



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

Company		Noble Energy	
Well		Crow Creek State AC36-74HN	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-37425	
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		11118'	
Depth Logger		6742'	
Bottom Logged Interval		6729'	
Top Log Interval		Surface	
Open Hole Size		8.125	
Type Fluid		Fresh Water	
Density / Viscosity		8.33	
Max. Recorded Temp.		223 Deg F	
Estimated Cement Top		1183'	
Time Well Ready		16:05	
Time Logger on Bottom		16:35	
Equipment Number		13033	
Location		Brighton	
Recorded By		C. Rail	
Witnessed By		Bill Mansfield	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
One			
Two			
Three			
Four			
Casing Record		Wgt/Ft	
Surface String		36#	
Top		Surface	
Bottom		625'	
Prot. String			
Production String		26#	
Surface		7033'	
Liner		11112'	
Short Joint		5775'	

<<< 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 24' KB.

Main Pass & Repeat Pass Logged with 0 PSI

Estimated Top of Cement @ 1183'

Short Joint @ 5775' To 5790'

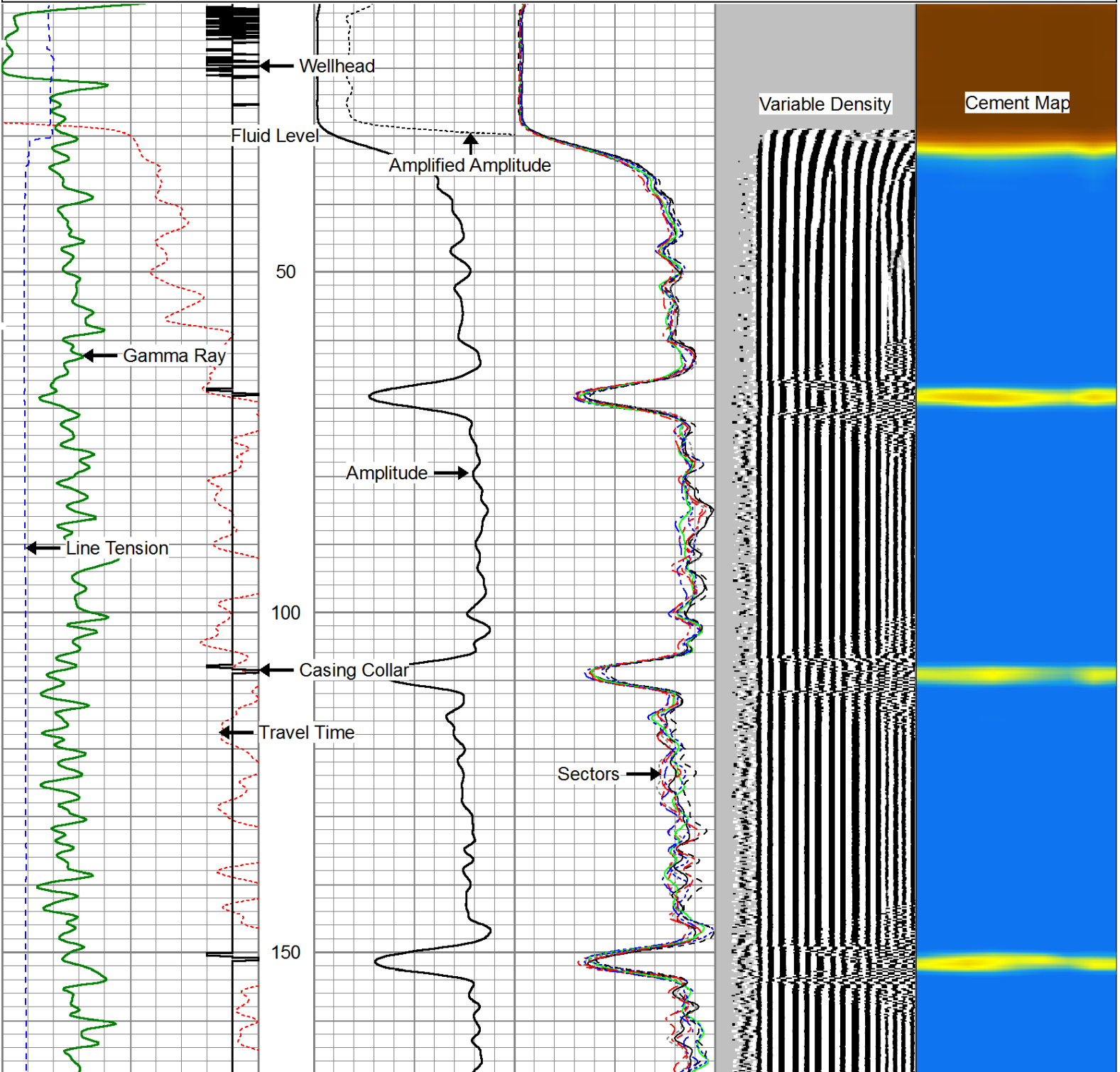
Thank you for using Allied Wireline.
(303)659-4609

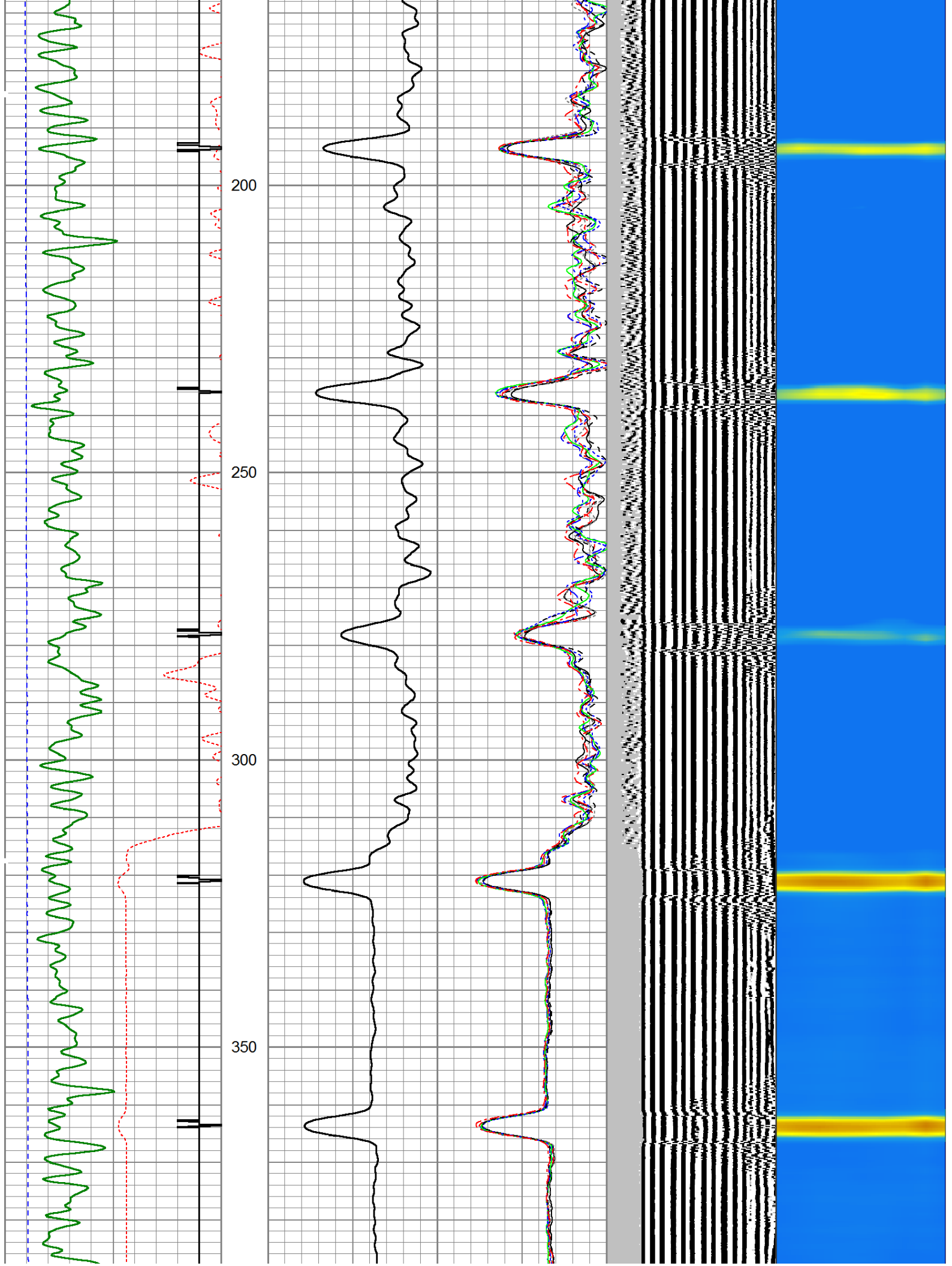


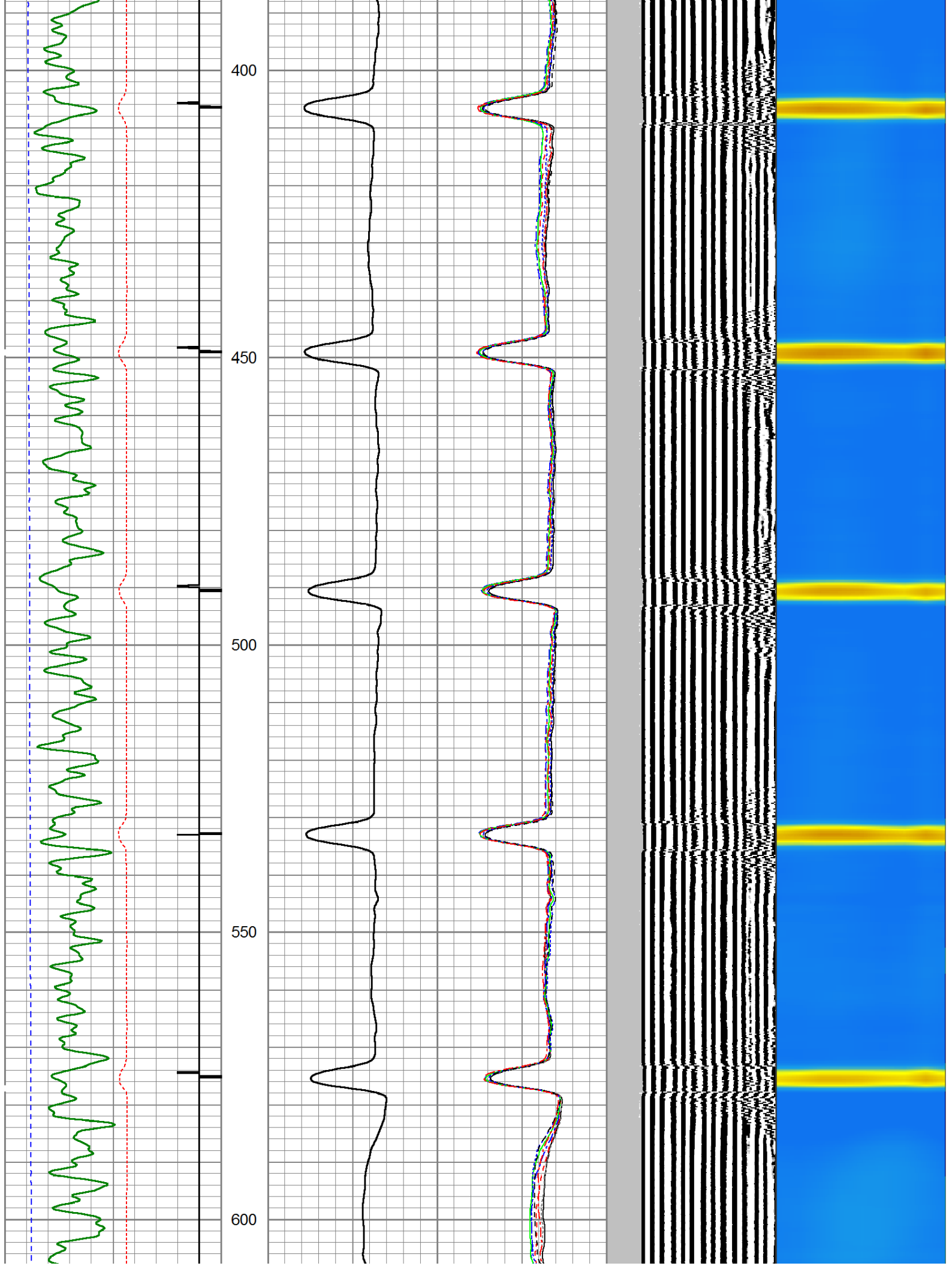
Main Pass (0 PSI)

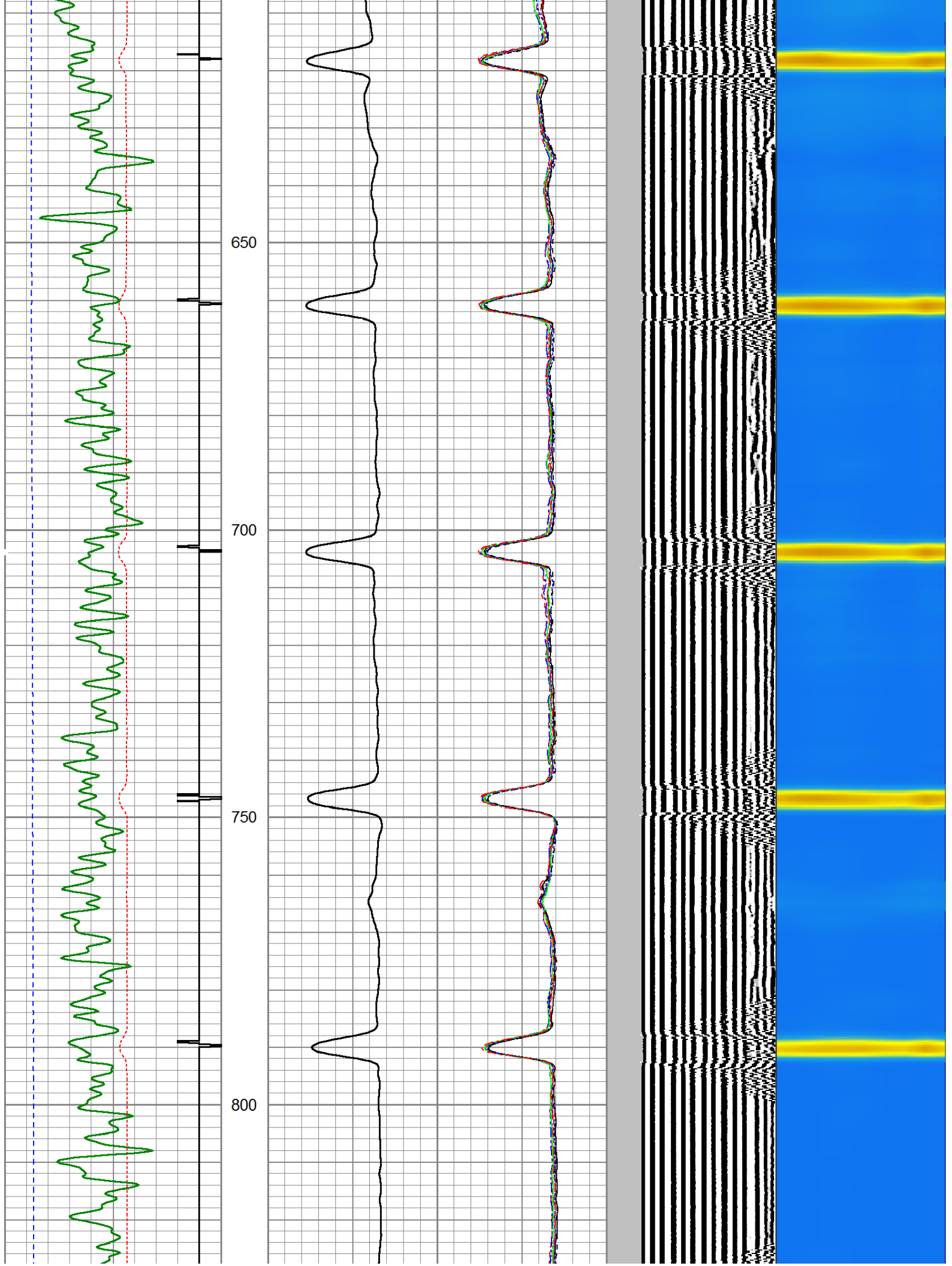
Database File: noble energy crow creek state ac36-74hn_rcbl.db
Dataset Pathname: pass8
Presentation Format: scbl03
Dataset Creation: Sat Dec 14 16:44:47 2013 by Log 0
Charted by: Depth in Feet scaled 1:240

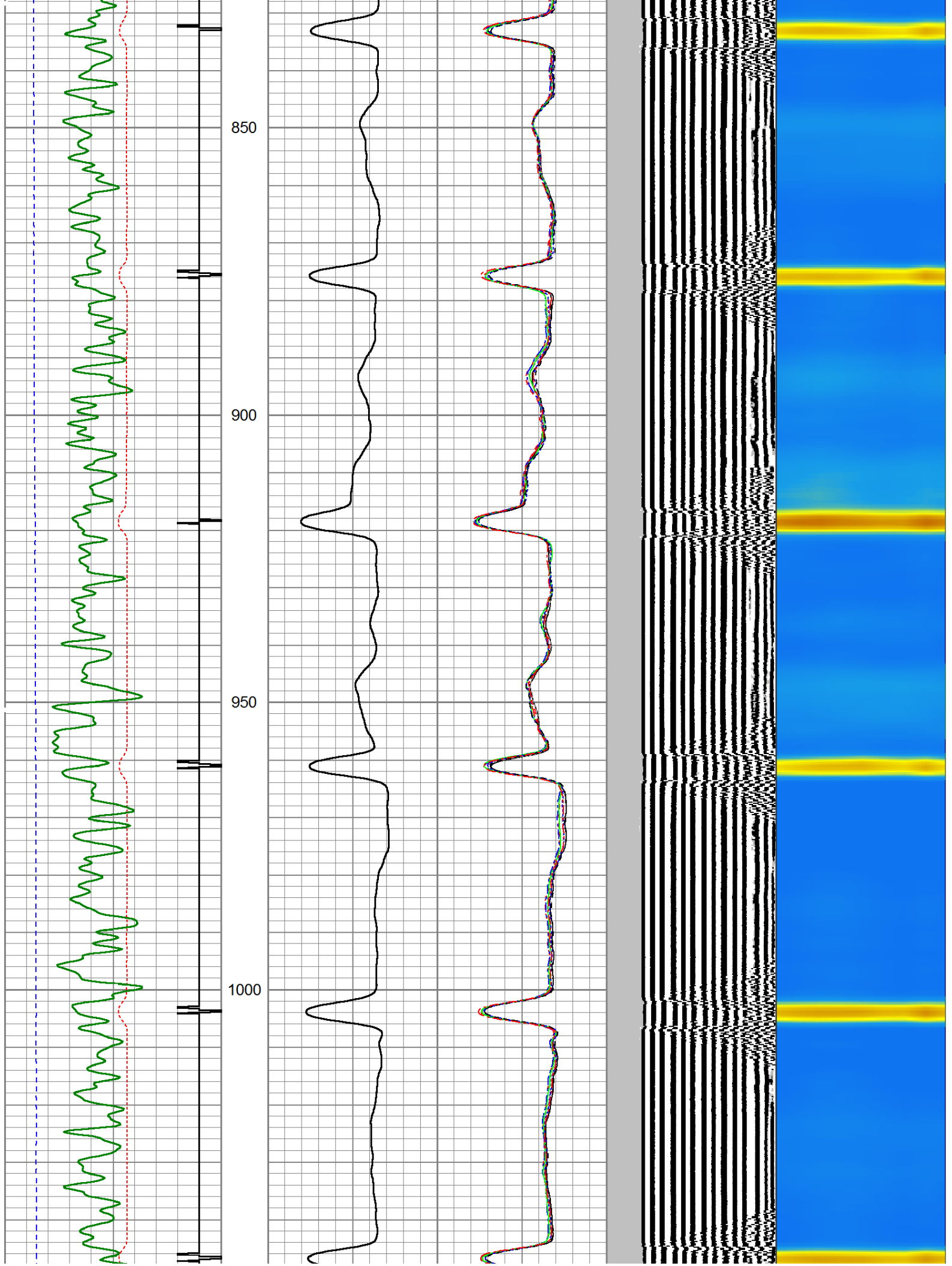
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	2000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150		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

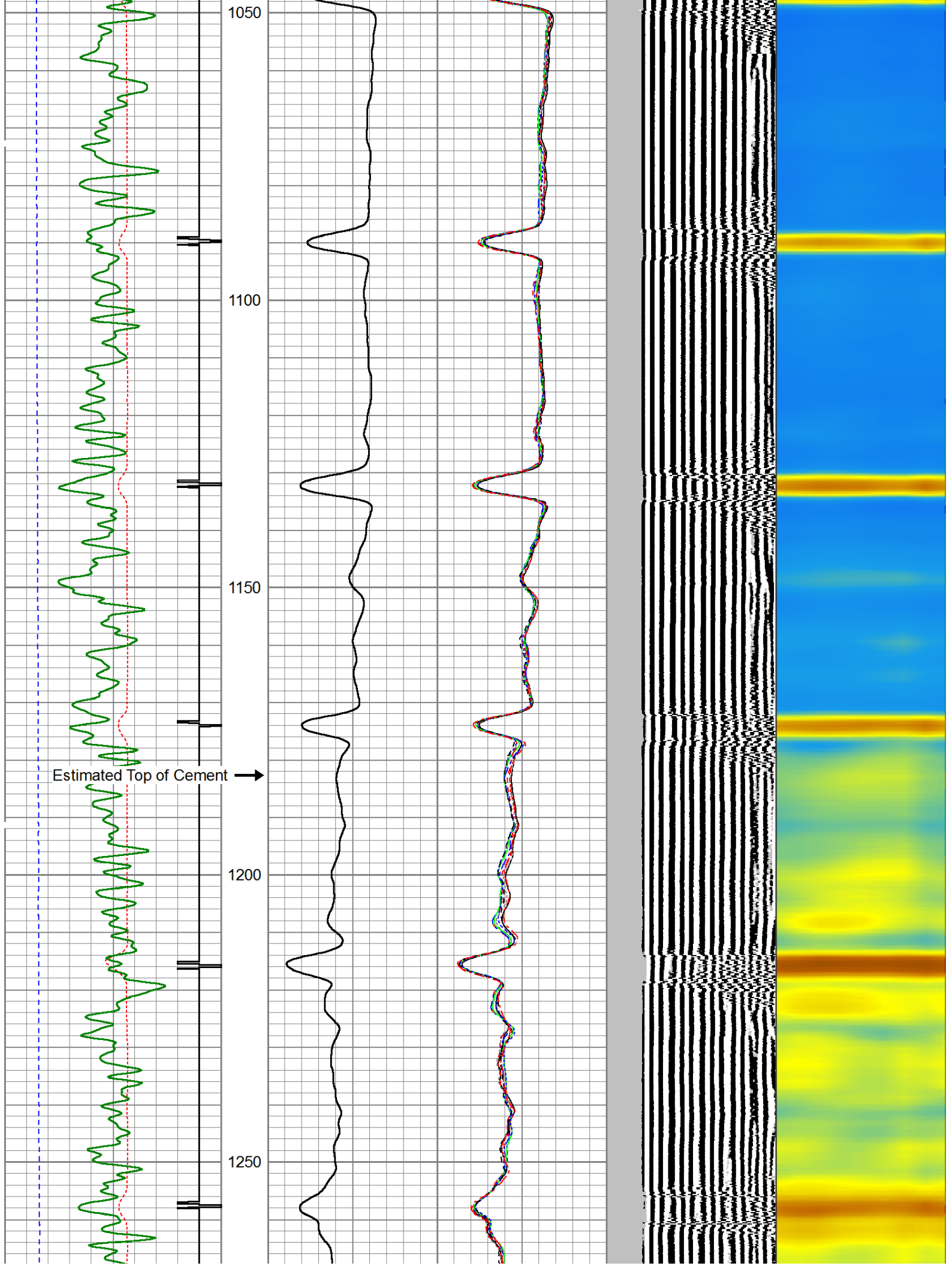


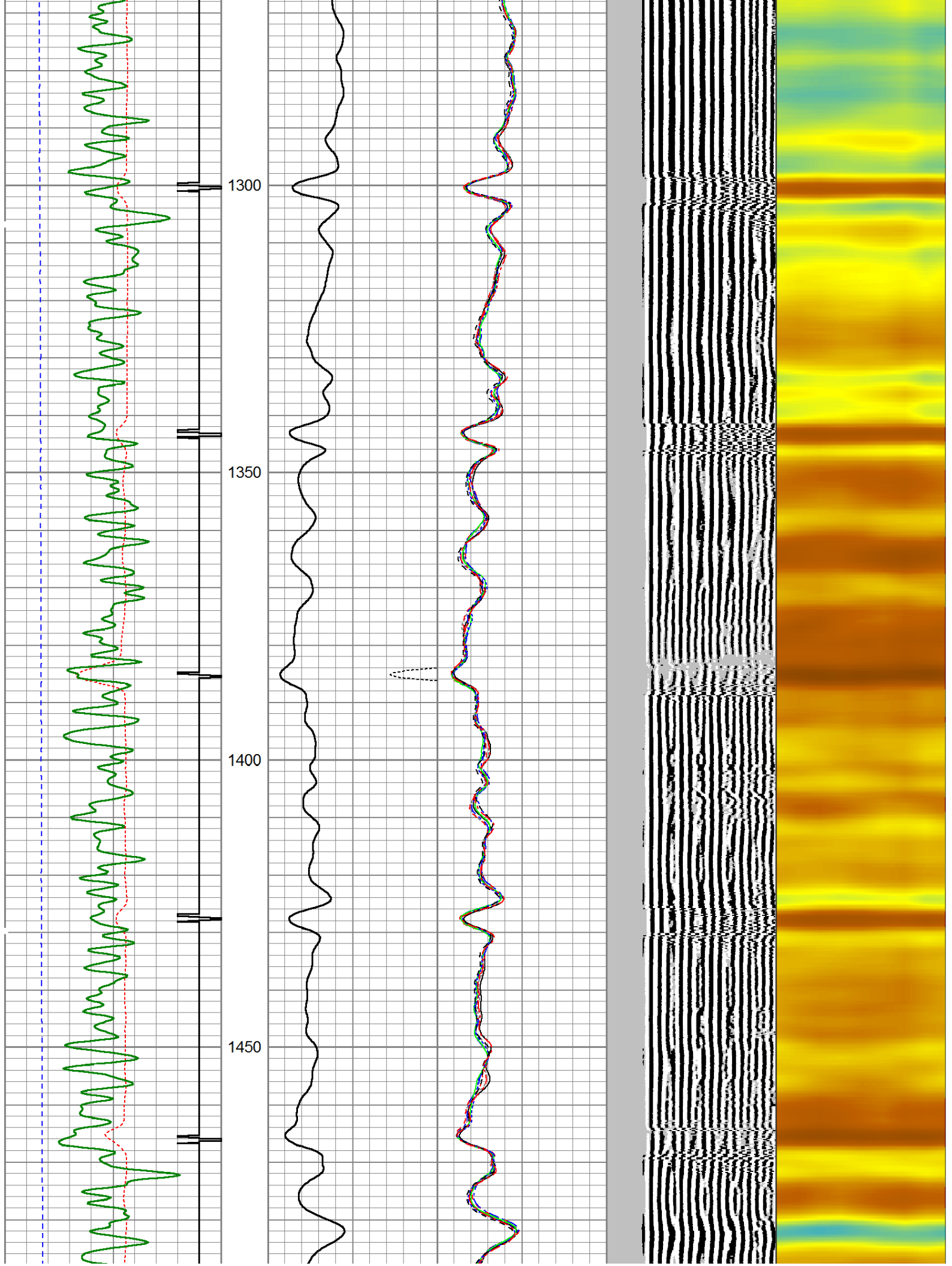


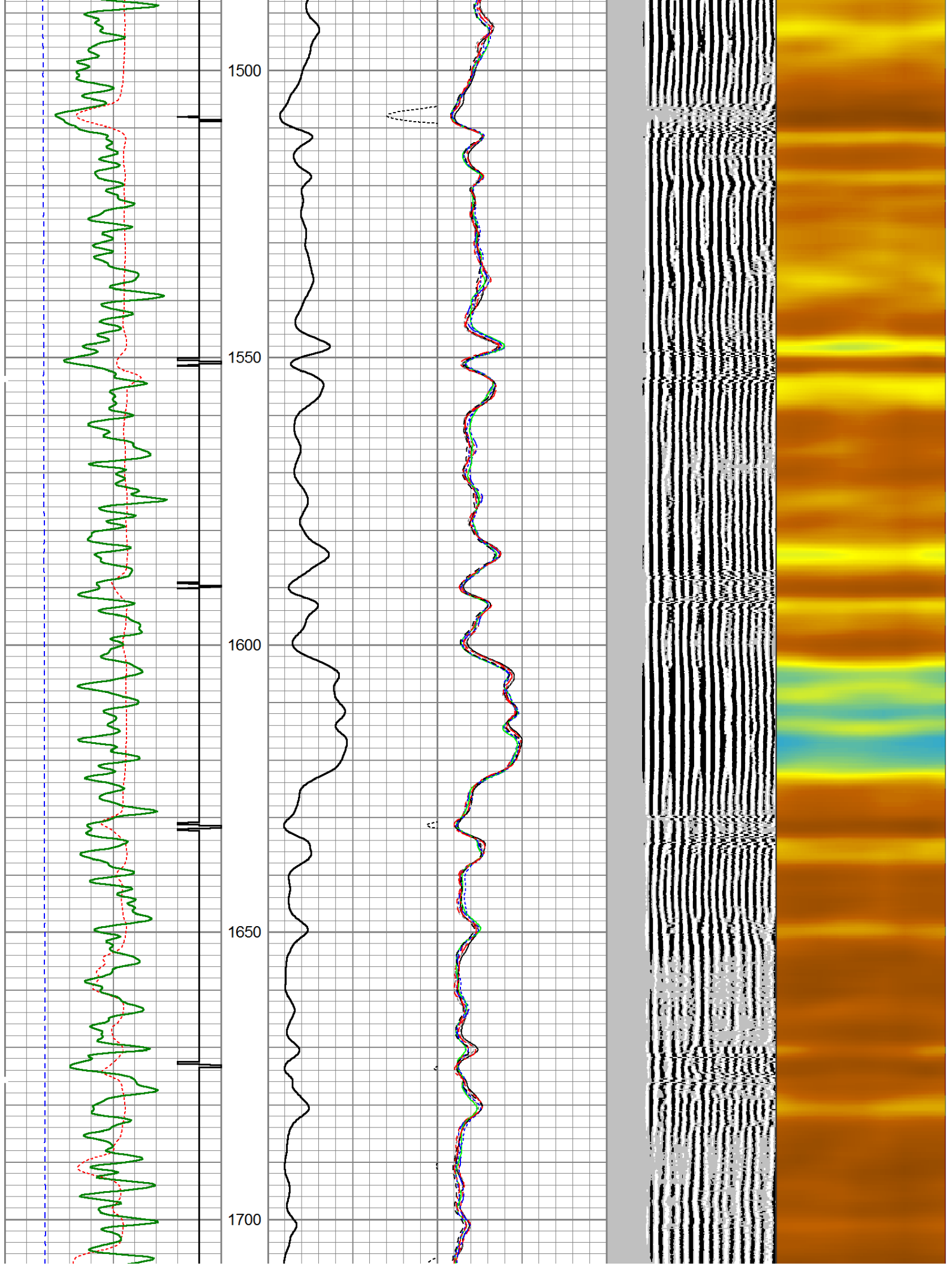


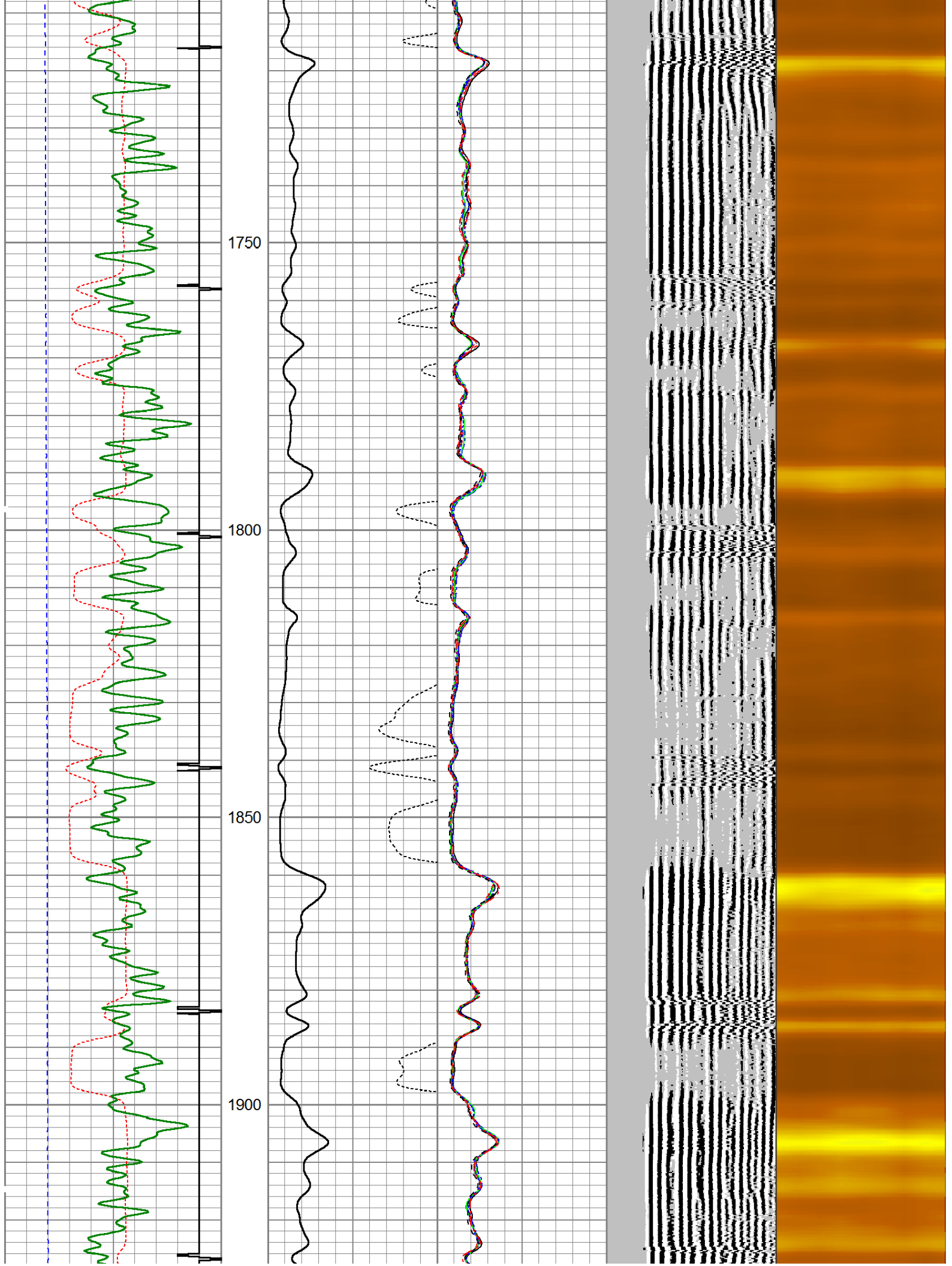


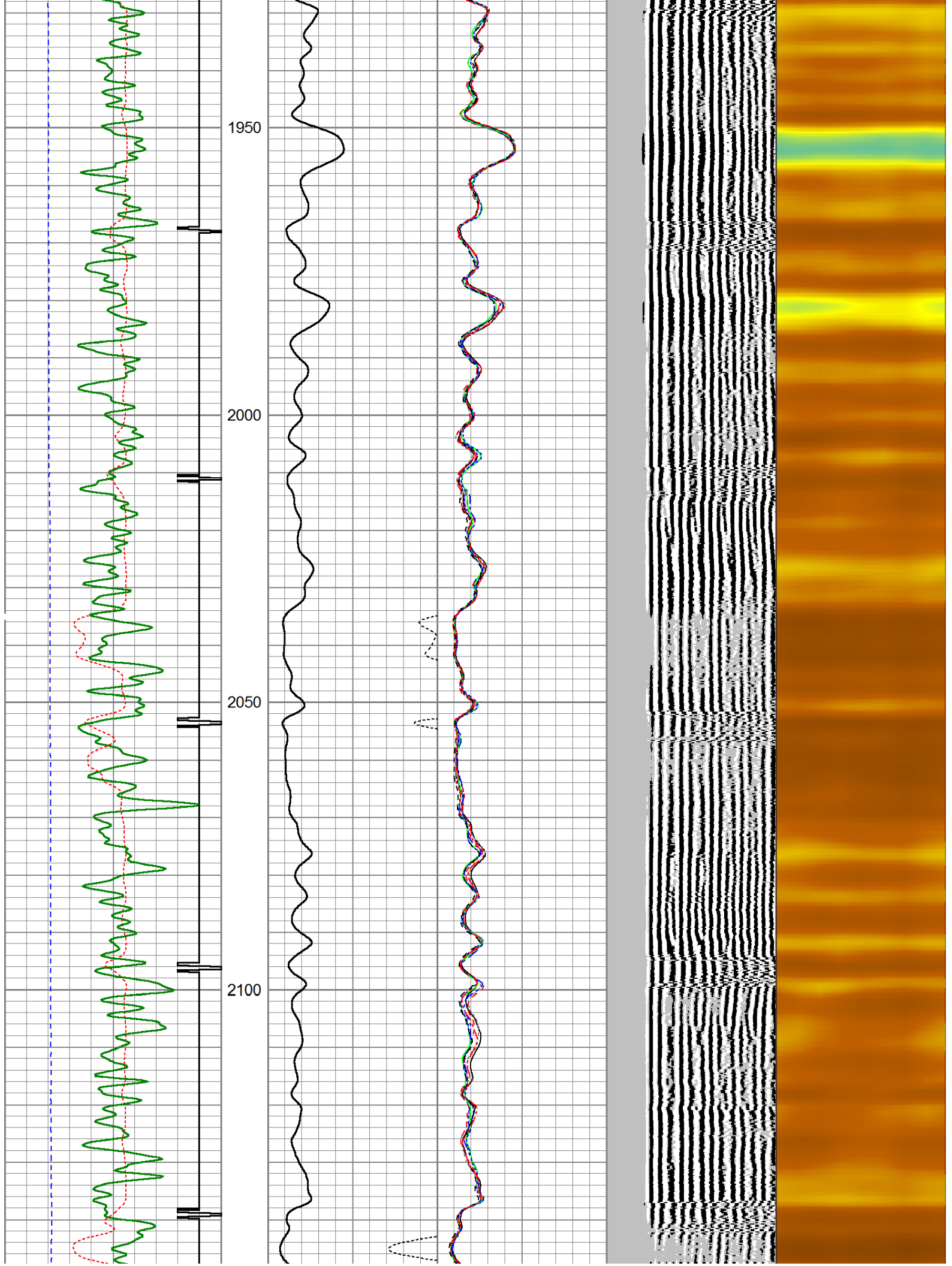


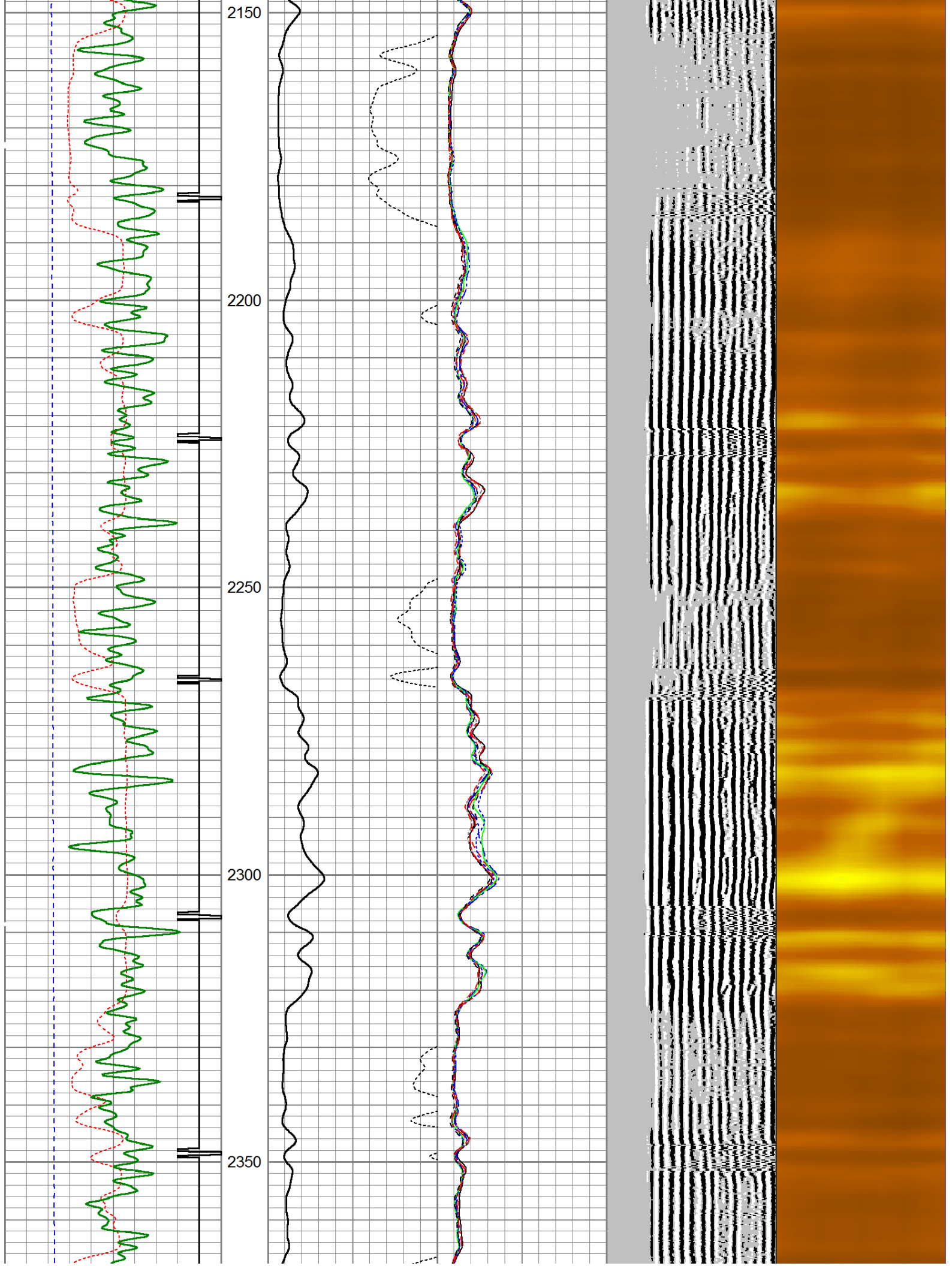


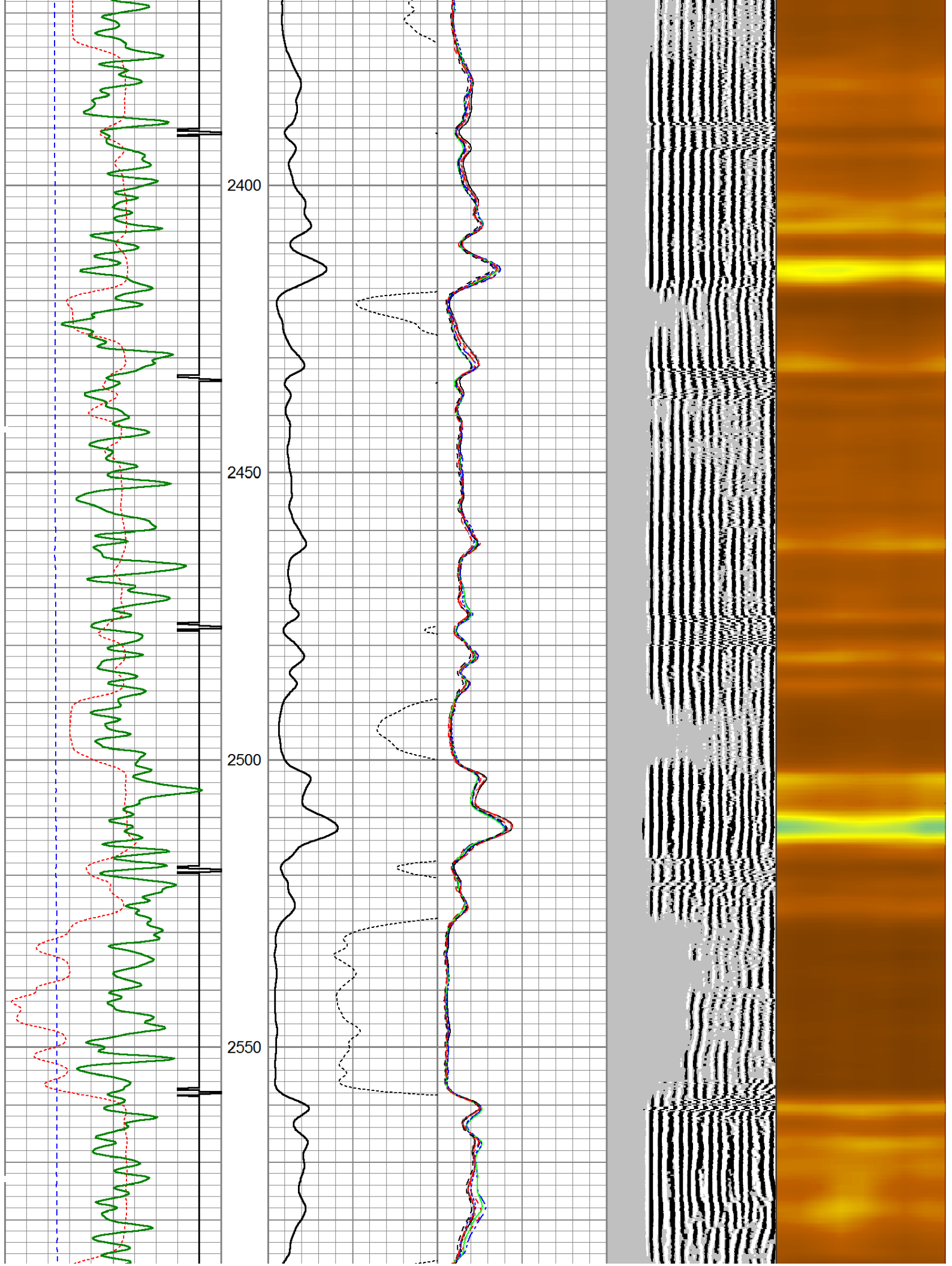


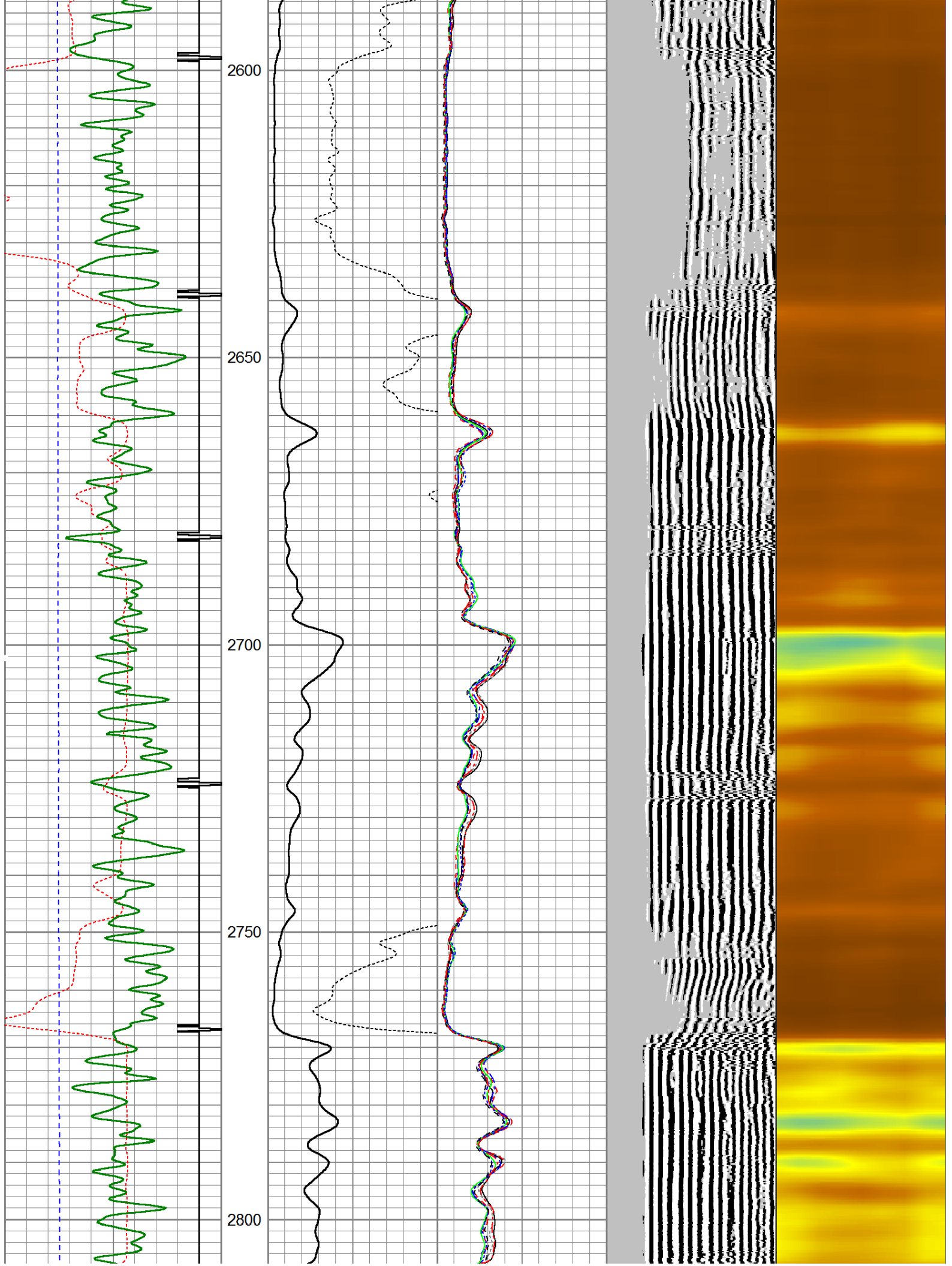


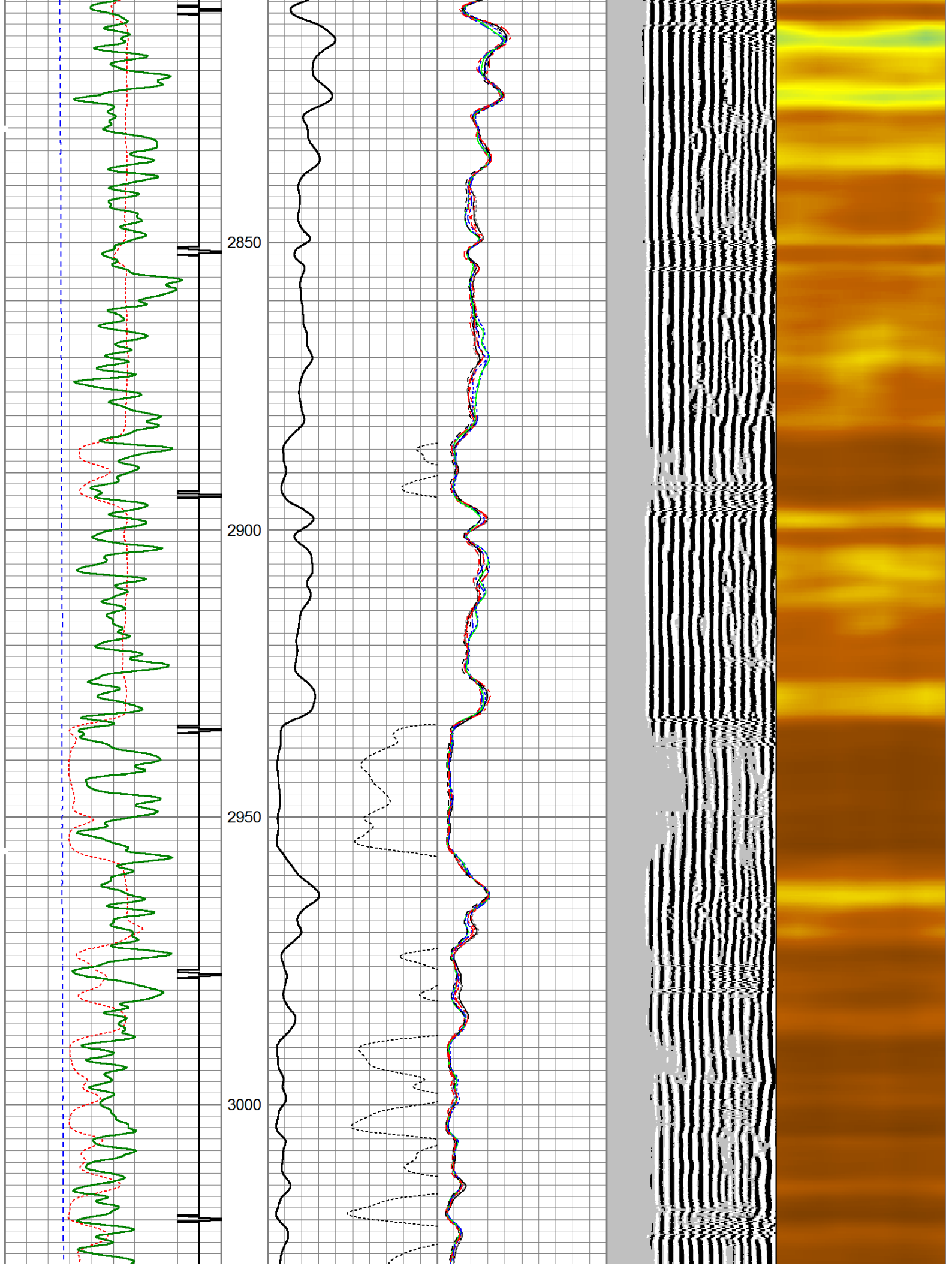


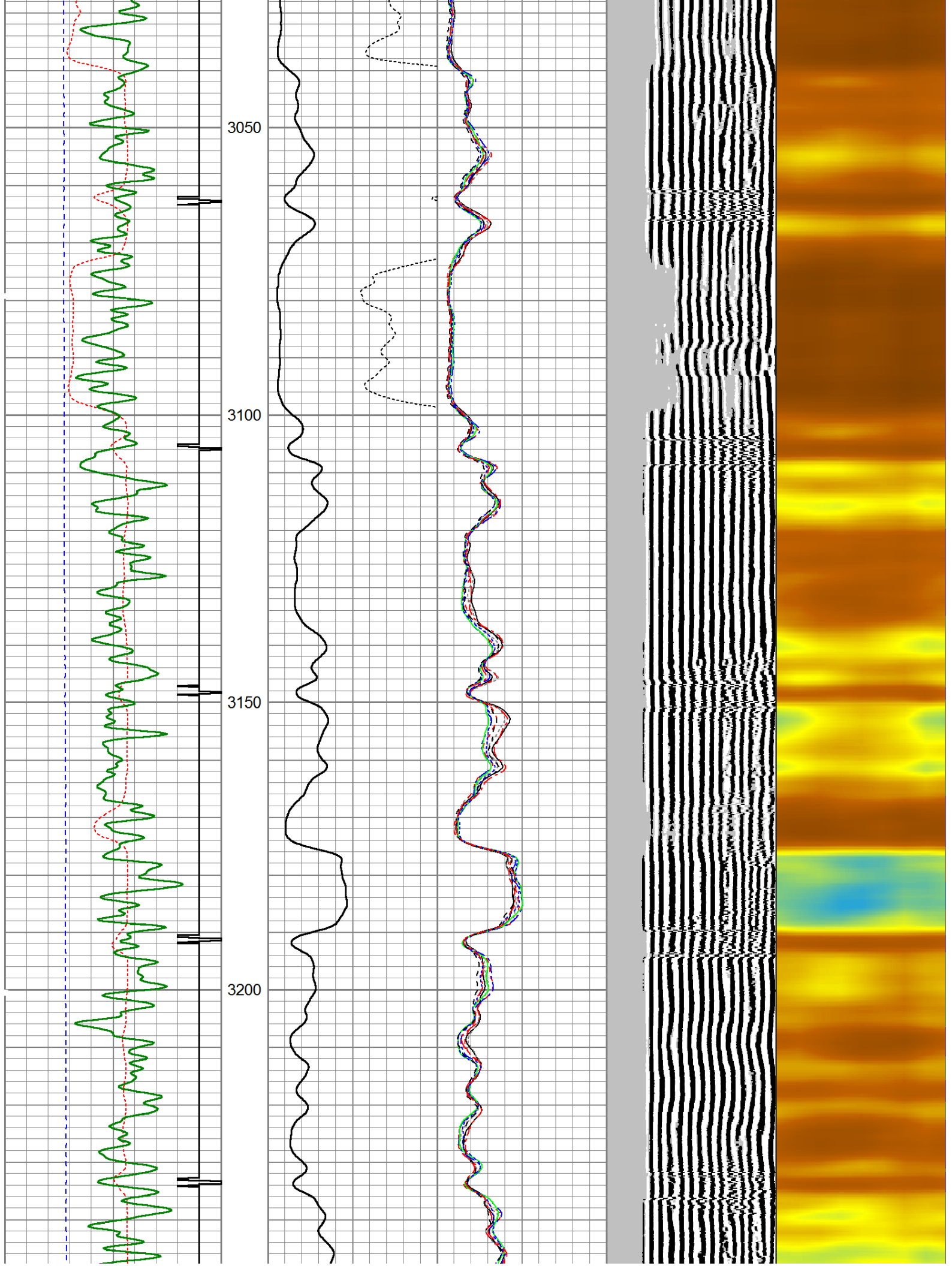


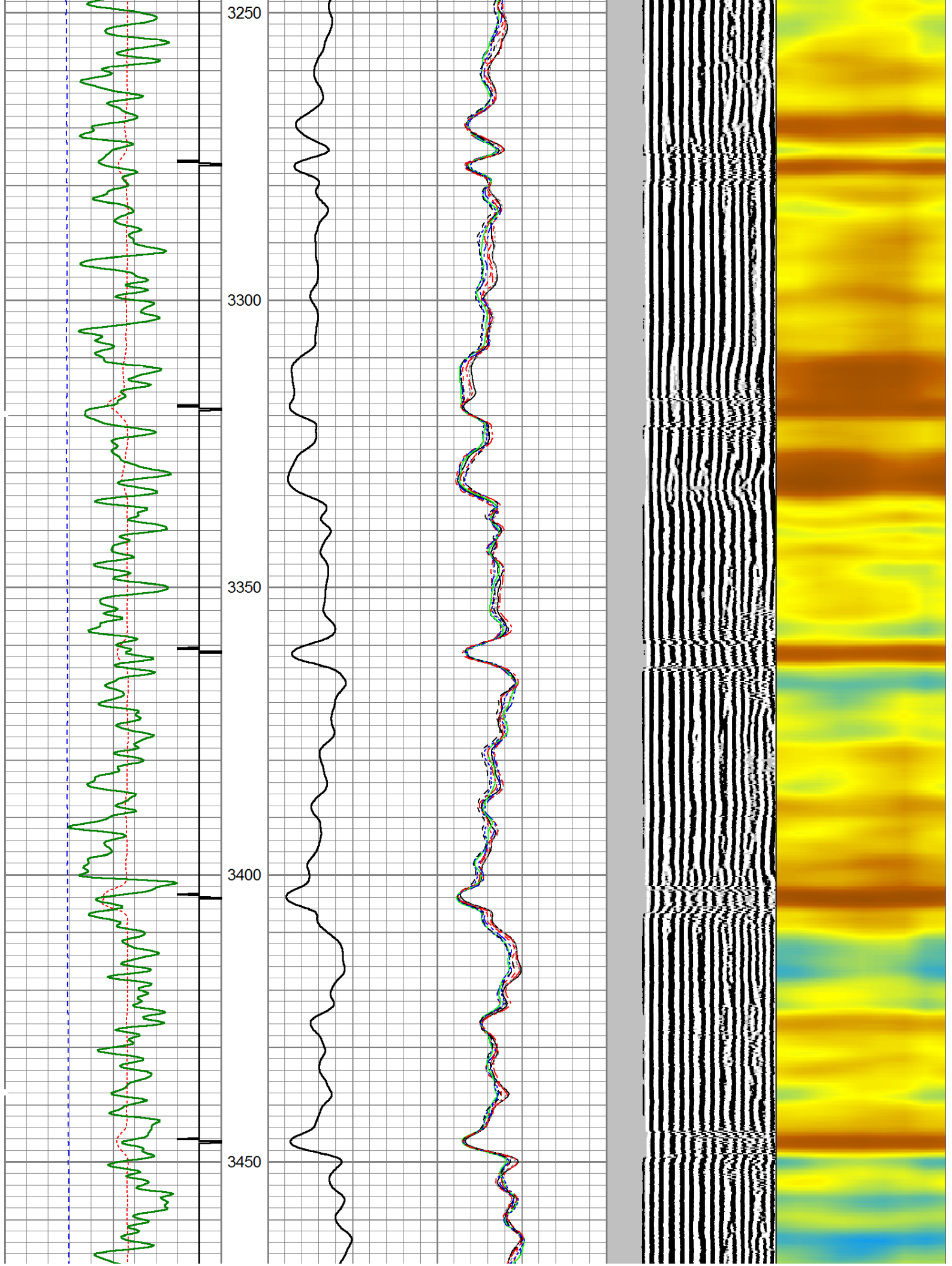


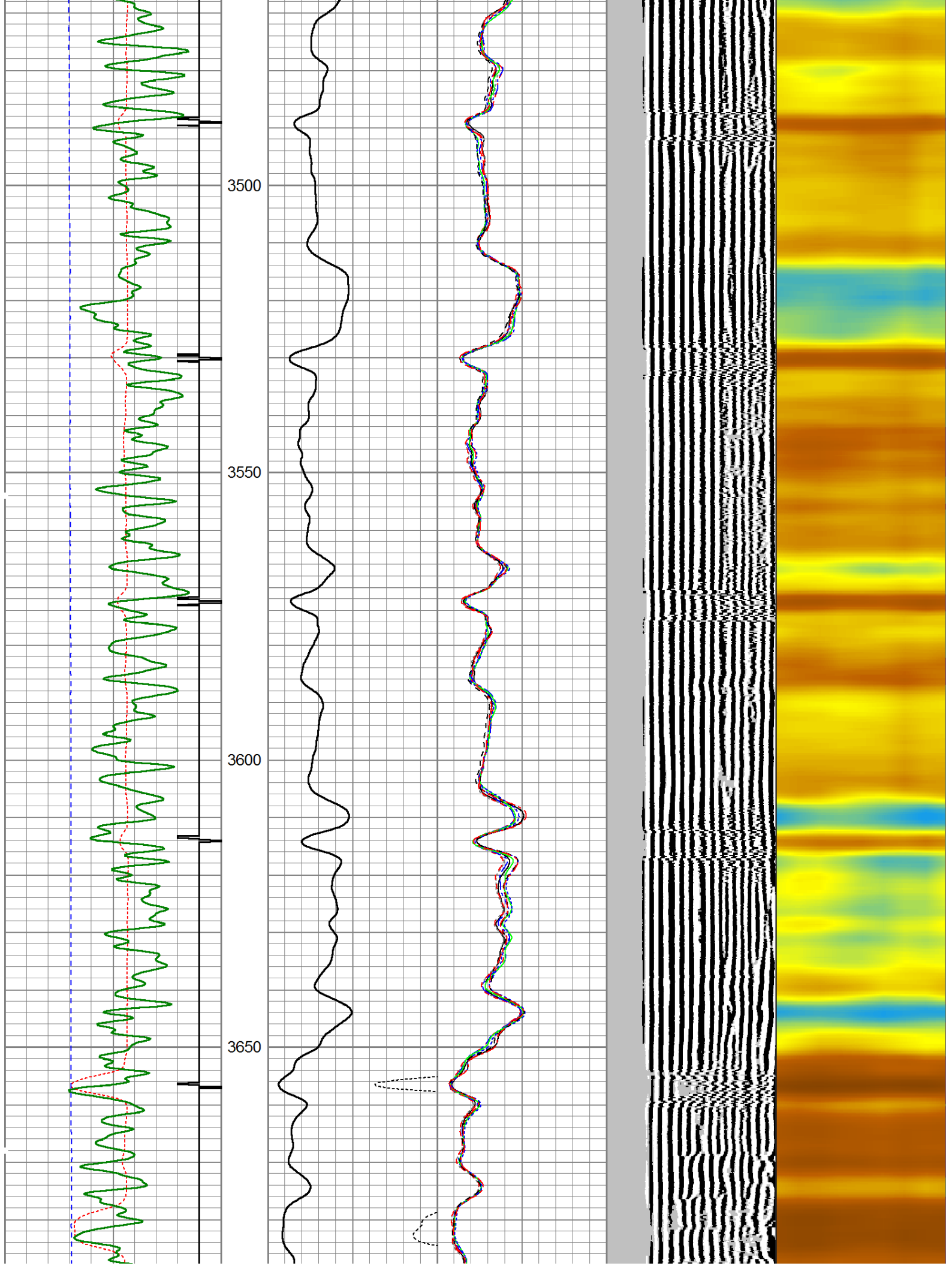


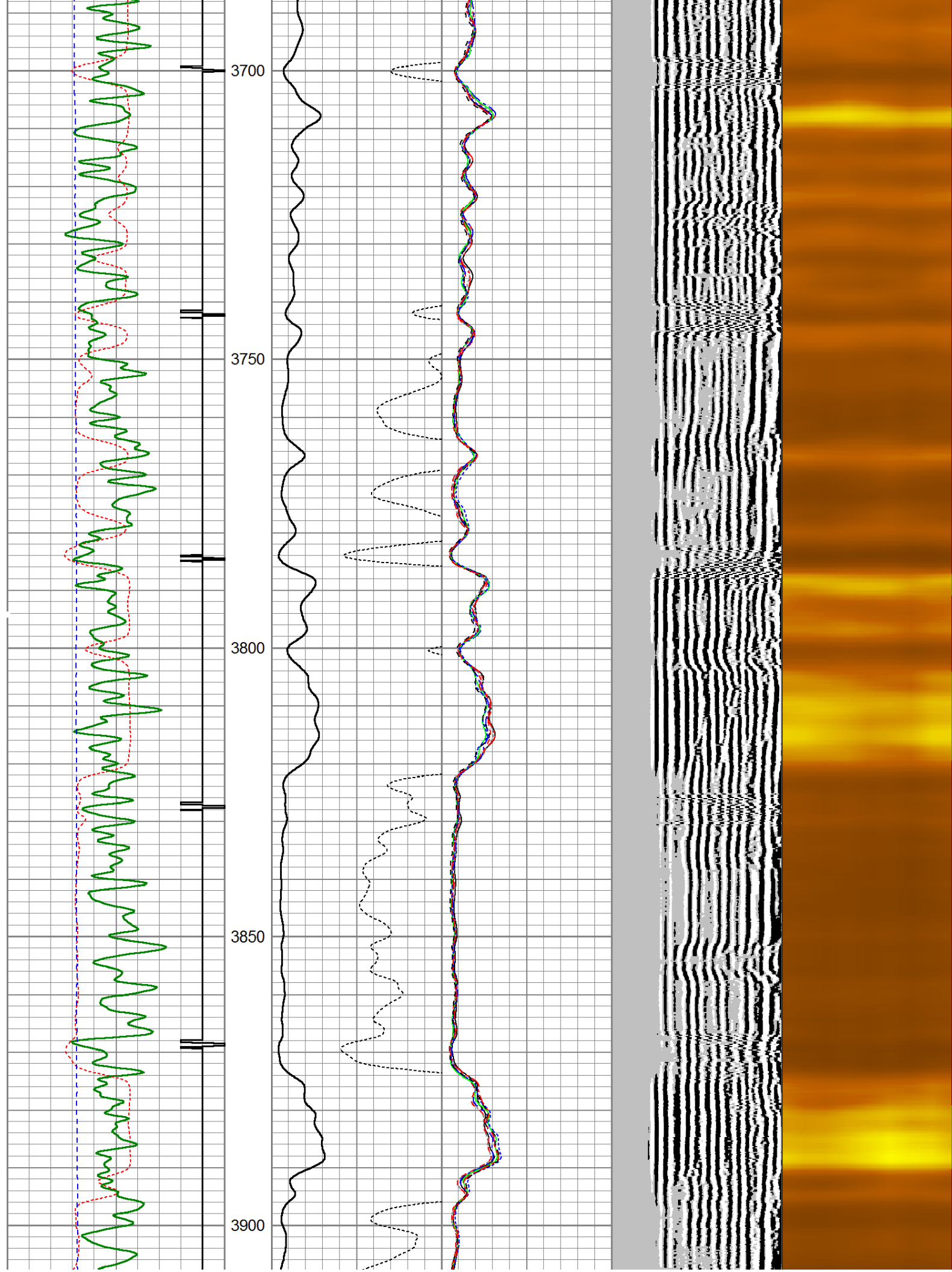


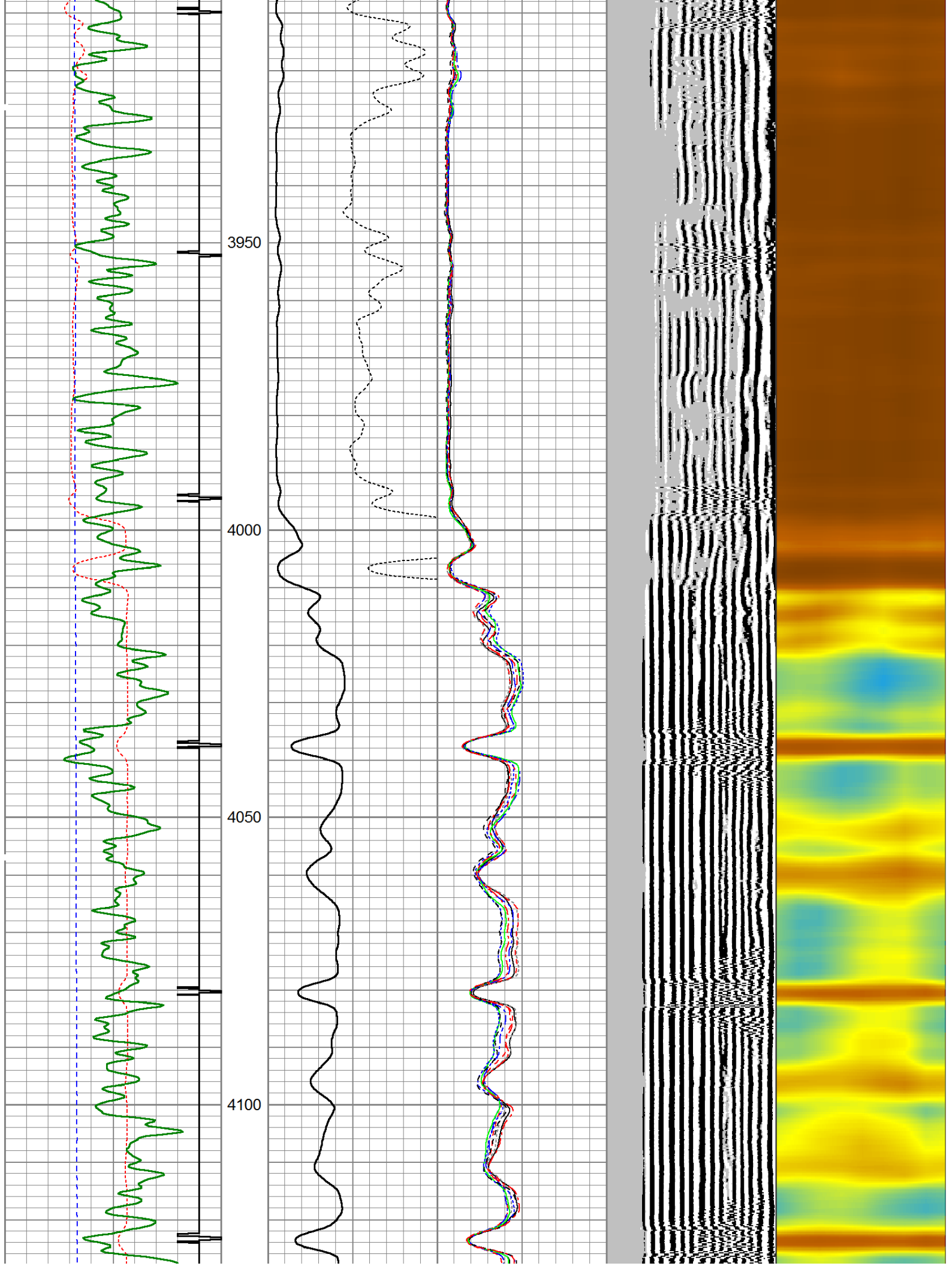


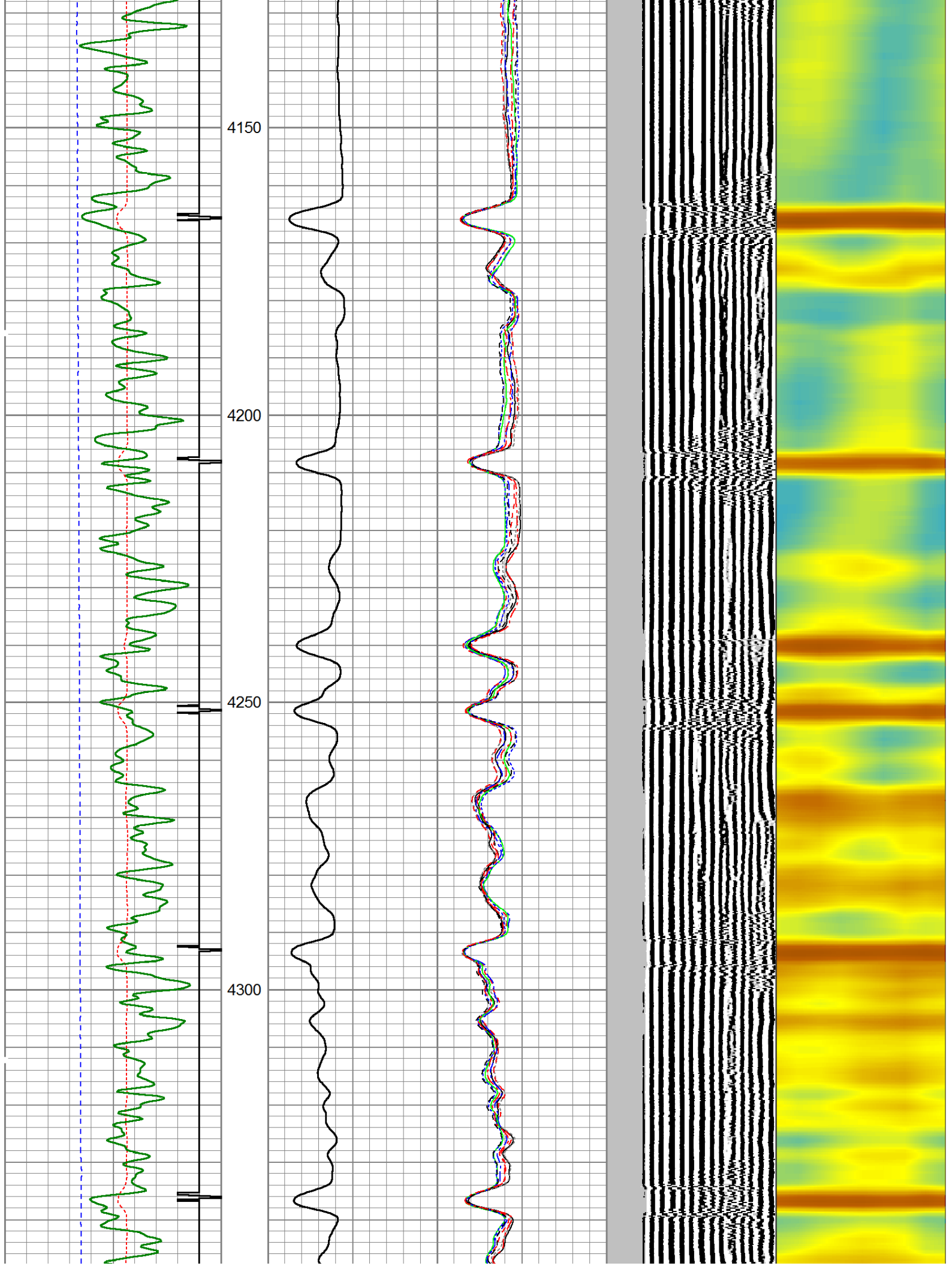


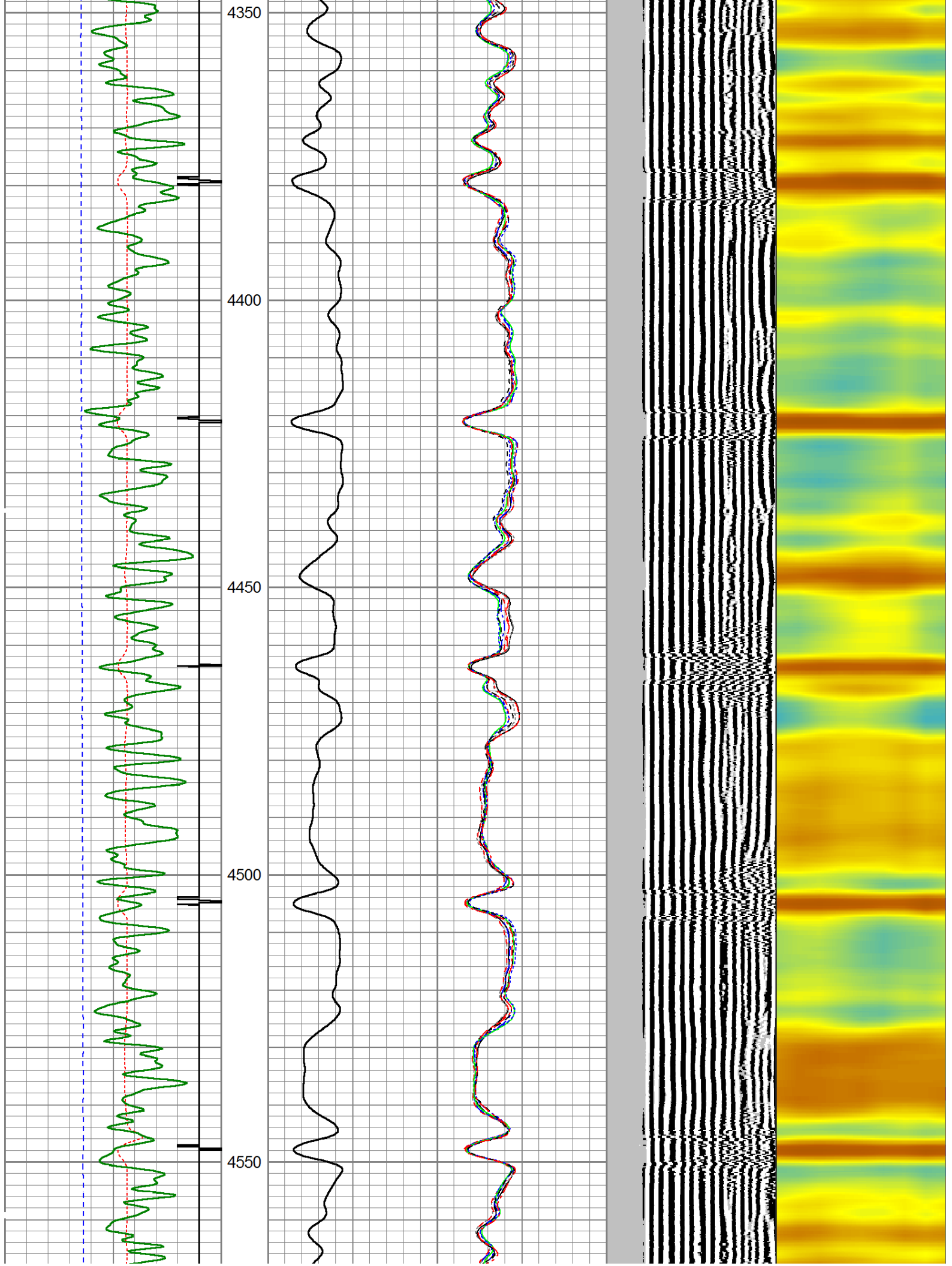


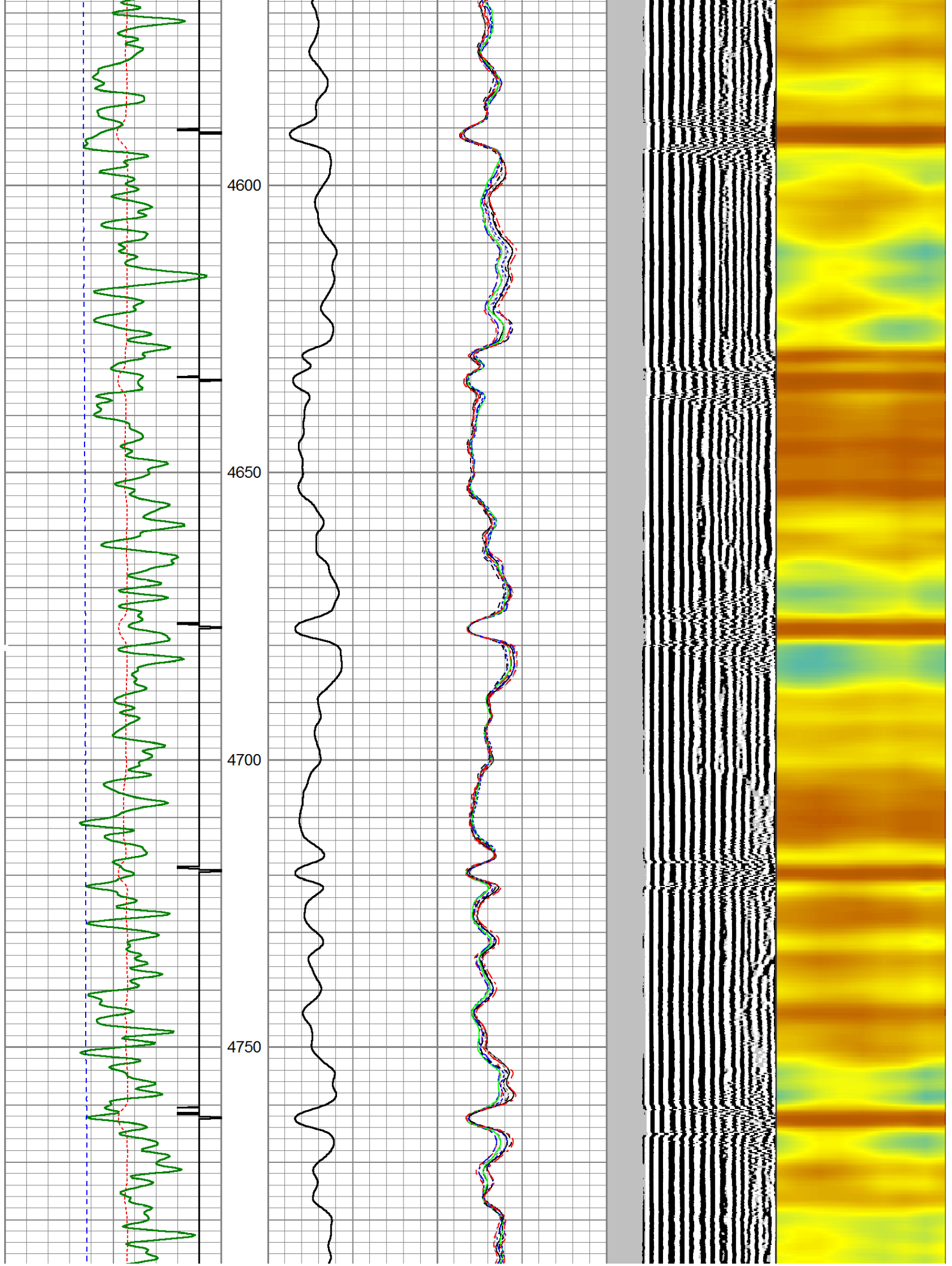


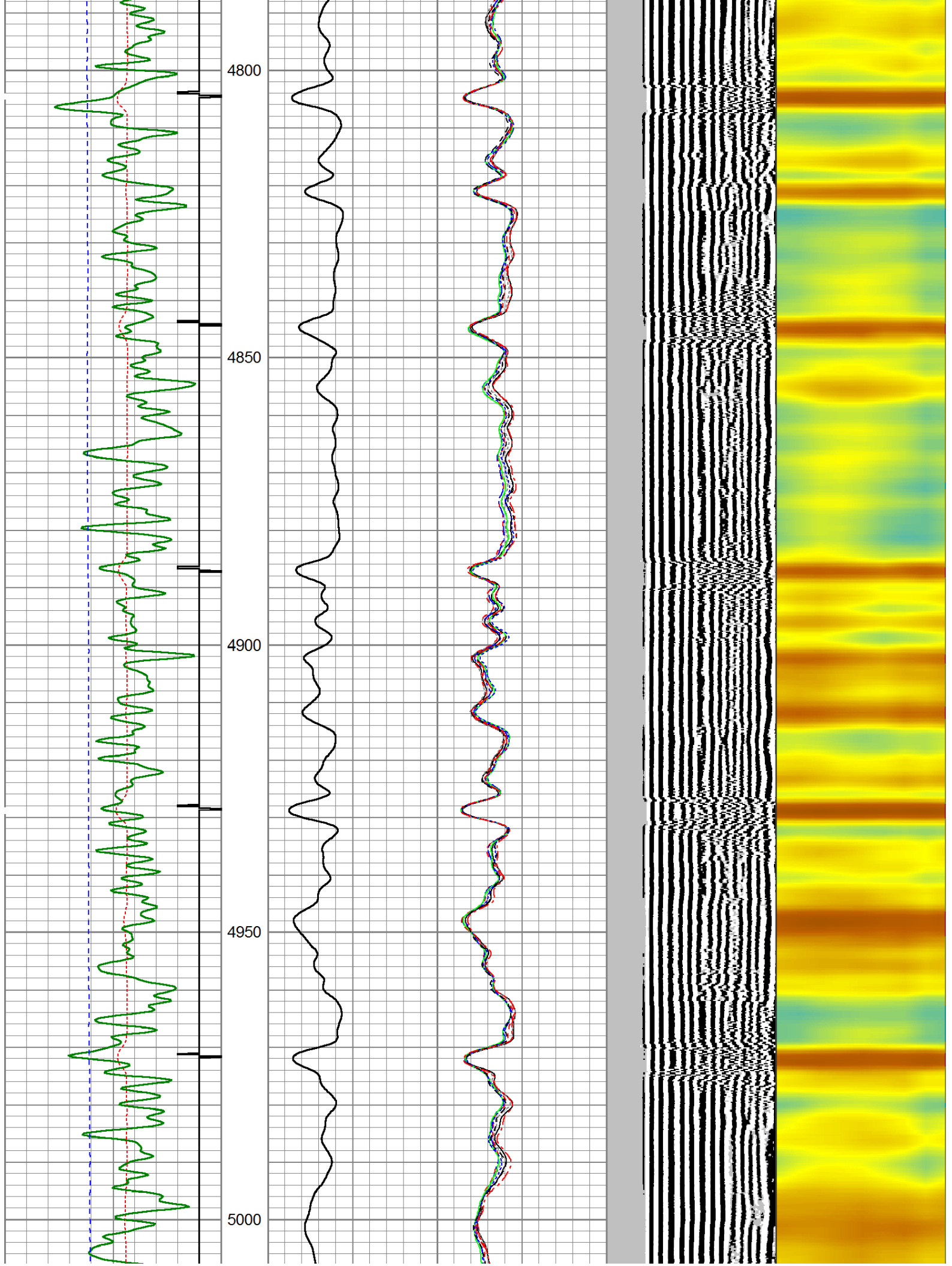


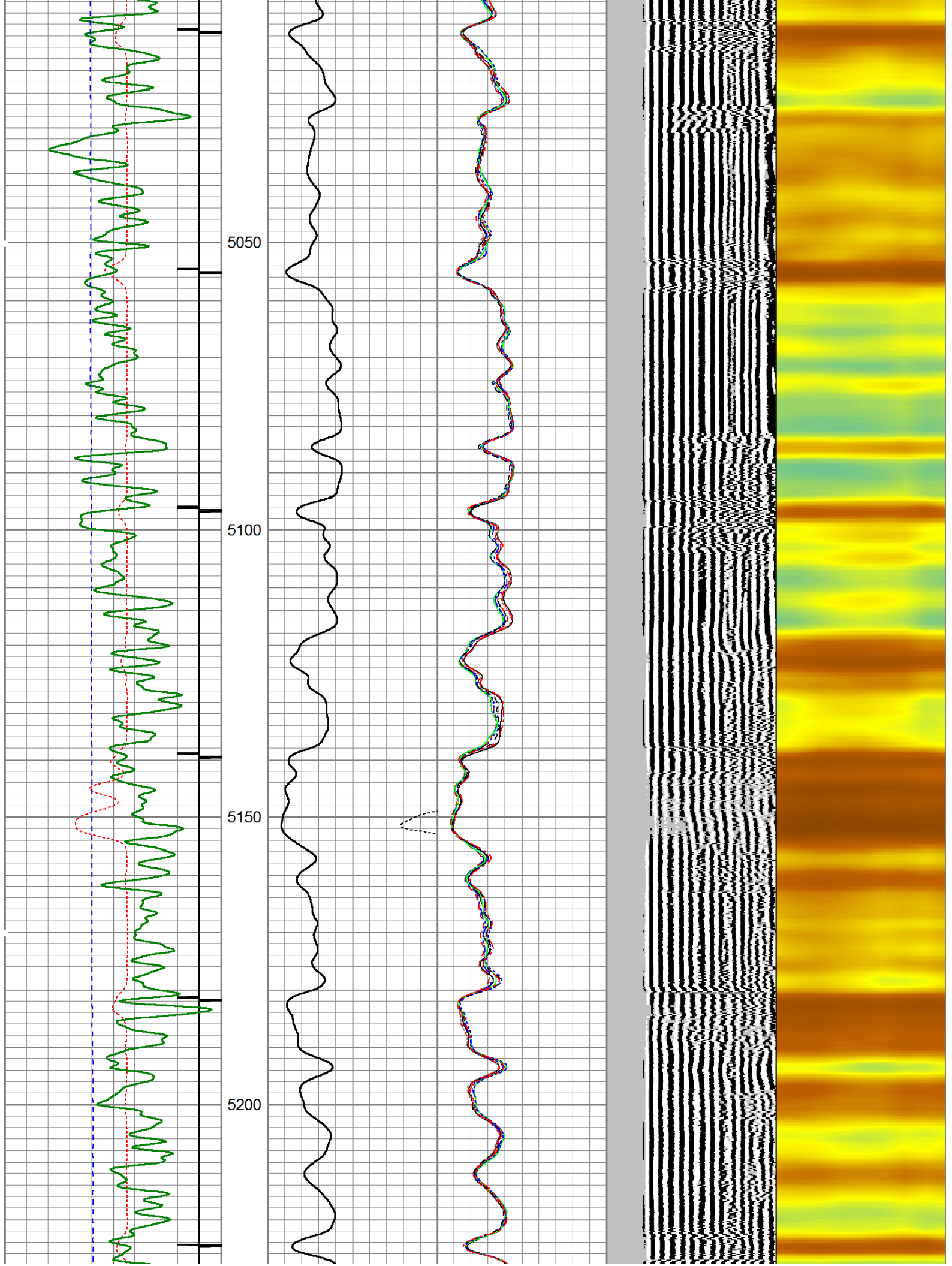


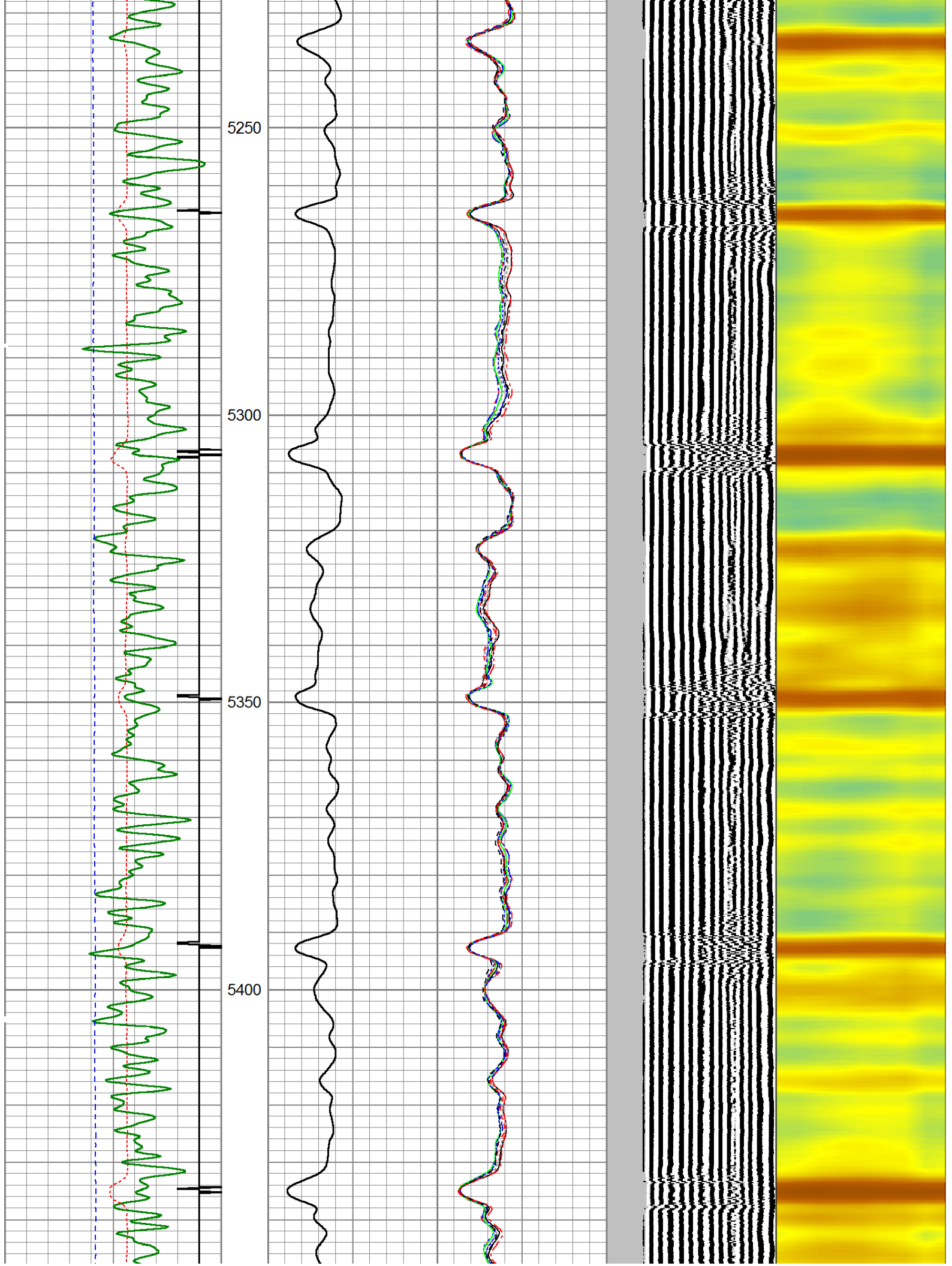


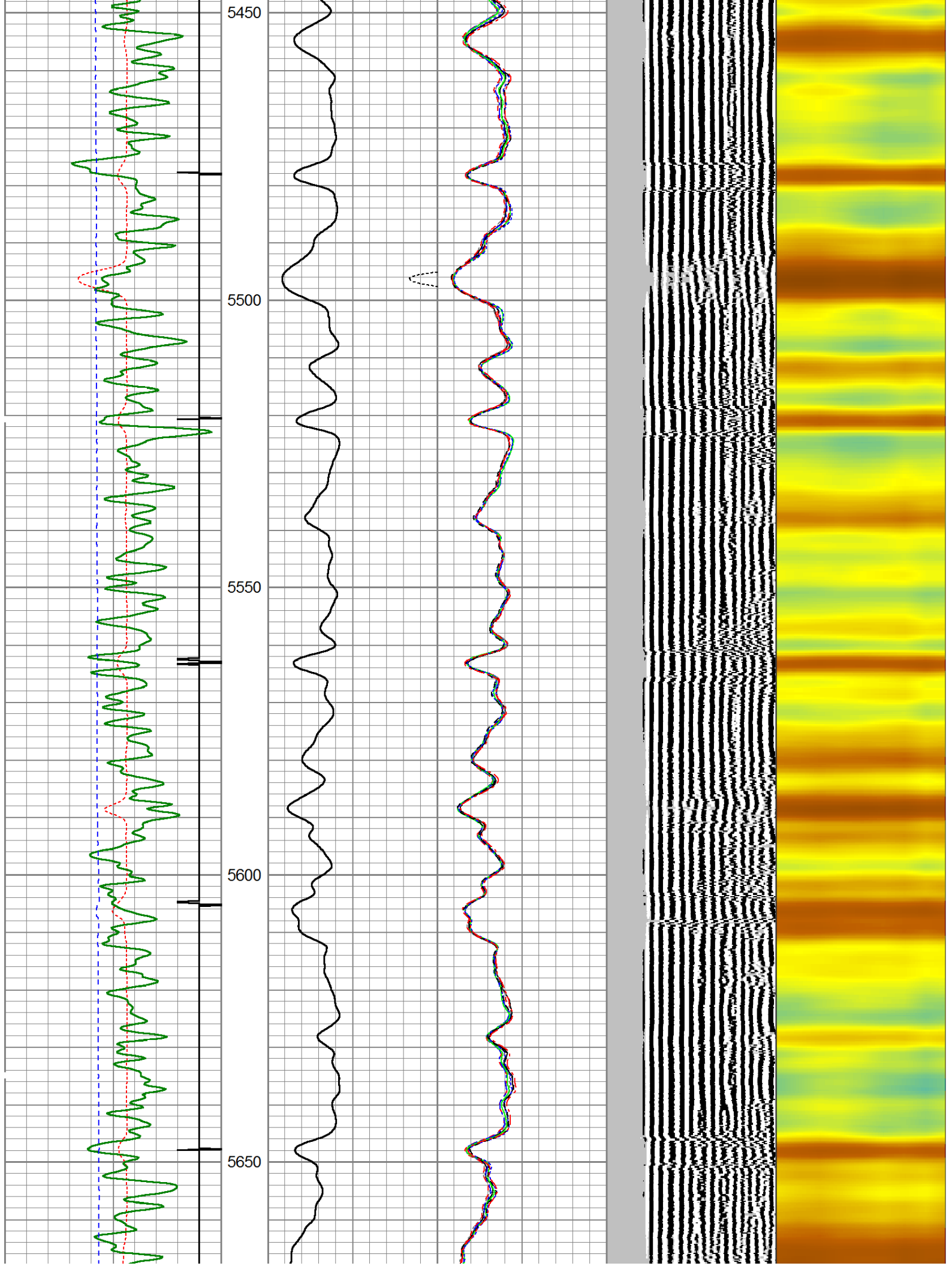


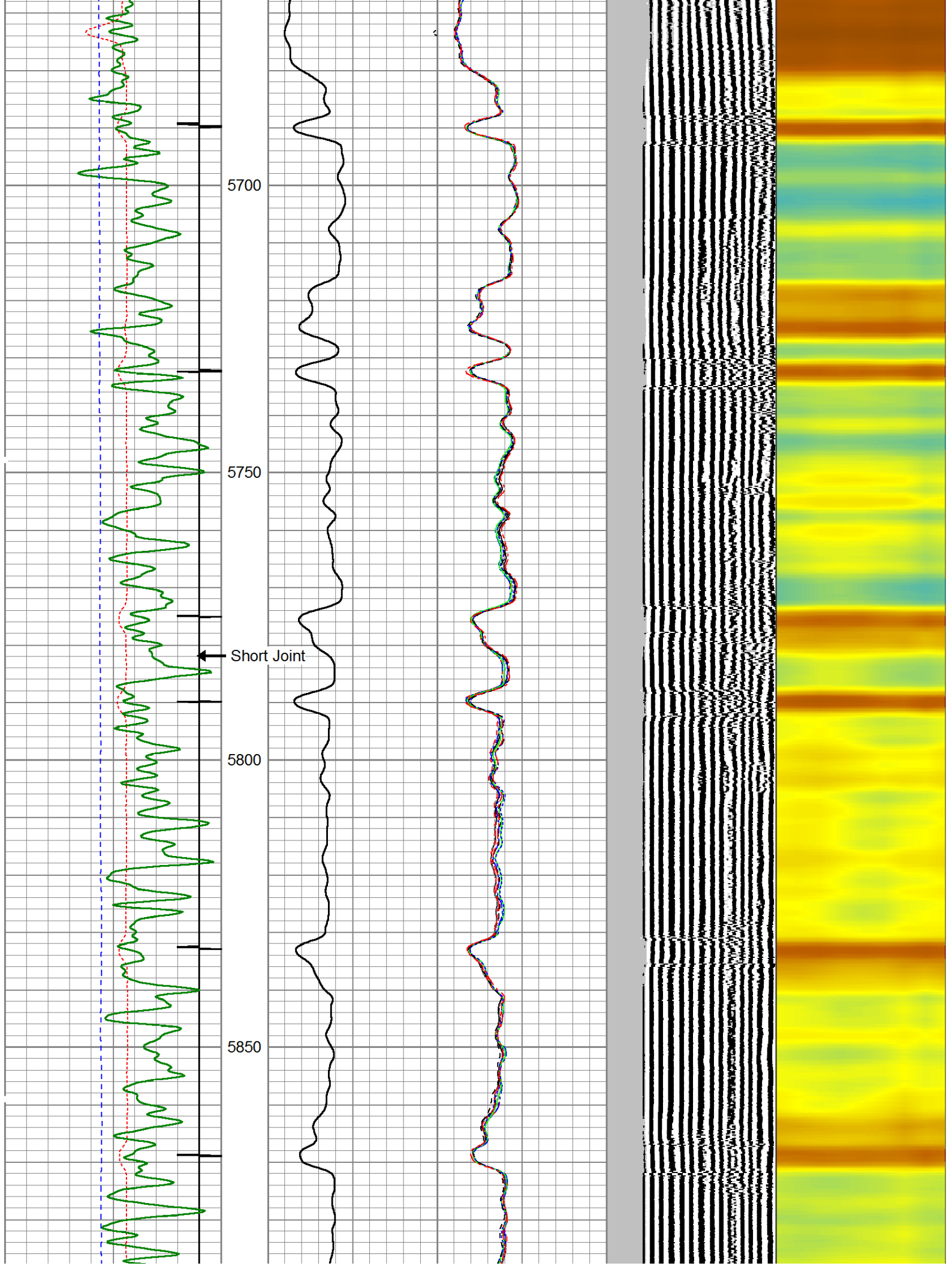


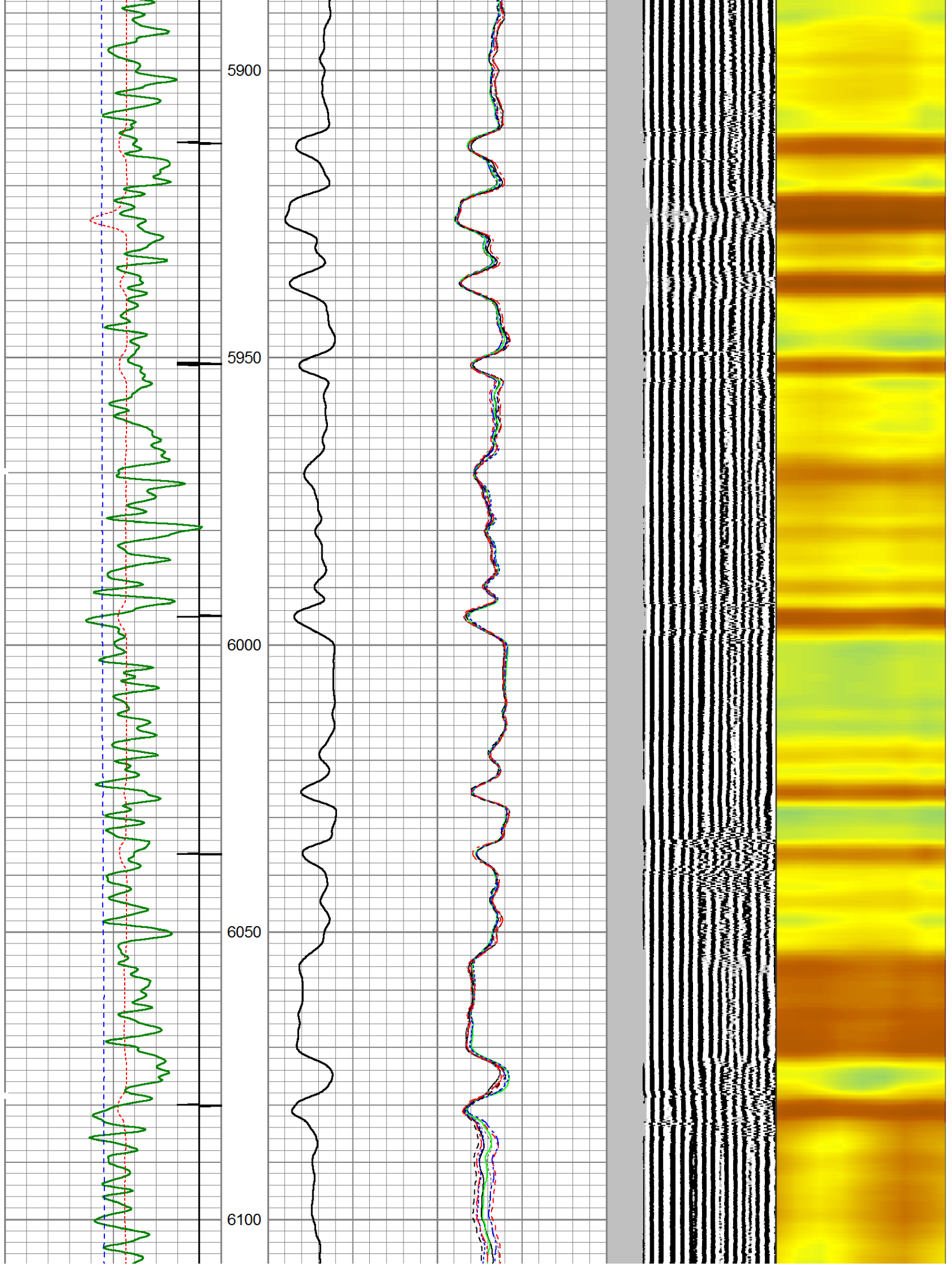


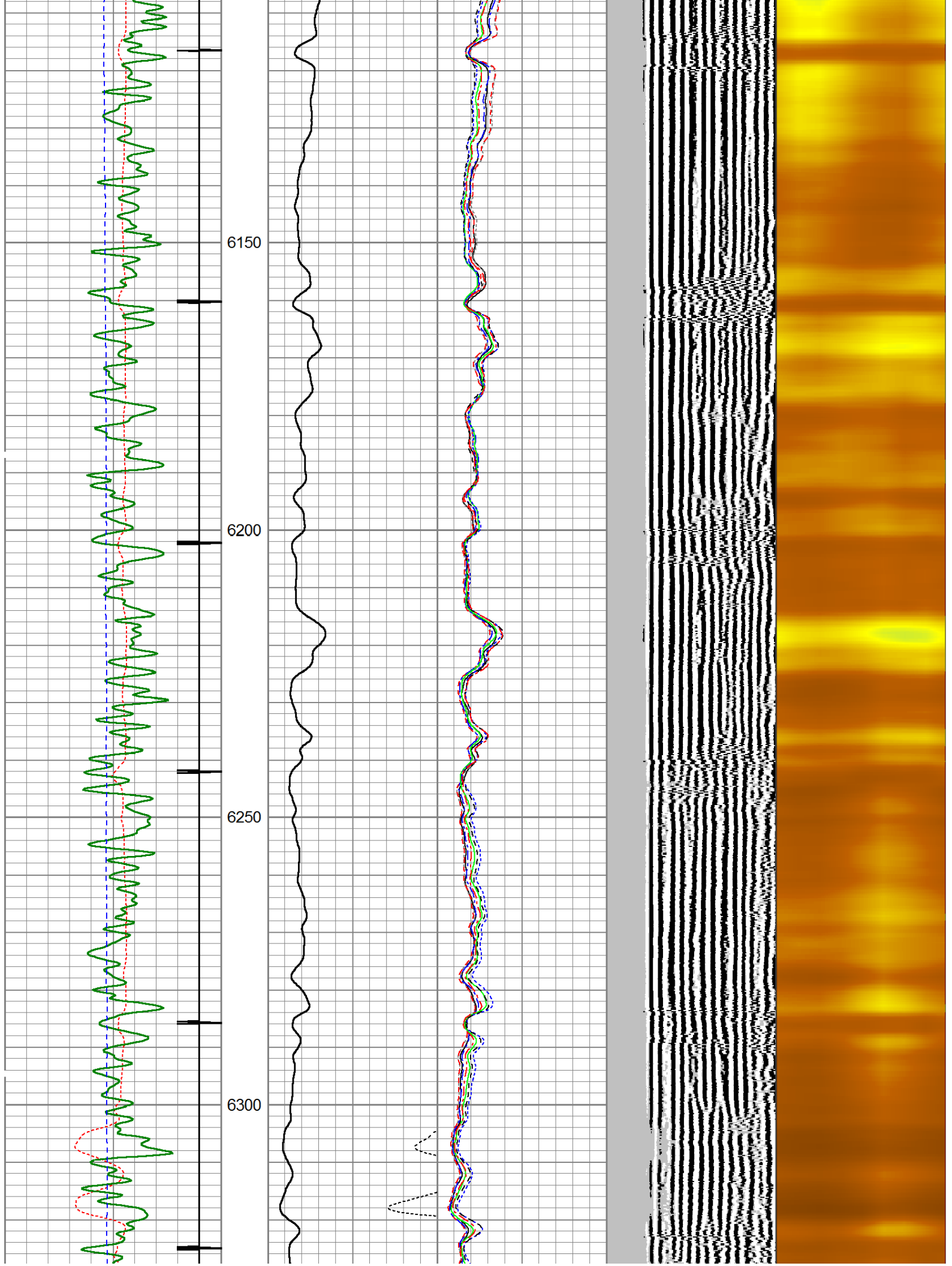


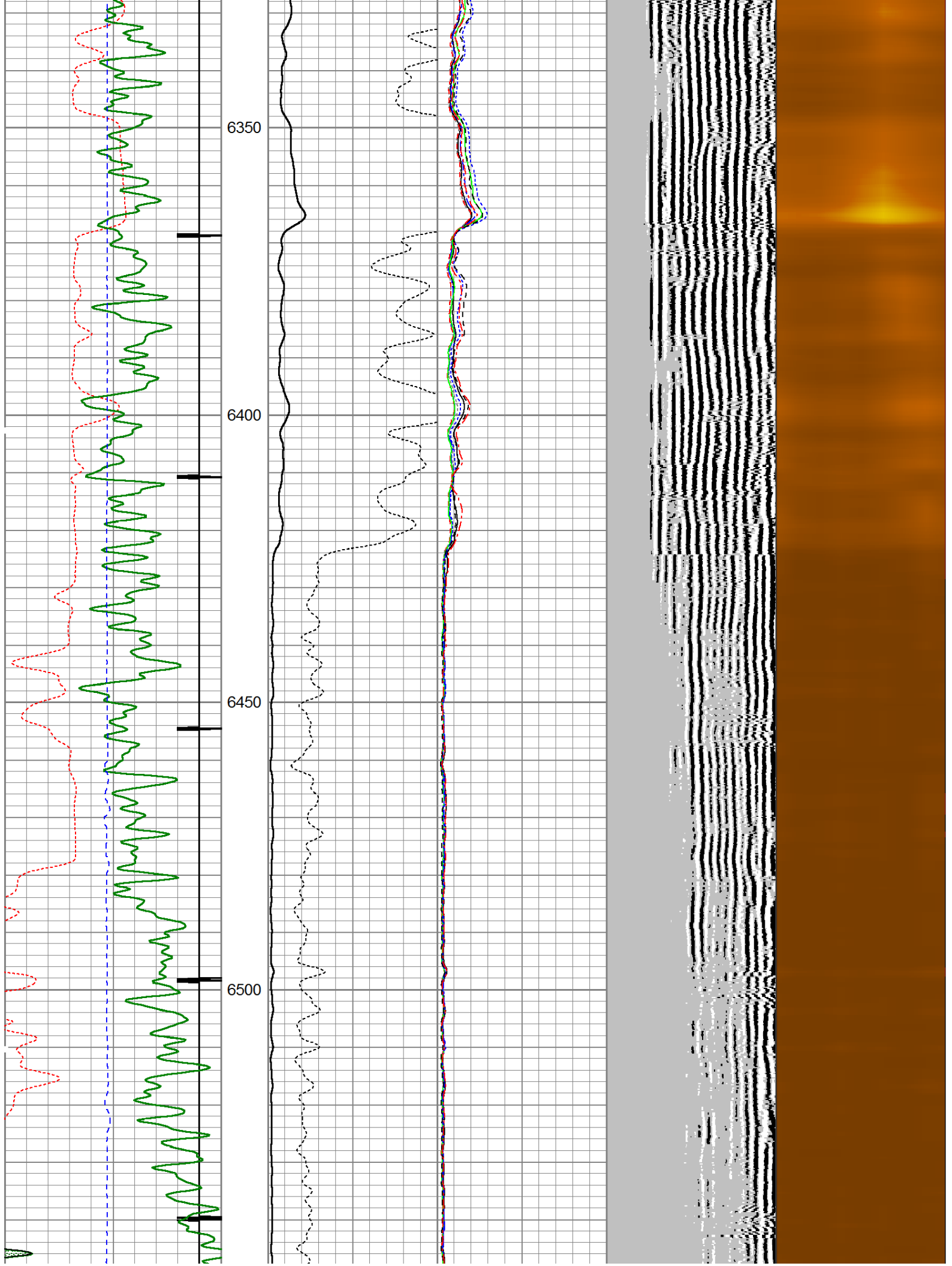


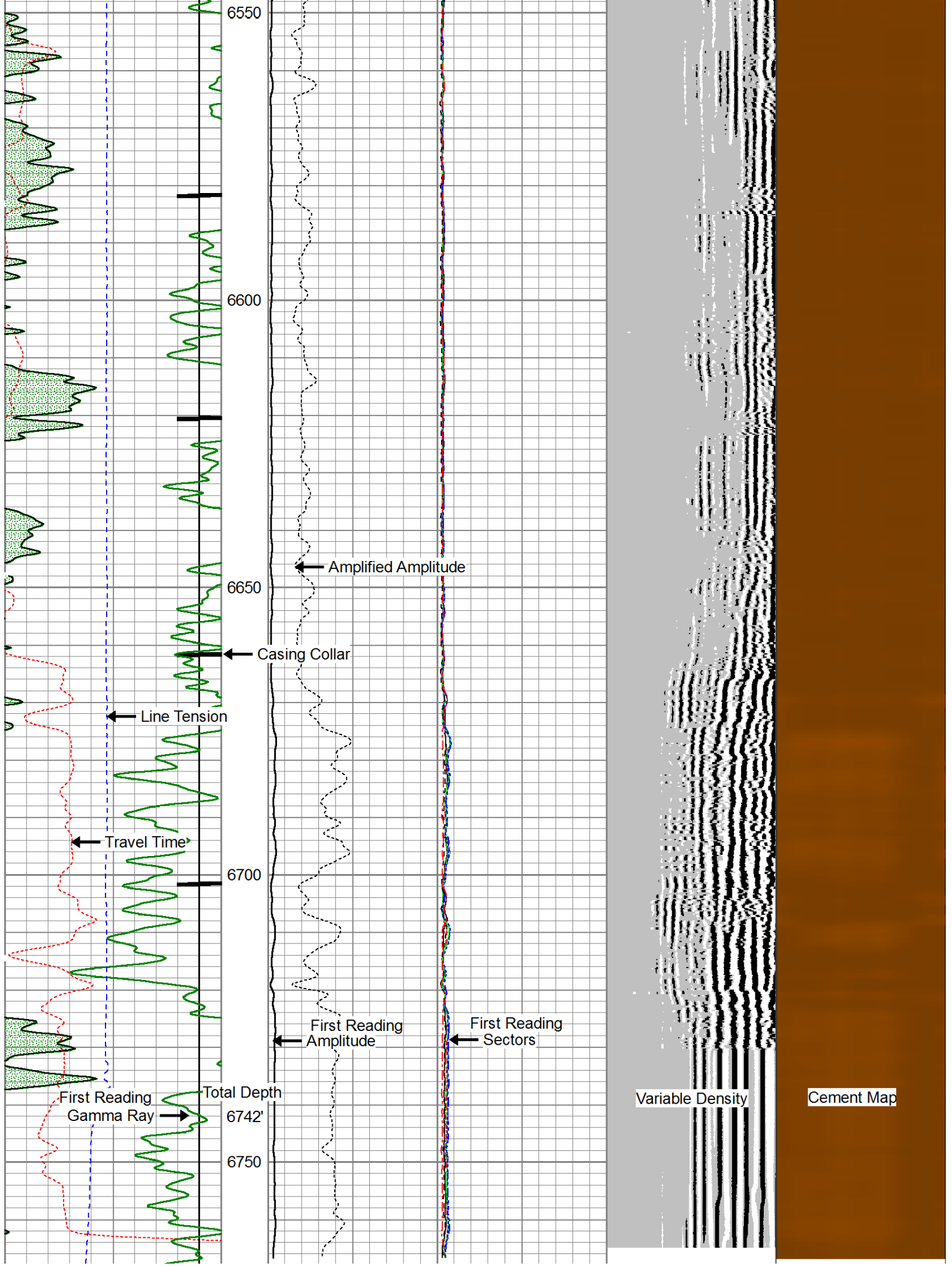


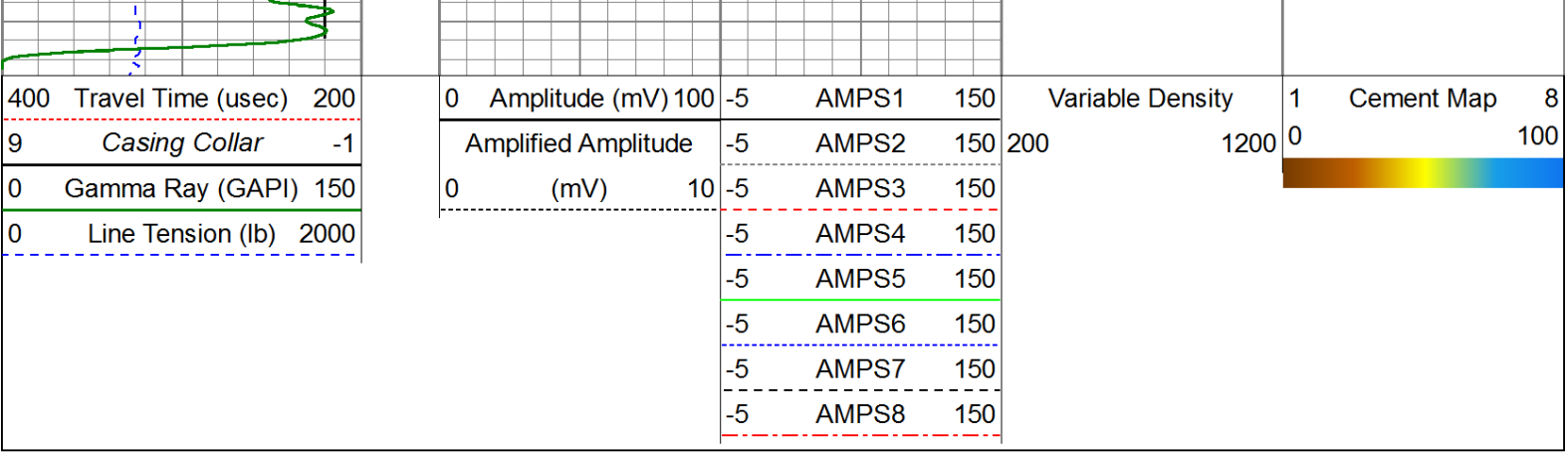








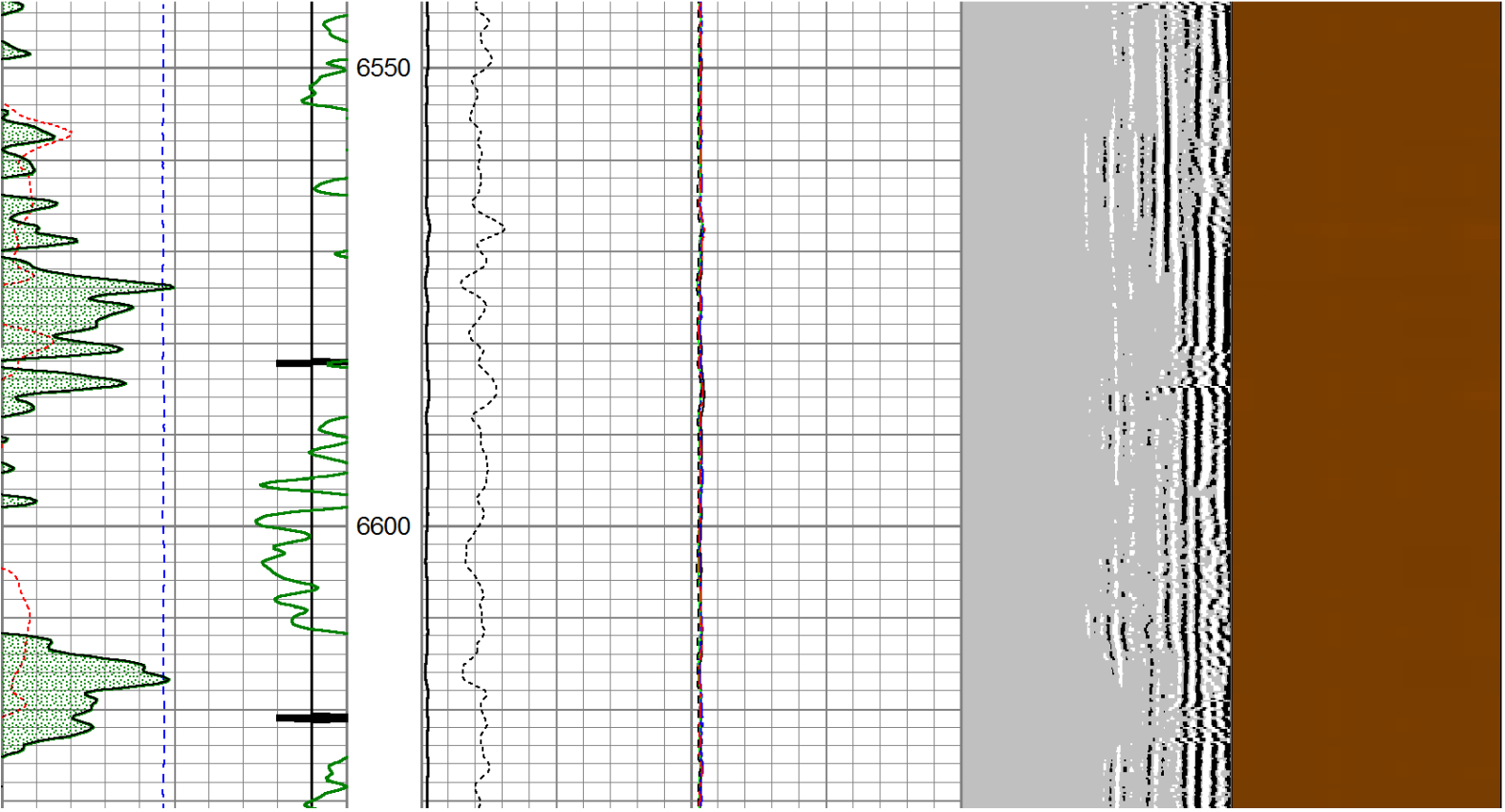
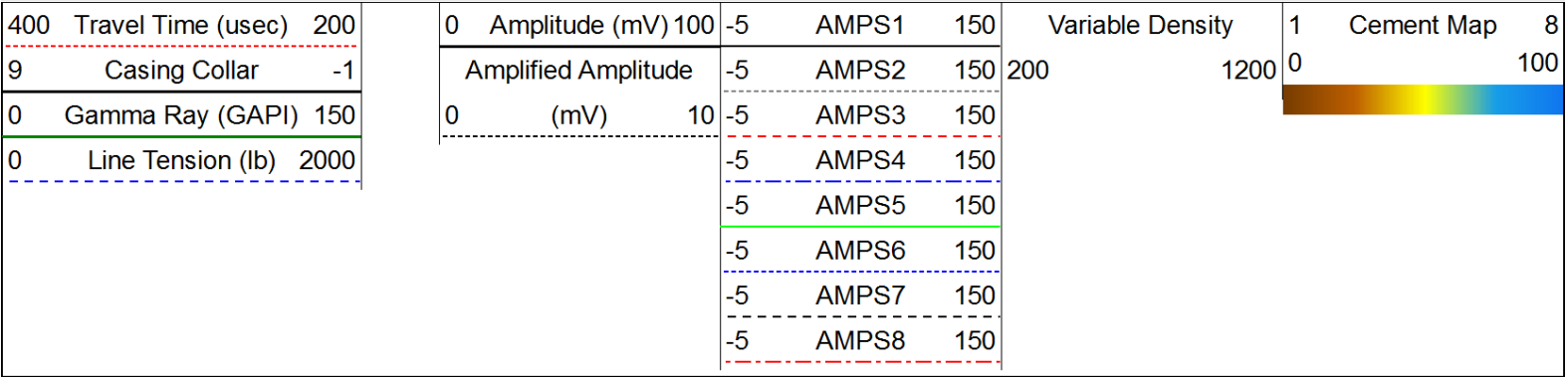


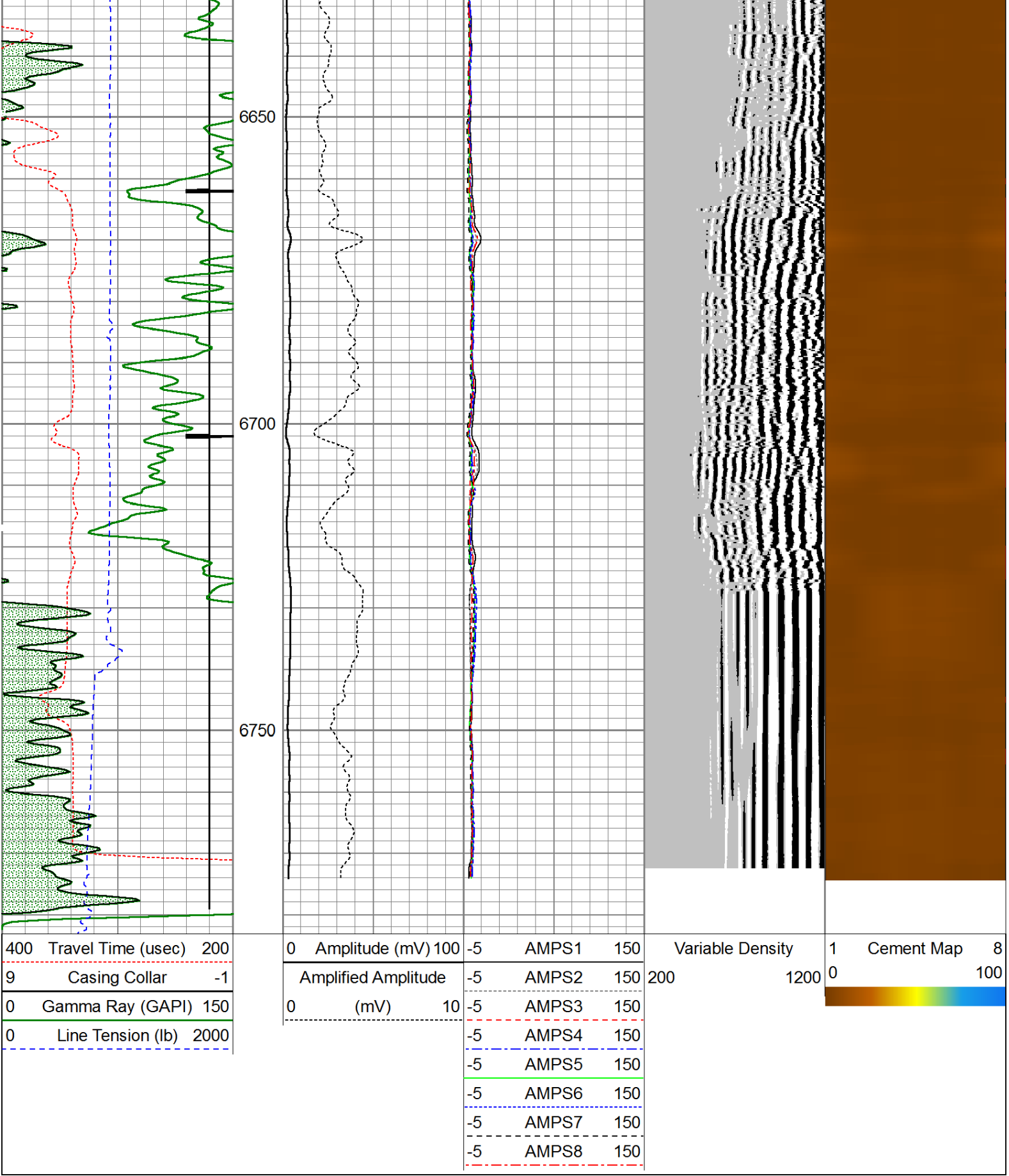


ALLIED WIRELINE

Repeat Pass (0 PSI)

Database File: noble energy crow creek state ac36-74hn_rcbl.db
Dataset Pathname: pass6
Presentation Format: scbl03
Dataset Creation: Sat Dec 14 16:39:16 2013 by Log 0
Charted by: Depth in Feet scaled 1:240





Calibration Report

Database File: noble energy crow creek state ac36-74hn_rcbl.db
Dataset Pathname: pass8
Dataset Creation: Sat Dec 14 16:44:47 2013 by Log 0

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: 834.280 ft

Master Calibration, performed Sat Dec 14 16:18:26 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	0.620	1.000	62.165	99.855	3.230
CAL	-0.029	0.922				
5'	-0.020	0.602	1.000	62.165	98.368	2.961
SUM						
S1	0.001	0.660	0.000	100.000	151.723	-0.189
S2	-0.011	0.621	0.000	100.000	158.312	1.703
S3	-0.012	0.589	0.000	100.000	166.379	1.988
S4	-0.019	0.573	0.000	100.000	168.803	3.192
S5	-0.013	0.618	0.000	100.000	158.324	2.103
S6	-0.016	0.686	0.000	100.000	142.489	2.292
S7	-0.003	0.717	0.000	100.000	138.711	0.476
S8	-0.010	0.650	0.000	100.000	151.505	1.491

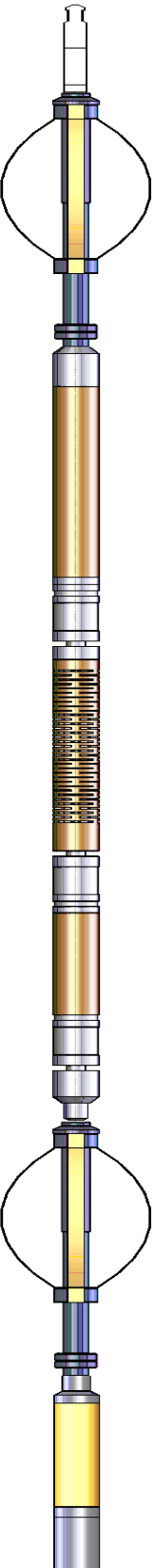
Internal Reference Calibration, performed Mon Oct 10 09:42:03 2005:


	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.029	0.922	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
WVF3FT	11.84		RBT-Probe (101225) Probe Radii Bond Tool with Digital Telemetry	8.75	2.75	90.00
WVFCAL	11.84					
WVFS1	11.84					
WVFS2	11.84					
WVFS3	11.84					
WVFS4	11.84					
WVFS5	11.84					
WVFS6	11.84					
WVFS7	11.84					
WVFS8	11.84					
WVF5FT	10.84					
			Probe275 2.75" Centralizer	2.88	2.75	20.00
CCL	3.88					
TEMP	3.00					
CD	2.54					

GR	2.54		GR-Probe275 (110108-Dig) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
<p>Dataset: noble energy crow creek state ac36-74hn_rcbl.db: field/well/run1/pass8</p> <p>Total Length: 20.28 ft</p> <p>Total Weight: 197.00 lb</p> <p>O.D. 2.75 in</p>						