

**GyroTracer Directional:**

Date: 5/9/2018  
 Operator : Brandon McKnight  
 API: 05-123-16009  
 Well Name: **Land 31-13**  
 Field : Noble Energy Inc  
 Tool Type And Number: 1609  
 Bottom Depth : 7200.00  
 Total Well Depth: 7375.00  
 Latitude : 40.270555 N  
 Longitude : 104.704003 W  
 Grid Offset : 0.51

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

Northing: 0.00      Easting: 0.00      Altitude: 4867.00

**Description:**

*Azimuth measured in degrees and referenced to local grid*

*Inclination measured from Vertical*

*Length measured in US survey feet*

Start Time: 5/9/2018 8:05

End Time: 5/9/2018 9:22

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
100.780	0.350	128.915	172.405	100.780	-0.600	0.080	0.347	0.605
200.000	0.038	154.478	161.593	199.999	-0.751	0.250	0.318	0.791
300.000	0.124	323.397	157.868	299.999	-0.728	0.296	0.024	0.786
400.000	0.323	341.484	171.746	399.998	-0.459	0.067	0.177	0.464
500.000	0.585	340.180	340.800	499.995	0.369	-0.128	0.103	0.391
600.000	0.418	336.060	342.462	599.992	1.038	-0.328	0.133	1.089
700.000	0.390	335.643	342.764	699.990	1.659	-0.515	0.028	1.737
800.000	0.321	357.561	344.551	799.988	2.277	-0.629	0.172	2.363
900.000	0.156	349.295	345.387	899.986	2.880	-0.751	0.256	2.976
1000.000	0.320	314.201	343.211	999.985	3.244	-0.979	0.157	3.389
1100.000	0.275	302.621	340.222	1099.984	3.578	-1.287	0.055	3.802
1200.000	0.408	291.700	334.761	1199.982	3.863	-1.821	0.135	4.270
1300.000	0.558	306.116	329.455	1299.978	4.275	-2.523	0.194	4.964
1400.000	0.880	316.627	325.702	1399.972	4.989	-3.403	0.360	6.039
1500.000	1.032	312.858	323.742	1499.960	6.113	-4.483	0.213	7.581
1600.000	1.110	325.686	323.548	1599.942	7.610	-5.621	0.242	9.461
1700.000	1.252	334.765	324.806	1699.920	9.430	-6.651	0.197	11.539
1800.000	1.428	337.394	327.126	1799.895	11.521	-7.446	0.300	13.718
1900.000	1.404	337.789	328.951	1899.867	13.729	-8.265	0.055	16.025
2000.000	1.644	339.502	330.804	1999.830	16.299	-9.107	0.296	18.670
2100.000	1.745	353.466	333.075	2099.783	19.263	-9.783	0.424	21.605
2200.000	1.571	358.820	335.633	2199.738	22.260	-10.082	0.220	24.436
2300.000	1.397	3.687	338.118	2299.701	24.971	-10.029	0.190	26.910

2400.000	1.573	6.765	340.558	2399.667	27.559	-9.728	0.168	29.226
2500.000	1.599	18.392	343.063	2499.631	30.190	-9.193	0.325	31.558
2600.000	1.659	29.707	346.186	2599.591	32.733	-8.049	0.329	33.708
2700.000	1.846	45.718	350.447	2699.541	35.043	-5.897	0.532	35.536
2800.000	2.121	49.128	354.872	2799.483	37.291	-3.347	0.278	37.441
2900.000	2.046	52.764	359.390	2899.418	39.407	-0.419	0.143	39.409
3000.000	2.083	53.030	3.477	2999.350	41.626	2.530	0.040	41.703
3100.000	1.767	57.874	7.006	3099.292	43.523	5.348	0.326	43.850
3200.000	1.530	48.598	9.900	3199.247	45.098	7.871	0.381	45.780
3300.000	1.080	56.892	11.770	3299.220	46.478	9.685	0.395	47.476
3400.000	0.505	123.267	13.060	3399.212	46.743	10.843	0.889	47.984
3500.000	0.593	182.204	13.626	3499.207	45.860	11.117	0.538	47.188
3600.000	0.720	183.503	14.008	3599.200	44.666	11.143	0.036	46.035
3700.000	1.250	206.001	14.131	3699.188	43.188	10.873	0.662	44.536
3800.000	1.503	220.377	13.247	3799.161	41.188	9.696	0.389	42.314
3900.000	1.939	228.067	10.945	3899.118	39.221	7.585	0.504	39.947
4000.000	1.712	230.249	8.042	3999.070	37.155	5.250	0.114	37.524
4100.000	1.805	226.596	4.668	4099.017	34.977	2.856	0.137	35.093
4200.000	1.955	227.611	0.566	4198.962	32.827	0.324	0.108	32.829
4300.000	2.131	205.472	357.202	4298.898	29.802	-1.456	0.837	29.838
4400.000	2.167	211.794	353.317	4398.831	26.518	-3.107	0.224	26.699
4500.000	1.595	240.212	347.873	4498.780	24.142	-5.188	0.967	24.693
4600.000	1.395	248.096	342.016	4598.747	23.070	-7.489	0.226	24.255
4700.000	1.101	253.003	337.295	4698.726	22.581	-9.448	0.322	24.478
4800.000	0.741	216.056	333.915	4798.715	21.865	-10.704	0.598	24.344
4900.000	1.212	134.402	332.423	4898.703	20.520	-10.718	1.443	23.151
5000.000	1.819	114.924	336.474	4998.661	19.009	-8.276	0.767	20.733
5100.000	1.449	114.734	342.334	5098.617	17.684	-5.632	0.284	18.559
5200.000	0.784	114.229	347.441	5198.594	16.793	-3.741	0.652	17.204
5300.000	0.406	166.788	349.281	5298.589	16.153	-3.058	0.698	16.440
5400.000	0.505	152.081	349.310	5398.587	15.672	-2.958	0.163	15.948
5500.000	0.372	187.258	348.244	5498.585	15.050	-3.132	0.266	15.373
5600.000	0.440	213.992	346.311	5598.582	14.400	-3.507	0.195	14.821
5700.000	0.522	229.084	343.108	5698.576	13.665	-4.150	0.176	14.281
5800.000	1.089	241.335	337.496	5798.565	12.895	-5.343	0.581	13.958
5900.000	1.470	254.068	328.835	5898.542	11.989	-7.251	0.480	14.012
6000.000	0.992	295.524	323.178	5998.522	12.003	-8.987	1.109	14.995
6100.000	1.723	302.334	318.767	6098.498	12.615	-11.056	0.793	16.774
6200.000	1.282	309.463	315.630	6198.475	13.192	-12.905	0.436	18.455
6300.000	0.610	289.702	313.224	6298.460	13.572	-14.441	0.817	19.817
6400.000	0.781	274.814	310.789	6398.443	13.921	-16.134	0.239	21.310
6500.000	1.218	291.229	310.009	6498.430	14.642	-17.445	0.660	22.775
6600.000	0.920	285.930	309.180	6598.421	15.183	-18.630	0.326	24.034
6700.000	0.824	305.323	308.713	6698.409	15.924	-19.867	0.311	25.461
6800.000	0.735	299.148	308.280	6798.403	16.435	-20.825	0.159	26.529
6900.000	0.450	320.982	307.972	6898.398	16.878	-21.624	0.328	27.431
7000.000	0.789	320.860	308.079	6998.392	17.577	-22.434	0.291	28.500
7100.000	0.616	347.192	308.706	7098.386	18.436	-23.007	0.288	29.482
7200.000	0.939	330.360	310.240	7198.380	19.542	-23.092	0.379	30.252