



RADIAL ANALYSIS BOND LOG

Baker Atlas

File No: WPX ENERGY

CH090703 FEDERAL NER 523-32

API No: RULISON

05045217760000 GARFIELD State COLORADO

Location

32 6S 93W SHL: 113' FNL x 2571' FWL SEC 5 7S 93W

RU 23-5 PAD BHL: 1756' FSL x 1906' FWL SEC 32 6S 93

NABORS 576 SEC 32 TWP 6S RGE 93W

Other Services

RPM

Permanent Datum GL Elevation 7603 ft

Log Measured From KB 26 ft Above P. D.

Drill Measured From KELLY BUSHING

Elevations

KB 7629 ft

DF

GL 7603 ft

Date	23/SEP/14	
Run	ONE	
Service Order	US090703	
Depth Driller	10386 ft	
Depth Logger	10296 ft	
Bottom Logged Interval	10286 ft	
Top Logged Interval	26 ft	
Time Started	1145	
Time Finished	1500	
Operator Rig Time	3.25 HOURS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	97 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	65 fpm	
Maximum Recorded Temperature	249 degF	
Reference Log	NONE	
Reference Log Date	NA	
Equipment No.	44271	GRAND JCT
Recorded By	FLOYD RENEAU	
Witnessed By	JEFF DUCY	

- FOLD HERE

In making interpretations of logs, our employees will give the customer the benefit of their best judgement. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Borehole Record		
Bit Size	From	To
13.5 in	26 ft	1131 ft
8.75 in	1106 ft	10386 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			26 ft	1131 ft
4.5 in	11.6 lbm/ft	P-110	26 ft	10386 ft

Remarks
All data on this log is shifted using the CCL curve to put the wellhead (top CCL mark) on depth with ground level elevation at the client's request.
The amount of linear shift is -2.0 feet.
Logged with zero PSI at wellhead.
BHT = 249°F
SHORT JOINT 6931' - 6954'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	VDL	1426XA	10218496	CENTRALIZED
1	1	GR/CCL	2459XA	10417457	CENTRALIZED

PRIMARY PRESENTATION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	305.000	usec	31.080	10298.800
RAL	Amp Gate Start Near	195.000	usec	31.080	10298.800
RAL	Amp Gate Start Radial	195.000	usec	31.080	10298.800
RAL	Amp Gate Width Far	25.000	usec	31.080	10298.800
RAL	Amp Gate Width Near	25.000	usec	31.080	10298.800
RAL	Amp Gate Width Radial	25.000	usec	31.080	10298.800
RAL	casing od	4.500	inches	31.080	10298.800
RAL	casing wt	11.600	lbm/ft	31.080	10298.800
RAL	FB Start Far	291.900	usec	31.080	10298.800
RAL	FB Start Near	180.000	usec	31.080	10298.800
RAL	FB Start Radial	180.000	usec	31.080	10298.800
RAL	FB Thresh Far	10.000	mv	31.080	10298.800
RAL	FB Thresh Near	4.000	mv	31.080	10298.800
RAL	FB Thresh Radial	4.000	mv	31.080	10298.800
RAL	Fluid Travel Time	200.000	usec/ft	31.080	10298.361

DEPTH OFFSETS
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-12.360	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	AR8	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-11.360	AFAR	SIG	TT5			
2459XA	-7.250	CCL					
2459XA	-5.390	GR					

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

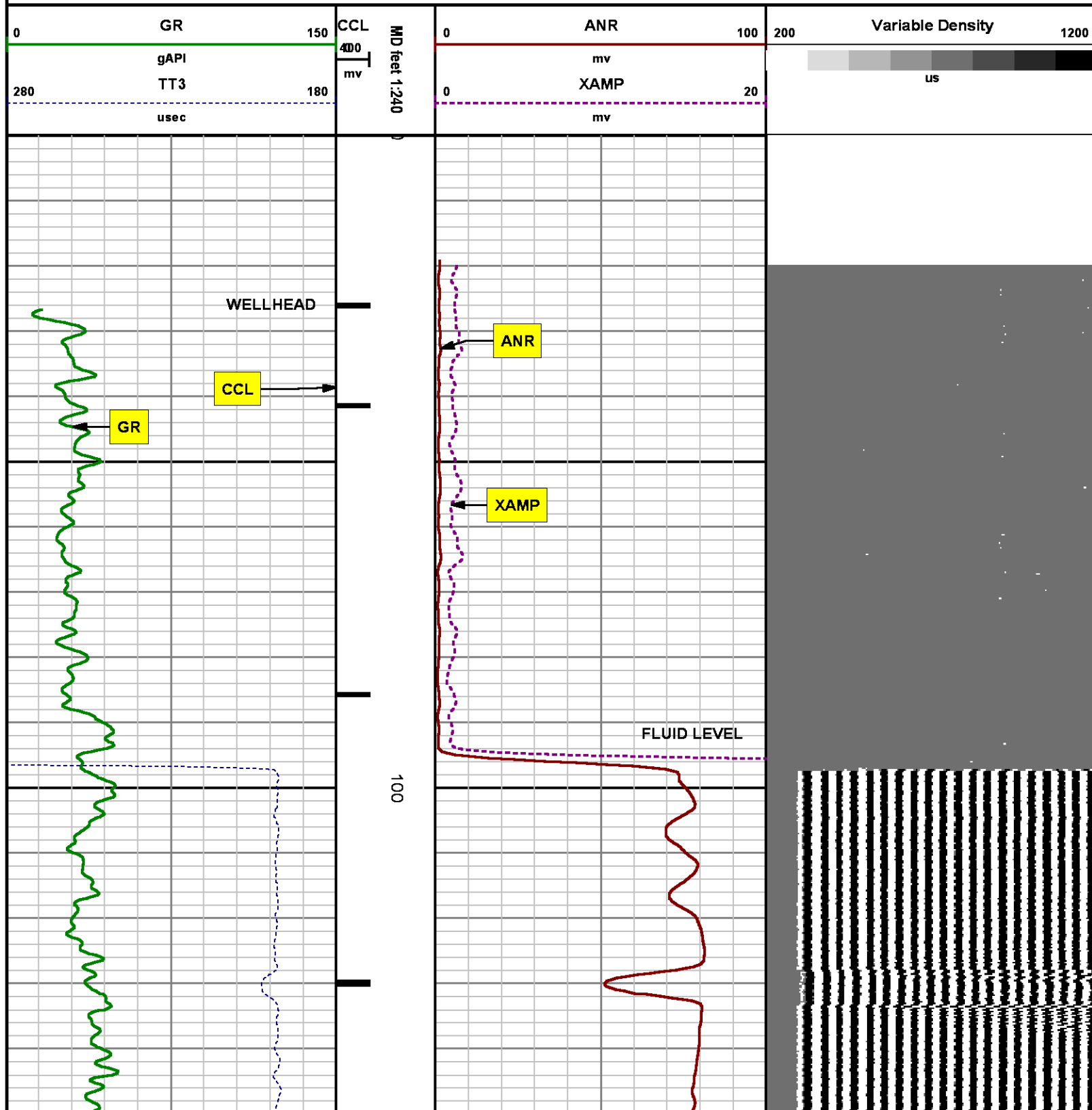
Well : FEDERAL NER 523-32

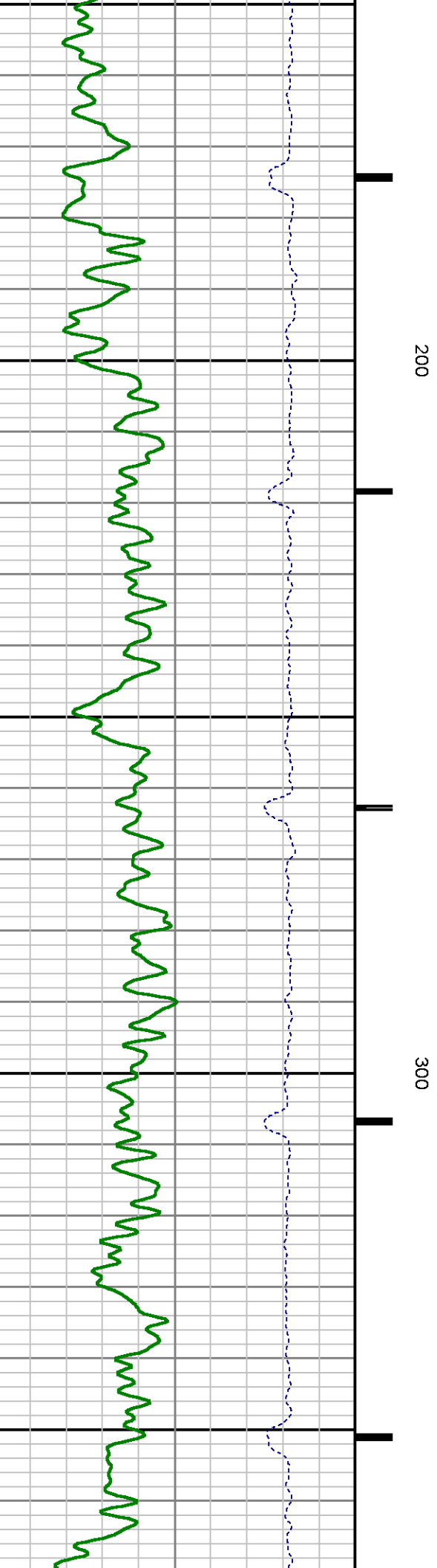
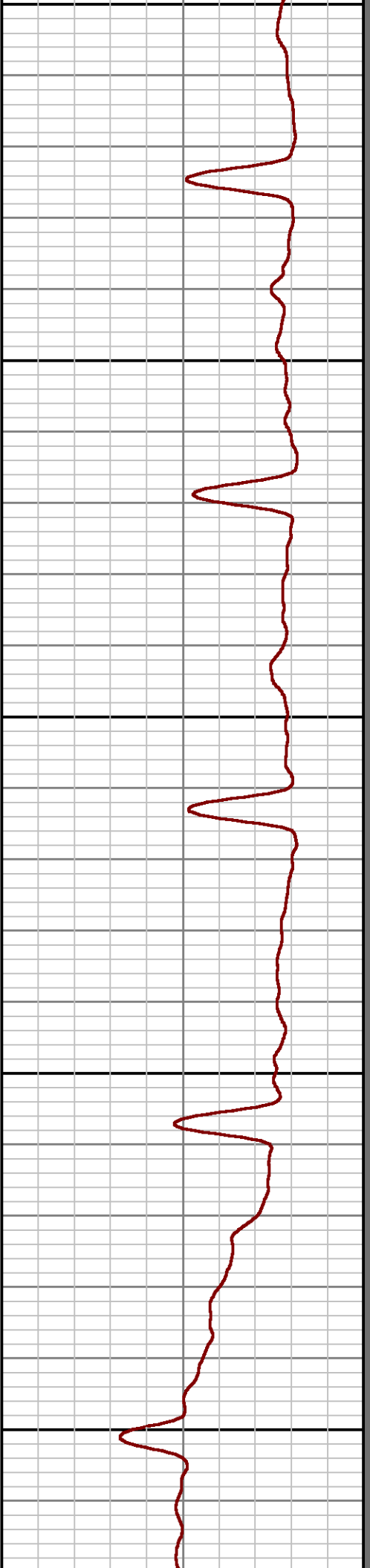
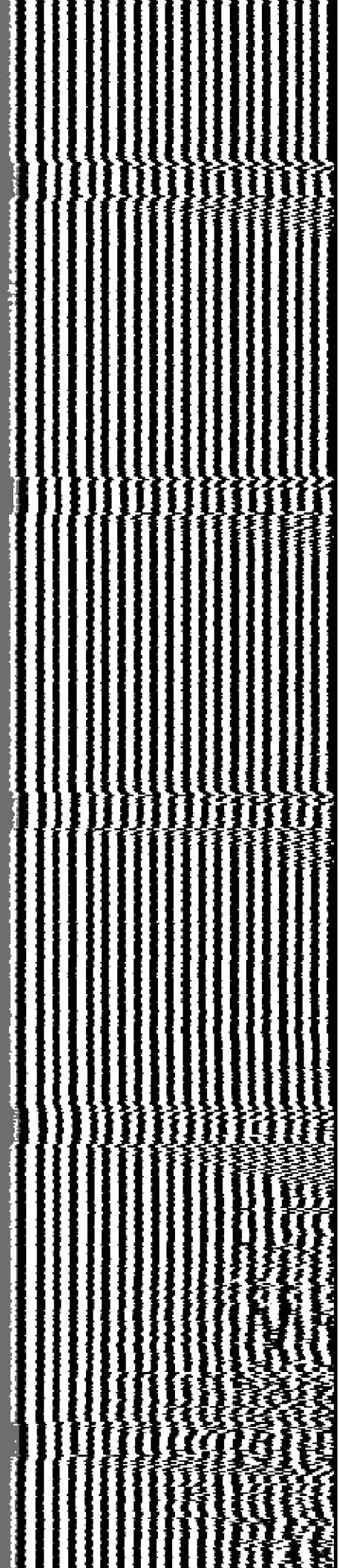
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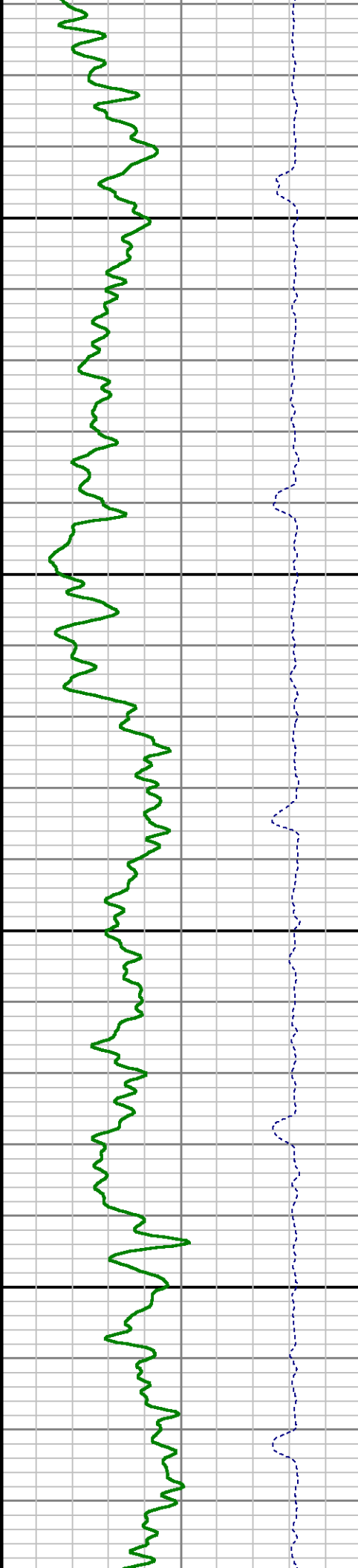
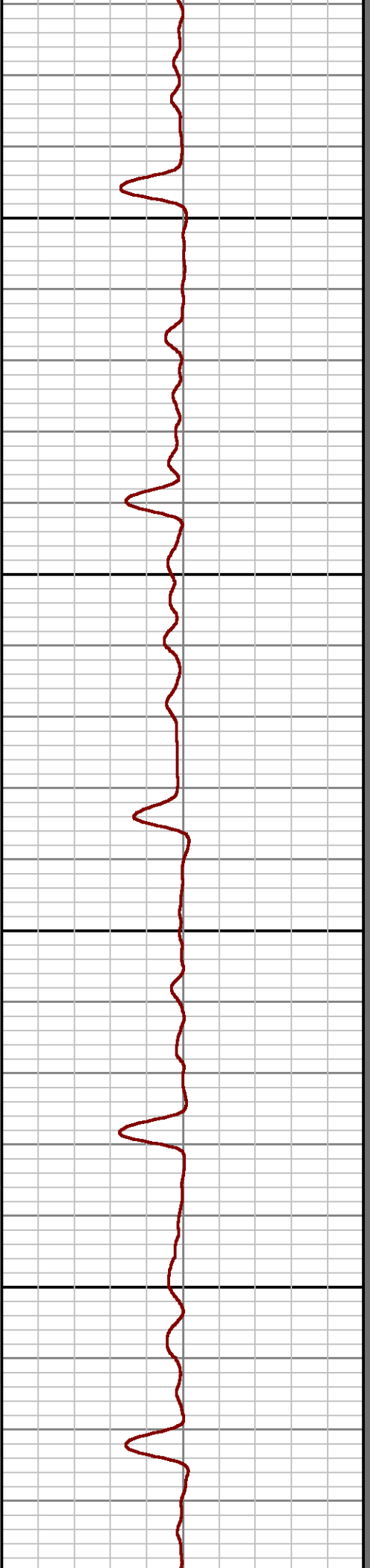
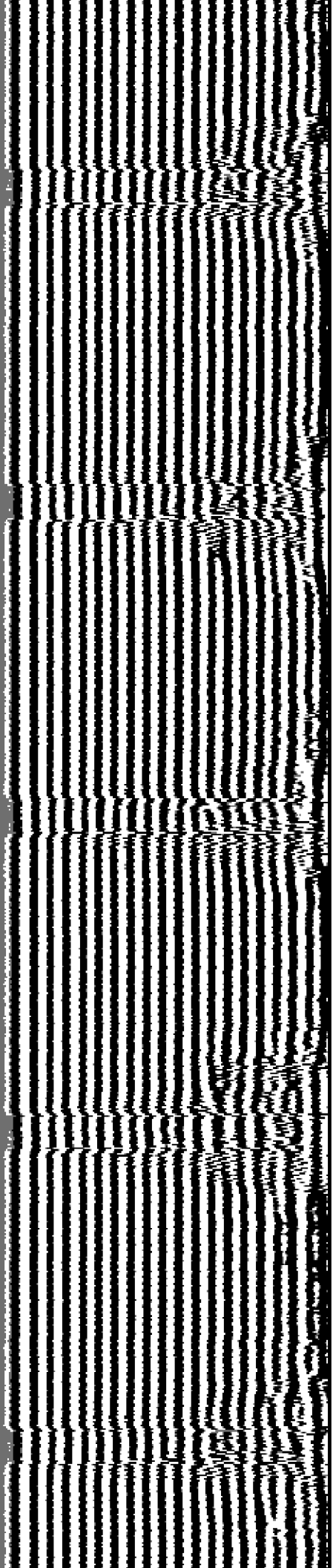
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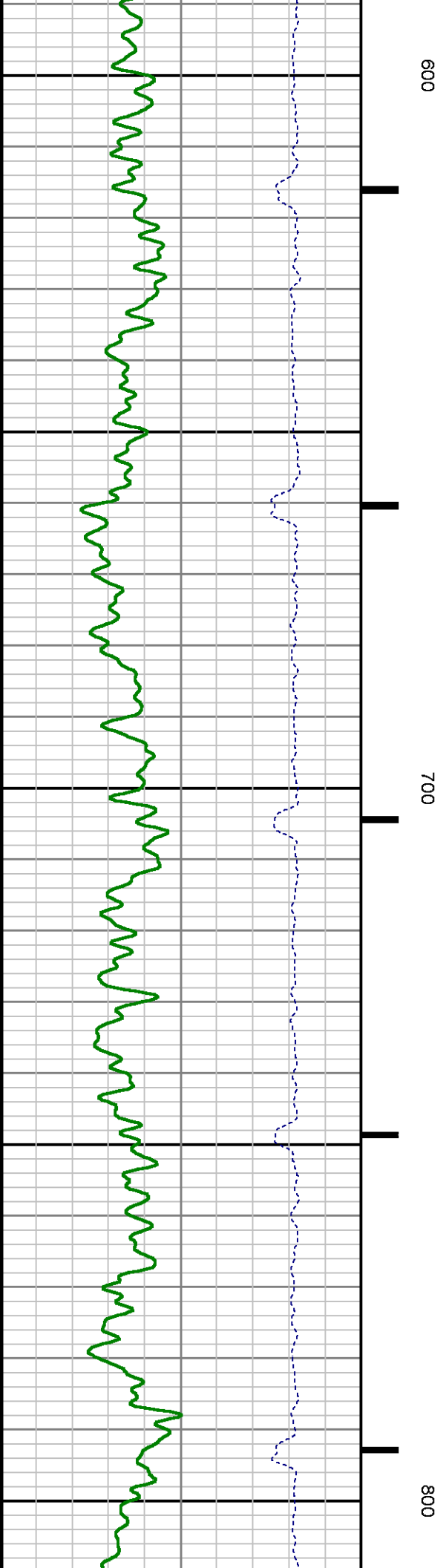
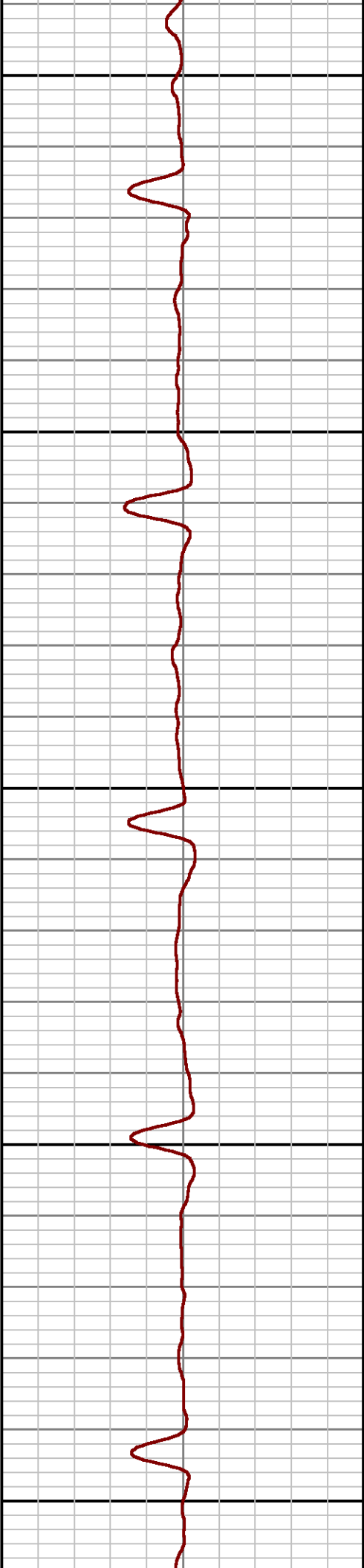
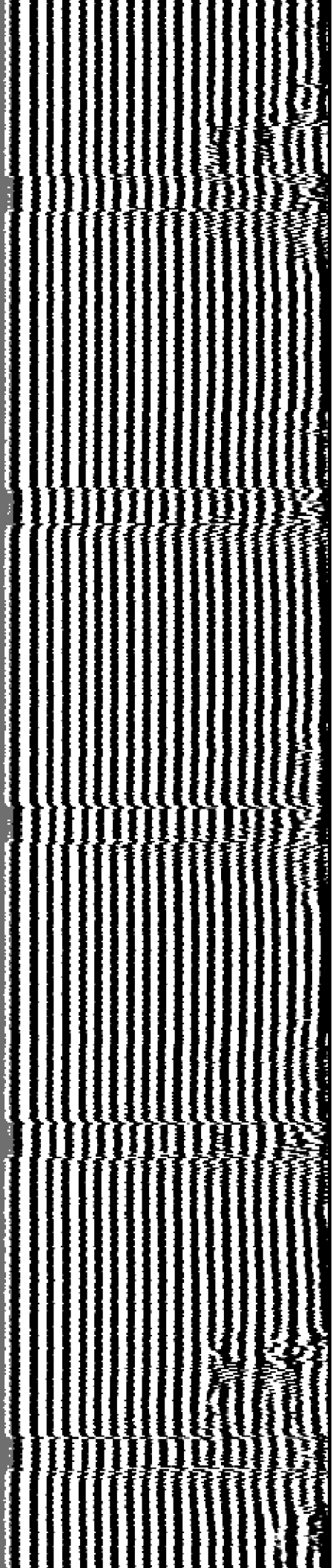
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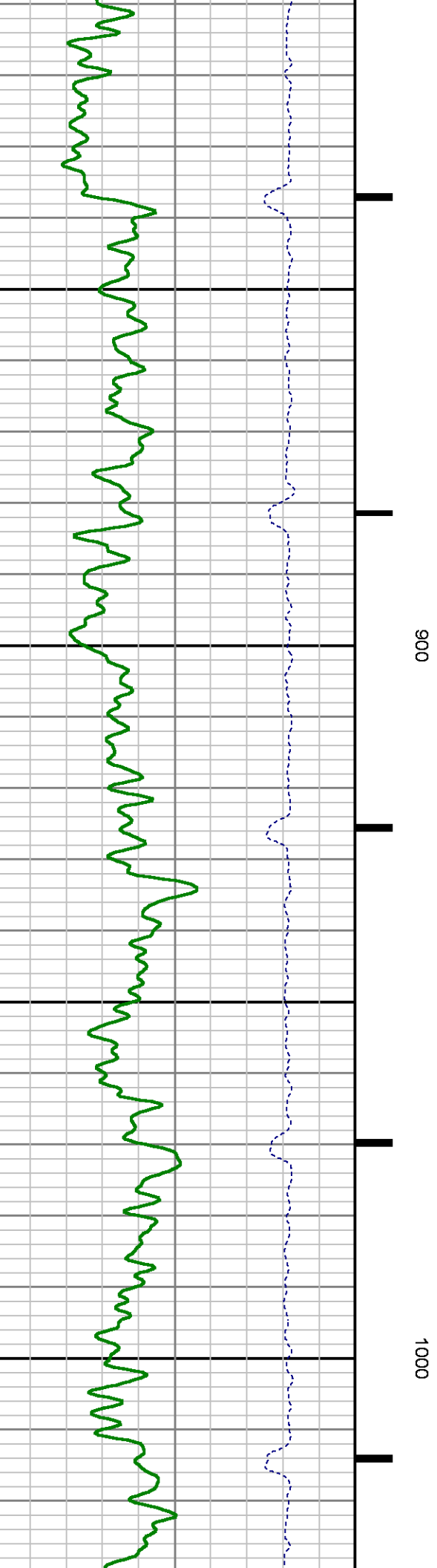
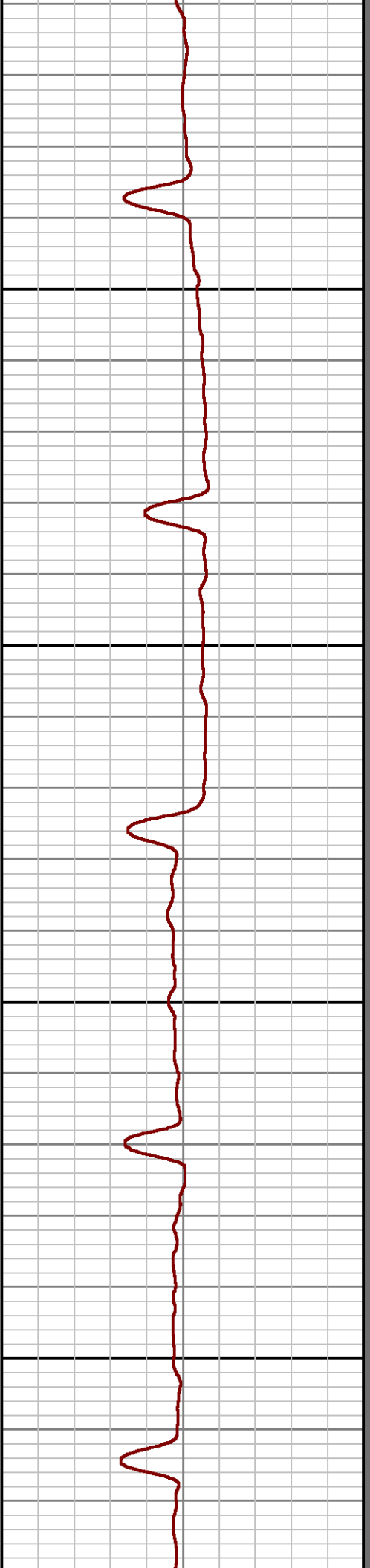
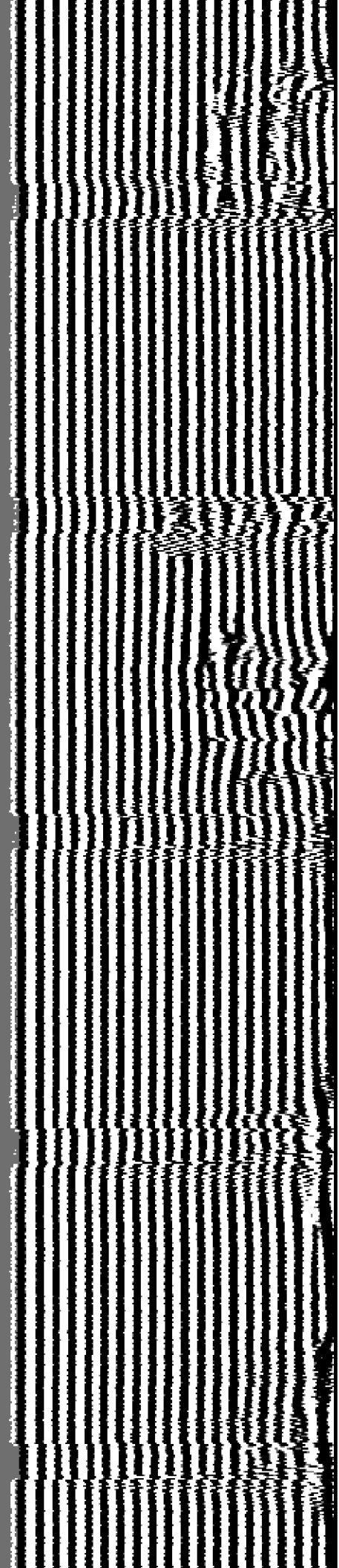
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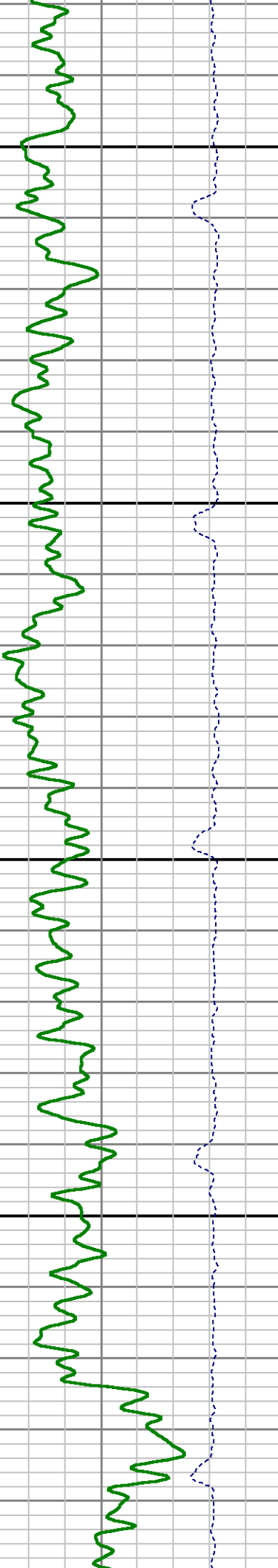
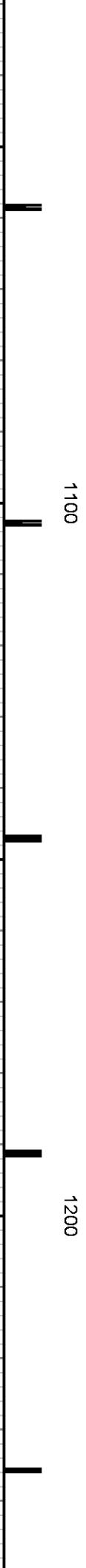
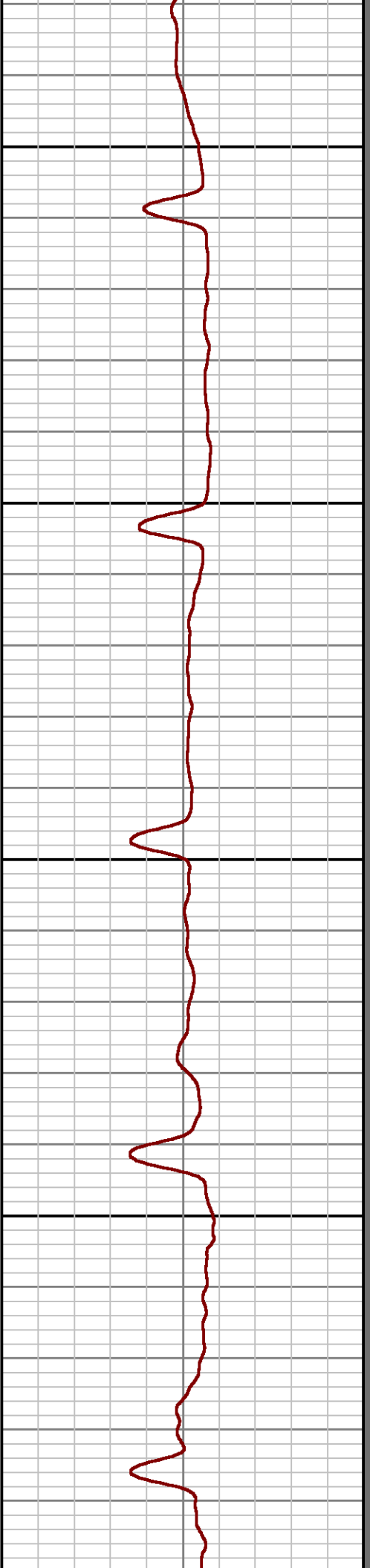
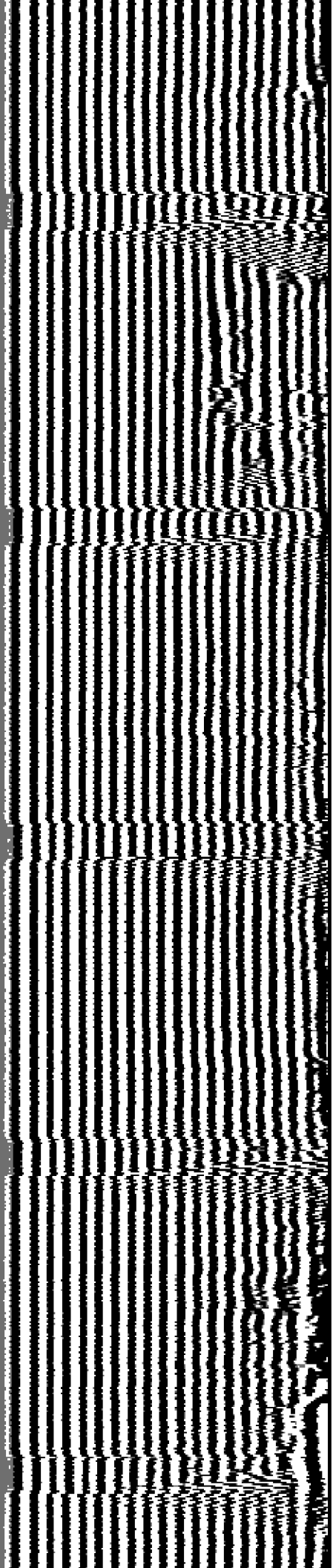


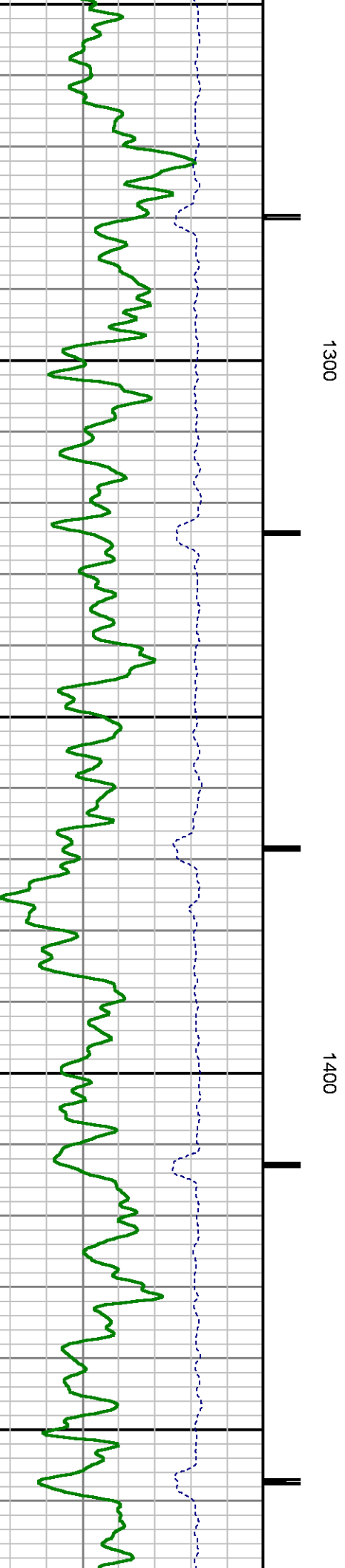
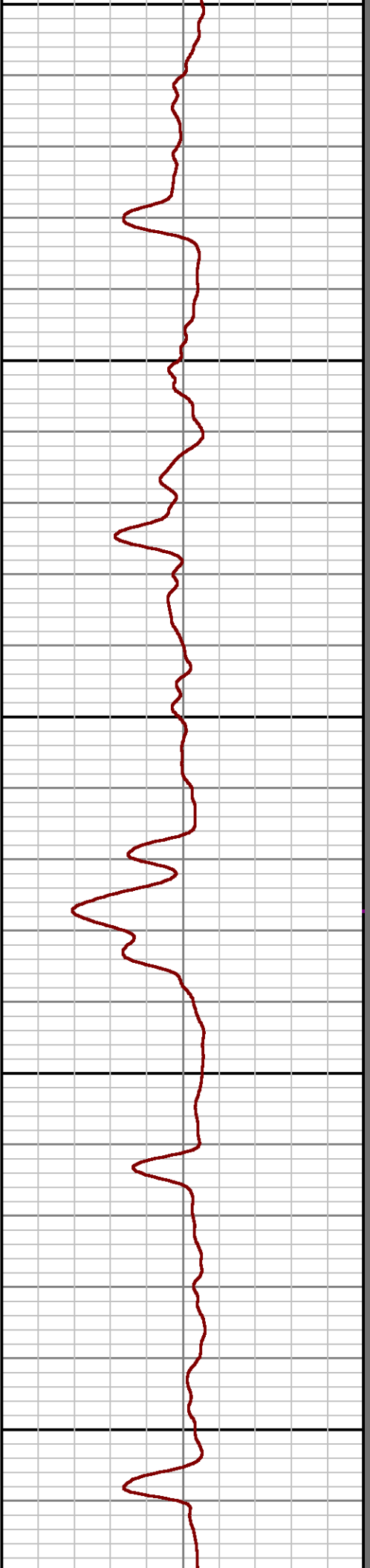
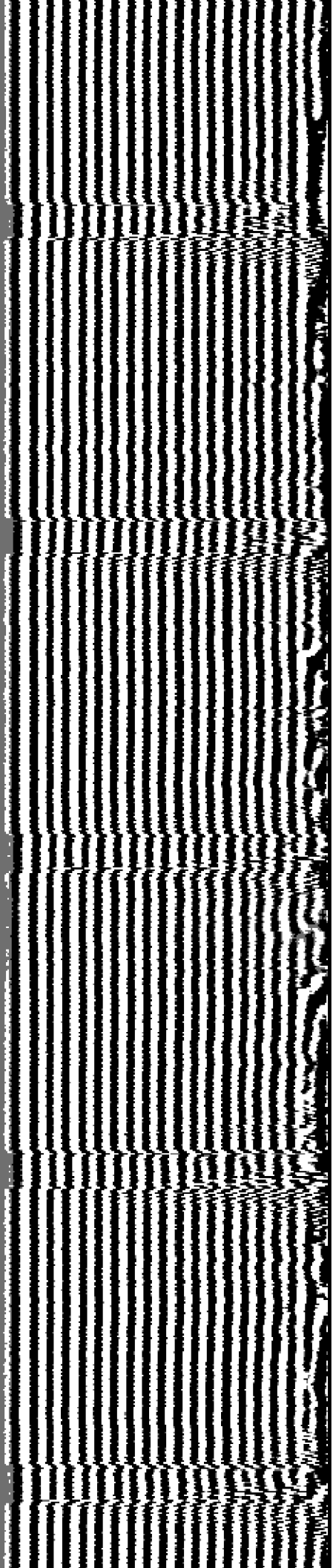


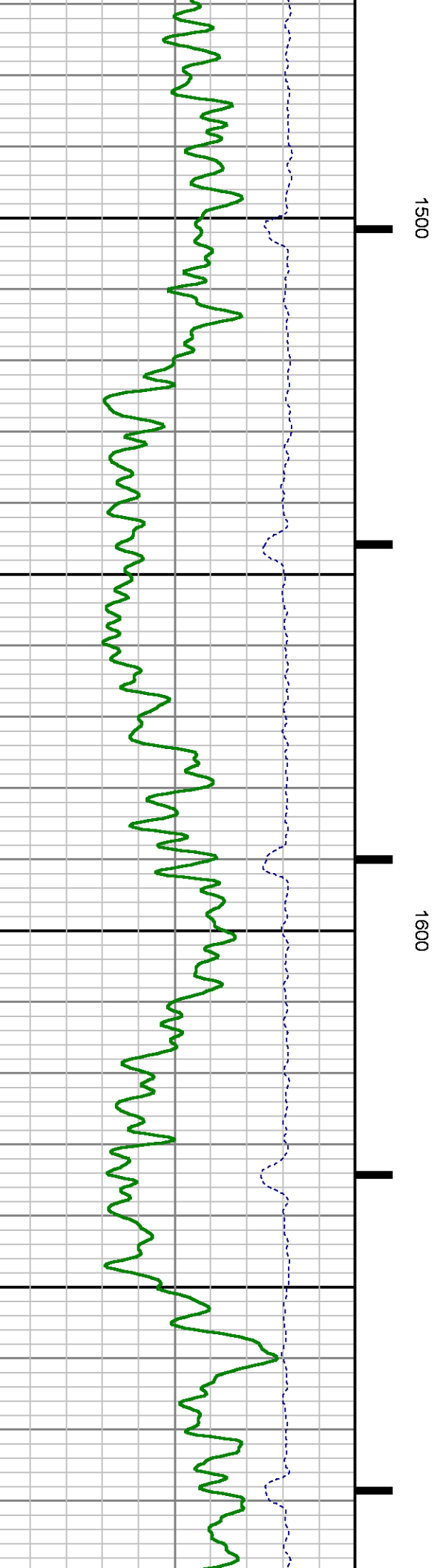
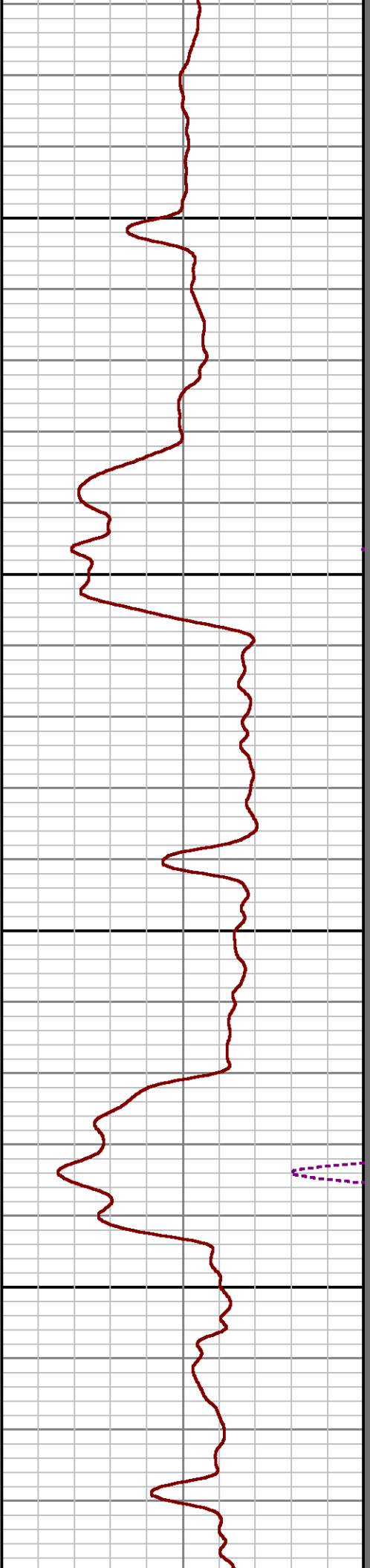
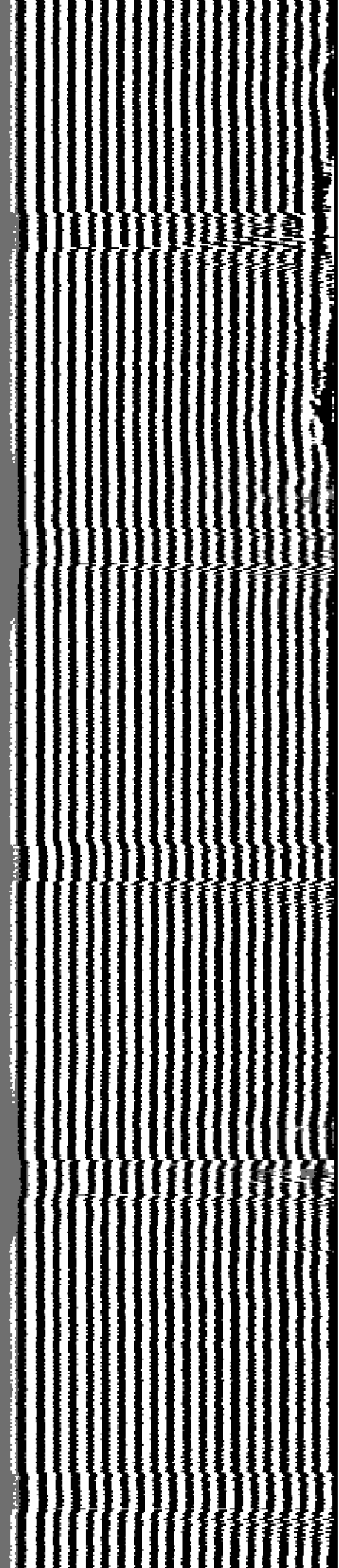


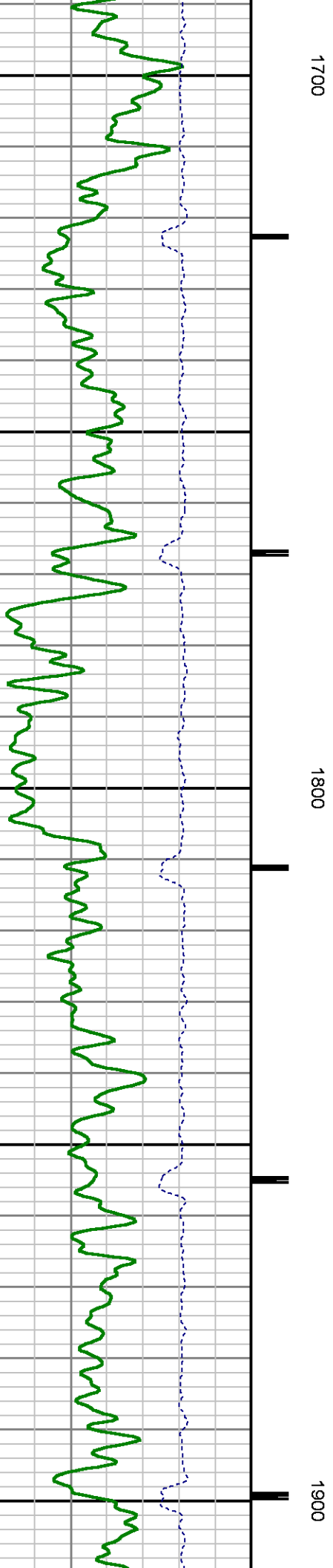
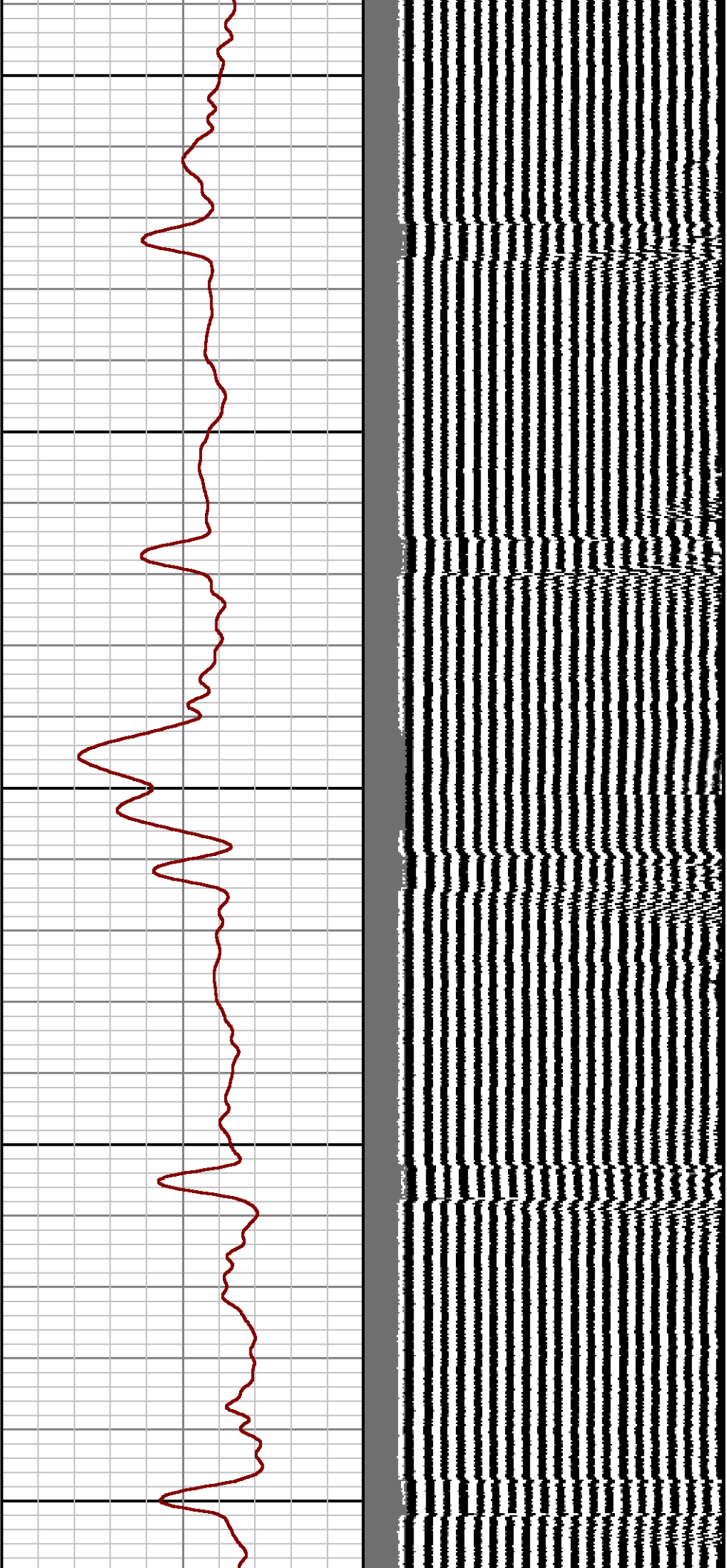


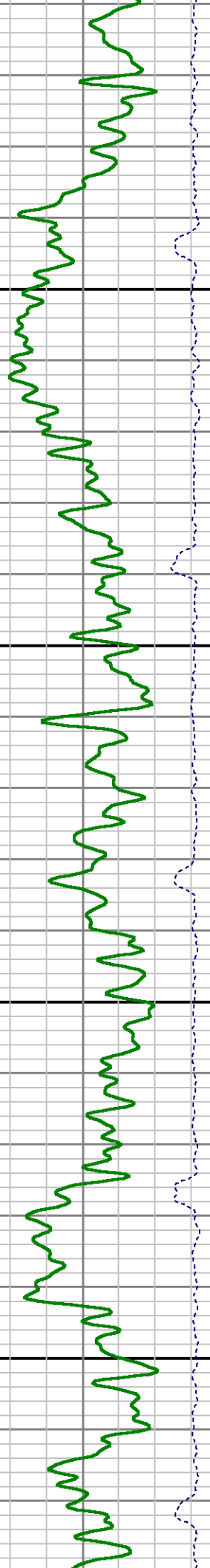
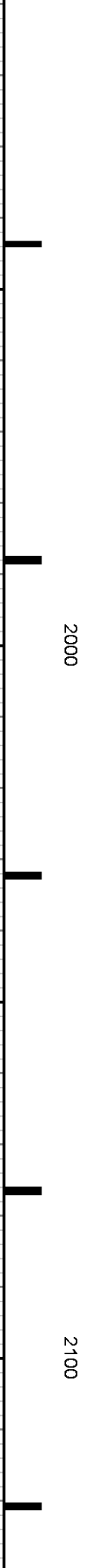
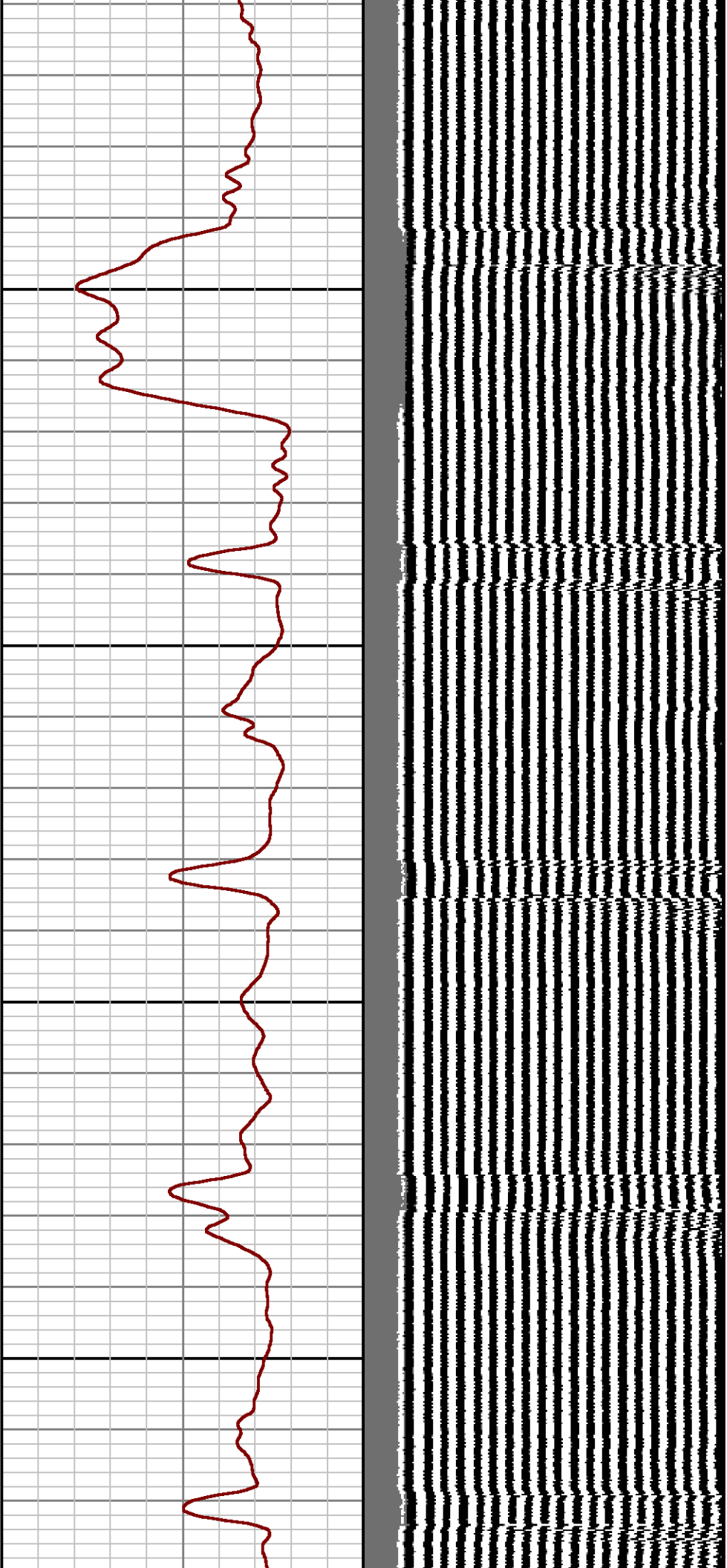


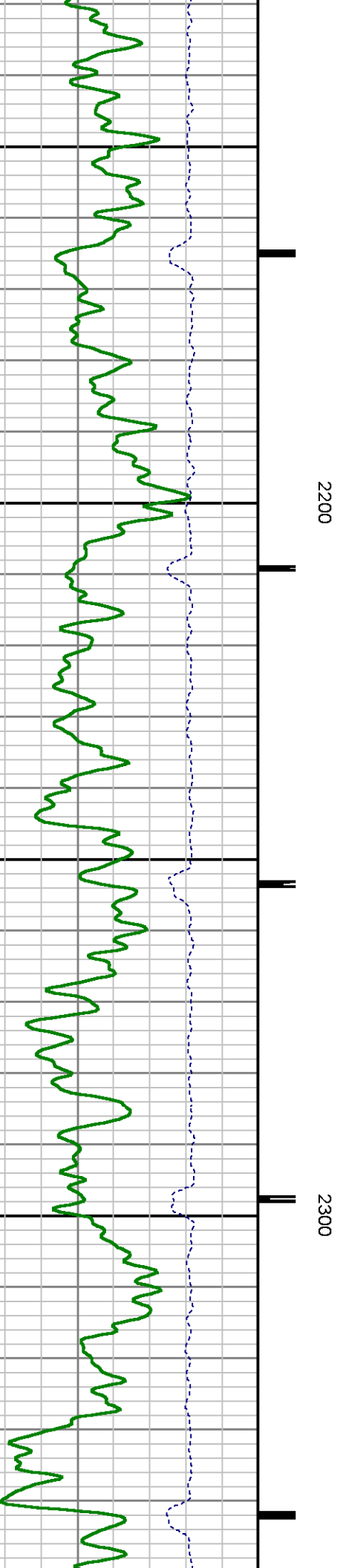
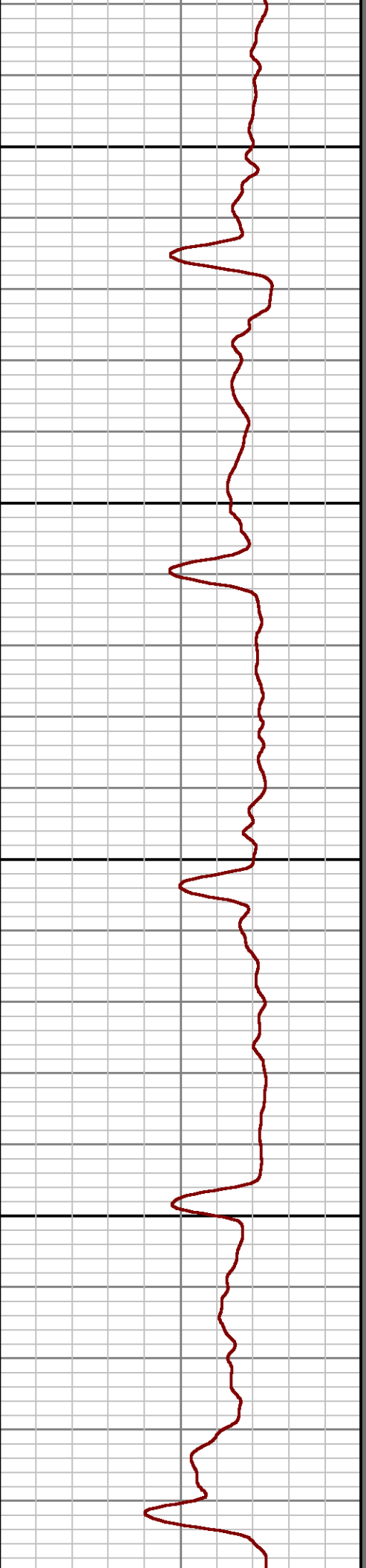
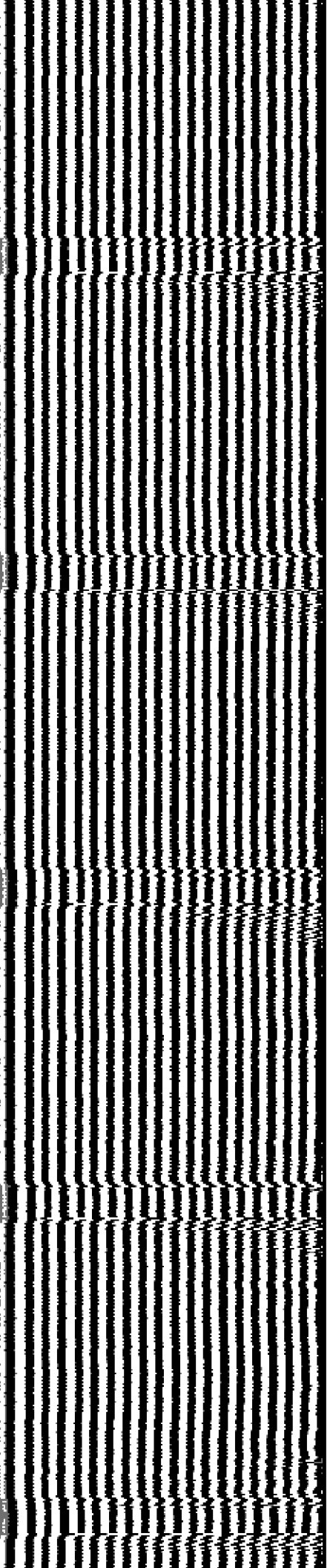


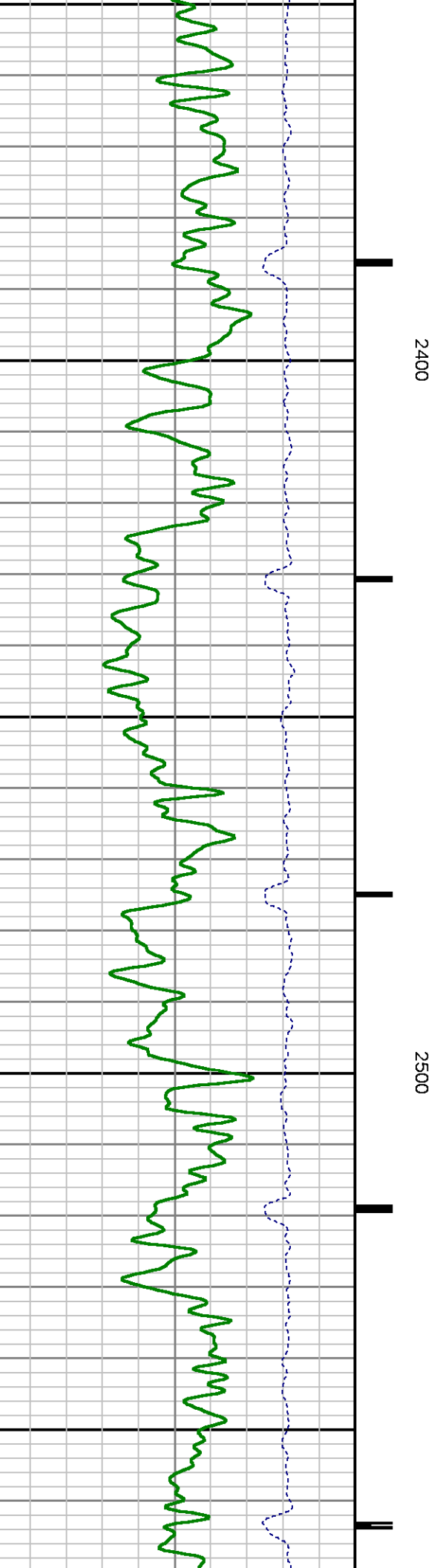
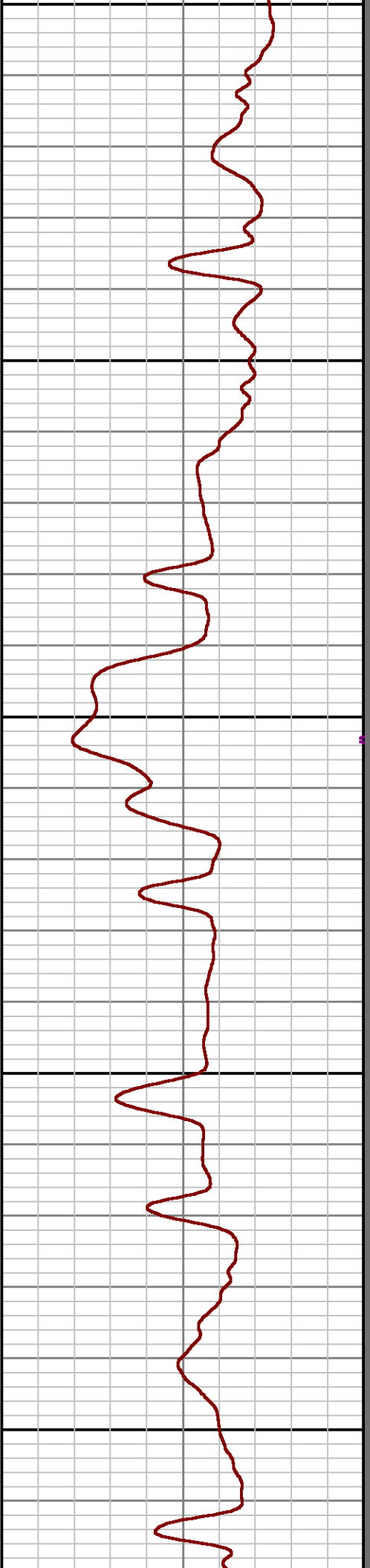
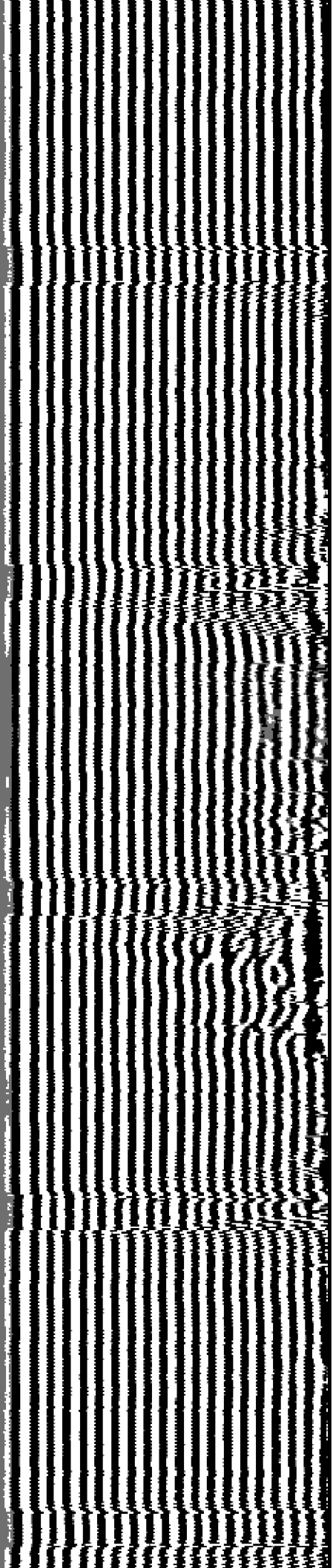


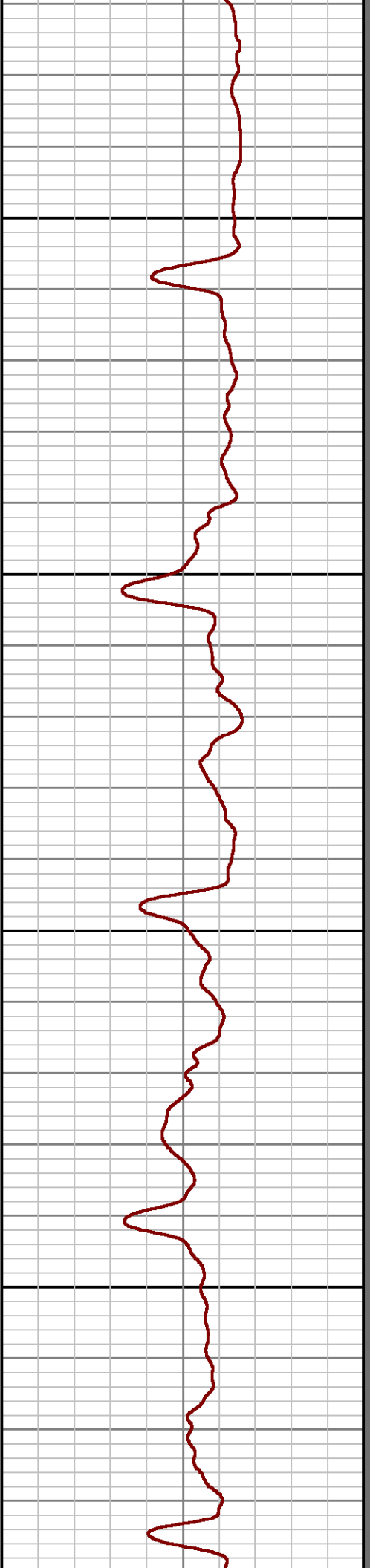
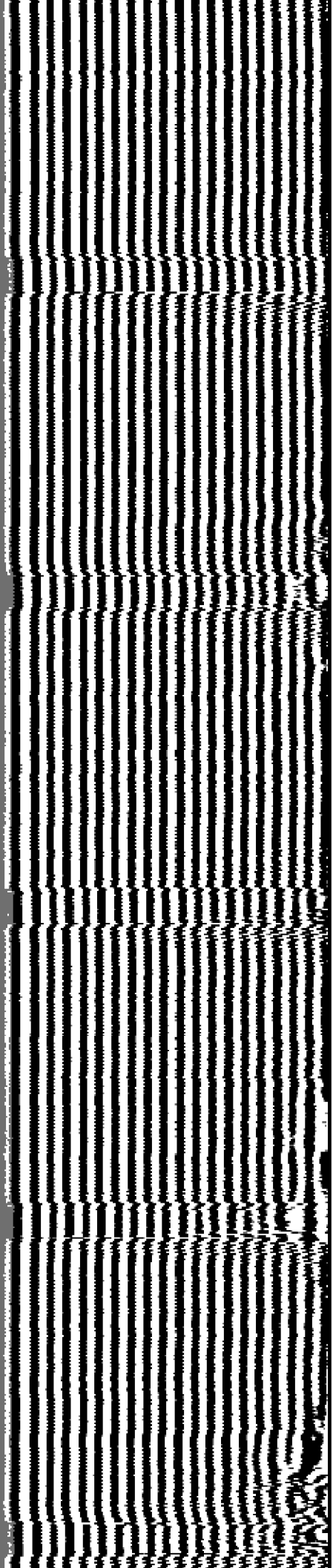






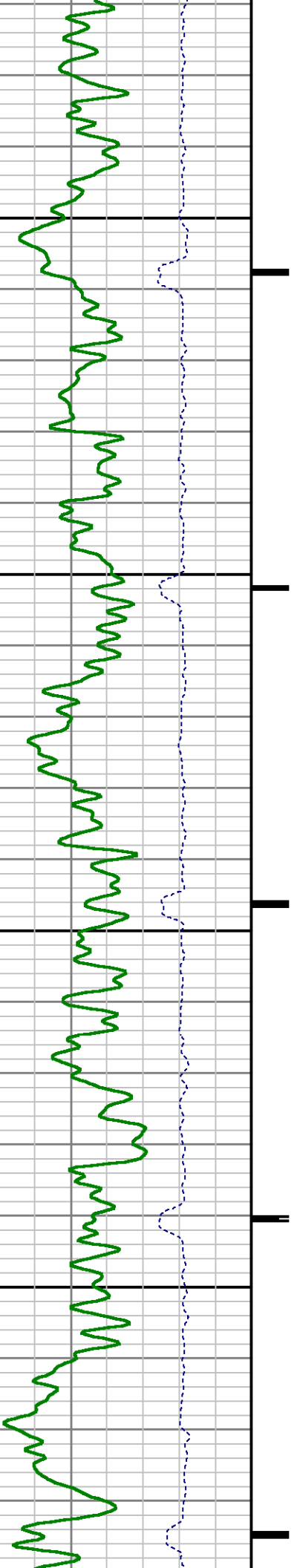


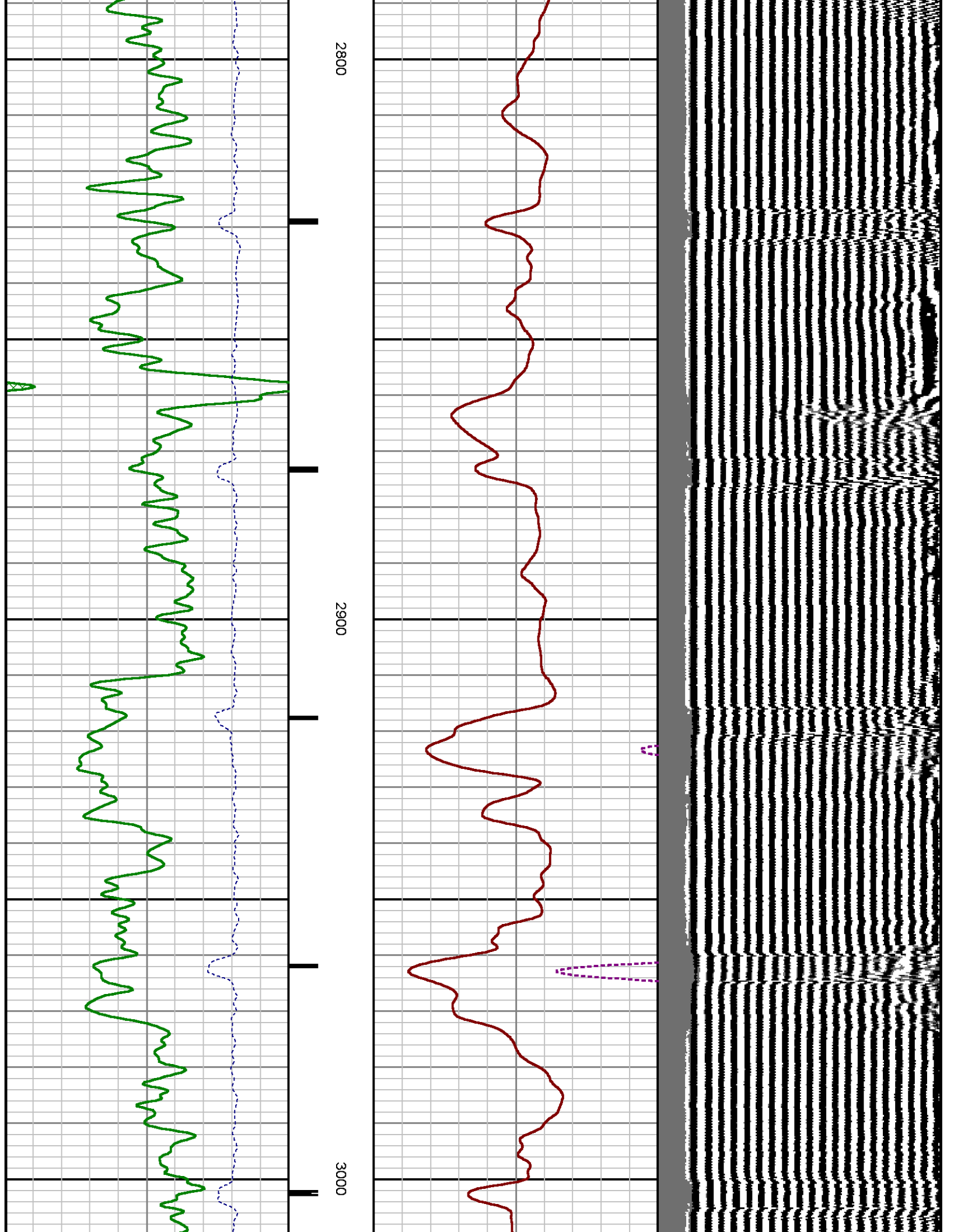


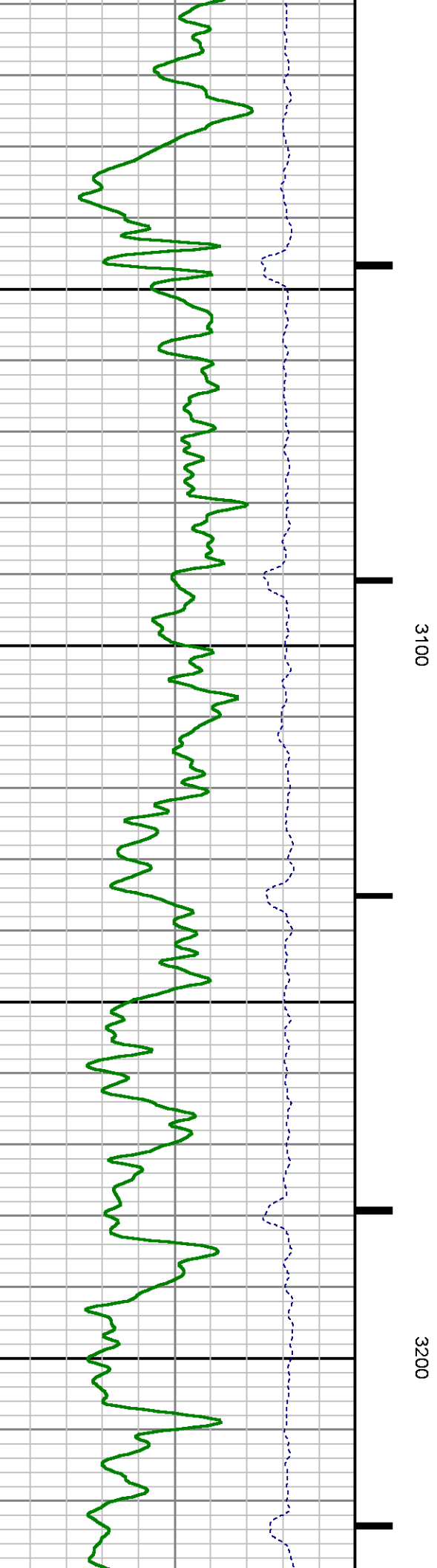
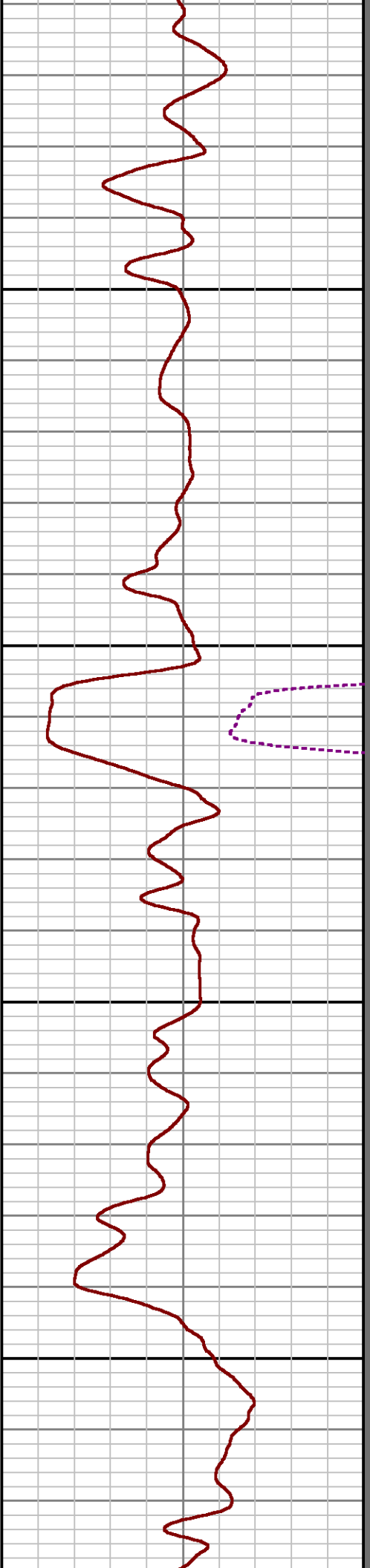
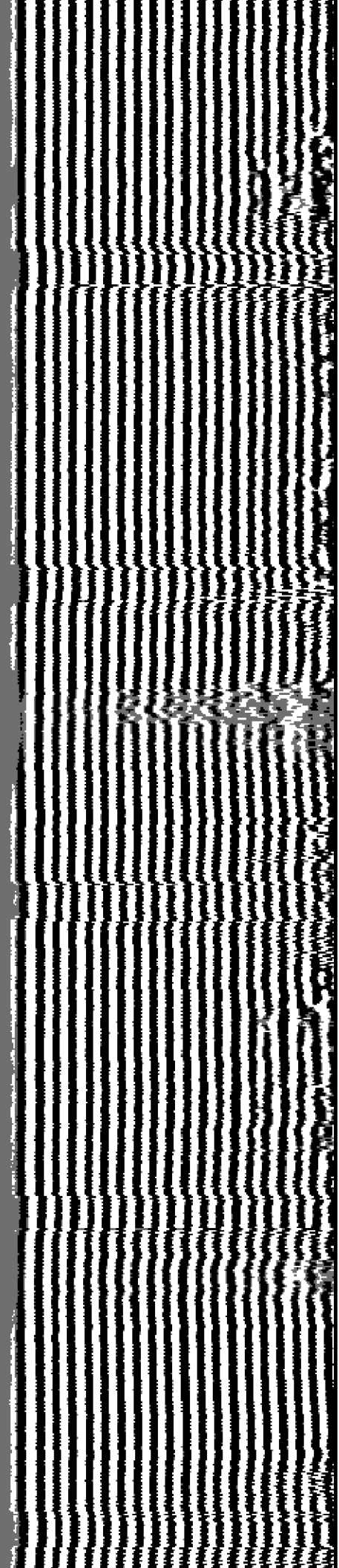


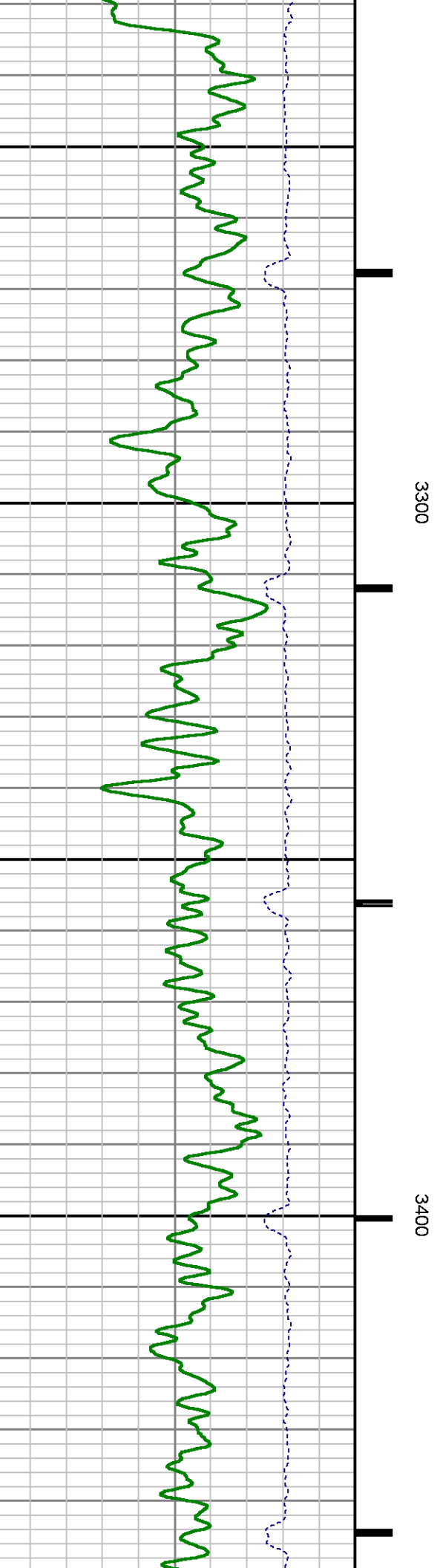
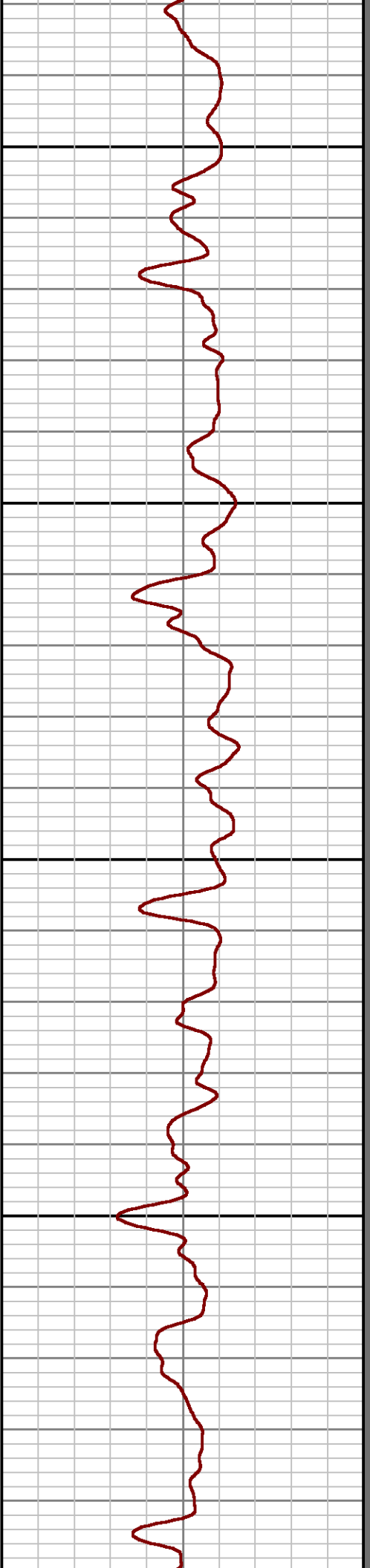
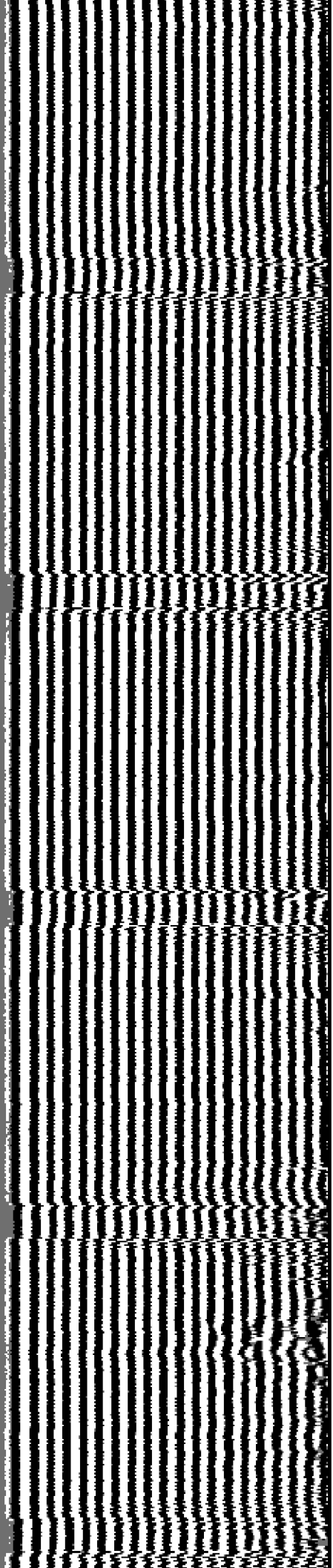
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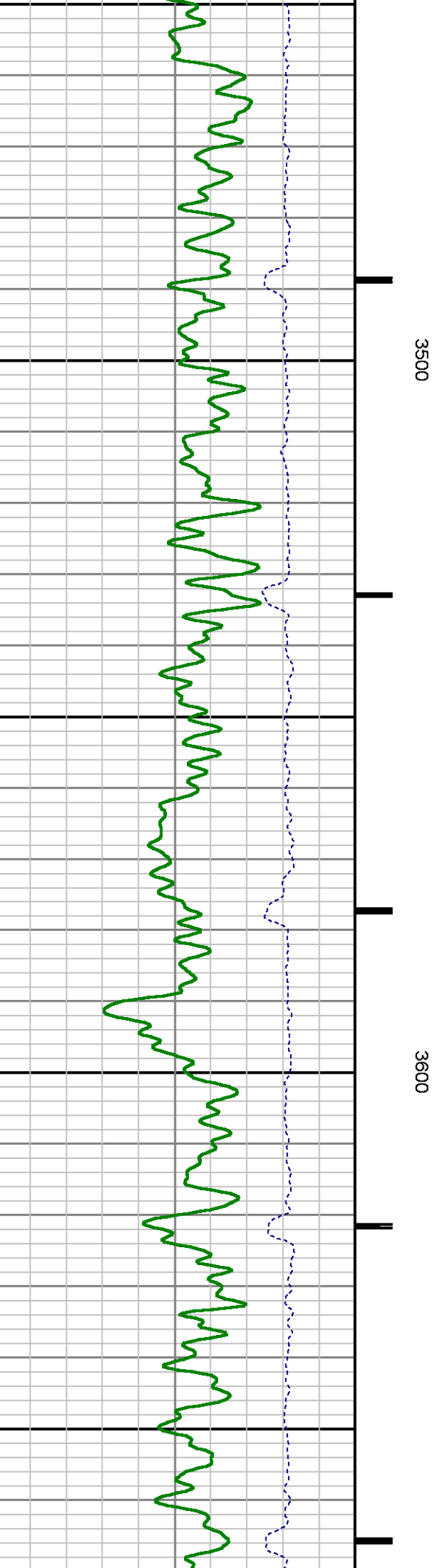
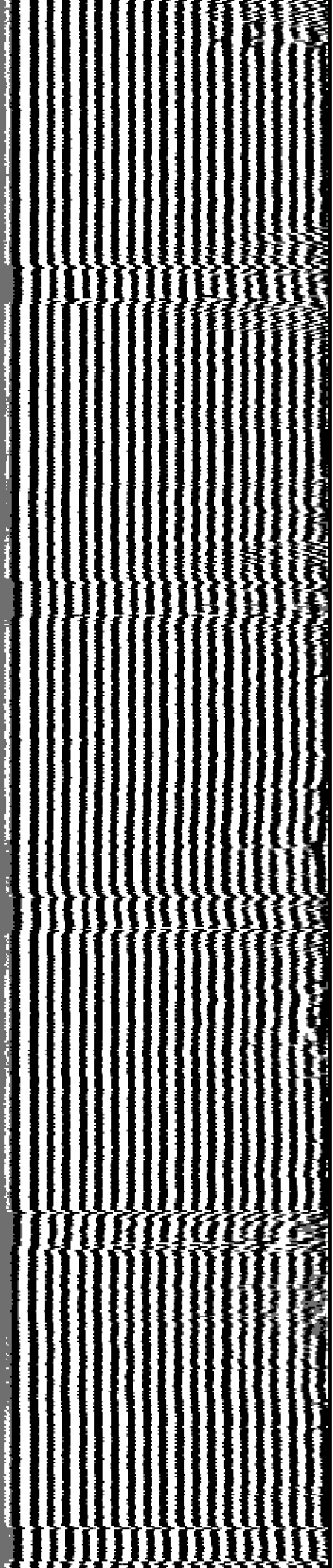
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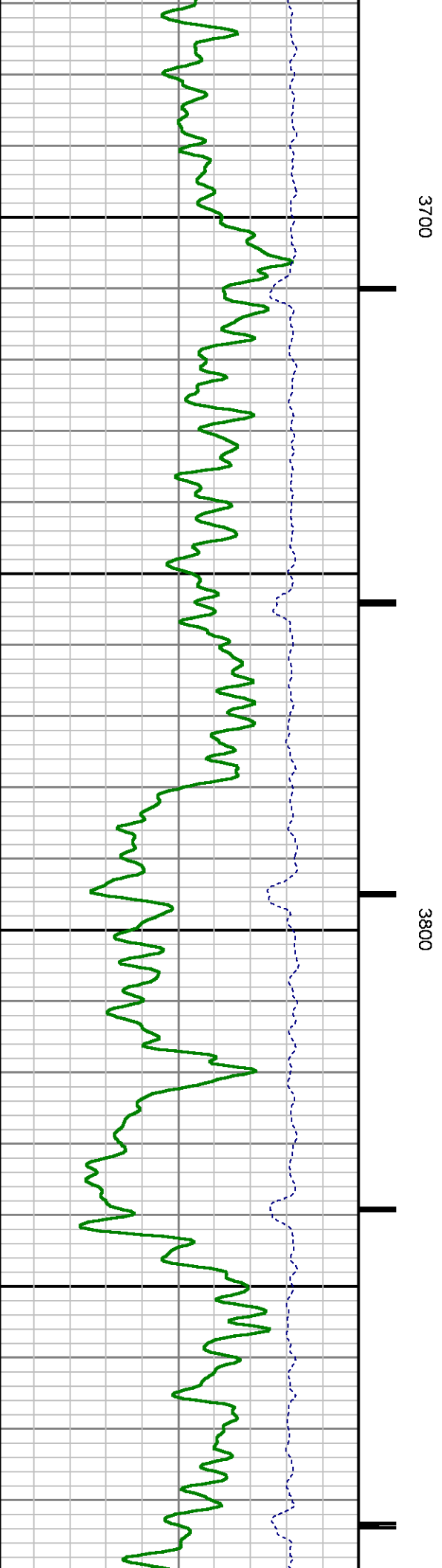
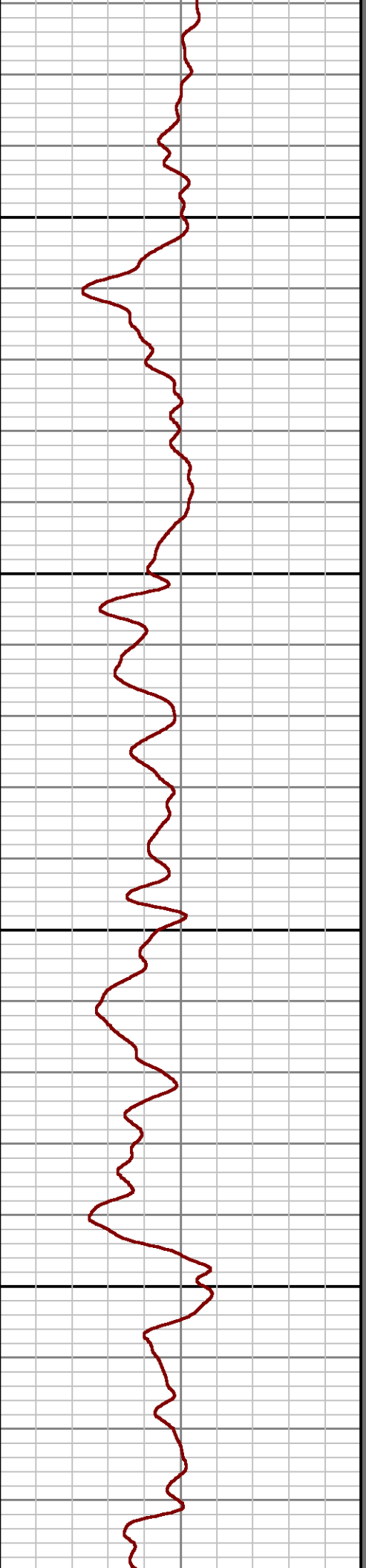
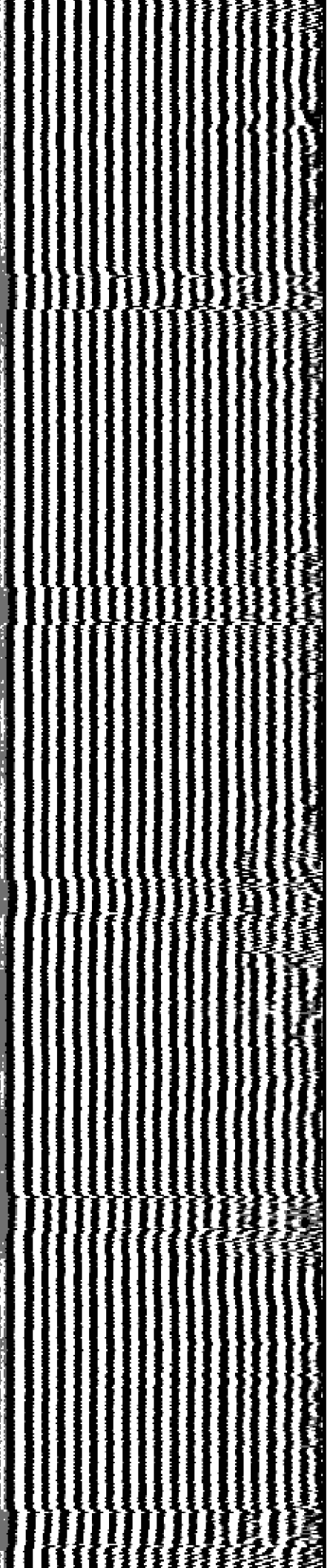


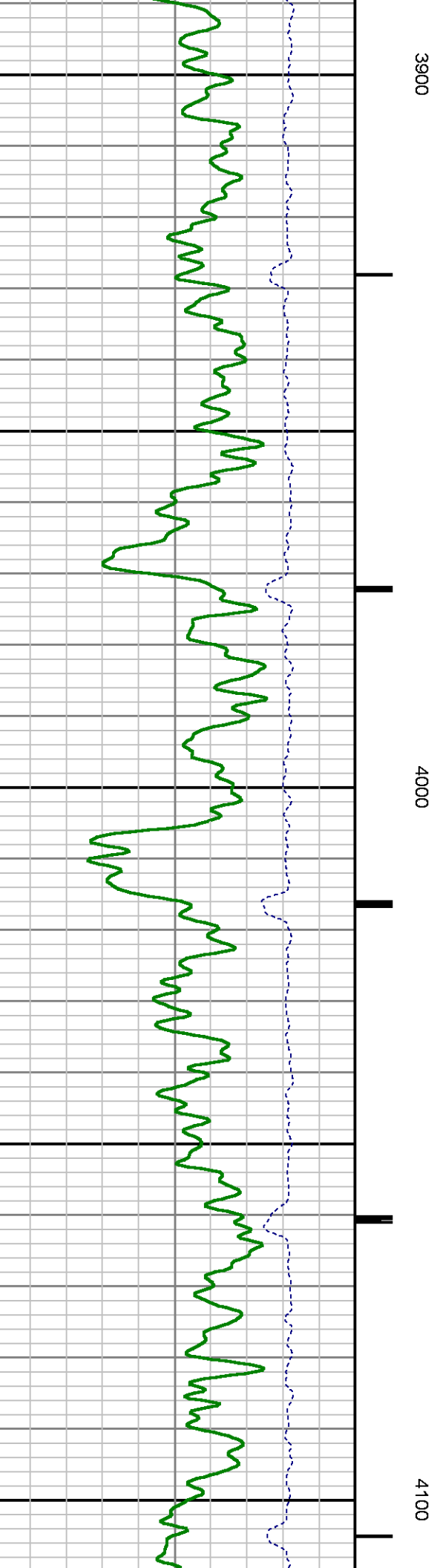
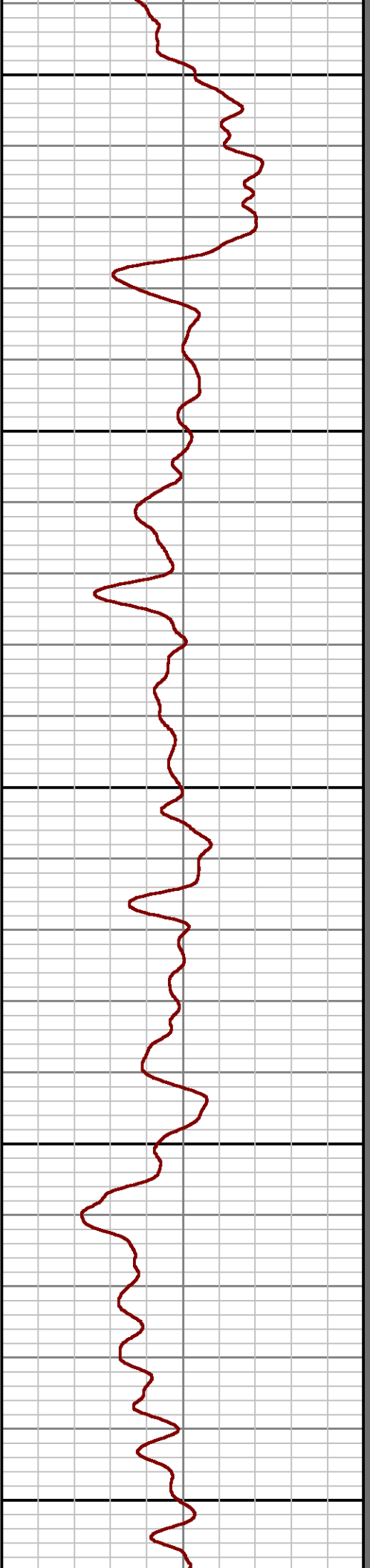
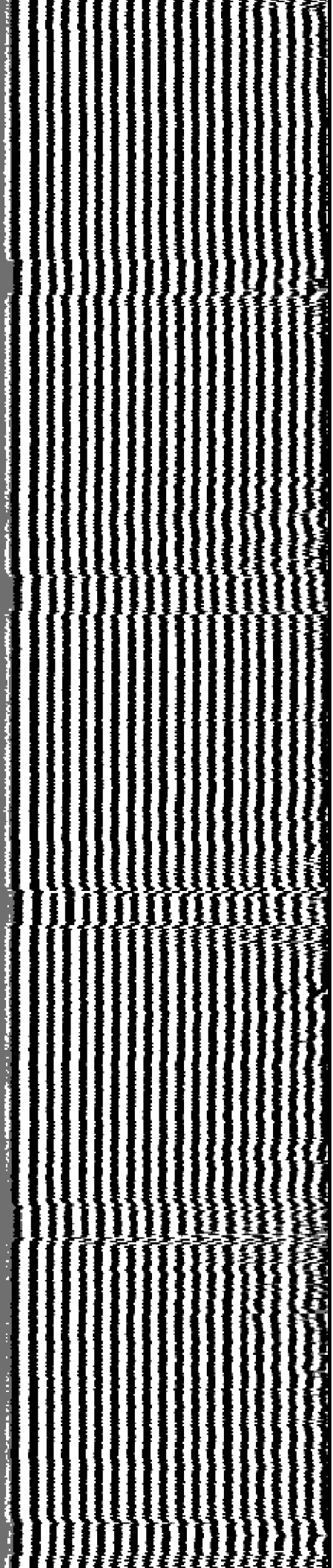


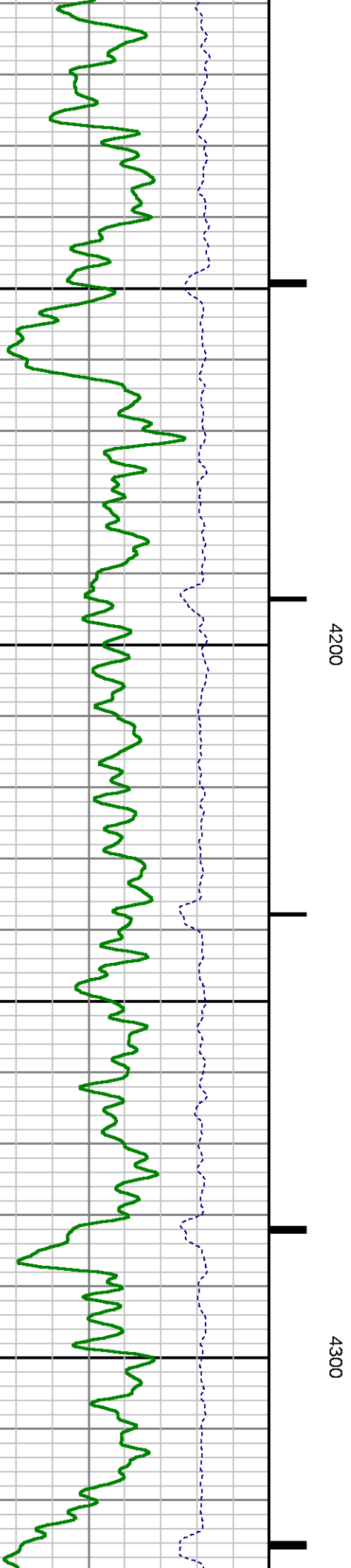
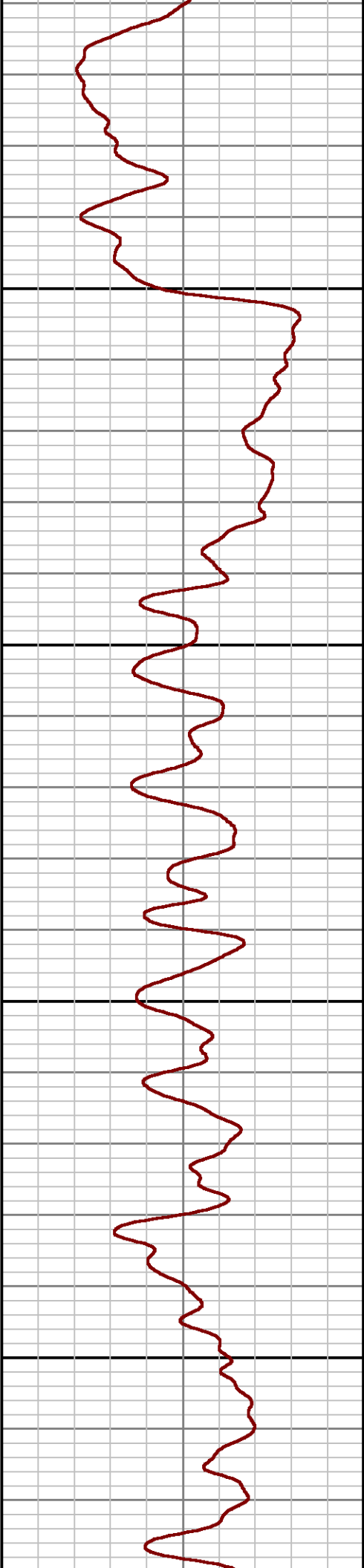
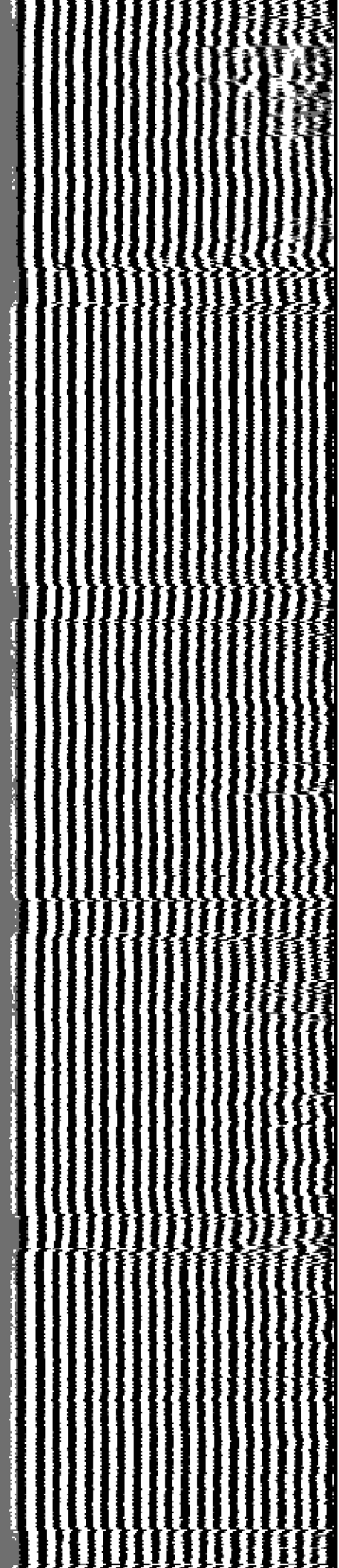


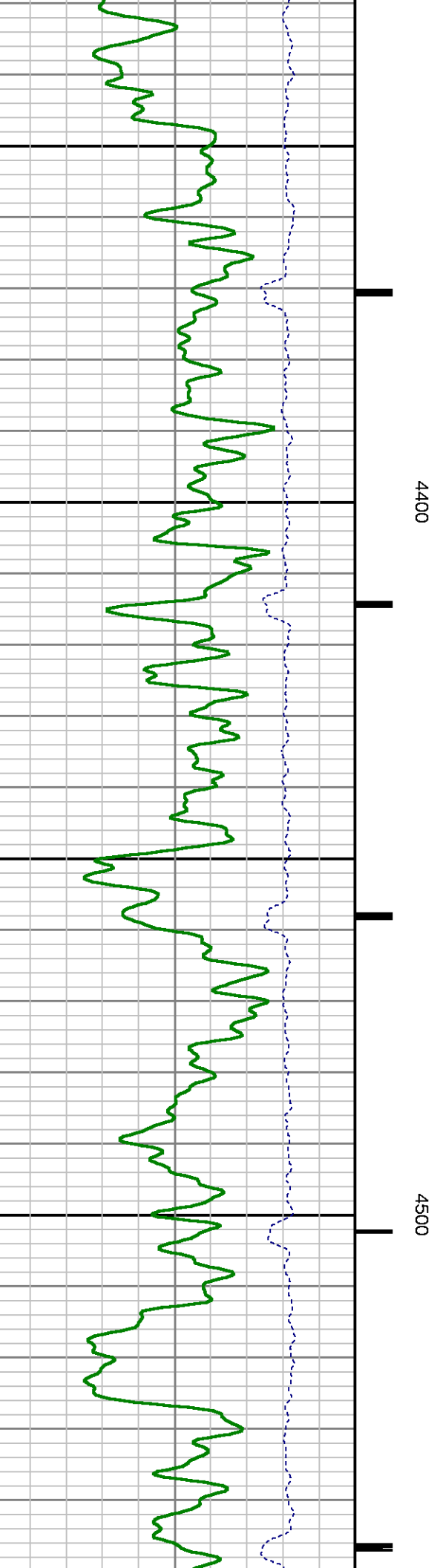
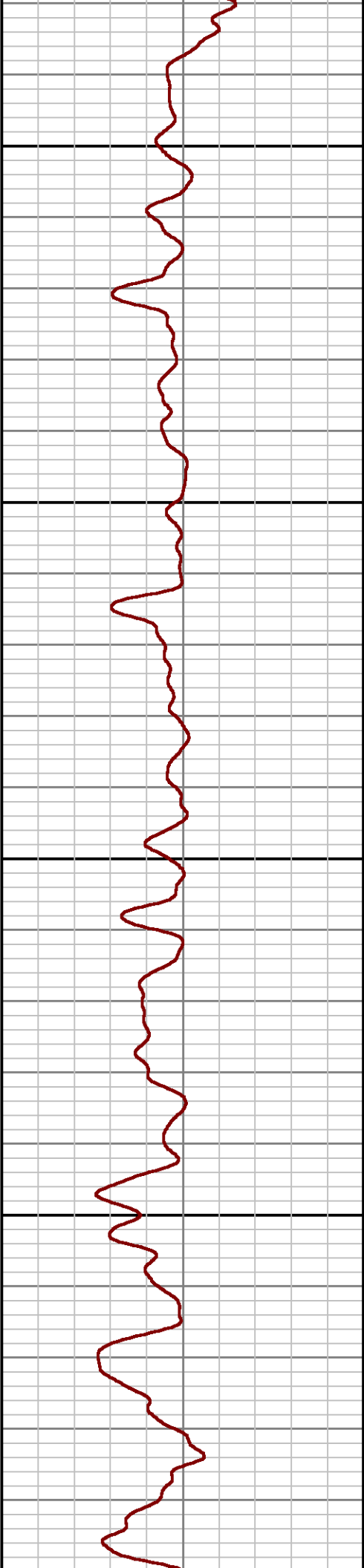
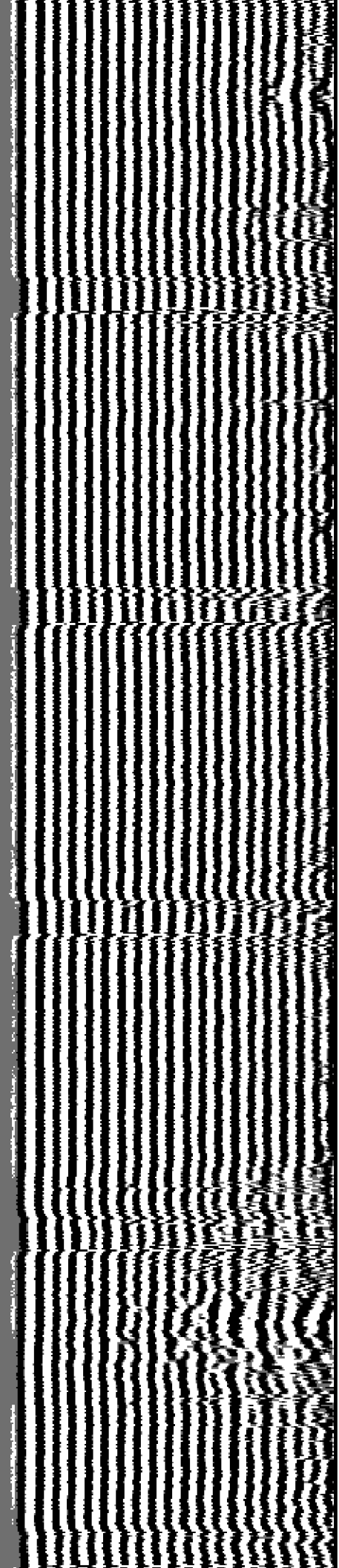


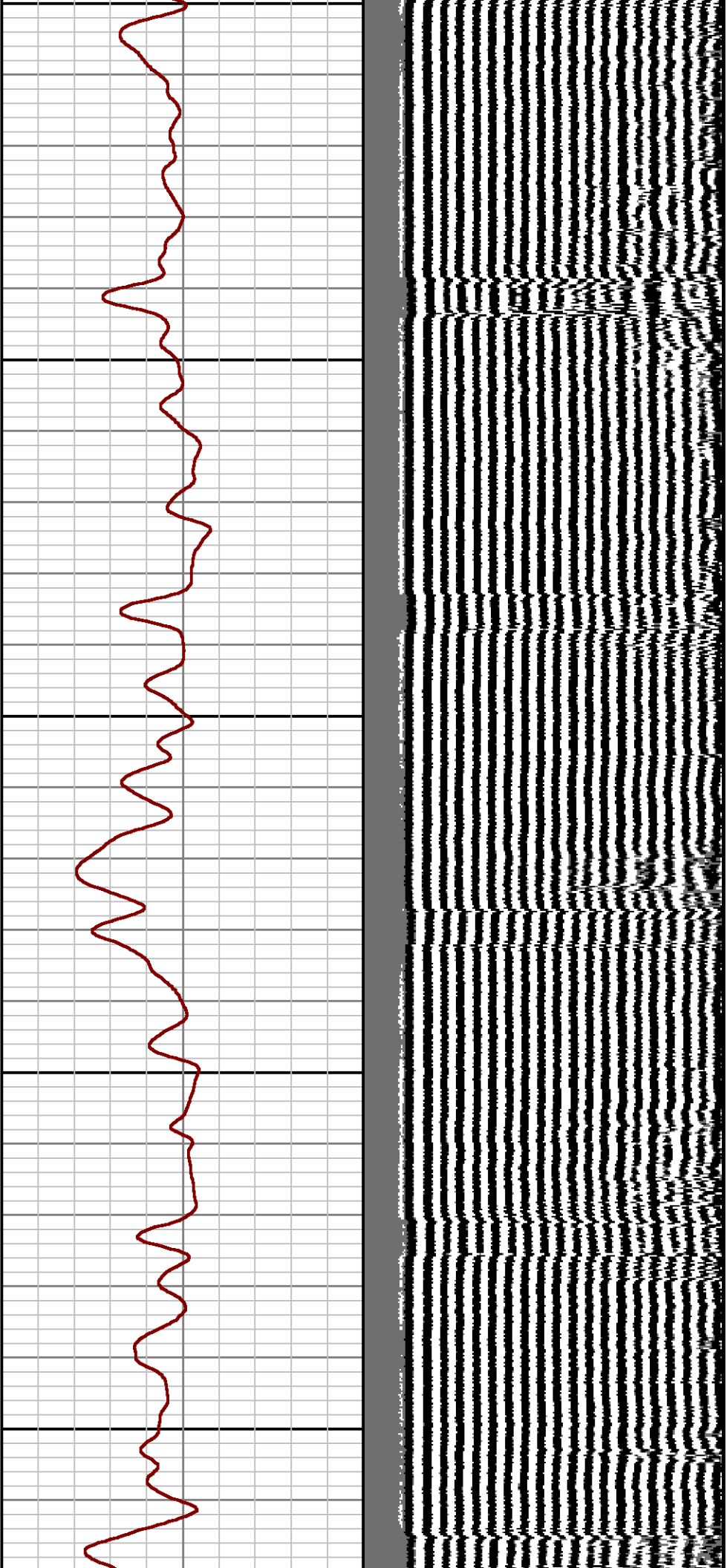






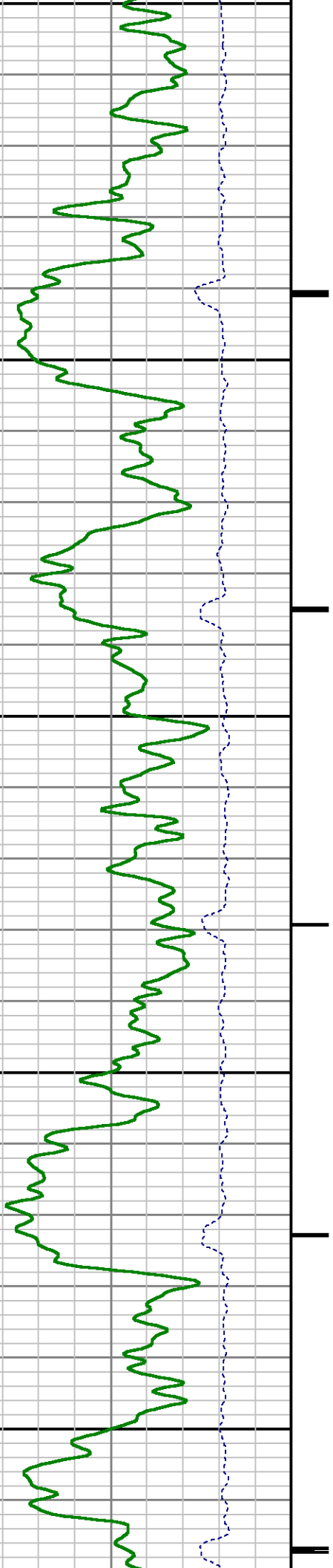


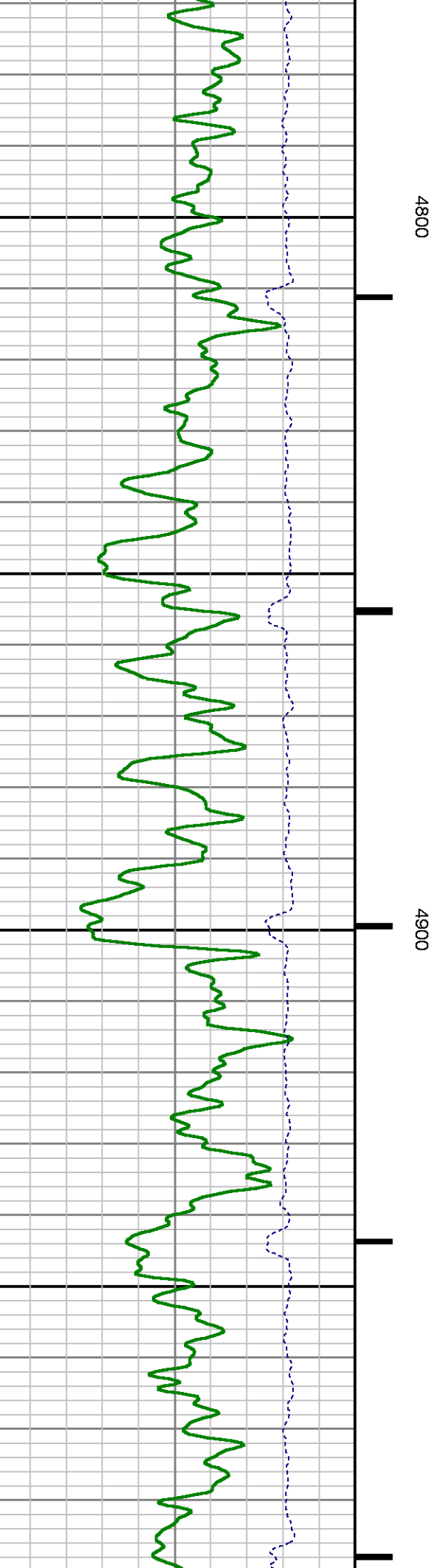
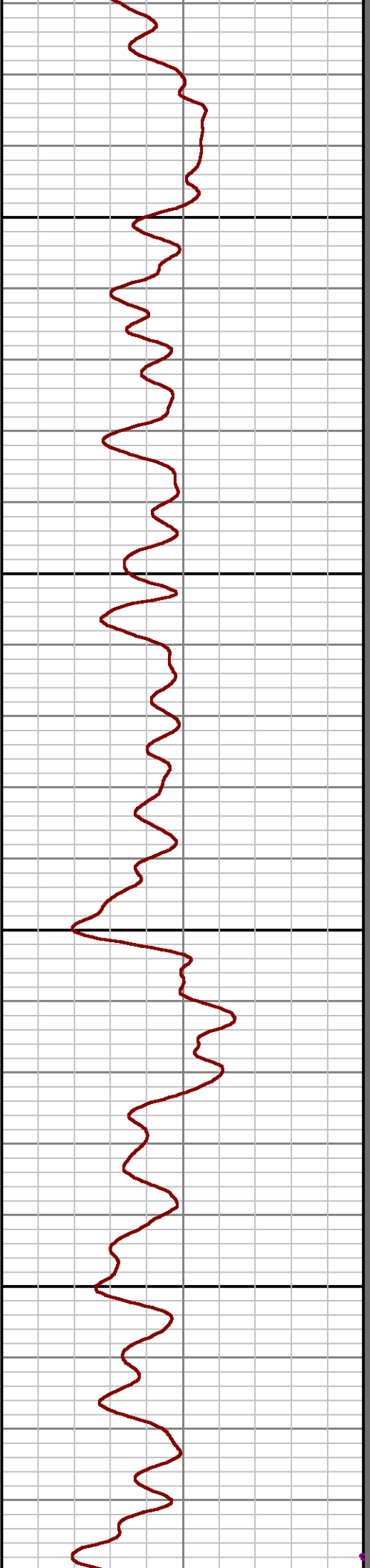
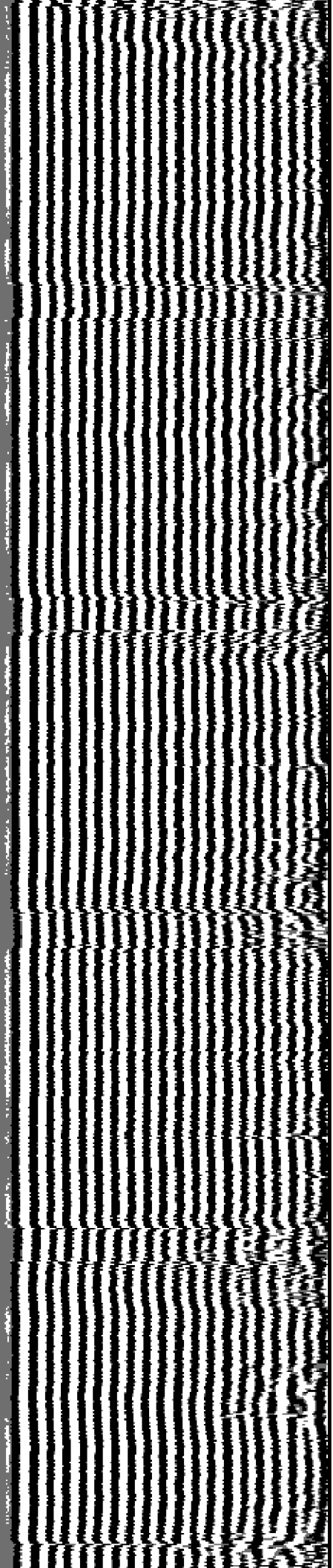


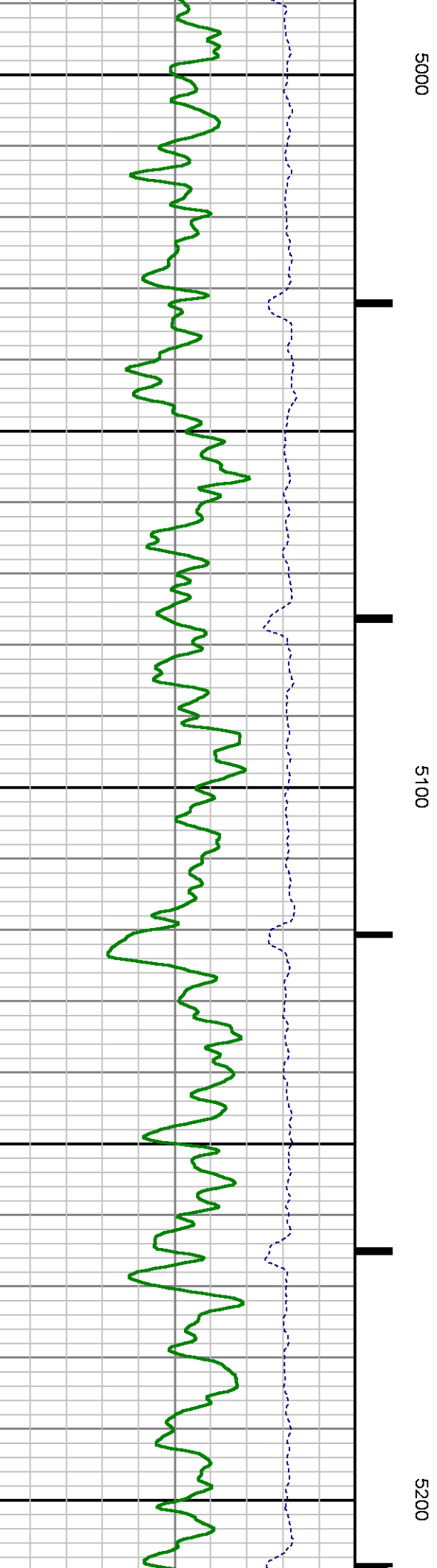
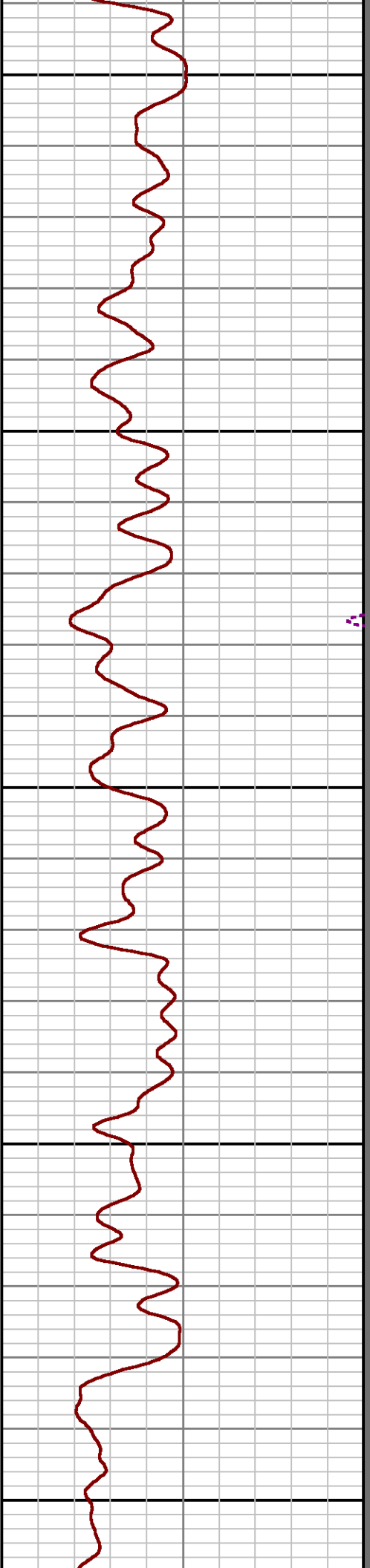
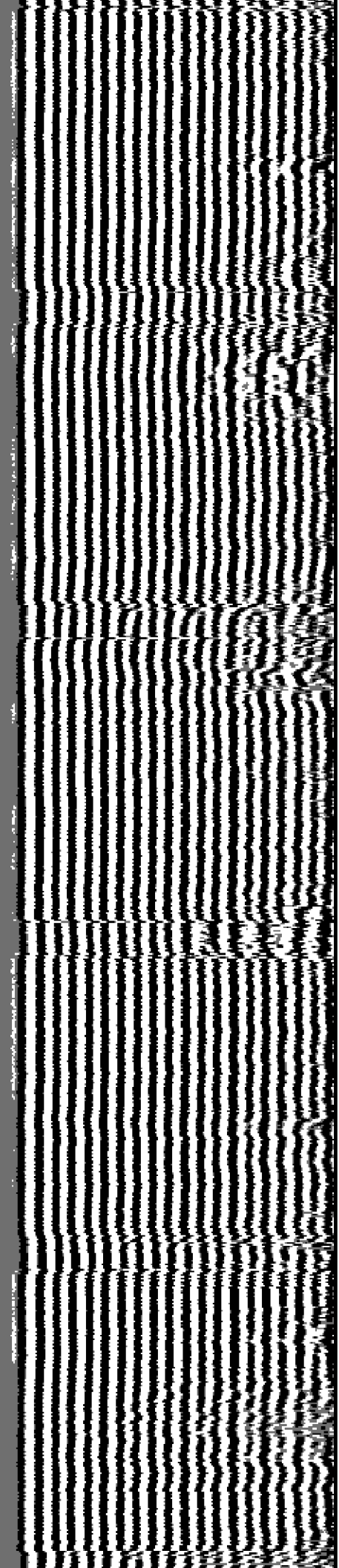


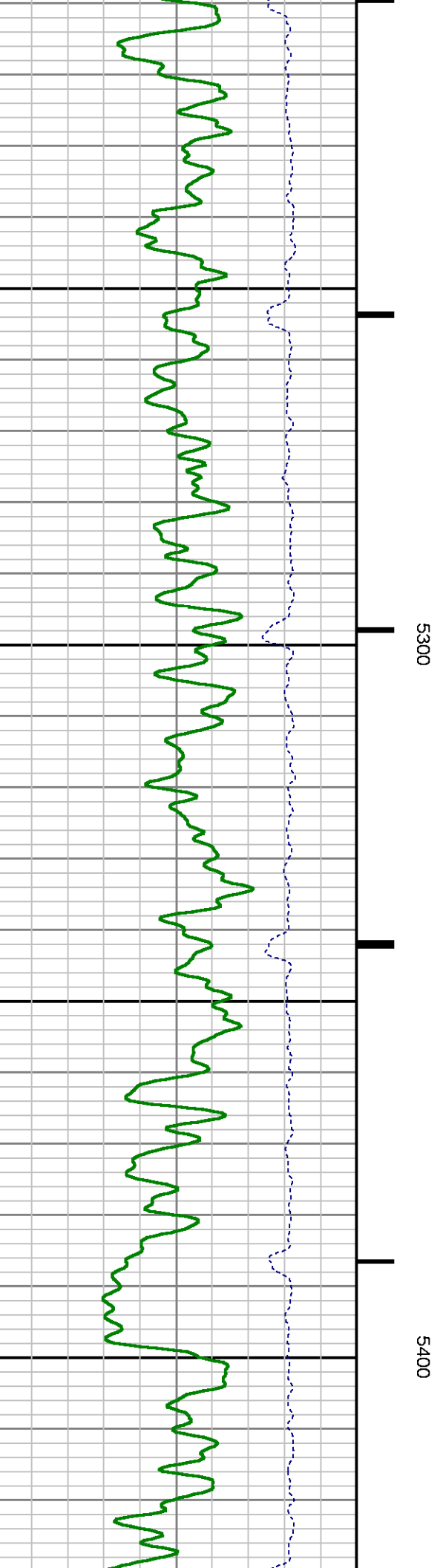
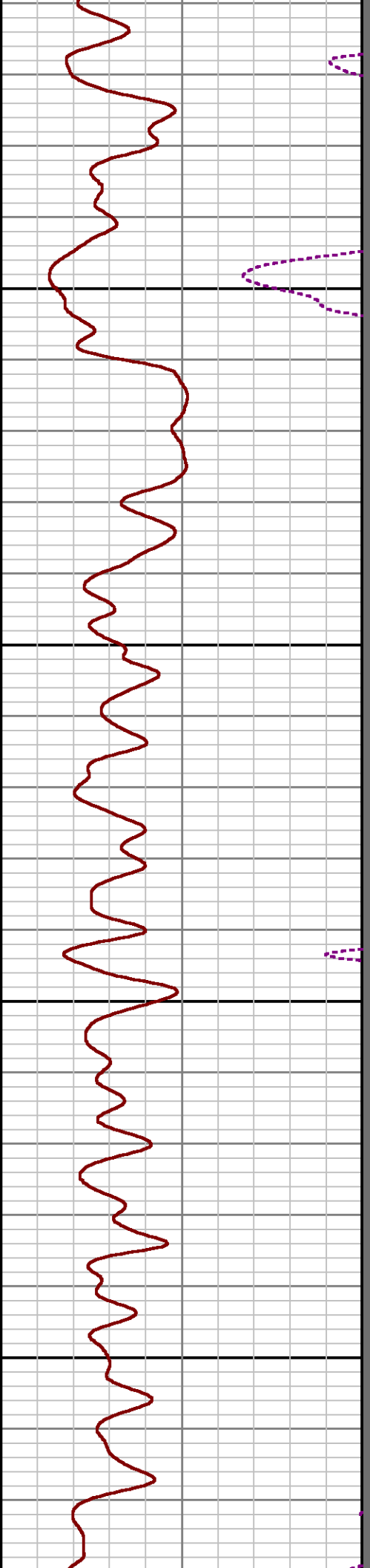
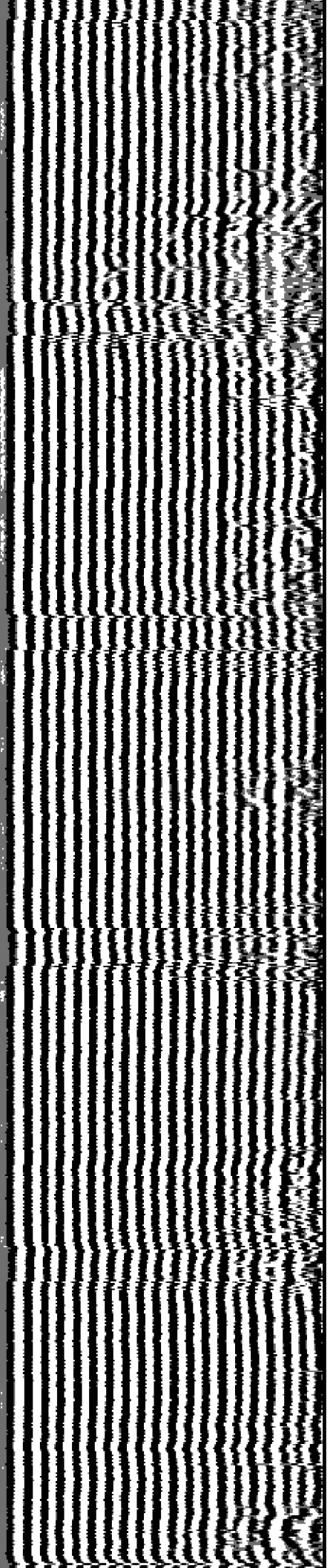
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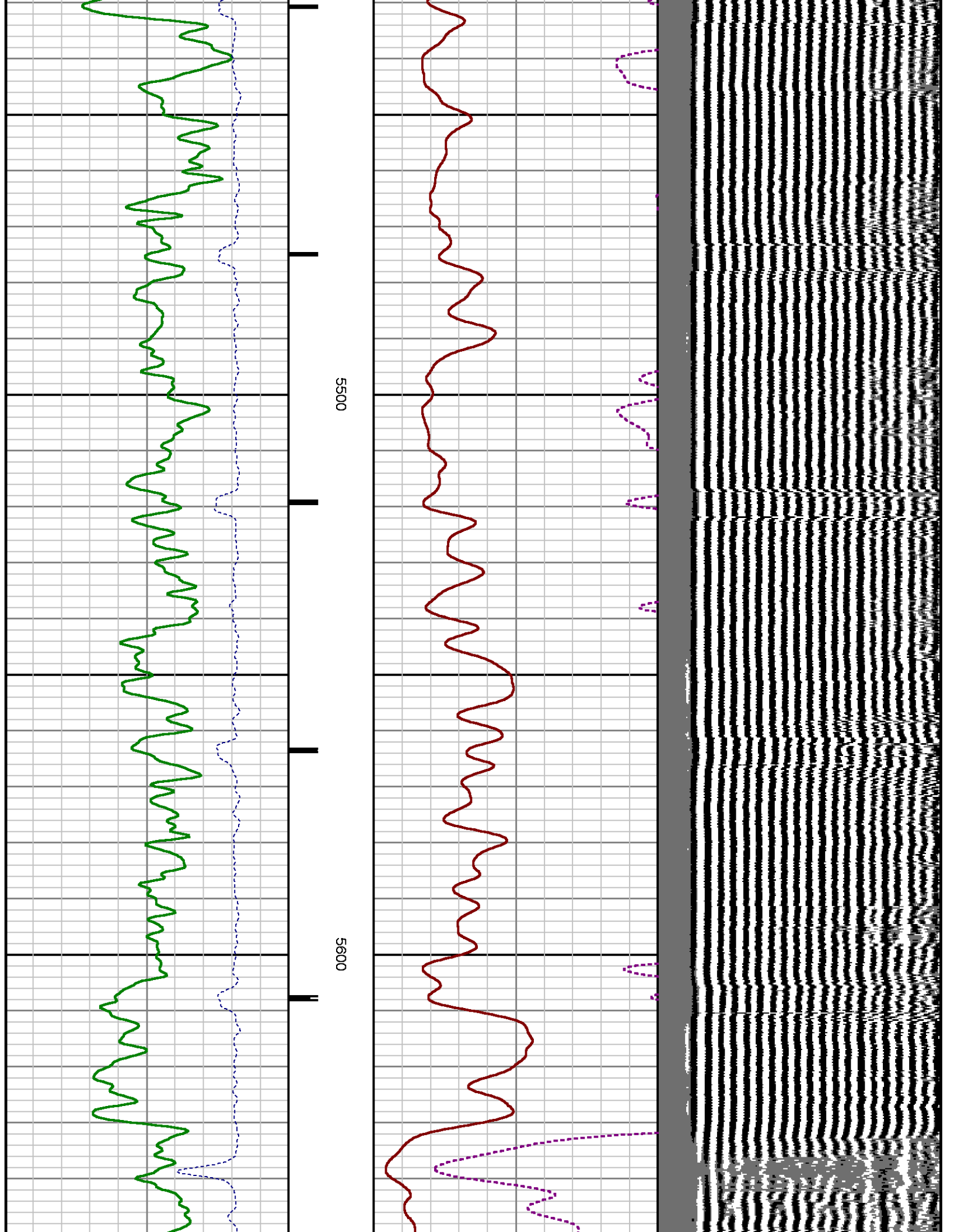
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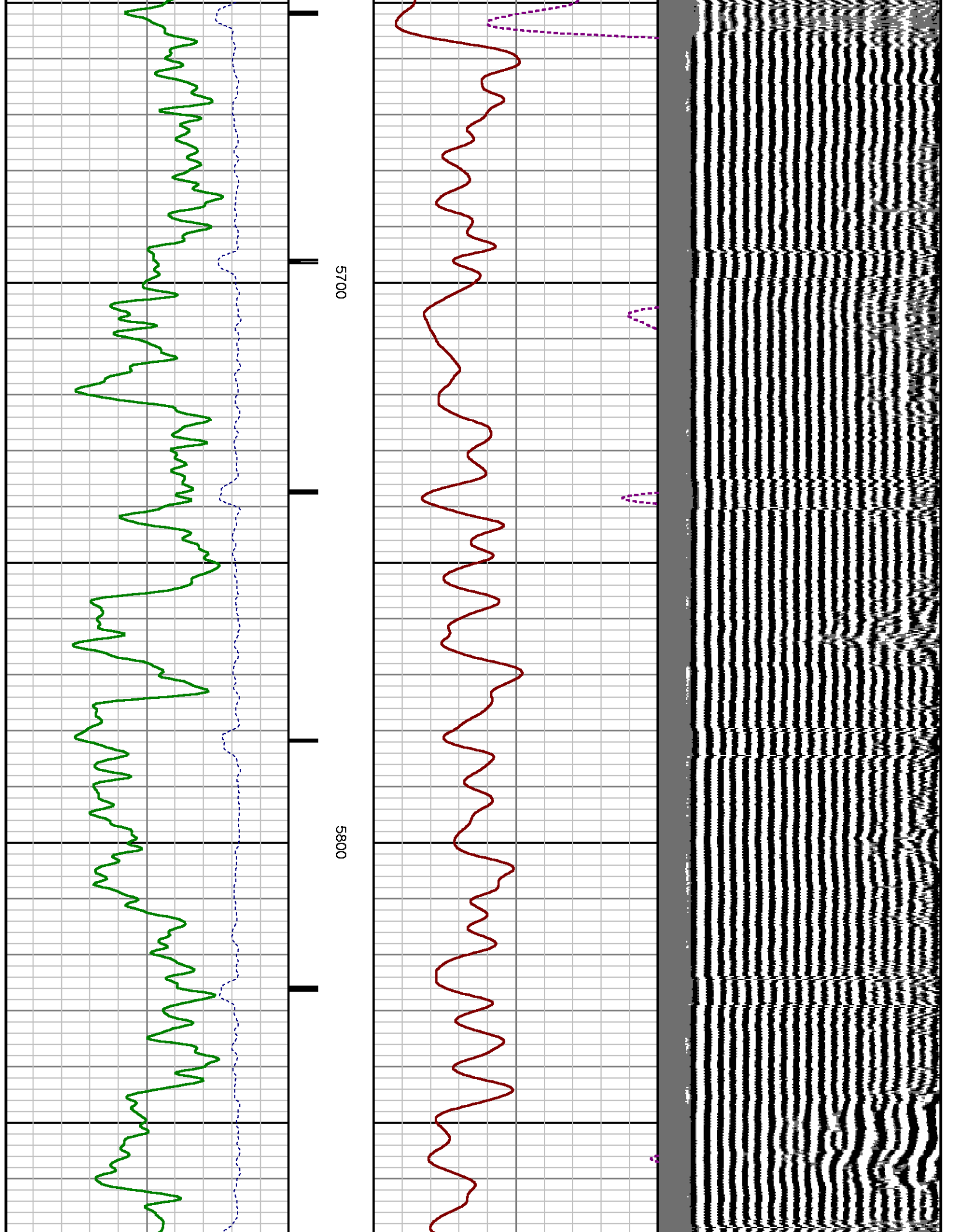


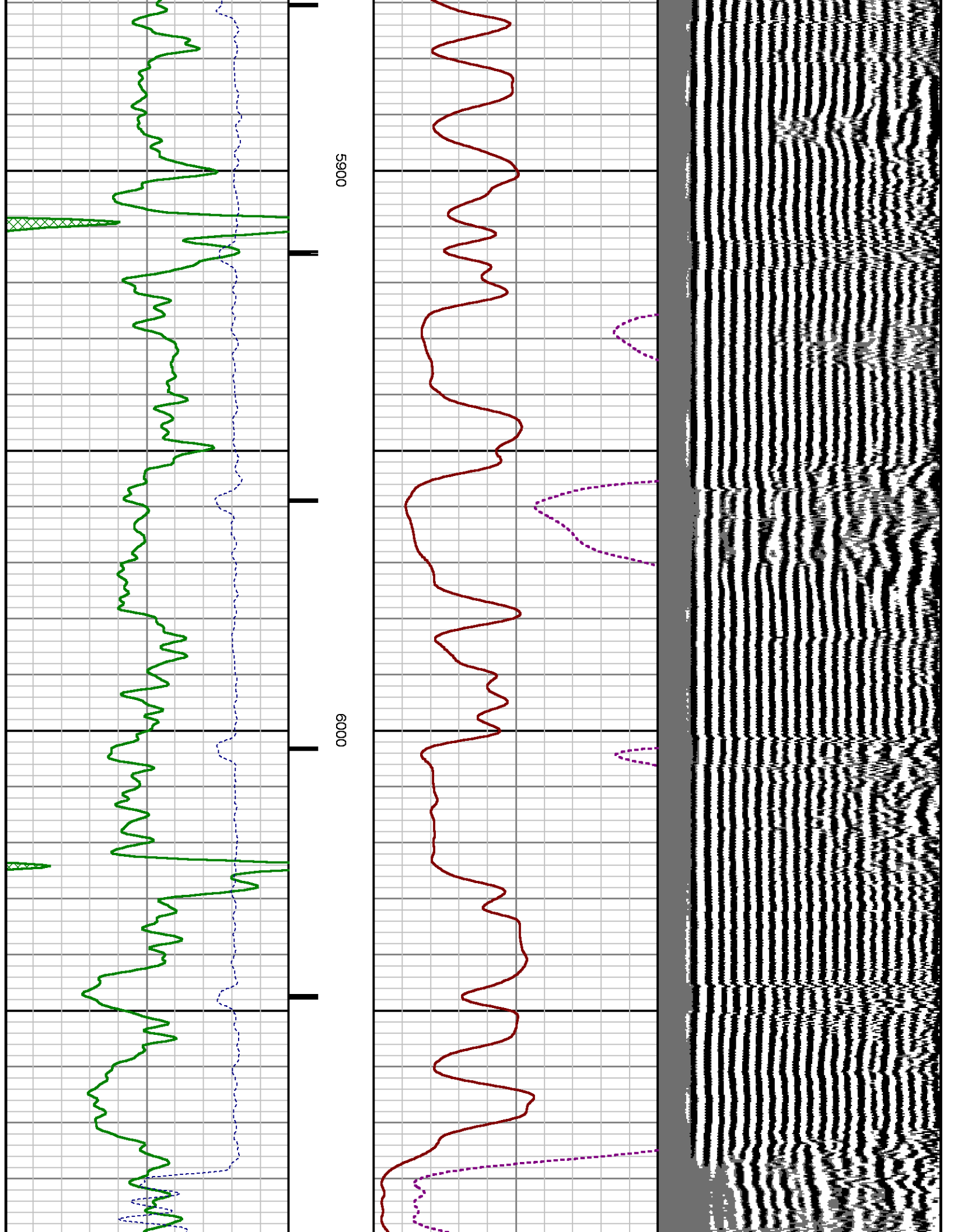


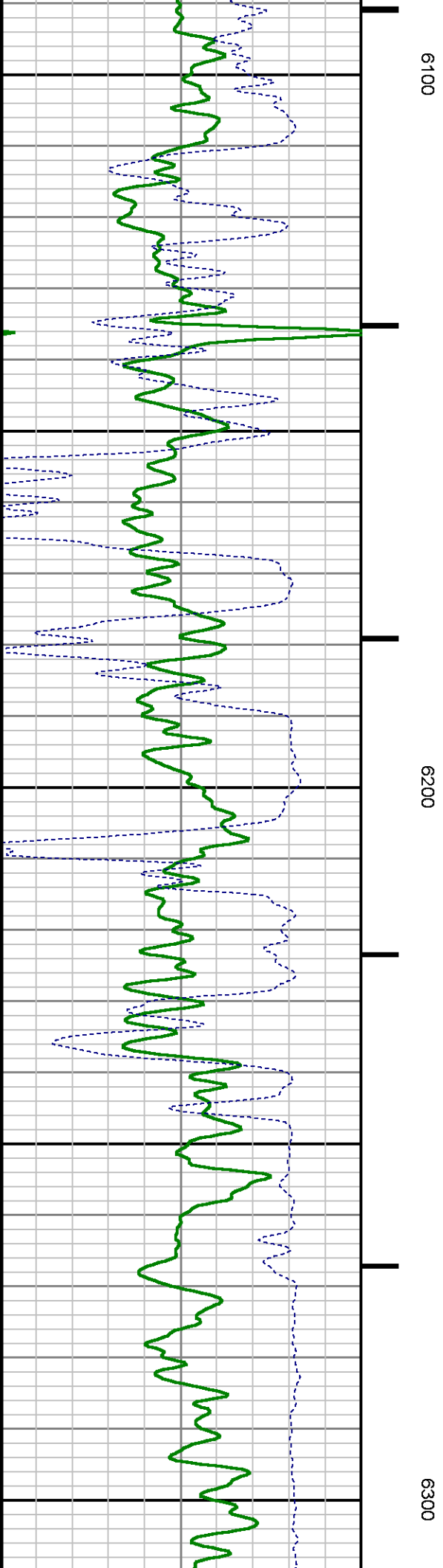
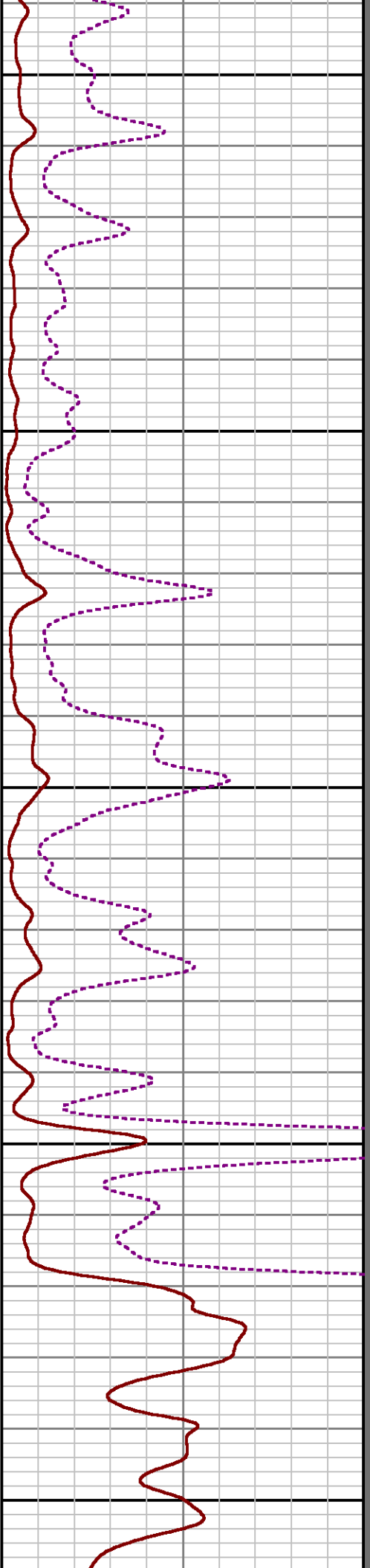
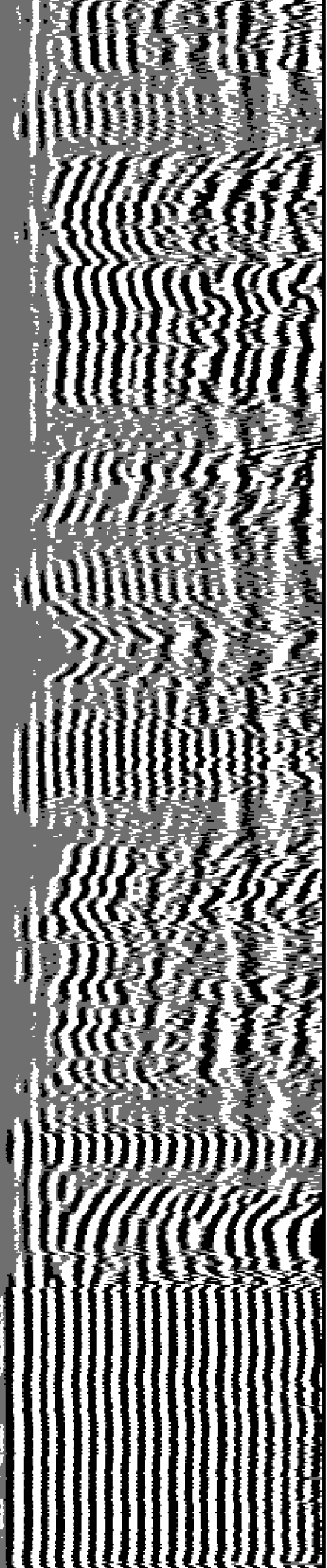


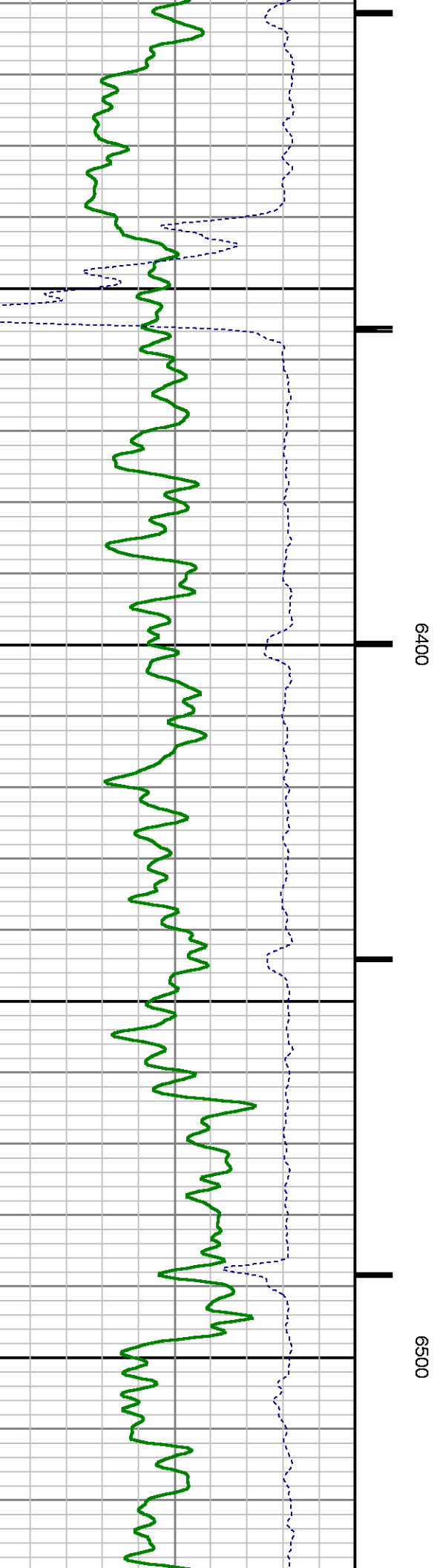
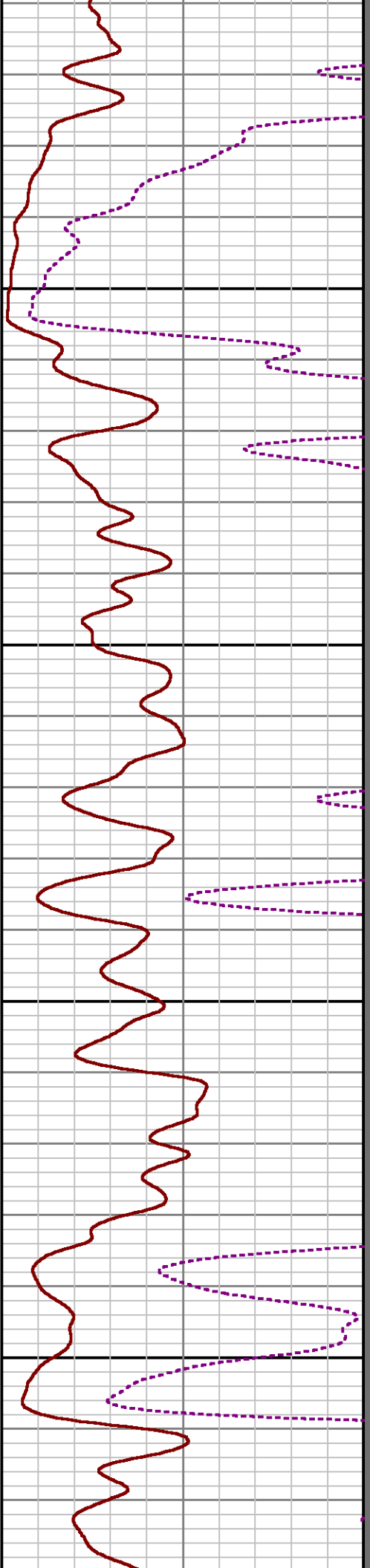
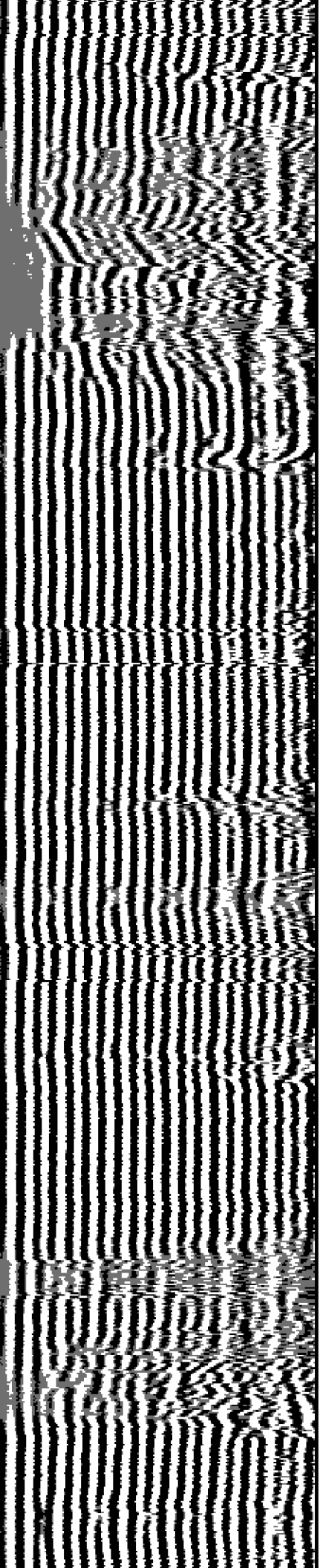


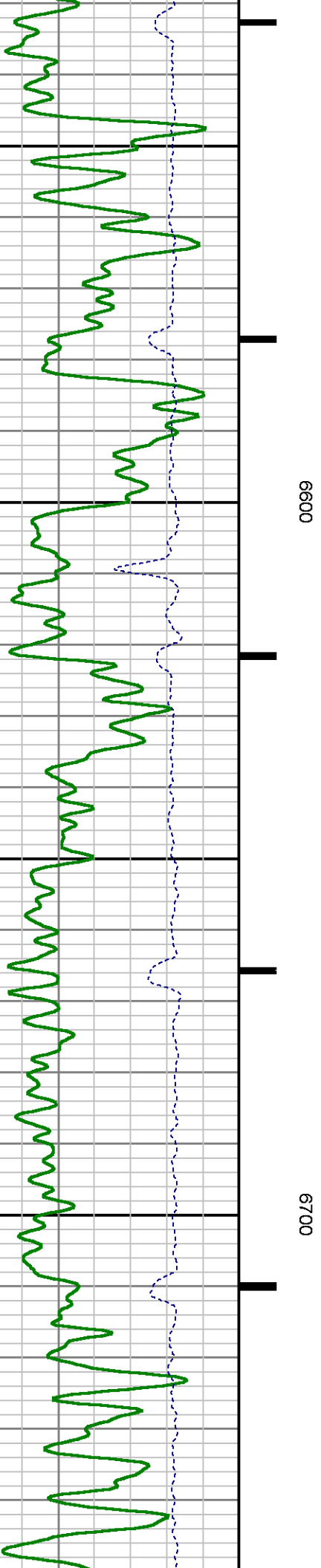
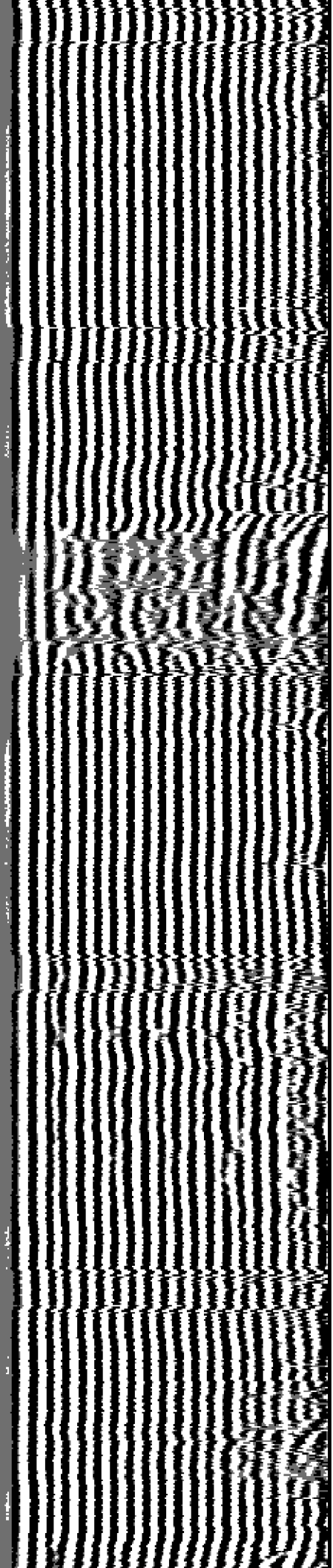


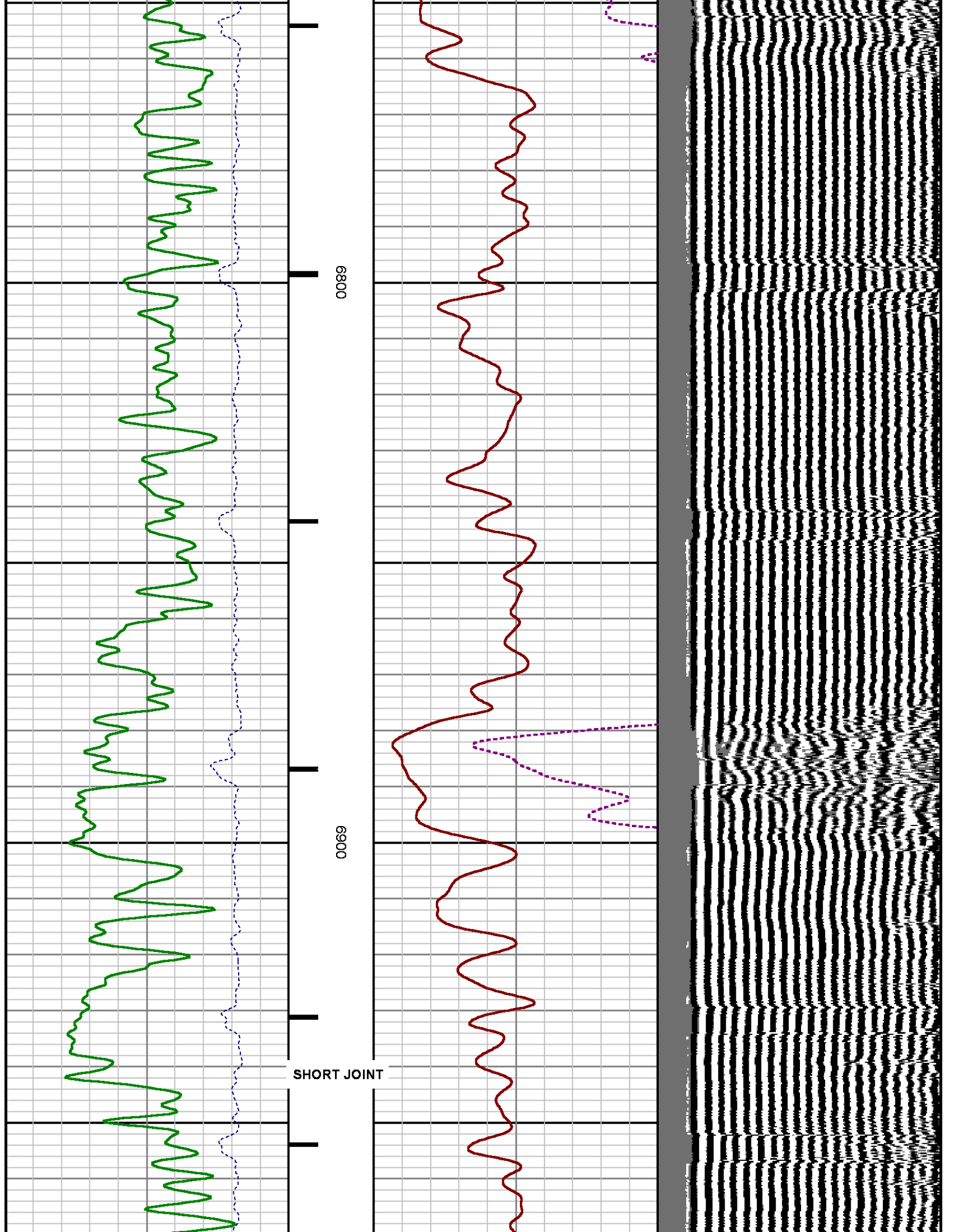


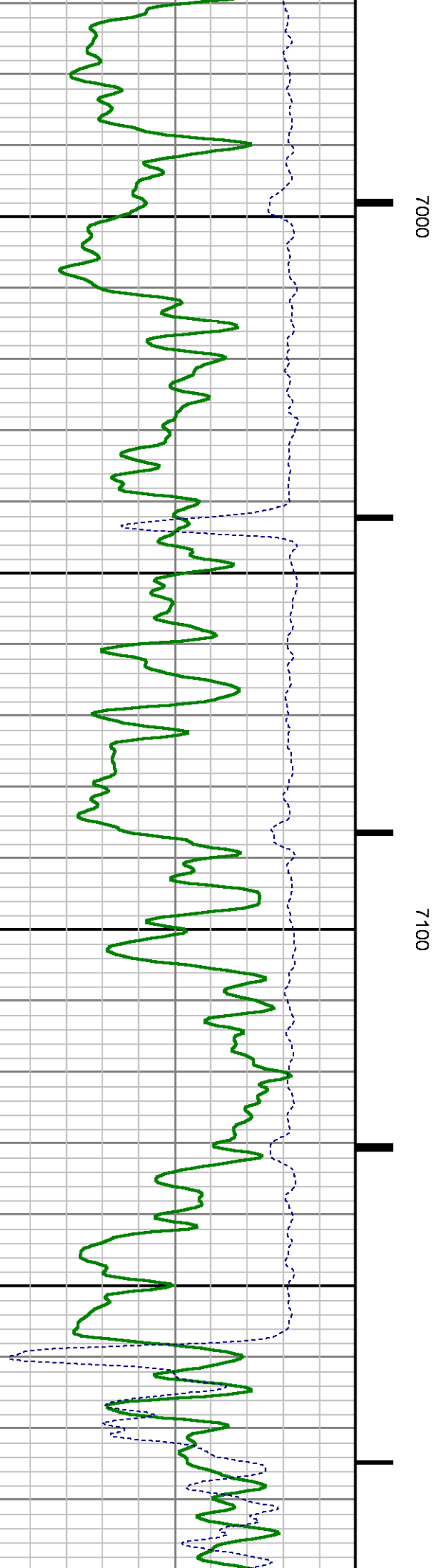
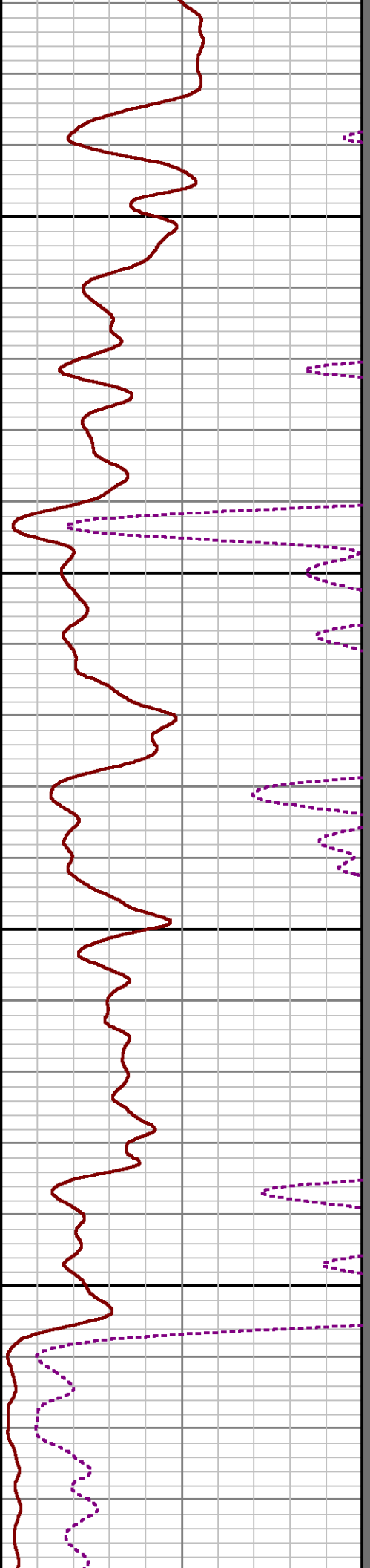
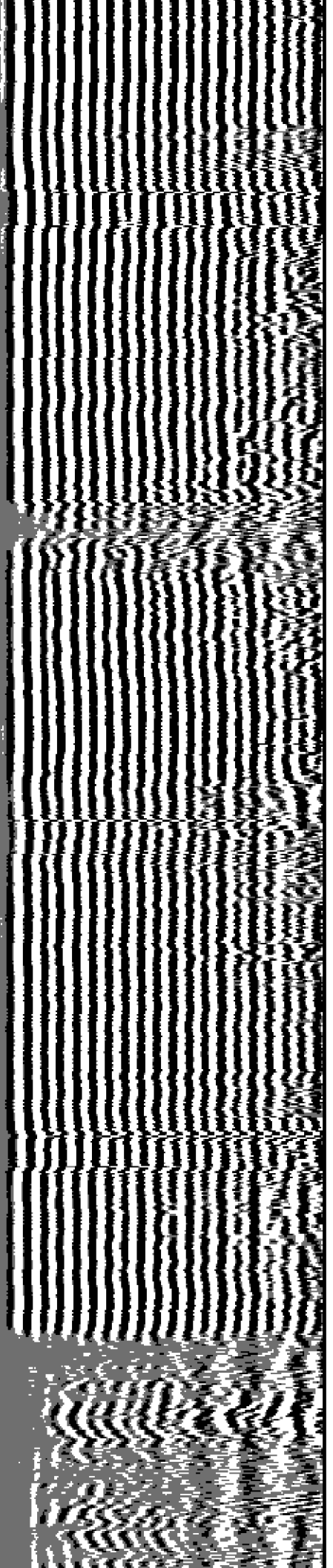


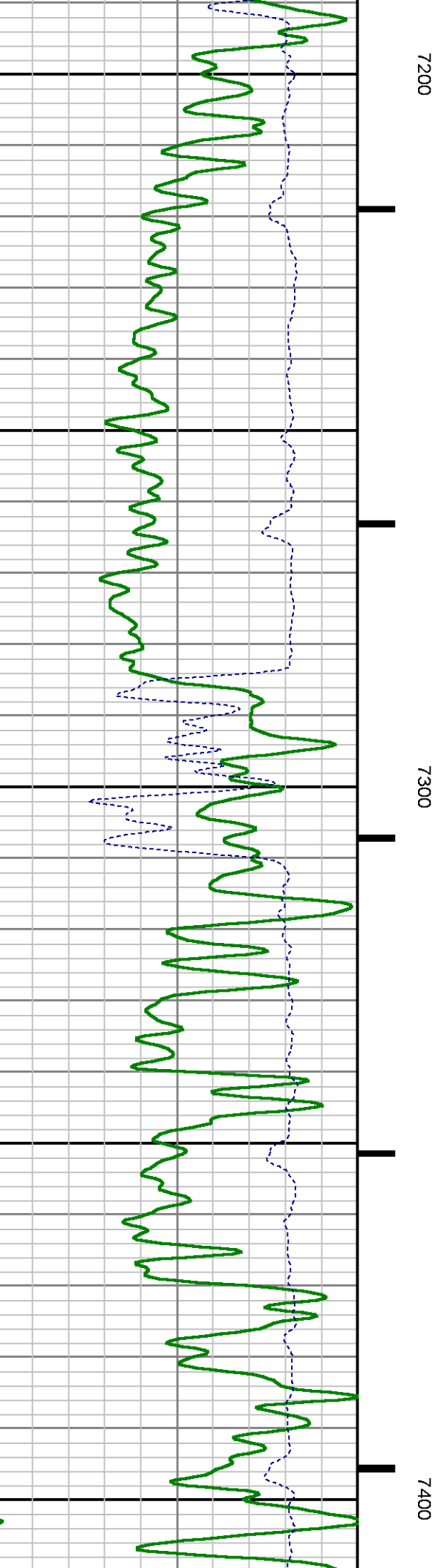
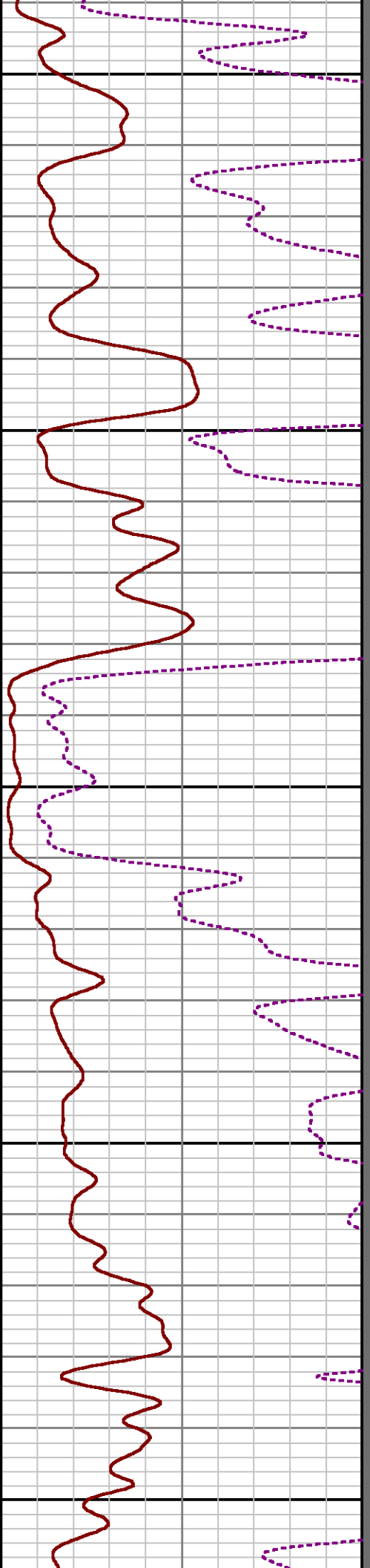
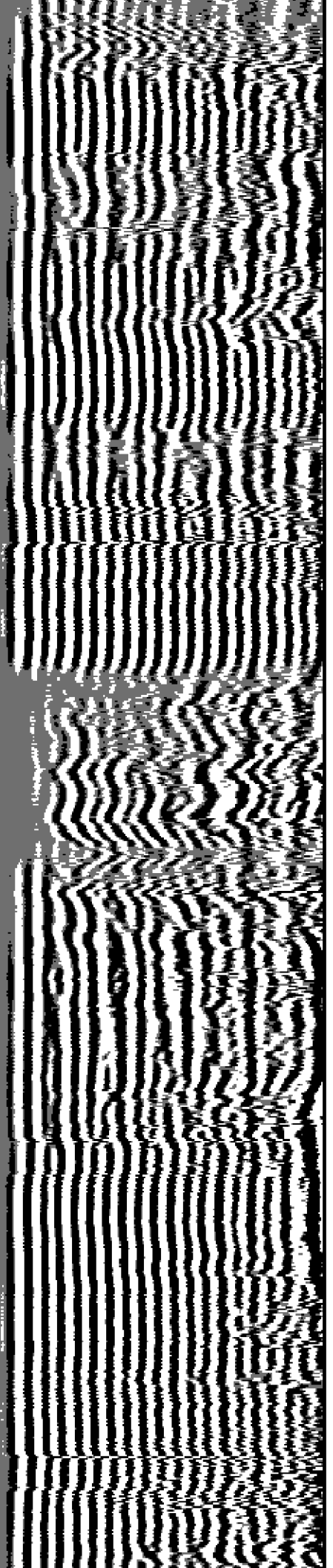


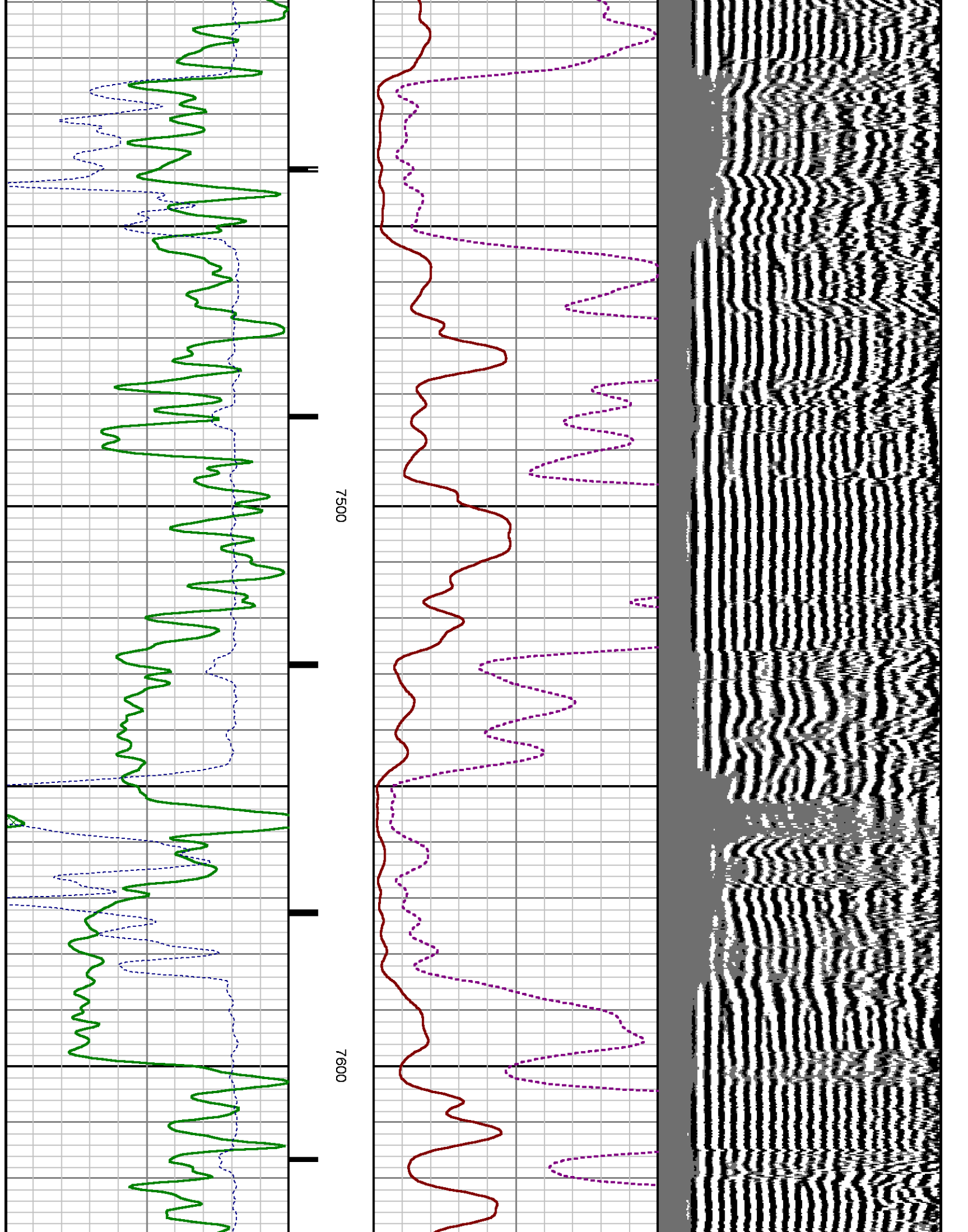


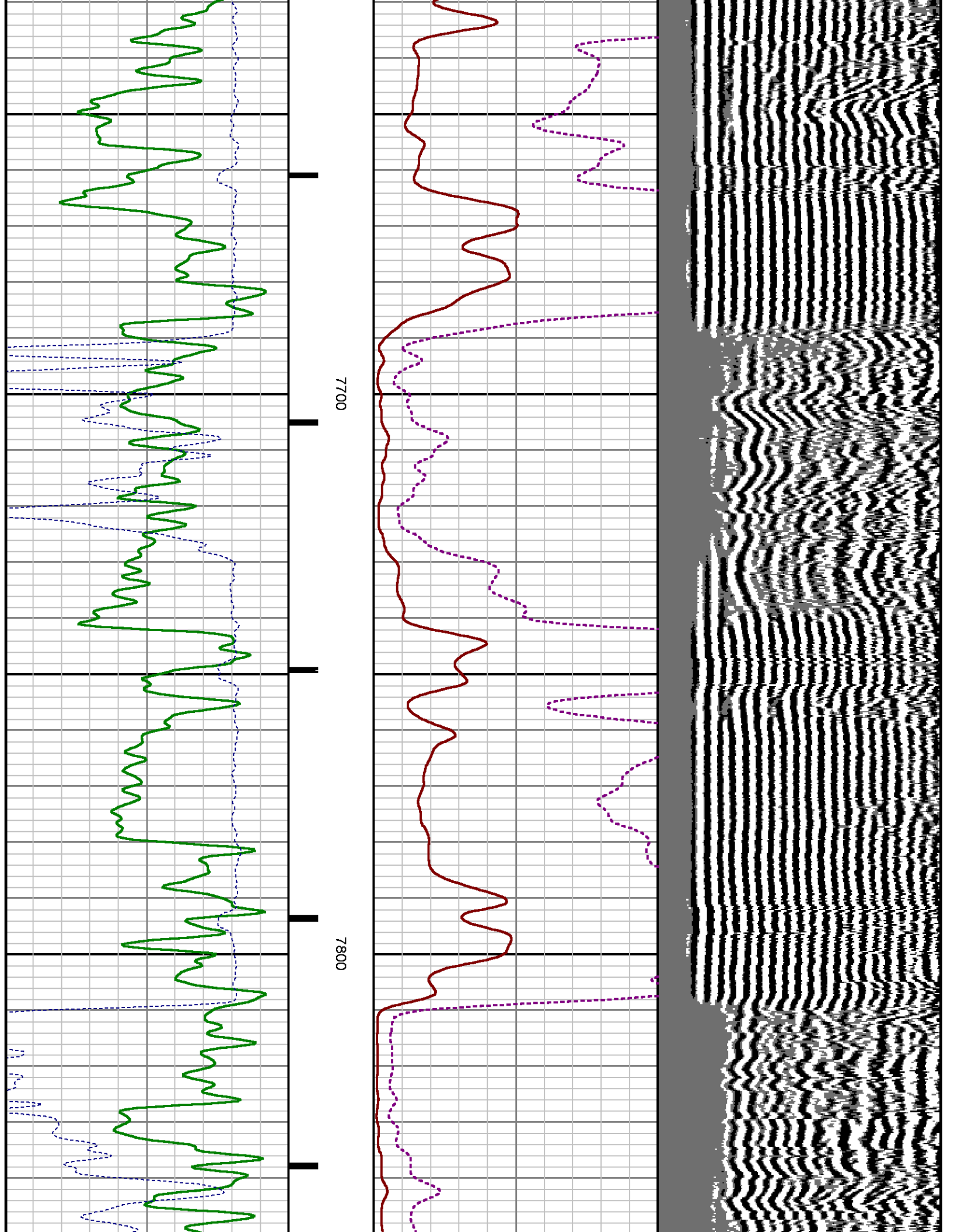


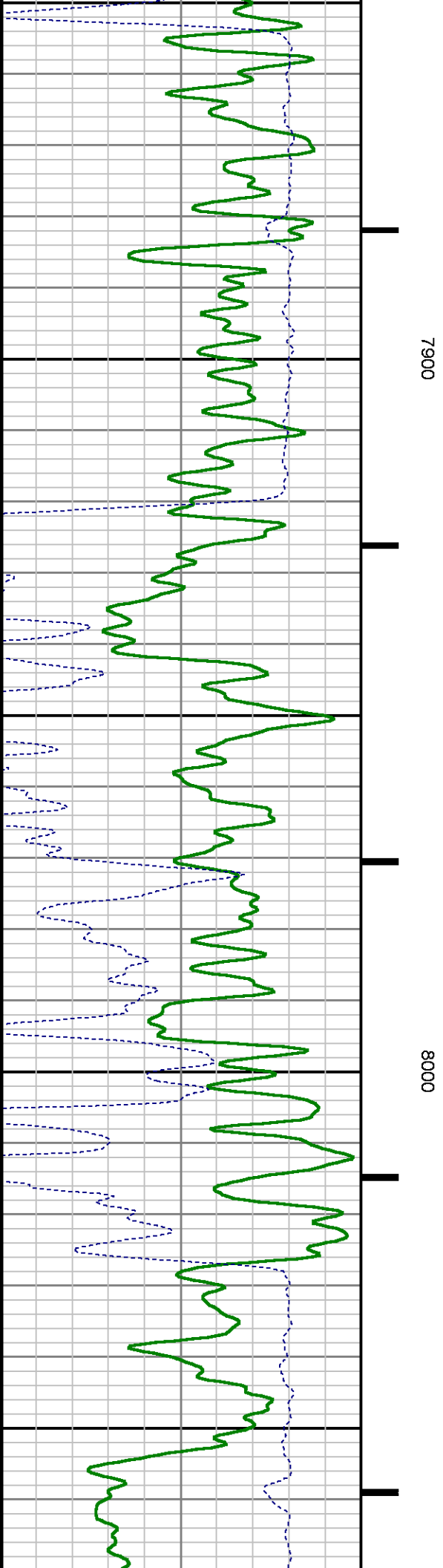
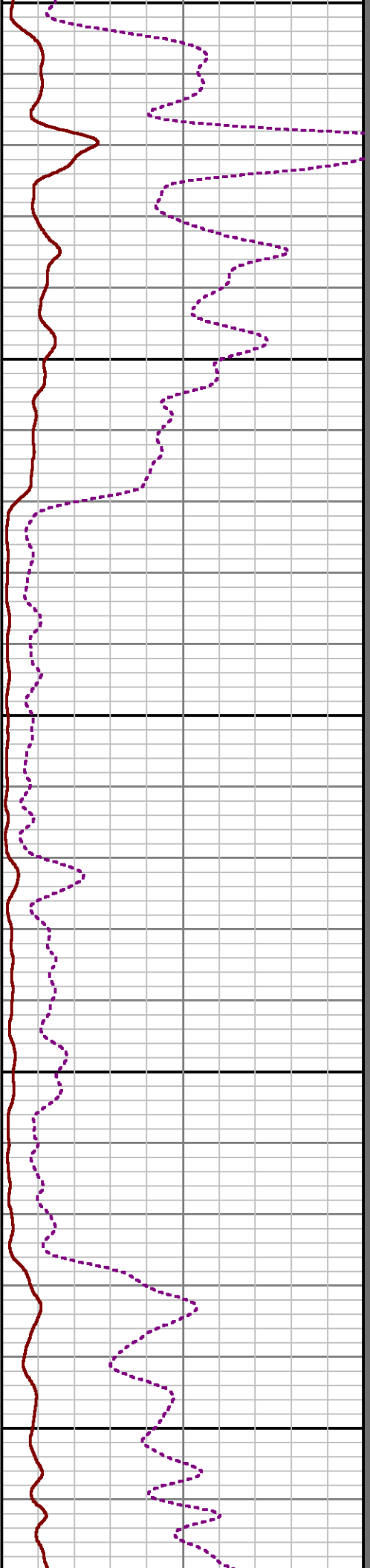
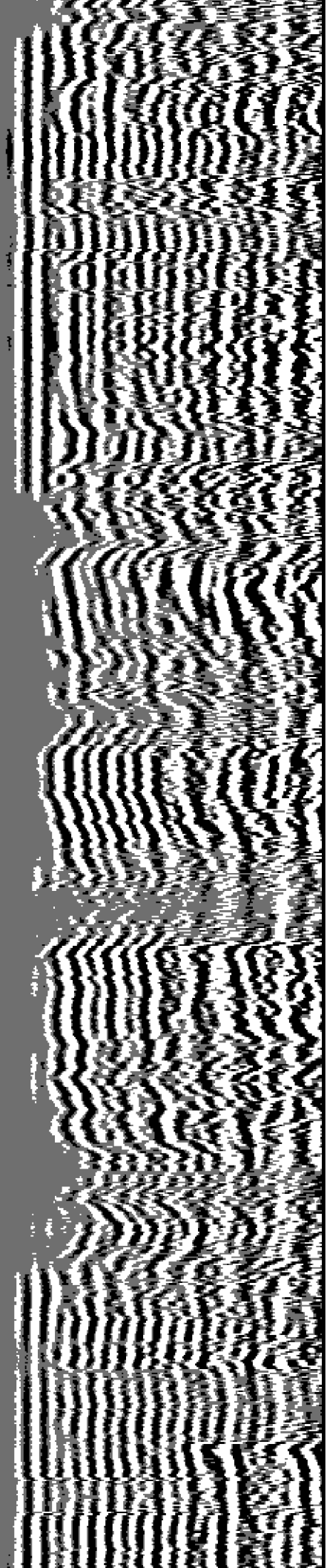


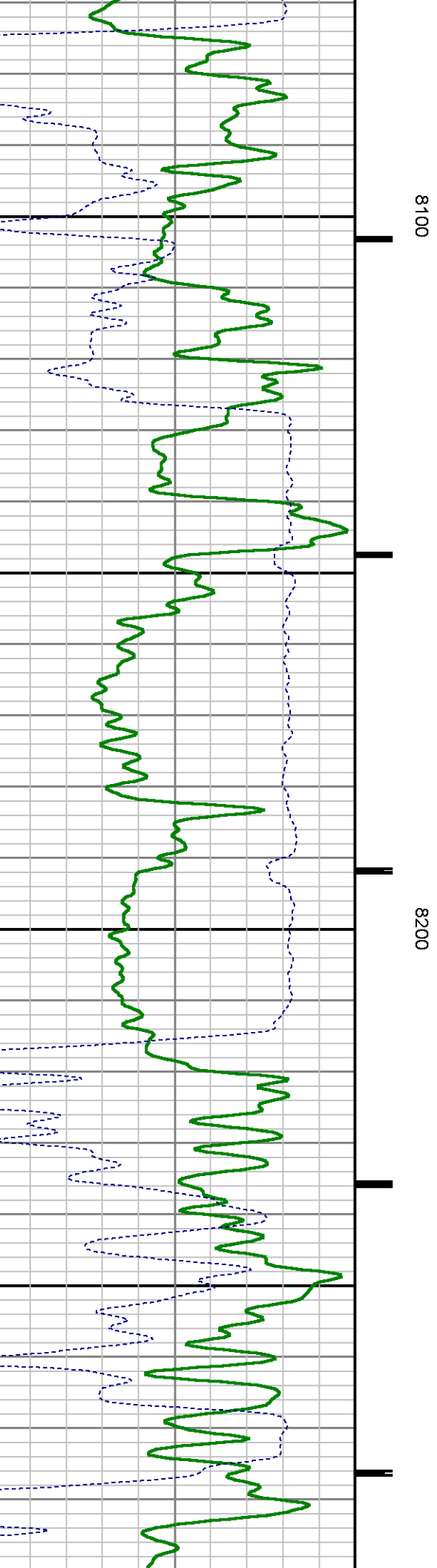
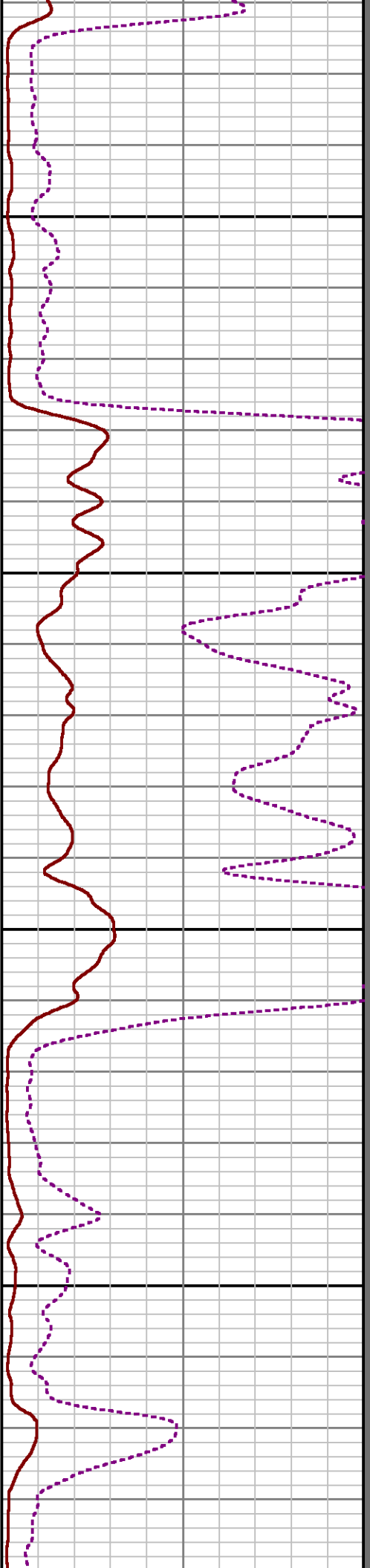
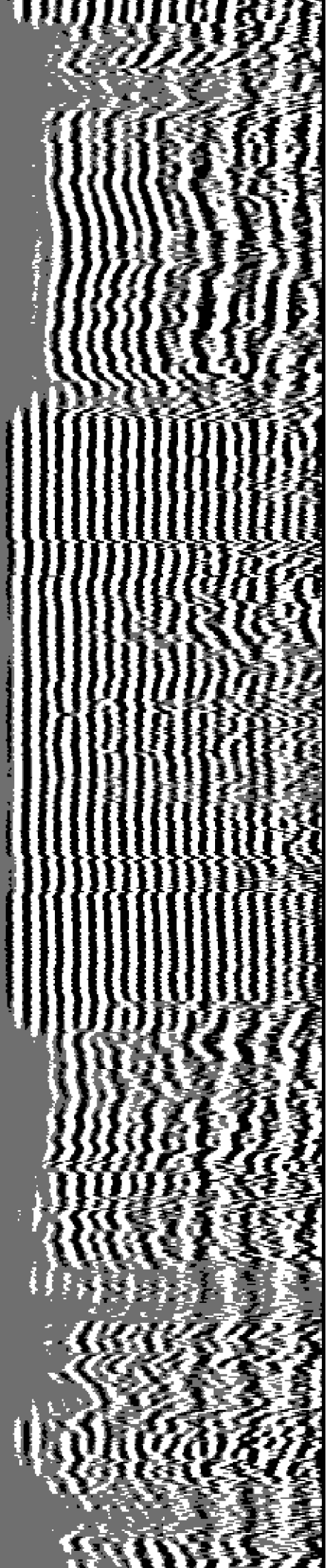


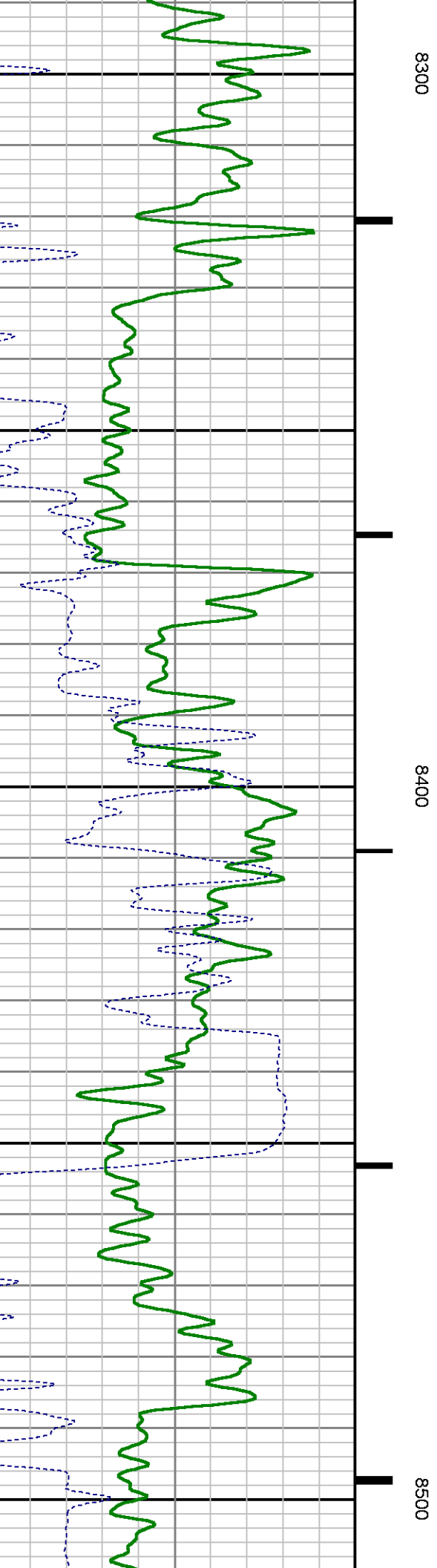
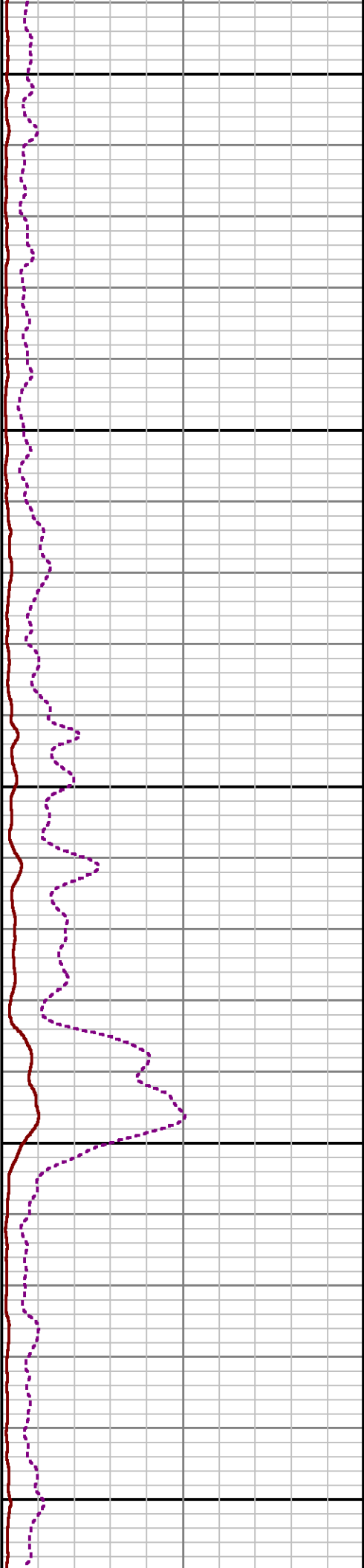
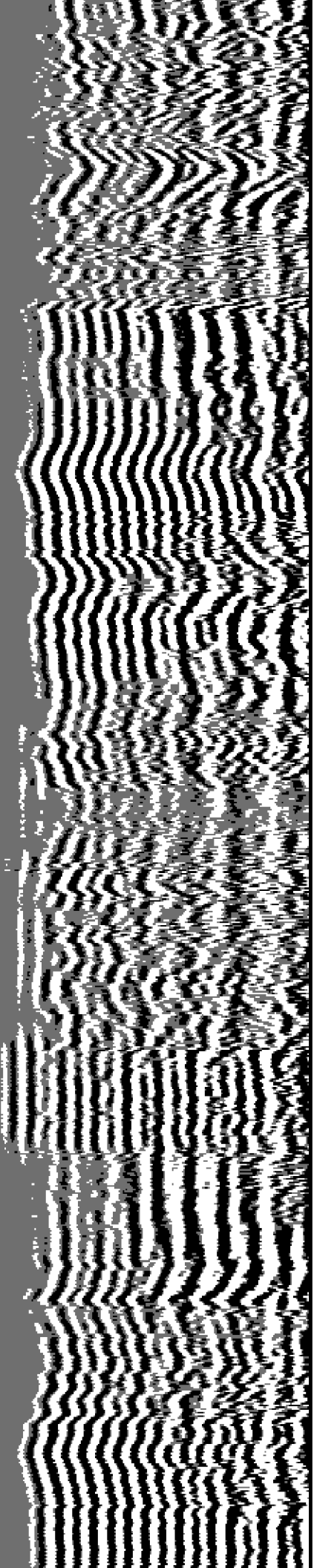


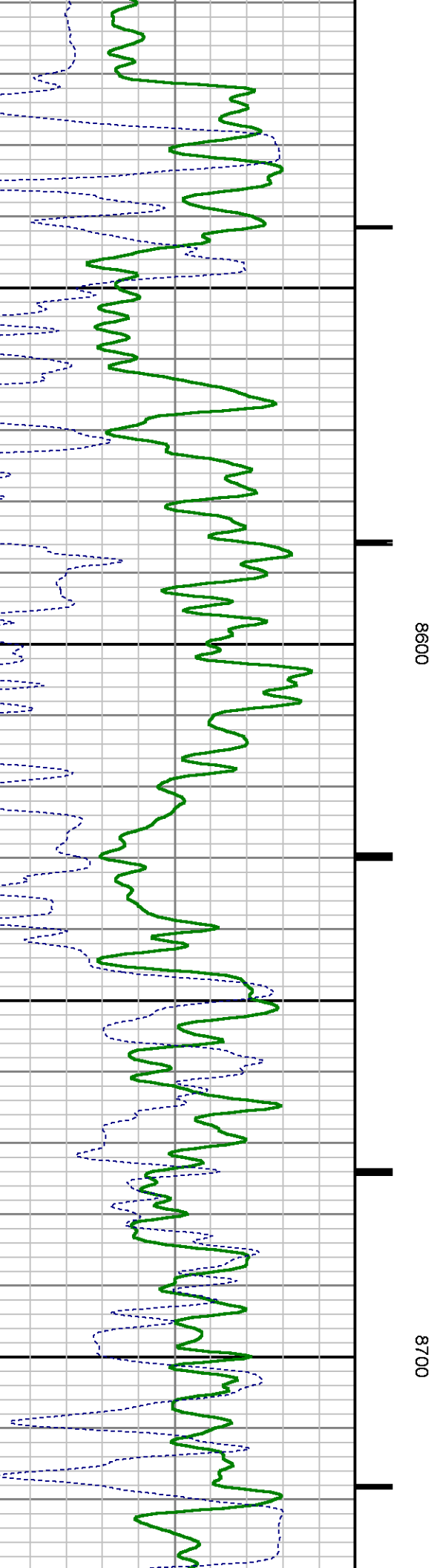
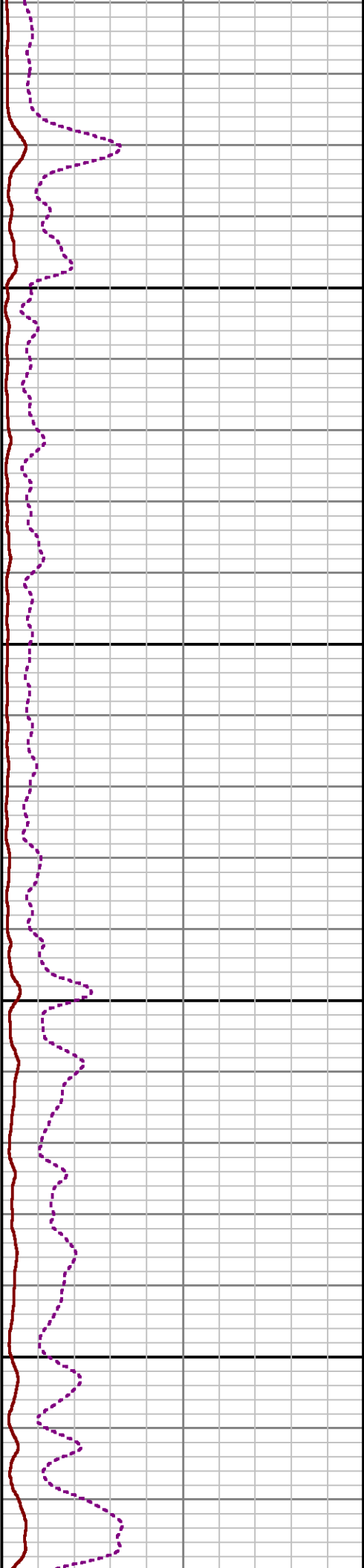
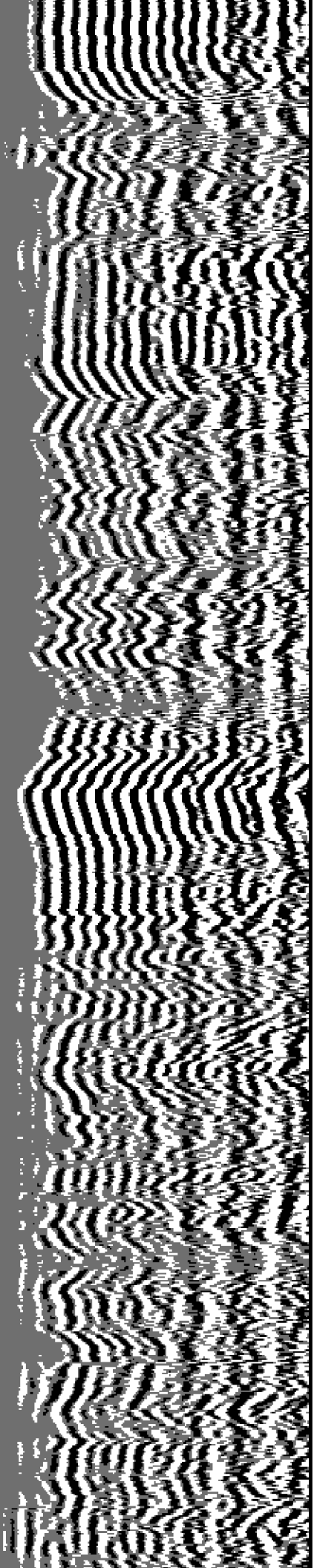


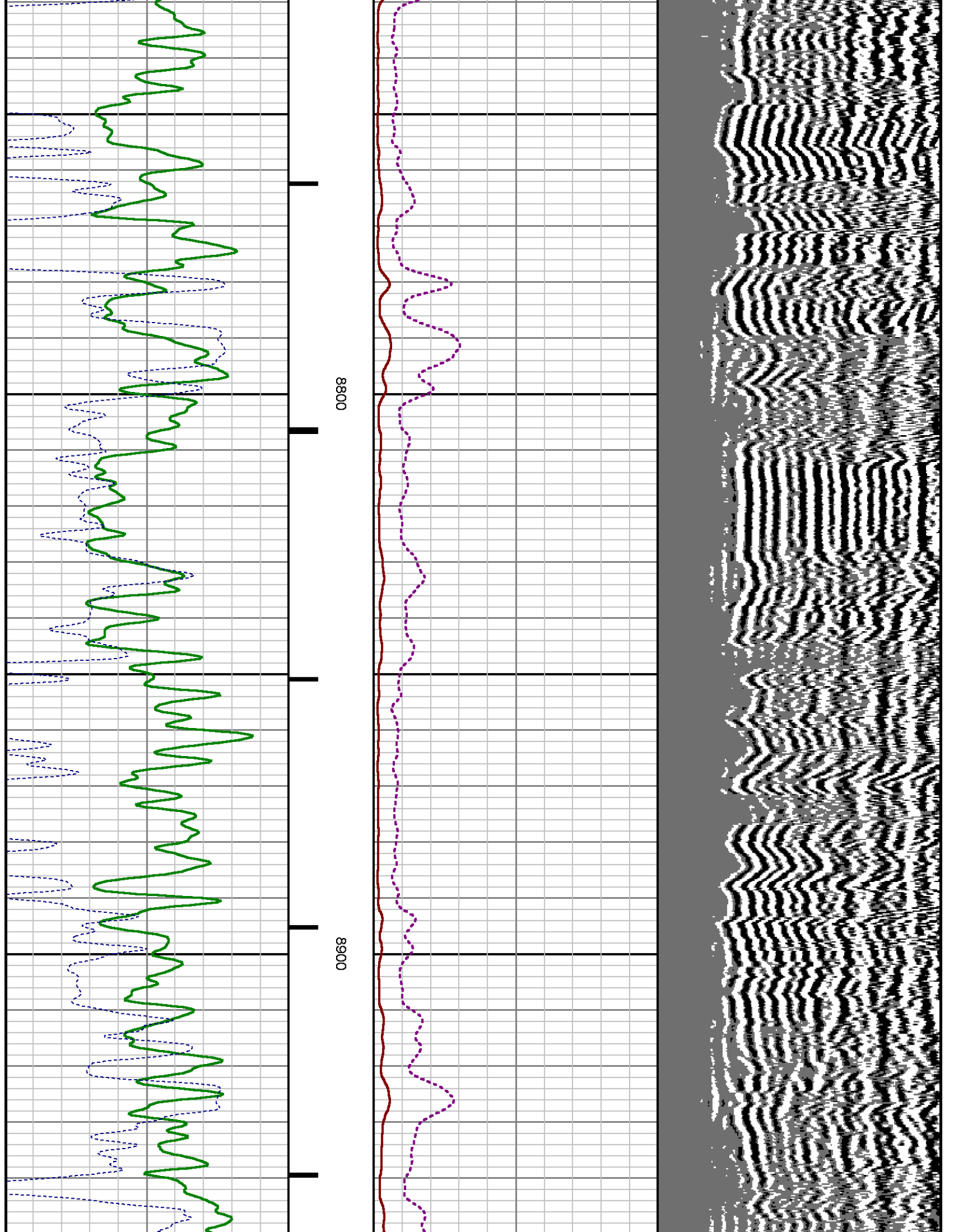


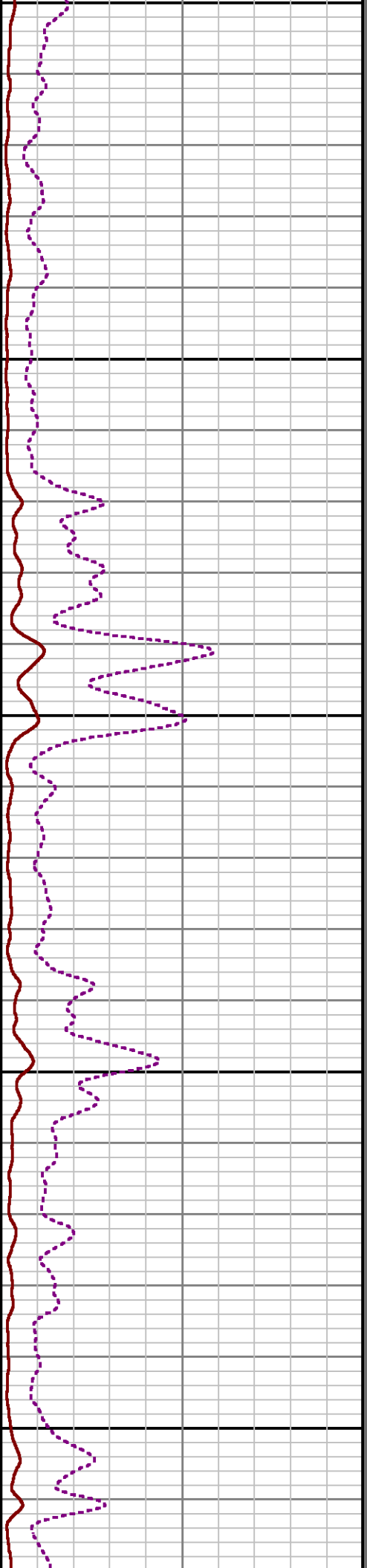
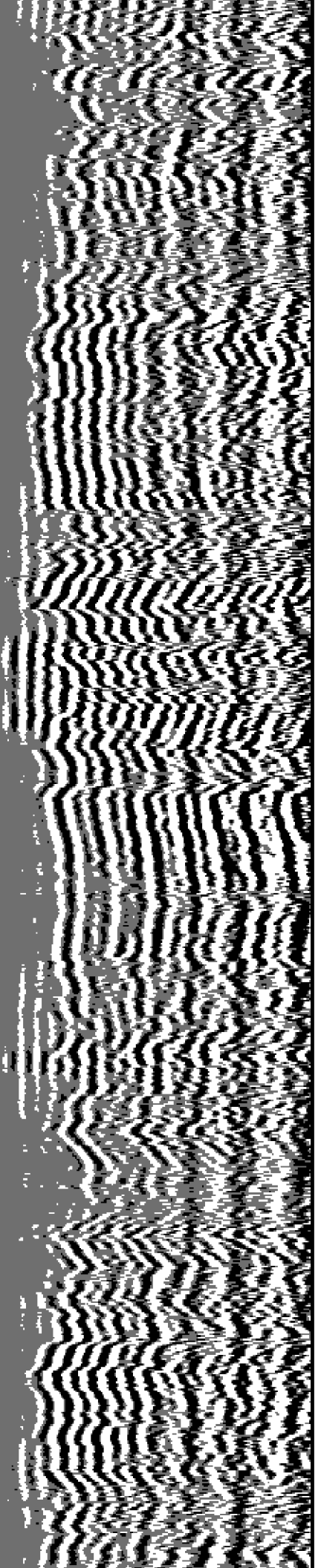






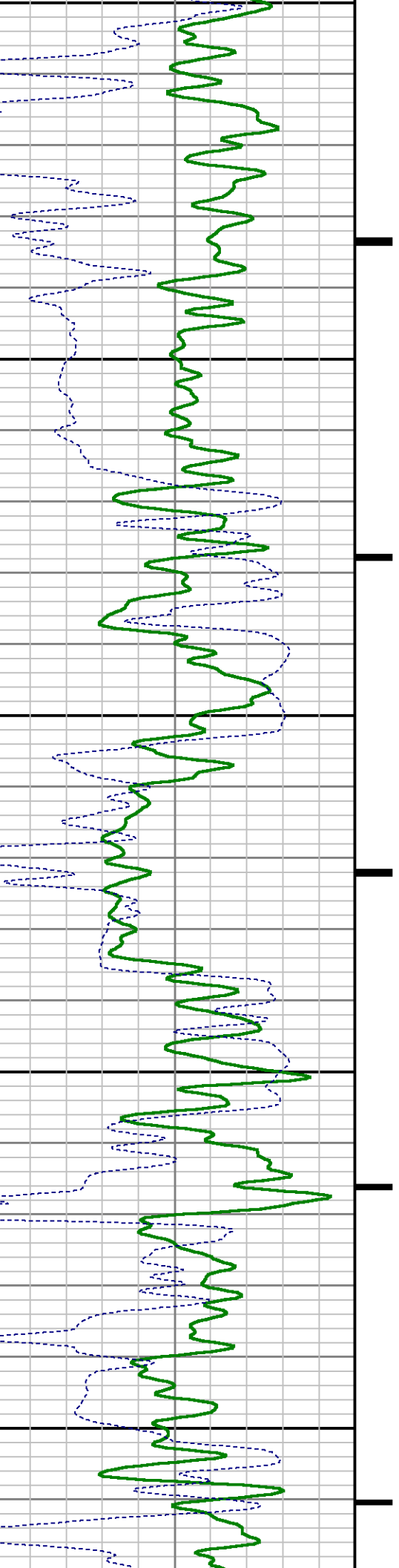


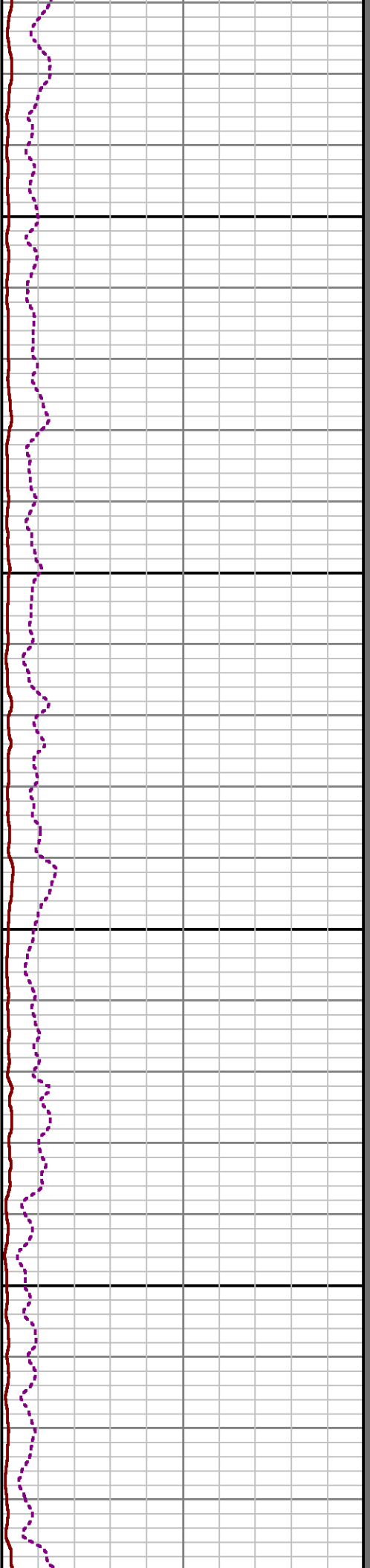
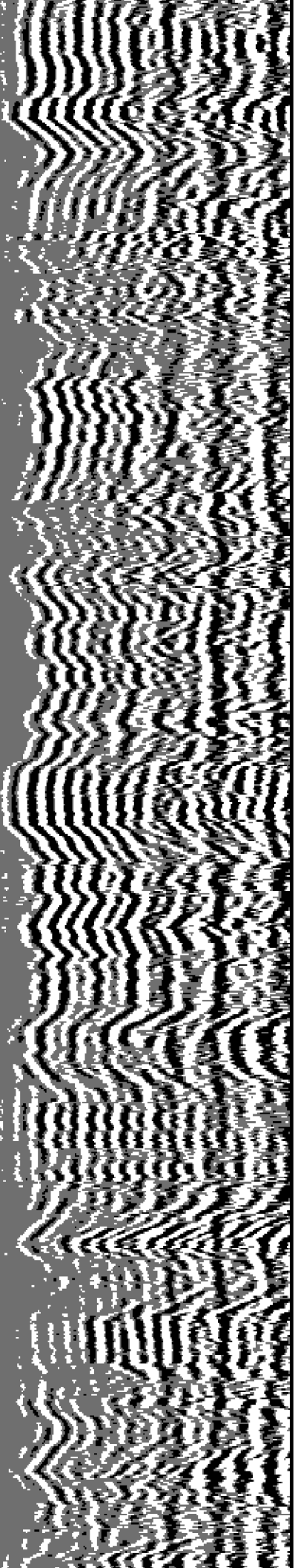




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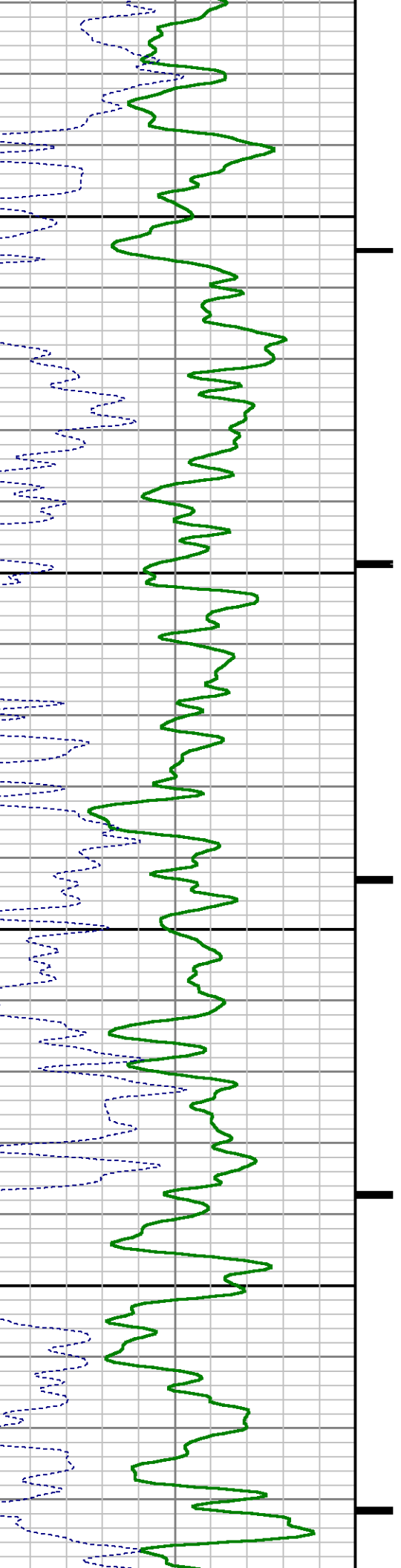
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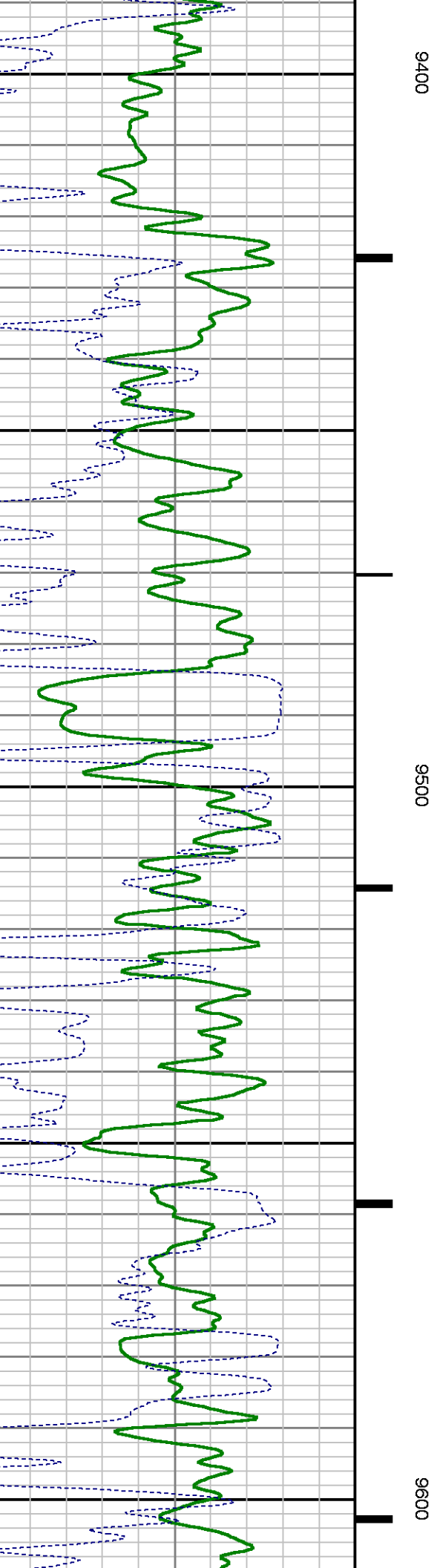
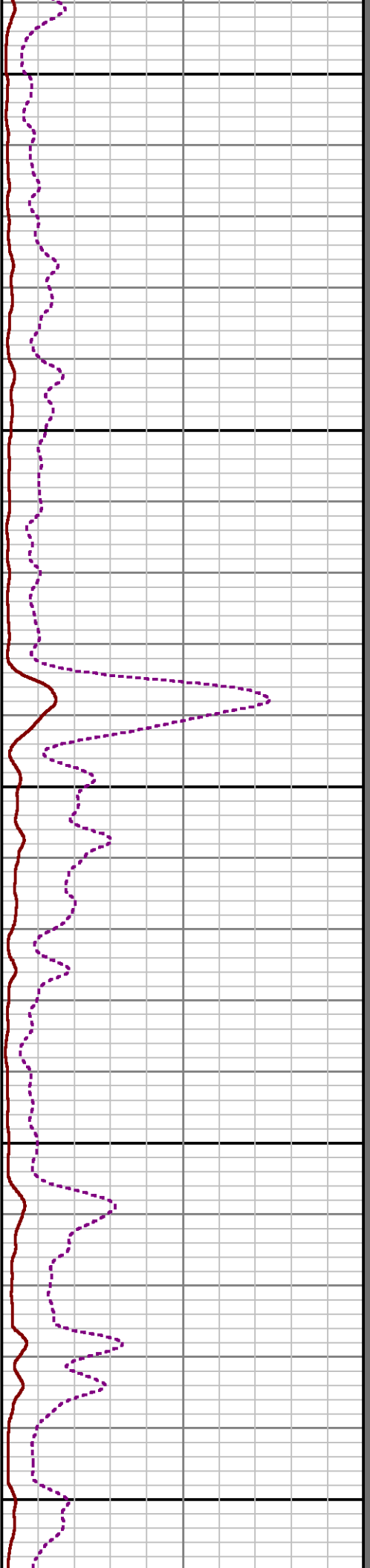
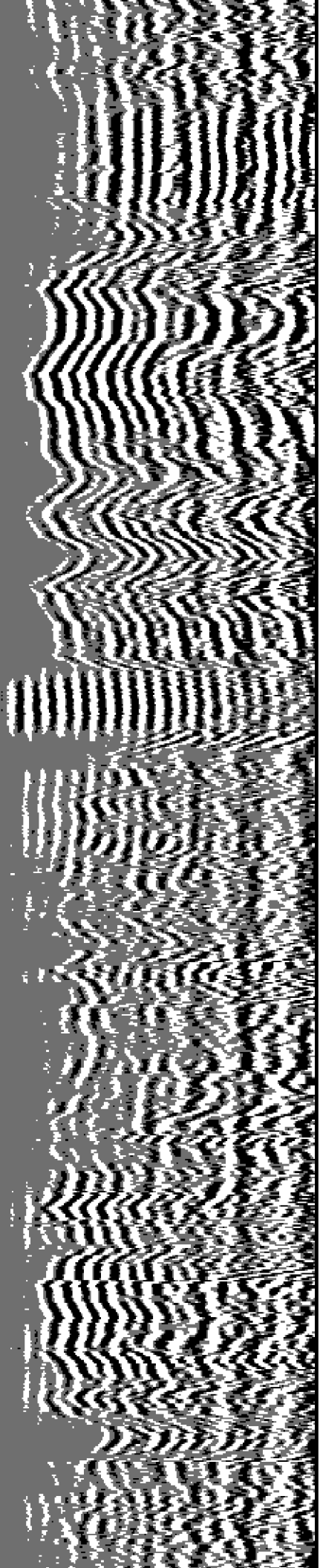


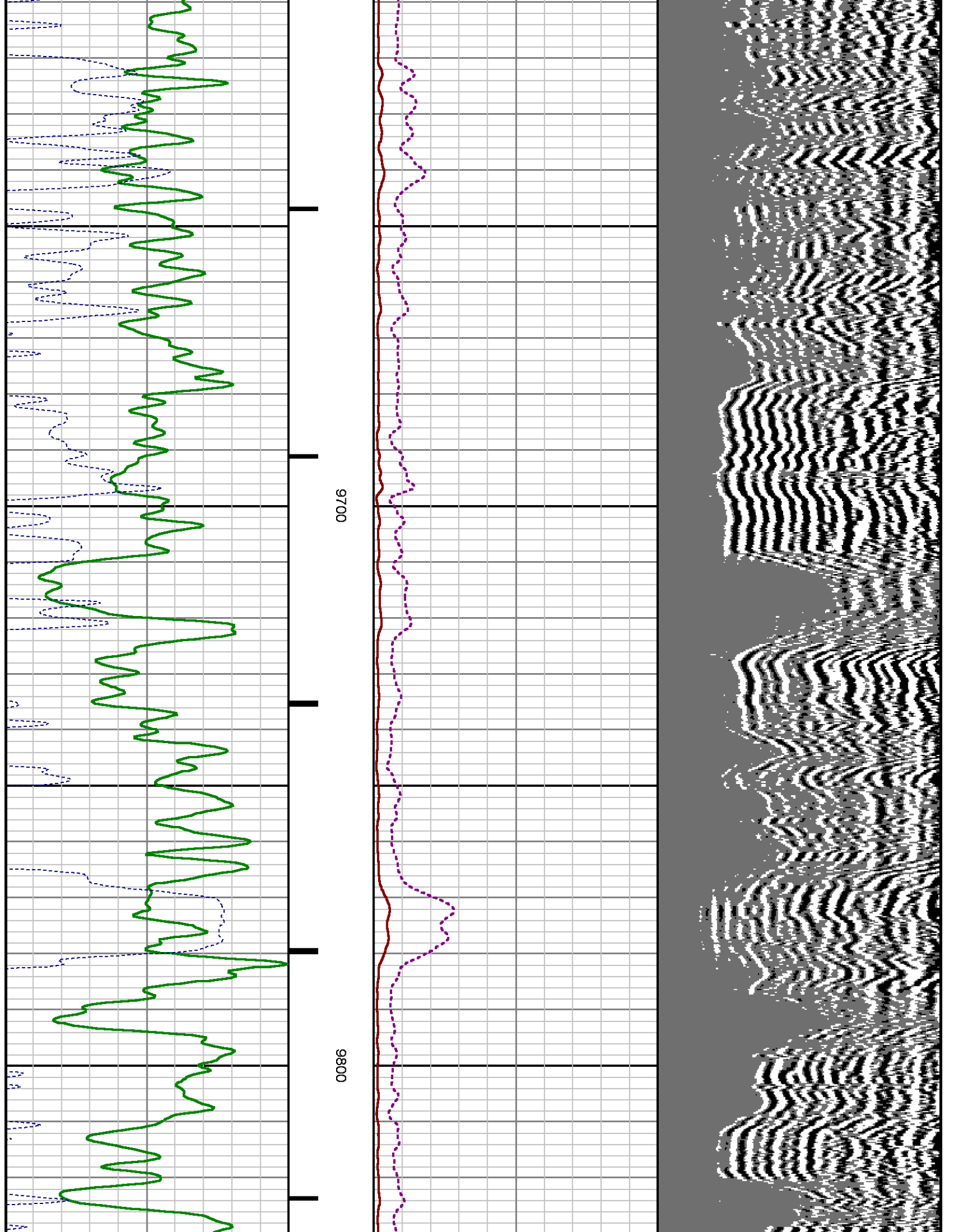


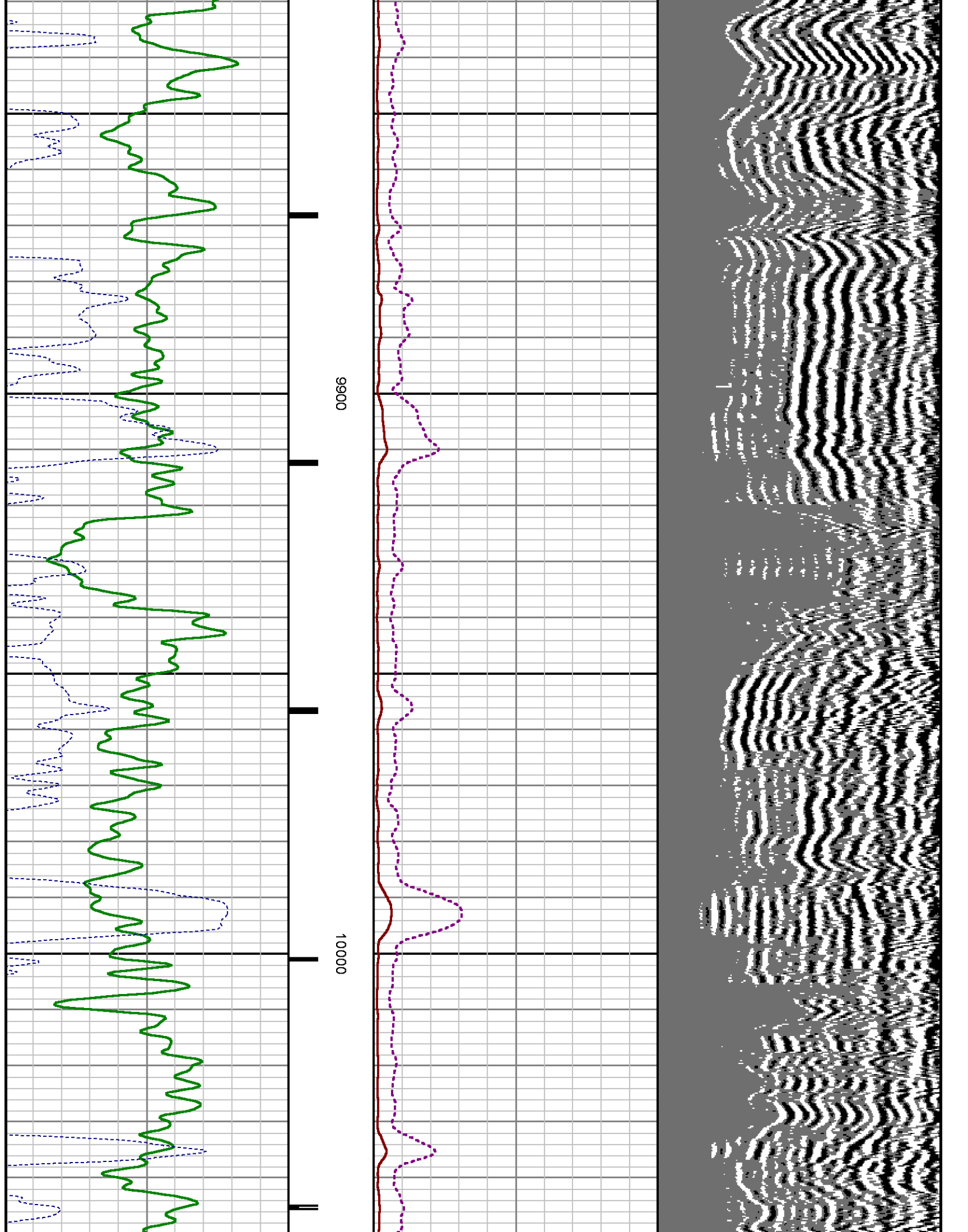
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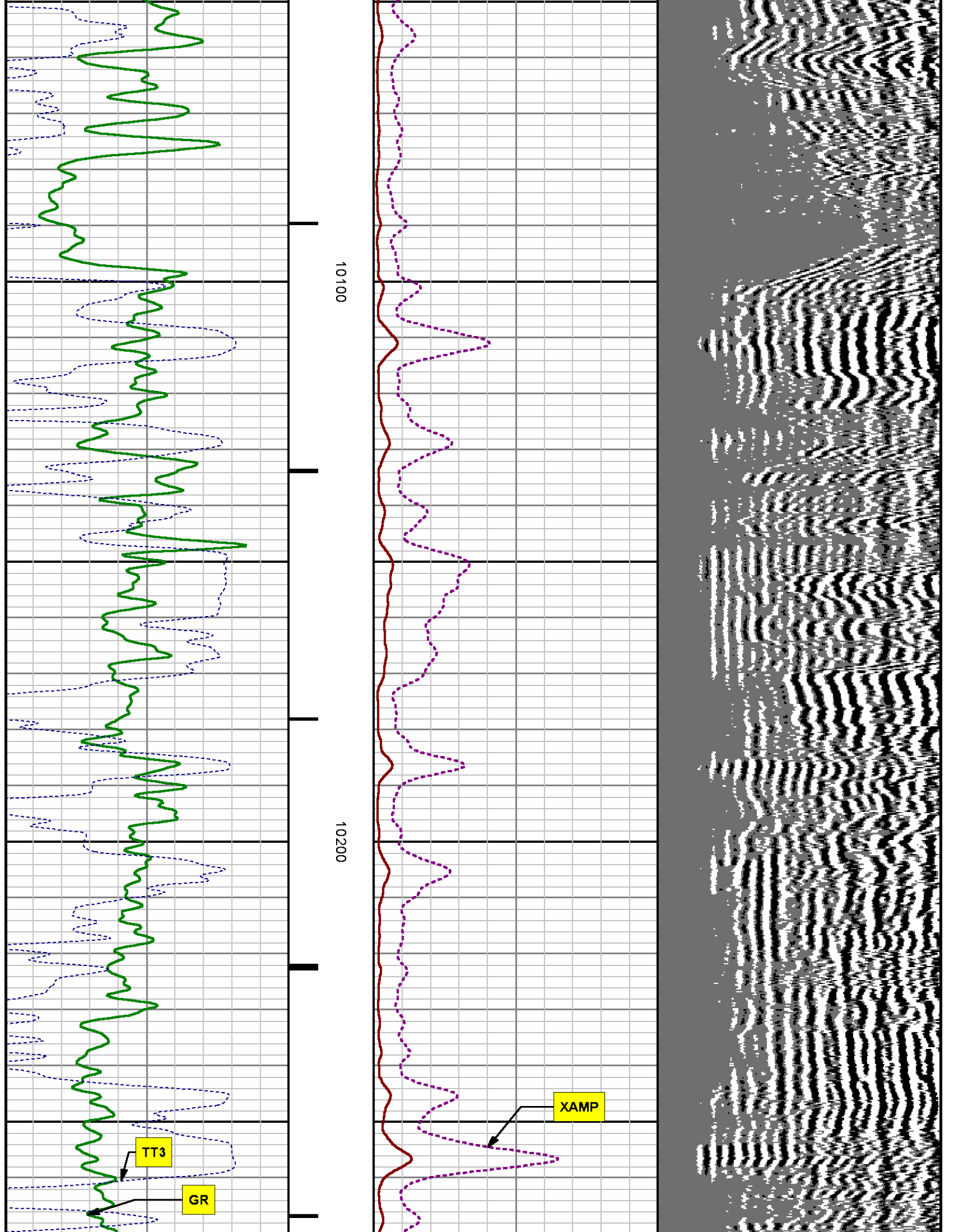
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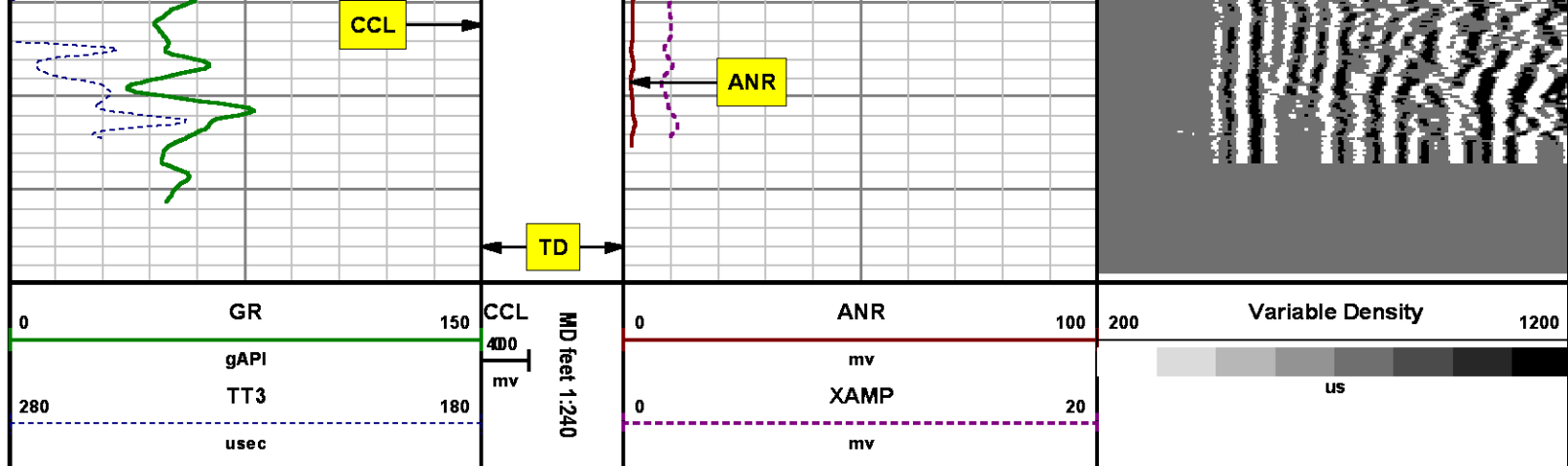












SECONDARY PRESENTATION 0 PSI

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	305.000	usec	31.080	10298.800
RAL	Amp Gate Start Near	195.000	usec	31.080	10298.800
RAL	Amp Gate Start Radial	195.000	usec	31.080	10298.800
RAL	Amp Gate Width Far	25.000	usec	31.080	10298.800
RAL	Amp Gate Width Near	25.000	usec	31.080	10298.800
RAL	Amp Gate Width Radial	25.000	usec	31.080	10298.800
RAL	casing od	4.500	inches	31.080	10298.800
RAL	casing wt	11.600	lbm/ft	31.080	10298.800
RAL	FB Start Far	291.900	usec	31.080	10298.800
RAL	FB Start Near	180.000	usec	31.080	10298.800
RAL	FB Start Radial	180.000	usec	31.080	10298.800
RAL	FB Thresh Far	10.000	mv	31.080	10298.800
RAL	FB Thresh Near	4.000	mv	31.080	10298.800
RAL	FB Thresh Radial	4.000	mv	31.080	10298.800
RAL	Fluid Travel Time	200.000	usec/ft	31.080	10298.361

DEPTH OFFSETS
(for Acquired Curves)

SERIES

DEPTH OFFSET

ACQUIRED CURVES

1426XA

-12.360

ACAL

ANR

AR1

AR2

AR3

AR4

AR5

AR6

AR7

AR8

CHV

FPR2

FPR3

FPR5

TT3

TTR1

TTR2

TTR3

TTR4

TTR5

TTR6

TTR7

TTR8

XAMP

1426XA

-11.360

AFAR

SIG

TT5

2459XA

-7.250

CCL

2459XA

-5.390

GR

2459XA

0.000

NEU

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

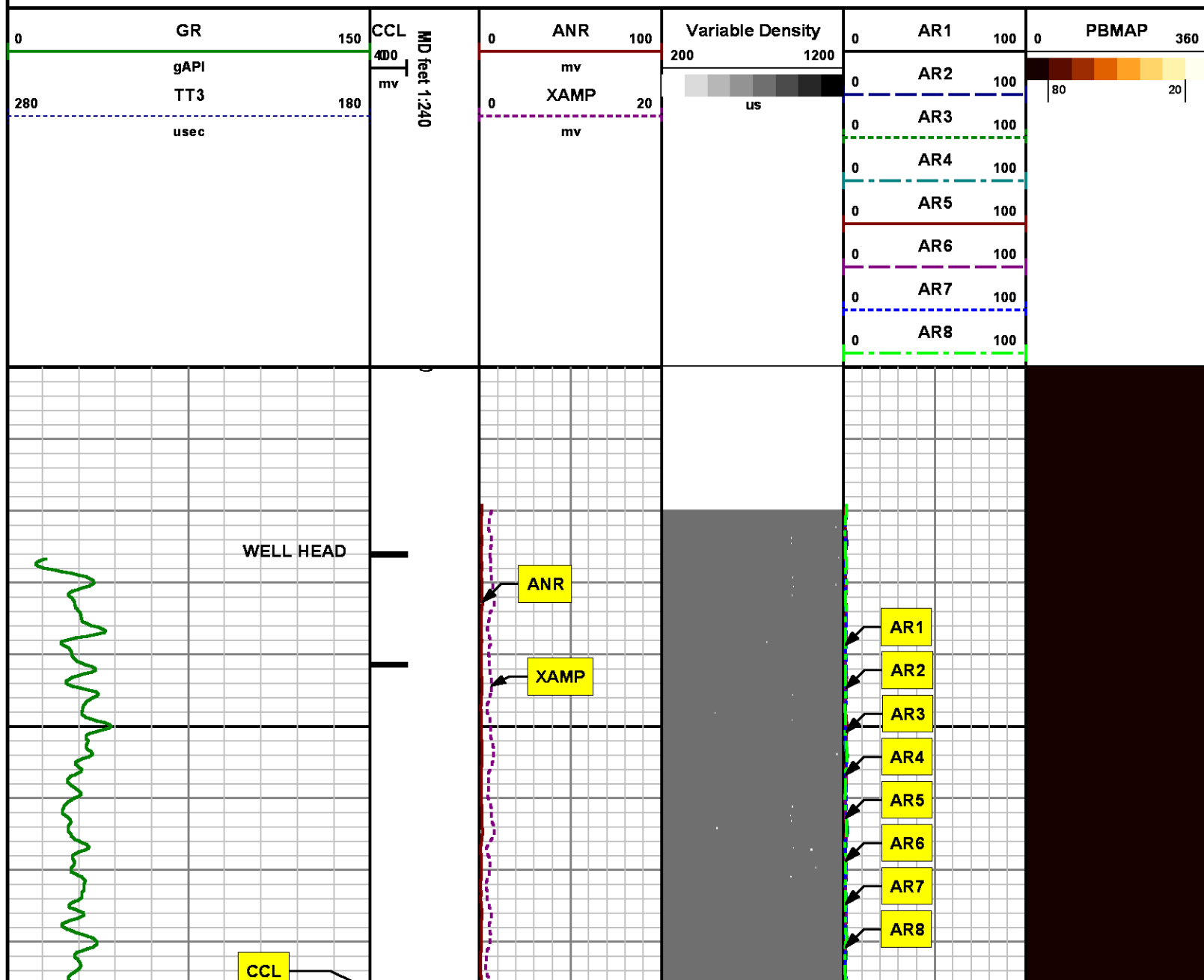
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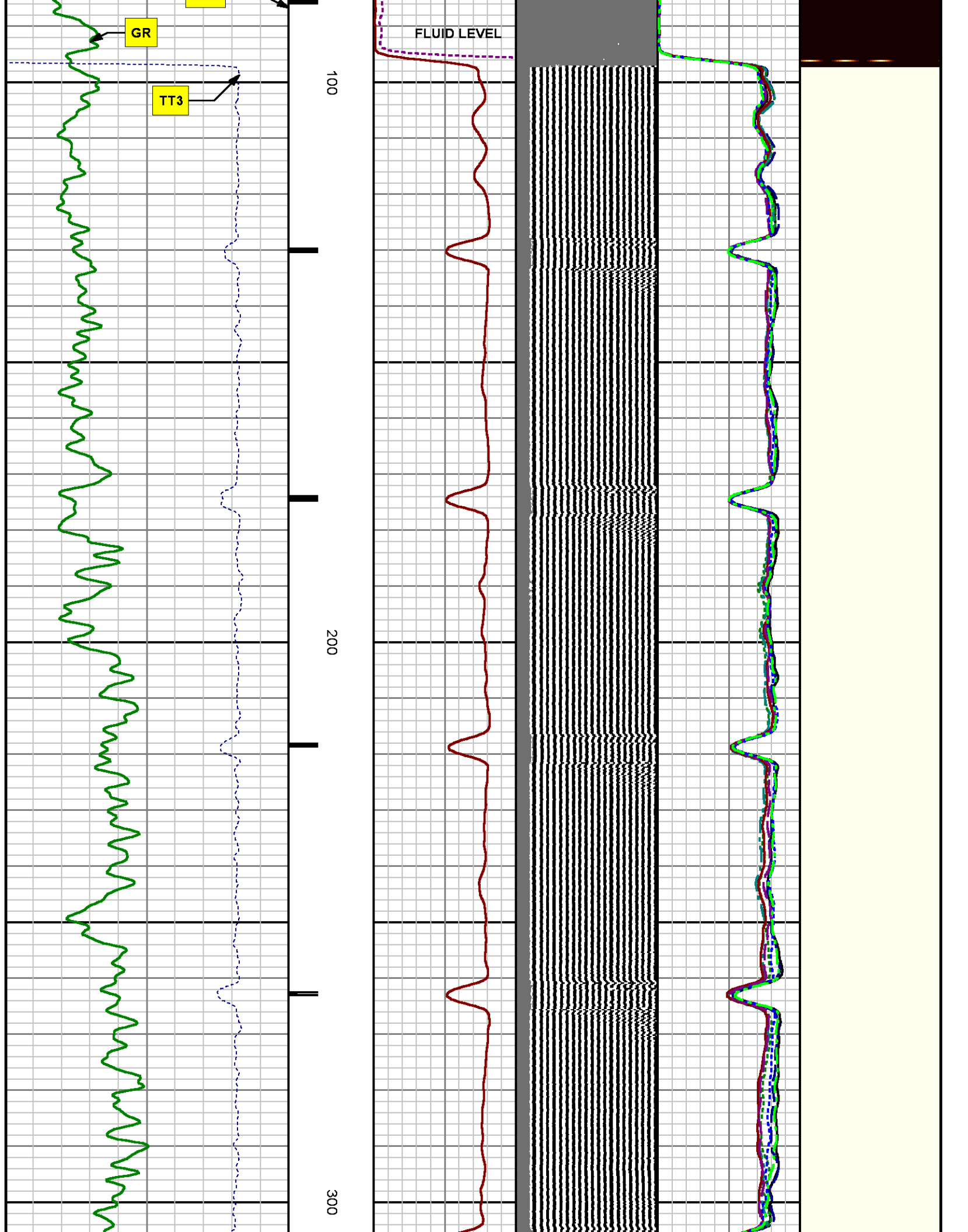
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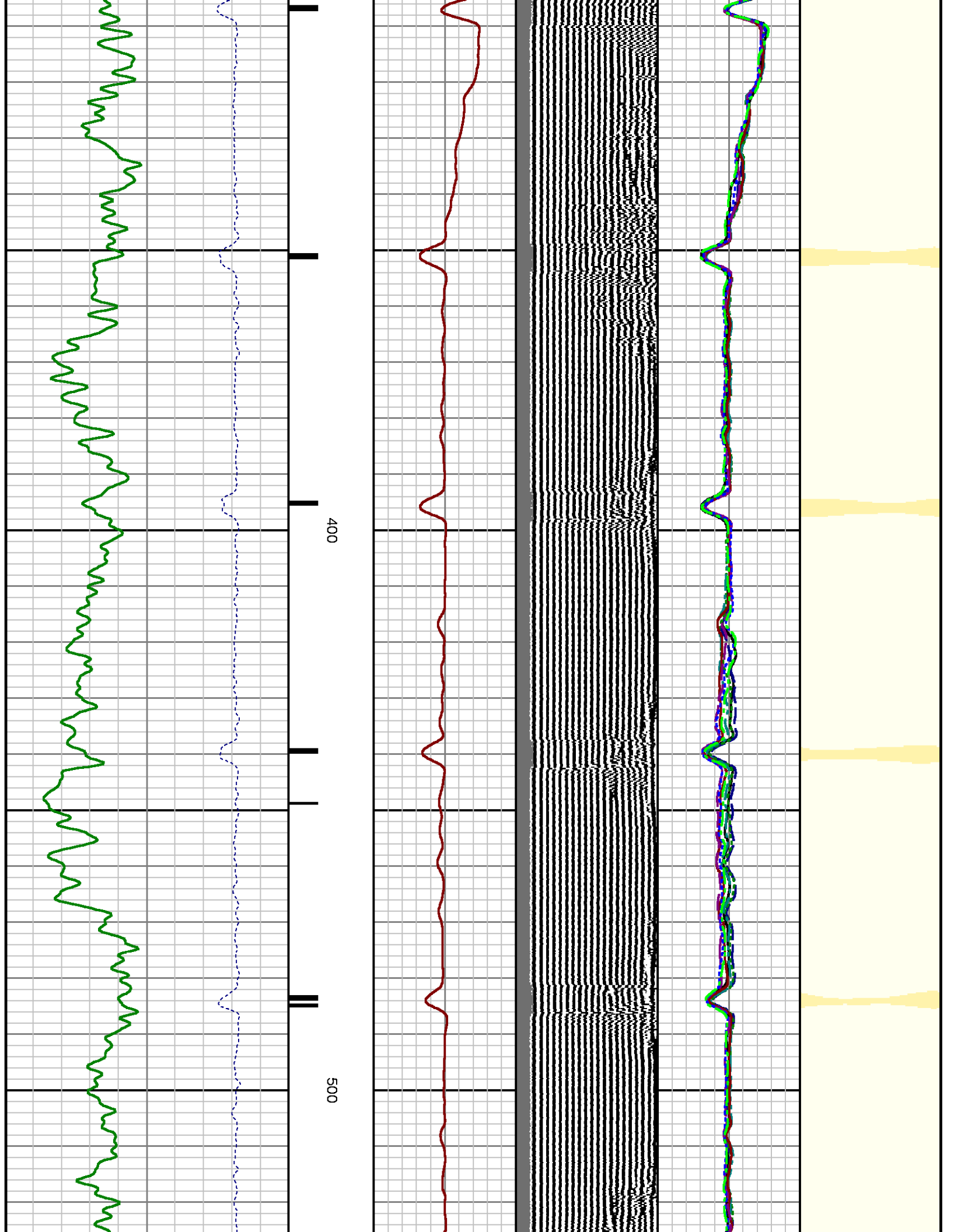
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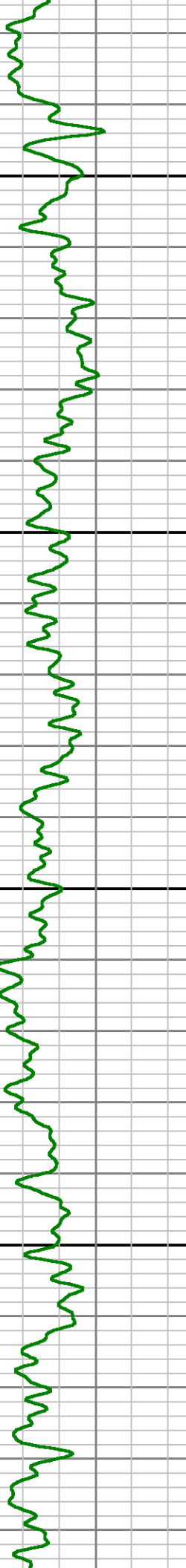
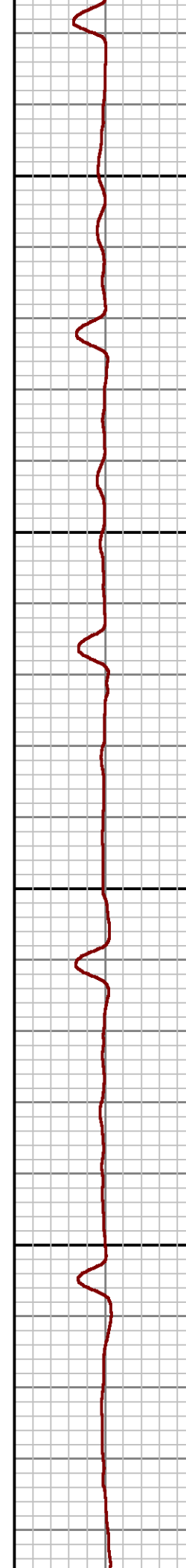
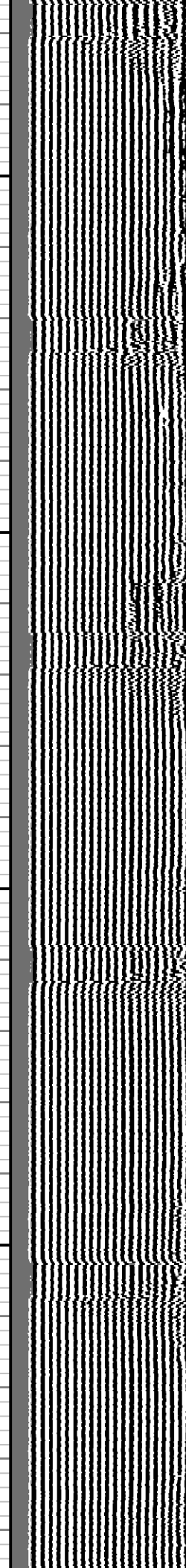
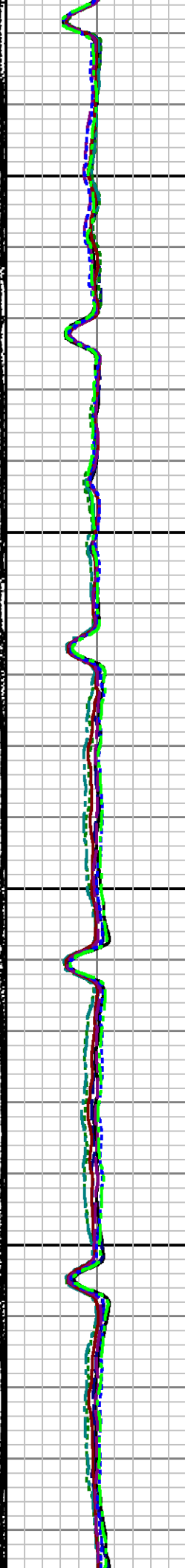
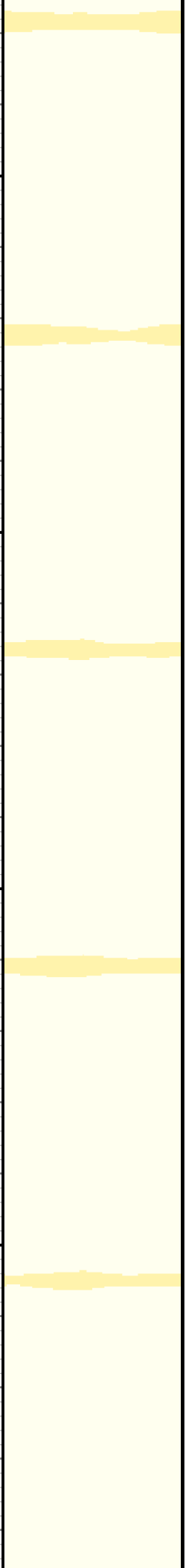
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Created : 9/23/2014 12:30:06 PM



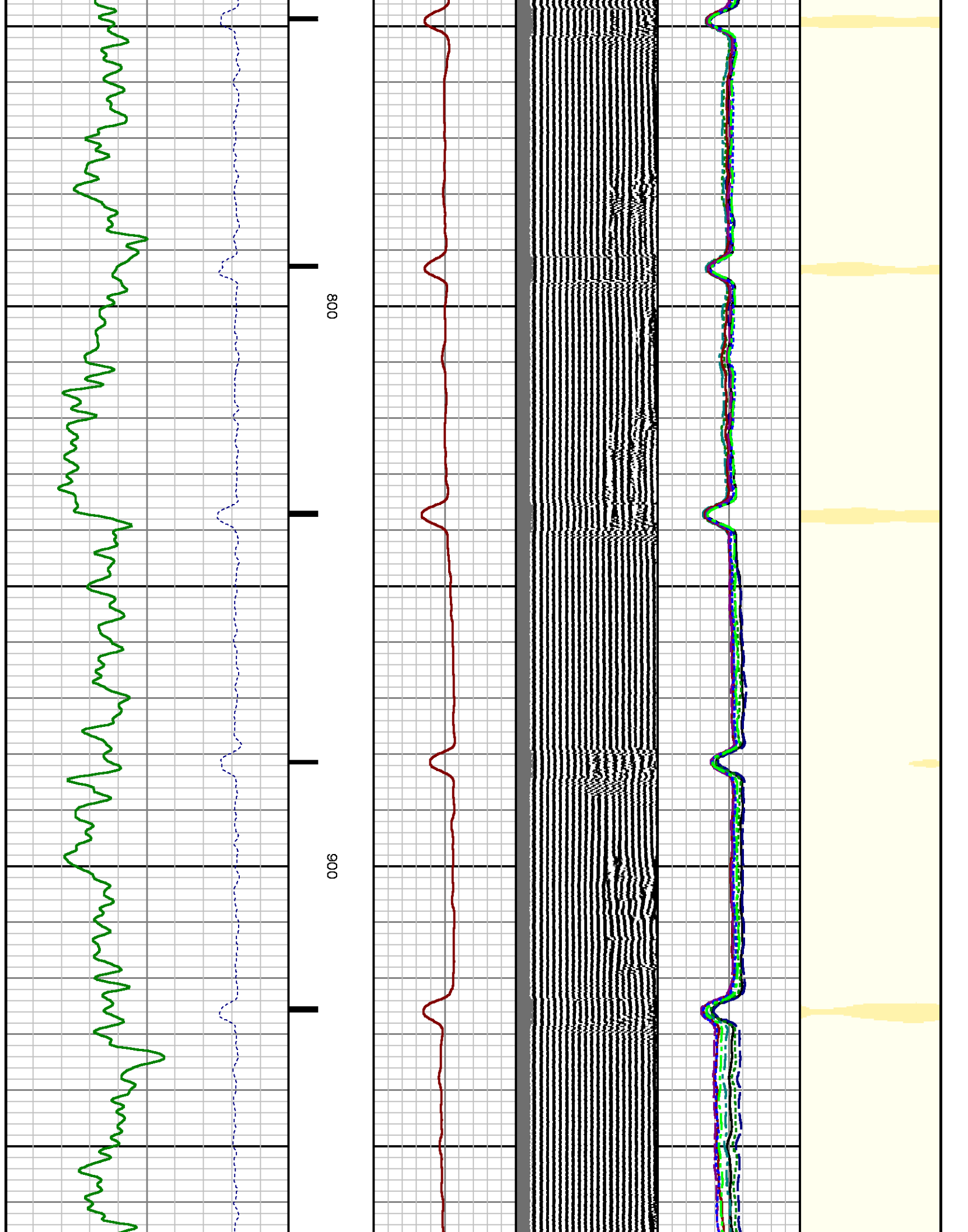


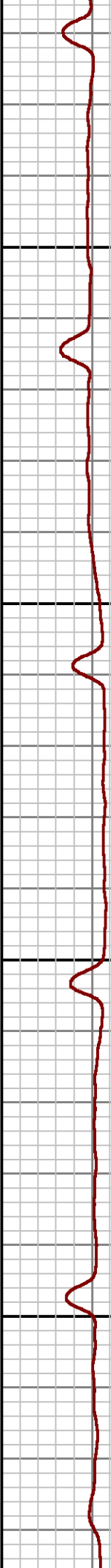
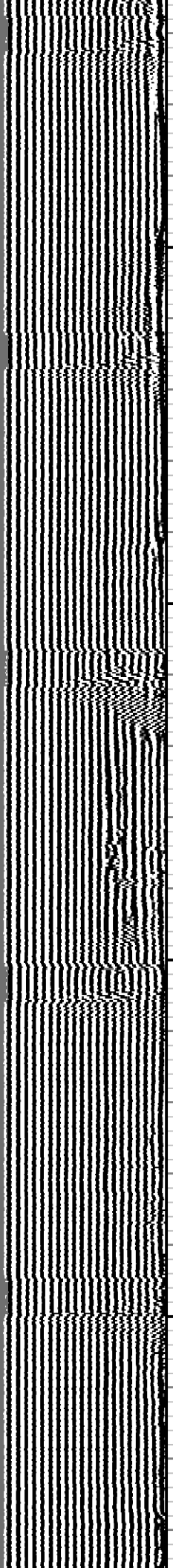
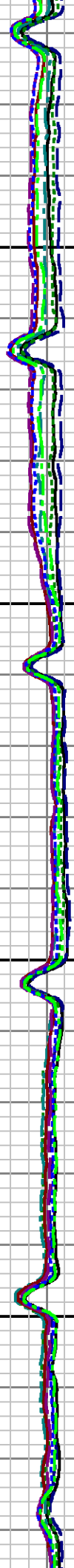
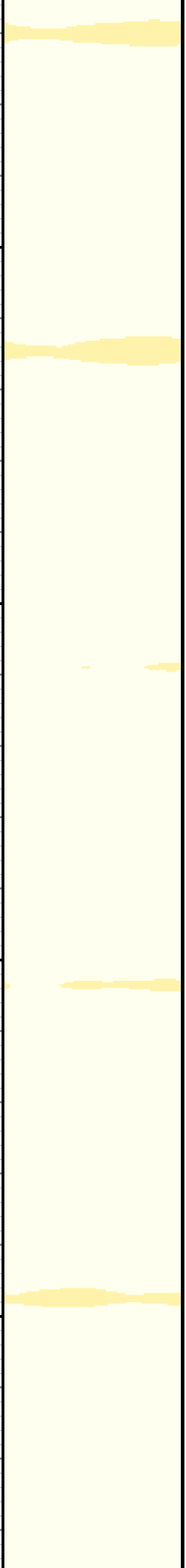




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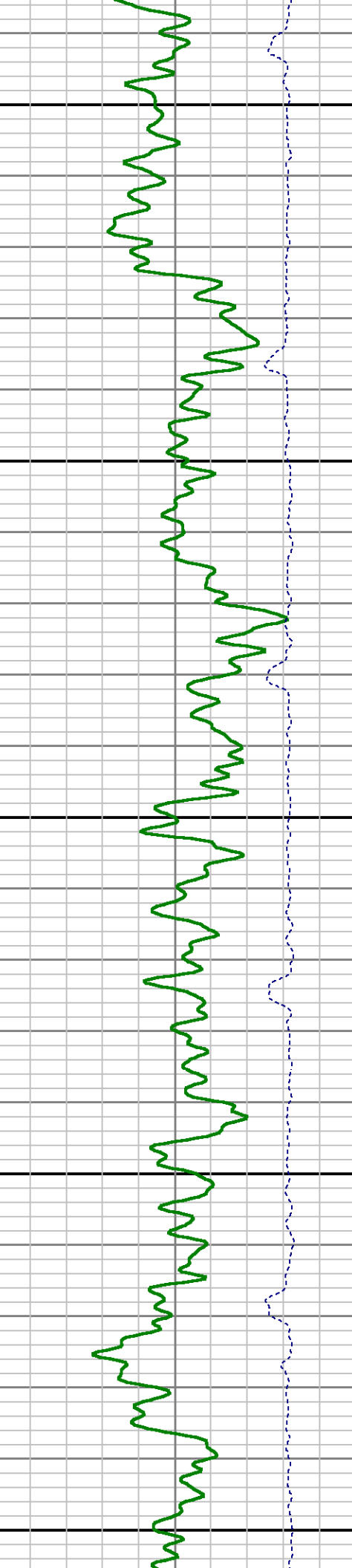
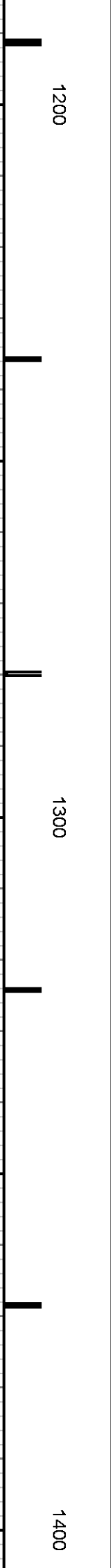
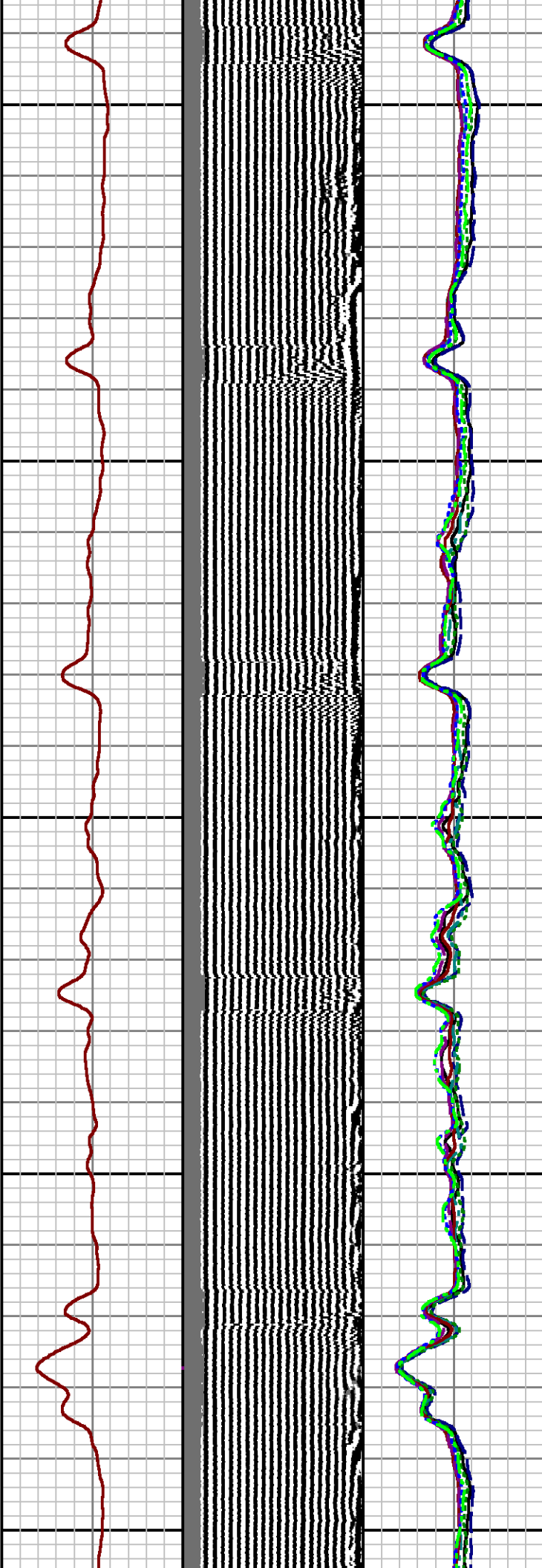
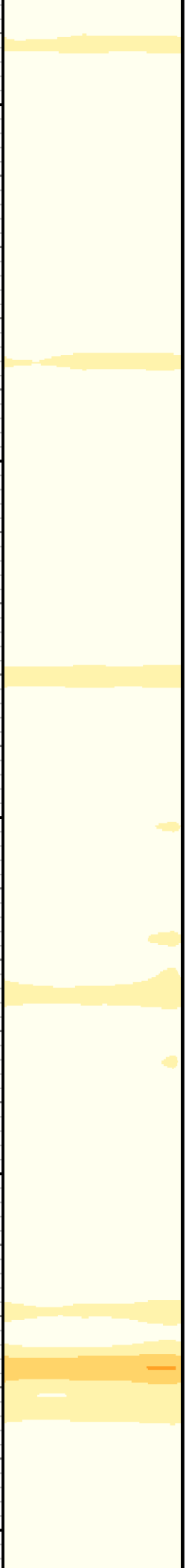
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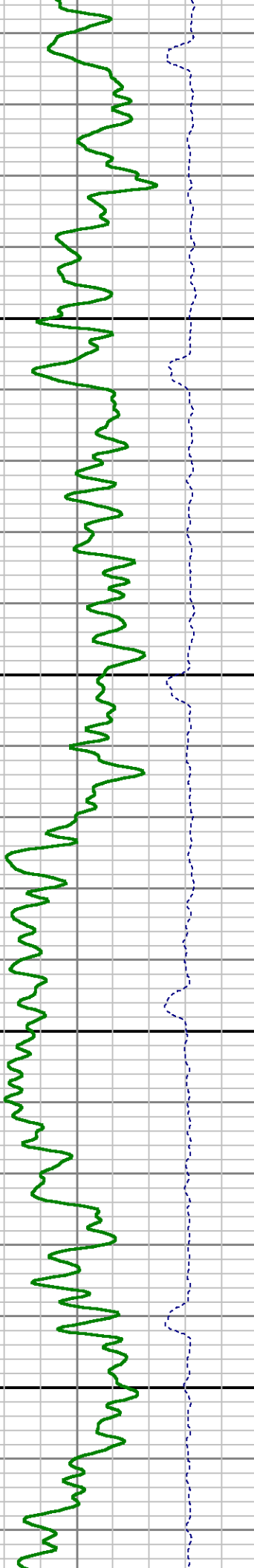
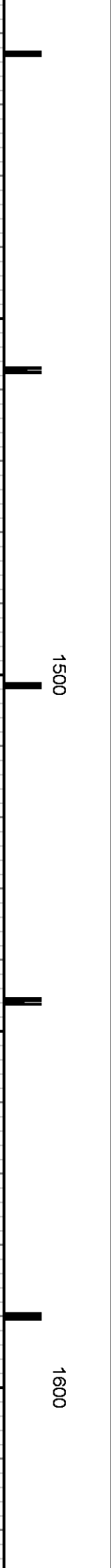
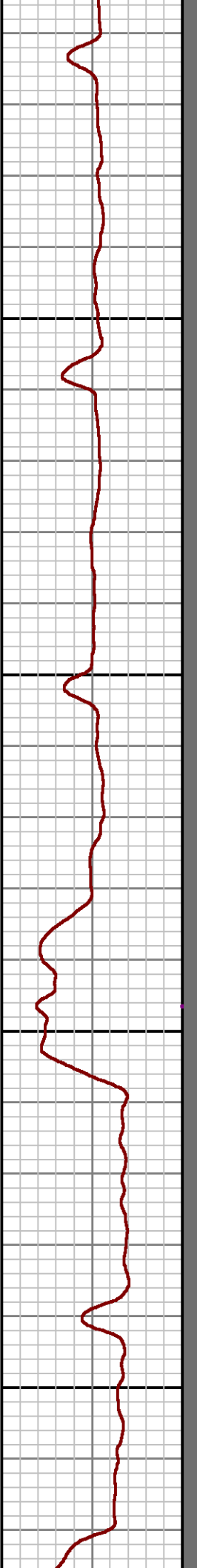
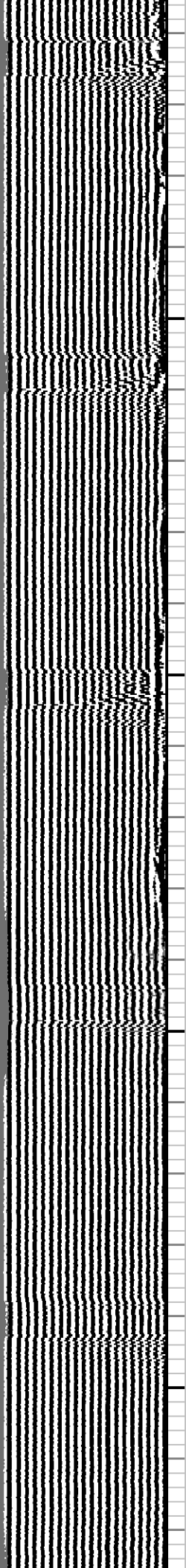
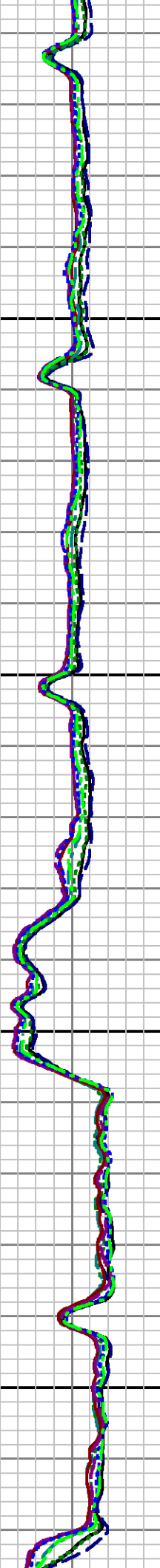
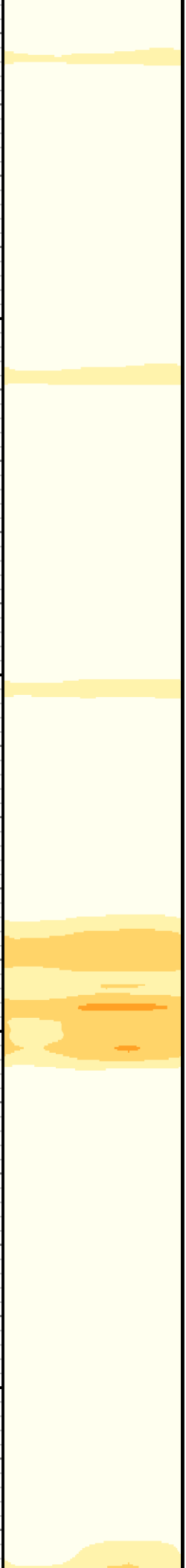


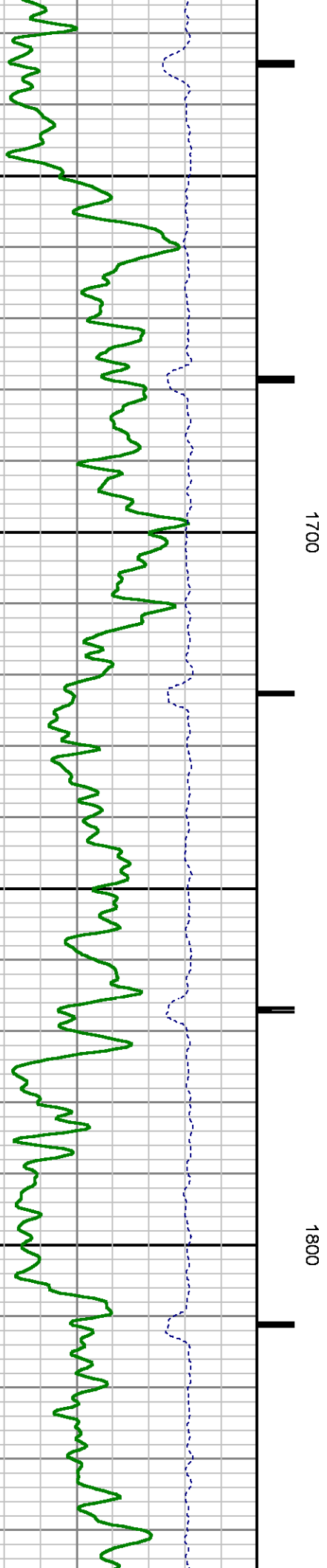
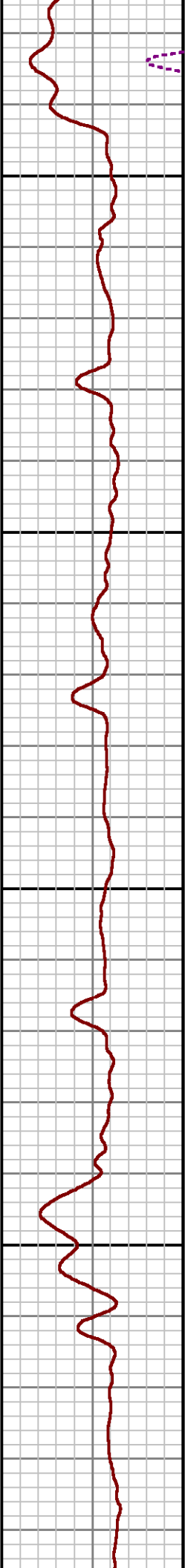
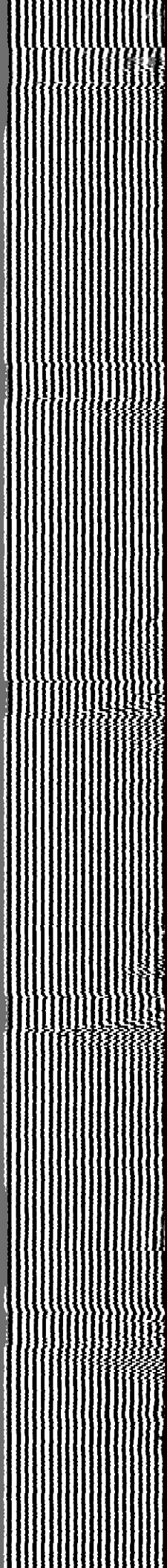
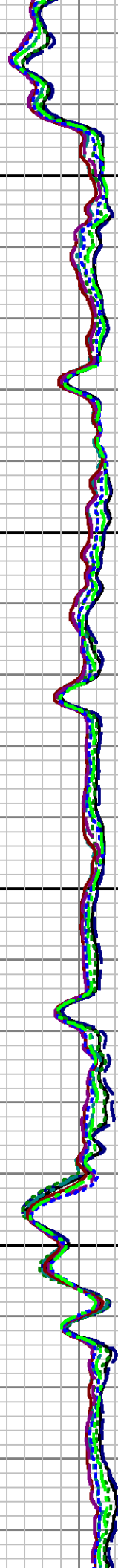
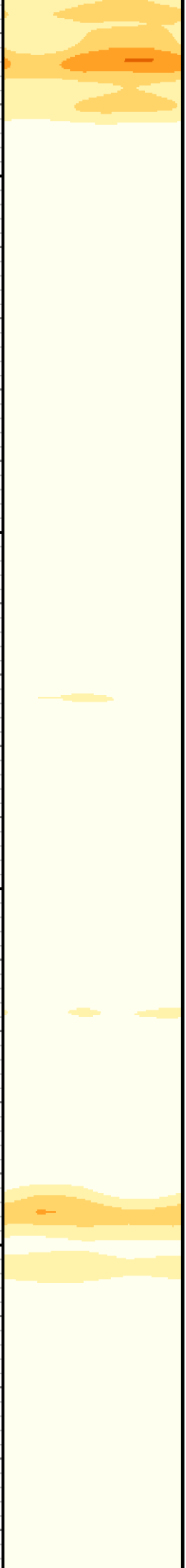


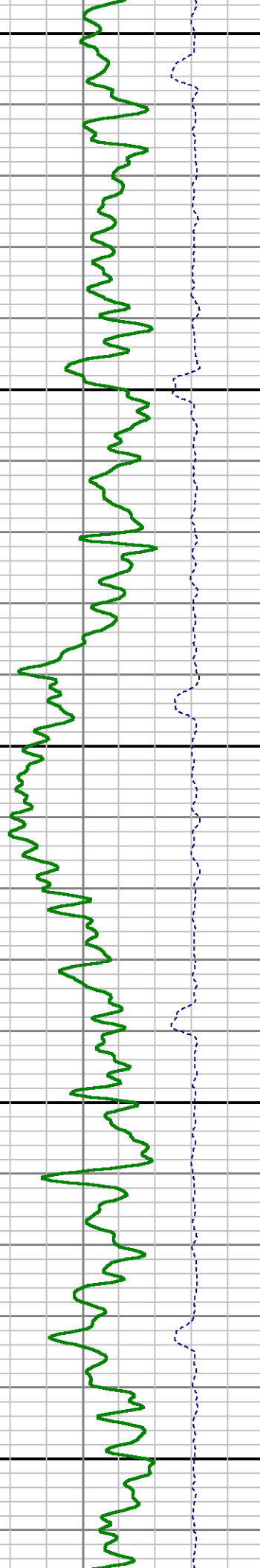
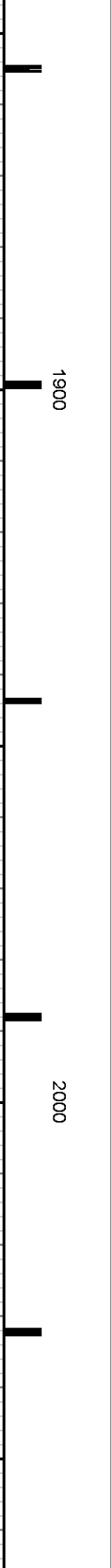
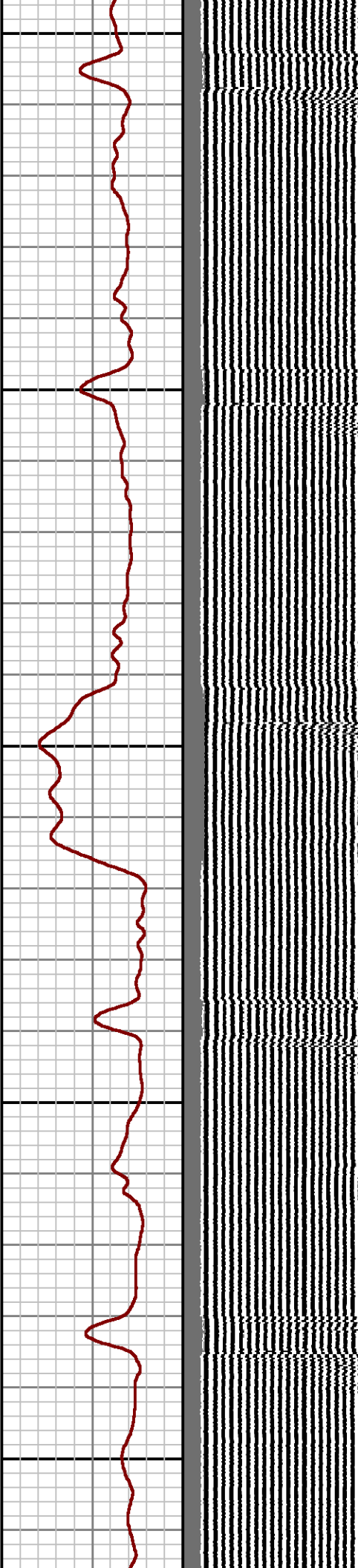
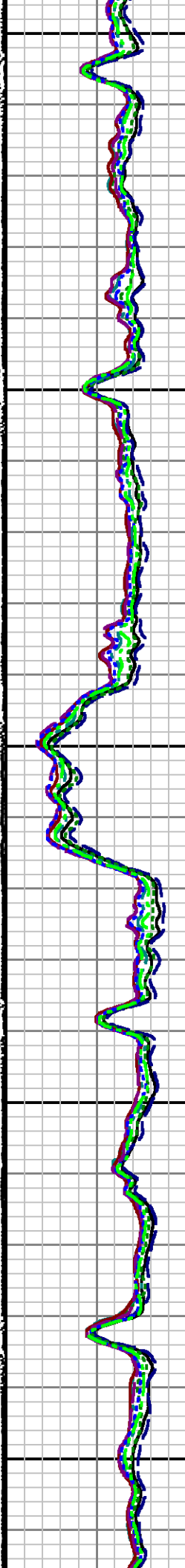
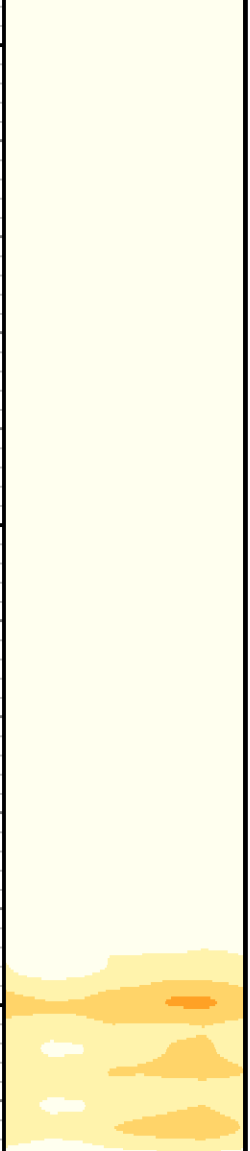
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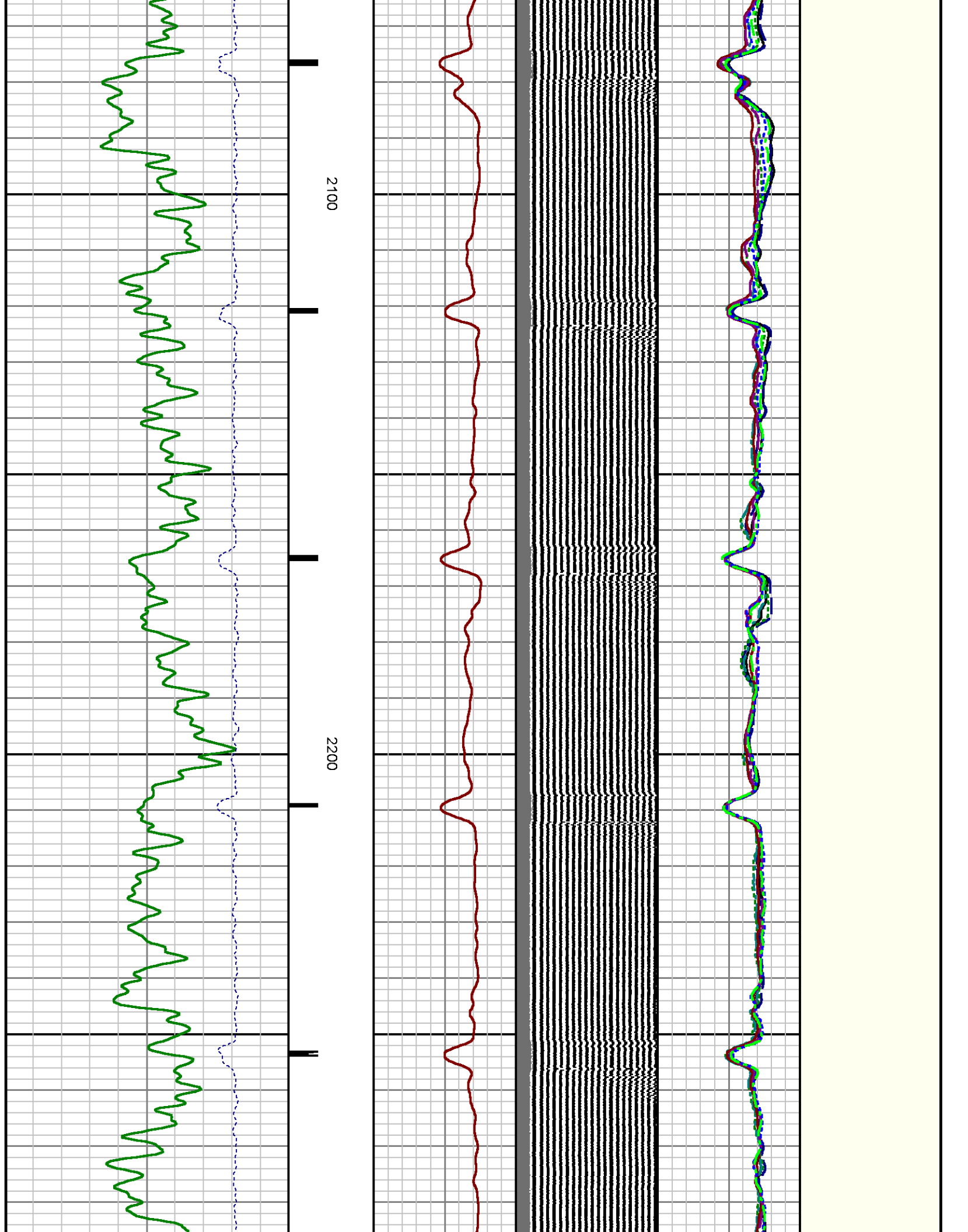
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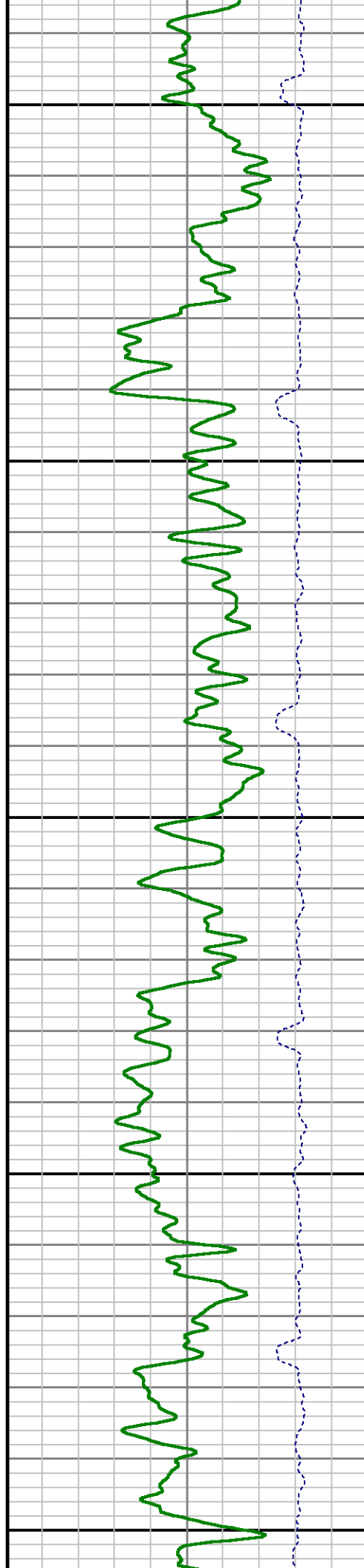
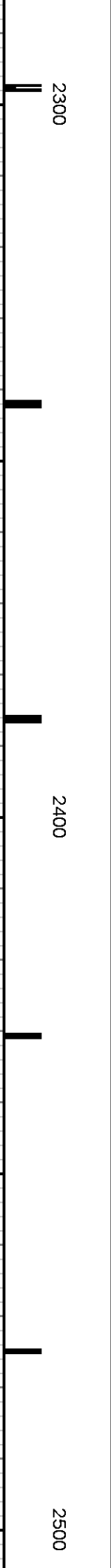
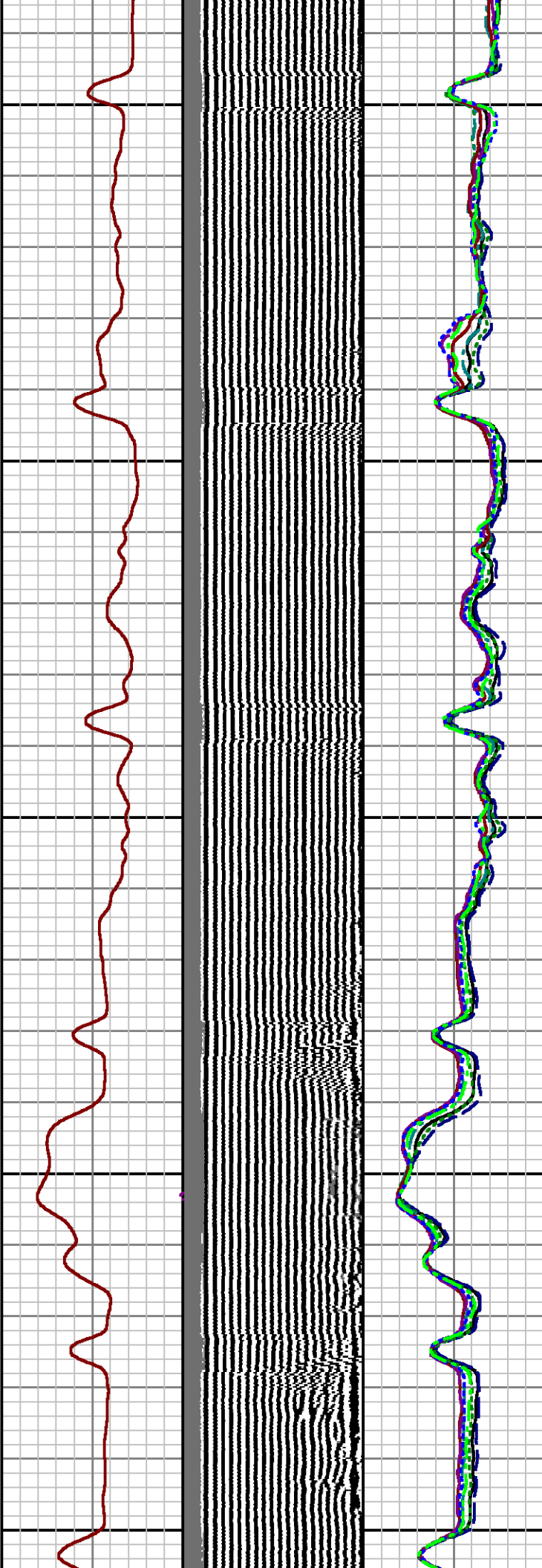
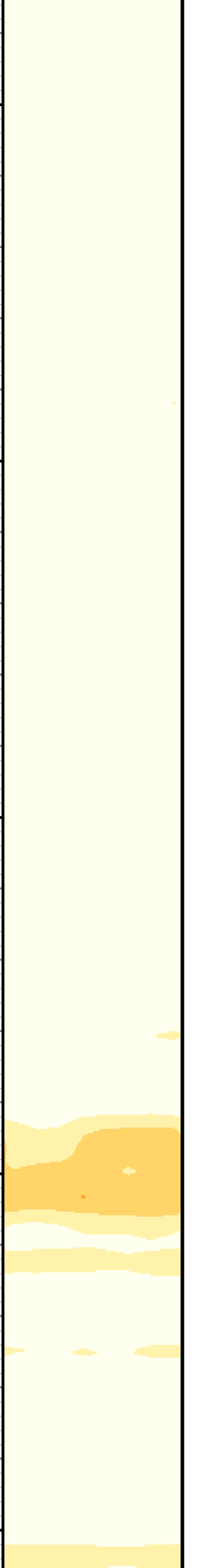


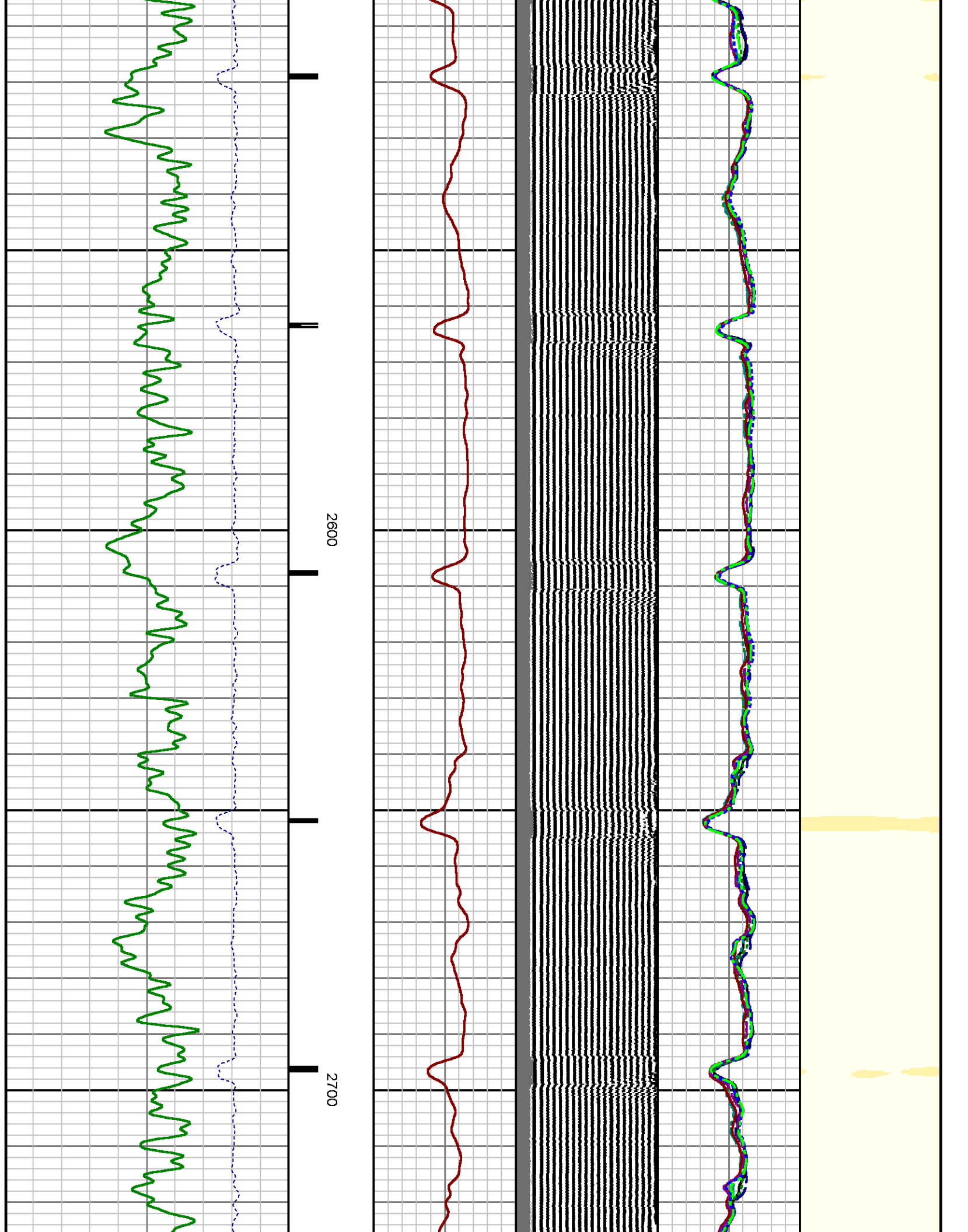


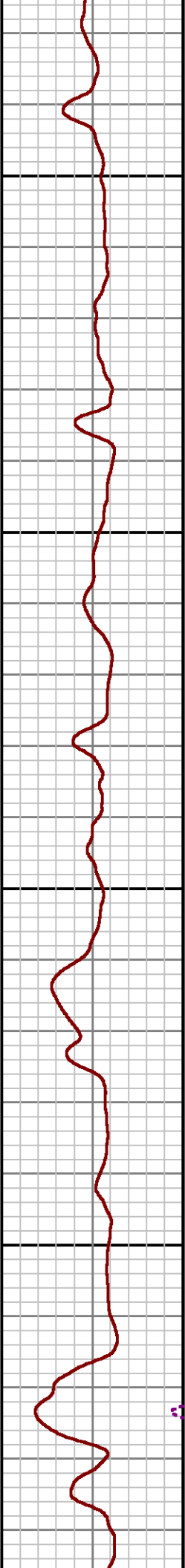
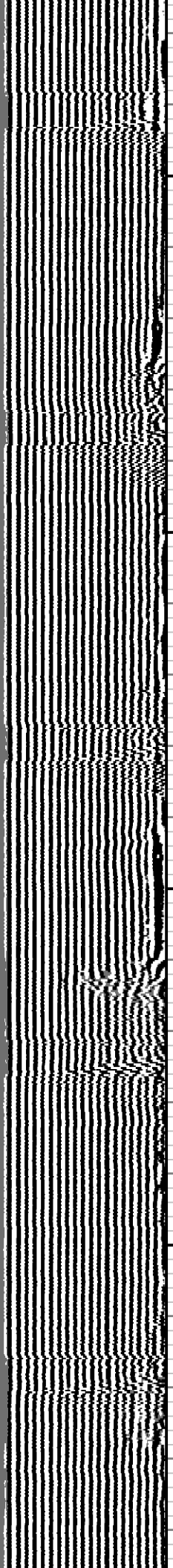
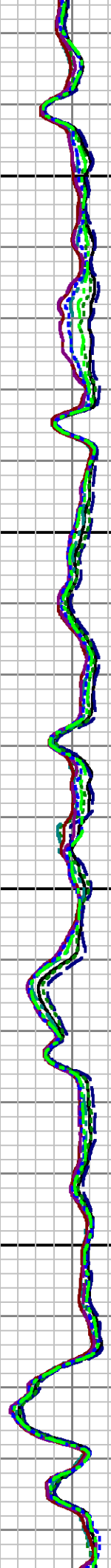
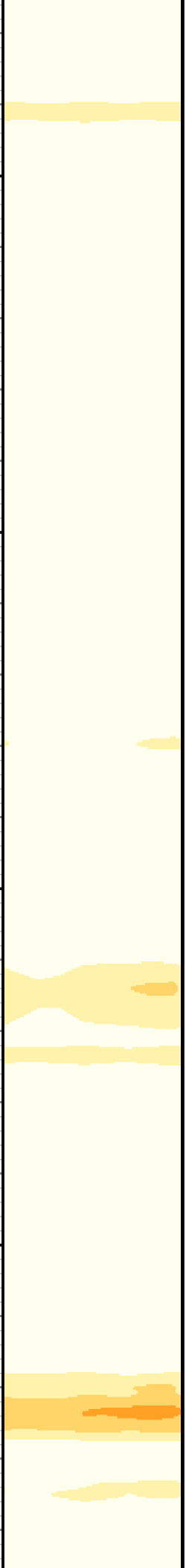






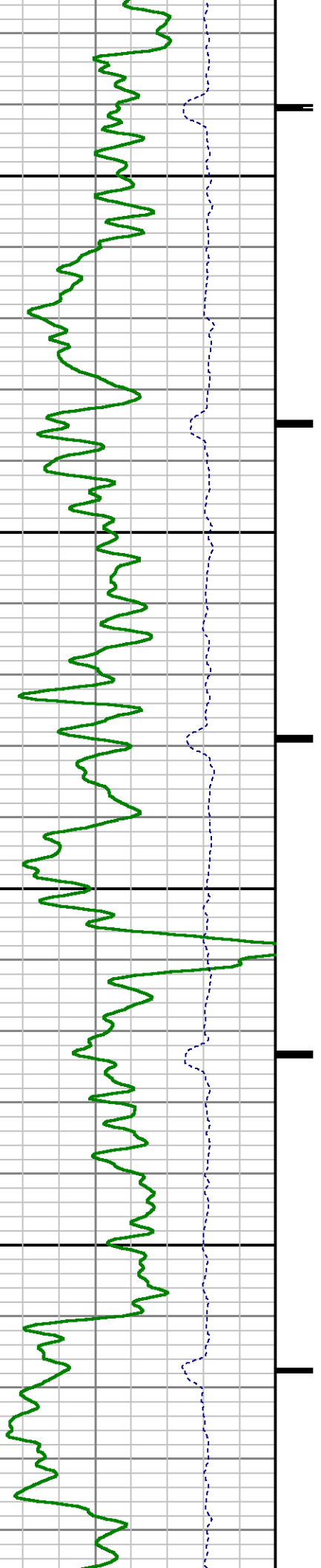


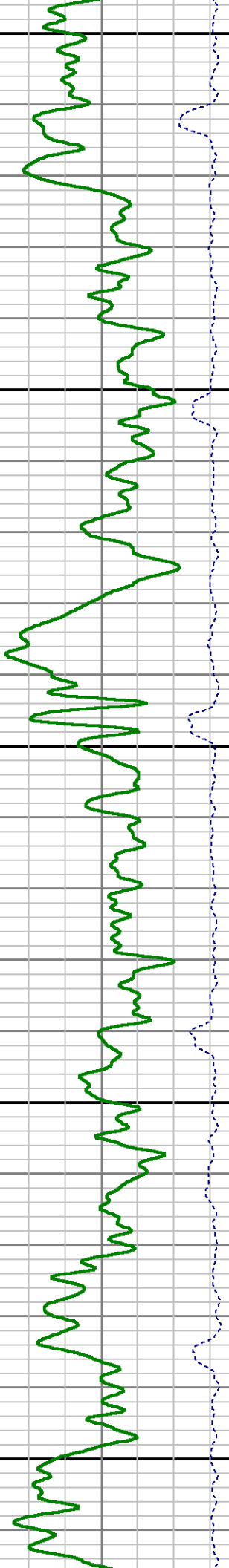
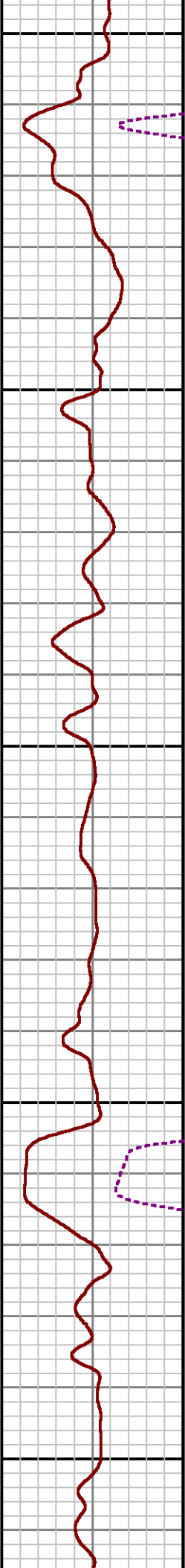
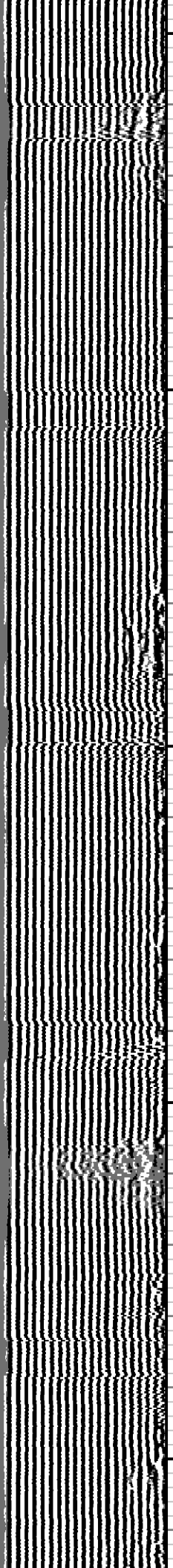
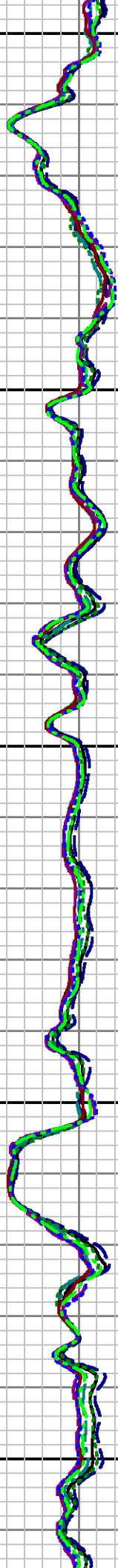
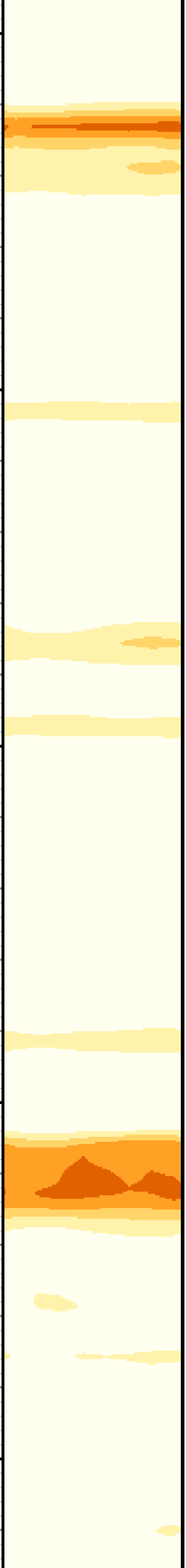


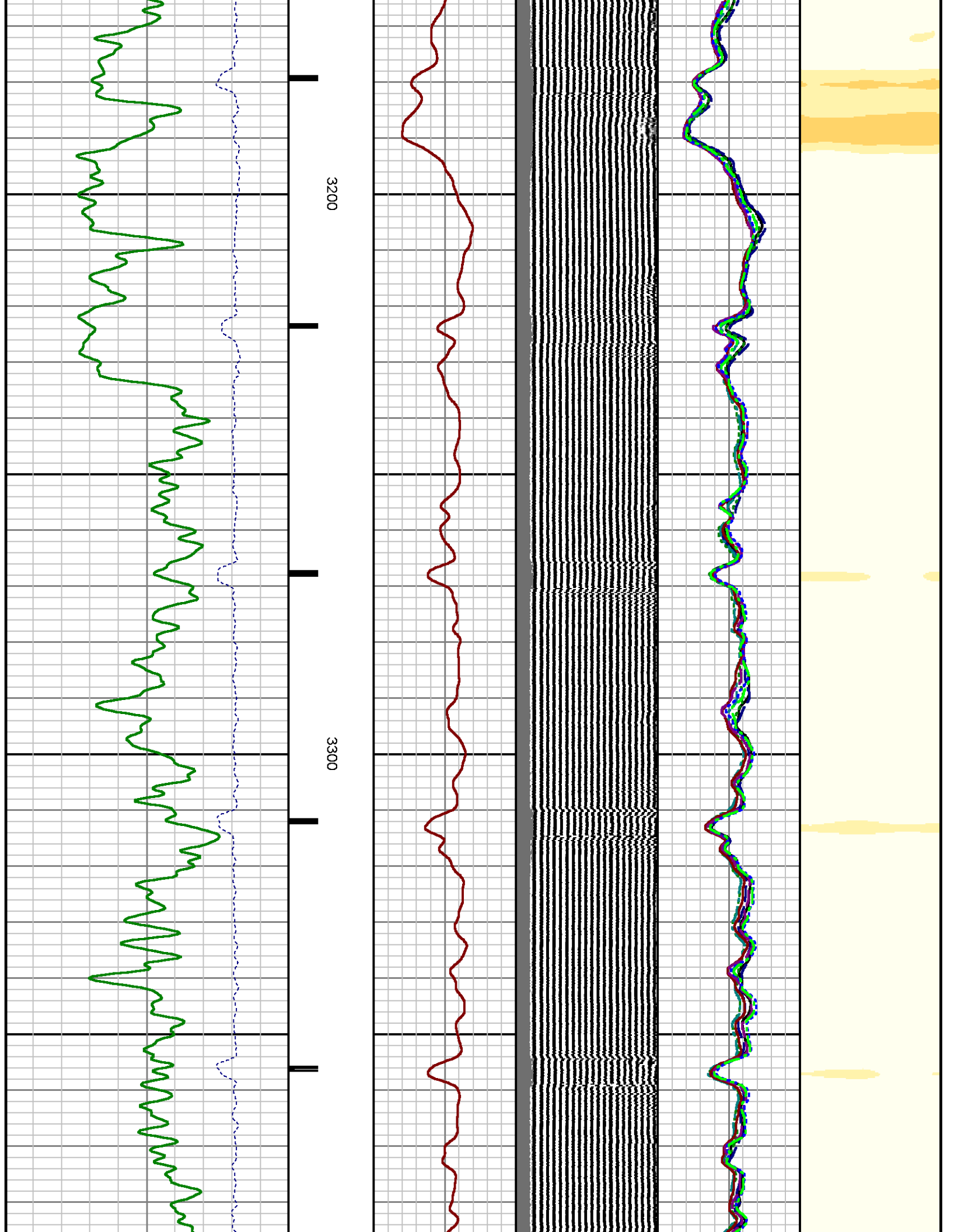


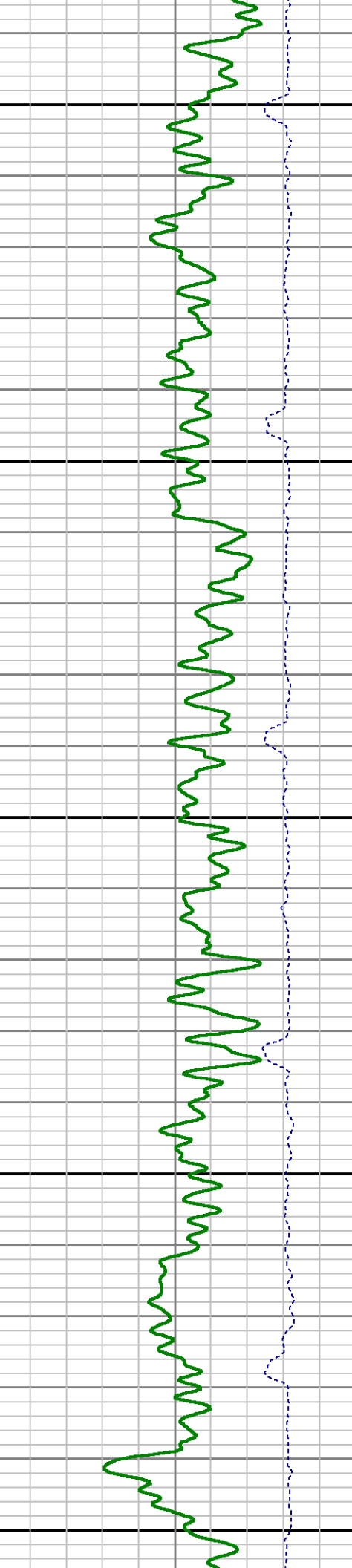
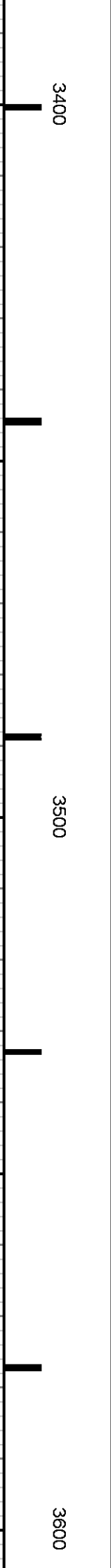
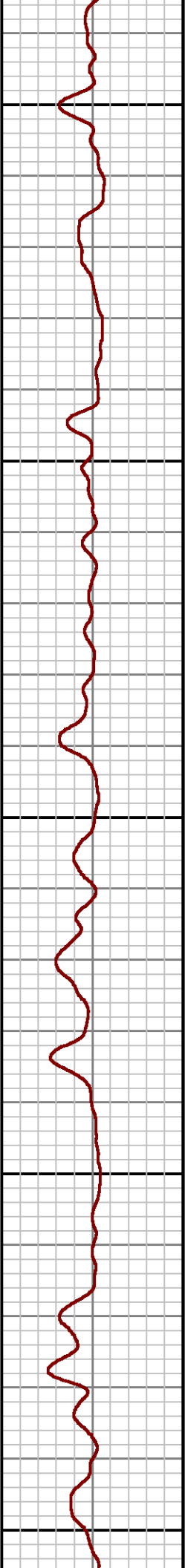
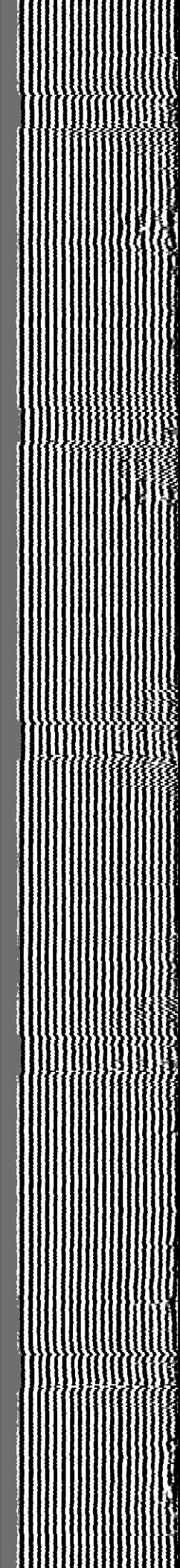
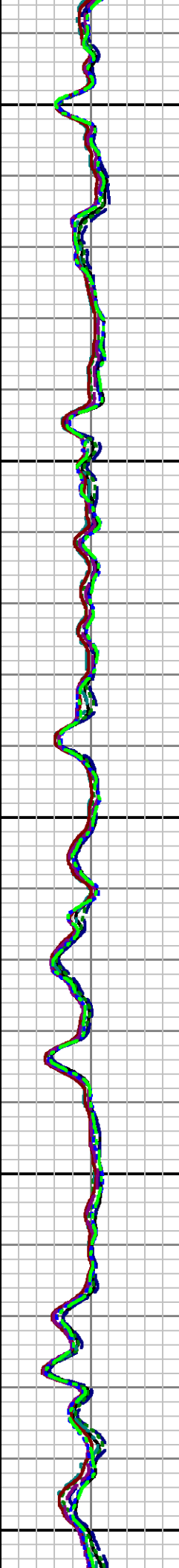
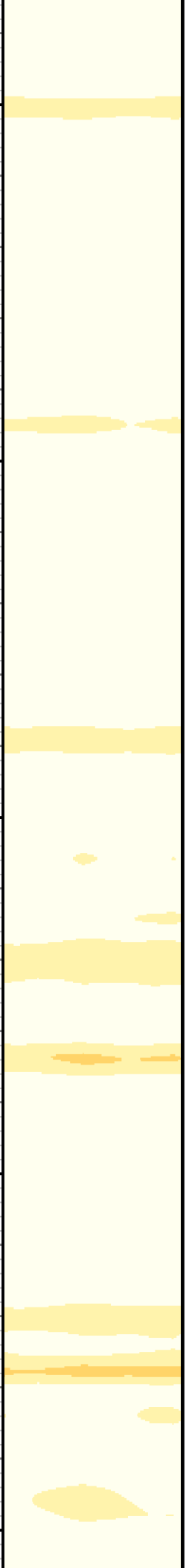
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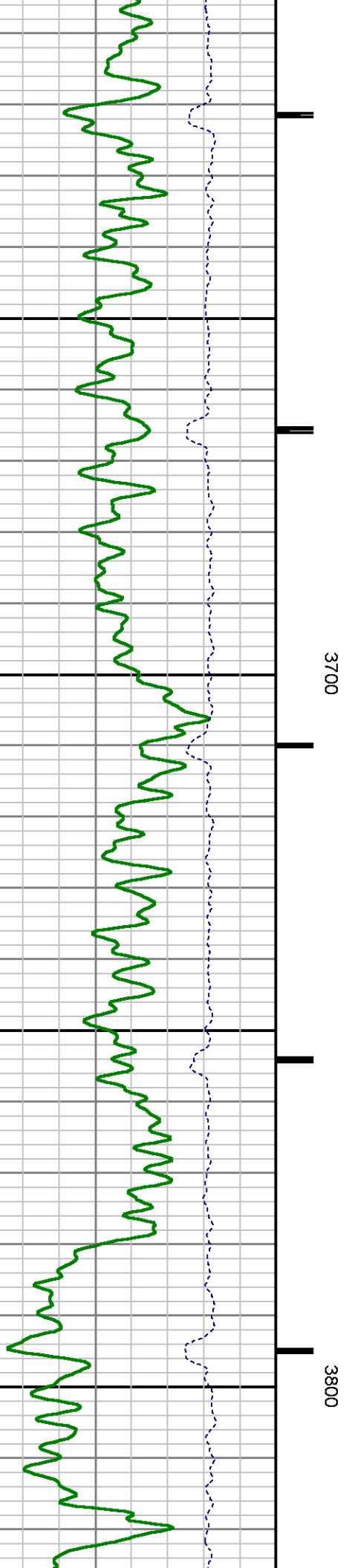
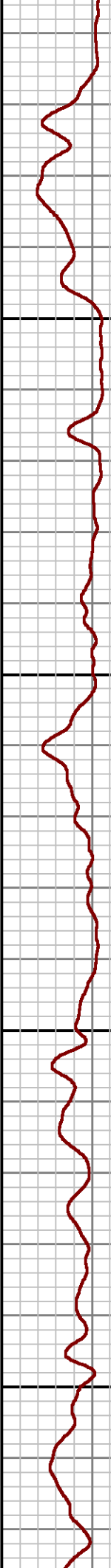
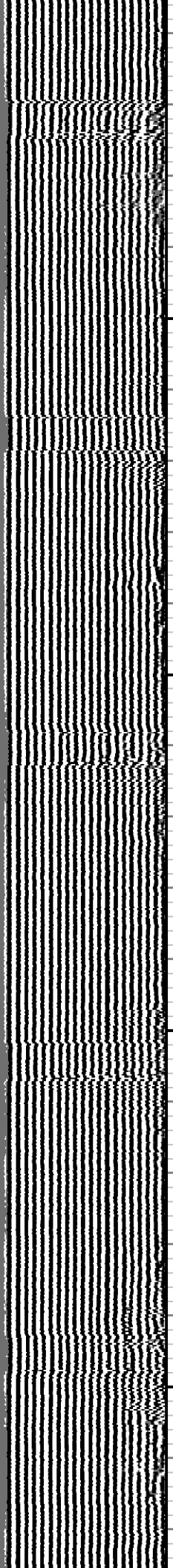
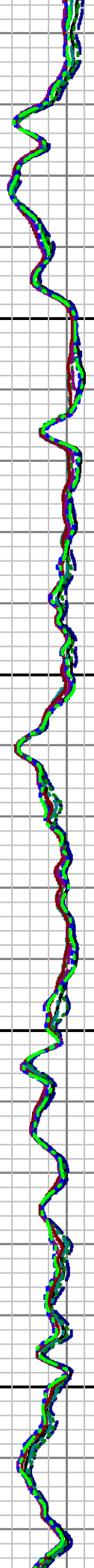
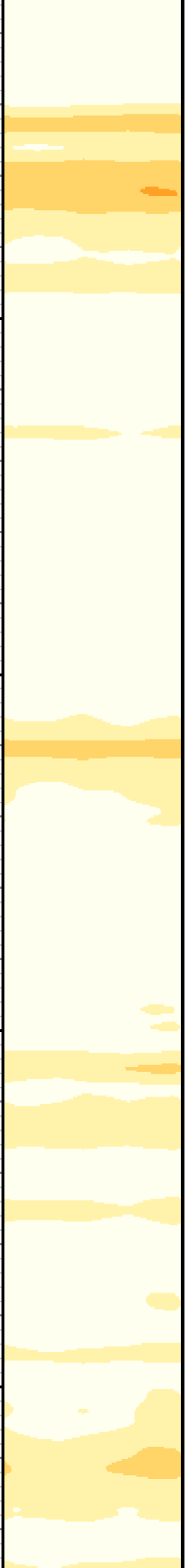
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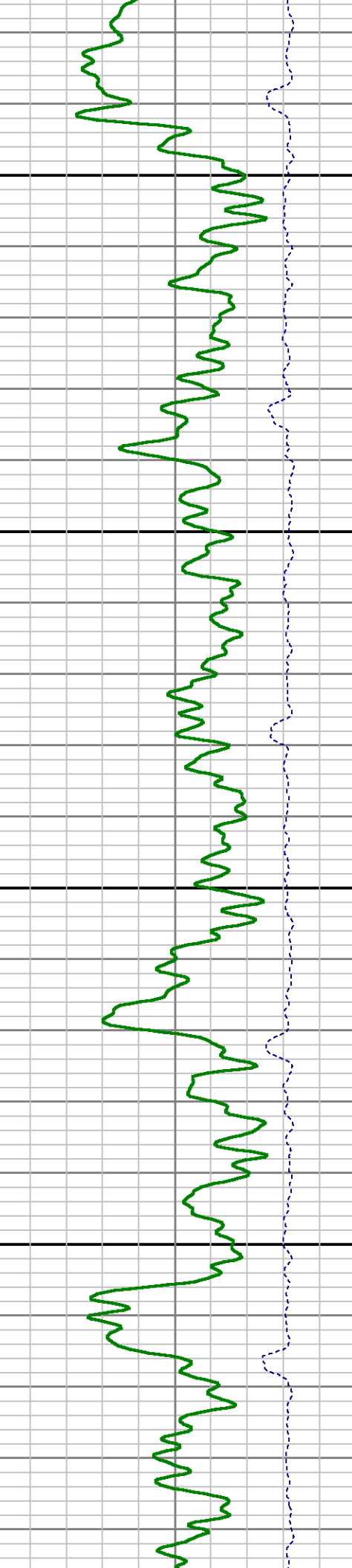
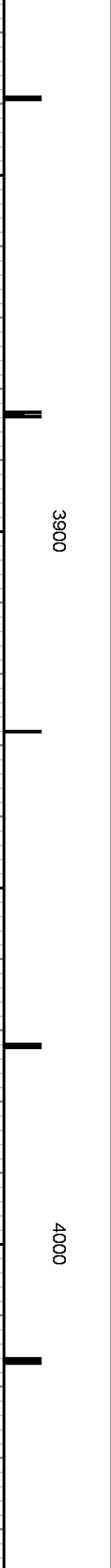
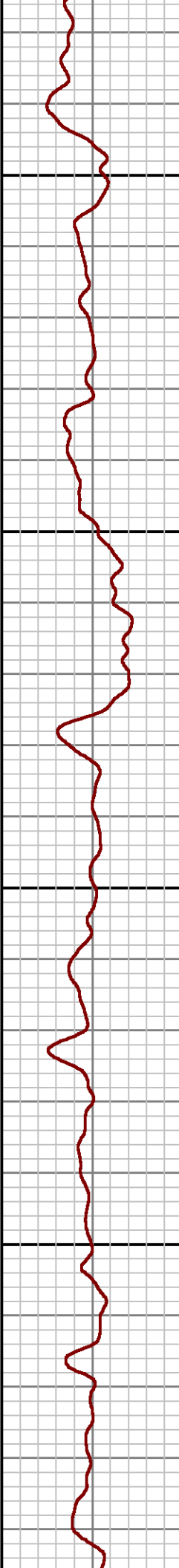
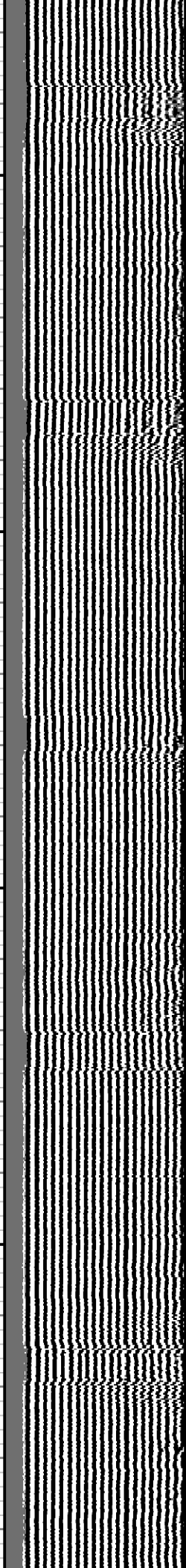
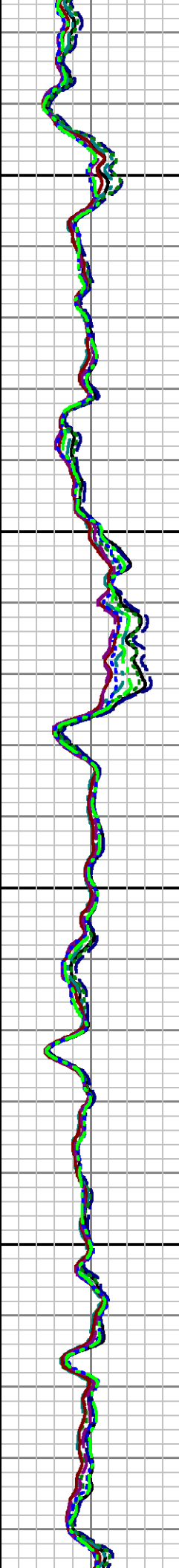
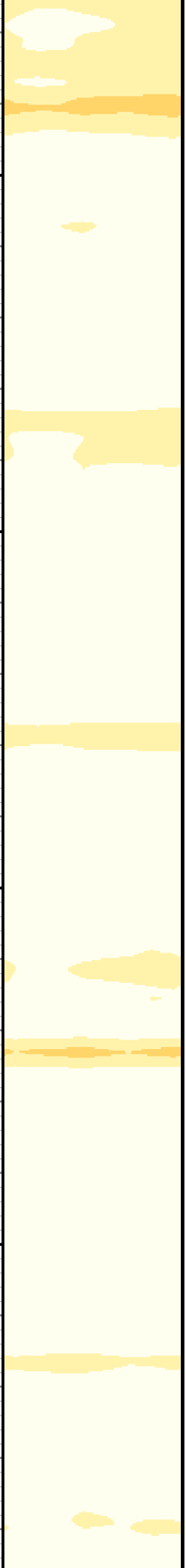


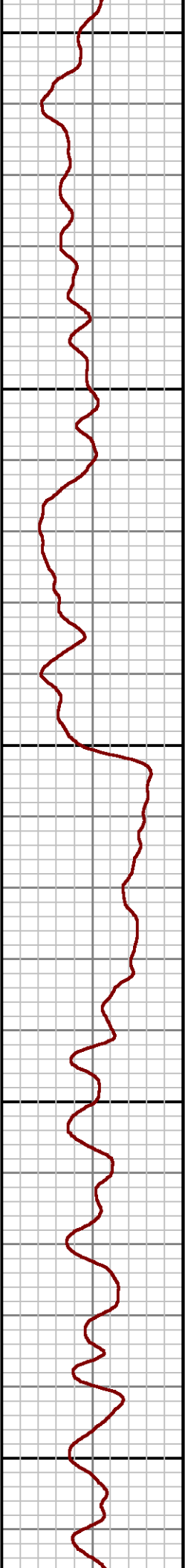
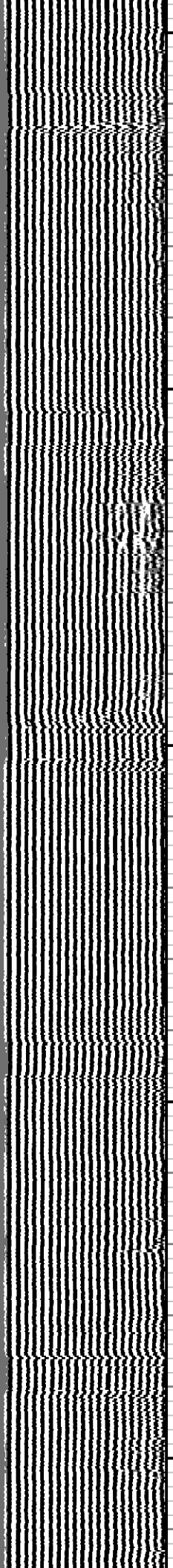
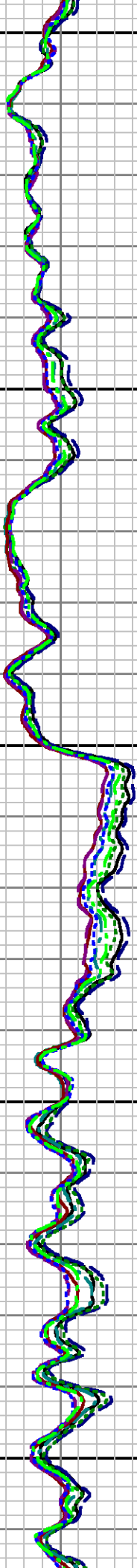
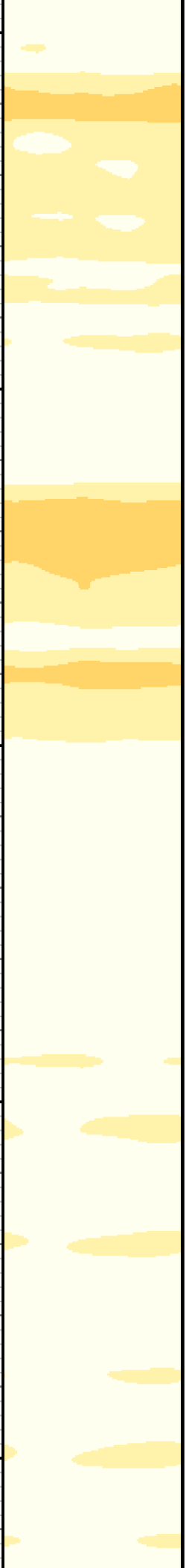






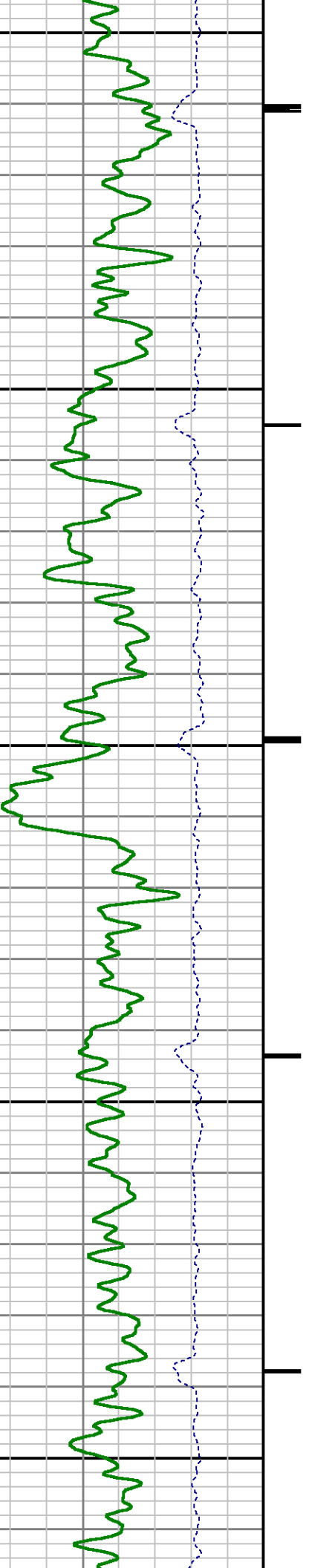


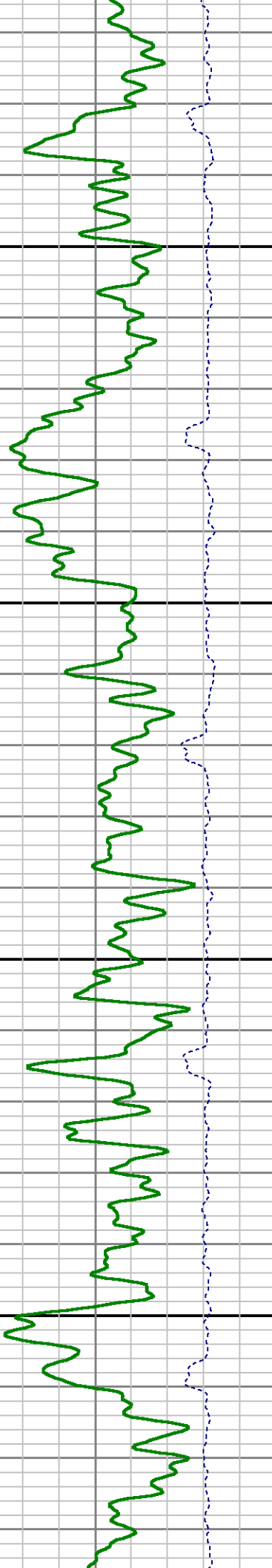
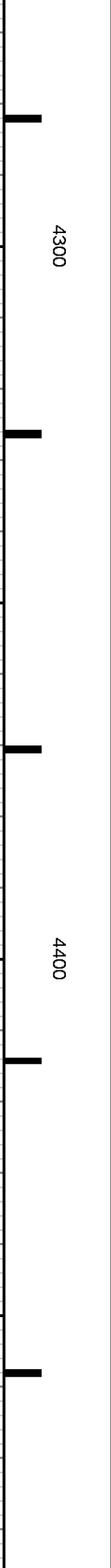
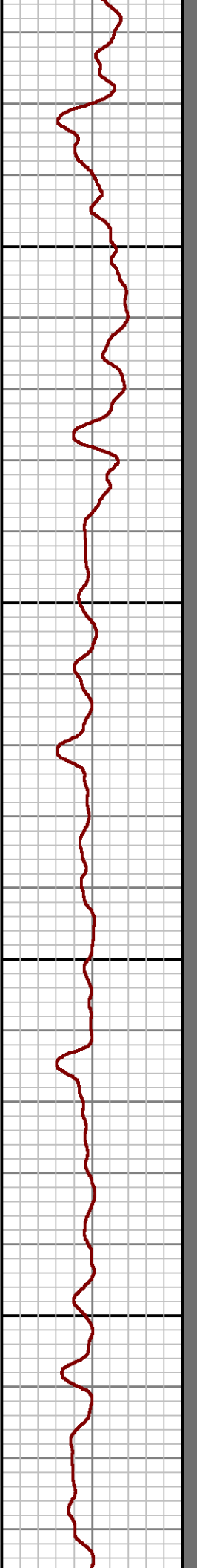
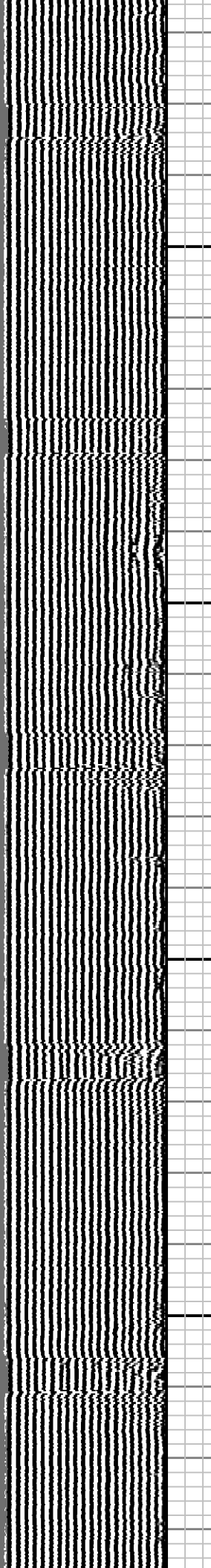
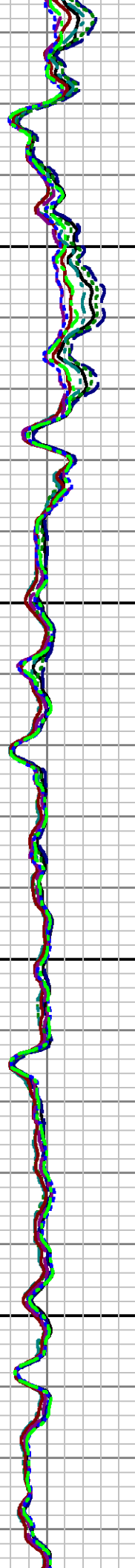
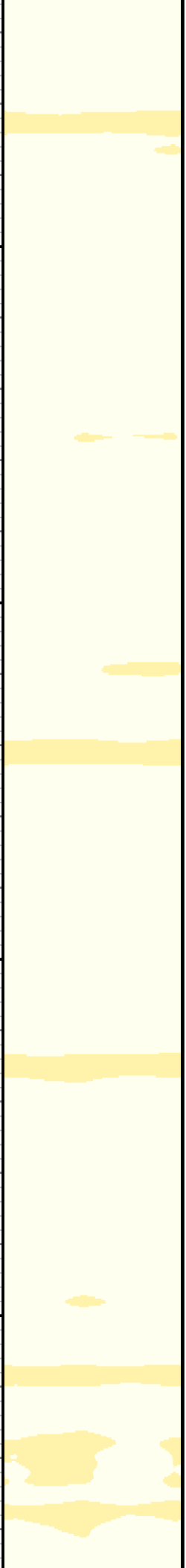


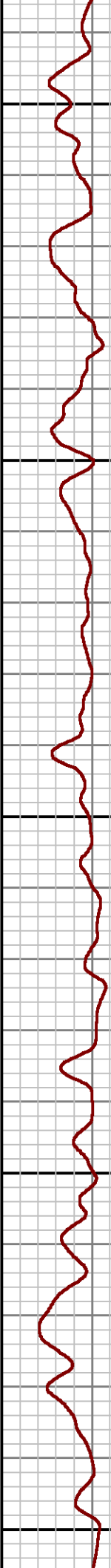
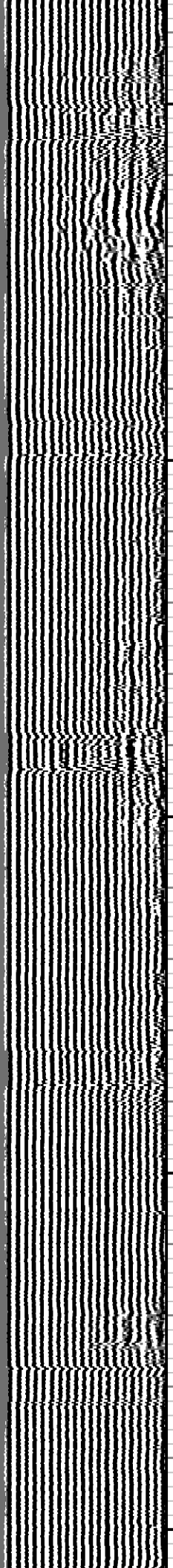
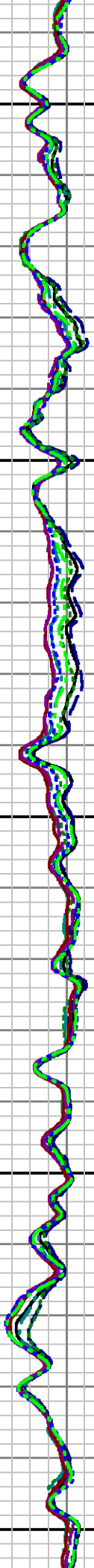
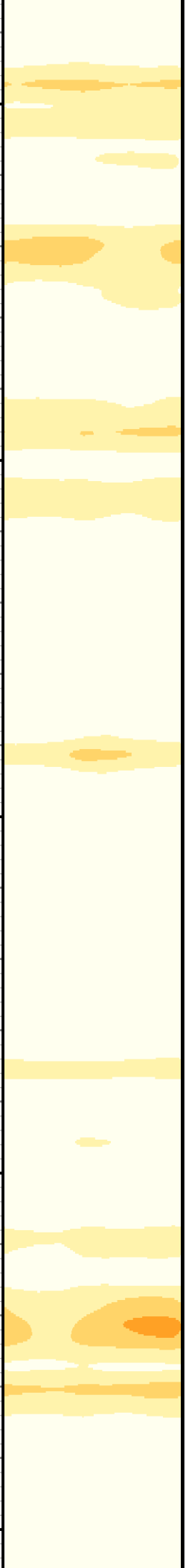


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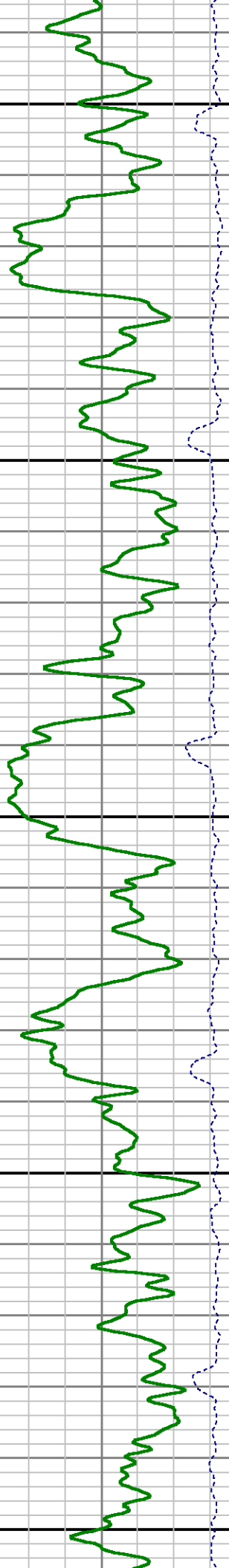


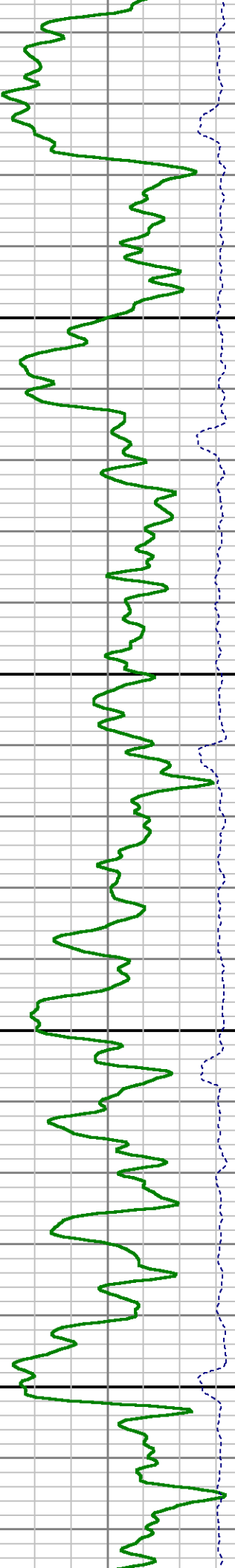
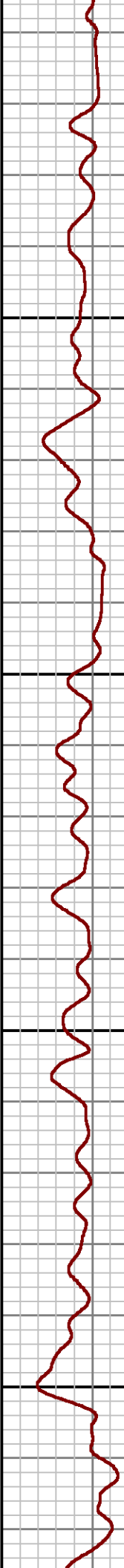
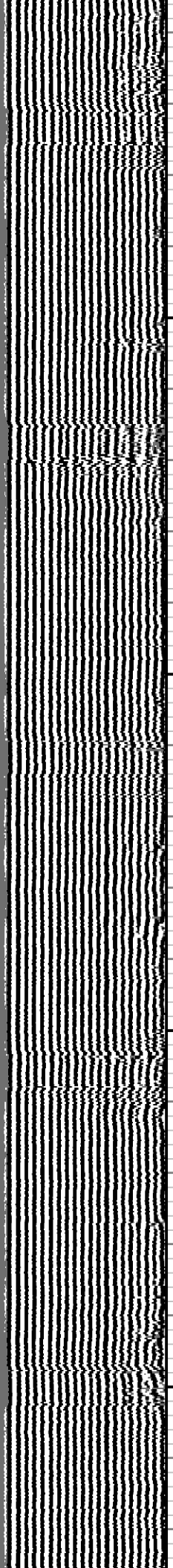
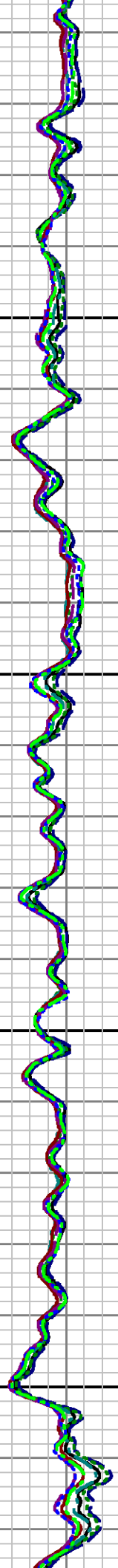
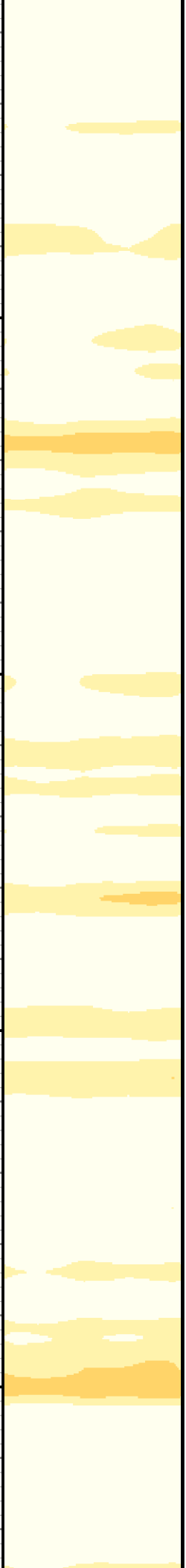


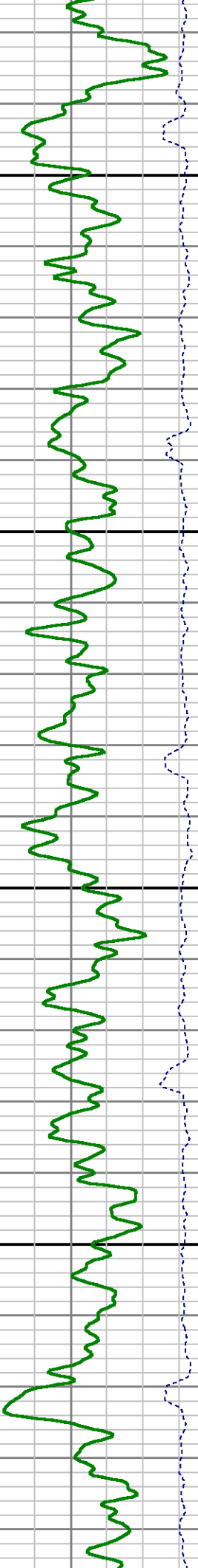
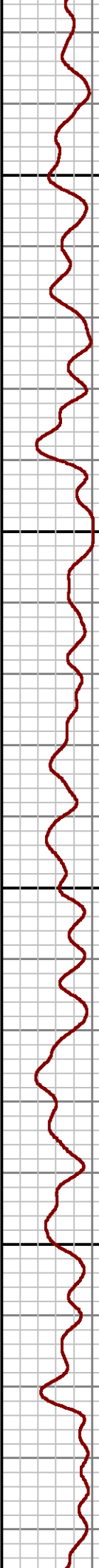
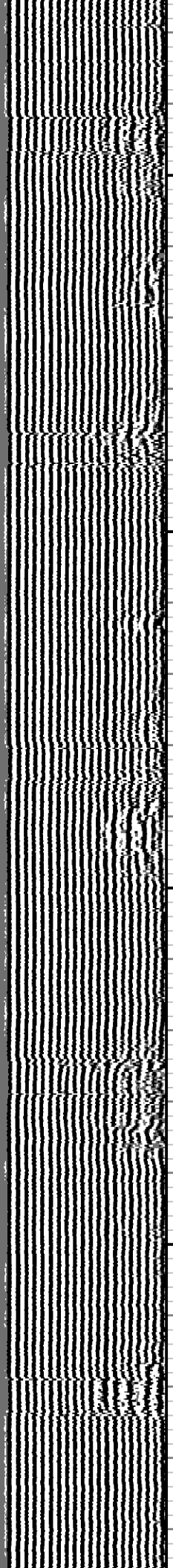
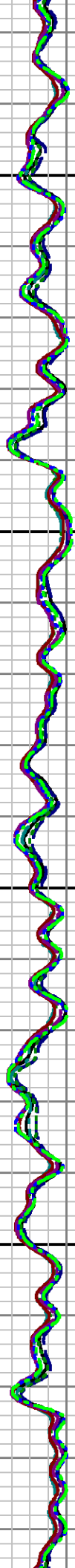
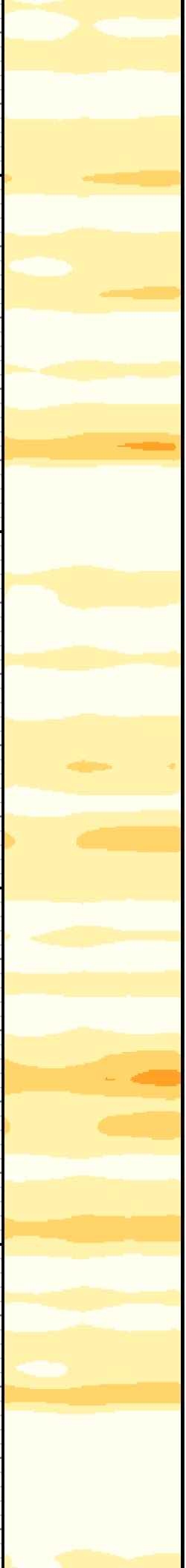
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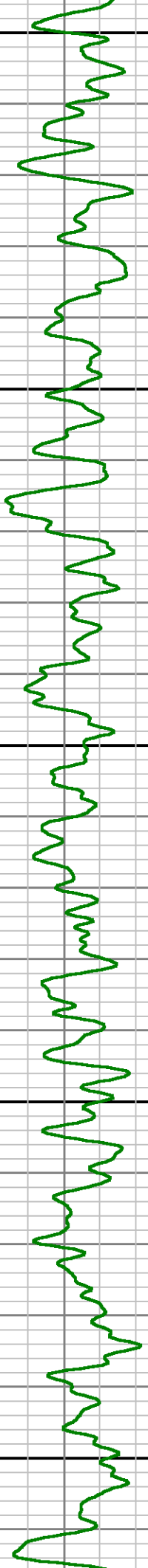
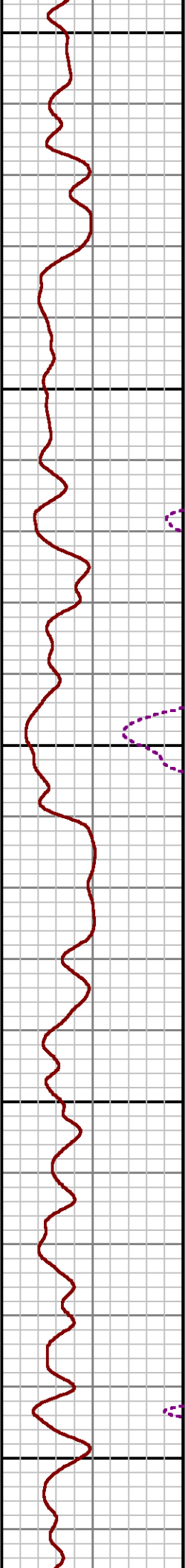
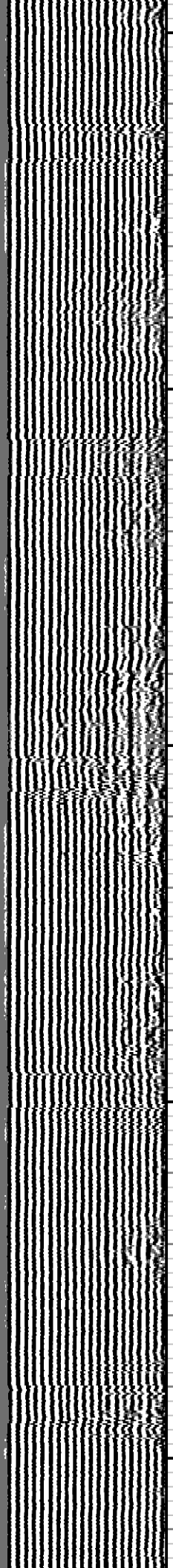
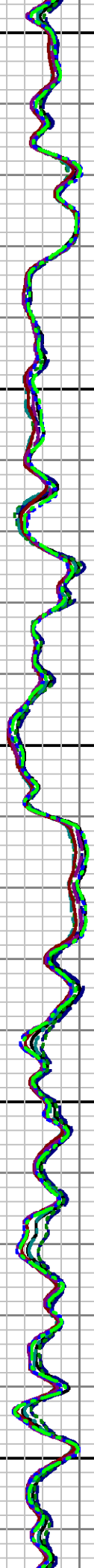
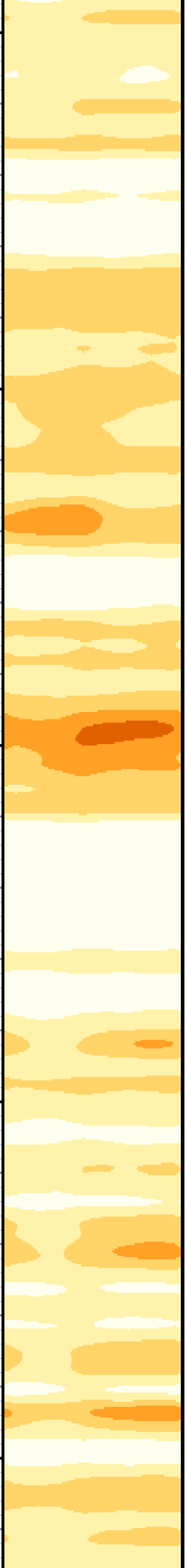


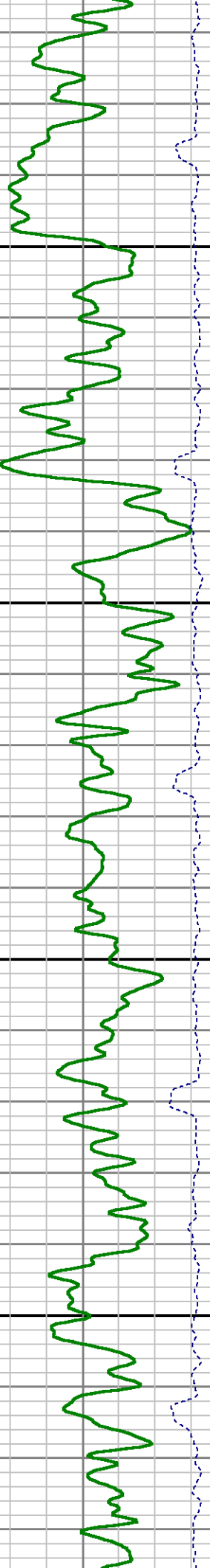
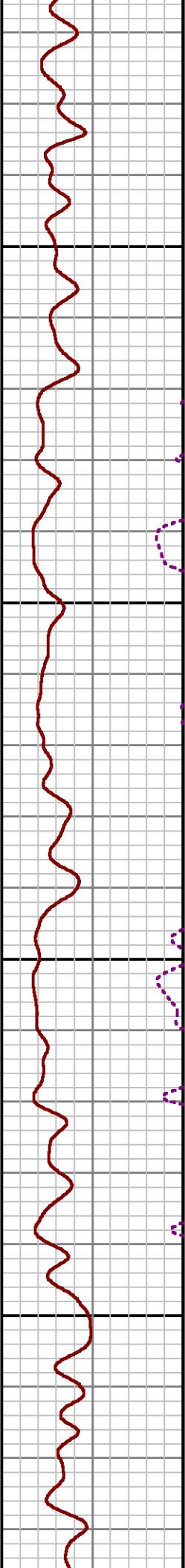
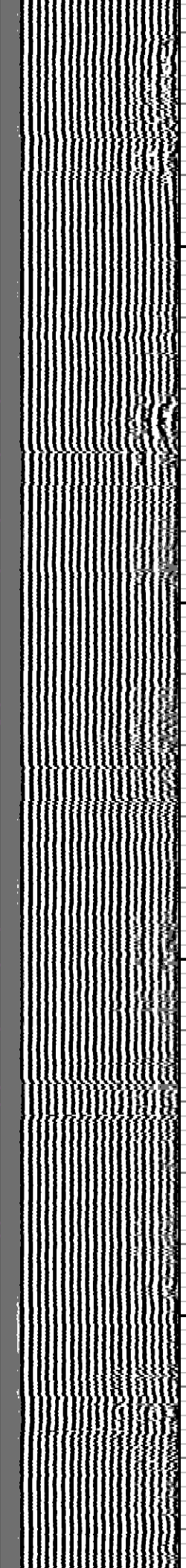
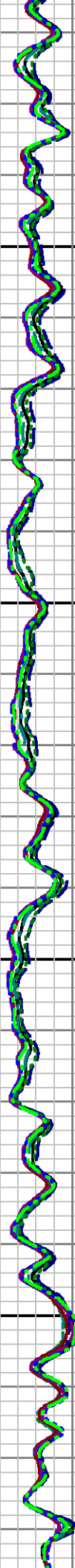


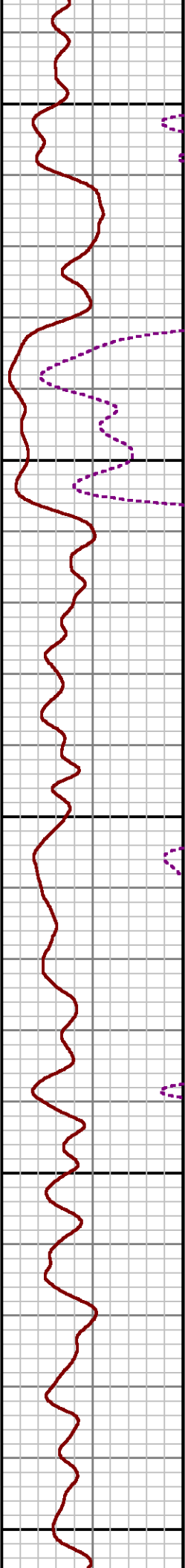
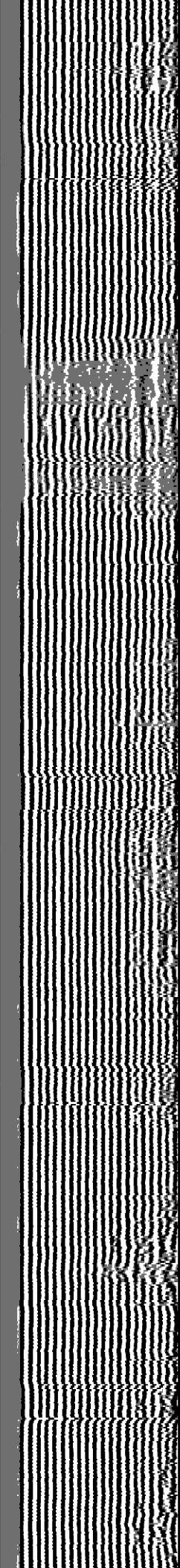
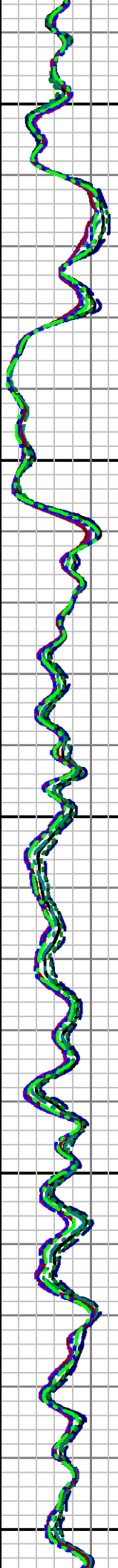
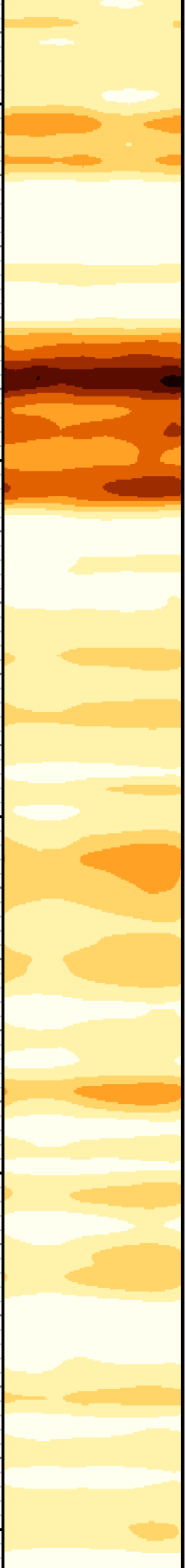


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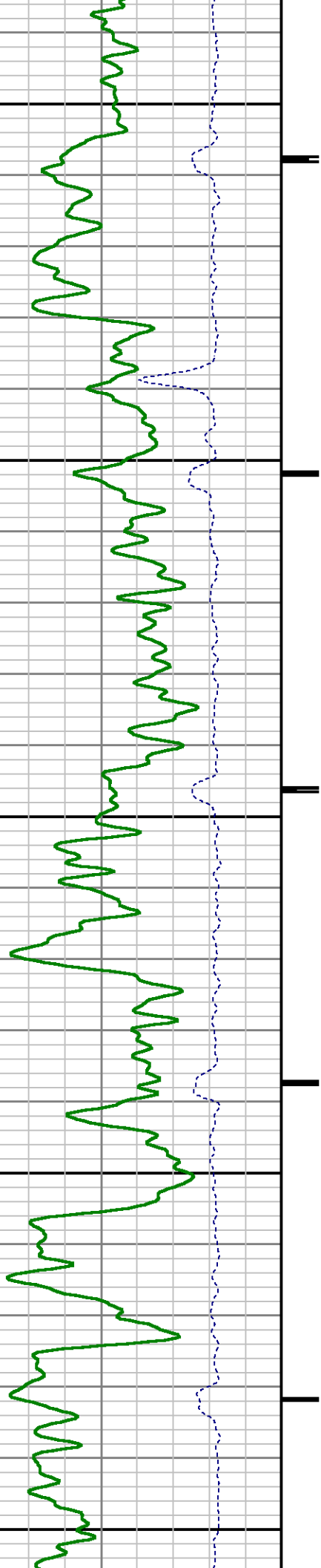


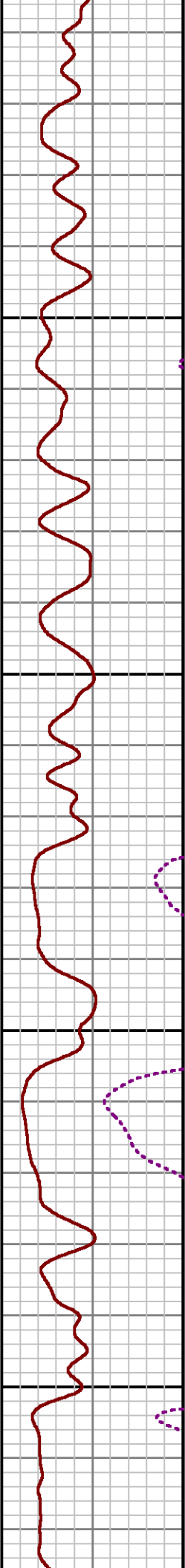
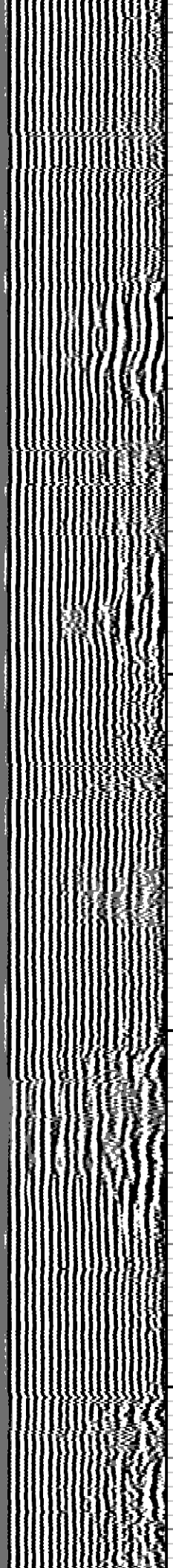
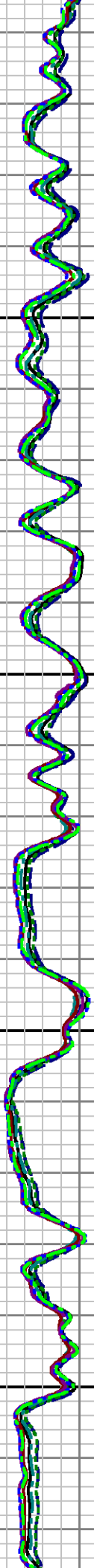
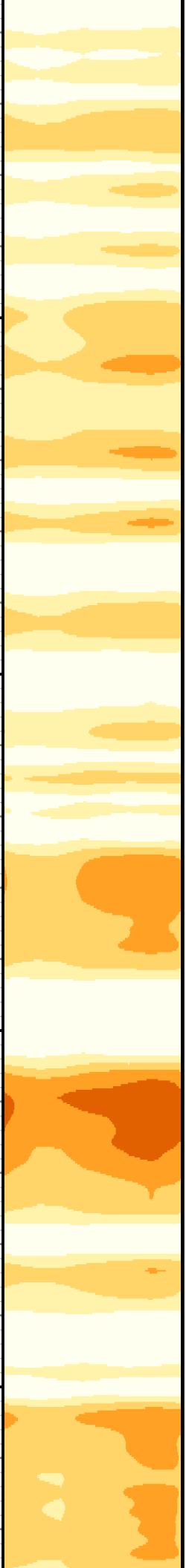


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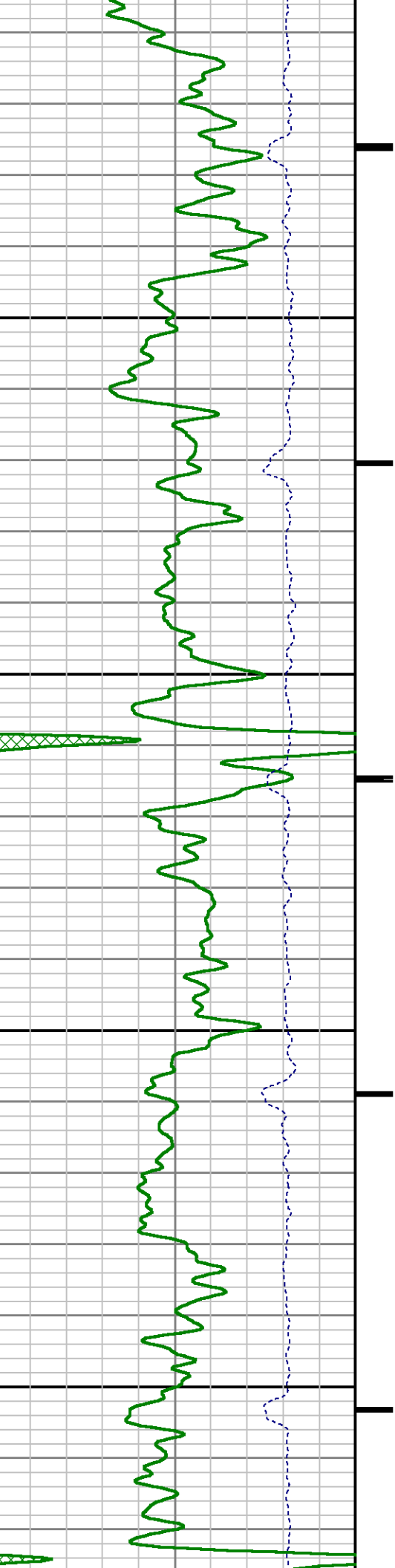
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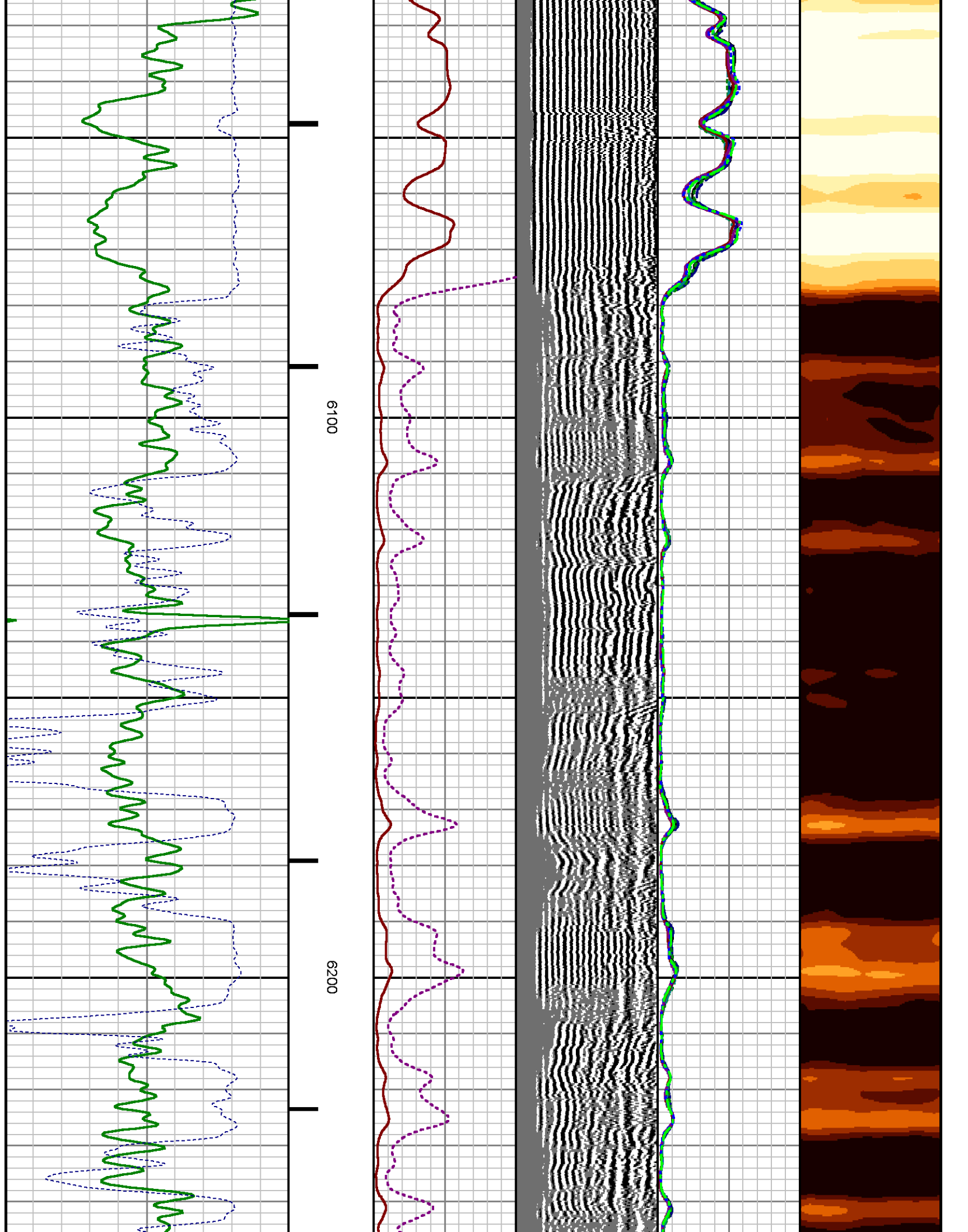


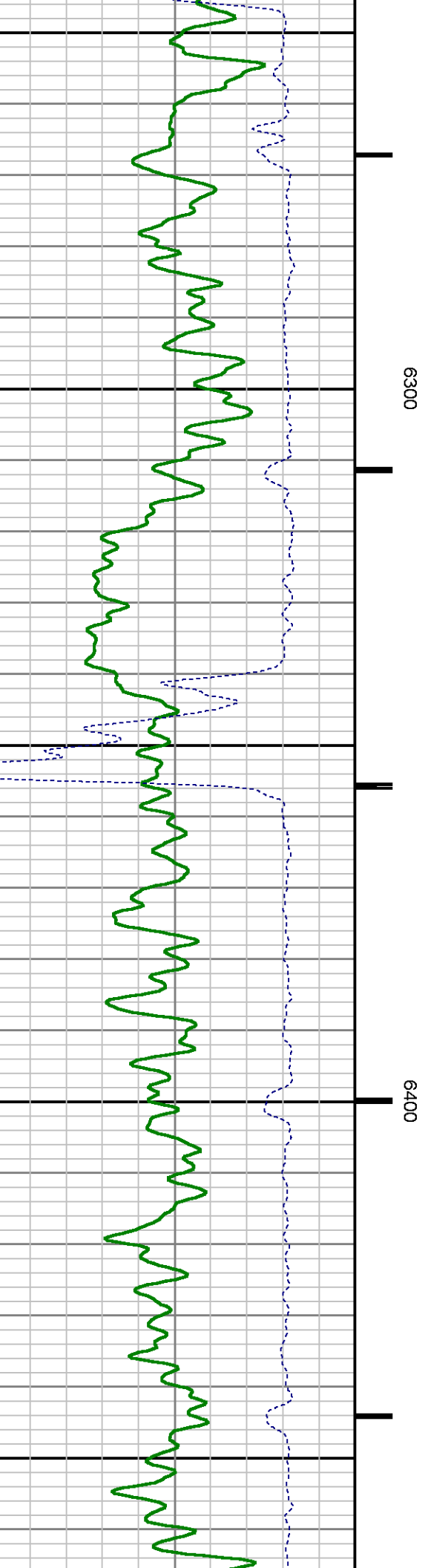
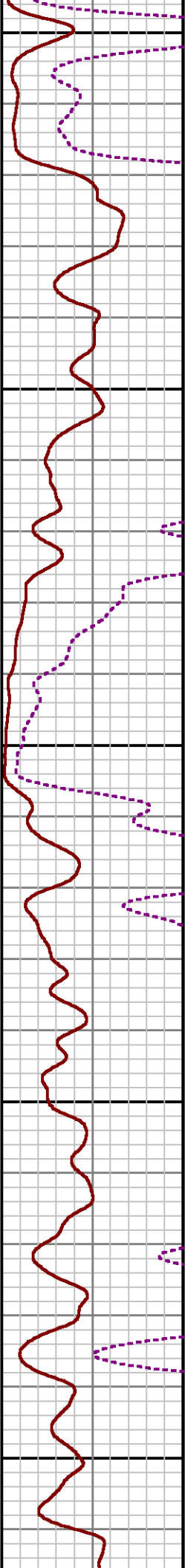
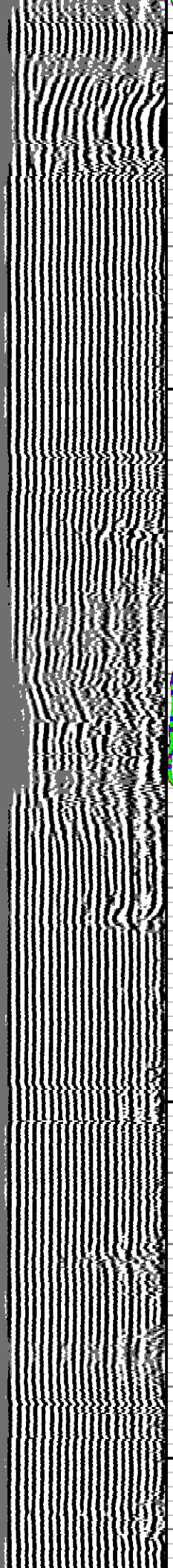


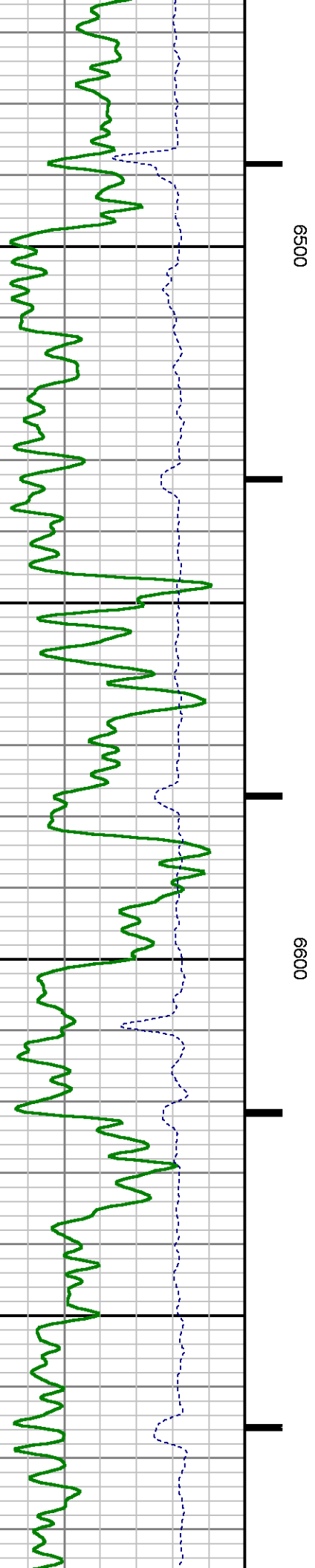
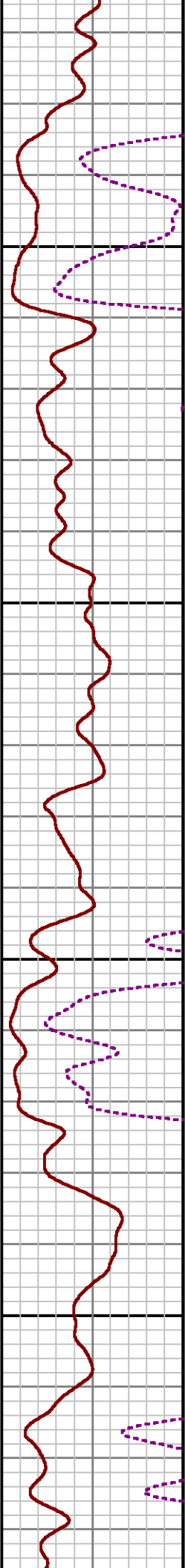
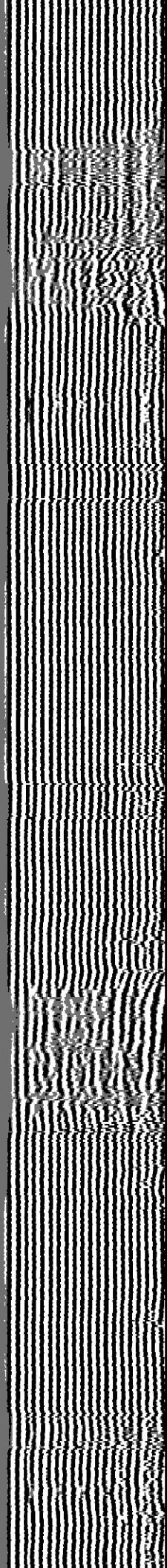
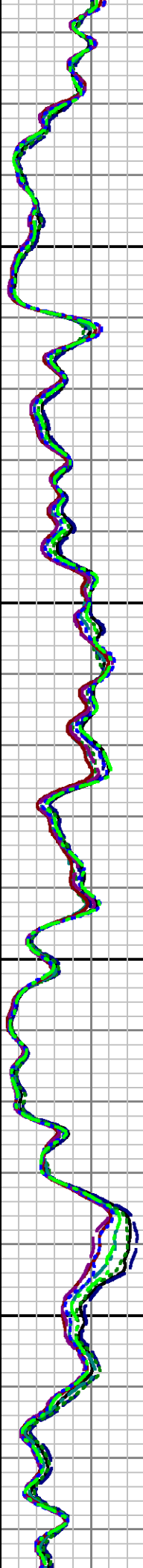
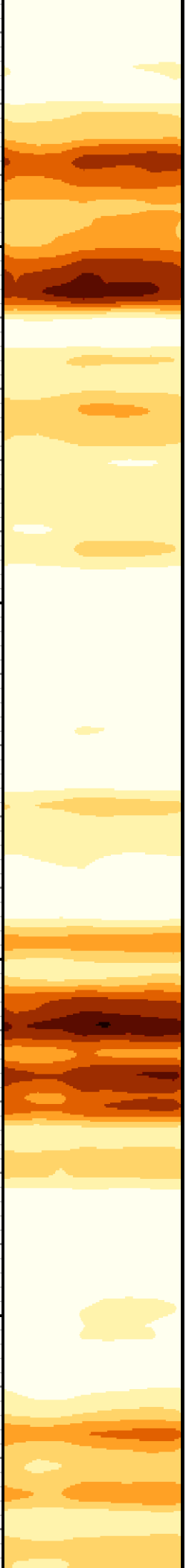
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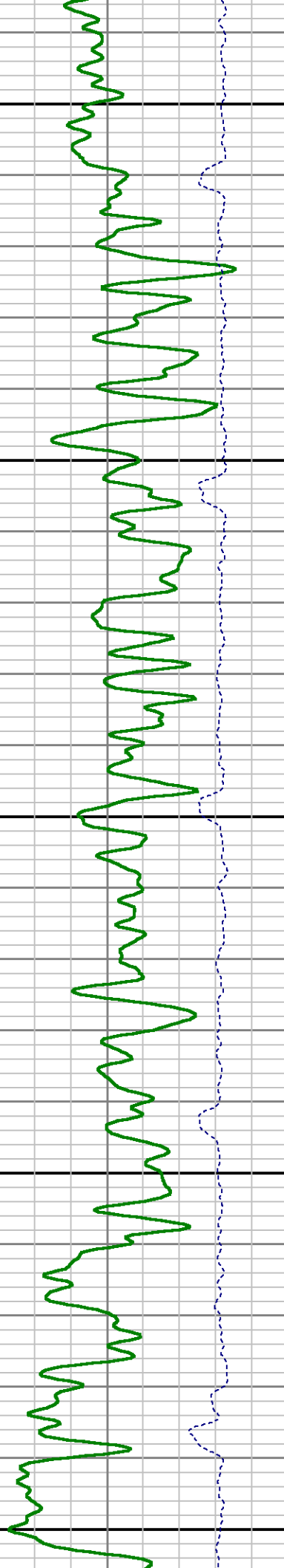
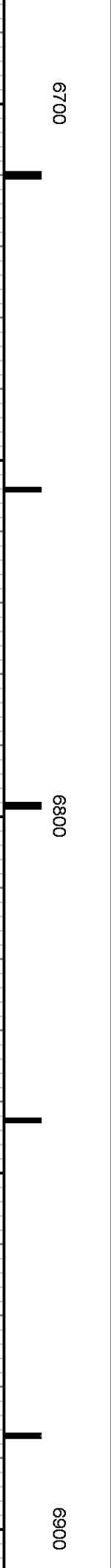
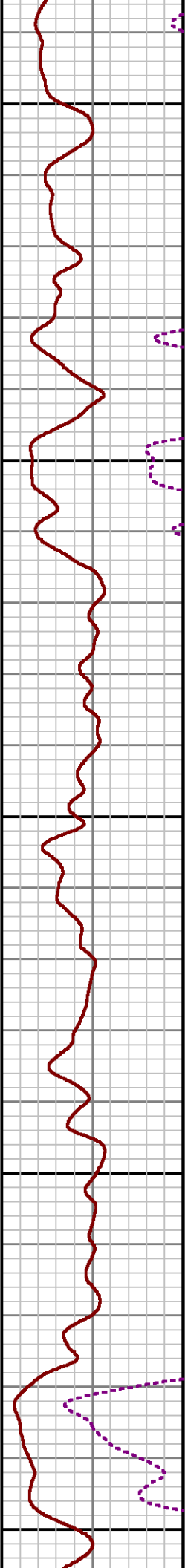
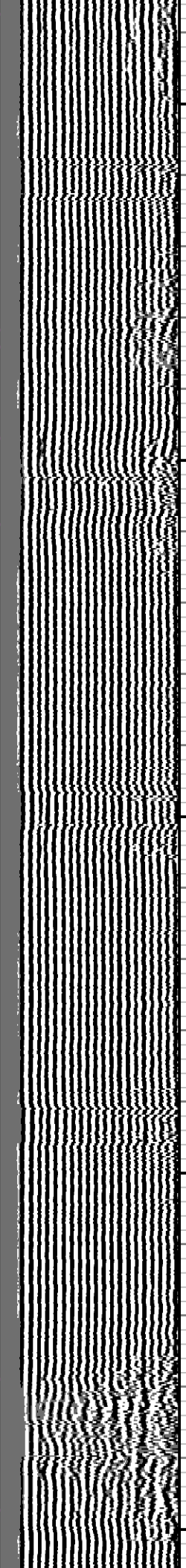
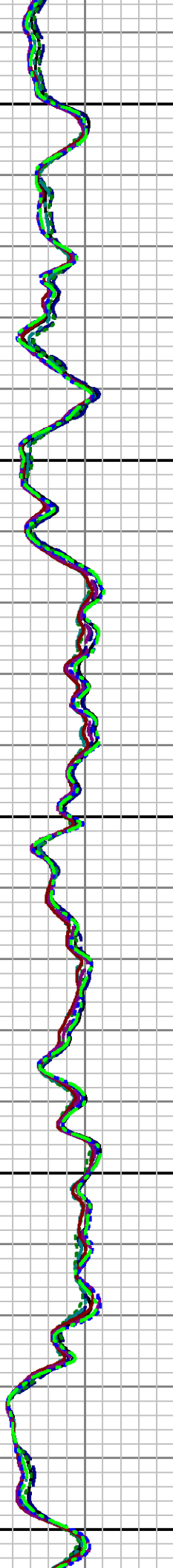
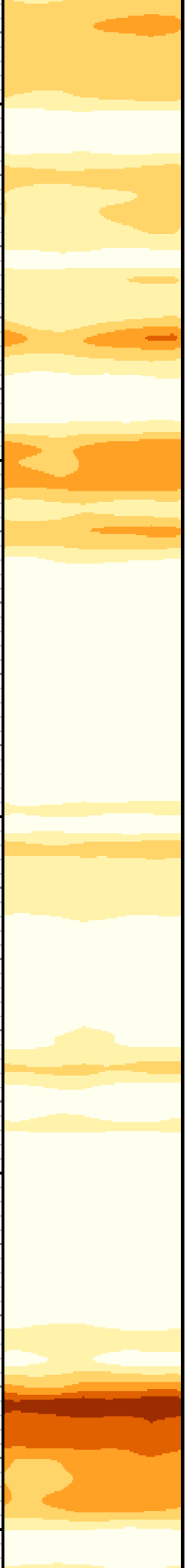
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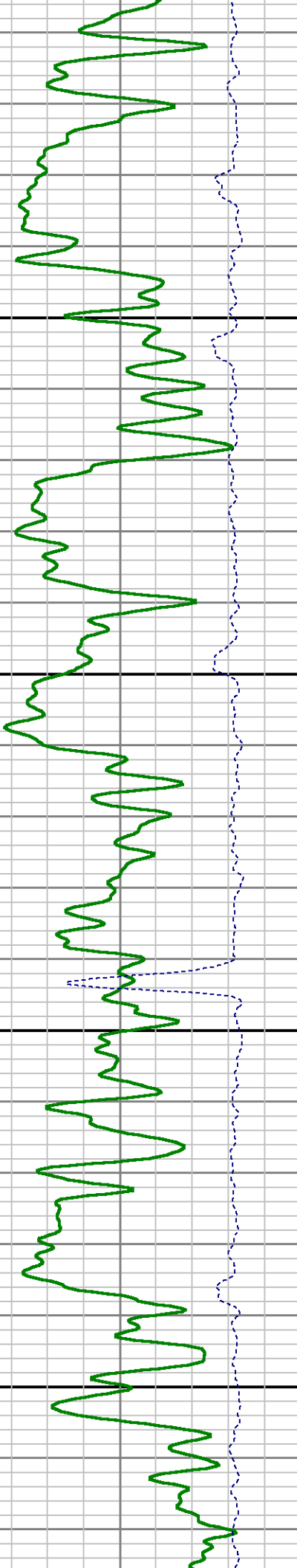
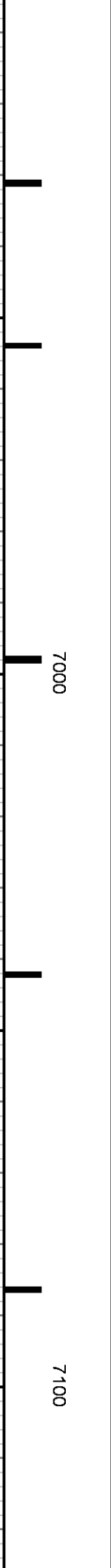
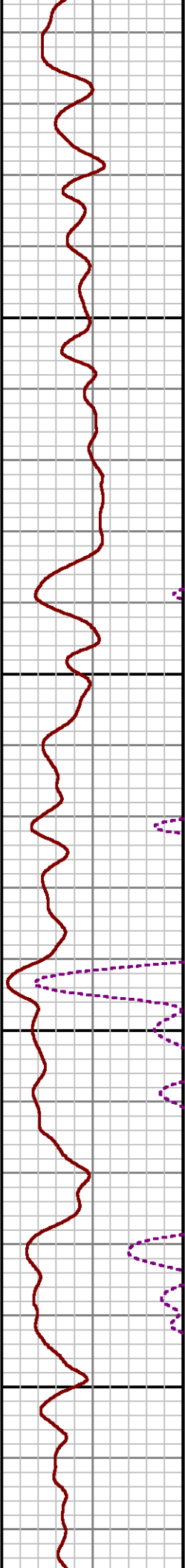
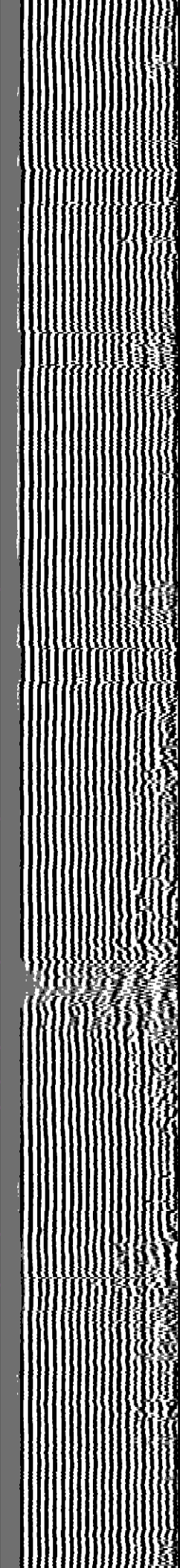
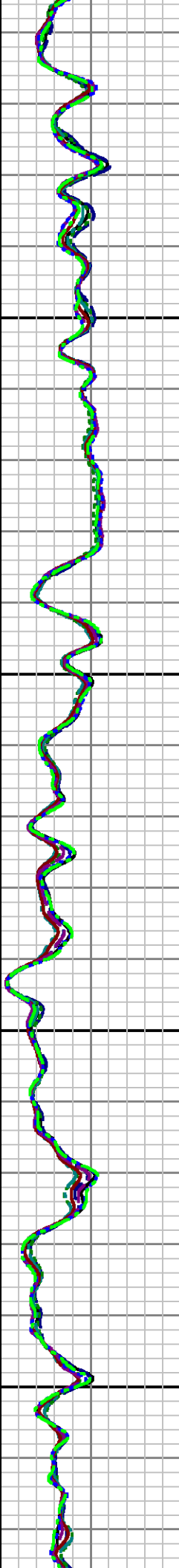
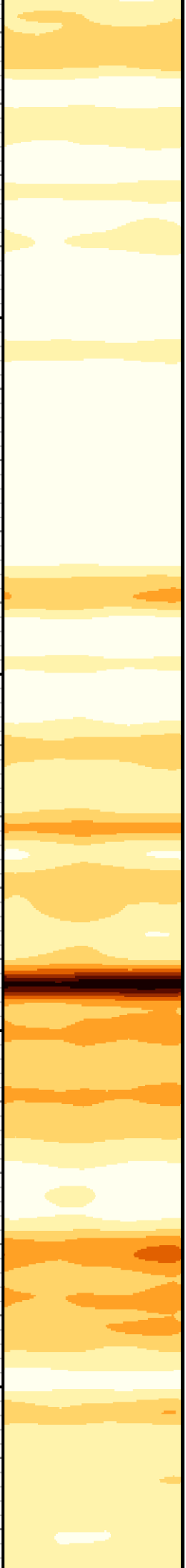


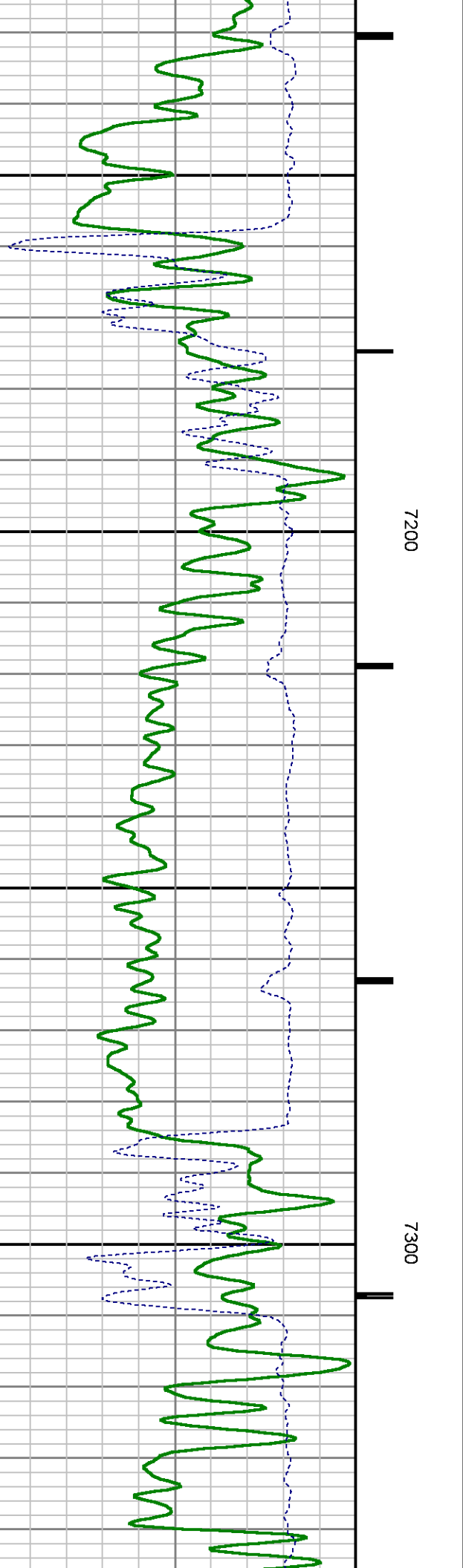
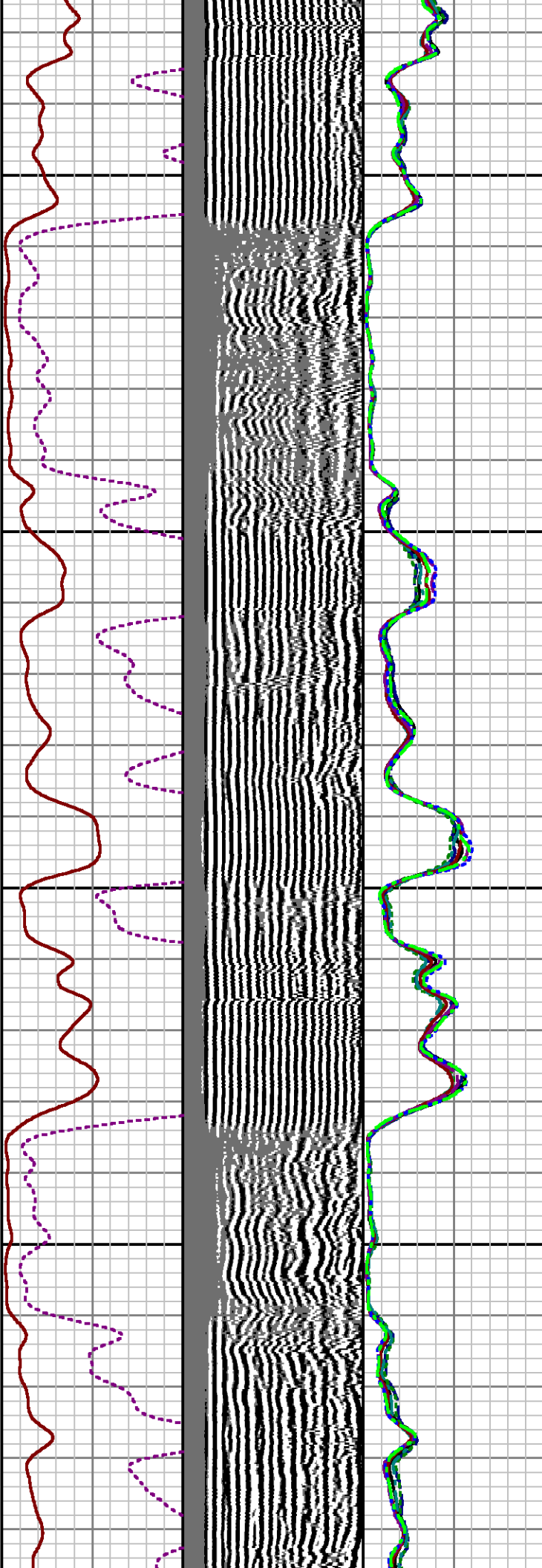


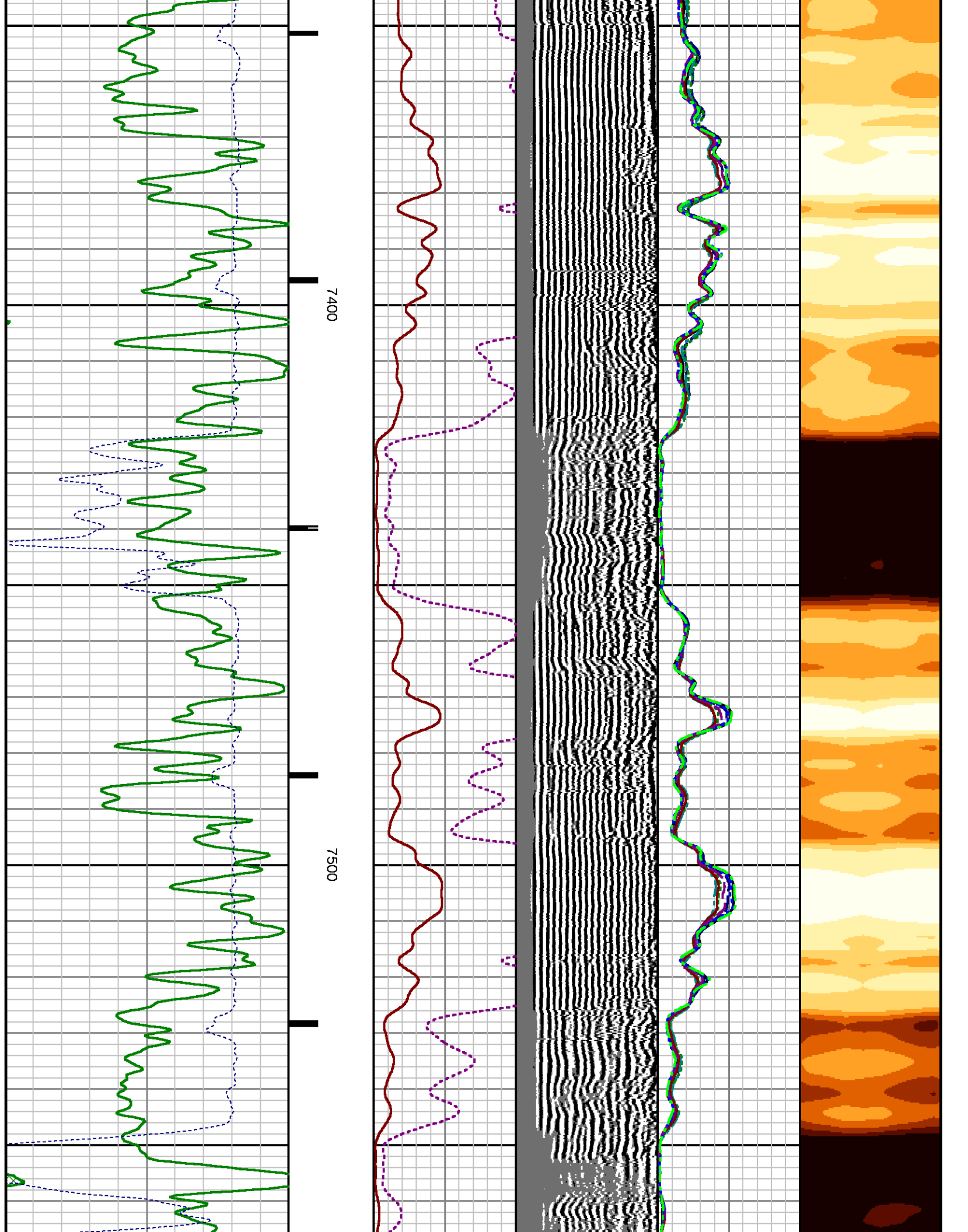


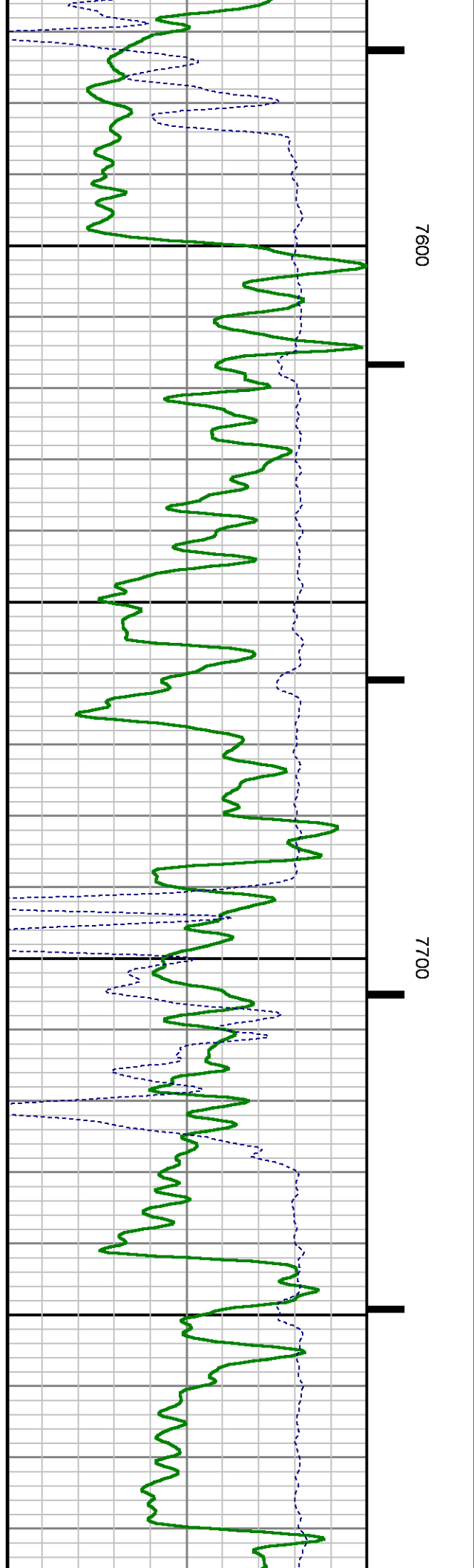
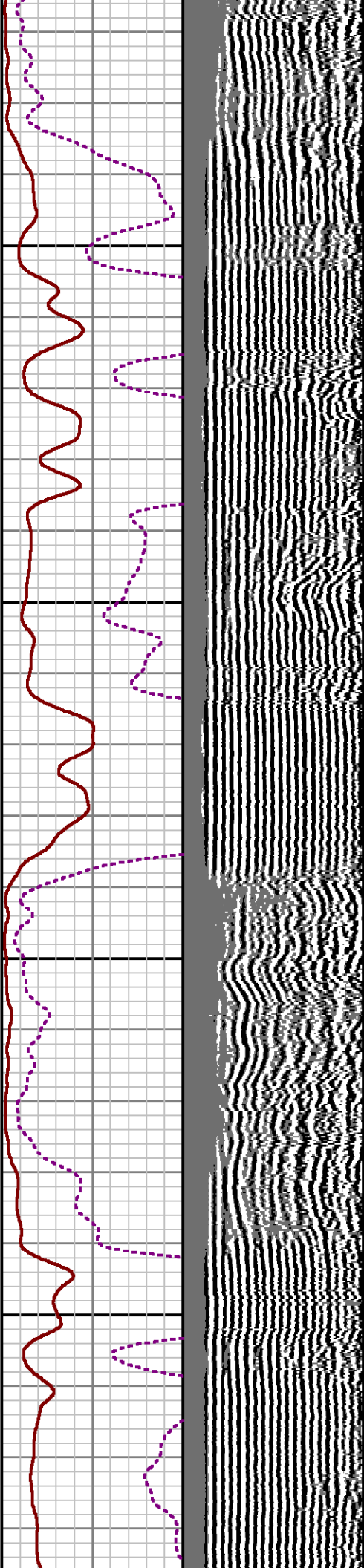
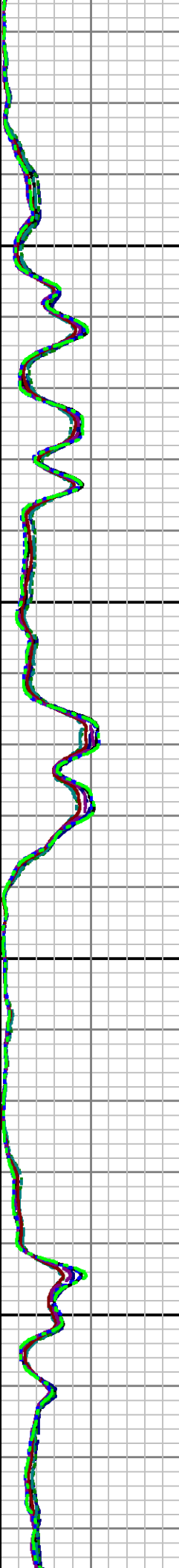
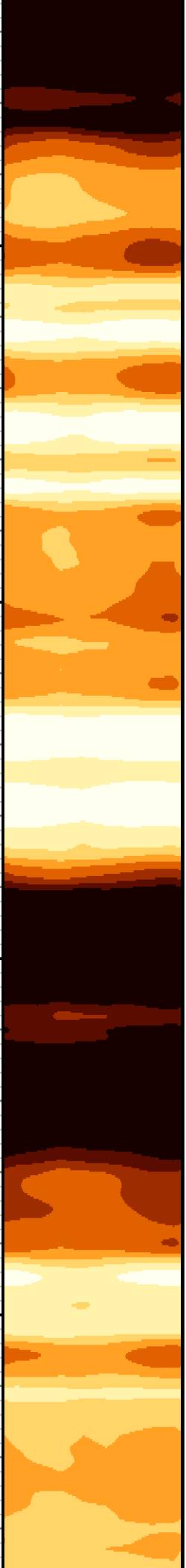


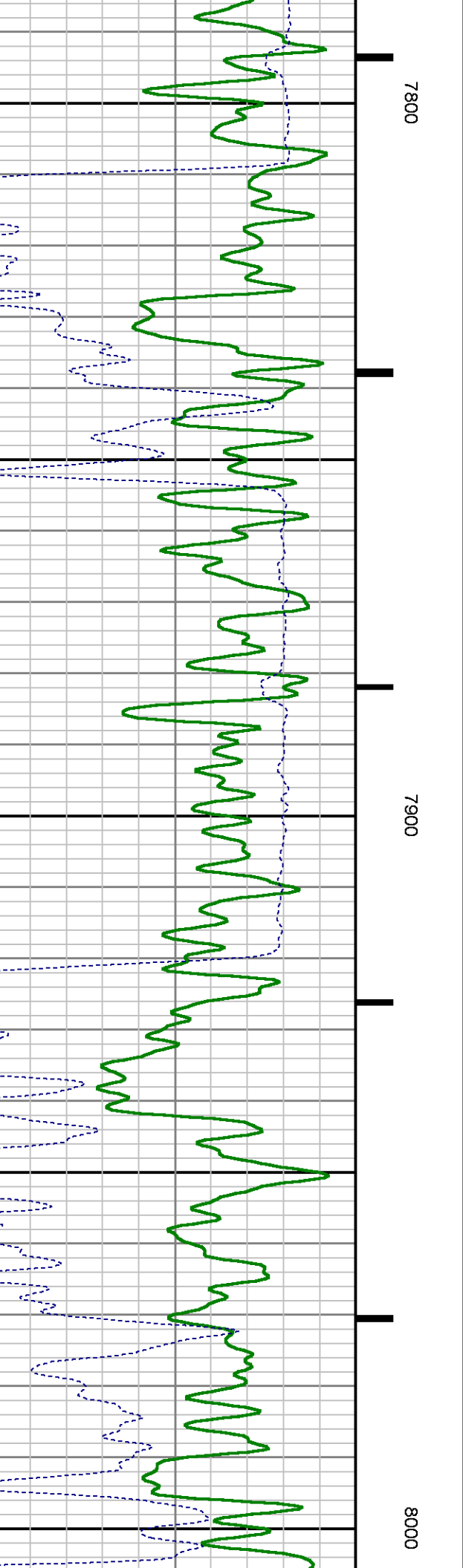
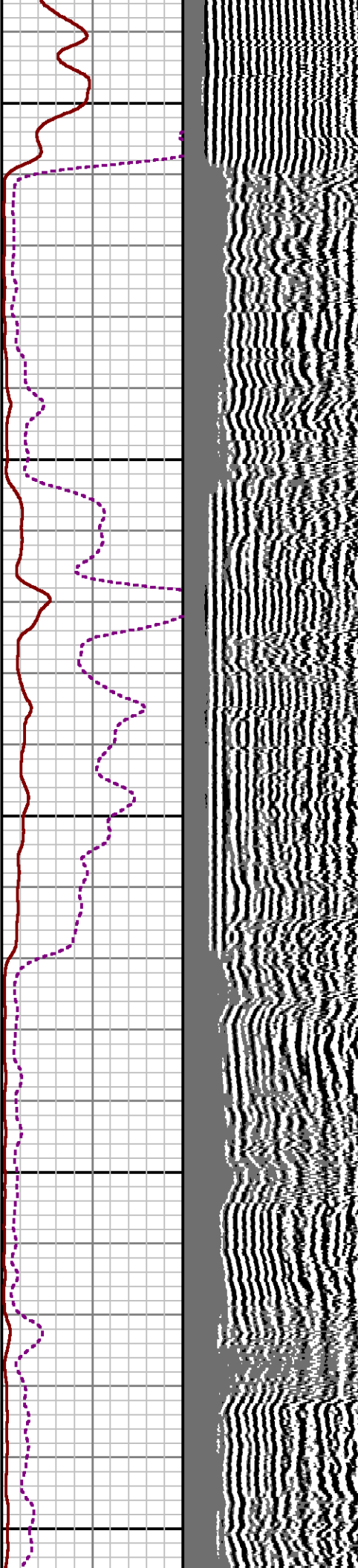
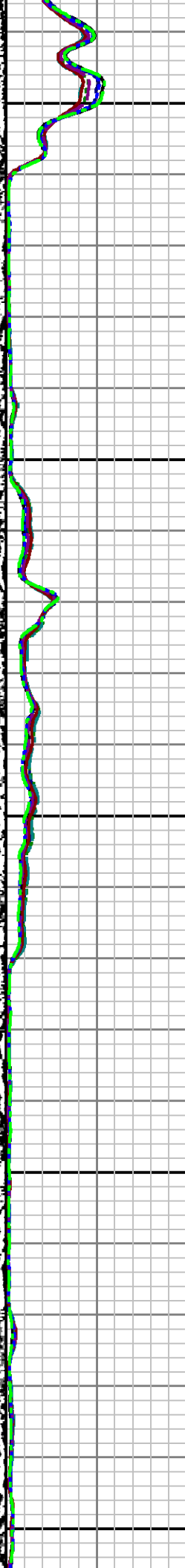
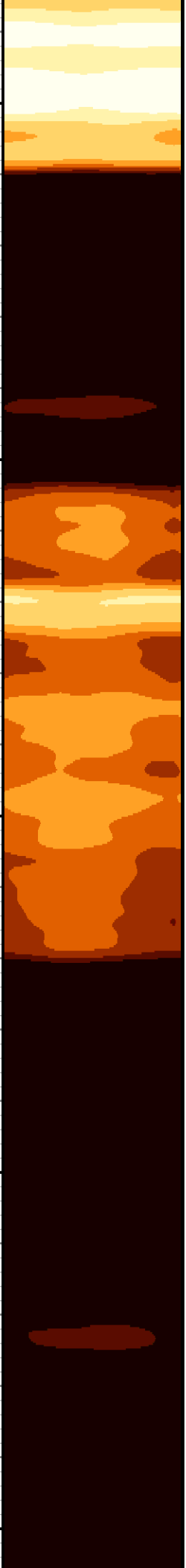


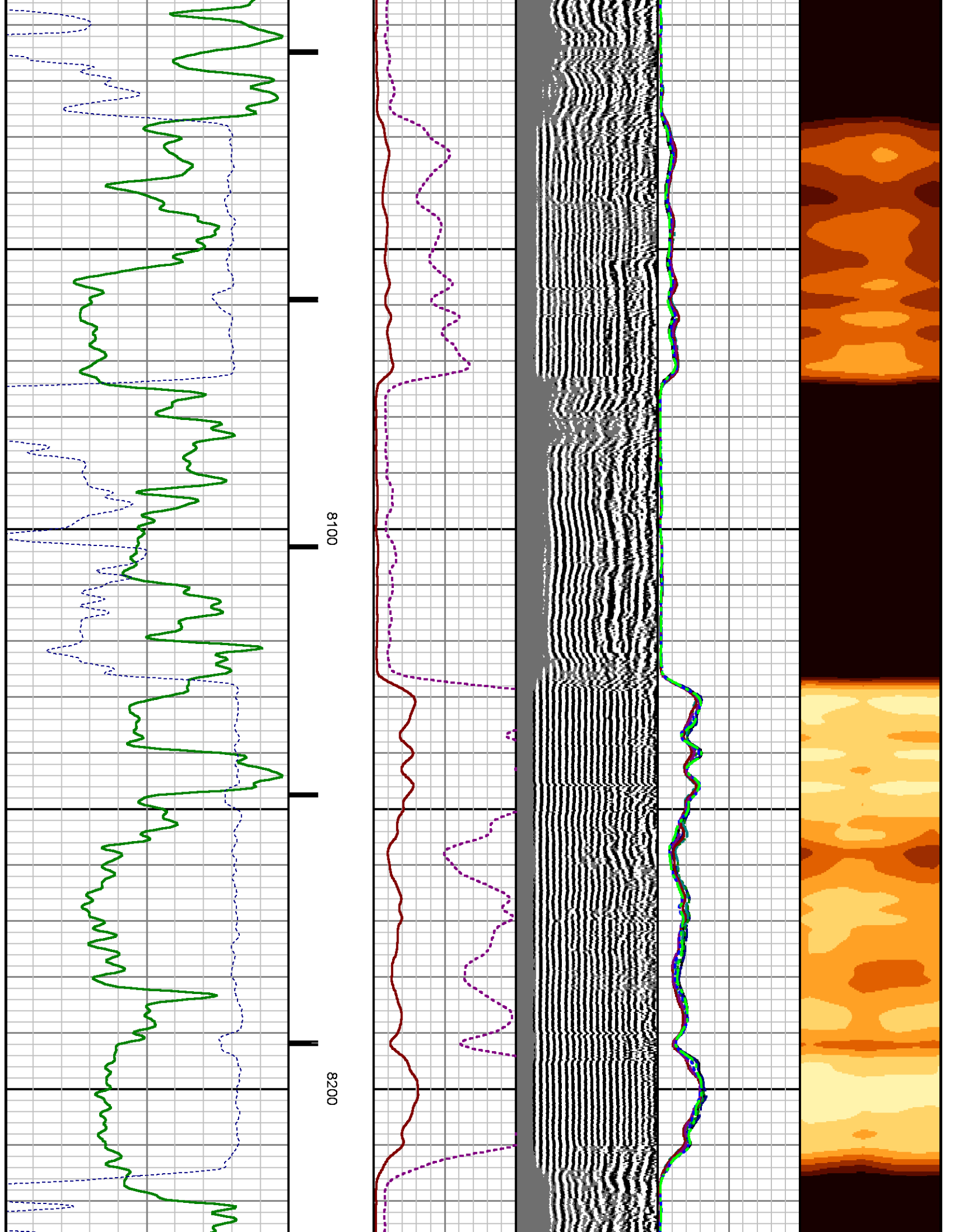


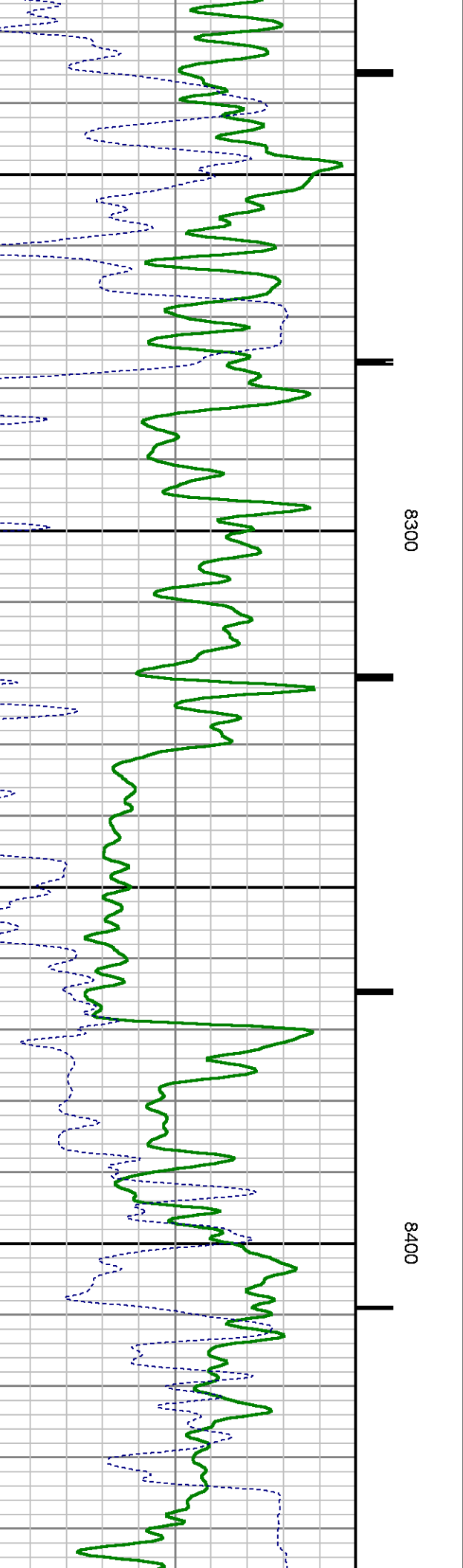
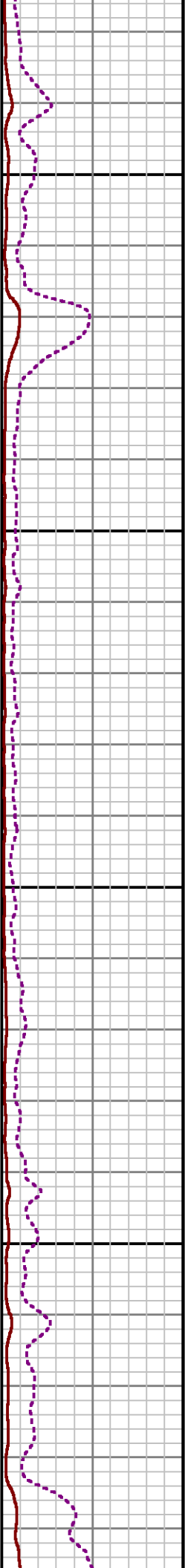
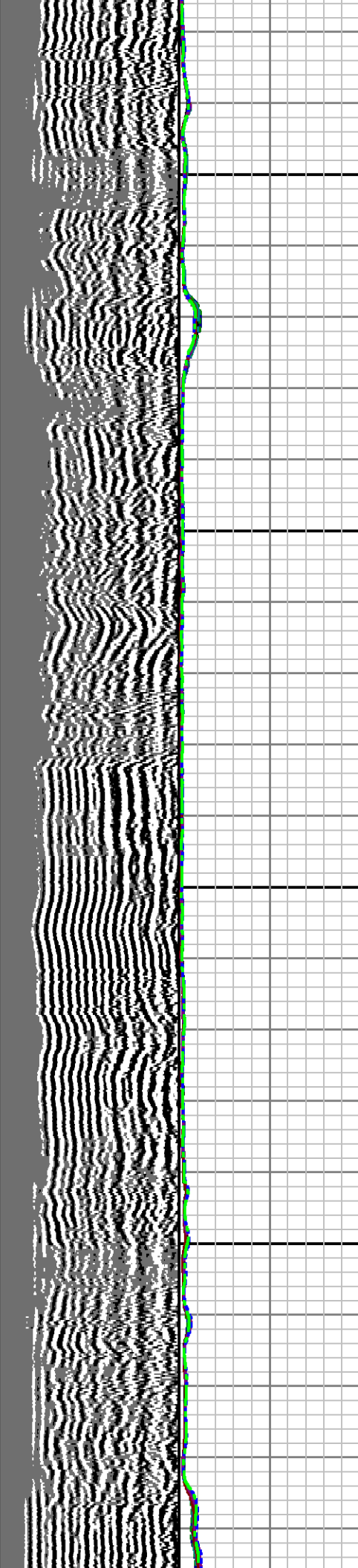
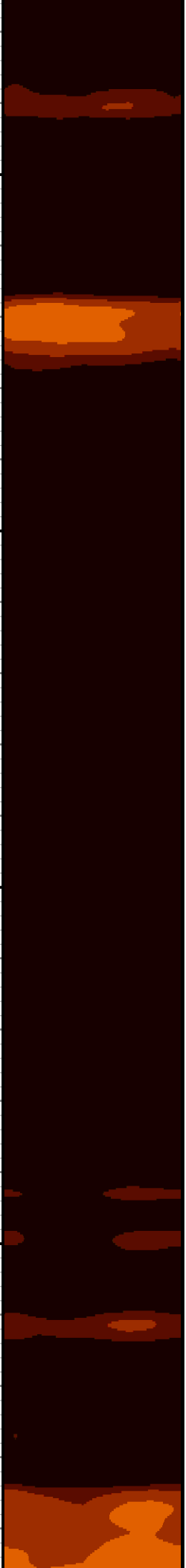


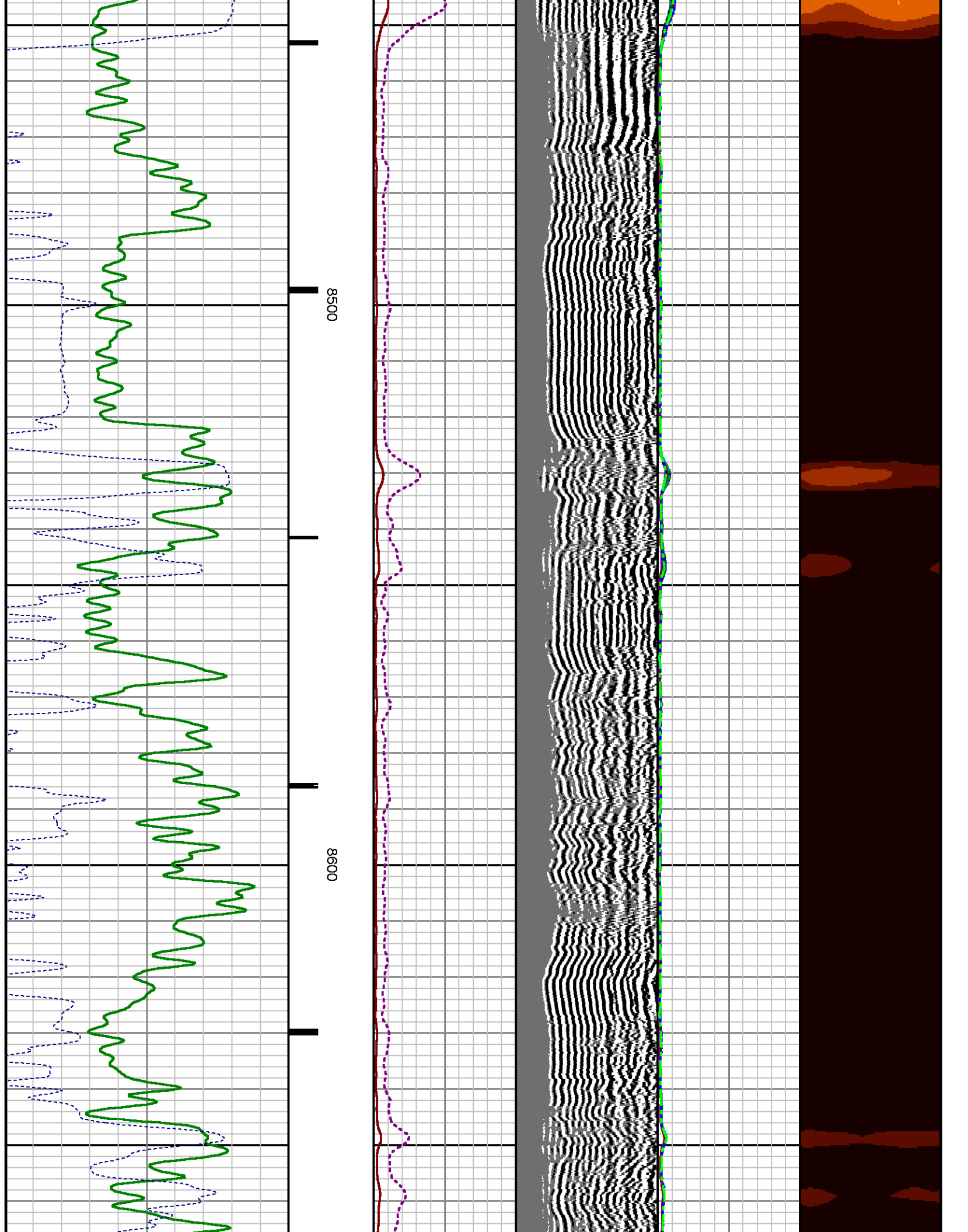


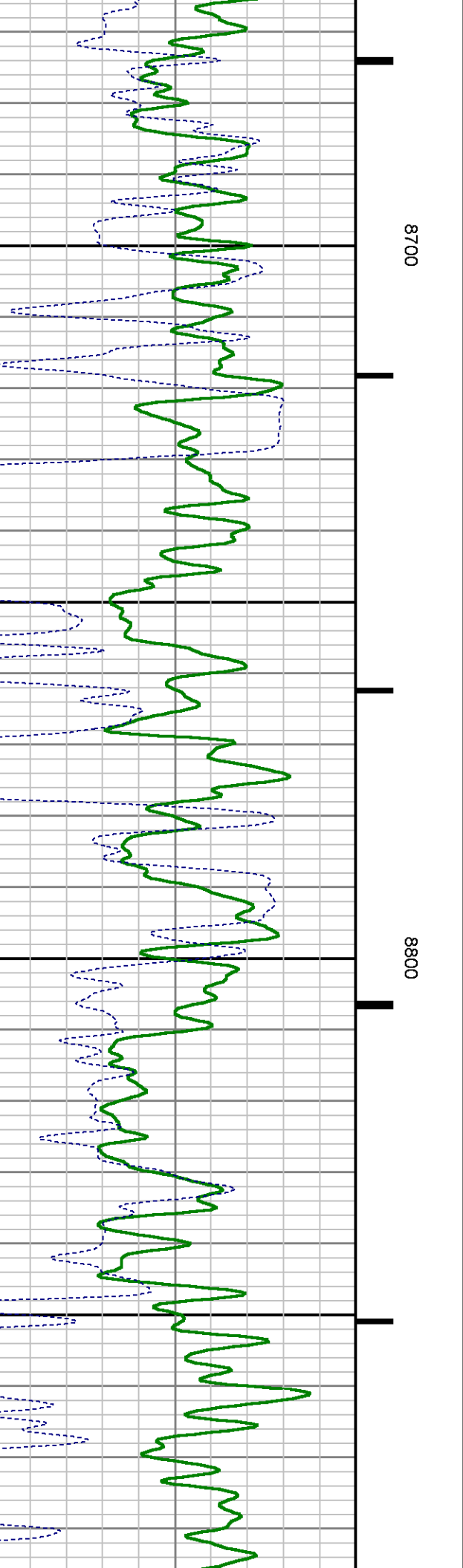
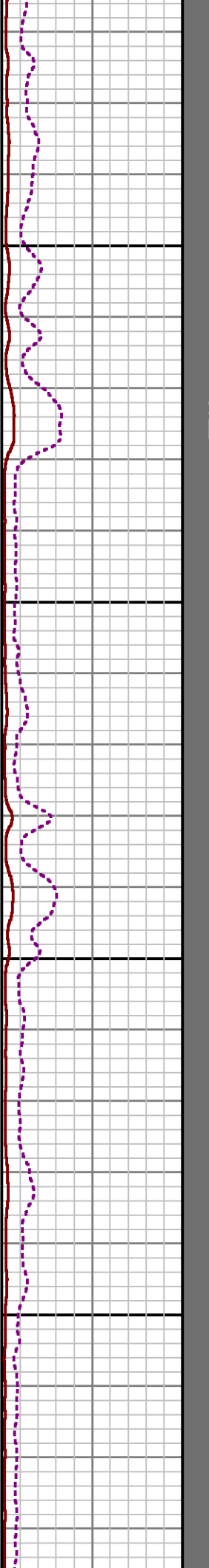
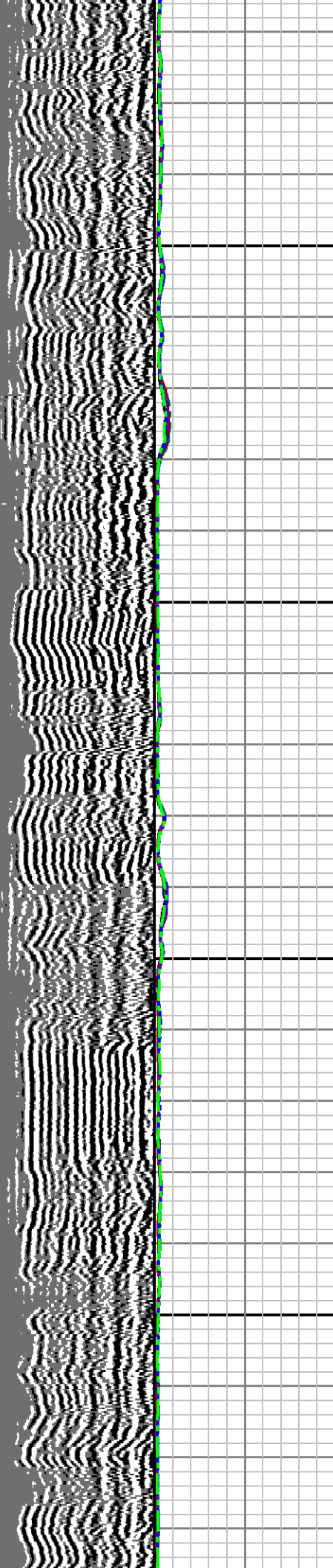


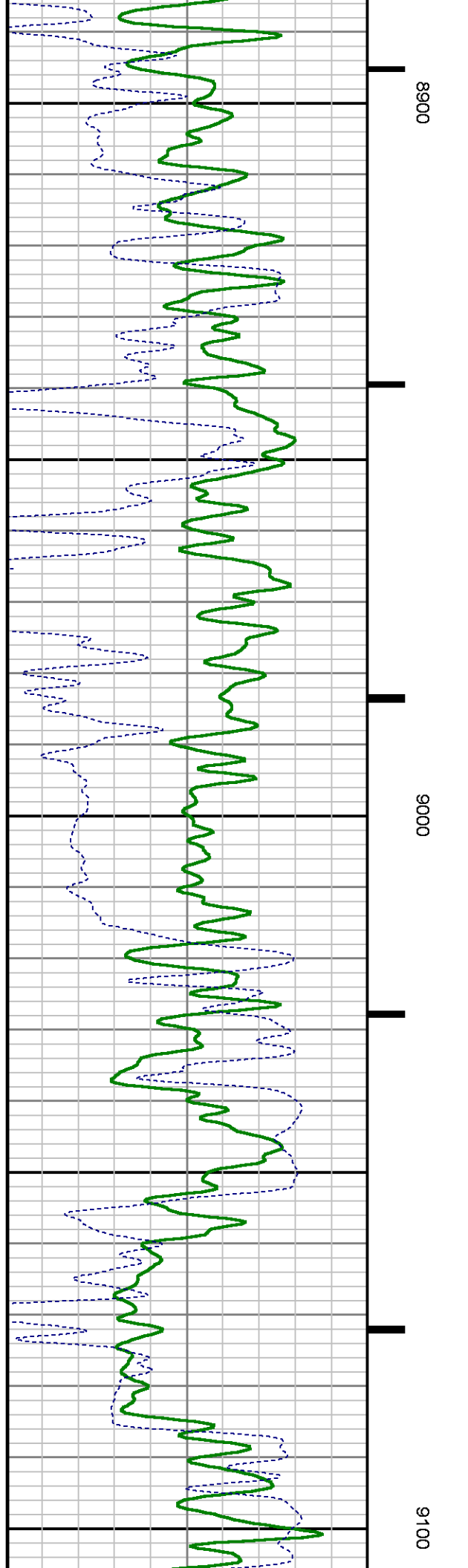
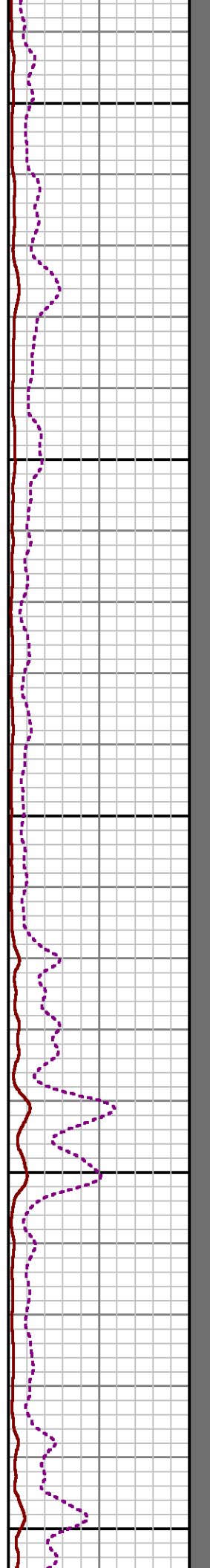
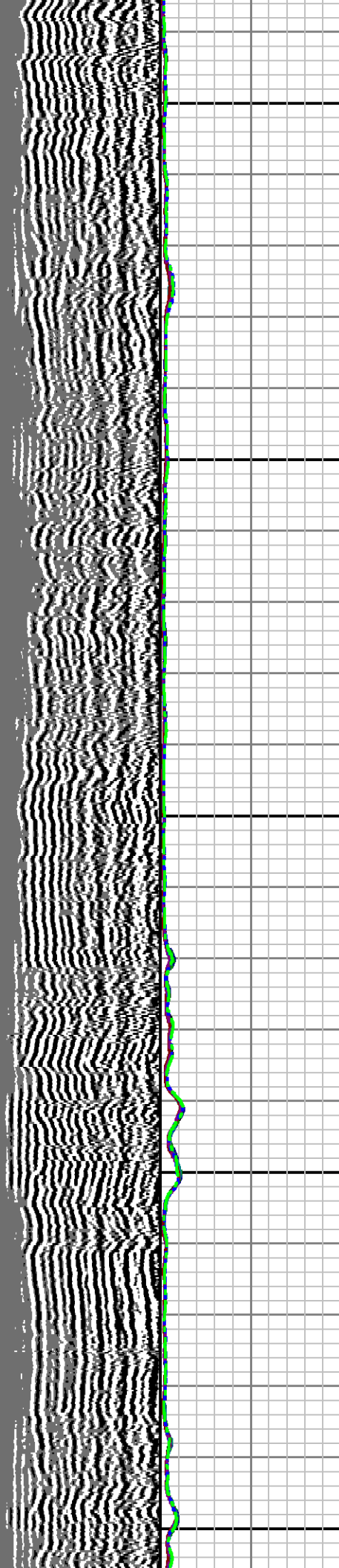
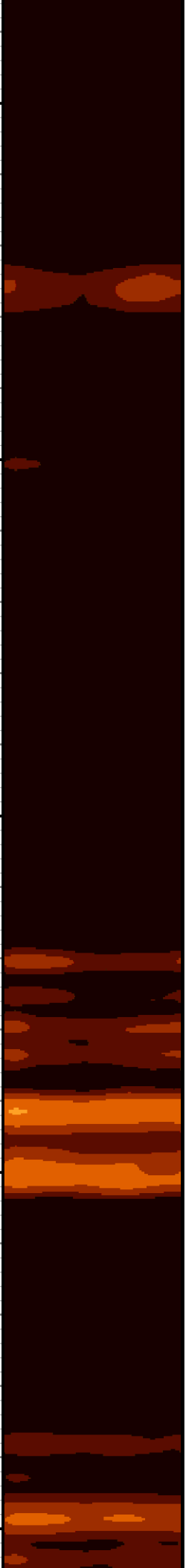


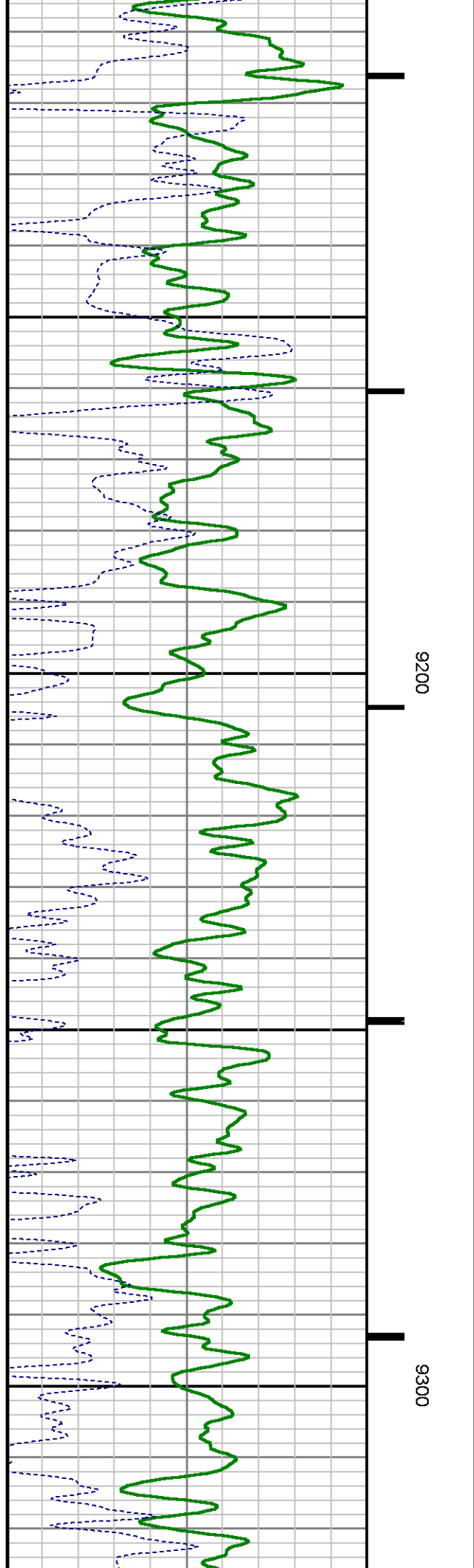
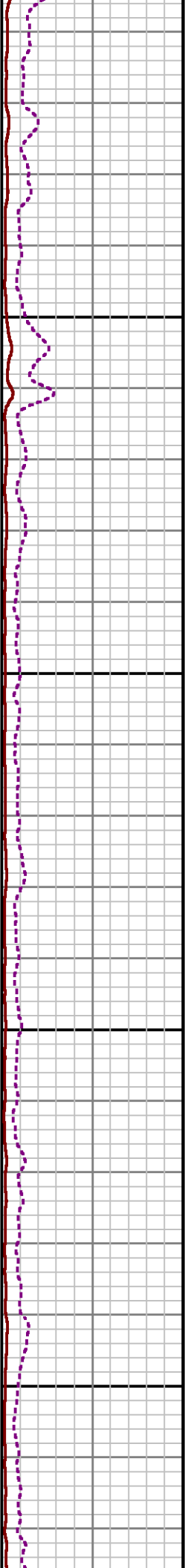
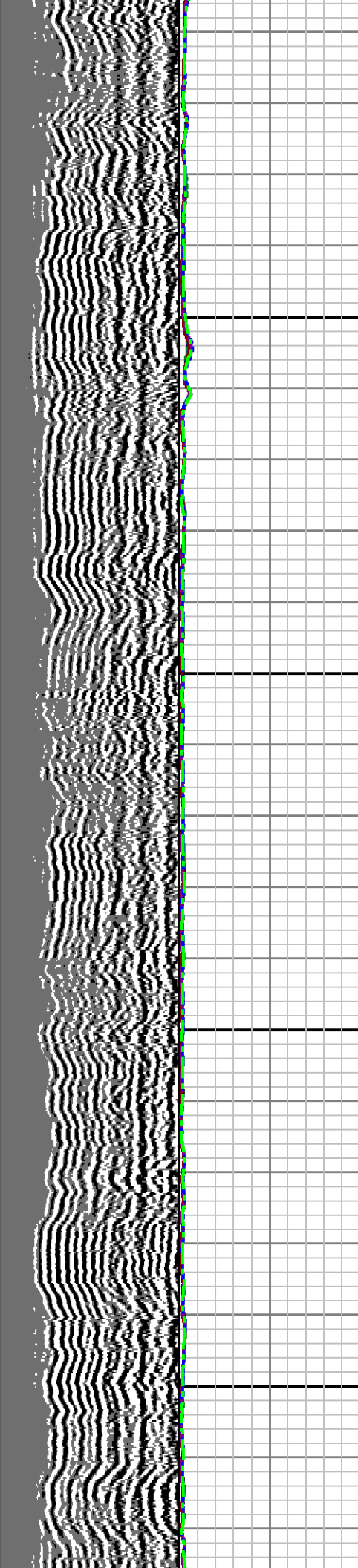
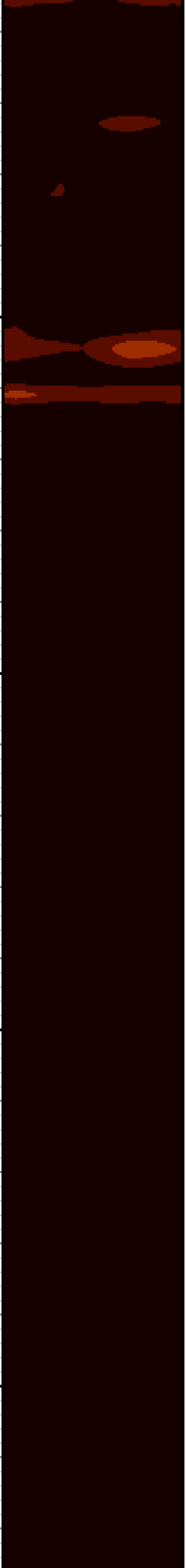


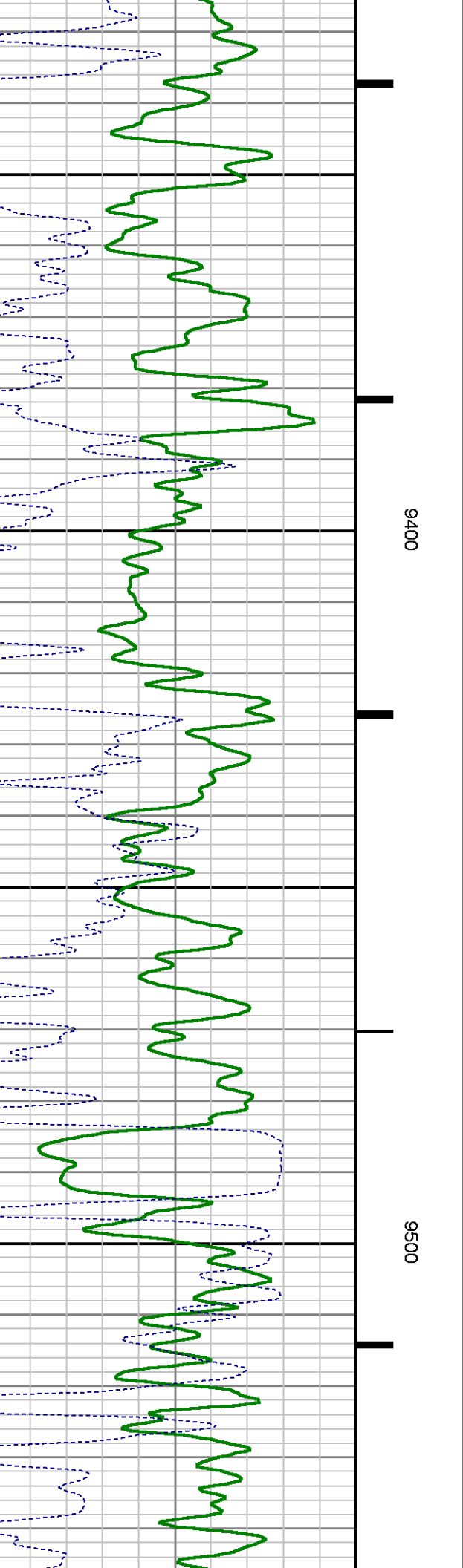
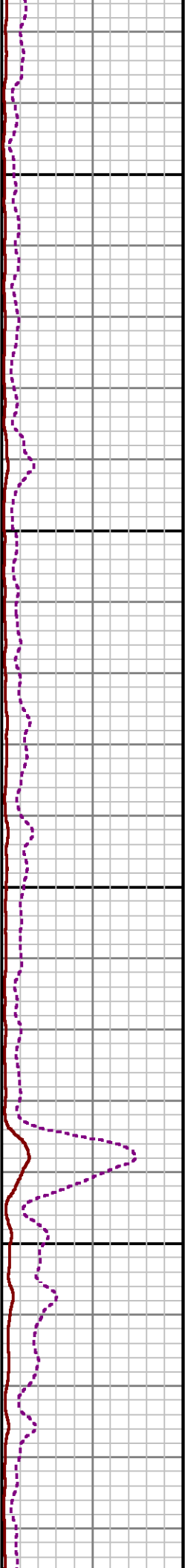
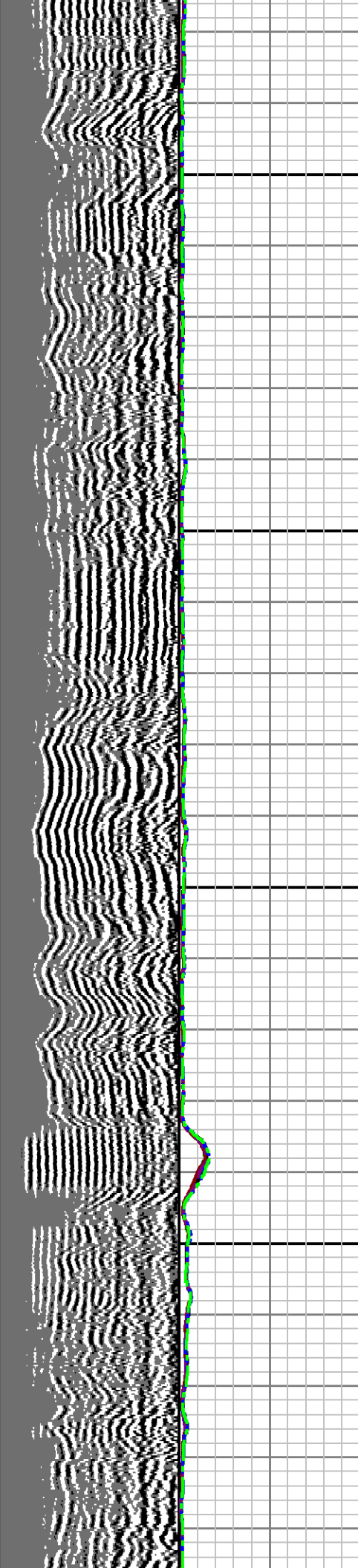


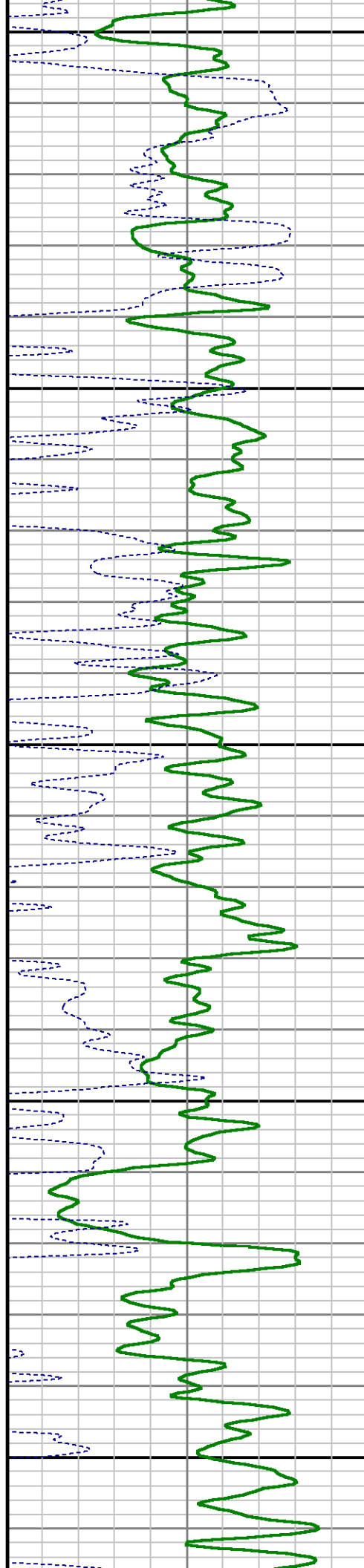
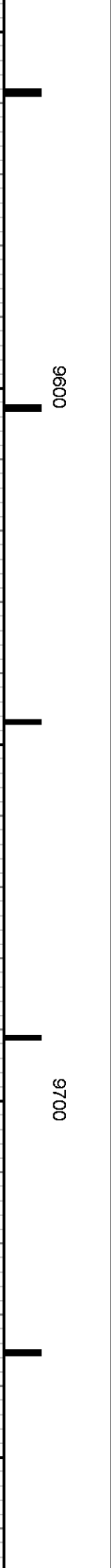
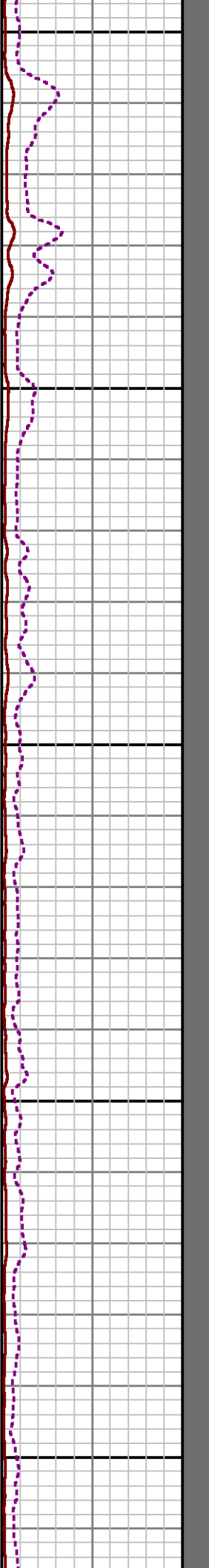
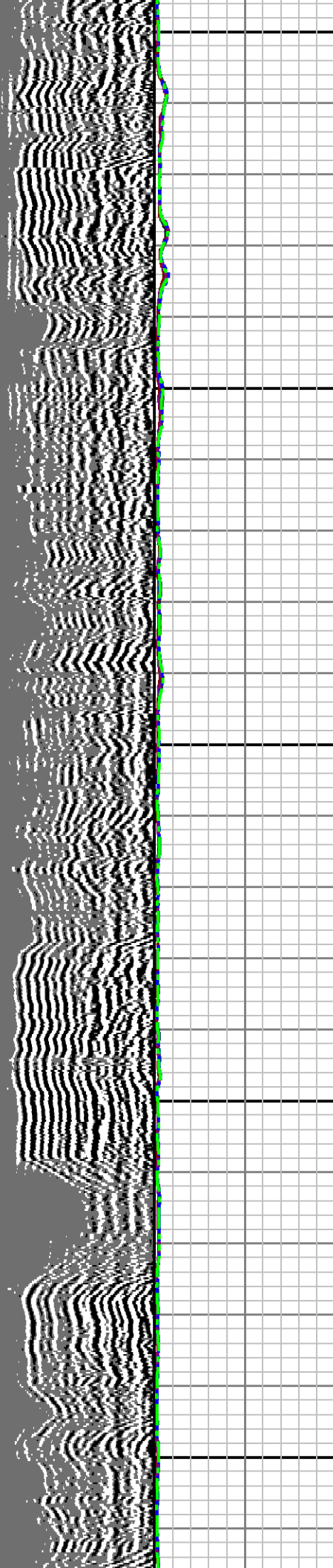
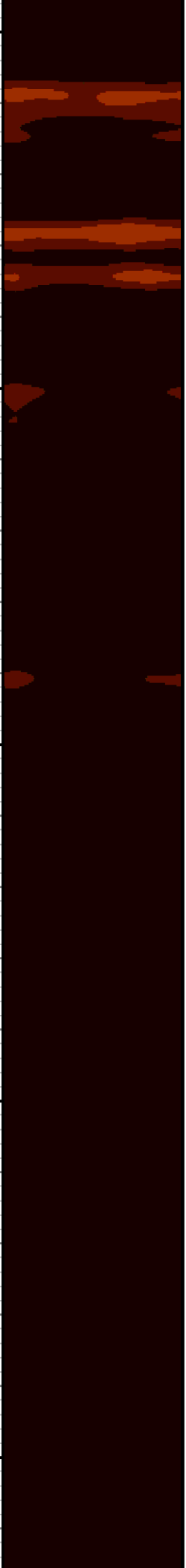


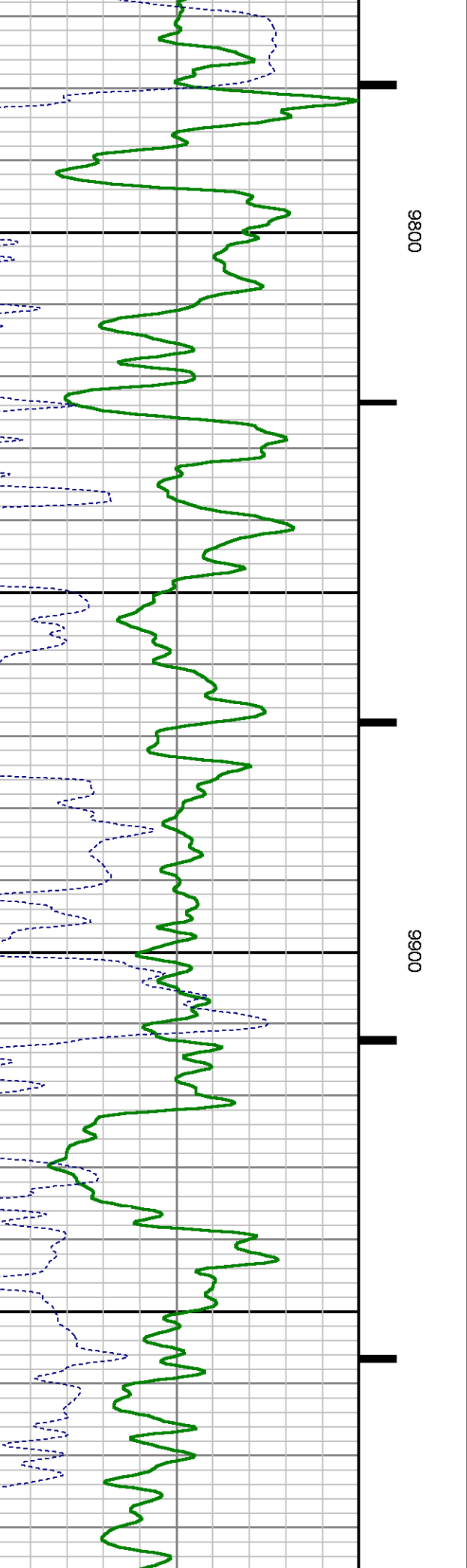
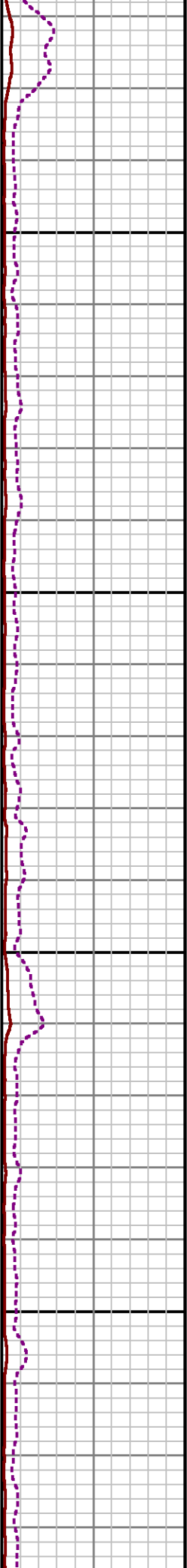
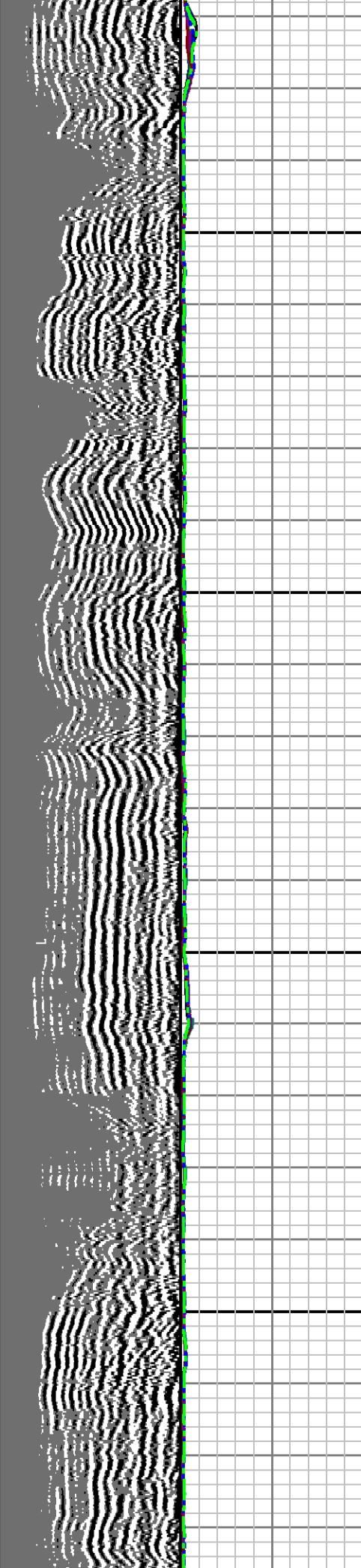
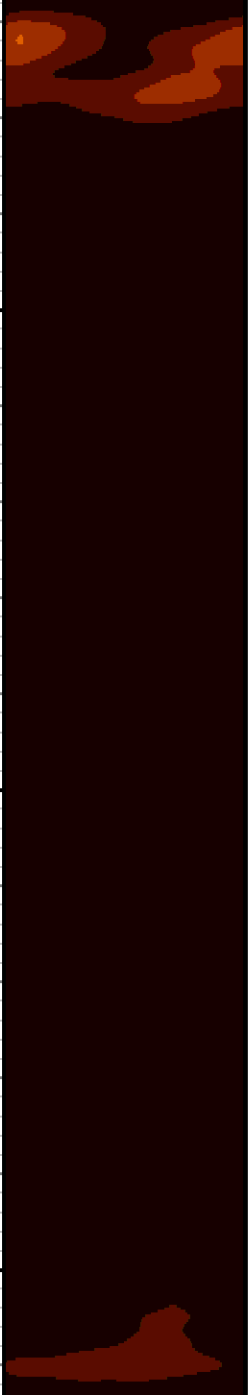


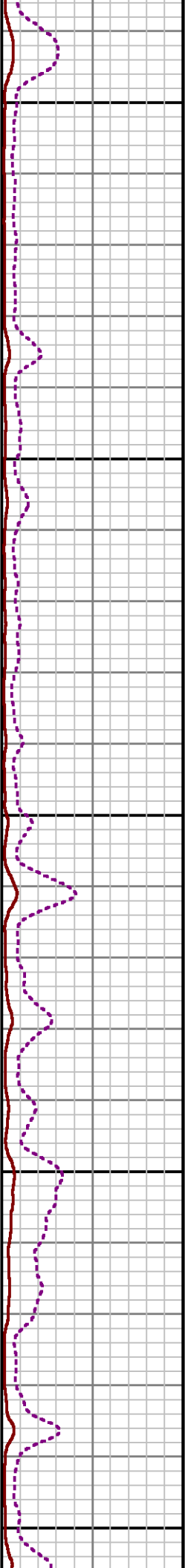
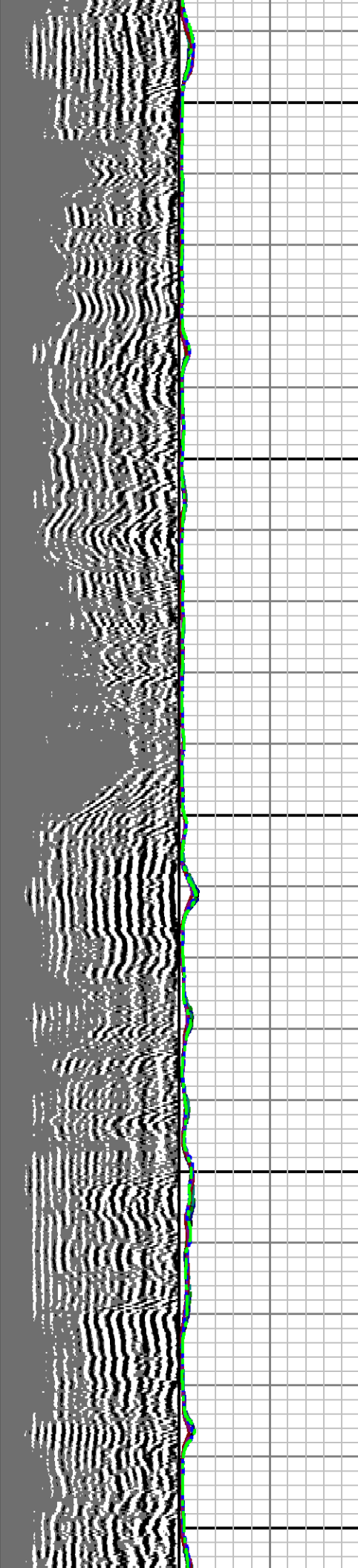








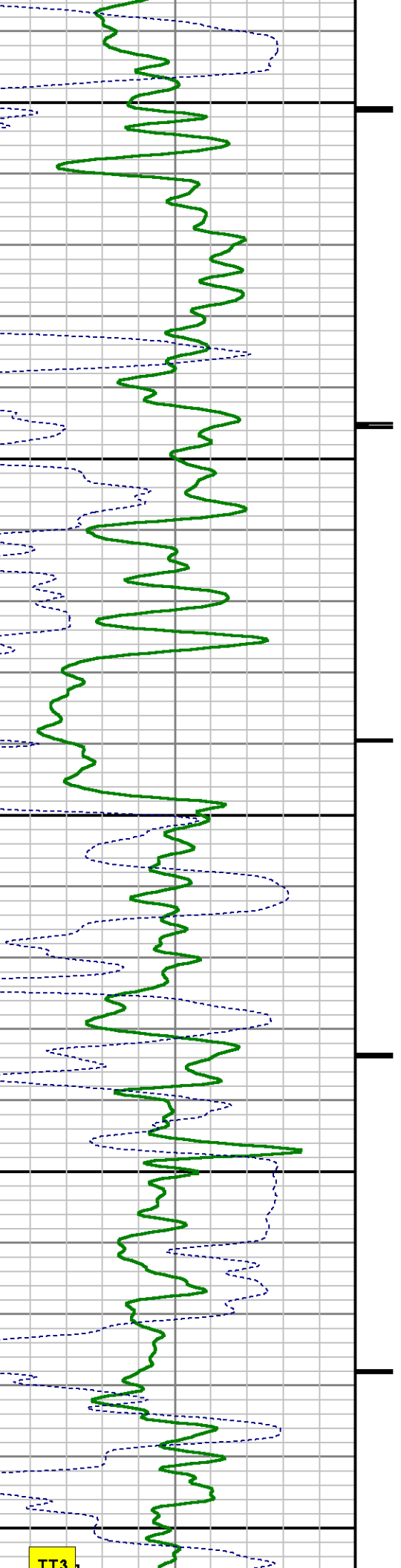




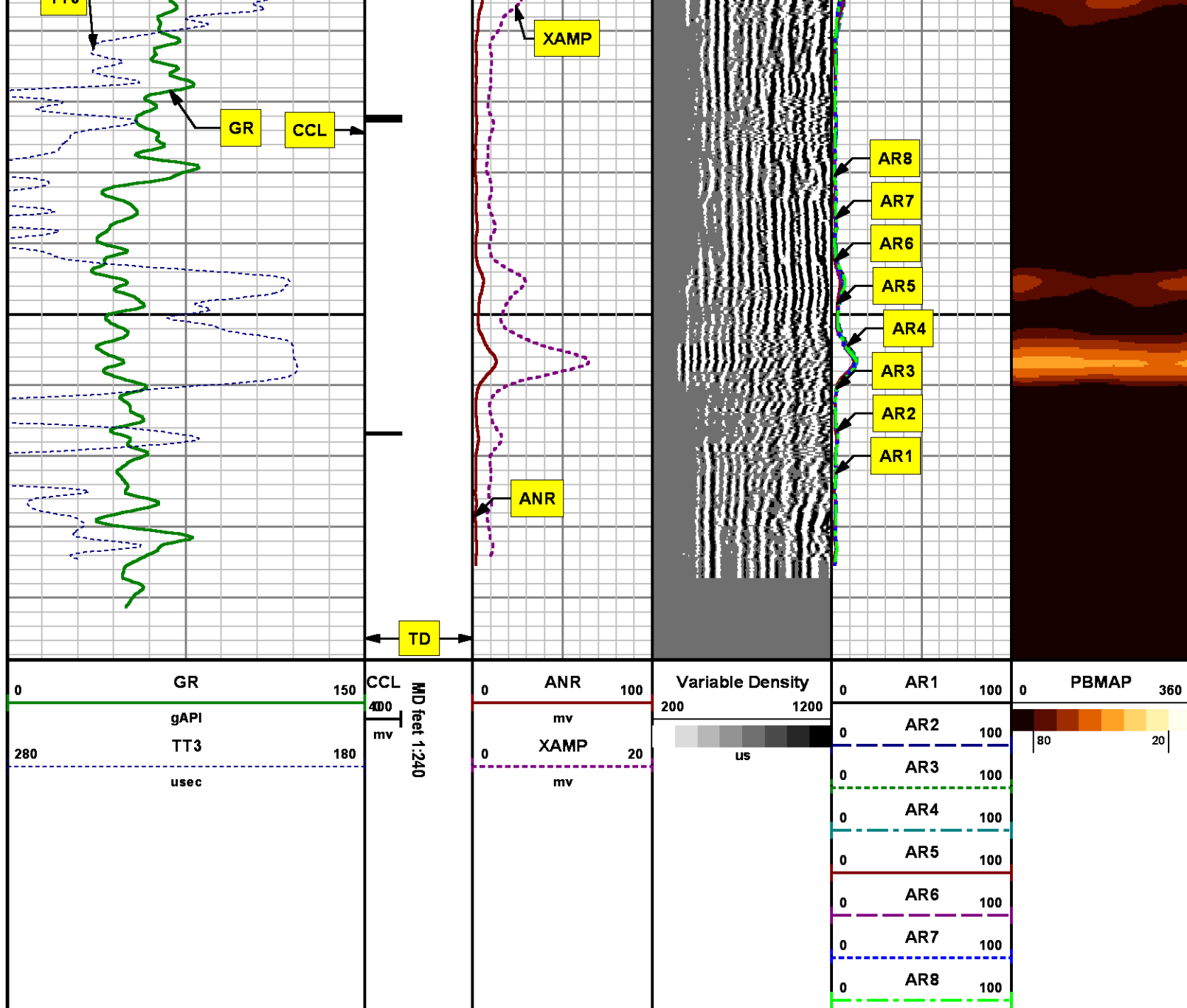
10000

10100

10200



TT3



REPEAT PASS
0 PSI

MEASUREMENT TYPE

PARAMETER

VALUE

UNITS

TOP

BOTTOM

RAL		Amp Gate Start Far	305.000	usec	9967.522	10294.680
RAL		Amp Gate Start Near	195.000	usec	9967.522	10294.680
RAL		Amp Gate Start Radial	195.000	usec	9967.522	10294.680
RAL		Amp Gate Width Far	25.000	usec	9967.522	10294.680
RAL		Amp Gate Width Near	25.000	usec	9967.522	10294.680
RAL		Amp Gate Width Radial	25.000	usec	9967.522	10294.680
RAL		casing od	4.500	inches	9967.522	10294.680
RAL		casing wt	11.600	lbm/ft	9967.522	10294.680
RAL		FB Start Far	291.900	usec	9967.522	10294.680
RAL		FB Start Near	180.000	usec	9967.522	10294.680
RAL		FB Start Radial	180.000	usec	9967.522	10294.680
RAL		FB Thresh Far	10.000	mv	9967.522	10294.680
RAL		FB Thresh Near	4.000	mv	9967.522	10294.680
RAL		FB Thresh Radial	4.000	mv	9967.522	10294.680
RAL		Fluid Travel Time	200.000	usec/ft	9967.522	10294.679

DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-12.360	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	AR8	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-11.360	AFAR	SIG	TT5			
2459XA	-7.250	CCL					
2459XA	-5.390	GR					
2459XA	0.000	NEU					

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

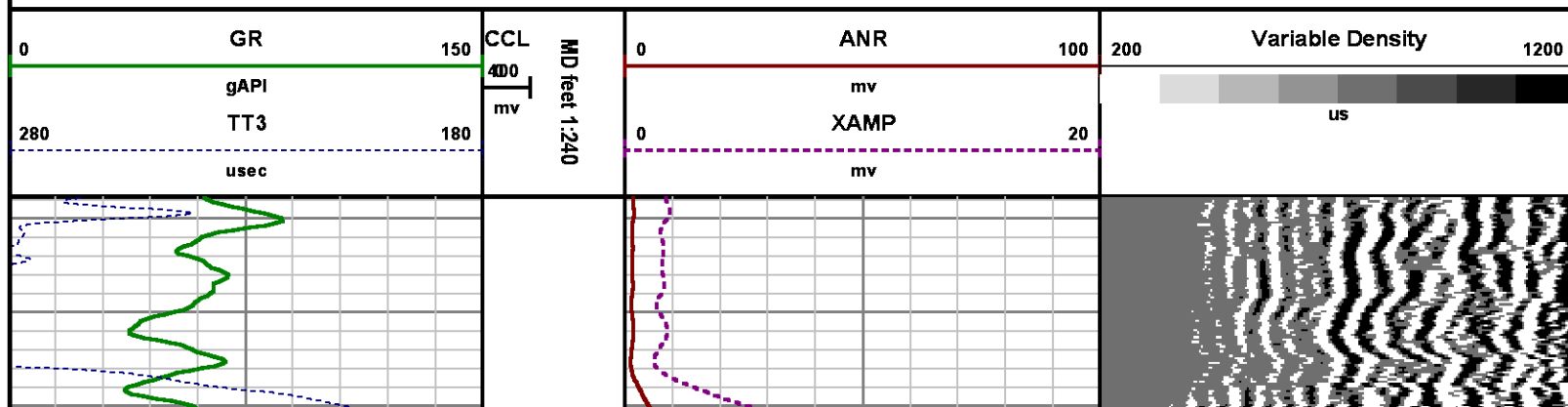
Well : FEDERAL NER 523-32

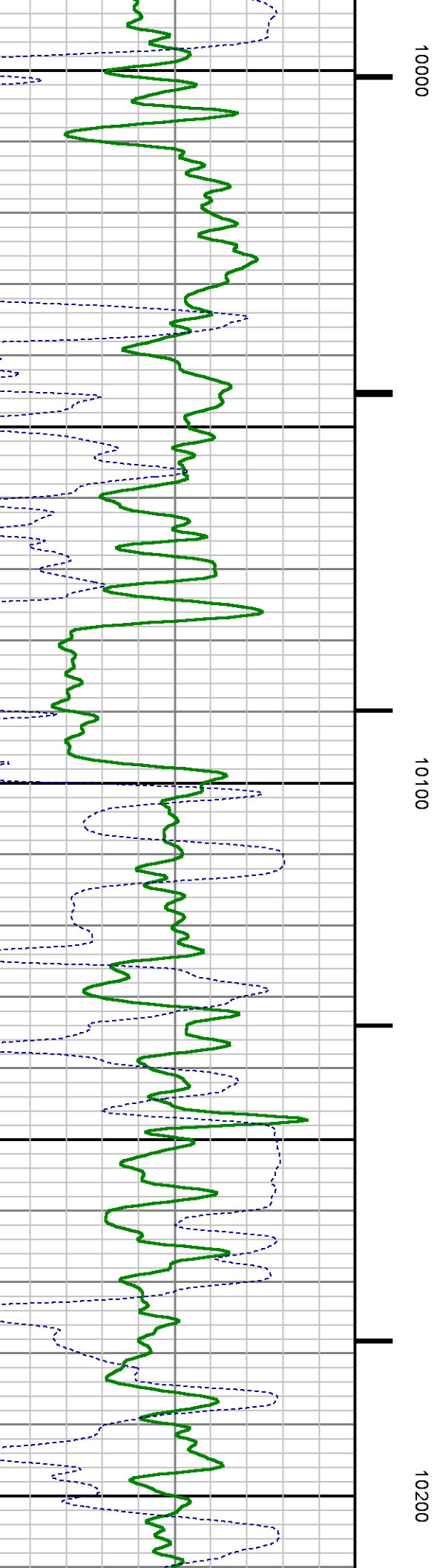
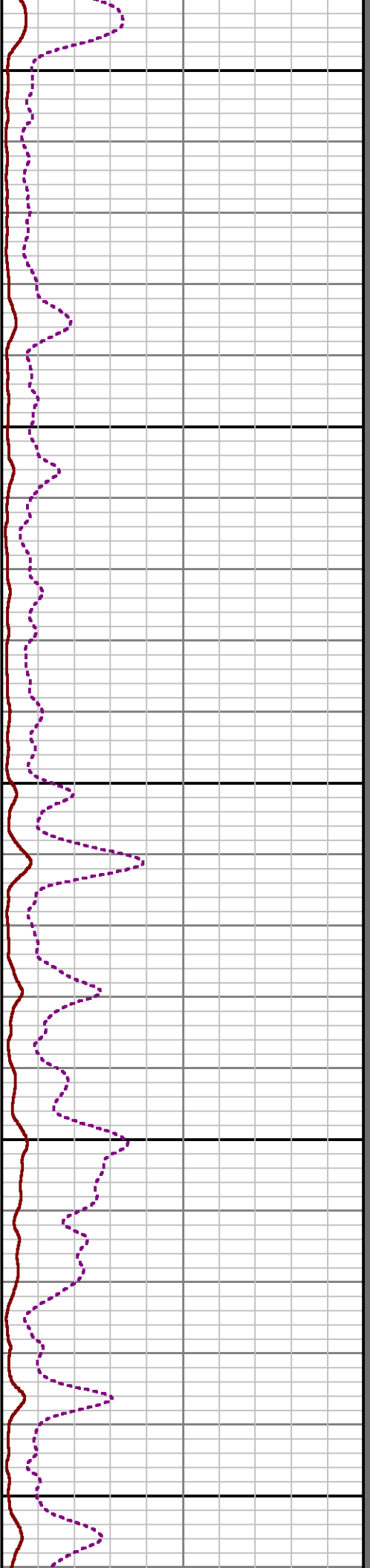
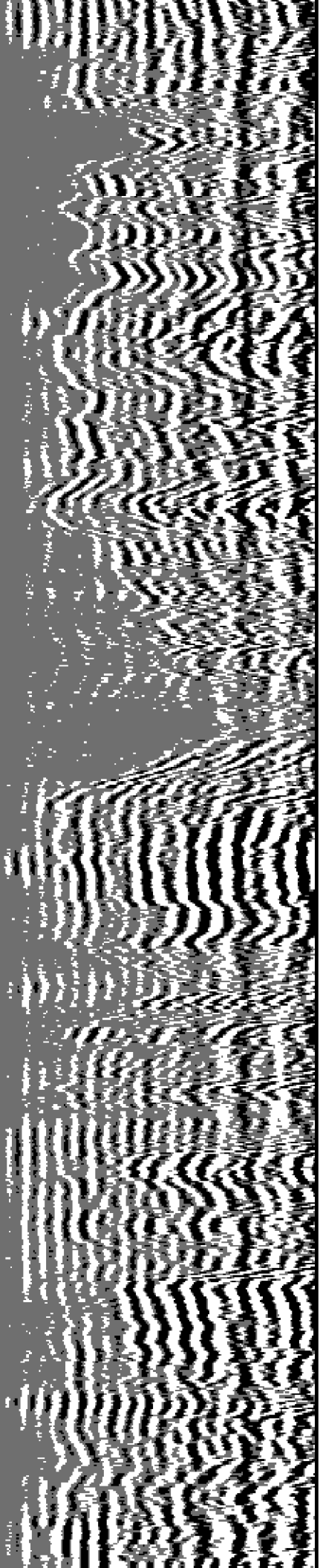
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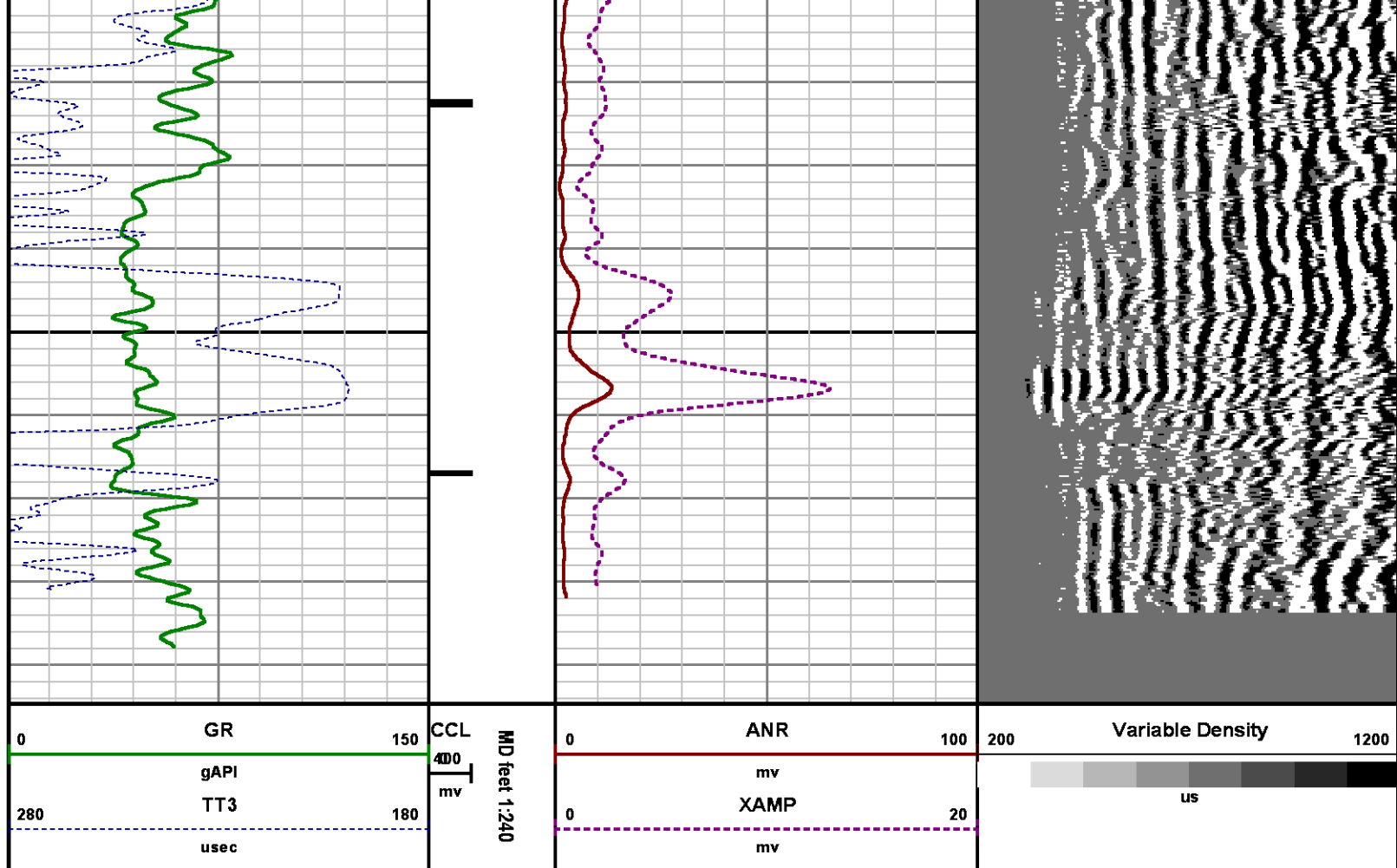
Mode : PlotMgr 5.4.504

Interval : 9967.68 - 10294.68 feet UP

Created : 9/23/2014 12:23:05 PM







CALIBRATION

RALSHP

Shop Calibration: C:\case\calver\RALSHP\496SEP22_shp.cal

SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Mon Sep 22 16:38:52 2014 TOOL SERIES: 1426XA ASSET: 496 SEQ: SEP22

Tool Delay [u sec] -54.00 Tank OD in 5.50 Tank Wt lbm/ft 15.50 Tank ID in 4.95

RECEIVER	Travel Time [u sec]	Amp. Gate Start [u sec]	Amp. Gate Width [u sec]	Zero Gate Start [u sec]	Zero Gate Width [u sec]	Zero Amp. [mV]	Amp Ref. [mV]	Shop Factor
CAL Pulse	218	216	30	166	25	-0.162	100.00	0.31
3 Ft. Receiver	217	216	30	166	25	1.362	100.00	0.31
5 Ft. Receiver	326	325	30	260	25	0.815	150.00	0.35
Radial #1	217	216	30	166	25	1.090	100.00	0.31
Radial #2	217	216	30	166	25	1.335	100.00	0.31

Radial #3	217	216	30	166	25	1.174	100.00	0.31
Radial #4	217	216	30	166	25	0.943	100.00	0.31
Radial #5	218	216	30	166	25	1.761	100.00	0.31
Radial #6	218	216	30	166	25	1.699	100.00	0.31
Radial #7	216	216	30	166	25	1.284	100.00	0.31
Radial #8	218	216	30	166	25	0.954	100.00	0.31

RALFLD

Wellsite Calibration: C:\case\calver\RALFLD\496SEP22 fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Mon Sep 22 16:40:47 2014 TOOL SERIES: 1426XA ASSET: 496 SEQ: SEP22

Tool Delay [usec] -54.00 Casing OD in 4.50 Casing Wt lbm/ft 11.60 Casing ID in 4.00

RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Wellsite Factor	Amp. Ref [mV]
CAL Pulse	166	25	-0.002	0.000	0.99	100.000
3 Ft. Receiver	195	25	2.281			
5 Ft. Receiver	305	25	3.765			
Radial #1	195	25	1.793			
Radial #2	195	25	1.920			
Radial #3	195	25	1.873			
Radial #4	195	25	1.842			
Radial #5	195	25	2.294			
Radial #6	195	25	2.416			
Radial #7	195	25	1.954			
Radial #8	195	25	1.942			

GAMMA RAY

Calibration File: C:\case\calver\GR\45712.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Fri Sep 12 08:49:06 2014 TOOL SERIES: 2459XA ASSET: 457 SEQ: 12

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA612	92.09	359.07	0.693	63.81	248.81	185.00

Verification File: C:\case\calver\GR\45712.VP

PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Fri Sep 12 08:50:21 2014 TOOL SERIES: 2459XA ASSET: 457 SEQ: 12

Calibrator #		Background	Calibrator On	Multiplicative	Background	Calibrator On	Differential
		[cps]	[cps]		[api]	[api]	[api]
S2K	WA612	92.31	353.73	0.693	63.97	245.12	181.15

TOOL DIAGRAM

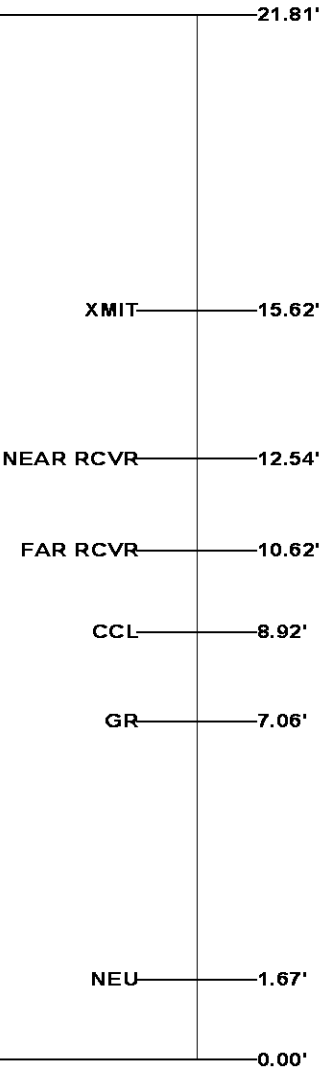
OTA SHORT CABLE HEAD

PROBE 2 3/4 DUAL RECEIVER RADII

Series	1426XA
Mnemonic	PROB
Diameter	2.75"
Length	11.17'
Measure Point	0.75' FAR RCVR
Measure Point	2.67' NEAR RCVR
Measure Point	5.75' XMIT
Temp Rating	350.00 °F
Press Rating	18000.00 PSI

Probe GR/CCL/NEU

Series	2459XA
Mnemonic	PROB
Diameter	2.75"
Length	9.42'
Measure Point	1.21' NEU
Measure Point	6.60' GR
Measure Point	8.46' CCL



Total Length: 21.81'
 Total Weight: Not Available
 Max Diameter: 0' 2.75"



CASE

Location

SHL: 113' FNL x 2571' FWL SEC 5 7S 93W

BHL: 1756' FSL x 1906' FWL SEC 32 6S 93

SEC 32 TWP 6S RGE 93W

Elevations

KB 7629 ft

DF

GL 7603 ft

32 6S 93W

RU 23-5 PAD

NABORS 576