



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

Company		Noble Energy	
Well		Crow Creek State AC36-75HN	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-37419	
SEC 36 TWP 7N RGE 63W		TEMP	
Permanent Datum		Ground Level	
Log Measured From		24' Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		4847'	
Other Services		Elevation	
K.B. 4871'		D.F. 4870'	
G.L. 4847'			
Date		December 14, 2013	
Run Number		1	
Depth Driller		11030'	
Depth Logger		6601'	
Bottom Logged Interval		6588'	
Top Log Interval		Surface	
Open Hole Size		8.125	
Type Fluid		Fresh Water	
Density / Viscosity		8.33	
Max. Recorded Temp.		213 Deg F	
Estimated Cement Top		770'	
Time Well Ready		8:30	
Time Logger on Bottom		8:58	
Equipment Number		13033	
Location		Brighton	
Recorded By		C. Rail	
Witnessed By		Bill Mansfield	
Borehole Record		Tubing Record	
Run Number		Bit	
One		From	
Two		To	
Three		Size	
Four		Weight	
Casing Record		From	
Surface String		To	
Size		Wgt/Ft	
9 5/8		36#	
Prot. String		Top	
Production String		Surface	
Liner		Bottom	
4 1/2		26#	
11 6#		7201'	
5858'		7050'	
5873'		11020'	
		5873'	

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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 24' KB.

Main Pass & Repeat Pass Logged with 0 PSI

Estimated Top of Cement @ 770'

Short Joint @ 5858' To 5873'

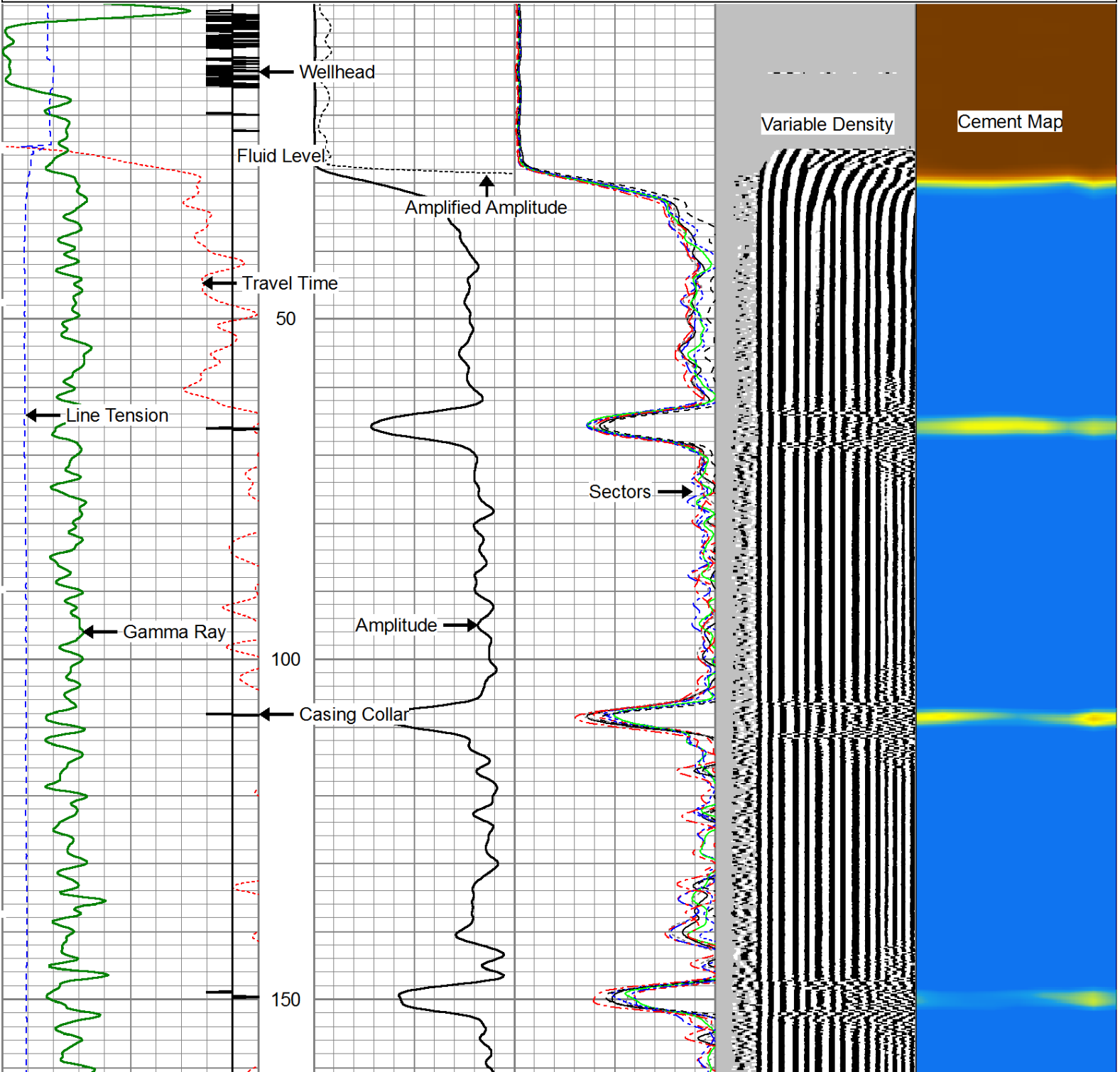
Thank you for using Allied Wireline.
(303)659-4609

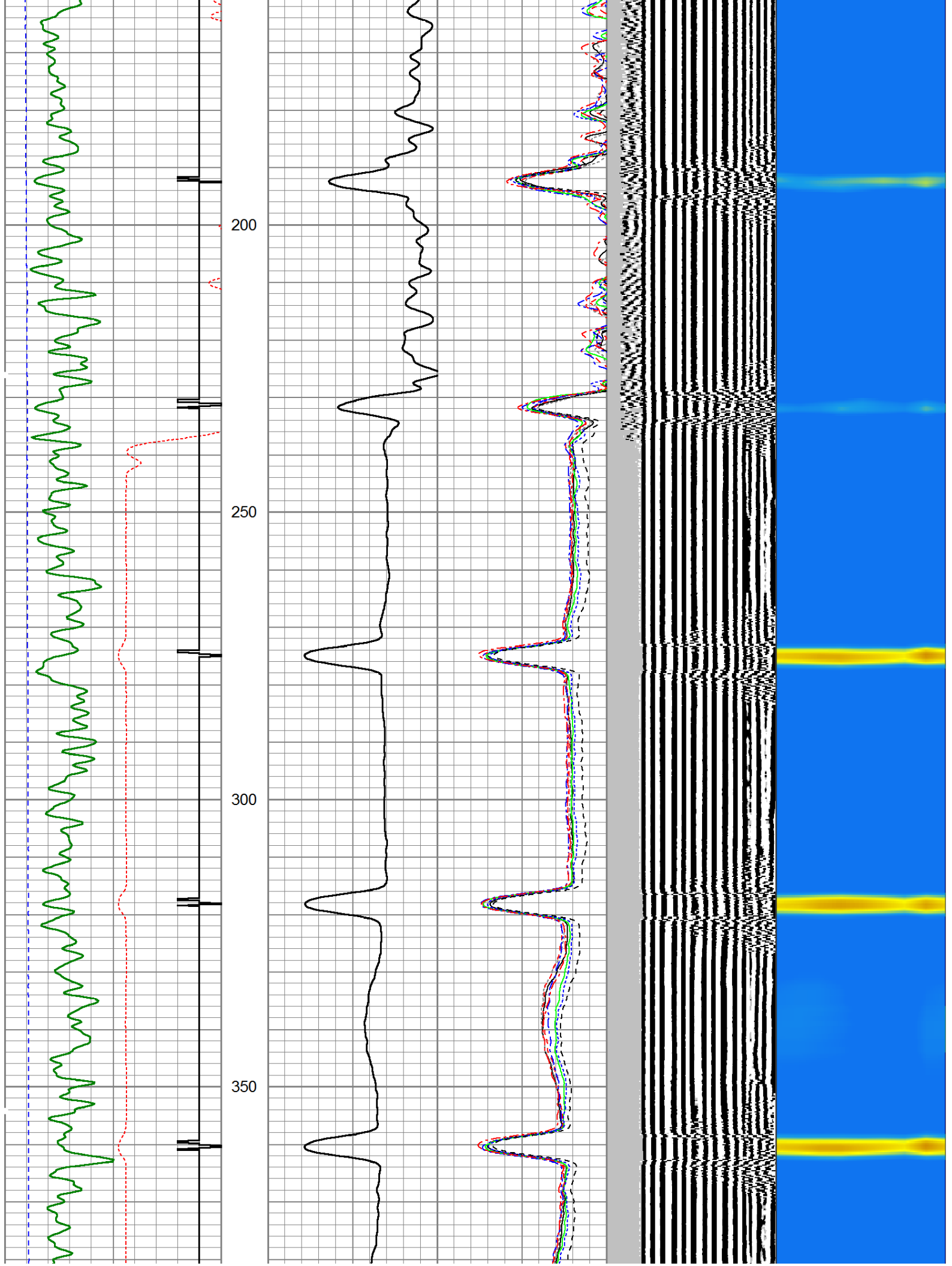


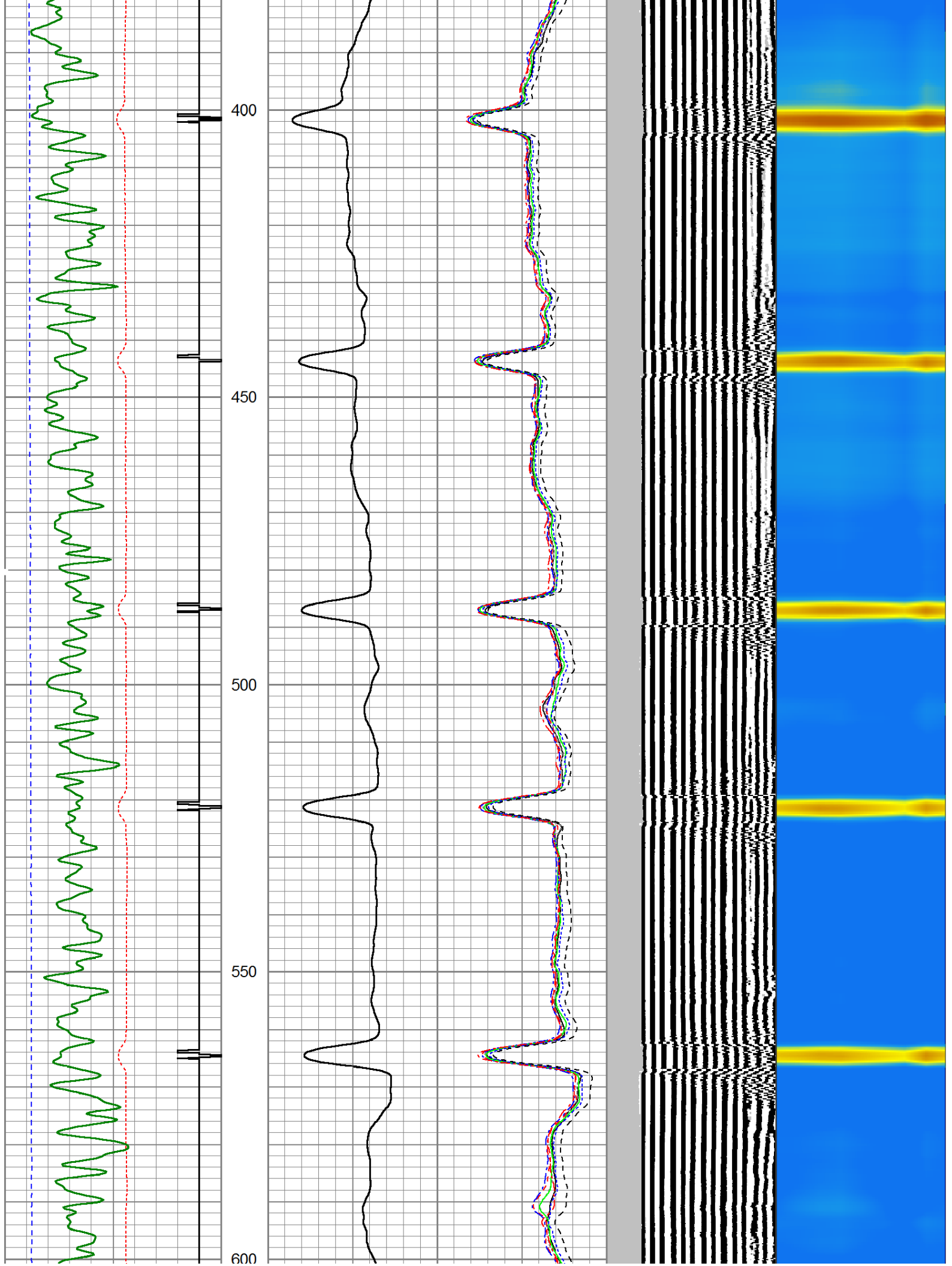
Main Pass (0 PSI)

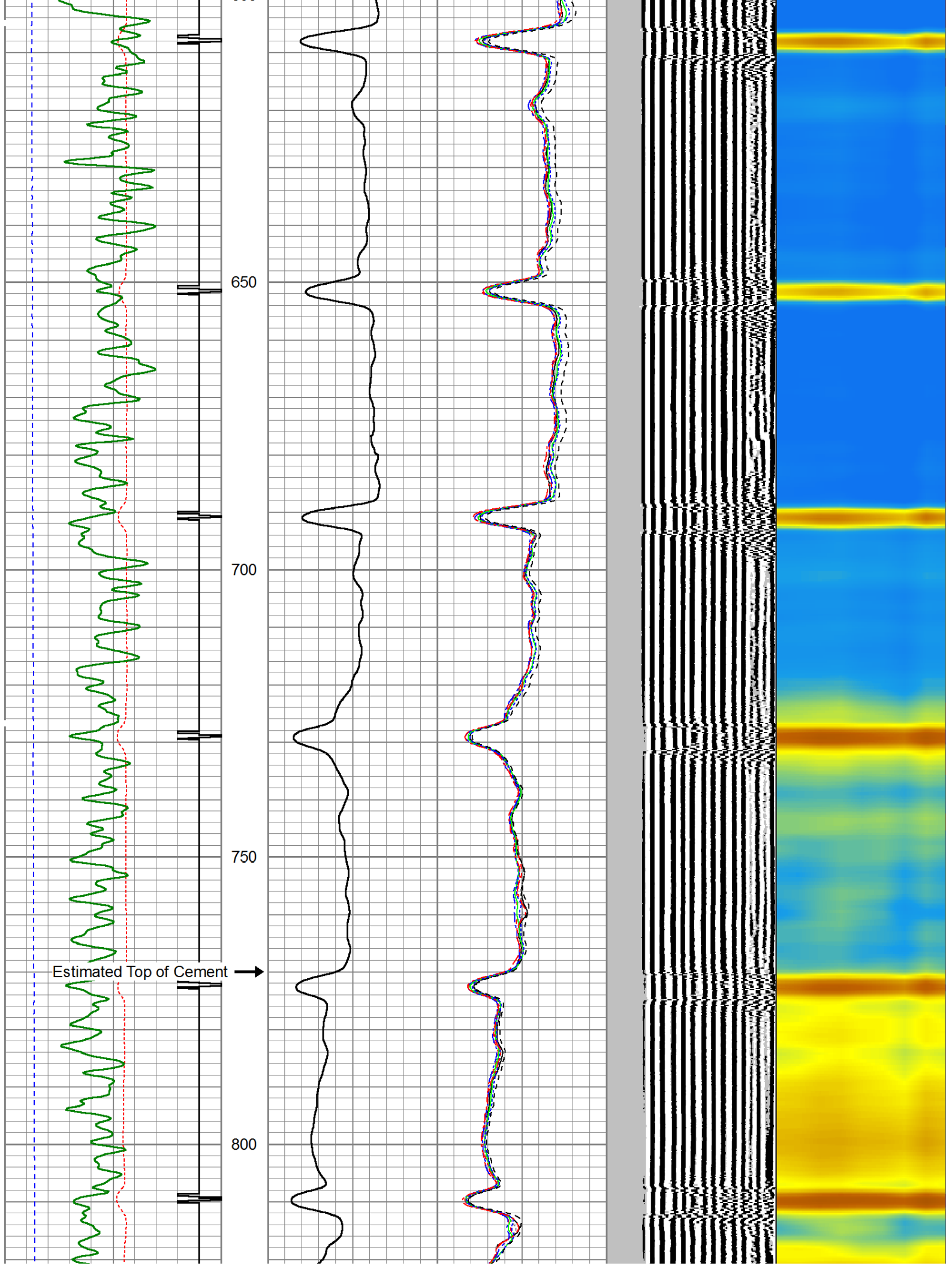
Database File: noble energy crow creek state ac36-75hn_rcbl.db
Dataset Pathname: pass5.1
Presentation Format: scbl03
Dataset Creation: Sat Dec 14 11:04:59 2013 by Calc 0
Charted by: Depth in Feet scaled 1:240

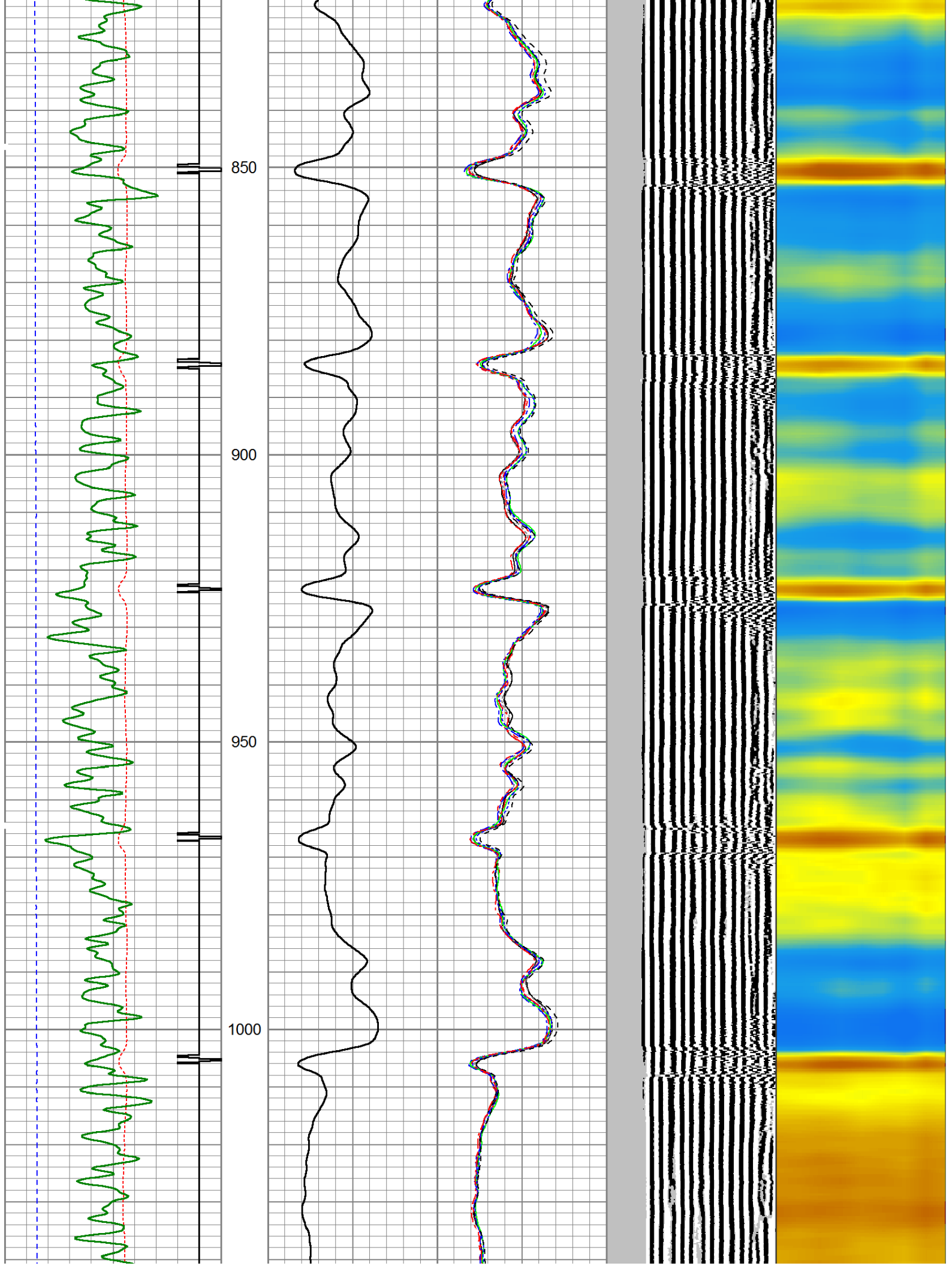
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	2000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150		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

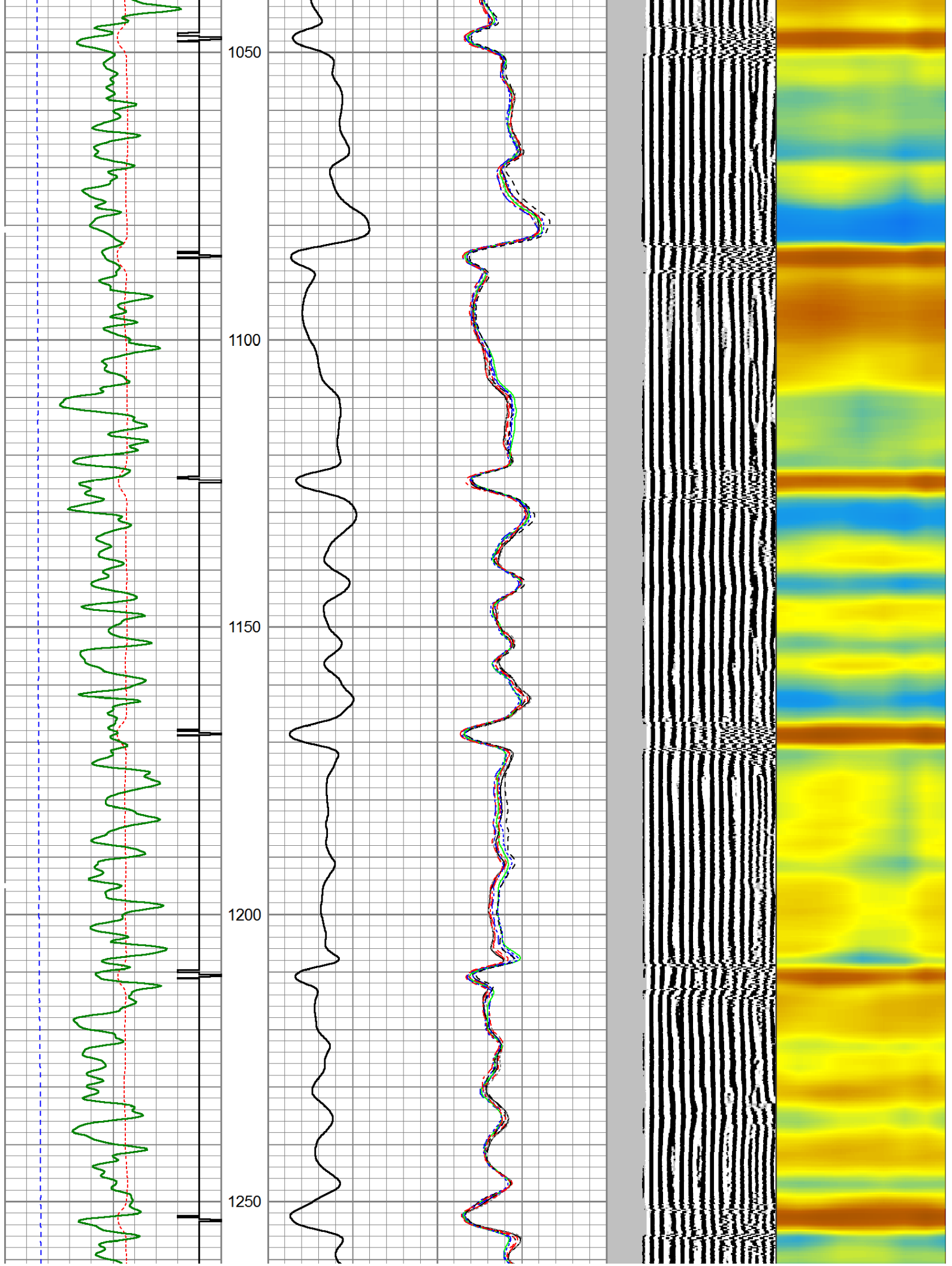


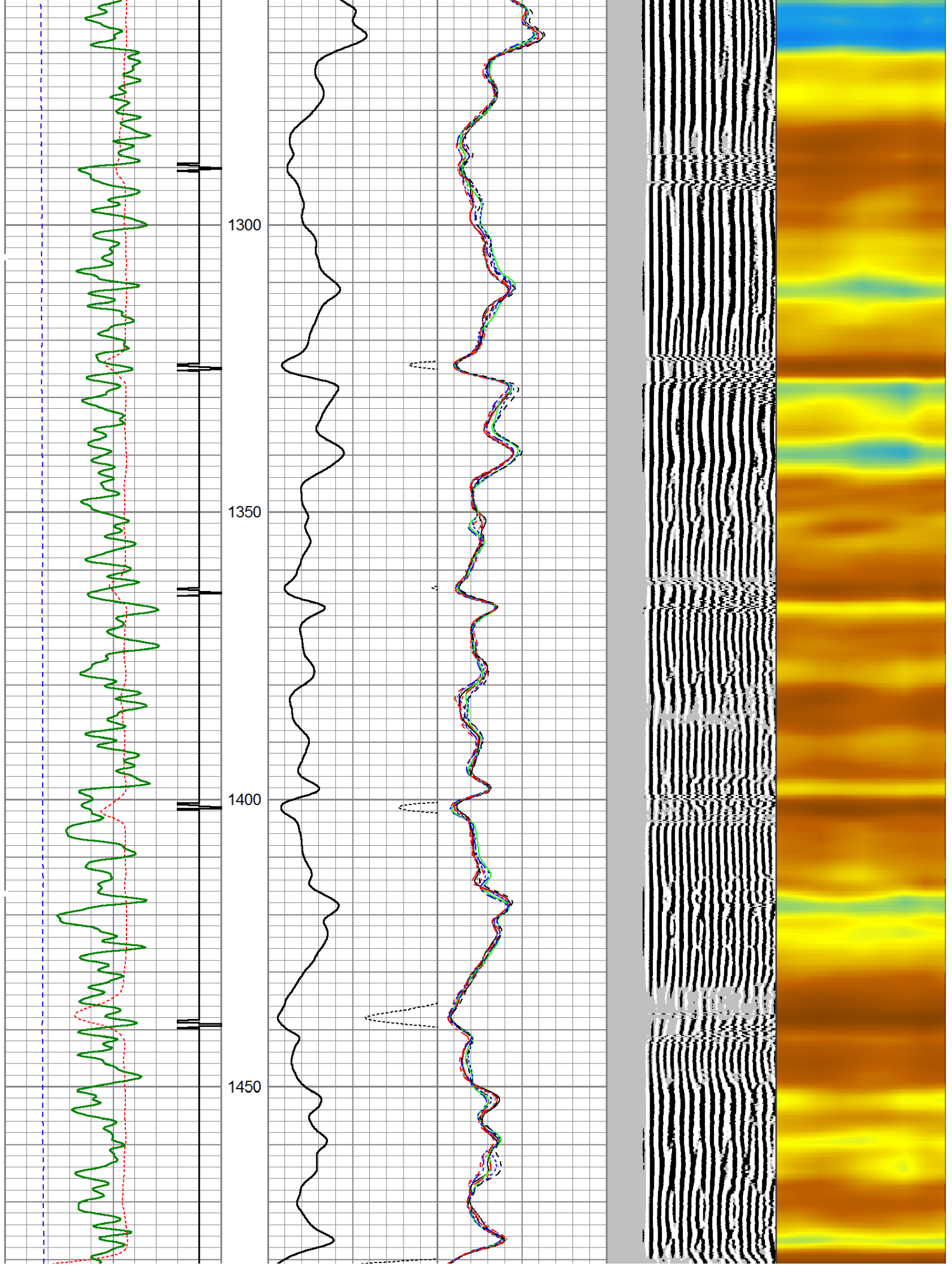


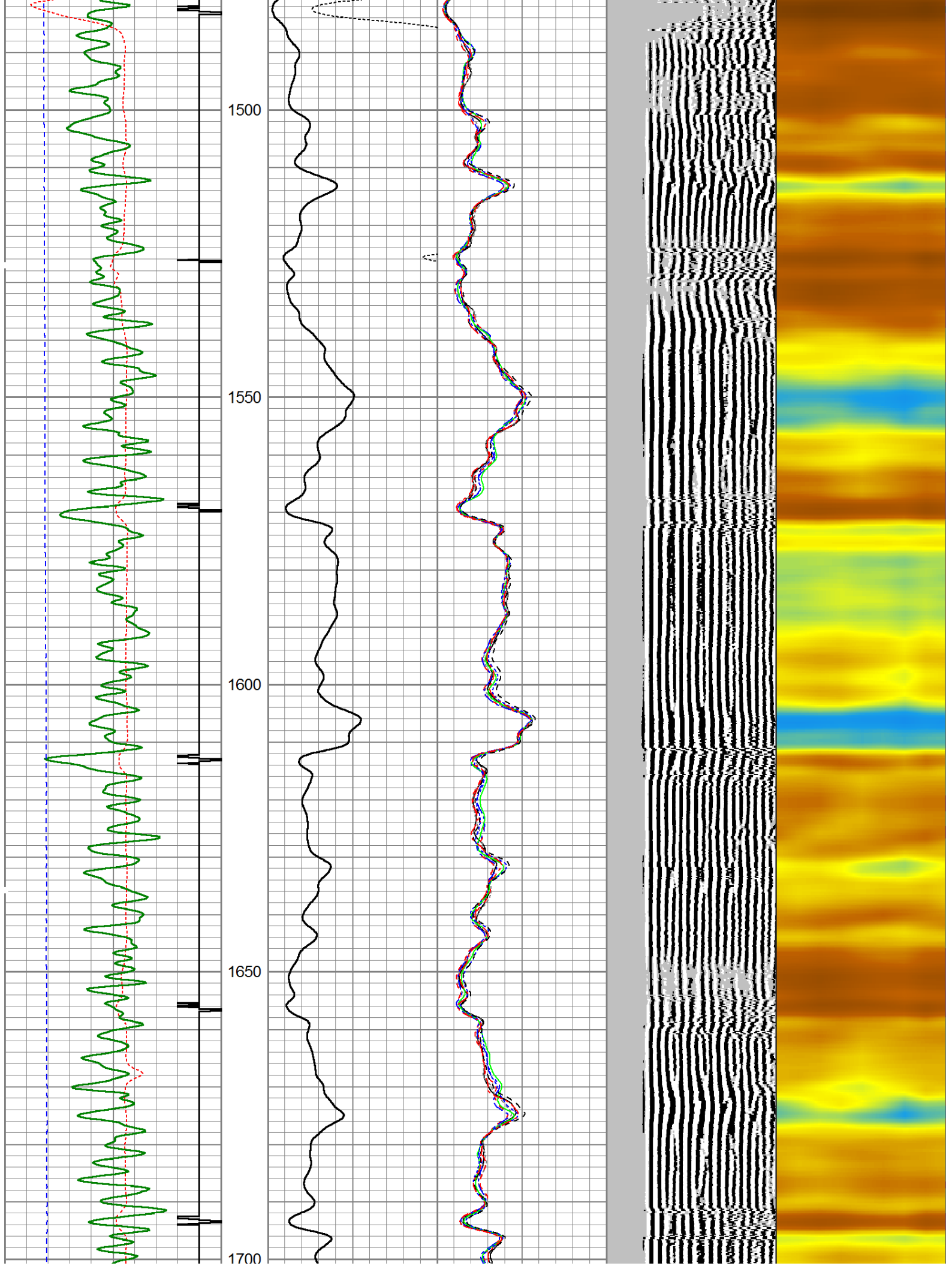


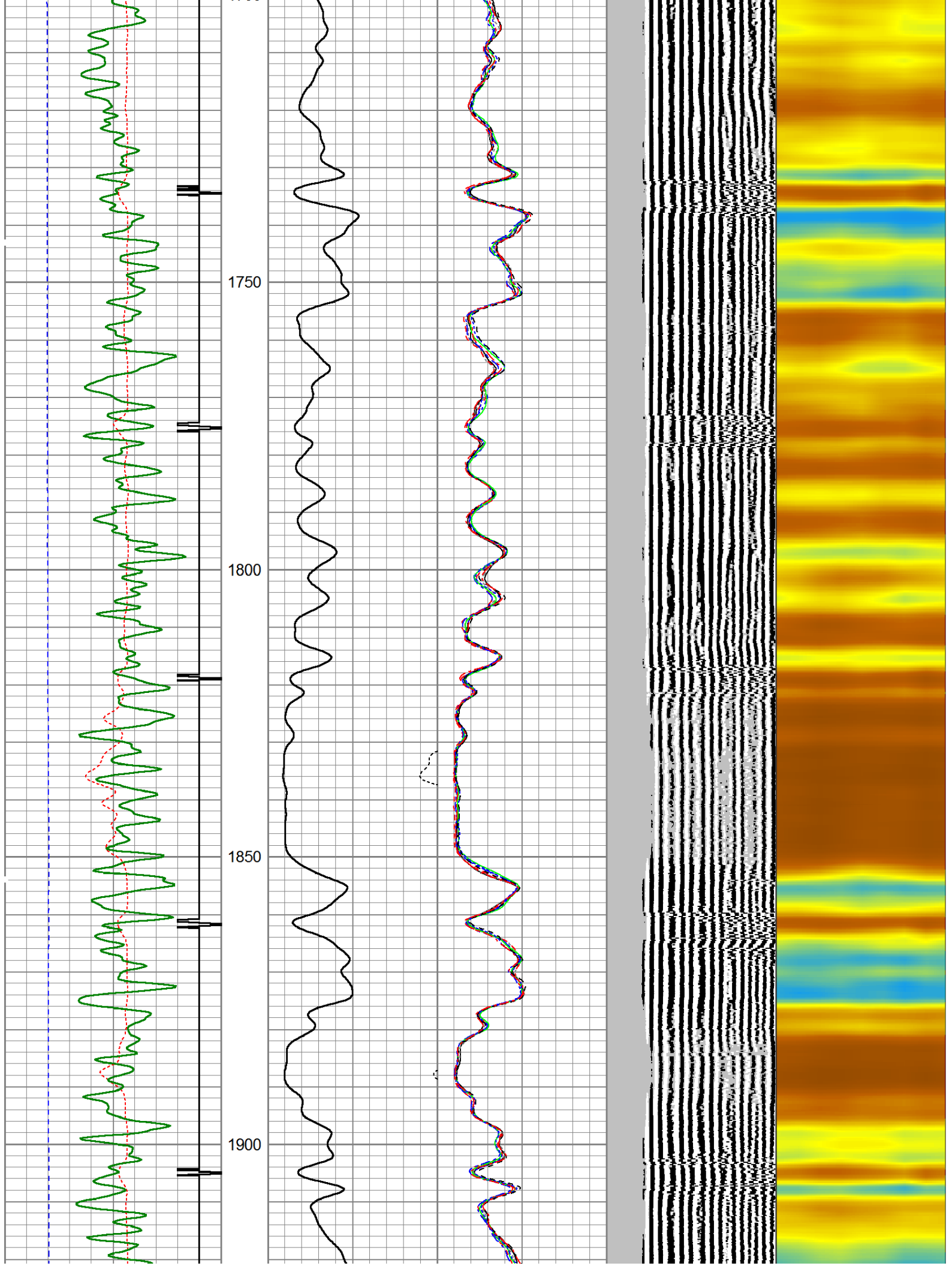


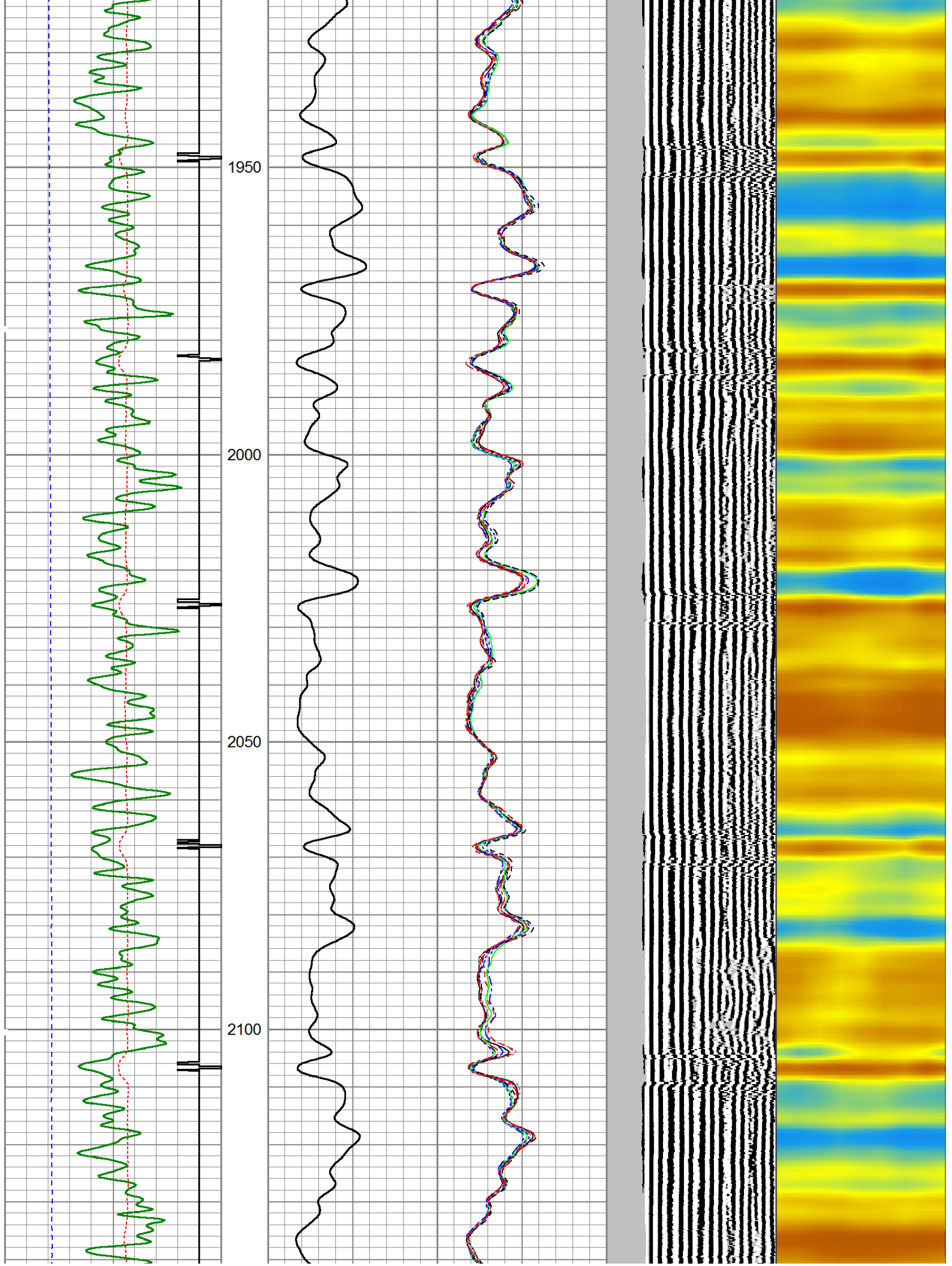


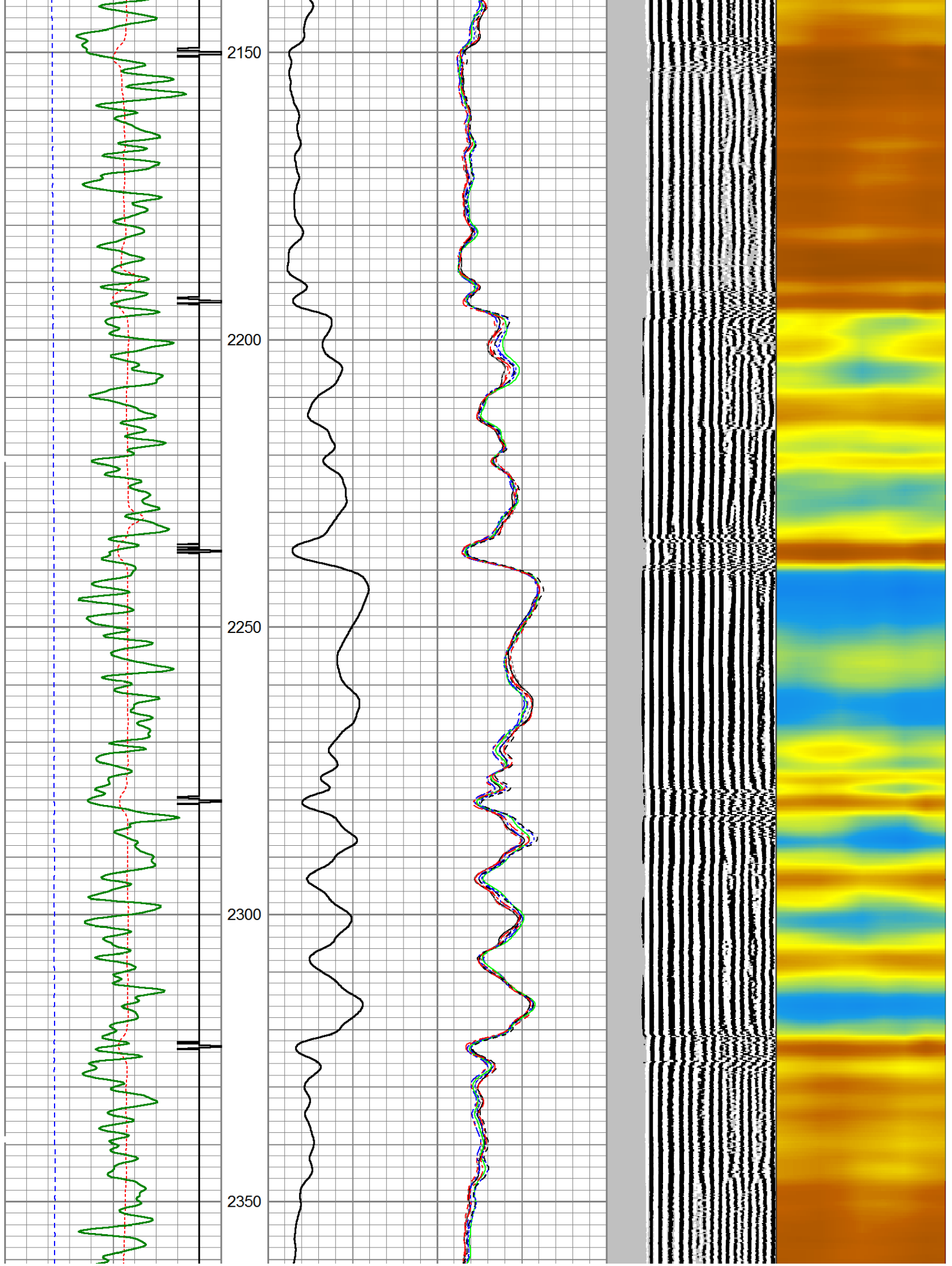


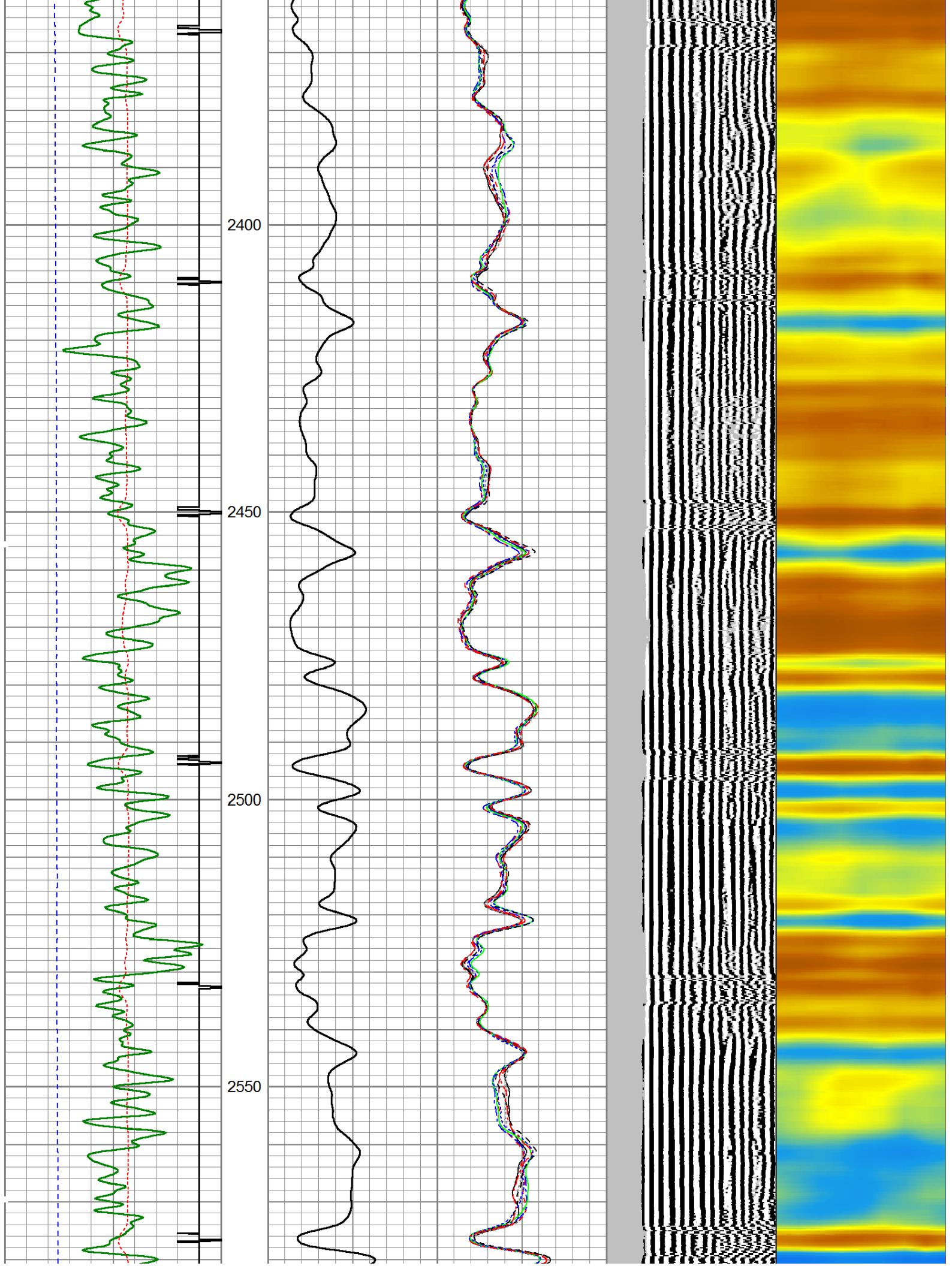


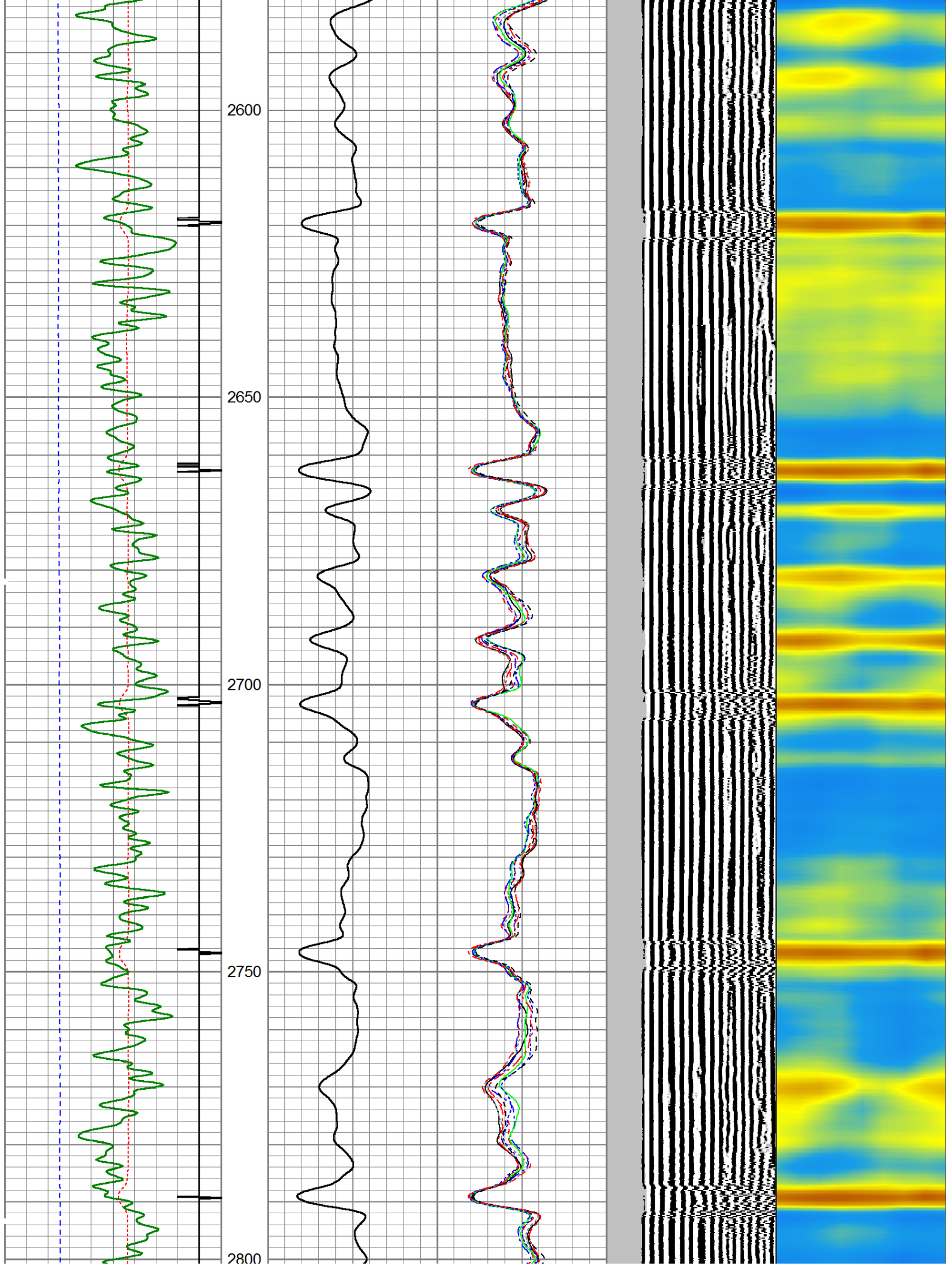


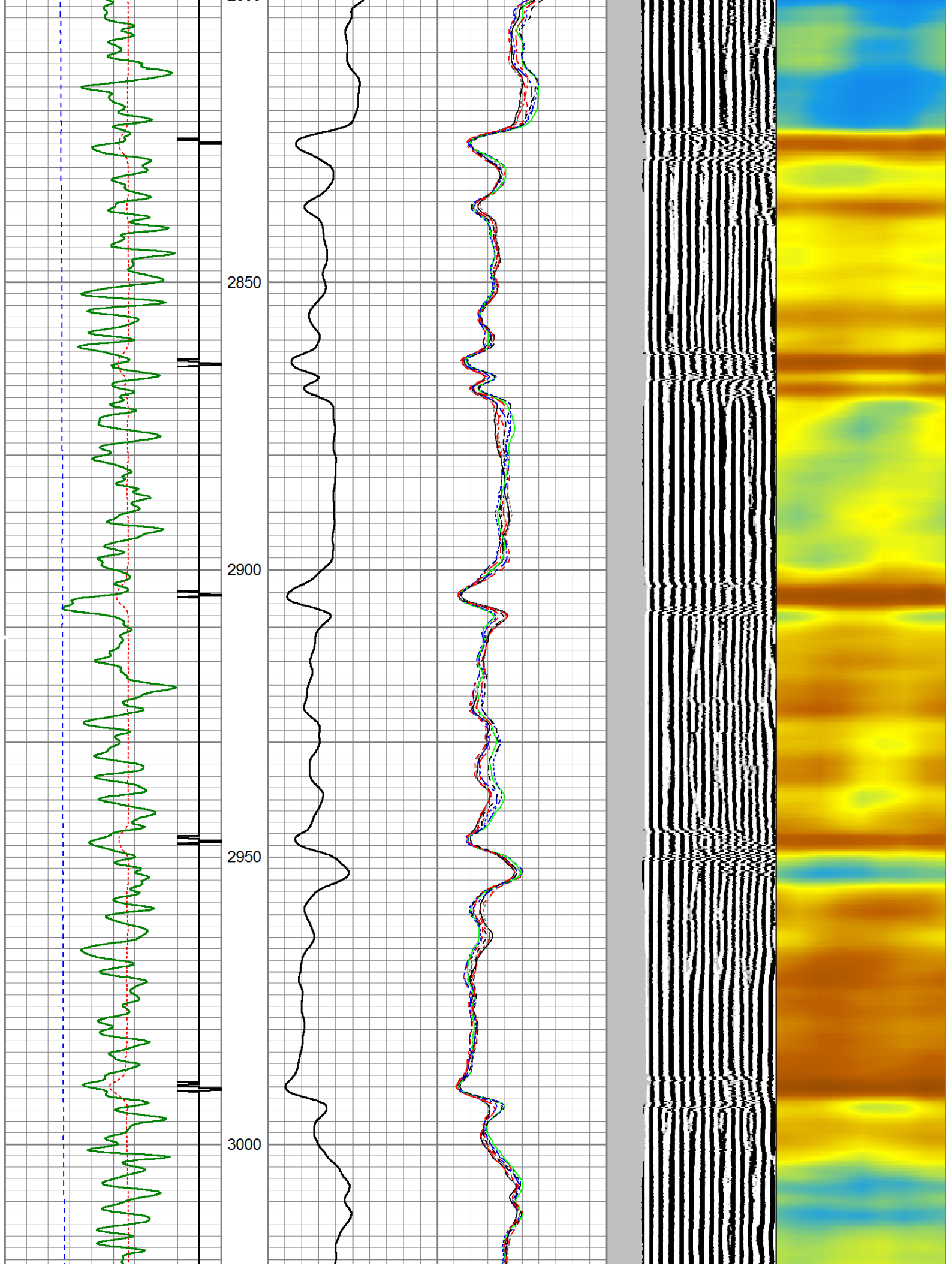


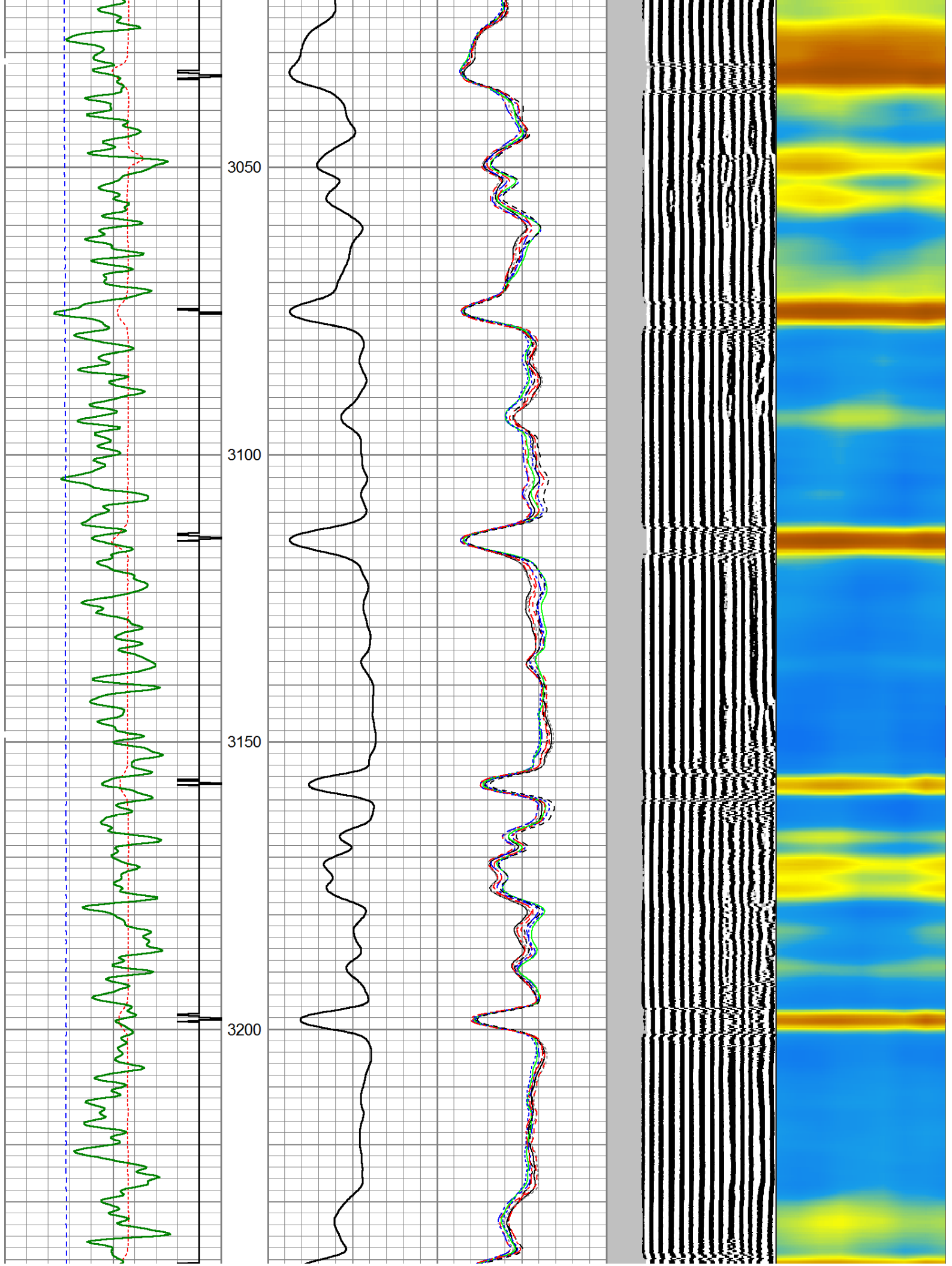


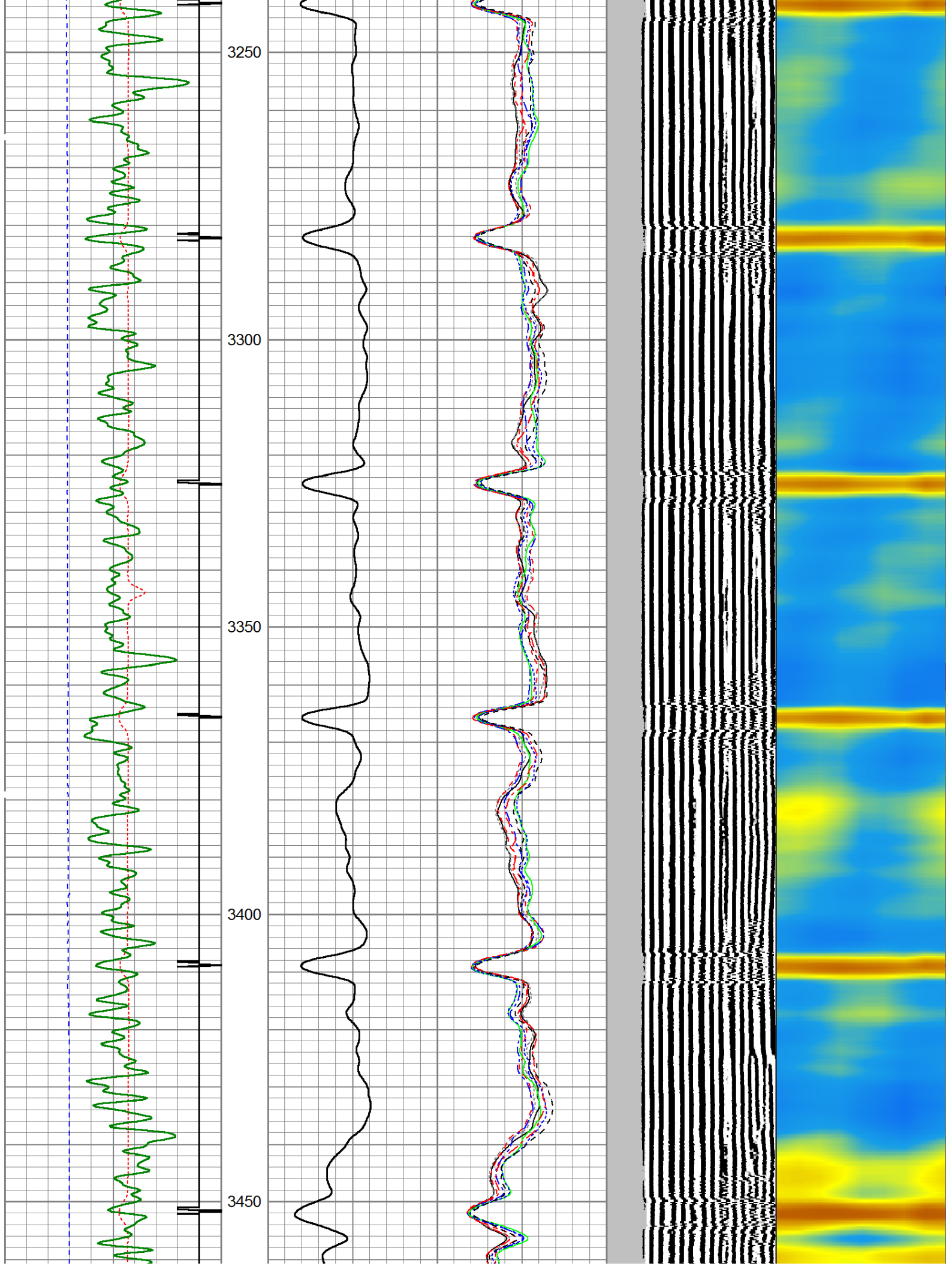


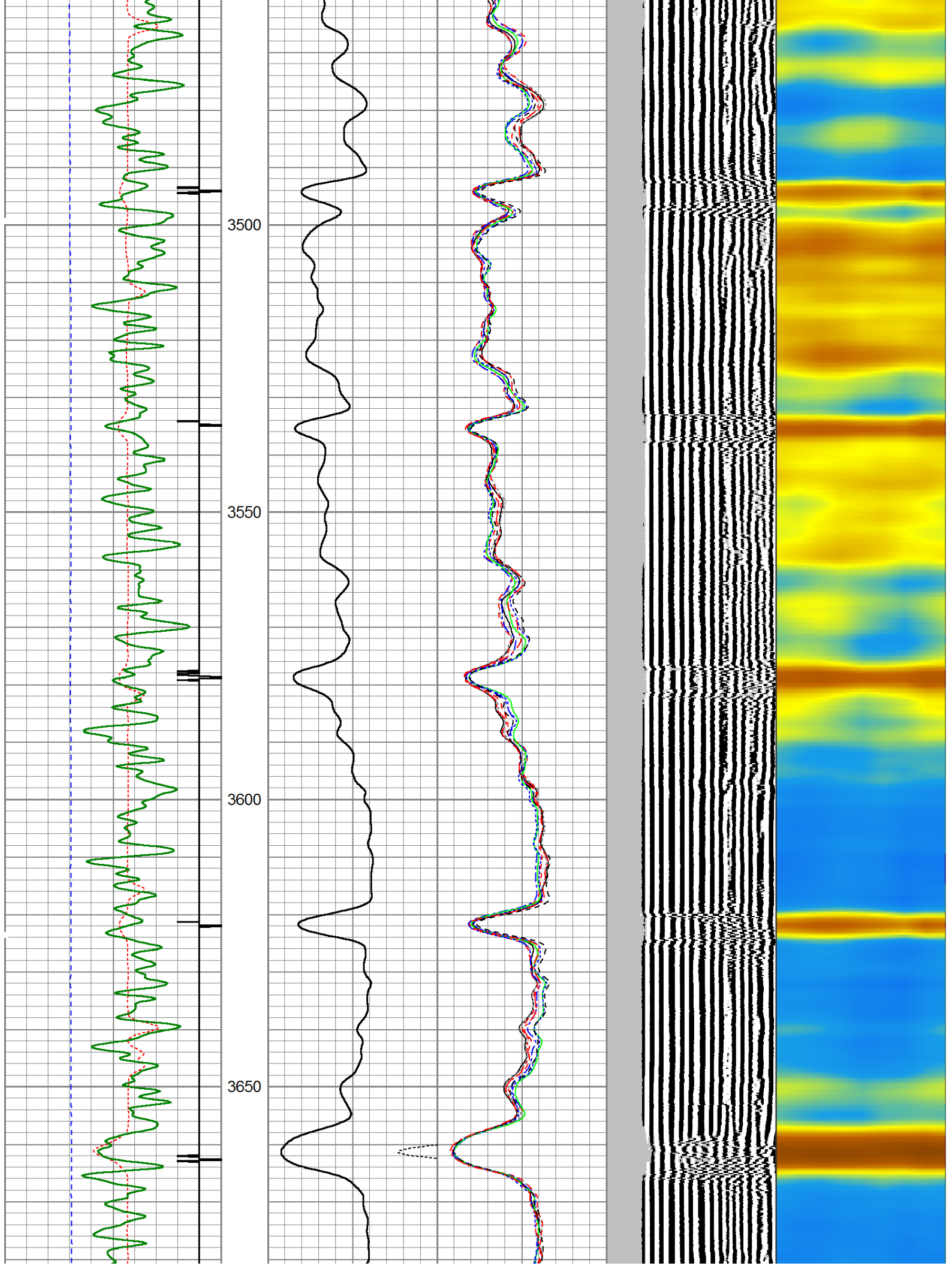


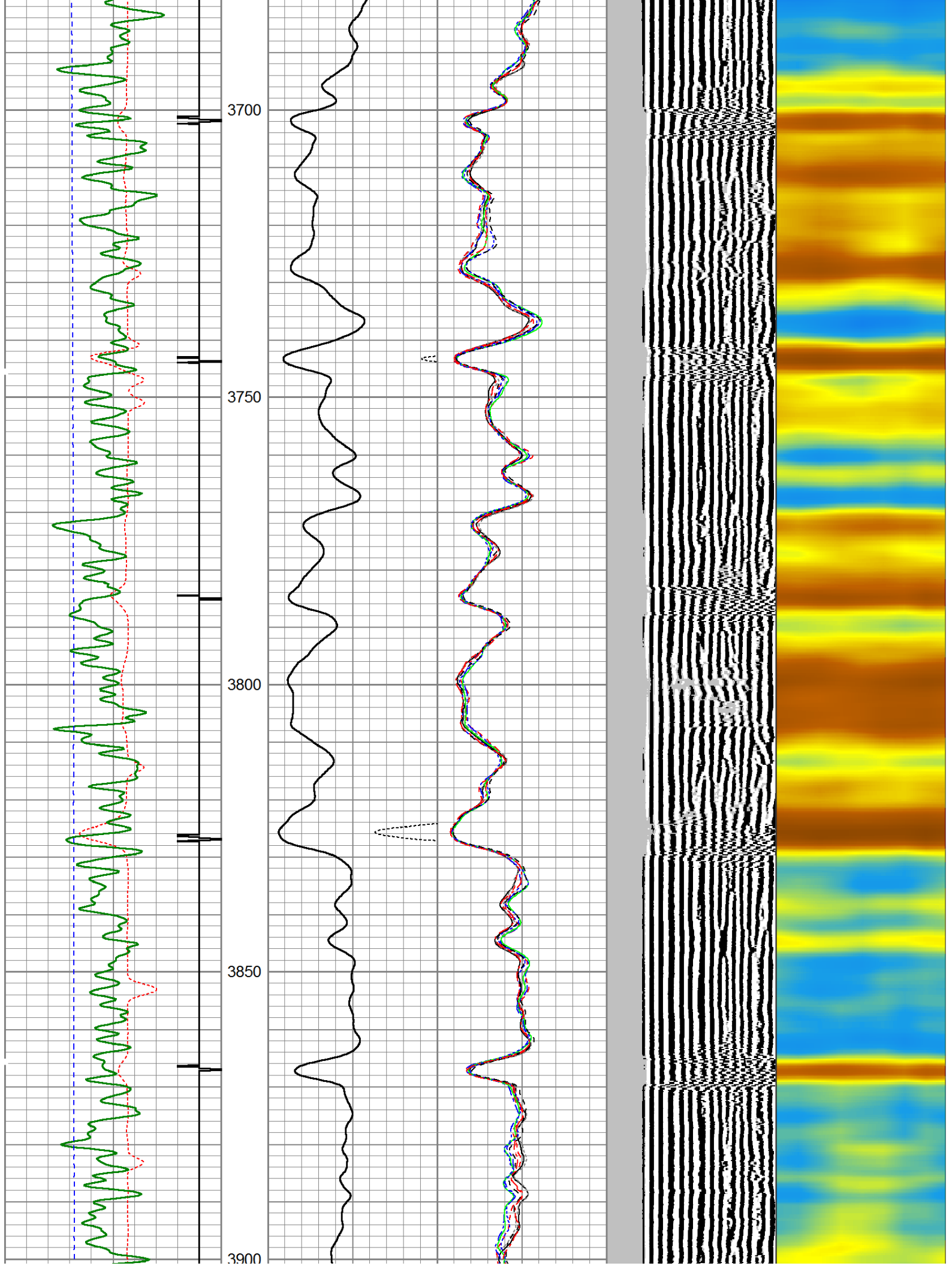


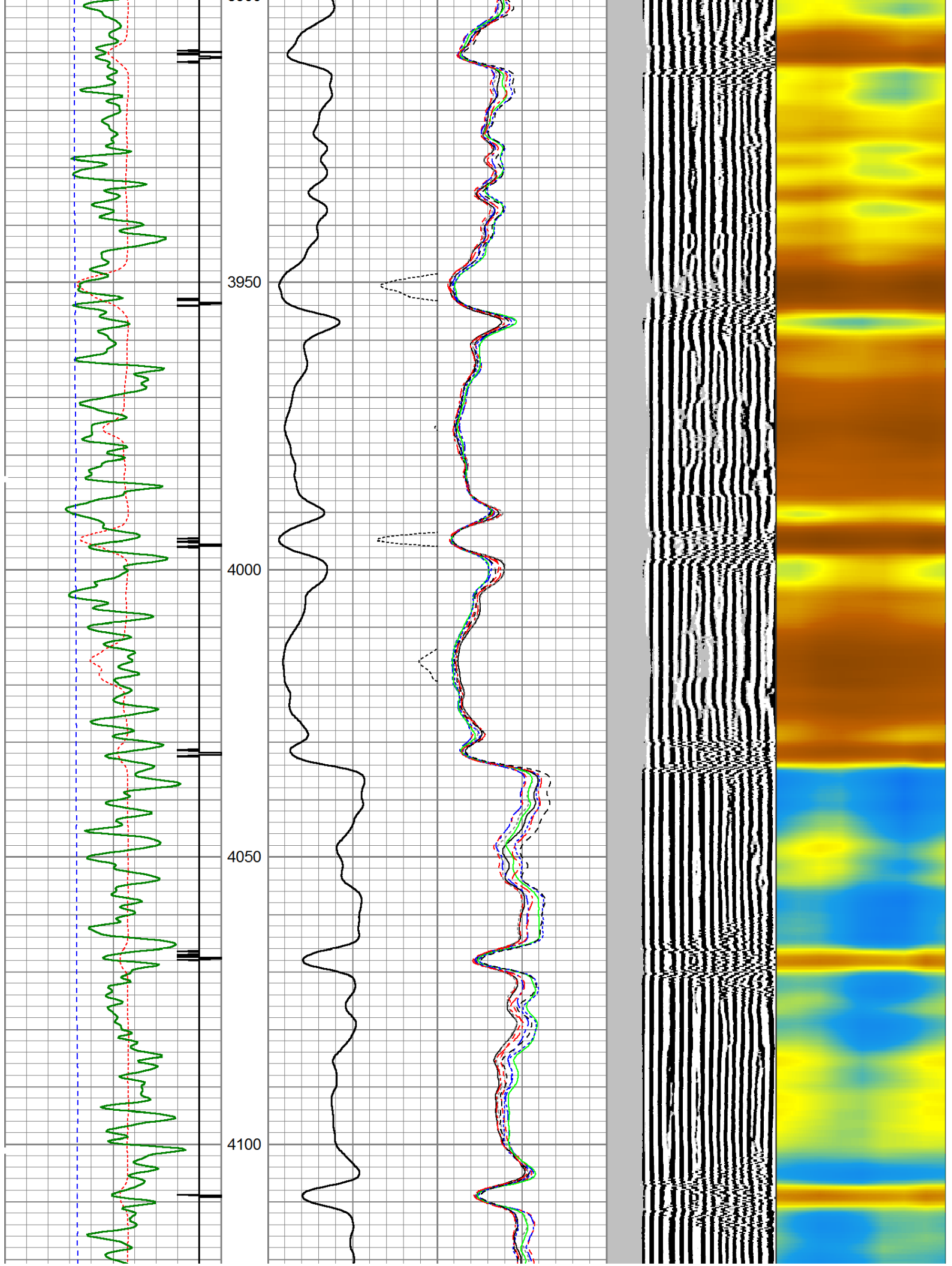


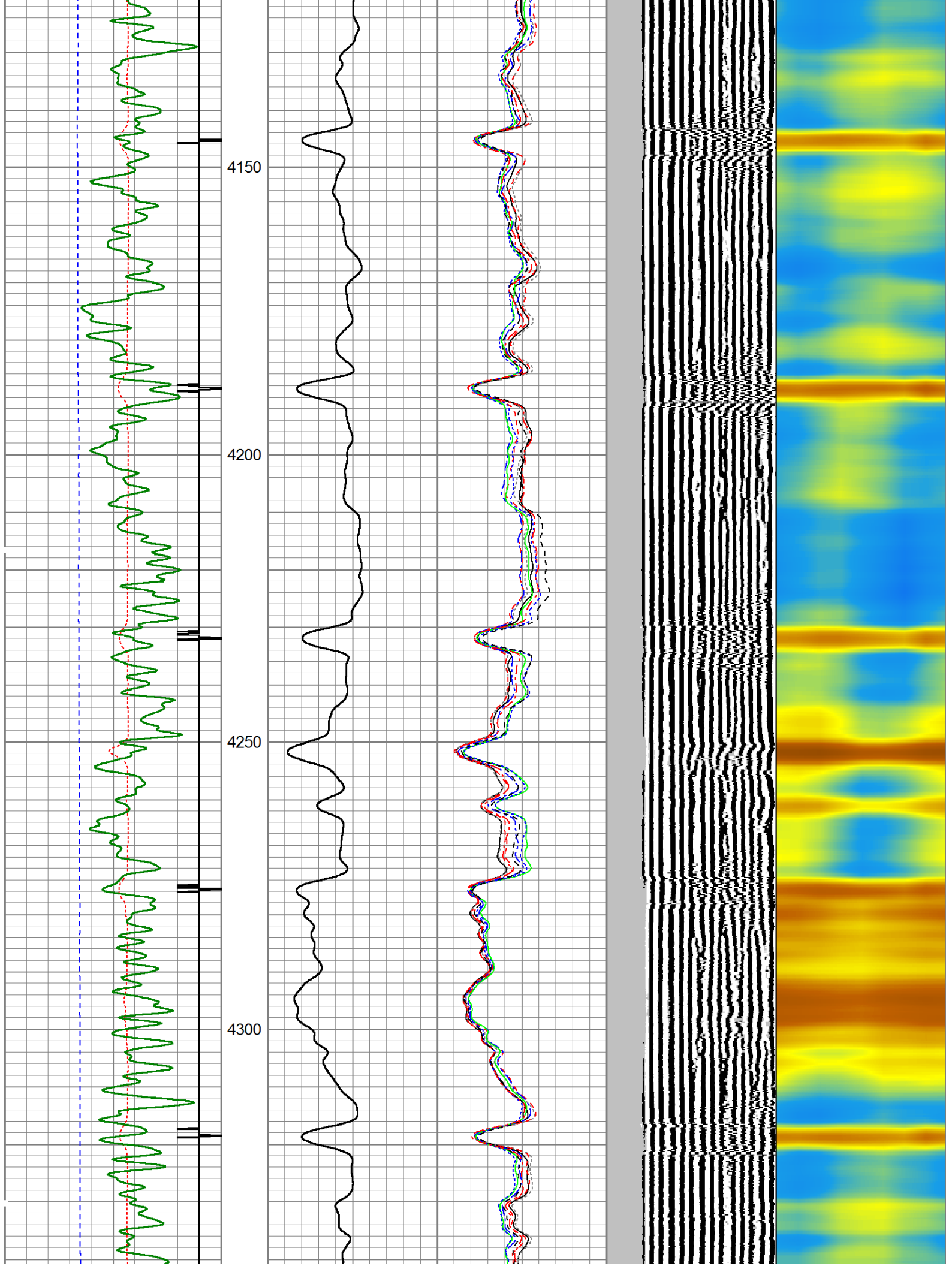


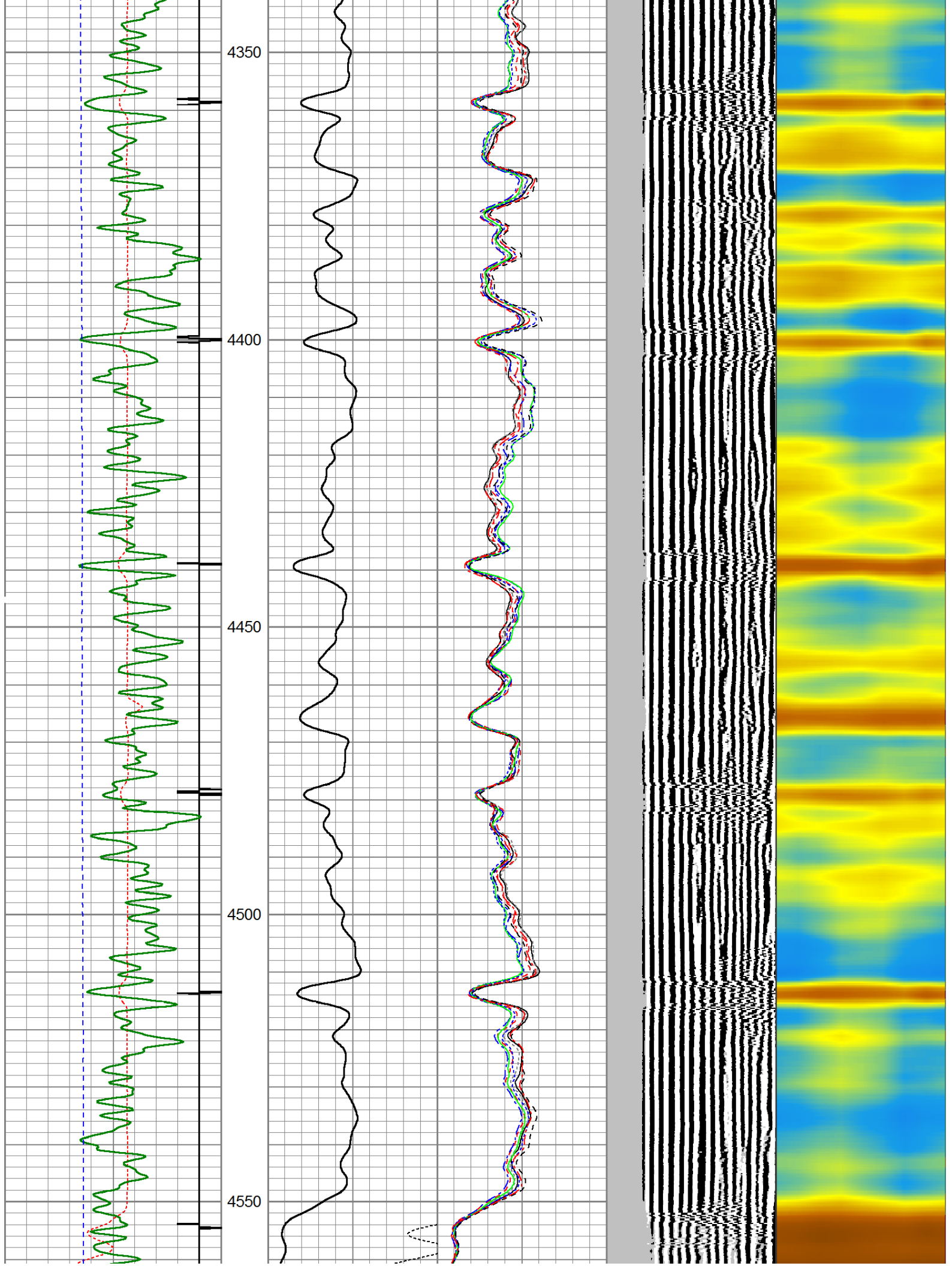


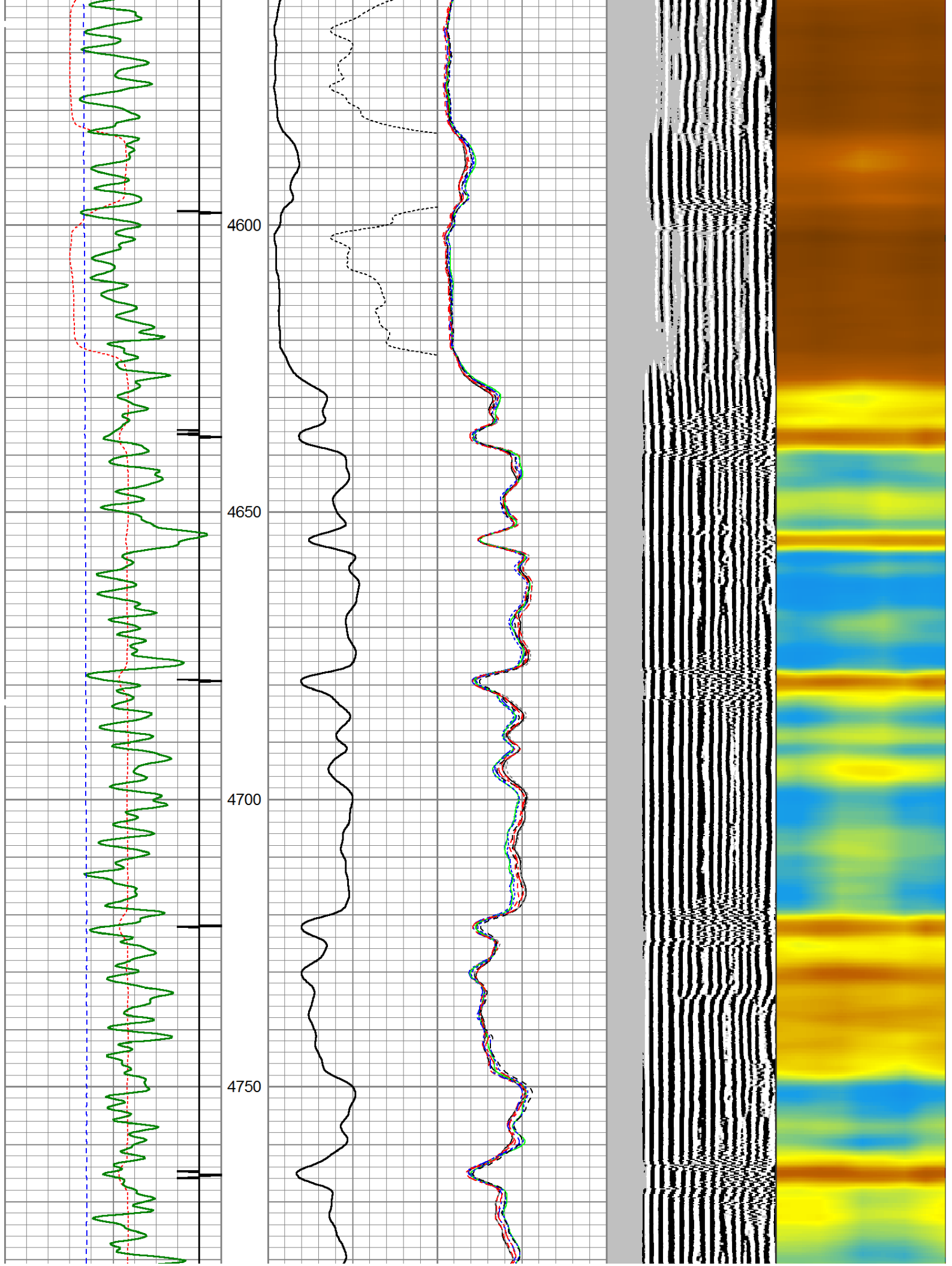


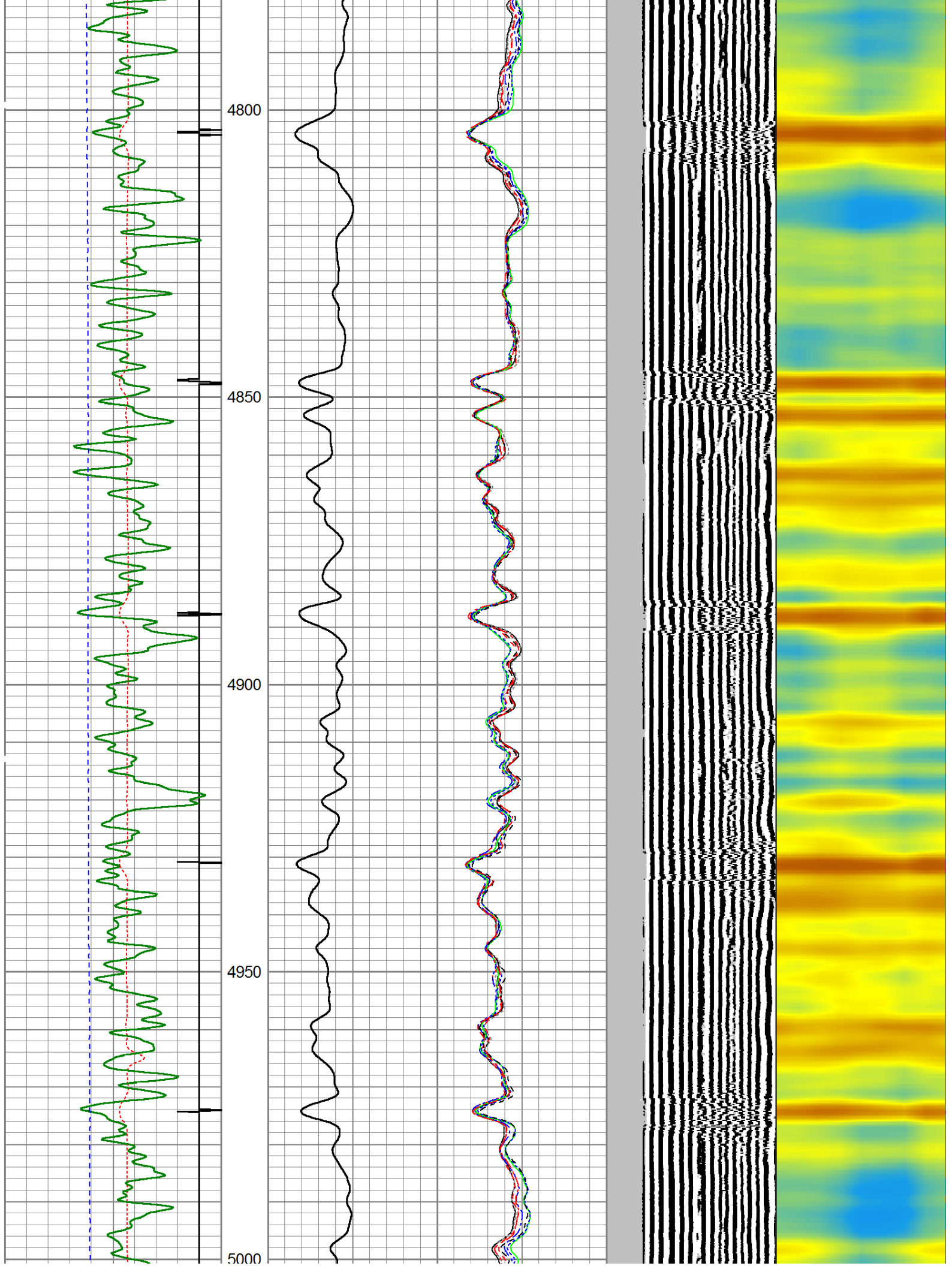


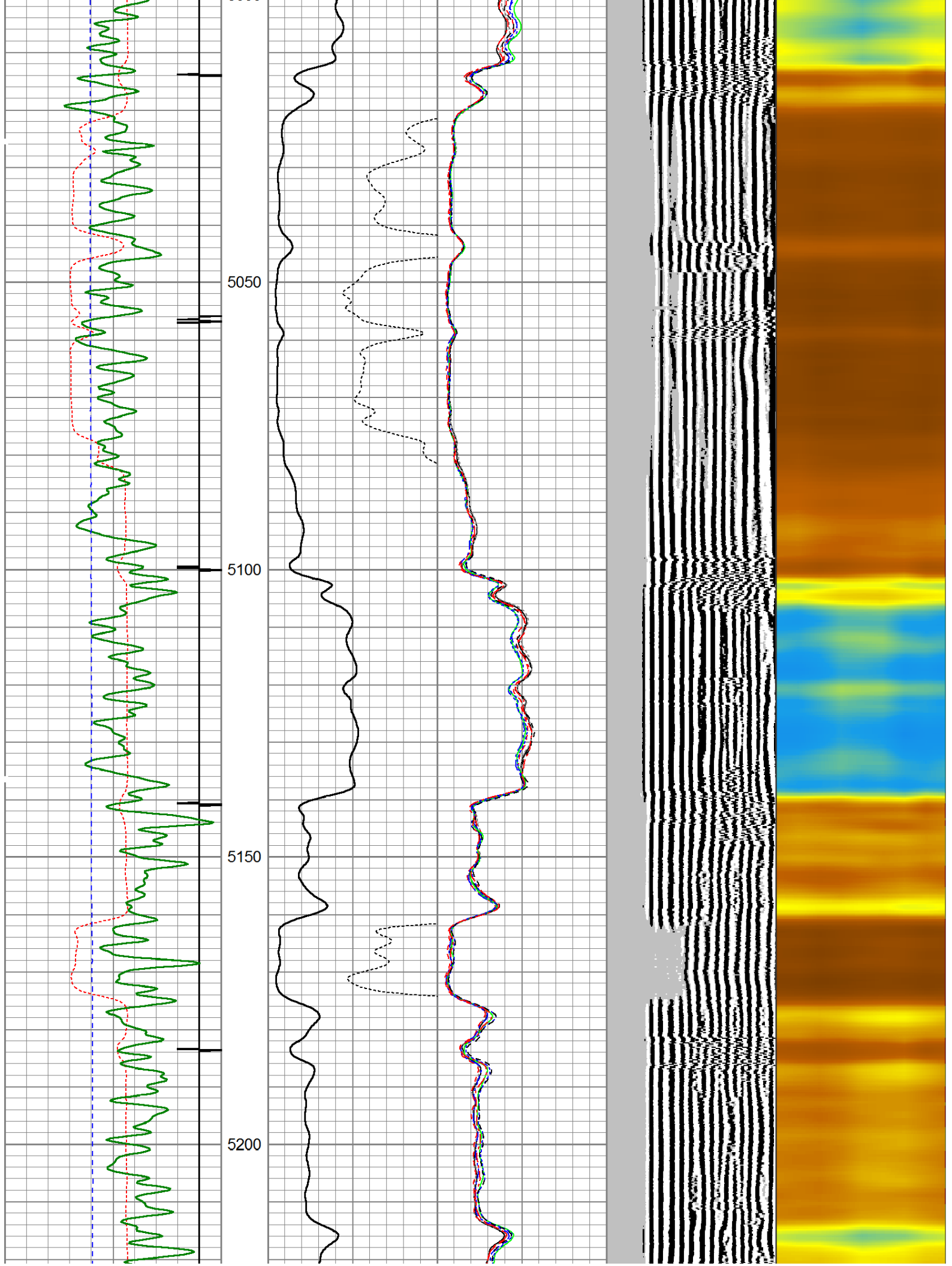


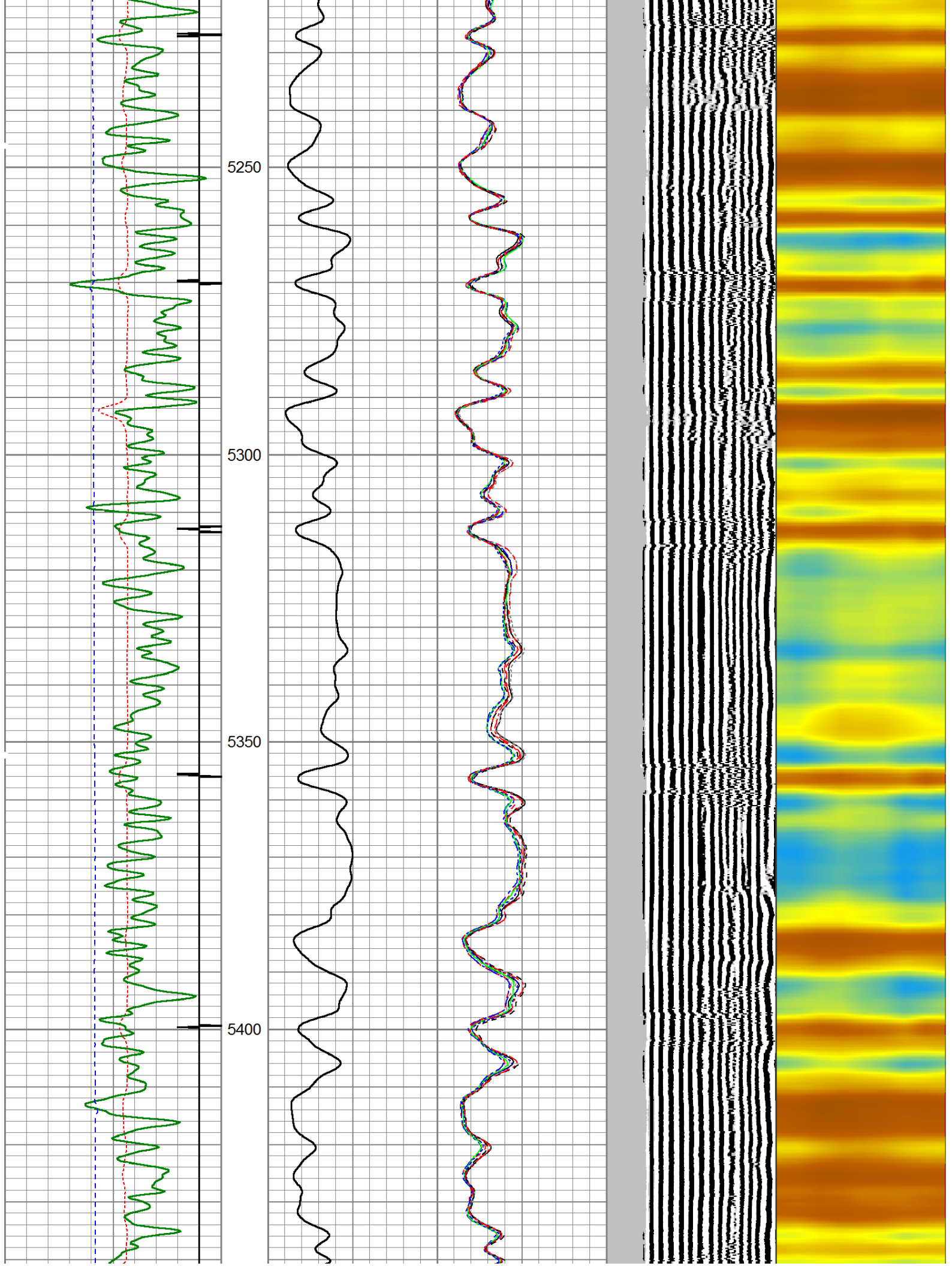


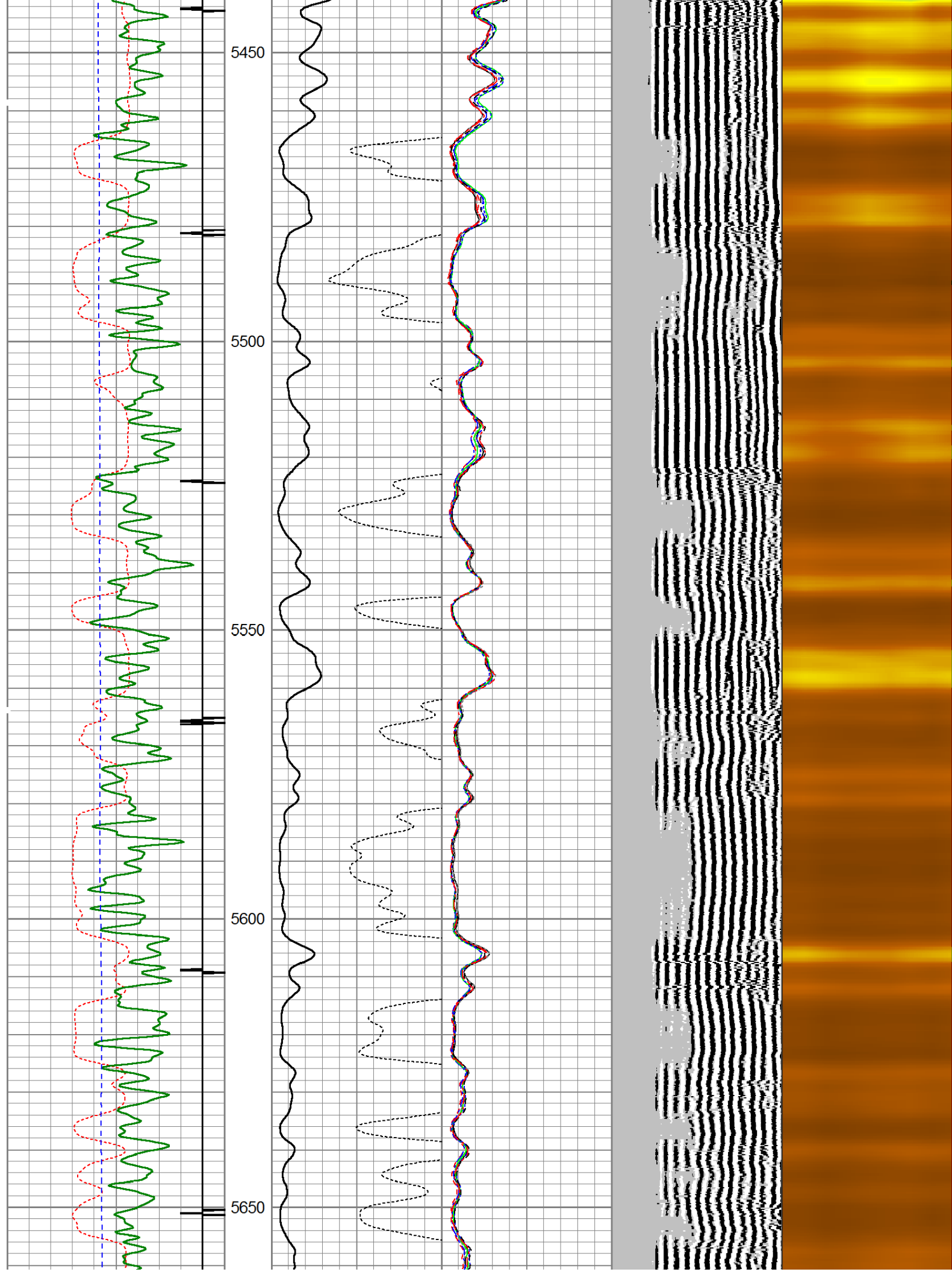


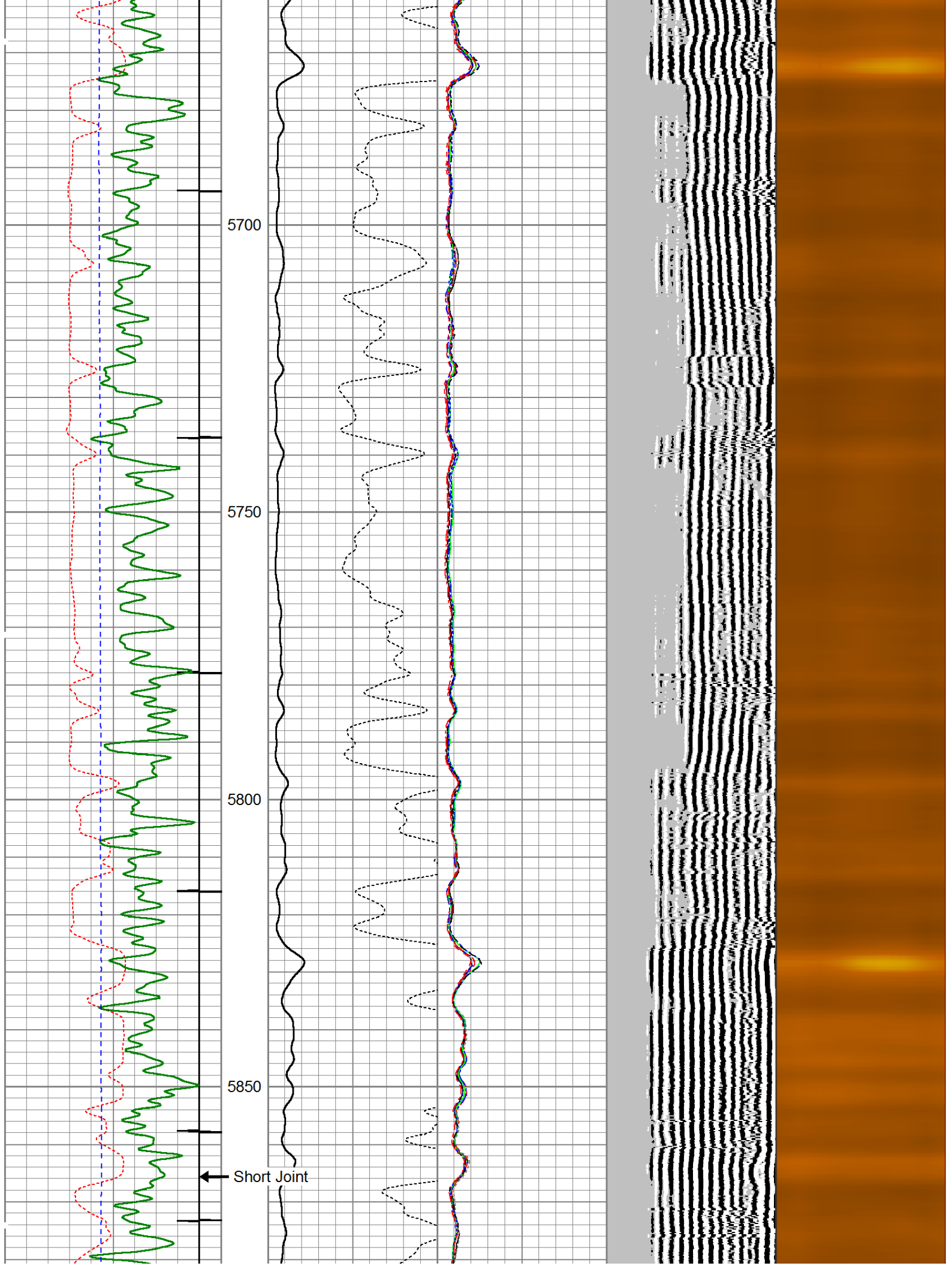


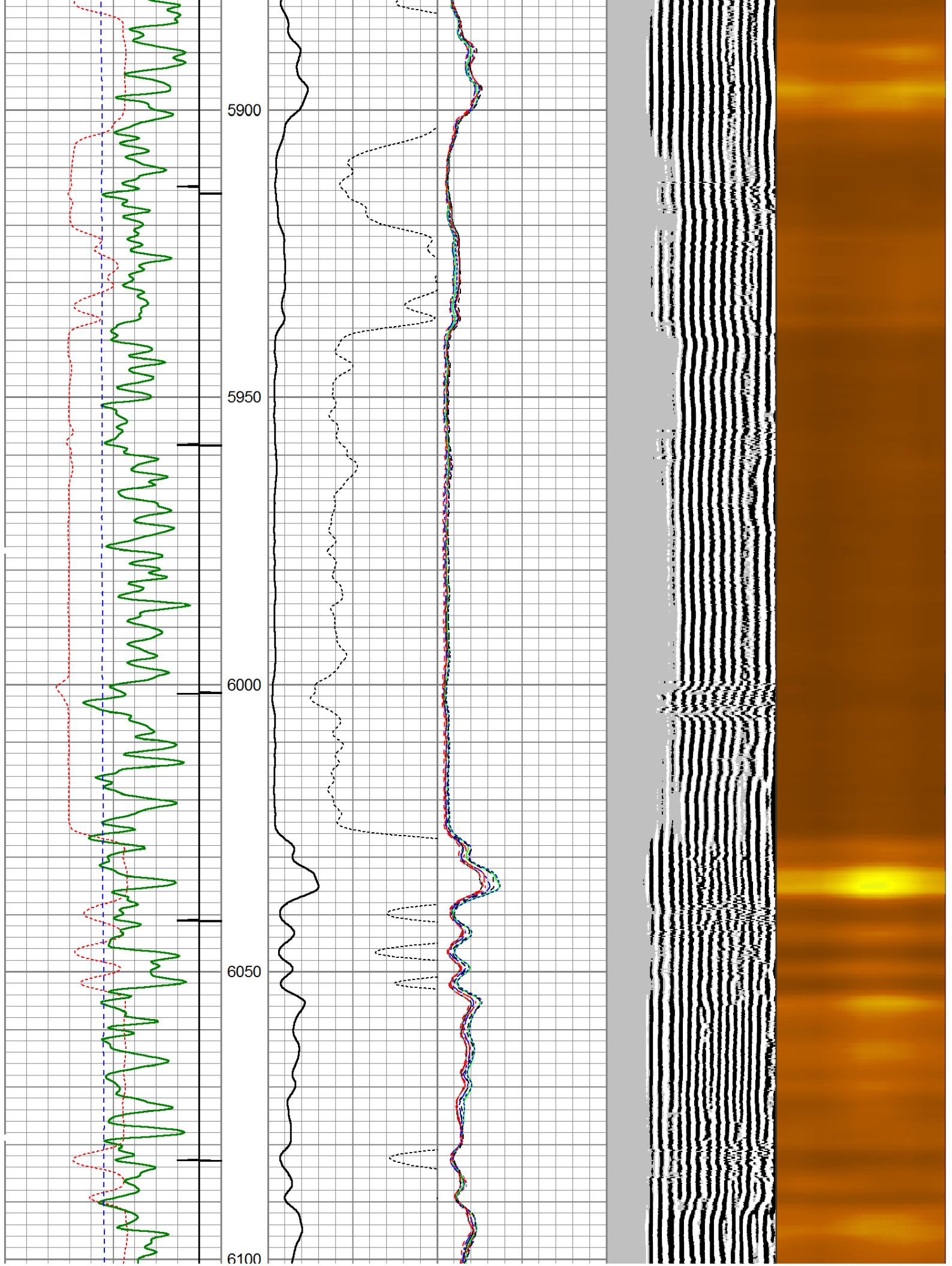


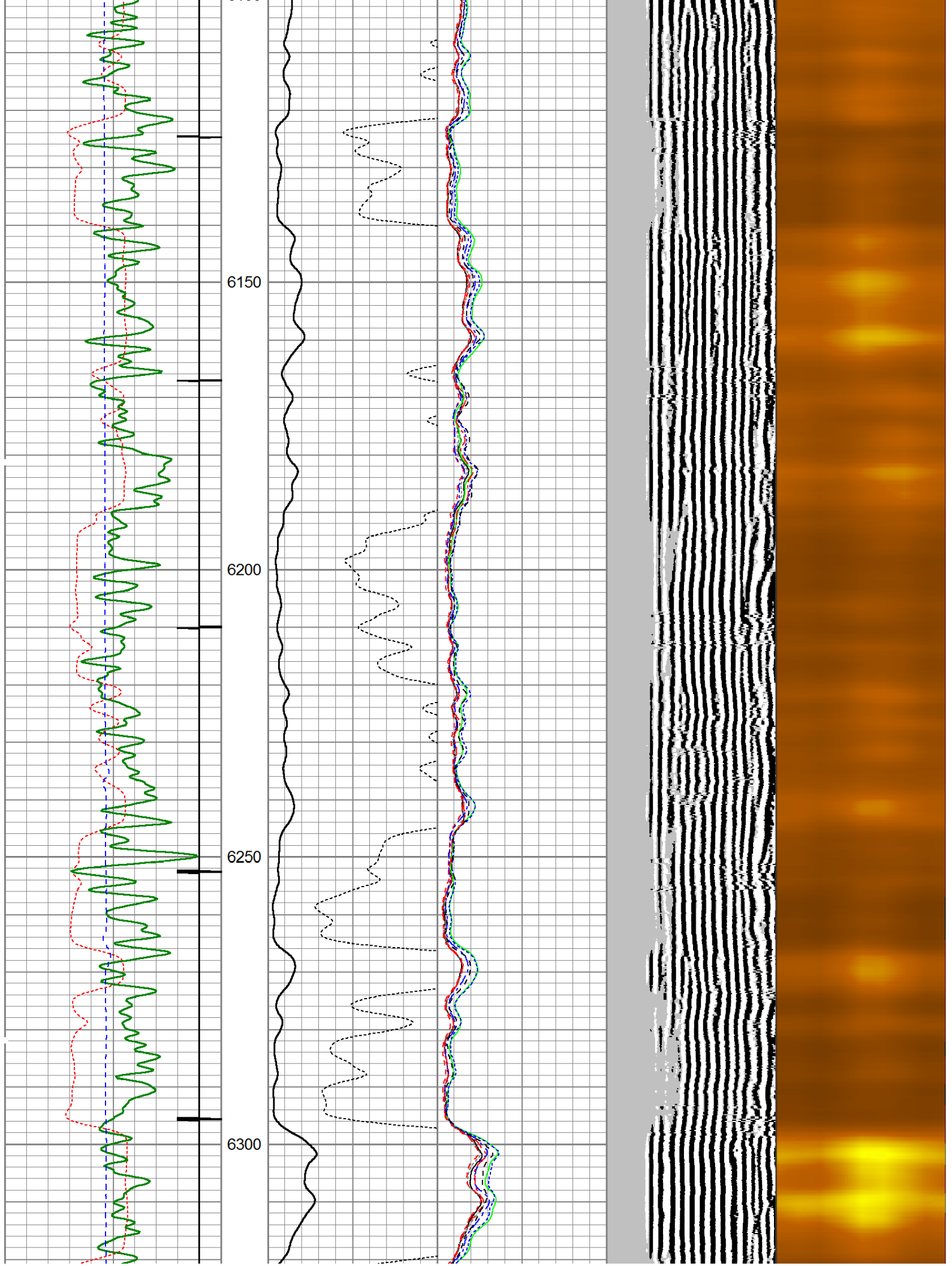


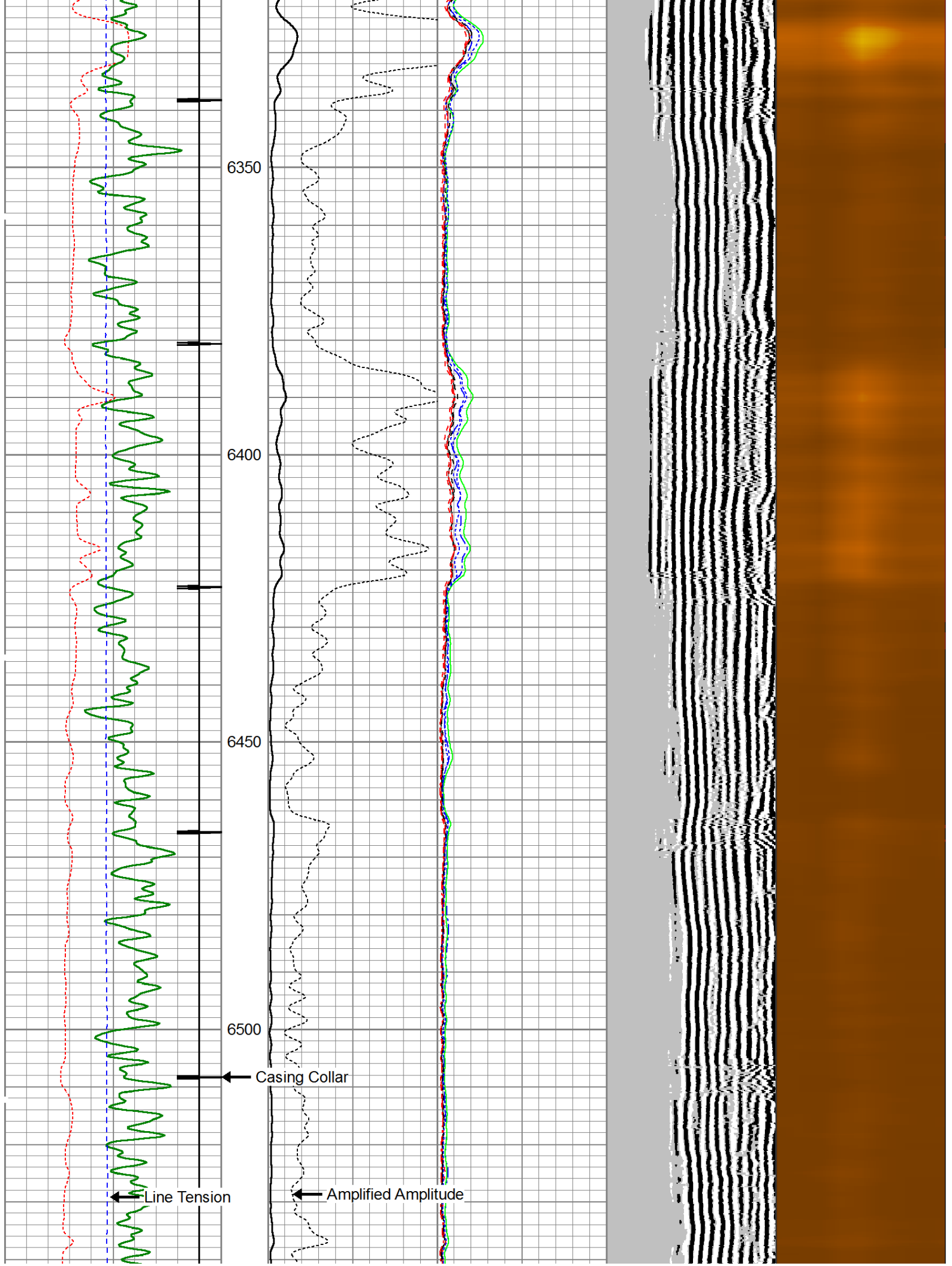


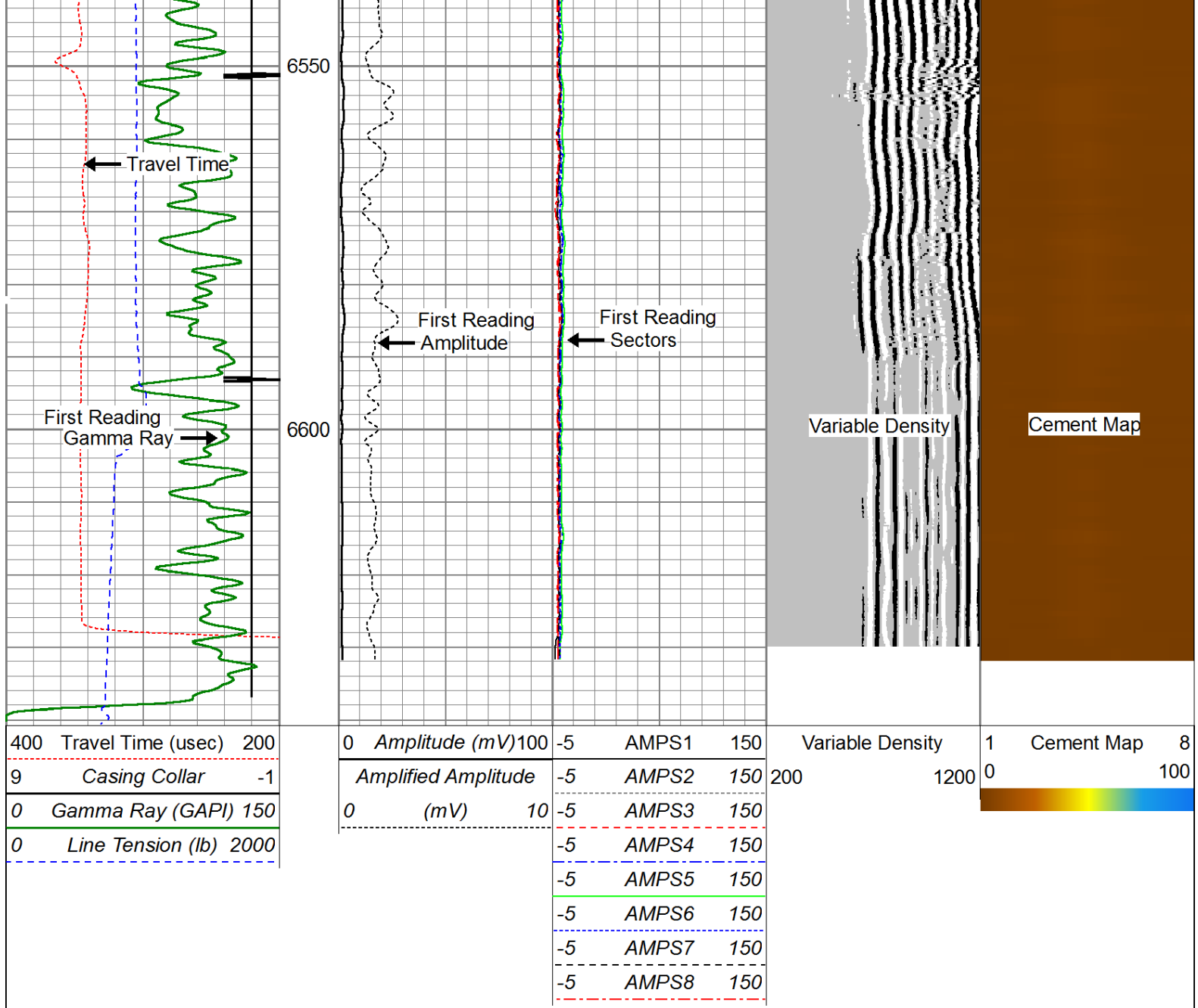






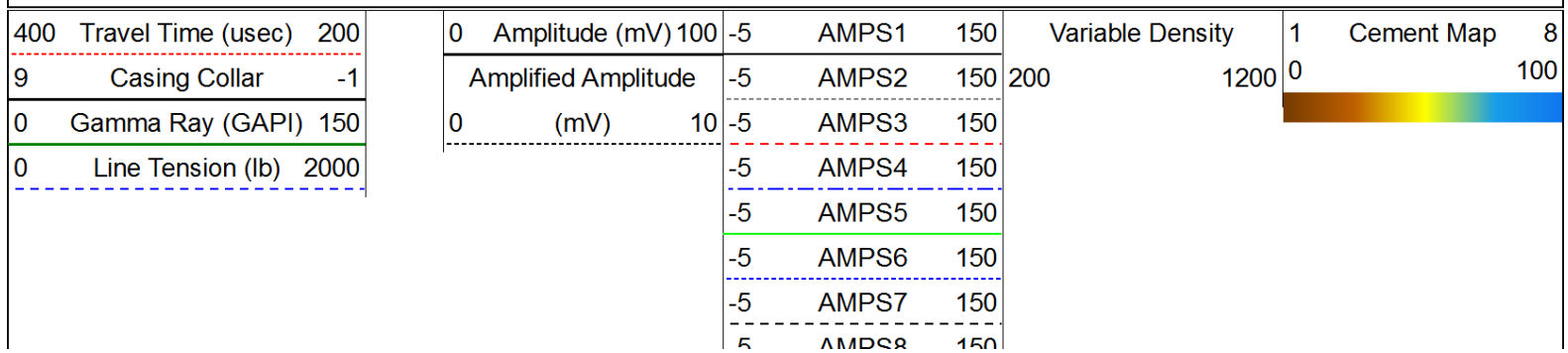


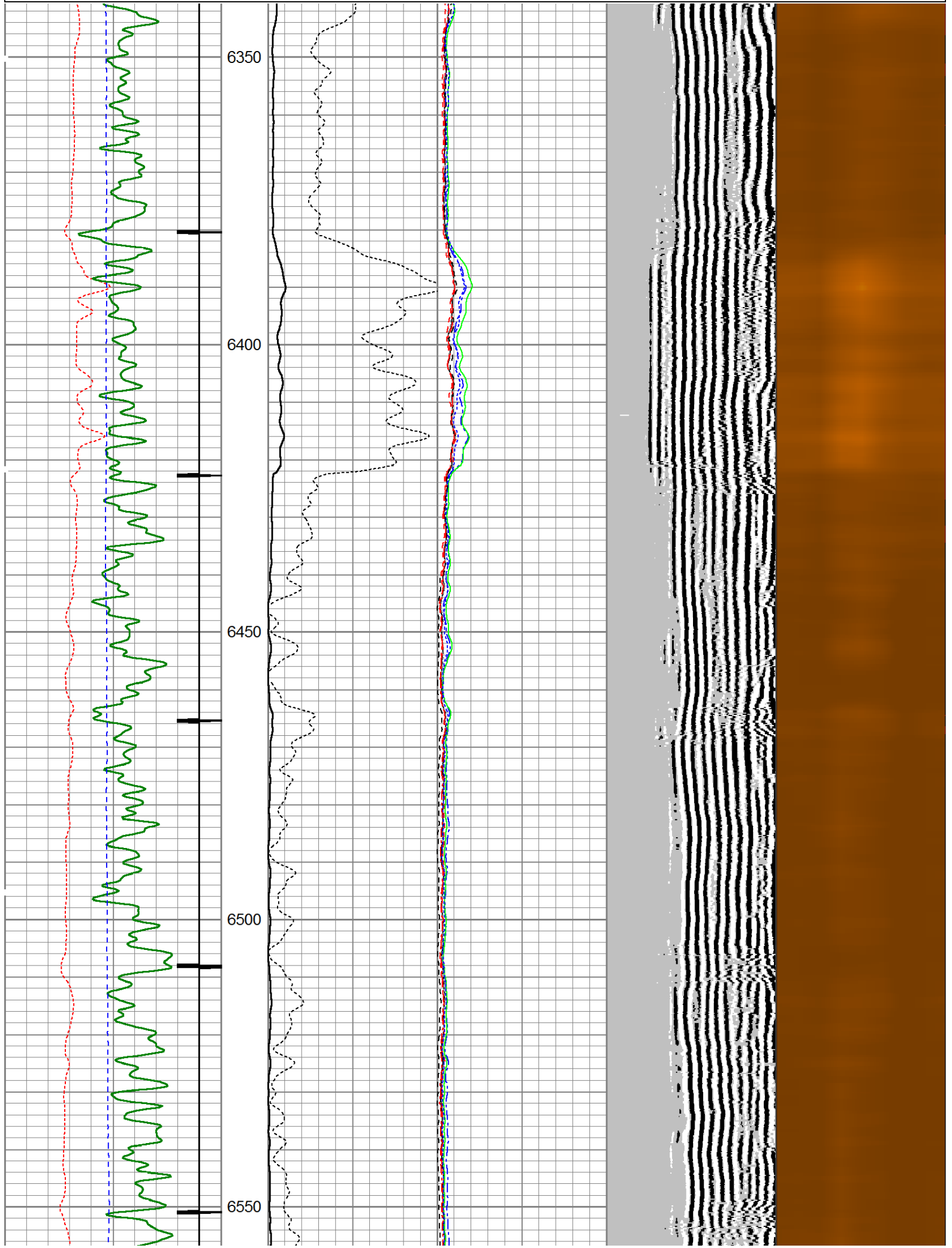


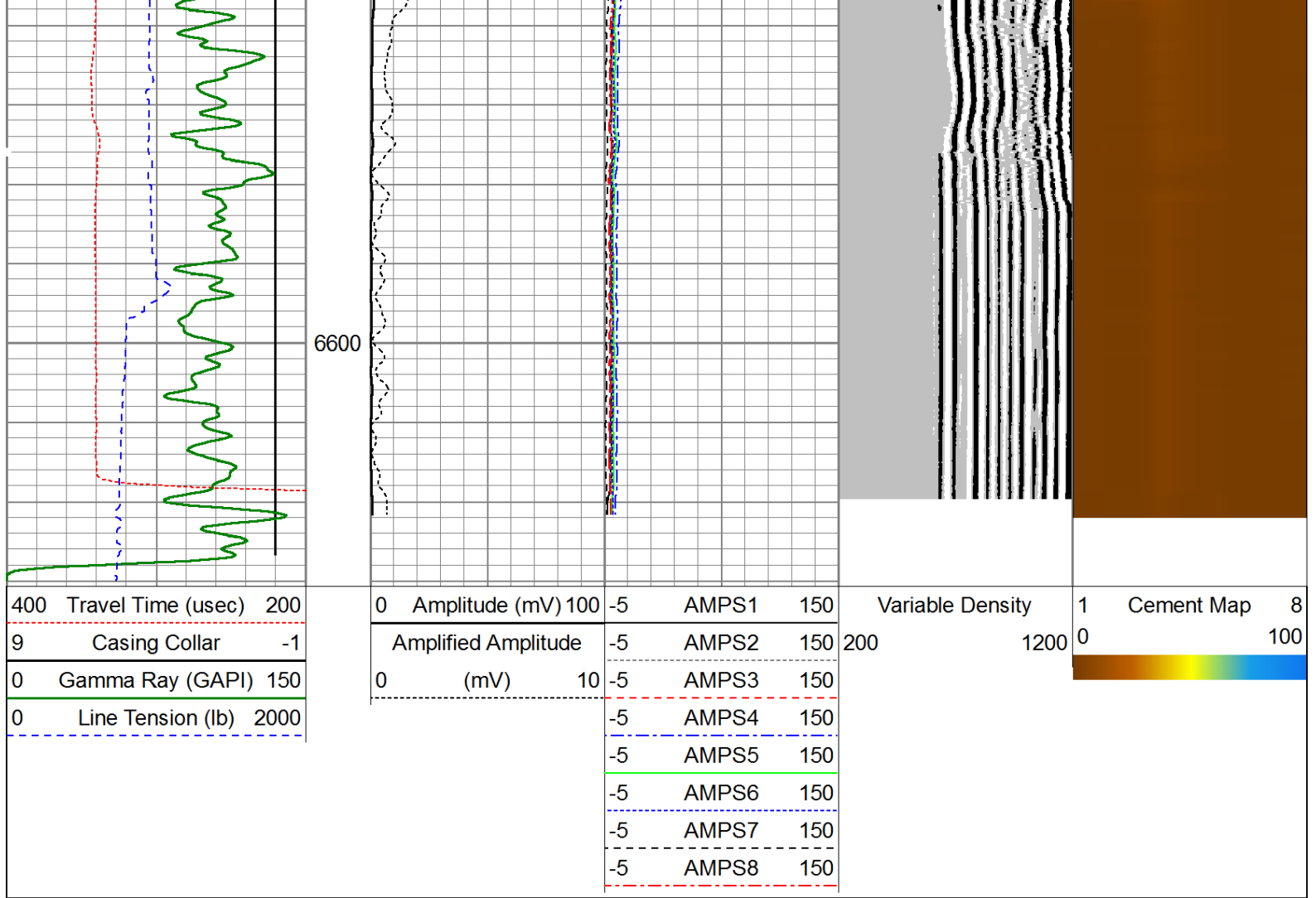


Repeat Pass (0 PSI)

Database File: noble energy crow creek state ac36-75hn_rcbl.db
 Dataset Pathname: pass3
 Presentation Format: scbl03
 Dataset Creation: Sat Dec 14 09:01:06 2013 by Log 0
 Charted by: Depth in Feet scaled 1:240







Calibration Report					
Database File:	noble energy crow creek state ac36-75hn_rcbl.db				
Dataset Pathname:	pass5.1				
Dataset Creation:	Sat Dec 14 11:04:59 2013 by Calc 0				
Gamma Ray Calibration Report					
Serial Number:	110108-Dig				
Tool Model:	Probe275				
Performed:	Fri Nov 29 14:39:10 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: 101225
 Tool Model: Probe
 Calibration Casing Diameter: 7.000 in
 Calibration Depth: 699.995 ft

Master Calibration, performed Sat Dec 14 09:03:58 2013:

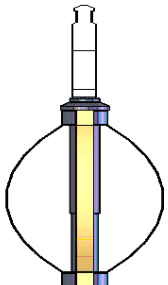
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.035	0.612	1.000	62.165	96.454	1.734
CAL	-0.027	1.084				
5'	-0.019	0.547	1.000	62.165	108.016	3.085
SUM						
S1	0.017	0.657	0.000	100.000	156.163	-2.663
S2	-0.002	0.616	0.000	100.000	161.763	0.342
S3	0.004	0.580	0.000	100.000	173.534	-0.646
S4	-0.014	0.558	0.000	100.000	174.830	0.360
S5	-0.001	0.601	0.000	100.000	166.106	0.903
S6	-0.007	0.657	0.000	100.000	150.619	1.050
S7	0.021	0.679	0.000	100.000	152.115	0.235
S8	0.005	0.641	0.000	100.000	157.215	-0.735

Internal Reference Calibration, performed Mon Oct 10 09:42:03 2005:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.027	1.084	1.000	0.000

Air Zero Calibration, performed Thu Dec 05 13:36:03 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

