

**GyroTracer Directional:**

Date: 10/19/2018  
 Operator : Adrian Bruner  
 API: 05-123-33520  
 Well Name : **Howard USX A 9-19**  
 Field : Noble Energy Inc  
 Tool Type And Number: 1719  
 Bottom Depth : 7074.00  
 Total Well Depth: 7318.00  
 Latitude : 40.50401 N  
 Longitude : 104.56006 W  
 Grid Offset : 0.61

**Starting Point Coordinates (in local grid):**

Northing: 0.00      Easting: 0.00      Altitude: 4866.00

**Description:**

*Azimuth measured in degrees and referenced to local grid*

*Inclination measured from Vertical*

*Length measured in US survey feet*

Start Time: 10/19/2018 8:33

End Time: 10/19/2018 9:45

Depth	Inclination	Azimuth	Closure Direction	True Depth	Coordinates		Dogleg Severity	Closure Distance
					+N/-S	+E/-W		
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.000	0.540	188.624	192.265	99.990	-0.920	-0.200	0.540	0.941
200.000	0.425	189.300	181.347	199.986	-1.728	-0.041	0.105	1.728
300.000	0.617	179.960	179.124	299.981	-2.684	0.041	0.093	2.684
400.000	0.402	213.323	176.728	399.977	-3.496	0.200	0.318	3.501
500.000	0.368	180.239	178.671	499.972	-4.250	0.099	0.177	4.251
600.000	0.364	265.091	186.061	599.969	-4.555	-0.484	0.588	4.580
700.000	0.600	231.692	193.683	699.965	-4.970	-1.210	0.354	5.115
800.000	0.783	232.698	199.301	799.961	-5.467	-1.915	0.175	5.792
900.000	0.303	241.734	205.370	899.954	-6.104	-2.895	0.342	6.756
1000.000	0.804	262.146	211.482	999.944	-6.653	-4.074	0.452	7.802
1100.000	0.845	250.220	217.002	1099.934	-7.107	-5.356	0.215	8.899
1200.000	0.932	249.753	220.913	1199.924	-7.642	-6.622	0.078	10.112
1300.000	0.862	232.308	224.156	1299.914	-8.126	-7.890	0.298	11.326
1400.000	0.779	236.501	227.038	1399.903	-8.597	-9.231	0.083	12.614
1500.000	1.002	255.027	229.436	1499.893	-9.018	-10.535	0.367	13.868
1600.000	0.859	253.437	231.268	1599.884	-9.410	-11.732	0.043	15.039
1700.000	0.740	226.507	232.024	1699.877	-9.965	-12.766	0.415	16.195
1800.000	0.959	212.136	230.855	1799.871	-10.837	-13.313	0.255	17.166
1900.000	0.710	192.159	228.890	1899.862	-11.990	-13.739	0.279	18.235
2000.000	0.824	209.440	226.883	1999.848	-13.478	-14.394	0.250	19.719
2100.000	0.605	202.570	224.956	2099.833	-15.052	-15.029	0.193	21.270
2200.000	0.678	71.880	222.528	2199.826	-15.962	-14.641	1.223	21.660
2300.000	0.765	64.926	220.224	2299.816	-15.777	-13.344	0.153	20.663

2400.000	0.467	236.823	219.318	2399.814	-15.792	-12.934	1.255	20.412
2500.000	1.345	260.351	221.697	2499.800	-16.057	-14.304	0.918	21.504
2600.000	1.222	252.623	224.287	2599.773	-16.845	-16.431	0.366	23.532
2700.000	1.058	250.046	226.651	2699.744	-17.617	-18.663	0.213	25.665
2800.000	0.773	250.584	228.681	2799.724	-18.077	-20.563	0.239	27.379
2900.000	0.277	265.343	230.246	2899.713	-18.257	-21.948	0.681	28.549
3000.000	0.732	246.662	231.952	2999.706	-18.008	-23.009	0.476	29.218
3100.000	0.200	14.594	232.952	3099.703	-17.814	-23.599	0.652	29.567
3200.000	0.590	89.580	232.965	3199.699	-17.369	-23.019	0.613	28.837
3300.000	1.429	106.707	231.214	3299.683	-17.130	-21.315	0.842	27.345
3400.000	1.826	91.439	227.374	3399.651	-17.366	-18.869	0.679	25.644
3500.000	2.279	96.238	221.141	3499.591	-17.701	-15.464	0.509	23.504
3600.000	2.869	101.996	212.323	3599.509	-18.167	-11.495	0.539	21.498
3700.000	3.098	123.831	199.138	3699.384	-19.496	-6.765	1.188	20.636
3800.000	3.828	136.749	184.174	3799.182	-23.149	-1.689	1.005	23.211
3900.000	4.090	130.102	172.711	3898.941	-27.688	3.542	0.492	27.914
4000.000	4.558	128.506	163.895	3998.646	-32.605	9.414	0.485	33.937
4100.000	4.472	127.540	157.503	4098.350	-37.347	15.467	0.109	40.423
4200.000	3.633	128.619	152.657	4198.092	-41.317	21.365	0.872	46.514
4300.000	3.204	129.526	150.242	4297.909	-45.311	25.906	0.408	52.194
4400.000	2.787	132.469	148.328	4397.792	-48.212	29.744	0.466	56.649
4500.000	1.464	111.284	146.897	4497.725	-50.120	32.676	1.570	59.831
4600.000	1.218	127.747	145.739	4597.691	-51.307	34.948	0.460	62.079
4700.000	1.047	182.076	145.950	4697.660	-53.411	36.094	0.943	64.464
4800.000	0.478	169.395	147.097	4797.640	-55.306	35.783	0.578	65.873
4900.000	0.455	354.349	147.166	4897.636	-55.219	35.633	0.935	65.718
5000.000	1.307	69.104	146.162	4997.625	-54.516	36.547	1.284	65.633
5100.000	0.990	97.555	144.532	5097.601	-54.314	38.696	0.721	66.689
5200.000	1.290	91.133	143.329	5197.581	-54.502	40.582	0.361	67.951
5300.000	0.684	167.833	143.081	5297.575	-54.841	41.204	1.348	68.596
5400.000	0.413	261.118	143.555	5397.571	-55.327	40.858	0.692	68.778
5500.000	1.030	237.356	144.750	5497.558	-55.717	39.376	0.624	68.227
5600.000	0.443	297.903	145.534	5597.552	-55.994	38.435	0.889	67.916
5700.000	0.282	33.099	145.618	5697.549	-55.640	38.072	0.646	67.419
5800.000	0.306	246.984	145.604	5797.547	-55.198	37.789	0.541	66.895
5900.000	0.665	301.327	145.744	5897.543	-54.812	37.328	0.549	66.315
6000.000	0.261	308.890	146.253	5997.539	-54.730	36.566	0.407	65.821
6100.000	1.028	276.411	146.955	6097.532	-54.538	35.478	0.863	65.063
6200.000	0.826	257.266	147.830	6197.521	-54.251	34.124	0.261	64.091
6300.000	0.836	281.912	148.634	6297.506	-53.577	32.660	0.367	62.747
6400.000	1.142	315.809	149.260	6397.484	-52.336	31.124	0.676	60.892
6500.000	1.870	8.938	148.430	6497.453	-50.024	30.739	1.504	58.714
6600.000	1.889	11.881	146.344	6597.410	-47.224	31.442	0.122	56.733
6700.000	1.234	32.162	144.142	6697.372	-44.650	32.271	0.451	55.091
6800.000	1.768	16.300	142.026	6797.341	-42.356	33.062	0.621	53.732
6900.000	1.026	11.841	140.376	6897.316	-40.198	33.284	0.680	52.189
7000.000	0.949	347.330	139.356	6997.293	-38.245	32.831	0.432	50.404
7074.700	1.000	314.830	139.179	7071.977	-37.031	31.989	0.558	48.935