



**Radial
Cement
Bond Log**

Company Antero Resources
Well Lenny 1H
Field Wetzel
County Wetzel
State WV
Country WV

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Well Lenny 1H
Field Wetzel
County Wetzel
State WV
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Location: Furbee Pad
API #: 47-103-03494

Other Services
GR
CCL

Elevation 30'

Permanent Datum G/L K.B.
Log Measured From K.B.
Drilling Measured From K.B.

Date	25/Nov/2022	
Run Number	ONE	
Depth Driller	22,572'	
Depth Logger	7,390'	
Bottom Logged Interval	7,379'	
Top Log Interval	Surface	
Open Hole Size	8.75"	
Type Fluid	Brine	
Density / Viscosity	9.8#	
Max. Recorded Temp.	N/A	
Estimated Cement Top	6,964'	
Time Well Ready	10:25	
Time Logger on Bottom	11:25	
Equipment Number	116	
Location	Charleroi, Pa	
Recorded By	B. Lane / D. Josephik	
Witnessed By	Mr. Mike Szabo	

Run Number	Borehole Record		Tubing Record				
	Bit	From	To	Size	Weight	From	To
Casing Record							
Surface String		28"				Top	Bottom
Production String		17.5"				Surface	130'
		12.25"				Surface	693'
Liner		8.75"				Surface	3,477'
		5.5"				Surface	6,215'
						Surface	22,542"

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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

Log Correlated to Marker Joint (6,016'-6,027') Per Well Schematic

Free Pipe = 71.9mv
Bonded Pipe = 3.4mv
ETOC = 6,964'

RECEIVED
Office of Oil and Gas

MAY 10 2023

WV Department of
Environmental Protection

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GCT_FMWR	21.59		CableHead-Titan	1.00	1.68	2.00
mSec_Count	21.59		Titan Mark II Cablehead			
RBT_Status	21.59					
Error_Ct	21.59					

			CENT-Probe169 1 11/16" Centralizer	3.17	1.69	10.00
RBT_HV	17.42					
WVFS8	12.93		RBT8-RADII-275C (RBT275C_Base) Probe 2.75" RADII 8 Sector Bond Tool	8.75	2.75	
WVFS7	12.93					
WVFS6	12.93					
WVFS5	12.93					
WVFS4	12.93					
WVFS3	12.93					
WVFS2	12.93					
WVFS1	12.93					
WVF3FT	12.93					
WVF5FT	11.93					
RBT_ACCZ	8.68					
RBT_ACCY	8.68					
RBT_ACCX	8.68					
WVFSYNC	8.68		CENT-Probe169 1 11/16" Centralizer	3.17	1.69	10.00
WVFCAL	8.68					
GCT_HV	5.51					
CCL\$2	4.29					
CCL\$1	4.29					
GR	2.72		GCacc-GC275-0BP0 (GC275-0BP0_base) Probe 2.75" Gamma Ray - CCL (6 magnet)	5.18	2.75	55.00
GCT_IntTemp	2.00					
			Plug-FA108-0000 1.38" Bull Plug	0.33	1.38	1.00

Dataset: antero_furbee_lenny1h_rcbl_25-nov-2022.db: field/well/MAIN/pass1
 Total length: 21.59 ft
 Total weight: 78.00 lb
 O.D.: 2.75 in

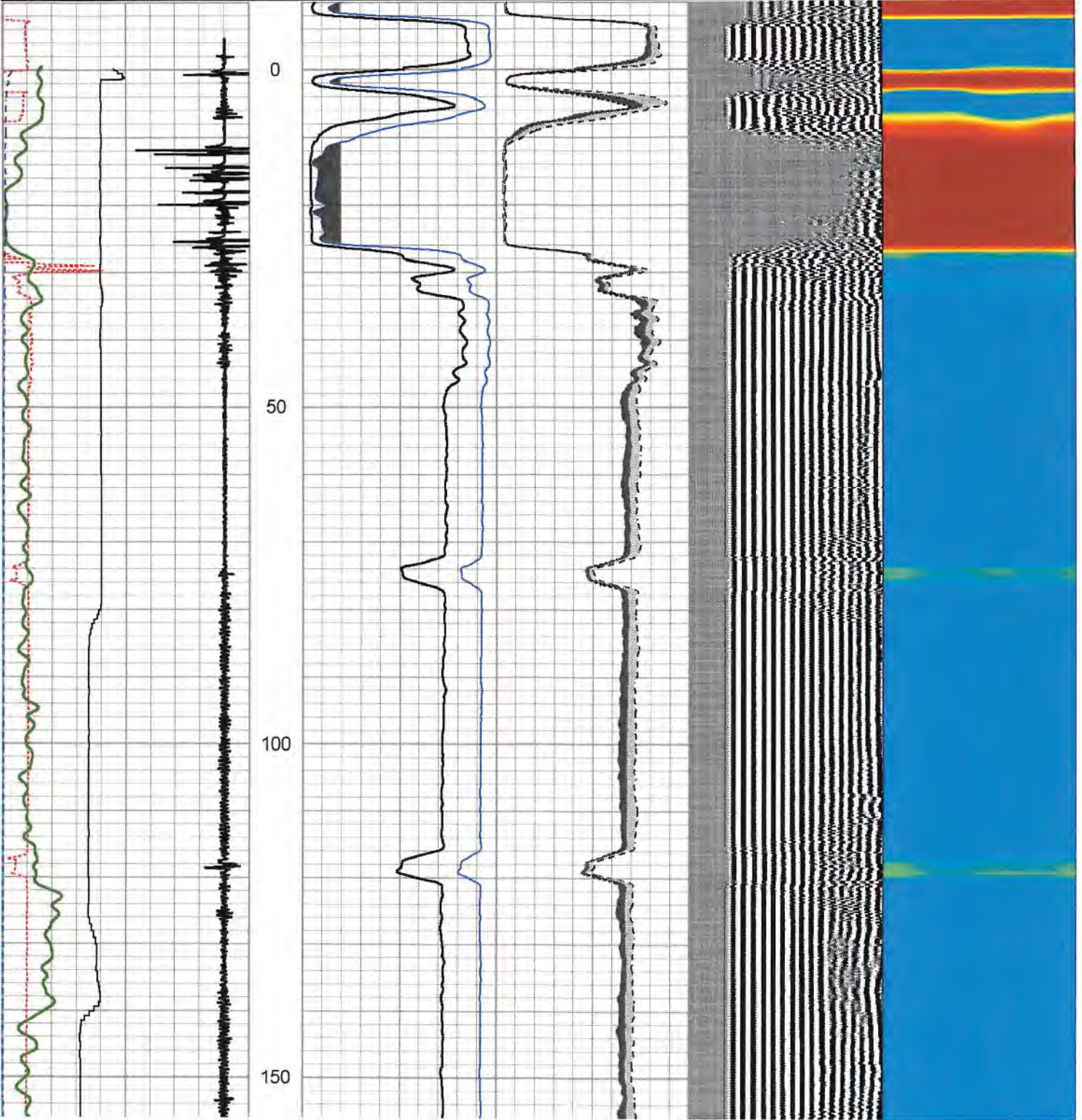


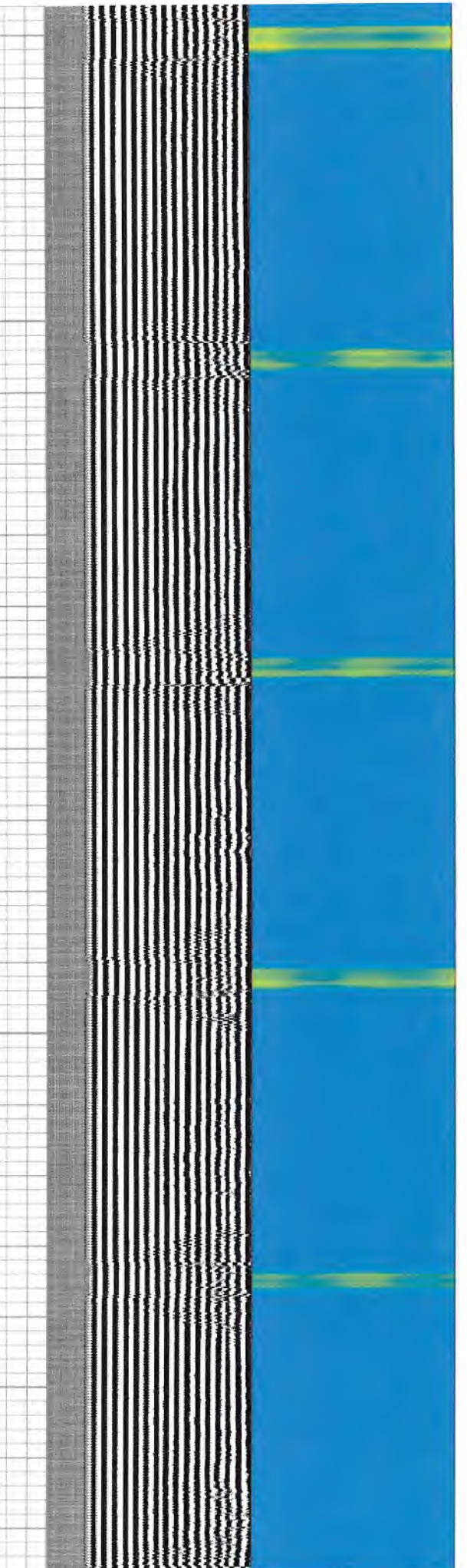
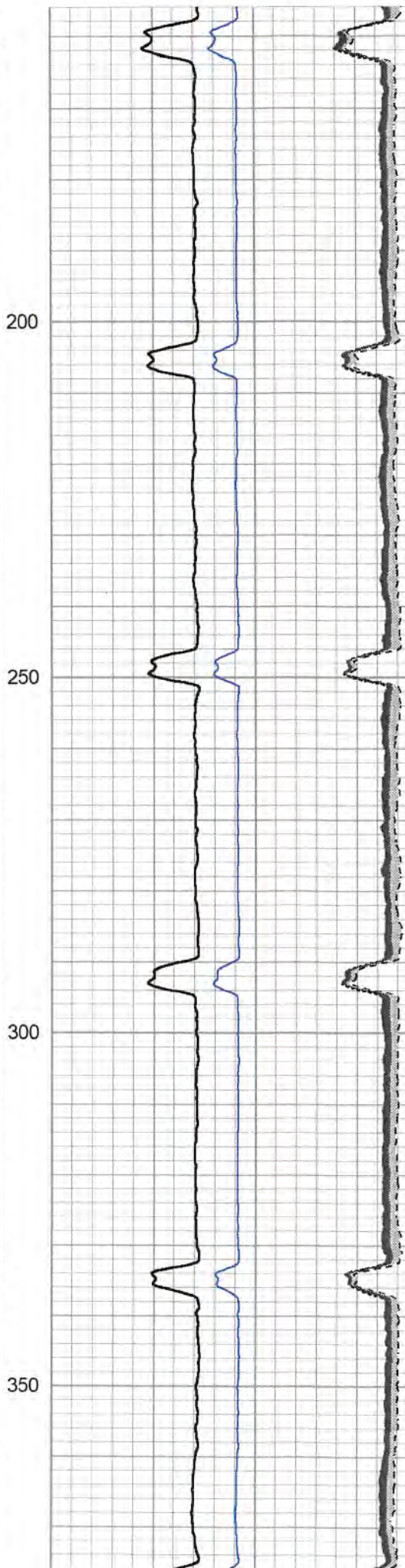
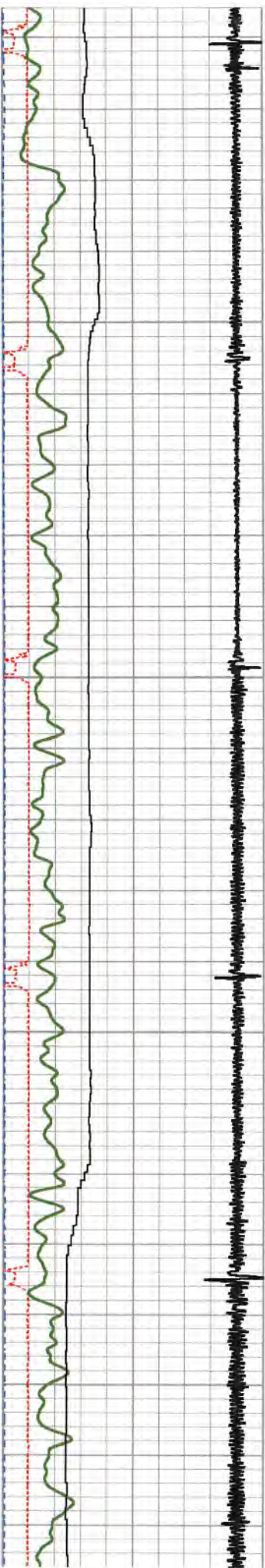
MAIN LOG

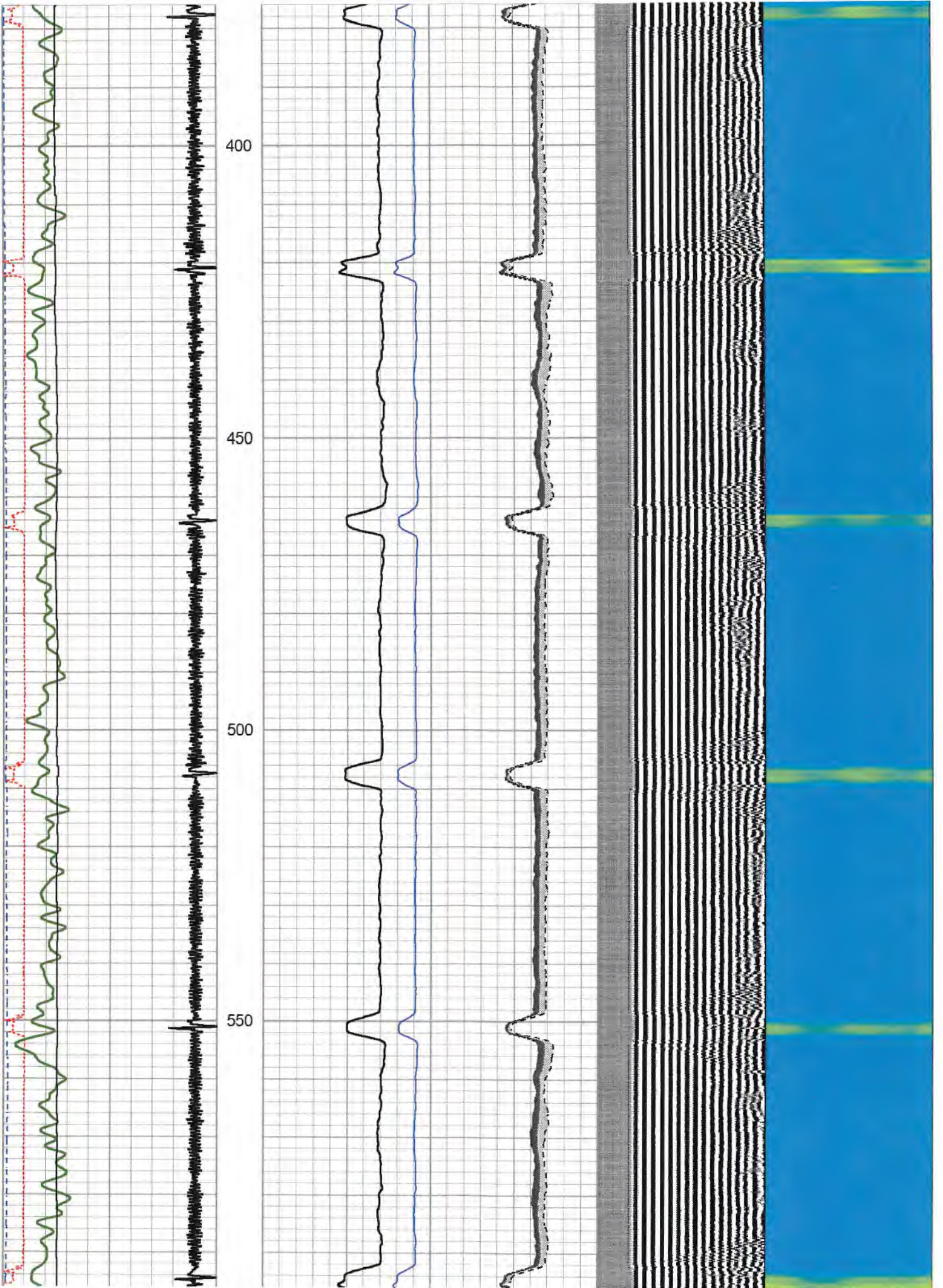
1500 PSI APPLIED

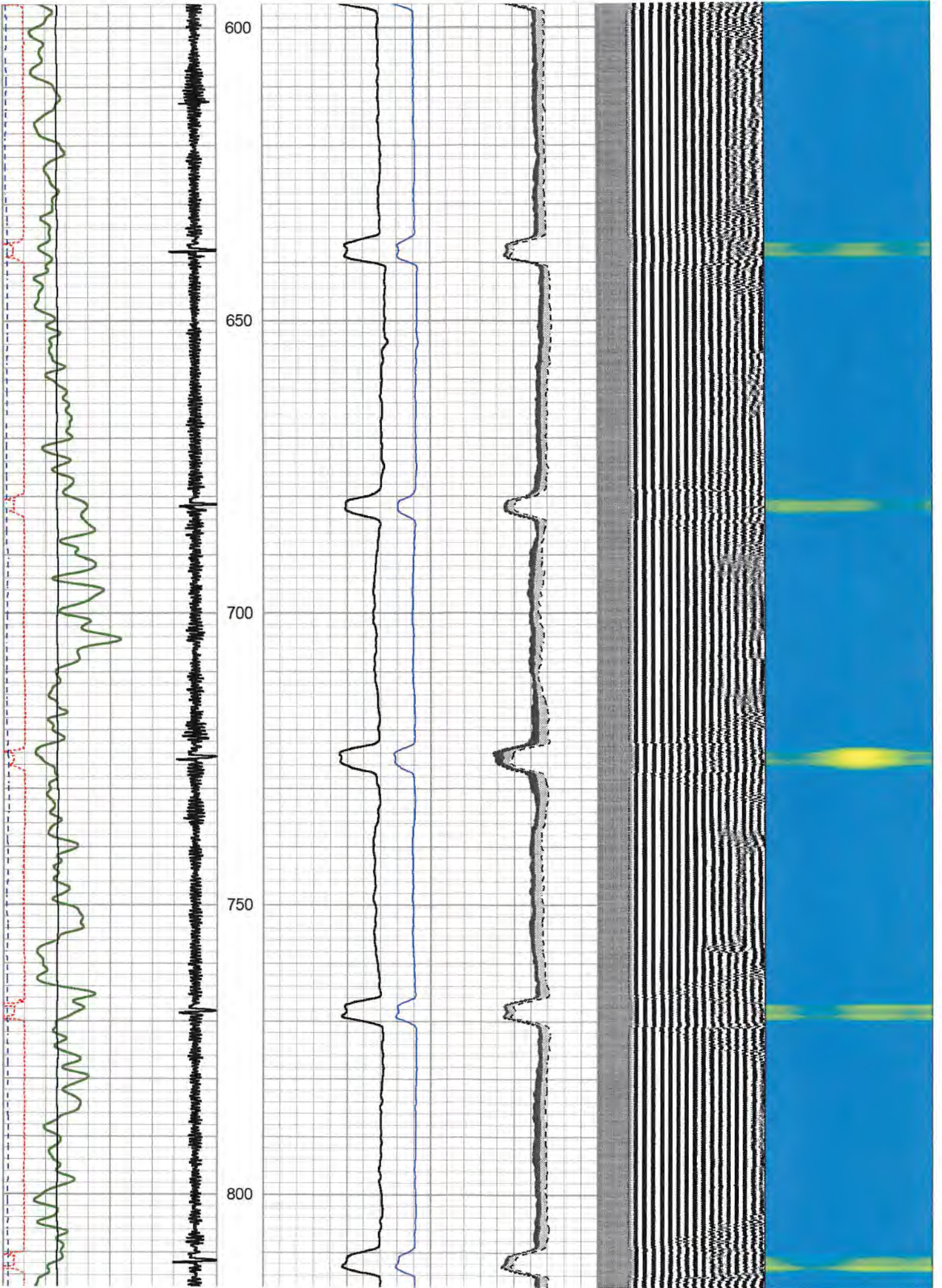
Database File d:\antero_furbee_lenny1h_rcbl_25-nov-2022.db
 Dataset Pathname MAIN/pass1
 Presentation Format prb_rbt8
 Dataset Creation Fri Nov 25 12:28:07 2022
 Charted by Depth in Feet scaled 1:240

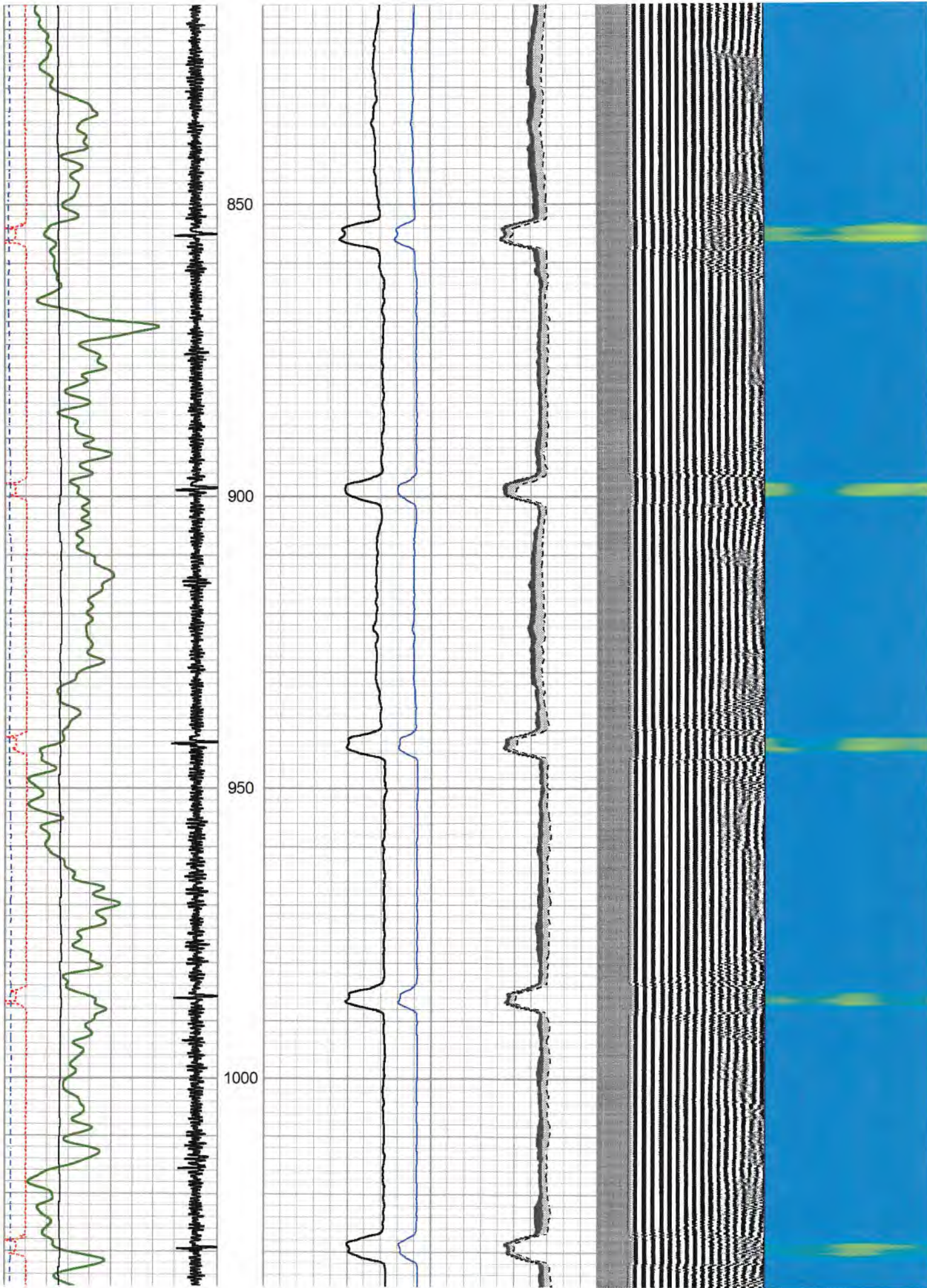
275	Travel Time (usec)	175	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	CCL\$1	-1	1	BONDIX	0	-5	AMPMAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed											
-200	(ft/min)	200										
0	Line Tension (lb)	5000										

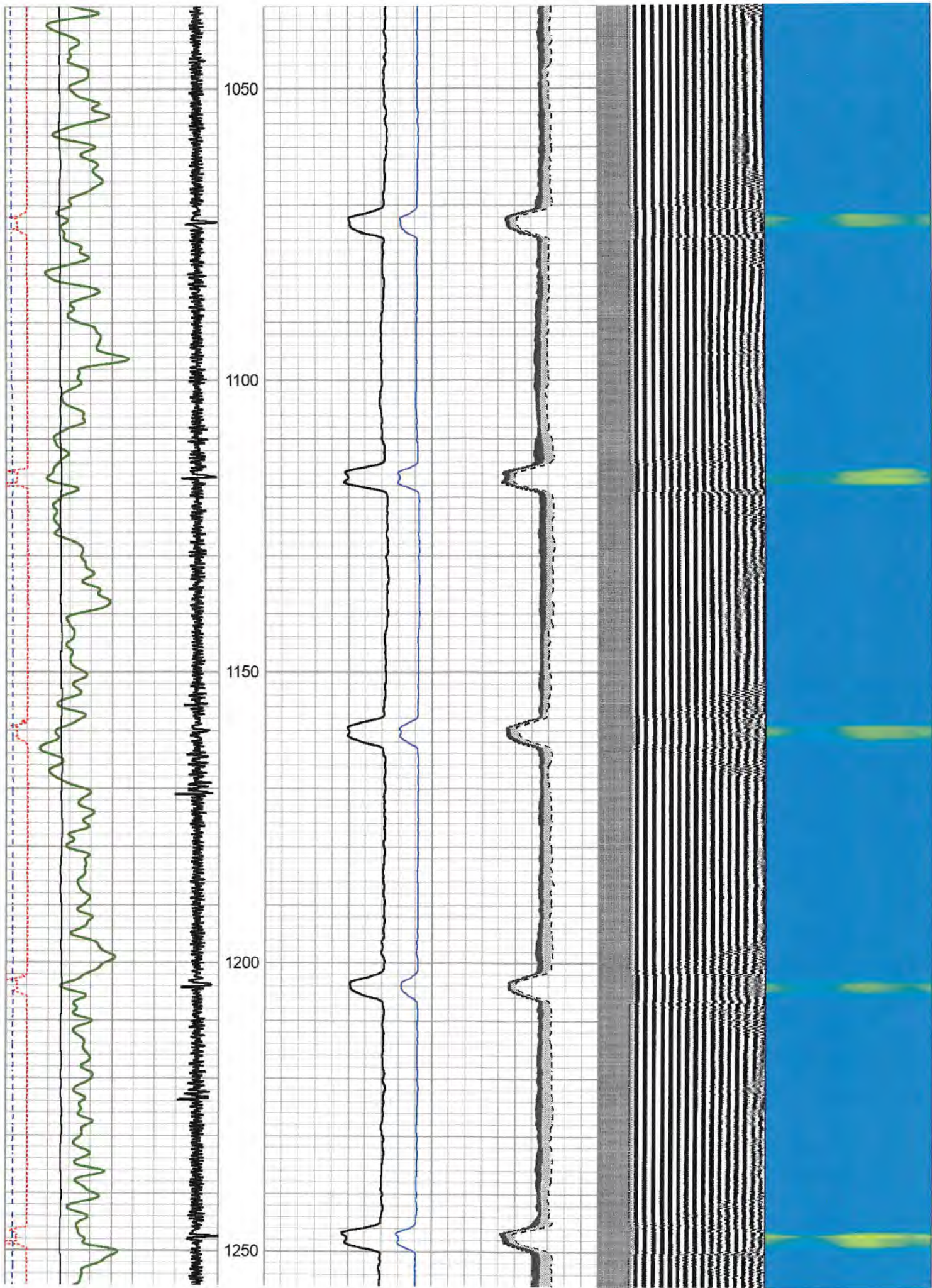


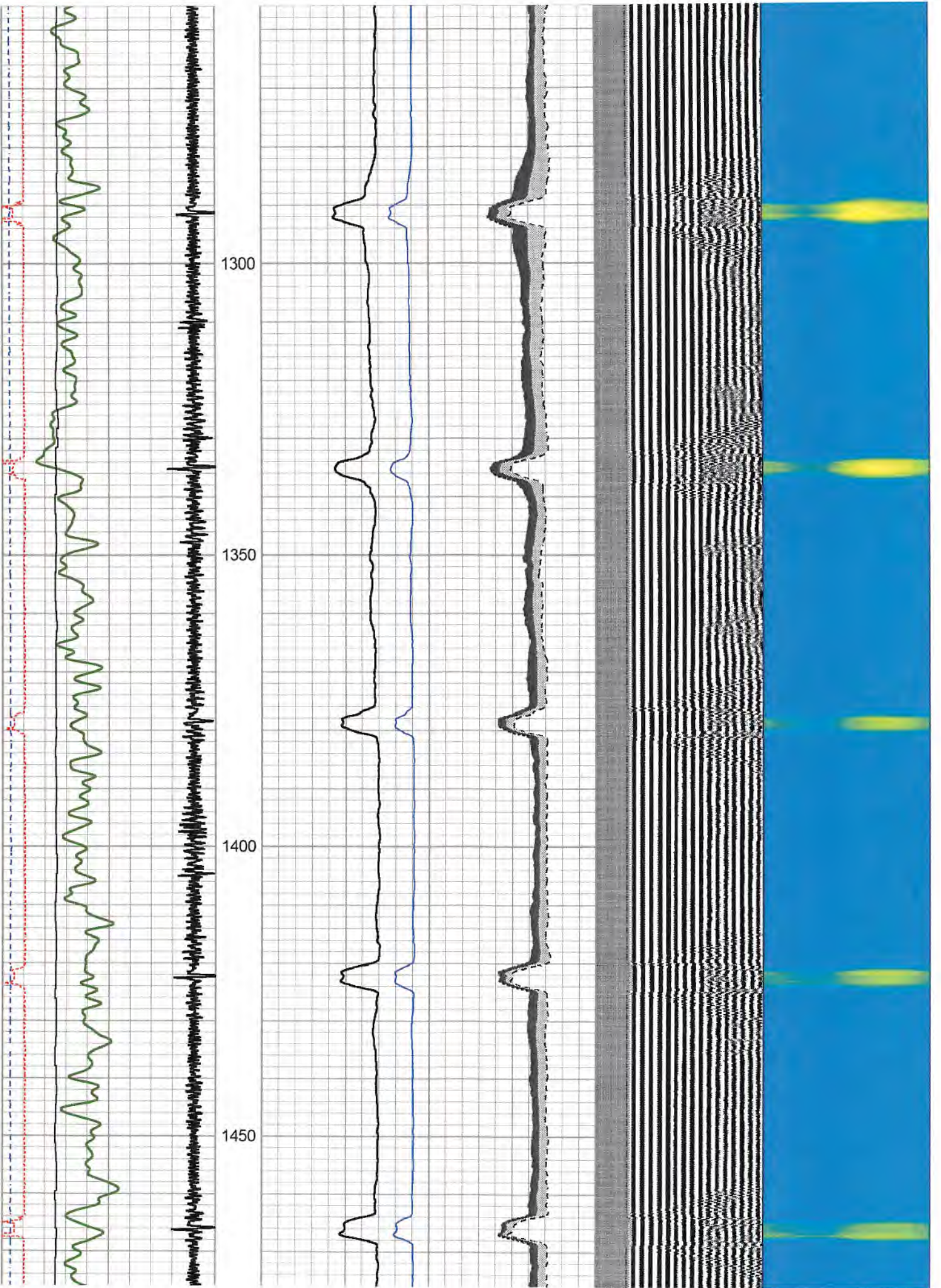


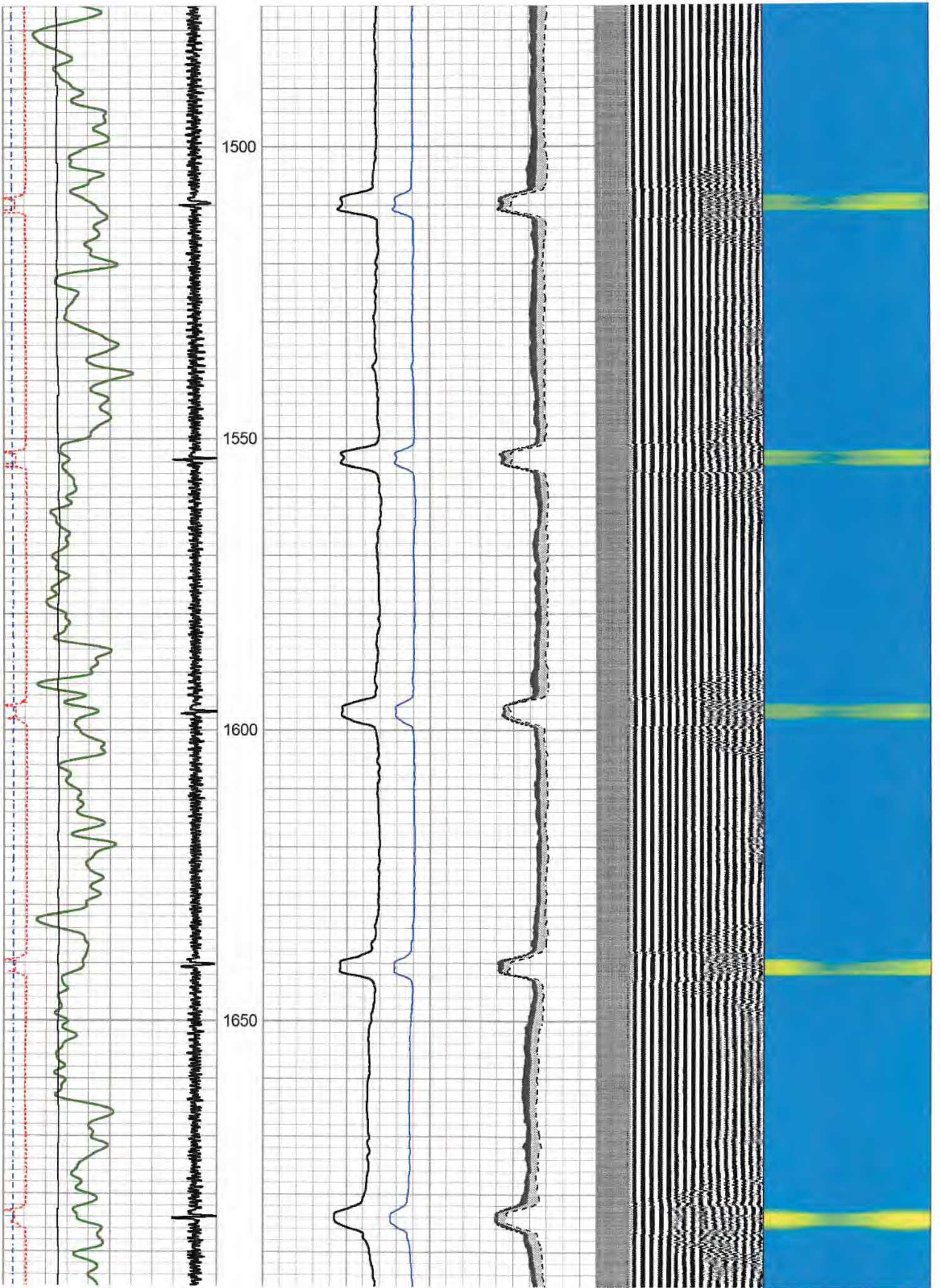


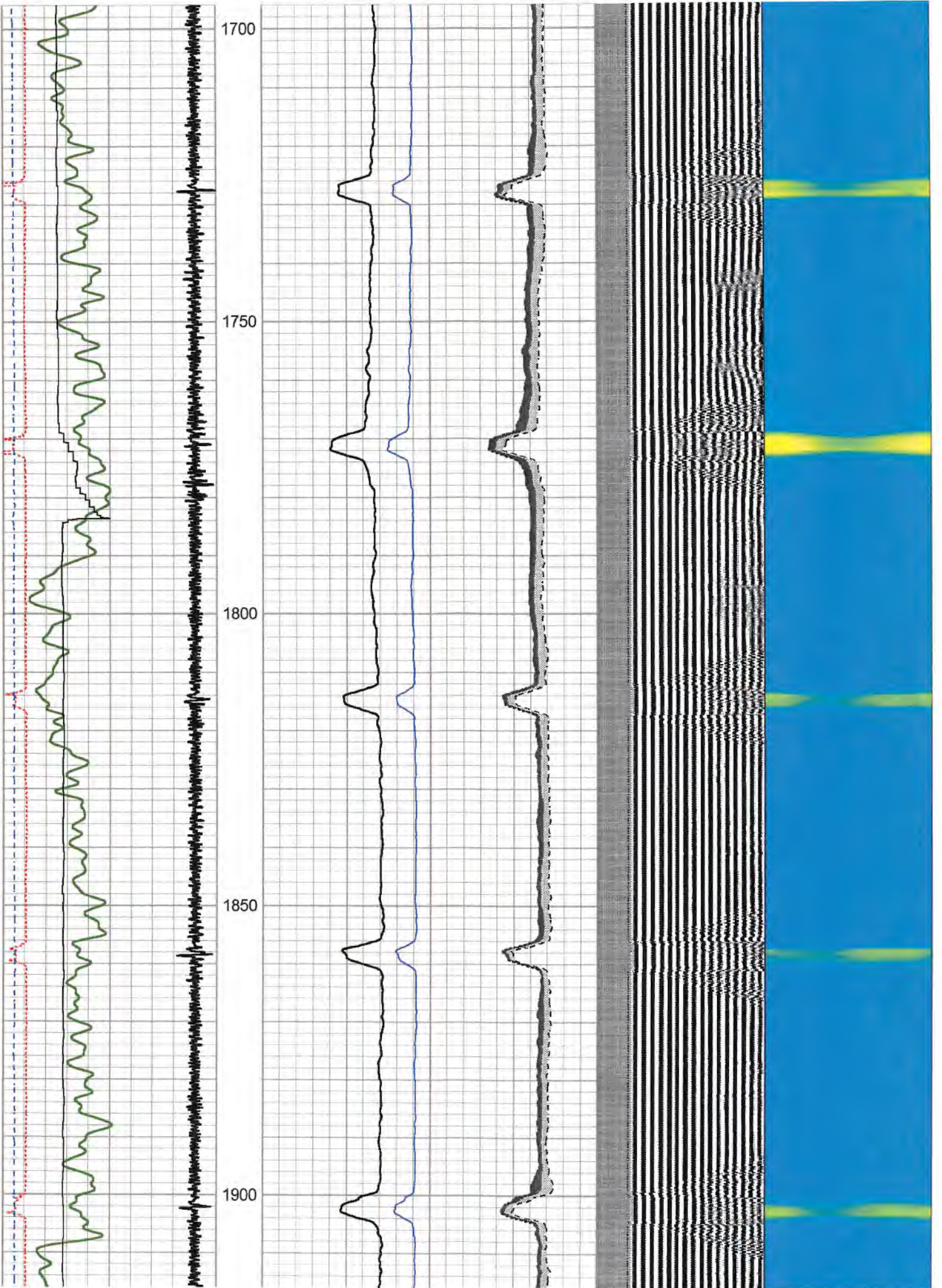


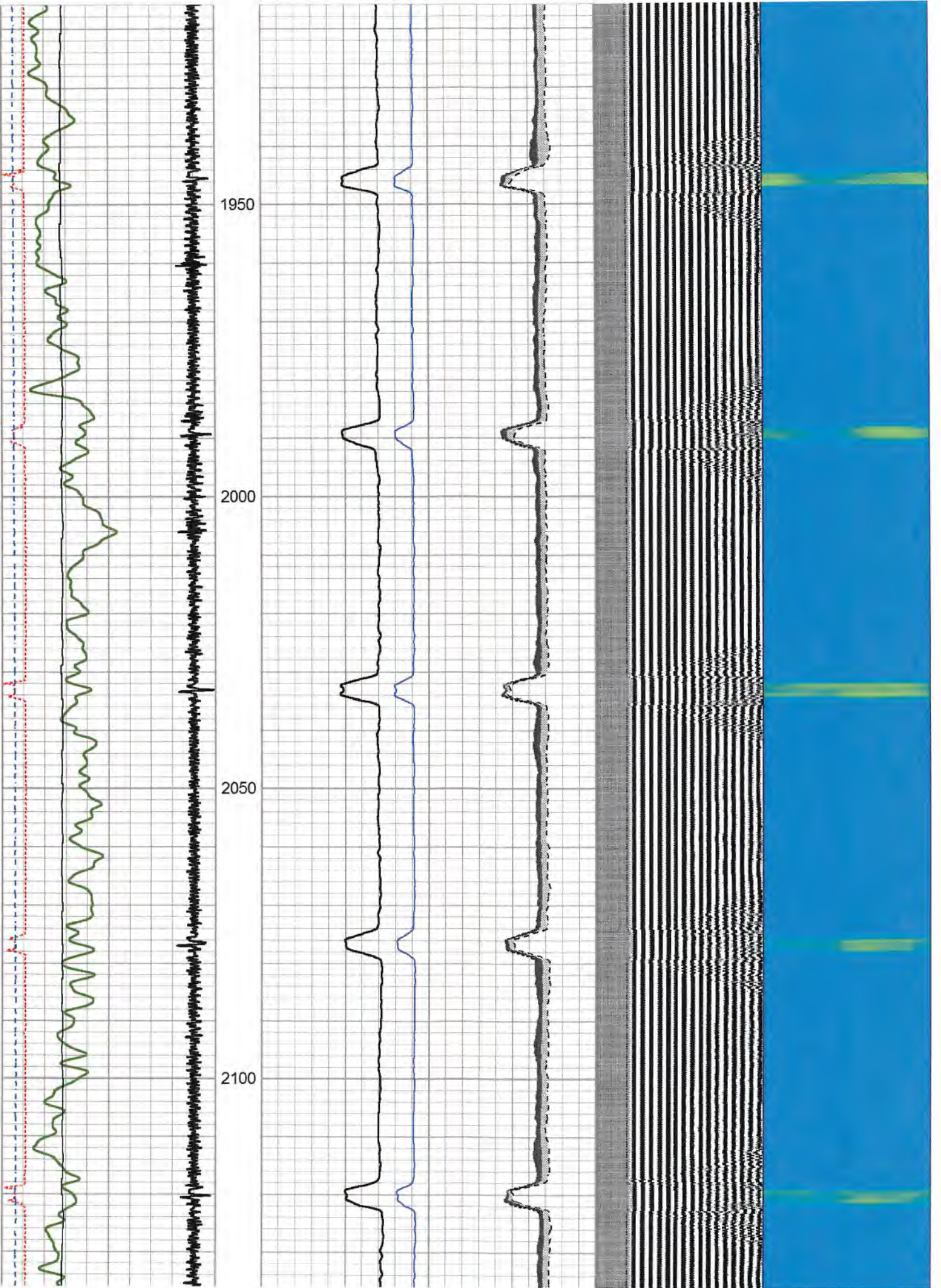


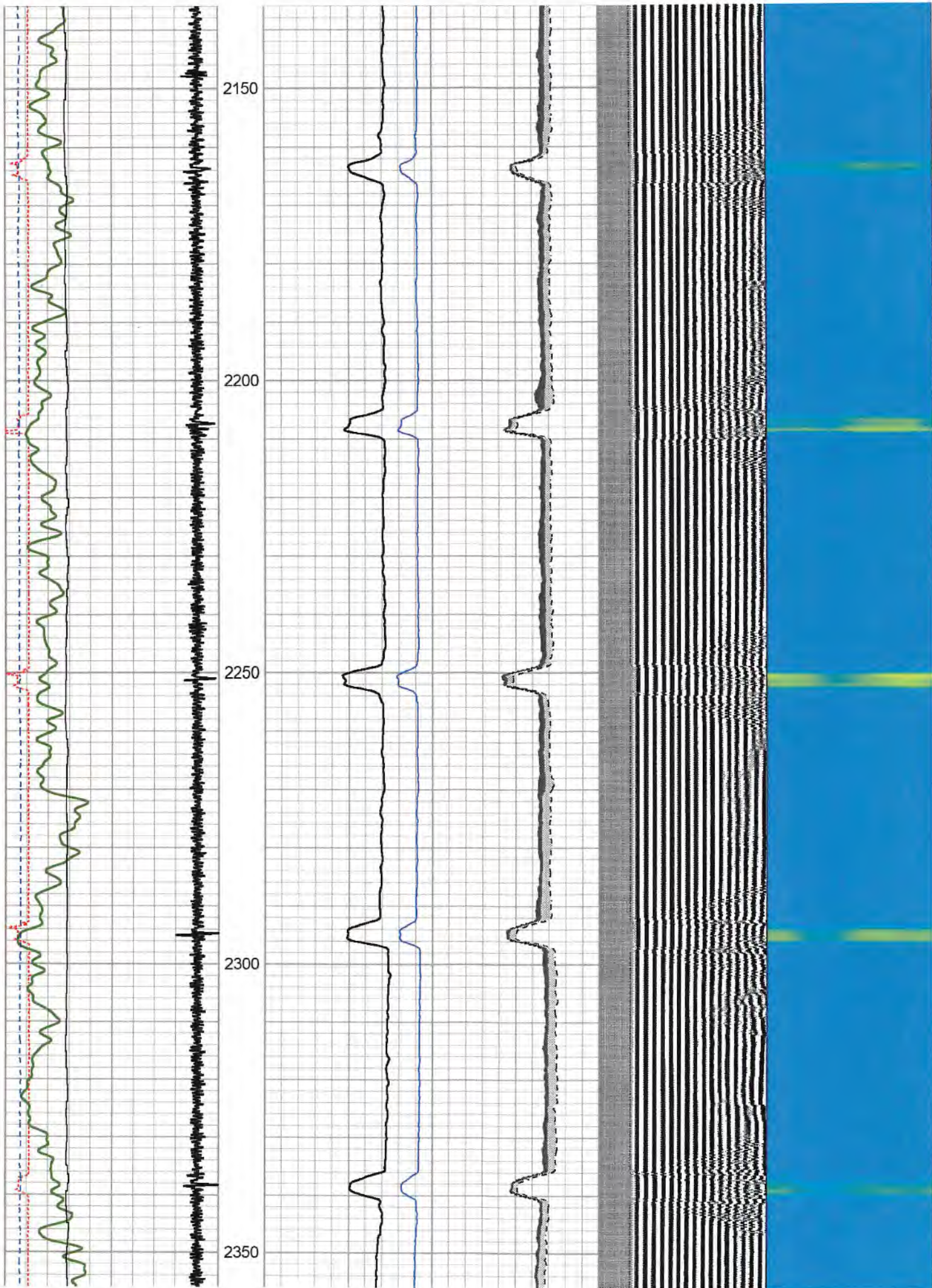


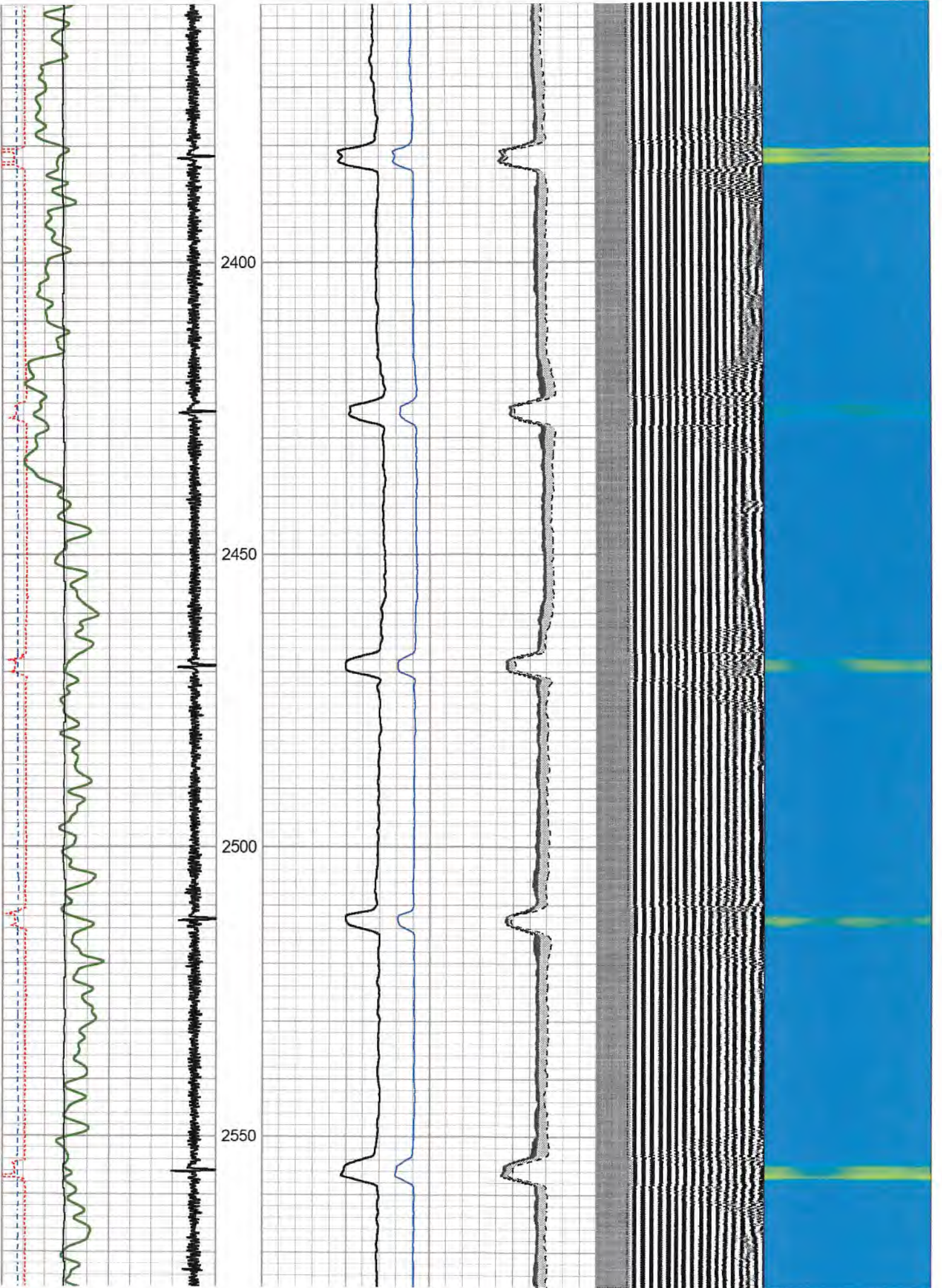


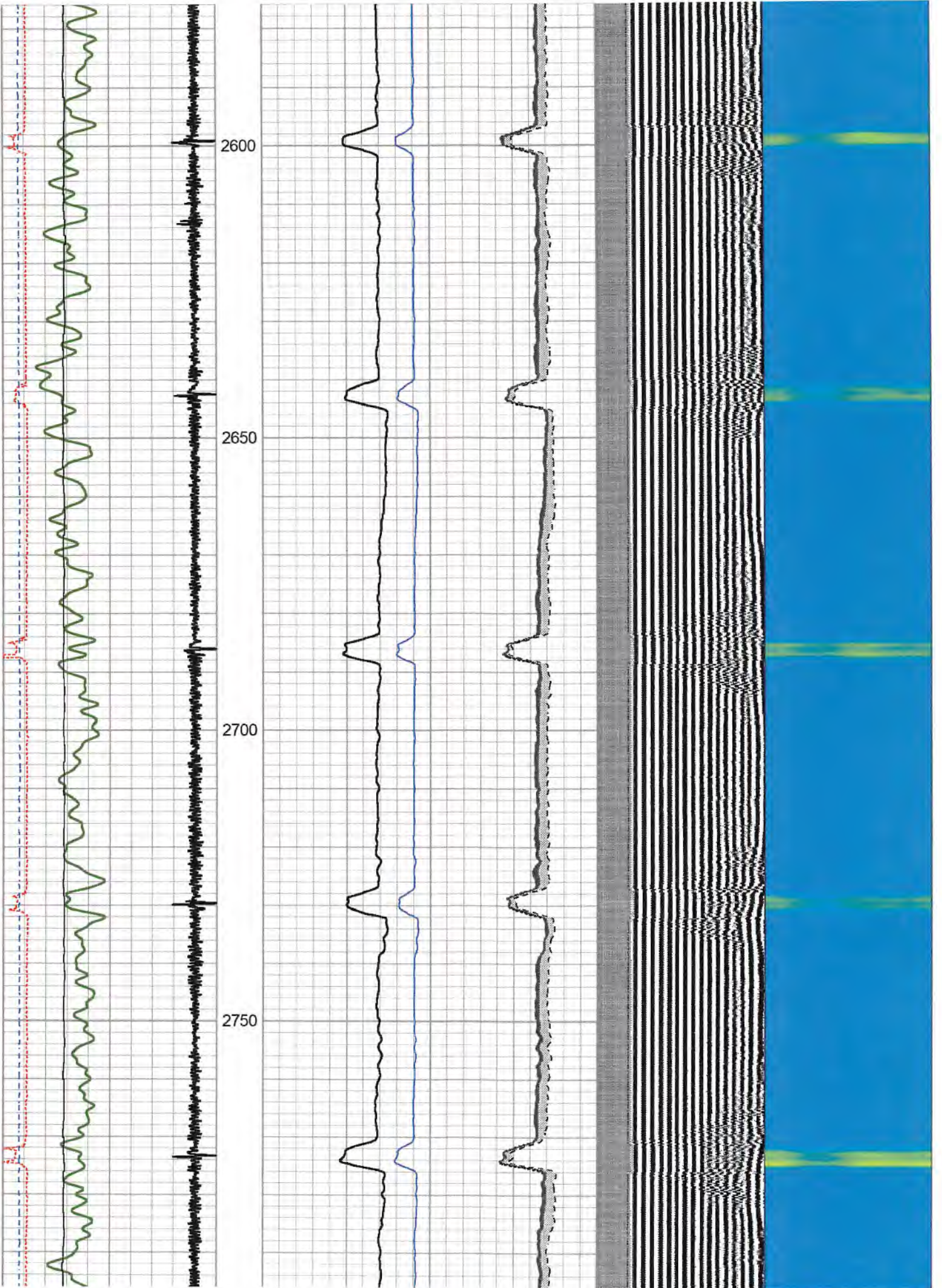


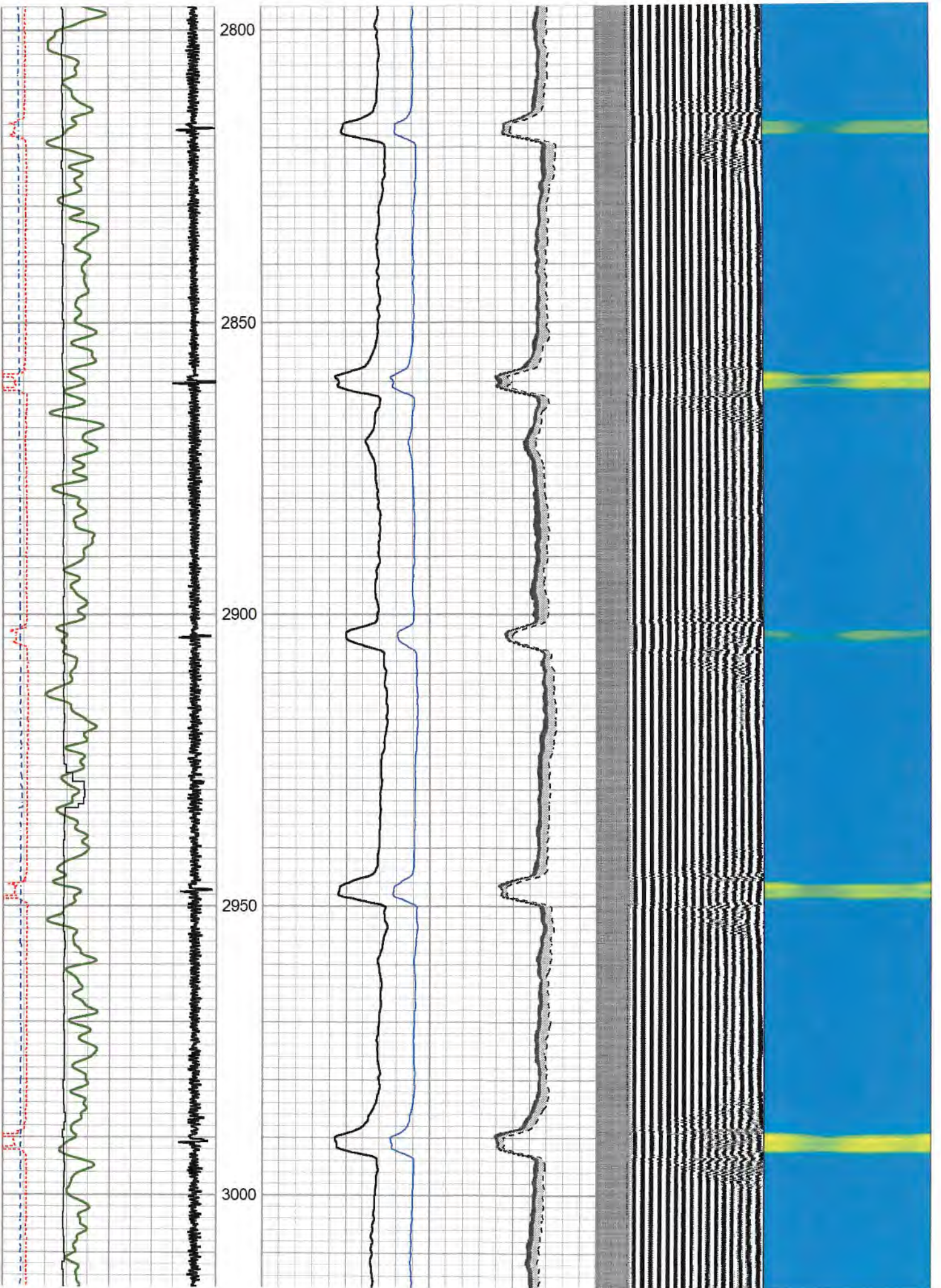


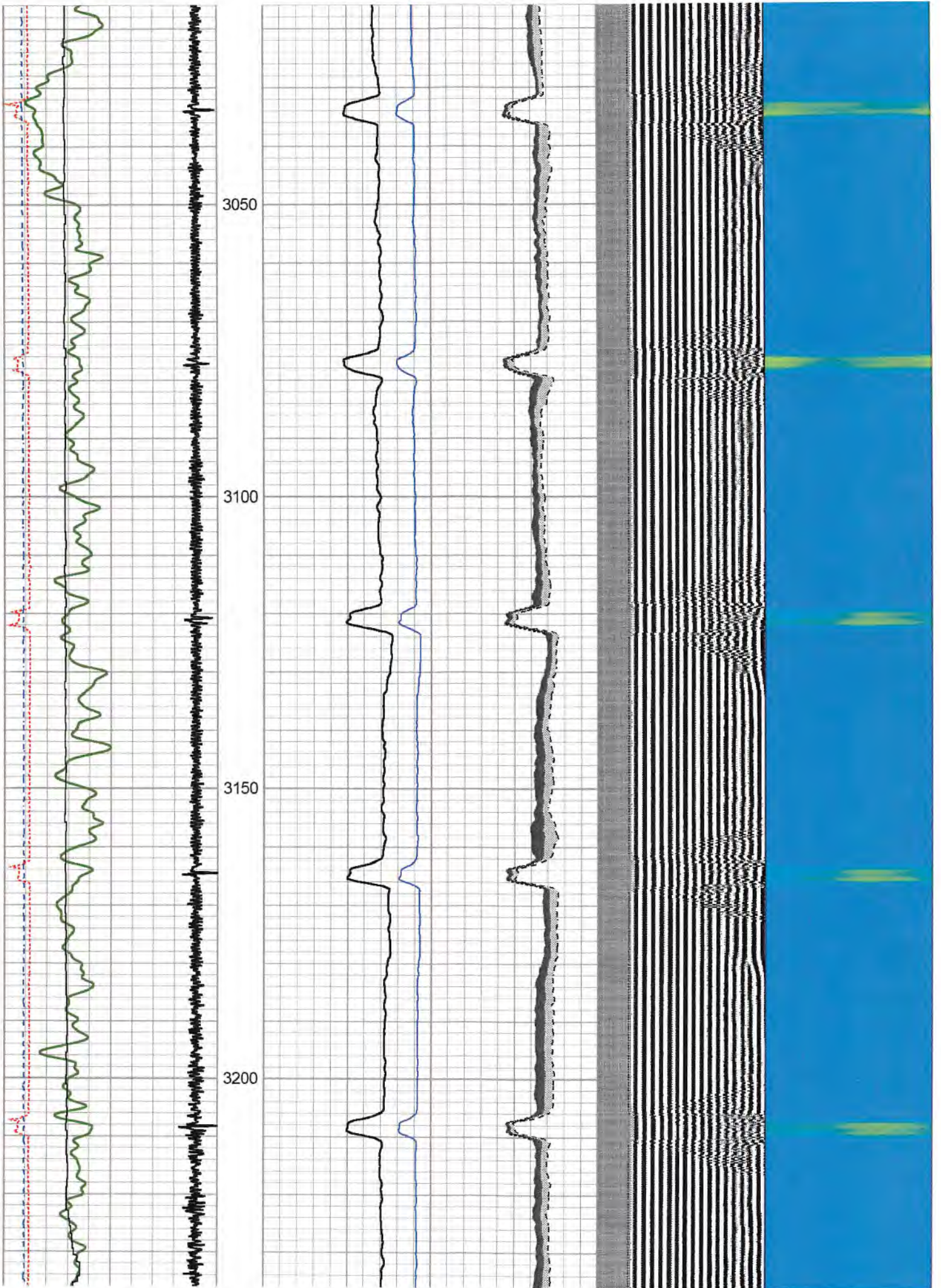


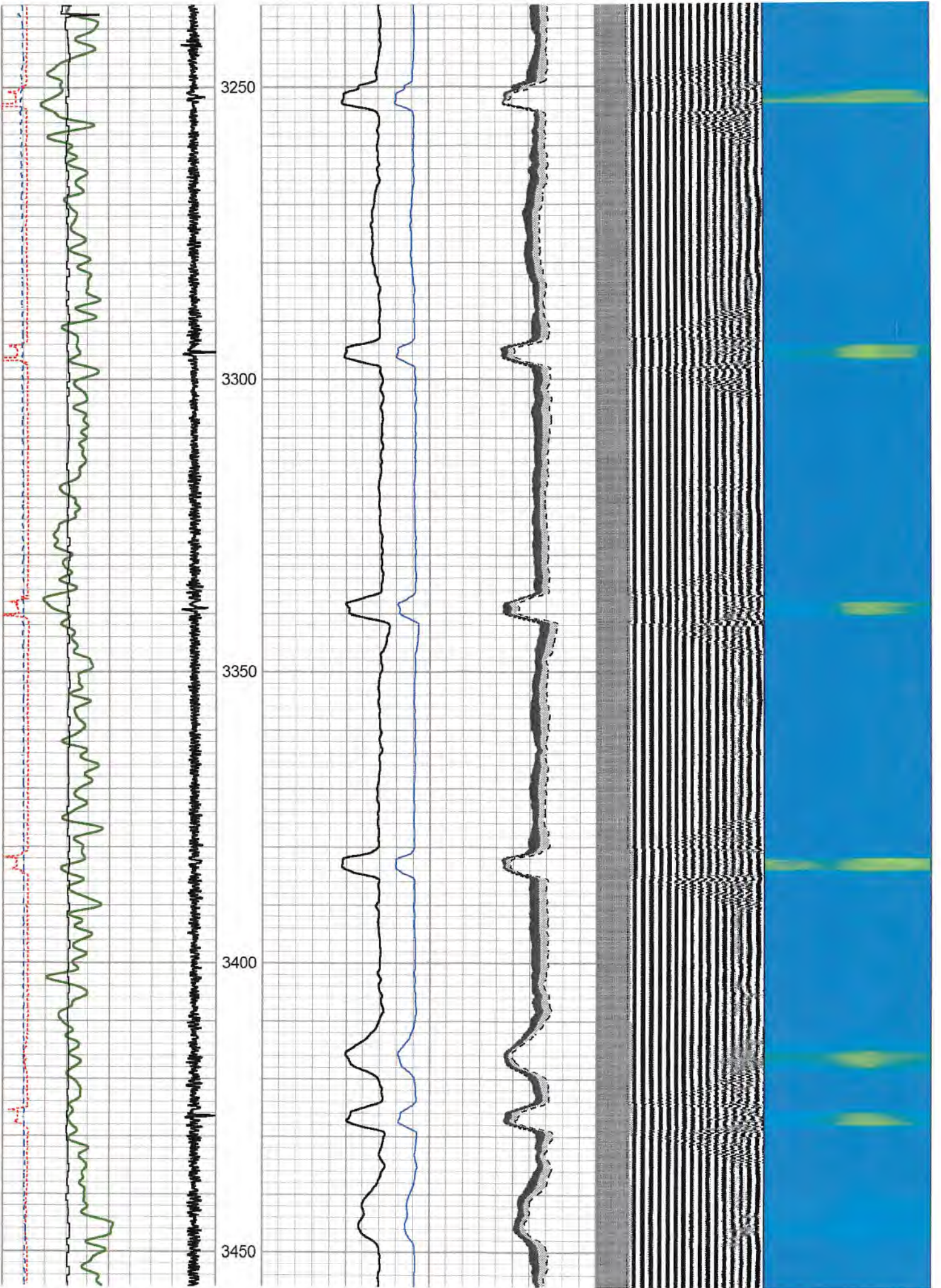


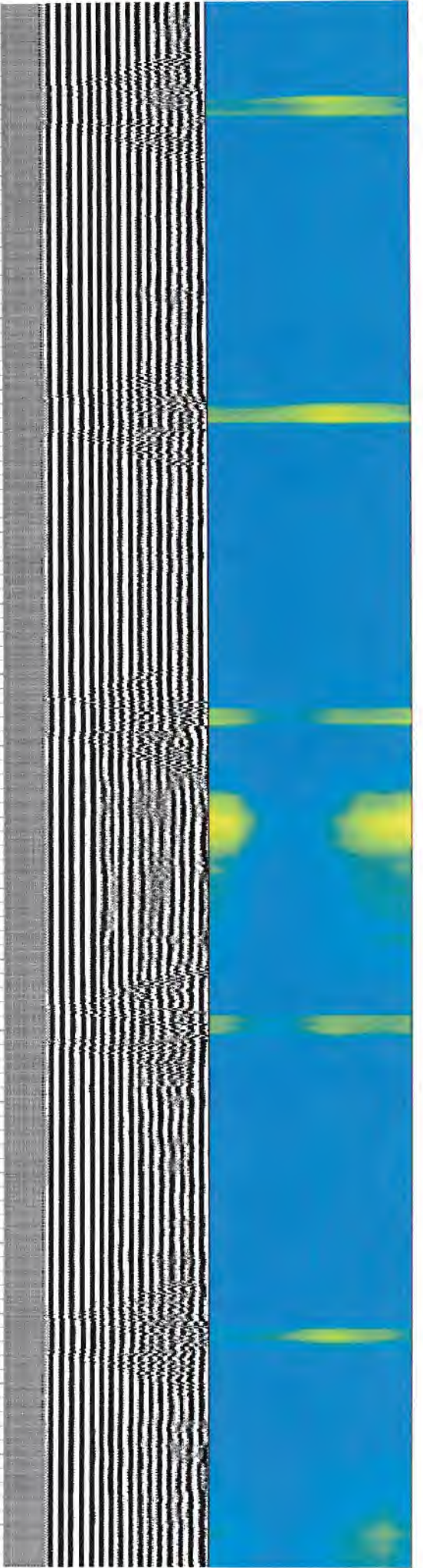
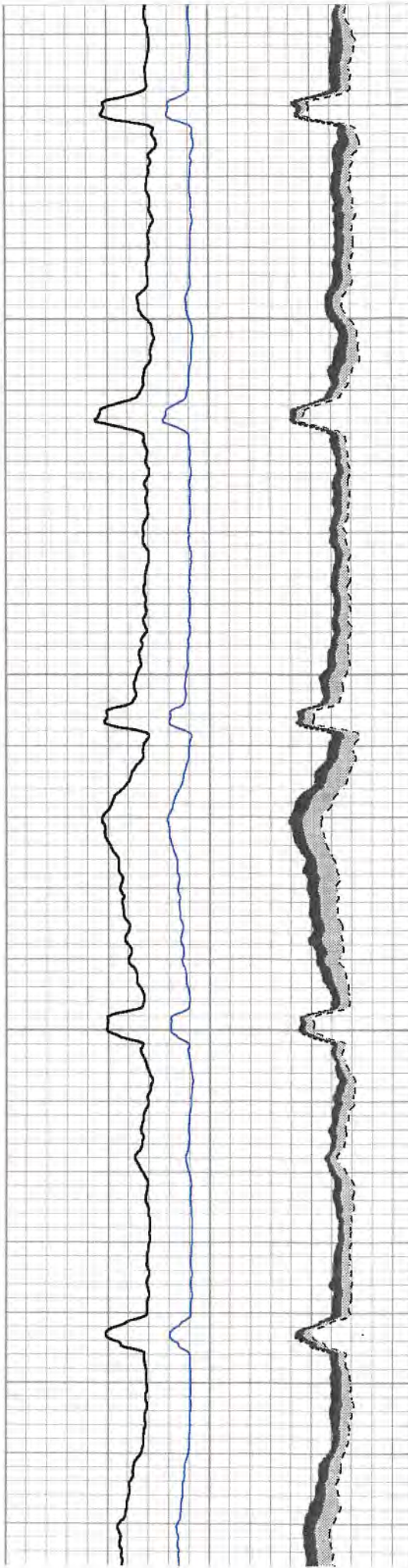
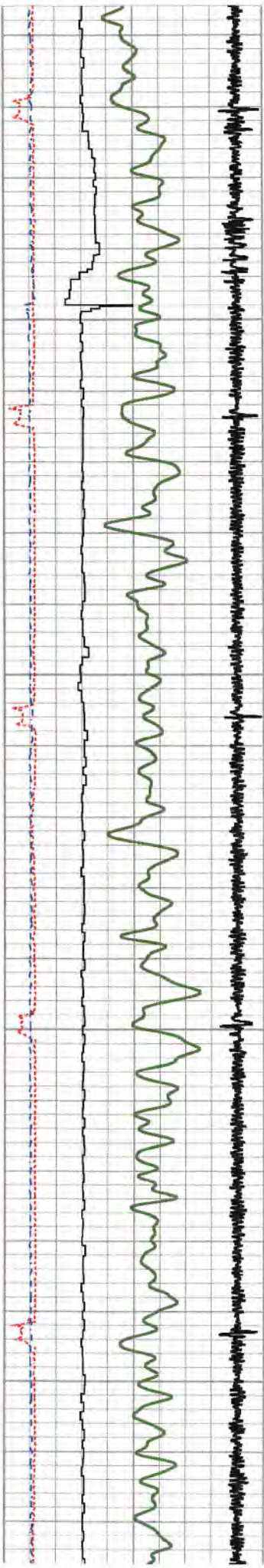


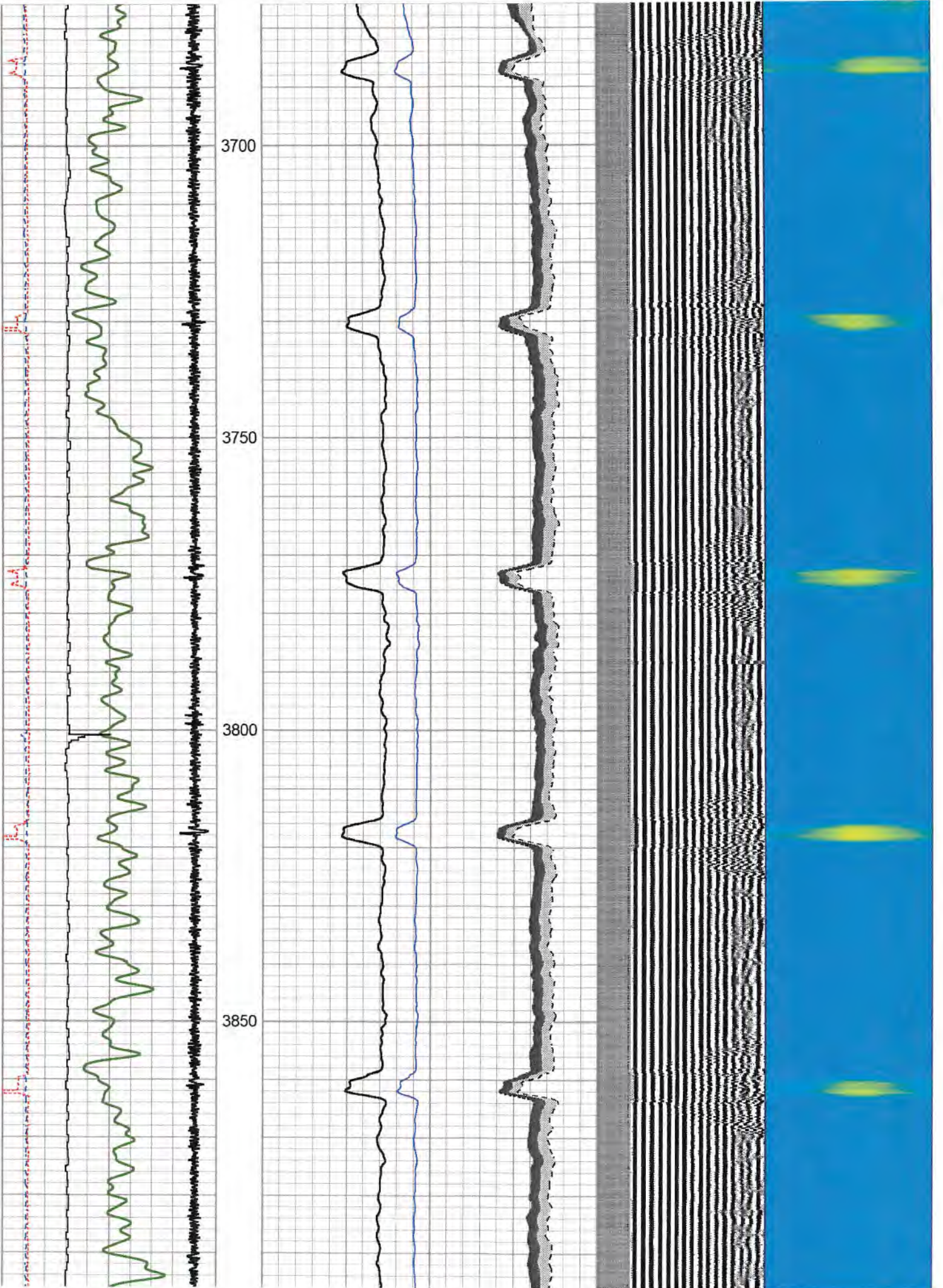


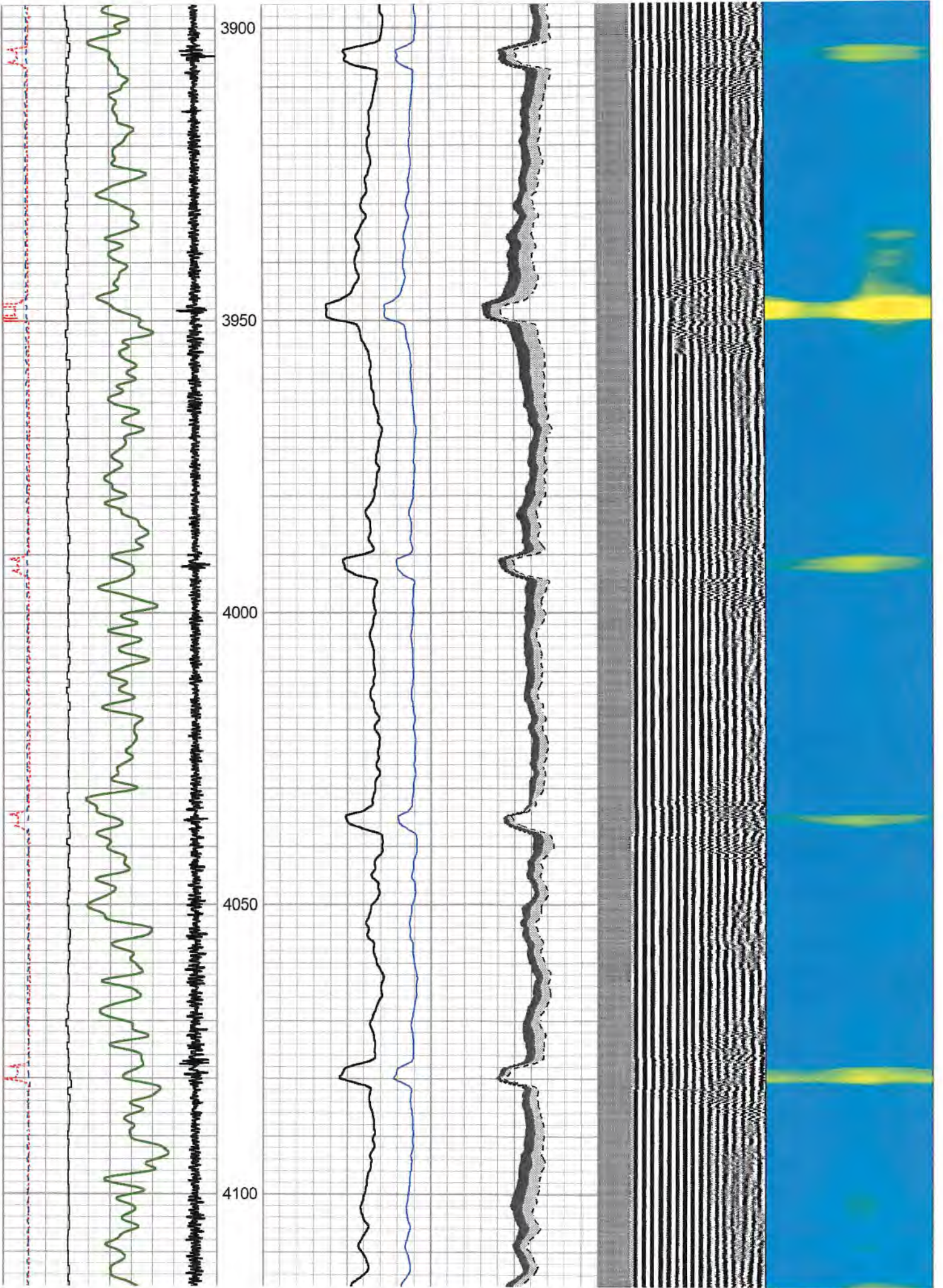


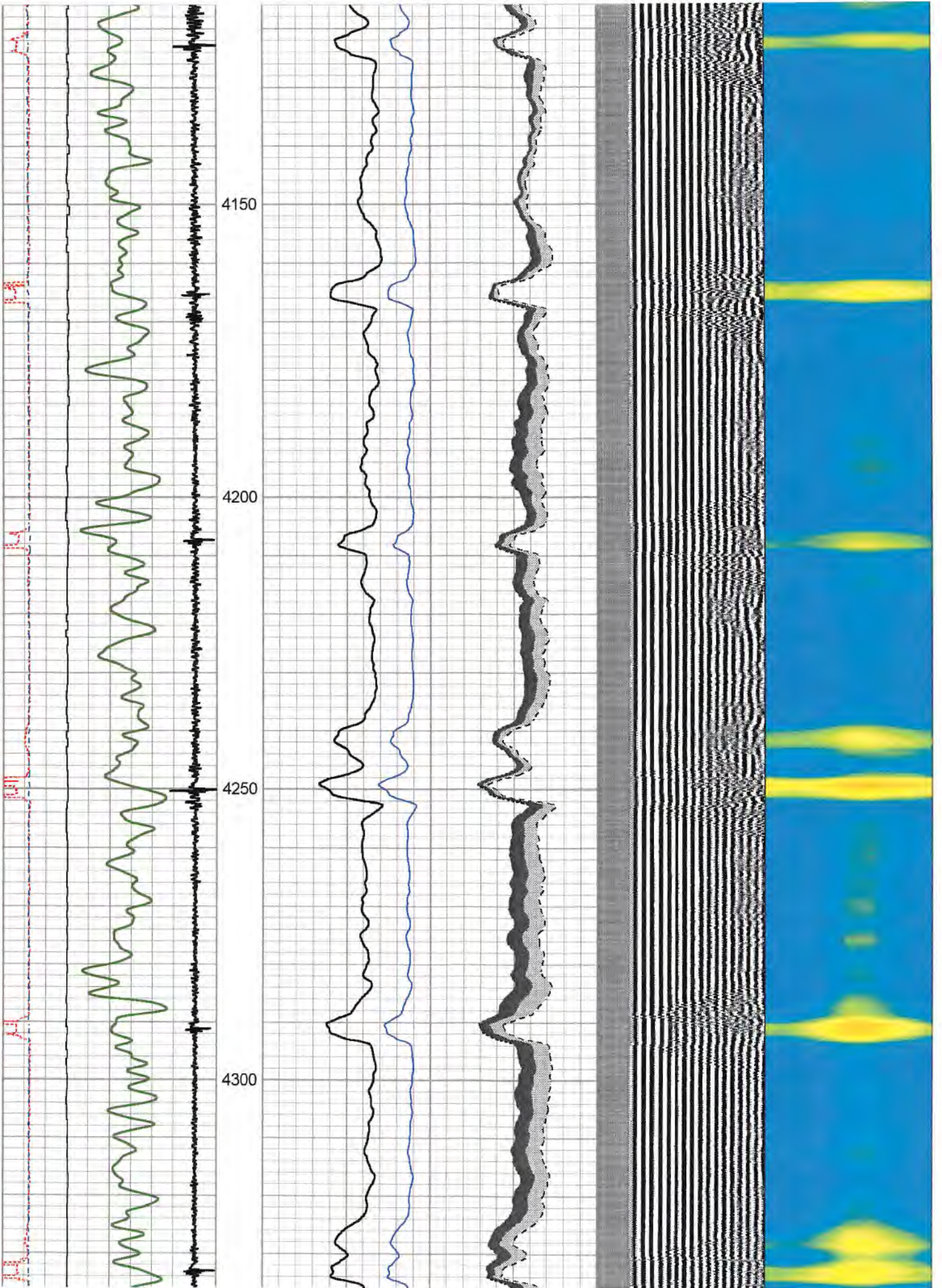


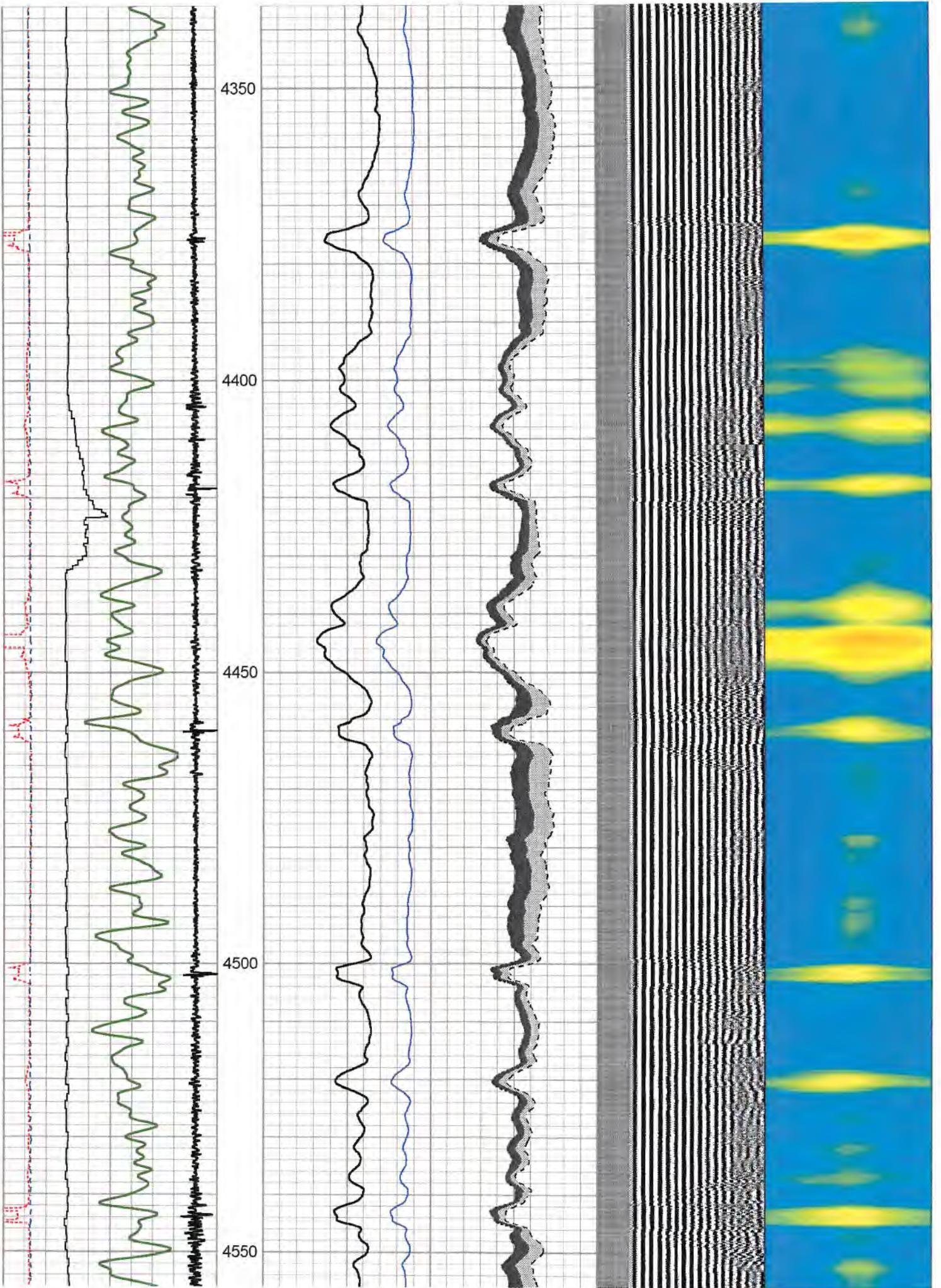


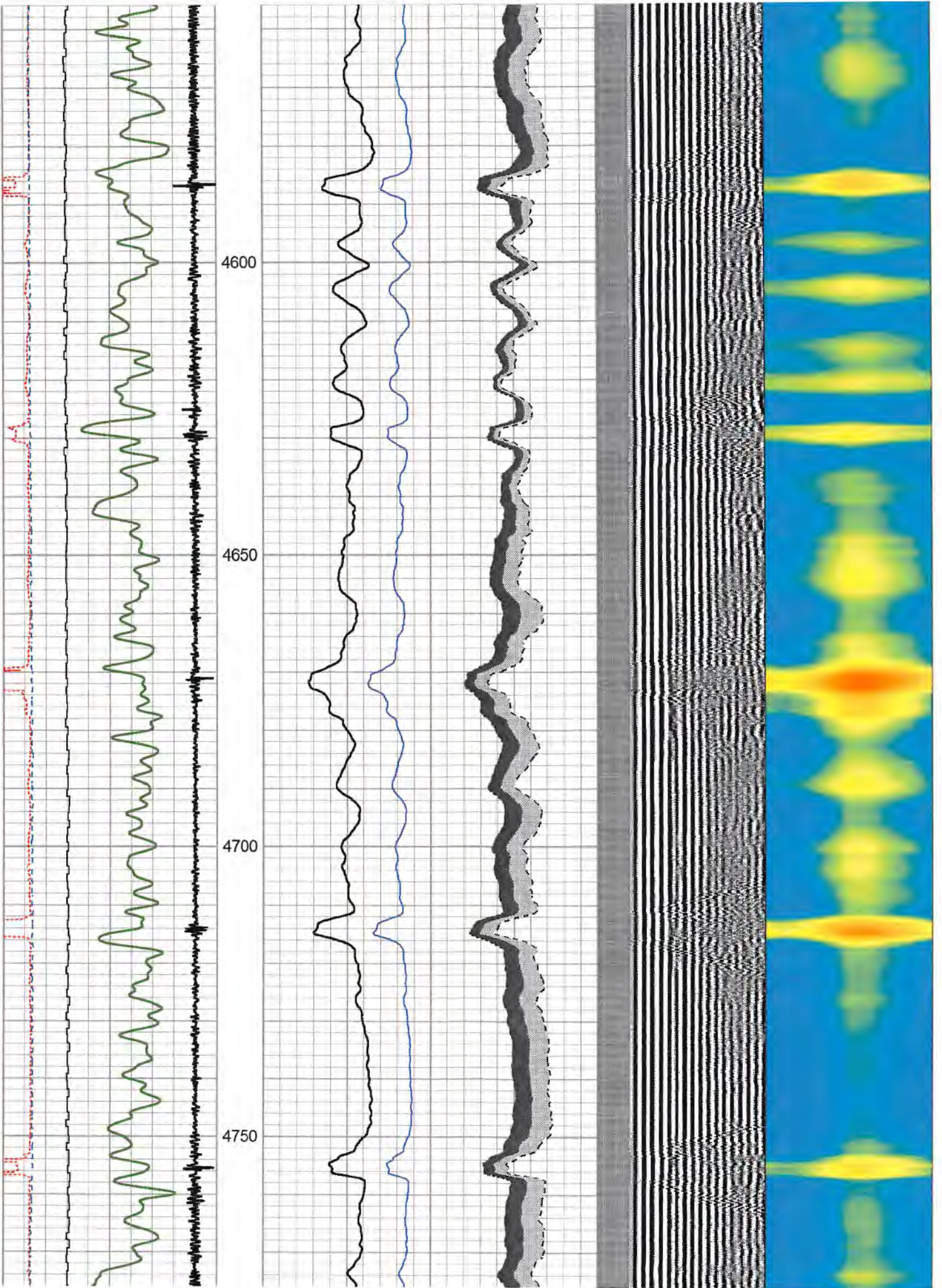


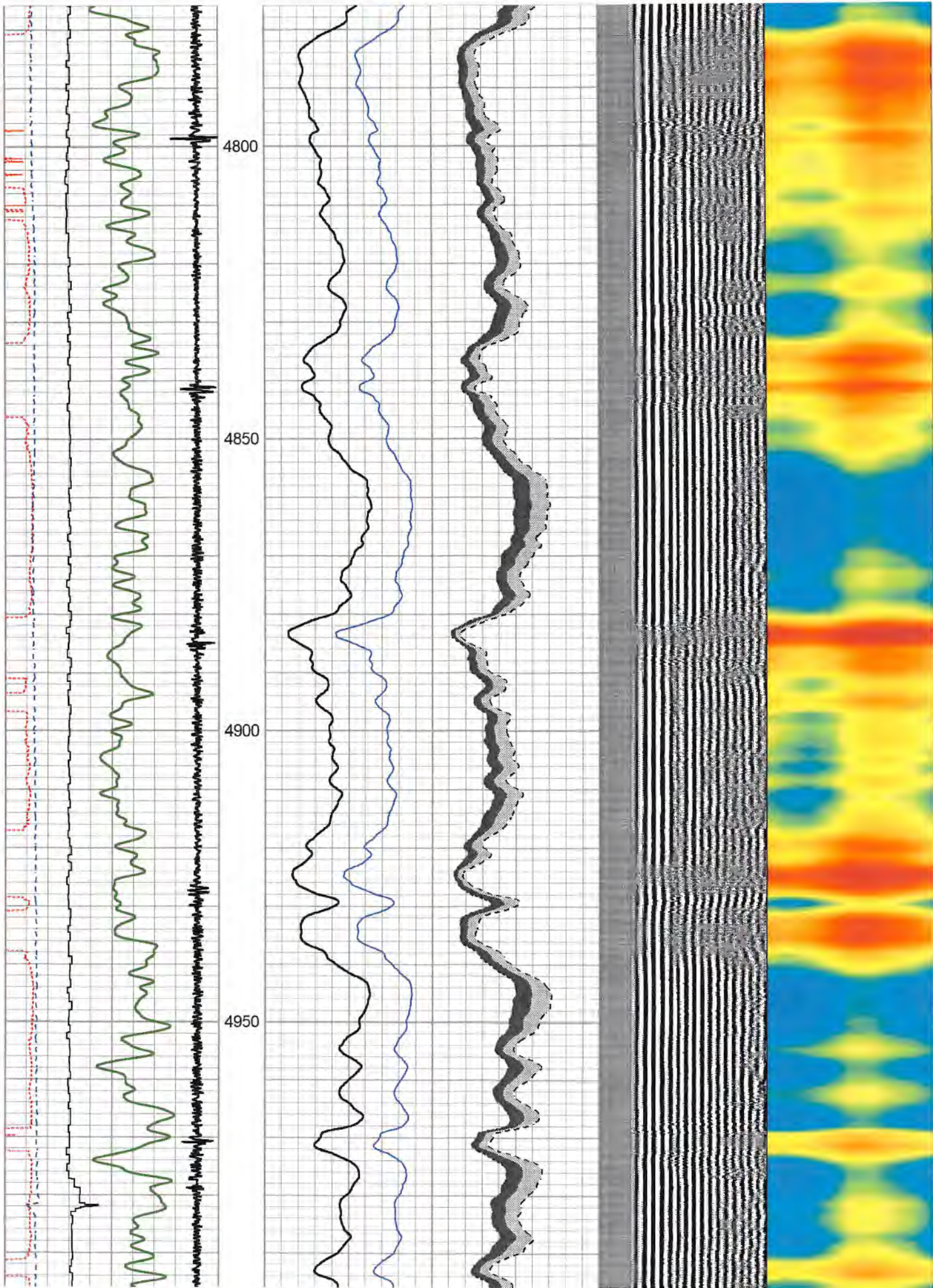


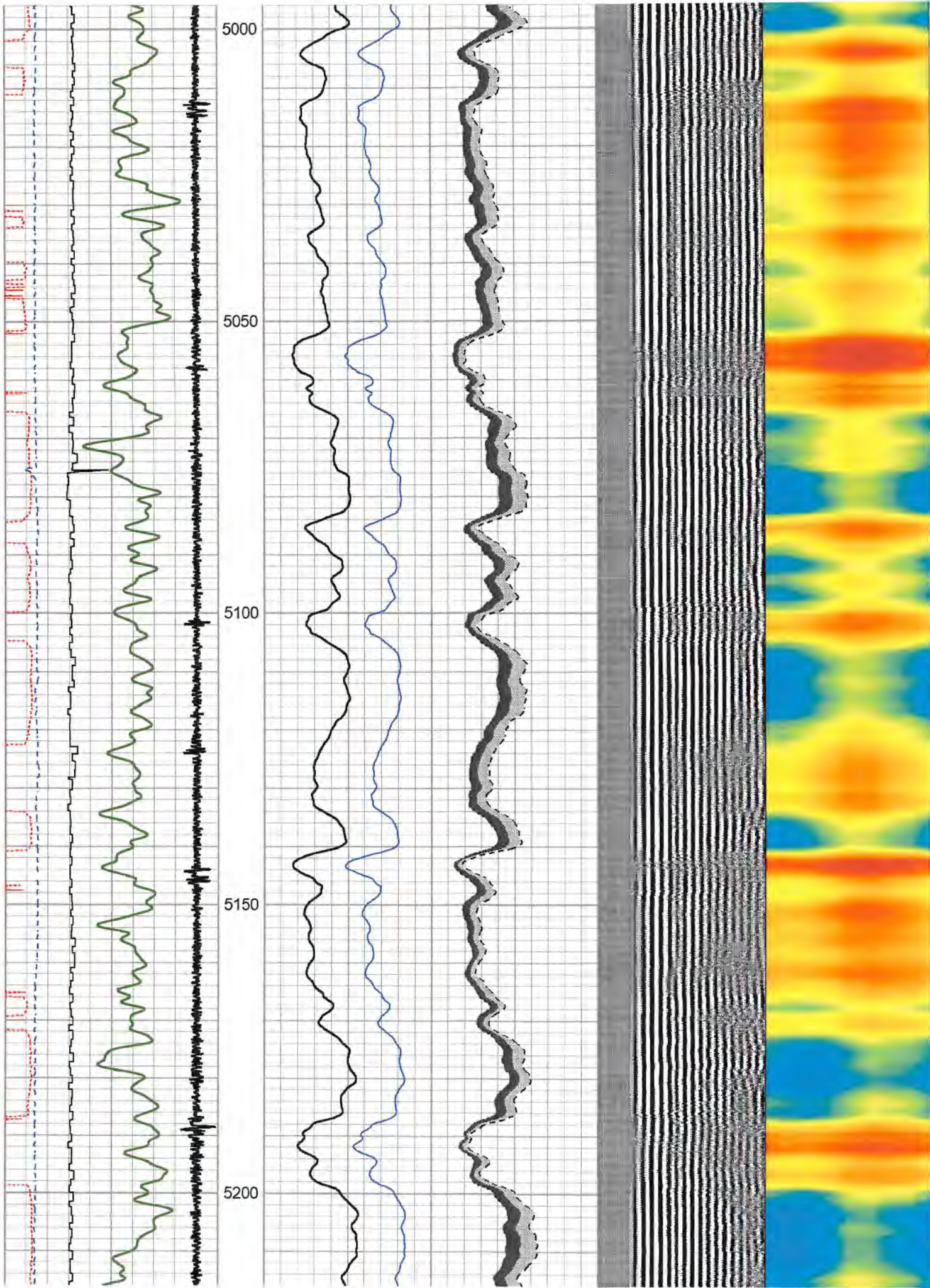


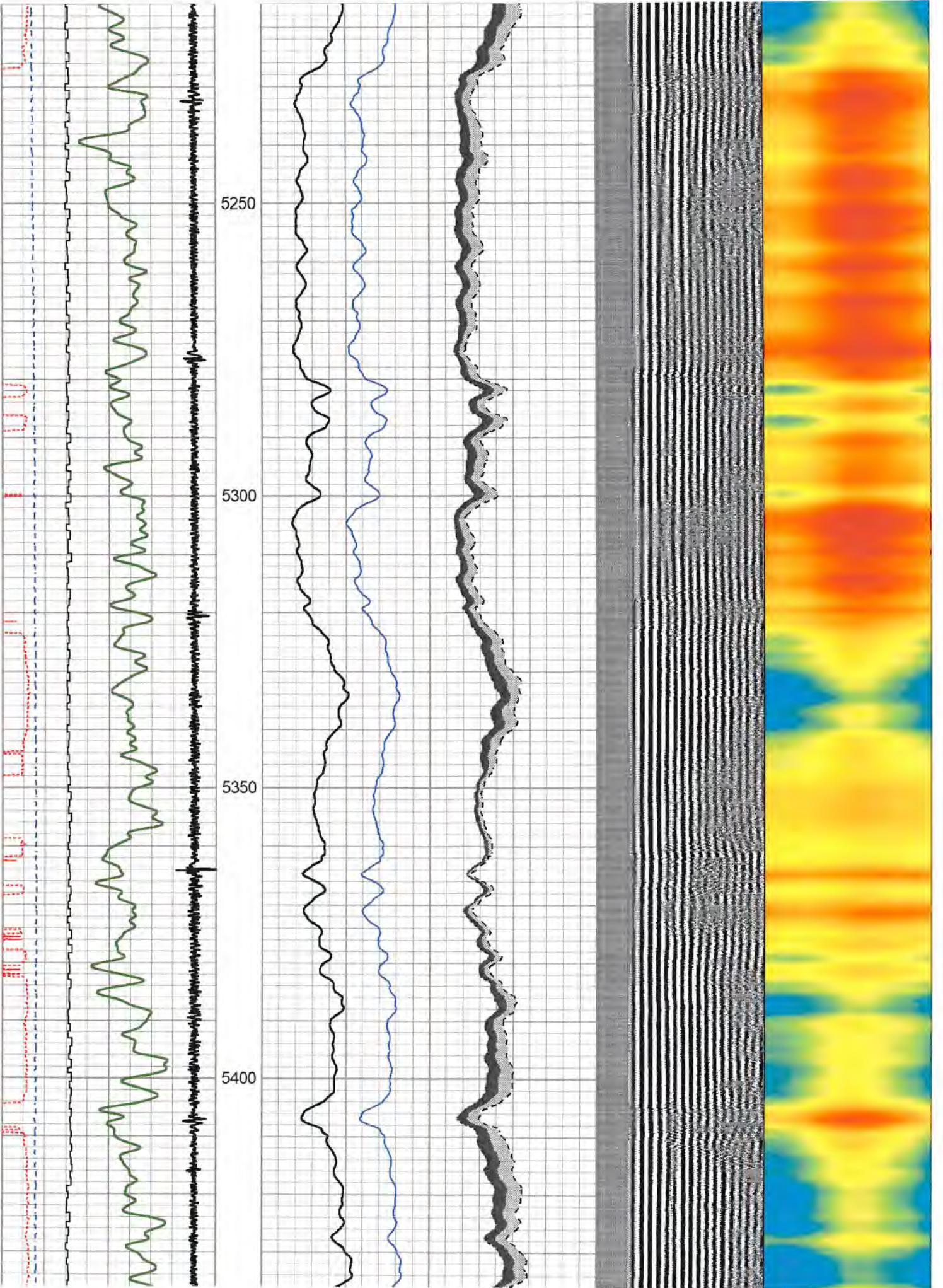


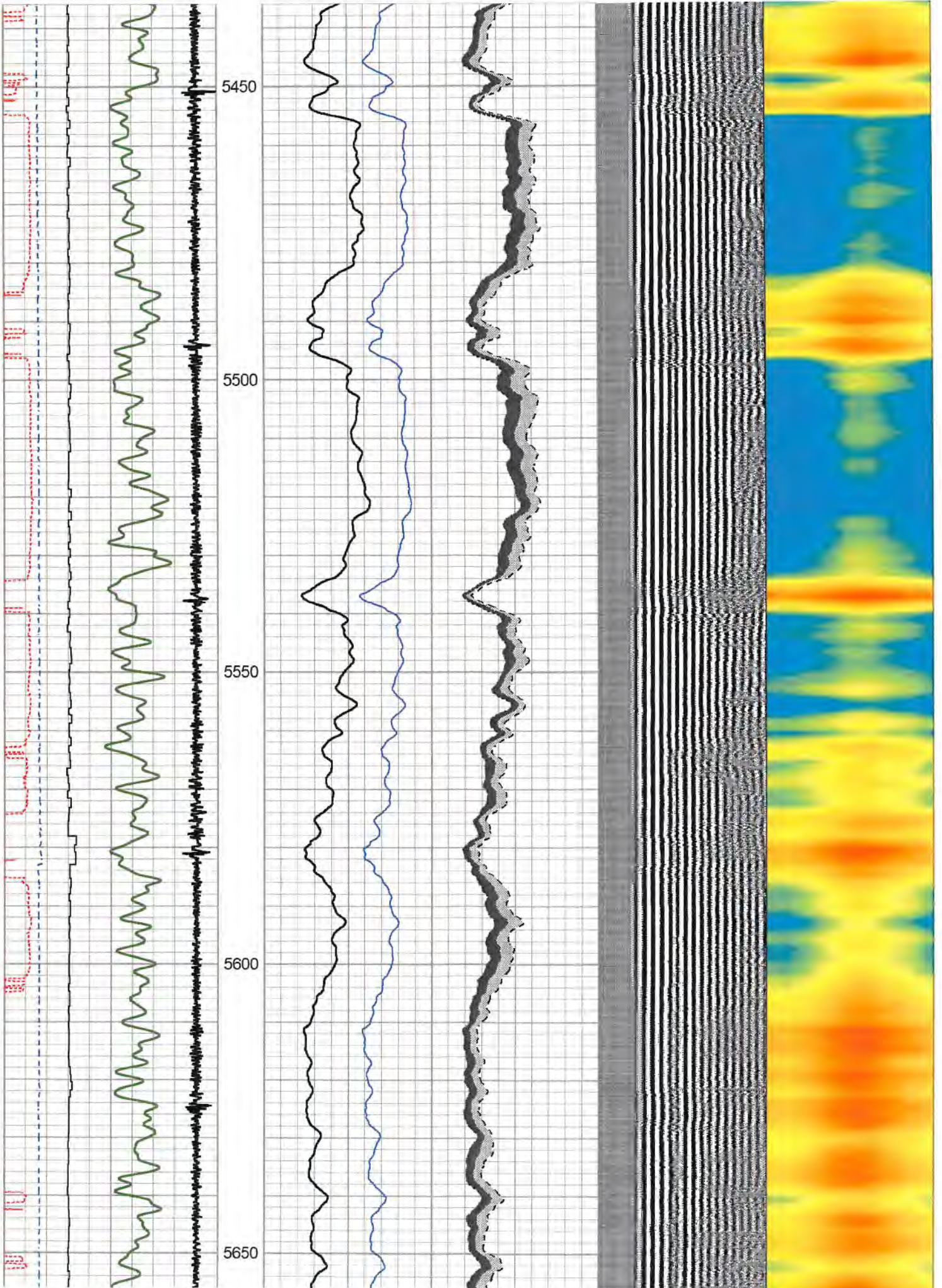


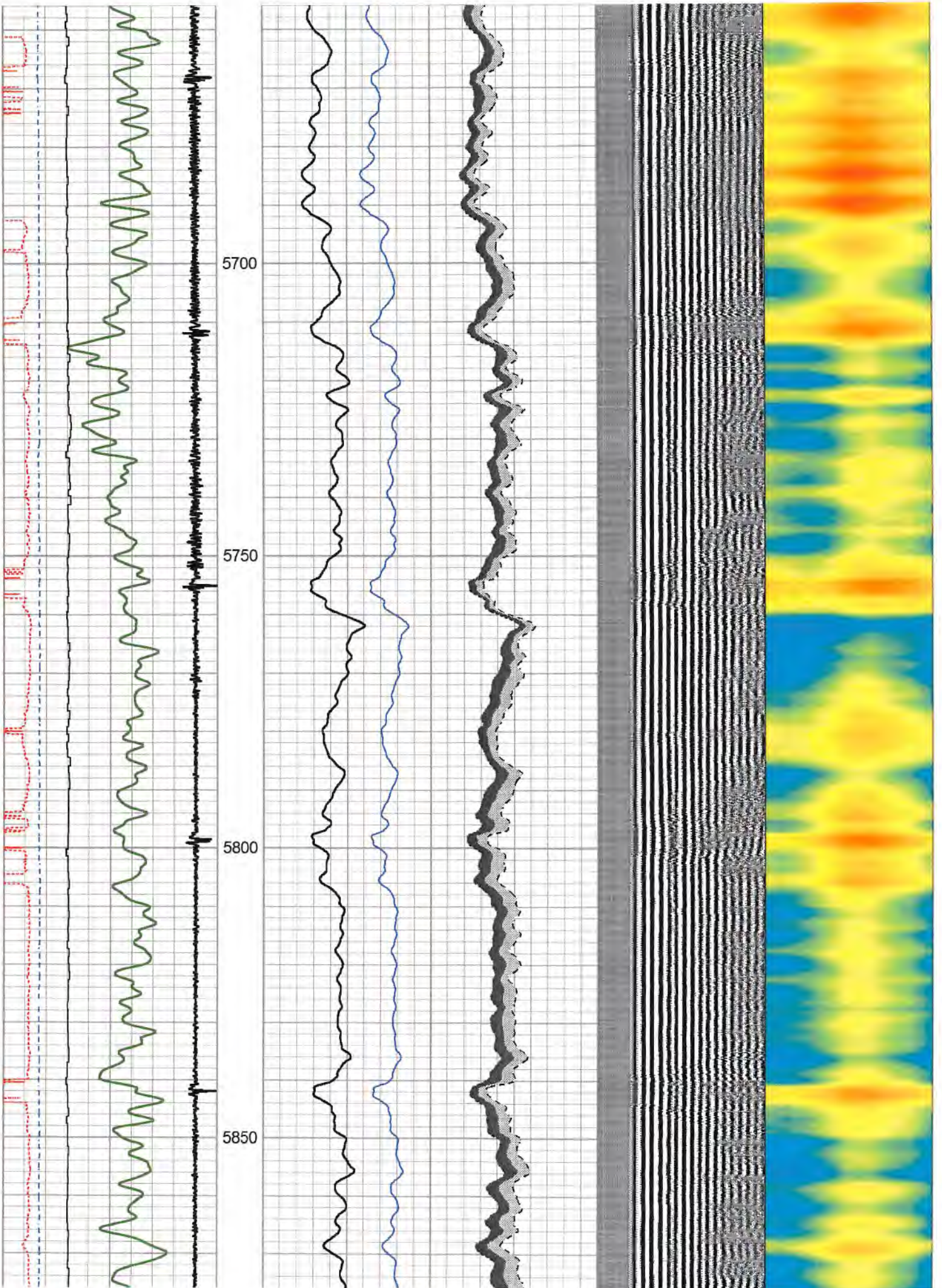


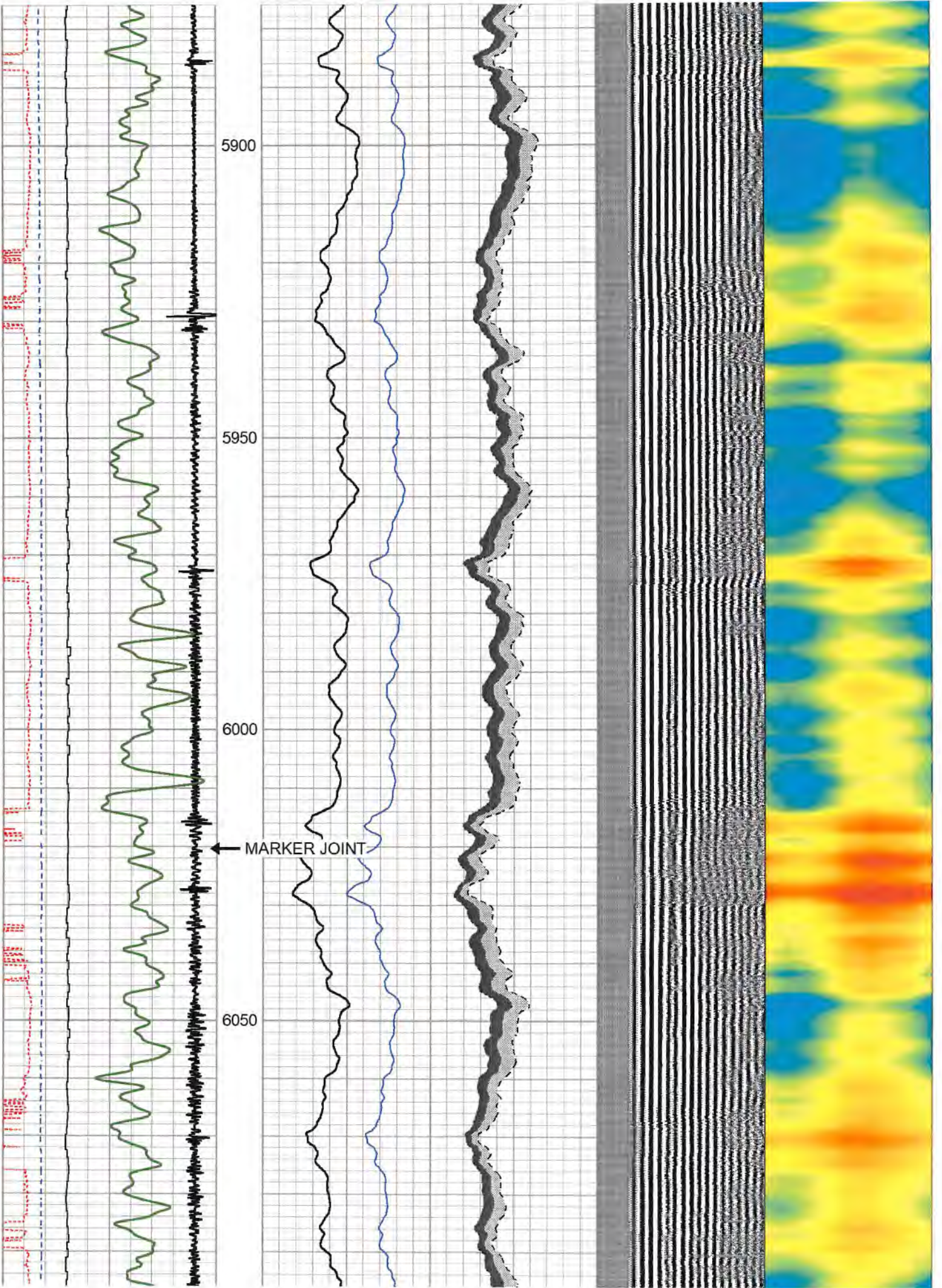


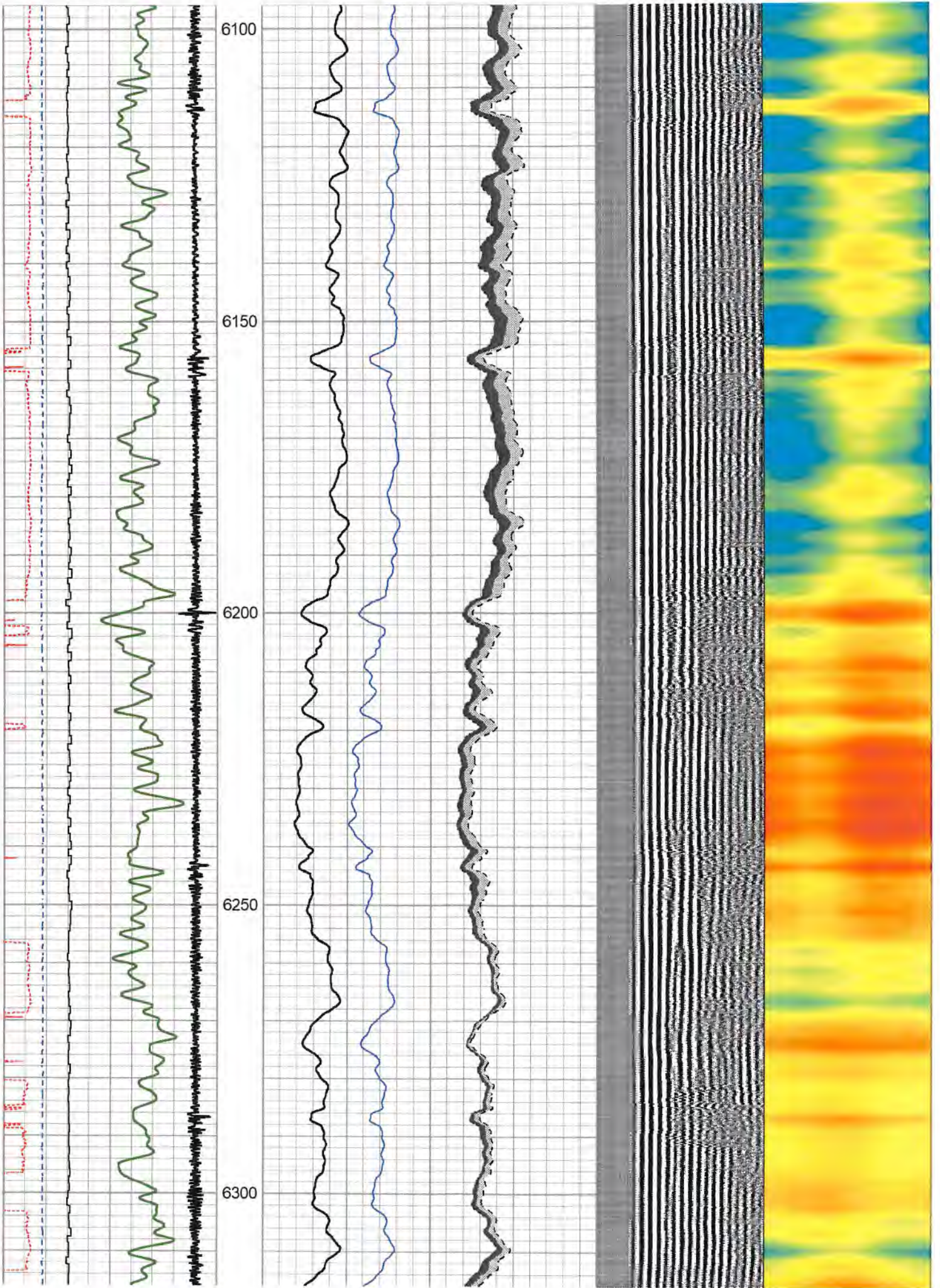


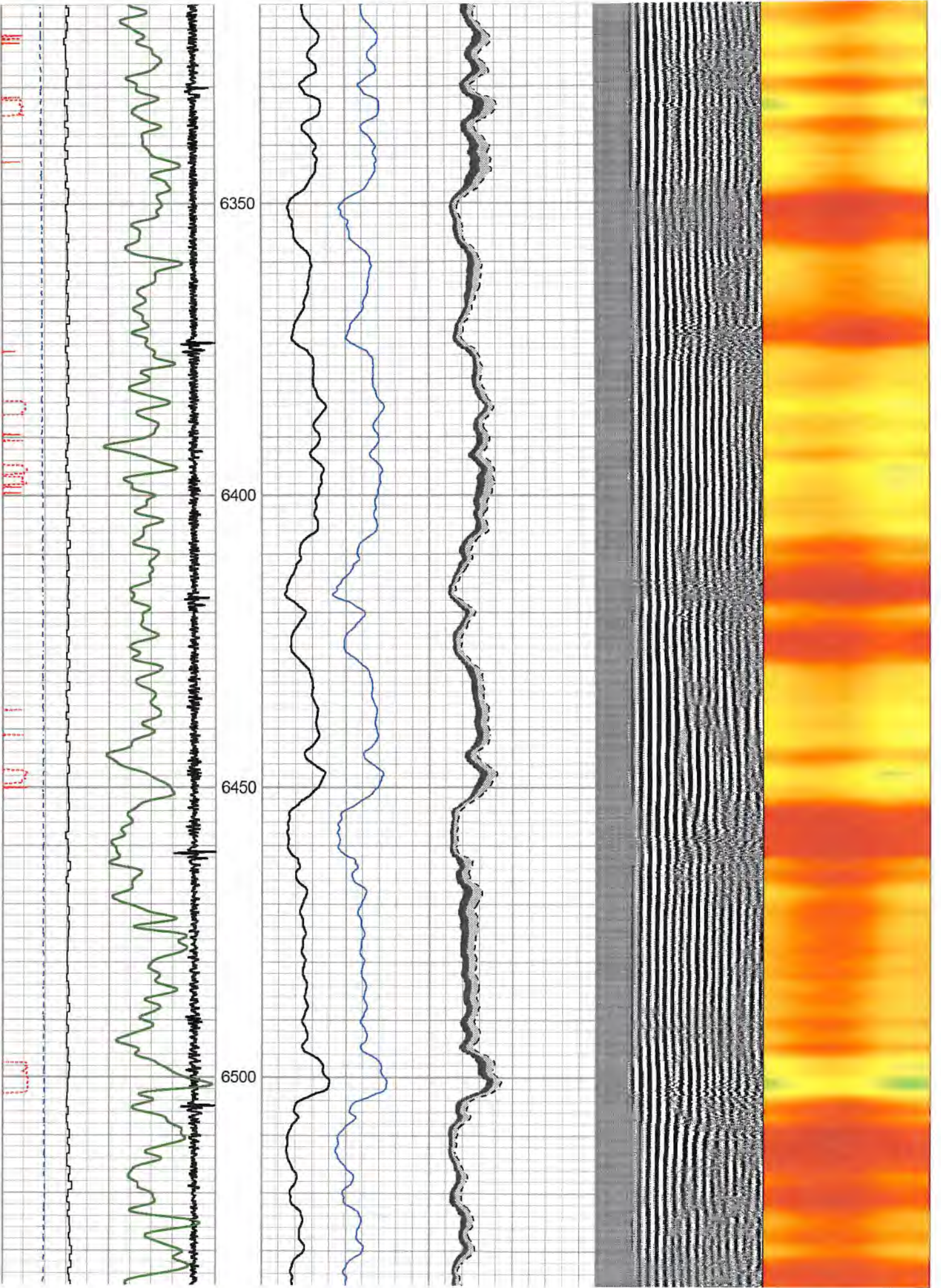


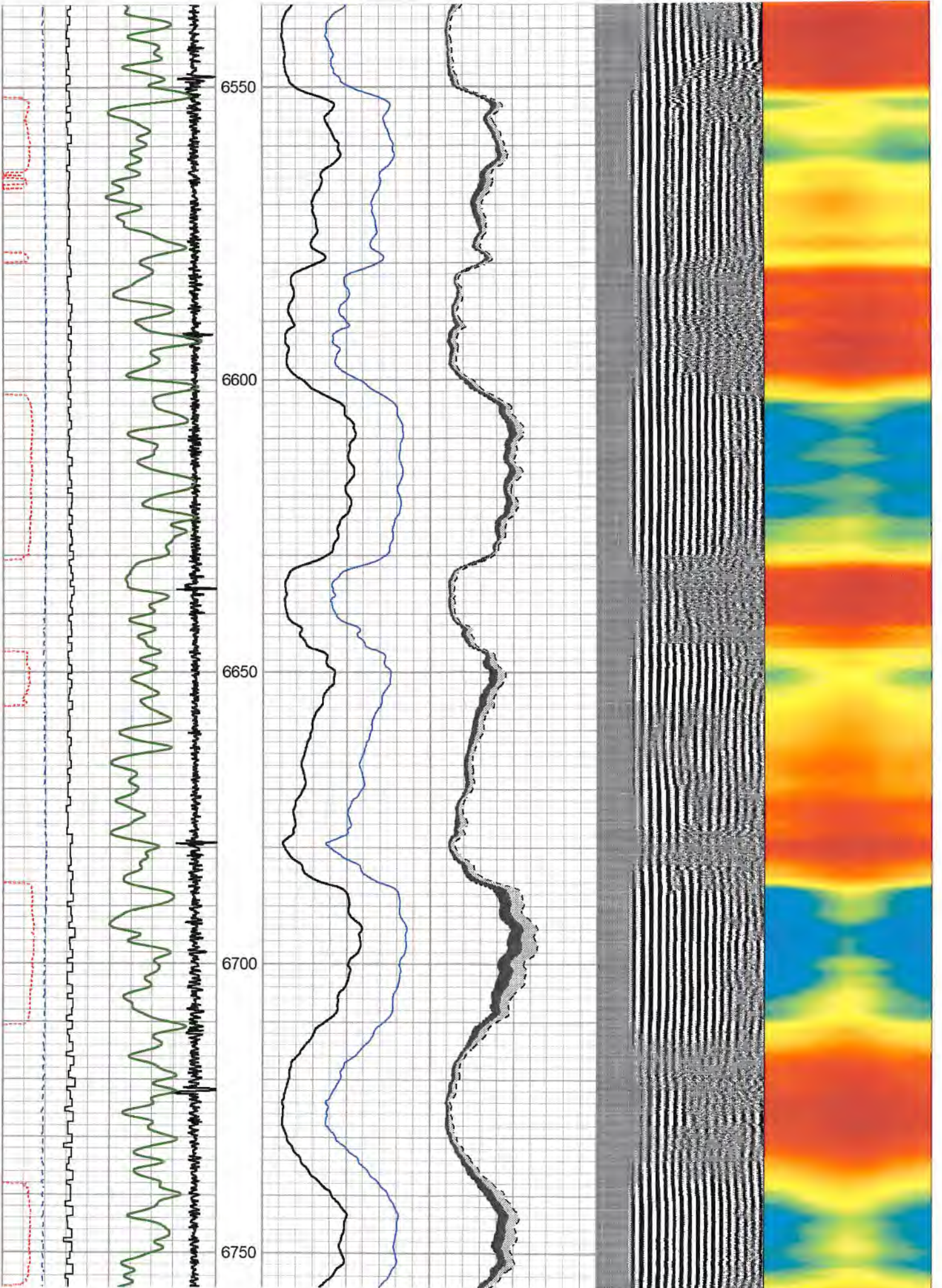


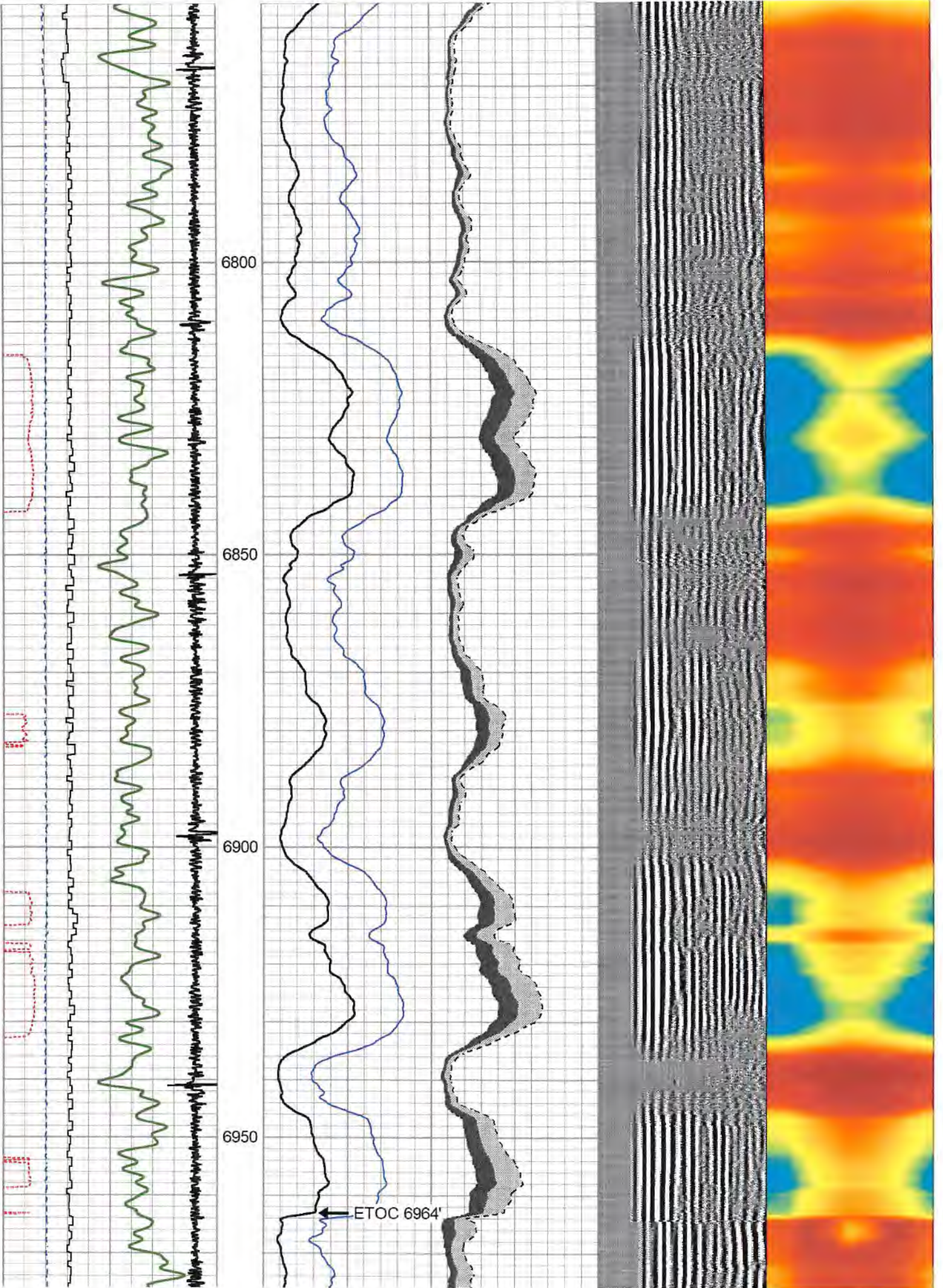


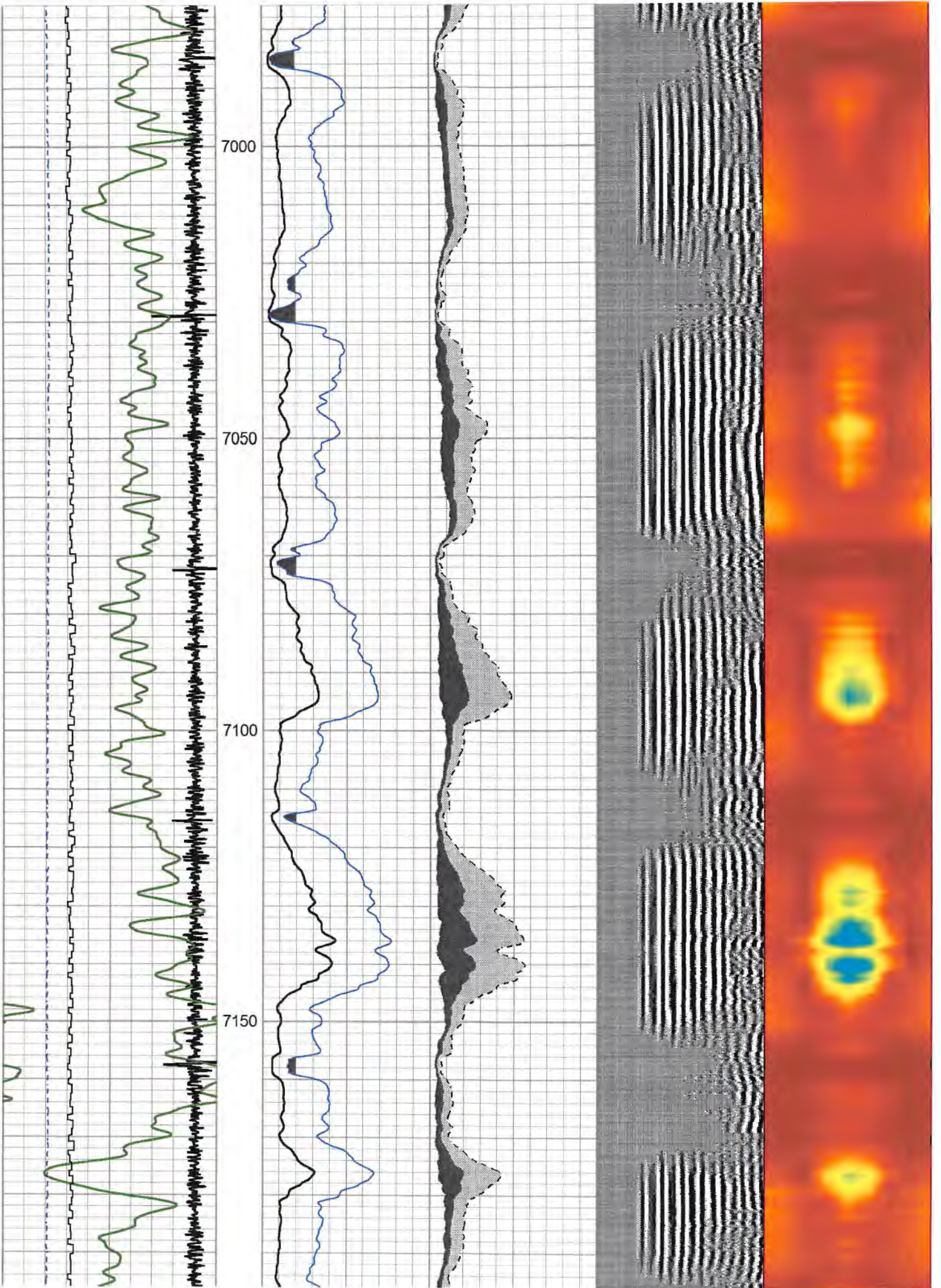


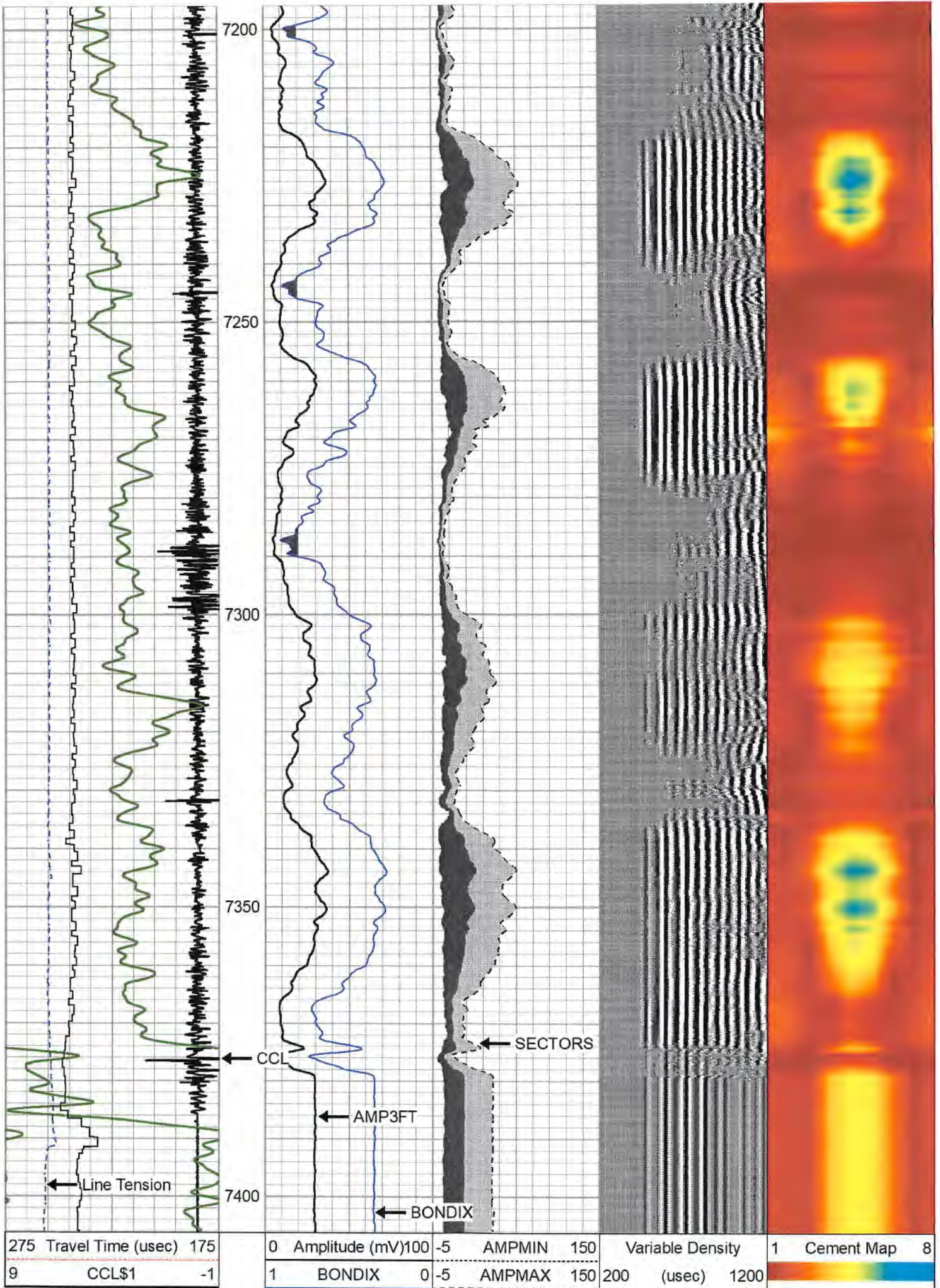














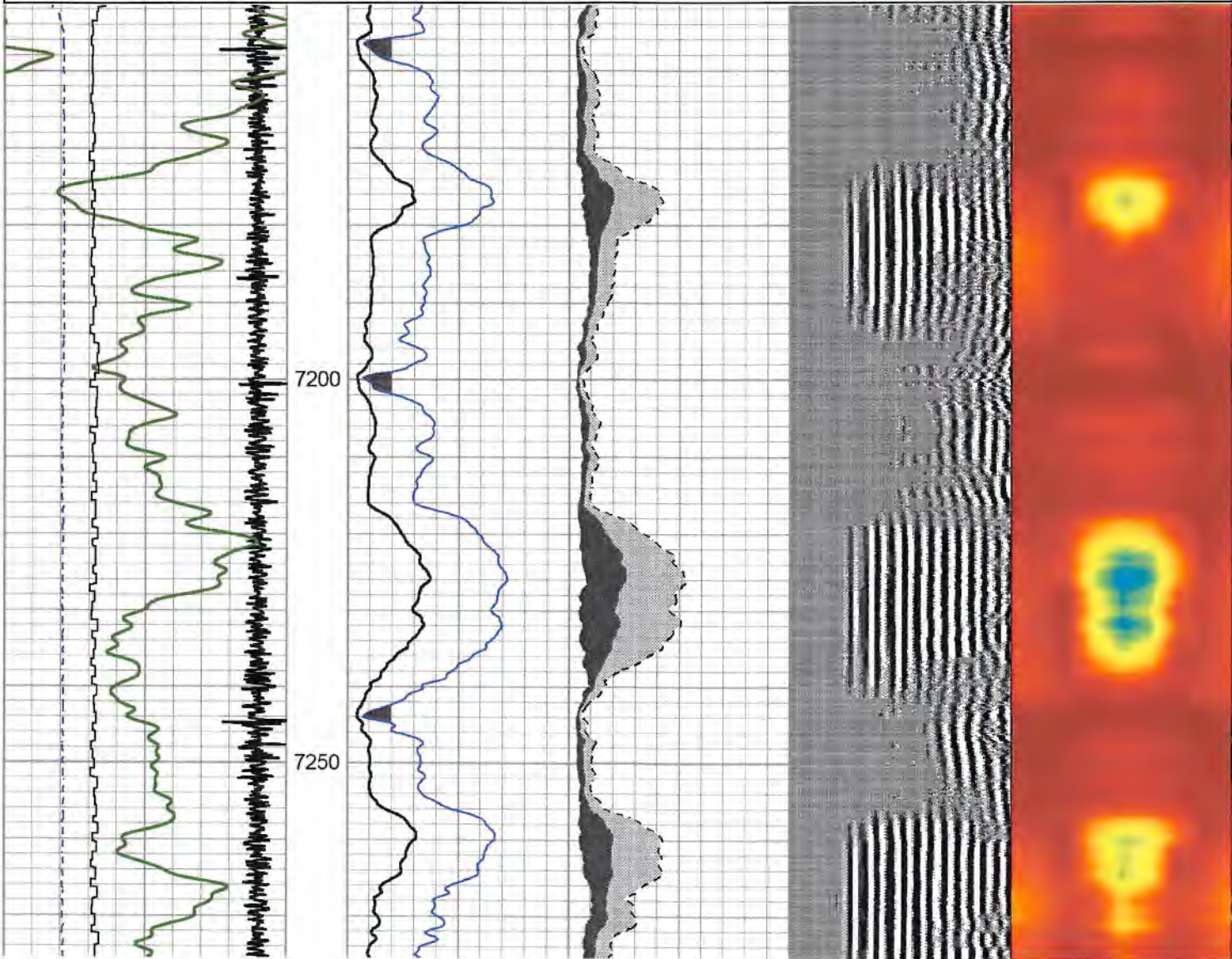
0	Gamma Ray (GAPI)	150
Line Speed		
-200	(ft/min)	200
0	Line Tension (lb)	5000

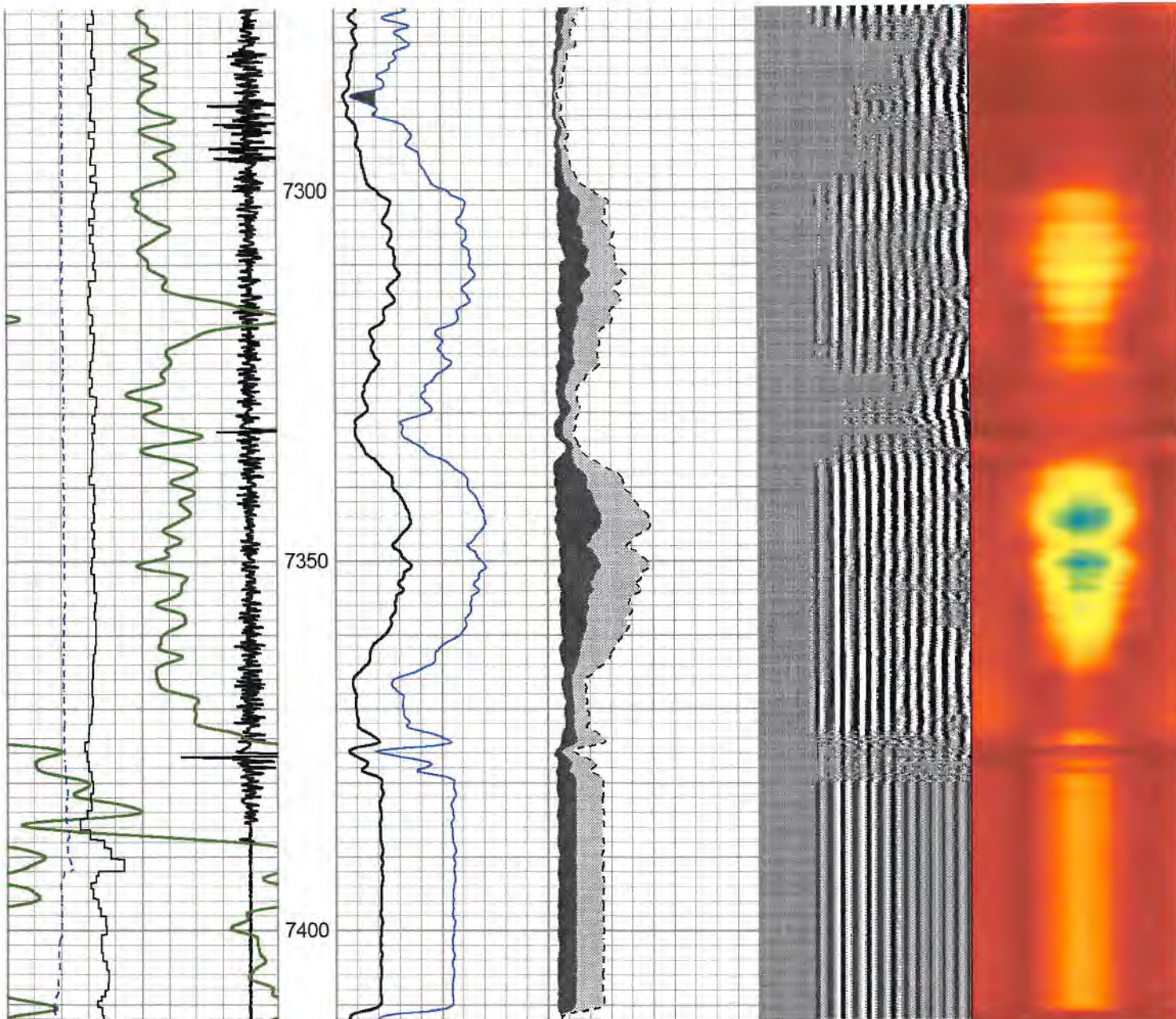
-5 AMPAVG 150

	REPEAT LOG
	1500 PSI APPLIED

Database File	d:\antero_furbee_lenny1h_rcbl_25-nov-2022.db
Dataset Pathname	REPEAT/pass2
Presentation Format	prb_rbt8
Dataset Creation	Fri Nov 25 12:21:27 2022
Charted by	Depth in Feet scaled 1:240

277	Travel Time (usec)	177	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	CCL\$1	-1	1	BONDIX	0	-5	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150										
Line Speed												
-200	(ft/min)	200										
0	Line Tension (lb)	5000										





277	Travel Time (usec)	177	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	CCL\$1	-1	1	BONDIX	0	-5	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed											
-200	(ft/min)	200										
0	Line Tension (lb)	5000										

Calibration Report	
Database File	d:\antero_furbee_lenny1h_rcbl_25-nov-2022.db
Dataset Pathname	MAIN/pass1
Dataset Creation	Fri Nov 25 12:28:07 2022
Gamma Ray Calibration Report	
Serial Number:	GC275-0BP0_base
Tool Model:	GC275-0BP0
Performed:	(Not Performed)

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	RBT275C_Base	
Tool Model:	RADII-275C	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	333.400	ft

Master Calibration, performed Fri Nov 25 10:29:55 2022:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.011	0.226	3.400	71.921	289.178	6.563
CAL	-0.010	1.803				
5'	-0.011	0.201	3.400	71.921	323.418	6.926
SUM						
S1	-0.011	0.240	0.000	100.000	398.773	4.376
S2	-0.011	0.249	0.000	100.000	384.818	4.214
S3	-0.011	0.237	0.000	100.000	403.885	4.427
S4	-0.011	0.243	0.000	100.000	393.751	4.302
S5	-0.011	0.249	0.000	100.000	385.252	4.228
S6	-0.011	0.235	0.000	100.000	407.279	4.455
S7	-0.011	0.217	0.000	100.000	438.873	4.806
S8	-0.011	0.214	0.000	100.000	443.866	4.876

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.010	1.803	1.000	0.000

Air Zero Calibration, performed Fri Nov 25 09:53:20 2022:

	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	

Inclinometer Calibration Report

Performed: Mon Jan 24 10:23:58 2022

Low Read. High Read. Low Ref. High Ref.

X Accelerometer	-918.00	908.00	-1.00	1.00	gee
Y Accelerometer	-941.00	887.00	-1.00	1.00	gee
Z Accelerometer	1.35	894.18	0.00	1.00	gee

Log Variables

Databased:\antero_furbee_lenny1h_rcbl_25-nov-2022.db
Dataset field/well/MAIN/pass1/_vars_

Top - Bottom

BOREID in 7.875	BOTTEMP degF 100	CASEOD in 5.5	CASETHCK in 0	CASEWGHT lb/ft 23	MAXAMPL mV 71.9	MINAMPL mV 3.4	MINATTN db/ft 0.8
PERFS No	PPT usec 273	SRFTEMP degF 0	TDEPTH ft 0				

Variable Description

BOREID : Borehole I.D.	CASEWGHT : Casing Weight	PERFS : Perforation Flag
BOTTEMP : Bottom Hole Temperature	MAXAMPL : Maximum Amplitude	PPT : Predicted Pipe Time
CASEOD : Casing O.D.	MINAMPL : Minimum Amplitude	SRFTEMP : Surface Temperature
CASETHCK : Casing Thickness	MINATTN : Minimum Attenuation	TDEPTH : Total Depth



Company Antero Resources
Well Lenny 1H
Field Wetzel
County Wetzel
State WV

Country