HALLIBURTON | Sperry Drilling

Powered by INSITE™

PCDC- Pressure Case Directional
PCGK - Pressure Case Gamma

Company	: Noble Energy
Rig	: H&P 321
Well	: Kevin LC26-735
Field	: Wattenberg
Country	: USA
API Number	: 05-123-40681

LOCATION

Latitude : 40° 42' 56.20" North
Longitude : 103° 56' 29.72" West
UTM Easting = 3,431,990.673 ft
UTM Northing = 1,507,337.185 ft

Other Services
Directional Drilling

Country	: USA
Field	: Wattenberg
Location	: Lat: 40° 42' 56.20" North Long: 103° 56' 29.72" West
Well	: Kevin LC26-735
Company	: Noble Energy
Rig	: H&P 321

Permanent Datum : Ground Level   Elevation : 4850.00 ft
Log Measured From : Drill Floor   30.00 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB N/A
DF 30.00 ft
GL 4850.00 ft
WD N/A

Depth Logged : 668.00 ft To 10,610.00 ft
Date Logged : 15-Apr-15 To 20-Apr-15
Total Depth MD : 10,610.00 ft TVD : 5,919.50 ft
Spud Date : 16-Apr-15

Unit No. : 11210424   Job No. : CA-XX-0902241010
Plot Type : Final
Plot Date : 20-Apr-15

Run No.	Borehole Record (MD) Size	From	To	Casing Record (MD) Size	Weight	From	To
100	8.750 in	668.00 ft	6,309.00 ft	9.625 in	34.90 lbpf	SURFACE	657.00 ft
200	6.125 in	6,309.00 ft	10,610.00 ft	7.000 in	25.70 lbpf	SURFACE	6,298.00 ft

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	18-Apr-15	18-Apr-15			
Rig Bit Number	200	0200			
Bit Size (in)	8.750	6.125			
Tool Nominal OD (in)	6.890				
Log Start Depth (MD, ft)	668.00	0.00			
Log End Depth (MD, ft)	6,309.00	0.00			
Drill or Wipe	Drill				
Drill/Wipe Start Date and Time	16-Apr-15 21:00	18-Apr-15 11:09			
Drill/Wipe End Date and Time	18-Apr-15 01:34	18-Apr-15 11:09			
Min Inc (deg) @ Depth (MD, ft)	0.22 @ 1,487.00	88.21 @ 6,427.00			
Max Inc (deg) @ Depth (MD, ft)	87.83 @ 6,309.00	92.68 @ 9,064.00			
Bit TFA(in2) / Bit Type	1.24 / PDC	0.65 / PDC			
Flow Rate (gpm)	595.08				
Max AV (fpm) / CV (fpm) @ MWD	N/A / N/A	/			
Fluid Type	Native/Spud Mud				
Density (ppg) / Viscosity (spqt)	8.80 / 33.00	/			
Filtrate CL (ppm)	1,500.00				
pH / Fluid Loss (mptm)	9.70 / N/A	/			
PV (cP) / YP (lhf2)	9 / 7.00	/			
% Solids / % Sand	3.2 / 0.3	/			
% Oil / Oil:Water Ratio	N/A / N/A	/			
Rm @ Measured Temp (degF)	N/A @ N/A	@			
Rmf @ Measured Temp (degF)	N/A @ N/A	@			
Rmc @ Measured Temp (degF)	N/A @ N/A	@			
Max Tool Temp (degF) / [illegible]	150.47 / BOM	218.14 / BOM			

Max Tool Temp (degF) / Source	158.47 / PCM	218.14 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ 158.47	@ 218.14			
Lead MWD Engineer	Robert Barnes	Robert Barnes			
Customer Representative	Jeremy Stolz	Jeremy Stolz			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.93	5.93			
Sub Serial Number	11404298	12310755			
Insert Serial Number	10997267	11680742			
Date and Time Initialized	16-Apr-15 07:19	18-Apr-15 11:23			
Date and Time Read	18-Apr-15 06:17	20-Apr-15 10:37			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	56.00	69.00			
Software Version	6.21	6.21			
Sub Serial Number	11404298	12310755			
Sonde Serial Number	11638501	11297516			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	195.00	162.00			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	49.67	71.80			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	11404298	12310755			
Insert/Sonde Serial Number	11681051	11293345			

REMARKS

1. All depths are calibrated to driller's pipe tally and are true vertical depth 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" modelforwater based fluids and the "Brigham Plastic"model for oil and synthetic based fluids.

4. All data presented is recorded data unless otherwice 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: 0.3 ft
Interval Distance: 1.2 ft

6. Insite Version V8.1.10

WARRANTY

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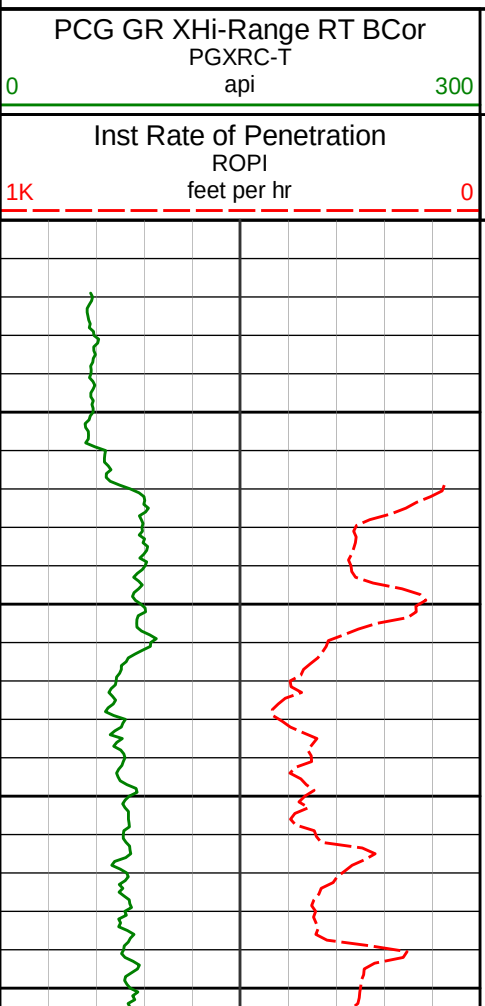
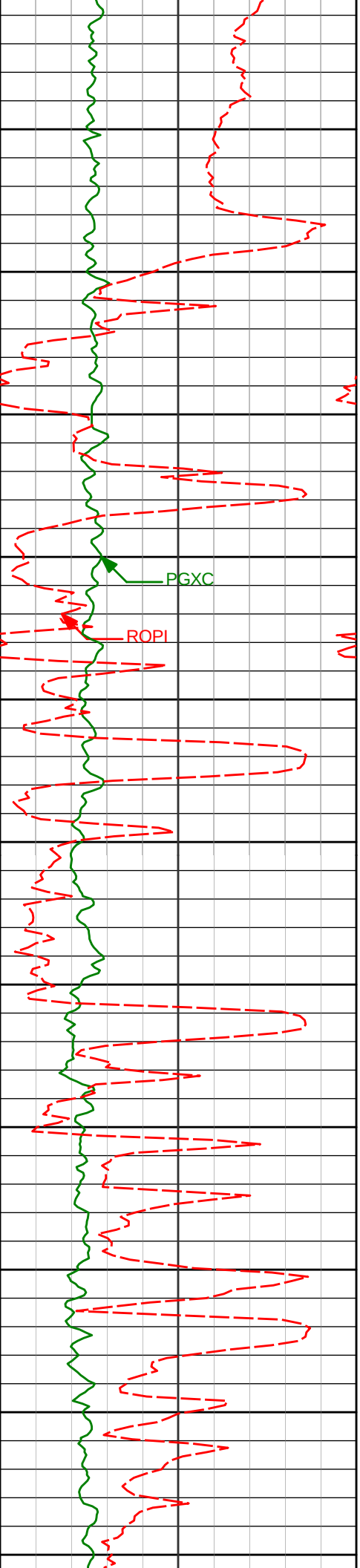
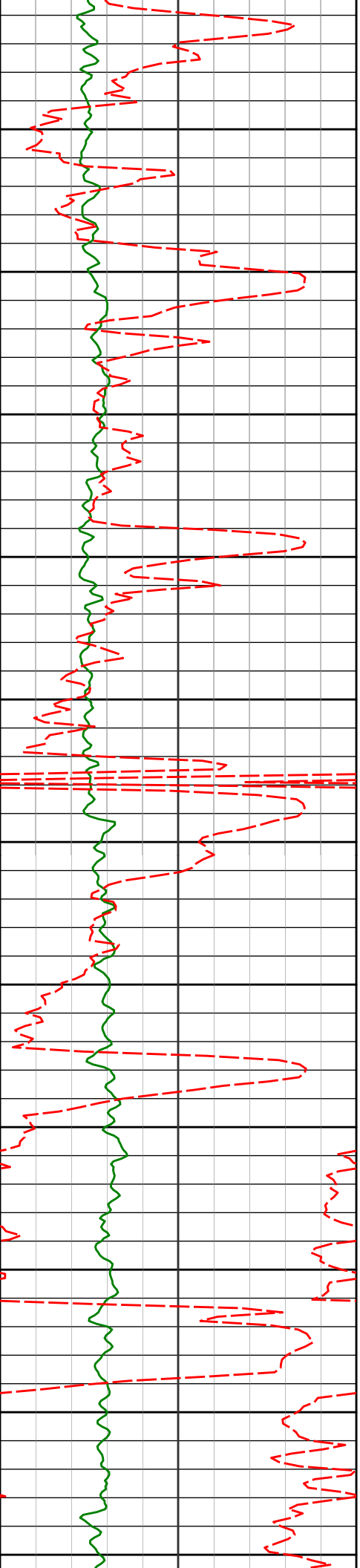
MD Detail 1:600 Scale



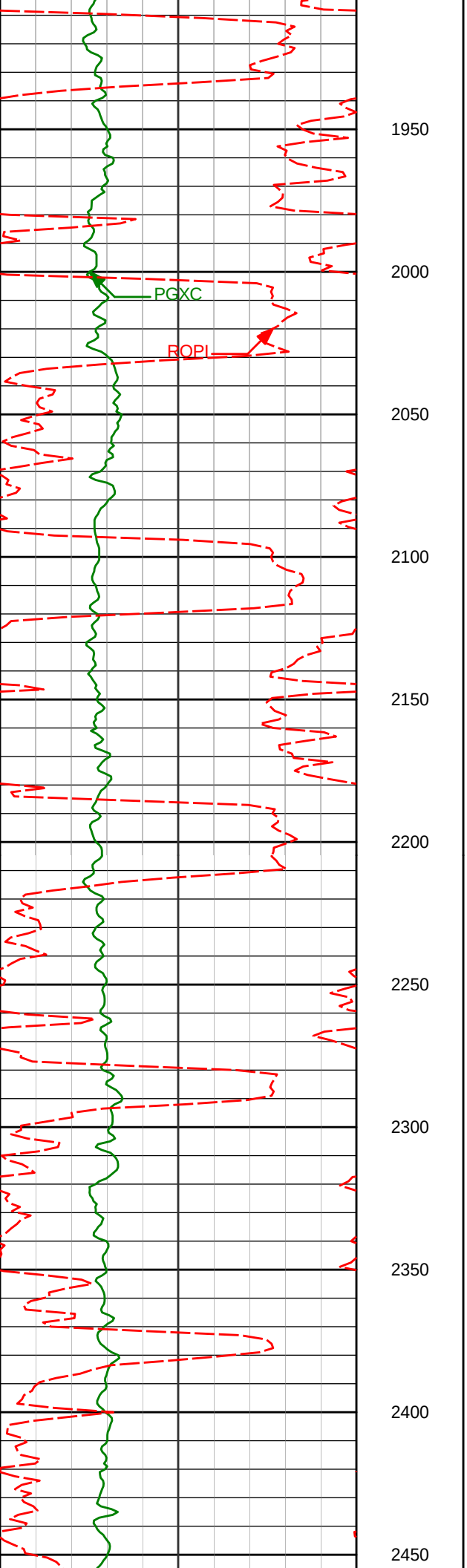
Depth TVD ft	Depth	Inc	Azi	TVD	V.S.	Temp
650						62.17°F
100						
						62.17°F
700						62.39°F
	735'	0.33°	348.85°	734.97'	-2.80'	
750						64.11°F
						64.11°F
800						



					64.33°F
827'	0.75°	339.03°	826.97'	-1.97'	
					66.07°F
850					
					66.07°F
900					66.07°F
919'	0.28°	340.61°	918.96'	-1.19'	
					68.04°F
950					
					68.04°F
					68.04°F
1000					
1011'	0.28°	347.39°	1010.96'	-0.76'	
					68.04°F
1050					68.04°F
					68.04°F
1100					
1103'	0.25°	345.44°	1102.96'	-0.34'	
					68.95°F
					70.02°F
1150					
					70.02°F
1200					70.02°F
1212'	0.35°	312.70°	1211.96'	0.11'	
					70.02°F
1250					
					71.33°F
					72.00°F
1300					
1303'	0.38°	302.75°	1302.96'	0.47'	
					72.00°F
1350					

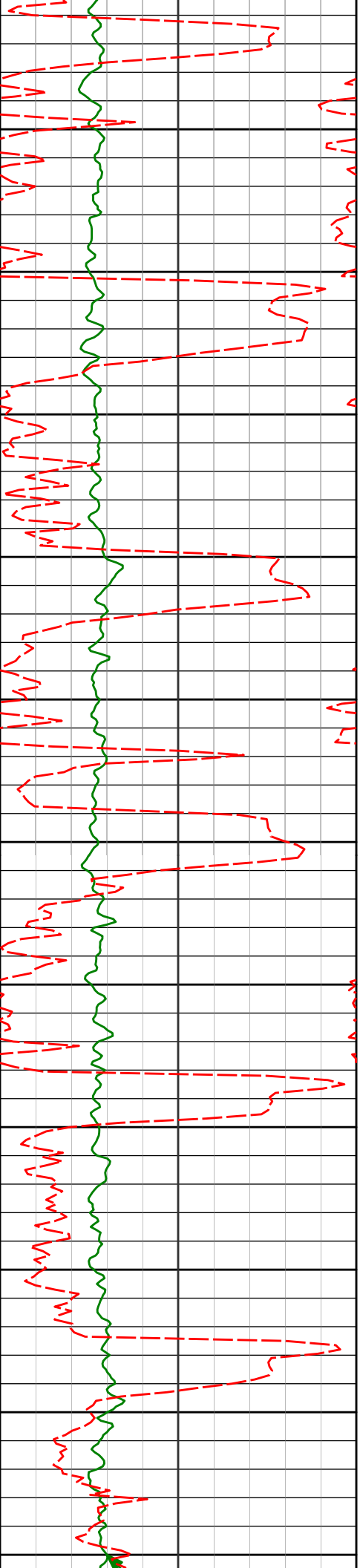


					72.12°F
					73.85°F
					73.98°F
					73.98°F
1487'	0.22°	291.30°	1486.95'	0.95'	
					73.98°F
					73.98°F
					75.97°F
1579'	0.43°	248.95°	1578.95'	0.90'	
					75.97°F
					75.97°F
					75.97°F
1671'	0.68°	251.13°	1670.95'	0.61'	
					77.99°F
					77.99°F
					78.81°F
1763'	0.78°	257.80°	1762.94'	0.32'	
					79.62°F
					80.01°F
					80.01°F
1855'	1.94°	192.91°	1854.92'	-1.32'	
					80.01°F
					80.01°F

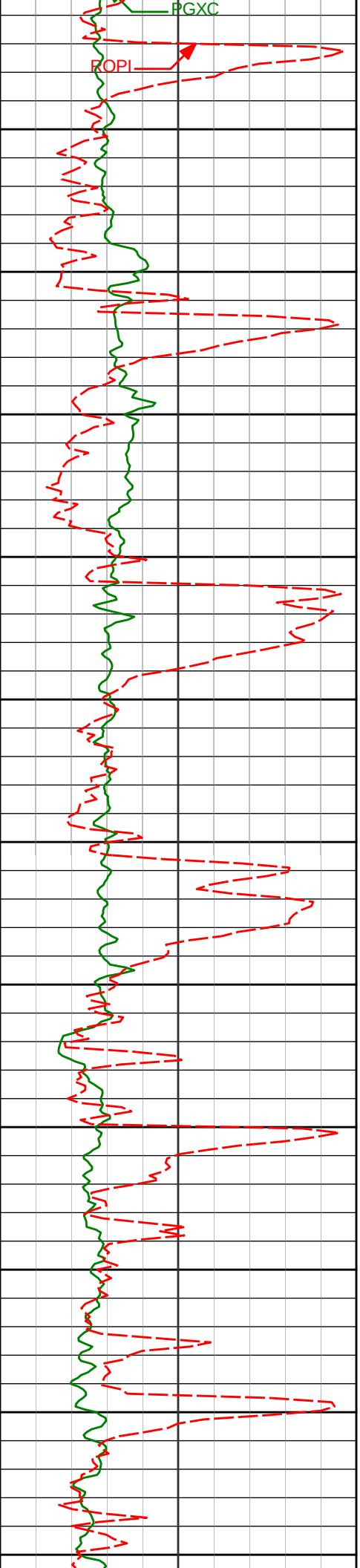


1947'	3.74°	180.61°	1946.80'	-5.84'	
2039'	6.58°	169.19°	2038.42'	-14.03'	
2130'	7.77°	164.10°	2128.71'	-25.11'	
2223'	10.05°	161.48°	2220.58'	-38.92'	
2315'	9.44°	158.77°	2311.25'	-53.65'	
2406'	9.39°	159.63°	2401.03'	-67.65'	

80.01°F
80.01°F
80.01°F
80.01°F
81.21°F
82.02°F
82.02°F
83.16°F
84.06°F
84.06°F
84.06°F
84.06°F
86.09°F
86.09°F
88.14°F



					88.14°F
					90.19°F
2499'	9.34°	157.93°	2492.79'	-81.83'	
					90.19°F
					90.84°F
2591'	9.51°	164.37°	2583.55'	-96.15'	
					90.99°F
					90.19°F
					91.10°F
2684'	10.16°	169.83°	2675.18'	-111.68'	
					92.26°F
					94.33°F
2778'	10.23°	172.87°	2767.70'	-128.16'	
					94.33°F
					94.33°F
					96.42°F
2873'	10.43°	172.93°	2861.16'	-145.11'	
					96.42°F
					96.42°F
					96.42°F
2968'	10.14°	171.78°	2954.63'	-161.96'	
					96.62°F
					98.51°F



3050					
	3063'	9.67°	169.96°	3048.22'	-178.13'
3100					
3150	3157'	9.09°	166.74°	3140.96'	-193.19'
3200					
3250	3252'	9.39°	171.05°	3234.73'	-208.19'
3300					
3350	3347'	9.66°	181.39°	3328.42'	-223.83'
3400					
3450	3441'	10.78°	180.60°	3420.93'	-240.51'
3500					
3550	3536'	11.12°	178.49°	3514.20'	-258.56'

98.51°F
98.64°F
100.62°F
100.62°F
100.62°F
100.62°F
101.25°F
102.56°F
102.72°F
102.72°F
104.83°F
104.83°F
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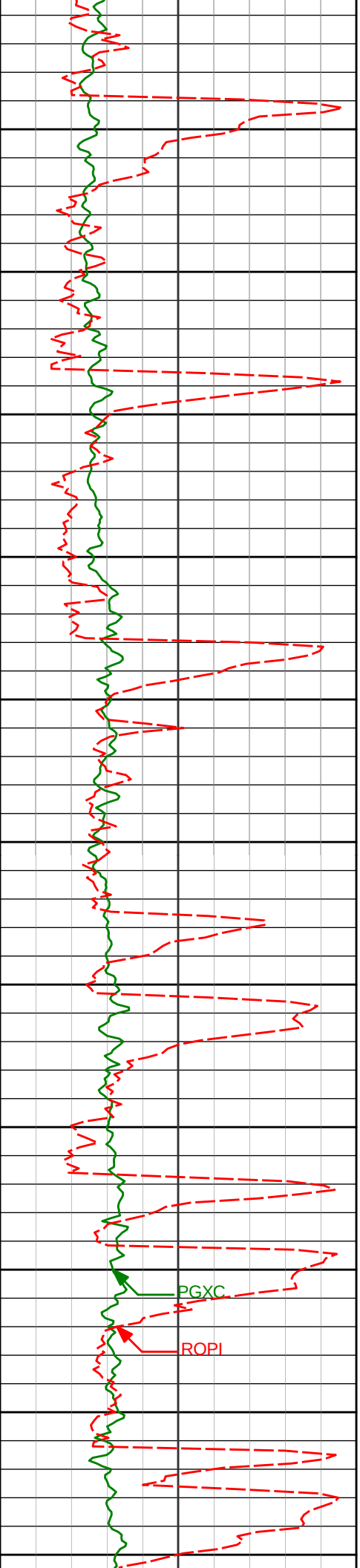
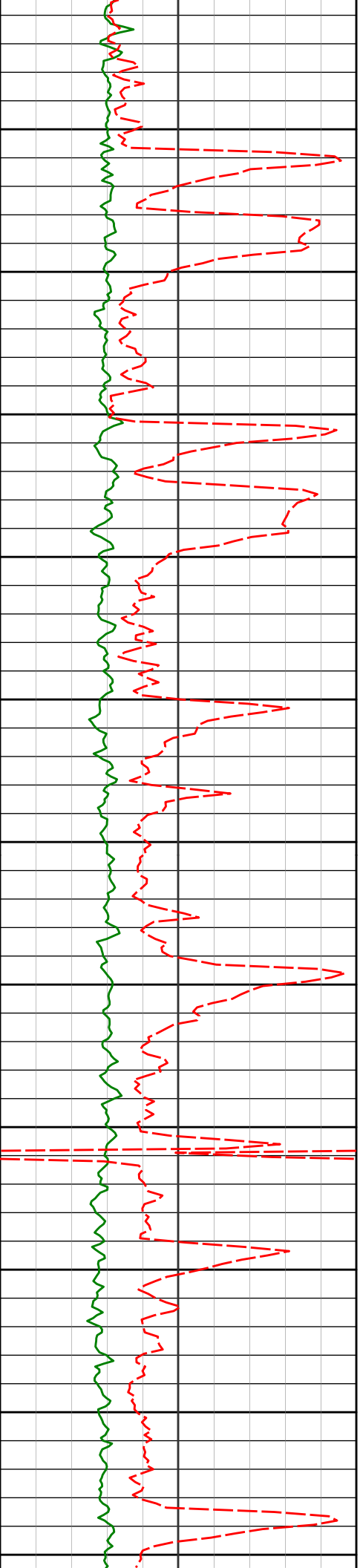
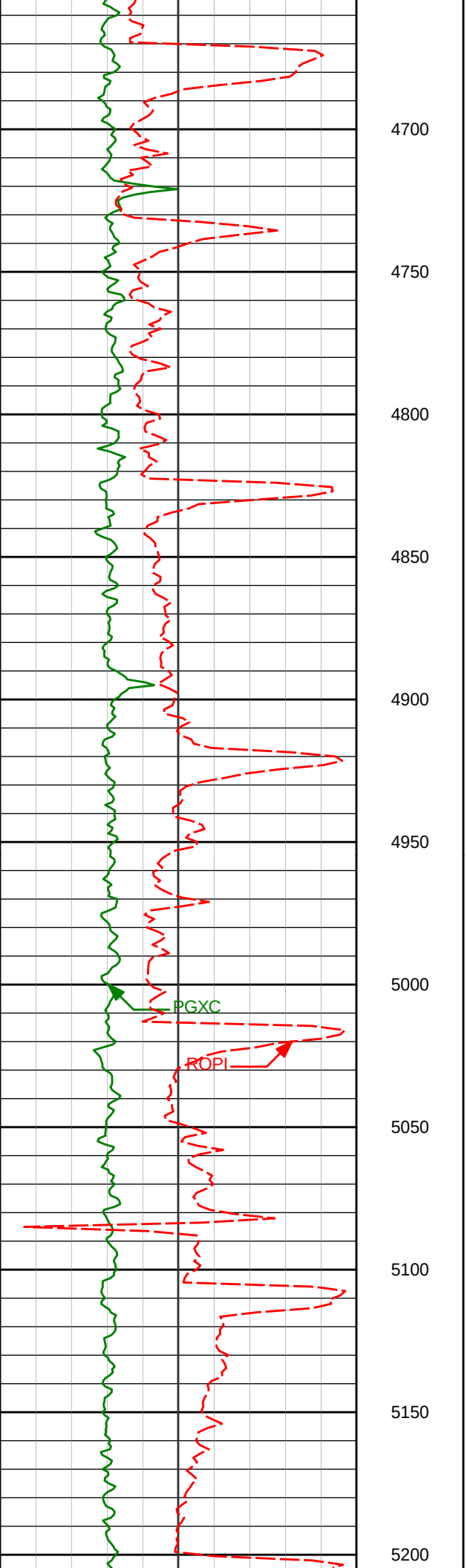
104.83°F
104.83°F



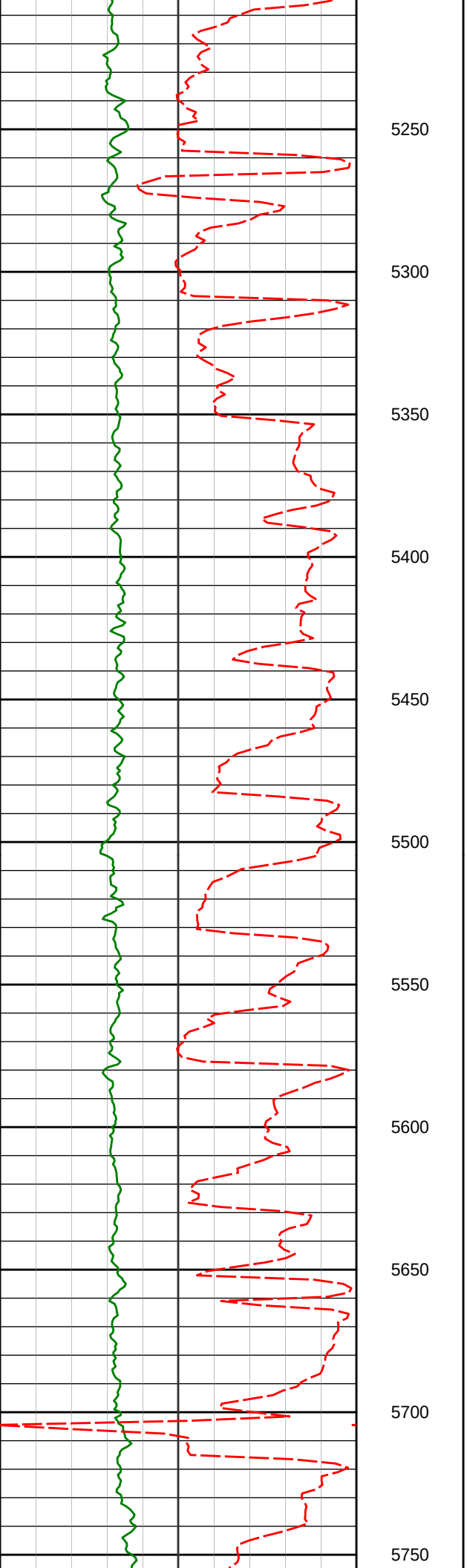
					106.97°F
					107.88°F
3631'	11.52°	176.07°	3607.35'	-277.20'	109.09°F
					109.09°F
					109.09°F
3725'	11.82°	174.95°	3699.41'	-296.17'	
					111.24°F
					111.24°F
					113.40°F
3820'	11.74°	172.74°	3792.41'	-315.48'	
					113.40°F
					112.66°F
					111.24°F
3914'	9.55°	169.63°	3884.78'	-332.68'	
					113.40°F
					113.40°F
					113.57°F
4009'	6.81°	168.35°	3978.81'	-345.99'	
					114.90°F
					113.40°F
					113.40°F
4104'	5.02°	172.77°	4073.30'	-355.65'	



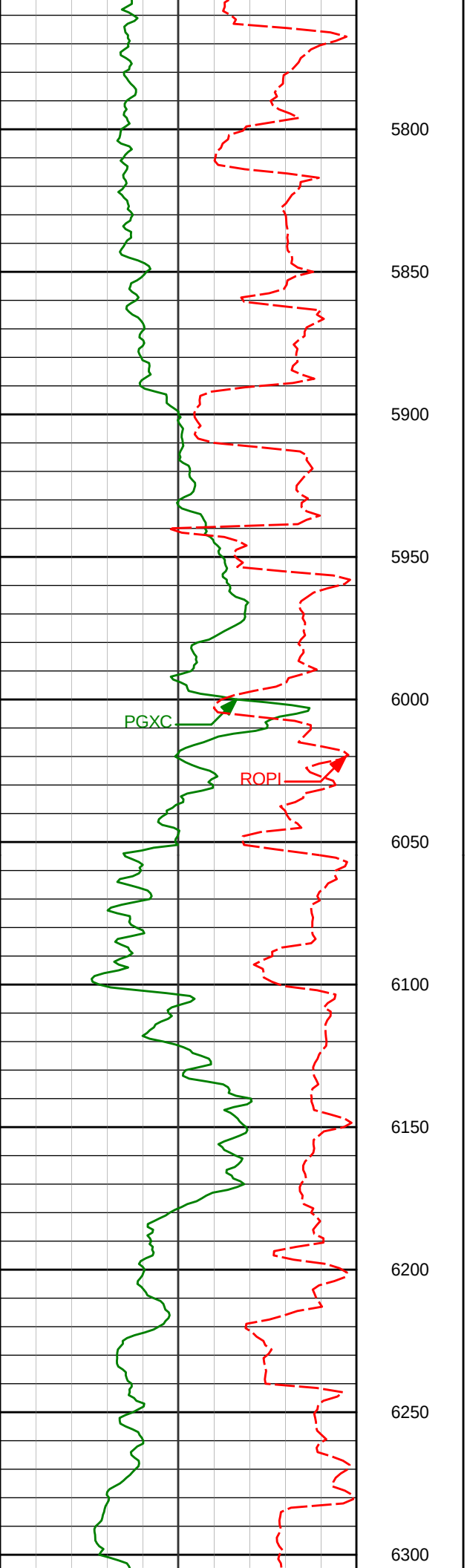
4104'	3.02°	172.77°	4073.30'	-353.03'	115.56°F
					115.56°F
					115.56°F
4198'	3.37°	174.27°	4167.05'	-362.49'	117.73°F
					117.73°F
					117.73°F
4293'	1.04°	106.21°	4261.98'	-365.53'	117.73°F
					117.73°F
					118.80°F
4388'	1.23°	82.93°	4356.96'	-365.67'	119.91°F
					122.11°F
					122.11°F
4483'	0.85°	75.70°	4451.95'	-365.40'	122.11°F
					123.51°F
					124.30°F
4578'	1.26°	77.74°	4546.93'	-365.03'	126.52°F
					126.52°F
					126.29°F
					124.30°F



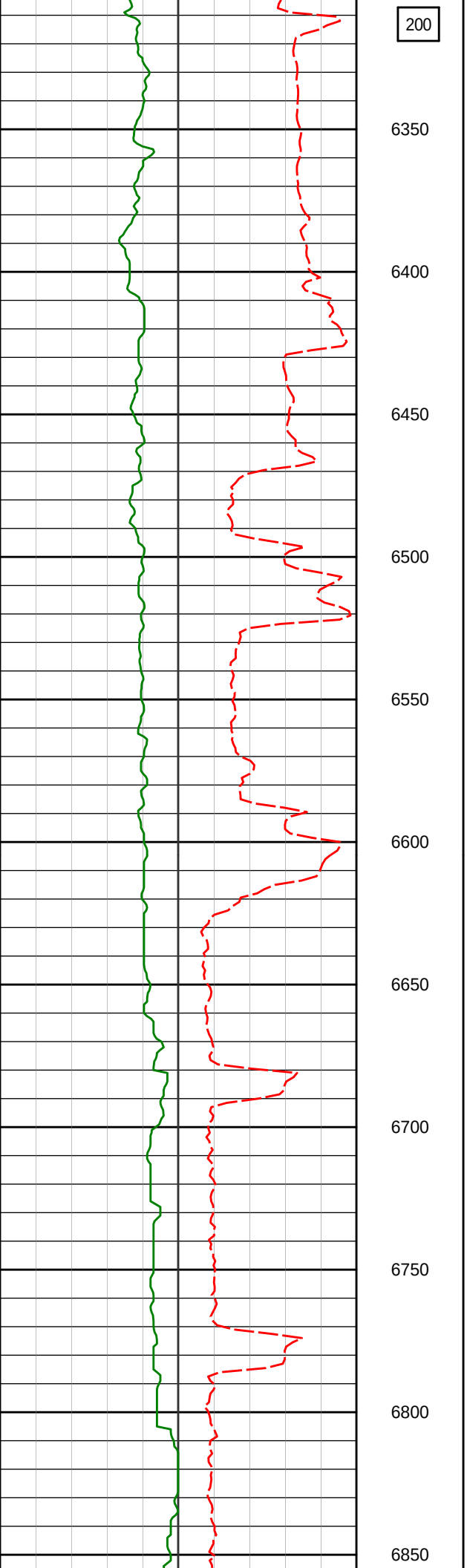
4672'	0.35°	158.86°	4640.92'	-365.10'	126.52°F
					126.52°F
					128.73°F
4767'	0.75°	156.46°	4735.92'	-365.94'	128.73°F
					130.96°F
					130.96°F
4862'	1.14°	149.42°	4830.90'	-367.33'	130.96°F
					133.20°F
					133.20°F
4957'	0.83°	134.08°	4925.89'	-368.64'	133.07°F
					131.87°F
					133.20°F
5052'	0.84°	142.68°	5020.88'	-369.69'	133.20°F
					133.20°F
					134.97°F
5146'	0.80°	132.02°	5114.87'	-370.69'	135.45°F
					135.45°F
					135.45°F



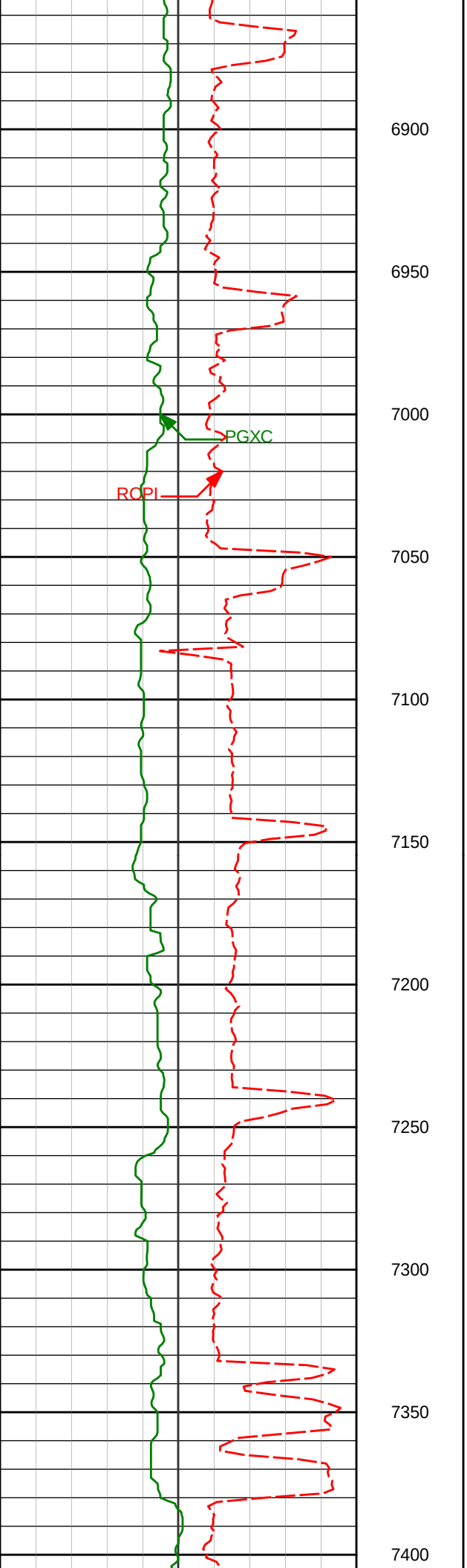
					135.45°F
5241'	0.59°	160.43°	5209.86'	-371.61'	
					136.23°F
					136.15°F
					135.62°F
5336'	0.51°	99.57°	5304.86'	-372.15'	
					136.29°F
					137.77°F
					139.23°F
5430'	15.36°	21.75°	5397.73'	-360.67'	
					139.70°F
					140.52°F
5477'	19.23°	14.86°	5442.60'	-347.47'	
					142.25°F
					142.25°F
5525'	21.19°	12.72°	5487.64'	-331.43'	
					142.53°F
					143.97°F
					144.54°F
5620'	28.20°	4.88°	5573.92'	-292.36'	
					144.81°F
					146.20°F
5667'	31.15°	4.29°	5614.75'	-269.20'	
					146.61°F
					147.04°F
5714'	33.74°	6.35°	5654.41'	-244.14'	



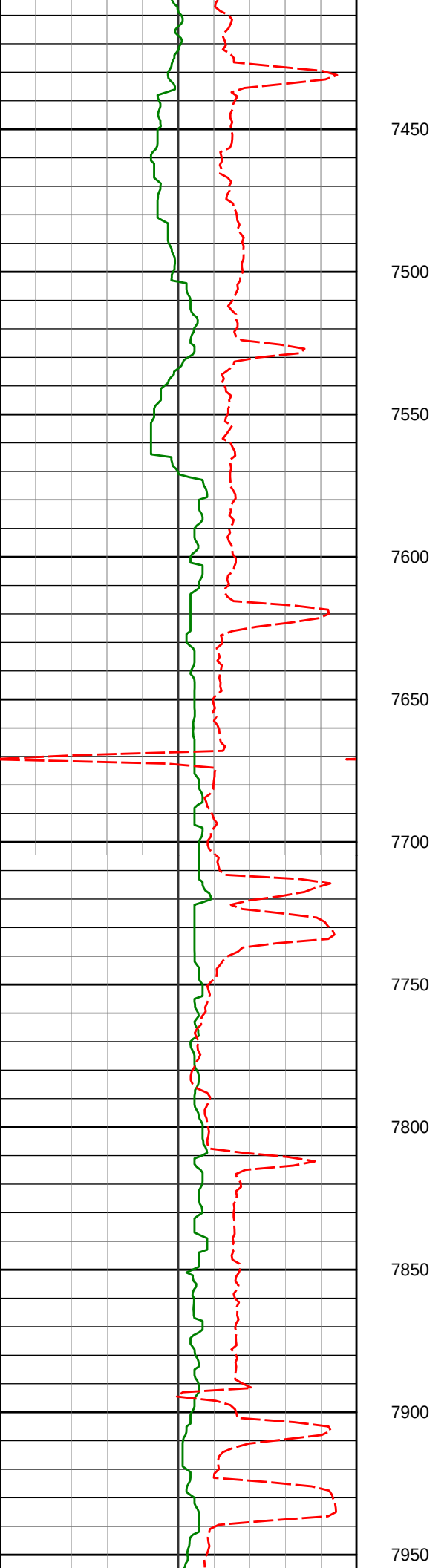
5761'	35.46°	2.58°	5693.10'	-217.58'	148.00°F
					149.14°F
5809'	39.54°	356.66°	5731.19'	-188.40'	
					149.25°F
					151.05°F
5856'	46.26°	355.86°	5765.60'	-156.46'	
					151.01°F
5904'	50.23°	355.25°	5797.56'	-120.73'	
					151.47°F
					151.47°F
5951'	53.71°	353.96°	5826.51'	-83.83'	
					151.55°F
5999'	58.87°	352.89°	5853.14'	-44.11'	151.85°F
					151.47°F
6046'	61.13°	354.65°	5876.64'	-3.58'	
					151.52°F
					152.12°F
6094'	64.74°	354.64°	5898.48'	39.03'	
					153.00°F
6141'	72.15°	357.01°	5915.74'	82.64'	
					153.51°F
					156.44°F
6188'	79.68°	1.89°	5927.17'	128.18'	
					156.67°F
					157.10°F
6253'	84.45°	0.98°	5936.14'	192.48'	
					158.05°F



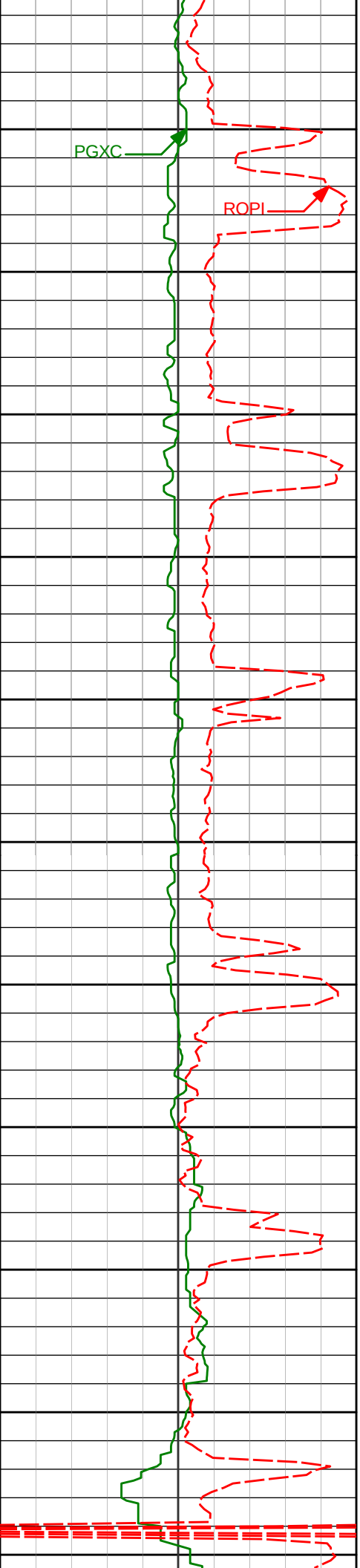
					158.56°F
					158.56°F
					154.34°F
6427'	88.21°	0.97°	5947.28'	365.99'	
					154.34°F
					154.34°F
6520'	89.69°	359.11°	5948.98'	458.96'	
					154.34°F
					158.56°F
6611'	90.15°	357.09°	5949.10'	549.94'	
					158.56°F
					162.78°F
6703'	89.66°	356.32°	5949.25'	641.86'	
					162.78°F
					162.78°F
6796'	89.78°	357.00°	5949.70'	734.78'	
					162.78°F



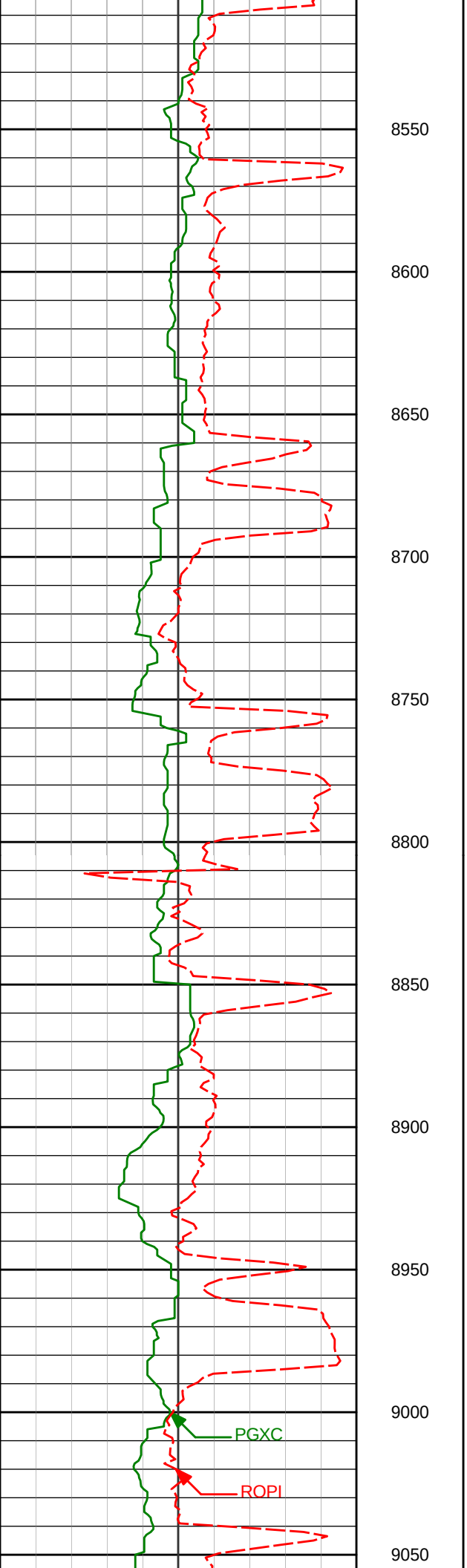
					167.00°F
6888'	90.22°	356.96°	5949.70'	826.72'	
					167.00°F
					171.22°F
6980'	90.95°	357.14°	5948.76'	918.66'	
					171.22°F
7075'	89.94°	356.89°	5948.02'	1013.59'	171.22°F
					171.22°F
7170'	89.20°	355.69°	5948.74'	1108.48'	175.44°F
					175.44°F
7264'	88.58°	354.85°	5950.56'	1202.25'	179.66°F
					179.66°F
					175.44°F
					175.44°F



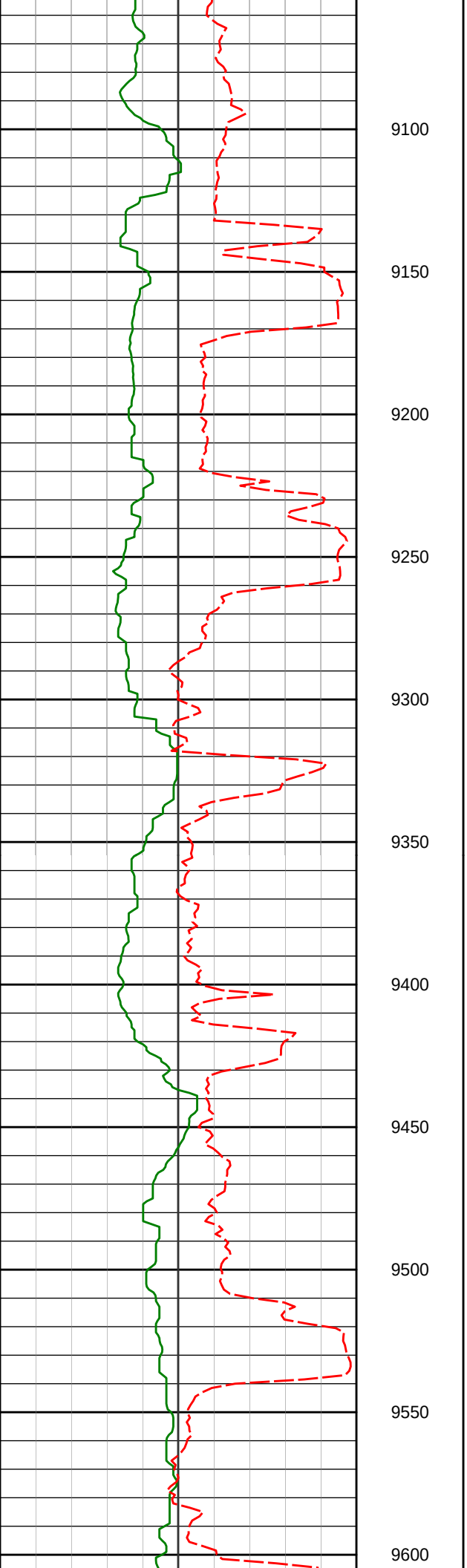
					179.66°F
7454'	90.80°	356.23°	5951.58'	1391.87'	
					179.66°F
					183.88°F
7548'	89.63°	357.33°	5951.22'	1485.79'	
					183.88°F
7643'	89.14°	357.40°	5952.25'	1580.75'	
					183.88°F
					183.88°F
7738'	90.86°	357.59°	5952.24'	1675.71'	
					188.09°F
					188.09°F
7833'	89.32°	356.55°	5952.09'	1770.65'	
					188.09°F
					133.31°F
					82.62°F
7927'	89.57°	356.43°	5953.00'	1864.55'	
					193.67°F
					195.17°F



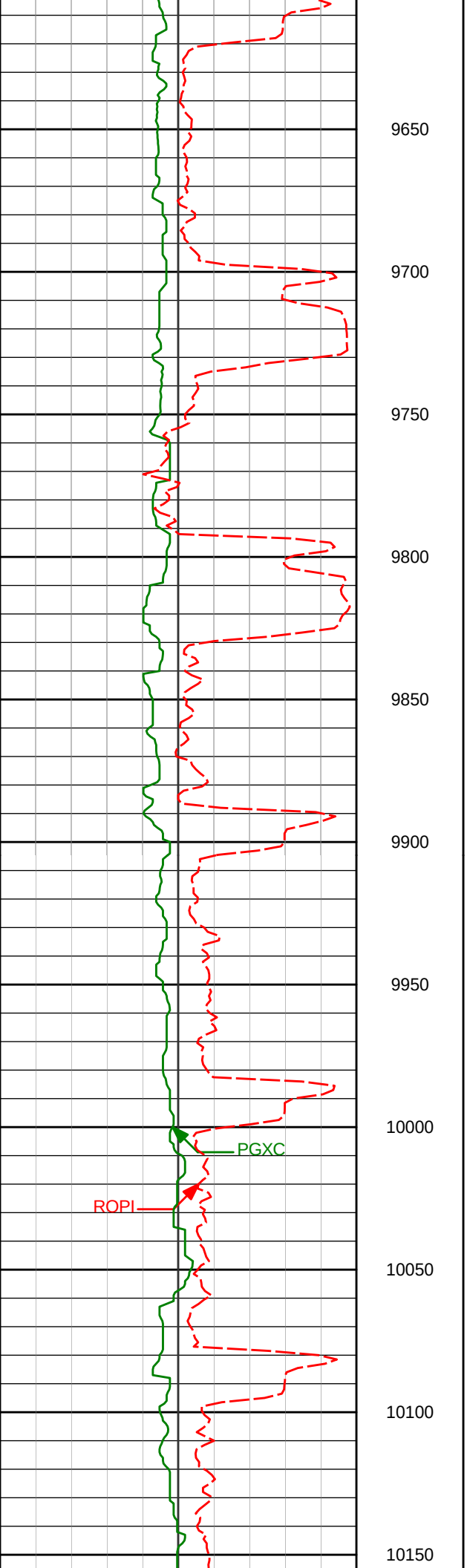
8022'	90.37°	356.03°	5953.05'	1959.43'	188.09°F
					188.09°F
8117'	90.49°	359.09°	5952.34'	2054.38'	188.09°F
					188.09°F
8211'	90.25°	358.11°	5951.73'	2148.38'	192.31°F
					192.31°F
					192.31°F
8306'	90.86°	357.72°	5950.81'	2243.35'	194.42°F
					196.53°F
8401'	91.79°	357.66°	5948.61'	2338.30'	196.53°F
					196.53°F
8495'	90.71°	357.30°	5946.57'	2432.24'	196.53°F



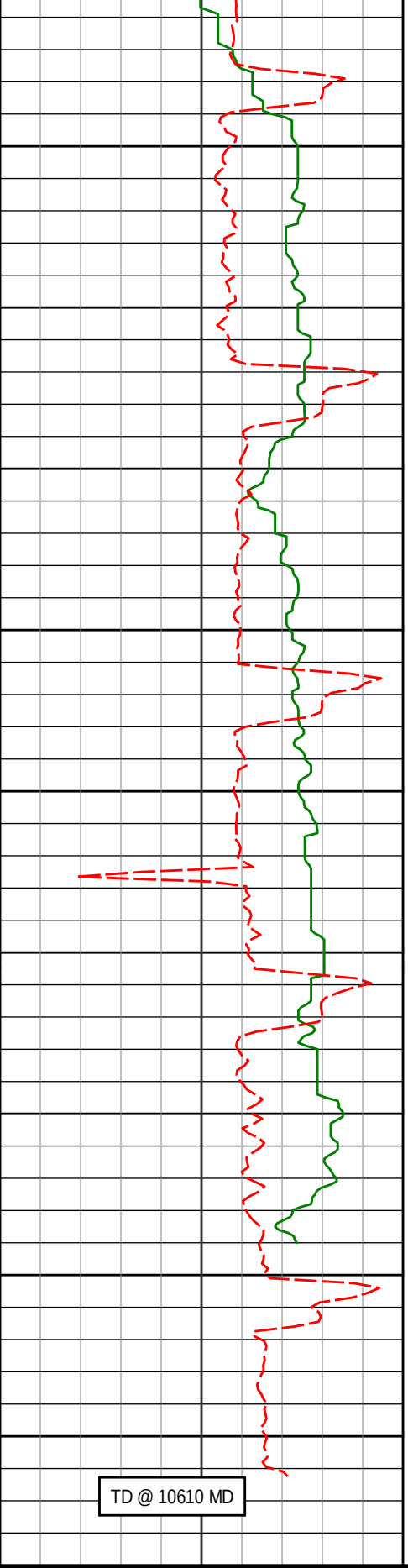
					196.53°F
					196.53°F
8590'	89.82°	356.81°	5946.13'	2527.18'	
					196.53°F
					200.75°F
8685'	89.97°	356.88°	5946.31'	2622.11'	
					200.75°F
					200.75°F
8780'	90.46°	357.06°	5945.95'	2717.04'	
					200.75°F
8875'	91.63°	357.34°	5944.21'	2811.98'	200.75°F
					200.75°F
8969'	92.03°	358.77°	5941.21'	2905.91'	200.75°F
					200.75°F



9064'	92.68°	357.96°	5937.30'	3000.82'	186.35°F
					105.46°F
9159'	91.33°	358.36°	5933.98'	3095.75'	196.53°F
					196.53°F
9254'	91.11°	0.14°	5931.96'	3190.72'	196.53°F
					196.53°F
9349'	91.63°	359.77°	5929.68'	3285.69'	196.53°F
					196.53°F
9443'	91.85°	359.10°	5926.83'	3379.64'	200.75°F
					200.75°F
9538'	89.51°	358.80°	5925.70'	3474.63'	196.53°F
					196.53°F



9633'	88.92°	357.82°	5927.01'	3569.61'	200.75°F
					200.75°F
9728'	88.43°	358.50°	5929.20'	3664.57'	200.75°F
					200.75°F
9823'	90.09°	0.60°	5930.43'	3759.55'	200.75°F
					200.75°F
9918'	90.77°	0.06°	5929.71'	3854.52'	204.97°F
					204.97°F
10012'	90.71°	359.51°	5928.50'	3948.51'	209.19°F
					209.19°F
10107'	91.29°	359.39°	5926.84'	4043.49'	209.19°F
					209.19°F



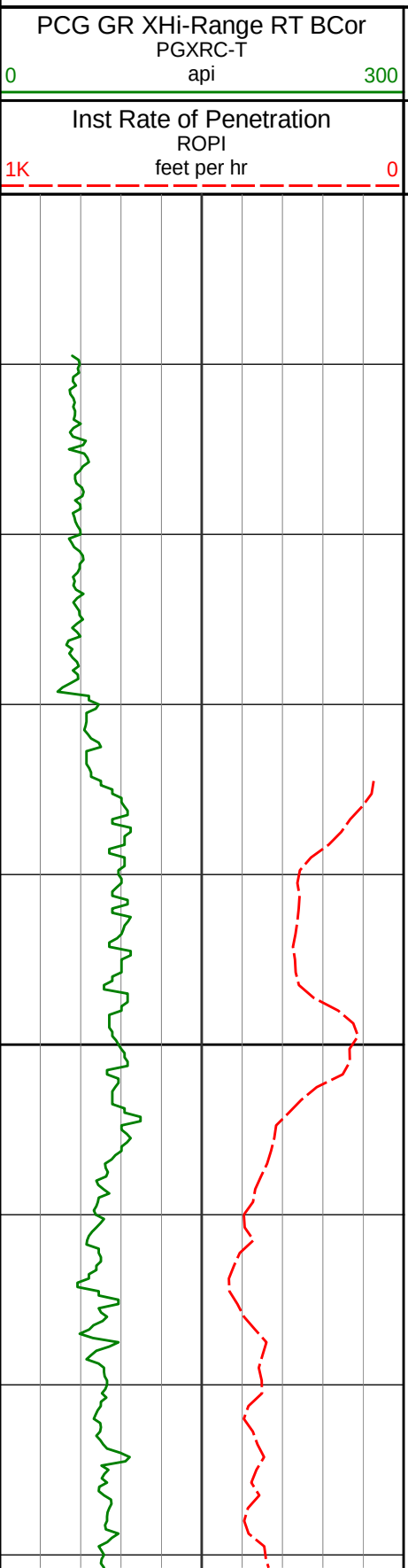
Depth	Inc	Azi	TVD	V.S.	Temp
10202'	91.29°	358.94°	5924.69'	4138.46'	213.41°F
					213.41°F
10297'	90.83°	358.24°	5922.93'	4233.44'	213.41°F
					213.41°F
10391'	91.51°	358.80°	5921.01'	4327.42'	213.41°F
					213.41°F
10486'	90.43°	357.72°	5919.40'	4422.39'	213.41°F
					213.41°F
10541'	89.82°	357.19°	5919.28'	4477.37'	215.27°F
10610'	89.82°	357.19°	5919.50'	4546.33'	

Inst Rate of Penetration
ROPI
1K feet per hr 0

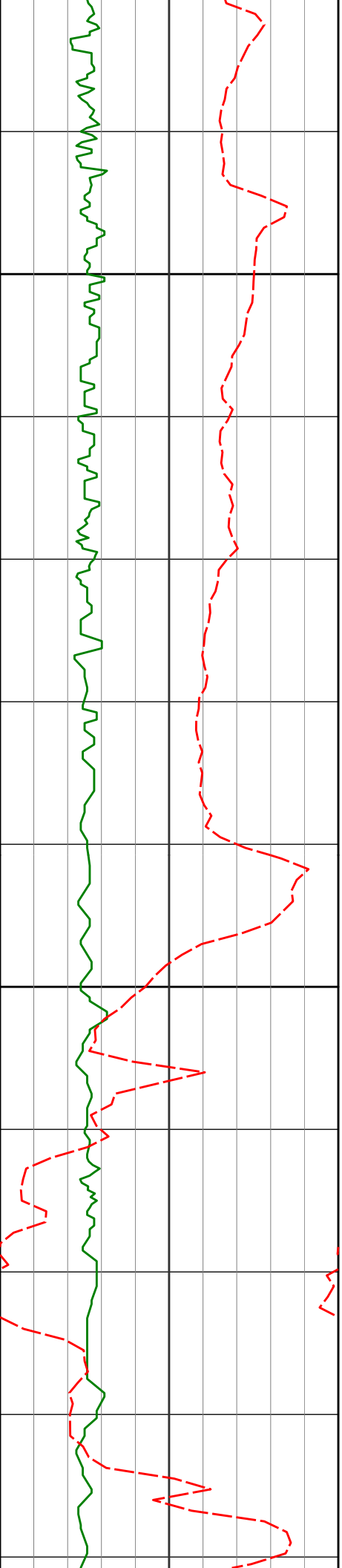
PCG GR XHi-Range RT BCor
PGXRC-T
0 api 300

Depth
TVD
ft

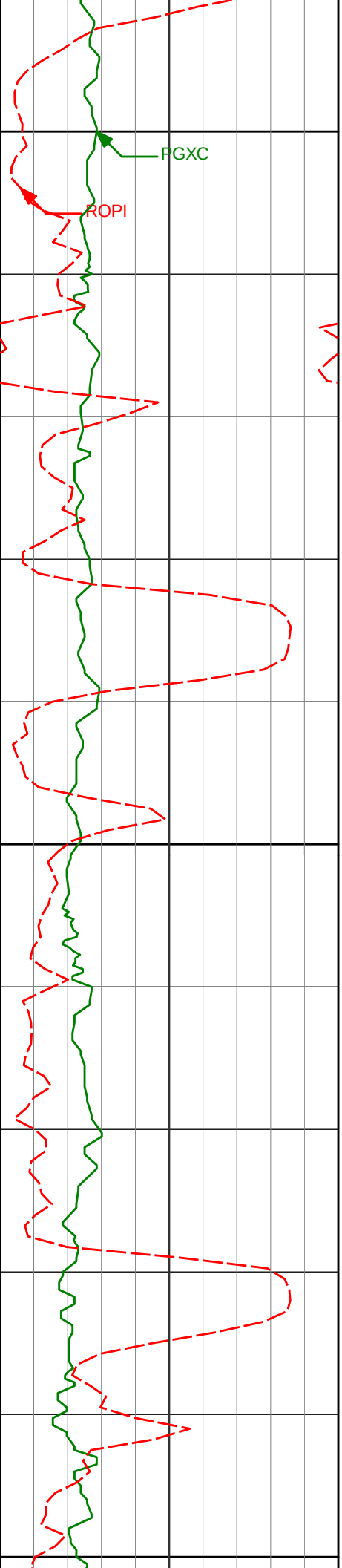
MD Detail 1:240 Scale



Depth TVD ft	Depth	Inc	Azi	TVD	V.S.	Temp
600						
Run 100						62.17°F
						62.17°F
700						
						62.39°F
	735'	0.33°	348.85°	734.97'	-2.80'	
						64.11°F



800					64.11°F
					64.33°F
	827'	0.75°	339.03°	826.97'	-1.97'
					66.07°F
					66.07°F
900					66.07°F
	919'	0.28°	340.61°	918.96'	-1.19'
					68.04°F
					68.04°F



1000

1011' 0.28° 347.39° 1010.96' -0.76'

68.04°F

68.04°F

68.04°F

68.04°F

1100

1103' 0.25° 345.44° 1102.96' -0.34'

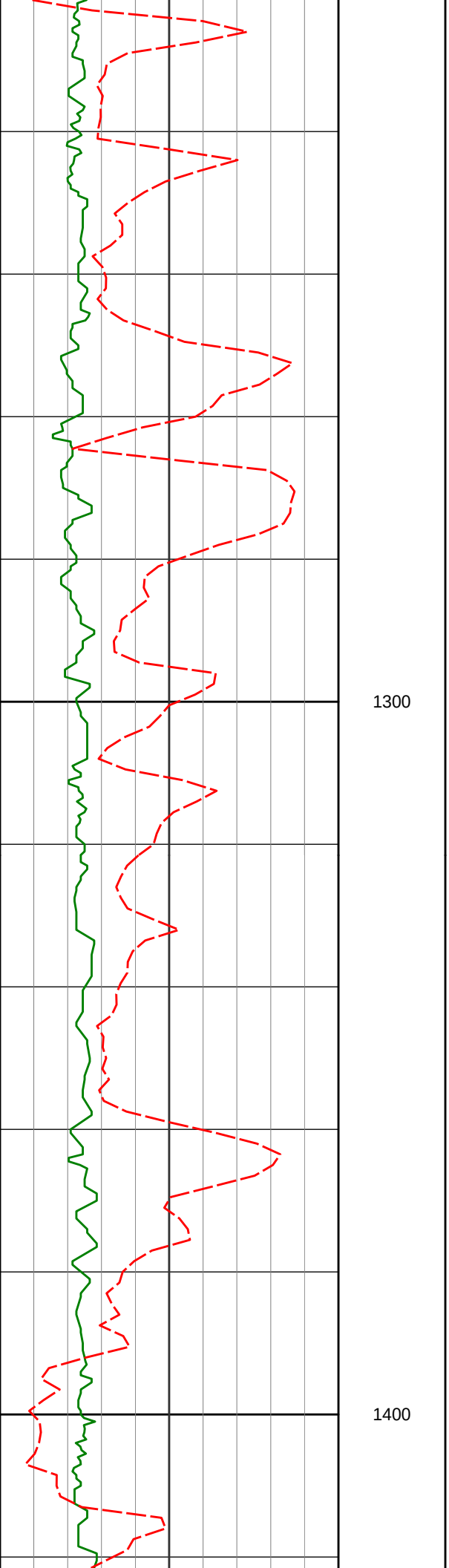
68.95°F

70.02°F

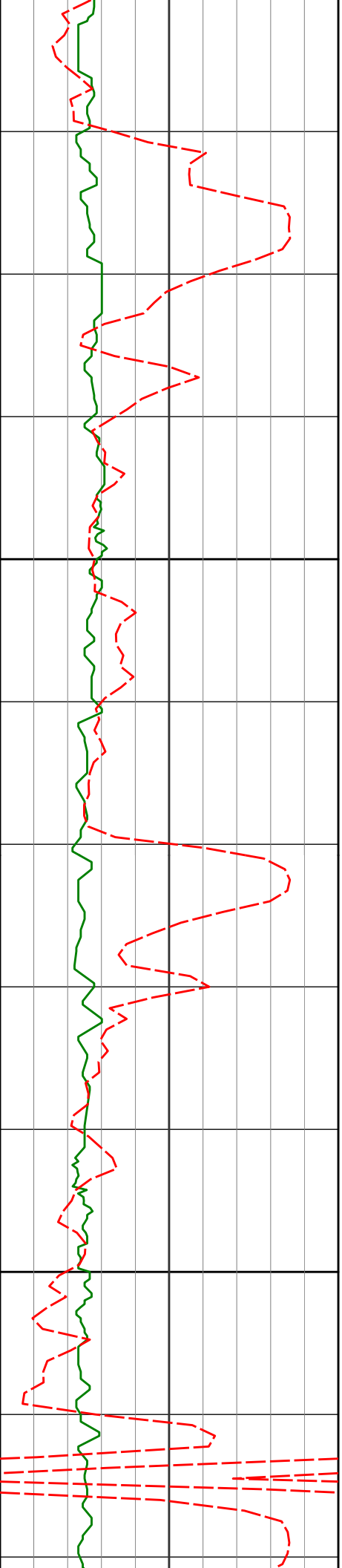
70.02°F

1200

70.02°F

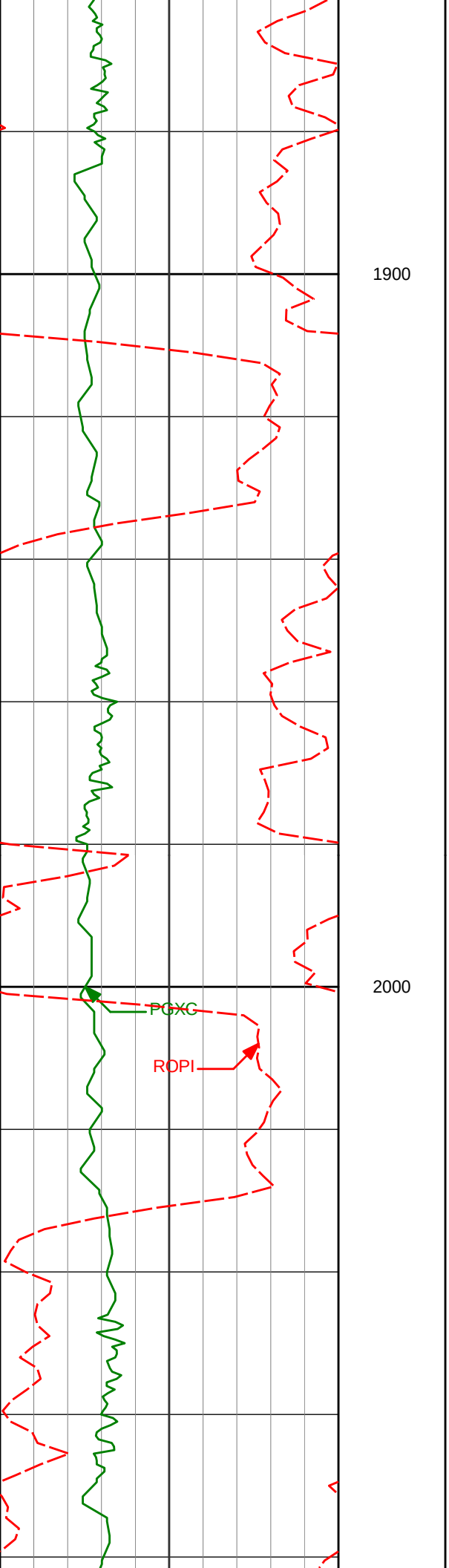


1212'	0.35°	312.70°	1211.96'	0.11'	
					70.02°F
					71.33°F
					72.00°F
1303'	0.38°	302.75°	1302.96'	0.47'	
					72.00°F
					72.12°F
					73.85°F

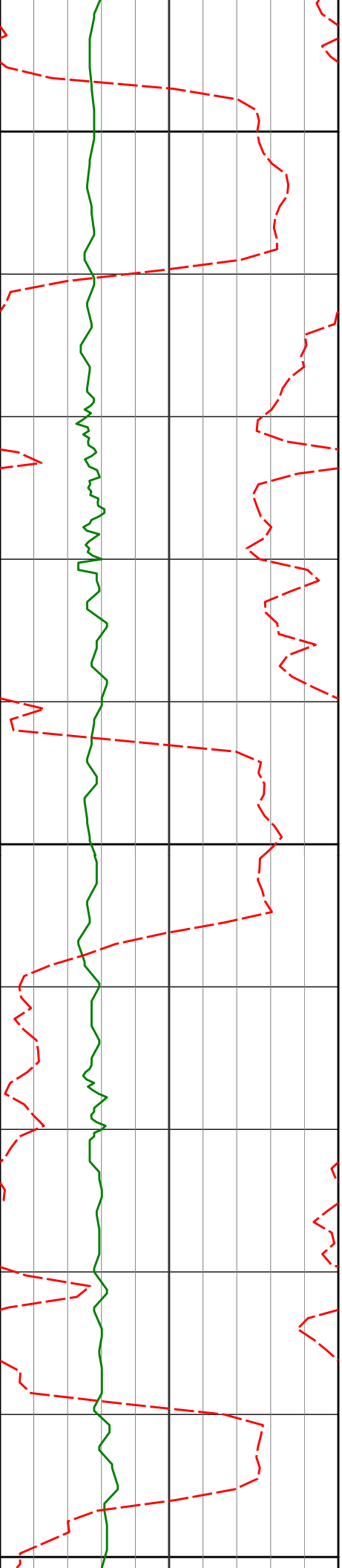


					73.98°F
					73.98°F
1487'	0.22°	291.30°	1486.95'	0.95'	
1500					73.98°F
					73.98°F
					75.97°F
1579'	0.43°	248.95°	1578.95'	0.90'	
					75.97°F
1600					
					75.97°F

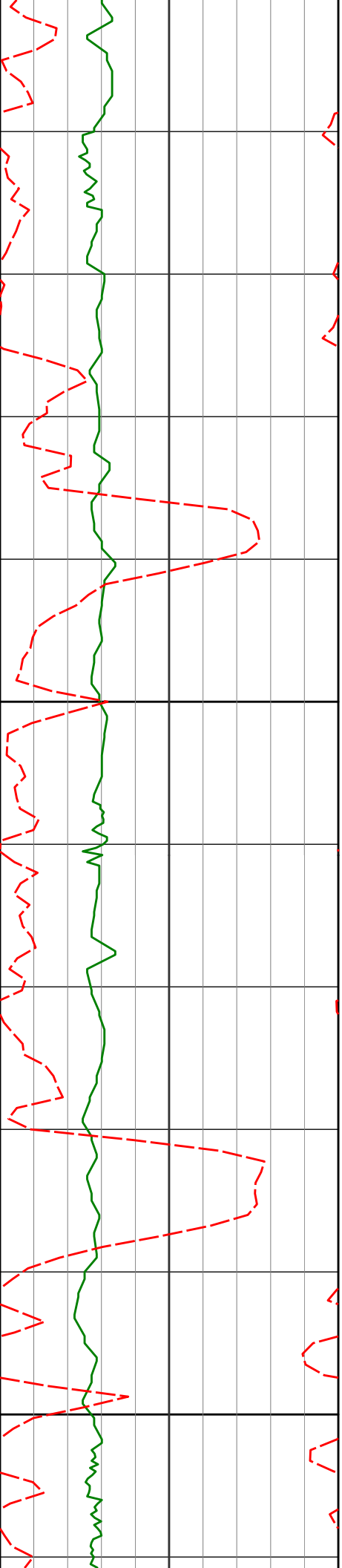
					75.97°F
1671'	0.68°	251.13°	1670.95'	0.61'	
					77.99°F
1700					
					77.99°F
					78.81°F
1763'	0.78°	257.80°	1762.94'	0.32'	
					79.62°F
1800					80.01°F
					80.01°F
1855'	1.94°	192.91°	1854.92'	-1.32'	
					80.01°F



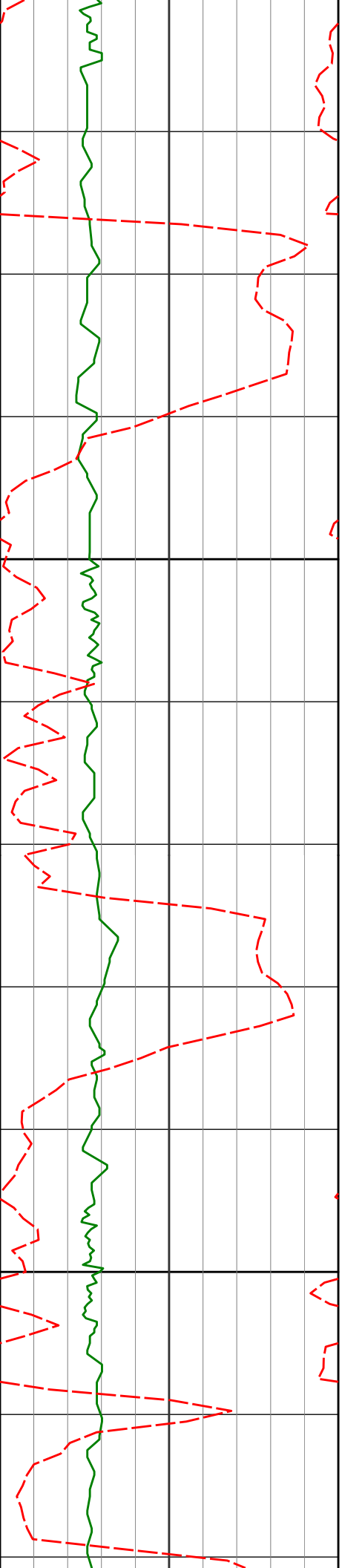
					80.01°F
					80.01°F
1947'	3.74°	180.61°	1946.80'	-5.84'	80.01°F
					80.01°F
					80.01°F
2039'	6.58°	169.19°	2038.42'	-14.03'	81.21°F
					82.02°F



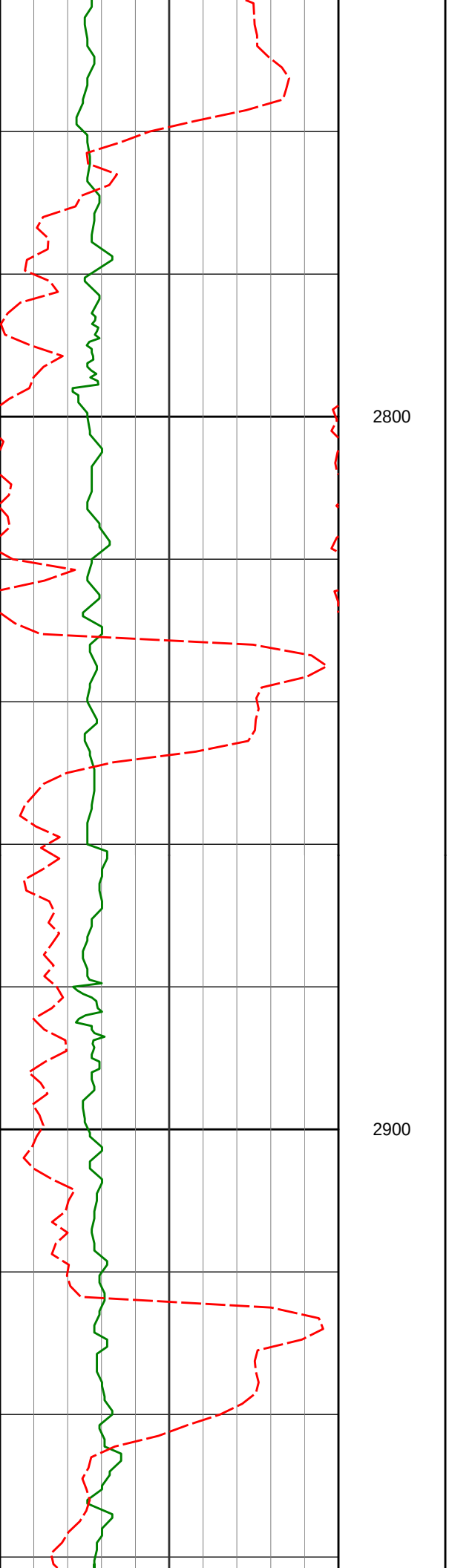
					82.02°F
2130'	7.77°	164.10°	2128.71'	-25.11'	83.16°F
					84.06°F
					84.06°F
2223'	10.05°	161.48°	2220.58'	-38.92'	84.06°F
					84.06°F
					84.06°F



2315'	9.44°	158.77°	2311.25'	-53.65'	
					86.09°F
					86.09°F
2400					
2406'	9.39°	159.63°	2401.03'	-67.65'	
					88.14°F
					88.14°F
					90.19°F
2500					
2499'	9.34°	157.93°	2492.79'	-81.83'	
					90.19°F

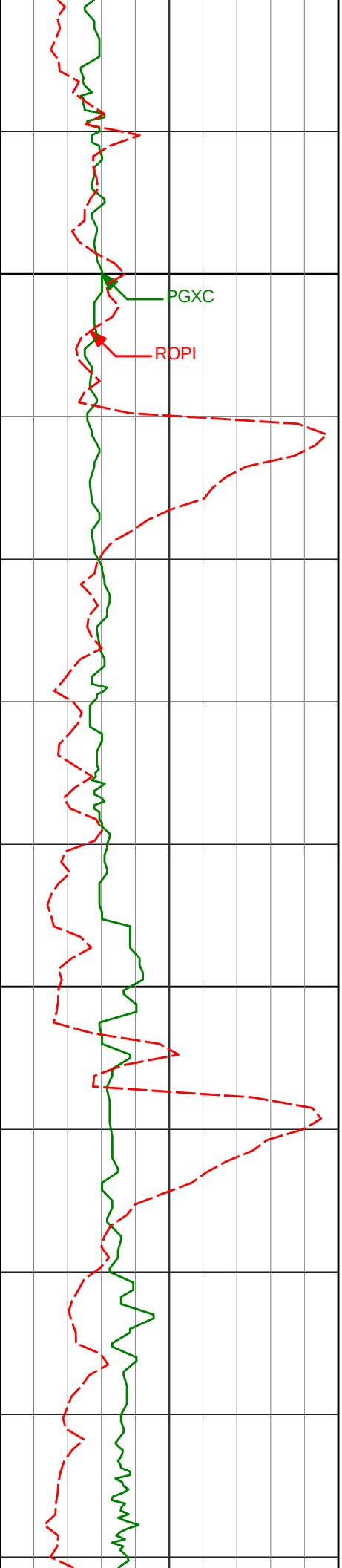


2591'	9.51°	164.37°	2583.55'	-96.15'	90.84°F
2600					
					90.99°F
					90.19°F
					91.10°F
2684'	10.16°	169.83°	2675.18'	-111.68'	
2700					92.26°F

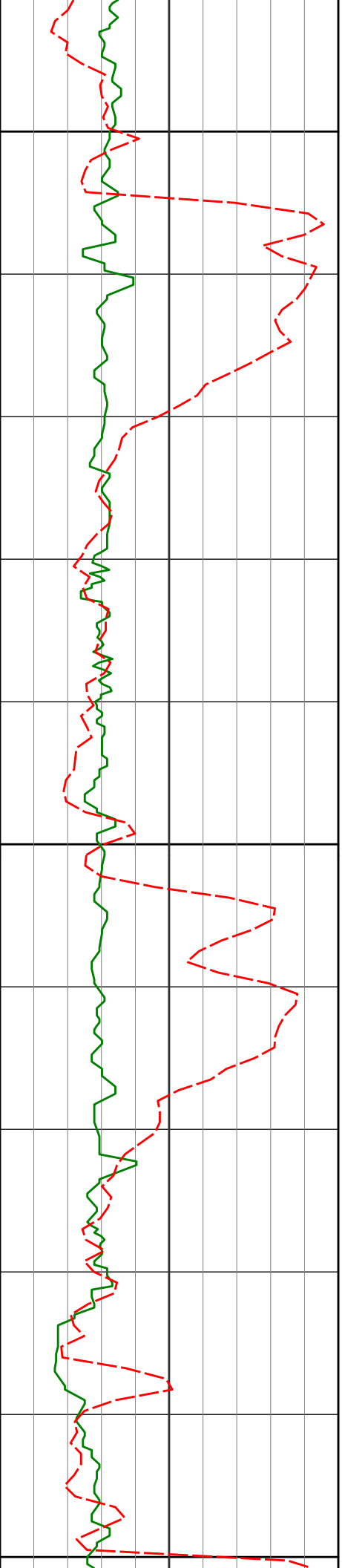


2778'	10.23°	172.87°	2767.70'	-128.16'
2873'	10.43°	172.93°	2861.16'	-145.11'

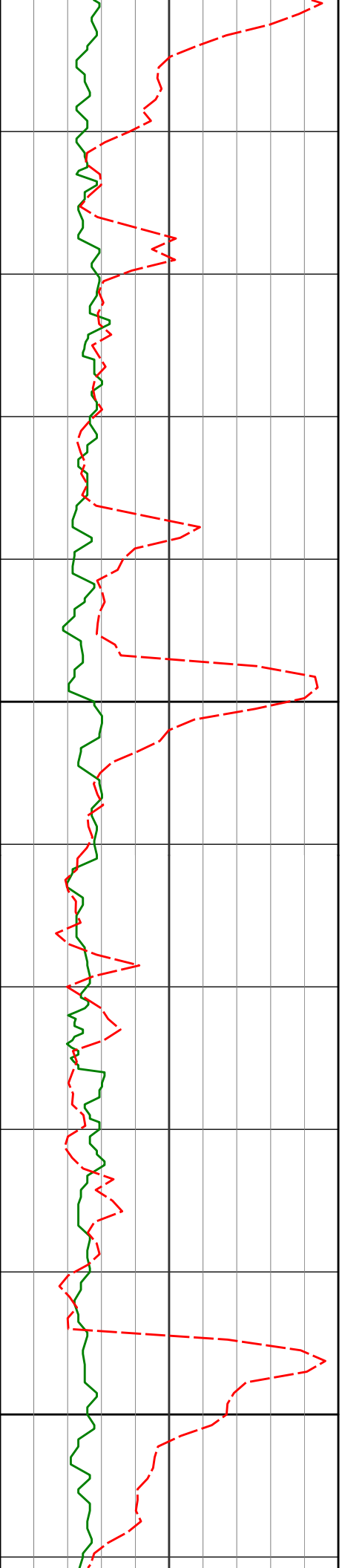
94.33°F
94.33°F
94.33°F
96.42°F
96.42°F
96.42°F
96.42°F



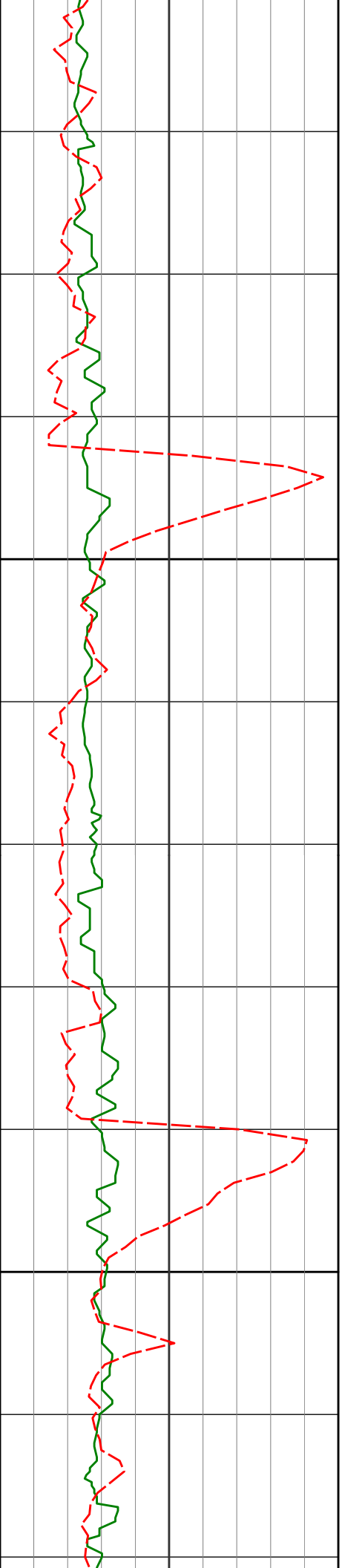
	2968'	10.14°	171.78°	2954.63'	-161.96'	96.62°F
3000						98.51°F
						98.51°F
	3063'	9.67°	169.96°	3048.22'	-178.13'	98.64°F
						100.62°F
3100						
						100.62°F
	3157'	9.09°	166.74°	3140.96'	-193.19'	
						100.62°F



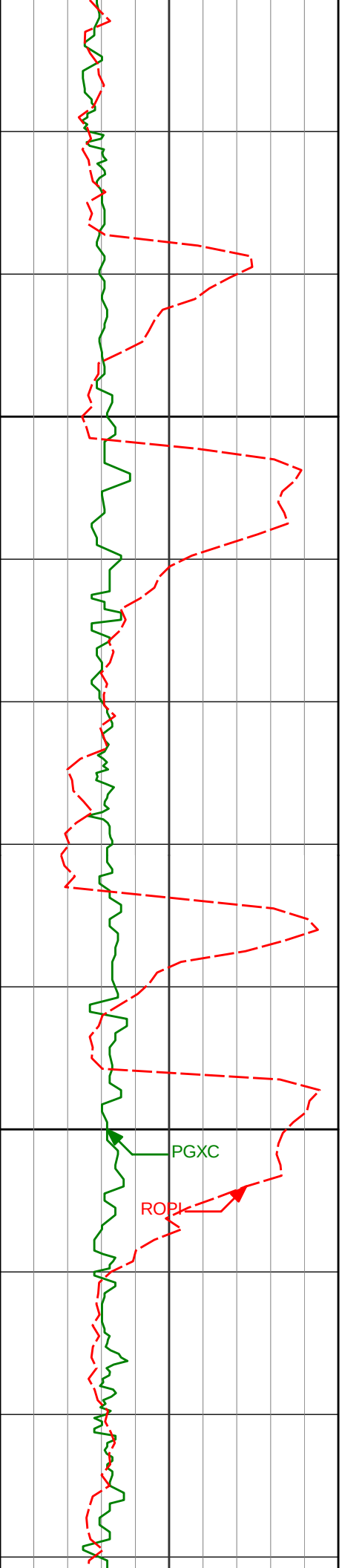
					100.62°F
					101.25°F
3252'	9.39°	171.05°	3234.73'	-208.19'	
					102.56°F
					102.72°F
					102.72°F
3347'	9.66°	181.39°	3328.42'	-223.83'	
					104.83°F
					104.83°F



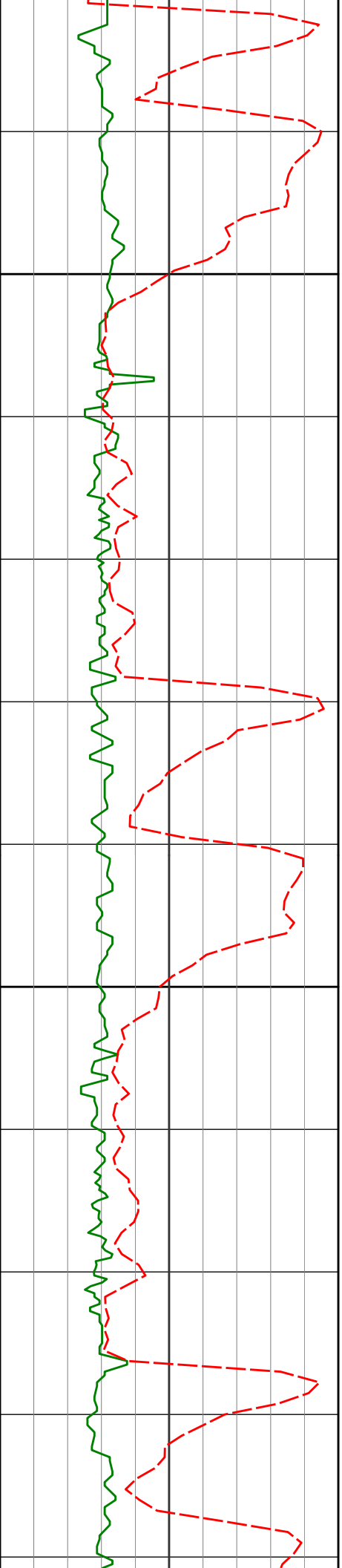
					104.83°F
3441'	10.78°	180.60°	3420.93'	-240.51'	
					104.83°F
					104.83°F
					104.83°F
3536'	11.12°	178.49°	3514.20'	-258.56'	
					106.97°F
					107.88°F



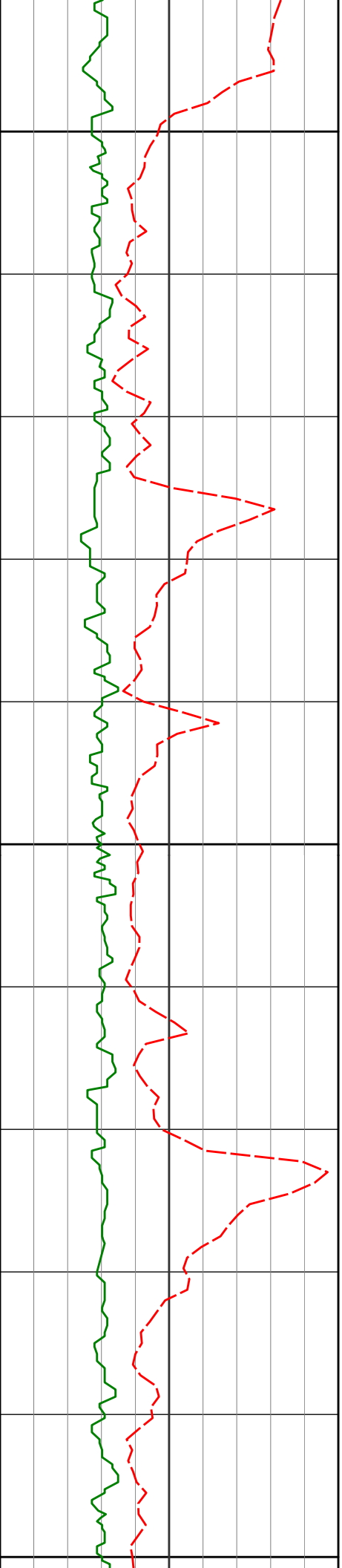
3631'	11.52°	176.07°	3607.35'	-277.20'	109.09°F
					109.09°F
					109.09°F
3725'	11.82°	174.95°	3699.41'	-296.17'	
					111.24°F
					111.24°F
3820'	11.74°	172.74°	3792.41'	-315.48'	113.40°F
					113.40°F



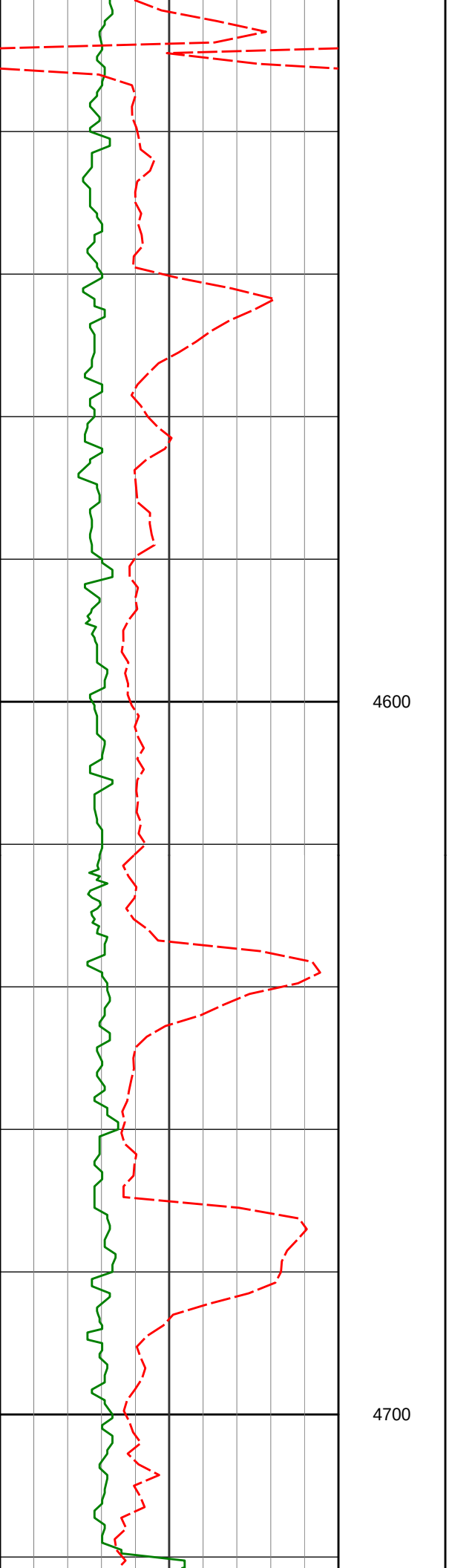
						112.66°F
3900						111.24°F
	3914'	9.55°	169.63°	3884.78'	-332.68'	
						113.40°F
						113.40°F
						113.57°F
4000						
	4009'	6.81°	168.35°	3978.81'	-345.99'	
						114.90°F
						113.40°F



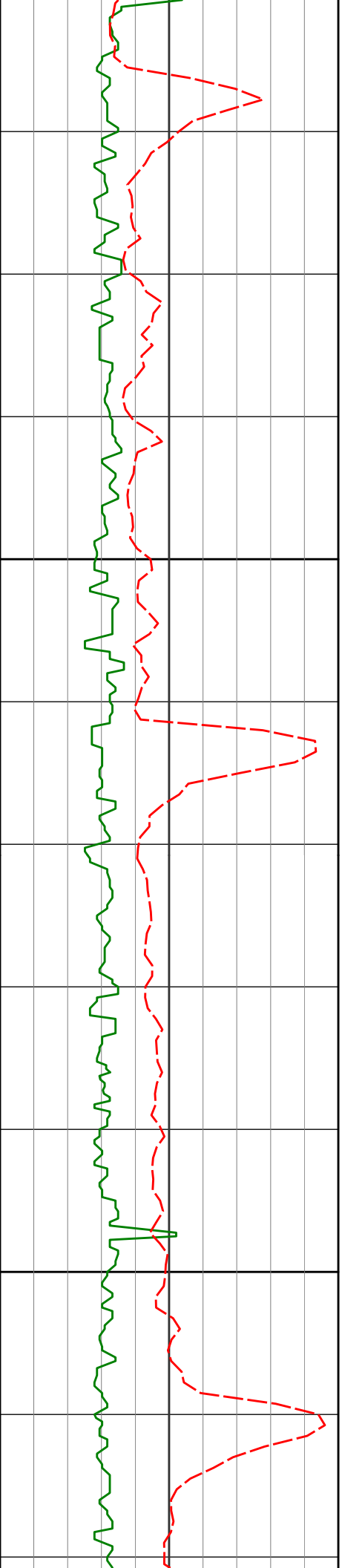
4100	4104'	5.02°	172.77°	4073.30'	-355.65'	113.40°F
						115.56°F
						115.56°F
						115.56°F
4200	4198'	3.37°	174.27°	4167.05'	-362.49'	117.73°F
						117.73°F
						117.73°F



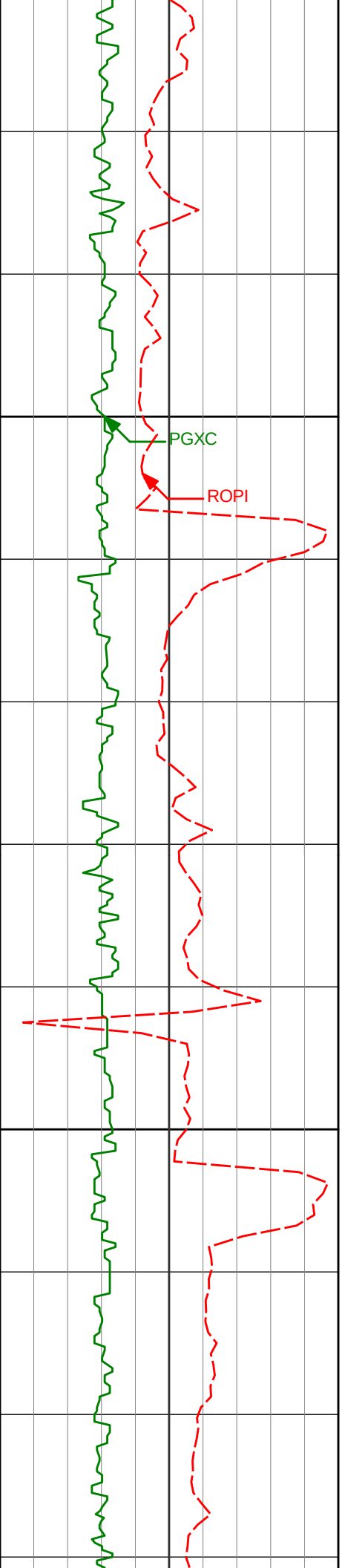
4293'	1.04°	106.21°	4261.98'	-365.53'	117.73°F
					117.73°F
					118.80°F
4388'	1.23°	82.93°	4356.96'	-365.67'	119.91°F
					122.11°F
					122.11°F
4483'	0.85°	75.70°	4451.95'	-365.40'	122.11°F
					123.51°F



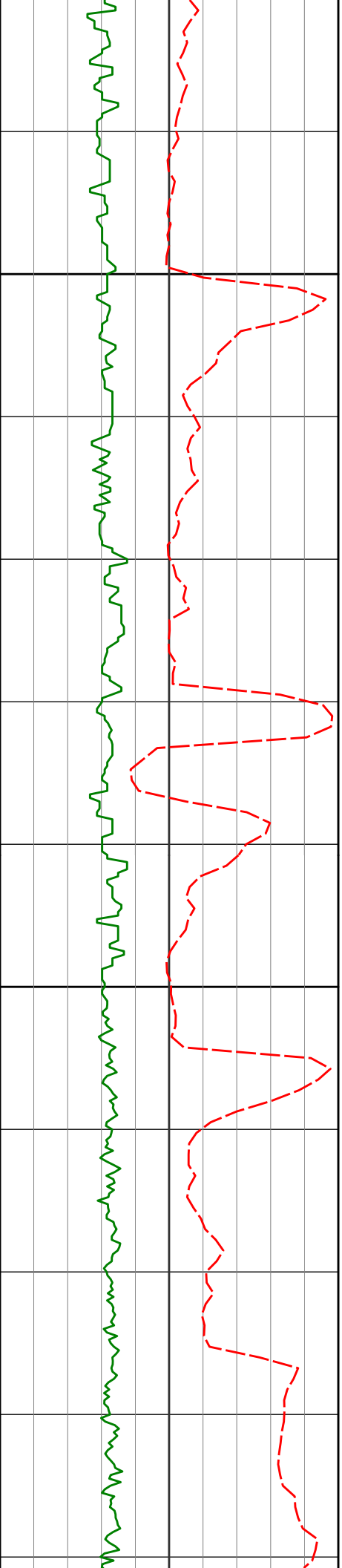
					124.30°F
					126.52°F
4578'	1.26°	77.74°	4546.93'	-365.03'	
					126.52°F
4600					
					126.29°F
					124.30°F
4672'	0.35°	158.86°	4640.92'	-365.10'	
					126.52°F
4700					
					126.52°F



					128.73°F
4767'	0.75°	156.46°	4735.92'	-365.94'	128.73°F
4800					130.96°F
					130.96°F
4862'	1.14°	149.42°	4830.90'	-367.33'	130.96°F
					133.20°F
4900					
					133.20°F

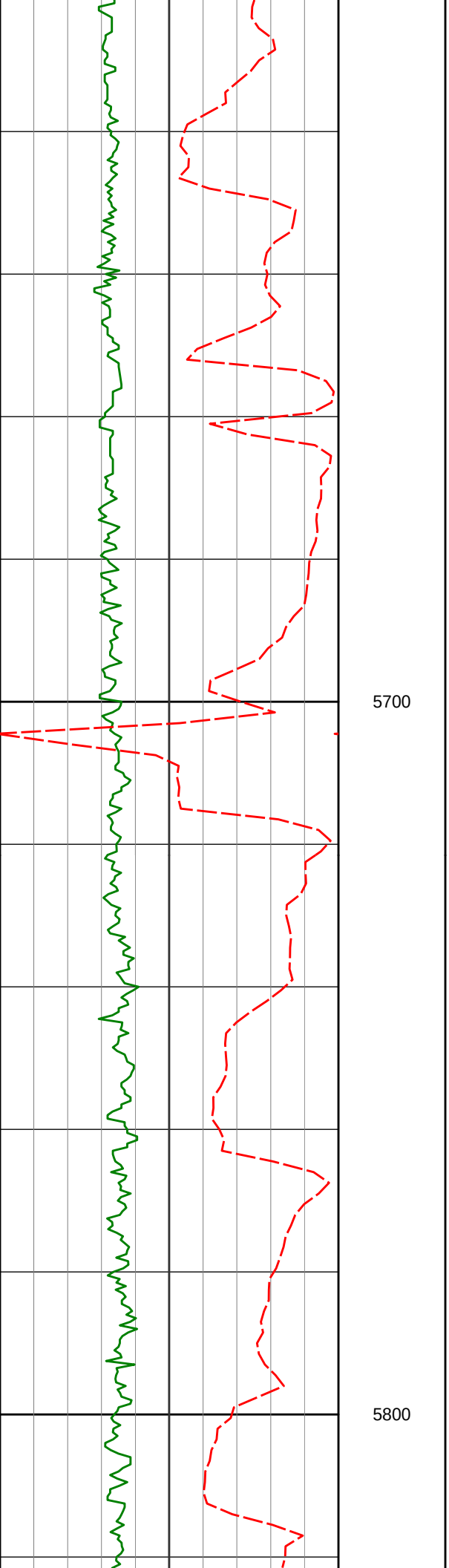


					133.07°F
4957'	0.83°	134.08°	4925.89'	-368.64'	
					131.87°F
5000					
					133.20°F
					133.20°F
5052'	0.84°	142.68°	5020.88'	-369.69'	
					133.20°F
5100					
					134.97°F
					135.45°F
5146'	0.80°	132.02°	5114.87'	-370.69'	
					135.45°F

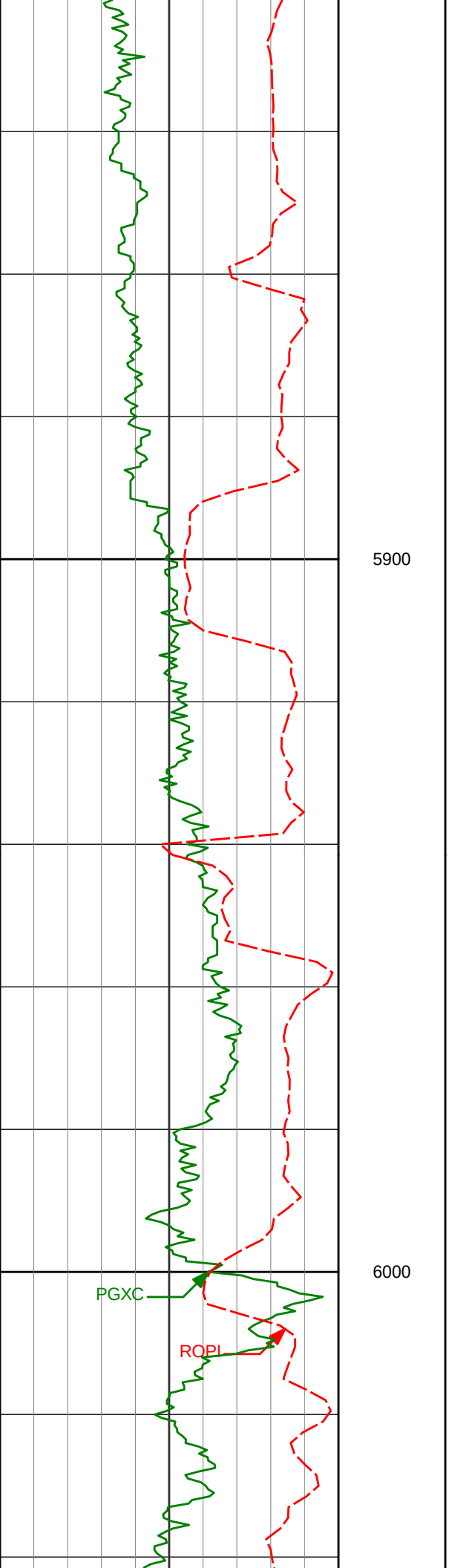


					135.45°F
					135.45°F
5241'	0.59°	160.43°	5209.86'	-371.61'	
					136.23°F
					136.15°F
					135.62°F
5336'	0.51°	99.57°	5304.86'	-372.15'	
					136.29°F
					137.77°F

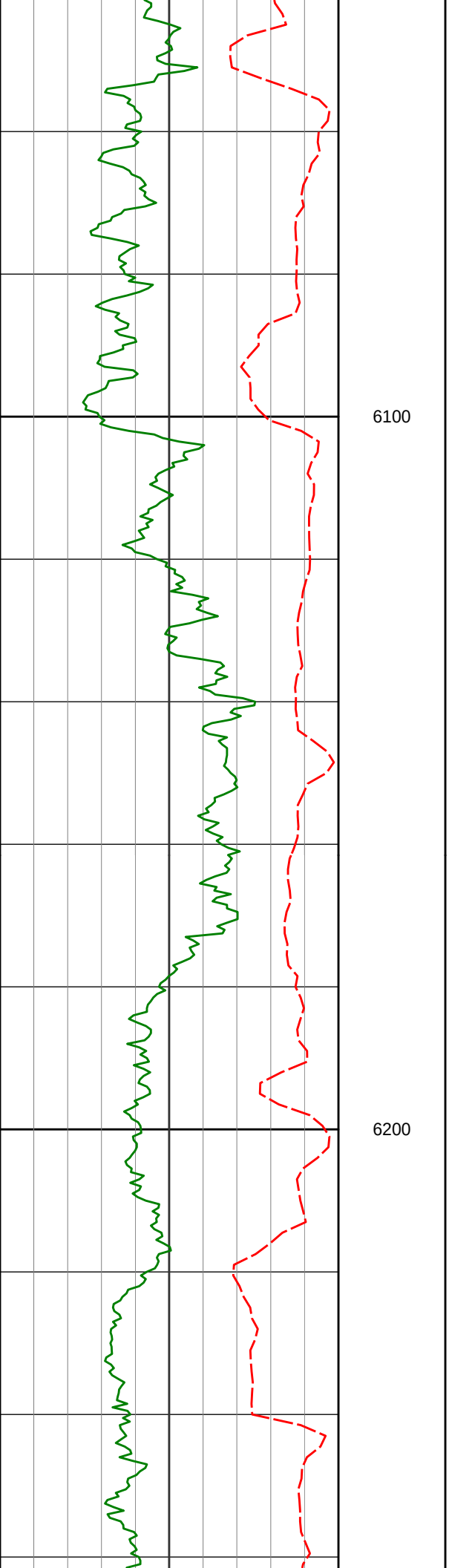
					139.23°F
5430'	15.36°	21.75°	5397.73'	-360.67'	139.70°F
					140.52°F
5477'	19.23°	14.86°	5442.60'	-347.47'	
					142.25°F
					142.25°F
5525'	21.19°	12.72°	5487.64'	-331.43'	
					142.53°F
					143.97°F



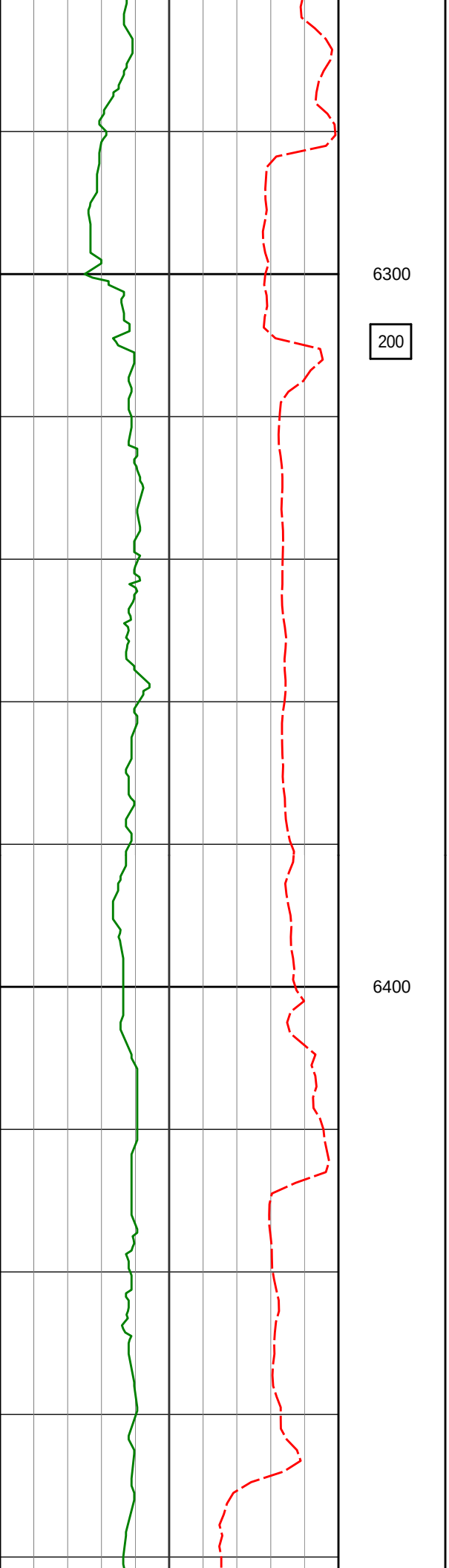
					144.54°F
5620'	28.20°	4.88°	5573.92'	-292.36'	
					144.81°F
5667'	31.15°	4.29°	5614.75'	-269.20'	
					146.20°F
					146.61°F
5714'	33.74°	6.35°	5654.41'	-244.14'	
					147.04°F
					148.00°F
5761'	35.46°	2.58°	5693.10'	-217.58'	
					149.14°F
5809'	39.54°	356.66°	5731.19'	-188.40'	
					149.25°F



	5856'	46.26°	355.86°	5765.60'	-156.46'	151.05°F
						151.01°F
5900	5904'	50.23°	355.25°	5797.56'	-120.73'	151.47°F
						151.47°F
	5951'	53.71°	353.96°	5826.51'	-83.83'	
						151.55°F
6000	5999'	58.87°	352.89°	5853.14'	-44.11'	151.85°F
						151.47°F



6046'	61.13°	354.65°	5876.64'	-3.58'	151.52°F
6094'	64.74°	354.64°	5898.48'	39.03'	152.12°F
6141'	72.15°	357.01°	5915.74'	82.64'	153.00°F
6188'	79.68°	1.89°	5927.17'	128.18'	153.51°F
6253'	84.45°	0.98°	5936.14'	192.48'	156.44°F
					156.67°F
					157.10°F



158.05°F

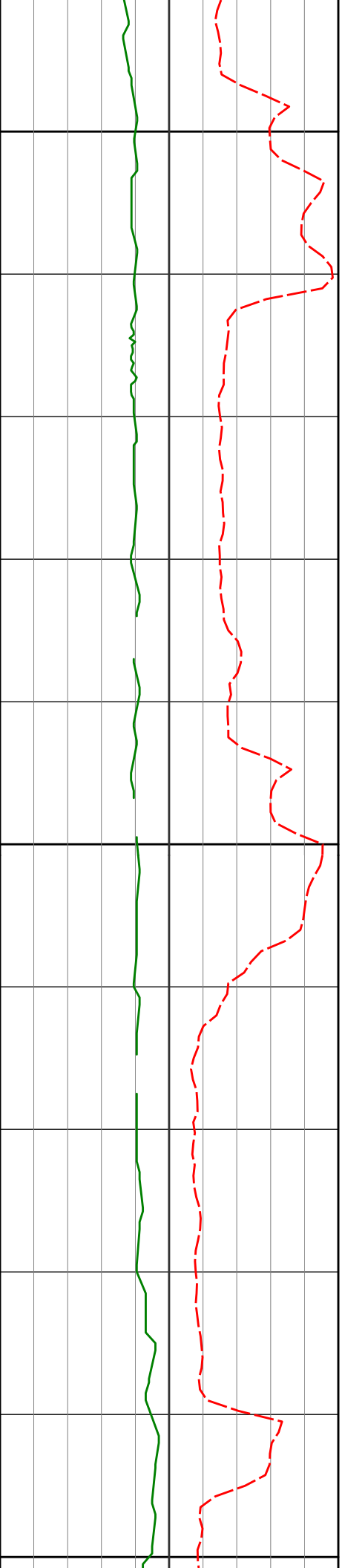
158.56°F

158.56°F

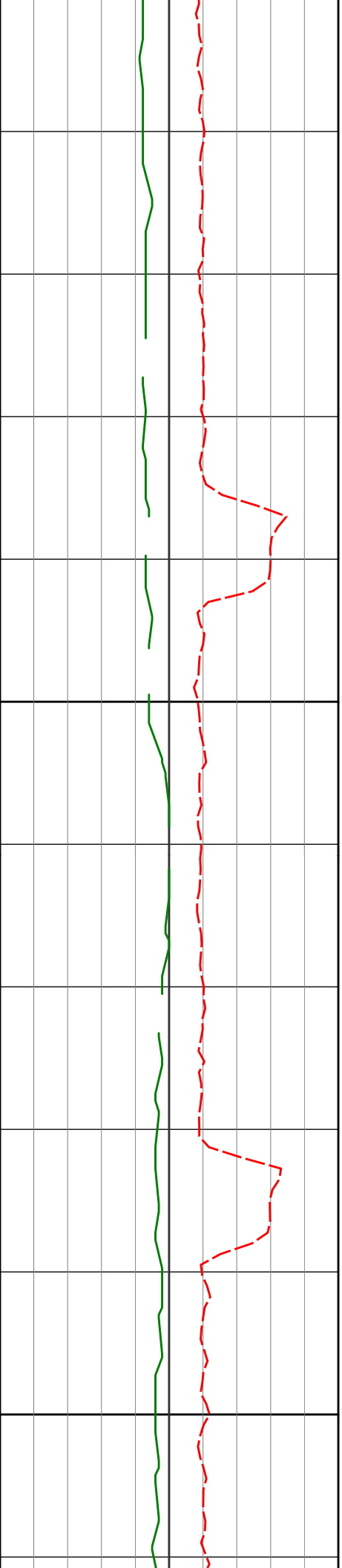
154.34°F

6427' 88.21° 0.97° 5947.28' 365.99'

154.34°F



					154.34°F
6520'	89.69°	359.11°	5948.98'	458.96'	
					154.34°F
					158.56°F
6611'	90.15°	357.09°	5949.10'	549.94'	
					158.56°F
					162.78°F



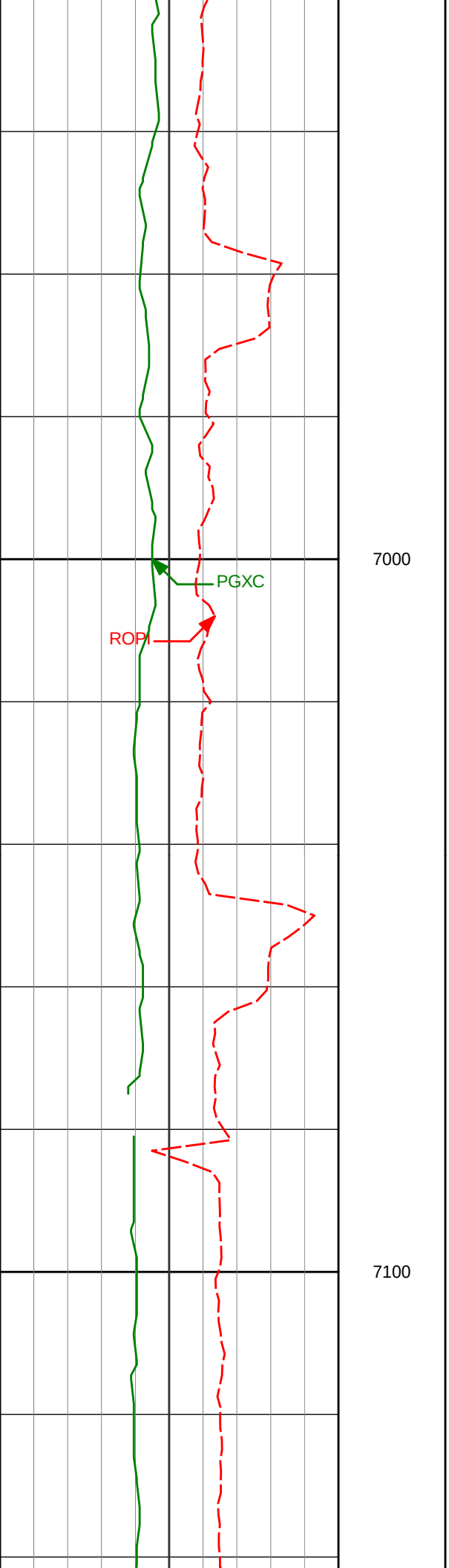
6703'	89.66°	356.32°	5949.25'	641.86'	162.78°F
6796'	89.78°	357.00°	5949.70'	734.78'	162.78°F
6888'	90.22°	356.96°	5949.70'	826.72'	167.00°F

6800

6900

162.78°F

167.00°F



171.22°F

6980' 90.95° 357.14° 5948.76' 918.66'

171.22°F

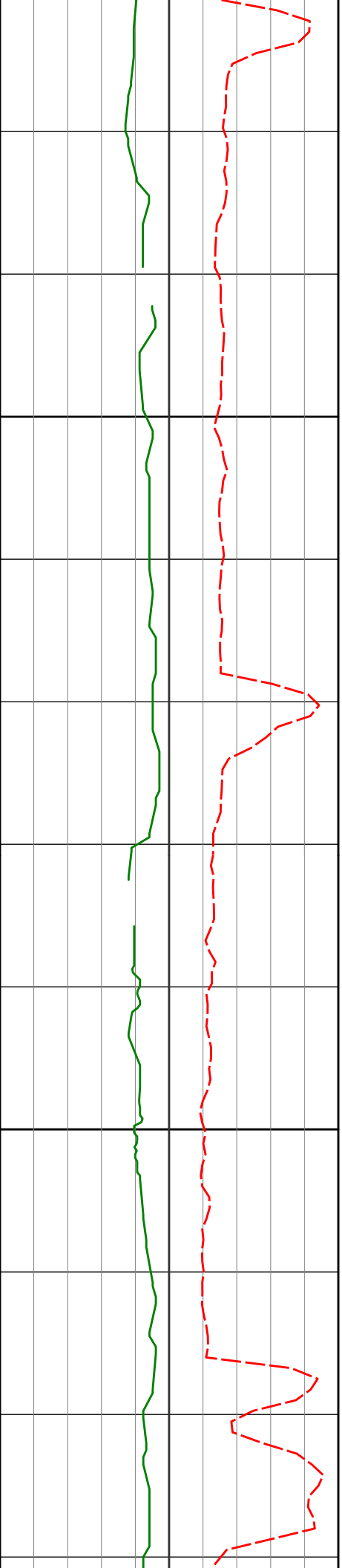
7000

7075' 89.94° 356.89° 5948.02' 1013.59'

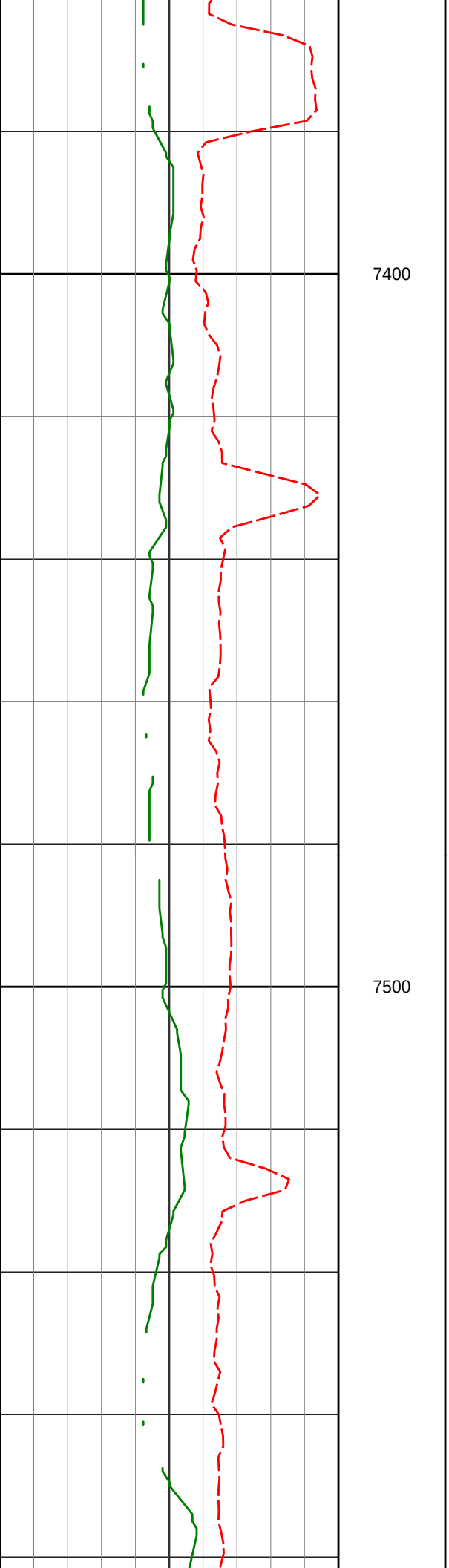
171.22°F

7100

171.22°F



7170'	89.20°	355.69°	5948.74'	1108.48'	175.44°F
7200					175.44°F
7264'	88.58°	354.85°	5950.56'	1202.25'	179.66°F
7300					179.66°F
					175.44°F



175.44°F

179.66°F

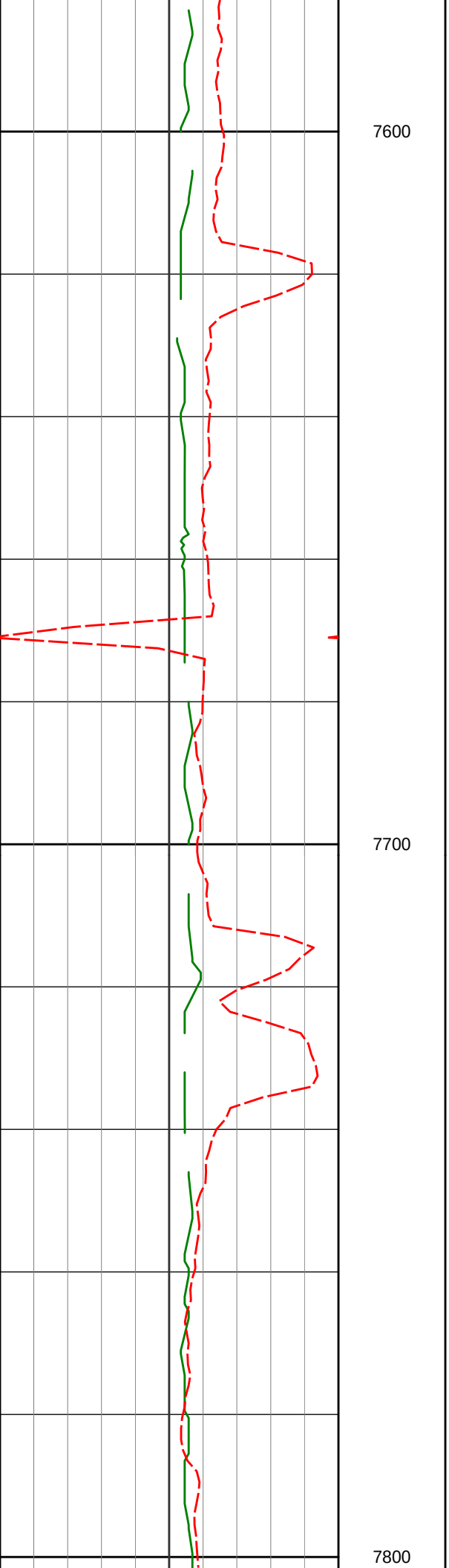
7454'	90.80°	356.23°	5951.58'	1391.87'

179.66°F

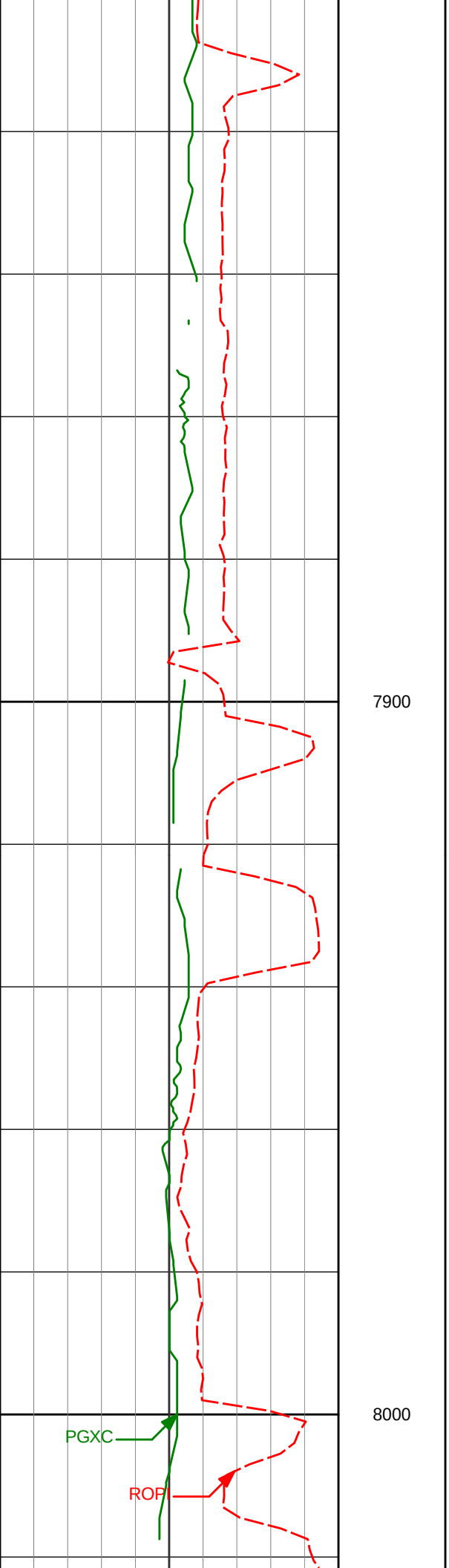
183.88°F

7548'	89.63°	357.33°	5951.22'	1485.79'

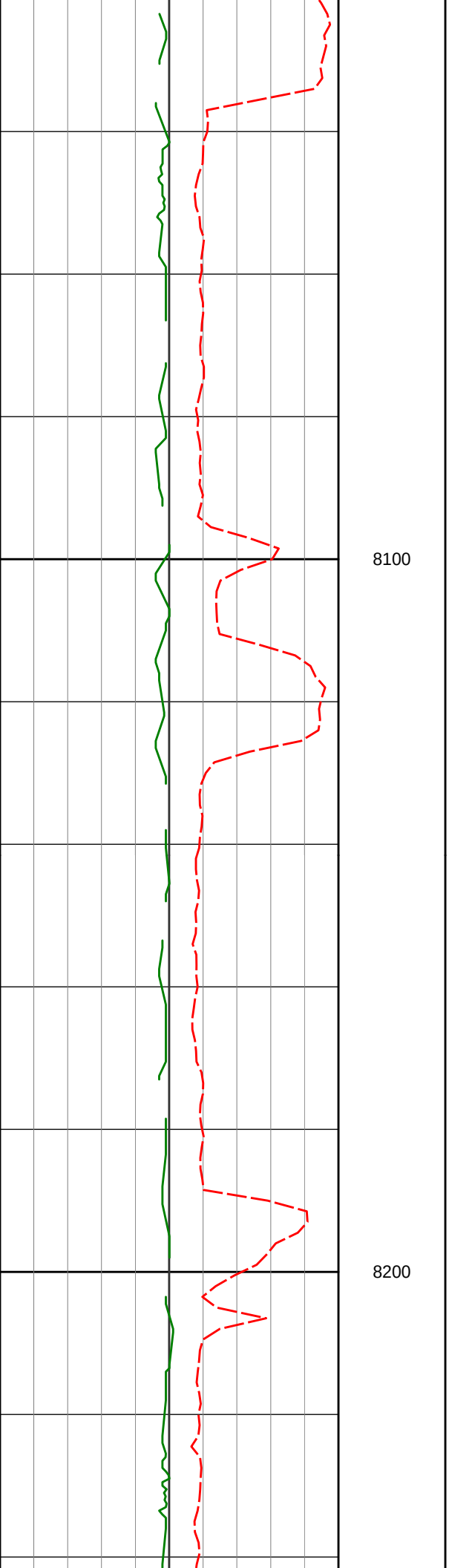
183.88°F



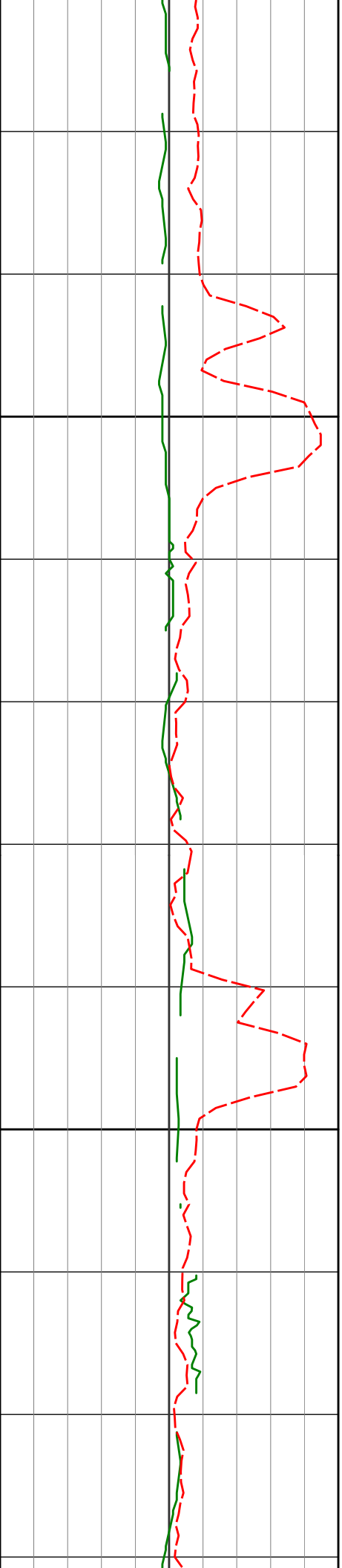
7643'	89.14°	357.40°	5952.25'	1580.75'	183.88°F
					183.88°F
7738'	90.86°	357.59°	5952.24'	1675.71'	188.09°F
					188.09°F



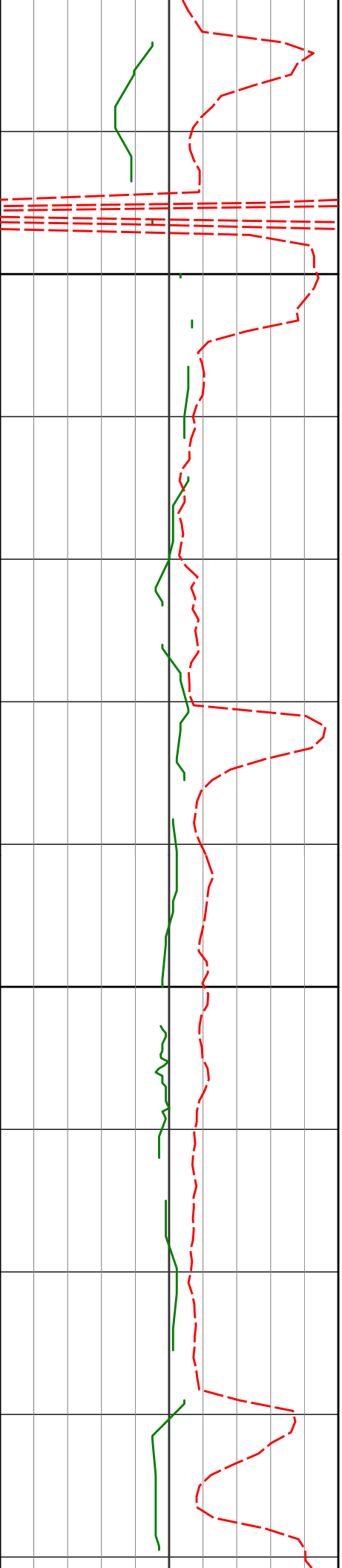
7833'	89.32°	356.55°	5952.09'	1770.65'	188.09°F
					133.31°F
					82.62°F
7927'	89.57°	356.43°	5953.00'	1864.55'	193.67°F
					195.17°F
					188.09°F



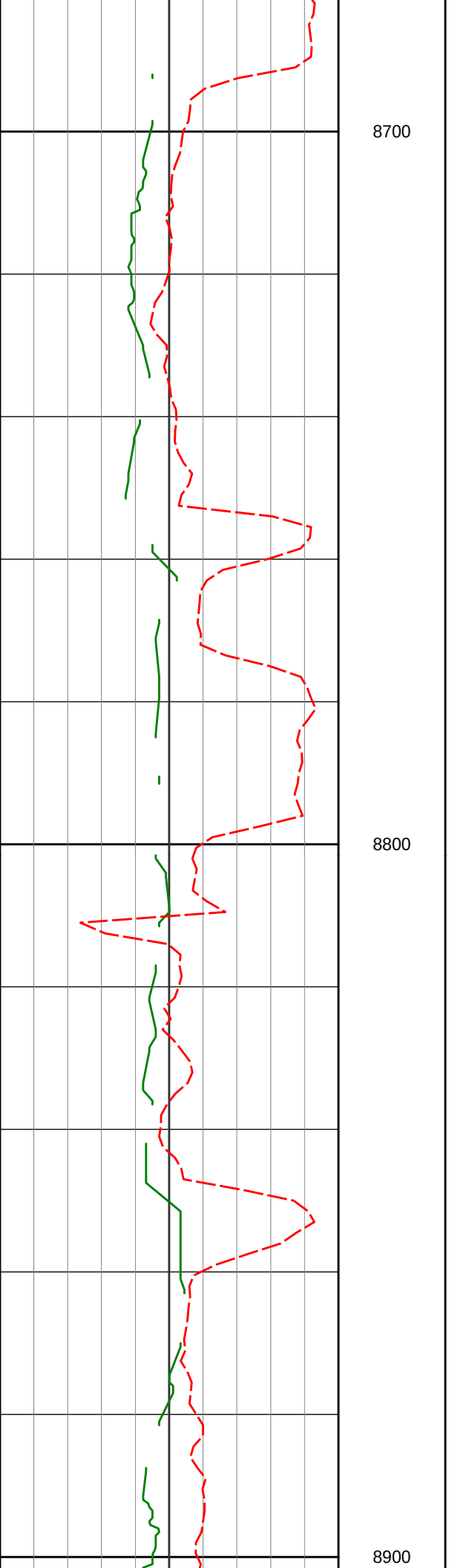
8022'	90.37°	356.03°	5953.05'	1959.43'	
					188.09°F
8100					188.09°F
8117'	90.49°	359.09°	5952.34'	2054.38'	
					188.09°F
8200					
8211'	90.25°	358.11°	5951.73'	2148.38'	
					192.31°F



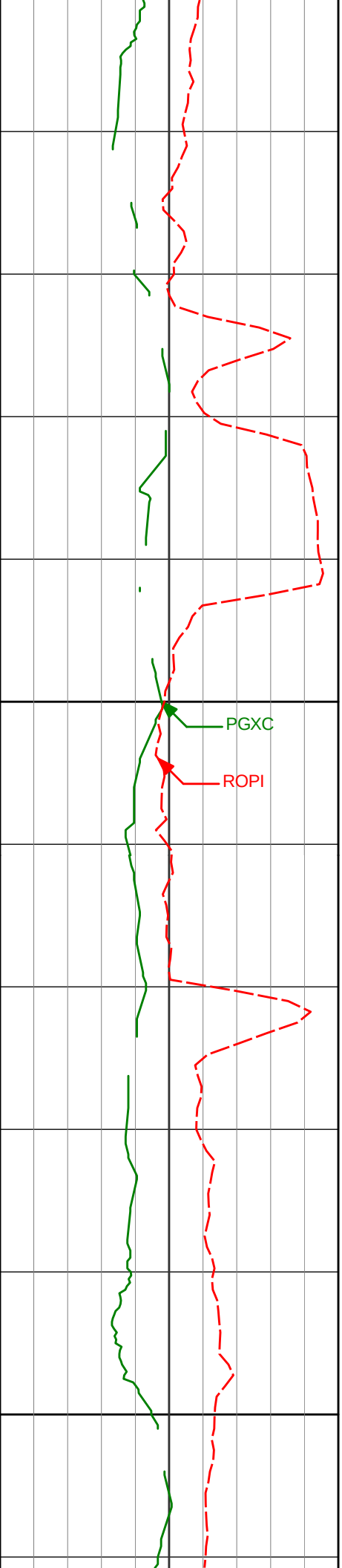
						192.31°F
						192.31°F
8300						
	8306'	90.86°	357.72°	5950.81'	2243.35'	194.42°F
						196.53°F
8400	8401'	91.79°	357.66°	5948.61'	2338.30'	196.53°F
						196.53°F



					196.53°F
8495'	90.71°	357.30°	5946.57'	2432.24'	
					196.53°F
					196.53°F
8590'	89.82°	356.81°	5946.13'	2527.18'	
					196.53°F
					200.75°F

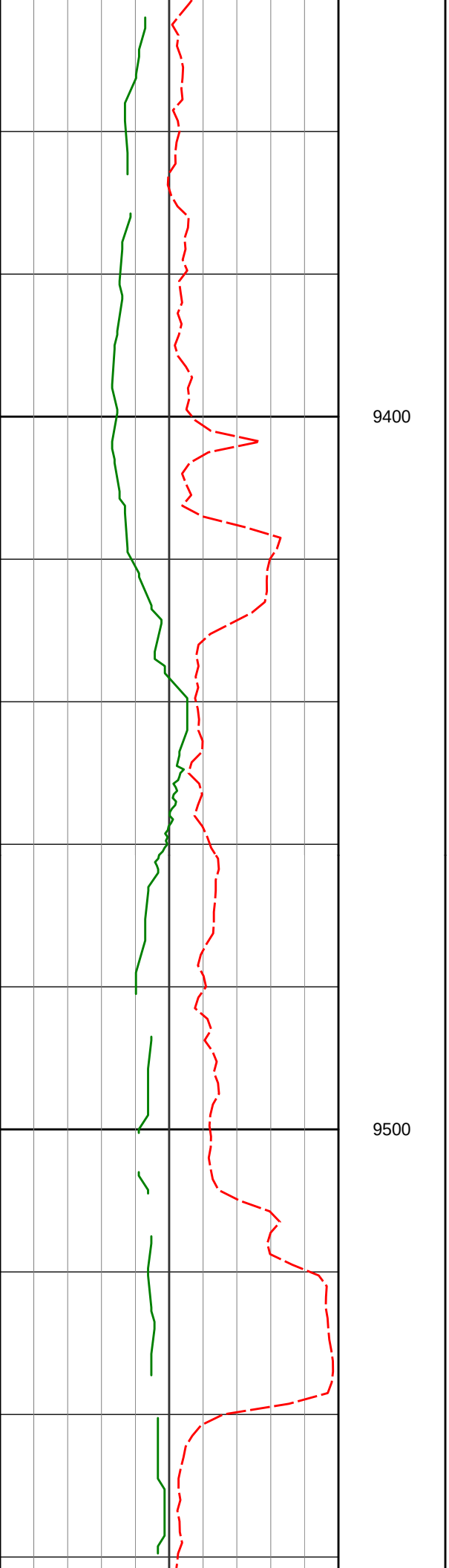


8685'	89.97°	356.88°	5946.31'	2622.11'	
					200.75°F
					200.75°F
8780'	90.46°	357.06°	5945.95'	2717.04'	
					200.75°F
8875'	91.63°	357.34°	5944.21'	2811.98'	
					200.75°F

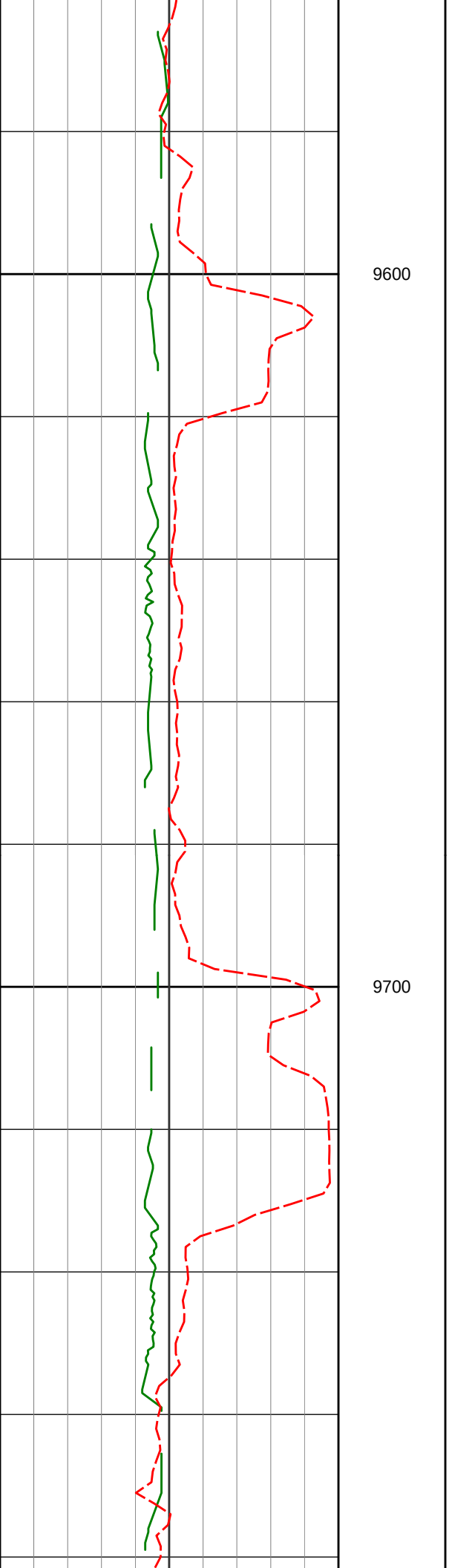


						200.75°F
	8969'	92.03°	358.77°	5941.21'	2905.91'	200.75°F
9000						200.75°F
	9064'	92.68°	357.96°	5937.30'	3000.82'	186.35°F
9100						105.46°F

9159'	91.33°	358.36°	5933.98'	3095.75'	196.53°F
					196.53°F
9200					
					196.53°F
9254'	91.11°	0.14°	5931.96'	3190.72'	
					196.53°F
9300					
					196.53°F



9349'	91.63°	359.77°	5929.68'	3285.69'	
					196.53°F
					200.75°F
9443'	91.85°	359.10°	5926.83'	3379.64'	
					200.75°F
9538'	89.51°	358.80°	5925.70'	3474.63'	
					196.53°F



196.53°F

200.75°F

9633'	88.92°	357.82°	5927.01'	3569.61'

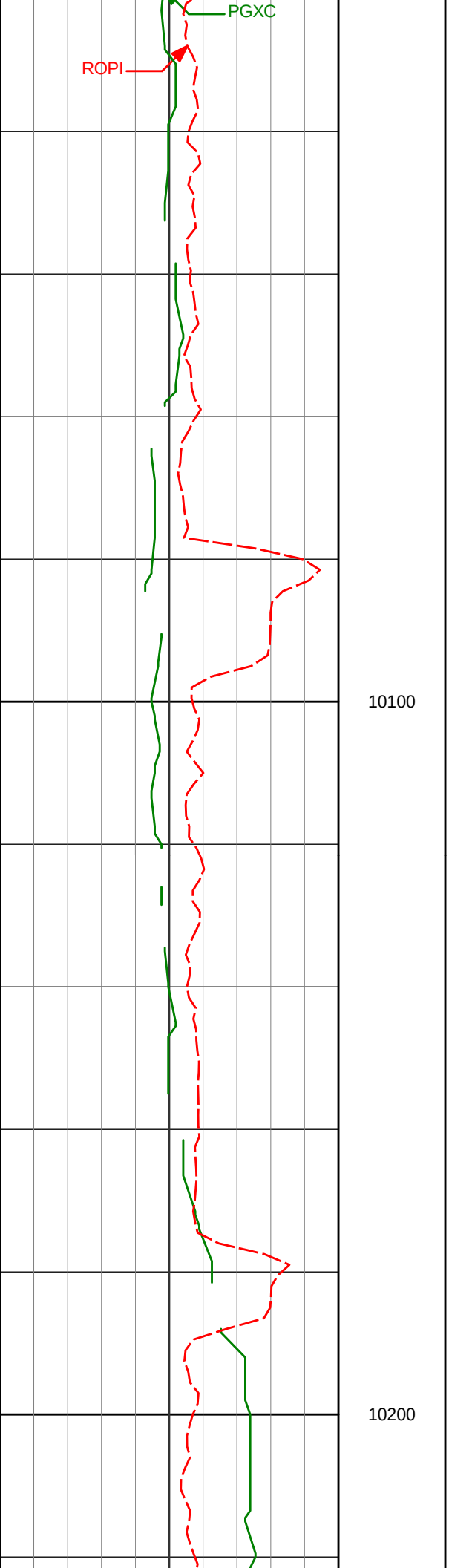
200.75°F

200.75°F

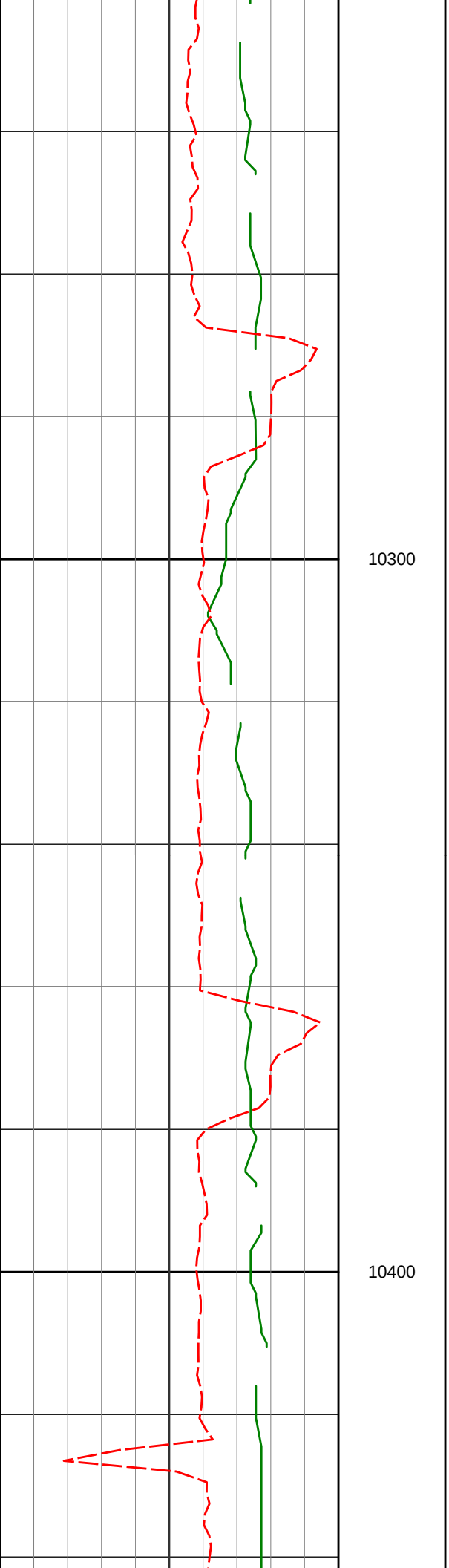
9728'	88.43°	358.50°	5929.20'	3664.57'

200.75°F

					200.75°F
9823'	90.09°	0.60°	5930.43'	3759.55'	
					200.75°F
					204.97°F
9918'	90.77°	0.06°	5929.71'	3854.52'	
					204.97°F
					209.19°F



	10012'	90.71°	359.51°	5928.50'	3948.51'	209.19°F
10100						
	10107'	91.29°	359.39°	5926.84'	4043.49'	209.19°F
						209.19°F
10200						
	10202'	91.29°	358.94°	5924.69'	4138.46'	213.41°F



213.41°F

213.41°F

10297' 90.83° 358.24° 5922.93' 4233.44'

10300

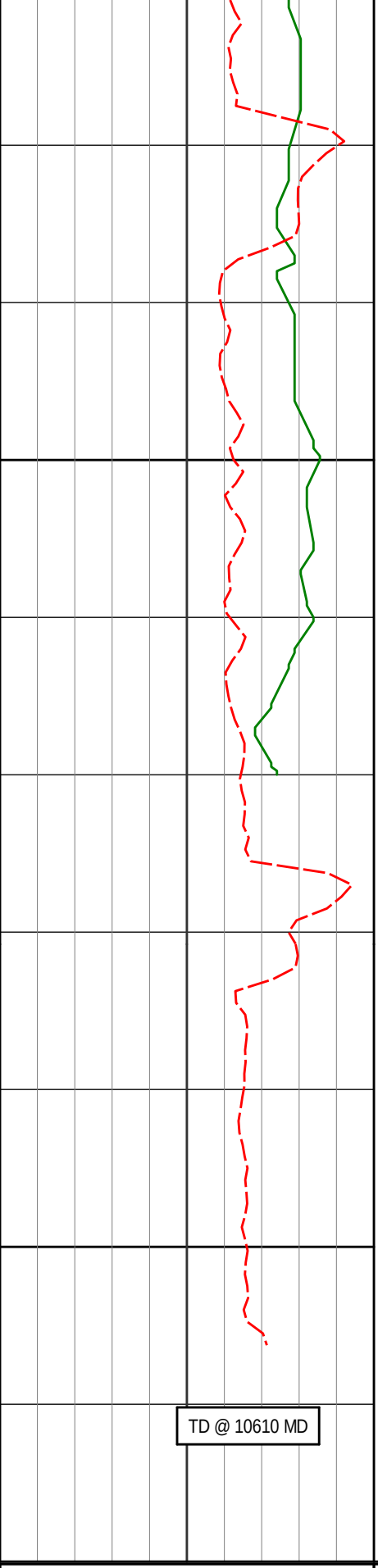
213.41°F

213.41°F

10391' 91.51° 358.80° 5921.01' 4327.42'

10400

213.41°F



Depth	Inc	Azi	TVD	V.S.	Temp
10486'	90.43°	357.72°	5919.40'	4422.39'	213.41°F
10541'	89.82°	357.19°	5919.28'	4477.37'	215.27°F
10610'	89.82°	357.19°	5919.50'	4546.33'	

Inst Rate of Penetration
ROPI
feet per hr
1K 0

PCG GR XHi-Range RT BCor
PGXRC-T
api
0 300

Depth
TVD
ft

10500

10600

HALLIBURTON

DIRECTIONAL SURVEY REPORT

Noble Energy
Kevin LC26-735
Wattenberg
Weld Colorado
USA
CA-XX-0902241010
Tied in @ Surface
First two surveys from 3rd party.

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
249.00	0.60	285.42	249.00	0.35 N	1.26 W	0.37	0.24
493.00	1.00	185.22	492.98	1.43 S	2.68 W	-1.39	0.51
735.00	0.33	348.85	734.97	2.85 S	3.01 W	-2.80	0.55
827.00	0.75	339.03	826.97	2.03 S	3.28 W	-1.97	0.46
919.00	0.28	340.61	918.96	1.25 S	3.57 W	-1.19	0.51
1011.00	0.28	347.39	1010.96	0.82 S	3.69 W	-0.76	0.04
1103.00	0.25	345.44	1102.96	0.41 S	3.79 W	-0.34	0.03
1212.00	0.35	312.70	1211.96	0.05 N	4.09 W	0.11	0.18
1303.00	0.38	302.75	1302.96	0.40 N	4.55 W	0.47	0.08
1487.00	0.22	291.30	1486.95	0.86 N	5.40 W	0.95	0.09
1579.00	0.43	248.95	1578.95	0.80 N	5.89 W	0.90	0.33
1671.00	0.68	251.13	1670.95	0.50 N	6.72 W	0.61	0.27
1763.00	0.78	257.80	1762.94	0.19 N	7.85 W	0.32	0.14
1855.00	1.94	192.91	1854.92	1.46 S	8.81 W	-1.32	1.91
1947.00	3.74	180.61	1946.80	5.99 S	9.19 W	-5.84	2.05
2039.00	6.58	169.19	2038.42	14.17 S	8.23 W	-14.03	3.26
2130.00	7.77	164.10	2128.71	25.20 S	5.57 W	-25.11	1.48
2223.00	10.05	161.48	2220.58	38.95 S	1.27 W	-38.92	2.50
2315.00	9.44	158.77	2311.25	53.59 S	4.01 E	-53.65	0.83
2406.00	9.39	159.63	2401.03	67.50 S	9.30 E	-67.65	0.17
2499.00	9.34	157.93	2492.79	81.60 S	14.77 E	-81.83	0.30
2591.00	9.51	164.37	2583.55	95.84 S	19.62 E	-96.15	1.16
2684.00	10.16	169.83	2675.18	111.31 S	23.14 E	-111.68	1.23
2778.00	10.23	172.87	2767.70	127.76 S	25.64 E	-128.16	0.58
2873.00	10.43	172.93	2861.16	144.67 S	27.75 E	-145.11	0.21
2968.00	10.14	171.78	2954.63	161.49 S	30.00 E	-161.96	0.38
3063.00	9.67	169.96	3048.22	177.62 S	32.59 E	-178.13	0.59
3157.00	9.09	166.74	3140.96	192.63 S	35.67 E	-193.19	0.84
3252.00	9.39	171.05	3234.73	207.59 S	38.60 E	-208.19	0.80
3347.00	9.66	181.39	3328.42	223.21 S	39.61 E	-223.83	1.82
3441.00	10.78	180.60	3420.93	239.90 S	39.32 E	-240.51	1.20
3536.00	11.12	178.49	3514.20	257.95 S	39.47 E	-258.56	0.55
3631.00	11.52	176.07	3607.35	276.57 S	40.37 E	-277.20	0.65
3725.00	11.82	174.95	3699.41	295.53 S	41.86 E	-296.17	0.40
3820.00	11.74	172.74	3792.41	314.80 S	43.93 E	-315.48	0.48
3914.00	9.55	169.63	3884.78	331.96 S	46.55 E	-332.68	2.41
4009.00	6.81	168.35	3978.81	345.23 S	49.11 E	-345.99	2.90
4104.00	5.02	172.77	4073.30	354.87 S	50.76 E	-355.65	1.94
4198.00	3.37	174.27	4167.05	361.69 S	51.56 E	-362.49	1.76
4293.00	1.04	106.21	4261.98	364.71 S	52.66 E	-365.53	3.30
4388.00	1.23	82.93	4356.96	364.83 S	54.50 E	-365.67	0.52
4483.00	0.85	75.70	4451.95	364.53 S	56.19 E	-365.40	0.42
4578.00	1.26	77.74	4546.93	364.13 S	57.90 E	-365.03	0.44
4672.00	0.35	158.86	4640.92	364.18 S	59.02 E	-365.10	1.34
4767.00	0.75	156.46	4735.92	365.02 S	59.37 E	-365.94	0.42
4862.00	1.14	149.42	4830.90	366.40 S	60.10 E	-367.33	0.43
4957.00	0.83	134.08	4925.89	367.69 S	61.07 E	-368.64	0.42
5052.00	0.84	142.68	5020.88	368.72 S	61.99 E	-369.69	0.13
5146.00	0.80	132.02	5114.87	369.71 S	62.89 E	-370.69	0.17
5241.00	0.59	160.43	5209.86	370.62 S	63.55 E	-371.61	0.42

5336.00	0.51	99.57	5304.86	371.15 S	64.13 E	-372.15	0.59
5430.00	15.36	21.75	5397.73	359.58 S	69.19 E	-360.67	16.24
5477.00	19.23	14.86	5442.60	346.31 S	73.48 E	-347.47	9.30
5525.00	21.19	12.72	5487.64	330.20 S	77.42 E	-331.43	4.36
5620.00	28.20	4.88	5573.92	291.03 S	83.12 E	-292.36	8.13
5667.00	31.15	4.29	5614.75	267.84 S	84.97 E	-269.20	6.32
5714.00	33.74	6.35	5654.41	242.74 S	87.33 E	-244.14	5.99
5761.00	35.46	2.58	5693.10	216.14 S	89.39 E	-217.58	5.83
5809.00	39.54	356.66	5731.19	186.96 S	89.12 E	-188.40	11.34
5856.00	46.26	355.86	5765.60	155.05 S	87.02 E	-156.46	14.35
5904.00	50.23	355.25	5797.56	119.36 S	84.25 E	-120.73	8.31
5951.00	53.71	353.96	5826.51	82.51 S	80.76 E	-83.83	7.71
5999.00	58.87	352.89	5853.14	42.86 S	76.18 E	-44.11	10.93
6046.00	61.13	354.65	5876.64	2.40 S	71.77 E	-3.58	5.79
6094.00	64.74	354.64	5898.48	40.14 N	67.78 E	39.03	7.52
6141.00	72.15	357.01	5915.74	83.71 N	64.62 E	82.64	16.46
6188.00	79.68	1.89	5927.17	129.25 N	64.21 E	128.18	18.92
6253.00	84.45	0.98	5936.14	193.58 N	65.82 E	192.48	7.46
6427.00	88.21	0.97	5947.28	367.17 N	68.77 E	365.99	2.16
6520.00	89.69	359.11	5948.98	460.15 N	68.83 E	458.96	2.55
6611.00	90.15	357.09	5949.10	551.09 N	65.82 E	549.94	2.27
6703.00	89.66	356.32	5949.25	642.94 N	60.53 E	641.86	1.00
6796.00	89.78	357.00	5949.70	735.78 N	55.11 E	734.78	0.74
6888.00	90.22	356.96	5949.70	827.65 N	50.27 E	826.72	0.47
6980.00	90.95	357.14	5948.76	919.53 N	45.53 E	918.66	0.83
7075.00	89.94	356.89	5948.02	1014.39 N	40.59 E	1013.59	1.10
7170.00	89.20	355.69	5948.74	1109.19 N	34.45 E	1108.48	1.49
7264.00	88.58	354.85	5950.56	1202.85 N	26.70 E	1202.25	1.11
7454.00	90.80	356.23	5951.58	1392.26 N	11.91 E	1391.87	1.38
7548.00	89.63	357.33	5951.22	1486.10 N	6.63 E	1485.79	1.71
7643.00	89.14	357.40	5952.25	1581.00 N	2.26 E	1580.75	0.52
7738.00	90.86	357.59	5952.24	1675.90 N	1.89 W	1675.71	1.83
7833.00	89.32	356.55	5952.09	1770.77 N	6.75 W	1770.65	1.96
7927.00	89.57	356.43	5953.00	1864.59 N	12.51 W	1864.55	0.29
8022.00	90.37	356.03	5953.05	1959.39 N	18.75 W	1959.43	0.94
8117.00	90.49	359.09	5952.34	2054.29 N	22.80 W	2054.38	3.22
8211.00	90.25	358.11	5951.73	2148.25 N	25.09 W	2148.38	1.07
8306.00	90.86	357.72	5950.81	2243.19 N	28.55 W	2243.35	0.77
8401.00	91.79	357.66	5948.61	2338.08 N	32.38 W	2338.30	0.97
8495.00	90.71	357.30	5946.57	2431.97 N	36.51 W	2432.24	1.21
8590.00	89.82	356.81	5946.13	2526.84 N	41.39 W	2527.18	1.07
8685.00	89.97	356.88	5946.31	2621.70 N	46.62 W	2622.11	0.18
8780.00	90.46	357.06	5945.95	2716.56 N	51.64 W	2717.04	0.55
8875.00	91.63	357.34	5944.21	2811.43 N	56.28 W	2811.98	1.27
8969.00	92.03	358.77	5941.21	2905.33 N	59.47 W	2905.91	1.58
9064.00	92.68	357.96	5937.30	3000.21 N	62.18 W	3000.82	1.09
9159.00	91.33	358.36	5933.98	3095.10 N	65.22 W	3095.75	1.49
9254.00	91.11	0.14	5931.96	3190.06 N	66.47 W	3190.72	1.88
9349.00	91.63	359.77	5929.68	3285.04 N	66.54 W	3285.69	0.67
9443.00	91.85	359.10	5926.83	3378.99 N	67.47 W	3379.64	0.75
9538.00	89.51	358.80	5925.70	3473.96 N	69.22 W	3474.63	2.48
9633.00	88.92	357.82	5927.01	3568.91 N	72.01 W	3569.61	1.20
9728.00	88.43	358.50	5929.20	3663.83 N	75.06 W	3664.57	0.88
9823.00	90.09	0.60	5930.43	3758.81 N	75.80 W	3759.55	2.83
9918.00	90.77	0.06	5929.71	3853.81 N	75.25 W	3854.52	0.92
10012.00	90.71	359.51	5928.50	3947.80 N	75.60 W	3948.51	0.59
10107.00	91.29	359.39	5926.84	4042.78 N	76.51 W	4043.49	0.63
10202.00	91.29	358.94	5924.69	4137.74 N	77.89 W	4138.46	0.47
10297.00	90.83	358.24	5922.93	4232.70 N	80.22 W	4233.44	0.88
10391.00	91.51	358.80	5921.01	4326.65 N	82.65 W	4327.42	0.93
10486.00	90.43	357.72	5919.40	4421.59 N	85.53 W	4422.39	1.61
10541.00	89.82	357.19	5919.28	4476.53 N	87.98 W	4477.37	1.47
10610.00	89.82	357.19	5919.50	4545.45 N	91.36 W	4546.33	0.01

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 359.06 DEGREES (GRID)
A TOTAL CORRECTION OF 7.02 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 10610.00 FEET
IS 4546.37 FEET ALONG 358.85 DEGREES (GRID)

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