

GyroTracer Directional:

Date: 12/17/2018
Operator : Adrian Bruner
API : 05-123-26395
Well Name : Karlberg State 36-41
Field : Noble Energy Inc
Tool Number: 1719
Bottom Depth : 7000.00
Total Well Depth: 7304.00
Latitude : 40.52816 N
Longitude : 104.60431 W
Grid Offset : 0.58
Datum: NAD 83

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

Northing: 0.00 **Easting:** 0.00 **GLE:** 4800.00

Description:

Azimuth measured in degrees and referenced to local grid

Inclination measured from Vertical

Length measured in US survey feet

Lat/Long/Elevation obtained by handheld GPS at wellhead. Device error \pm 9 Feet

RKB = Ground Level Elevation

Start Time: 12/17/2018 11:20

End Time: 12/17/2018 12:31

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	0.490	342.672	13.548	100.000	0.830	0.200	0.490	0.854
200.000	0.480	295.010	10.781	199.999	0.984	0.187	0.388	1.001
300.000	0.430	265.927	335.274	299.997	1.005	-0.463	0.223	1.106
400.000	0.460	320.024	316.176	399.994	1.119	-1.074	0.403	1.551
500.000	0.780	335.353	309.769	499.989	1.541	-1.852	0.369	2.409
600.000	0.370	334.422	313.631	599.983	2.366	-2.482	0.403	3.429
700.000	0.500	295.944	313.692	699.977	3.086	-3.230	0.305	4.468
800.000	0.340	305.886	312.662	799.972	3.671	-3.984	0.176	5.417
900.000	0.280	266.357	307.645	899.968	3.718	-4.821	0.222	6.088
1000.000	0.920	252.726	304.214	999.961	3.982	-5.857	0.647	7.083
1100.000	0.640	264.332	299.409	1099.952	4.038	-7.163	0.310	8.223
1200.000	0.770	276.942	296.873	1199.943	4.283	-8.452	0.198	9.475
1300.000	0.810	273.121	296.094	1299.930	4.844	-9.890	0.075	11.013
1400.000	1.100	309.490	296.902	1399.920	5.594	-11.025	0.639	12.363
1500.000	1.090	299.419	297.171	1499.906	6.408	-12.485	0.165	14.033
1600.000	1.120	311.599	298.317	1599.893	7.393	-13.721	0.233	15.586
1700.000	1.110	308.462	298.915	1699.880	8.291	-15.011	0.050	17.149
1800.000	0.400	301.725	299.686	1799.872	9.065	-15.901	0.712	18.303
1900.000	0.190	24.340	301.103	1899.868	9.808	-16.257	0.500	18.986
2000.000	0.400	341.086	302.398	1999.866	10.384	-16.363	0.247	19.380
2100.000	0.550	22.472	304.120	2099.862	11.131	-16.428	0.361	19.844

2200.000	0.660	335.856	305.649	2199.859	11.797	-16.449	0.478	20.242
2300.000	1.060	337.604	307.915	2299.851	12.995	-16.684	0.429	21.148
2400.000	1.140	348.642	311.063	2399.826	15.106	-17.339	0.256	22.996
2500.000	1.460	331.683	313.800	2499.794	17.440	-18.186	0.493	25.197
2600.000	1.250	326.764	315.677	2599.768	19.534	-19.078	0.189	27.305
2700.000	1.320	313.331	316.591	2699.737	21.567	-20.402	0.313	29.688
2800.000	1.190	329.060	317.117	2799.712	23.367	-21.701	0.409	31.890
2900.000	1.580	305.923	316.795	2899.684	24.946	-23.430	0.649	34.223
3000.000	0.950	303.942	315.876	2999.662	25.995	-25.212	0.631	36.212
3100.000	1.500	292.978	314.638	3099.636	26.890	-27.232	0.595	38.271
3200.000	1.350	282.862	313.093	3199.618	27.211	-29.085	0.251	39.830
3300.000	0.940	260.571	311.580	3299.599	27.483	-30.976	0.596	41.411
3400.000	1.390	262.152	309.844	3399.583	27.292	-32.705	0.460	42.596
3500.000	1.030	260.502	308.568	3499.572	27.190	-34.100	0.360	43.613
3600.000	0.320	242.516	307.511	3599.564	27.110	-35.316	0.788	44.522
3700.000	0.290	299.085	307.612	3699.562	27.472	-35.658	0.279	45.013
3800.000	0.480	50.738	308.382	3799.558	28.184	-35.583	0.649	45.392
3900.000	1.010	48.420	309.487	3899.552	29.122	-35.344	0.537	45.796
4000.000	0.730	5.448	310.635	3999.546	30.016	-34.978	0.647	46.091
4100.000	0.760	36.237	311.856	4099.541	30.871	-34.459	0.362	46.265
4200.000	0.420	327.918	312.859	4199.536	31.608	-34.063	0.730	46.468
4300.000	0.630	16.456	314.138	4299.526	32.938	-33.945	0.492	47.298
4400.000	1.150	5.408	315.743	4399.511	34.627	-33.741	0.508	48.347
4500.000	1.010	332.586	317.107	4499.493	36.445	-33.858	0.639	49.746
4600.000	1.360	335.497	317.906	4599.476	38.142	-34.456	0.341	51.401
4700.000	0.990	304.780	317.931	4699.462	39.392	-35.555	0.703	53.064
4800.000	0.250	291.357	317.811	4799.459	39.777	-36.053	0.713	53.685
4900.000	1.540	234.863	316.365	4899.447	39.025	-37.208	1.433	53.920
5000.000	1.560	215.285	313.521	4999.409	37.151	-39.120	0.520	53.950
5100.000	1.490	226.805	310.541	5099.368	35.345	-41.324	0.295	54.377
5200.000	1.080	248.764	307.925	5199.332	33.923	-43.537	0.631	55.193
5300.000	0.850	267.761	306.496	5299.312	33.586	-45.395	0.398	56.469
5400.000	1.150	331.613	306.054	5399.298	34.131	-46.885	1.094	57.993
5500.000	1.370	318.495	306.395	5499.277	35.551	-48.229	0.356	59.916
5600.000	1.280	322.330	307.296	5599.249	37.615	-49.383	0.112	62.077
5700.000	0.700	302.373	307.953	5699.230	39.241	-50.311	0.681	63.805
5800.000	0.630	274.494	307.039	5799.221	38.865	-51.503	0.314	64.522
5900.000	0.880	249.628	306.199	5899.212	38.588	-52.726	0.396	65.338
6000.000	0.570	226.507	305.368	5999.205	38.146	-53.741	0.405	65.903
6100.000	0.900	246.905	304.051	6099.190	37.347	-55.261	0.379	66.698
6200.000	1.480	237.076	302.596	6199.172	36.306	-56.779	0.598	67.395
6300.000	1.920	239.359	300.624	6299.138	34.864	-58.894	0.443	68.440
6400.000	1.560	253.139	298.486	6399.093	33.325	-61.413	0.556	69.872
6500.000	1.070	261.855	297.110	6499.059	32.732	-63.937	0.532	71.829
6600.000	1.490	288.651	296.491	6599.030	33.029	-66.273	0.705	74.047
6700.000	1.690	293.350	296.225	6699.001	33.746	-68.505	0.265	76.366
6800.000	1.710	311.864	296.362	6798.970	34.994	-70.611	0.545	78.806
6900.000	1.960	297.735	296.741	6898.916	36.915	-73.266	0.516	82.040
7000.000	1.610	308.360	296.980	6998.871	38.550	-75.723	0.484	84.971