



Radial Cement Bond
Variable Density Log
W/Gamma Ray/CCL

Company Noble Energy

Well Rohn State LD09-64-1HN

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-37528

BHL: 1650" FSL & 660' FWL

SEC 9 TWP 9N RGE 58W

Permanent Datum Ground Level Elevation 4716'

Log Measured From 30' Kelly Bushing

Drilling Measured From KB

Other Services
None

Elevation
K.B. 4746'
D.F. 4745'
G.L. 4716'

Date November 15, 2013

Run Number 1

Depth Driller 9687'

Depth Logger 6076'

Bottom Logged Interval 6062'

Top Log Interval Surface

Open Hole Size 8.125

Type Fluid Fresh Water

Density / Viscosity 8.33

Max. Recorded Temp. -

Estimated Cement Top 1752'

Time Well Ready 20.01

Time Logger on Bottom 22.55

Equipment Number 13033

Location Brighton

Recorded By C. Rall

Witnessed By B. Mansfield

Borehole Record

Run Number

Bit

From

To

Size

Weight

From

To

Tubing Record

Run Number

Bit

From

To

Size

Weight

From

To

One

Two

Three

Four

Casing Record

Surface String

Prot. String

Production String

Liner

Short Joint

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Primary Log on Well. Well logged using 30' KB.

Main Pass and Repeat Pass logged with zero pressure on surface

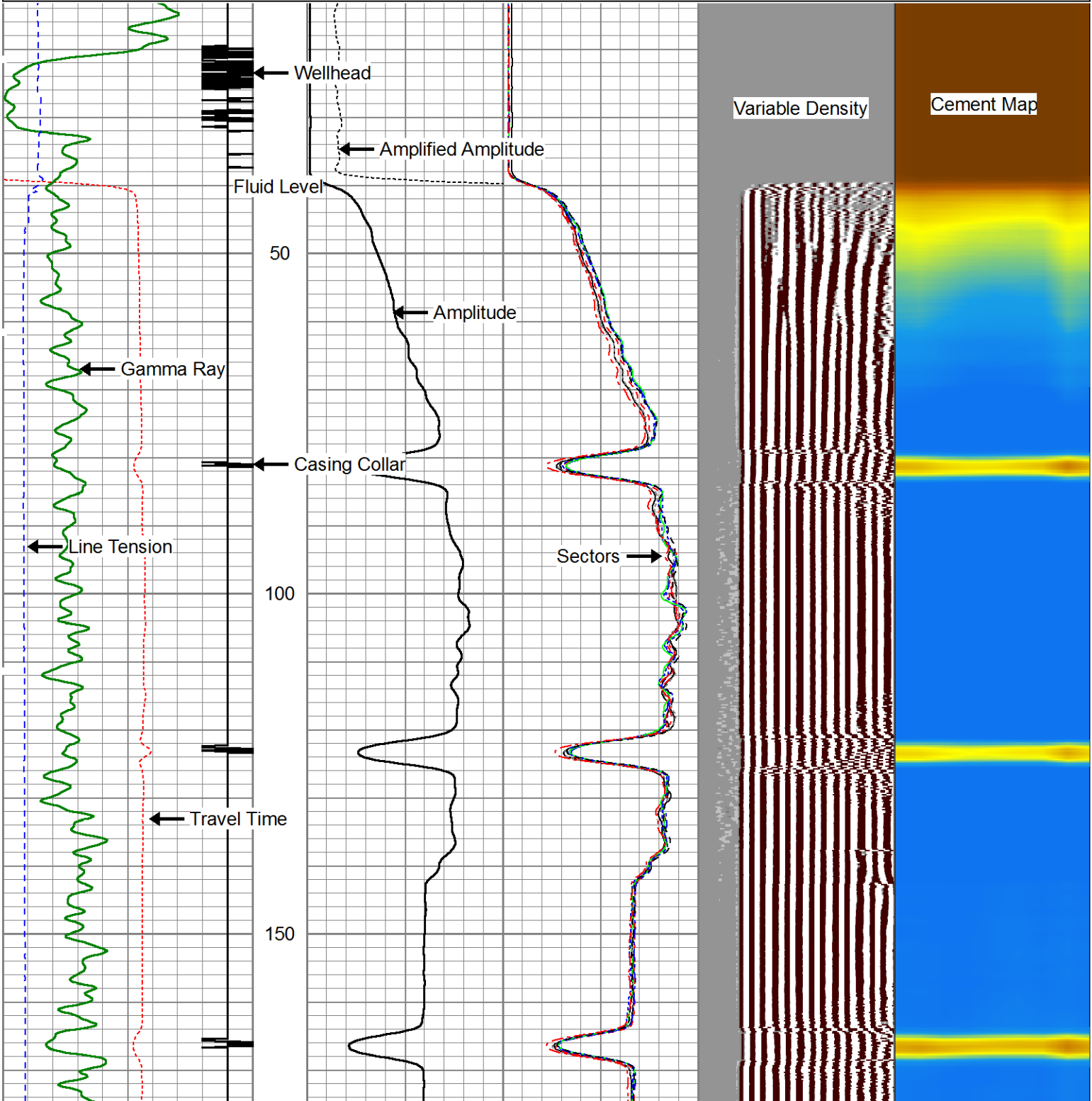
Estimated top of cement 1752'

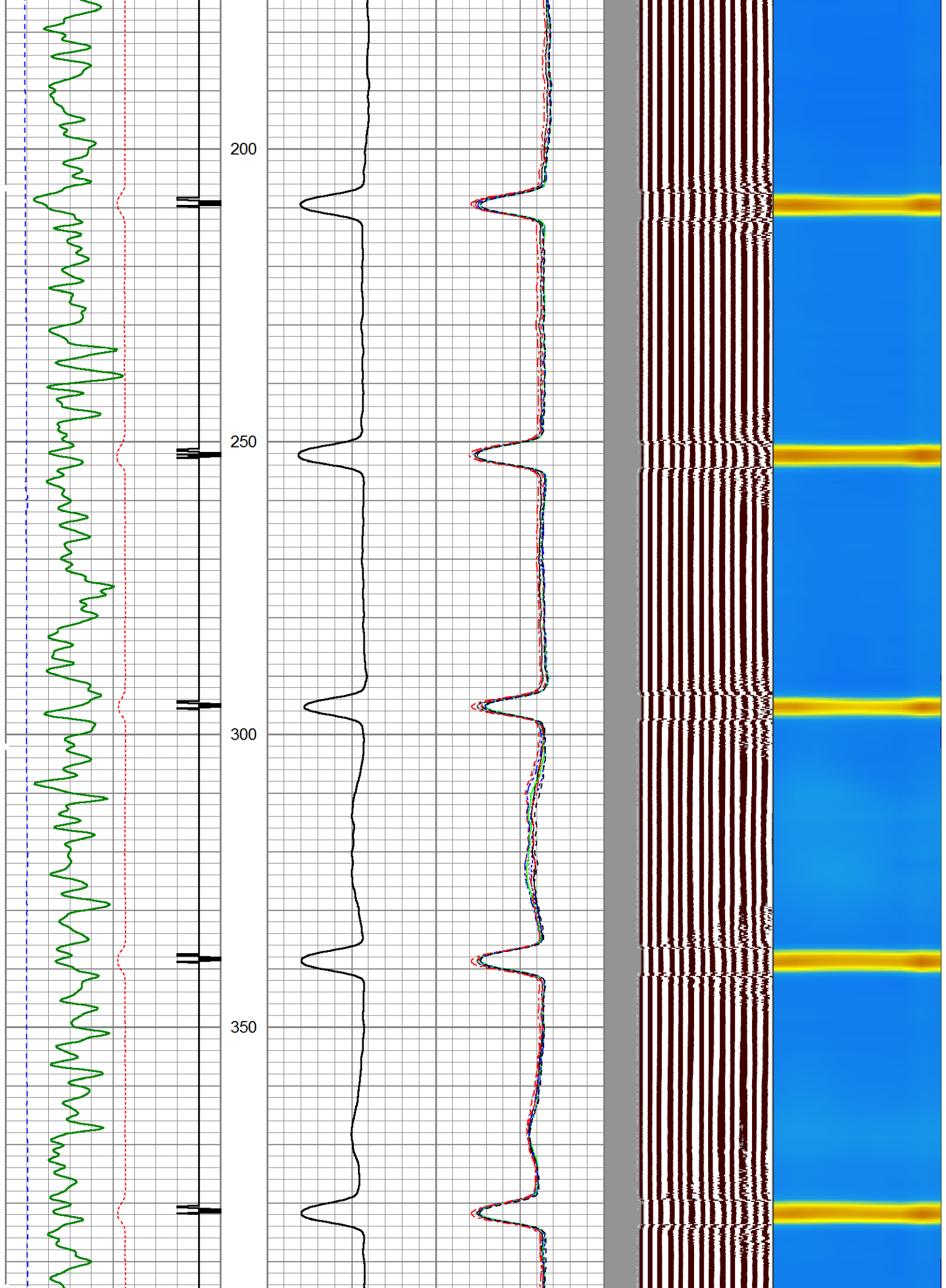
Thank you for using Allied Wireline.
(303)659-4609

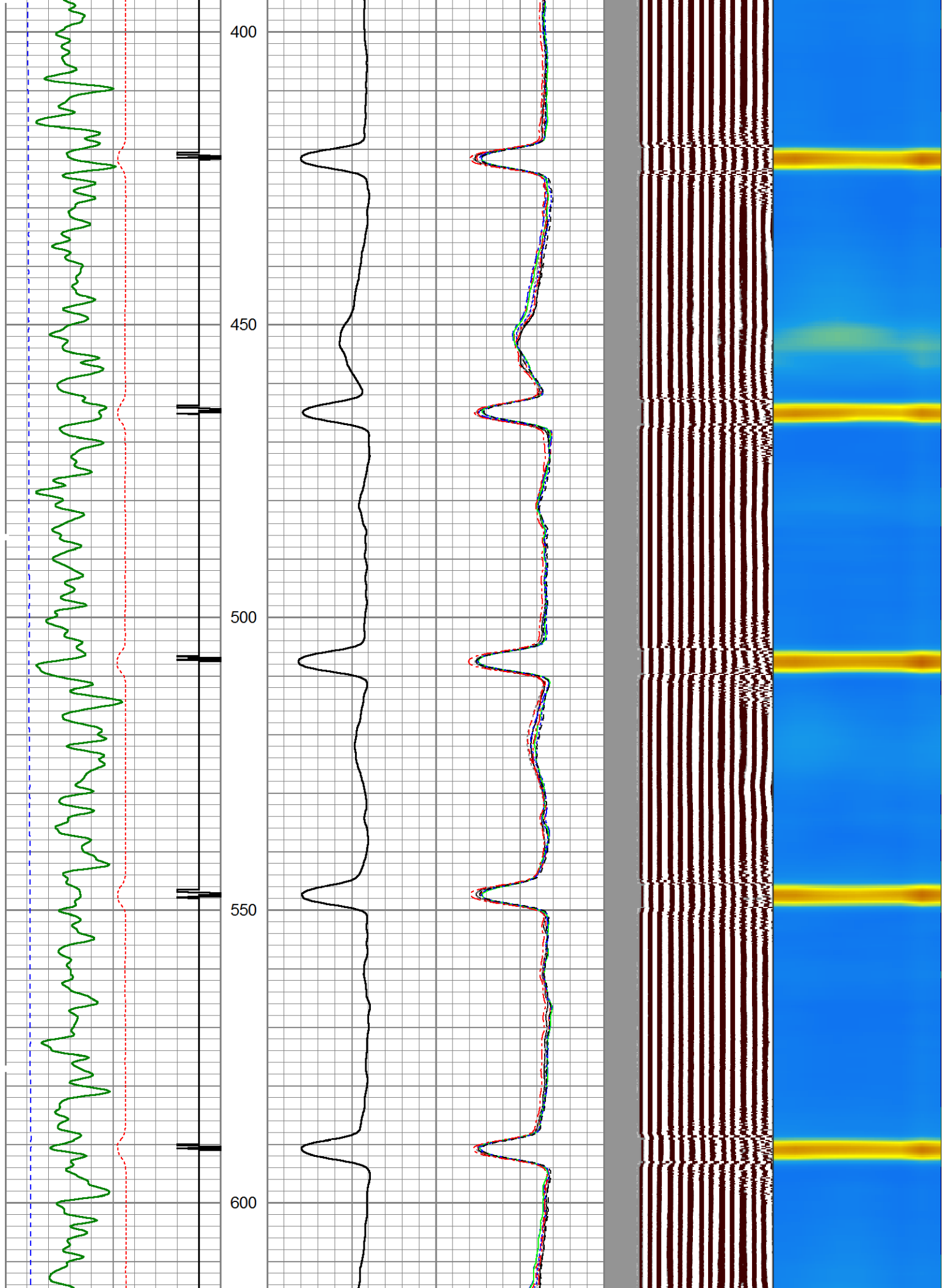


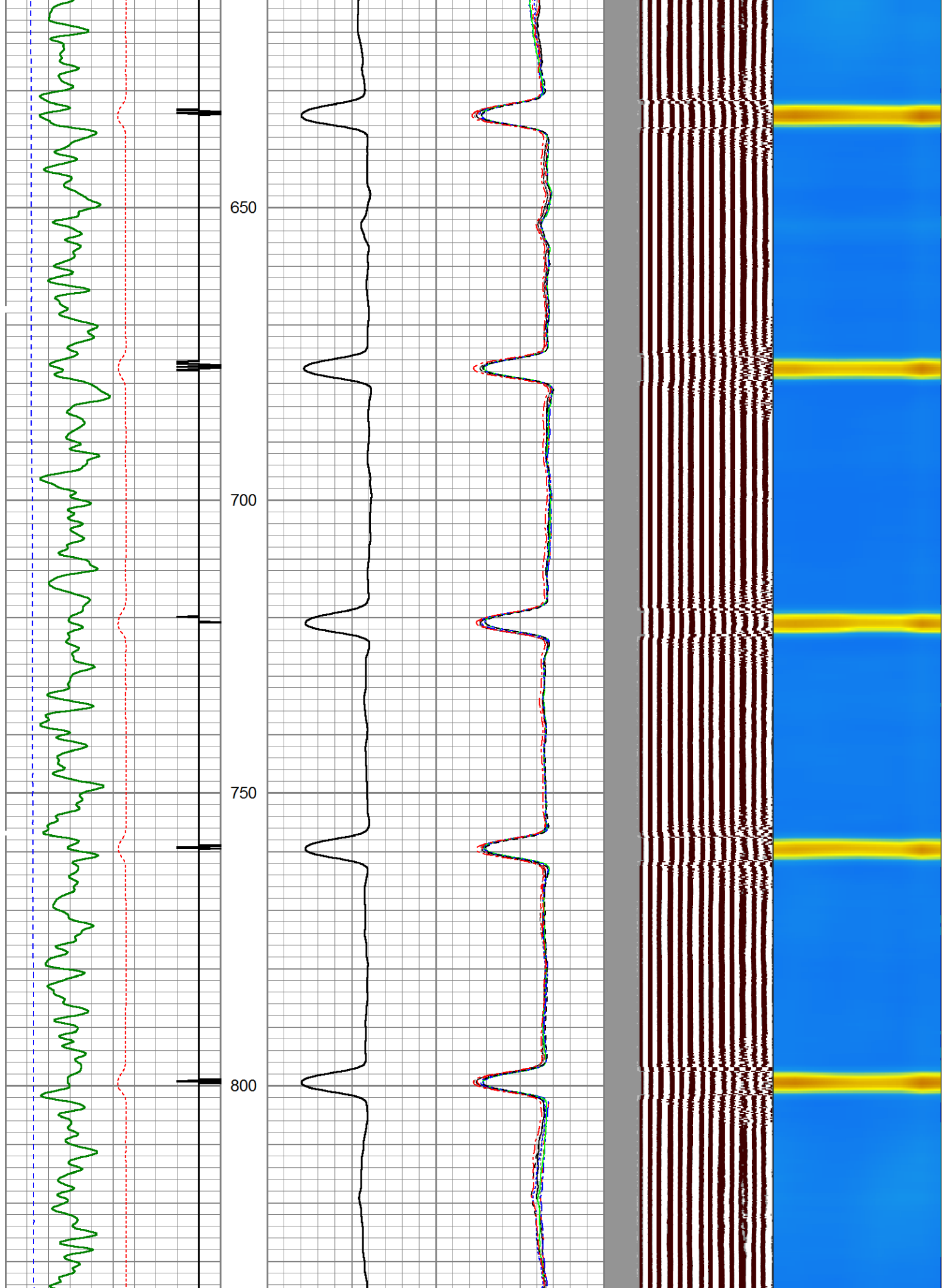
Main Pass (0 PSI)

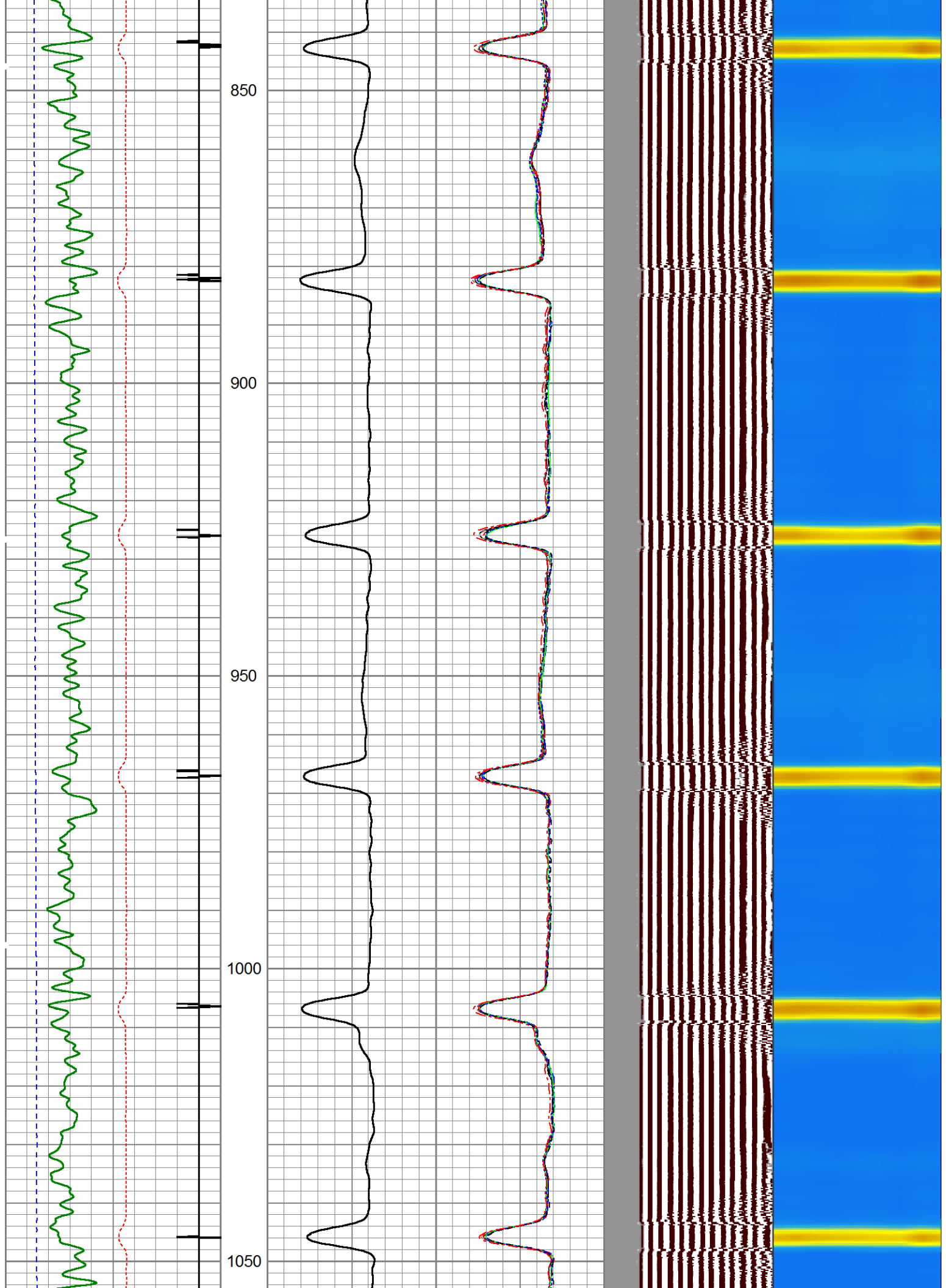
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	2000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150				
						-5	AMPS7	150				
						-5	AMPS8	150				

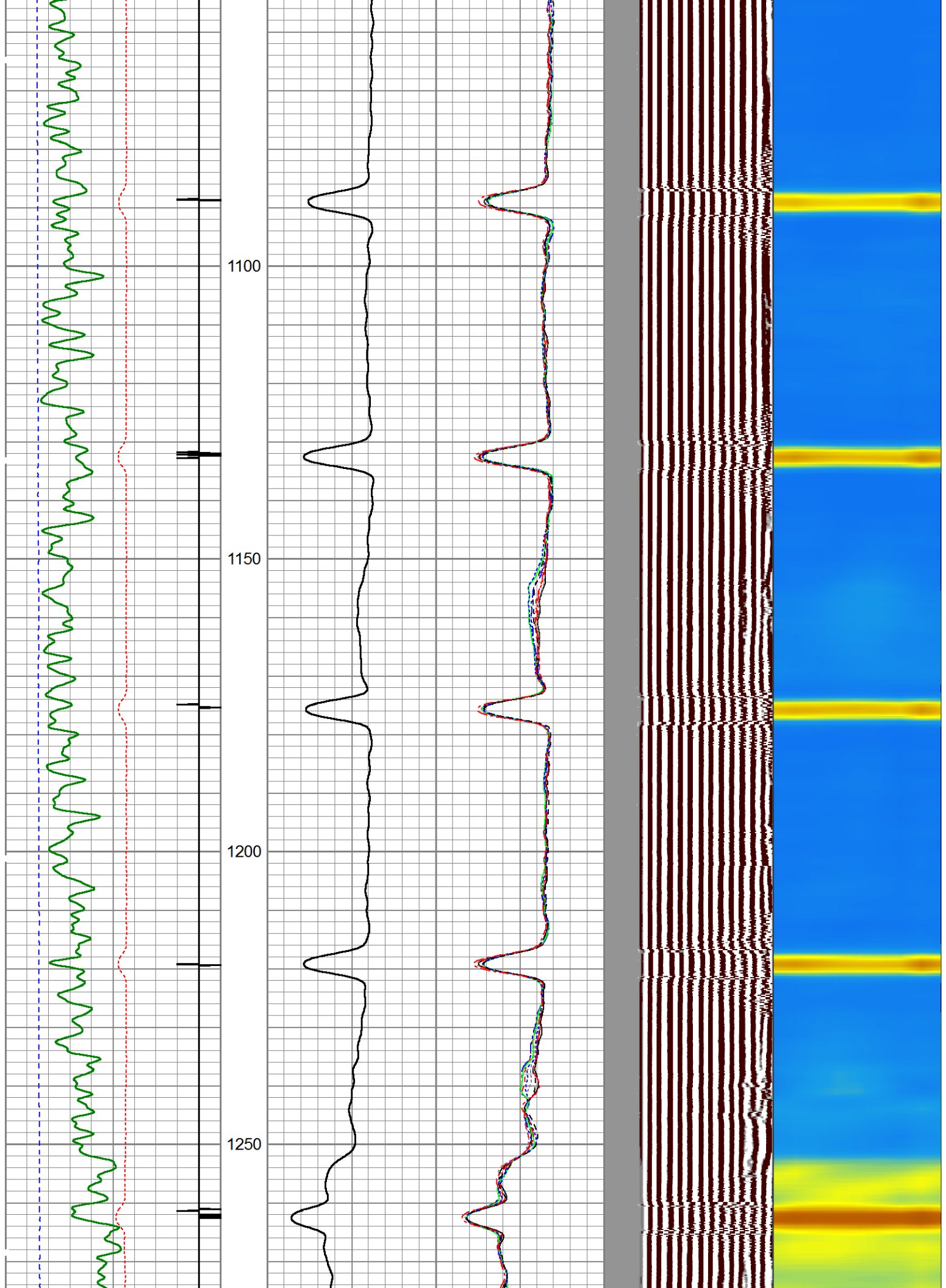


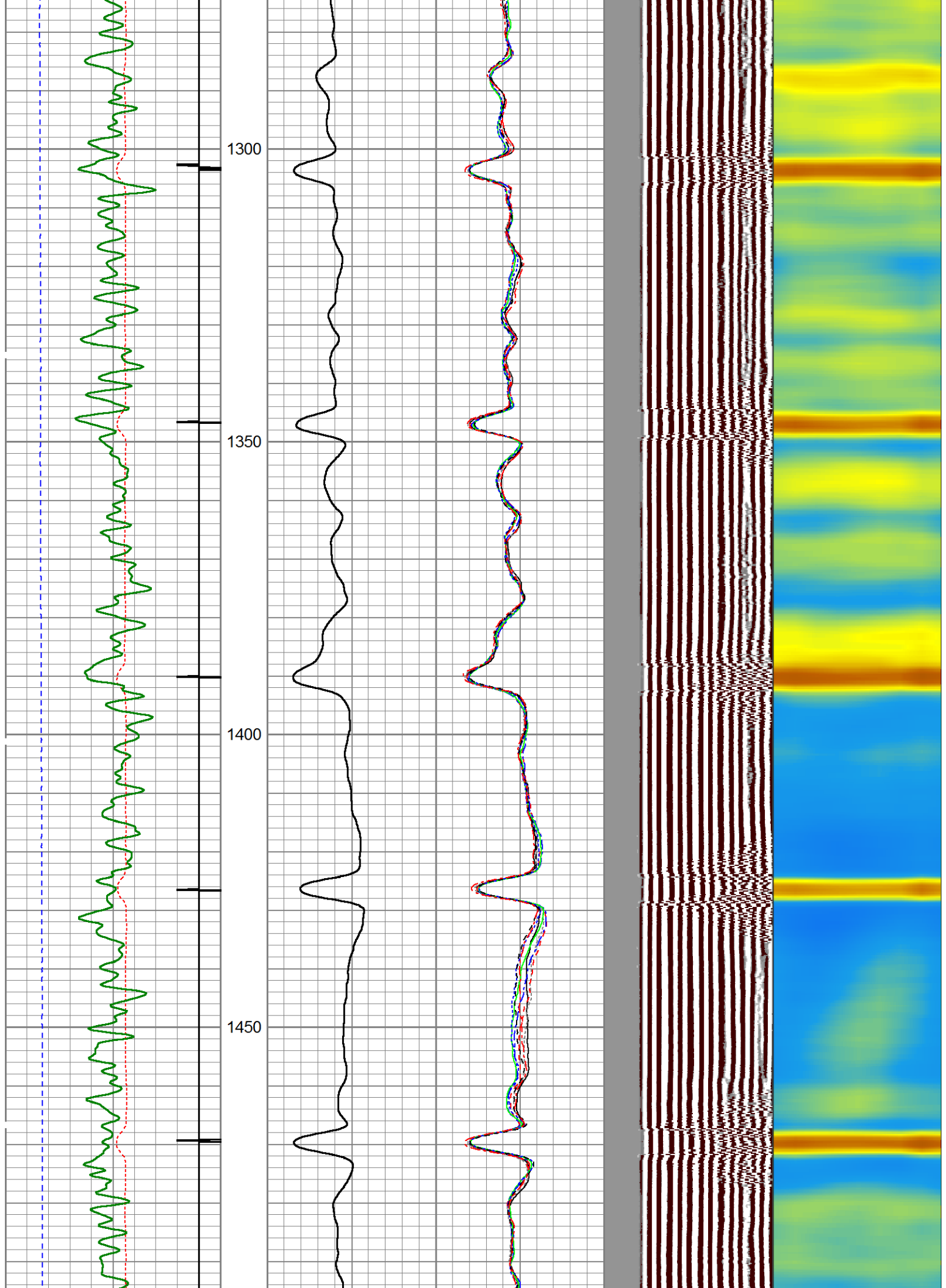


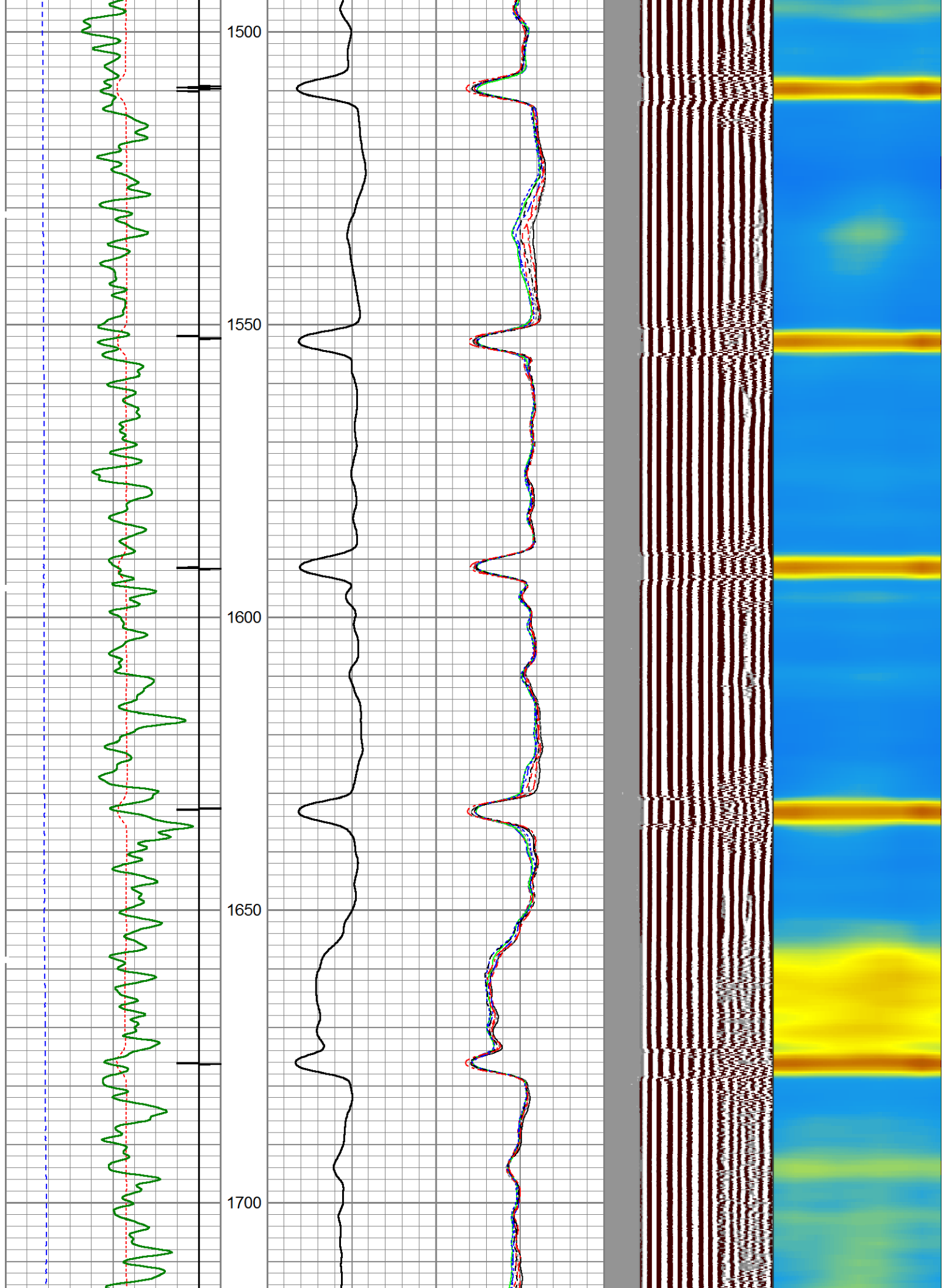


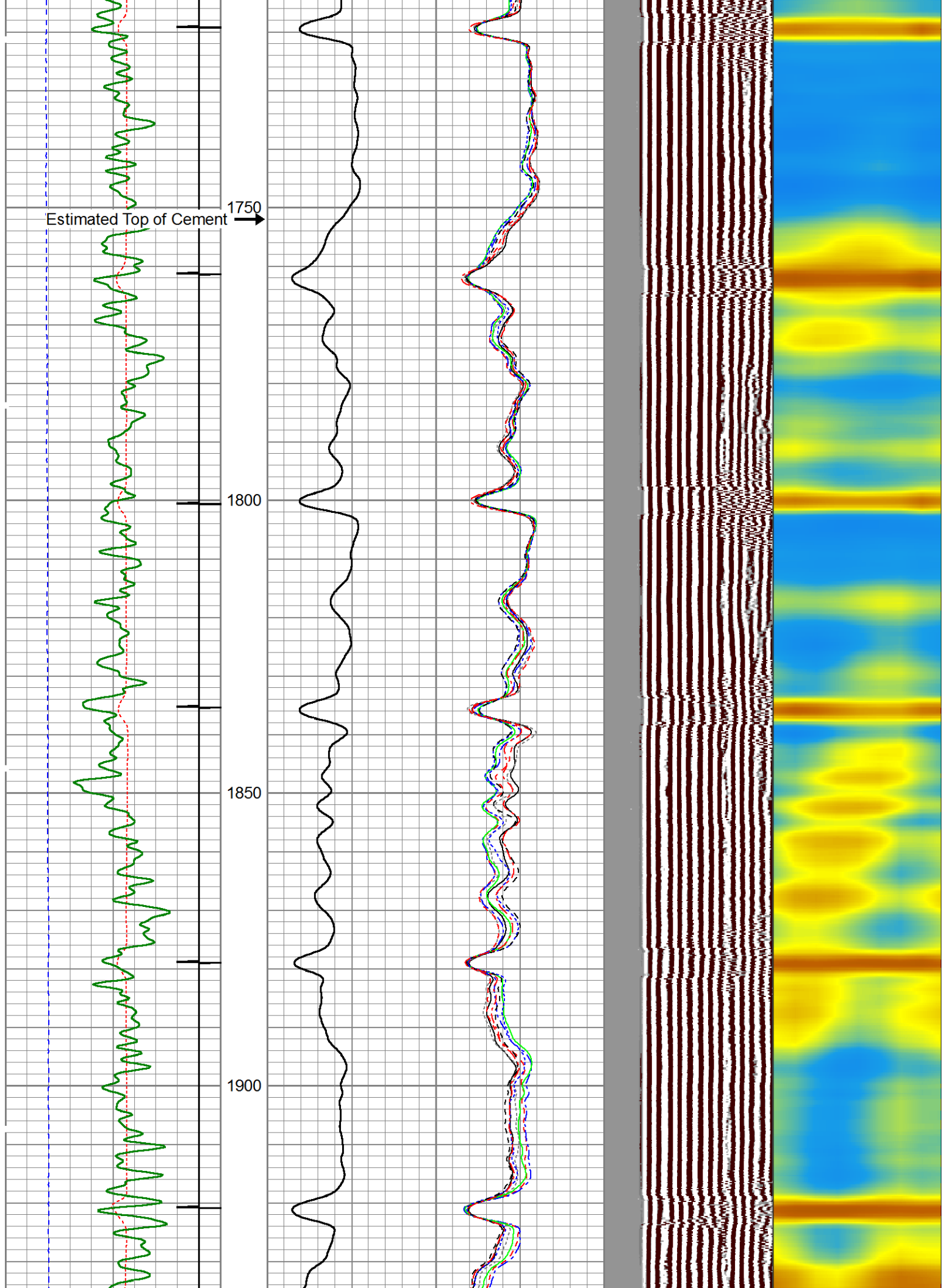


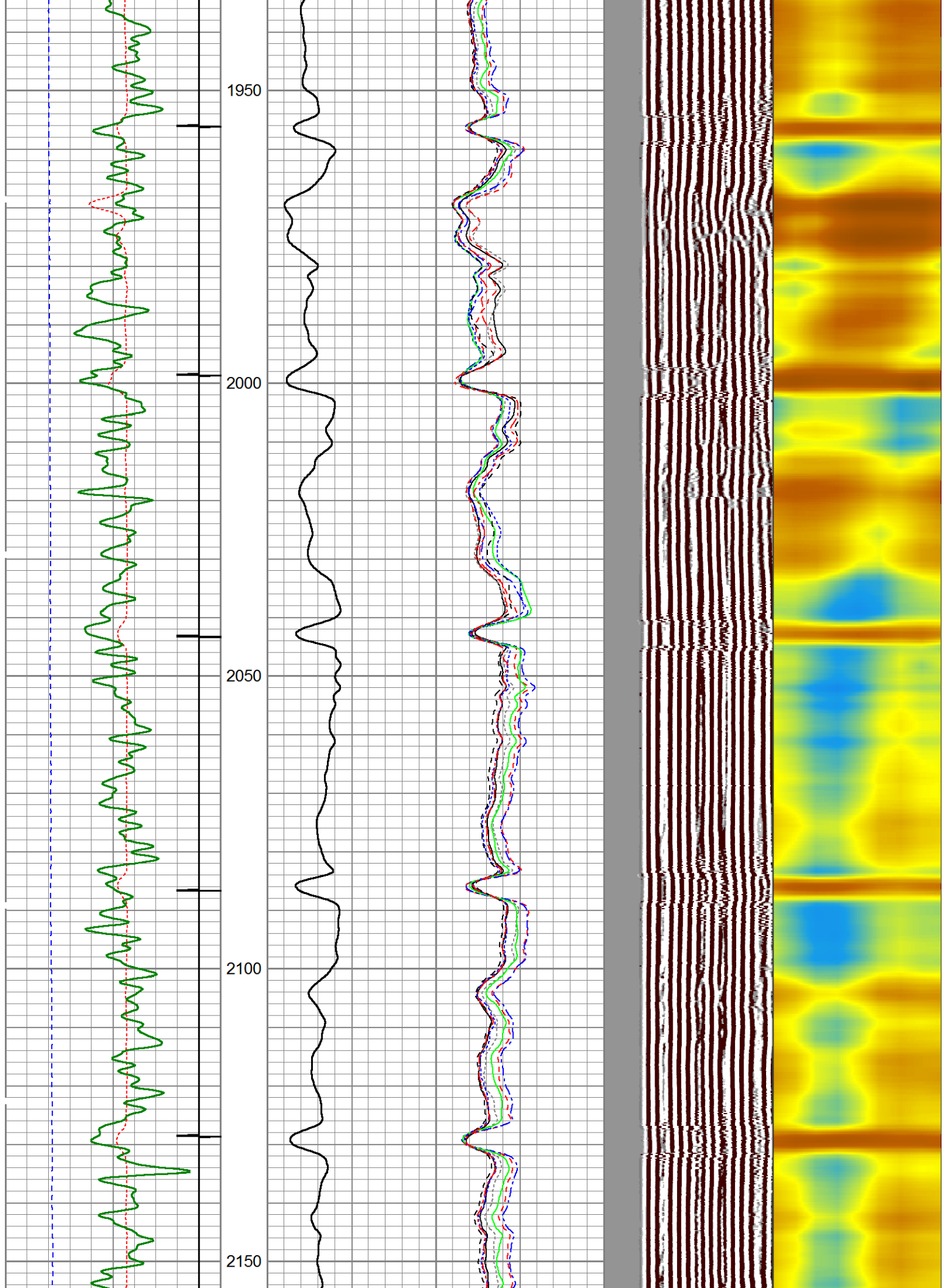


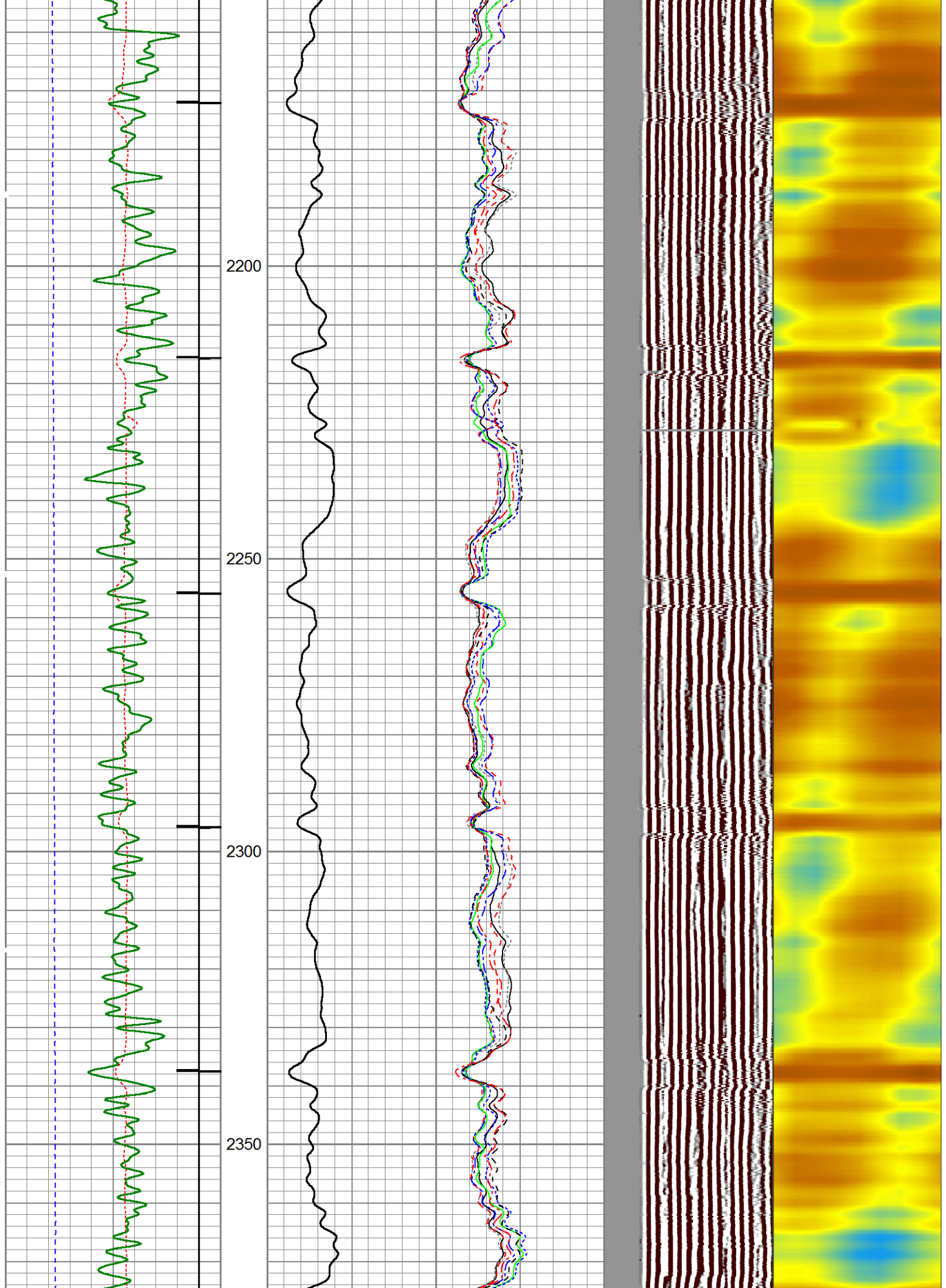


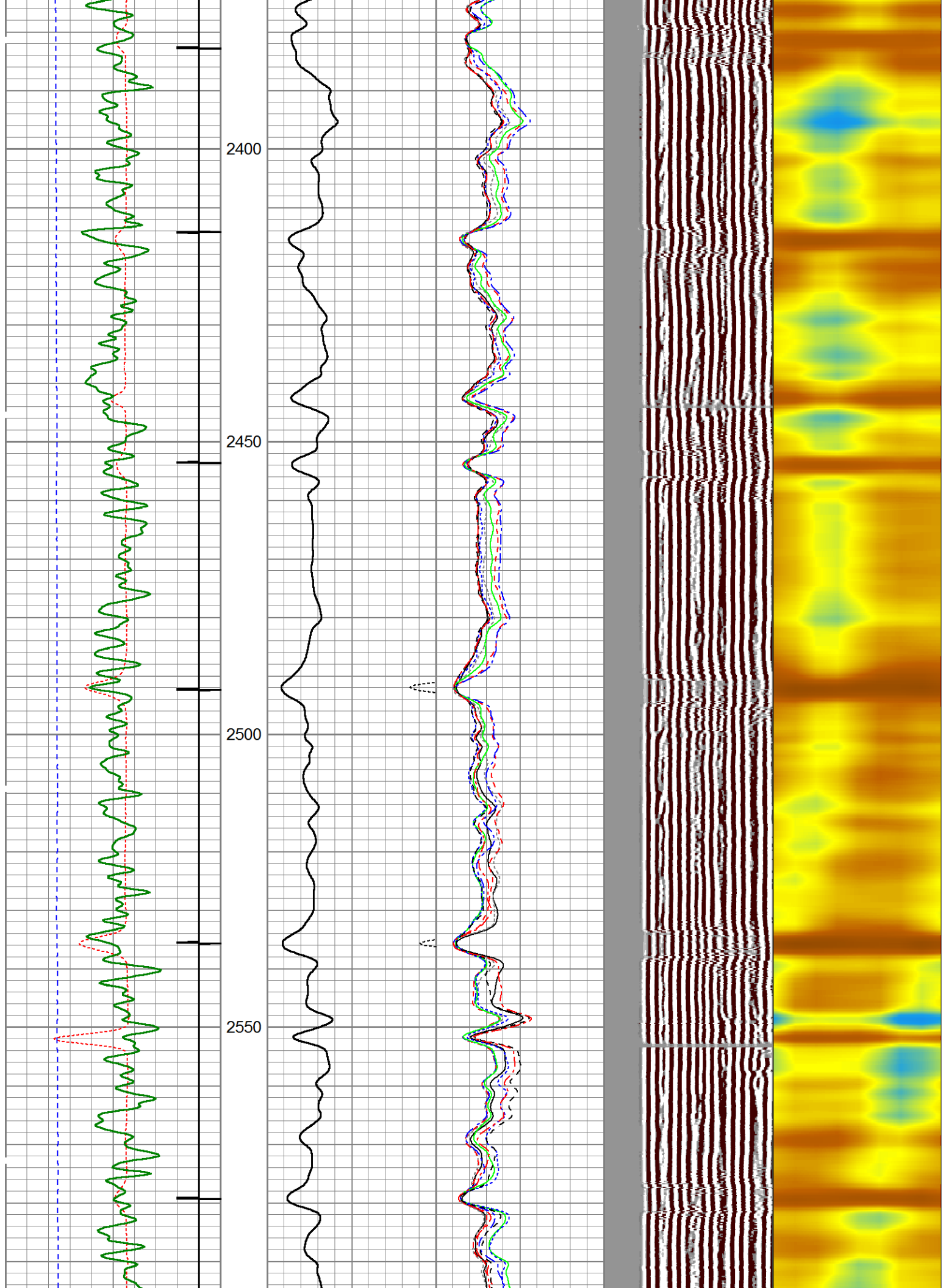


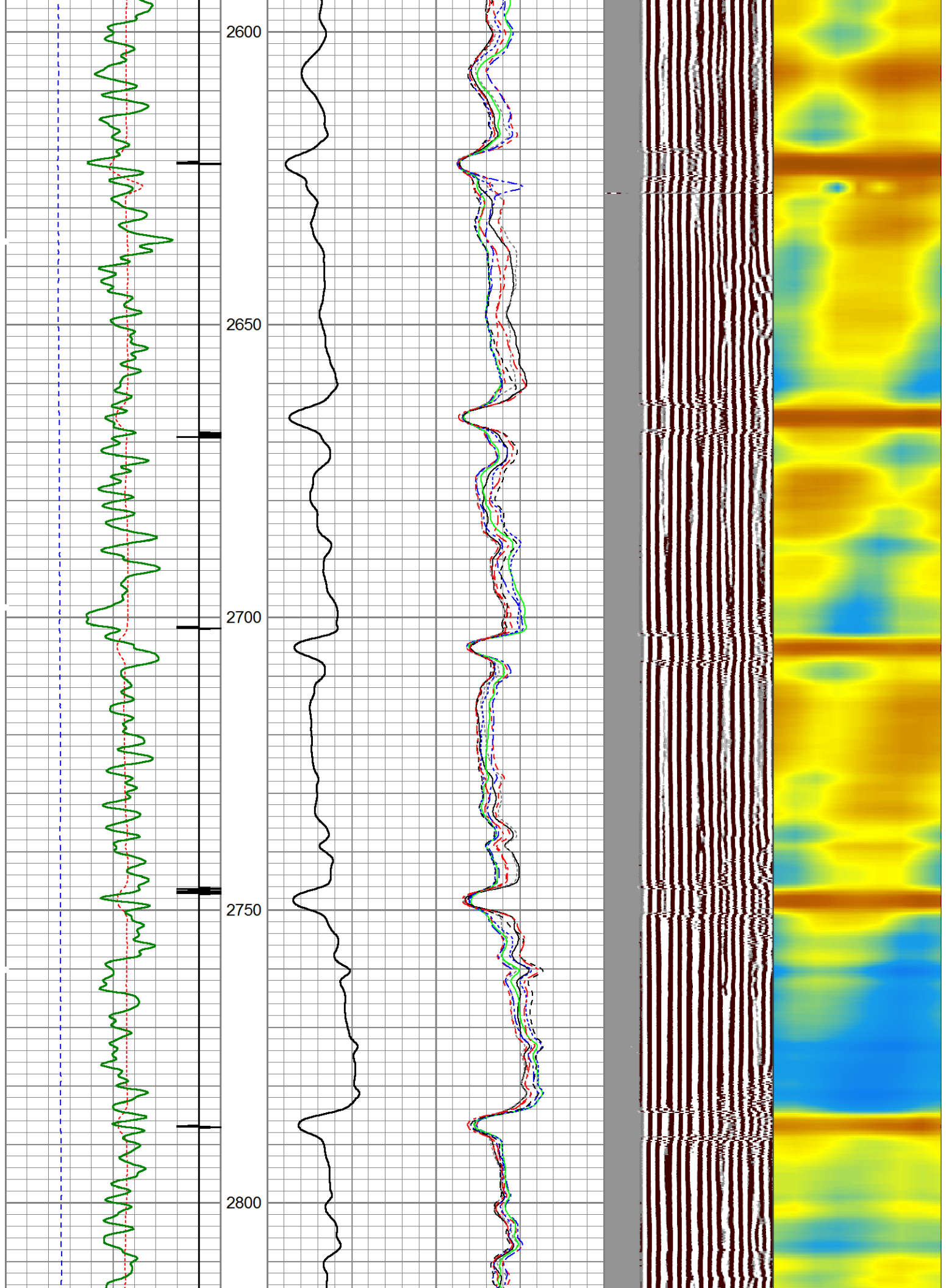


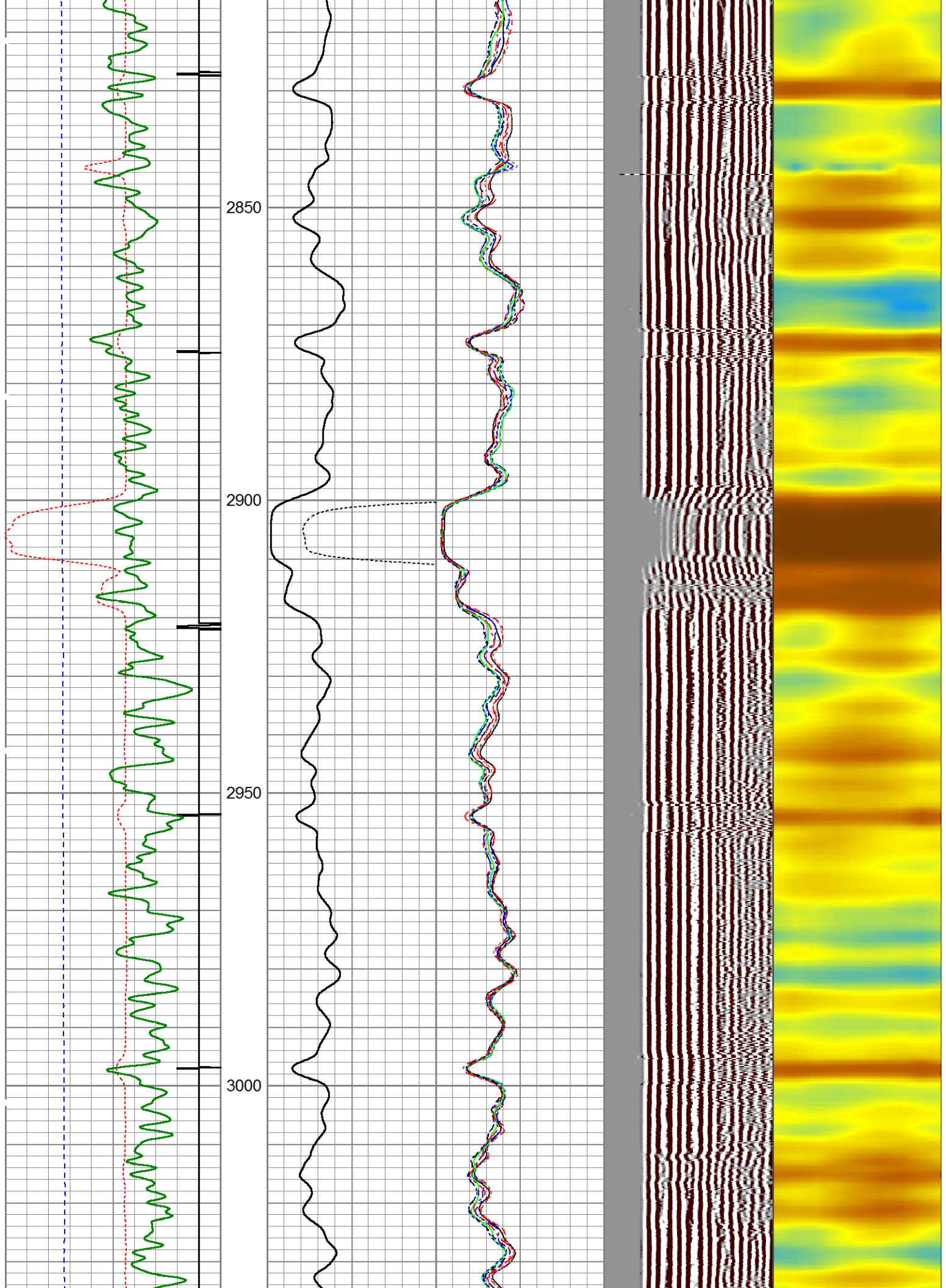


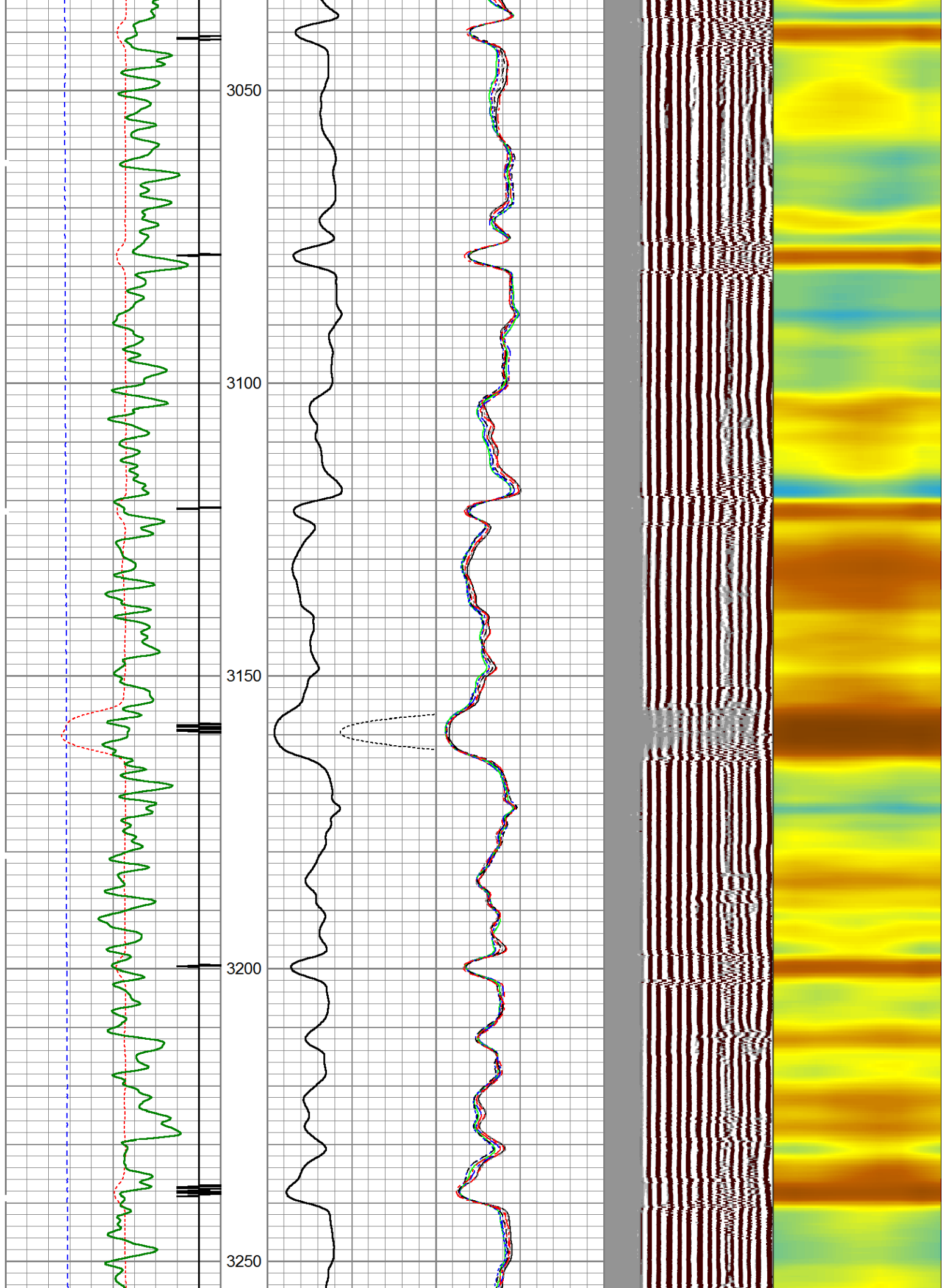


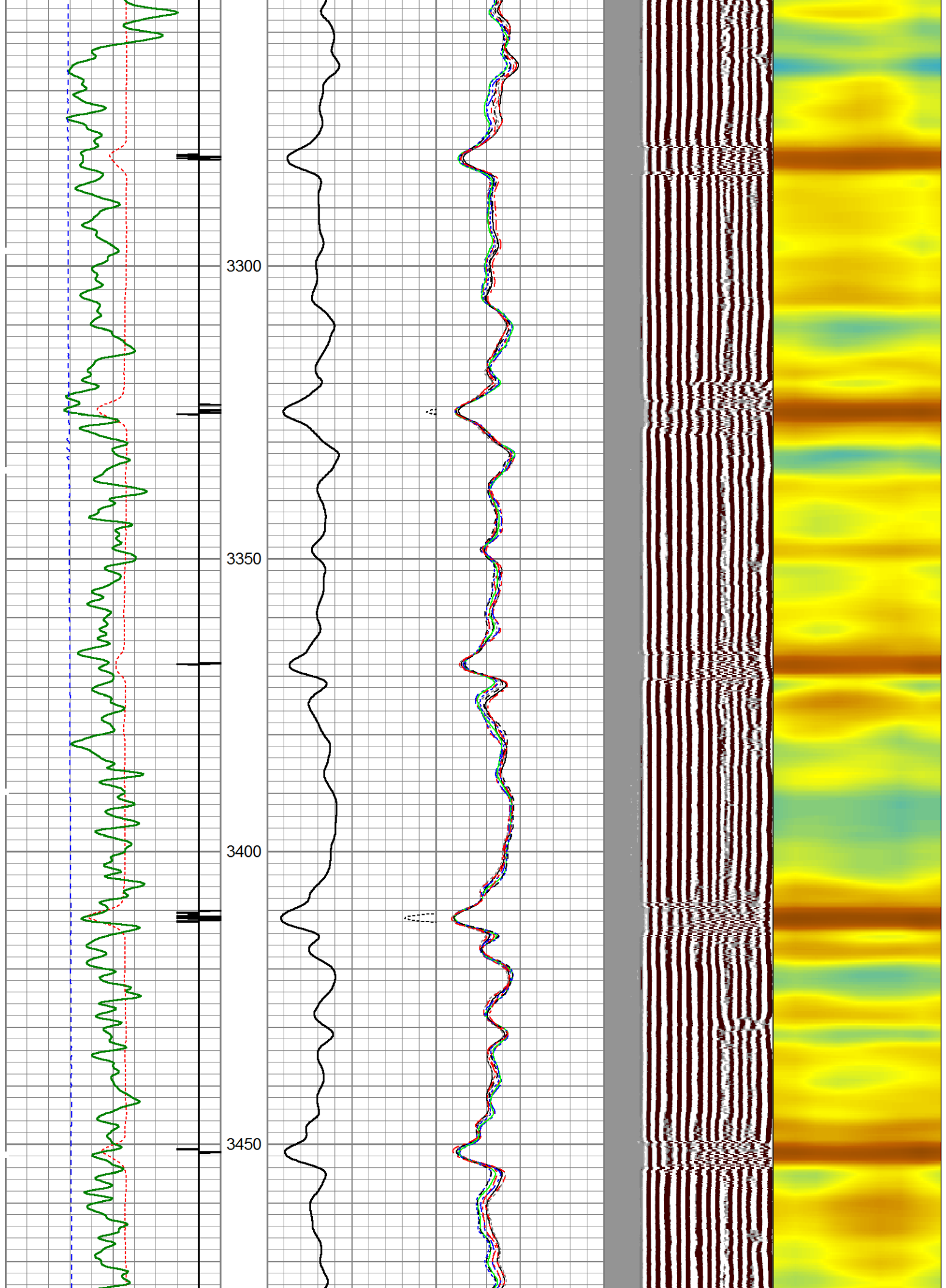


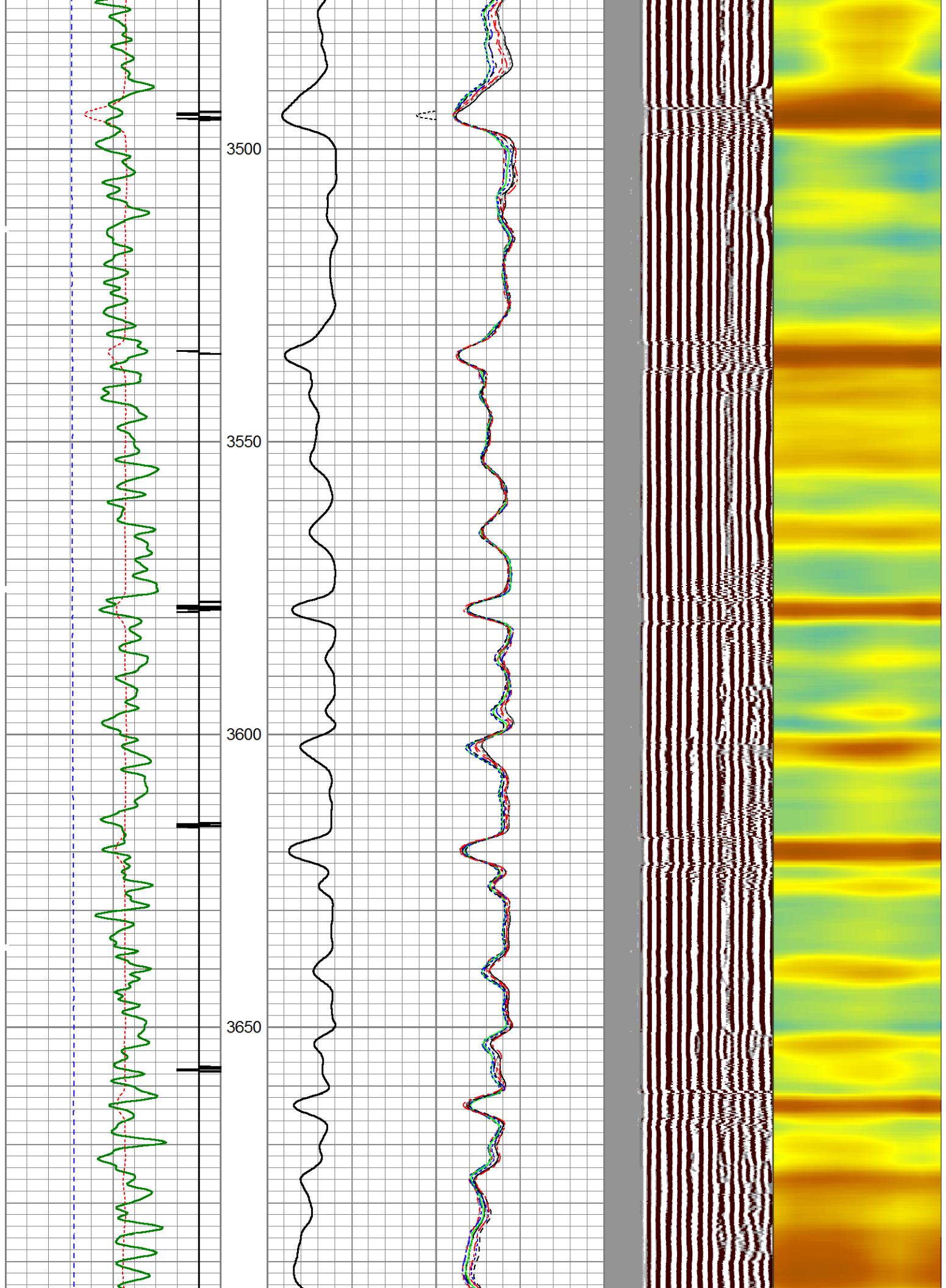


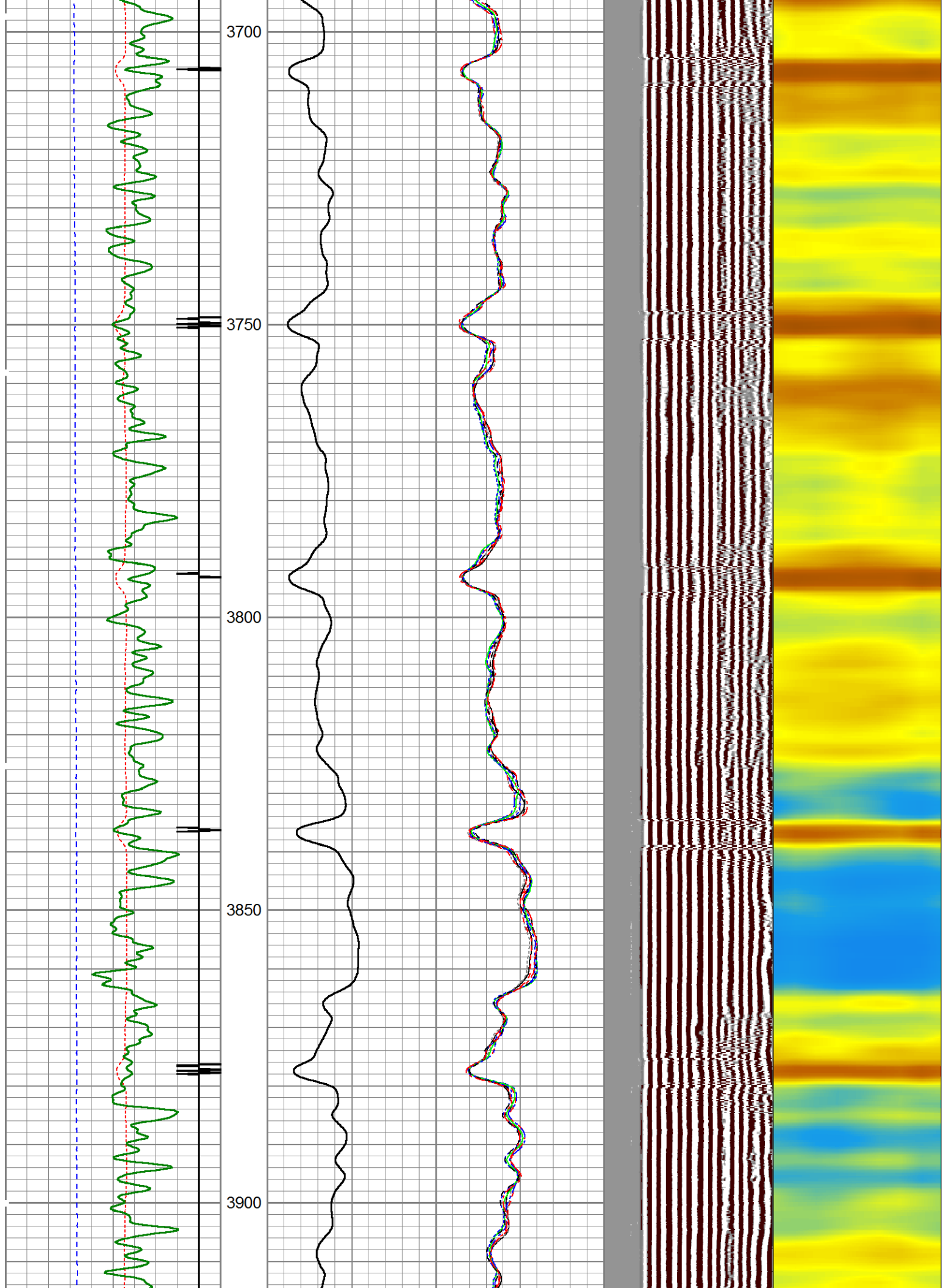


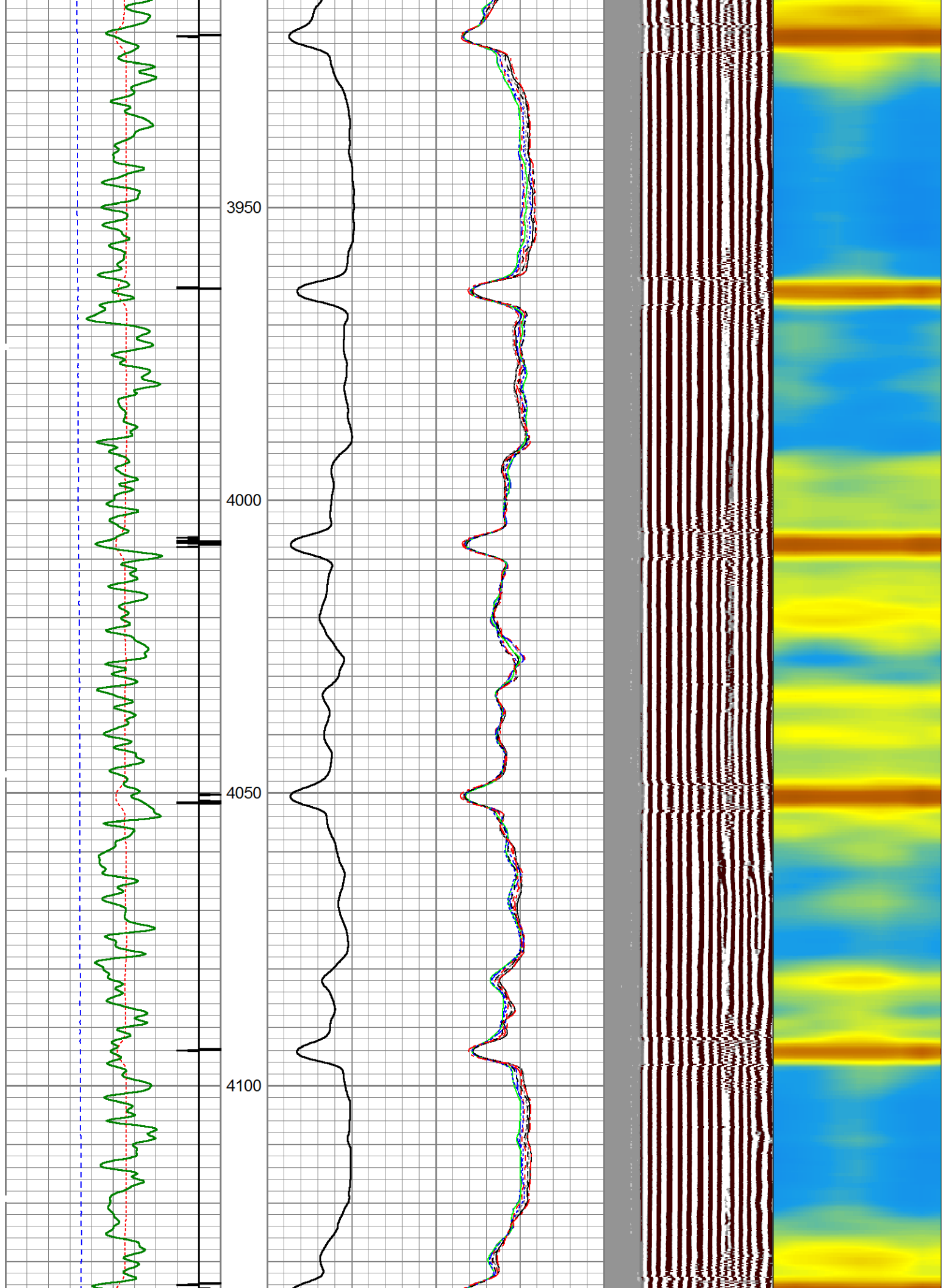


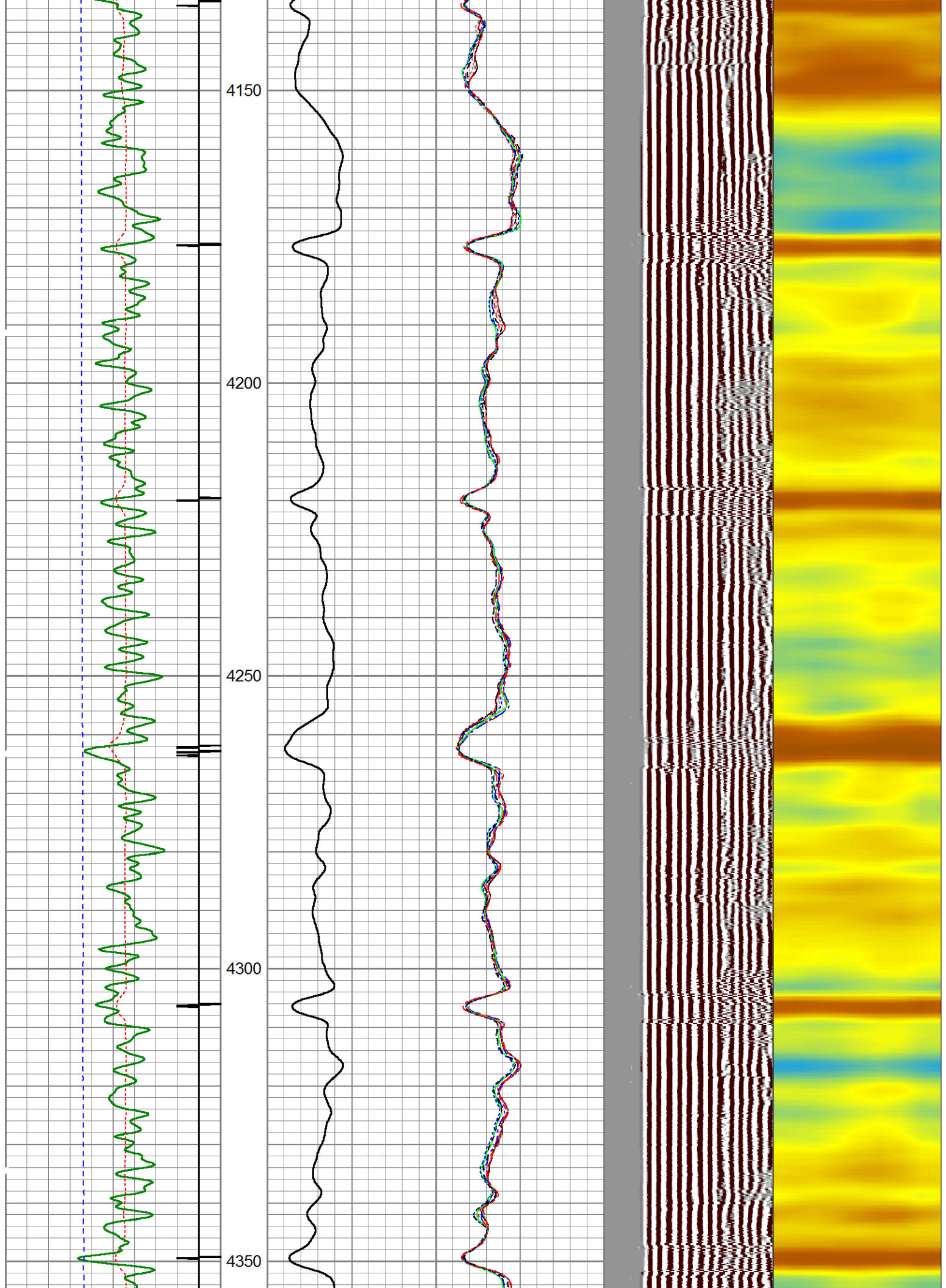


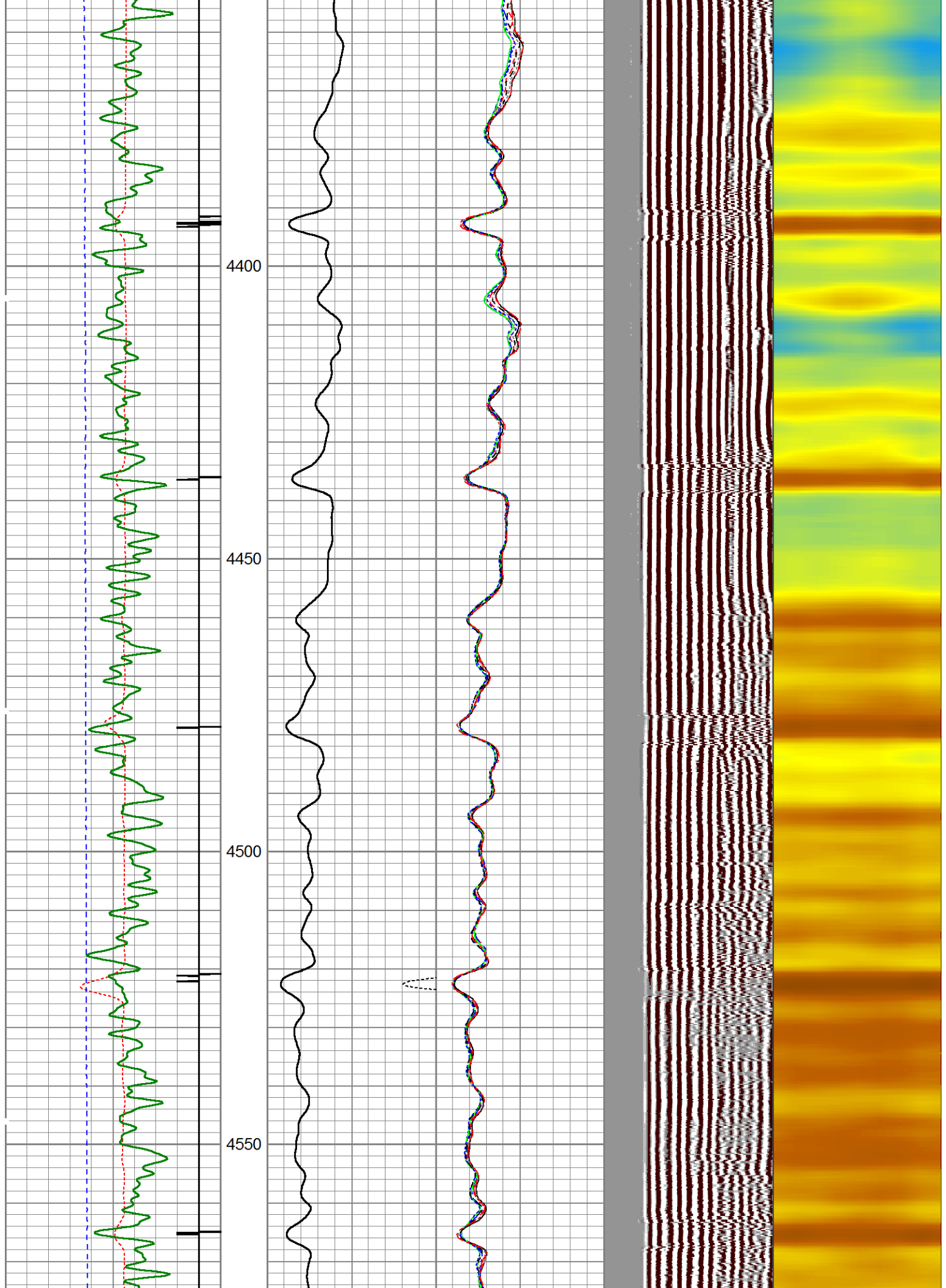


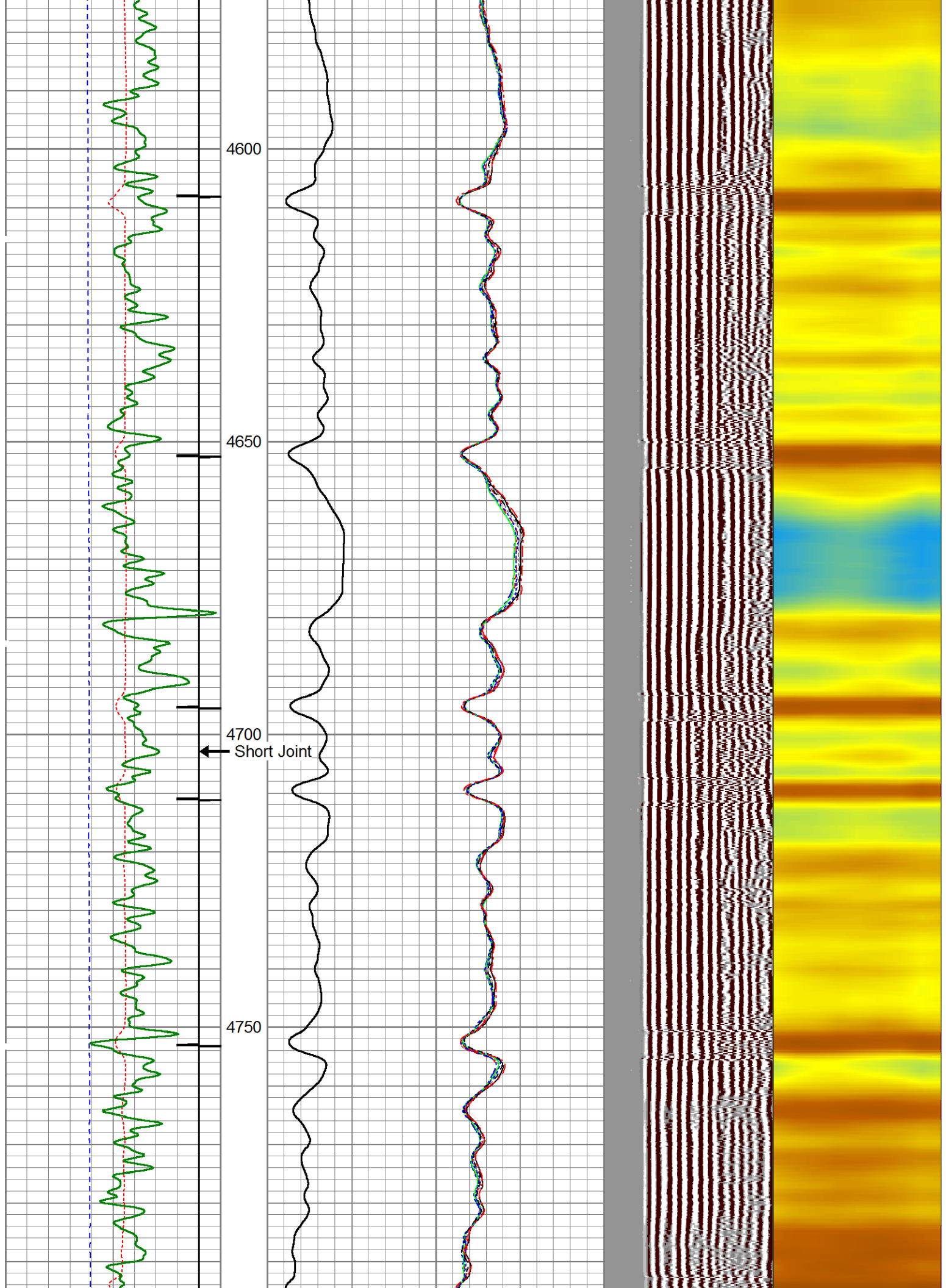


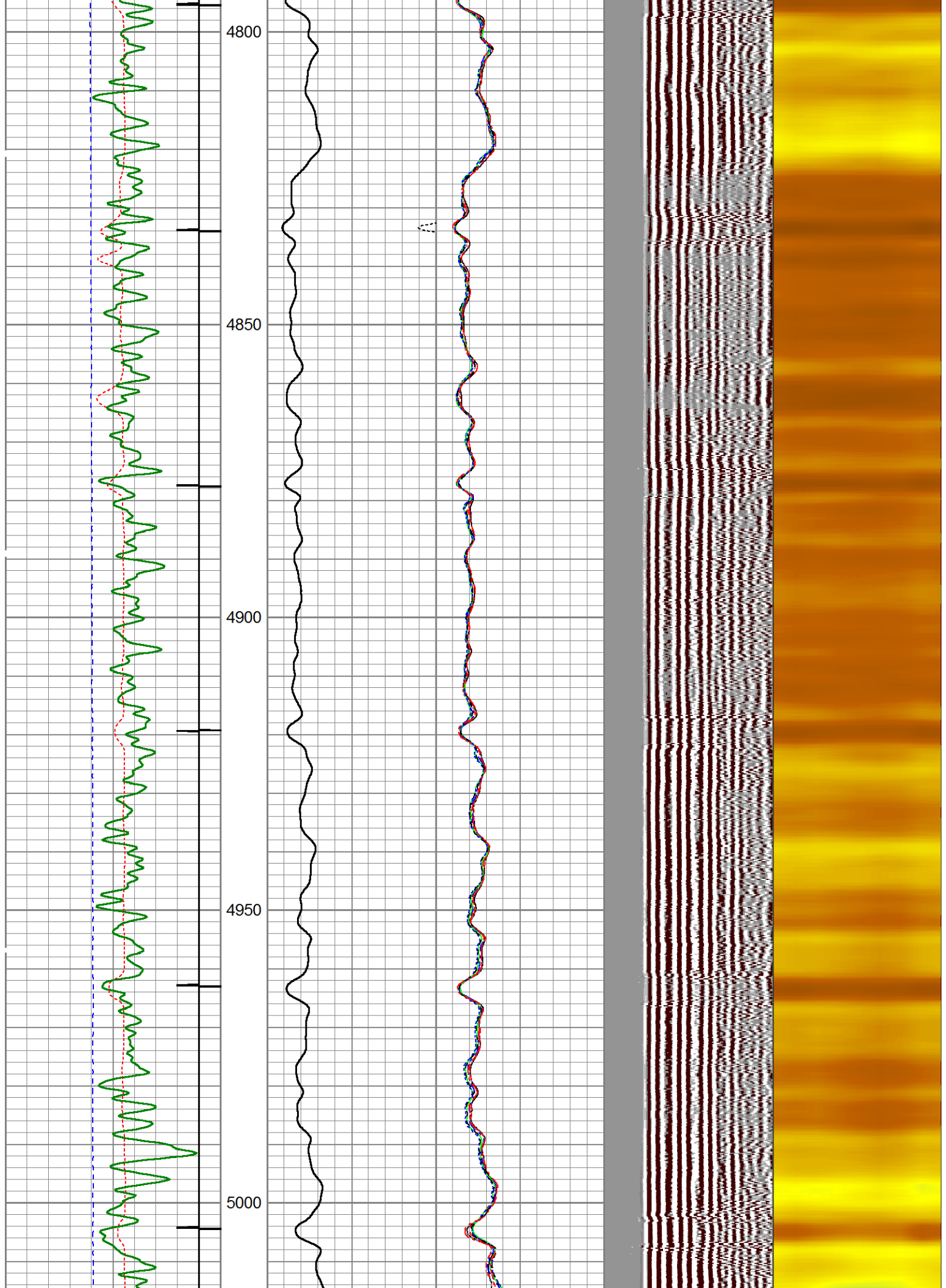


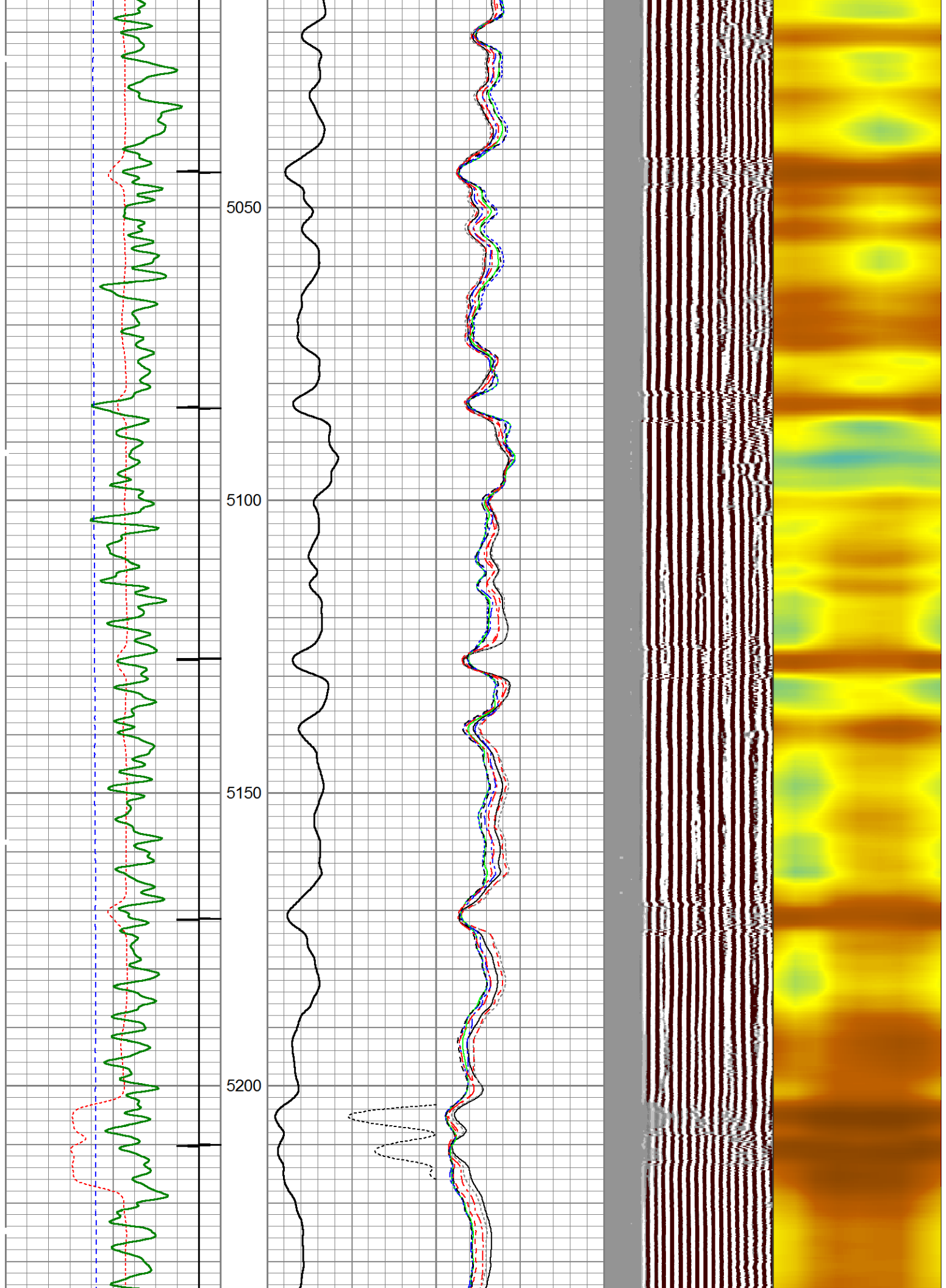


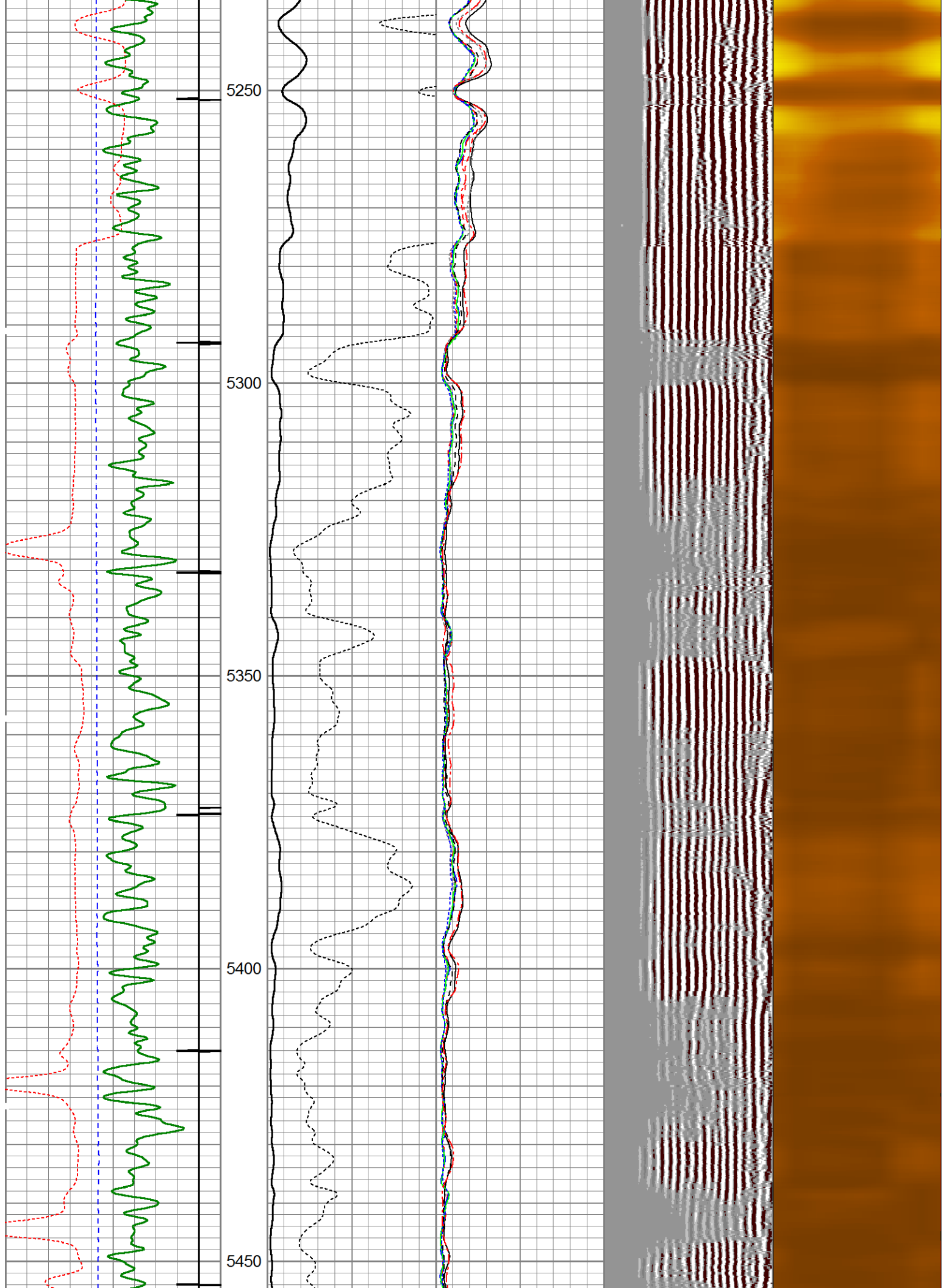


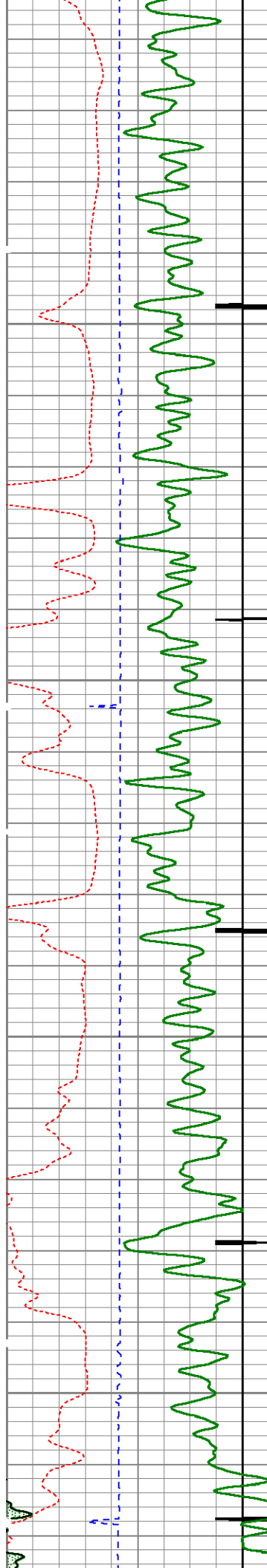










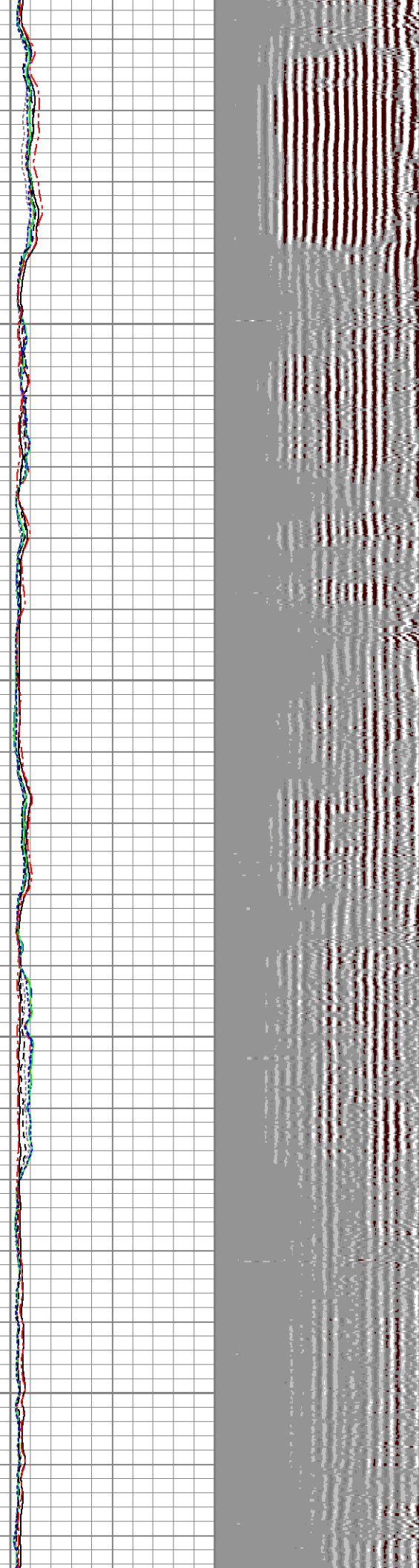
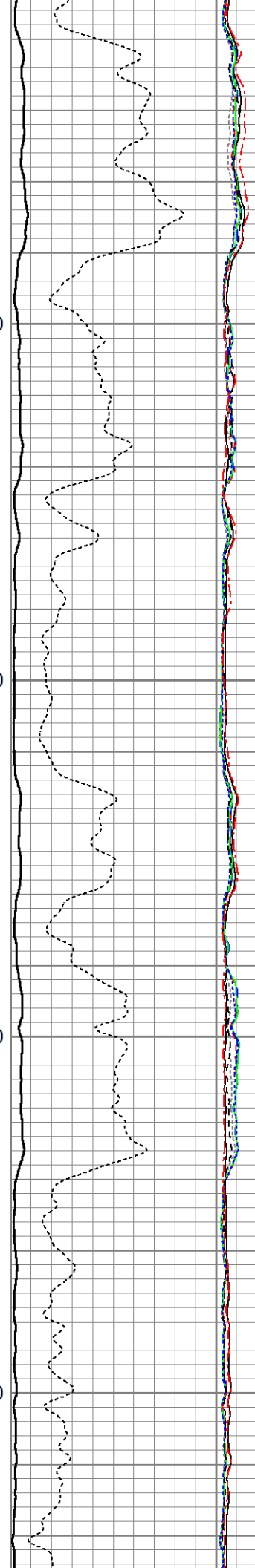


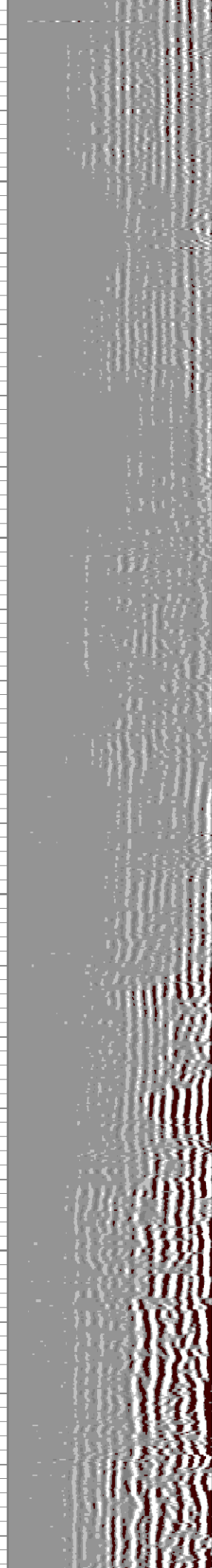
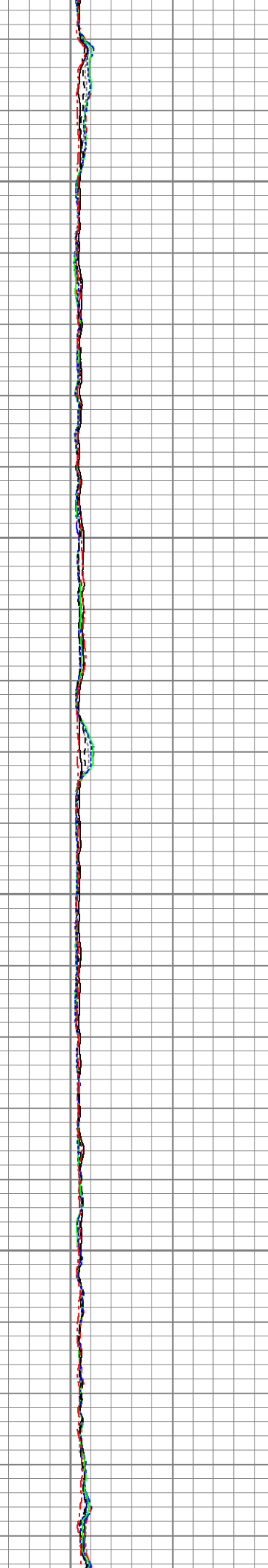
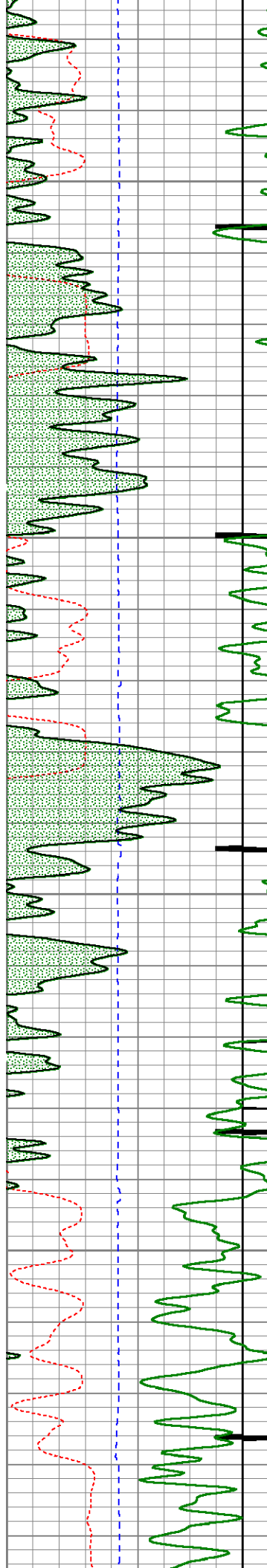
5500

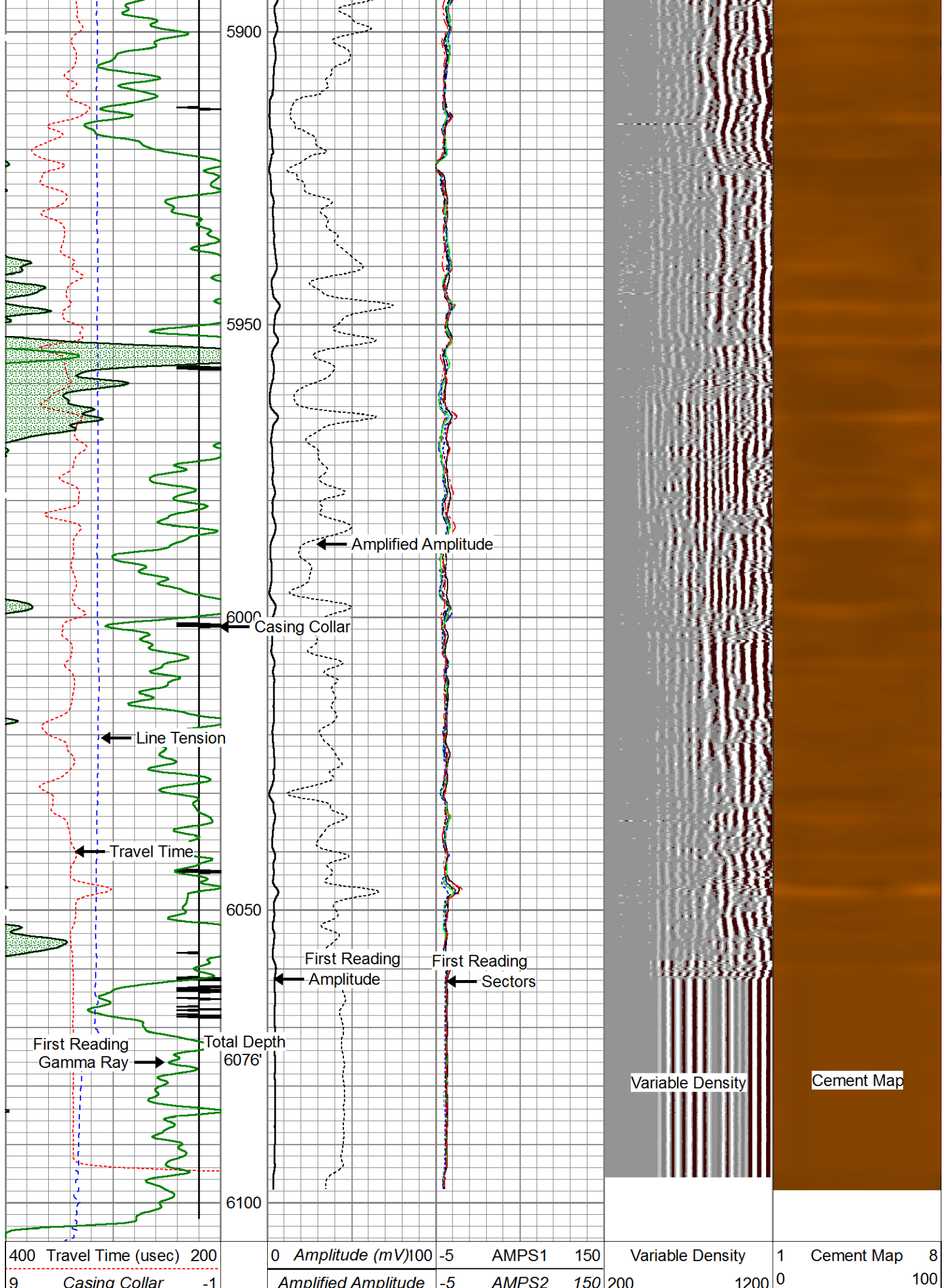
5550


5600

5650









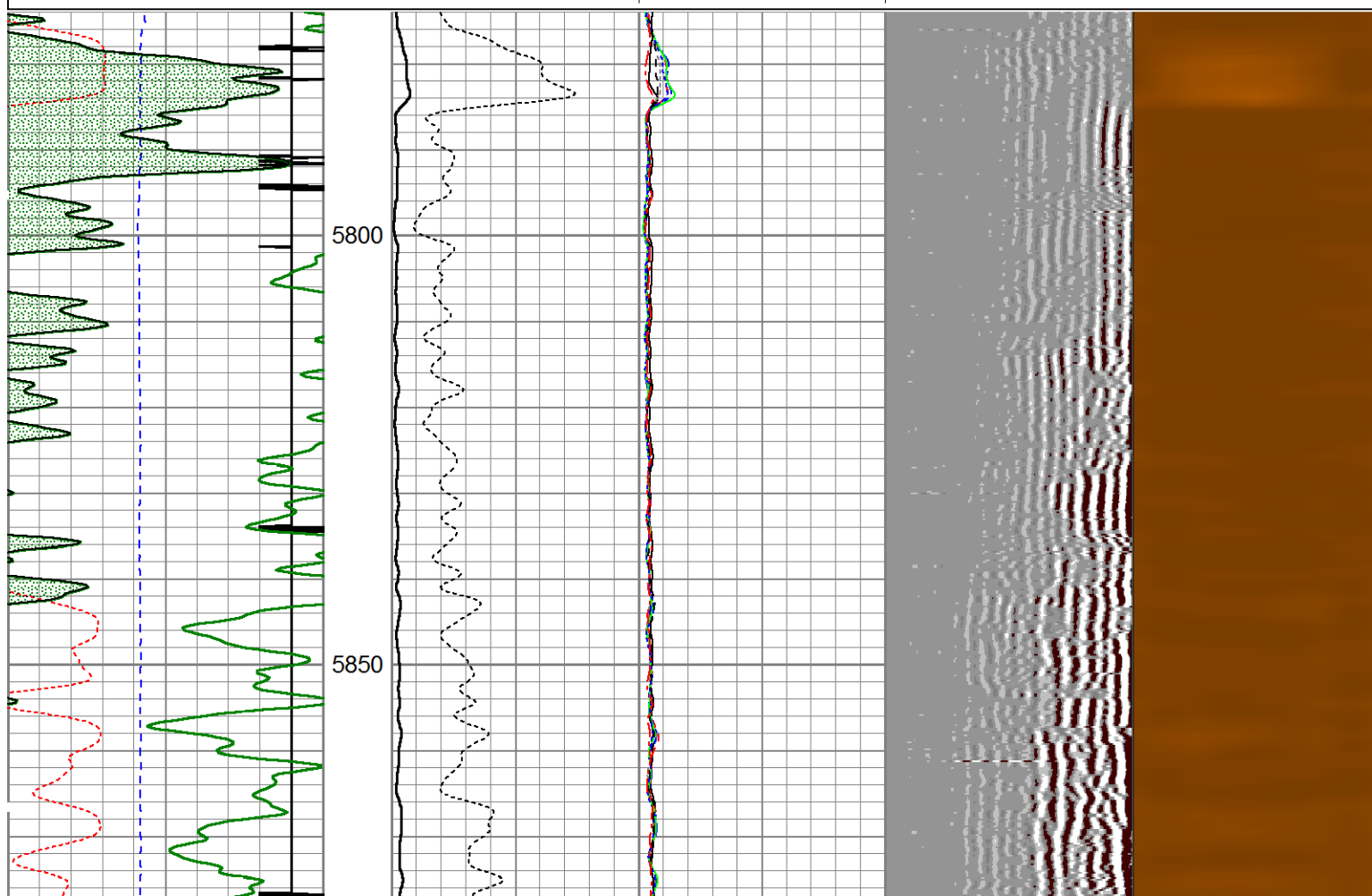
0	Gamma Ray (GAPI) 150	0	Amplitude (mV) 10	-5	AMPS3	150	
0	Line Tension (lb) 2000	-5		-5	AMPS4	150	
		-5		-5	AMPS5	150	
		-5		-5	AMPS6	150	
		-5		-5	AMPS7	150	
		-5		-5	AMPS8	150	

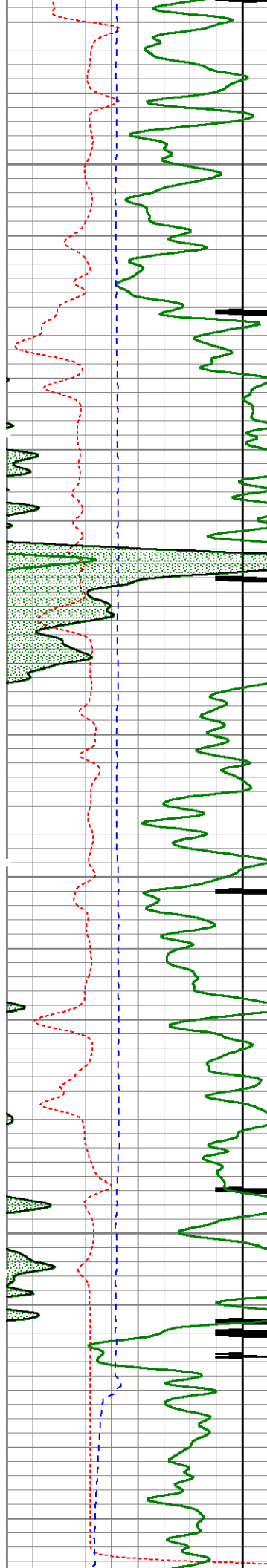


Repeat Pass (0 PSI)

Database File: c:\users\engineers\desktop\brtn logs\noble\rohn state ld09-64-1hn\noble energy rohn state ld09-64-1hn_rc
 Dataset Pathname: pass2
 Presentation Format: scbl03
 Dataset Creation: Fri Nov 15 20:52:16 2013 by Log 0
 Charted by: Depth in Feet scaled 1:240

400	Travel Time (usec) 200	0	Amplitude (mV) 100	-5	AMPS1	150	Variable Density 200 1200 
9	Casing Collar -1	Amplified Amplitude	-5	AMPS2	150		
0	Gamma Ray (GAPI) 150	0	(mV) 10	-5	AMPS3	150	
0	Line Tension (lb) 2000	-5		-5	AMPS4	150	
		-5		-5	AMPS5	150	
		-5		-5	AMPS6	150	
		-5		-5	AMPS7	150	Cement Map 0 100 
		-5		-5	AMPS8	150	



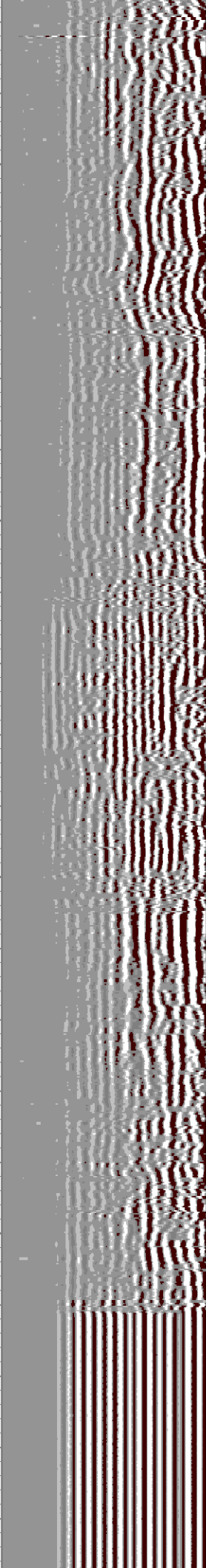
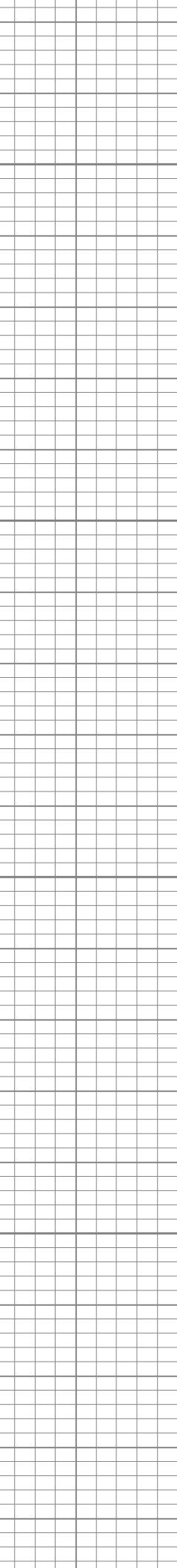
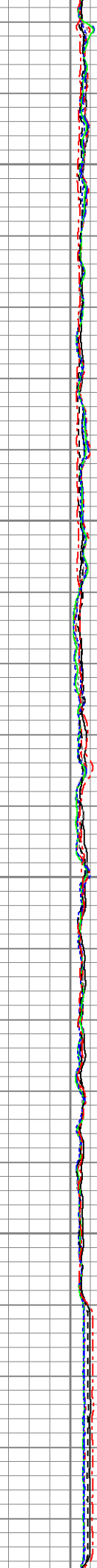


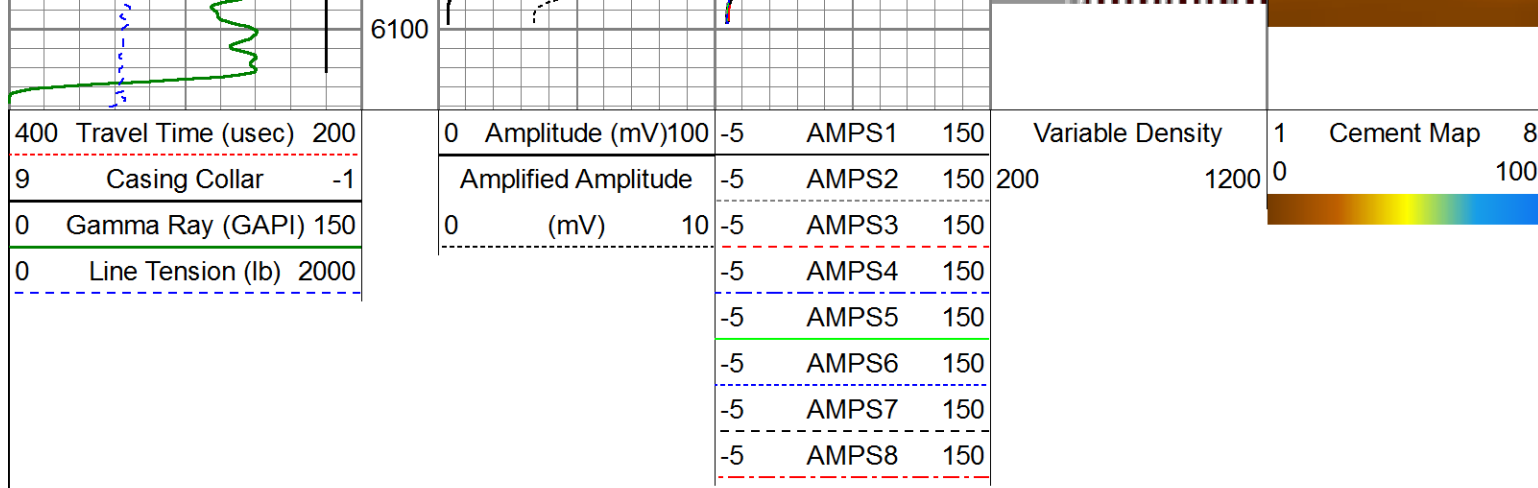
5900

5950

6000

6050





Calibration Report

Database File: C:\Users\Engineers\Desktop\BRTN LOGS\Noble\Rohn State LD09-64-1HN\noble energy rohn state ld09-64-1HN

Dataset Pathname: pass4

Dataset Creation: Fri Nov 15 21:00:33 2013 by Log 0

Gamma Ray Calibration Report			
Serial Number:	110108-Dig		
Tool Model:	Probe275		
Performed:	Mon Jul 01 16:56:15 2013		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.8500	GAPI/cps	

Temperature Calibration Report			
Serial Number:	110108-Dig		
Tool Model:	Probe275		
Performed:	Sun Jun 13 13:33:21 1993		
	Reference	Reading	
Low Reference:	0.00 degF	0.00	cps
High Reference:	1.00 degF	1.00	cps
Gain:	1.00		
Offset:	0.00		
Delta Spacing	2		

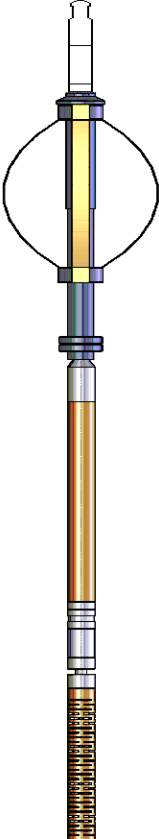
Segmented Cement Bond Log Calibration Report			
Serial Number:	111107		
Tool Model:	Probe		
Calibration Casing Diameter:	7.000	in	
Calibration Depth:	774.827	ft	

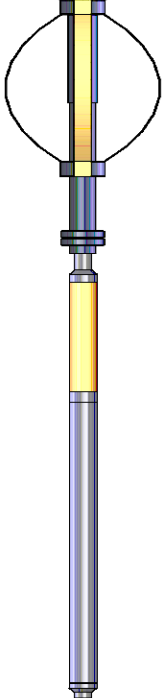
Master Calibration, performed Fri Nov 15 16:18:15 2013:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.026	0.618	1.000	62.165	95.032	3.478
CAL	-0.033	0.835				

5'	-0.018	0.558	1.000	62.165	106.288	2.889
SUM						
S1	-0.012	0.667	0.000	100.000	147.153	1.823
S2	-0.013	0.714	0.000	100.000	137.547	1.834
S3	-0.020	0.709	0.000	100.000	137.132	2.752
S4	-0.018	0.677	0.000	100.000	143.939	2.551
S5	-0.019	0.622	0.000	100.000	156.002	2.916
S6	-0.018	0.578	0.000	100.000	167.700	3.042
S7	-0.020	0.545	0.000	100.000	176.864	3.575
S8	-0.018	0.543	0.000	100.000	178.296	3.267

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:						
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.033	0.835	1.000	0.000

Air Zero Calibration, performed Thu Oct 17 08:50:08 2013:						
	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1	0.000		0.000		0.000	
S2	0.000		0.000		0.000	
S3	0.000		0.000		0.000	
S4	0.000		0.000		0.000	
S5	0.000		0.000		0.000	
S6	0.000		0.000		0.000	
S7	0.000		0.000		0.000	
S8	0.000		0.000		0.000	

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			Titan Cable_head	1.00	1.44	10.00
			Probe275 2.75" Centralizer	2.88	2.75	20.00
WVF3FT WVFCAL	11.84 11.84		RBT-Probe (111107) Probe Radii Bond Tool with Digital Telemetry	8.75	2.75	90.00

Tool Joint	Depth (ft)	Diagram	Tool Joint	Depth (ft)	Weight (lb)	Length (ft)	Weight (lb)	Length (ft)
WVFS1	11.84		Probe275 2.75" Centralizer	2.88	2.75	20.00		
WVFS2	11.84							
WVFS3	11.84							
WVFS4	11.84							
WVFS5	11.84							
WVFS6	11.84							
WVFS7	11.84							
WVFS8	11.84							
WVF5FT	10.84							
CCL	3.88							
TEMP	3.00							
GR	2.54		GR-Probe275 (110108-Dig) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00		
Dataset:		noble energy rohn state ld09-64-1hn_rcbl.db: field/well/run1/pass4						
Total Length:		20.28 ft						
Total Weight:		197.00 lb						
O.D.		2.75 in						