



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

Company Antero Resources
Well Shepherd Rapids 1H
Field North Canton
County Tyler
State WV

Company Antero Resources

Well Shepherd Rapids 1H

Field North Canton

County Tyler State WV

Location: API #: 47-095-02739 Other Services

Lat:39.391454
Long:-80.765510

SEC TWP RGE Elevation

Permanent Datum Ground Level Elevation
Log Measured From Kelly Bushing 25.5'
Drilling Measured From Kelly Bushing

K.B.
D.F.
G.L.

Date 22-Sep-2021

Run Number One

Depth Driller 24,085'

Depth Logger 7,370'

Bottom Logged Interval 7,400'

Top Log Interval Surface

Open Hole Size N/A

Type Fluid Water

Density / Viscosity N/A

Max. Recorded Temp. 152 Deg.F.

Estimated Cement Top 5.735'

Time Well Ready 10:15

Time Logger on Bottom 12:20

Equipment Number 116 (P1,G1)

Location Charleroi,PA

Recorded By Matt McNally

Witnessed By Daniel Martinez

Borehole Record

Run Number Bit From To Size Weight From To

Run Number Bit From To Size Weight From To

Run Number Bit From To Size Weight From To

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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 6,204' - 6,215'
Depth Correction 0'

Main Pass 1,500 PSI
Repeat 0 PSI

Thank You for Choosing Nine Energy Service Wireline. Charleroi, PA

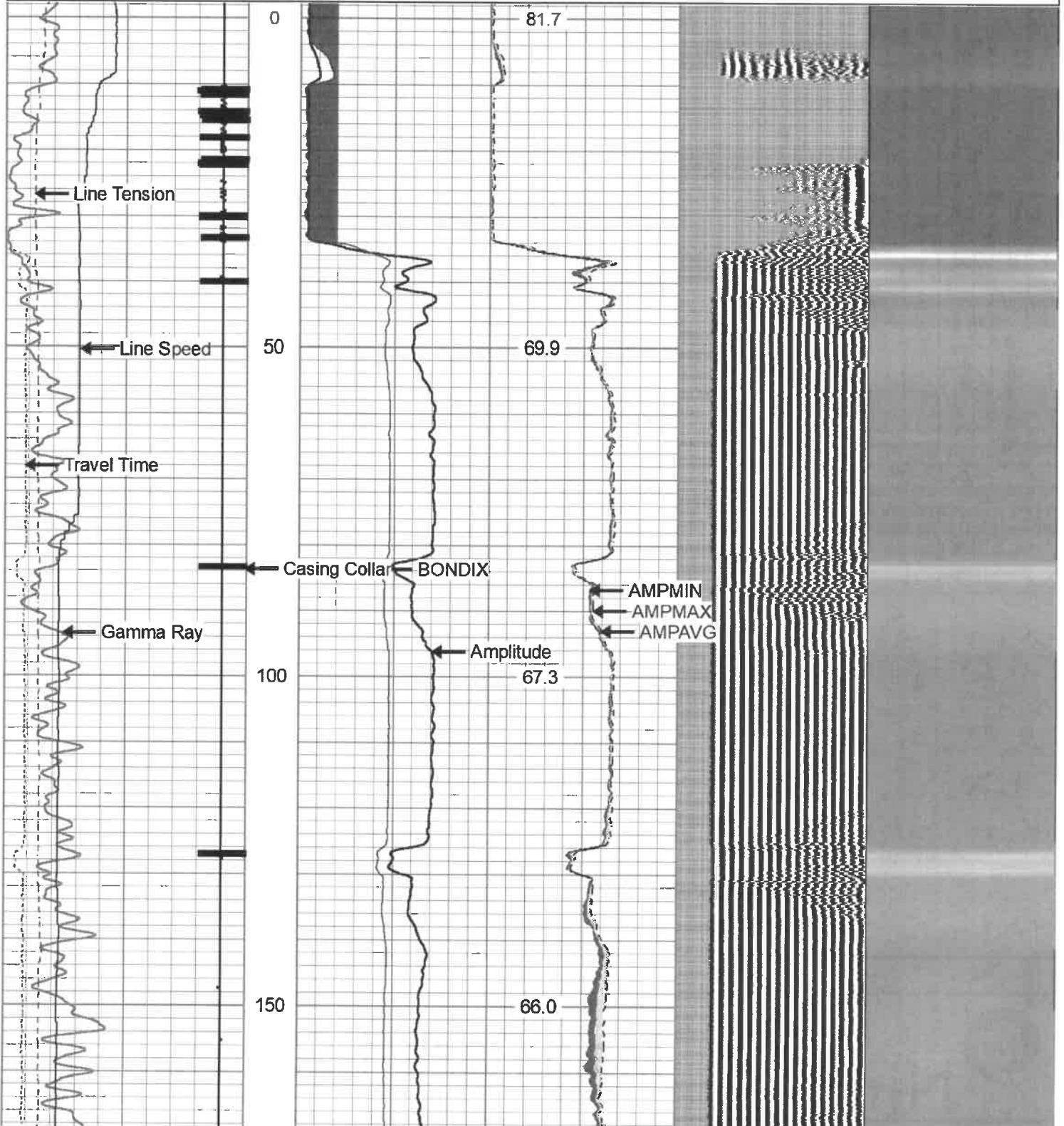


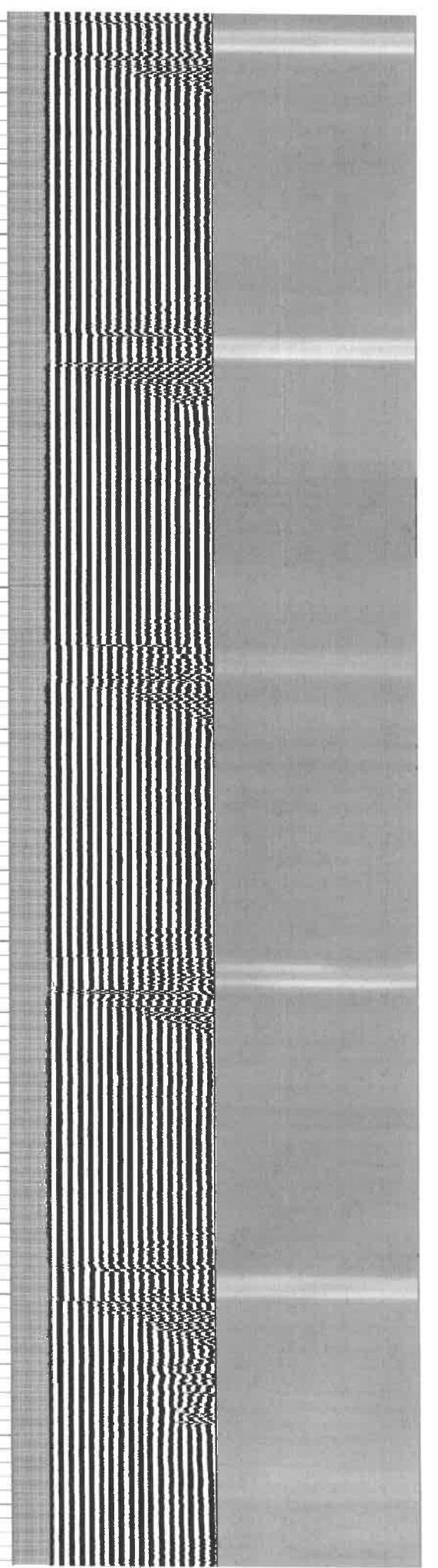
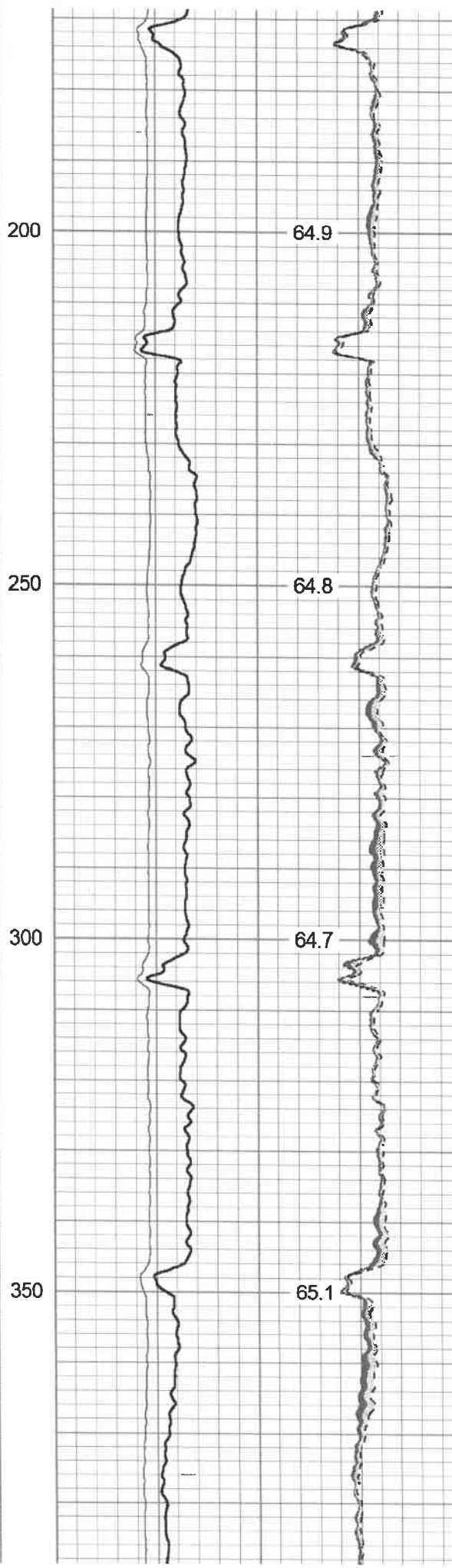
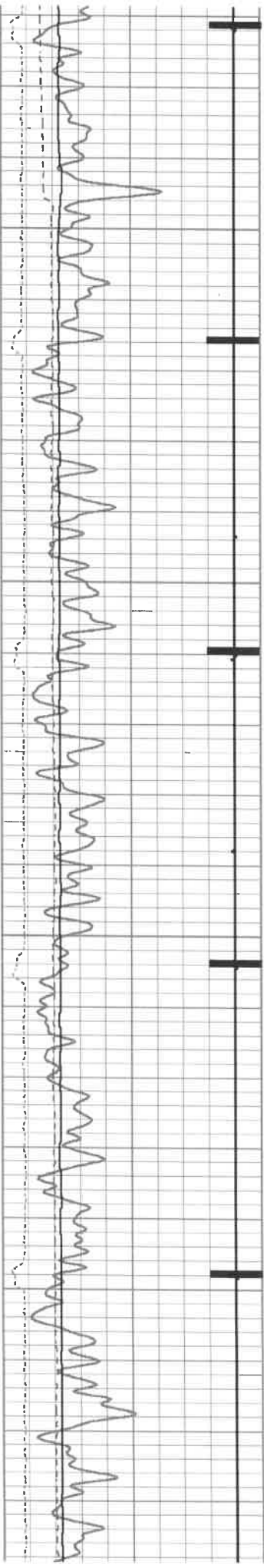
Main Pass 1,500 PSI

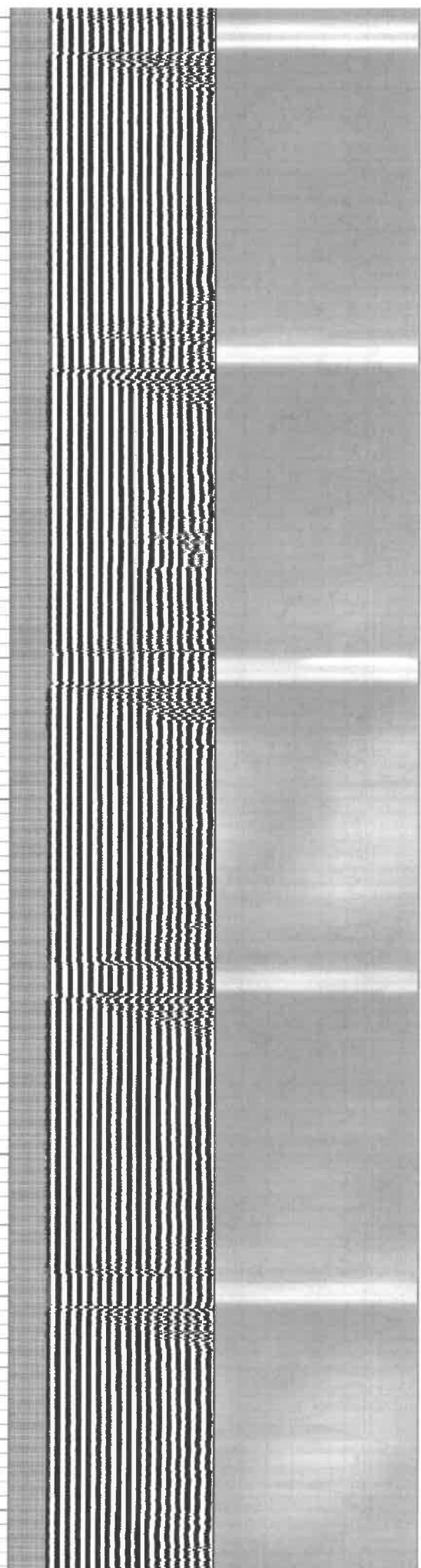
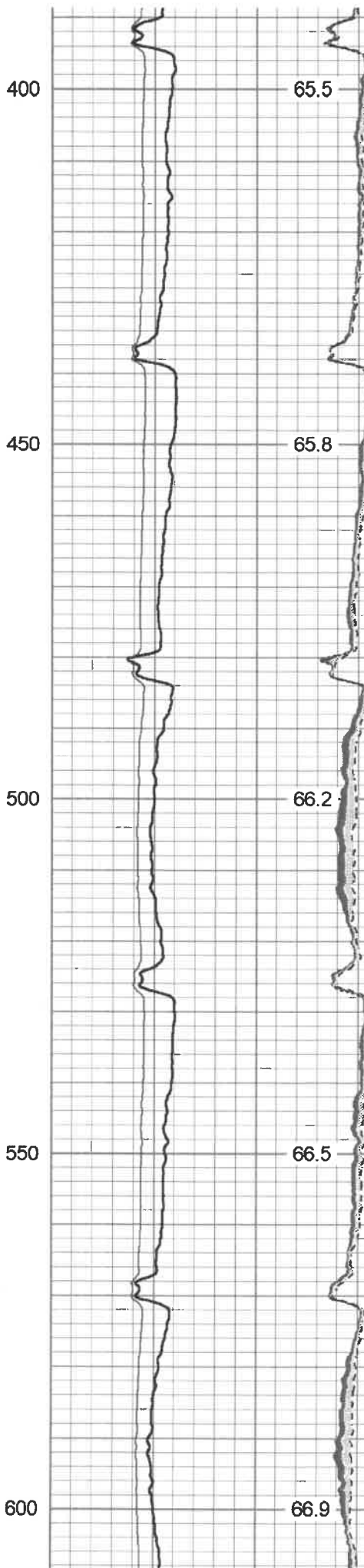
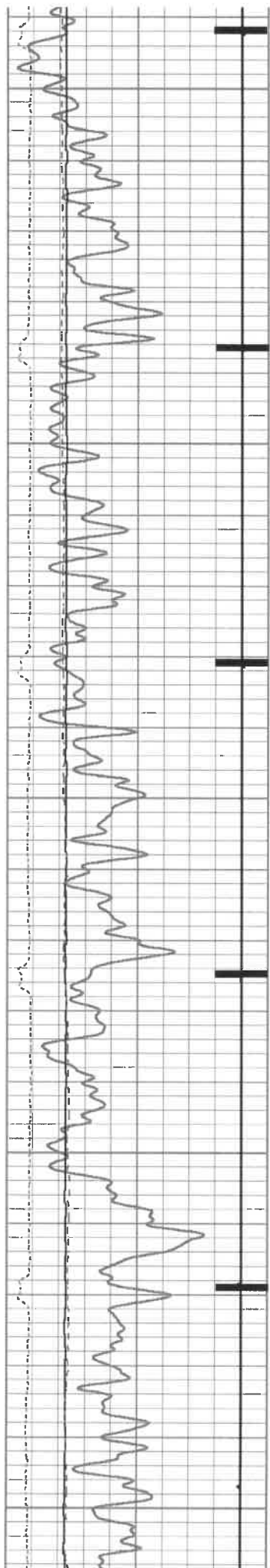
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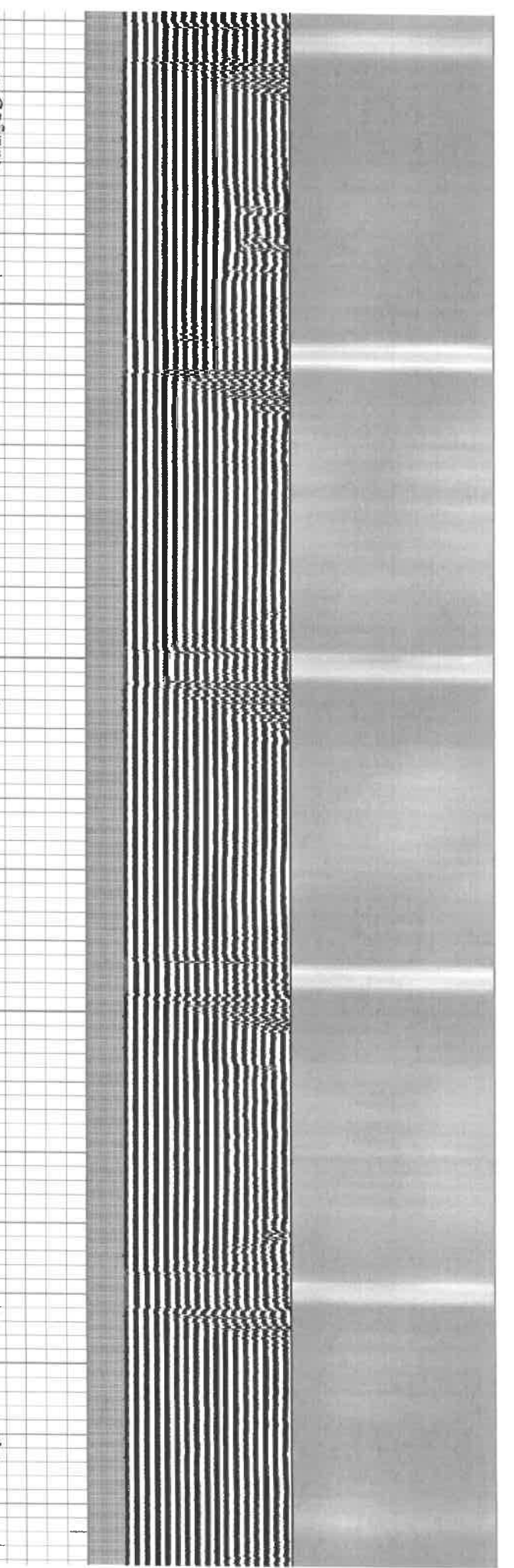
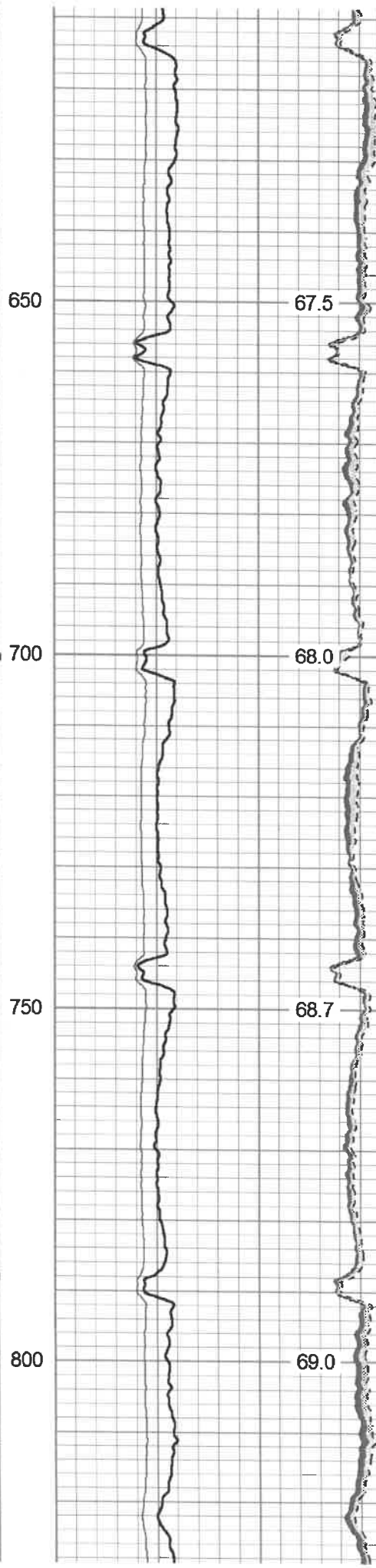
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 Dataset Pathname north_canton/1h/run1/pass12.1
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Wed Sep 22 12:28:24 2021
 Charted by Depth in Feet scaled 1:240

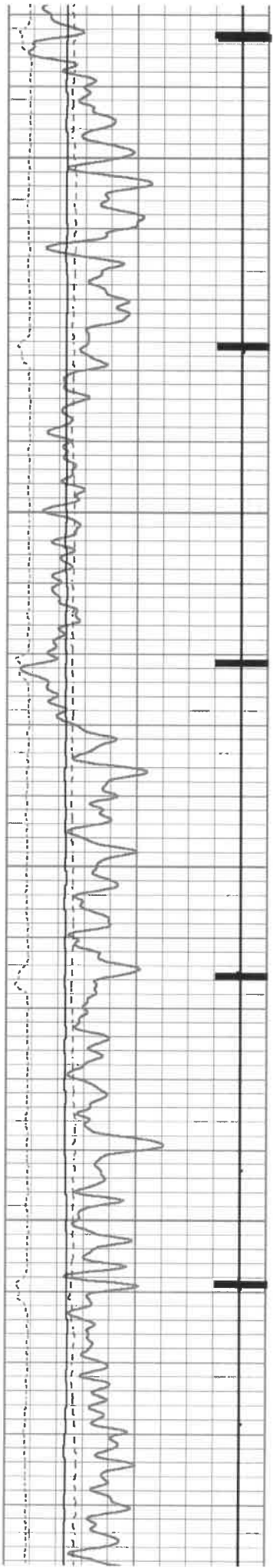
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90	Casing Collar	-10	1	BONDIX	0	0	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				0	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	2000										









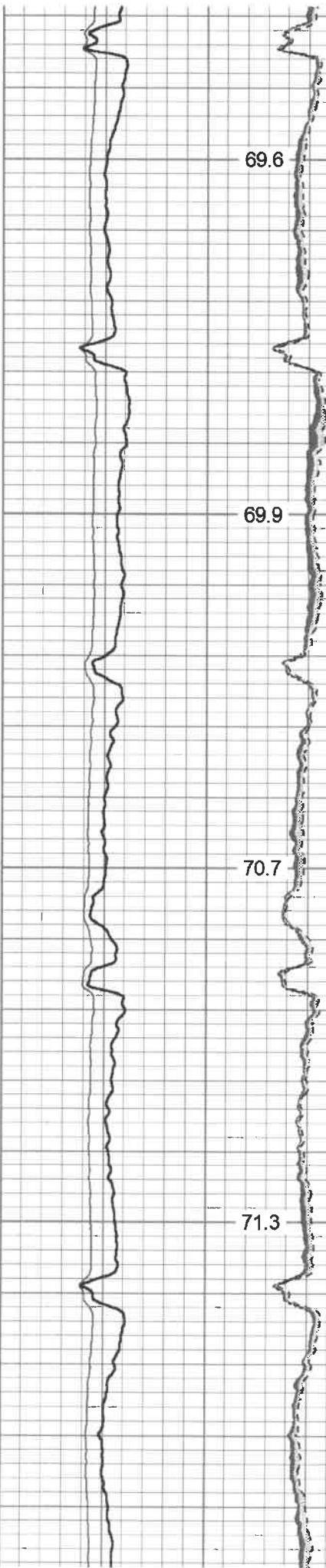


850

900

950

1000

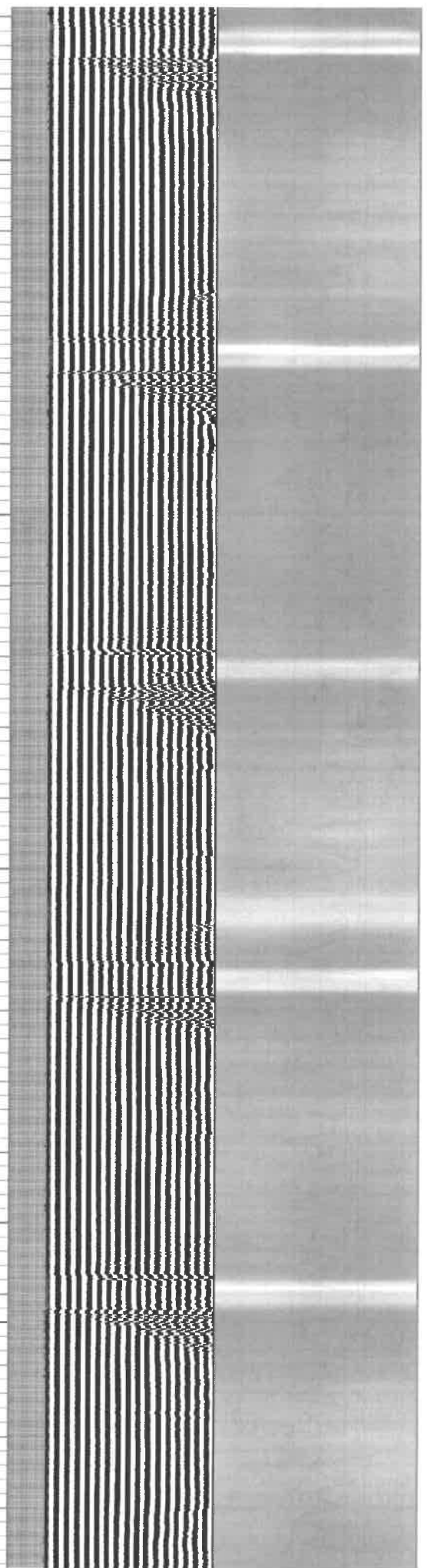


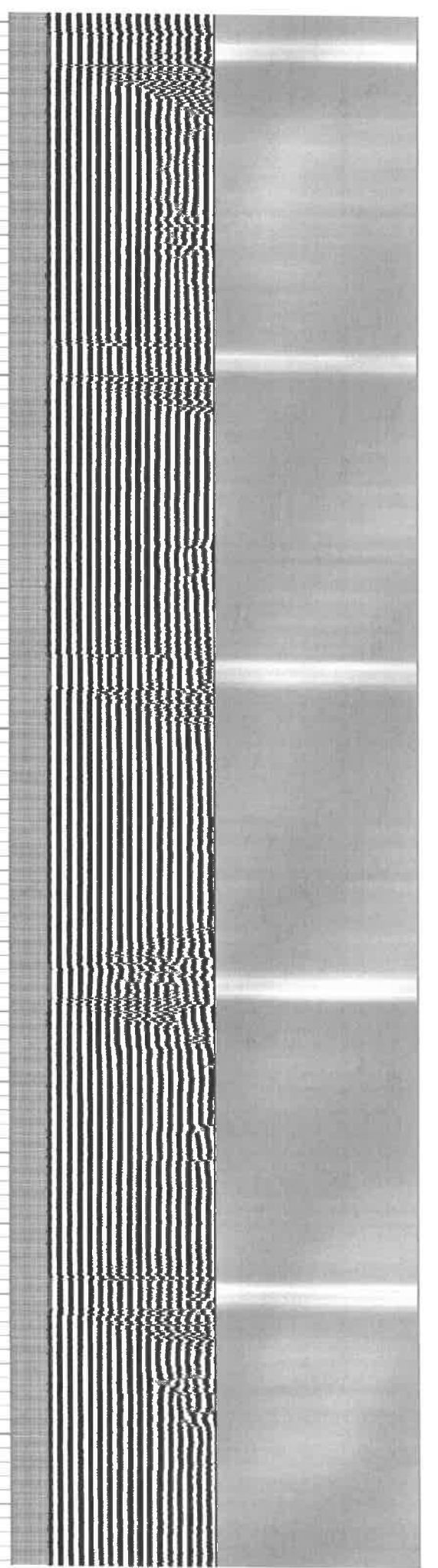
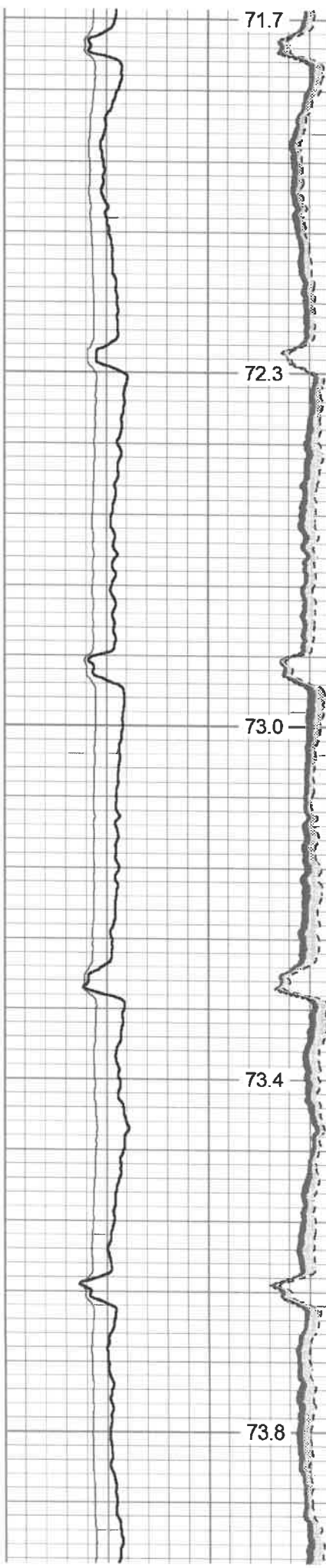
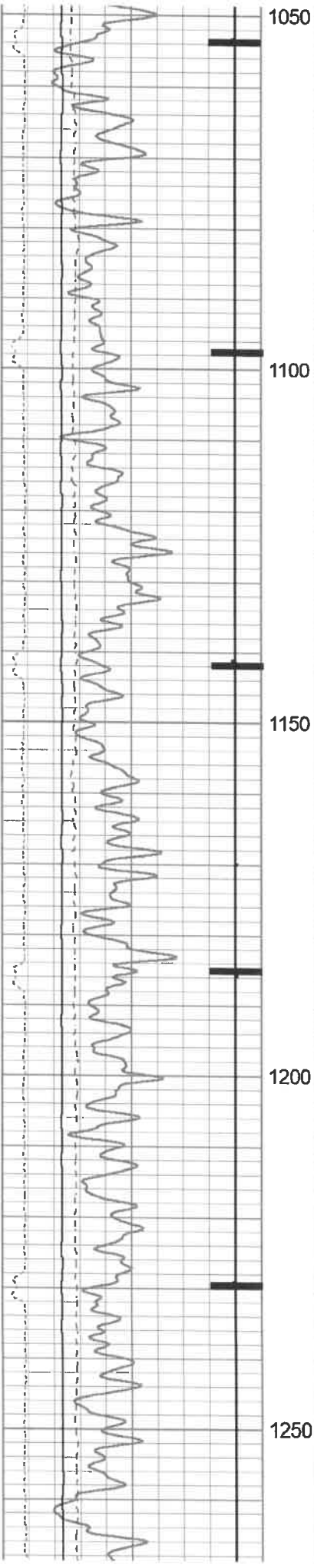
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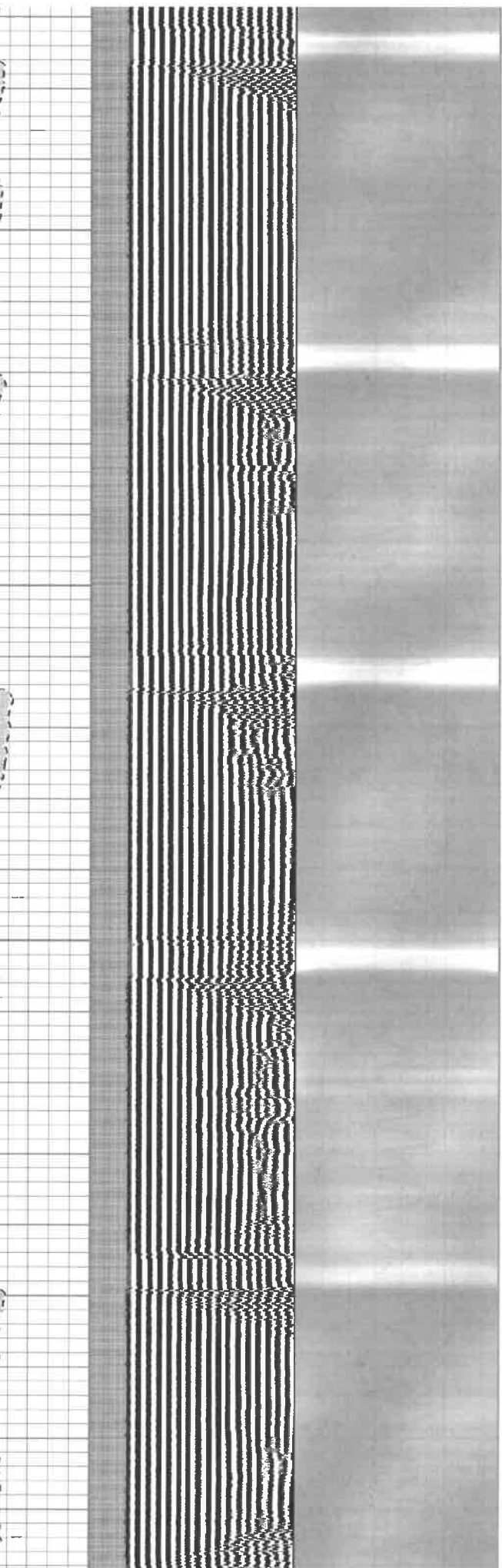
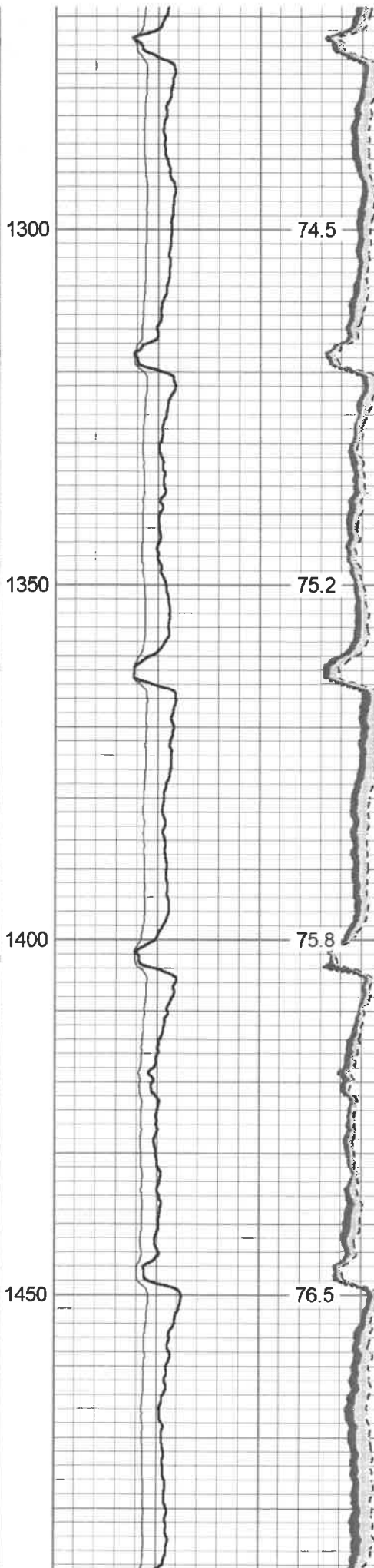
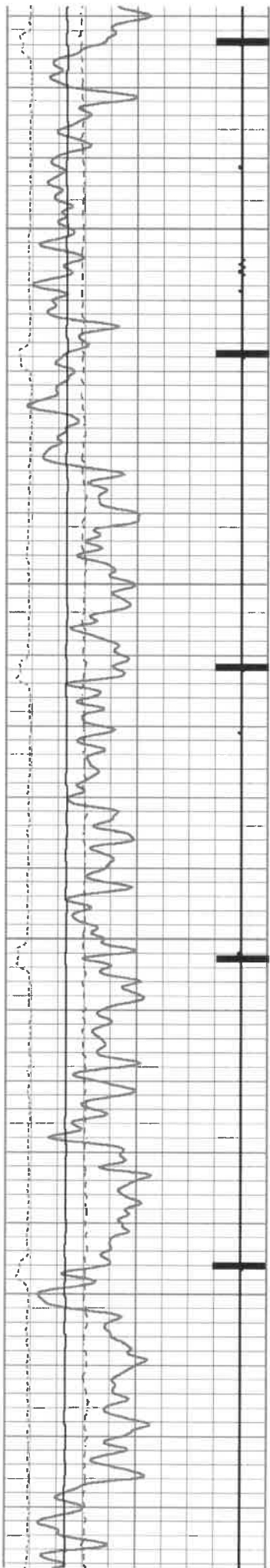
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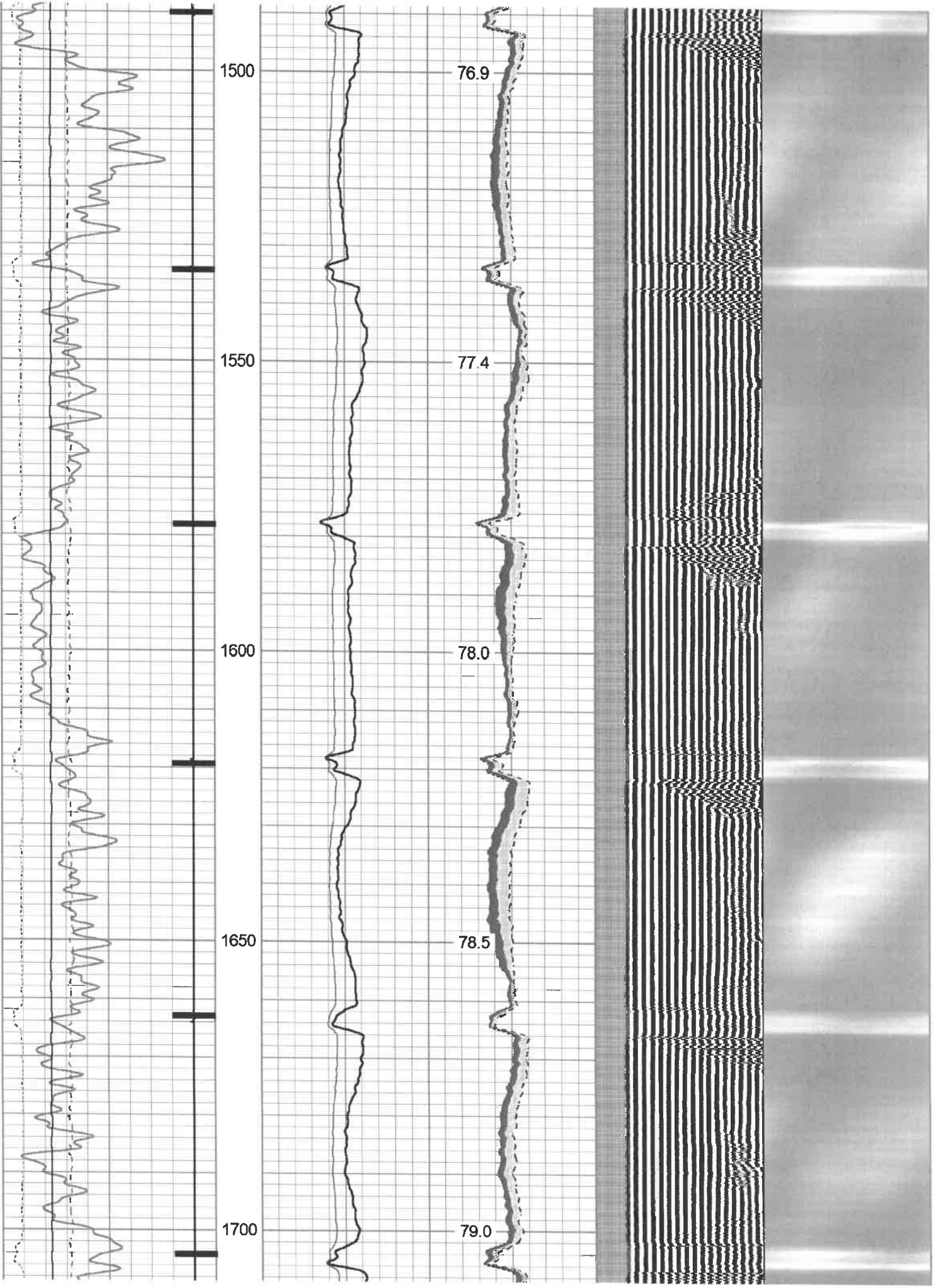
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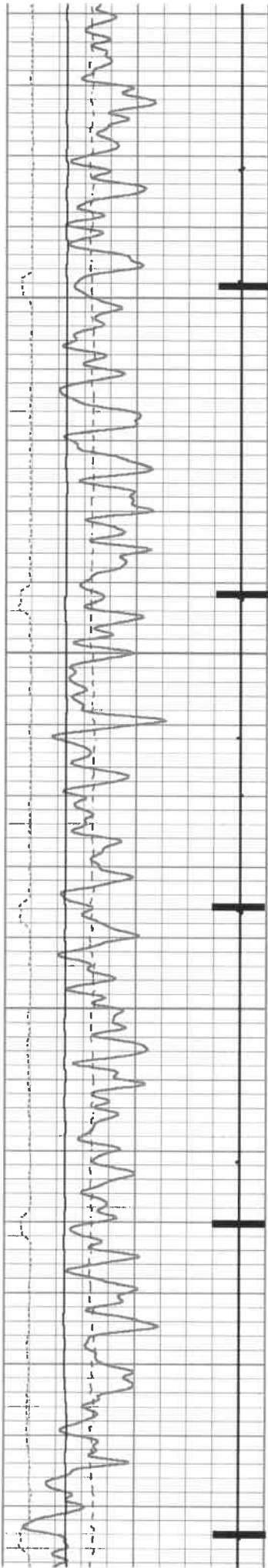
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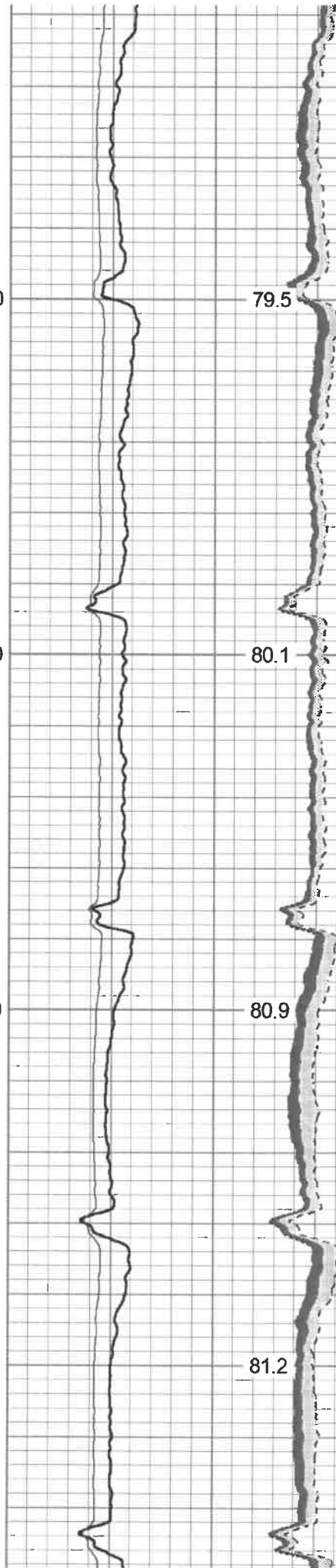


1750

1800

1850

1900

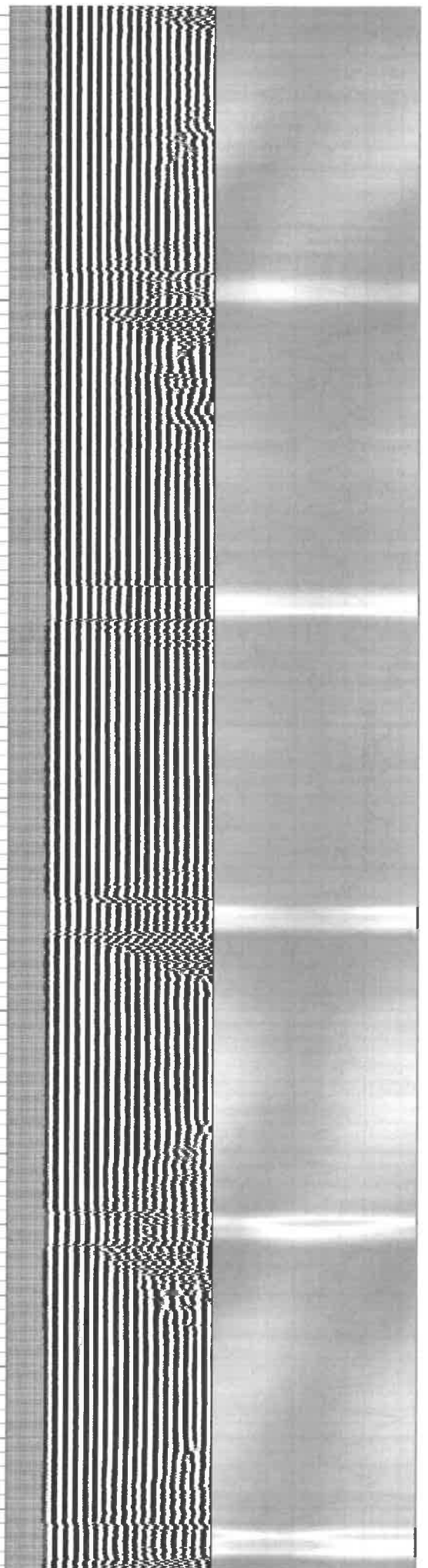


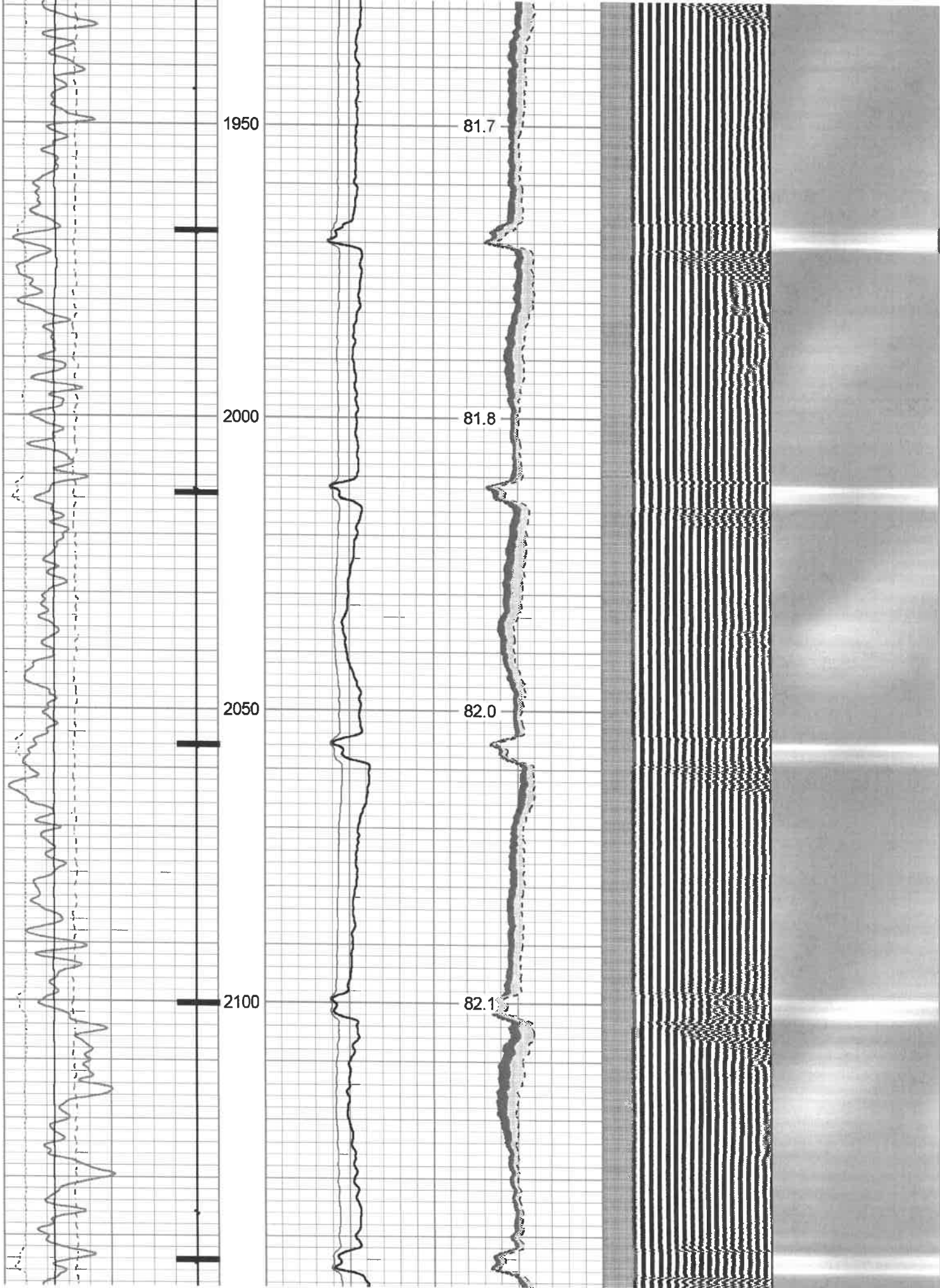
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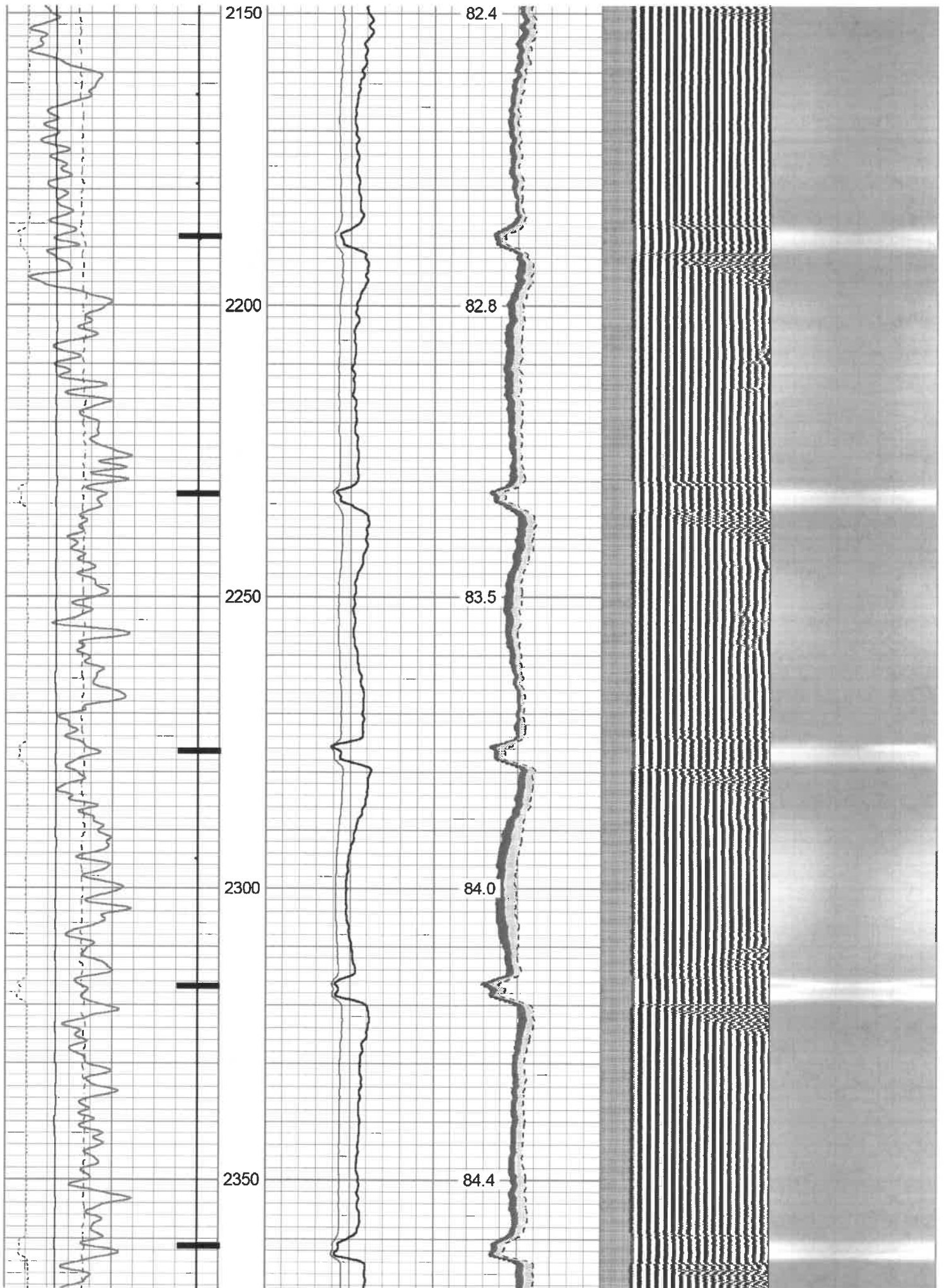
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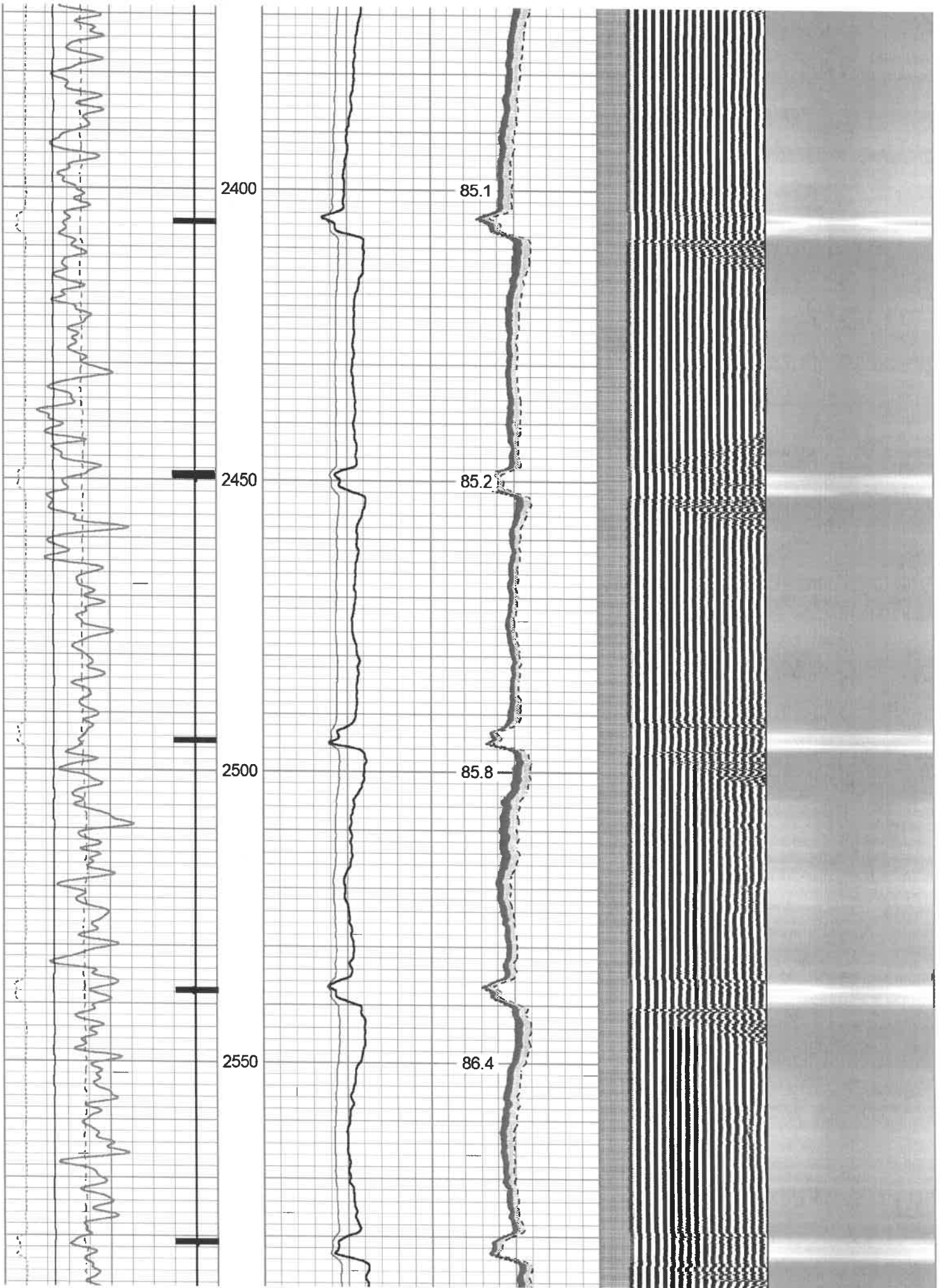
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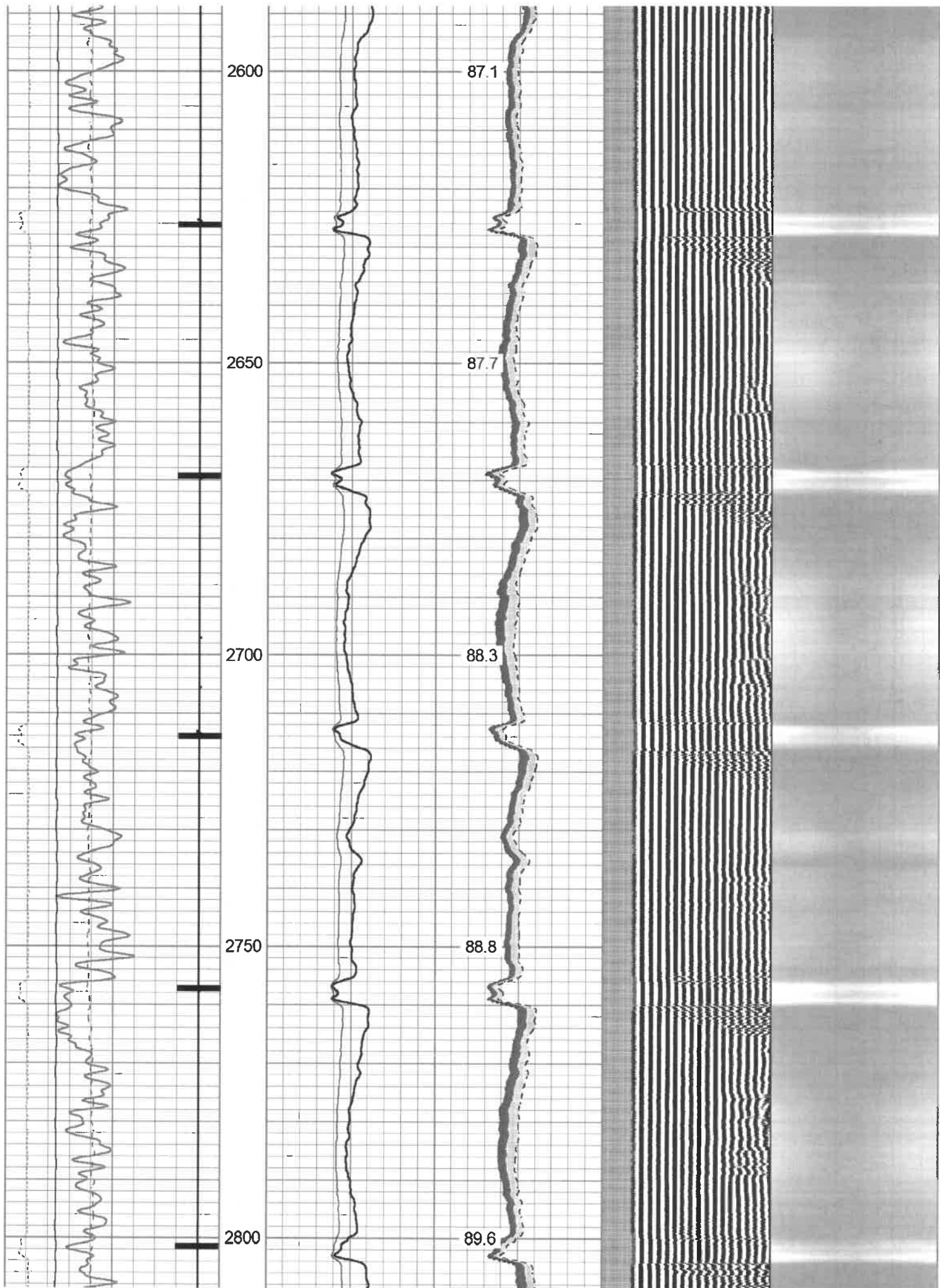
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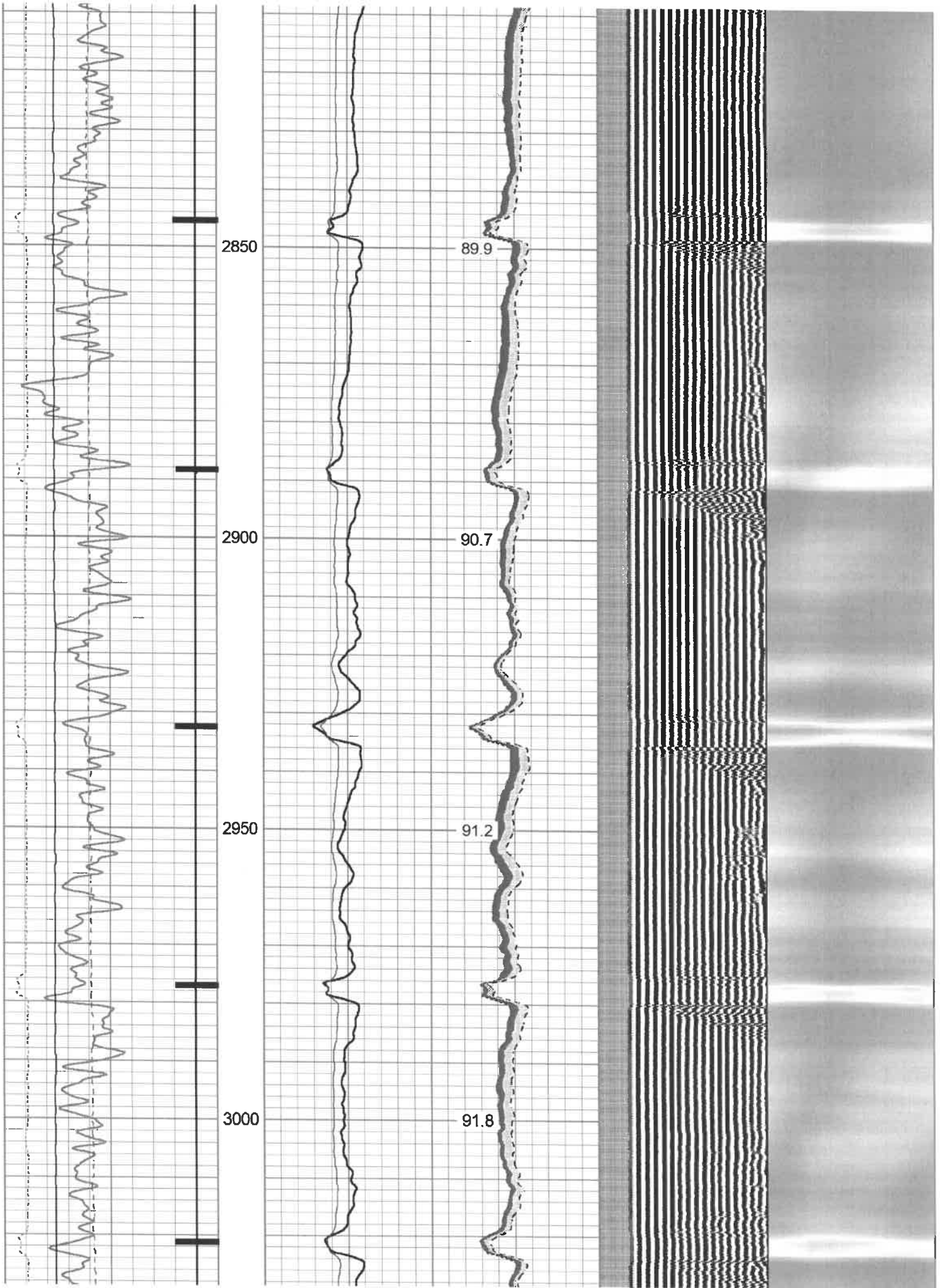


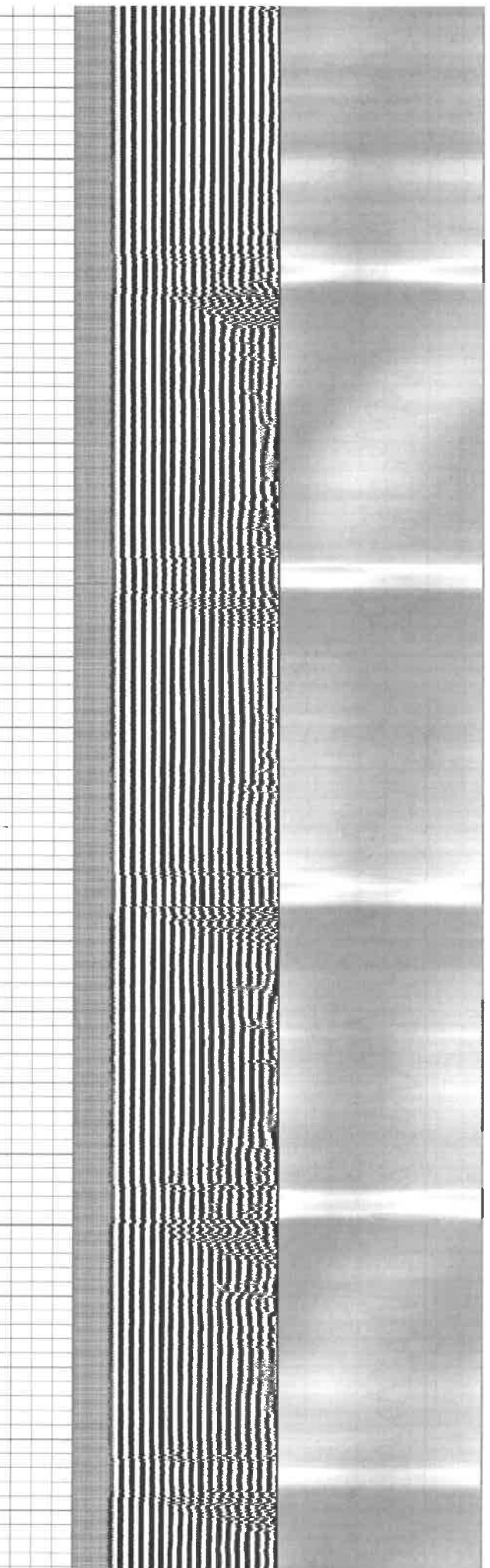
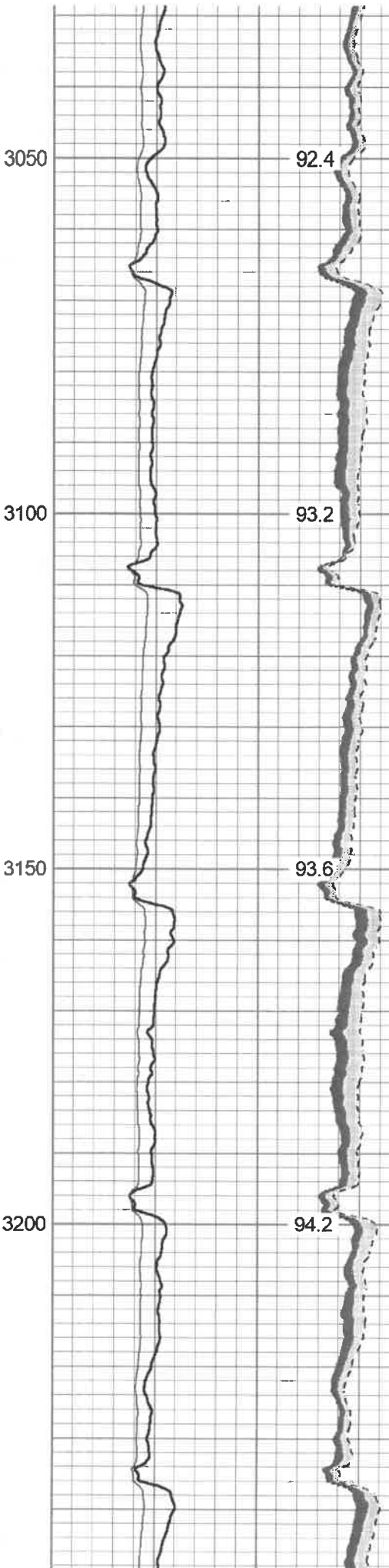
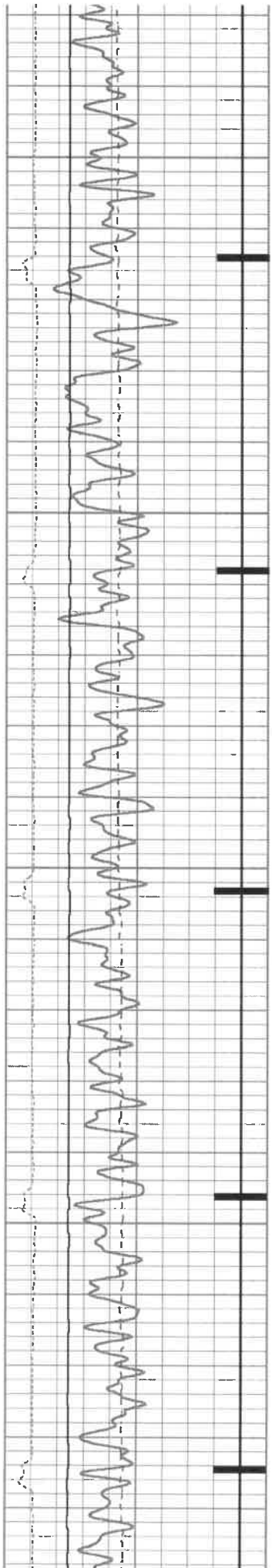


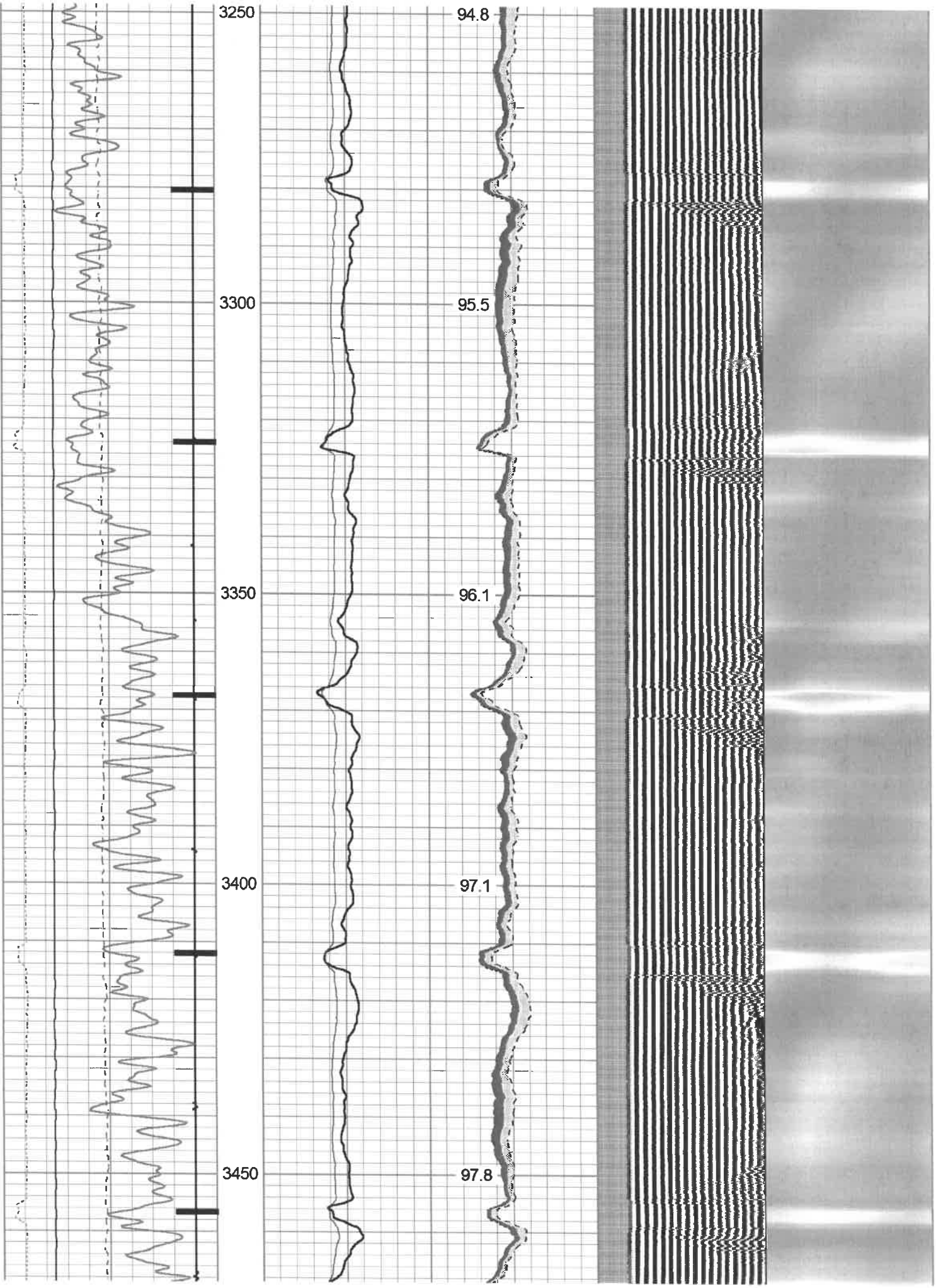


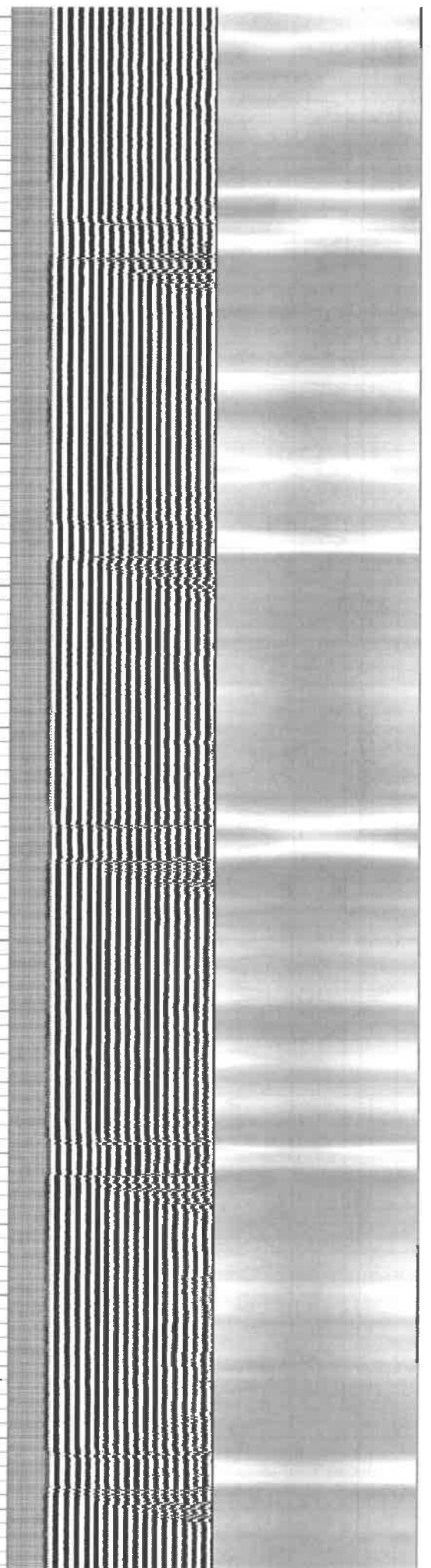
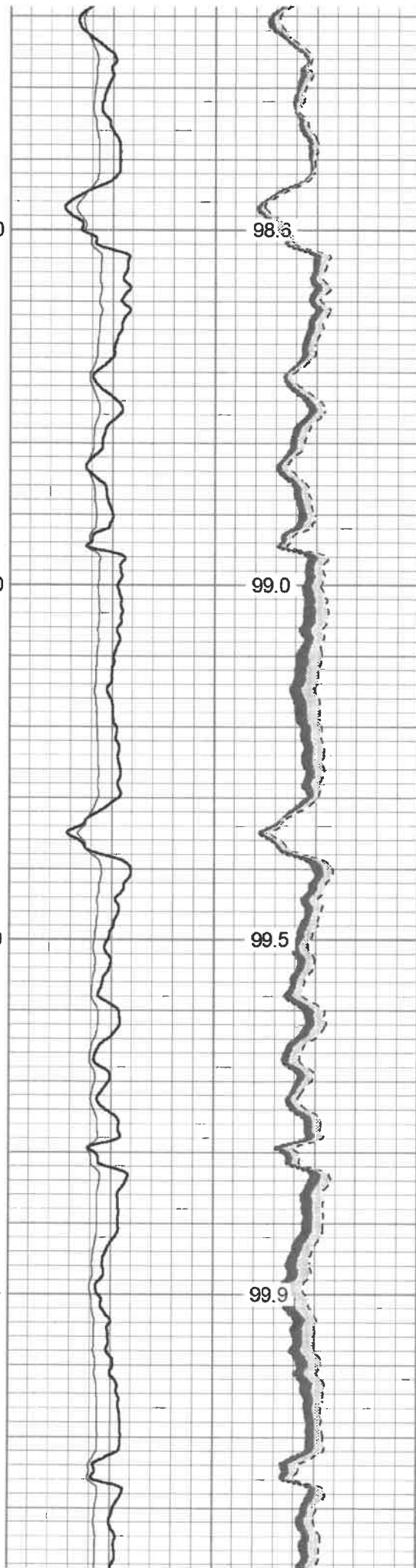
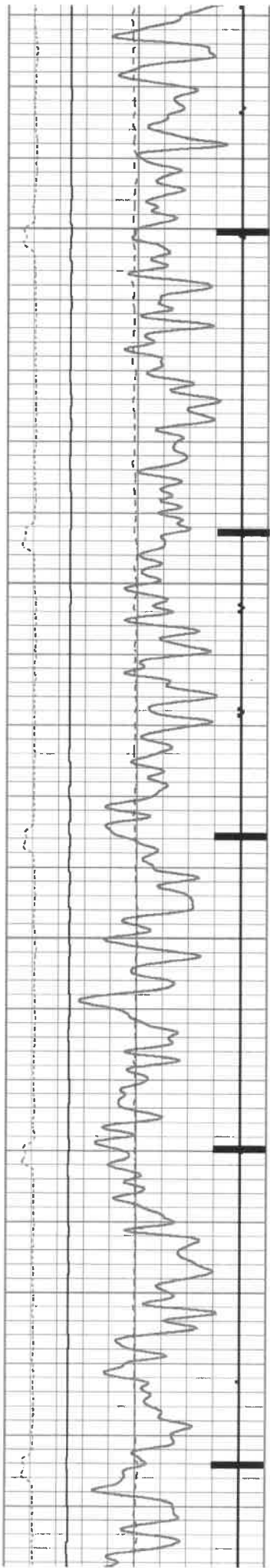


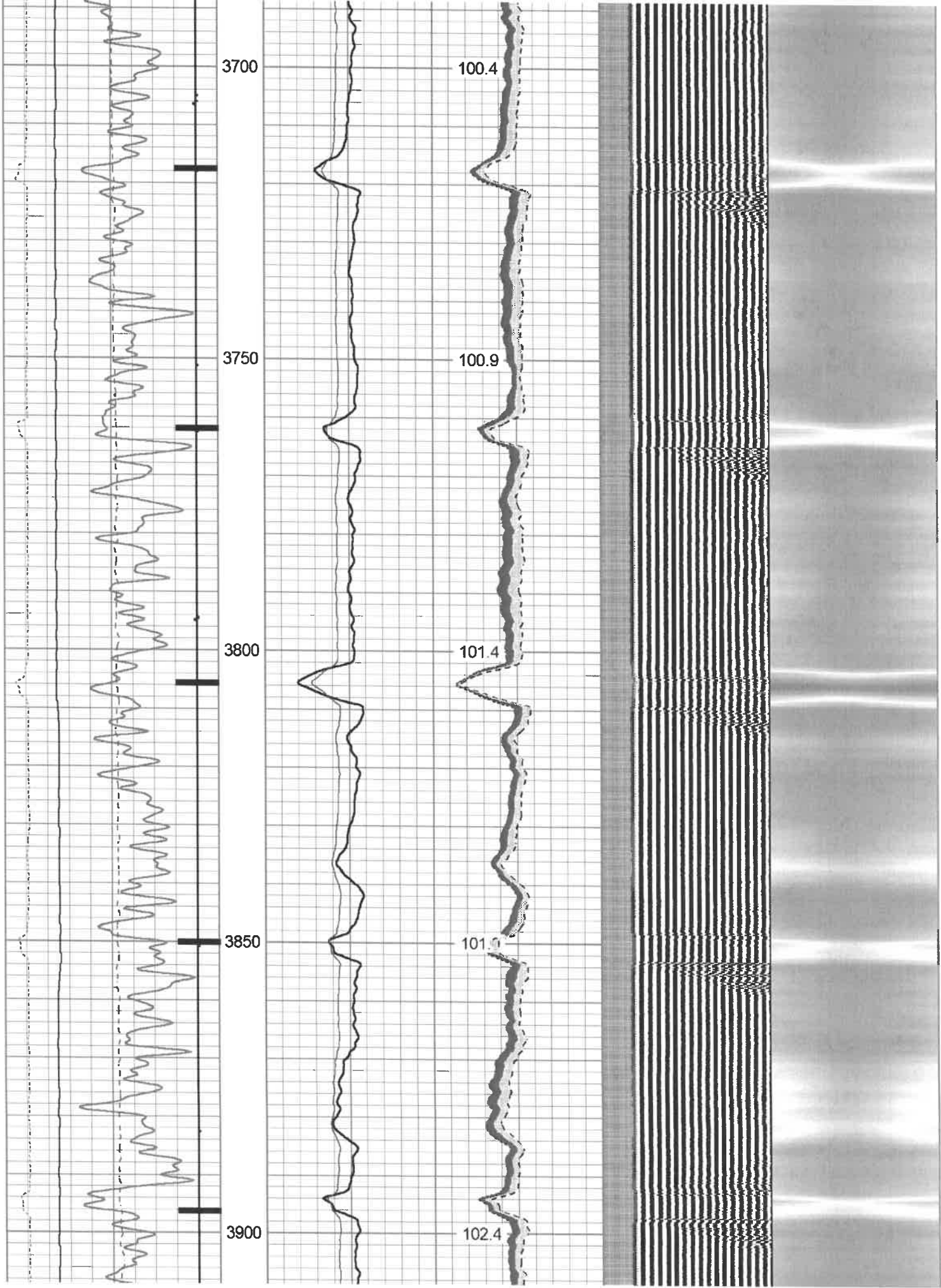


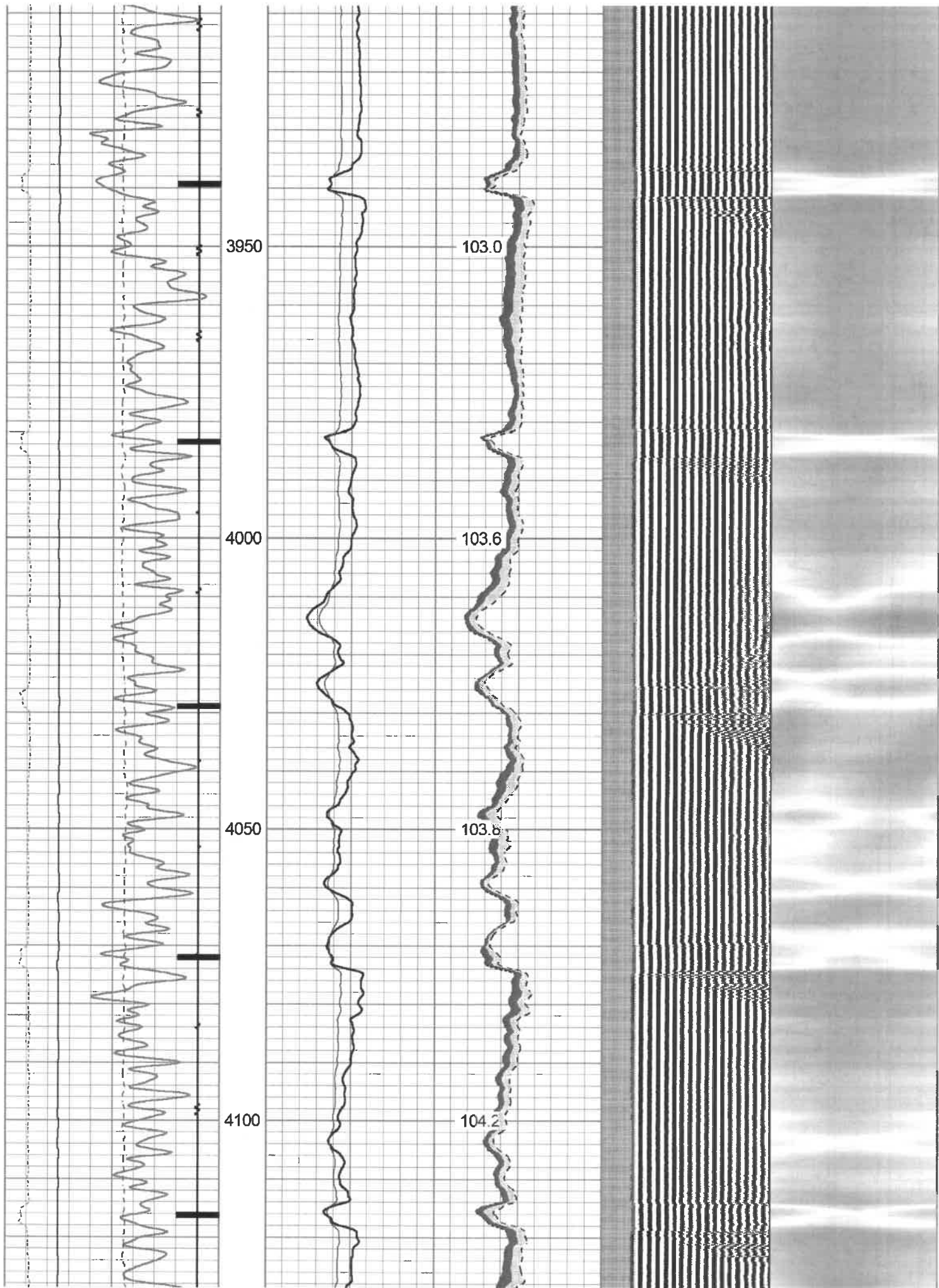


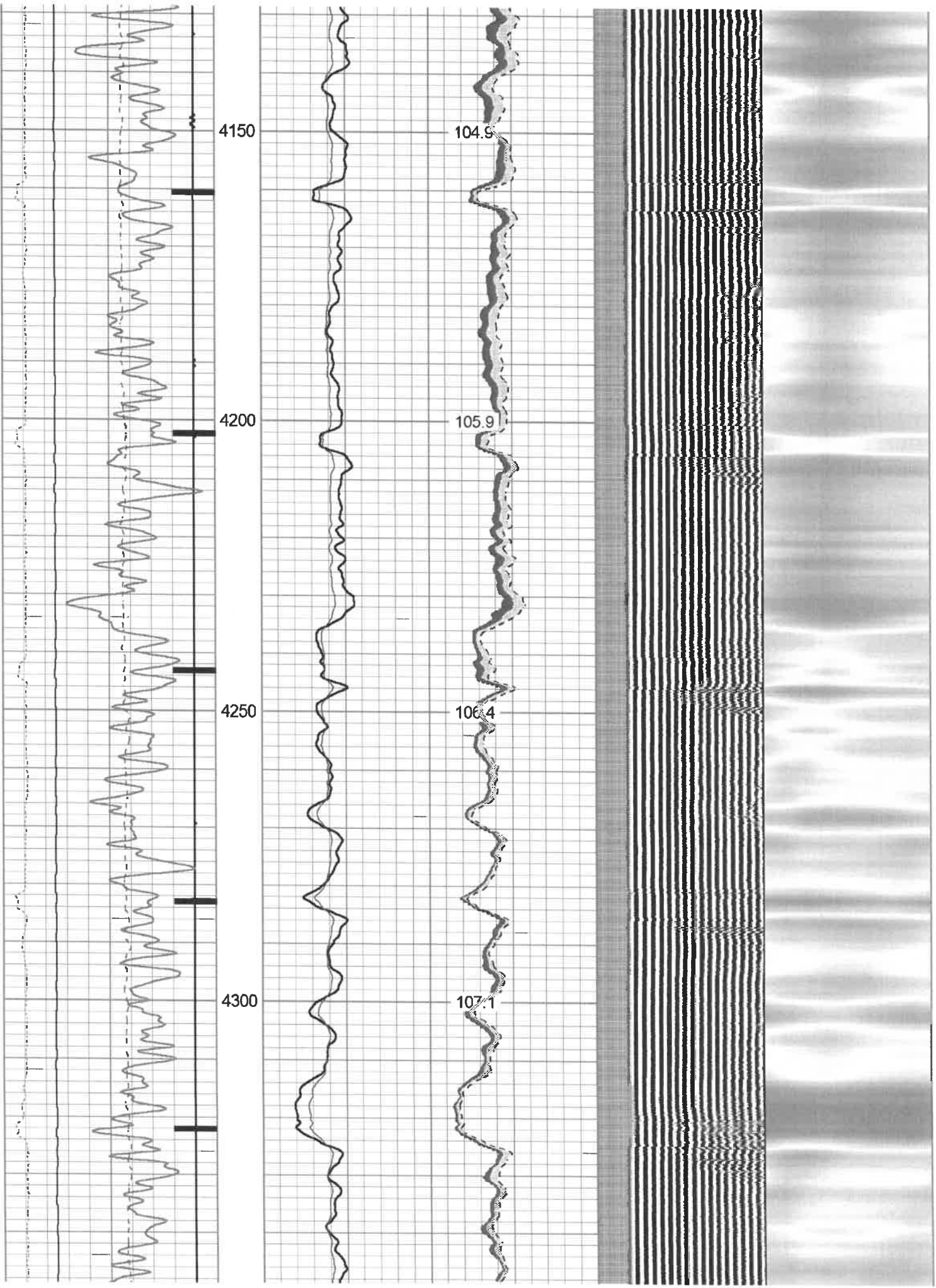


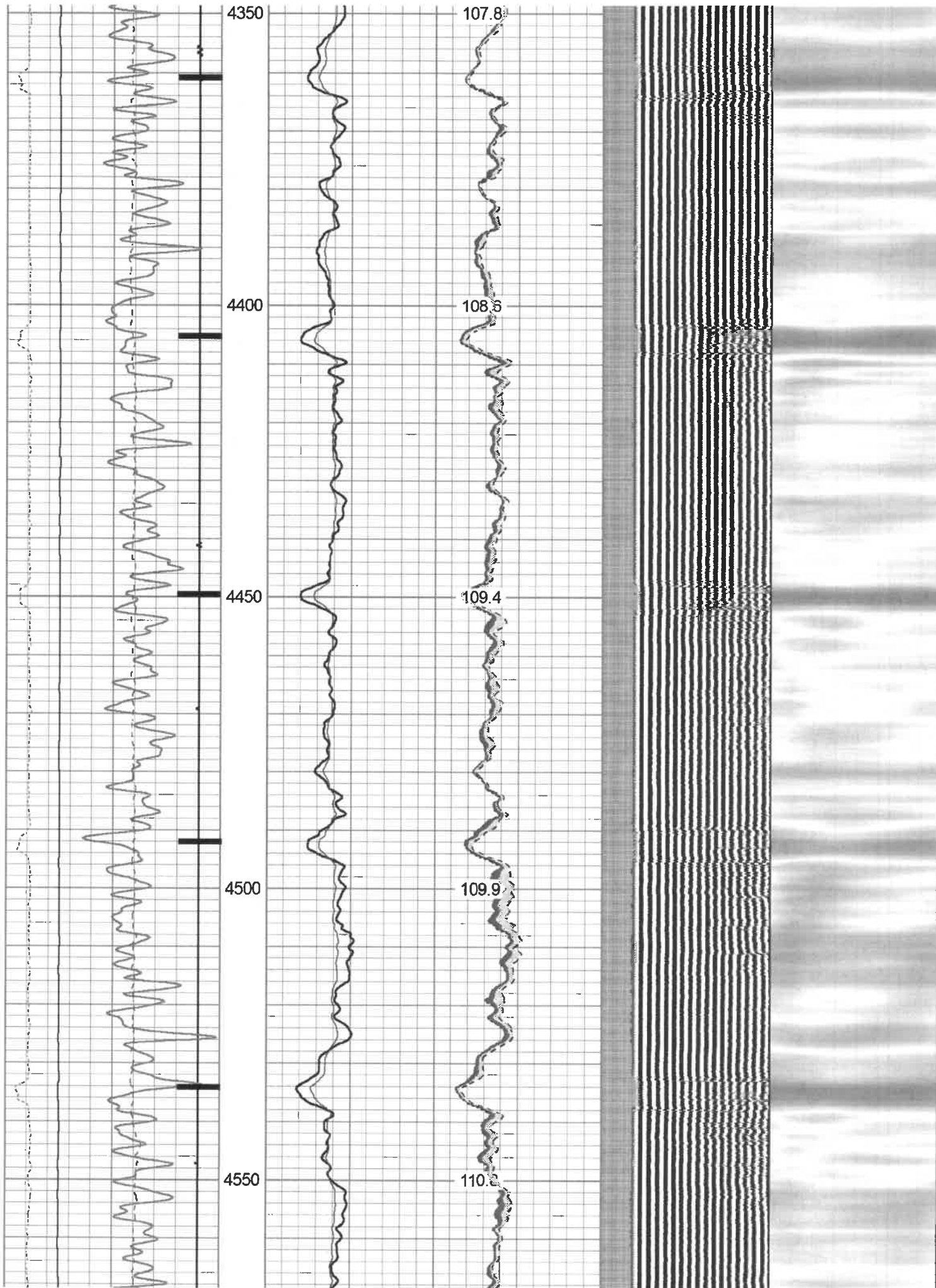


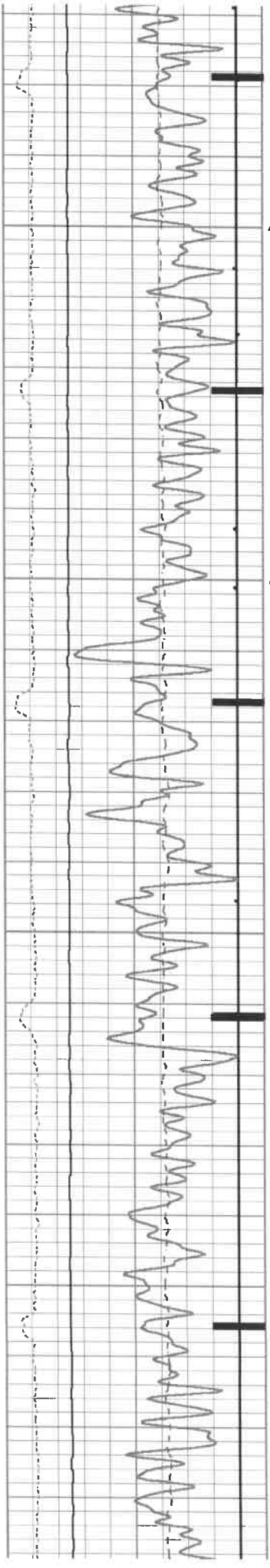










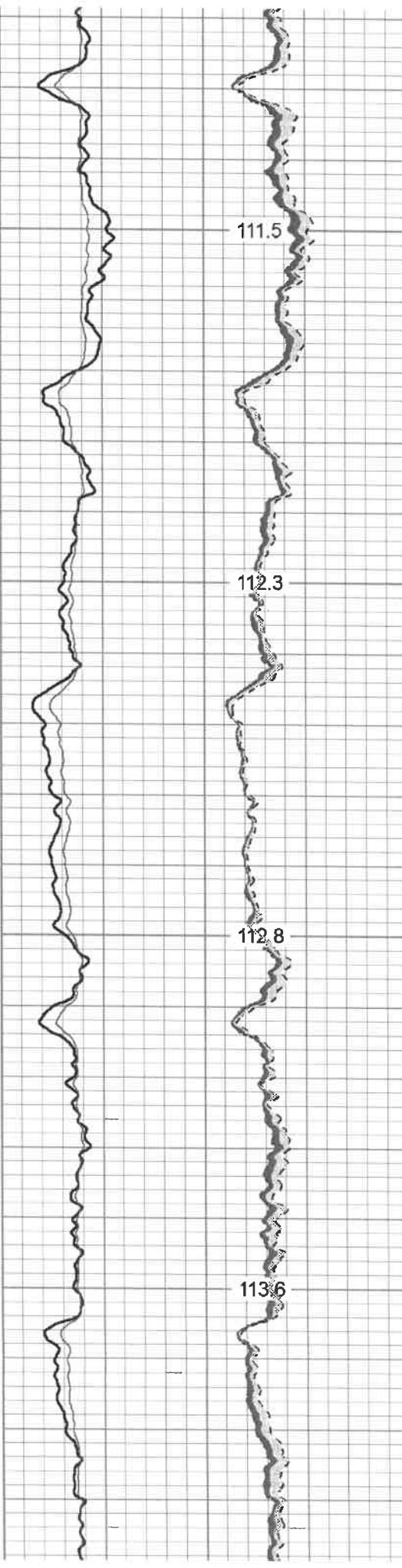


4600

4650

4700

4750

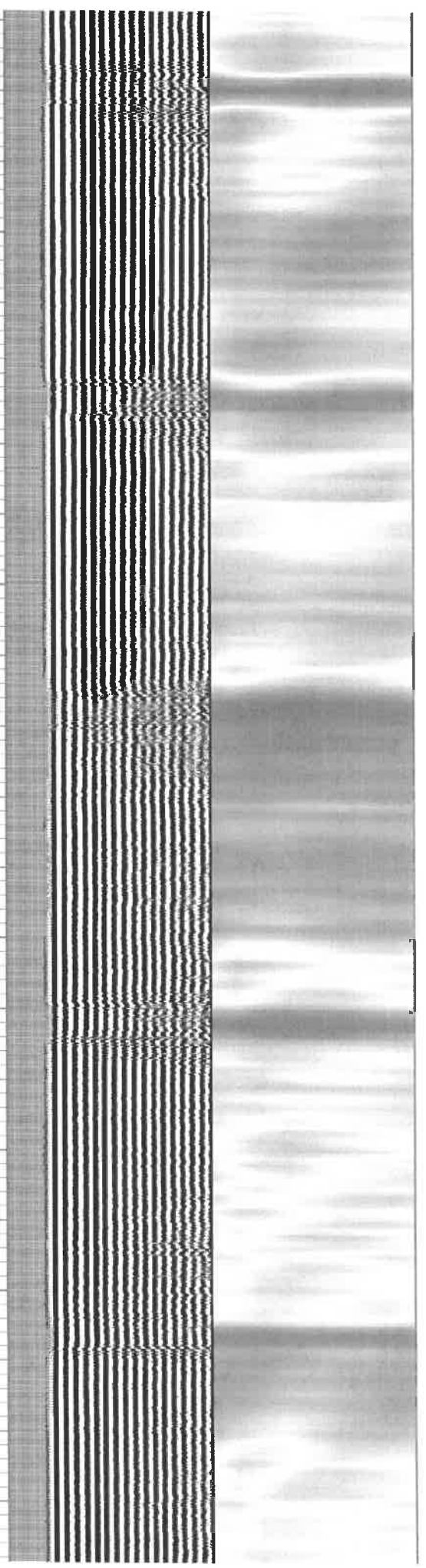


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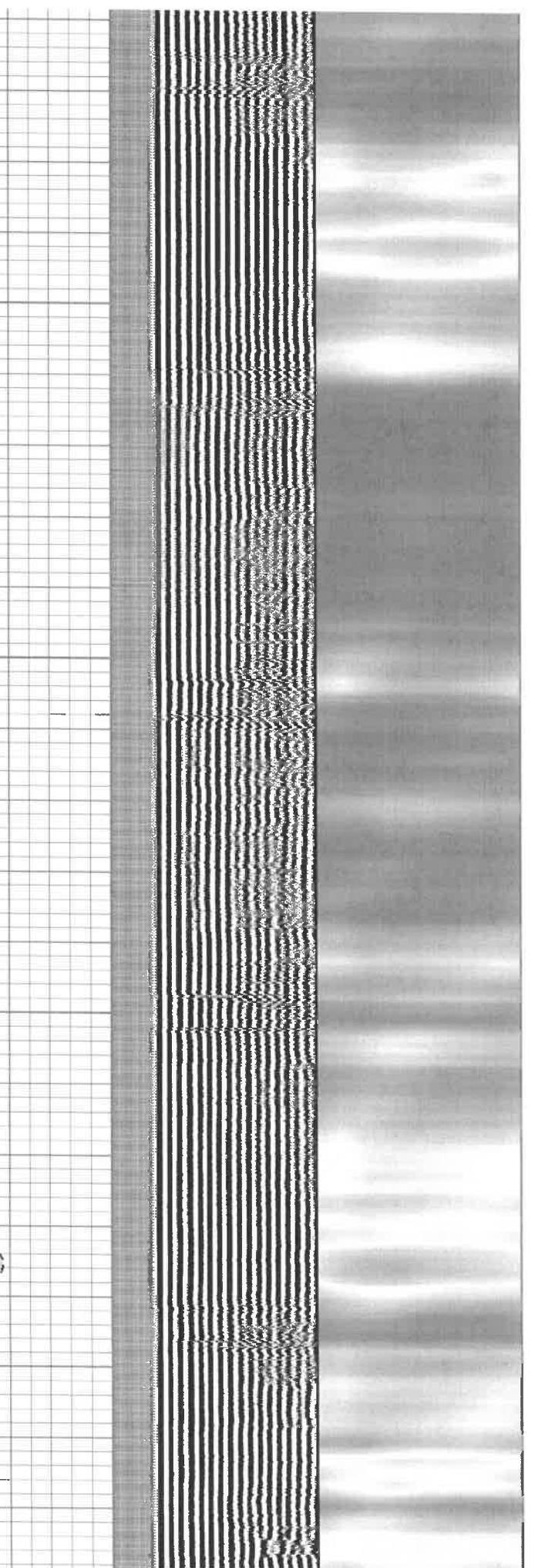
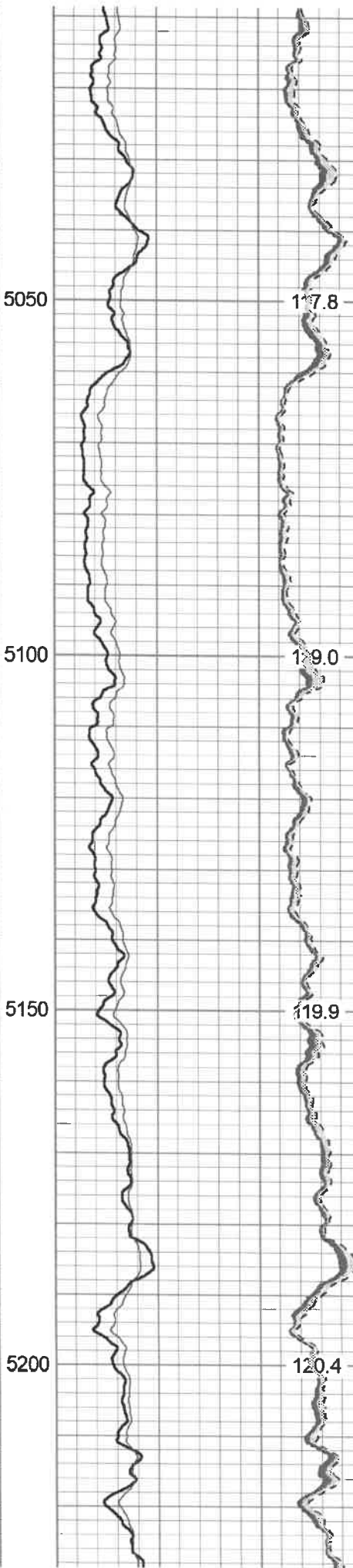
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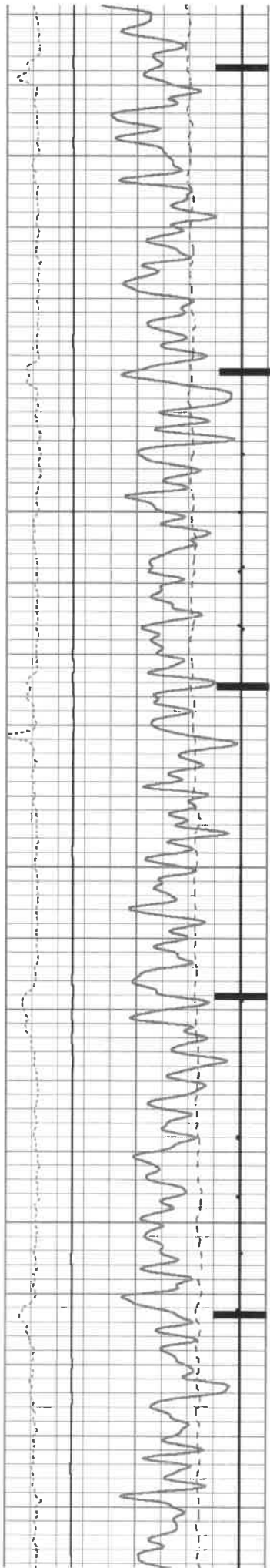
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113.6







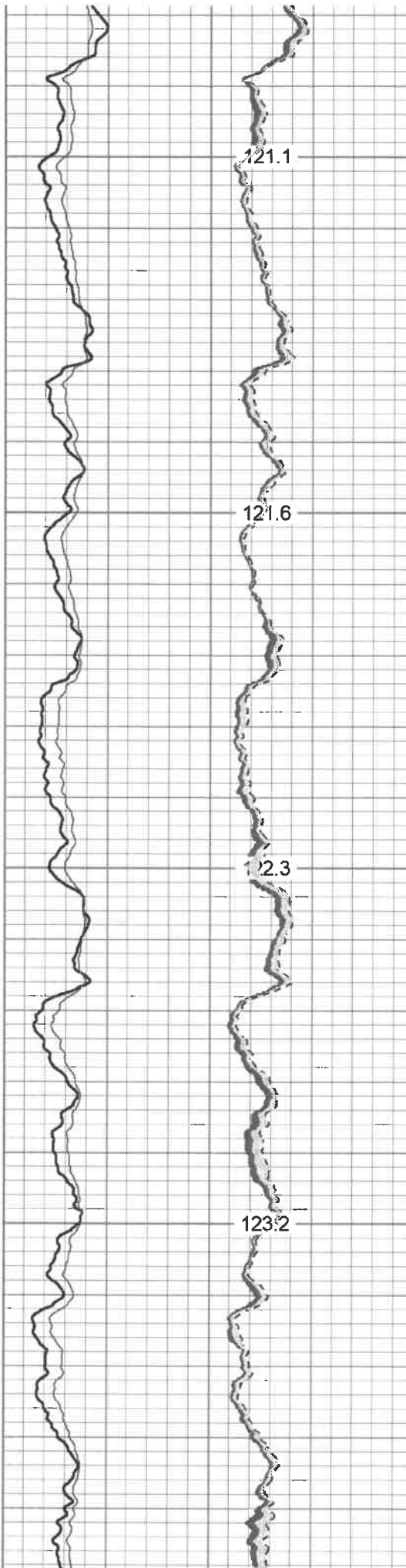


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5300

5350

5400

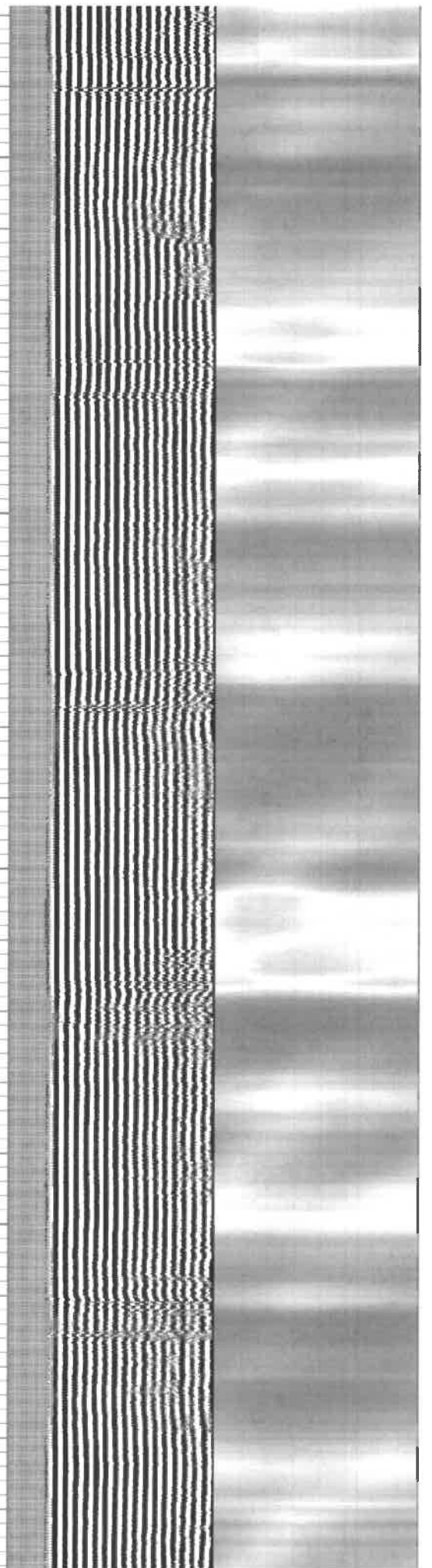


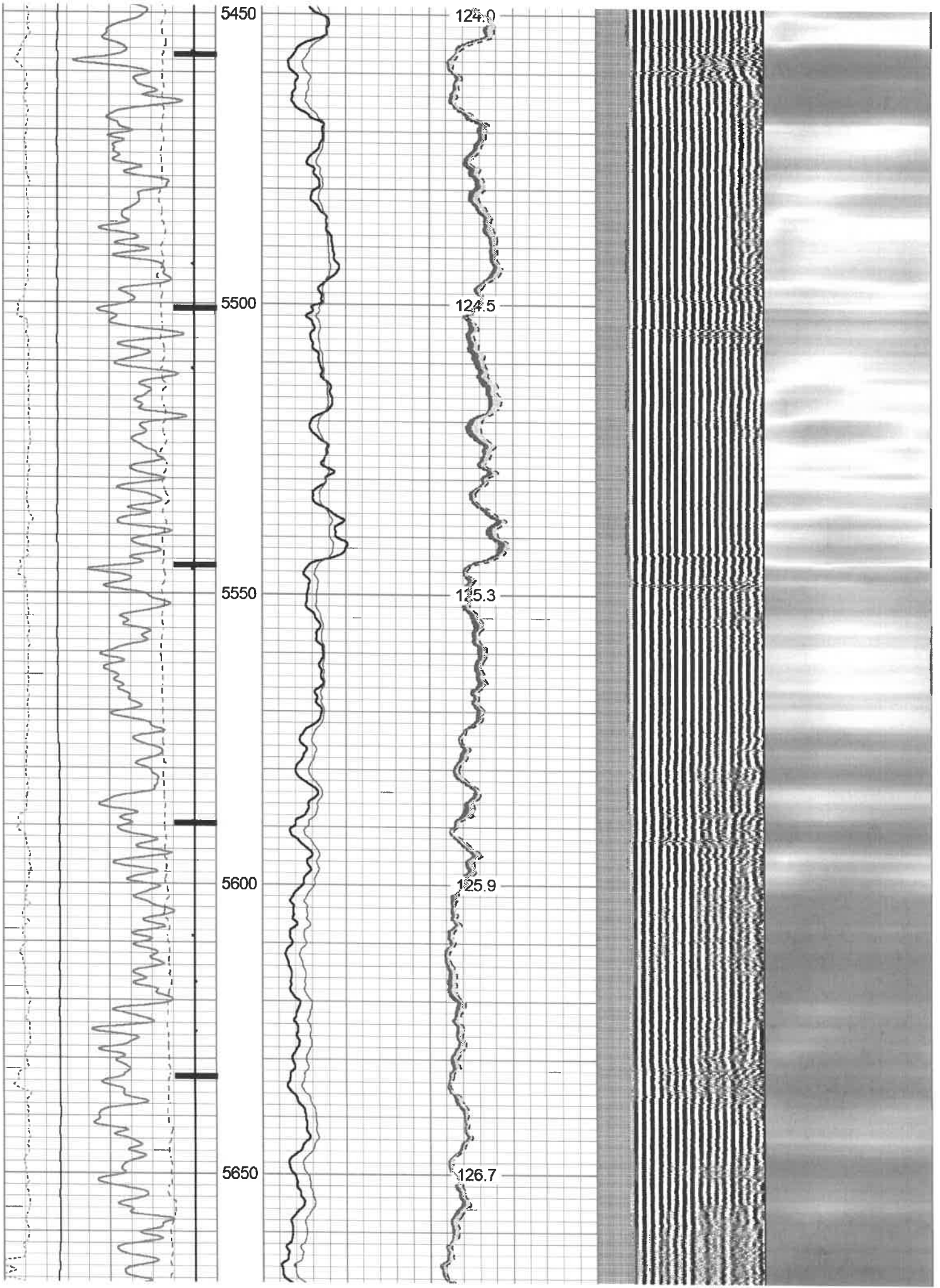
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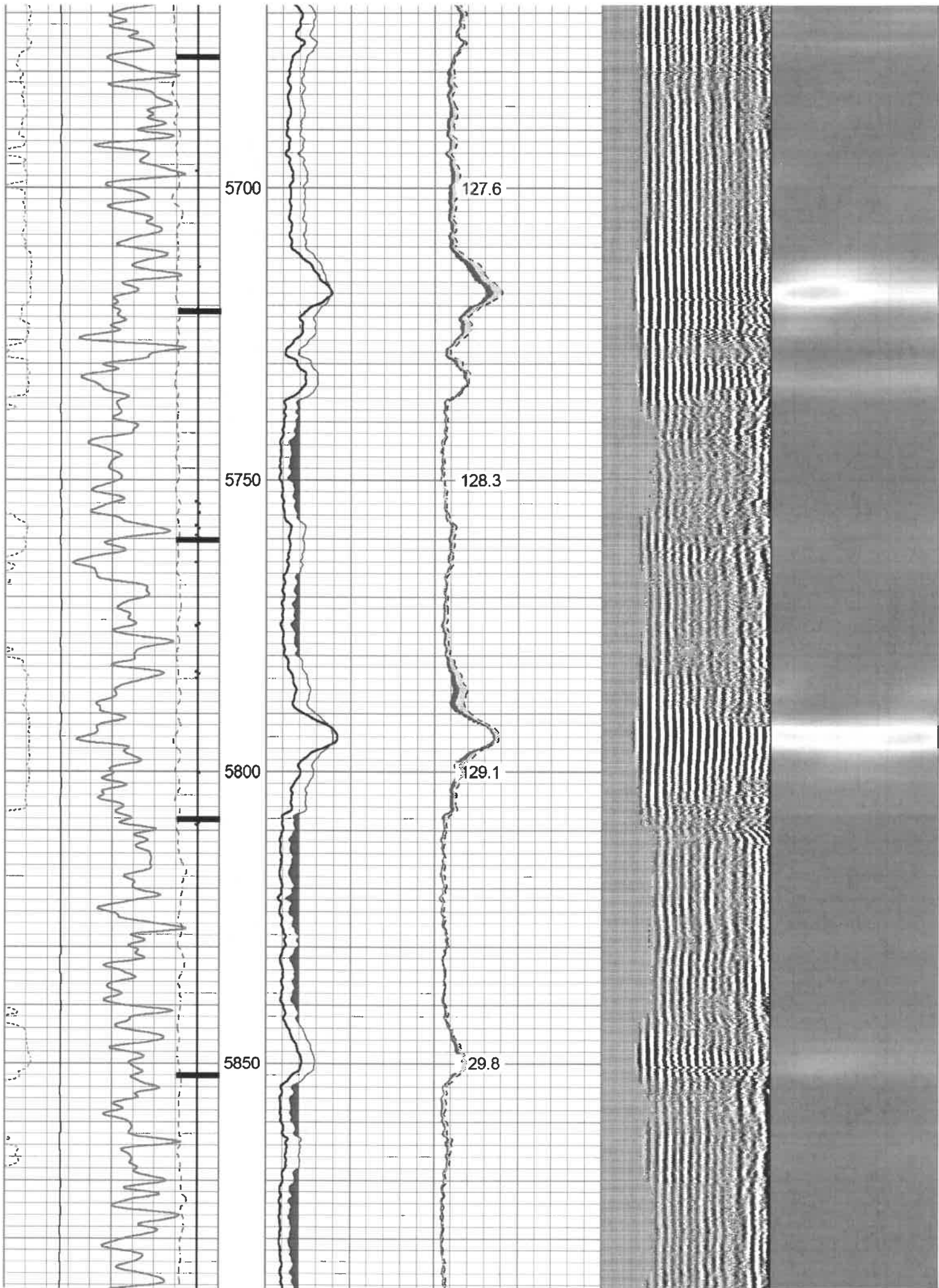
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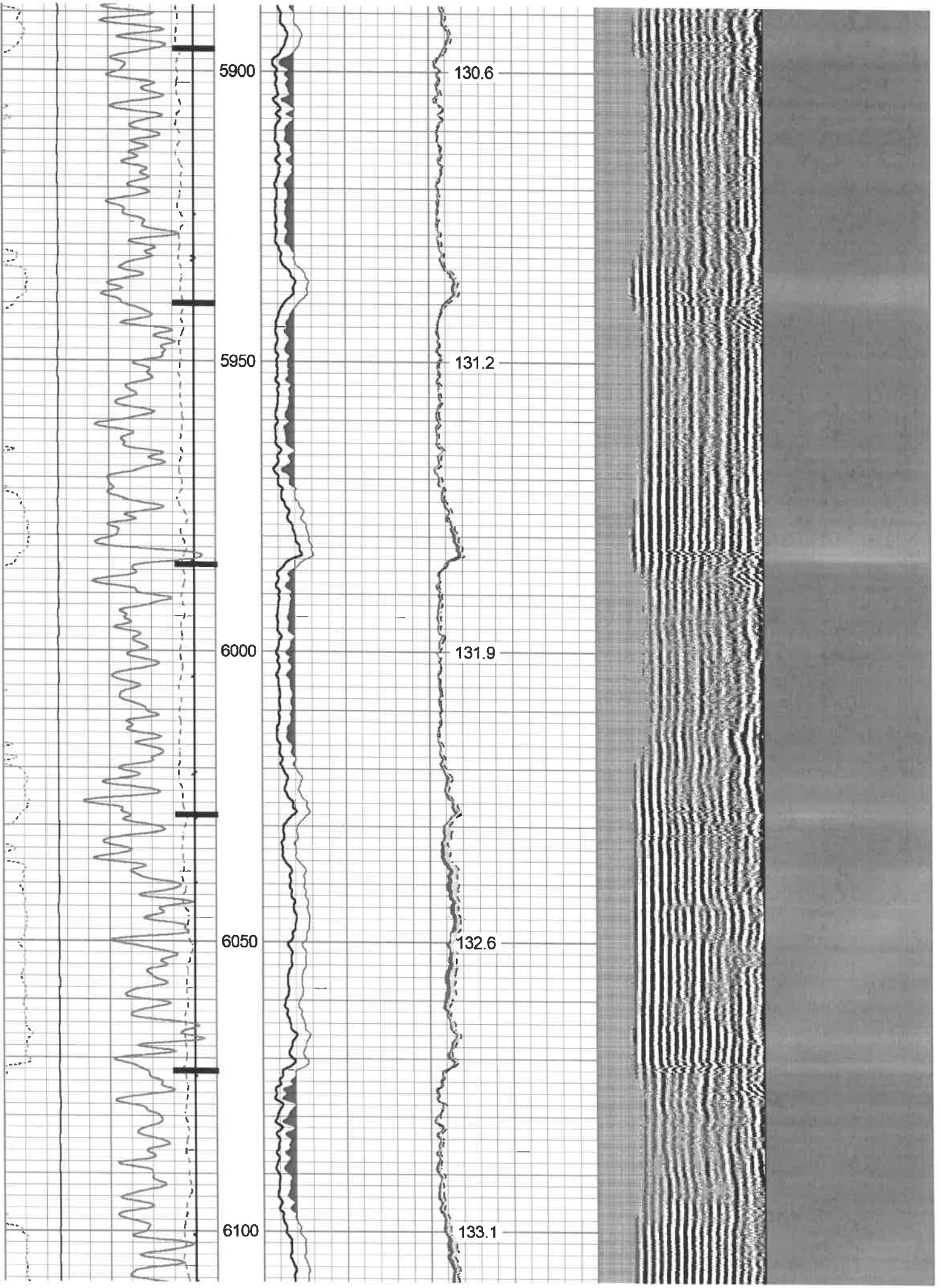
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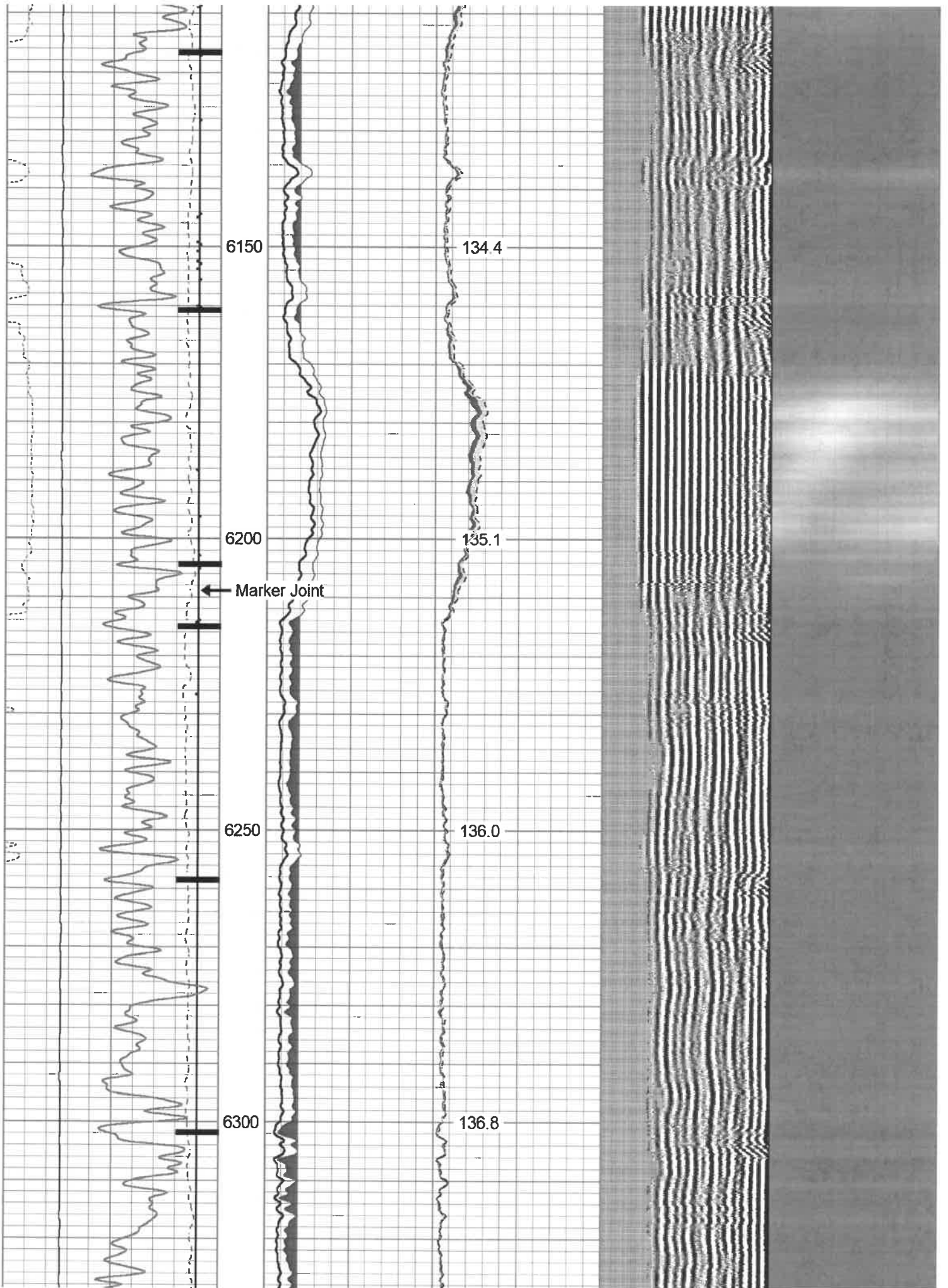
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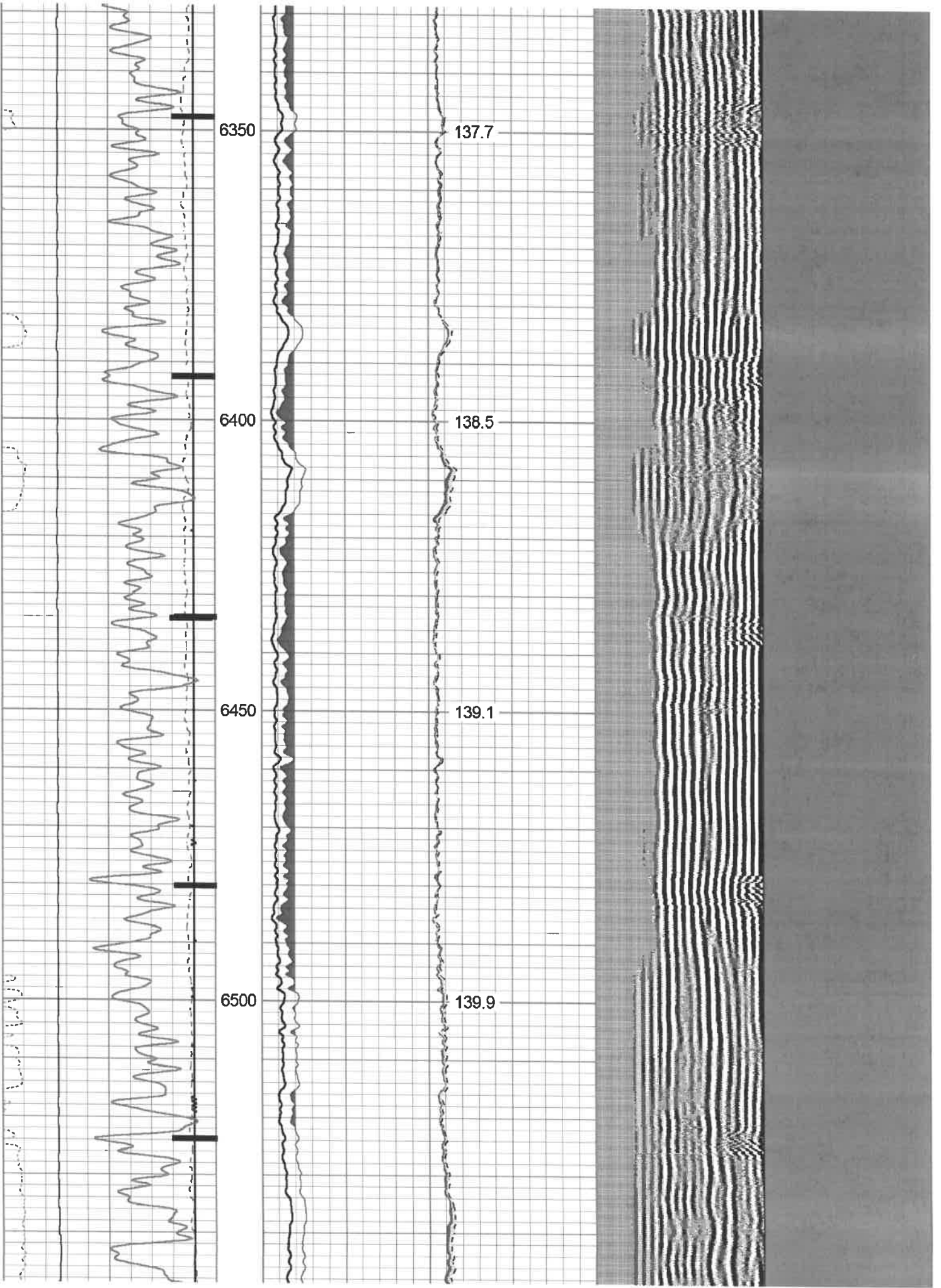


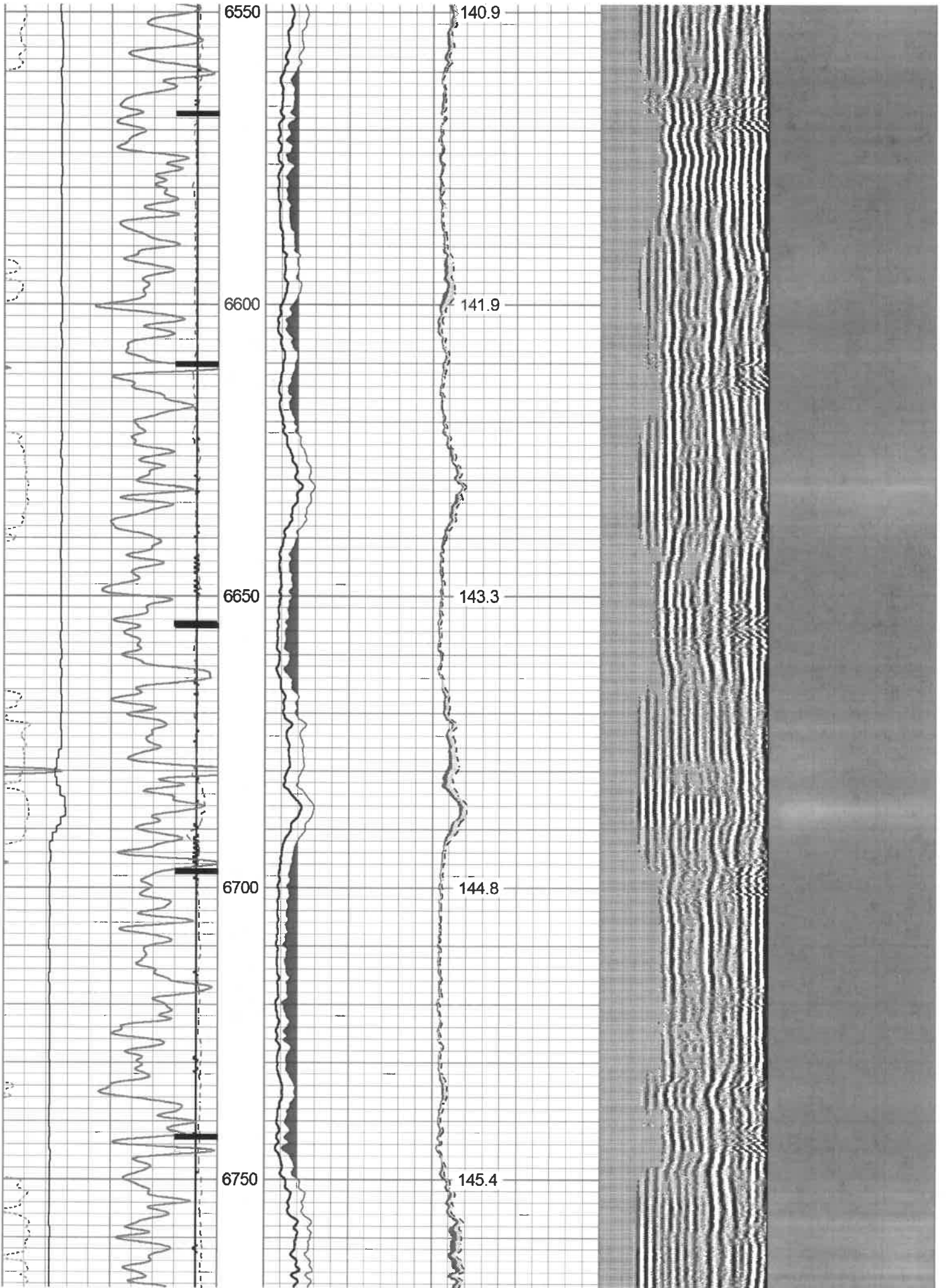


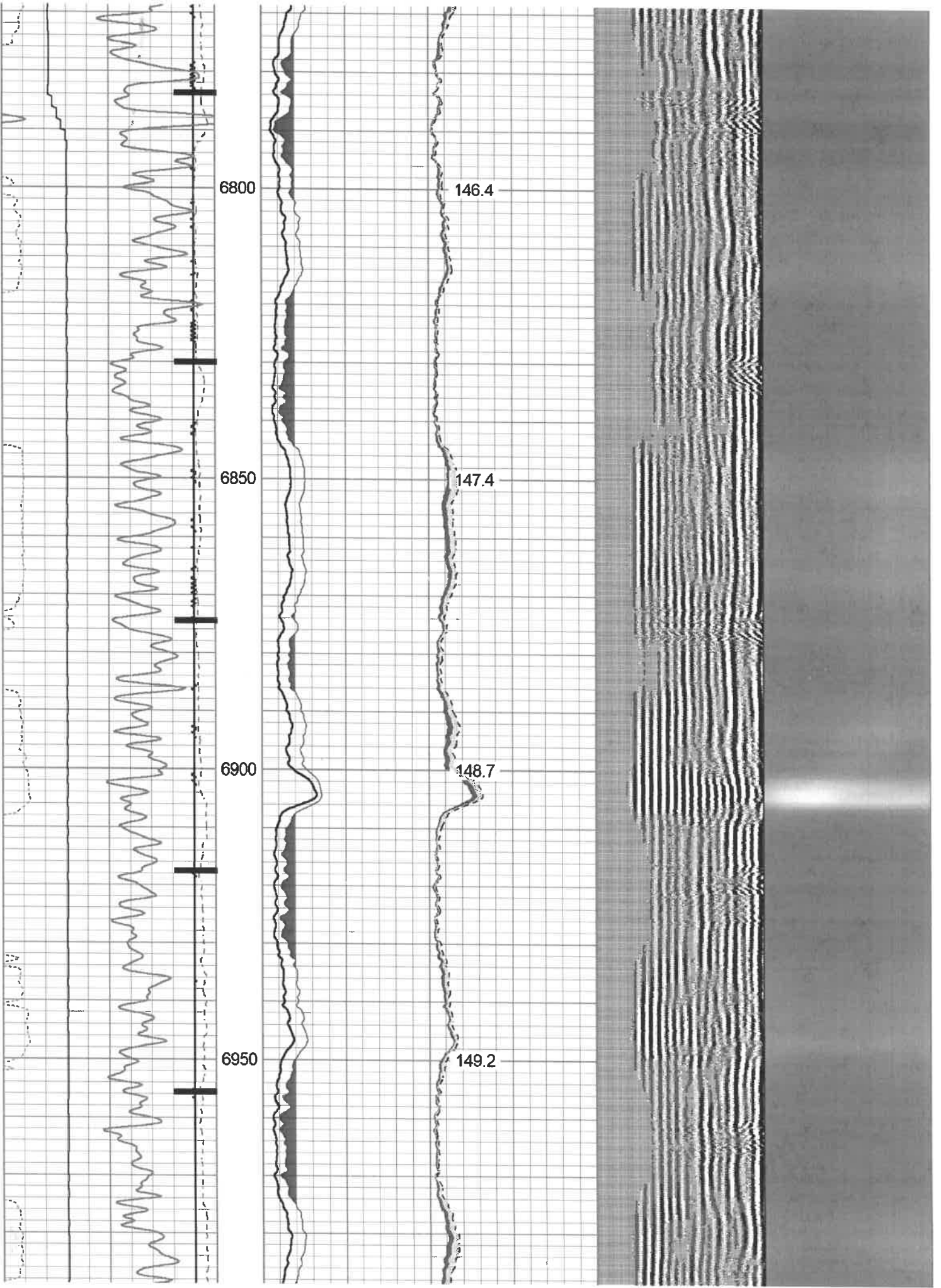


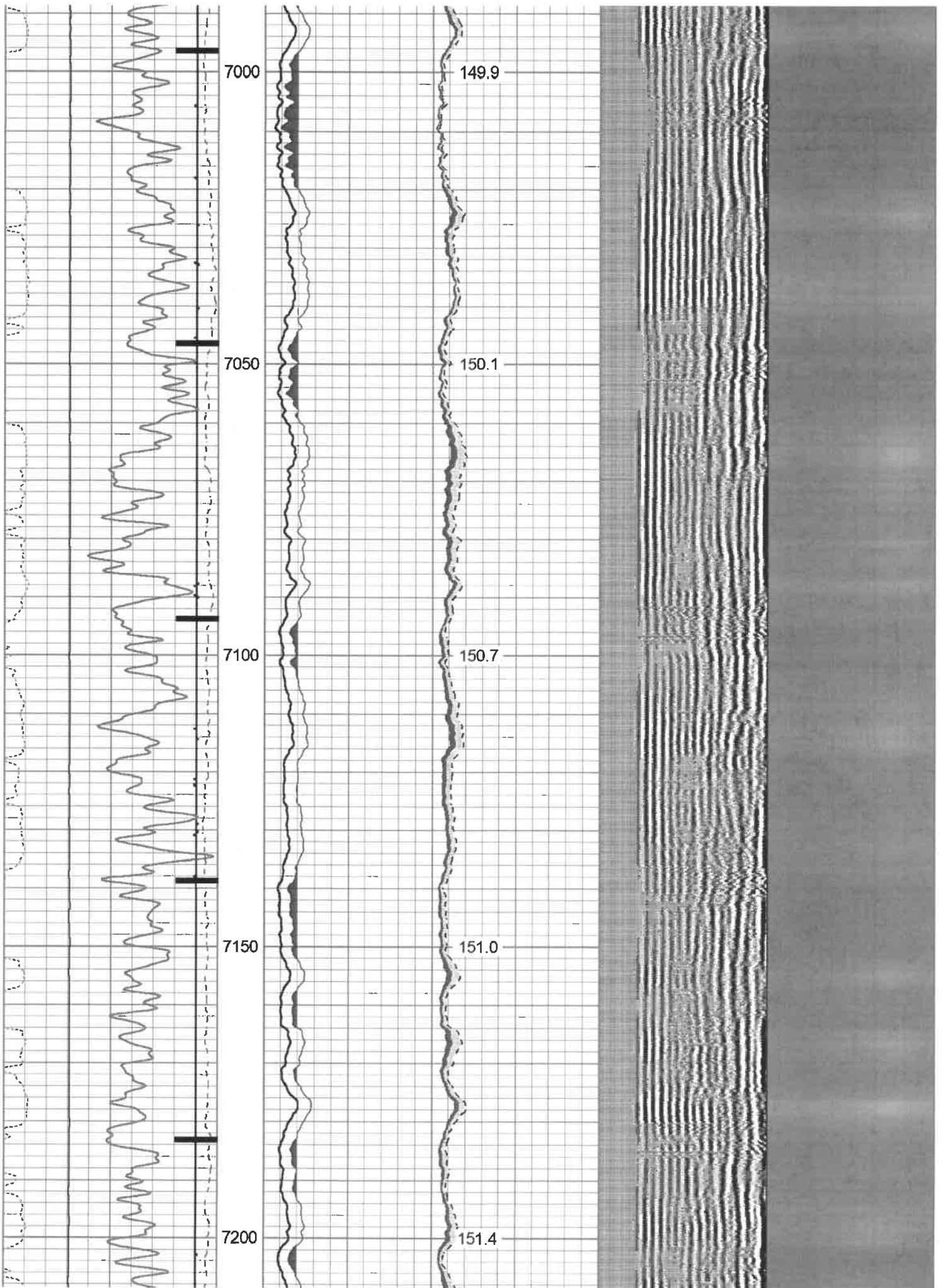


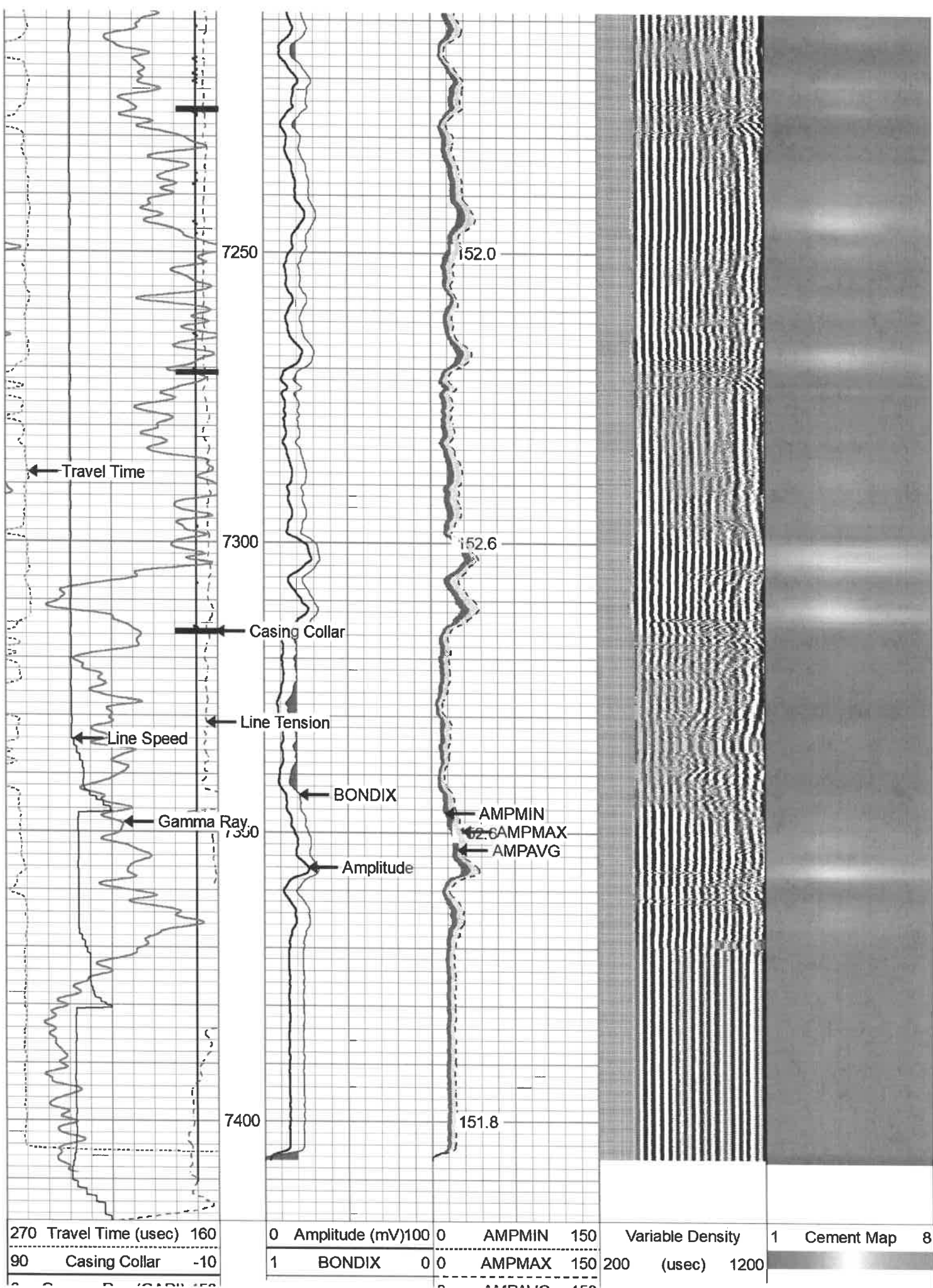












U	Gamma Ray (GAPI) 150
Line Speed	
-200	(ft/min) 200
0	Line Tension (lb) 2000

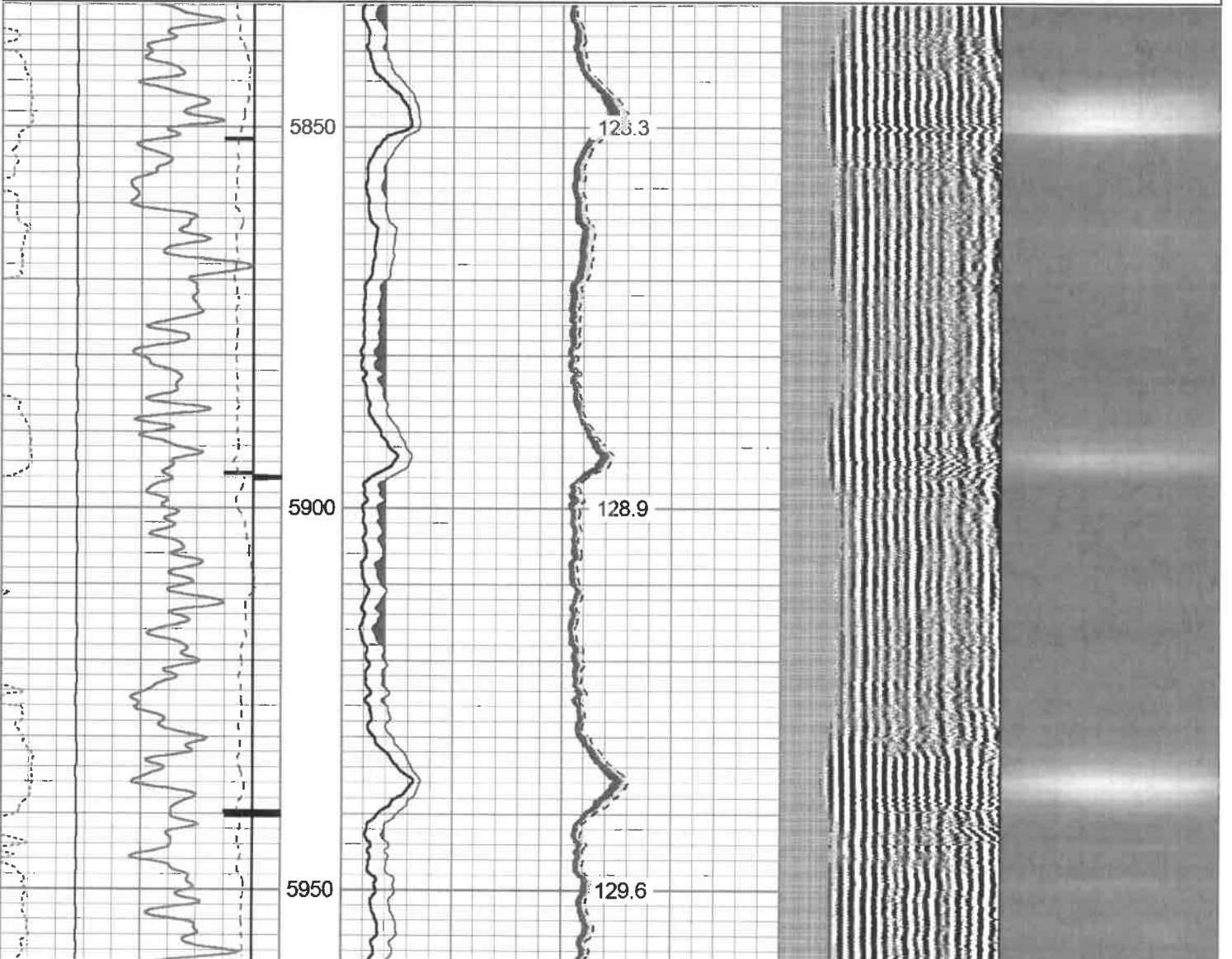
U	AMPAVG 150
TEMP	
(degF)	

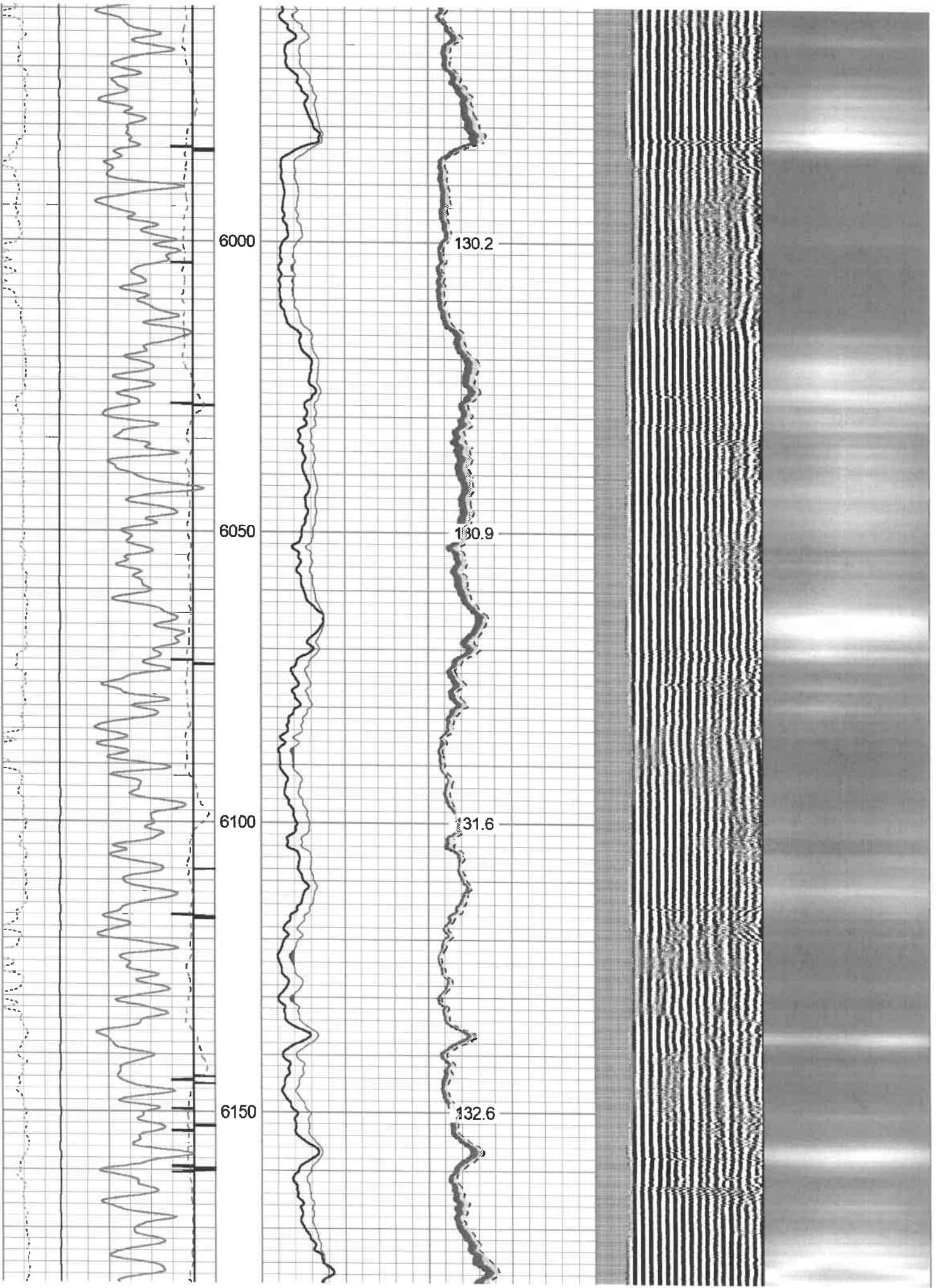


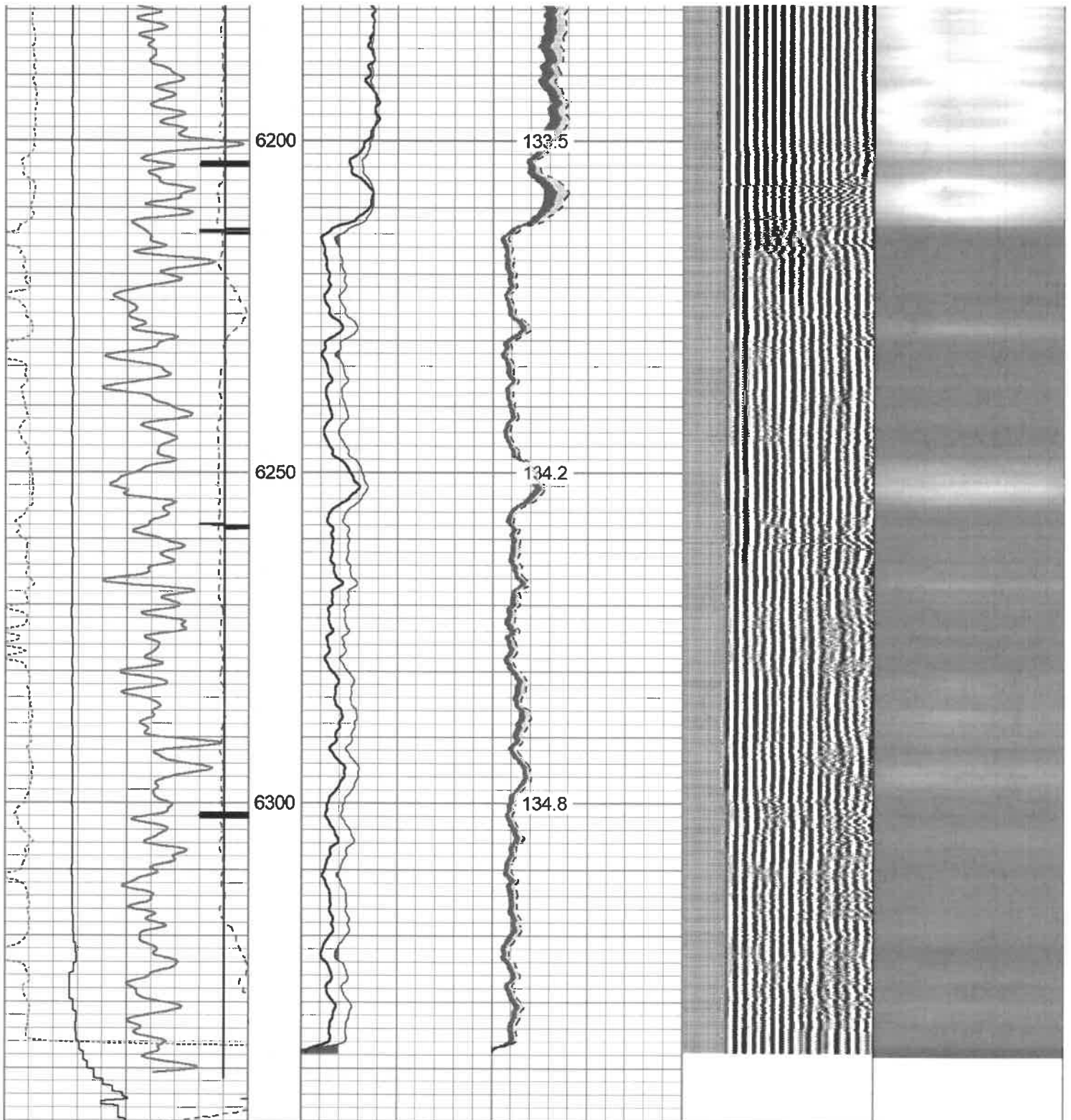
Repeat Pass 0 PSI

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 Dataset Pathname north_canton/1h/run1/pass7
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Wed Sep 22 10:32:07 2021
 Charted by Depth in Feet scaled 1:240

270	Travel Time (usec) 160	0	Amplitude (mV)100	0	AMPMIN 150	Variable Density	1	Cement Map	8
9	Casing Collar -1	1	BONDIX 0	0	AMPMAX 150	200 (usec) 1200			
0	Gamma Ray (GAPI) 150	0	AMPAVG 150						
Line Speed		TEMP							
-200	(ft/min) 200	(degF)							
0	Line Tension (lb) 2000								







270	Travel Time (usec)	160	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150	0	AMPAVG	150							
	Line Speed			TEMP								
-200	(ft/min)	200		(degF)								
0	Line Tension (lb)	2000										

Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_shepard_rapids_1h_rcbl_22_sep_21.db
 Dataset north_canton/1h/run1/pass12.1/_vars_

Top - Bottom

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 152	CASEOD in 5.5	CASETHCK in 0.415	CASEWGHT lb/ft 23	MAXAMPL mV 71.9	MINAMPL mV 3.4
MINATTN db/ft 9.6	PERFS No	PPT usec 260	SRFTEMP degF 70	TDEPTH ft 7400			

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_shepard_rapids_1h_rcbl_22_sep_21.db
 Dataset Pathname north_canton/1h/run1/pass12.1
 Dataset Creation Wed Sep 22 12:28:24 2021

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Mon Feb 03 14:18:32 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: 2.75"
 Tool Model: Probe275T
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 349.083 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	1.004	3.400	71.921	68.240	3.399
CAL	0.443	1.189				
5'	0.000	0.920	3.400	71.921	74.520	3.399
SUM						
S1	0.000	1.059	0.000	100.000	94.437	-0.001
S2	0.000	1.018	0.000	100.000	98.222	-0.001
S3	0.000	1.024	0.000	100.000	97.698	-0.002
S4	0.000	0.996	0.000	100.000	100.381	-0.002
S5	0.000	0.987	0.000	100.000	101.308	-0.002
S6	0.000	1.036	0.000	100.000	96.535	-0.001
S7	0.000	1.035	0.000	100.000	96.587	-0.001
S8	0.000	1.043	0.000	100.000	95.848	-0.001

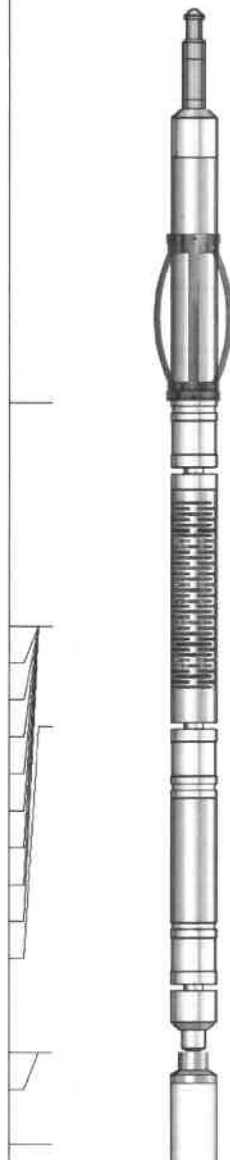
Internal Reference Calibration performed Wed Nov 22 14:17:52 2011.

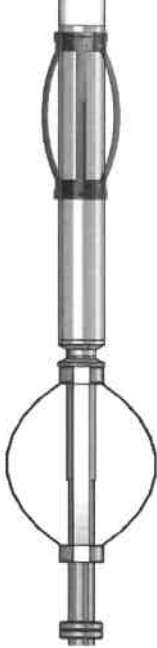
Internal Reference Calibration, performed Wed Nov 23 14:17:52 2011.

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.443	1.189	1.000	0.000


Air Zero Calibration, performed Tue Sep 21 09:40:27 2021:

	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)	
			CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00	
			CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00	
Temp	14.14						
			RBT-Probe275T (2.75") Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00	
WVFS8	11.91						
WVFS7	11.91						
WVFS6	11.91						
WVFS5	11.91						
WVFS4	11.91						
WVFS3	11.91						
WVFS2	11.91						
WVFS1	11.91						
WVF3FT	11.91						
WVF5FT	10.91						
HeadVolt	7.66						
WVFCAL	7.66						
CCL	6.75						

GR	5.42		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
			GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
			CENT-Probe275 2.75" Centralizer	2.88	2.75	20.00

Dataset: antero_shepard_rapids_1h_rcbl_22_sep_21.db: north_canton/1h/run1/pass12.1
 Total length: 18.07 ft
 Total weight: 178.00 lb
 O.D.: 4.88 in

	Company	Antero Resources
	Well	Shepherd Rapids 1H
	Field	North Canton
	County	Tyler
	State	WV