



RADIAL ANALYSIS BOND LOG

Baker Atlas

File No:	1203	Company	WILLIAMS PRODUCTION RMT COMPANY
API No:	05045181430000	Well	RMF 441-36
		Field	RULISON
		County	GARFIELD
		State	COLORADO
S:38 T:65 R:94W PAD: RMF 32-38 Rte: W680RS 576	Location SHL: 1452' FIL & 2458' FEL BHL: 902' FIL & 396' FEL SEC 38 TWP 6S RGE 94W	Other Services NONE	
Permanent Datum Log Measured From Drill Measured From	G.L. _____ Elevation 6426.3 ft K.B. _____ 26 ft Above P. D. KELLY BUSHING	Elevations KB 6452.3 ft DF 6451.3 ft GL 6426.3 ft	

Date	22-JULY-2010
Run	ONE
Service Order	557987
Depth Driller	9215 ft
Depth Logger	9122 ft
Bottom Logged Interval	9122 ft
Top Logged Interval	SURFACE
Time Started	11:30
Time Finished	15:00
Operator Rig Time	3.5 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	236 degF
Reference Log	5MS/PLATFORM EXPRESS
Reference Log Date	4-JUL-10
Equipment No.	4271
Location	GRAND JCT, CO
Recorded By	TIM KAUFF
Witnessed By	MR. GARY SHINABAKER

- 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		
7.875 in		

Casing Record				
Size	Weight	Grade	From	To
9.825 in	N/A	N/A	SURFACE	1120.2 ft
4.5 in	11.6 lbm/ft	N/A	SURFACE	9240 ft

Remarks
BHT RECORDED 236"
SHORT JOINT #5804' - 5825'
THE CREW OF 4271 THANKS YOU.

Equipment Data				
Run	Trip	Tool	Series Number	Serial Number

1	1	MANDREL	1426XA	10417452	CENTRALIZED
1	1	GAMMA RAY	2458XA	10417457	CENTRALIZED

MAIN SECTION PRIMARY PRESENTATION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	usec	19.435	9149.000
RAL	Amp Gate Start Near	200.391	usec	19.435	9149.000
RAL	Amp Gate Start Radial	200.391	usec	19.435	9149.000
RAL	Amp Gate Width Far	25.000	usec	19.435	9149.000
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RAL	casing od	4.500	inches	19.435	9149.000
RAL	casing wt	11.600	lbm/ft	19.435	9149.000
RAL	FB Start Far	281.900	usec	19.435	9149.000
RAL	FB Start Near	175.391	usec	19.435	9149.000
RAL	FB Start Radial	175.391	usec	19.435	9149.000
RAL	FB Thresh Far	15.000	mv	19.435	9149.000
RAL	FB Thresh Near	10.000	mv	19.435	9149.000
RAL	FB Thresh Radial	10.000	mv	19.435	9149.000
RAL	Fluid Travel Time	200.000	usec/ft	19.435	9148.649

DEPTH OFFSETS (for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-15.360	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	-14.360	AFAR	SIG	TT5			
1426XA	-7.250	CCL					
1426XA	-5.390	GR					
1426XA	0.000	NEU					

Created by : RAL, v4.8.007

Plotted by : PlatMgr, v5.4.504

Company : WILLIAMS PRODUCTION RMT COMPANY

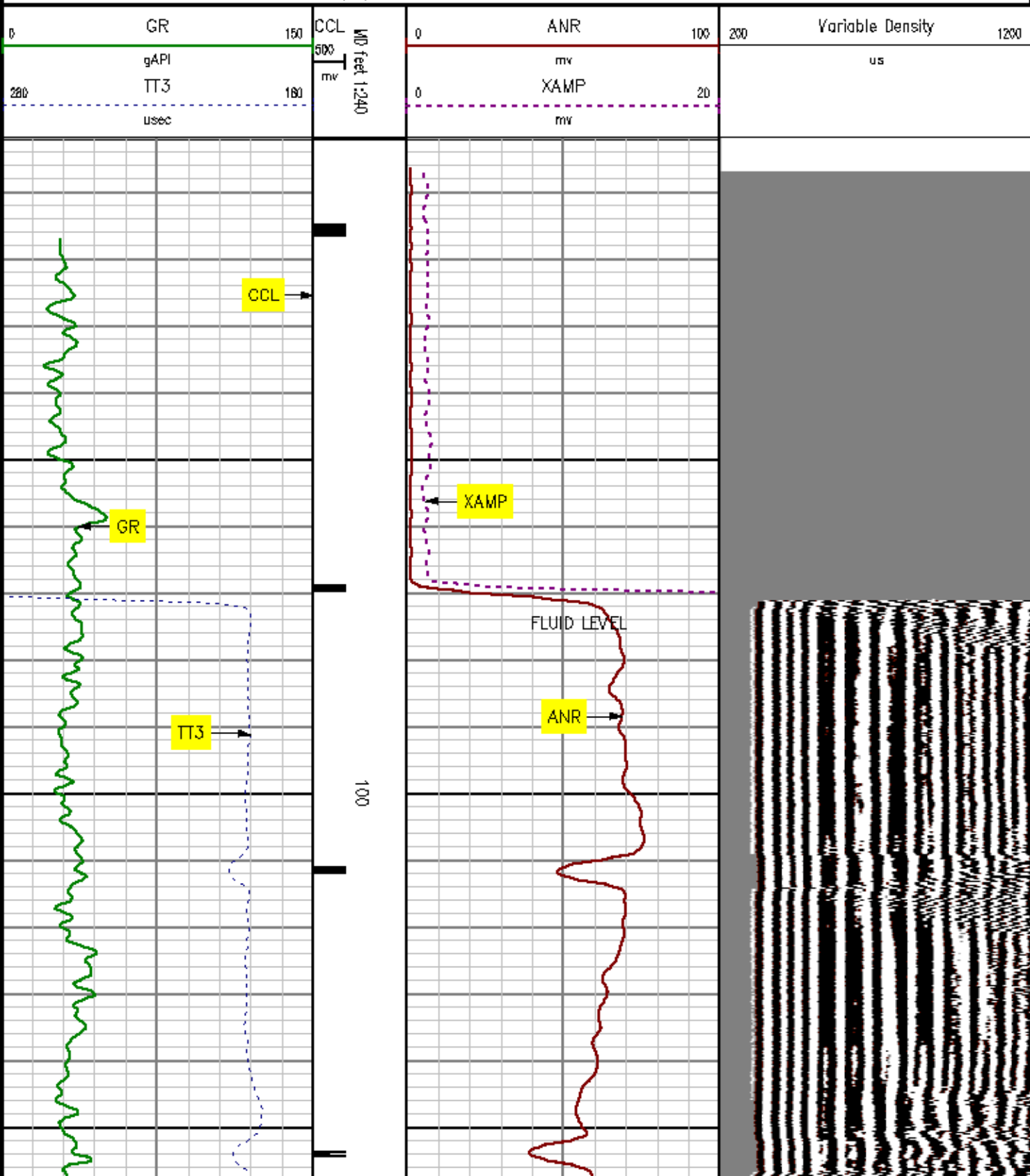
Well : RWF 441-36

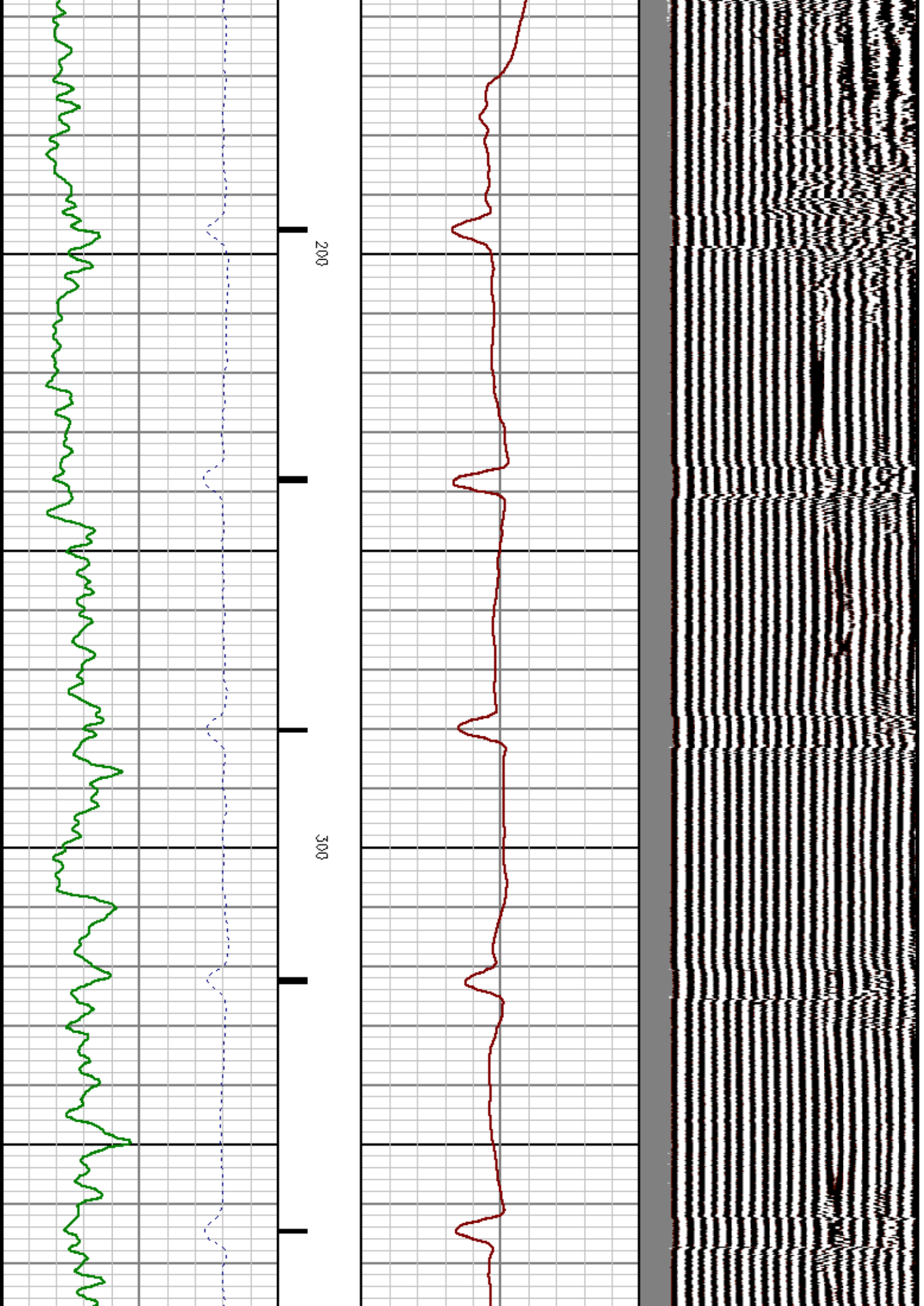
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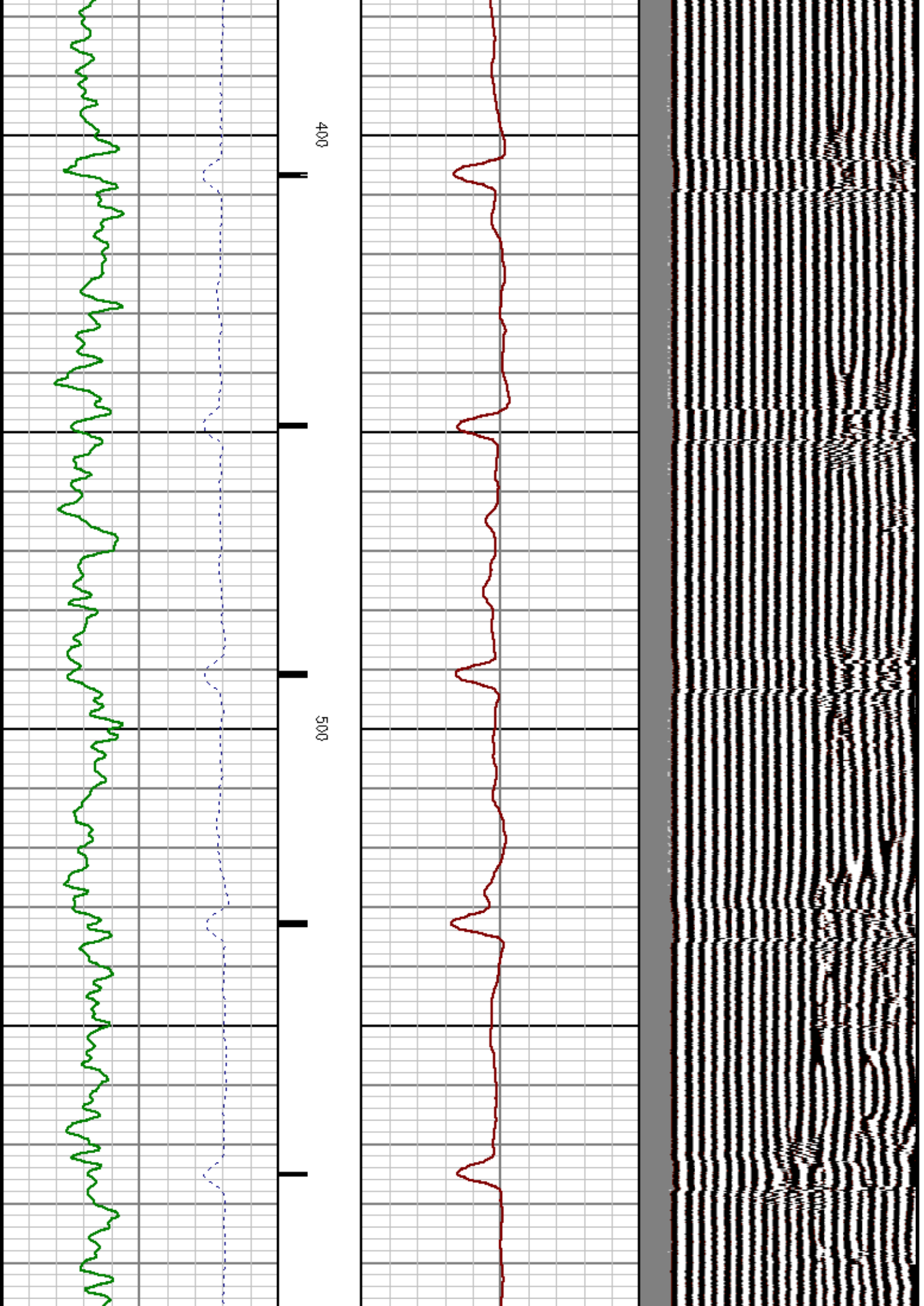
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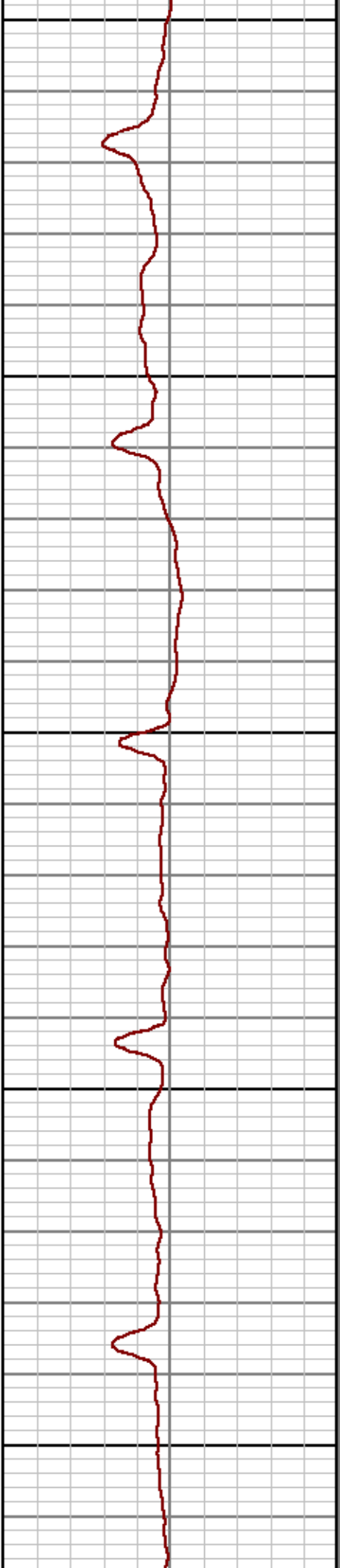
Interval : 2.00 - 9150.00 feet UP

Created : 7/22/2010 12:08:14 PM





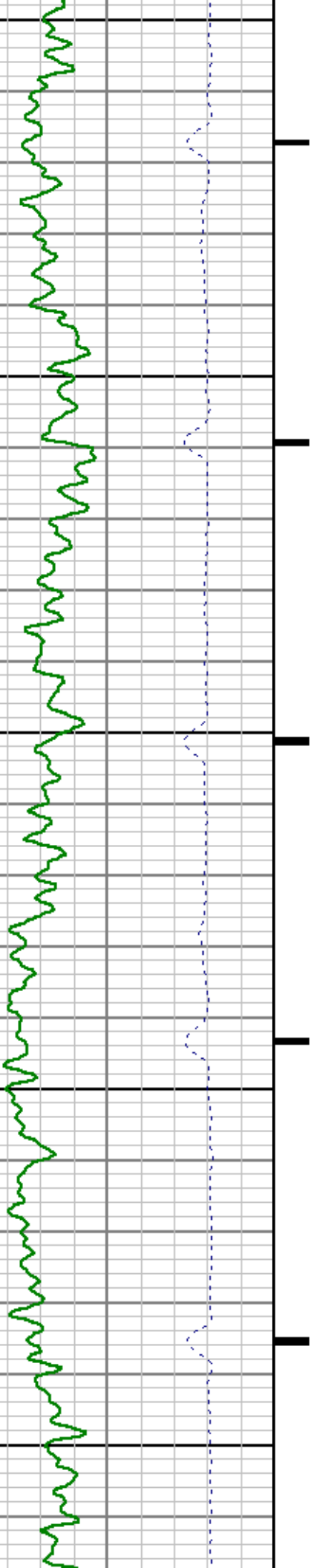


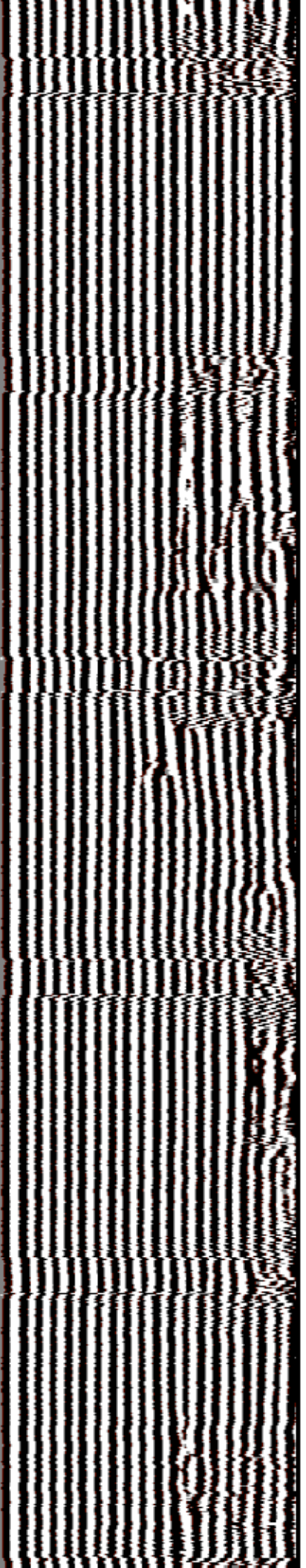


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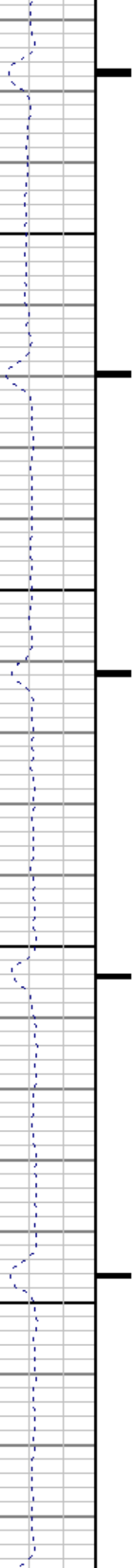
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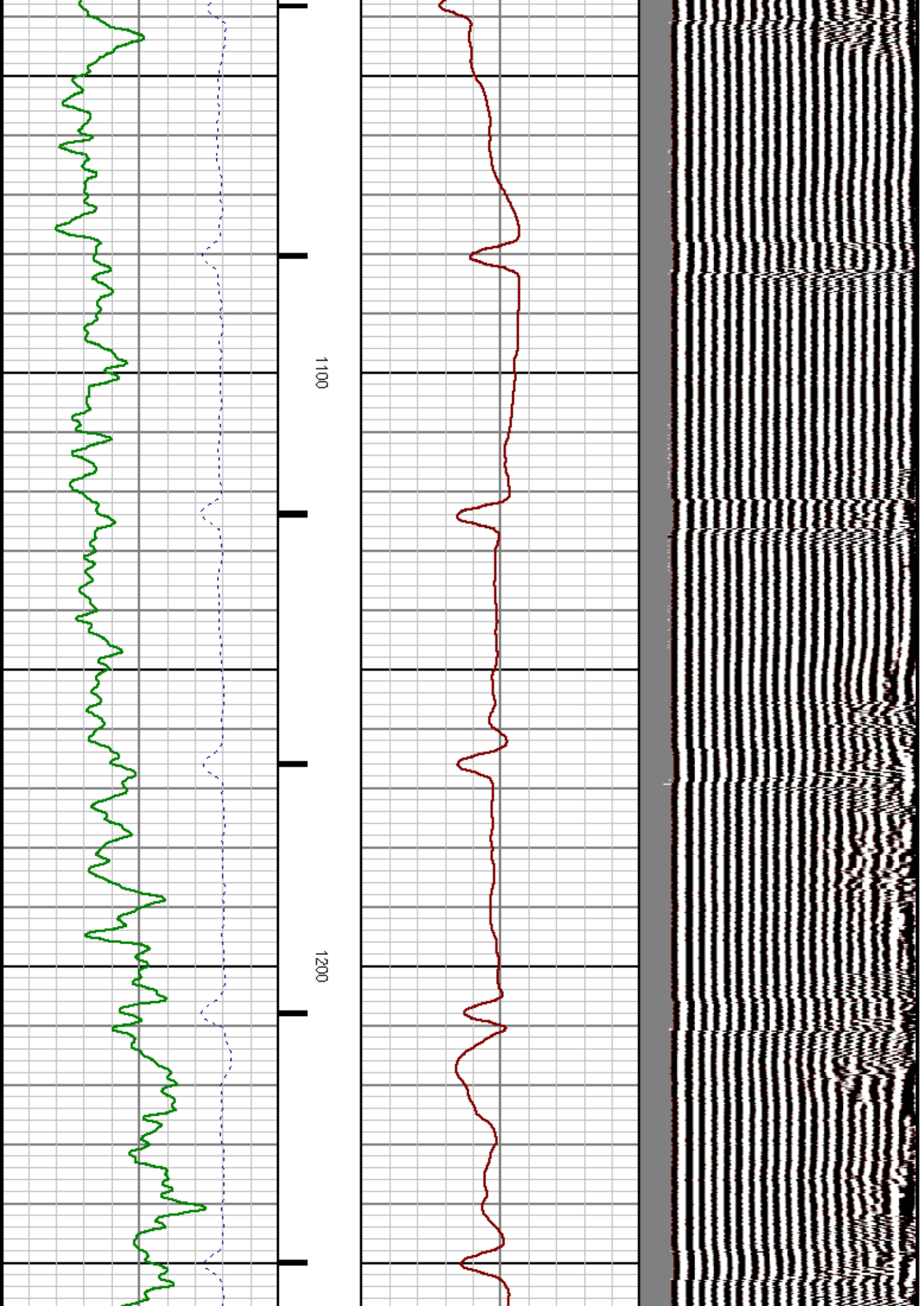


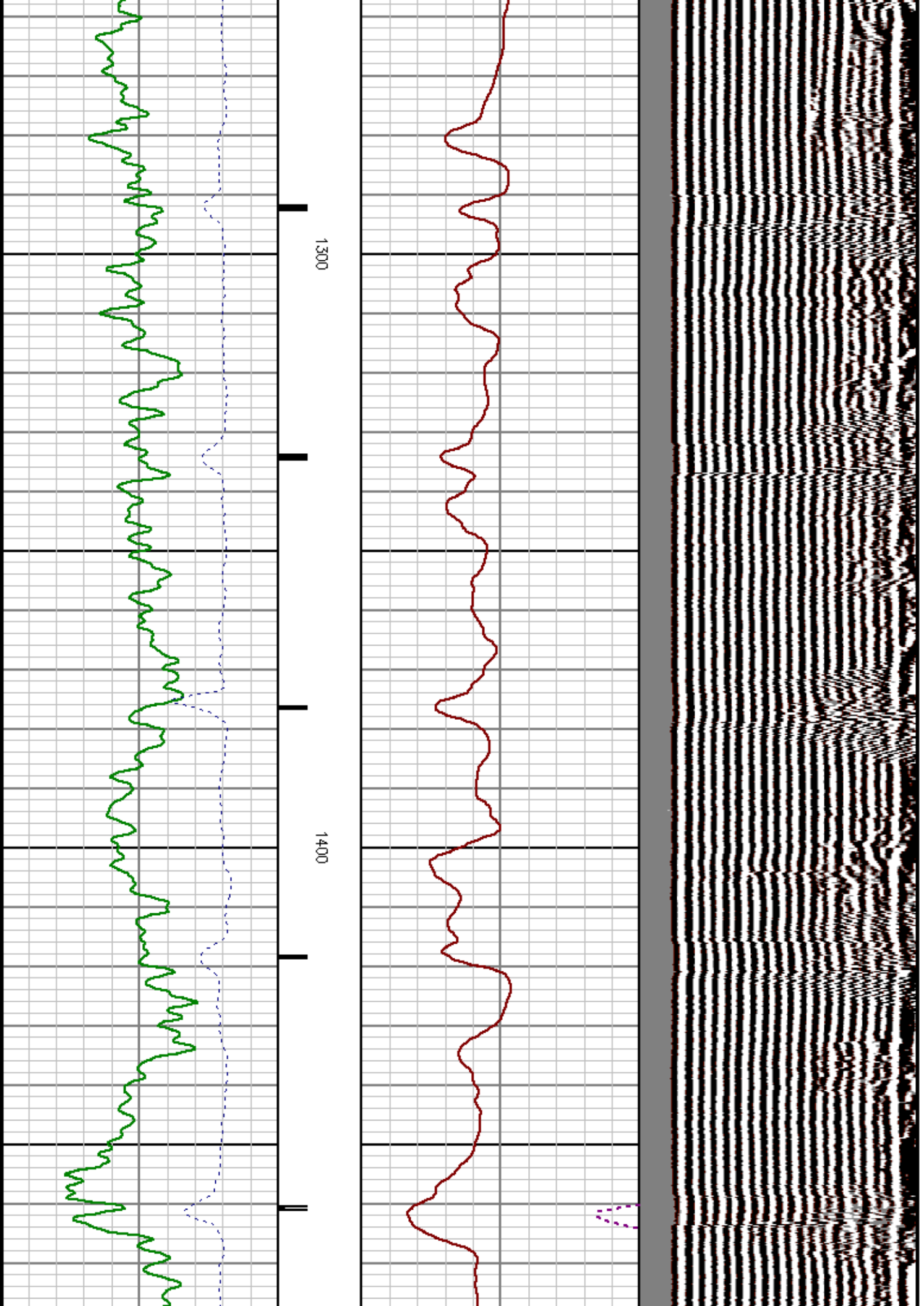


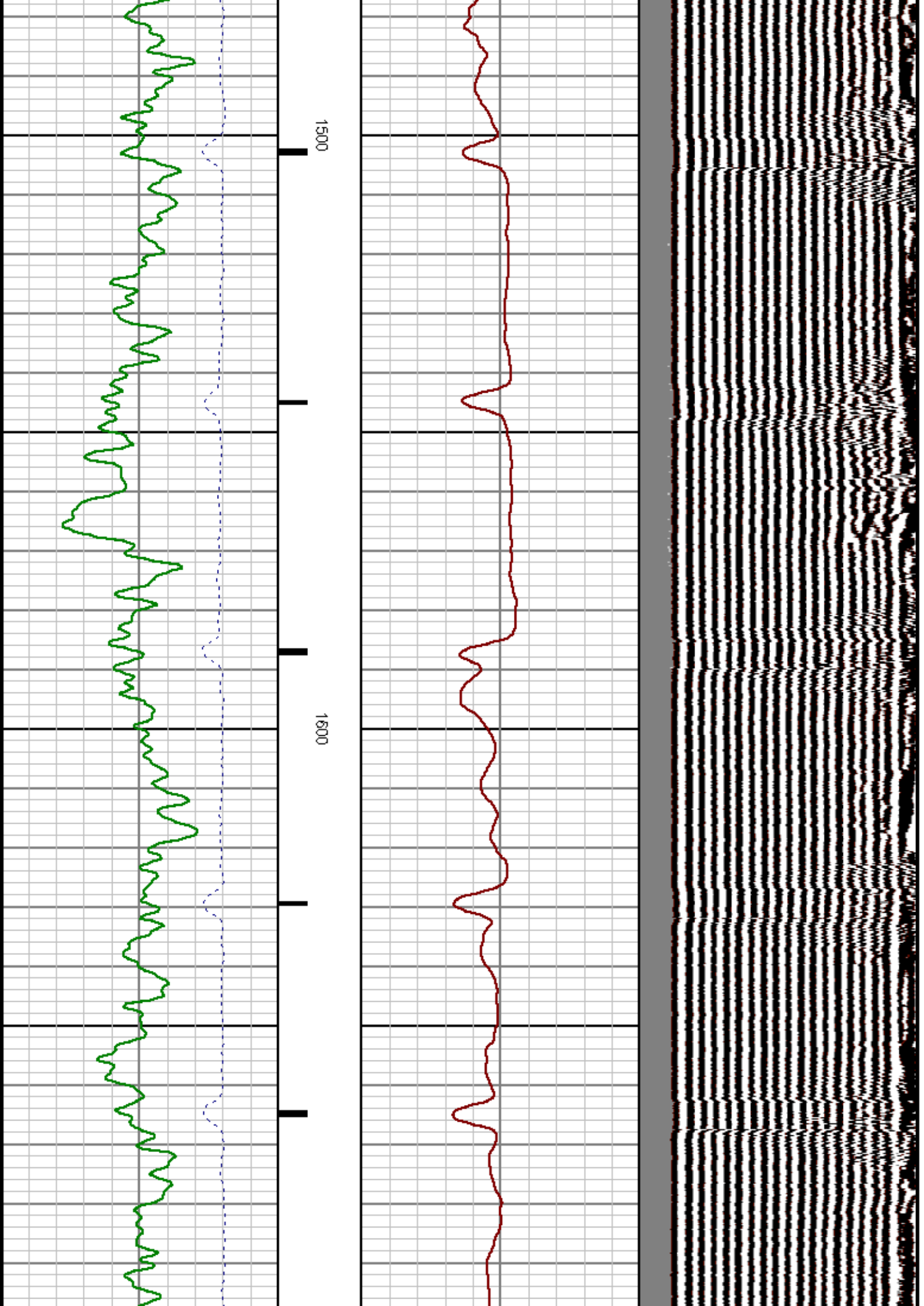
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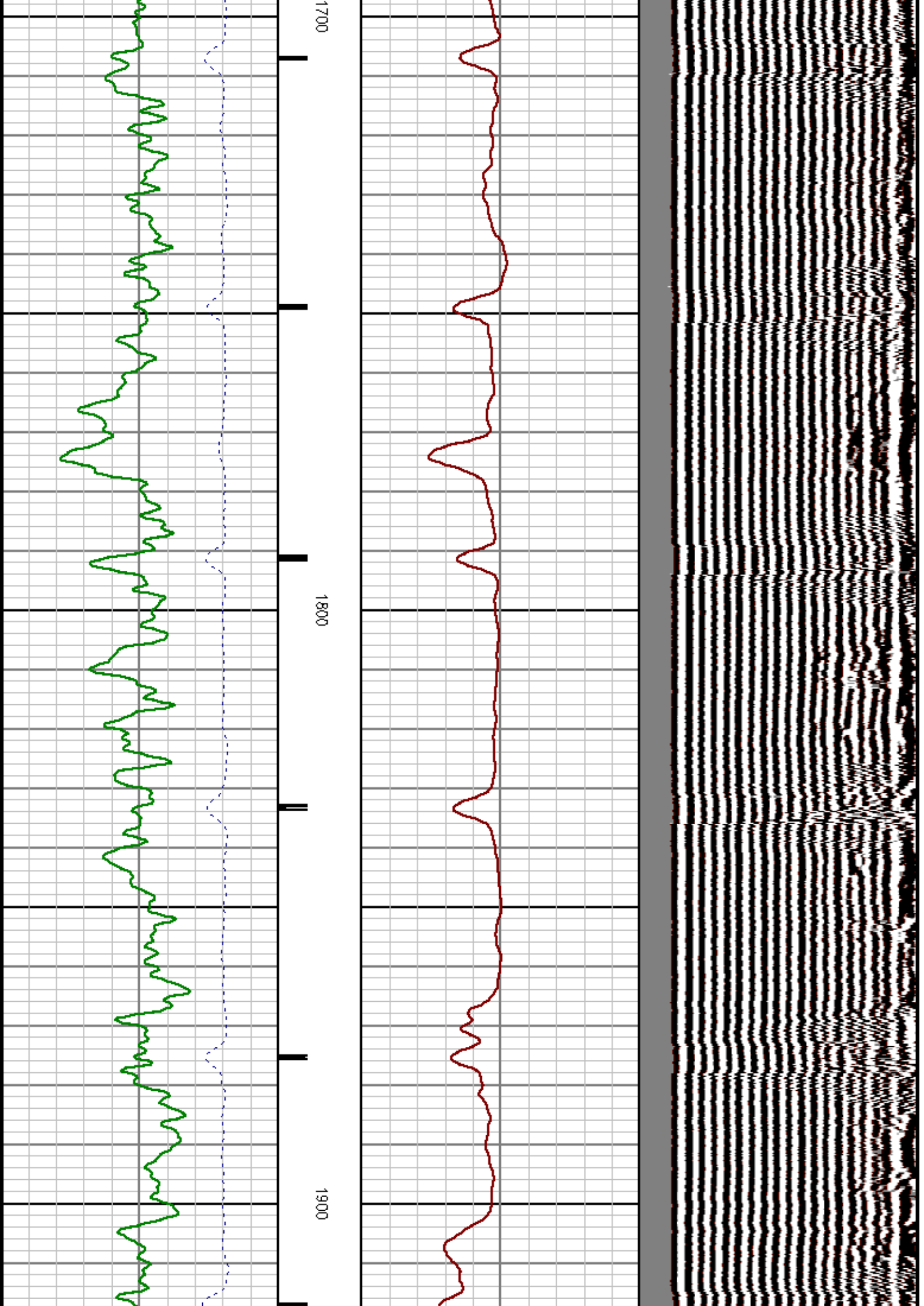
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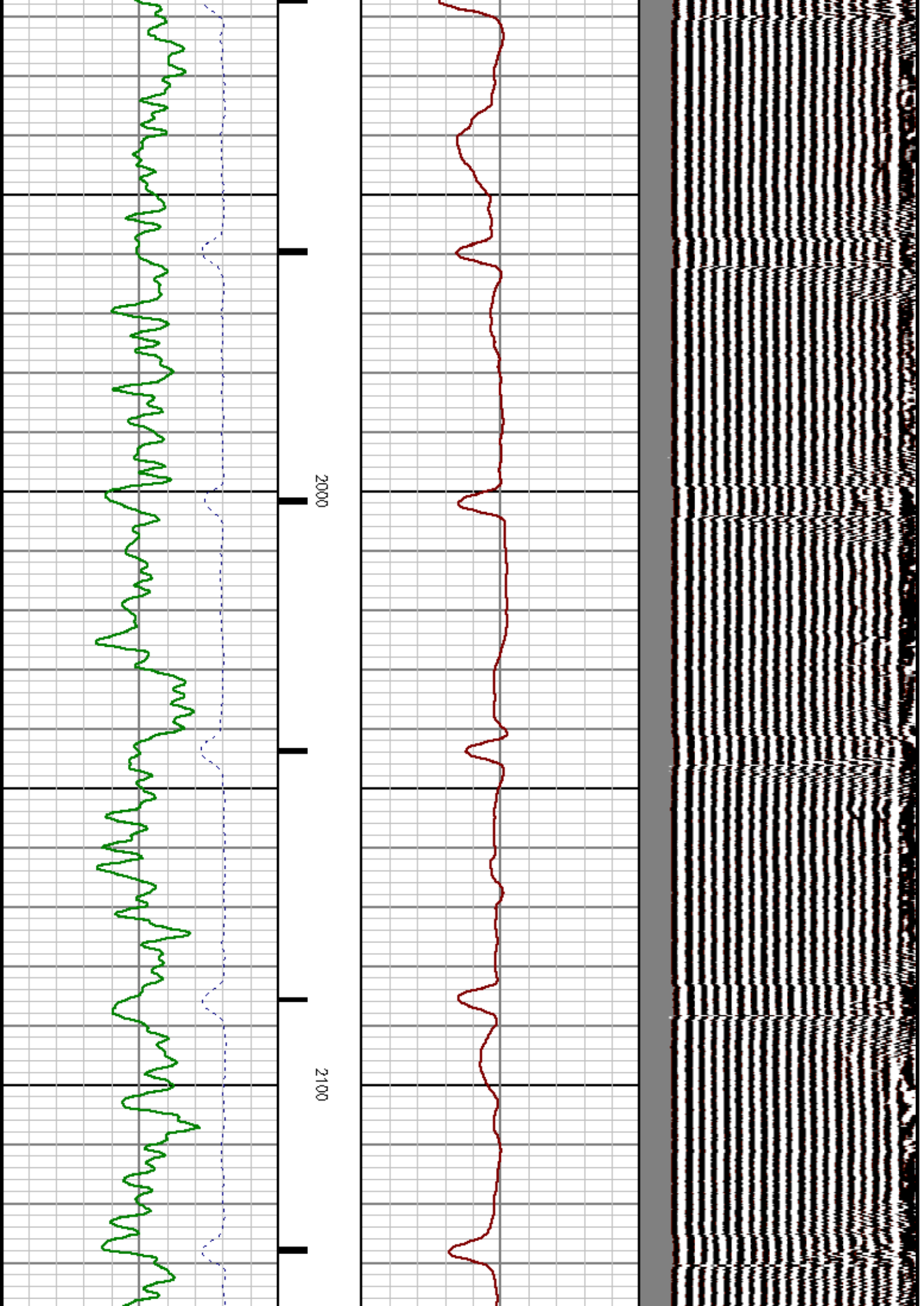


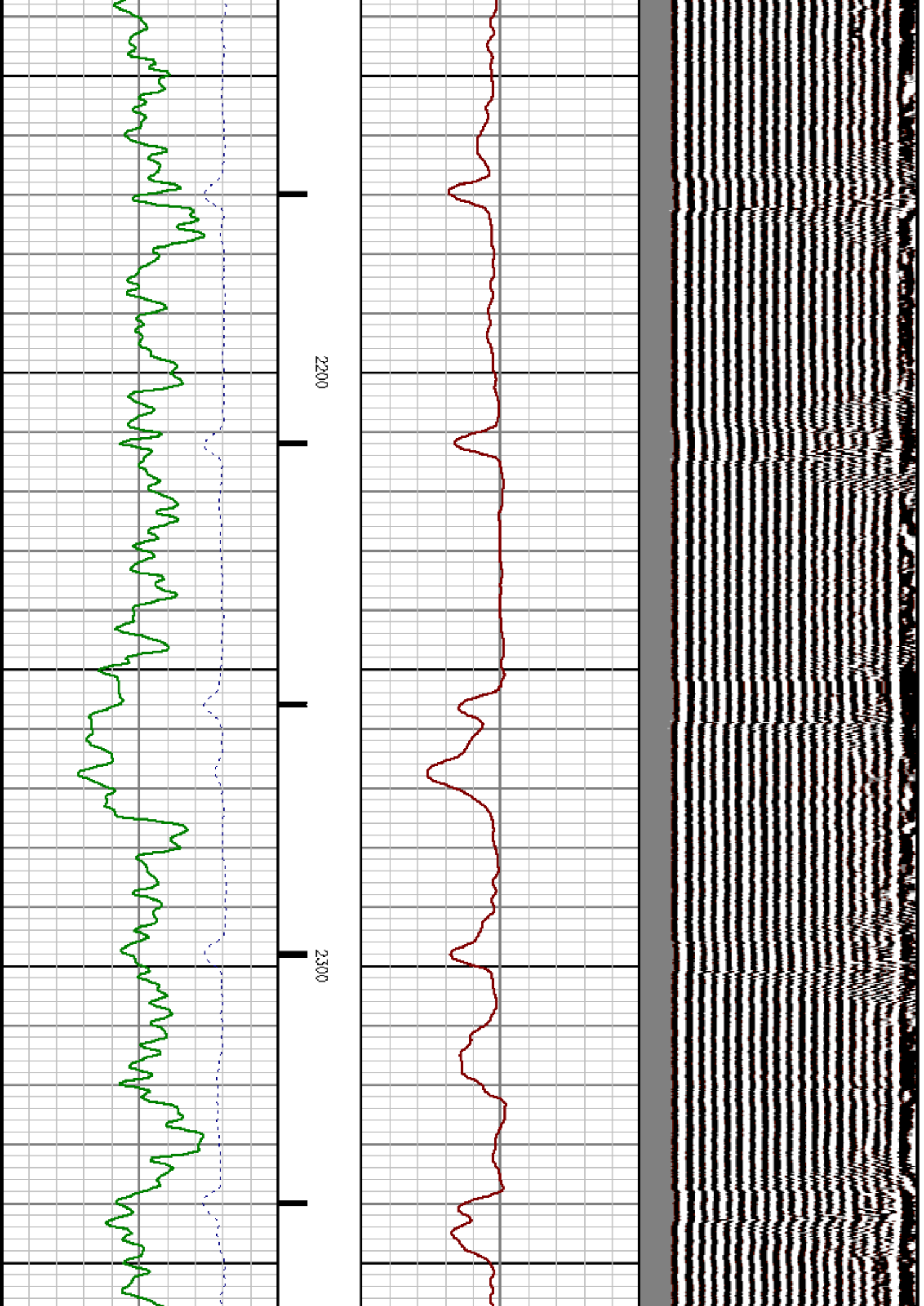


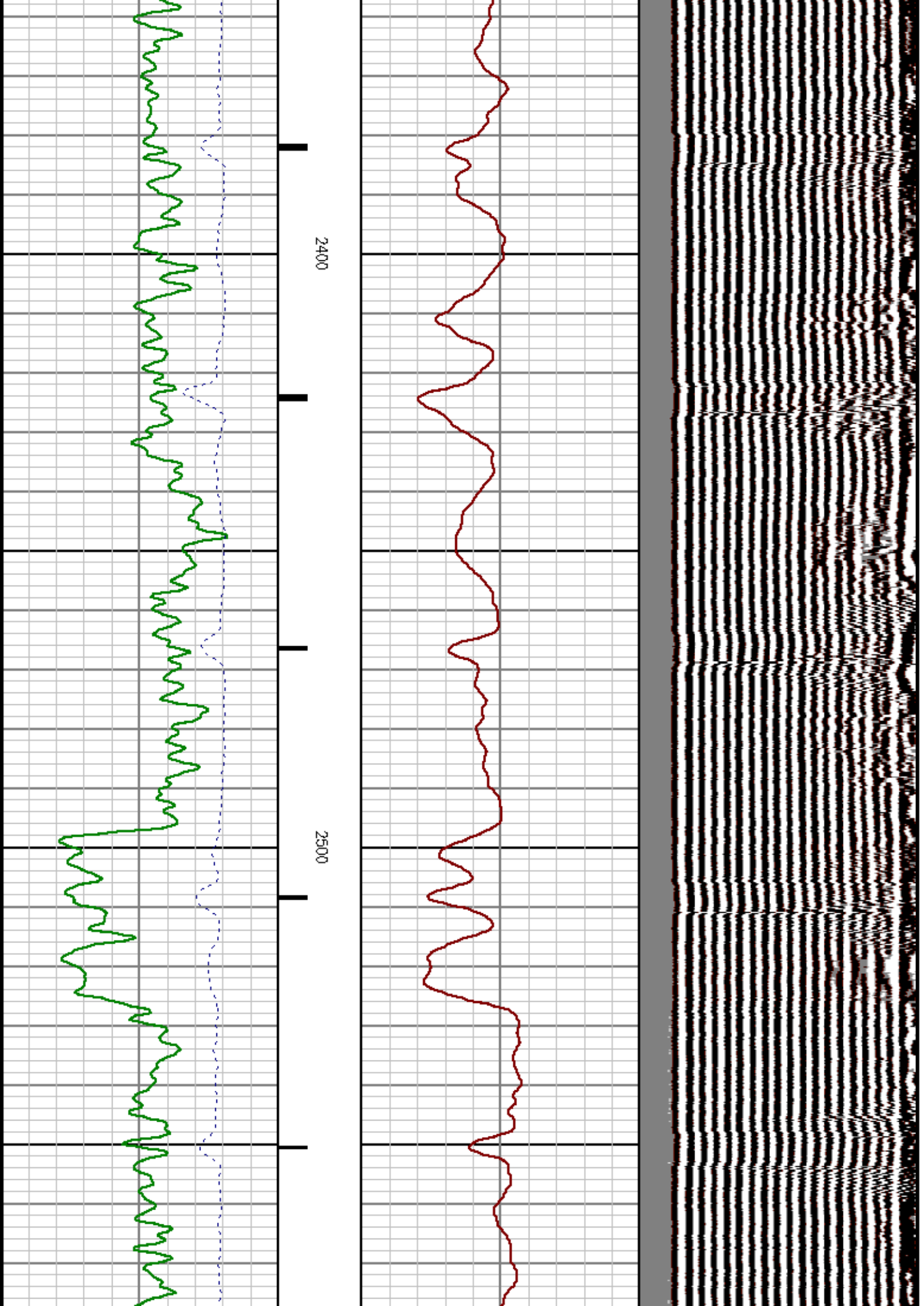


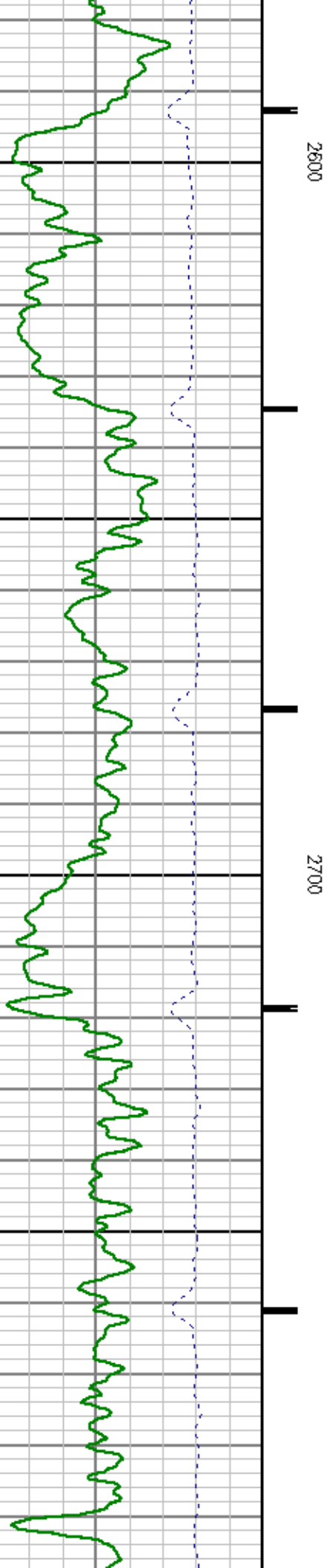
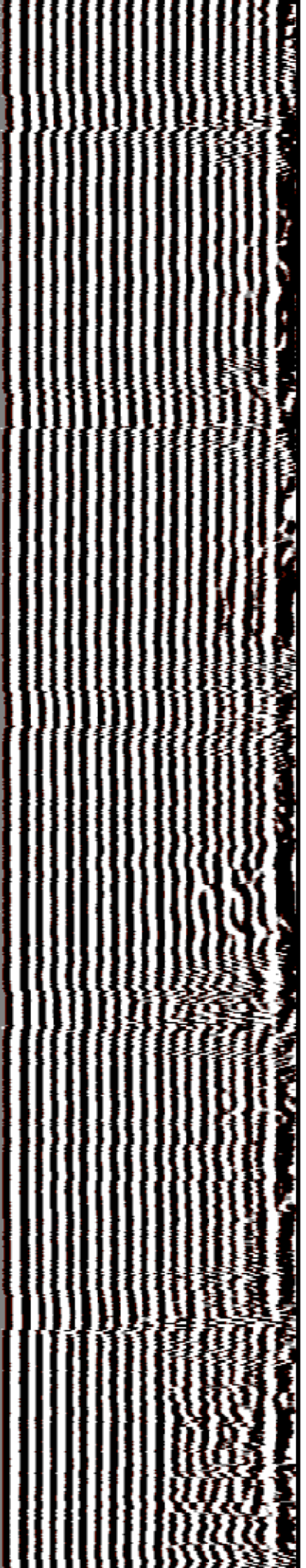


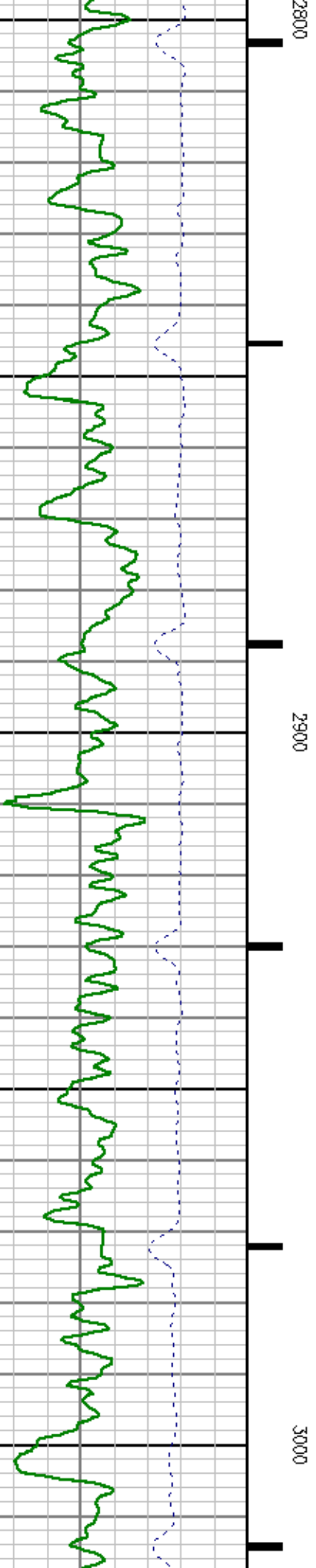
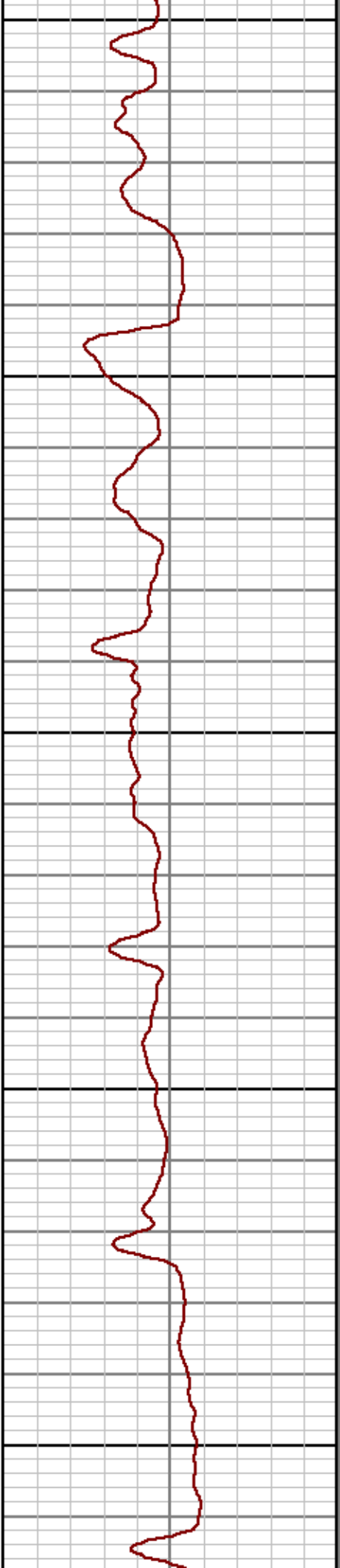
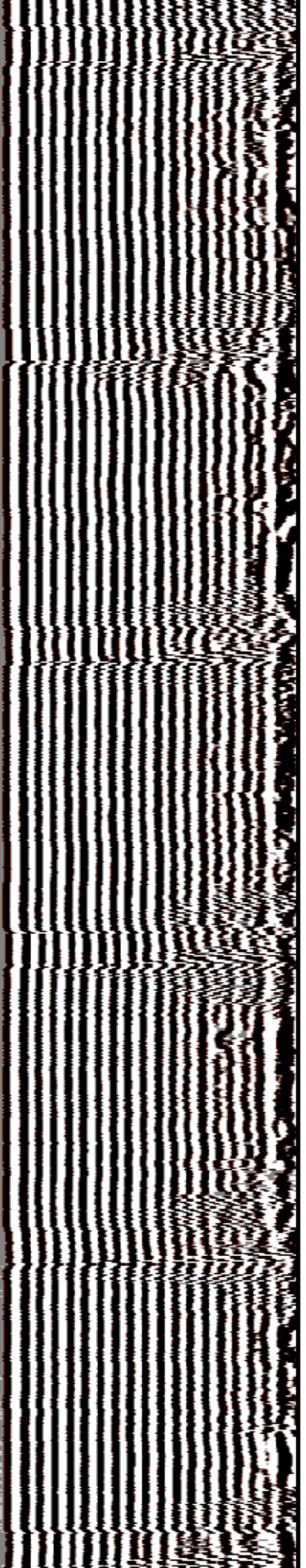


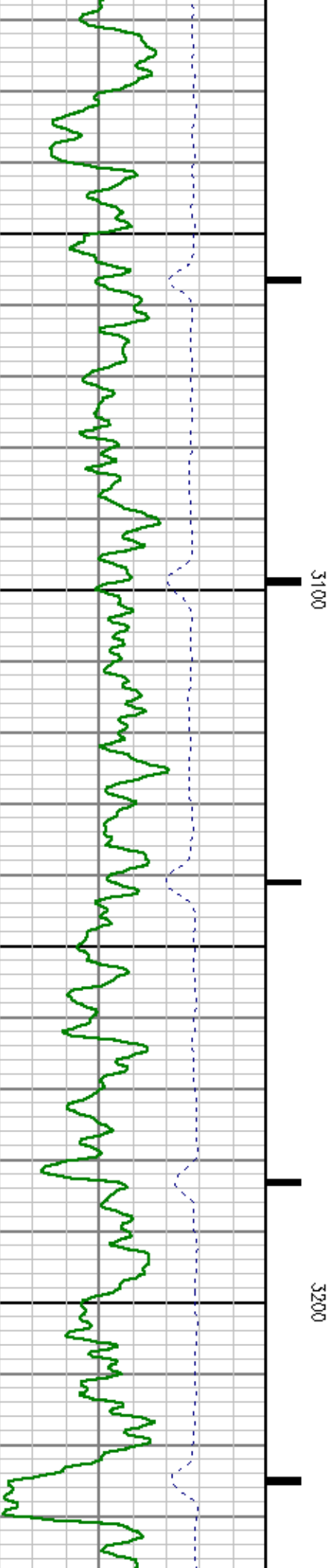
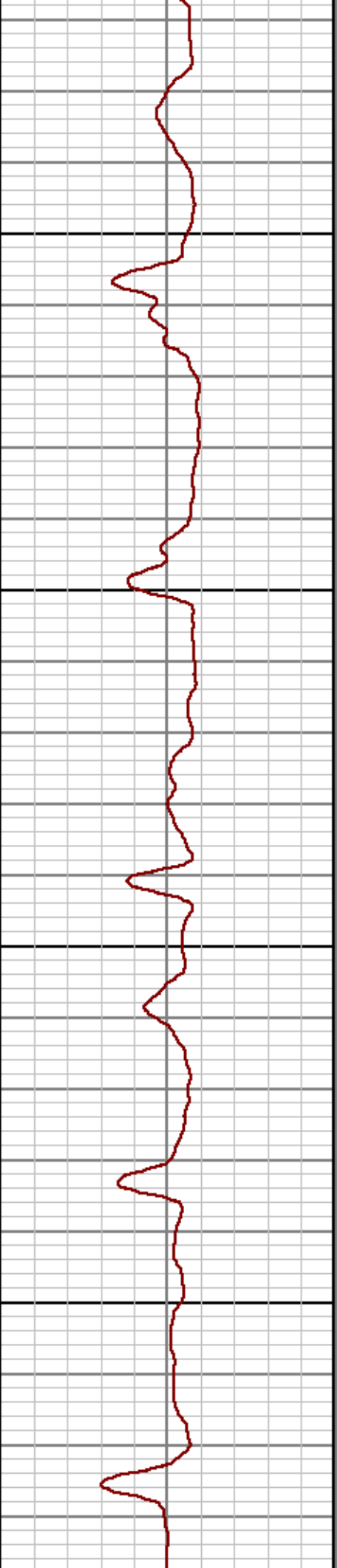
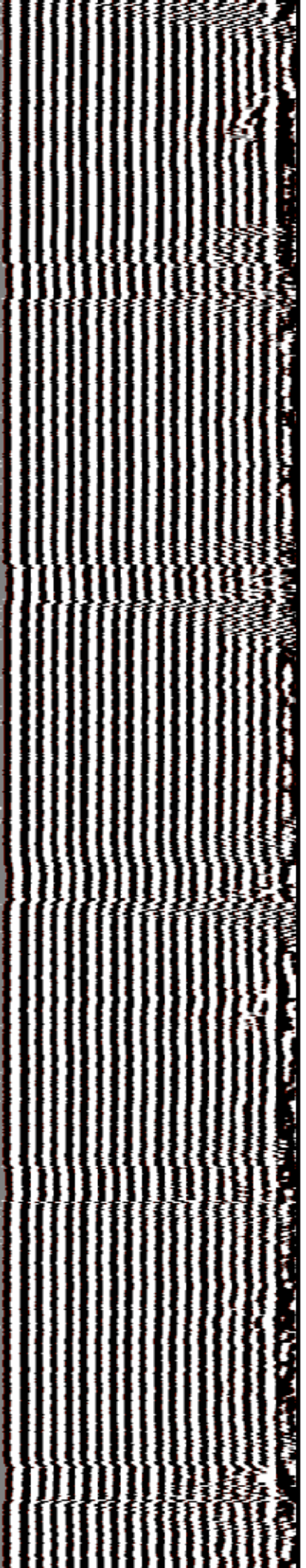


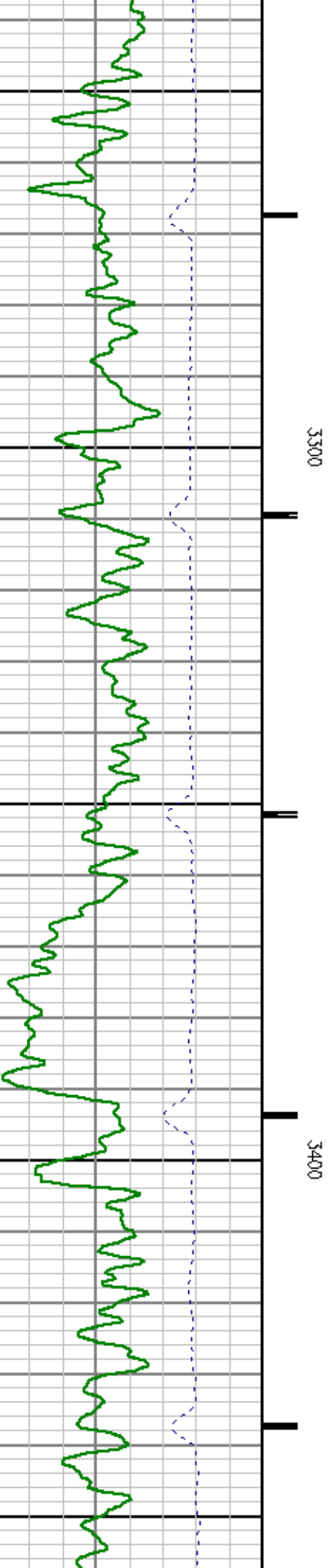
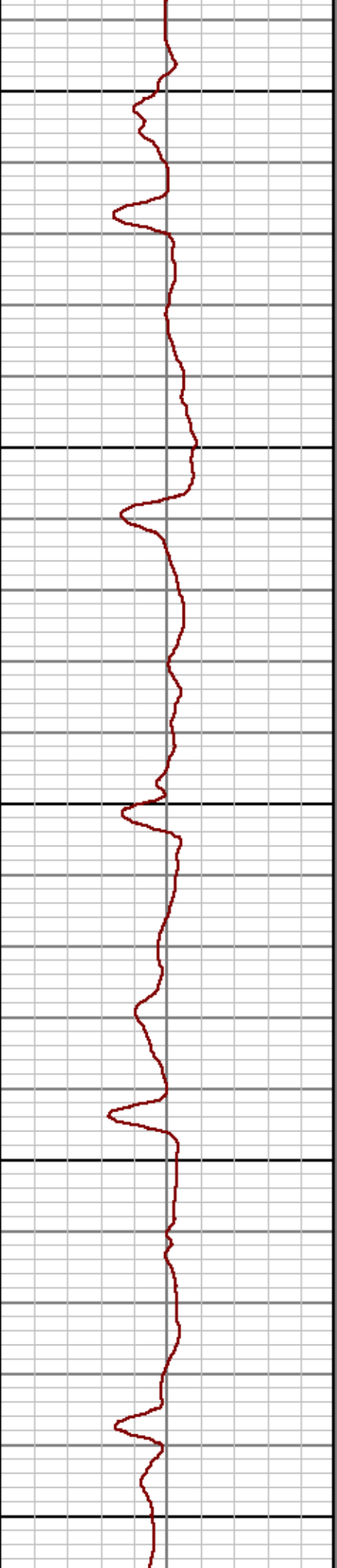
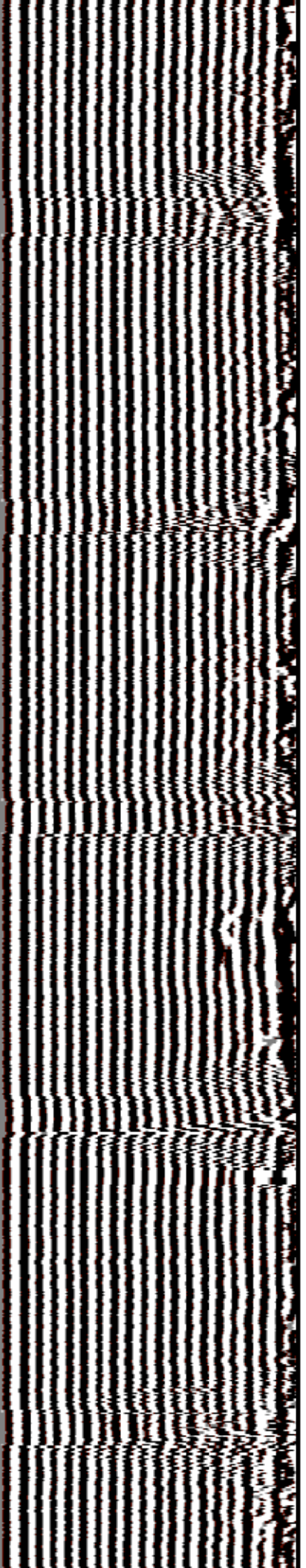


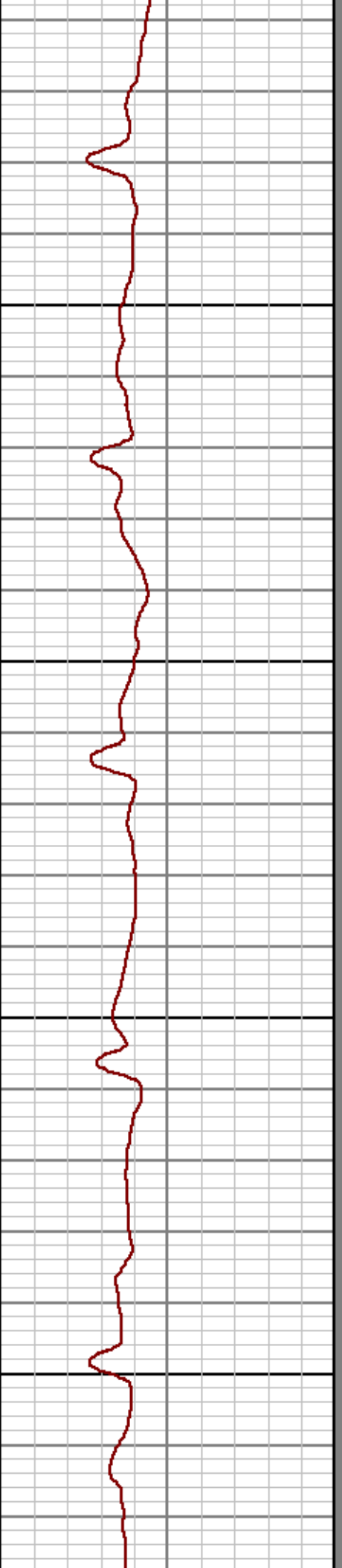
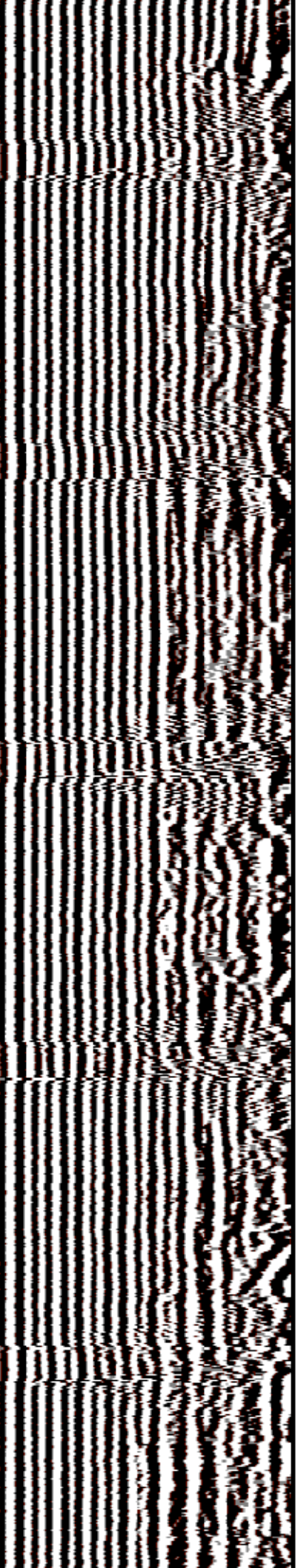






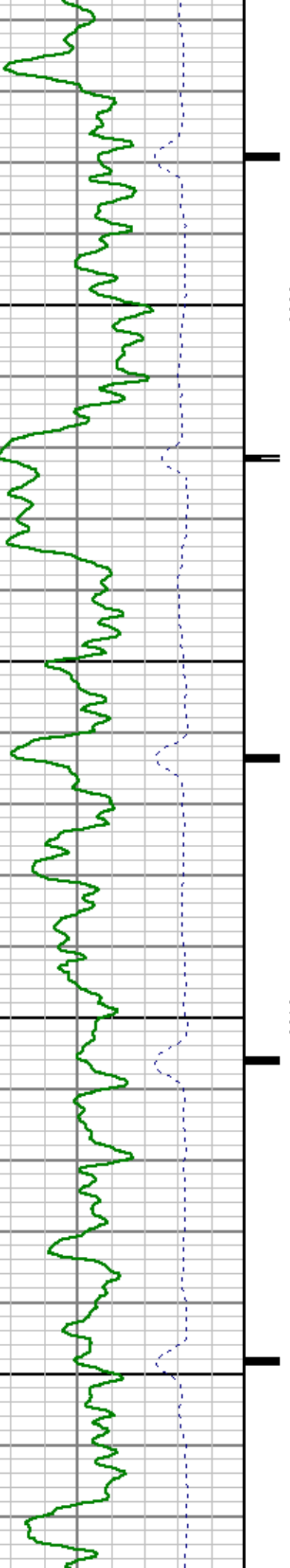


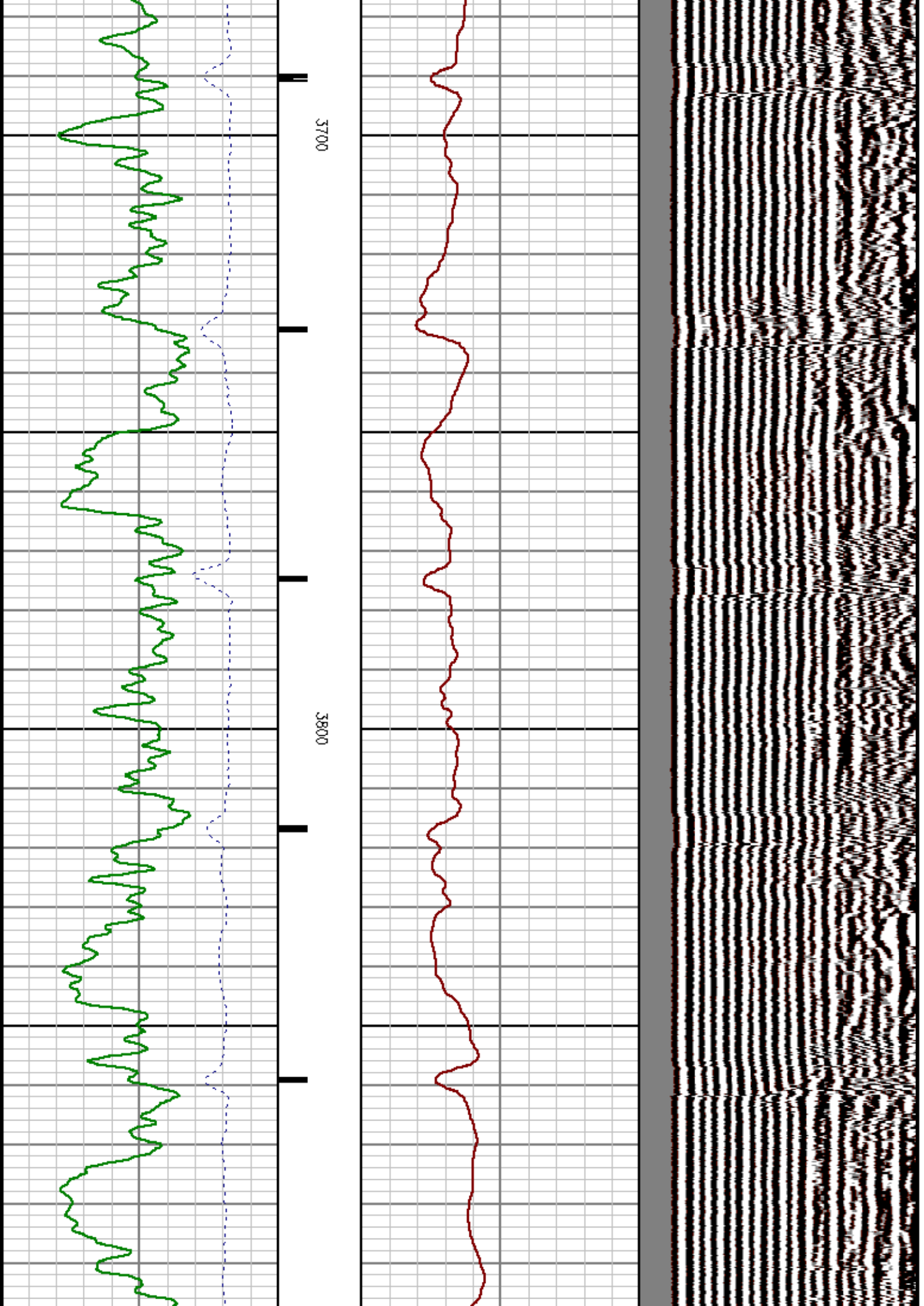


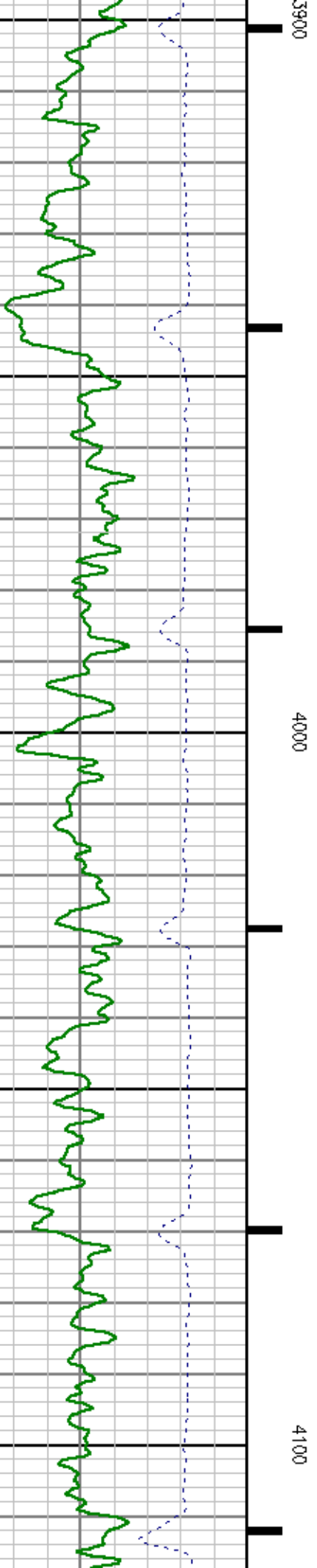
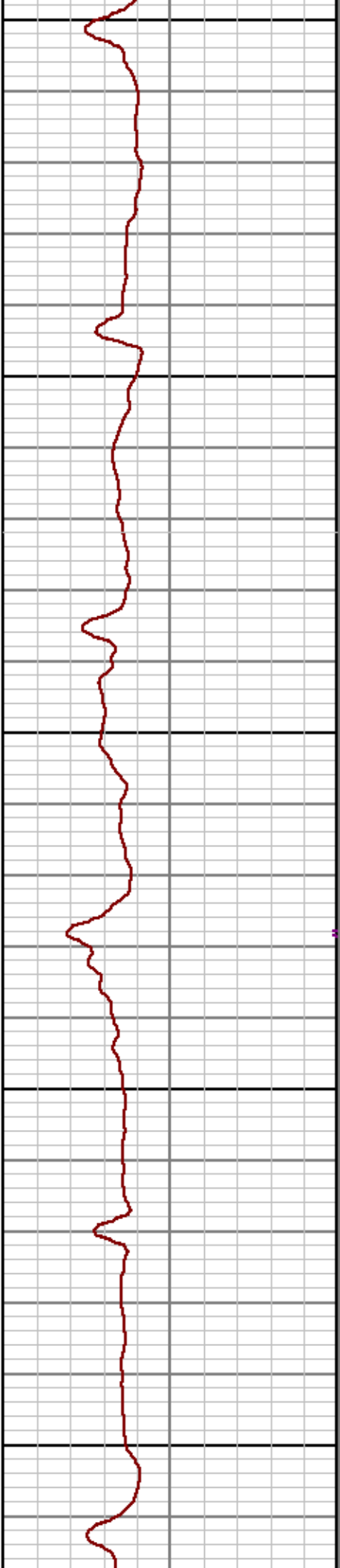
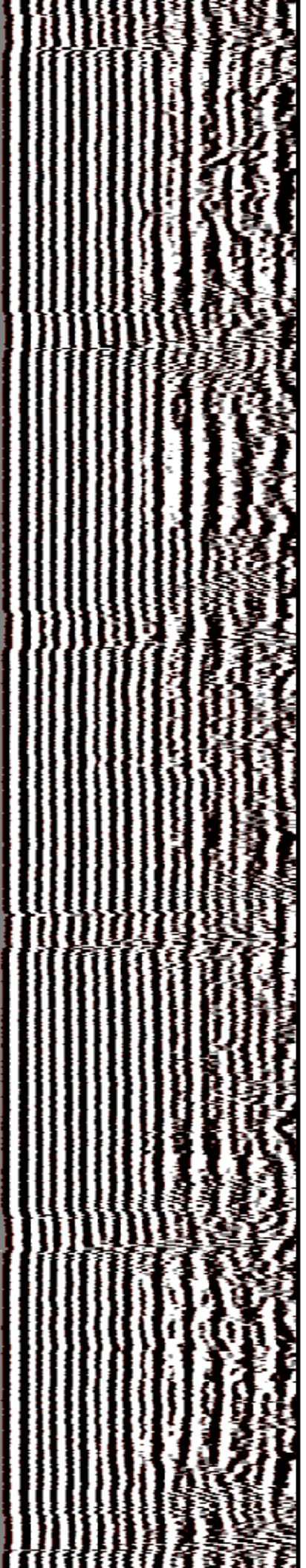


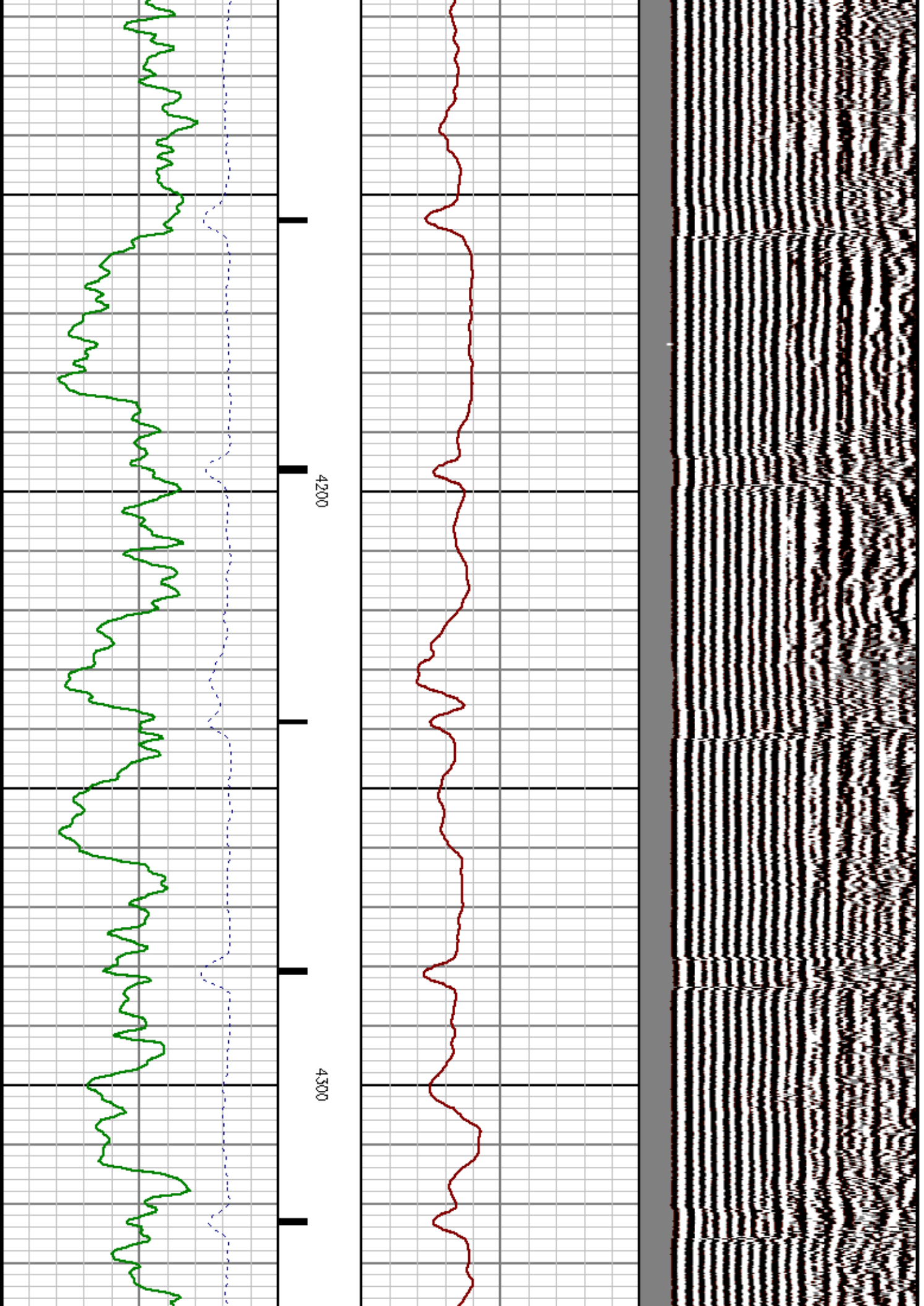
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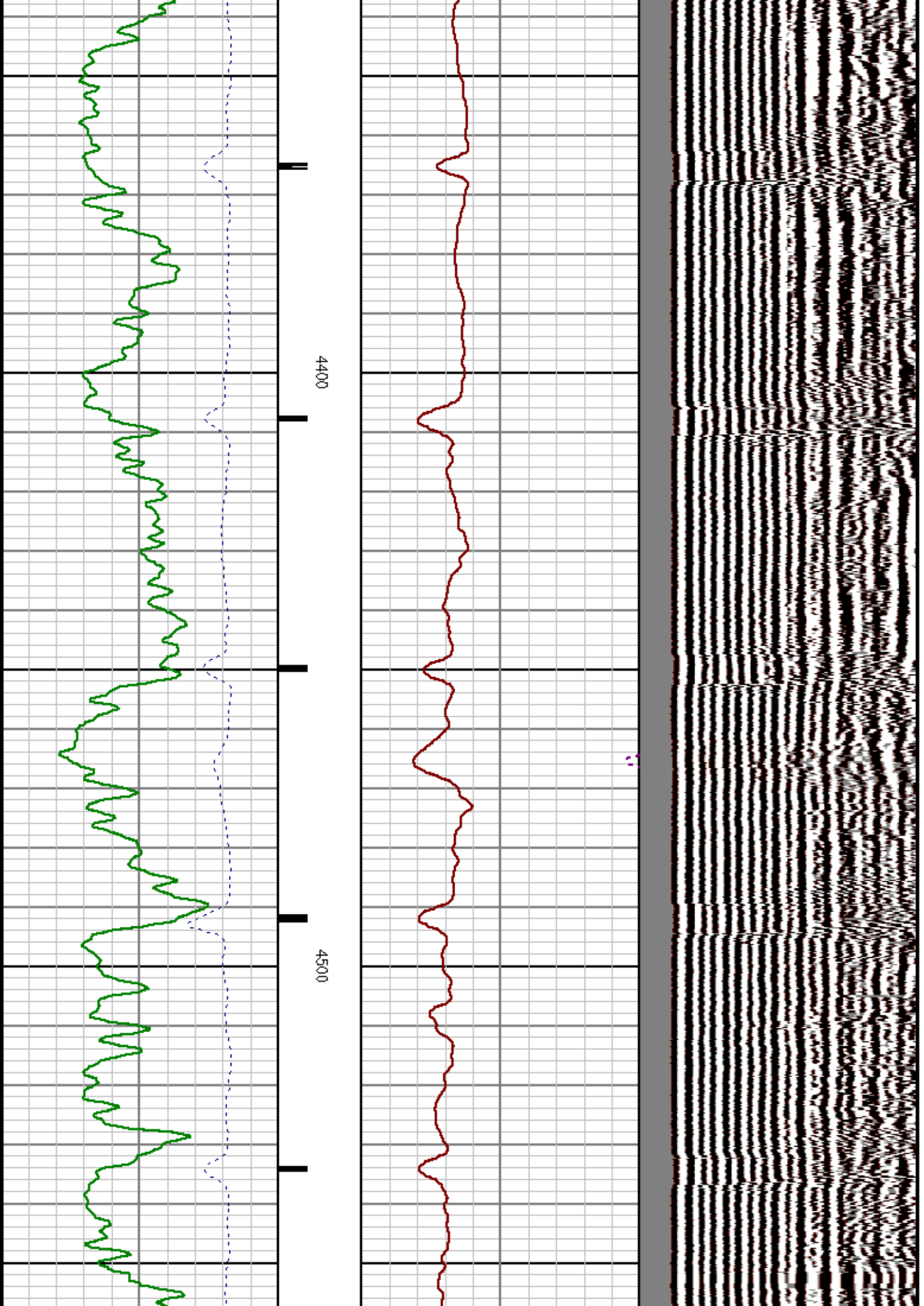
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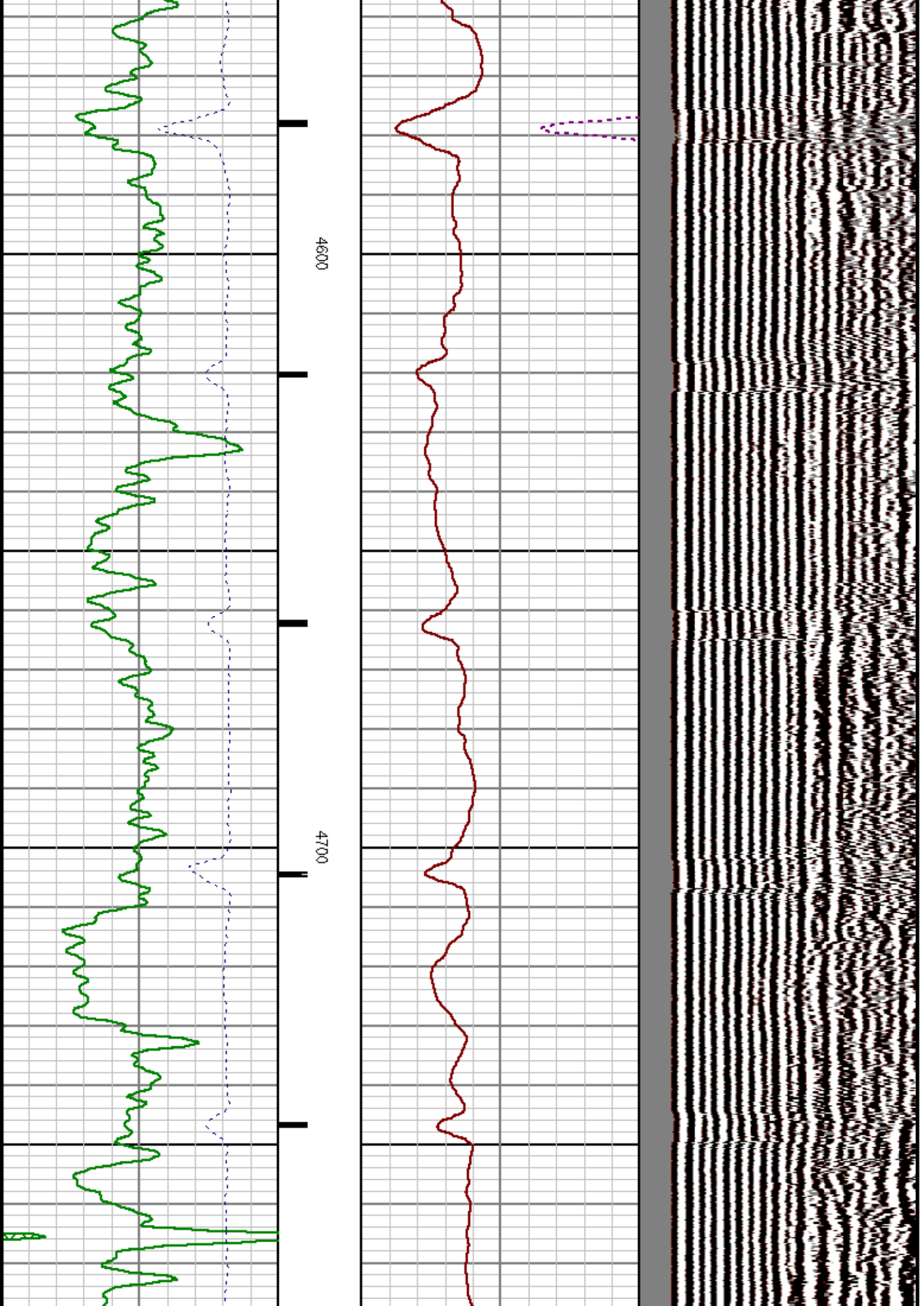


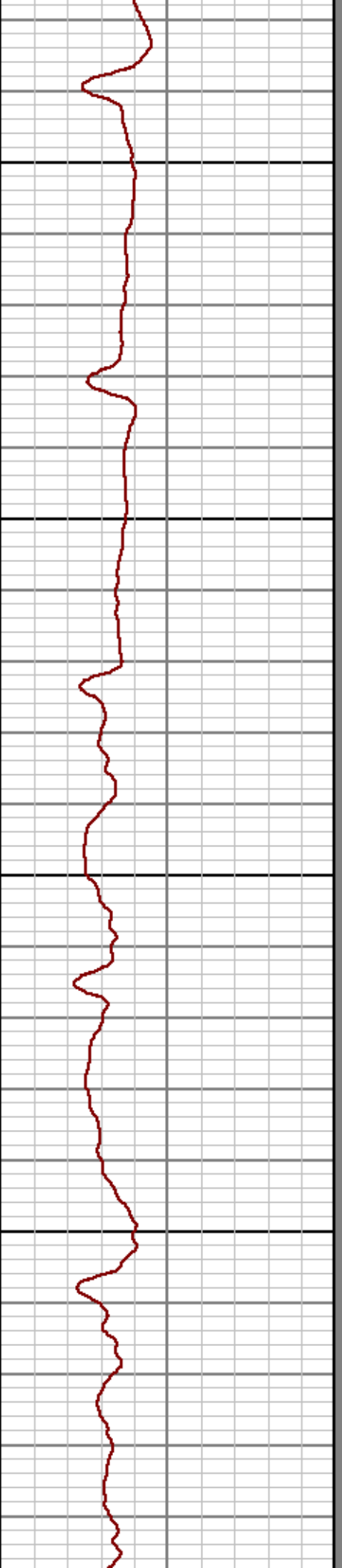
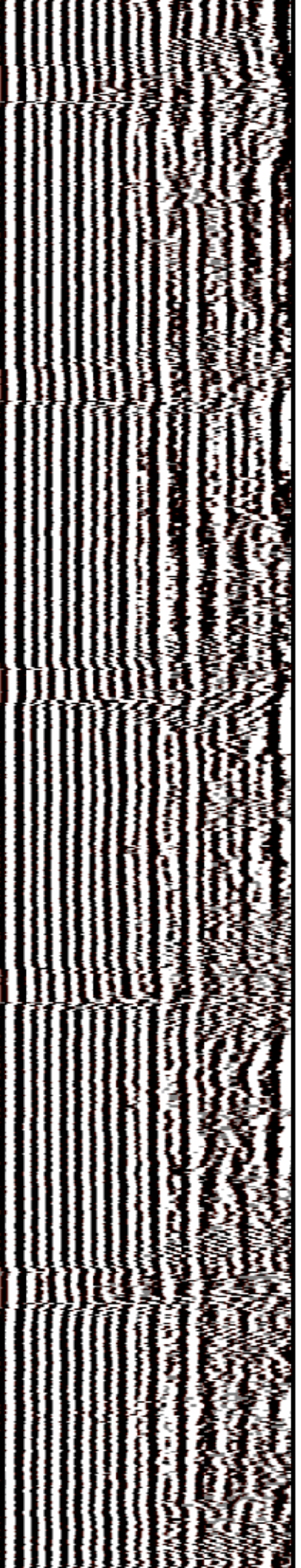






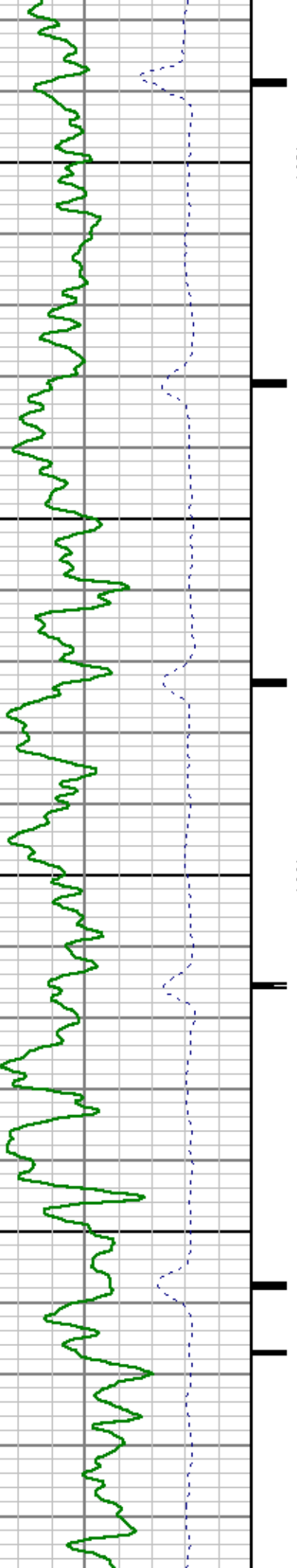


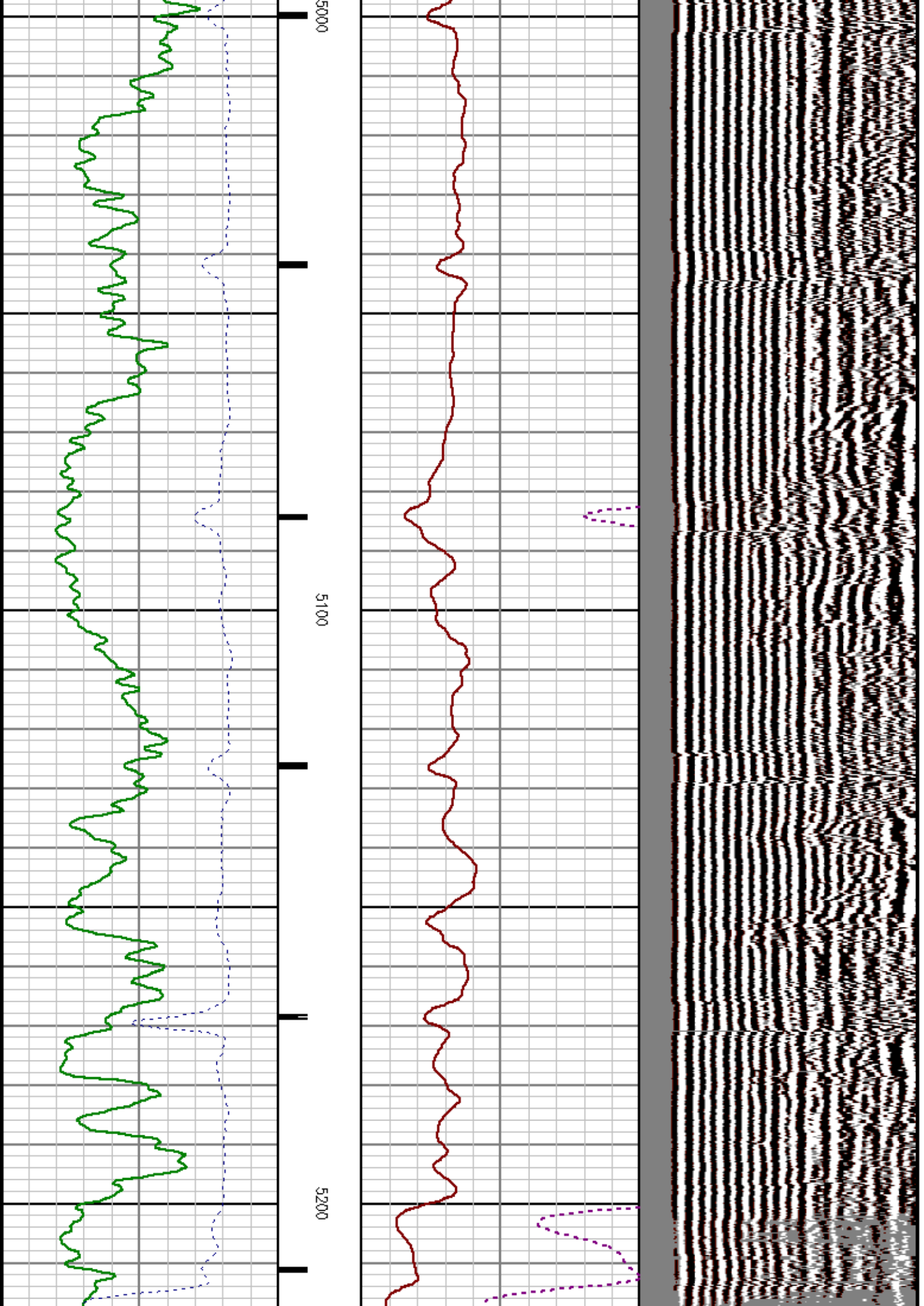


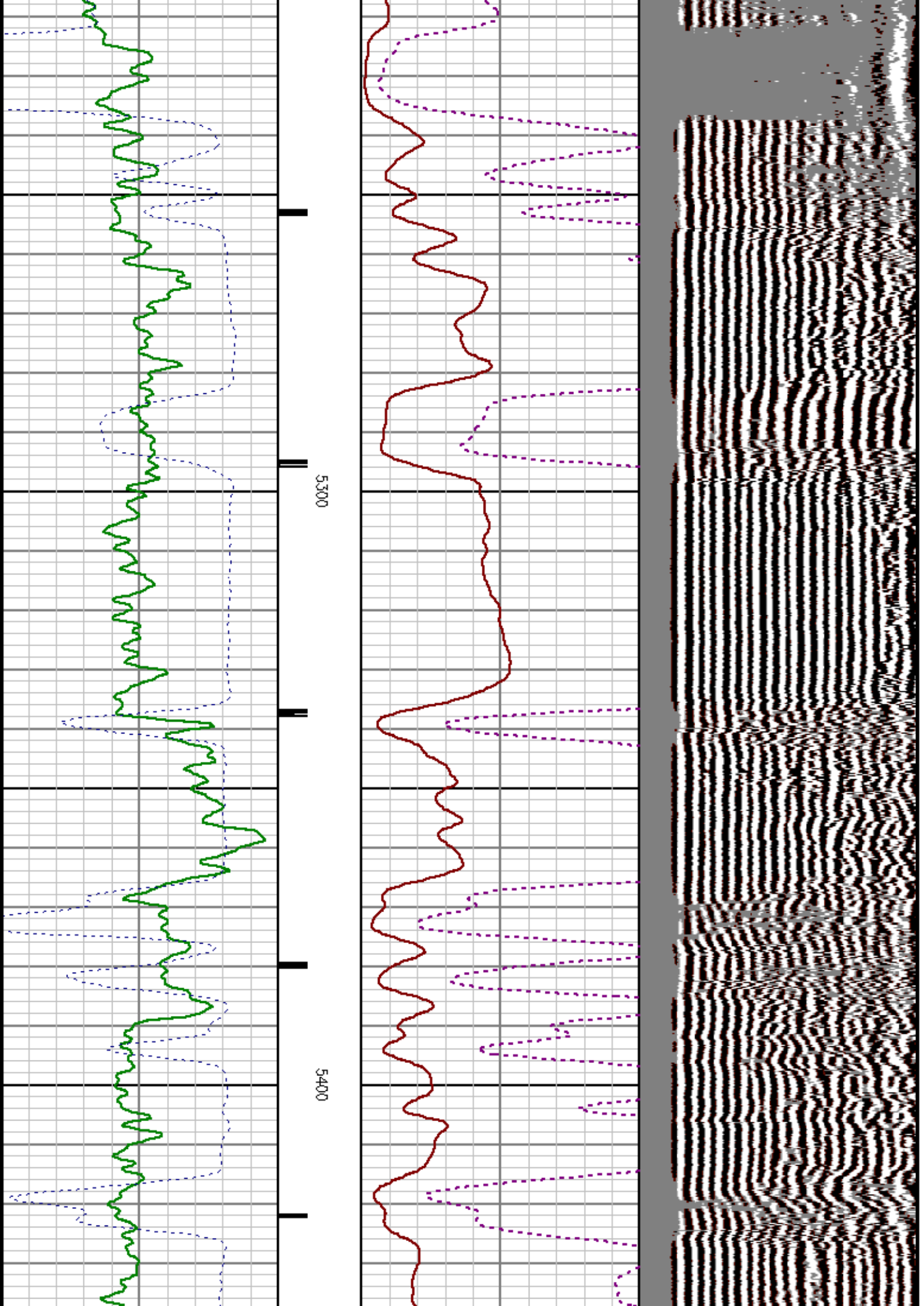


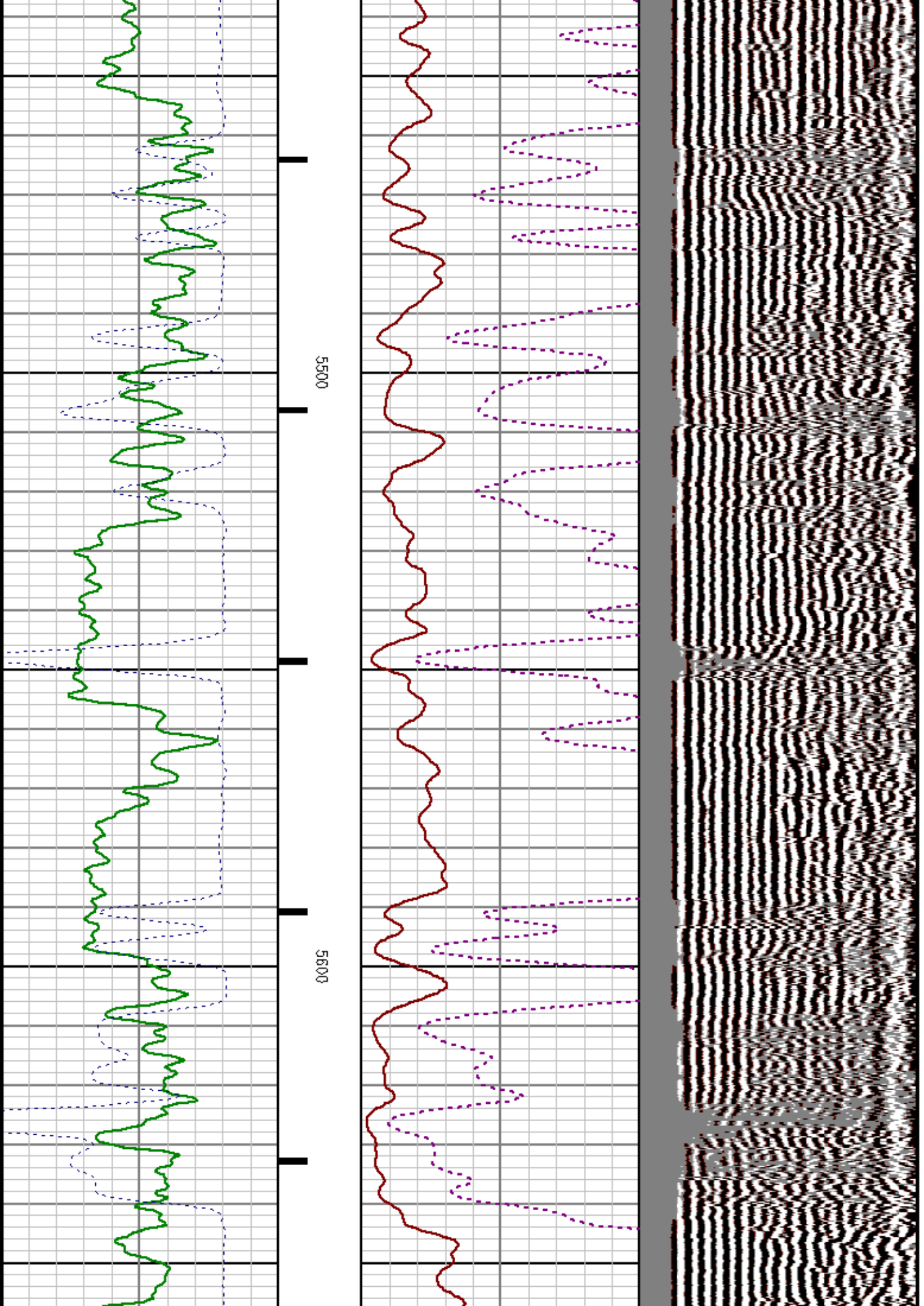
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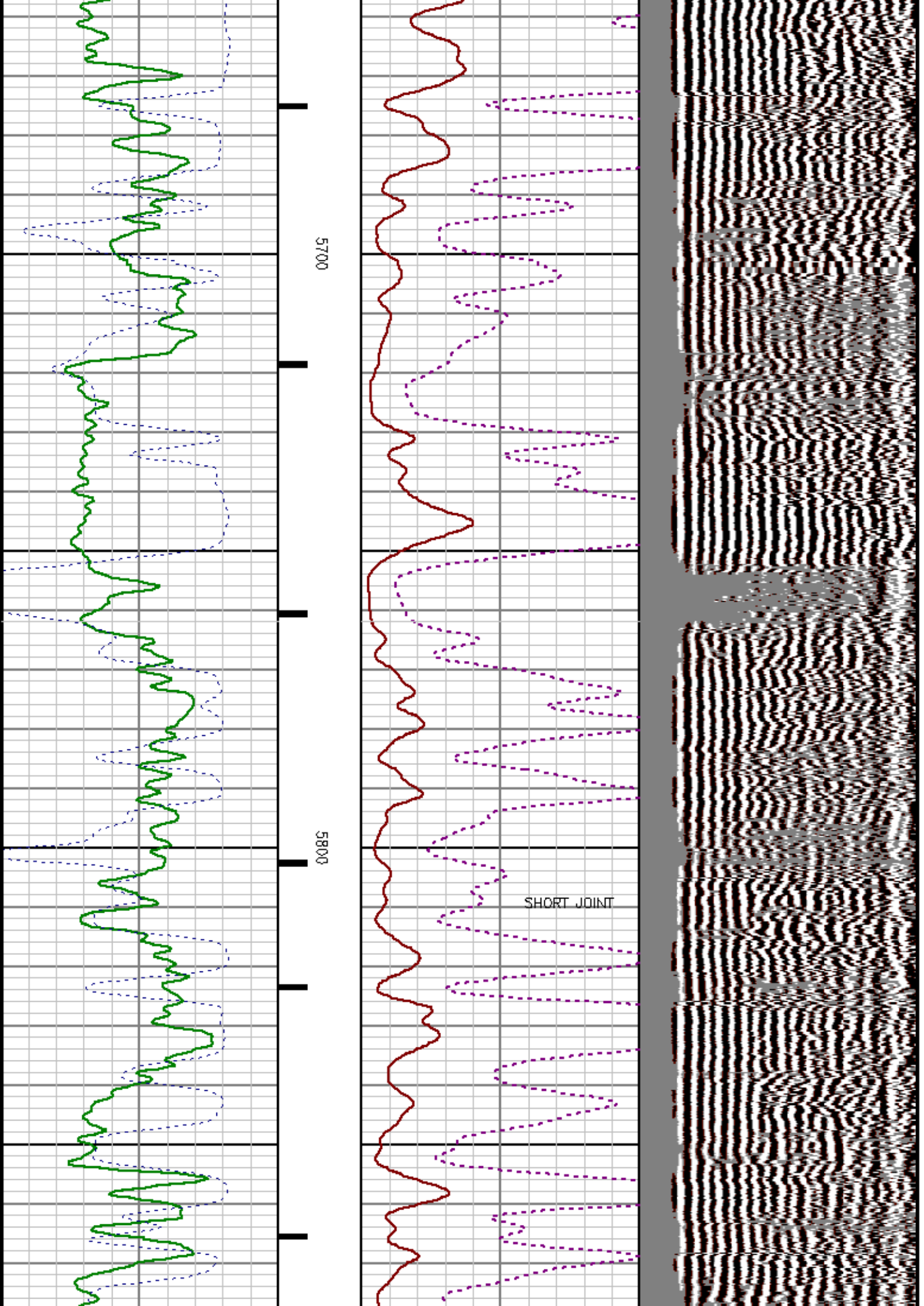
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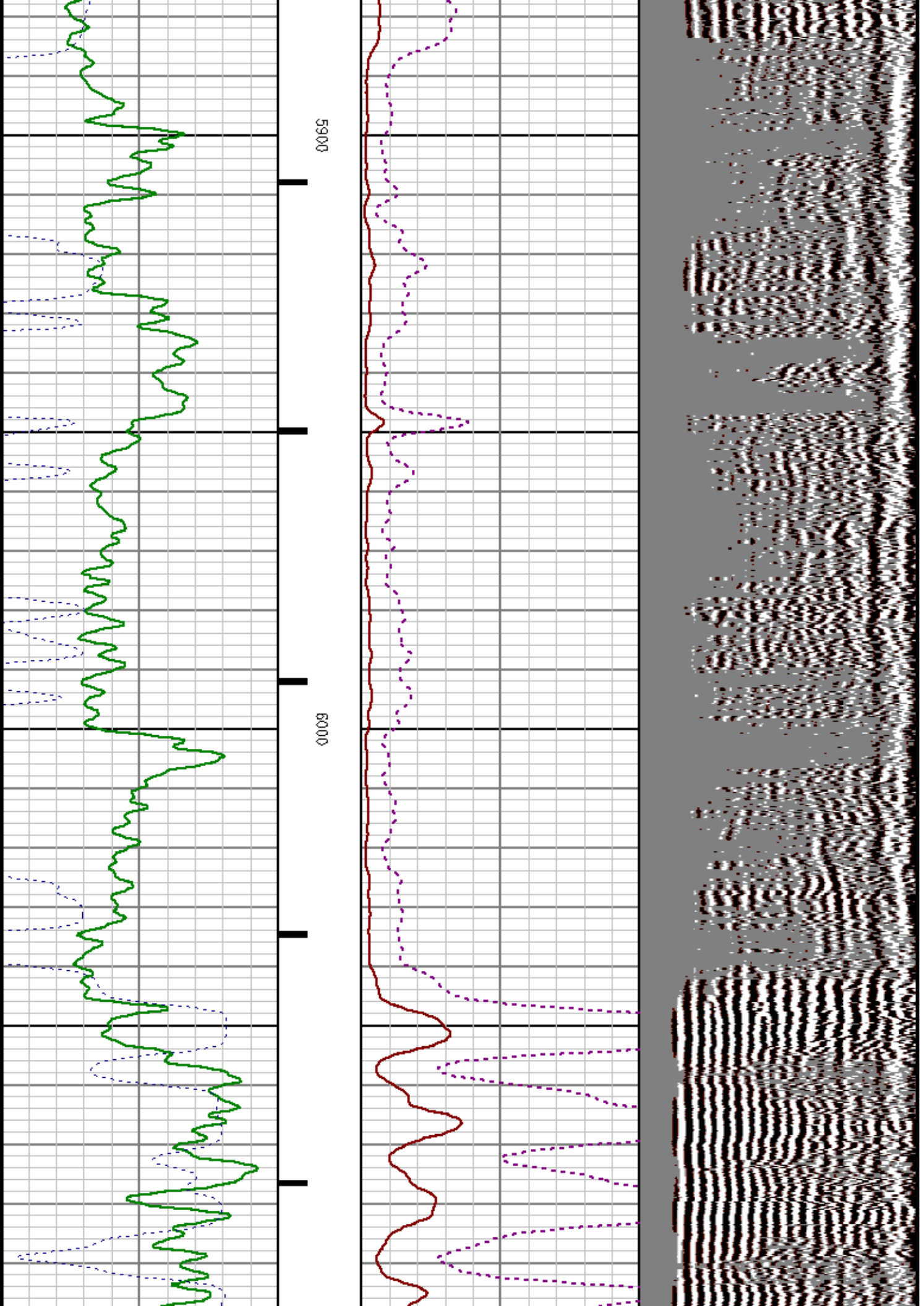


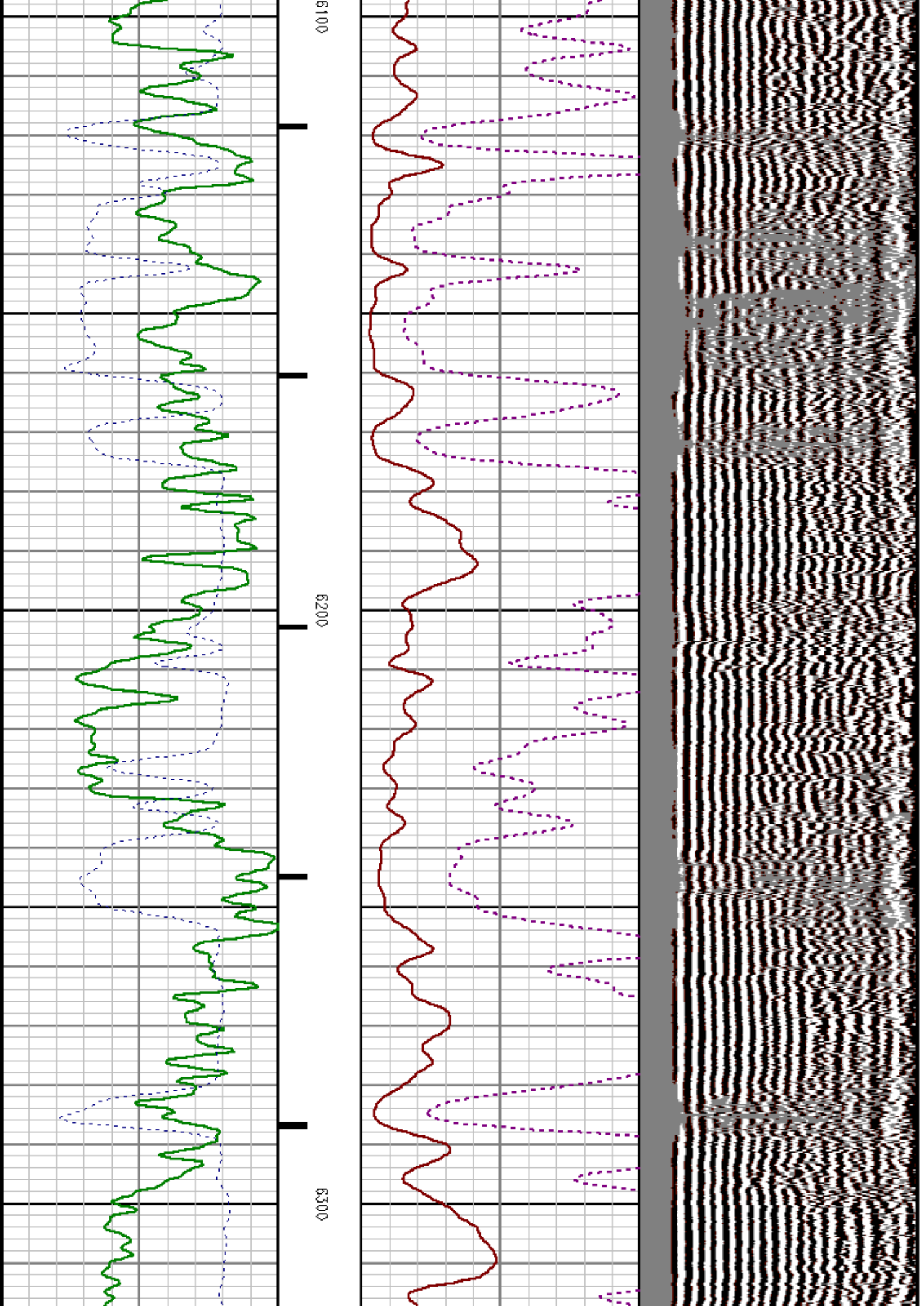


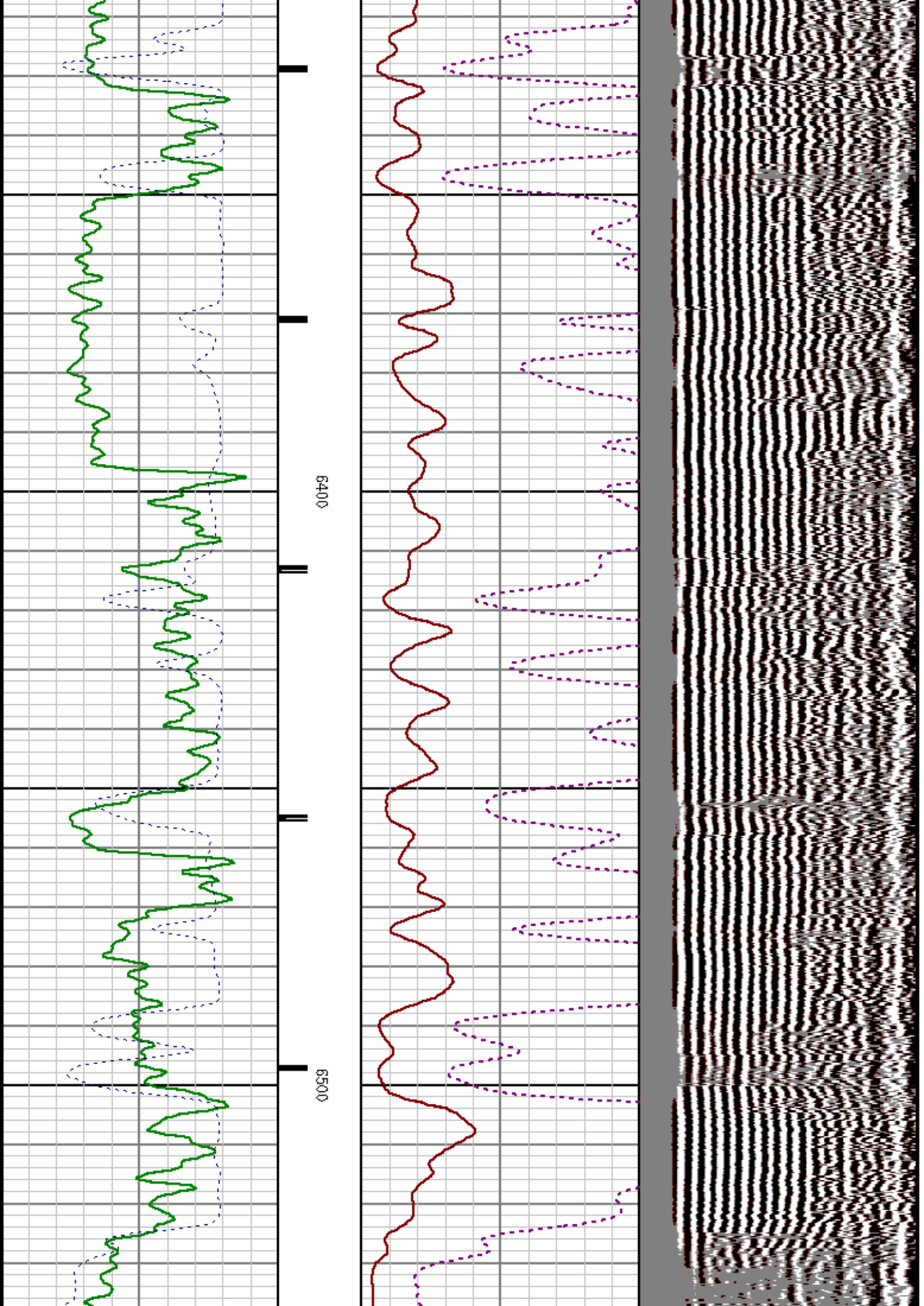


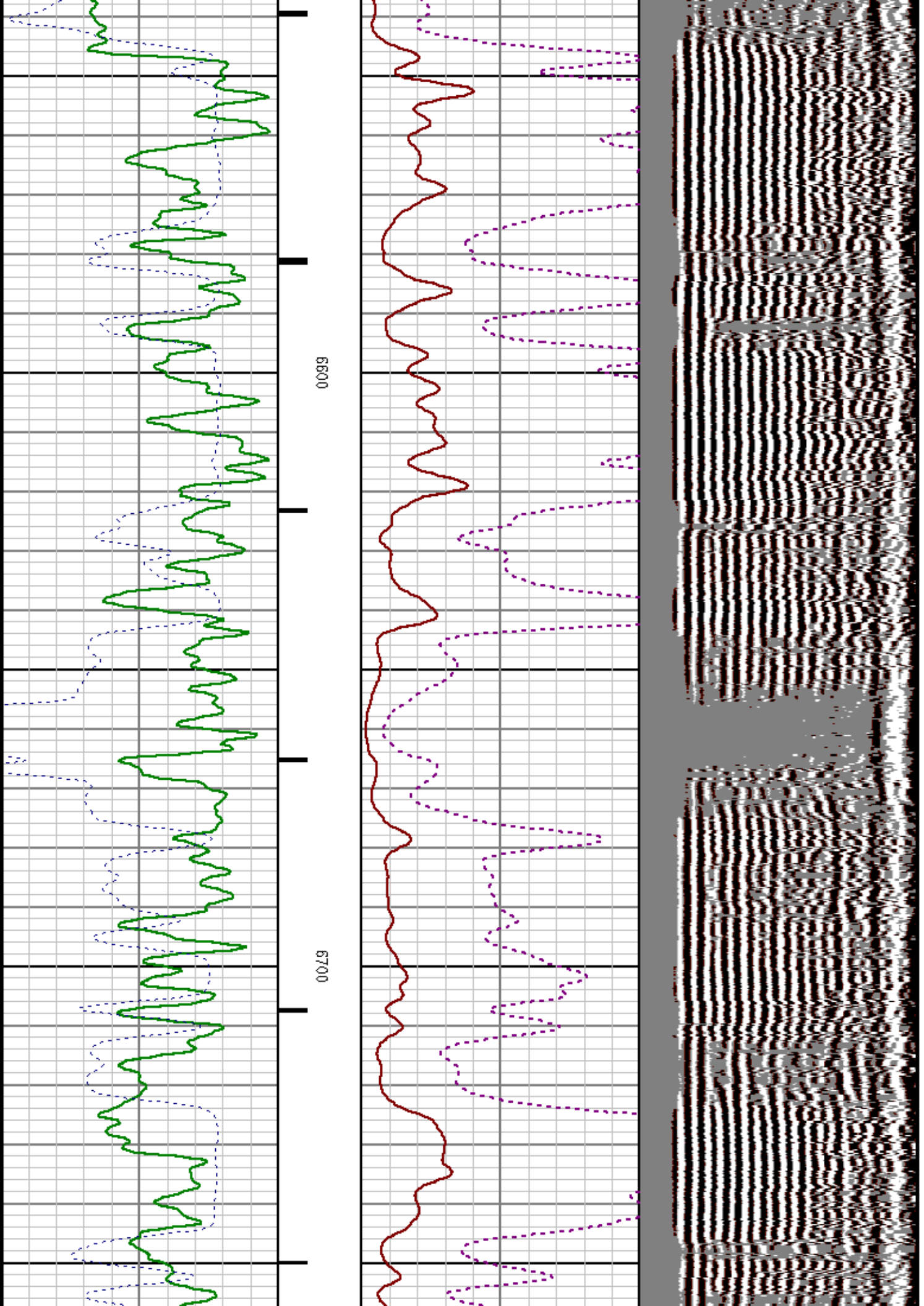


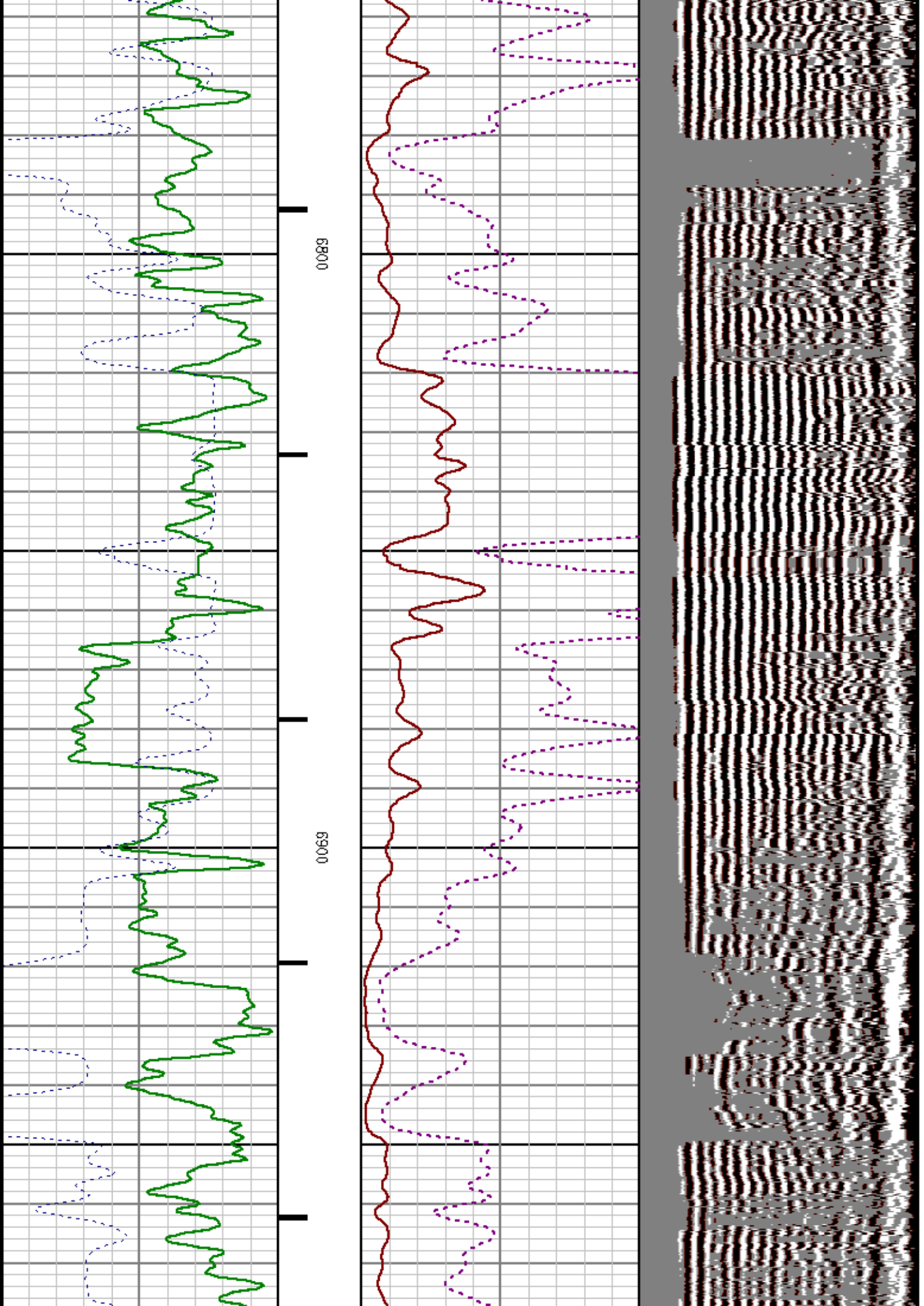


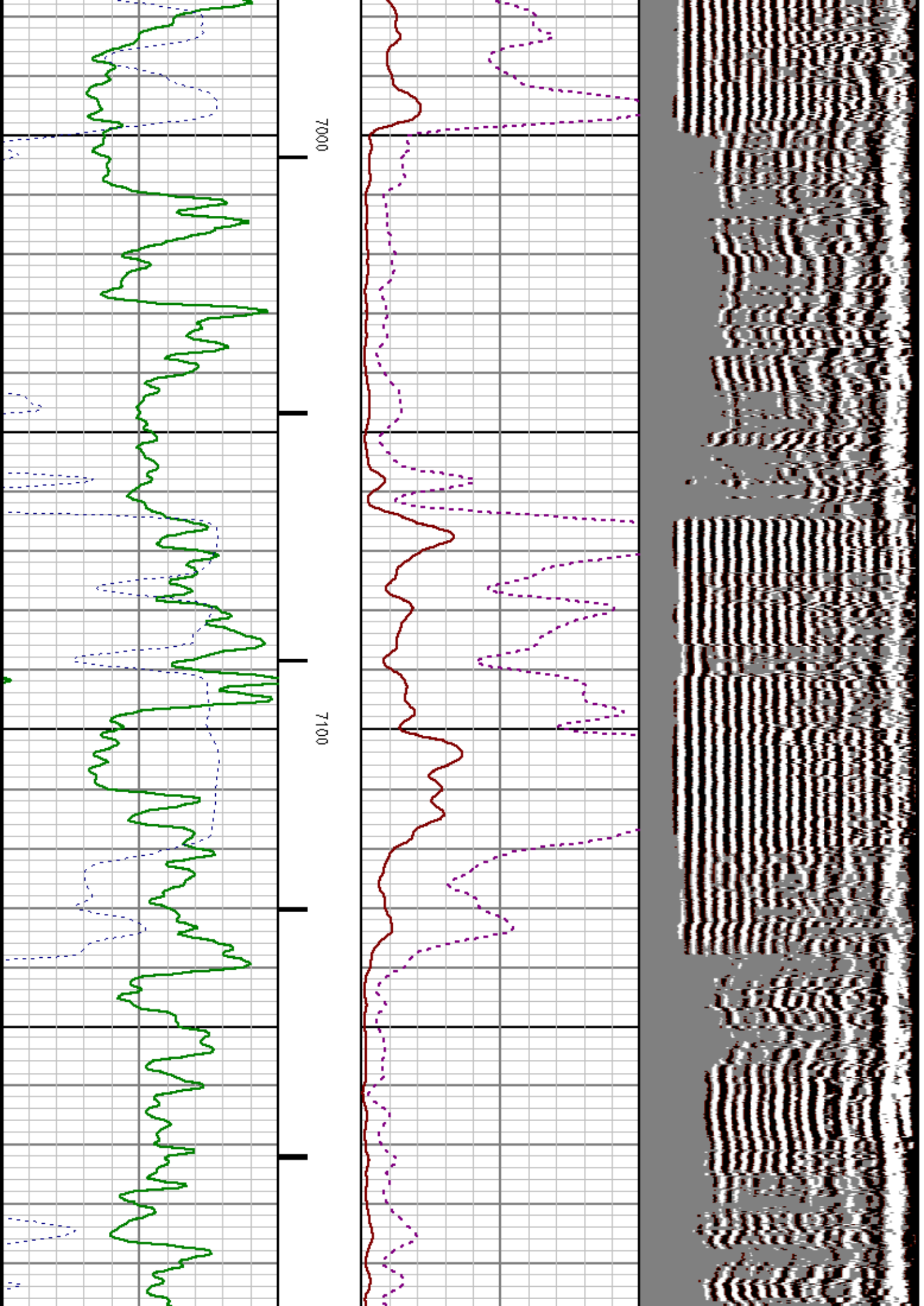


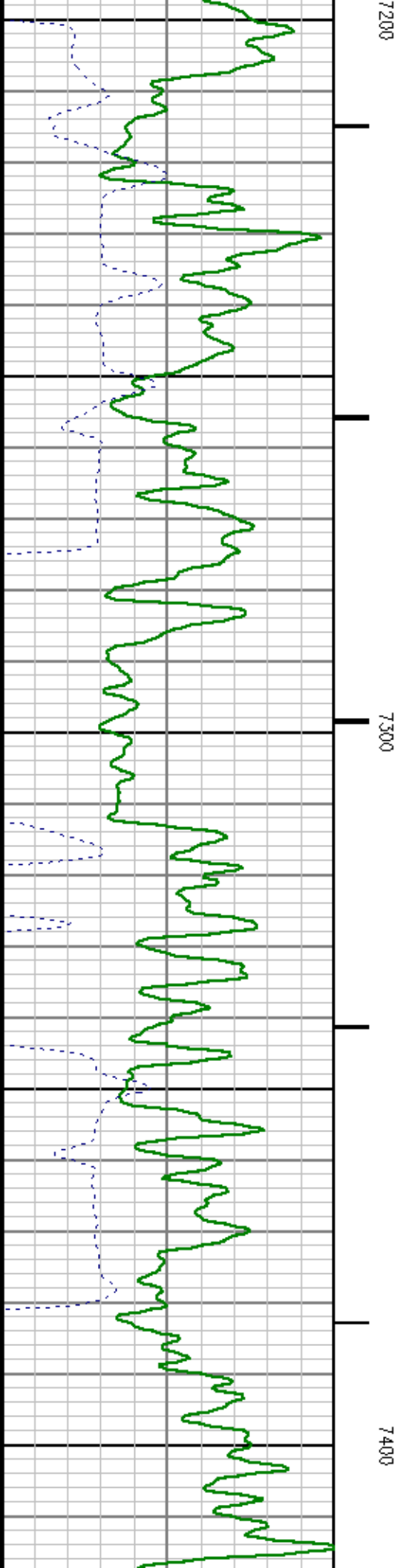
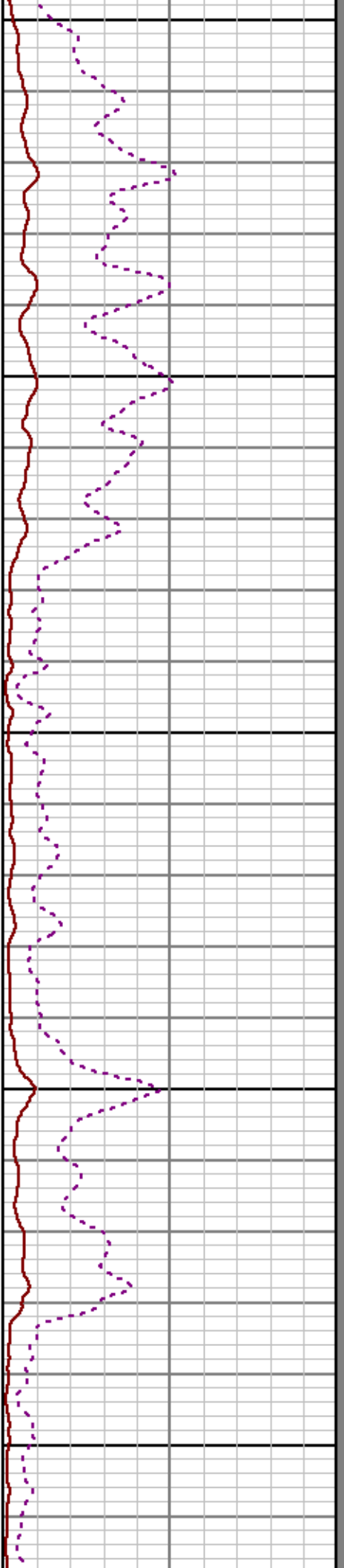
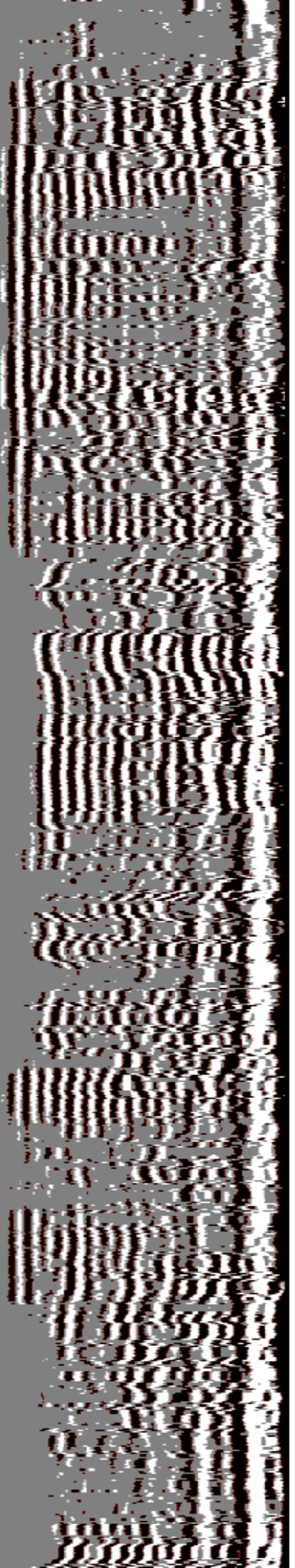


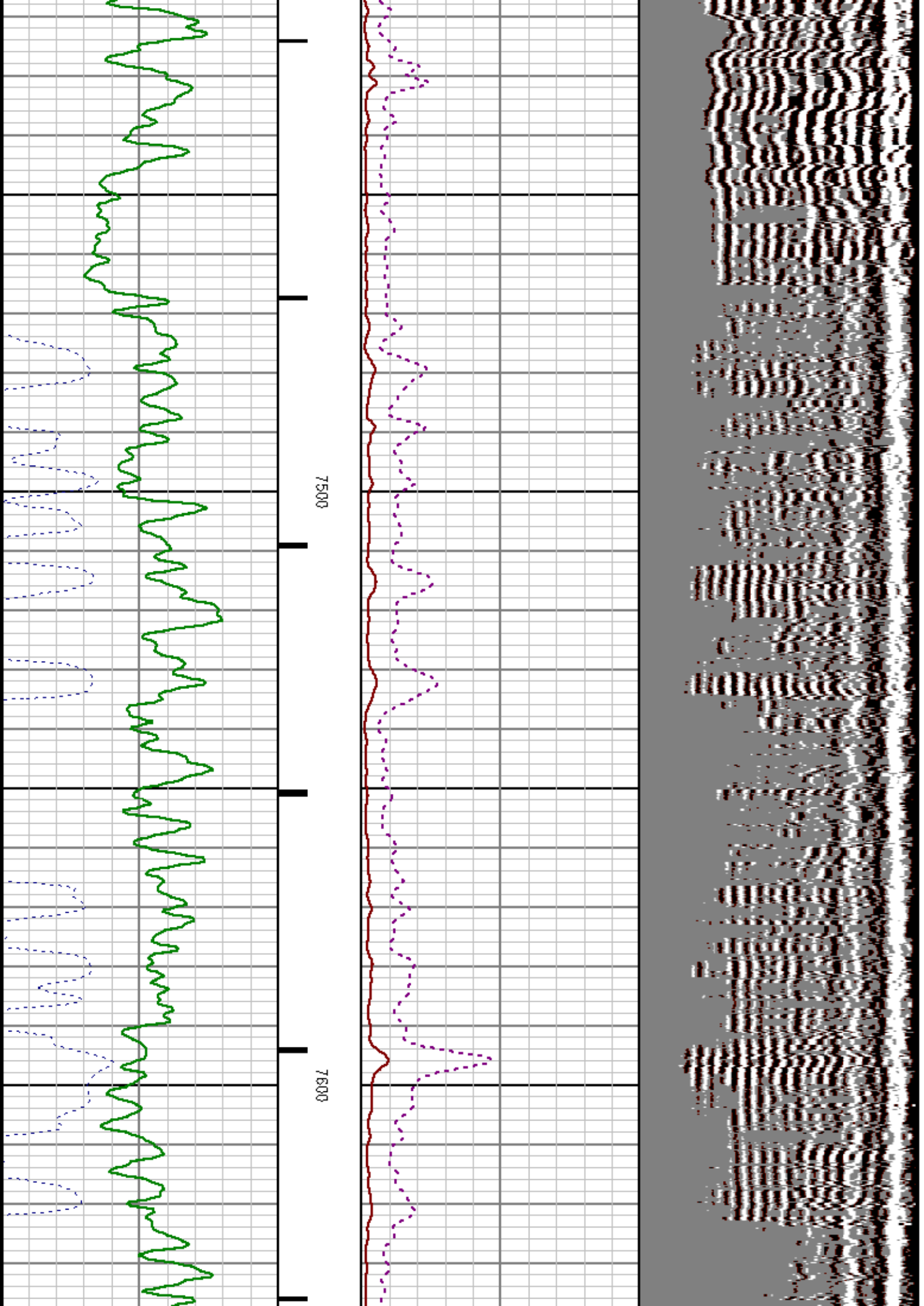


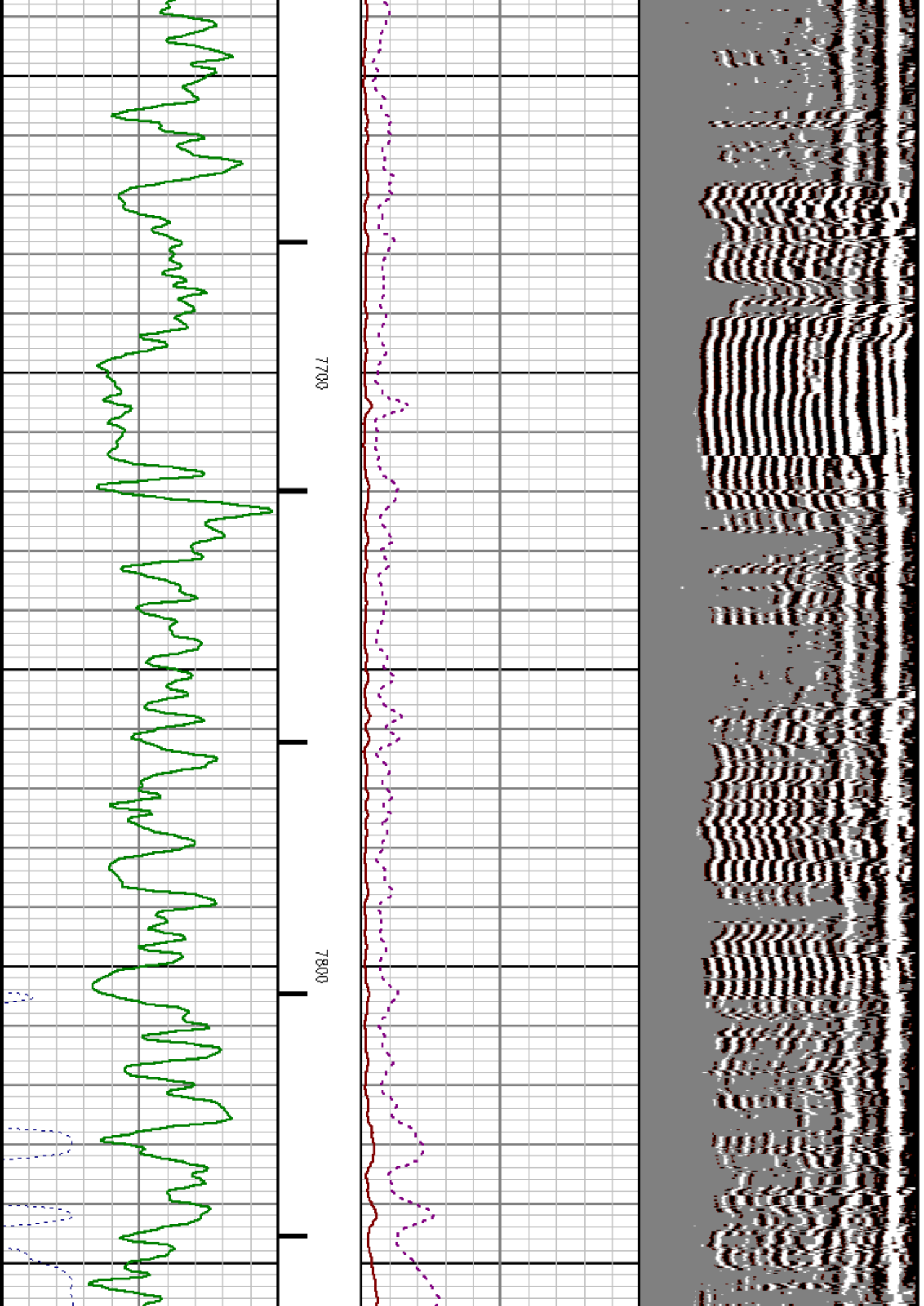


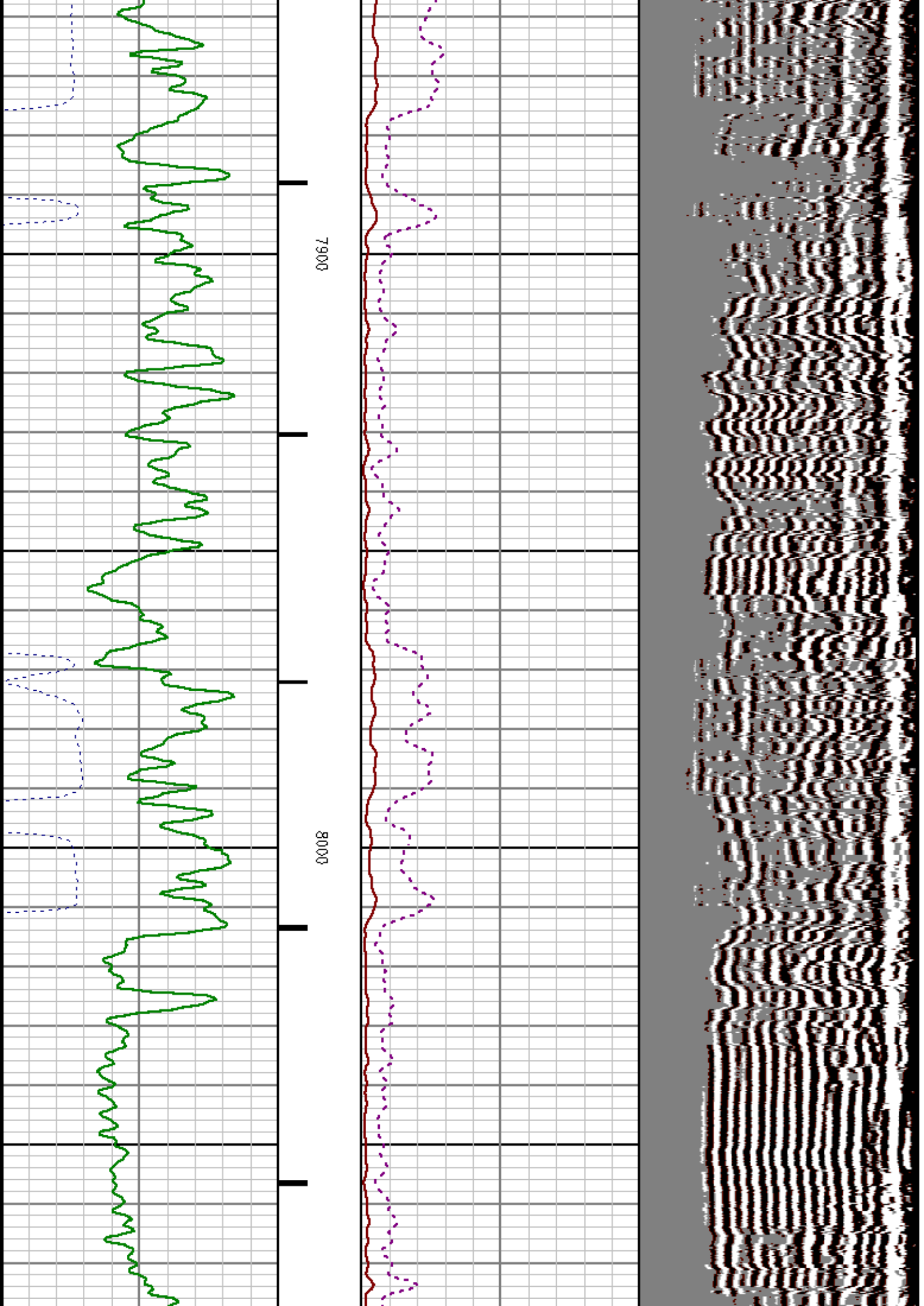


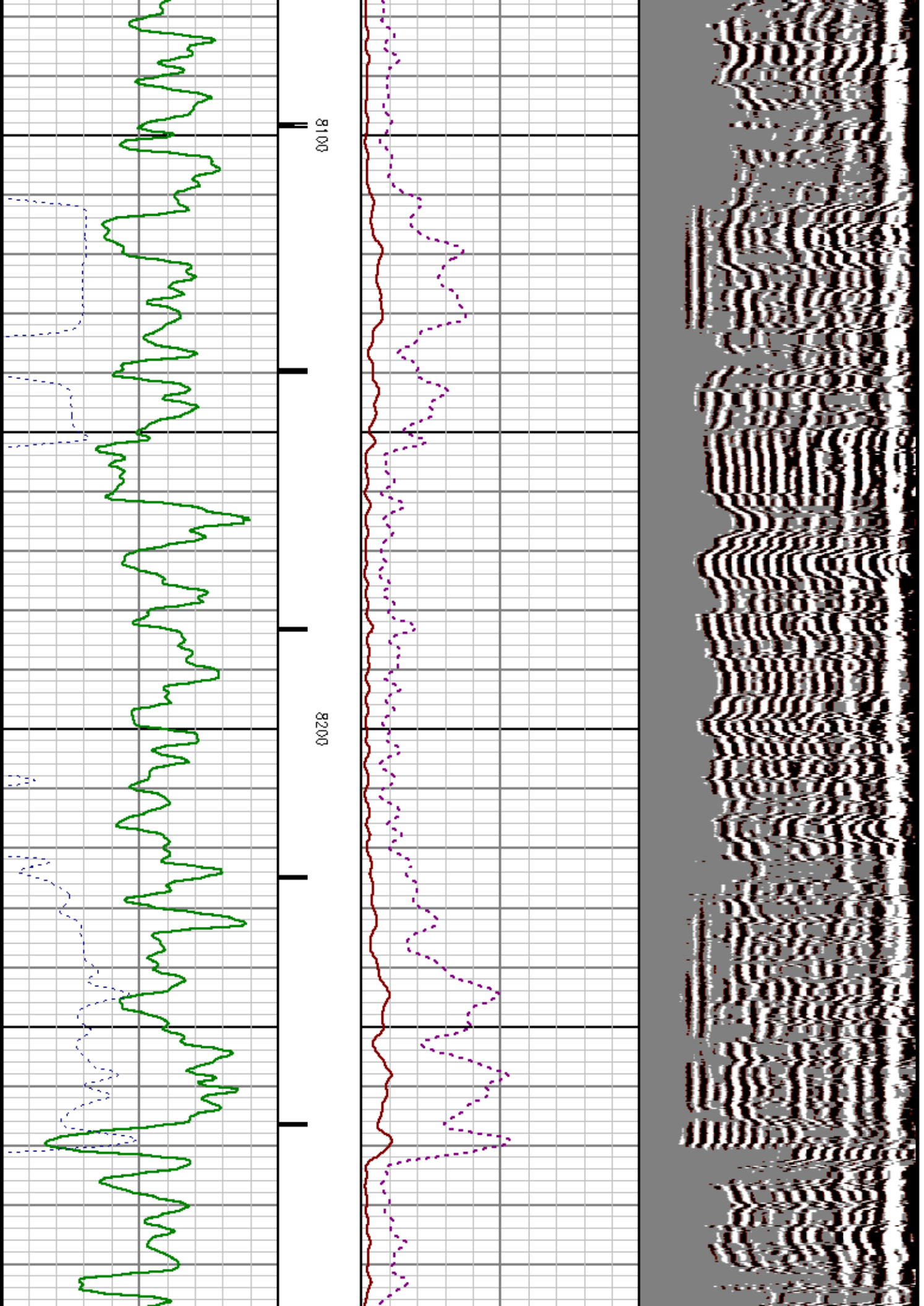


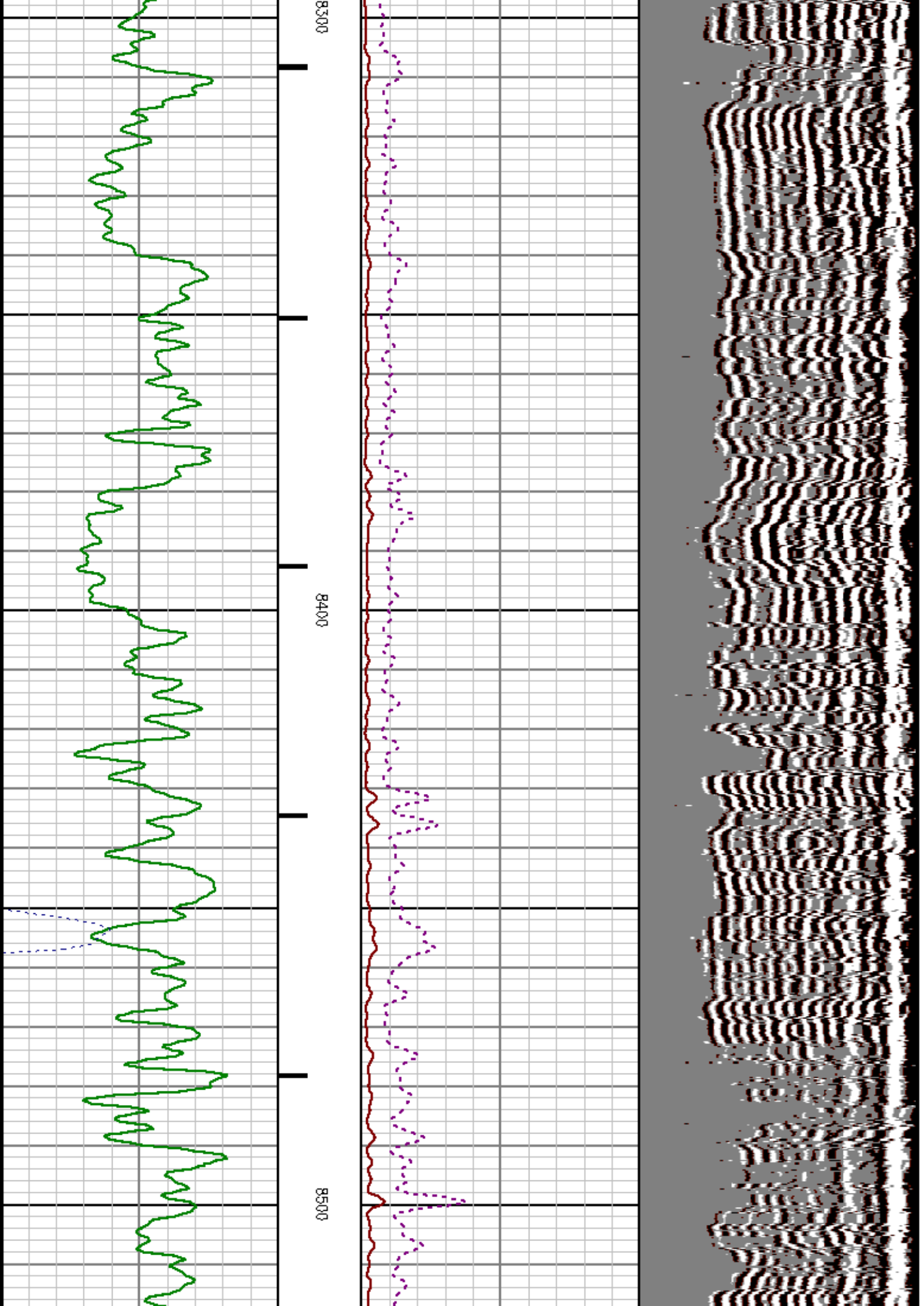


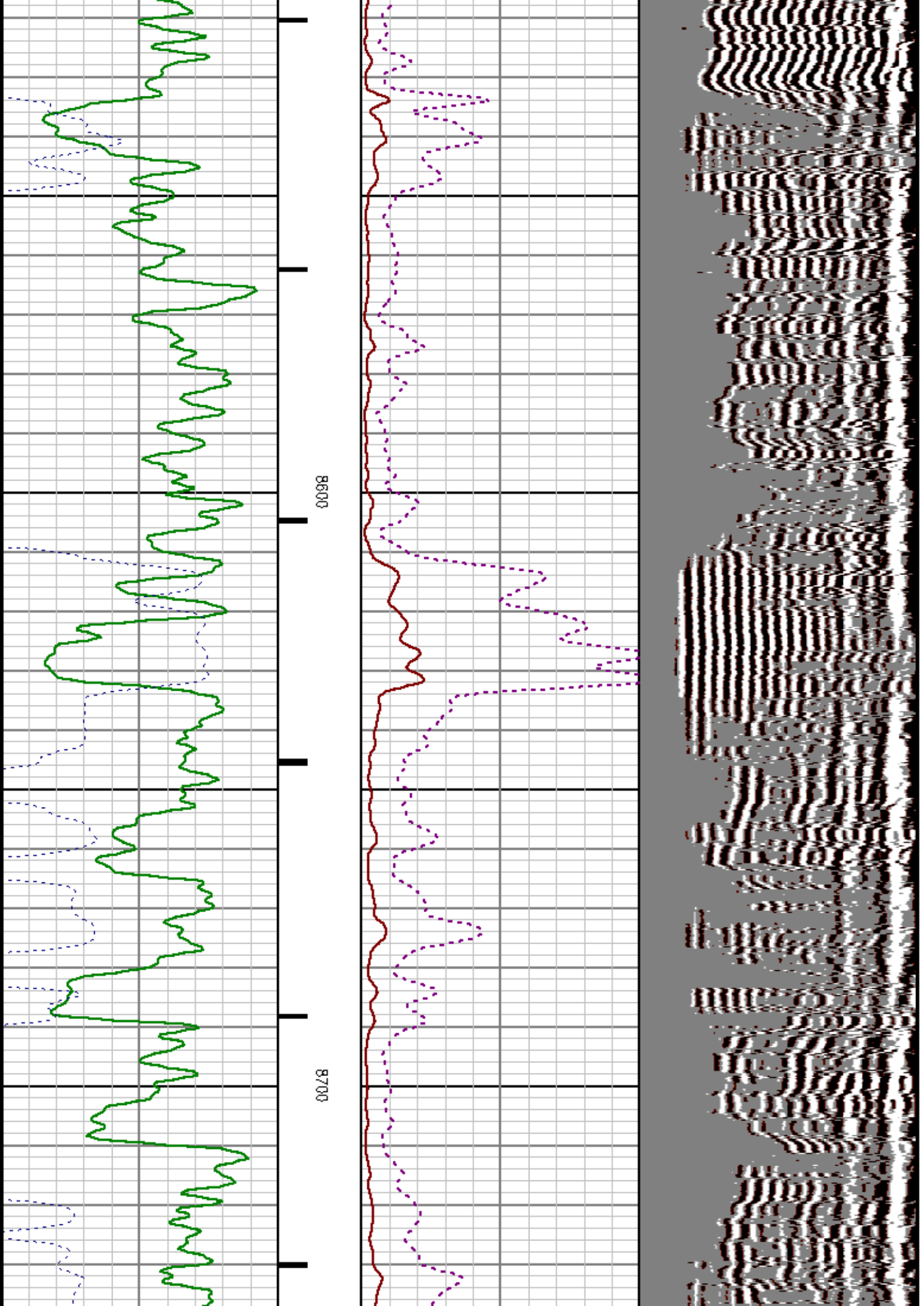


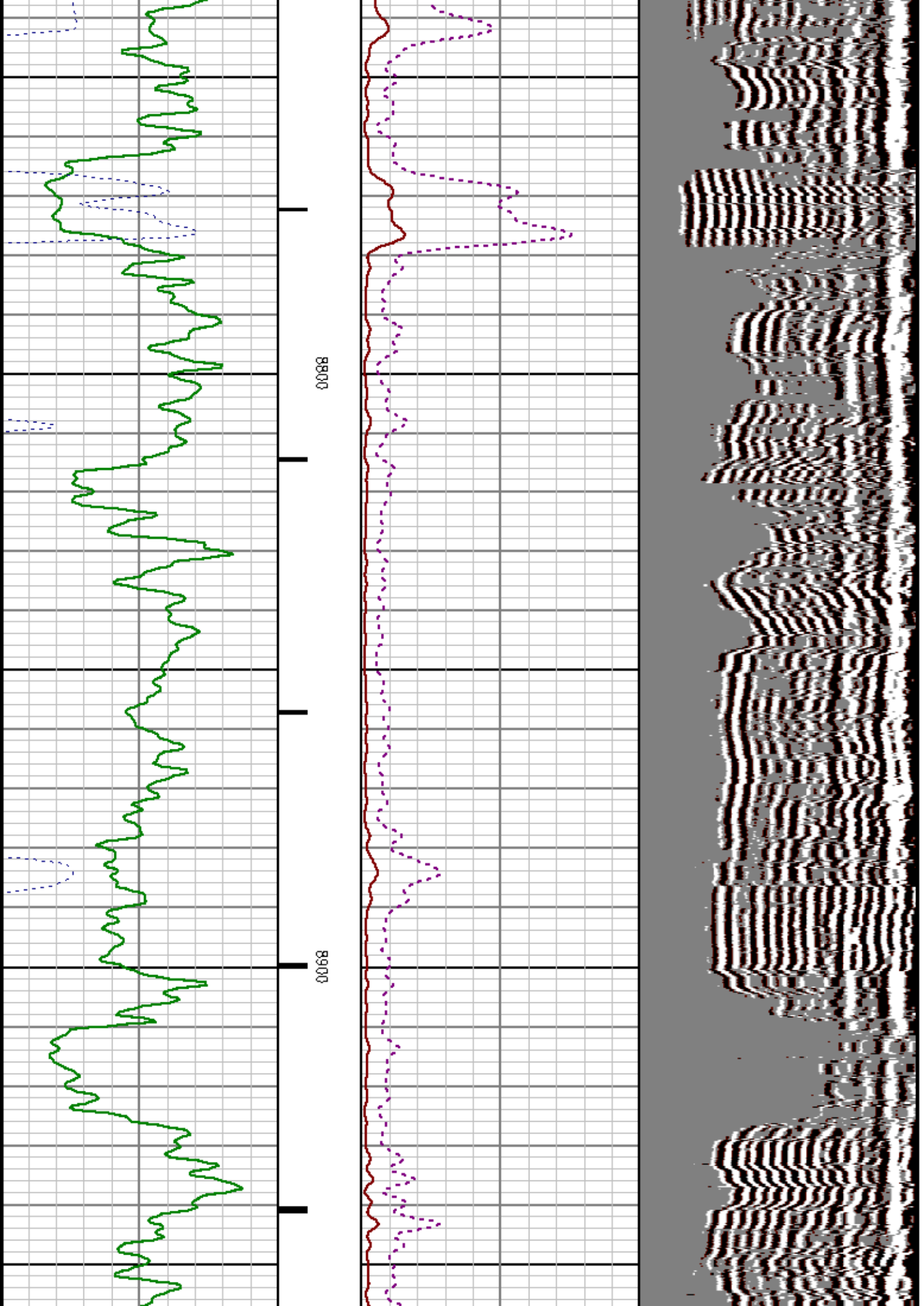


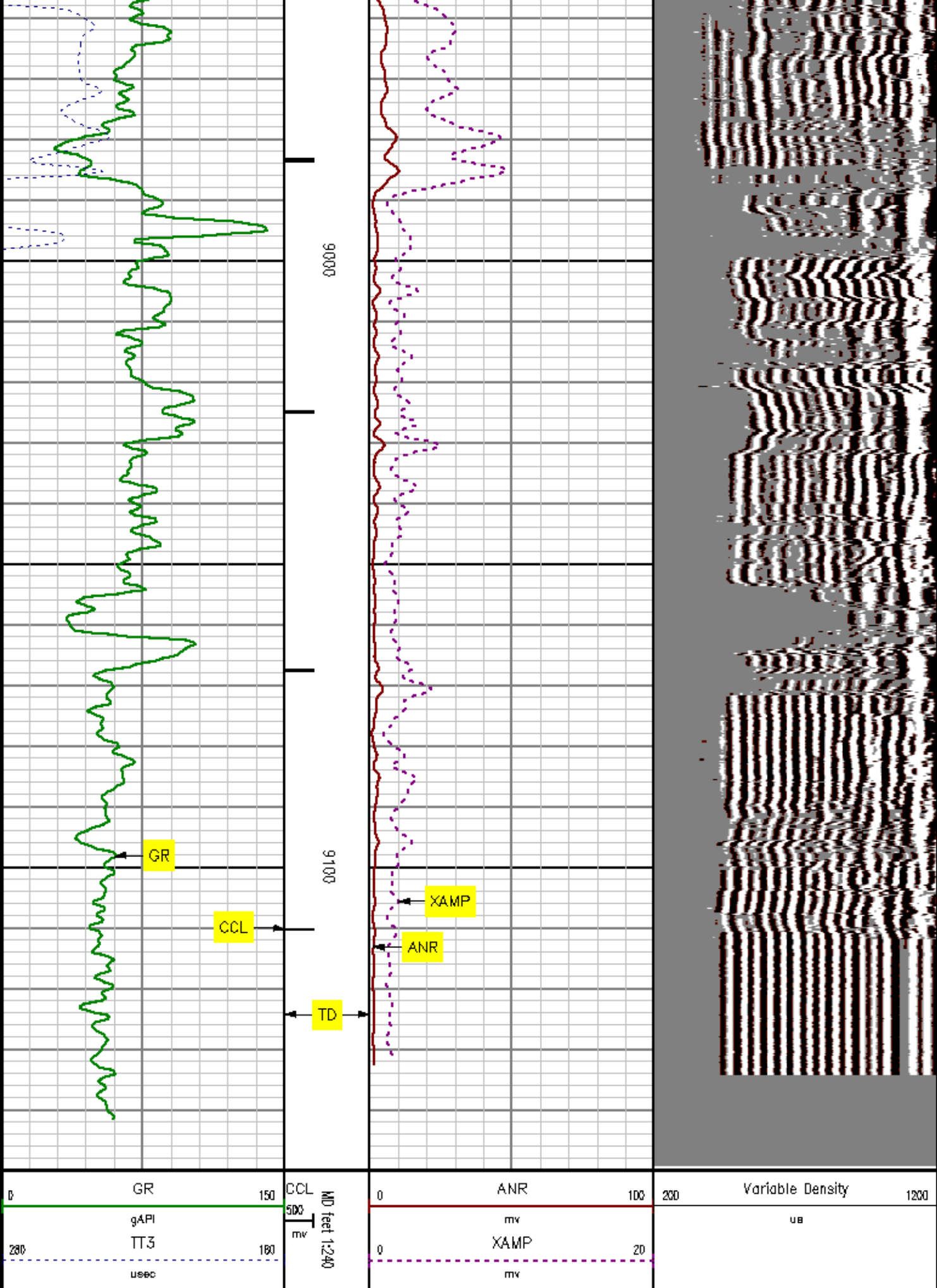












MAIN SECTION

SECONDARY PRESENTATION

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RAL	FB Thresh Radial	10.000	mv	19.435	9149.000
RAL	Fluid Travel Time	200.000	usec/ft	19.435	9149.649

DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
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		AR5	AR6	AR7	ARB	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-14.360	AFAR	SIG	TT5			
1426XA	-7.250	GCL					
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Company : WILLIAMS PRODUCTION RMT COMPANY

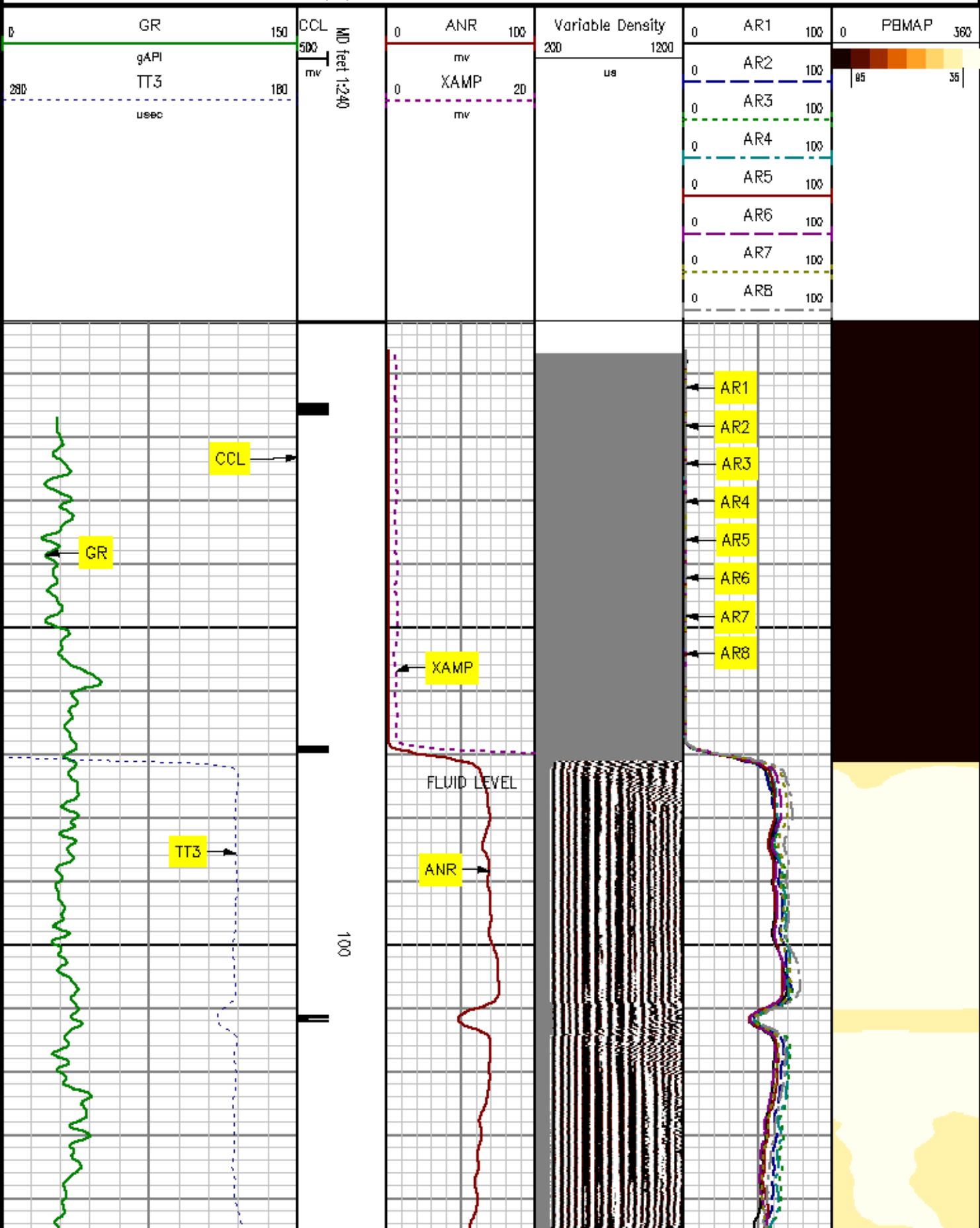
Well : RWF 441-36

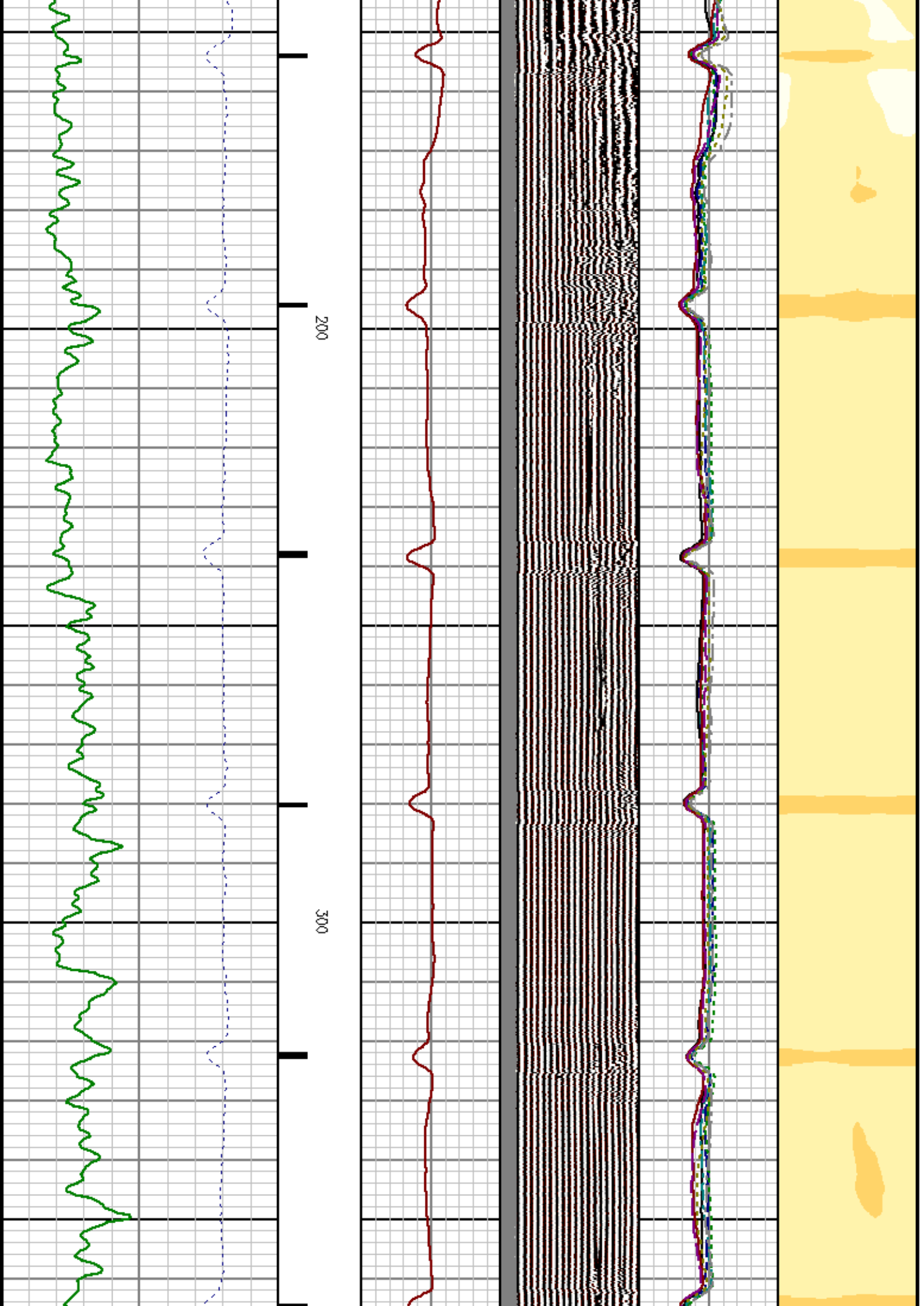
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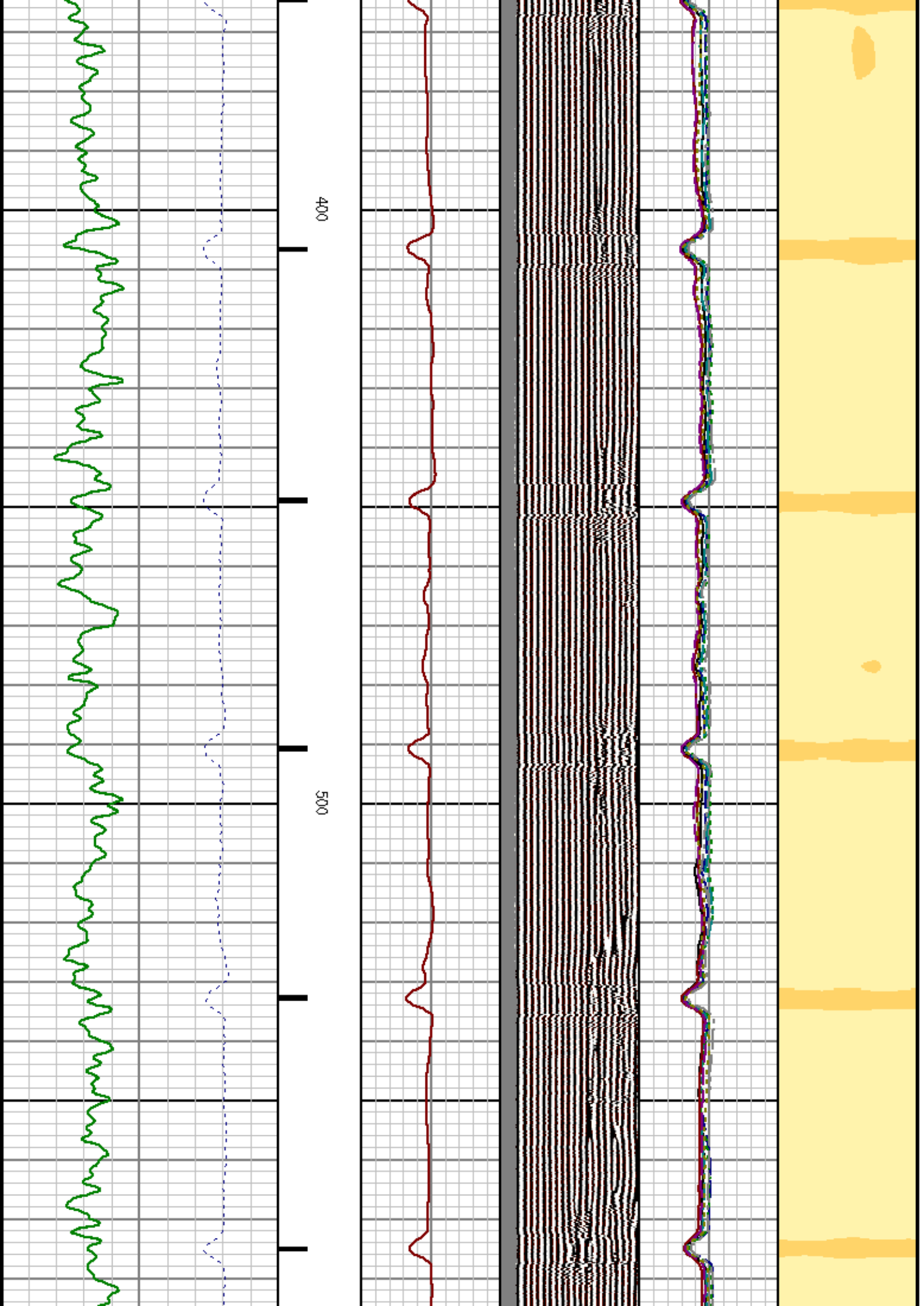
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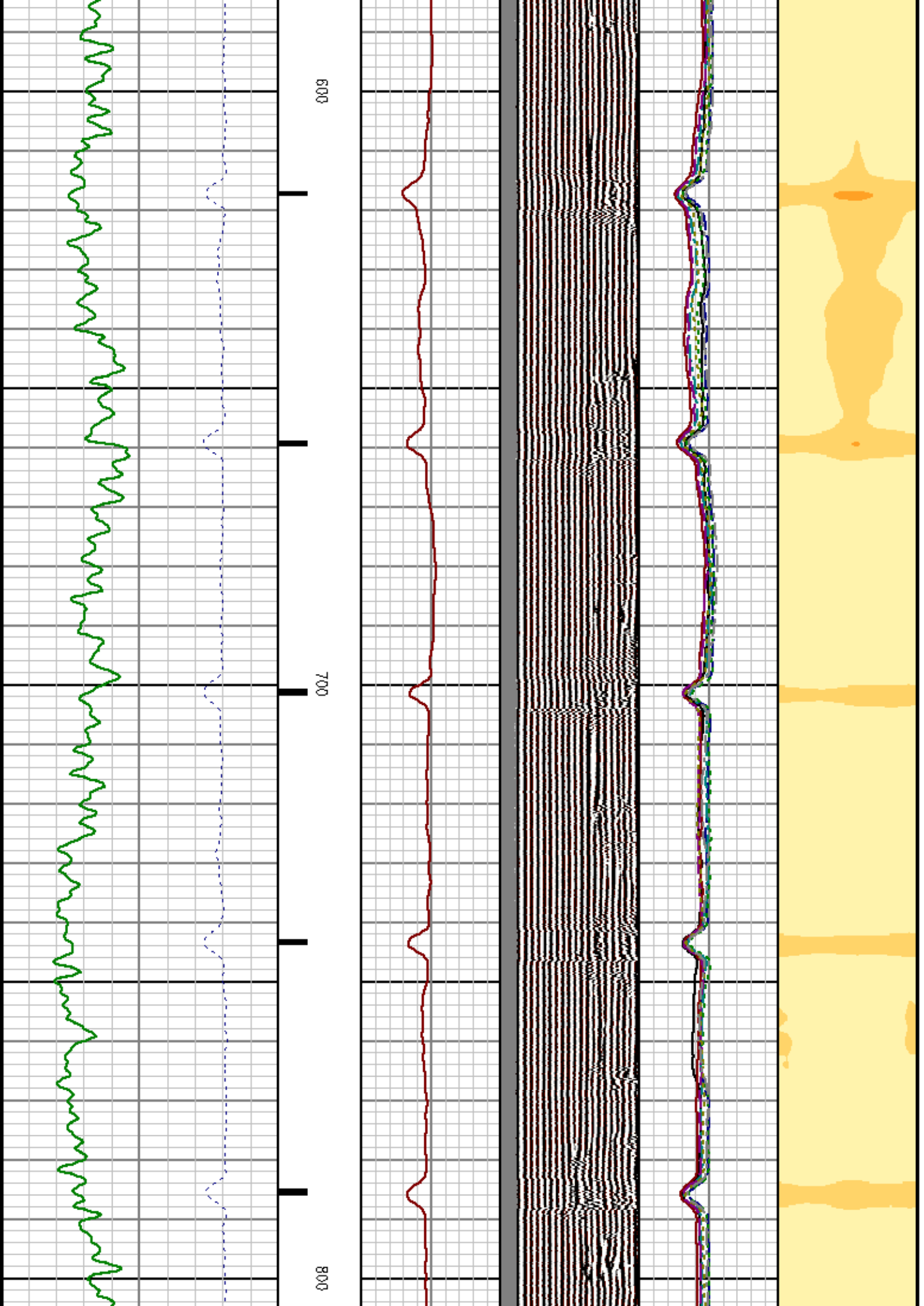
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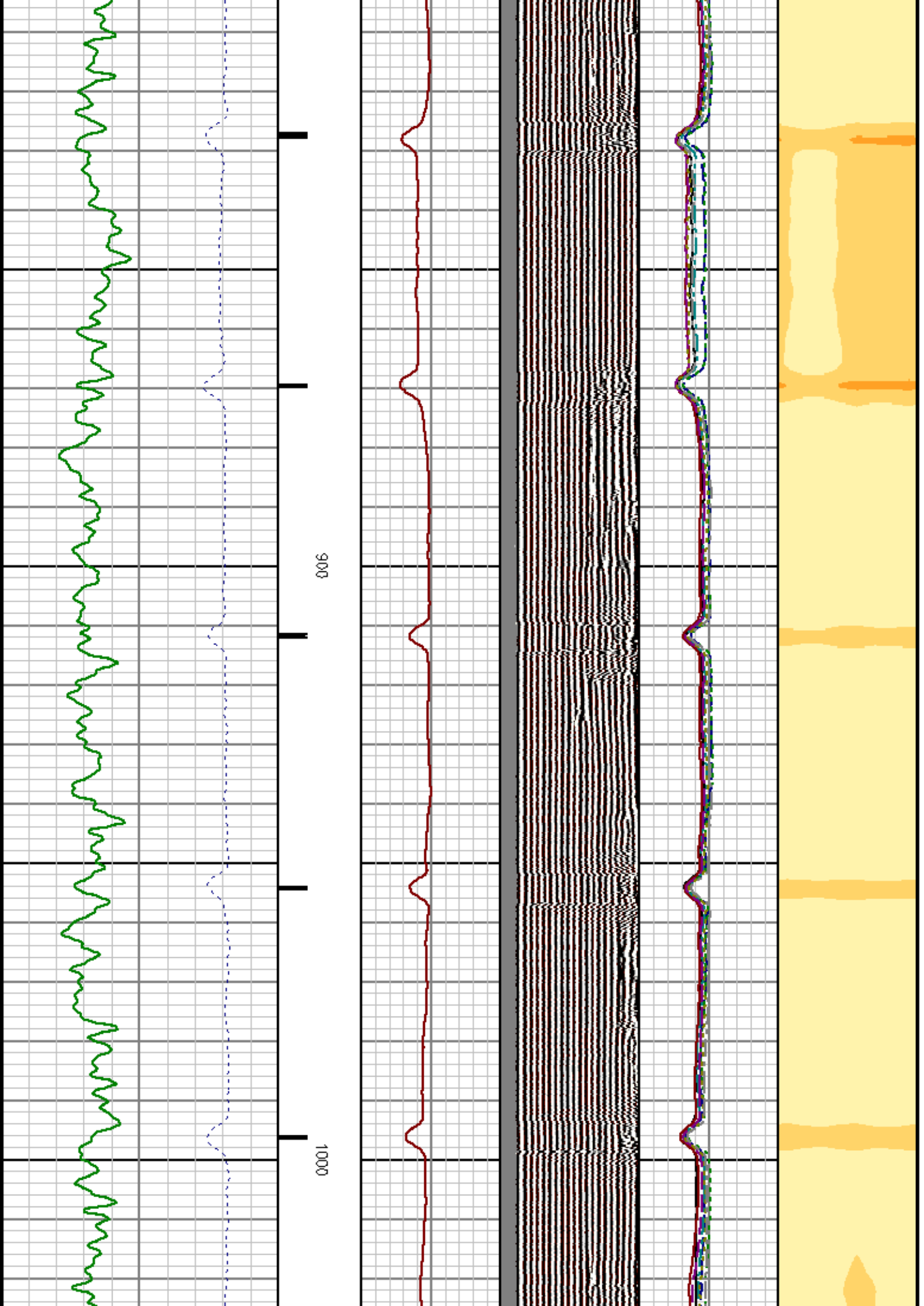
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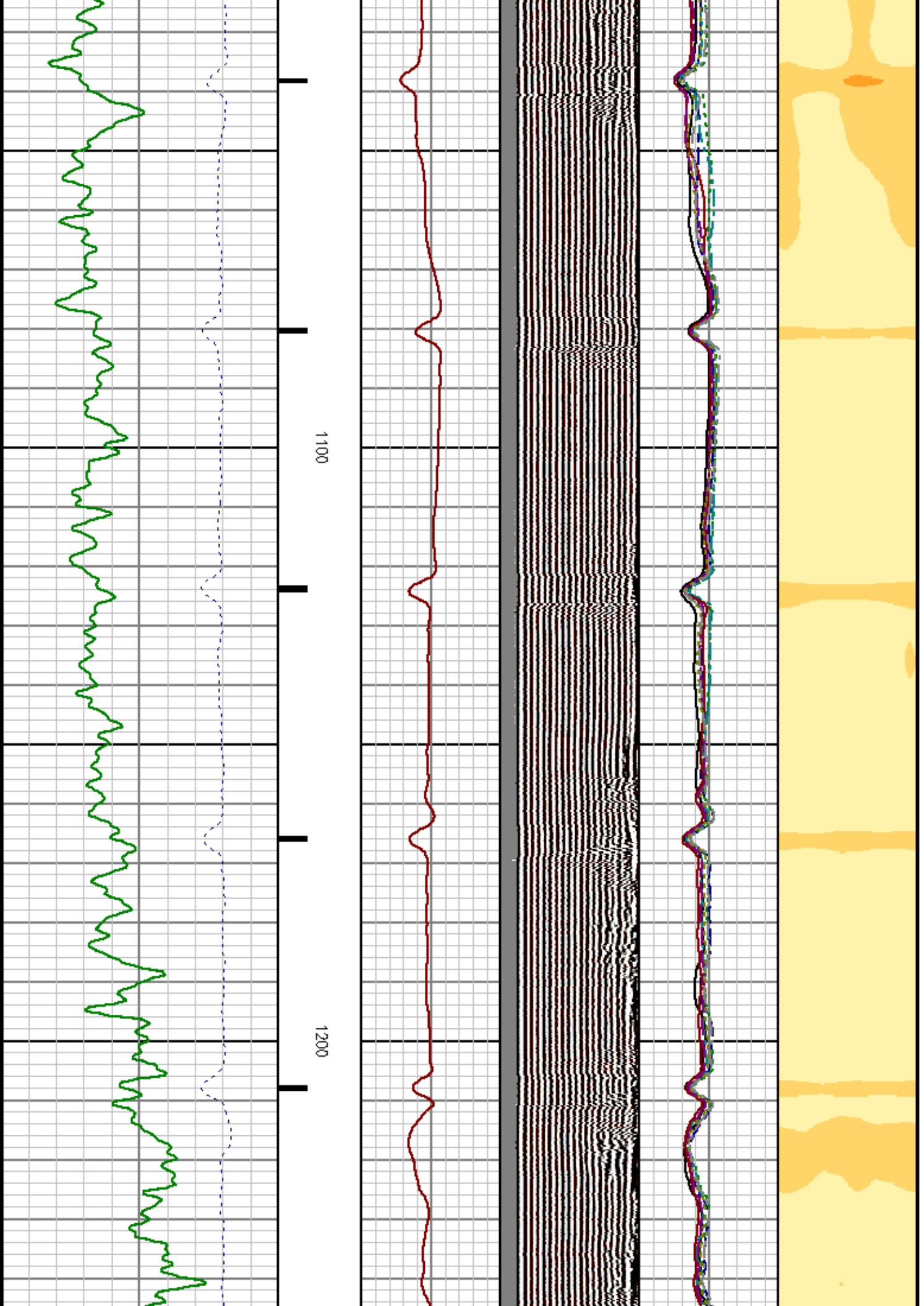


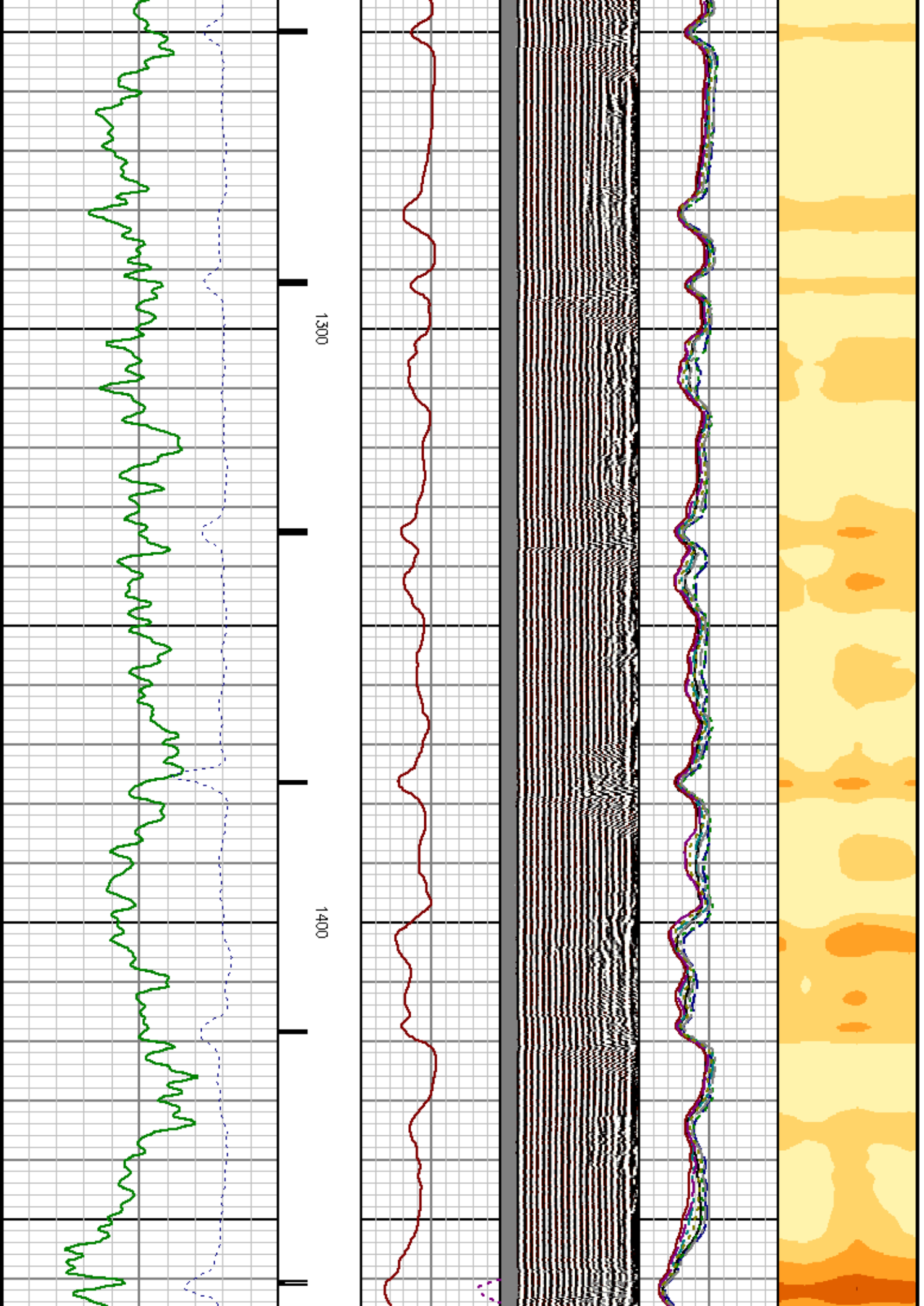


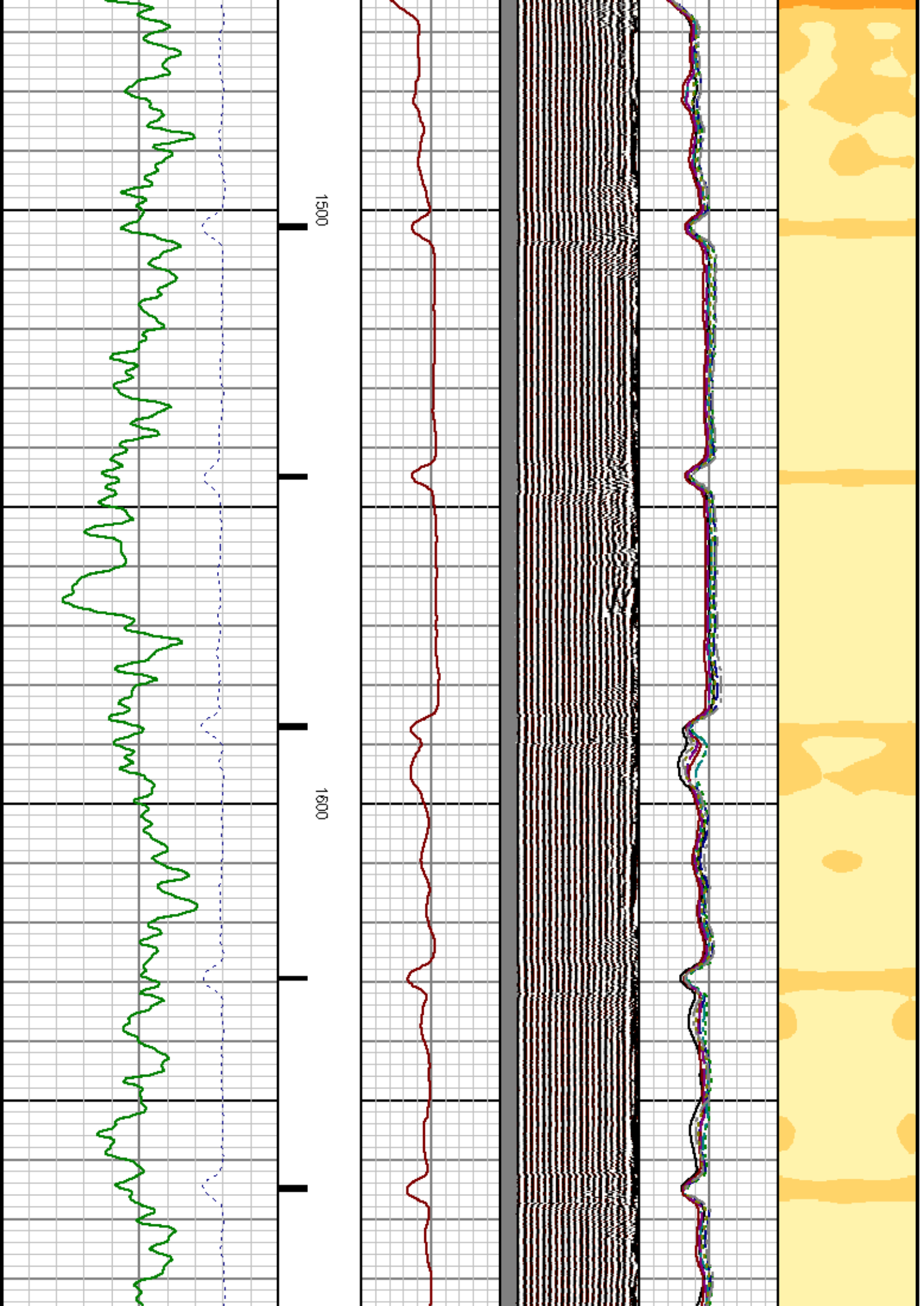


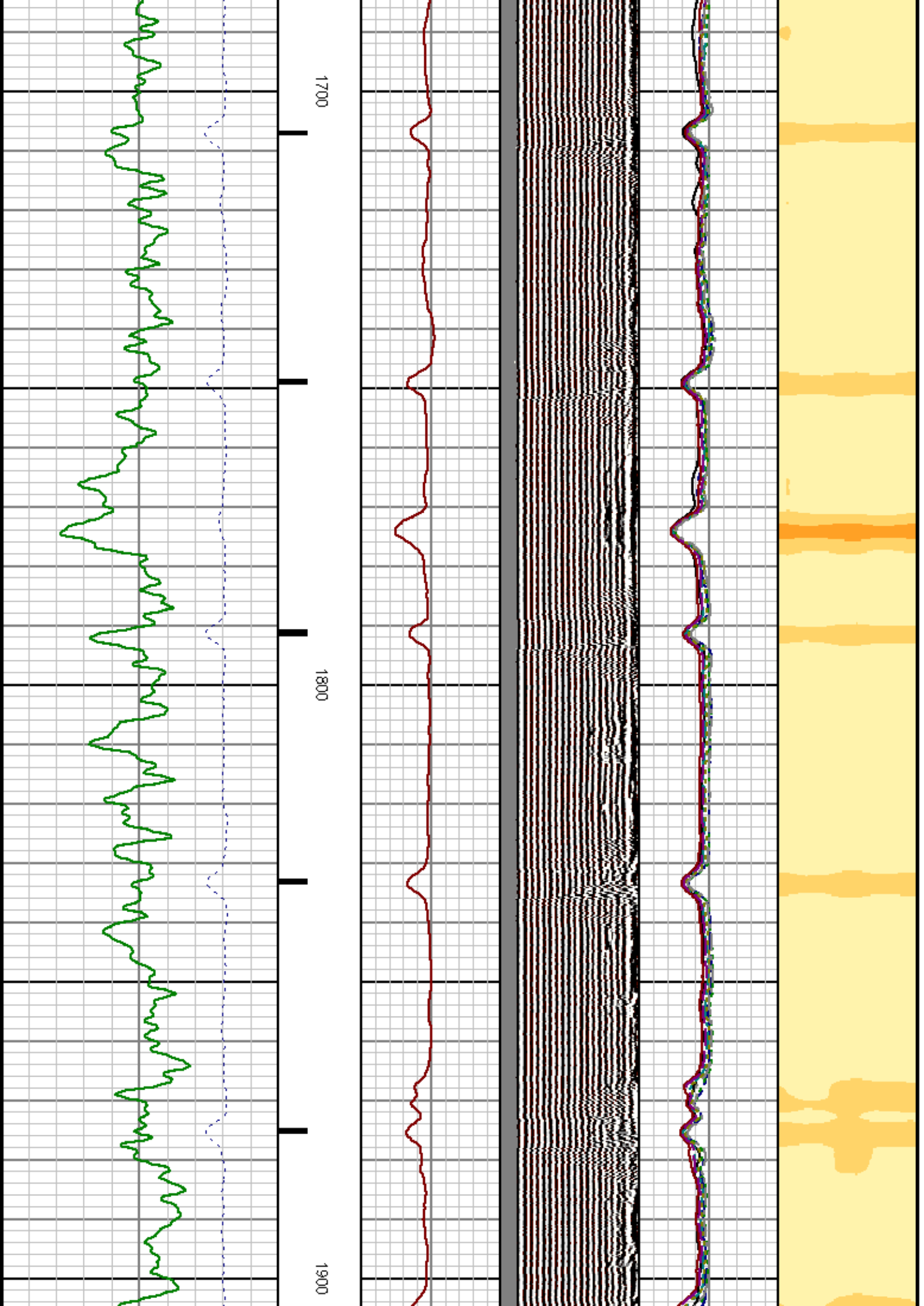


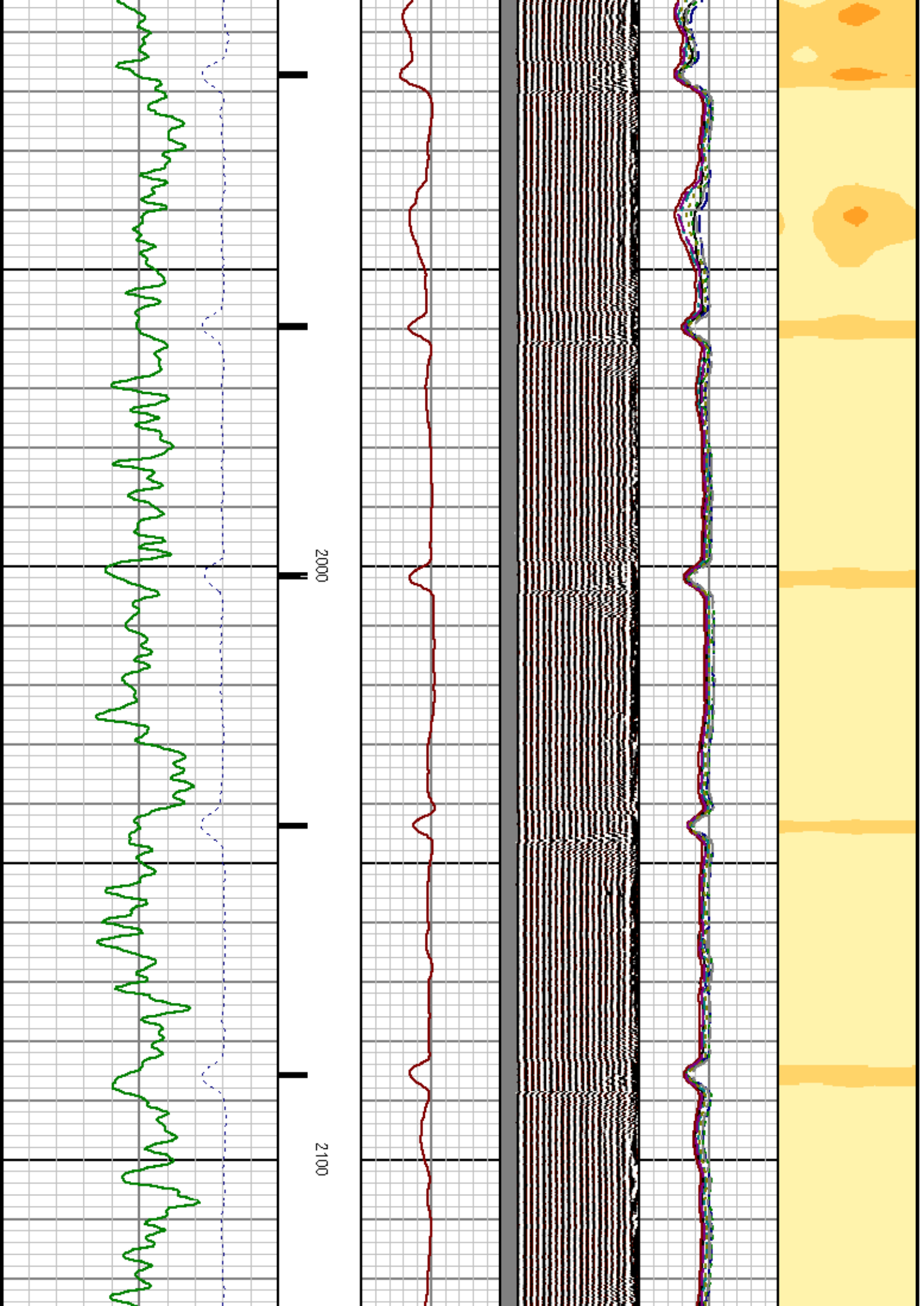


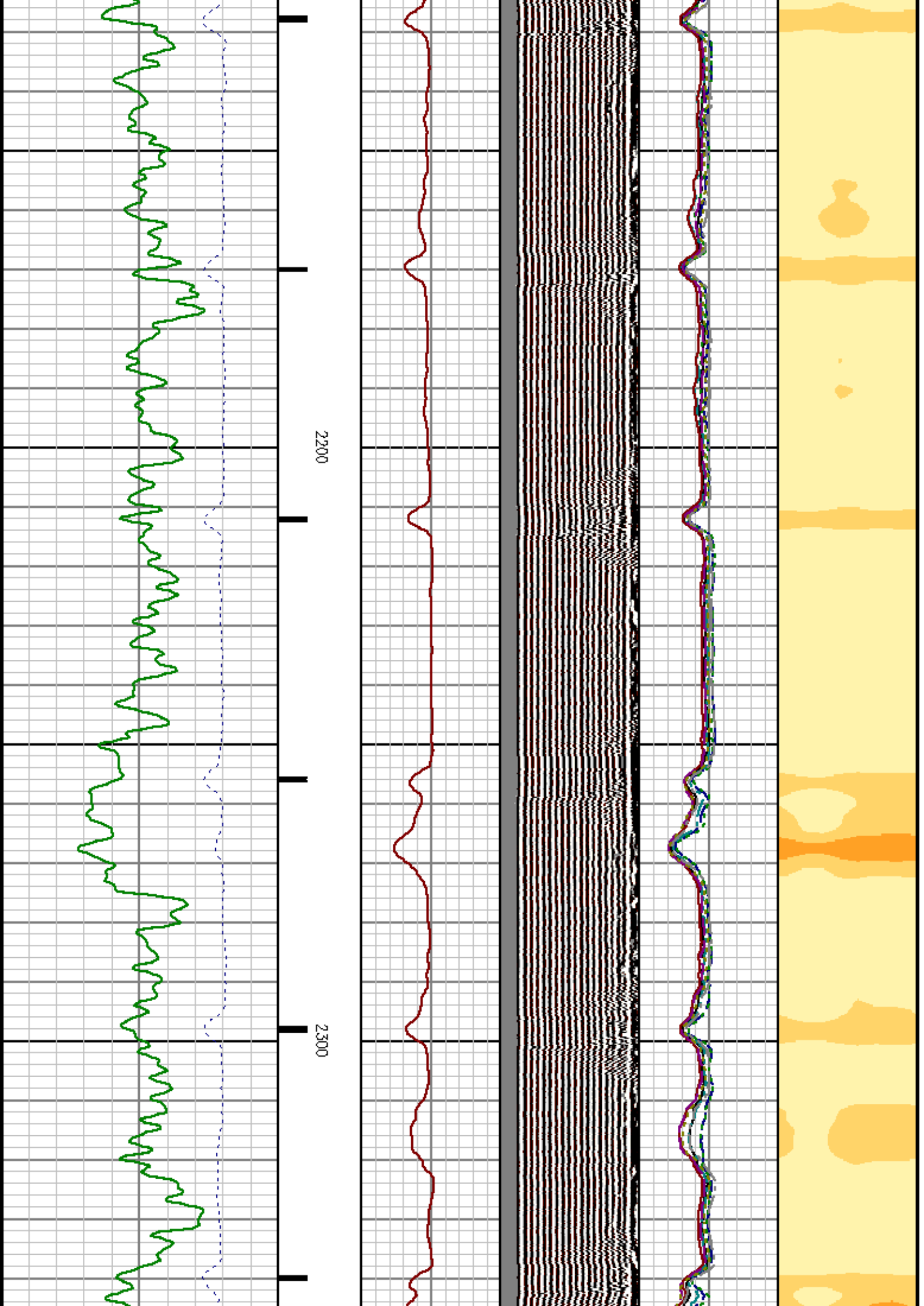


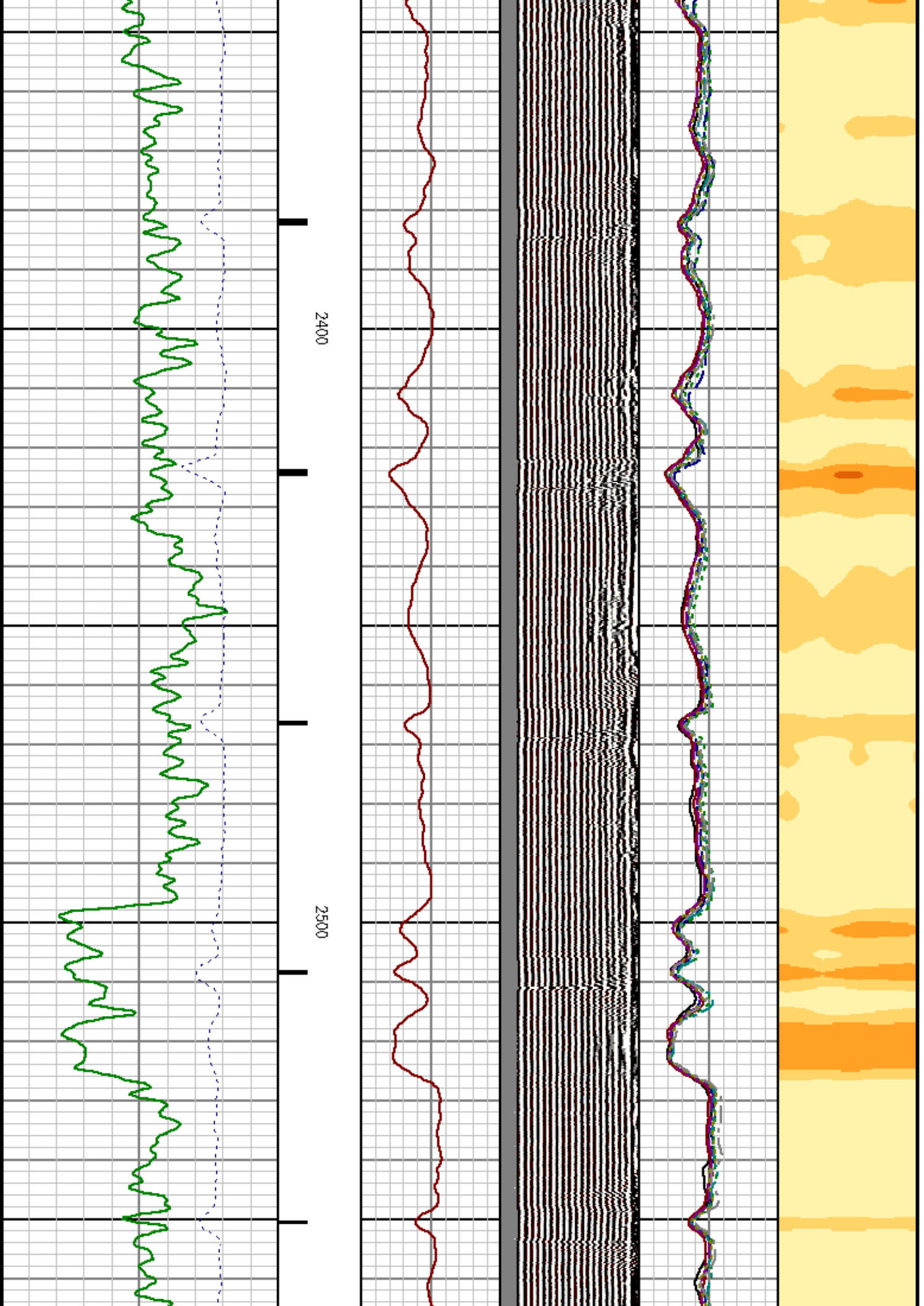


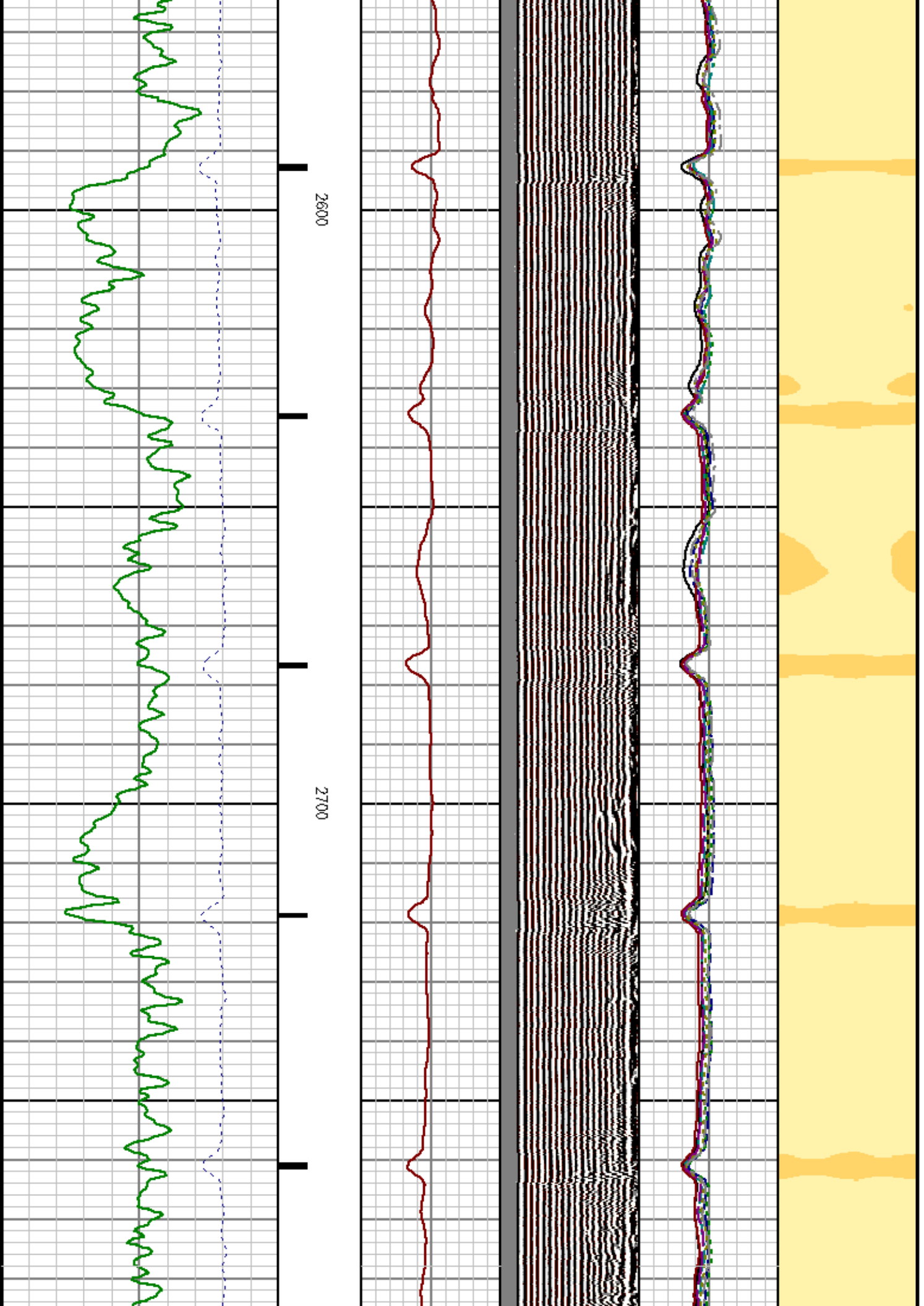


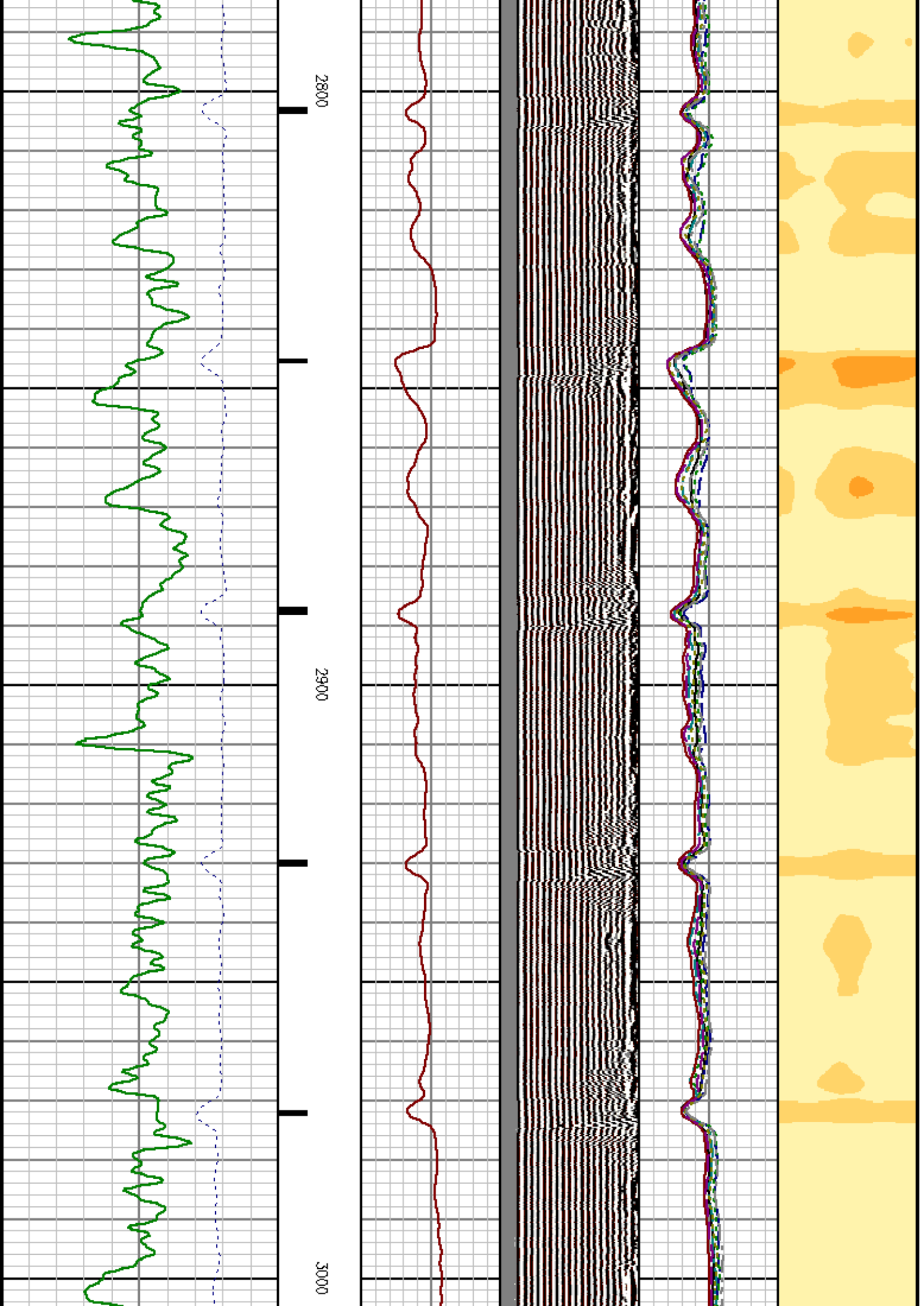


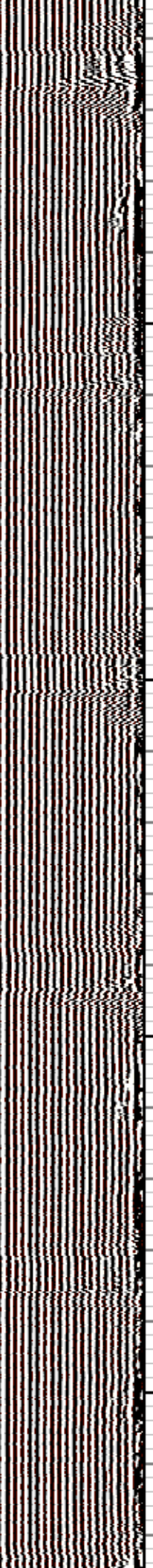
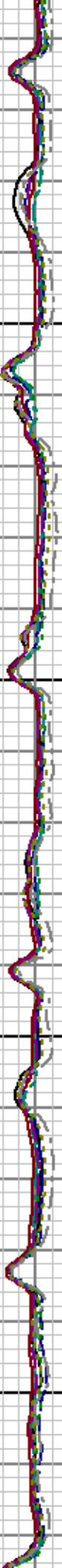






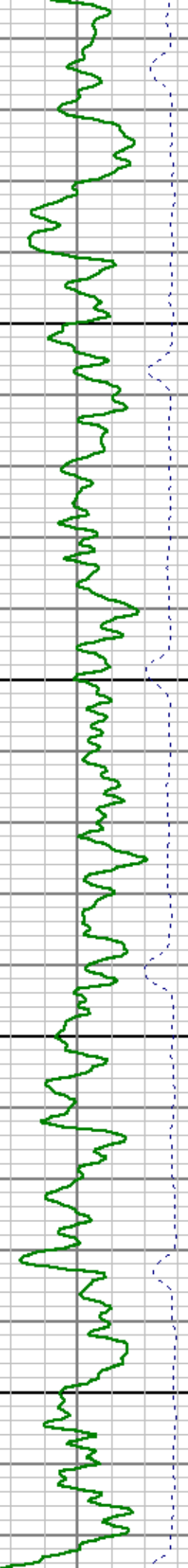


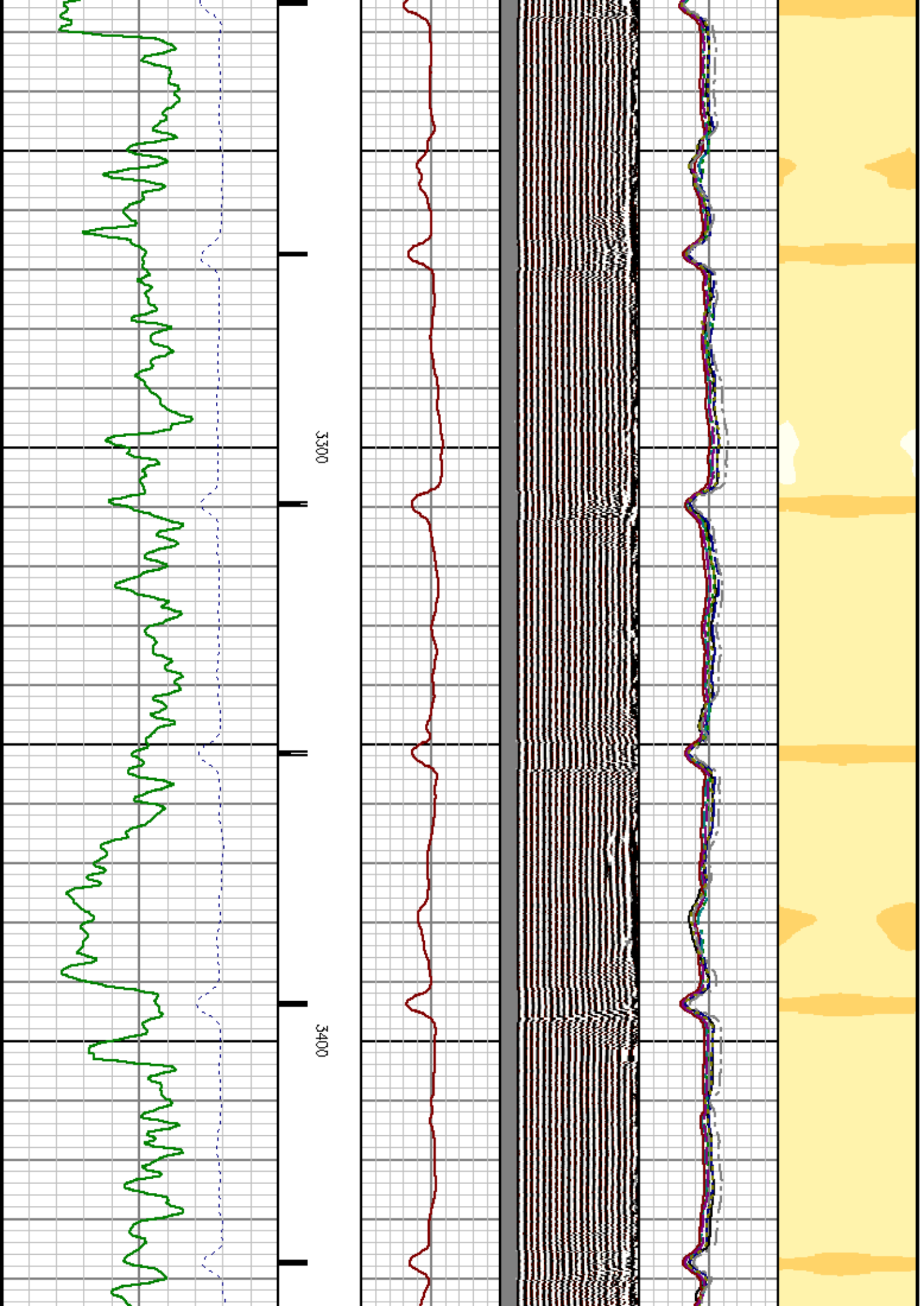


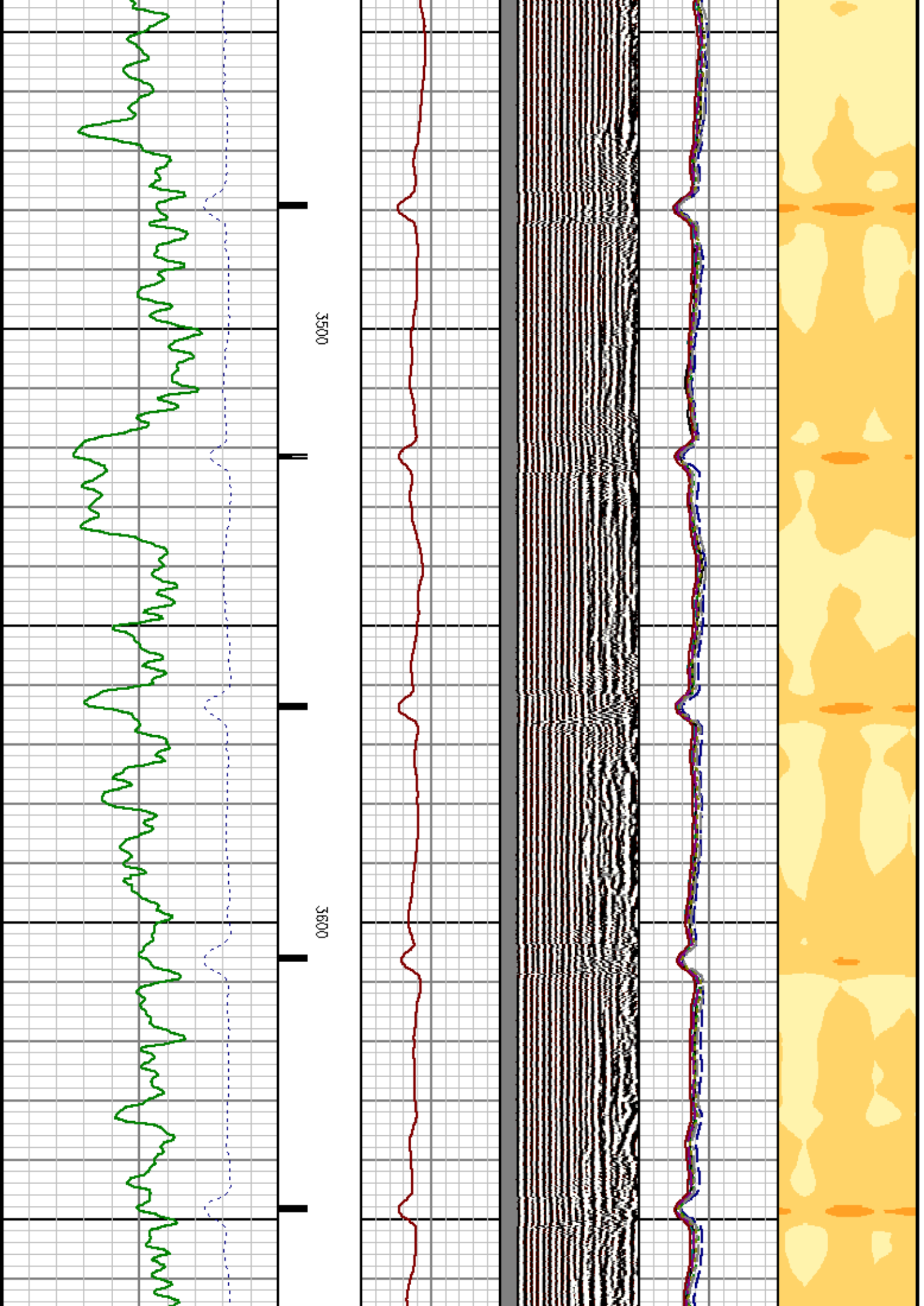


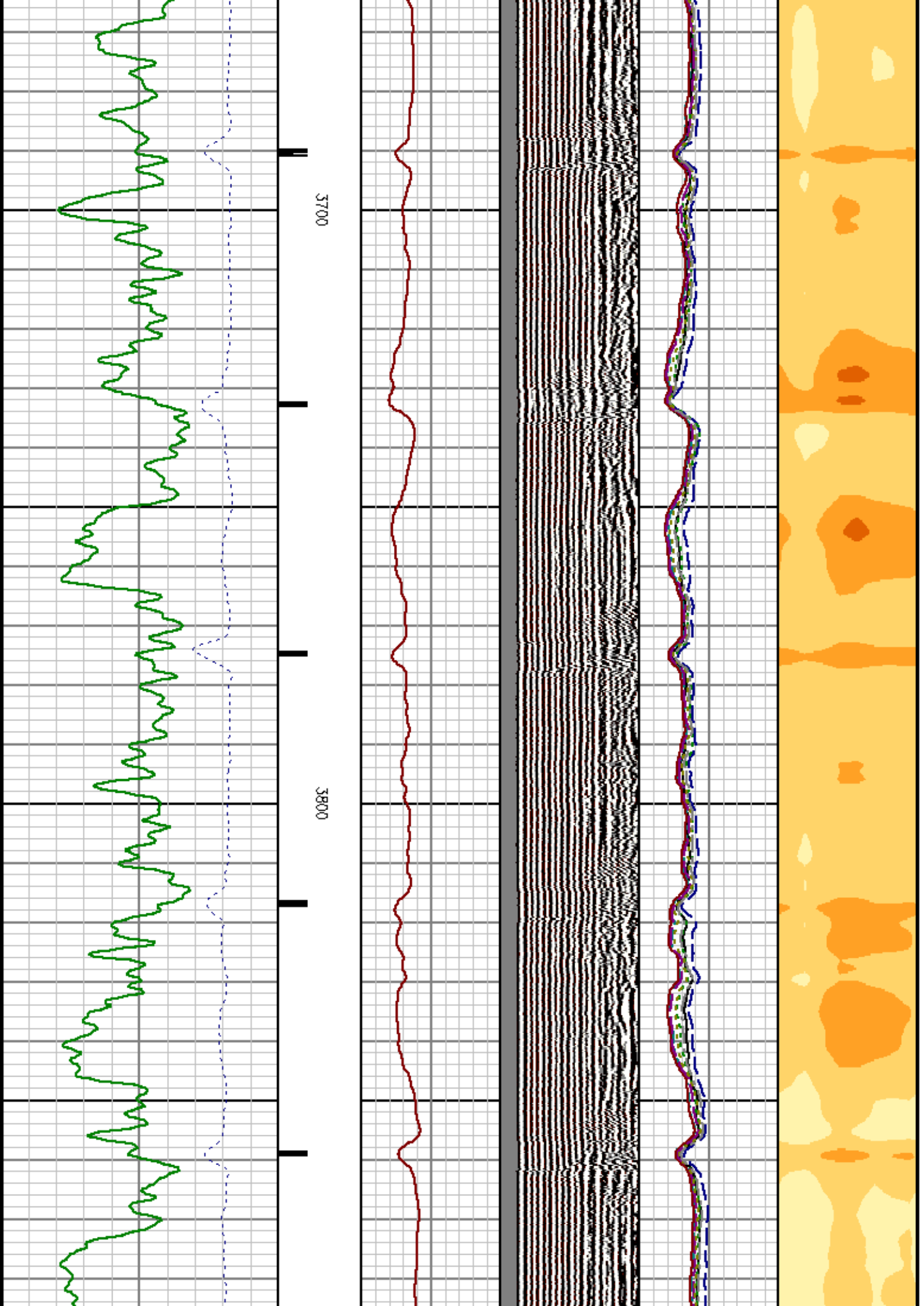
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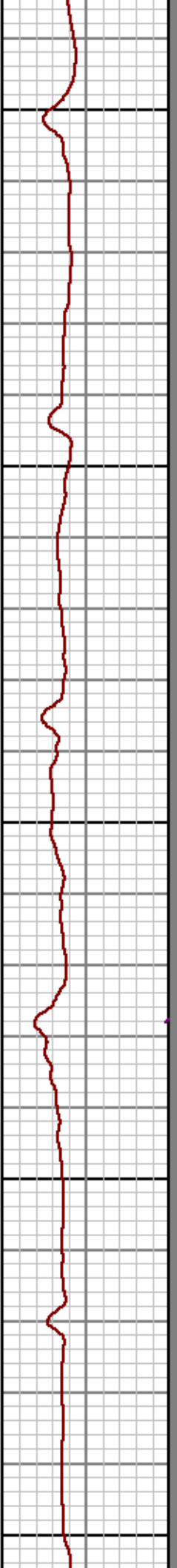
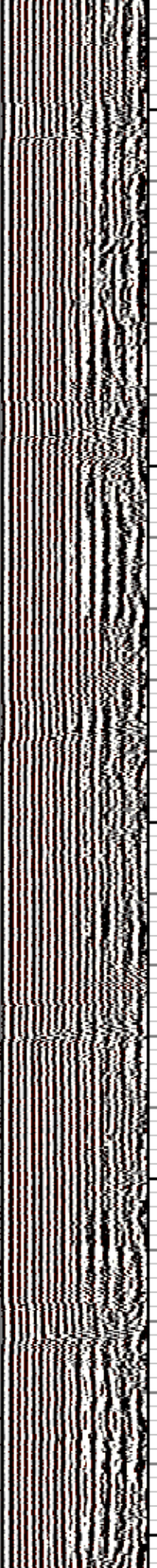
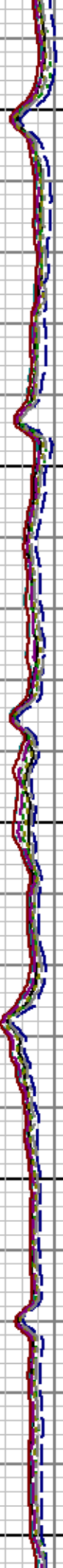
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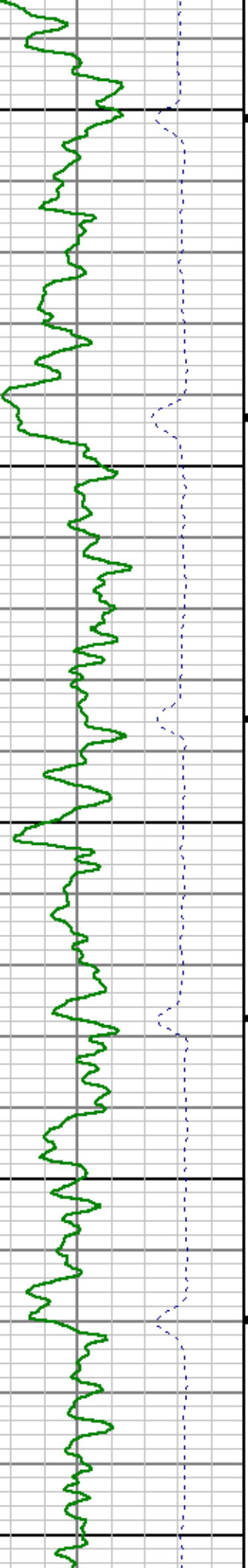


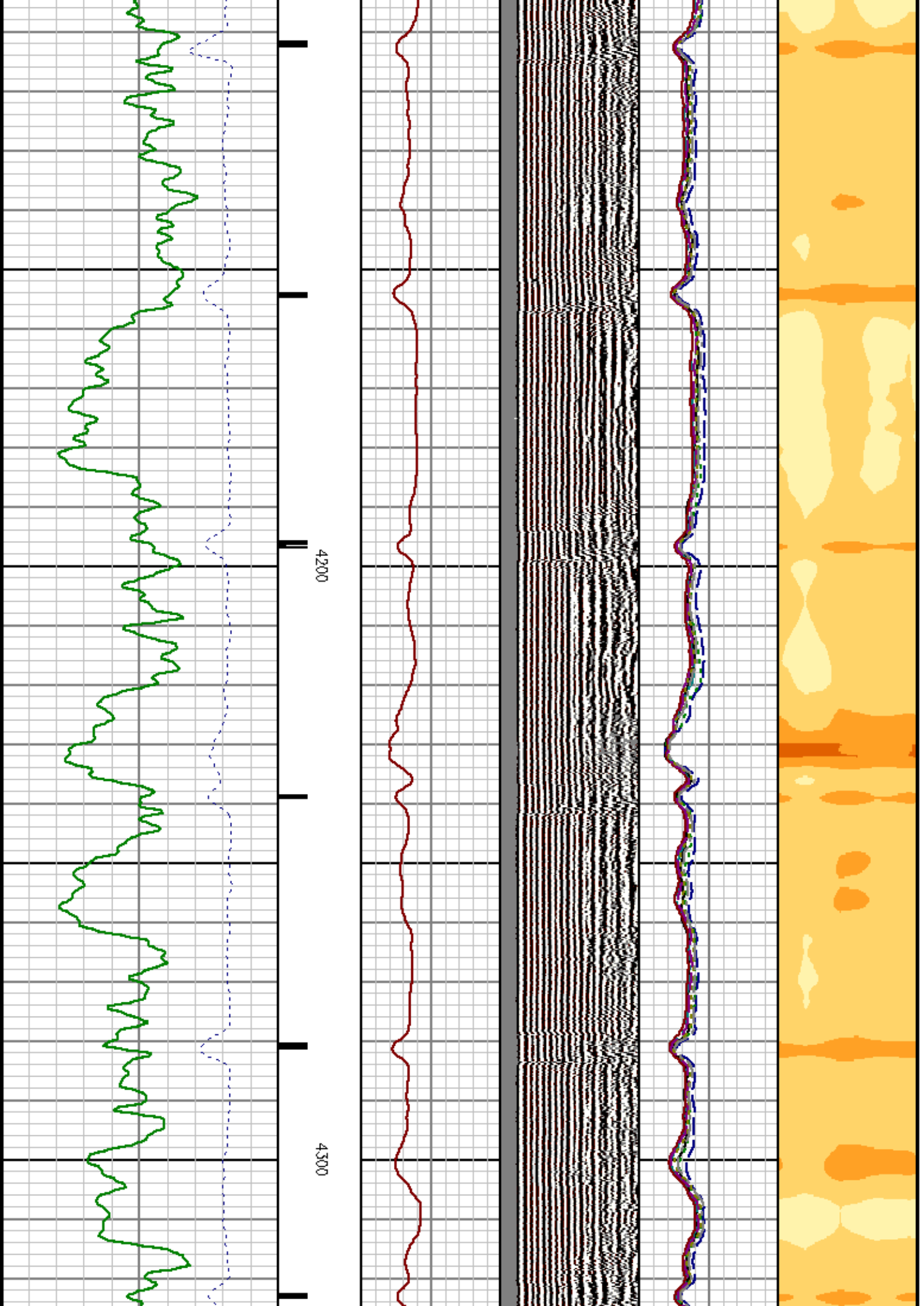


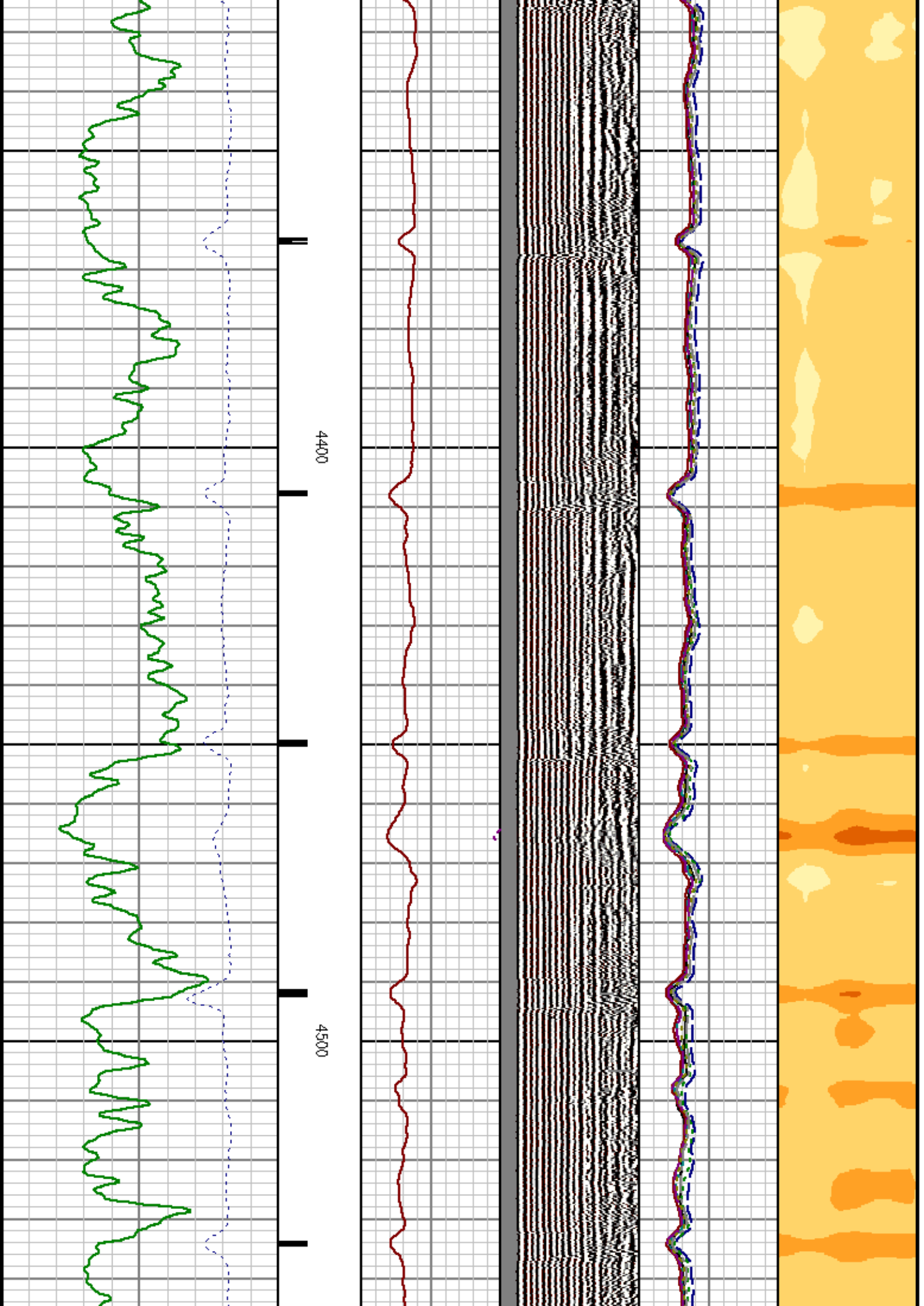
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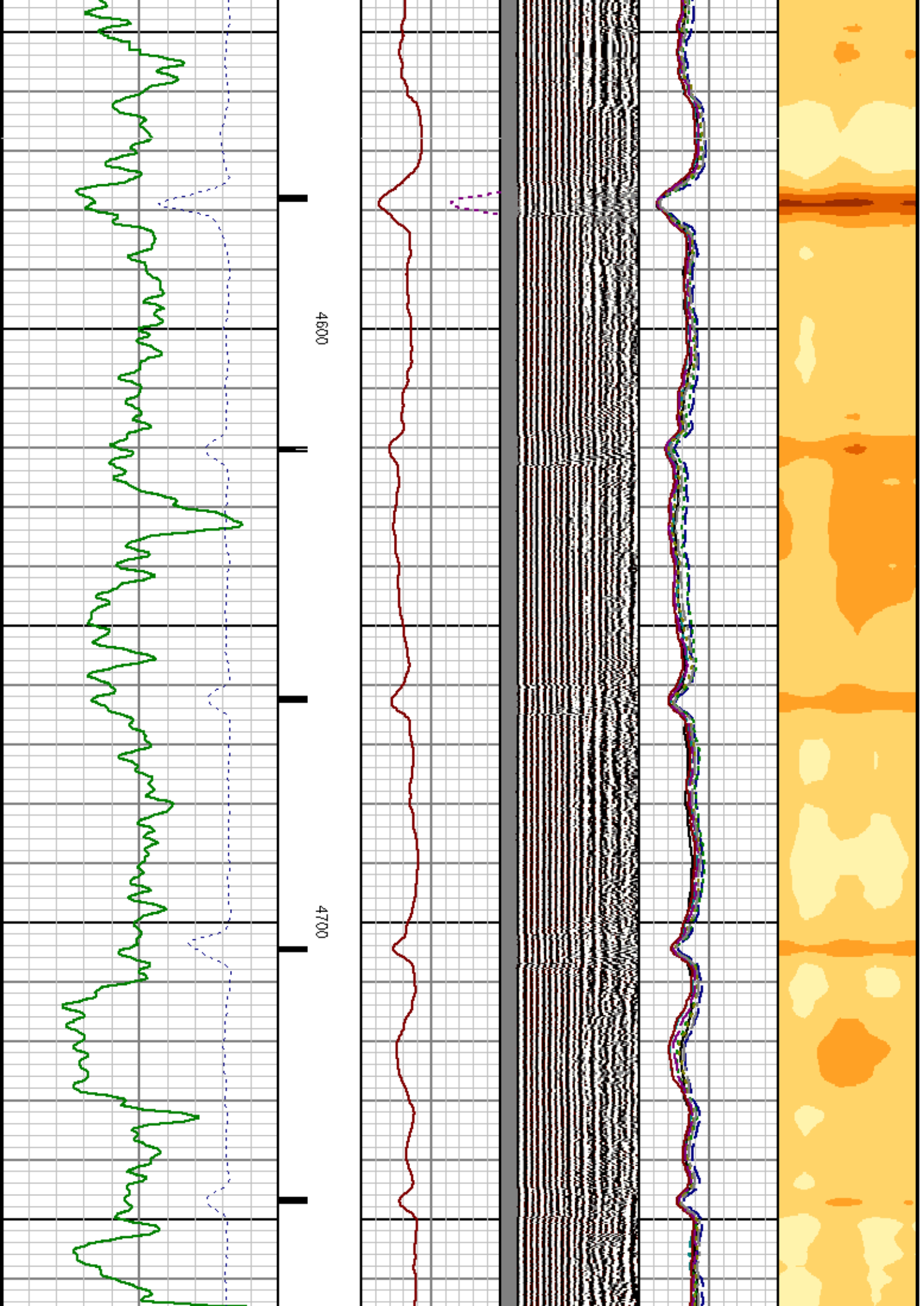
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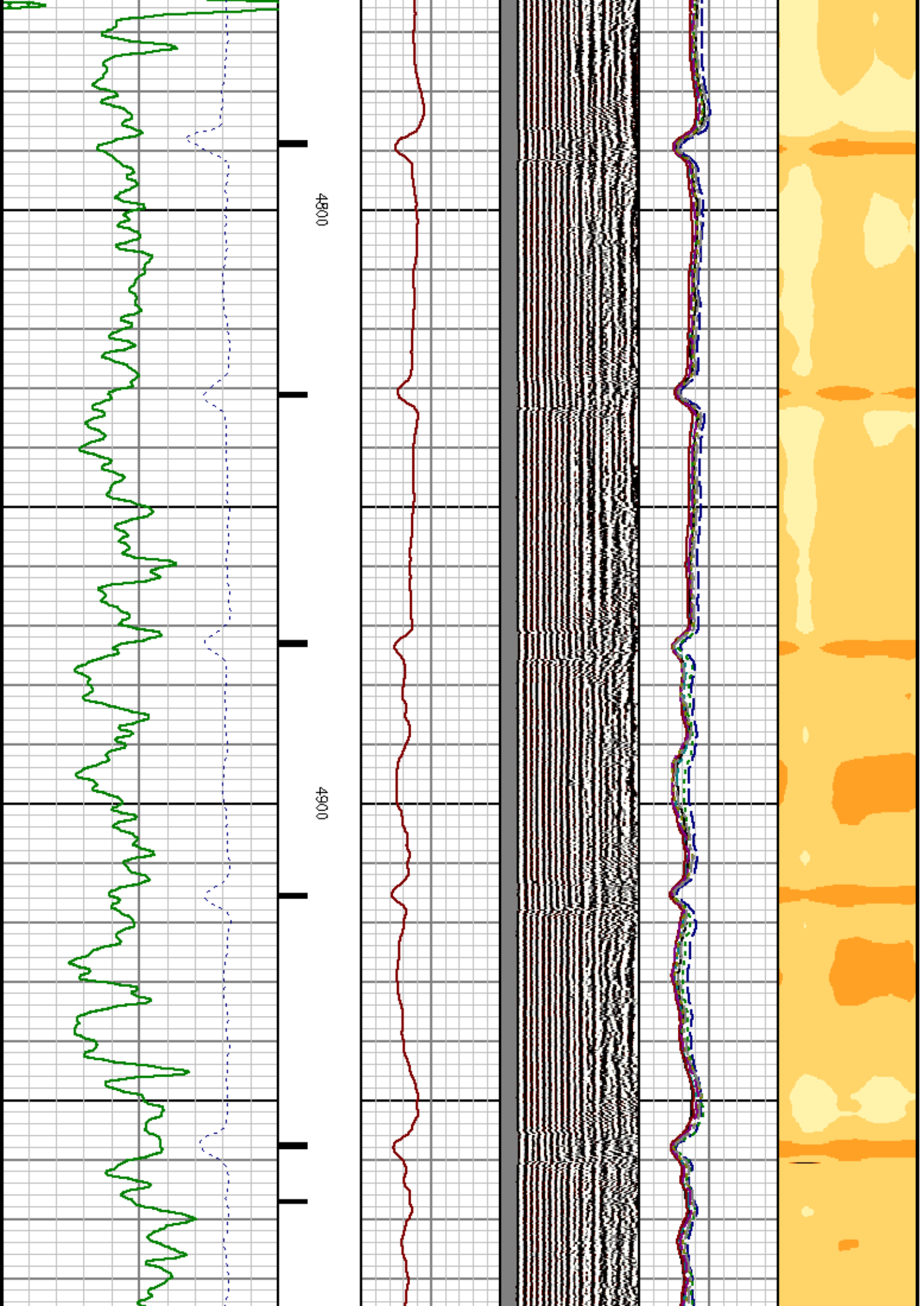
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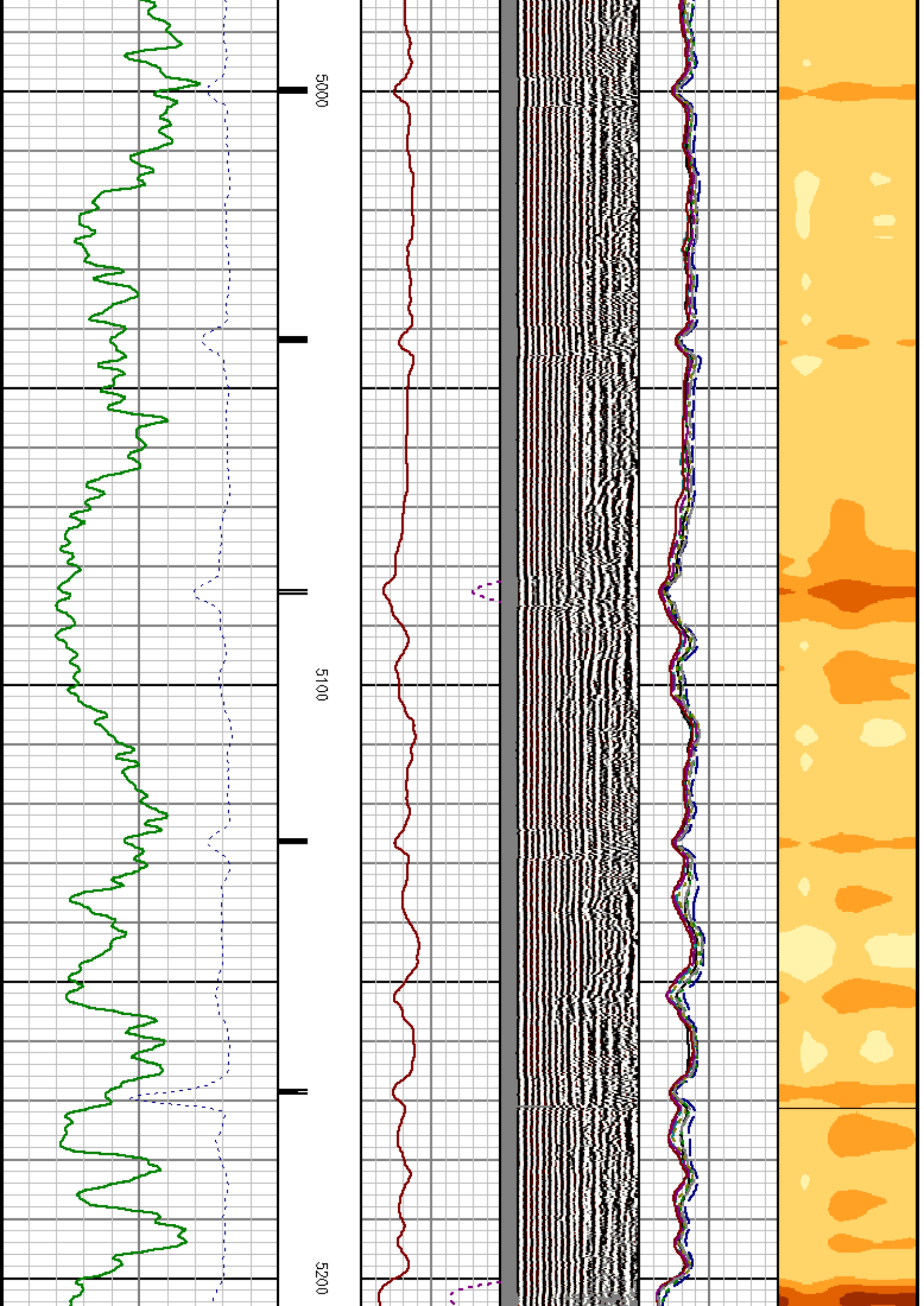


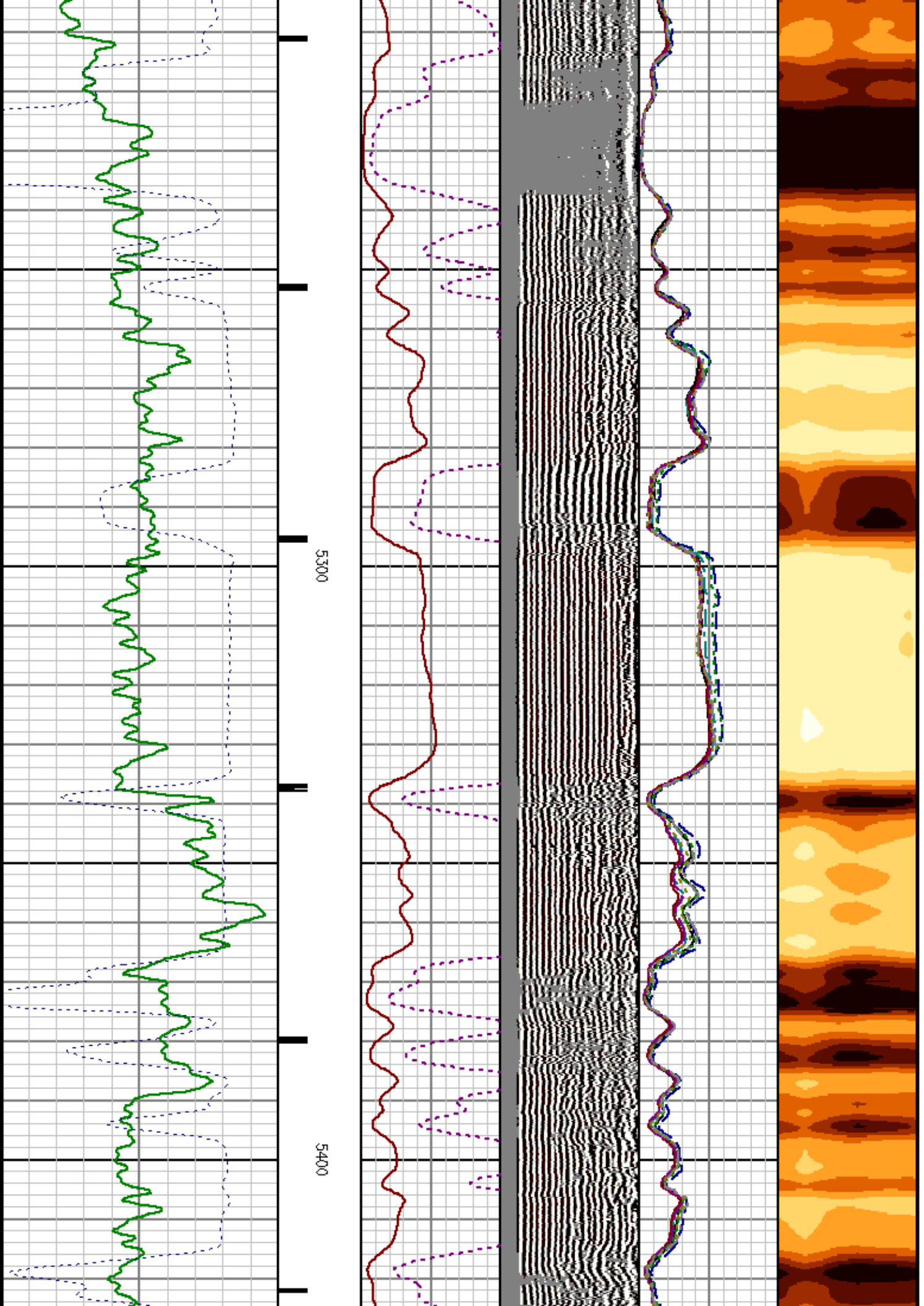


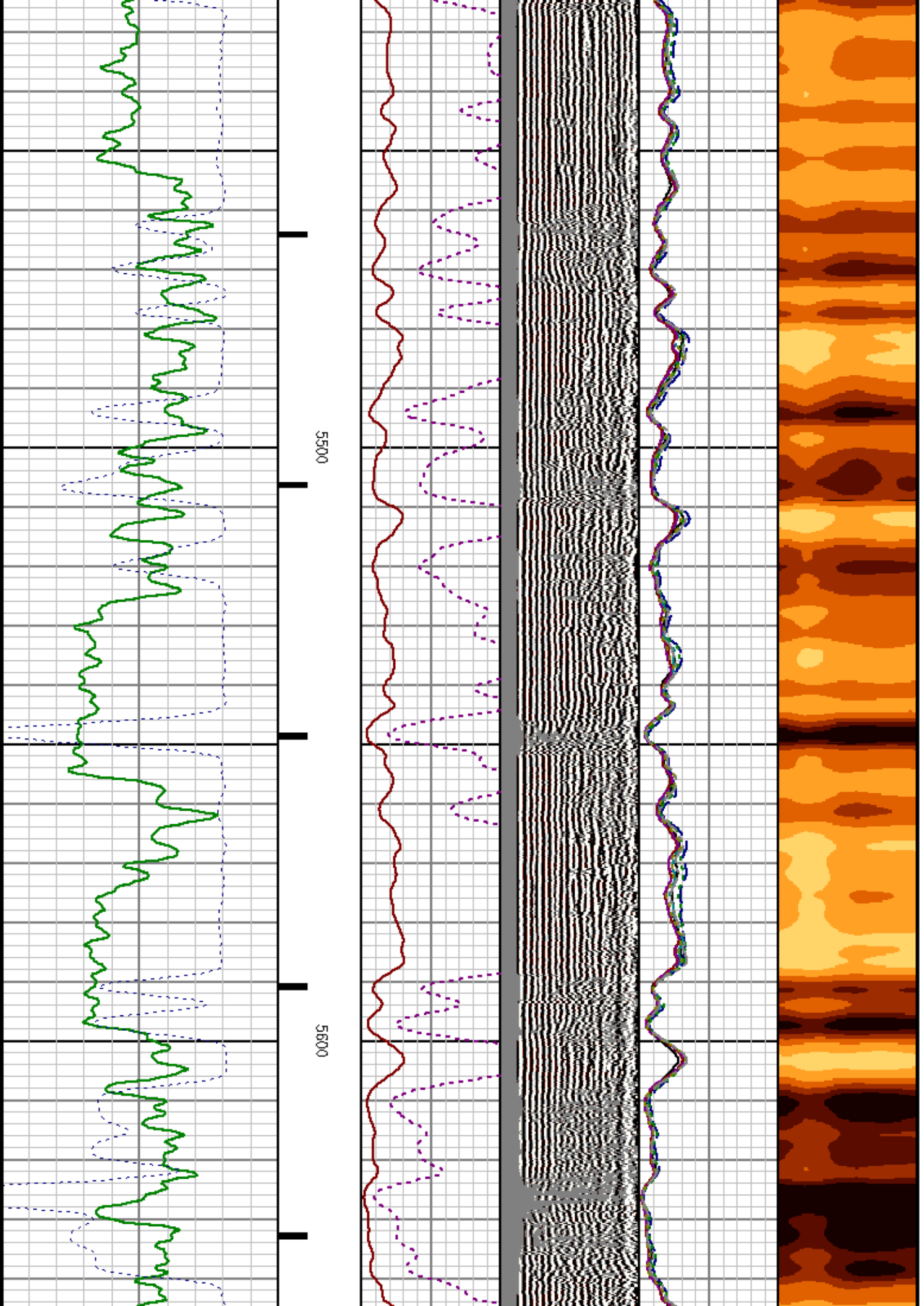


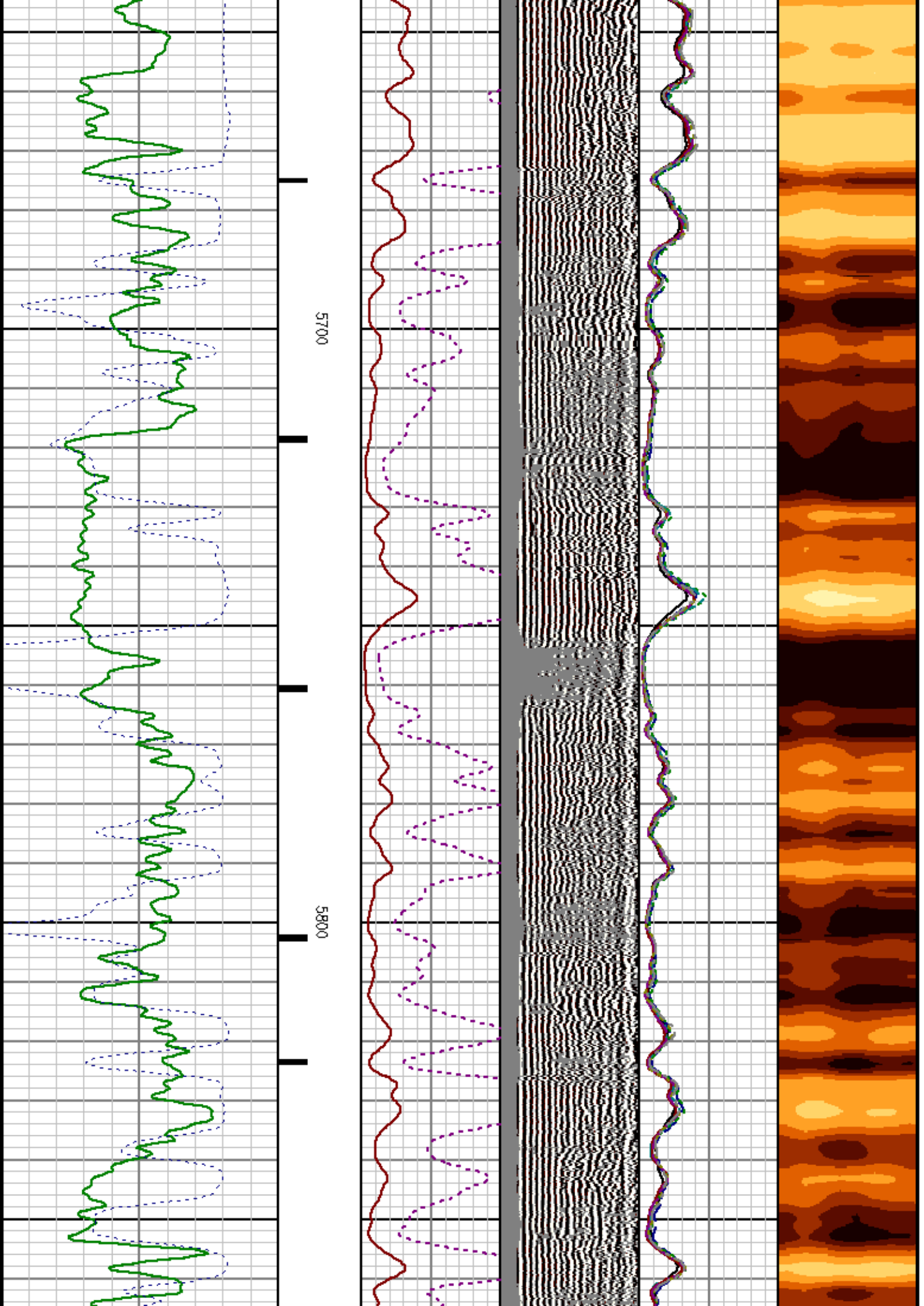


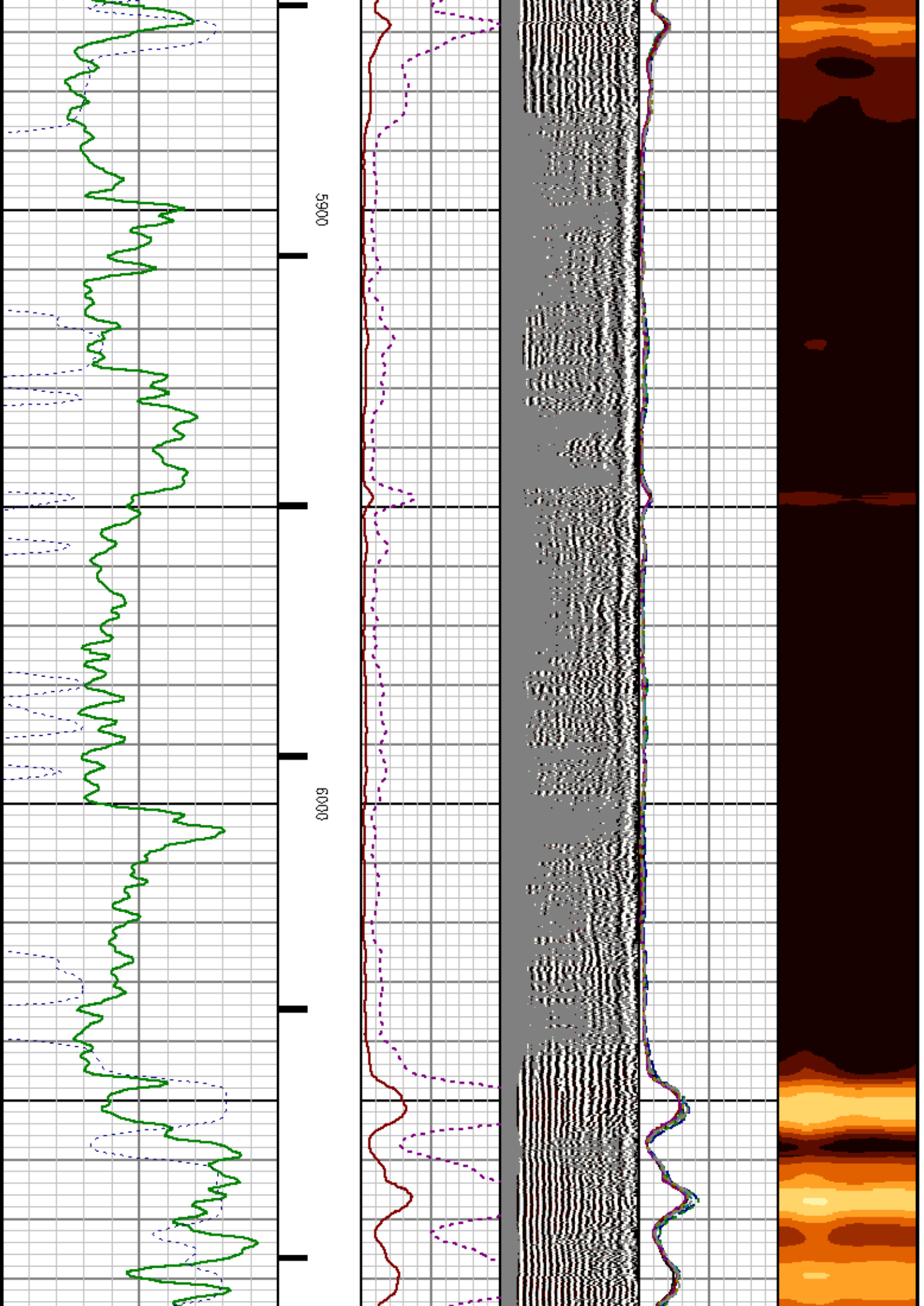


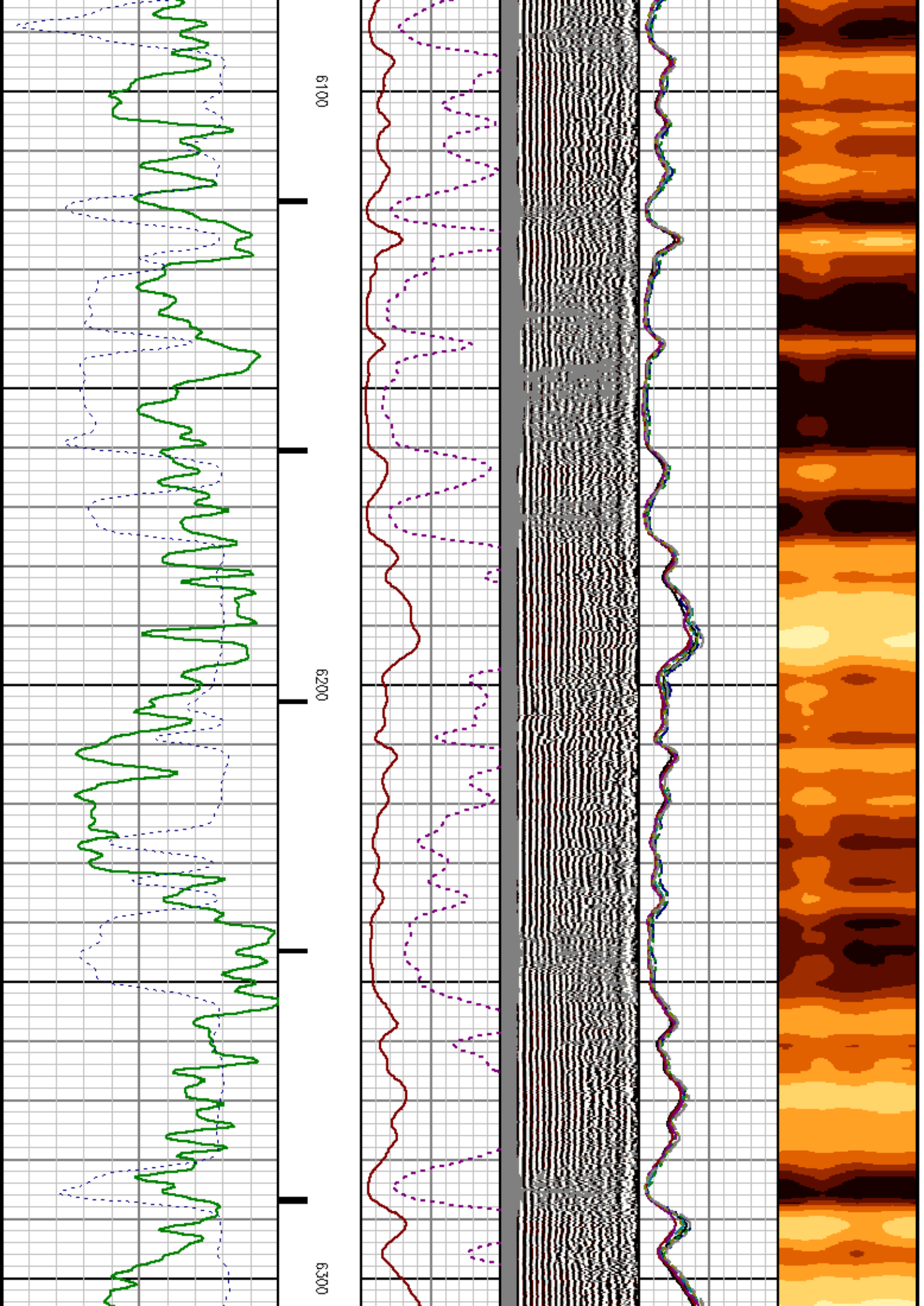


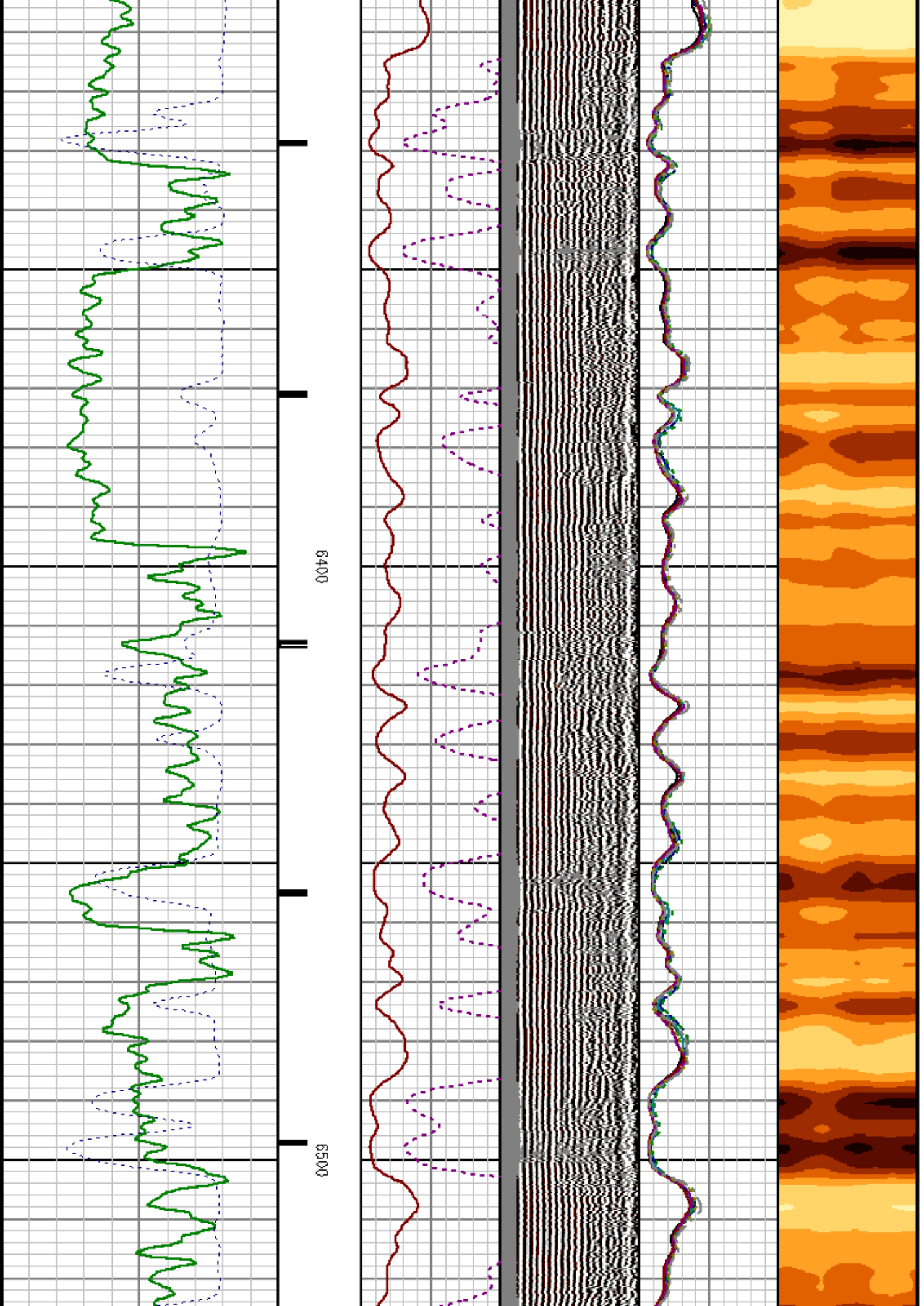


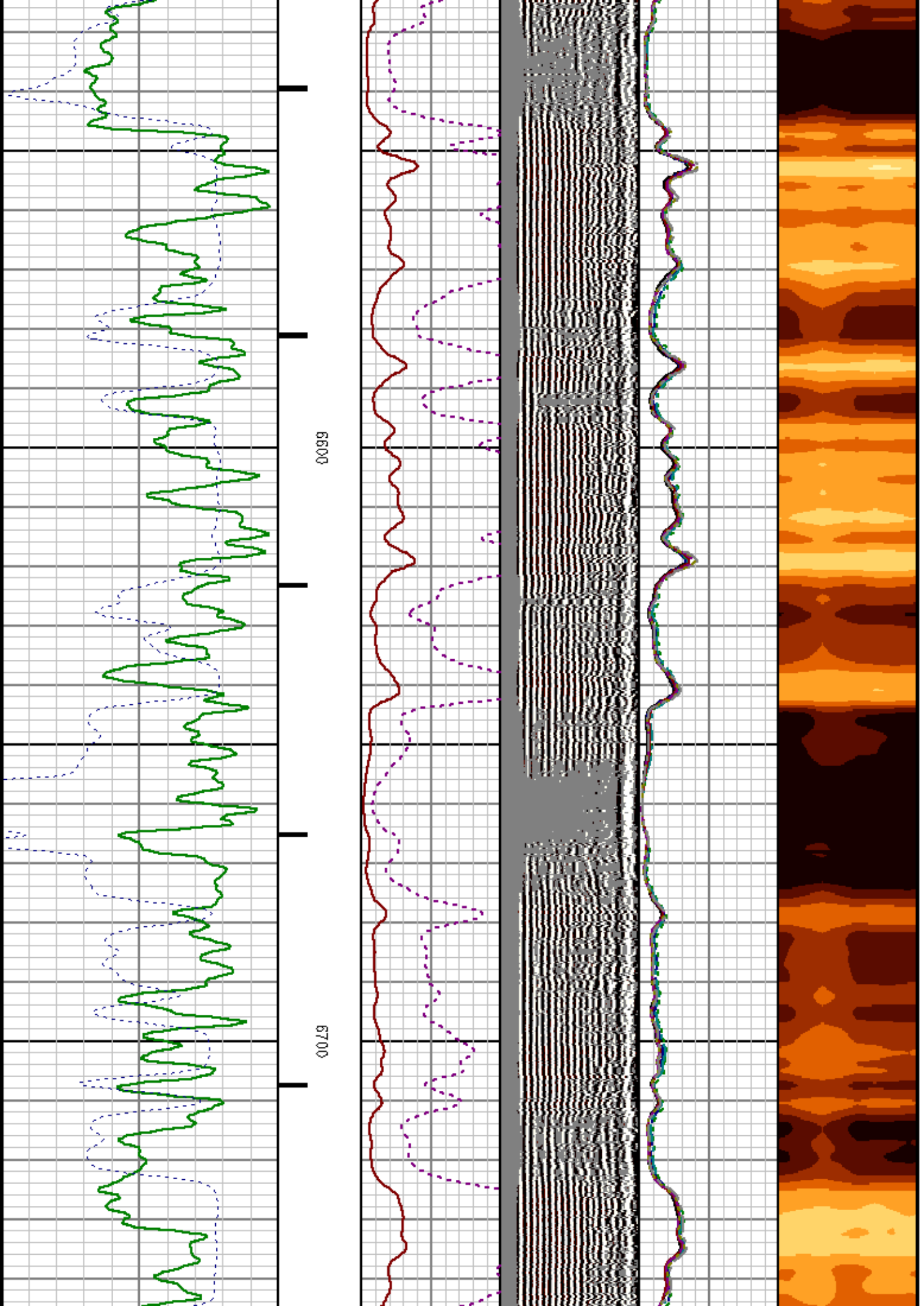


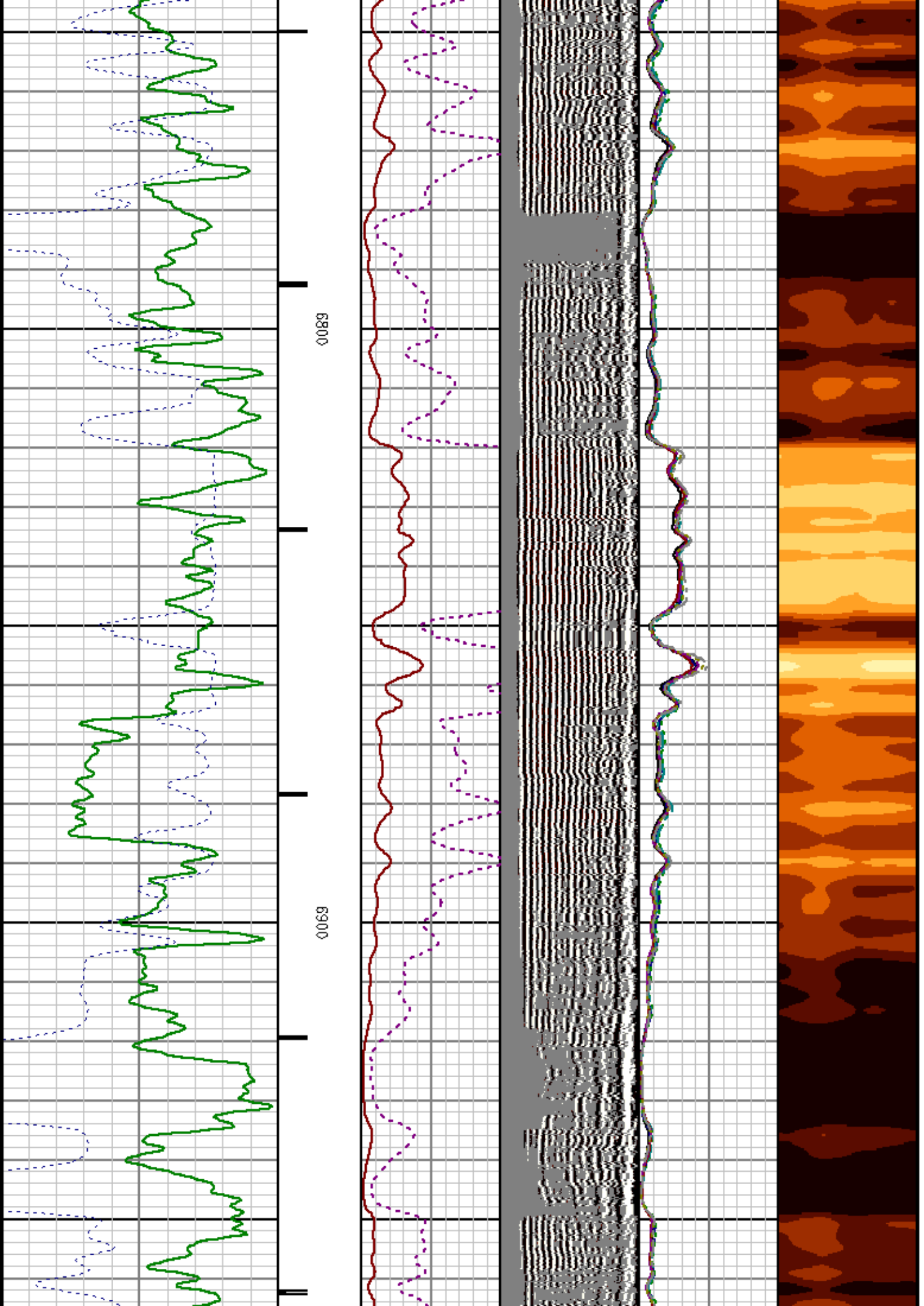


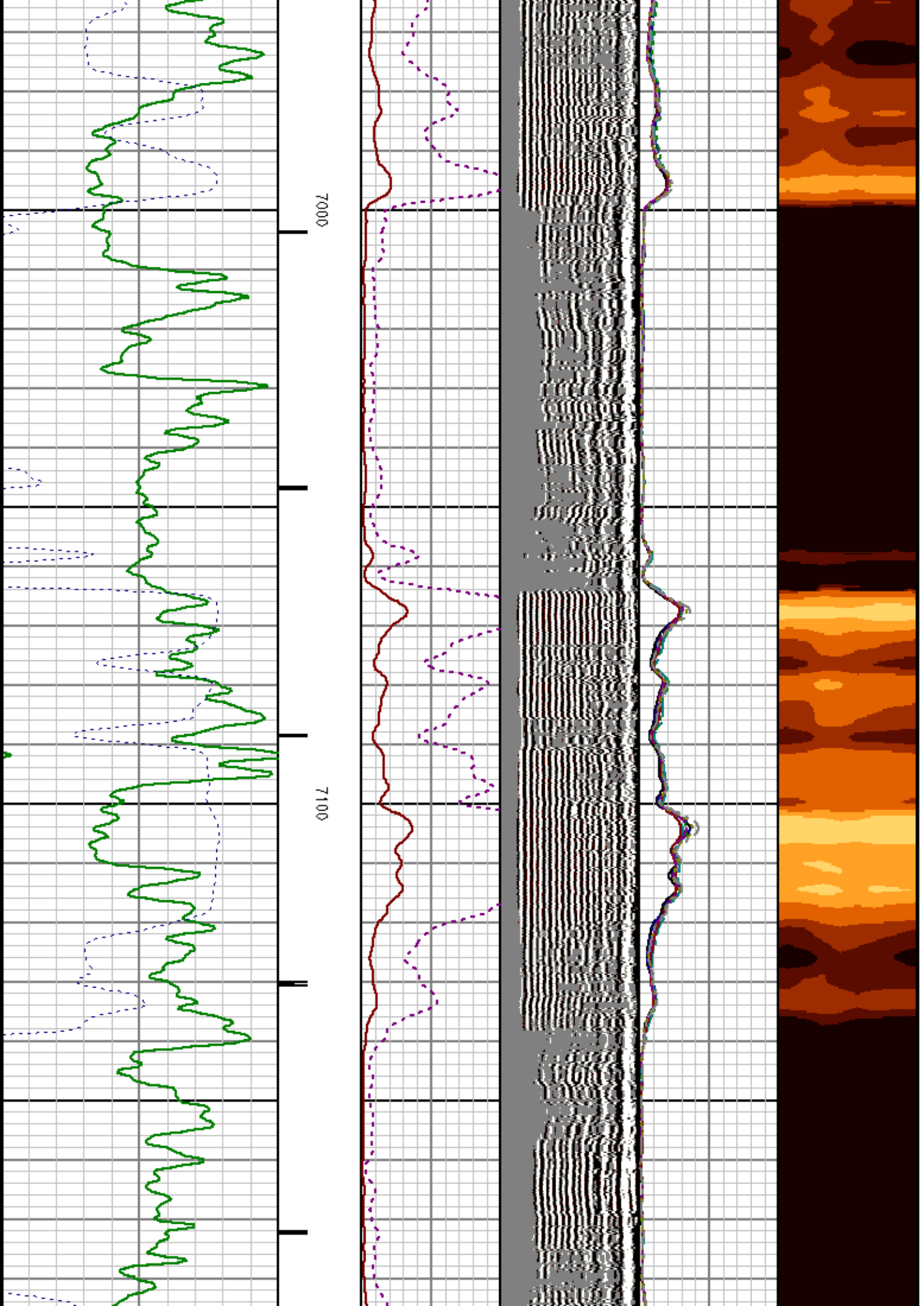


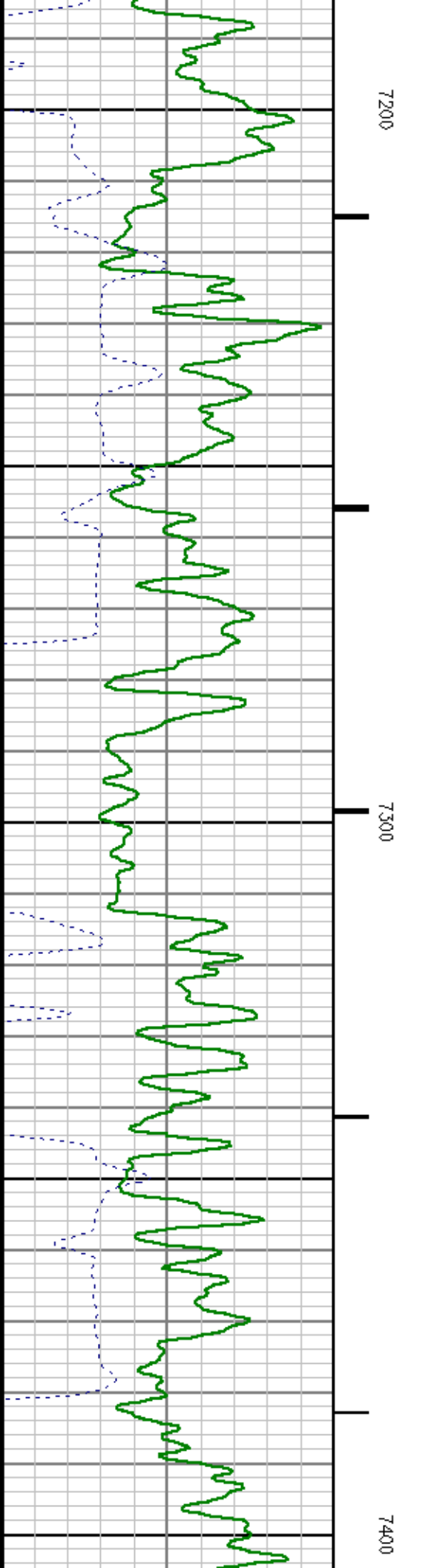
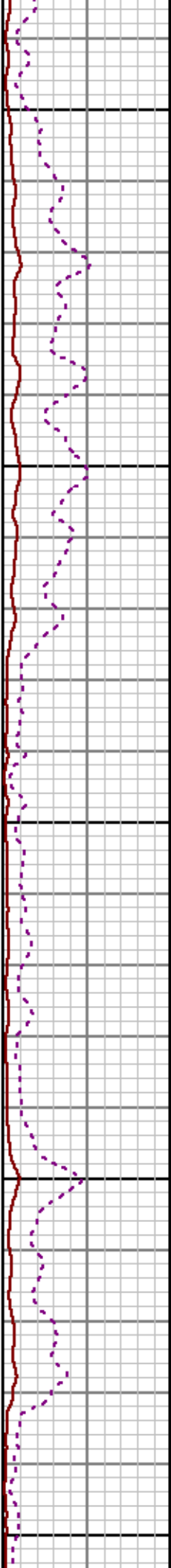
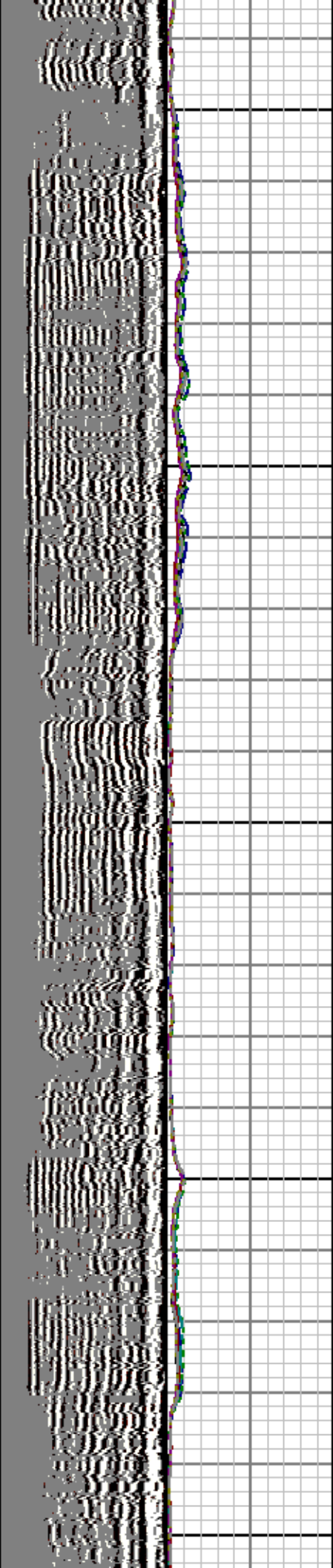


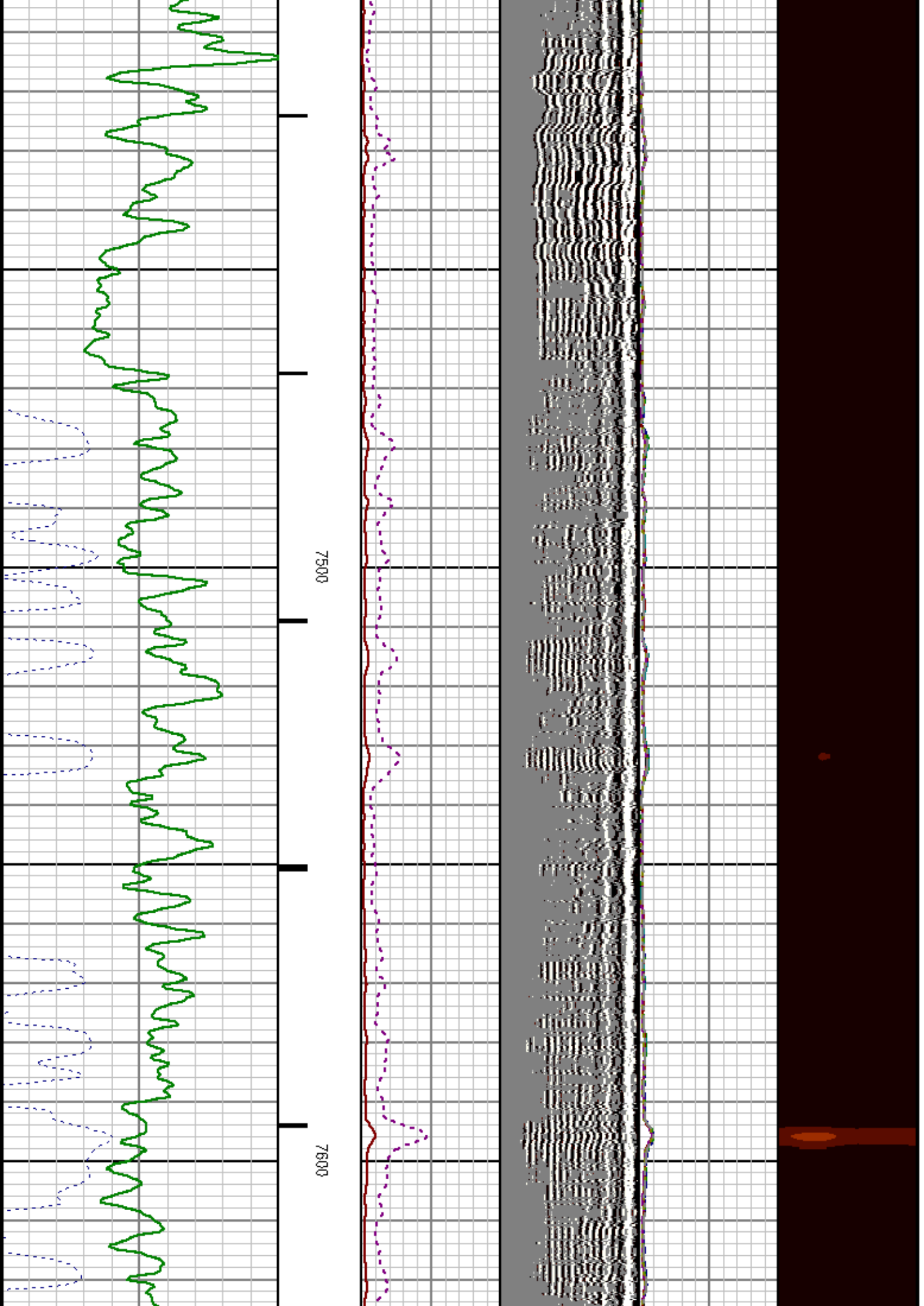


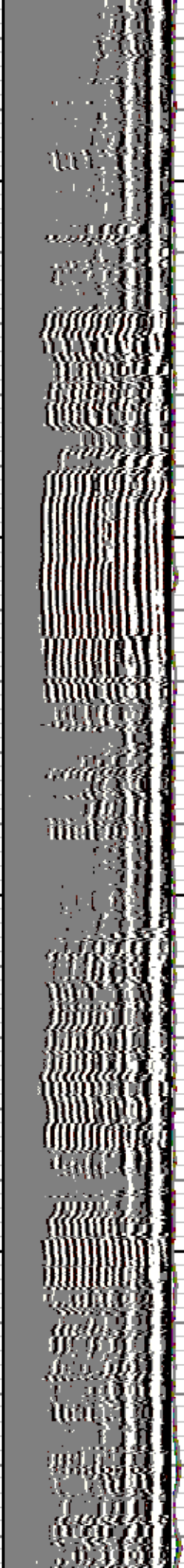








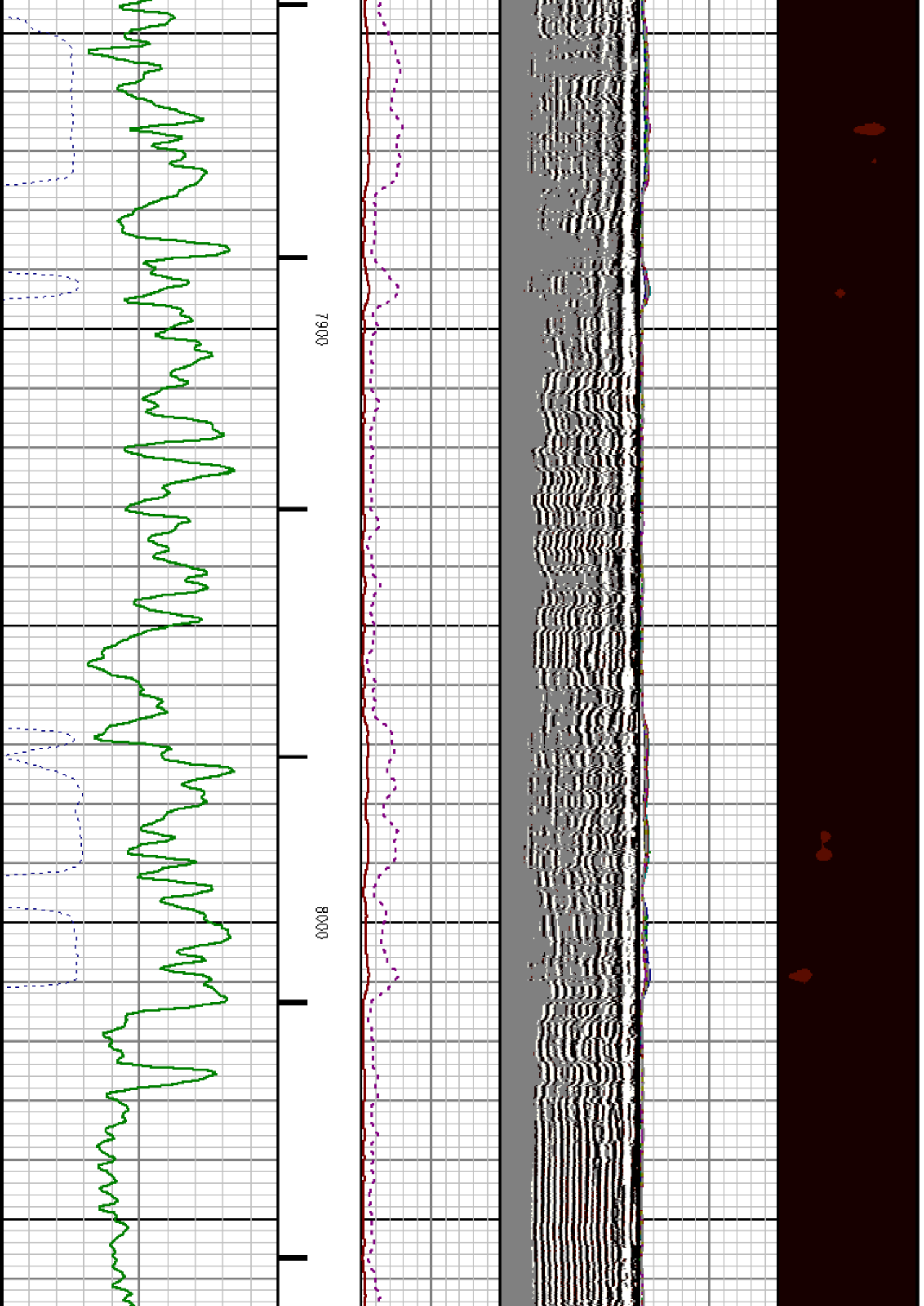


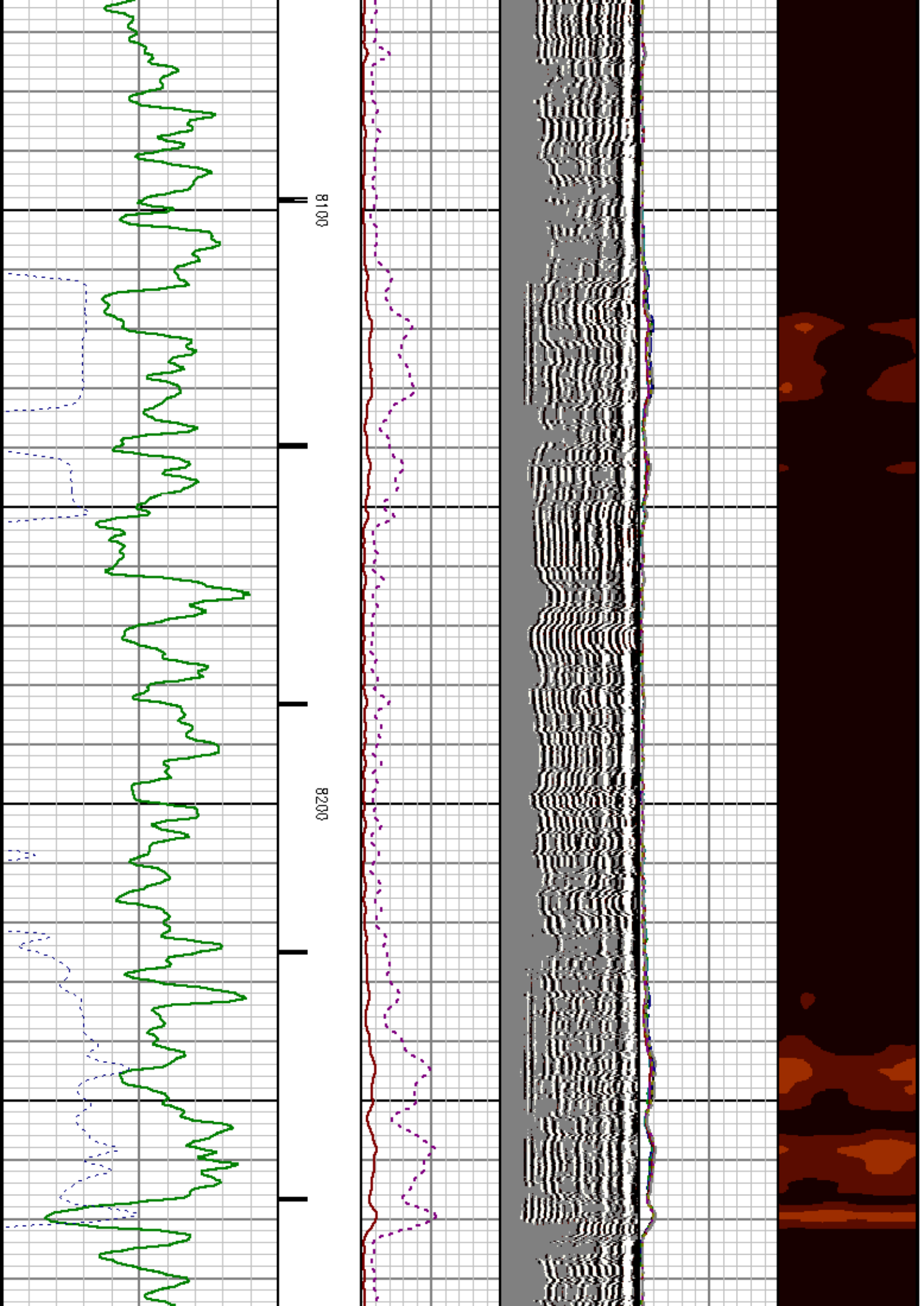


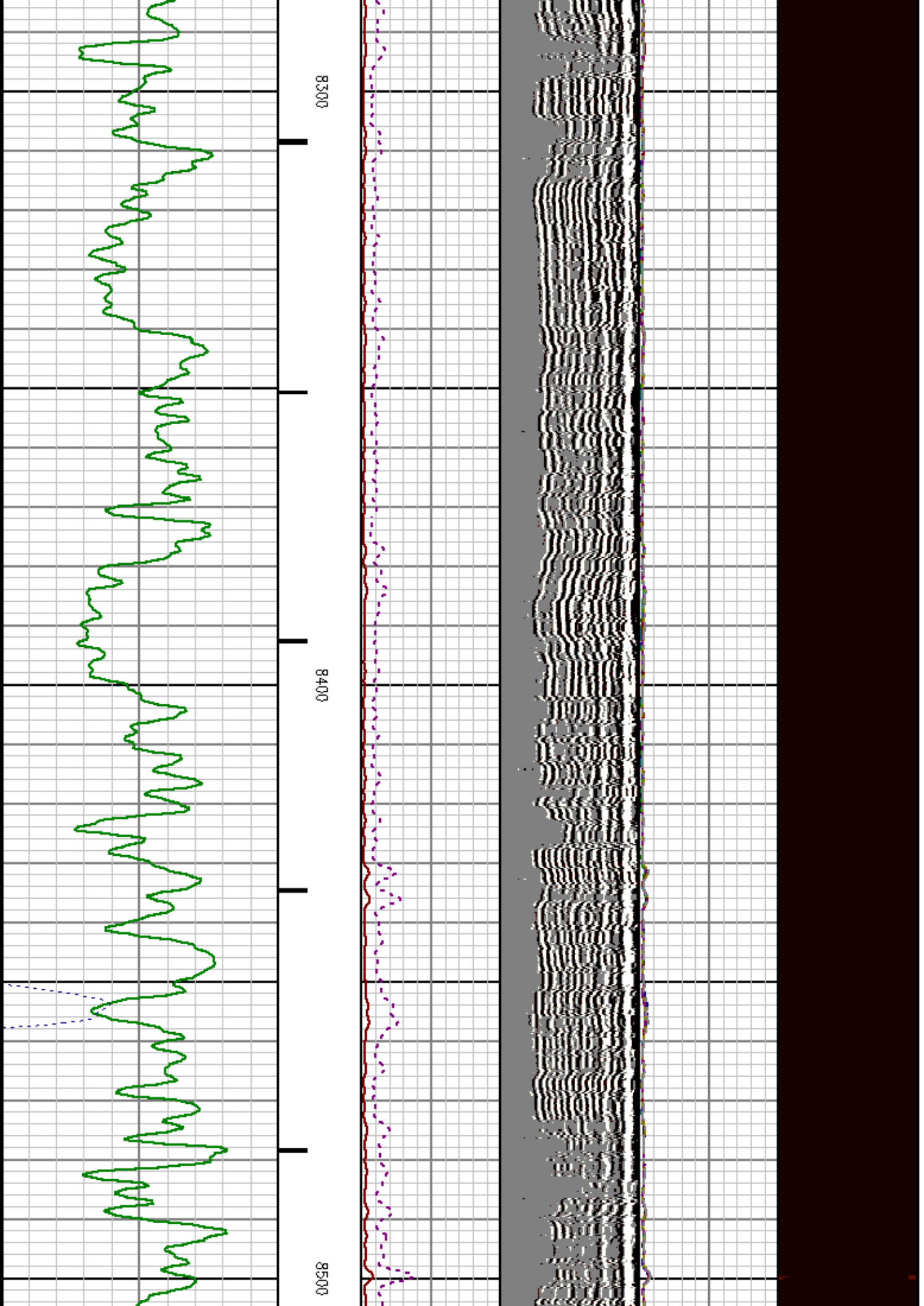
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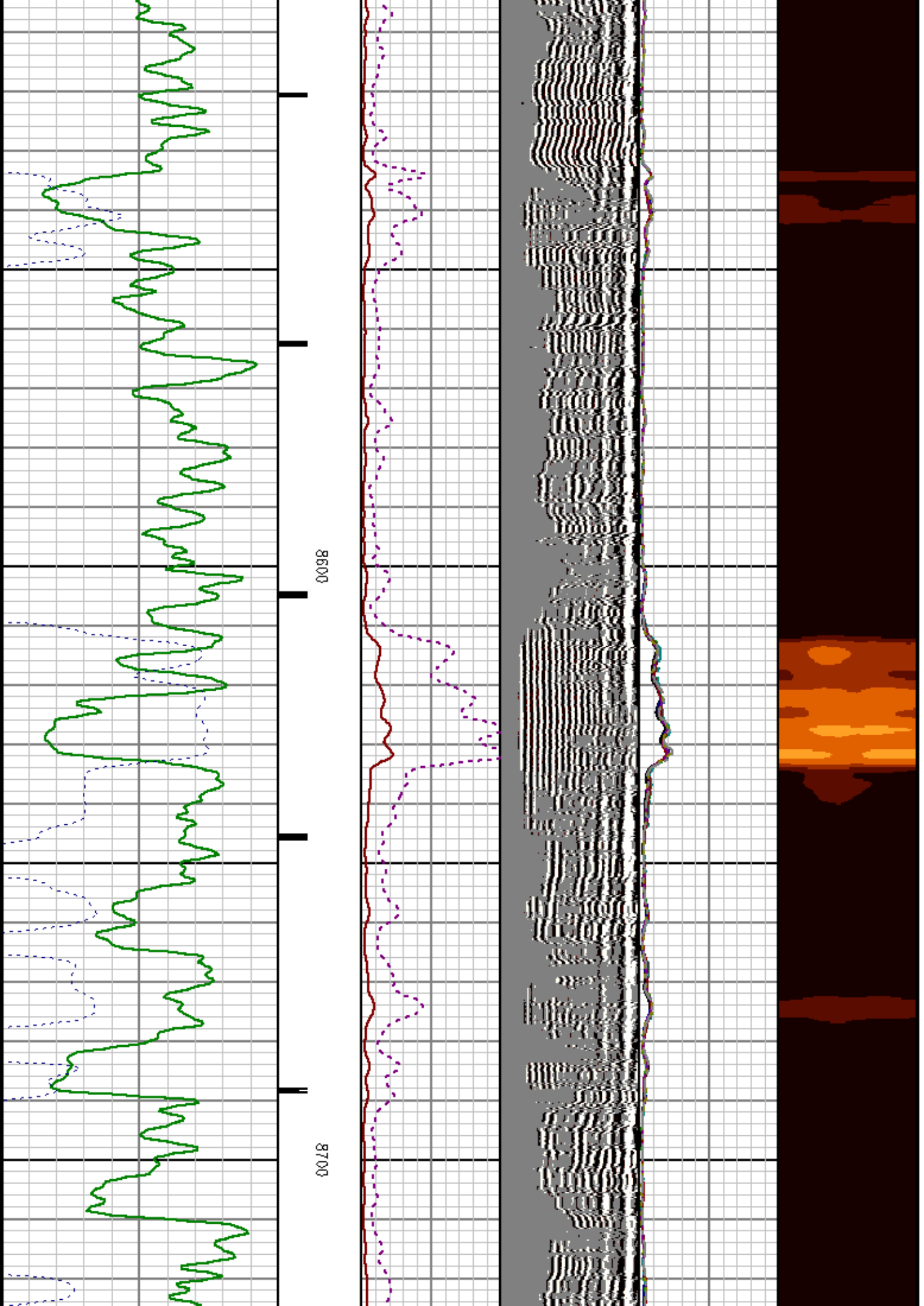
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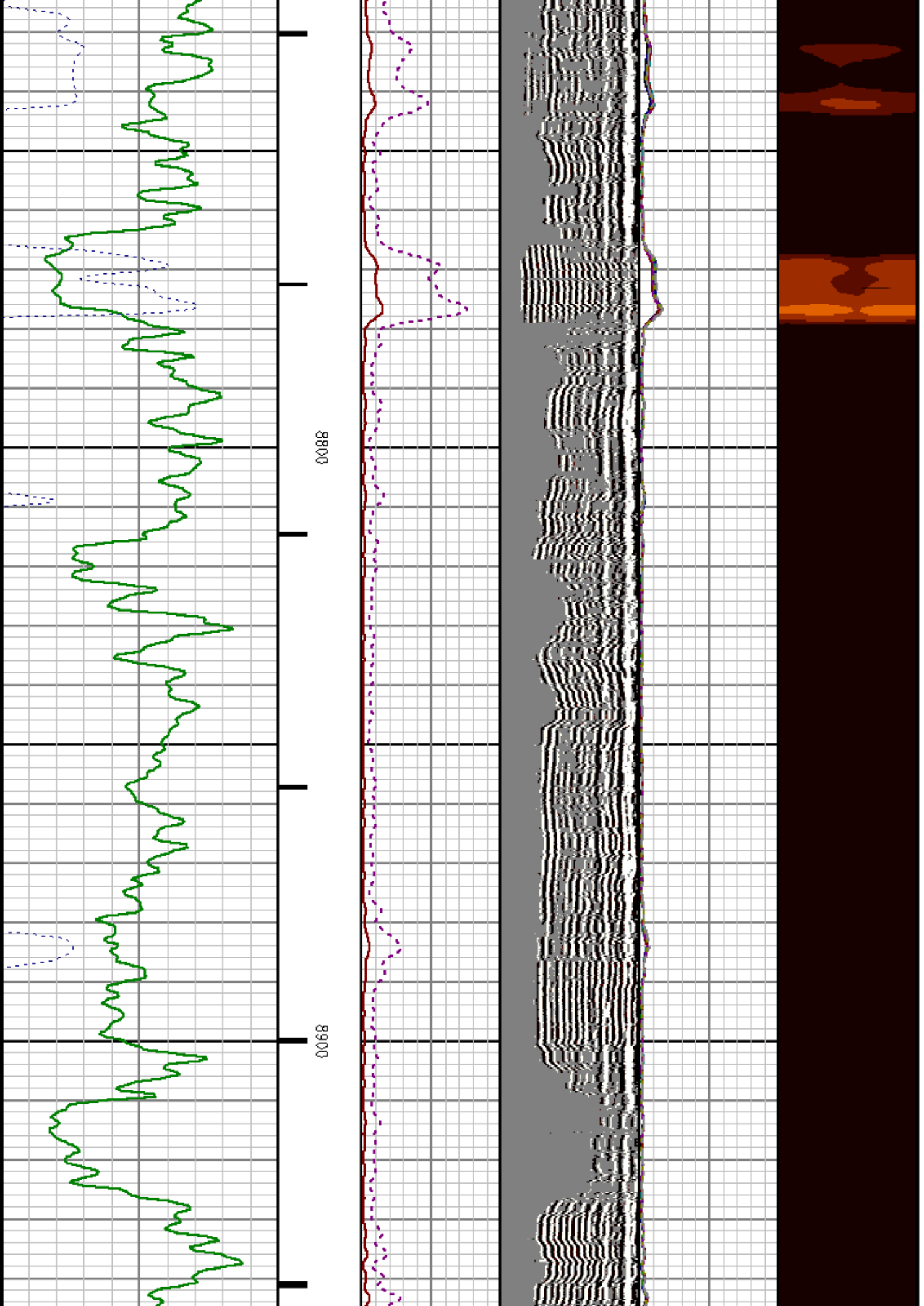


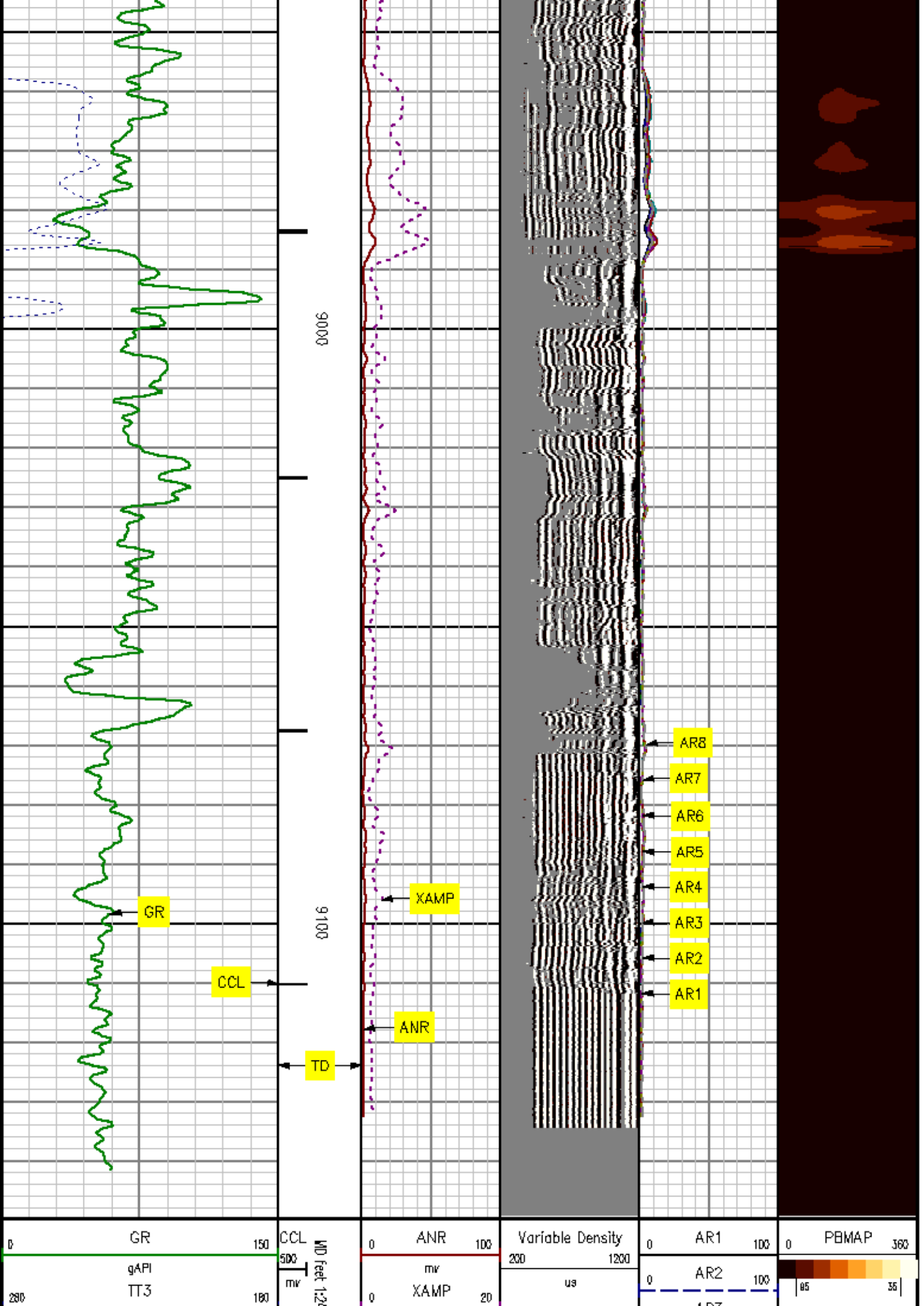












0	GR	150	CCL	MD feet 1:20	0	ANR	100	Variable Density	230	1200	0	AR1	100	0	PBMAP	360
	gAPI		500			mv						AR2	100			
280	TT3	180	mv			XAMP	20	us							85	35

u sec	5	mv	0	AR3	100
			0	AR4	100
			0	AR5	100
			0	AR6	100
			0	AR7	100
			0	AR8	100

REPEAT SECTION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	u sec	8890.774	9146.000
RAL	Amp Gate Start Near	200.391	u sec	8890.774	9146.000
RAL	Amp Gate Start Radial	200.391	u sec	8890.774	9146.000
RAL	Amp Gate Width Far	25.000	u sec	8890.774	9146.000
RAL	Amp Gate Width Near	25.000	u sec	8890.774	9146.000
RAL	Amp Gate Width Radial	25.000	u sec	8890.774	9146.000
RAL	casing od	4.500	inches	8890.774	9146.000
RAL	casing wt	11.600	lbm/ft	8890.774	9146.000
RAL	FB Start Far	291.900	u sec	8890.774	9146.000
RAL	FB Start Near	175.391	u sec	8890.774	9146.000
RAL	FB Start Radial	175.391	u sec	8890.774	9146.000
RAL	FB Thresh Far	15.000	mv	8890.774	9146.000
RAL	FB Thresh Near	10.000	mv	8890.774	9146.000
RAL	FB Thresh Radial	10.000	mv	8890.774	9146.000
RAL	Fluid Travel Time	200.000	u sec/ft	8890.774	9145.962

DEPTH OFFSETS (for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-15.360	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	ARB	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-14.360	AFAR	SIG	TT5			

1426XA	-7.250	GCL
1426XA	-5.390	GR
1426XA	0.000	NEJ

Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION RMT COMPANY

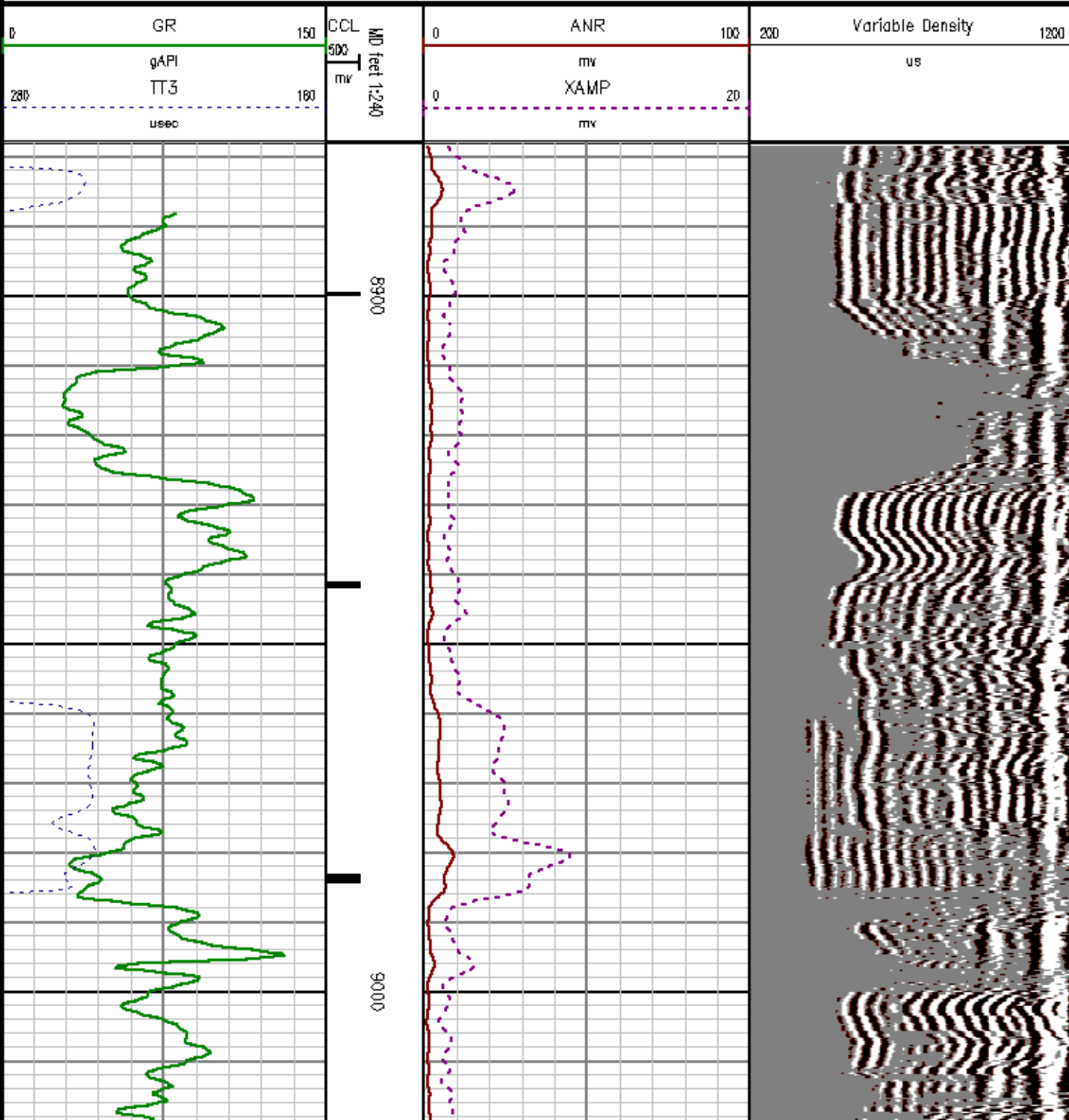
Well : RWF 441-36

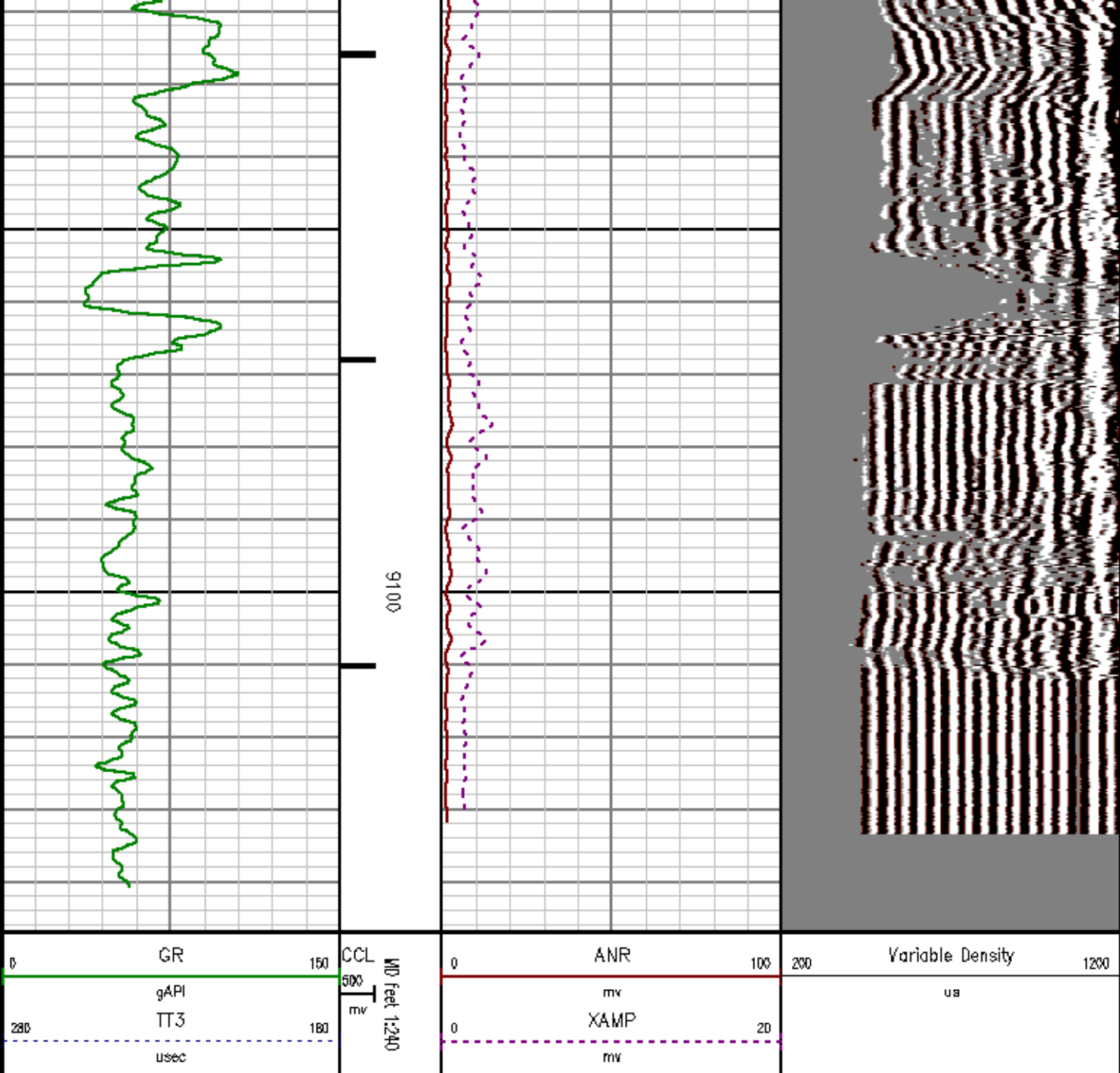
File Name : d:\welldata\441rad\repeat.xtf

Mode : PlotMgr 5.4.504

Interval : 8878.00 - 9147.00 feet UP

Created : 7/22/2010 12:01:13 PM





CALIBRATION SUMMARY

RALSHP

DATE/TIME PERFORMED: Tue Jul 20 10:50:21 2010 TOOL SERIES: 1428XA ASSET: 452 SEQ: T2

Tool Delay [usec]	-54.00	Tank OD in	5.50	Tank Wt lbm/ft	15.50	Tank ID in	4.95
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RECEIVER	Travel Time [usec]	Amp. Gate Start [usec]	Amp. Gate Width [usec]	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Amp Ref. [mV]	Shop Factor
CAL Pulse	217	216	30	166	25	-0.427	100.00	0.21
3 Ft. Receiver	221	216	30	166	25	-0.139	100.00	0.20
5 Ft. Receiver	329	323	30	270	25	1.367	150.00	0.22
Radial #1	218	216	30	138	25	0.412	100.00	0.20
Radial #2	218	216	30	138	25	0.153	100.00	0.20
Radial #3	221	216	30	136	25	-0.114	100.00	0.20
Radial #4	221	216	30	136	25	-0.299	100.00	0.20
Radial #5	221	216	30	136	25	-0.278	100.00	0.20
Radial #6	221	216	30	138	25	-0.129	100.00	0.20
Radial #7	218	216	30	138	25	-0.220	100.00	0.20
Radial #8	219	216	30	138	25	-0.280	100.00	0.20

RALFLD

Wellsite Calibration: C:\case\calver\RALFLD\452T2 fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Jul 20 10:51:25 2010 TOOL SERIES: 1428XA ASSET: 452 SEQ: T2

Tool Delay [usec]	-54.00	Casing OD in	4.50	Casing Wt lbm/ft	11.60	Casing ID in	4.00
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RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Wellsite Factor	Amp. Ref [mV]
CAL Pulse	166	25	-0.046	0.000	1.00	100.000
3 Ft. Receiver	200	25	-0.138			
5 Ft. Receiver	261	25	0.193			
Radial #1	200	25	-0.354			
Radial #2	200	25	-0.204			
Radial #3	200	25	-0.103			
Radial #4	200	25	-0.239			
Radial #5	200	25	-0.467			
Radial #6	200	25	-0.267			
Radial #7	200	25	-0.392			
Radial #8	200	25	-0.381			

GAMMA RAY

Calibration File: C:\case\calver\GR\457T1.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Fri Jul 02 16:06:24 2010 TOOL SERIES: 1426XA ASSET: 457 SEQ: T1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
52K DA856	87.33	358.42	0.680	58.38	244.38	185.00

Verification File: C:\case\calver\GR\457T1.VP

PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Fri Jul 02 16:07:44 2010 TOOL SERIES: 1426XA ASSET: 457 SEQ: T1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
52K DA856	92.27	358.64	0.680	62.73	244.53	181.80

TOOL DIAGRAM

OTA SHORT CABLE HEAD

CENTRALIZER

Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

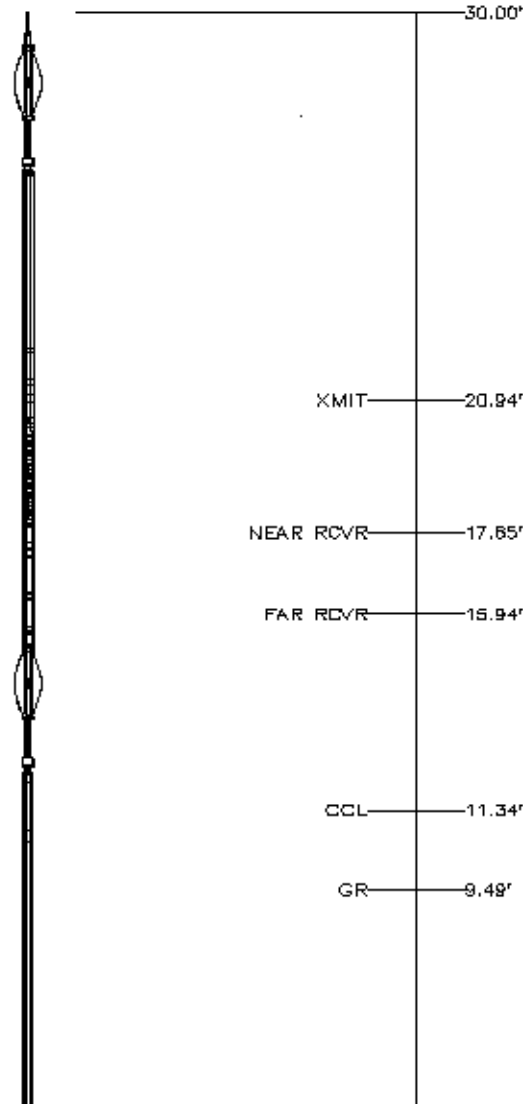
PROBE 2 3/4 DUAL RECEIVER RADII (1426XA)

CENTRALIZER

Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

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	8.48' CCL



NEU 4.09'

CENTRALIZER	
Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb



0.00'

Total Length: 30.00'

Total Weight: Not Available

Max Diameter: 0' 3.12"

BAKER
HUGHES

Baker Atlas

CASE

Company WILLIAMS PRODUCTION RMT COMPANY

Well RMF 441-36

Field RULISON

County GARFIELD State COLORADO

File No:

1203

API No:

05045181430000

Location

SHL: 1452' FNL & 2458' FEL

BHL: 902' FNL & 385' FEL

Elevations

KB 6452.3 ft

DF 6451.3 ft

GL 6426.3 ft

S:36 T:8S R:94W

PAD; RMF 32-36

RIG: HARBORS 576

SEC 36 TWP 6S RGE 94W