



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

Company ANTERO RESOURCES  
Well PETER 2H  
Field SOUTH CANTON  
County DODDRIDGE  
State WV

Company ANTERO RESOURCES  
Well PETER 2H  
Field SOUTH CANTON  
County DODDRIDGE State WV

Location: API #: 47-017-06934  
SEC TWP RGE  
Permanent Datum GROUND LEVEL Elevation 1334'  
Log Measured From KELLY BUSHING 30'  
Drilling Measured From KELLY BUSHING  
Other Services  
Elevation  
K.B. 1,364'  
D.F. 1,364'  
G.L. 1,334'

Date	JANUARY 11, 2023	
Run Number	ONE	
Depth Driller	15,773'	
Depth Logger	7,530'	
Bottom Logged Interval	7,555'	
Top Log Interval	SURFACE	
Open Hole Size	NA	
Type Fluid	FRESH WATER	
Density / Viscosity	8.6 LB/GAL	
Max. Recorded Temp.	147 DEG.F.	
Estimated Cement Top	2,782'	
Time Well Ready	21:20	
Time Logger on Bottom	21:47	
Equipment Number	116	
Location	CHARLEROI, PA	
Recorded By	M.MCNALLY	
Witnessed By	RYAN RIVERA	

Run Number	Borehole Record		Tubing Record				
	Bit	From	To	Size	Weight	From	To
Casing Record							
Conductor String							
Surface String							
Intermediate String							
Intermediate String							
Production String							

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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  
DEPTH SHIFT -12'  
MARKER JOINT 6,259'-6,269'  
MAIN PASS LOGGED WITH 1500 PSI  
REPEAT PASS LOGGED WITH 0 PSI  
  
THANK YOU FOR USING NINE ENERGY SERVICES

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WV Department of  
Environmental Protection



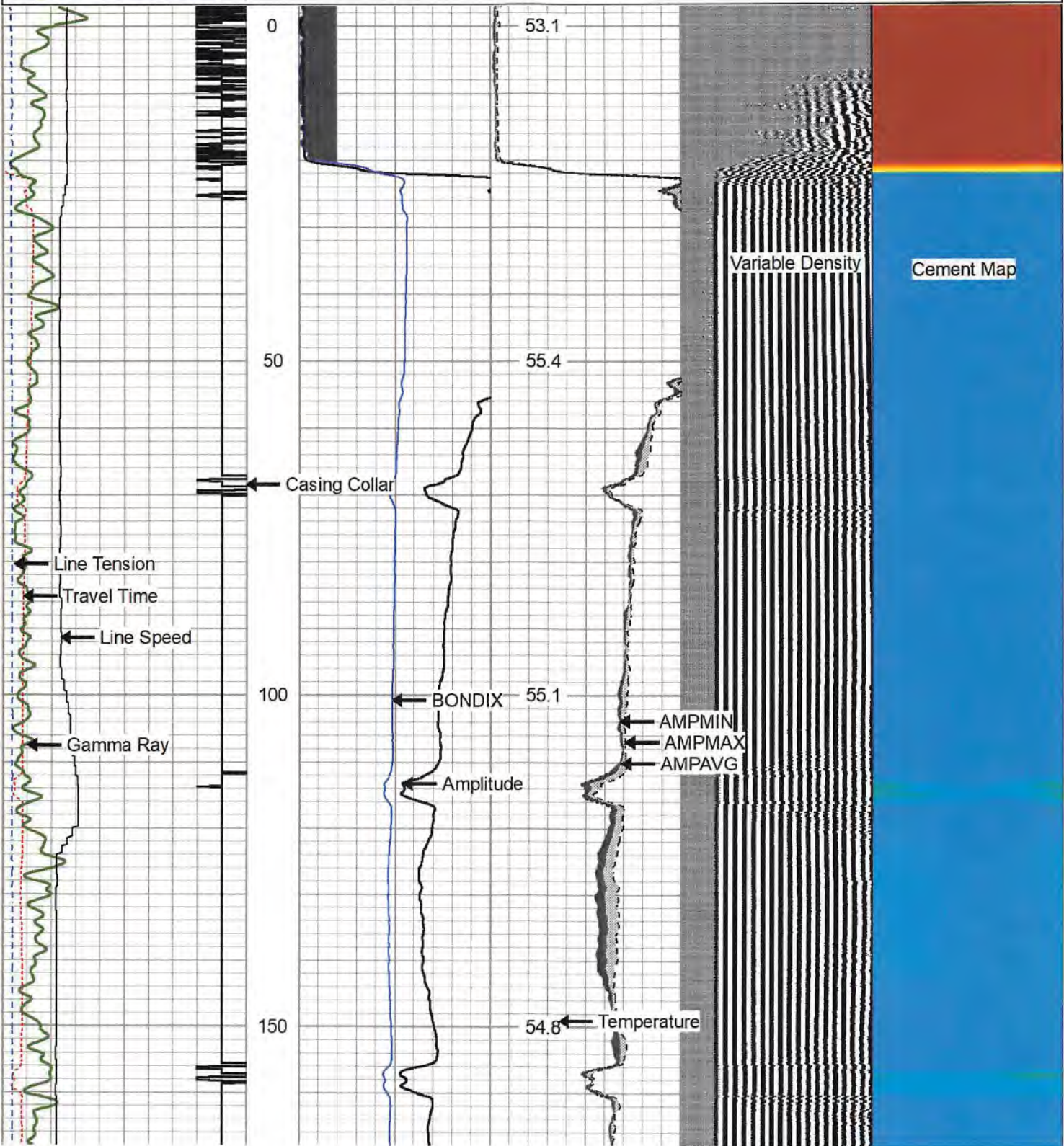
**MAIN PASS 1,500 PSI**

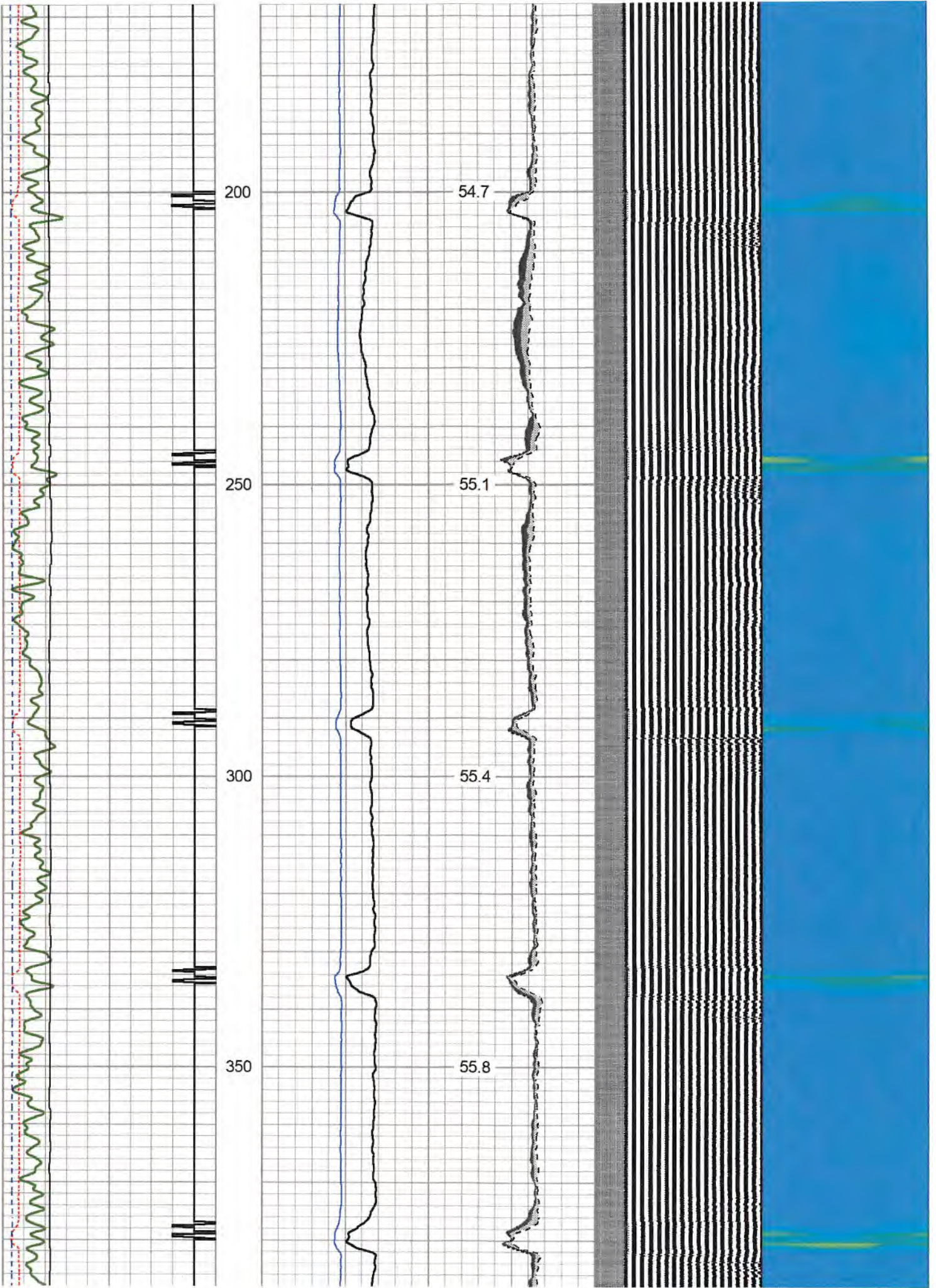
Database File antero\_peter\_2h\_rcbl\_11\_jan\_2023.db  
 Dataset Pathname peter2h/run1/pass4  
 Presentation Format rcbl 2  
 Dataset Creation Wed Jan 11 21:45:14 2023  
 Charted by Depth in Feet scaled 1:240

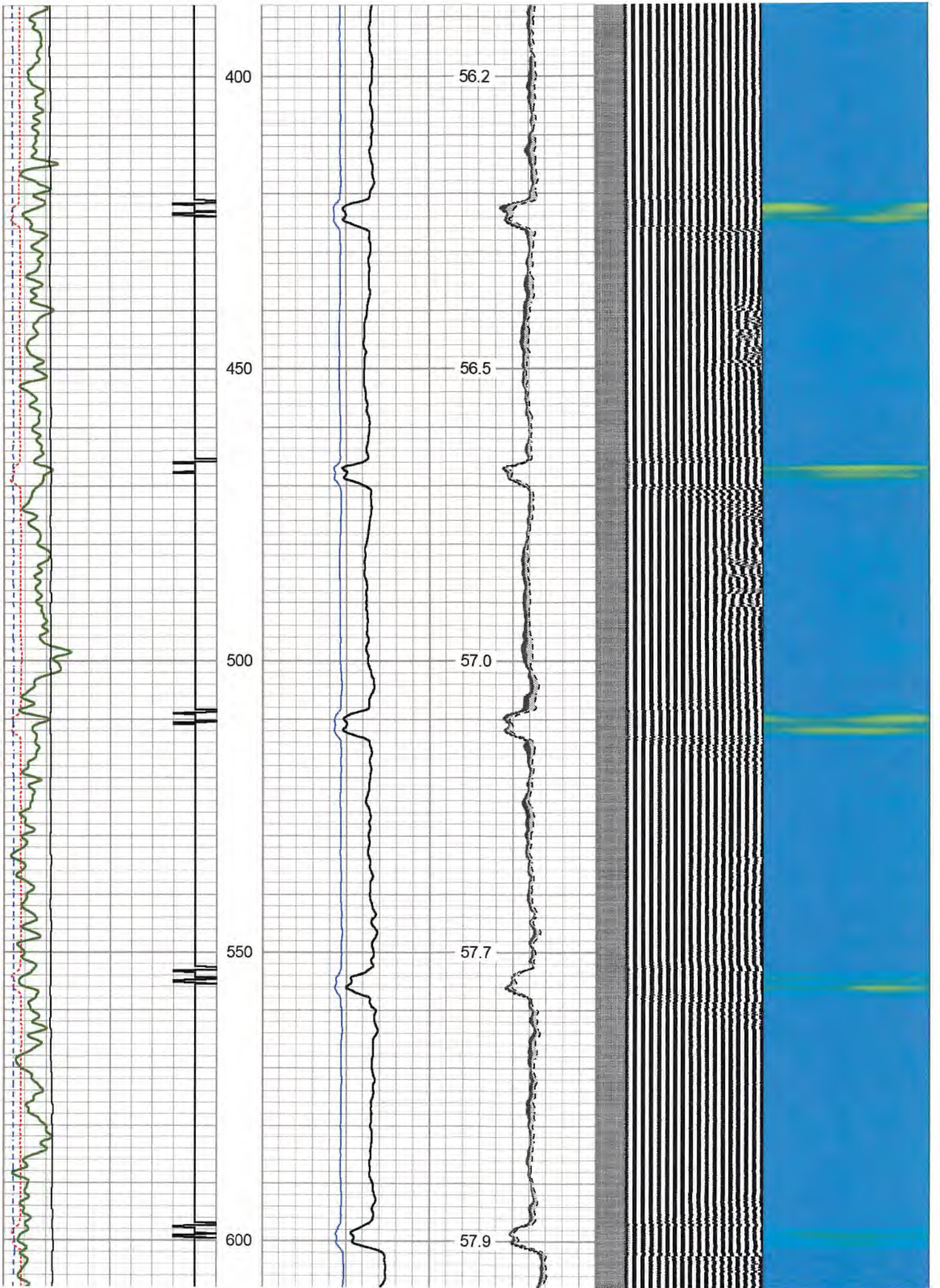
270	Travel Time (usec)	160
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
Line Speed		
-200	(ft/min)	200
0	Line Tension (lb)	5000

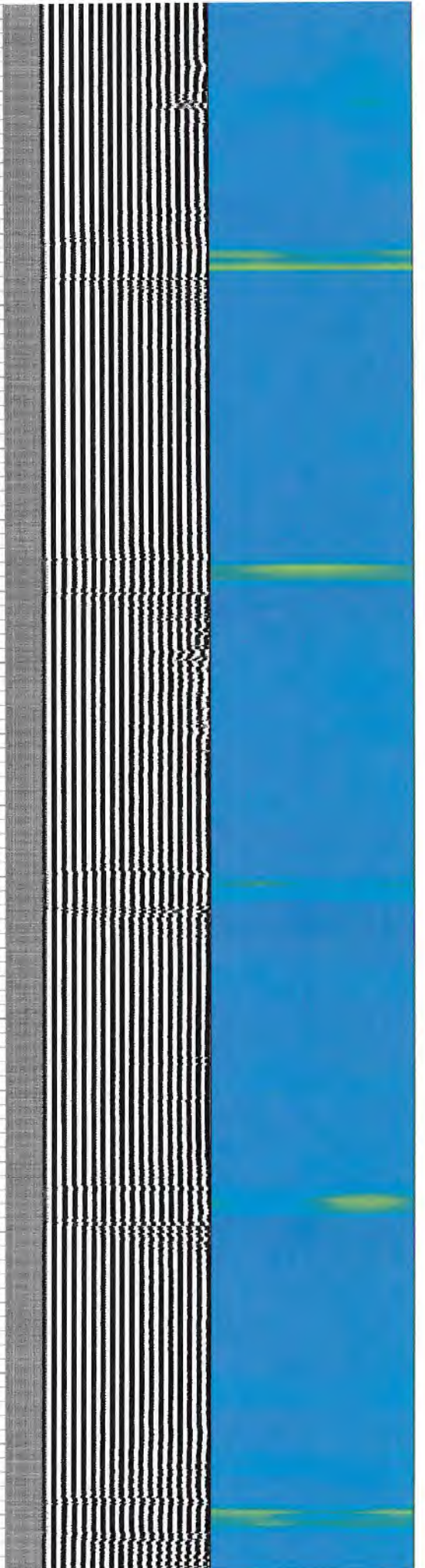
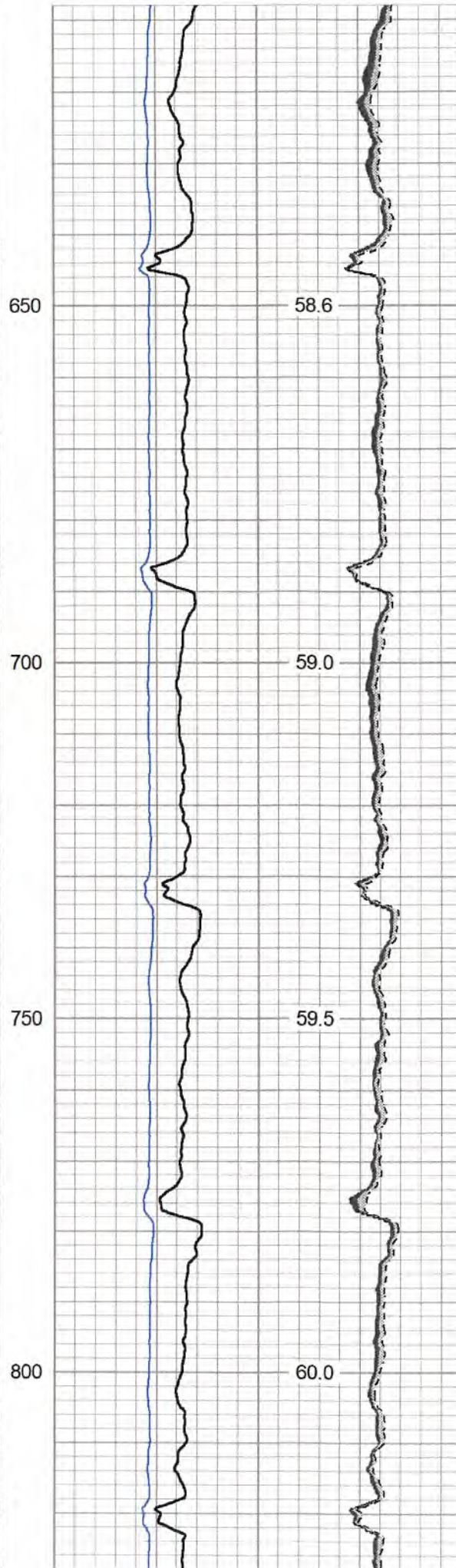
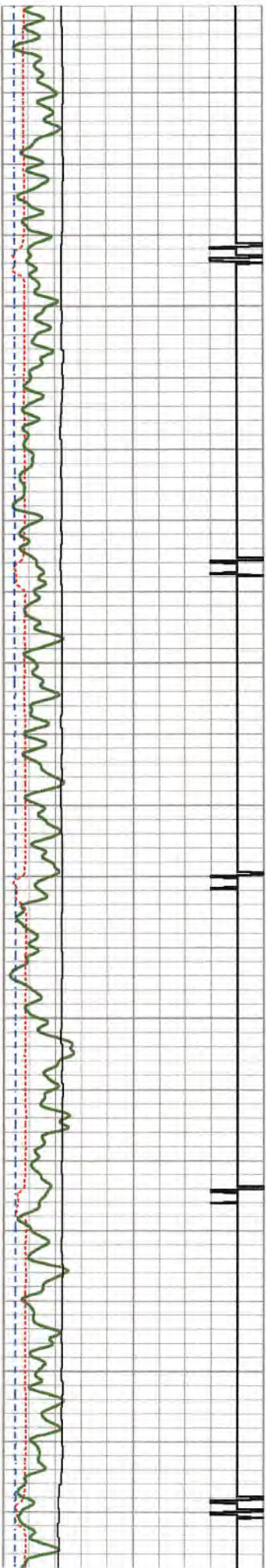
0	Amplitude (mV)	100	-5	AMPMIN	150
1	BONDIX	0	-5	AMPMAX	150
			-5	AMPAVG	150
TEMP					
(degF)					

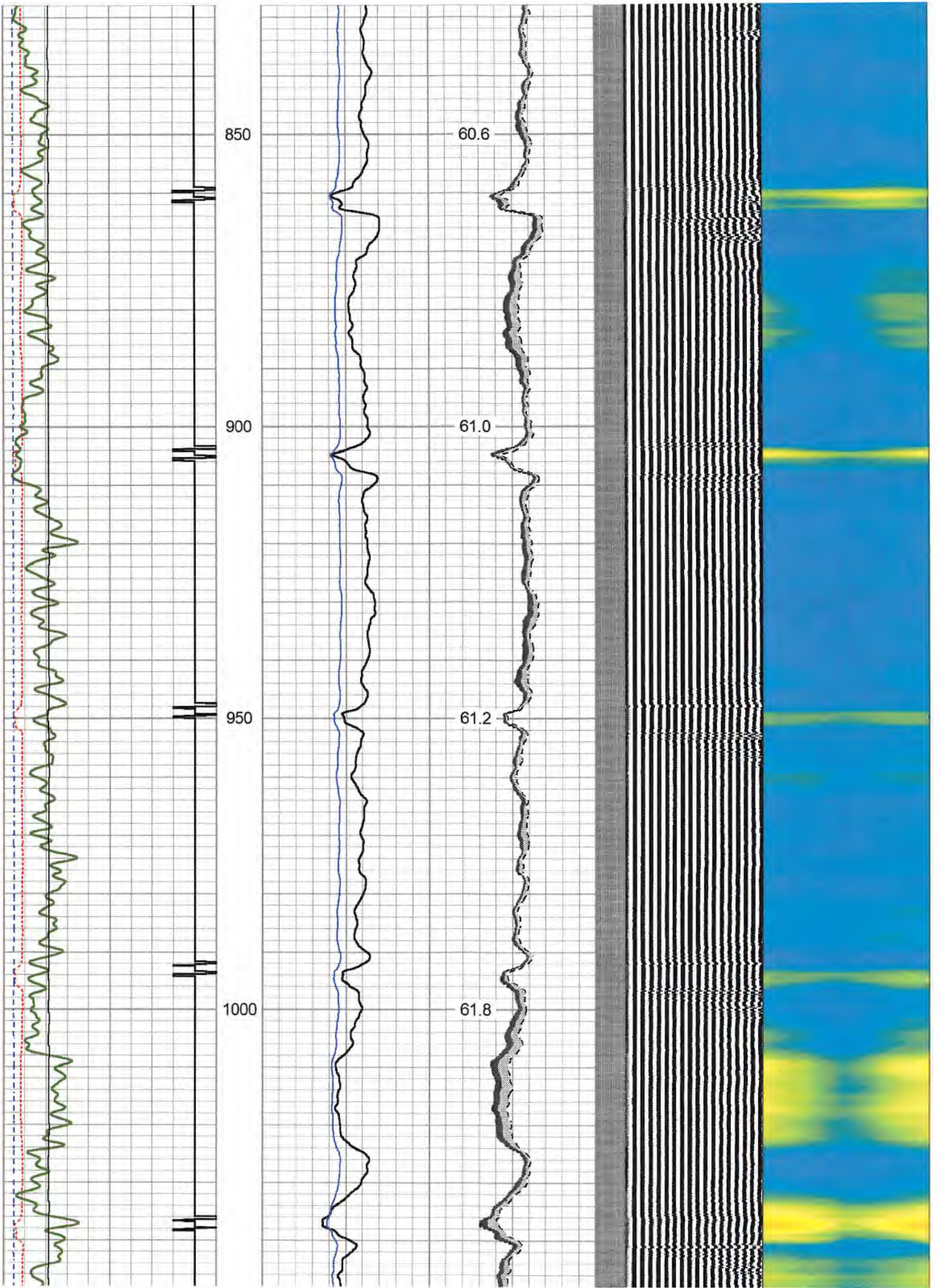
Variable Density	1	Cement Map	8
(usec)	200		1200

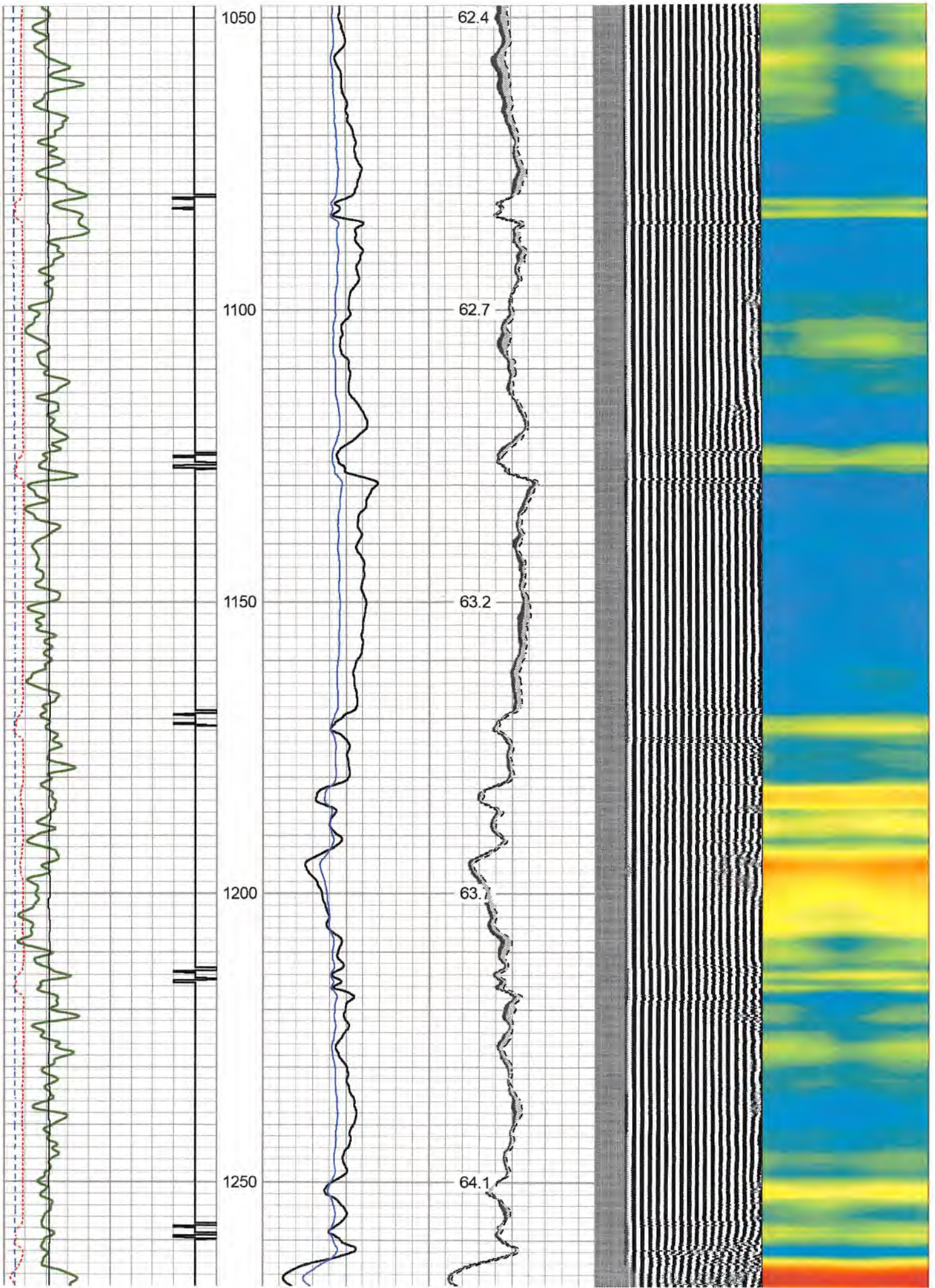


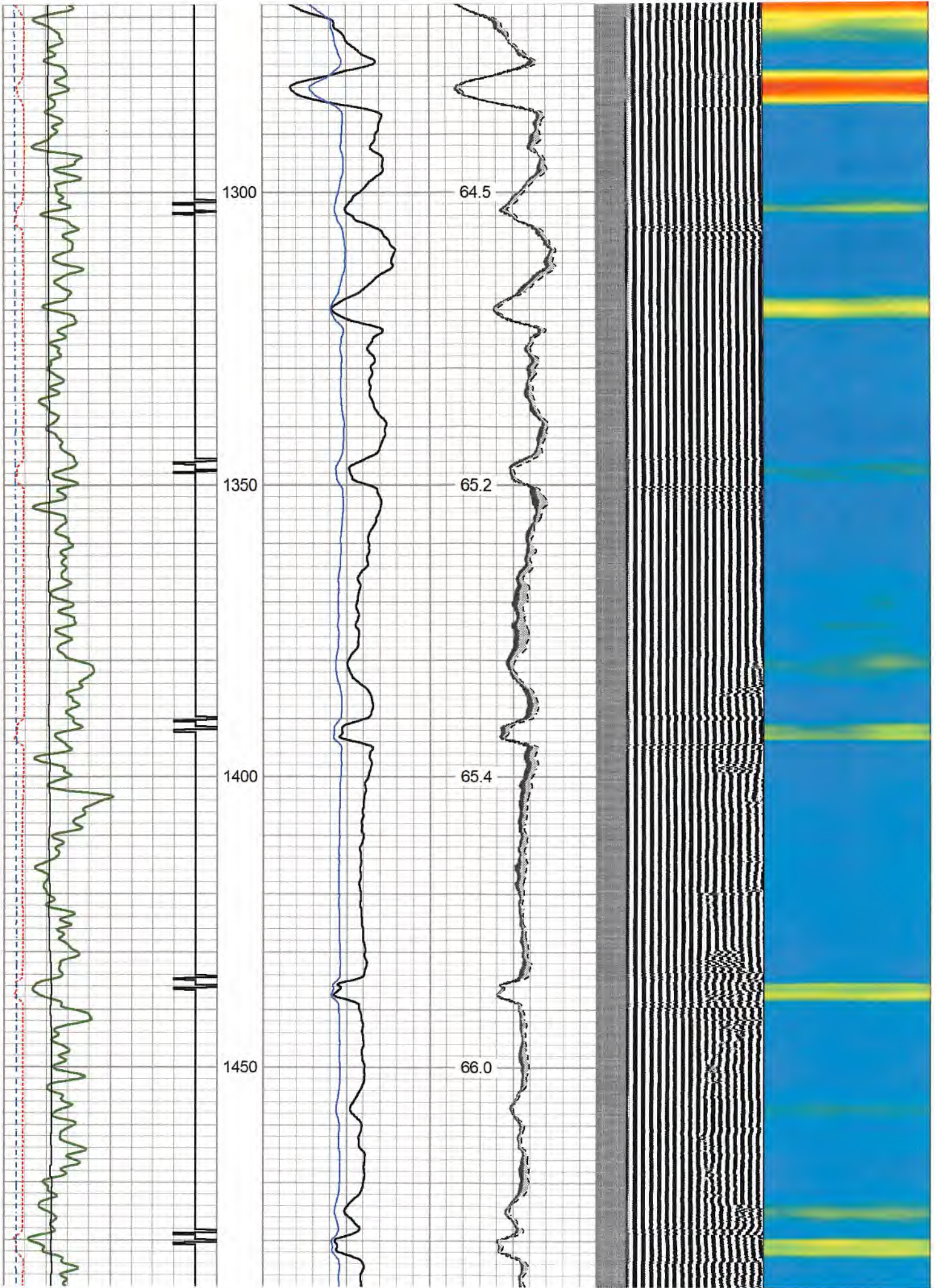




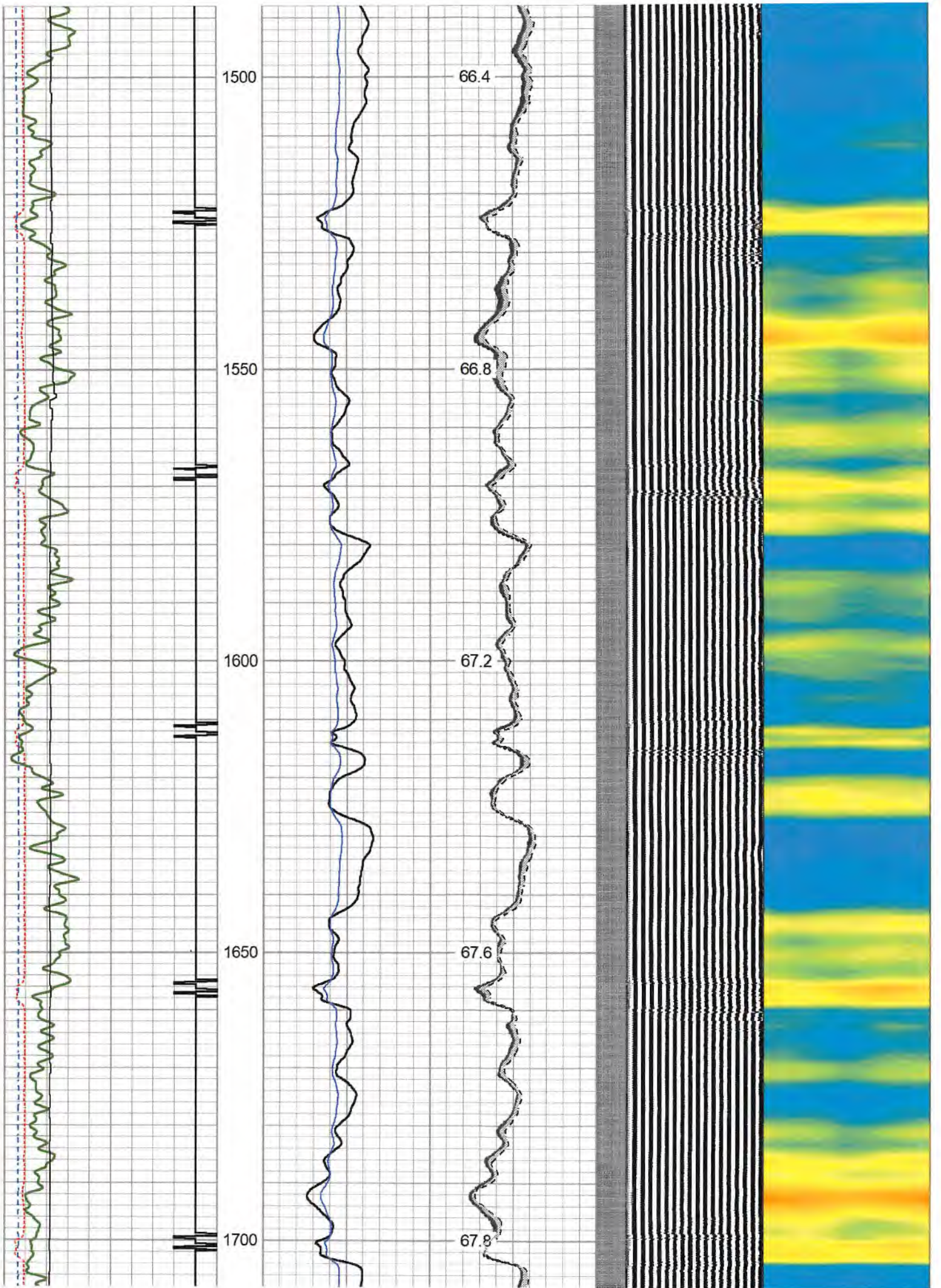


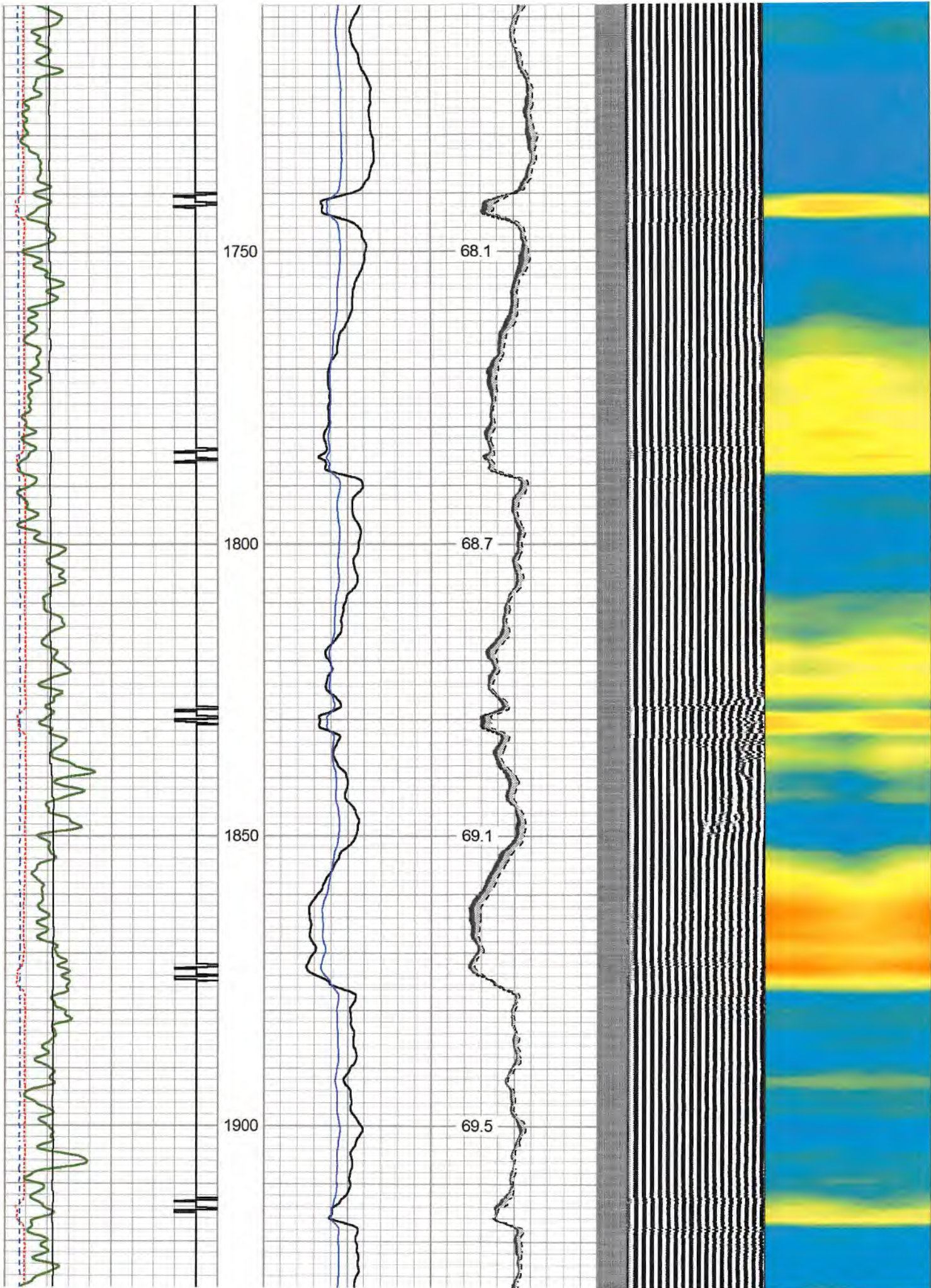


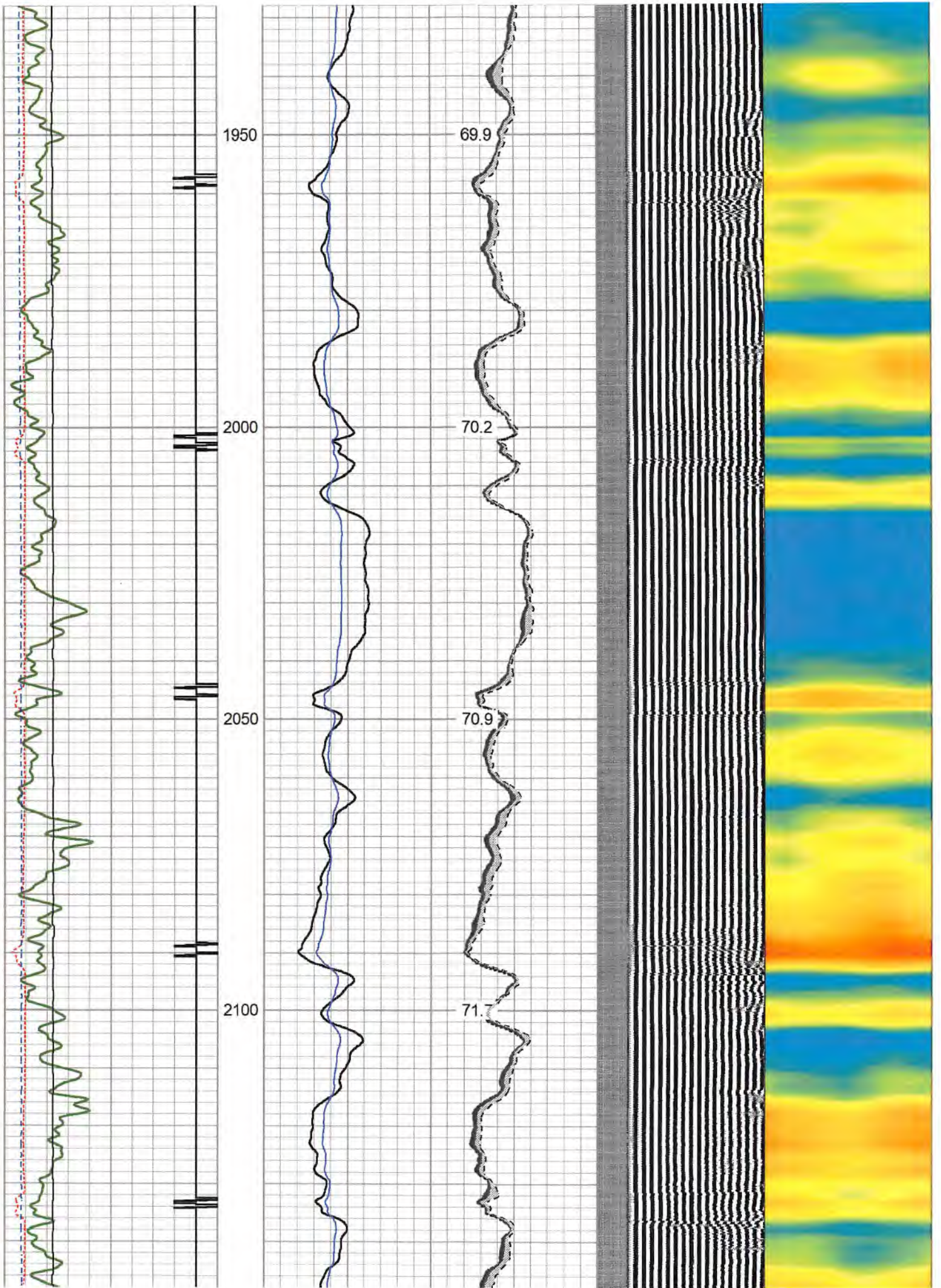


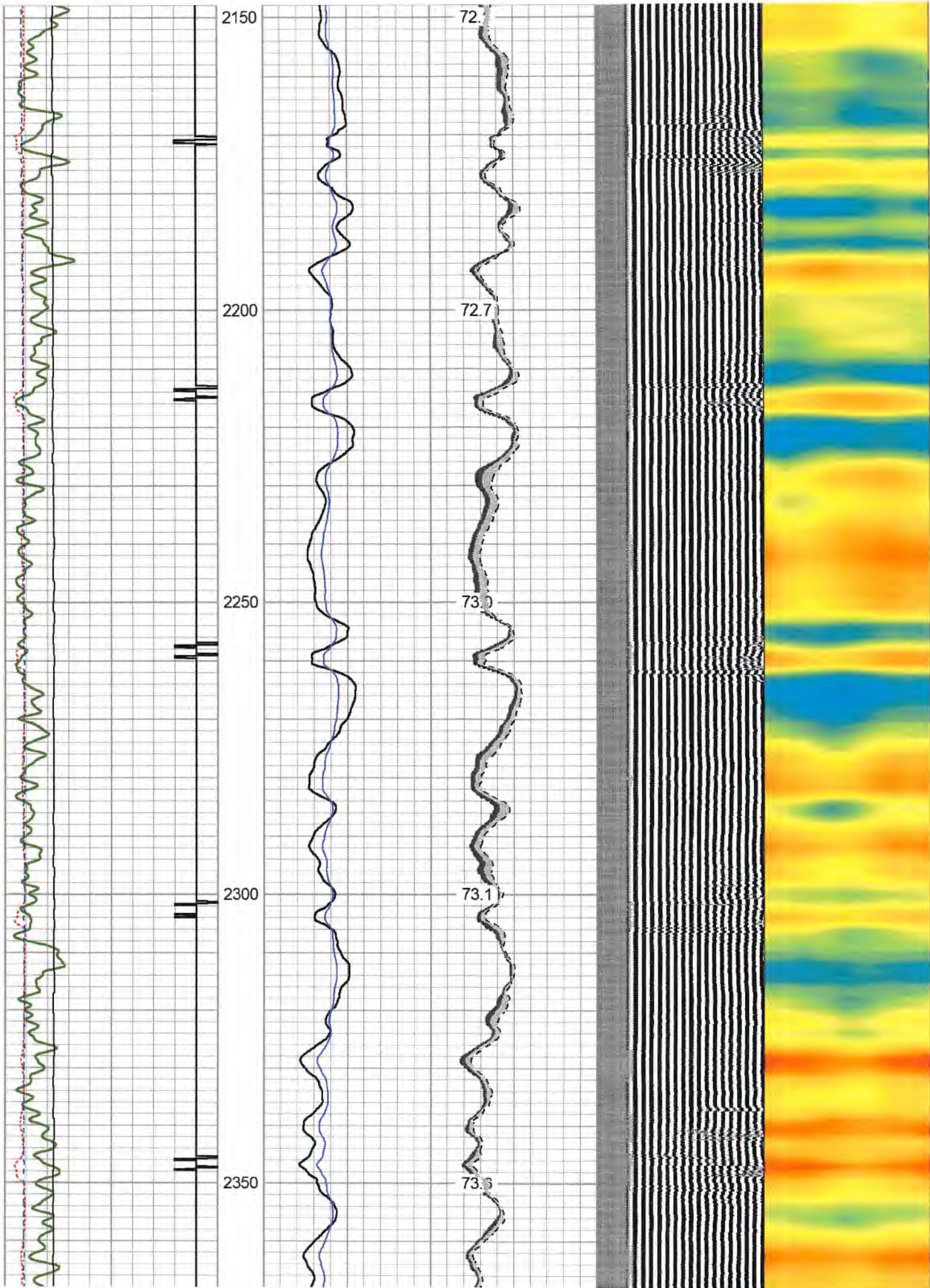


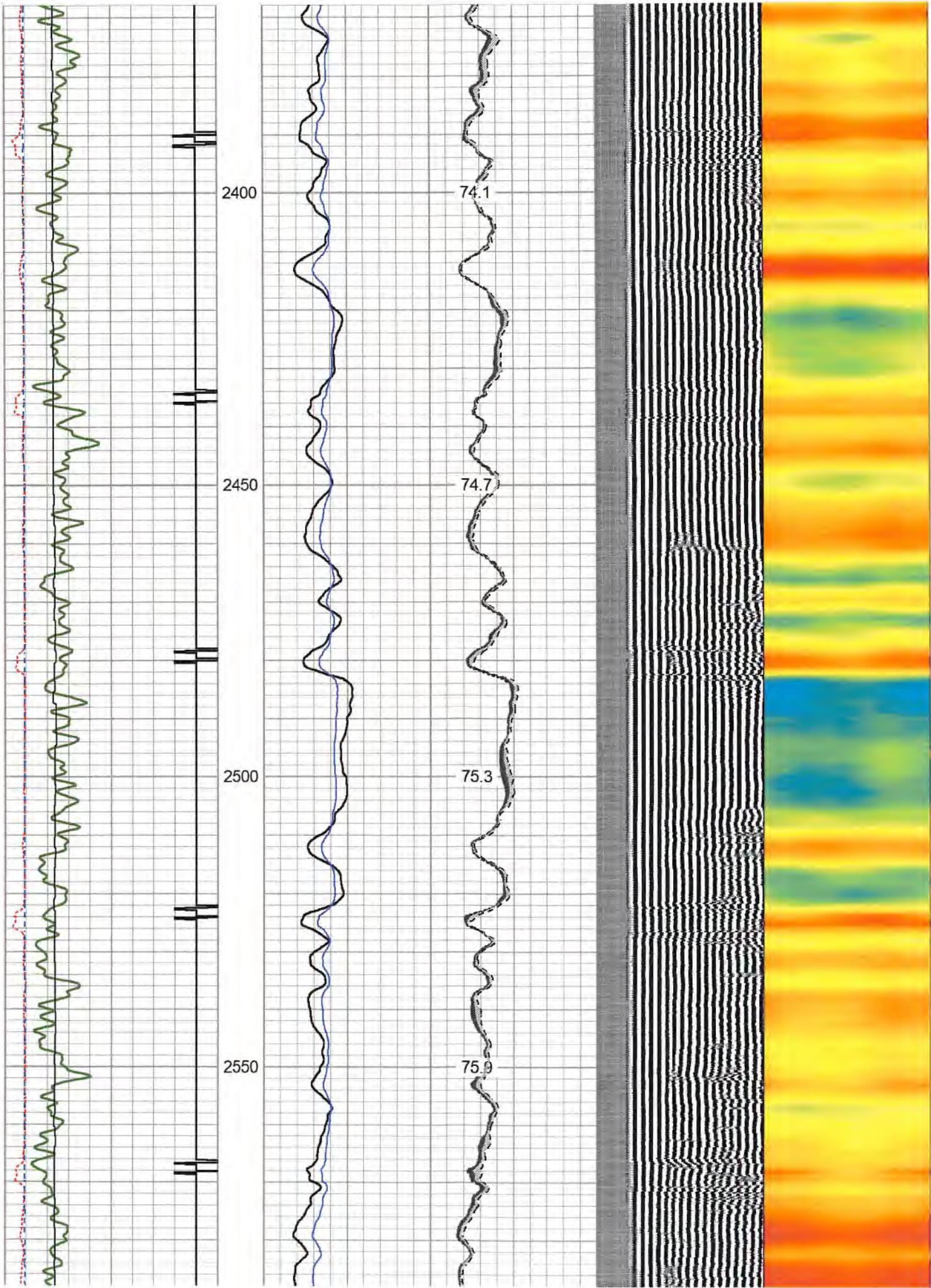


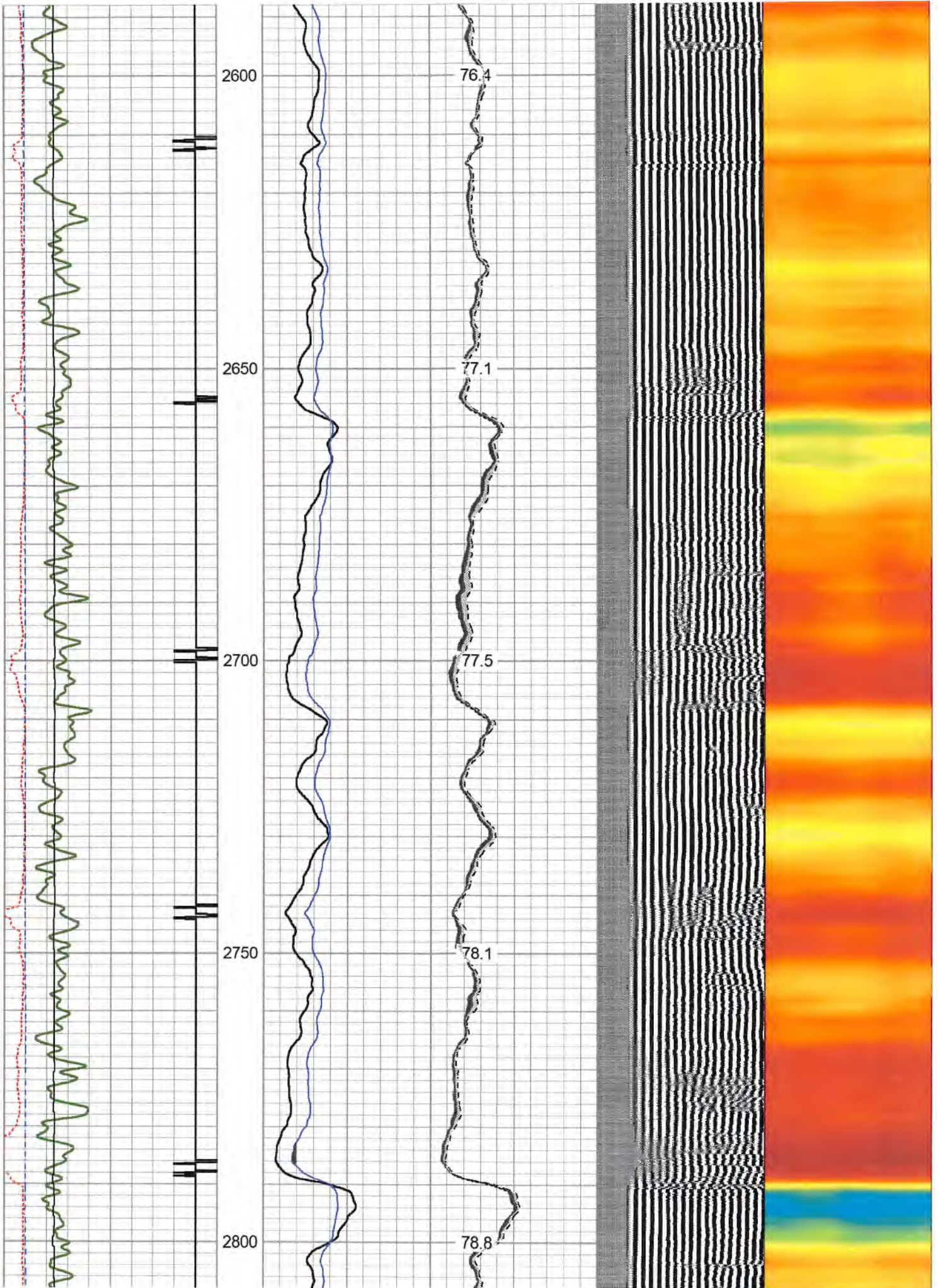


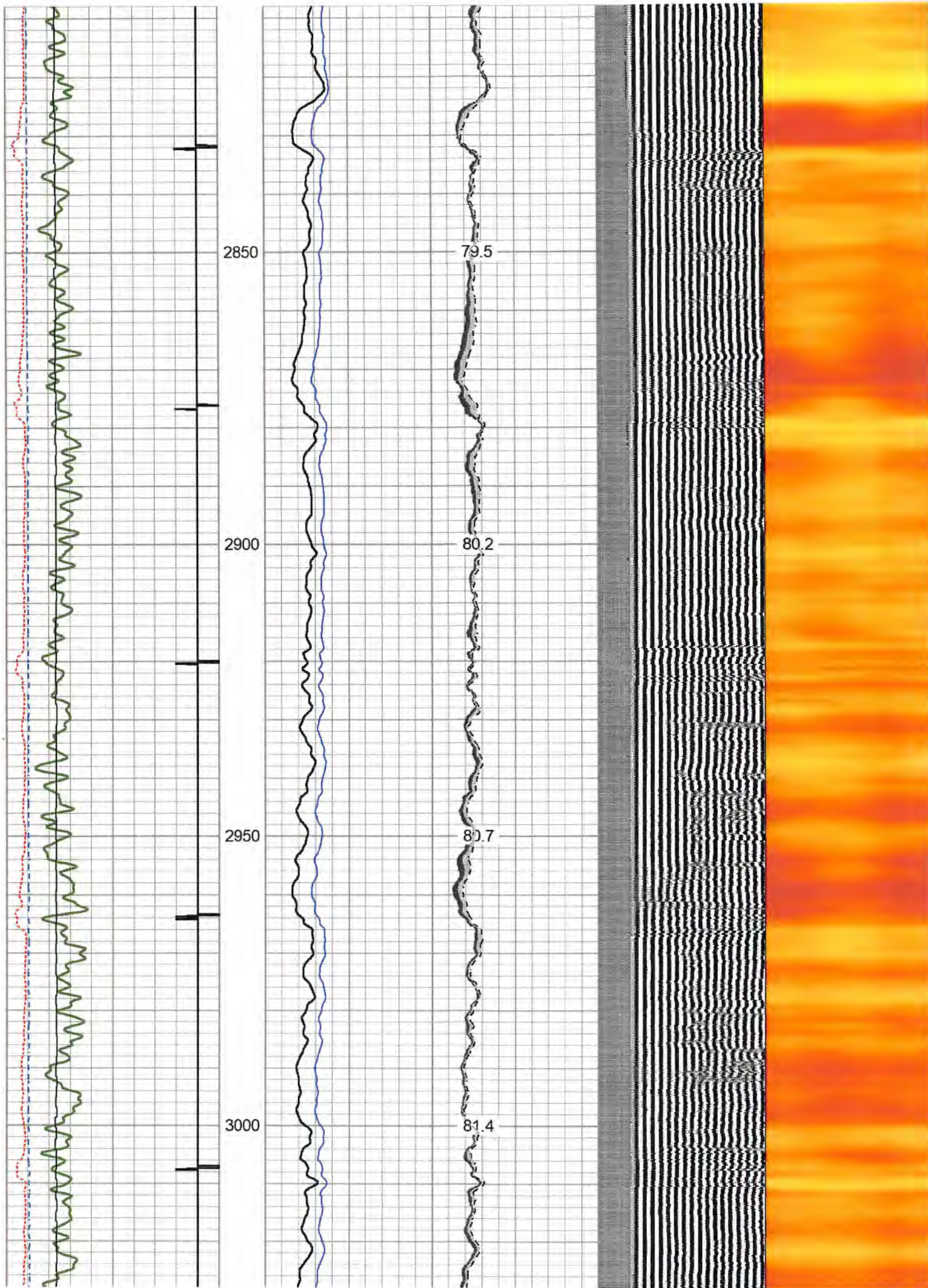


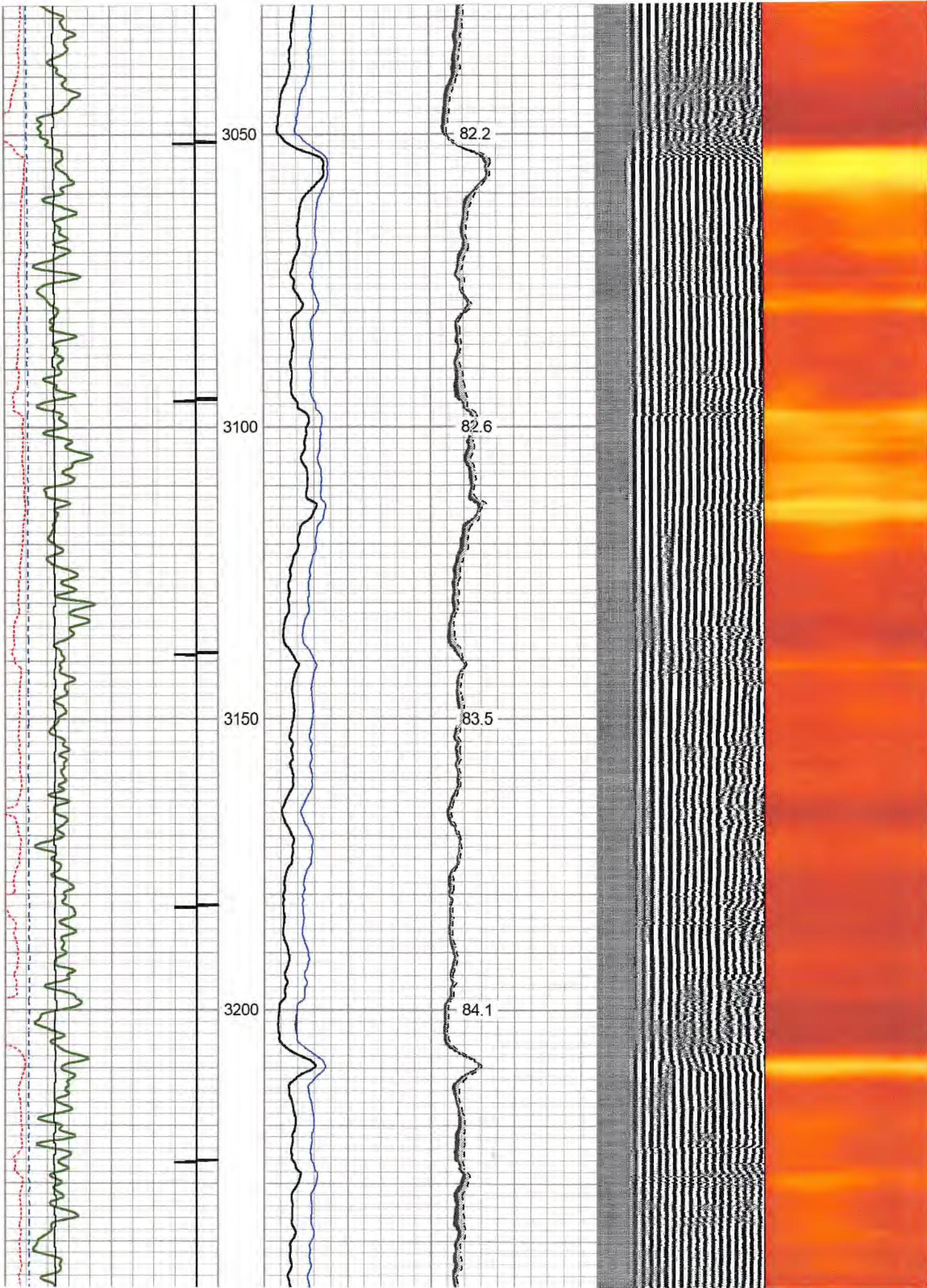




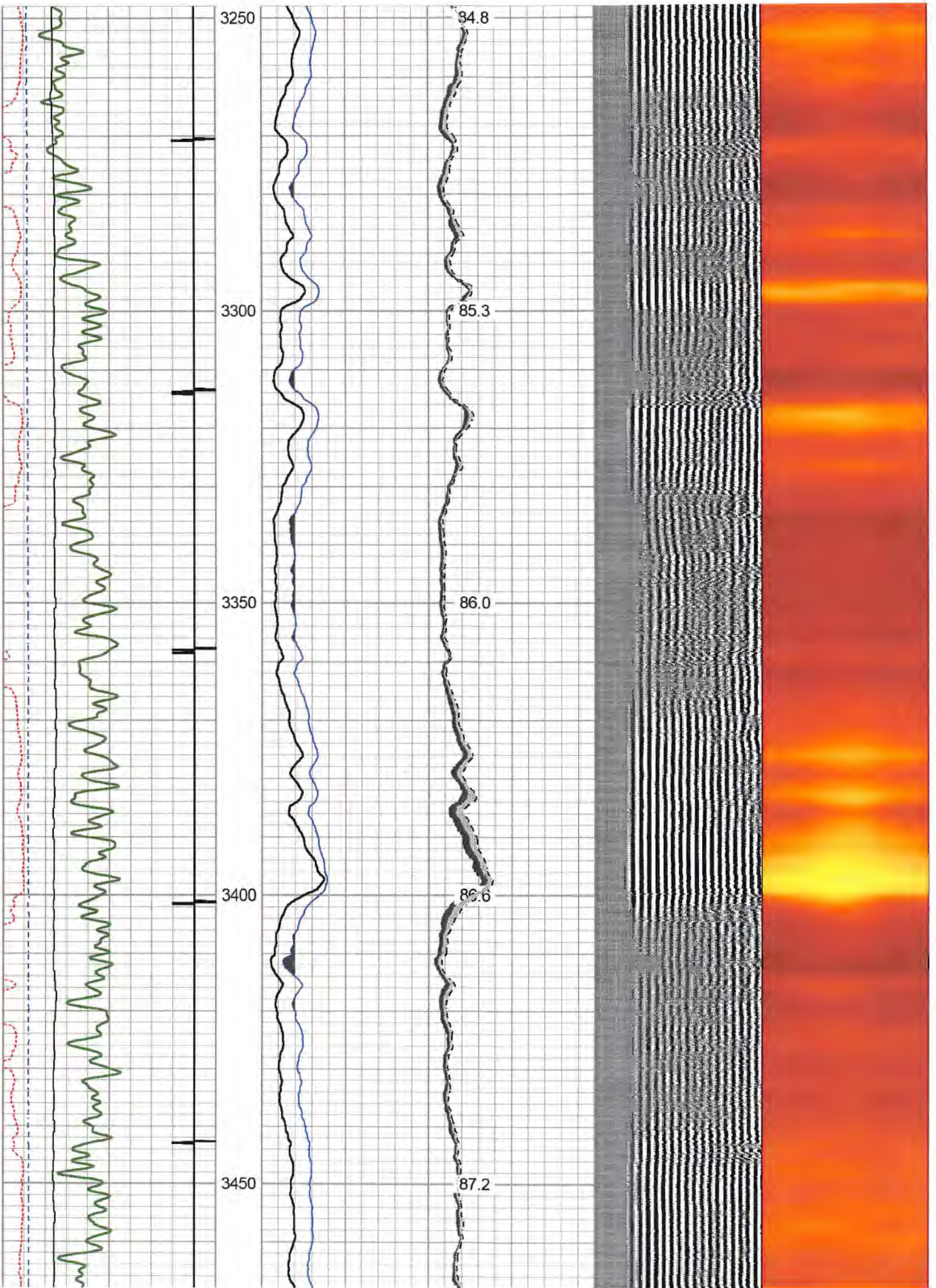


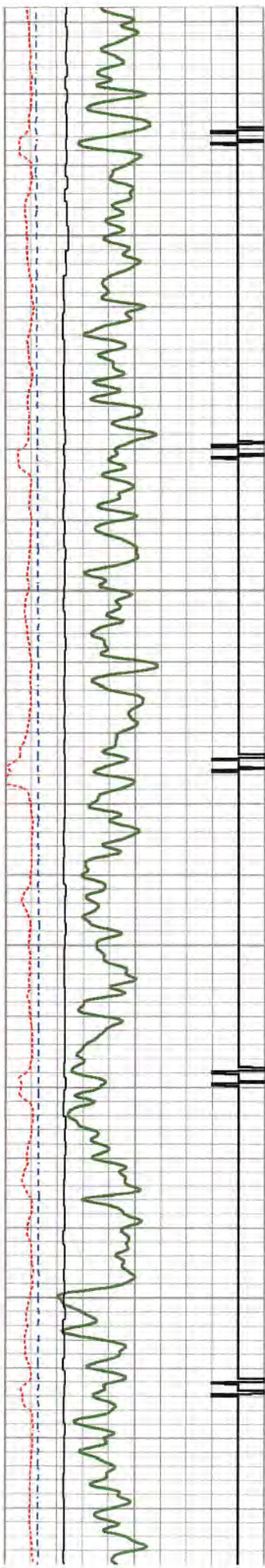










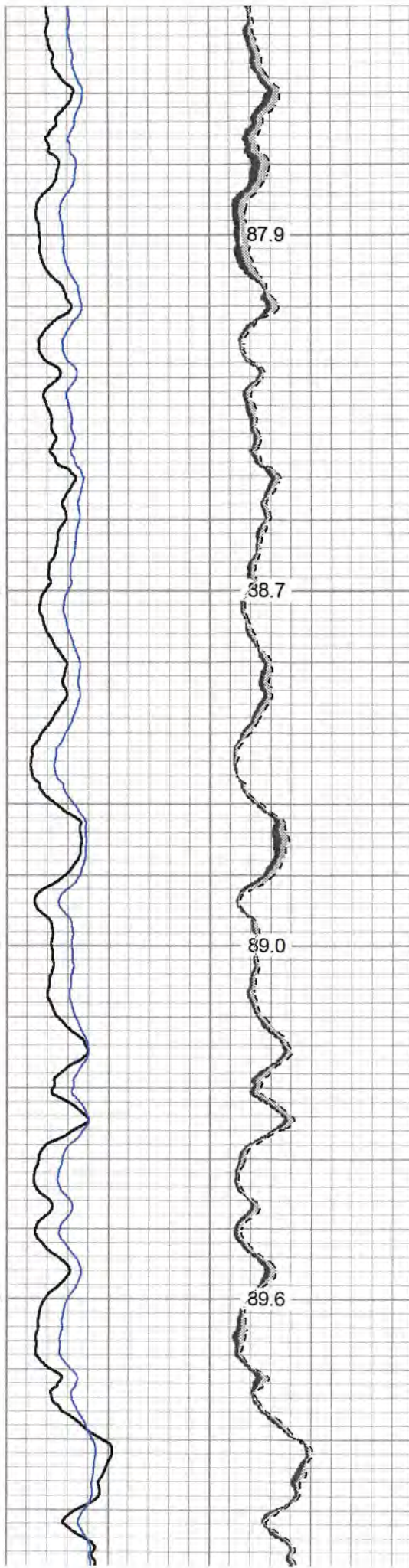


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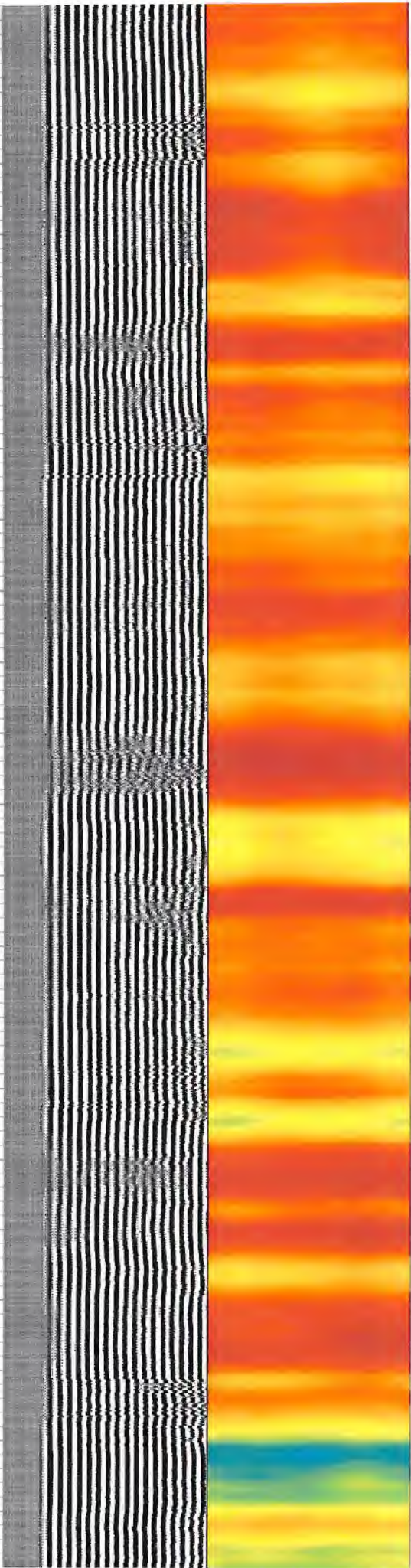


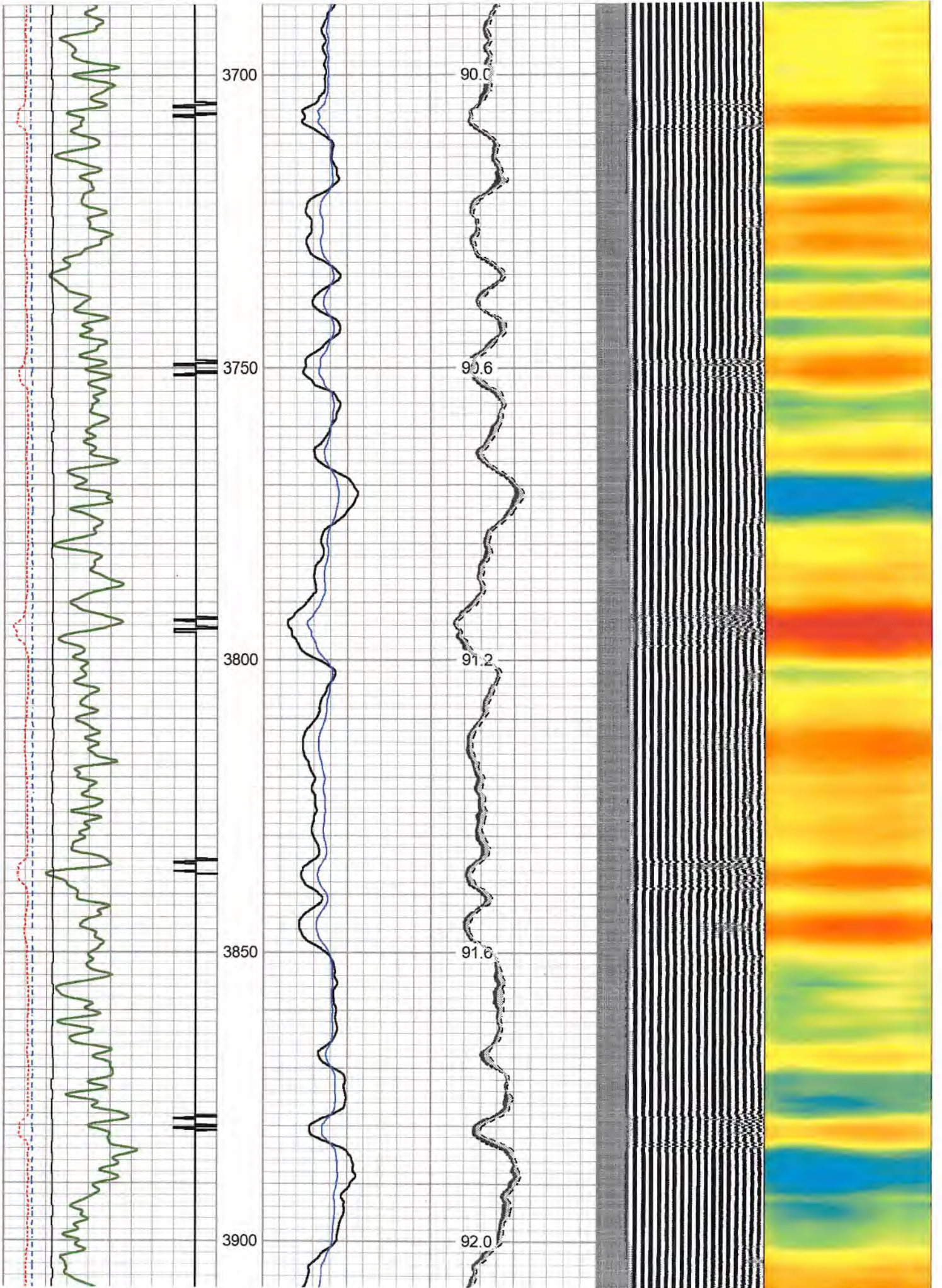
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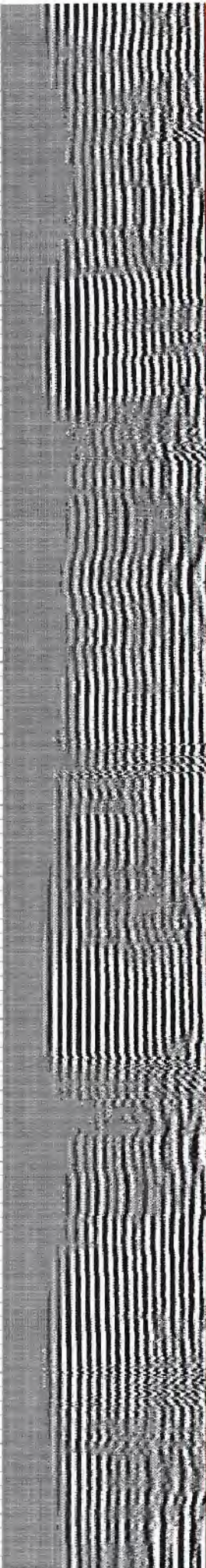
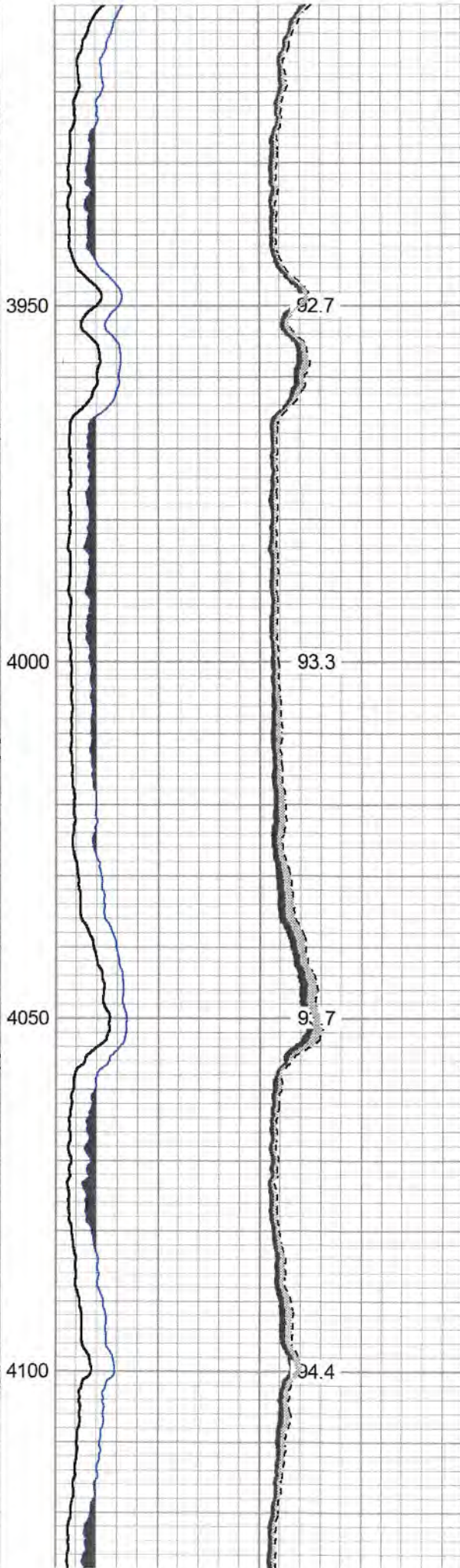
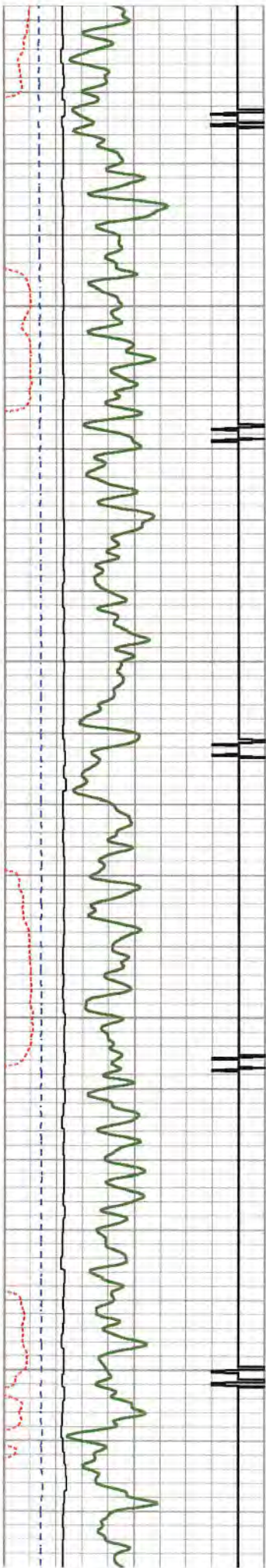
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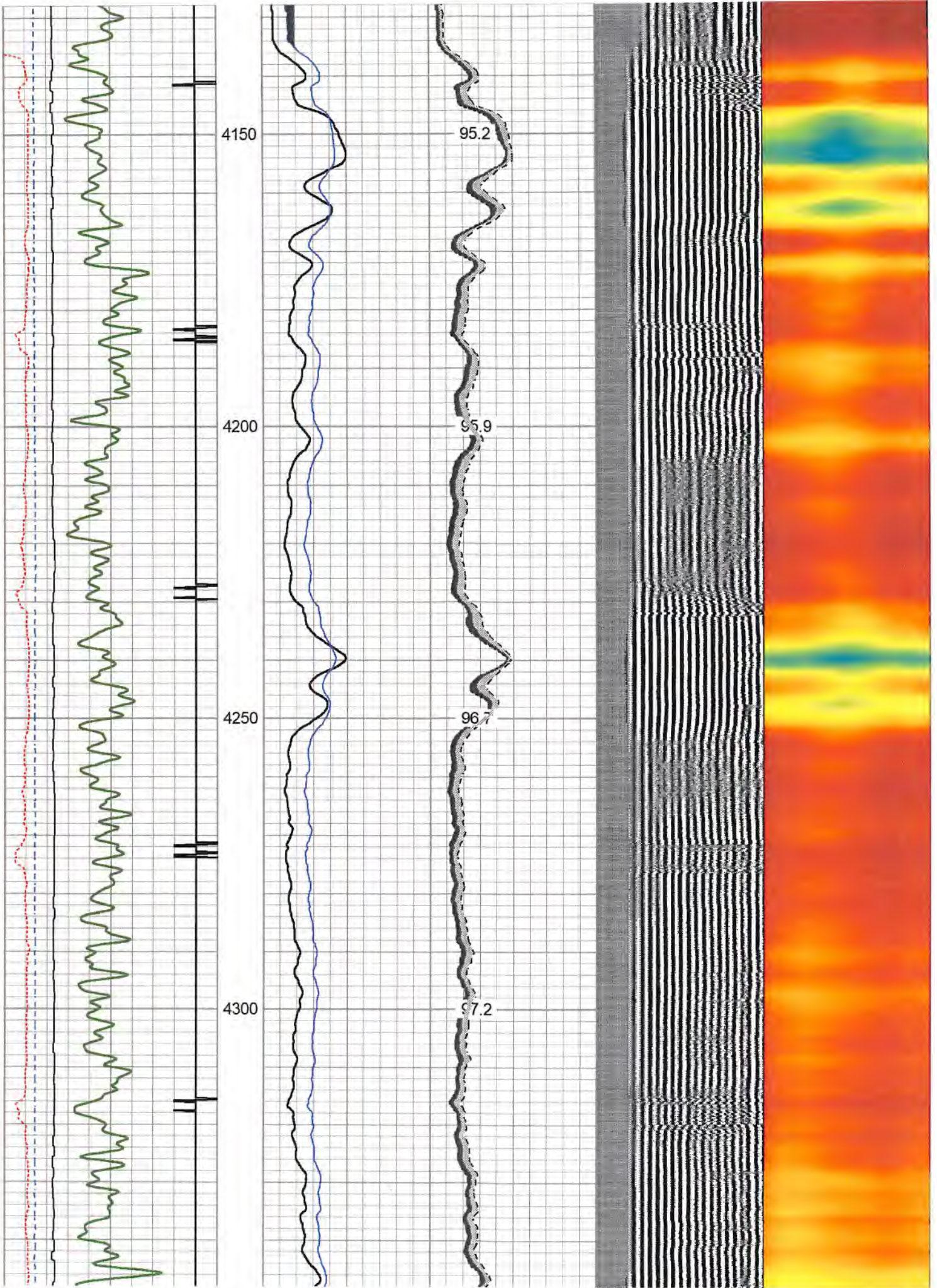
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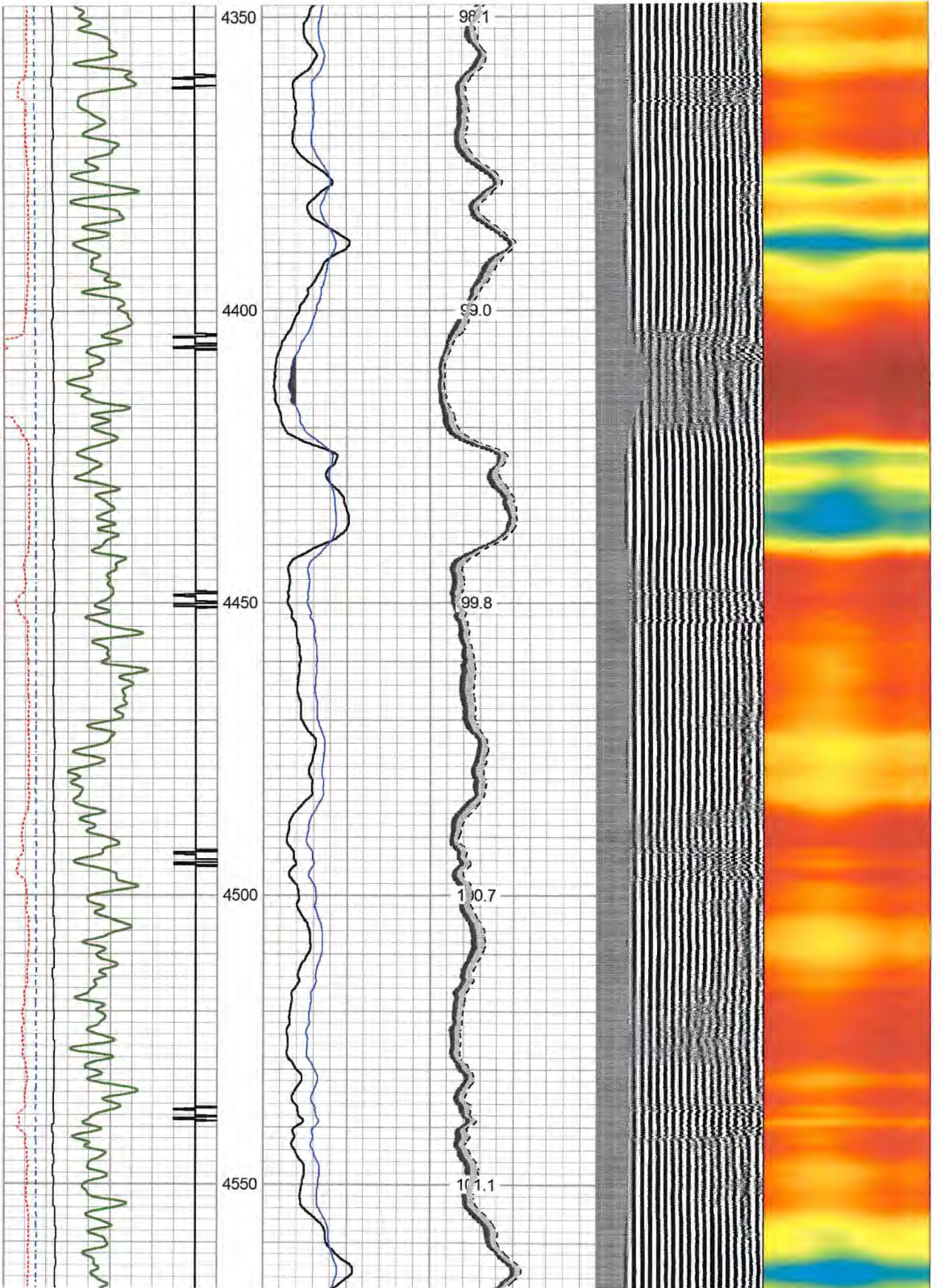
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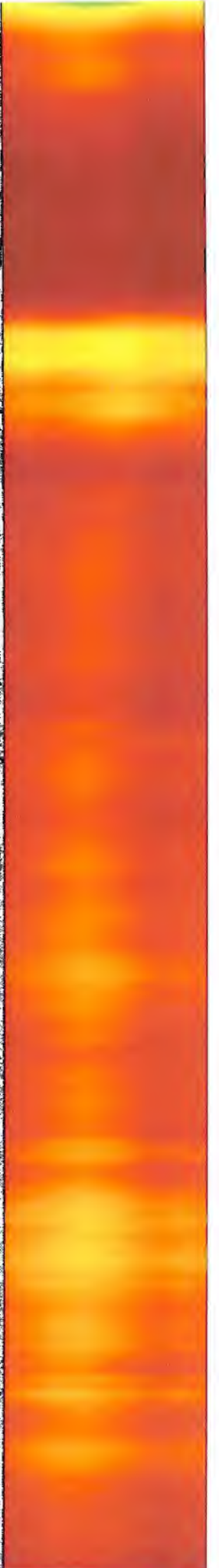
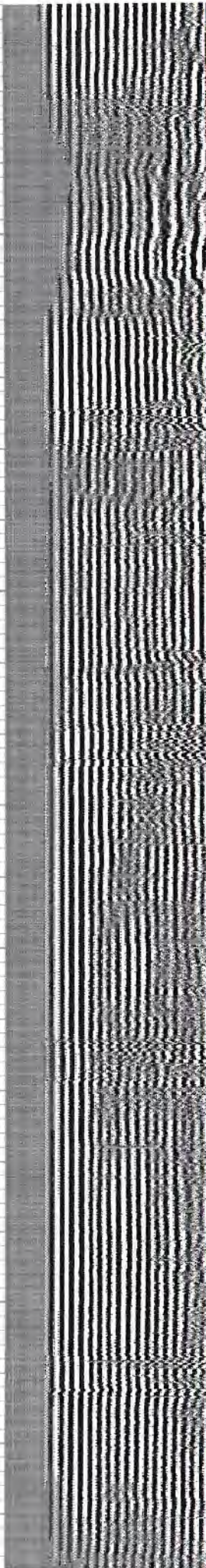
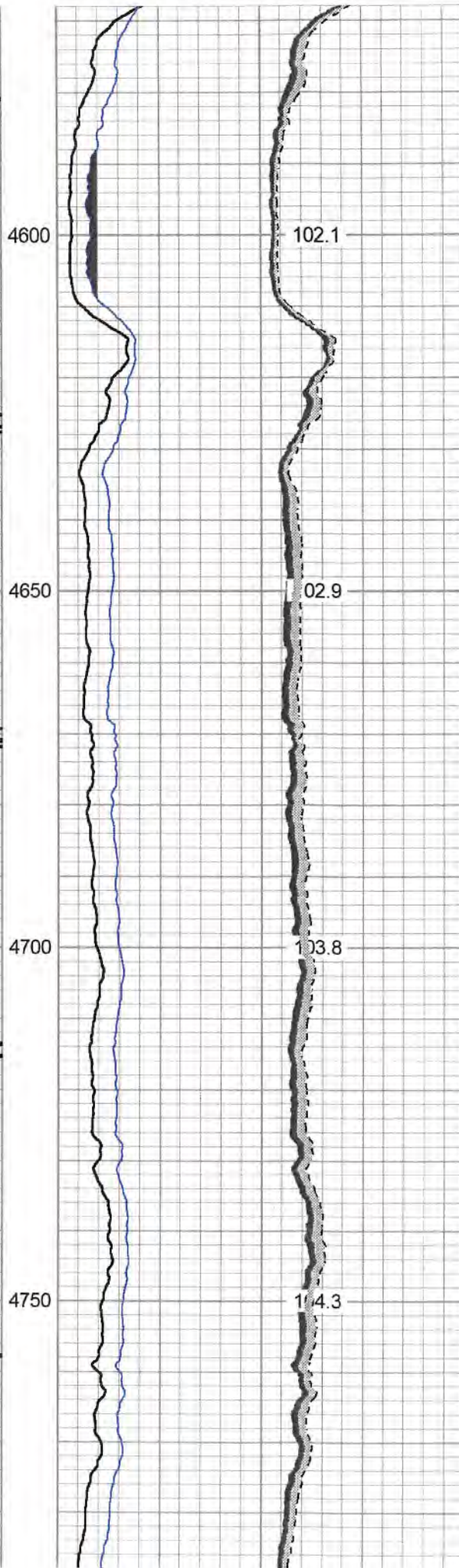
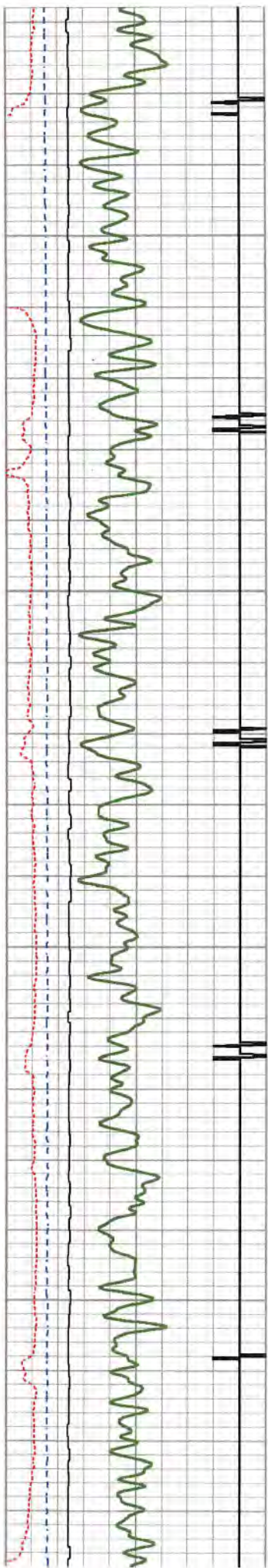


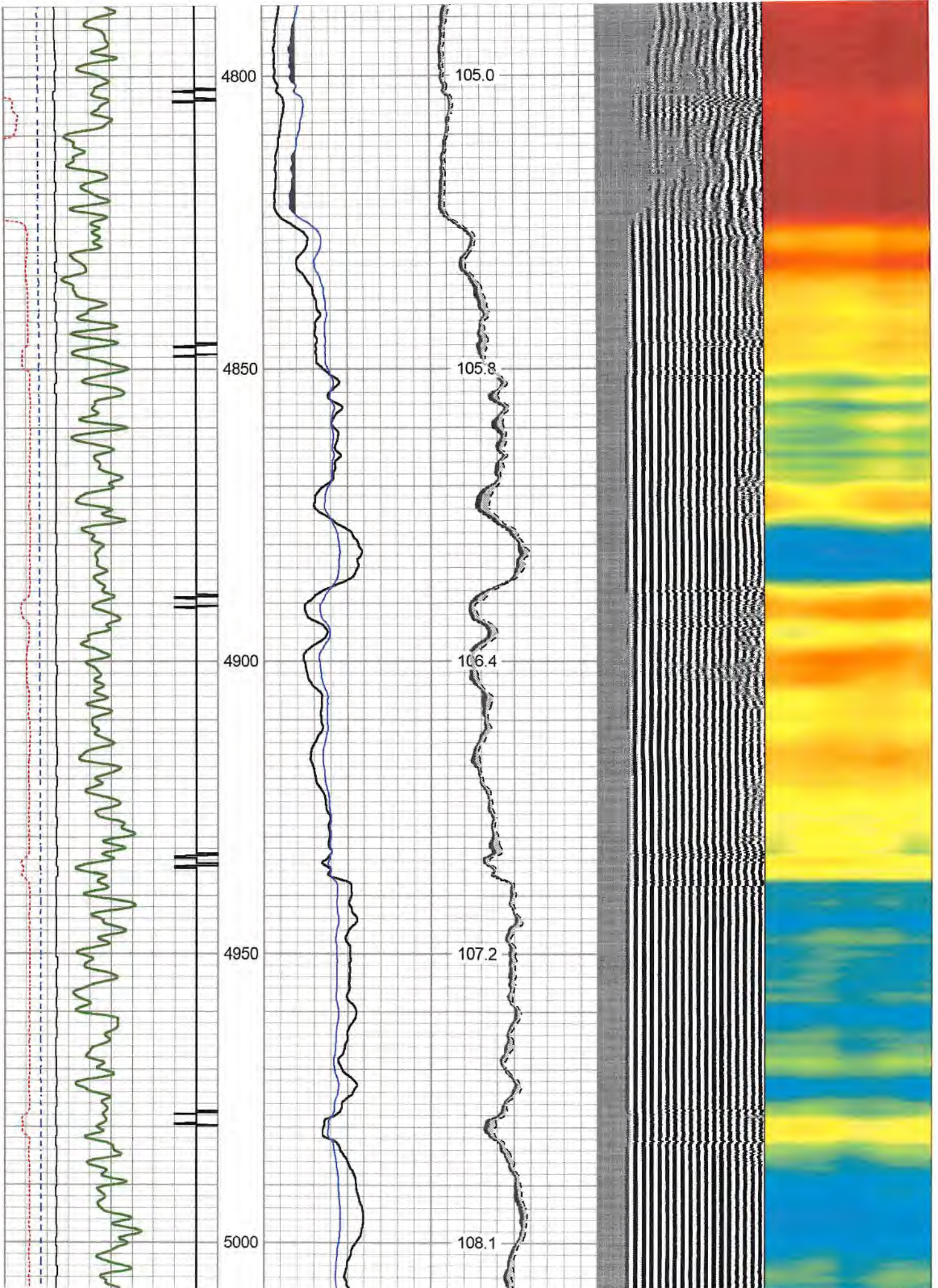




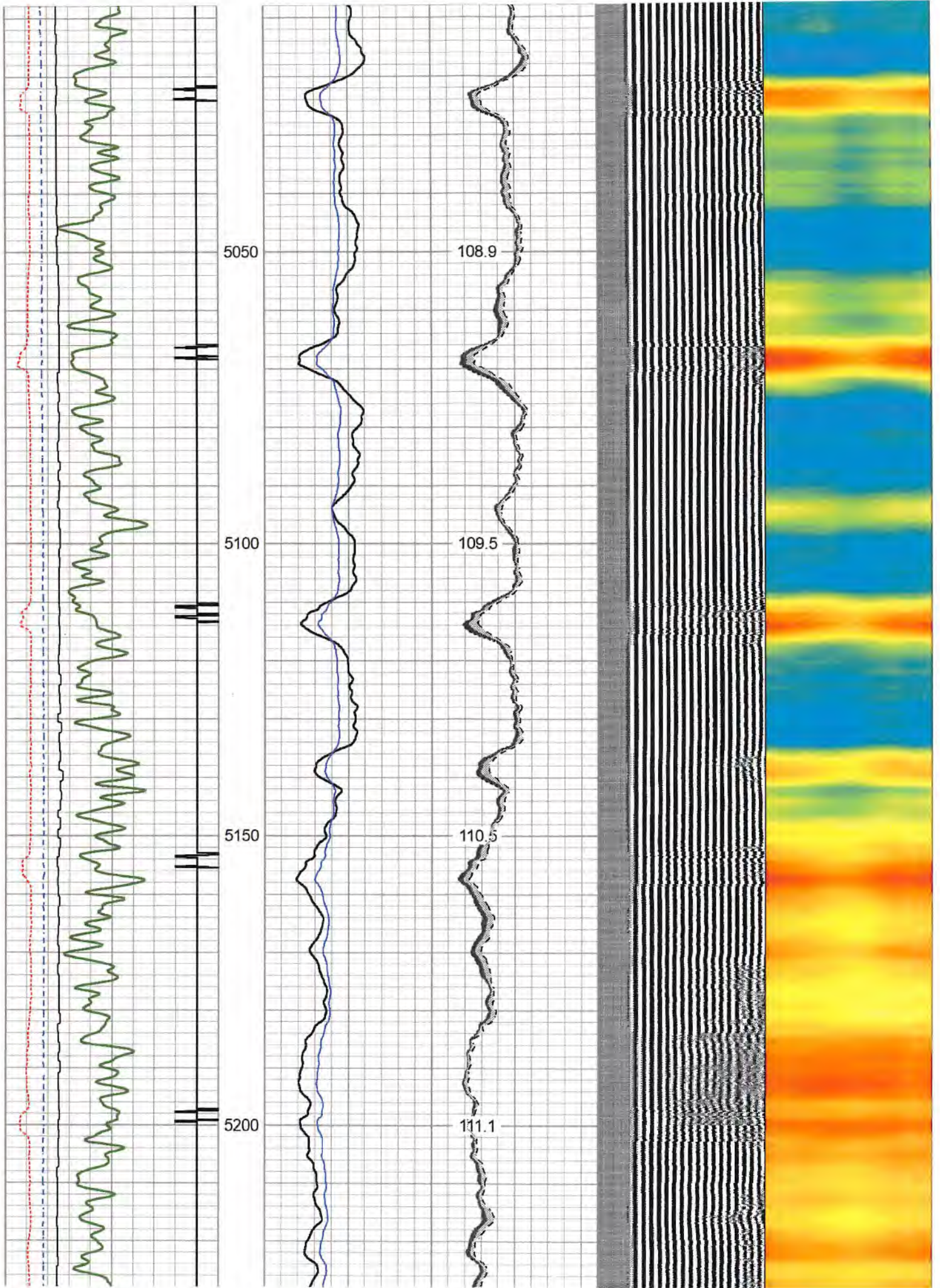


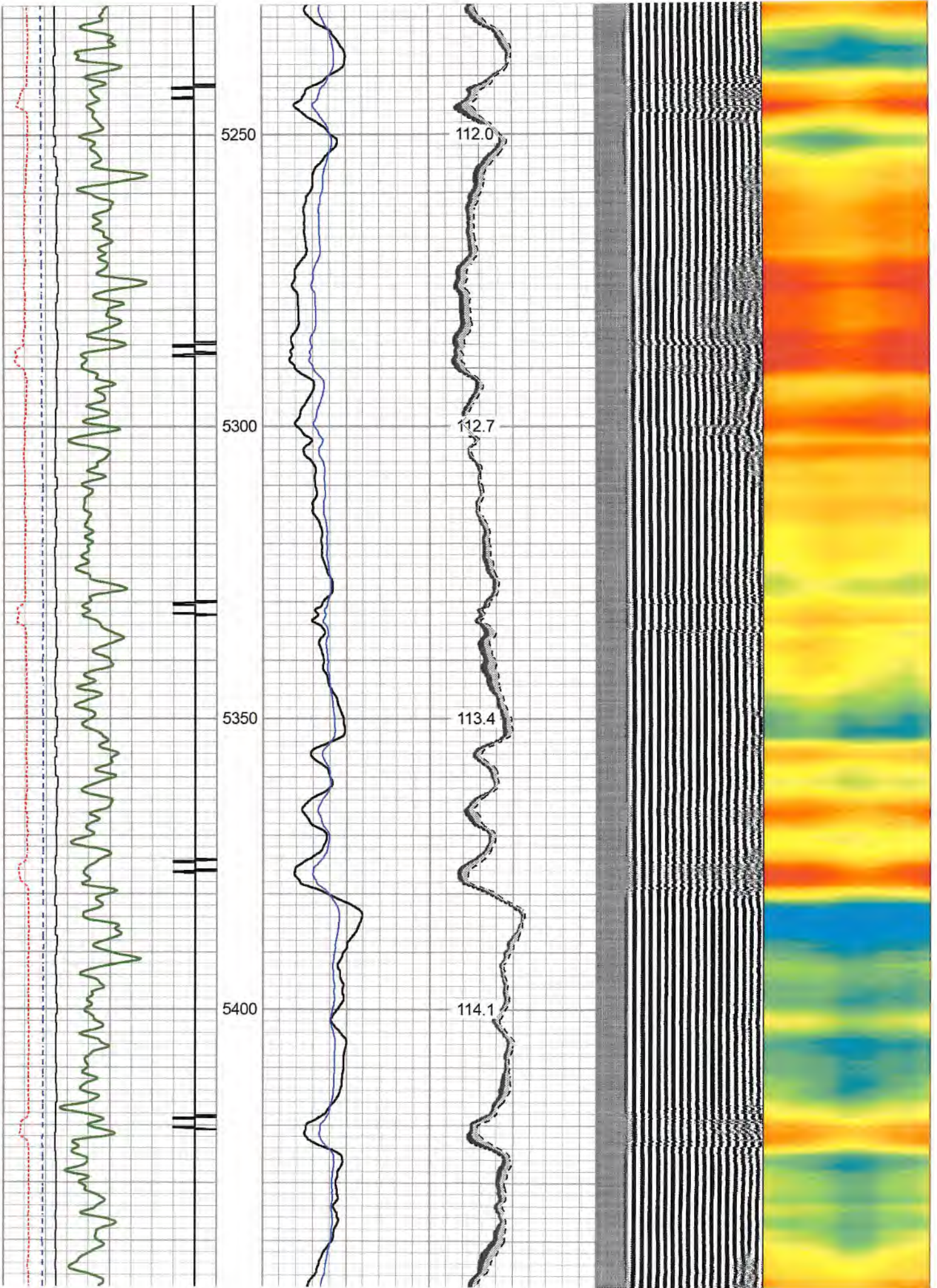


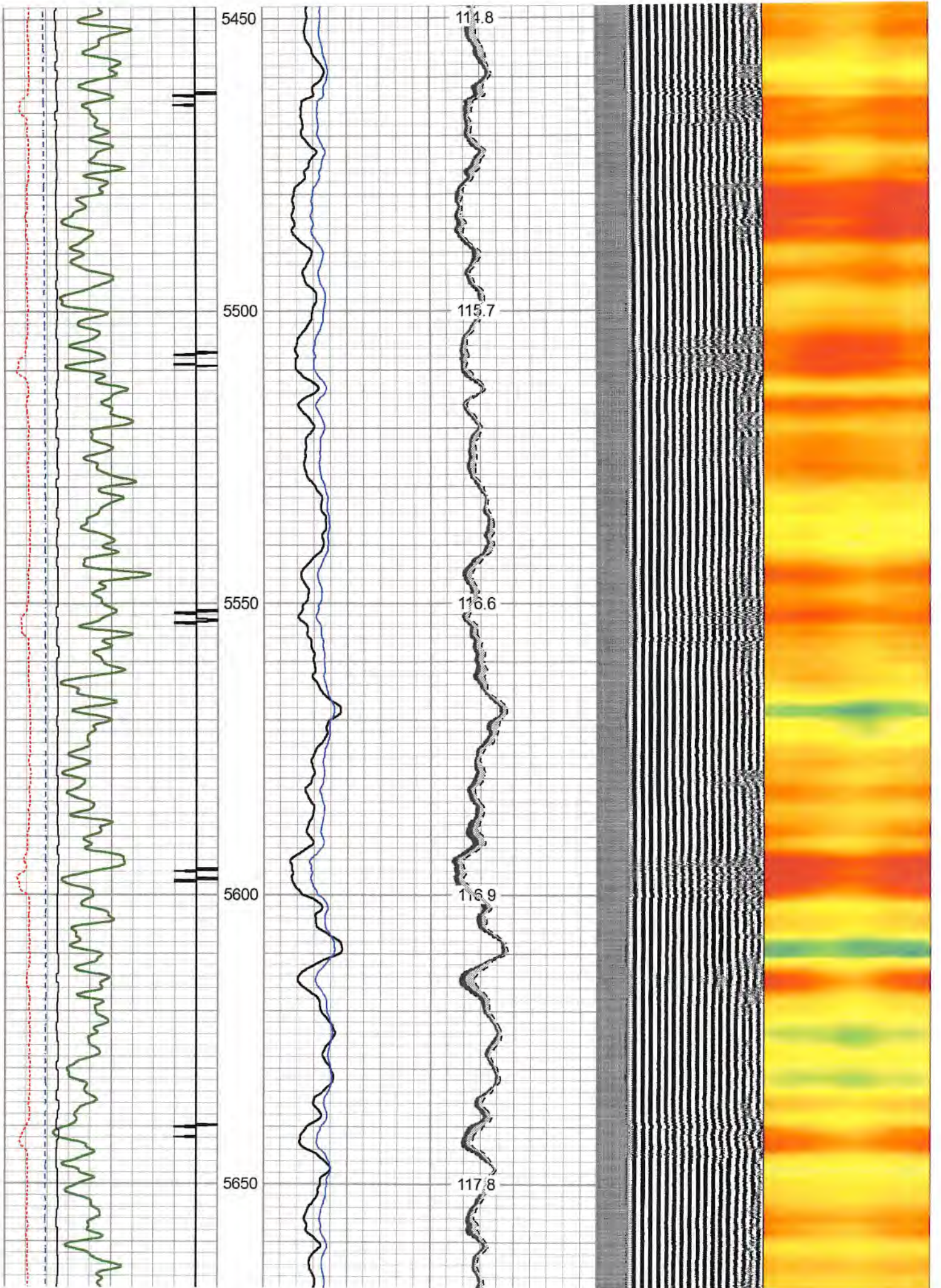


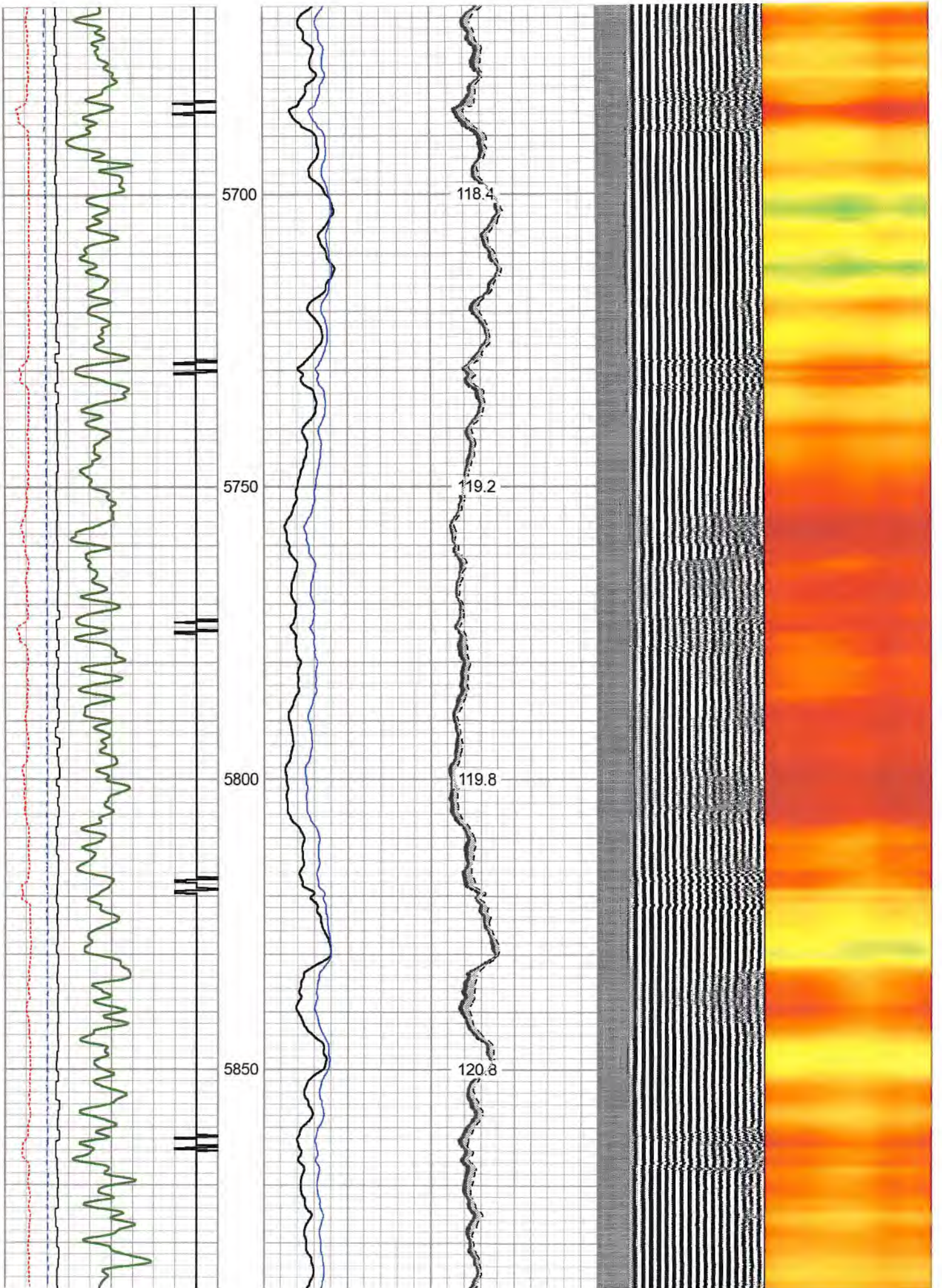


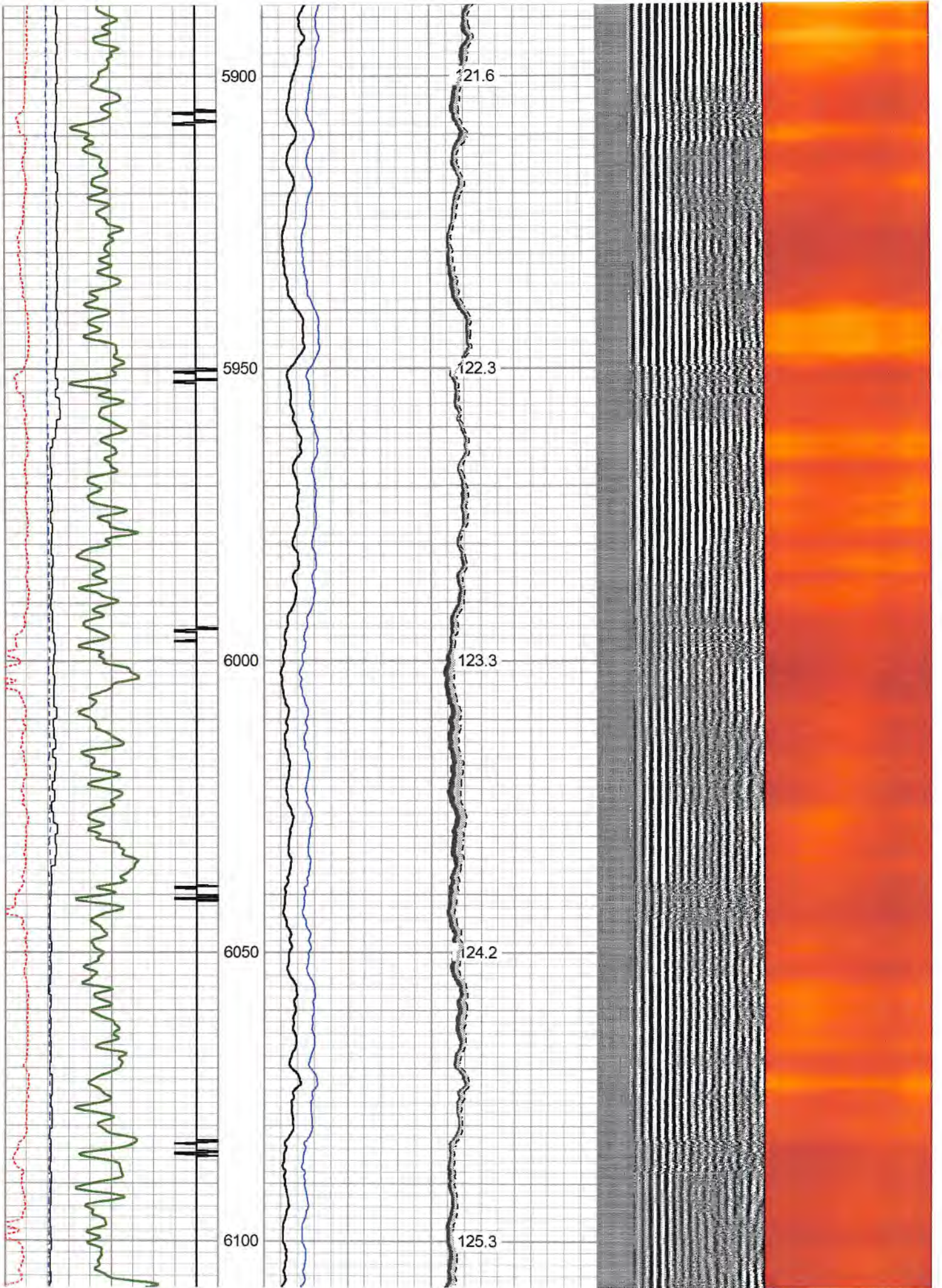


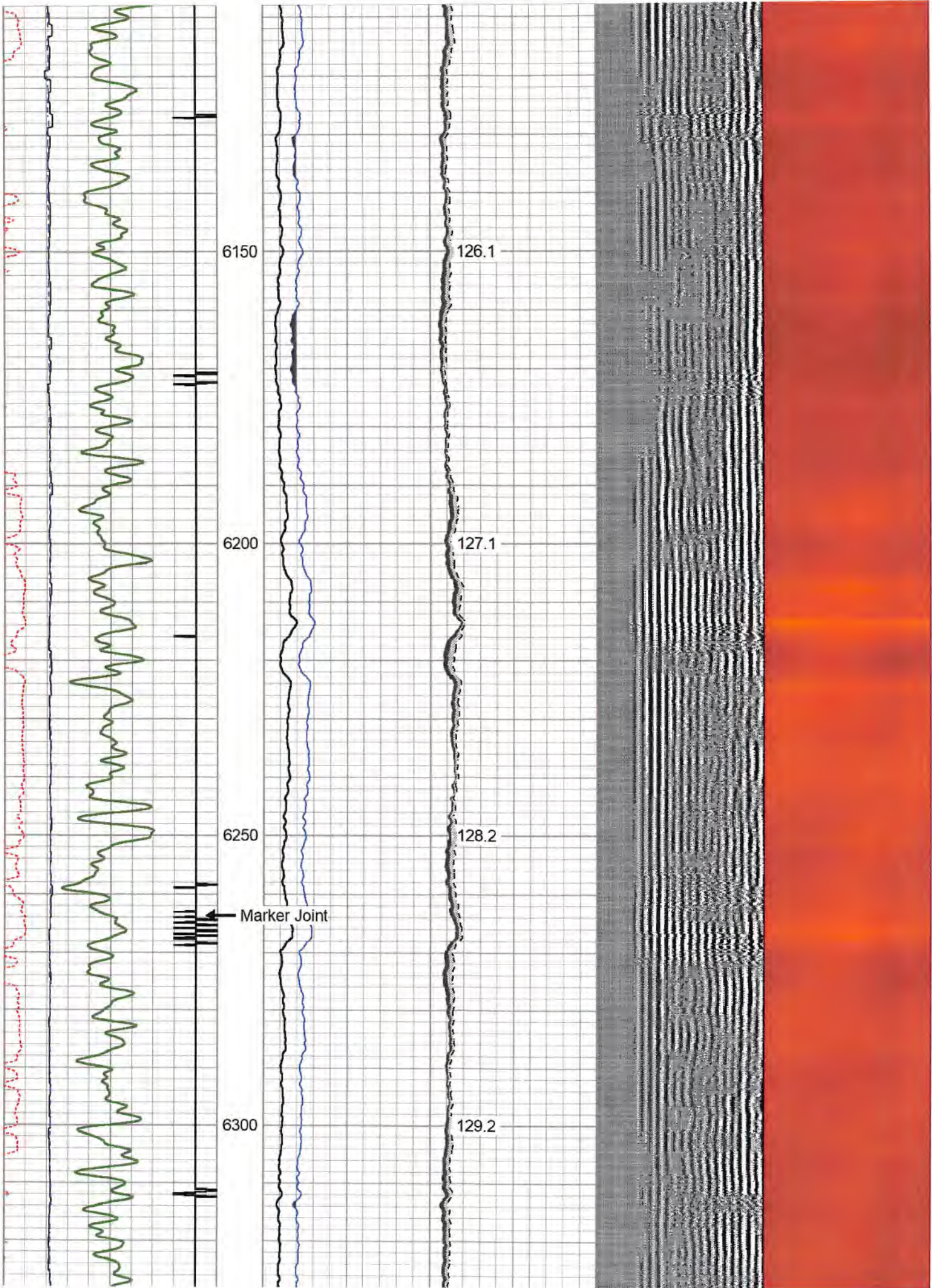


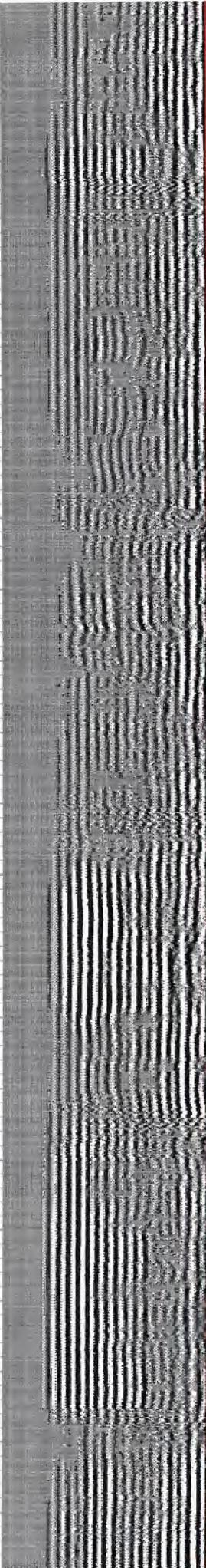
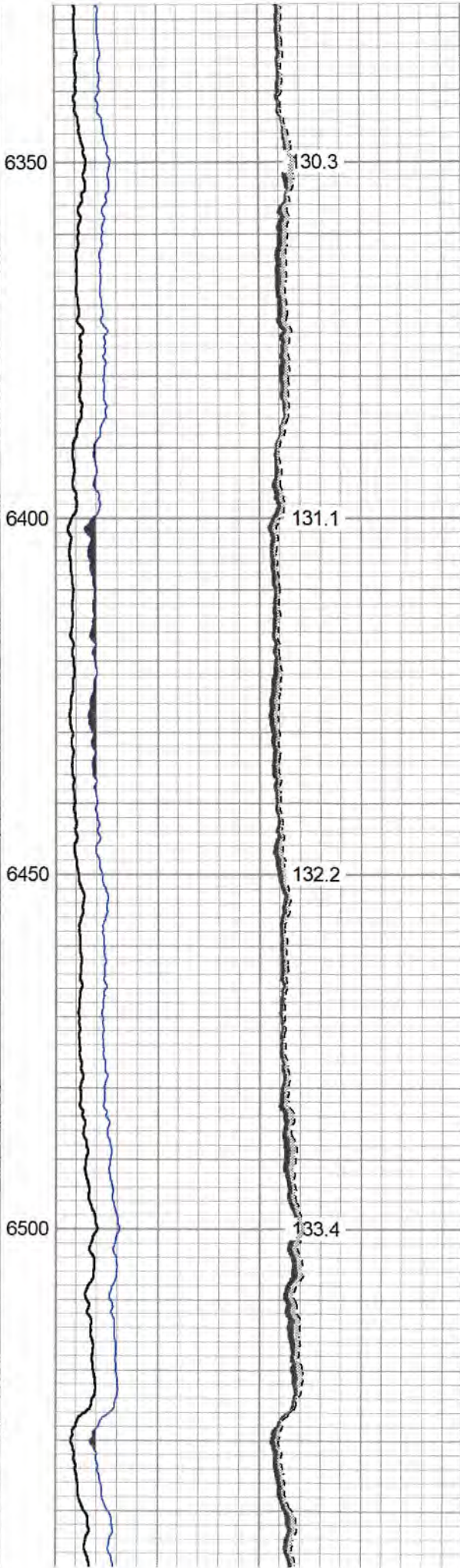
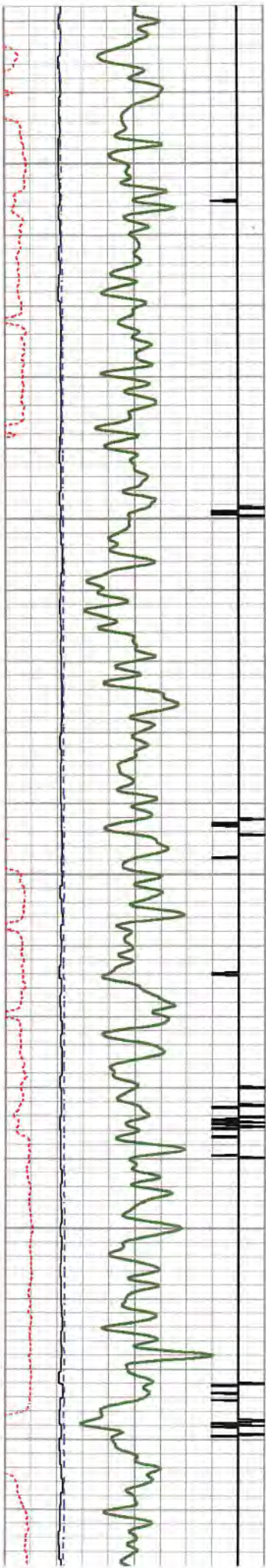


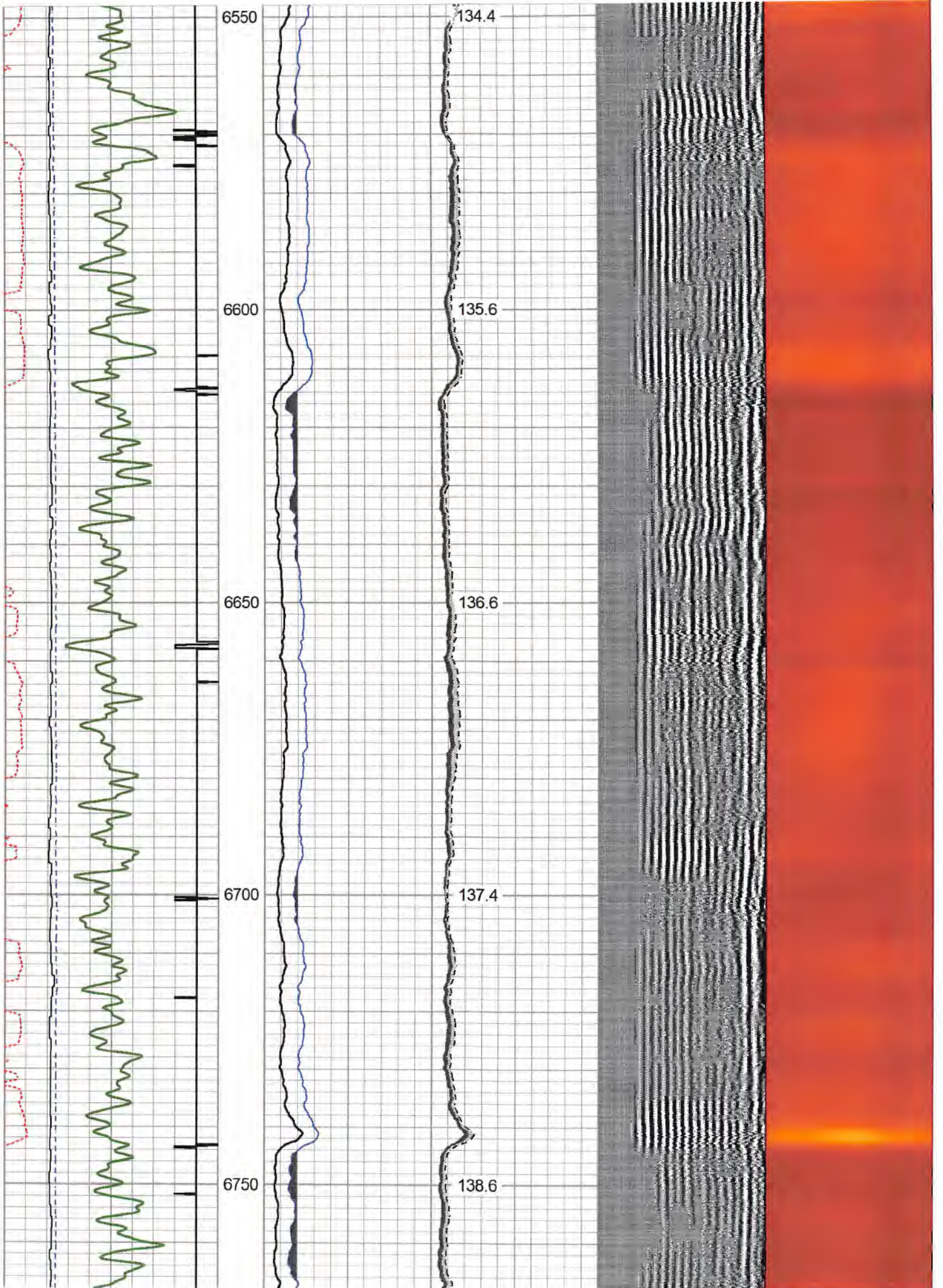




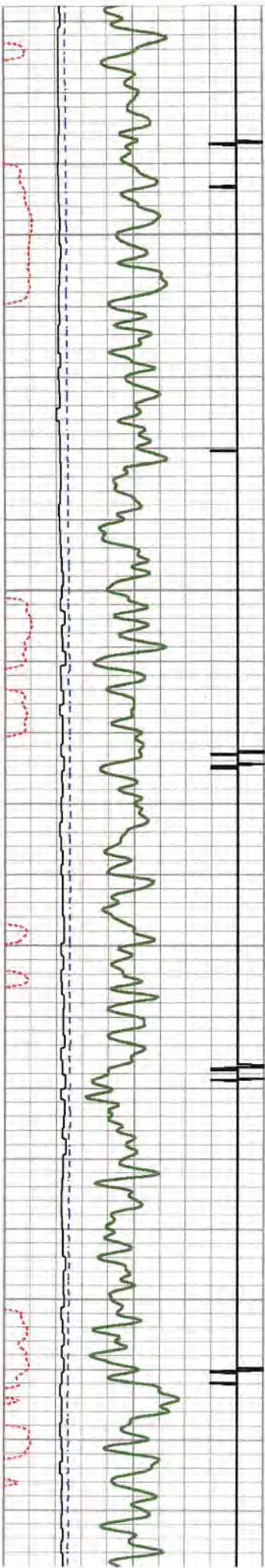










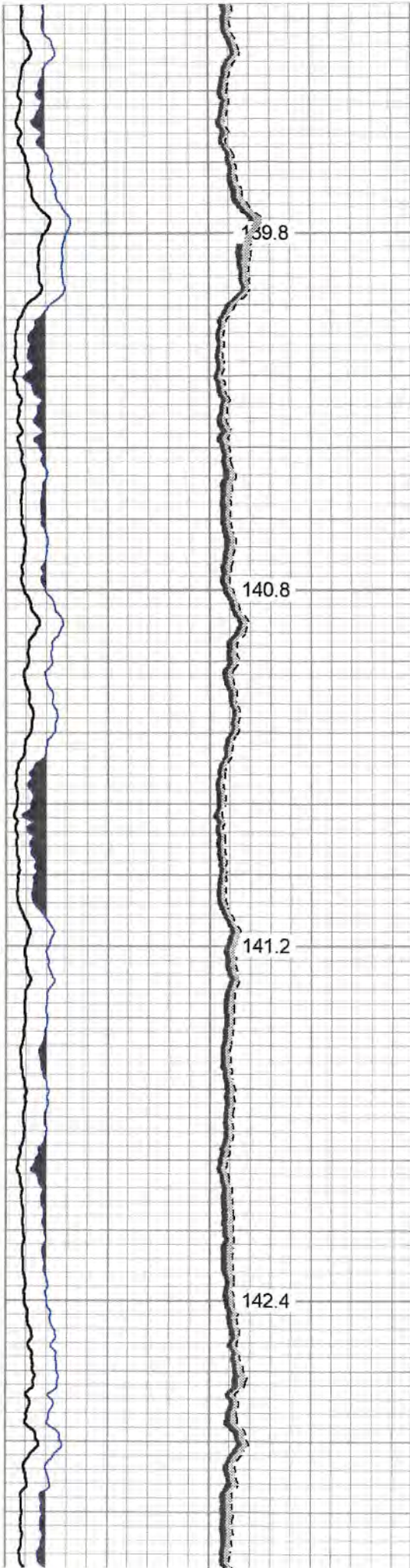


6800

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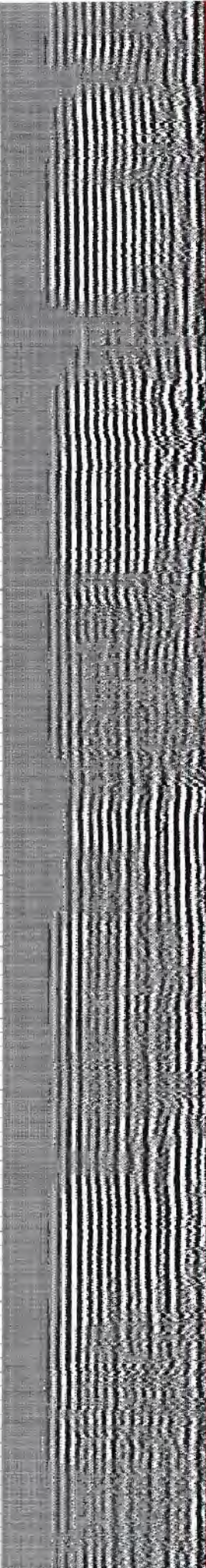


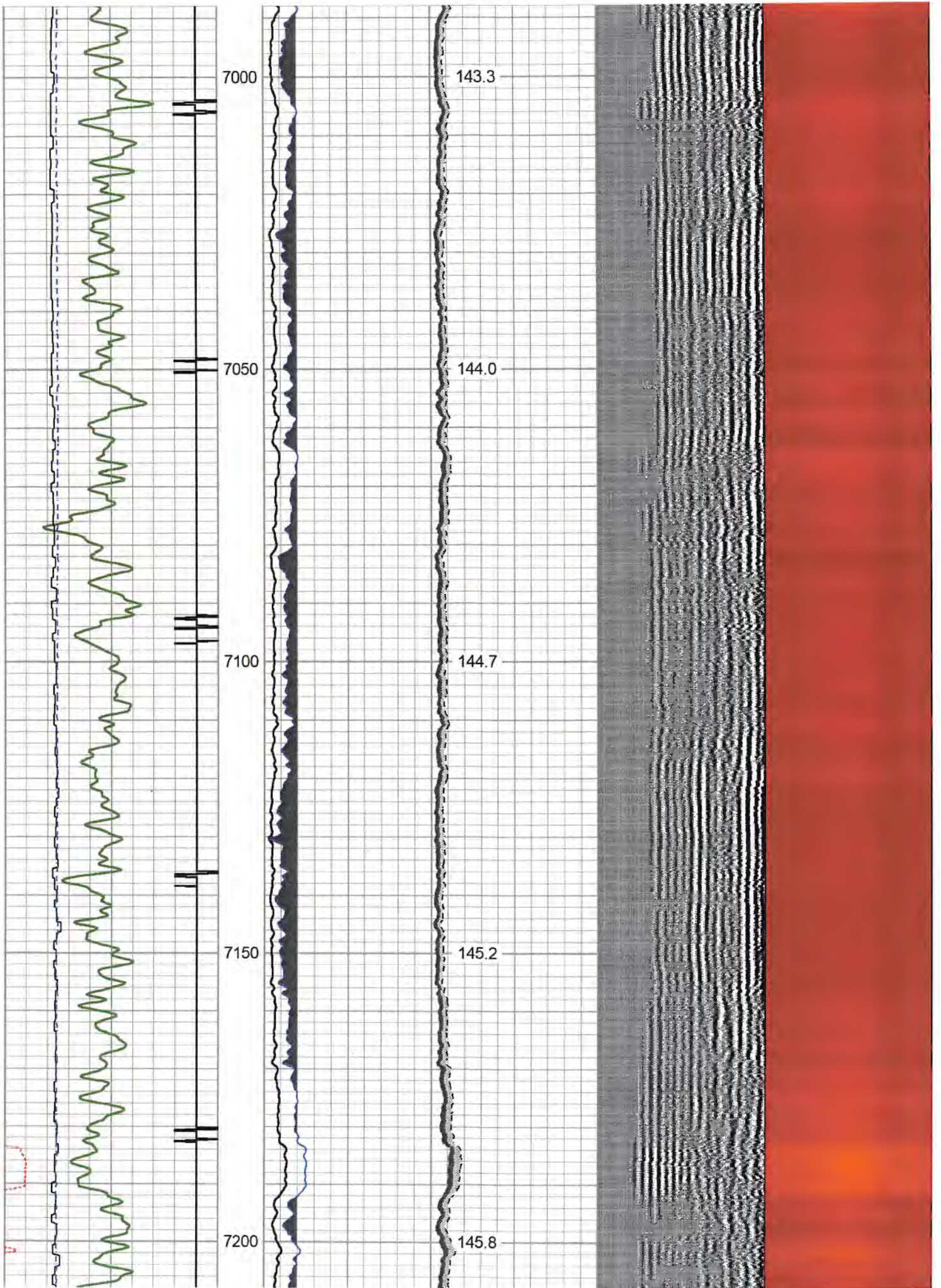
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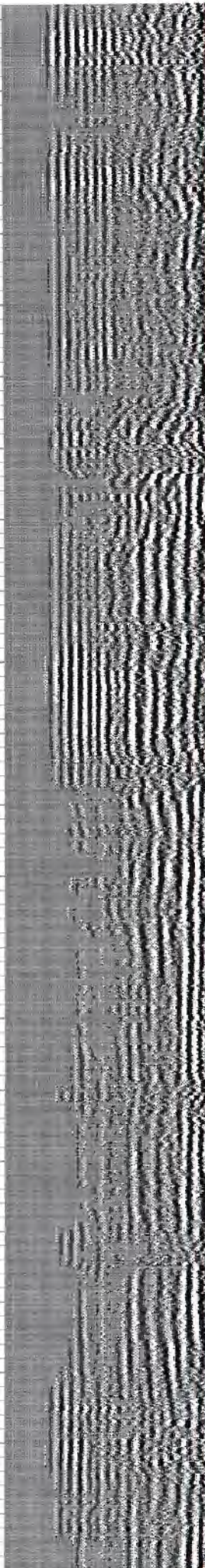
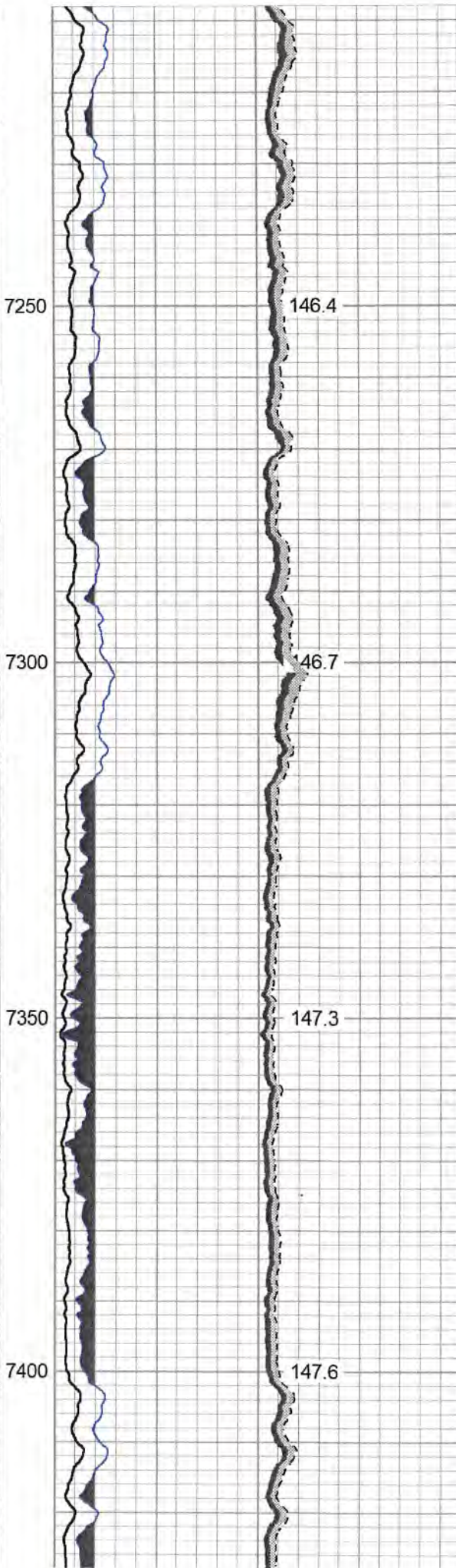
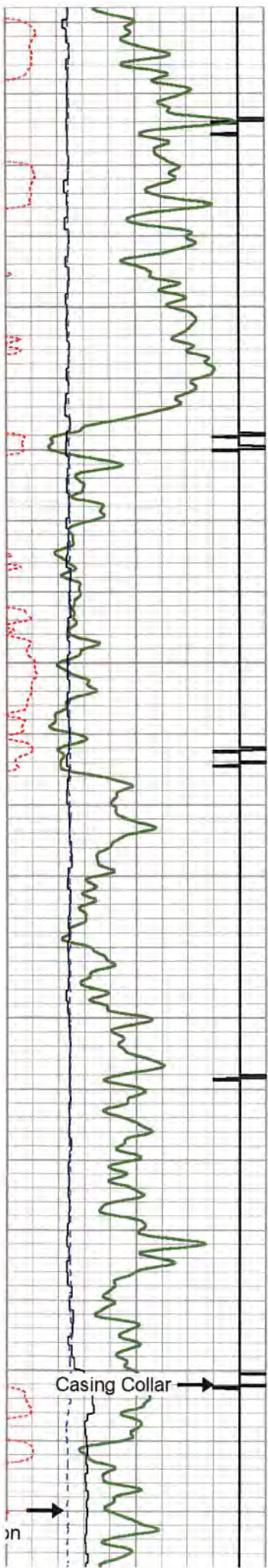
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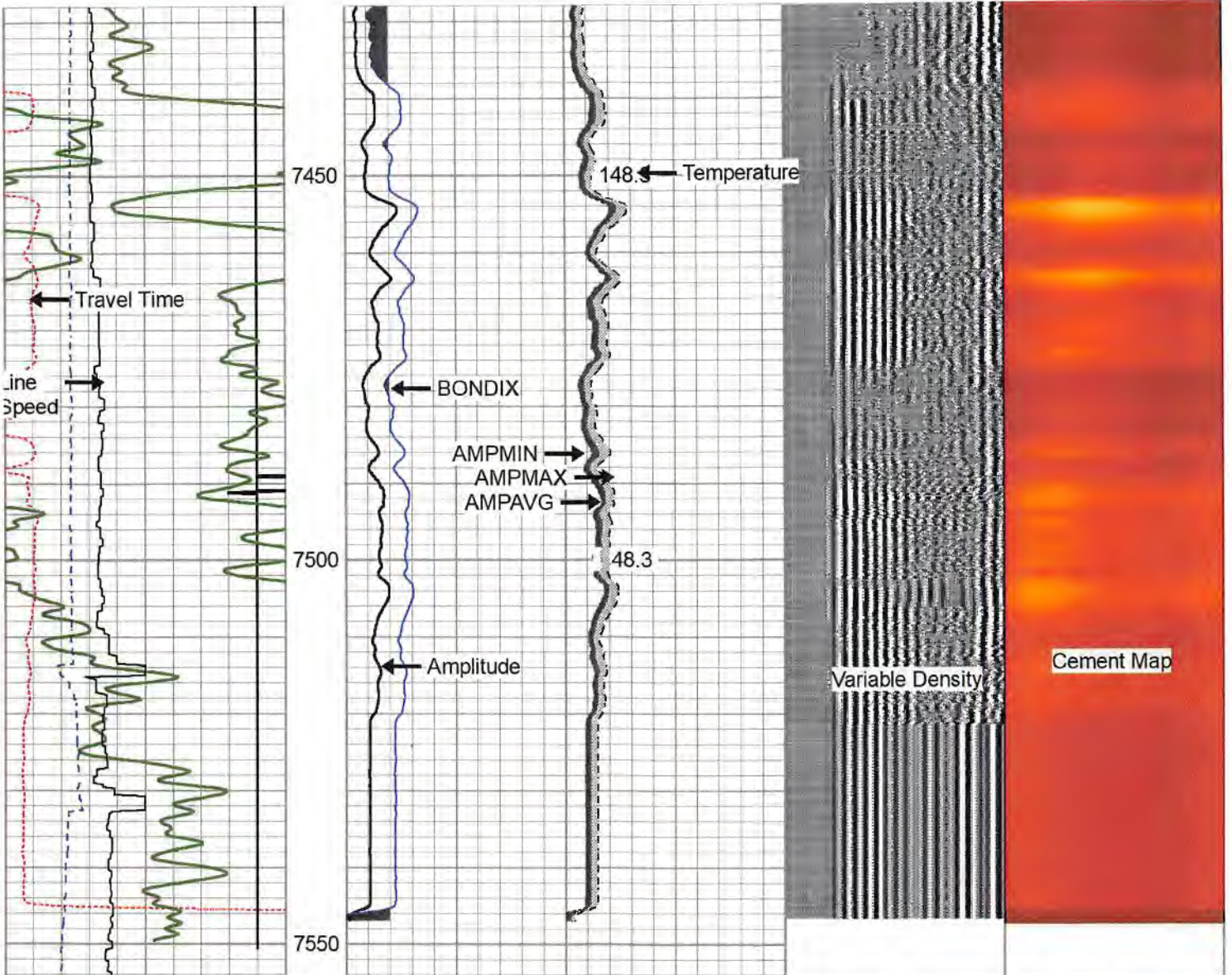
141.2

142.4









270	Travel Time (usec)	160	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
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										



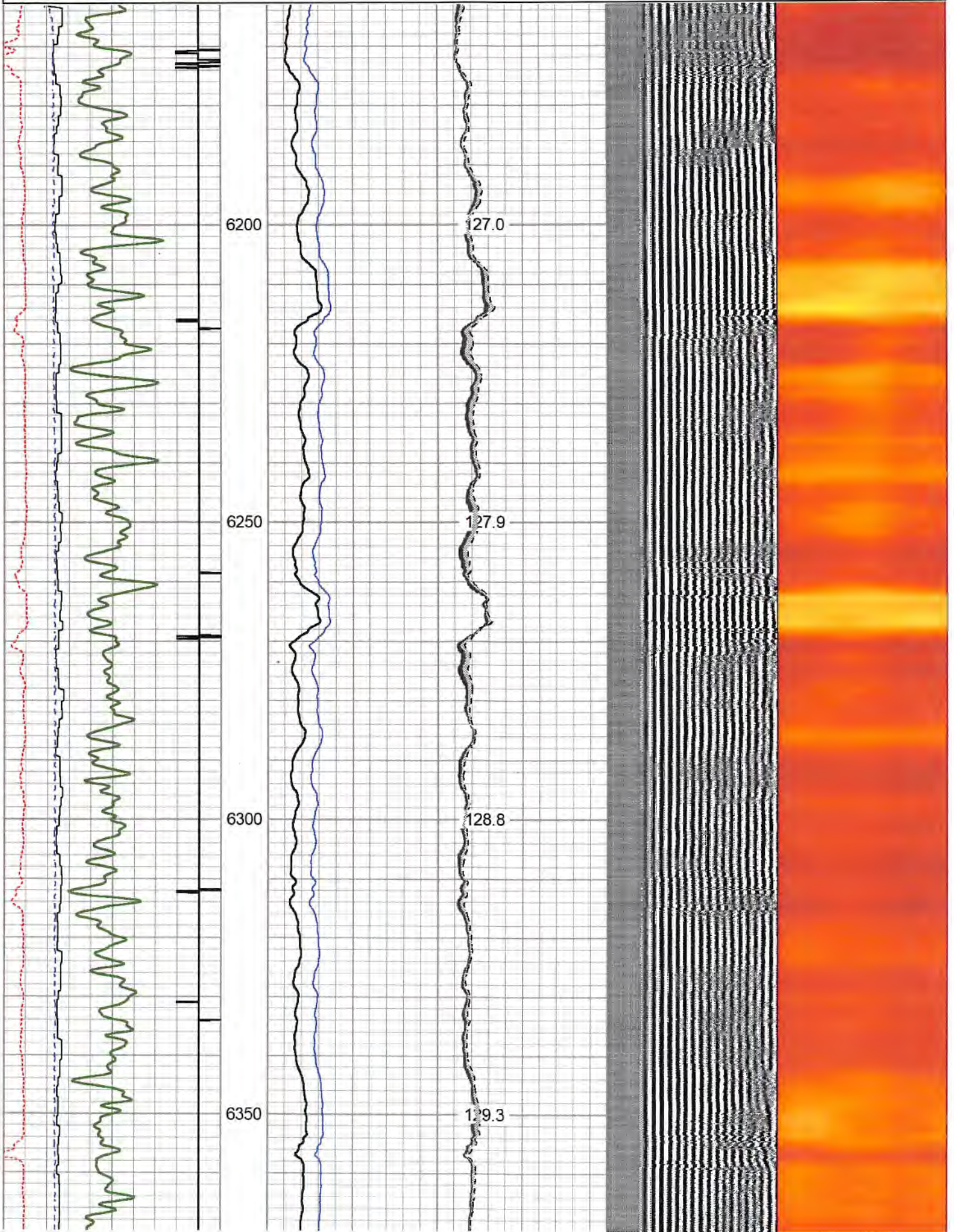
# REPEAT PASS 0 PSI

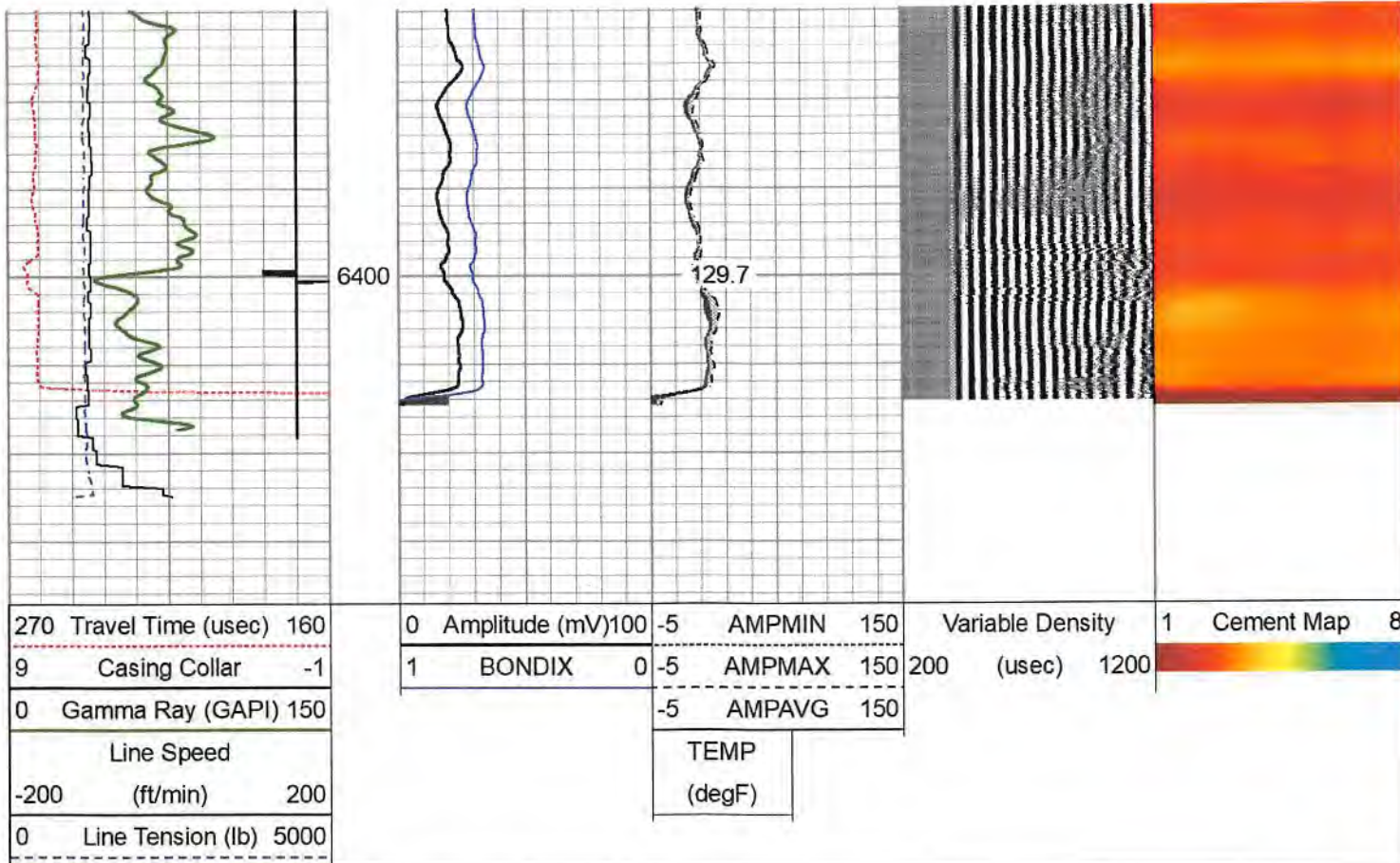
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 Dataset Pathname peter2h/run1/pass2  
 Presentation Format rcbl 2  
 Dataset Creation Wed Jan 11 21:36:46 2023  
 Charted by Depth in Feet scaled 1:240

270	Travel Time (usec)	160	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed						TFMP					

Line Speed  
-200 (ft/min) 200  
0 Line Tension (lb) 5000

Temp  
(degF)





### Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero\_peter\_2h\_rcbl\_11\_jan\_2023.db  
Dataset field/peter2h/run1/pass4/\_vars\_

**Top - Bottom**

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	7.875	147	5.5	0.361	20	71.9	2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
10.8	No	261	48	7530			

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**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_peter_2h_rcbl_11_jan_2023.db
Dataset Pathname	peter2h/run1/pass4
Dataset Creation	Wed Jan 11 21:45:14 2023

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

Segmented Cement Bond Log Calibration Report

Serial Number: 2.75"  
 Tool Model: Probe275T  
 Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 339.675 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.881	2.200	71.921	79.834	1.615
CAL	0.993	1.456				
5'	-0.005	0.900	2.200	71.921	77.077	2.576
SUM						
S1	0.089	0.889	0.000	100.000	125.048	-11.146
S2	0.006	0.813	0.000	100.000	123.882	-0.732
S3	-0.001	0.871	0.000	100.000	114.770	0.086
S4	-0.005	0.919	0.000	100.000	108.216	0.544
S5	-0.009	0.936	0.000	100.000	105.804	0.944
S6	-0.013	0.949	0.000	100.000	104.002	1.314
S7	0.000	0.920	0.000	100.000	108.707	-0.042
S8	0.004	0.871	0.000	100.000	115.335	-0.424


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	0.993	1.456	1.000	0.000

Air Zero Calibration, performed Wed Jan 11 18:02:46 2023:

	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	

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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00







Nine

Well	PETER 2H
Field	SOUTH CANTON
County	DODDRIDGE
State	WV

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JUN 2 2023

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Environmental Protection