



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

Company	Noble Energy					
Well	Crow Creek State AC36-73-1HN					
Field	Wallsenburg					
County	Weld	State	Colorado			
Location:	API # : 05-123-37422		Other Services			
	535' FNL & 990' FEL		None			
SEC 36	TWP 7N	RGE 63W				
Permanent Datum	Ground Level	Elevation	4851'			
Log Measured From	Kelly Bushing 24'					
Drilling Measured From	Kelly Bushing					
Elevation			K.B. 4875' D.F. 4874' G.L. 4851'			
Date	14-Dec-2013					
Run Number	One					
Depth Driller	11191					
Depth Logger	6980					
Bottom Logged Interval	6980					
Top Log Interval	Surface					
Open Hole Size	8 3/4"					
Type Fluid	Water					
Density / Viscosity	-					
Max. Recorded Temp.	230 degF					
Estimated Cement Top	1130					
Time Well Ready	14:00					
Time Logger on Bottom	15:00					
Equipment Number	13034					
Location	Brighton, CO					
Recorded By	Jacob Staley					
Witnessed By	Bill Mansfield					
Recorded By	R.Grisson					
Witnessed By						
Run Number						
Bit	From	To	Size	Weight	From	To
Casing Record	Size	Wgt/Ft	Top	Bottom		
Surface String	9 5/8"	36#	Surface	621		
Prot. String						
Production String	7"	26#	Surface	7073		
Liner	4.5"	11 6#	6980	11191		
Short Joint			5864	5878		

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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

Well Logged using 24' KB

Main Pass and Repeat Pass logged with zero Pressure on surface

Short Joint 5864-5878

Thank You for using Allied Wireline

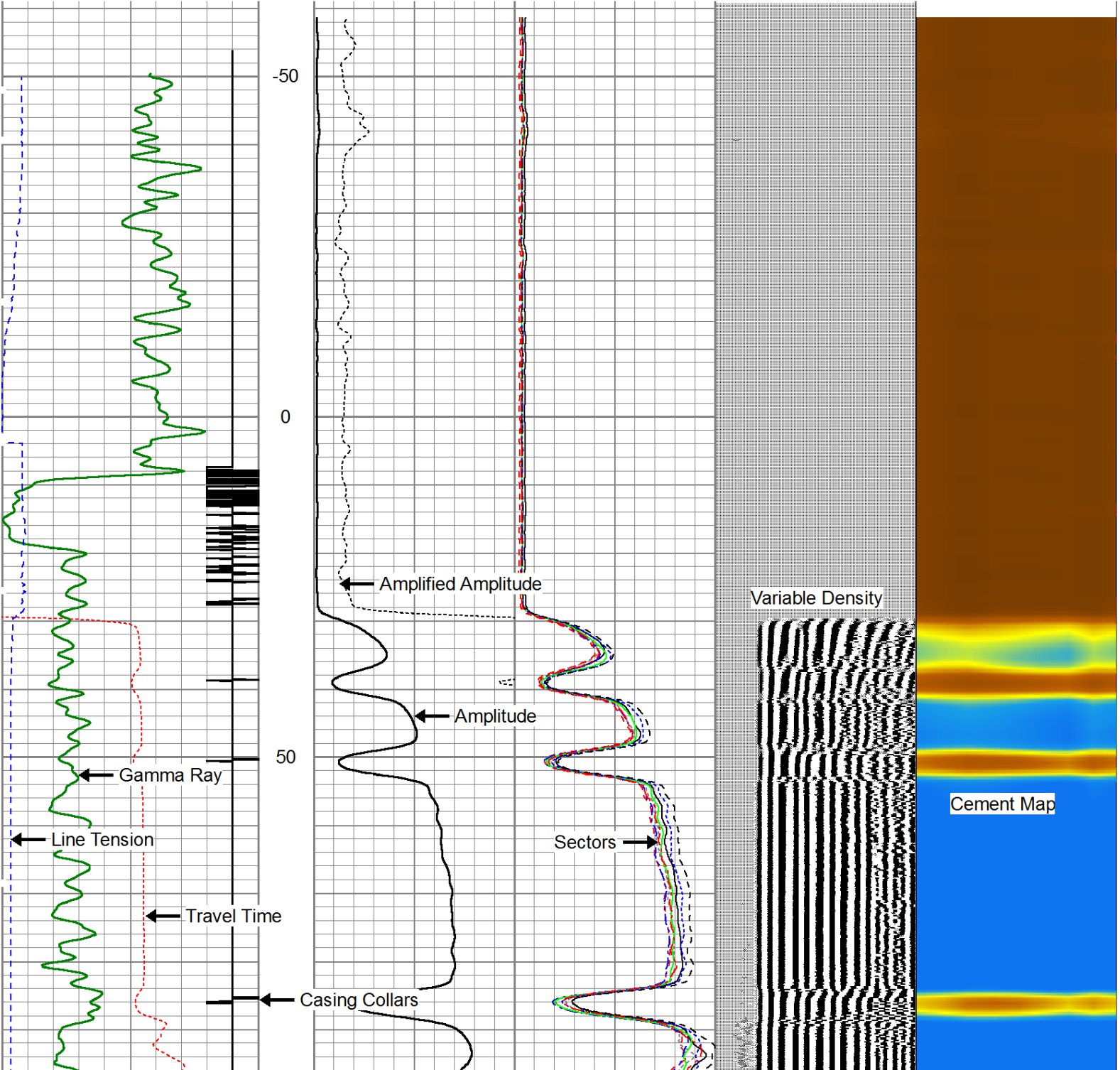
(303)659-4609

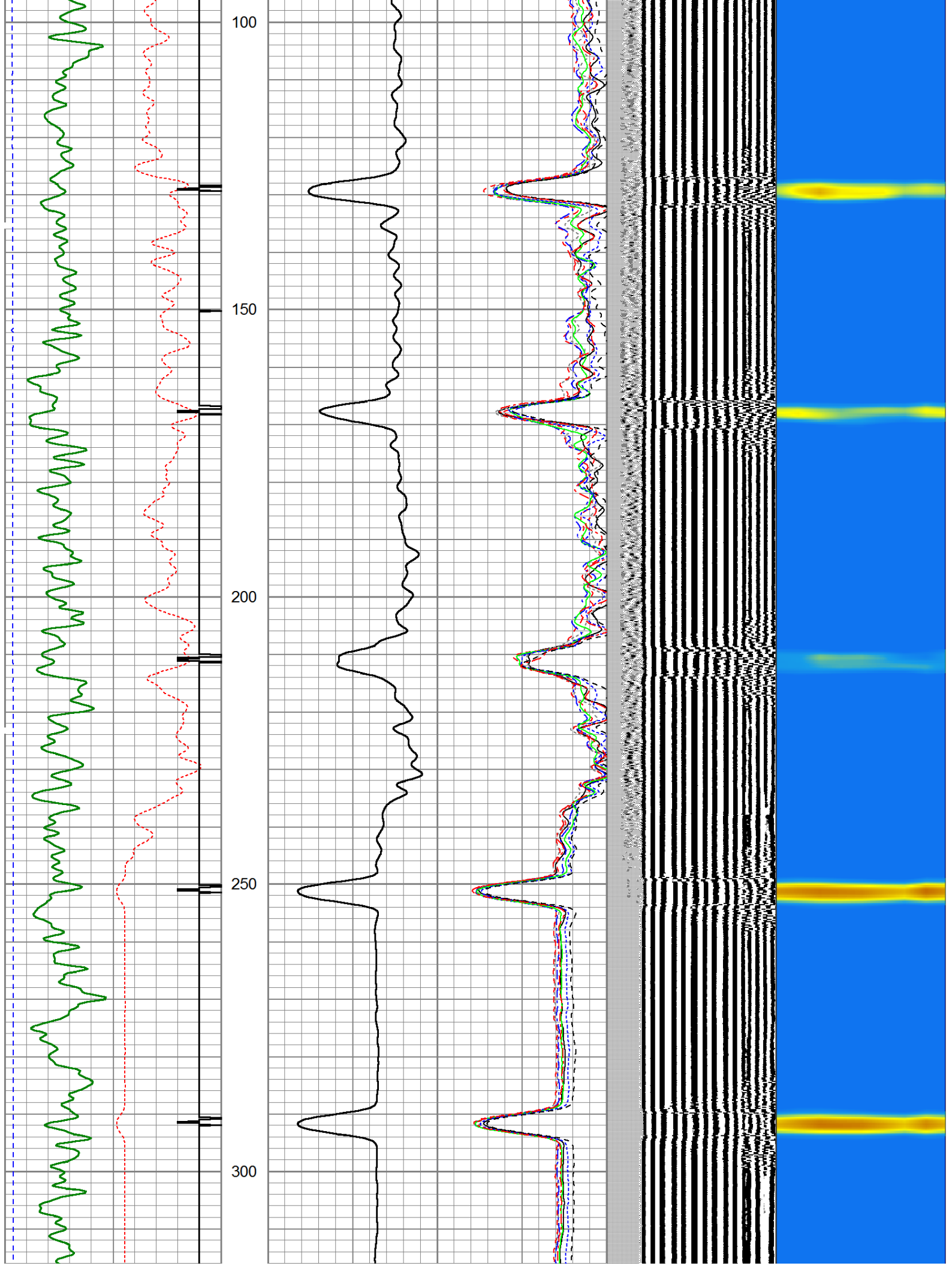


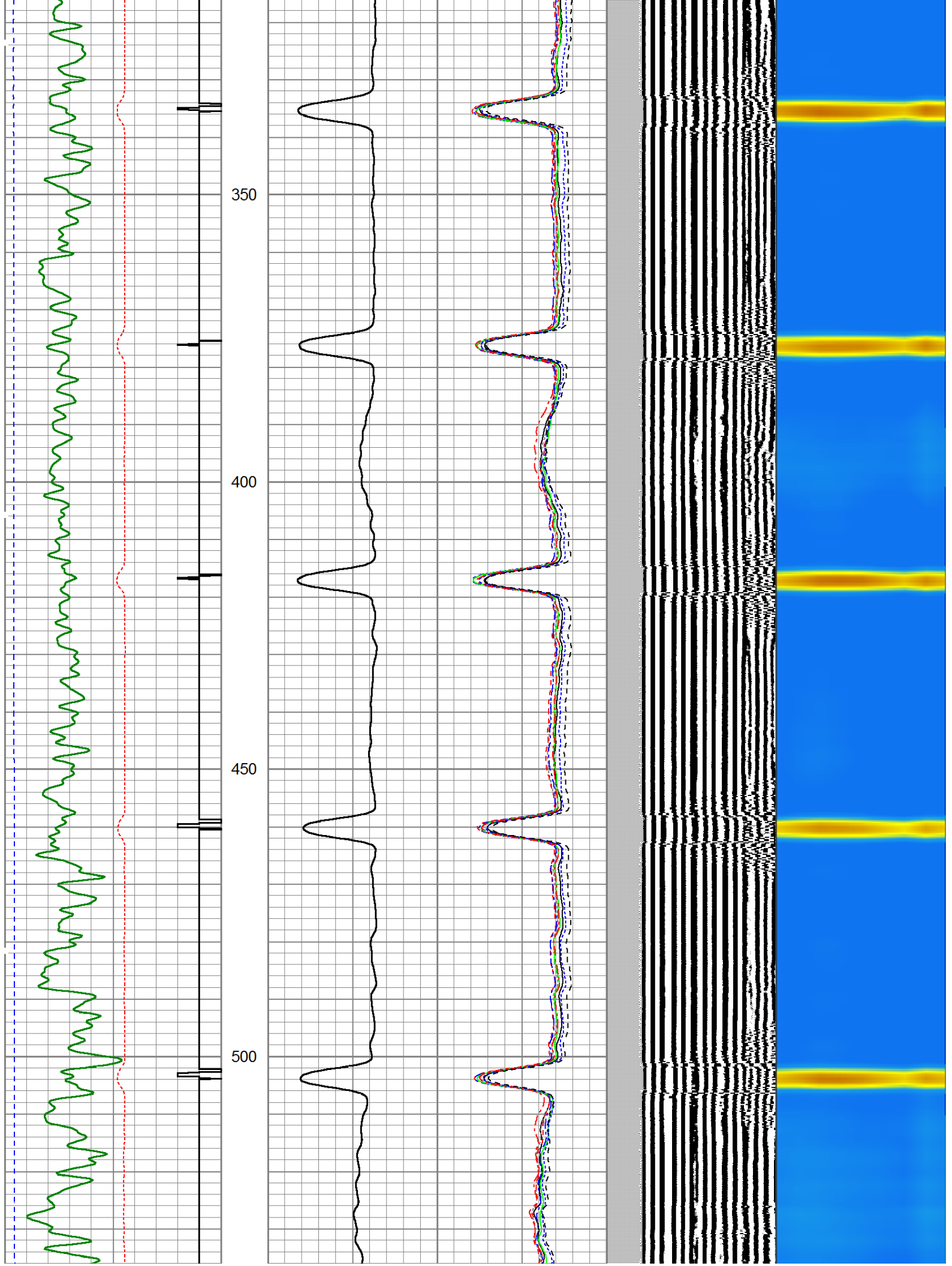
Main Pass(0PSI)

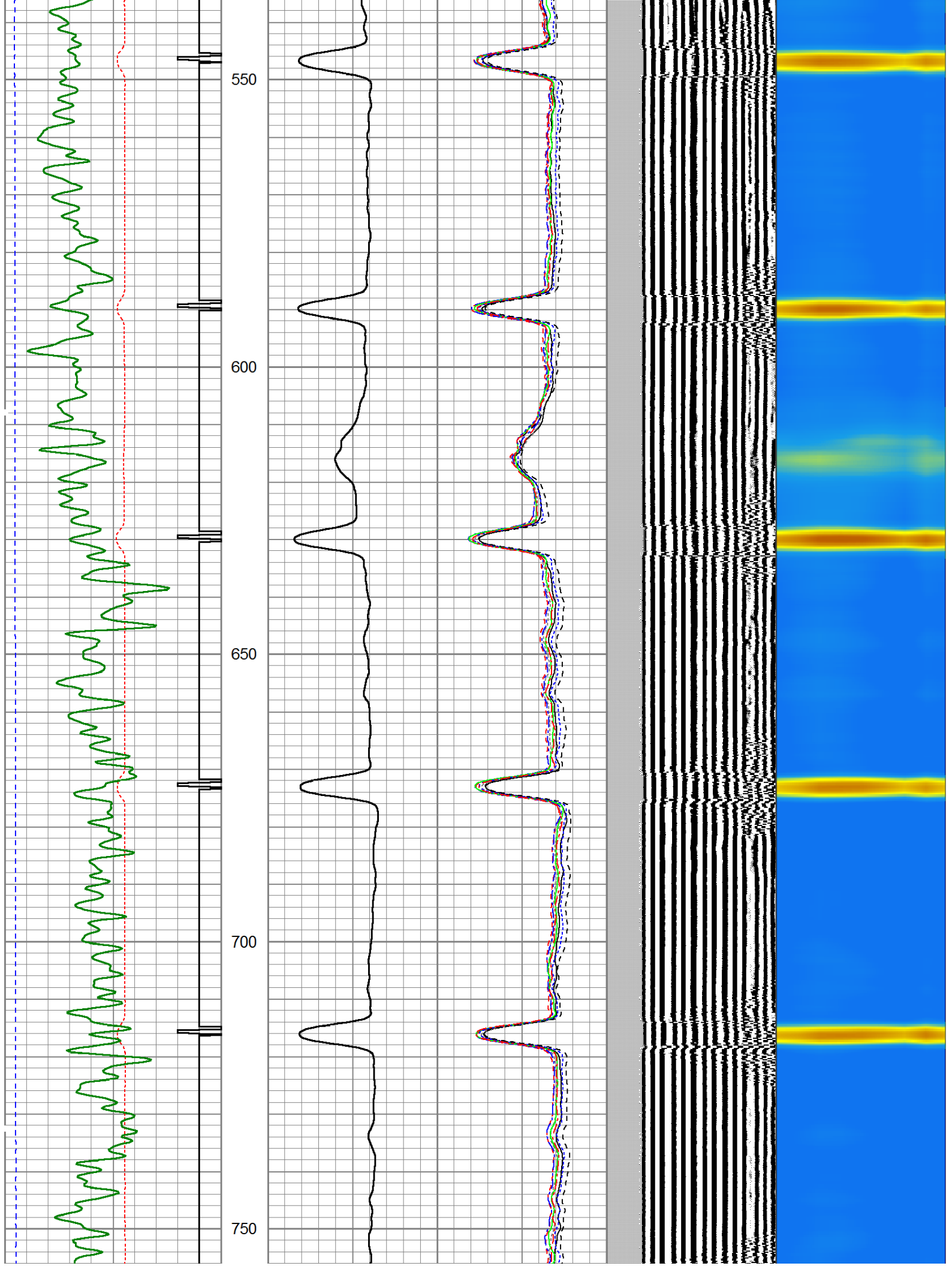
Database File: noble crow creek state ac36-73-1hn_rcbl.db
Dataset Pathname: pass4
Presentation Format: scbl03
Dataset Creation: Sat Dec 14 16:17:46 2013 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

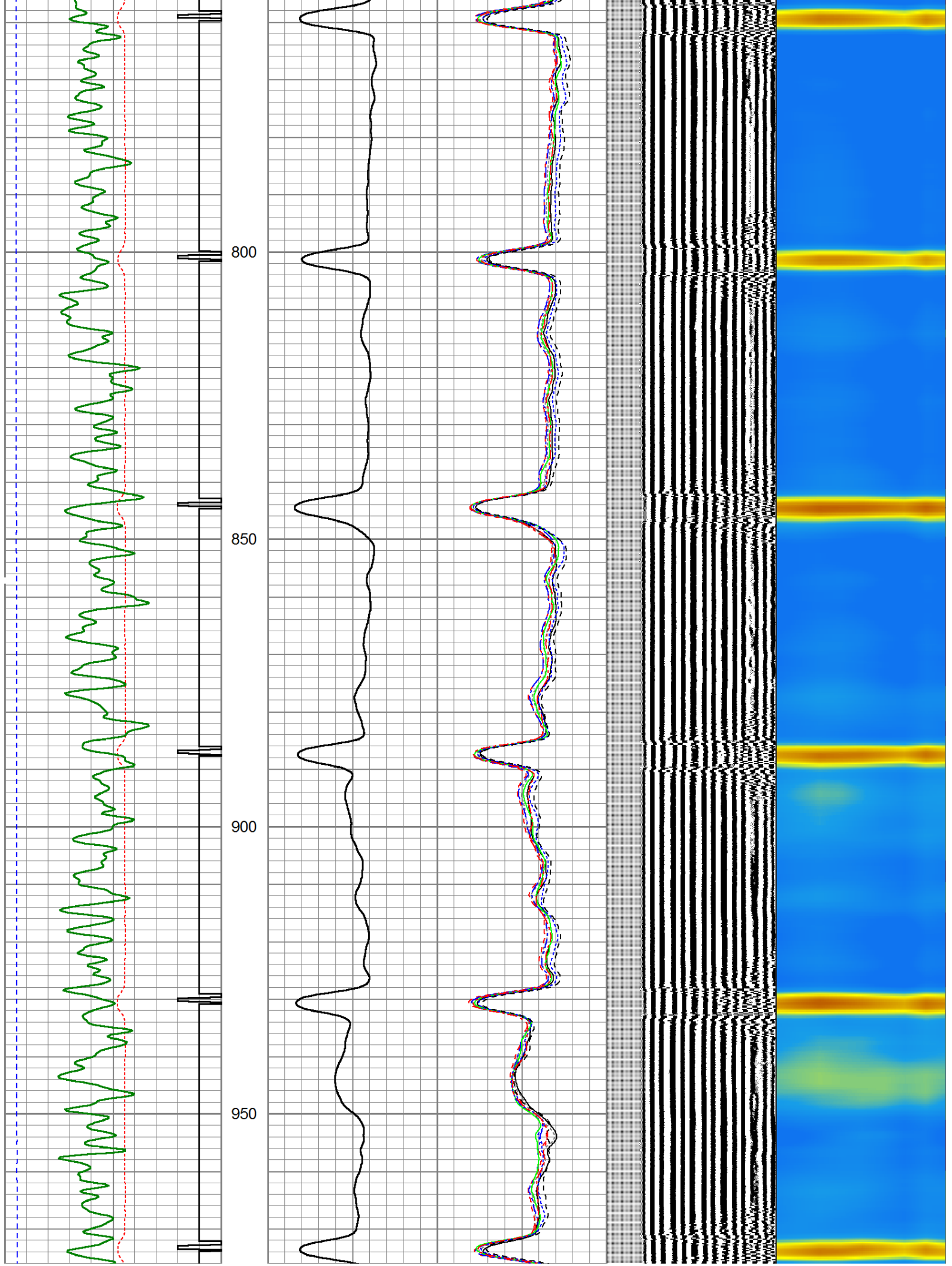
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200	1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150				
0	Line Tension (lb)	5000				-5	AMPS4	150				
						-5	AMPS5	150				
						-5	AMPS6	150				
						-5	AMPS7	150				
						-5	AMPS8	150				

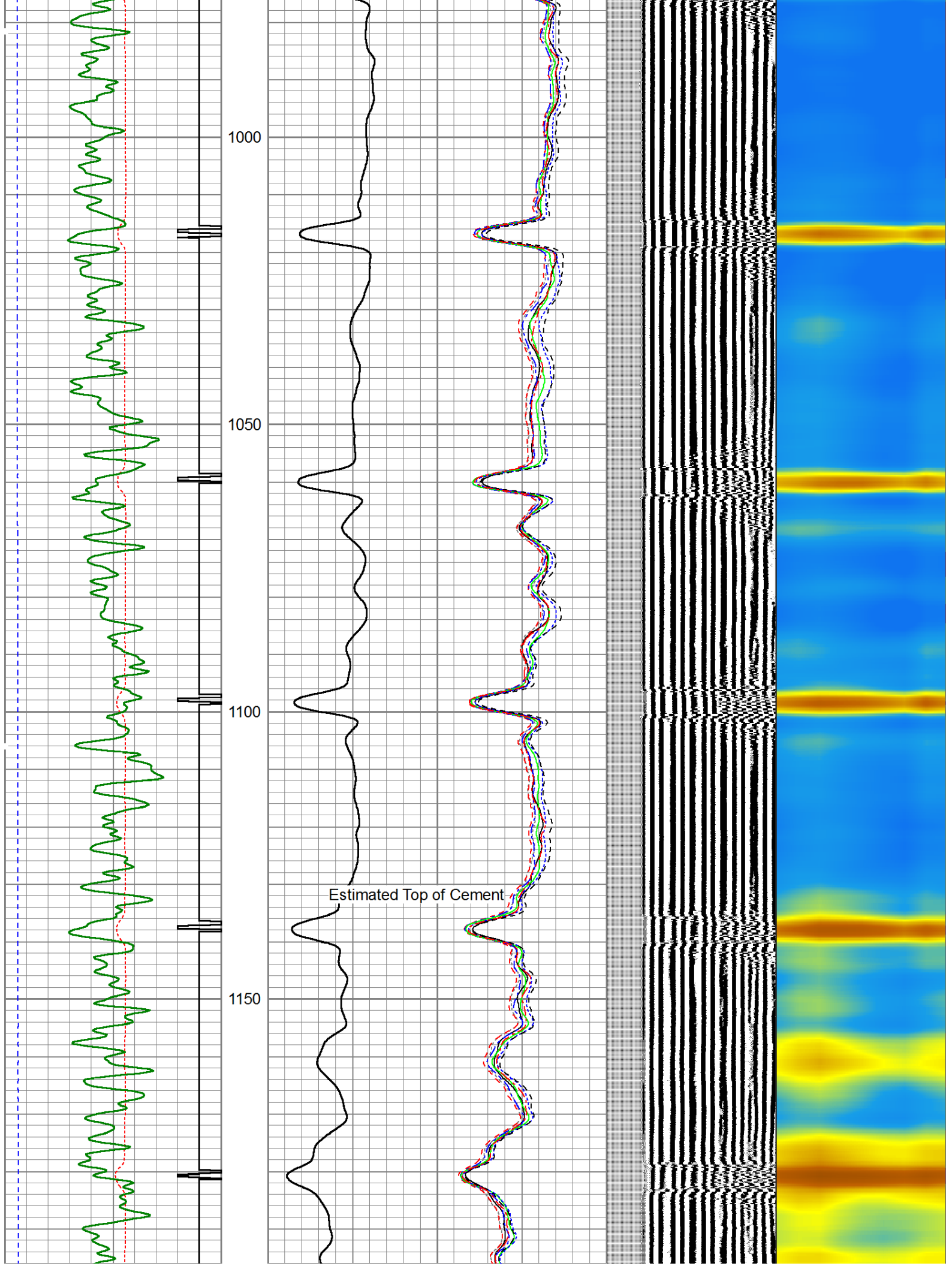


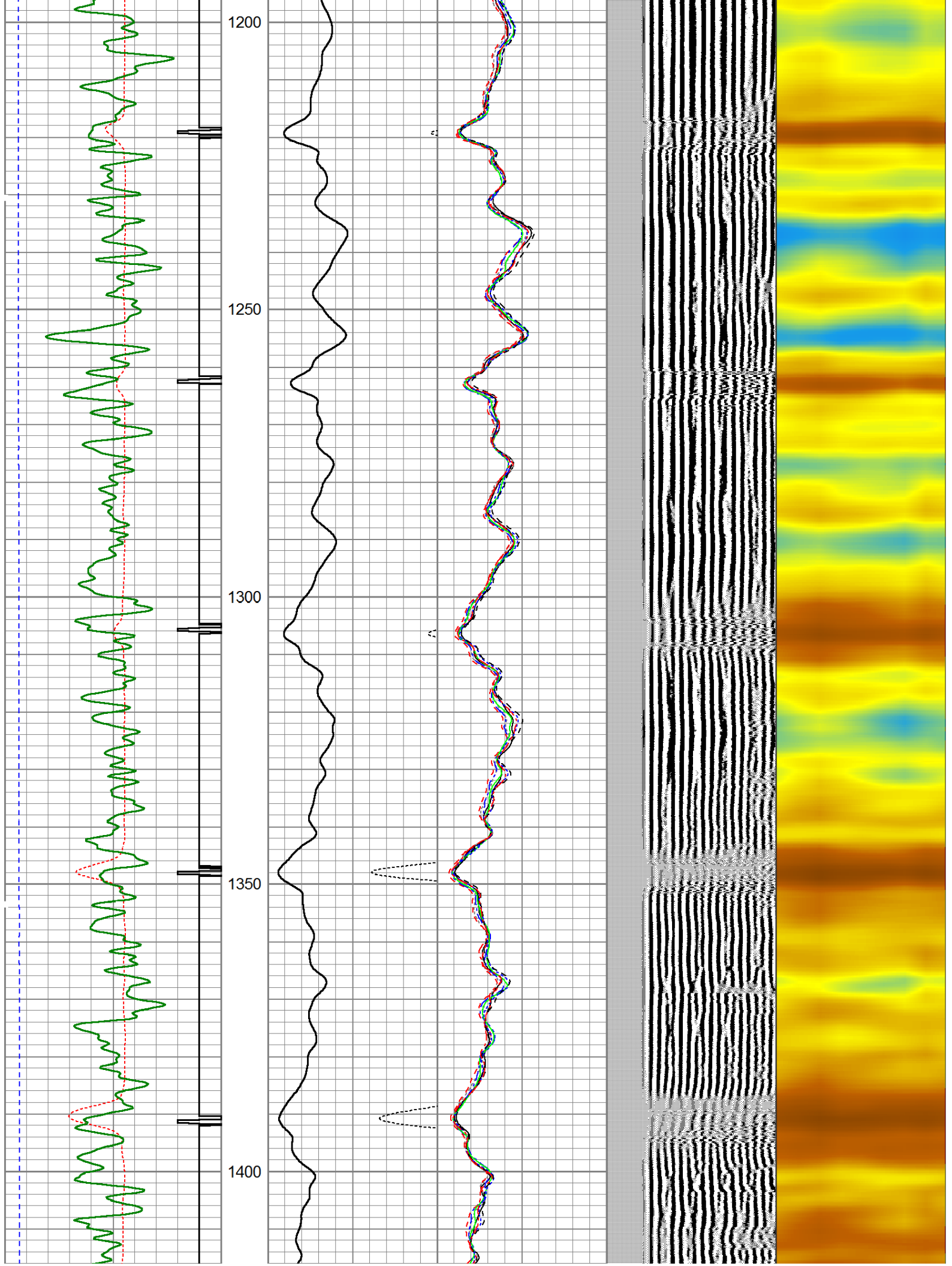


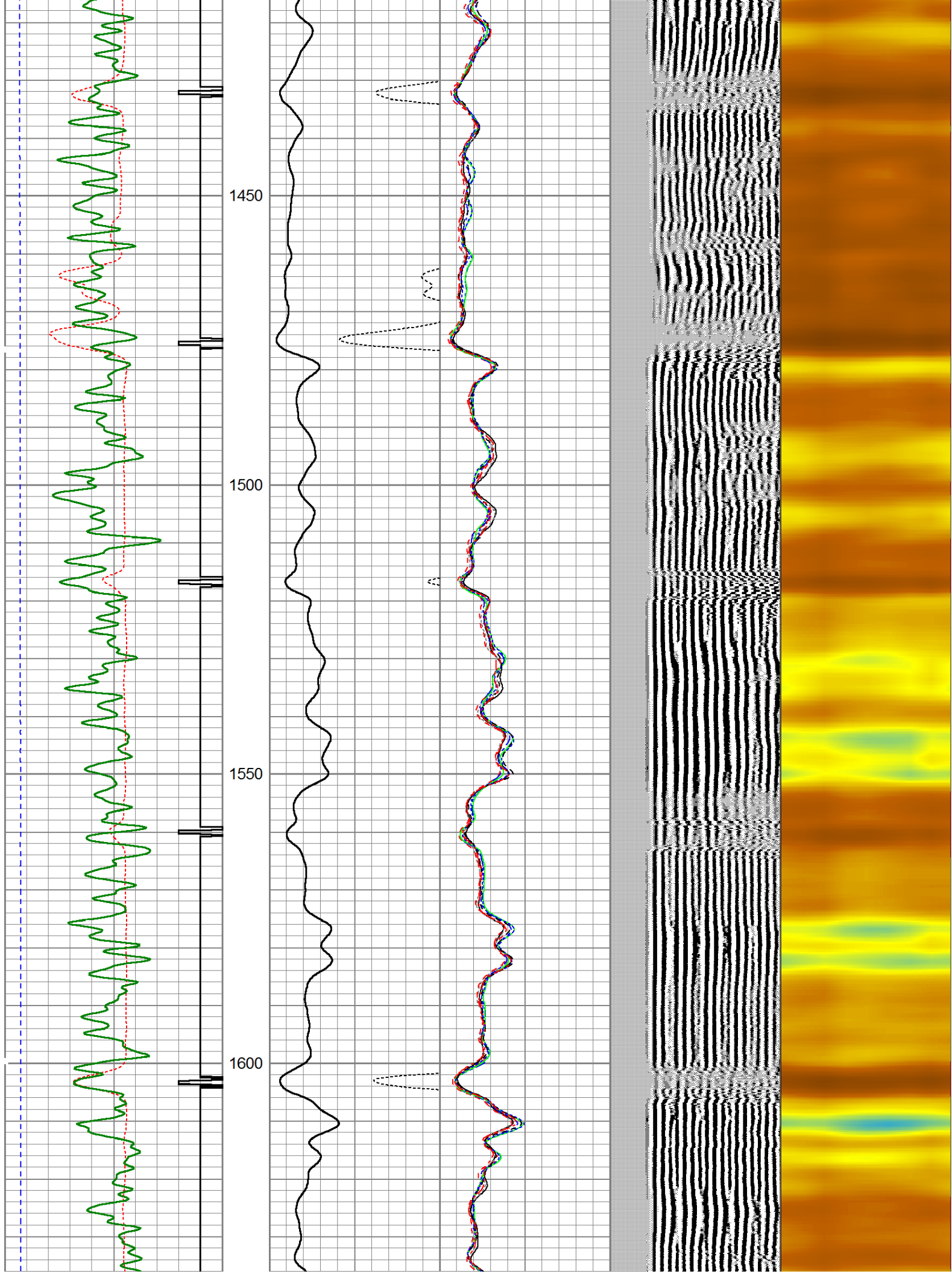


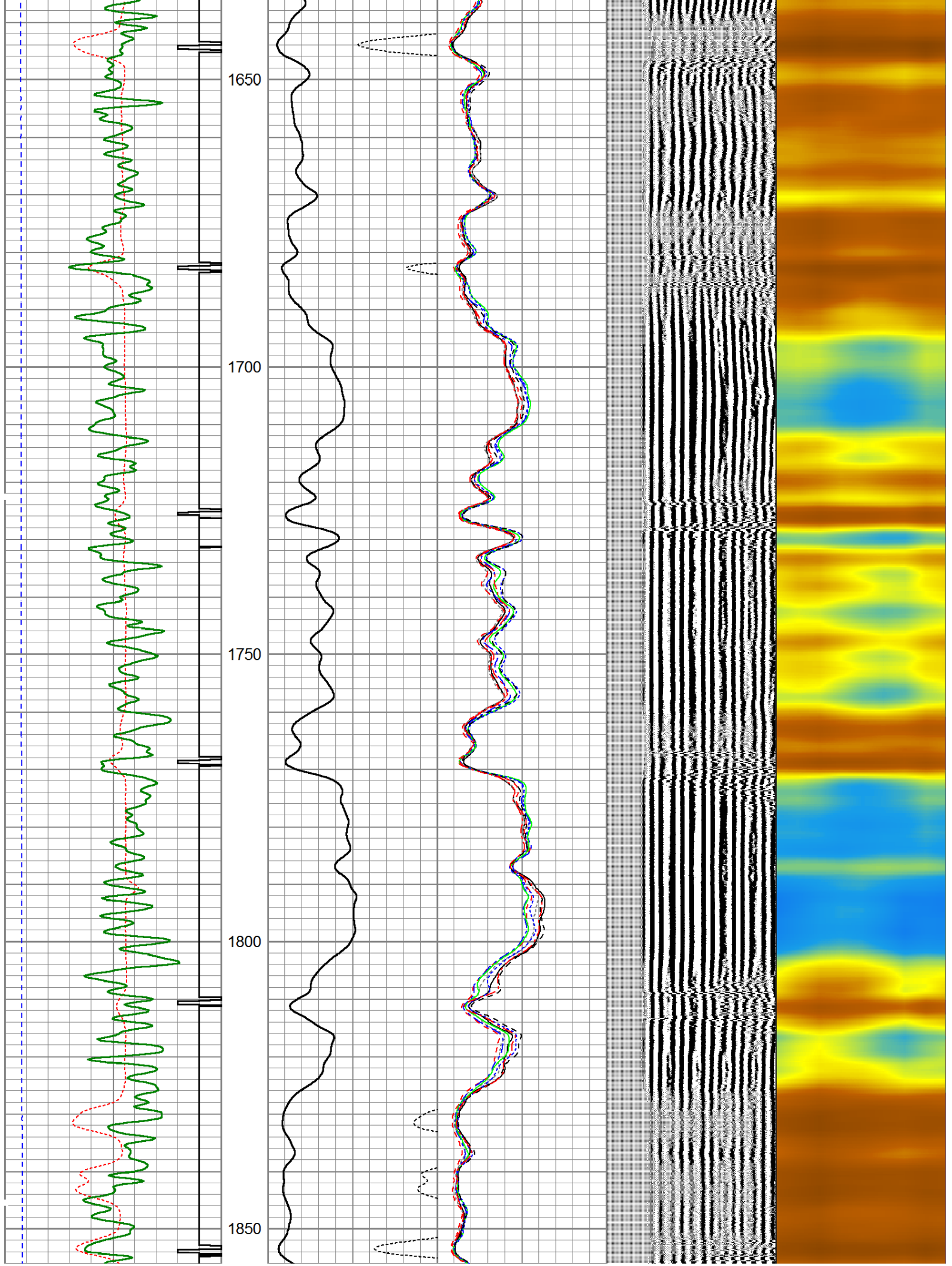


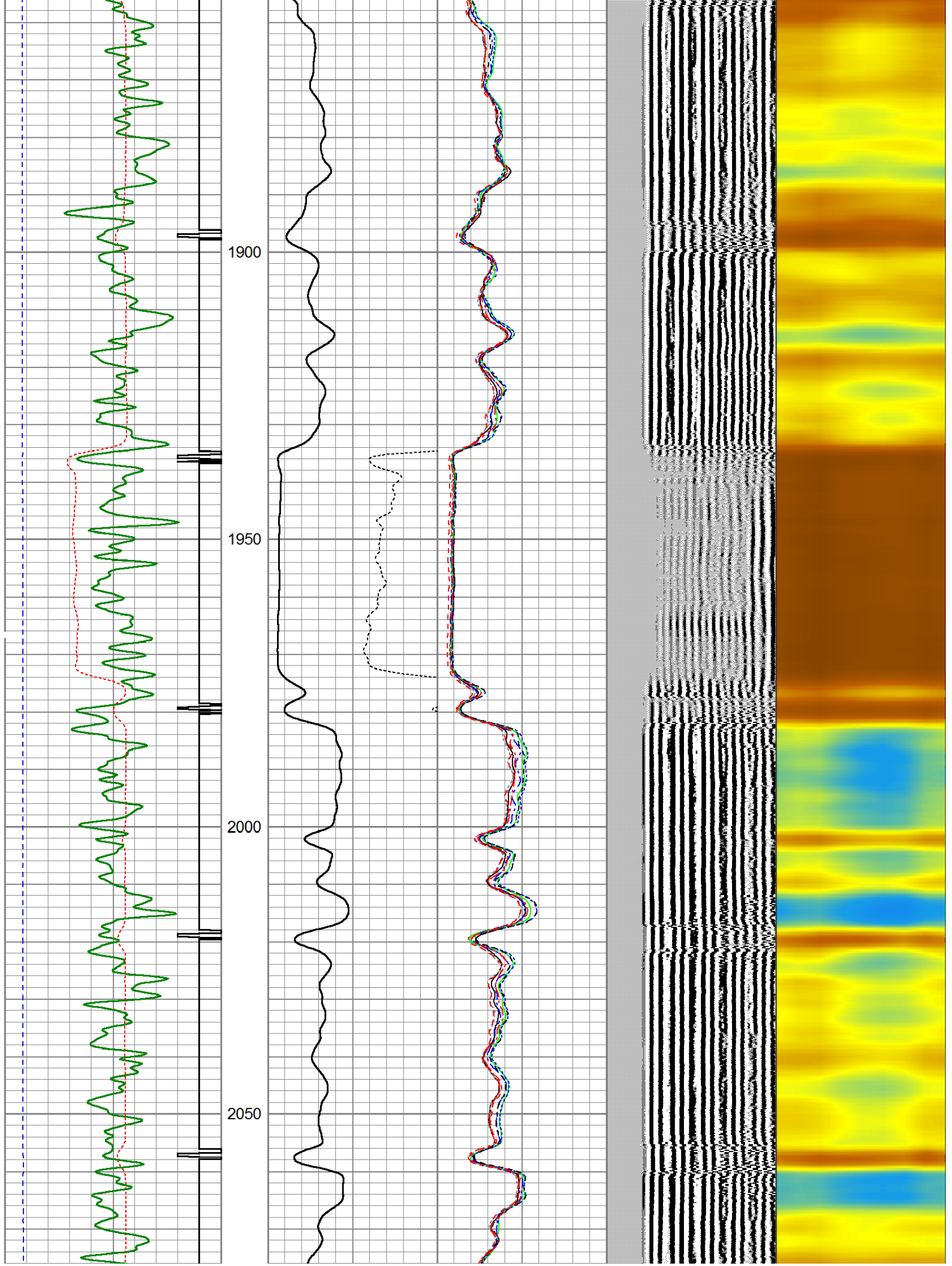


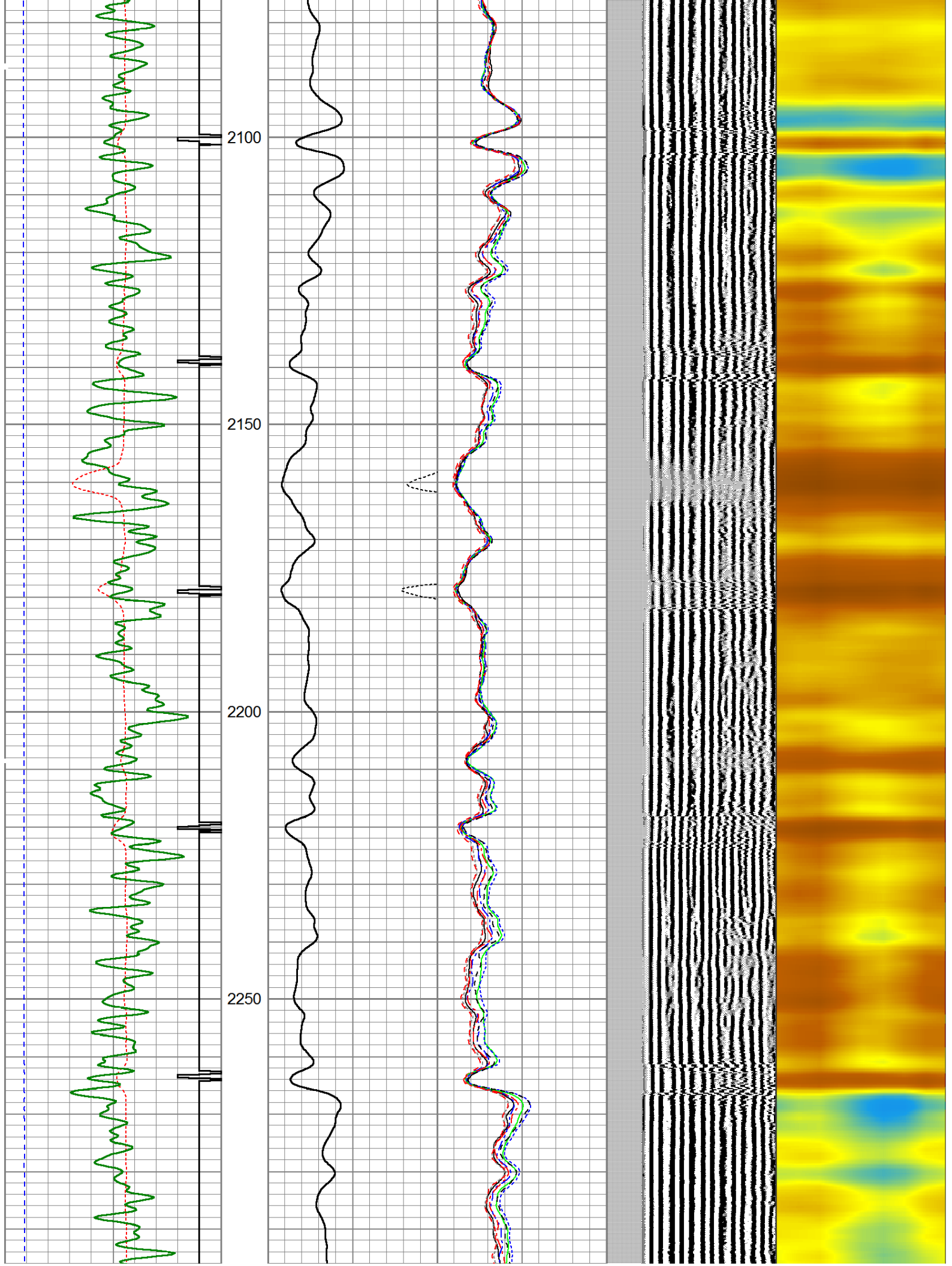


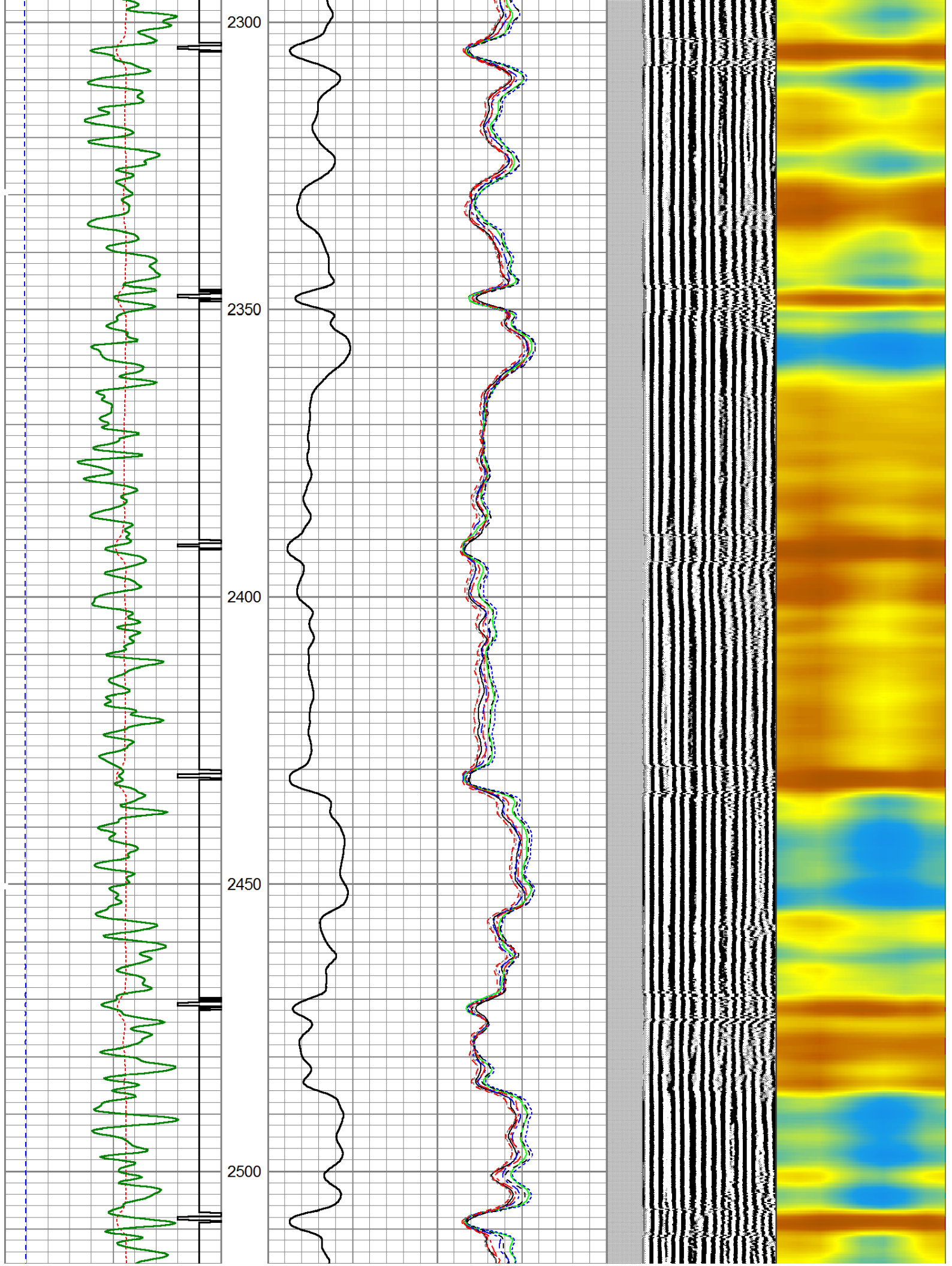


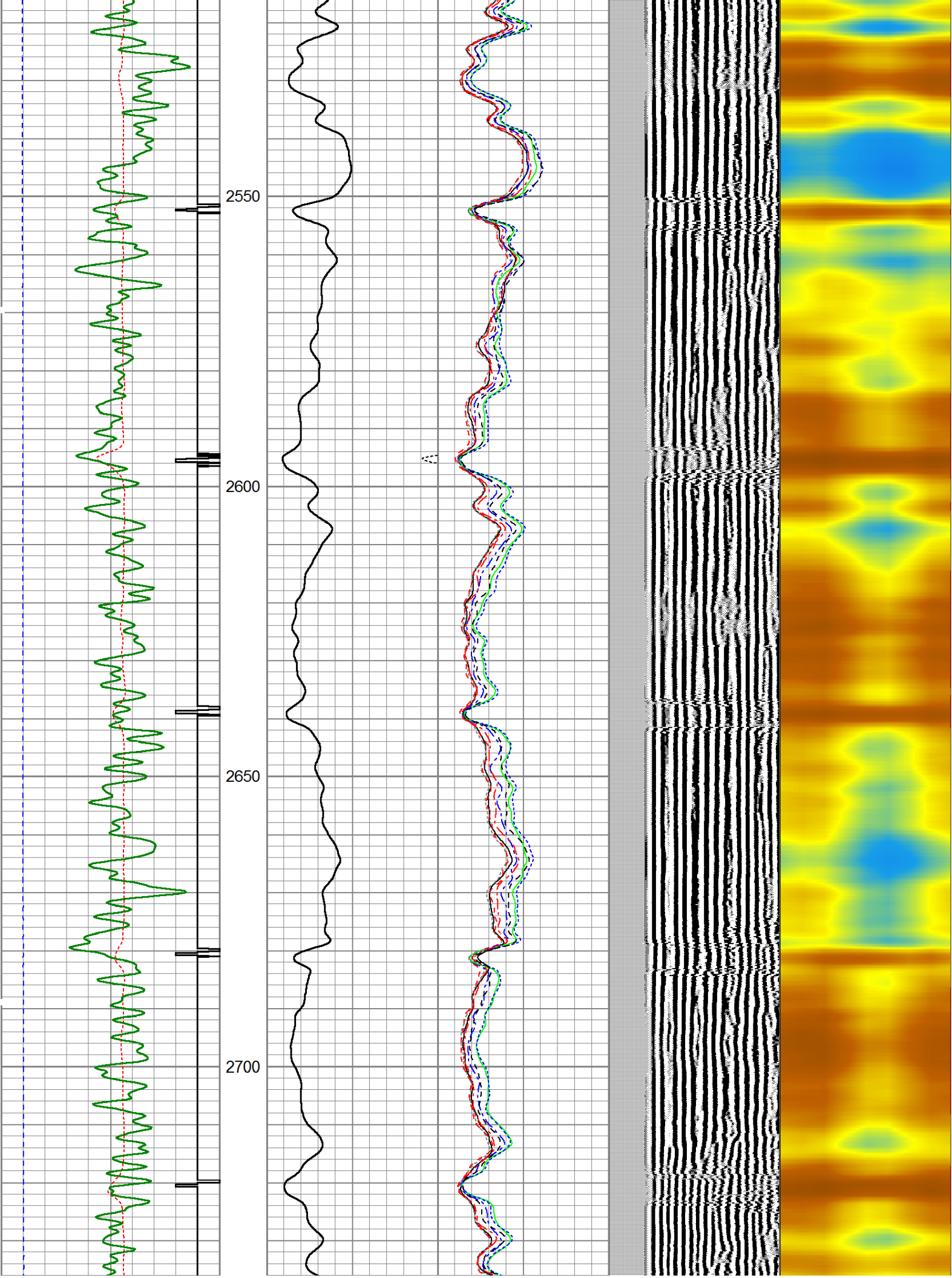


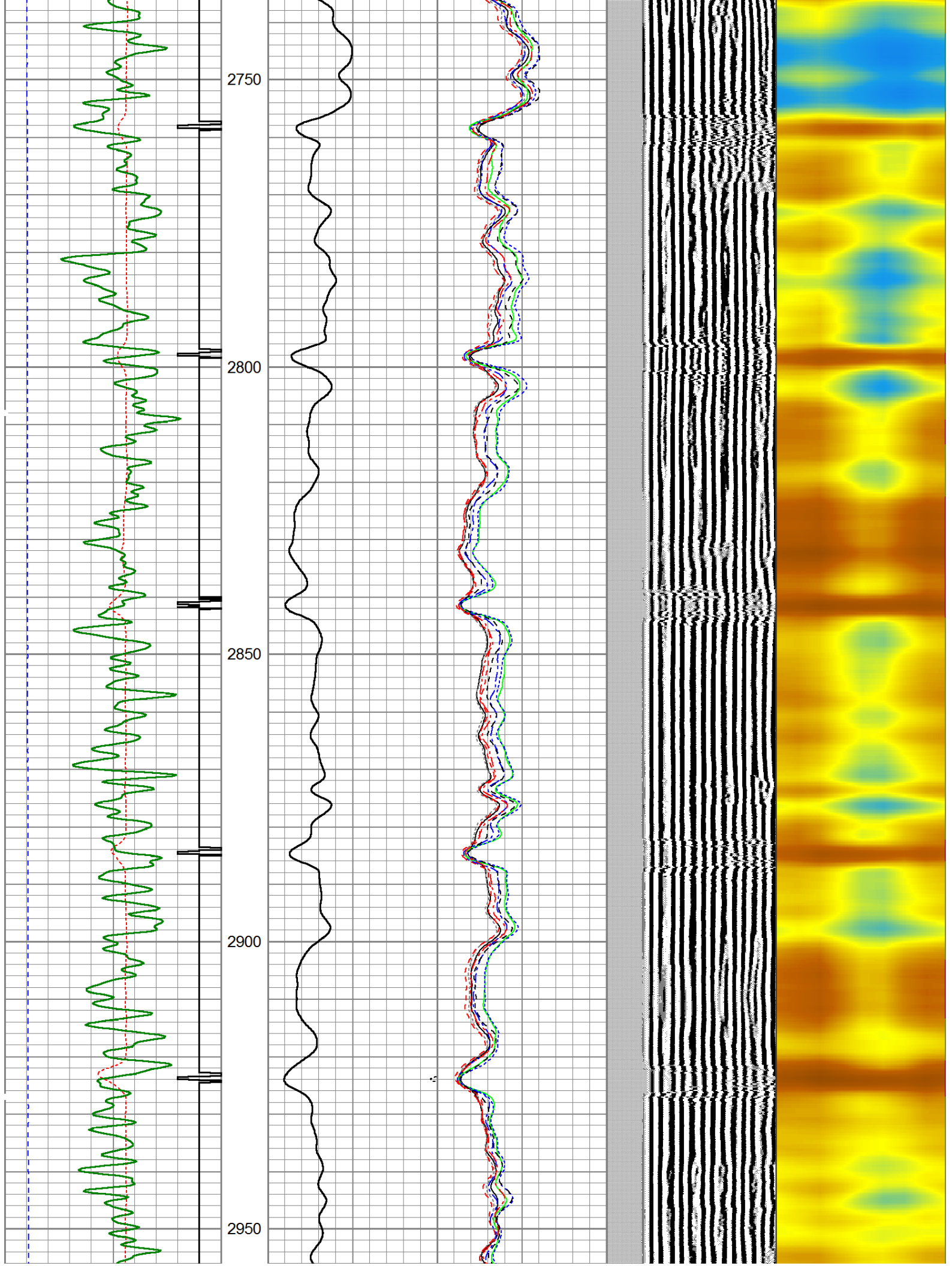


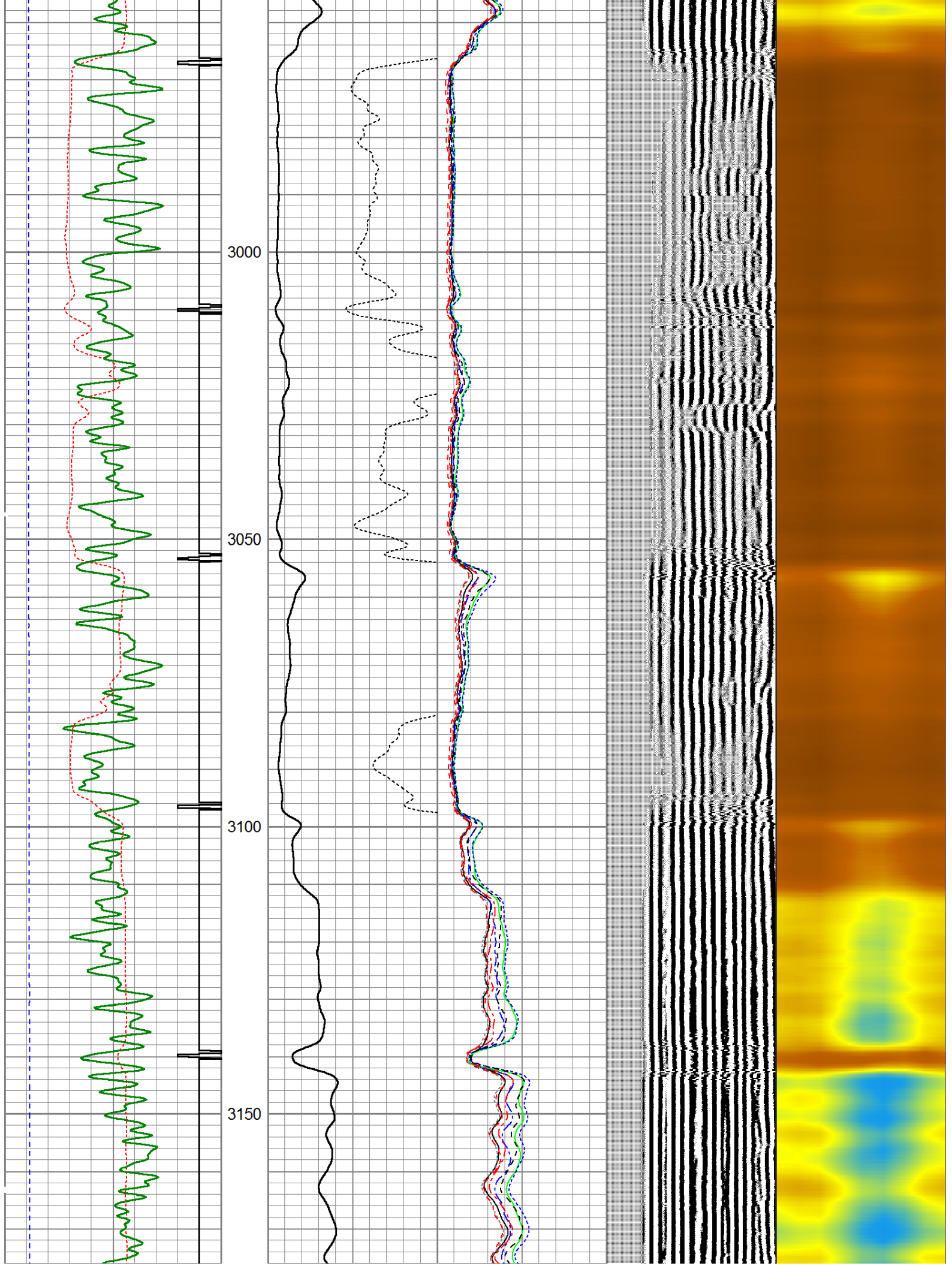


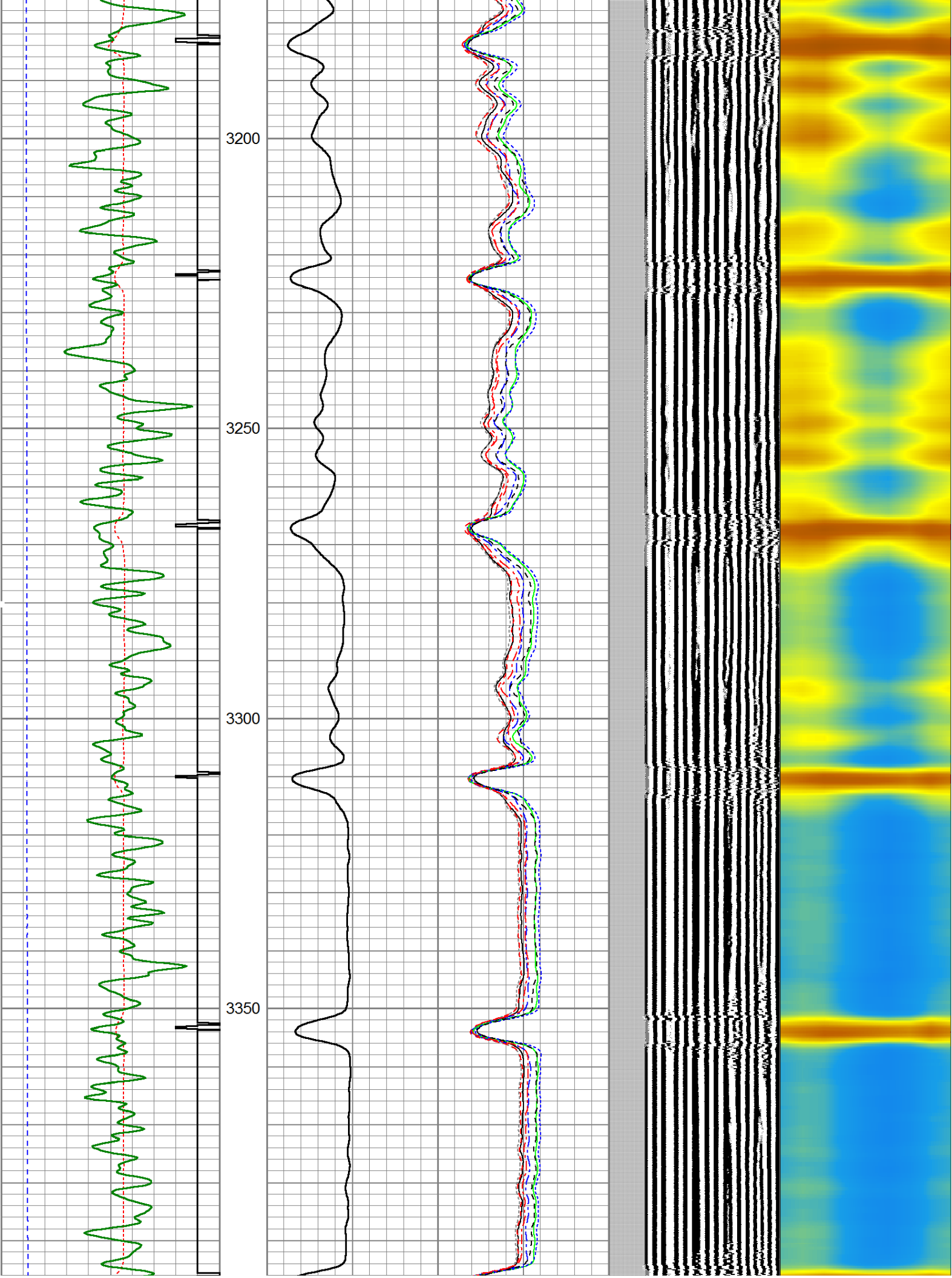


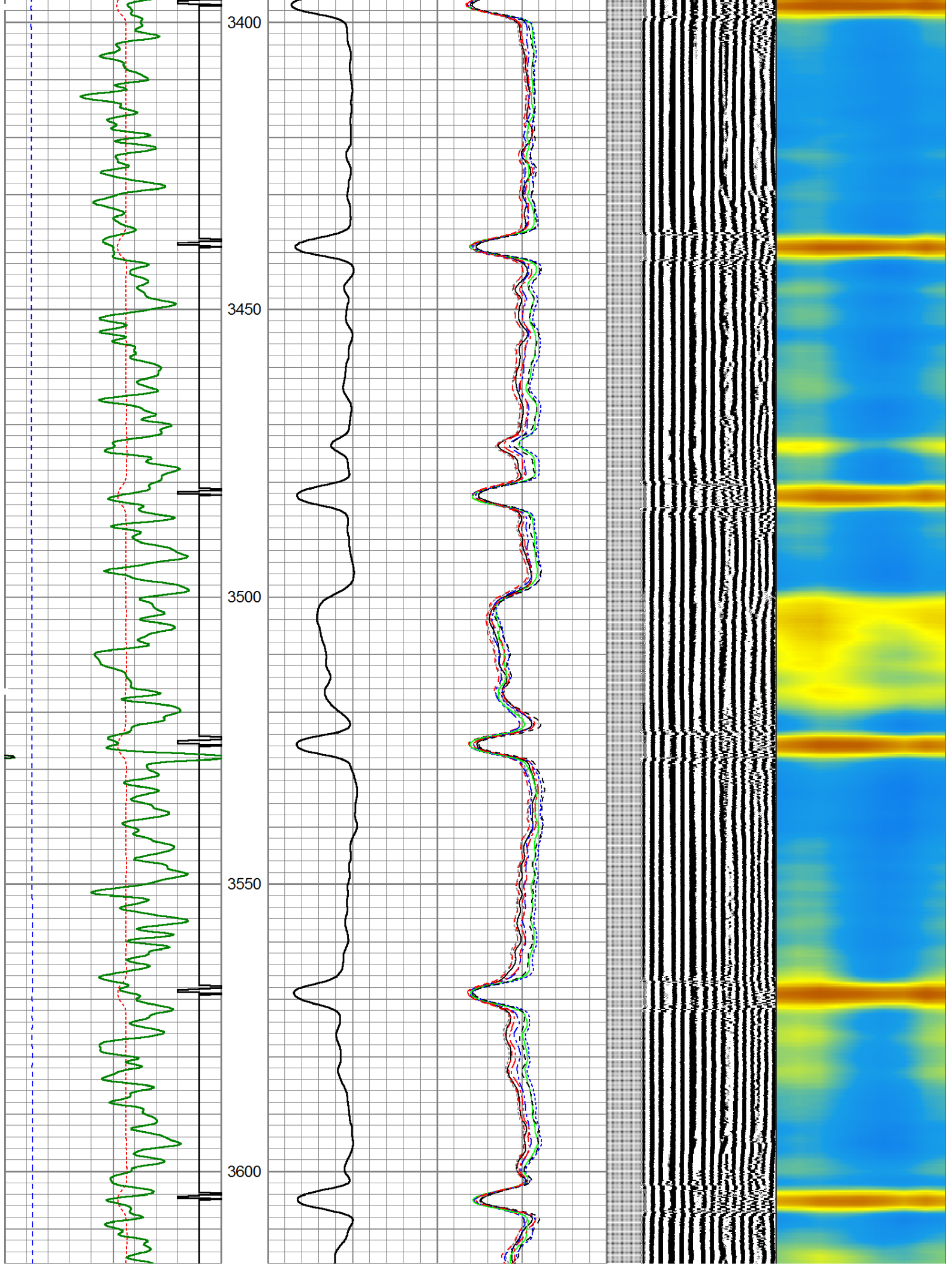


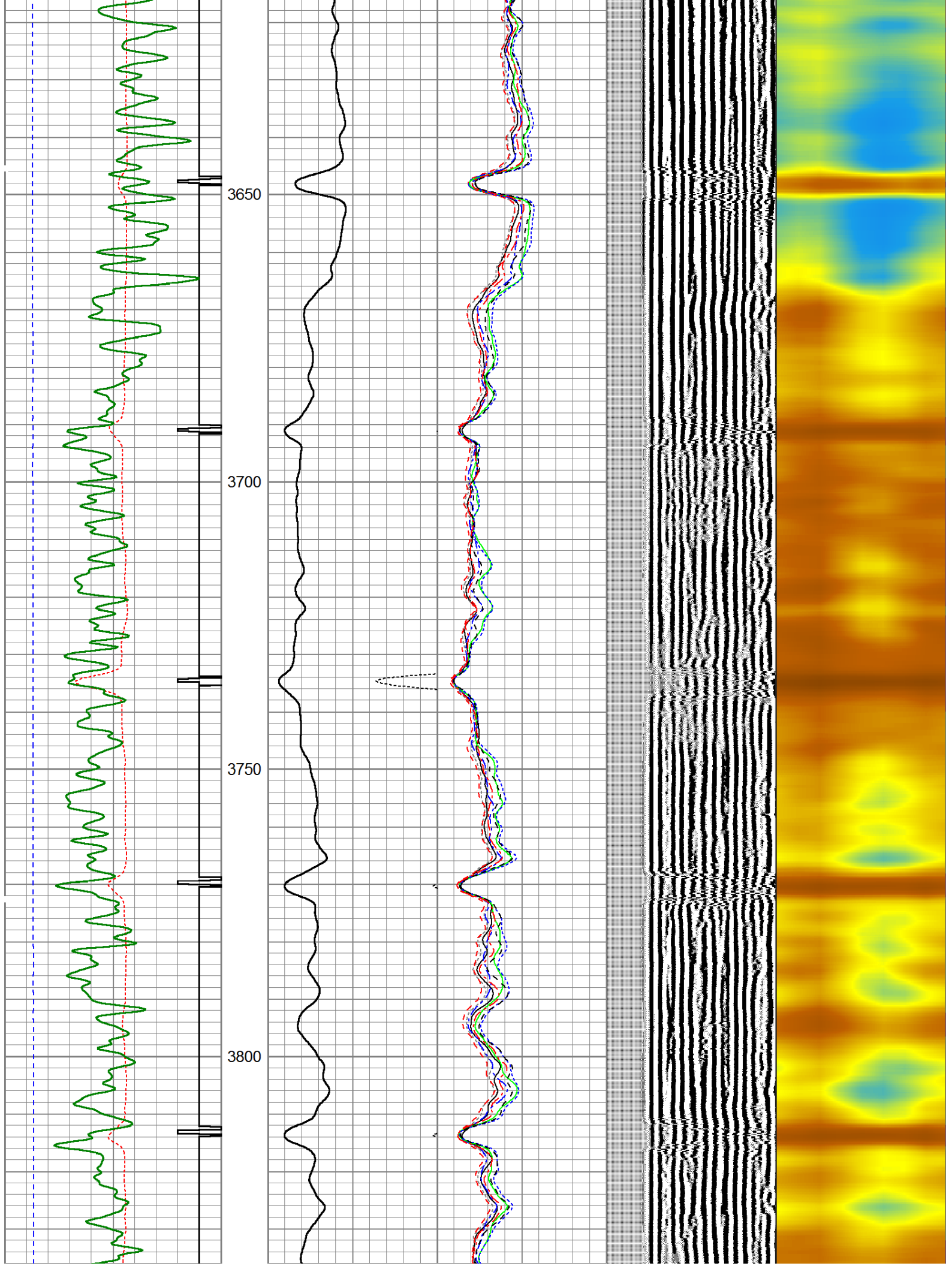


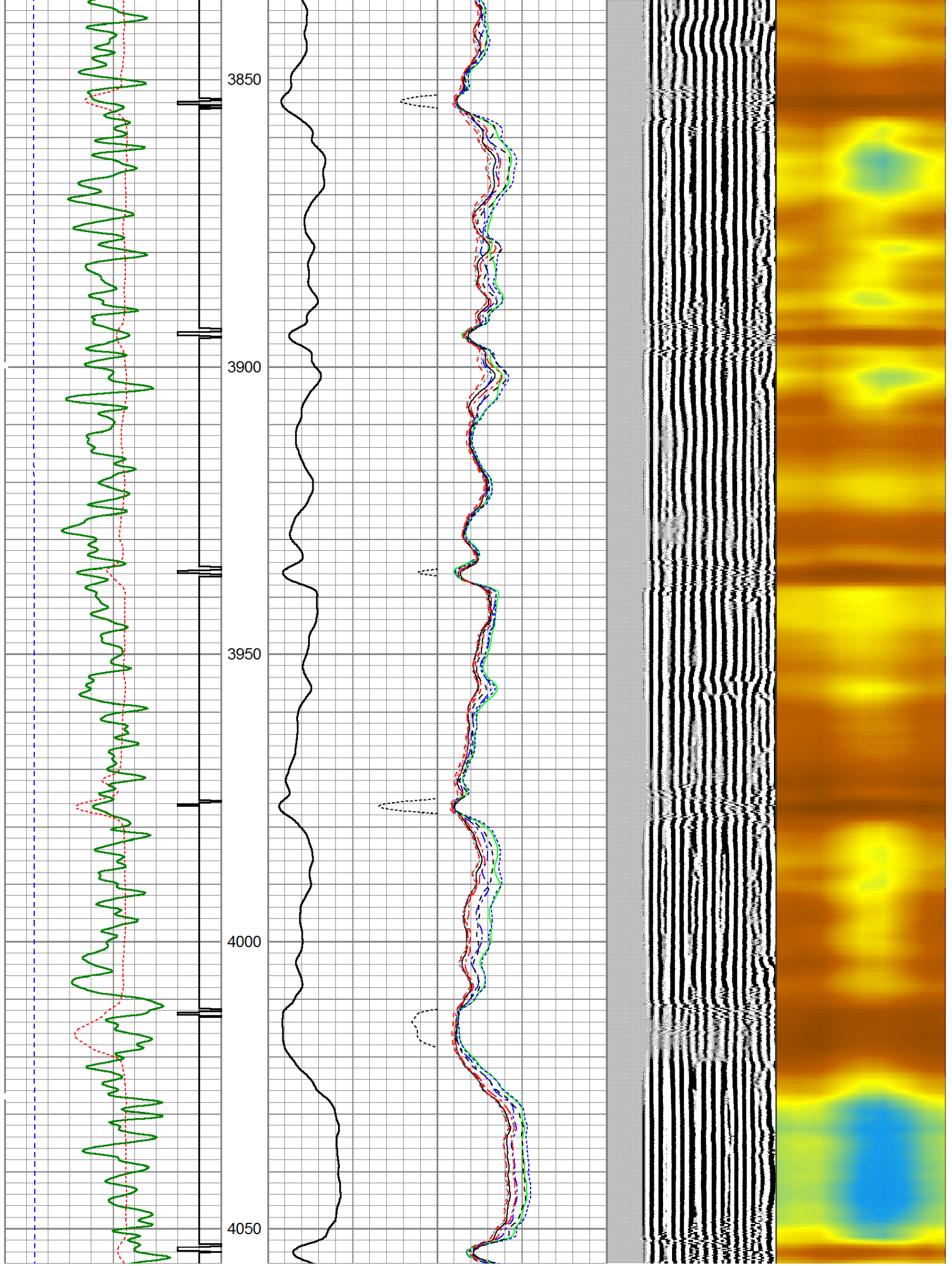


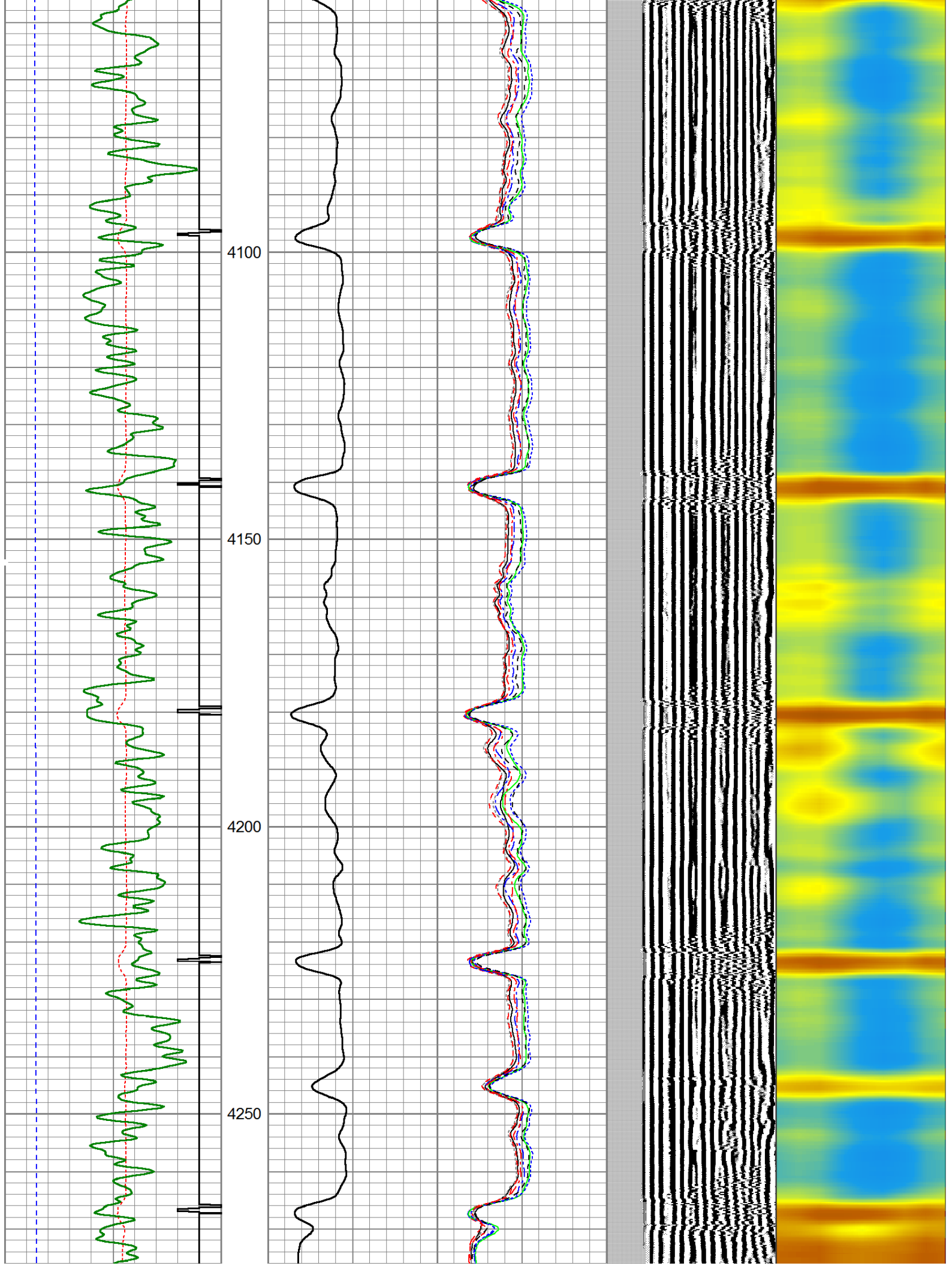


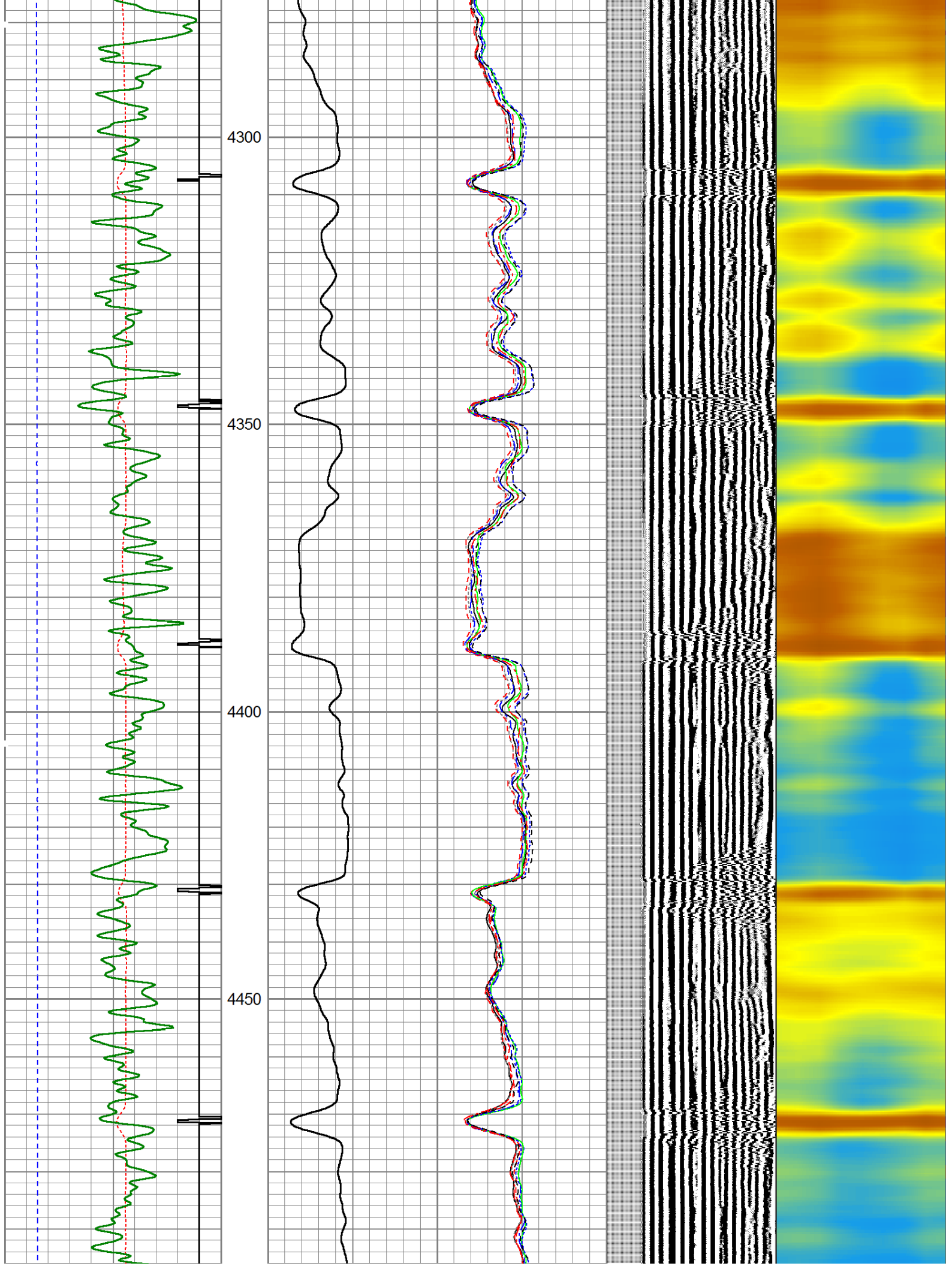


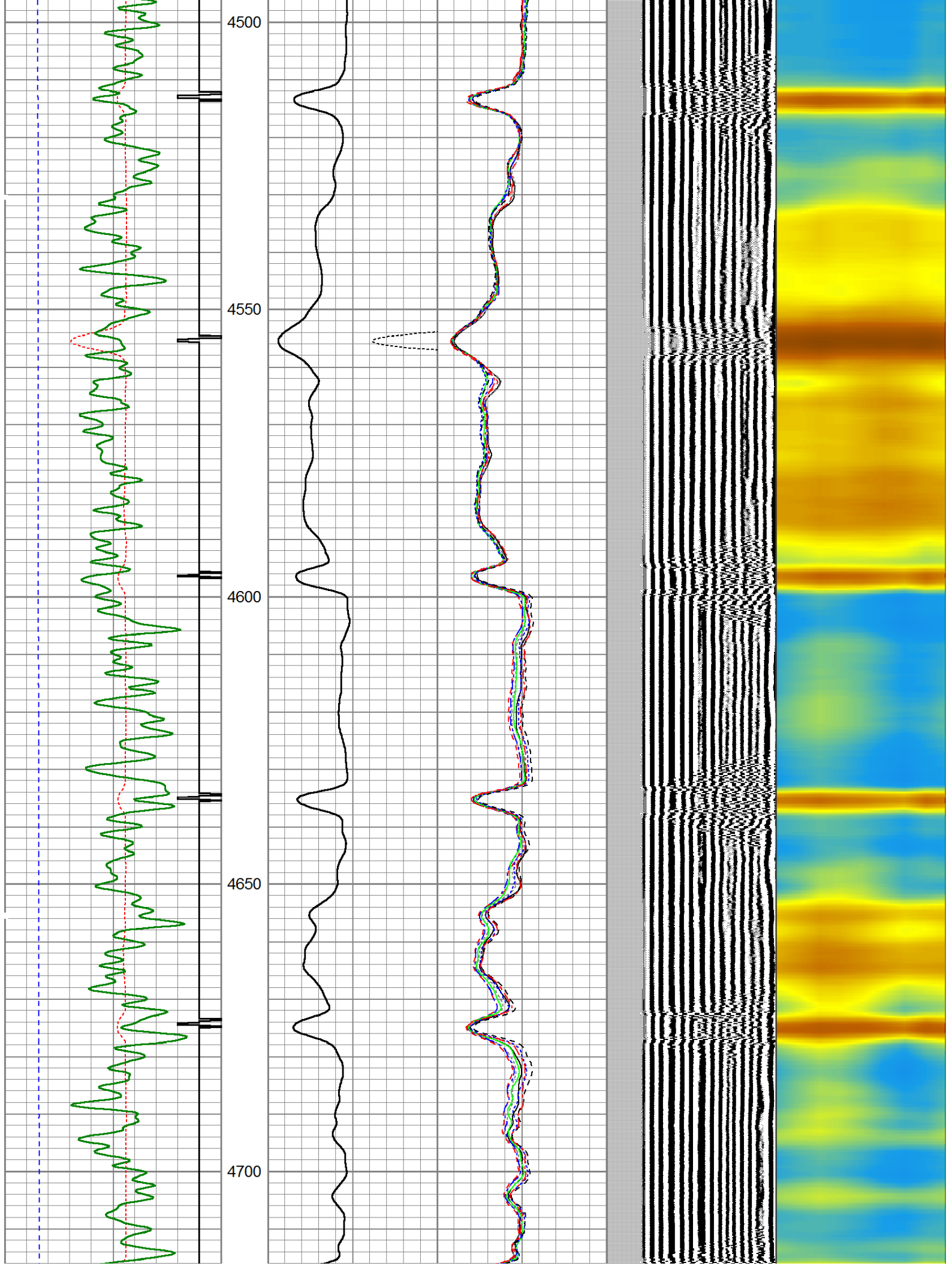


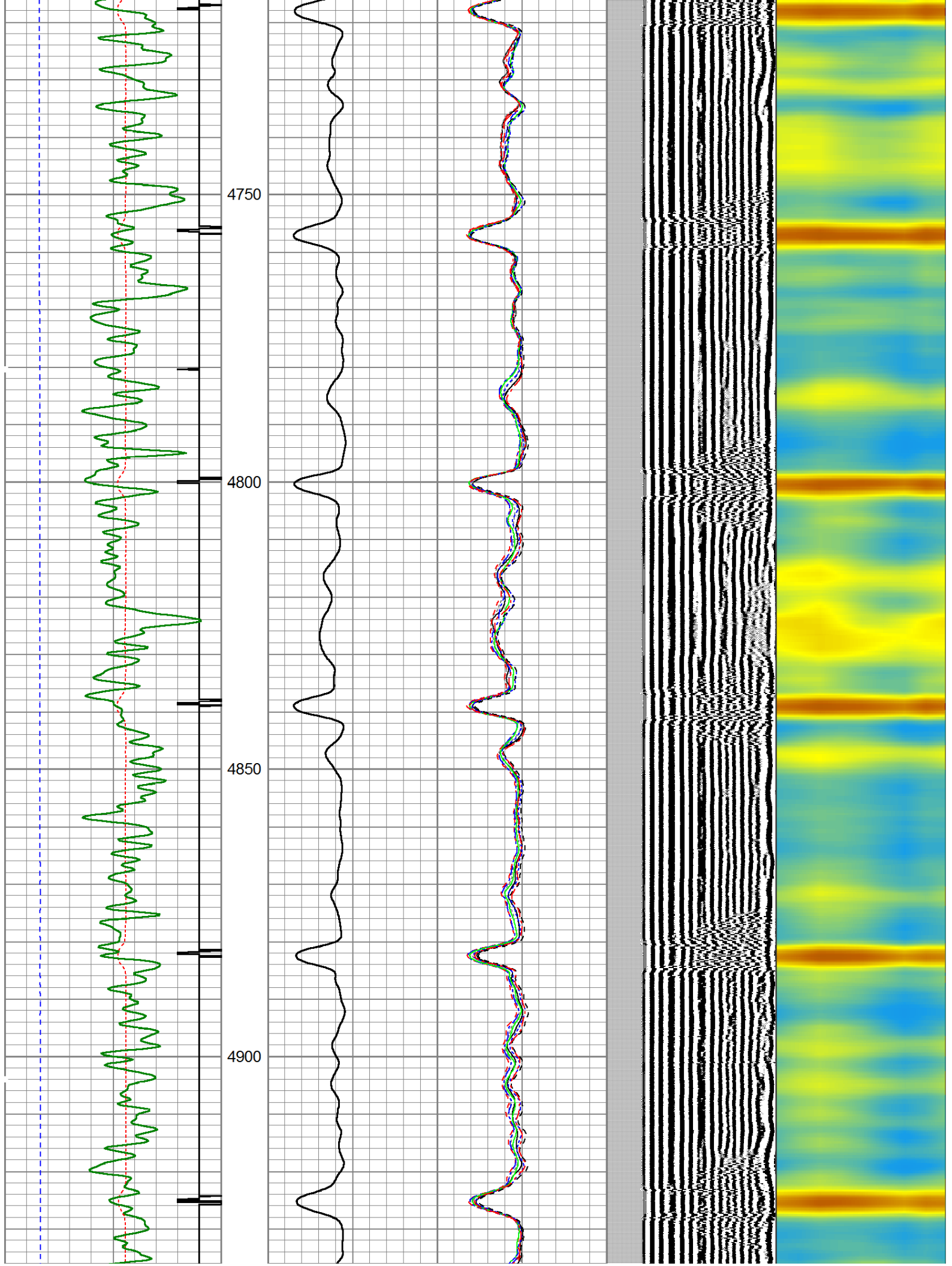


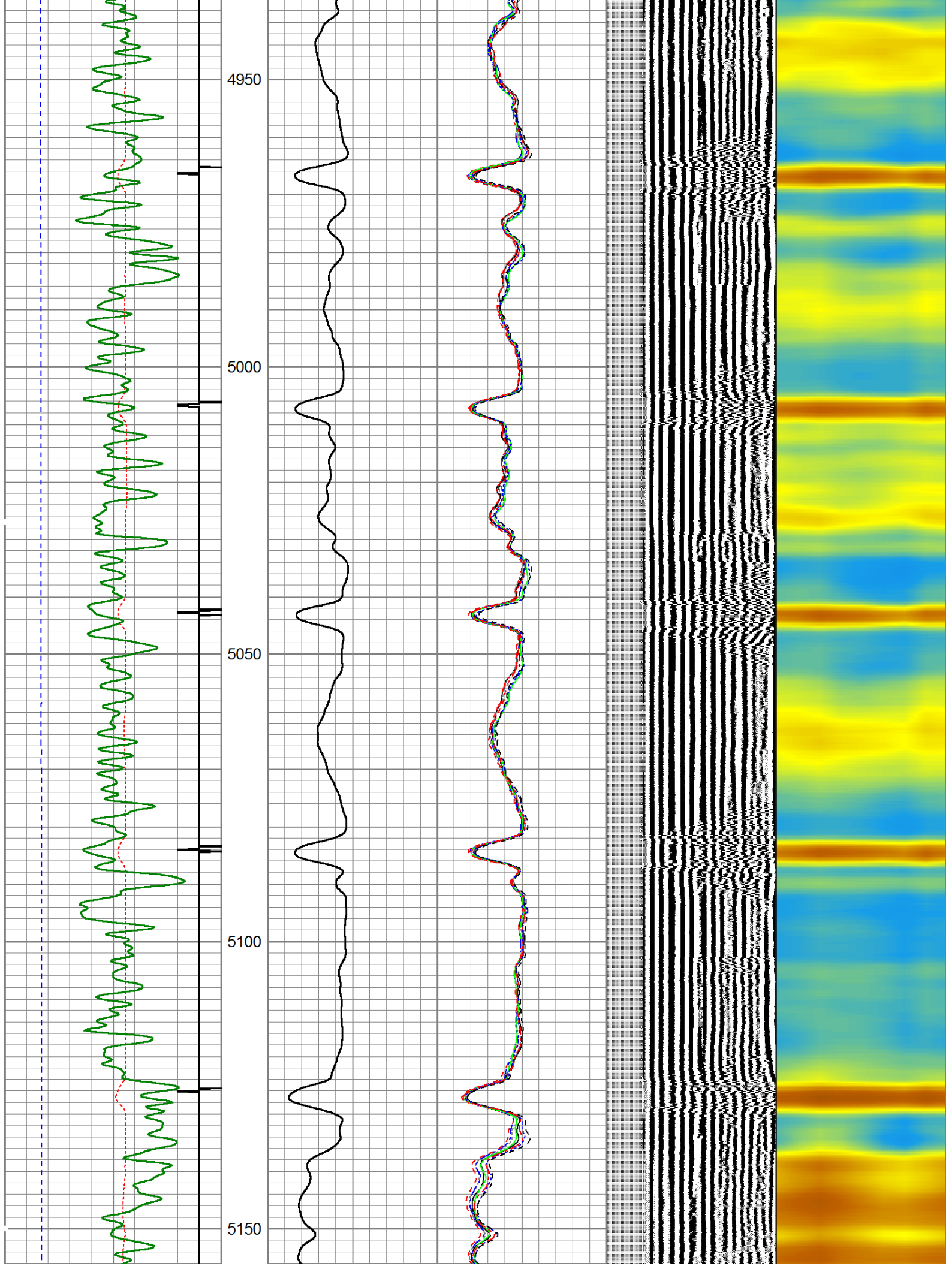


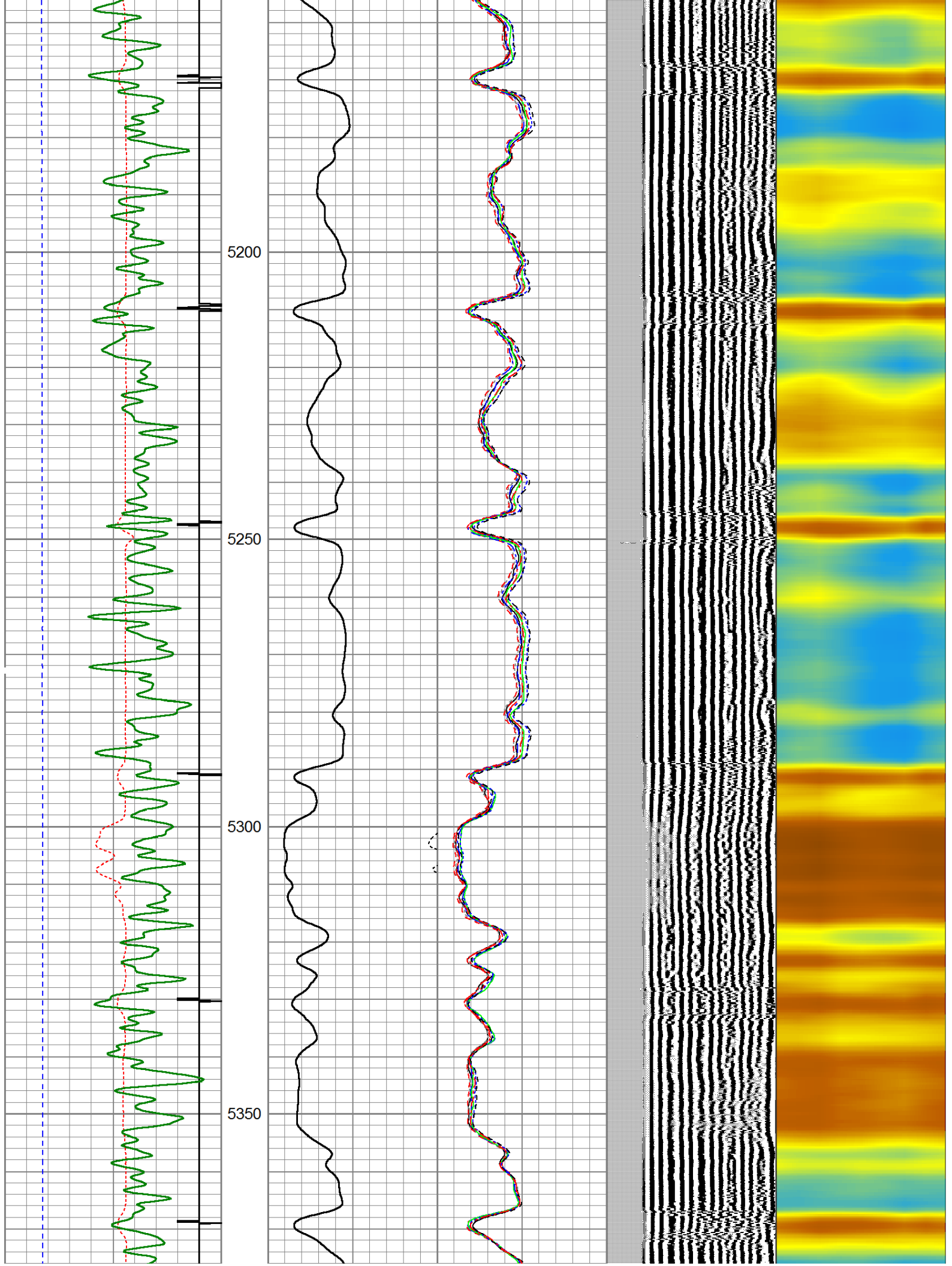


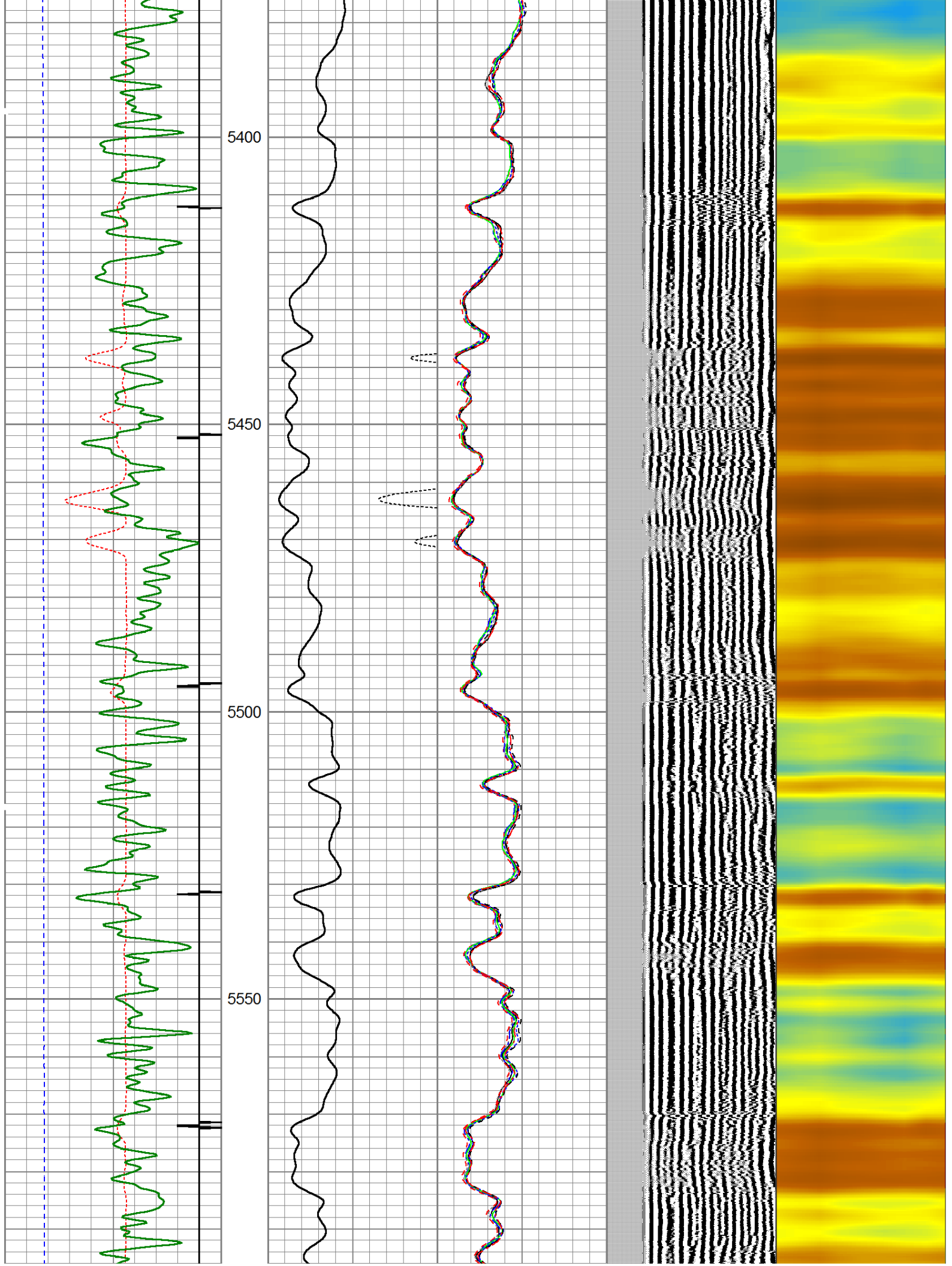


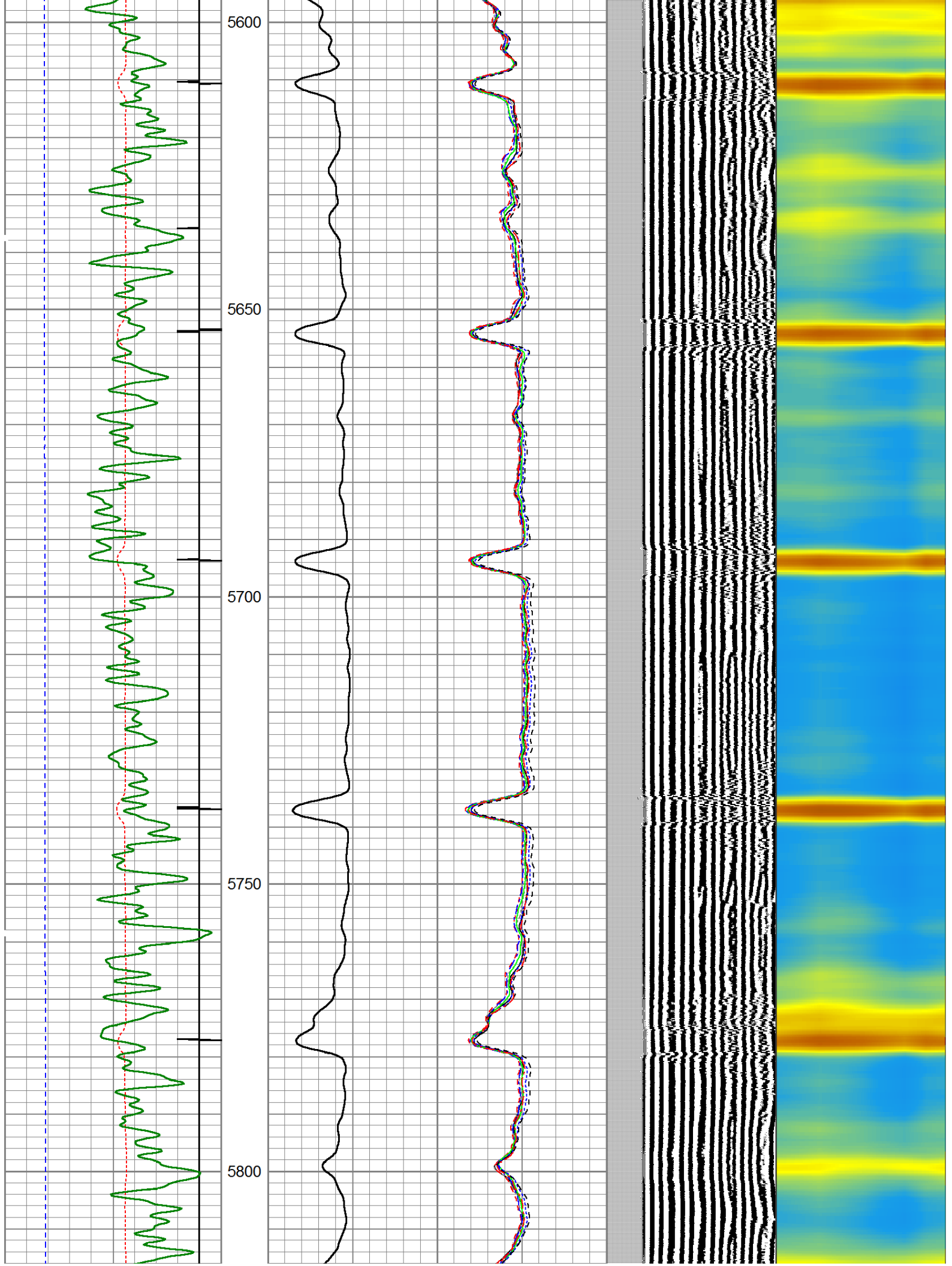


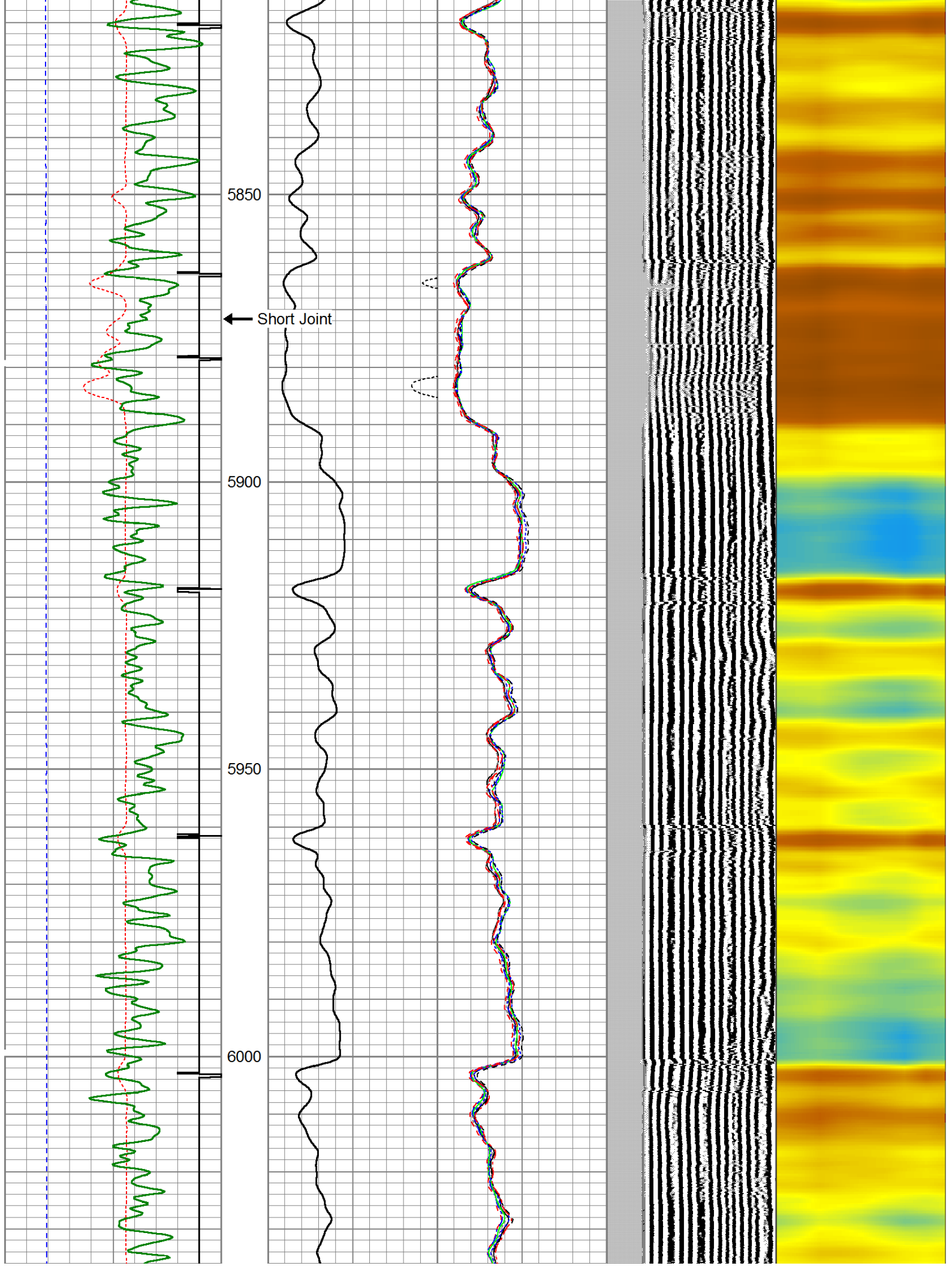


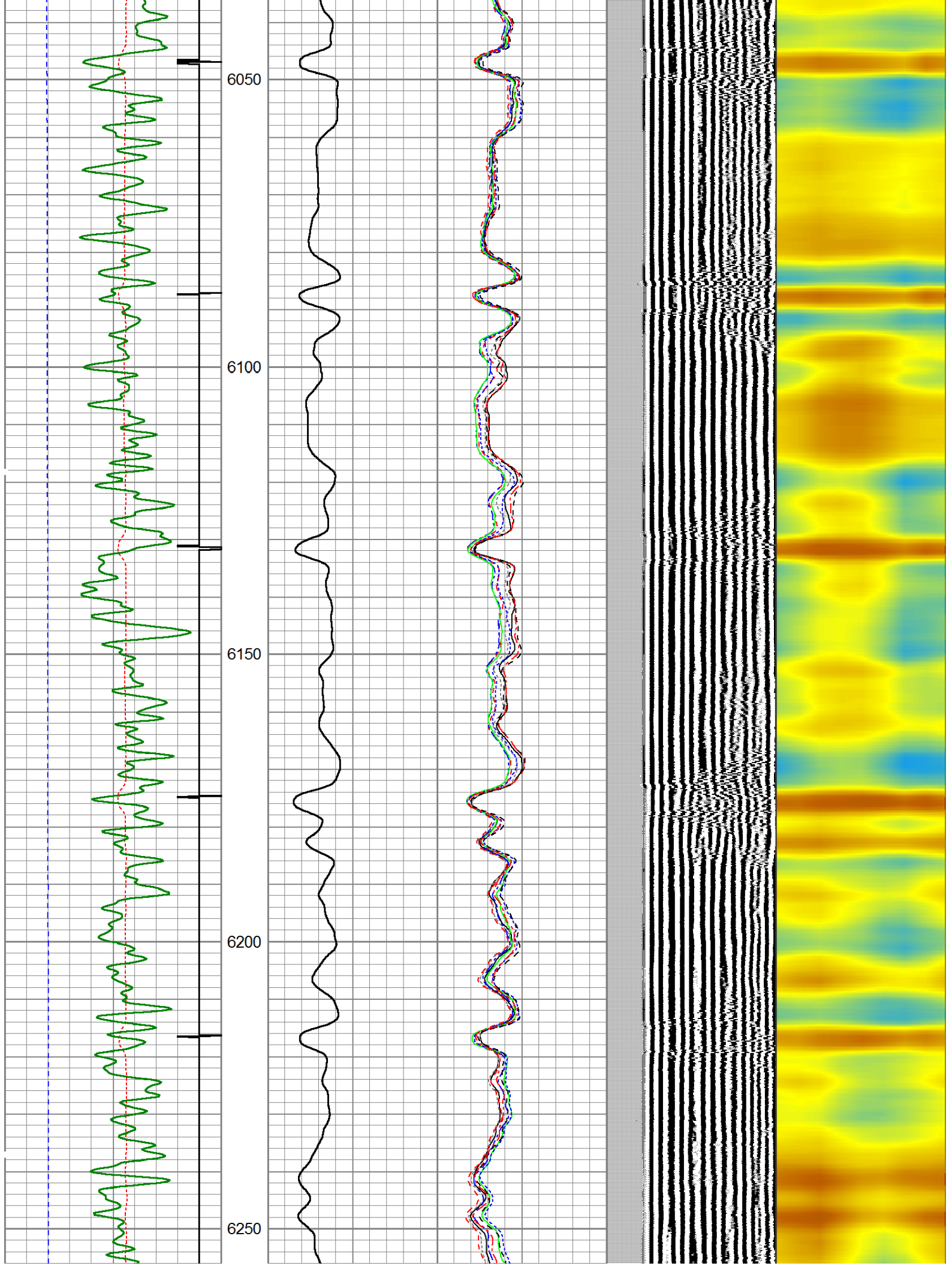


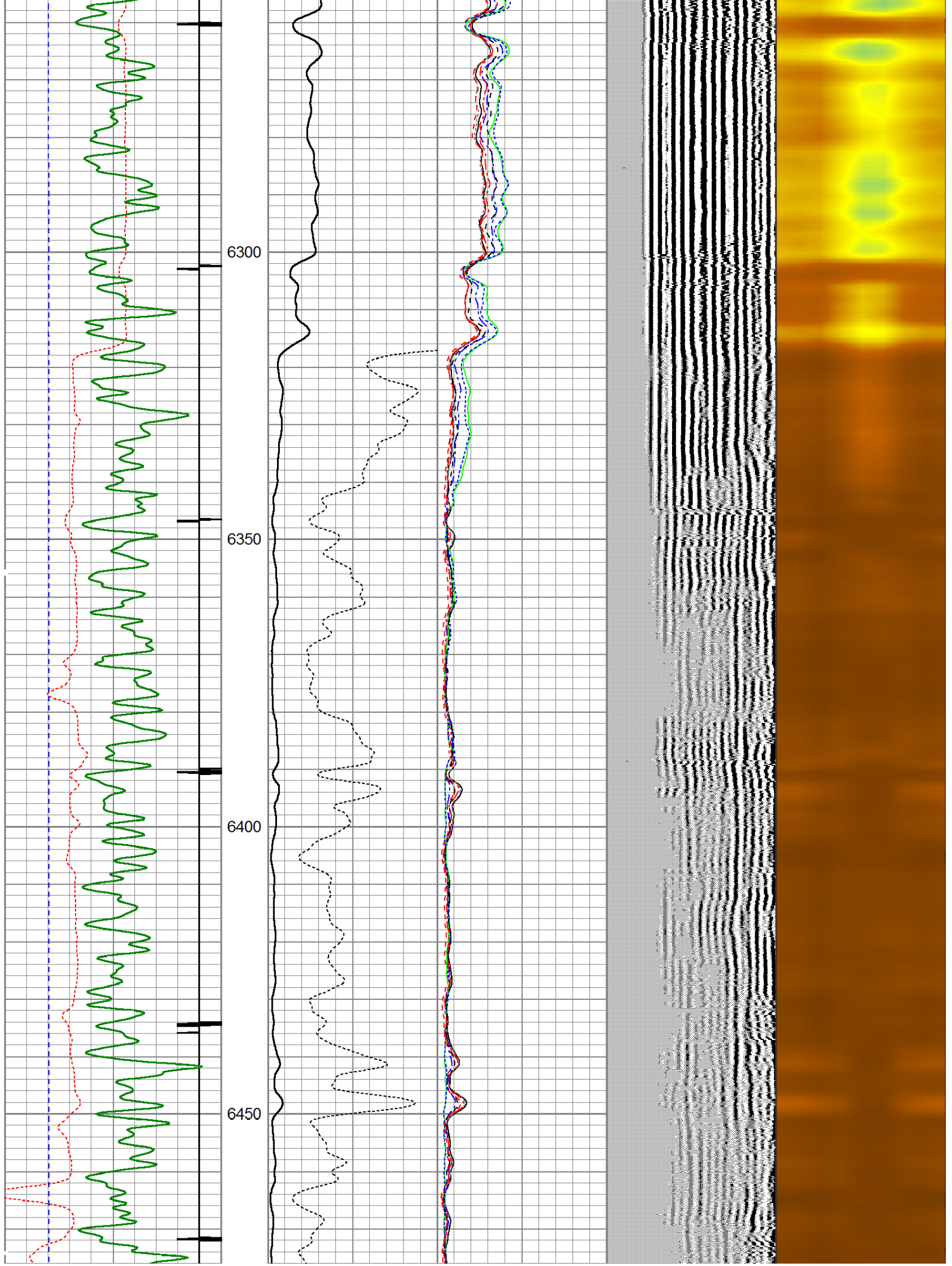


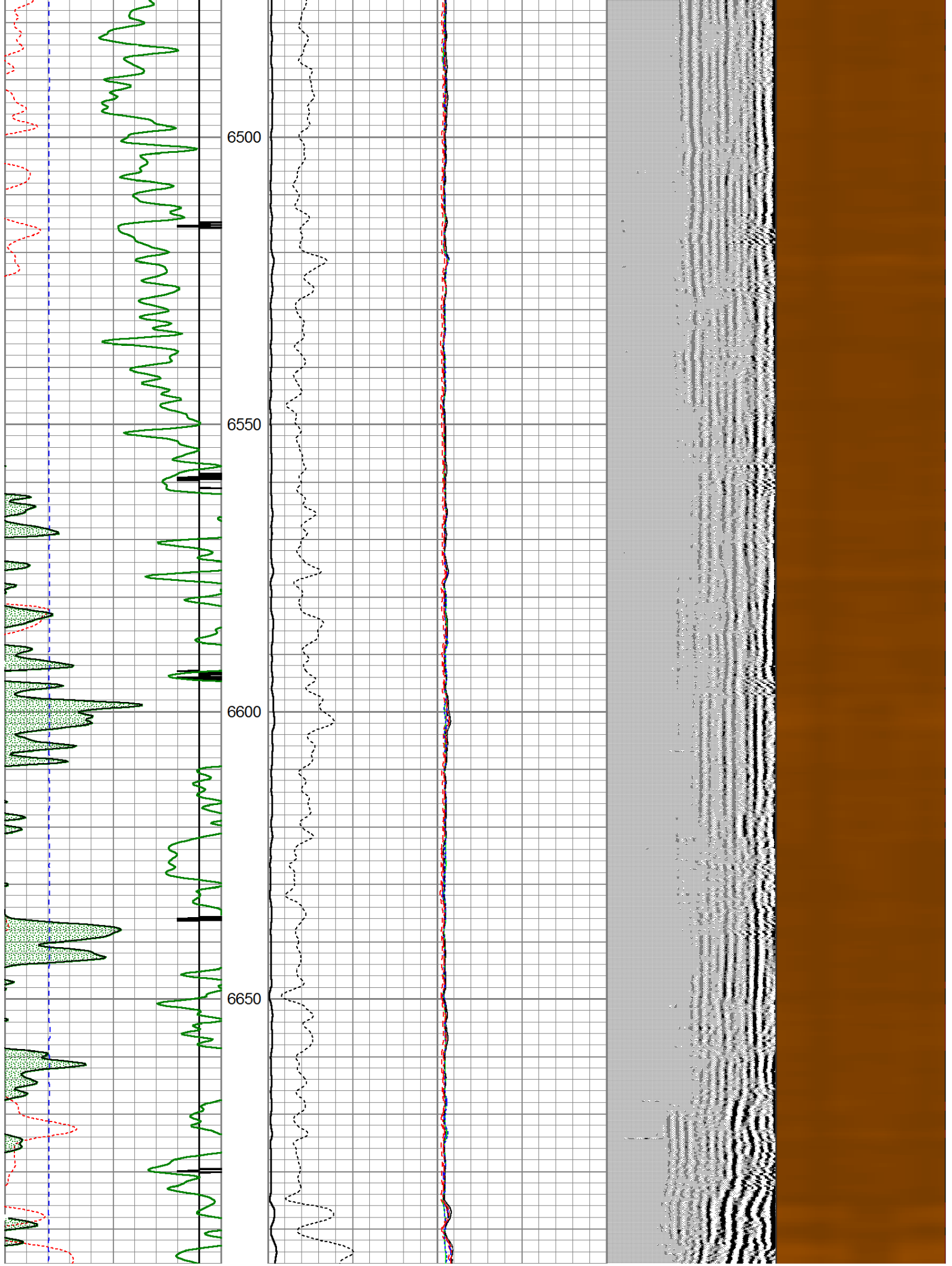


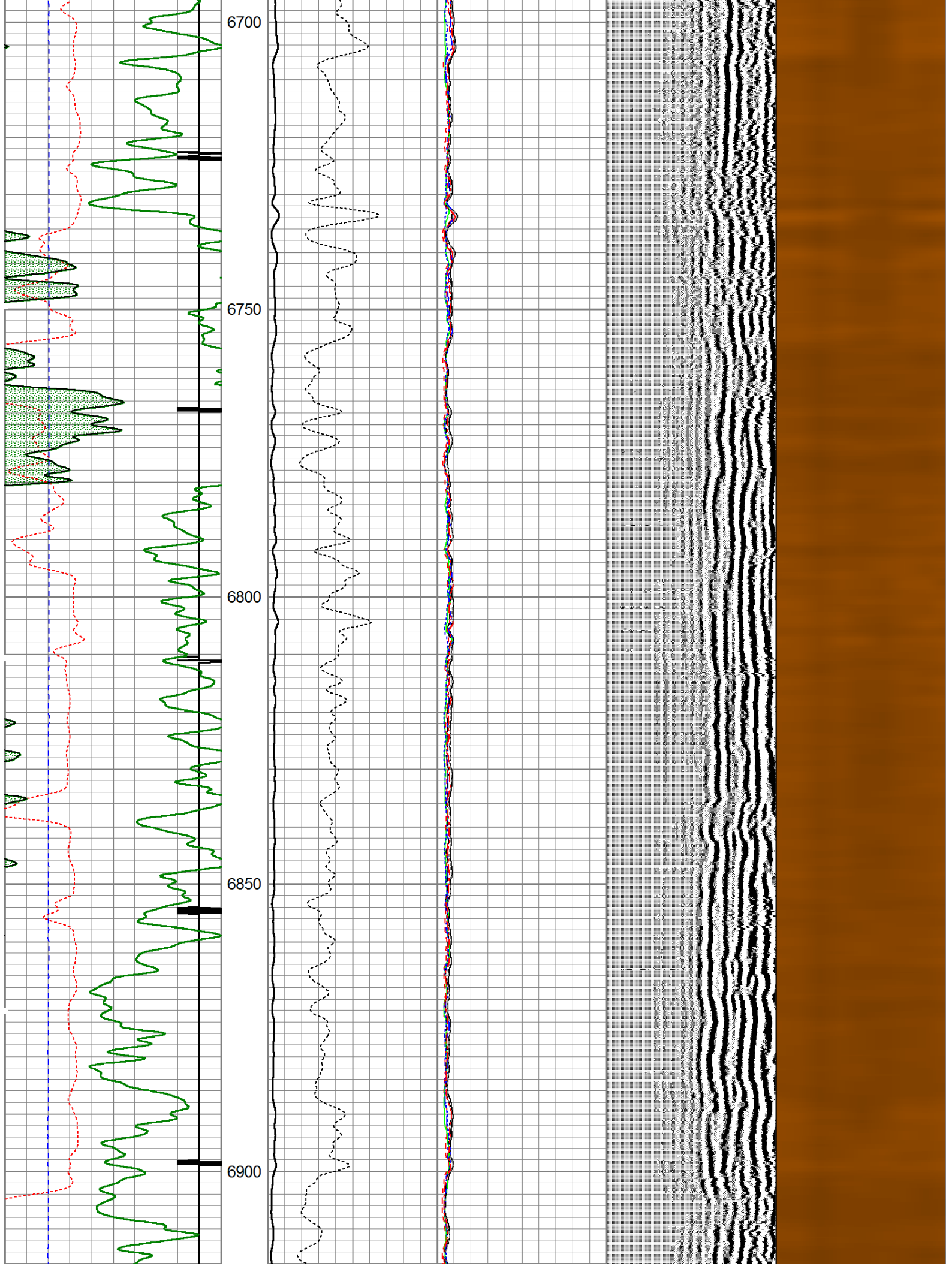


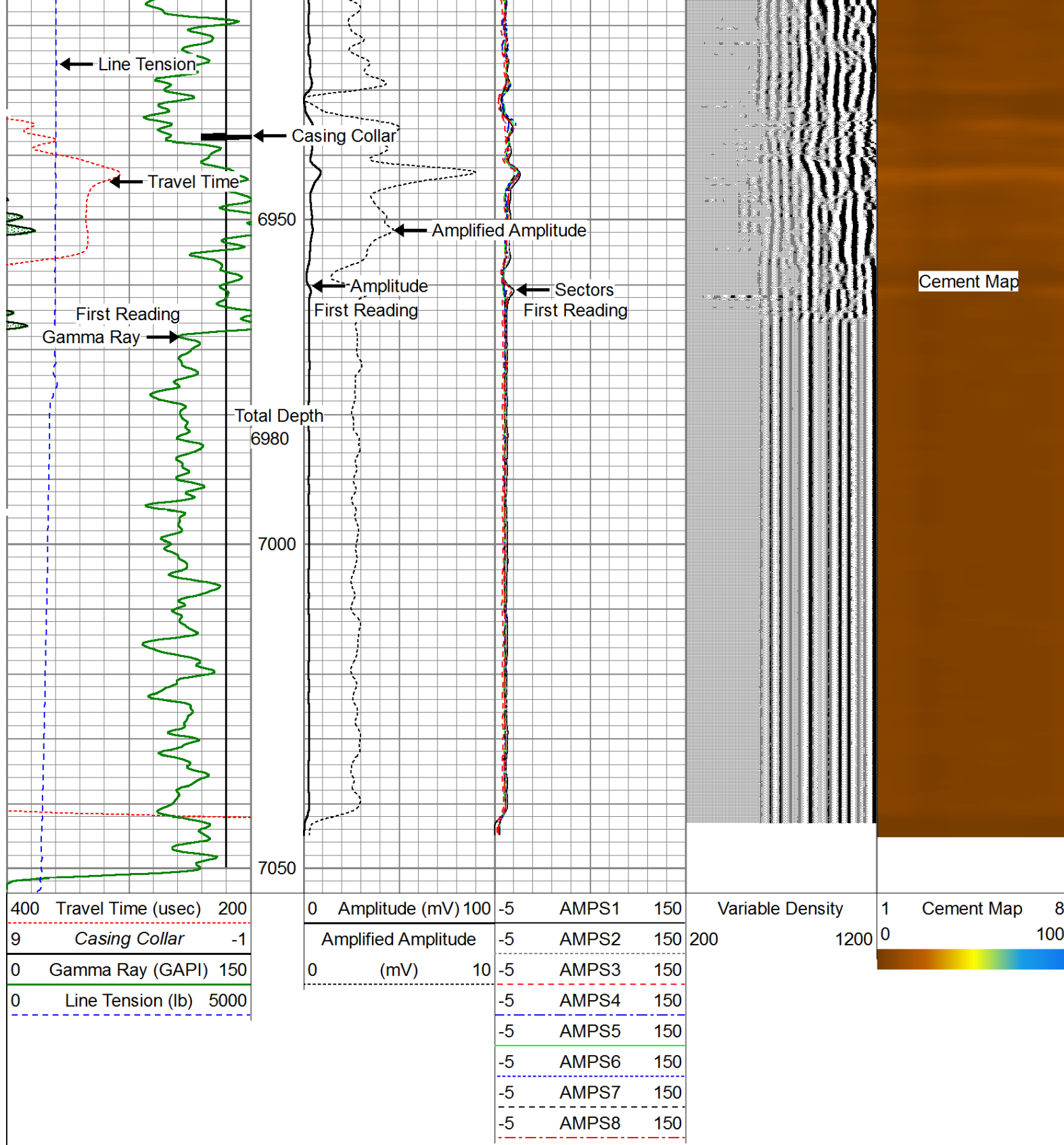












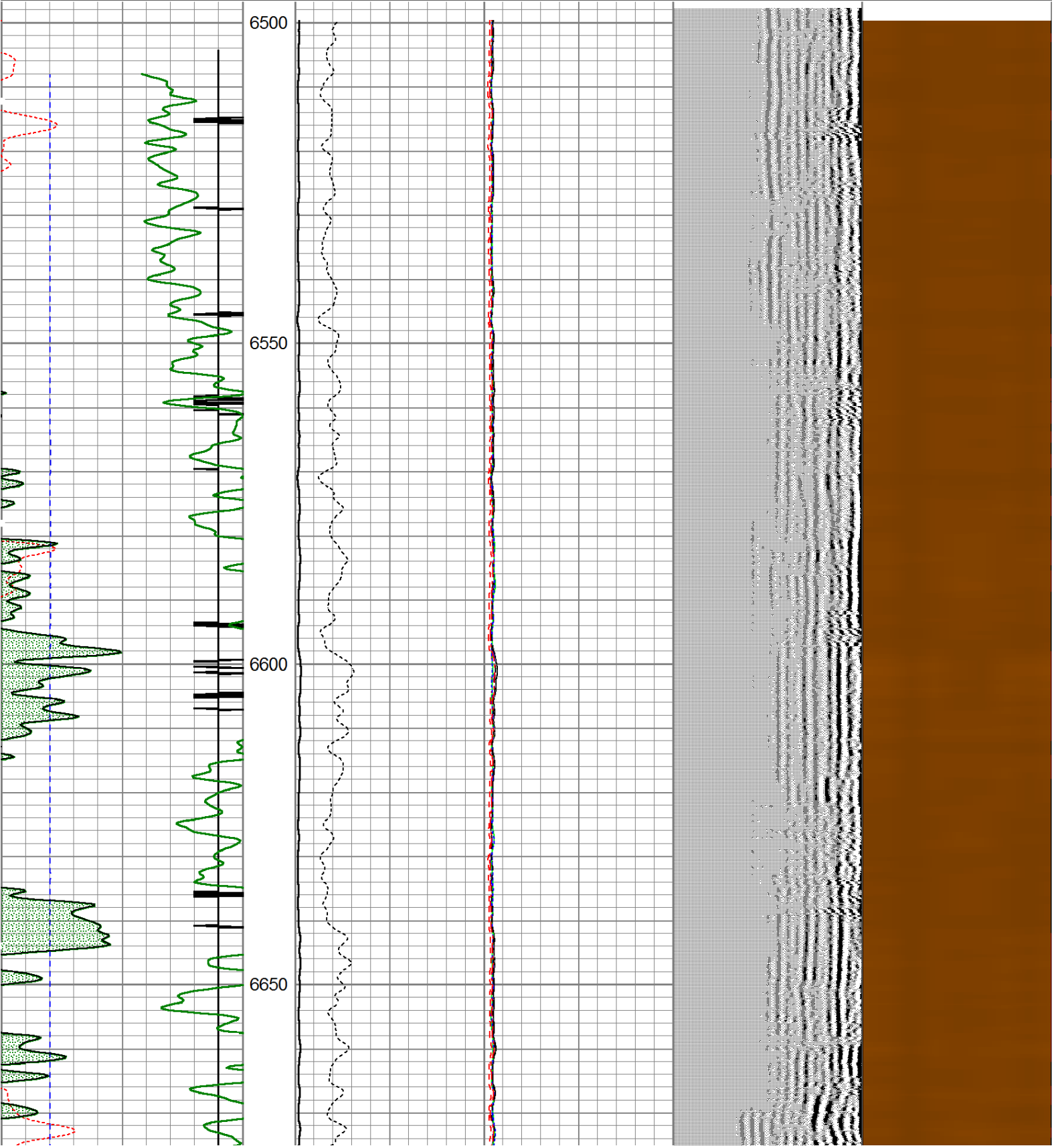
Repeat Pass(0PSI)

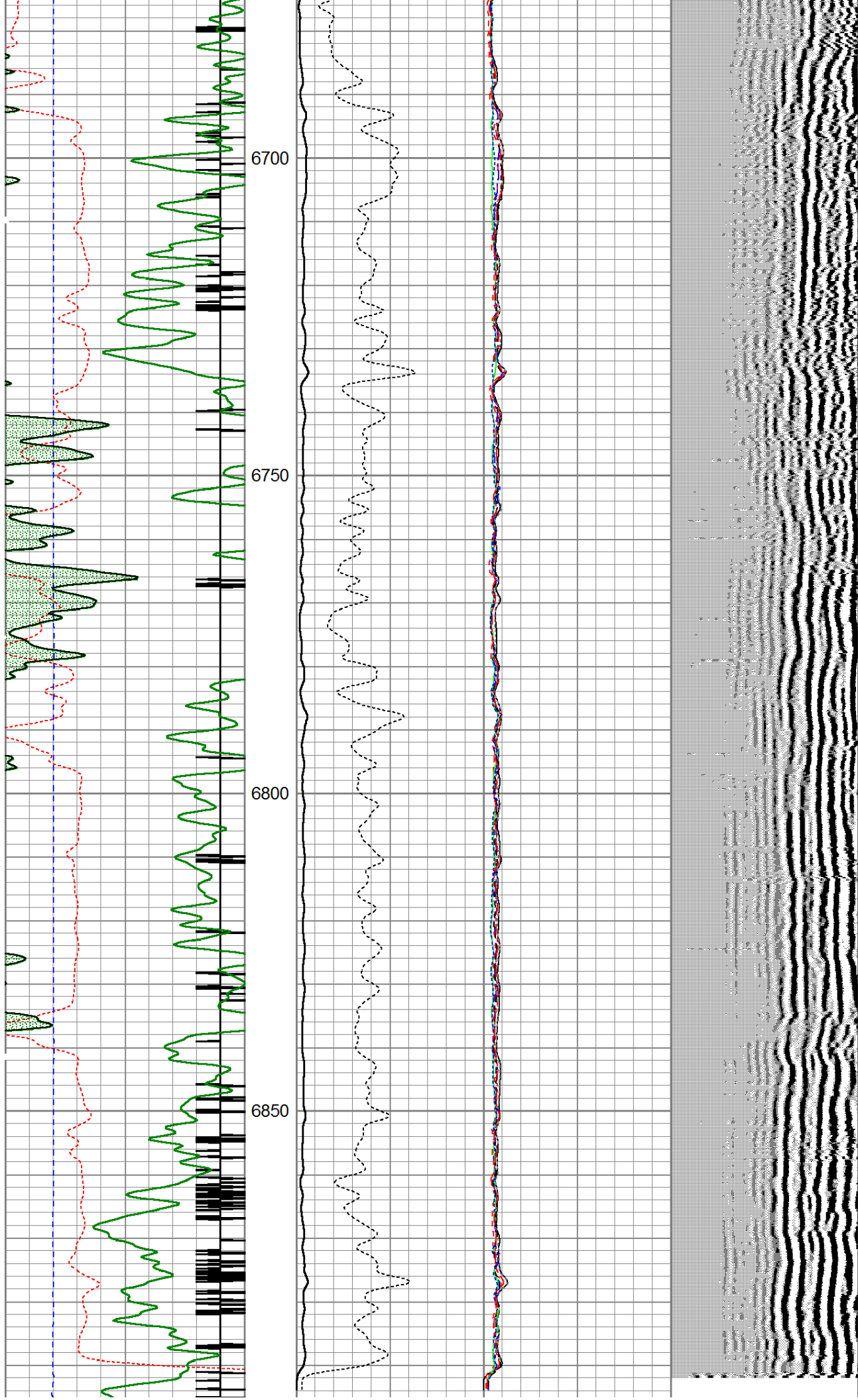
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 Presentation Format: scbl03
 Dataset Creation: Sat Dec 14 16:06:30 2013 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

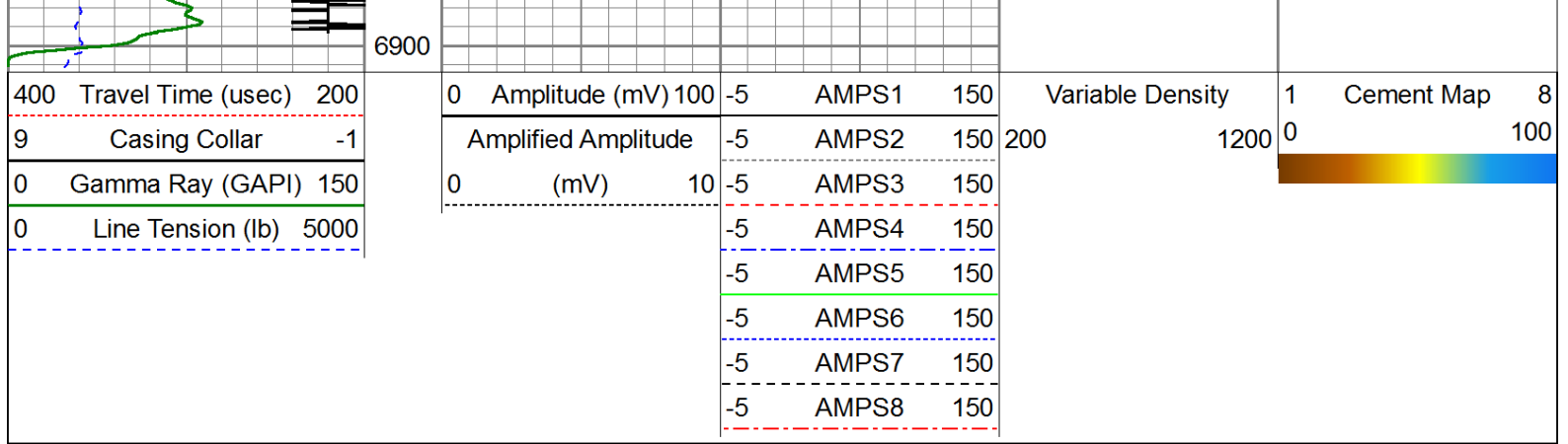
400	Travel Time (usec)	200
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	5000

0	Amplitude (mV)	100	-5	AMPS1	150
	Amplified Amplitude		-5	AMPS2	150
0	(mV)	10	-5	AMPS3	150
			-5	AMPS4	150
			-5	AMPS5	150
			-5	AMPS6	150
			-5	AMPS7	150
			-5	AMPS8	150

Variable Density	1	Cement Map	8
200	1200	0	100







Calibration Report

Database File: noble crow creek state ac36-73-1hn_rcbl.db

Dataset Pathname: pass4

Dataset Creation: Sat Dec 14 16:17:46 2013 by Log 7.0 B1

Gamma Ray Calibration Report

Type / Serial: Probe275 / 110108-Dig

SHOP CALIBRATION		Tue Nov 05 09:42:00 2013			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.8500			GAPI/cps
PRIMARY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Segmented Cement Bond Log Calibration Report

Serial Number: 101224

Tool Model: Probe

Calibration Casing Diameter: 7.000 in

Calibration Depth: 1222.292 ft

Master Calibration, performed Sat Dec 14 09:04:00 2013:							
	Raw (v)		Calibrated (mv)		Results		
	Zero	Cal	Zero	Cal	Gain	Offset	
3'	0.007	0.602	1.000	62.165	102.658	0.322	
CAL	0.003	1.097					
5'	0.007	0.551	1.000	62.165	112.414	0.258	
SUM							

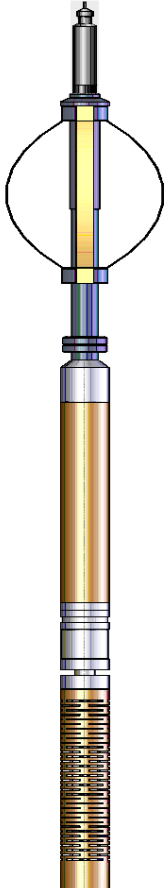

SUM						
S1	0.028	0.616	0.000	100.000	170.181	-4.824
S2	0.006	0.620	0.000	100.000	162.701	-0.951
S3	0.018	0.652	0.000	100.000	157.766	-2.914
S4	0.005	0.664	0.000	100.000	151.580	-0.722
S5	0.006	0.652	0.000	100.000	154.636	-0.887
S6	0.005	0.618	0.000	100.000	163.080	-0.814
S7	0.005	0.578	0.000	100.000	174.513	-0.810
S8	0.009	0.559	0.000	100.000	182.024	-1.704

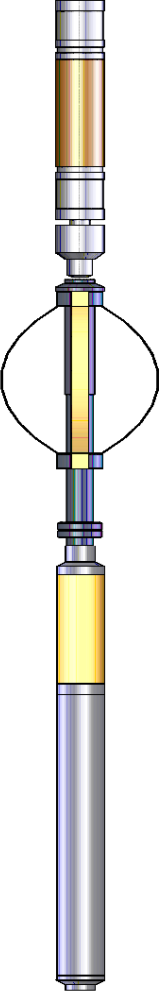
Internal Reference Calibration, performed Mon Oct 10 09:42:03 2005:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.003	1.097	1.000	0.000

Air Zero Calibration, performed Sat Dec 14 08:03:41 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
			RBT-Probe (101224) Probe Radii Bond Tool with Digital Telemetry	8.75	2.75	90.00
WVF3FT	11.84					
WVFCAL	11.84					
WVFS1	11.84					
WVFSS	11.84					

WVFS2	11.84		2.88	2.75	20.00
WVFS3	11.84				
WVFS4	11.84				
WVFS5	11.84				
WVFS6	11.84				
WVFS7	11.84				
WVFS8	11.84				
WVF5FT	10.84				
CCL	3.88				
GR	2.54	GR-Probe275 (110108-Dig) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
Dataset: noble crow creek state ac36-73-1hn_rcbl.db: field/well/run1/pass4 Total Length: 20.28 ft Total Weight: 197.00 lb O.D. 2.75 in					