



RADIAL ANALYSIS BOND LOG

Baker Atlas

File No: EXXONMOBIL PRODUCTION COMPANY

Well: FRU 197-33B3

Field: FREEDOM UNIT

County: RIO BLANCO State: COLORADO

API No: 05103114330000

Location

2393' FNL & 1395' FEL

SEC 33 TWP 15 RGE 97W

Other Services

RPM

Elevations

KB 6476 ft

DF 6475 ft

GL 6446 ft

G.L. Elevation 6446 ft

K.B. 30 ft Above P. D.

Drill Measured From KELLY BUSHING

Permanent Datum
Log Measured From
Drill Measured From

Date: 15/SEP/10

Run: ONE

Service Order: 567932

Depth Driller: 12614 ft

Depth Logger: 12538 ft

Bottom Logged Interval: 12538 ft

Top Logged Interval: 6600 ft

Time Started: 22:00

Time Finished: 1:30

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: N/A

Reference Log: NONE

Reference Log Date: N/A

Equipment No.: 4271 Location: GRAND JUNCTION

Recorded By: J. WIESER

Witnessed By: MR. JIM JONES

- 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
14.75 In	SURFACE	4550 ft
8.75 In	4550 ft	9857 ft
7.875 In	9857 ft	12614 ft

Casing Record				
Size	Weight	Grade	From	To
10.75 In	45 lbm/ft	J-55	SURFACE	4550 ft
4.5 In	15.1 lbm/ft	P-110	SURFACE	9857 ft
4.5 In	15.1 lbm/ft	P-110	9857 ft	12614 ft

Remarks

THIS IS THE FIRST LOG OF THE WELL.
WELL WAS LOGGED WITH 0 psi AT THE WELLHEAD.

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position

Run	Trp	Tool	Series Number	Serial Number	Position
1	1	MANDREL	1426XA	10154957	CENTRALIZED
1	1	GR/CCL/TEL	2459XA	10417457	CENTRALIZED

MAIN SECTION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	314.263	usec	6785.250	12498.000
RAL	Amp Gate Start Near	197.754	usec	6785.250	12498.000
RAL	Amp Gate Start Radial	197.754	usec	6785.250	12498.000
RAL	Amp Gate Width Far	25.000	usec	6785.250	12498.000
RAL	Amp Gate Width Near	25.000	usec	6785.250	12498.000
RAL	Amp Gate Width Radial	25.000	usec	6785.250	12498.000
RAL	casing od	4.500	inches	6785.250	12498.000
RAL	casing wt	15.100	lbm/ft	6785.250	12498.000
RAL	FB Start Far	289.263	usec	6785.250	12498.000
RAL	FB Start Near	172.754	usec	6785.250	12498.000
RAL	FB Start Radial	172.754	usec	6785.250	12498.000
RAL	FB Thresh Far	15.000	mv	6785.250	12498.000
RAL	FB Thresh Near	10.000	mv	6785.250	12498.000
RAL	FB Thresh Radial	10.000	mv	6785.250	12498.000
RAL	Fluid Travel Time	200.000	usec/ft	6785.250	12498.843

DEPTH OFFSETS

(for Acquired Curves)

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

Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

Company : EXXONMOBIL PRODUCTION COMPANY

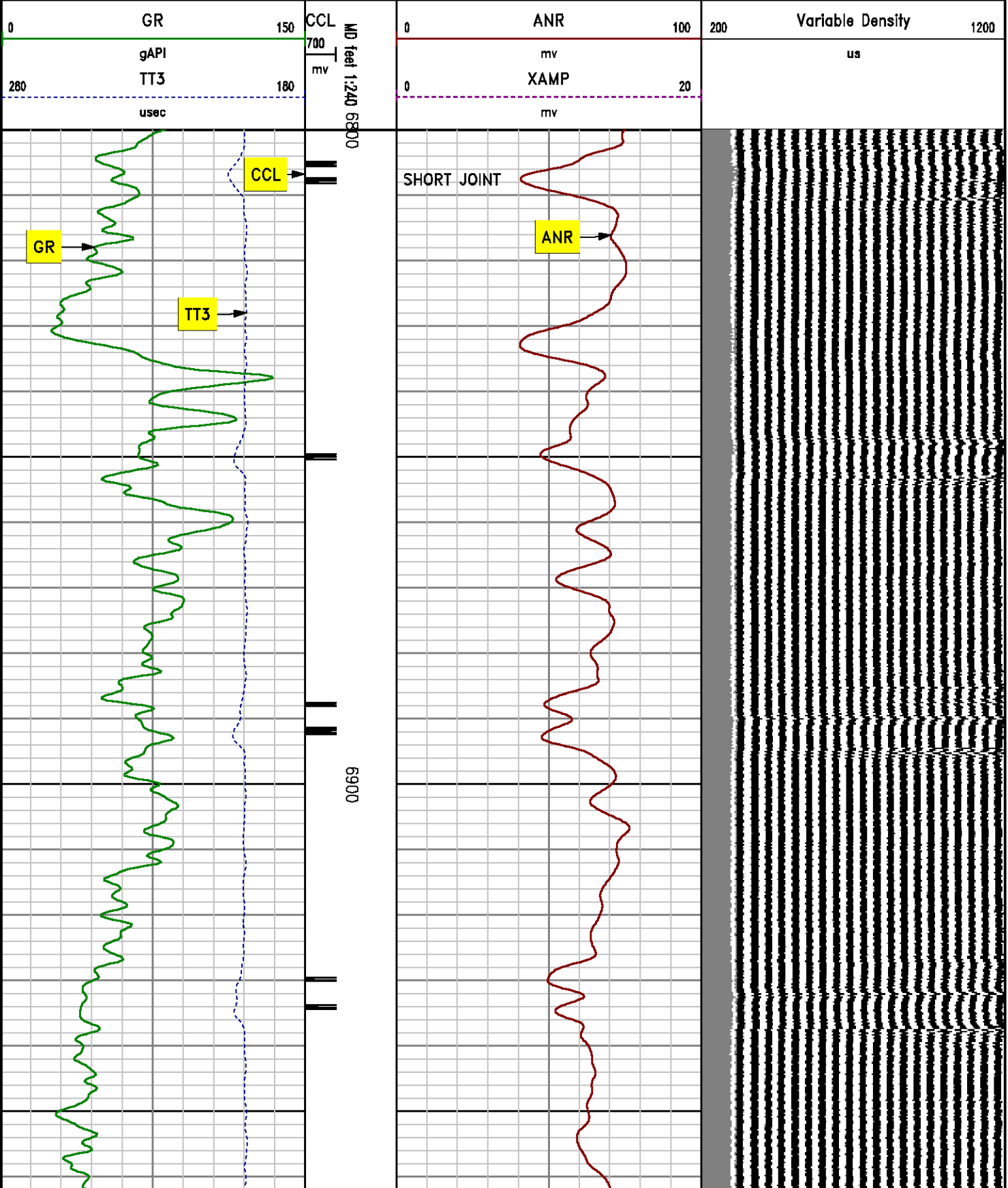
Well : FRU 197-33B3

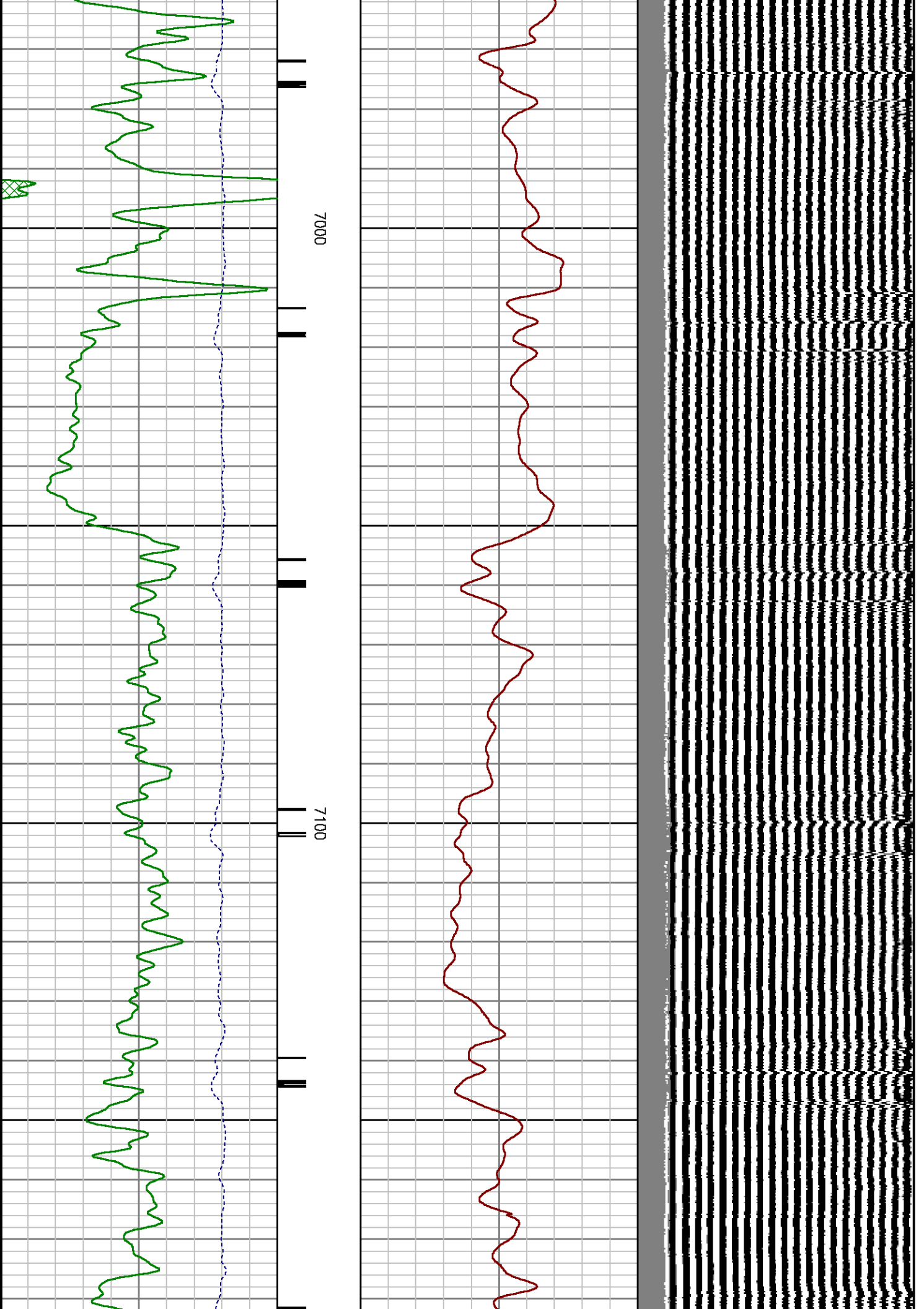
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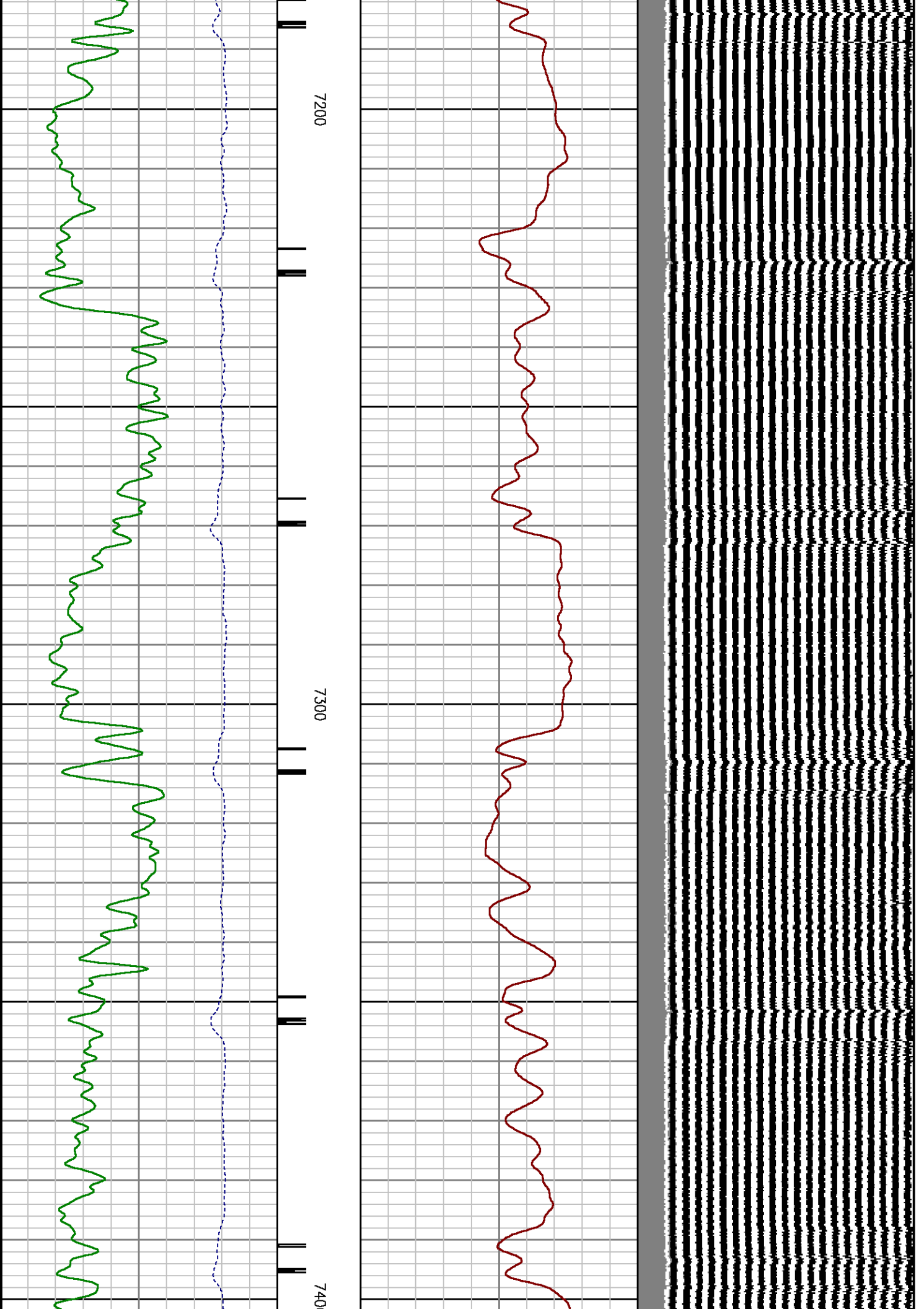
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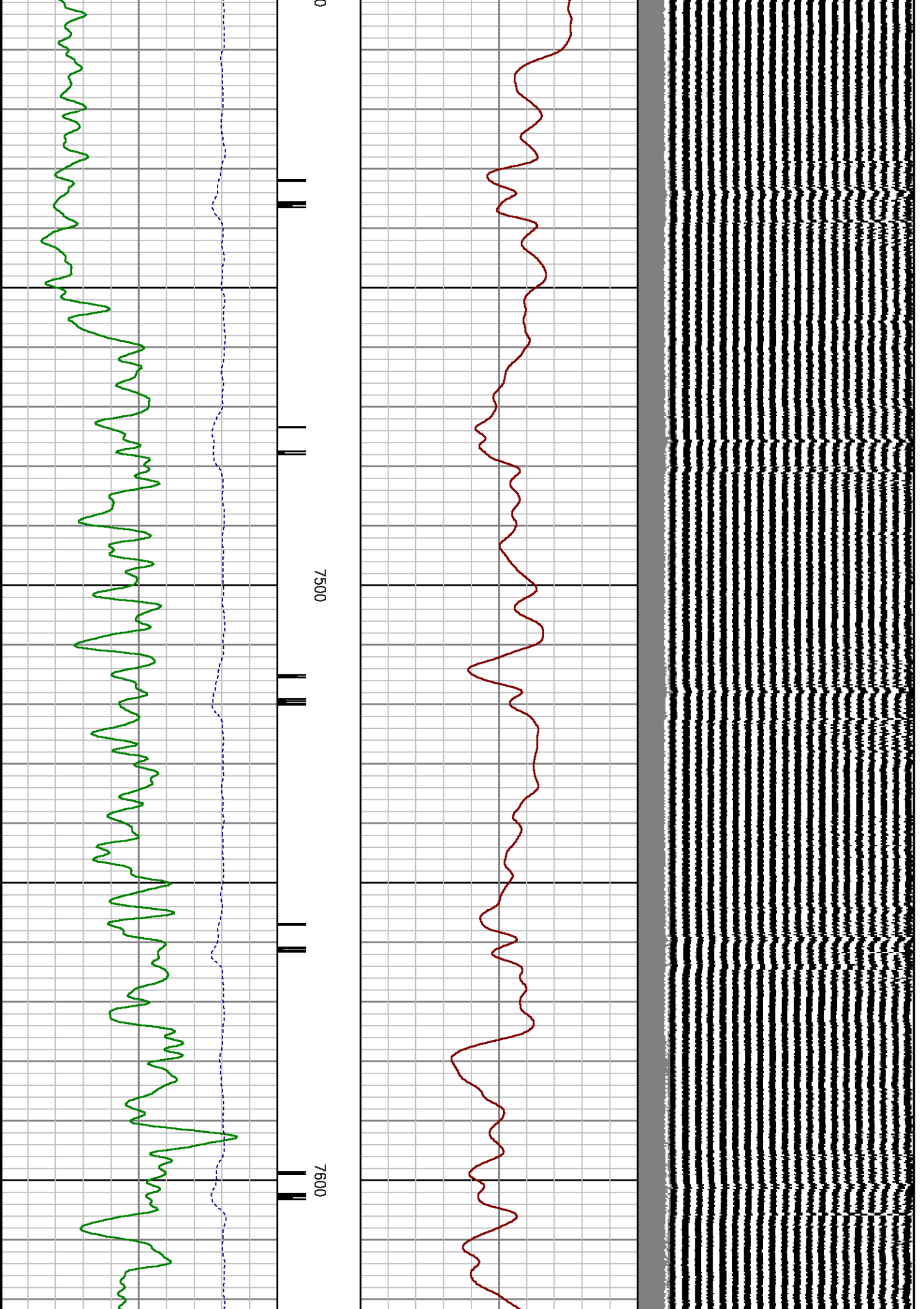
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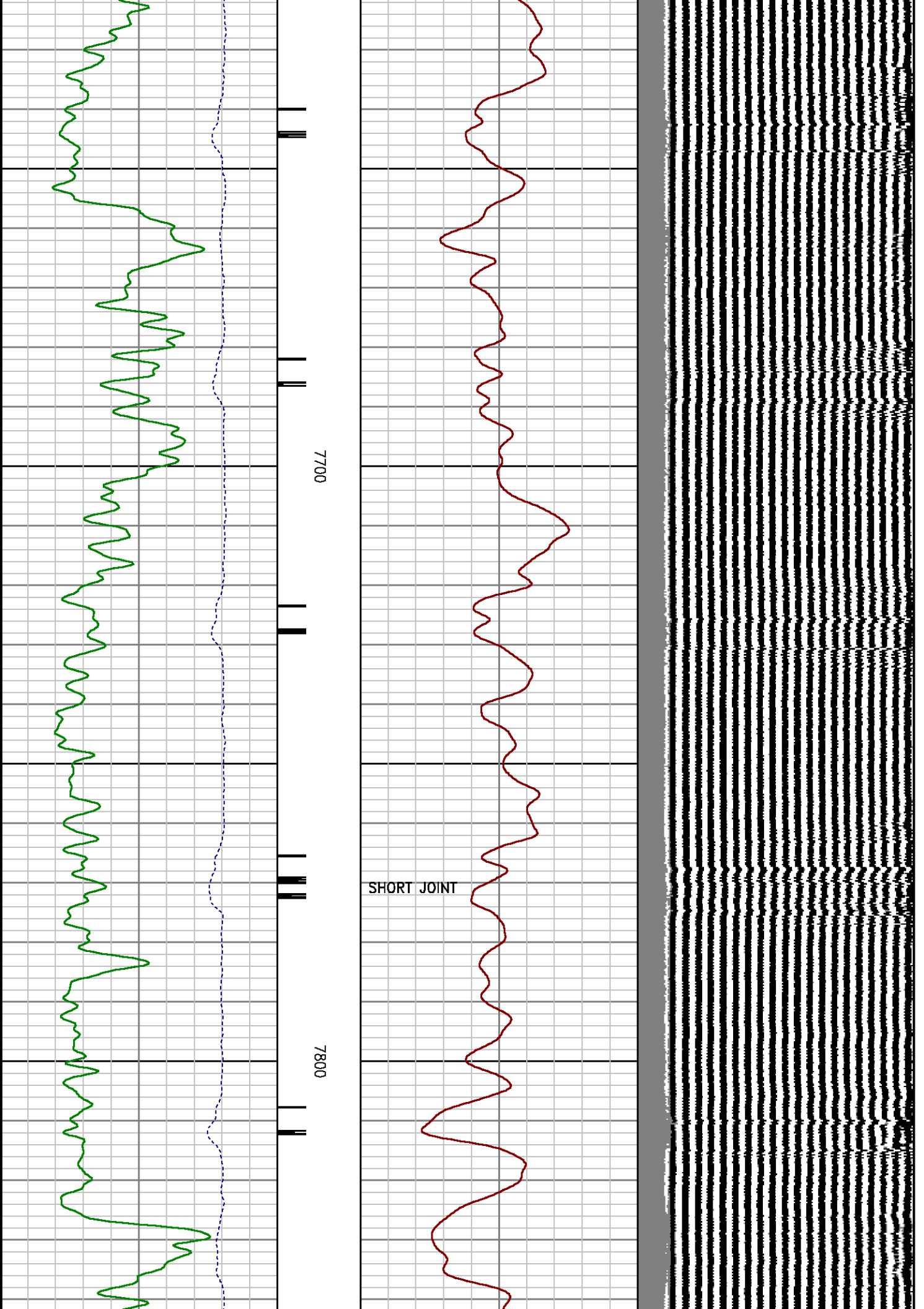
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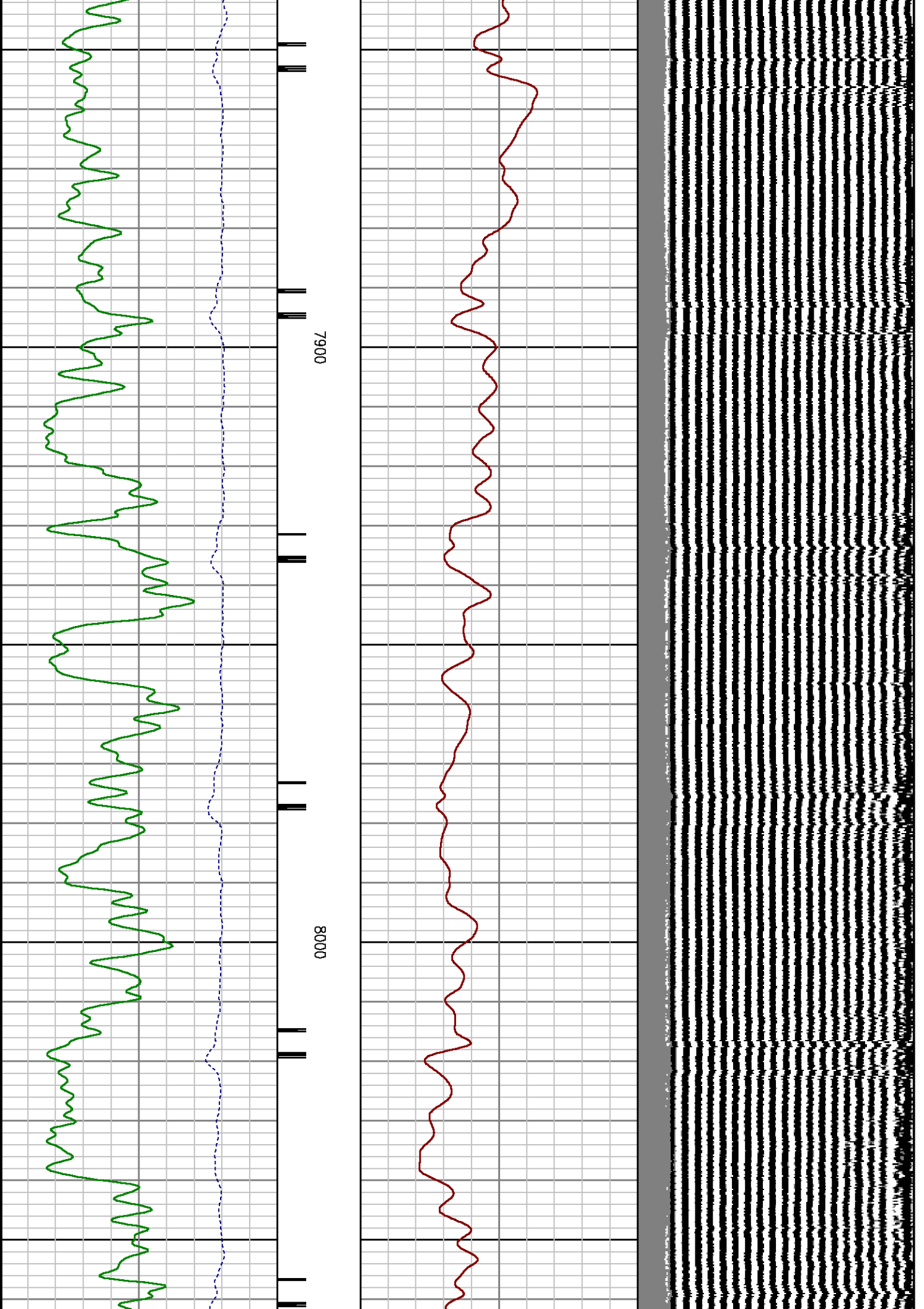


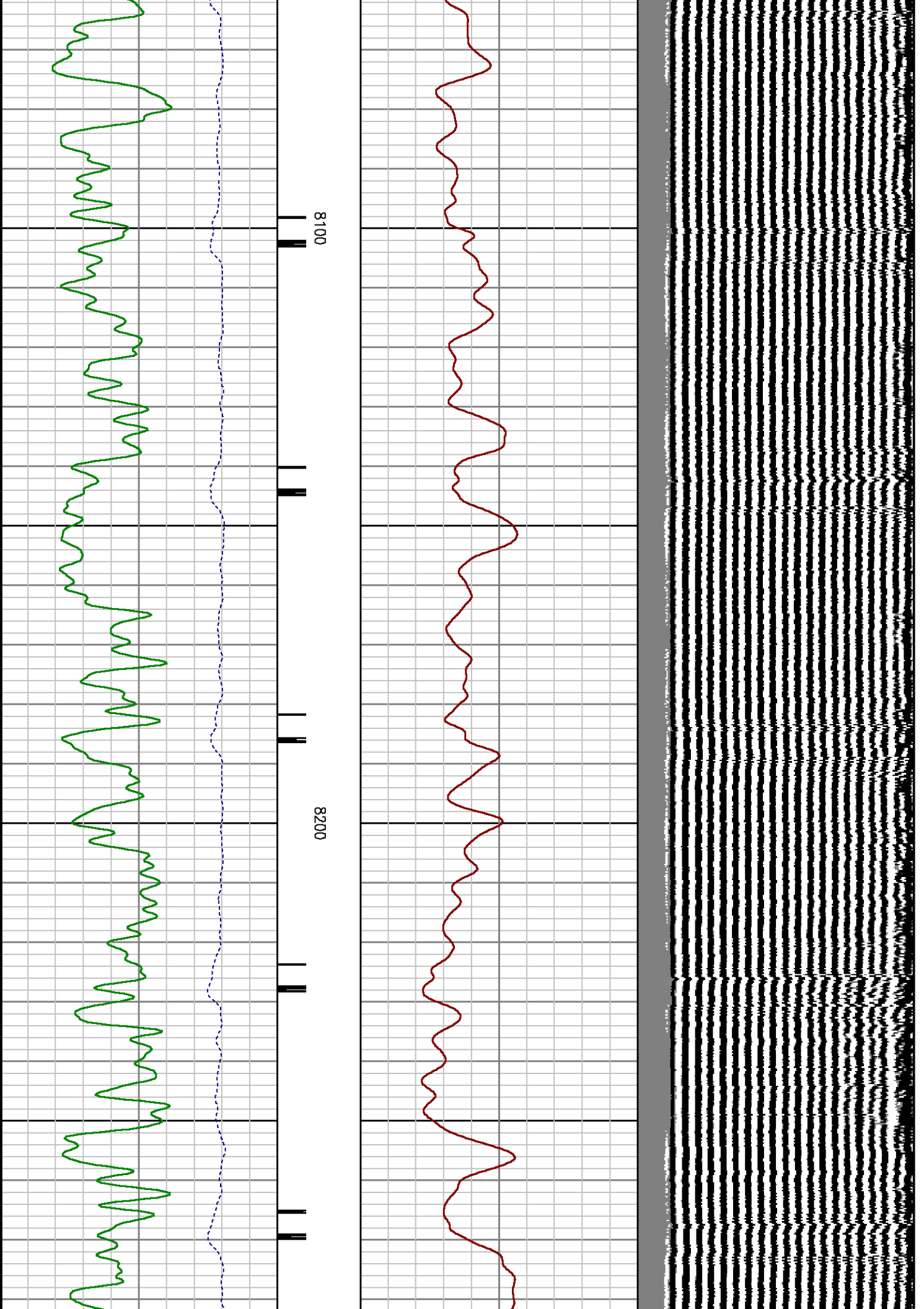


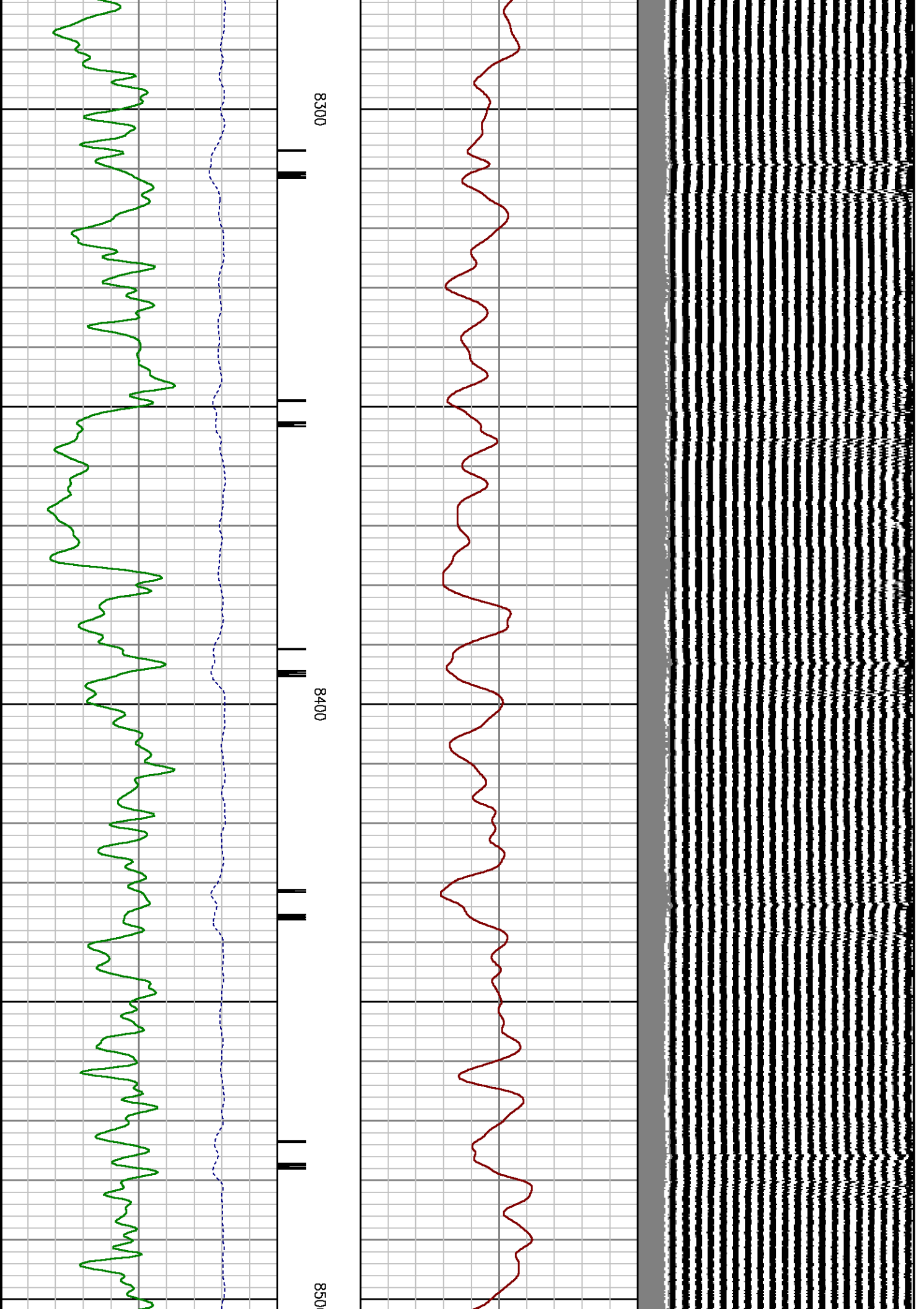


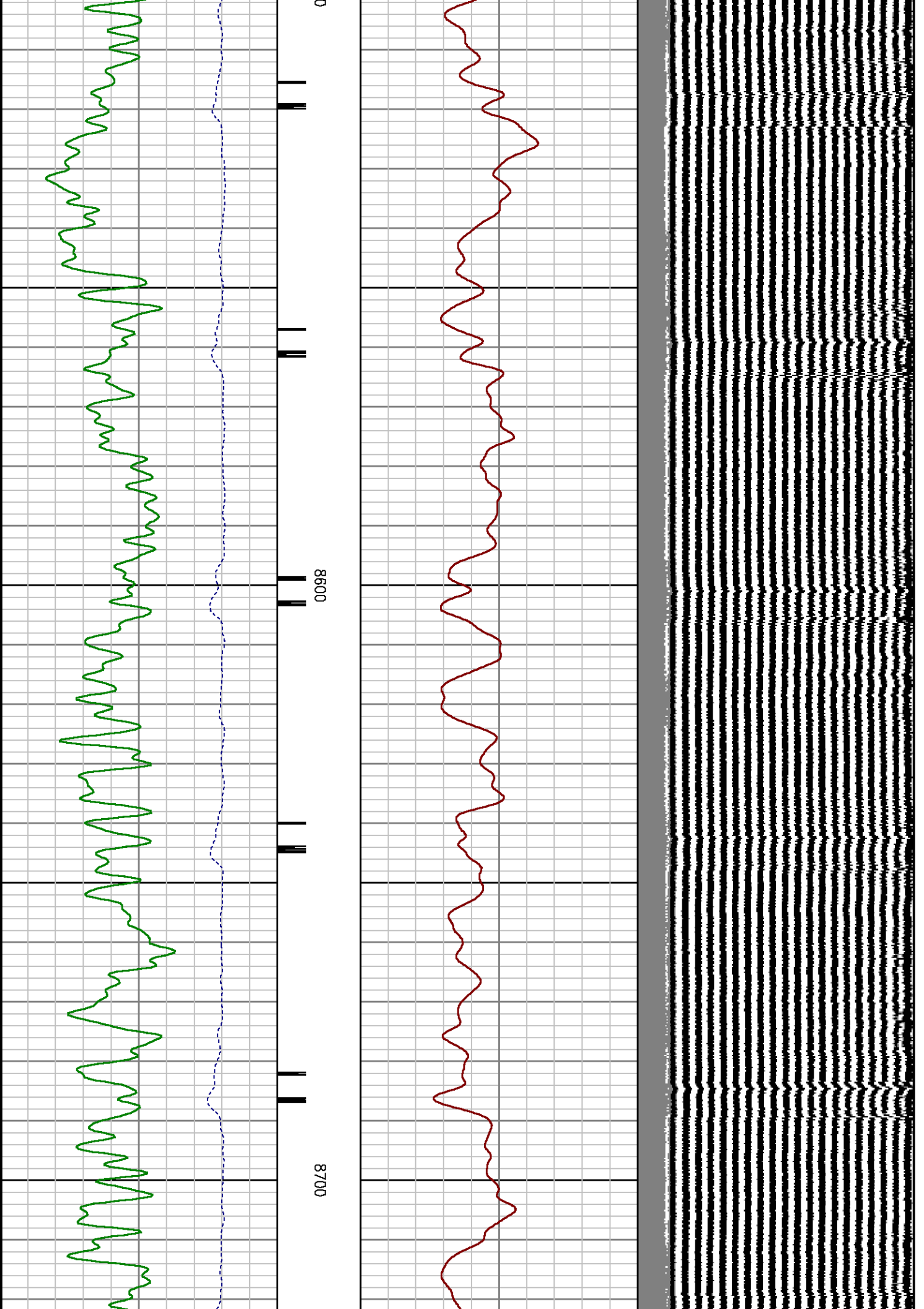


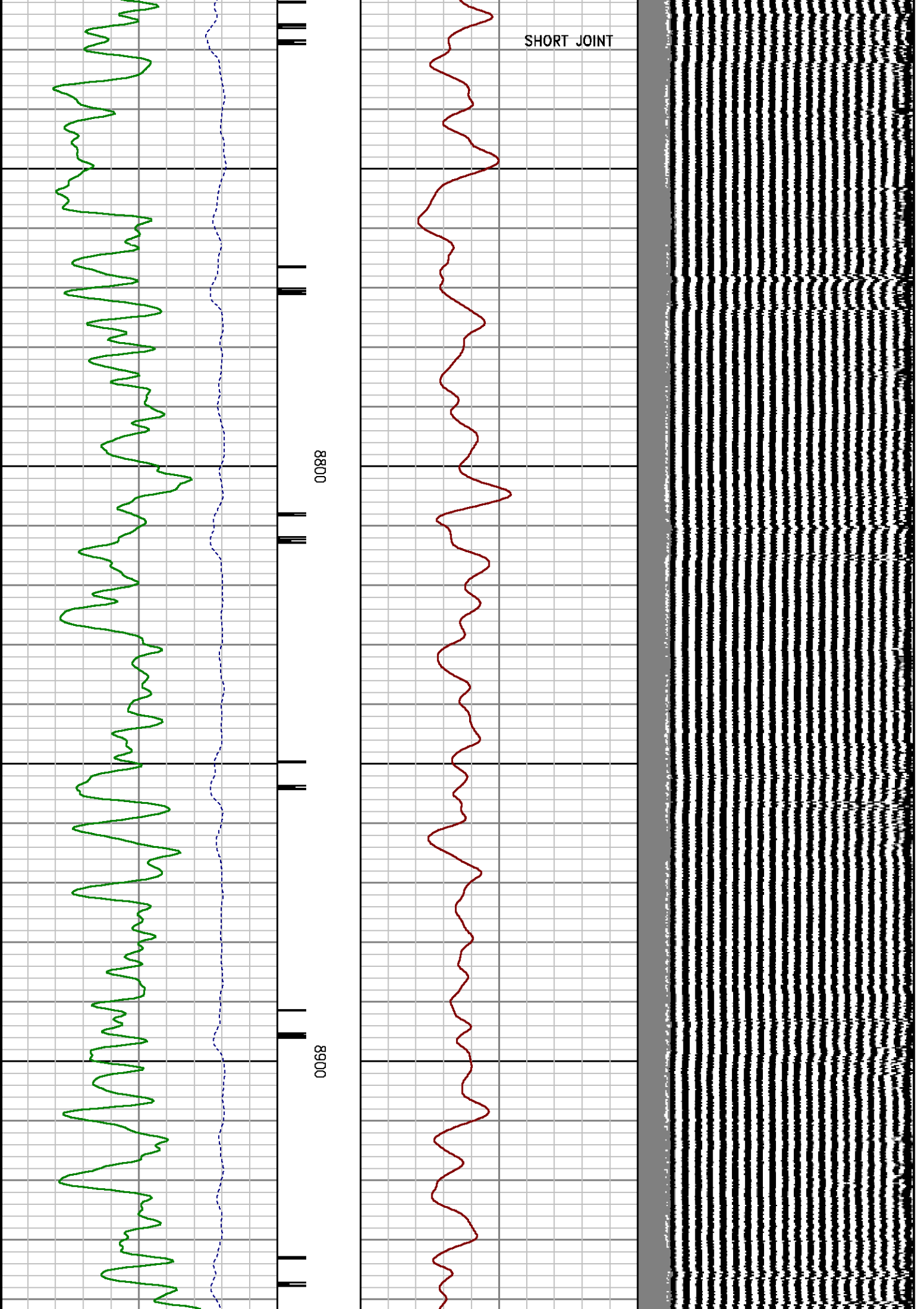


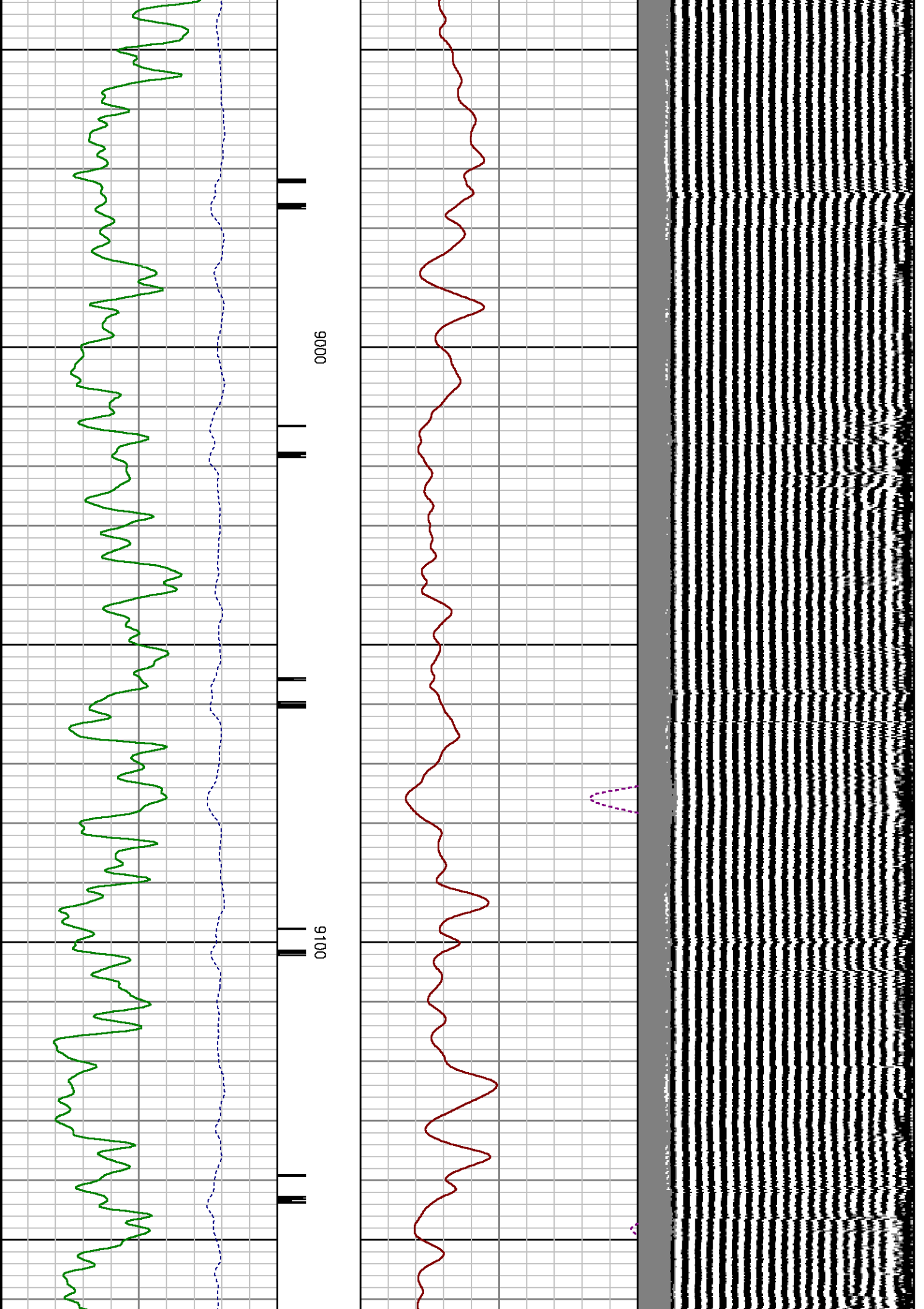


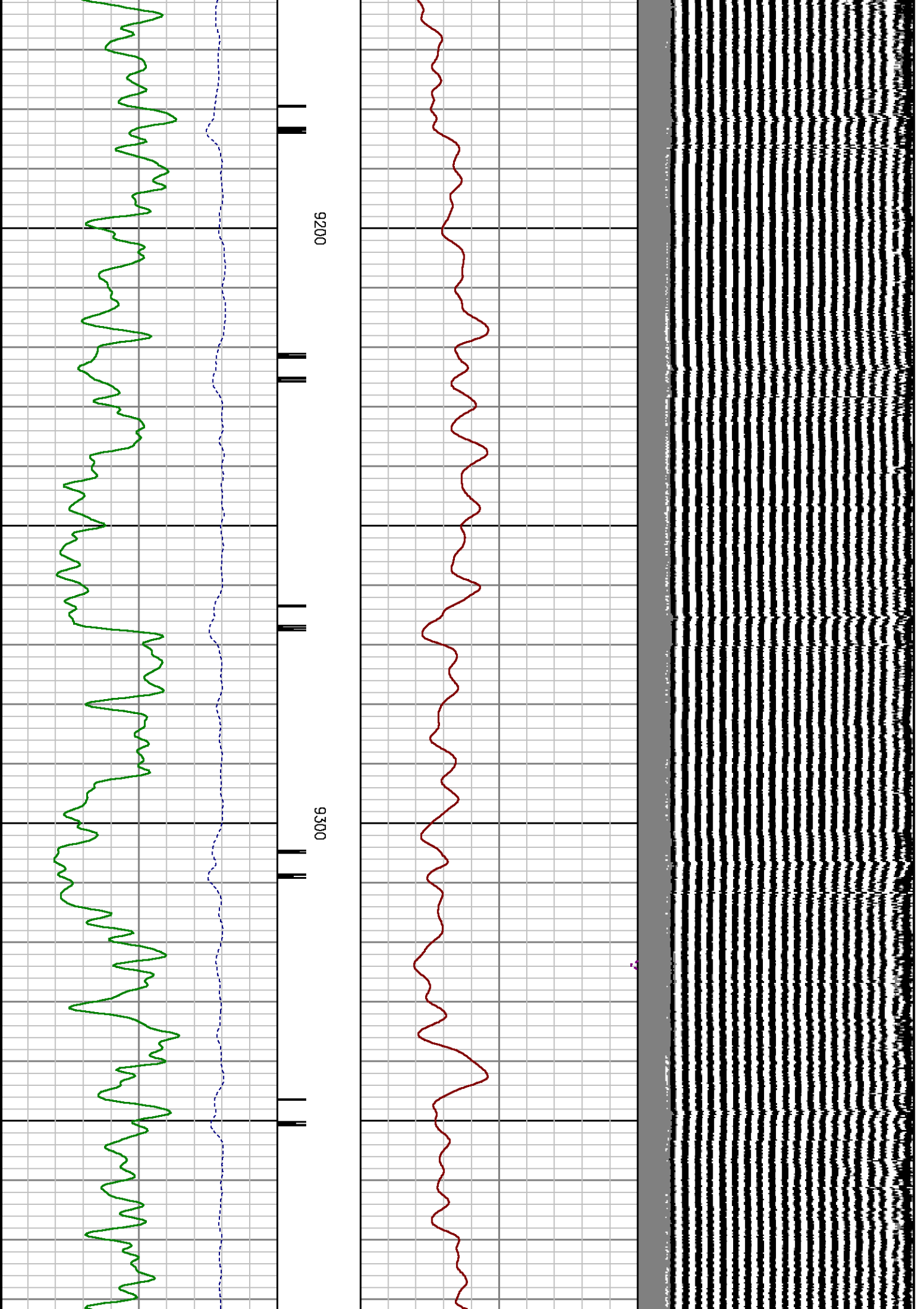


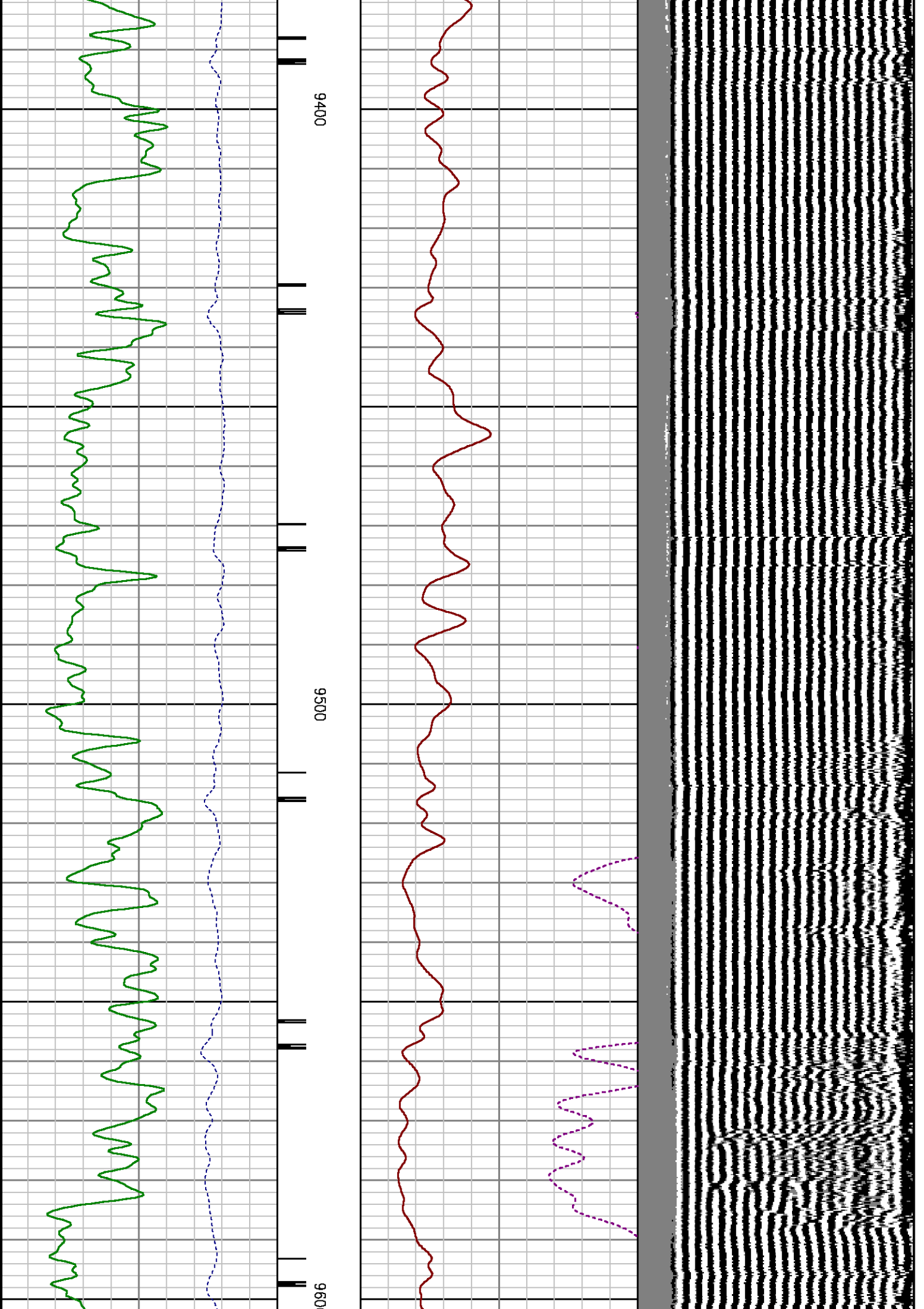


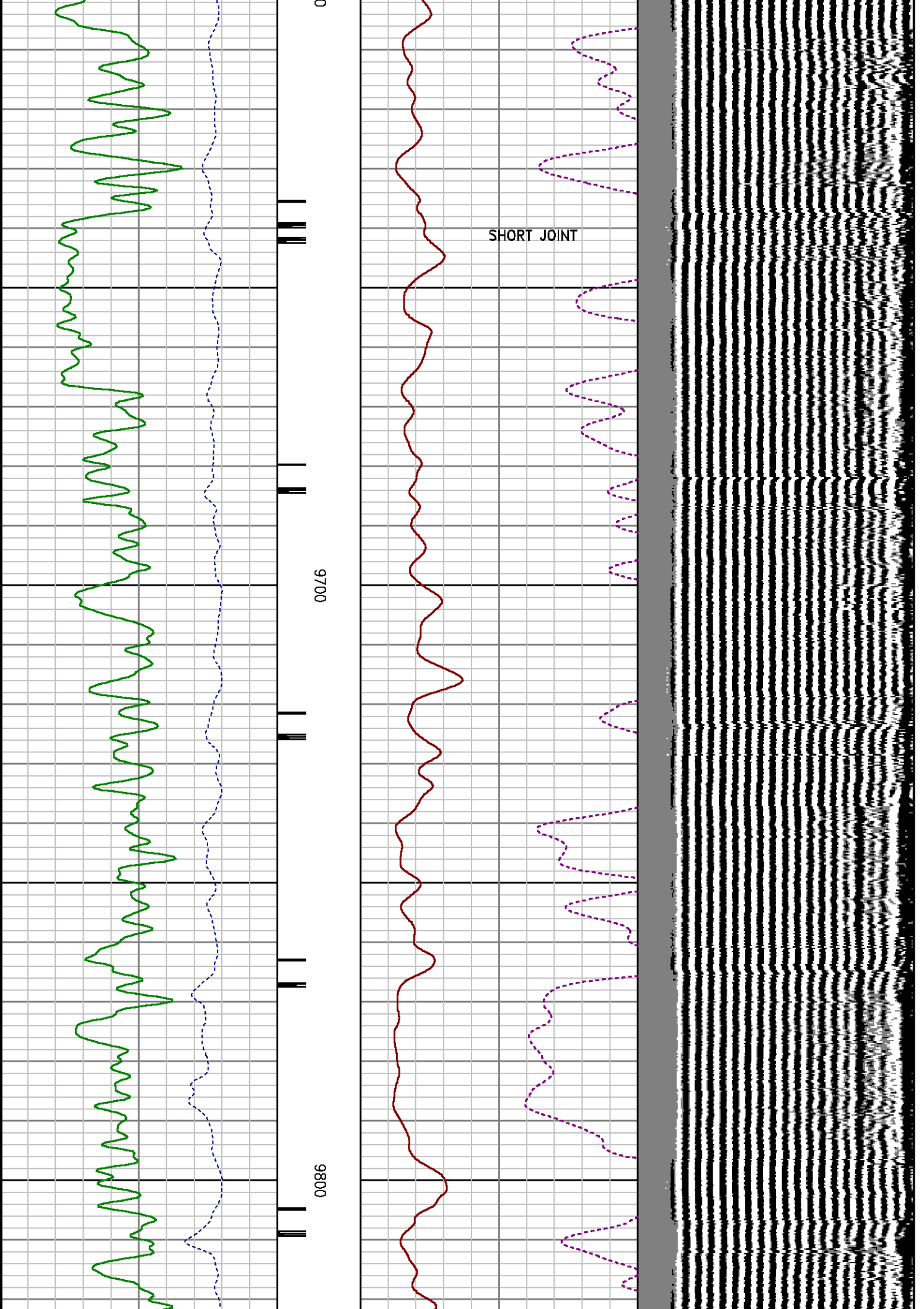


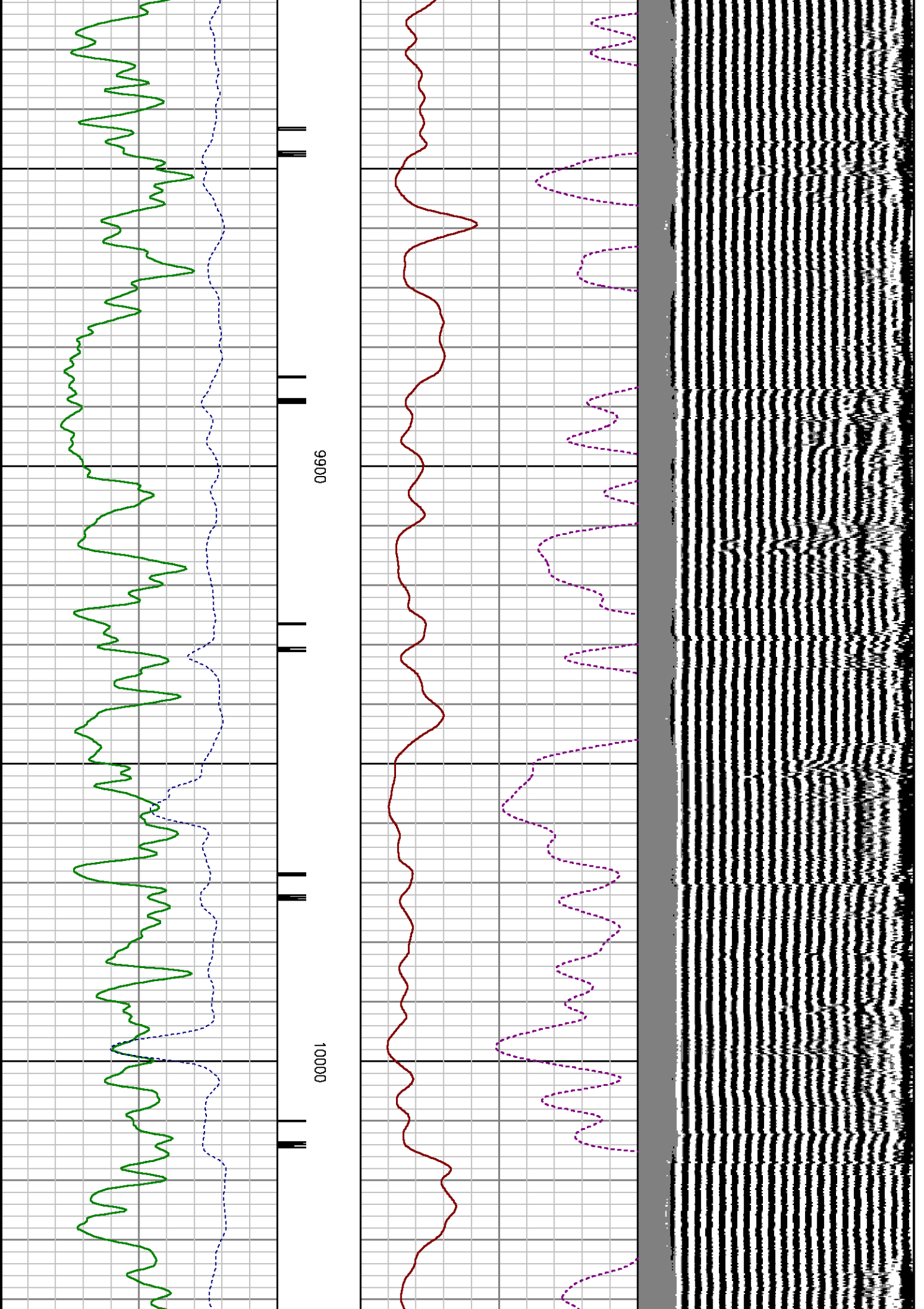


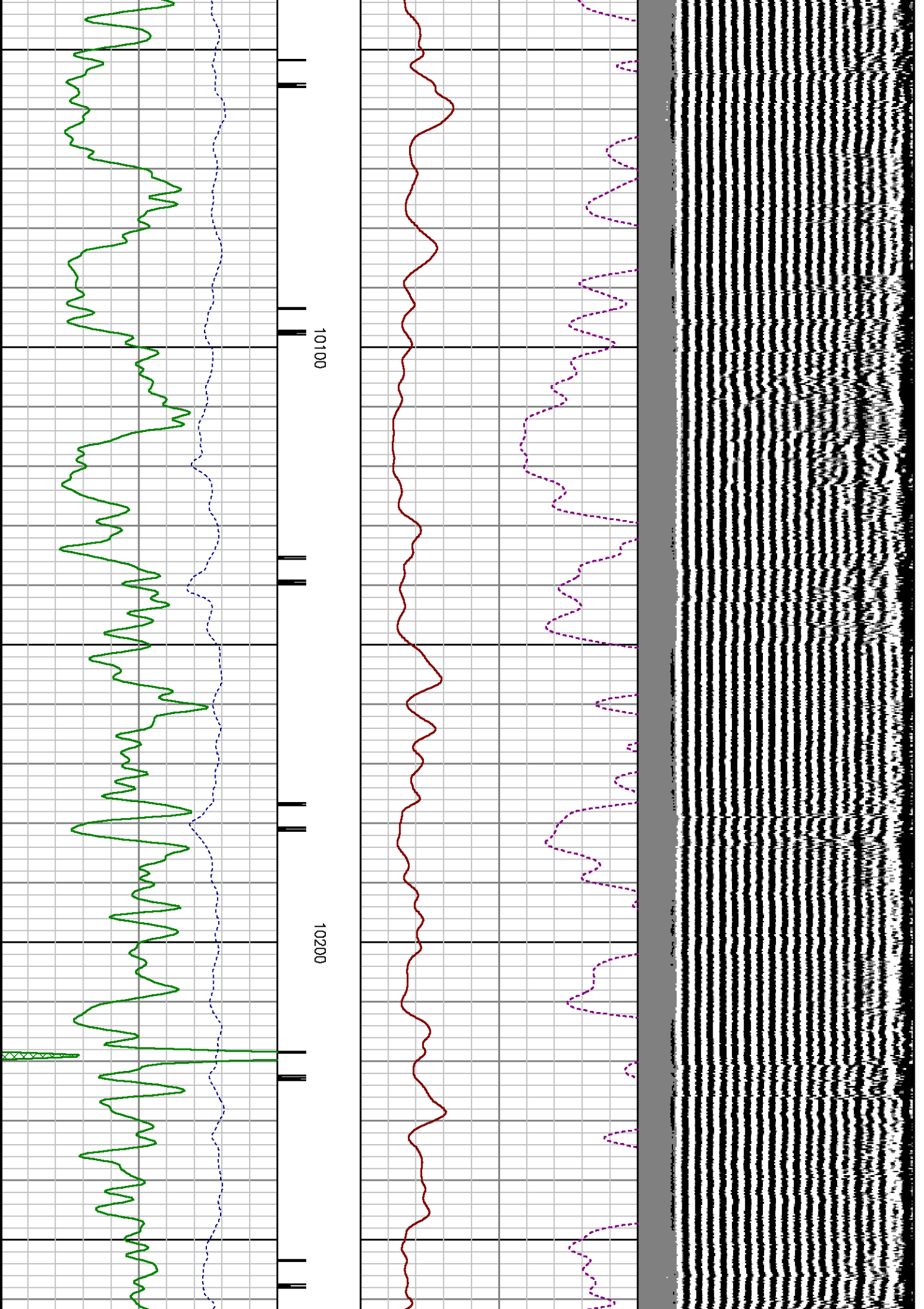


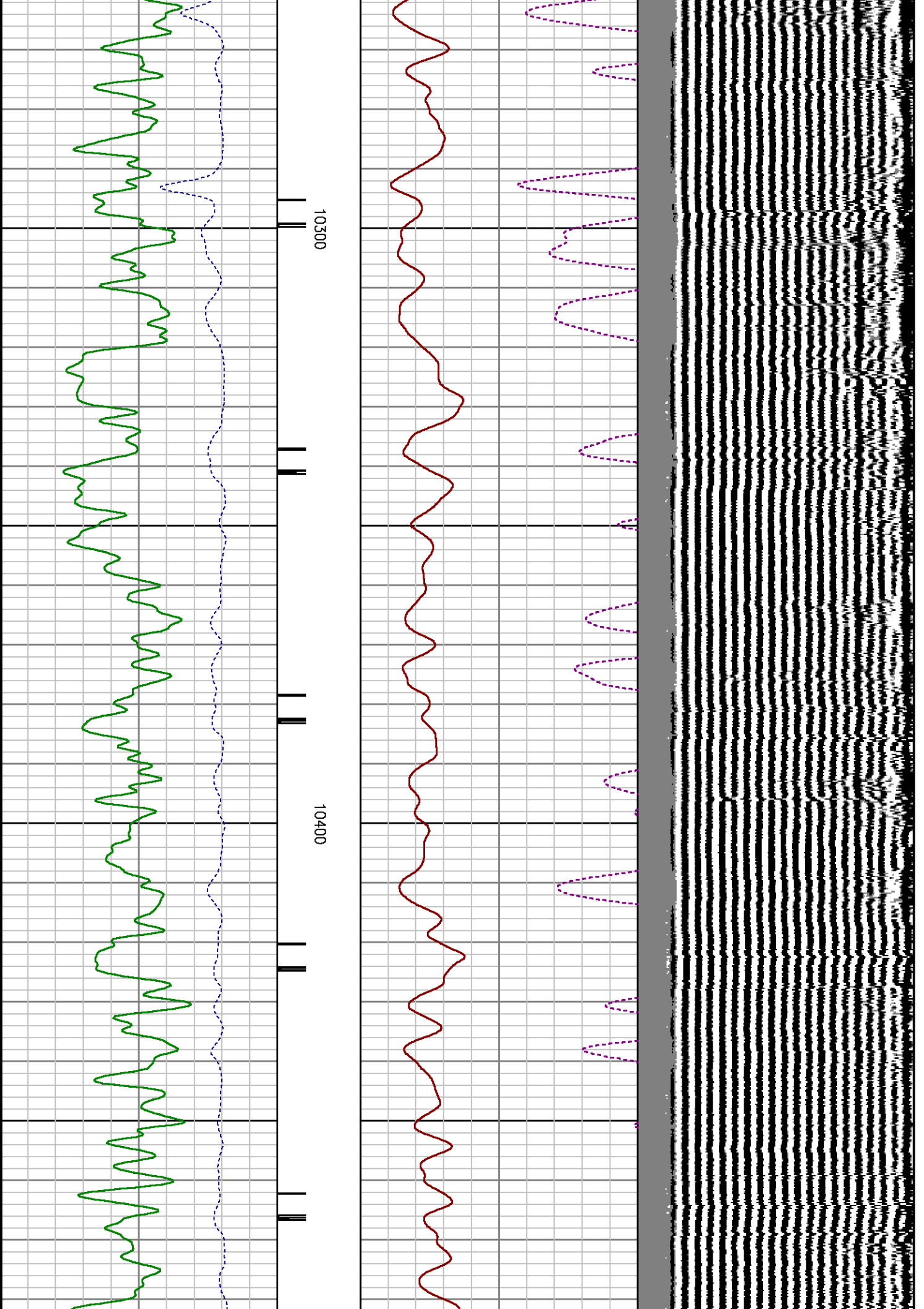


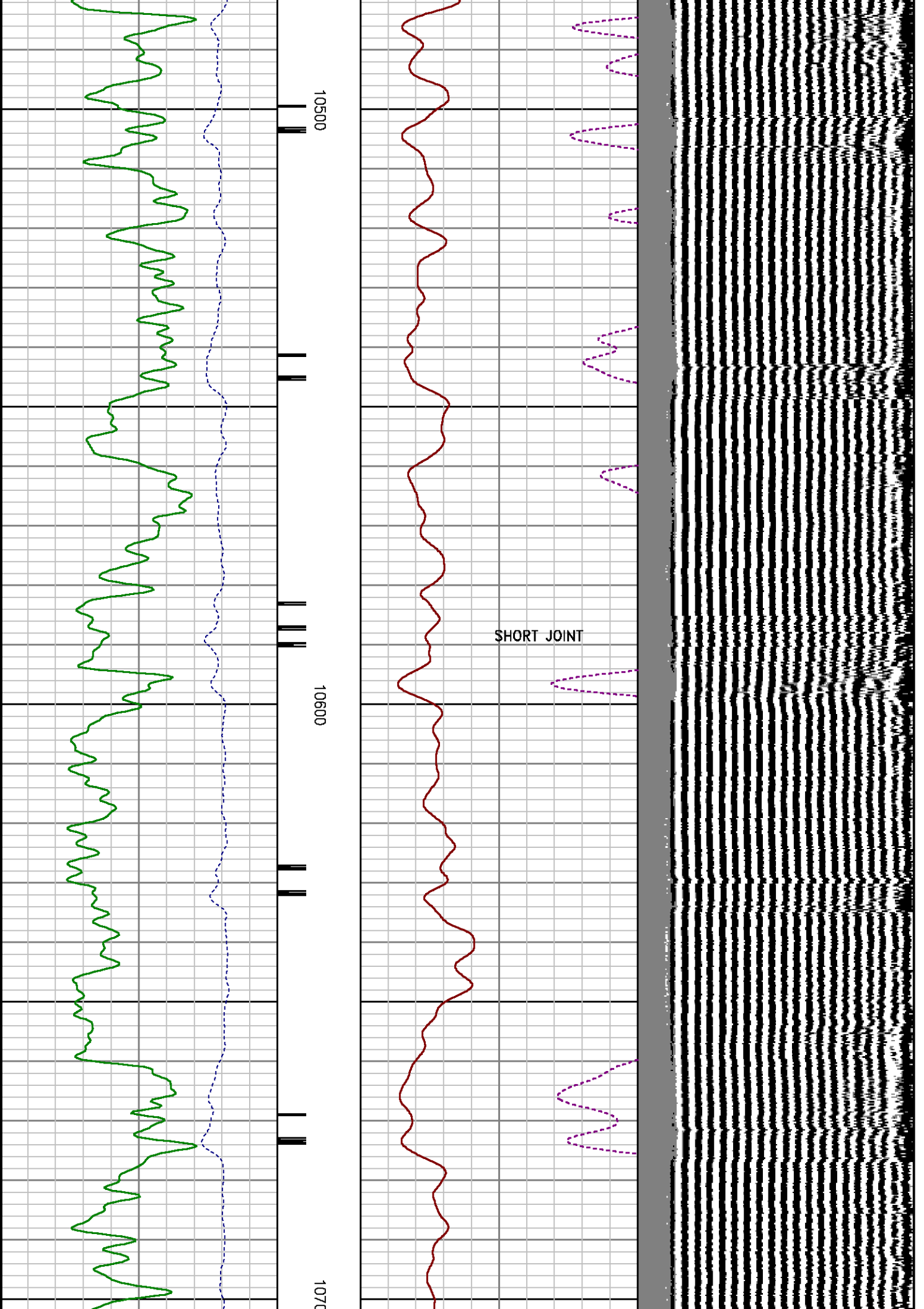


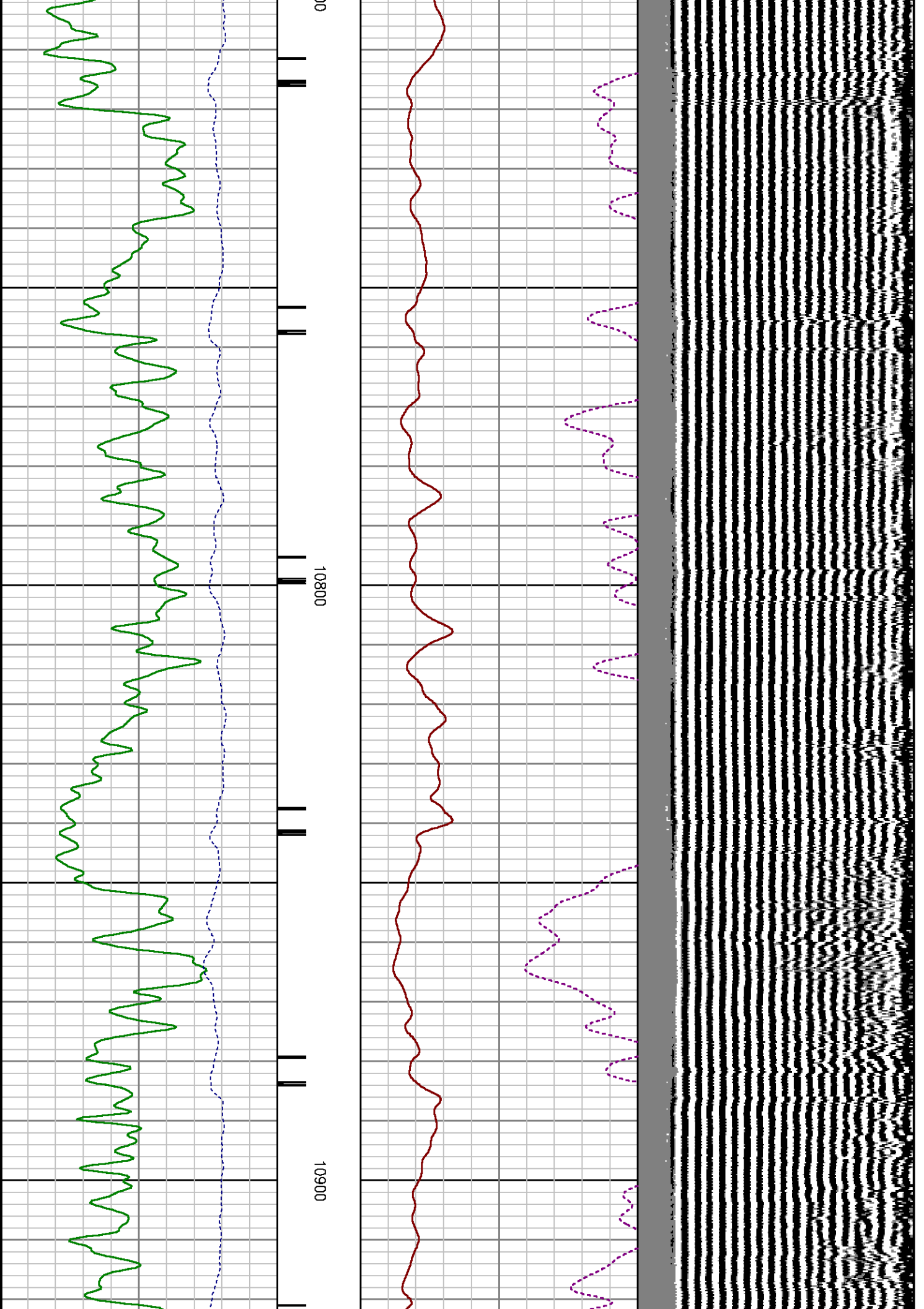


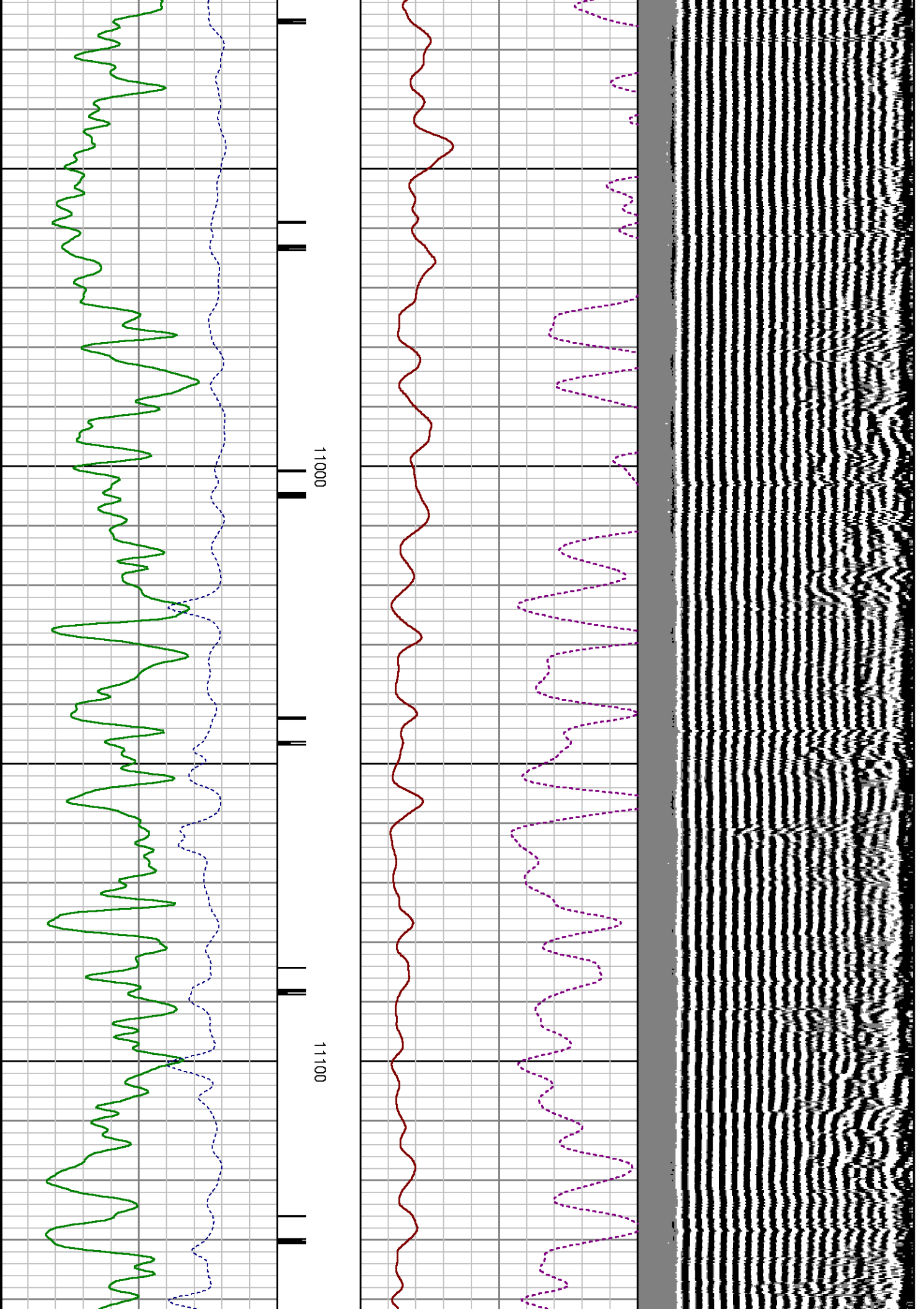


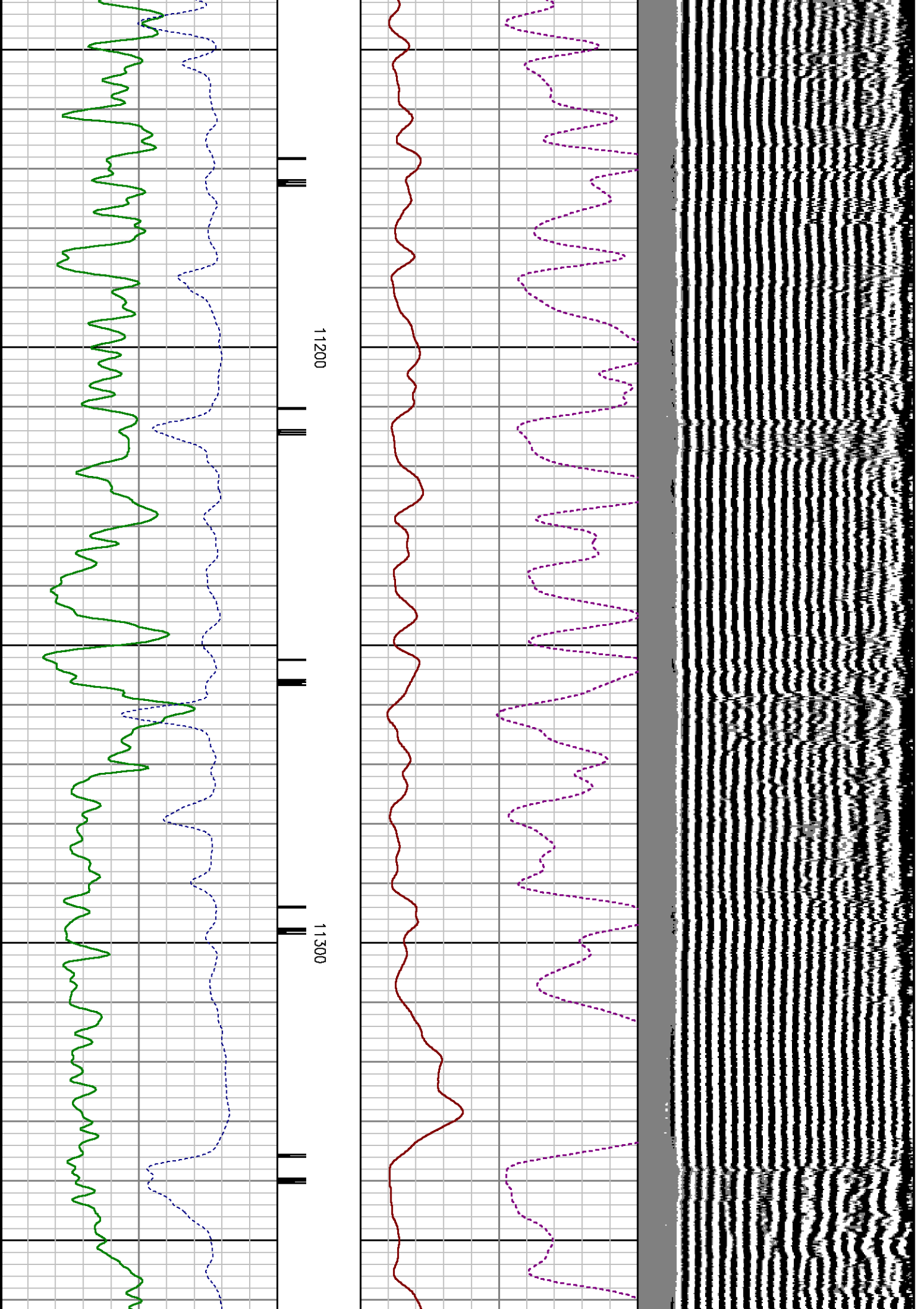


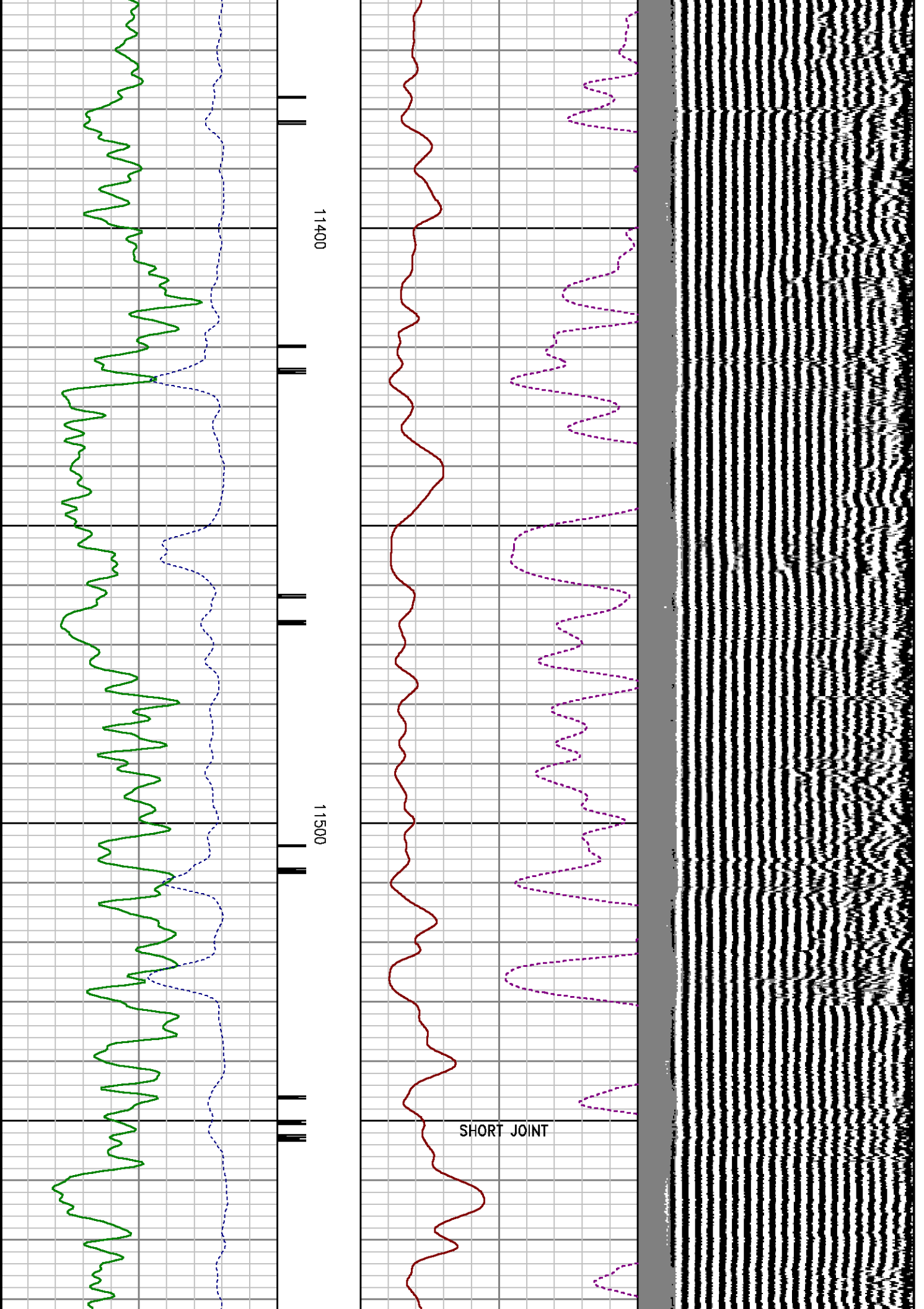


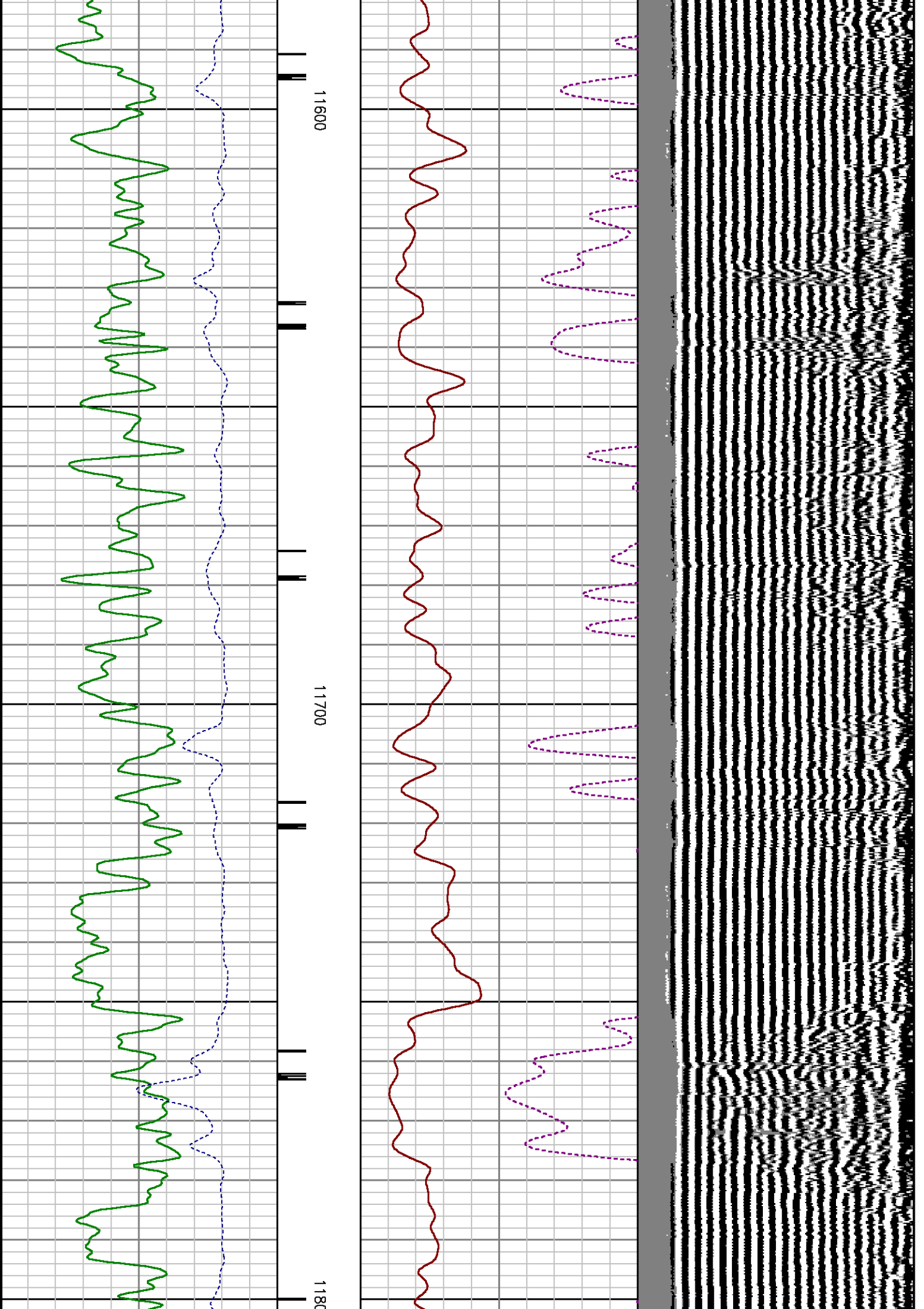


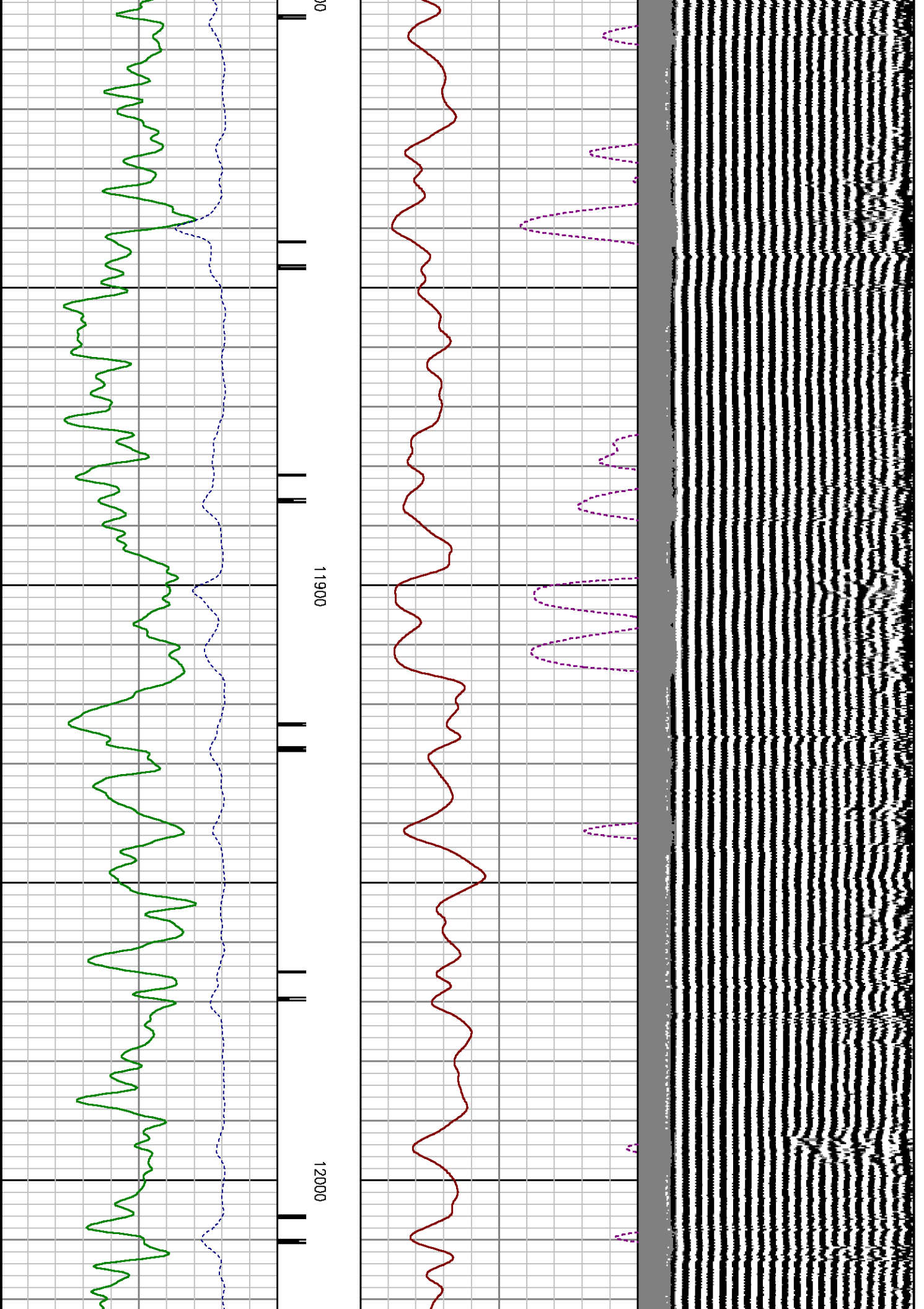


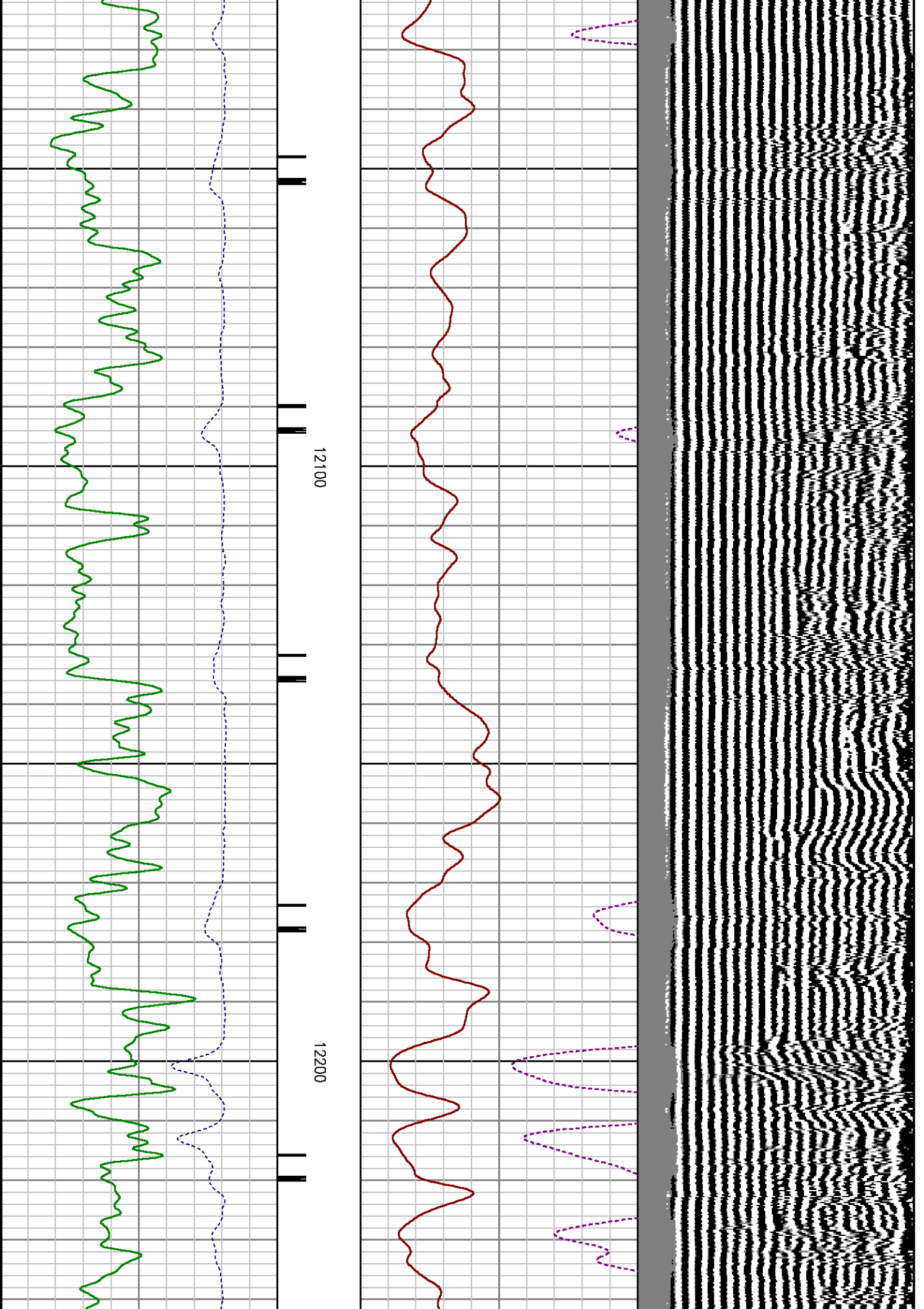


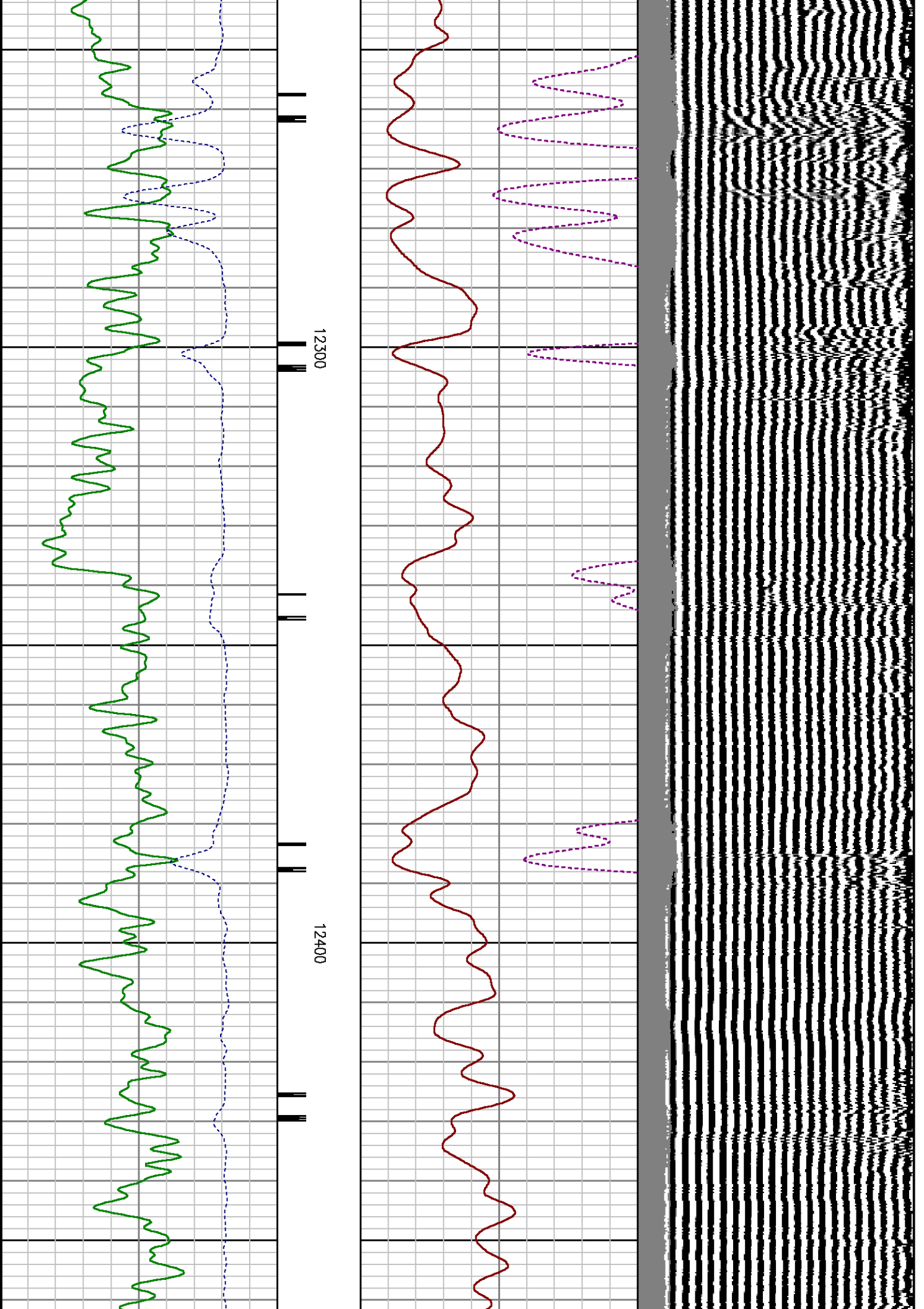


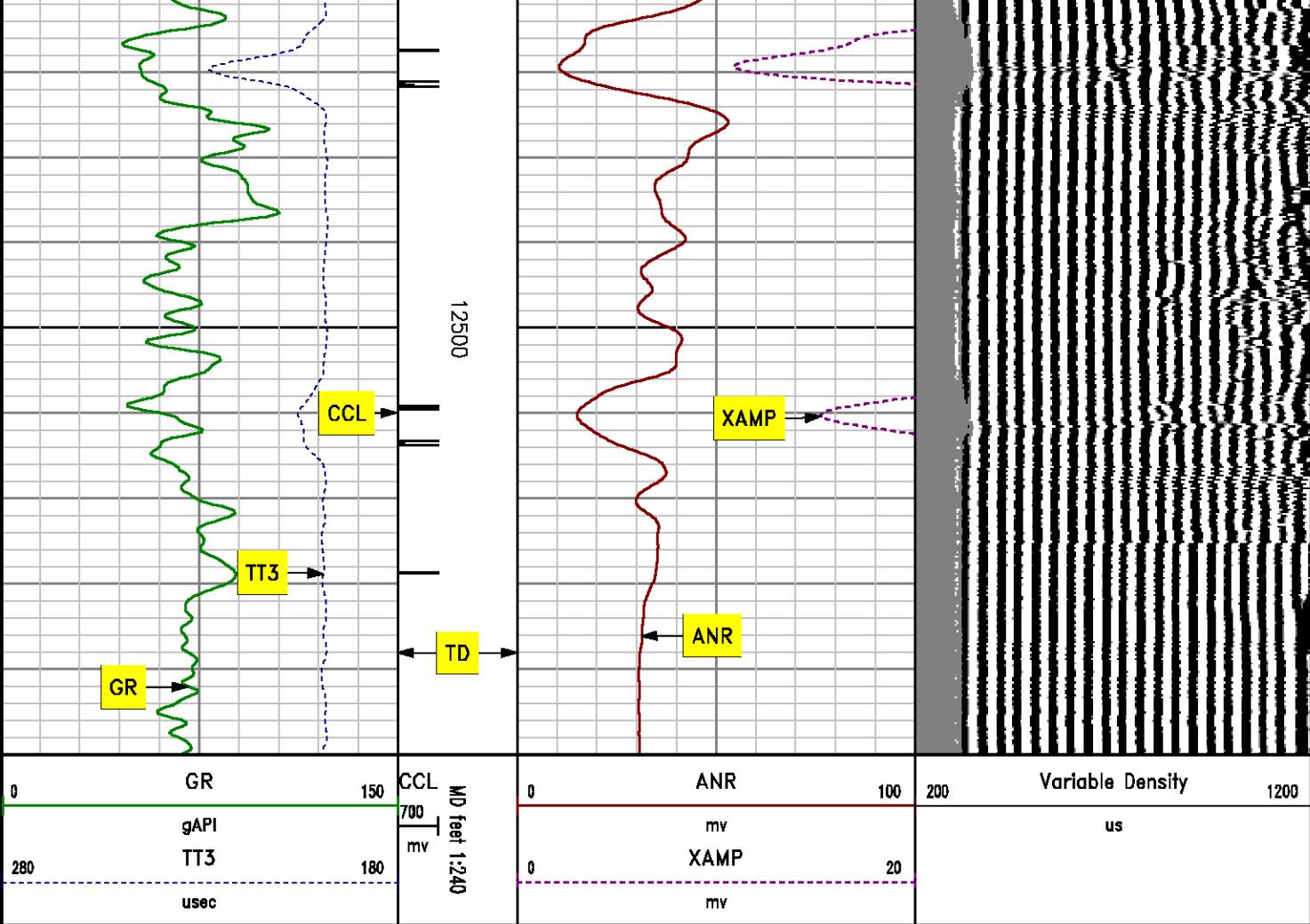












REPEAT SECTION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	314.263	usec	12299.750	12578.750
RAL	Amp Gate Start Near	197.754	usec	12299.750	12578.750
RAL	Amp Gate Start Radial	197.754	usec	12299.750	12578.750
RAL	Amp Gate Width Far	25.000	usec	12299.750	12578.750
RAL	Amp Gate Width Near	25.000	usec	12299.750	12578.750
RAL	Amp Gate Width Radial	25.000	usec	12299.750	12578.750
RAL	casing od	4.500	inches	12299.750	12578.750
RAL	casing wt	15.100	lbm/ft	12299.750	12578.750
RAL	FB Start Far	289.263	usec	12299.750	12578.750
RAL	FB Start Near	172.754	usec	12299.750	12578.750
RAL	FB Start Radial	172.754	usec	12299.750	12578.750

RAL	FB Thresh Far	15.000	mv	12299.750	12578.750
RAL	FB Thresh Near	10.000	mv	12299.750	12578.750
RAL	FB Thresh Radial	10.000	mv	12299.750	12578.750
RAL	Fluid Travel Time	200.000	usec/ft	12299.750	12579.280

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					
1426XA	-7.250	CCL							
1426XA	-5.390	GR							
1426XA	0.000	NEU							

Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

Company : EXXONMOBIL PRODUCTION COMPANY

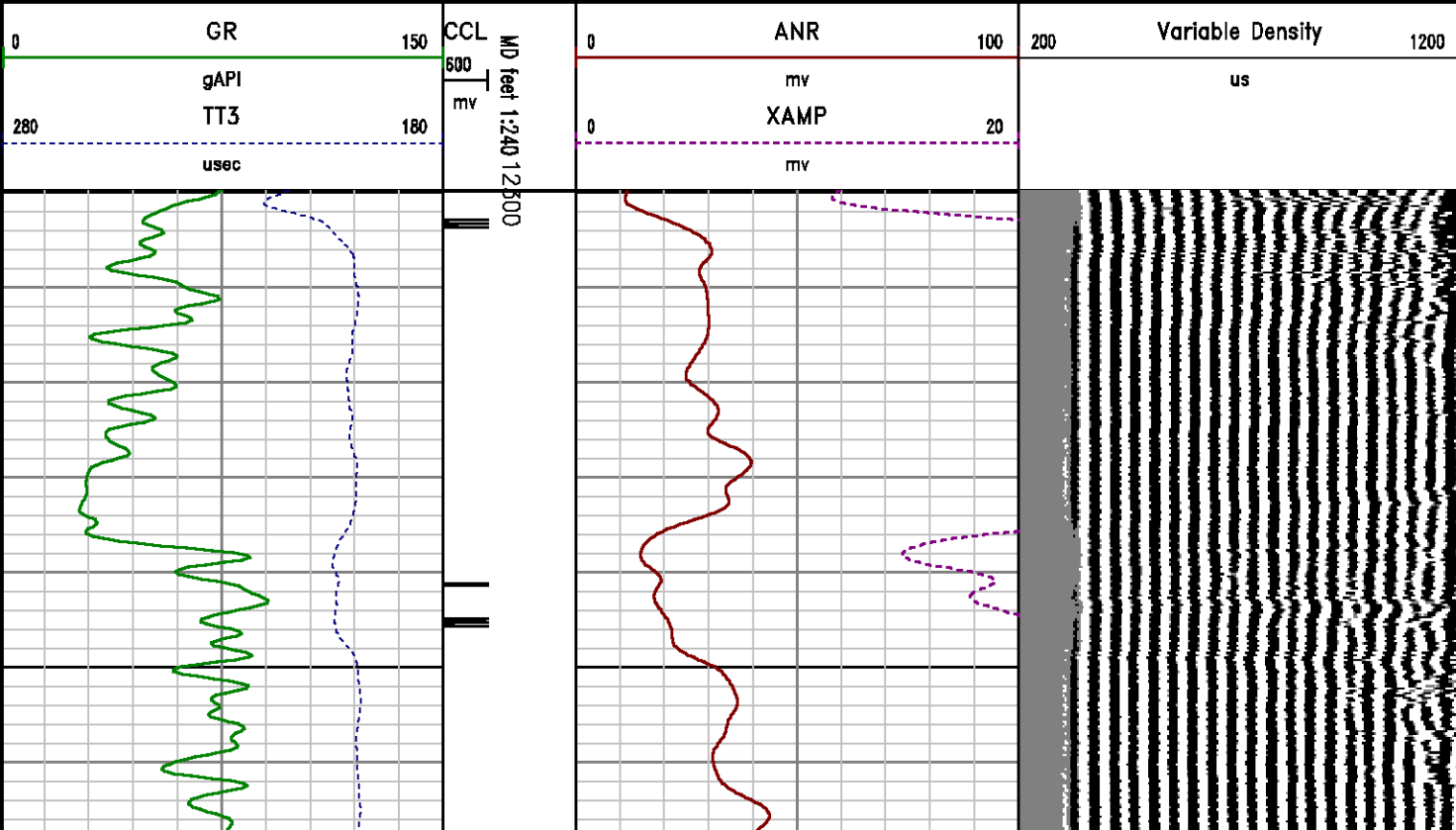
Well : FRU 197-33B3

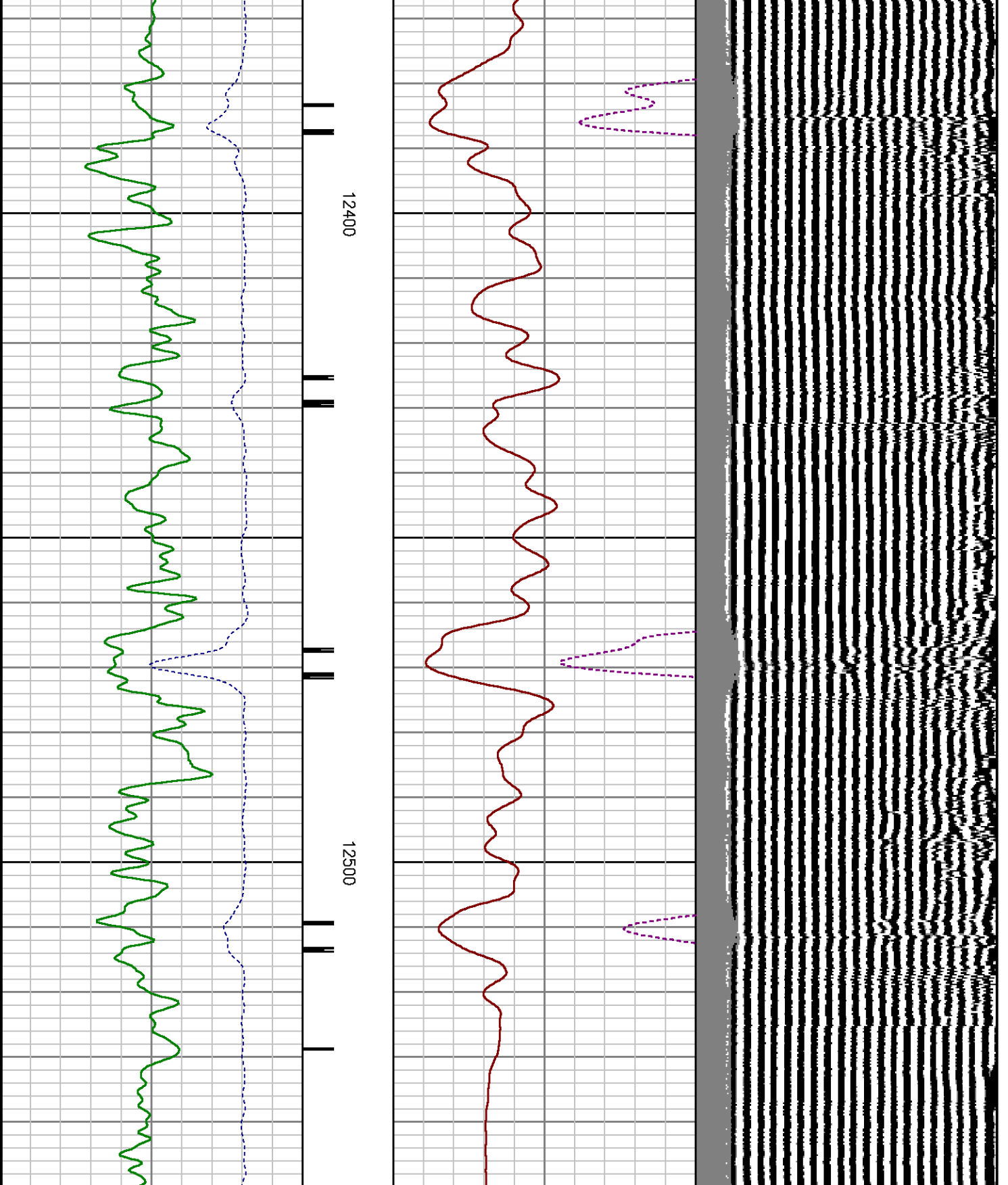
File Name : d:\well\data\b3cbi\cbi_repeat.xtf

Mode : PlotMgr 5.4.504

Interval : 12299.75 - 12550.00 feet UP

Created : 9/15/2010 1:33:13 AM





0	GR	150	CCL	0	ANR	100	200	Variable Density	1200
	gAPI		600		mv				
280	TT3	180	MD Feet 1:240	0	XAMP	20			
	usec				mv			us	

SURFACE CASING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	314.263	usec	4300.000	4719.000
RAL	Amp Gate Start Near	197.754	usec	4300.000	4719.000
RAL	Amp Gate Start Radial	197.754	usec	4300.000	4719.000
RAL	Amp Gate Width Far	25.000	usec	4300.000	4719.000
RAL	Amp Gate Width Near	25.000	usec	4300.000	4719.000
RAL	Amp Gate Width Radial	25.000	usec	4300.000	4719.000
RAL	casing od	4.500	inches	4300.000	4719.000
RAL	casing wt	15.100	lbm/ft	4300.000	4719.000
RAL	FB Start Far	289.263	usec	4300.000	4719.000
RAL	FB Start Near	172.754	usec	4300.000	4719.000
RAL	FB Start Radial	172.754	usec	4300.000	4719.000
RAL	FB Thresh Far	15.000	mv	4300.000	4719.000
RAL	FB Thresh Near	10.000	mv	4300.000	4719.000
RAL	FB Thresh Radial	10.000	mv	4300.000	4719.000
RAL	Fluid Travel Time	200.000	usec/ft	4300.000	4719.000

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					
1426XA	-7.250	CCL							
1426XA	-5.390	GR							
1426XA	0.000	NEU							

Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

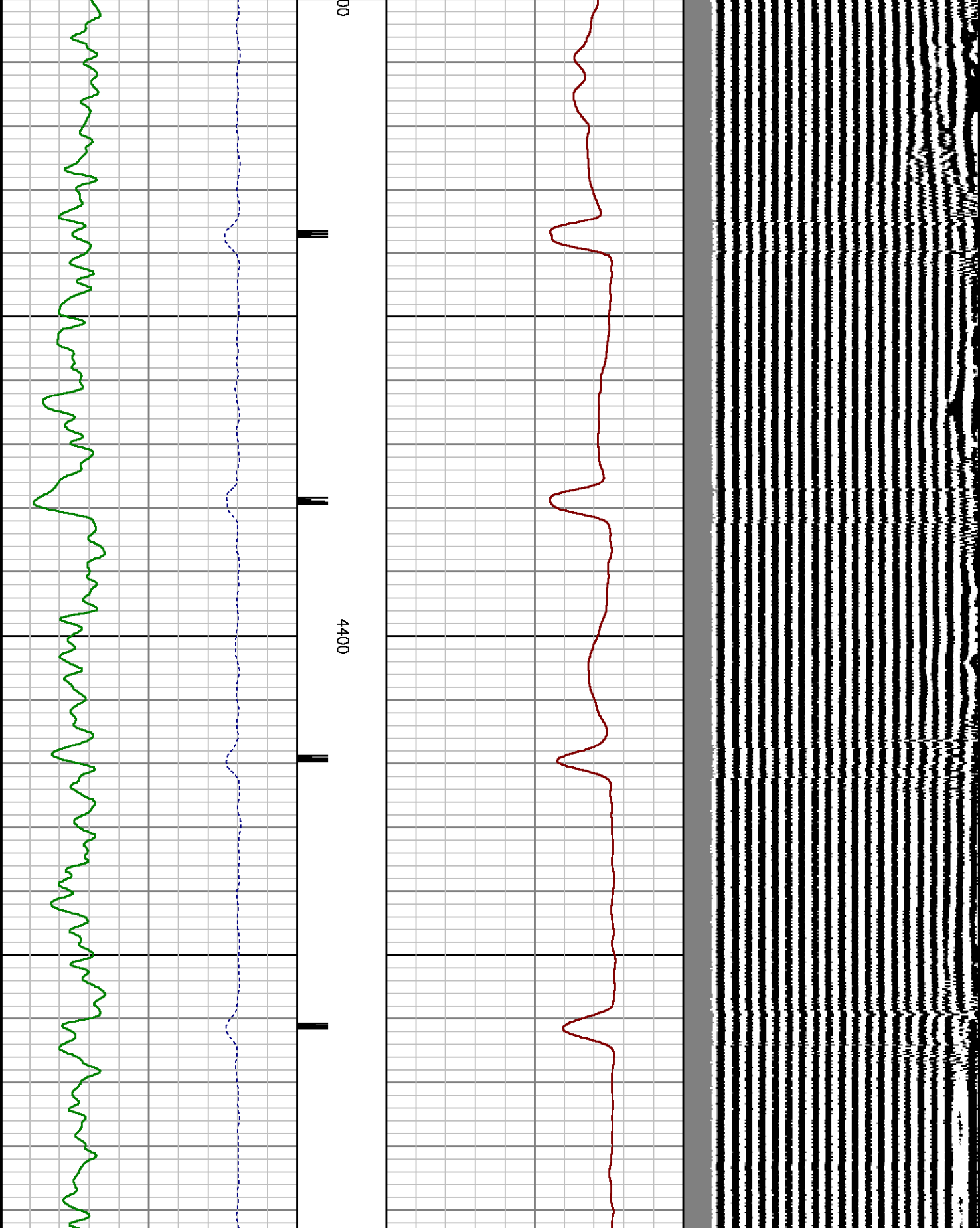
Company : EXXONMOBIL PRODUCTION COMPANY

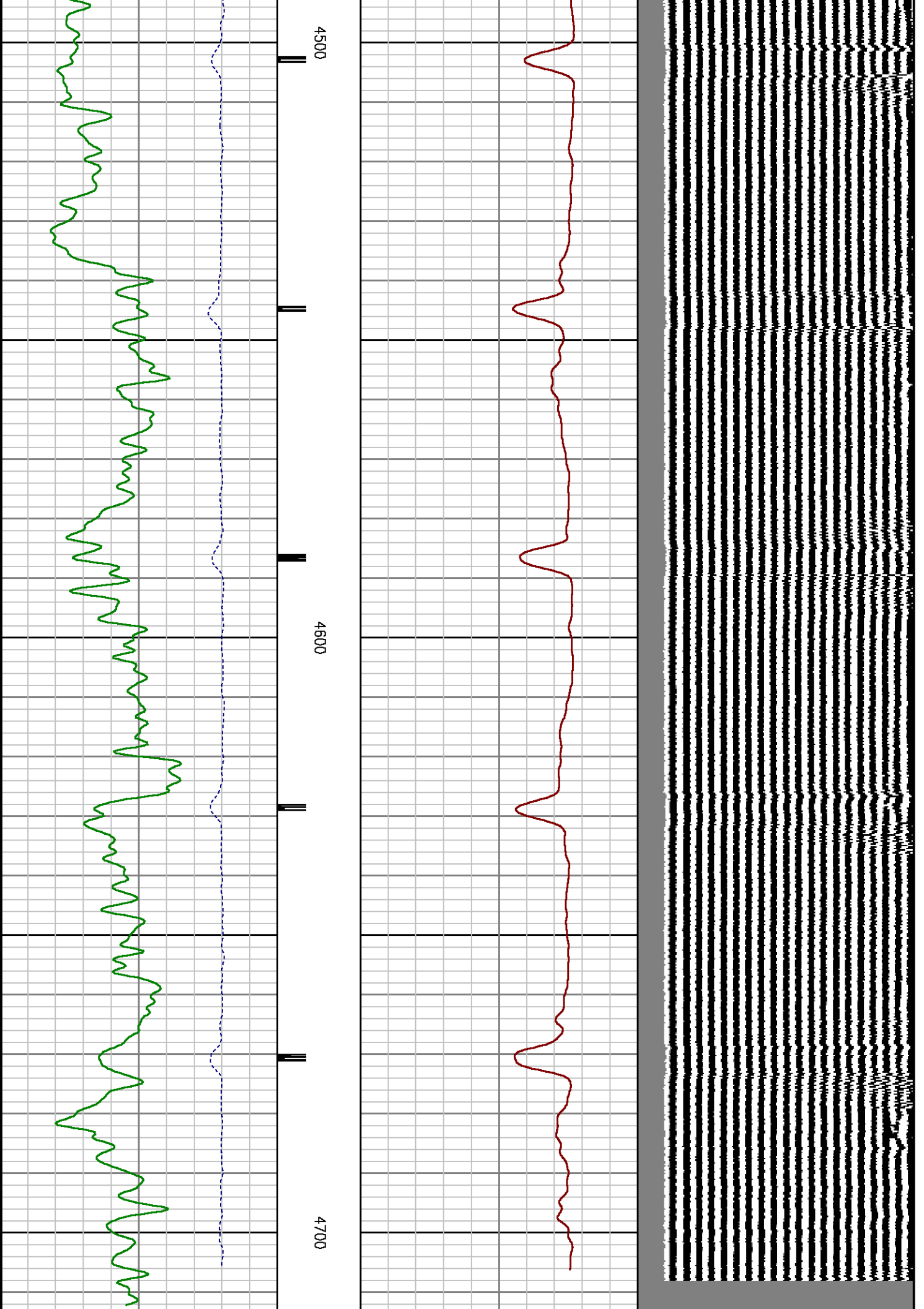
Well : FRU 197-3383

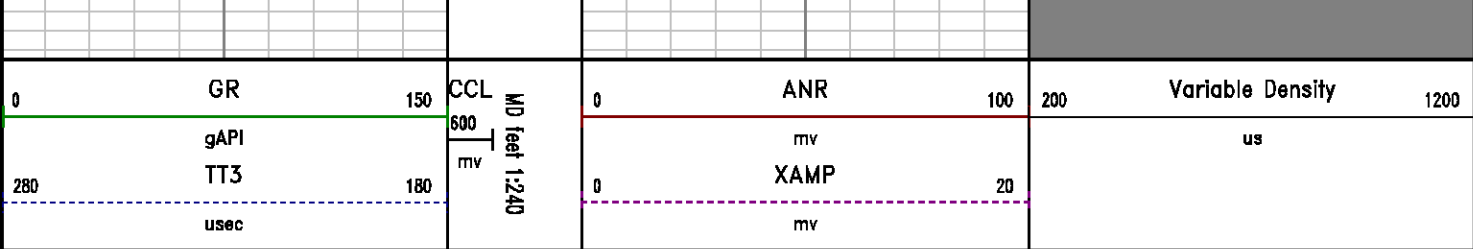
File Name : D:\WELLDATA\B3CBL\CBL_SHOE.xff

Mode : PlotMgr 5.4.504

0	GR	150	CCL	0	ANR	100	200	Variable Density	1200
	gAPI		500		mv				
280	TT3	180	mv	0	XAMP	20		us	
	uSec				mv				







FREE PIPE SECTION

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	314.263	usec	800.000	1025.000
RAL	Amp Gate Start Near	197.754	usec	800.000	1025.000
RAL	Amp Gate Start Radial	197.754	usec	800.000	1025.000
RAL	Amp Gate Width Far	25.000	usec	800.000	1025.000
RAL	Amp Gate Width Near	25.000	usec	800.000	1025.000
RAL	Amp Gate Width Radial	25.000	usec	800.000	1025.000
RAL	casing od	4.500	inches	800.000	1025.000
RAL	casing wt	15.100	lbm/ft	800.000	1025.000
RAL	FB Start Far	289.263	usec	800.000	1025.000
RAL	FB Start Near	172.754	usec	800.000	1025.000
RAL	FB Start Radial	172.754	usec	800.000	1025.000
RAL	FB Thresh Far	15.000	mv	800.000	1025.000
RAL	FB Thresh Near	10.000	mv	800.000	1025.000
RAL	FB Thresh Radial	10.000	mv	800.000	1025.000
RAL	Fluid Travel Time	200.000	usec/ft	800.000	1025.687

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					
1426XA	-7.250	CCL							
1426XA	-5.390	GR							

Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

Company : EXXONMOBIL PRODUCTION COMPANY

Well : FRU 197-33B3

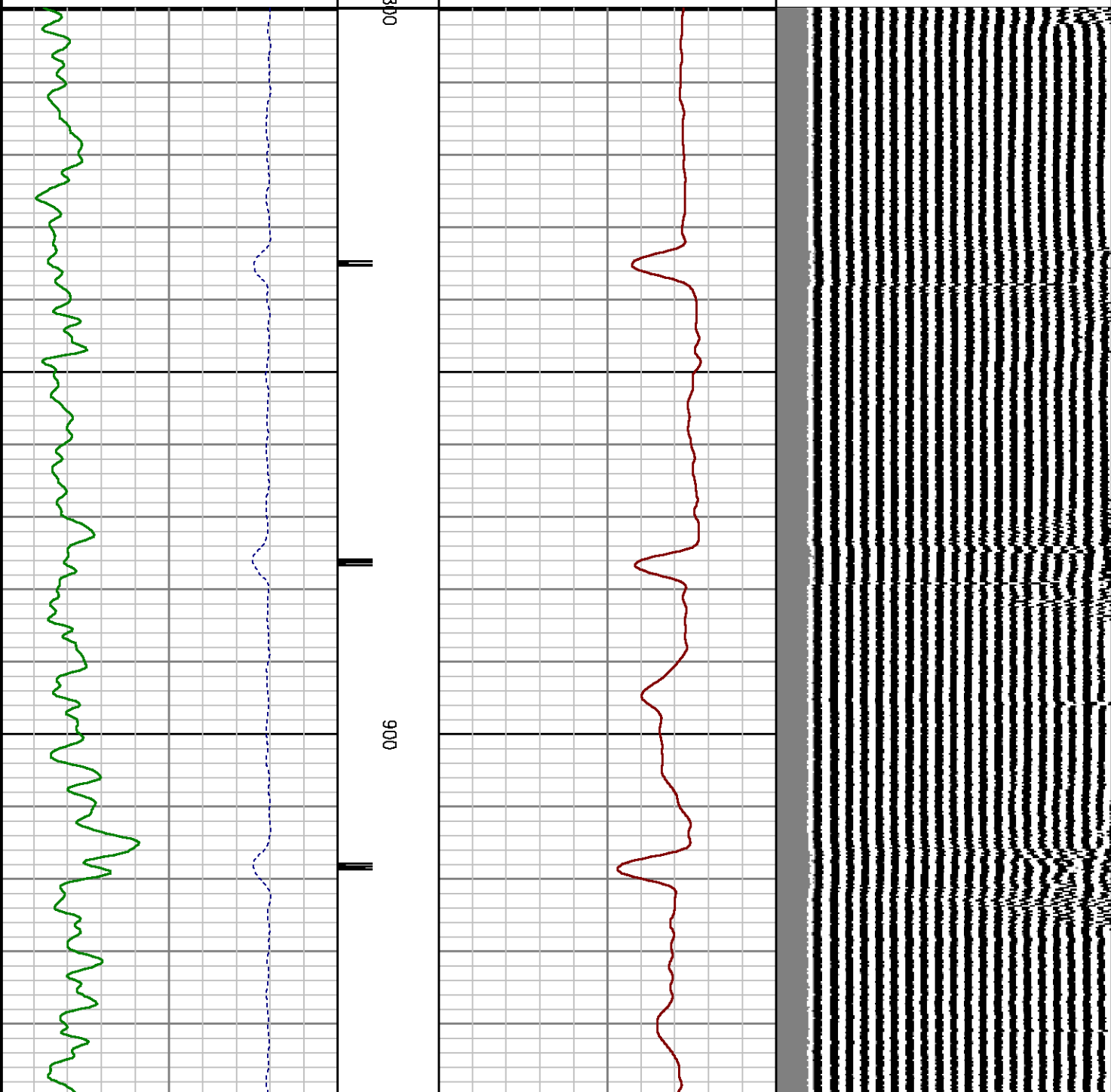
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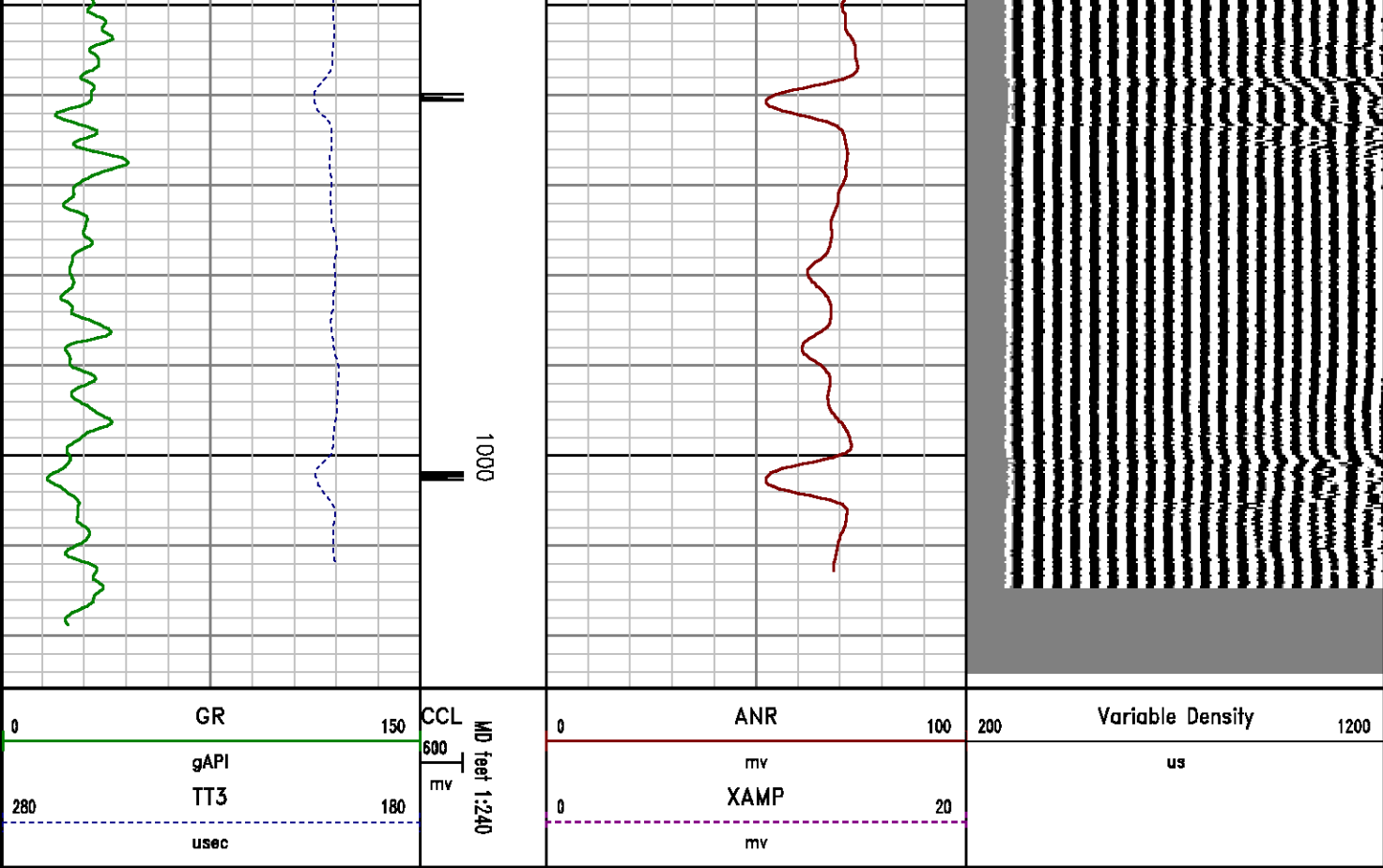
Mode : PlotMgr 5.4.504

Interval : 799.75 - 1025.75 feet UP

Created : 9/15/2010 1:32:47 AM

0	GR	150	CCL	0	ANR	100	200	Variable Density	1200
	gAPI		500		mv				
280	TT3	180	mv	0	XAMP	20		us	
	usec				mv				





CALIBRATION SUMMARY

GAMMA RAY

Calibration File: C:\case\calver\GR\456S1.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Mon Aug 30 11:15:38 2010 TOOL SERIES: 1426XA ASSET: 456 SEQ: S1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K DA612	79.82	235.87	1.186	94.63	279.63	185.00

Verification File: C:\case\calver\GR\456S1.VP

PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Mon Aug 30 11:17:50 2010 TOOL SERIES: 1426XA ASSET: 456 SEQ: S1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K DA612	73.36	240.09	1.186	86.98	284.64	197.66

RALSHP

Shop Calibration: C:\case\calver\RALSHP\957S14.shp.cal

SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Sep 14 18:35:56 2010 TOOL SERIES: 1426XA ASSET: 957 SEQ: S14

Tool Delay [usec] Tank OD Tank Wt Tank ID

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	<input type="text" value="219"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="58"/>	<input type="text" value="117"/>	<input type="text" value="-0.127"/>	<input type="text" value="100.00"/>	<input type="text" value="0.24"/>
3 Ft. Receiver	<input type="text" value="219"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="83"/>	<input type="text" value="101"/>	<input type="text" value="-0.248"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
5 Ft. Receiver	<input type="text" value="327"/>	<input type="text" value="326"/>	<input type="text" value="30"/>	<input type="text" value="131"/>	<input type="text" value="158"/>	<input type="text" value="0.266"/>	<input type="text" value="150.00"/>	<input type="text" value="0.26"/>
Radial #1	<input type="text" value="221"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="-0.591"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
Radial #2	<input type="text" value="222"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="-0.496"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
Radial #3	<input type="text" value="220"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="0.061"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
Radial #4	<input type="text" value="219"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="0.156"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
Radial #5	<input type="text" value="218"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="0.282"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
Radial #6	<input type="text" value="216"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="0.108"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
Radial #7	<input type="text" value="216"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="0.262"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>
Radial #8	<input type="text" value="219"/>	<input type="text" value="216"/>	<input type="text" value="30"/>	<input type="text" value="112"/>	<input type="text" value="74"/>	<input type="text" value="0.076"/>	<input type="text" value="100.00"/>	<input type="text" value="0.23"/>

RALFLD

Well-site Calibration: C:\case\calver\RALFLD\957S14 fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Sep 14 18:37:33 2010 TOOL SERIES: 1426XA ASSET: 957 SEQ: S14

Tool Delay [usec] Casing OD Casing Wt Casing ID

RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Well-site Factor	Amp. Ref [mV]
CAL Pulse	<input type="text" value="58"/>	<input type="text" value="117"/>	<input type="text" value="-0.024"/>	<input type="text" value="0.000"/>	<input type="text" value="1.00"/>	<input type="text" value="100.000"/>
3 Ft. Receiver	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-1.853"/>			
5 Ft. Receiver	<input type="text" value="314"/>	<input type="text" value="25"/>	<input type="text" value="-0.690"/>			
Radial #1	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-2.251"/>			
Radial #2	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-2.471"/>			
Radial #3	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-0.727"/>			
Radial #4	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-1.159"/>			
Radial #5	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-0.752"/>			
Radial #6	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-0.746"/>			
Radial #7	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-1.190"/>			
Radial #8	<input type="text" value="198"/>	<input type="text" value="25"/>	<input type="text" value="-0.880"/>			

TOOL DIAGRAM

OTA SHORT CABLE HEAD

PROBE 2 3/4 DUAL RECEIVER RADII

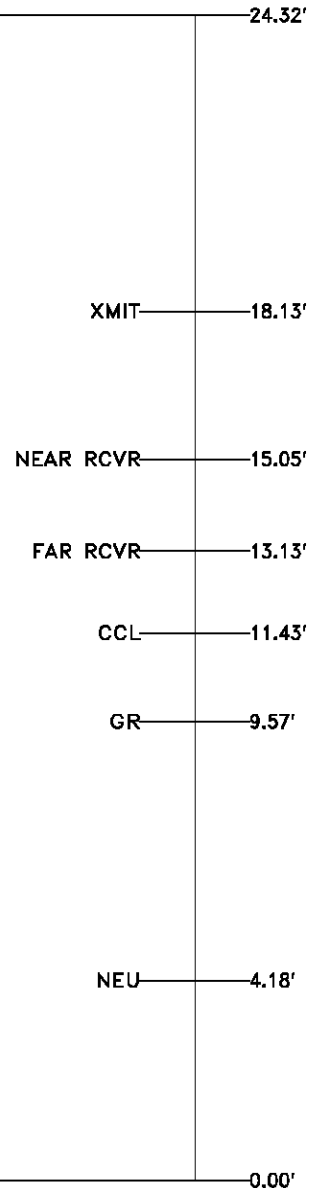
Series	1426XA
Mnemonic	PROB
Diameter	2.75"
Length	11.17'
Measure Point	0.75' FAR RCVR
Measure Point	2.67' NEAR RCVR
Measure Point	5.75' XMIT
Temp Rating	350.00 °F
Press Rating	18000.00 PSI

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

CENTRALIZER

Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb



Total Length: 24.32'
 Total Weight: Not Available
 Max Diameter: 0" 3.12"

Baker Atlas



County	RIO BLANCO	State	COLORADO	05103114330000
Location	2395' FNL & 1395' FEL		Elevations	
			KB 8476 ft	
			DF 8475 ft	
			GL 8448 ft	
SEC	33	TWP	1S	RGE 97W