



**Radial Cement Bond
Variable Density Log
W/Gamma Ray/CCLTemp**

Company Antero Resources
Well Carse 2H
Field Marcellus
County Tyler
State WV

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Location: Rush Fork Pad
API #: 47-095-02444
Lat.: 39.4167
Long.: -80.9697
SEC TWP RGE
Permanent Datum Ground Level Elevation
Log Measured From Kelly Bushing 25' A.P.D.
Drilling Measured From Kelly Bushing
Other Services
JB/GR 4.50"
Elevation
K.B. 1,011'
D.F. 1,010'
G.L. 986'

Date	24-Jun-19	
Run Number	One	
Depth Driller	18,685'	
Depth Logger	6,410'	
Bottom Logged Interval	6,410'	
Top Log Interval	Surface	
Open Hole Size	N/A	
Type Fluid	Water	
Density / Viscosity	N/A	
Max. Recorded Temp.	138 Deg.F.	
Estimated Cement Top	2,454'	
Time Well Ready	03:50	
Time Logger on Bottom	04:30	
Equipment Number	104 (P4) (G4)	
Location	Washington, PA	
Recorded By	Matt McNally	
Witnessed By	Ryan Banik	
Run Number	Borehole Record	
	Bit	Tubing Record
	From	To
	Size	Weight
		From
		To
Casing Record	Size	Wgt/ft
Surface String		Top
Prot. String		Bottom
Production String	5 1/2"	23 LBS
Liner		Surface
Marker Joint		5,325'
		5,335'

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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

**Log Correlated To Marker Joint at (5,325' - 5,335')
Depth Correction (-5')**

**Main Pass Logged at 1,500 PSI
Repeat Pass Logged at 0 PSI**

Thank you for using Nine Energy Wireline Service. Washington, PA

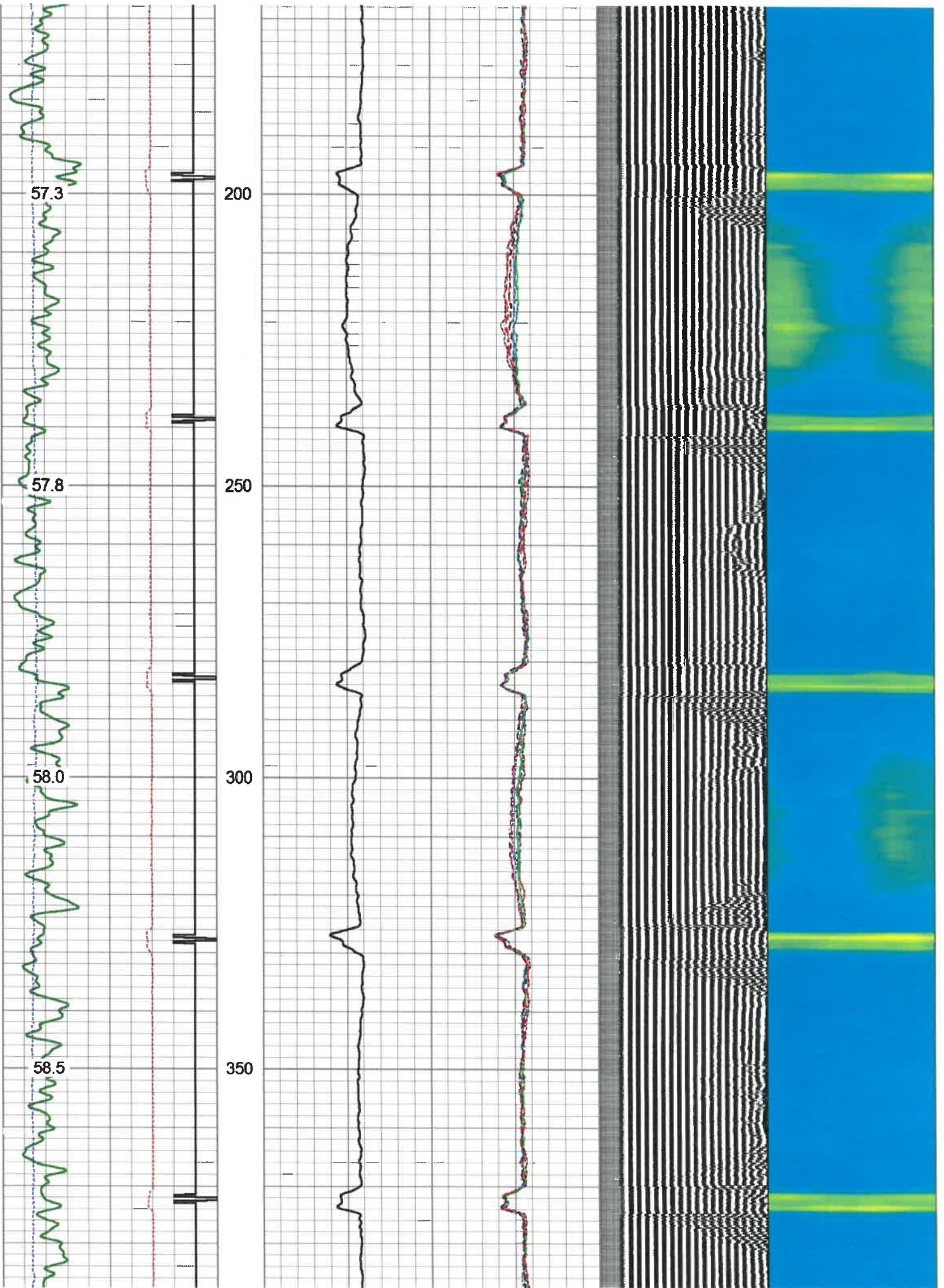
RECEIVED
Office of Oil and Gas

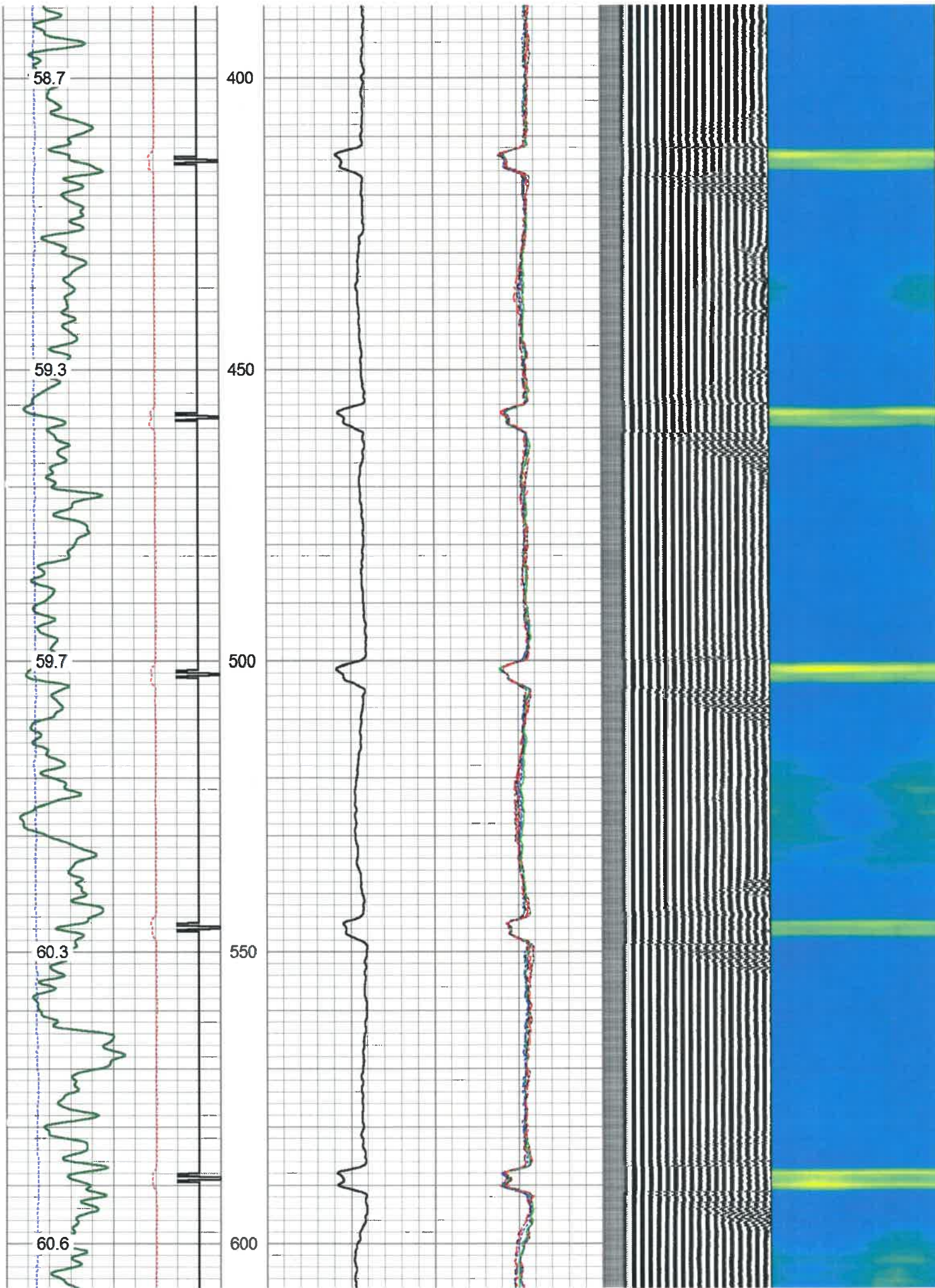
AUG 31 2020

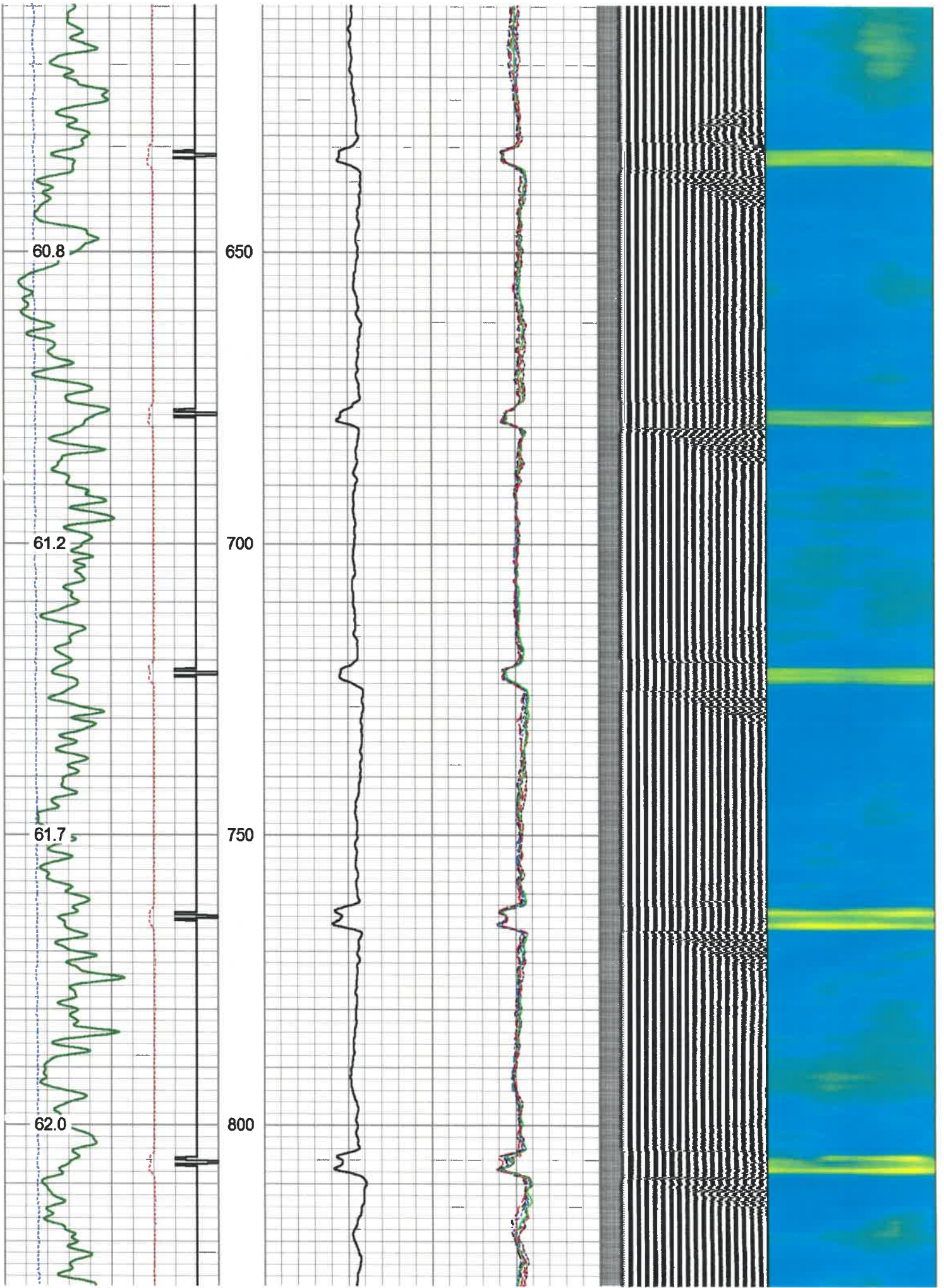
WV Department of
Environmental Protection

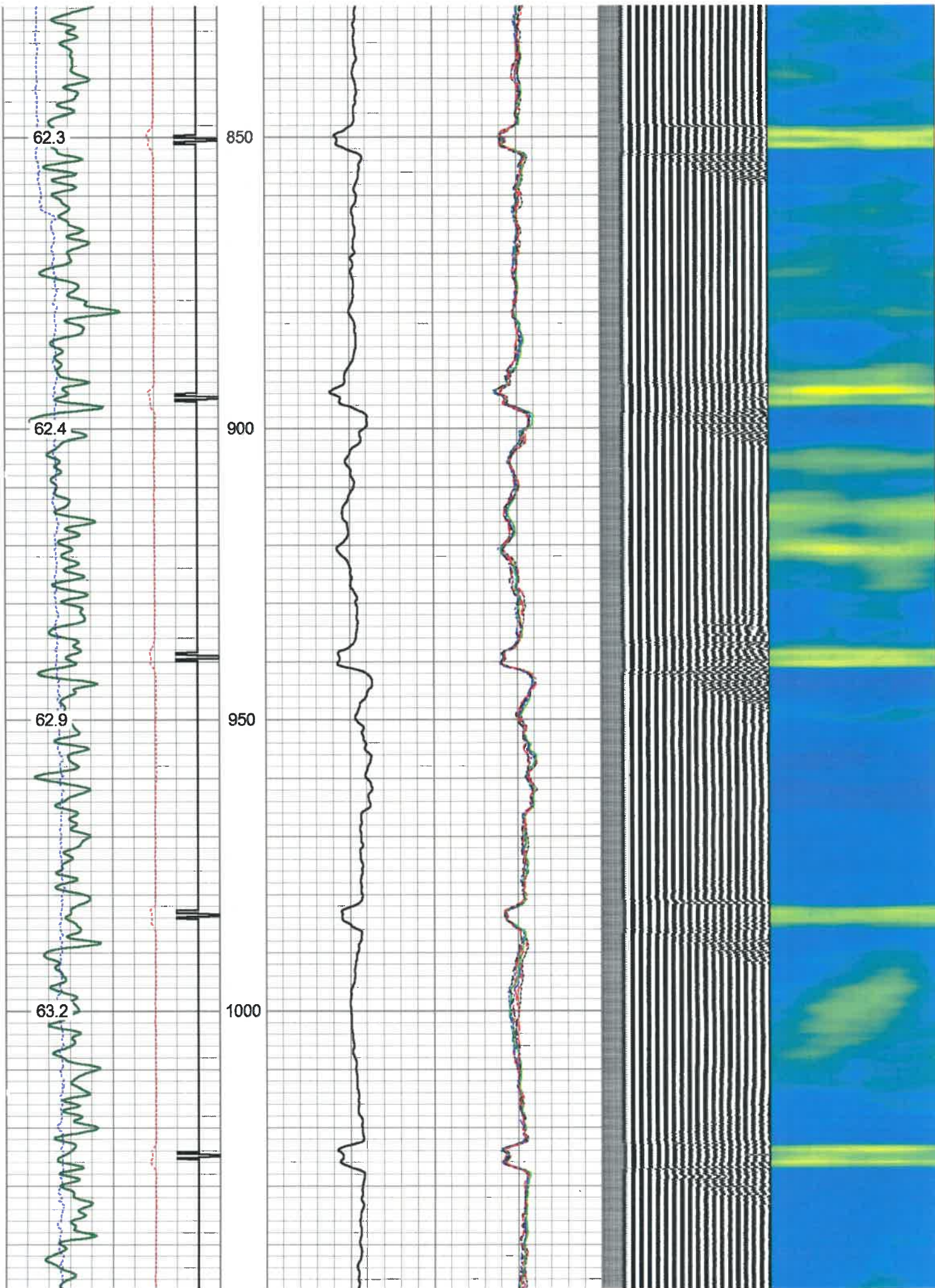


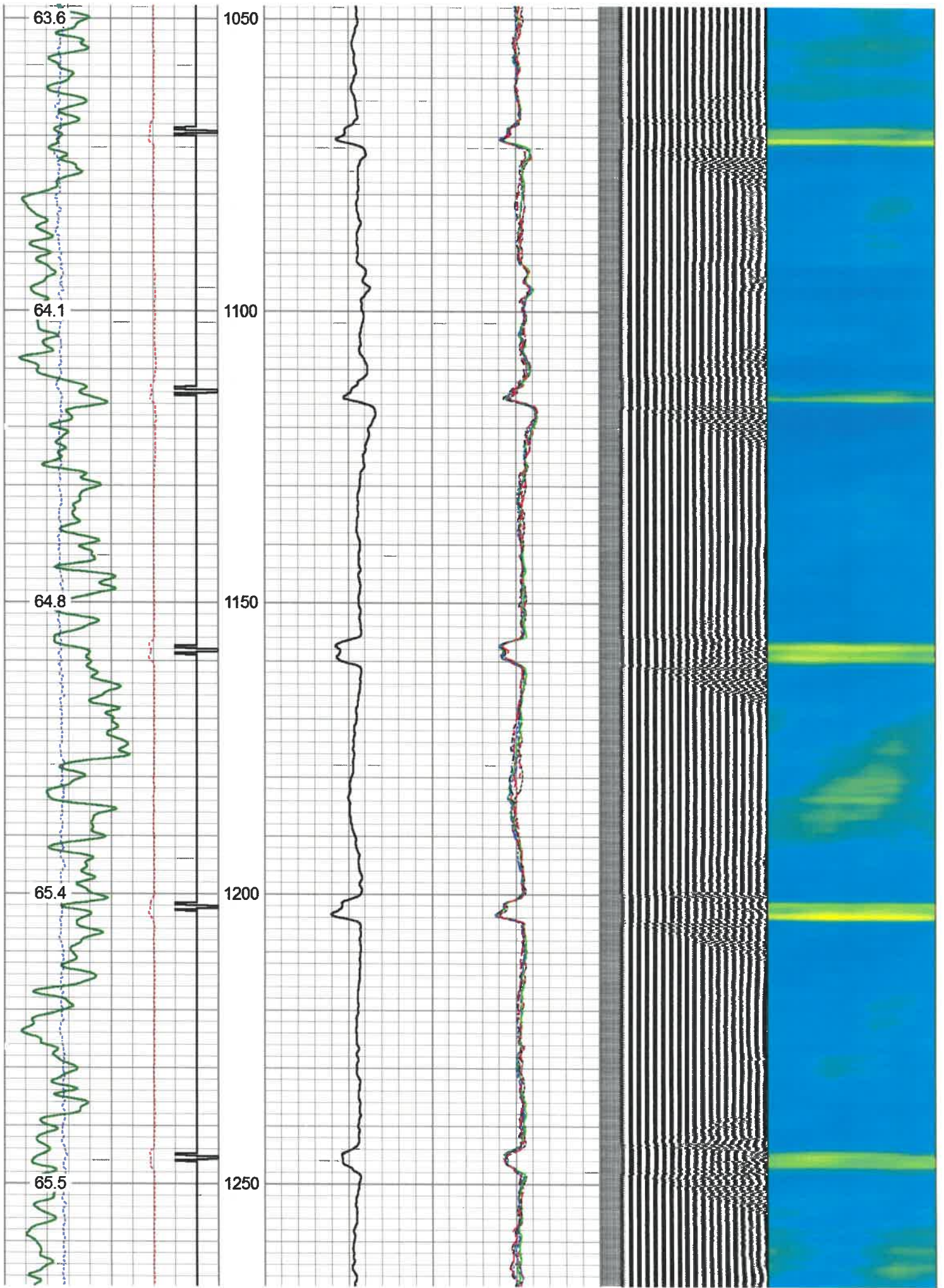
Main Pass 1,500 PSI

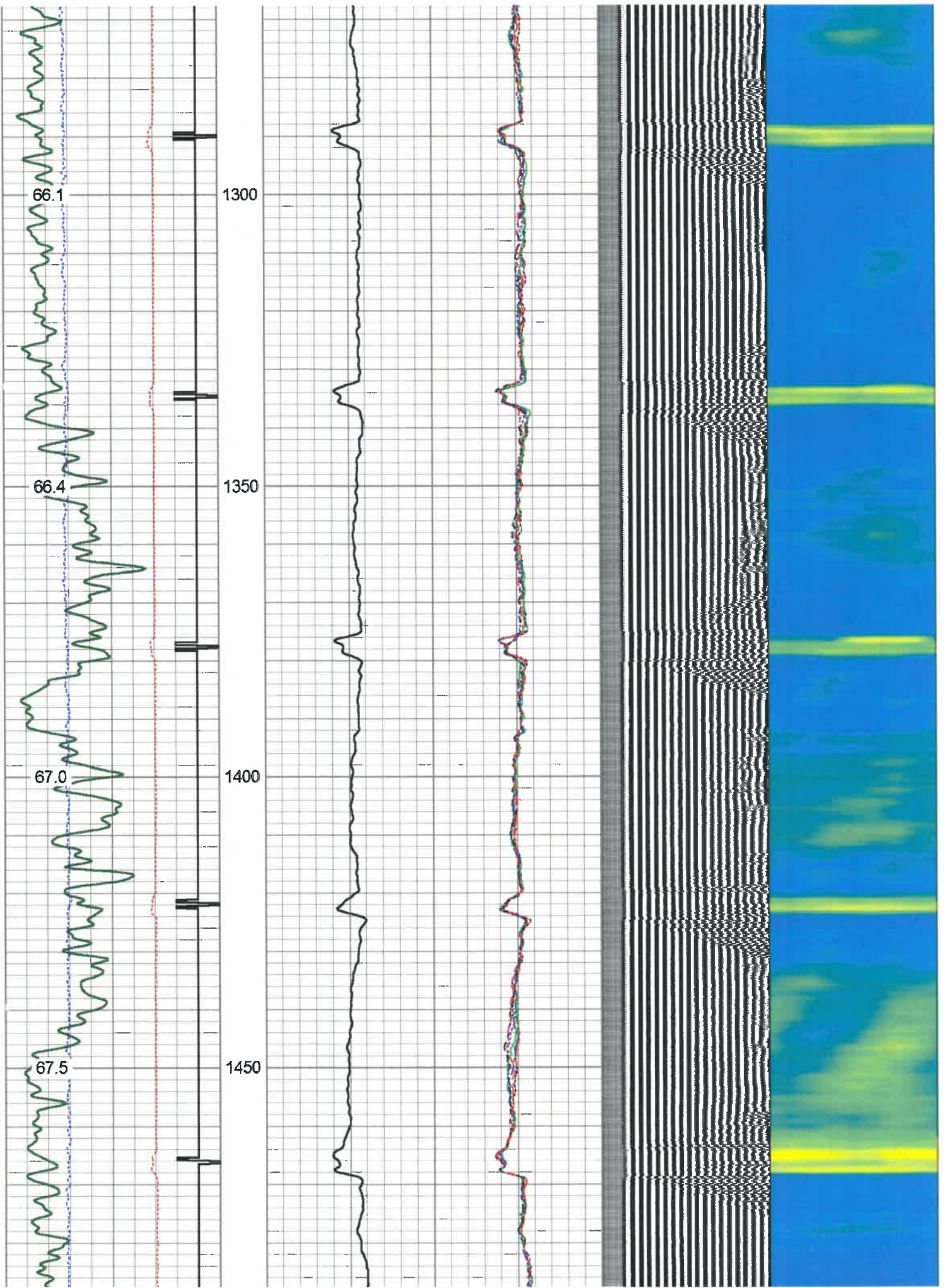


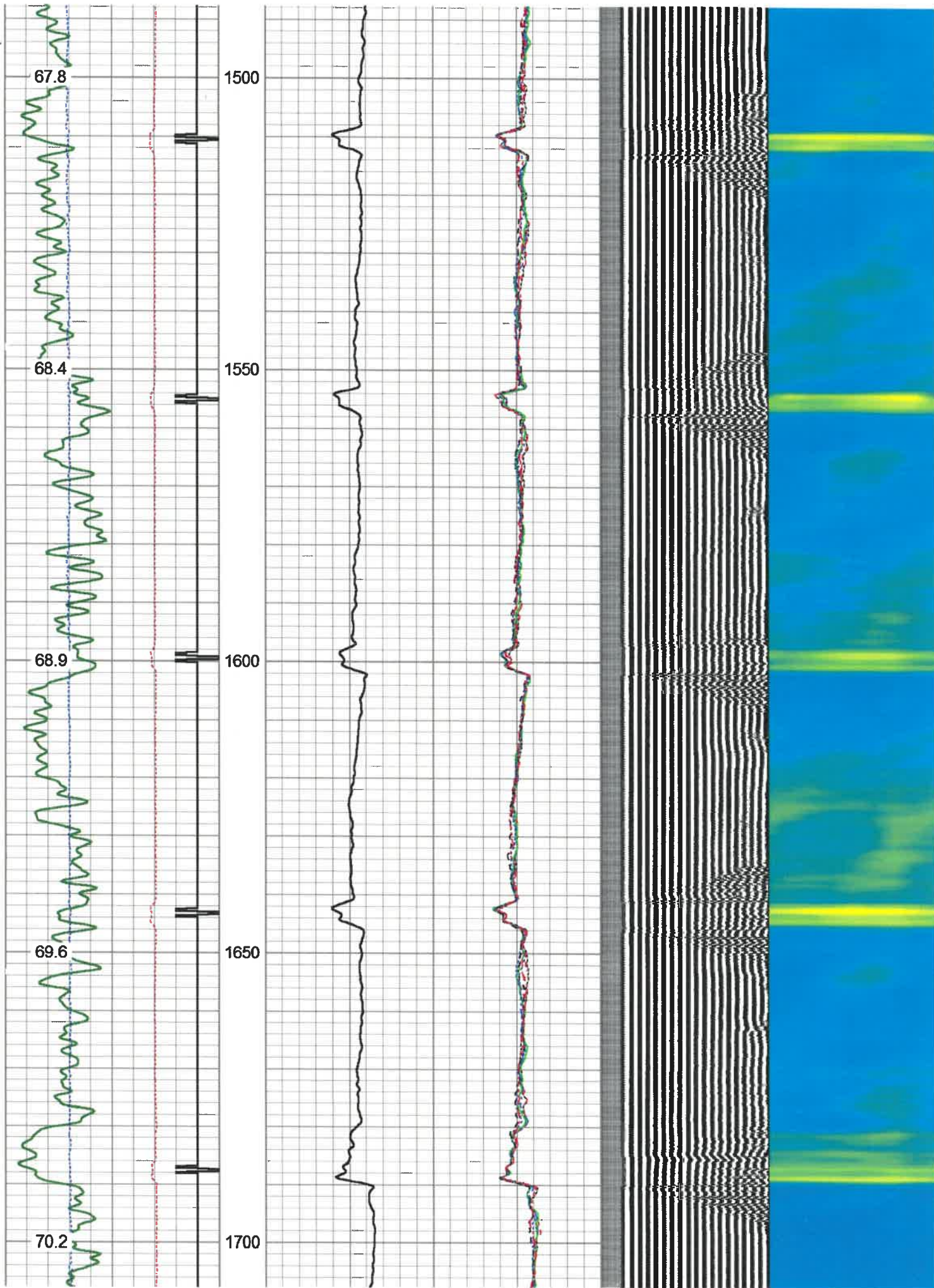


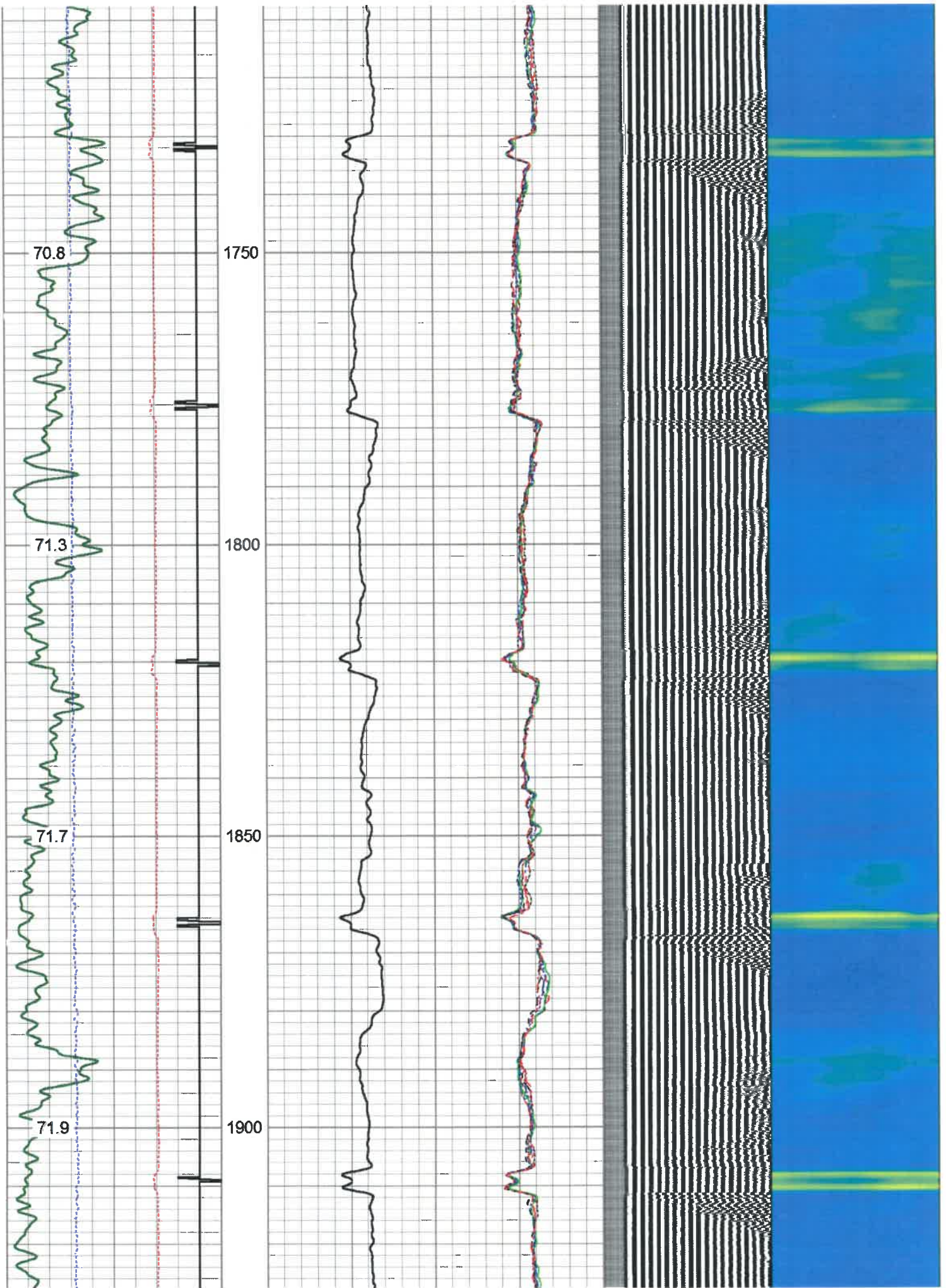


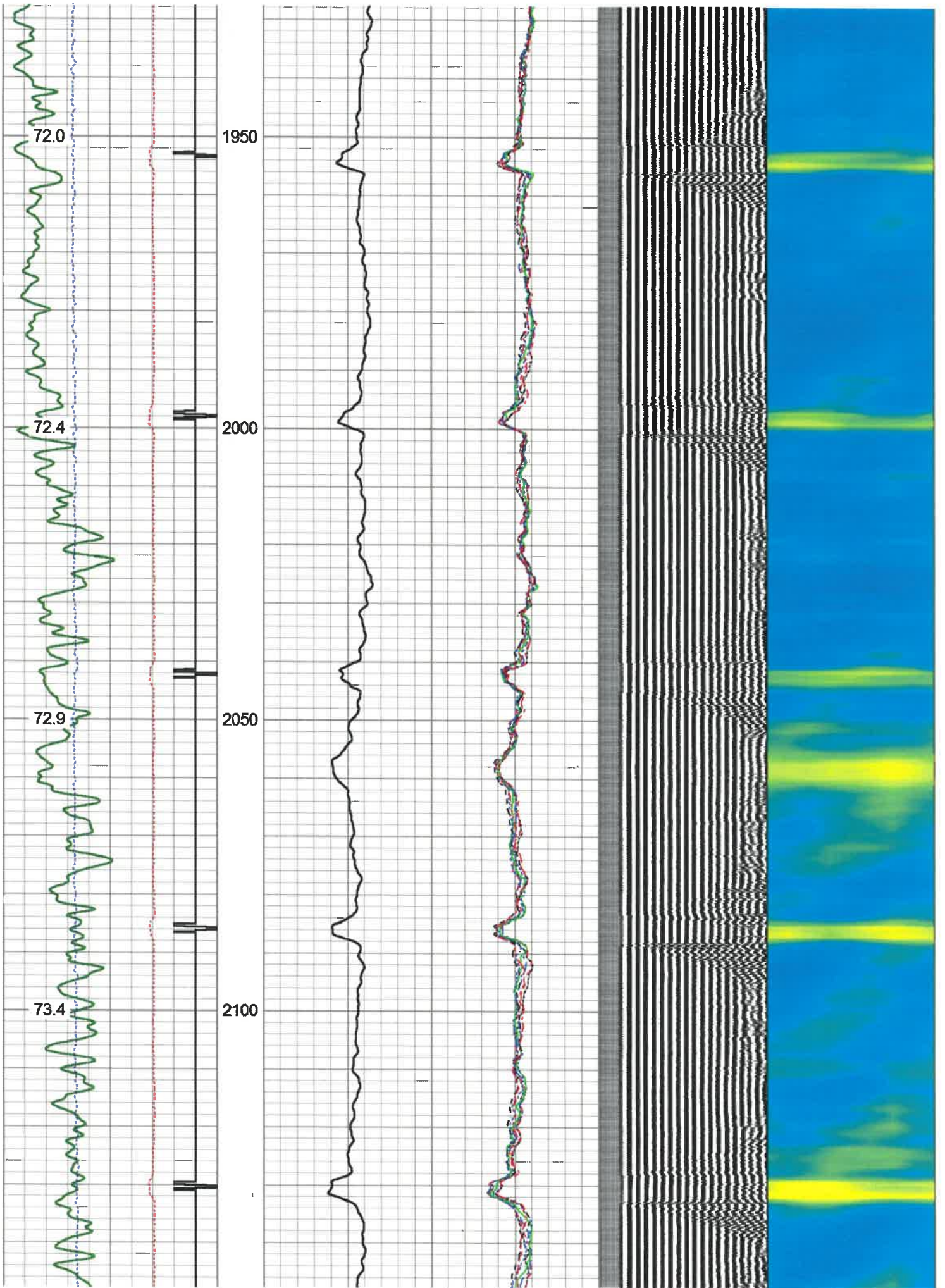


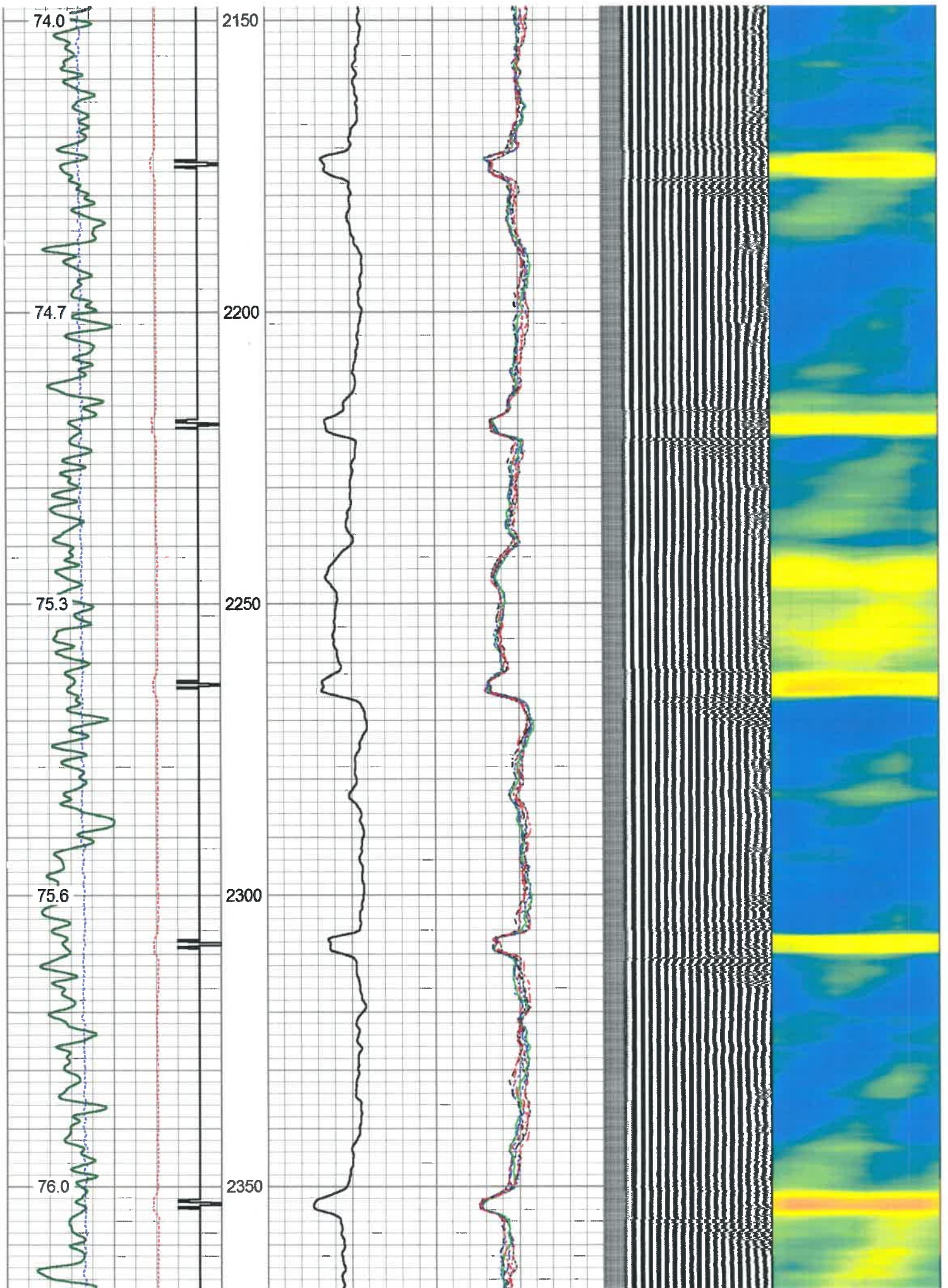


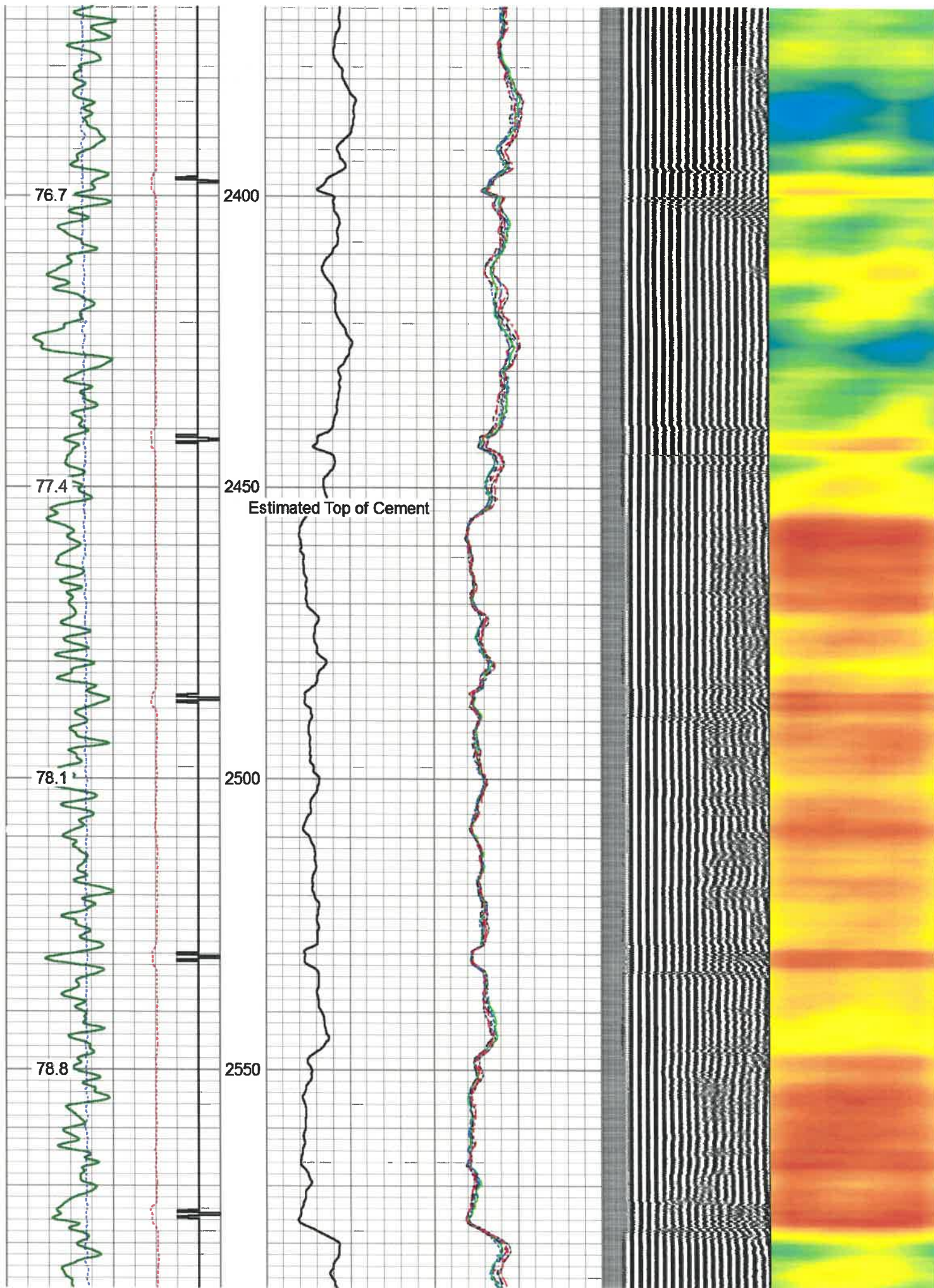


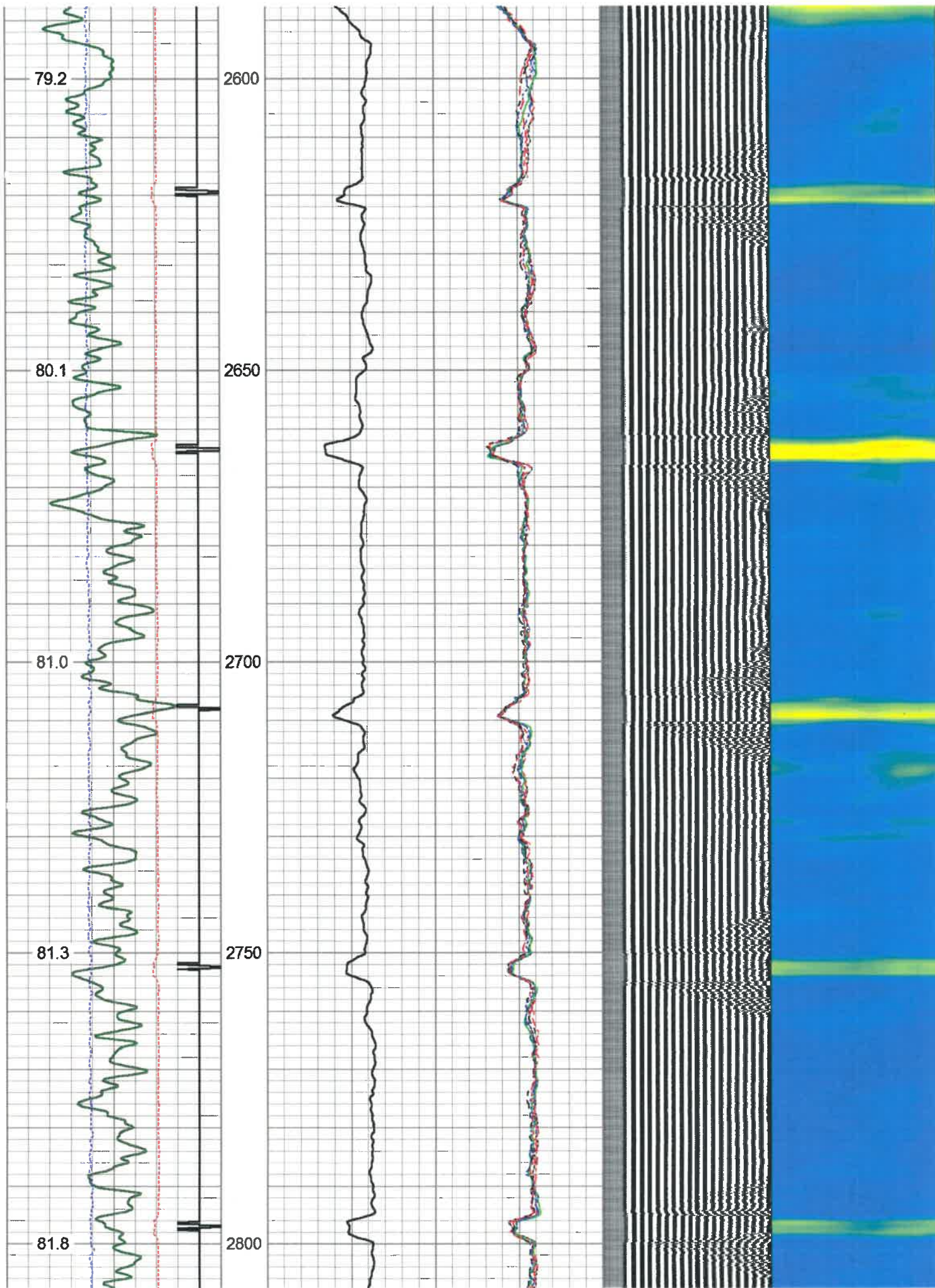


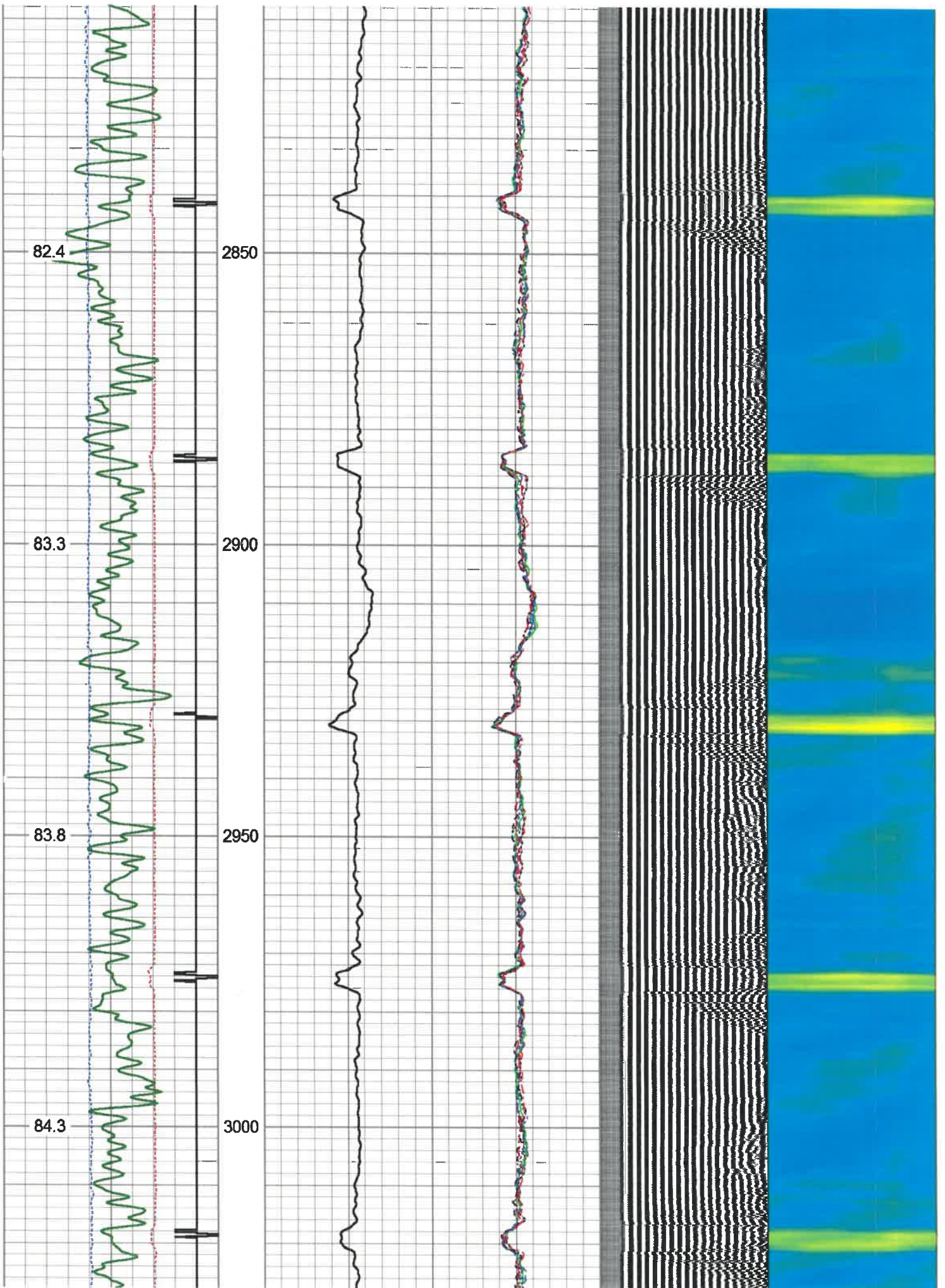


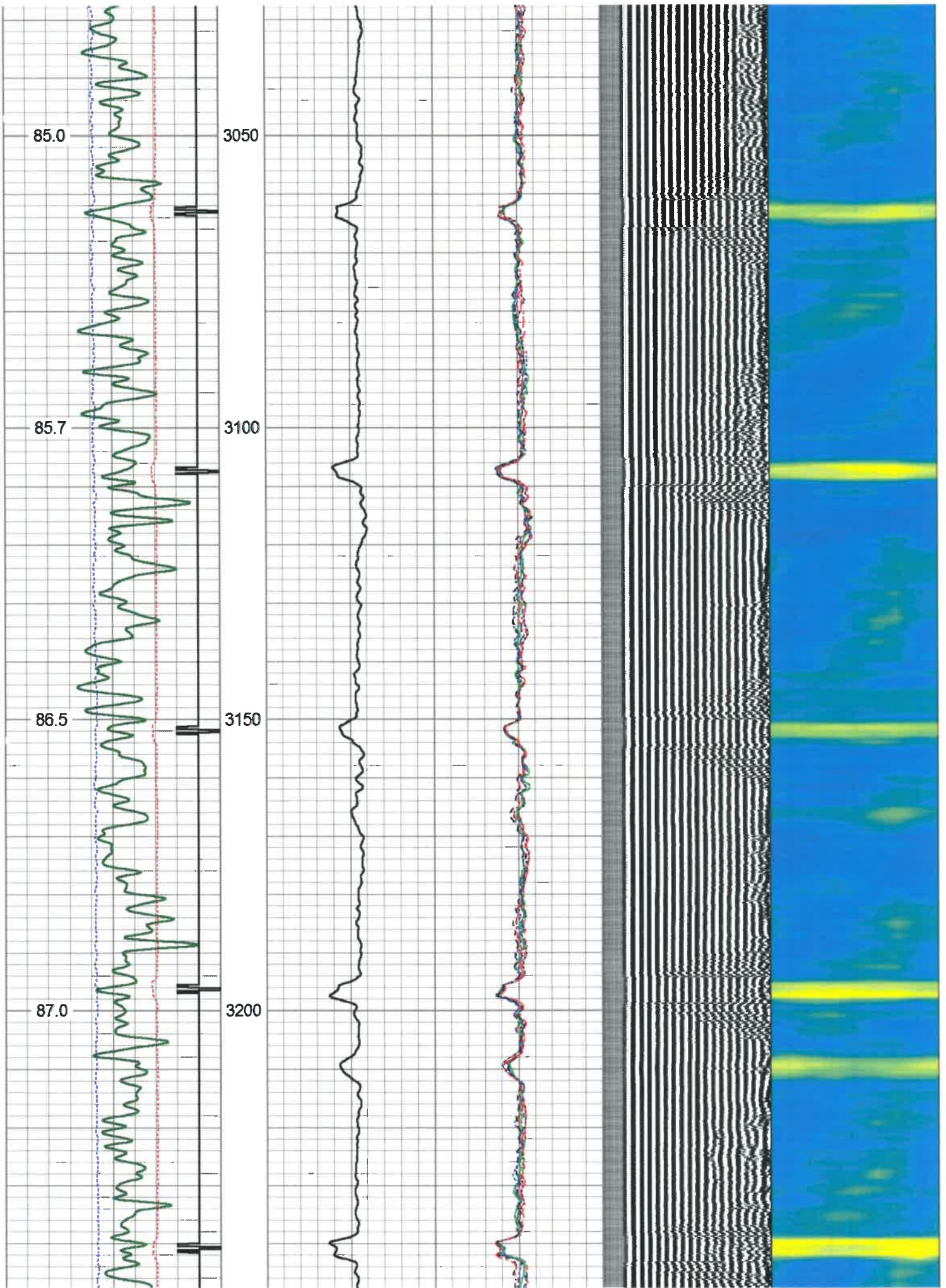


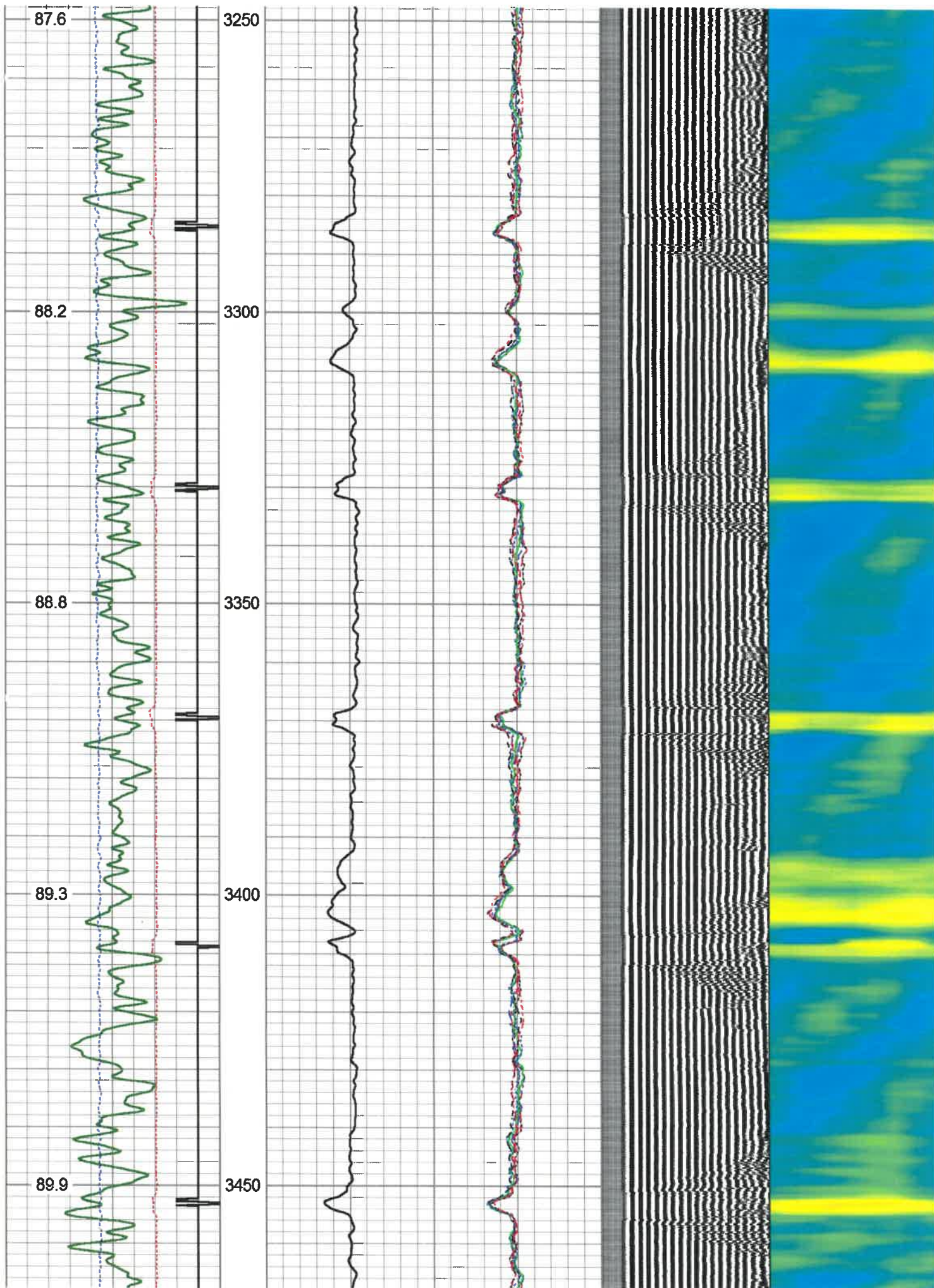


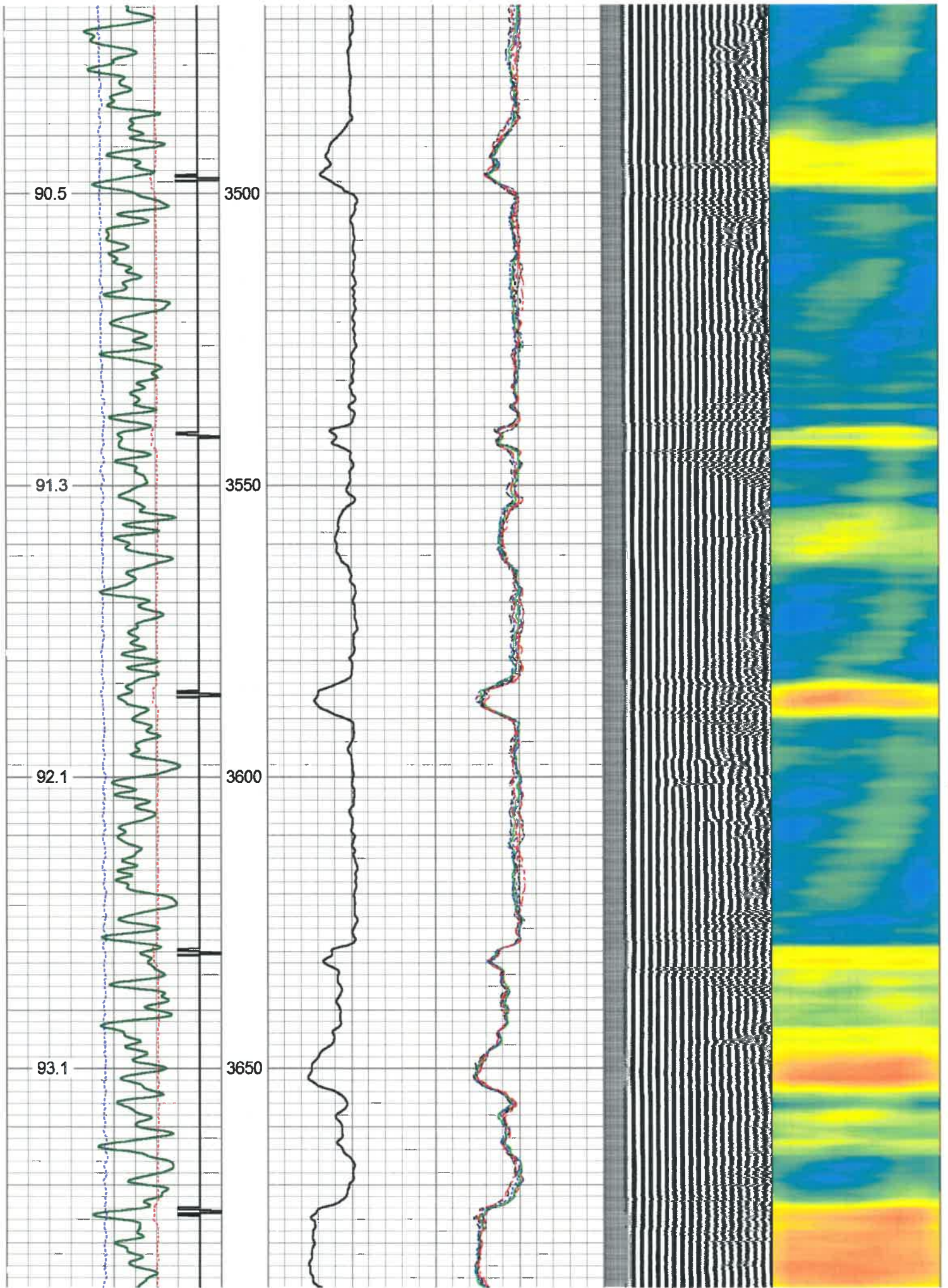


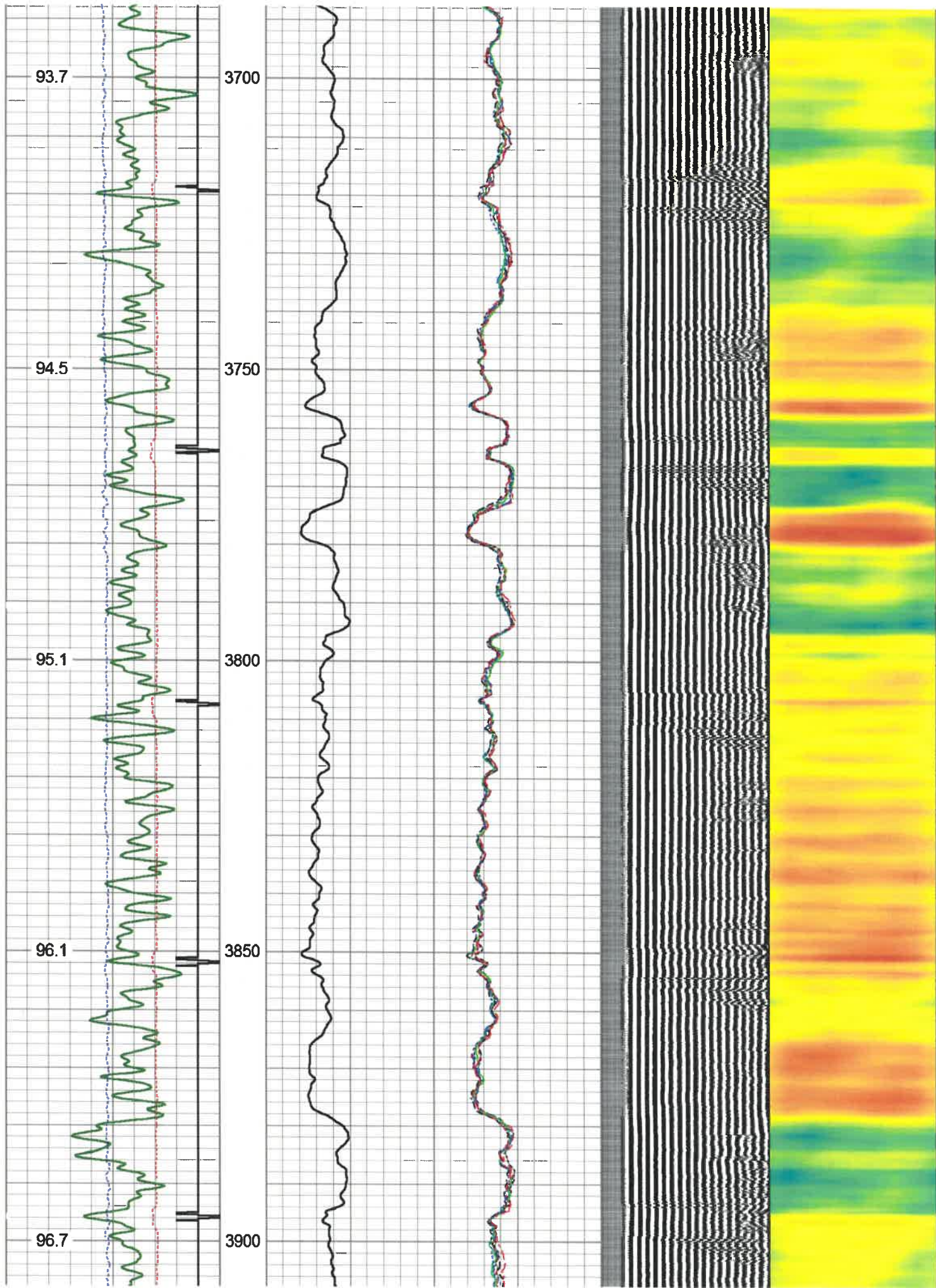


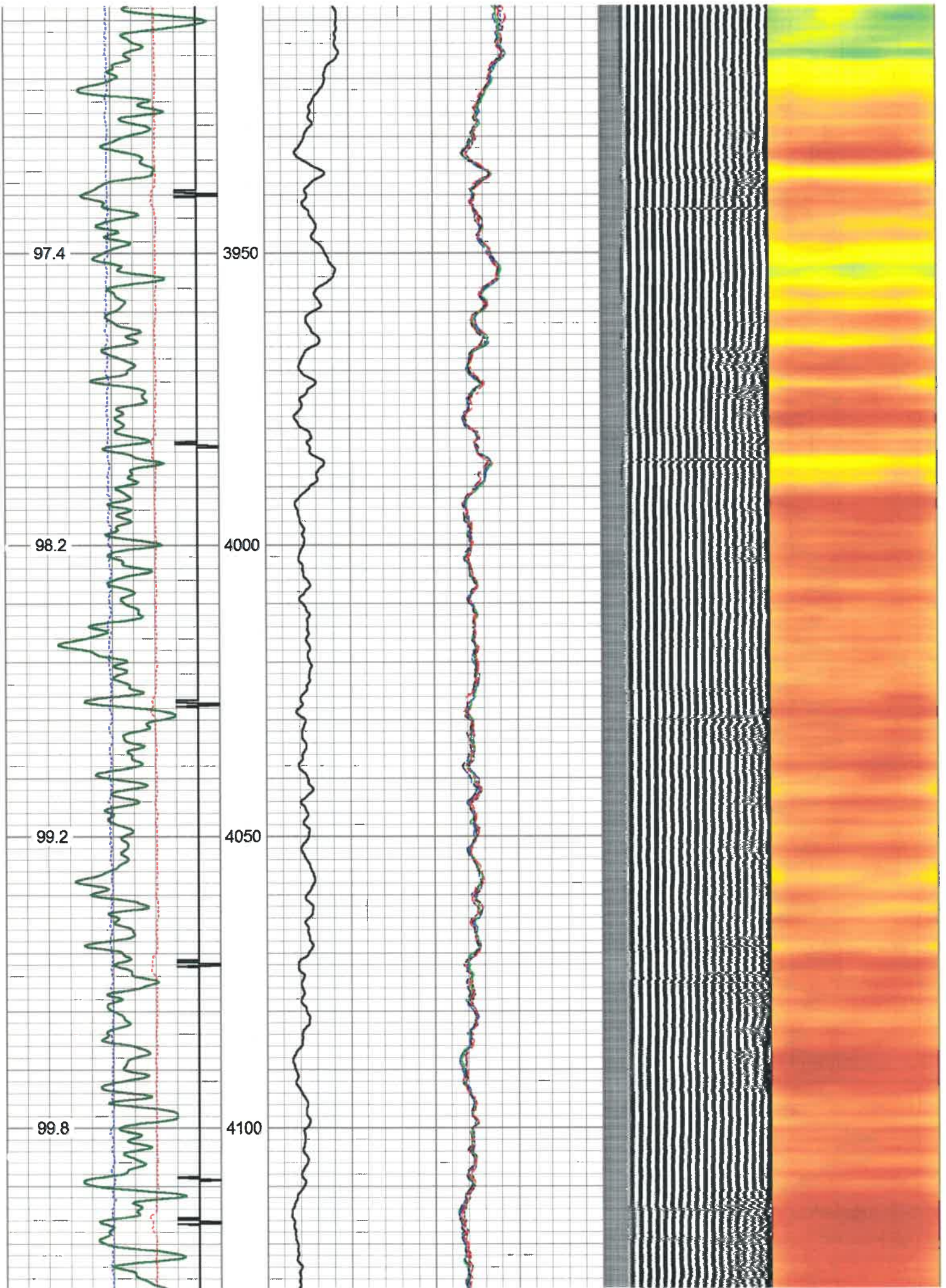


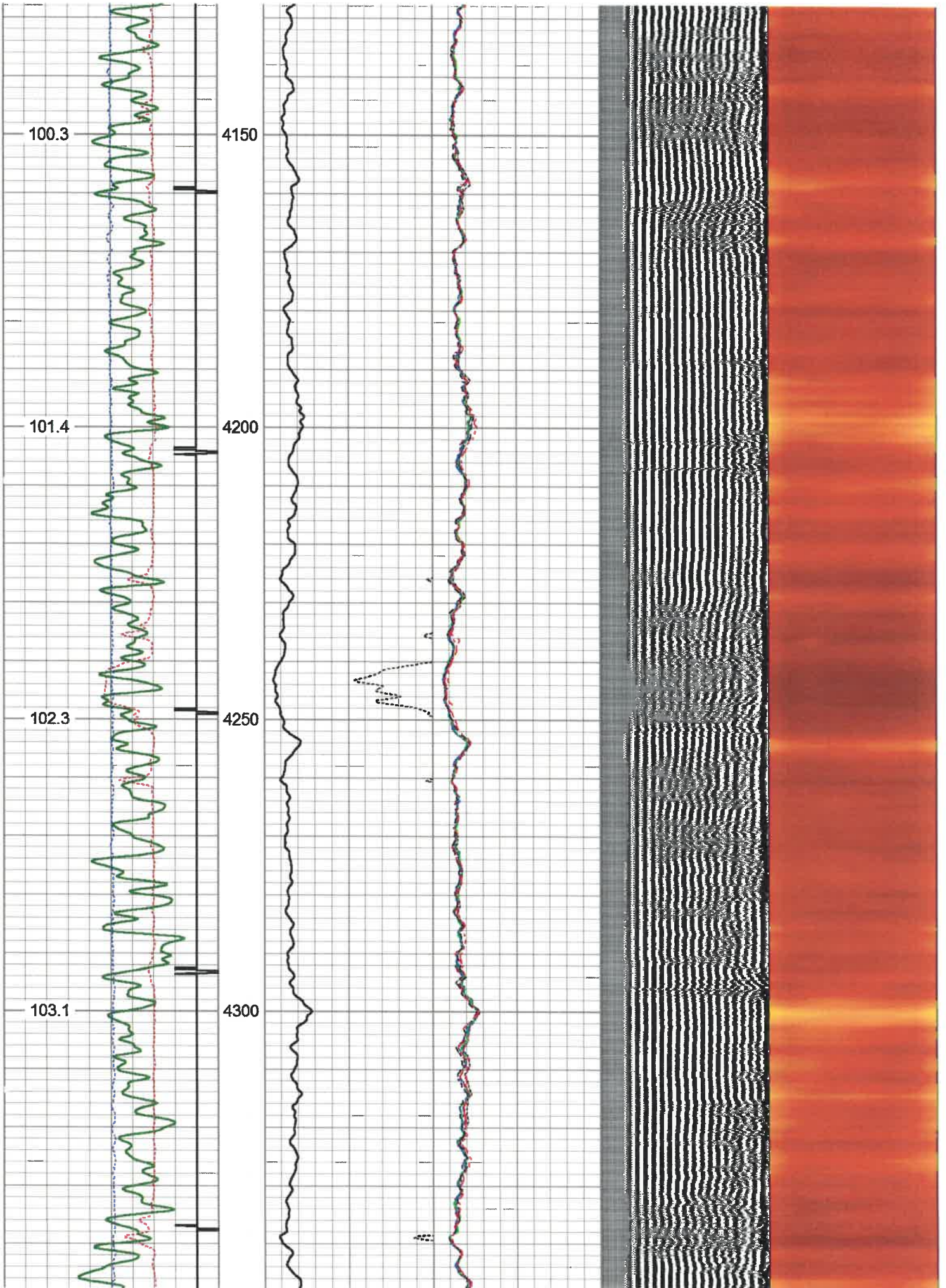


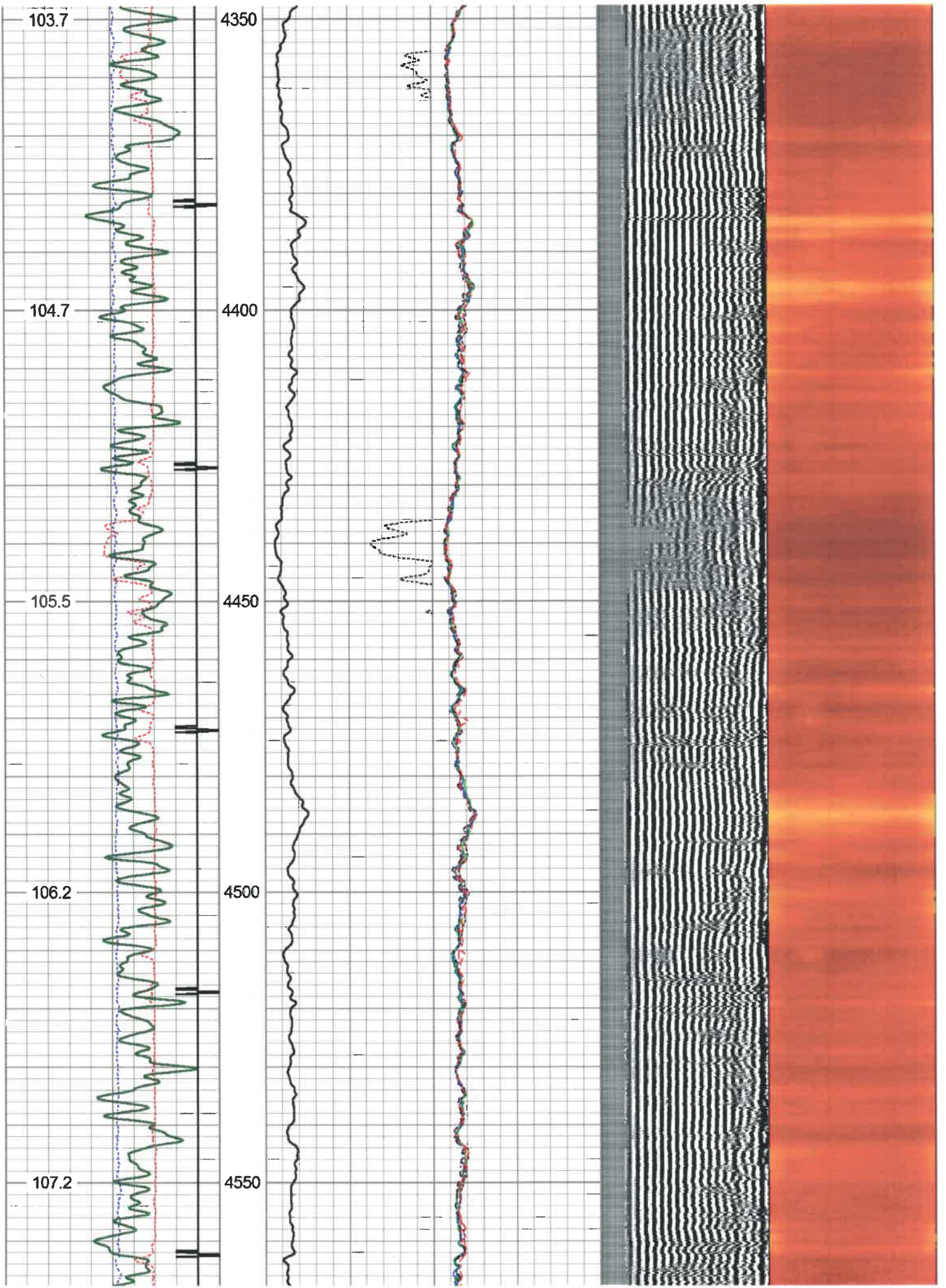


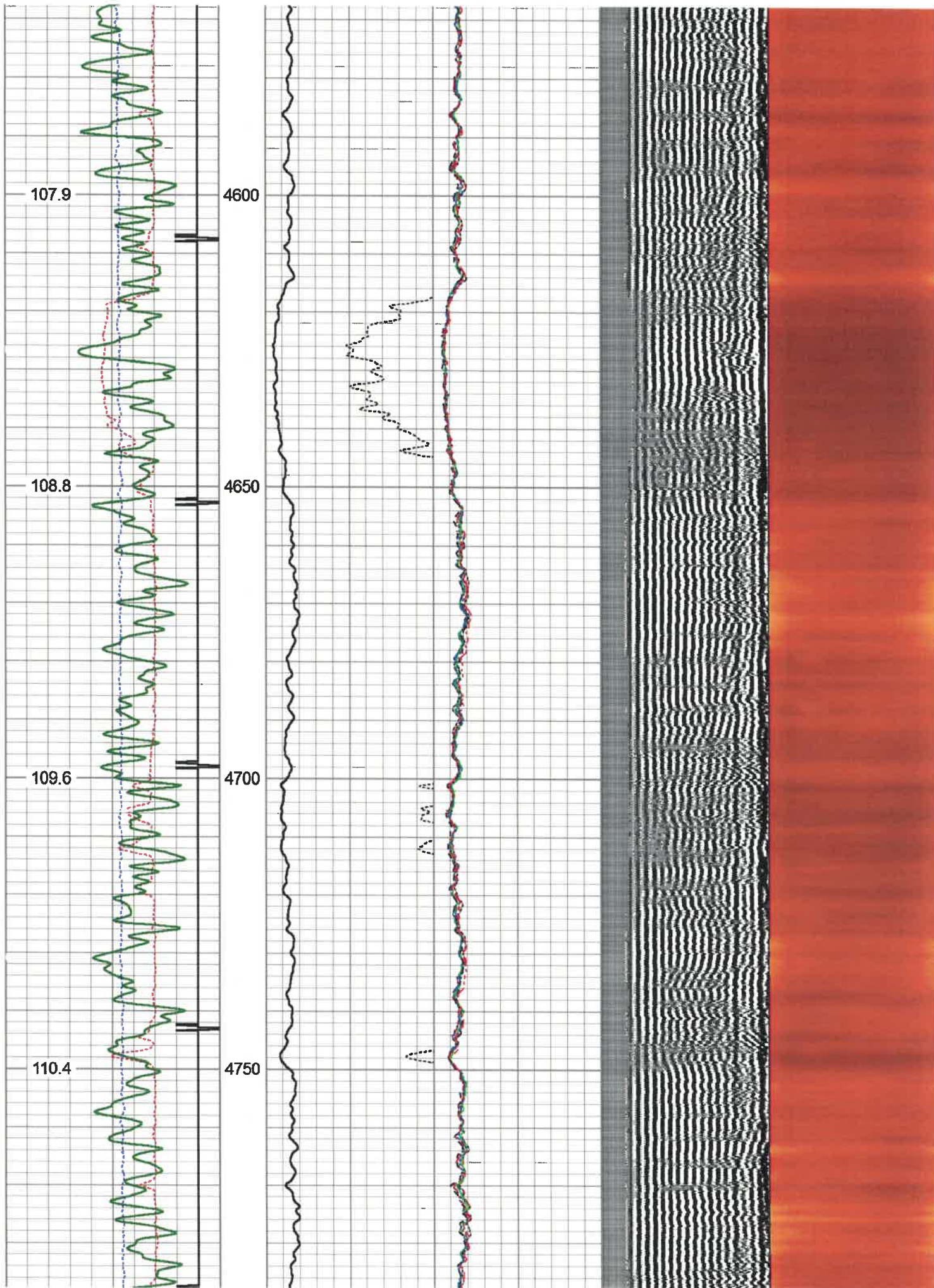


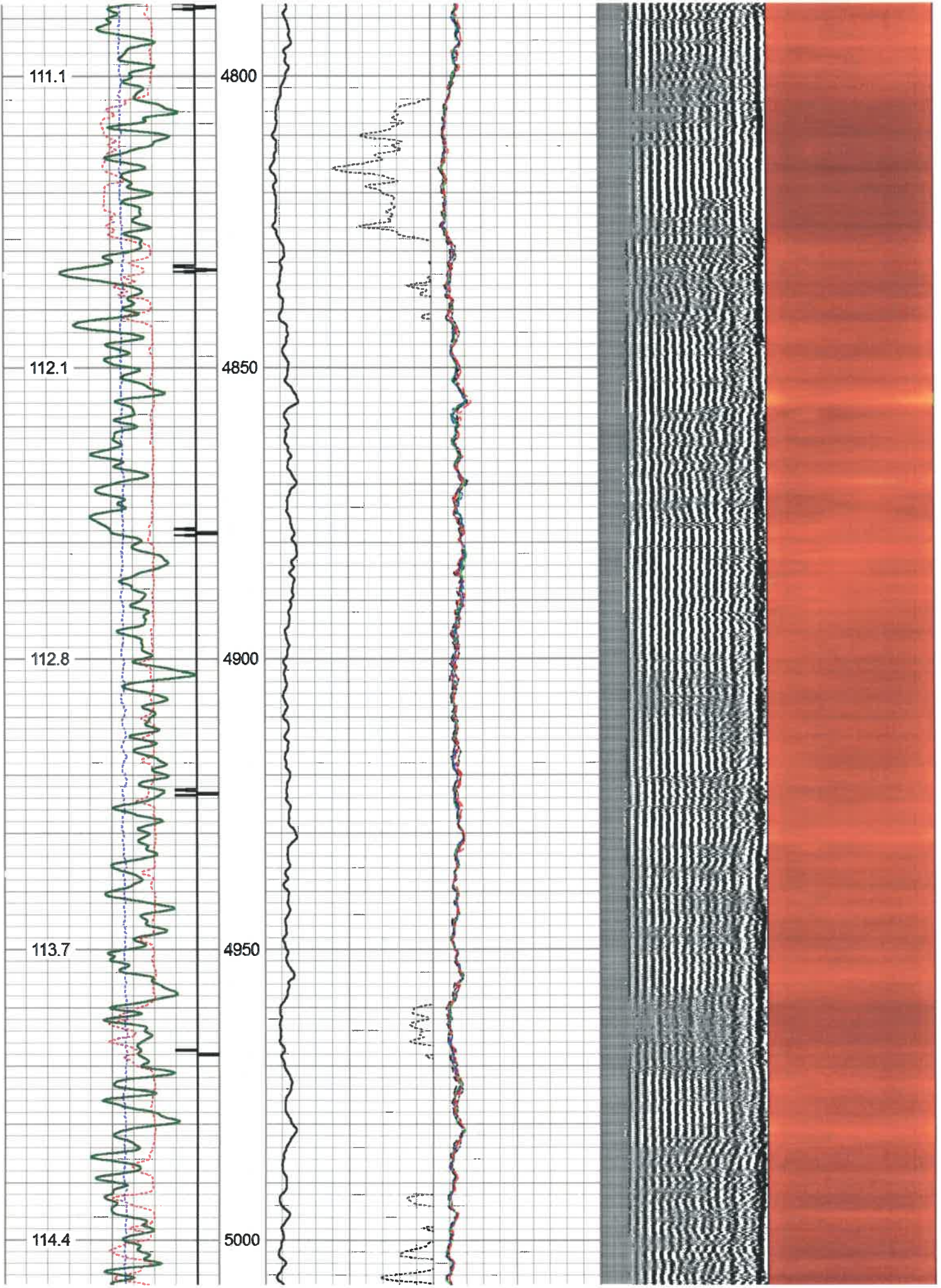


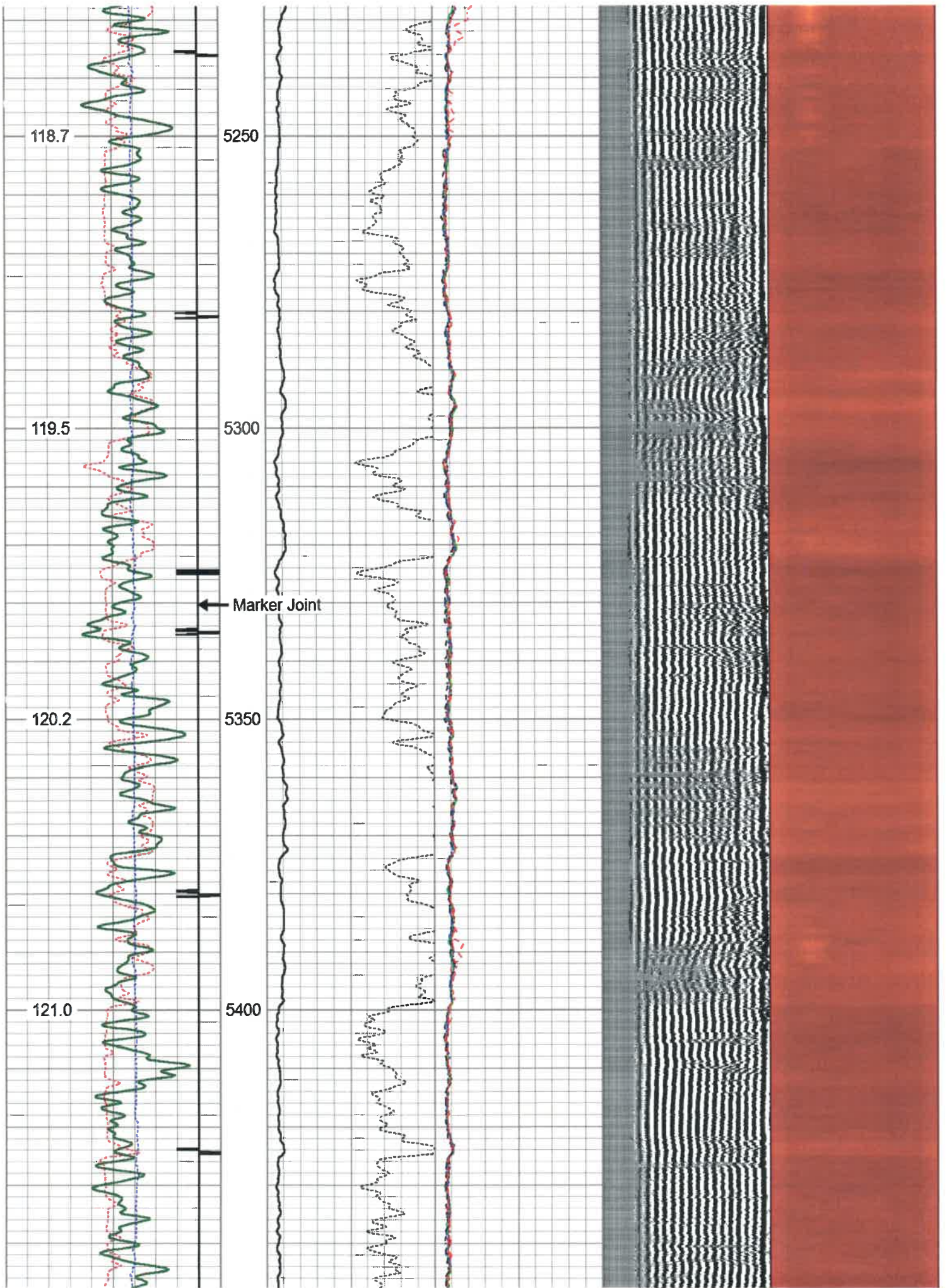


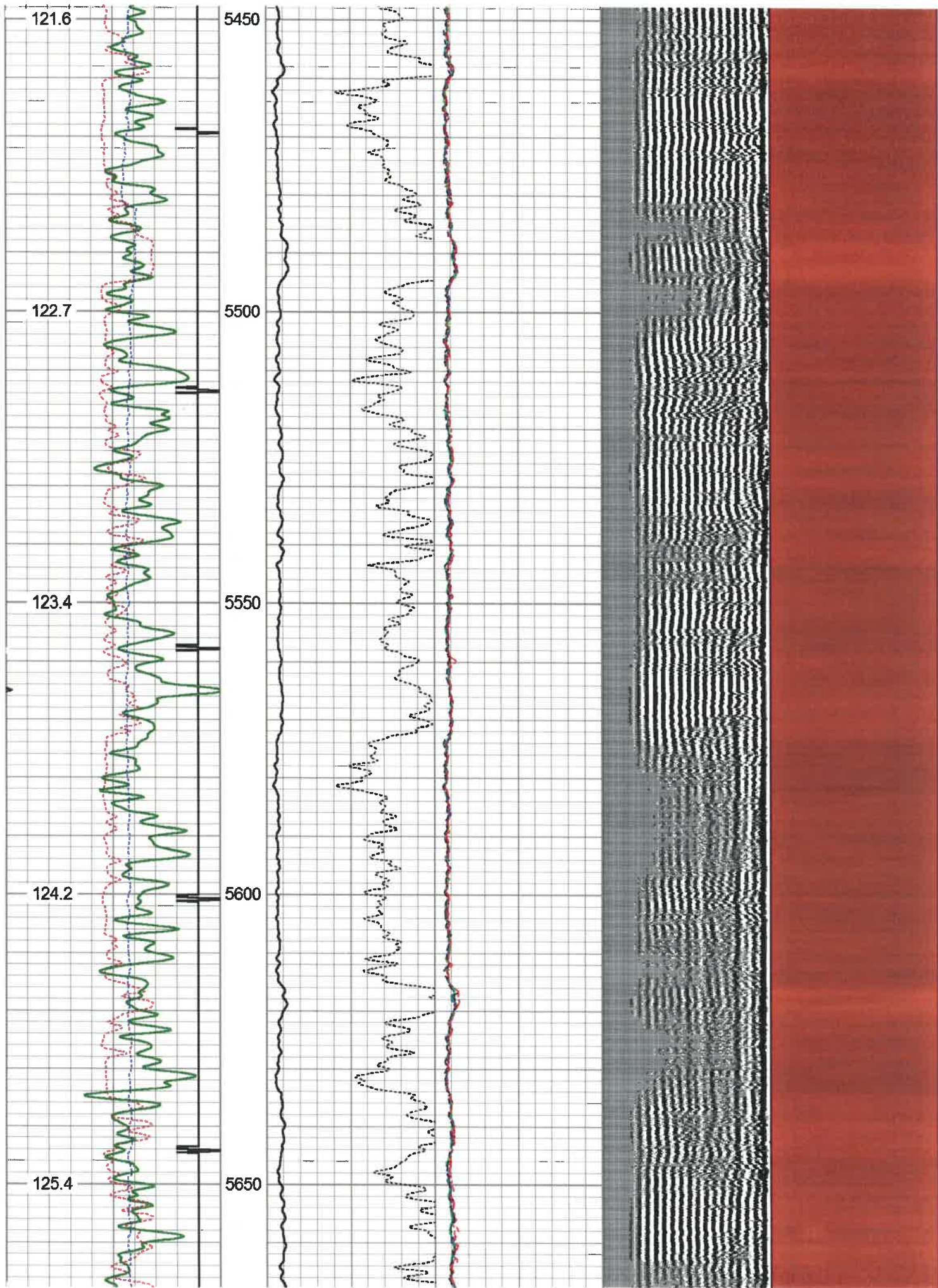


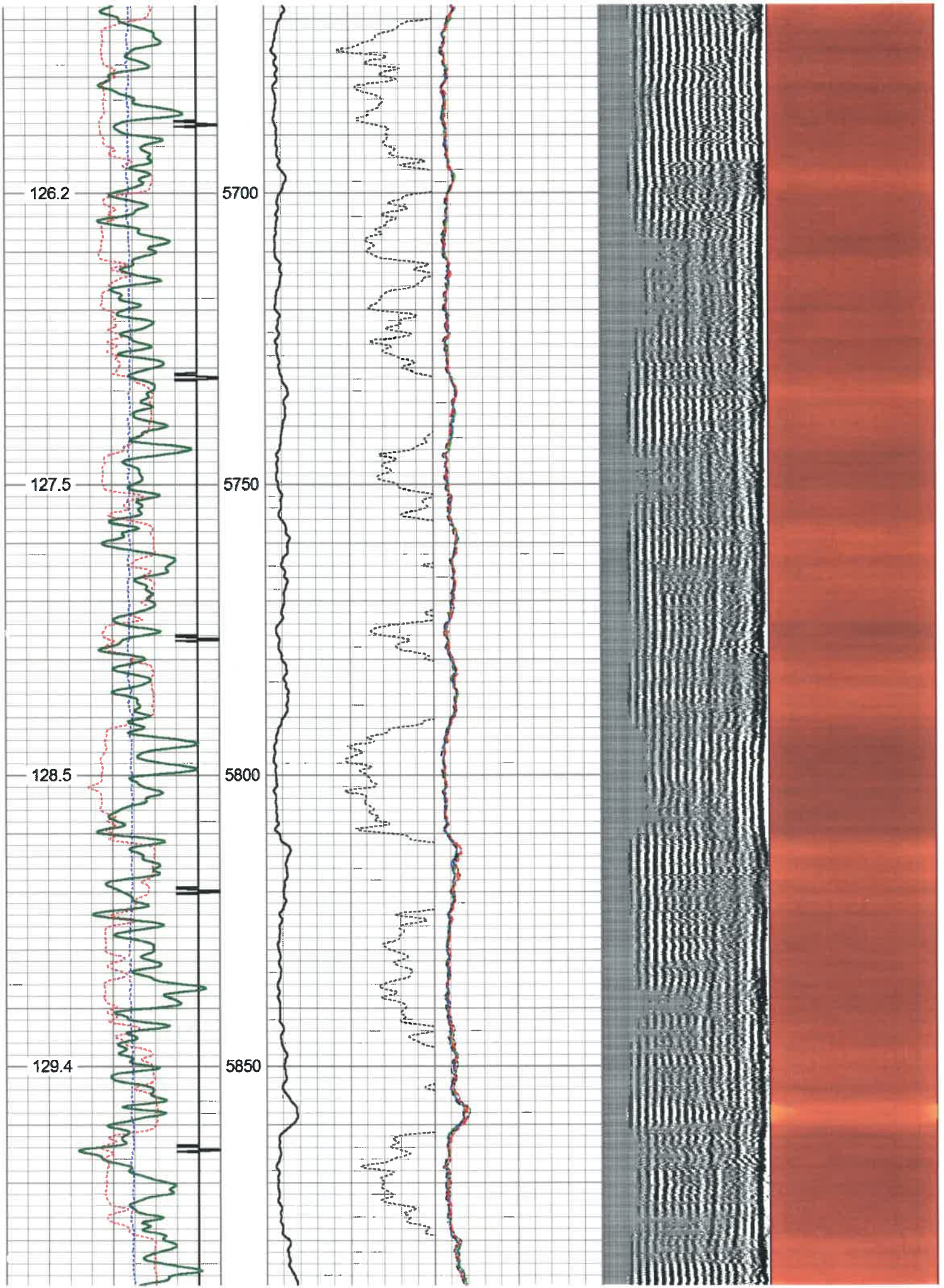


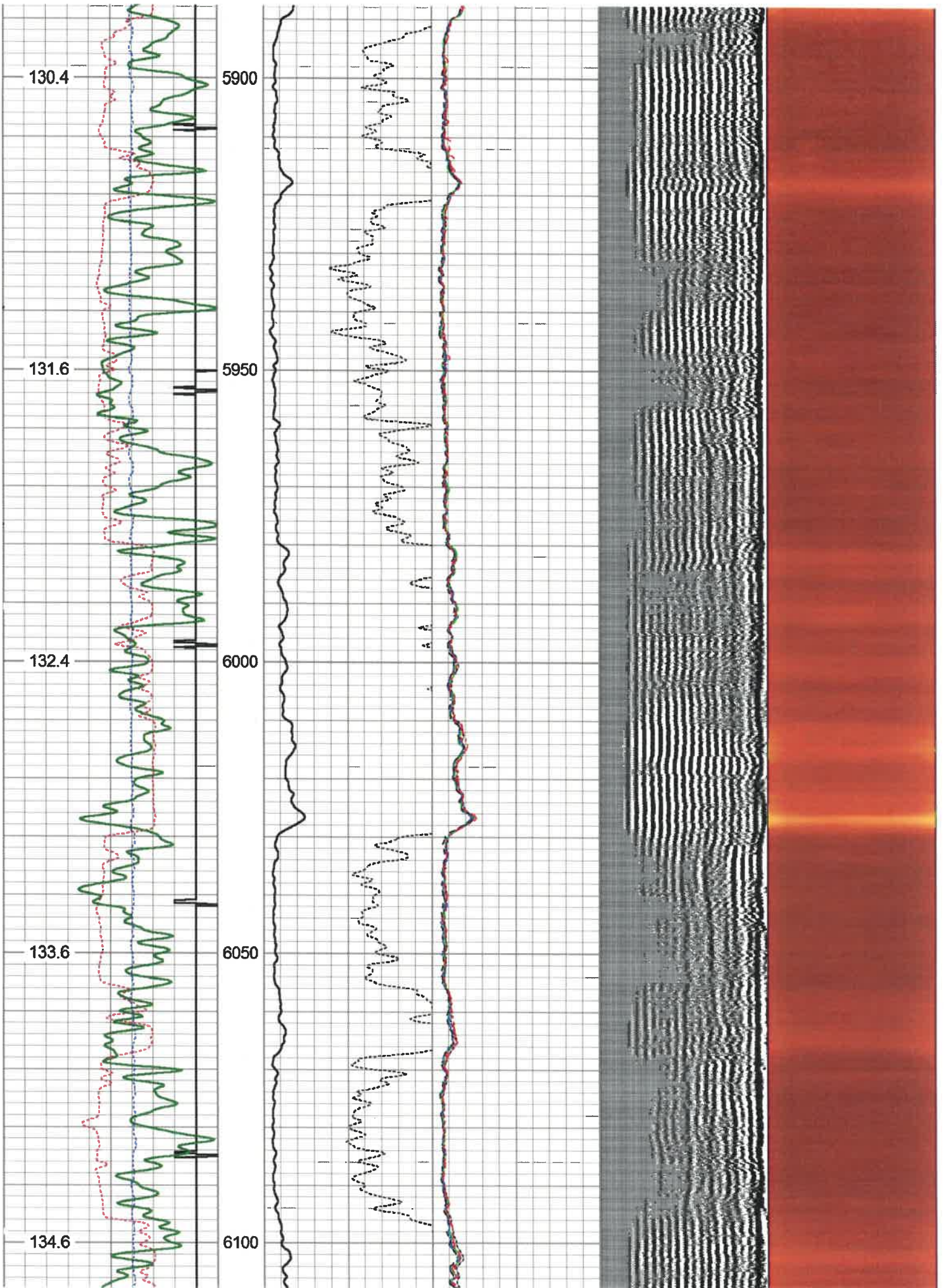


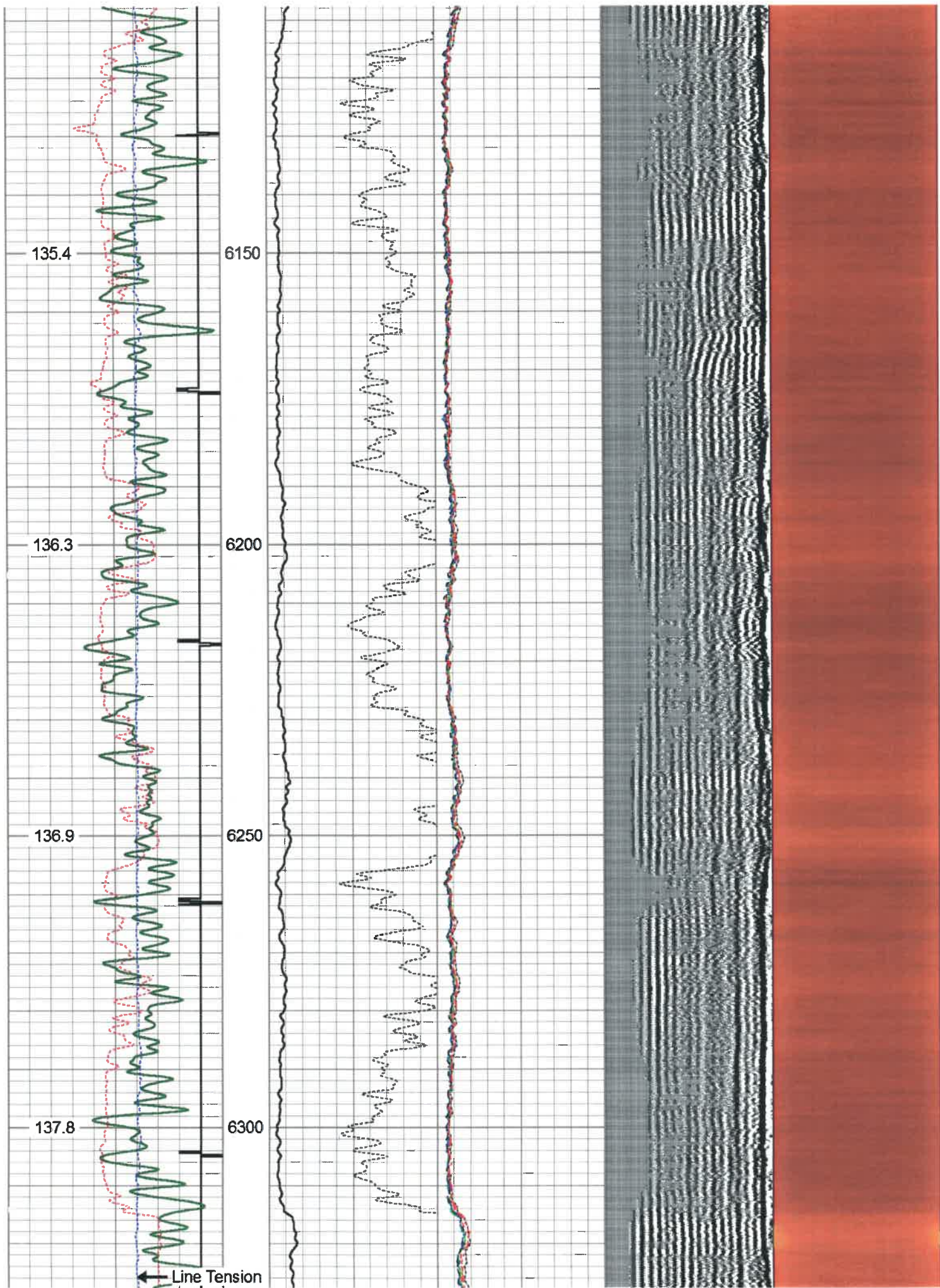


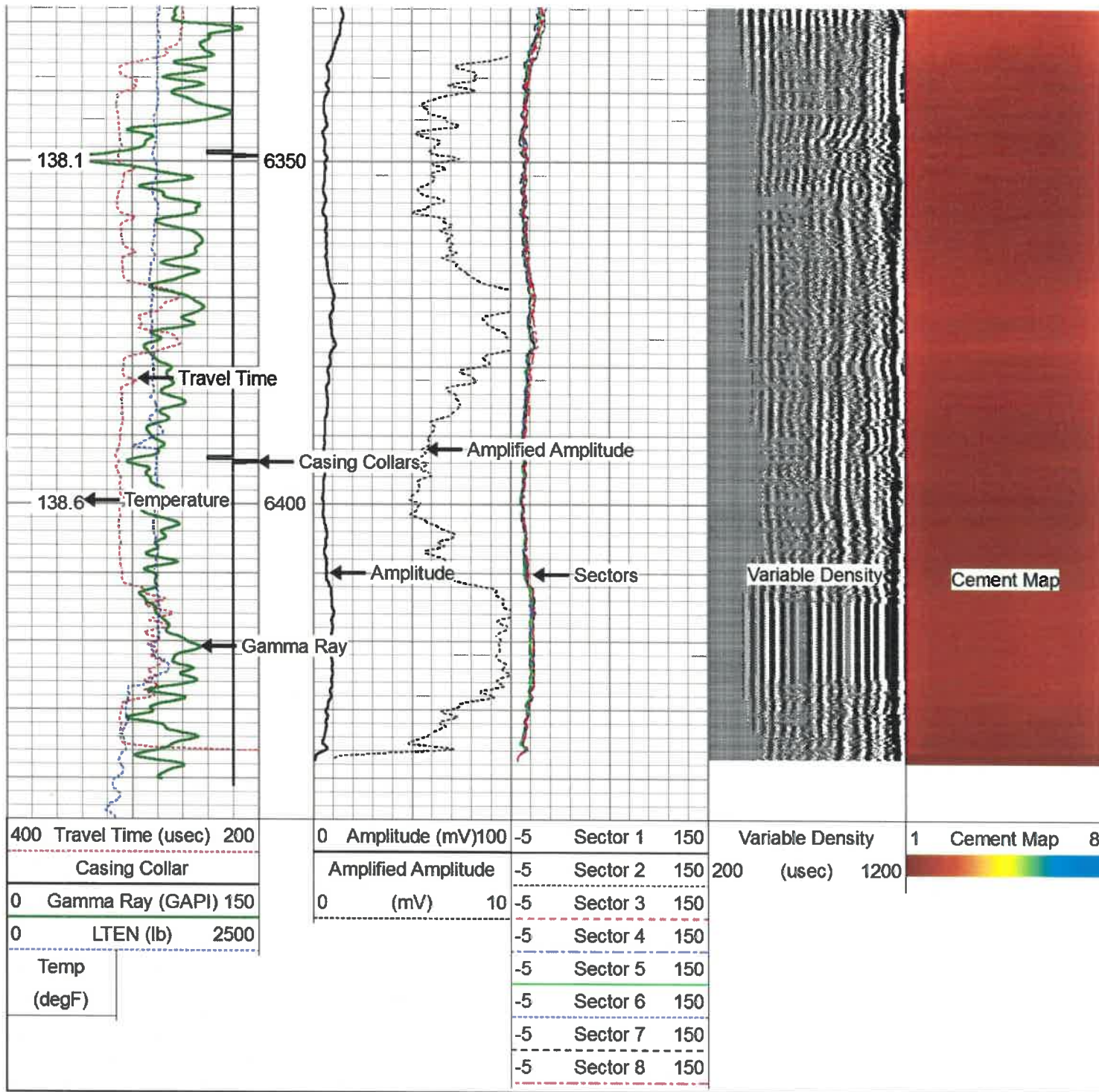






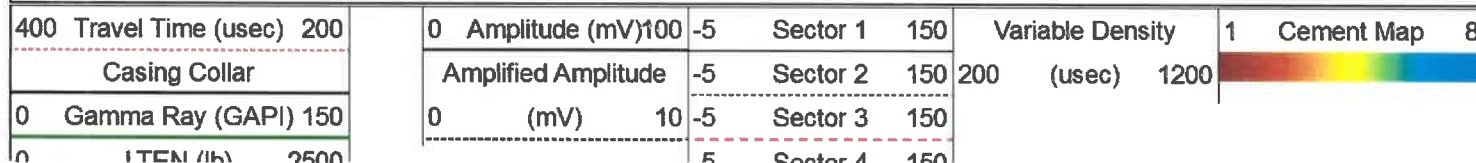






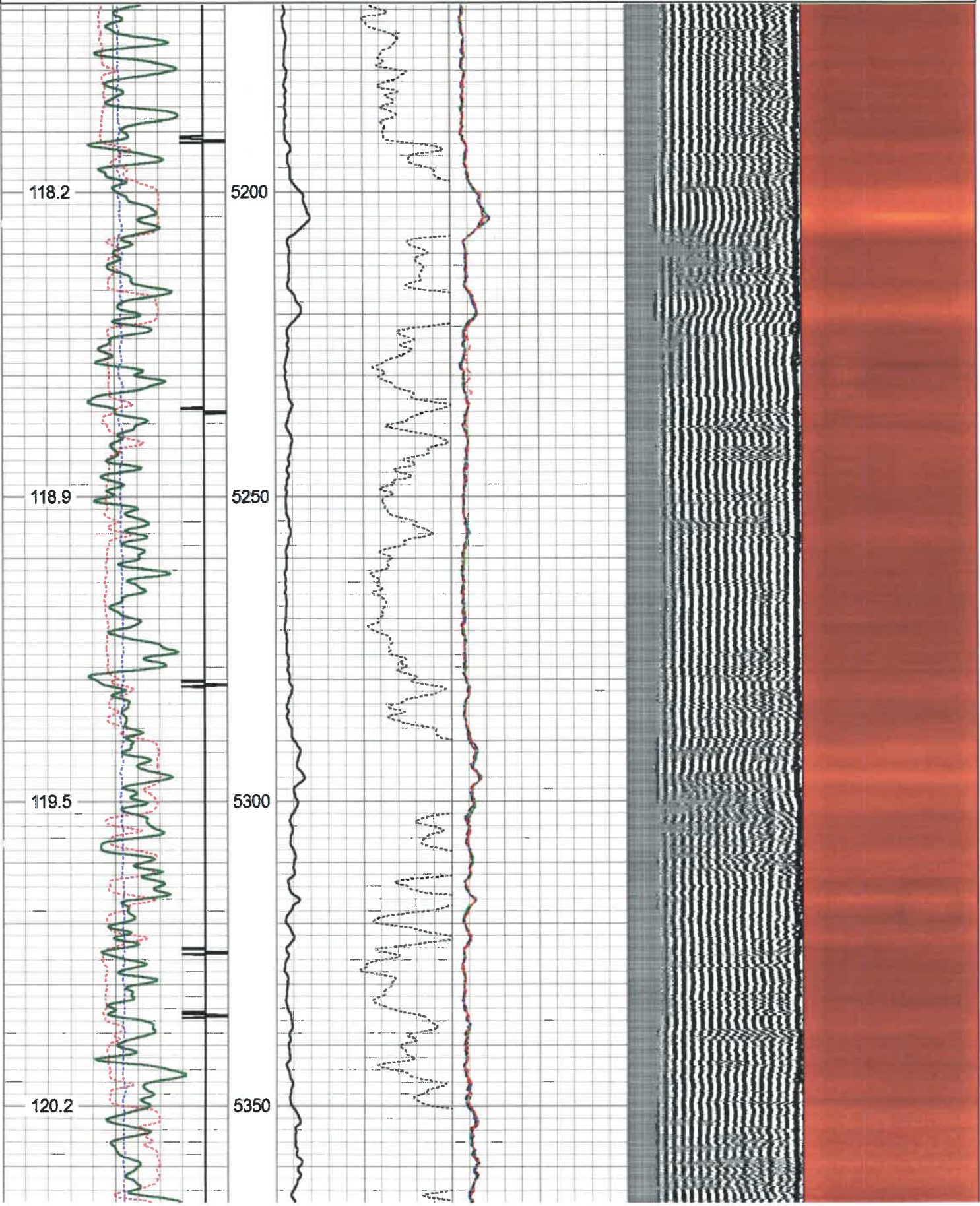
Repeat Pass 0 PSI

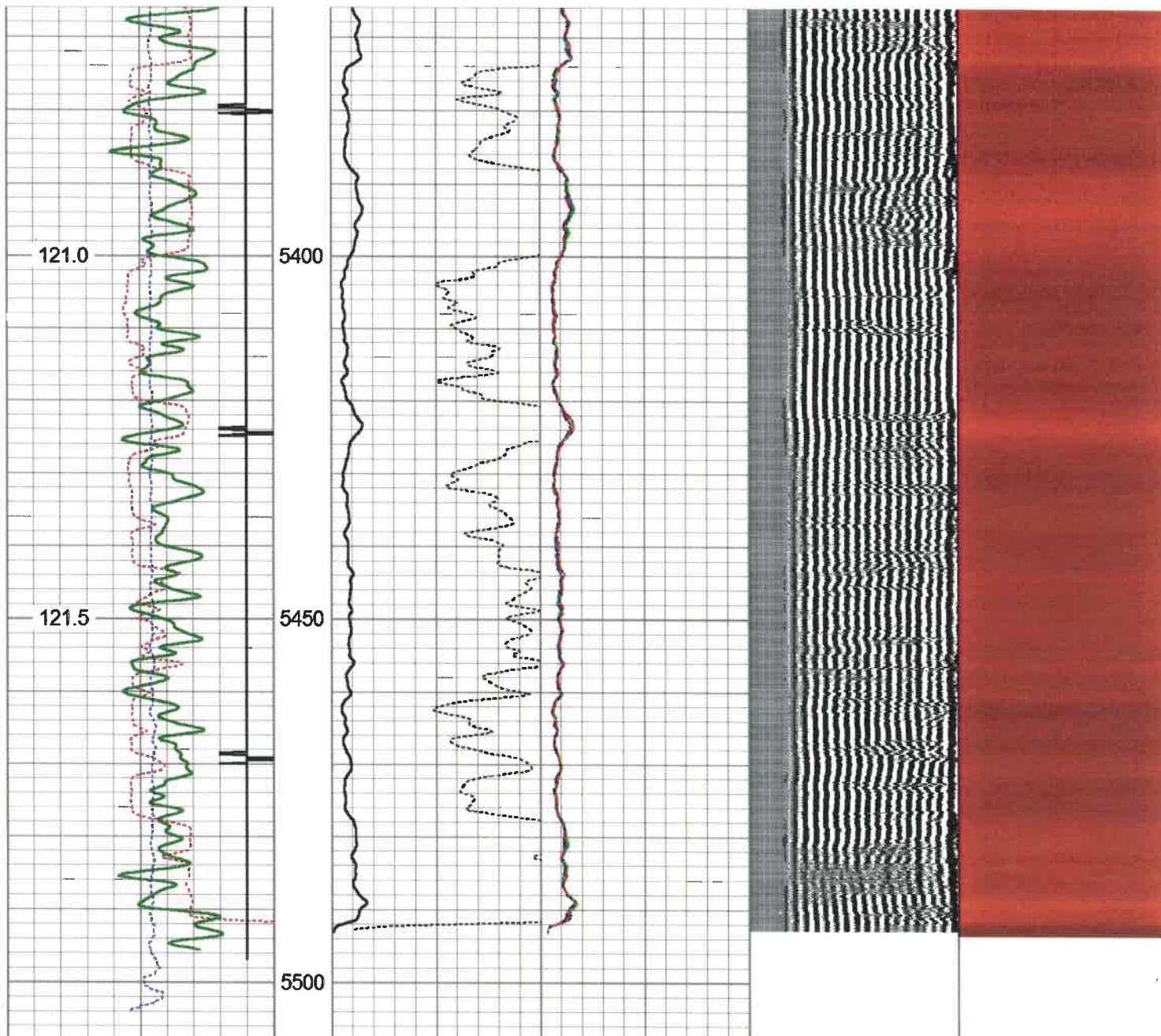
Database File antero_carse_2h_rcbl_24_jun_19.db
 Dataset Pathname marcellus/2H/rcbl/pass2
 Presentation Format scbl03
 Dataset Creation Mon Jun 24 04:11:56 2019
 Charted by Depth in Feet scaled 1:240



Temp (degF)	2000
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-5	Sector 4	150
-5	Sector 5	150
-5	Sector 6	150
-5	Sector 7	150
-5	Sector 8	150





400	Travel Time (usec)	200
Casing Collar		
0	Gamma Ray (GAPI)	150
0	LTEN (lb)	2500
Temp	(degF)	

0	Amplitude (mV)	100	-5	Sector 1	150
Amplified Amplitude					
0	(mV)	10	-5	Sector 2	150

			-5	Sector 3	150

			-5	Sector 4	150

			-5	Sector 5	150

			-5	Sector 6	150

			-5	Sector 7	150

			-5	Sector 8	150

Variable Density	1	Cement Map	8
200	(usec)	1200	



Calibration Report

Database File antero_carse_2h_rcbl_24_jun_19.db
 Dataset Pathname marcellus/2H/rcbl/pass4
 Dataset Creation Mon Jun 24 04:20:24 2019

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Sun May 19 10:00:44 2019

Performed:

Sun May 19 12:22:44 2019

Calibrator Value: 1.0 GAPI
 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps
 Sensitivity: 0.7000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 195.825 ft

Master Calibration, performed (Derived):


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	1.119	1.000	71.921	63.356	0.998
CAL	-0.046	1.834				
5'	0.000	1.092	1.000	71.921	64.955	0.999
SUM						
S1	0.000	1.214	0.000	100.000	82.371	-0.003
S2	0.000	1.084	0.000	100.000	92.236	-0.003
S3	0.000	1.065	0.000	100.000	93.925	-0.003
S4	0.000	1.067	0.000	100.000	93.691	-0.003
S5	0.000	1.095	0.000	100.000	91.356	-0.003
S6	0.000	1.162	0.000	100.000	86.094	-0.003
S7	0.000	1.198	0.000	100.000	83.452	-0.003
S8	0.000	1.187	0.000	100.000	84.263	-0.003

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.046	1.834	1.000	0.000

Air Zero Calibration, performed Sat Jun 22 12:51:05 2019:

	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)
						



Nine

Company	Antero Resources
Well	Carse 2H
Field	Marcellus
County	Tyler
State	WV