



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

Company	Antero Resources	Location:	API #: 47-095-02740	Other Services
Well	Shepherd Gatrell 2H	SEC	Lat:39.391454 Long:-80.765510	
Field	North Canton	TWP	RGE	Elevation
County	Tyler	Ground Level	Kelly Bushing 25.5'	K.B. D.F. G.L.
State	WV	Drilling Measured From	Kelly Bushing	

Date	21-Sep-2021	Run Number	One	Depth Driller	17,368'
Depth Driller	6,968'	Bottom Logger	7,017'	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	5,648'	Time Well Ready	10:30
Time Well Ready	10:30	Time Logger on Bottom	10:50	Equipment Number	116 (P1,G1)
Location	Charleroi,PA	Recorded By	Matt McNally	Witnessed By	Daniel Martinez

Borehole Record		Tubing Record					
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wg/Wt	Top	Bottom
Surface String				
Prot. String	5.5"	20#	Surface	17,368'
Production String				
Liner				
Marker Joint			5,731'	5,741'

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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 5,731'- 5,741'
 Depth Correction +13'
 Main Pass 1,500 PSI
 Repeat 0 PSI

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

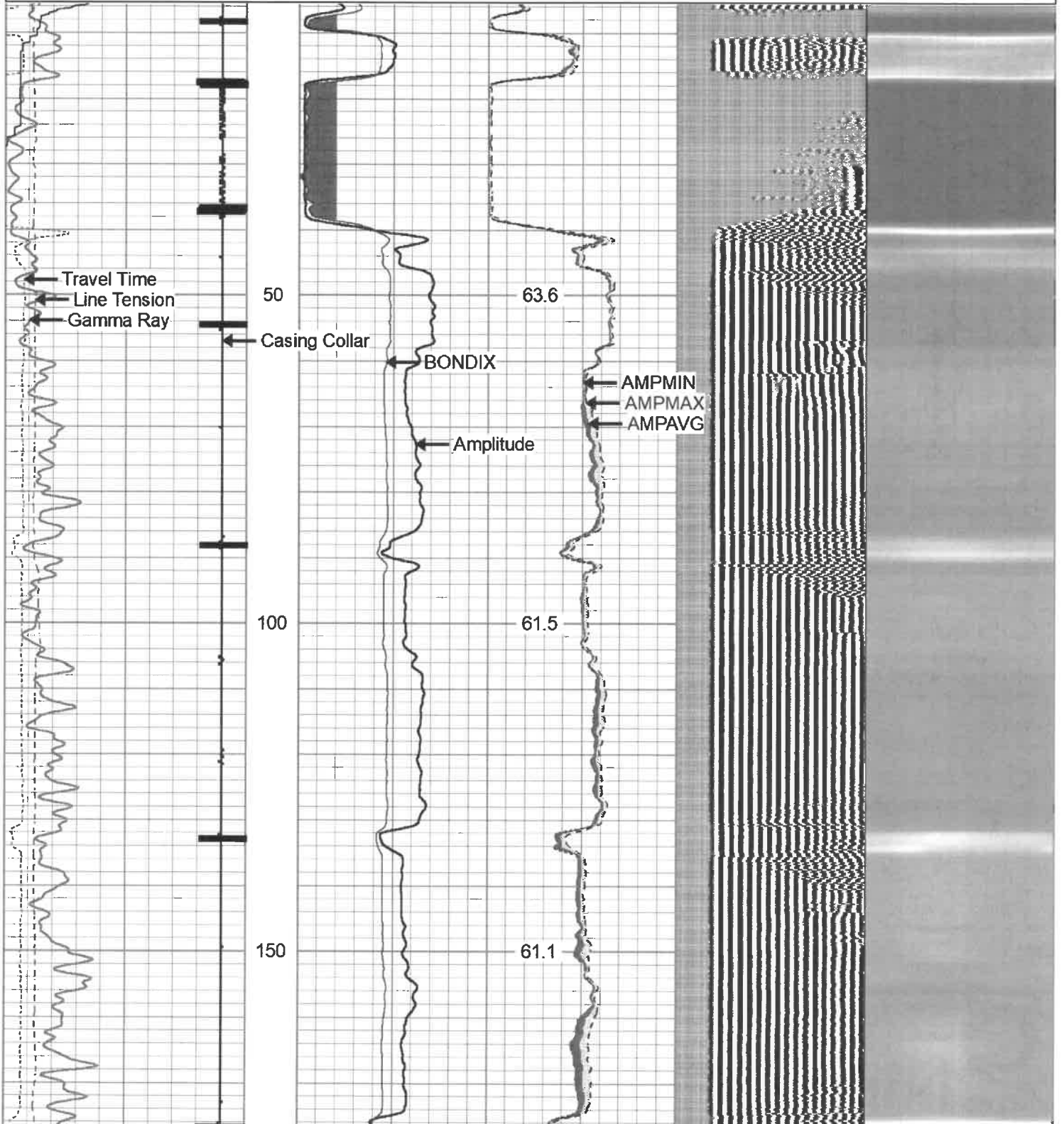


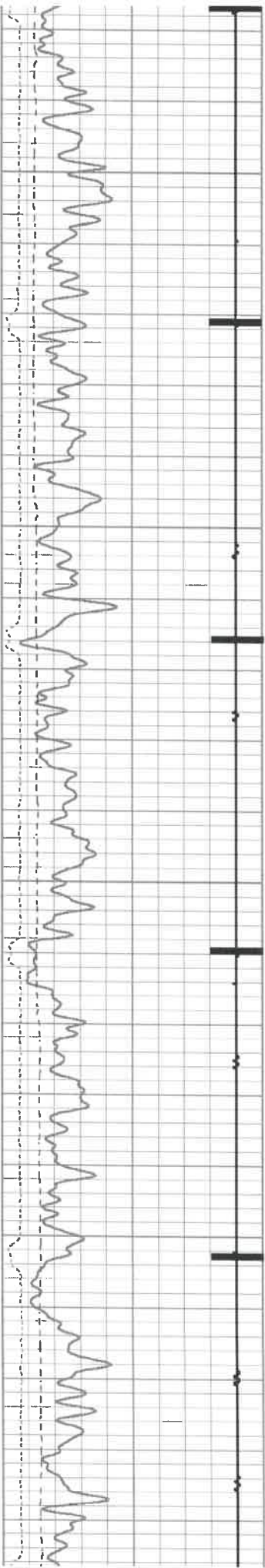
Main Pass 1,500 PSI

SM

Database File antero_shepherd_gatrell_2h_rcbl_21_sep_21.db
 Dataset Pathname North_Canton/2h/run1/pass8.2
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Tue Sep 21 12:38:54 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
Casing Collar	1 BONDIX 0	0 AMPMAX 150	200 (usec) 1200	
0 Gamma Ray (GAPI) 150		0 AMPAVG 150		
Line Speed		TEMP		
-100 (ft/min) 100		(degF)		
0 Line Tension (lb) 2000				



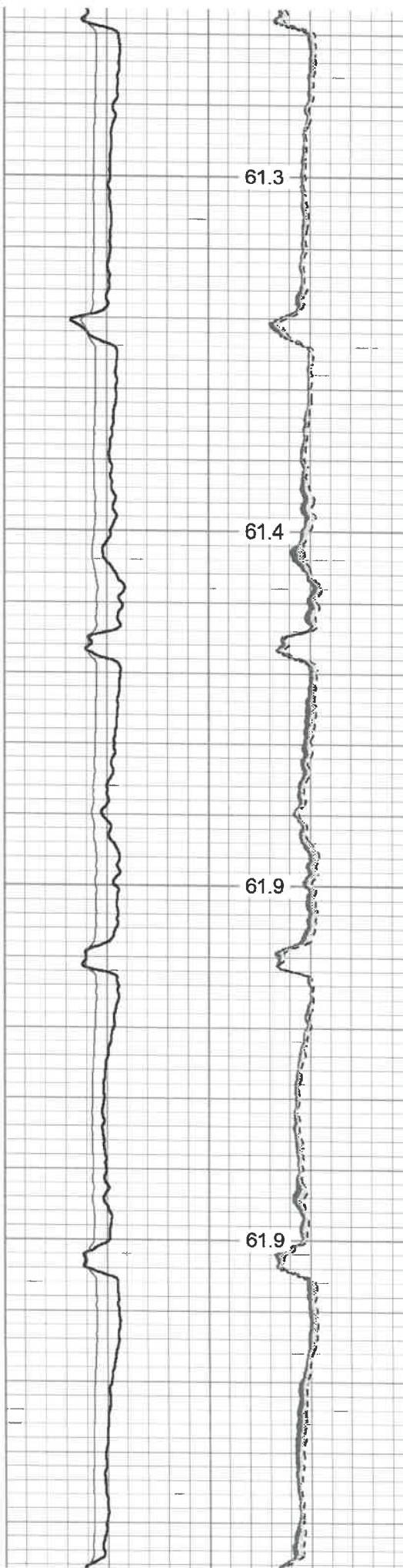


200

250

300

350

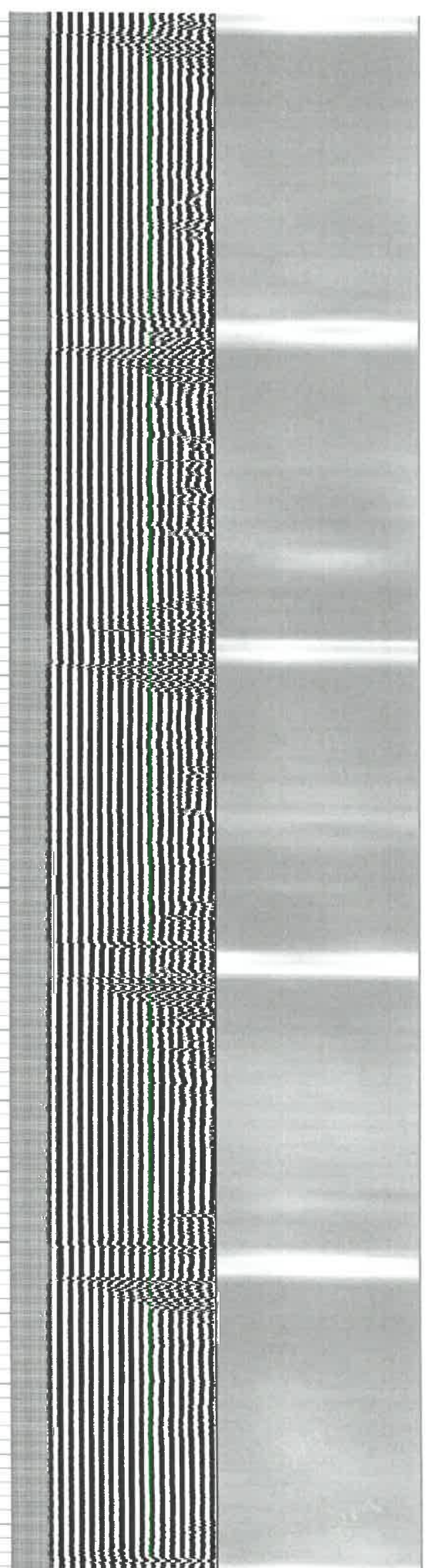


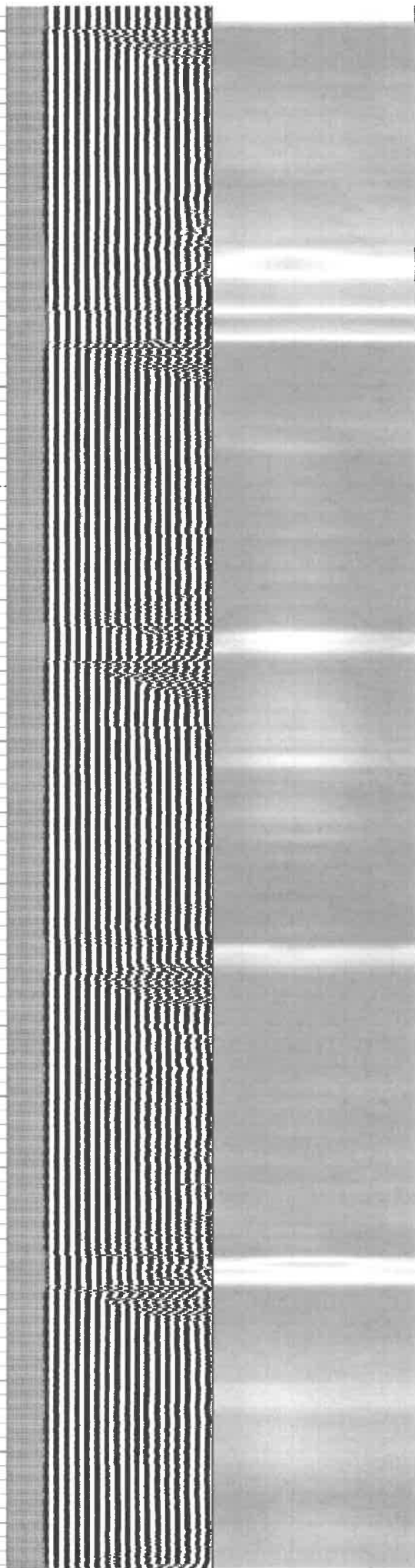
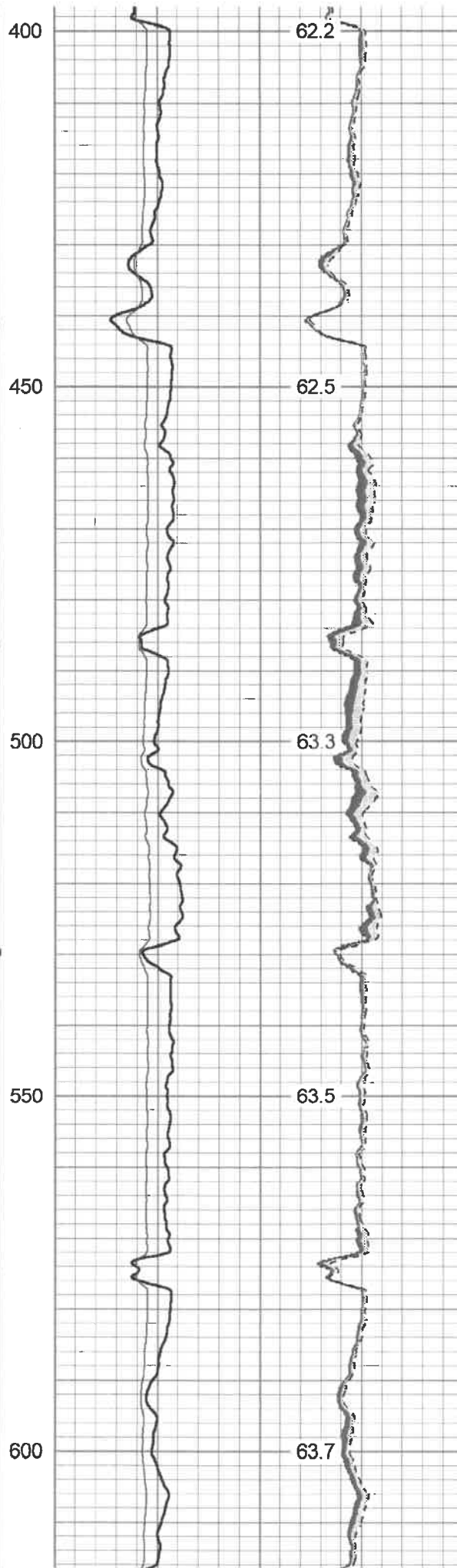
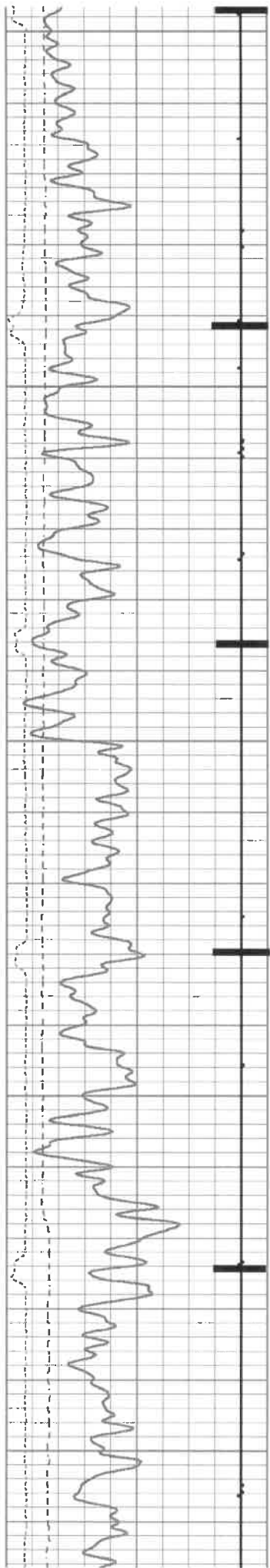
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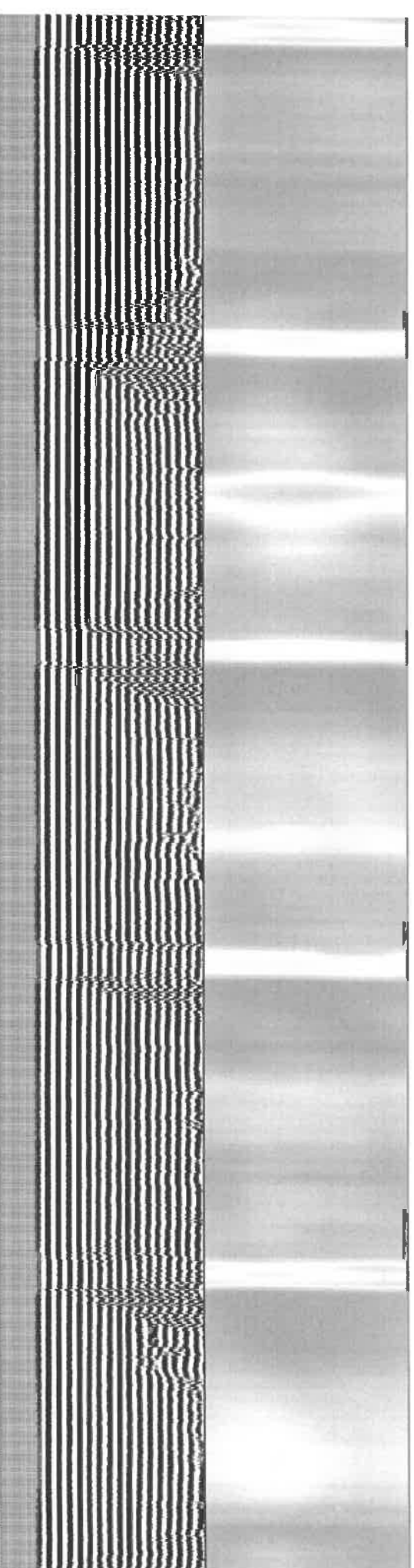
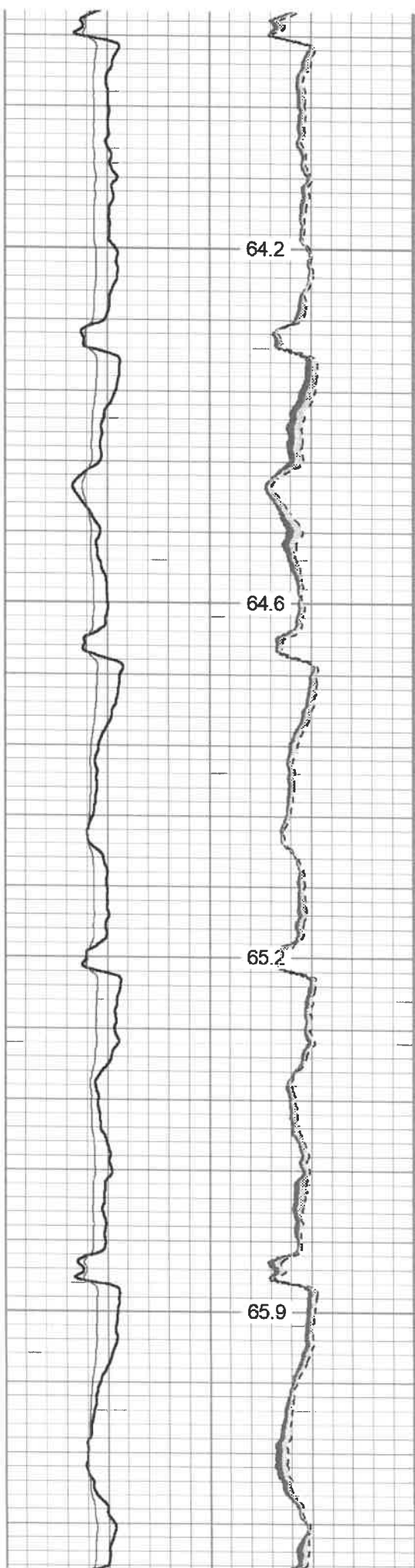
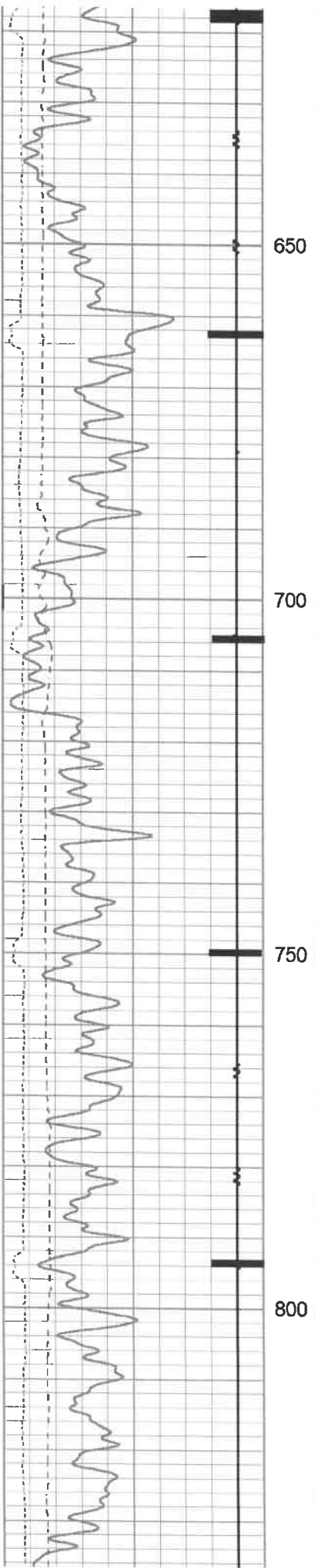
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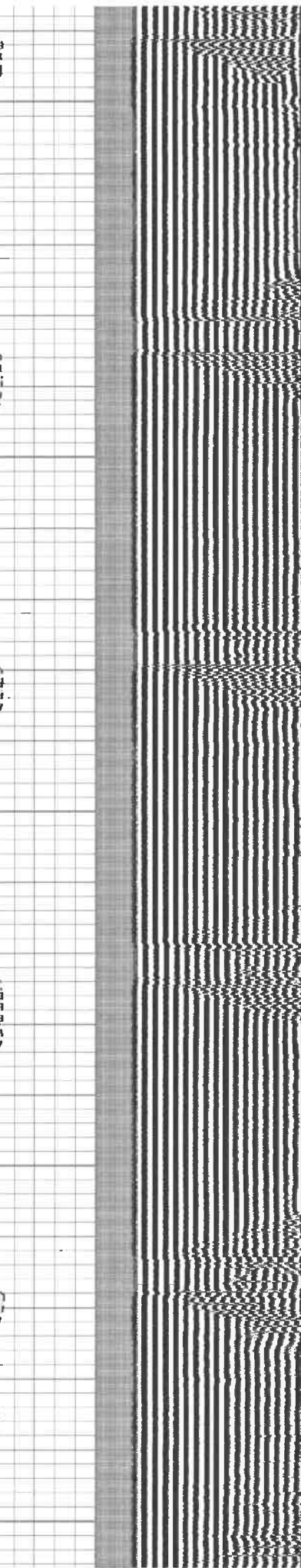
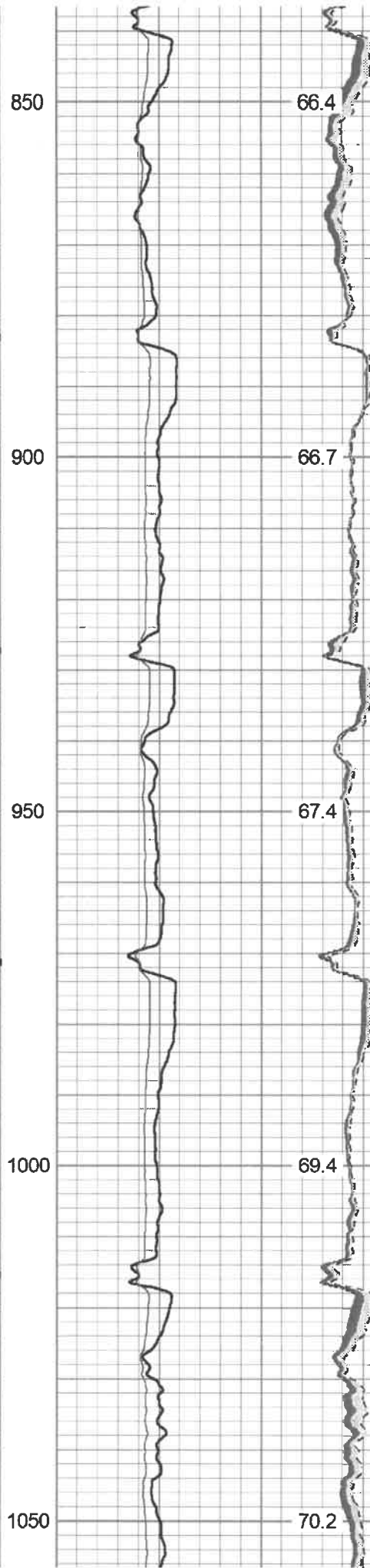
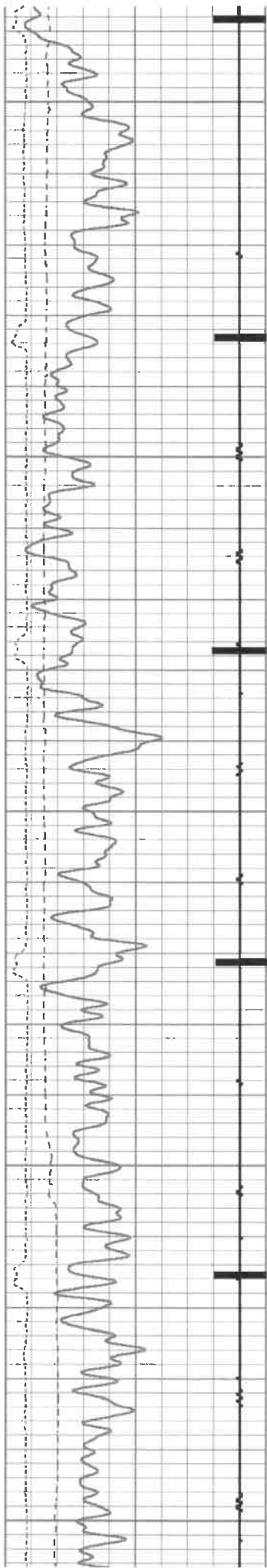
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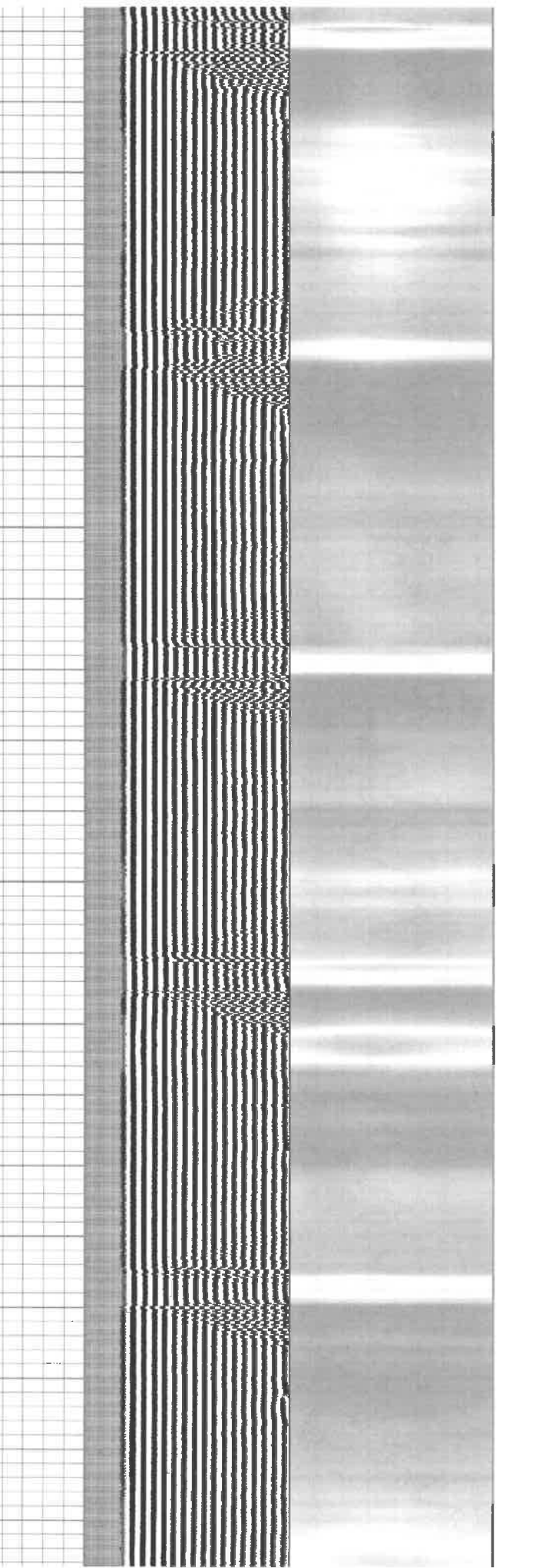
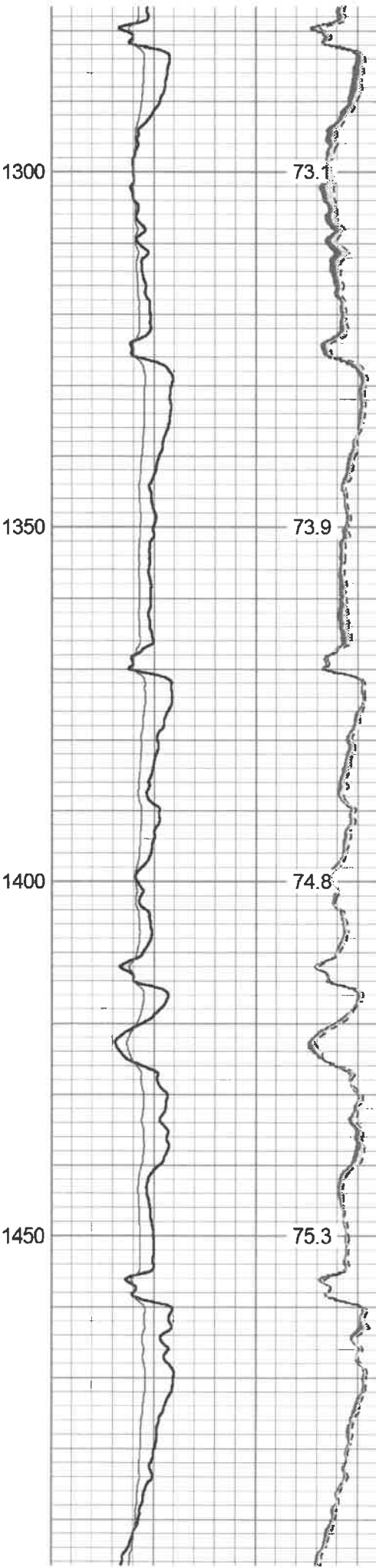
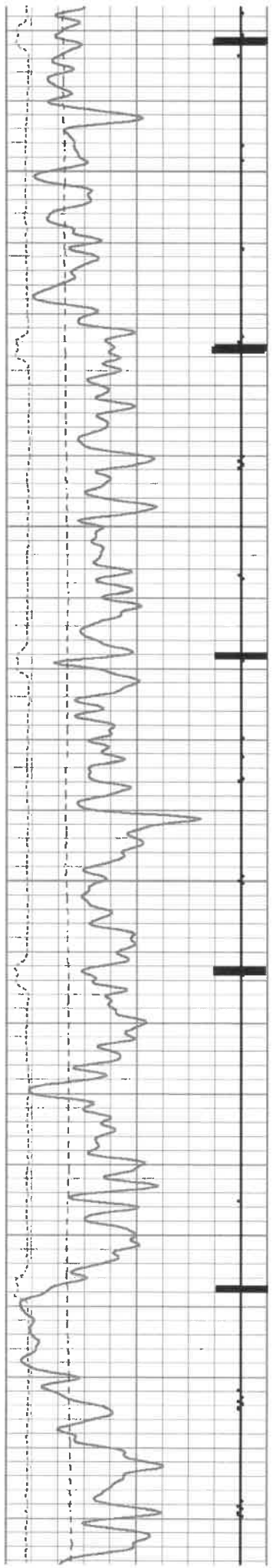


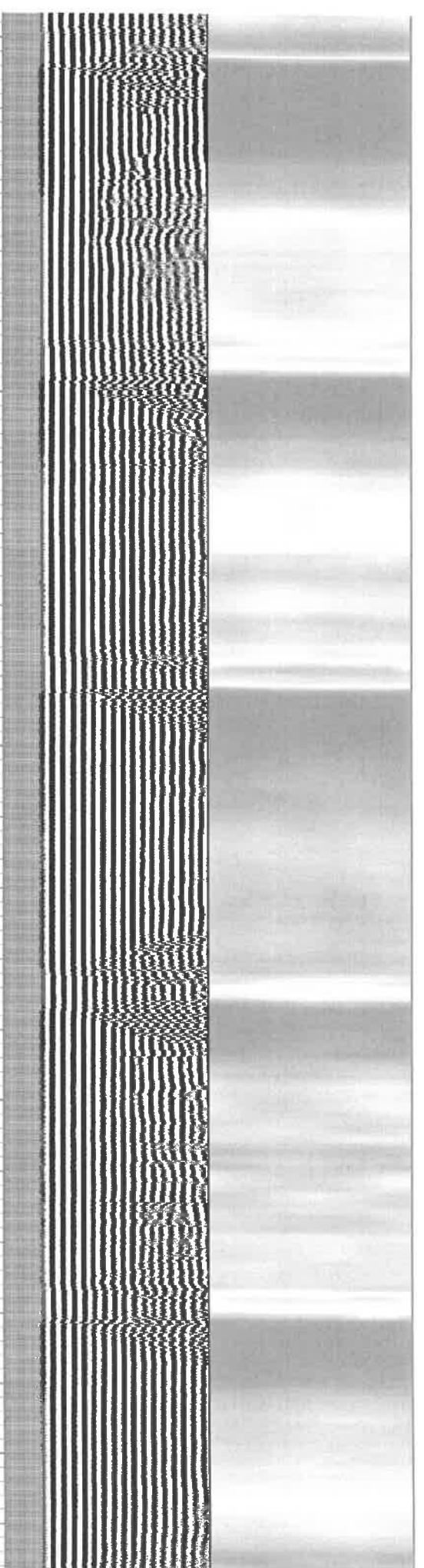
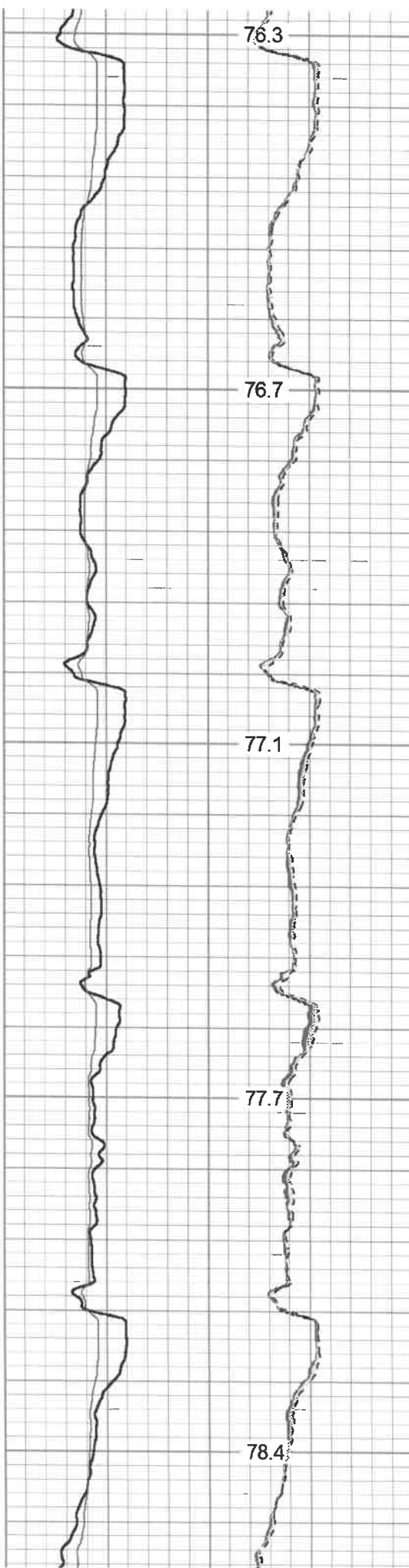
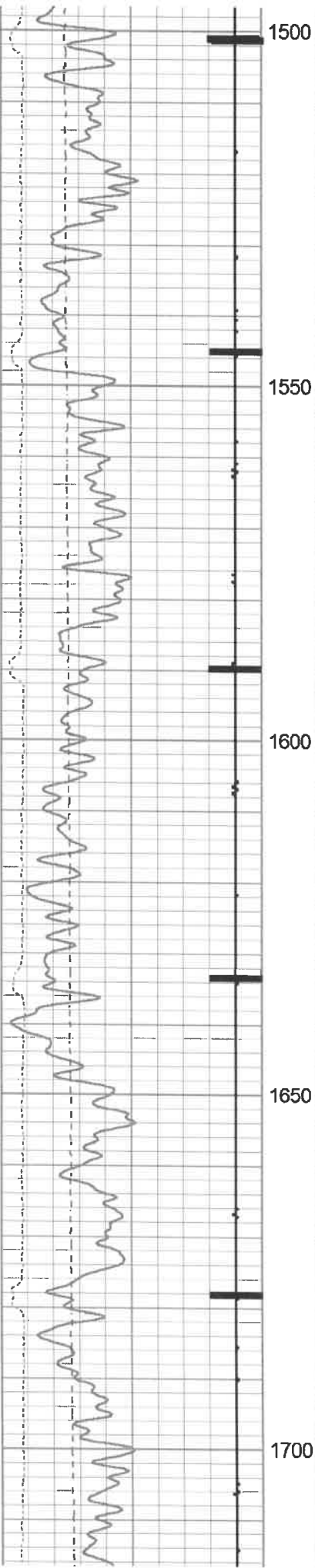


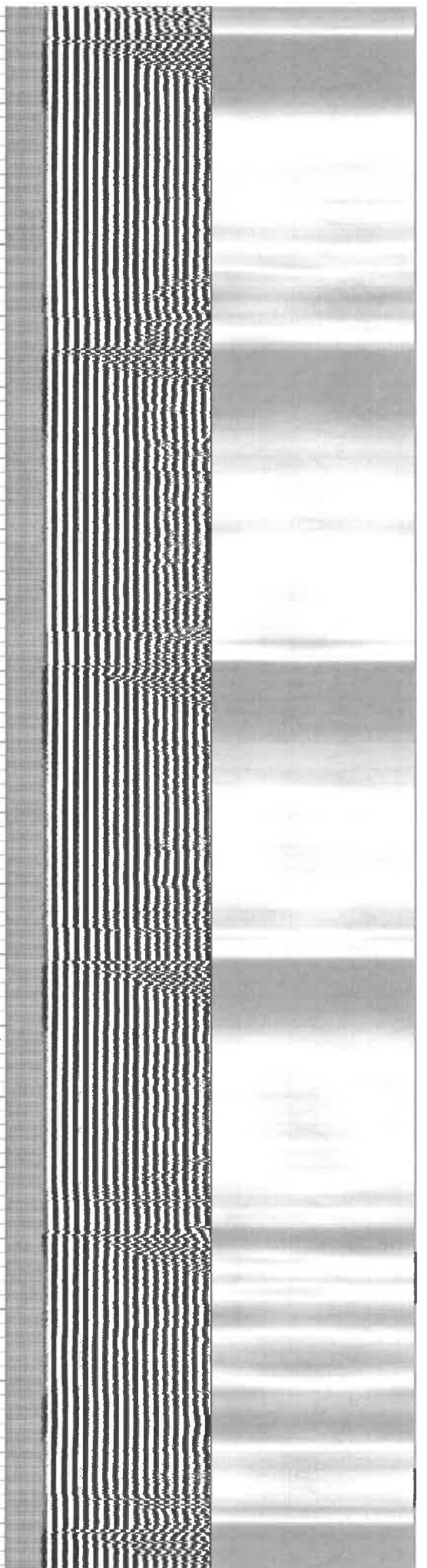
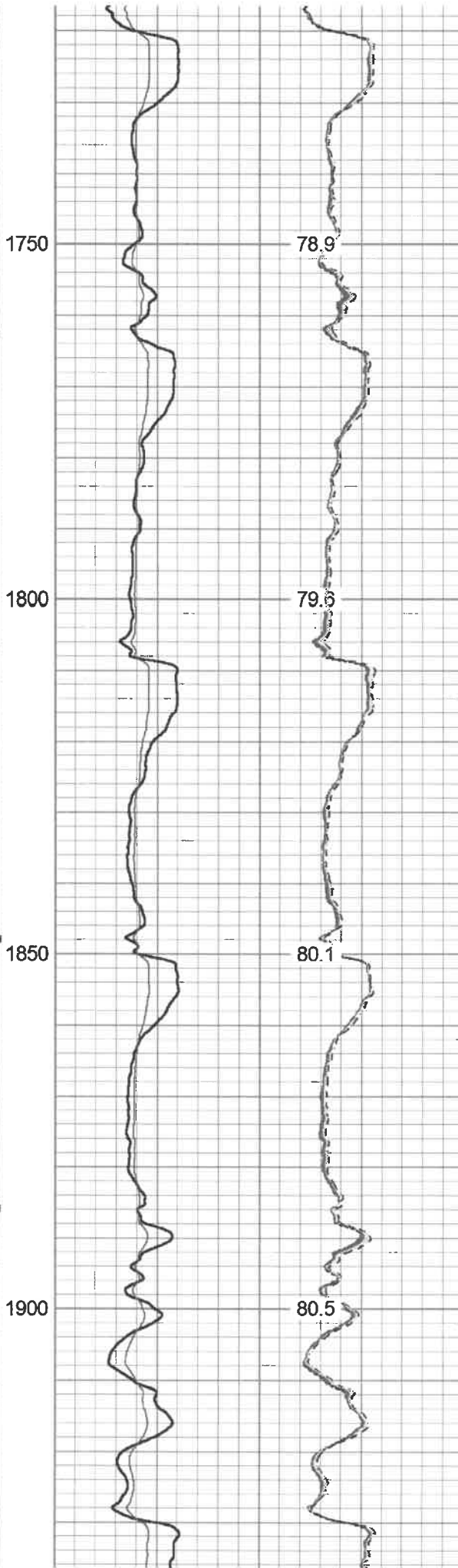
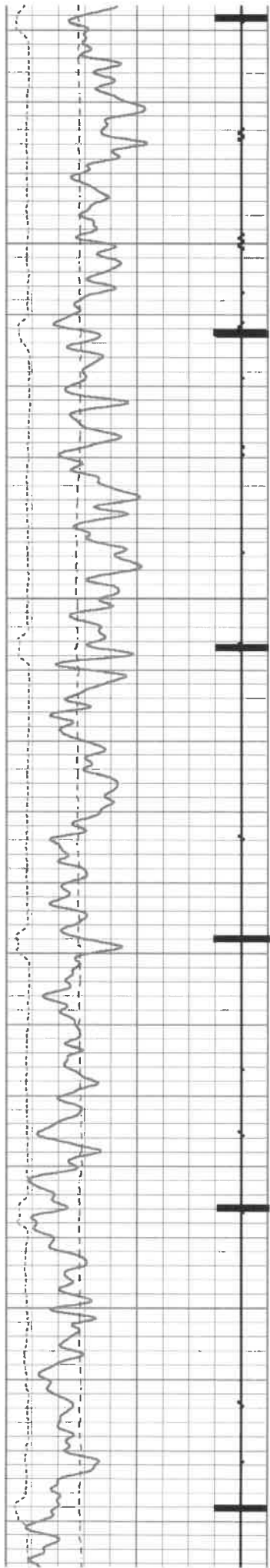


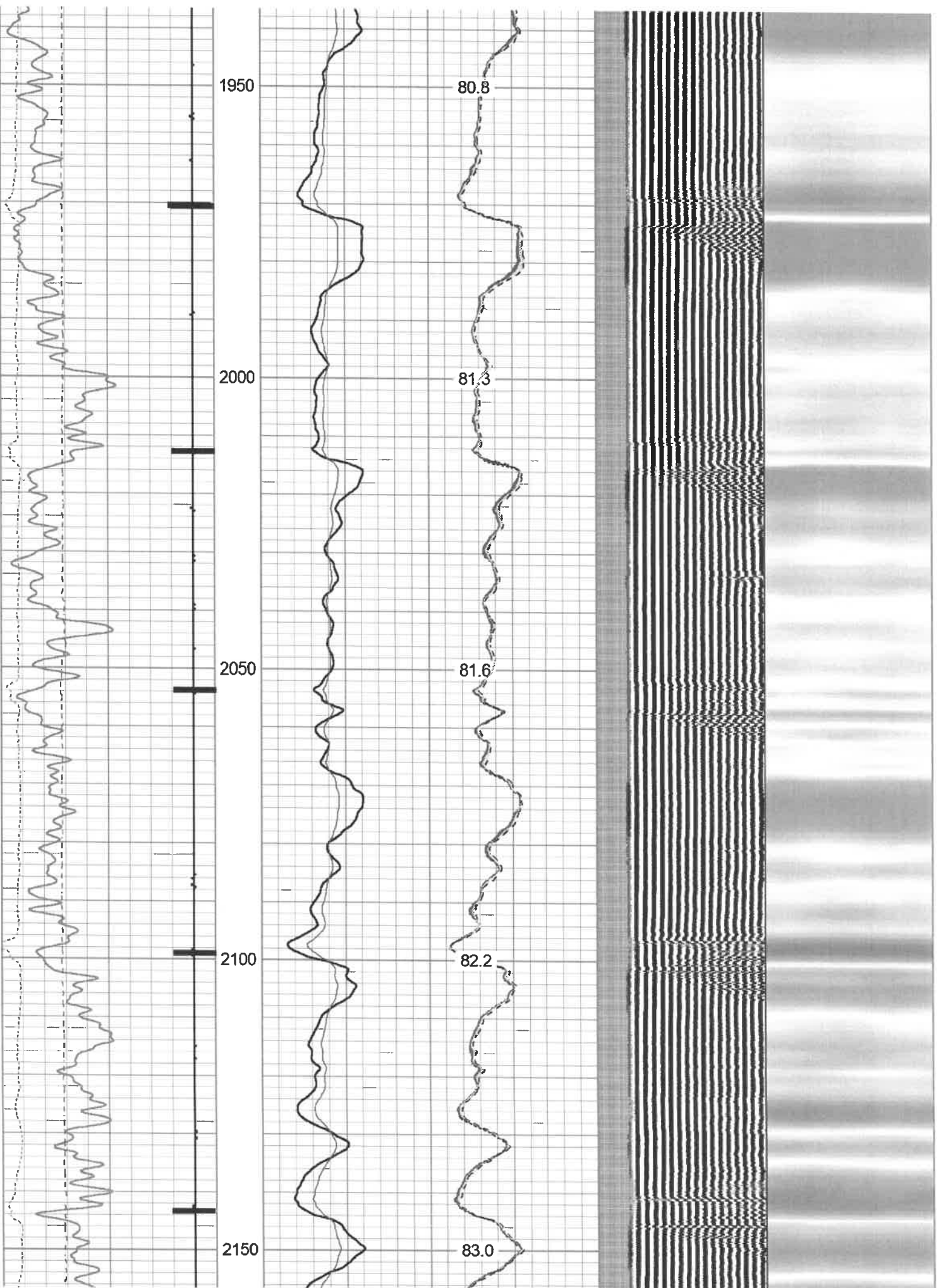


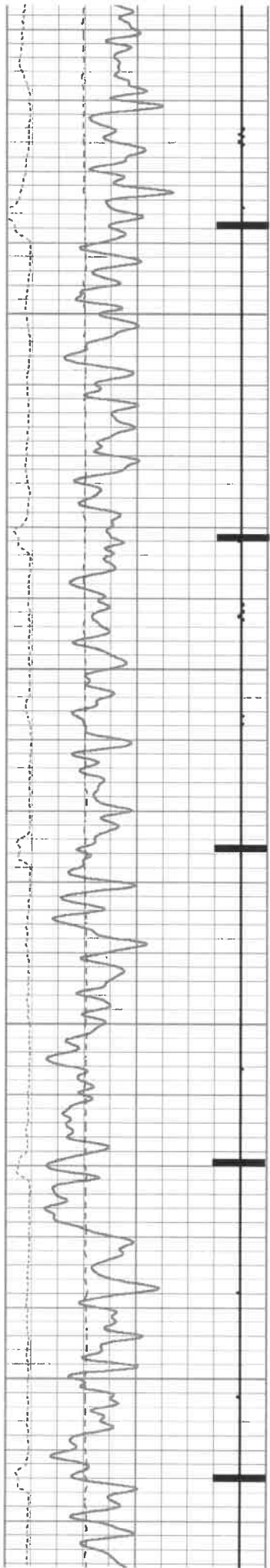










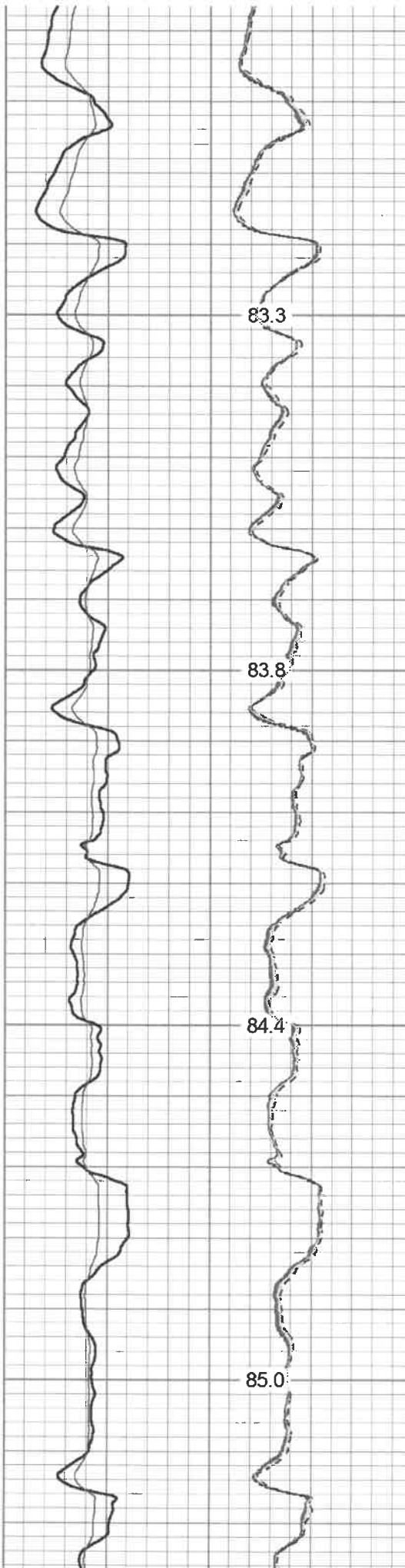


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2250

2300

2350

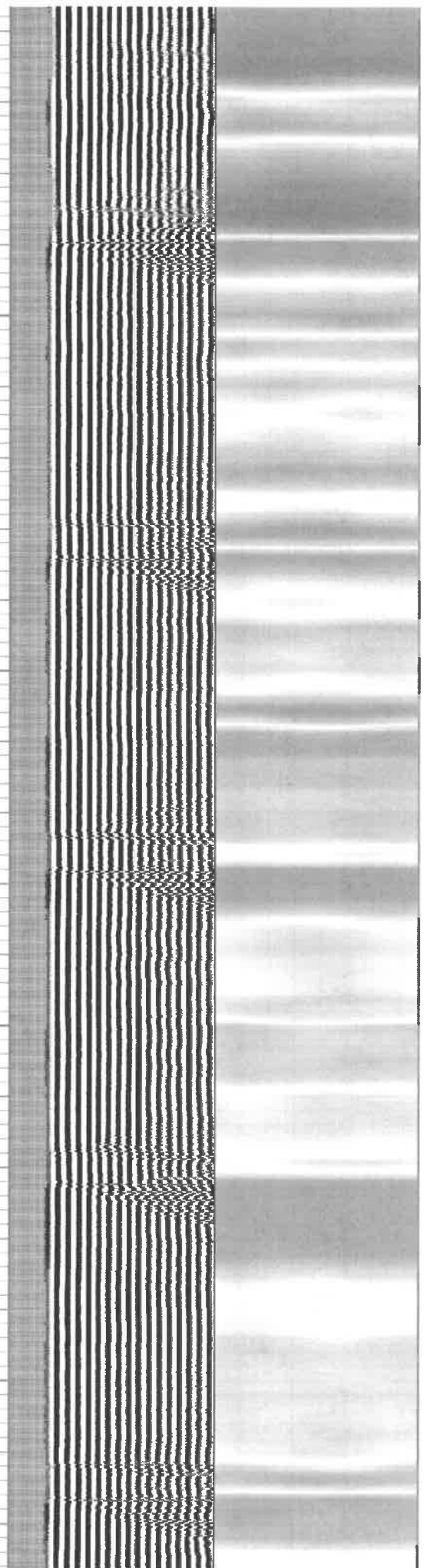


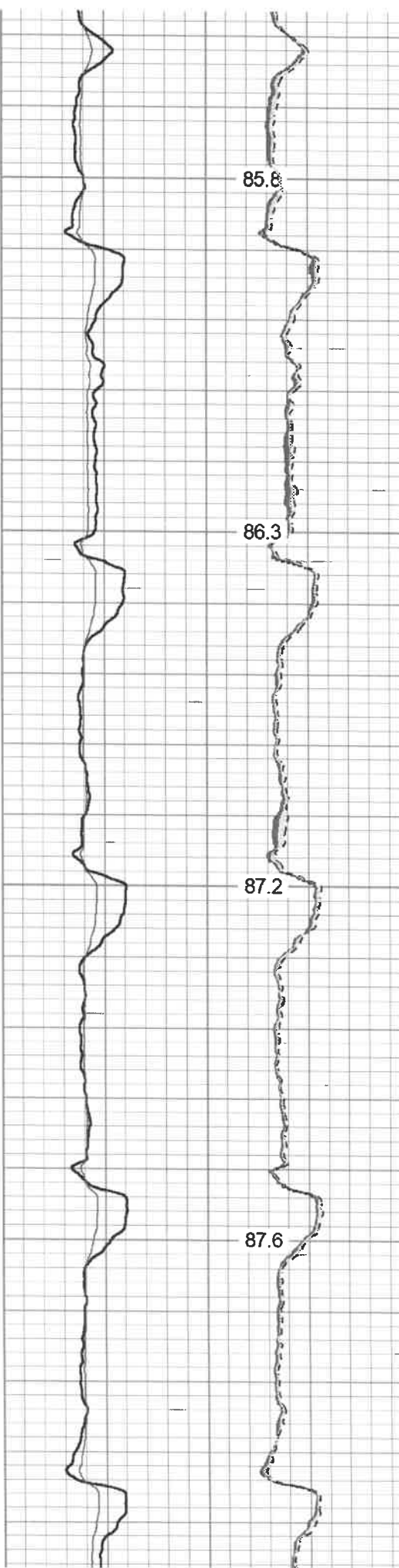
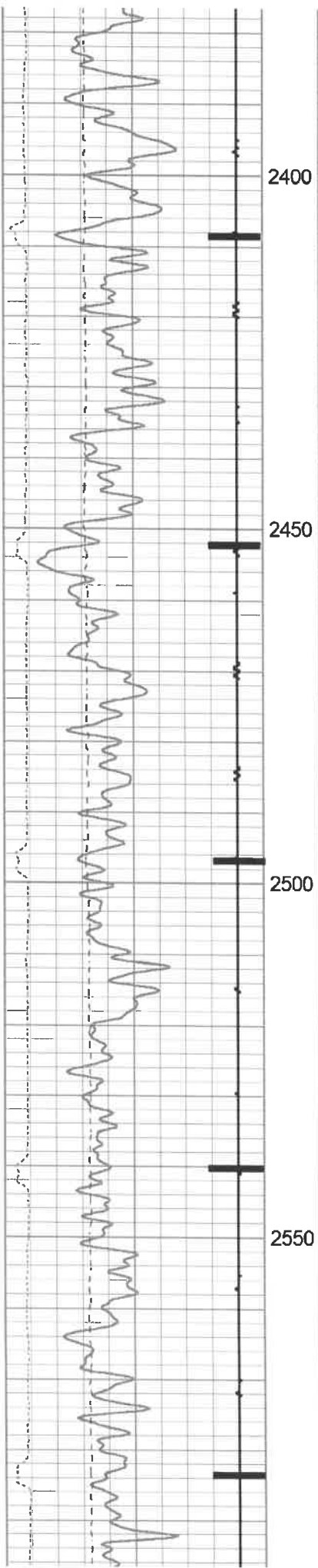
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83.8

84.4

85.0



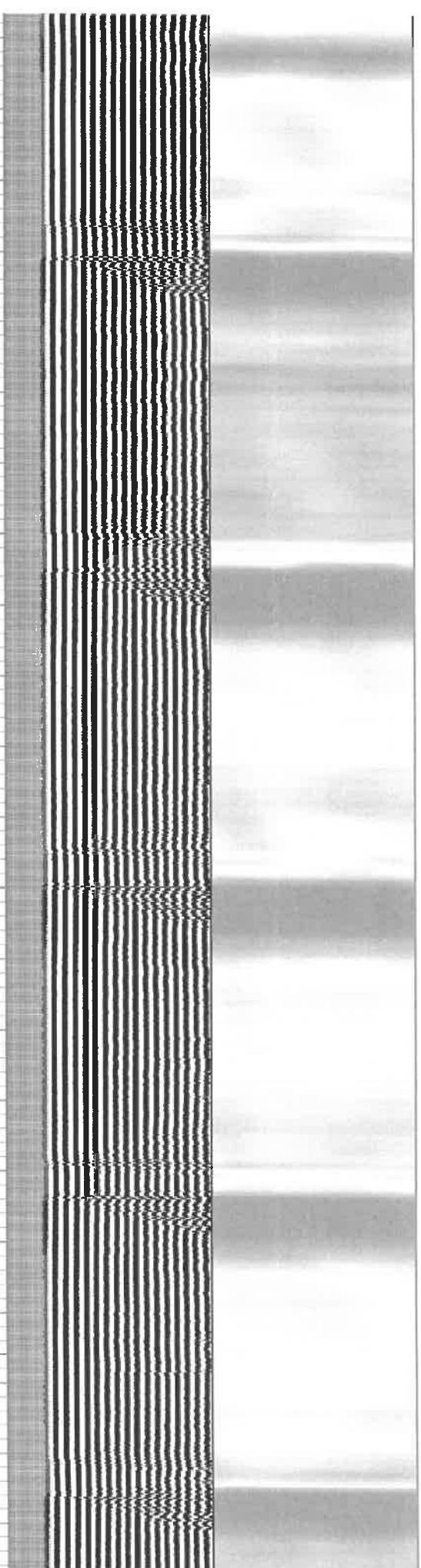


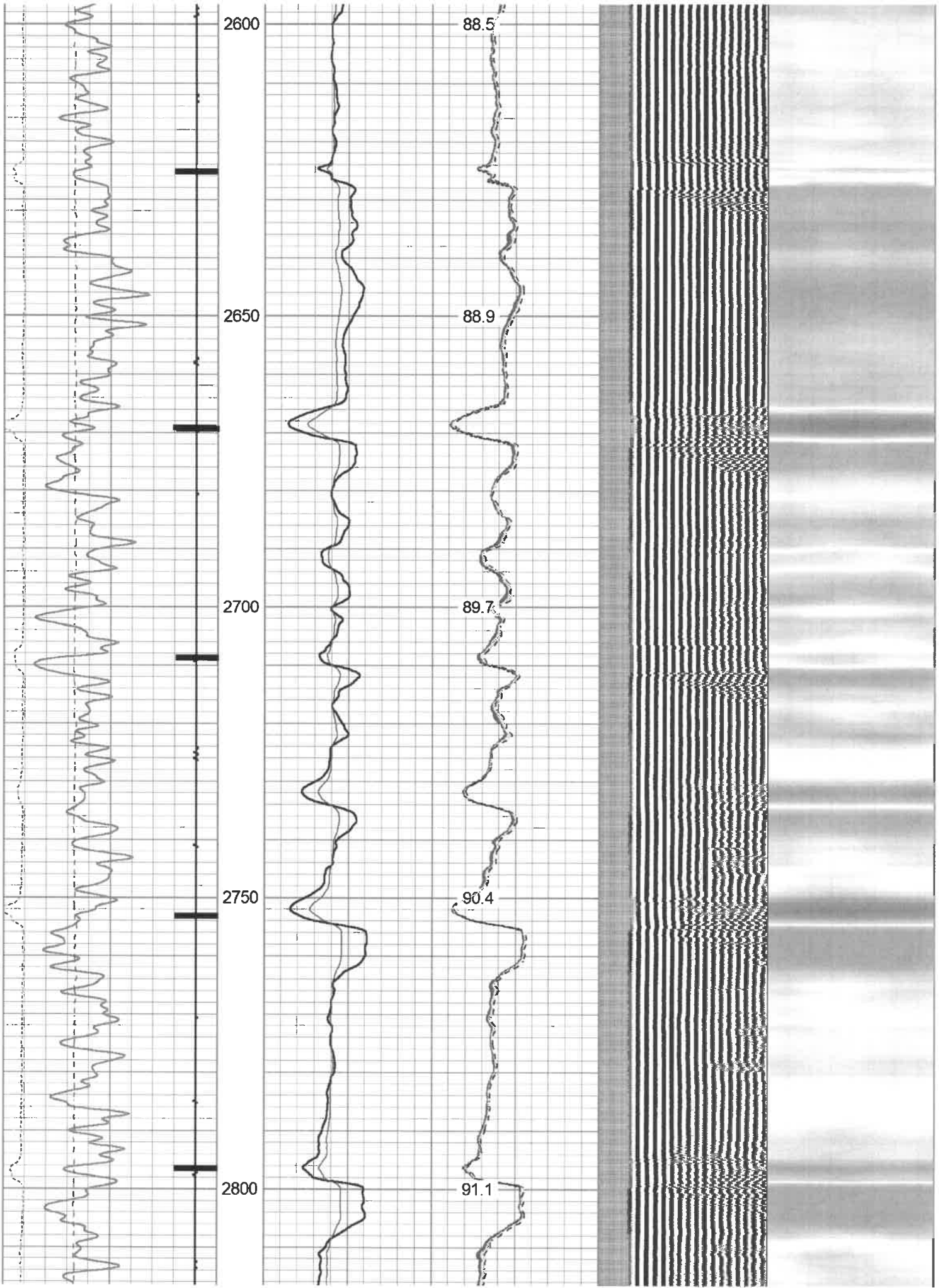
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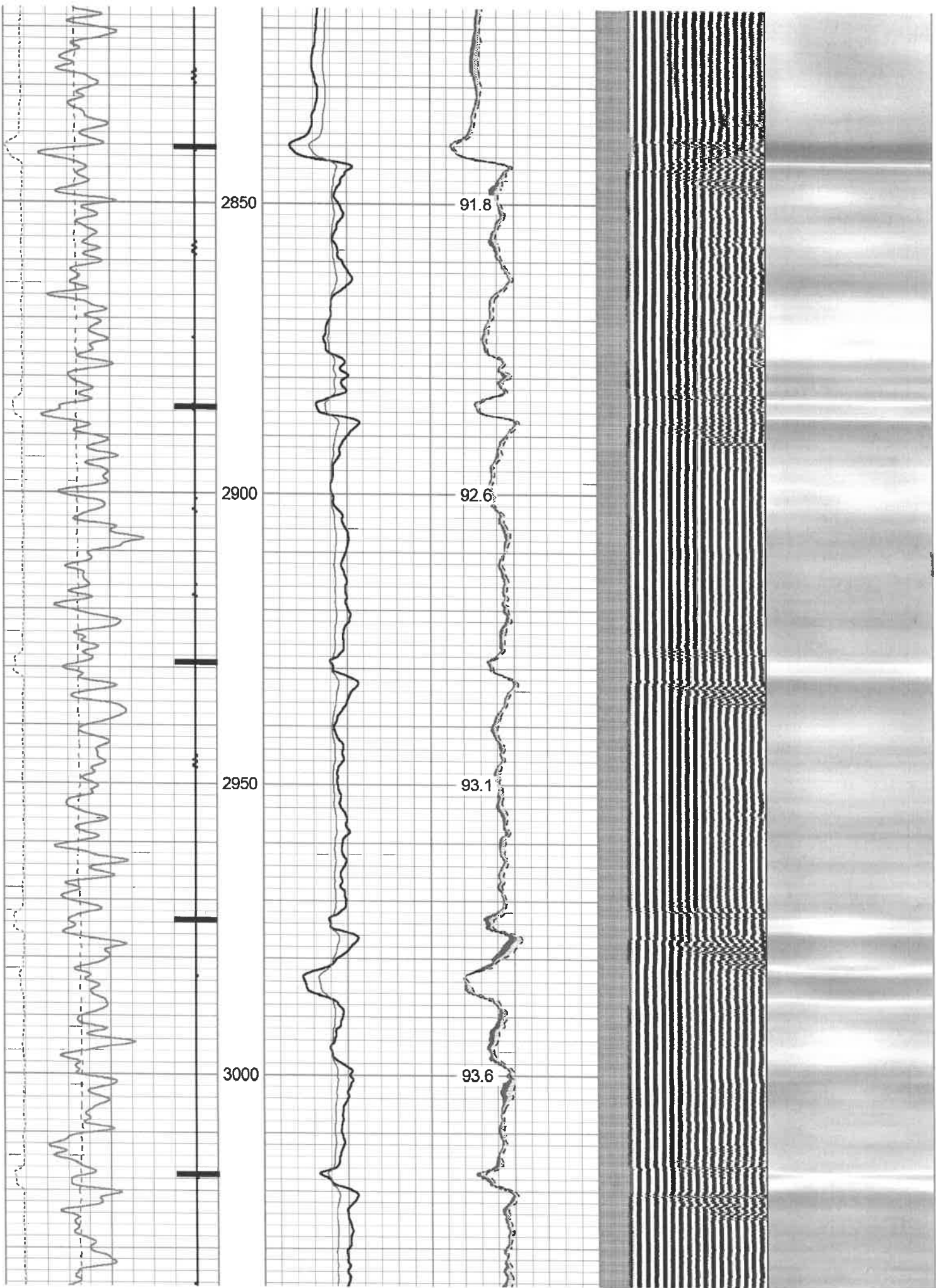
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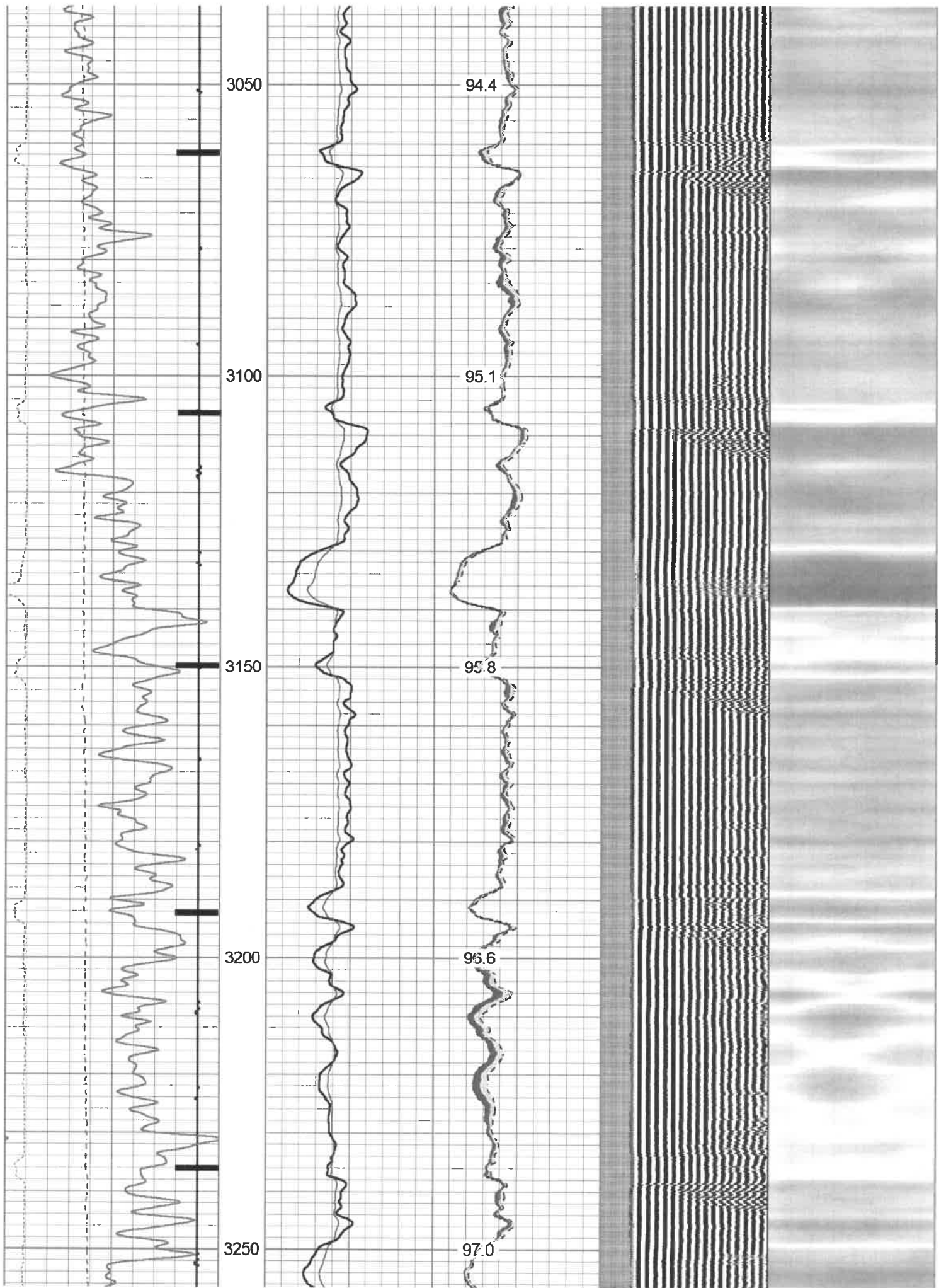
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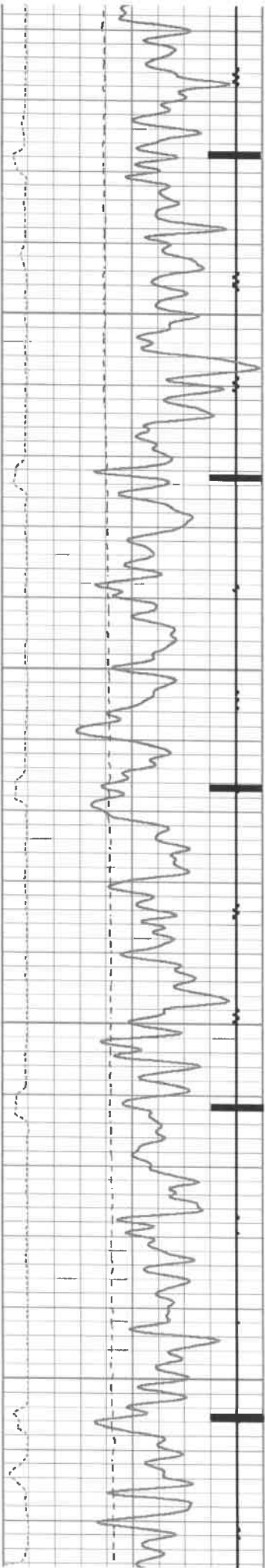
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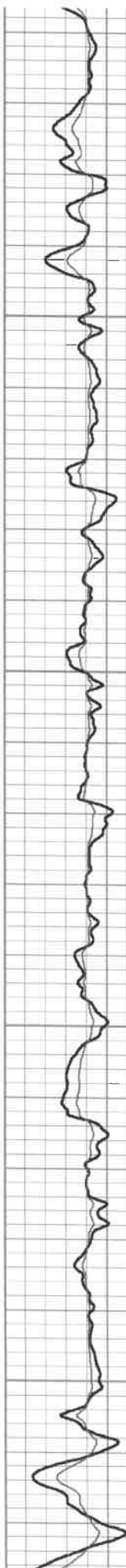


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3350

3400

3450

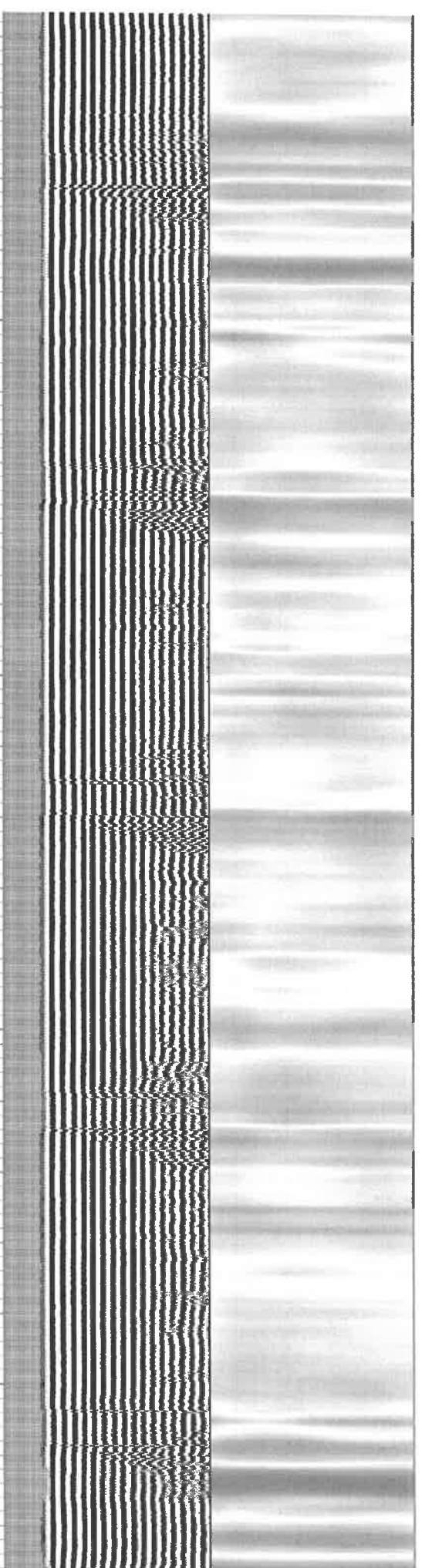
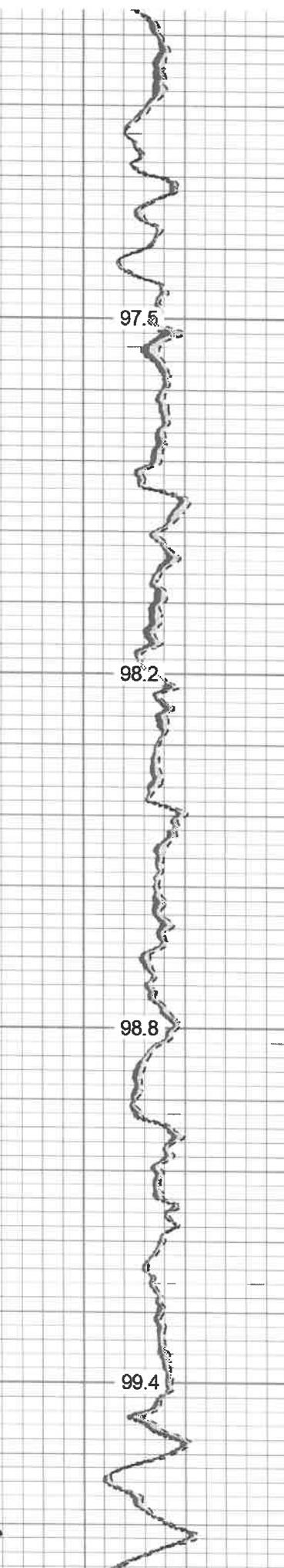


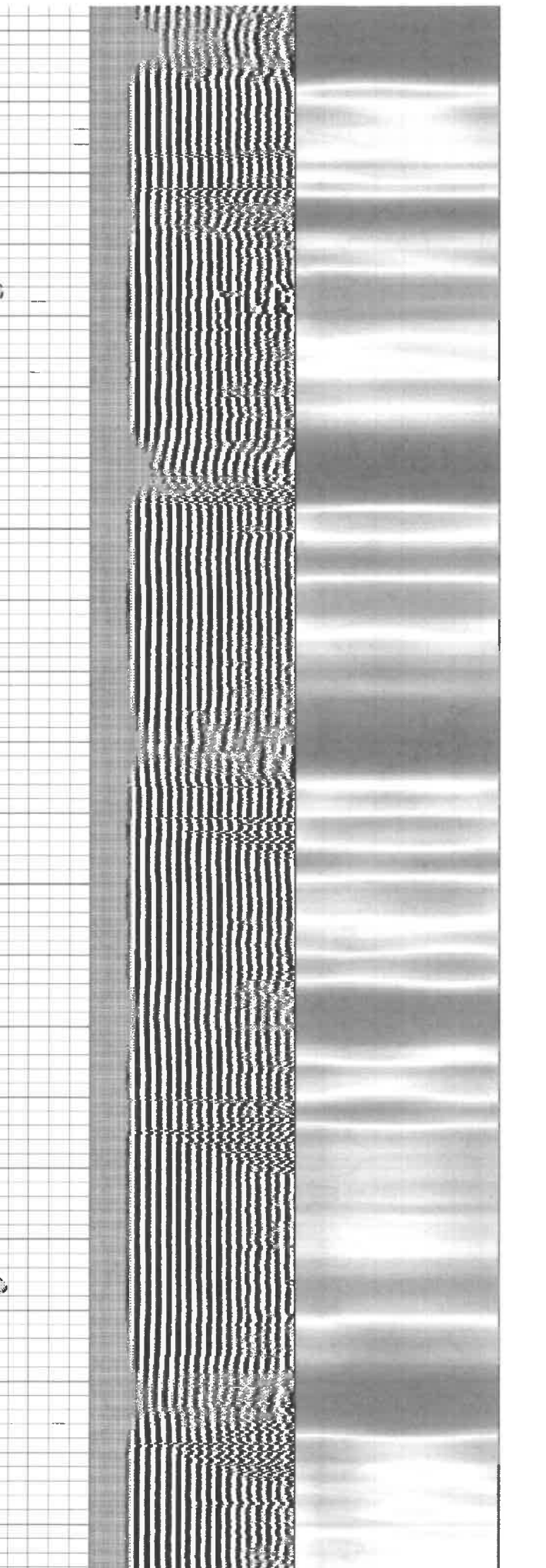
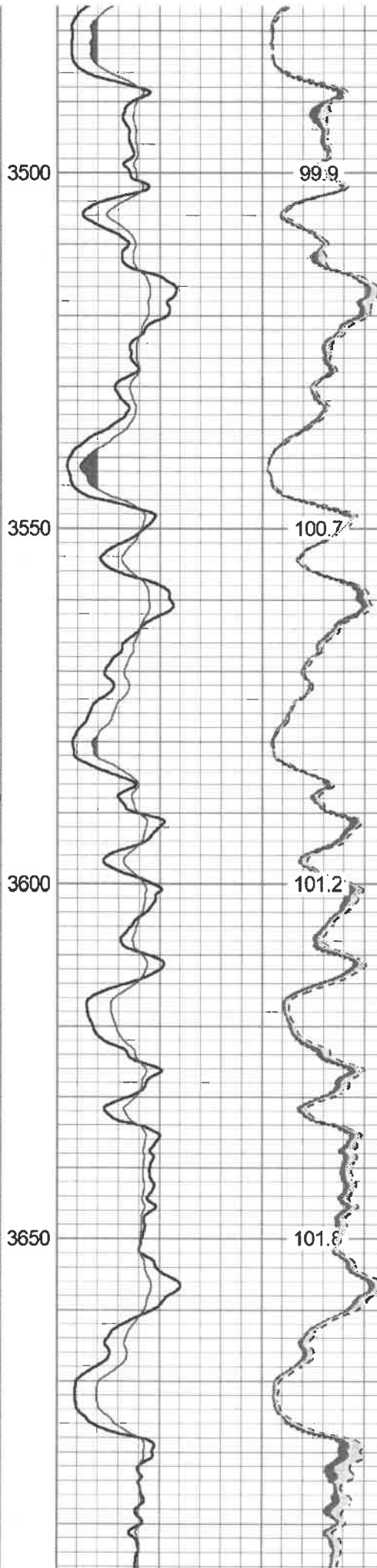
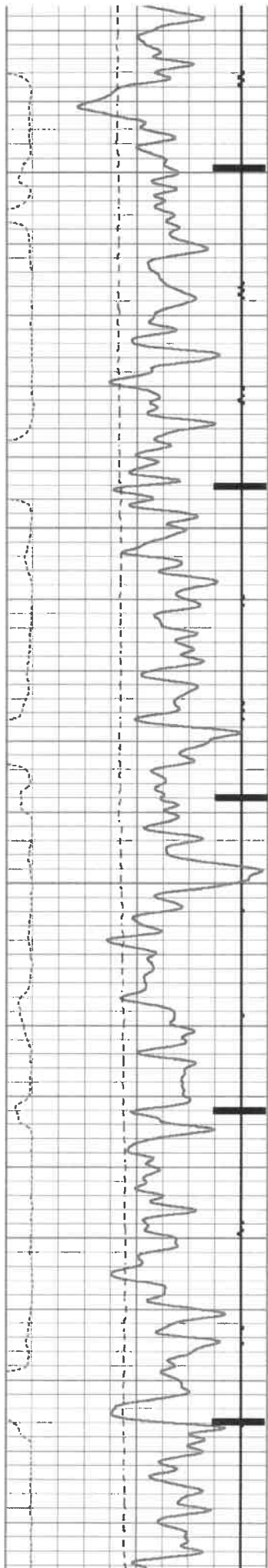
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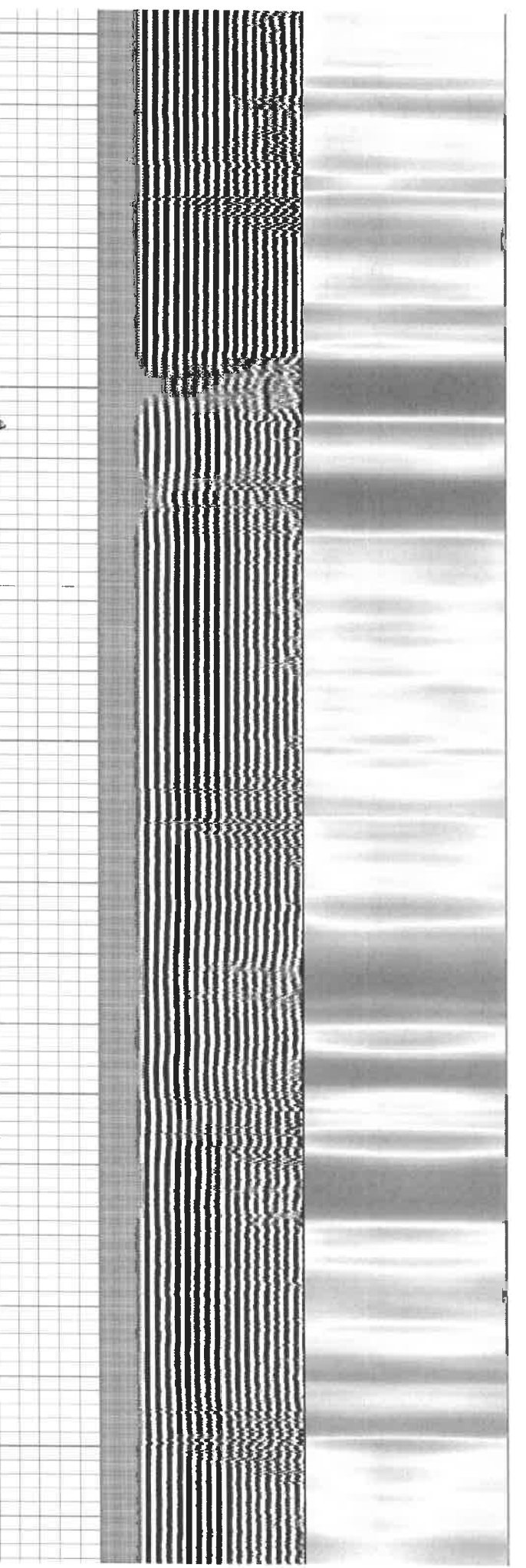
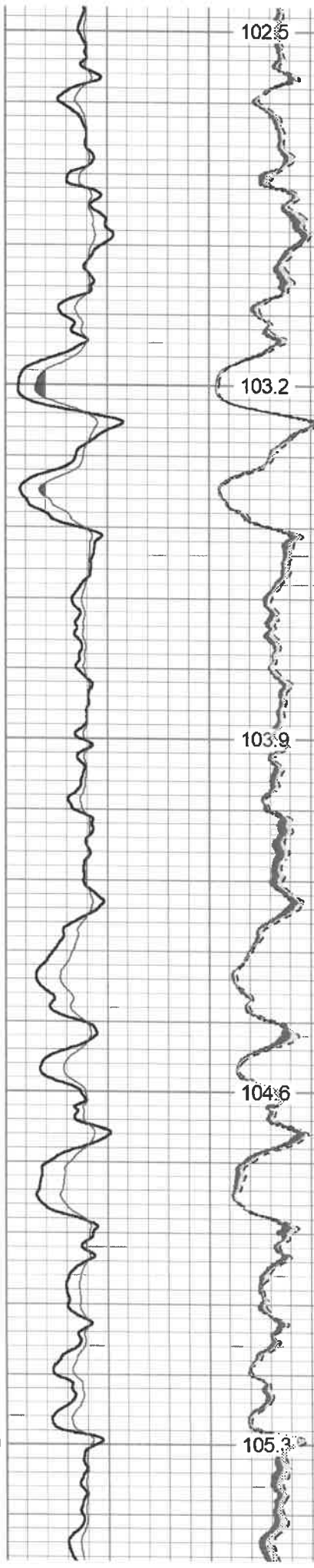
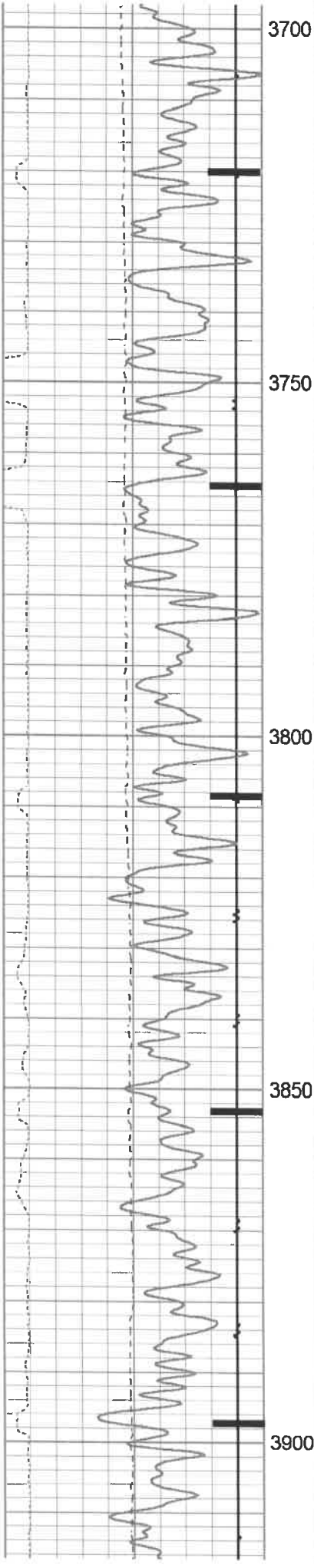
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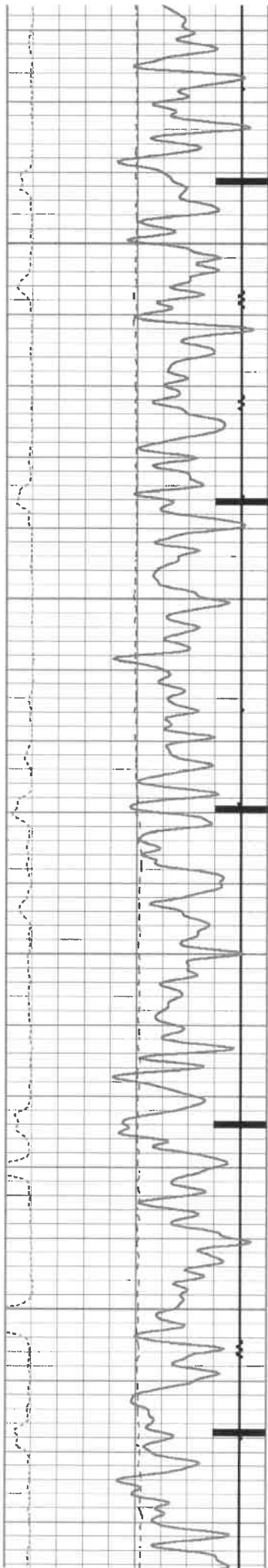
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99.4







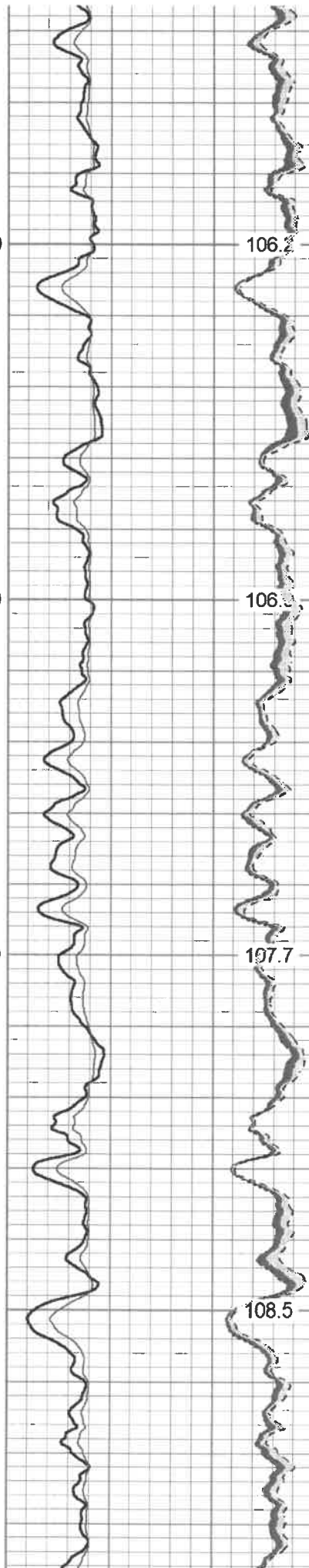


3950

4000

4050

4100

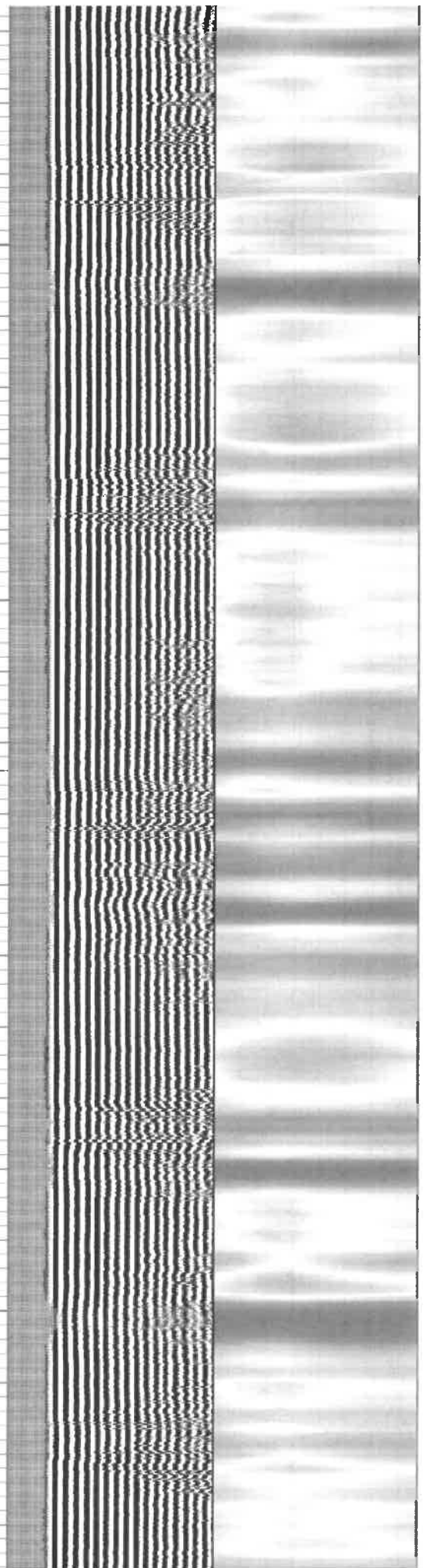


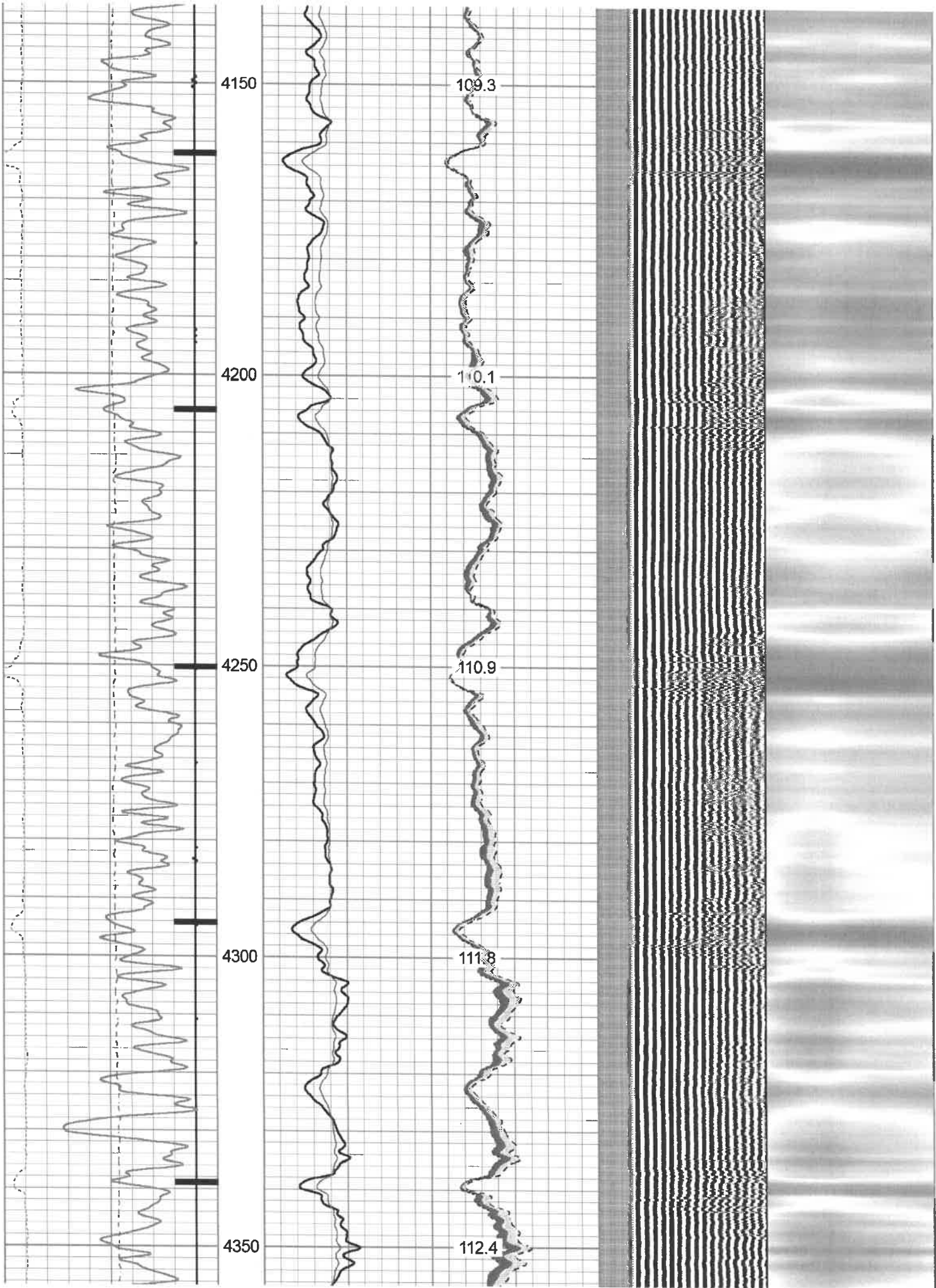
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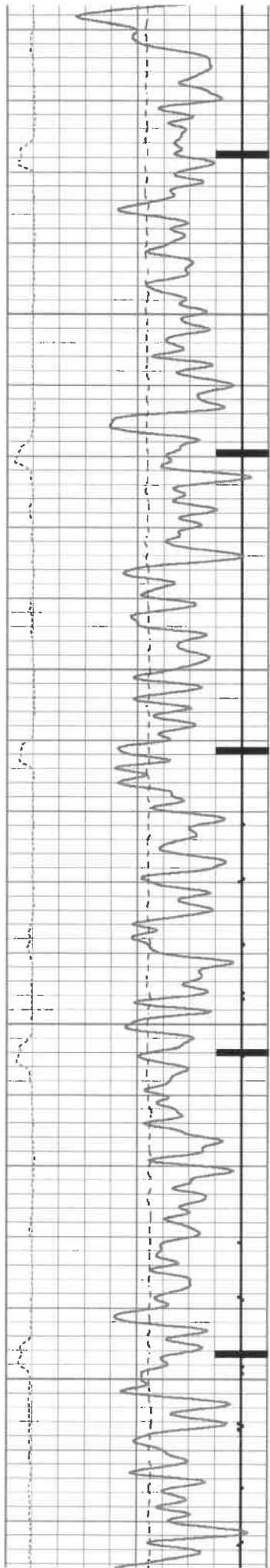
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107.7

108.5





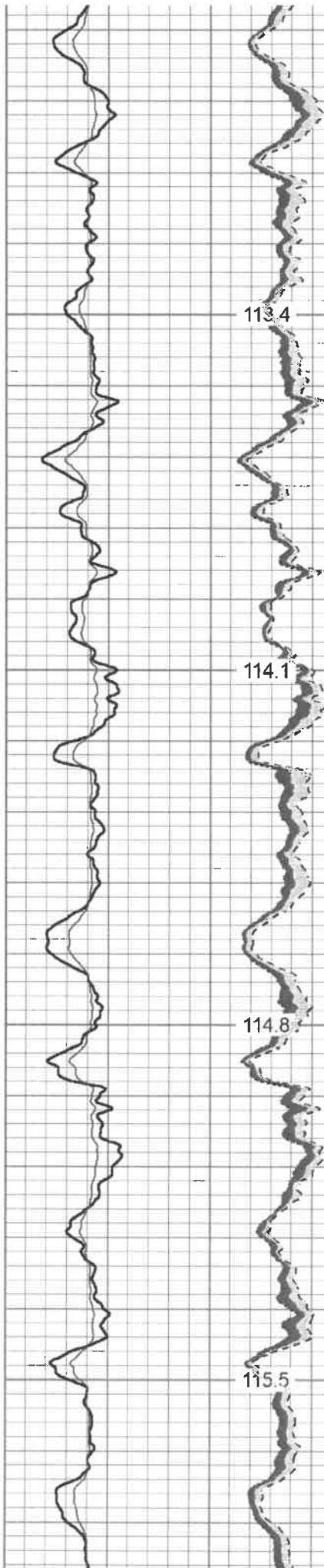


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4500

4550

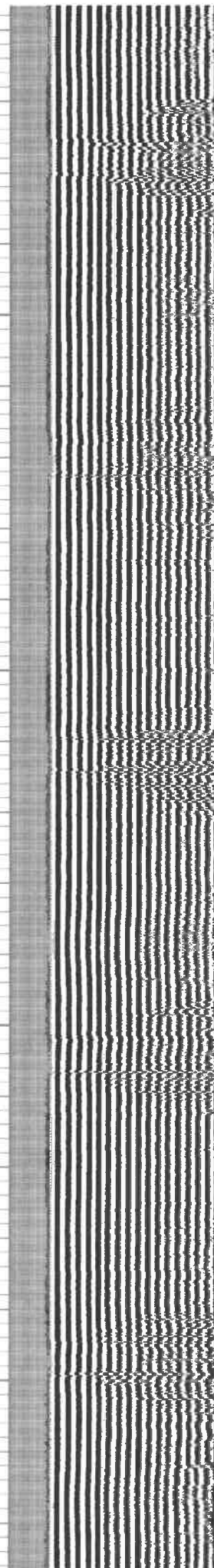


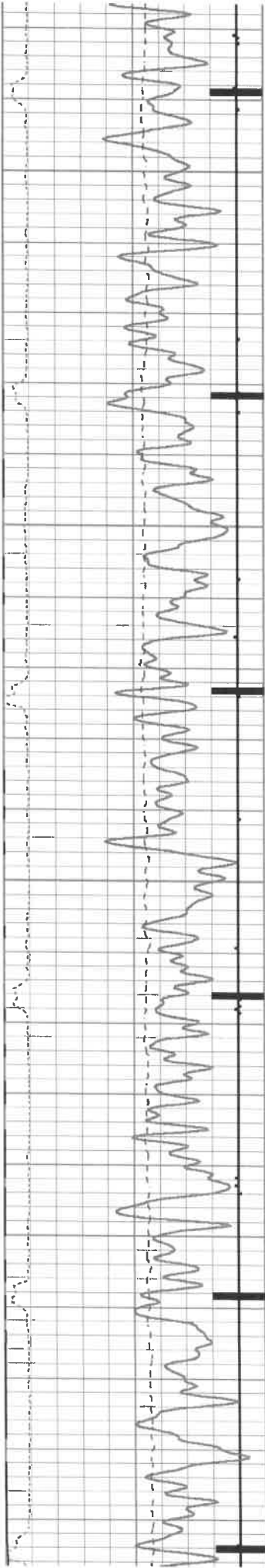
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114.1

114.8

115.5



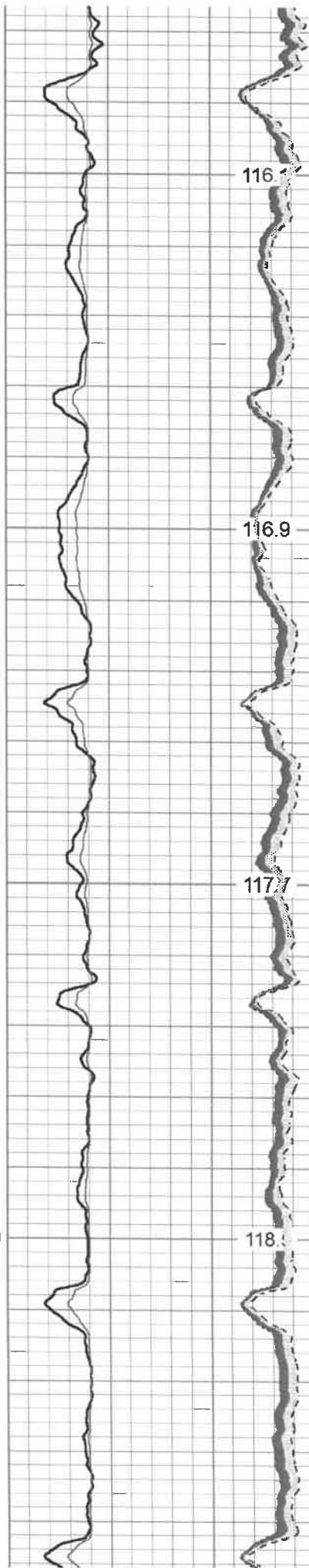


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4650

4700

4750

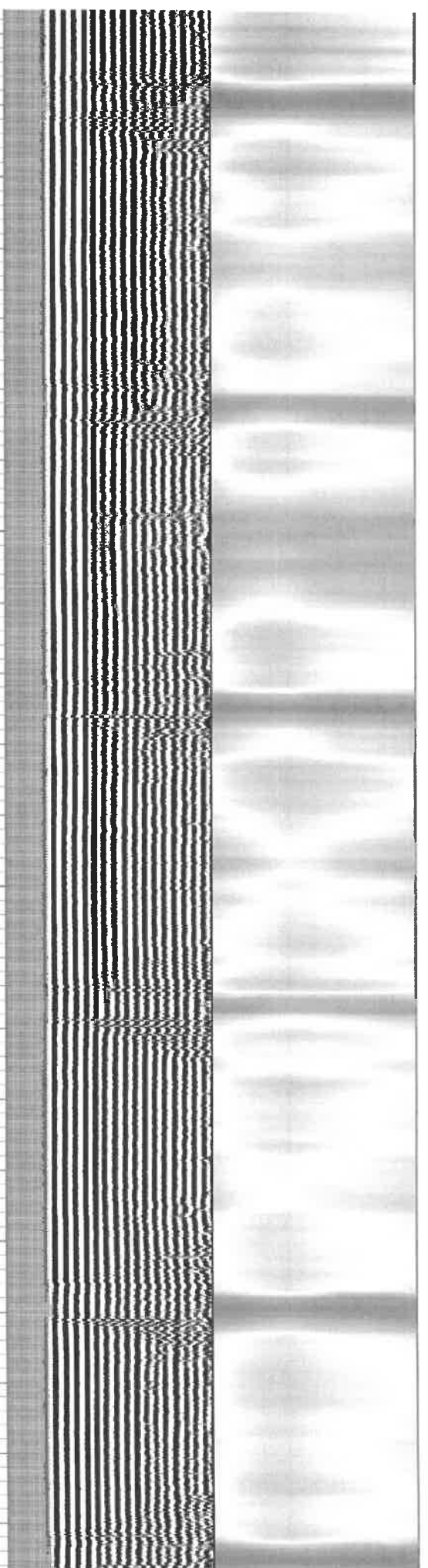


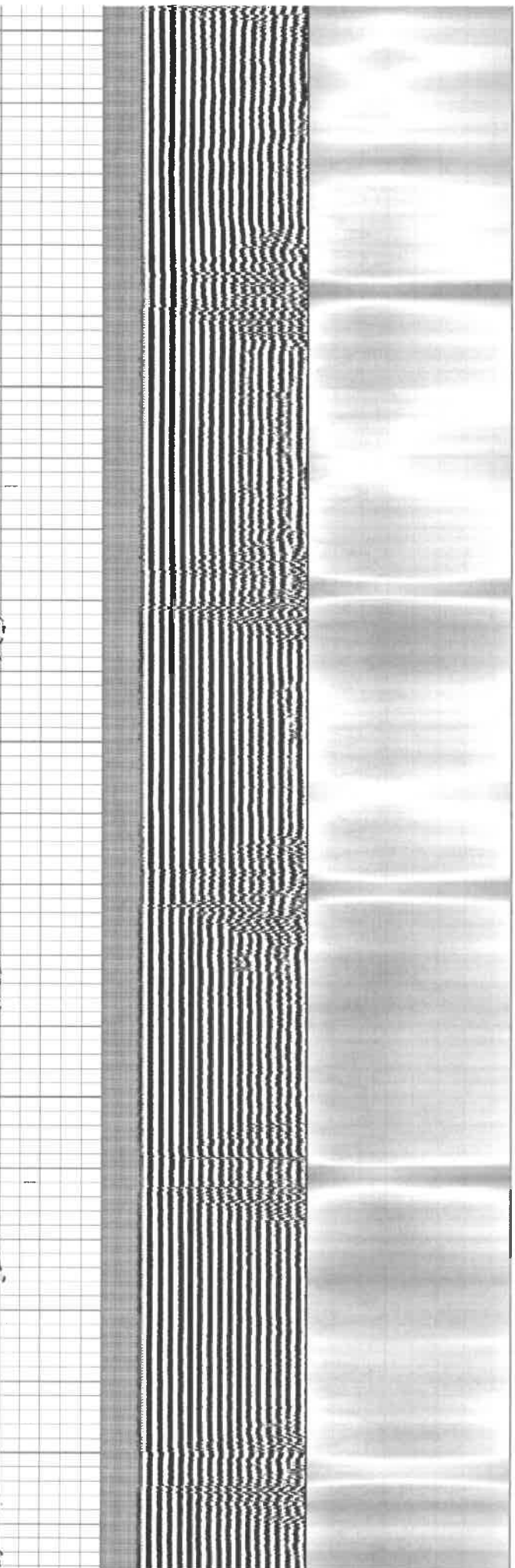
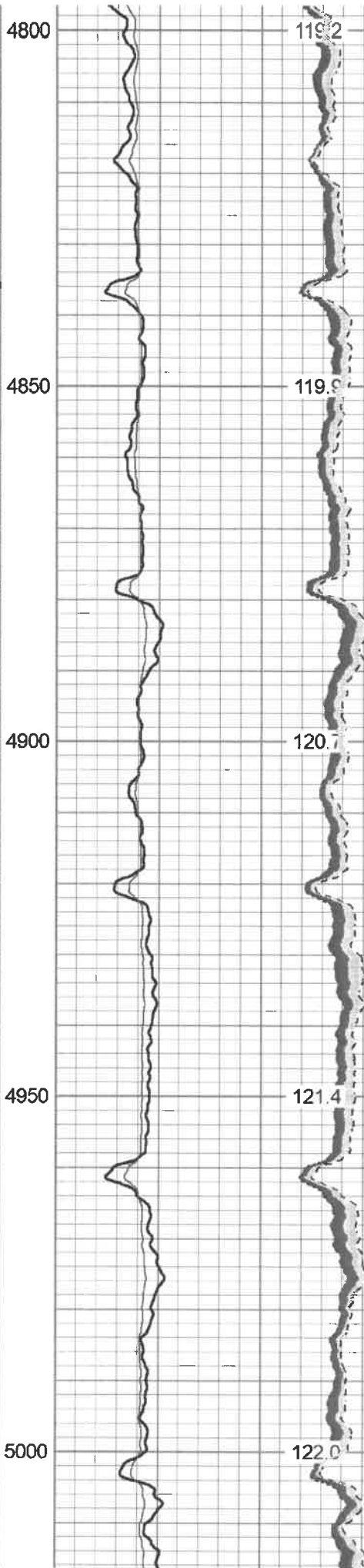
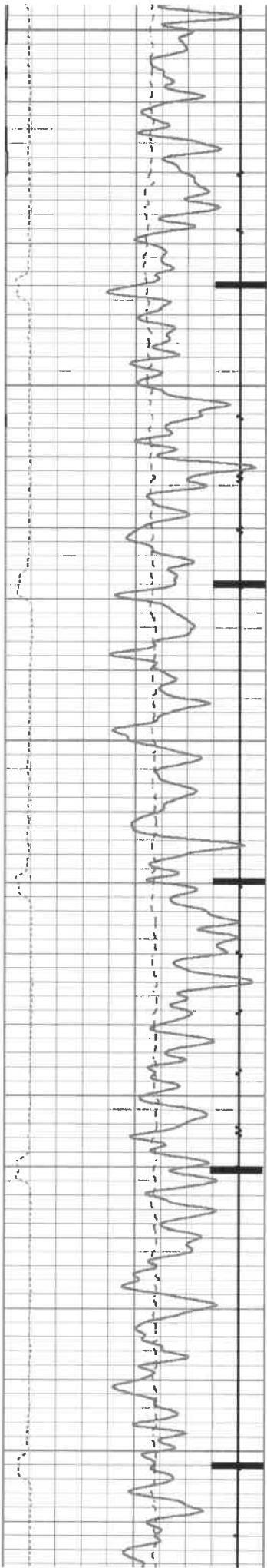
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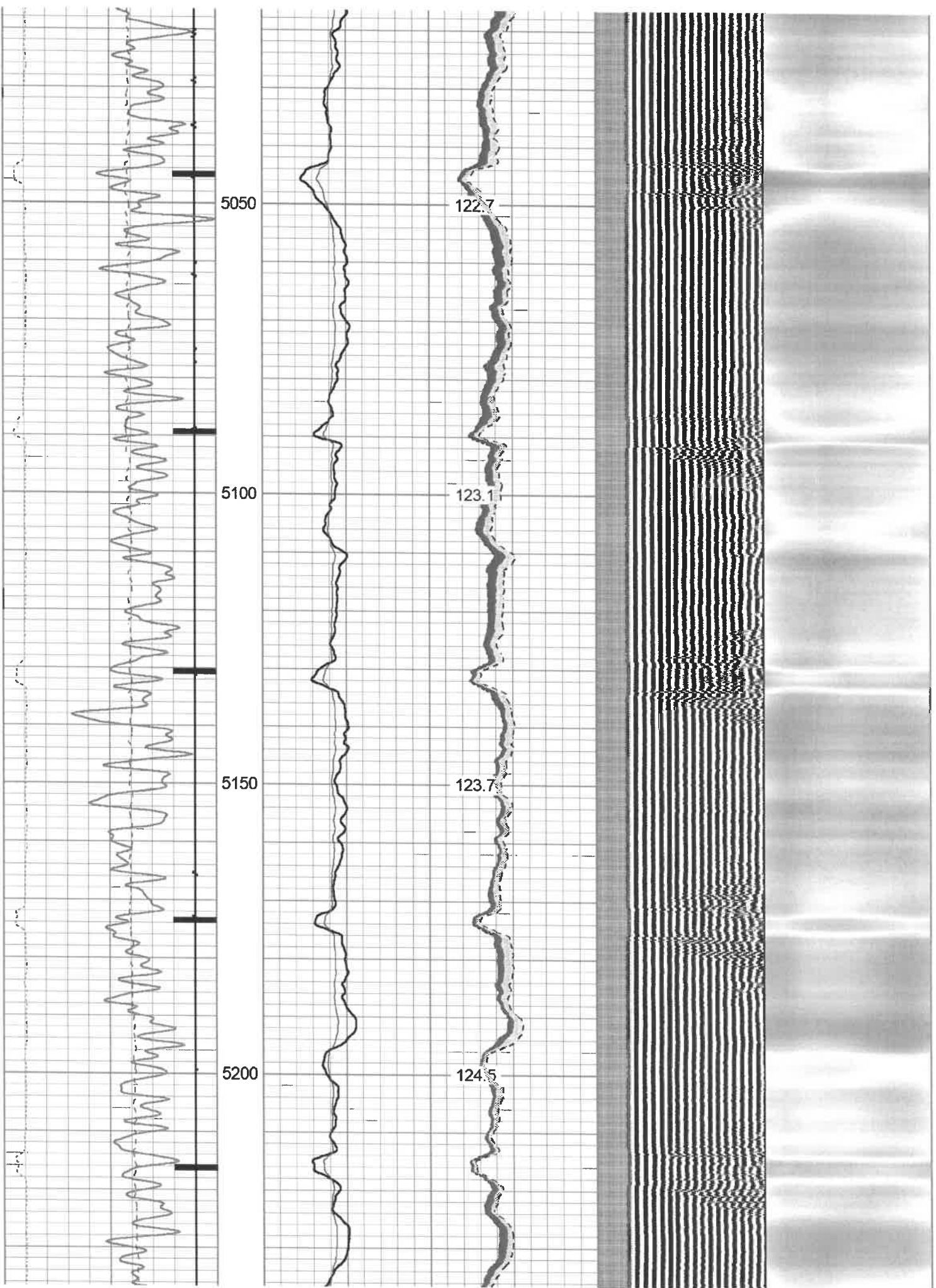
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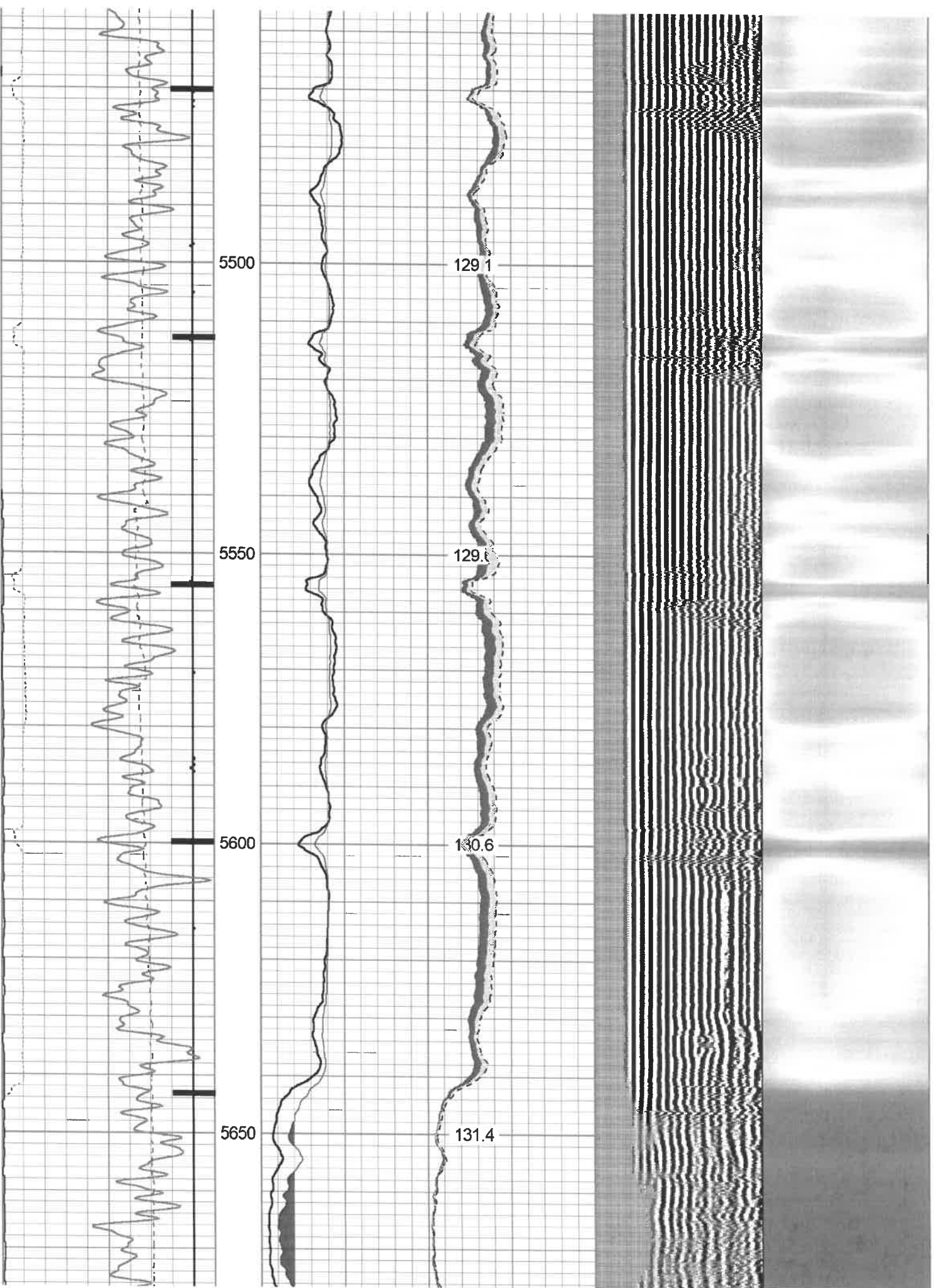
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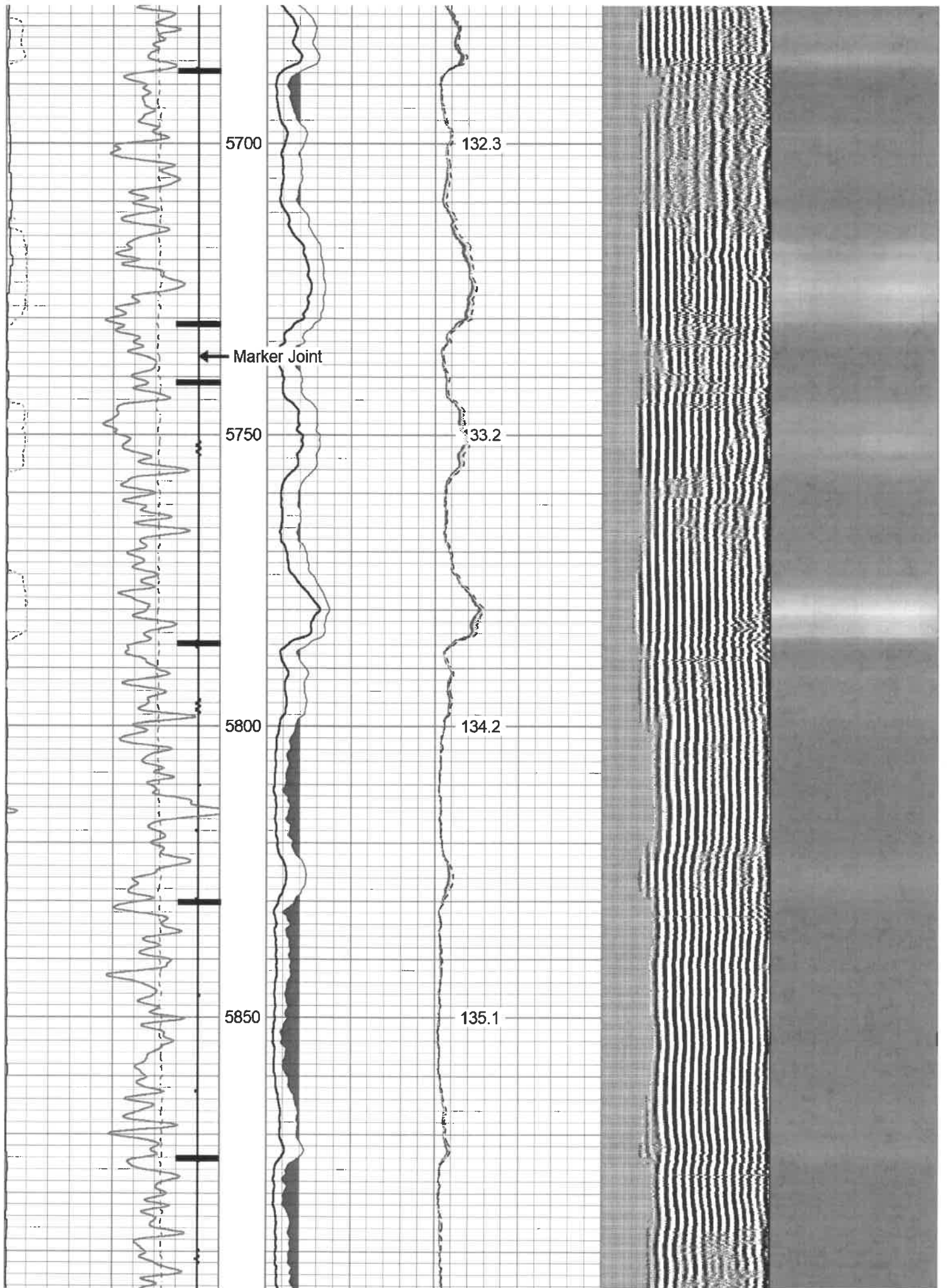


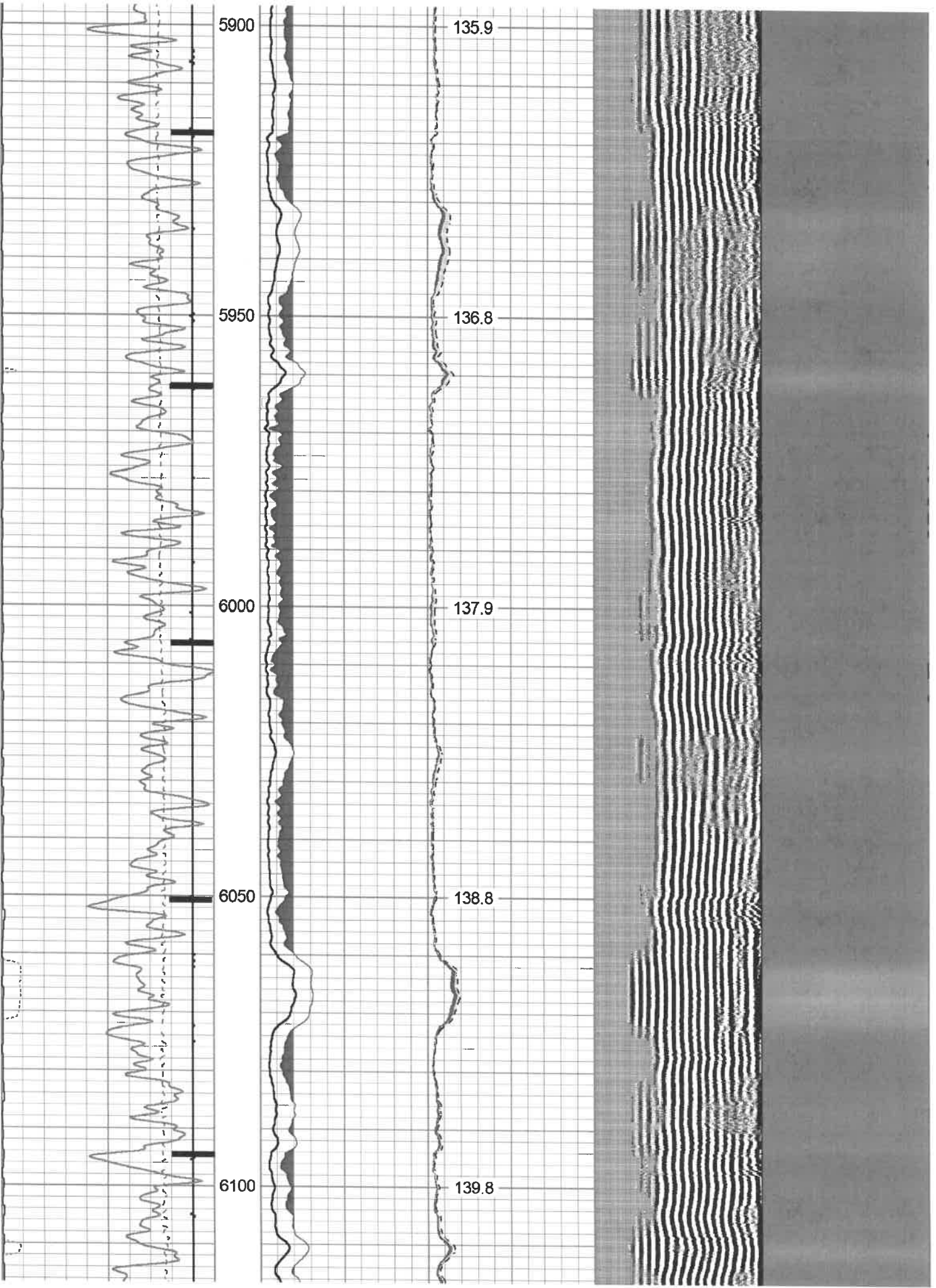


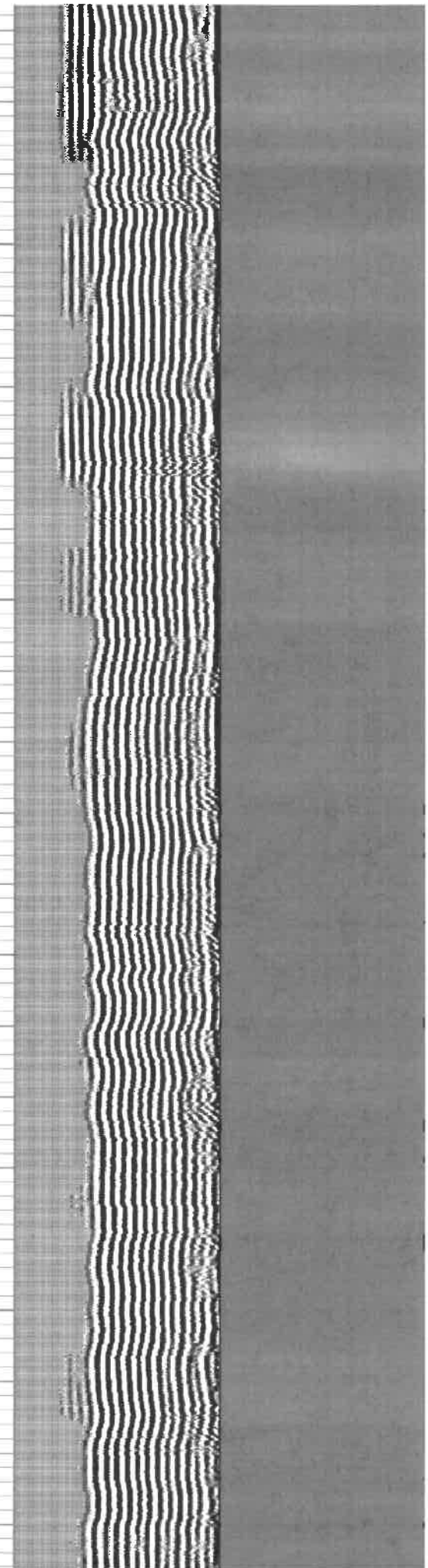
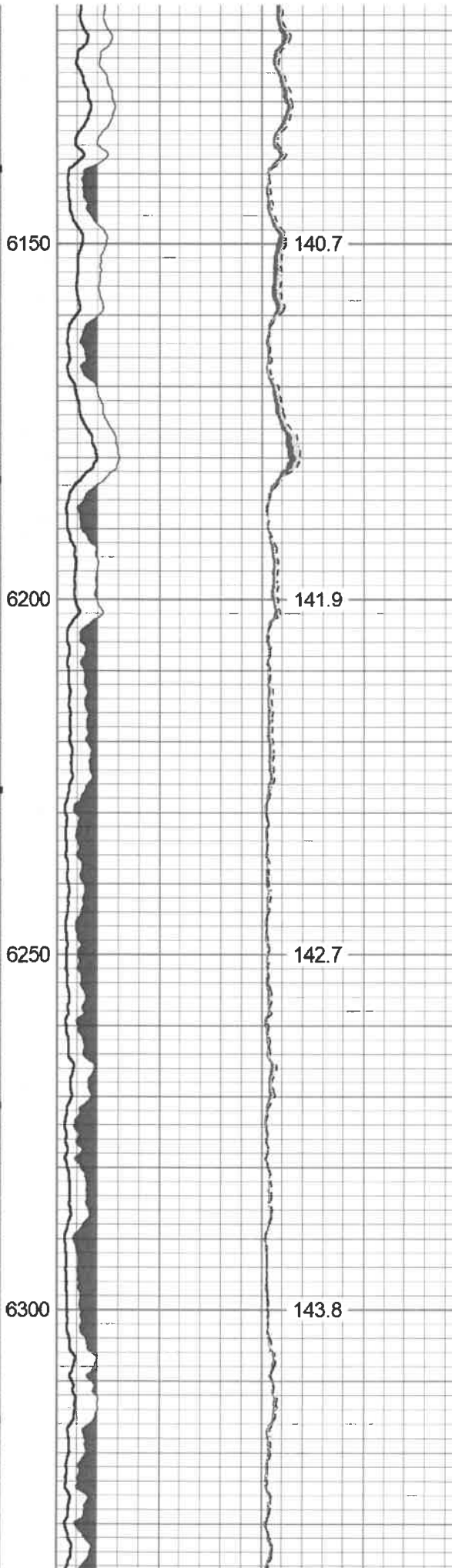
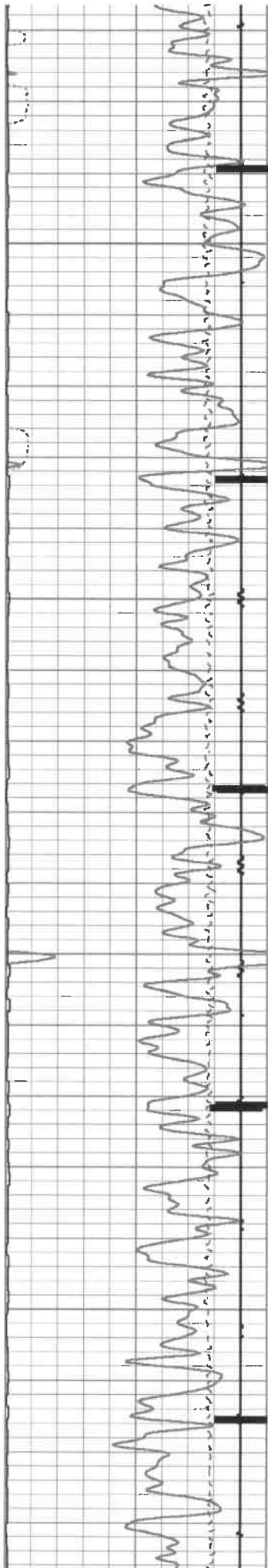


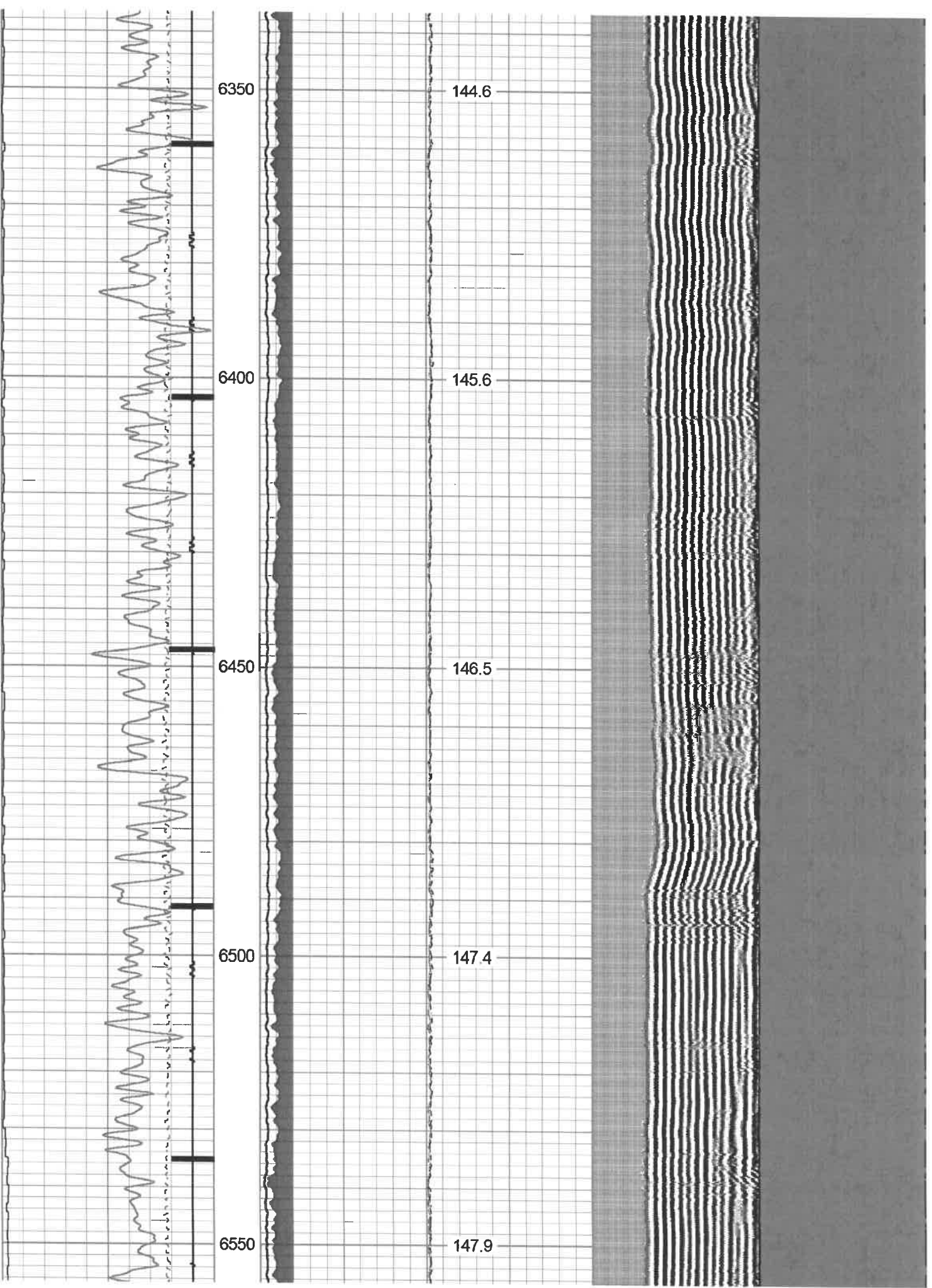


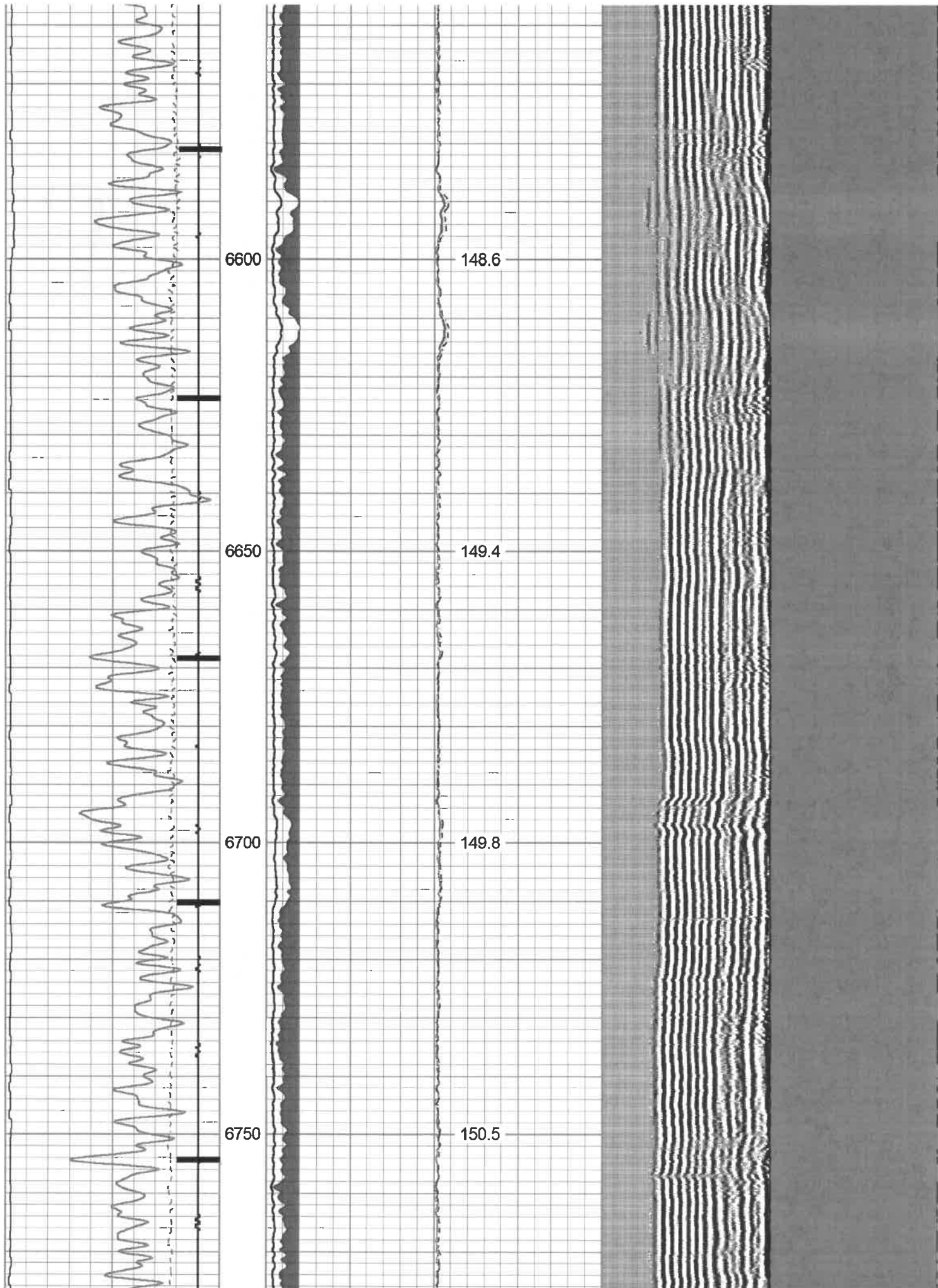


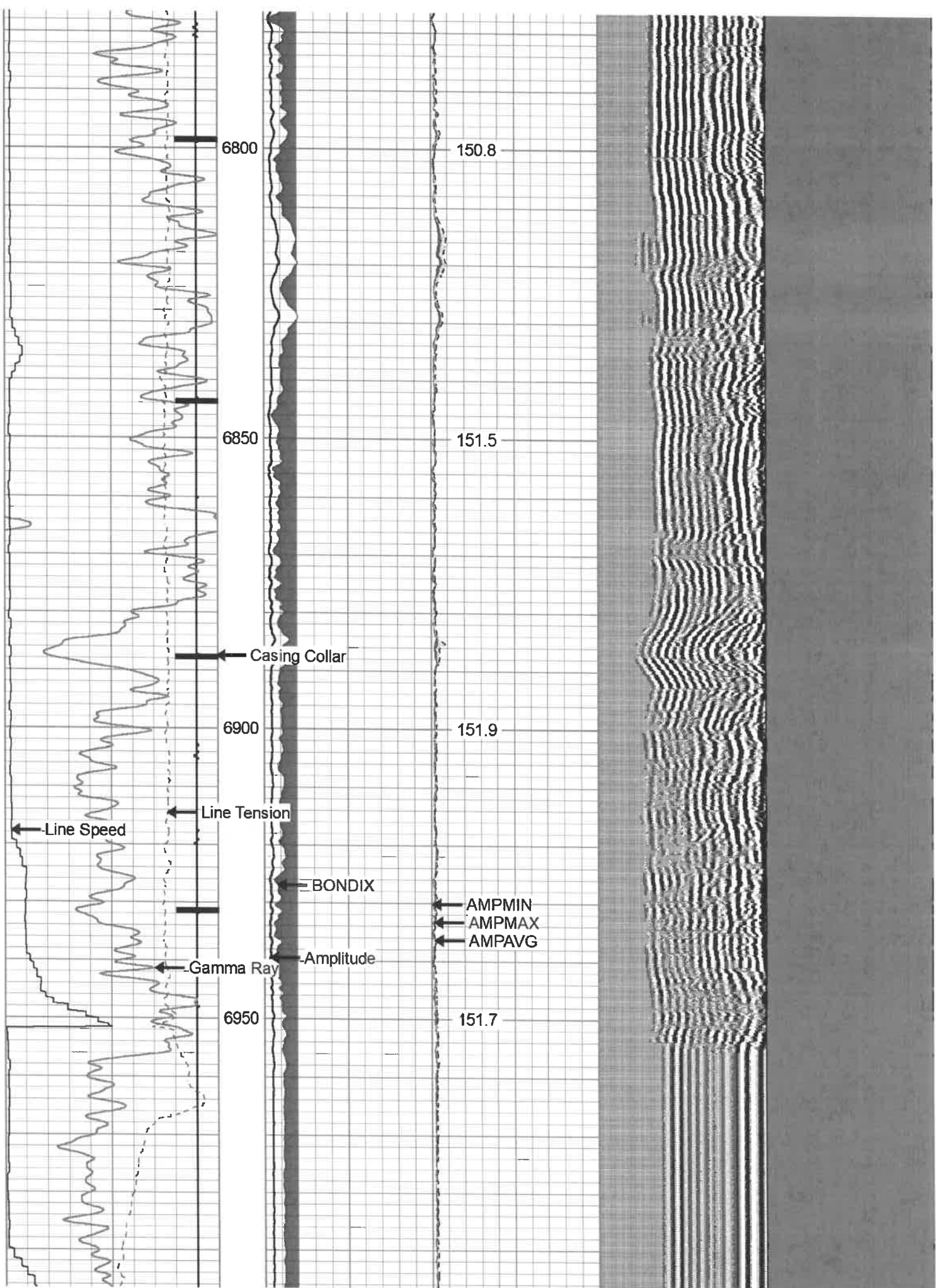


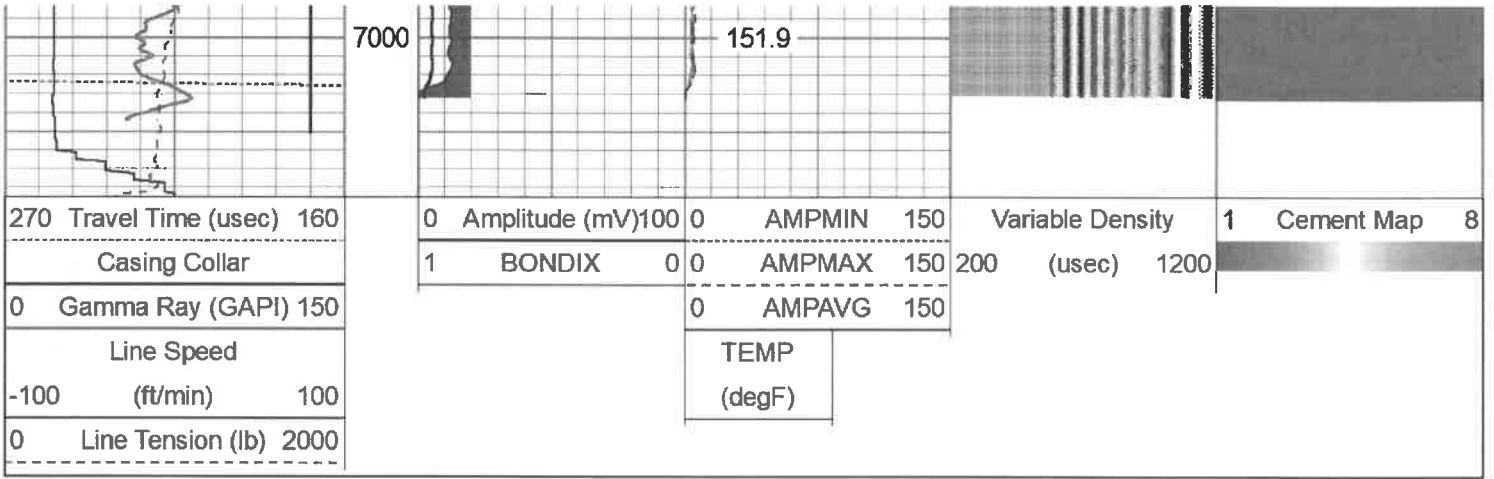






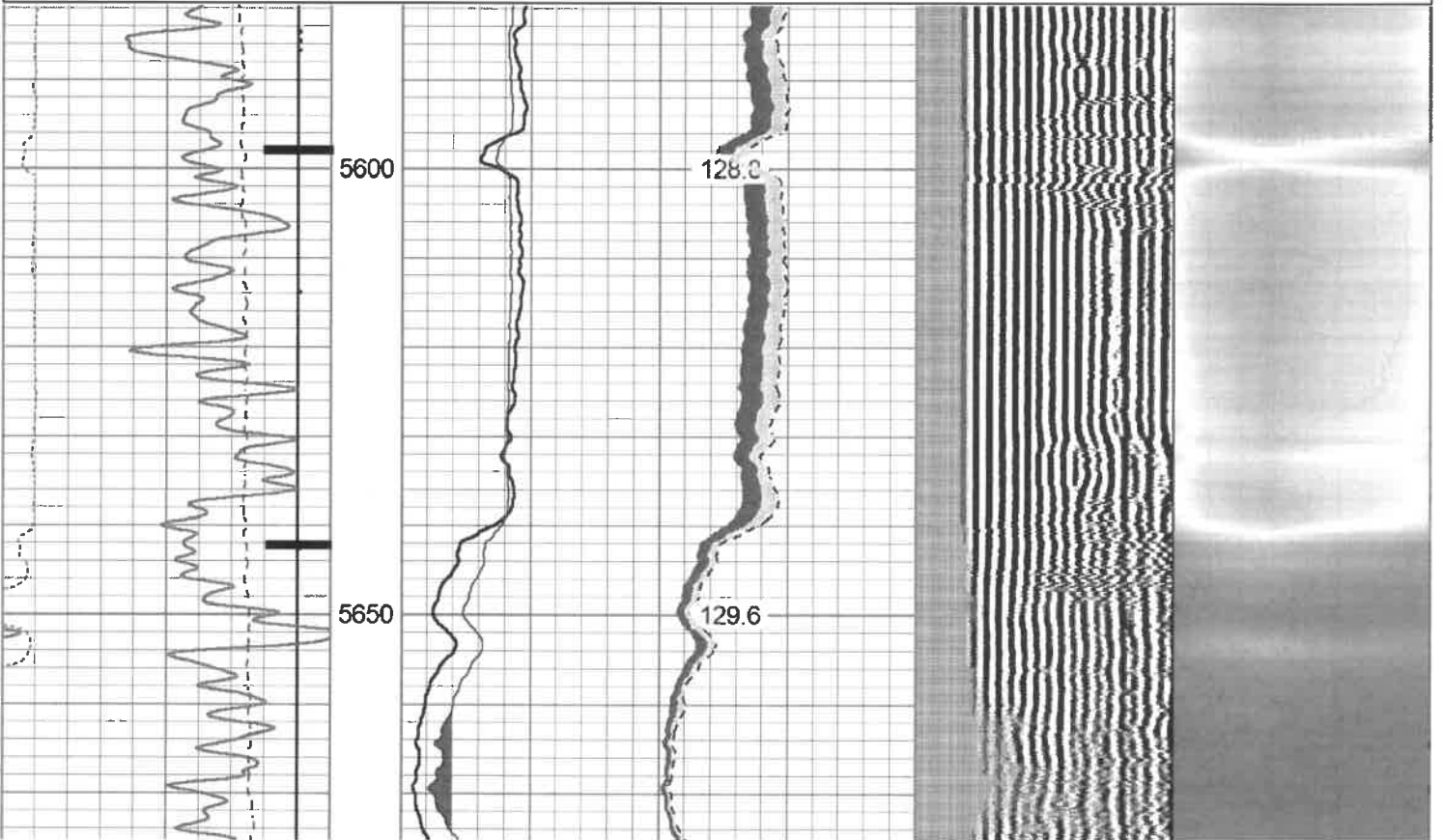
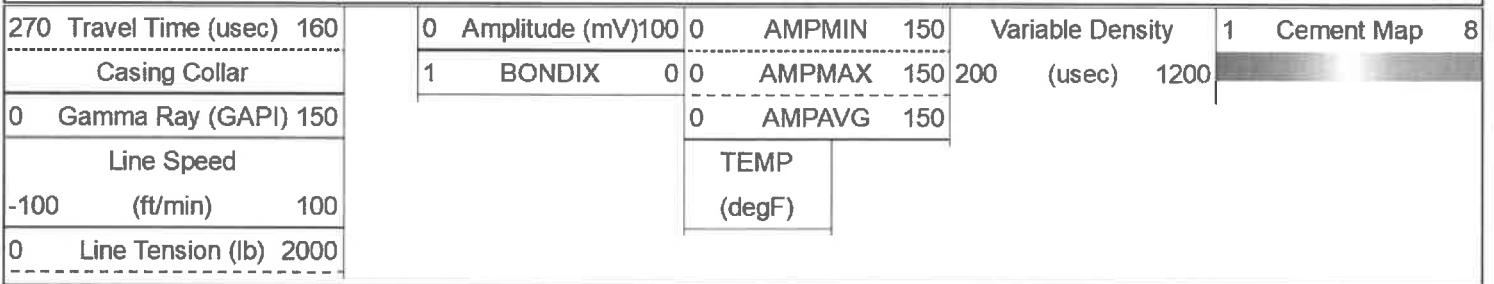


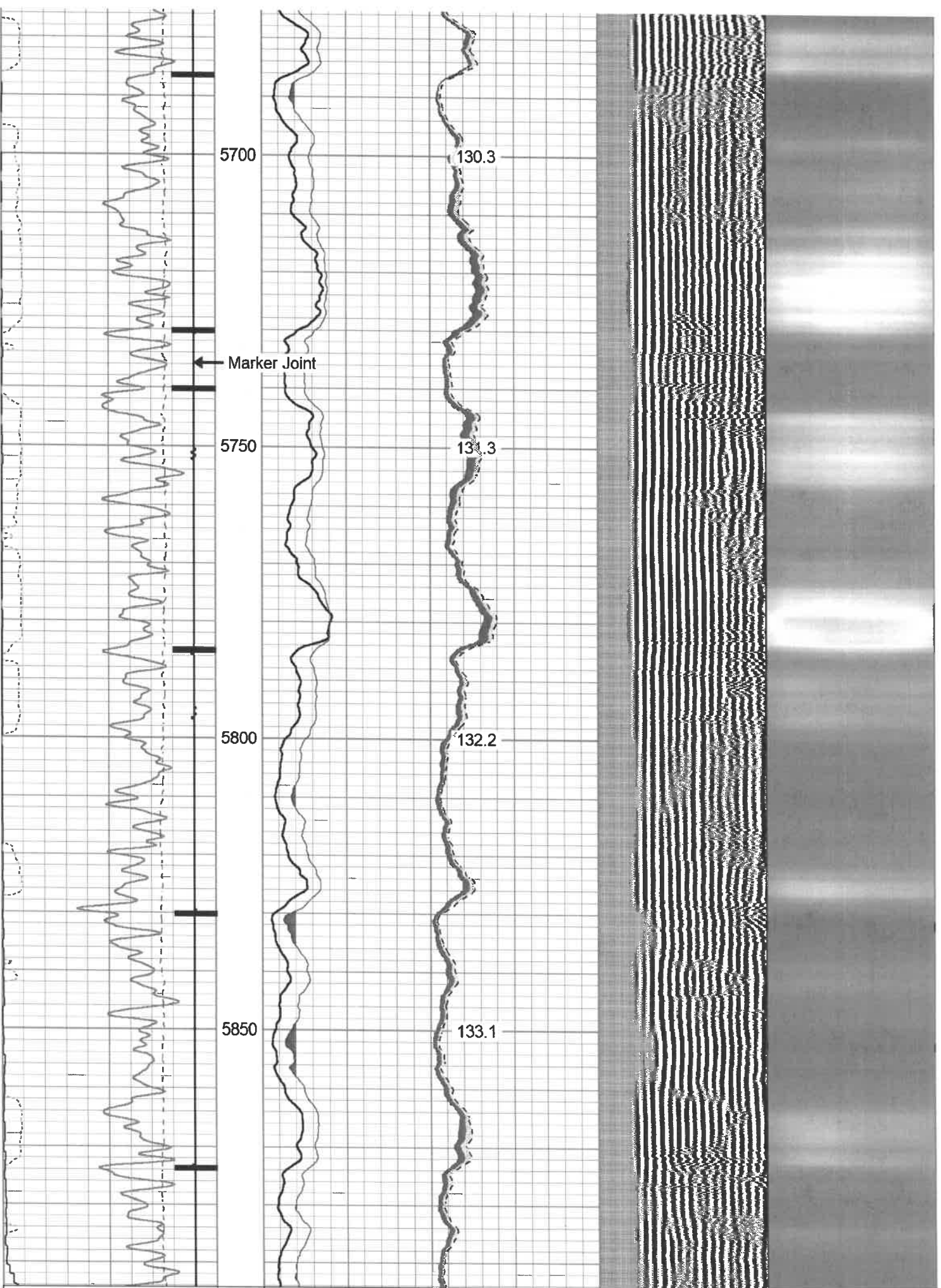





Repeat Pass 0 PSI

Database File antero_shepherd_gatrell_2h_rcbl_21_sep_21.db
 Dataset Pathname North_Canton/2h/run1/pass6
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Tue Sep 21 10:45:57 2021
 Charted by Depth in Feet scaled 1:240





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

Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_shepherd_gatrell_2h_rcbl_21_sep_21.db
 Dataset North_Canton/2h/run1/pass8.2/_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	0.361	20	71.9	2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
10.8	No	261	65	6935			

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_shepherd_gatrell_2h_rcbl_21_sep_21.db
 Dataset Pathname North_Canton/2h/run1/pass8.2
 Dataset Creation Tue Sep 21 12:38:54 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: 120.983 ft

Master Calibration, performed (Derived):

Raw (v)		Calibrated (mv)		Results	
Zero	Cal	Zero	Cal	Gain	Offset

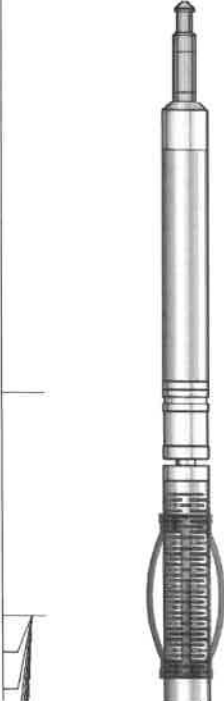
3'	0.000	1.097	2.200	71.921	63.578	2.200
CAL	0.554	1.222				
5'	0.000	1.039	2.200	71.921	67.074	2.200
SUM						
S1	0.000	1.136	0.000	100.000	87.999	-0.000
S2	0.000	1.113	0.000	100.000	89.834	-0.000
S3	0.000	1.114	0.000	100.000	89.742	-0.000
S4	0.000	1.101	0.000	100.000	90.806	-0.000
S5	0.000	1.100	0.000	100.000	90.940	-0.000
S6	0.000	1.128	0.000	100.000	88.644	-0.000
S7	0.000	1.117	0.000	100.000	89.534	-0.000
S8	0.000	1.132	0.000	100.000	88.376	-0.000

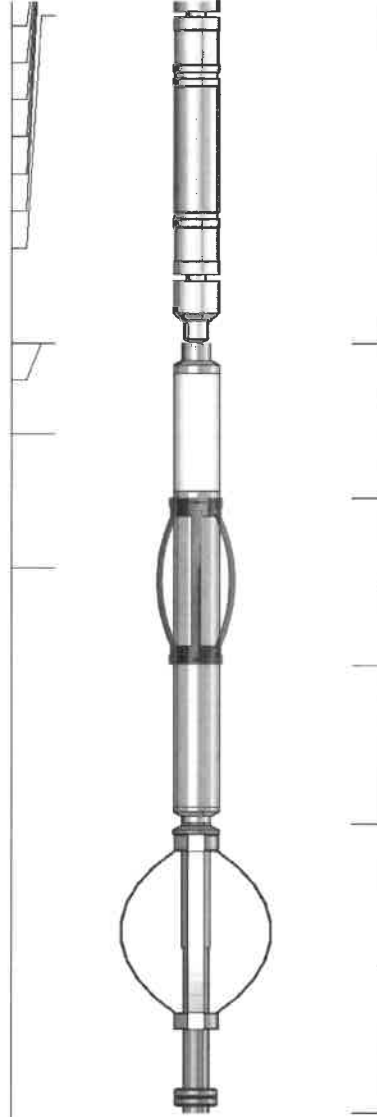
Internal Reference Calibration, performed Wed Nov 23 14:17:52 2011:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.554	1.222	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)
Temp	14.14		CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00
WVFS8	11.91		RBT-Probe275T (2.75") Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	11.91		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
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_shepherd_gatrell_2h_rcbl_21_sep_21.db: North_Canton/2h/run1/pass8.2
 Total length: 18.07 ft
 Total weight: 178.00 lb
 O.D.: 4.88 in



Company Antero Resources
 Well Shepherd Gatrell 2H
 Field North Canton
 County Tyler
 State WV