



WELL INFORMATION					
MWD Run Number	100	200			
Date run completed	13-Aug-15	16-Aug-15			
Rig Bit Number	0200	0300			
Bit Size (in)	8.750	6.125			
Tool Nominal OD (in)	6.750	4.910			
Log Start Depth (MD, ft)	775.00	6,142.00			
Log End Depth (MD, ft)	6,142.00	10,427.00			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	12-Aug-15 22:35	14-Aug-15 16:37			
Drill/Wipe End Date and Time	13-Aug-15 17:10	15-Aug-15 20:24			
Min Inc (deg) @ Depth (MD, ft)	0.28 @ 1,039.00	87.23 @ 7,348.00			
Max Inc (deg) @ Depth (MD, ft)	82.55 @ 6,087.00	92.28 @ 10,427.00			
Bit TFA(in2) / Bit Type	0.98 / PDC	0.46 / PDC			
Flow Rate (gpm)	577.94	300.18			
Max AV (fpm) / CV (fpm) @ MWD	N/A / N/A	N/A / N/A			
Fluid Type	Native/Spud Mud	Native/Spud Mud			
Density (ppg) / Viscosity (spqt)	9.10 / 28.00	10.60 / 35.00			
Filtrate CL (ppm)	2,400.00	2,200.00			
pH / Fluid Loss (mptm)	9.90 / 41	9.70 / 8			
PV (cP) / YP (lbf2)	3 / 2.00	8 / 8.00			
% Solids / % Sand	4.40 / 0.30	11.00 / 0.20			
% Oil / Oil:Water Ratio	N/A / N/A	N/A / N/A			
Rm @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmf @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmc @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Min Temp (degF) @ Depth (MD, ft)	122.22 @ 720M	210.10 @ 720M			

Max Tool Temp (degF) / Source	162.80 / PCM	213.40 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ 162.80	N/A @ 213.40			
Lead MWD Engineer	Robert Barnes	Robert Barnes			
Customer Representative	Jim Turner	Jim Turner			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.93	5.93			
Sub Serial Number	11341339	12368592			
Insert Serial Number	11400992	11400842			
Date and Time Initialized	11-Aug-15 20:23	13-Aug-15 18:46			
Date and Time Read	13-Aug-15 22:15	16-Aug-15 03:56			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	55.00	68.00			
Software Version	6.21	6.21			
Sub Serial Number	11341339	12368592			
Sonde Serial Number	11297516	11637592			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	353.80	158.00			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	48.73	70.70			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	11341339	12368592			
Insert/Sonde Serial Number	12037420	12071509			

REMARKS

1. All depths are calibrated to driller's pipe tally and are Measured depth's from the Drill Floor.
2. No depth corrections have been made for pipe stretch or compression.
3. Critical annular velocities are calculated using the "Power Law" model for water based fluids and the "Brigham Plastic" model for oil and synthetic based fluids.
4. All data presented is recorded data unless otherwise specified.
5. The following smoothing parameters have been applied to the data:
 - 1:600 Log
PGRC (Gamma CG) and ROPA (Average Rate of Penetration)
Interval Resolution: 1.0 ft
Interval Distance: 3.0 ft
 - 1:240 Log
PGRC (Gamma CG):
Interval Resolution: 0.5 ft
Interval Distance: 0.6 ft
 - ROPA (Average Rate Of Penetration):
Interval Resolution: 0.5 ft

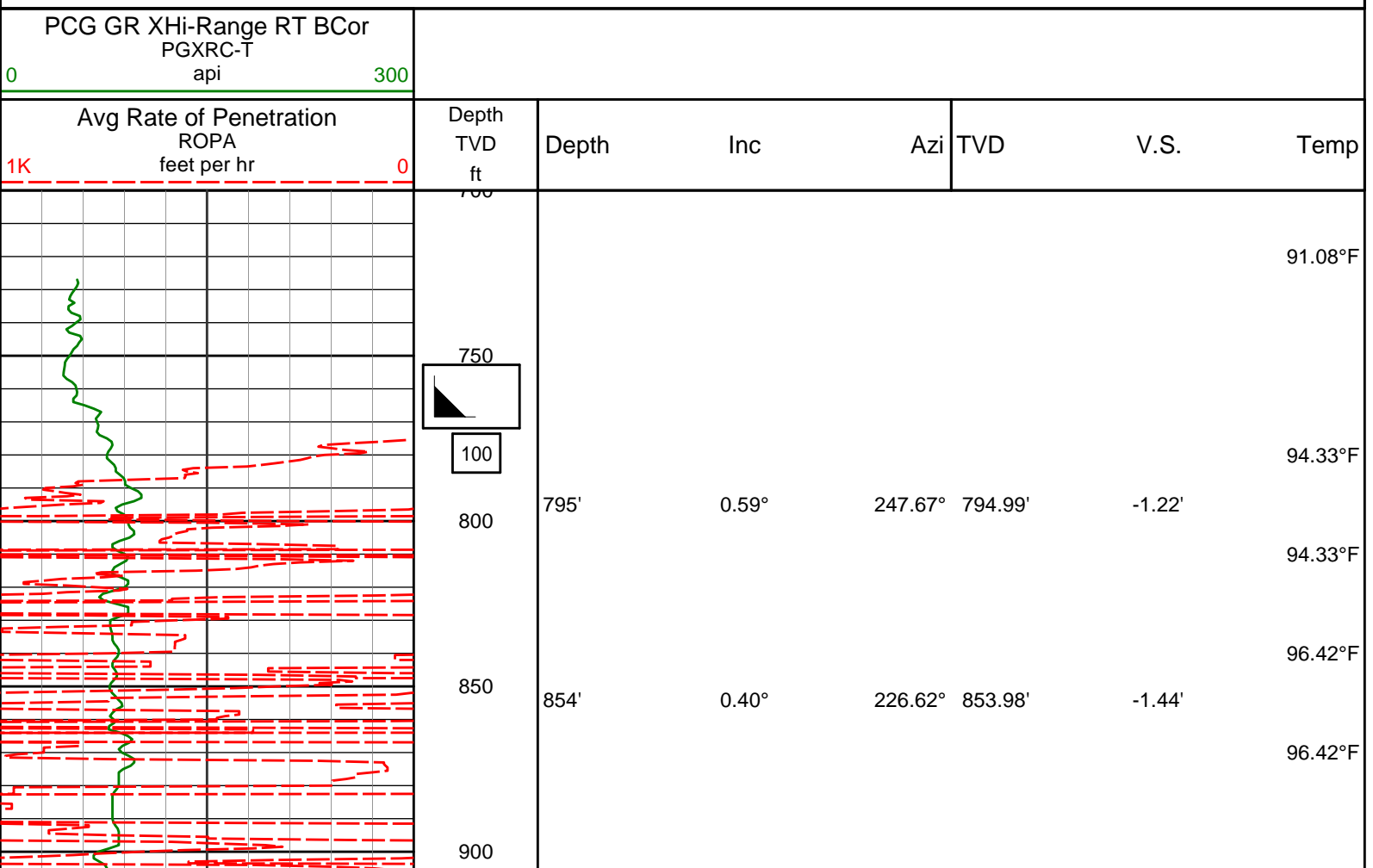
Interval Resolution: 1.2 ft

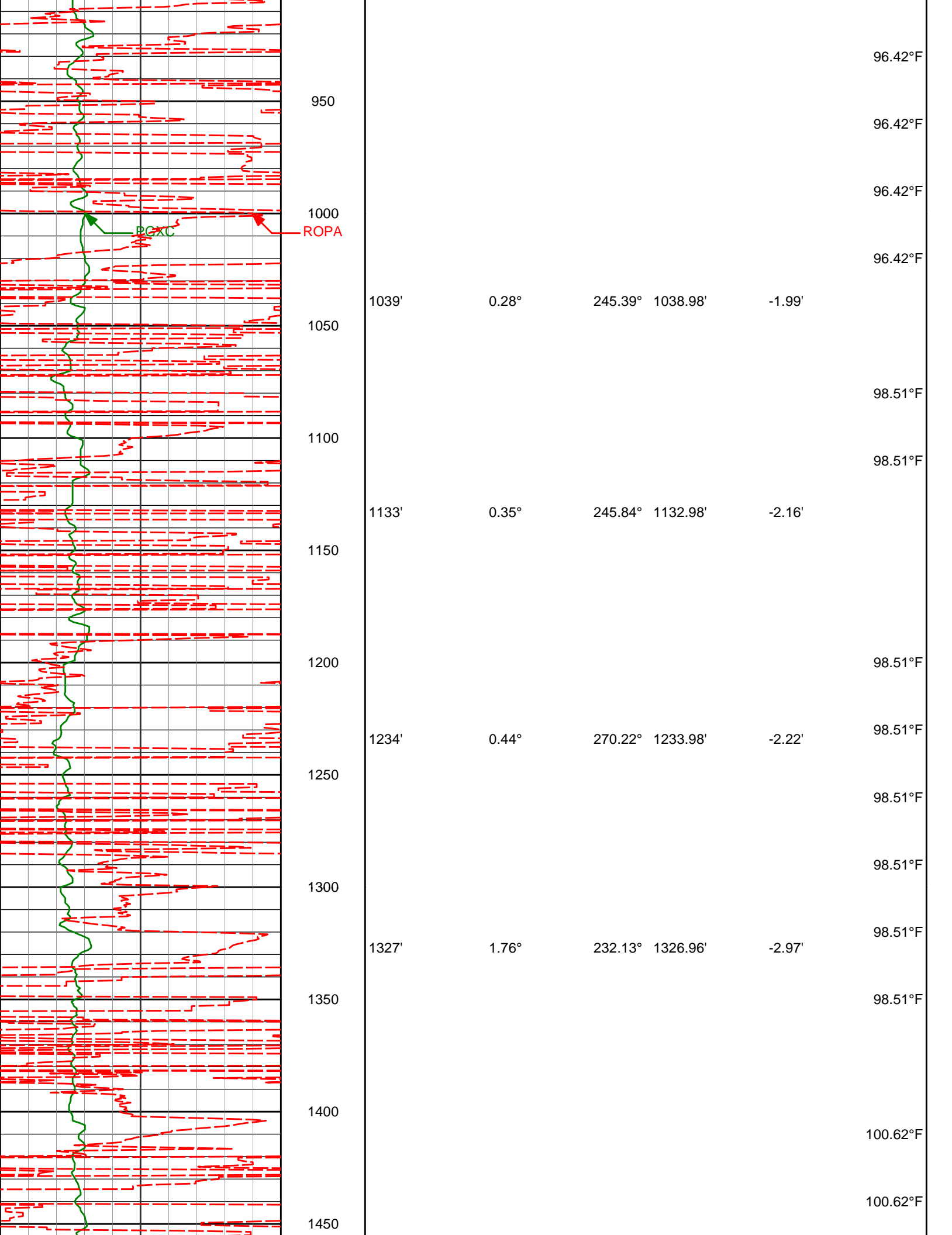
6. Insite Version v8.3

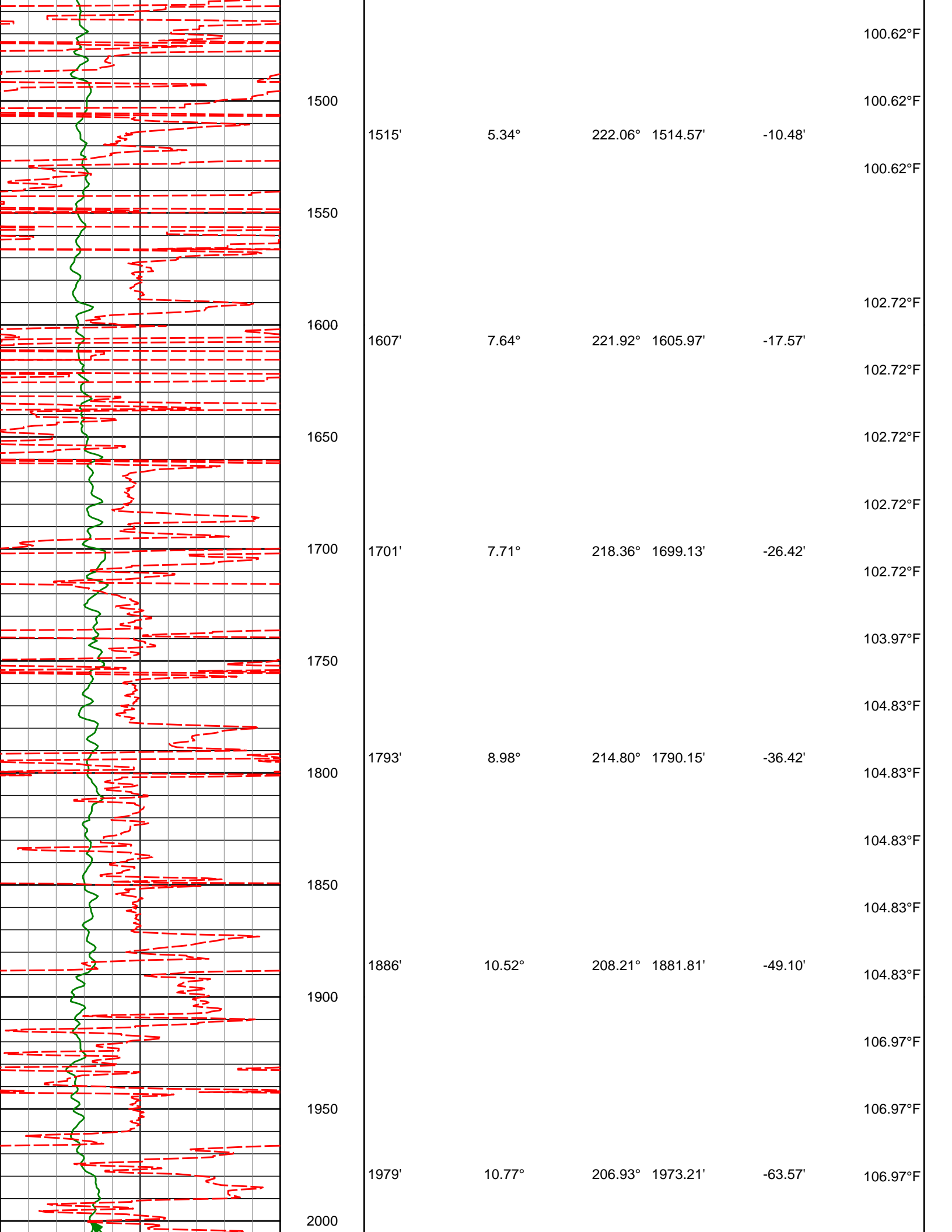
WARRANTY

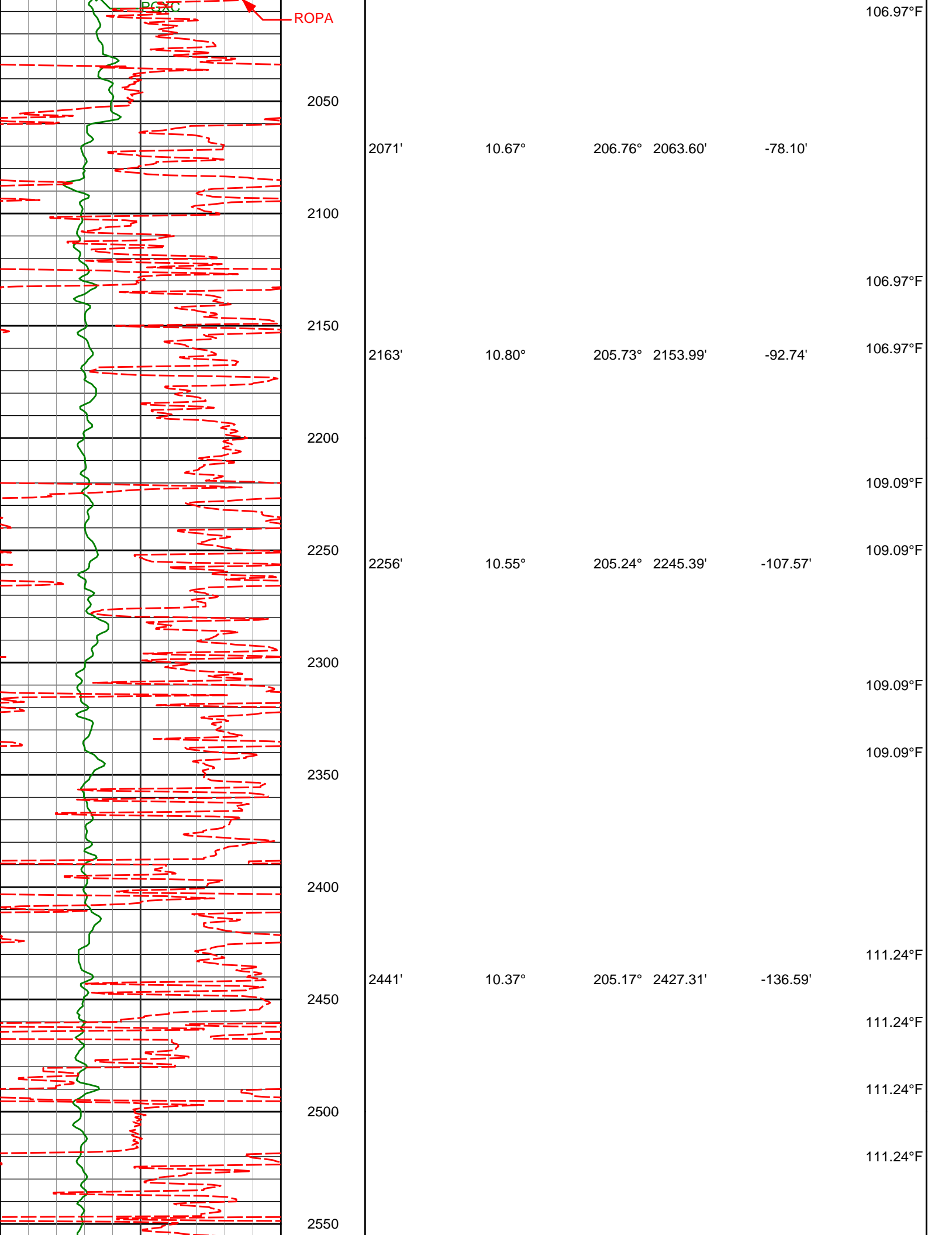
HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HALLIBURTON MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON.

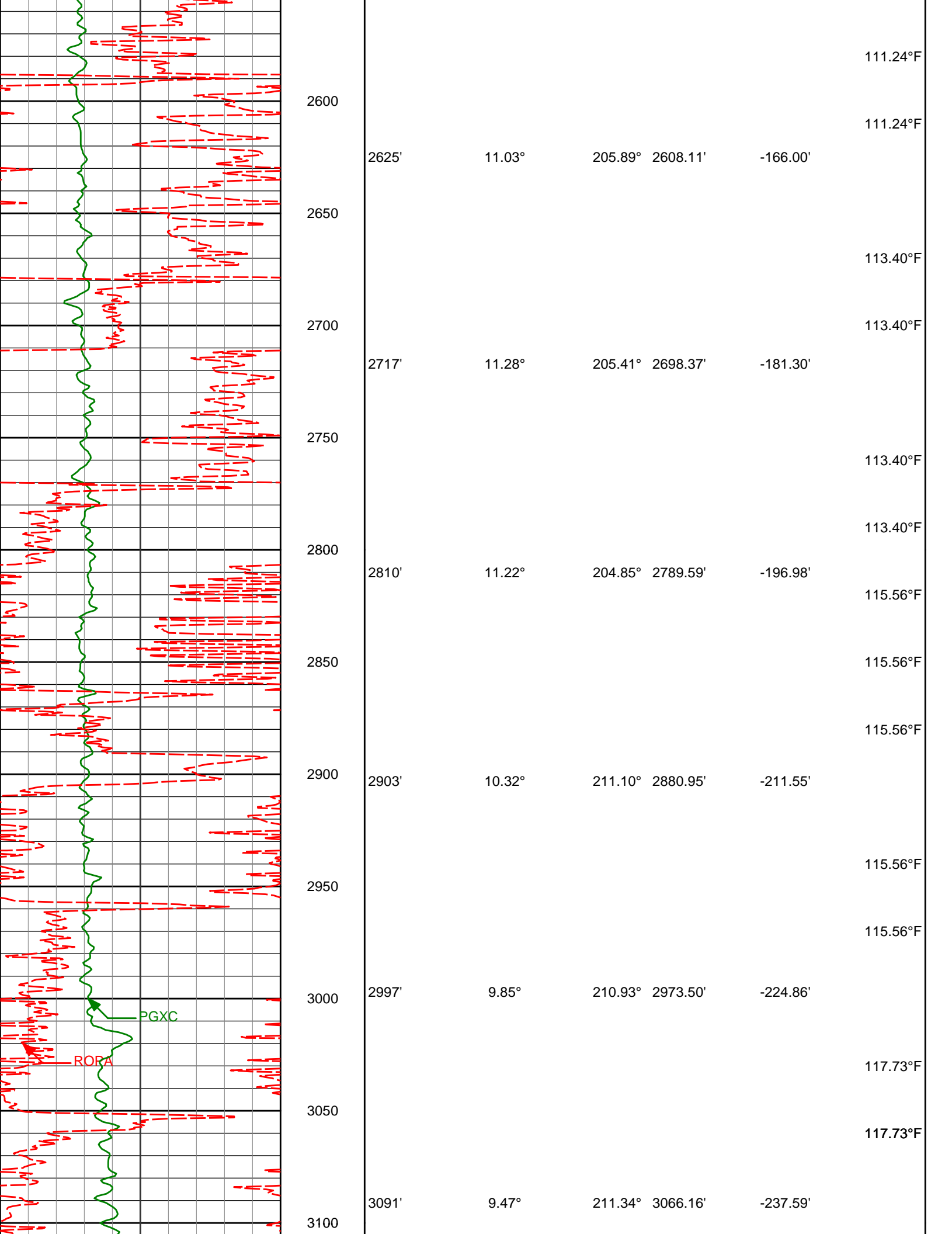
MD Detail 1:600 Scale

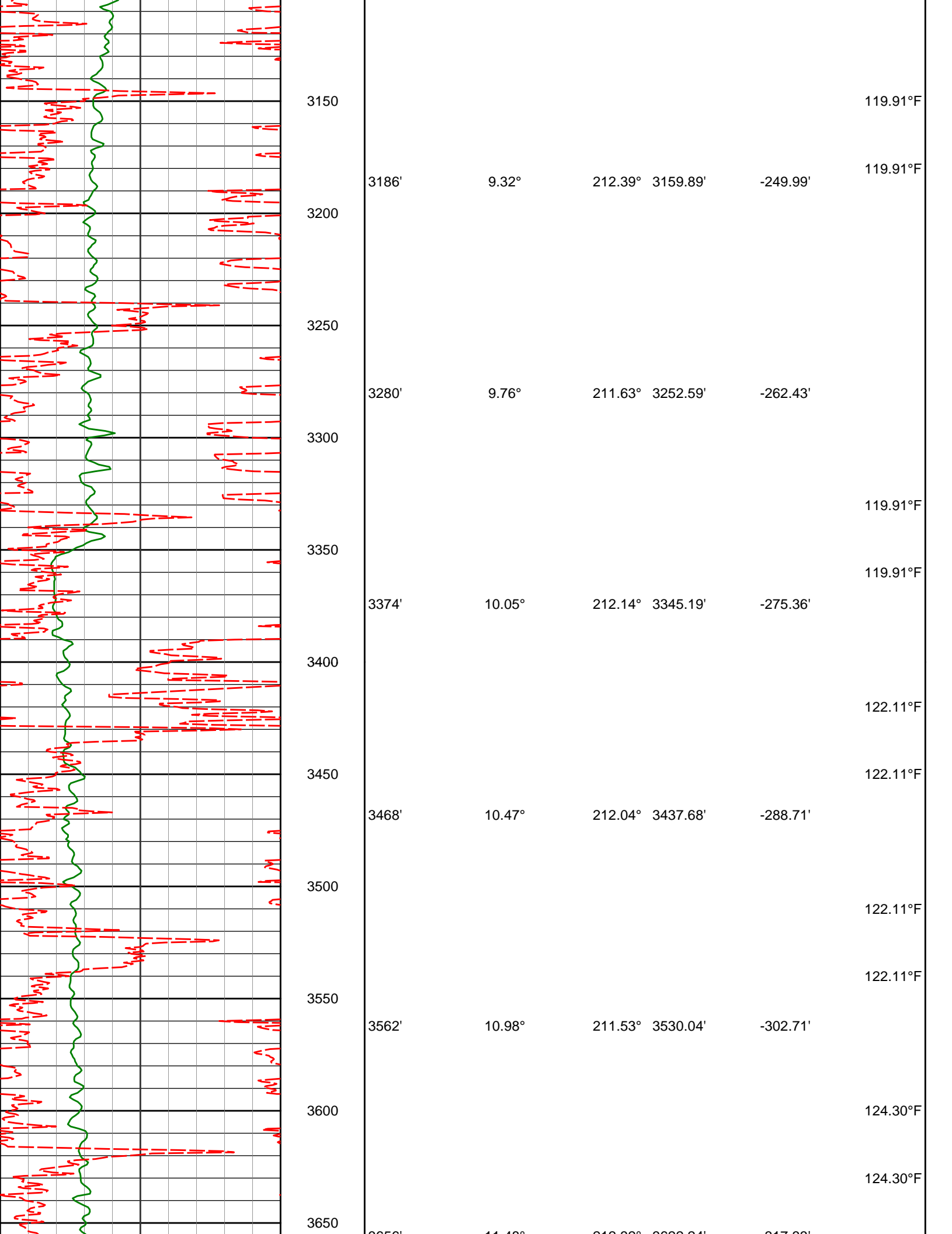


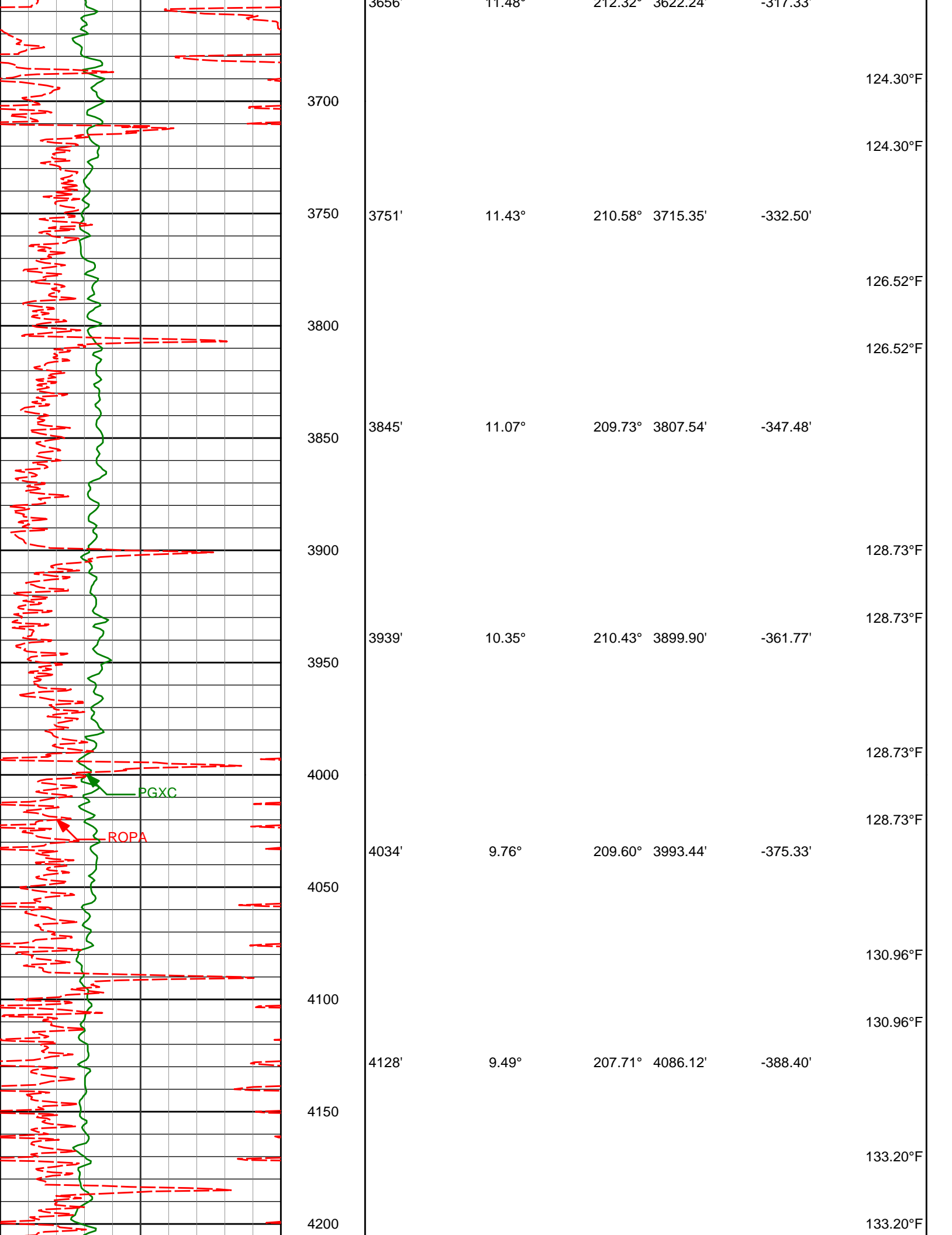


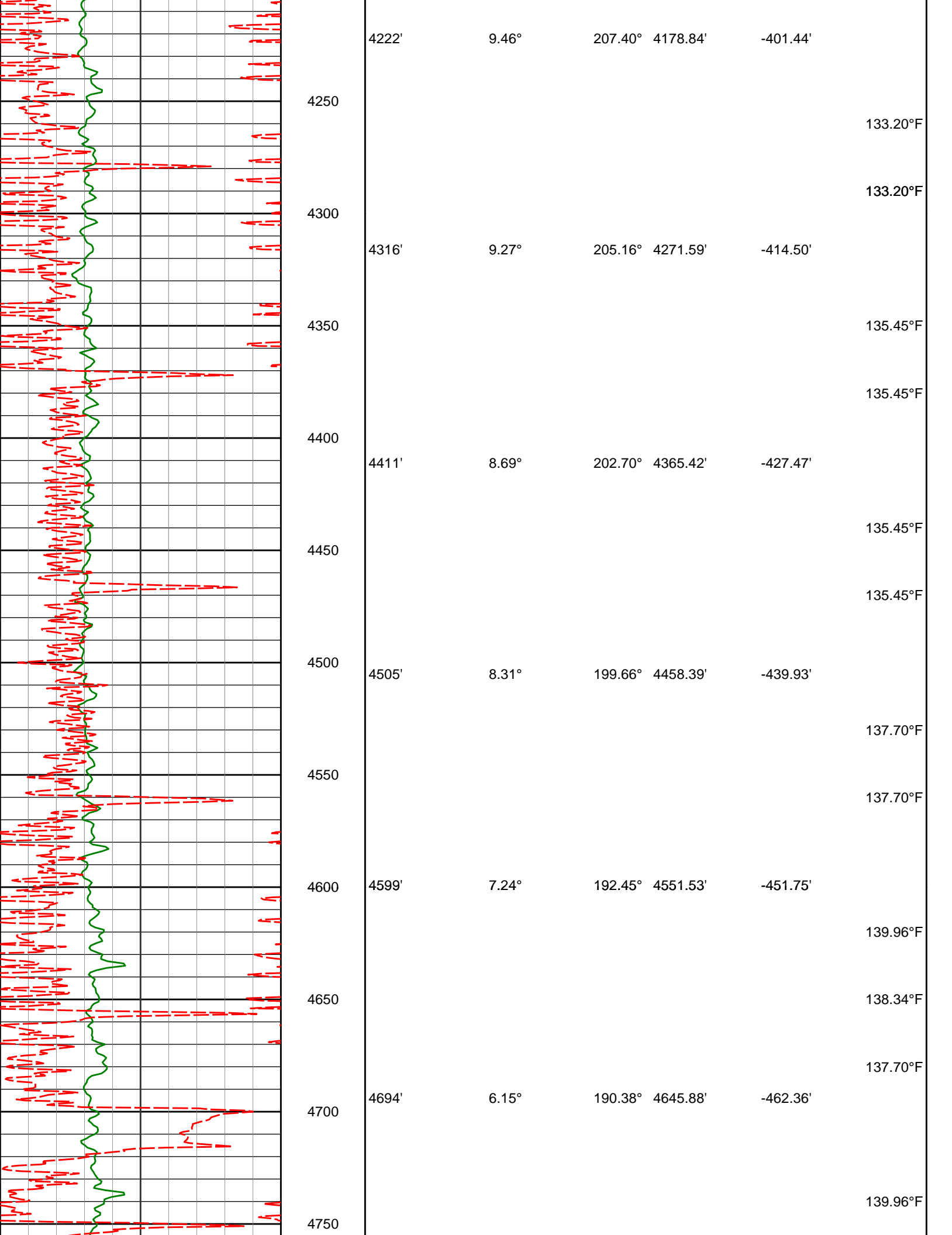


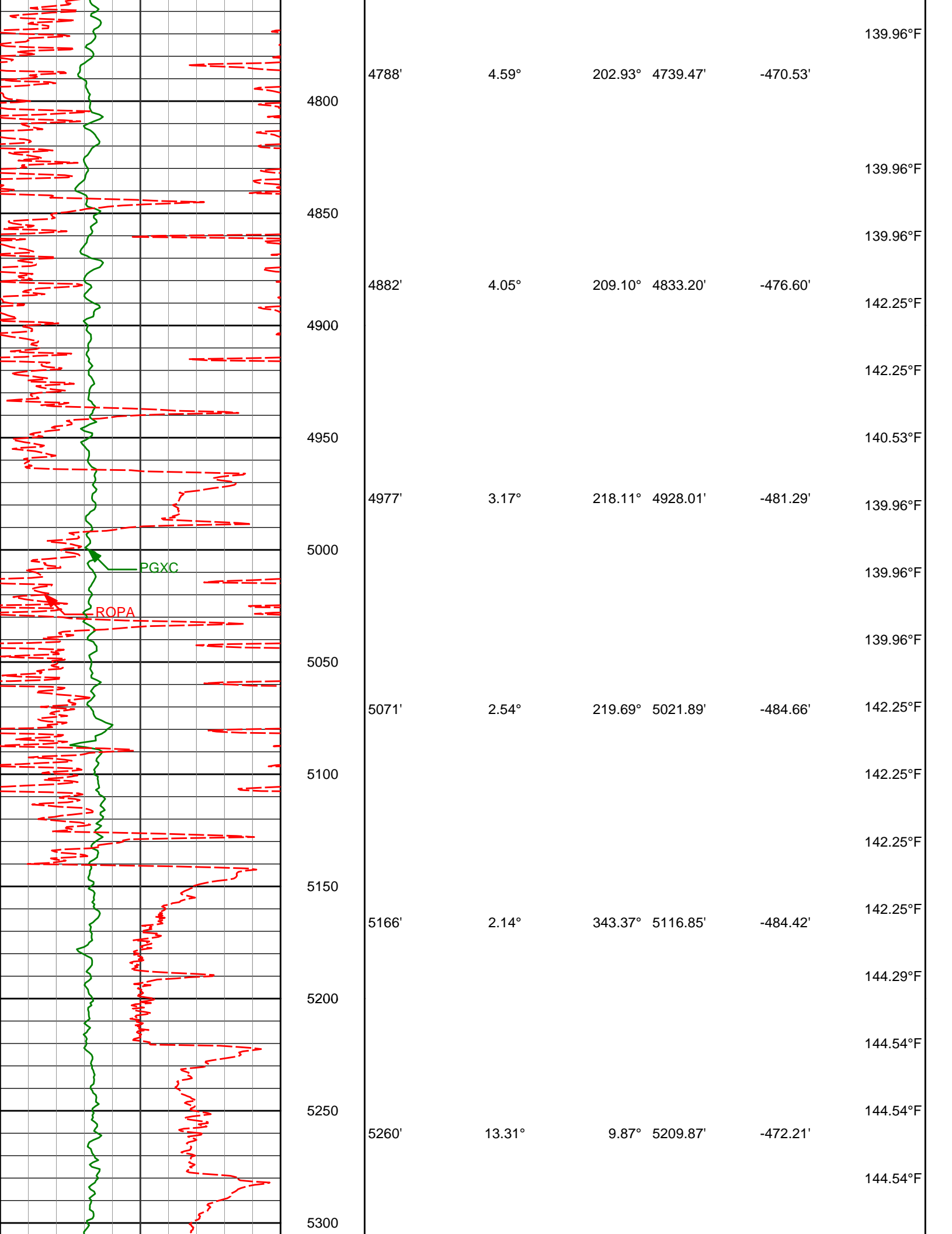


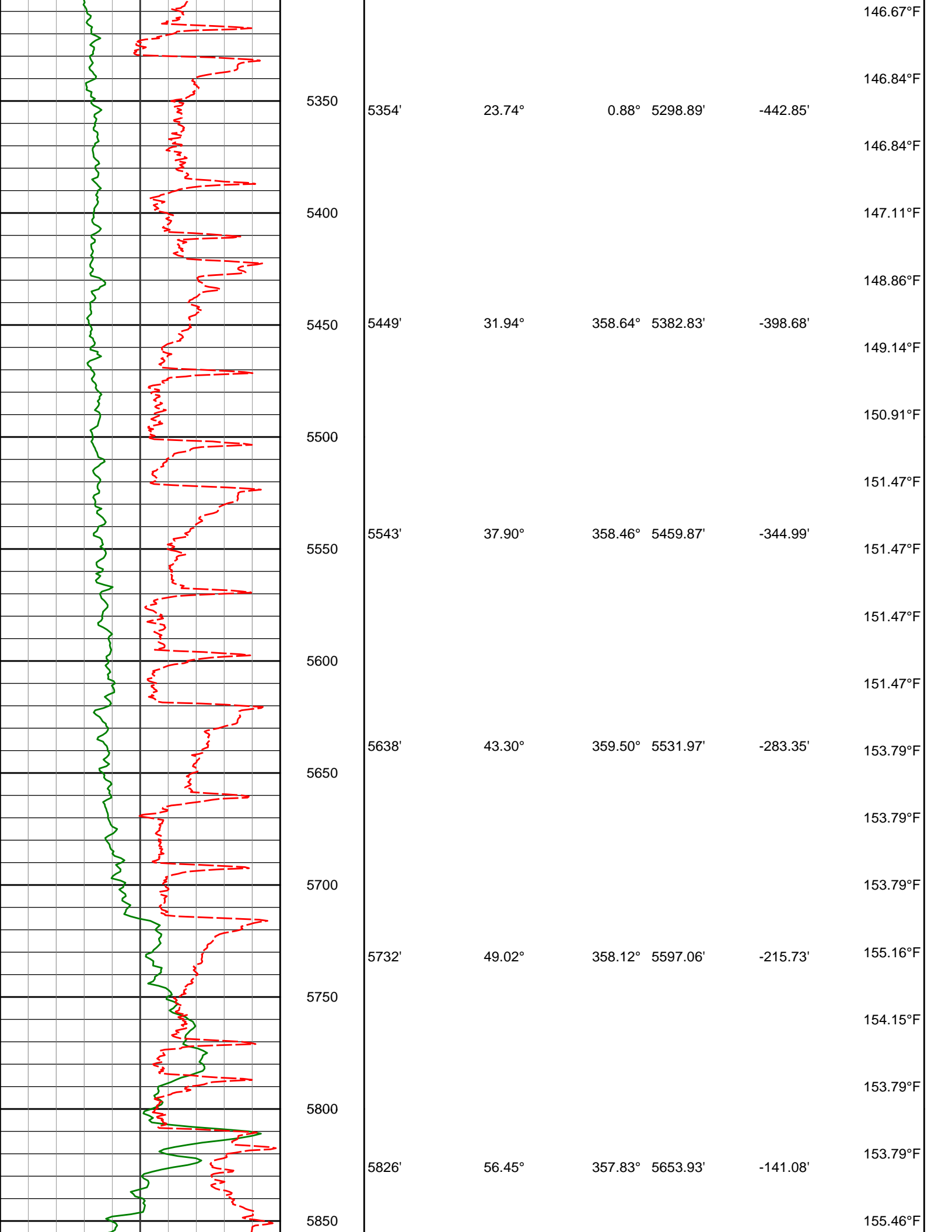


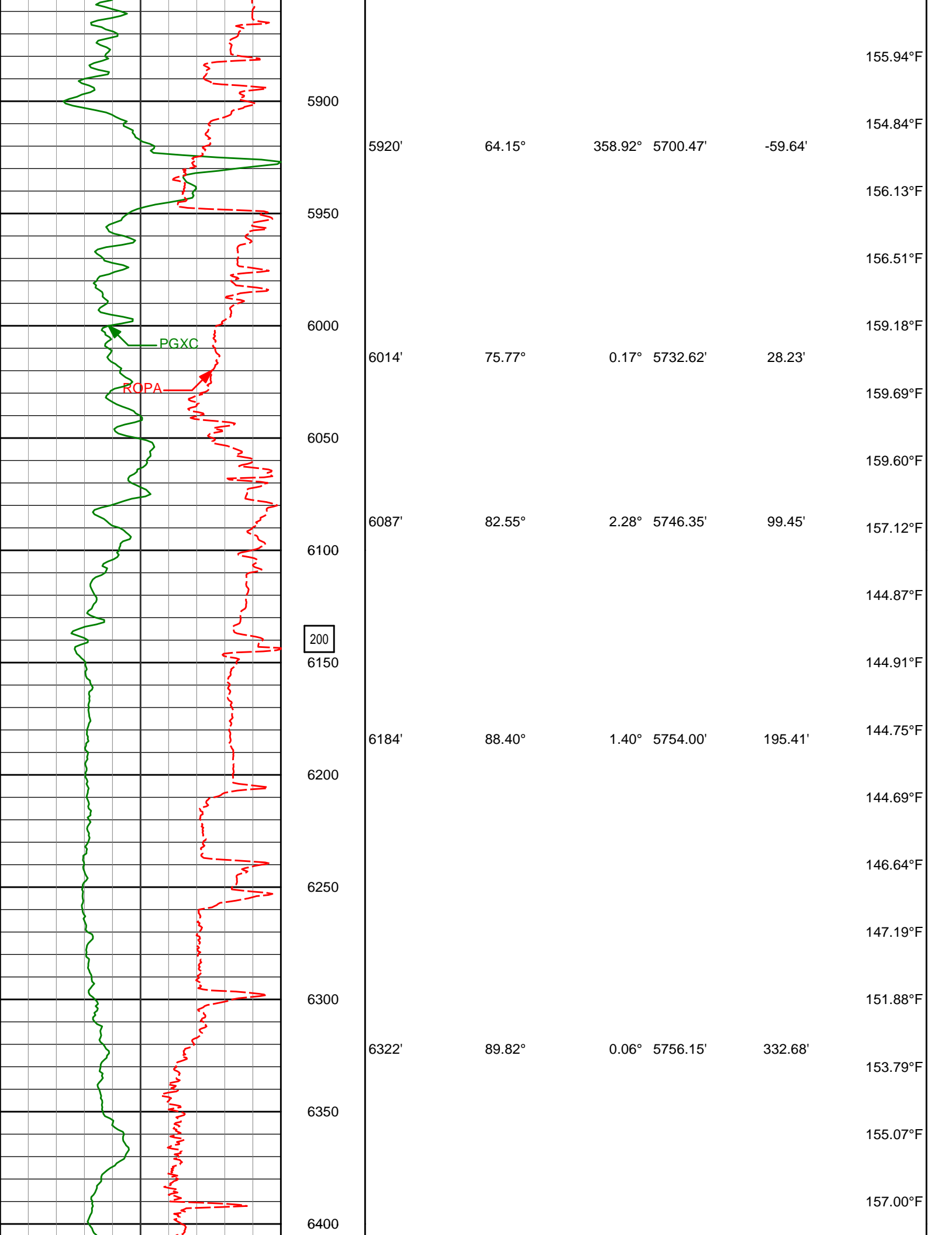


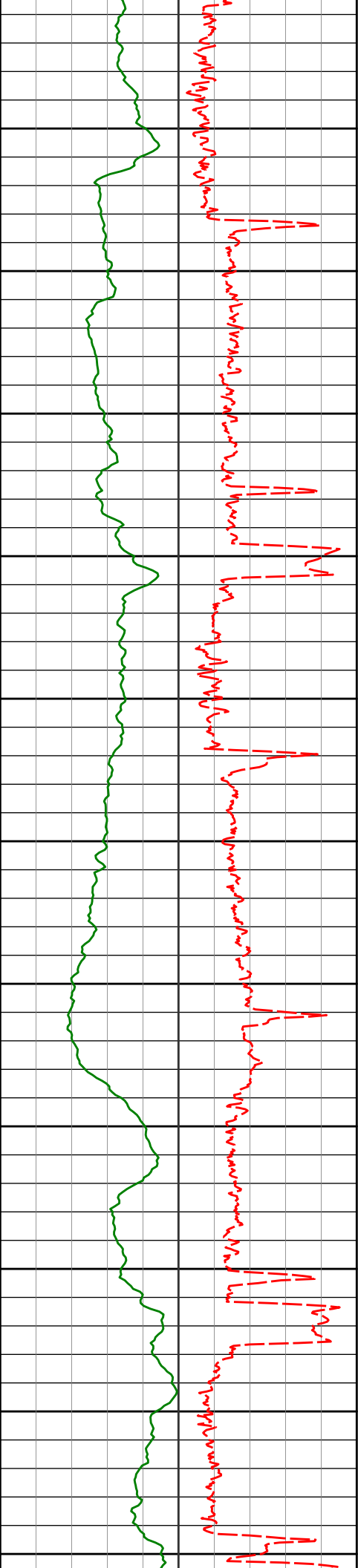




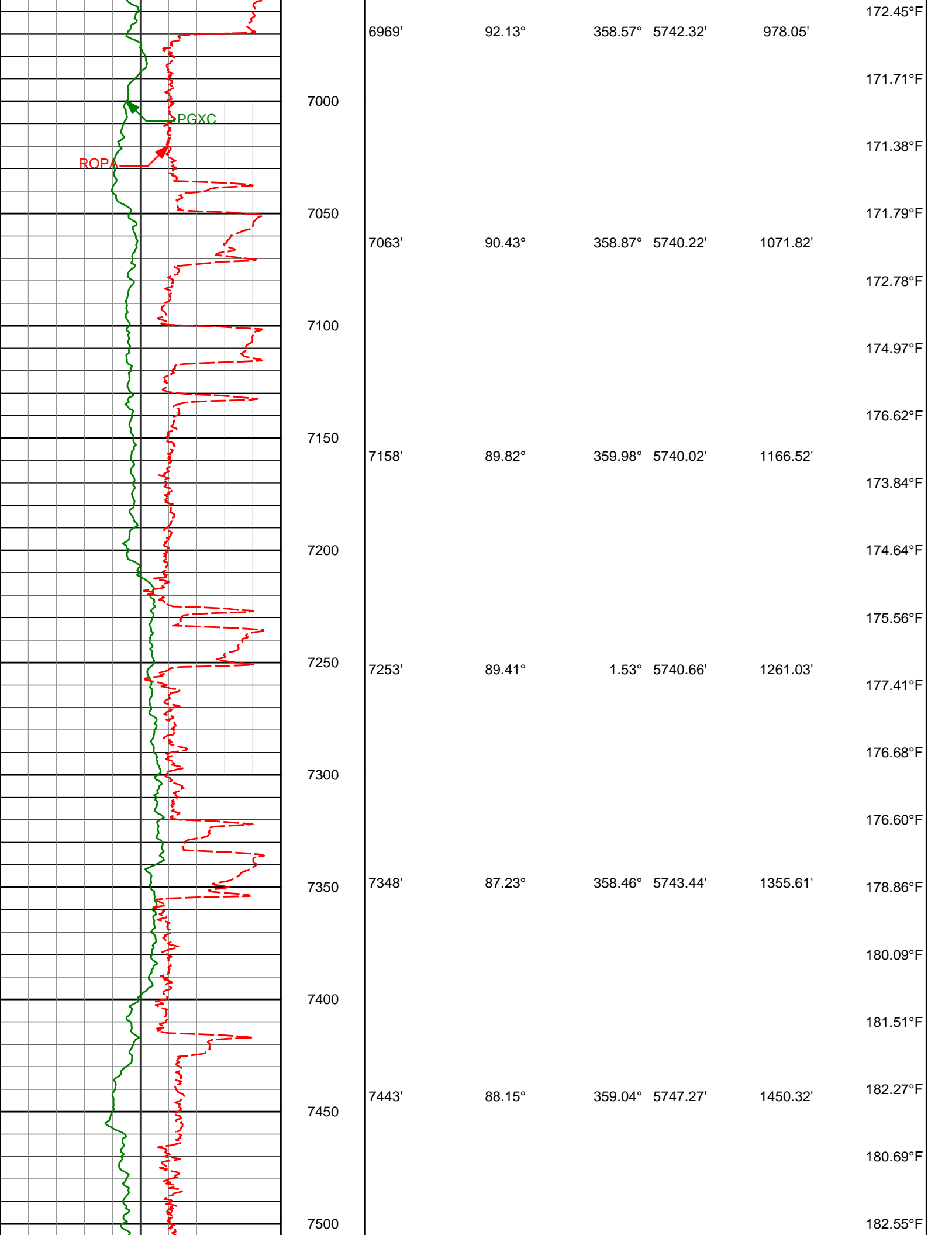


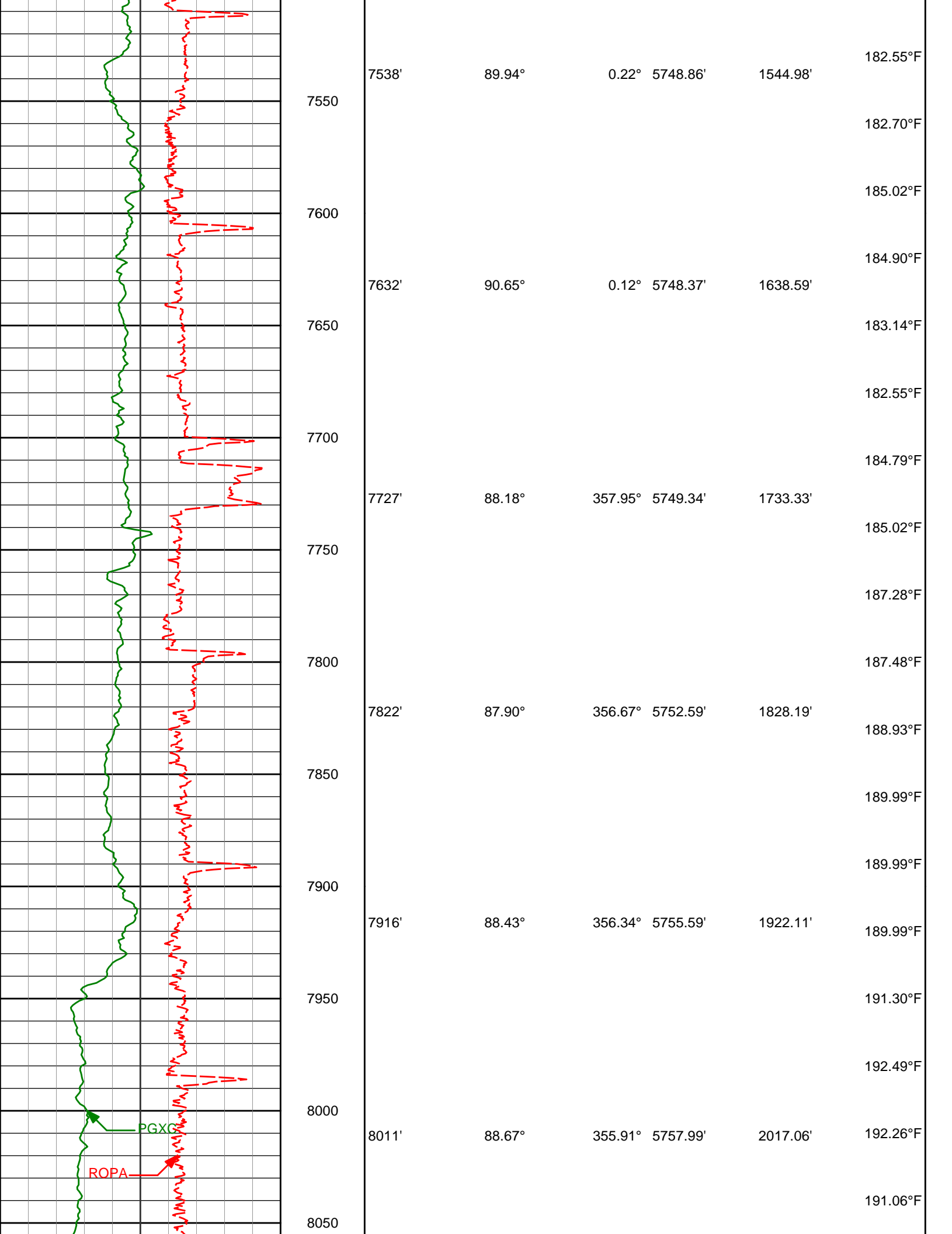


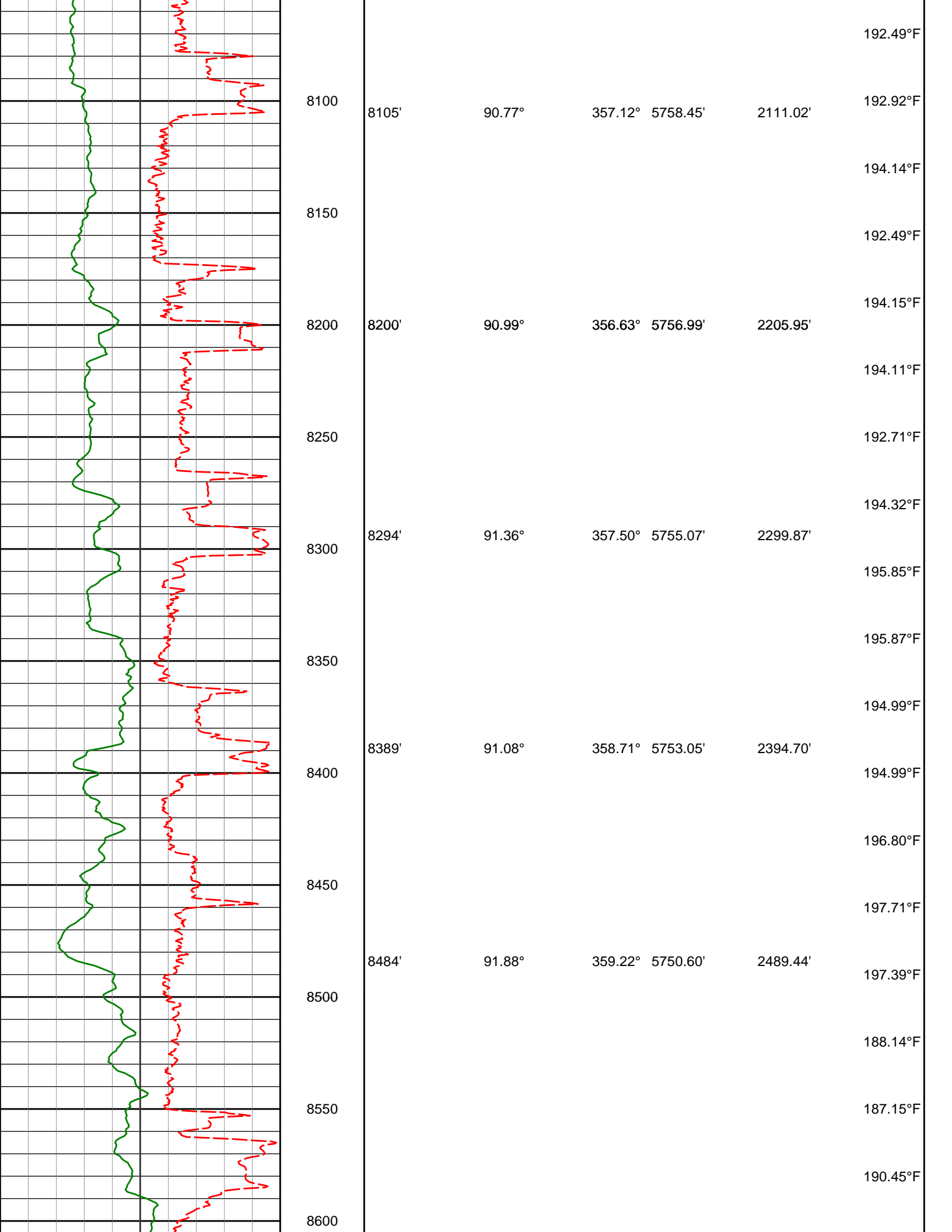


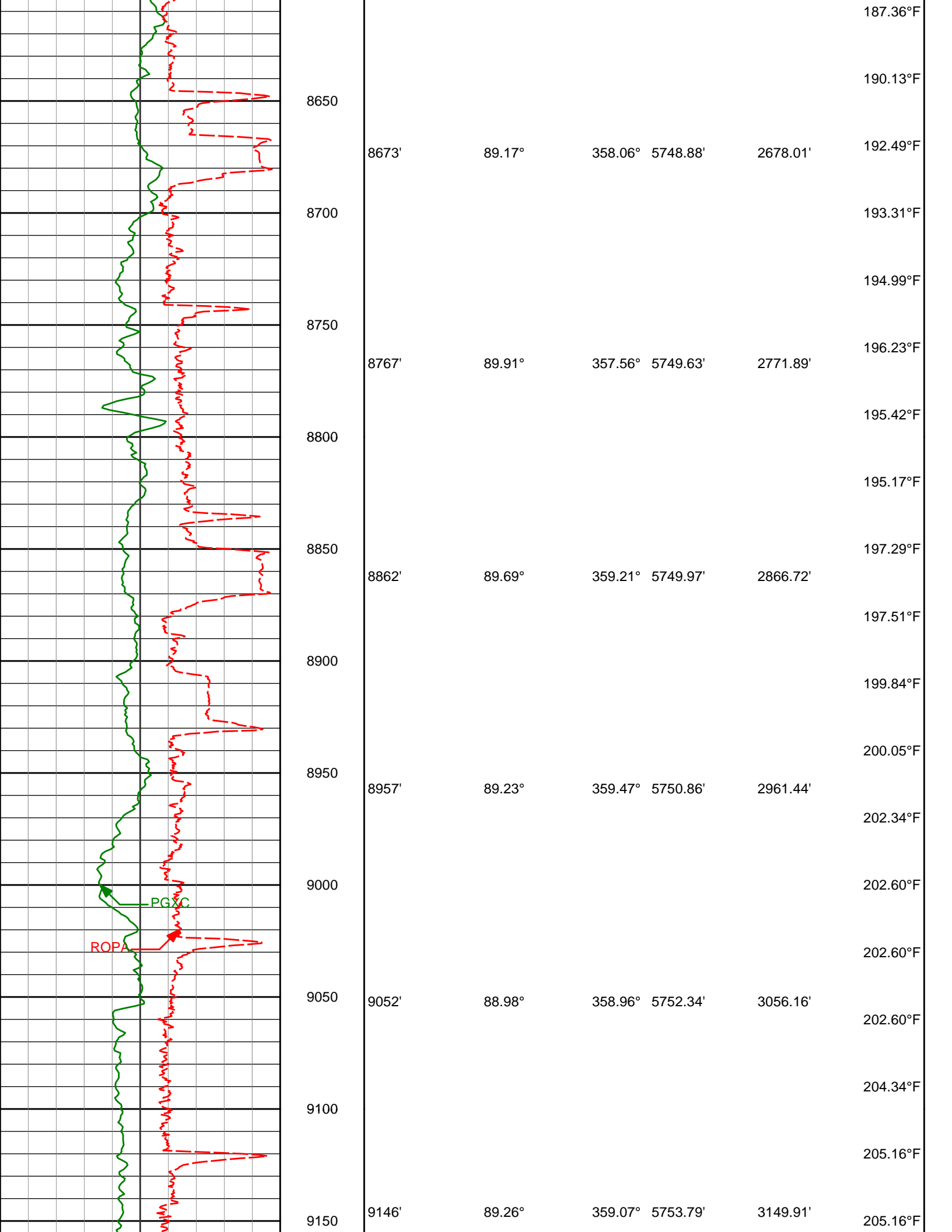


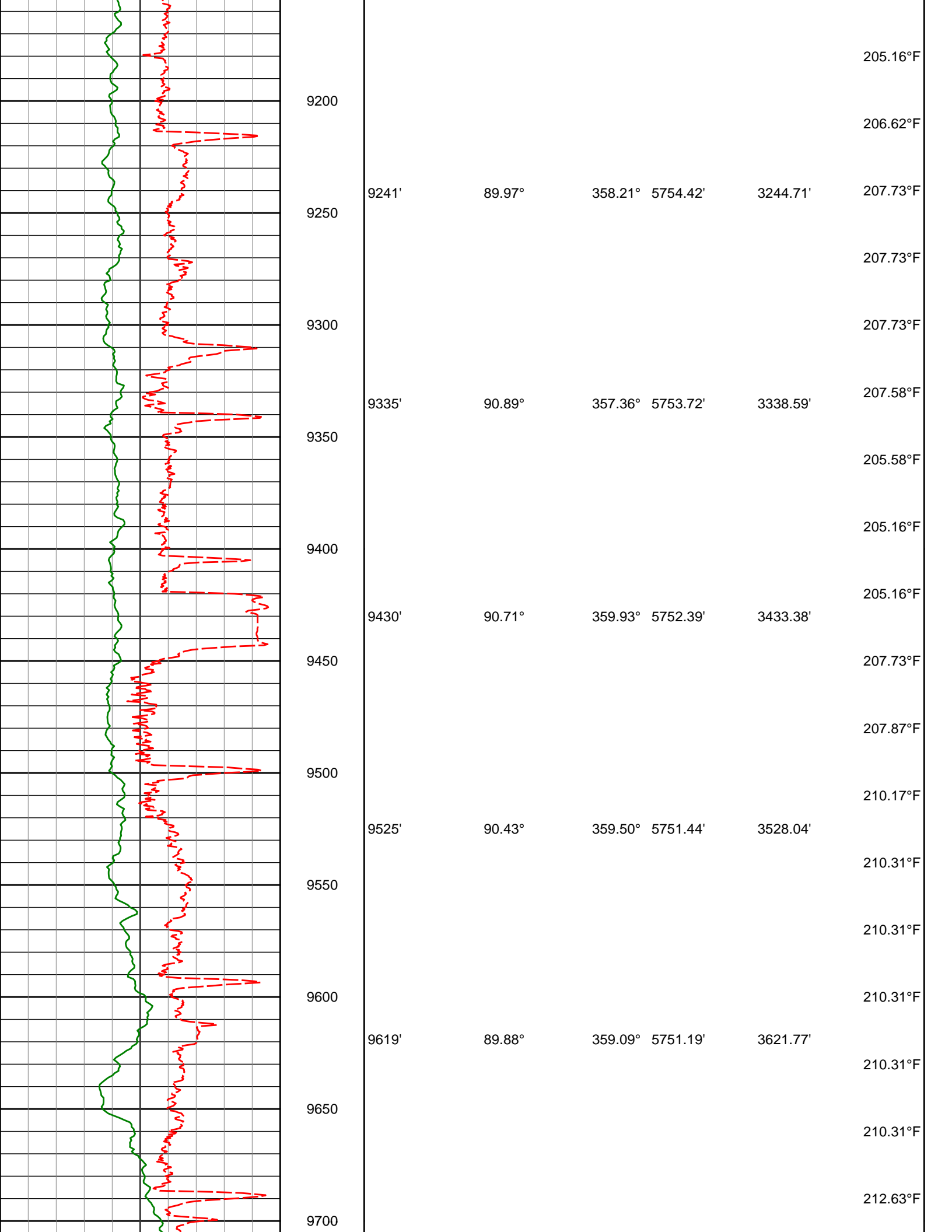
	6415'	90.43°	0.65°	5755.95'	425.27'	158.47°F
6450						158.47°F
						158.96°F
6500	6508'	91.05°	0.36°	5754.75'	517.82'	159.12°F
						158.47°F
6550						158.71°F
						161.15°F
6600	6600'	91.39°	358.82°	5752.80'	609.50'	161.15°F
						163.20°F
6650						164.40°F
						165.58°F
6700	6692'	90.96°	356.28°	5750.92'	701.38'	165.58°F
						166.66°F
6750						167.97°F
						167.97°F
6800	6784'	91.76°	356.23°	5748.74'	793.33'	167.97°F
						166.85°F
						167.52°F
6850						169.75°F
						168.67°F
6900	6876'	92.03°	357.21°	5745.70'	885.23'	169.75°F
						168.67°F
						169.50°F
6950						

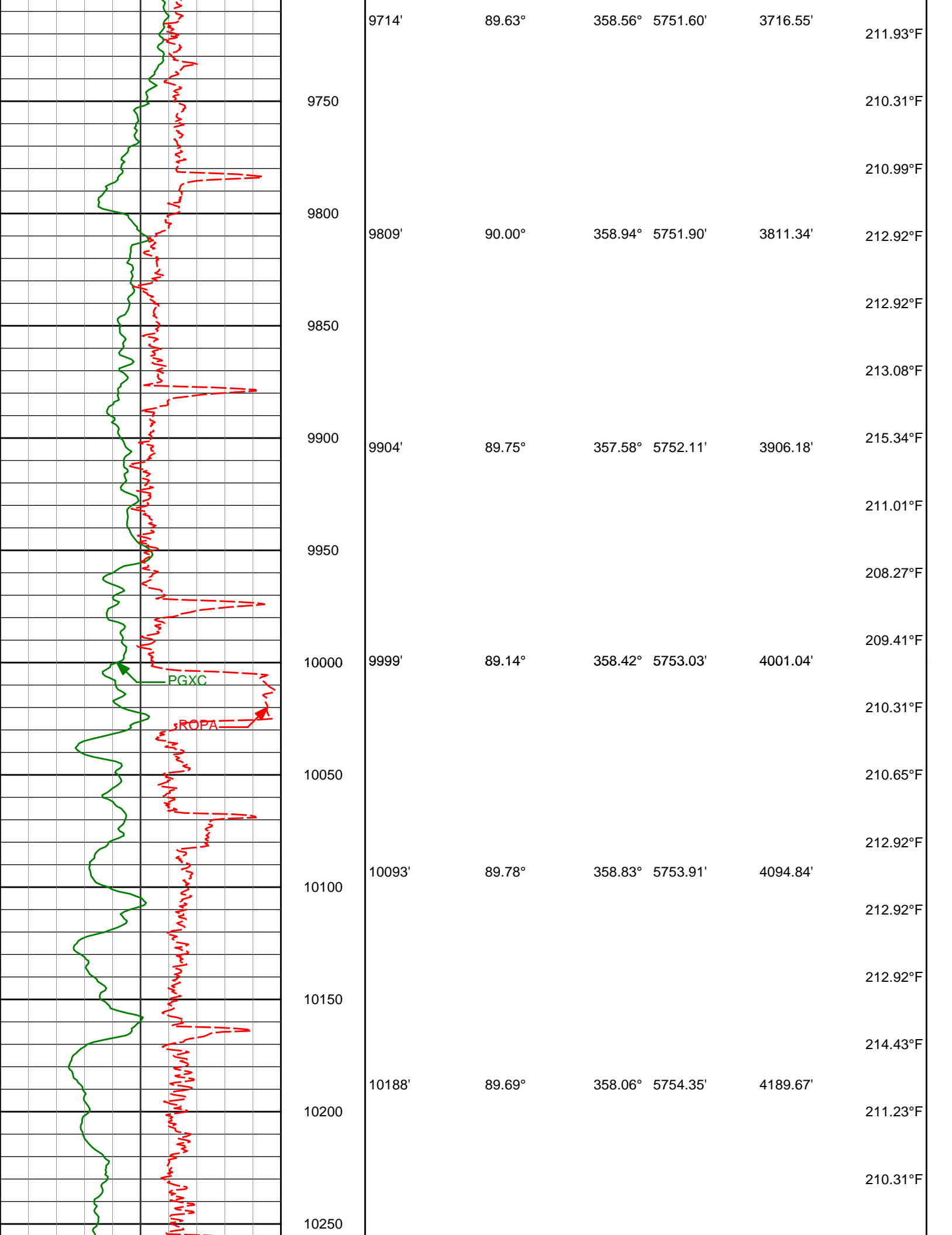


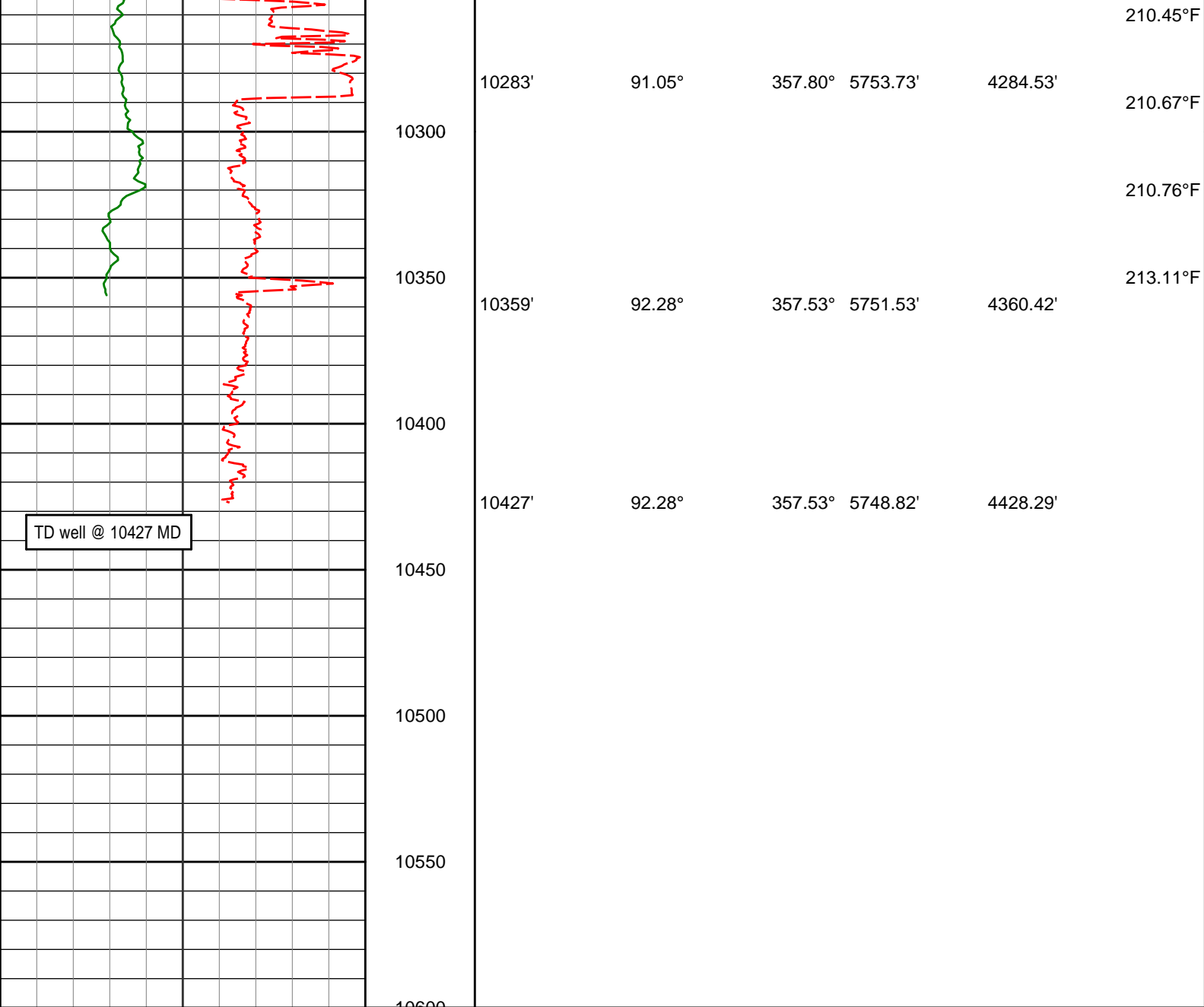








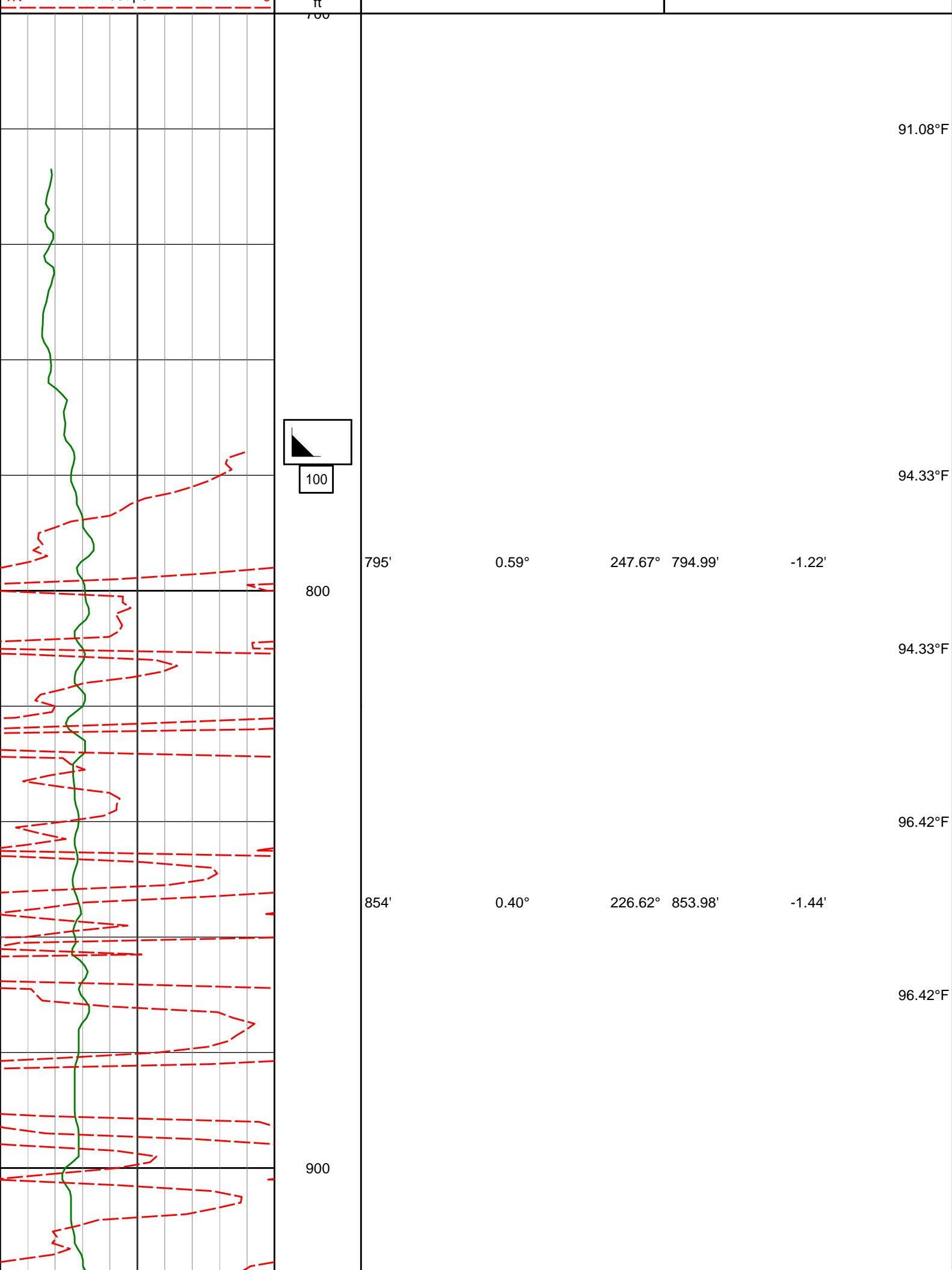


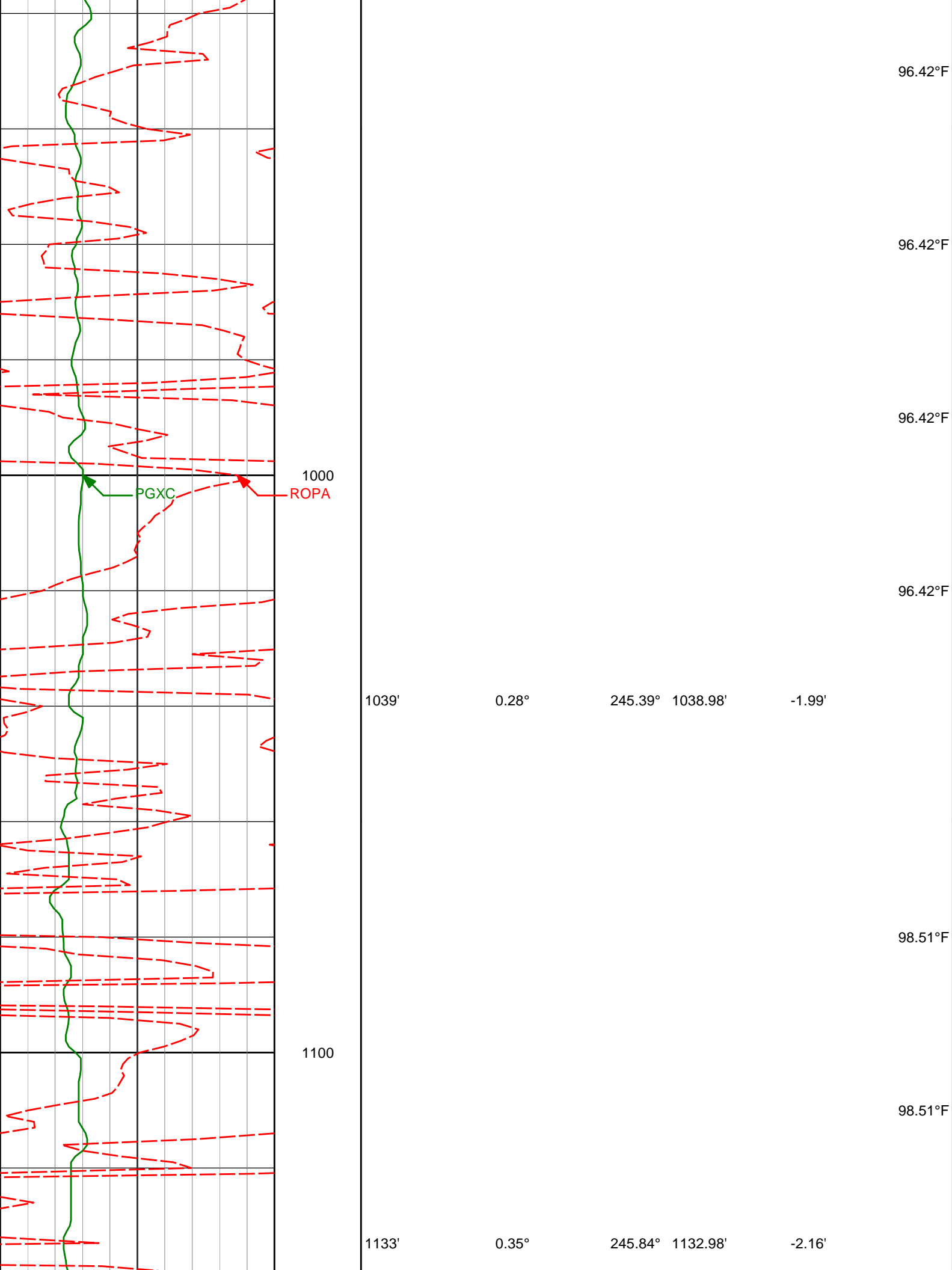


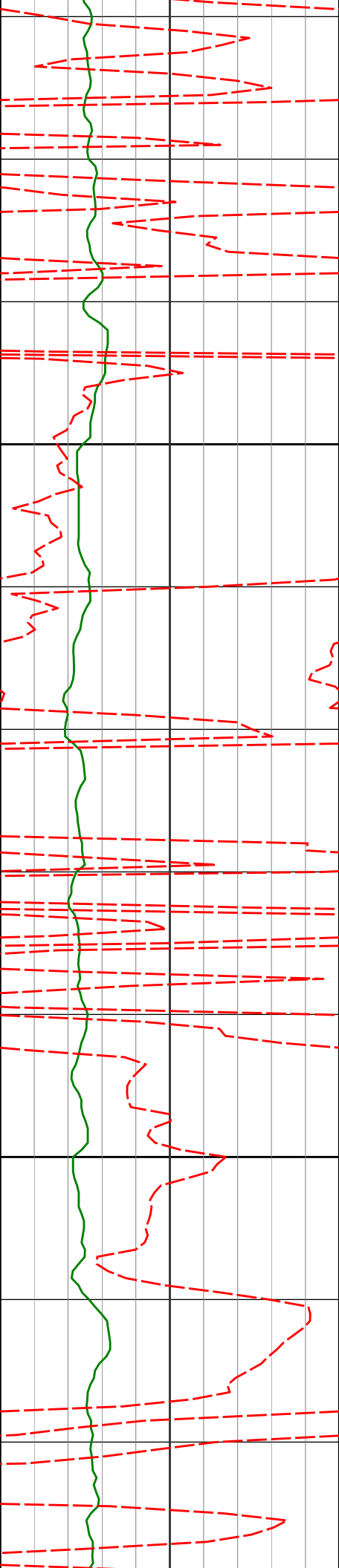
Avg Rate of Penetration ROPA feet per hr		Depth TVD ft	Depth	Inc	Azi	TVD	V.S.	Temp
1K 0								
PCG GR XHi-Range RT BCor PGXRC-T api								
0 300								

MD Detail 1:240 Scale

PCG GR XHi-Range RT BCor PGXRC-T api								
0 300								
Avg Rate of Penetration ROPA feet per hr		Depth TVD ft	Depth	Inc	Azi	TVD	V.S.	Temp
1K 0								







1200

1234'

0.44°

270.22°

1233.98'

-2.22'

98.51°F

98.51°F

98.51°F

1300

1327'

1.76°

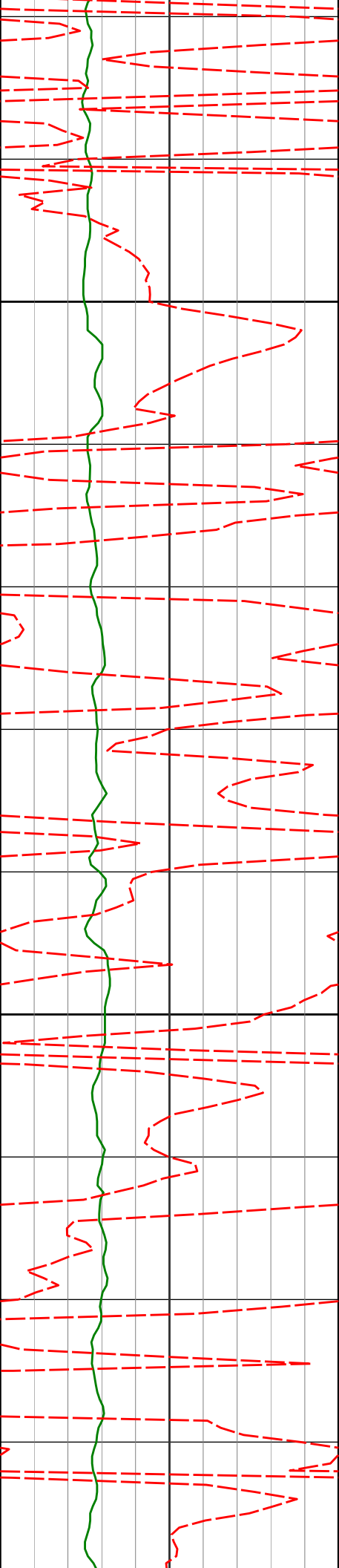
232.13°

1326.96'

-2.97'

98.51°F

98.51°F



1400

100.62°F

100.62°F

100.62°F

1500

100.62°F

1515'

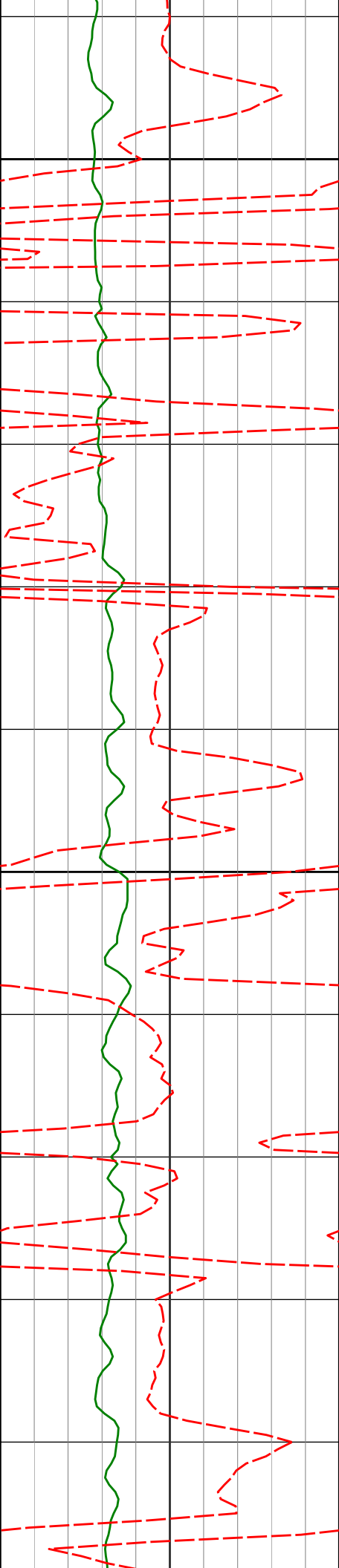
5.34°

222.06°

1514.57'

-10.48'

100.62°F



1600

1607'

7.64°

221.92°

1605.97'

-17.57'

1700

1701'

7.71°

218.36°

1699.13'

-26.42'

1793'

8.98°

214.80°

1790.15'

-36.42'

102.72°F

102.72°F

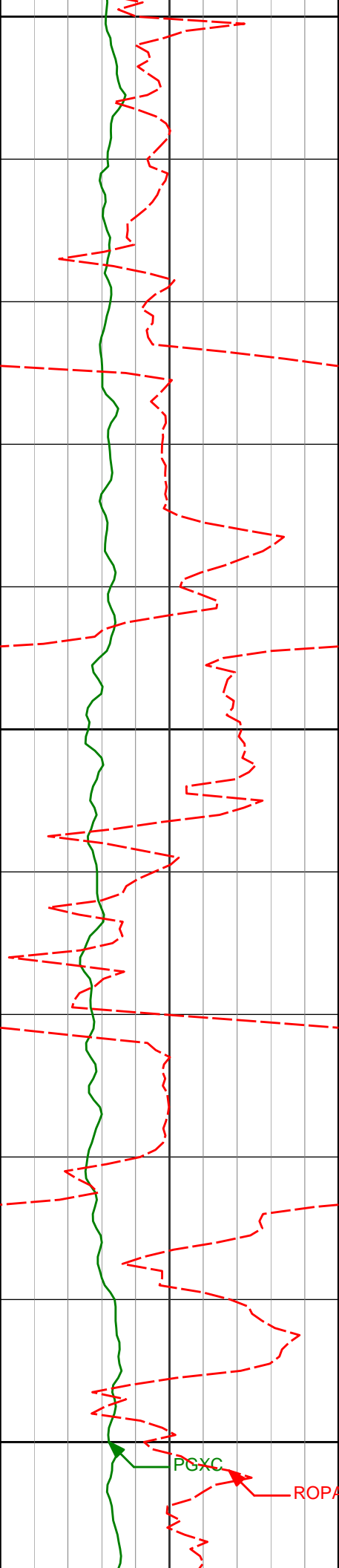
102.72°F

102.72°F

102.72°F

103.97°F

104.83°F



1800

1900

2000

1886'

10.52°

208.21°

1881.81'

-49.10'

1979'

10.77°

206.93°

1973.21'

-63.57'

104.83°F

104.83°F

104.83°F

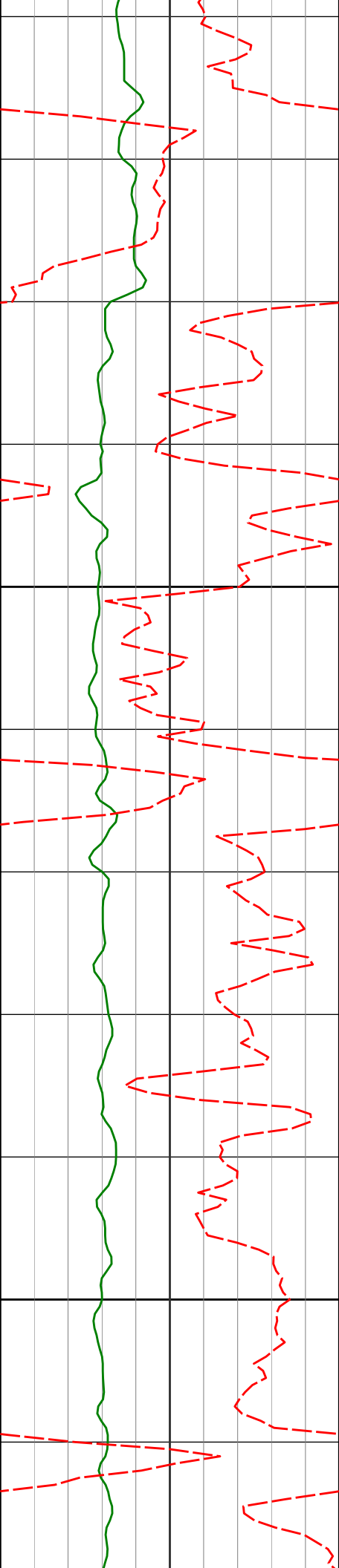
104.83°F

106.97°F

106.97°F

106.97°F

106.97°F



2071'

 10.67°

206.76° 2063.60'

-78.10'

2100

106.97°F

106.97°F

2163'

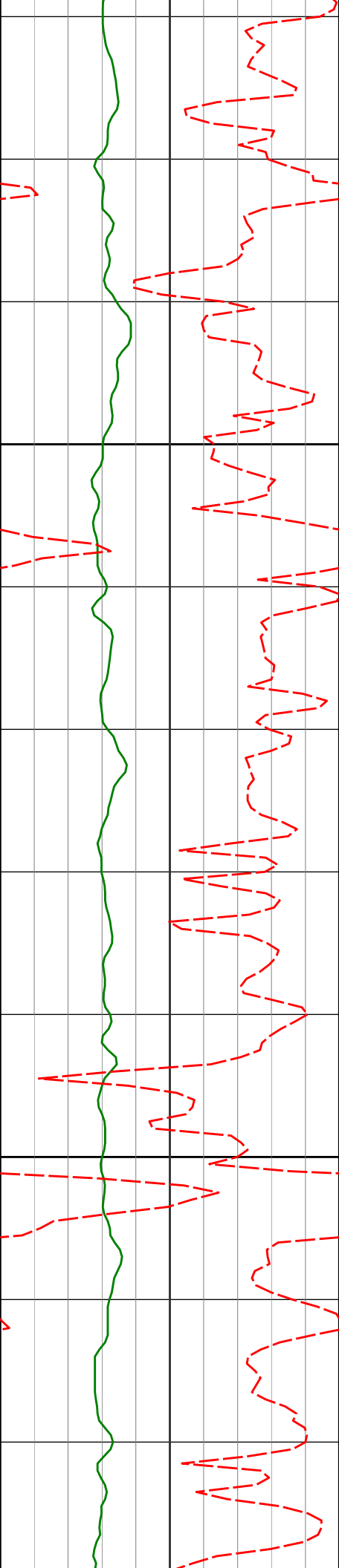
10.80°

205.73° 2153.99'

-92.74'

2200

109.09°F



2256'

10.55°

205.24° 2245.39'

-107.57'

109.09°F

2300

109.09°F

109.09°F

2400

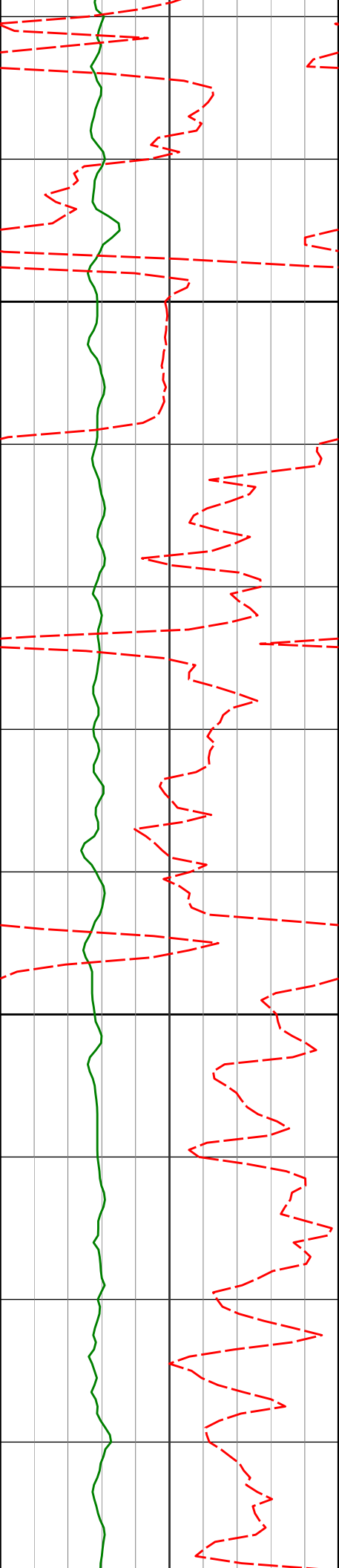
111.24°F

2441'

10.37°

205.17° 2427.31'

-136.59'



2500

2600

2625'

11.03°

205.89°

2608.11'

-166.00'

111.24°F

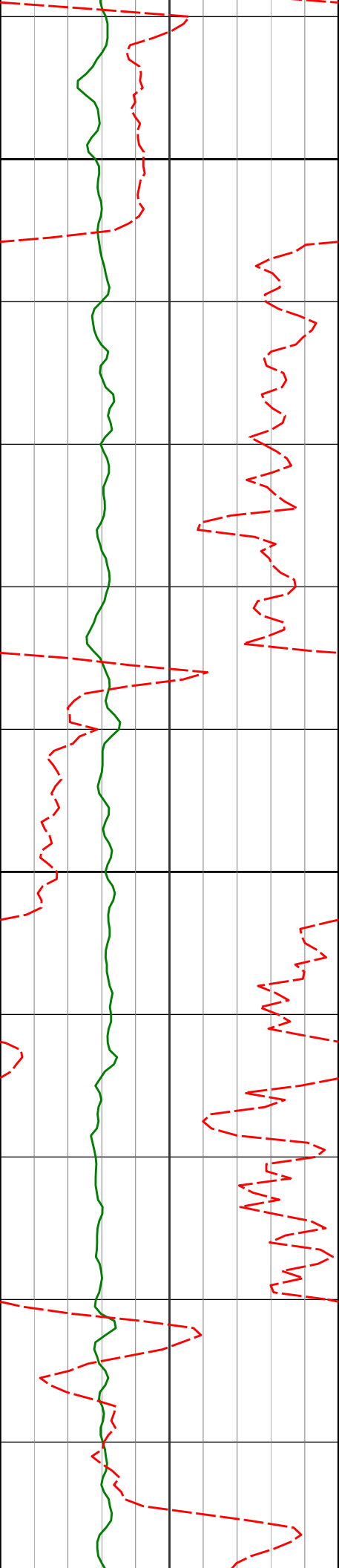
111.24°F

111.24°F

111.24°F

111.24°F

113.40°F



2700

113.40°F

2717'

11.28°

205.41°

2698.37'

-181.30'

113.40°F

113.40°F

2800

2810'

11.22°

204.85°

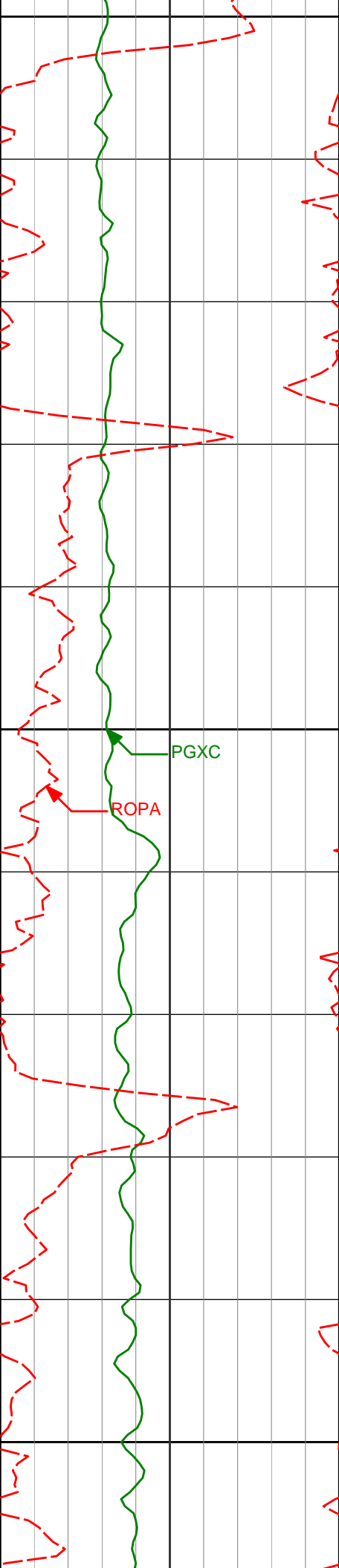
2789.59'

-196.98'

115.56°F

115.56°F

115.56°F



2900

2903'

10.32°

211.10°

2880.95'

-211.55'

115.56°F

115.56°F

3000

2997'

9.85°

210.93°

2973.50'

-224.86'

117.73°F

117.73°F

3100

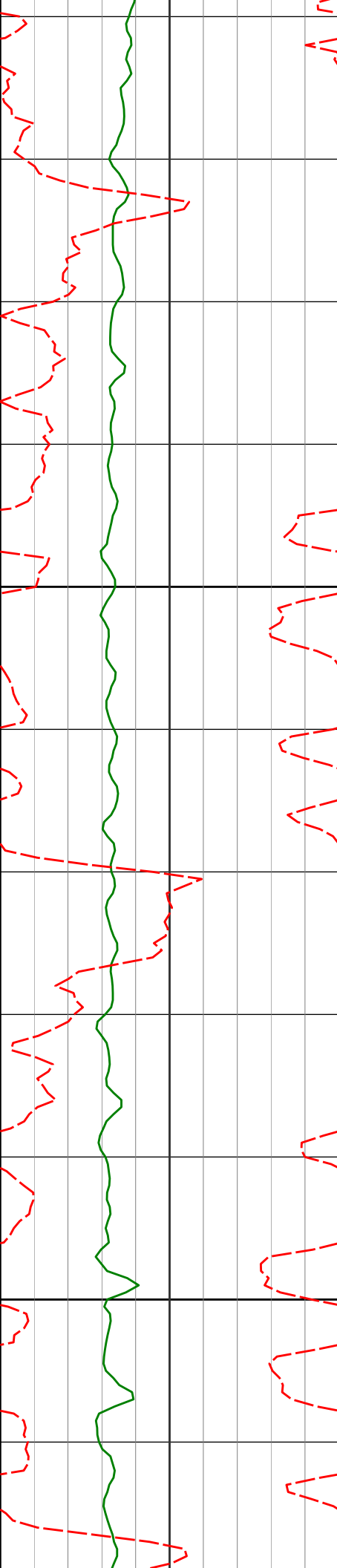
3091'

9.47°

211.34°

3066.16'

-237.59'



3200

3300

3186'

3280'

9.32°

9.76°

212.39°

211.63°

3159.89'

3252.59'

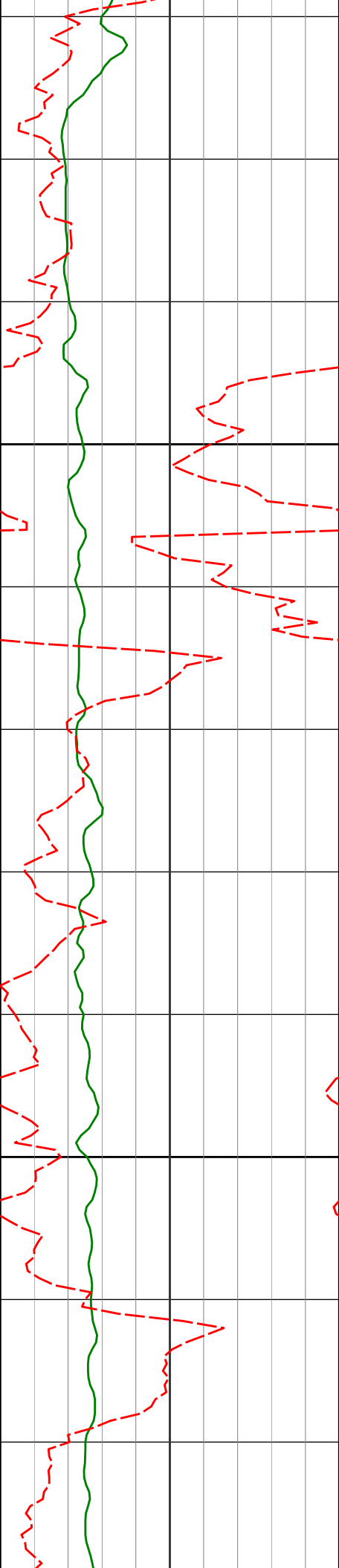
-249.99'

-262.43'

119.91°F

119.91°F

119.91°F



3400

3500

3374'

10.05°

212.14°

3345.19'

-275.36'

3468'

10.47°

212.04°

3437.68'

-288.71'

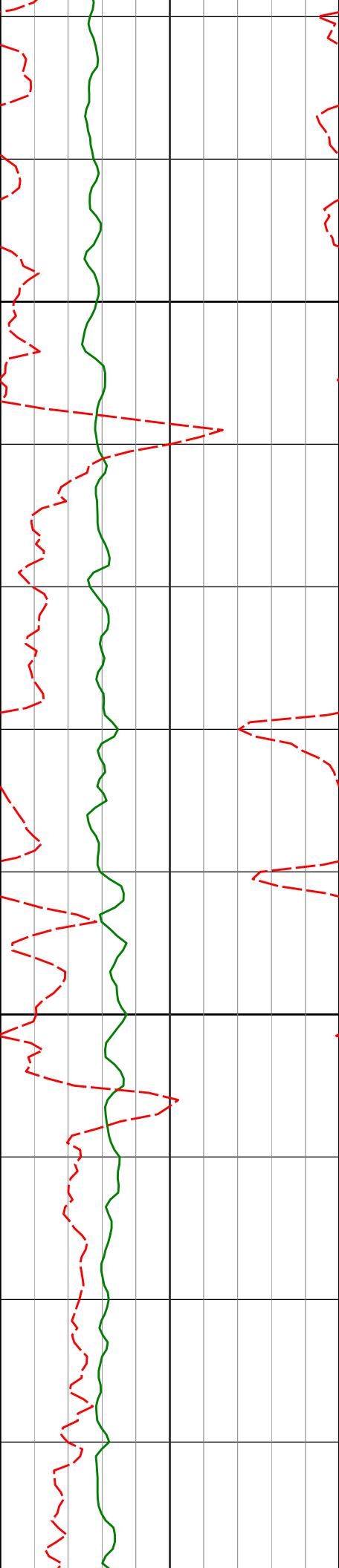
119.91°F

122.11°F

122.11°F

122.11°F

122.11°F



3562'

10.98°

211.53°

3530.04'

-302.71'

3600

124.30°F

124.30°F

3656'

11.48°

212.32°

3622.24'

-317.33'

3700

124.30°F

124.30°F

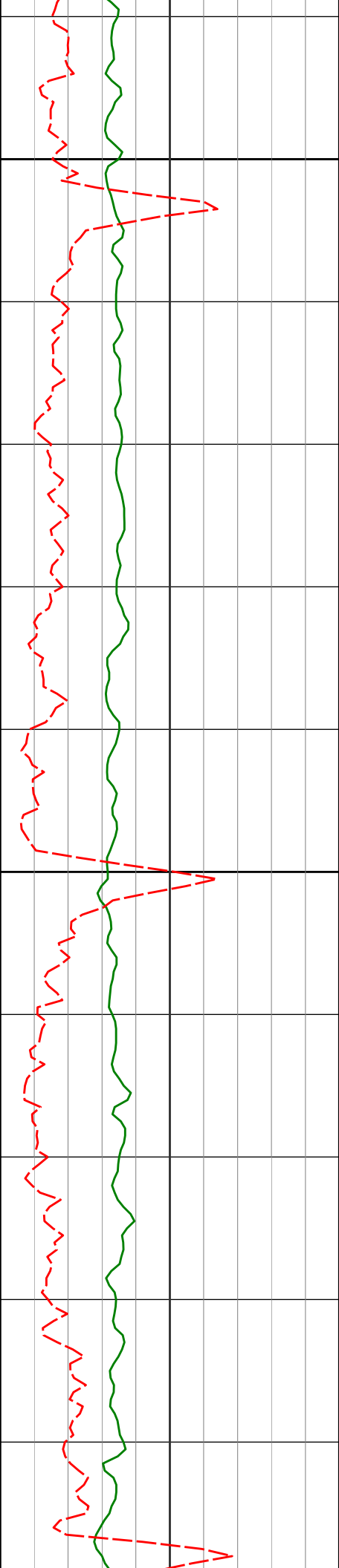
3751'

11.43°

210.58°

3715.35'

-332.50'



3800

3845'

11.07°

209.73°

3807.54'

-347.48'

3900

3939'

10.35°

210.43°

3899.90'

-361.77'

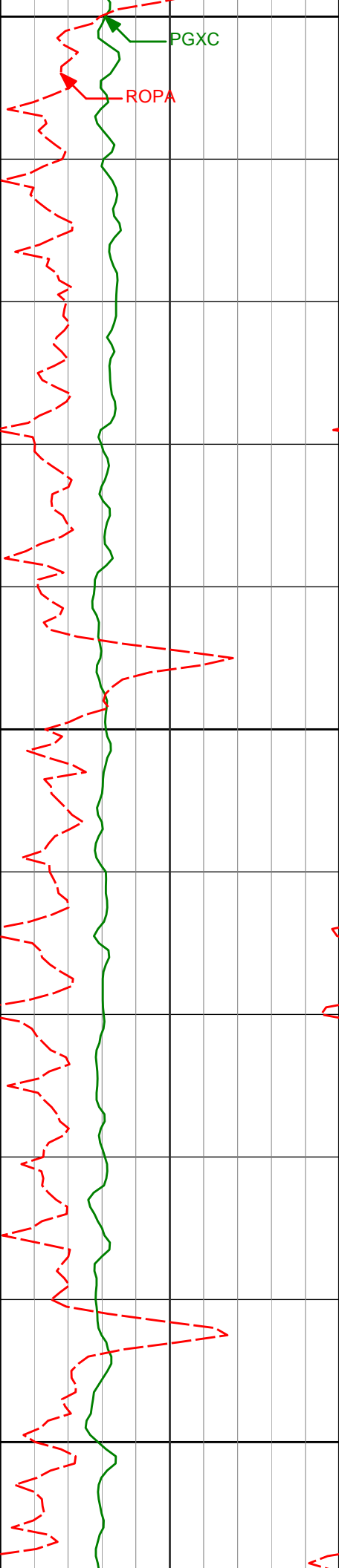
126.52°F

126.52°F

128.73°F

128.73°F

128.73°F



4000

PGXC

ROPA

128.73°F

4034'

9.76°

209.60°

3993.44'

-375.33'

130.96°F

4100

130.96°F

4128'

9.49°

207.71°

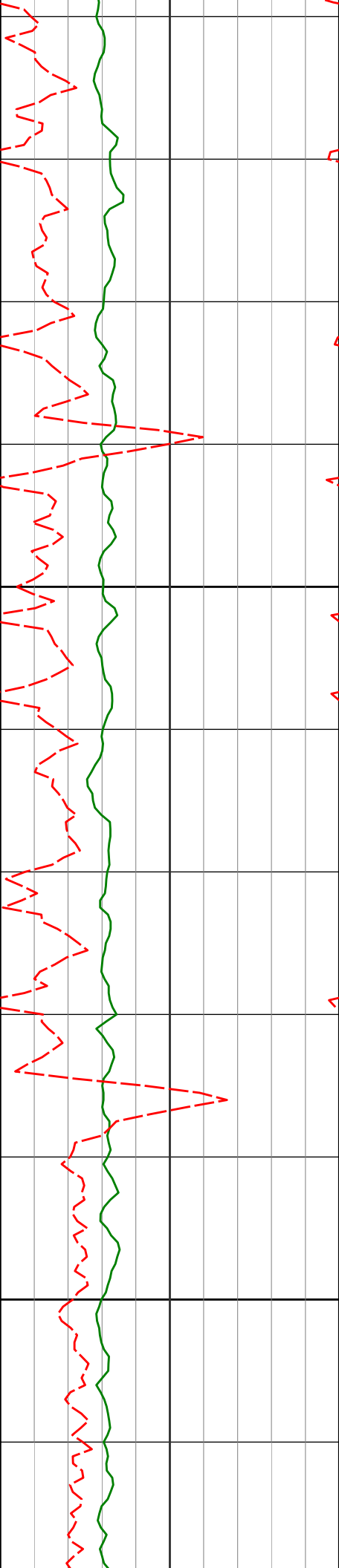
4086.12'

-388.40'

133.20°F

4200

133.20°F



4222'

9.46°

207.40°

4178.84'

-401.44'

133.20°F

133.20°F

4300

4316'

9.27°

205.16°

4271.59'

-414.50'

135.45°F

135.45°F

4400

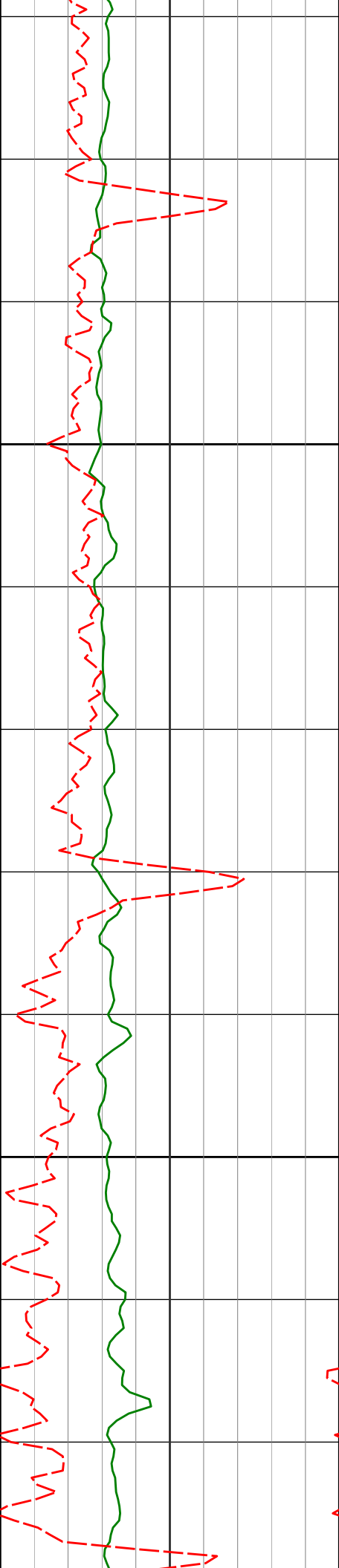
4411'

8.69°

202.70°

4365.42'

-427.47'



4500

4505'

8.31°

199.66°

4458.39'

-439.93'

4600

4599'

7.24°

192.45°

4551.53'

-451.75'

135.45°F

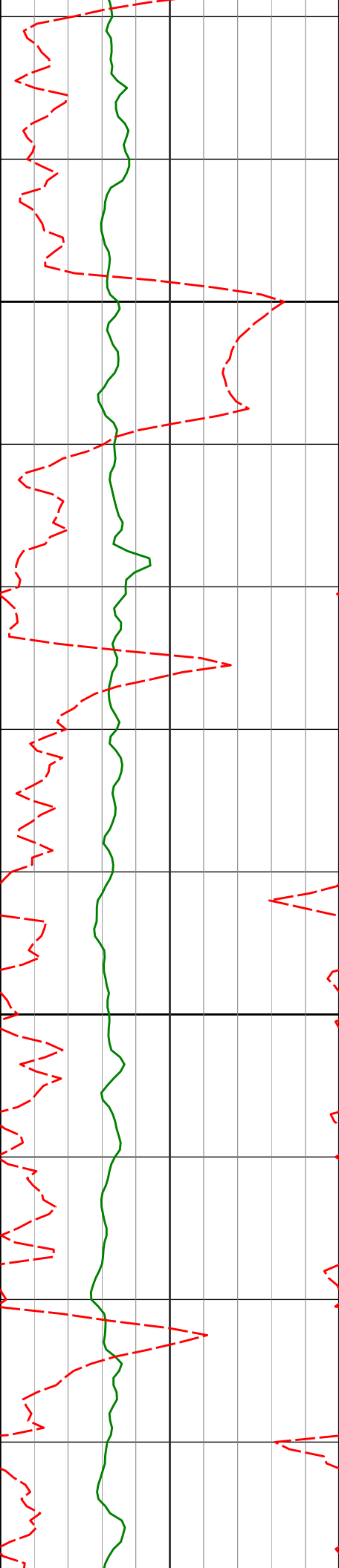
135.45°F

137.70°F

137.70°F

139.96°F

138.34°F



4700

4800

4694'

4788'

6.15°

4.59°

190.38°

202.93°

4645.88'

4739.47'

-462.36'

-470.53'

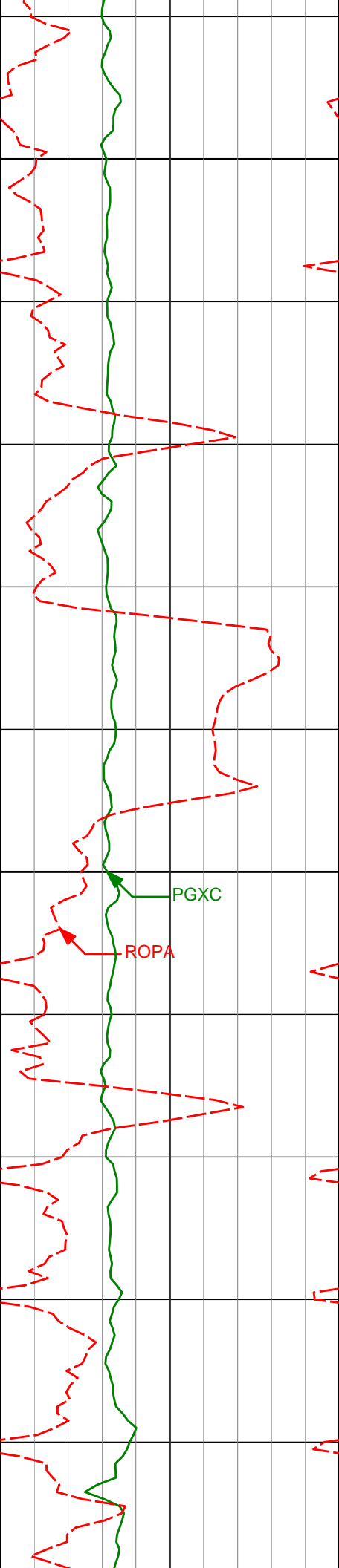
137.70°F

139.96°F

139.96°F

139.96°F

139.96°F



4882'

4.05°

209.10°

4833.20'

-476.60'

142.25°F

4900

142.25°F

140.53°F

4977'

3.17°

218.11°

4928.01'

-481.29'

139.96°F

5000

PGXC

ROPA

139.96°F

139.96°F

5071'

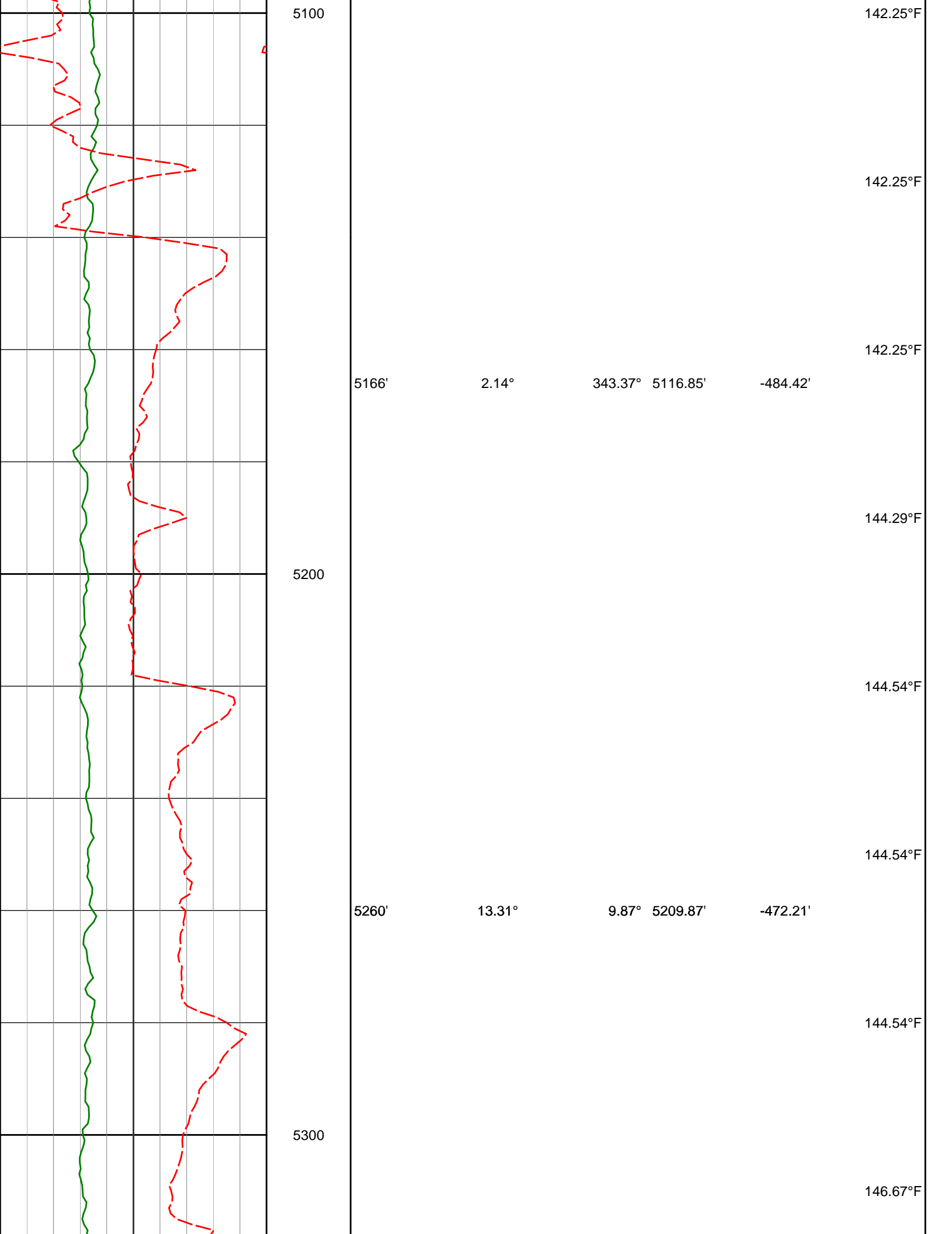
2.54°

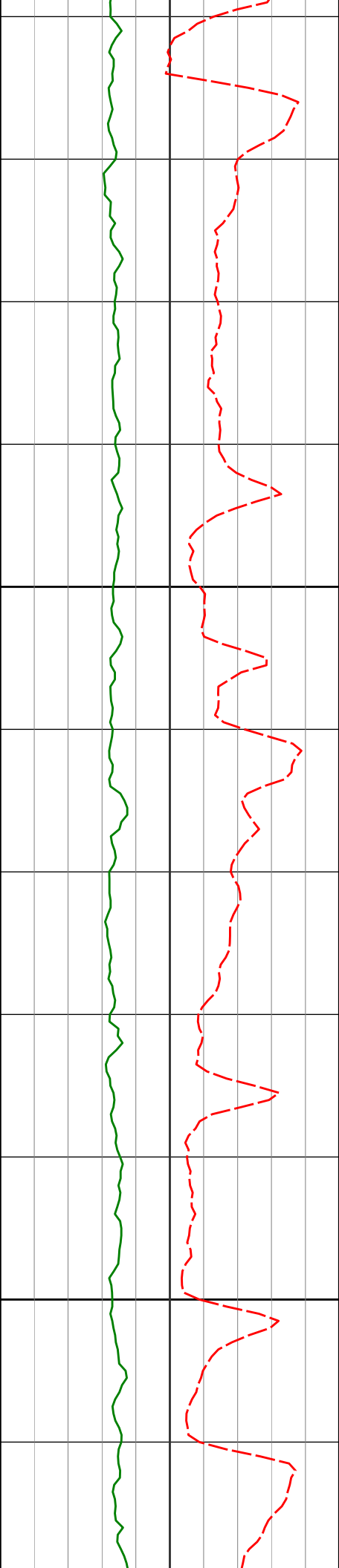
219.69°

5021.89'

-484.66'

142.25°F





5400

5500

5354'

23.74°

0.88° 5298.89'

-442.85'

5449'

31.94°

358.64° 5382.83'

-398.68'

146.84°F

146.84°F

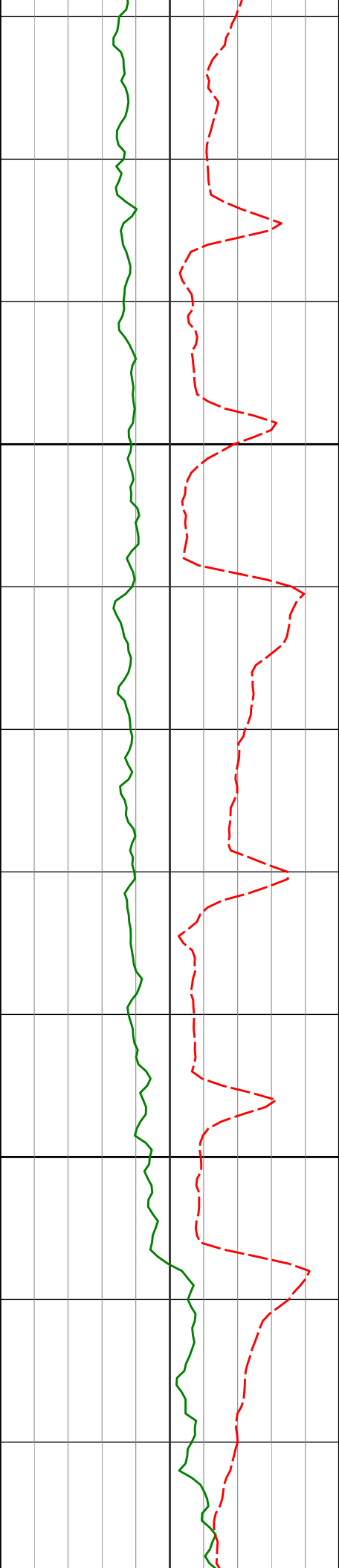
147.11°F

148.86°F

149.14°F

150.91°F

151.47°F



5543'

37.90°

358.46°

5459.87'

-344.99'

151.47°F

5600

151.47°F

151.47°F

5638'

43.30°

359.50°

5531.97'

-283.35'

153.79°F

153.79°F

5700

153.79°F

5732'

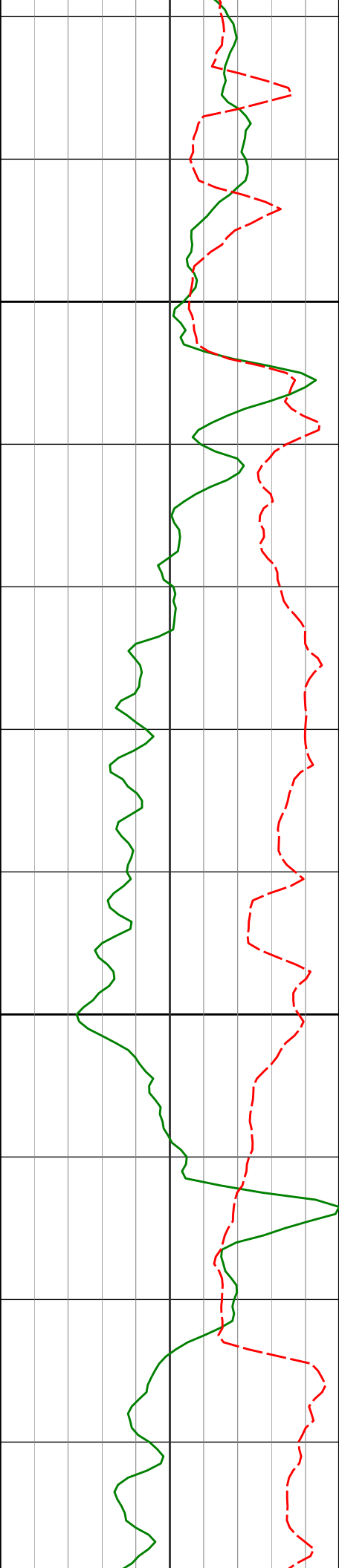
49.02°

358.12°

5597.06'

-215.73'

155.16°F



5800

5826'

56.45°

357.83°

5653.93'

-141.08'

5900

5920'

64.15°

358.92°

5700.47'

-59.64'

154.15°F

153.79°F

153.79°F

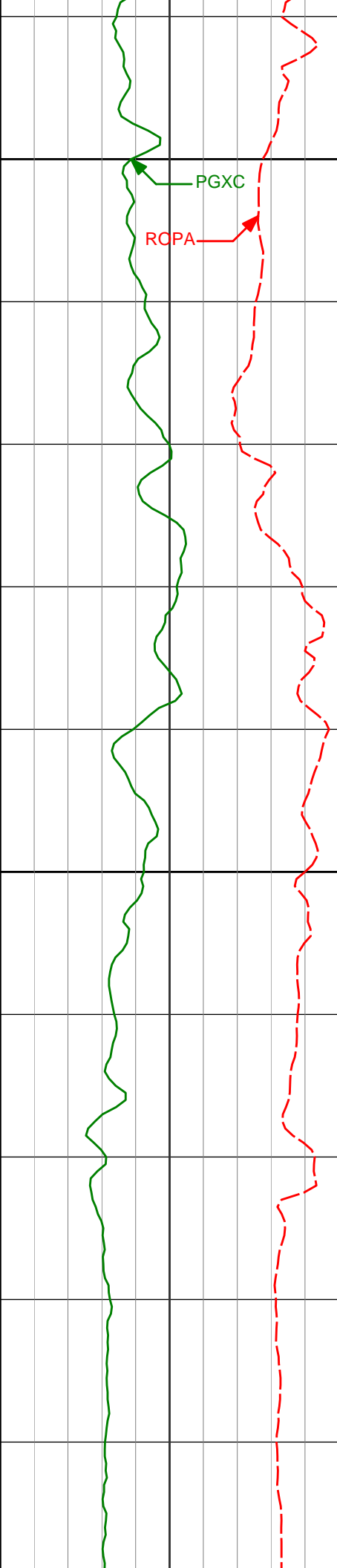
155.46°F

155.94°F

154.84°F

156.13°F

156.51°F



6000

159.18°F

6014'

75.77°

0.17° 5732.62'

28.23'

159.69°F

159.60°F

6087'

82.55°

2.28° 5746.35'

99.45'

157.12°F

6100

144.87°F

200

144.91°F

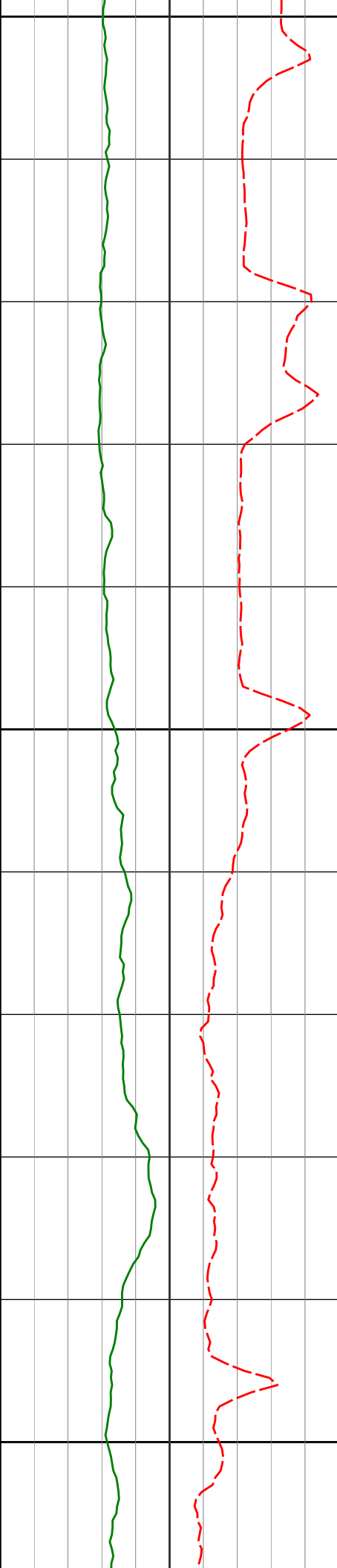
144.75°F

6184'

88.40°

1.40° 5754.00'

195.41'



6200

6300

6400

6322'

6415'

89.82°

90.43°

0.06° 5756.15'

0.65° 5755.95'

332.68'

425.27'

144.69°F

146.64°F

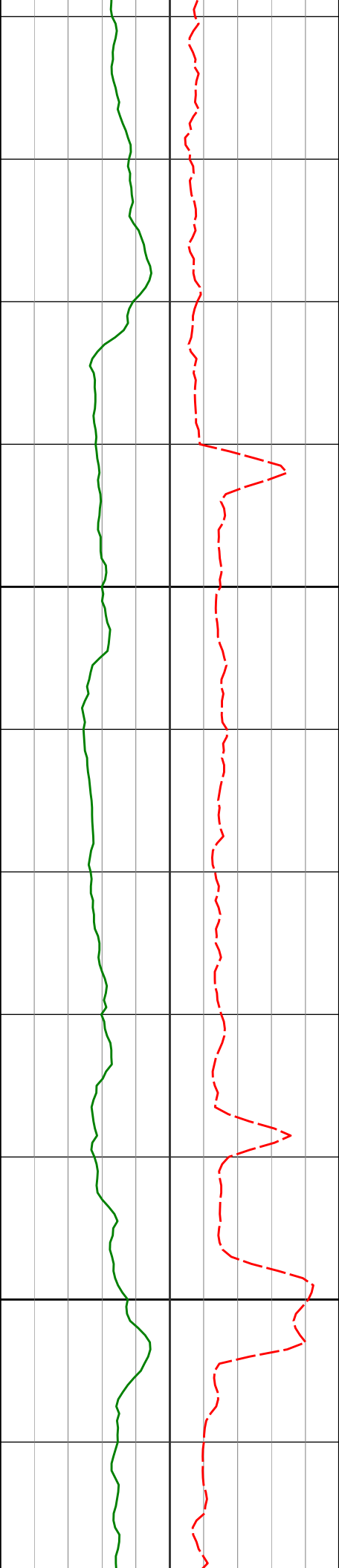
147.19°F

151.88°F

153.79°F

155.07°F

157.00°F



6500

6508'

91.05°

0.36° 5754.75'

517.82'

159.12°F

158.47°F

158.71°F

6600

6600'

91.39°

358.82° 5752.80'

609.50'

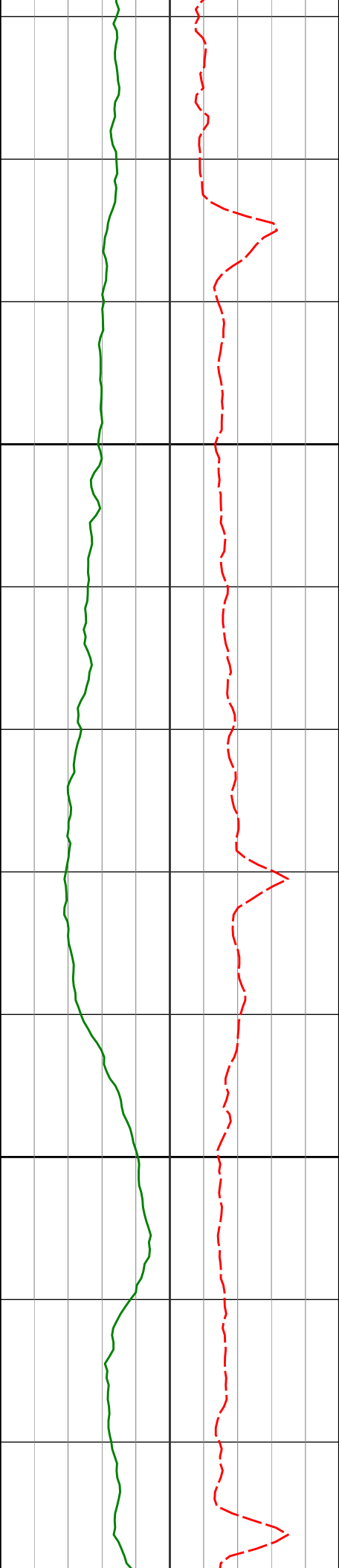
161.15°F

163.20°F

158.96°F

158.47°F

158.47°F



6700

6692'

90.96°

356.28°

5750.92'

701.38'

164.40°F

165.58°F

166.66°F

167.97°F

167.97°F

6800

6784'

91.76°

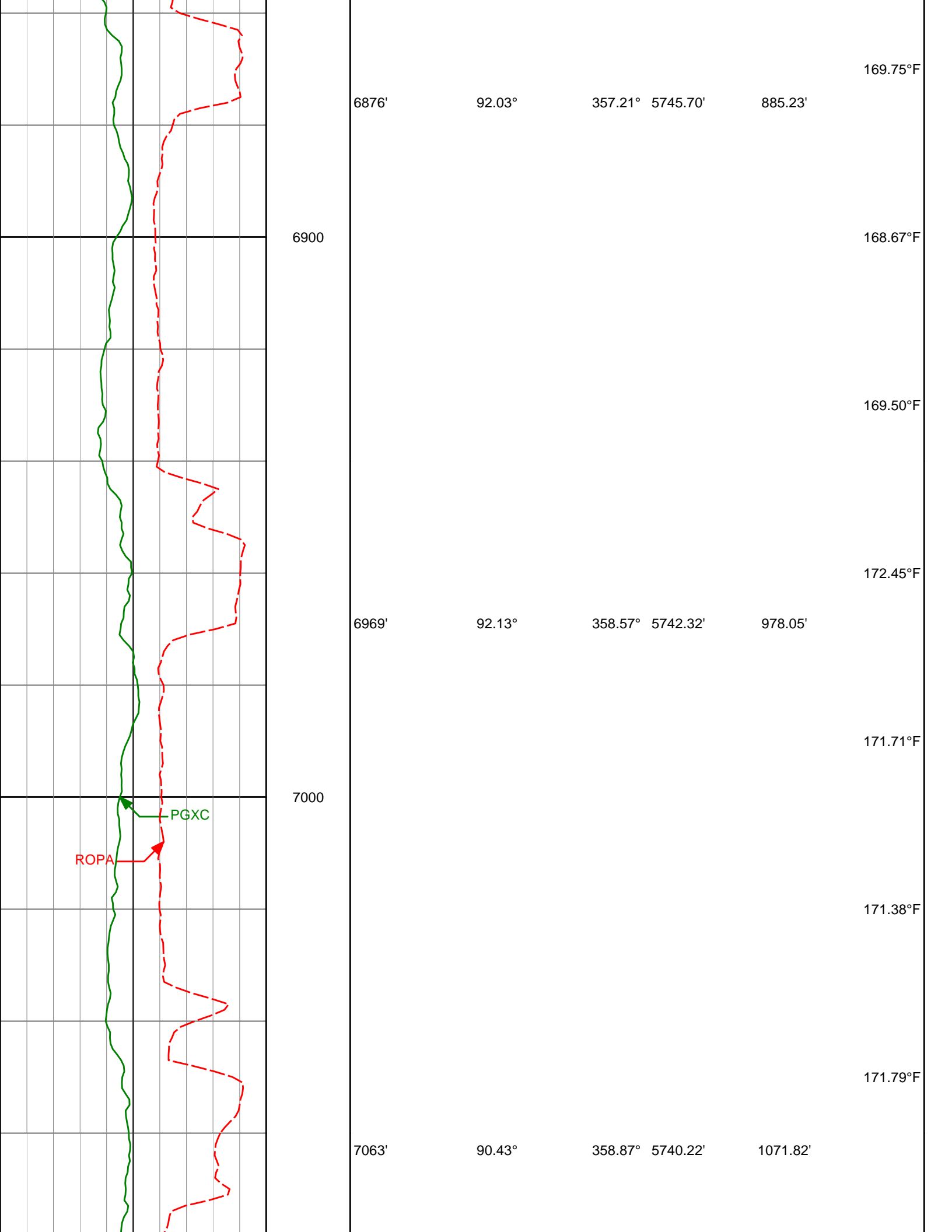
356.23°

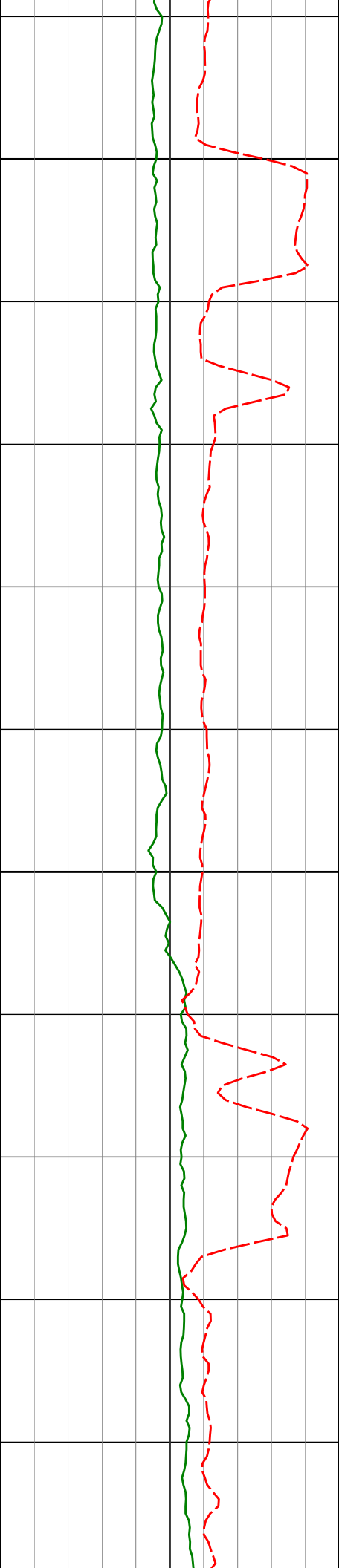
5748.74'

793.33'

166.85°F

167.52°F





7100

7200

7158'

7253'

89.82°

89.41°

359.98°

1.53°

5740.02'

5740.66'

1166.52'

1261.03'

172.78°F

174.97°F

176.62°F

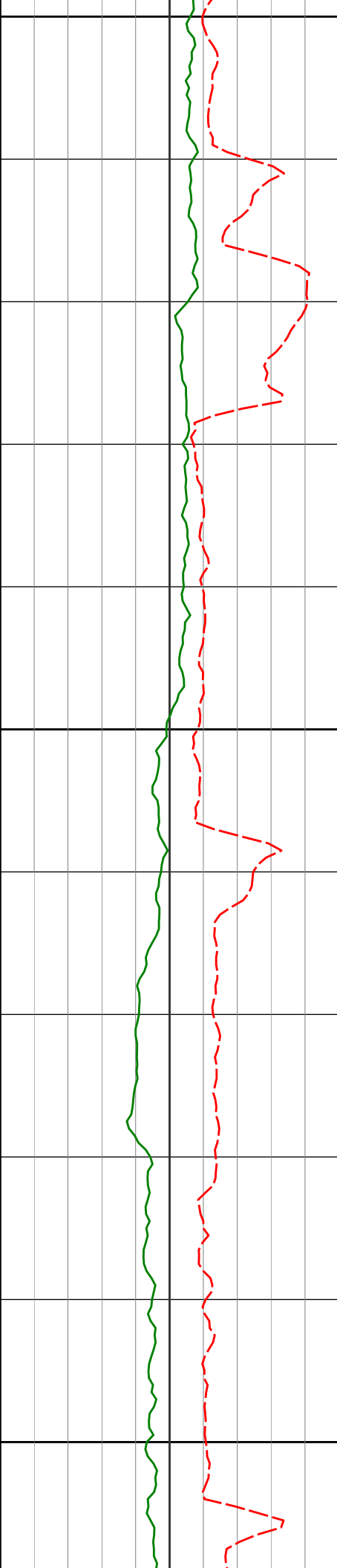
173.84°F

174.64°F

175.56°F

177.41°F

176.68°F



7300

176.60°F

7348'

87.23°

358.46°

5743.44'

1355.61'

178.86°F

7400

181.51°F

7443'

88.15°

359.04°

5747.27'

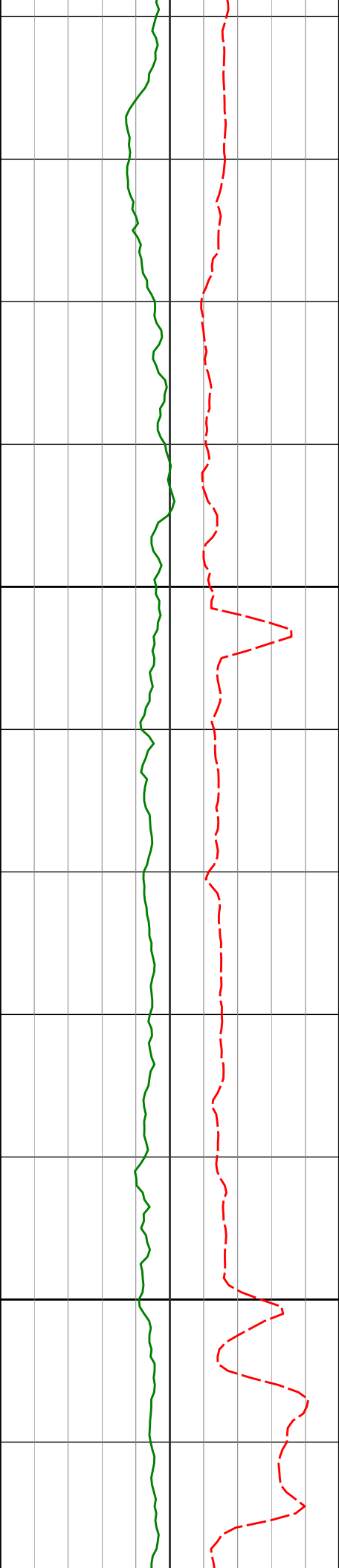
1450.32'

182.27°F

180.69°F

7500

182.55°F



7600

7700

7538'

89.94°

0.22° 5748.86'

1544.98'

7632'

90.65°

0.12° 5748.37'

1638.59'

7727'

88.18°

357.95° 5749.34'

1733.33'

182.55°F

182.70°F

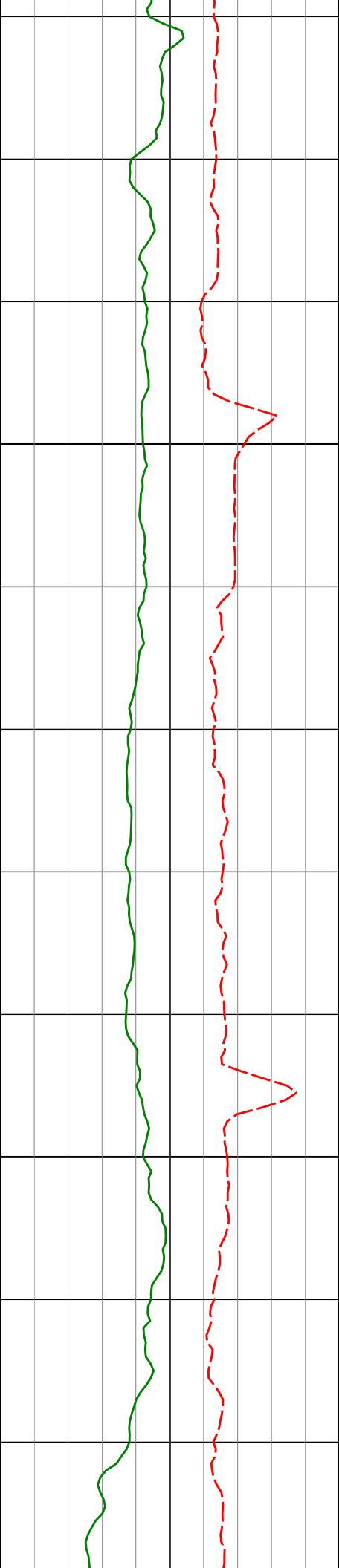
185.02°F

184.90°F

183.14°F

182.55°F

184.79°F



7800

7822'

87.90°

356.67° 5752.59'

1828.19'

188.93°F

189.99°F

189.99°F

7900

7916'

88.43°

356.34° 5755.59'

1922.11'

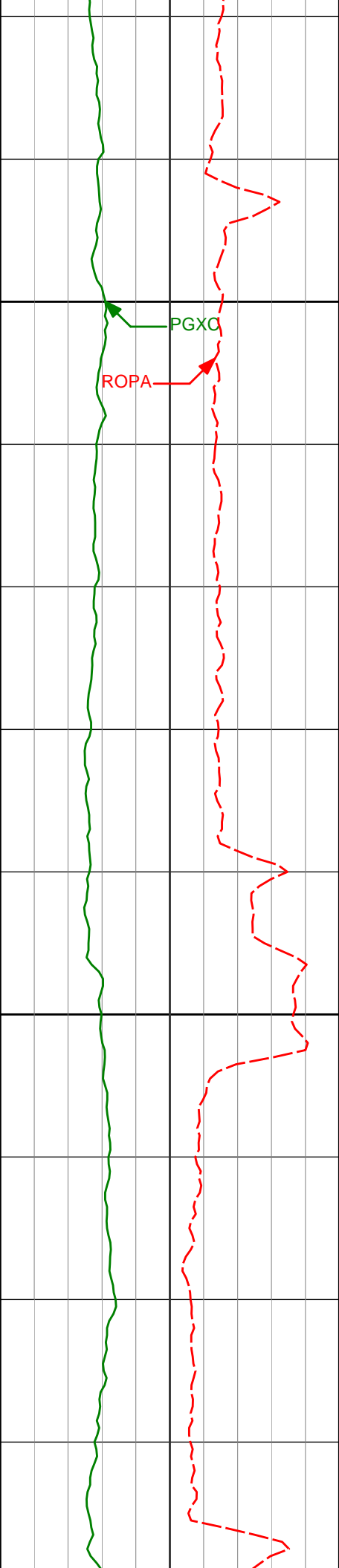
189.99°F

191.30°F

185.02°F

187.28°F

187.48°F



8000

8011'

88.67°

355.91° 5757.99'

2017.06'

192.49°F

192.26°F

191.06°F

192.49°F

8100

8105'

90.77°

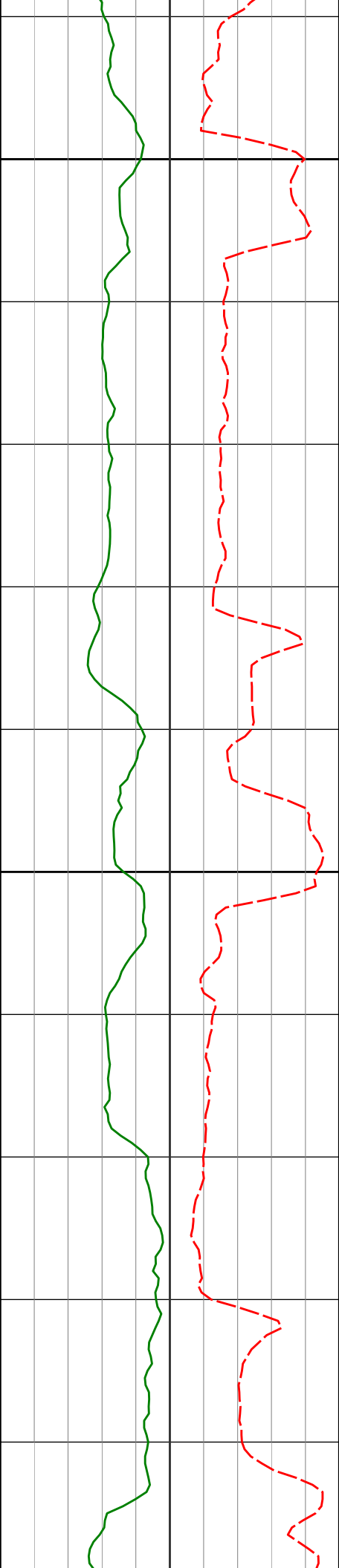
357.12° 5758.45'

2111.02'

192.92°F

194.14°F

192.49°F



8200

8200'

90.99°

356.63° 5756.99'

2205.95'

194.15°F

194.11°F

192.71°F

194.32°F

8300

8294'

91.36°

357.50° 5755.07'

2299.87'

195.85°F

195.87°F

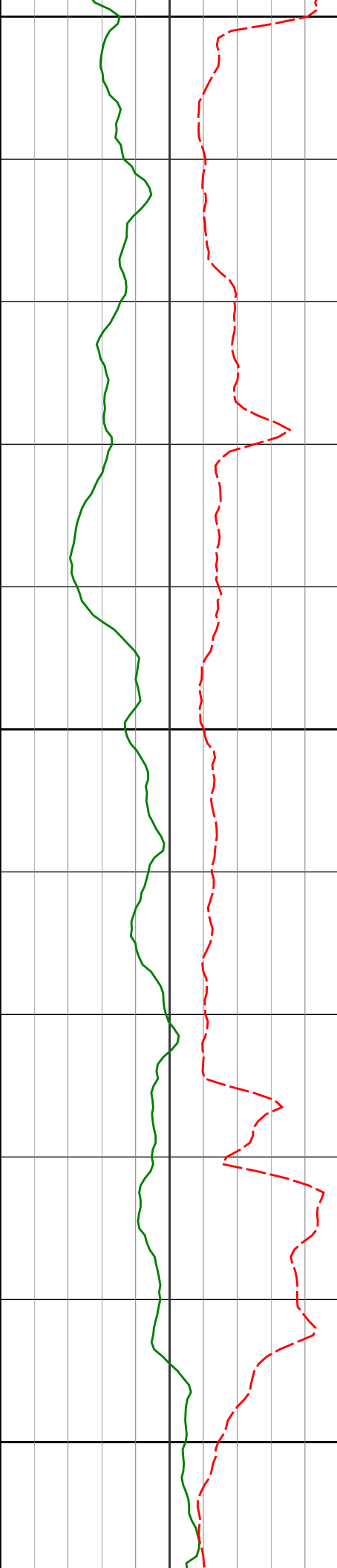
194.99°F

8389'

91.08°

358.71° 5753.05'

2394.70'



8400

194.99°F

196.80°F

197.71°F

8484'

91.88°

359.22° 5750.60'

2489.44'

197.39°F

8500

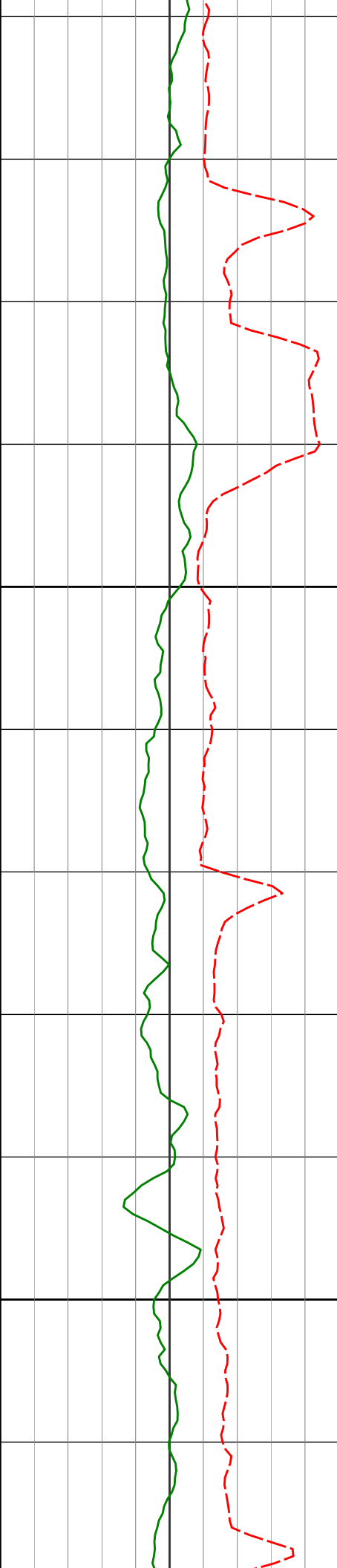
188.14°F

187.15°F

190.45°F

8600

187.36°F



8700

8800

8673'

89.17°

358.06°

5748.88'

2678.01'

8767'

89.91°

357.56°

5749.63'

2771.89'

190.13°F

192.49°F

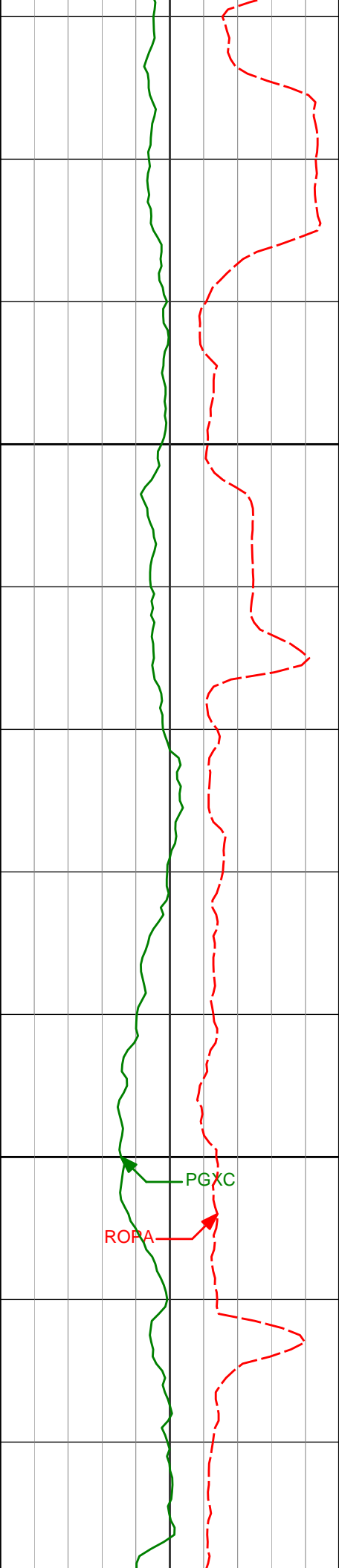
193.31°F

194.99°F

196.23°F

195.42°F

195.17°F



8900

9000

8862'

89.69°

359.21° 5749.97'

2866.72'

8957'

89.23°

359.47° 5750.86'

2961.44'

9052'

88.98°

358.96° 5752.34'

3056.16'

197.29°F

197.51°F

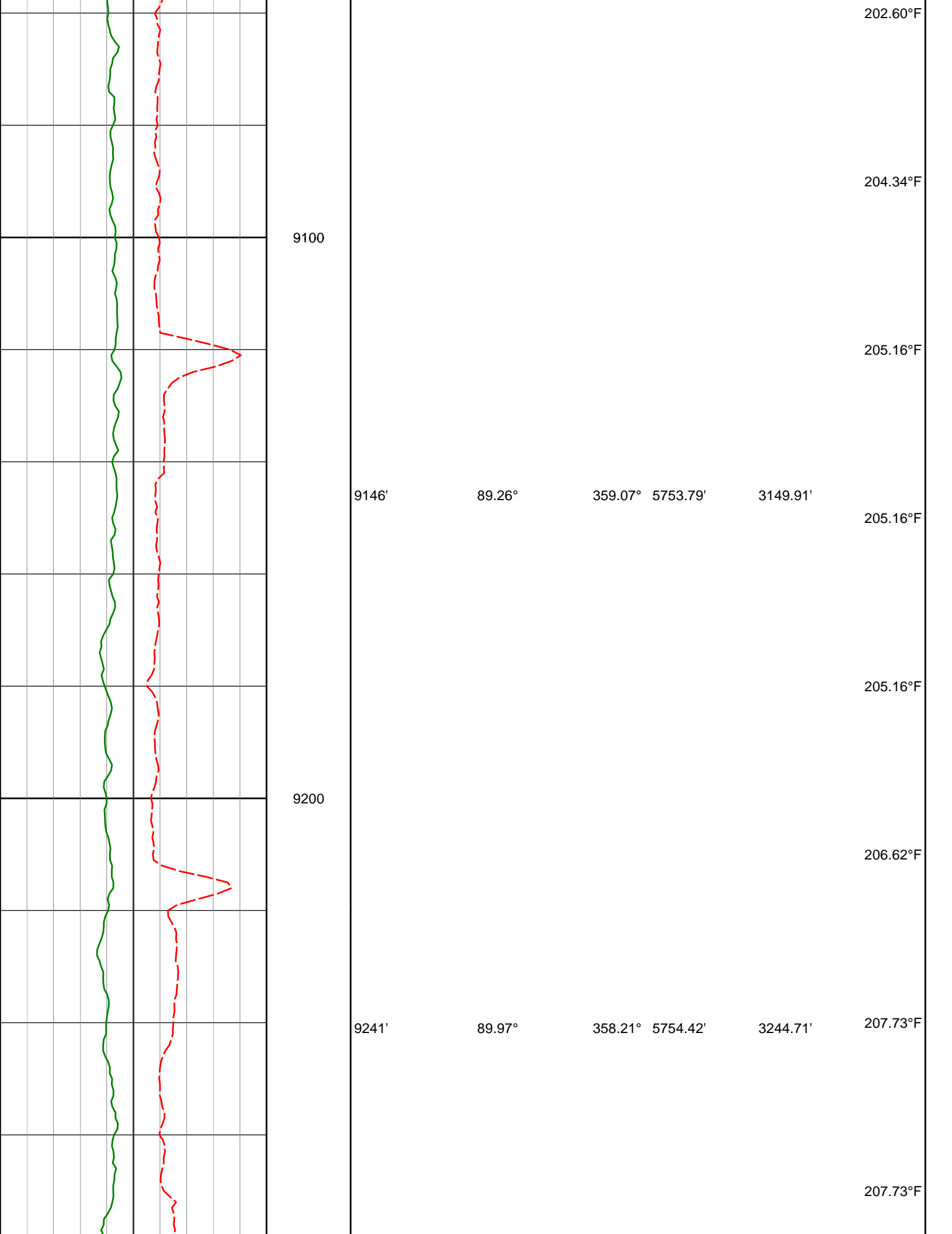
199.84°F

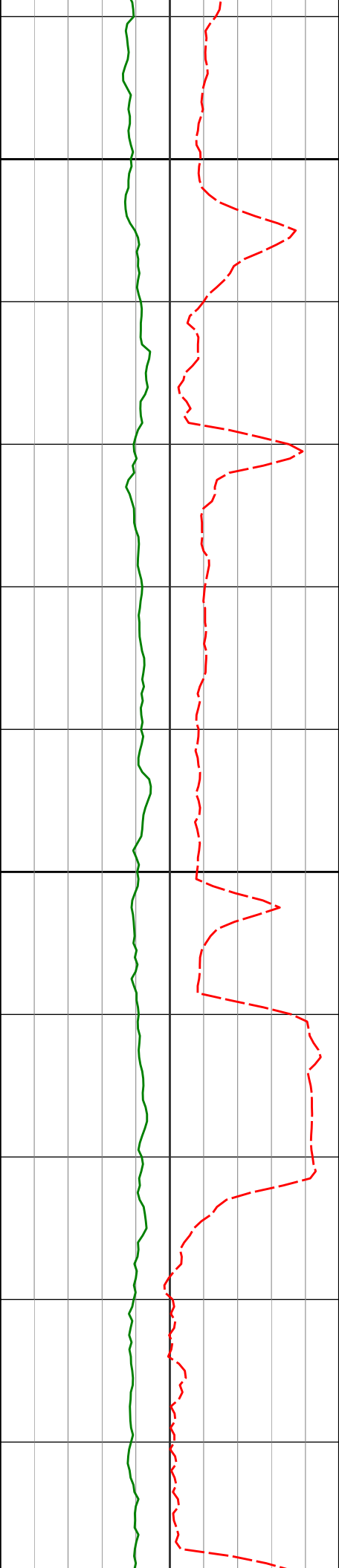
200.05°F

202.34°F

202.60°F

202.60°F





9300

207.73°F

9335'

90.89°

357.36° 5753.72'

3338.59'

207.58°F

205.58°F

9400

205.16°F

205.16°F

9430'

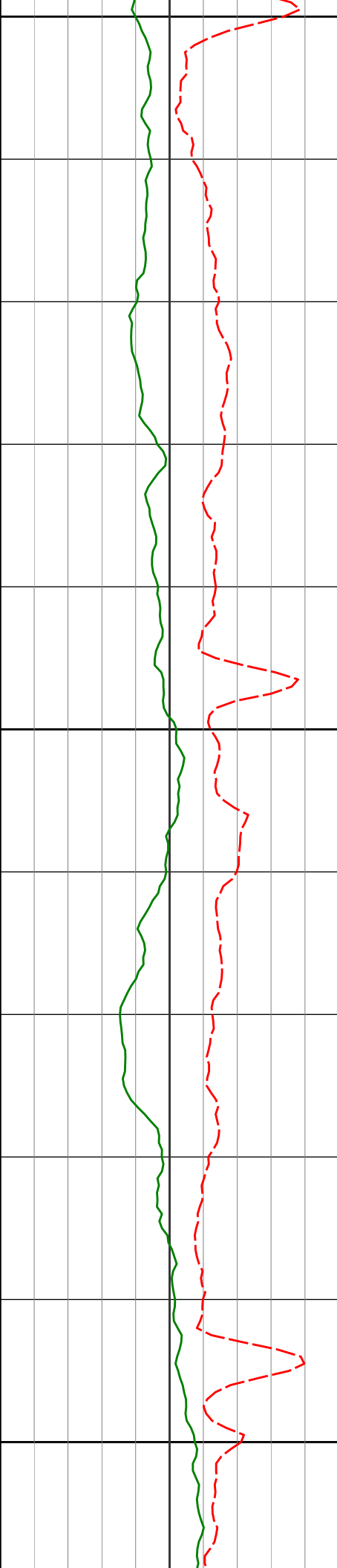
90.71°

359.93° 5752.39'

3433.38'

207.73°F

207.87°F



9500

9525'

90.43°

359.50° 5751.44'

3528.04'

210.17°F

210.31°F

210.31°F

9600

9619'

89.88°

359.09° 5751.19'

3621.77'

210.31°F

210.31°F

210.31°F

212.63°F

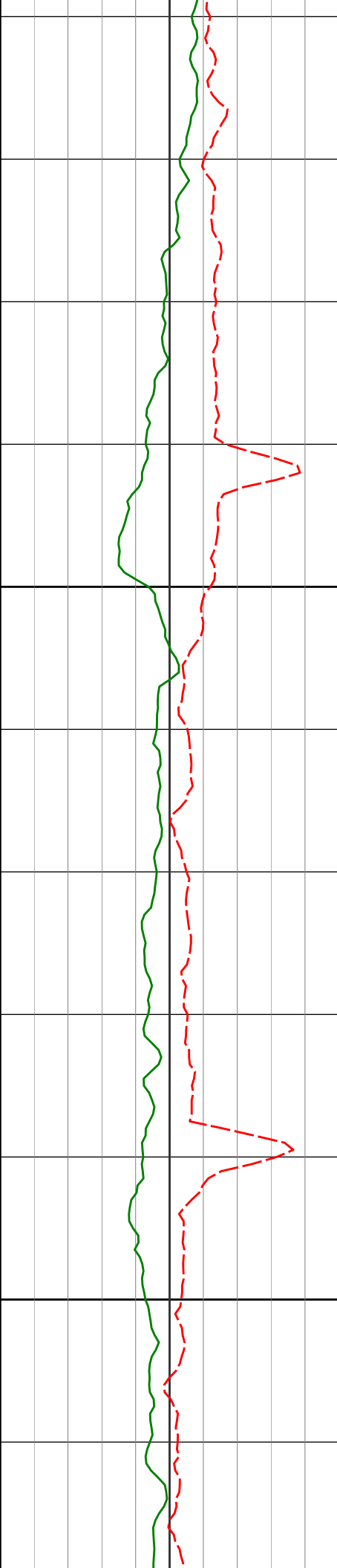
9700

9714'

89.63°

358.56° 5751.60'

3716.55'



9800

9809'

90.00°

358.94° 5751.90'

3811.34'

212.92°F

212.92°F

213.08°F

9900

9904'

89.75°

357.58° 5752.11'

3906.18'

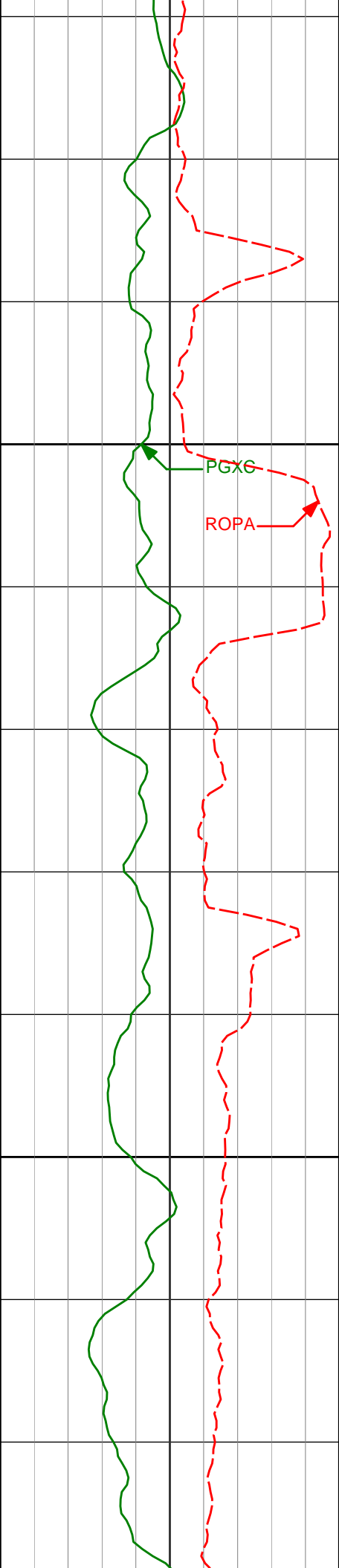
215.34°F

211.01°F

211.93°F

210.31°F

210.99°F



10000

10100

9999'

10093'

89.14°

89.78°

358.42° 5753.03'

358.83° 5753.91'

4001.04'

4094.84'

208.27°F

209.41°F

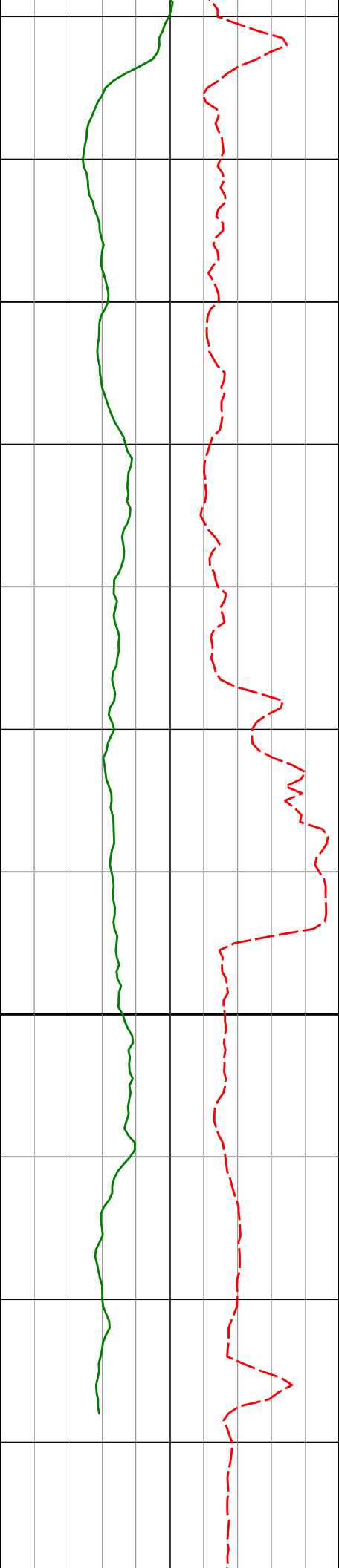
210.31°F

210.65°F

212.92°F

212.92°F

212.92°F



10200

10300

10188'

10283'

10359'

89.69°

91.05°

92.28°

358.06°

357.80°

357.53°

5754.35'

5753.73'

5751.53'

4189.67'

4284.53'

4360.42'

214.43°F

211.23°F

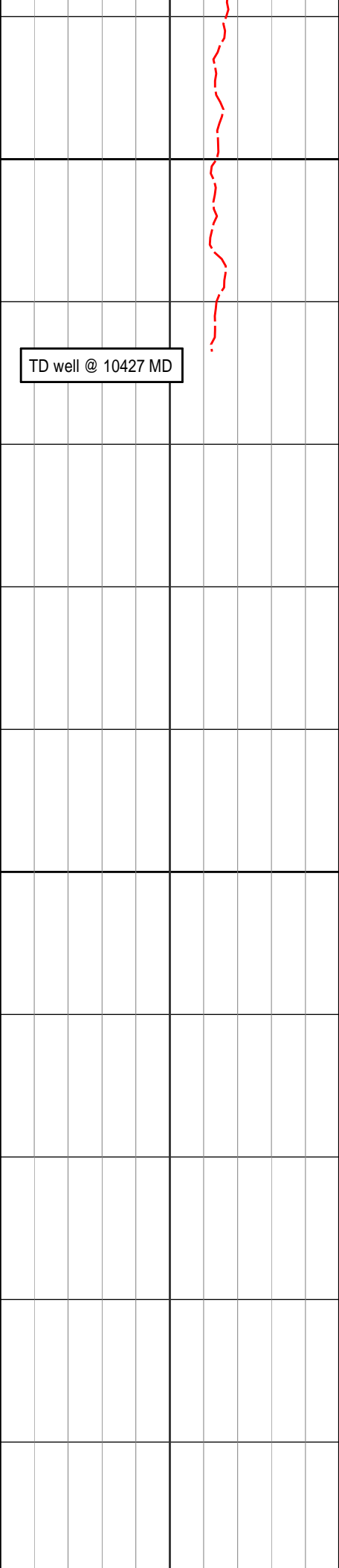
210.31°F

210.45°F

210.67°F

210.76°F

213.11°F



10400

10427'

92.28°

357.53° 5748.82'

4428.29'

10500

Avg Rate of Penetration ROPA feet per hr		Depth TVD ft	Depth Inc		Azi	TVD	V.S.	Temp
1K		0						
PCG GR XHi-Range RT BCor PGXRC-T api		0						300

HALLIBURTON

DIRECTIONAL SURVEY REPORT

Noble Energy
Gracie LD22-740
Wattenberg
Weld Colorado
USA
CA-XX-0902634324
Tied in @ Surface

Final survey projected to bit.

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
795.00	0.59	247.67	794.99	1.56 S	3.80 W	-1.22	0.07
854.00	0.40	226.62	853.98	1.82 S	4.23 W	-1.44	0.44
1039.00	0.28	245.39	1038.98	2.45 S	5.11 W	-1.99	0.09
1133.00	0.35	245.84	1132.98	2.66 S	5.58 W	-2.16	0.08
1234.00	0.44	270.22	1233.98	2.79 S	6.24 W	-2.22	0.18
1327.00	1.76	232.13	1326.96	3.66 S	7.72 W	-2.97	1.55
1515.00	5.34	222.06	1514.57	11.93 S	15.86 W	-10.48	1.92
1607.00	7.64	221.92	1605.97	19.66 S	22.82 W	-17.57	2.51
1701.00	7.71	218.36	1699.13	29.25 S	30.91 W	-26.42	0.51
1793.00	8.98	214.80	1790.15	39.99 S	38.84 W	-36.42	1.49
1886.00	10.52	208.21	1881.81	53.44 S	47.00 W	-49.10	2.04
1979.00	10.77	206.93	1973.21	68.68 S	54.95 W	-63.57	0.37
2071.00	10.67	206.76	2063.60	83.94 S	62.68 W	-78.10	0.12
2163.00	10.80	205.73	2153.99	99.31 S	70.25 W	-92.74	0.25
2256.00	10.55	205.24	2245.39	114.86 S	77.67 W	-107.57	0.28
2441.00	10.37	205.17	2427.31	145.25 S	91.97 W	-136.59	0.10
2625.00	11.03	205.89	2608.11	176.07 S	106.70 W	-166.00	0.36
2717.00	11.28	205.41	2698.37	192.11 S	114.41 W	-181.30	0.29
2810.00	11.22	204.85	2789.59	208.54 S	122.11 W	-196.98	0.13
2903.00	10.32	211.10	2880.95	223.88 S	130.22 W	-211.55	1.58
2997.00	9.85	210.93	2973.50	237.99 S	138.70 W	-224.86	0.51
3091.00	9.47	211.34	3066.16	251.49 S	146.85 W	-237.59	0.40
3186.00	9.32	212.39	3159.89	264.67 S	155.04 W	-249.99	0.24
3280.00	9.76	211.63	3252.59	277.88 S	163.30 W	-262.43	0.49
3374.00	10.05	212.14	3345.19	291.61 S	171.84 W	-275.36	0.33
3468.00	10.47	212.04	3437.68	305.80 S	180.74 W	-288.71	0.45
3562.00	10.98	211.53	3530.04	320.68 S	189.95 W	-302.71	0.54
3656.00	11.48	212.32	3622.24	336.21 S	199.63 W	-317.33	0.56
3751.00	11.43	210.58	3715.35	352.30 S	209.48 W	-332.50	0.37
3845.00	11.07	209.73	3807.54	368.16 S	218.69 W	-347.48	0.42
3939.00	10.35	210.43	3899.90	383.28 S	227.44 W	-361.77	0.78
4034.00	9.76	209.60	3993.44	397.63 S	235.74 W	-375.33	0.64
4128.00	9.49	207.71	4086.12	411.41 S	243.28 W	-388.40	0.44
4222.00	9.46	207.40	4178.84	425.13 S	250.44 W	-401.44	0.06
4316.00	9.27	205.16	4271.59	438.85 S	257.21 W	-414.50	0.44
4411.00	8.69	202.70	4365.42	452.39 S	263.23 W	-427.47	0.73
4505.00	8.31	199.66	4458.39	465.35 S	268.26 W	-439.93	0.62
4599.00	7.24	192.45	4551.53	477.53 S	271.82 W	-451.75	1.54
4694.00	6.15	190.38	4645.88	488.38 S	274.03 W	-462.36	1.18
4788.00	4.59	202.93	4739.47	496.79 S	276.40 W	-470.53	2.06

4882.00	4.05	209.10	4833.20	503.15 S	279.48 W	-476.60	0.76
4977.00	3.17	218.11	4928.01	508.15 S	282.73 W	-481.29	1.10
5071.00	2.54	219.69	5021.89	511.80 S	285.66 W	-484.66	0.68
5166.00	2.14	343.37	5116.85	511.71 S	287.52 W	-484.42	4.34
5260.00	13.31	9.87	5209.87	499.34 S	286.16 W	-472.21	12.16
5354.00	23.74	0.88	5298.89	469.67 S	284.01 W	-442.85	11.48
5449.00	31.94	358.64	5382.83	425.35 S	284.32 W	-398.68	8.70
5543.00	37.90	358.46	5459.87	371.58 S	285.68 W	-344.99	6.34
5638.00	43.30	359.50	5531.97	309.79 S	286.75 W	-283.35	5.72
5732.00	49.02	358.12	5597.06	242.04 S	288.20 W	-215.73	6.18
5826.00	56.45	357.83	5653.93	167.33 S	290.85 W	-141.08	7.91
5920.00	64.15	358.92	5700.47	85.77 S	293.13 W	-59.64	8.26
6014.00	75.77	0.17	5732.62	2.38 N	293.78 W	28.23	12.42
6087.00	82.55	2.28	5746.35	74.01 N	292.23 W	99.45	9.71
6184.00	88.40	1.40	5754.00	170.62 N	289.13 W	195.41	6.10
6322.00	89.82	0.06	5756.15	308.58 N	287.38 W	332.68	1.42
6415.00	90.43	0.65	5755.95	401.58 N	286.81 W	425.27	0.92
6508.00	91.05	0.36	5754.75	494.57 N	285.99 W	517.82	0.73
6600.00	91.39	358.82	5752.80	586.54 N	286.65 W	609.50	1.71
6692.00	90.96	356.28	5750.92	678.43 N	290.58 W	701.38	2.81
6784.00	91.76	356.23	5748.74	770.21 N	296.59 W	793.33	0.87
6876.00	92.03	357.21	5745.70	862.01 N	301.85 W	885.23	1.10
6969.00	92.13	358.57	5742.32	954.88 N	305.27 W	978.05	1.46
7063.00	90.43	358.87	5740.22	1048.83 N	307.37 W	1071.82	1.83
7158.00	89.82	359.98	5740.02	1143.82 N	308.32 W	1166.52	1.33
7253.00	89.41	1.53	5740.66	1238.81 N	307.07 W	1261.03	1.68
7348.00	87.23	358.46	5743.44	1333.75 N	307.08 W	1355.61	3.97
7443.00	88.15	359.04	5747.27	1428.65 N	309.15 W	1450.32	1.15
7538.00	89.94	0.22	5748.86	1523.63 N	309.77 W	1544.98	2.25
7632.00	90.65	0.12	5748.37	1617.63 N	309.49 W	1638.59	0.76
7727.00	88.18	357.95	5749.34	1712.60 N	311.09 W	1733.33	3.46
7822.00	87.90	356.67	5752.59	1807.43 N	315.55 W	1828.19	1.38
7916.00	88.43	356.34	5755.59	1901.21 N	321.28 W	1922.11	0.66
8011.00	88.67	355.91	5757.99	1995.96 N	327.70 W	2017.06	0.52
8105.00	90.77	357.12	5758.45	2089.78 N	333.42 W	2111.02	2.58
8200.00	90.99	356.63	5756.99	2184.63 N	338.60 W	2205.95	0.56
8294.00	91.36	357.50	5755.07	2278.48 N	343.41 W	2299.87	1.00
8389.00	91.08	358.71	5753.05	2373.41 N	346.55 W	2394.70	1.31
8484.00	91.88	359.22	5750.60	2468.36 N	348.27 W	2489.44	1.00
8673.00	89.17	358.06	5748.88	2657.28 N	352.75 W	2678.01	1.56
8767.00	89.91	357.56	5749.63	2751.21 N	356.34 W	2771.89	0.95
8862.00	89.69	359.21	5749.97	2846.16 N	359.02 W	2866.72	1.75
8957.00	89.23	359.47	5750.86	2941.15 N	360.11 W	2961.44	0.56
9052.00	88.98	358.96	5752.34	3036.13 N	361.41 W	3056.16	0.60
9146.00	89.26	359.07	5753.79	3130.11 N	363.03 W	3149.91	0.32
9241.00	89.97	358.21	5754.42	3225.08 N	365.28 W	3244.71	1.17
9335.00	90.89	357.36	5753.72	3319.00 N	368.91 W	3338.59	1.33
9430.00	90.71	359.93	5752.39	3413.96 N	371.16 W	3433.38	2.71
9525.00	90.43	359.50	5751.44	3508.95 N	371.63 W	3528.04	0.53
9619.00	89.88	359.09	5751.19	3602.94 N	372.78 W	3621.77	0.74
9714.00	89.63	358.56	5751.60	3697.92 N	374.73 W	3716.55	0.61
9809.00	90.00	358.94	5751.90	3792.90 N	376.80 W	3811.34	0.56
9904.00	89.75	357.58	5752.11	3887.85 N	379.68 W	3906.18	1.46
9999.00	89.14	358.42	5753.03	3982.79 N	383.00 W	4001.04	1.09
10093.00	89.78	358.83	5753.91	4076.76 N	385.26 W	4094.84	0.81
10188.00	89.69	358.06	5754.35	4171.72 N	387.84 W	4189.67	0.82
10283.00	91.05	357.80	5753.73	4266.65 N	391.27 W	4284.53	1.45
10359.00	92.28	357.53	5751.53	4342.56 N	394.37 W	4360.42	1.66
10427.00	92.28	357.53	5748.82	4410.44 N	397.30 W	4428.29	0.00

<div> CALCULATION BASED ON MINIMUM CURVATURE METHOD </div> <div> SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT </div> <div> VERTICAL SECTION RELATIVE TO WELL HEAD VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 354.95 DEGREES (GRID) A TOTAL CORRECTION OF 6.94 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED </div> <div> HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD. HORIZONTAL DISPLACEMENT(CLOSURE) AT 10427.00 FEET </div>
