



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

Company	Antero Resources	Location:	API #: 47-095-02737	Other Services
Well	Shepherd Gatrell 1H	SEC	Lat: 39.391454	Elevation
Field	North Canton	TWP	Long: -80.765510	
County	Tyler	RGE	Ground Level	K.B.
State	WV		Log Measured From	D.F.
			Drilling Measured From	G.L.

Date	21-Sep-2021			
Run Number	One			
Depth Driller	17,368'			
Depth Logger	6,935'			
Bottom Logged Interval	6,980'			
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	3,153'			
Time Well Ready	12:30			
Time Logger on Bottom	13:00			
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	Wgt/Ft	Top	Bottom
Surface String				
Prot. String	5.5"	20#	Surface	17,368'
Production String				
Liner				
Marker Joint			5,558'	5,568'

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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 5,558' - 5,568'
Depth Correction +11'**

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

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

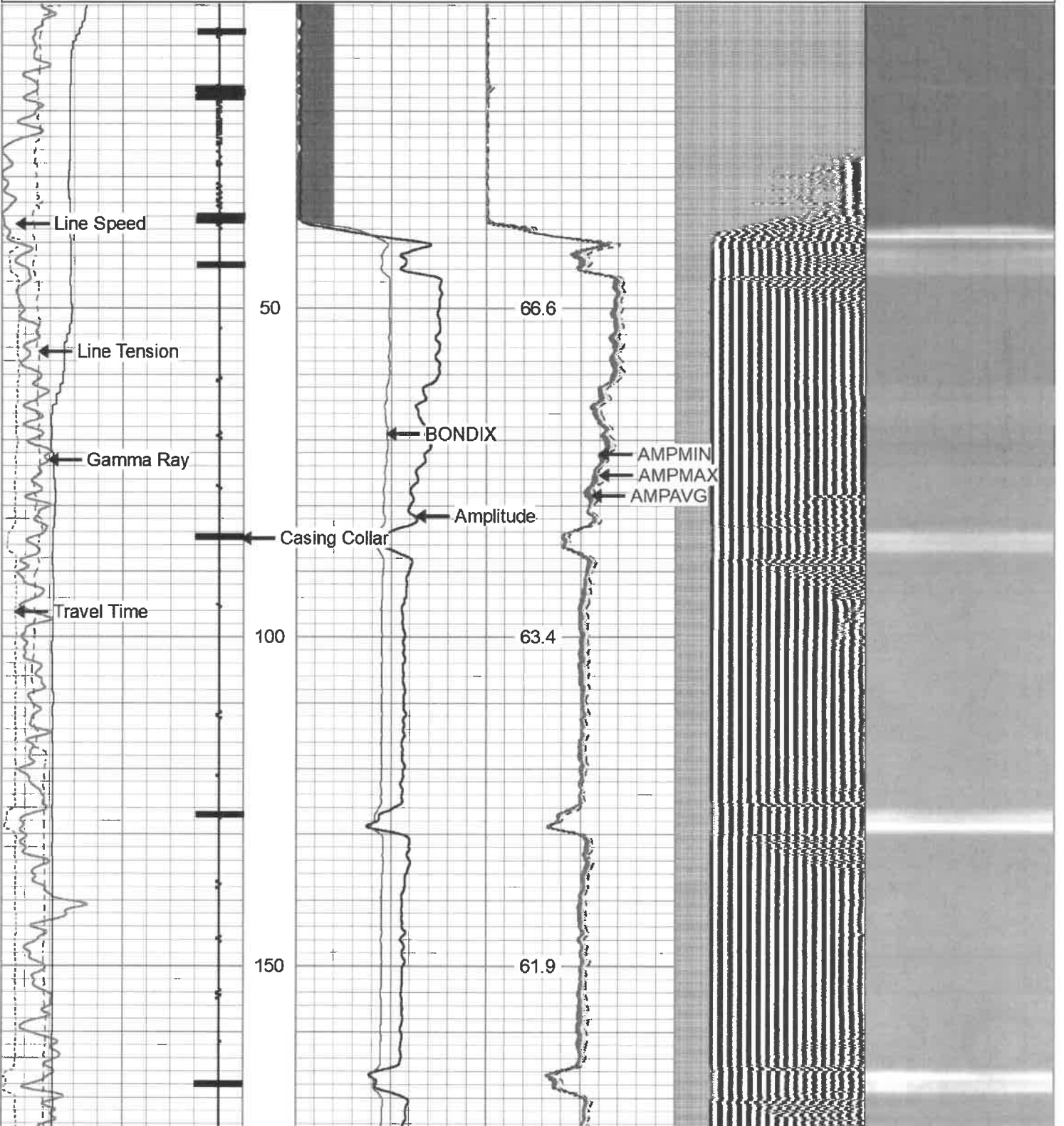


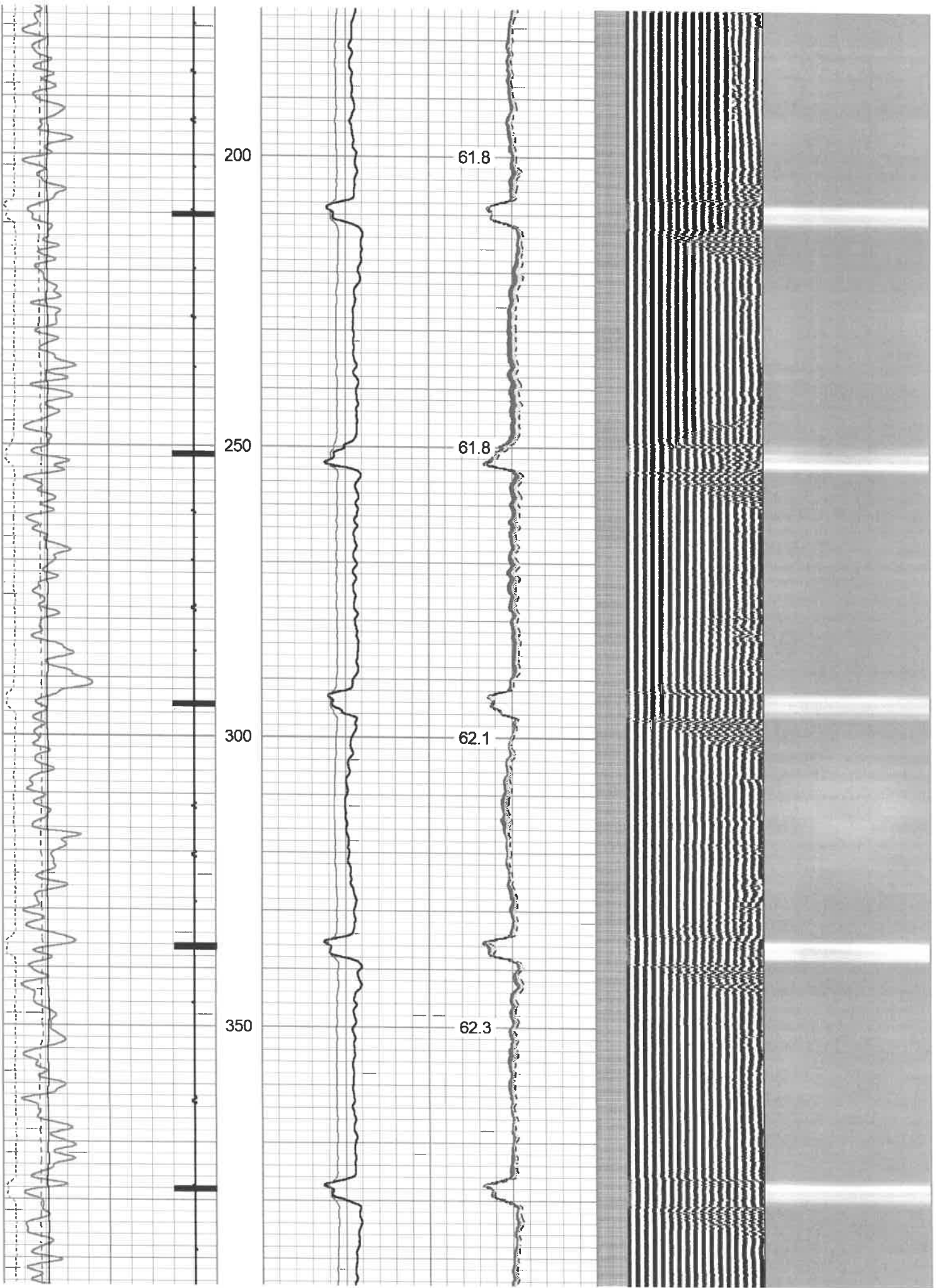
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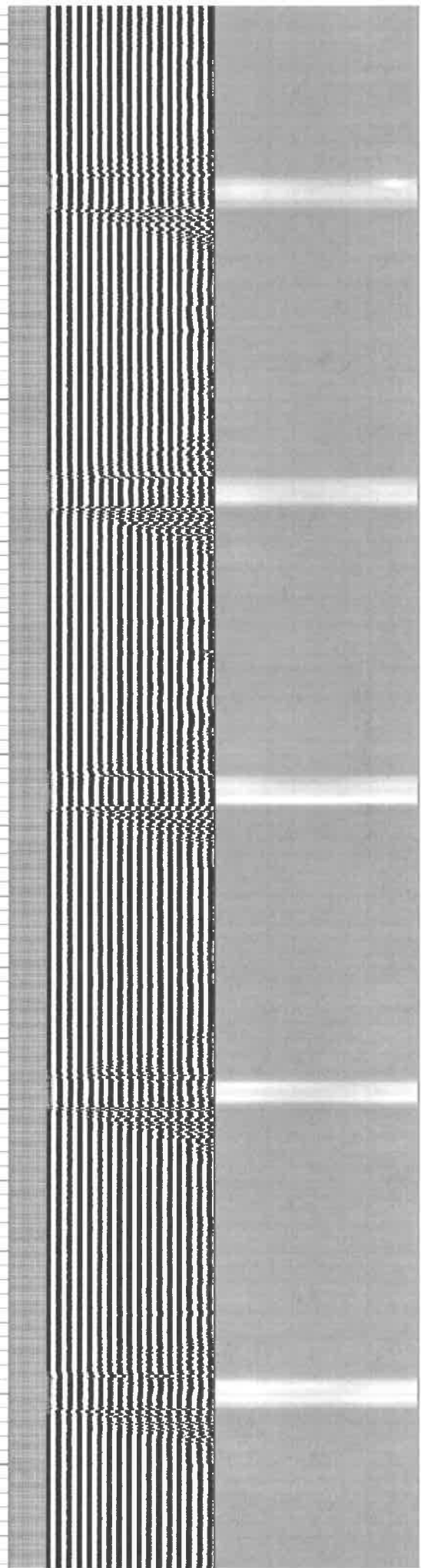
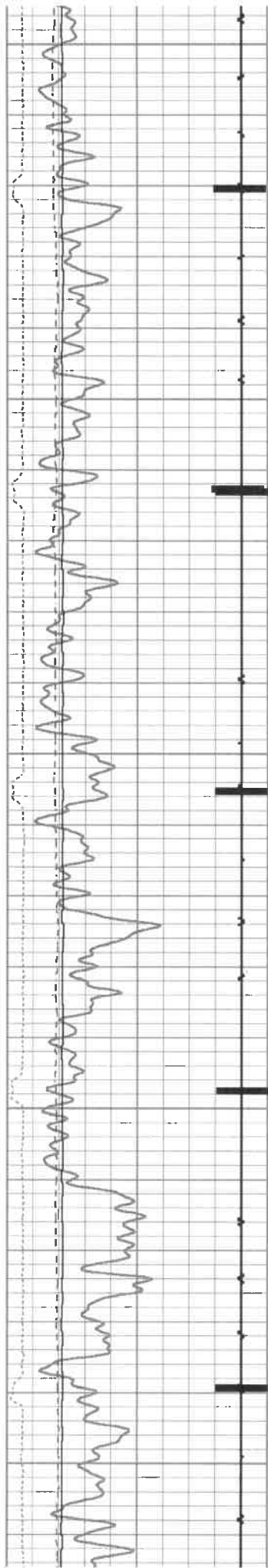
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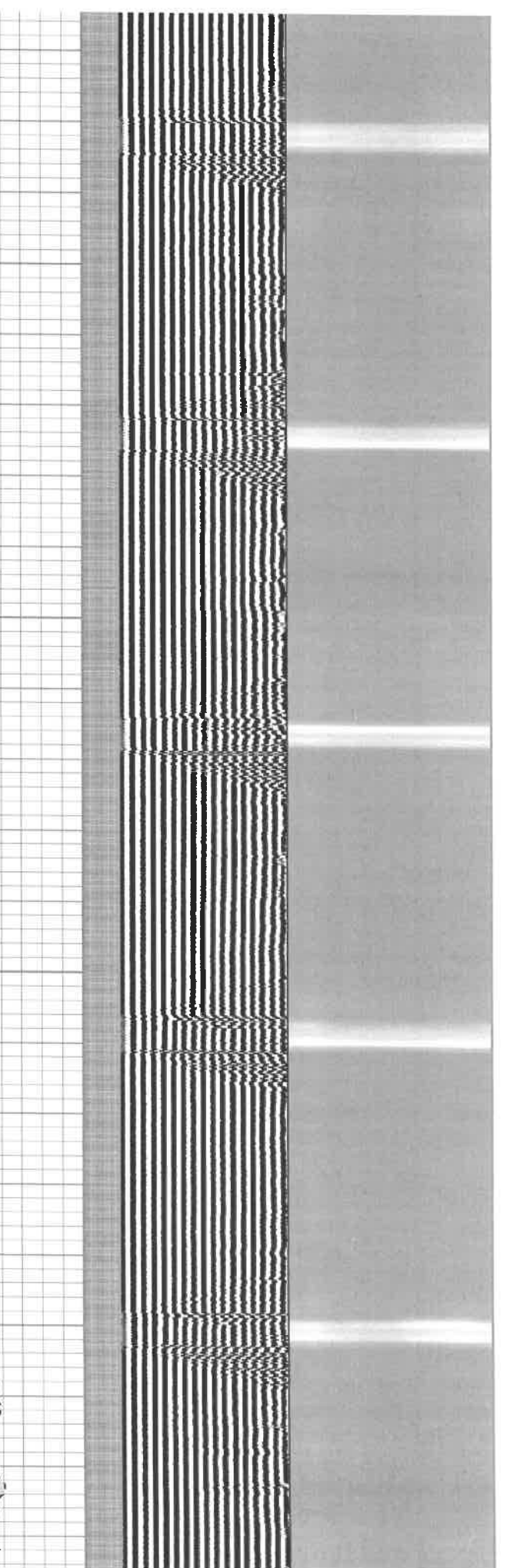
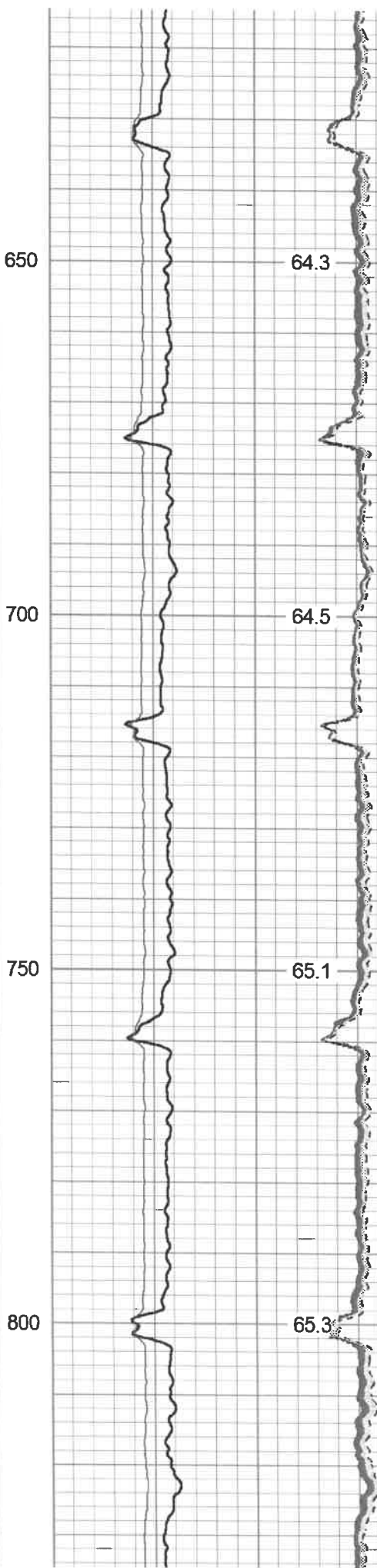
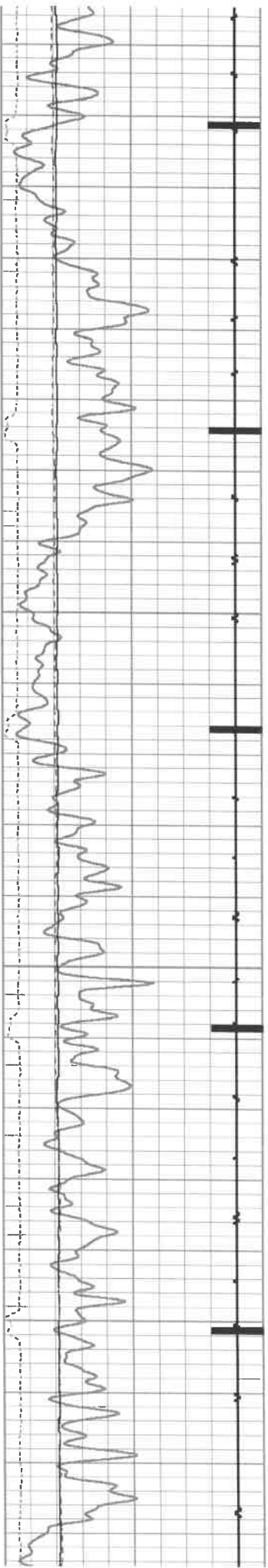
Database File antero_shepherd_gatrell_1h_rcbl_21_sep_21.db
 Dataset Pathname North_Canton/1h/run1/pass12
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Tue Sep 21 13:11:18 2021
 Charted by Depth in Feet scaled 1:240

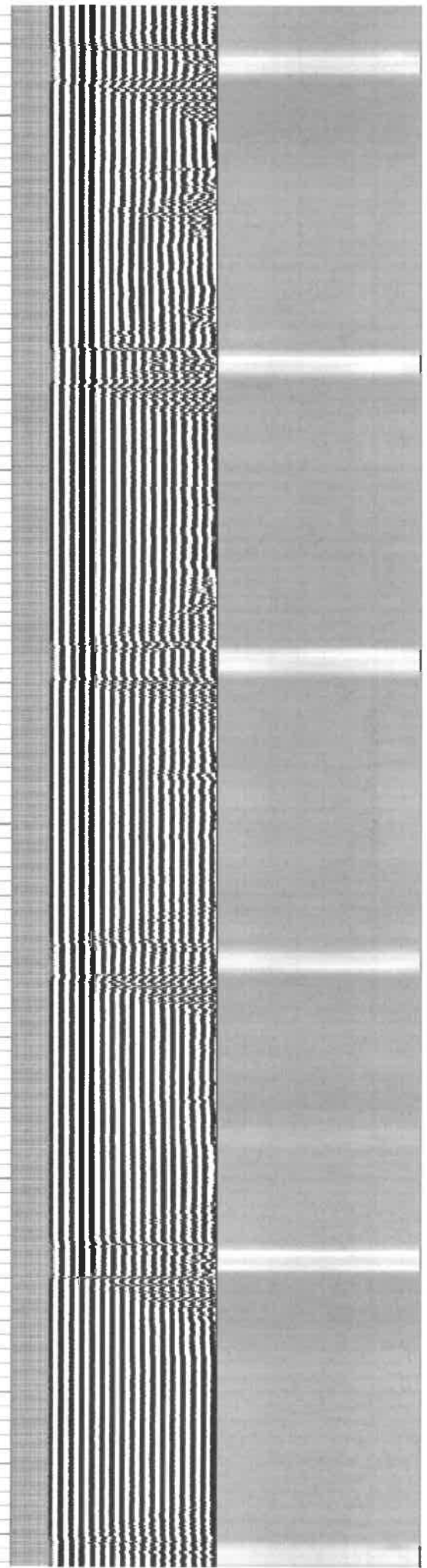
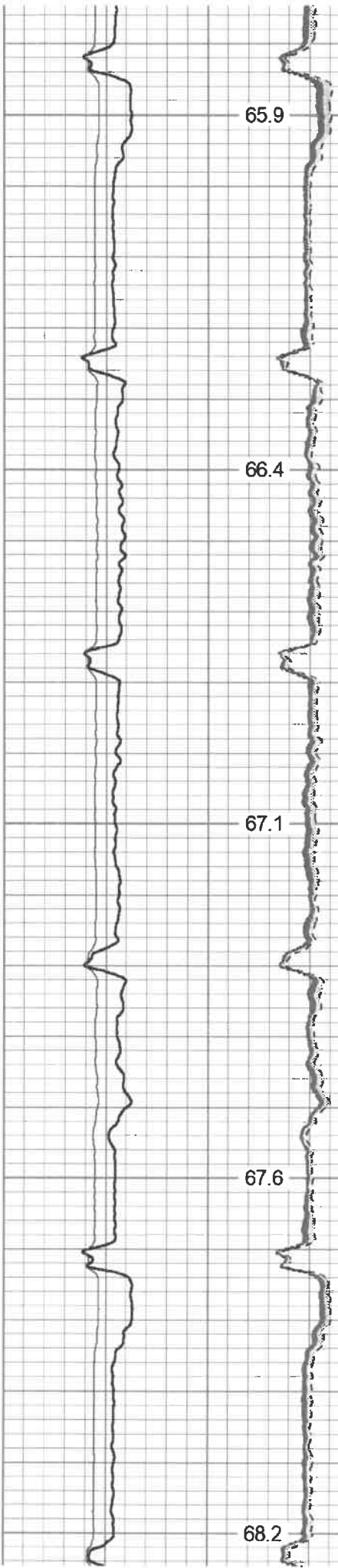
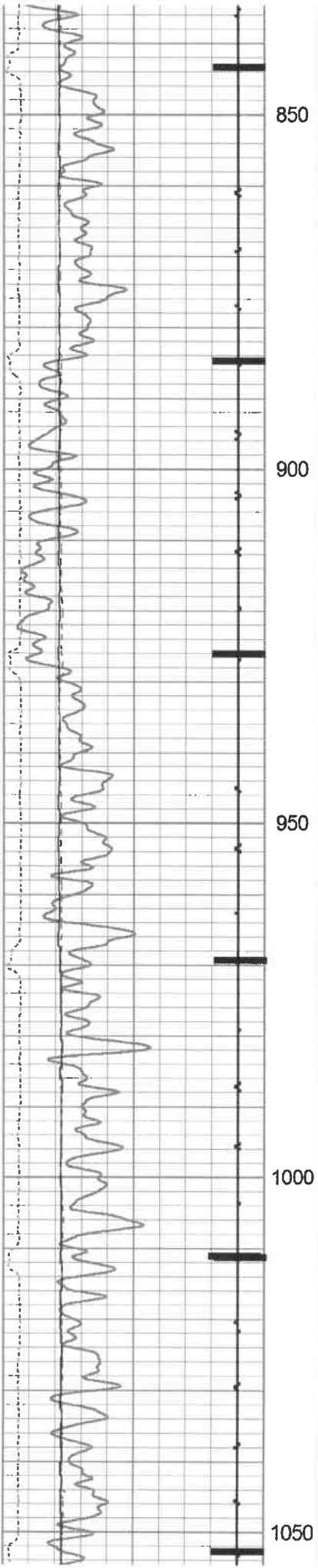
270	Travel Time (usec)	160	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
90	Casing Collar	-10	1	BONDIX	0	0	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				0	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	2000										

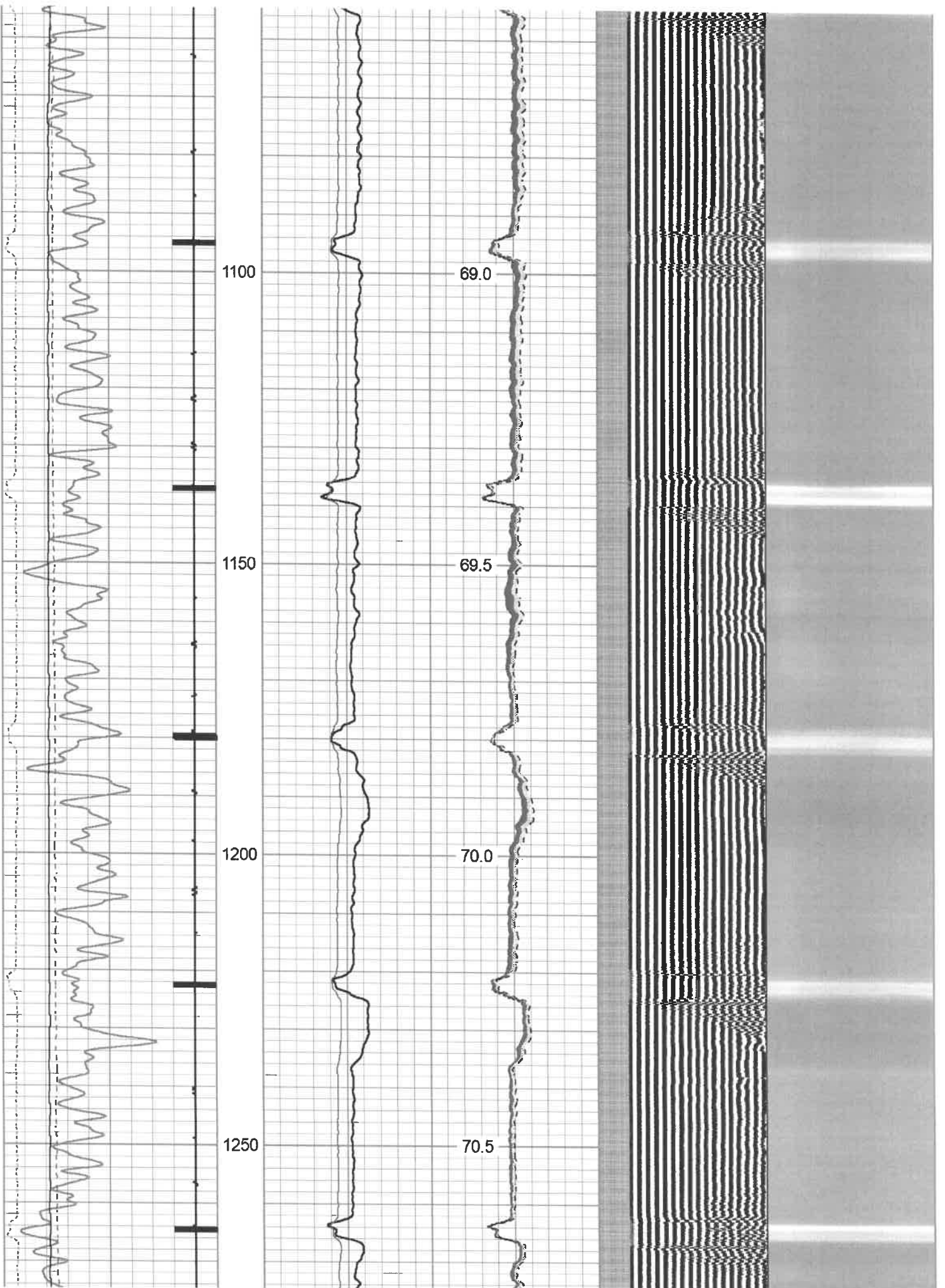


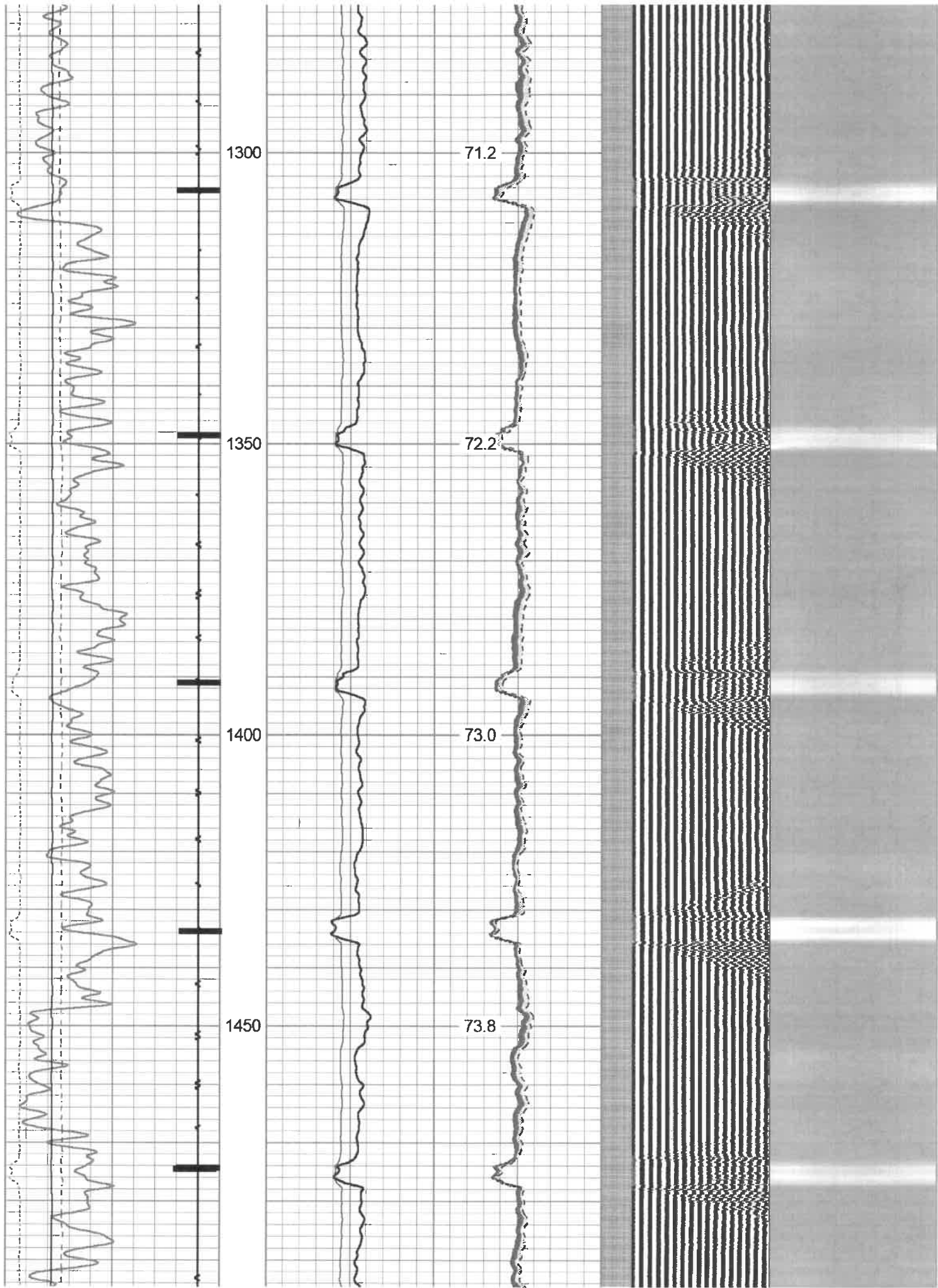


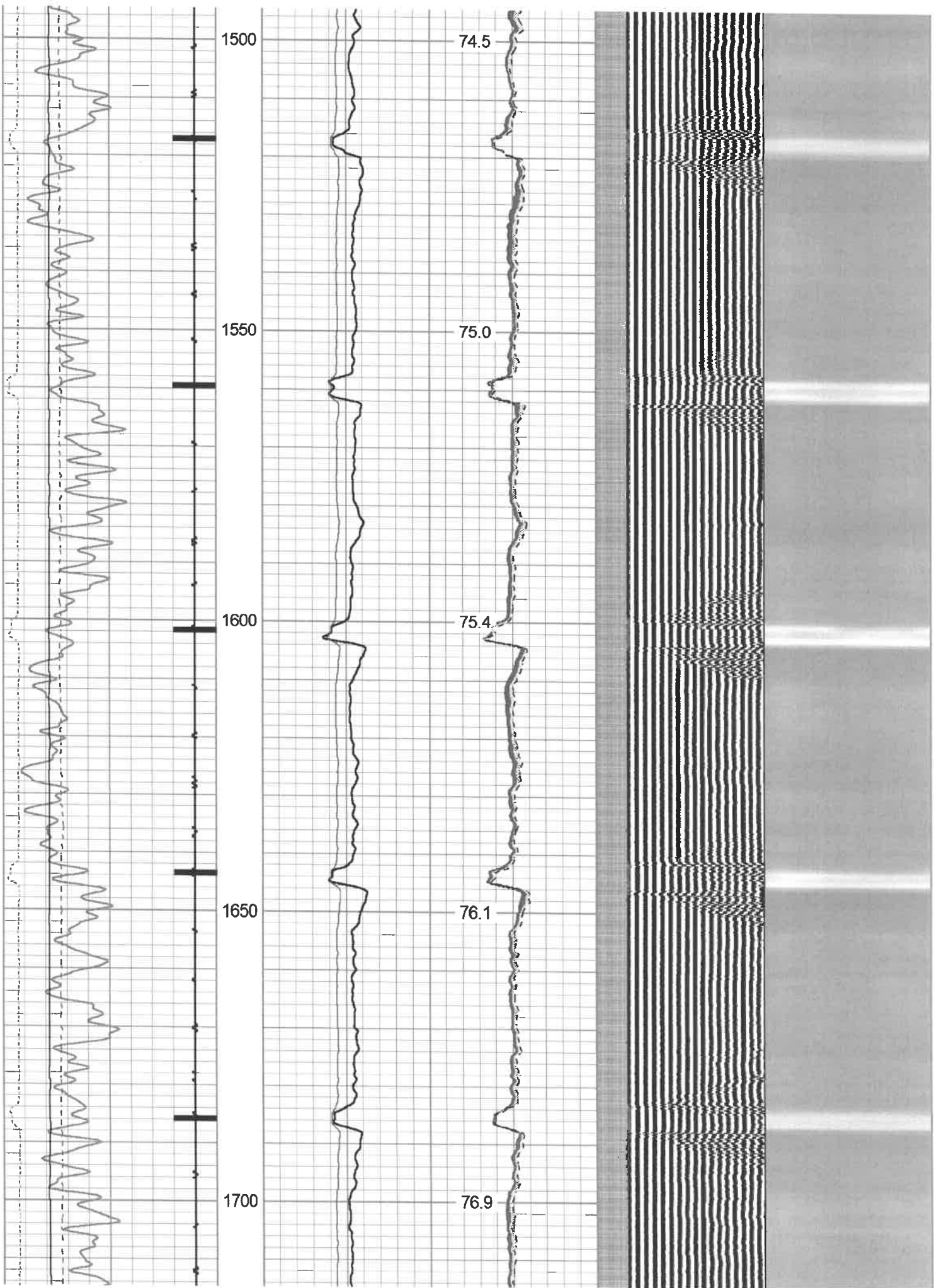


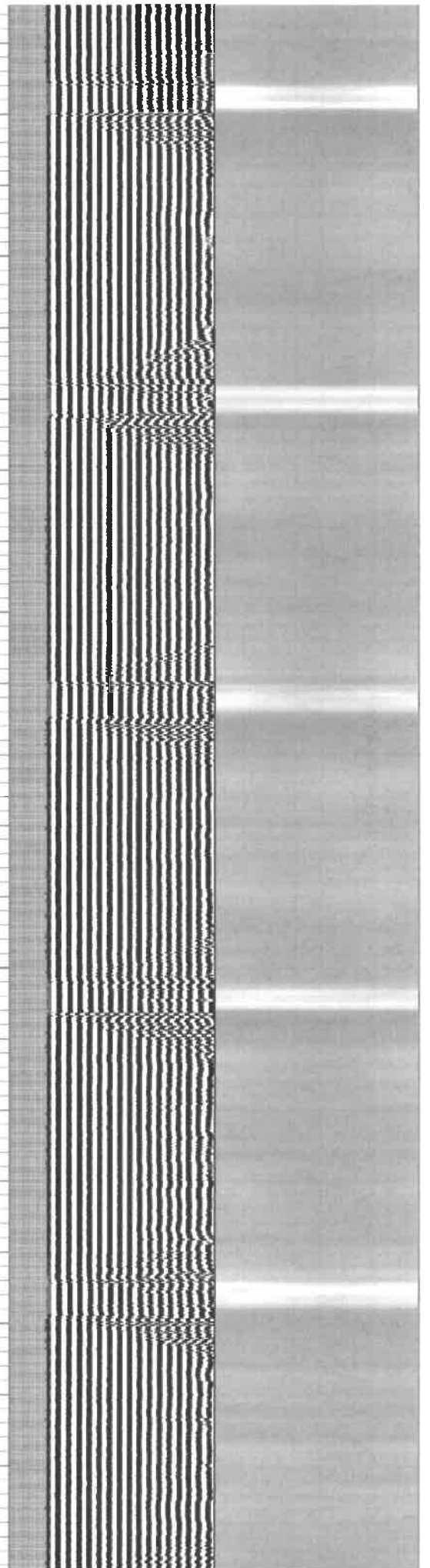
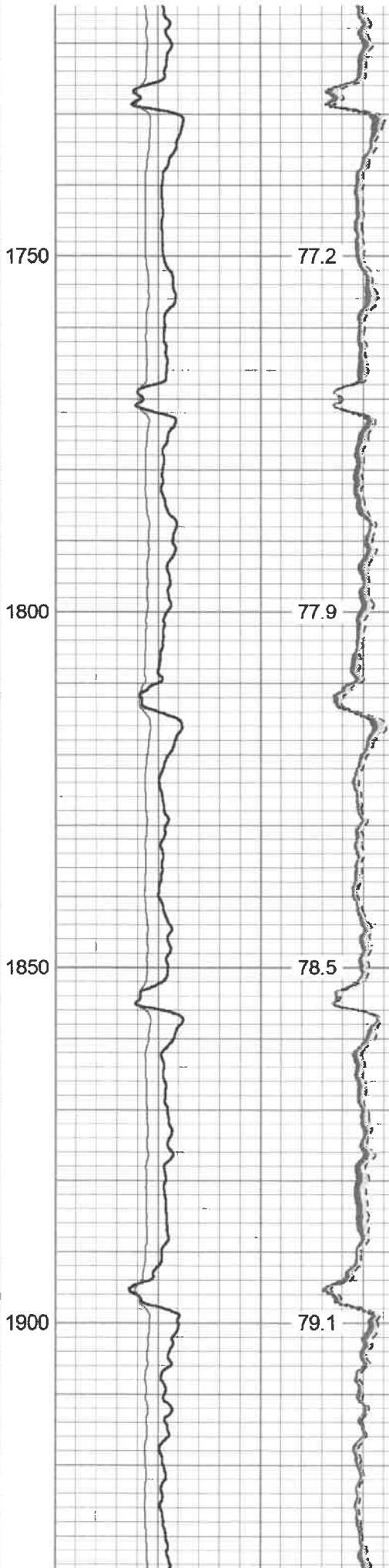
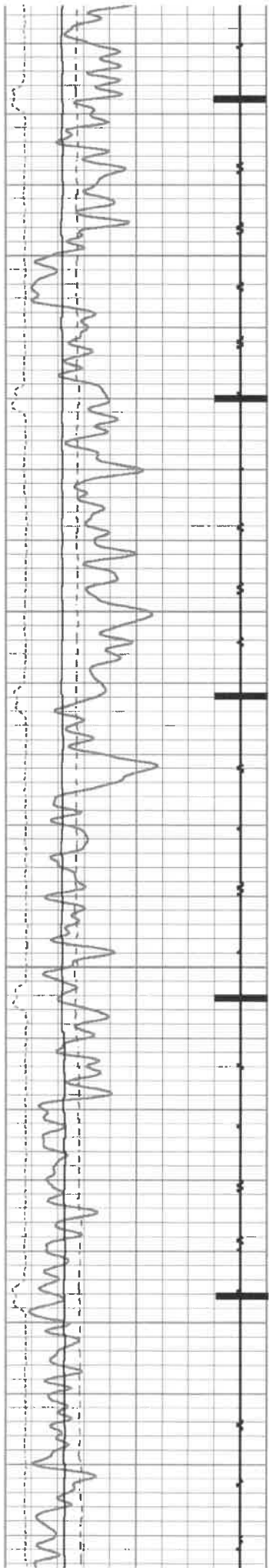


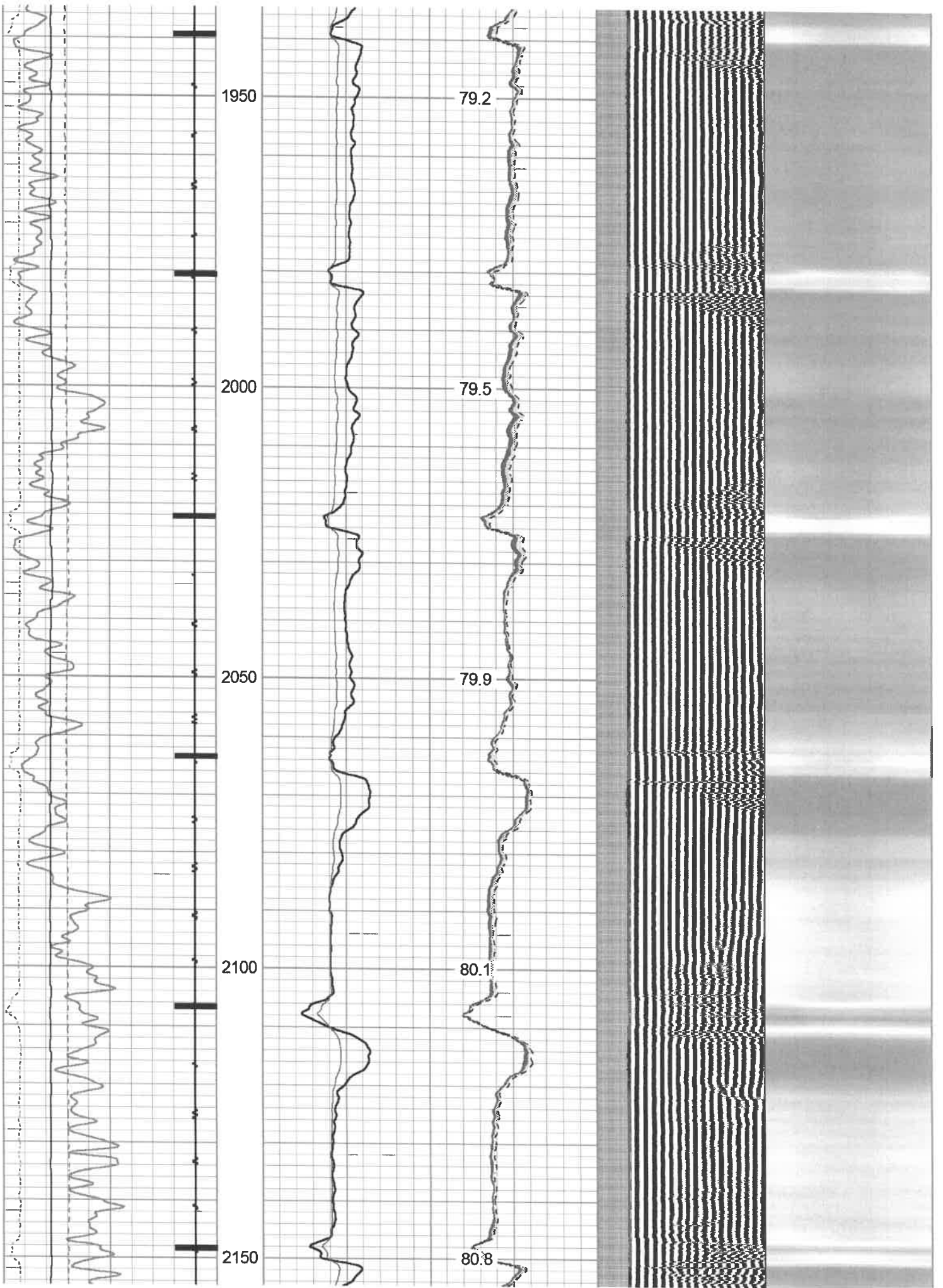


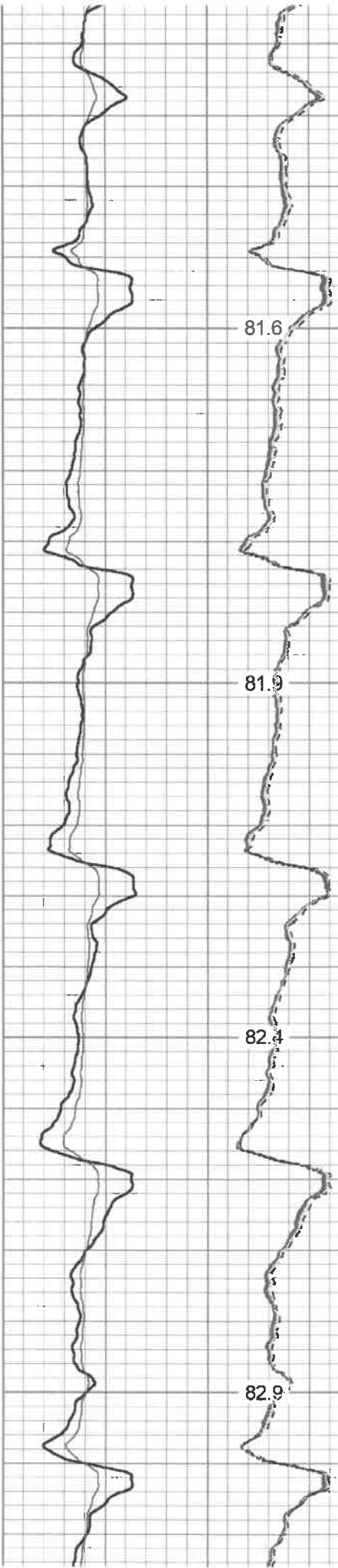
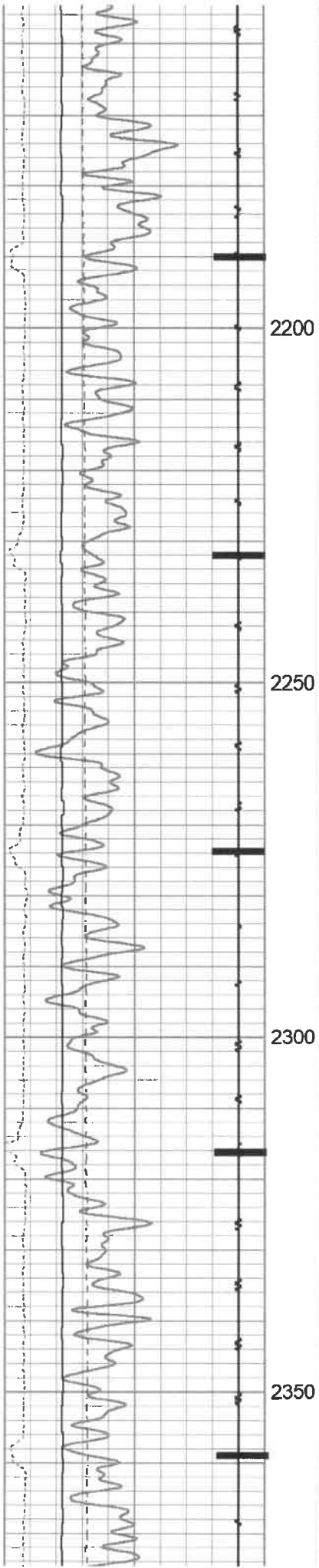










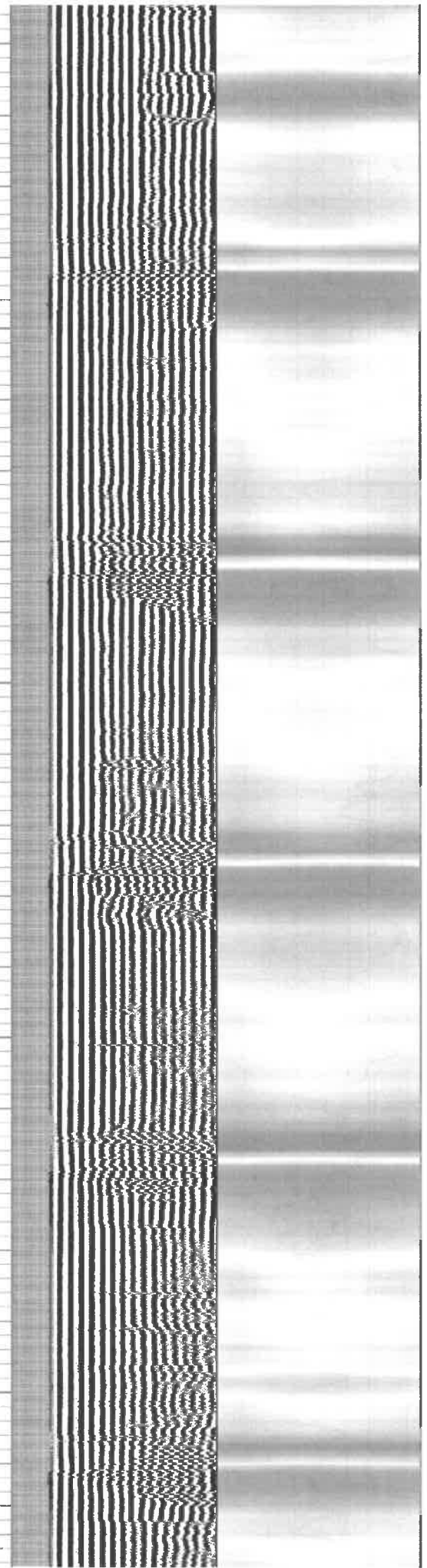


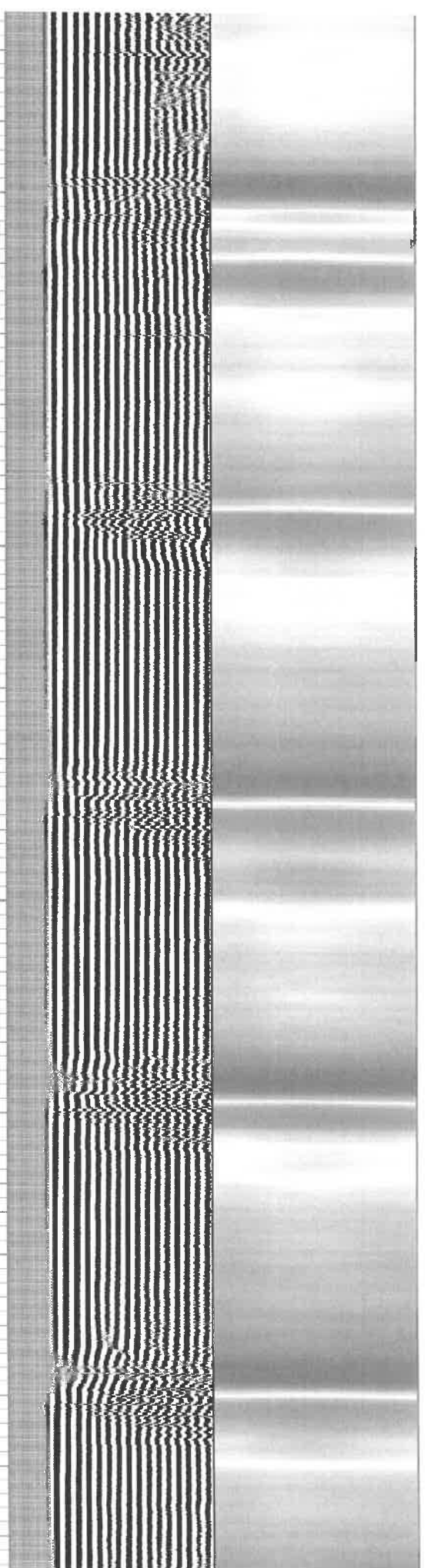
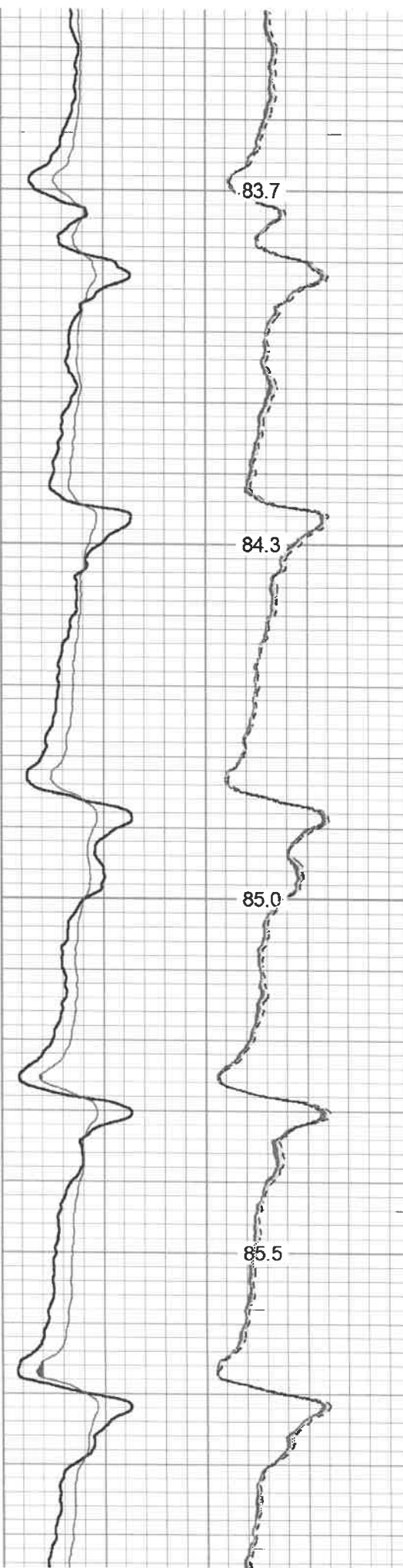
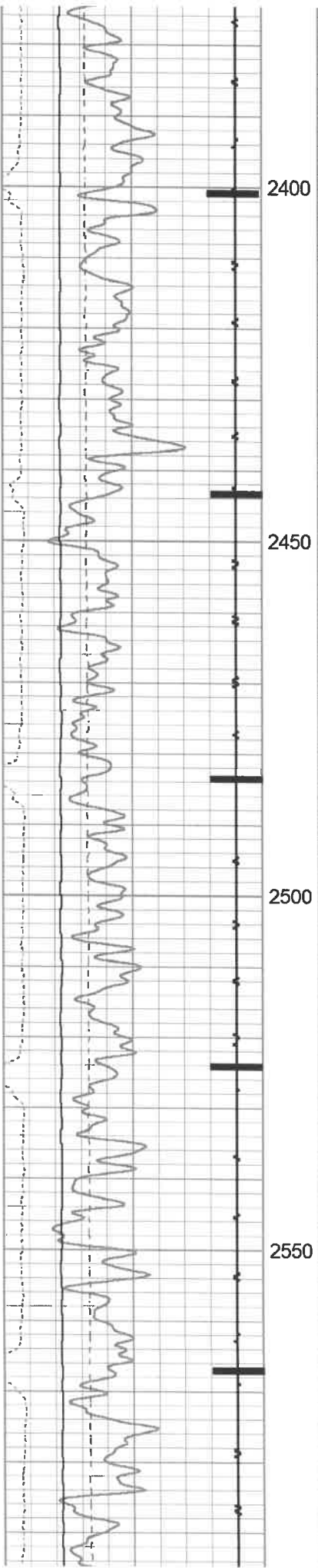
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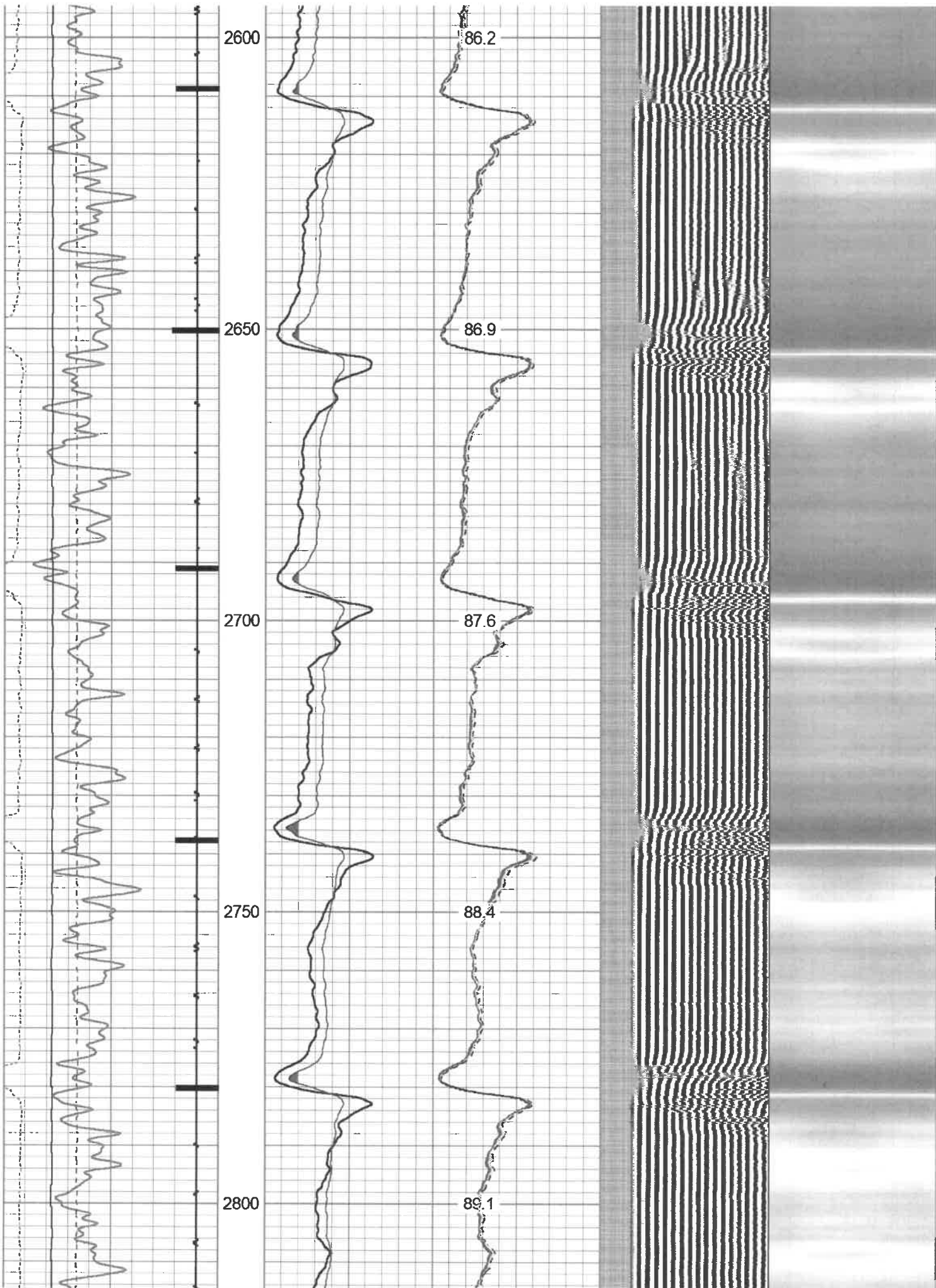
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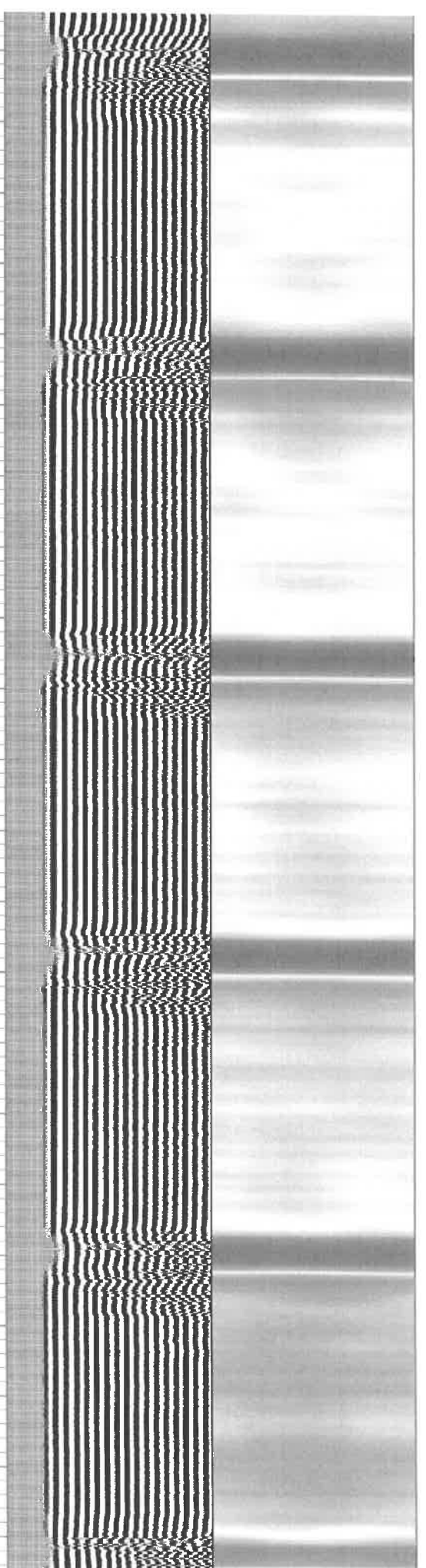
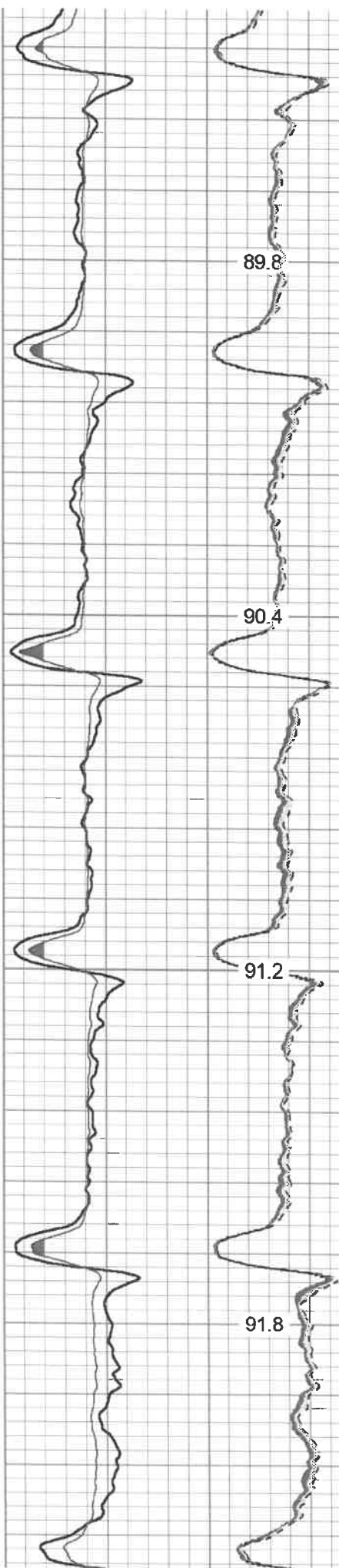
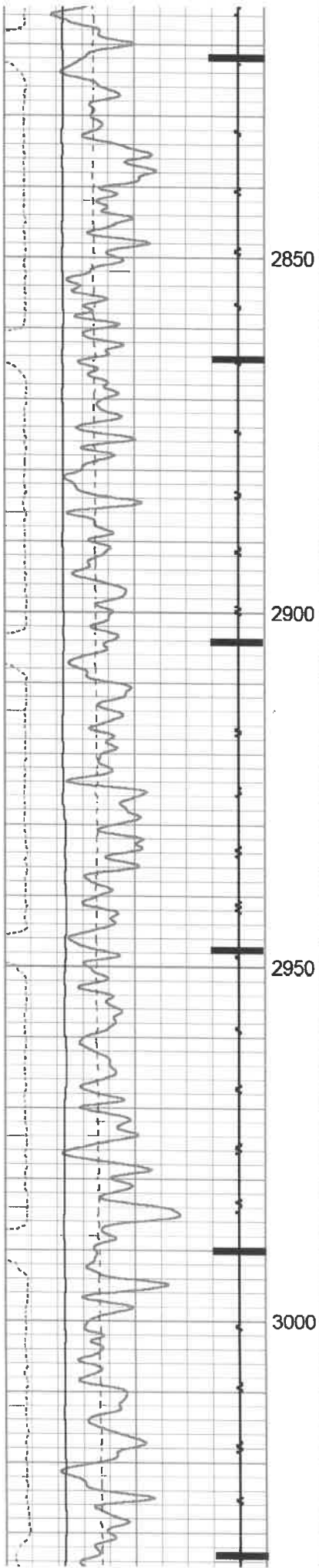
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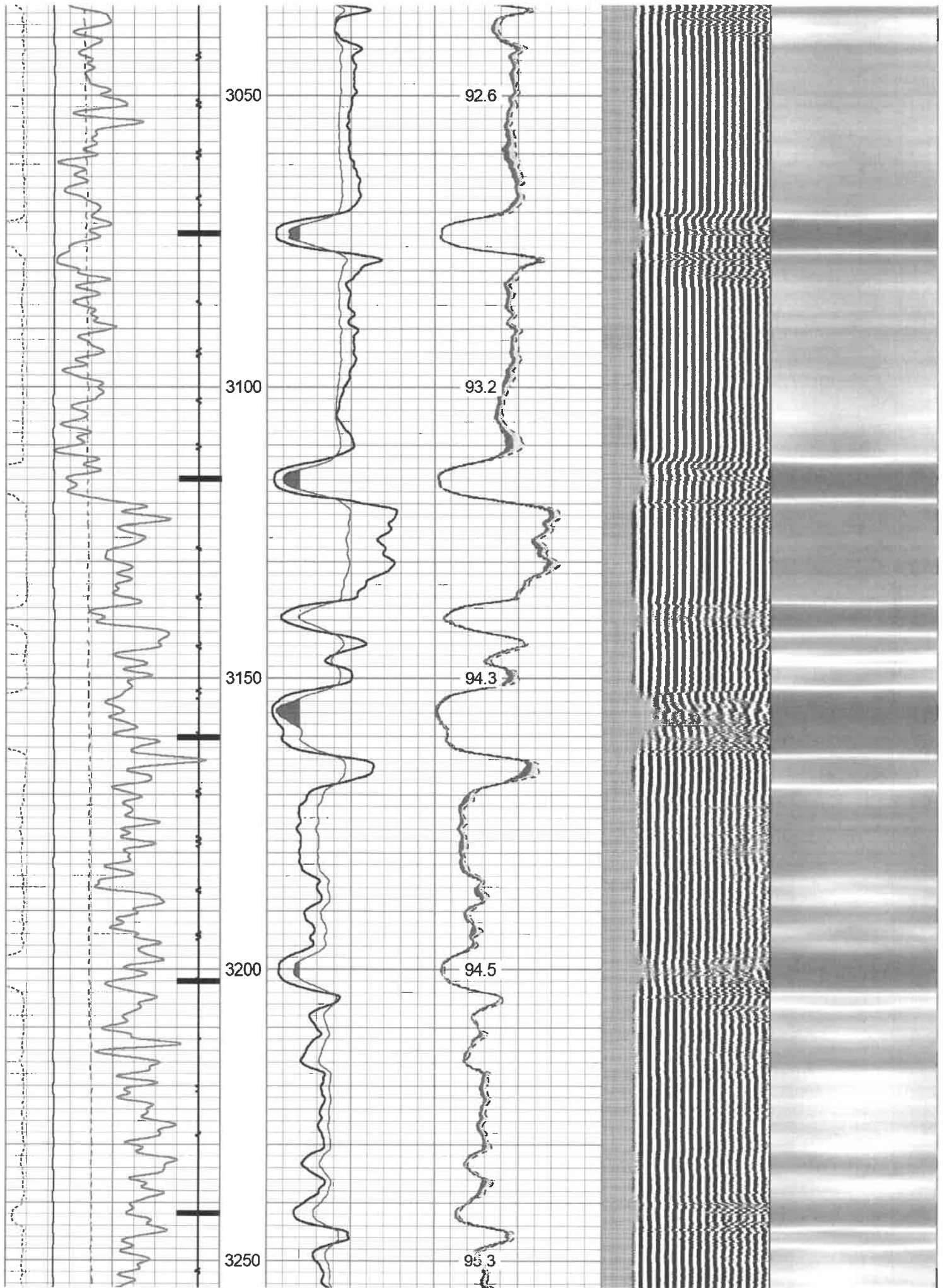
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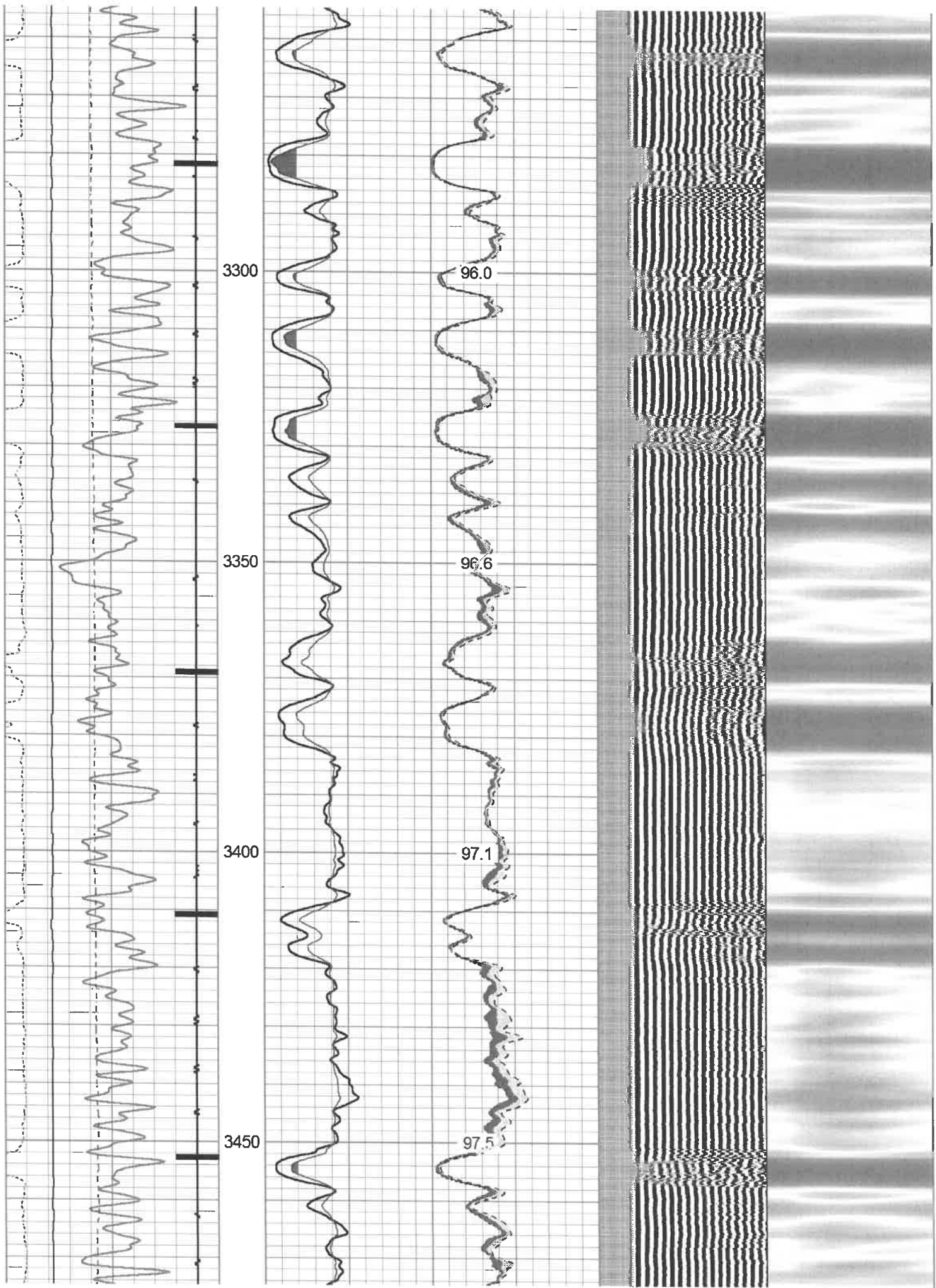


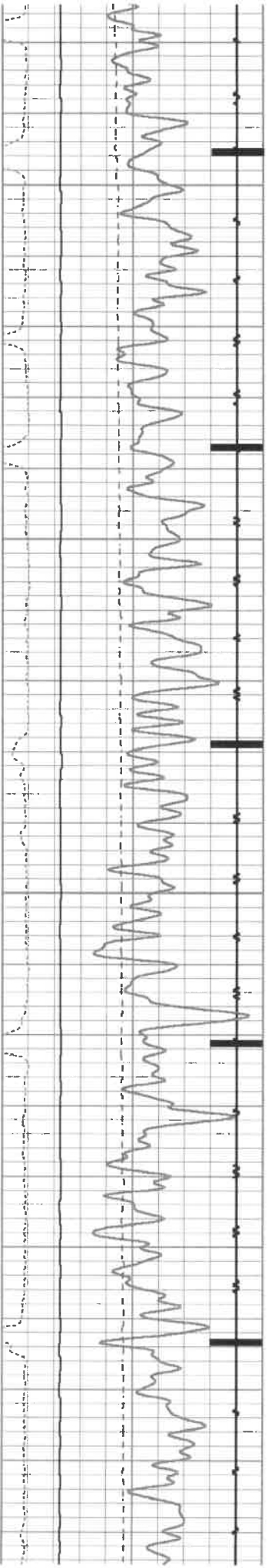










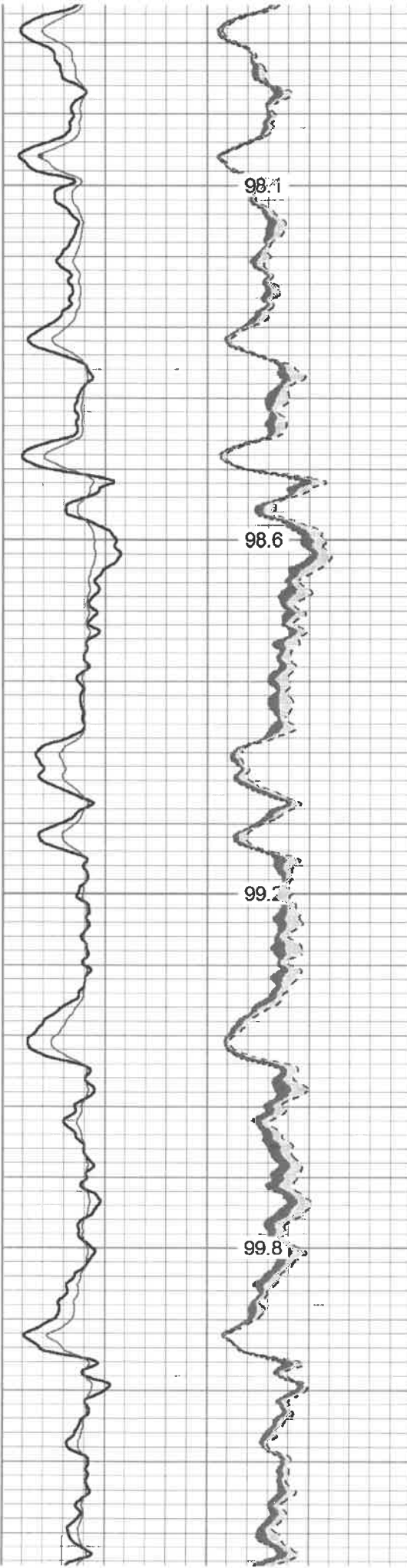


3500

3550

3600

3650

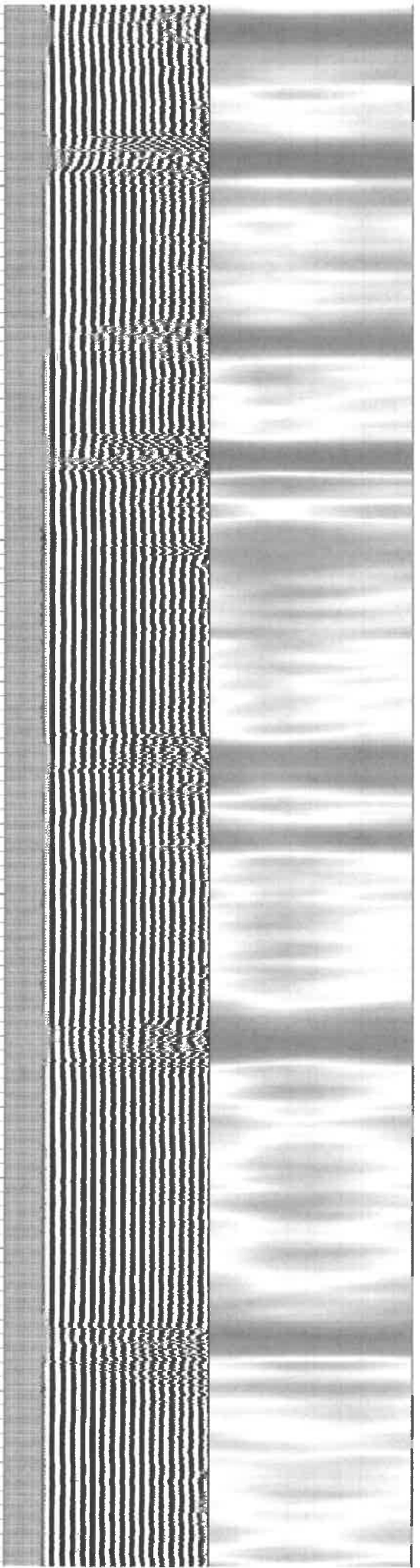


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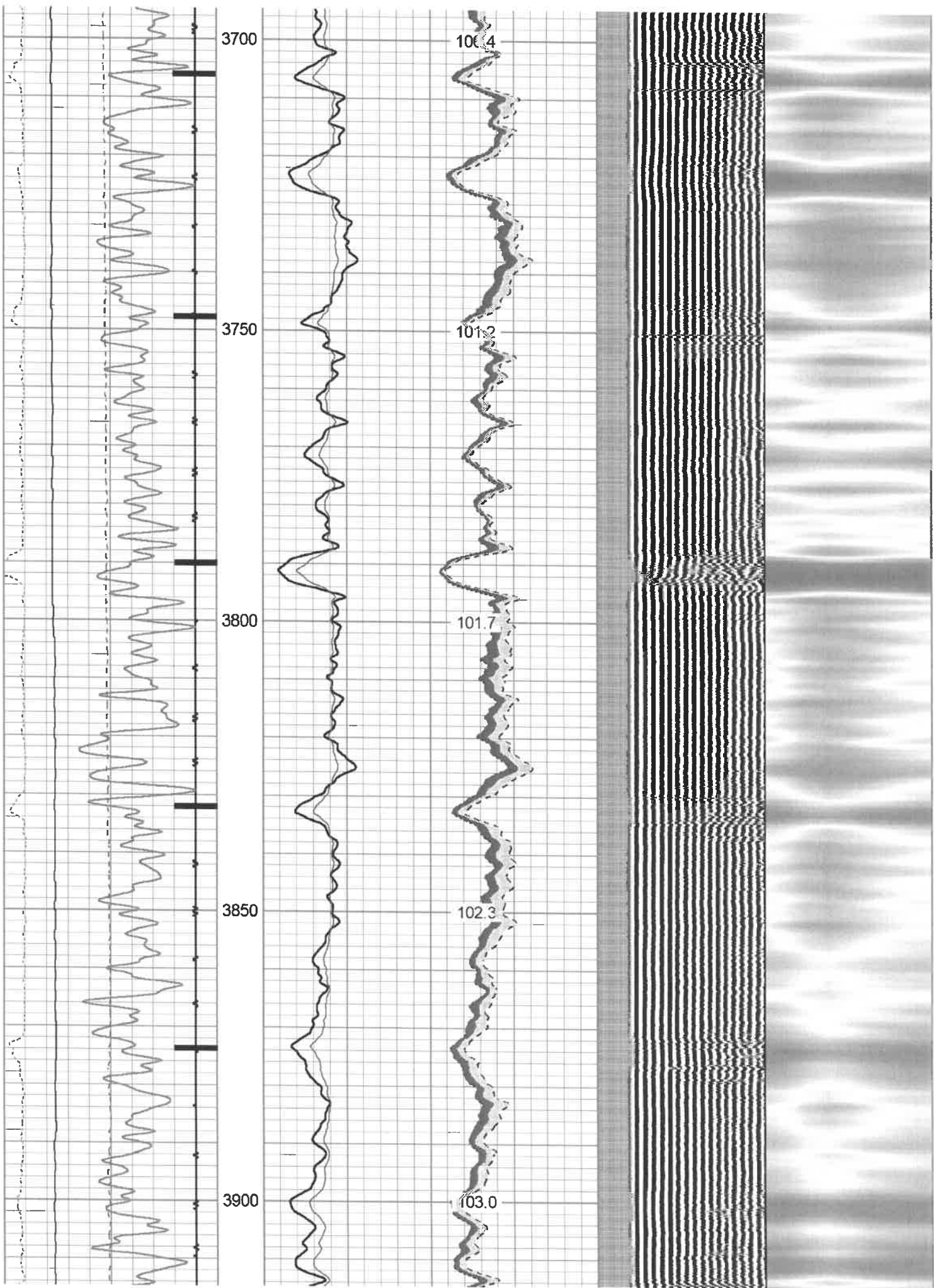
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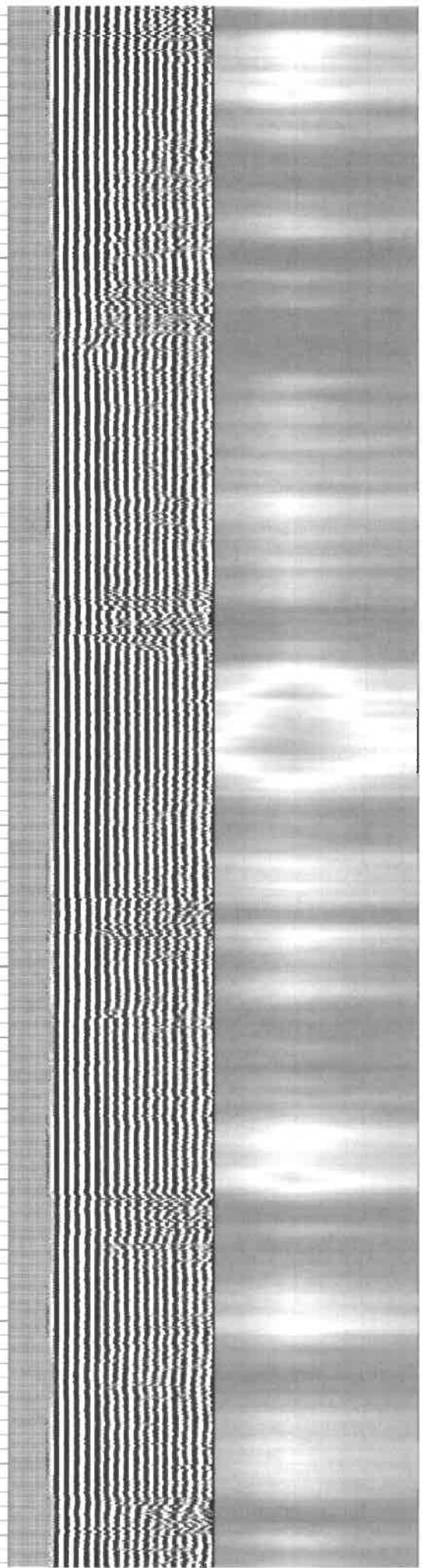
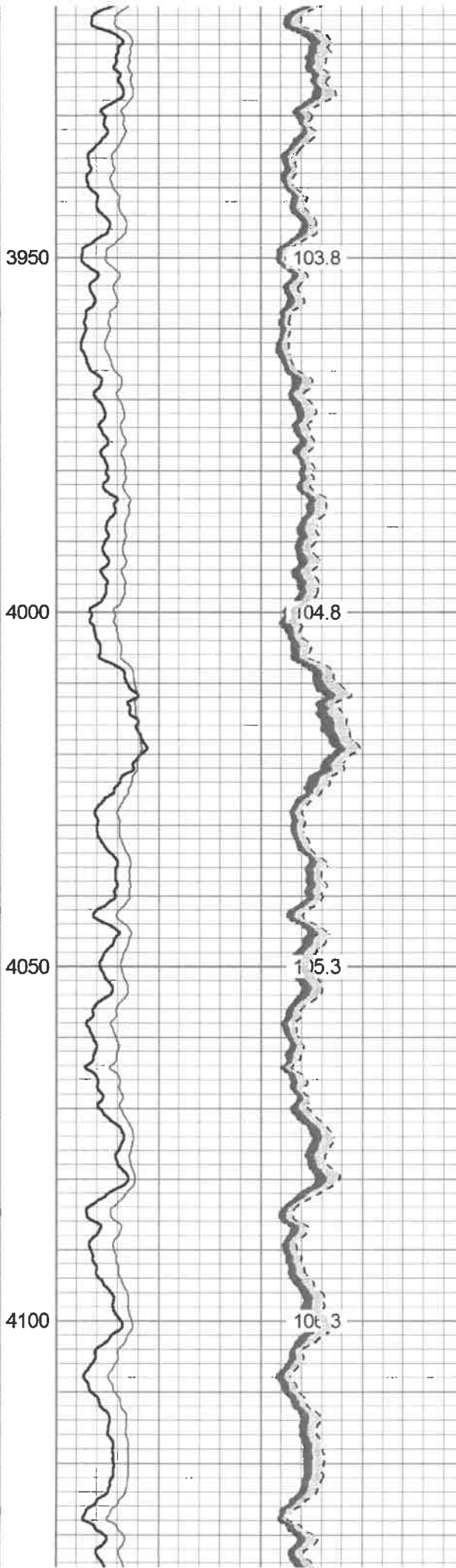
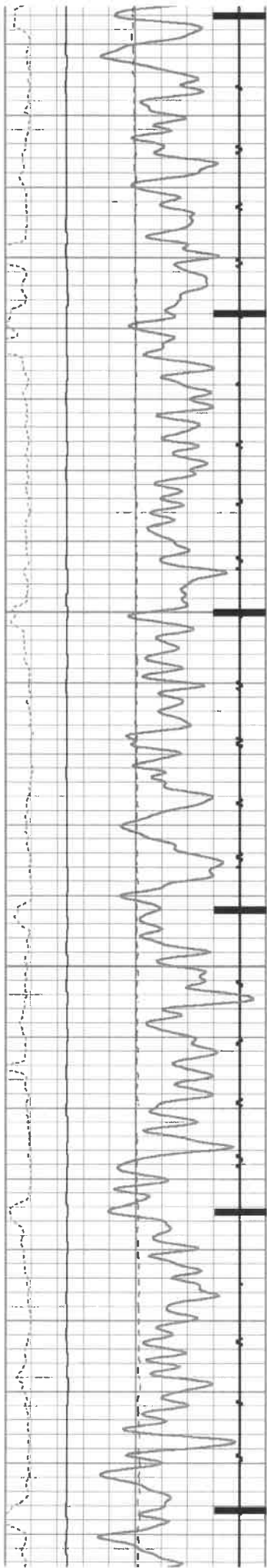
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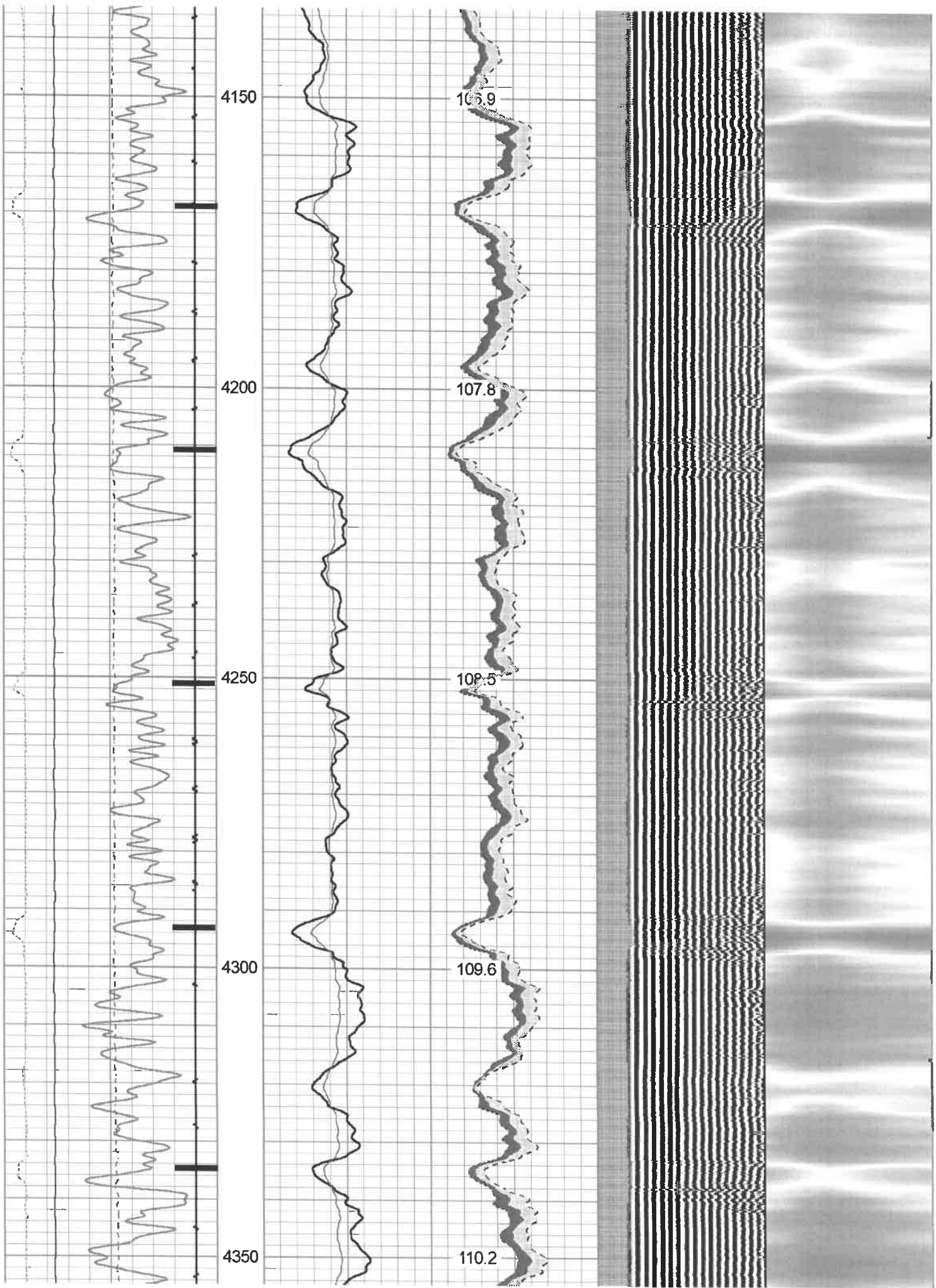
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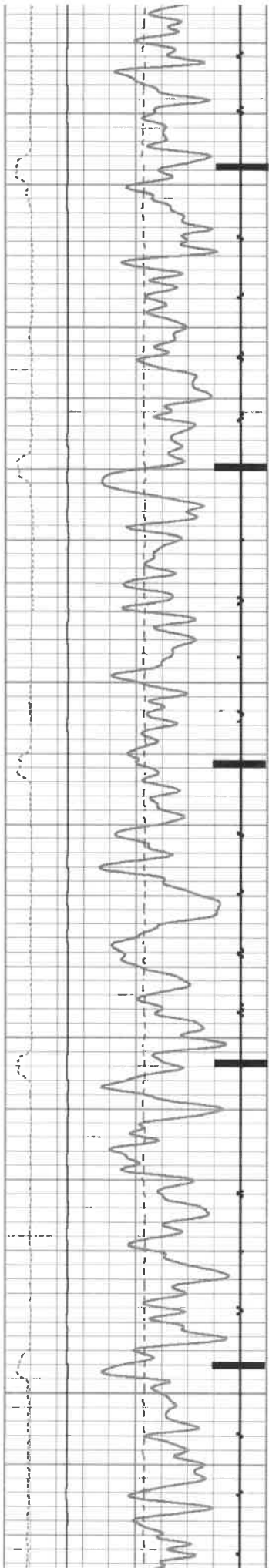


Vertical axis labels: 3500, 3550, 3600, 3650







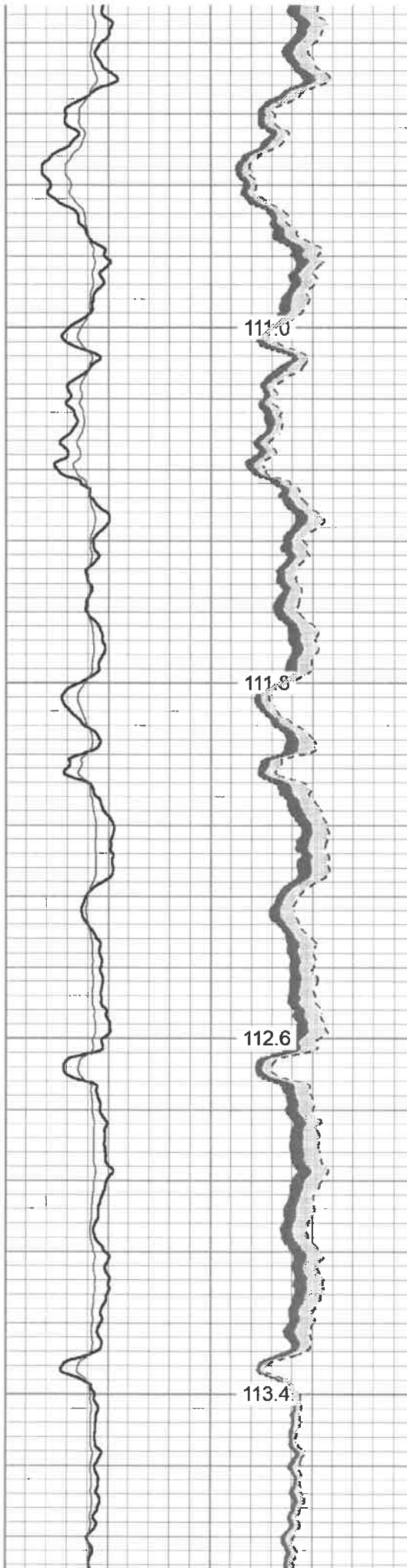


4400

4450

4500

4550

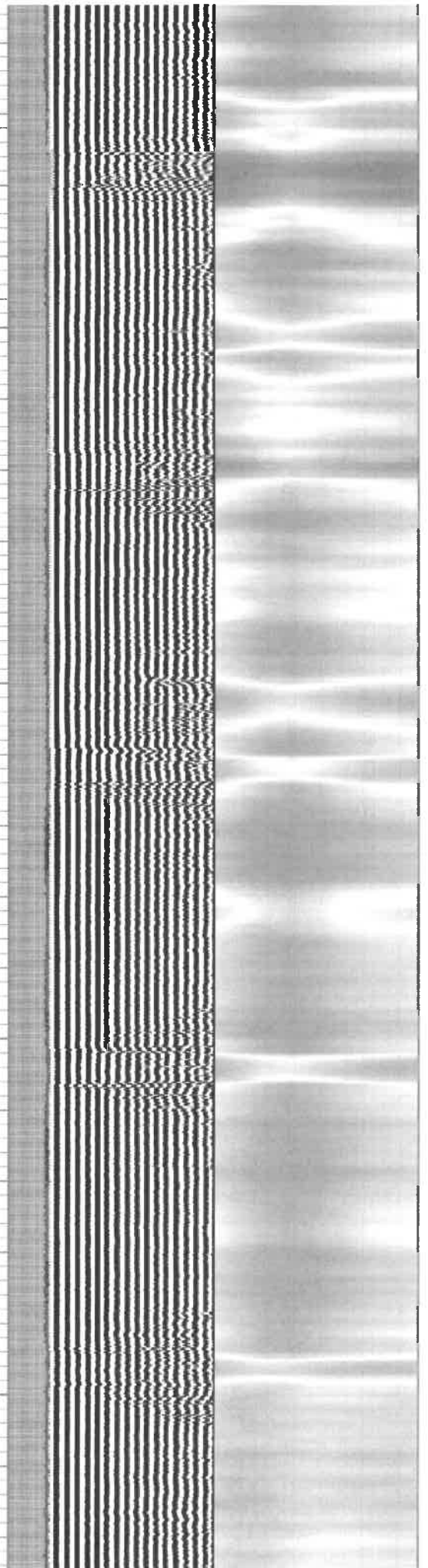


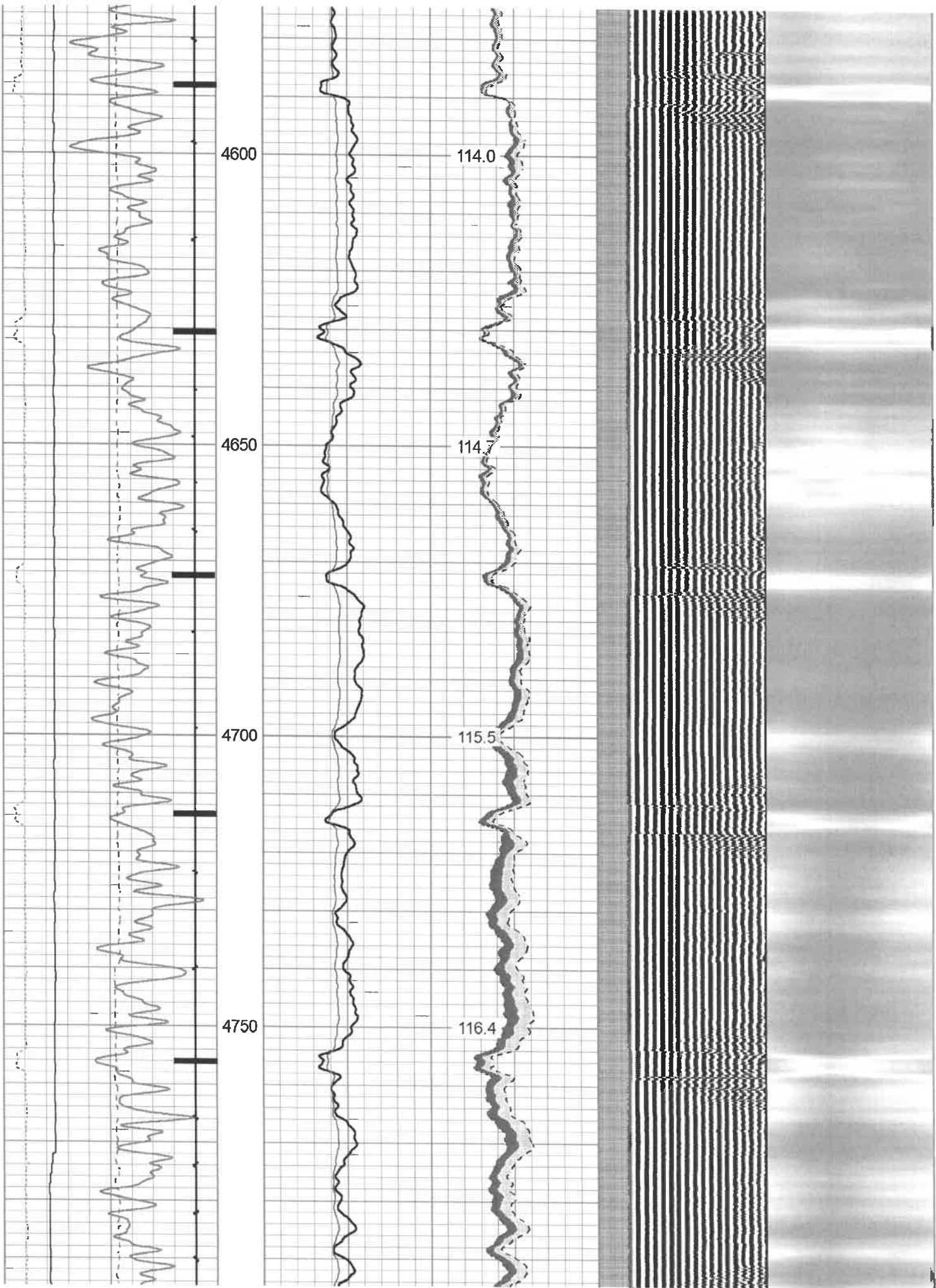
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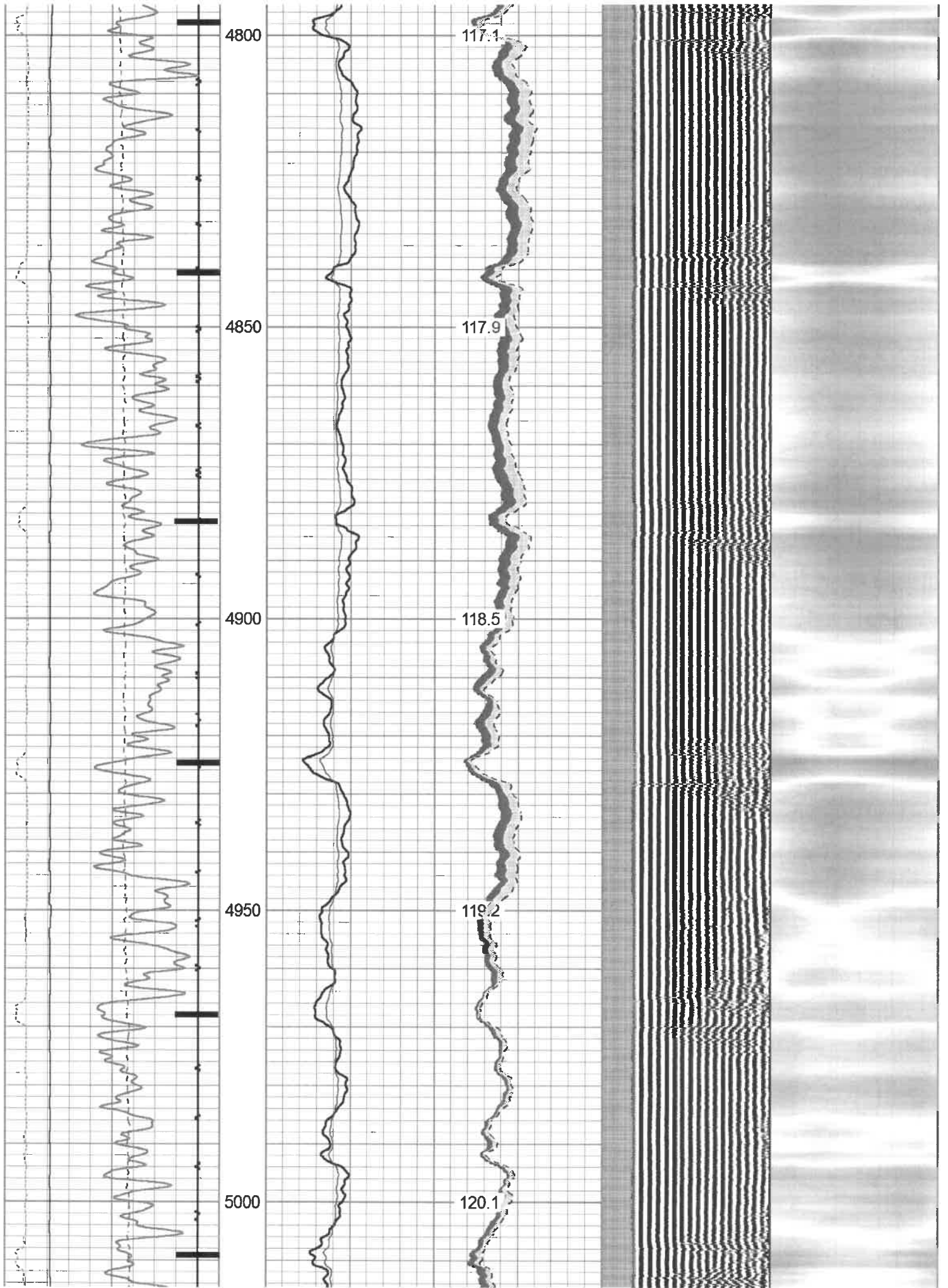
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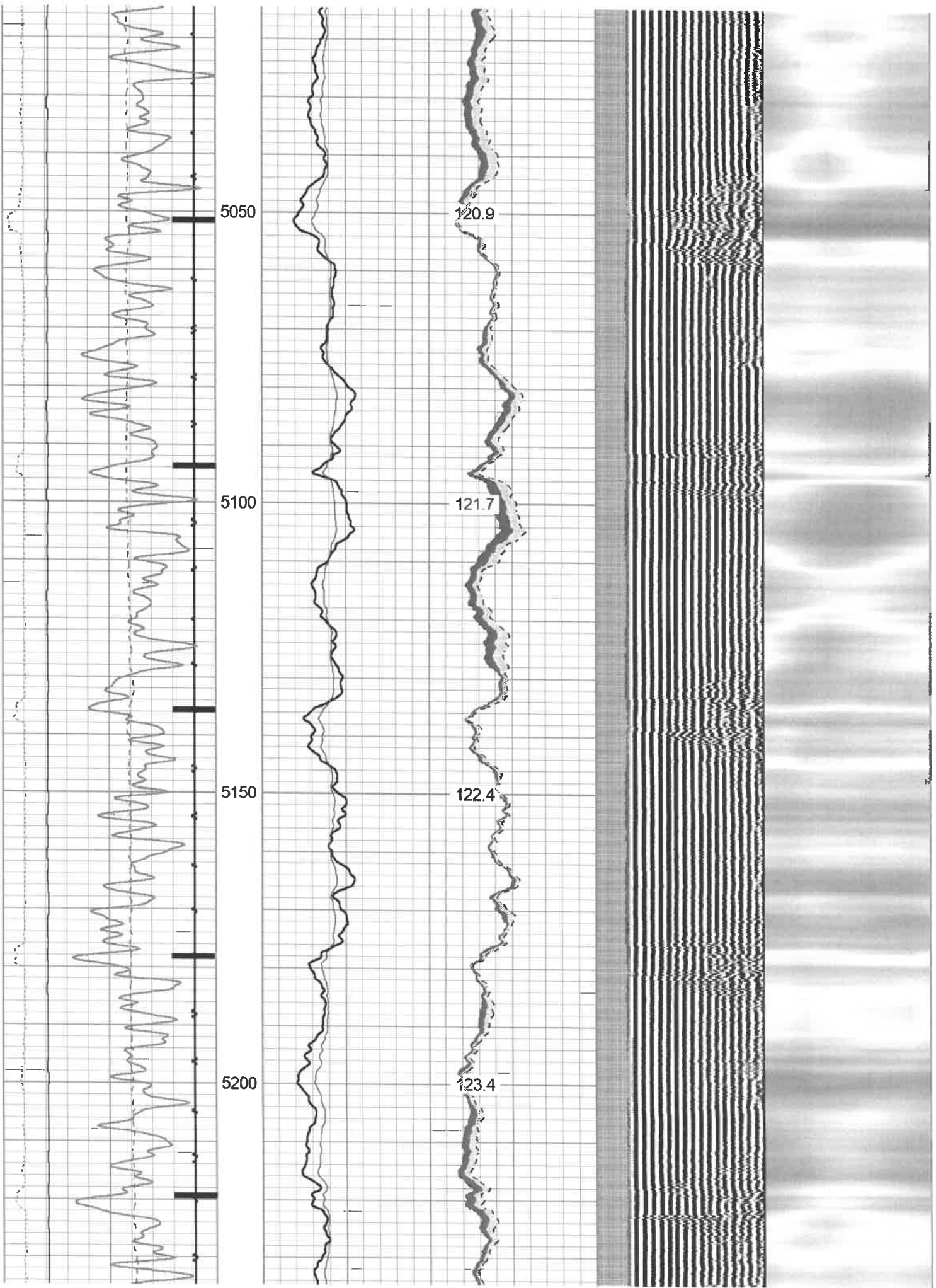
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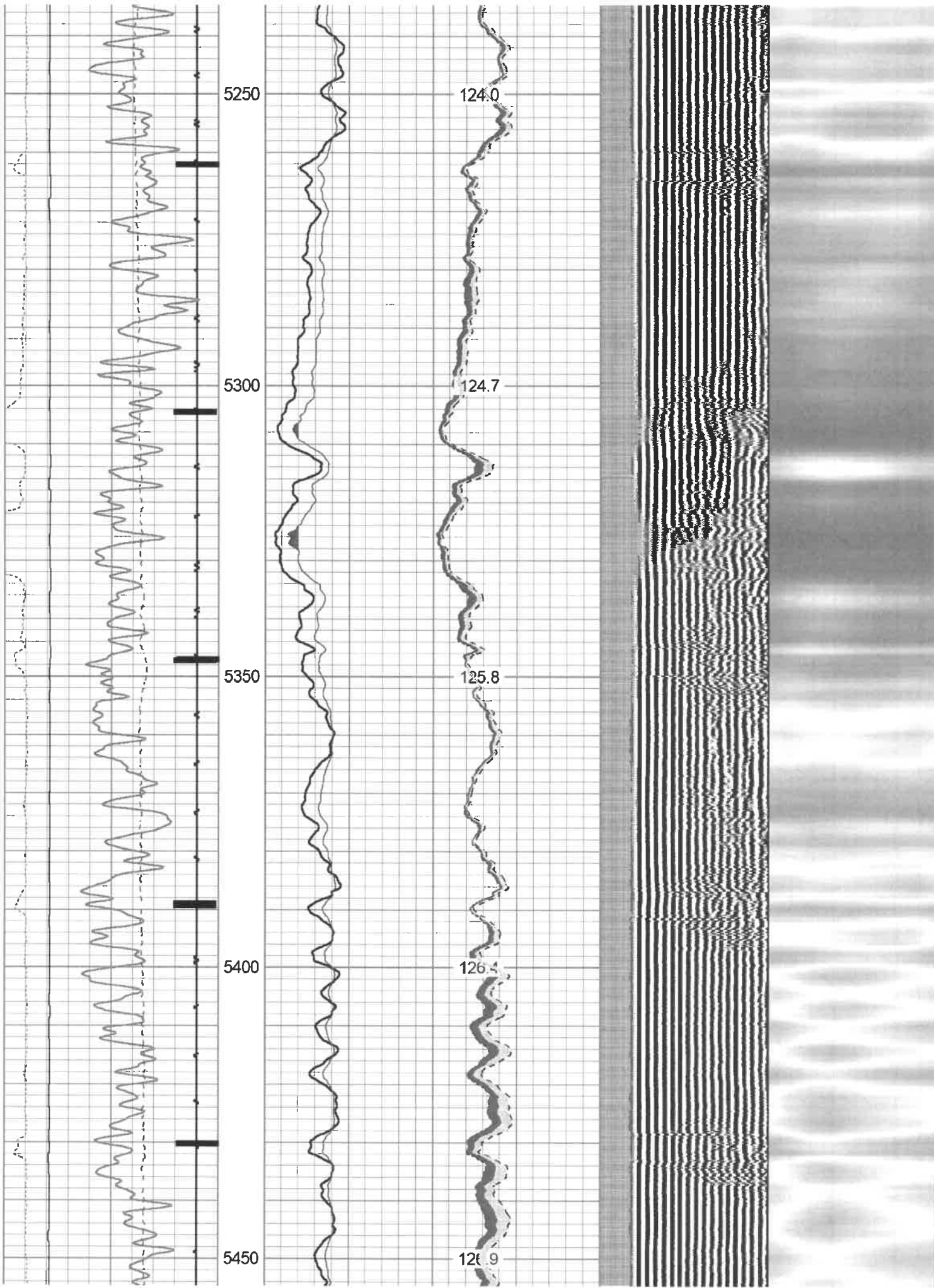
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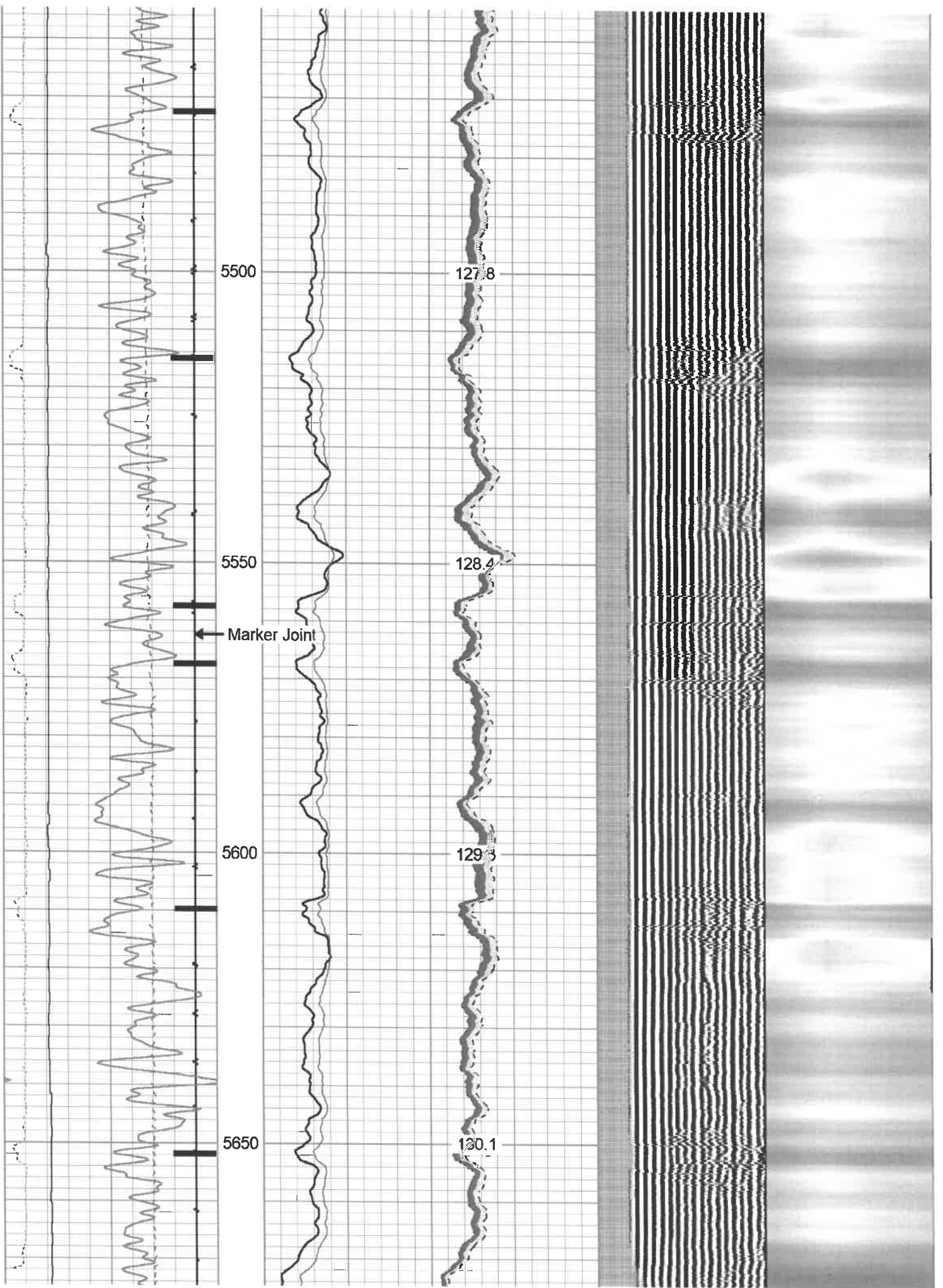


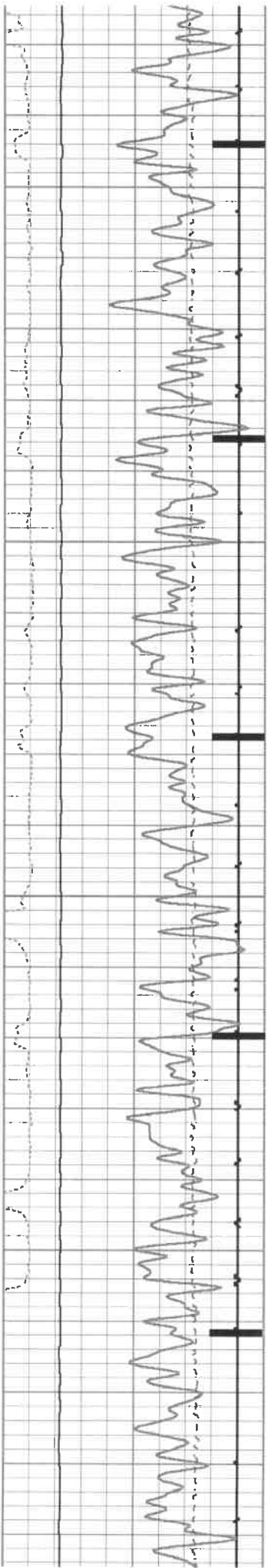










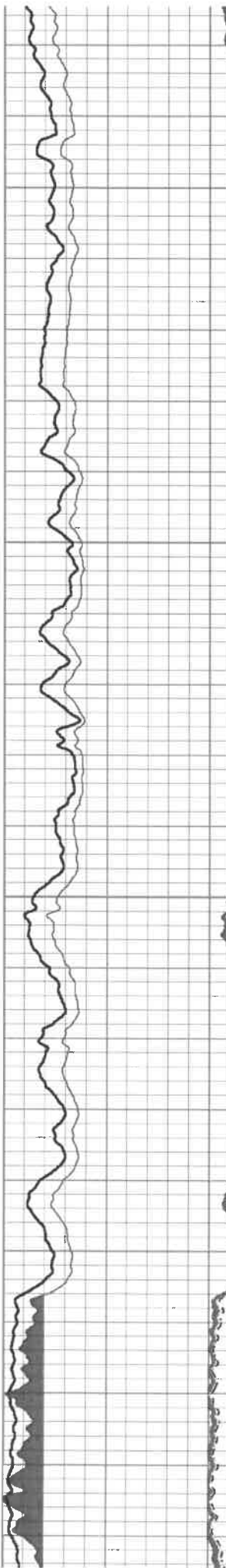


5700

5750

5800

5850

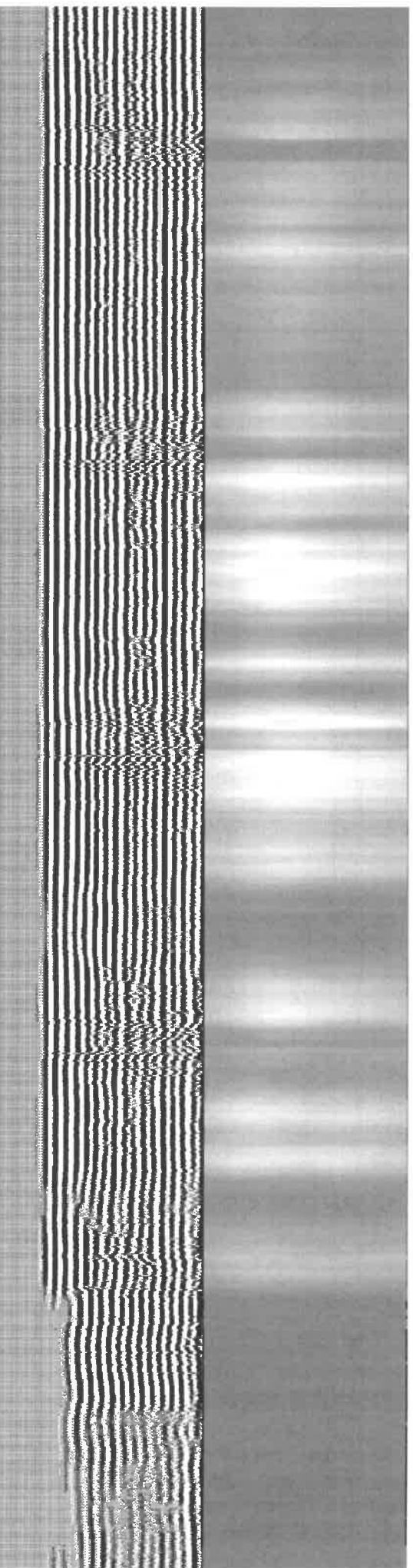
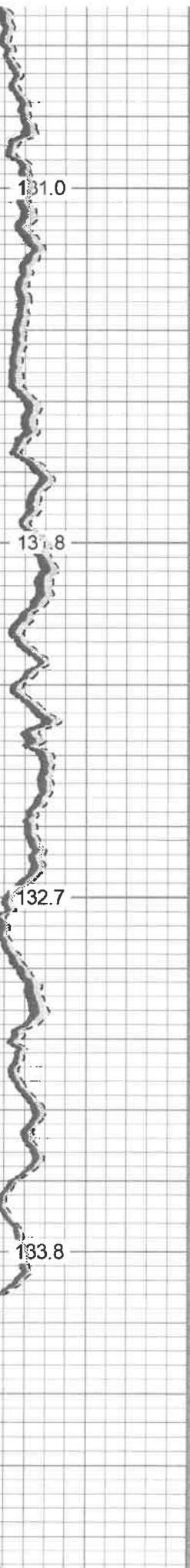


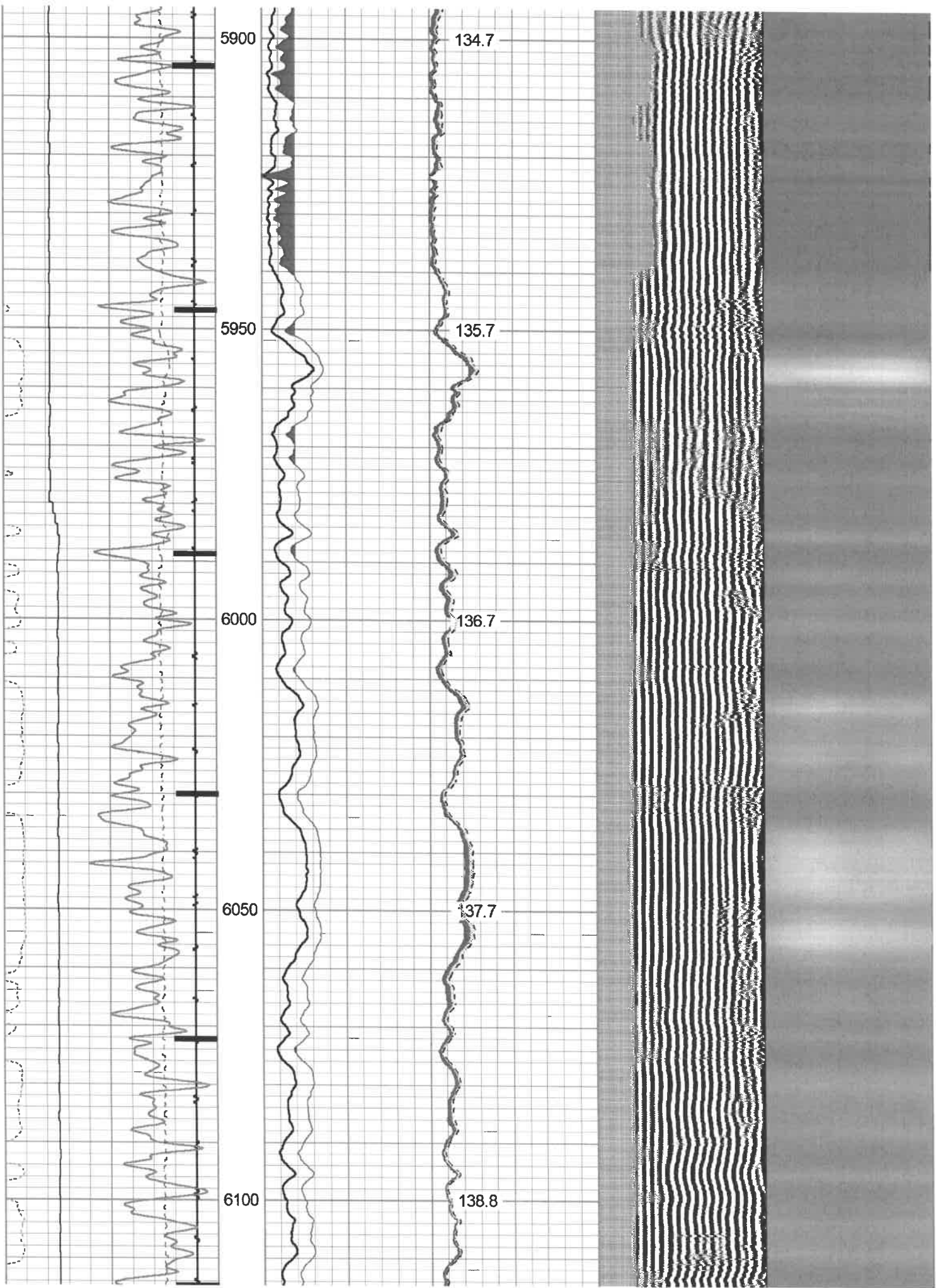
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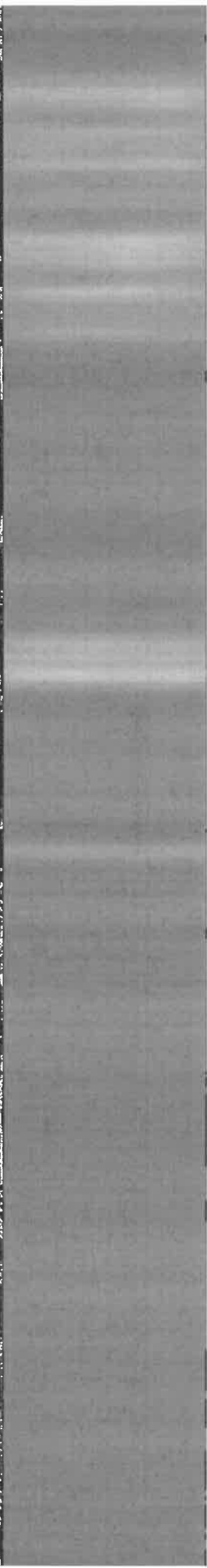
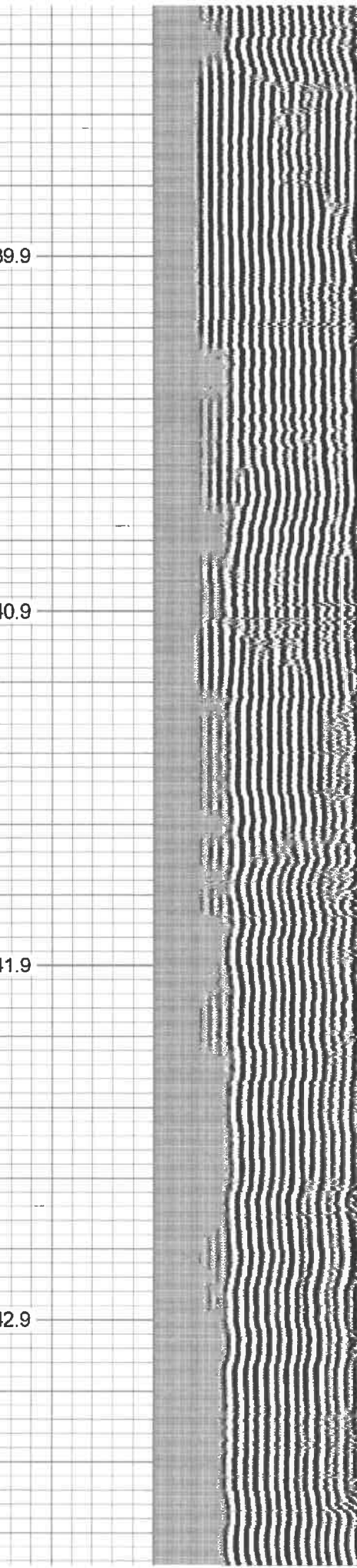
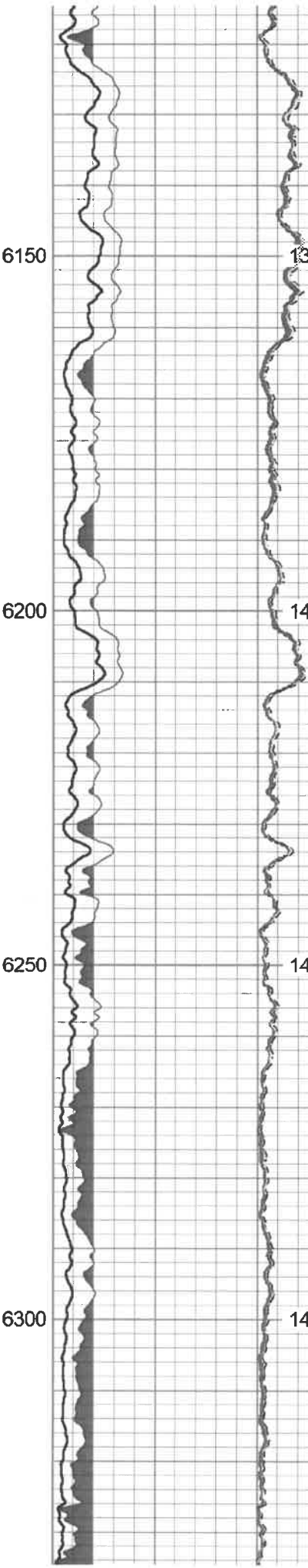
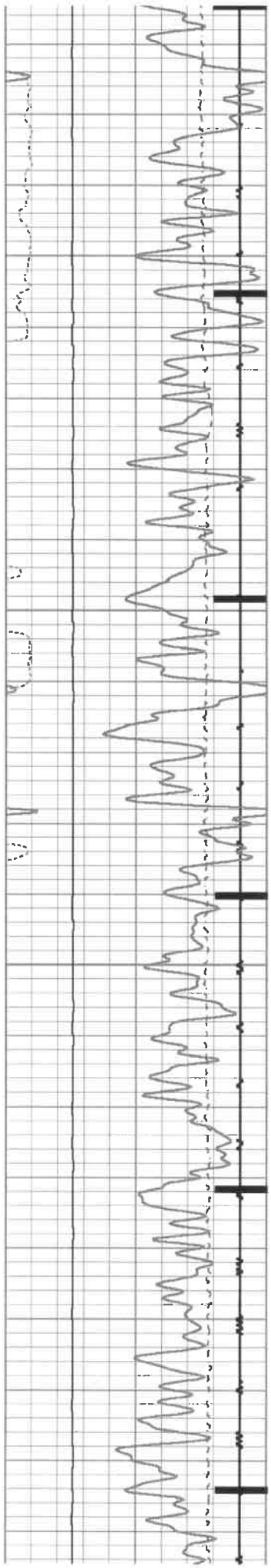
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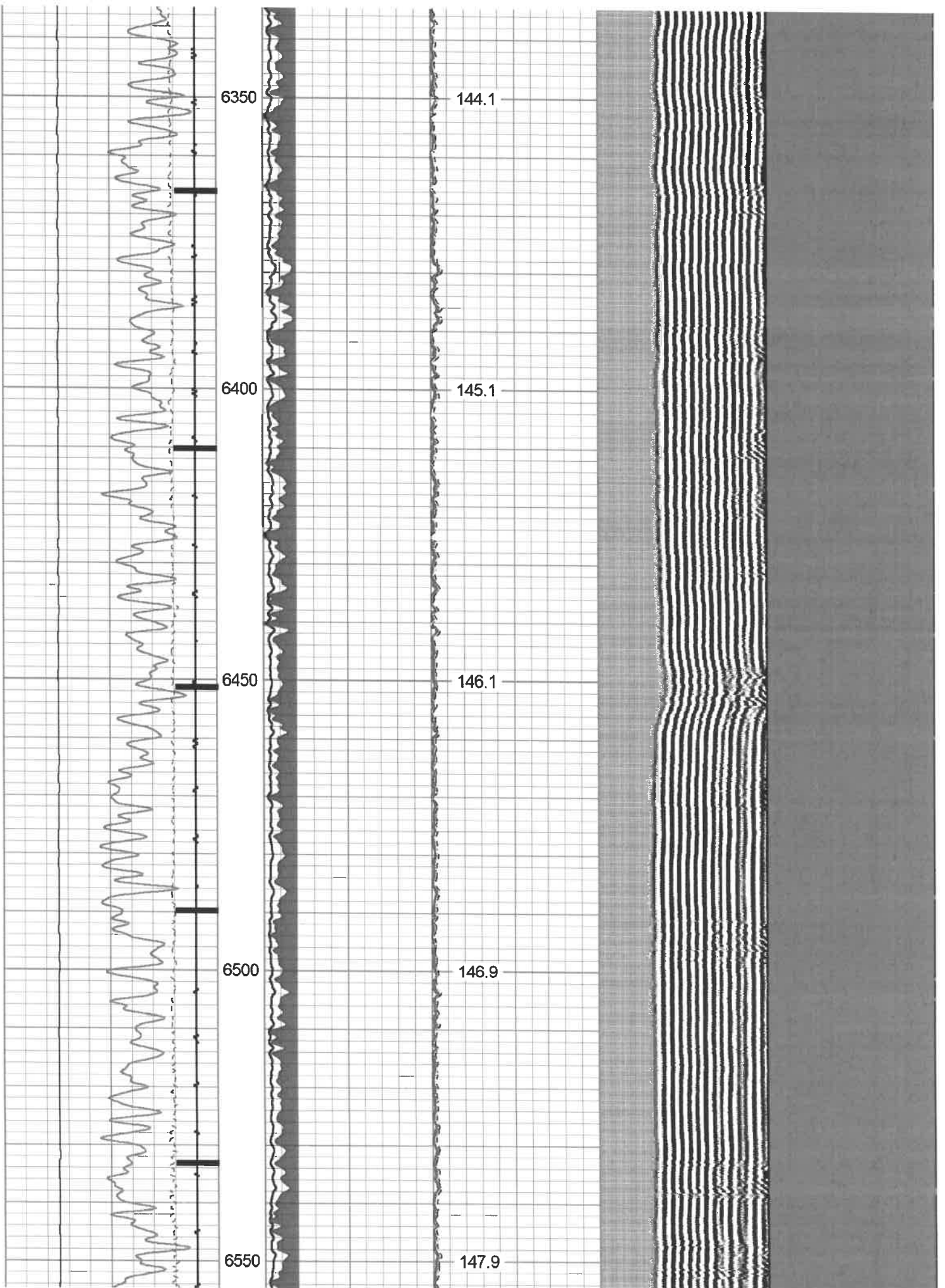
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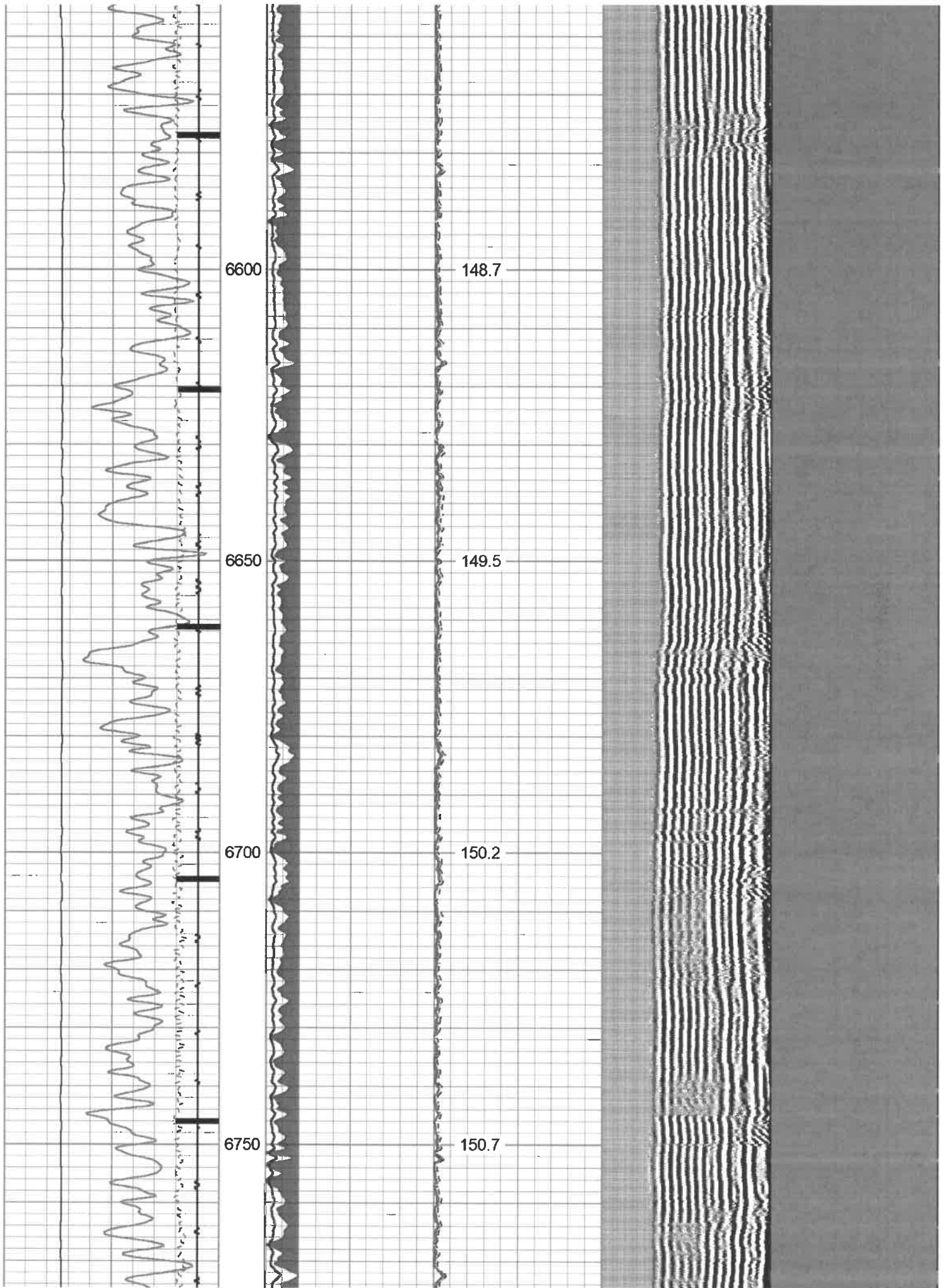
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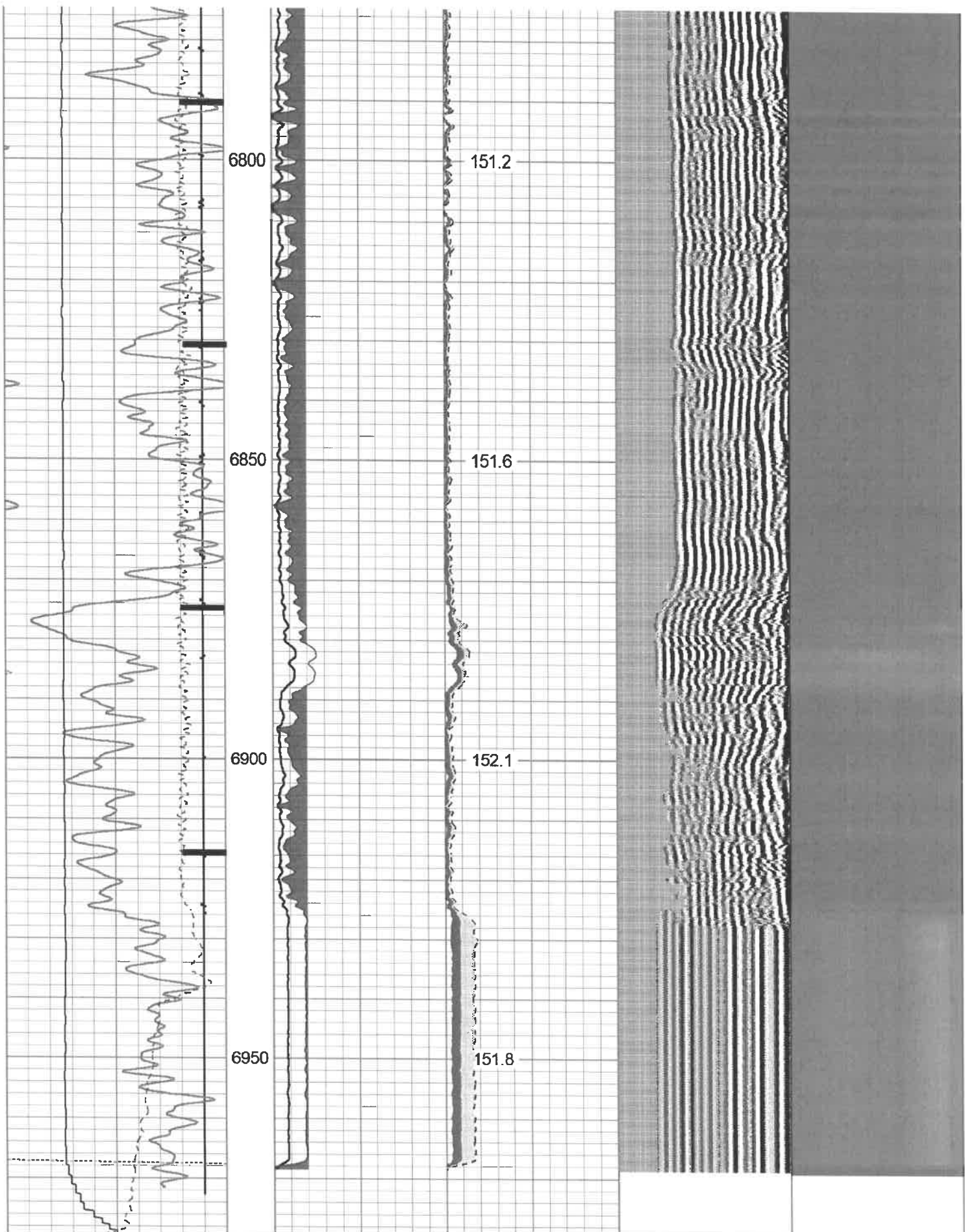












270	Travel Time (usec)	160
90	Casing Collar	-10
0	Gamma Ray (GAPI)	150

0	Amplitude (mV)	100
1	BONDIX	0
0	AMPMIN	150
0	AMPMAX	150
0	AMPAVG	150

Variable Density	1	Cement Map	8
200 (usec)	1200		

Line Speed		
-200	(ft/min)	200
0	Line Tension (lb)	2000

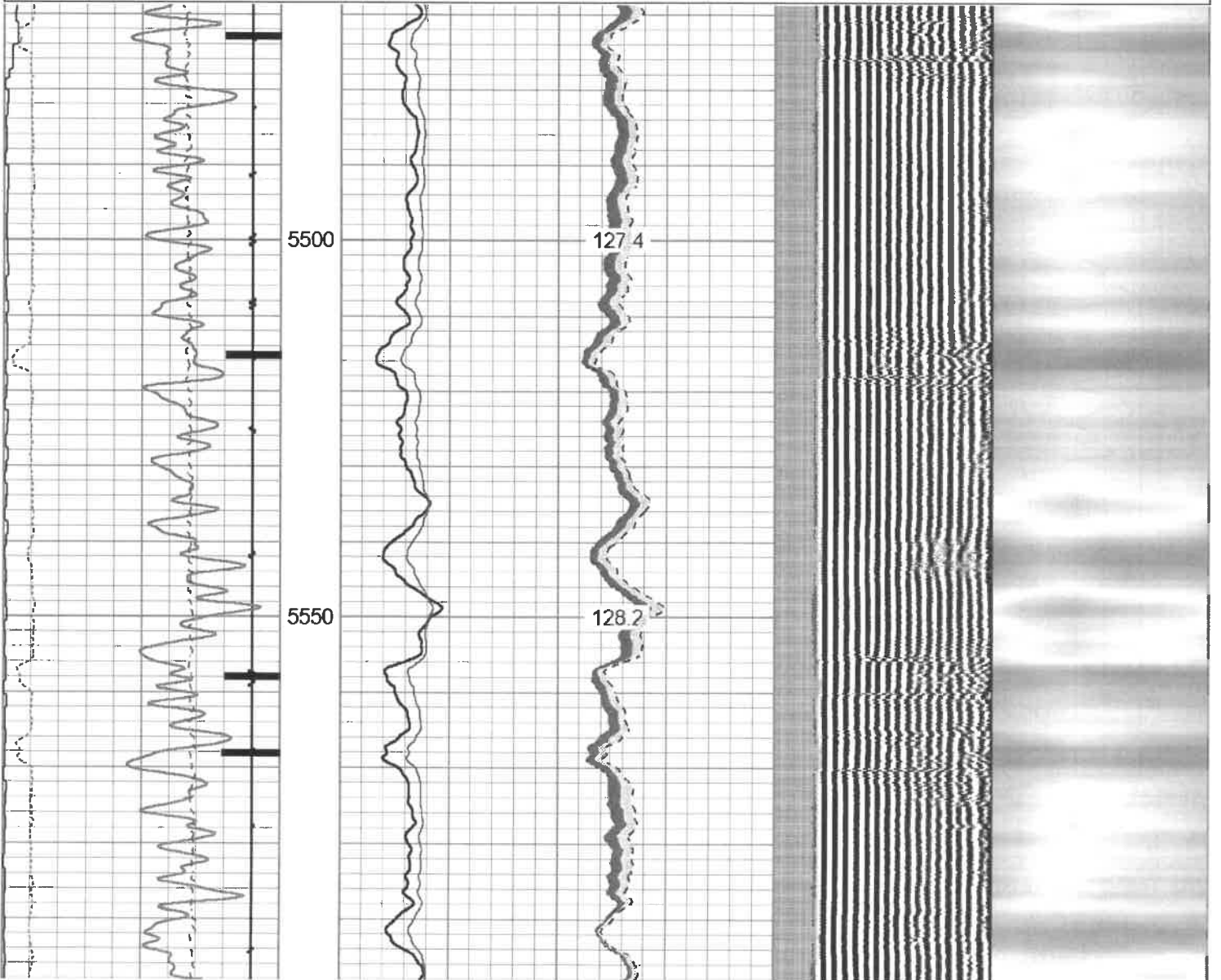
TEMP
(degF)

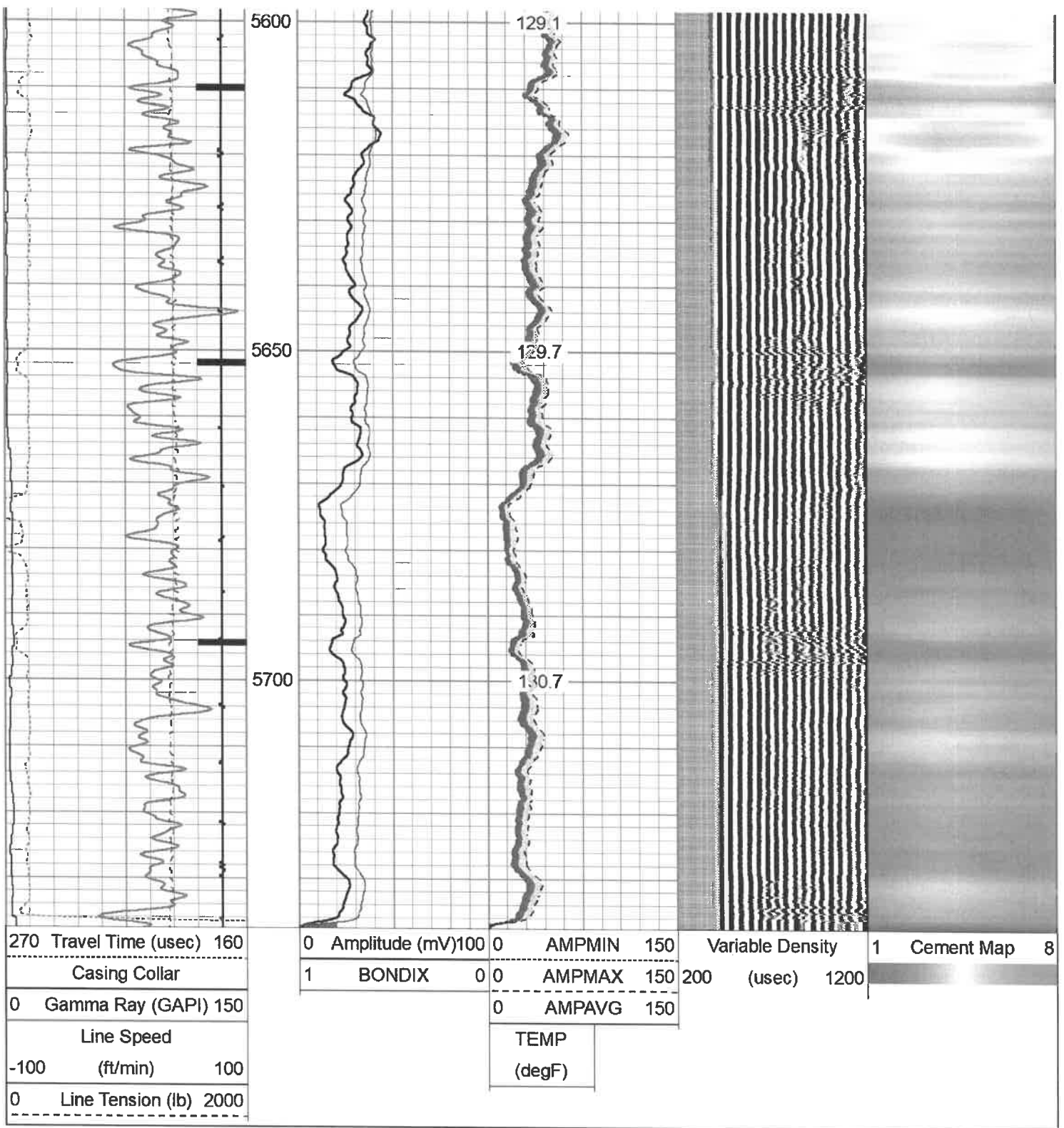


Repeat Pass 0 PSI

Database File antero_shepherd_gatrell_1h_rcbl_21_sep_21.db
 Dataset Pathname North_Canton/1h/run1/pass10
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Tue Sep 21 13:03:18 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				





Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_shepherd_gatrell_1h_rcbl_21_sep_21.db
 Dataset North_Canton/1h/run1/pass12/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 152	in 5.5	in 0.361	lb/ft 20	mV 71.9	mV 2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 10.8	No	usec 261	degF 65	ft 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_1h_rcbl_21_sep_21.db
 Dataset Pathname North_Canton/1h/run1/pass12
 Dataset Creation Tue Sep 21 13:11:18 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: 3126.808 ft

Master Calibration, performed Tue Sep 21 12:45:51 2021:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.011	1.018	2.200	71.921	69.234	1.471
CAL	0.554	1.203				
5'	0.015	0.849	2.200	71.921	83.558	0.984
SUM						
S1	0.034	1.053	0.000	100.000	98.116	-3.348
S2	0.006	1.074	0.000	100.000	93.656	-0.586
S3	0.002	1.012	0.000	100.000	98.937	-0.149
S4	0.003	0.965	0.000	100.000	103.995	-0.321
S5	0.001	0.959	0.000	100.000	104.369	-0.131
S6	0.003	1.006	0.000	100.000	99.715	-0.293
S7	0.002	1.031	0.000	100.000	97.184	-0.215
S8	-0.000	1.057	0.000	100.000	94.593	0.016

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	1.203	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)
HeadVolt	16.99		CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00
Temp	14.14		RBT-Probe275T (2.75") Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS8	11.91		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
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					
WVFCAL	7.66					
HEADVOLT	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\"

2.88

2.75

20.00

Dataset: antero_shepherd_gatrell_1h_rcbl_21_sep_21.db: North_Canton/1h/run1/pass12
Total length: 18.07 ft
Total weight: 178.00 lb
O.D.: 4.88 in



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