



**RADIAL CEMENT BOND LOG
VARIABLE DENSITY LOG
GAMMA/CCL/TEMP**

Company ANTERO RESOURCES
Well CONIFER 1H
Field WEST UNION
County DODDRIDGE
State WV

Company ANTERO RESOURCES
Well CONIFER 1H
Field WEST UNION
County DODDRIDGE State WV

Location: 39.256436, -80.791916 (ENTERANCE)
APL #: 47-017-06928
SEC TWP RGE
Permanent Datum GROUND LEVEL Elevation 25.5"
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
Elevation
K.B. 1155.5
D.F. 1145.5
G.L. 1121

Date	NOVEMBER 15, 2022						
Run Number	ONE						
Depth Driller	12.710'						
Depth Logger	7.314'						
Bottom Logged Interval	7.292'						
Top Log Interval	SURFACE						
Open Hole Size	NA						
Type Fluid	FRESH WATER						
Density / Viscosity	8.6 LB/GAL						
Max. Recorded Temp.	141.9						
Estimated Cement Top	3.642'						
Time Well Ready	UPON ARRIVAL						
Time Logger on Bottom	9:00						
Equipment Number	116						
Location	CHARLEROI, PA						
Recorded By	C. DRUMMOND						
Witnessed By	Keith Stansbury						
Borehole Record		Tubing Record					
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size	Wgt/Ft		Top	Bottom		
Conductor String	13.375"	54.5 LBS.		SURFACE	328'		
Surface String	9.625"	36 LBS.		SURFACE	2.719'		
Intermediate String	5.5	20 LBS.		SURFACE	12.710'		
Intermediate String							
Production String							

<<< 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

LOG CORRELATED TO MARKER JOINT
DEPTH SHIFT -10
MARKER JOINT 6,063' - 6,073'
MAIN PASS LOGGED WITH 1500 PSI
REPEAT PASS LOGGED WITH 0 PSI

THANK YOU FOR USING NINE ENERGY SERVICES

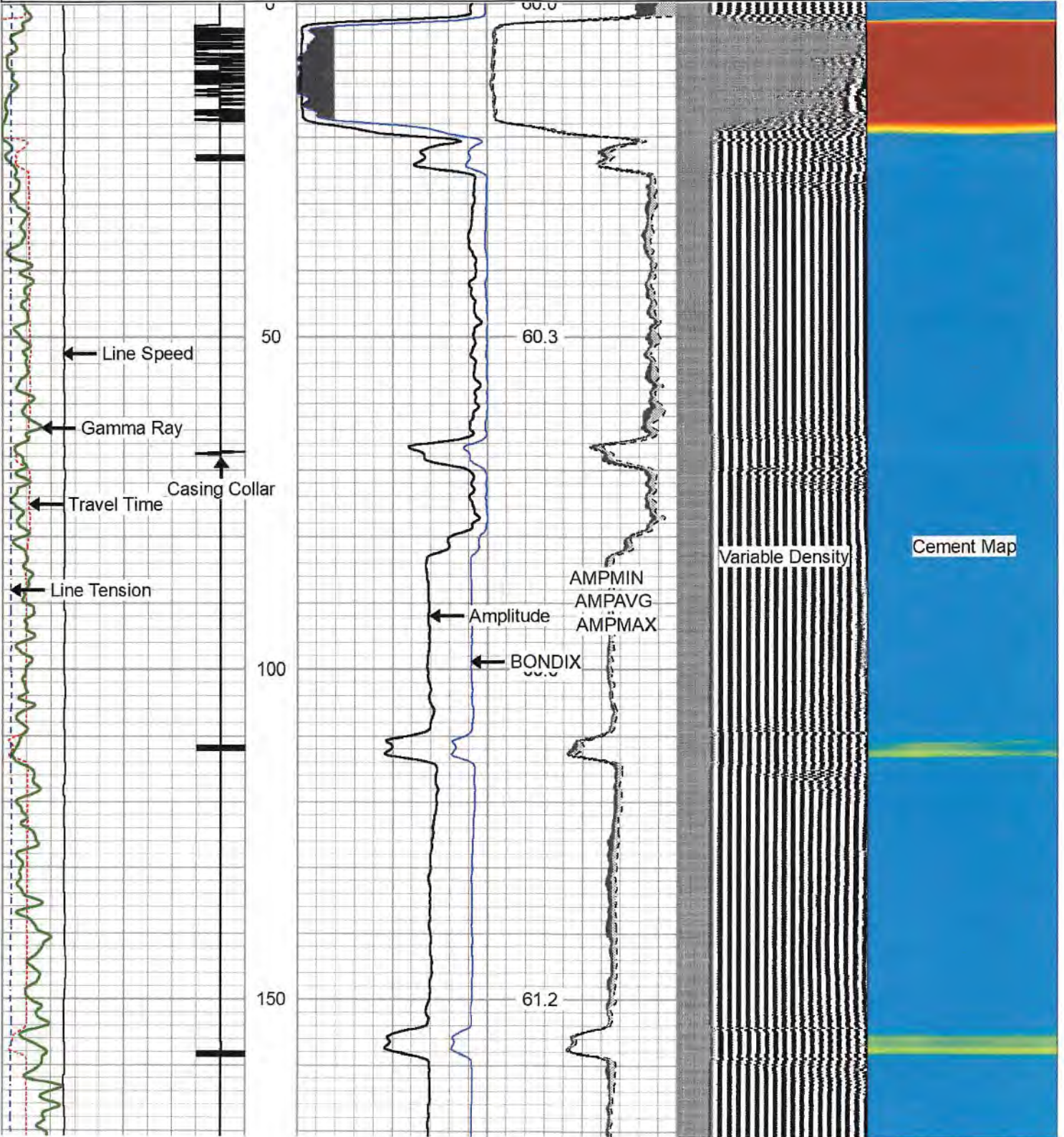
RECEIVED
Office of Oil and Gas
APR 24 2023
WV Department of
Environmental Protection

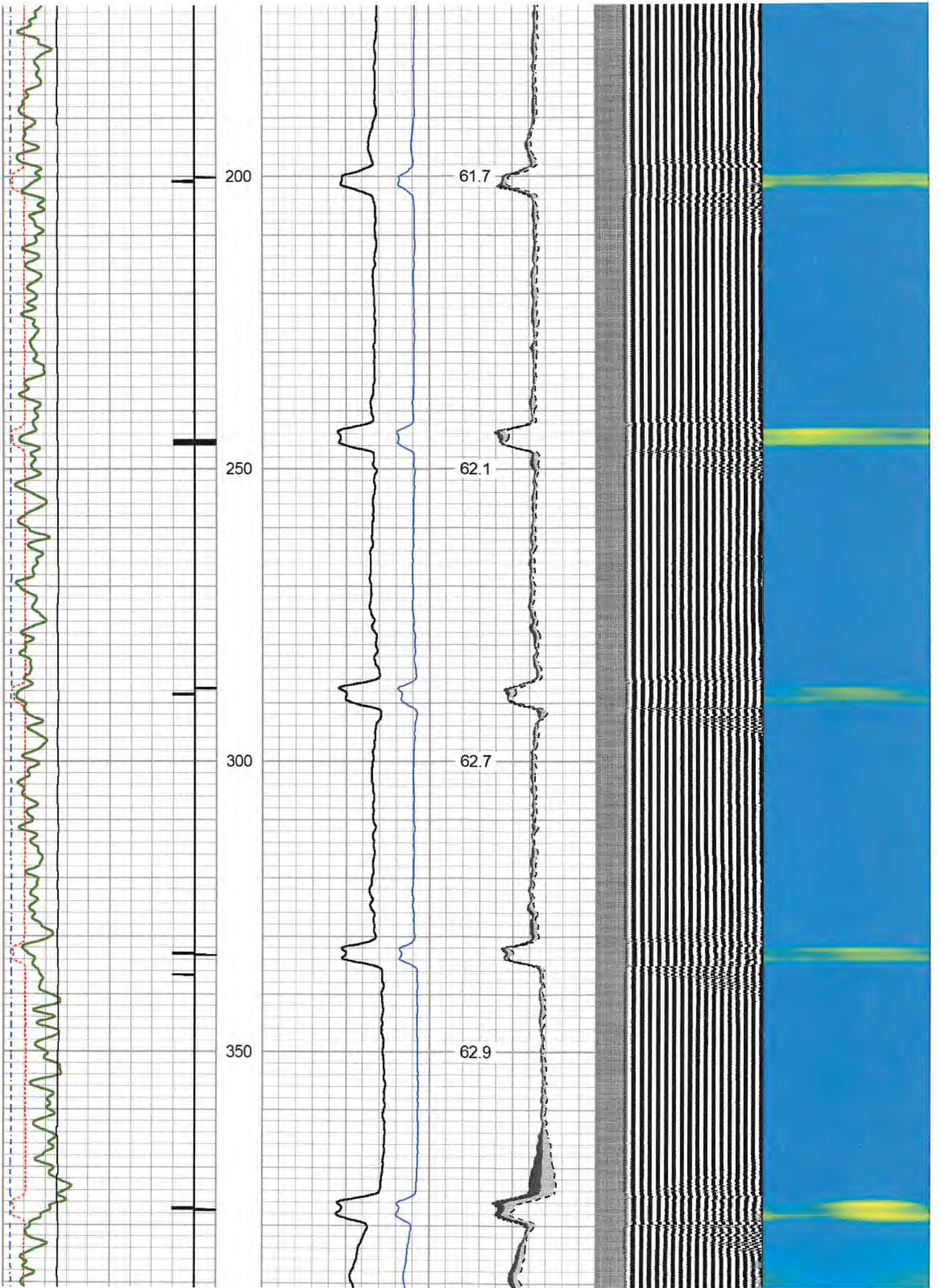


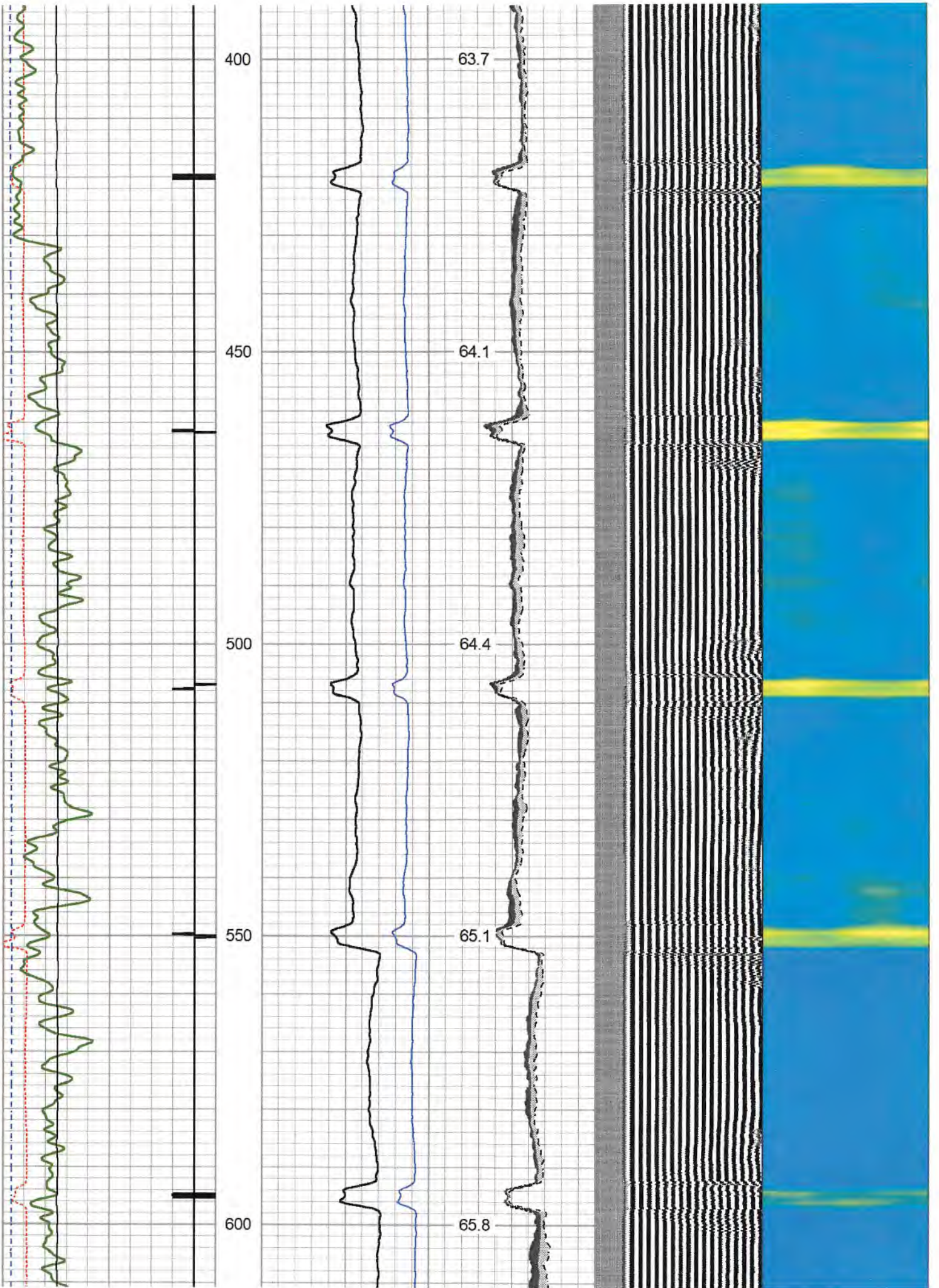
Main Pass 1500 PSI

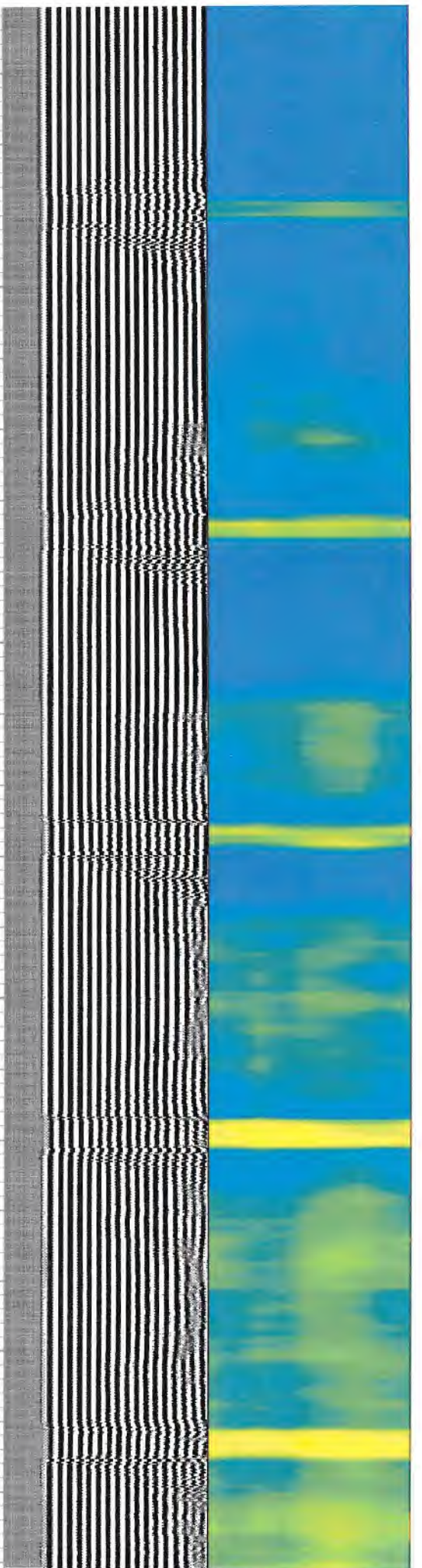
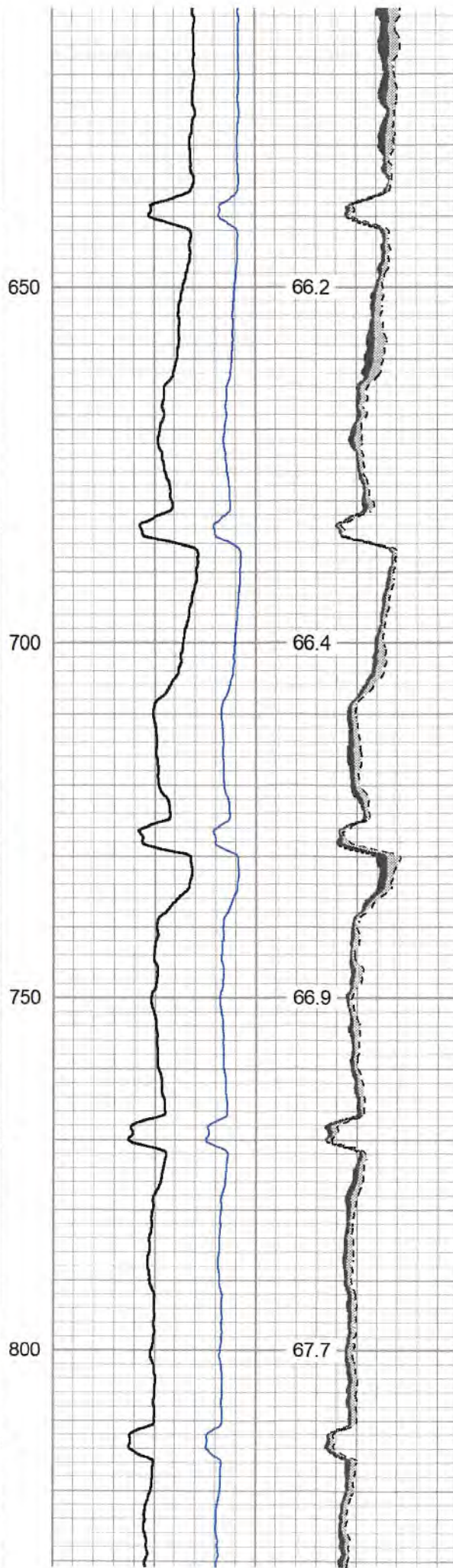
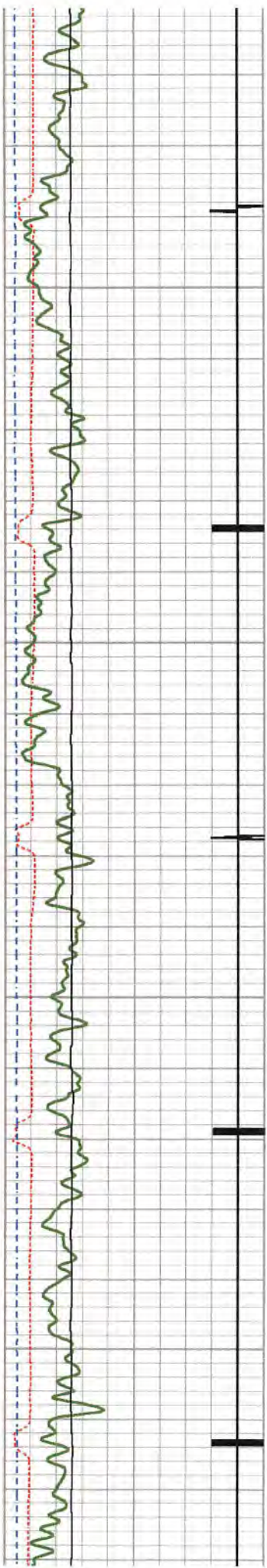
Database File antero_conifer_1h_rcbl_15_nov_2022.db
 Dataset Pathname pass5
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Tue Nov 15 09:36:37 2022
 Charted by Depth in Feet scaled 1:240

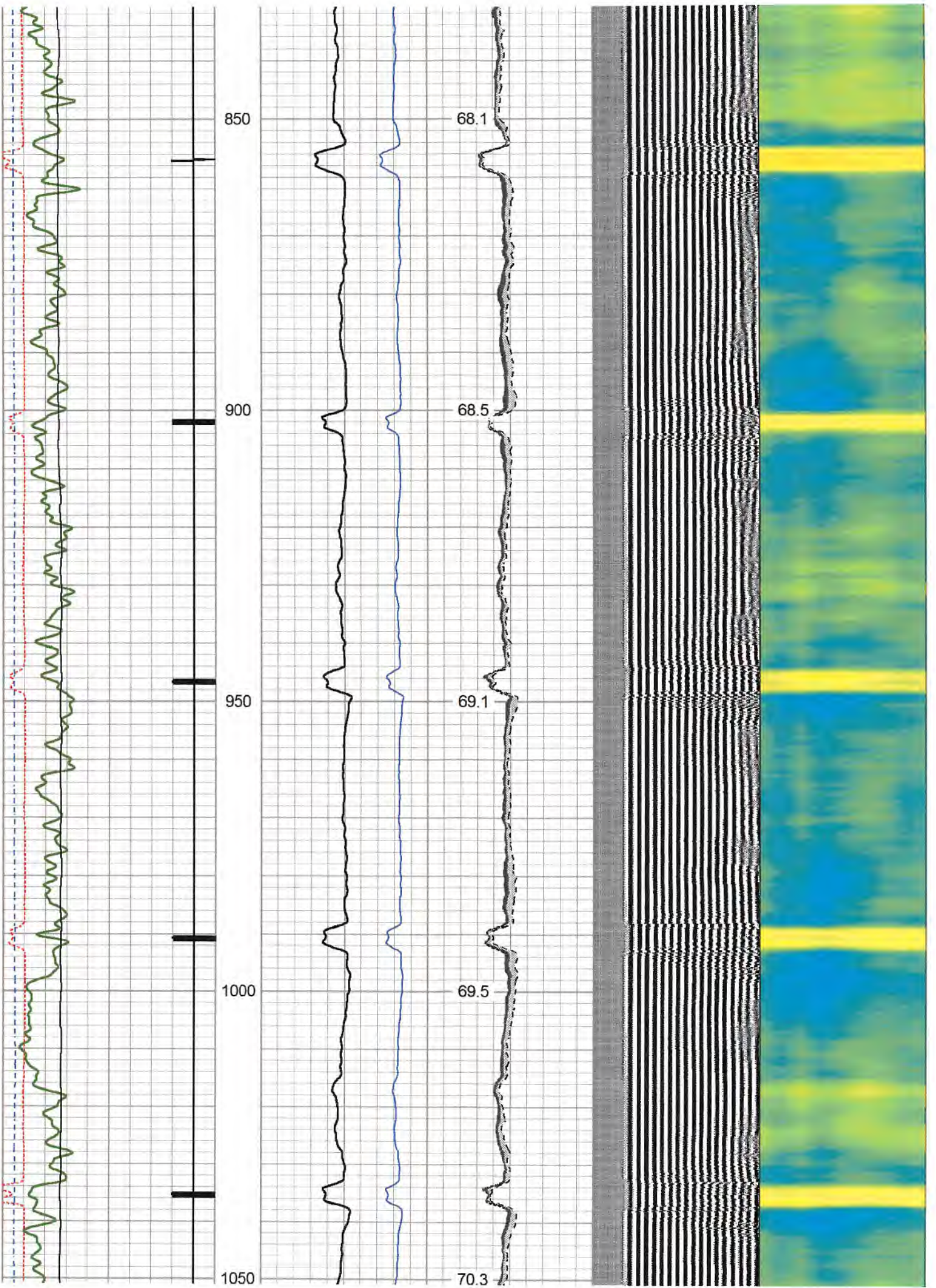
267	Travel Time (usec)	167	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	(usec)	200		
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	5000										

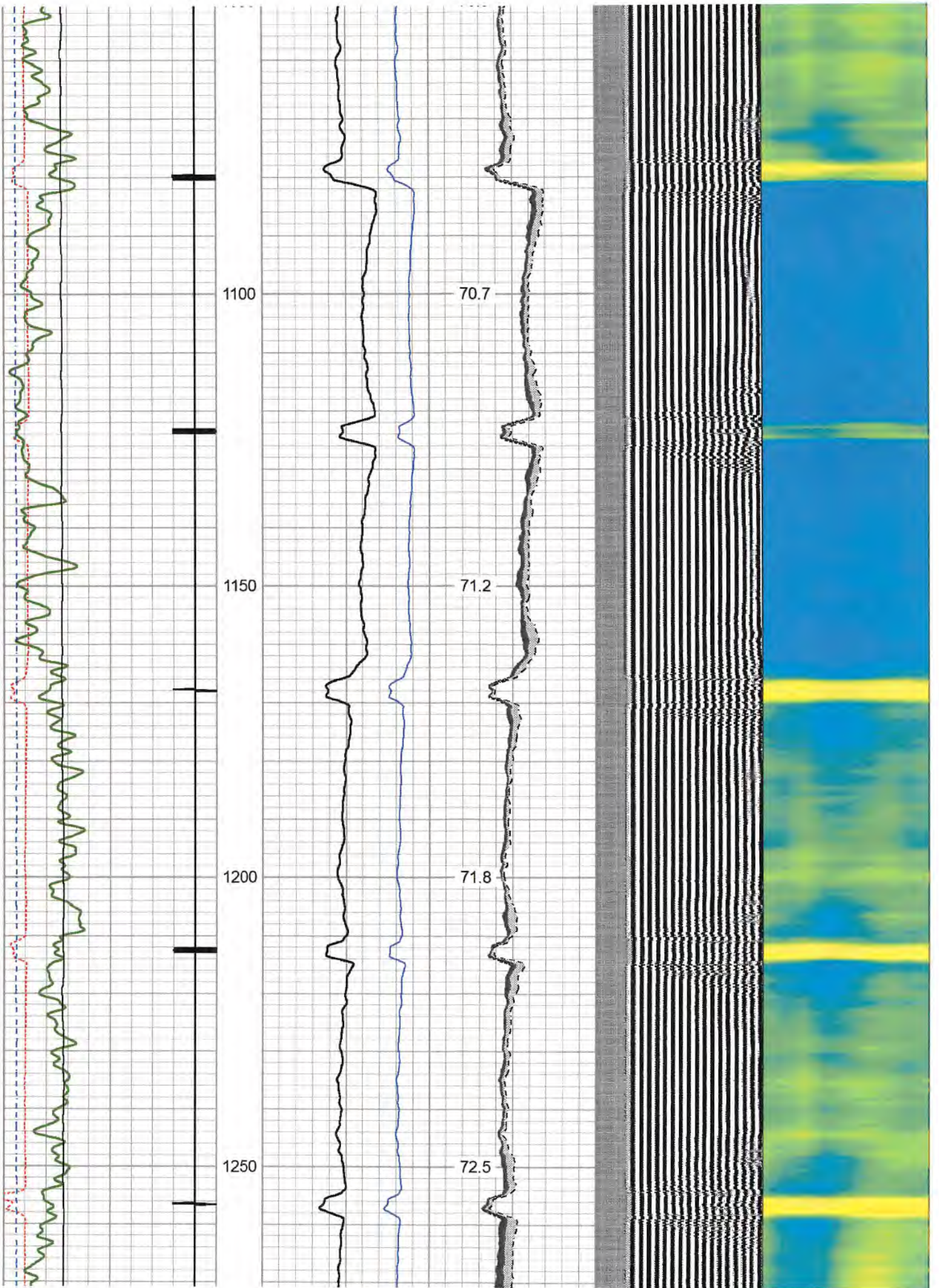


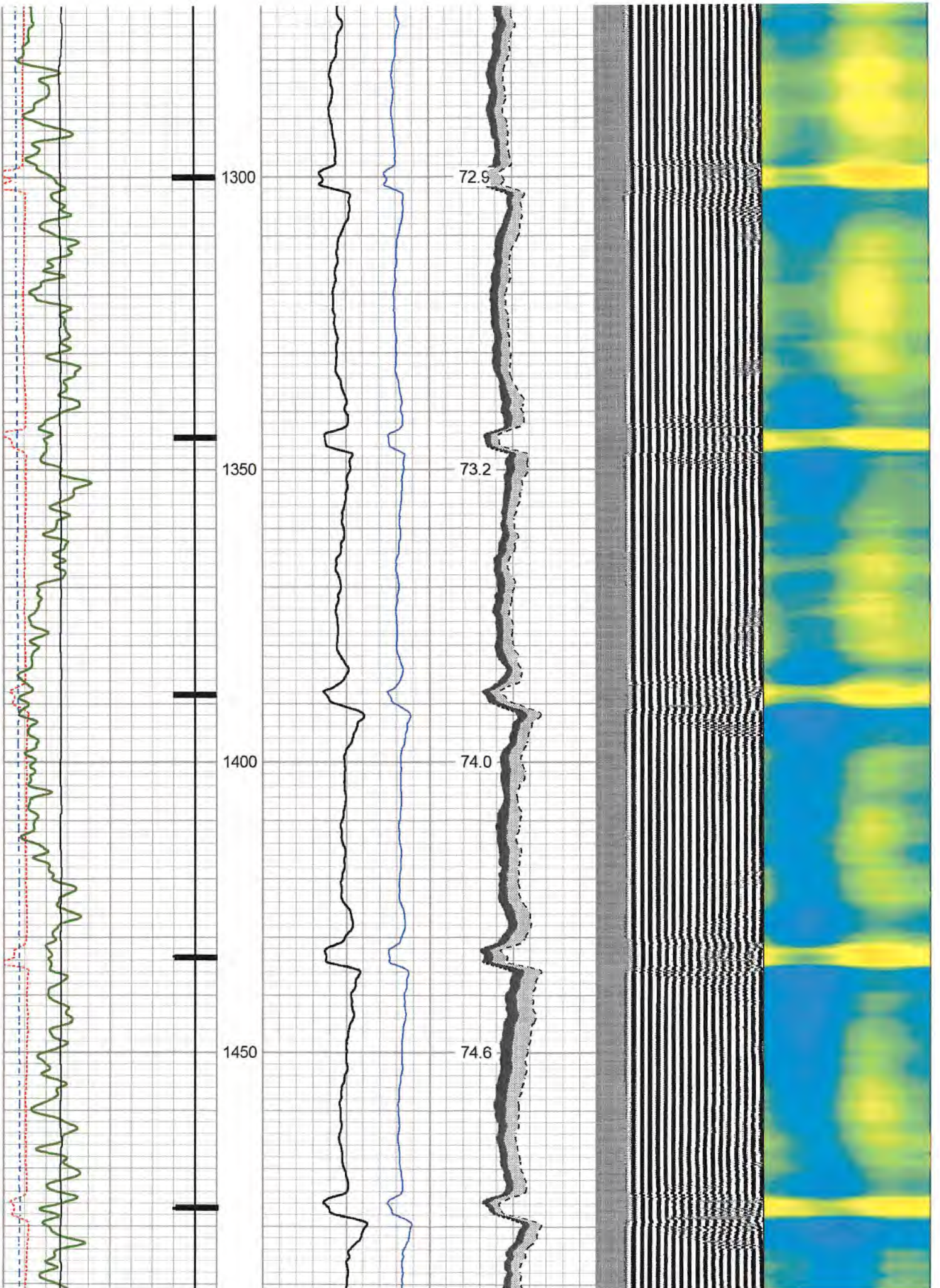


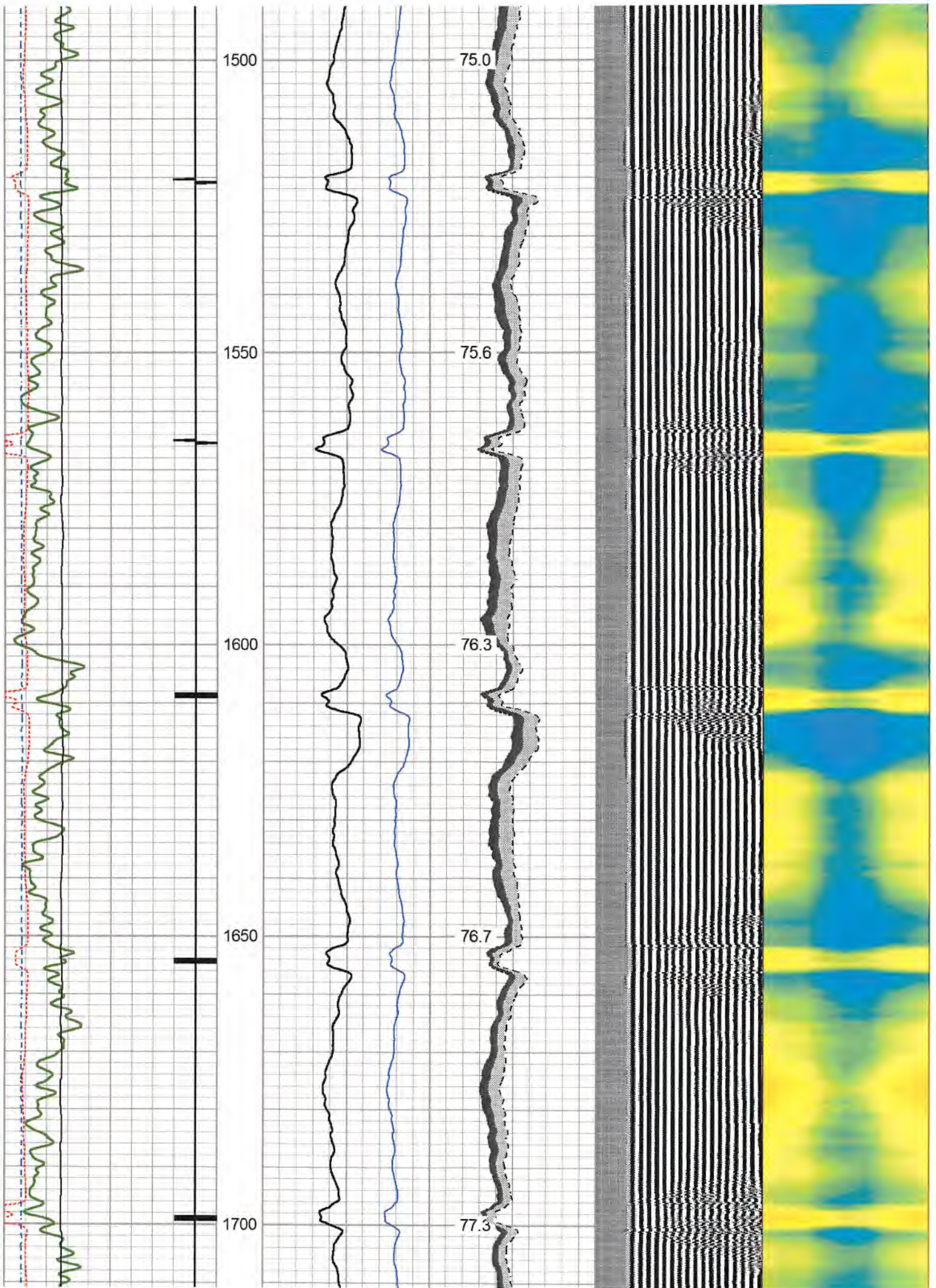


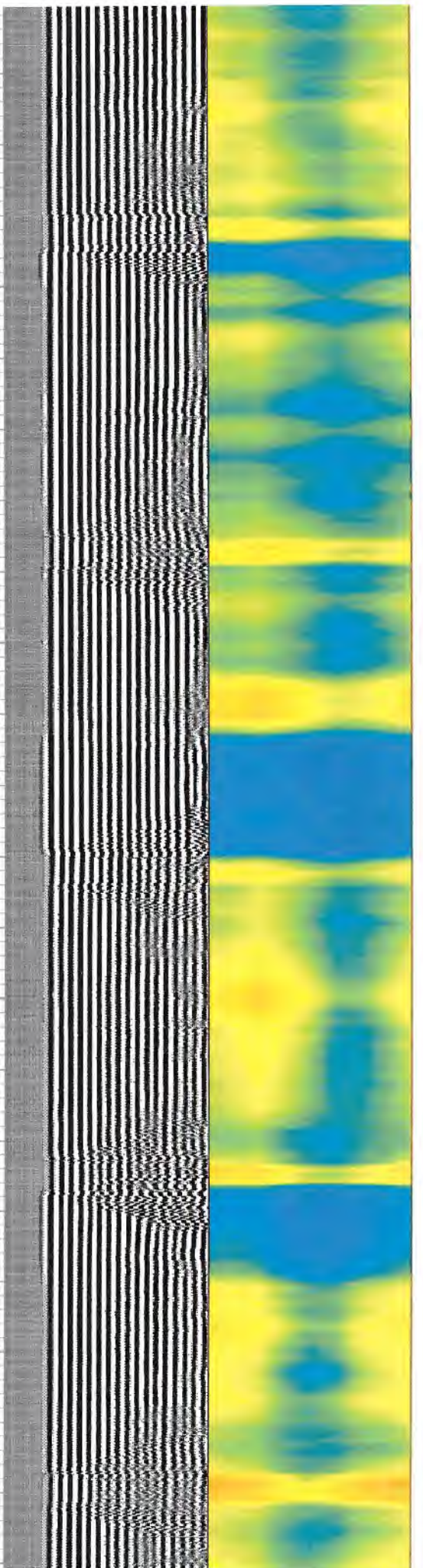
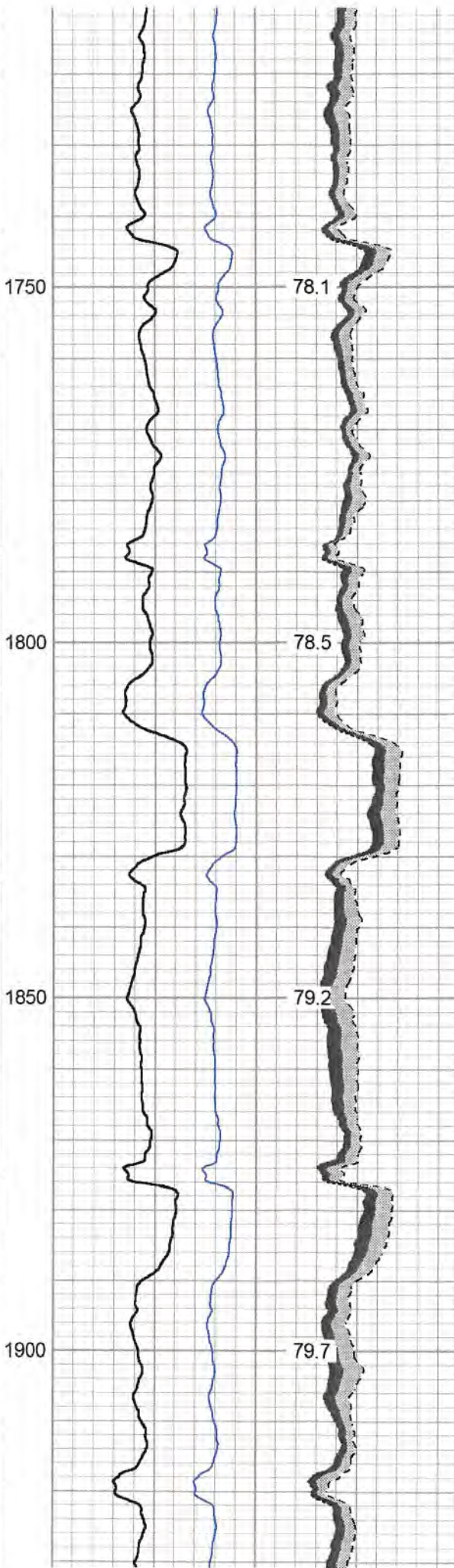
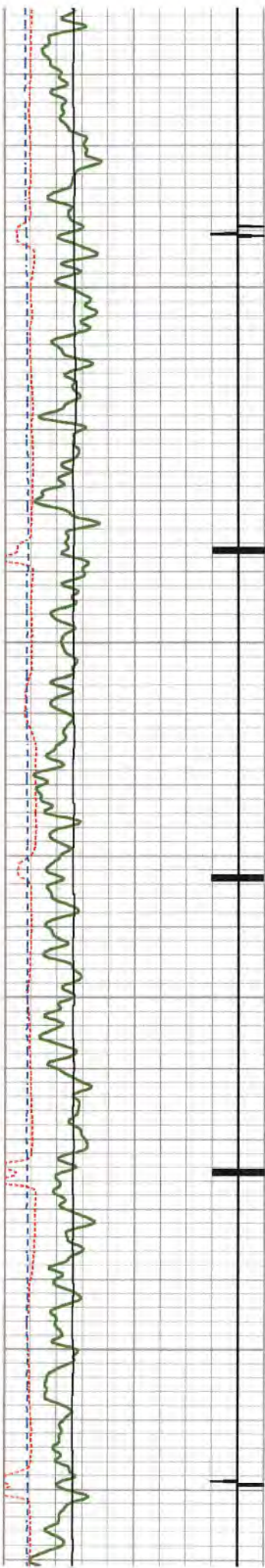


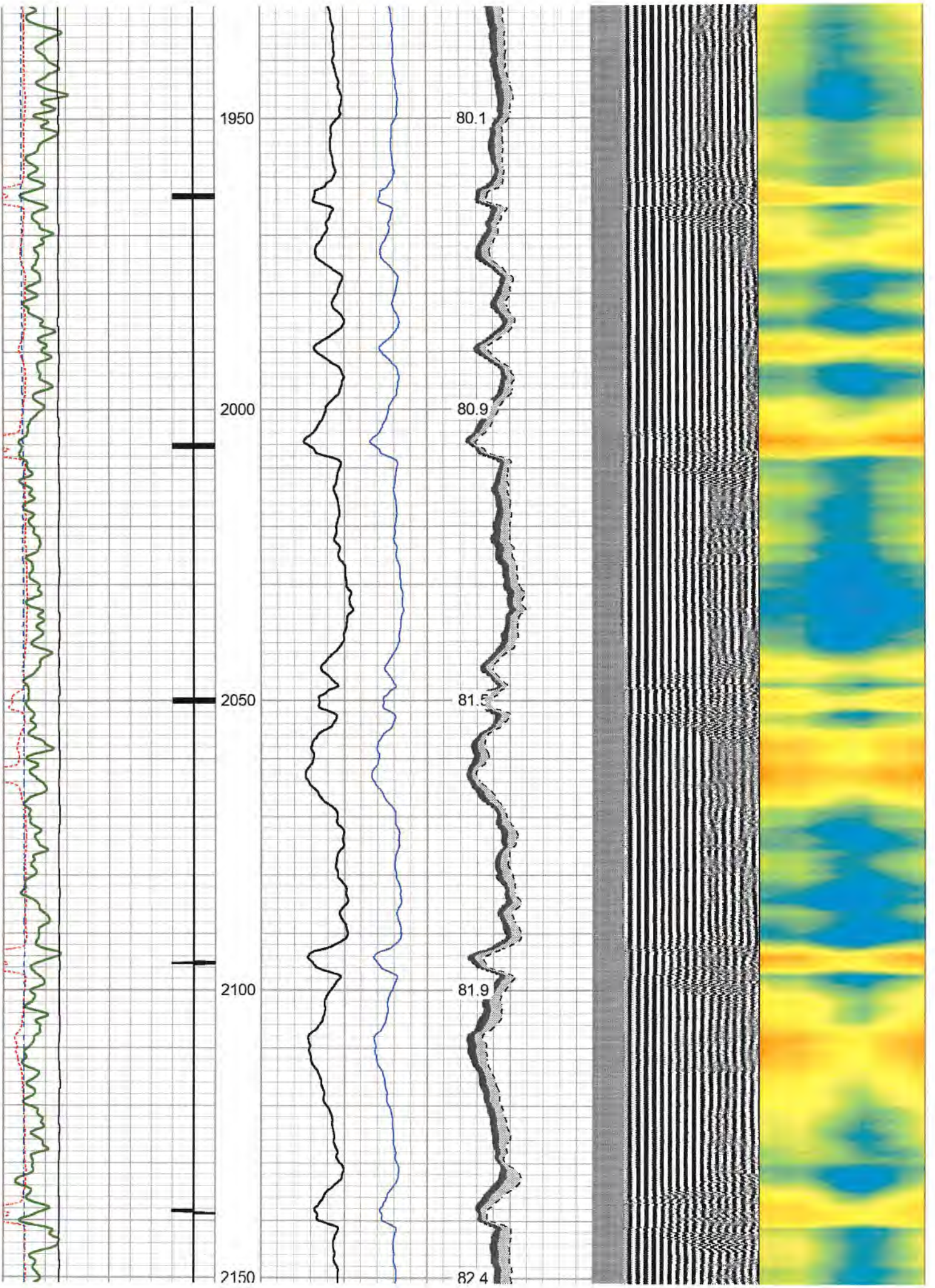


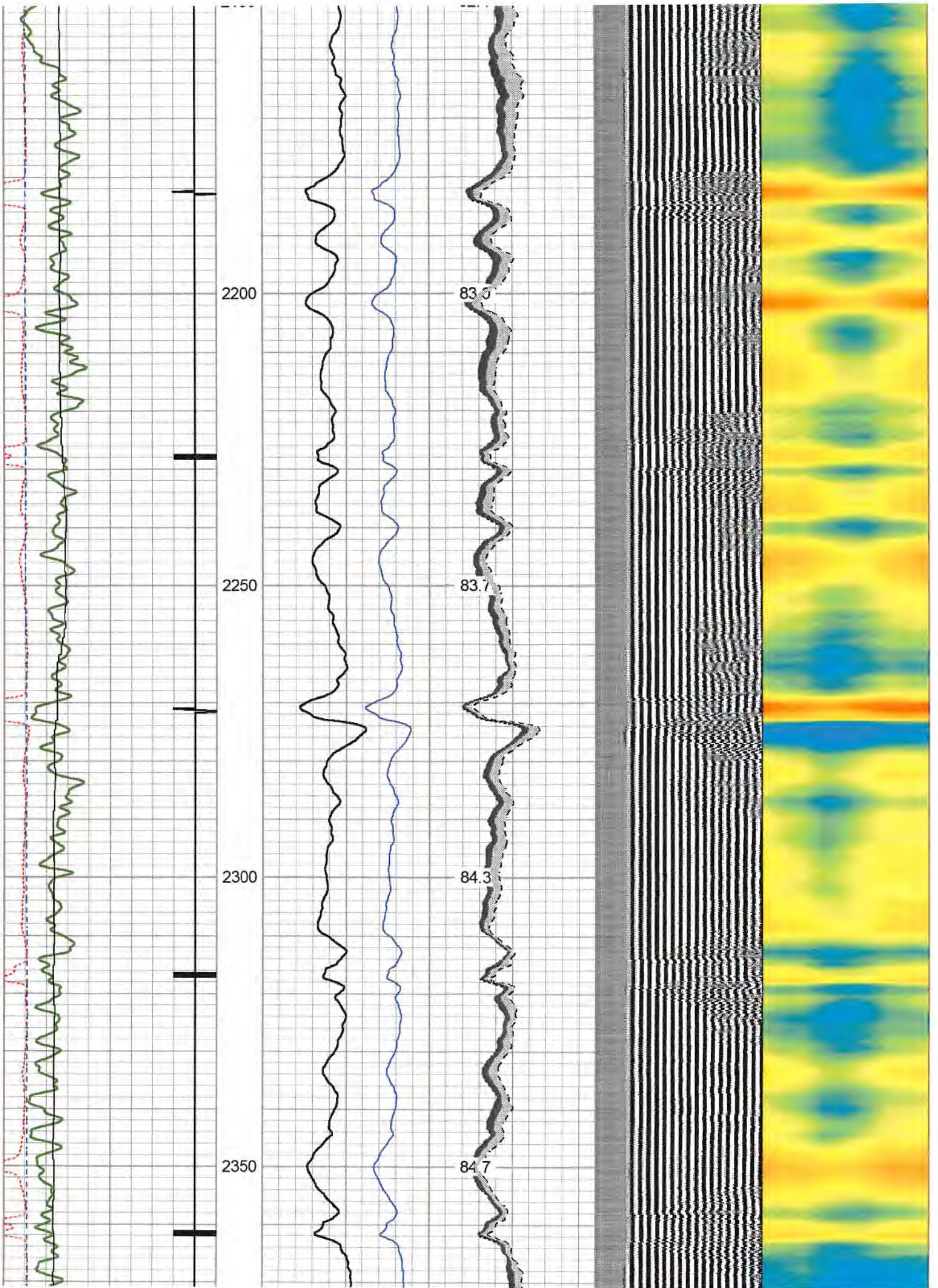


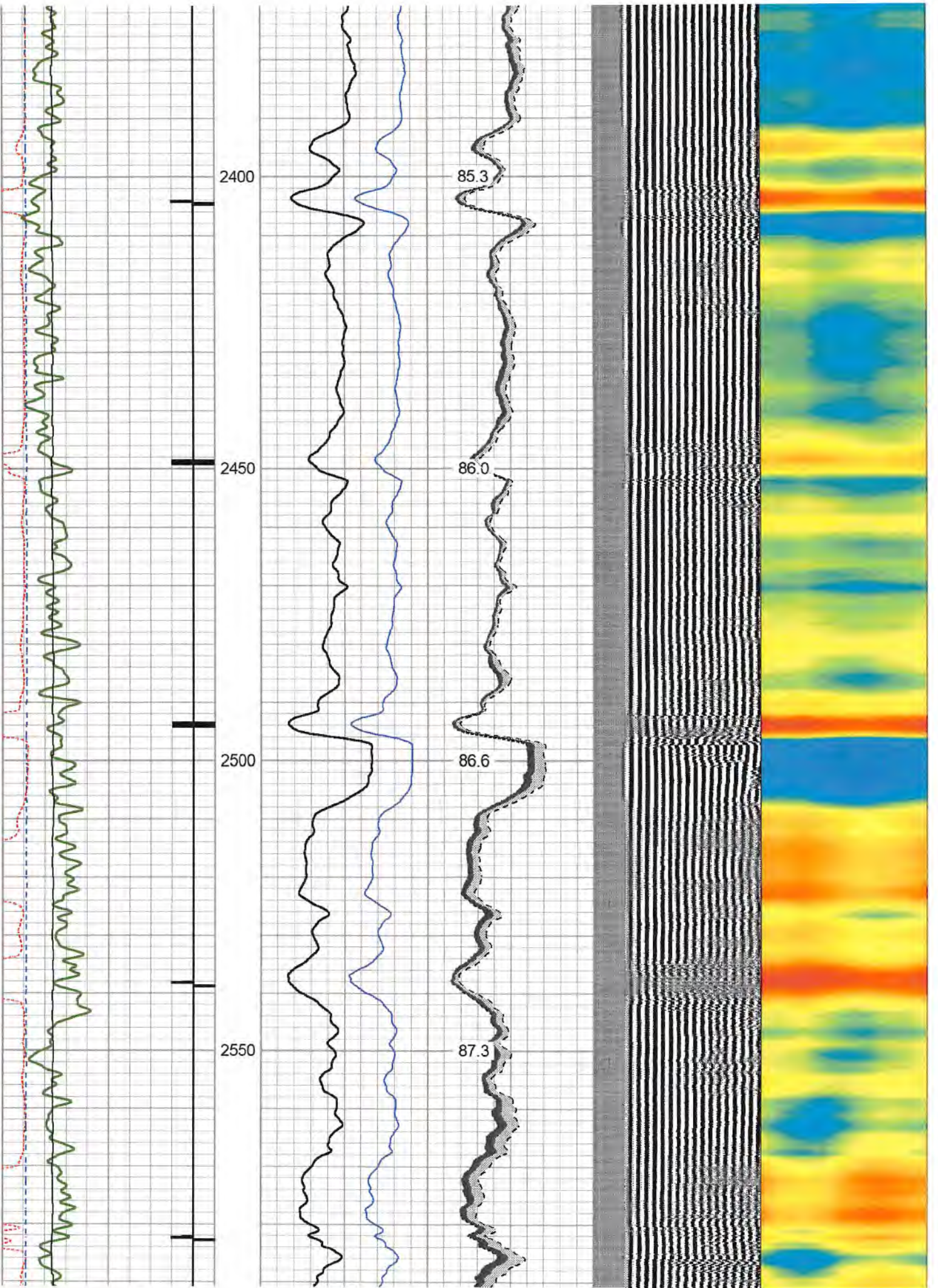


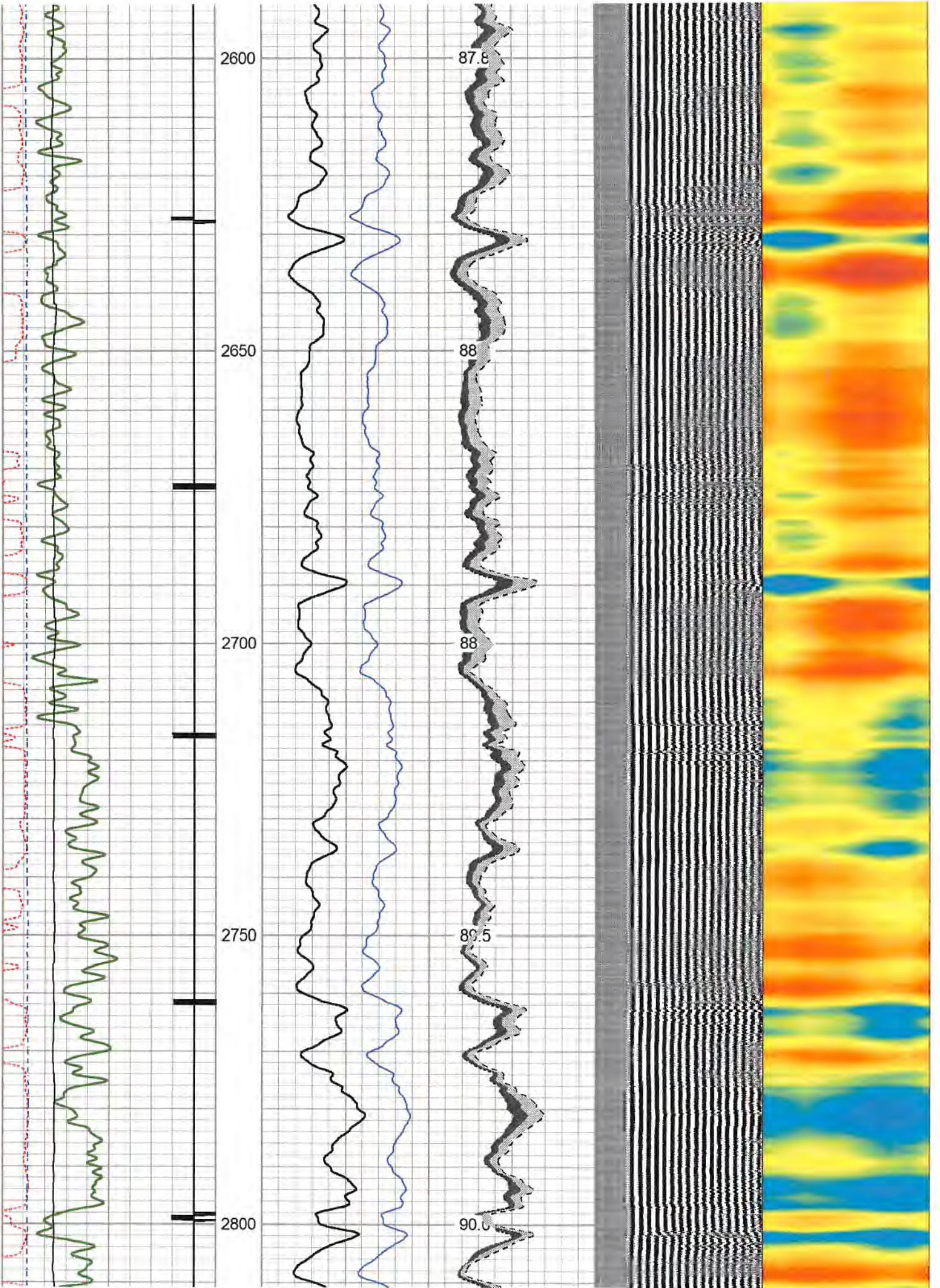


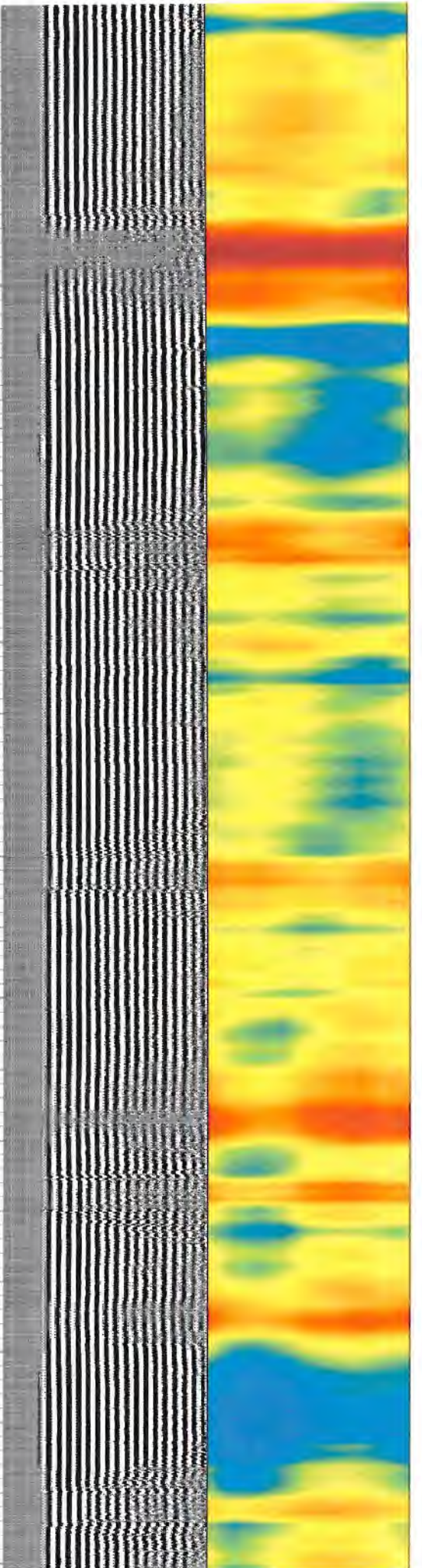
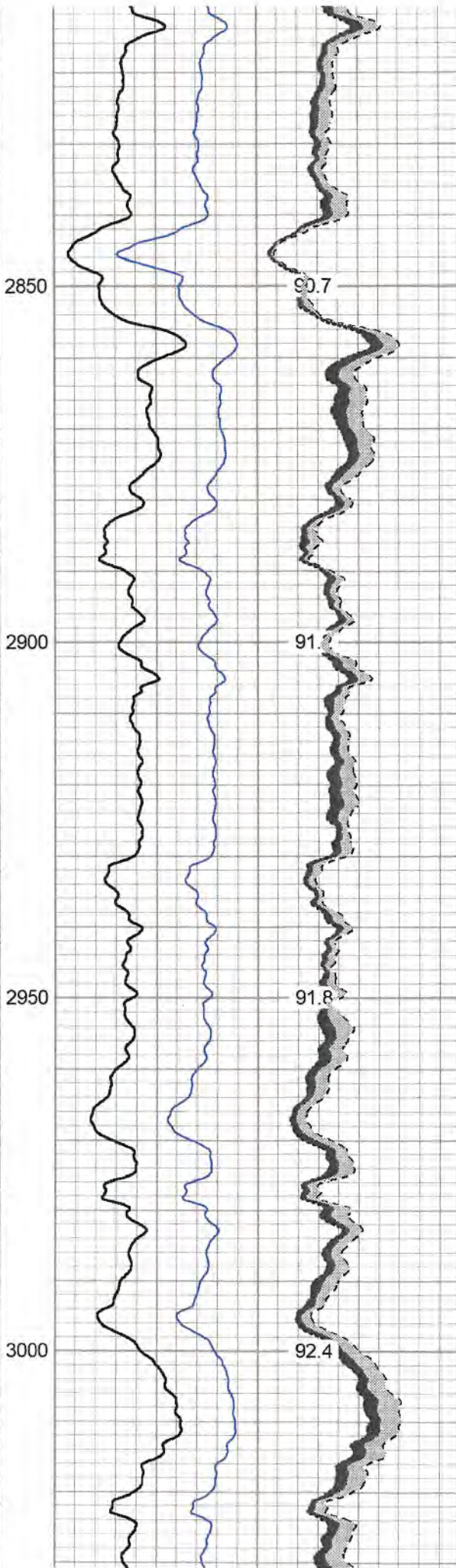
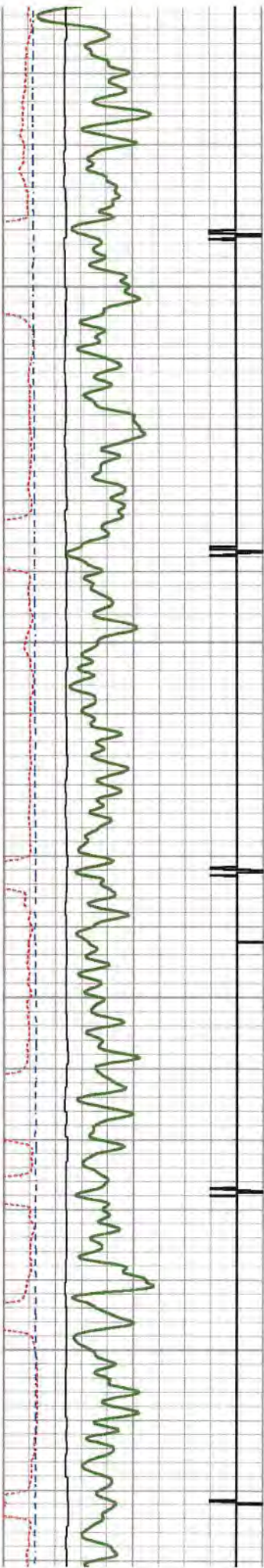


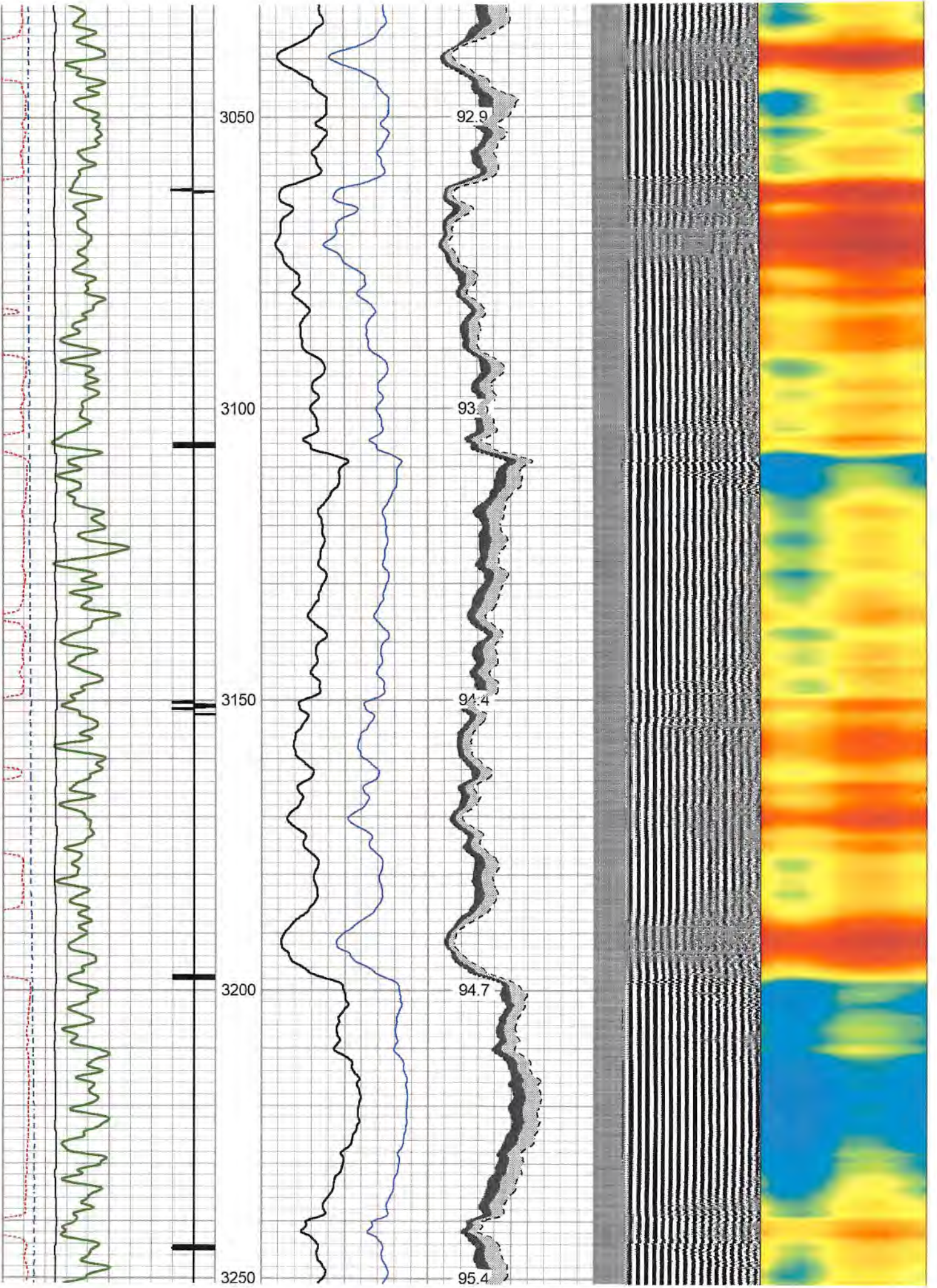


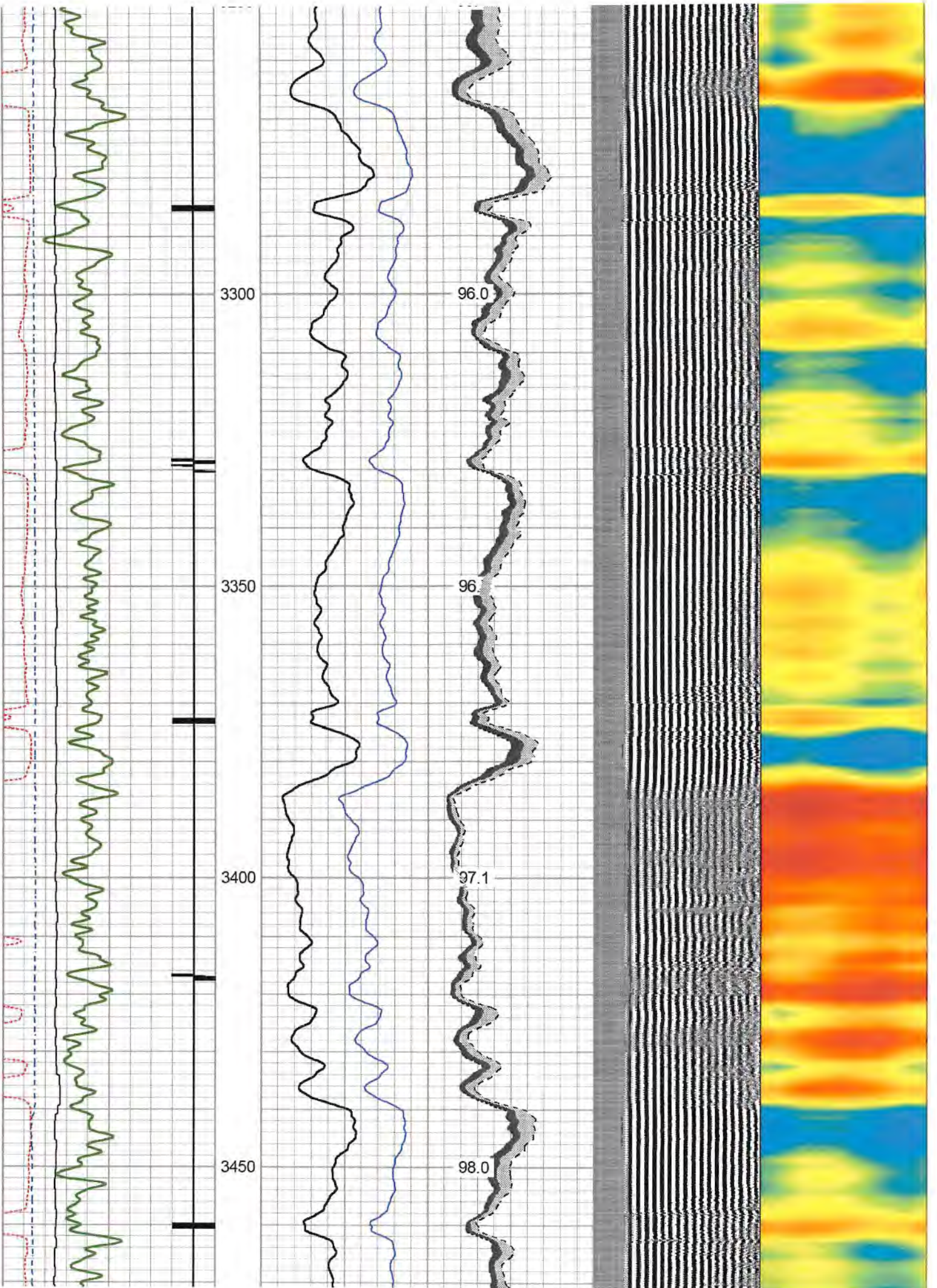


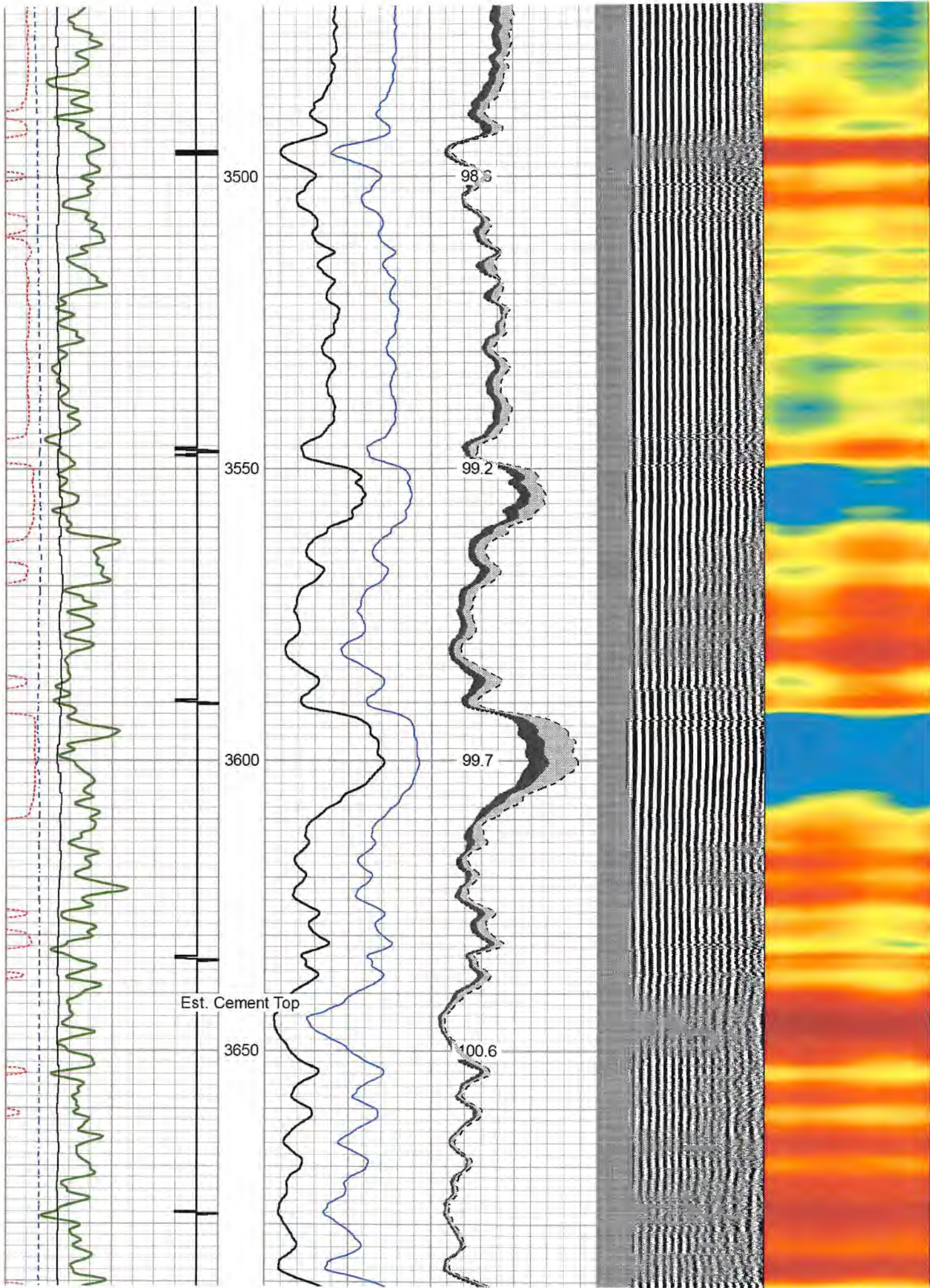


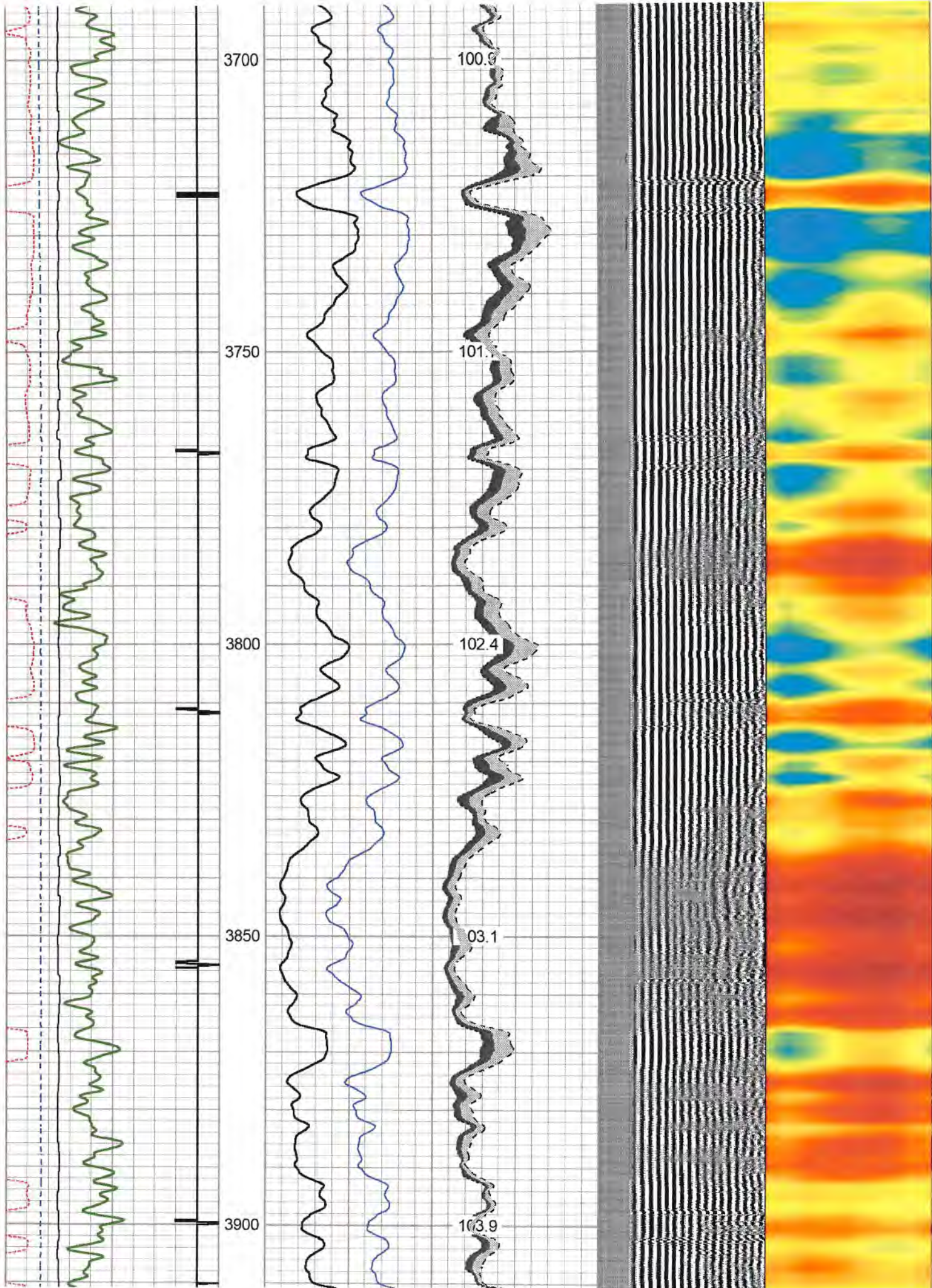


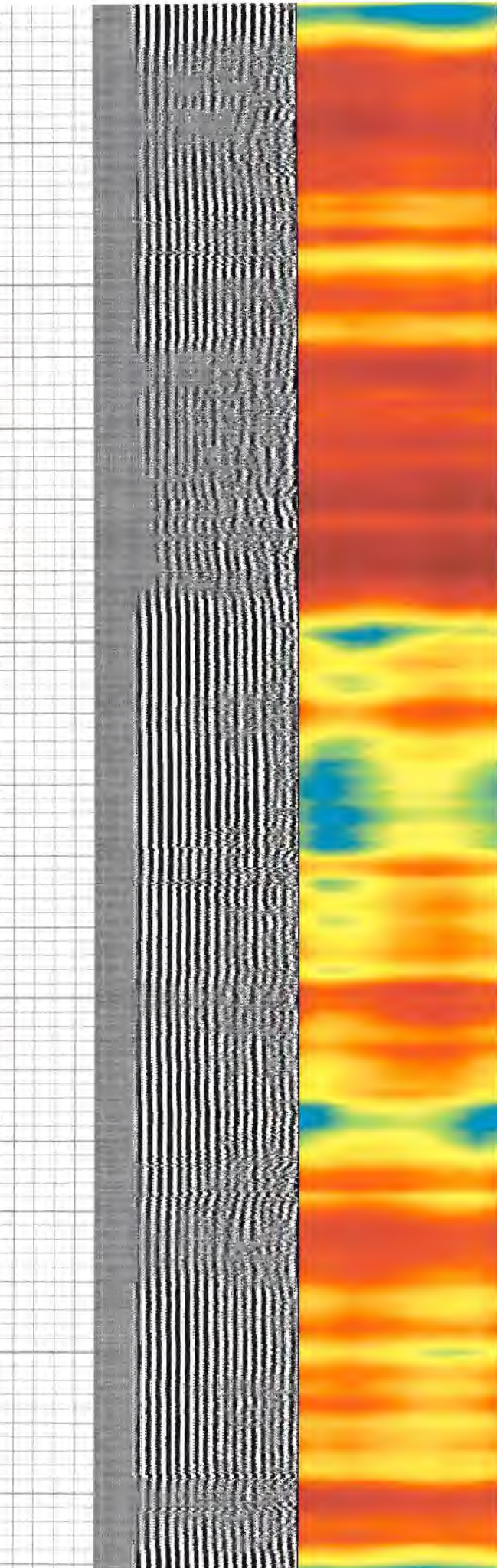
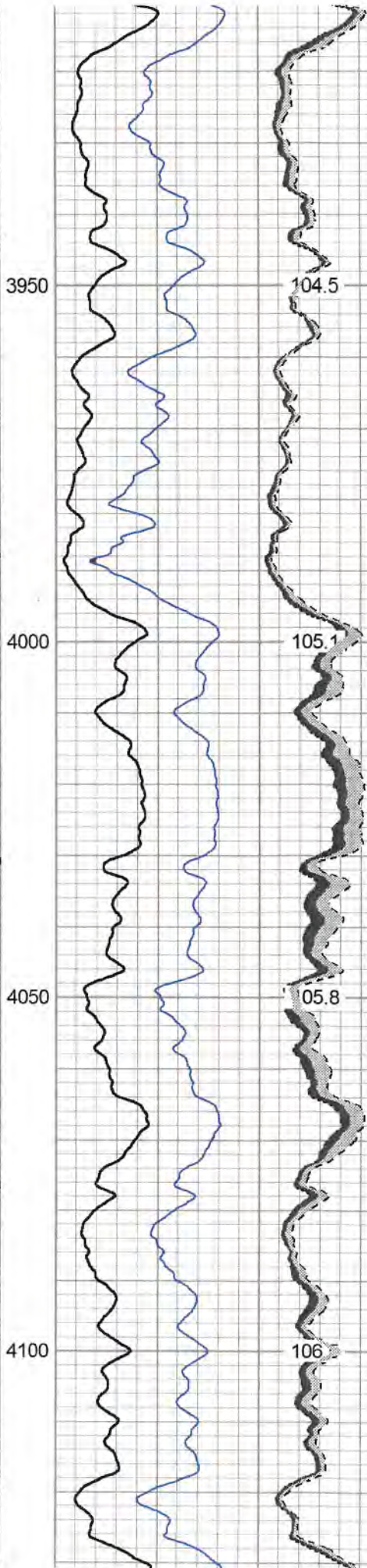
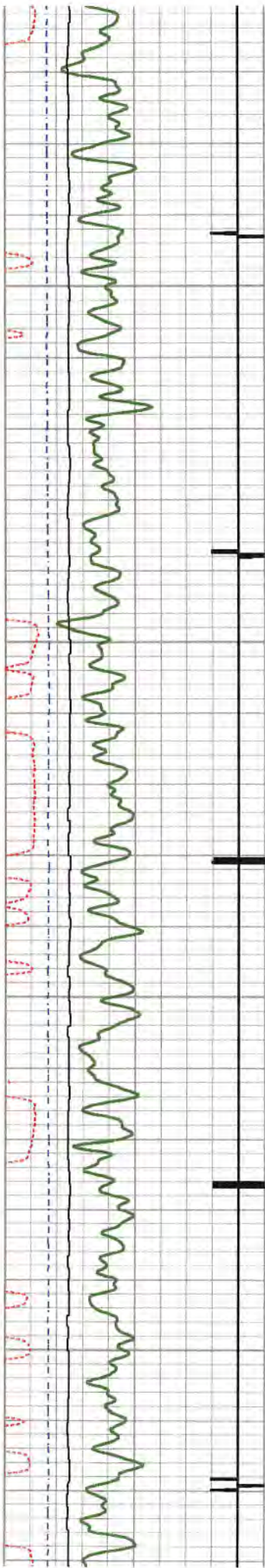


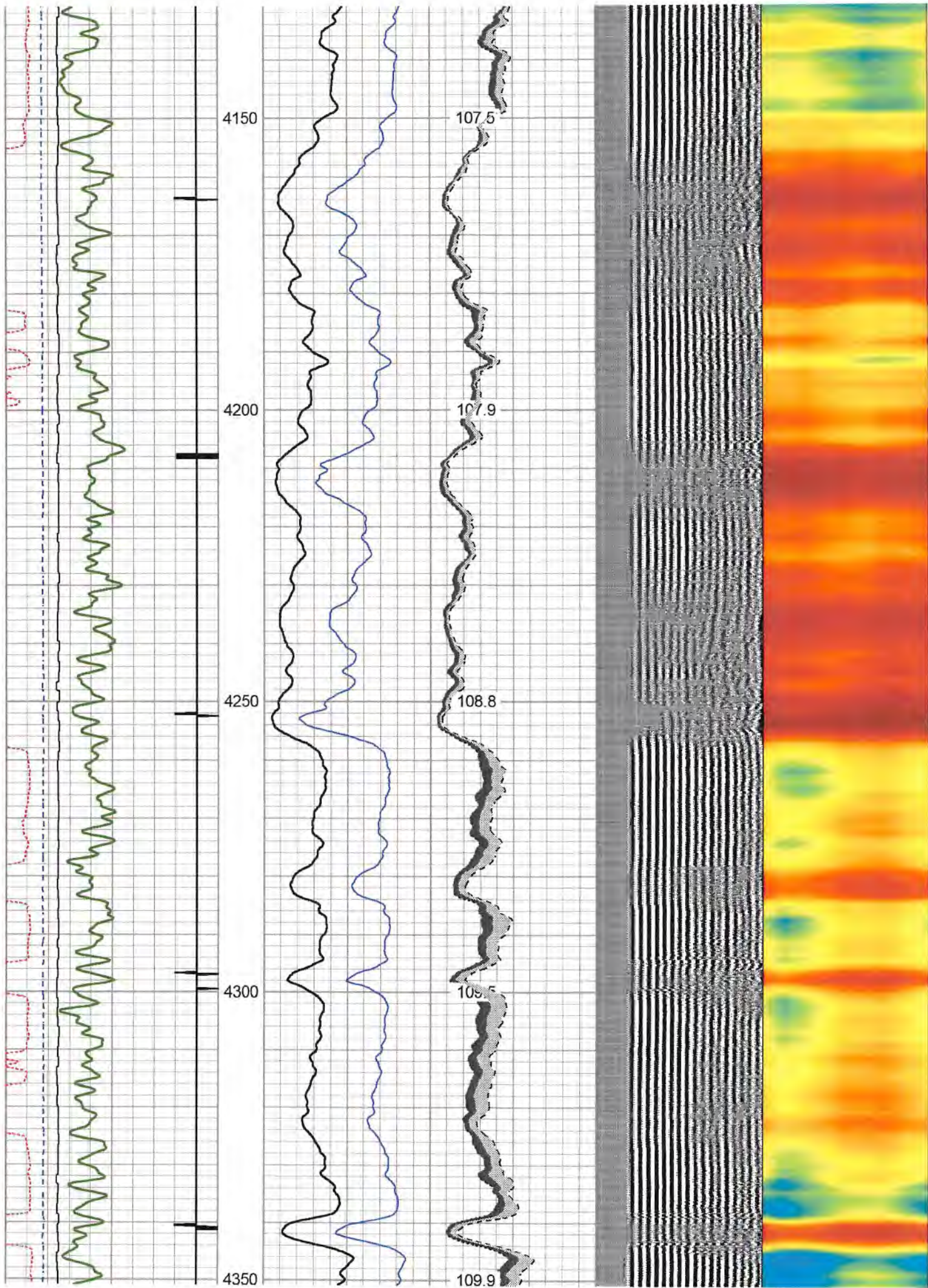


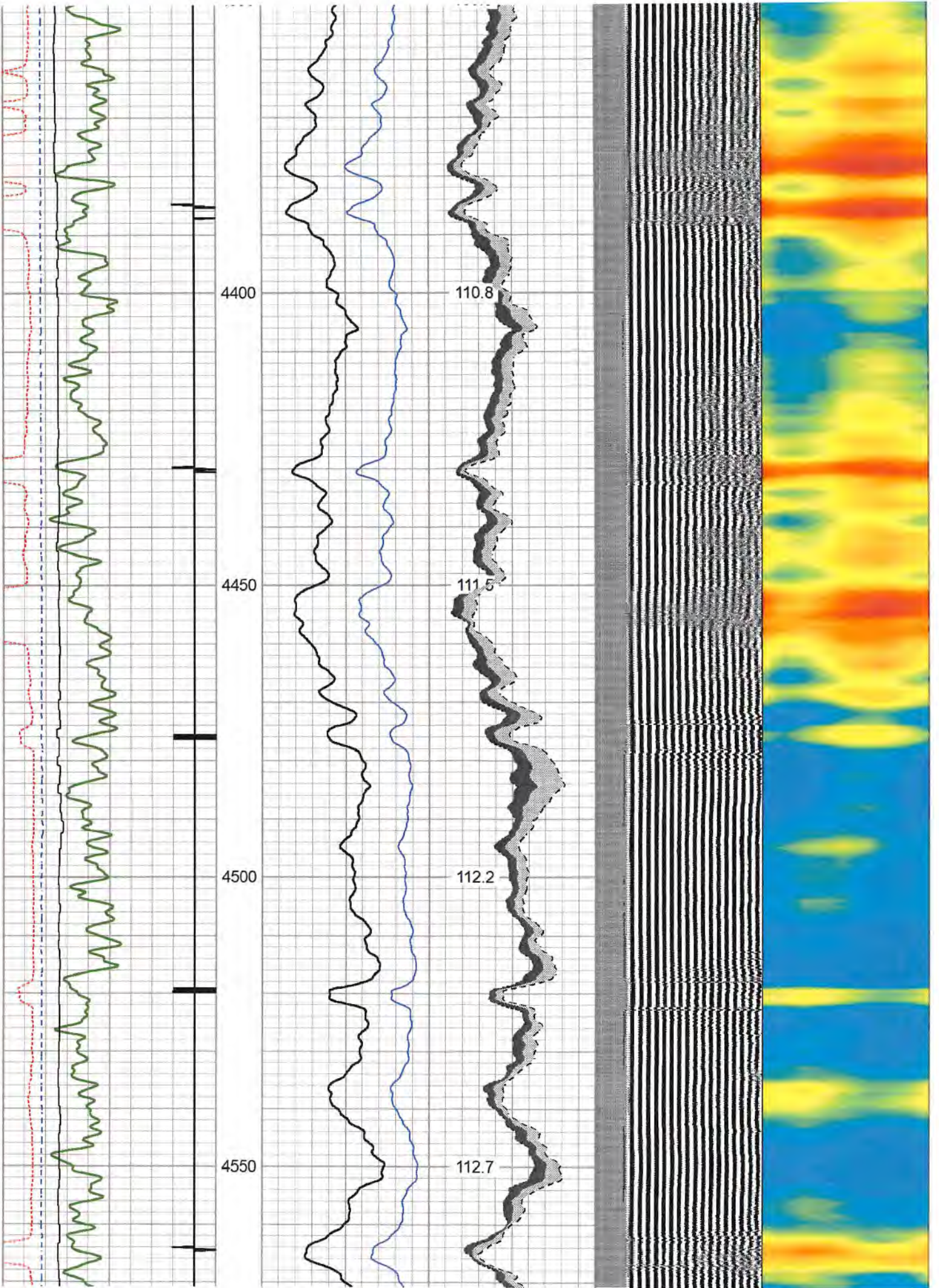


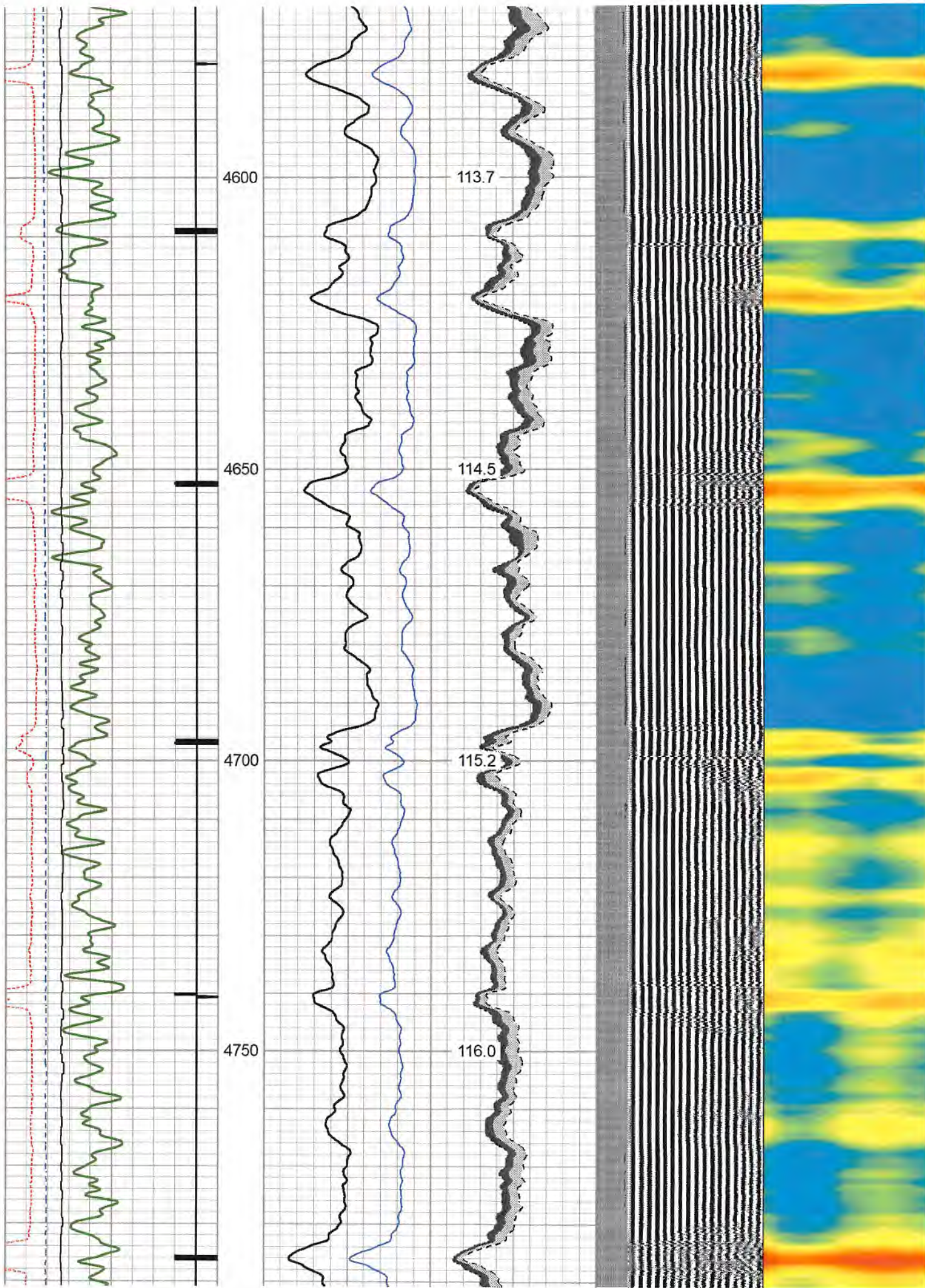


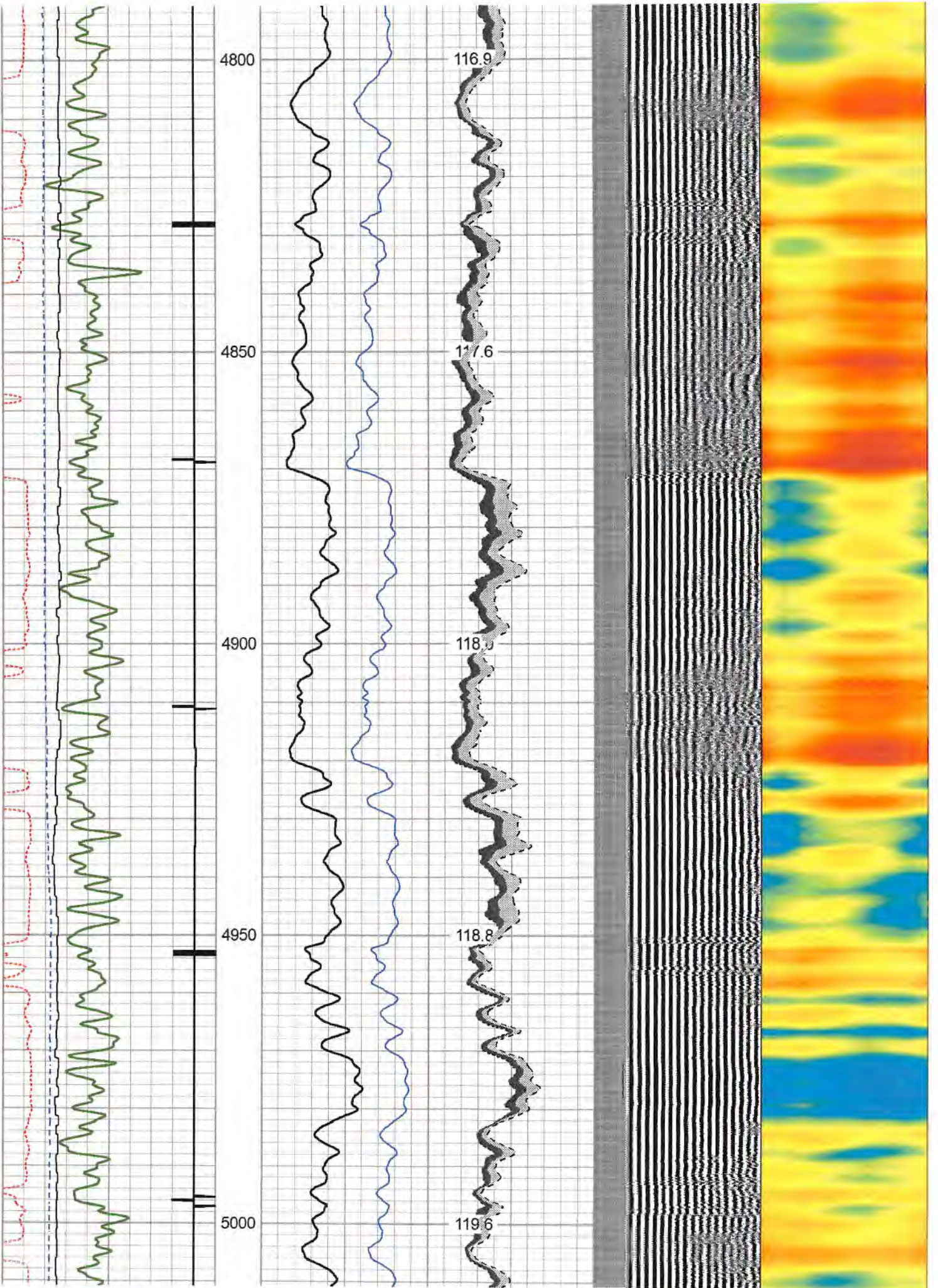


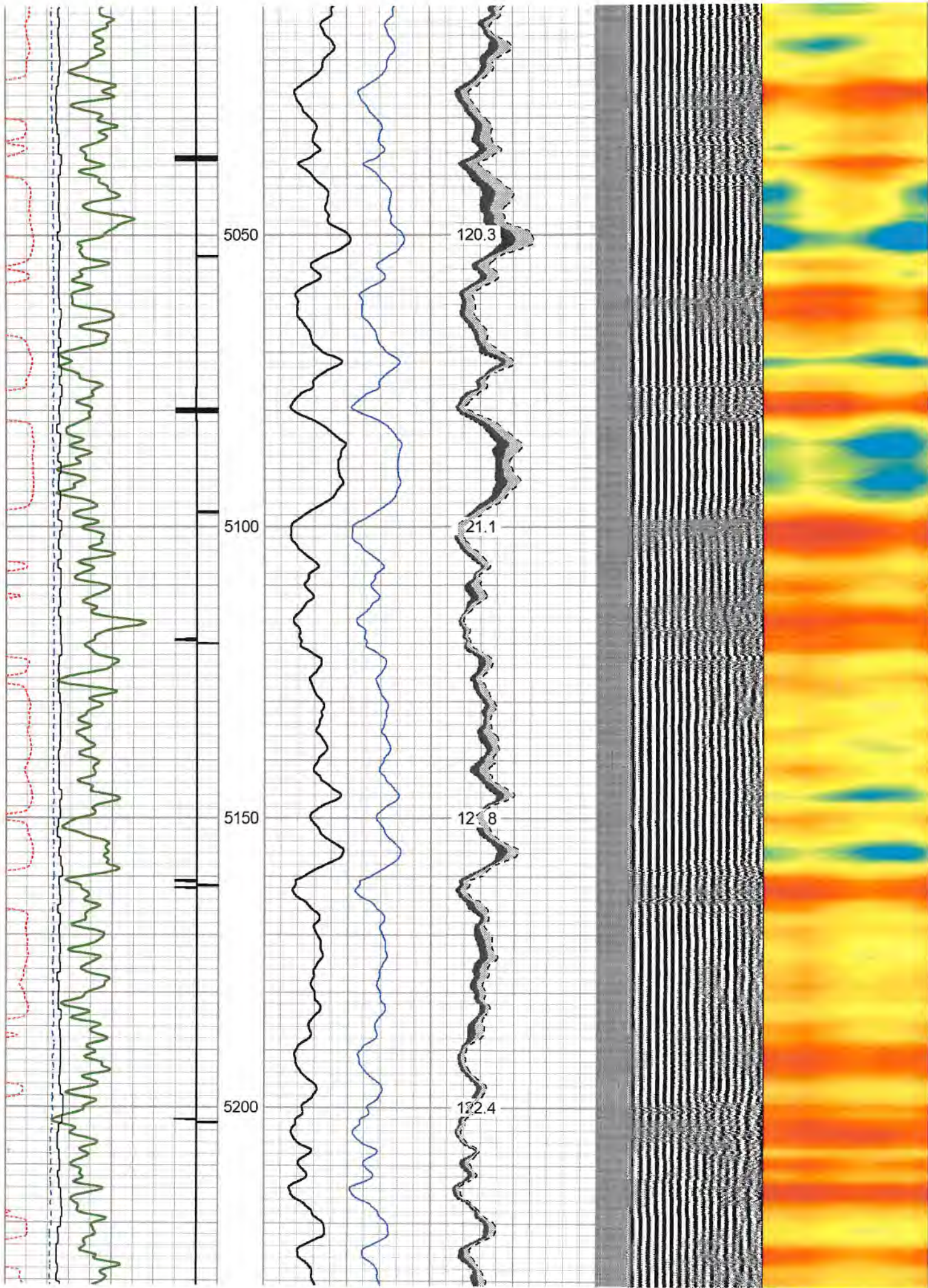


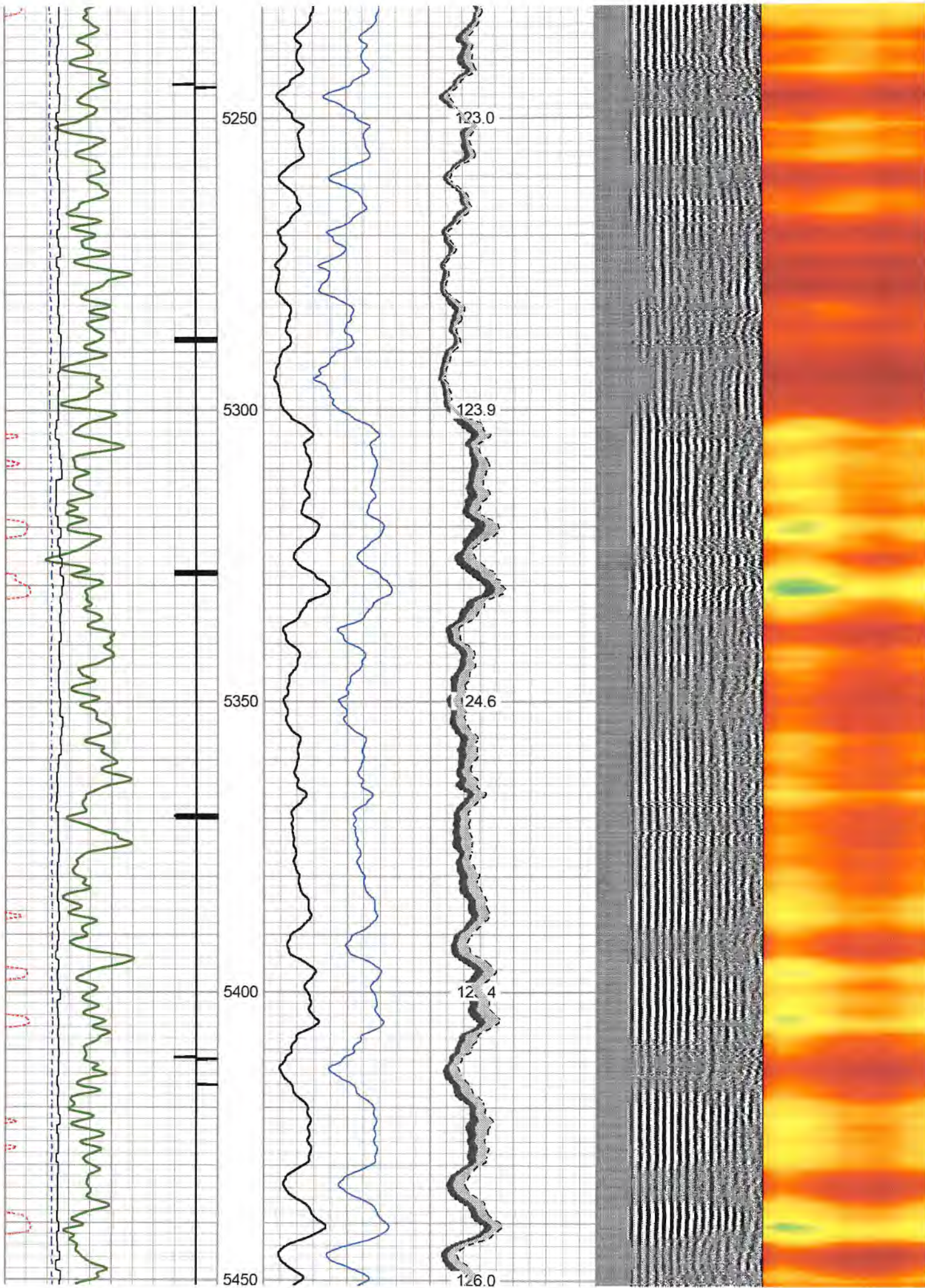


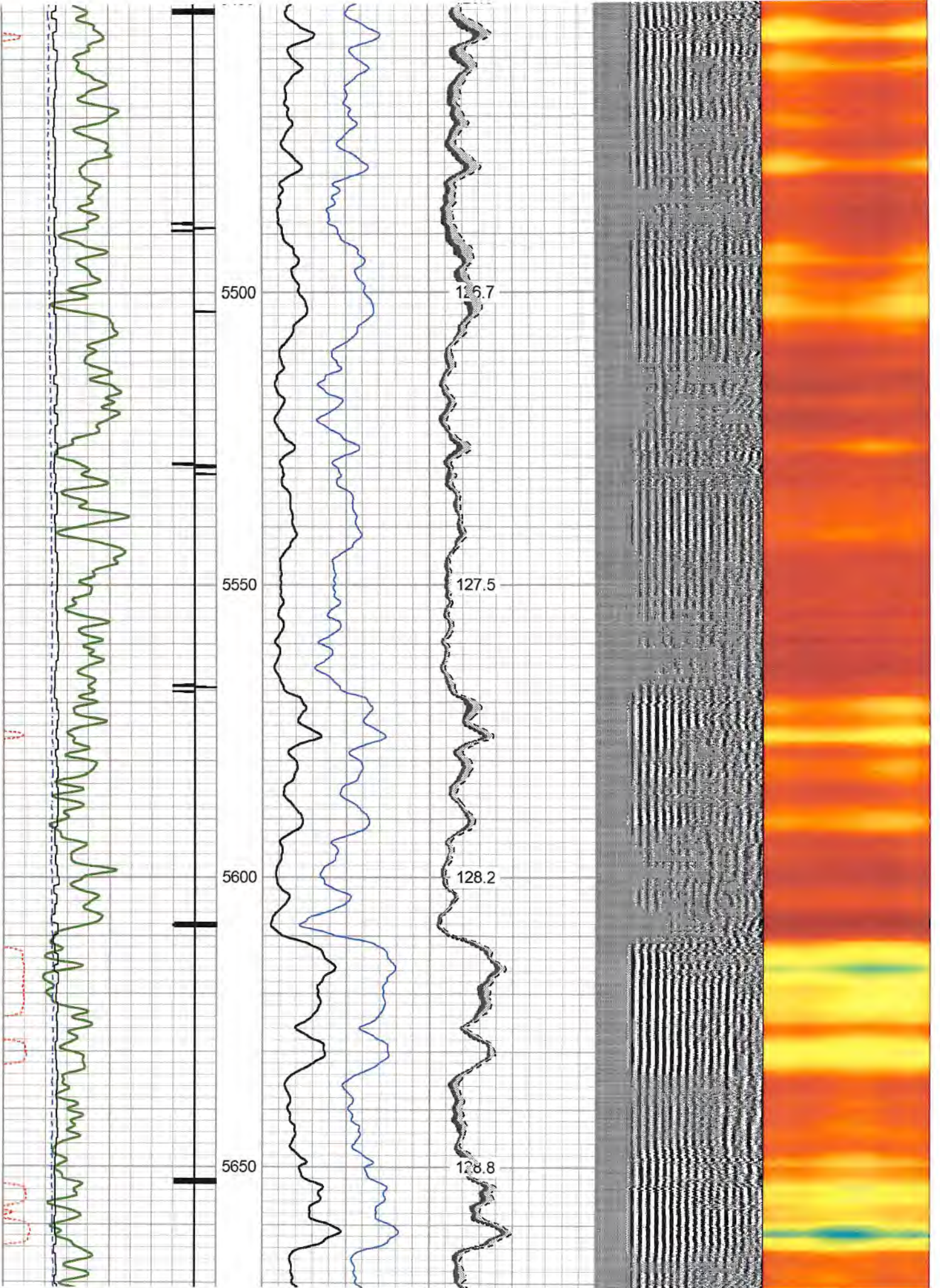


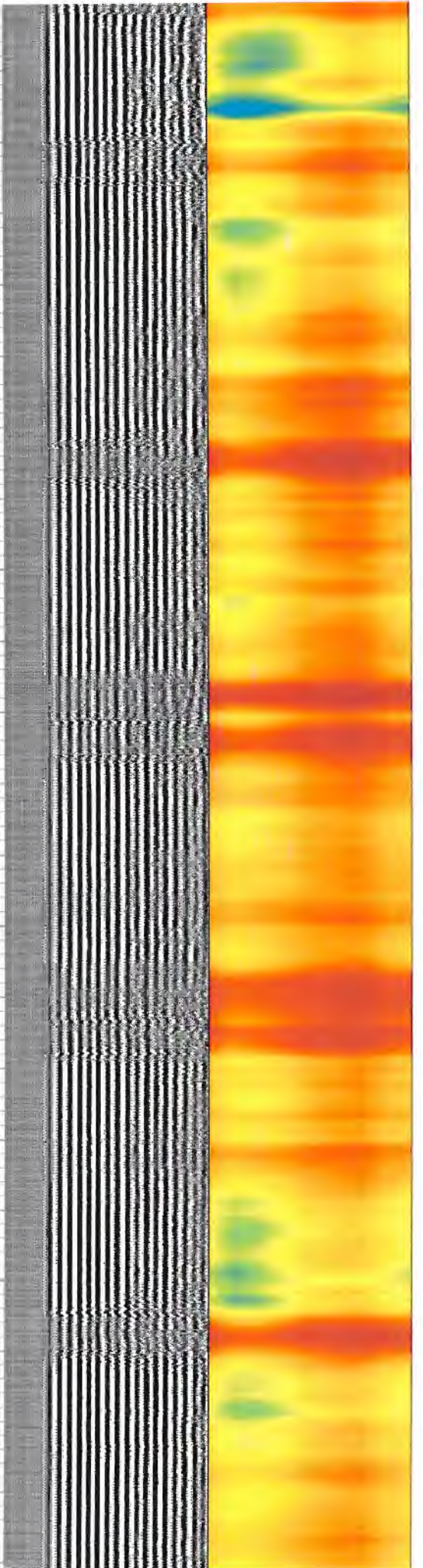
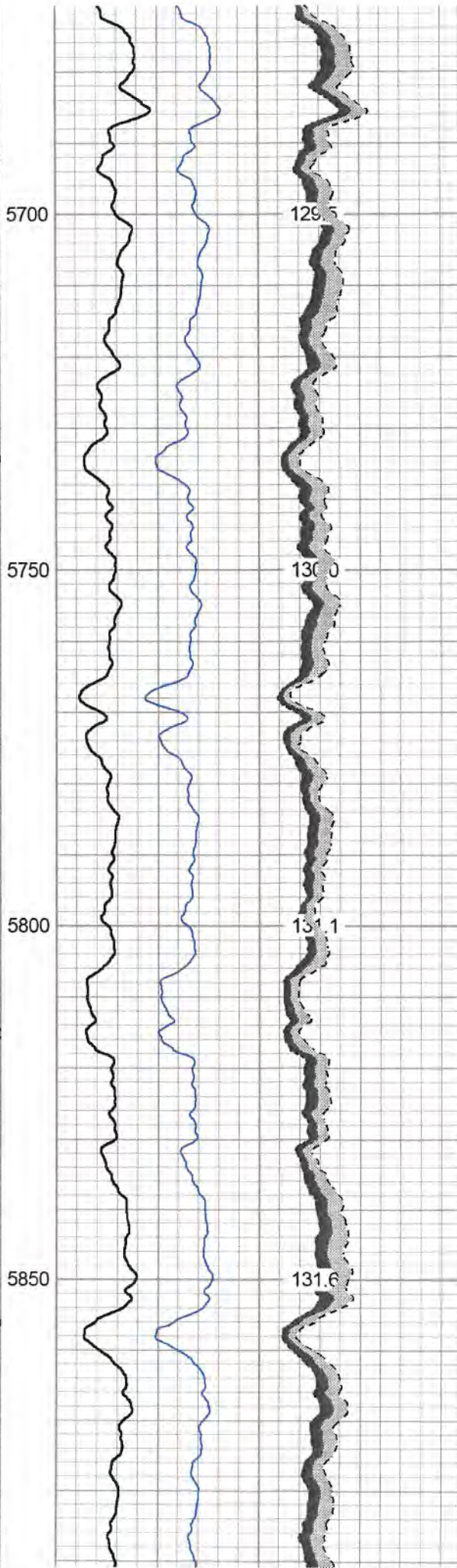
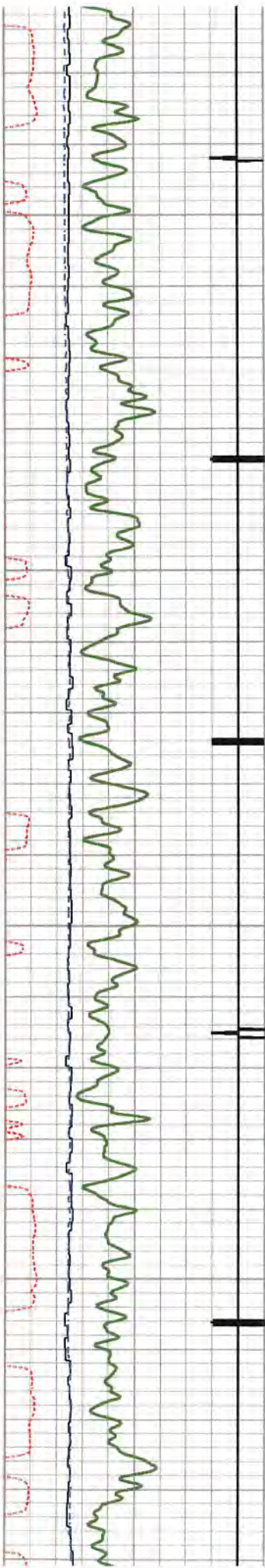


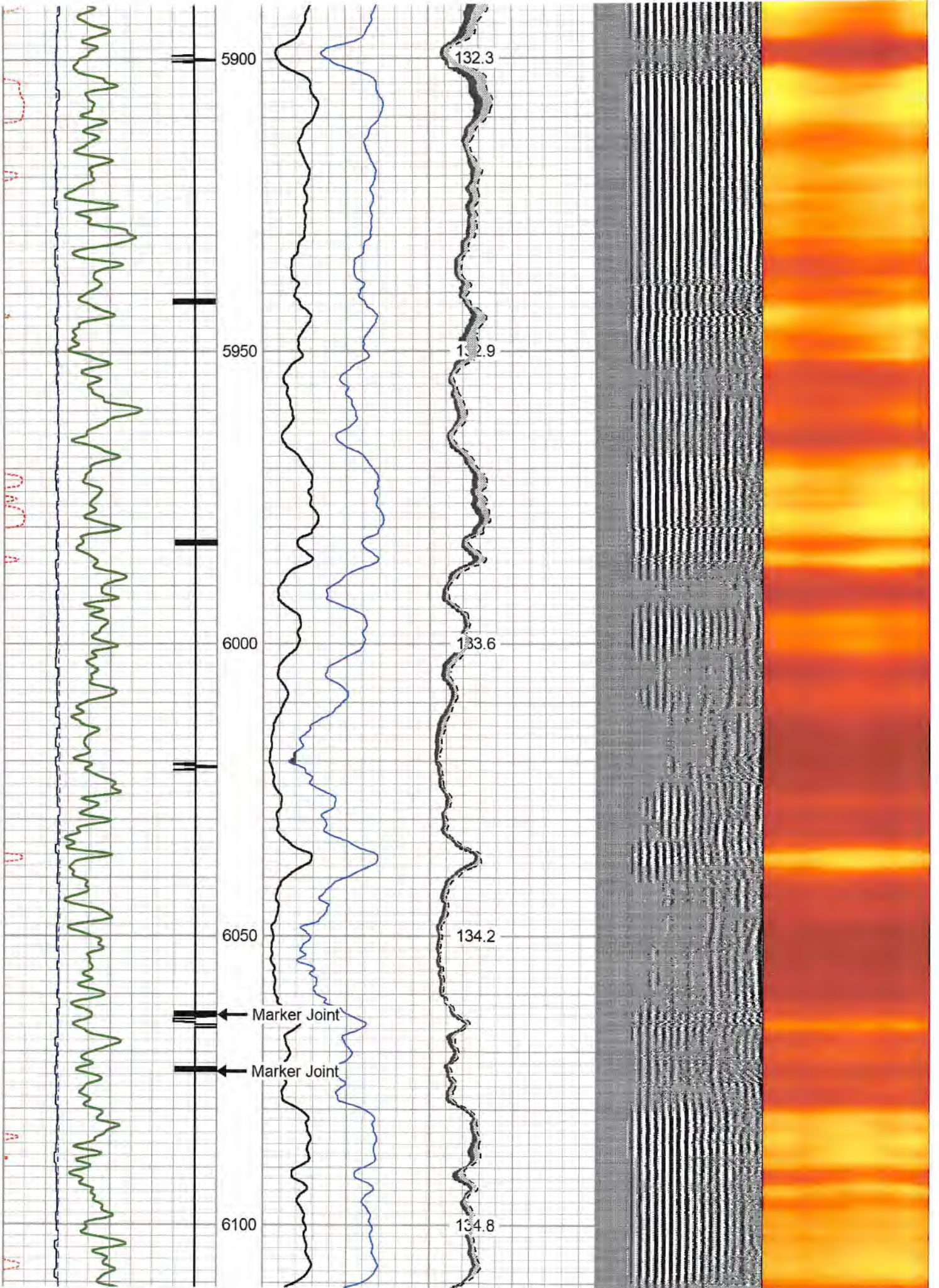


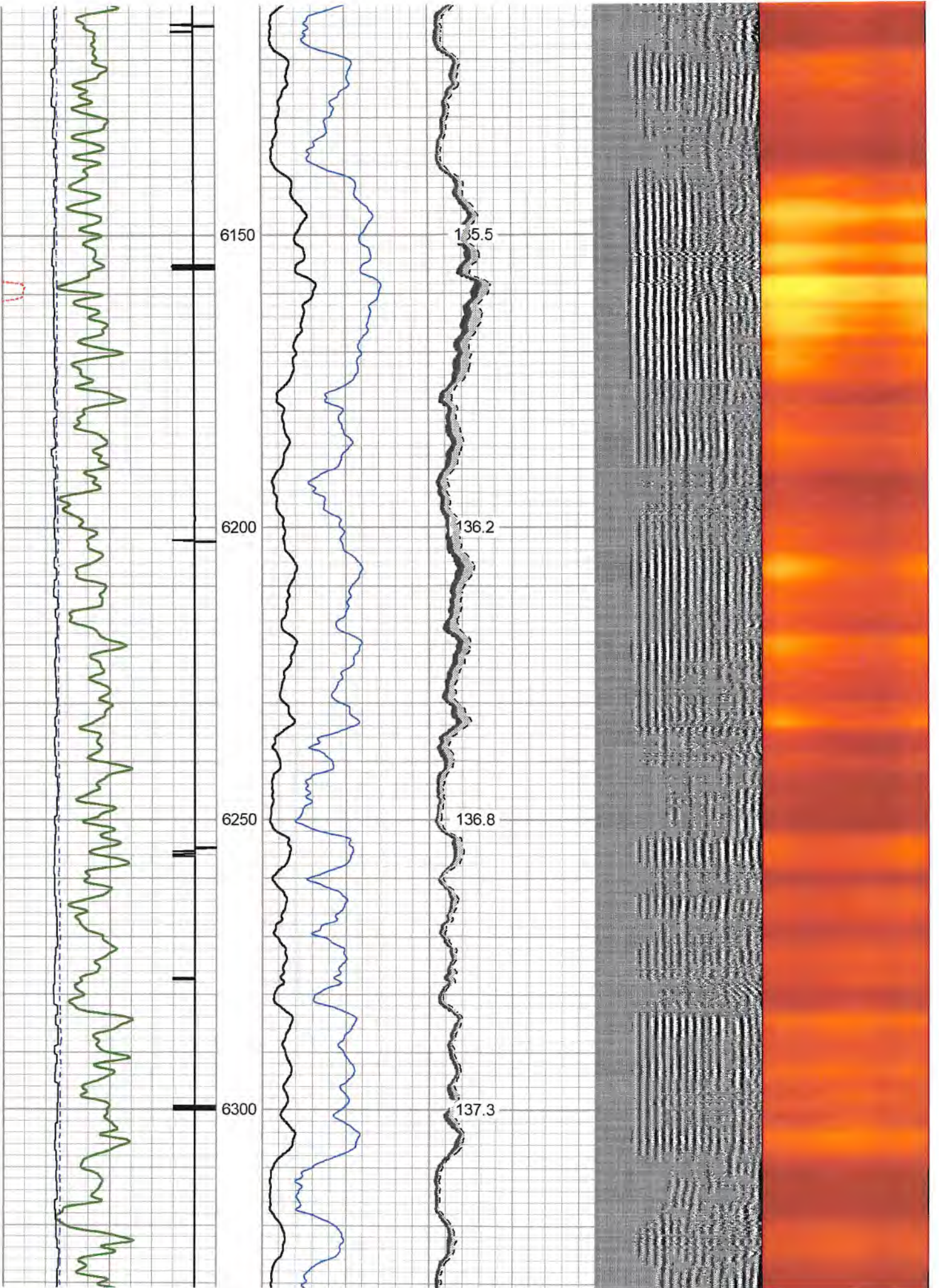


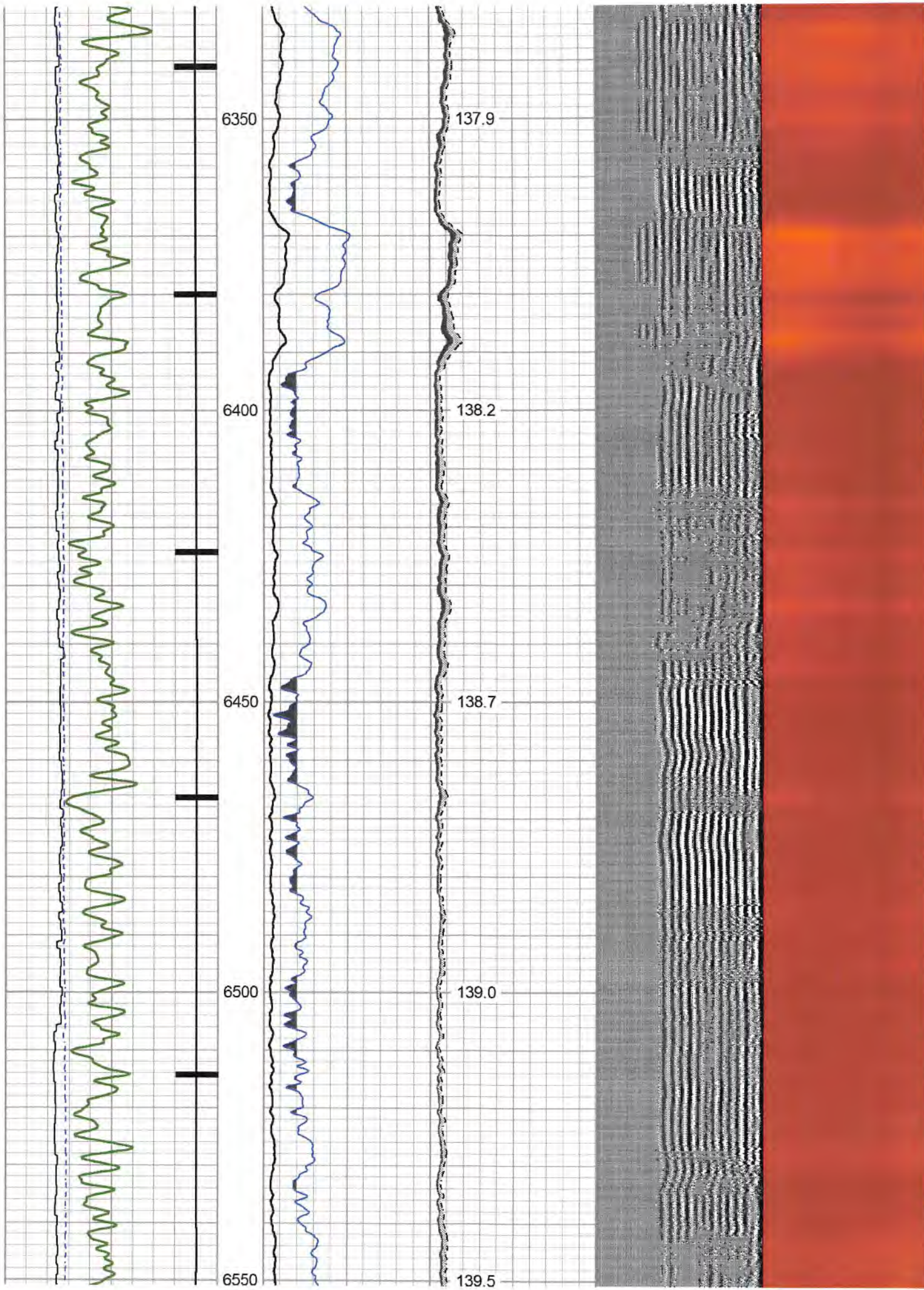


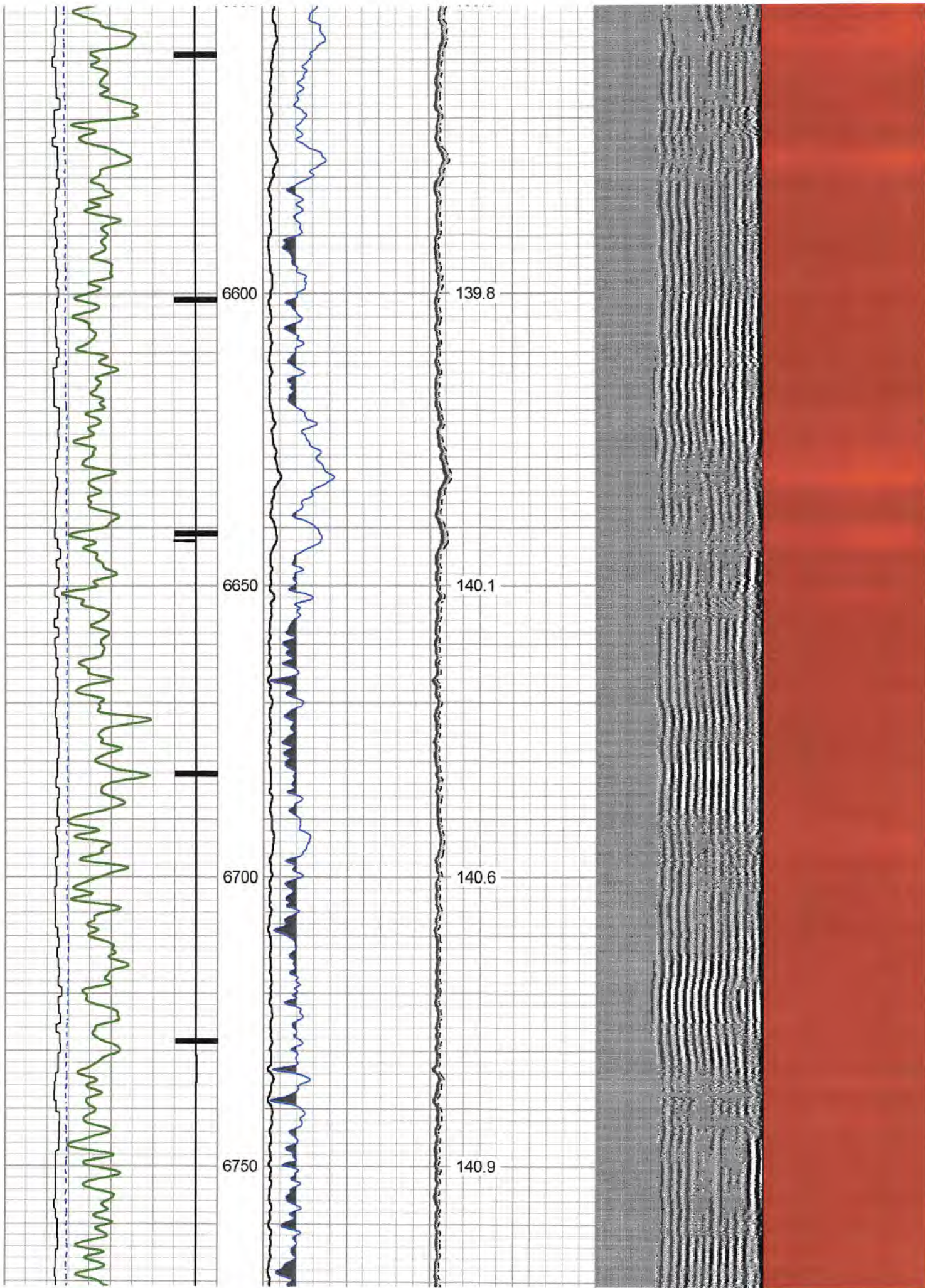


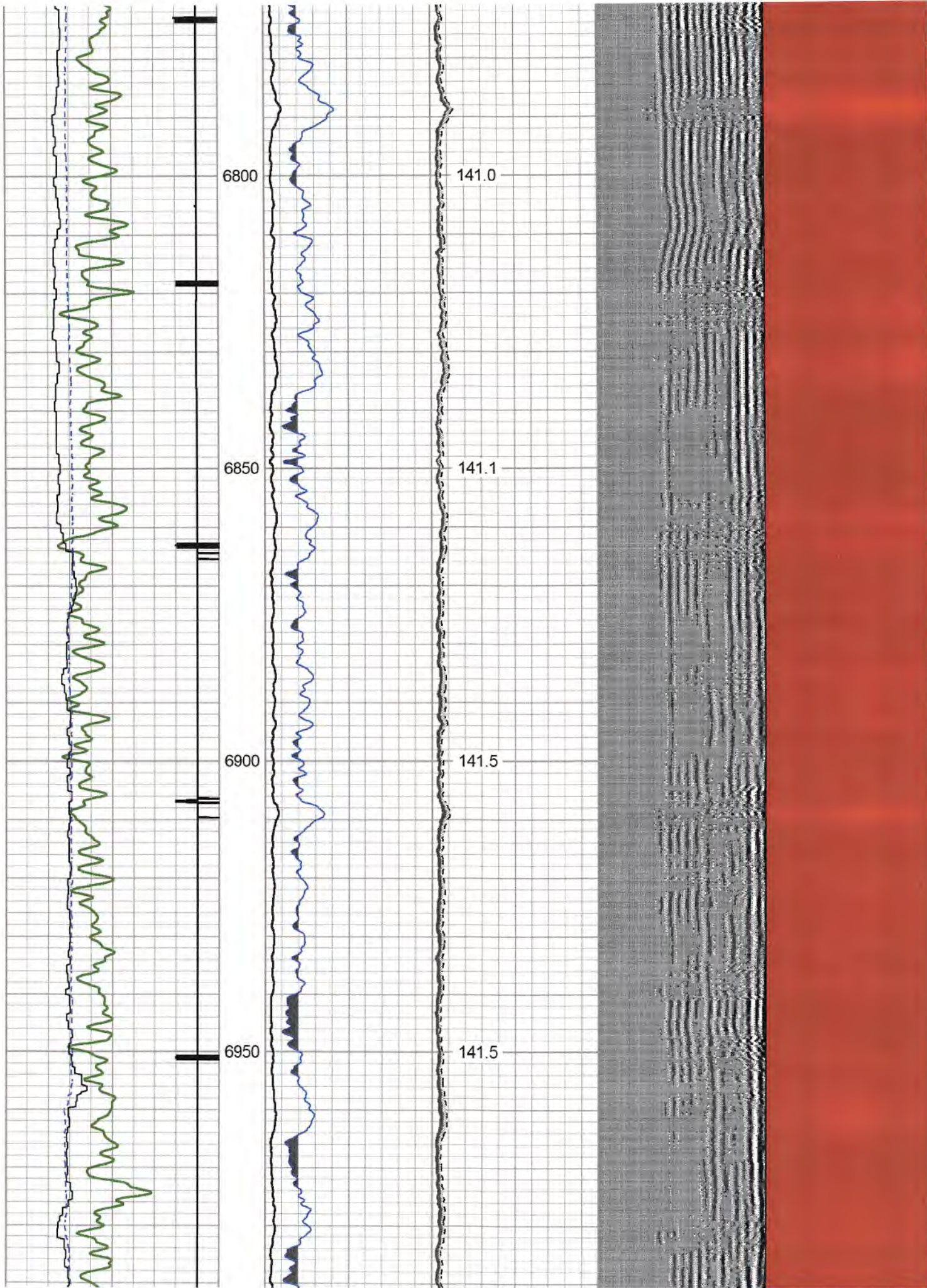


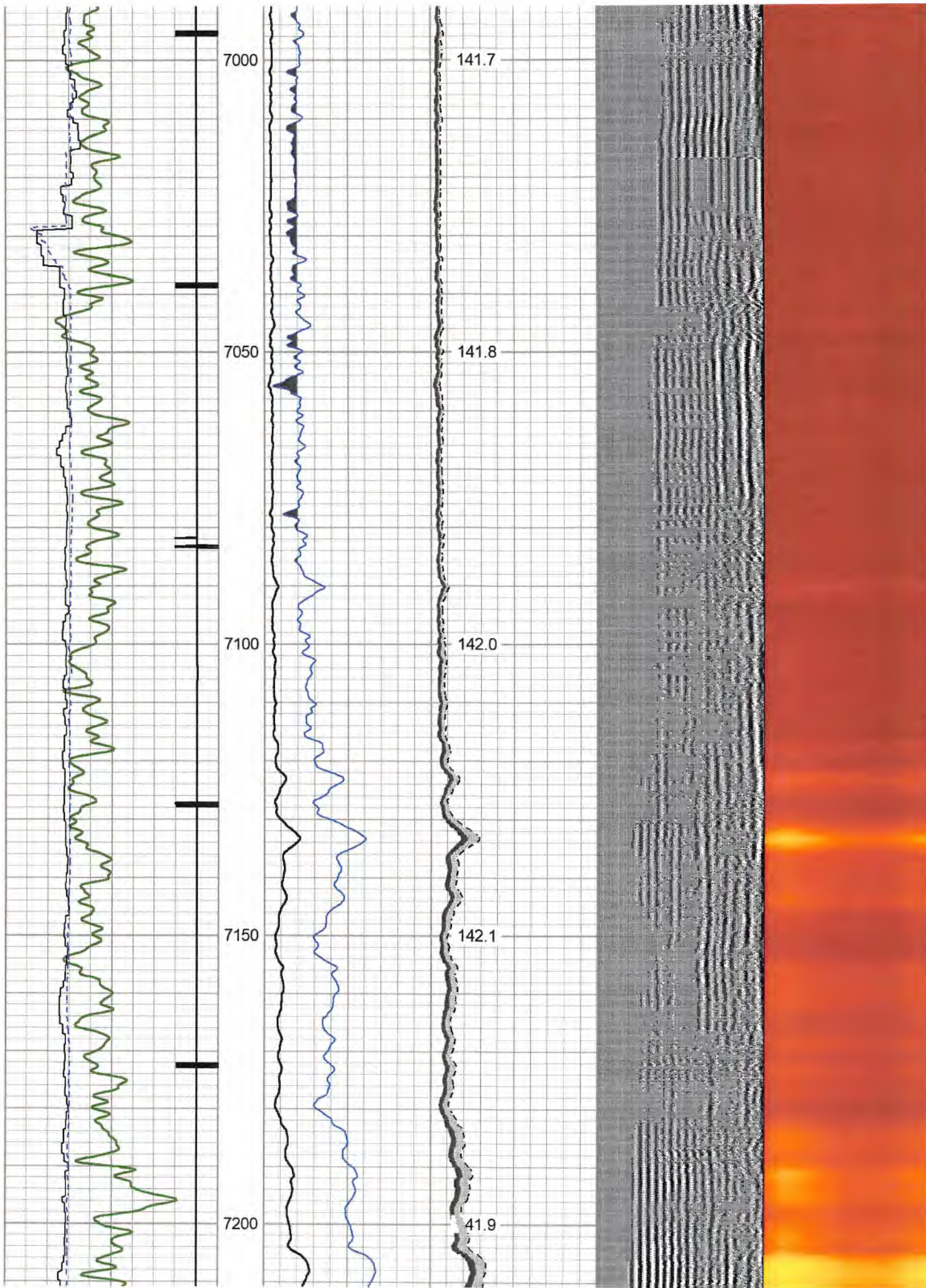


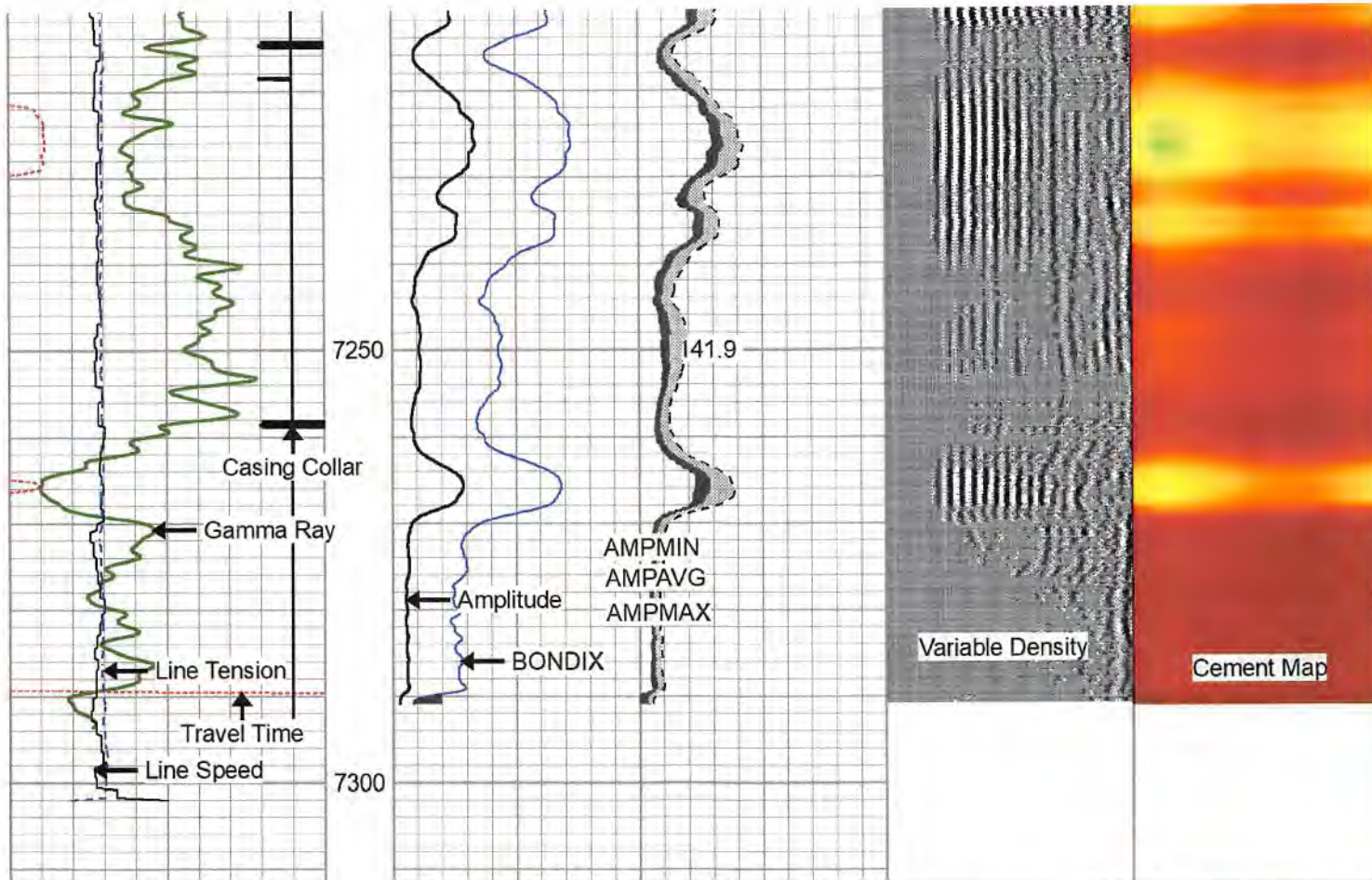










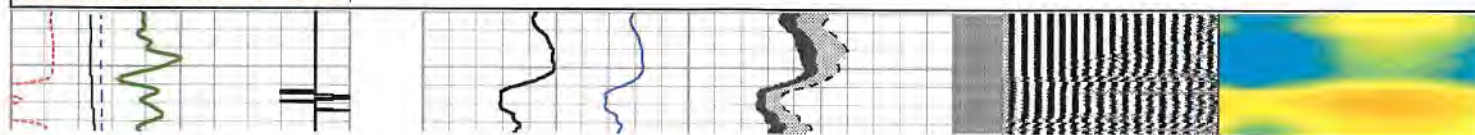


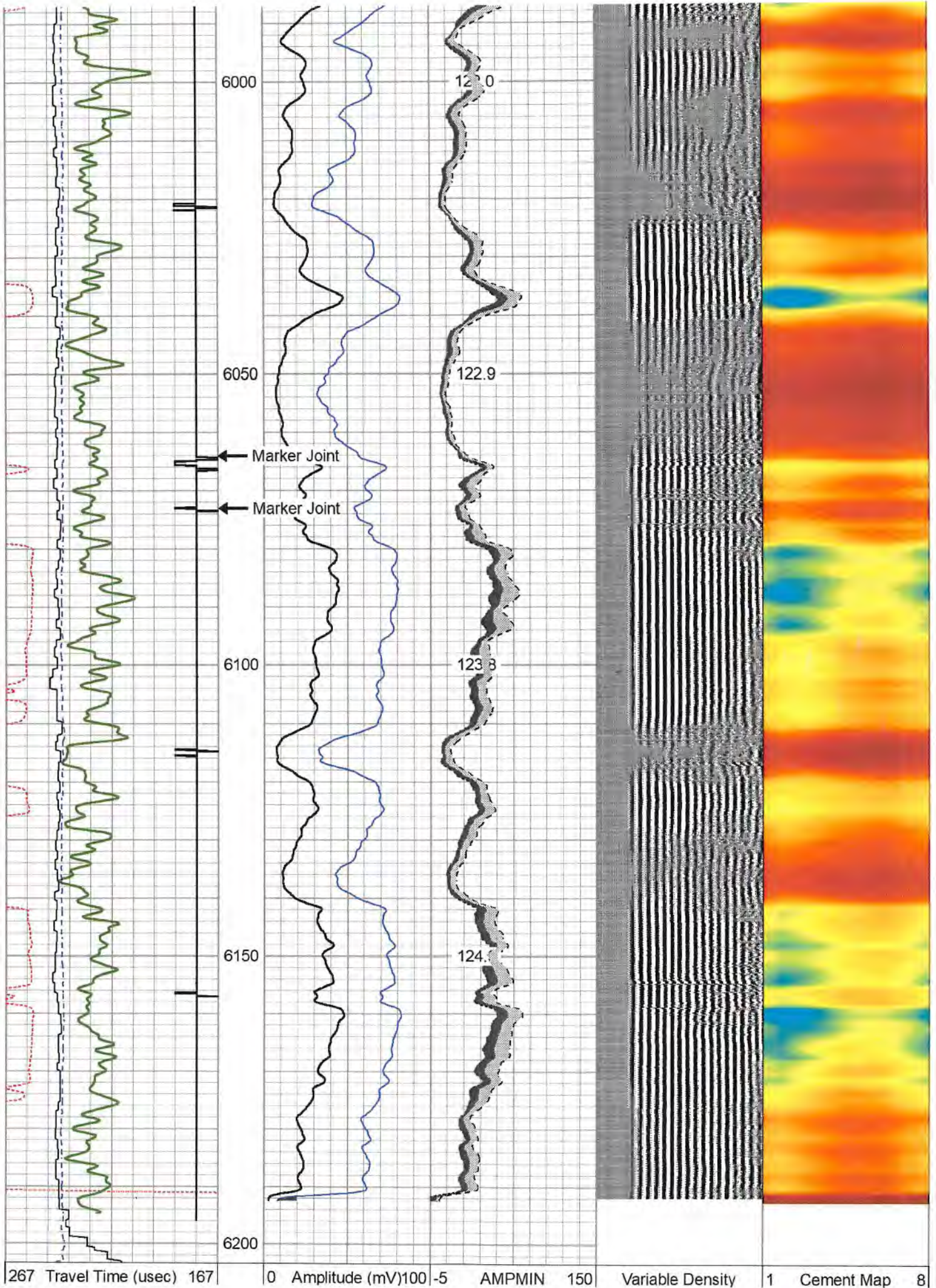
267	Travel Time (usec)	167	0	Amplitude (mV)	100	-5	AMP MIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMP MAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	AMP AVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	5000										

Repeat Pass 0 PSI

Database File antero_conifer_1h_rcbl_15_nov_2022.db
 Dataset Pathname pass2
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Tue Nov 15 09:23:00 2022
 Charted by Depth in Feet scaled 1:240

267	Travel Time (usec)	167	0	Amplitude (mV)	100	-5	AMP MIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMP MAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	AMP AVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	5000										





9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	200	(usec)	1200
0	Gamma Ray (GAPI) 150					-5	AMPAVG	150			
	Line Speed						TEMP				
-200	(ft/min)	200					(degF)				
0	Line Tension (lb)	5000									

Log Variables		DatabaseC:\ProgramData\Warrior\Data\antero_conifer_1h_rcbl_15_nov_2022.db Dataset field/well/run1/pass5/_vars_					
Top - Bottom							
BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	7.875	100	5.5	0	20	71.9	2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
0.8	No	261	0	0			
Variable Description							
BHTEMP_Src : BHTEMP Input Source Selector				MINAMPL : Minimum Amplitude			
BOREID : Borehole I.D.				MINATTN : Minimum Attenuation			
BOTTEMP : Bottom Hole Temperature				PERFS : Perforation Flag			
CASEOD : Casing O.D.				PPT : Predicted Pipe Time			
CASETHCK : Casing Thickness				SRFTEMP : Surface Temperature			
CASEWGHT : Casing Weight				TDEPTH : Total Depth			
MAXAMPL : Maximum Amplitude							

Calibration Report		
Database File	antero_conifer_1h_rcbl_15_nov_2022.db	
Dataset Pathname	pass5	
Dataset Creation	Tue Nov 15 09:36:37 2022	
Gamma Ray Calibration Report		
Serial Number:	FW1211-86	
Tool Model:	Probe	
Performed:	Sun Nov 13 11:04:25 2022	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5000	GAPI/cps

RECEIVED
Office of Oil and Gas
APR 24 2023
WV Department of
Environmental Protection

Segmented Cement Bond Log Calibration Report		
Serial Number:	2.75"	
Tool Model:	Probe275T	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	312.475	ft

Master Calibration, performed Tue Nov 15 07:01:53 2022:						
Raw (v)		Calibrated (mv)		Results		
Zero	Cal	Zero	Cal	Gain	Offset	

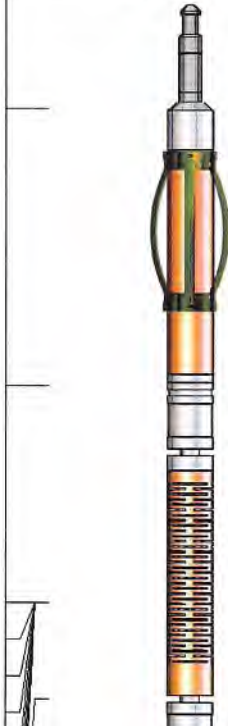
3'	-0.004	0.356	2.200	71.921	193.389	3.005
CAL	0.593	0.594				
5'	-0.009	0.352	2.200	71.921	193.310	3.849
SUM						
S1	0.029	0.355	0.000	100.000	306.369	-8.845
S2	-0.012	0.321	0.000	100.000	300.966	3.498
S3	-0.007	0.347	0.000	100.000	282.512	1.880
S4	-0.007	0.360	0.000	100.000	272.069	1.943
S5	-0.007	0.386	0.000	100.000	254.647	1.809
S6	-0.010	0.390	0.000	100.000	250.321	2.411
S7	-0.006	0.374	0.000	100.000	263.146	1.674
S8	-0.008	0.347	0.000	100.000	281.618	2.379

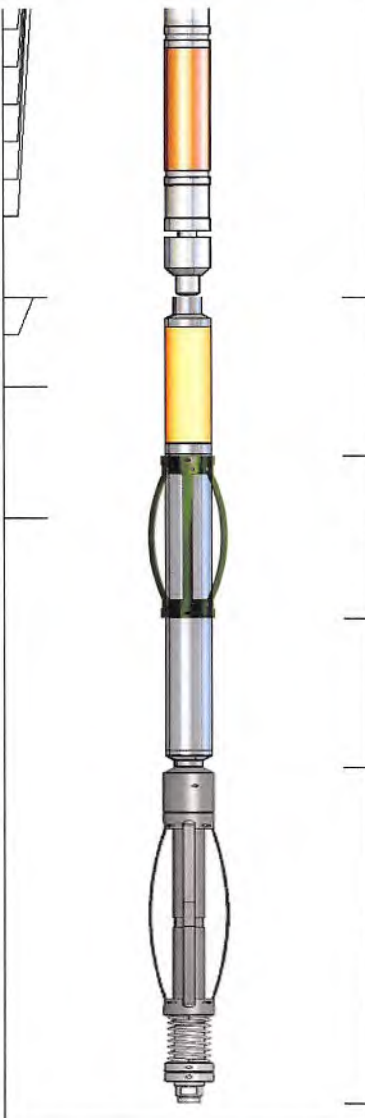
Internal Reference Calibration, performed Wed Nov 23 14:17:52 2011:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.593	0.594	1.000	0.000

Air Zero Calibration, performed Tue Nov 15 06:41:00 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	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
HeadVolt	17.53		CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00
			Centralizer-2.75_Overbody	1.67	3.12	5.00
Temp	14.68		RECEIVED Office of Oil and Gas APR 24 2023 WV Department of Environmental Protection			
WVFS8	12.45		RBT-Probe275T (2.75") Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	12.45					
WVFS6	12.45					
WVFS5	12.45					

WVFS4	12.45					
WVFS3	12.45					
WVFS2	12.45					
WVFS1	12.45					
WVF3FT	12.45					
WVF5FT	11.45					
WVFCAL	8.20					
HEADVOLT	8.20					
CCL	7.29					
GR	5.96		GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
			Centralizer-2.75_Overbody	1.67	3.12	5.00
			Centralizers-5419-312-S600 Titan 3 1/8" Adjustable Centralizer	3.42	3.13	34.00

Dataset: antero_conifer_1h_rcbl_15_nov_2022.db: field/well/run1/pass5
 Total length: 18.61 ft
 Total weight: 192.00 lb
 O.D.: 3.13 in

	Company	ANTERO RESOURCES
	Well	CONIFER 1H
	Field	WEST UNION
	County	DODDRIDGE
	State	WV

RECEIVED
Office of Oil and Gas

APR 24 2023

WV Department of
Environmental Protection