



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

Company Antero Resources
Well Sisterville Unit 1
Field Rabbit Ears
County Tyler
State West Virginia

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County Tyler State West Virginia

Location: API #: 47-095-02619 Other Services

Permanent Datum SEC N/A TWP N/A RGE N/A
Log Measured From Ground Level Elevation Kelly Bushing (30')
Drilling Measured From Kelly Bushing

Date 23-Feb-2020

Run Number	One				
Depth Driller	17,738 ft.				
Depth Logger	7,210 ft.				
Bottom Logged Interval	7,210 ft.				
Top Log Interval	Surface				
Open Hole Size	N/A				
Type Fluid	Water				
Density / Viscosity	N/A				
Max. Recorded Temp.	148 Deg. F.				
Estimated Cement Top	3,840 ft.				
Time Well Ready	07:00				
Time Logger on Bottom	10:06				
Equipment Number	132				
Location	Marietta, Ohio				
Recorded By	Tom Weese				
Witnessed By	James Carter				
Borehole Record		Tubing Record			
Run Number	Bit	From	To	Size	Weight
					From
					To
Casing Record	Size	Wgt/Ft	Top	Bottom	
Surface String	13 3/8 in.	54.5 lbs.	Surface	406 ft.	
Prot. String	9 5/8 in.	36 lbs.	Surface	2,590 ft.	
Production String	5 1/2 in.	20 lbs.	Surface	17,738 ft.	
Liner					

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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

Primary Log on Well

Marker Joint @ 6,364 to 6,374 ft. Wireline Depth
No Correction to Pipe Tally - Per OSR

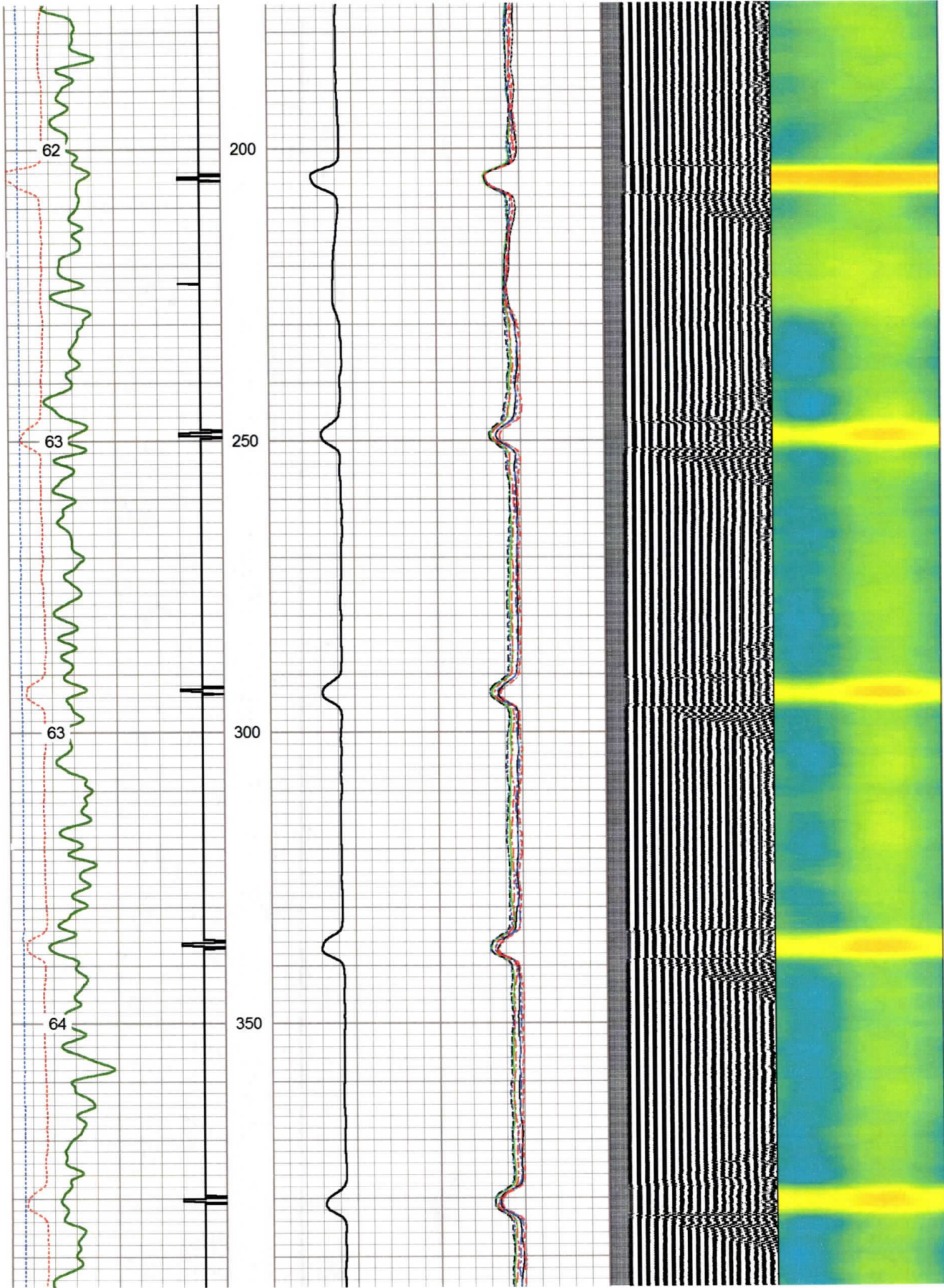
Main Pass 1,500 PSI
Repeat Pass 0 PSI

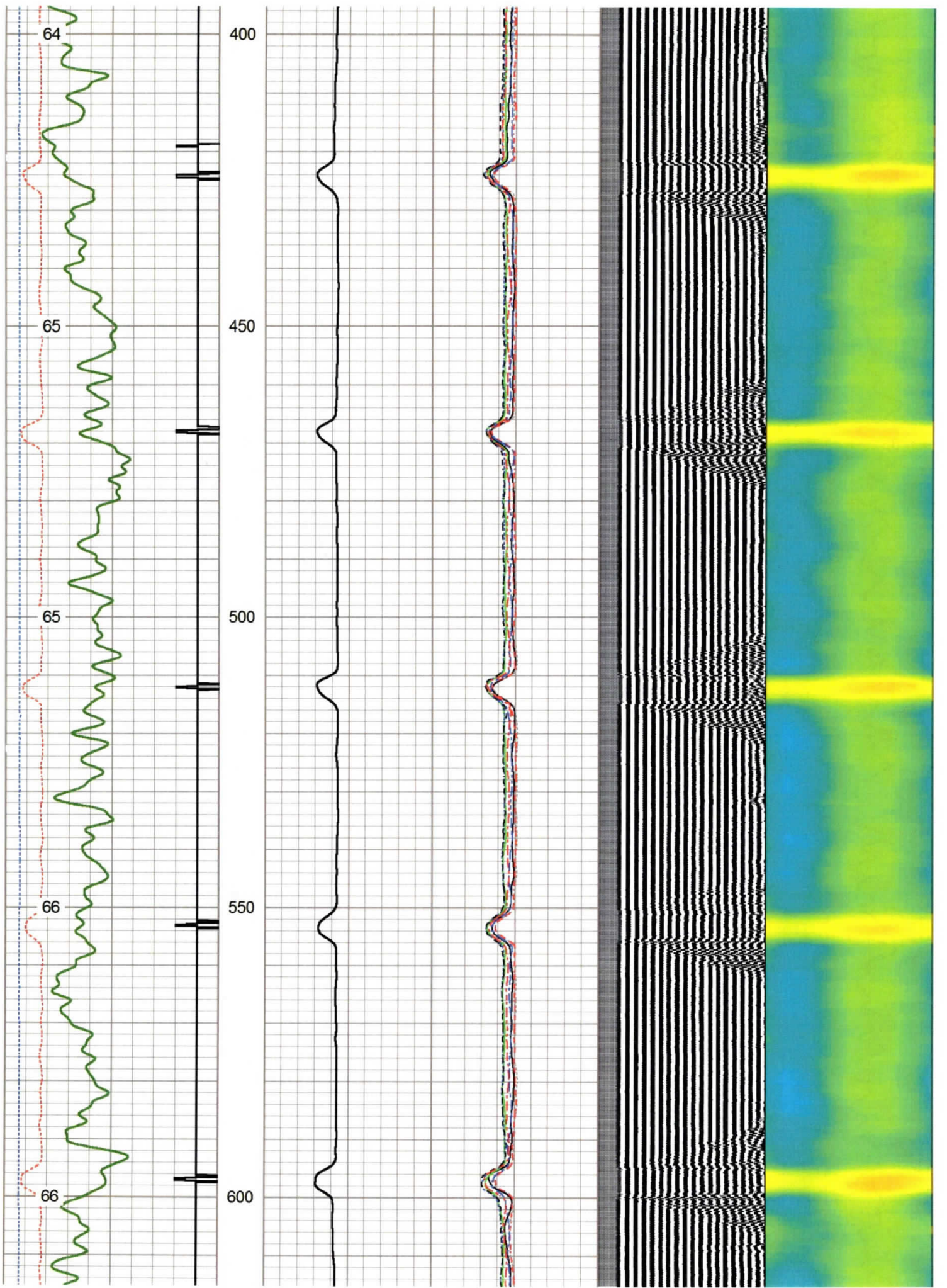
Thank You For Choosing Nine Energy Service Wireline. Marietta, Ohio

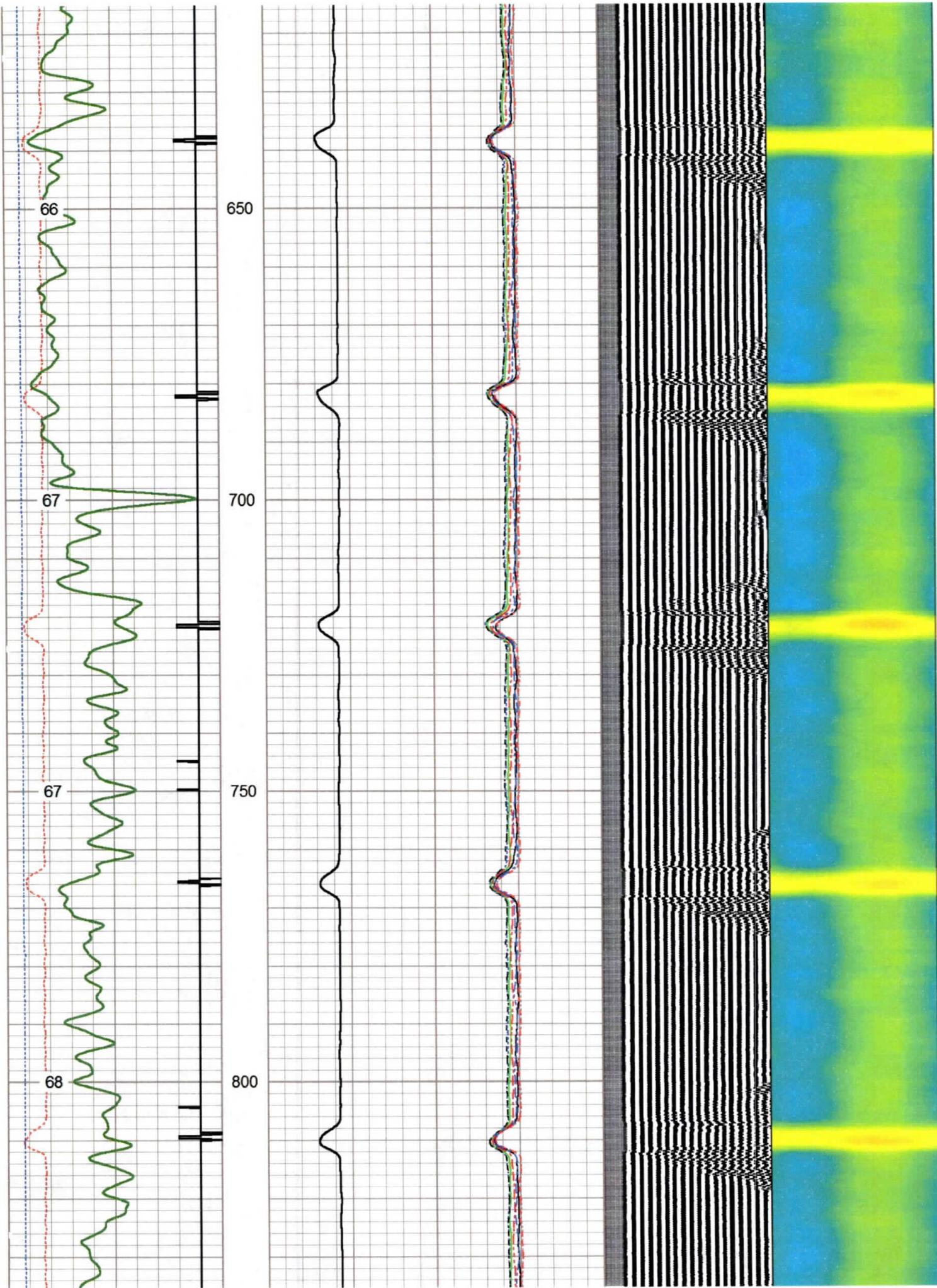
RECEIVED
Office of Oil and Gas
OCT 28 2020
WV Department of
Environmental Protection

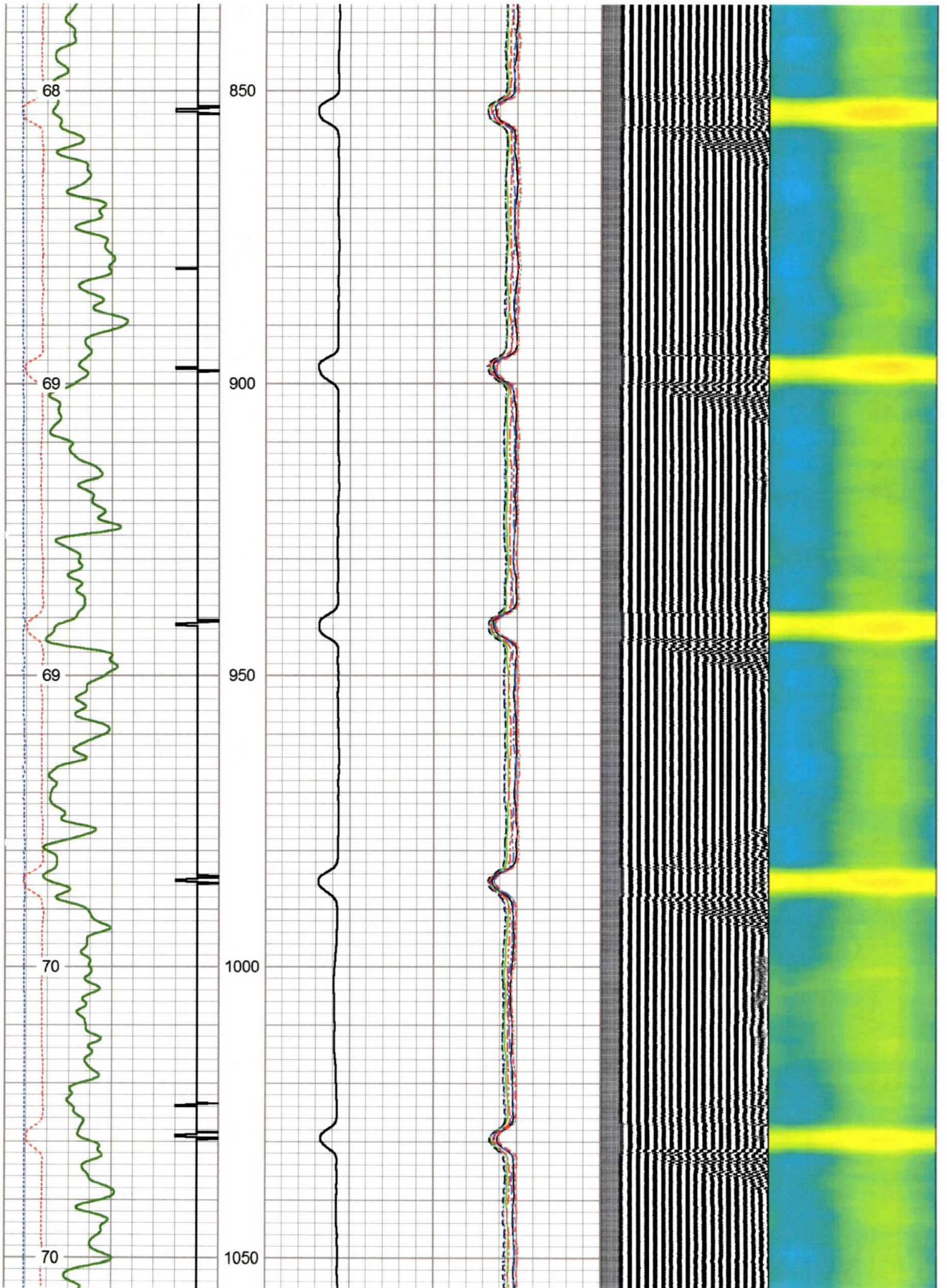


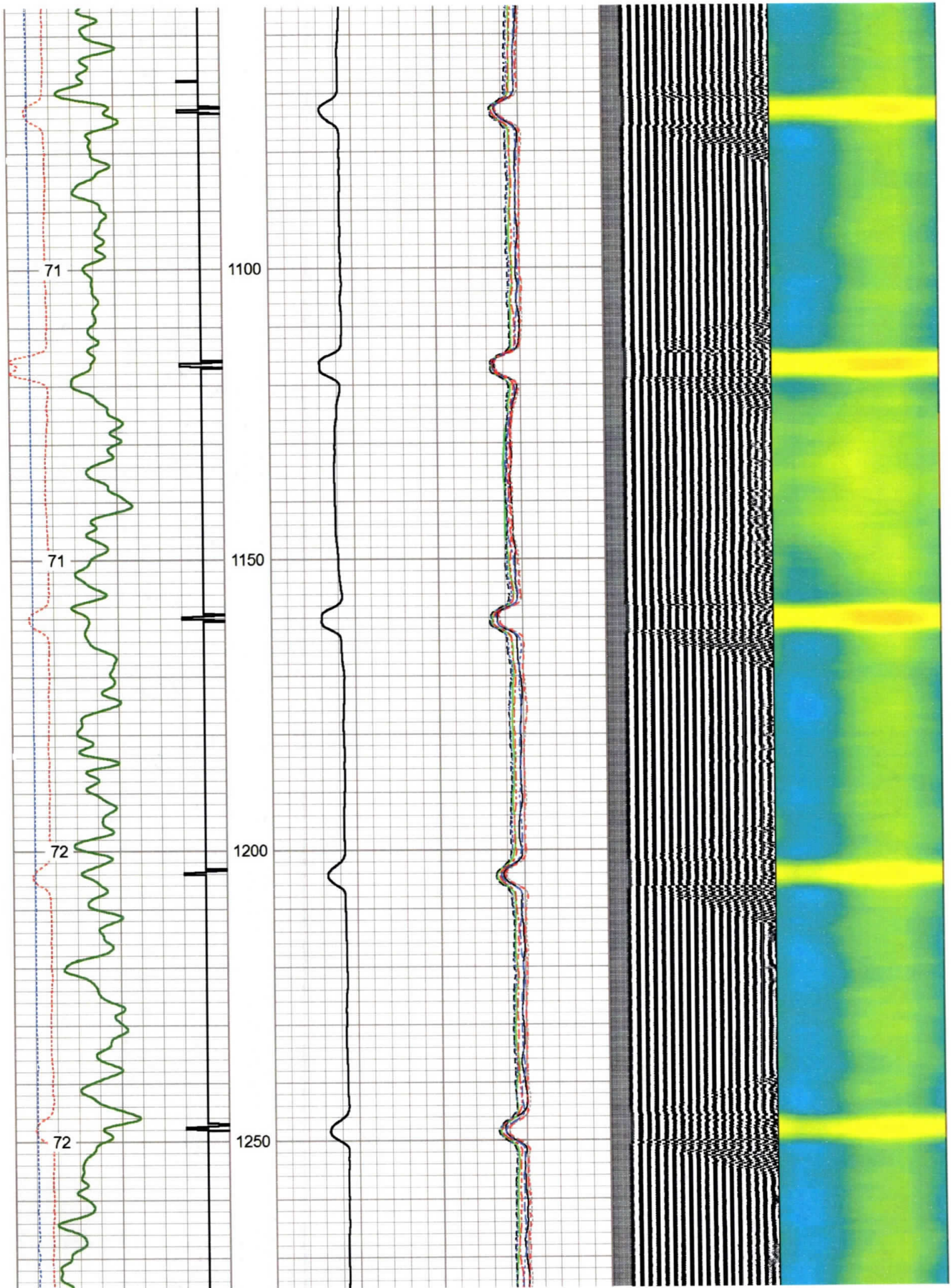
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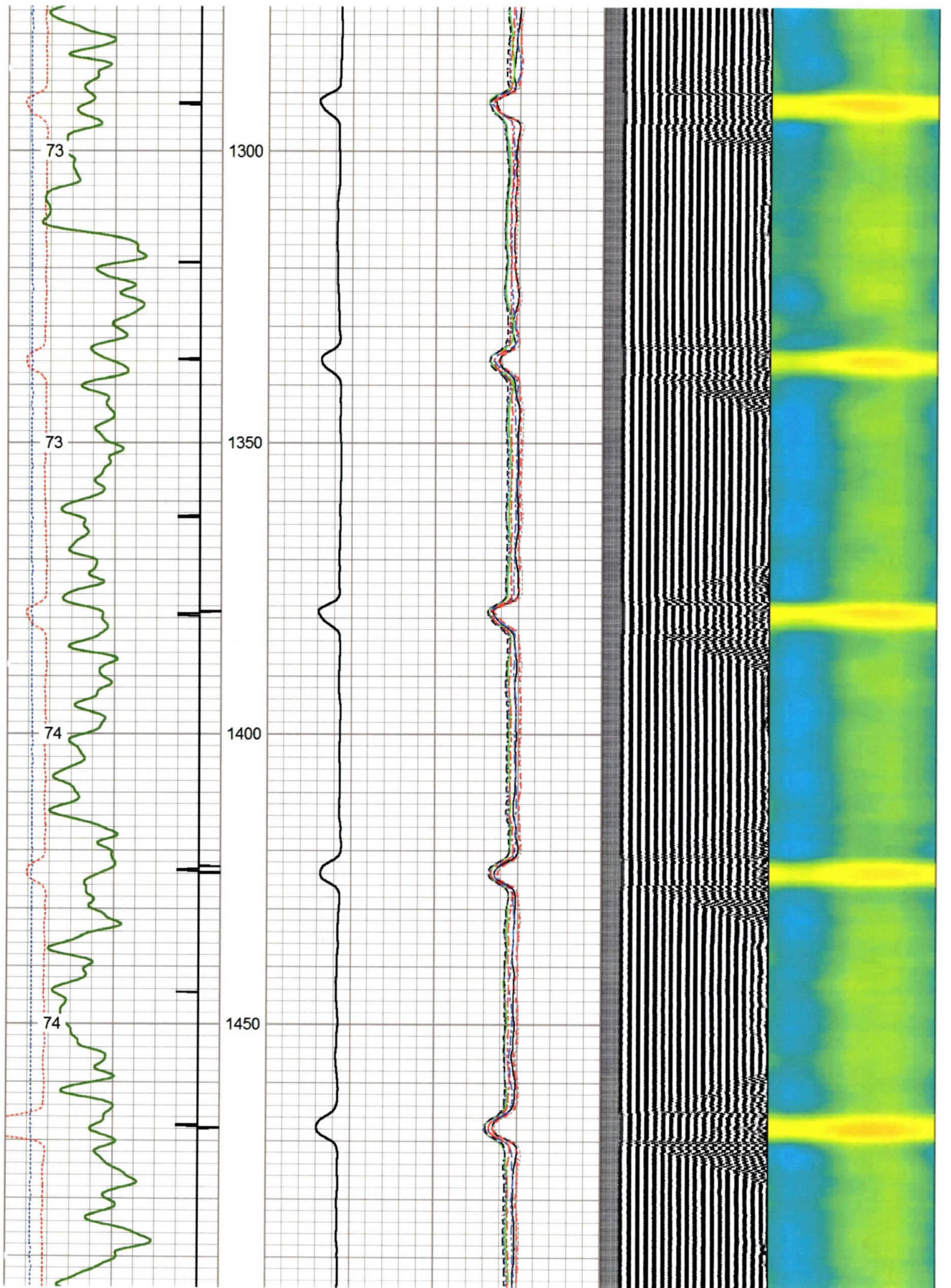


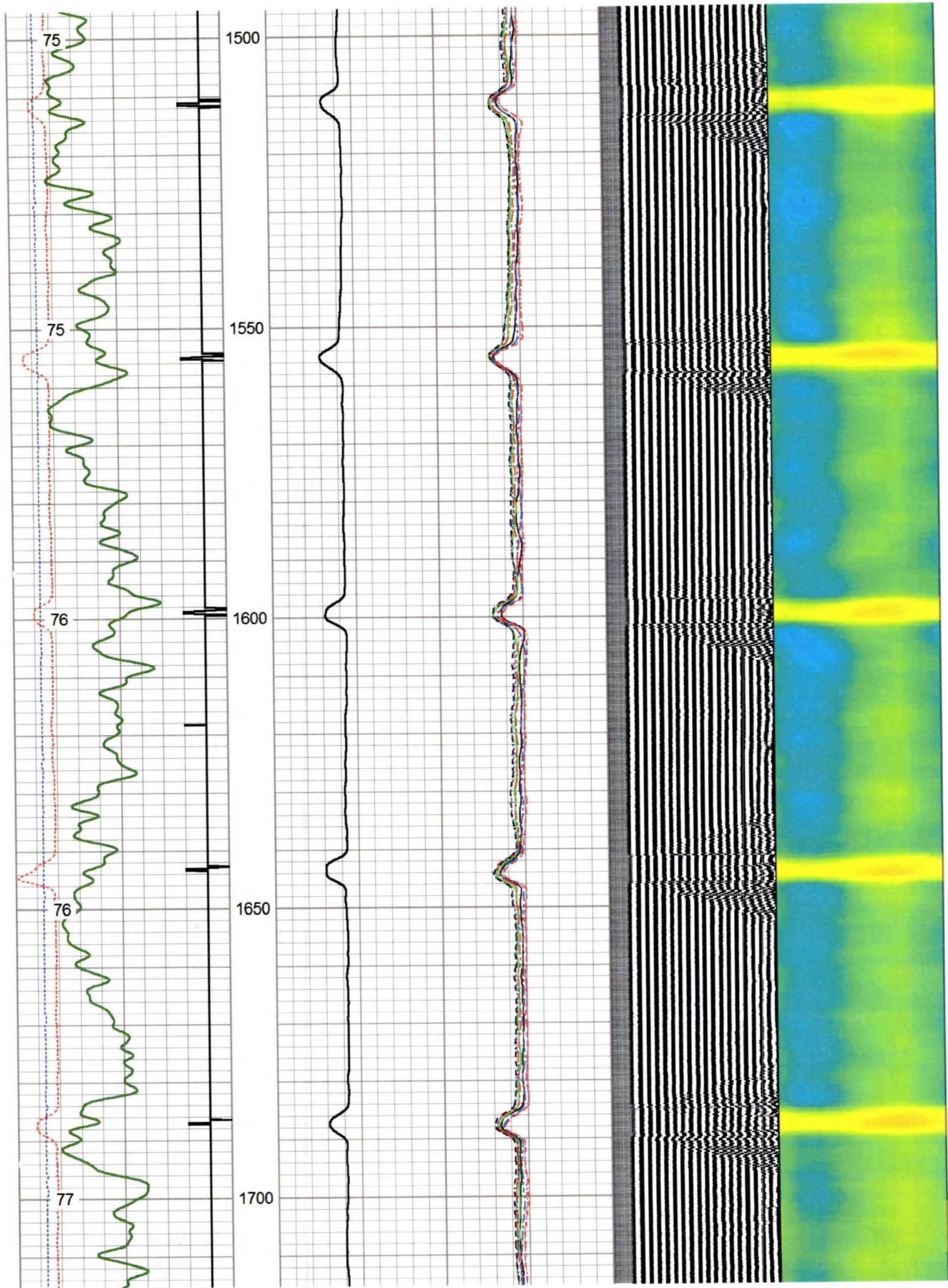


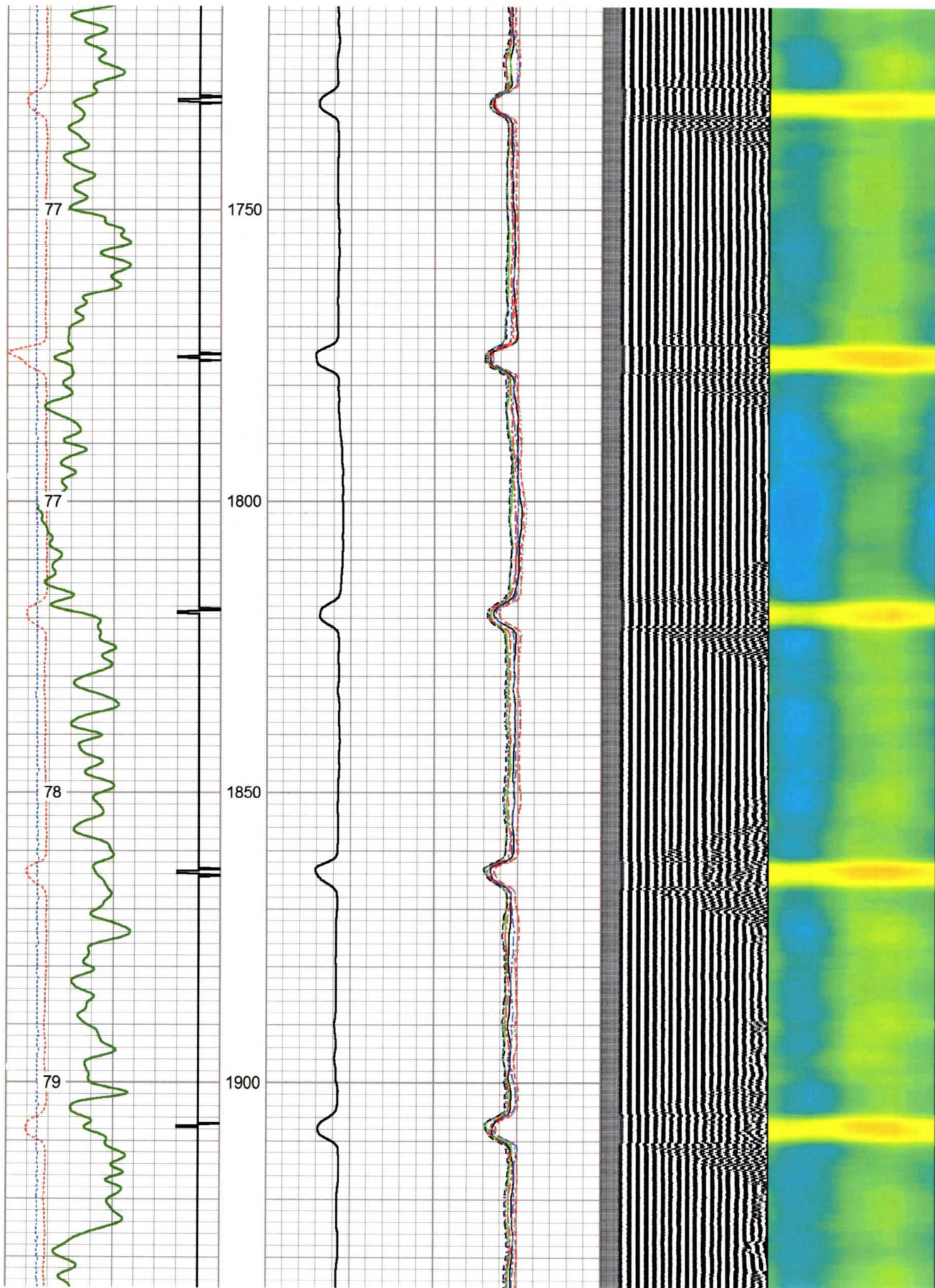


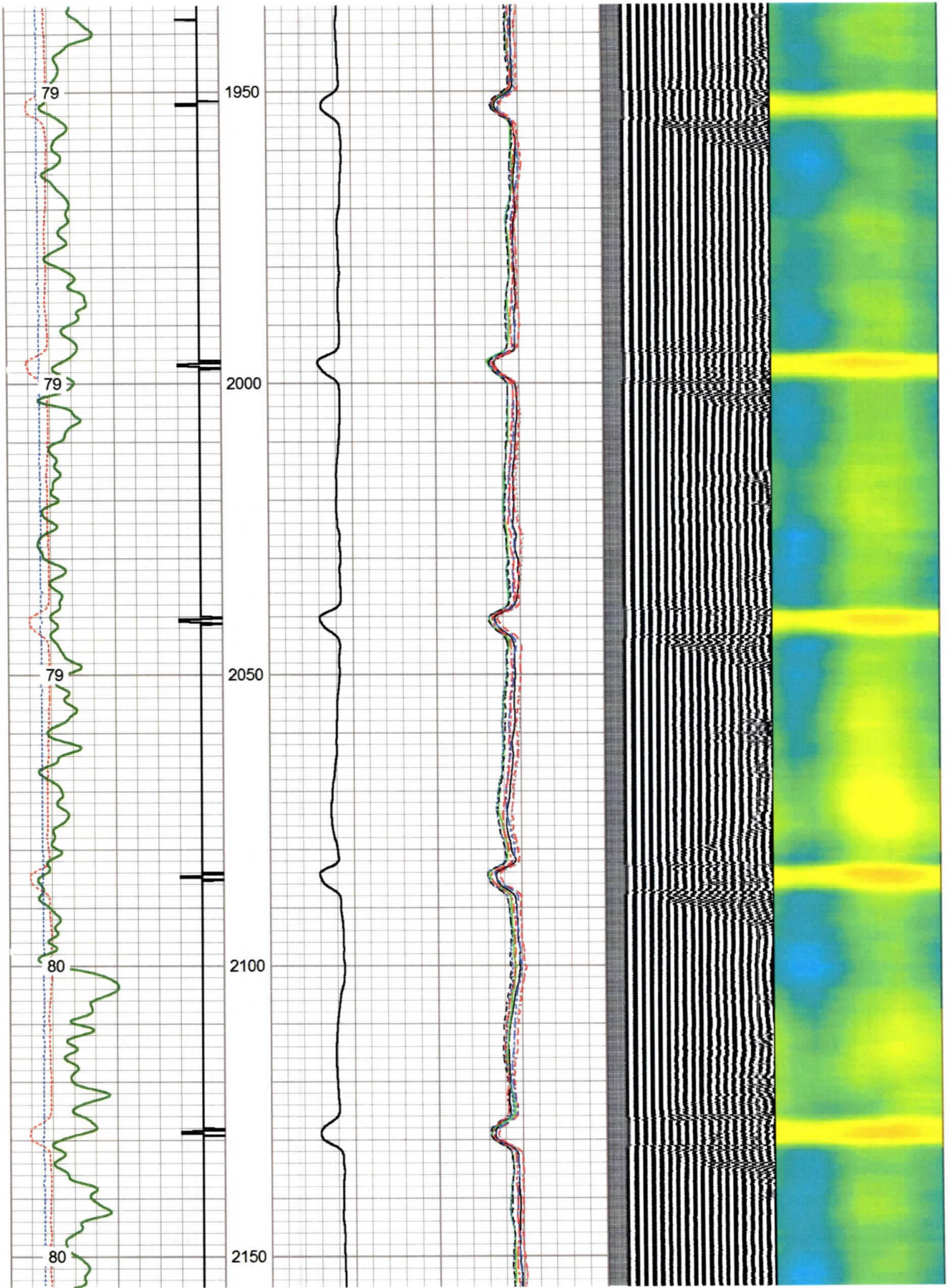


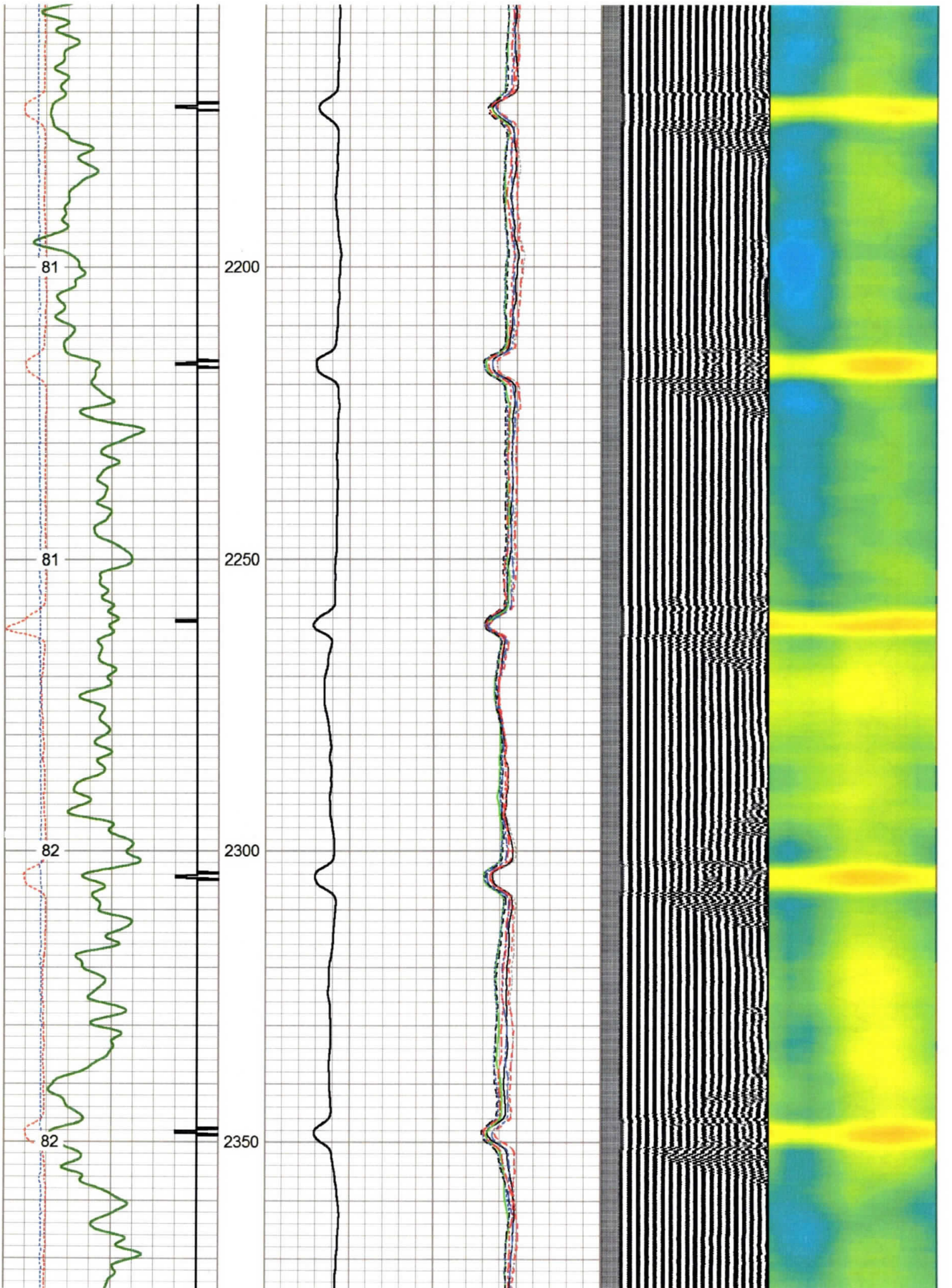


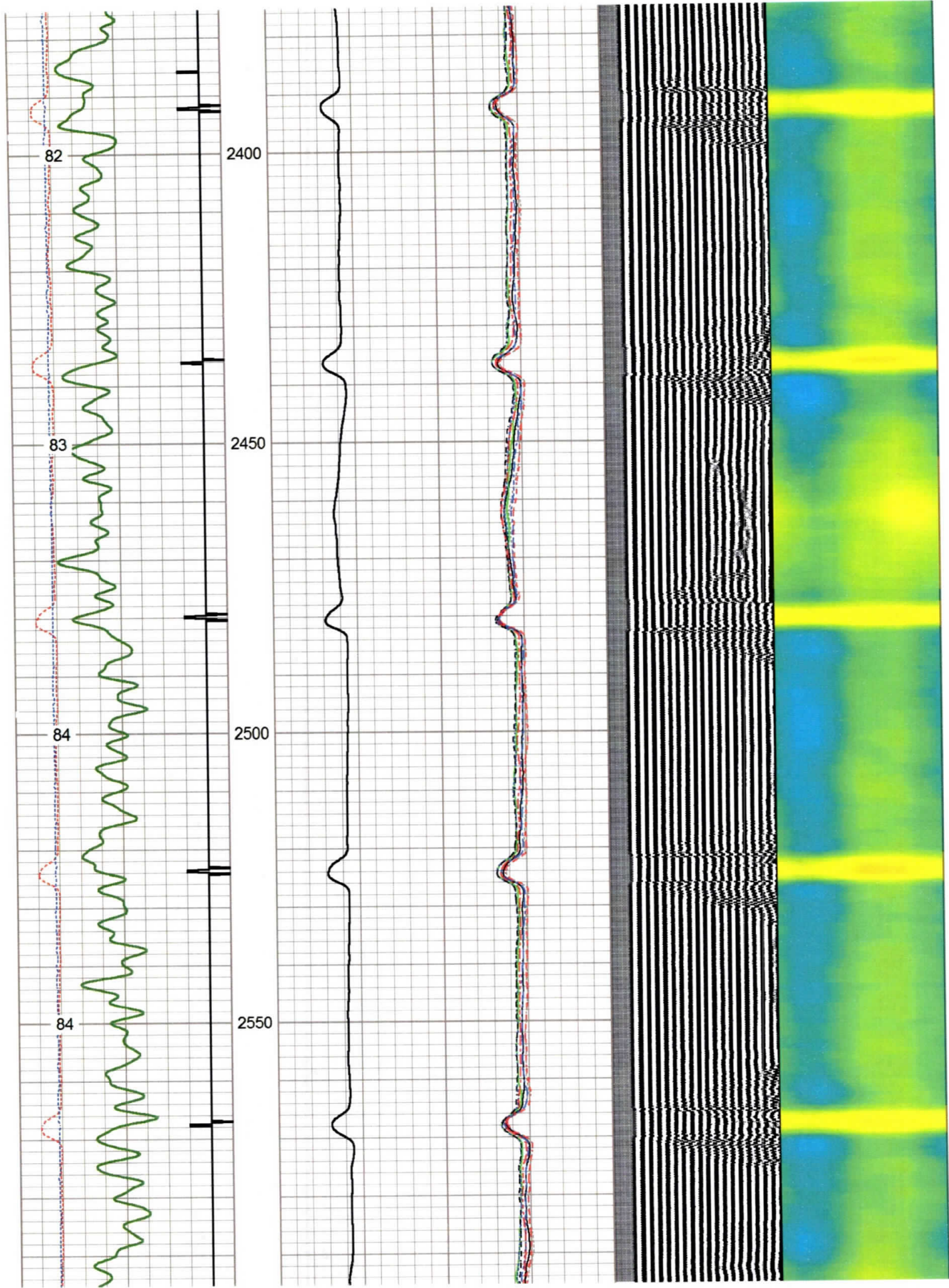


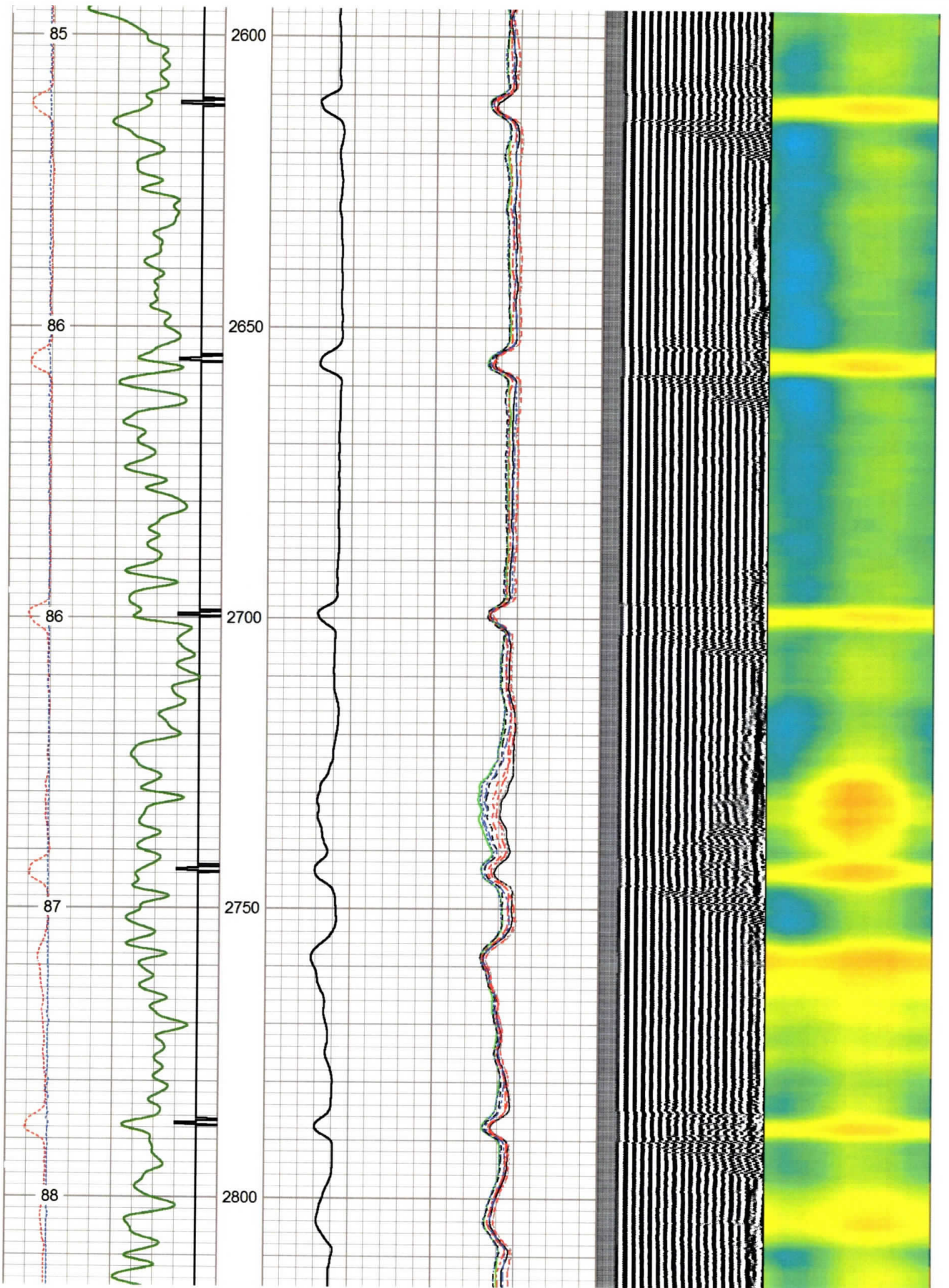


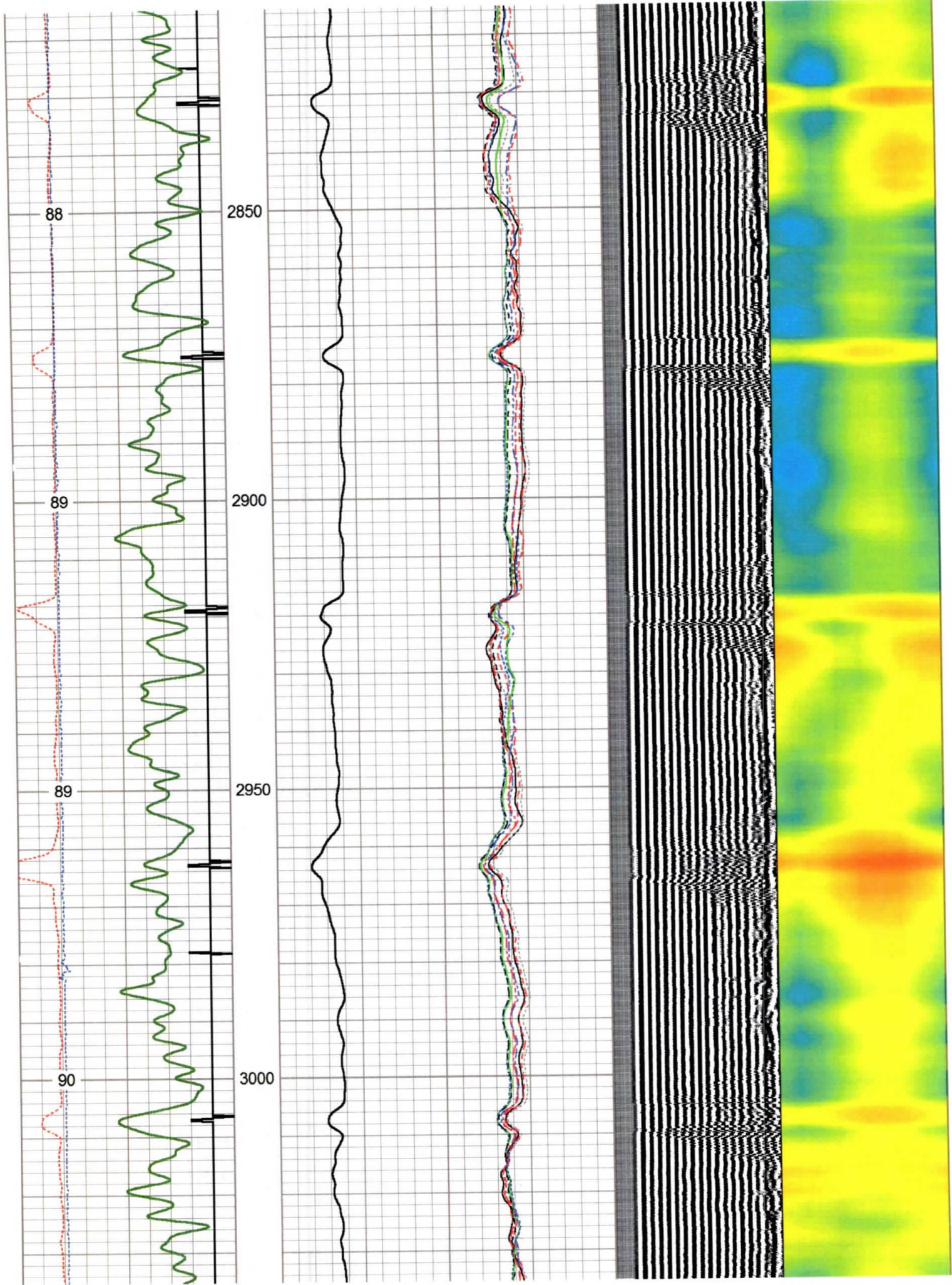


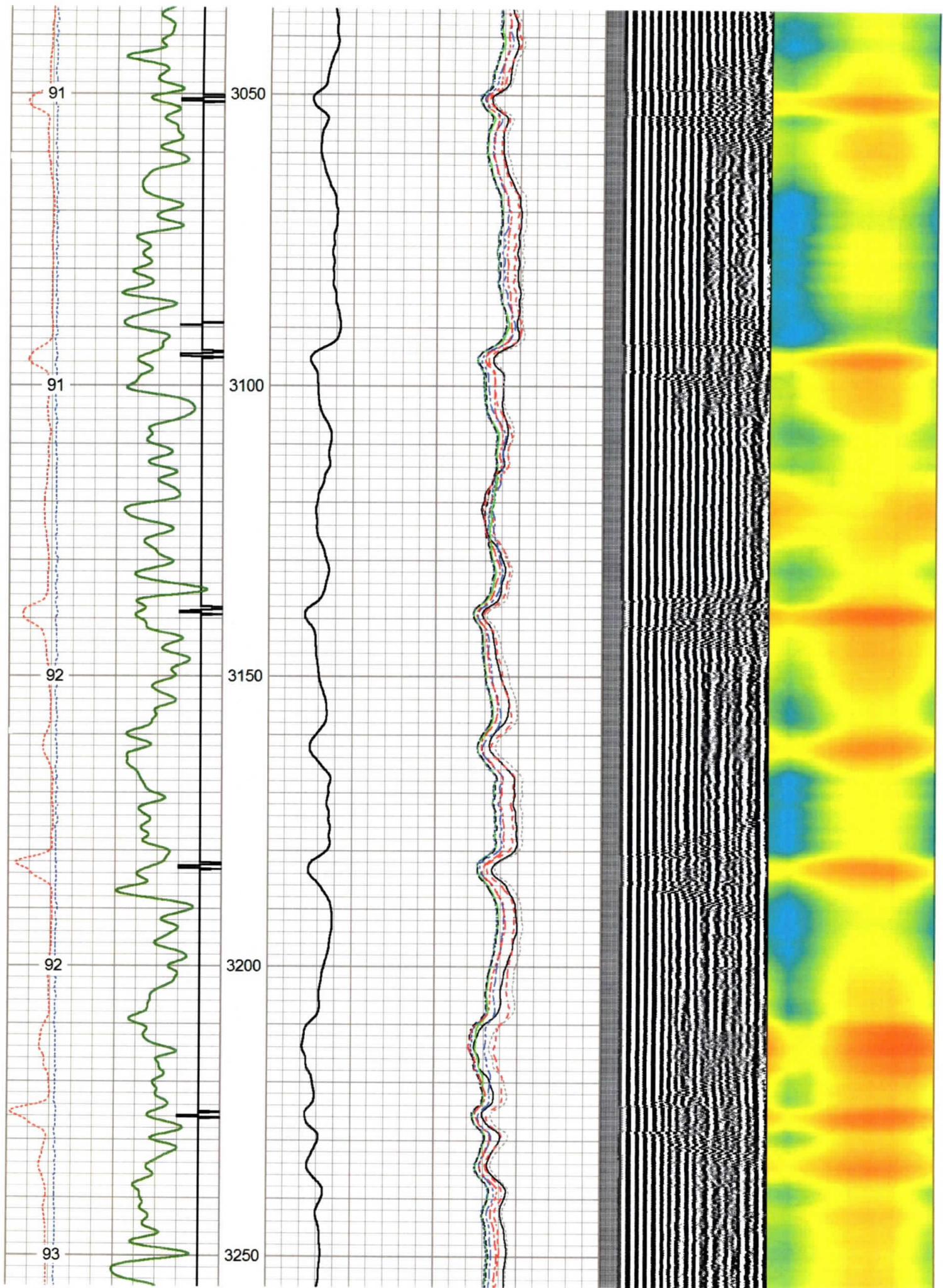


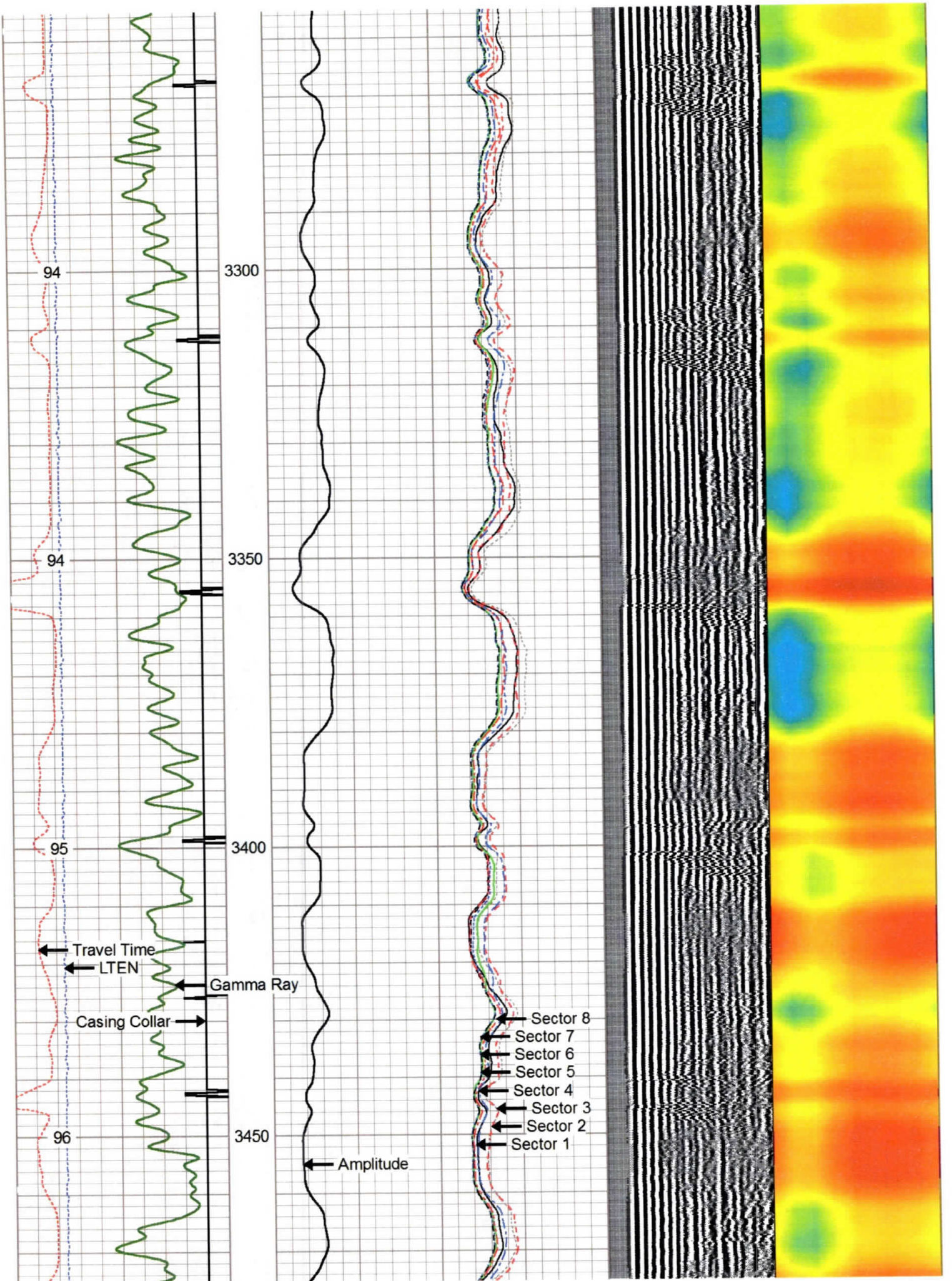












94

3300

94

3350

95

3400

96

3450

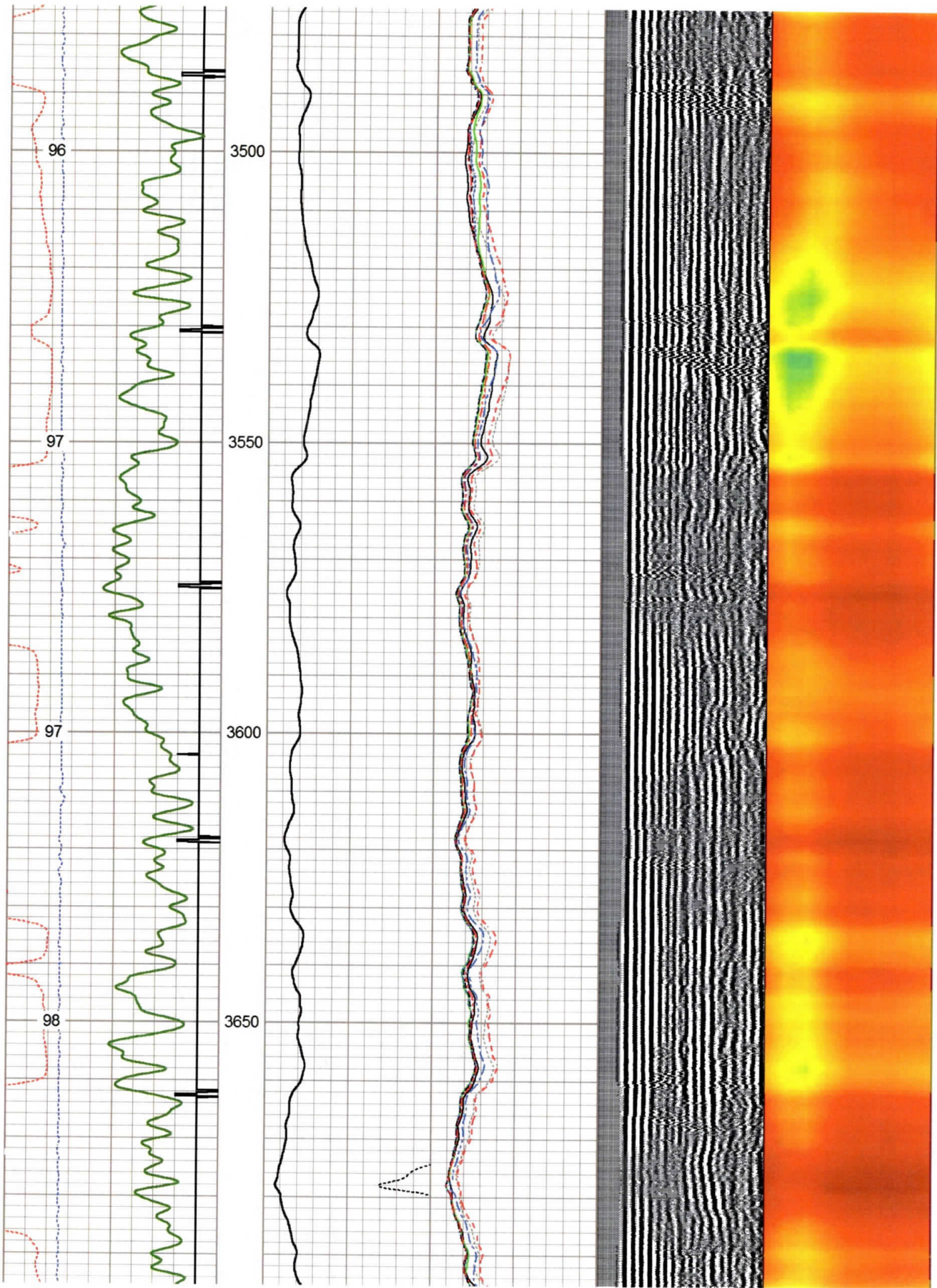
Travel Time
LTEN

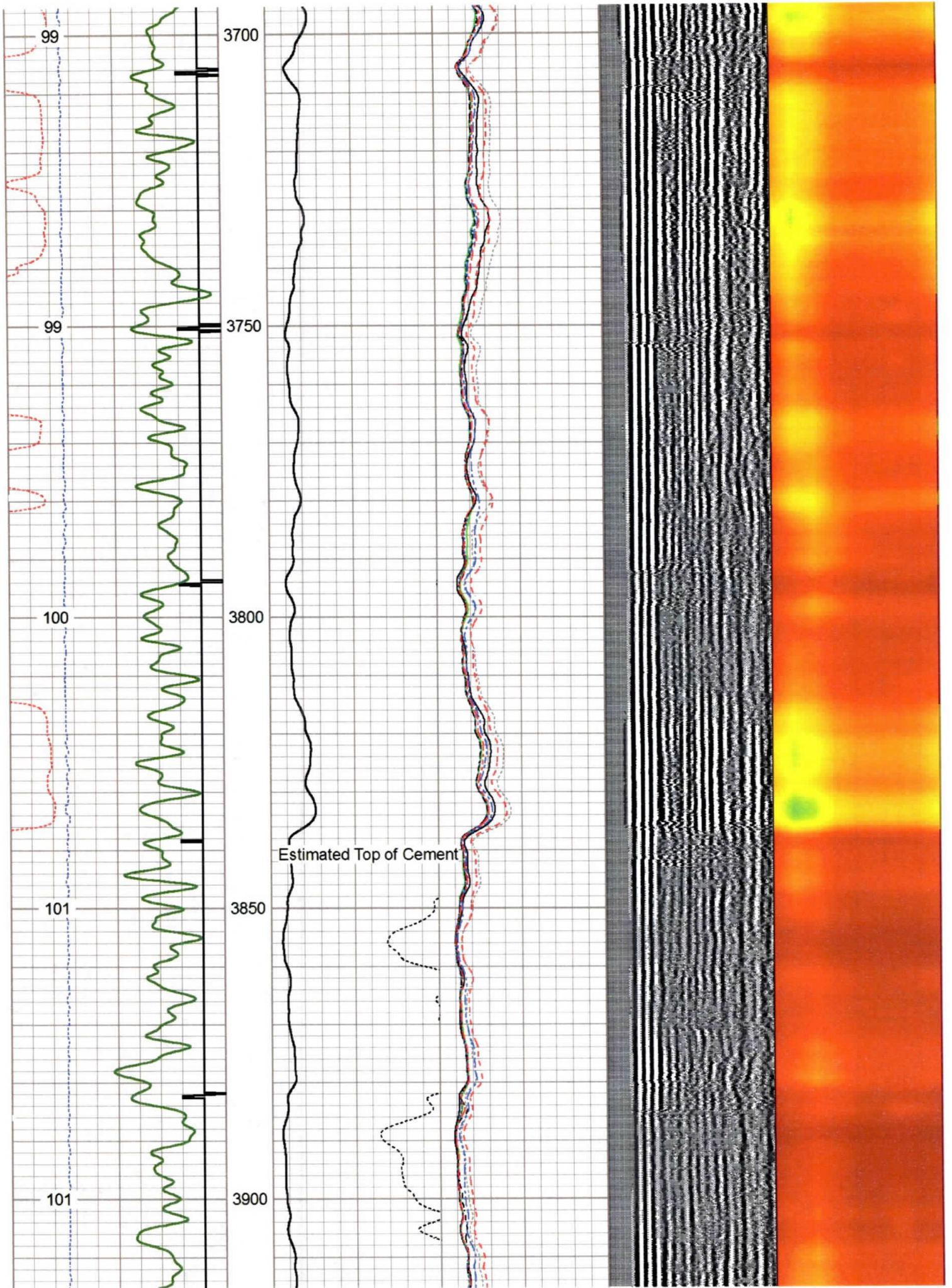
Gamma Ray

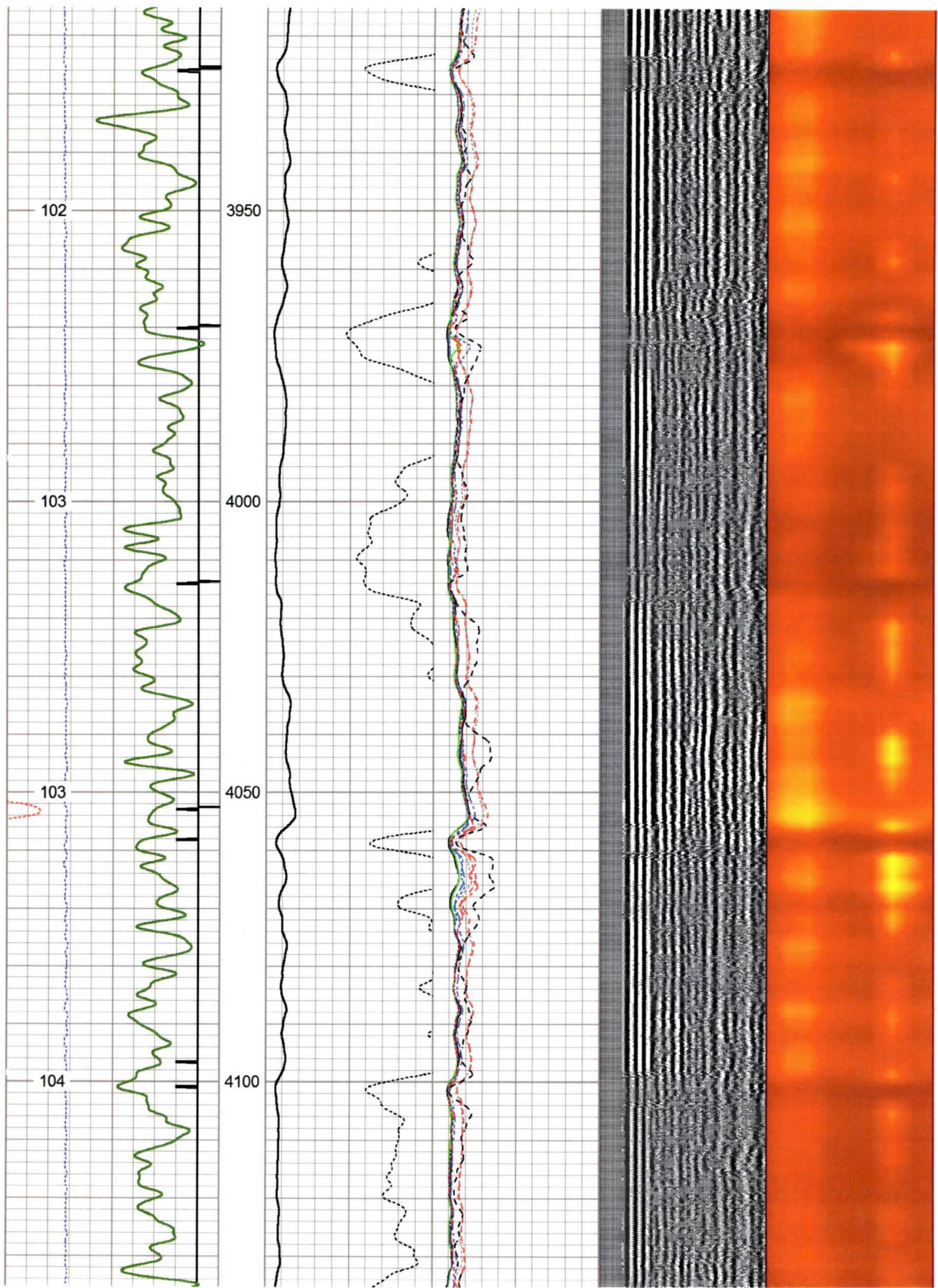
Casing Collar

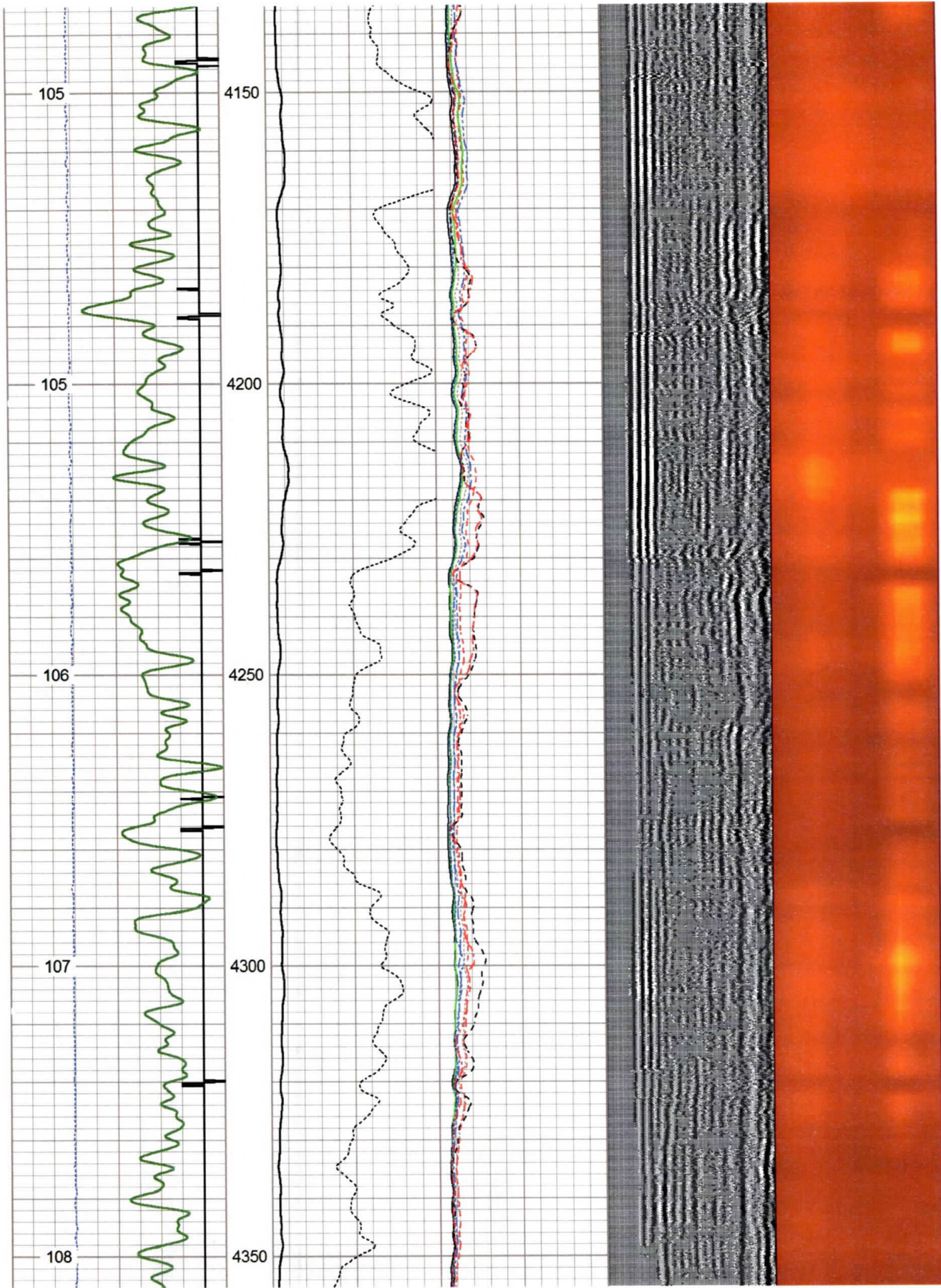
Sector 8
Sector 7
Sector 6
Sector 5
Sector 4
Sector 3
Sector 2
Sector 1

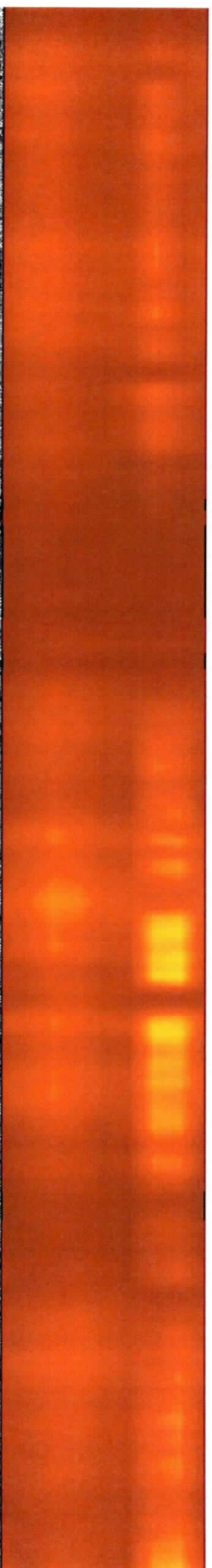
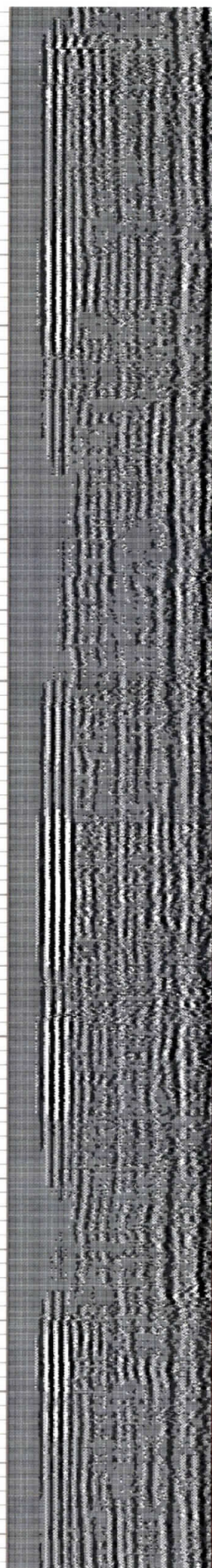
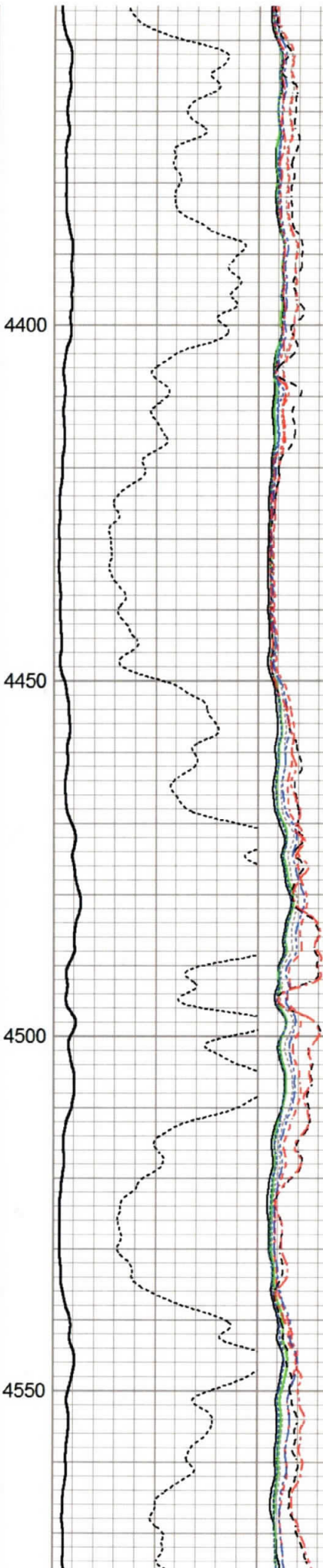
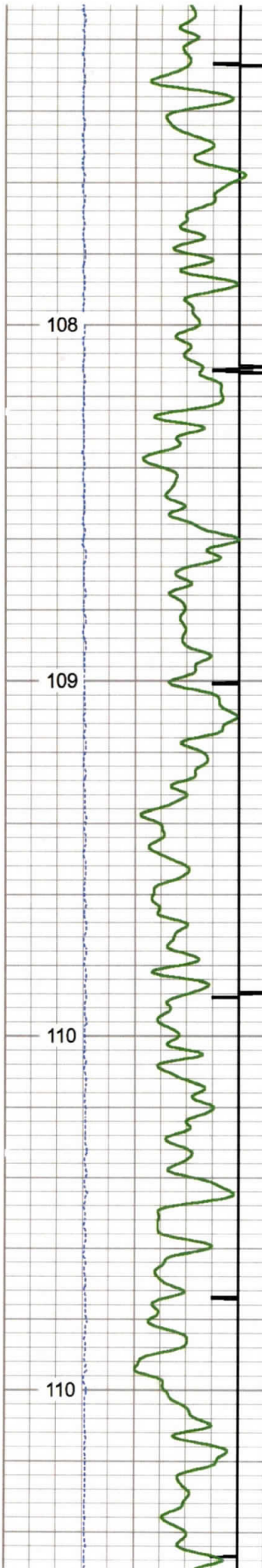
Amplitude

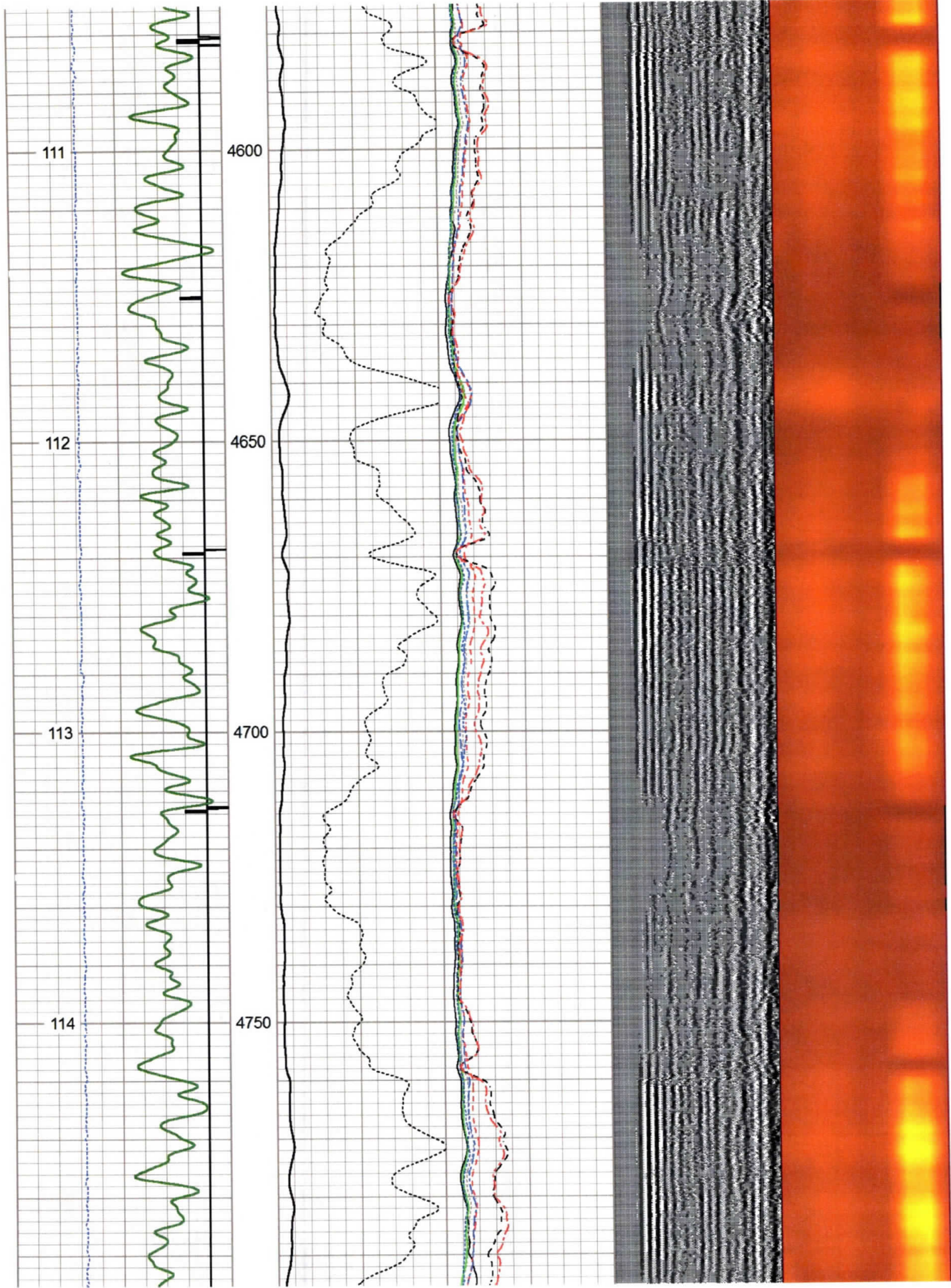


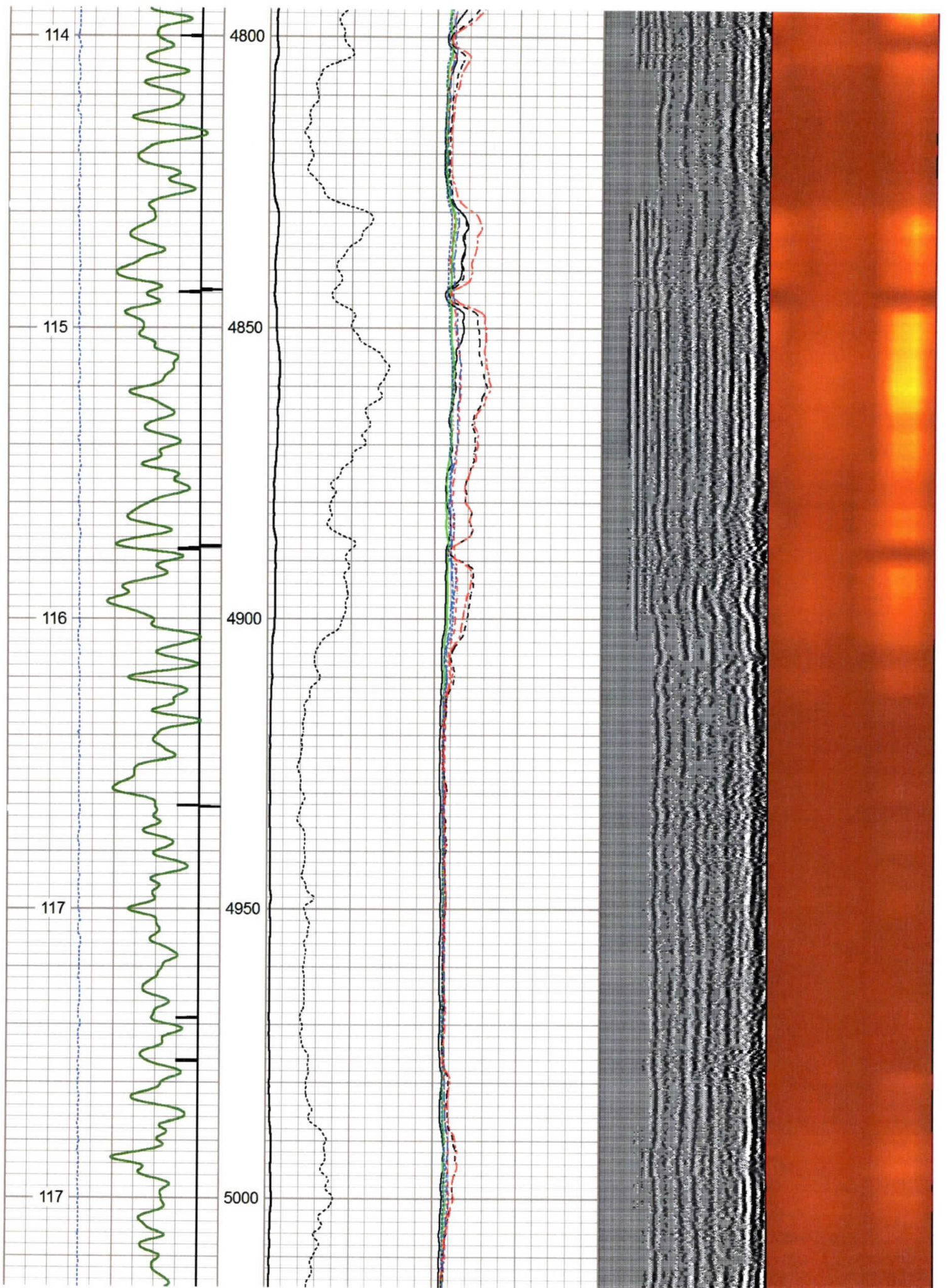


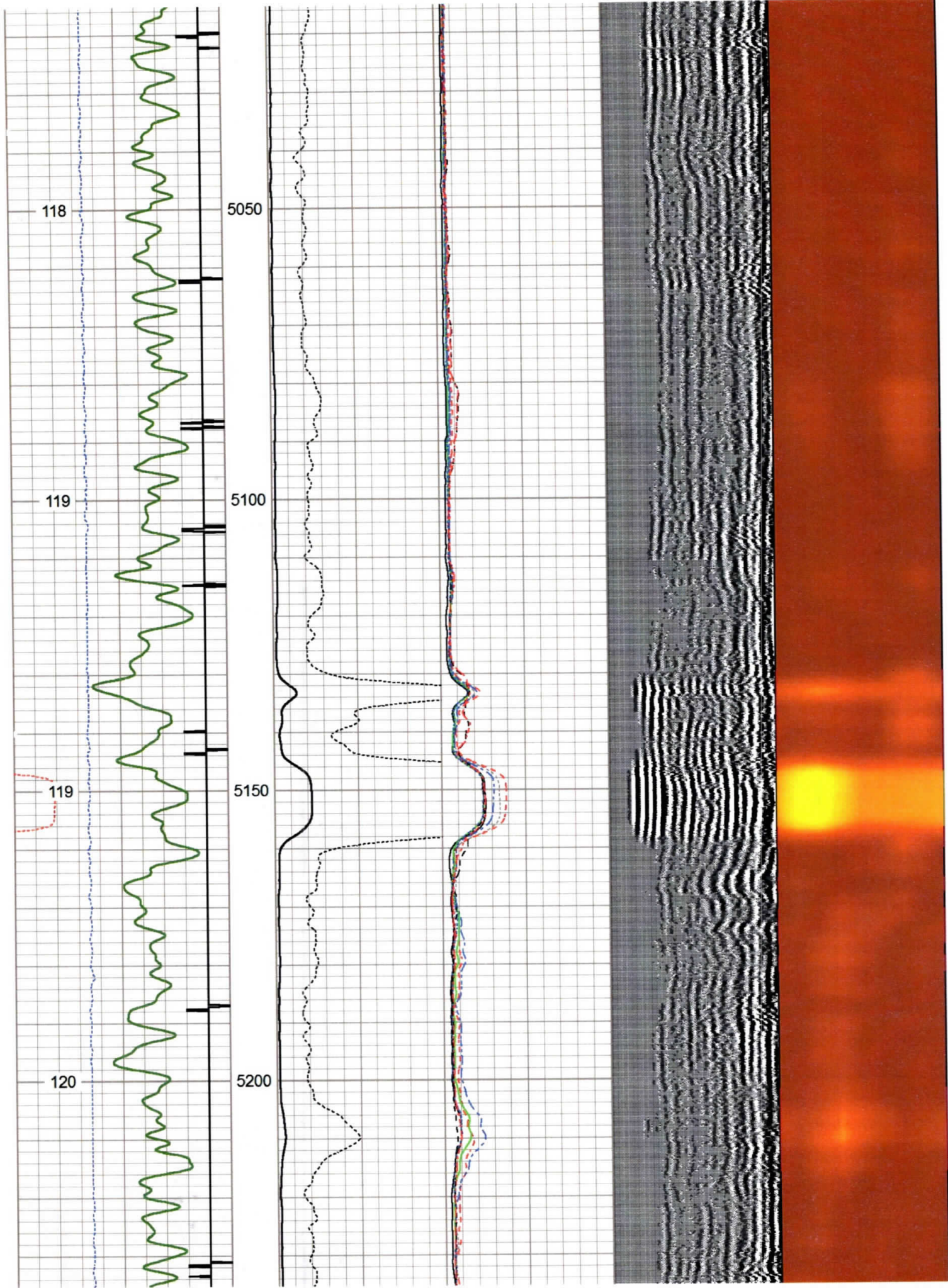


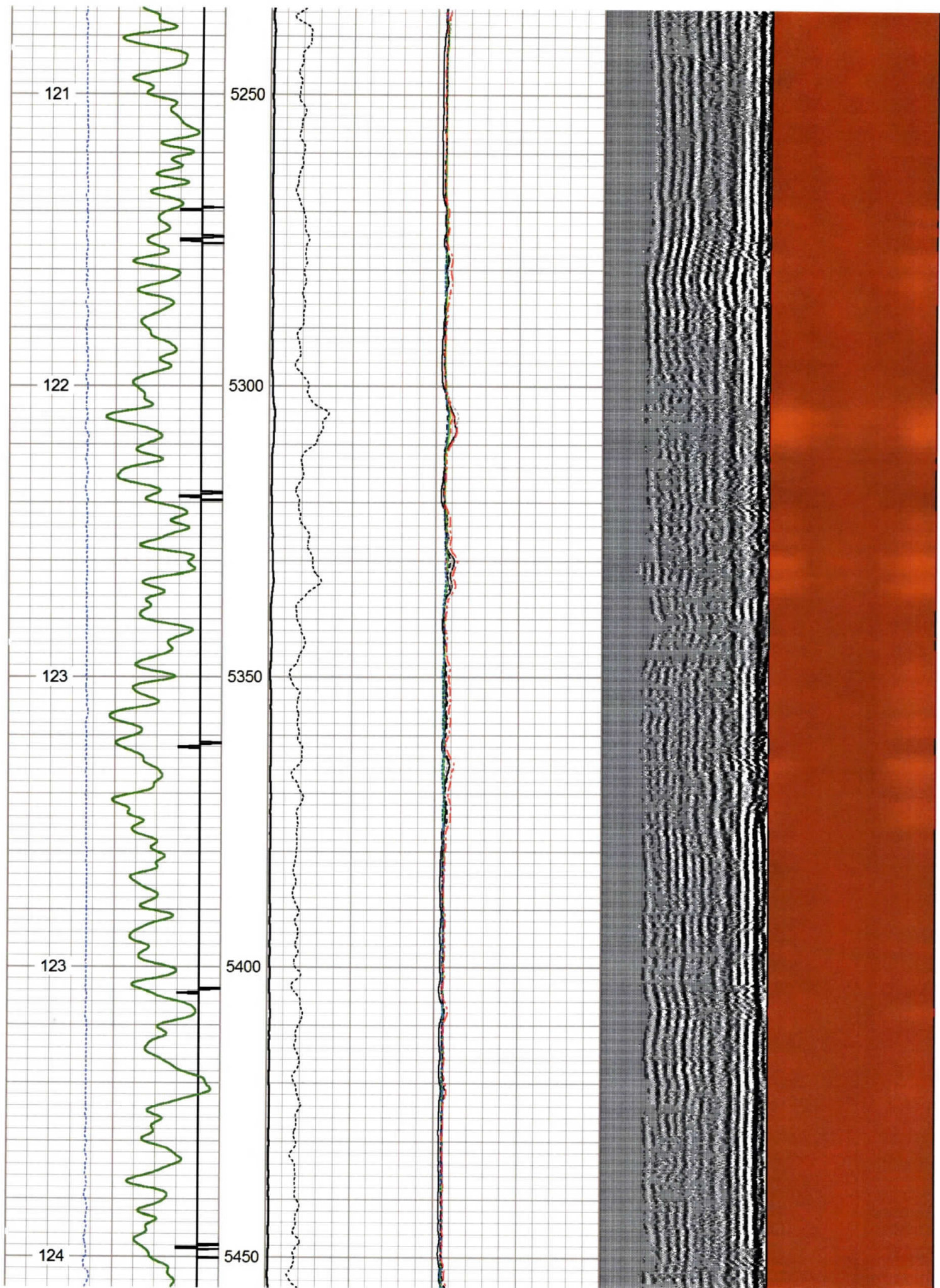


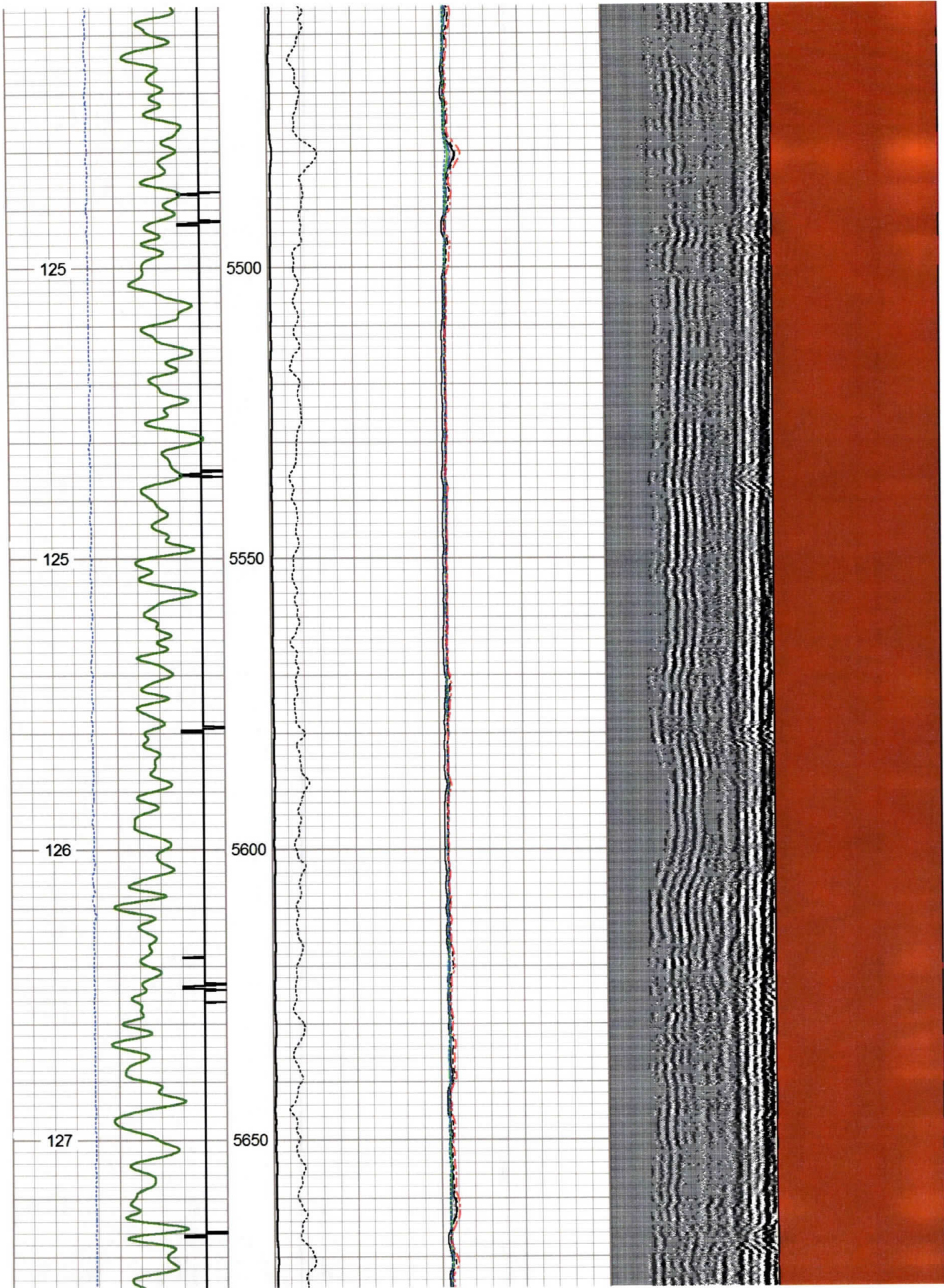


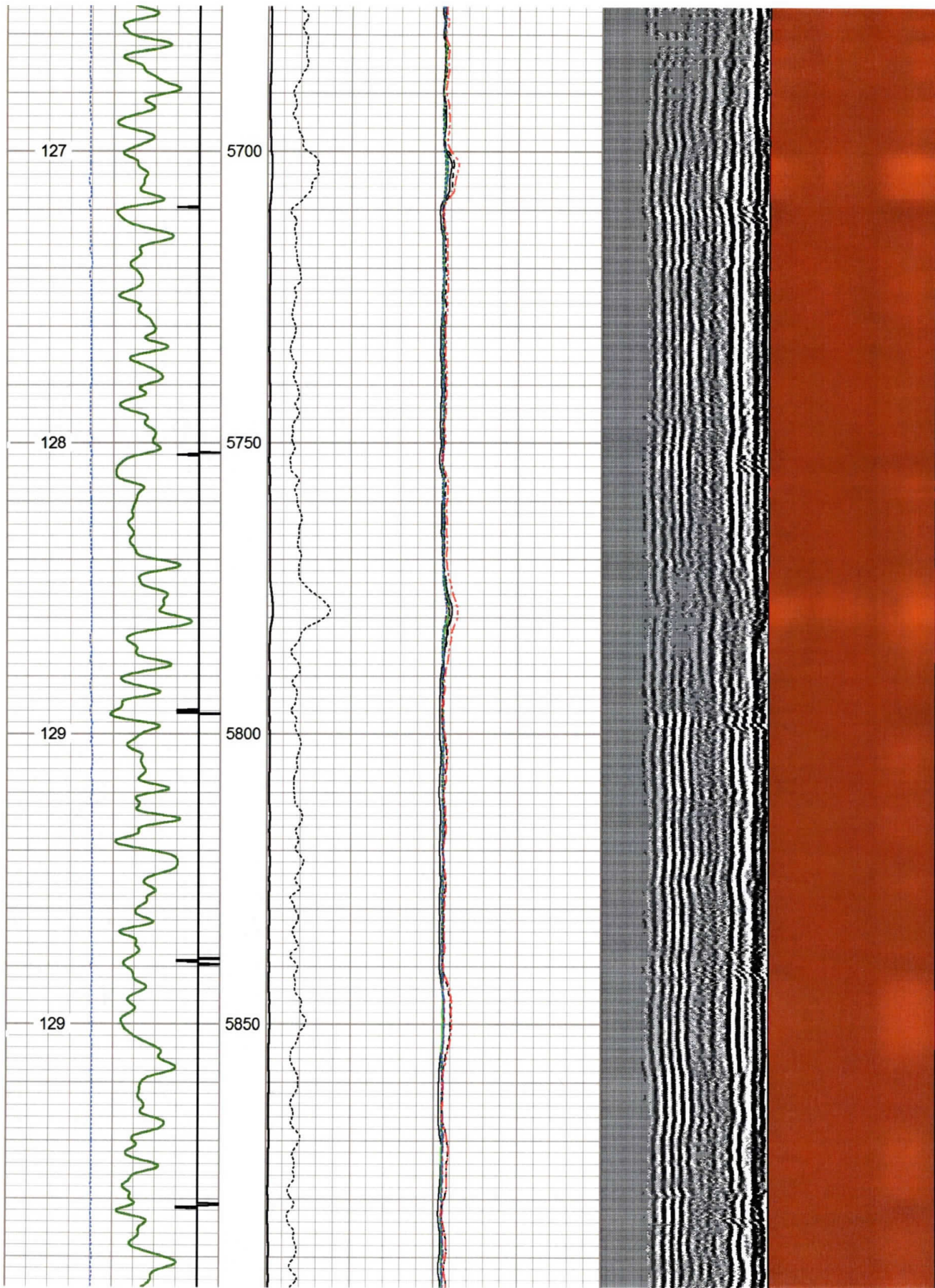


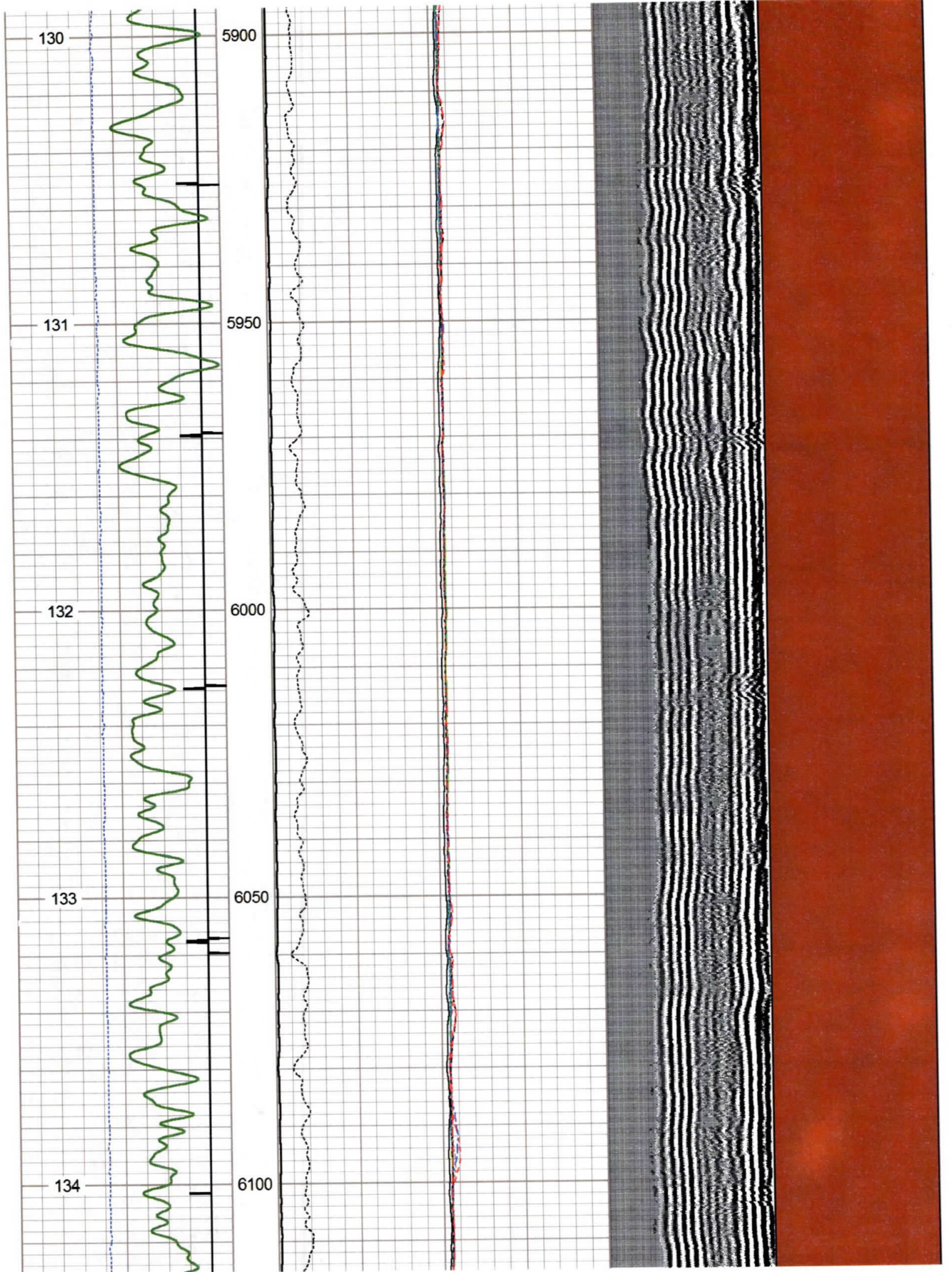


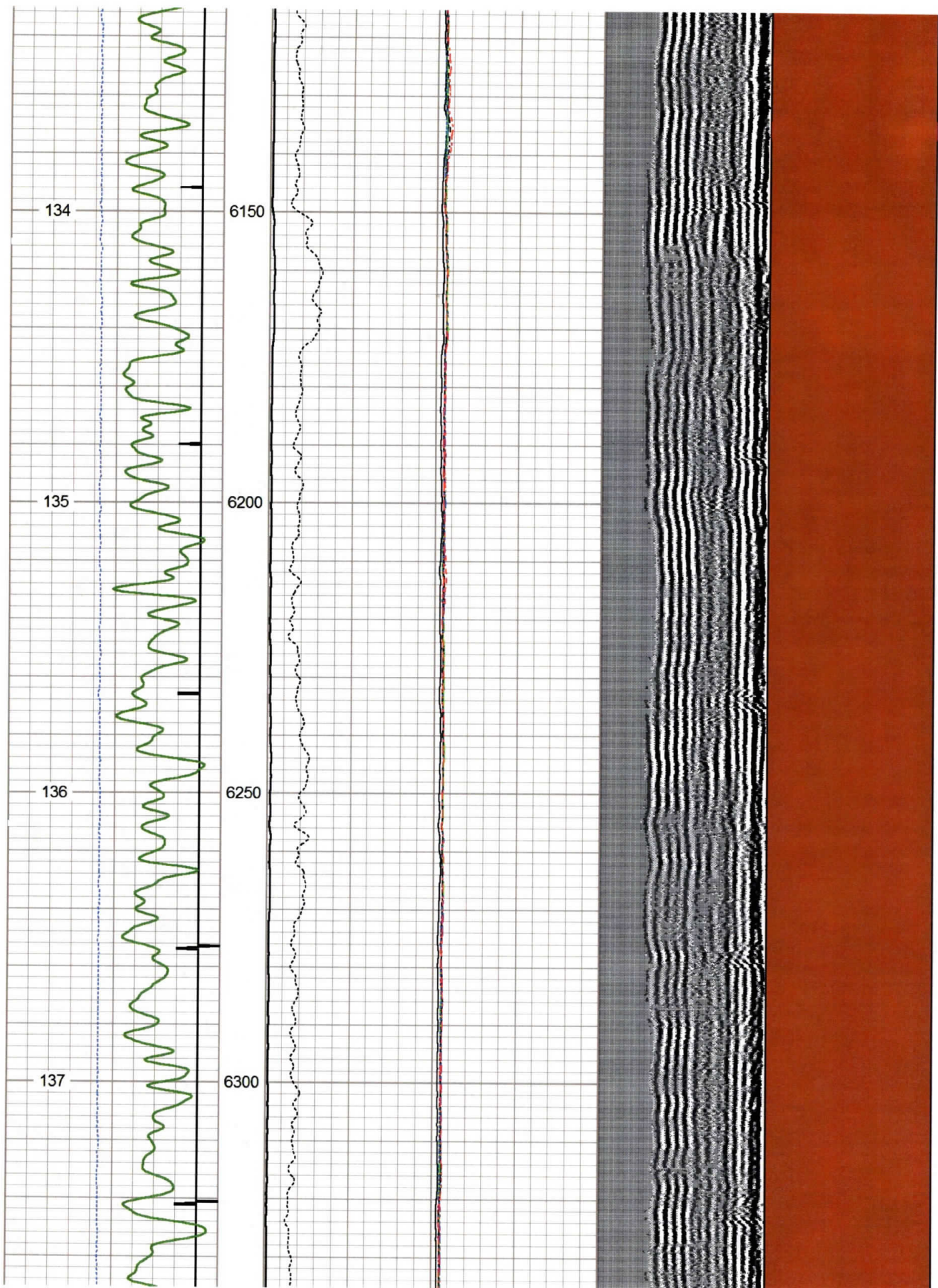


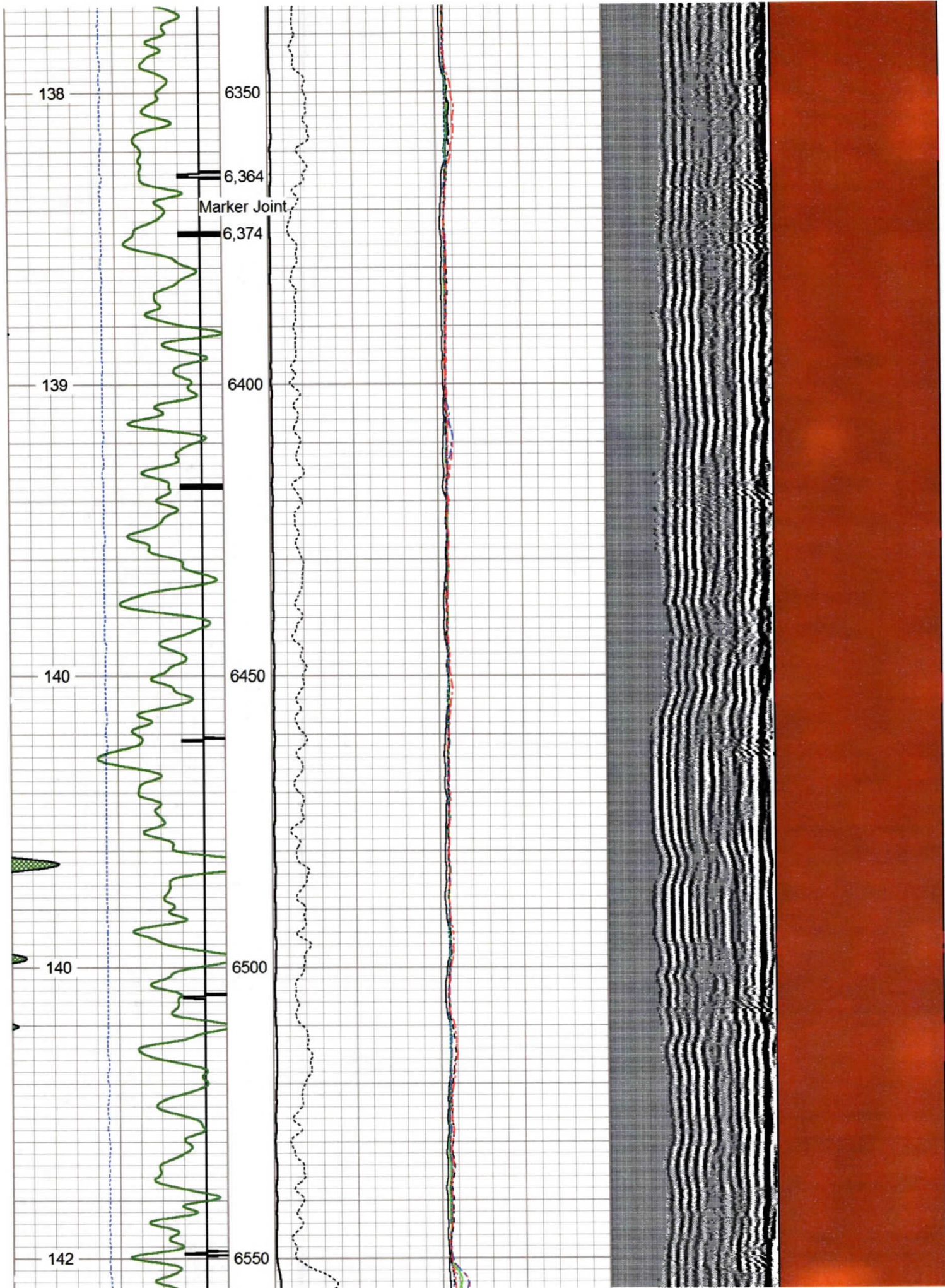


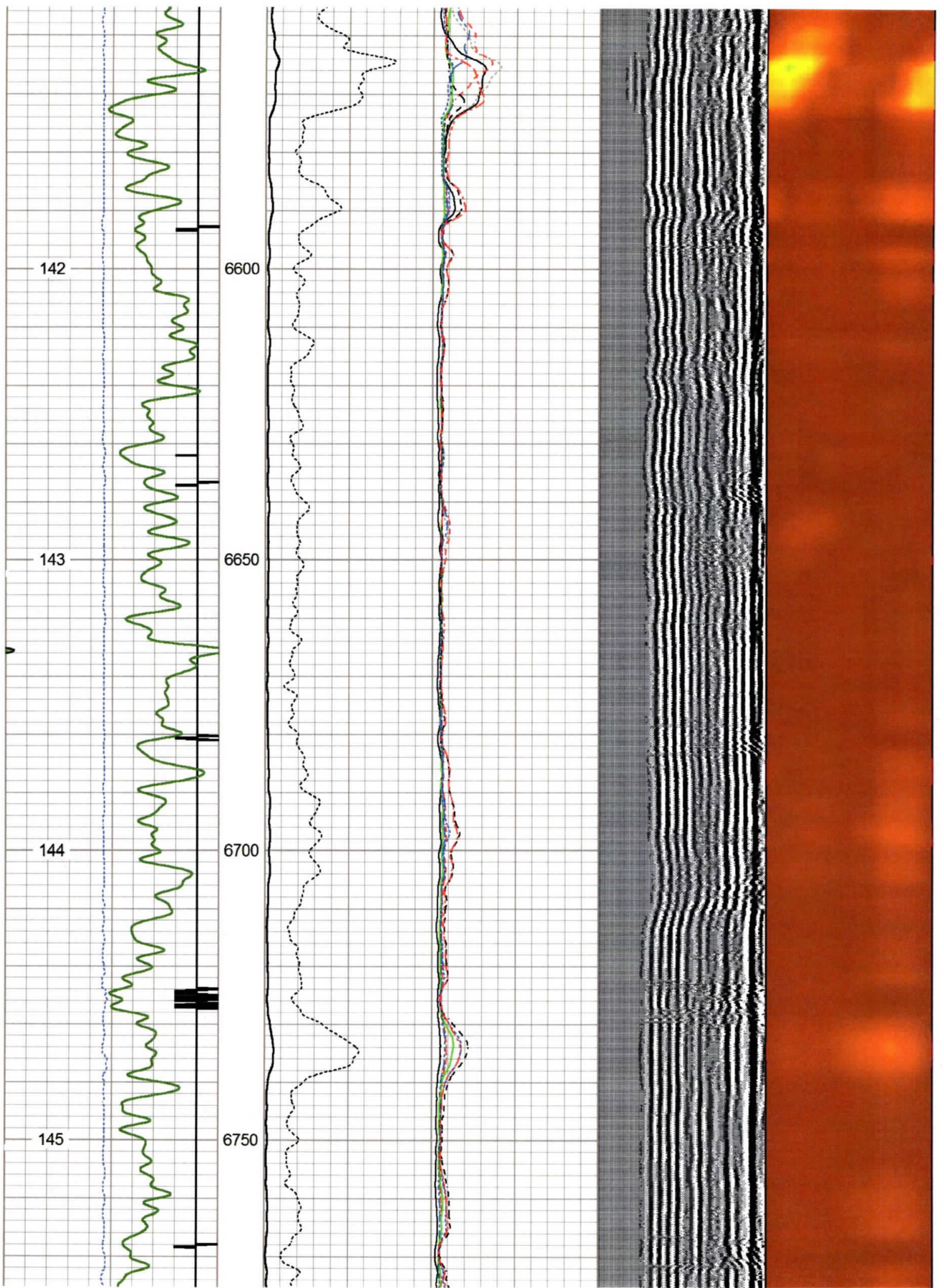


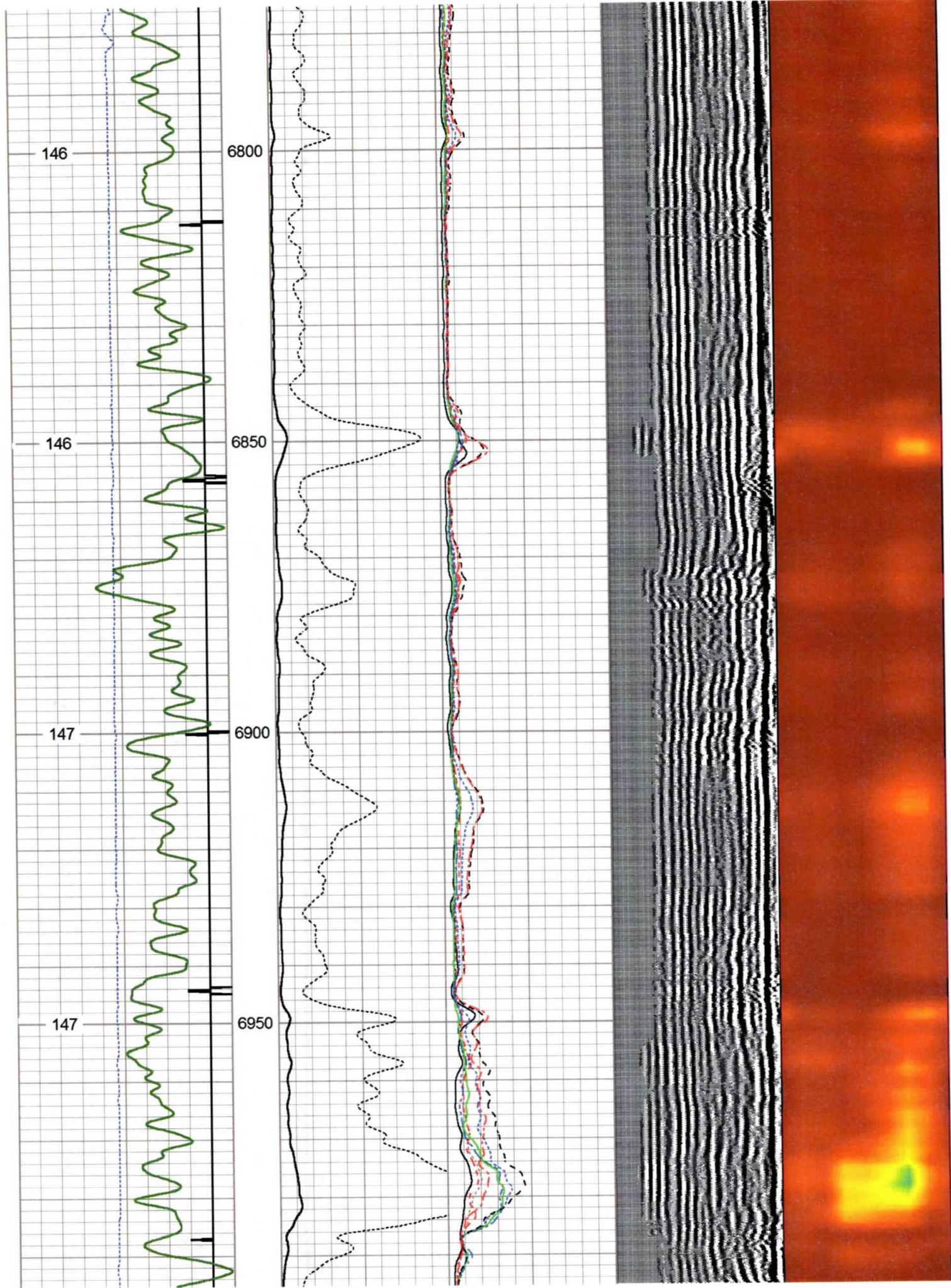


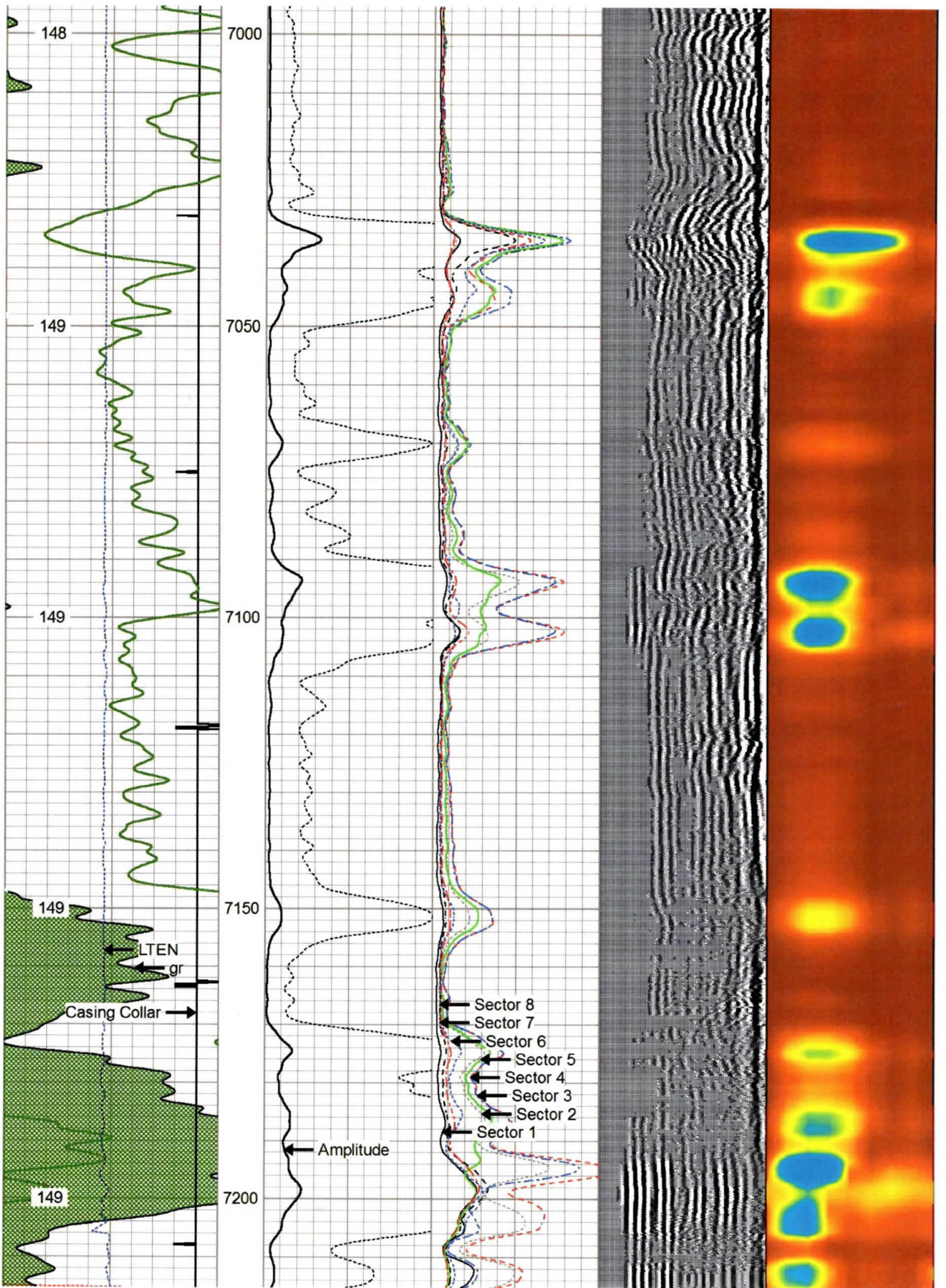


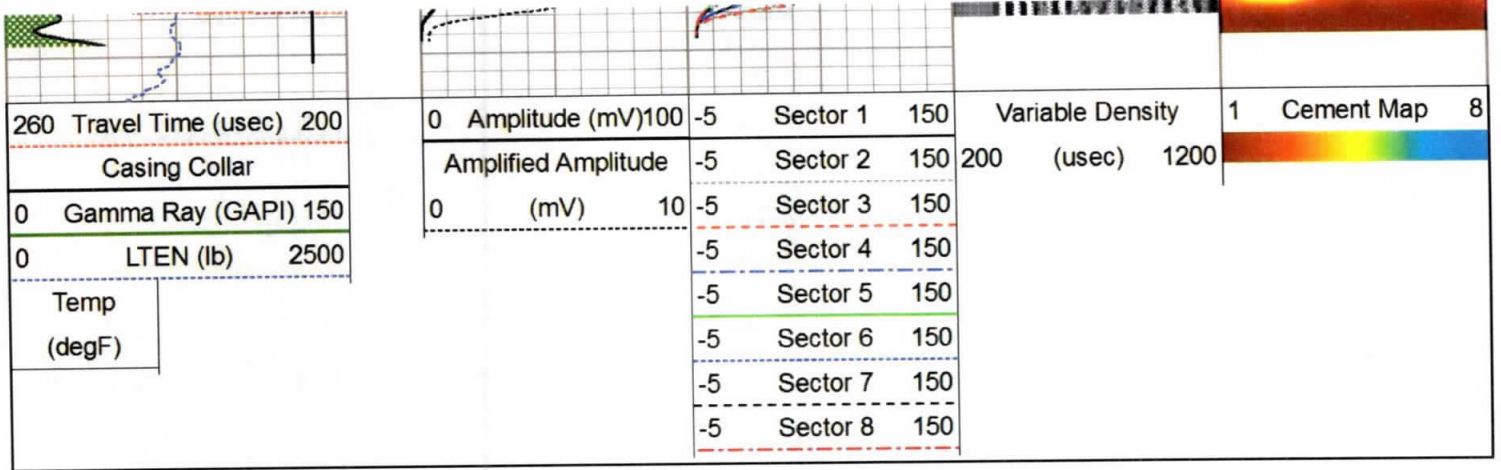






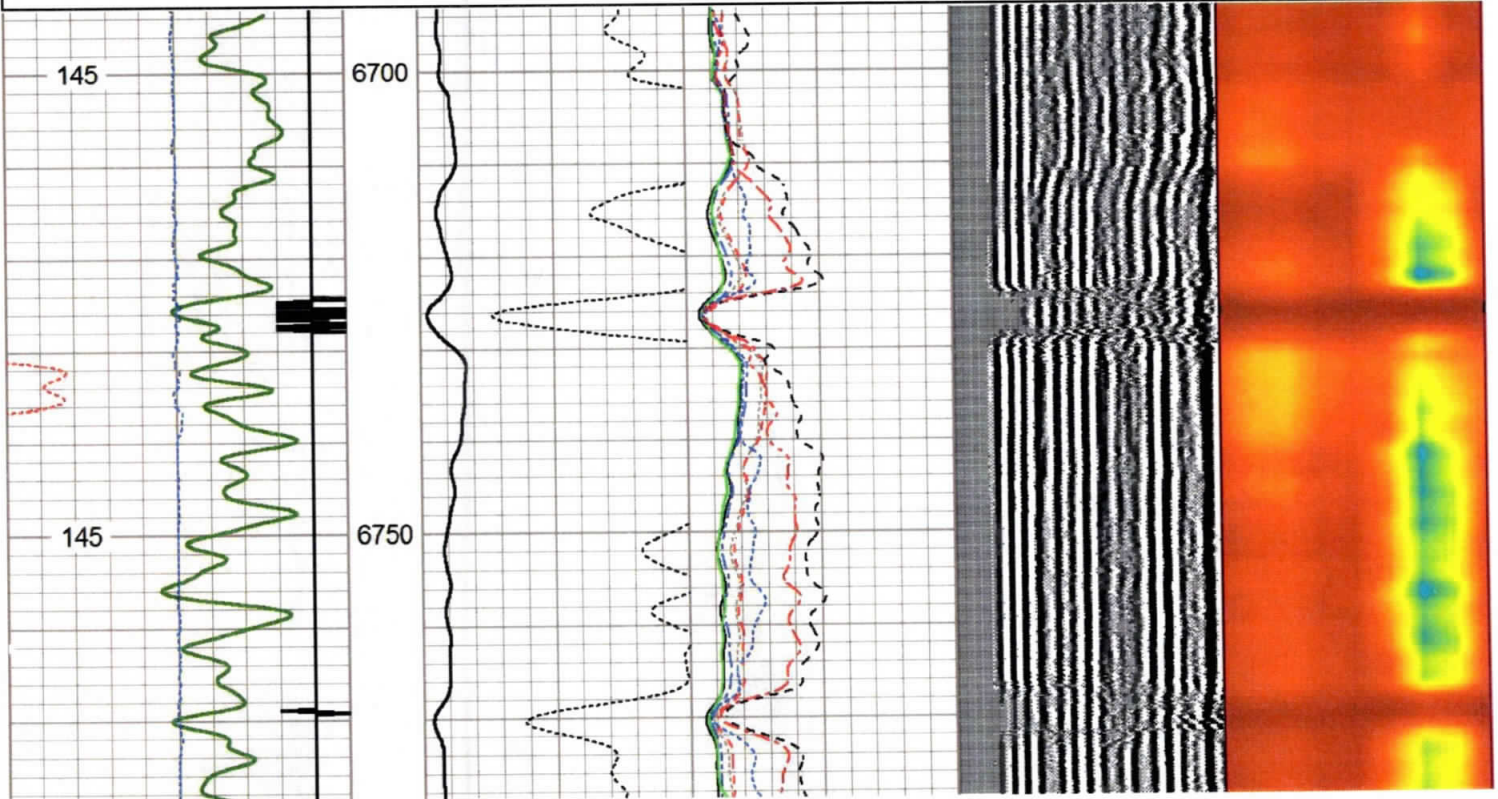
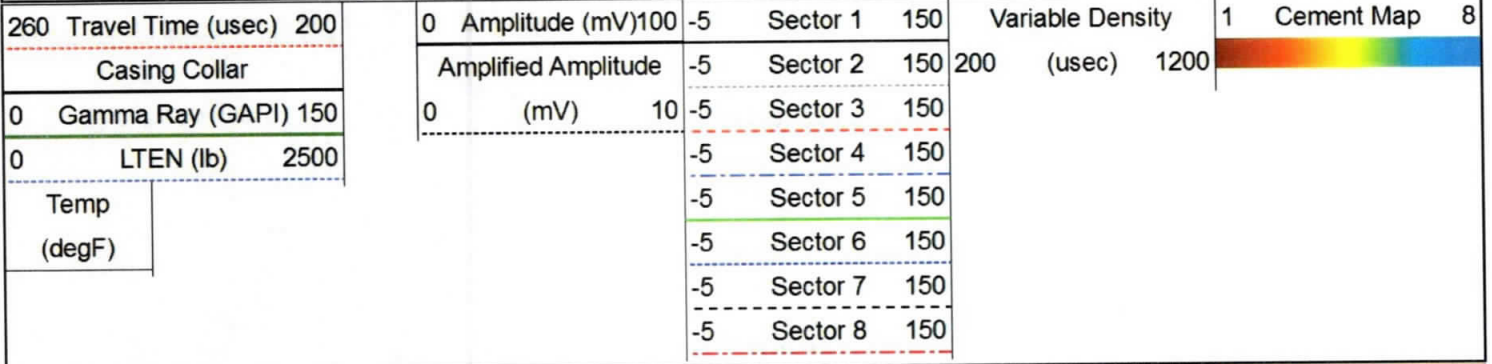


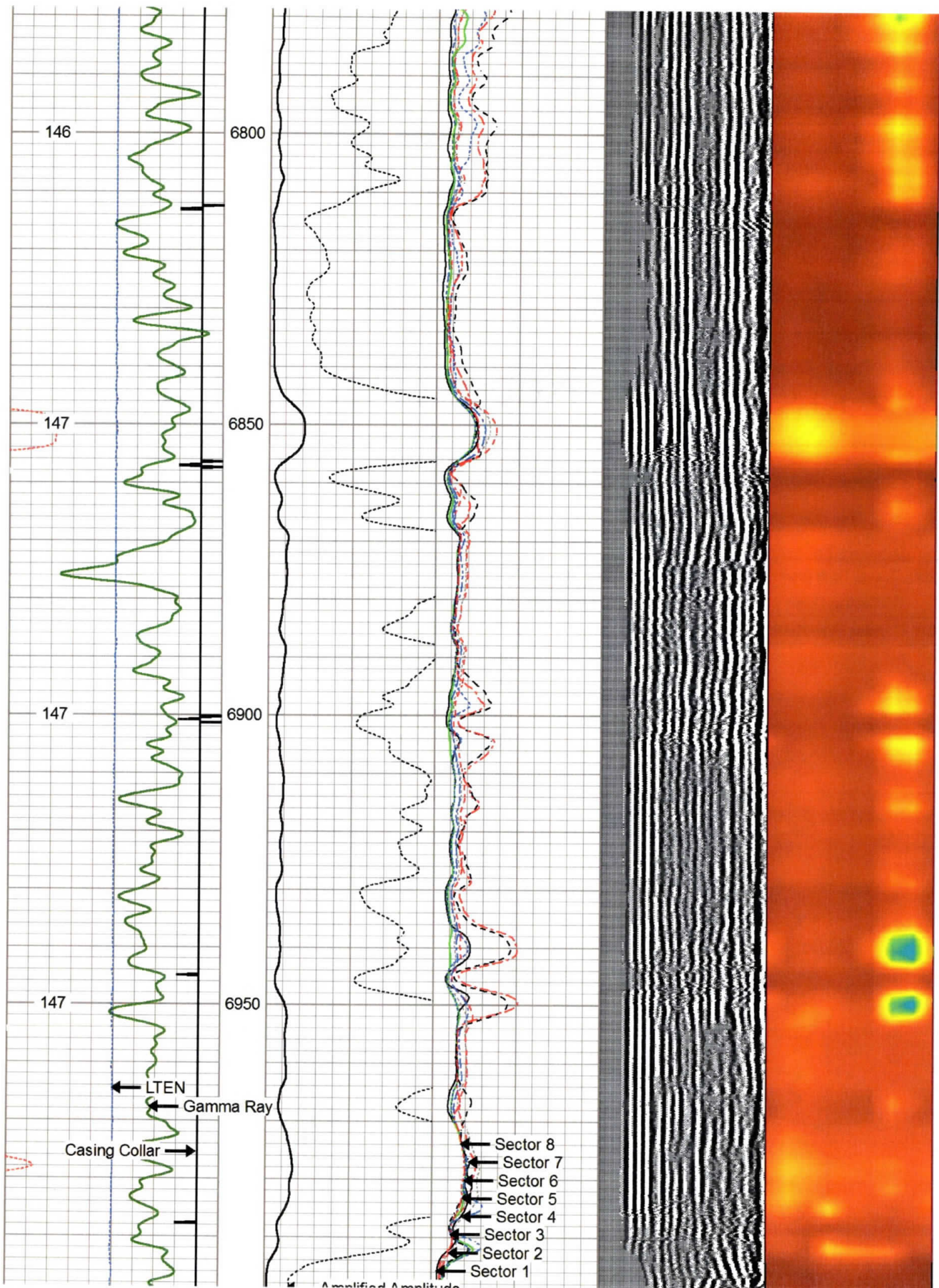


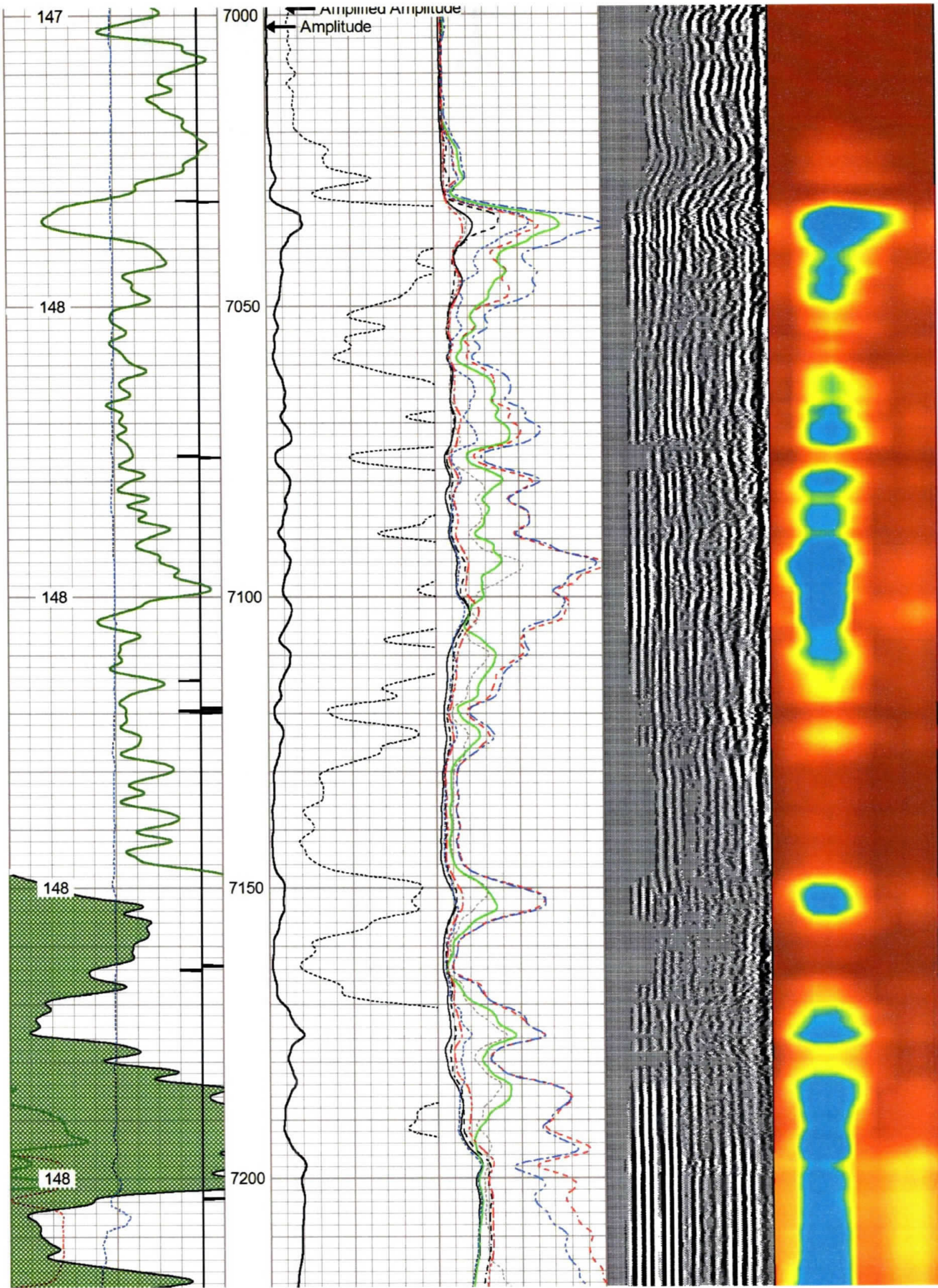


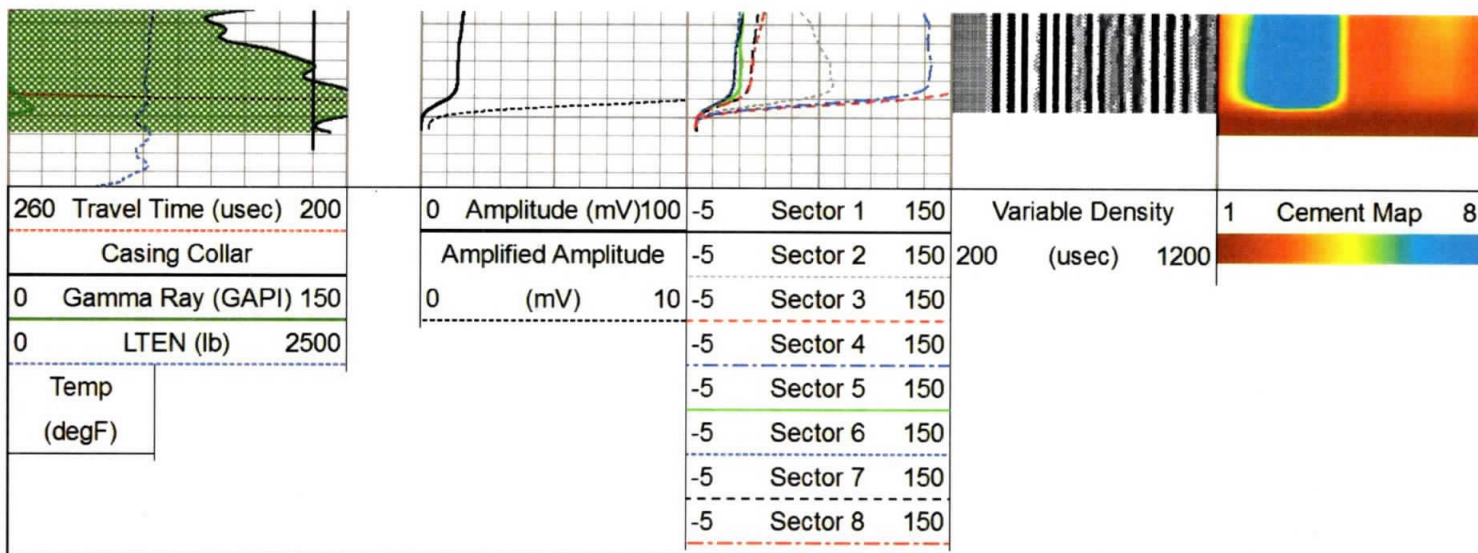
Repeat Pass 0 PSI

Database File antero_sisterville_1h_rcbl_nineenergy_23_feb_2020.db
 Dataset Pathname Rabbit_Ears/Sisterville_1H/RCBL_1/pass2
 Presentation Format scbl03
 Dataset Creation Sun Feb 23 09:44:19 2020
 Charted by Depth in Feet scaled 1:240









Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_sisterville_1h_rcbl_nineenergy_23_feb_2020.db
 Dataset Rabbit_Ears/Sisterville_1H/RCBL_1/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	72	1
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
1	No	0	0	0			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.
 CASETHCK : Casing Thickness
 CASEWGHT : Casing Weight
 MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
 MINATTN : Minimum Attenuation
 PERFS : Perforation Flag
 PPT : Predicted Pipe Time
 SRFTEMP : Surface Temperature
 TDEPTH : Total Depth

Calibration Report

Database File antero_sisterville_1h_rcbl_nineenergy_23_feb_2020.db
 Dataset Pathname Rabbit_Ears/Sisterville_1H/RCBL_1/pass4
 Dataset Creation Sun Feb 23 09:52:22 2020

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Mon Feb 03 15:18:32 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.8000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T

Calibration Casing Diameter: 5.500 in
 Calibration Depth: -11.158 ft

Master Calibration, performed Sun Feb 23 07:08:21 2020:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	0.974	1.000	71.921	53.469	0.283
CAL	1.012	1.014				
5'	0.011	1.083	1.000	71.921	66.177	0.276
SUM						
S1	0.005	0.973	1.000	71.921	83.291	0.643
S2	0.017	0.968	1.000	71.921	84.604	-0.292
S3	0.009	0.934	1.000	71.921	86.655	0.315
S4	0.012	0.954	1.000	71.921	85.284	0.122
S5	0.010	1.014	1.000	71.921	80.666	0.275
S6	0.009	1.002	1.000	71.921	81.398	0.352
S7	0.008	0.993	1.000	71.921	82.025	0.391
S8	0.009	0.972	1.000	71.921	83.653	0.364

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.012	1.014	1.000	0.000

Air Zero Calibration, performed Sun Feb 23 06:50:29 2020:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Gain	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	14.11		CHD-Titan Titan 1 7/16" GO Cablehead	1.00	1.44	5.00
			CFNT-Overhead	1.67	4.88	5.00

