



# RADIAL ANALYSIS BOND LOG

Baker Atlas

File No: CH044032	Company Well Field County	WILLIAMS PRODUCTION COMPANY FEDERAL GM 743-4 GRAND VALLEY GARFIELD	State COLORADO
API No: 05045209120000			
4 75 96W W 8-4 PAD NABORS 574	Location SHL: 1710' FSL & 789' FEL BHL: 1432' FSL & 477' FEL SEC 4 TWP 7S RGE 96W	Other Services RPM TEMP XMAC	
Permanent Datum Log Measured From Drill Measured From	GL KB KELLY BUSHING	Elevation 26 ft Above P. D.	Elevations KB 6091 ft DF 6090 ft GL 6065 ft

Date	18 OCT 2011	
Run	ONE	
Service Order	574865	
Depth Driller	11391 ft	
Depth Logger	11356 ft	
Bottom Logged Interval	11354 ft	
Top Logged Interval	26 ft	
Time Started	09:00	
Time Finished	16:30	
Operator Rig Time	7.5 hrs	
Type of Fluid in Hole	WATER	
Fluid Density	N/A	
Salinity	N/A	
Fluid Level	FULL	
Logged Cement Top	N/A	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	N/A	
Nominal Logging Speed	45 fpm	
Maximum Recorded Temperature	310 degF	
Reference Log	SCHLUMBERGER PLATFORM EXPRESS	
Reference Log Date	5 OCT 2011	
Equipment No.	WL 4214	G-J.. COLORADO
Recorded By	J. OSTLER	
Witnessed By	MR. RON TOWERS	

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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	SURFACE	2230 ft
8.75 In	SURFACE	11391 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 In			SURFACE	2230 ft
5.5 In	20 lbm/ft		SURFACE	11391 ft

Remarks
ALL DATA IN THIS LOG IS SHIFTED AND DEPTH MATCHED USING THE GAMMA RAY CURVE
TO THE SCHLUMBERGER PLATFORM EXPRESS LOG DATED 5 OCT 2011 AT THE CLIENTS REQUEST
THE AMOUNT OF LINEAR SHIFT WAS 5 FEET DOWN. THIS DEPTH MATCHING PROCESS
CREATES POTENTIAL FOR COLLAR LENGTHS TO VARY FROM THOSE RECORDED ON OTHER
CASED HOLE WIRELINE UNITS WITH OUT A GAMMA RAY REFERENCE.
WELL WAS LOGGED WITH 0 PSI AT THE WELL HEAD.

BHT = 310°F.

SHORT JOINT AT 8169' TO 8189'.

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	VDL	1428XA	10163028	CENTRALIZED
1	1	GR/CCL/NEU	2459XA	10218503	CENTRALIZED

*MAIN LOG*  
*PRIMARY PRESENTATION*  
*0 PSI*

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	318.745	usec	17.905	11386.000
RAL	Amp Gate Start Near	212.952	usec	17.905	11386.000
RAL	Amp Gate Start Radial	212.952	usec	17.905	11386.000
RAL	Amp Gate Width Far	25.000	usec	17.905	11386.000
RAL	Amp Gate Width Near	25.000	usec	17.905	11386.000
RAL	Amp Gate Width Radial	25.000	usec	17.905	11386.000
RAL	casing od	5.500	inches	17.905	11386.000
RAL	casing wt	20.000	lbm/ft	17.905	11386.000
RAL	FB Start Far	304.461	usec	17.905	11386.000
RAL	FB Start Near	187.952	usec	17.905	11386.000
RAL	FB Start Radial	187.952	usec	17.905	11386.000
RAL	FB Thresh Far	15.000	mv	17.905	11386.000
RAL	FB Thresh Near	10.000	mv	17.905	11386.000
RAL	FB Thresh Radial	10.000	mv	17.905	11386.000
RAL	Fluid Travel Time	200.000	usec/ft	17.905	11386.000

DEPTH OFFSETS  
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-14.970	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	-13.050	AFAR	SIG	TT5			
2459XA	-11.340	CCL					
2459XA	-9.490	GR					
2459XA	-4.090	NEU					

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

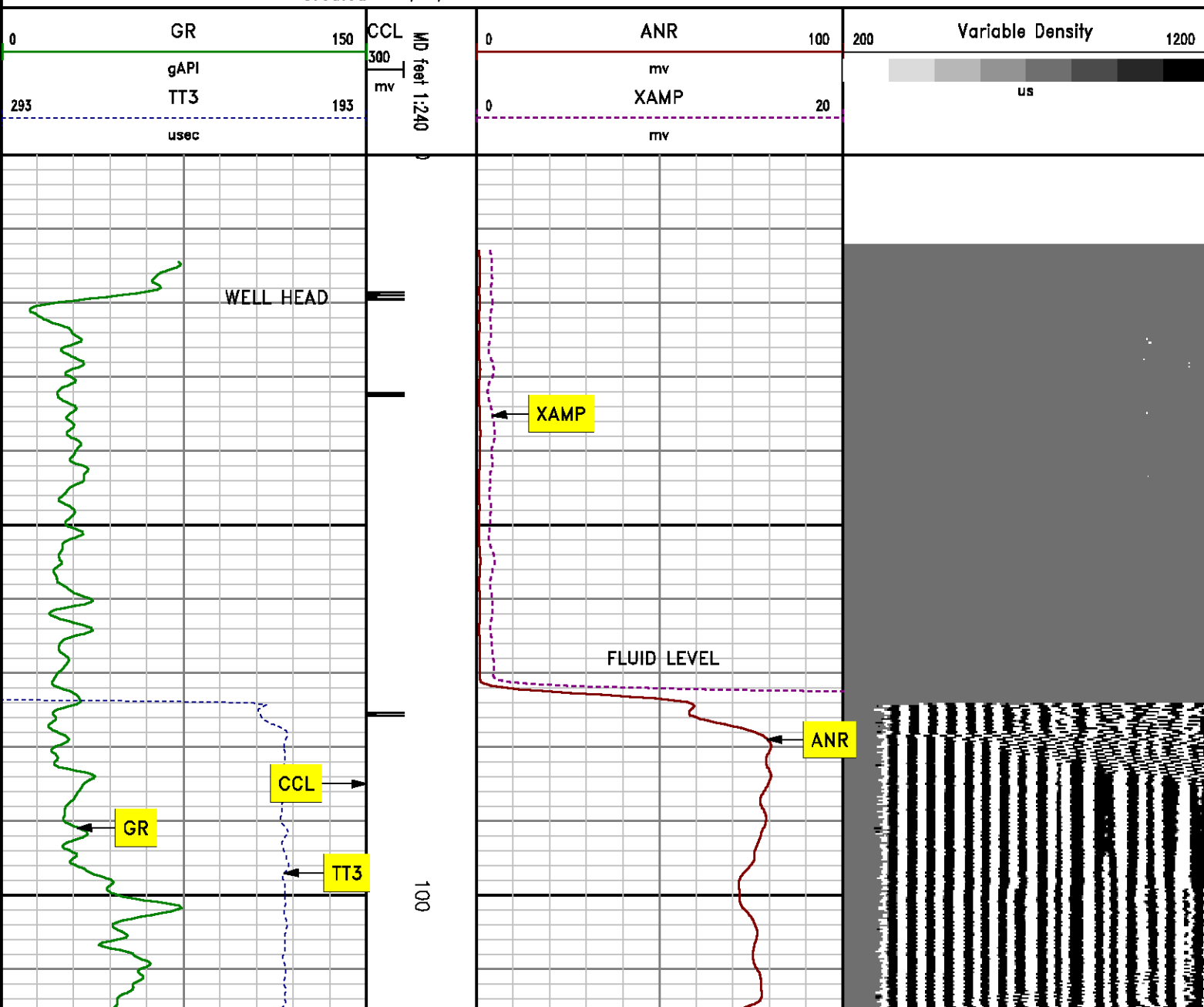
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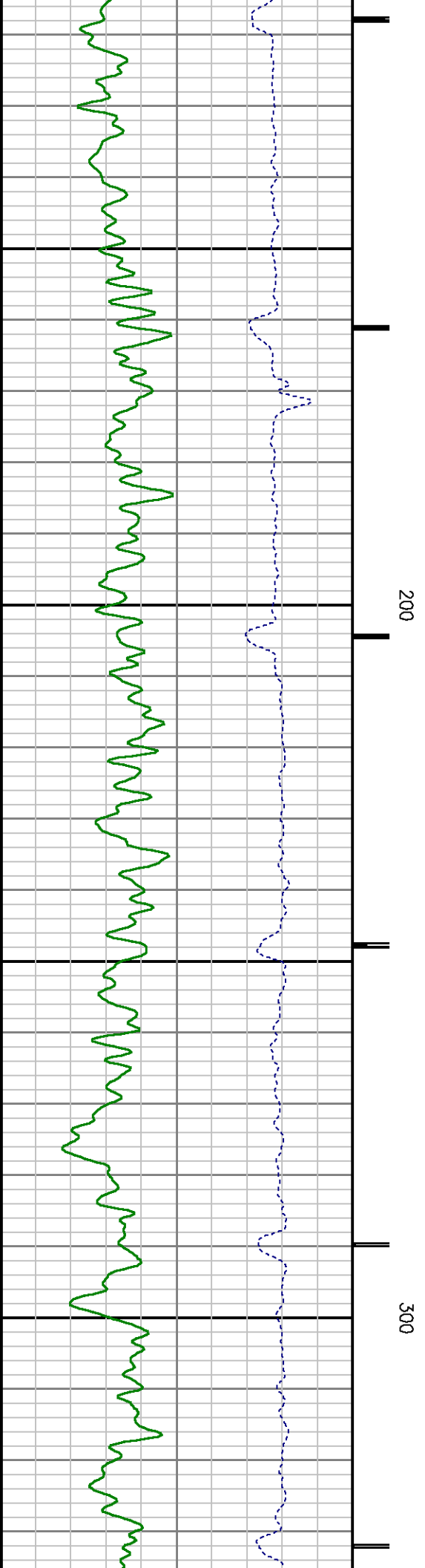
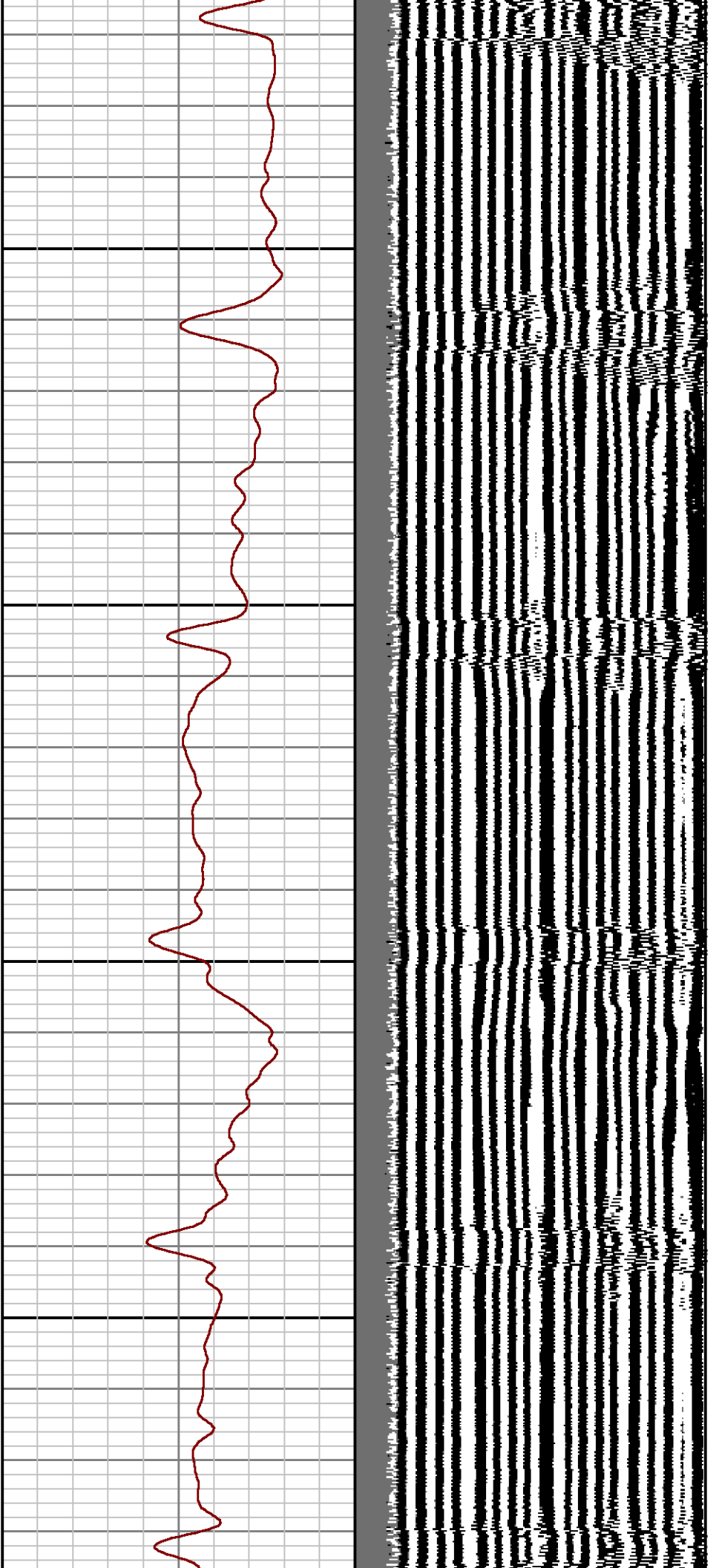
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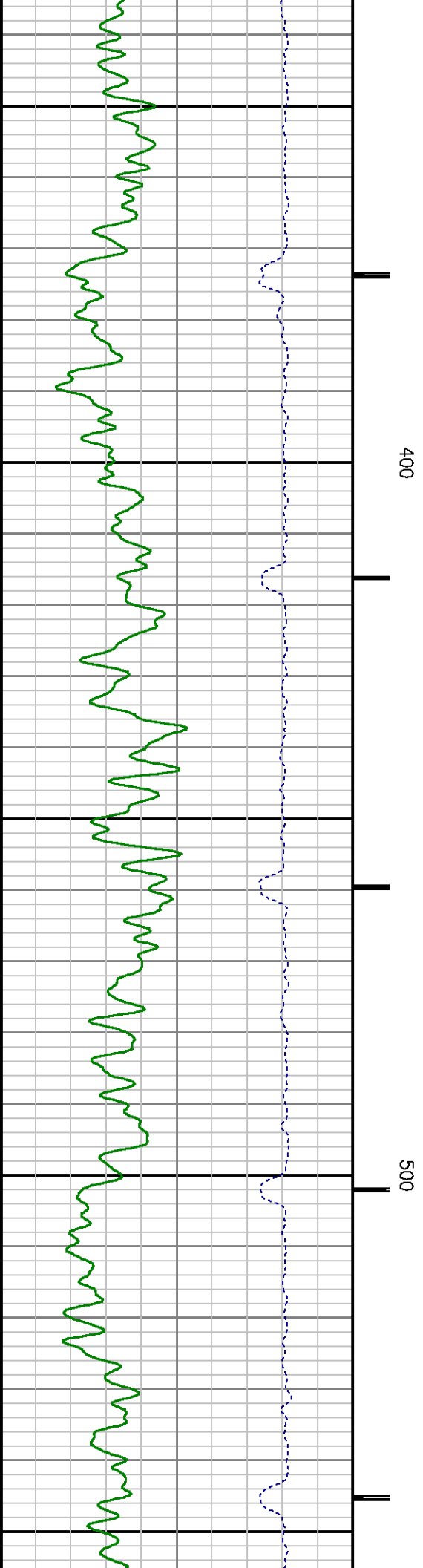
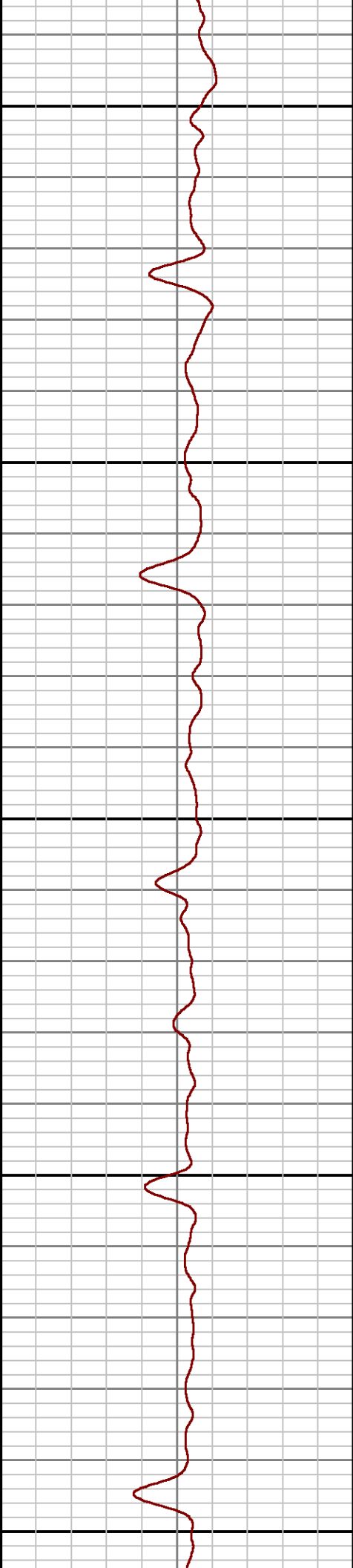
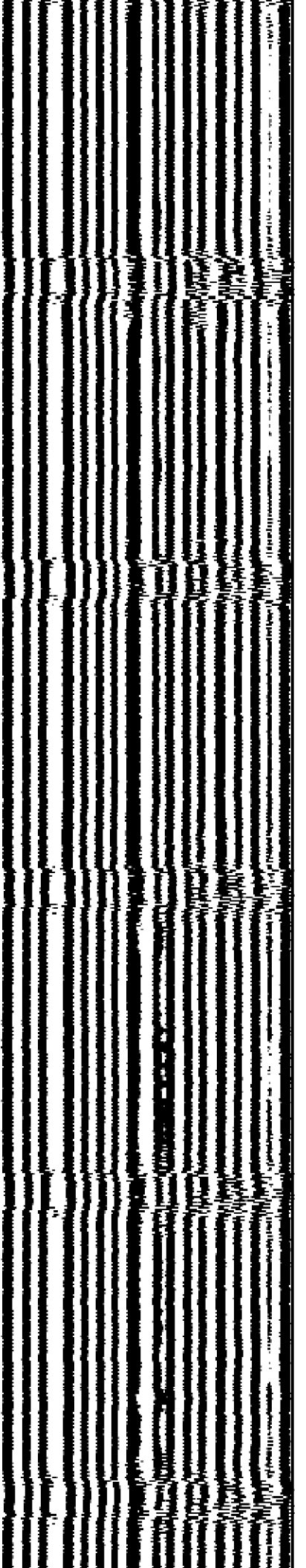
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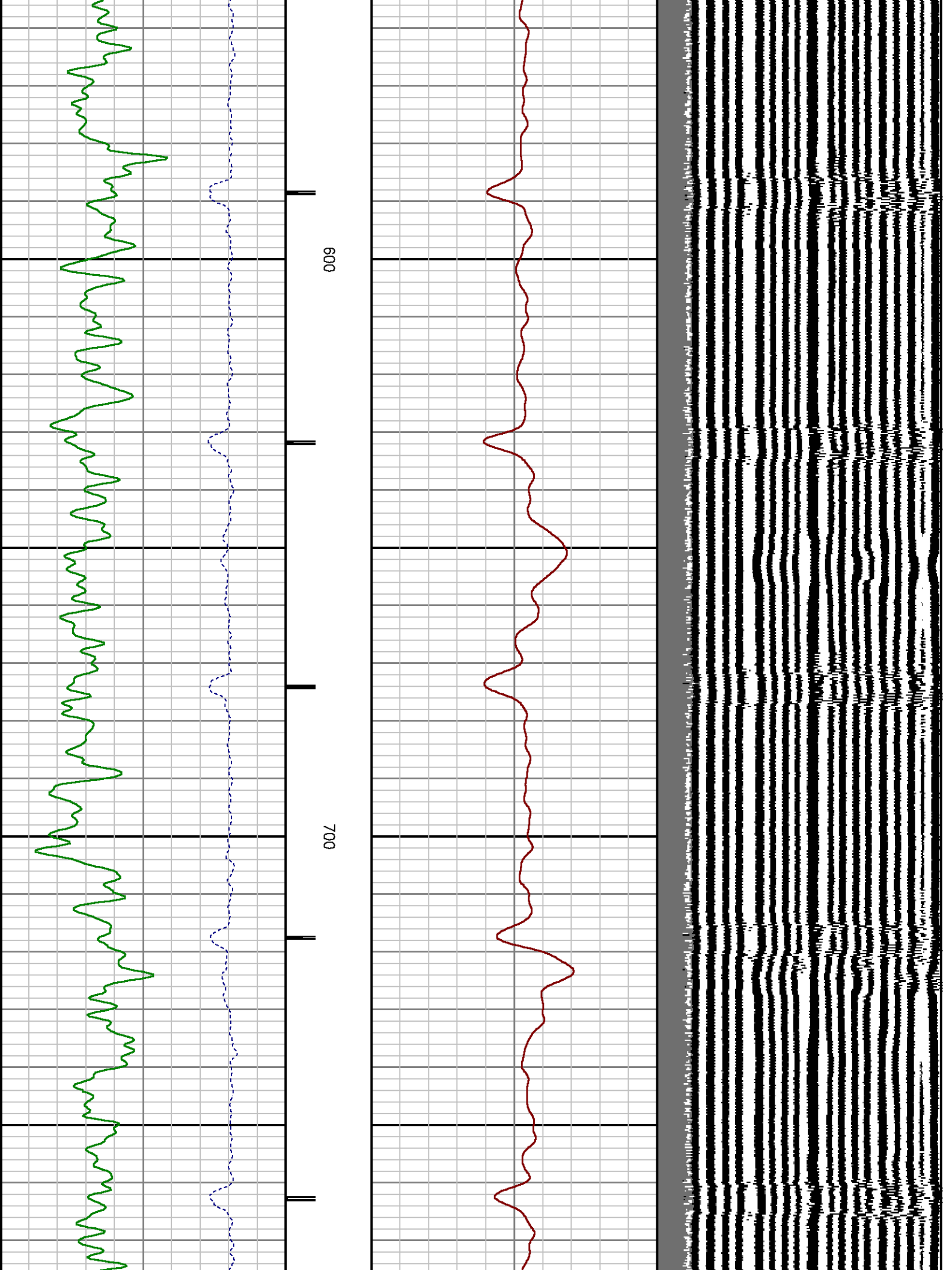
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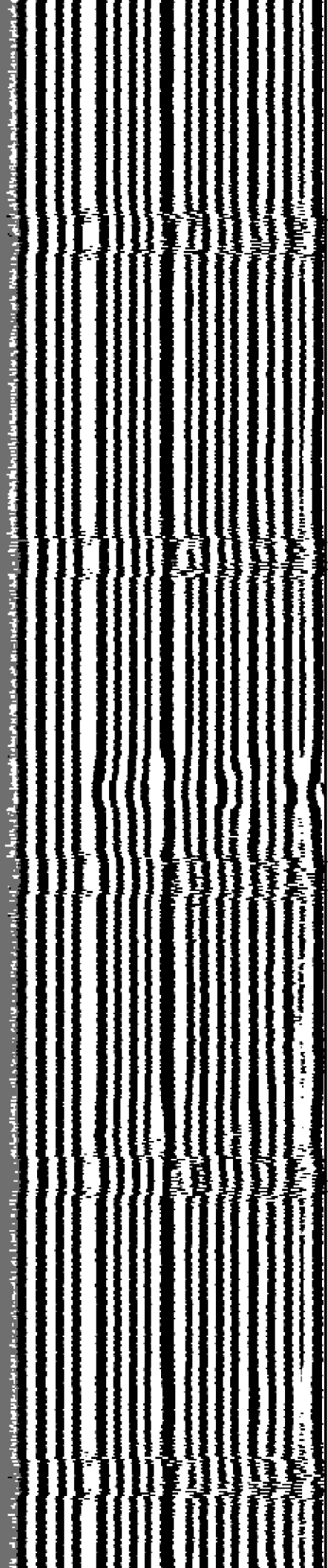
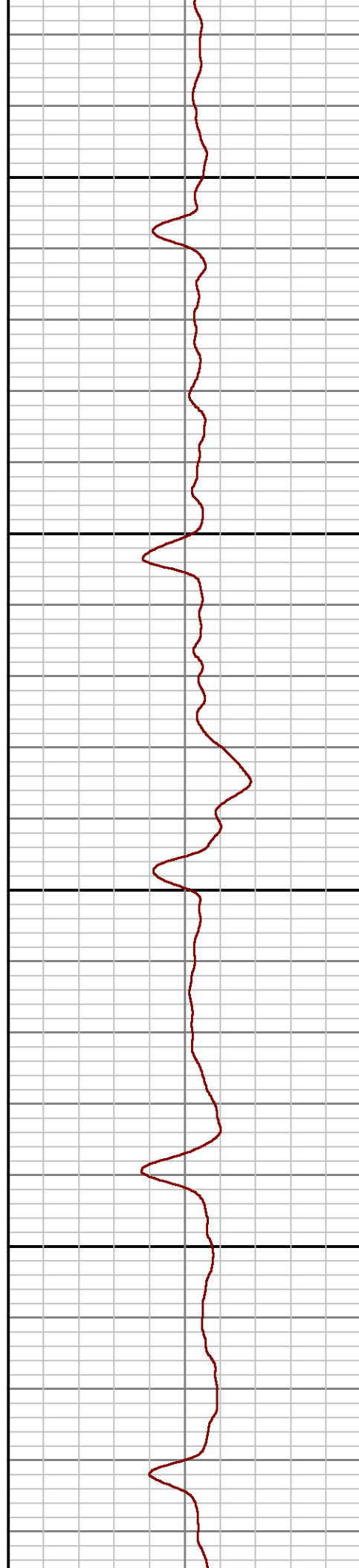
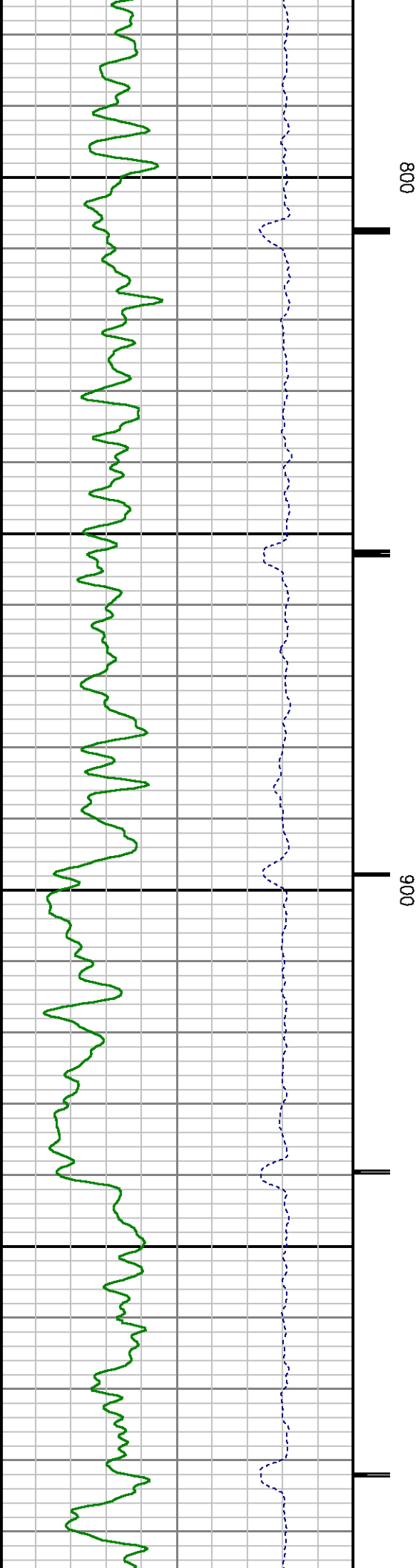


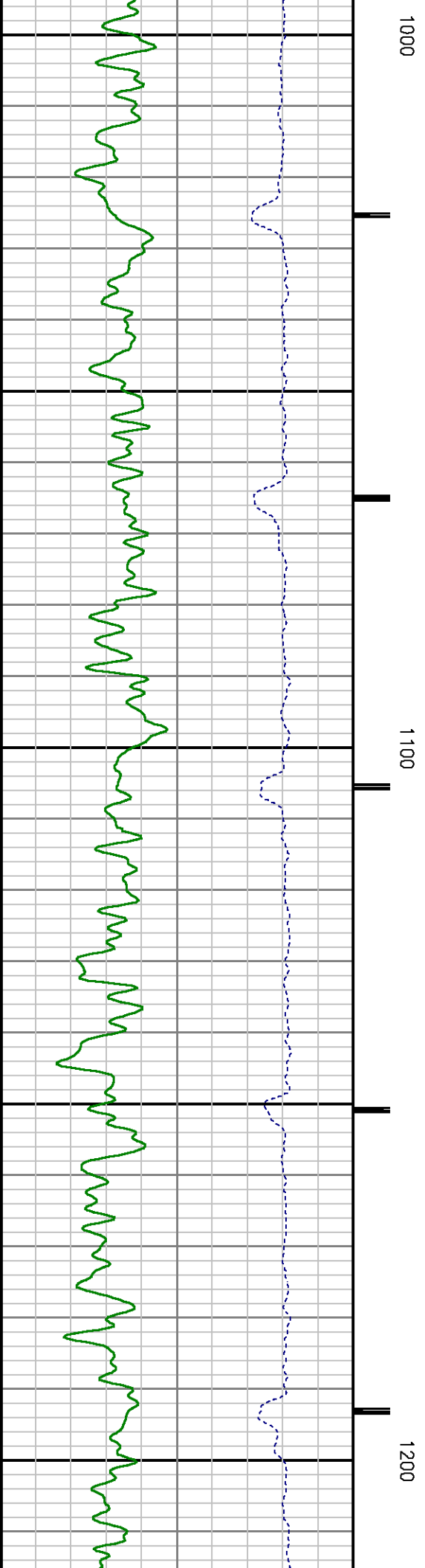
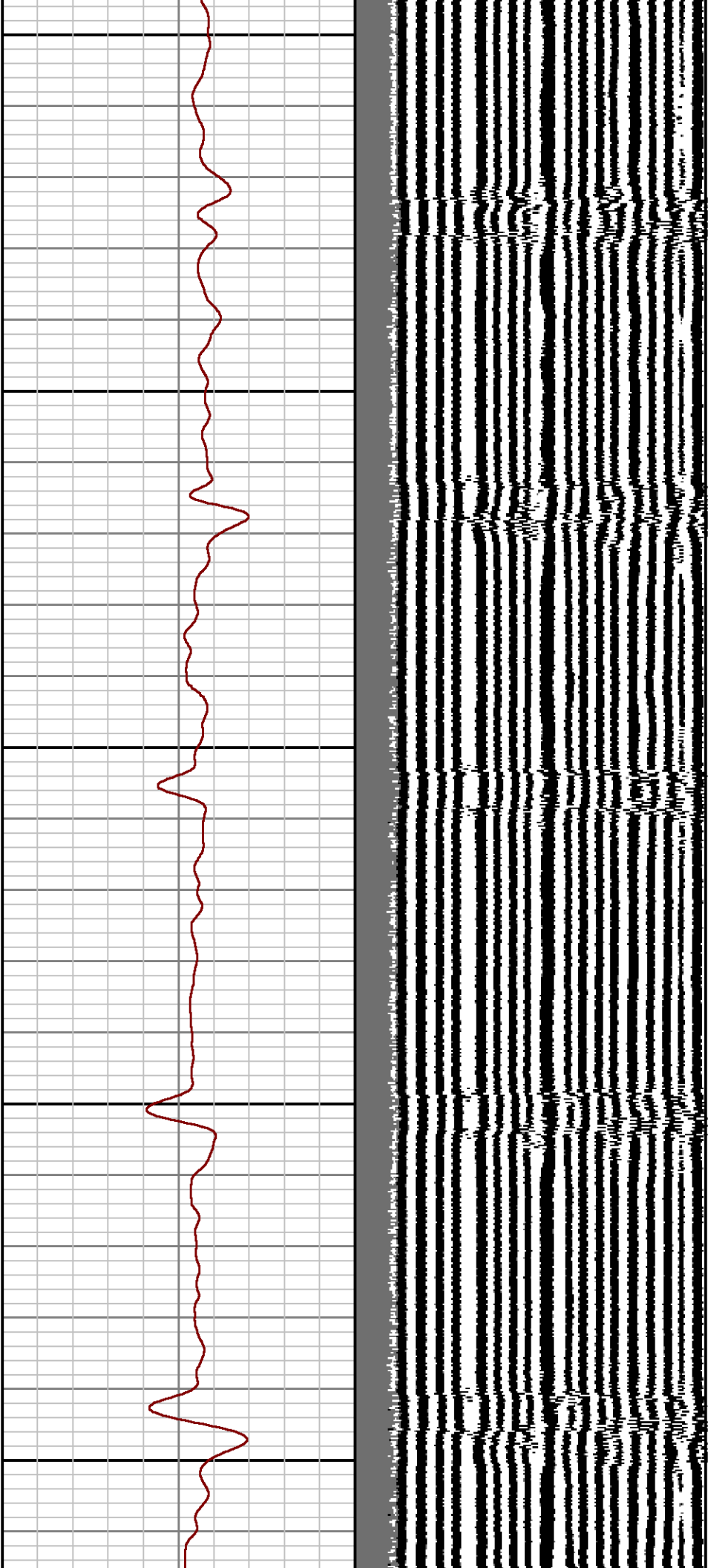


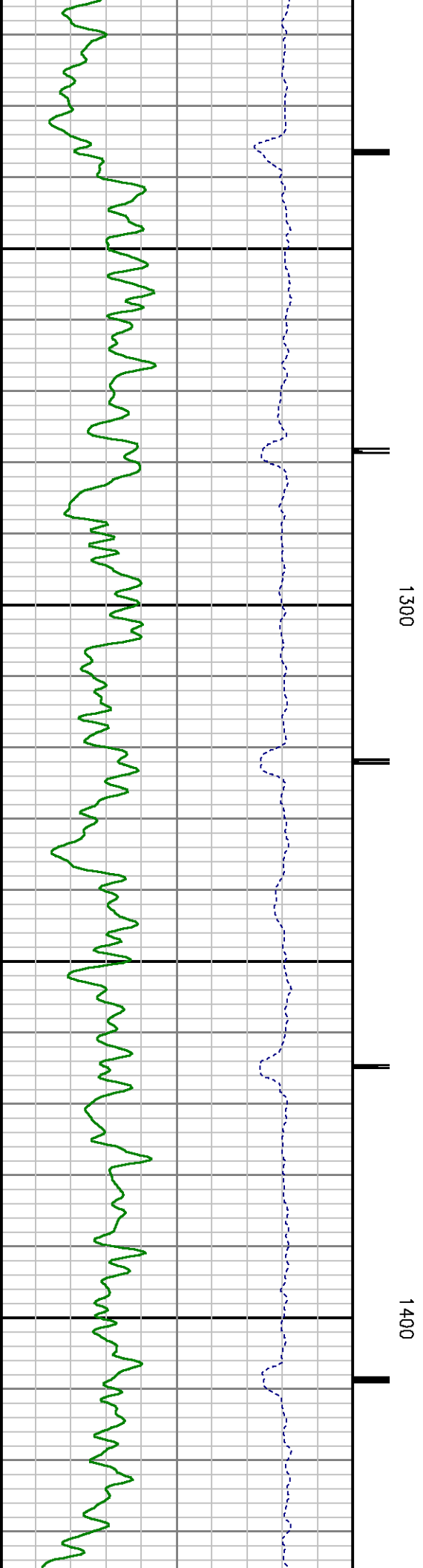
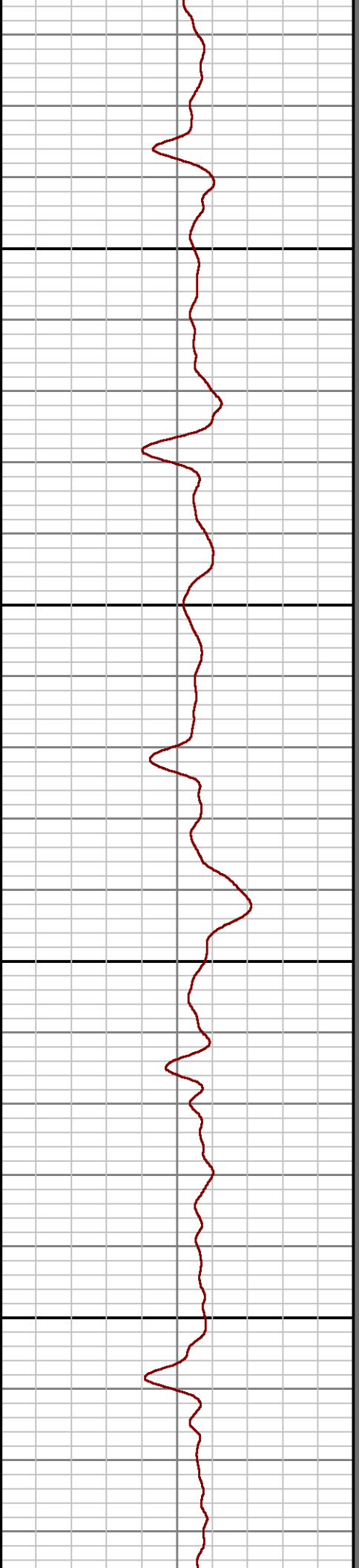
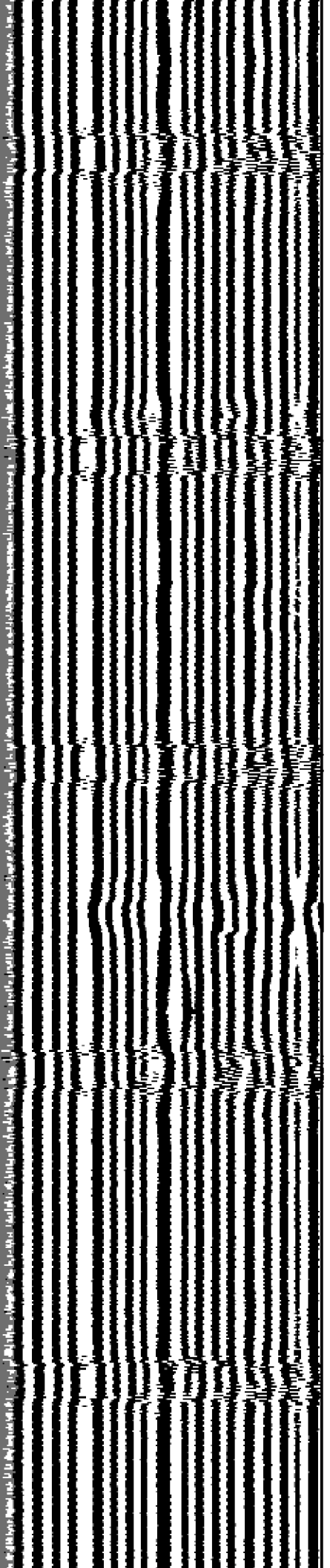


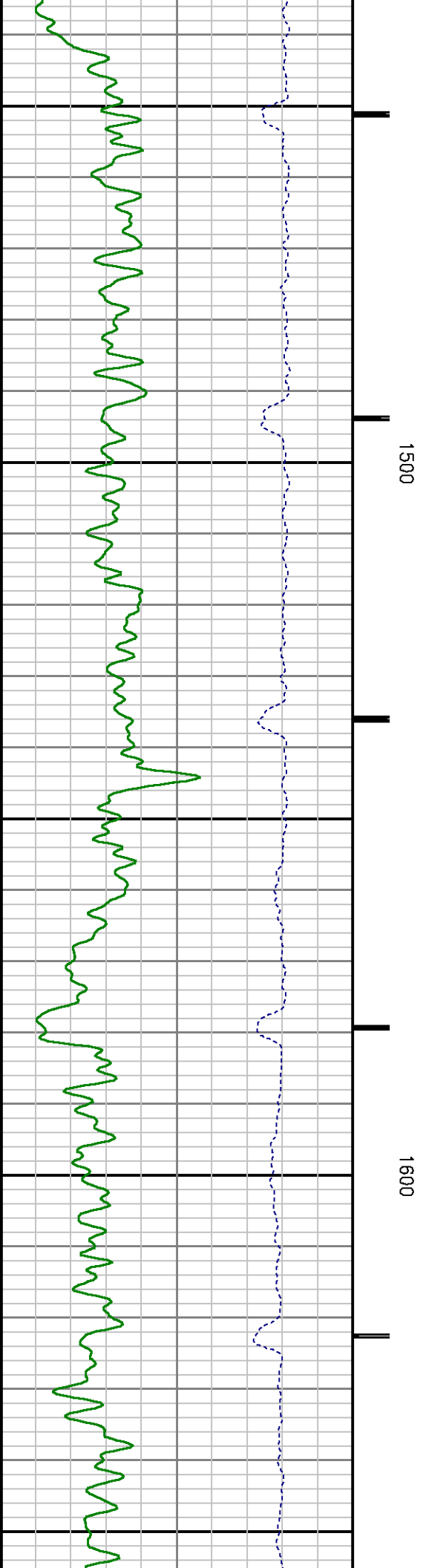
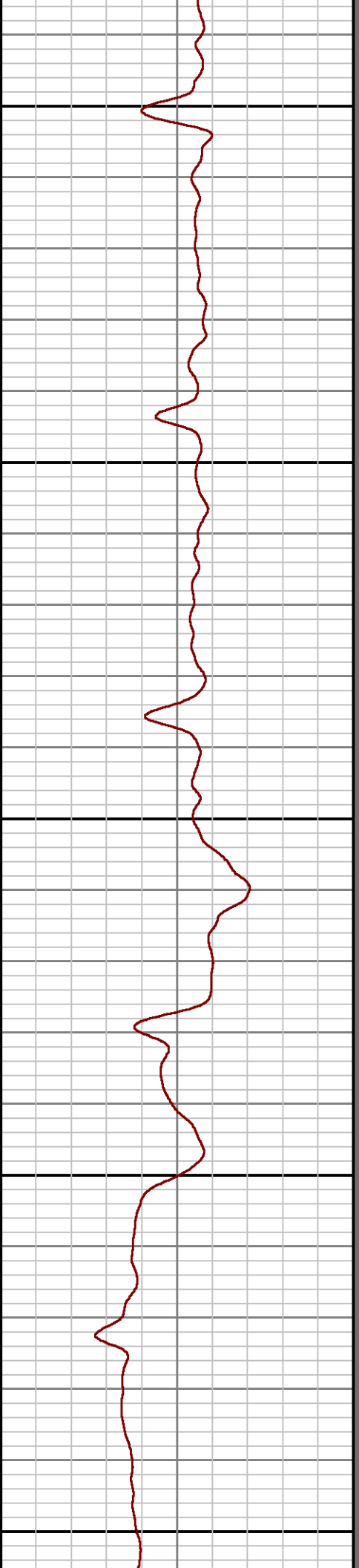
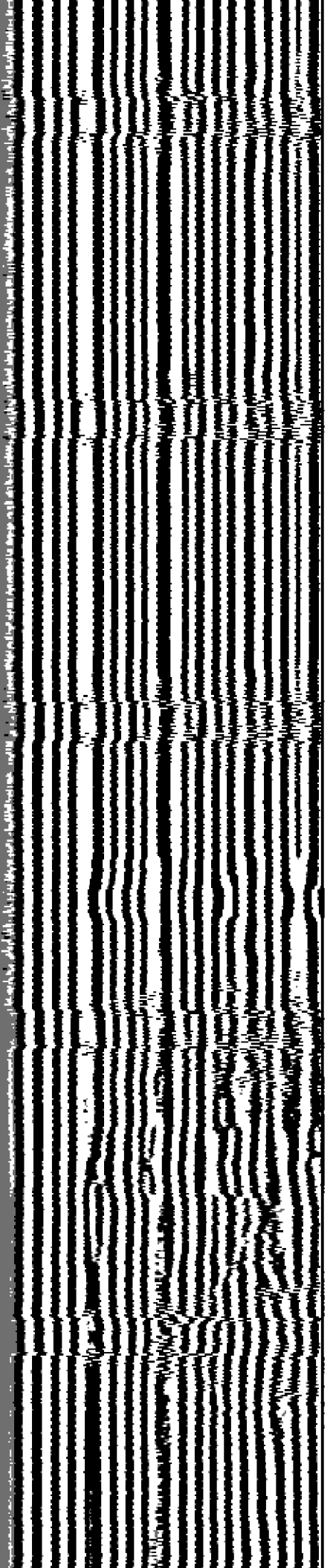


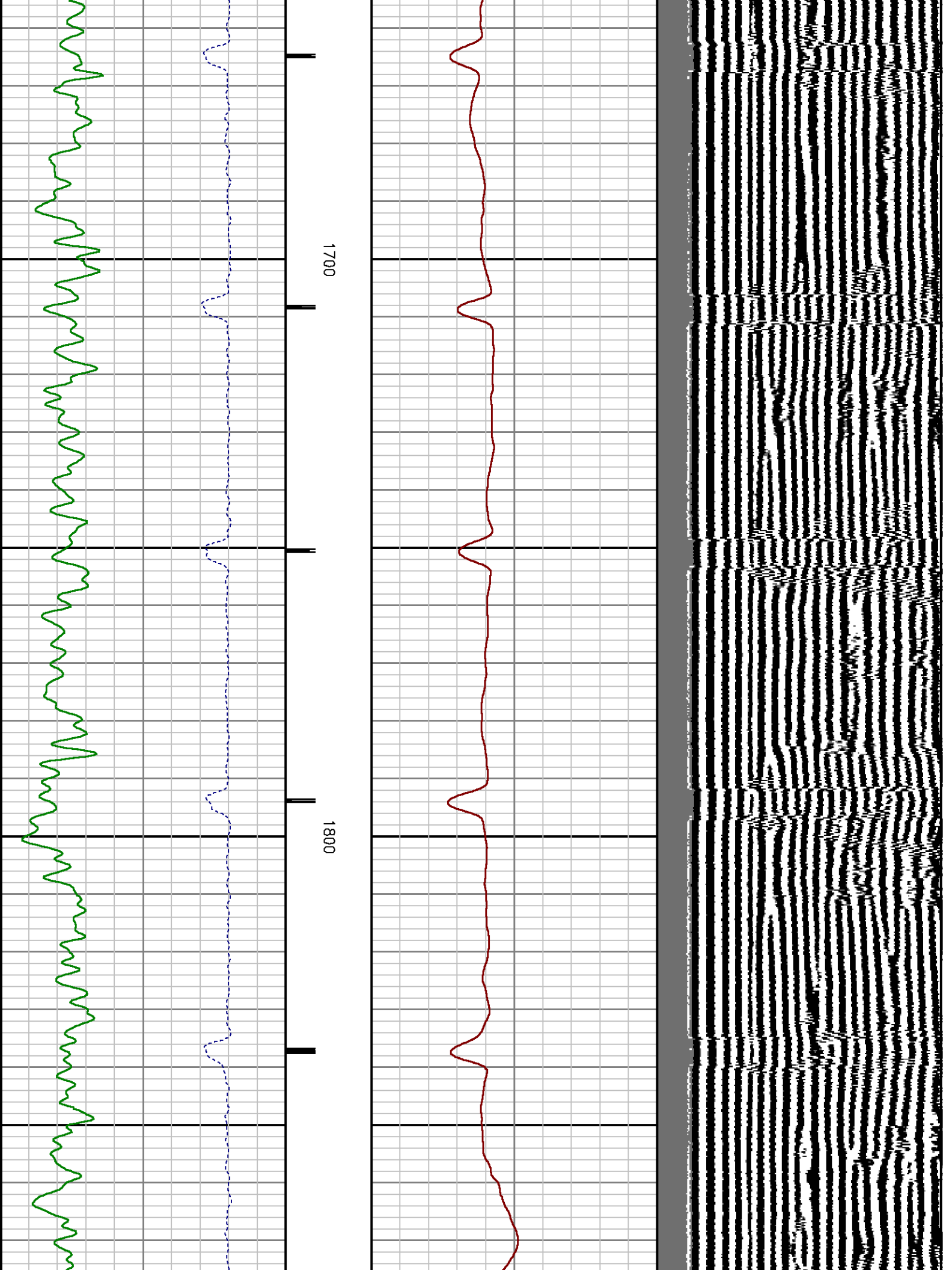




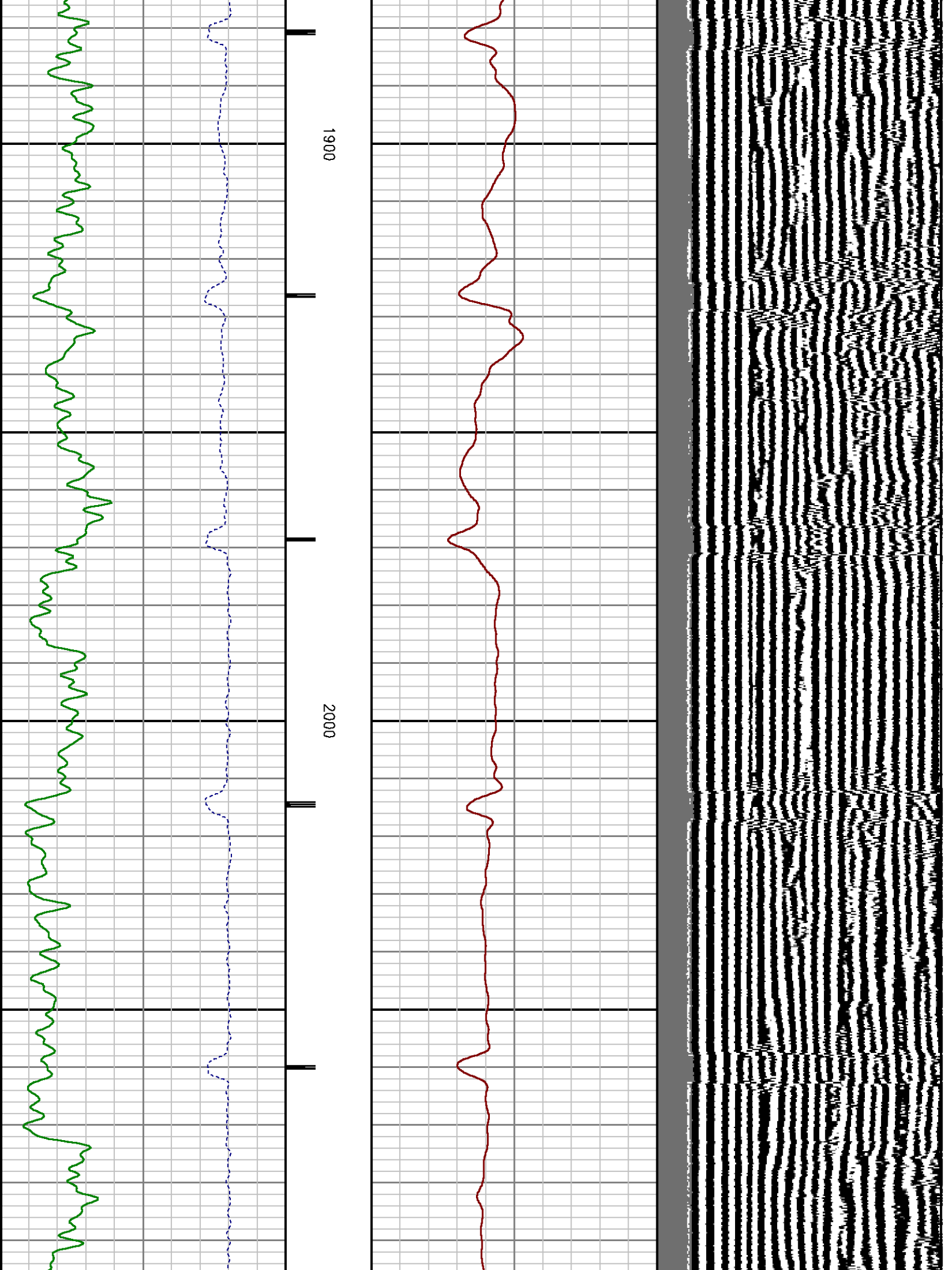




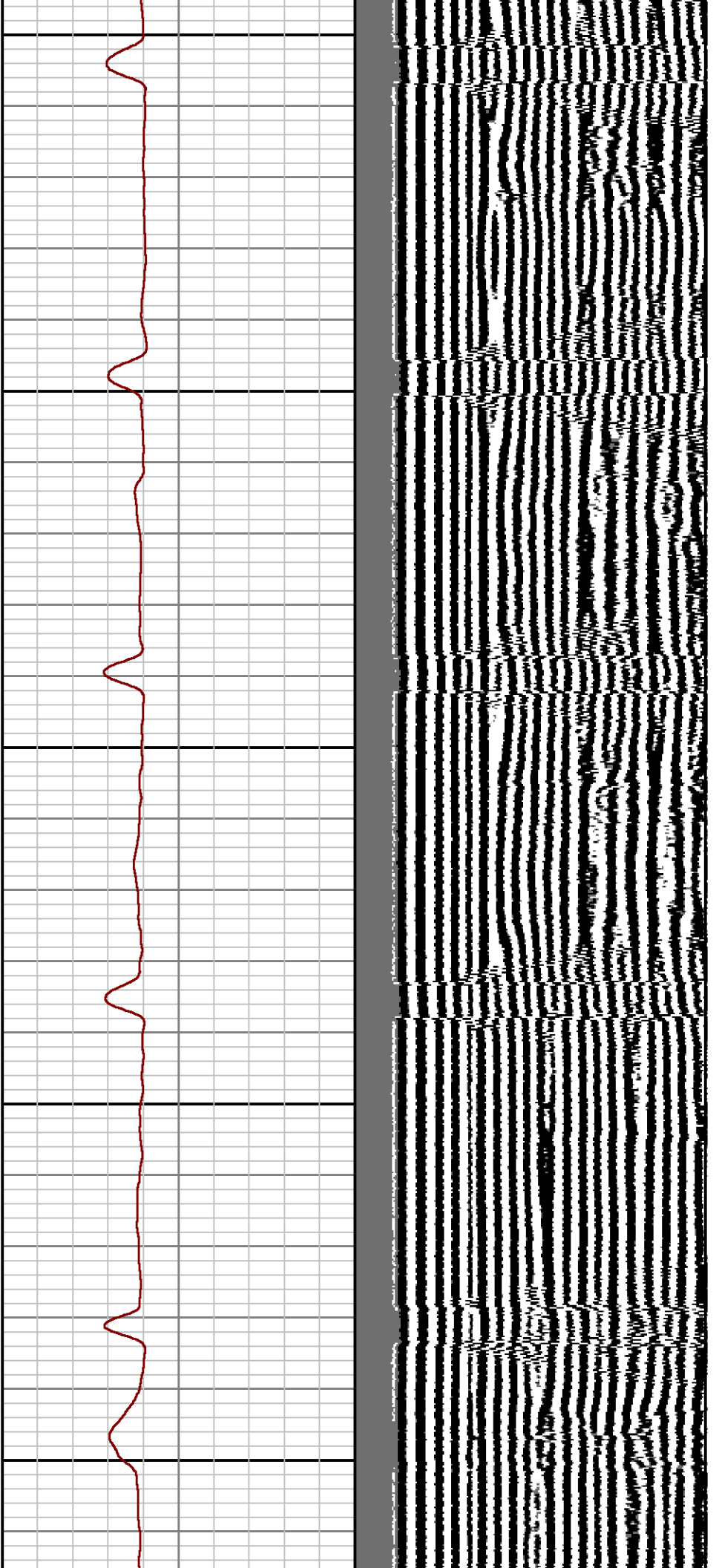








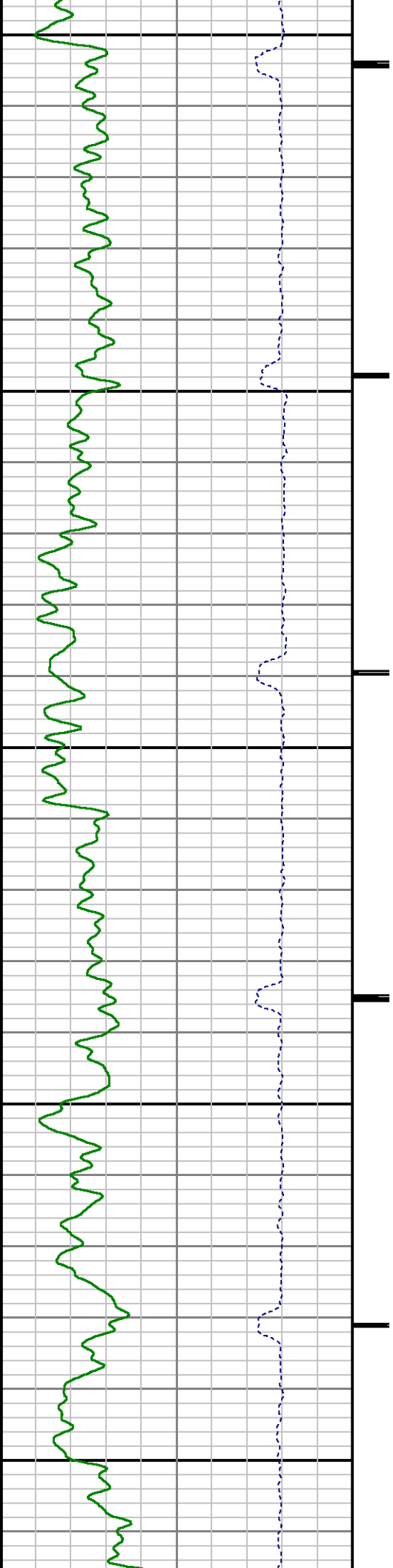


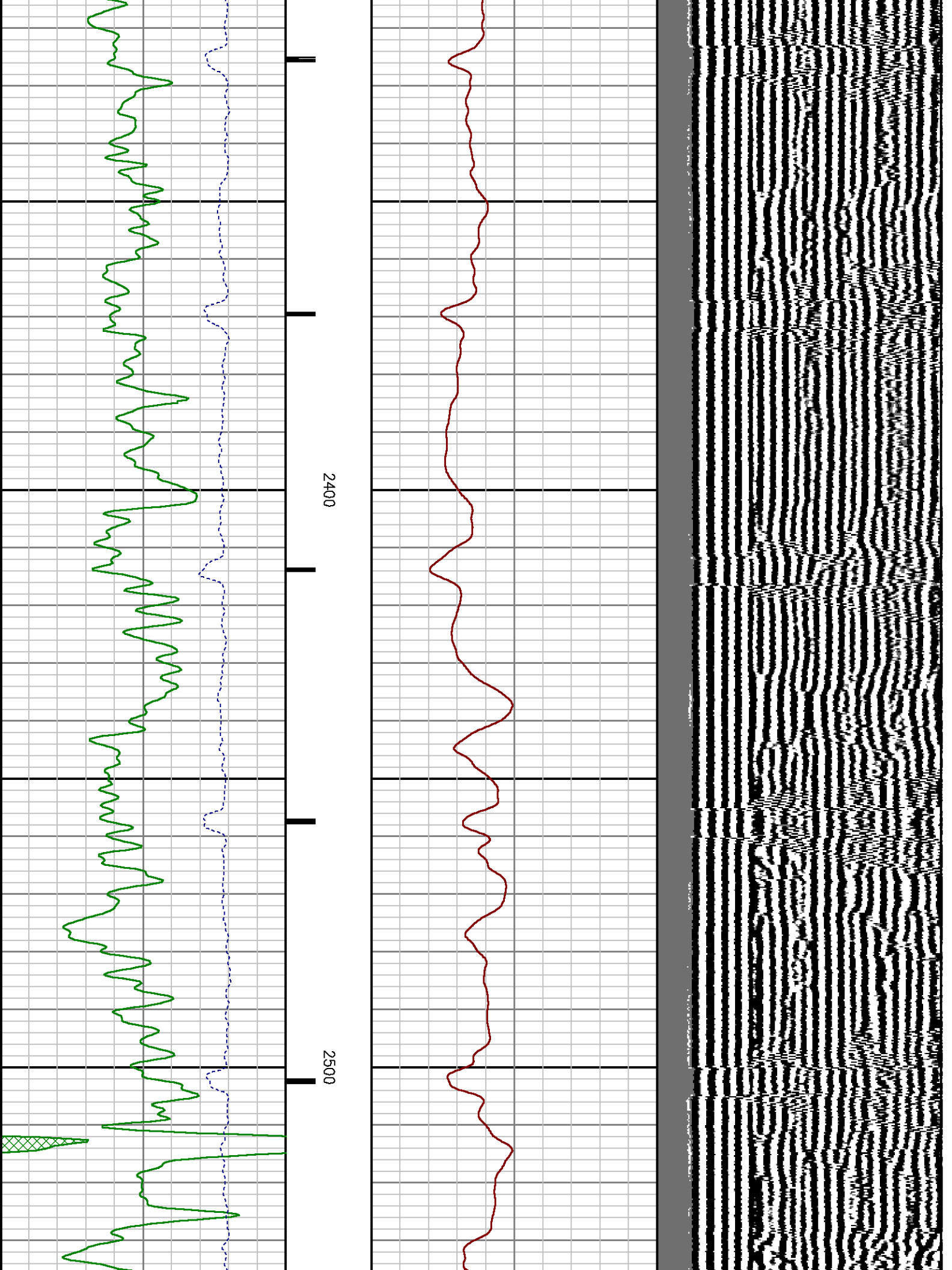


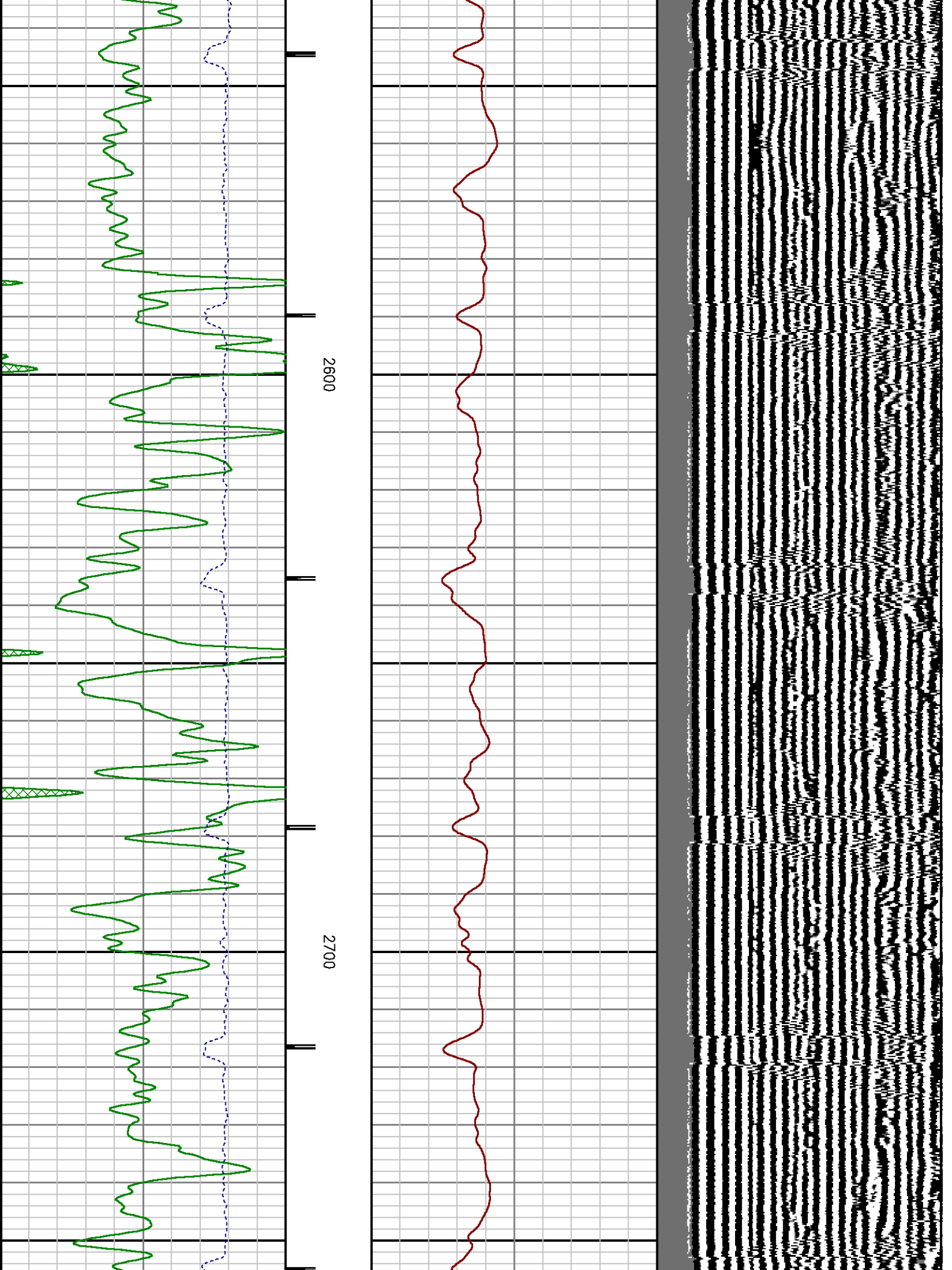
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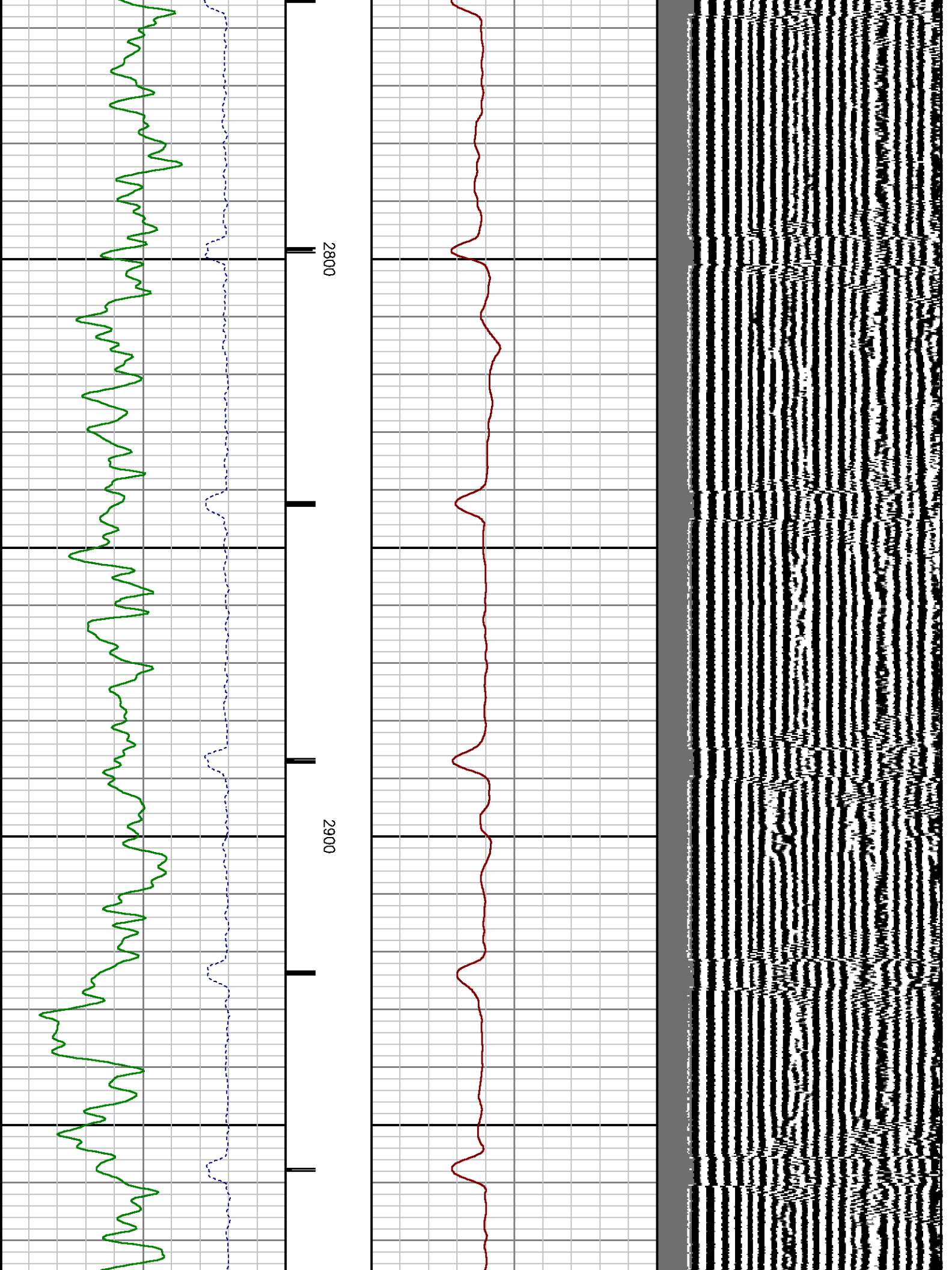
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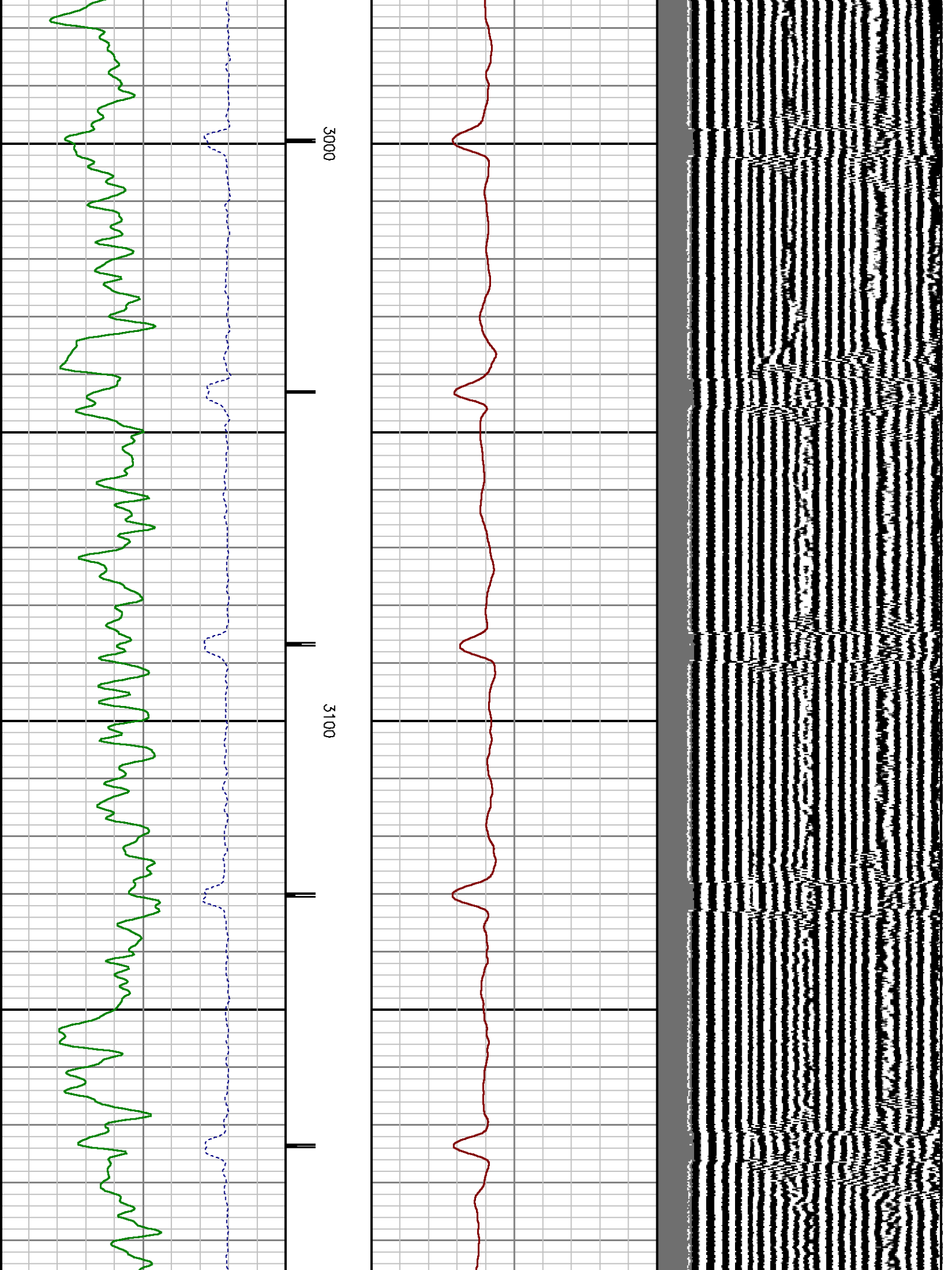
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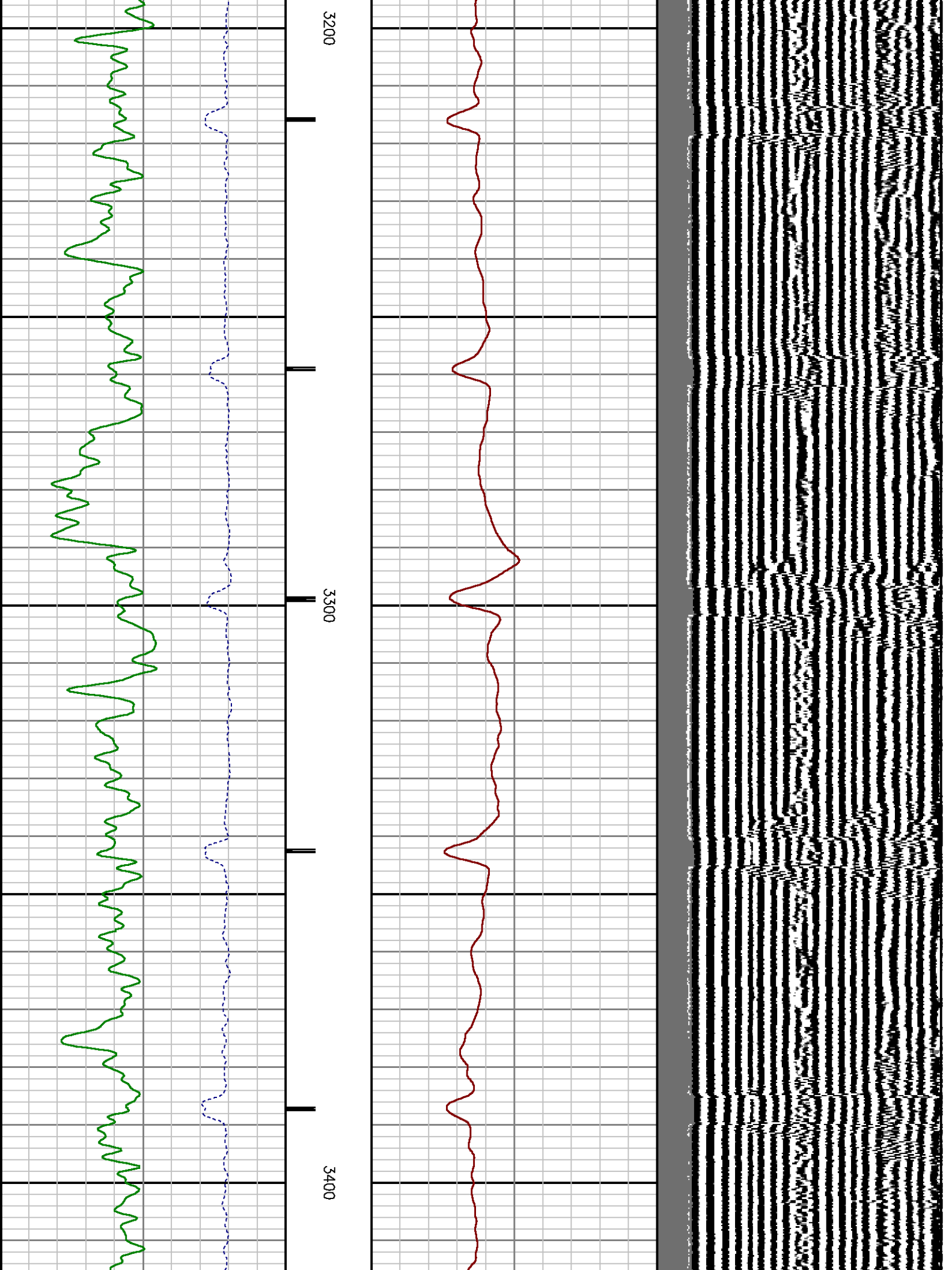


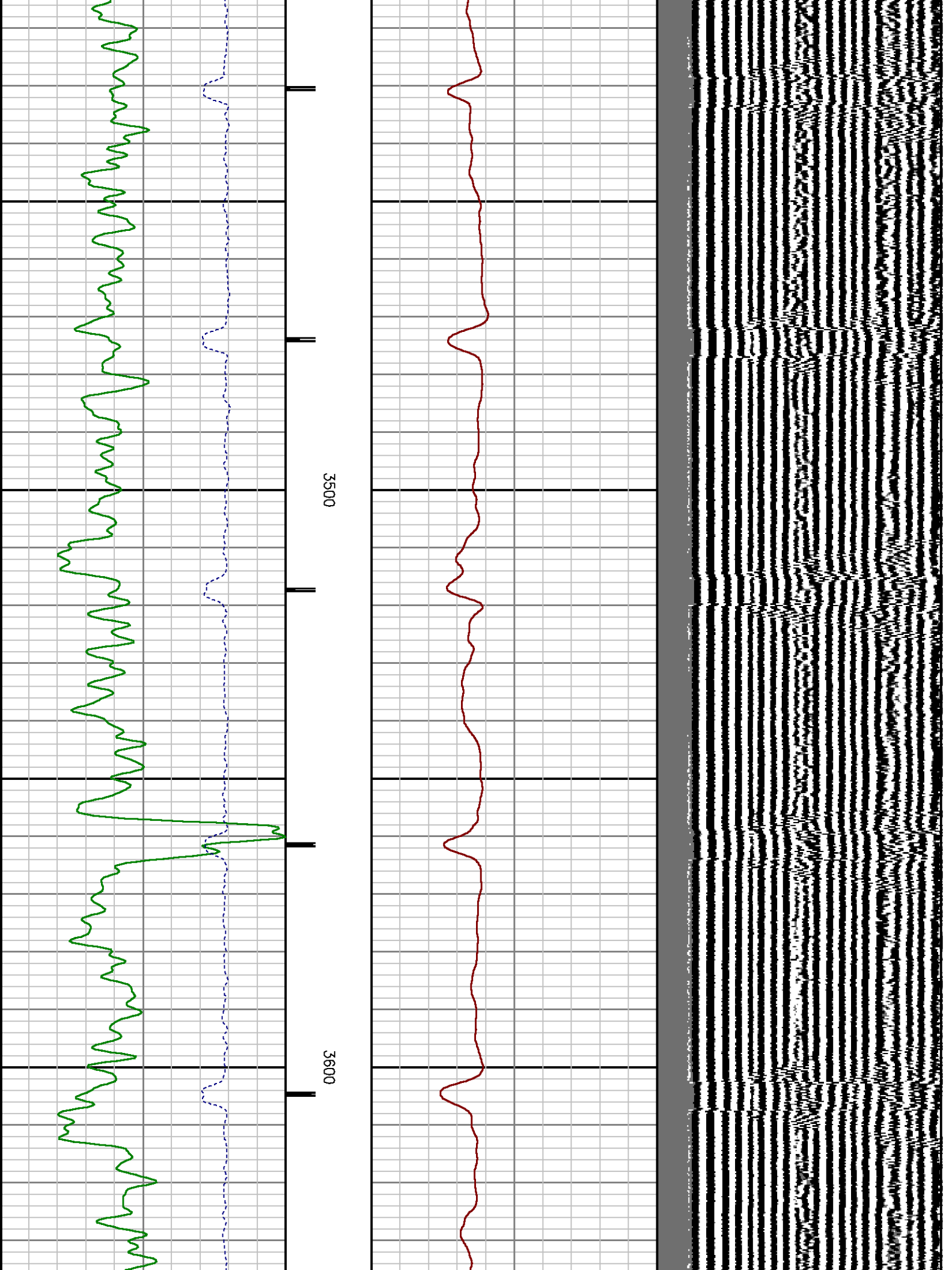


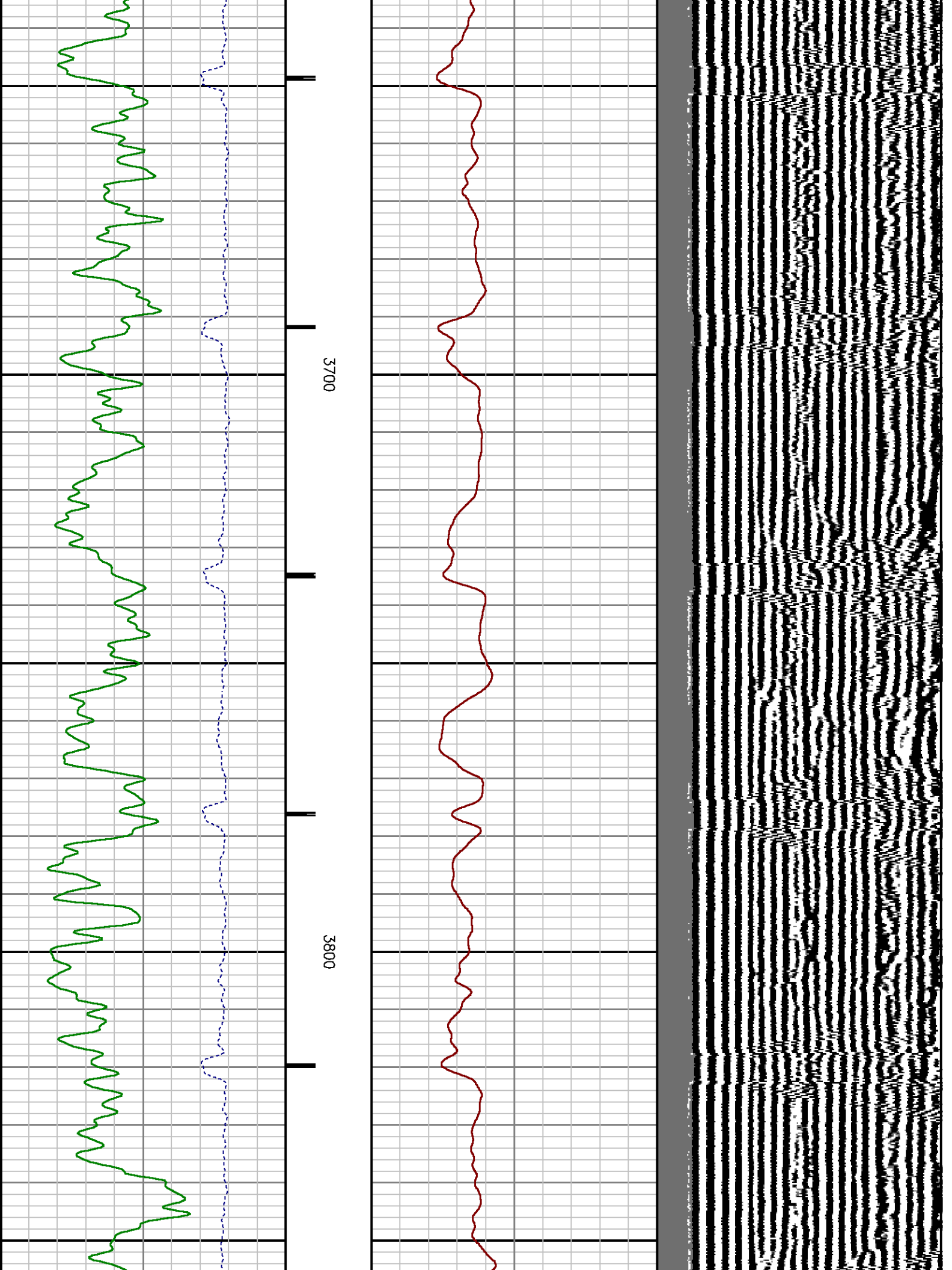




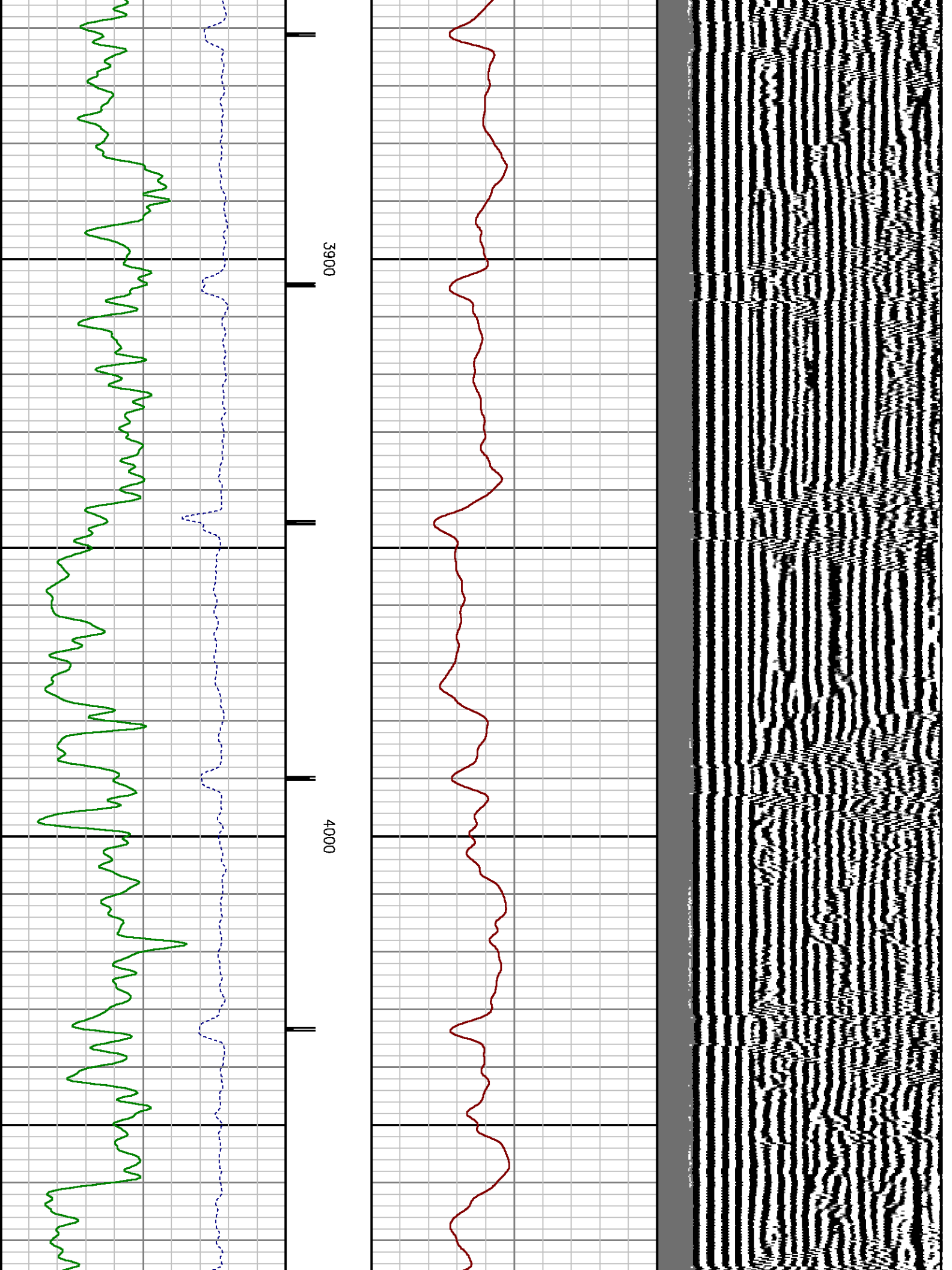


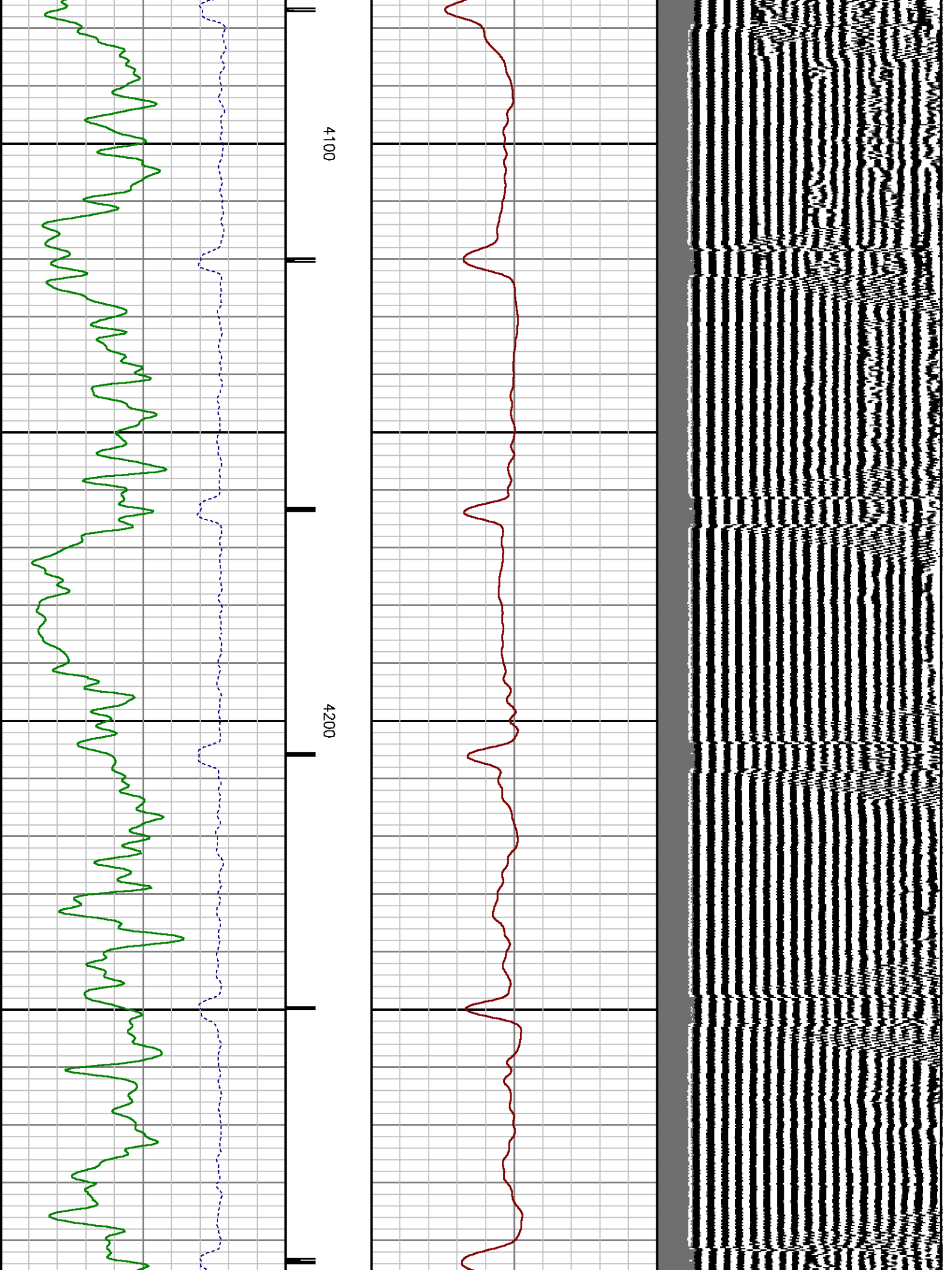


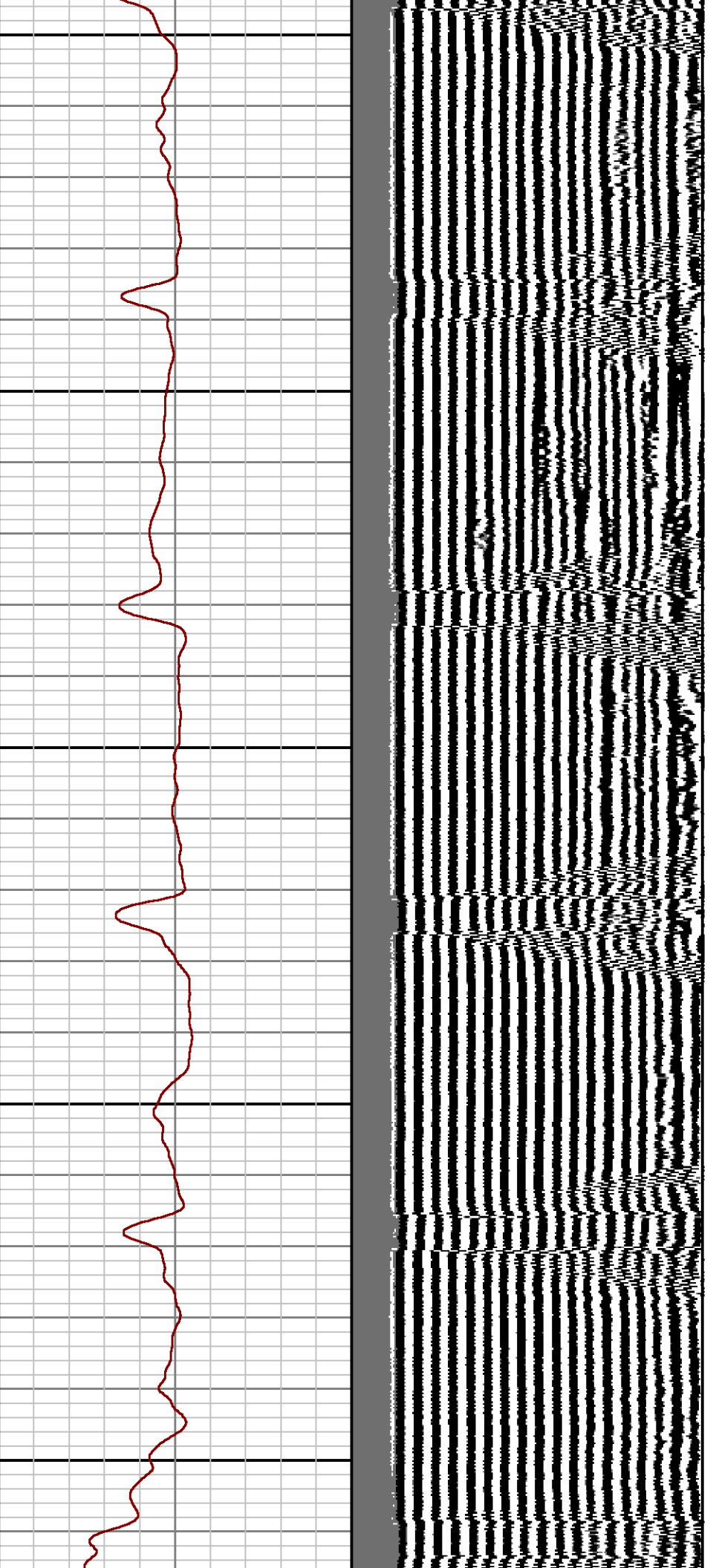








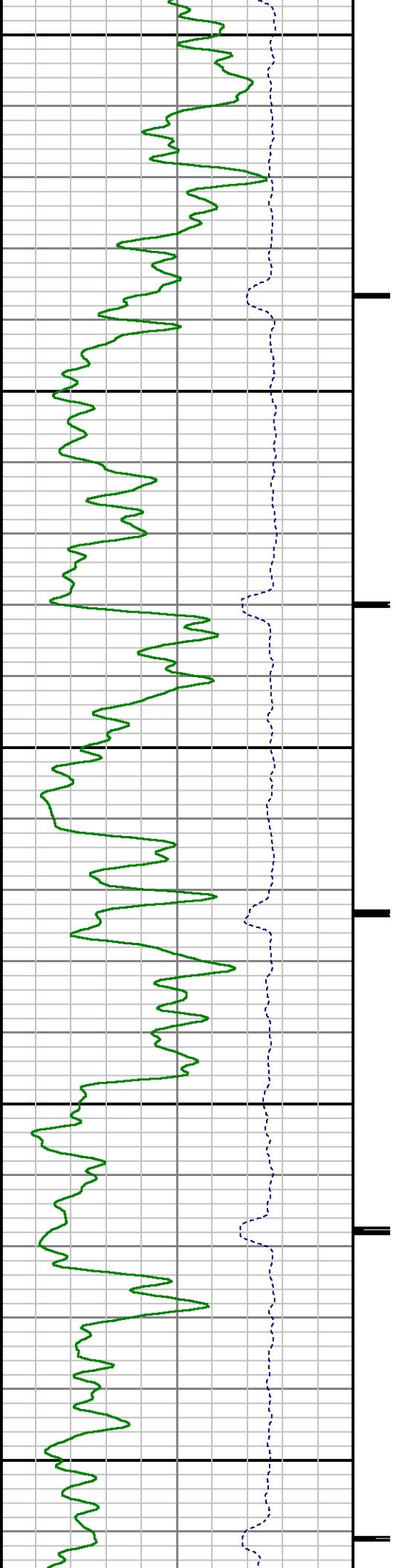


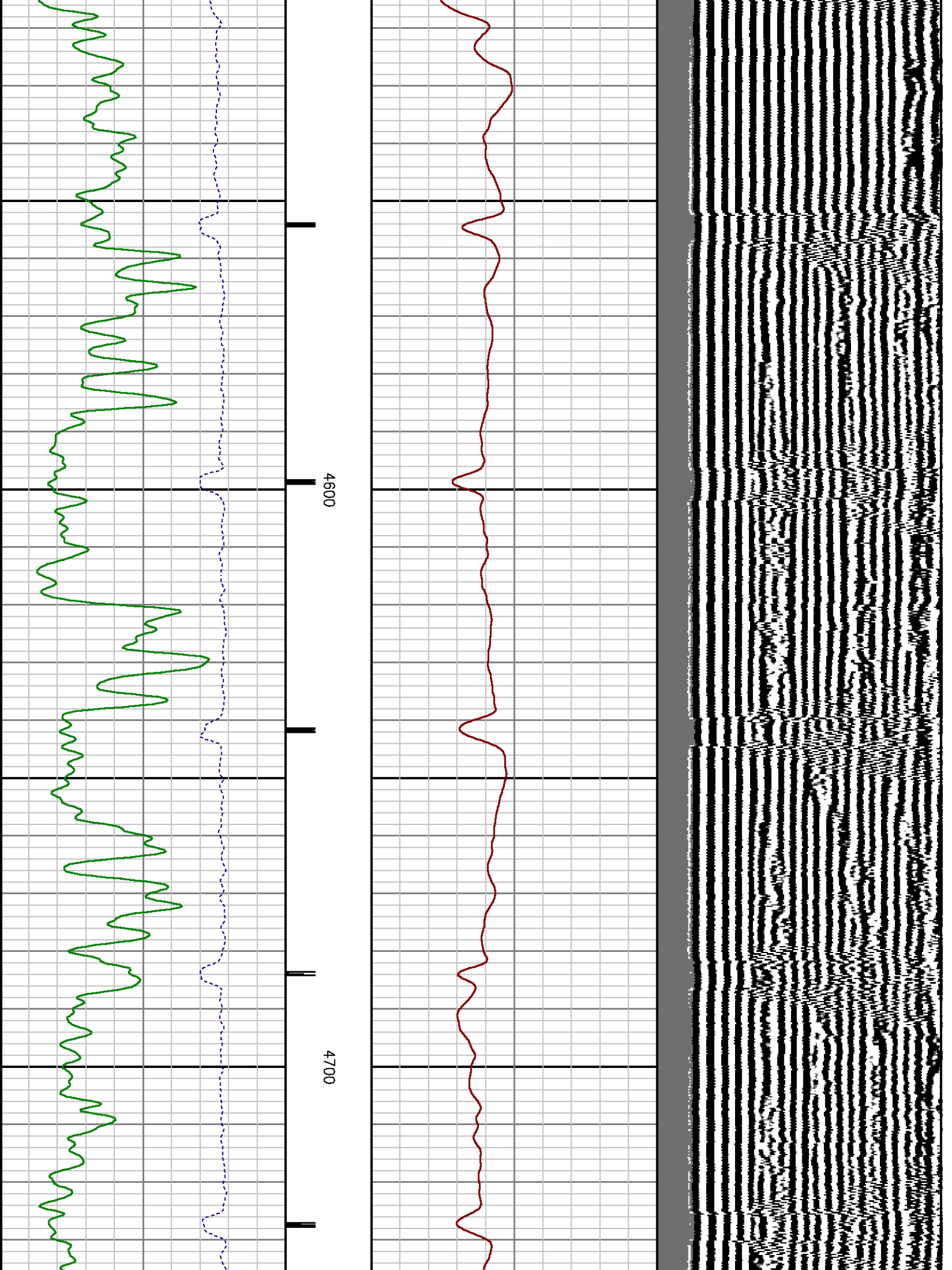


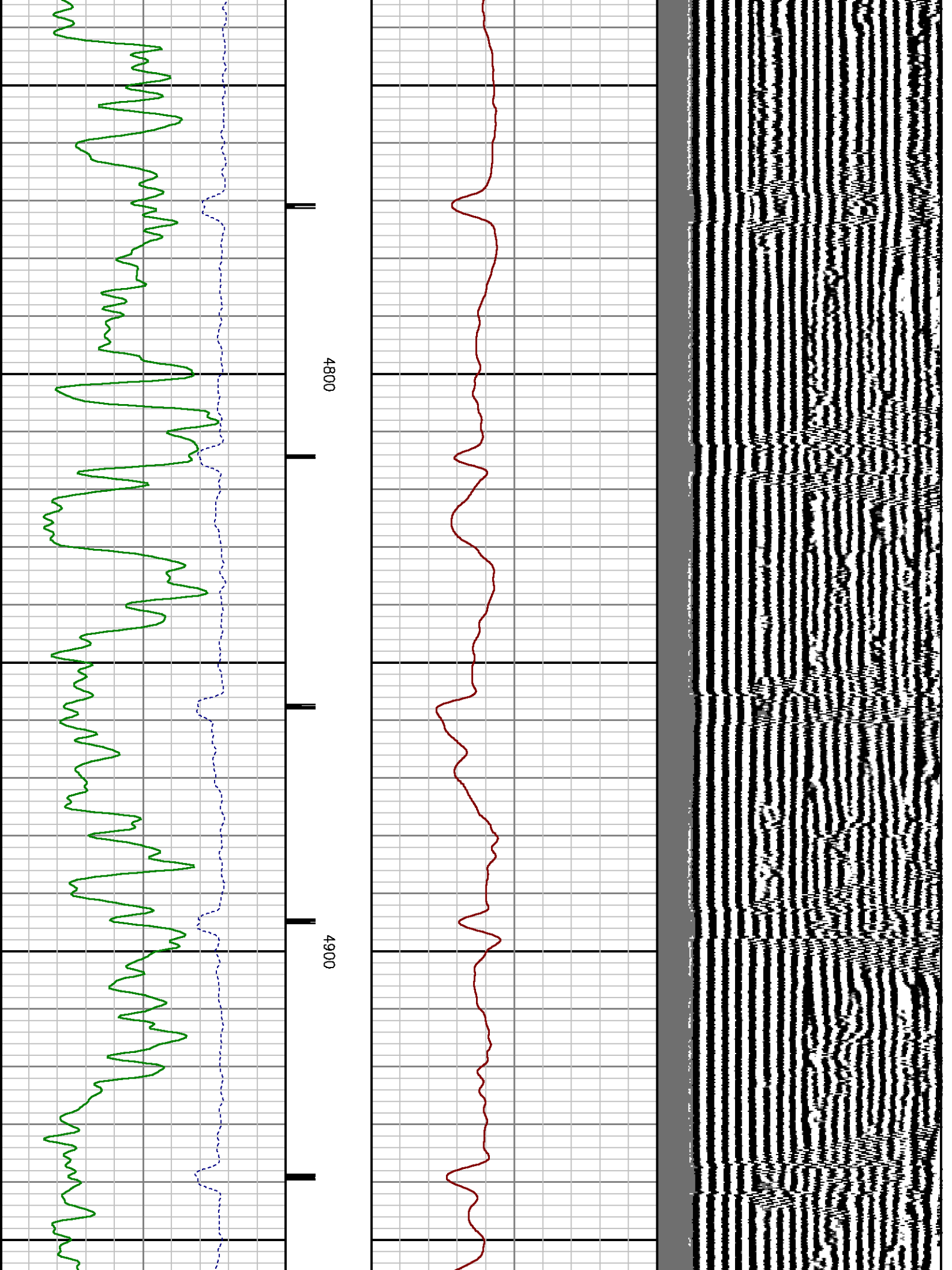
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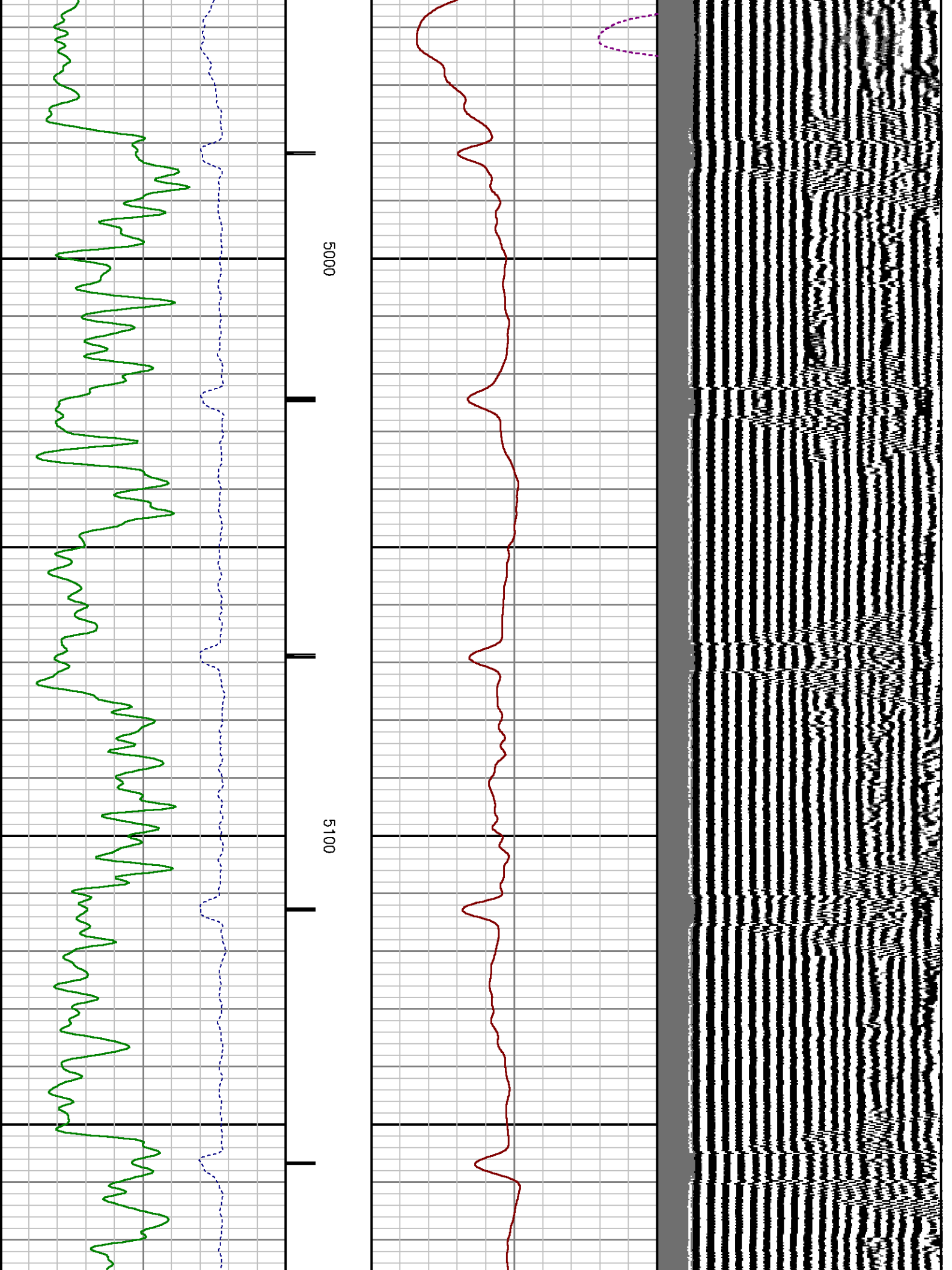
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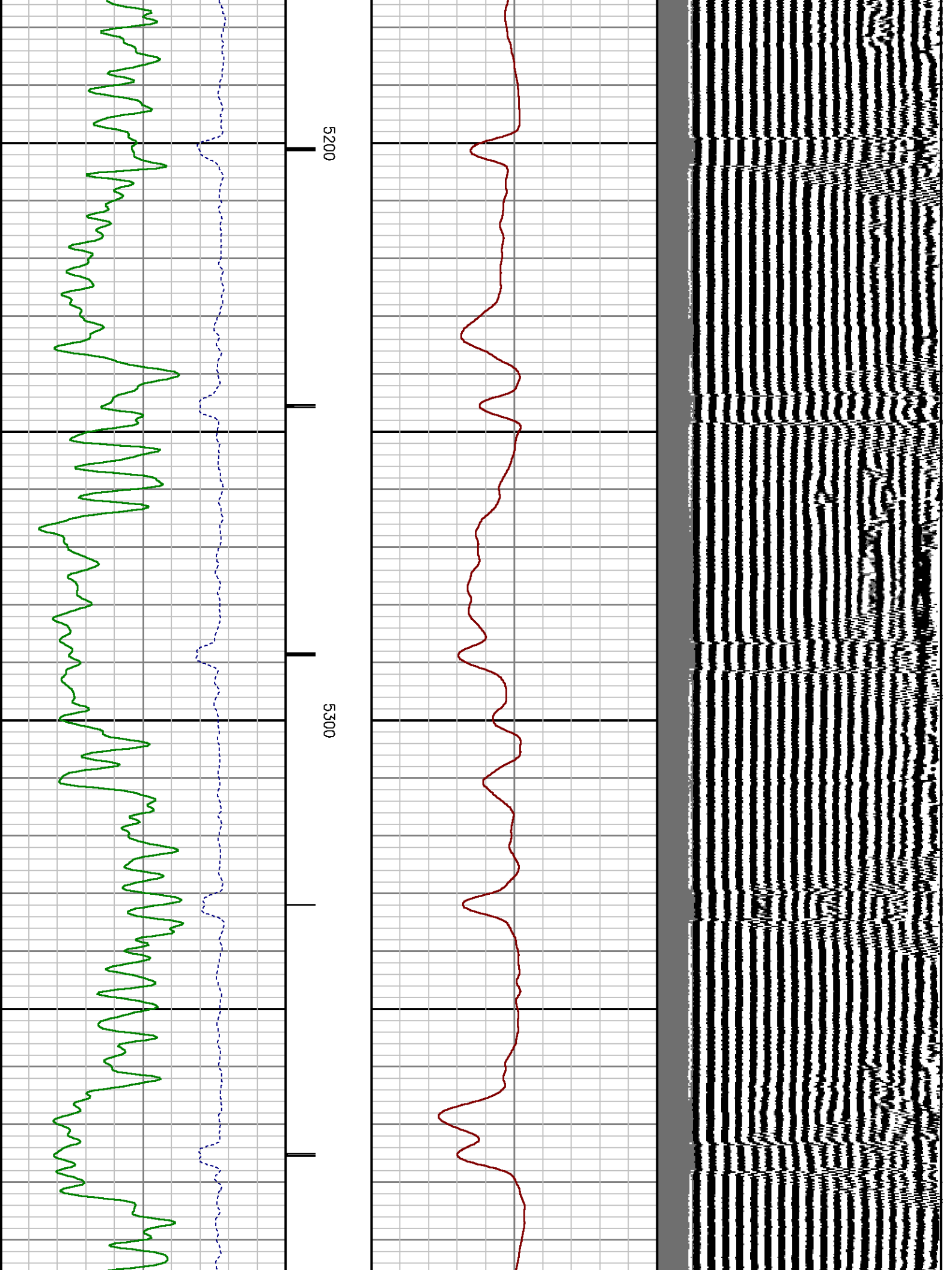


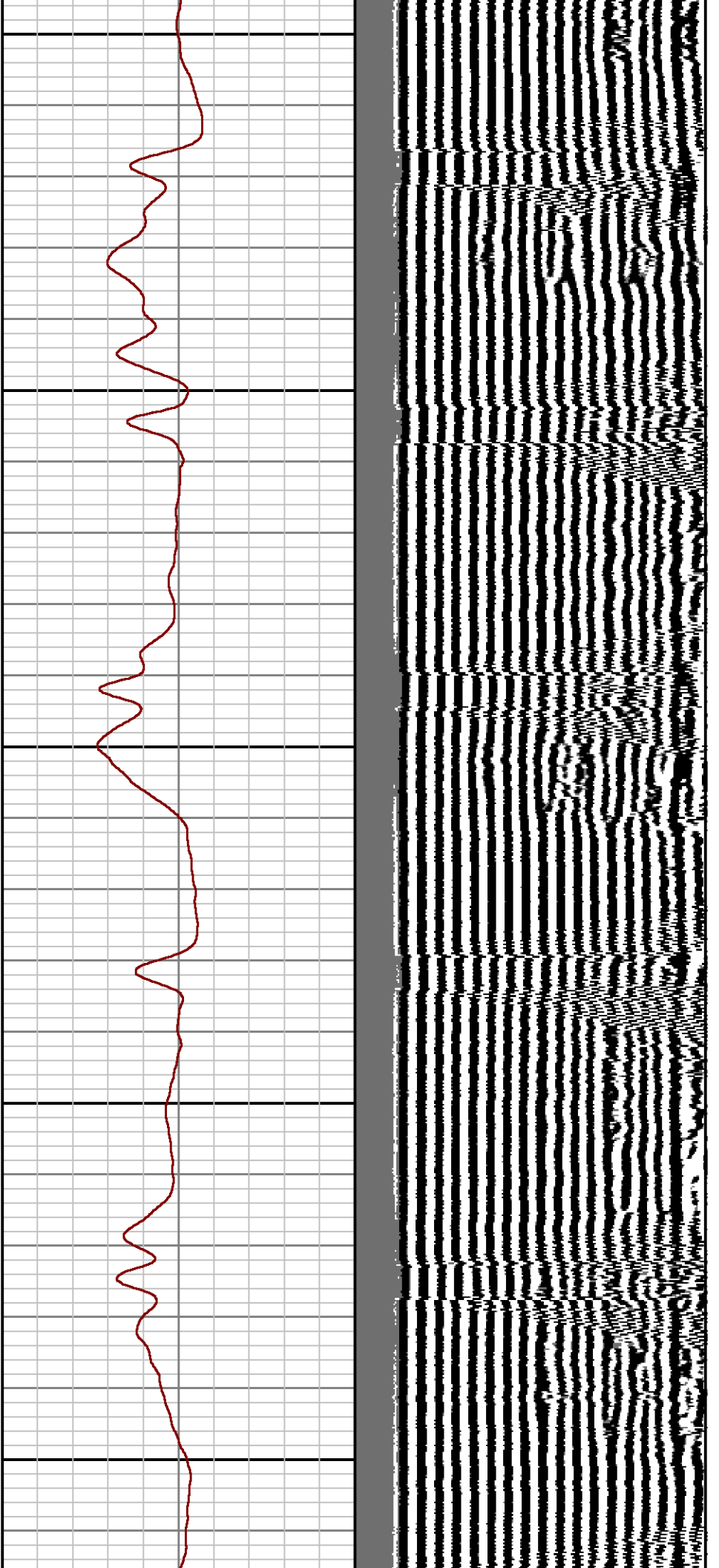








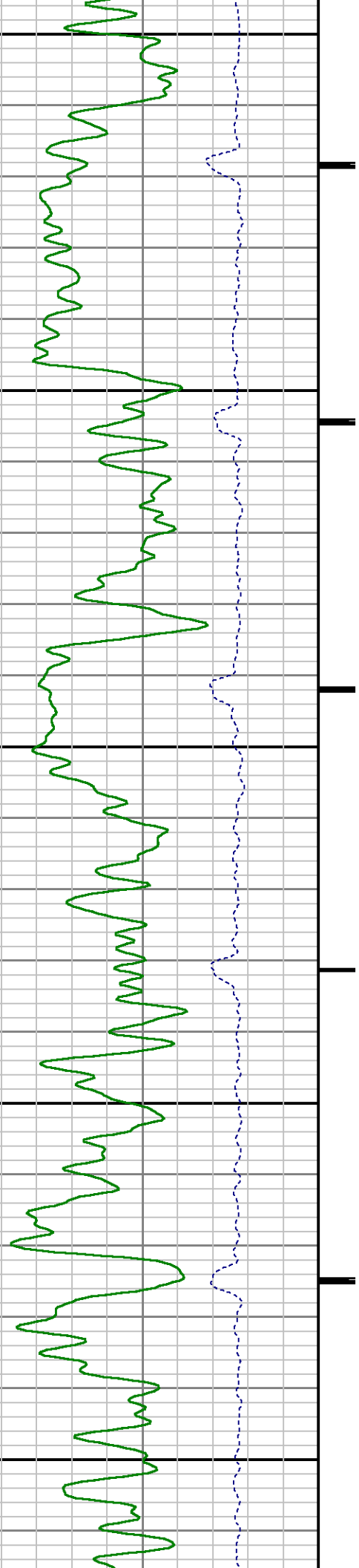




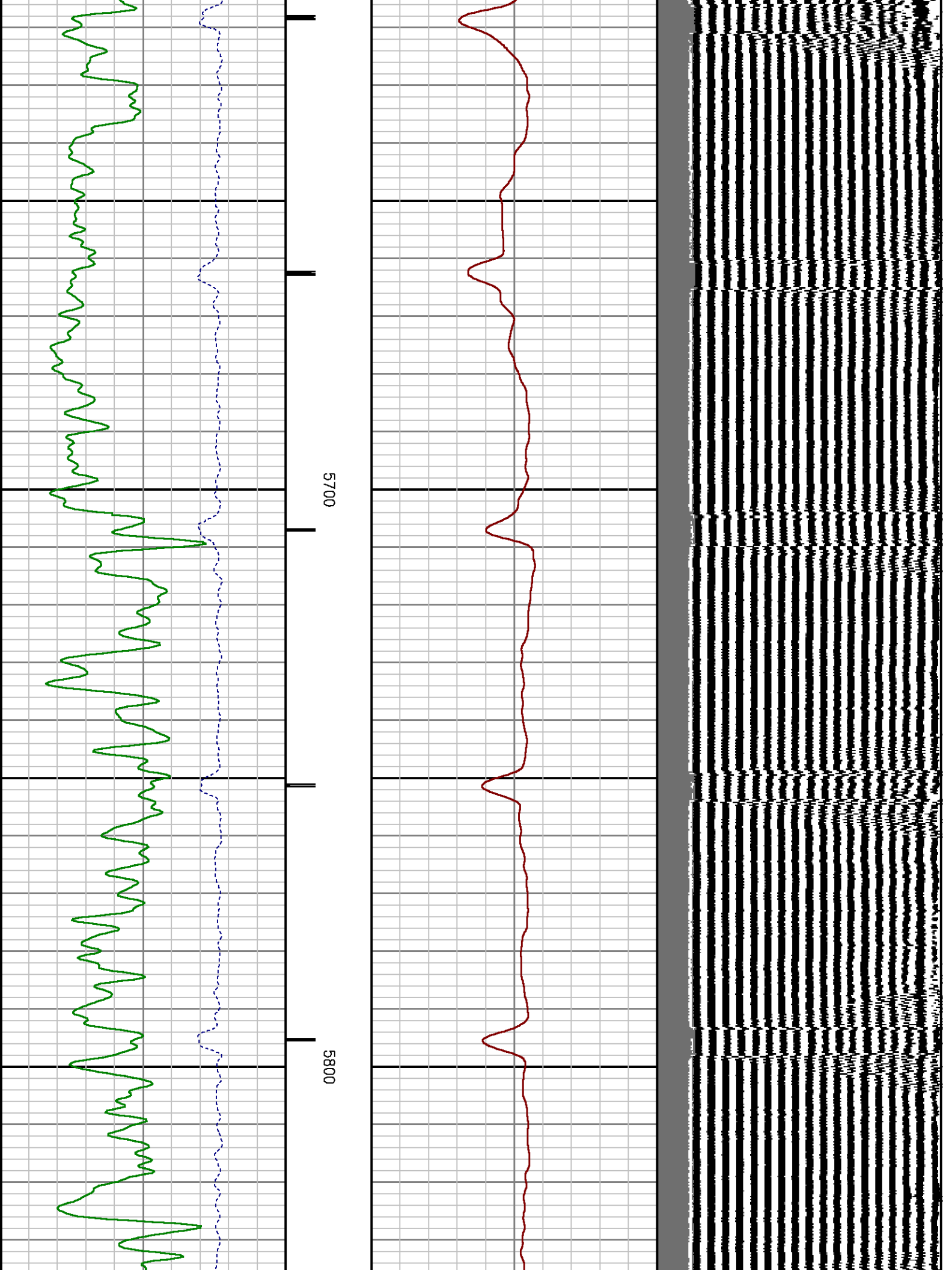
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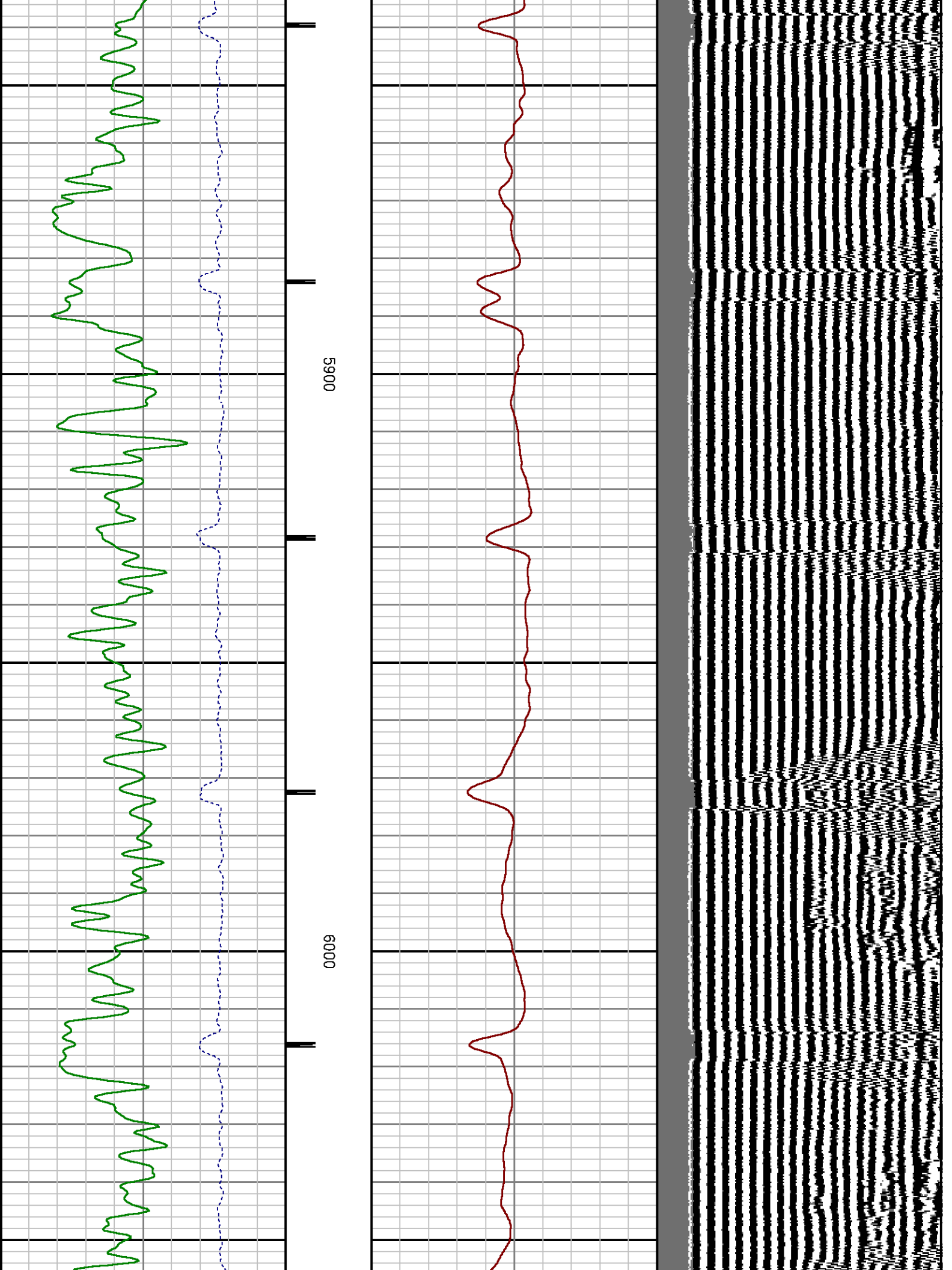
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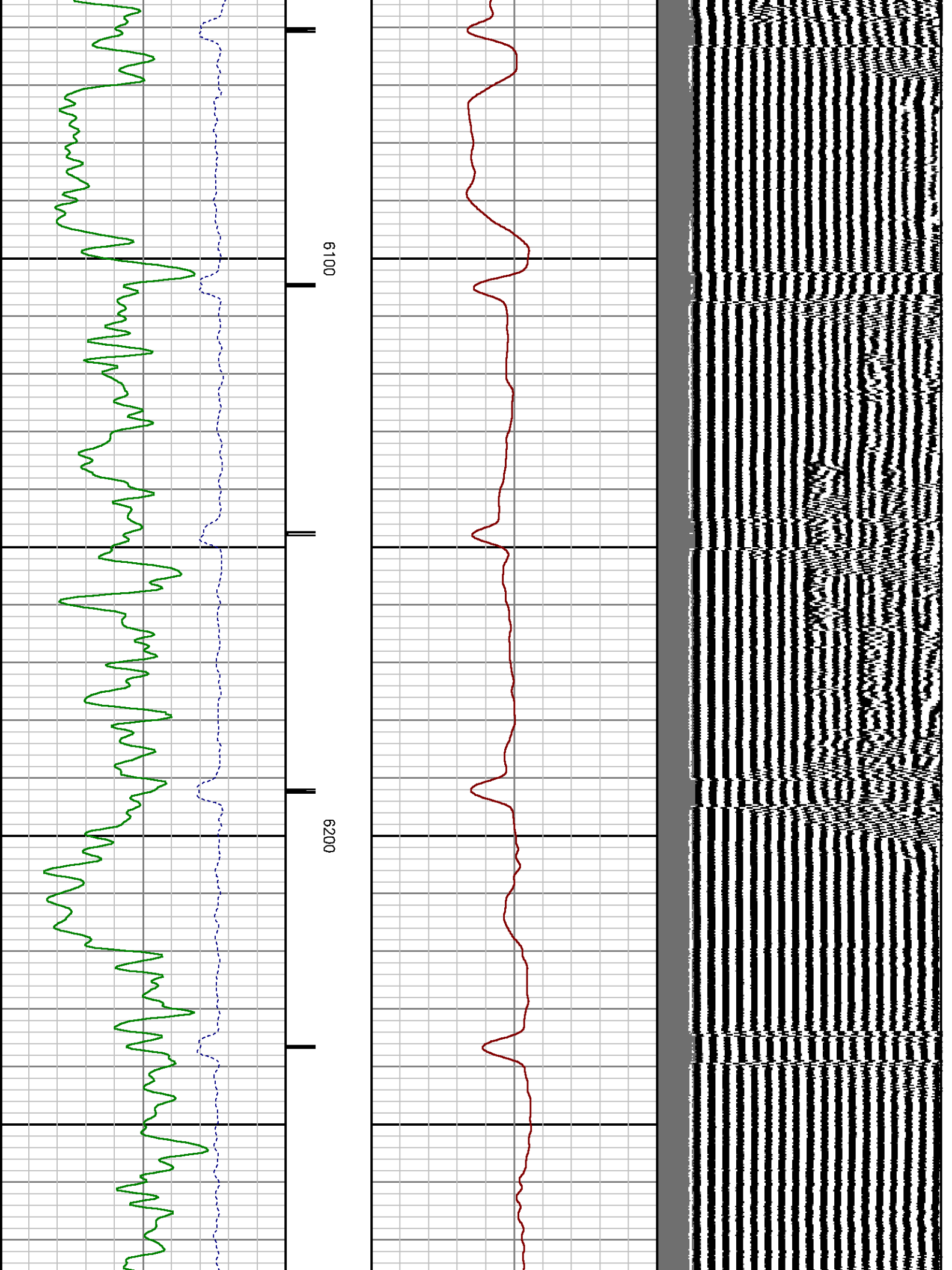
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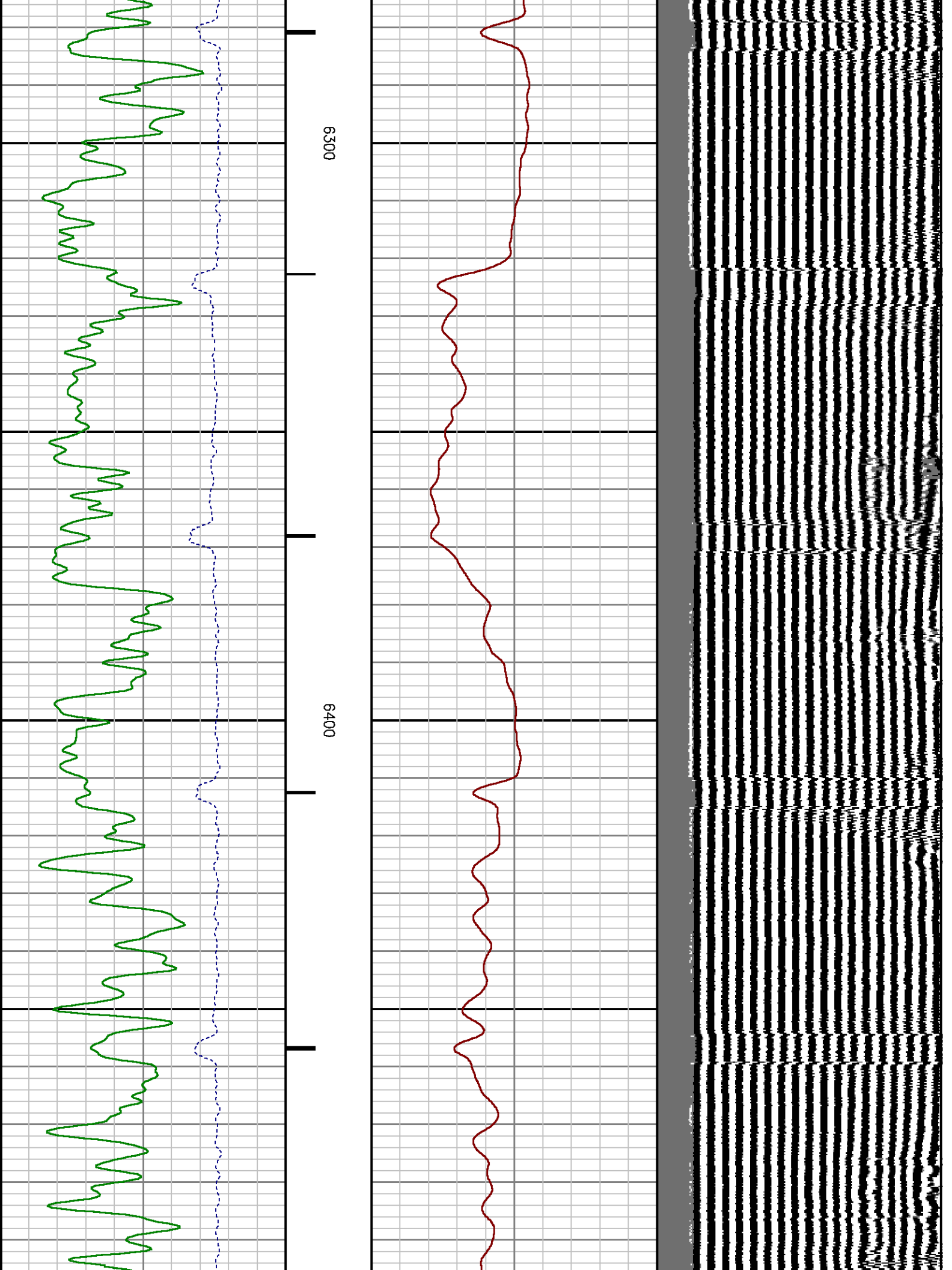


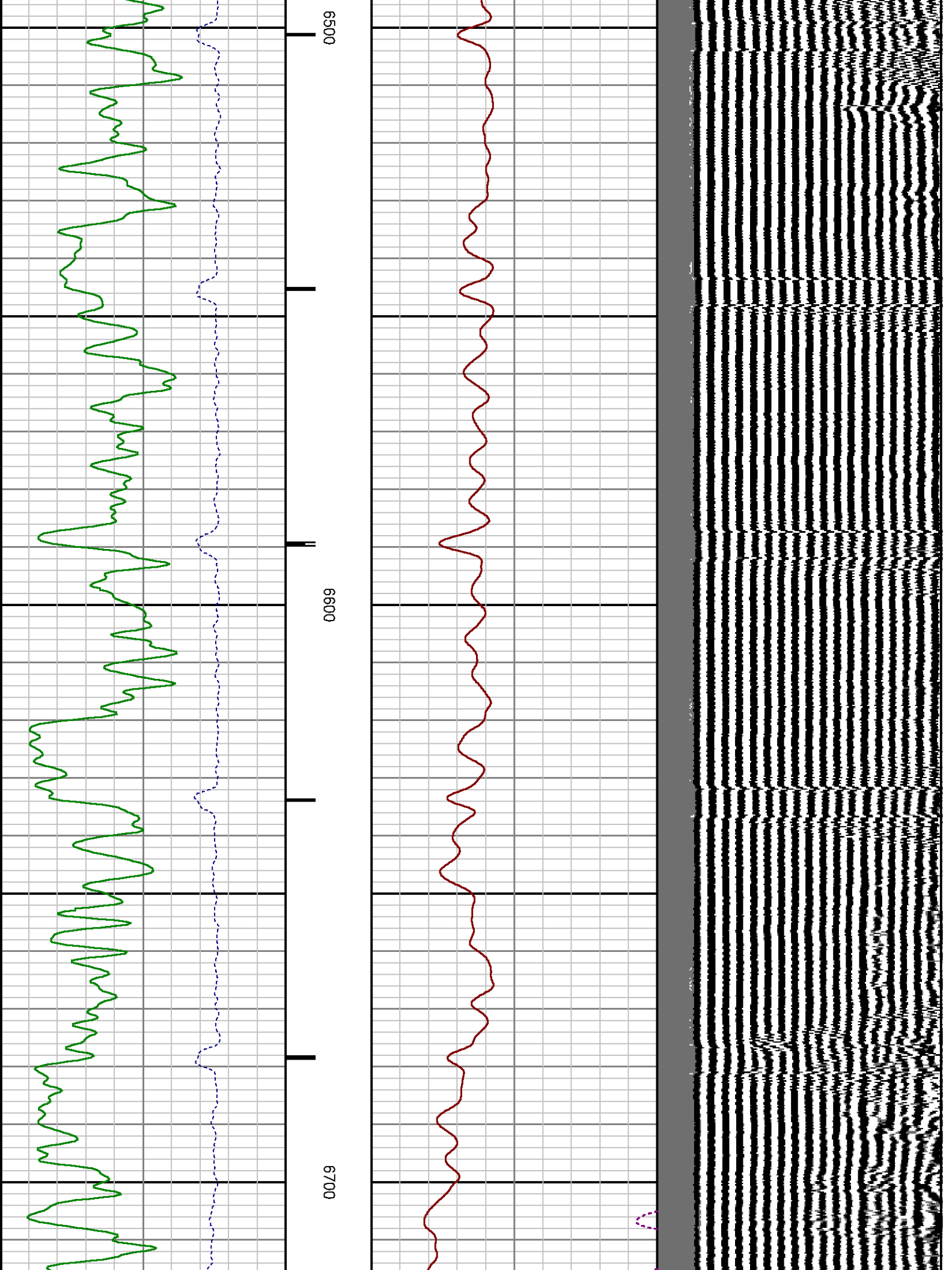


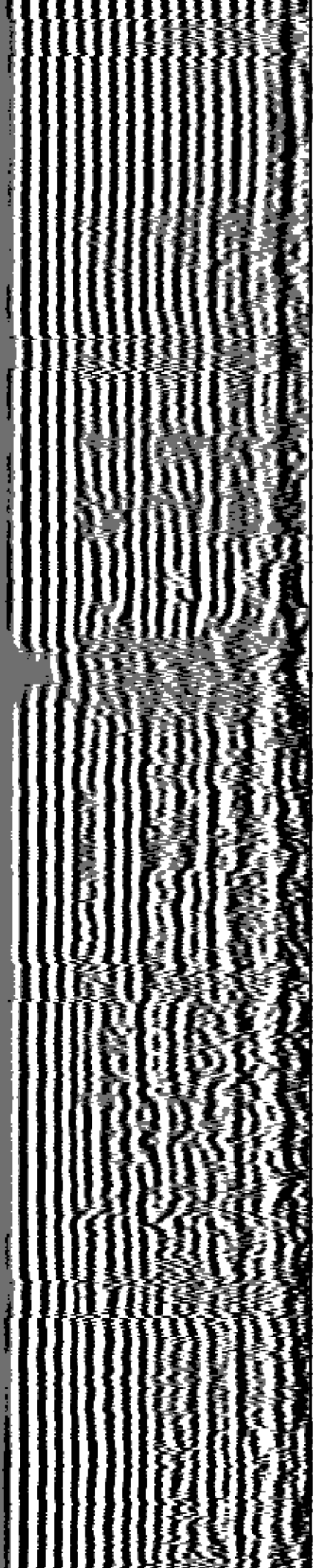
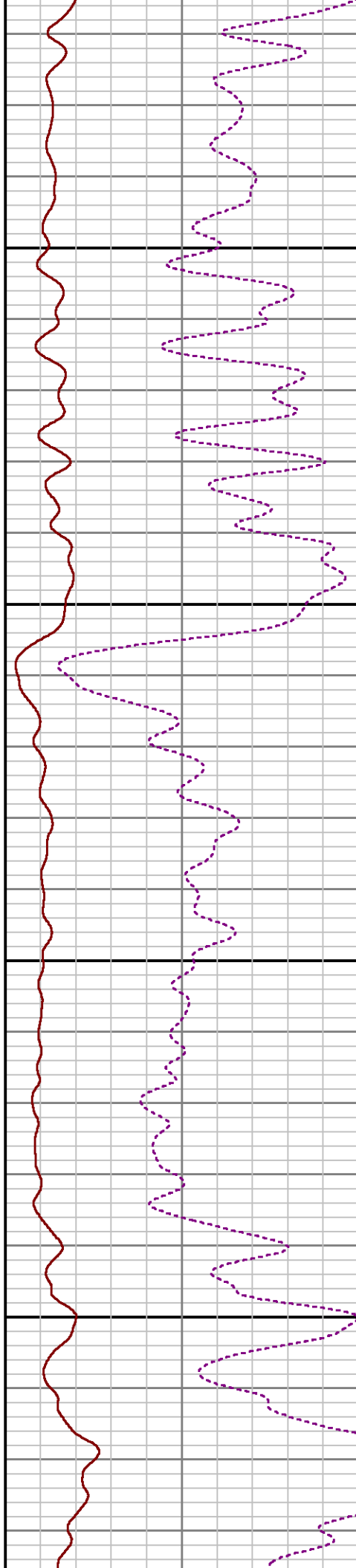
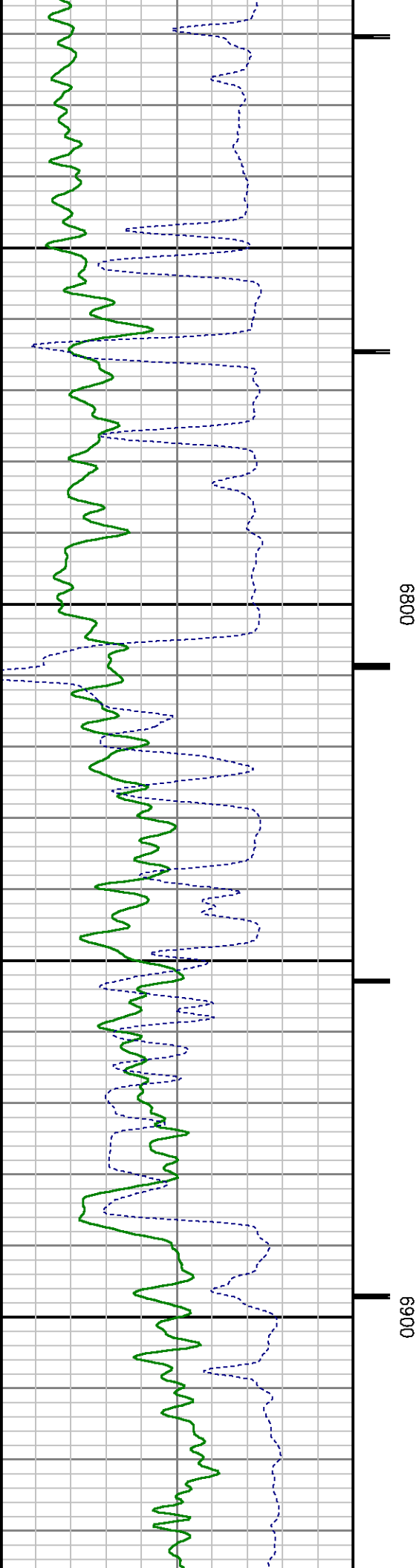




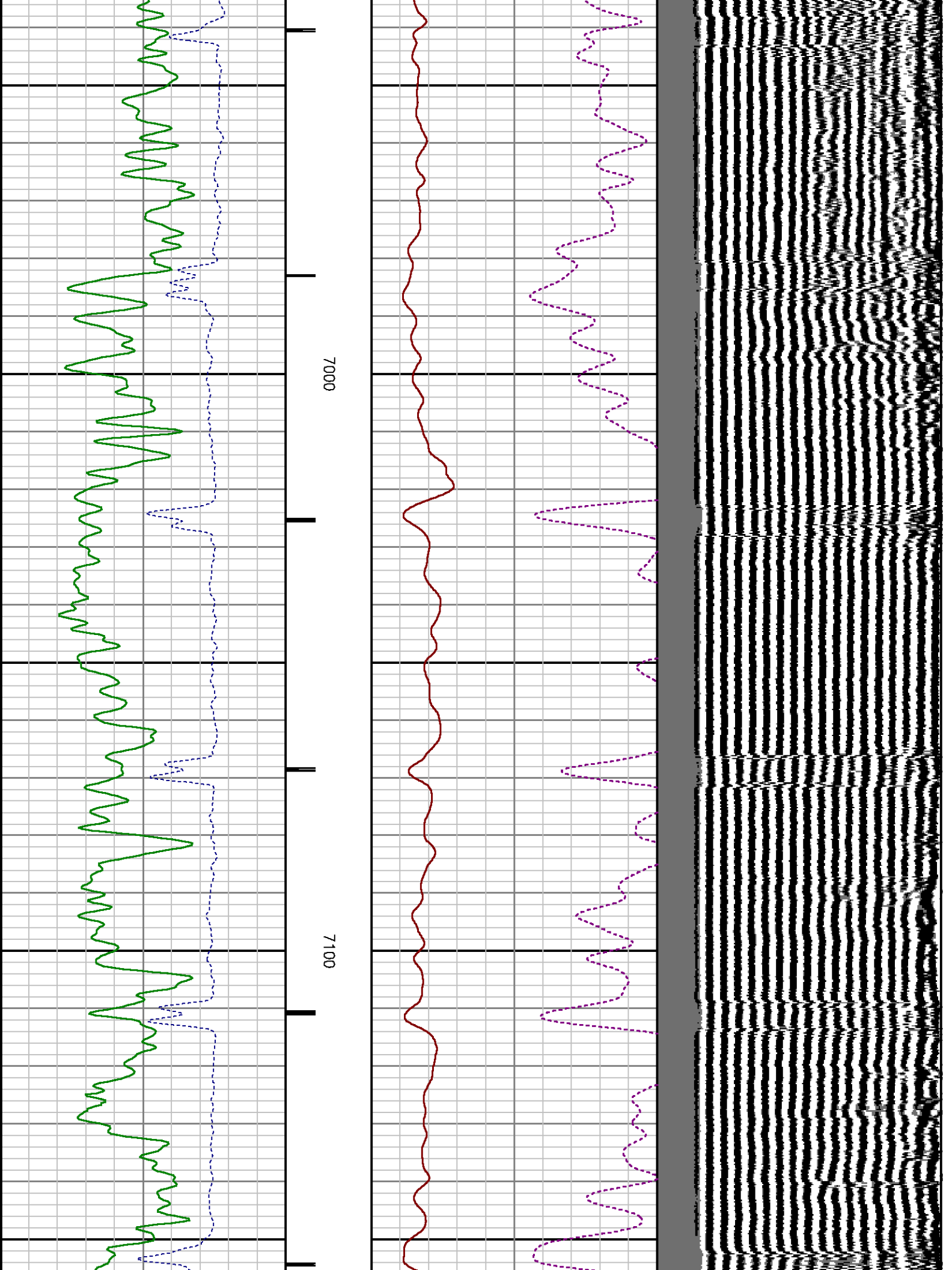


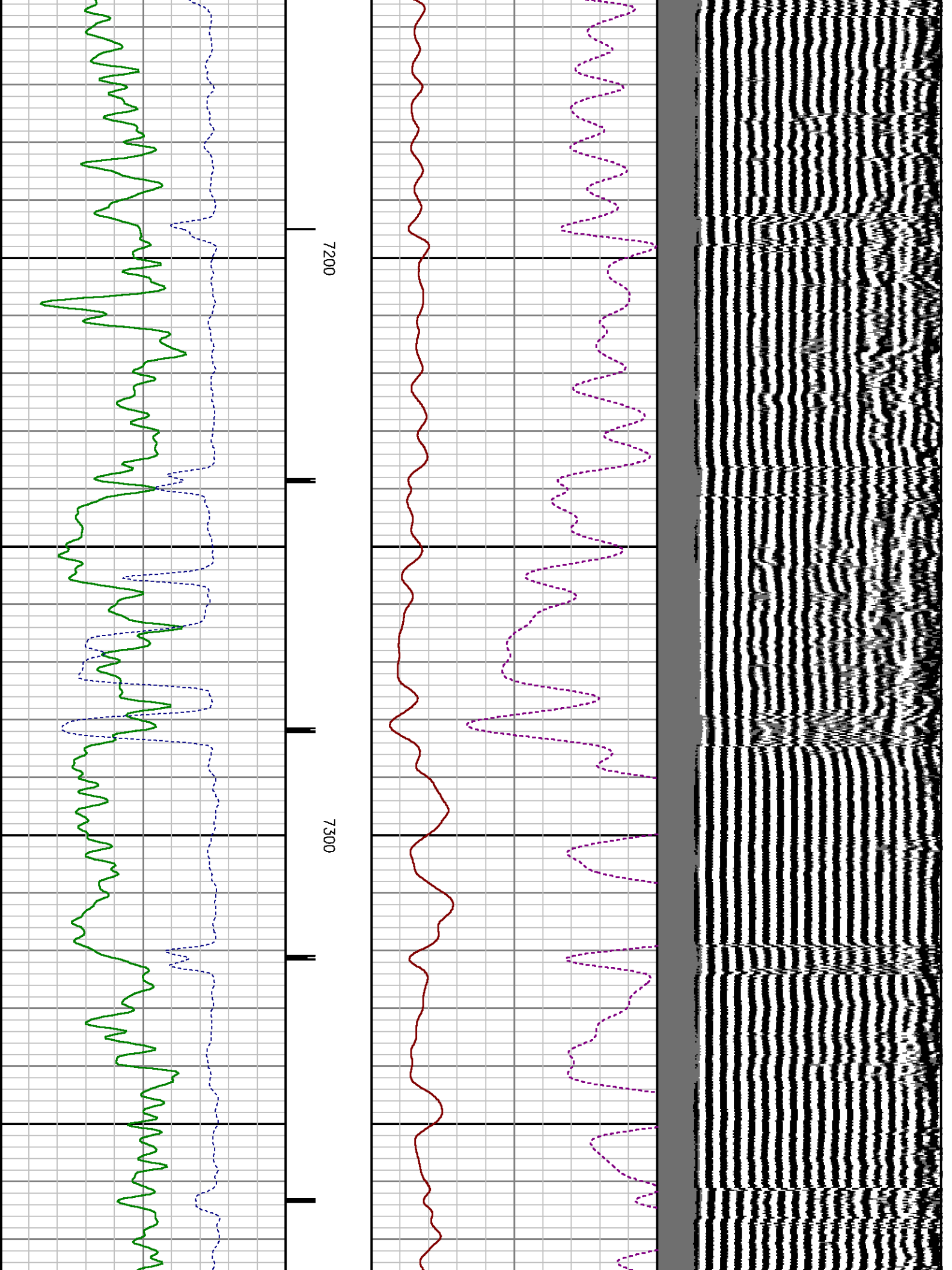




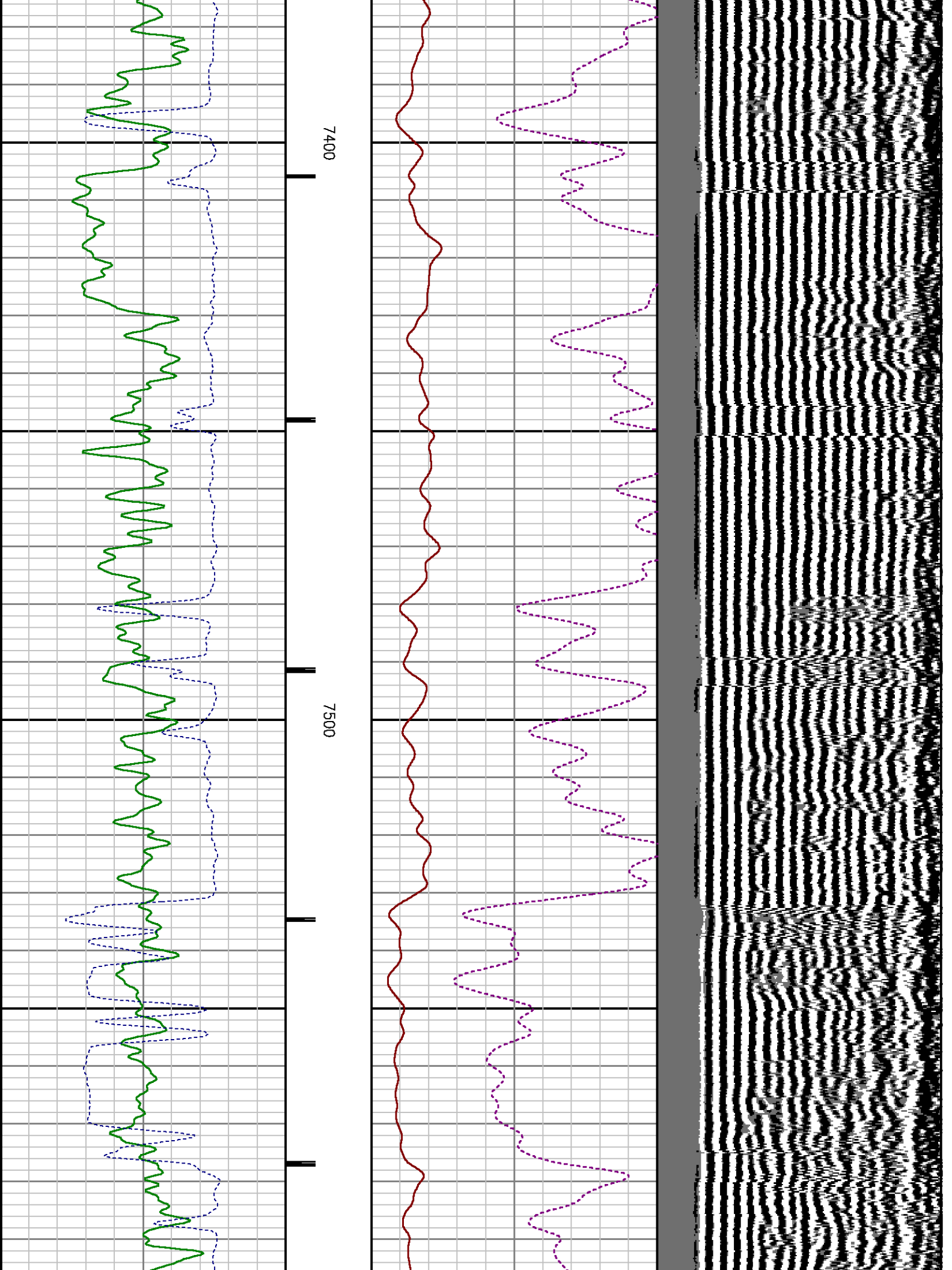


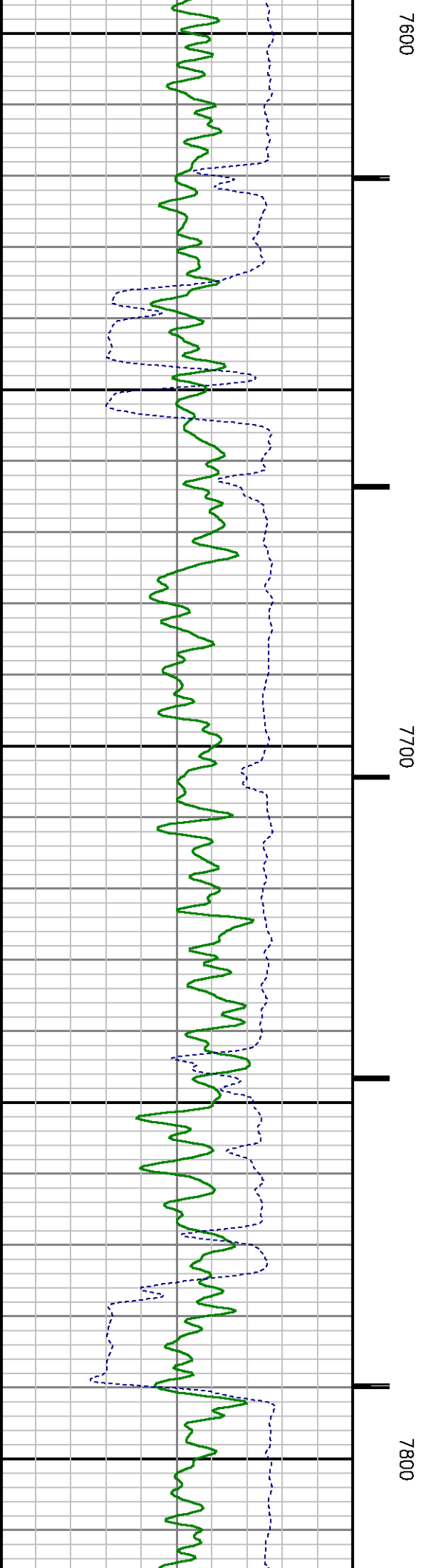
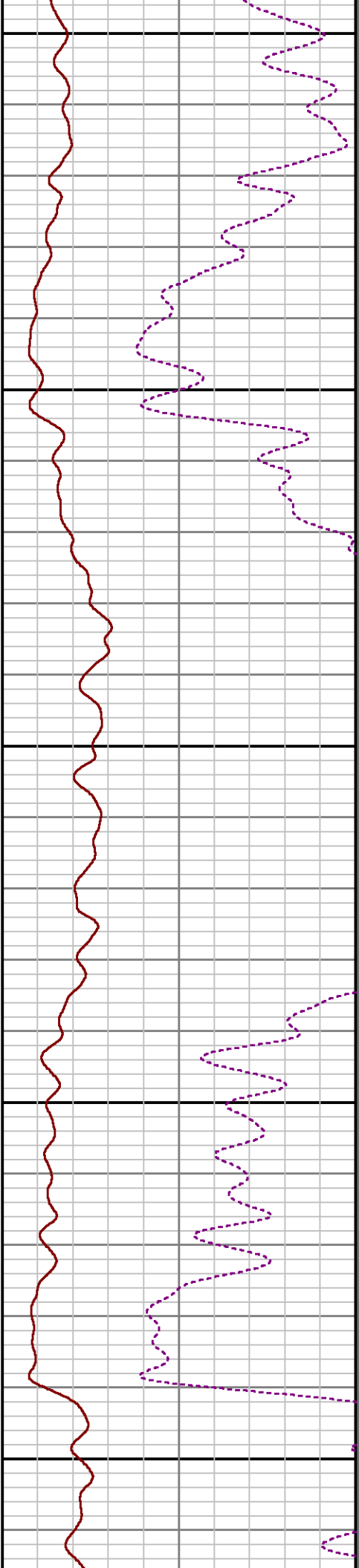
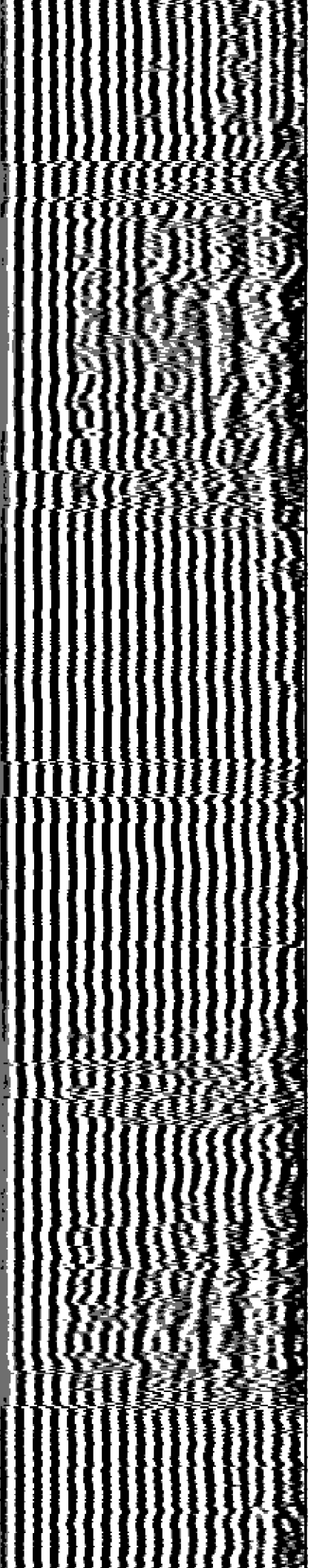


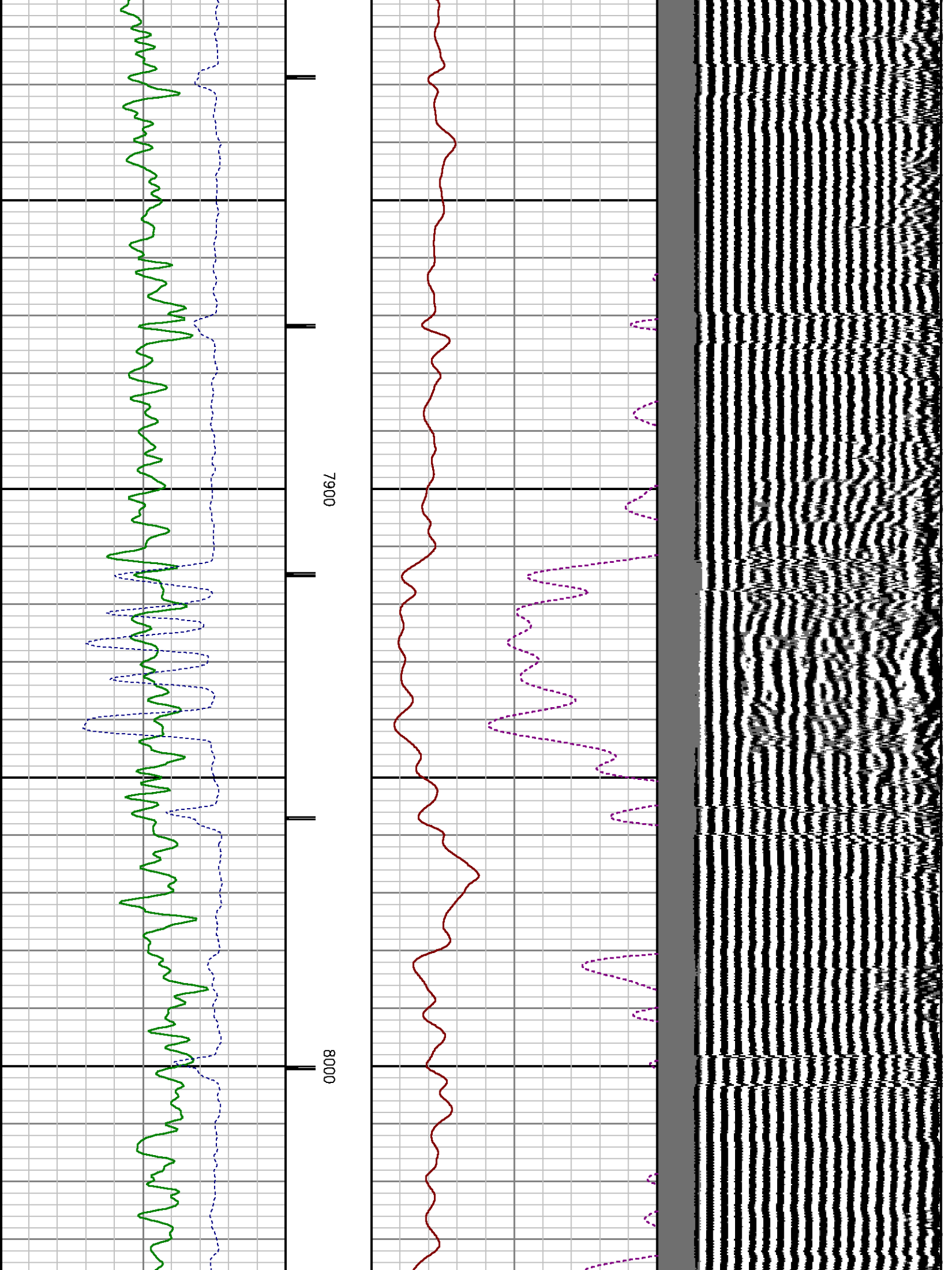


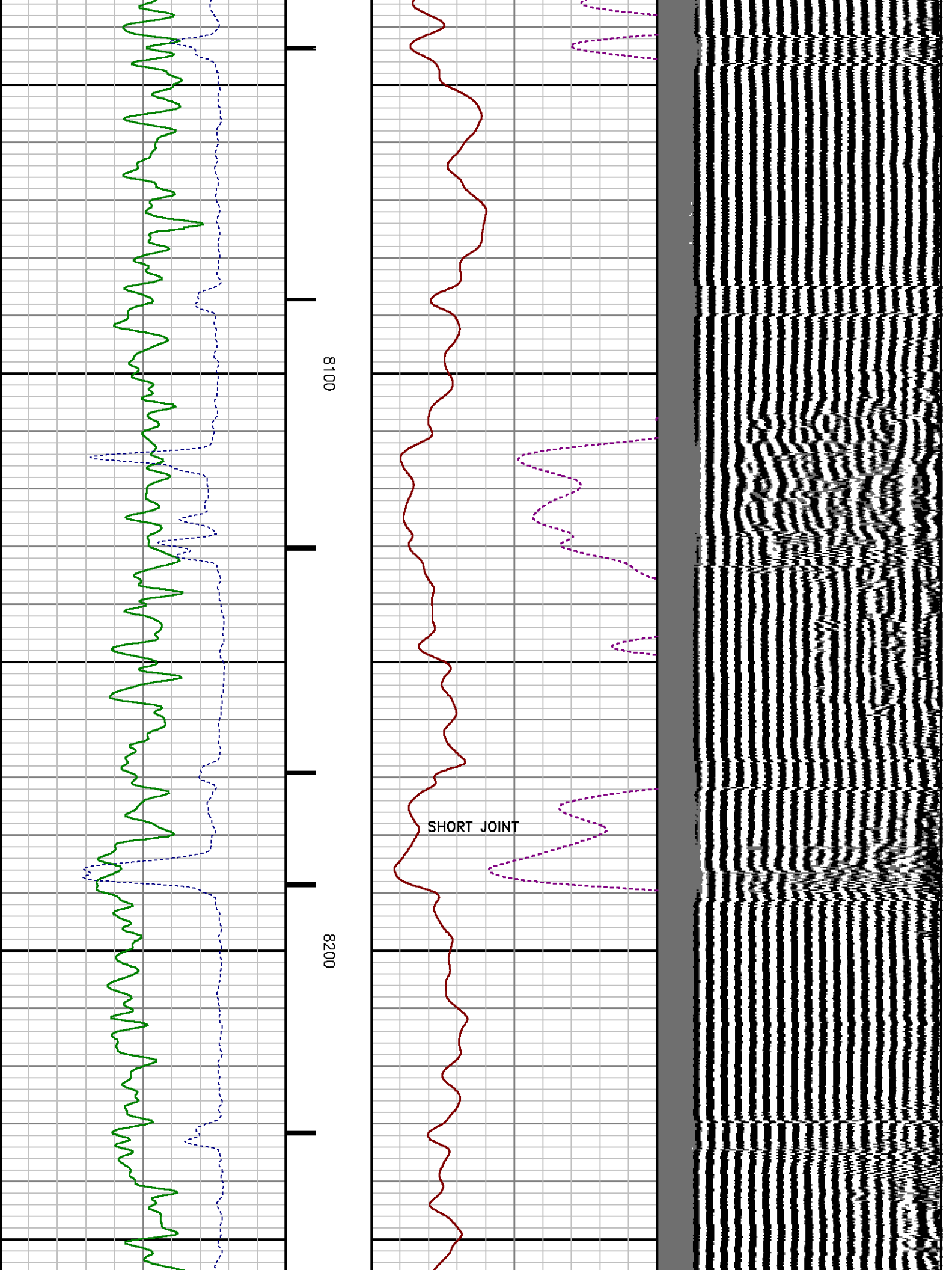


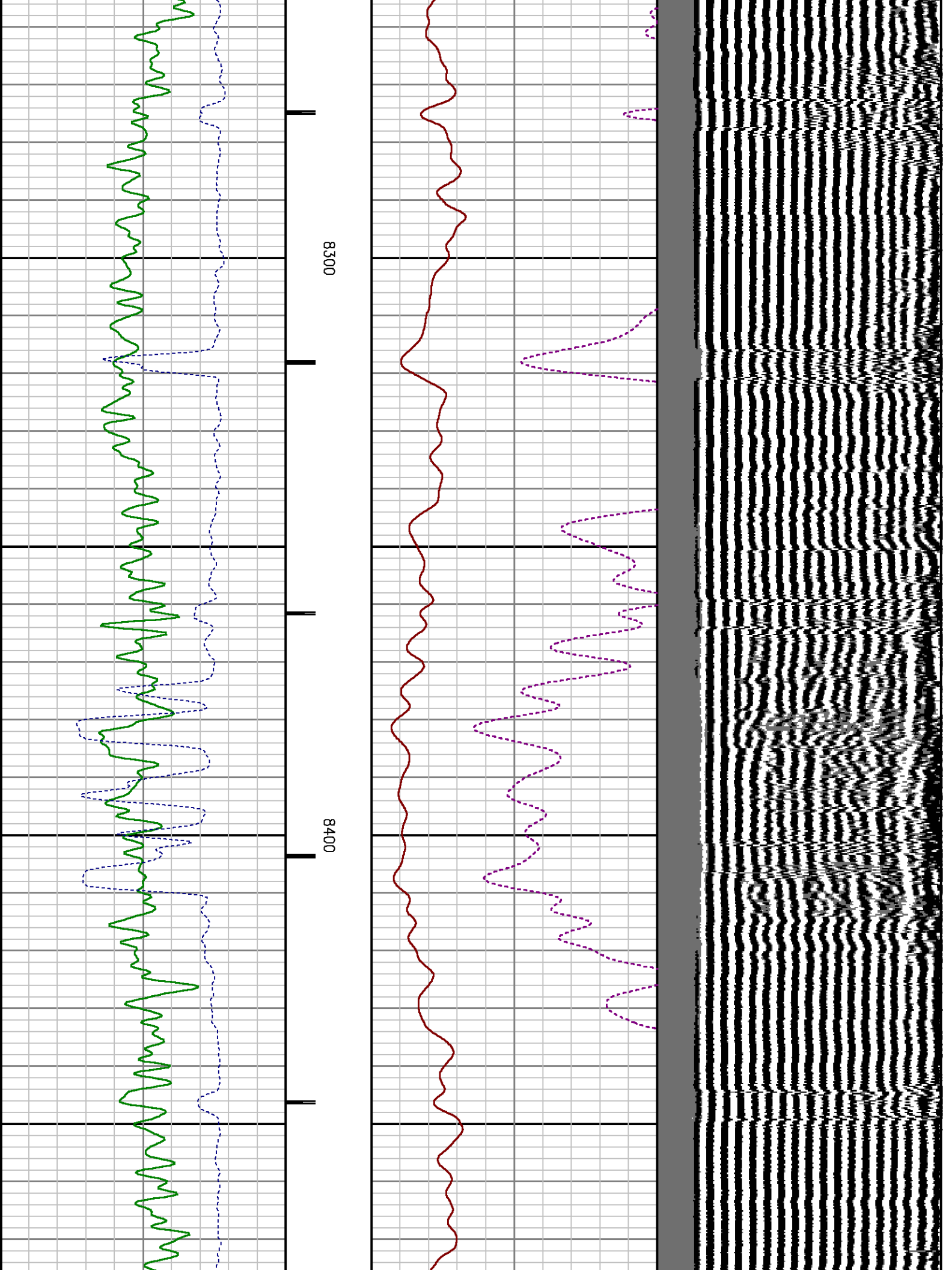




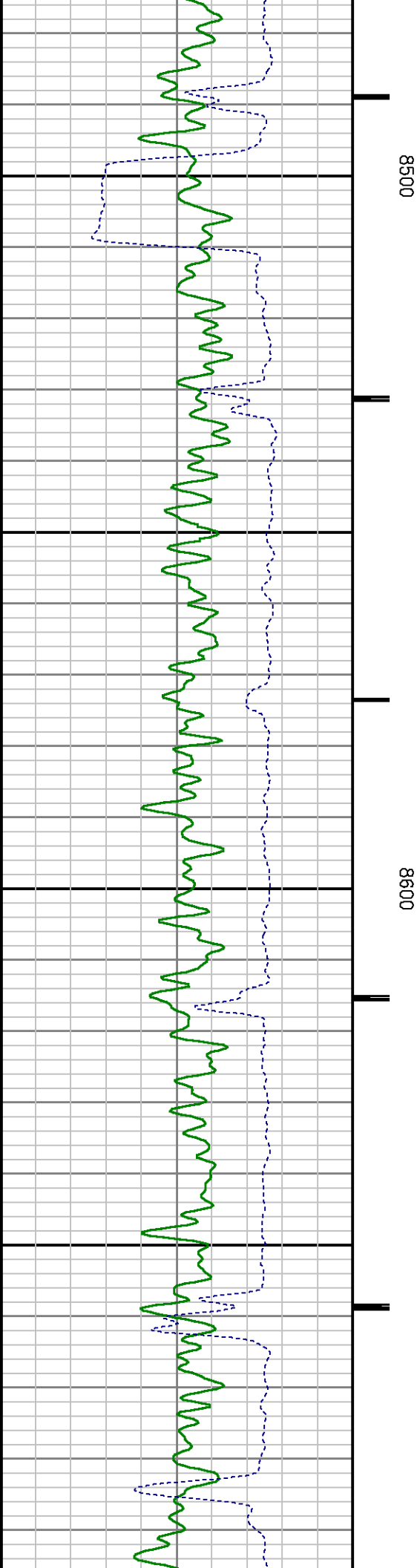
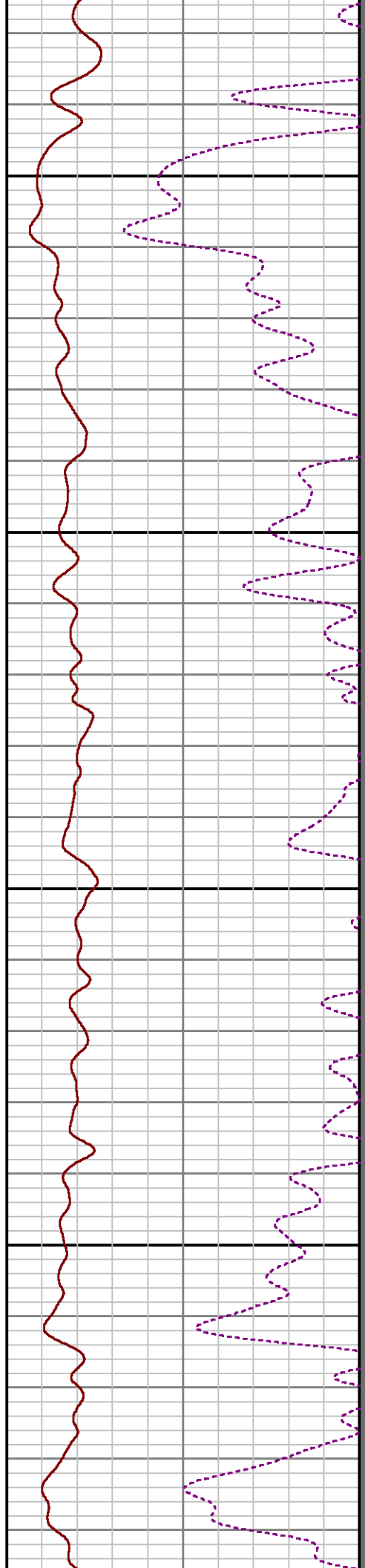
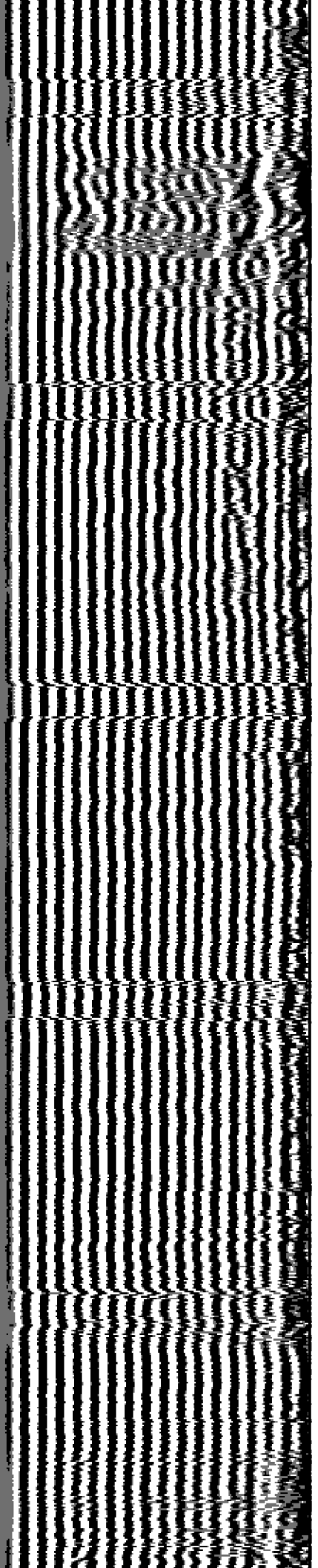




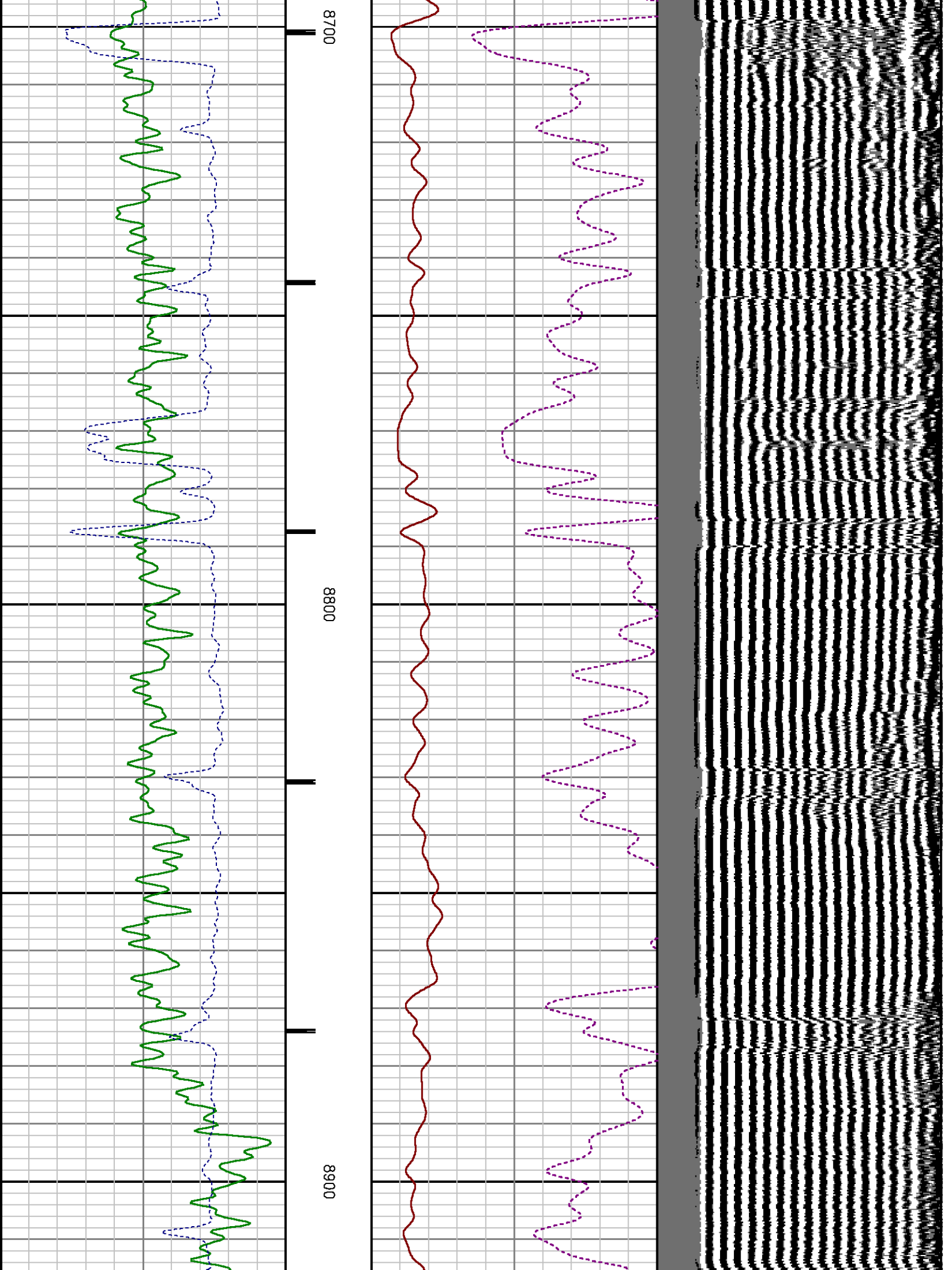


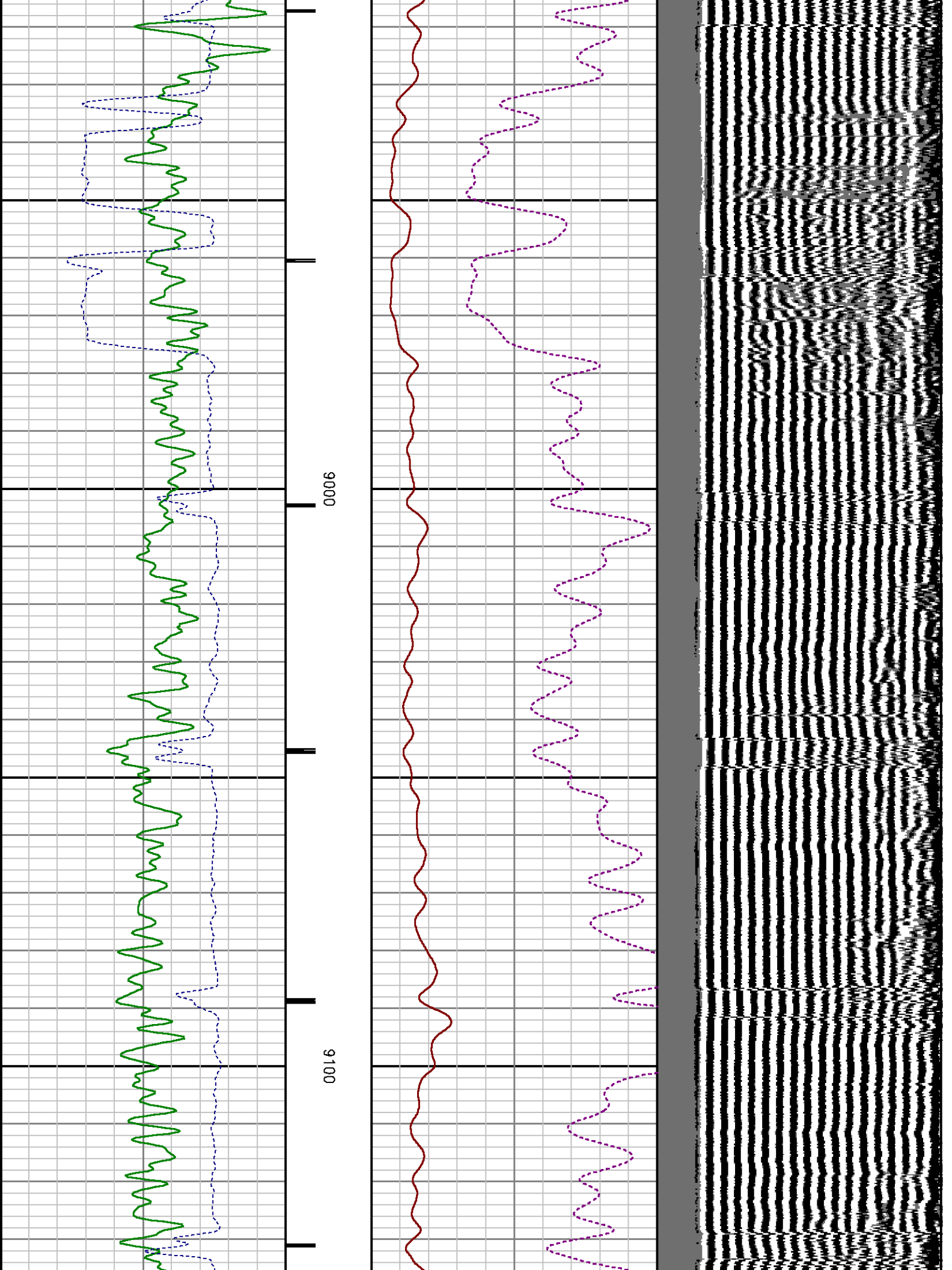


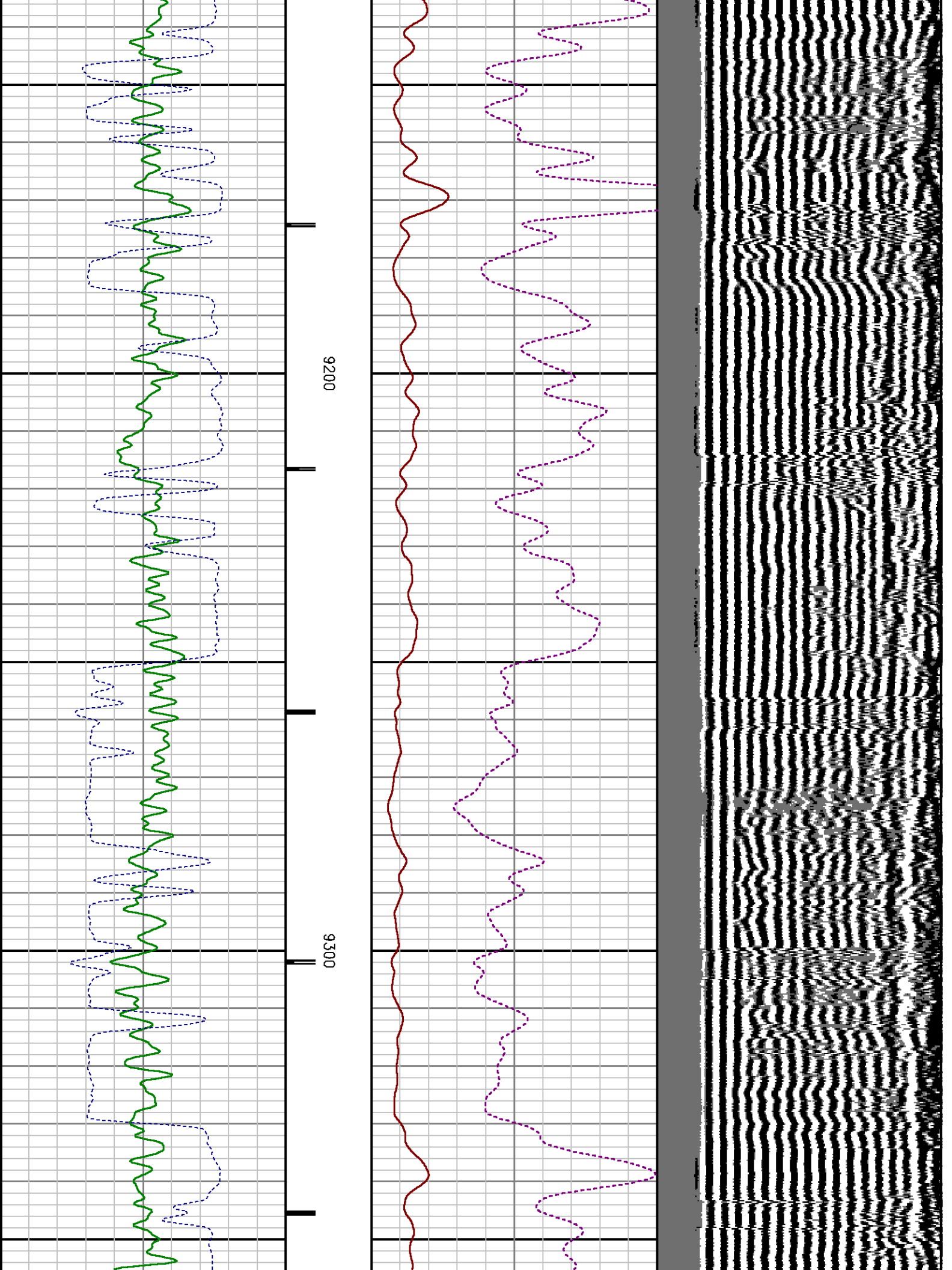


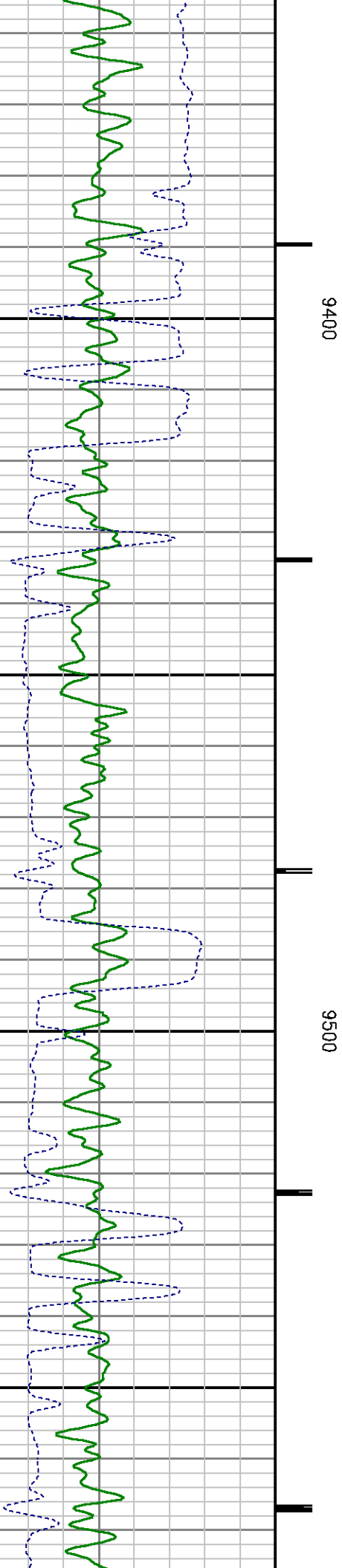
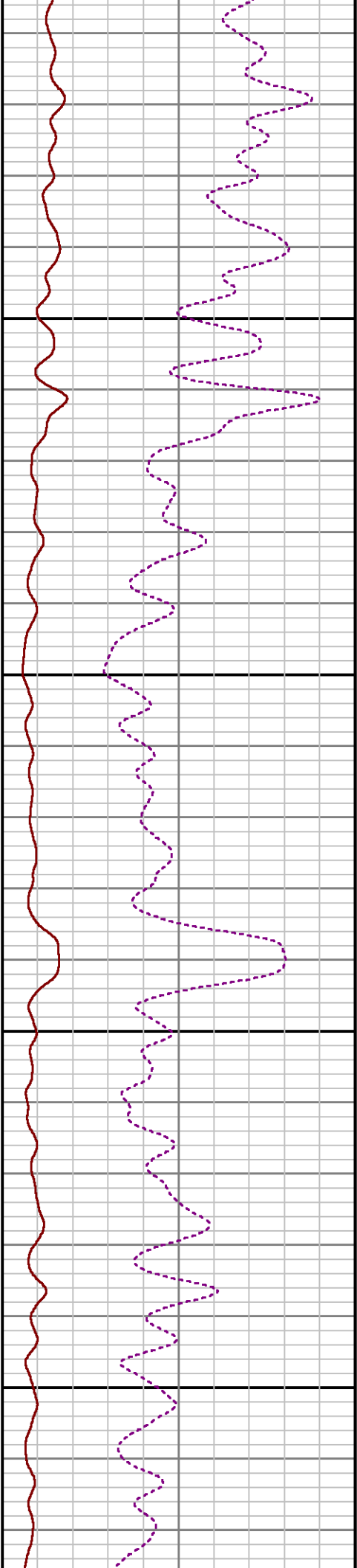
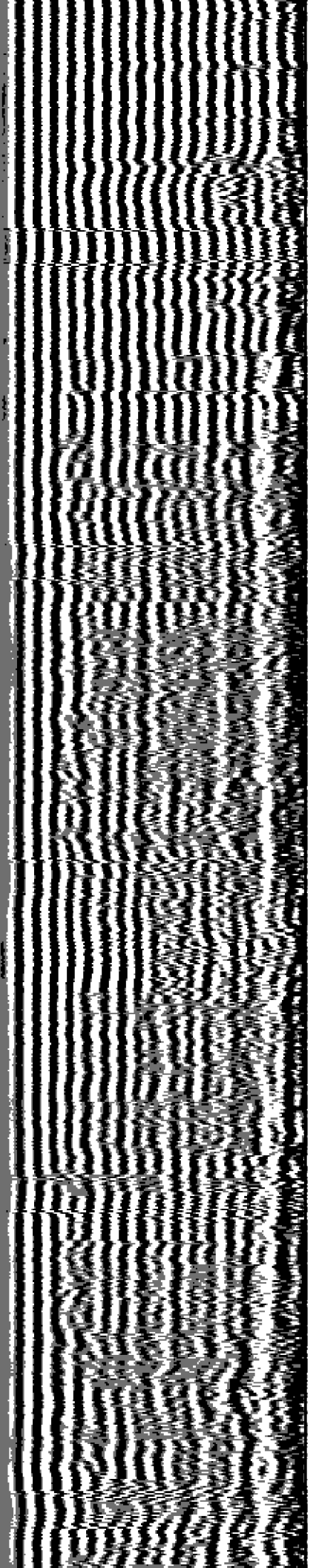


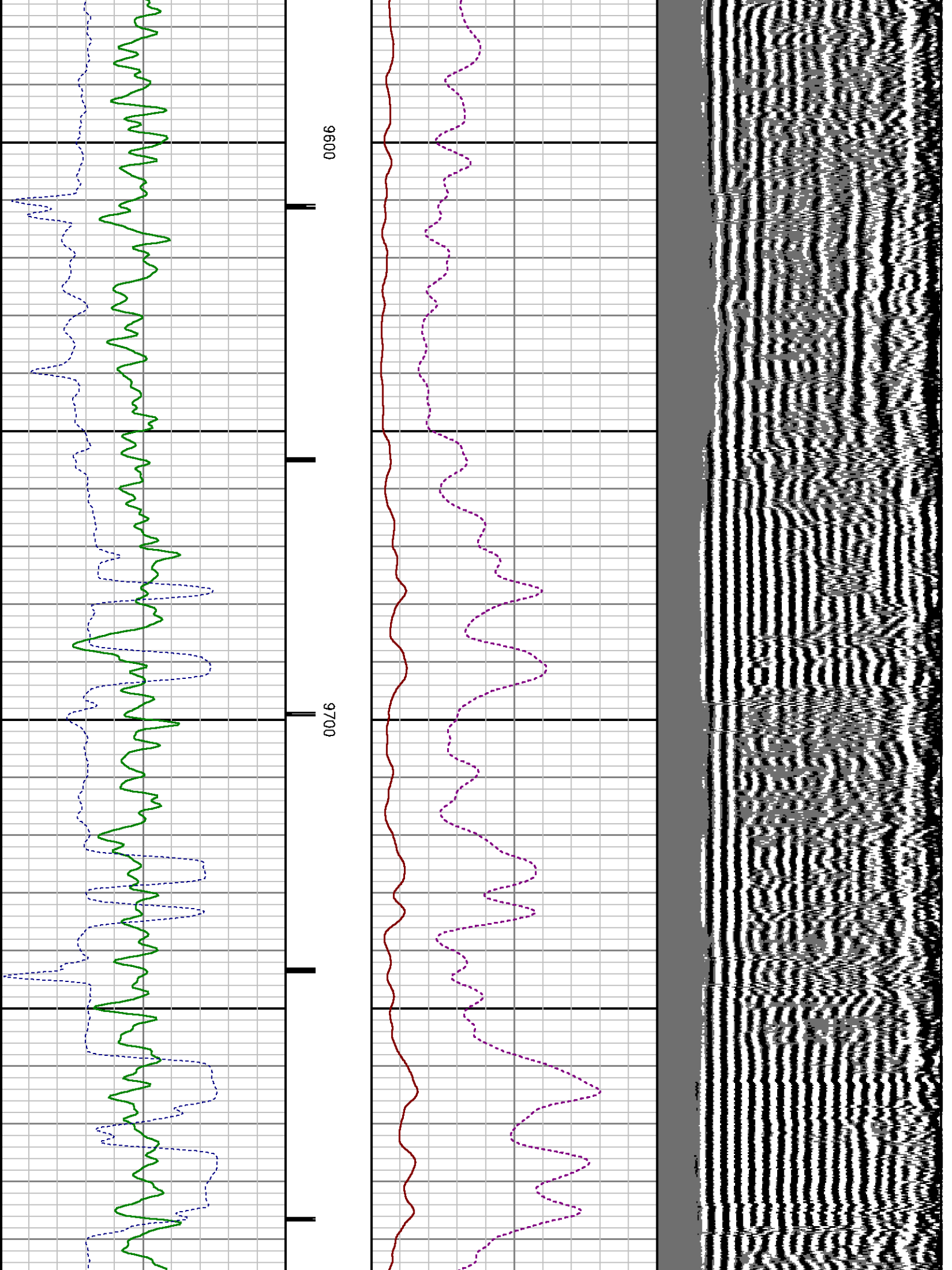




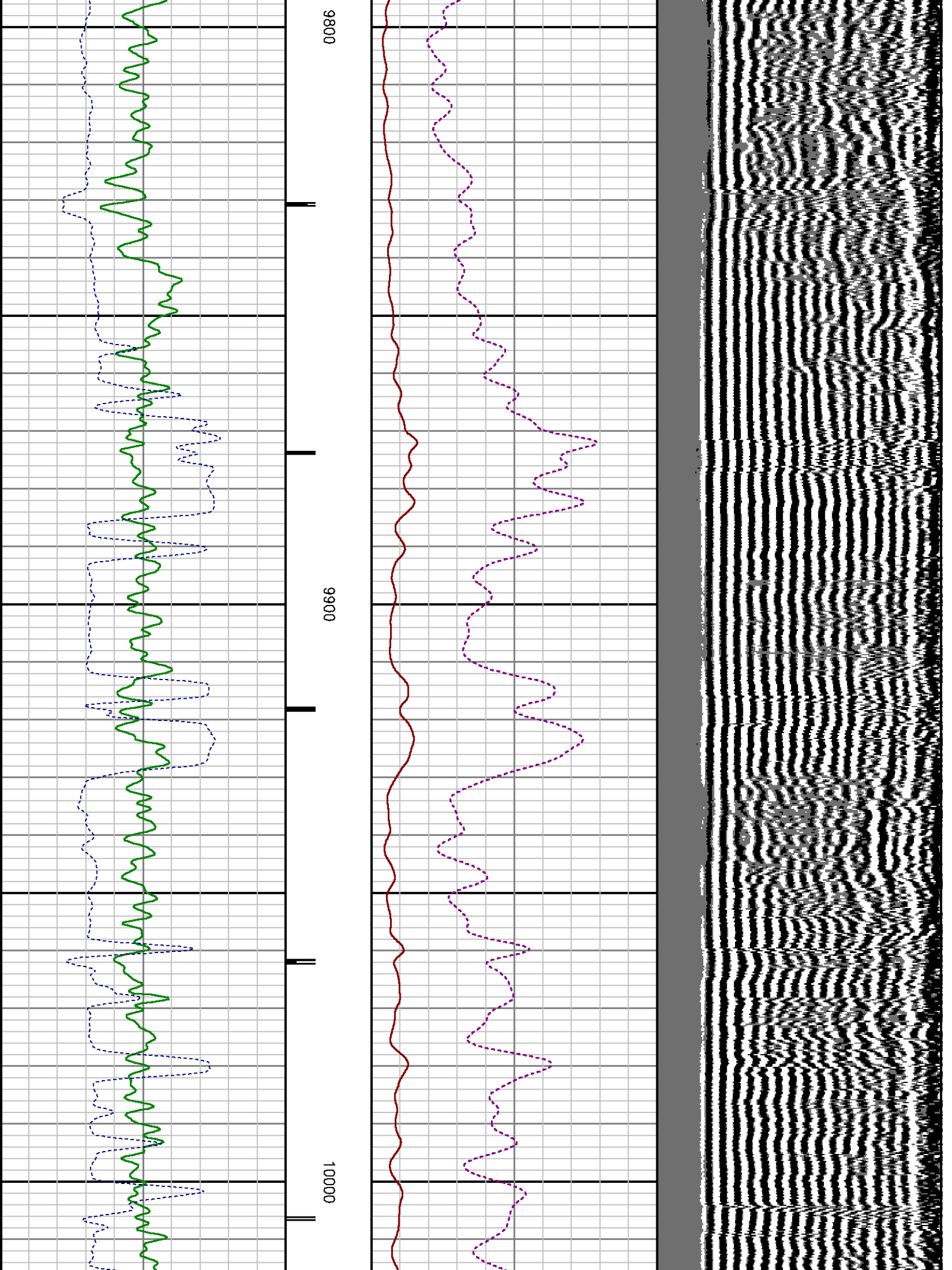




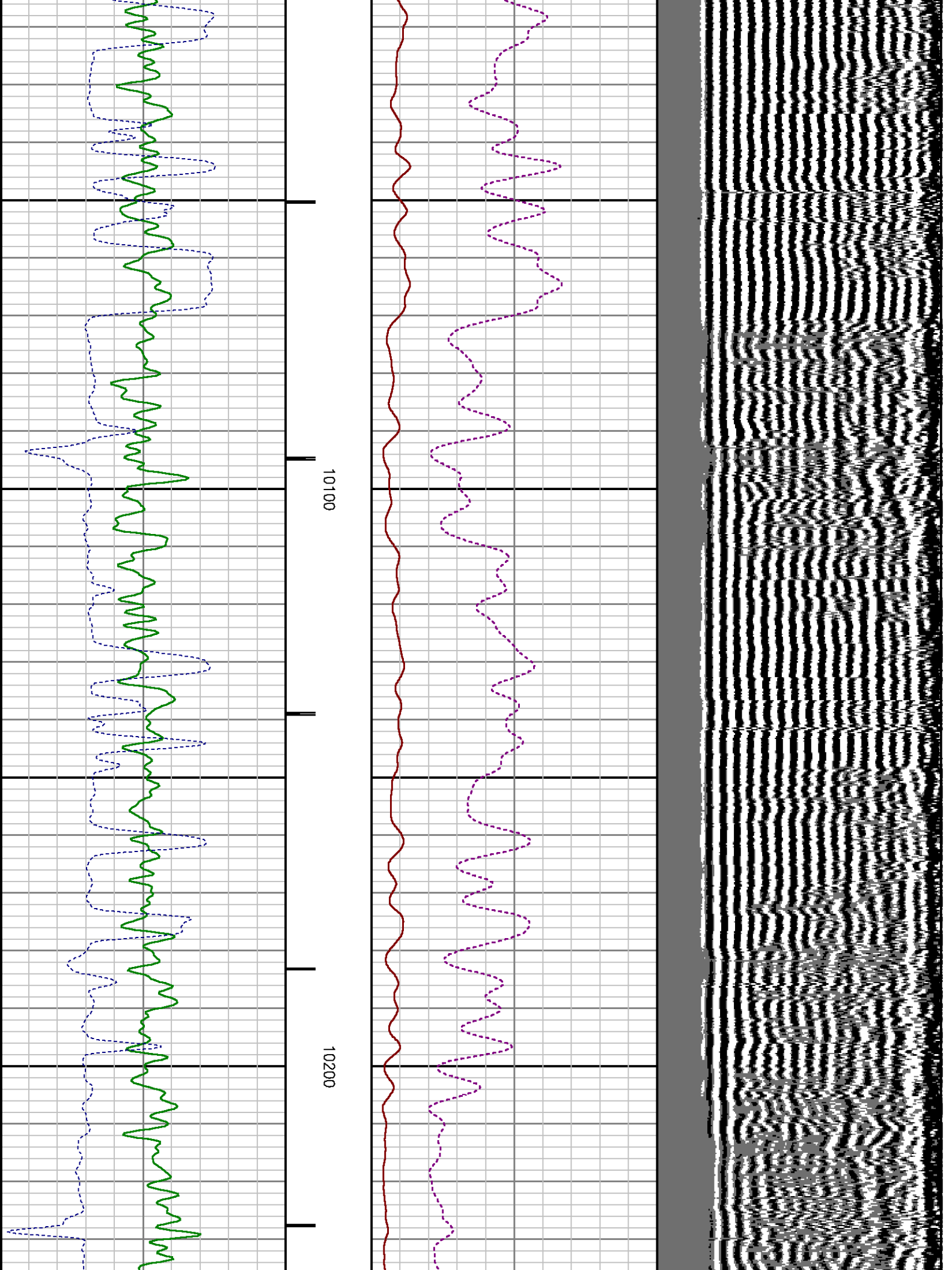


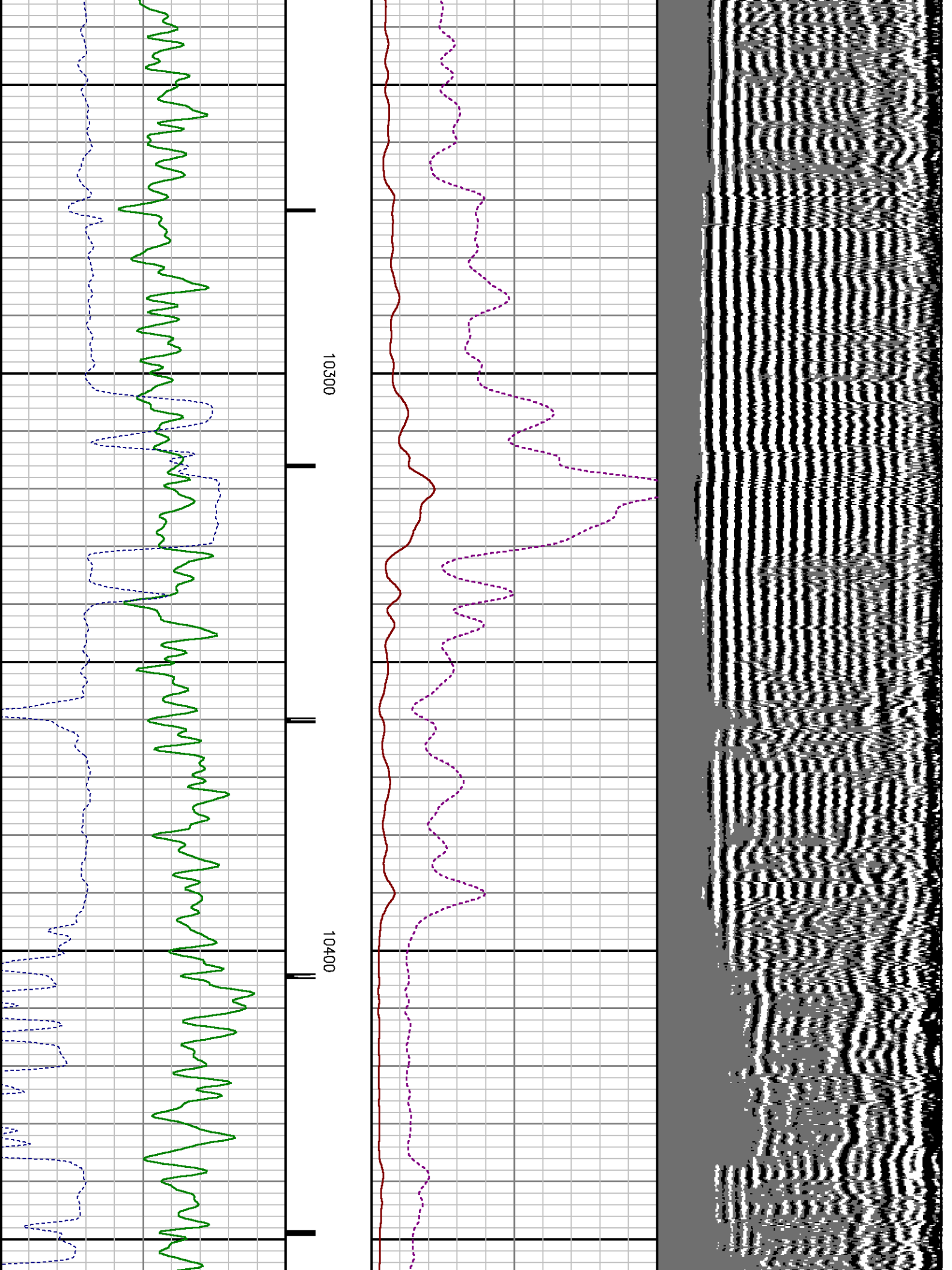


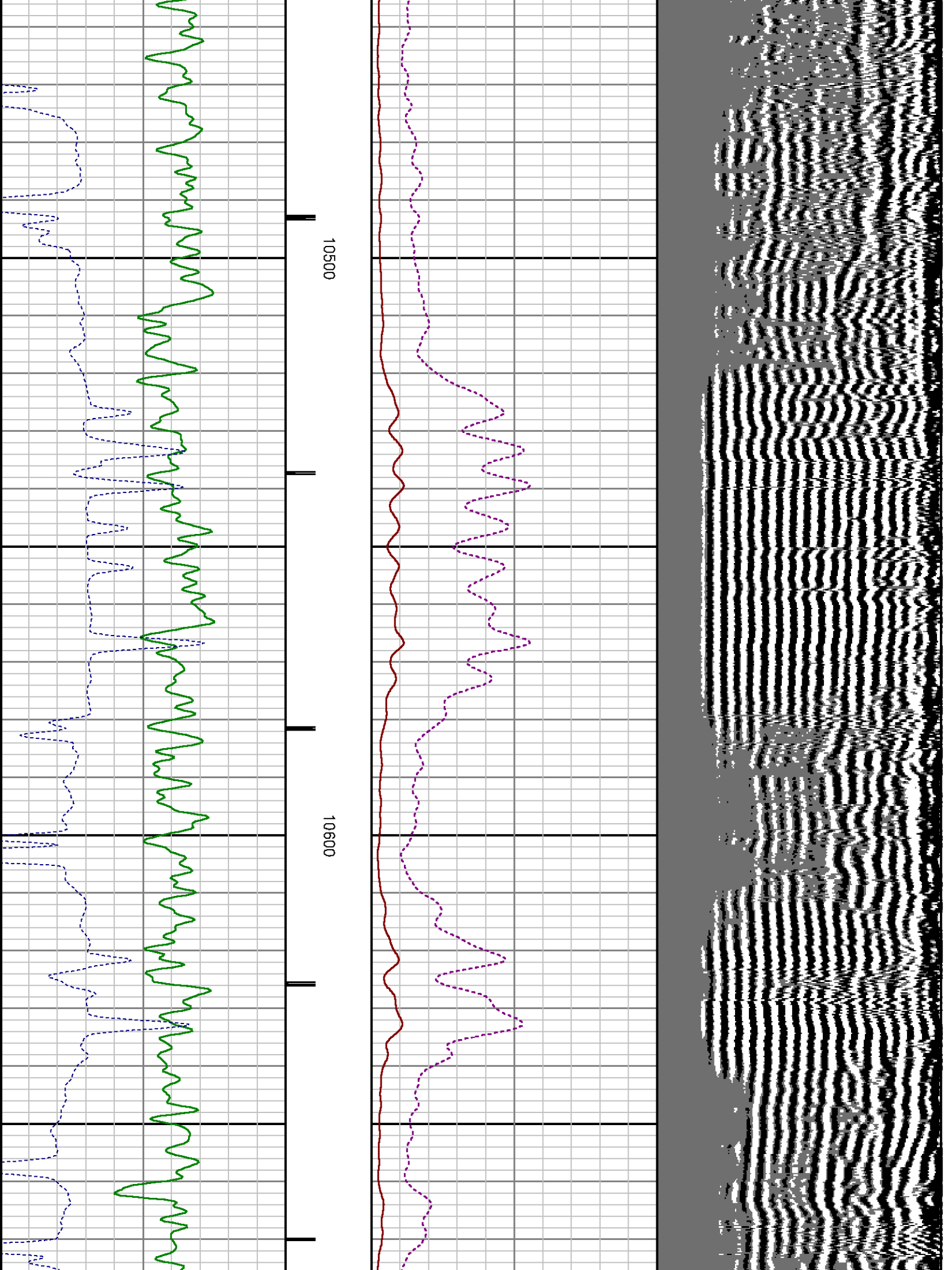


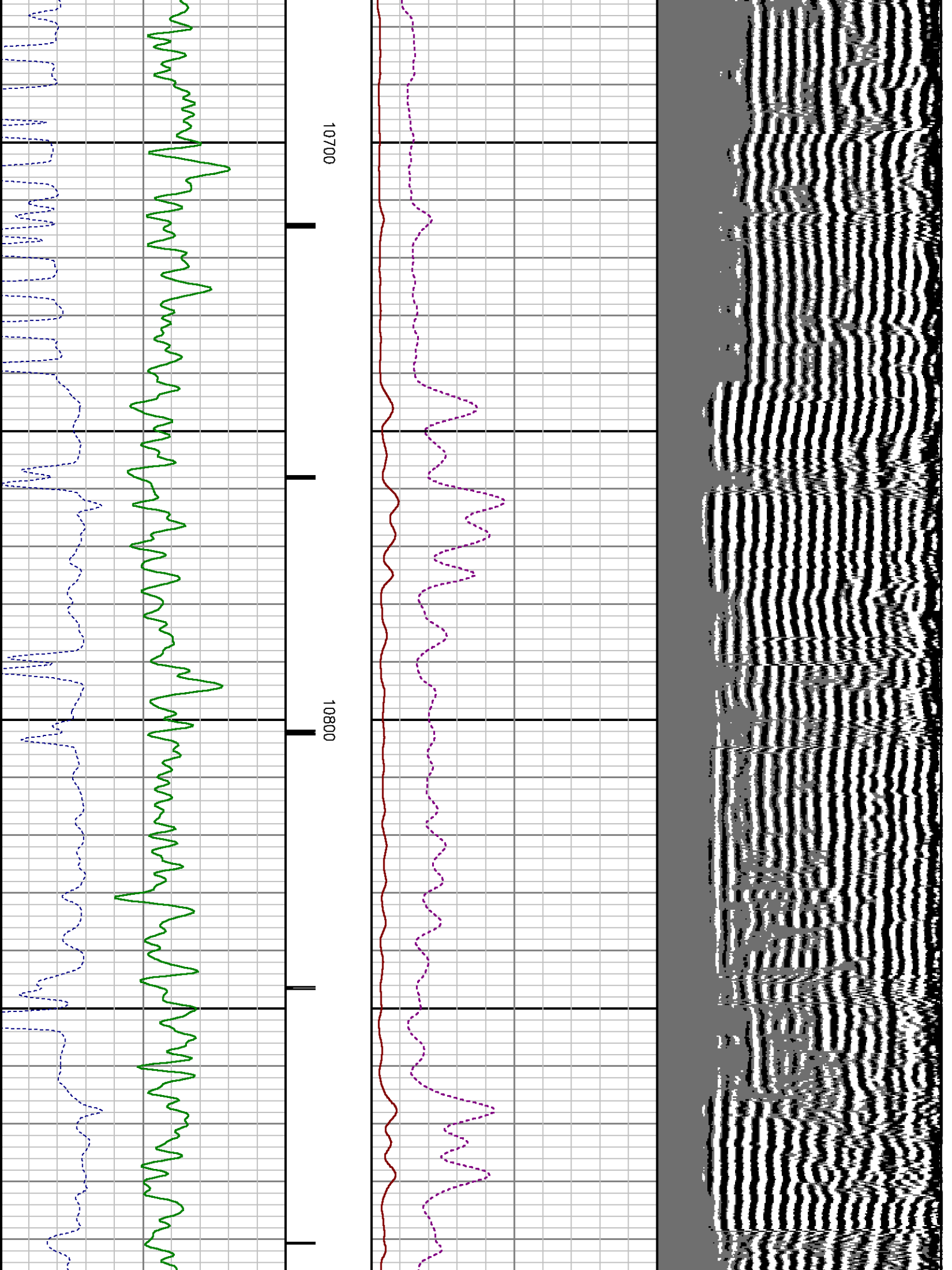


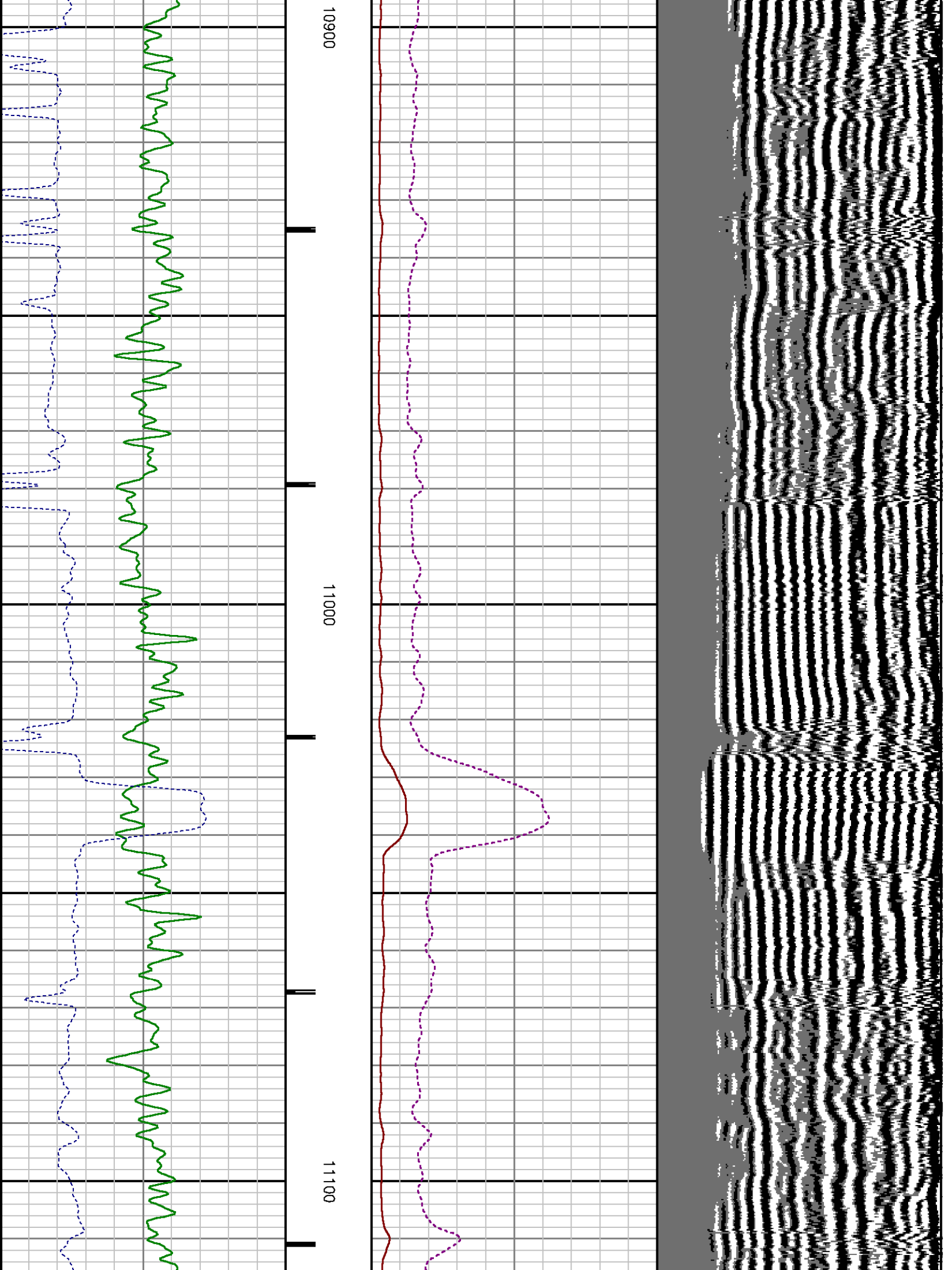




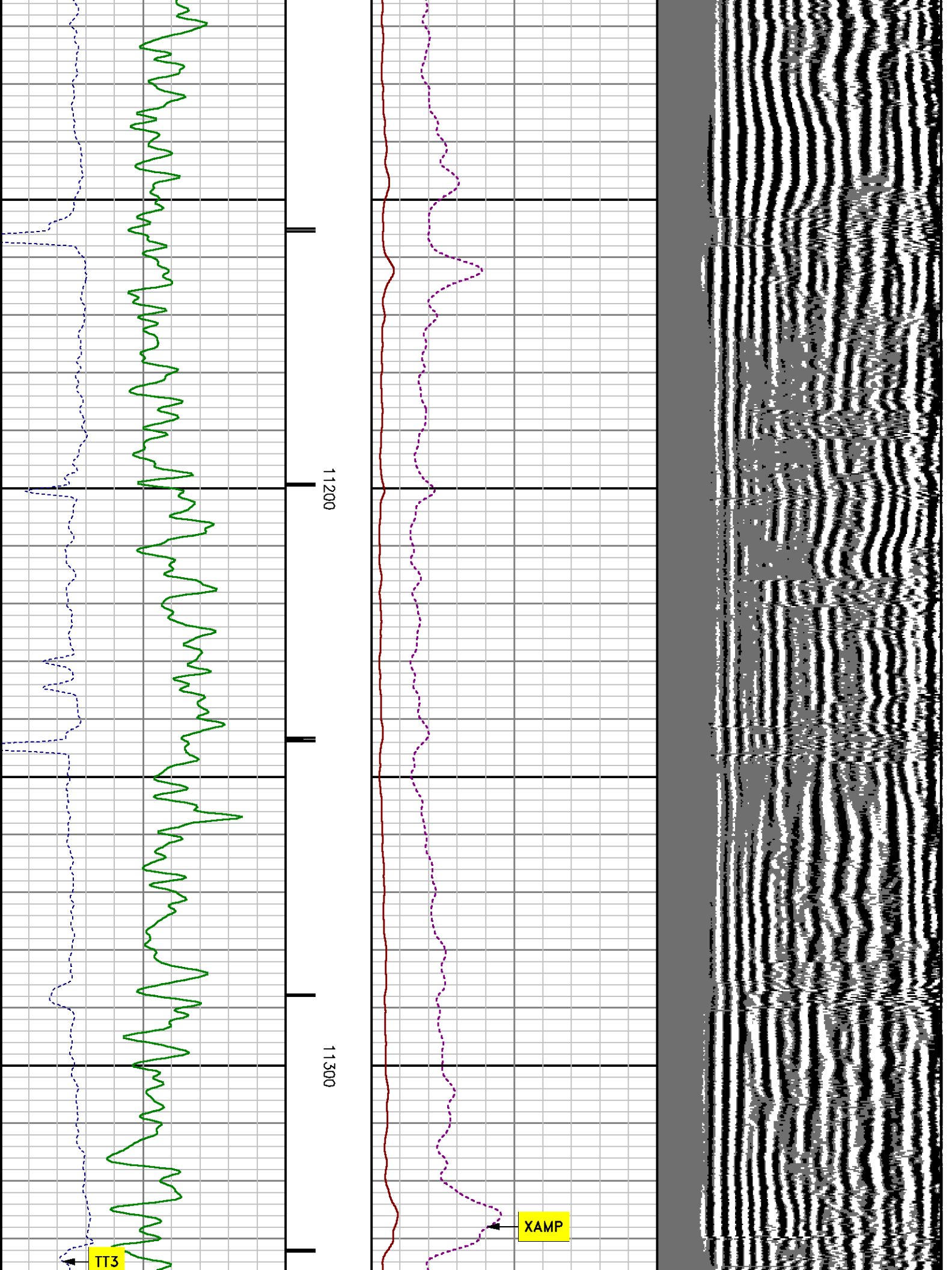




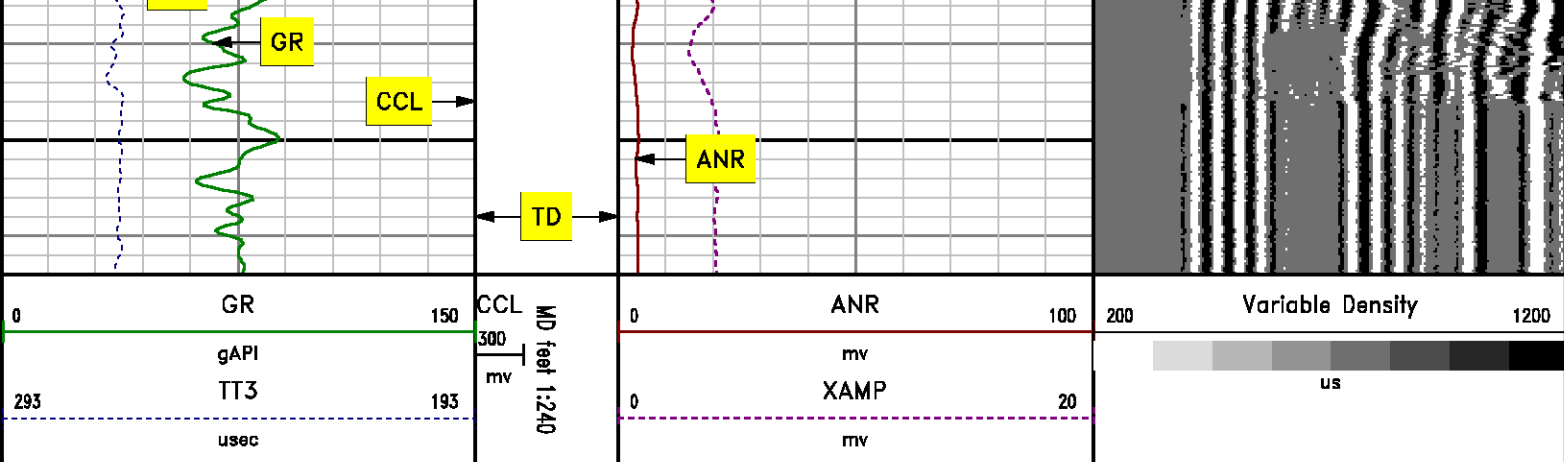












# **MAIN LOG** **SECONDARY PRESENTATION** **0 PSI**

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	318.745	usec	17.905	11386.000
RAL	Amp Gate Start Near	212.952	usec	17.905	11386.000
RAL	Amp Gate Start Radial	212.952	usec	17.905	11386.000
RAL	Amp Gate Width Far	25.000	usec	17.905	11386.000
RAL	Amp Gate Width Near	25.000	usec	17.905	11386.000
RAL	Amp Gate Width Radial	25.000	usec	17.905	11386.000
RAL	casing od	5.500	inches	17.905	11386.000
RAL	casing wt	20.000	lbm/ft	17.905	11386.000
RAL	FB Start Far	304.461	usec	17.905	11386.000
RAL	FB Start Near	187.952	usec	17.905	11386.000
RAL	FB Start Radial	187.952	usec	17.905	11386.000
RAL	FB Thresh Far	15.000	mv	17.905	11386.000
RAL	FB Thresh Near	10.000	mv	17.905	11386.000
RAL	FB Thresh Radial	10.000	mv	17.905	11386.000
RAL	Fluid Travel Time	200.000	usec/ft	17.905	11386.000

DEPTH OFFSETS

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
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		AR5	AR6	AR7	AR8	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-13.050	AFAR	SIG	TT5			
2459XA	-11.340	CCL					
2459XA	-9.490	GR					
2459XA	-4.090	NEU					

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

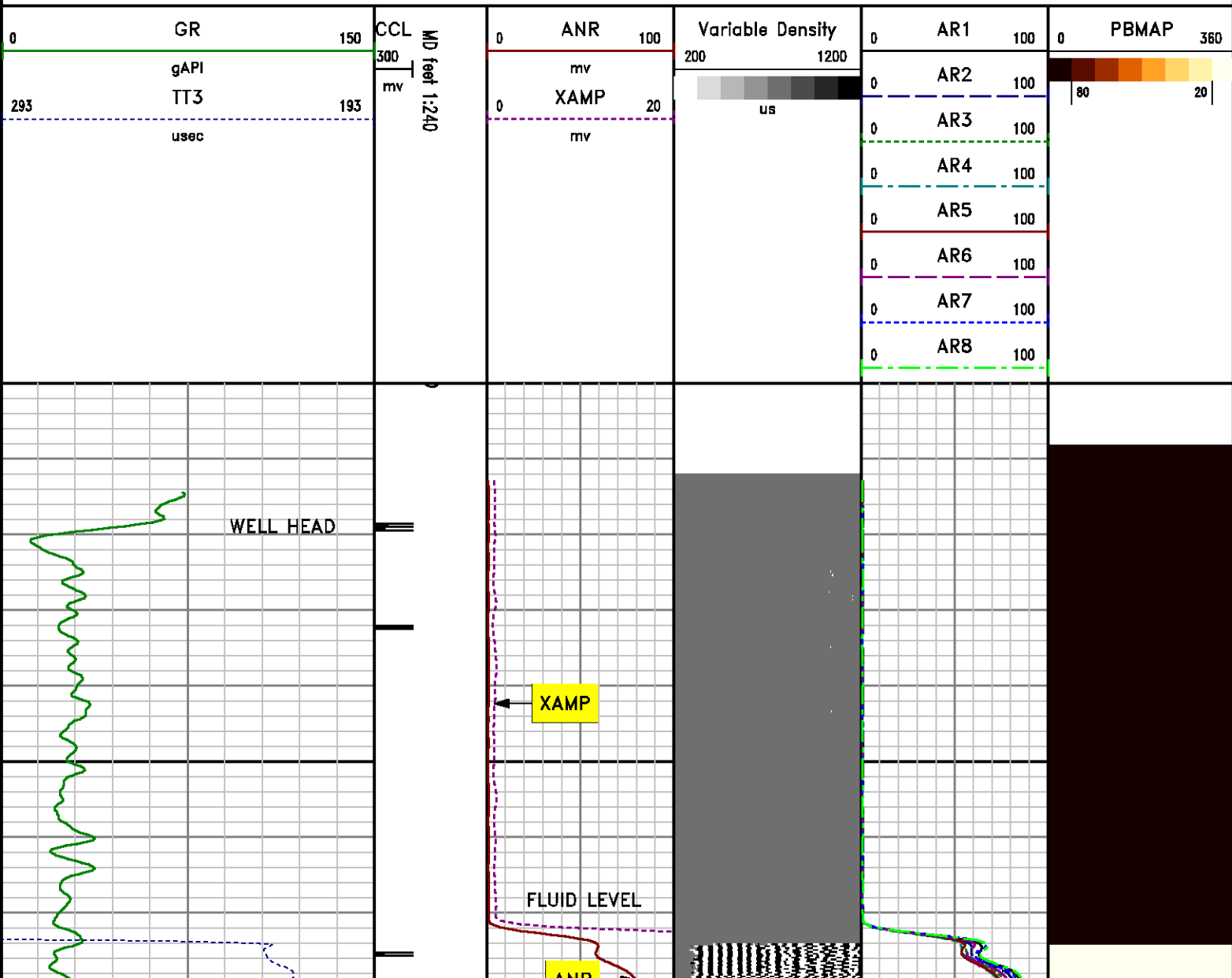
Well : FEDERAL GM 743-4

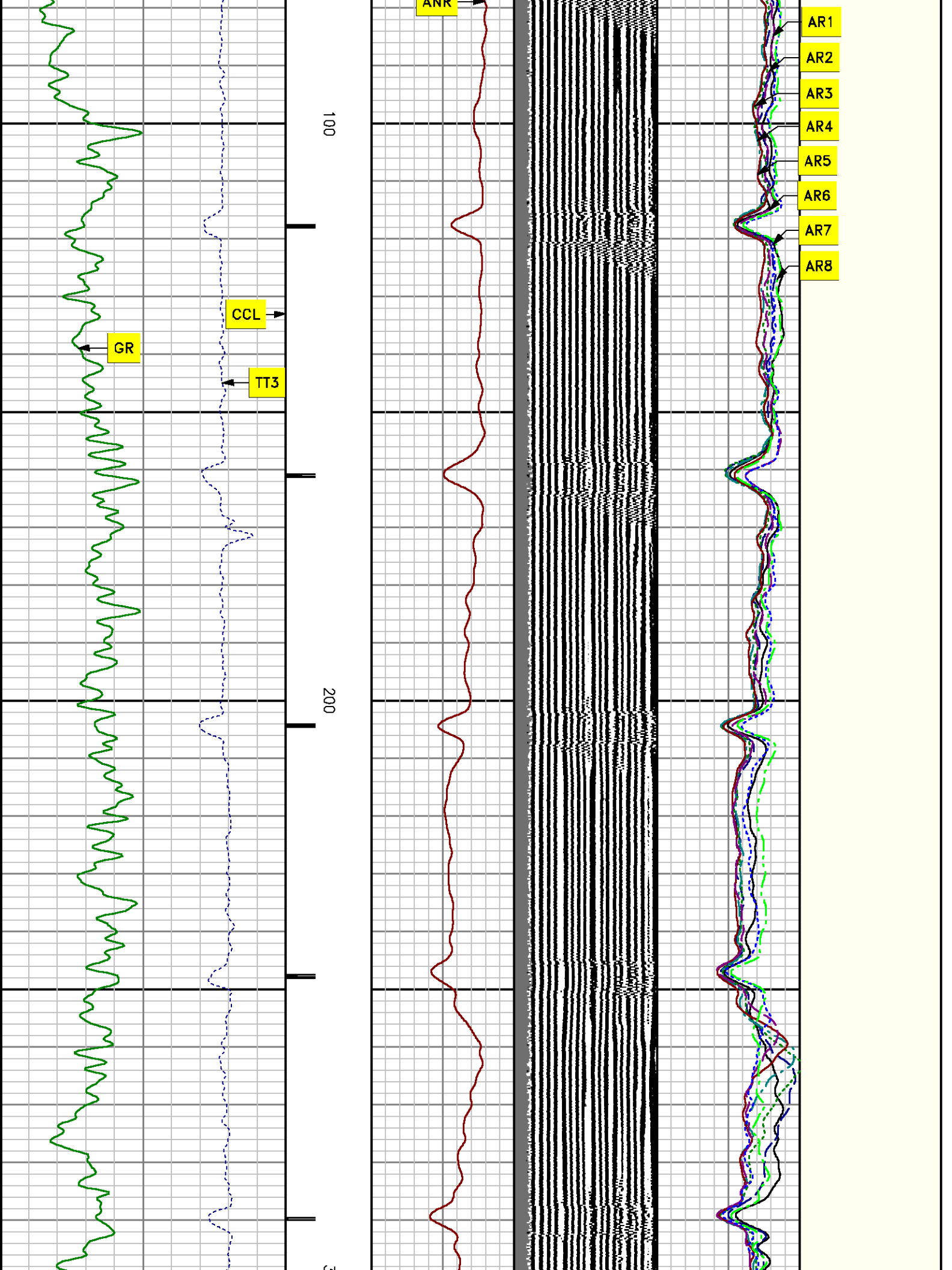
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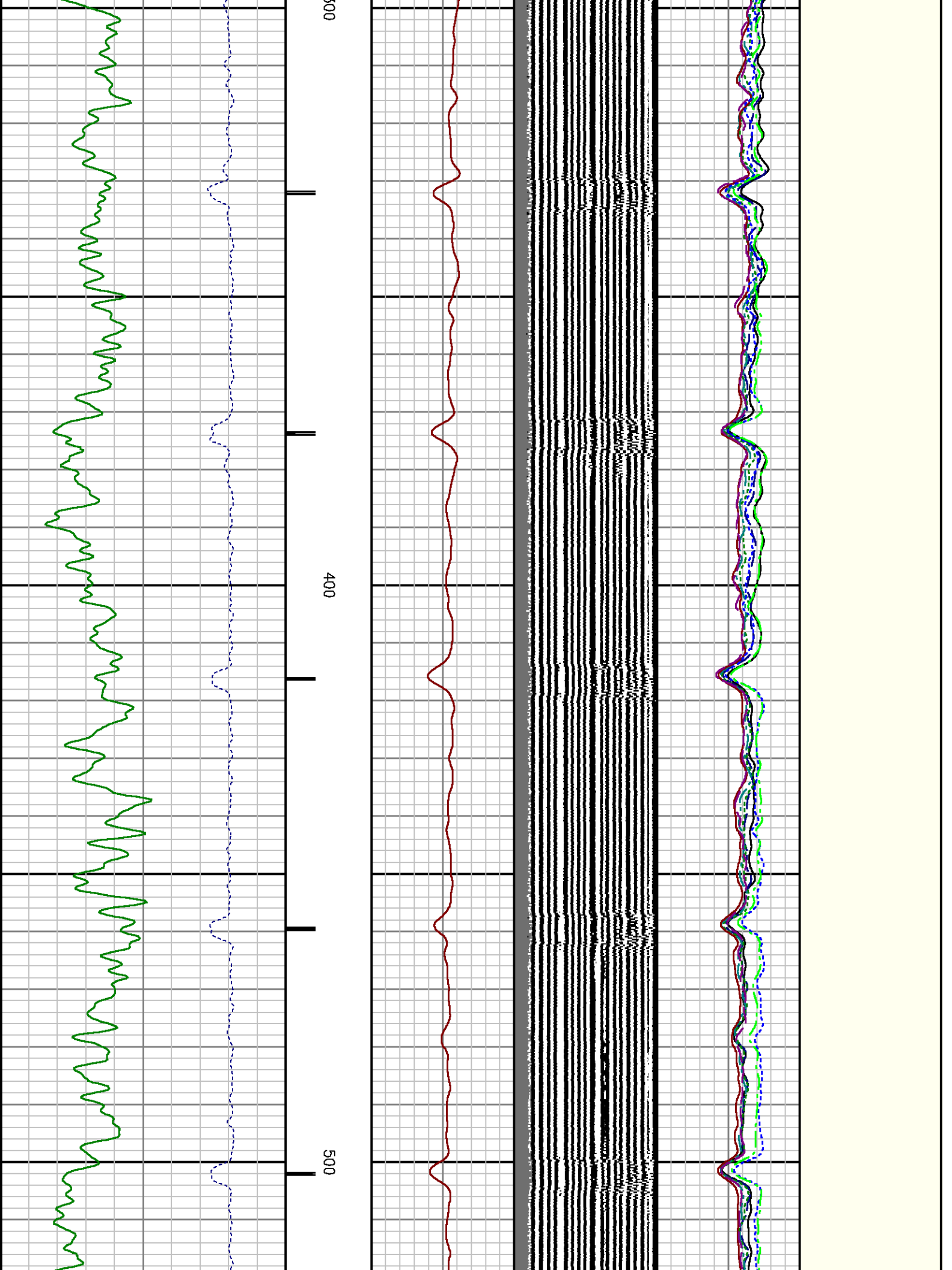
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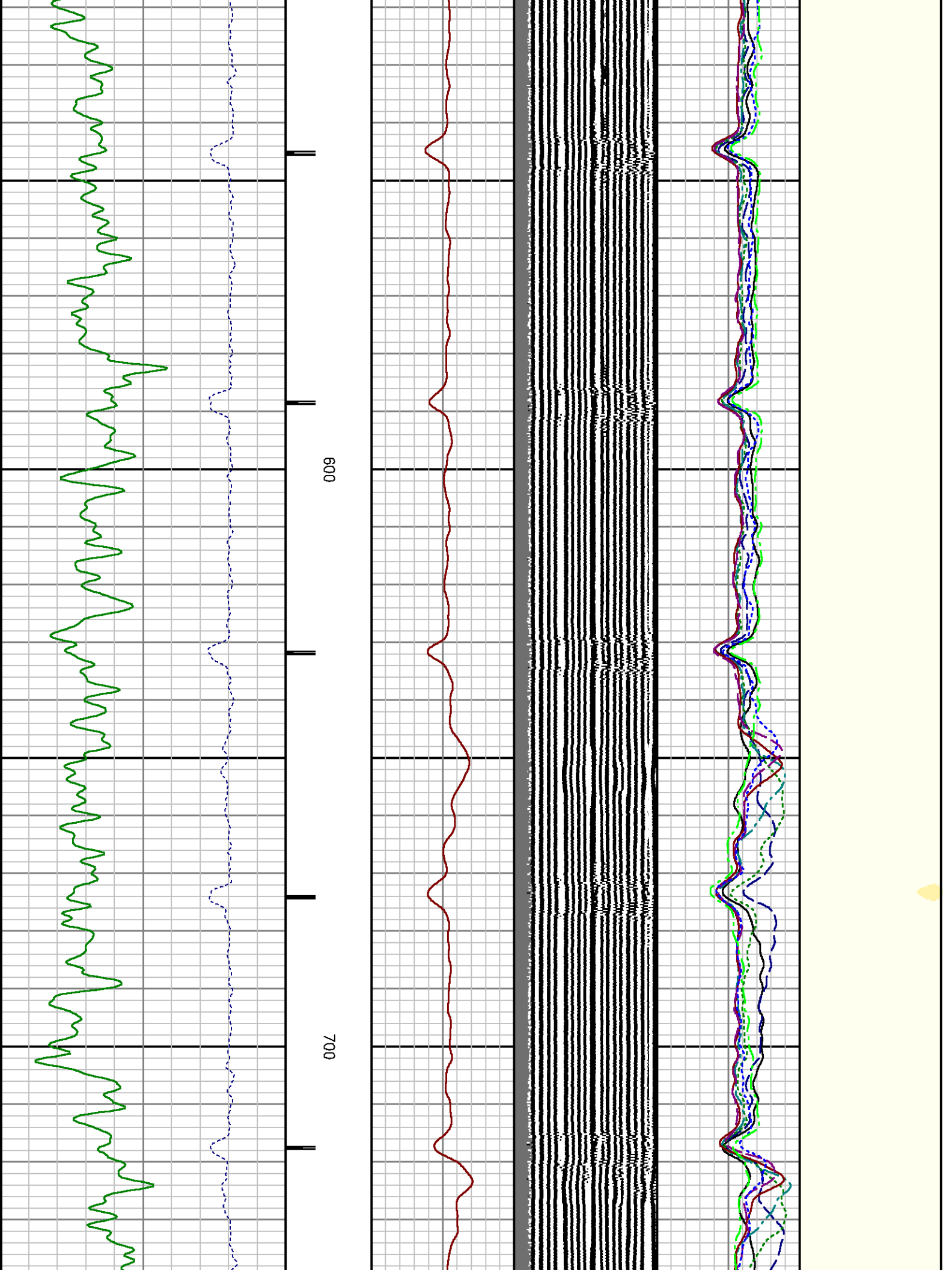
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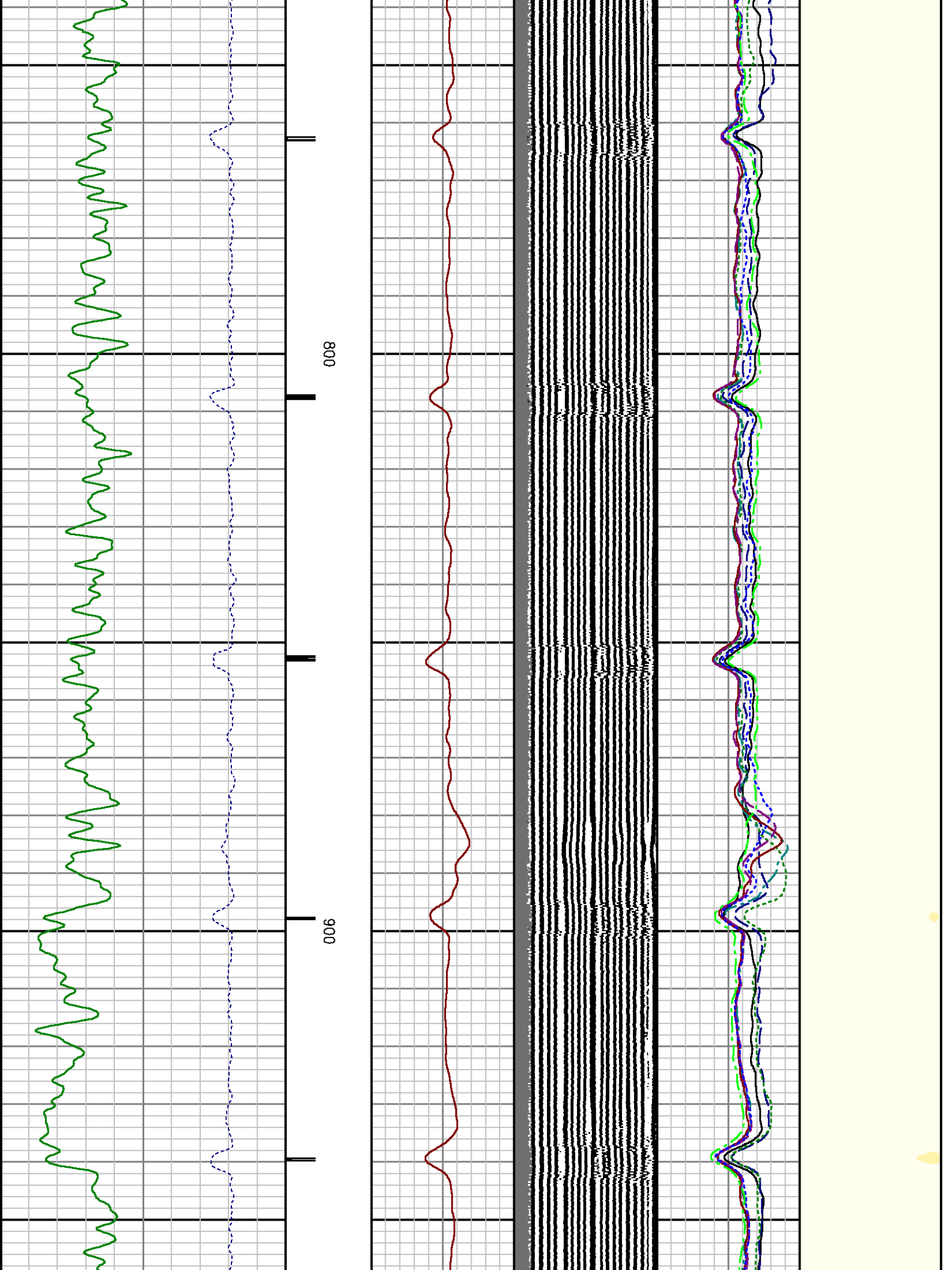
Created : 10/18/2011 4:15:57 PM



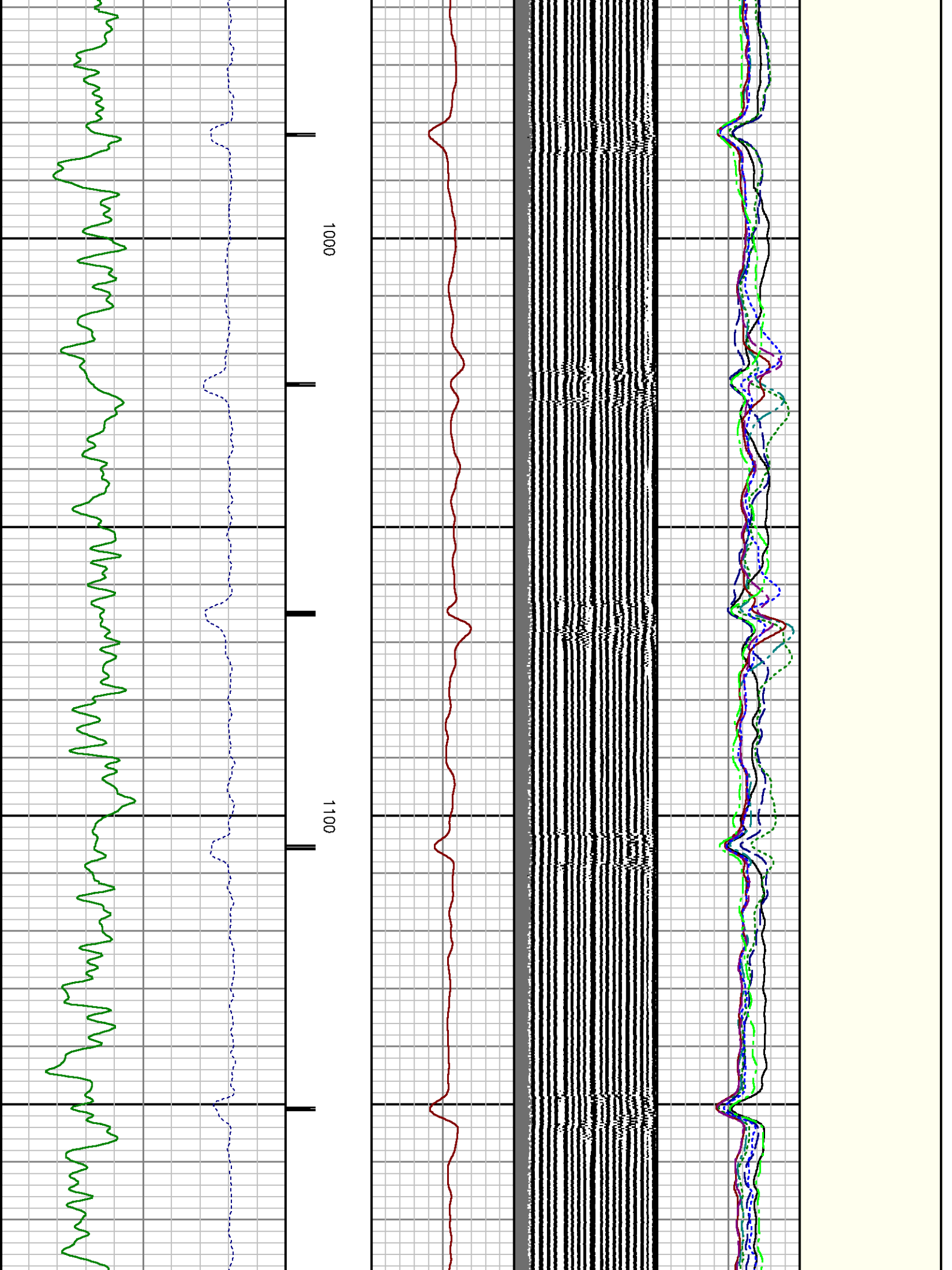


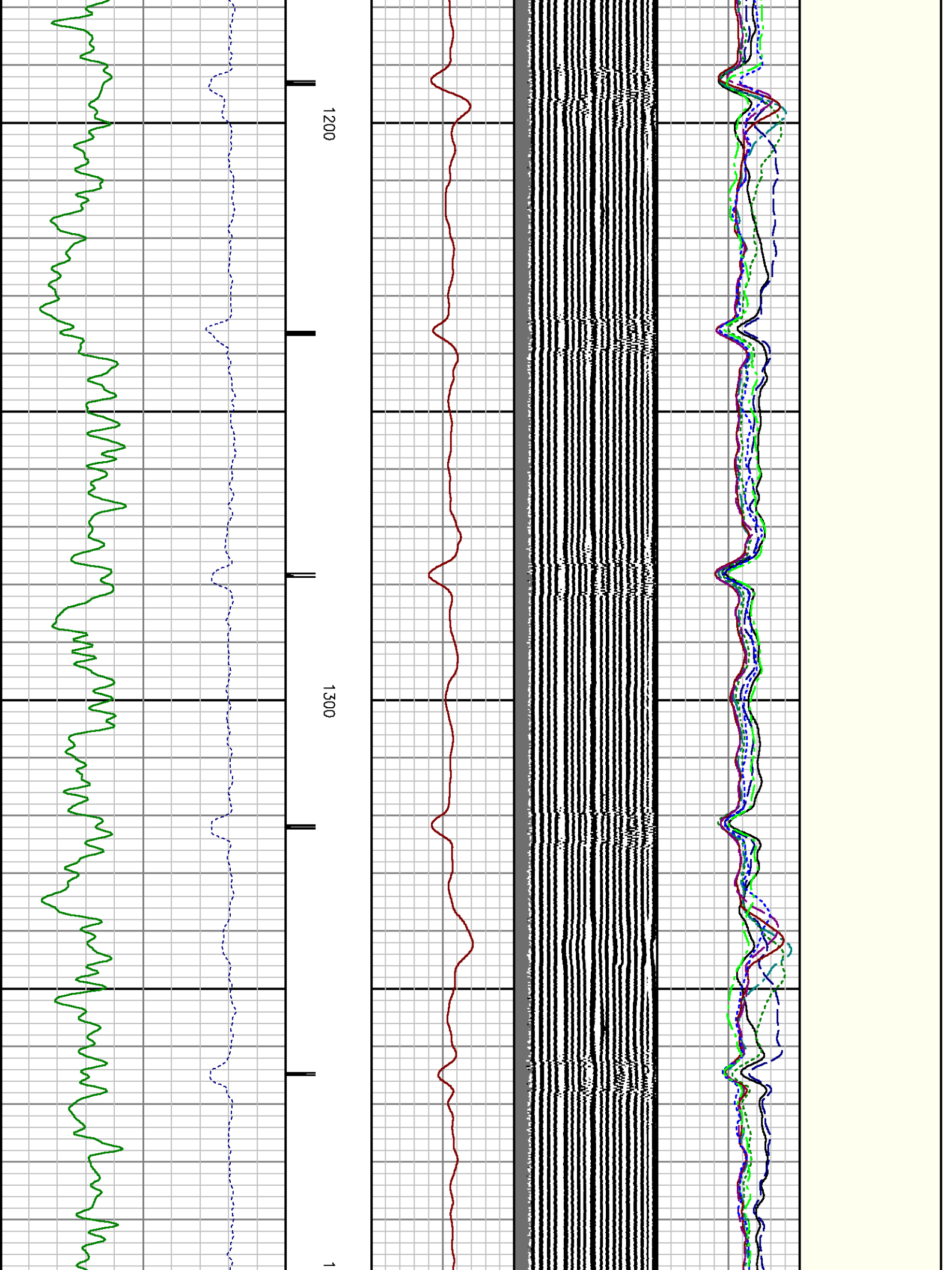


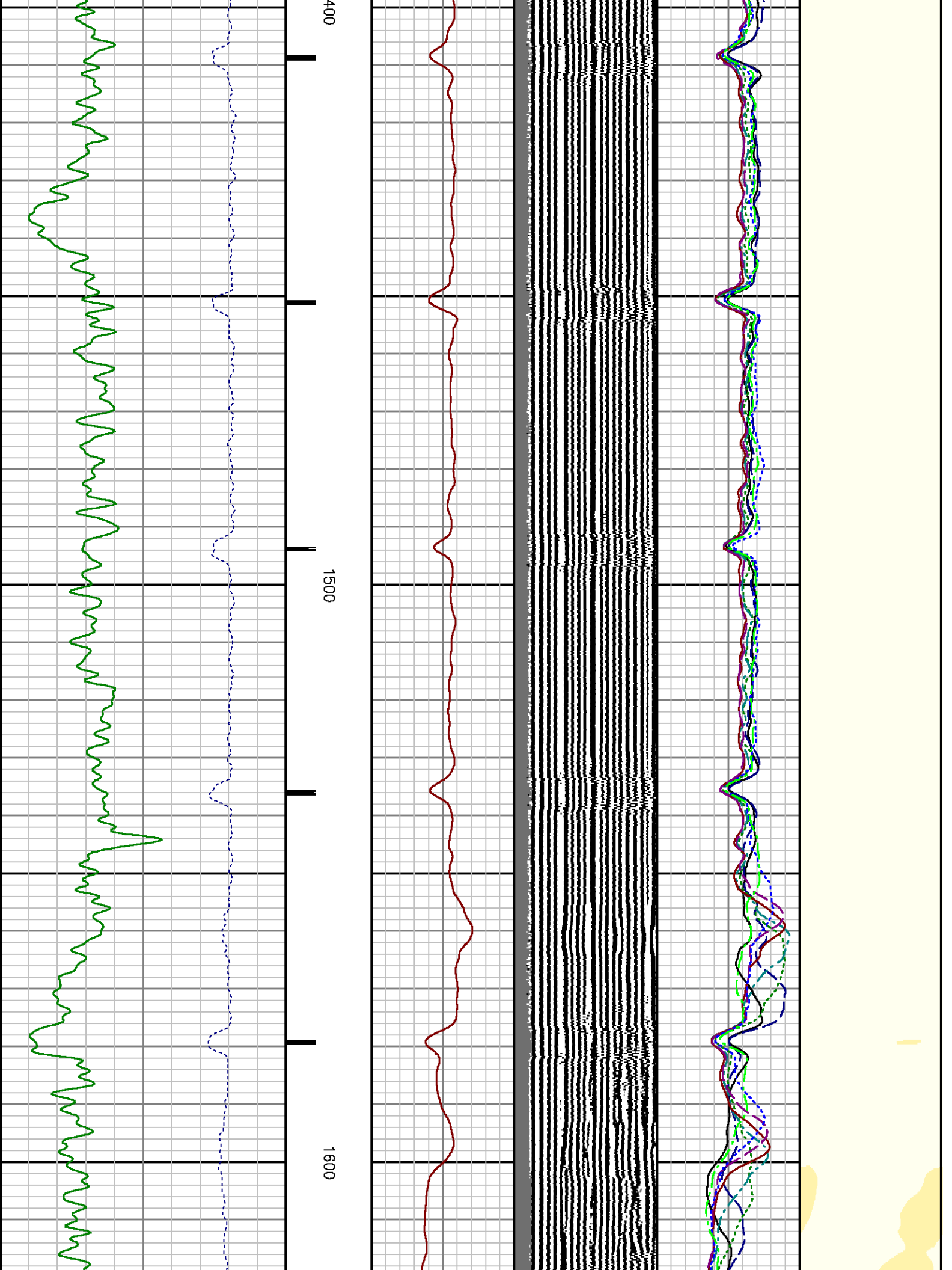


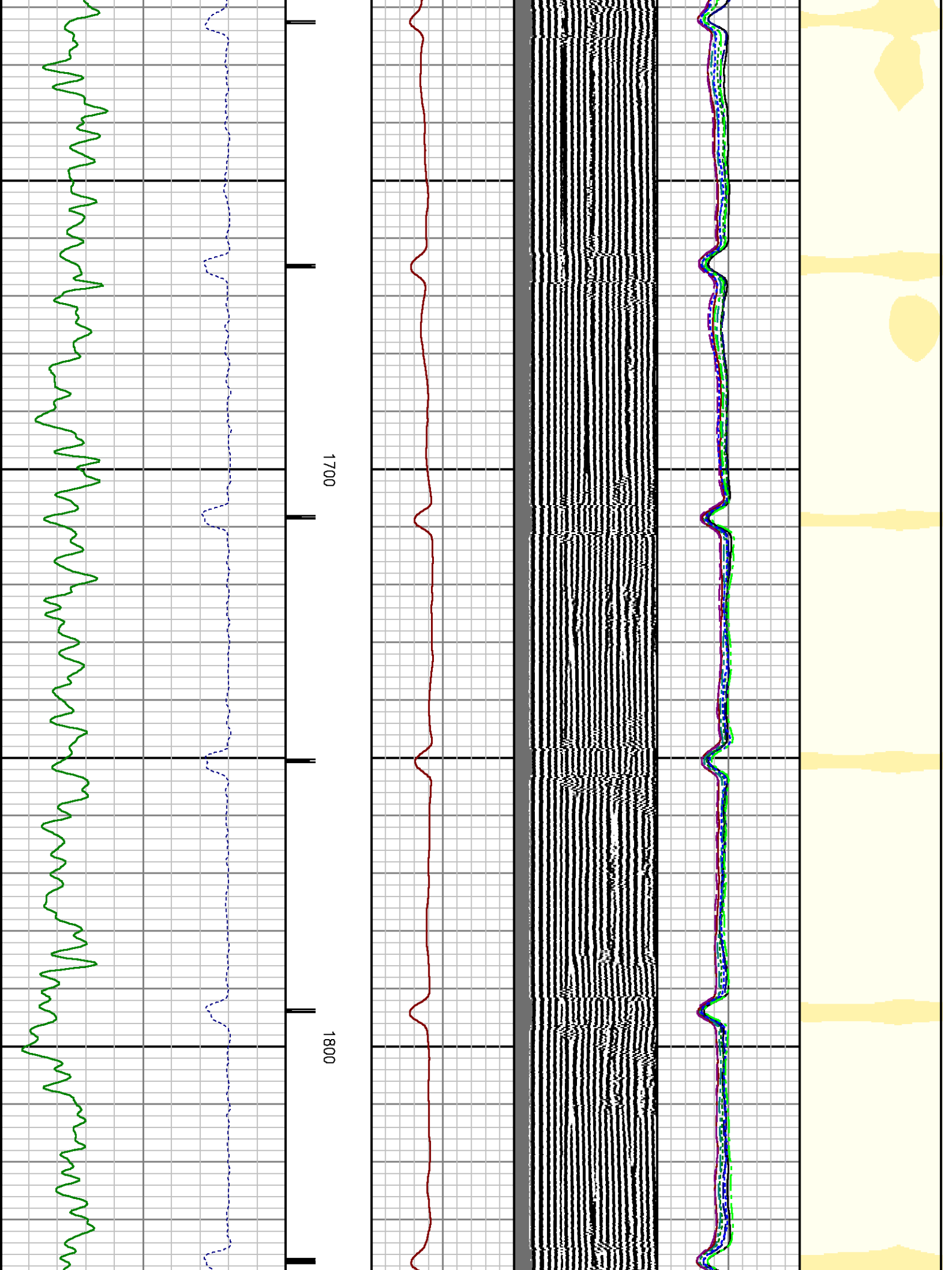


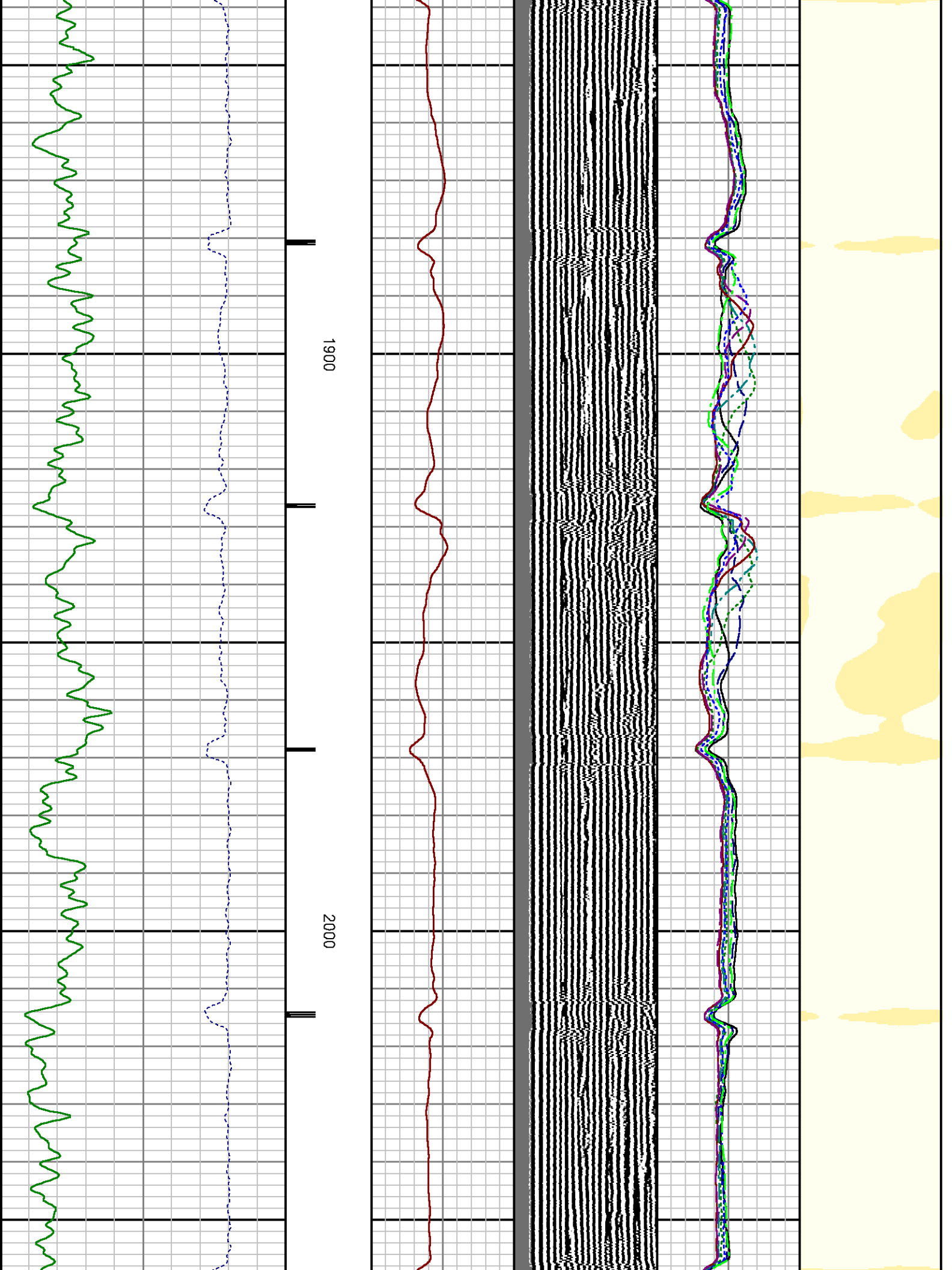


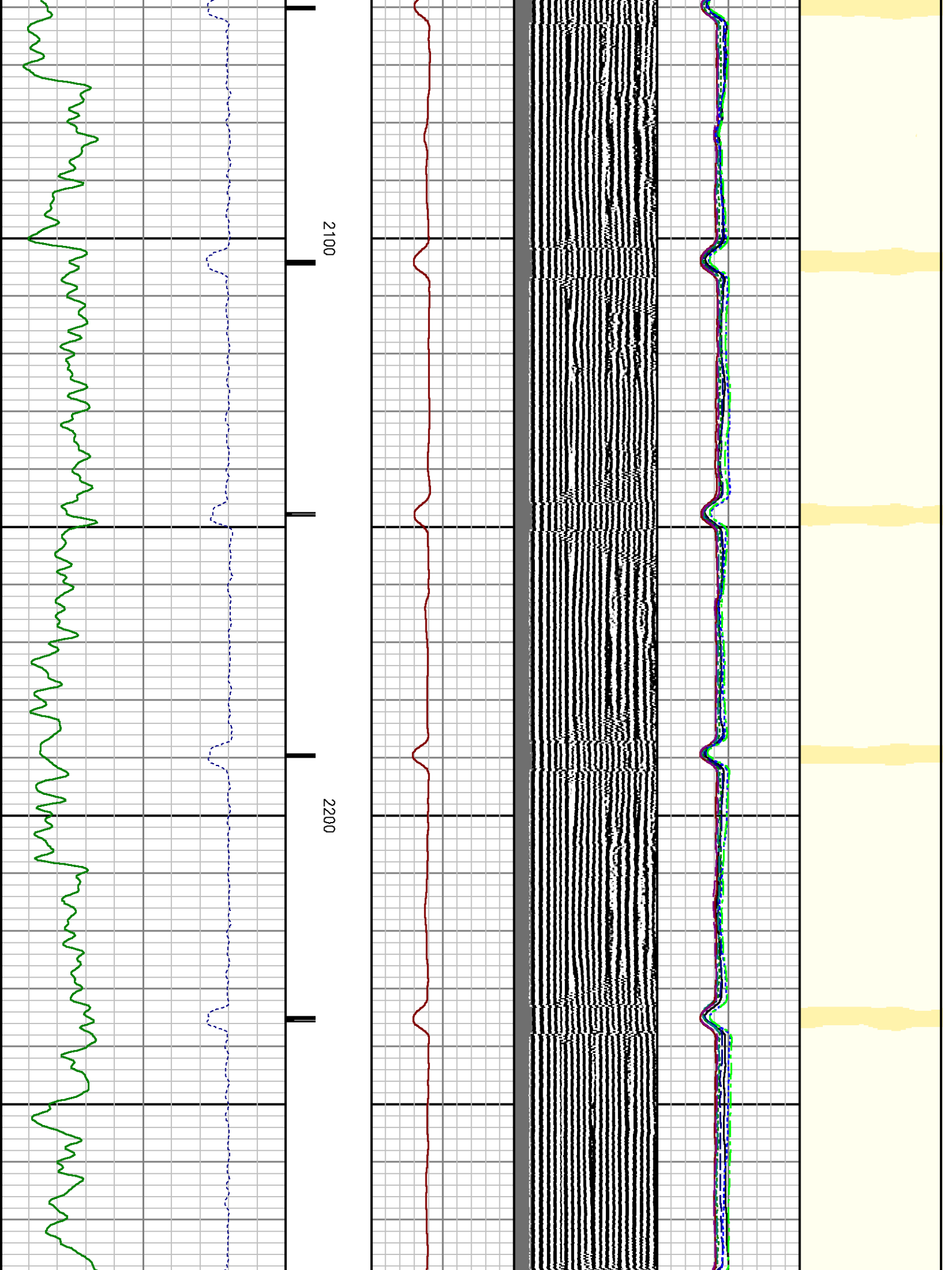




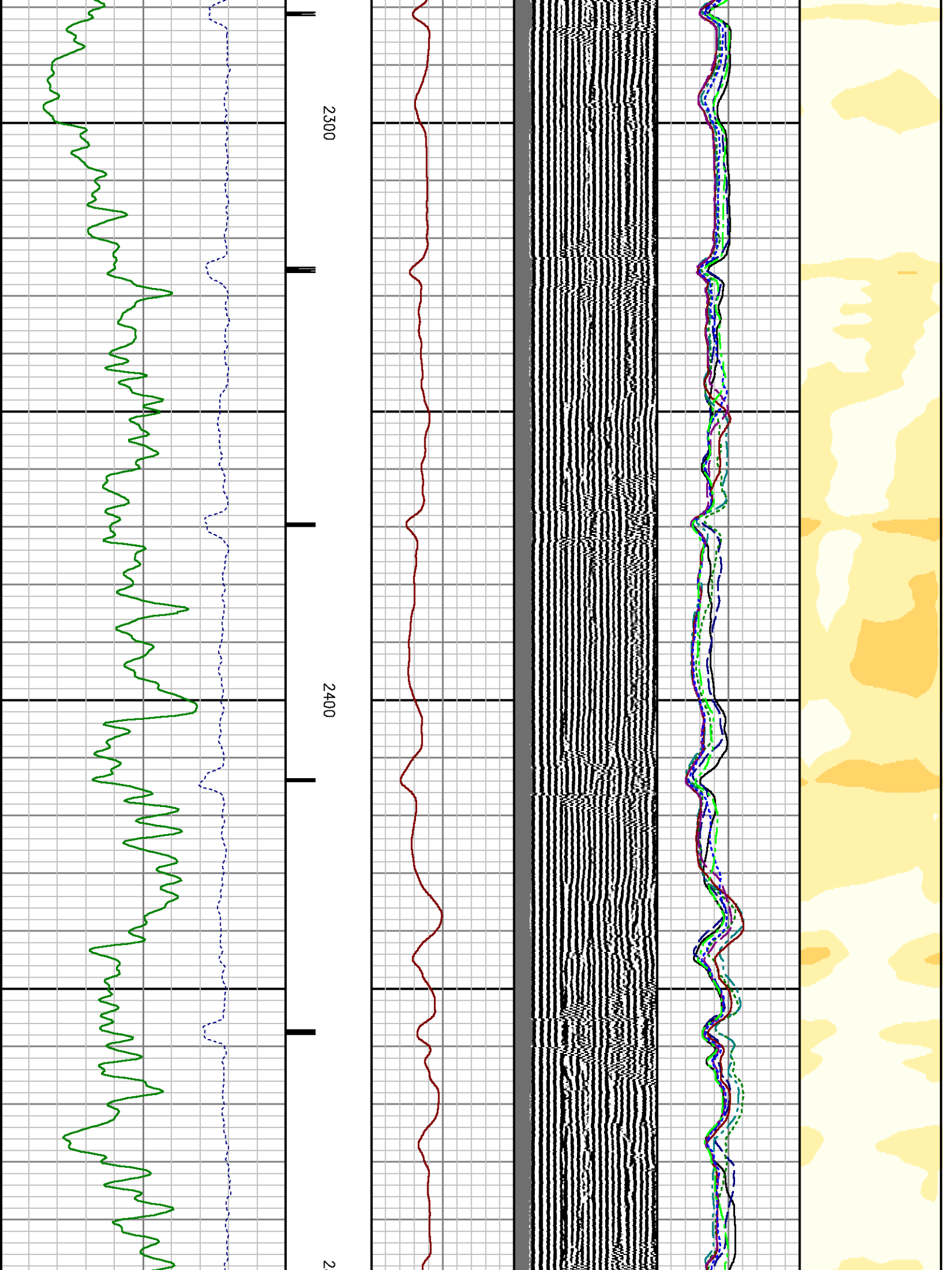


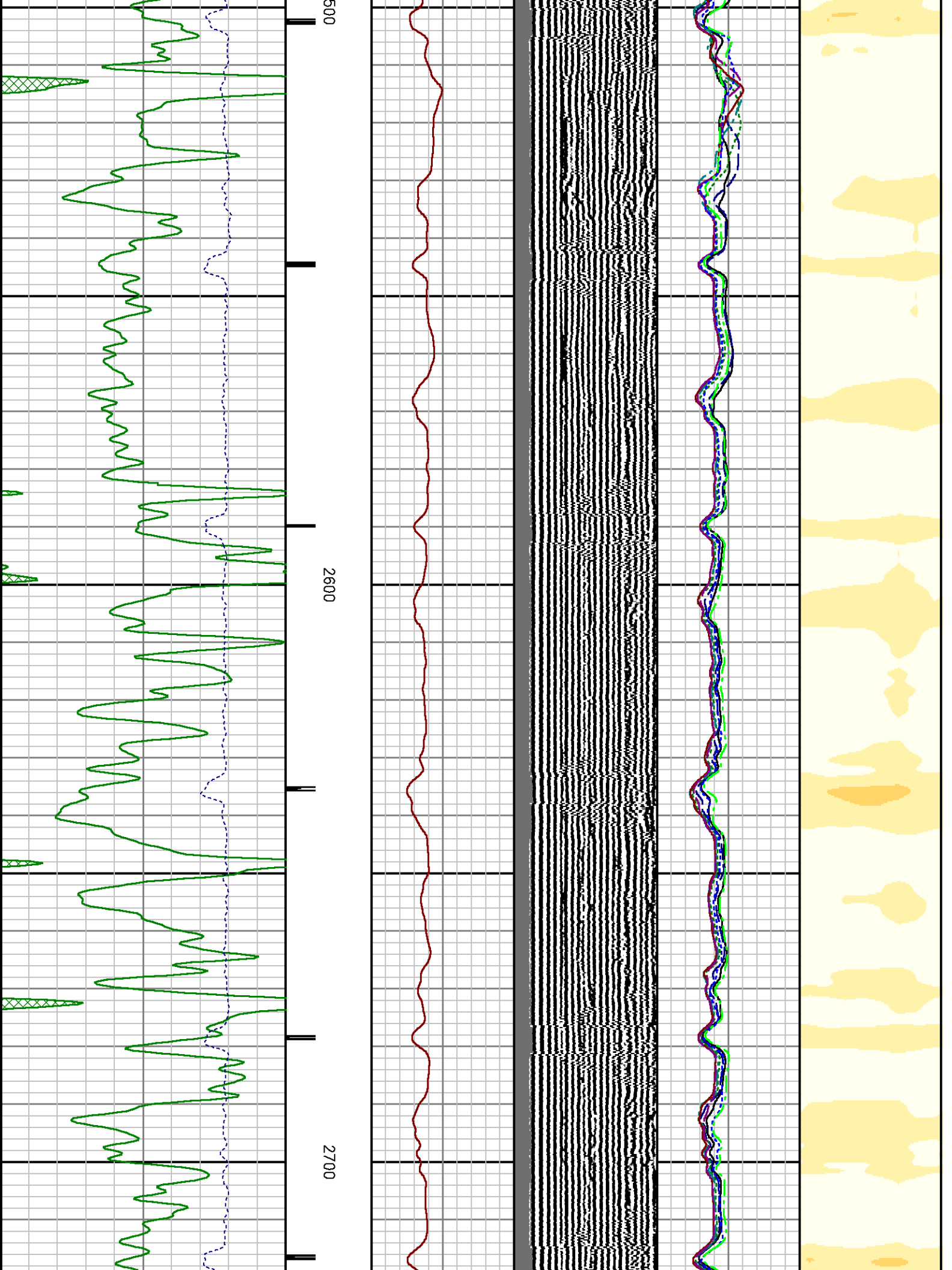


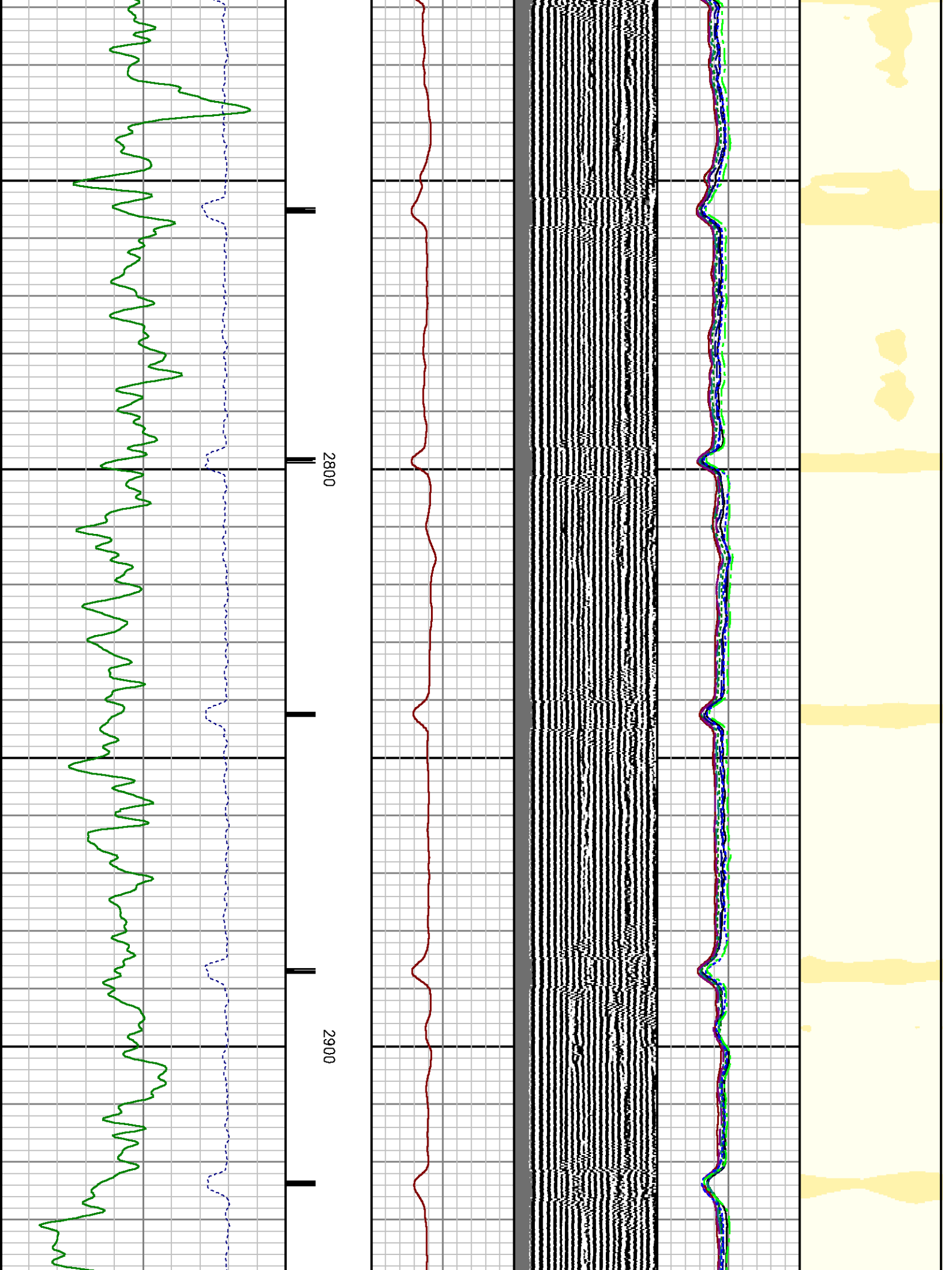


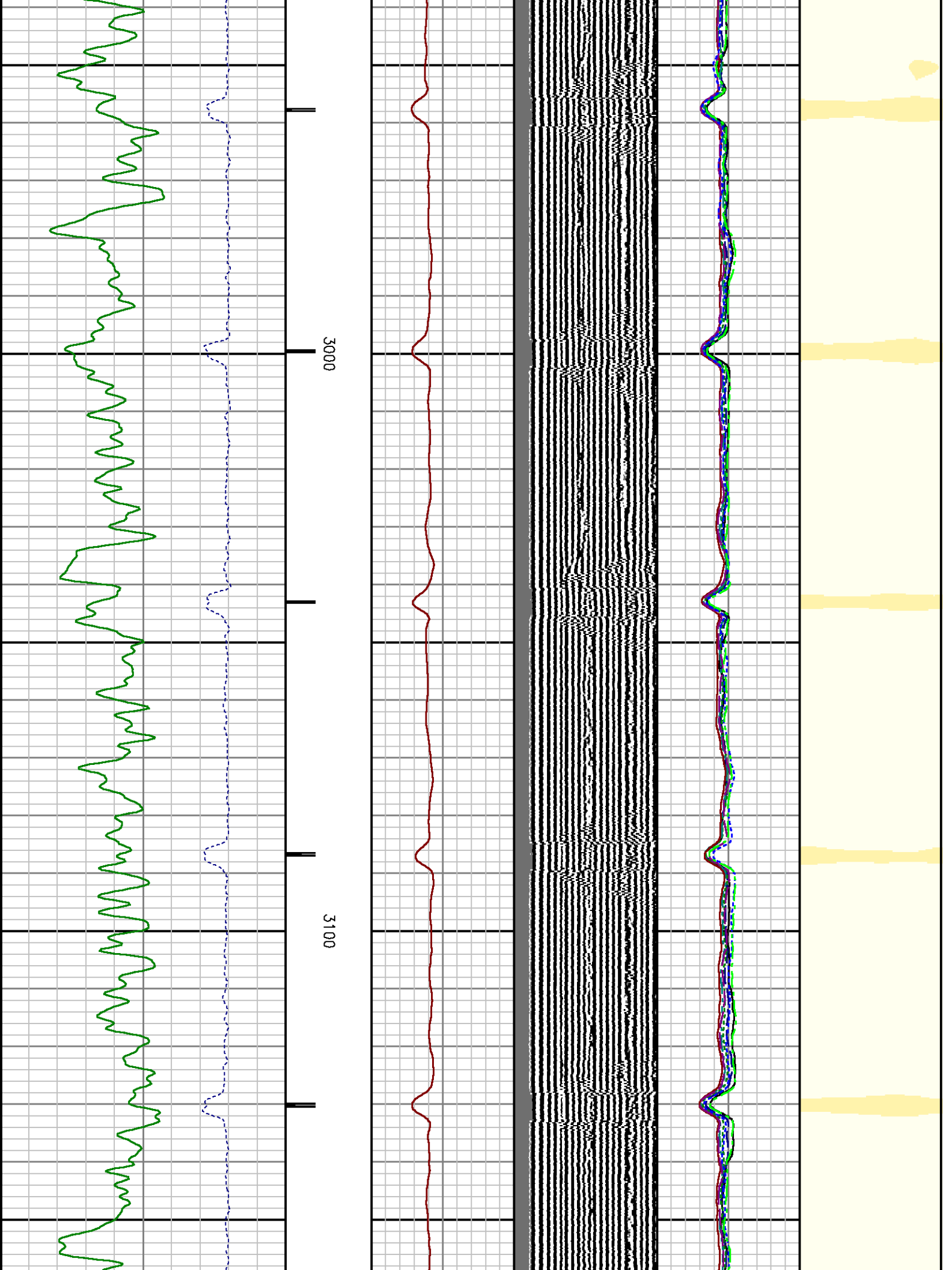


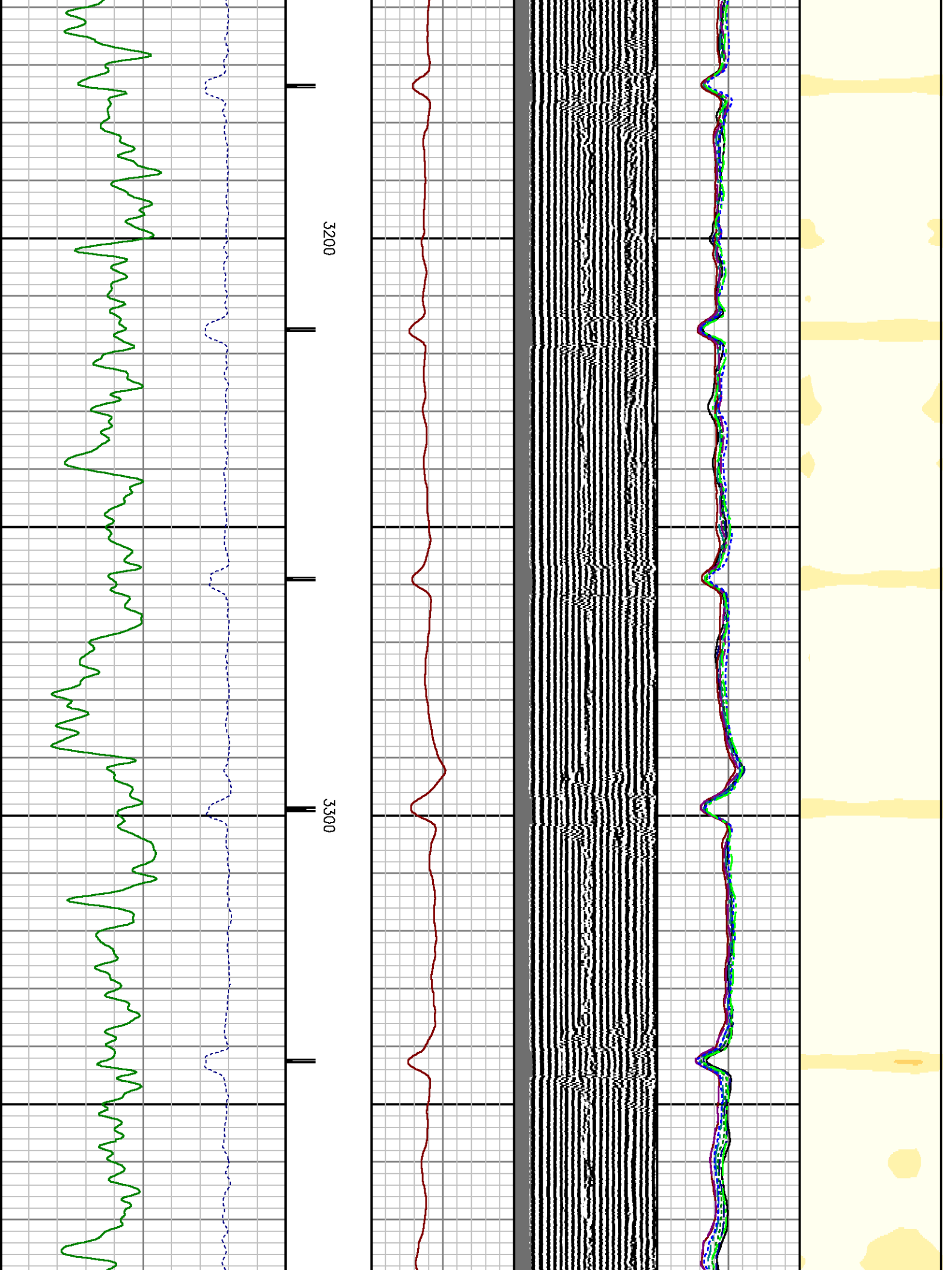


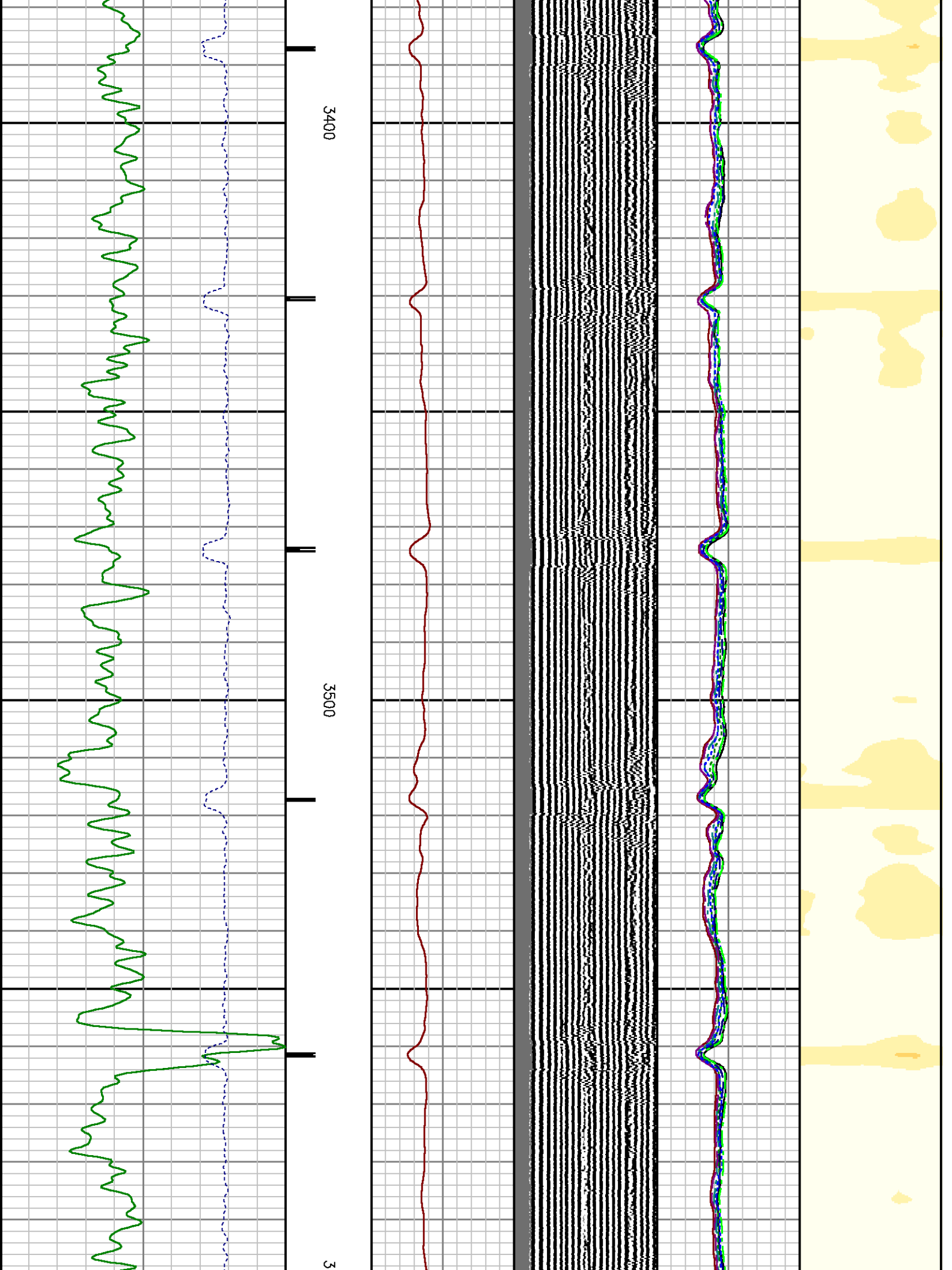




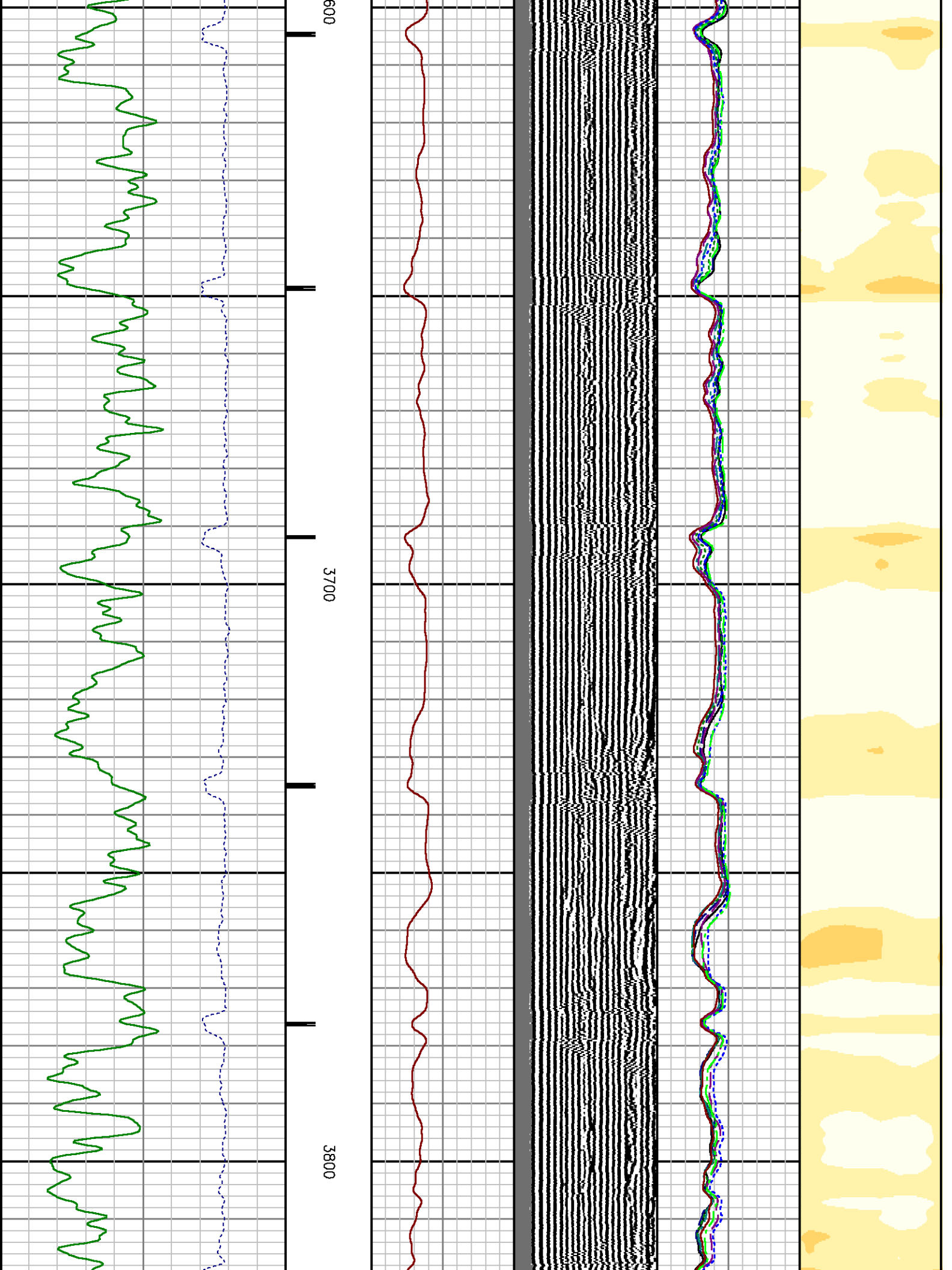


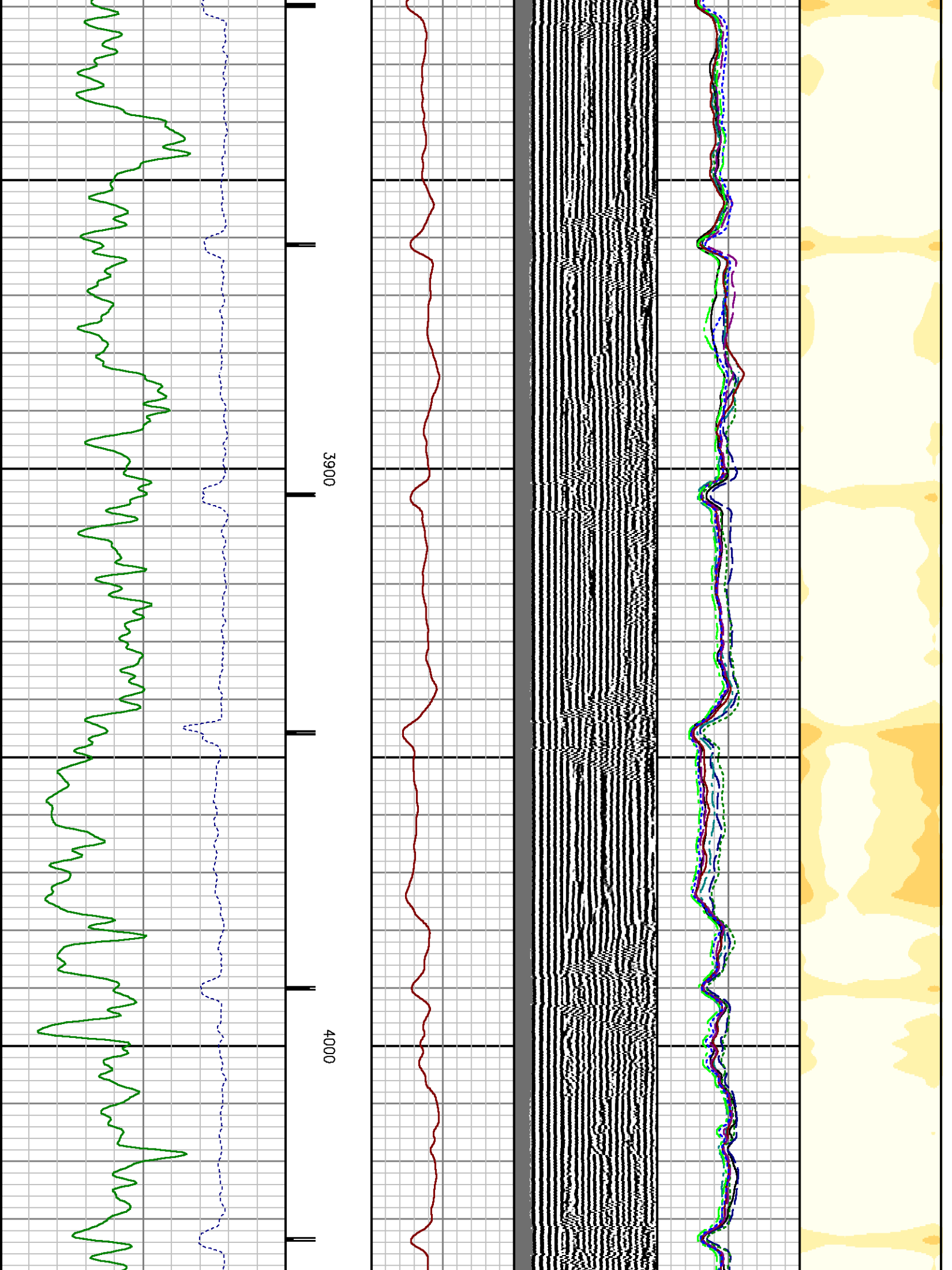


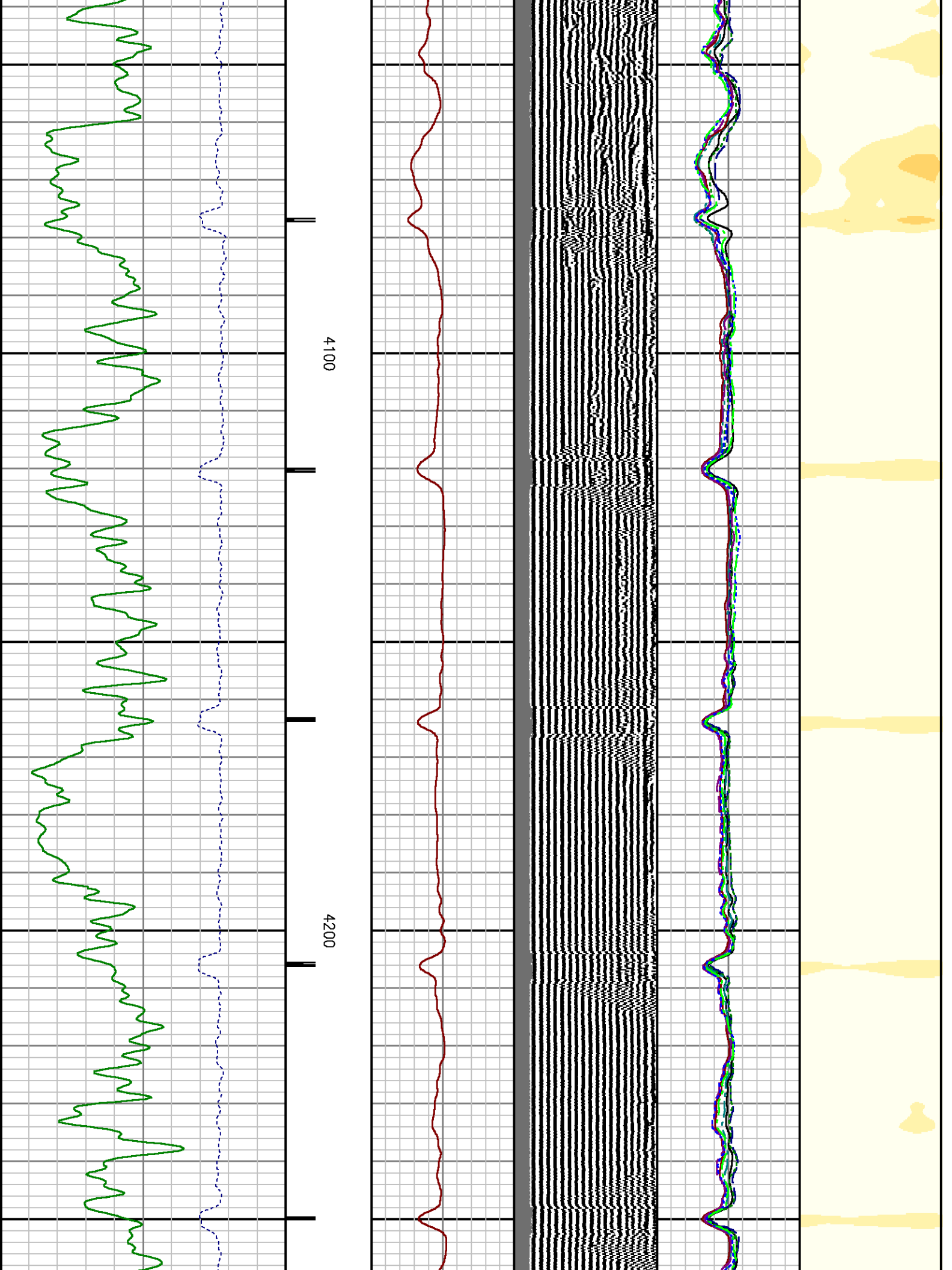


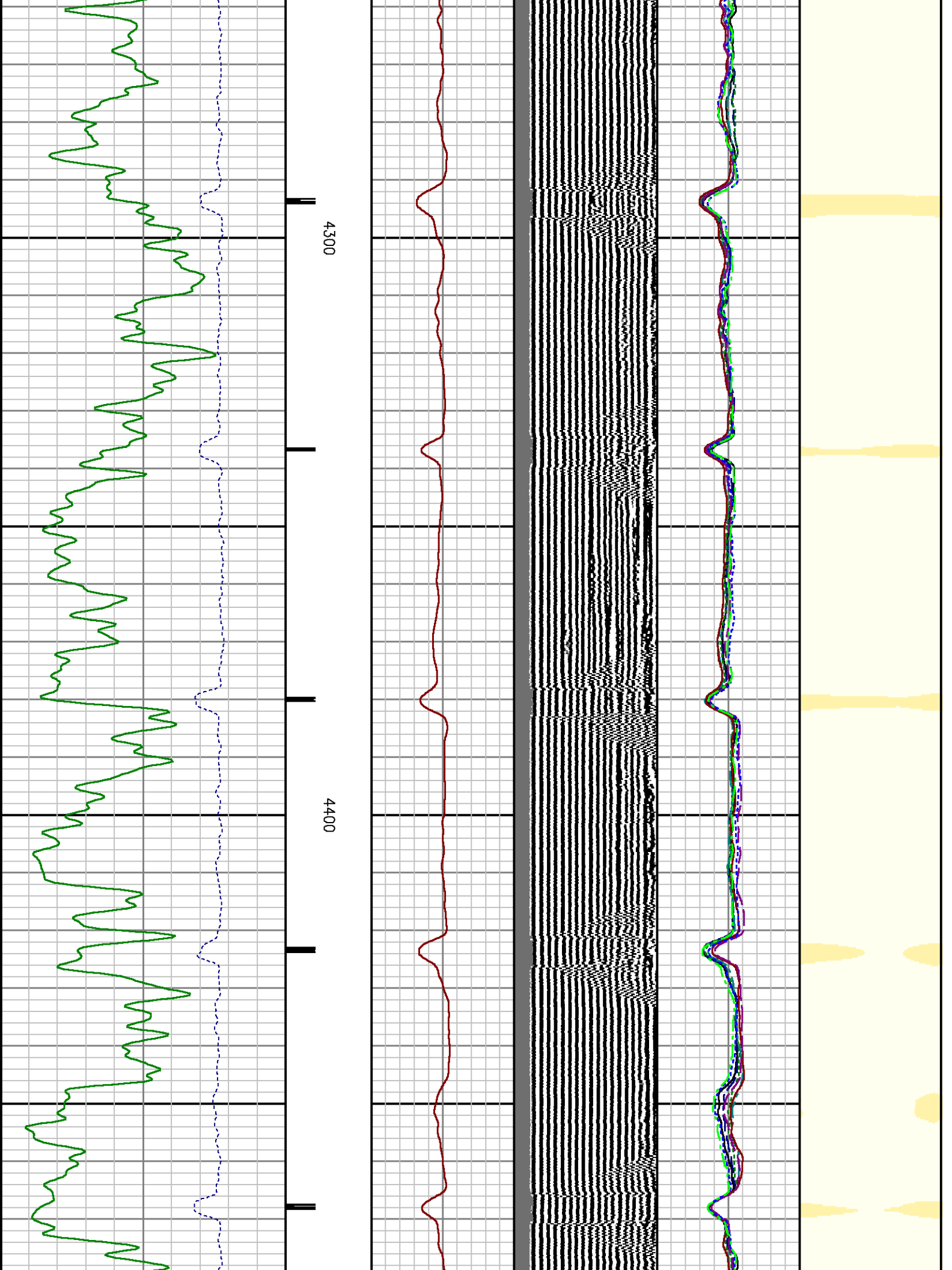


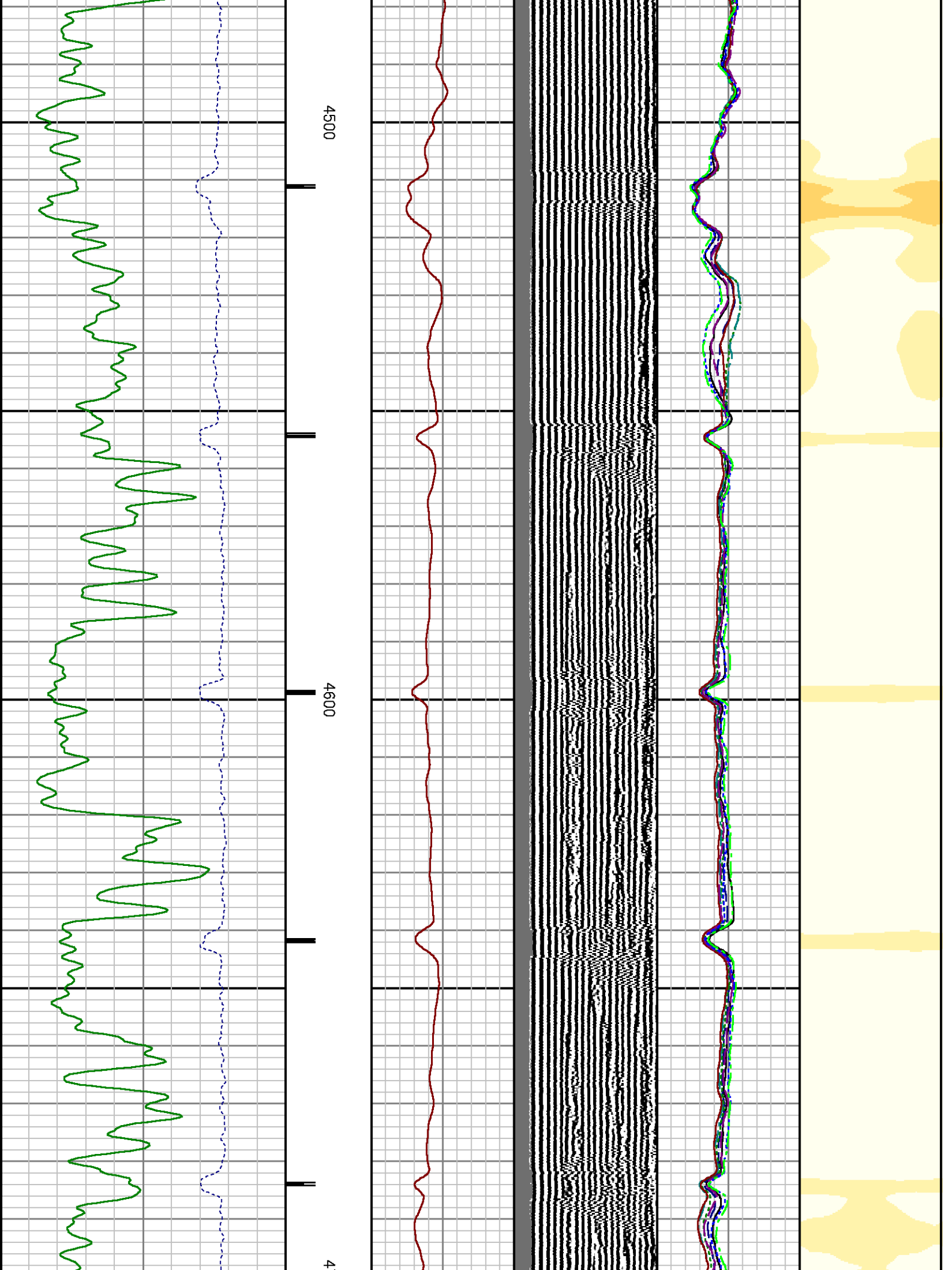


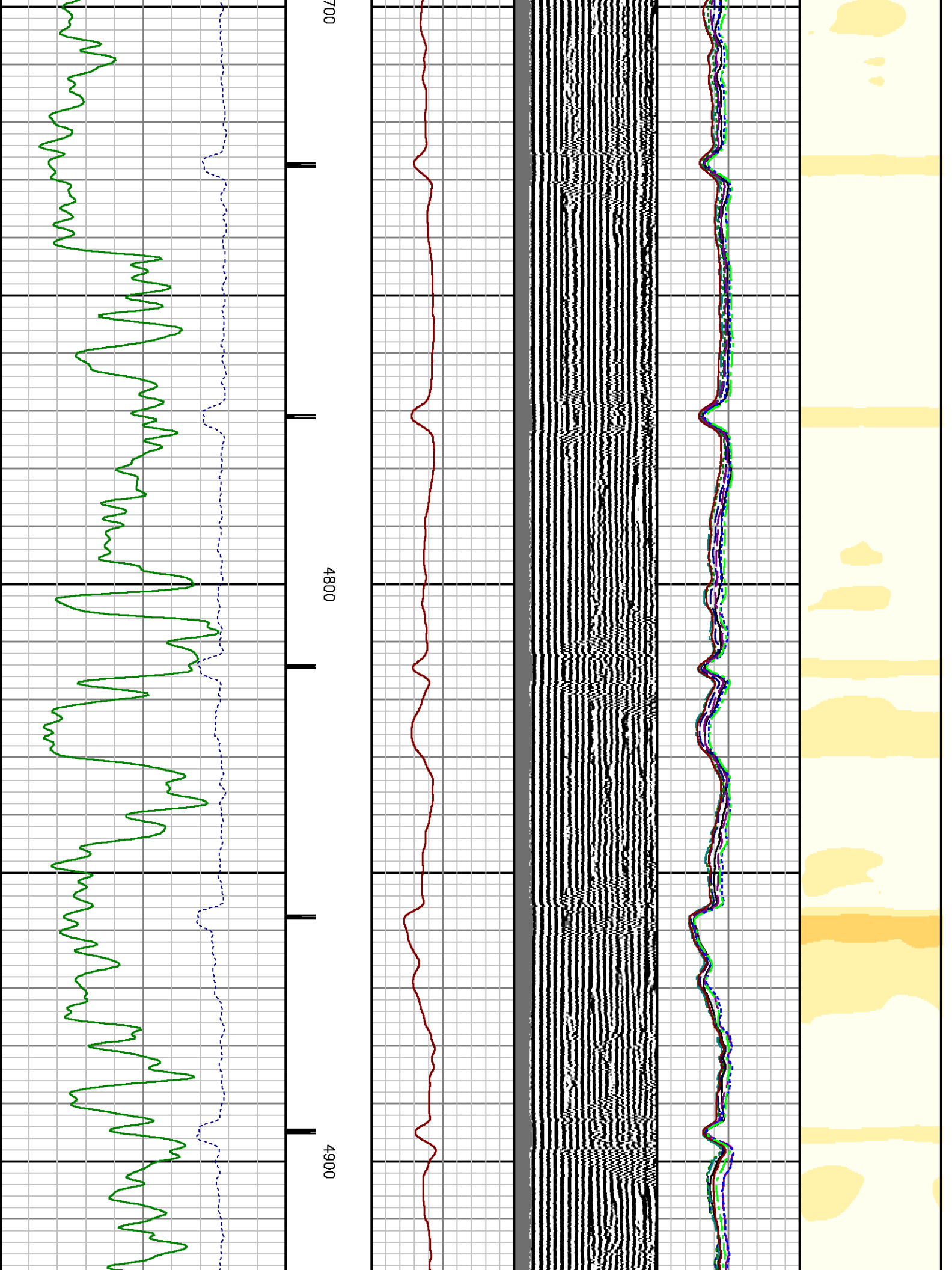




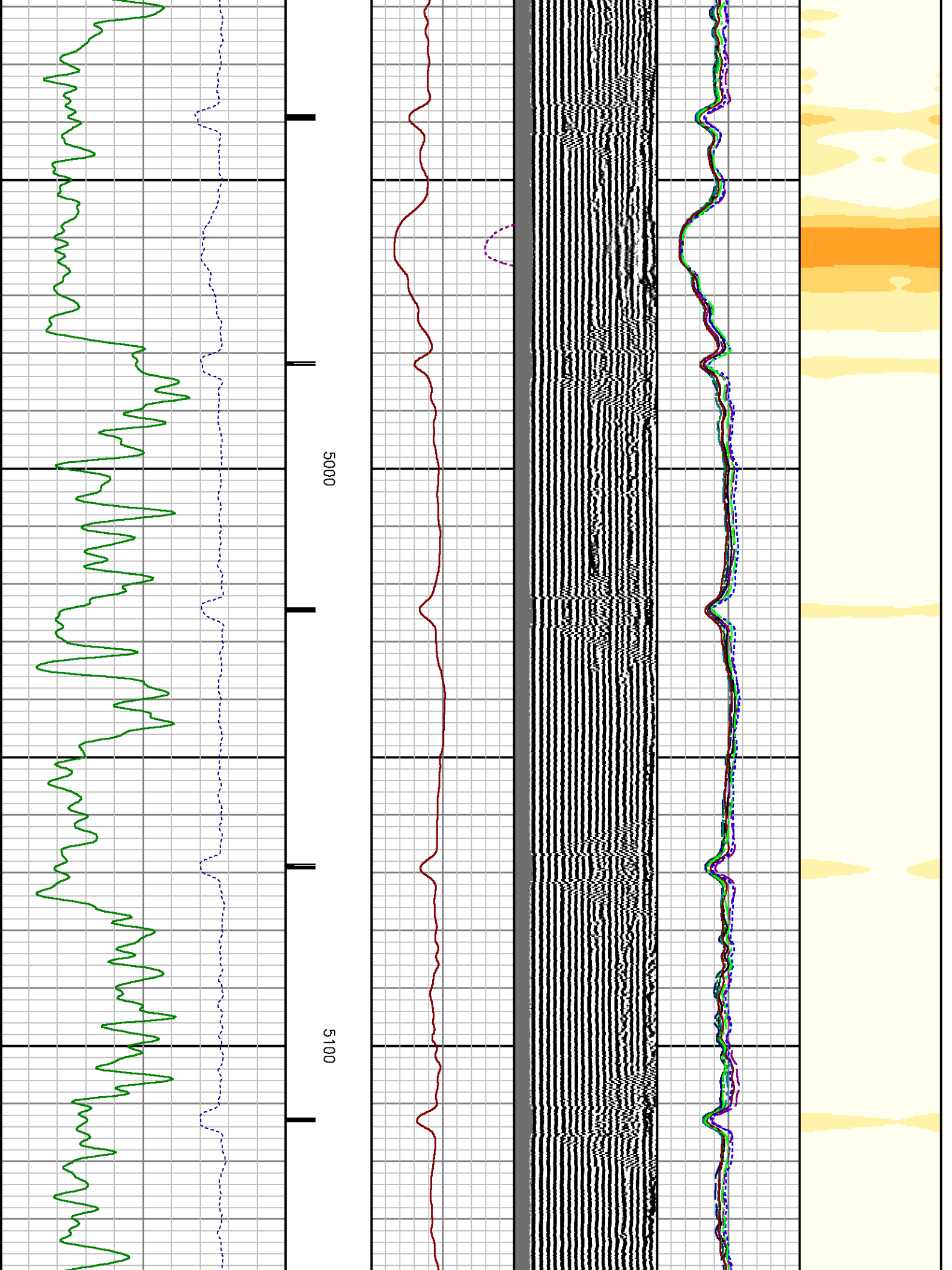


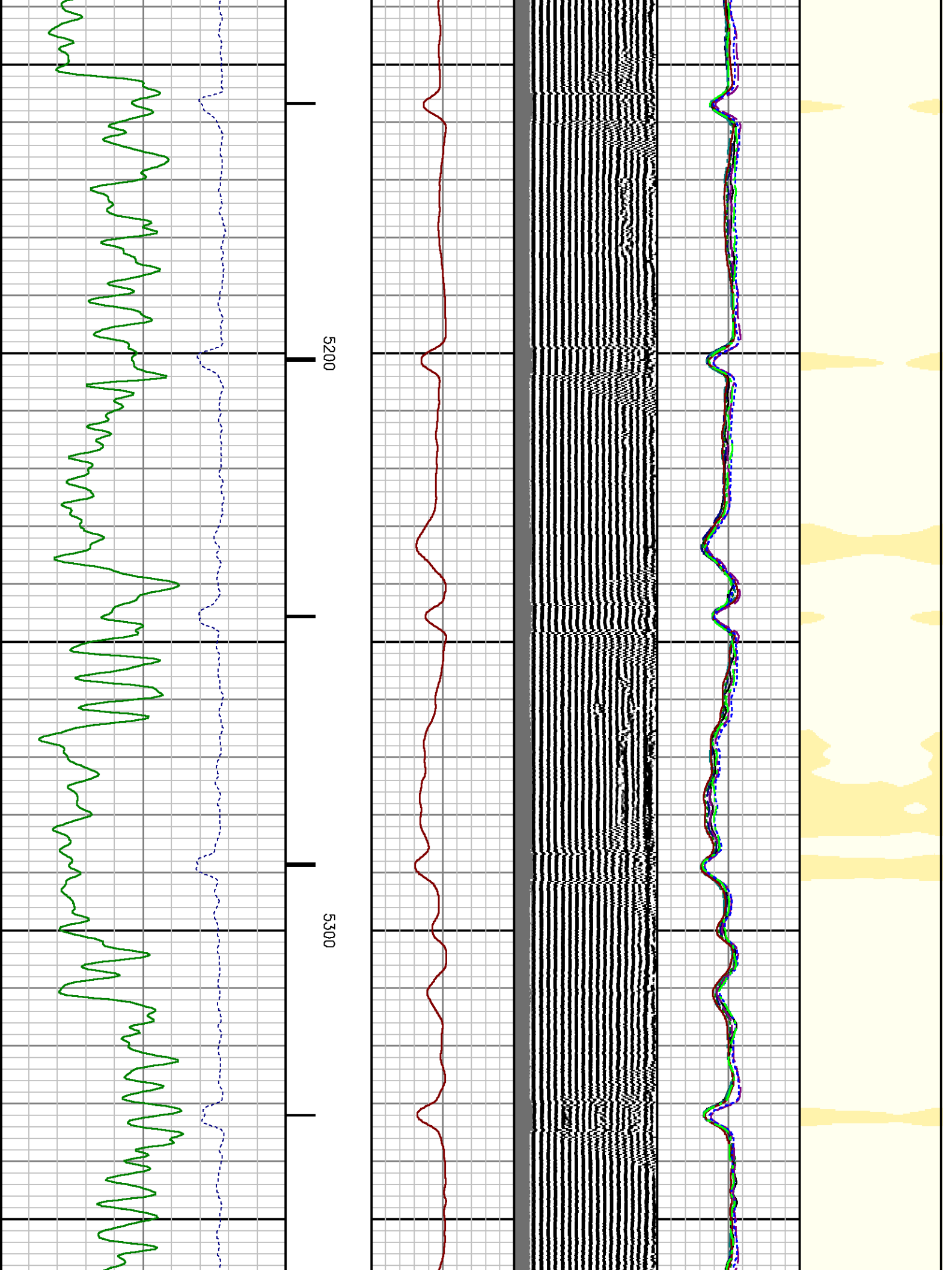


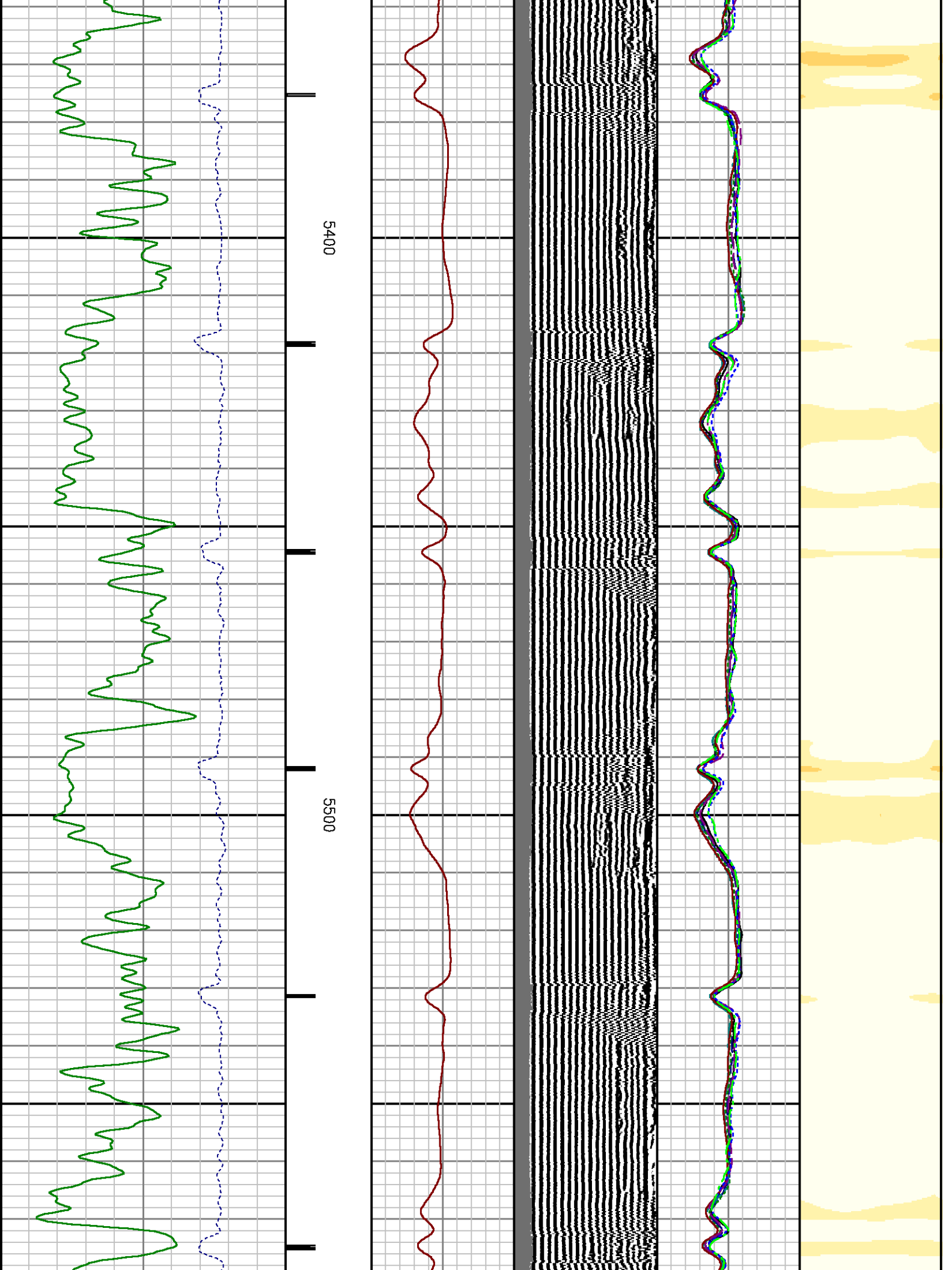


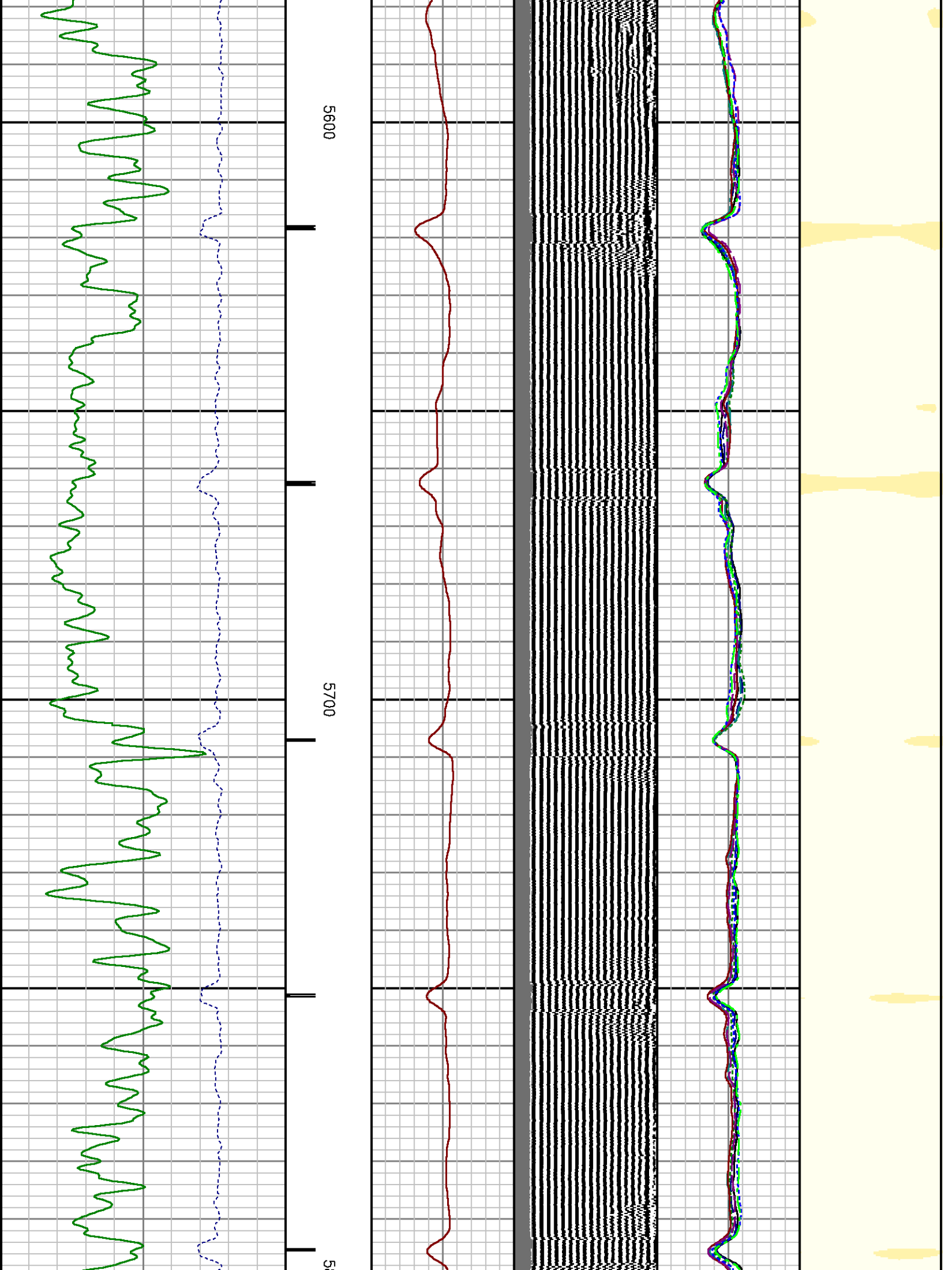


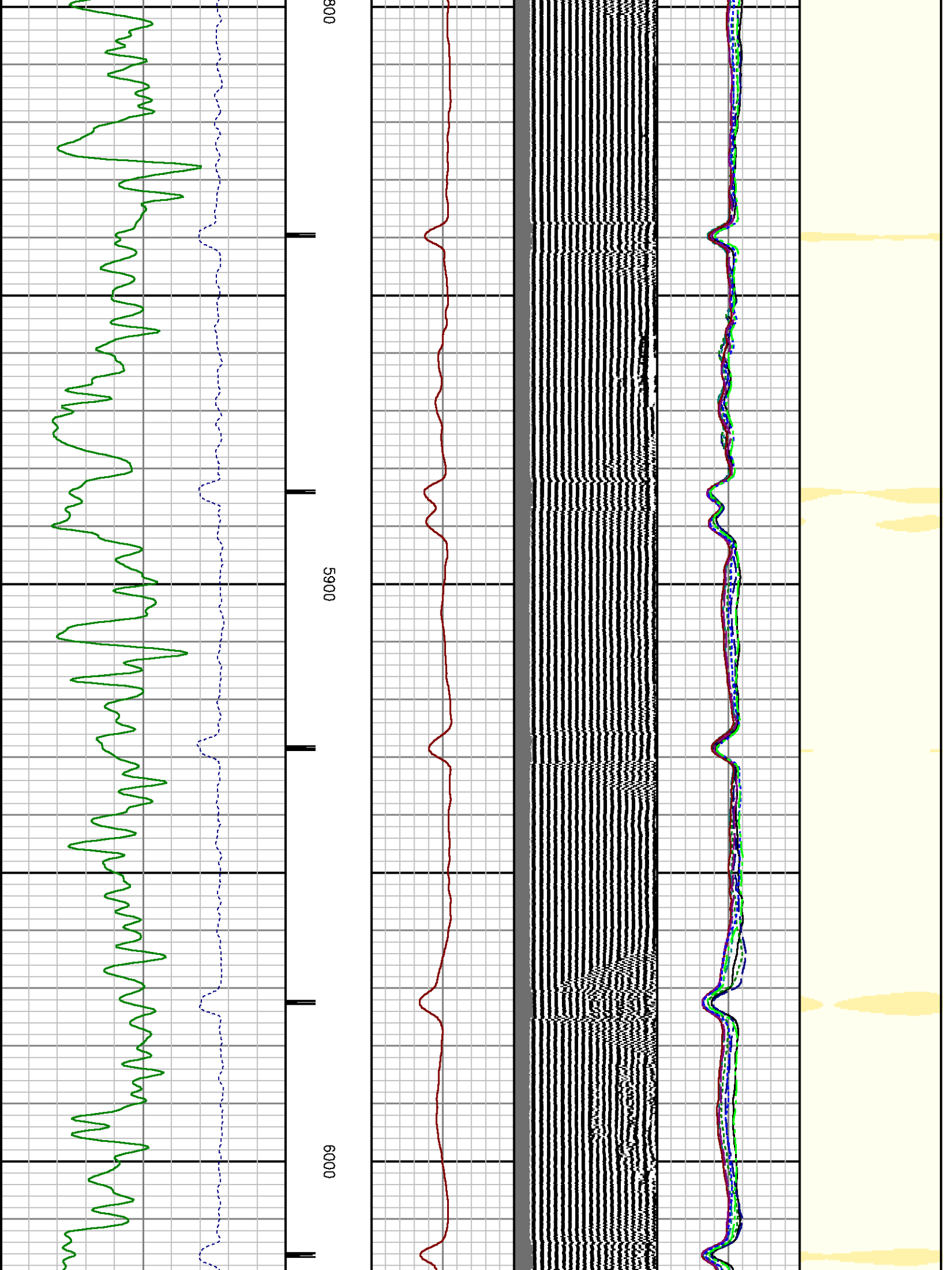


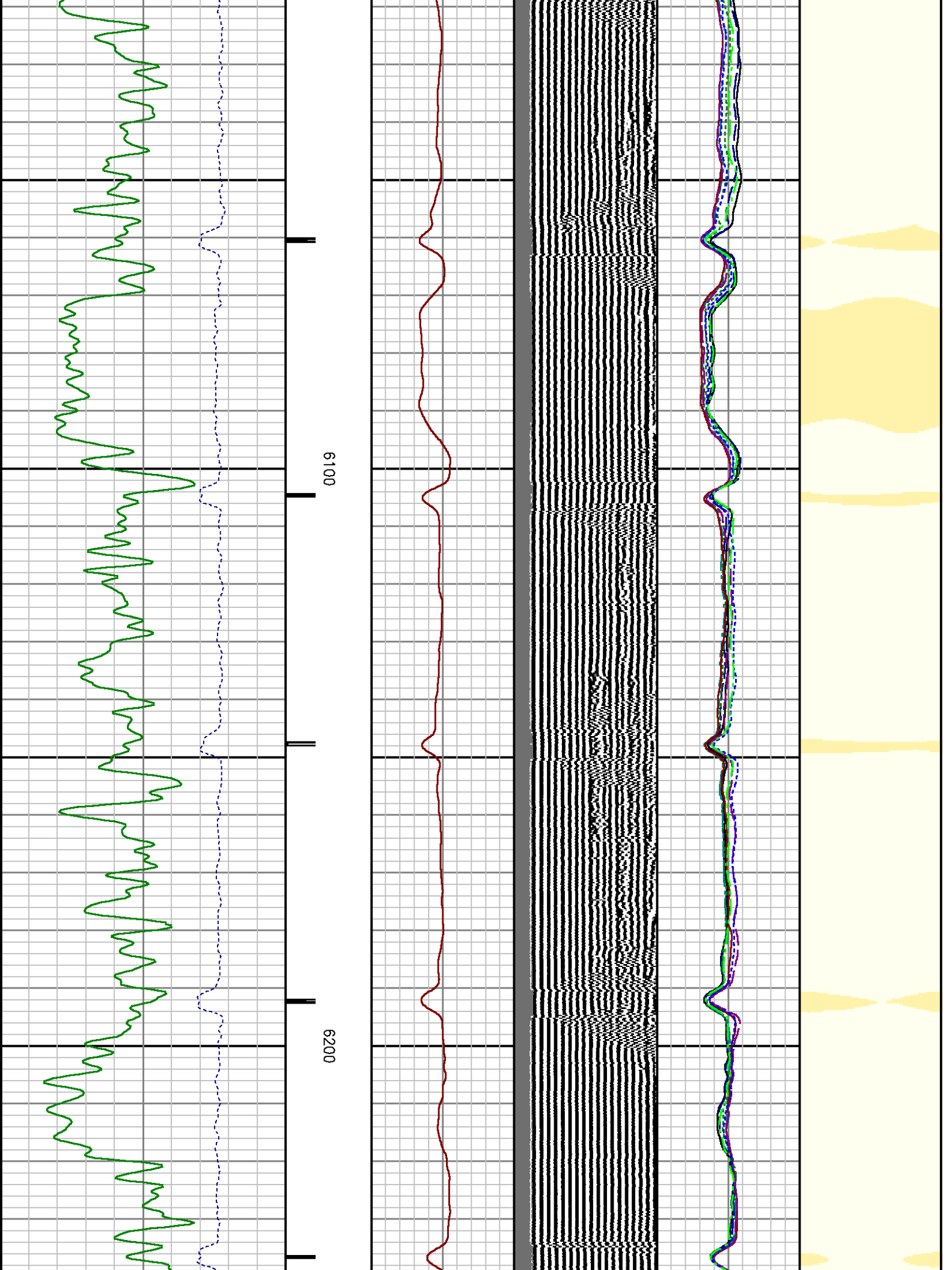




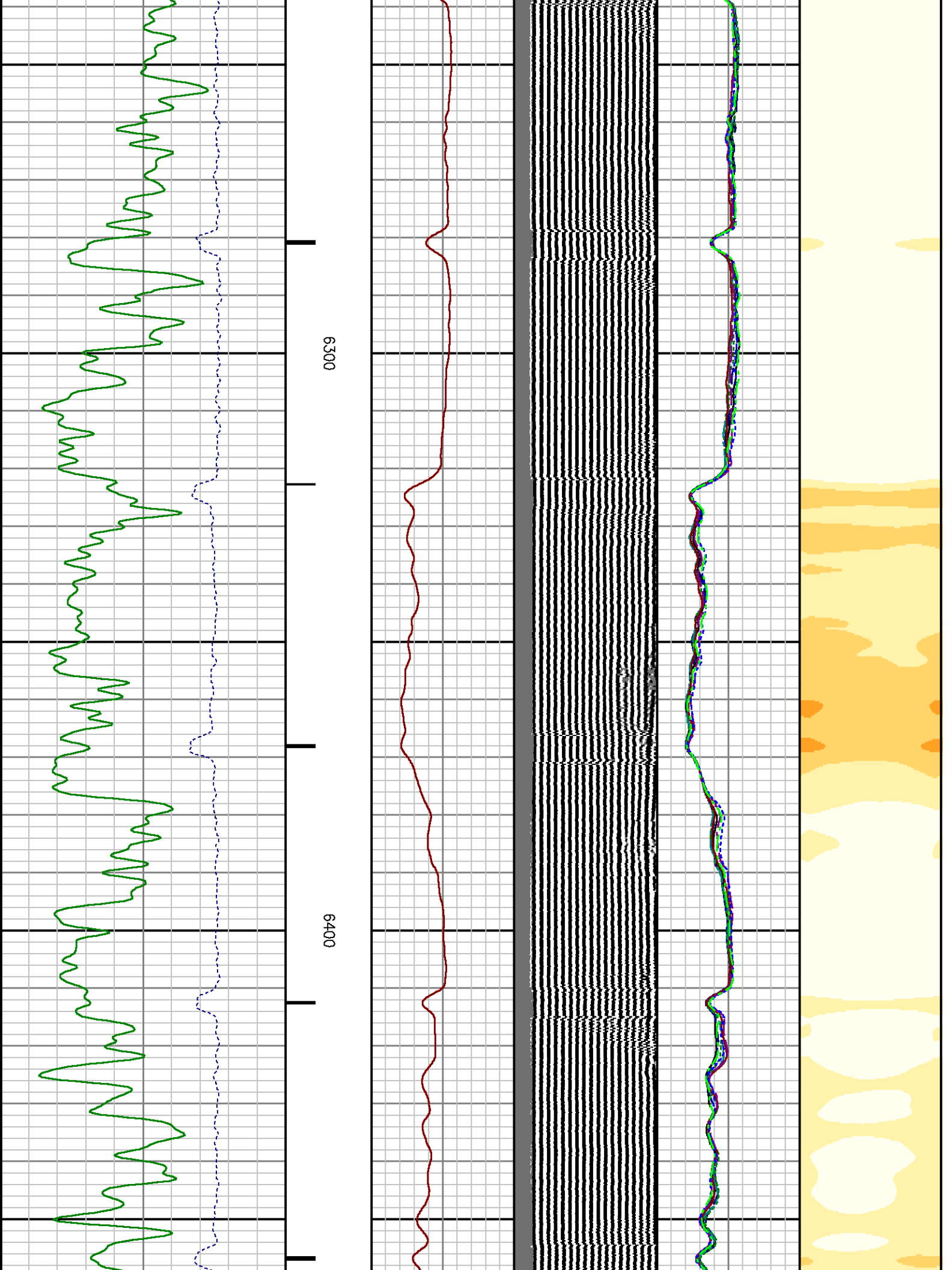


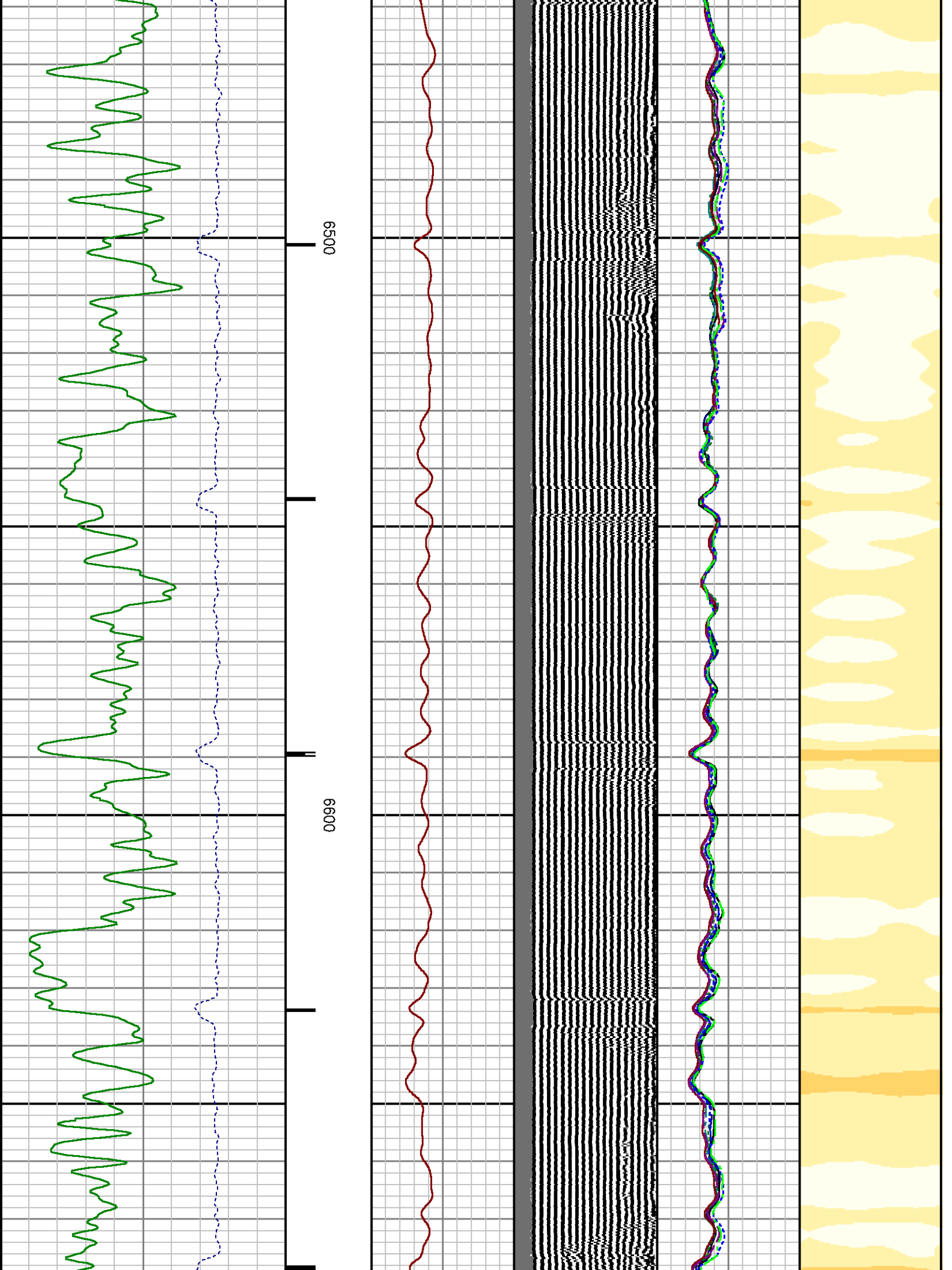


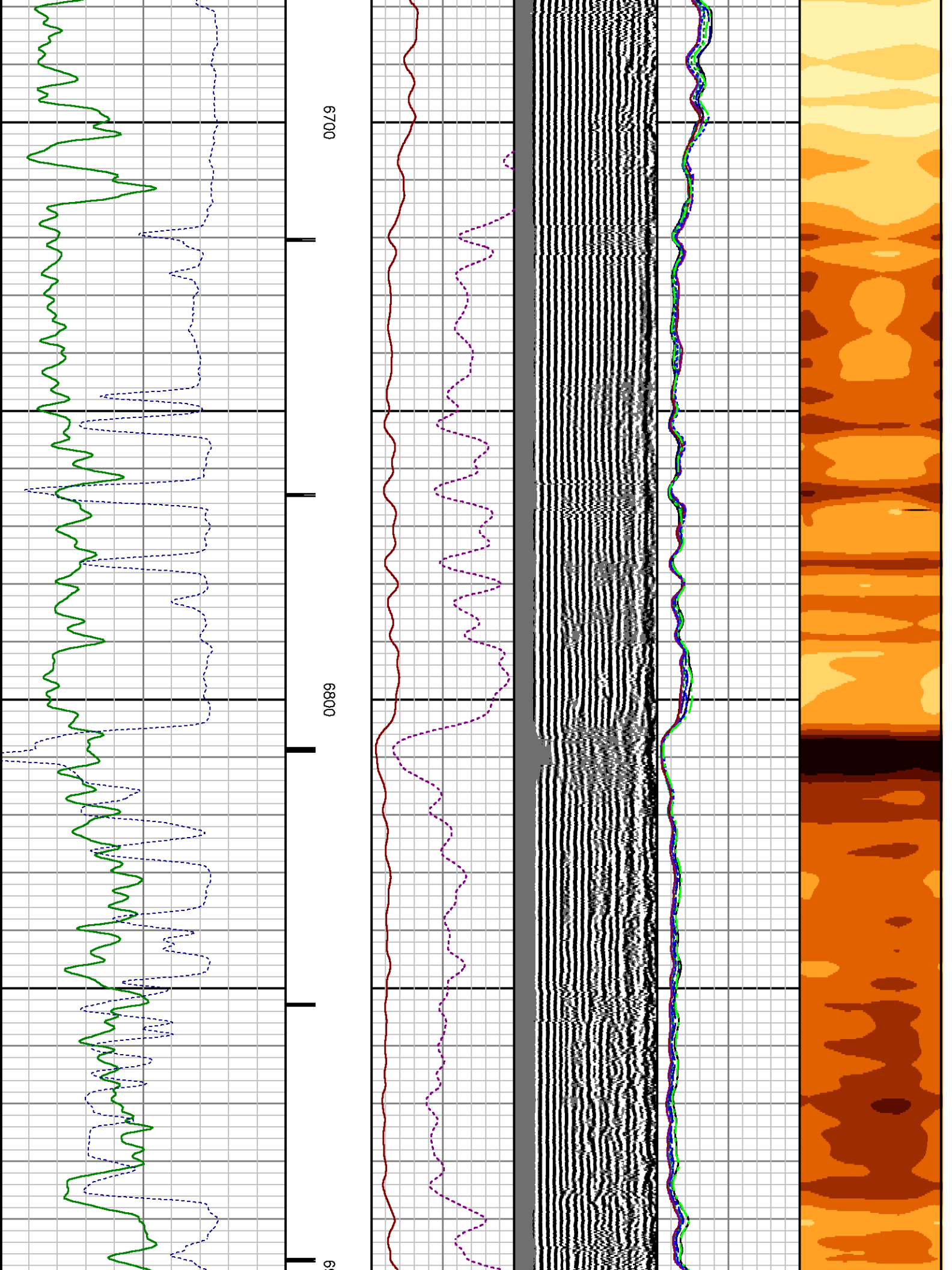


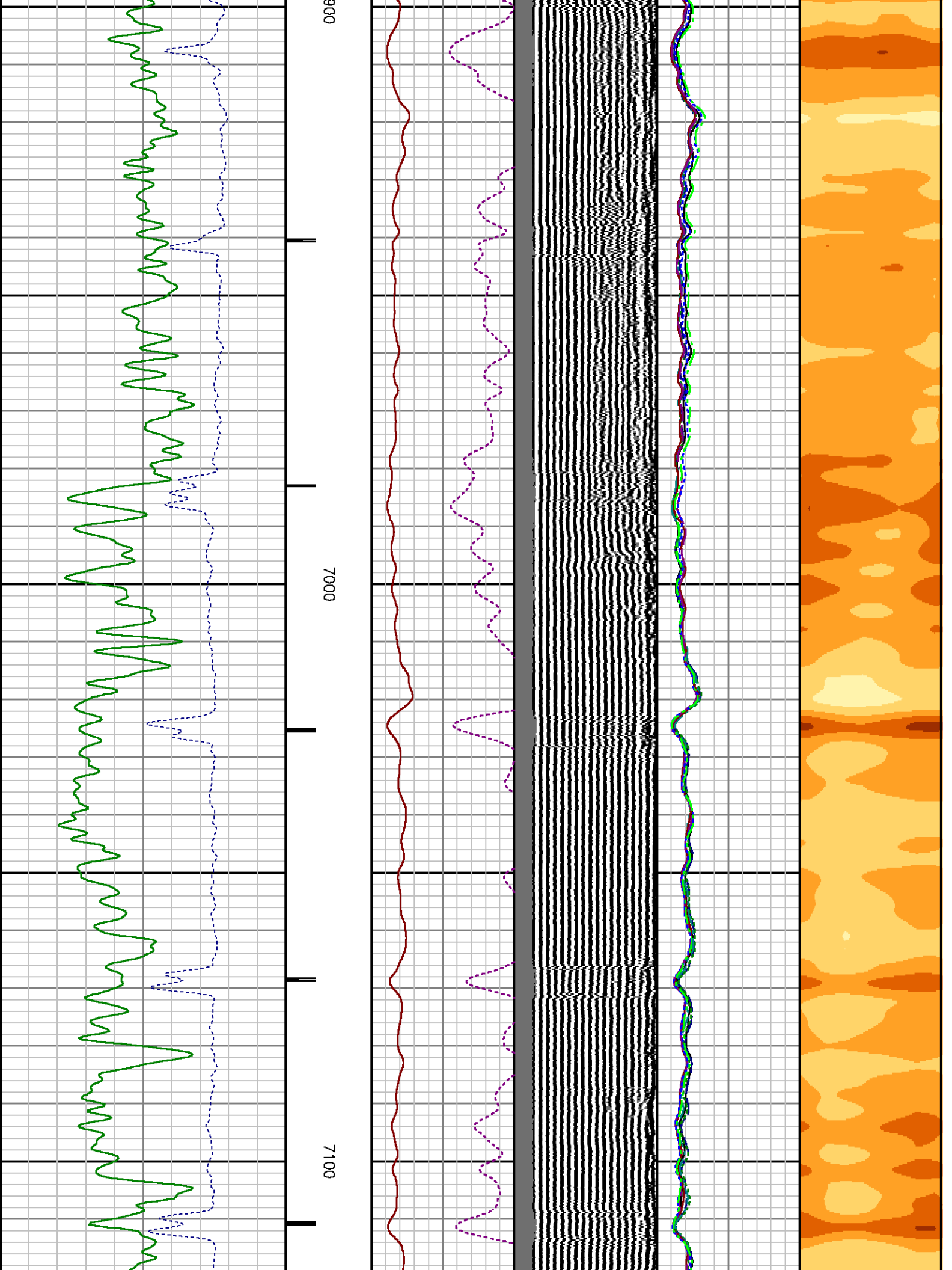


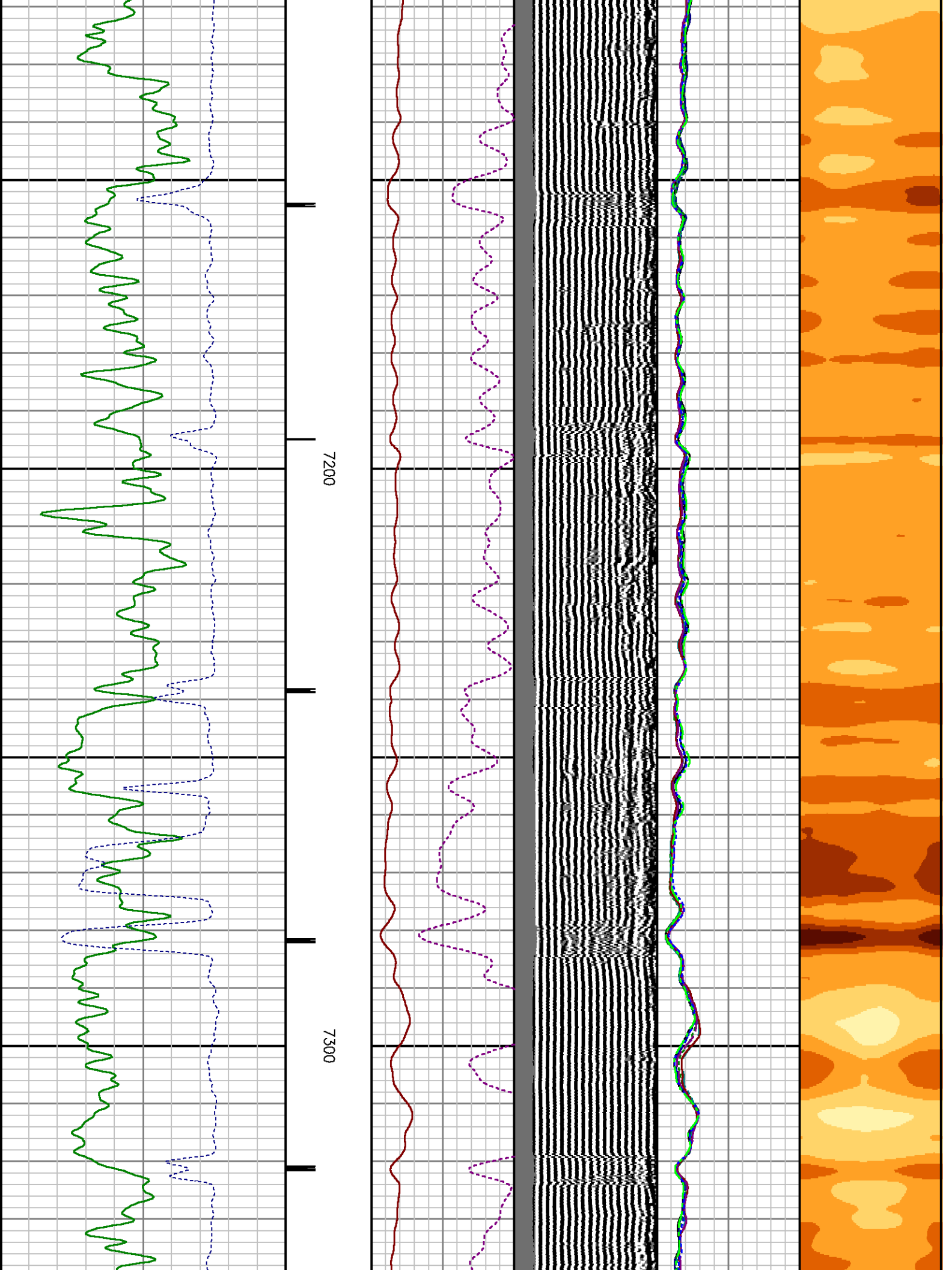


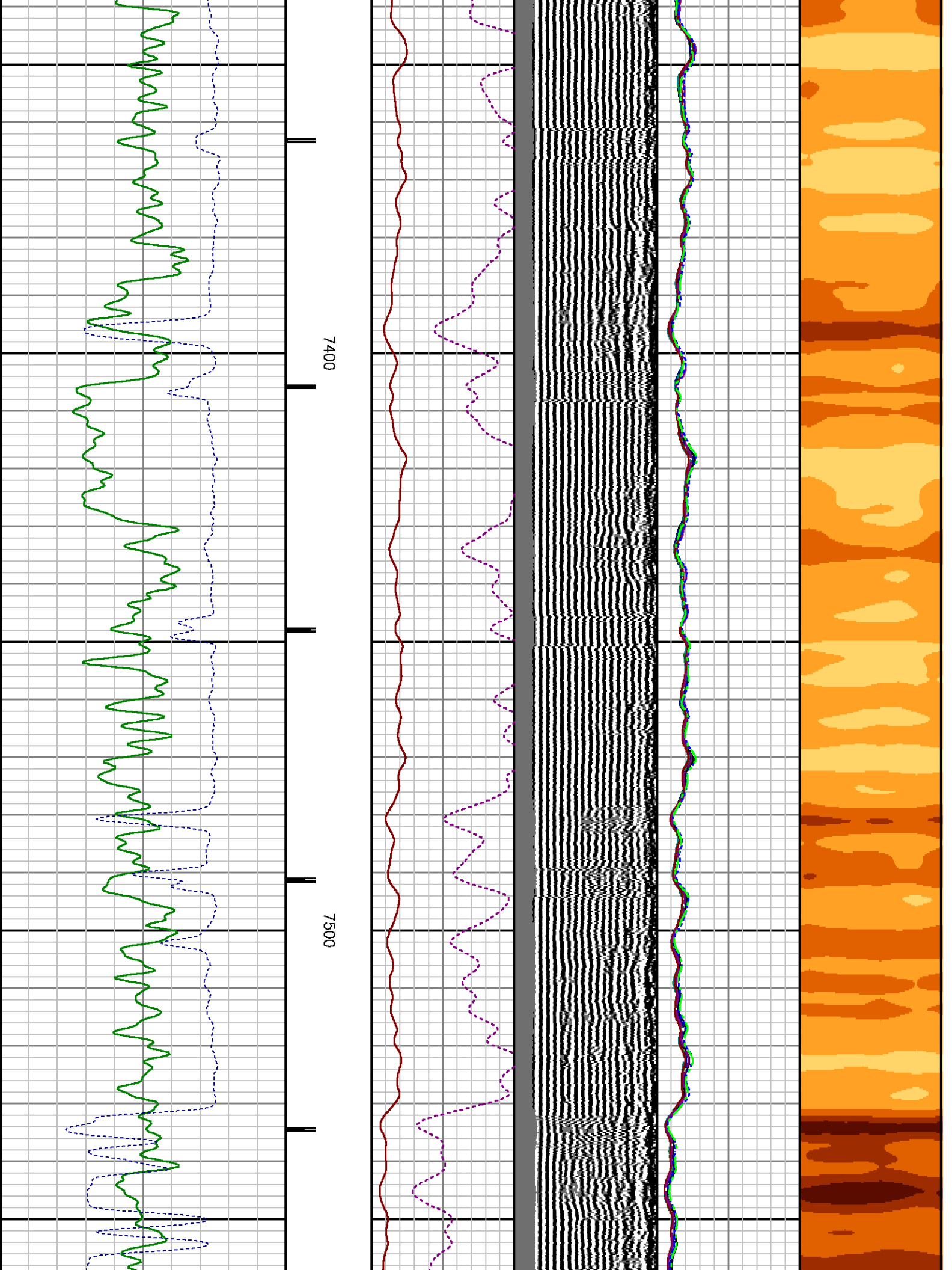




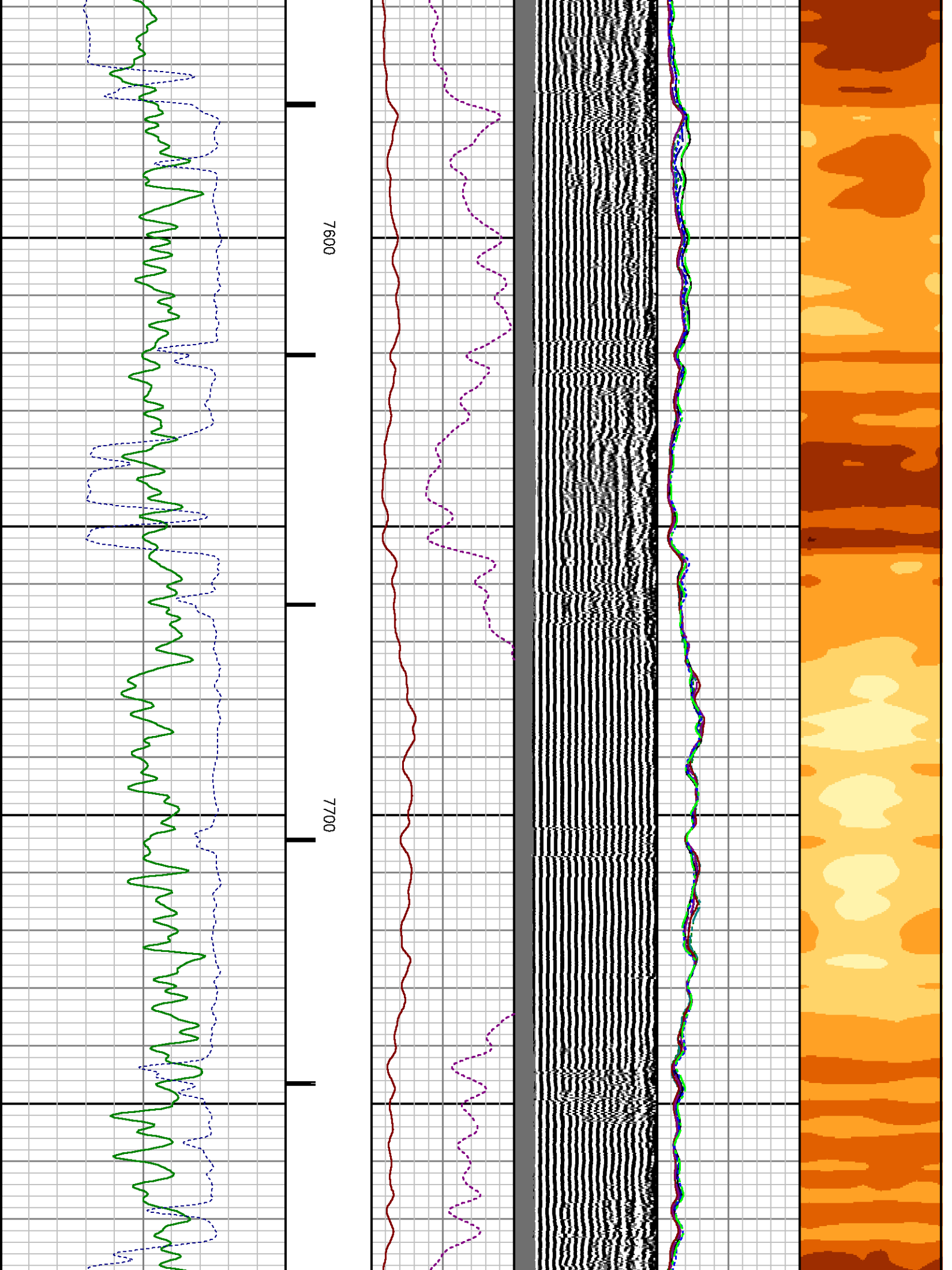


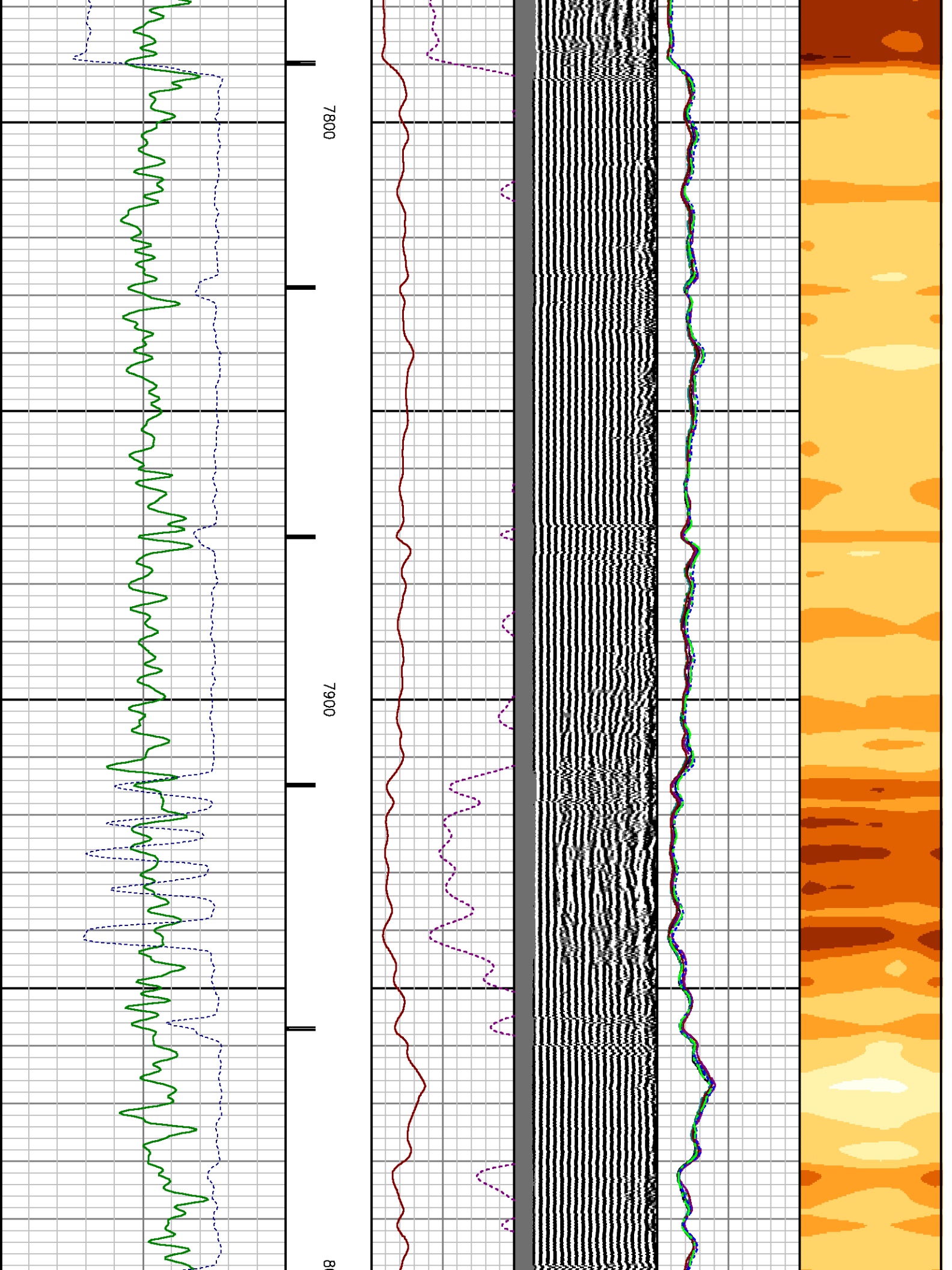


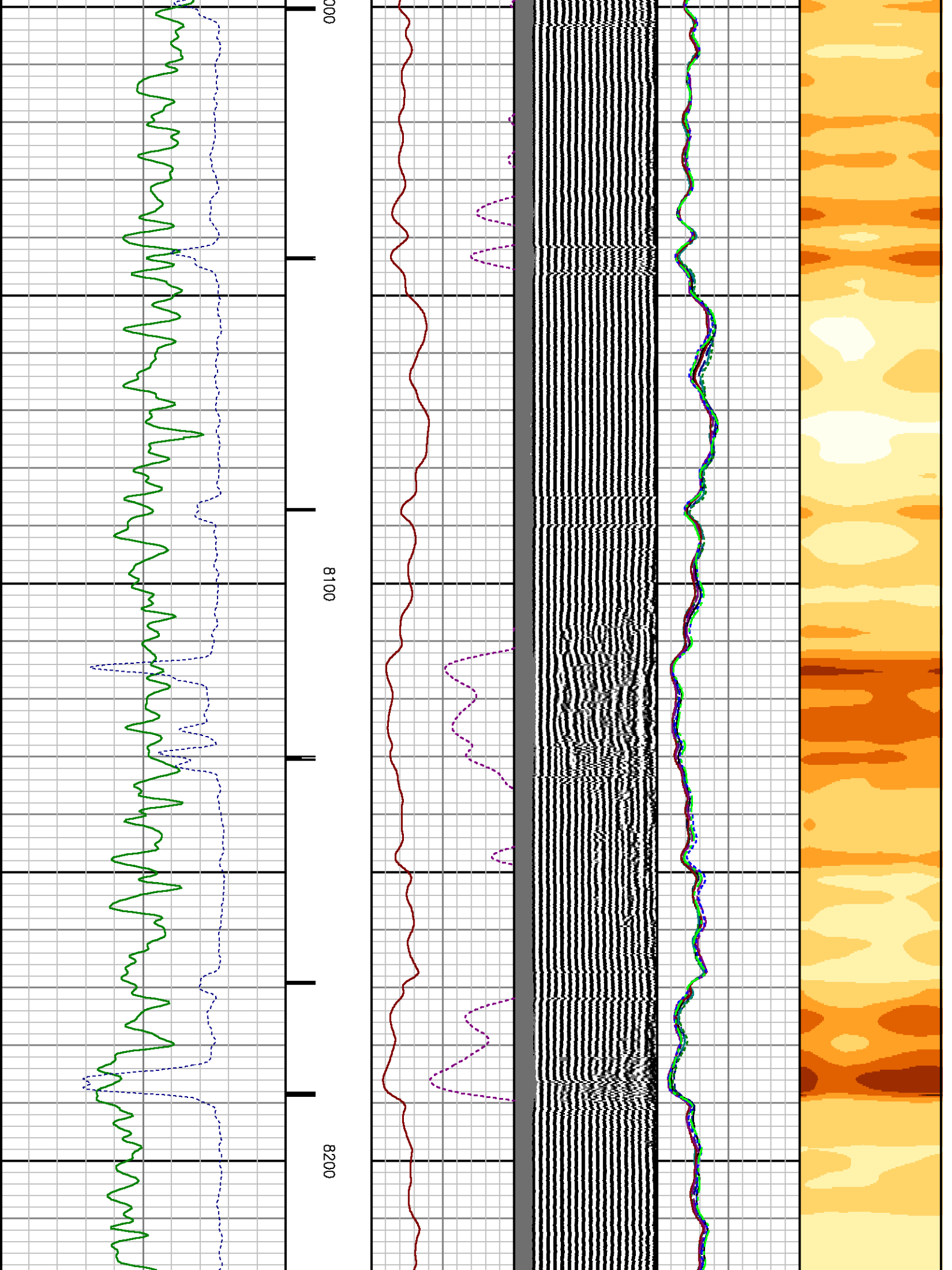


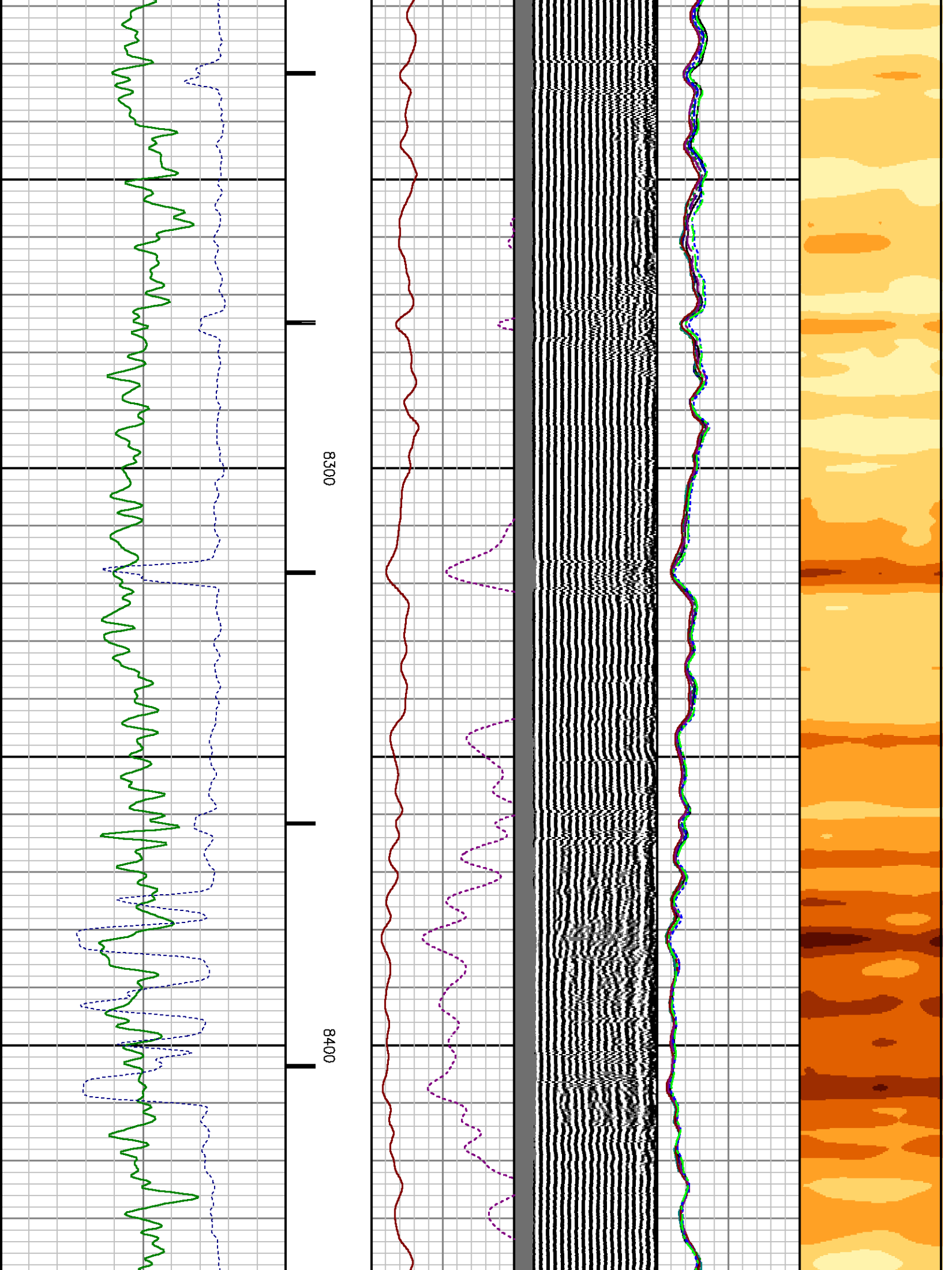


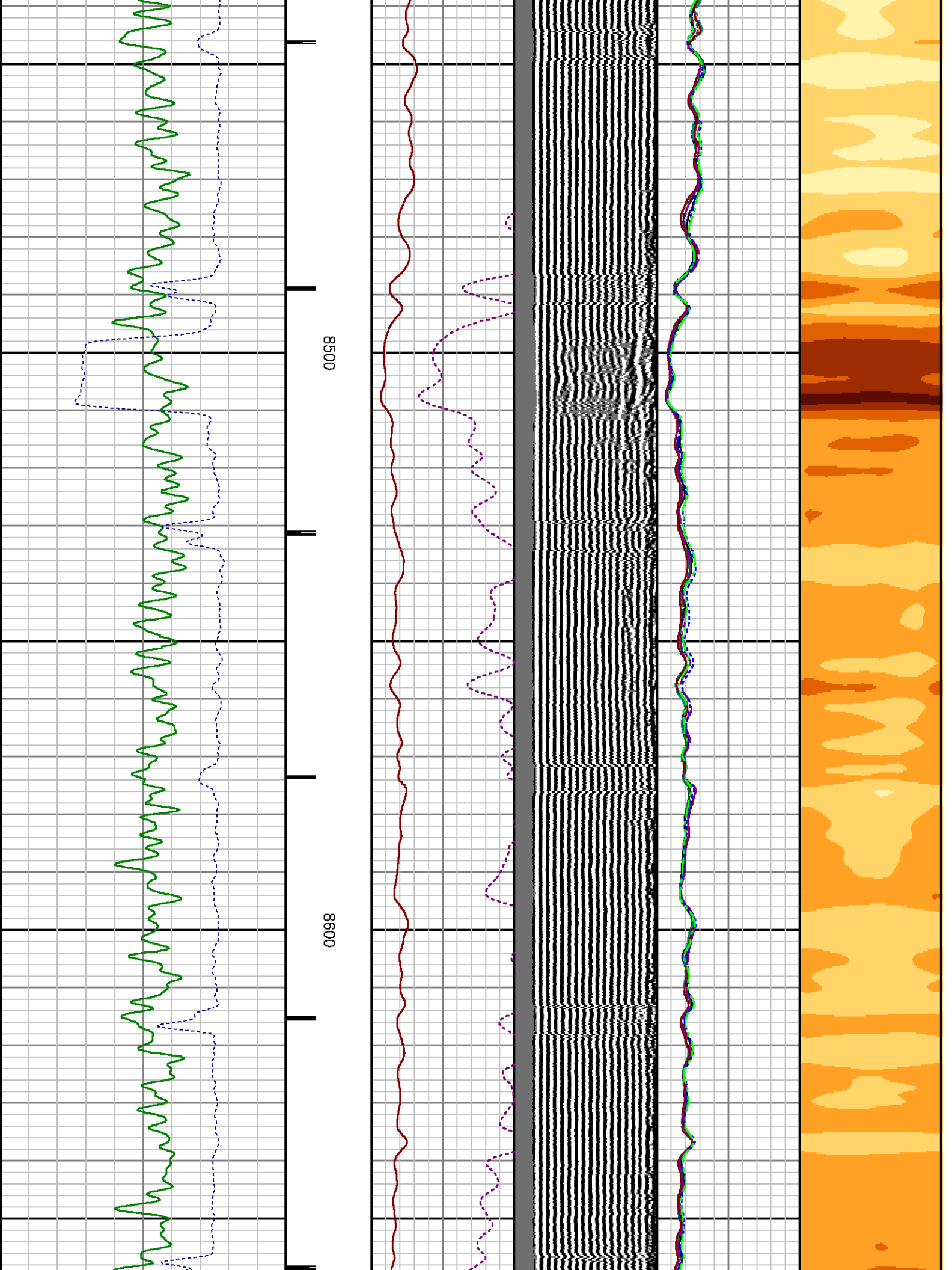


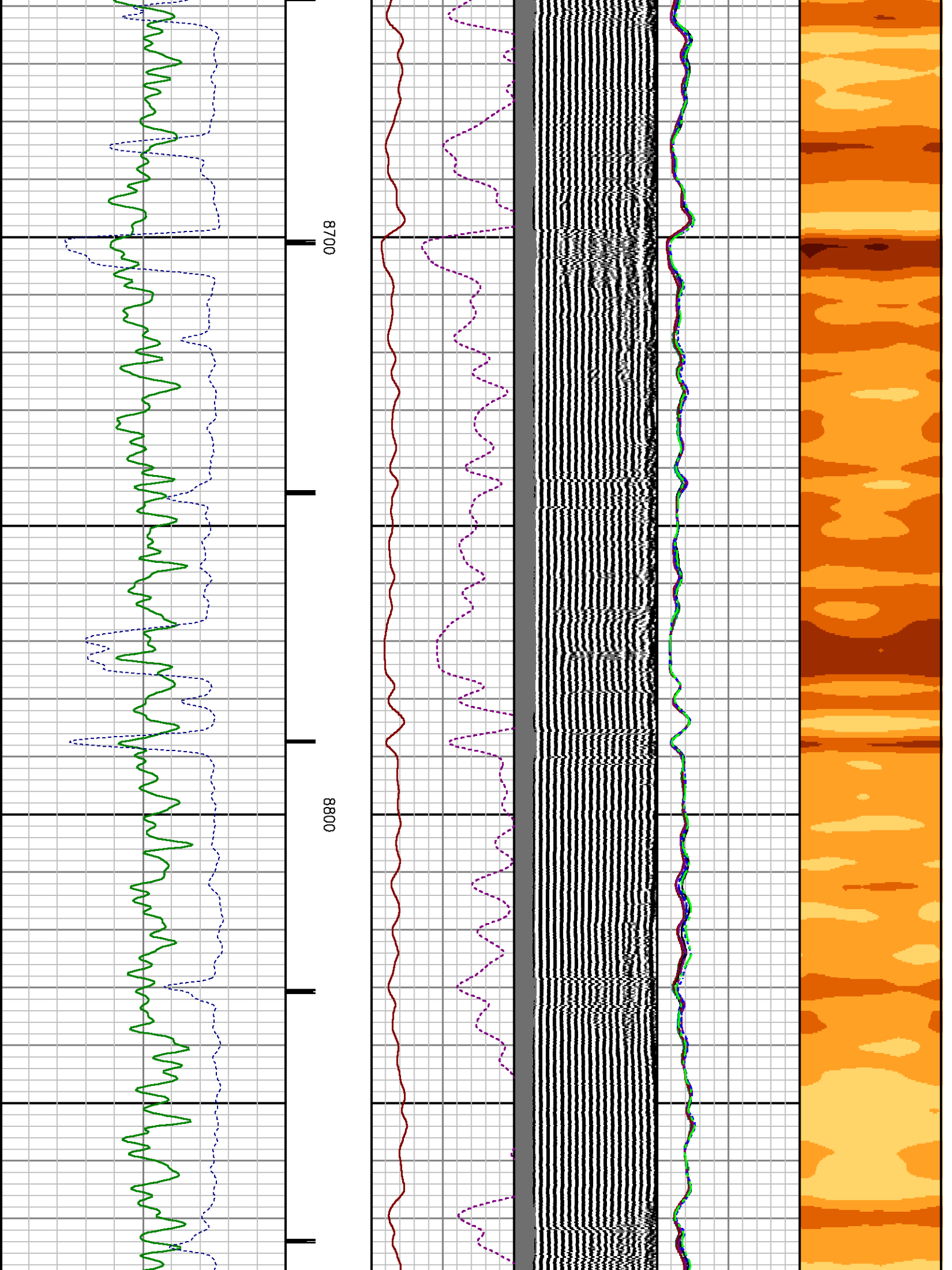




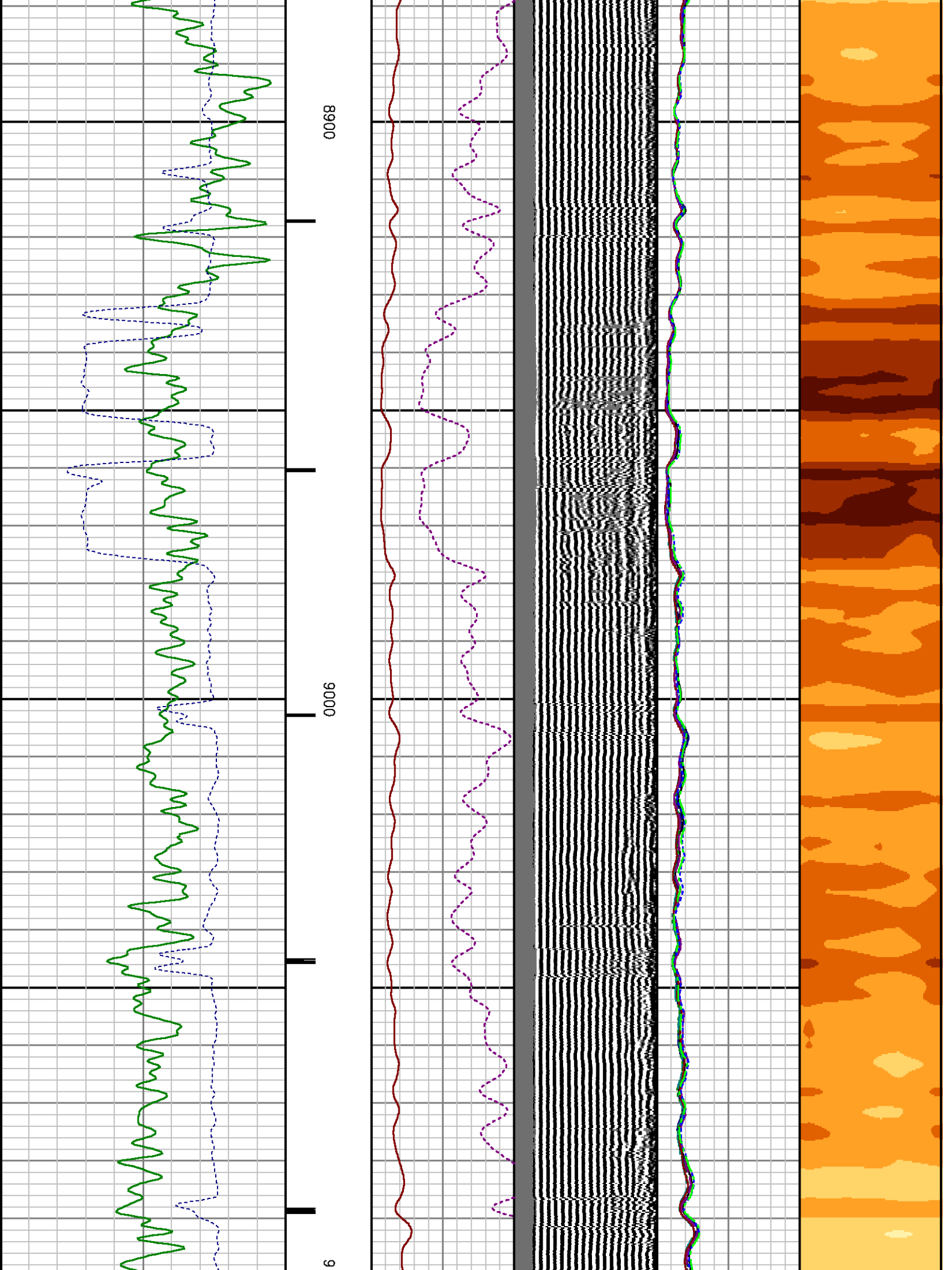


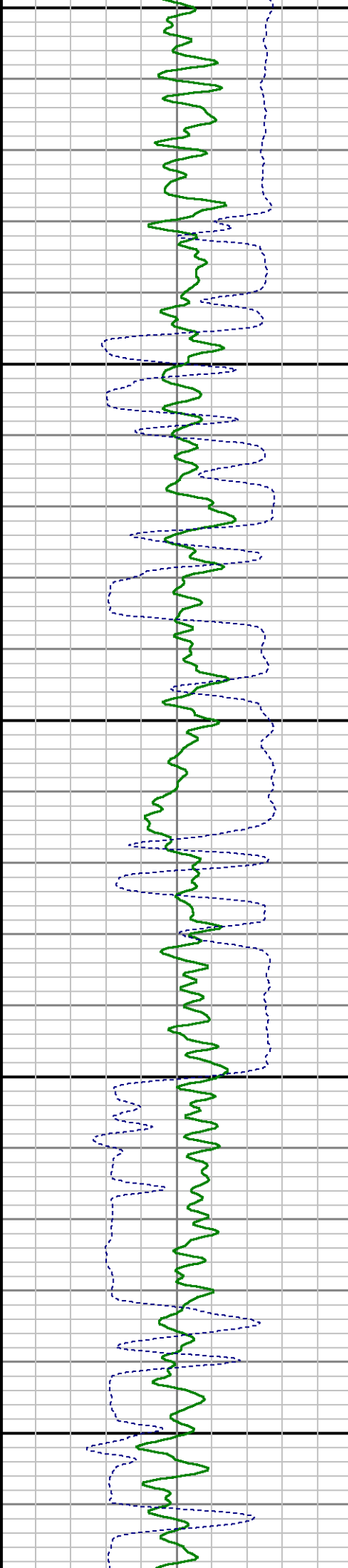
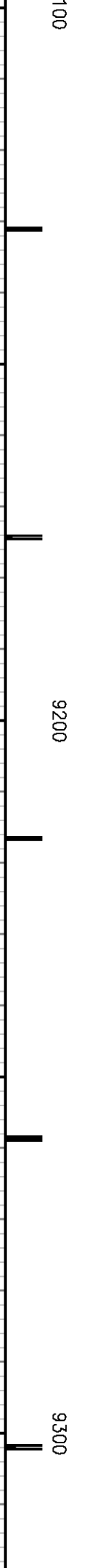
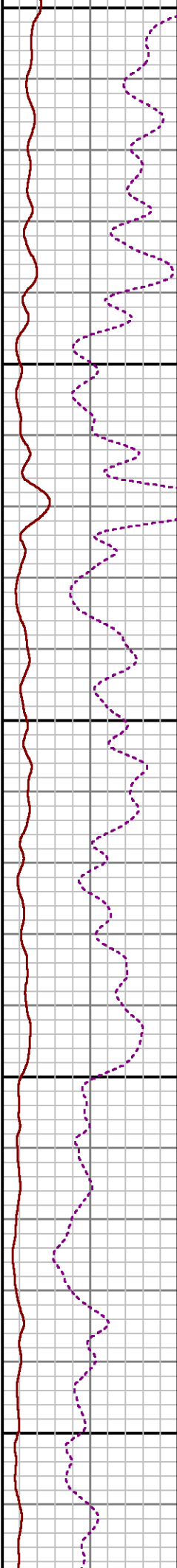
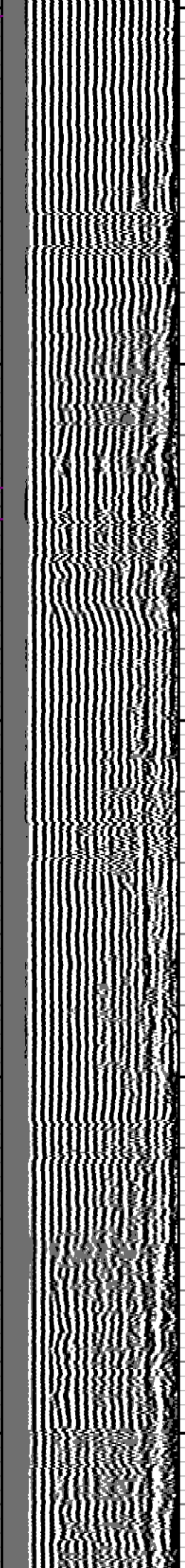
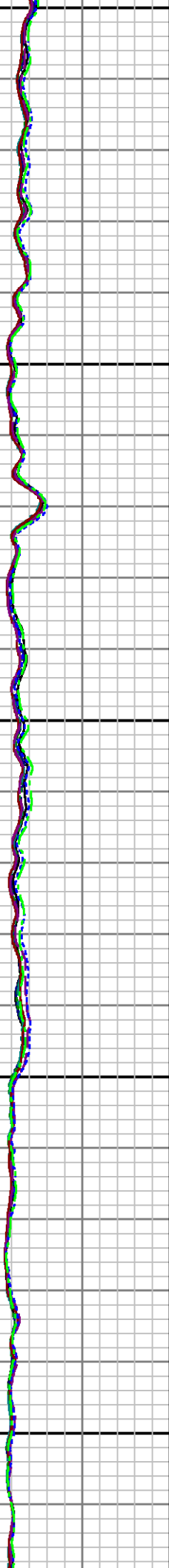
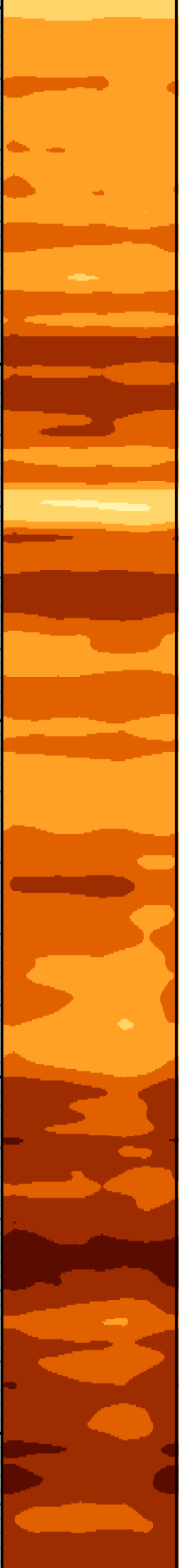


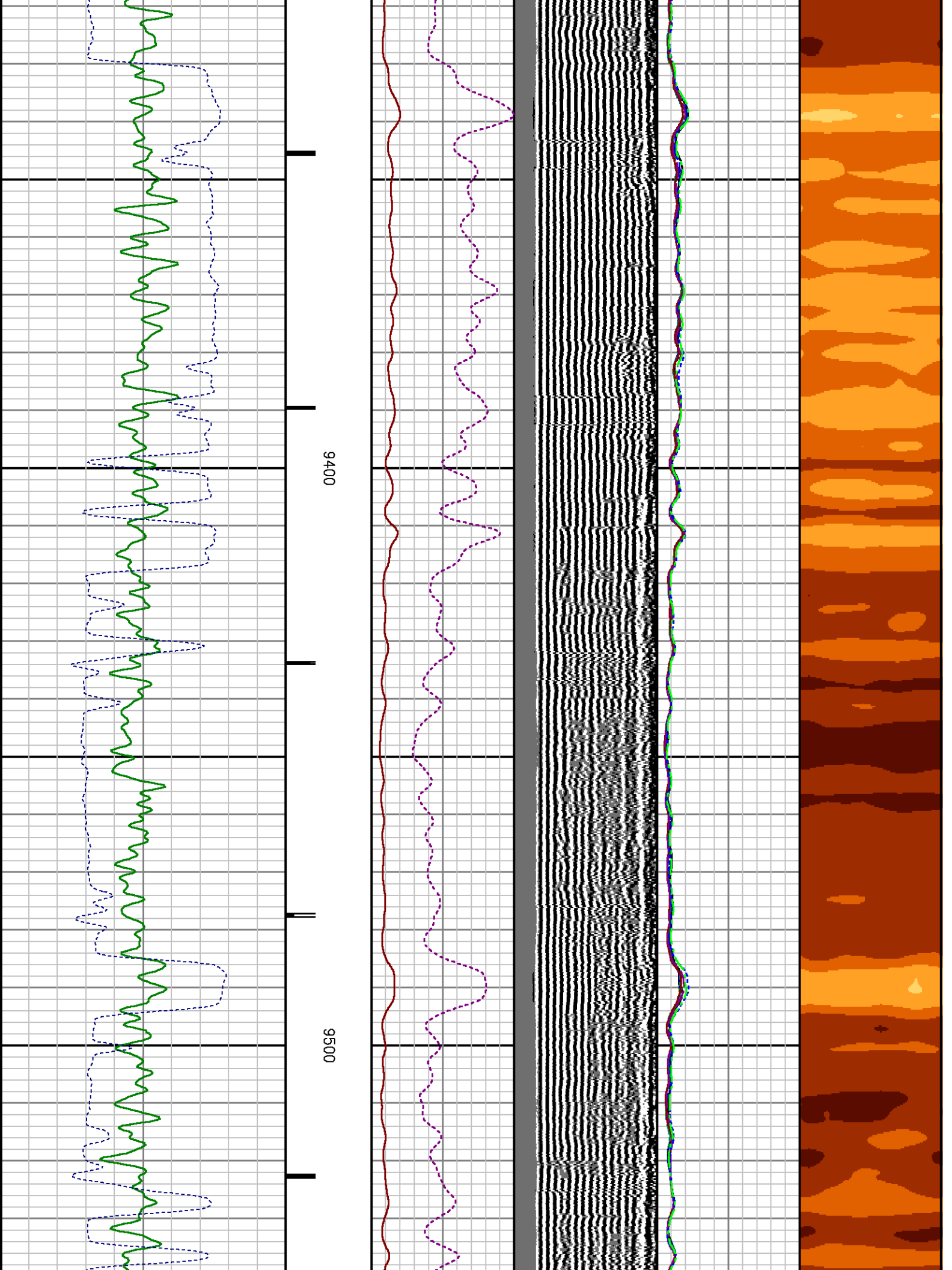


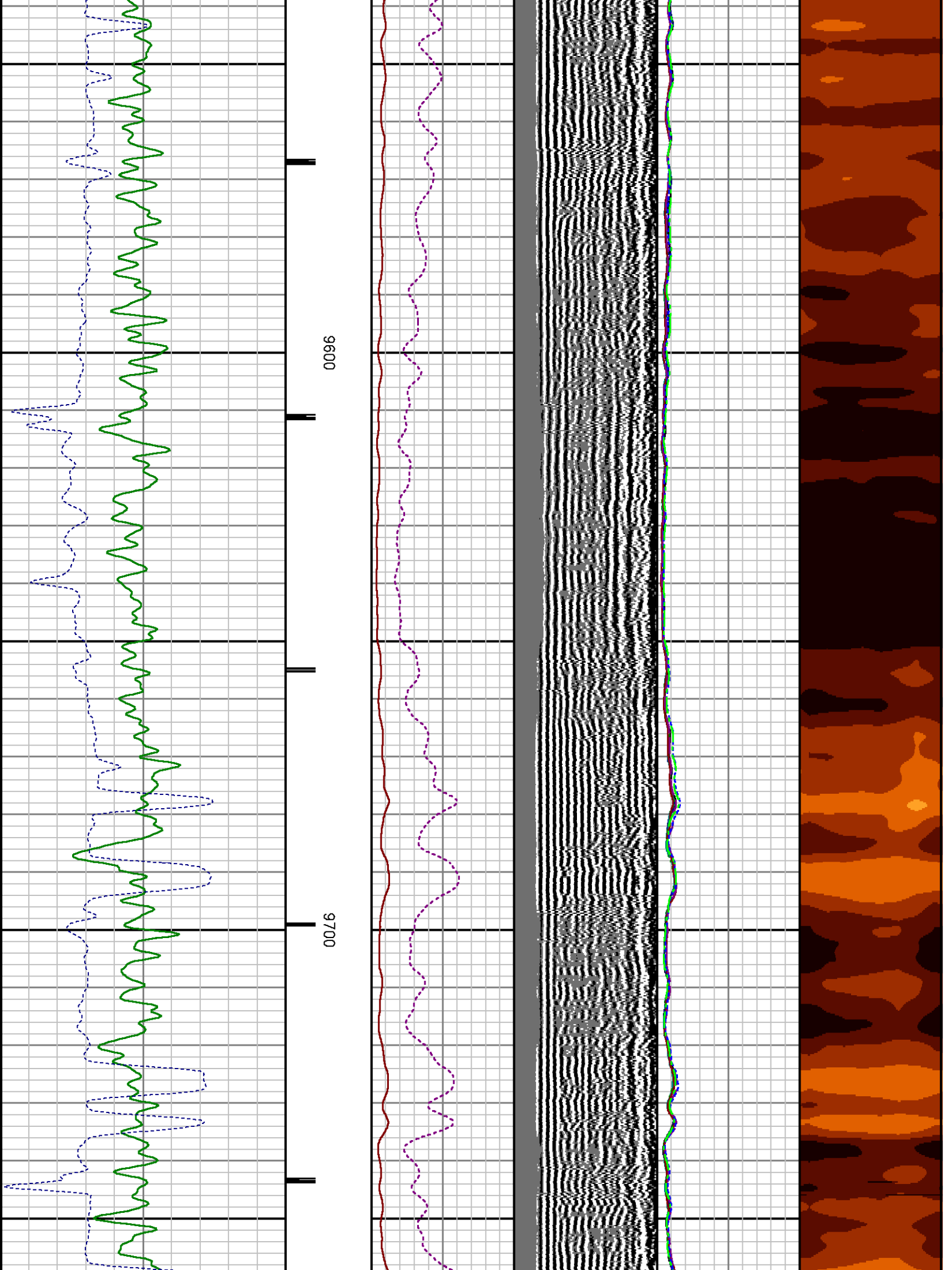


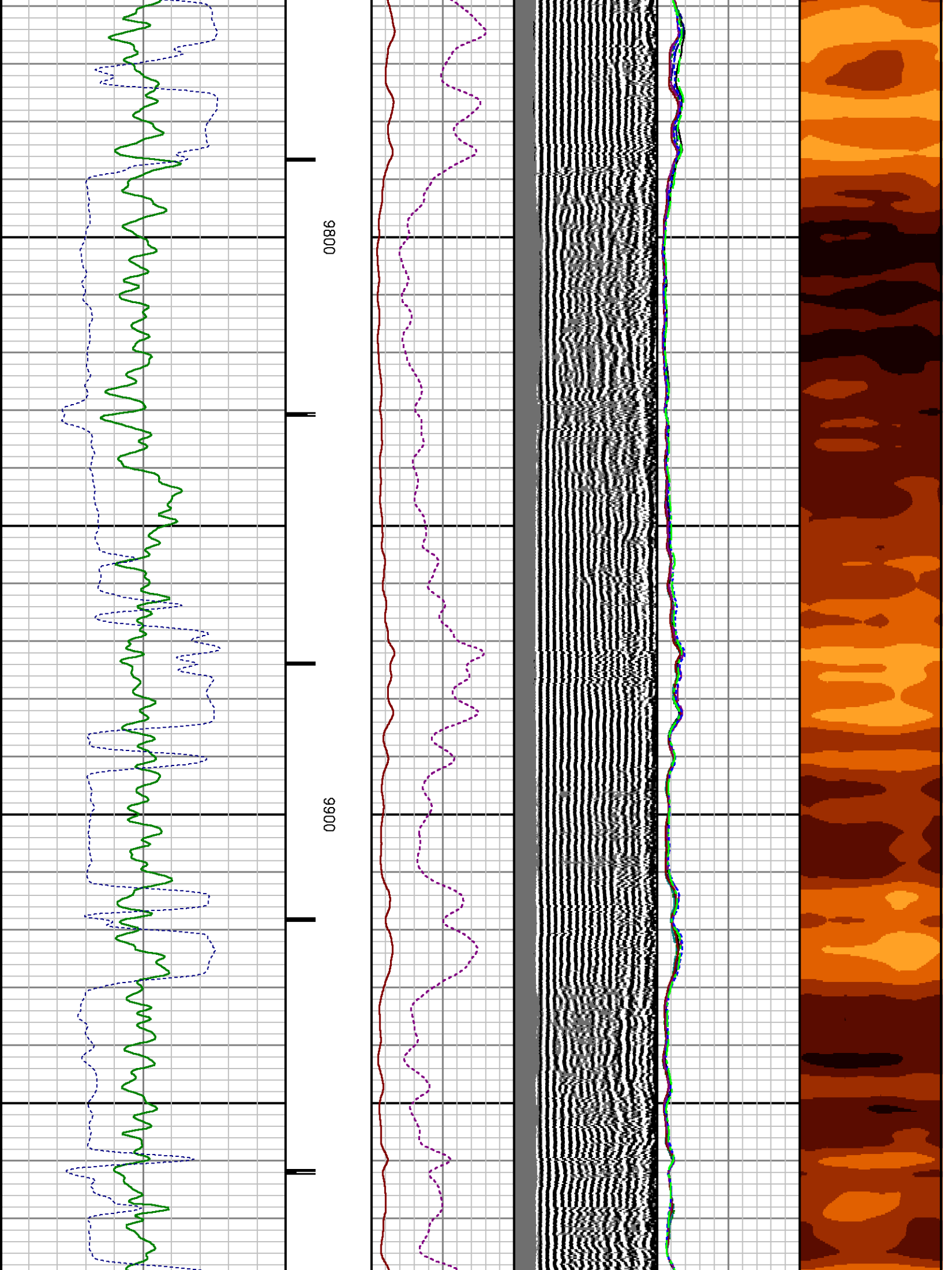




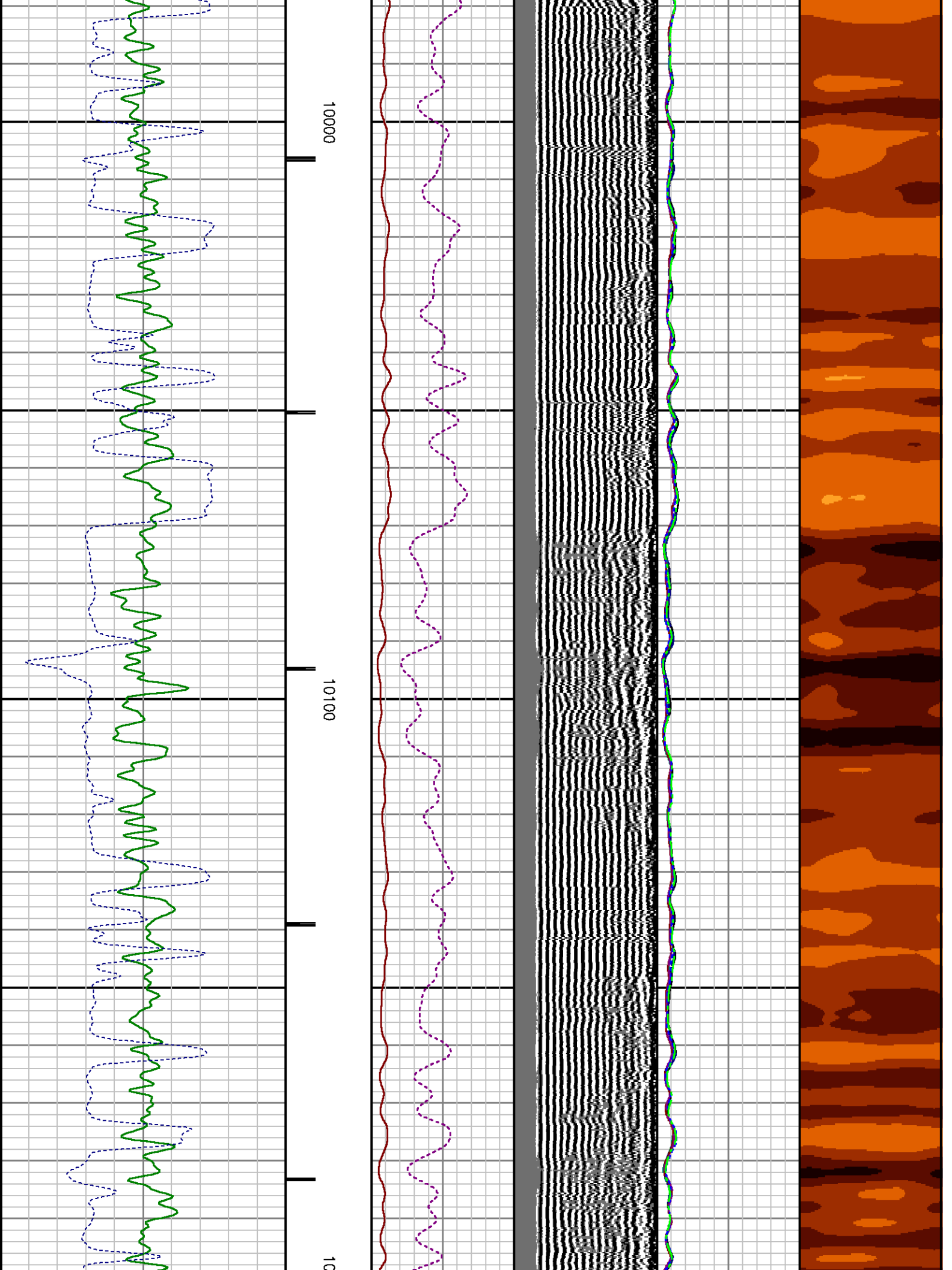




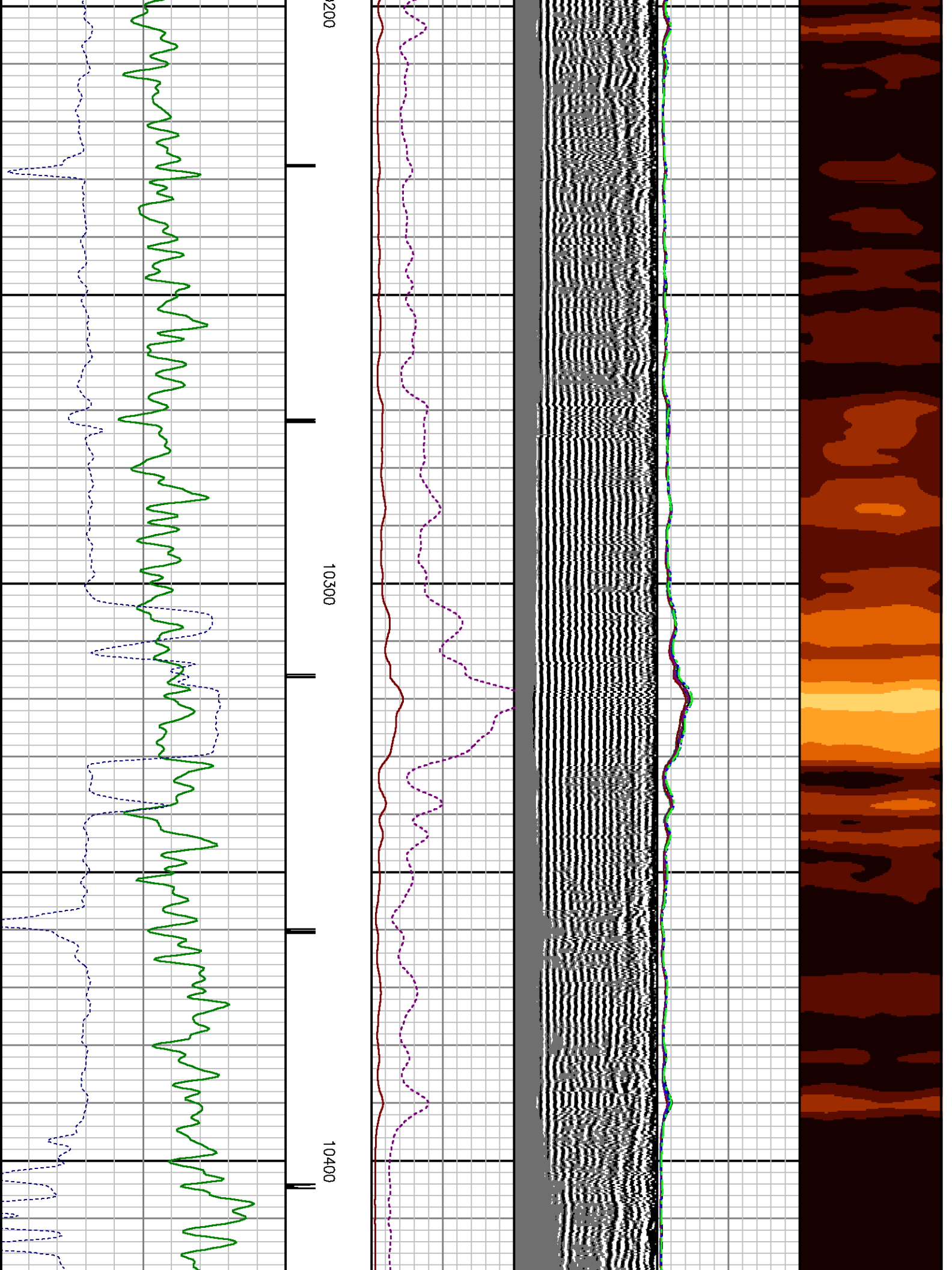


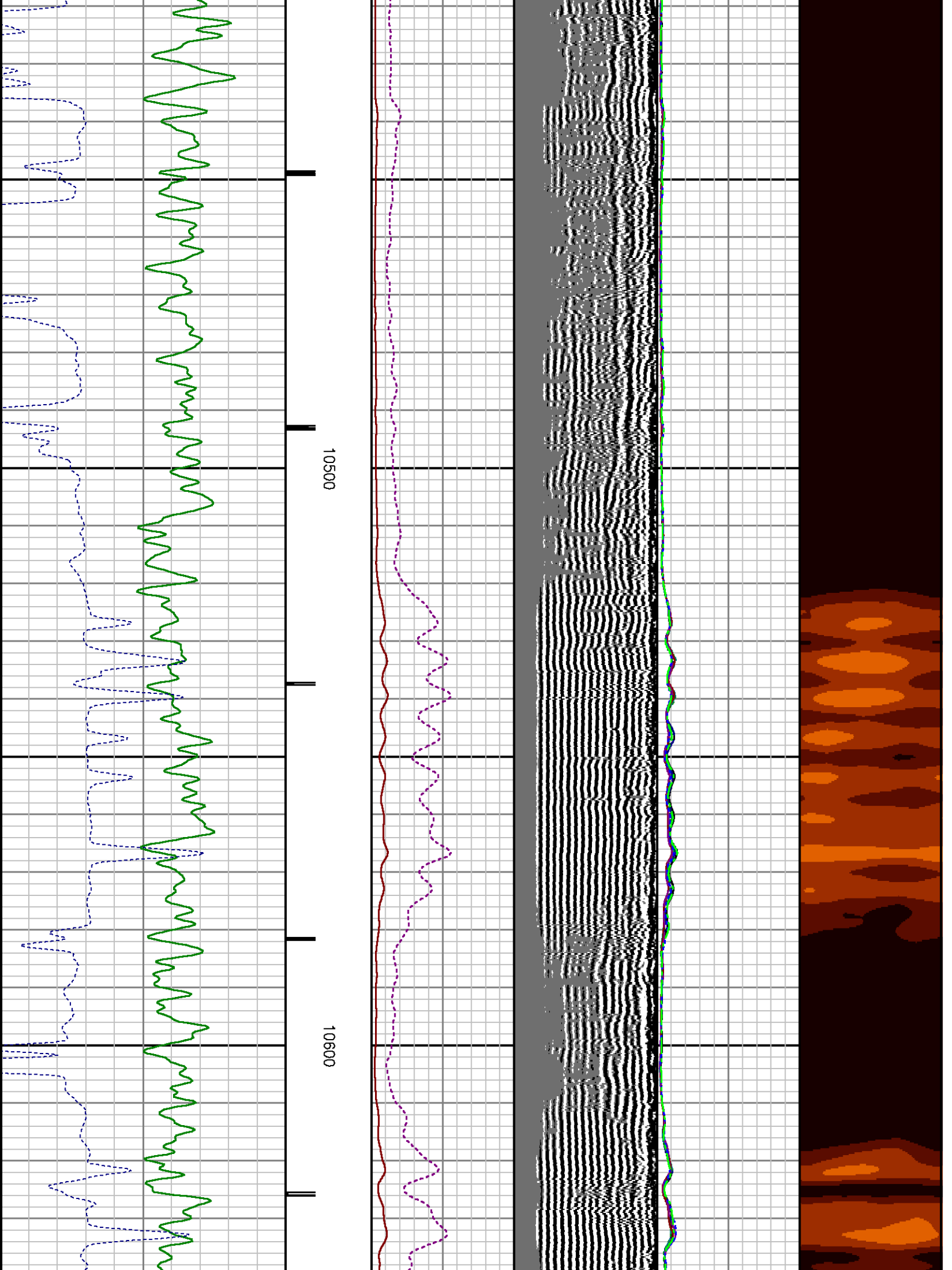


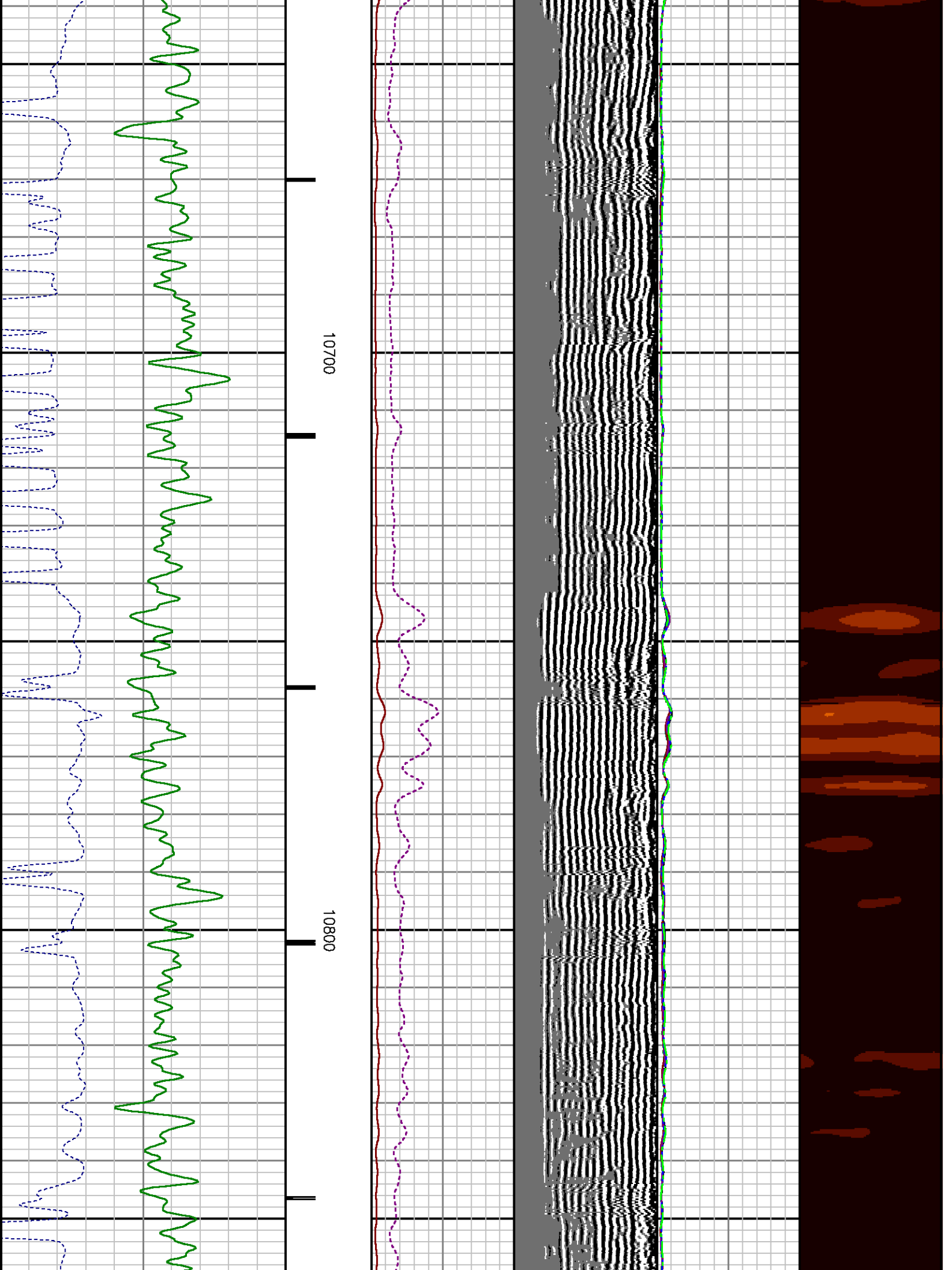


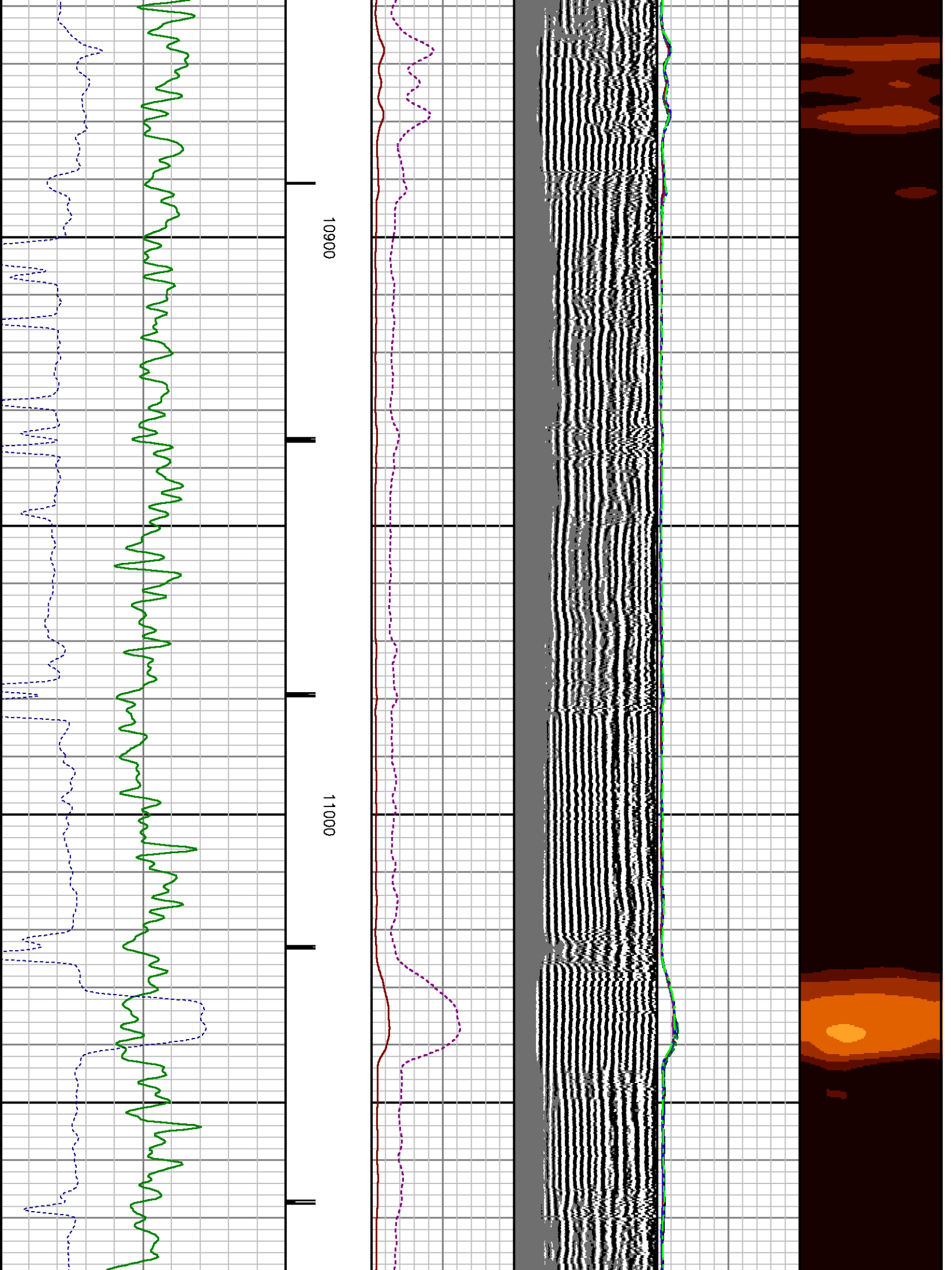


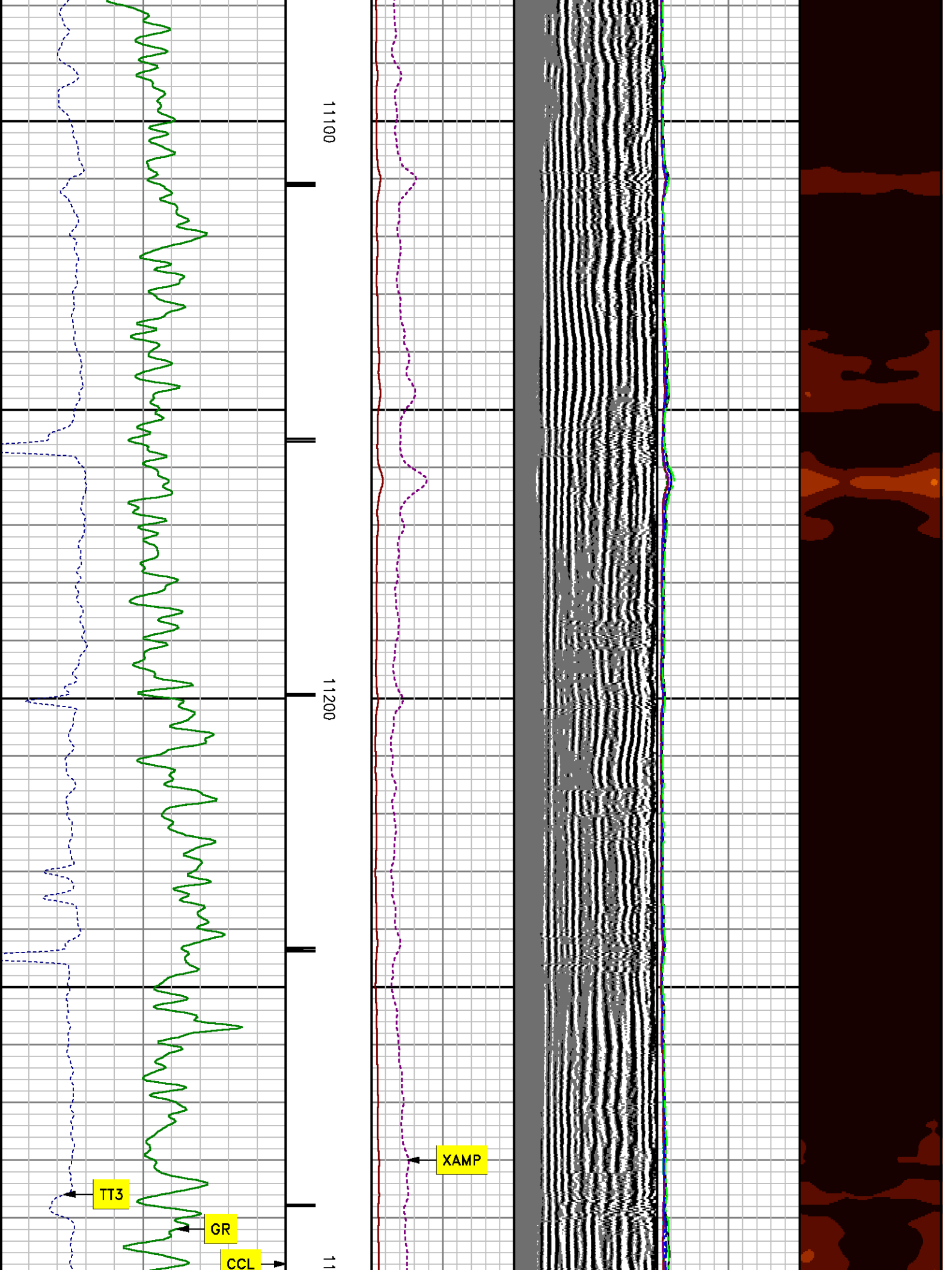


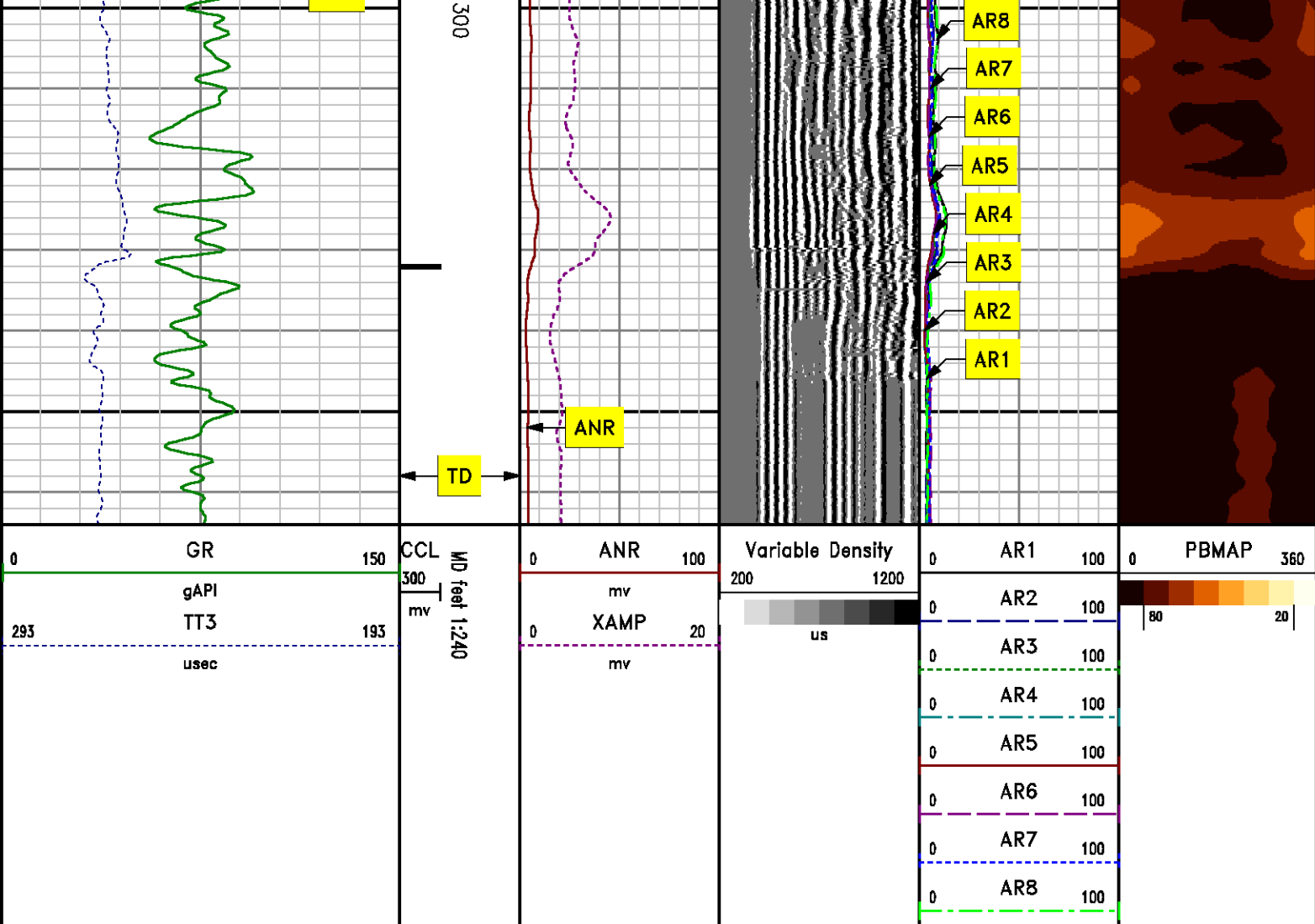












**REPEAT LOG**  
**0 PSI**

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	318.745	usec	7450.000	7851.000
RAL	Amp Gate Start Near	212.952	usec	7450.000	7851.000
RAL	Amp Gate Start Radial	212.952	usec	7450.000	7851.000
RAL	Amp Gate Width Far	25.000	usec	7450.000	7851.000
RAL	Amp Gate Width Near	25.000	usec	7450.000	7851.000
RAL	Amp Gate Width Radial	25.000	usec	7450.000	7851.000
RAL	casing od	5.500	inches	7450.000	7851.000



RAL	casing wt	20.000	lbm/ft	7450.000	7851.000
RAL	FB Start Far	304.461	usec	7450.000	7851.000
RAL	FB Start Near	187.952	usec	7450.000	7851.000
RAL	FB Start Radial	187.952	usec	7450.000	7851.000
RAL	FB Thresh Far	15.000	mv	7450.000	7851.000
RAL	FB Thresh Near	10.000	mv	7450.000	7851.000
RAL	FB Thresh Radial	10.000	mv	7450.000	7851.000
RAL	Fluid Travel Time	200.000	usec/ft	7450.000	7851.700

## DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-14.970	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	-13.050	AFAR	SIG	TT5			
2459XA	-11.340	CCL					
2459XA	-9.490	GR					
2459XA	-4.090	NEU					

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

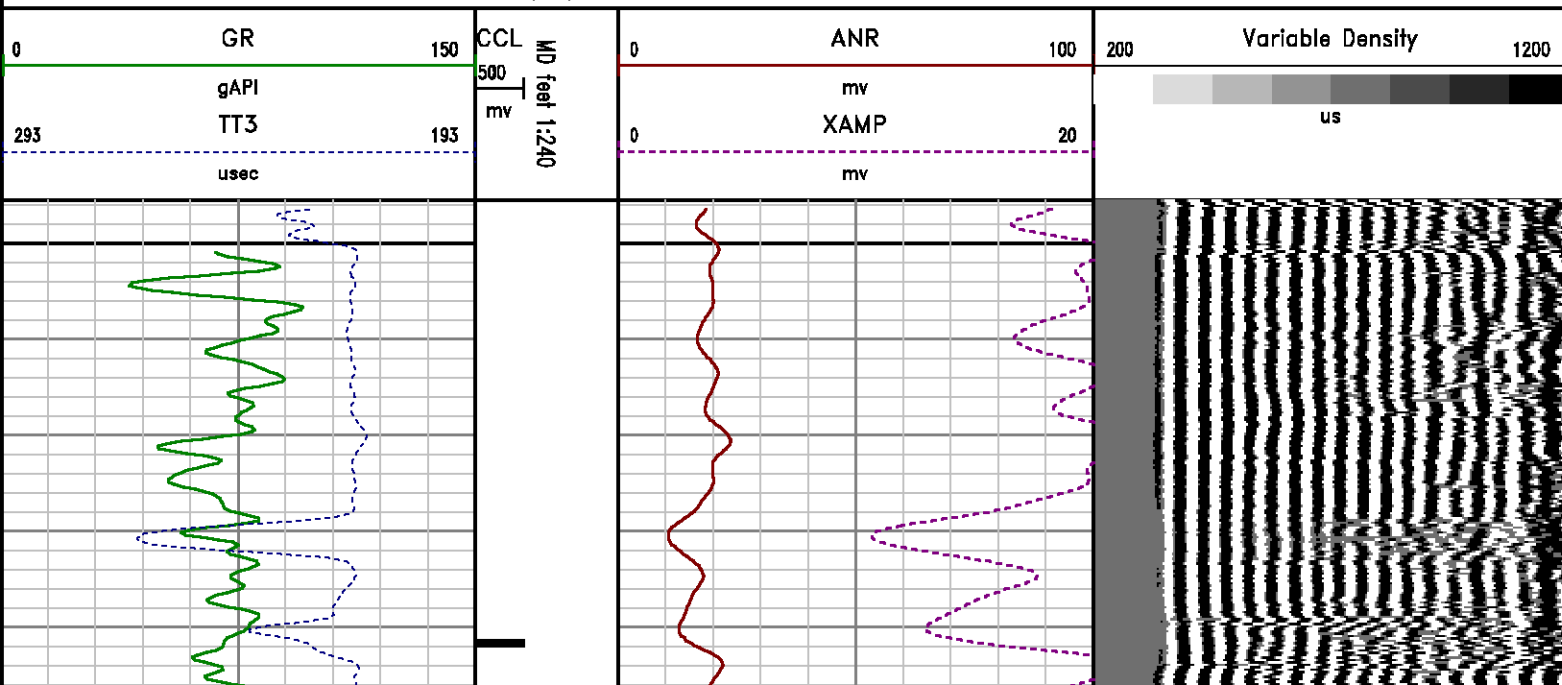
Well : FEDERAL GM 743-4

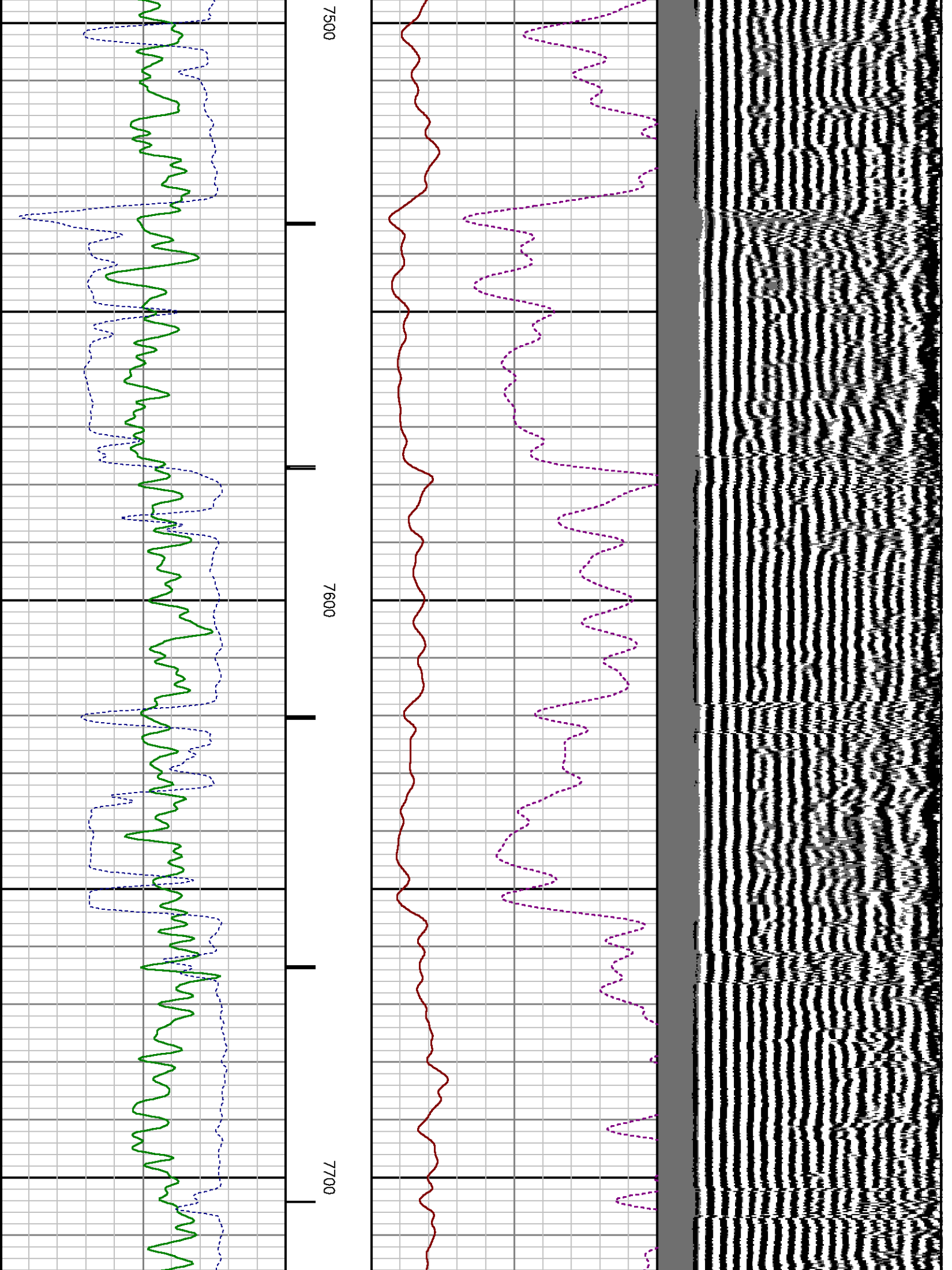
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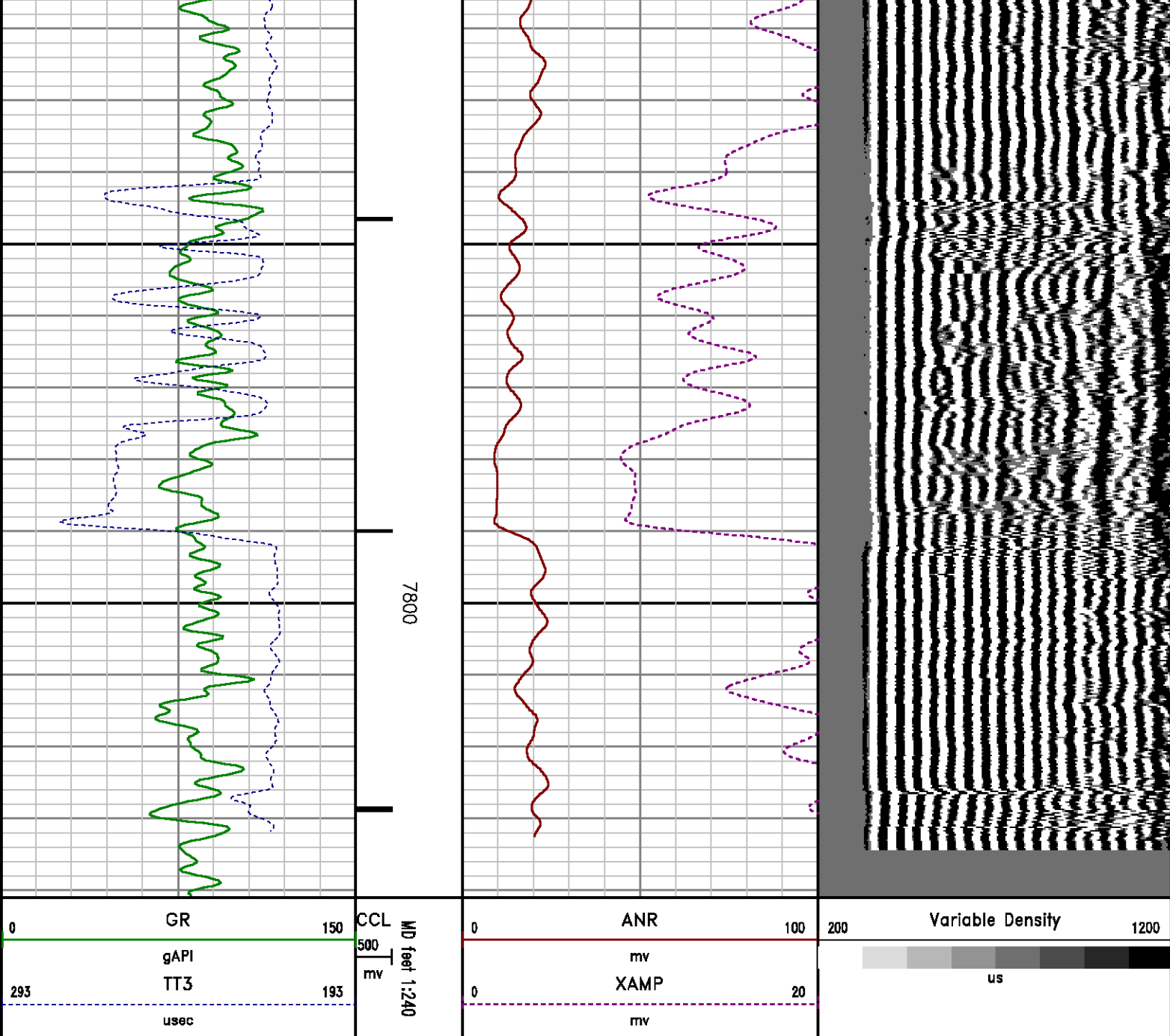
Mode : PlotMgr 5.4.504

Interval : 7445.50 - 7841.00 feet UP

Created : 10/18/2011 4:24:11 PM







## CALIBRATION SUMMARY

## GAMMA RAY

Calibration File: C:\case\calver\GR\503SE.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Sep 20 12:26:58 2011 TOOL SERIES: 2459YA ASSET: 503 SEQ: SE

DATE/TIME PERFORMED:		Tue Sep 20 12:28:42 2011		TOOL SERIES:		2459XA		ASSET:		503		SEQ:		SE	
Calibrator #	Background	Calibrator On		Multiplicative	Background	Calibrator On		Differential							
[cps]	[cps]	[cps]			[api]	[api]		[api]							
S2K BA905	79.56	313.47		0.791	62.92	247.92		185.00							

Verification File: C:\case\calver\GR\503SE.VP

PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Tue Sep 20 12:28:42 2011 TOOL SERIES: 2459XA ASSET: 503 SEQ: SE

Calibrator #	Background	Calibrator On		Multiplicative	Background	Calibrator On		Differential
[cps]	[cps]	[cps]			[api]	[api]		[api]
S2K BA905	86.80	319.07		0.791	68.65	252.35		183.70

**RALSHP**

Shop Calibration: C:\case\calver\RALSHP\028018 shp.cal

SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Oct 18 10:31:22 2011 TOOL SERIES: 1426XA ASSET: 028 SEQ: 018

Tool Delay	-56.00	Tank OD	5.50	Tank Wt	15.50	Tank ID	4.95	
[usec]		In		lbm/ft		In		
RECEIVER	Travel Time	Amp. Gate	Amp. Gate	Zero Gate	Zero Gate	Zero Amp.	Amp Ref.	Shop Factor
	[usec]	Start	Width	Start	Width	[mV]	[mV]	
		[usec]	[usec]	[usec]	[usec]			
CAL Pulse	216	216	25	166	25	0.133	100.00	0.19
3 Ft. Receiver	216	216	25	166	25	0.339	100.00	0.19
5 Ft. Receiver	326	324	25	282	25	-6.783	150.00	0.20
Radial #1	215	216	25	166	25	-1.050	100.00	0.19
Radial #2	215	216	25	166	25	0.219	100.00	0.19
Radial #3	215	216	25	166	25	-0.008	100.00	0.19
Radial #4	216	216	25	166	25	-0.275	100.00	0.19
Radial #5	217	216	25	166	25	0.464	100.00	0.19
Radial #6	215	216	25	166	25	-0.350	100.00	0.19
Radial #7	215	216	25	166	25	-0.161	100.00	0.19
Radial #8	216	216	25	166	25	0.783	100.00	0.19

**RALFLD**

Well site Calibration: C:\case\calver\RALFLD\028019 fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Oct 18 16:13:05 2011 TOOL SERIES: 1426XA ASSET: 028 SEQ: 019

Tool Delay	-57.00	Casing OD	5.50	Casing Wt	20.00	Casing ID	4.78	
[usec]		In		lbm/ft		In		
RECEIVER	Zero Gate	Zero Gate	Zero Amp.	Full Amp.	Wellsite Factor	Amp. Ref		
	Start	Width	[mV]	[mV]		[mV]		
	[usec]	[usec]						

CAL Pulse	166	25	-0.055	0.000	0.99	100.000
3 Ft. Receiver	213	25	-0.120			
5 Ft. Receiver	319	25	0.530			
Radial #1	213	25	-0.045			
Radial #2	213	25	-0.026			
Radial #3	213	25	-0.076			
Radial #4	213	25	-0.047			
Radial #5	213	25	-0.080			
Radial #6	213	25	-0.057			
Radial #7	213	25	-0.075			
Radial #8	213	25	-0.054			

## TOOL DIAGRAM

### OTA SHORT CABLE HEAD

#### CENTRALIZER

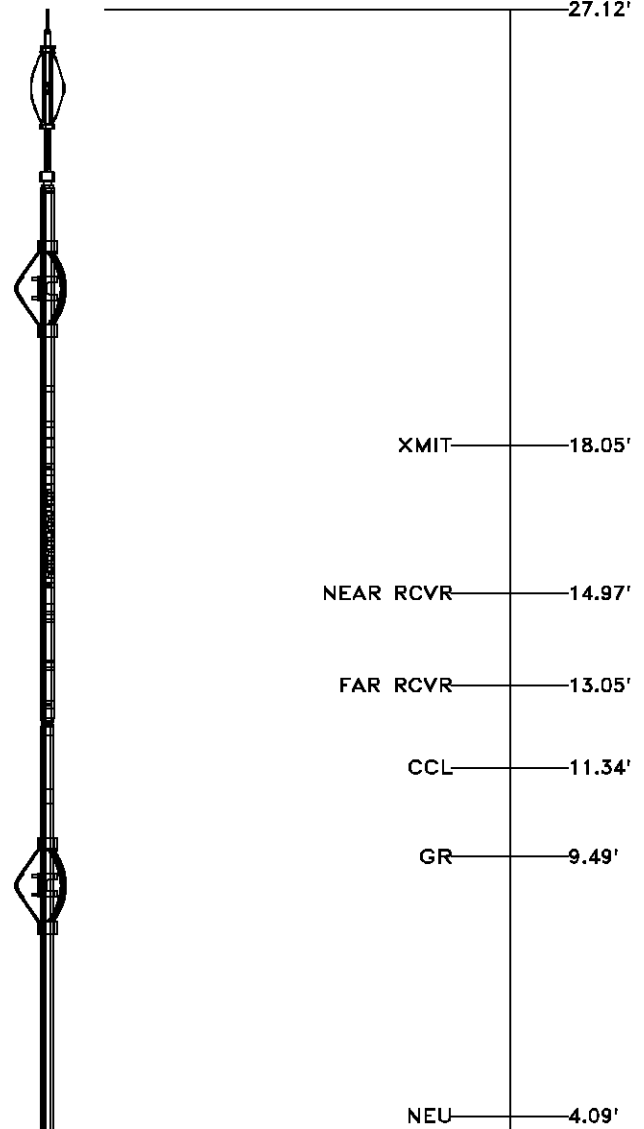
Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

### 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



<b>CENTRALIZER</b>	
Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb



0.00'

Total Length: 27.12'

Total Weight: Not Available

Max Diameter: 0' 3.12"



Baker Atlas

609094'

Company Well Field County	WILLIAMS PRODUCTION COMPANY				File No:
	FEDERAL GM 743-4				CH044032
	GRAND VALLEY				API No:
	GARFIELD	State	COLORADO		05045209120000
Location					Elevations
SHL: 1710' FSL & 789' FEL					KB 6091 ft
BHL: 1432' FSL & 477' FEL					DF 6090 ft
					GL 6085 ft
SEC	4	TWP	7S	RGE	96W
					4 7S 96W
					MV 8-4 PAD
					NABORS 574

4 7S 96W

MV 8-4 PAD

NABORS 574