



**RADIAL CEMENT BOND
GAMMA RAY/CCL/VDL**

Company ANTERO RESOURCES CORPORATION
 Well KAREN UNIT 3H
 Field MARCELLUS
 County RITCHIE
 State W.V.

Company ANTERO RESOURCES CORPORATION
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 Field MARCELLUS
 County RITCHIE State W.V.

Location: API #: 47085102150000

Other Services

Permanent Datum	SEC	TWP	RGE	Elevation	N/A
Log Measured From				K.B.	N/A
Drilling Measured From				K.B. OF 30'	N/A

Date	4/3/19
Run Number	ONE
Depth Driller	19215'
Depth Logger	6760'
Bottom Logged Interval	6760'
Top Log Interval	SURFACE
Open Hole Size	N/A
Type Fluid	H2O
Density / Viscosity	N/A
Max. Recorded Temp.	142 DEG
Estimated Cement Top	630'
Time Well Ready	N/A
Time Logger on Bottom	N/A
Equipment Number	340
Location	BRIDGEPORT, WV
Recorded By	J. BOGGS
Witnessed By	MR. BOB REED

Borehole Record		Casing Record					
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

THANK YOU FOR USING KLX ENERGY SERVICES

LOG WAS RAN ON 5 1/2" CASING WITH 1500PSI ON CASING
 TOP OF CEMENT- 630'
 BOTTOM HOLE TEMP- 142 DEG
 MARKER JOINT ON LOG @ 5490'-5500'
 CORRECTED UP HOLE 29' TO PUT MARKER ON DEPTH WITH PIPE TALLY

FEB 18 2020
 WV Department of Environmental Protection
 Office of Chemical Cas



MAIN LOG 5"/100'

Database File: c:\warrior\data\2019 anterol\antero-karen3h.db
 Dataset Pathname: pass3
 Presentation Format: antero f
 Dataset Creation: Wed Apr 03 13:52:08 2019 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

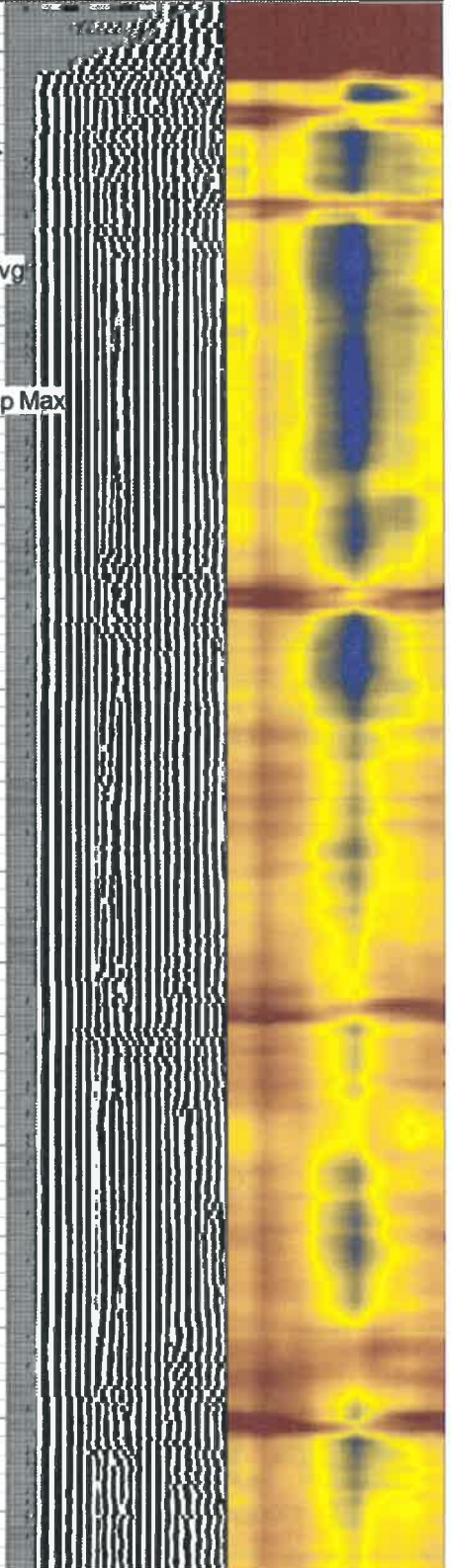
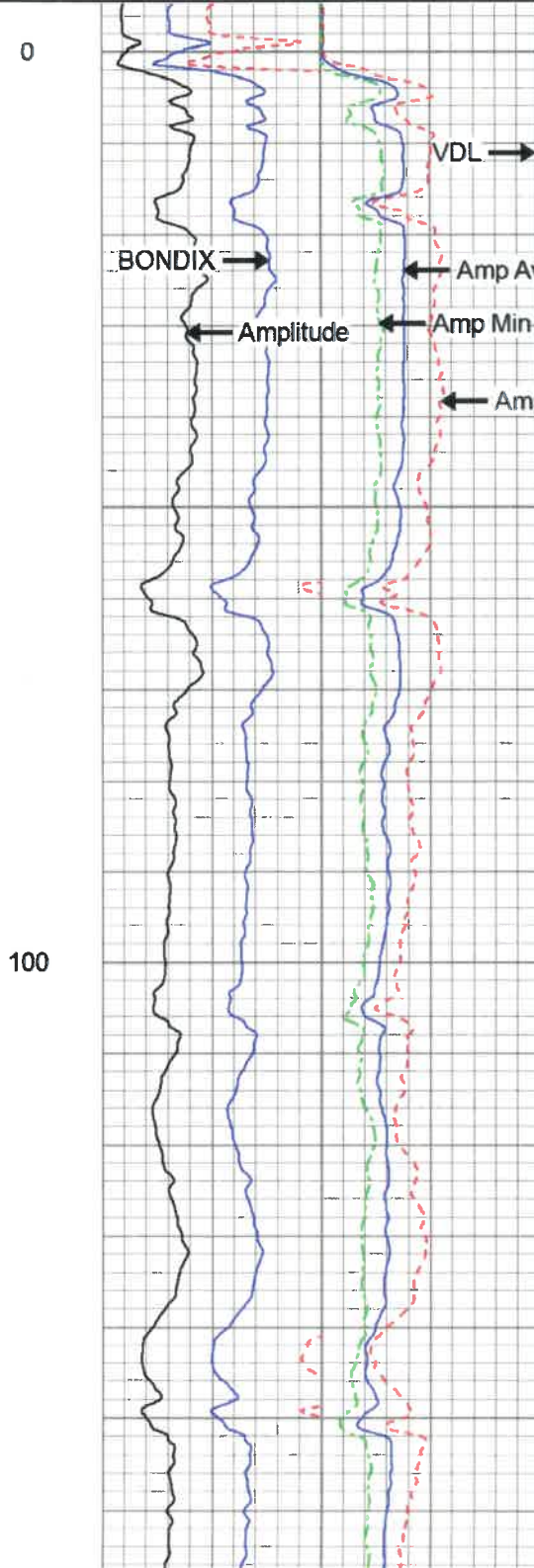
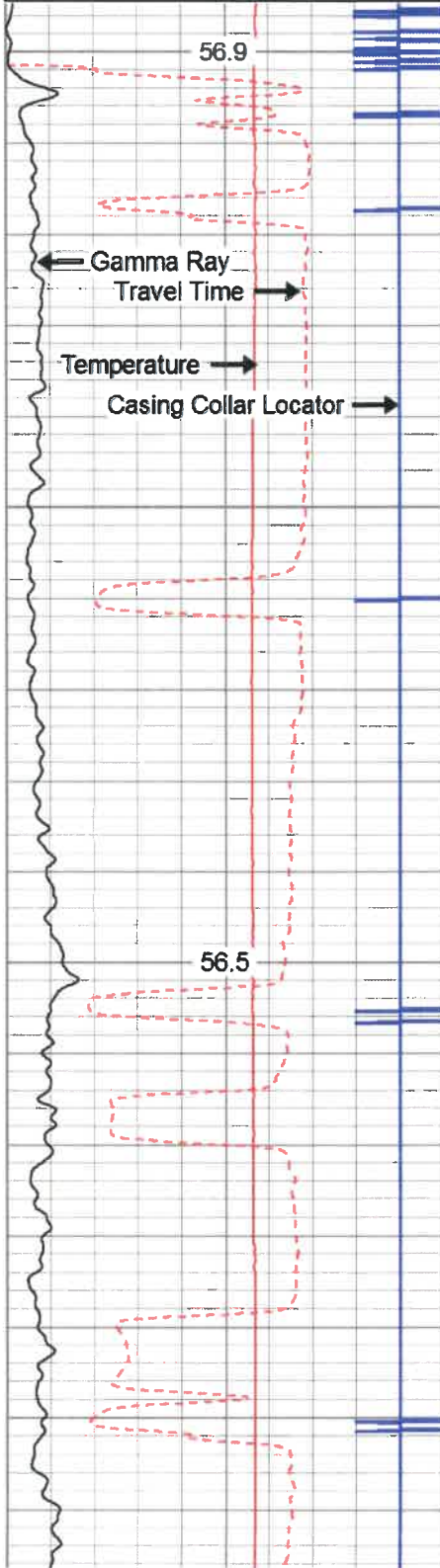
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9	Casing Collars	-1
0	Gamma Ray	180
0	TEMP (degF)	100

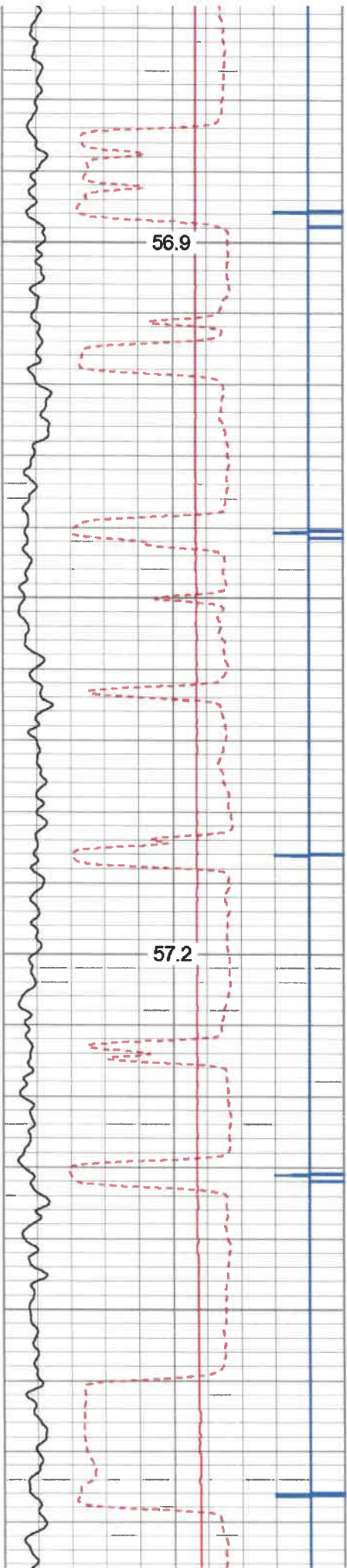
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0	AmpX5 (mV)	20	0	Amp Max	150
1	BONDIX	0	0	Amp Min	150

200	VDL	1200	1	Sector Map	12
			20		80



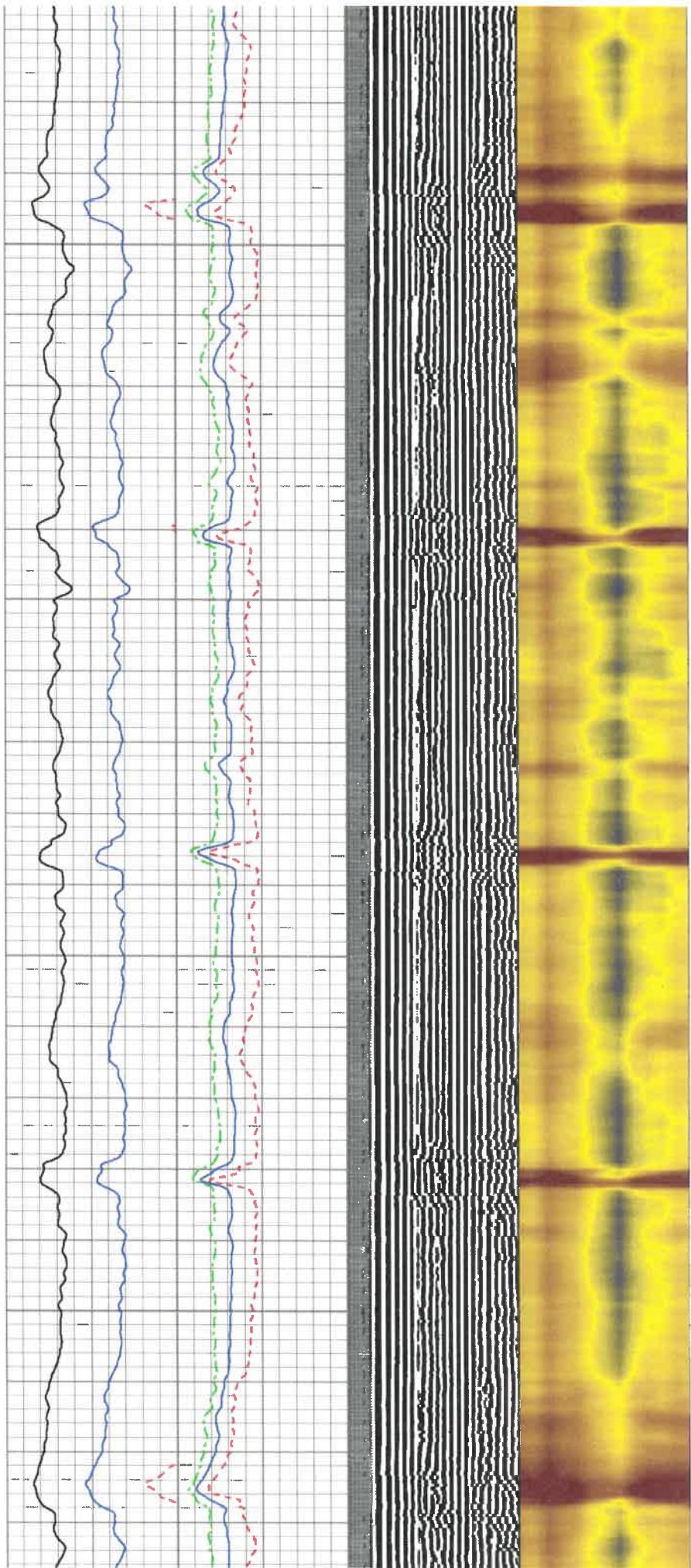
TEMP (degF)

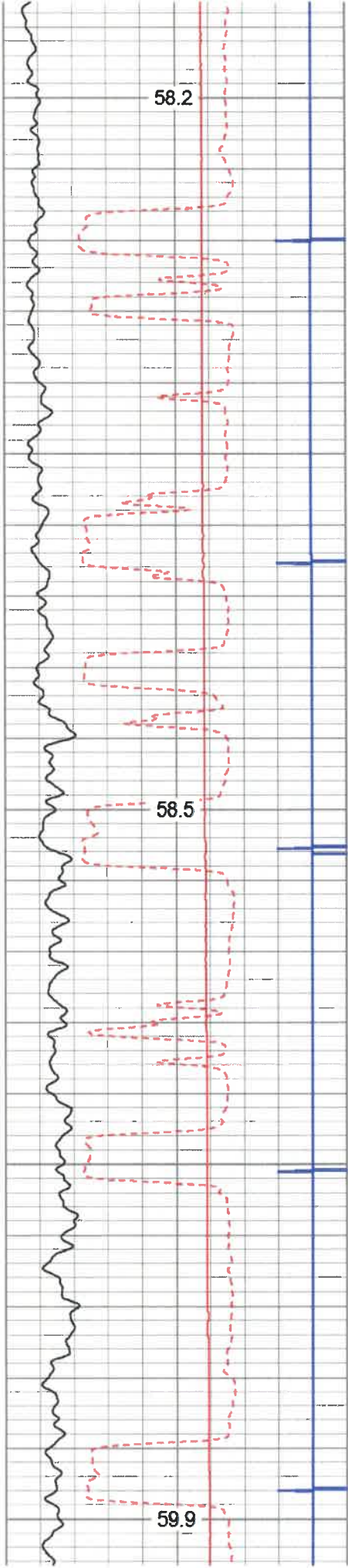




200

300

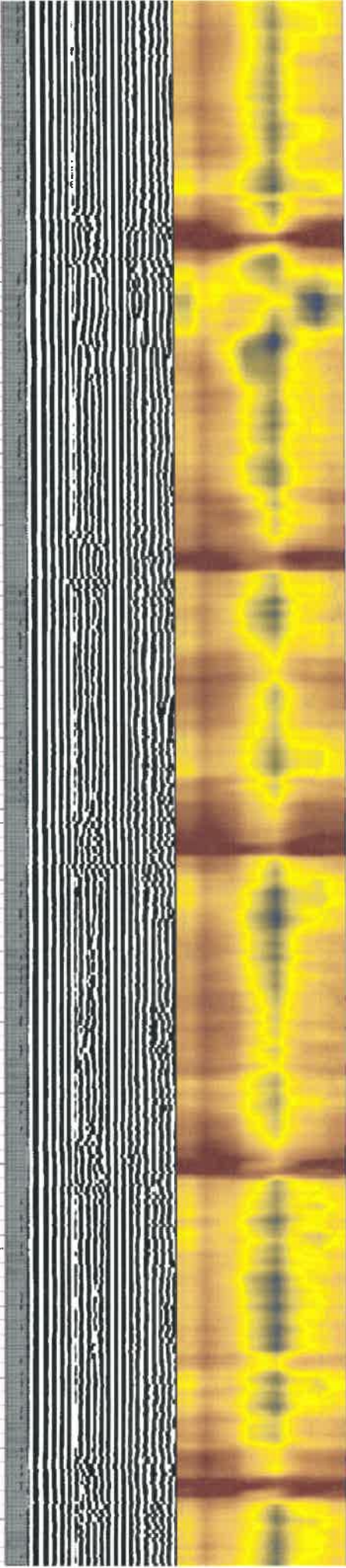
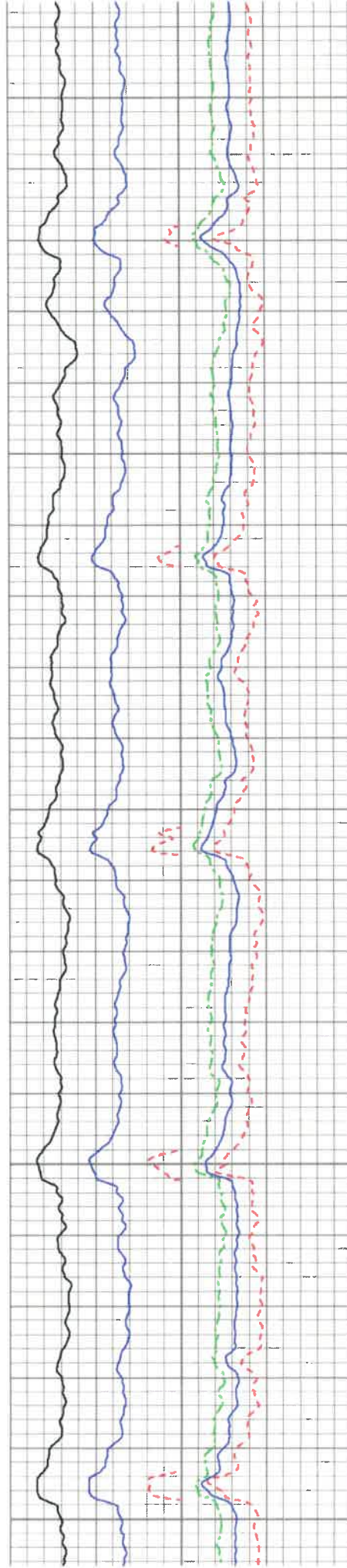


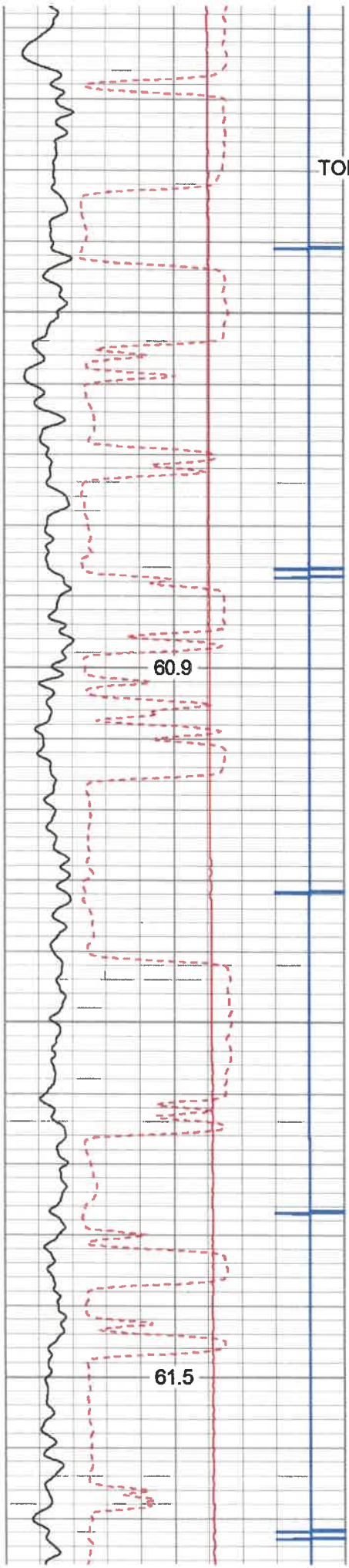


400

500

600

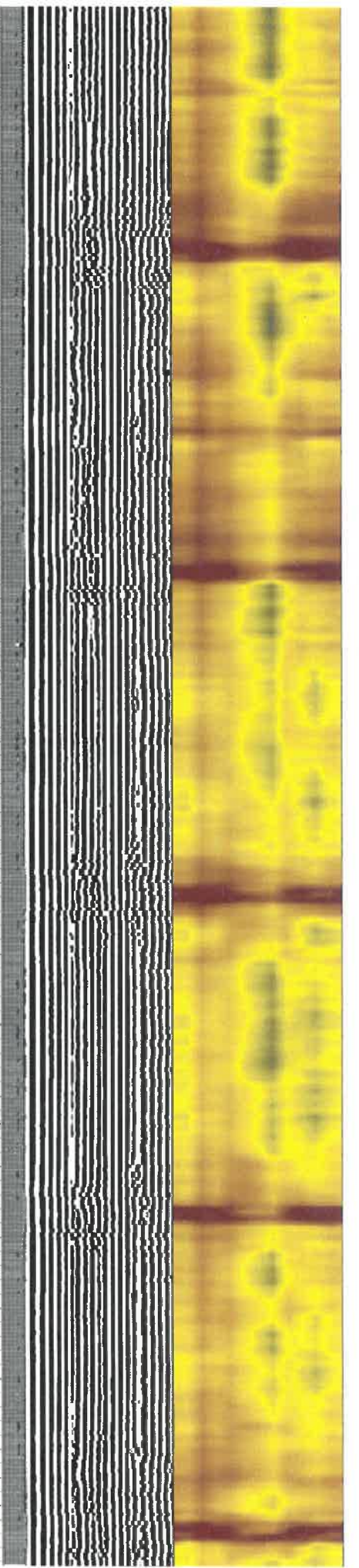
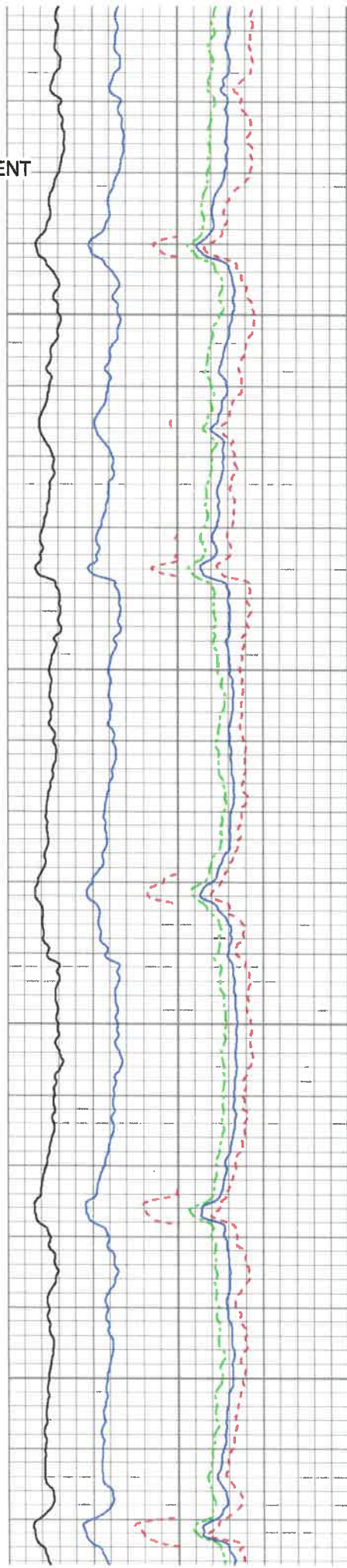


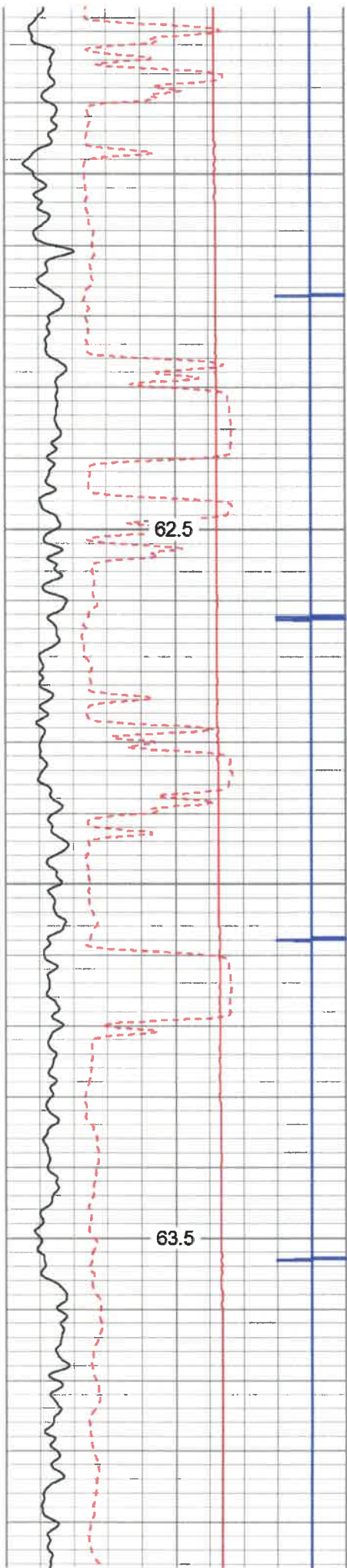


TOP OF CEMENT

700

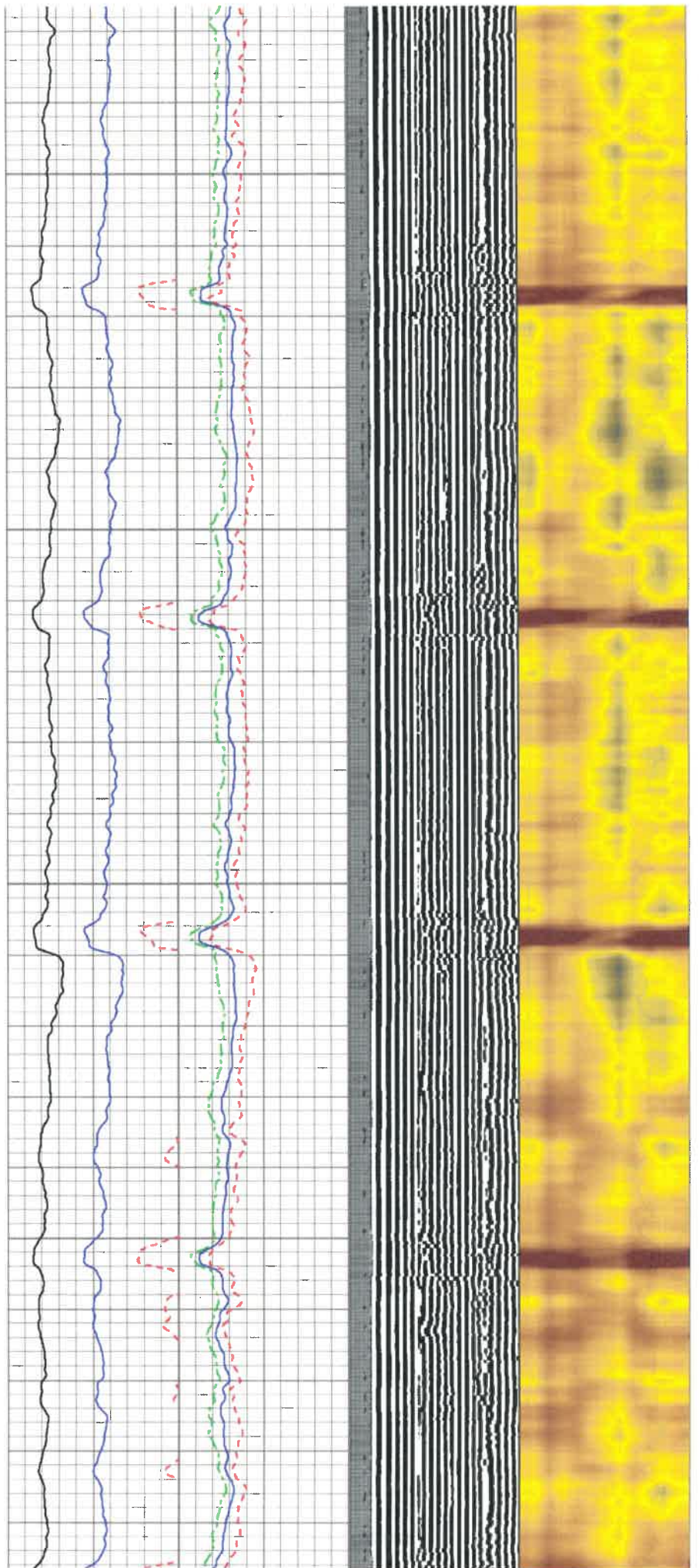
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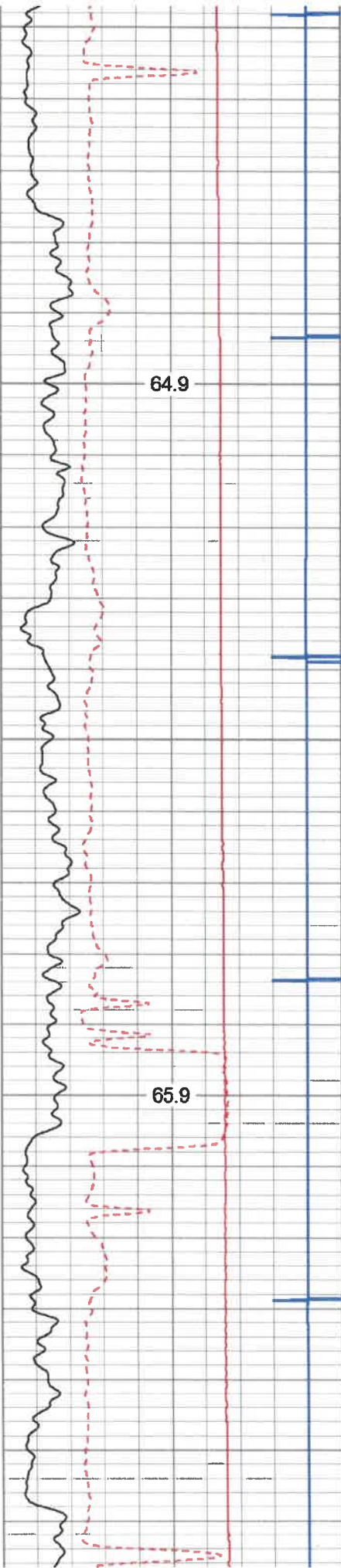




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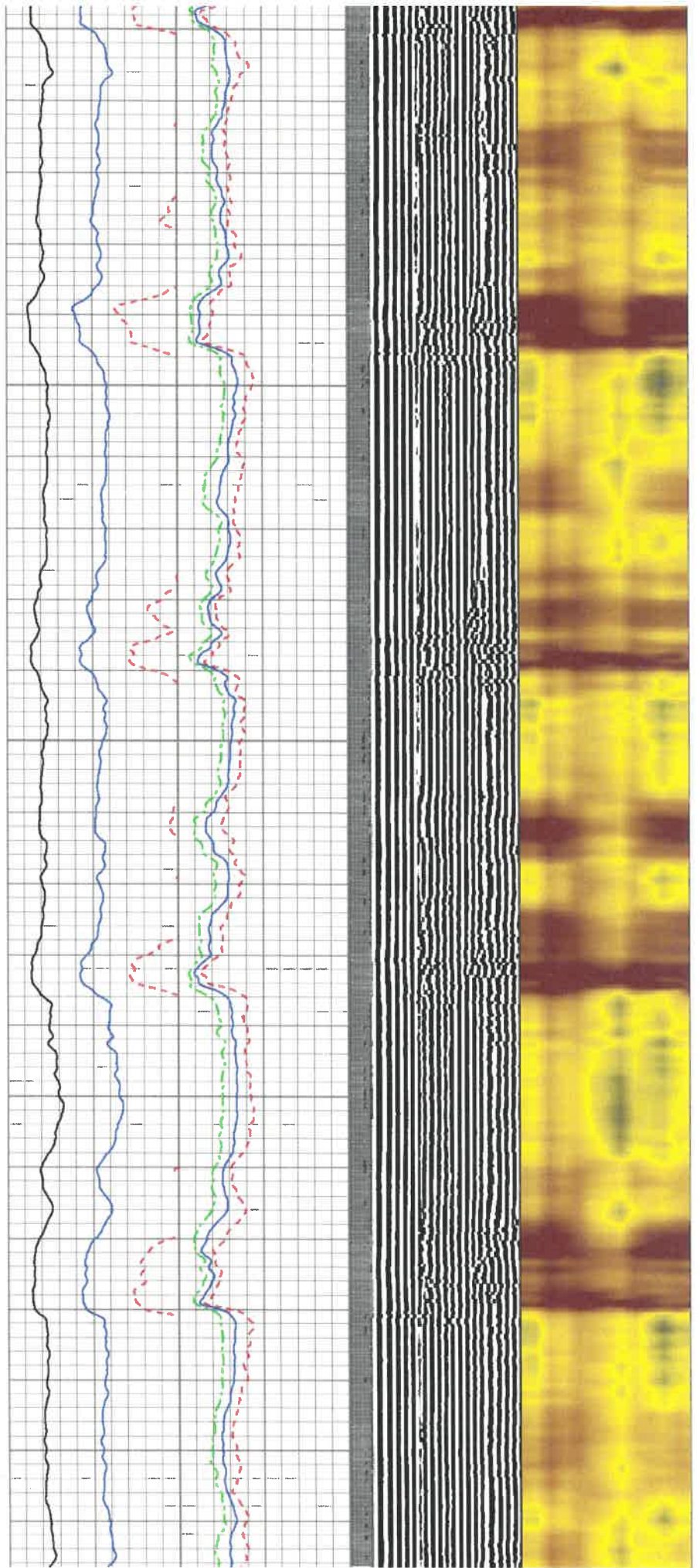
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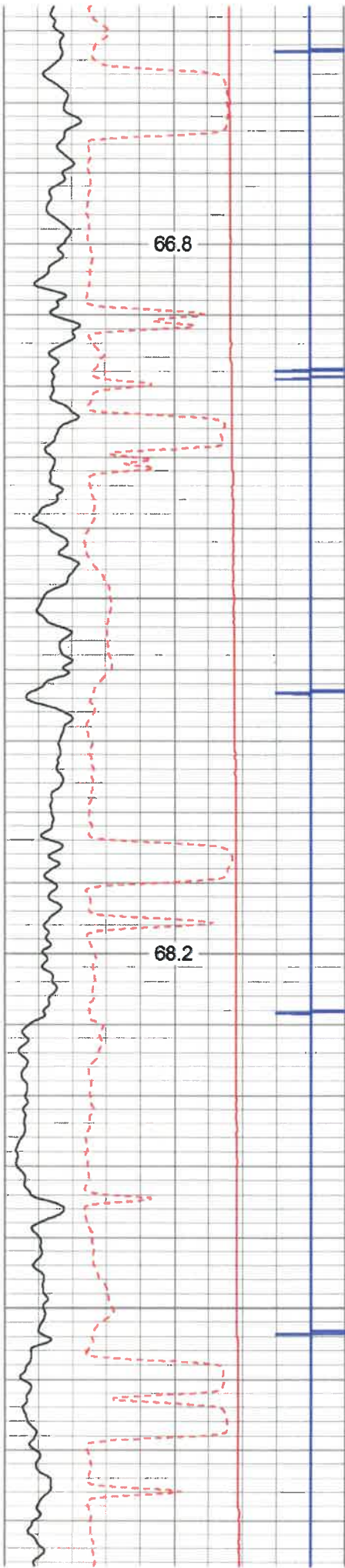




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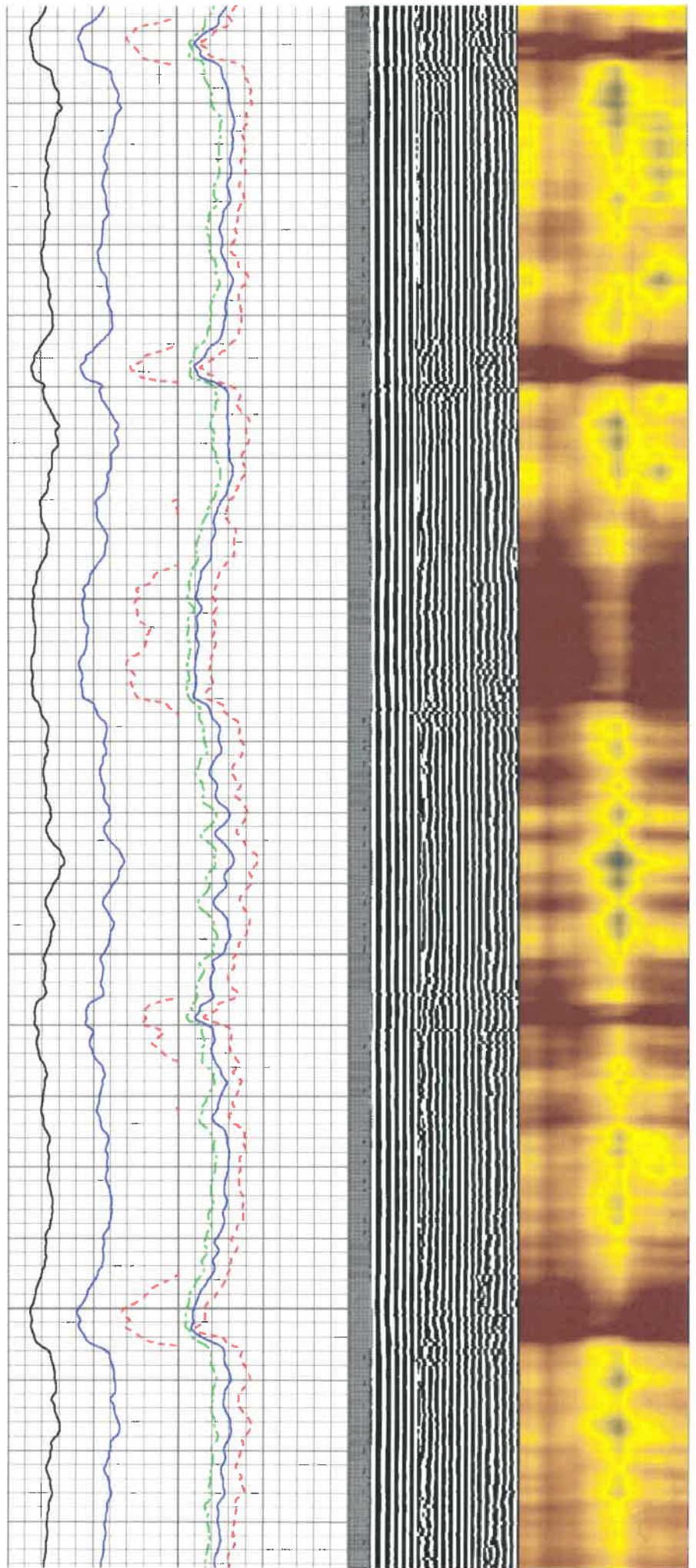
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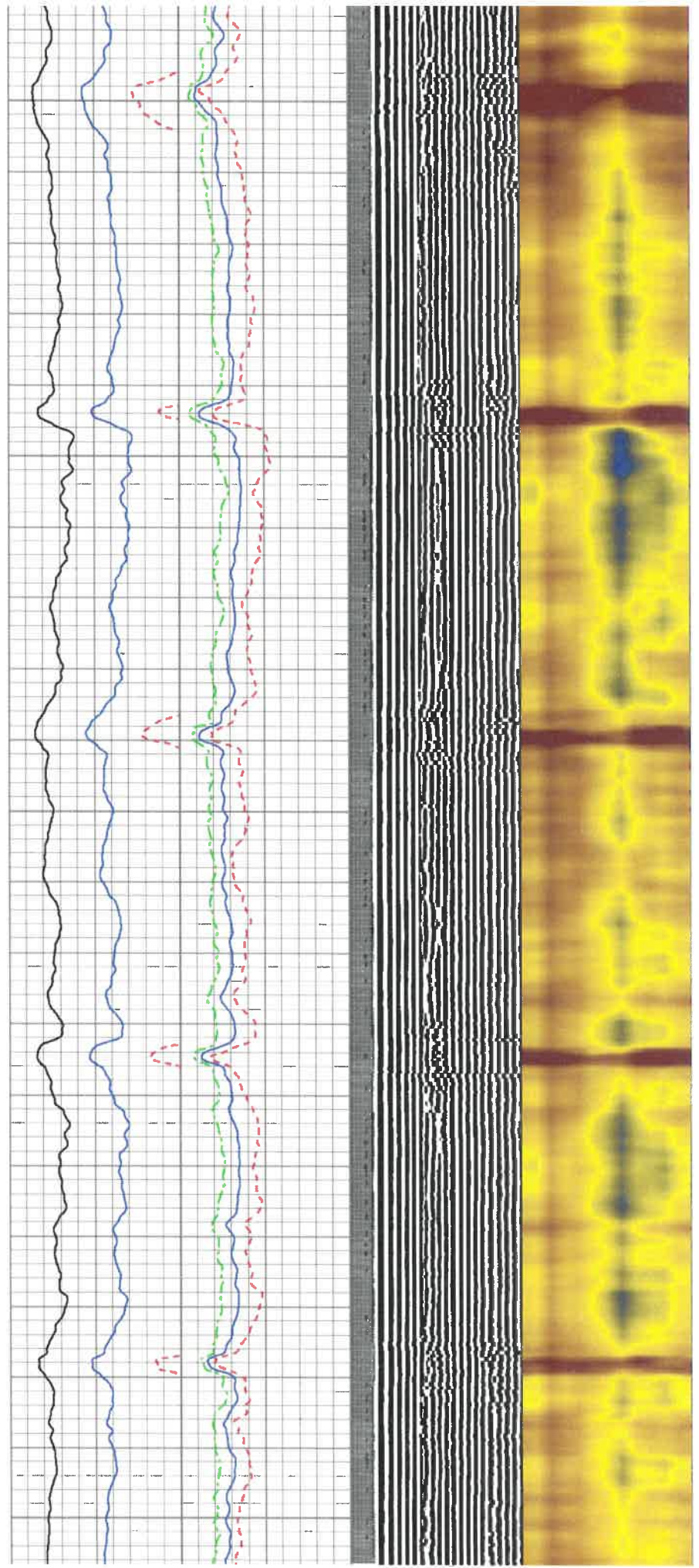
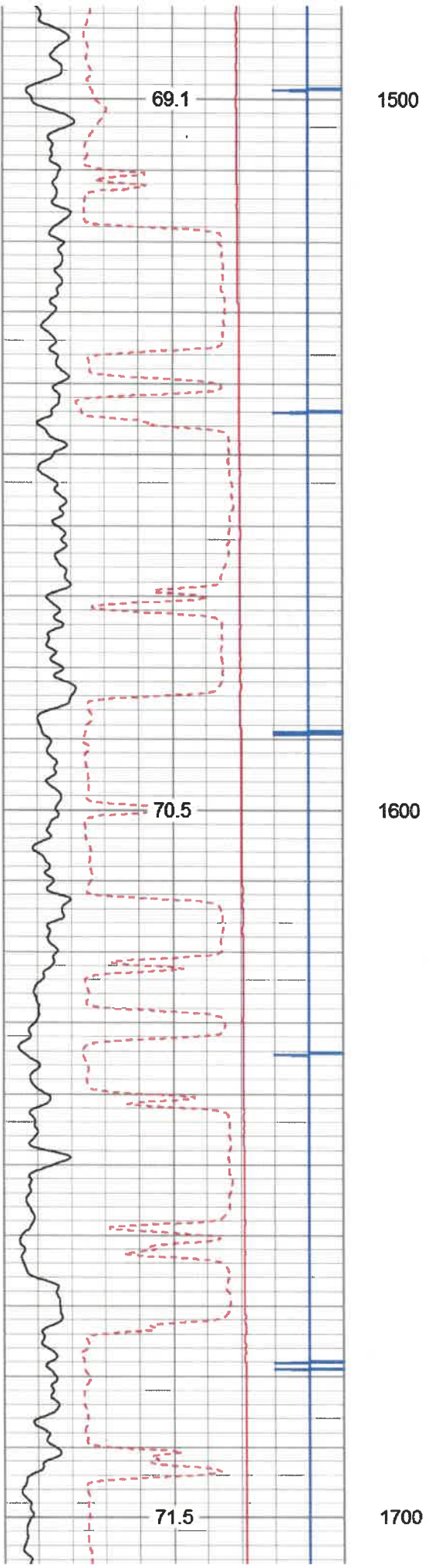


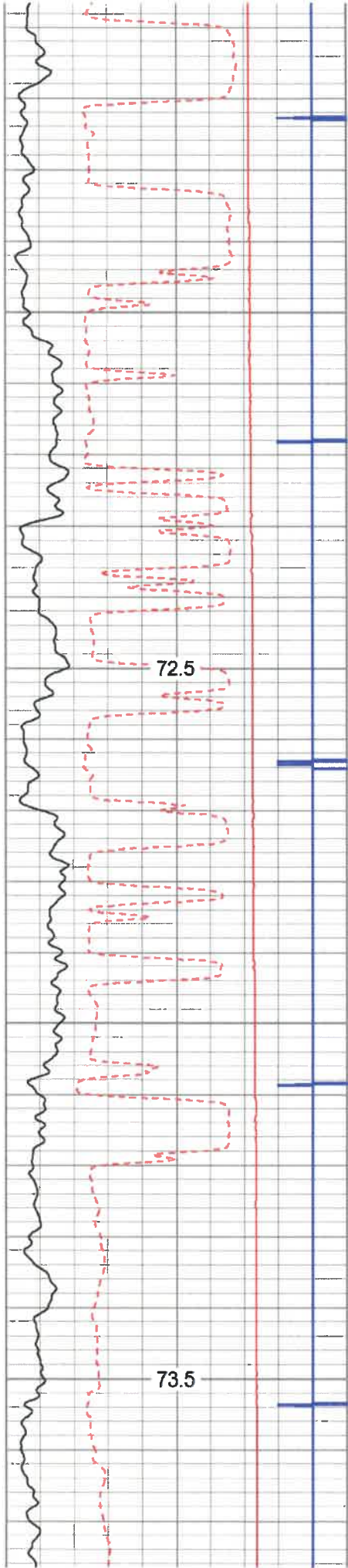


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1400

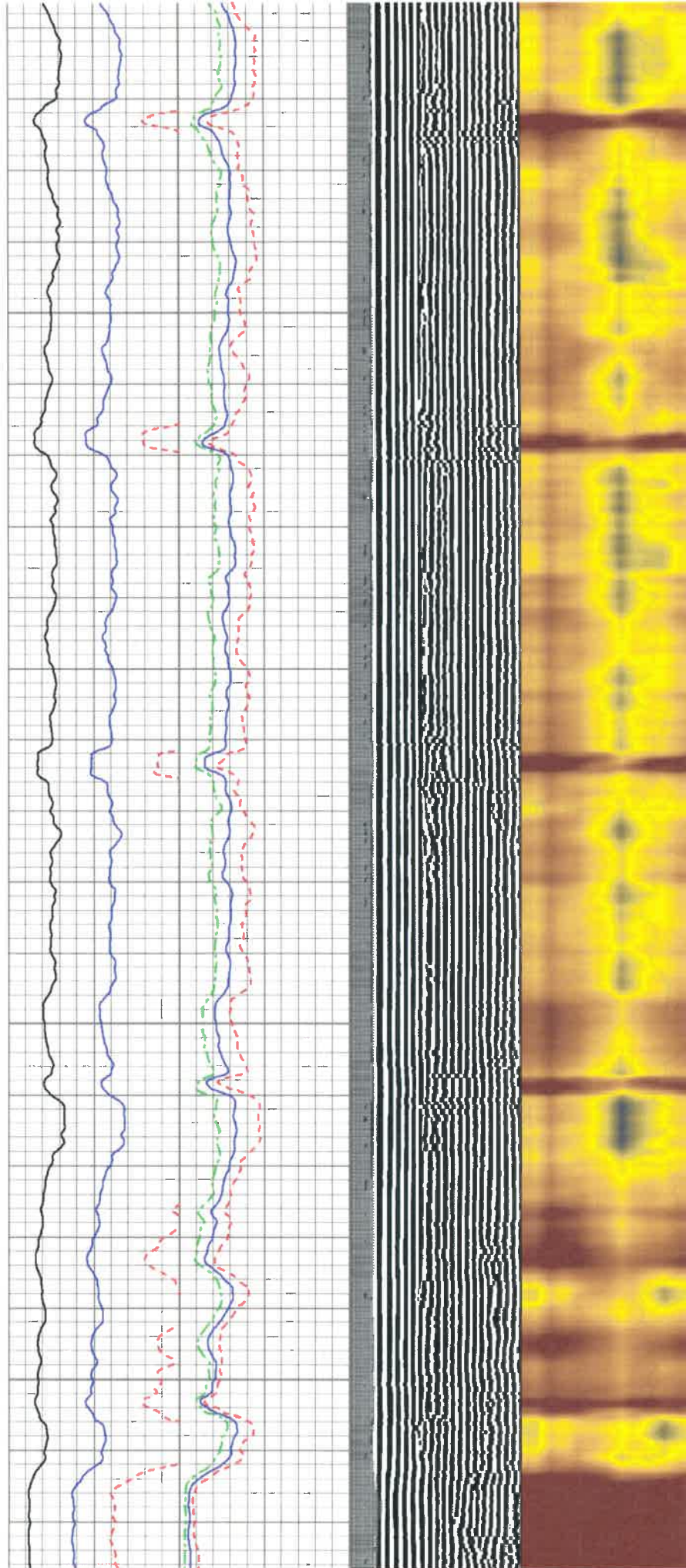


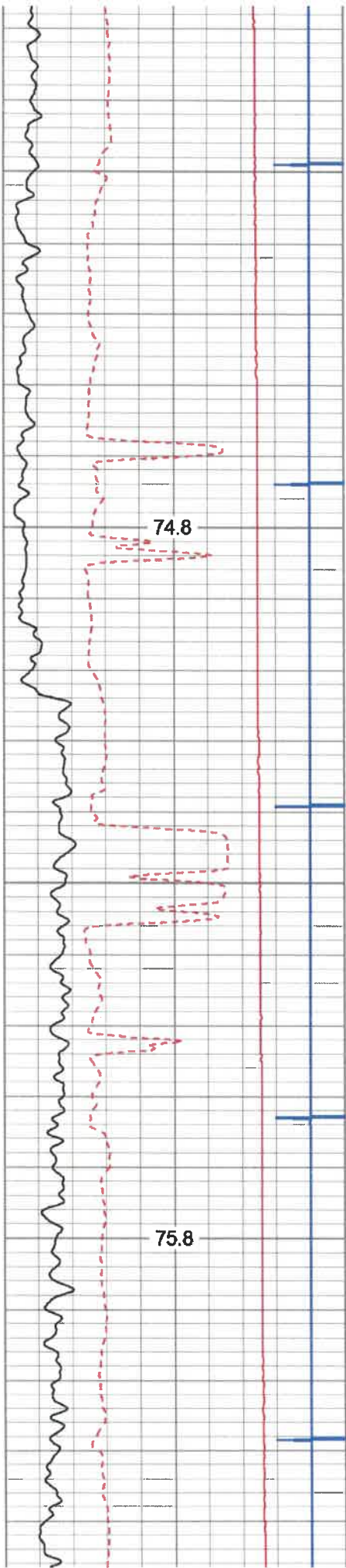




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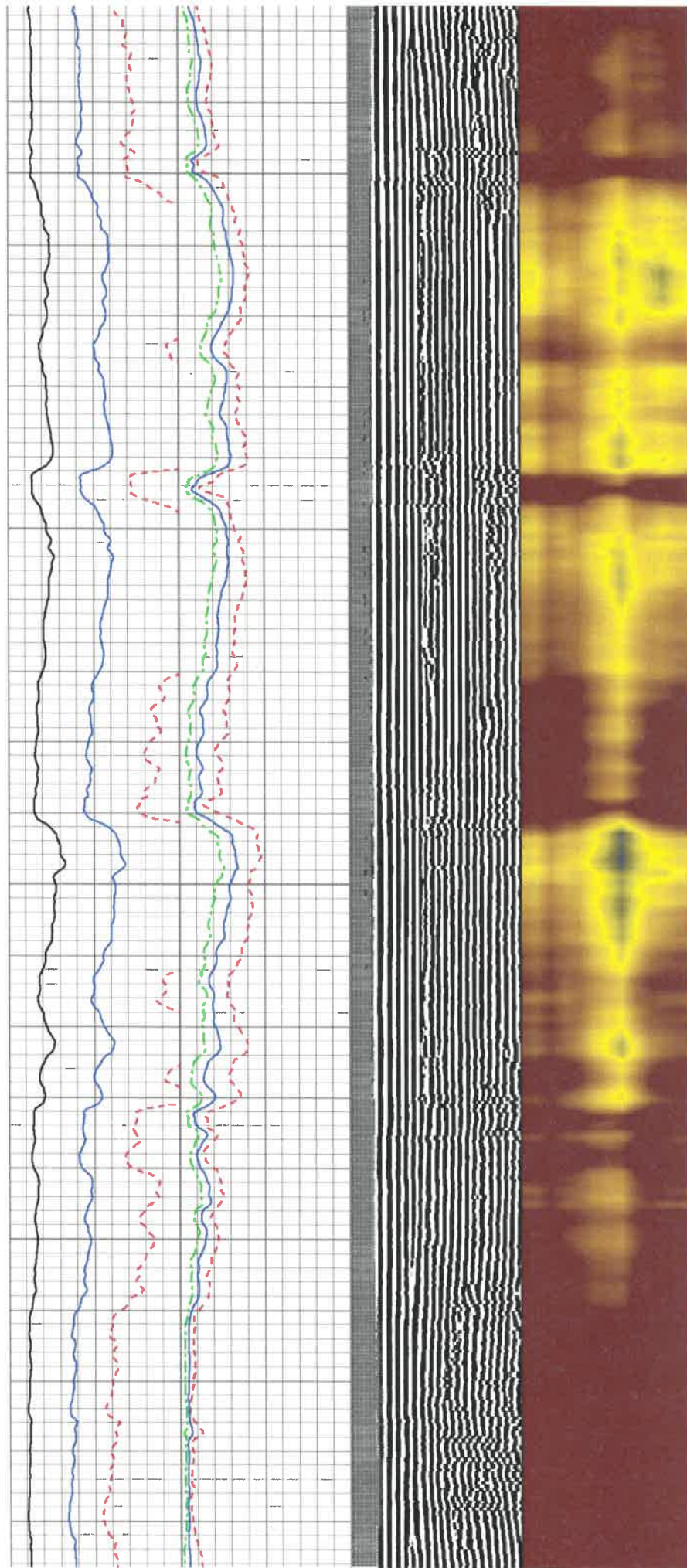
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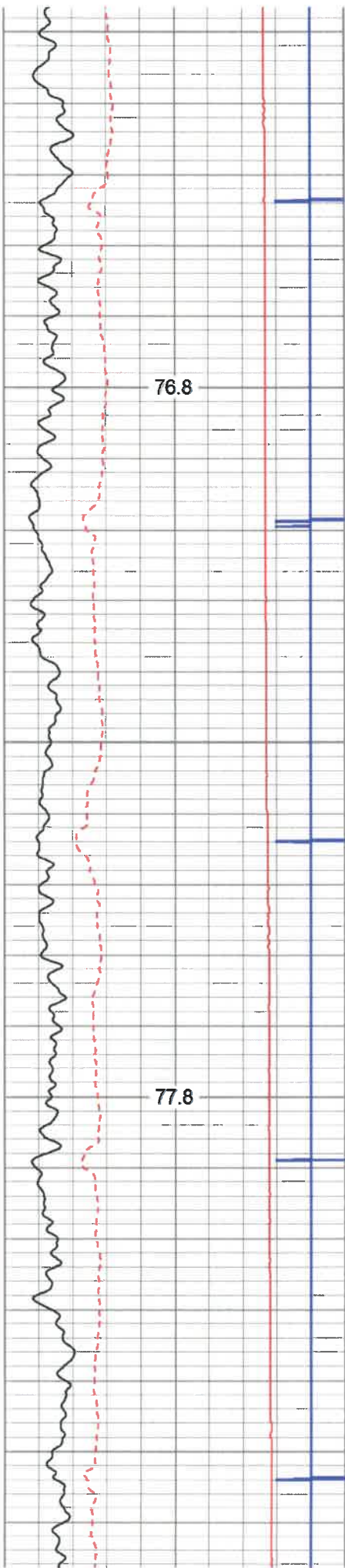




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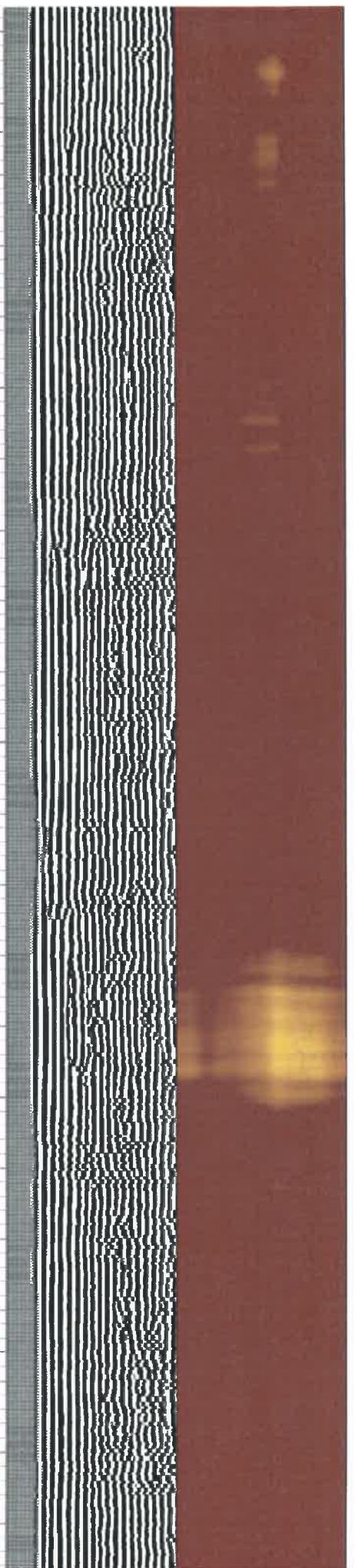
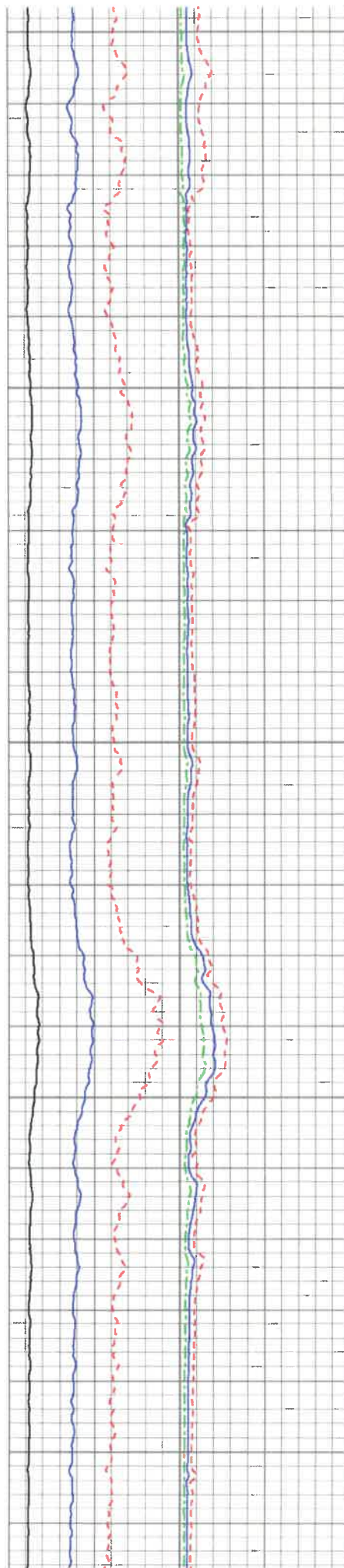
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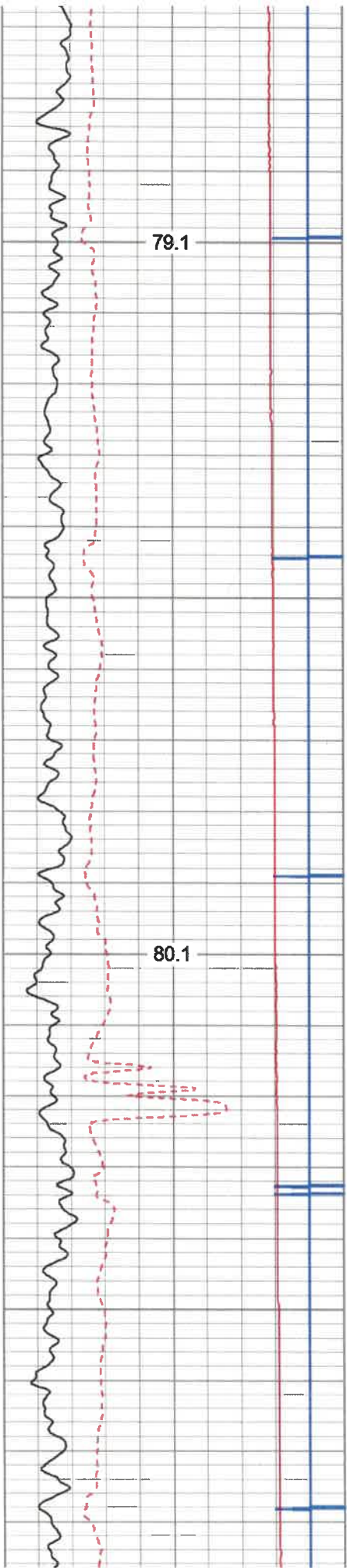




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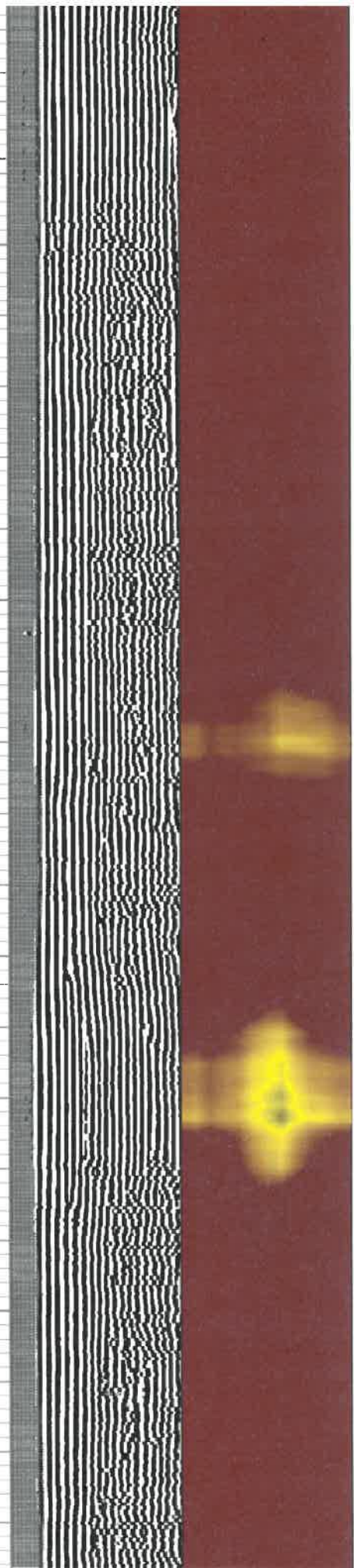
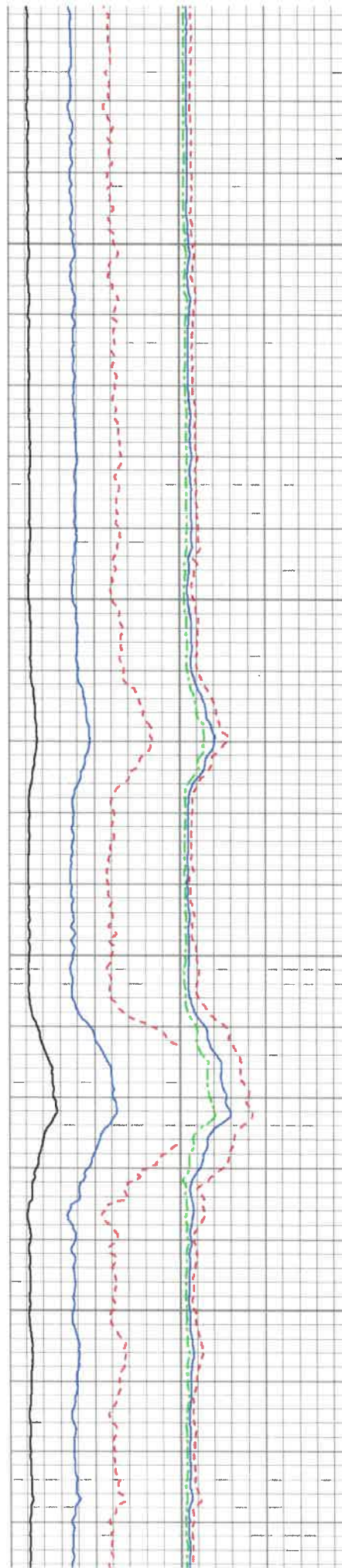
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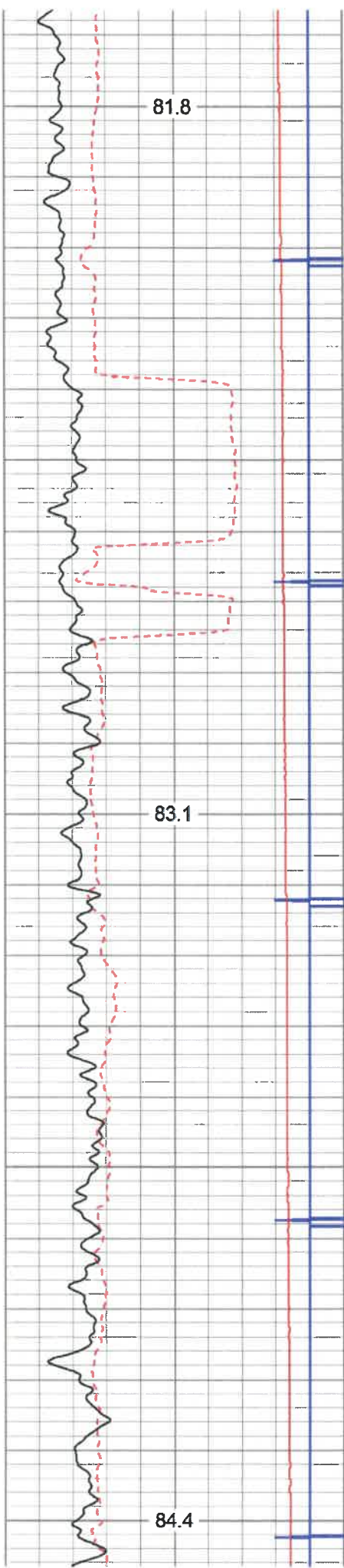




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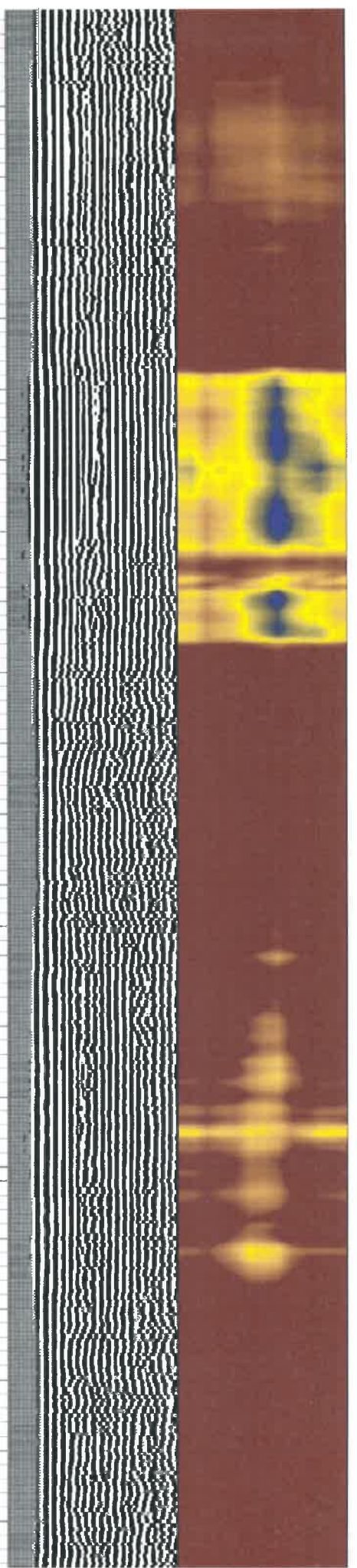


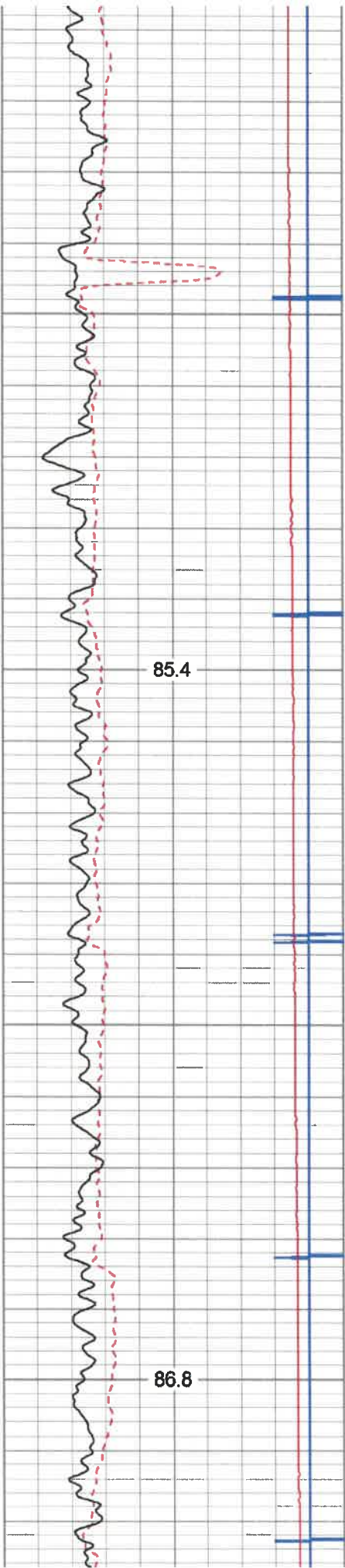


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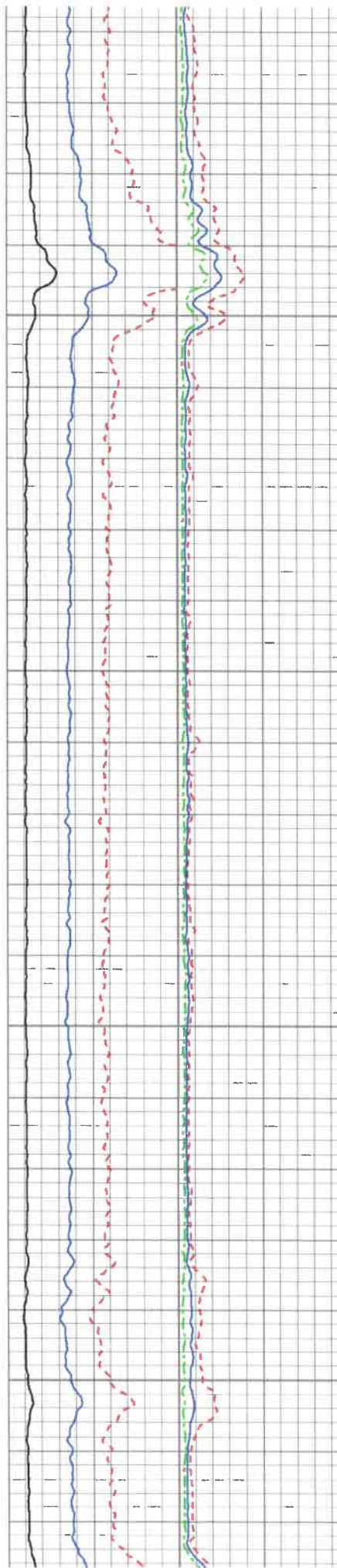
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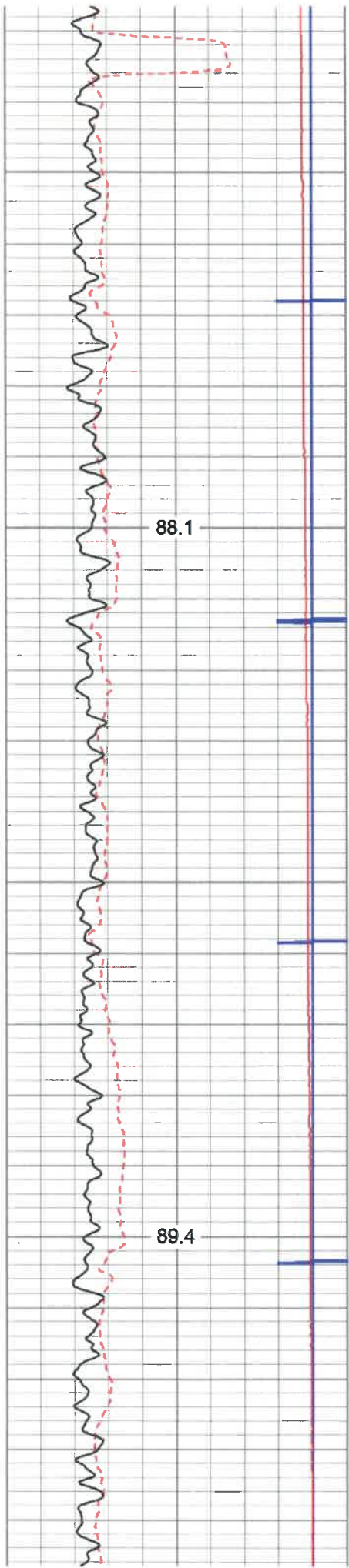




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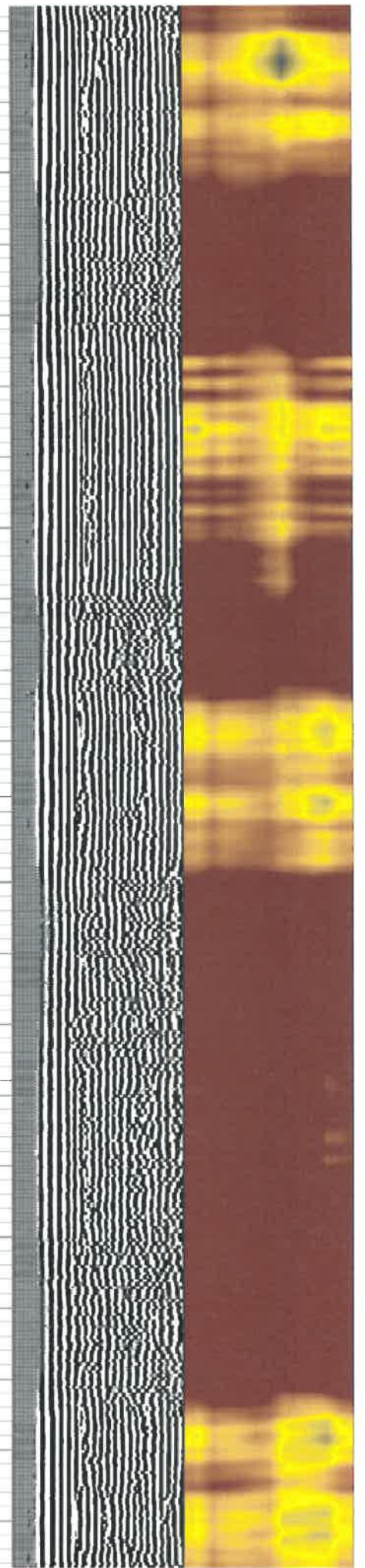
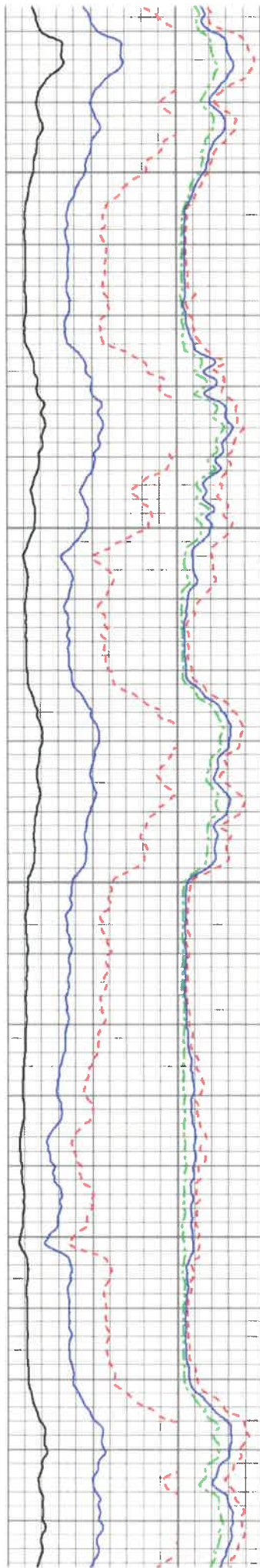
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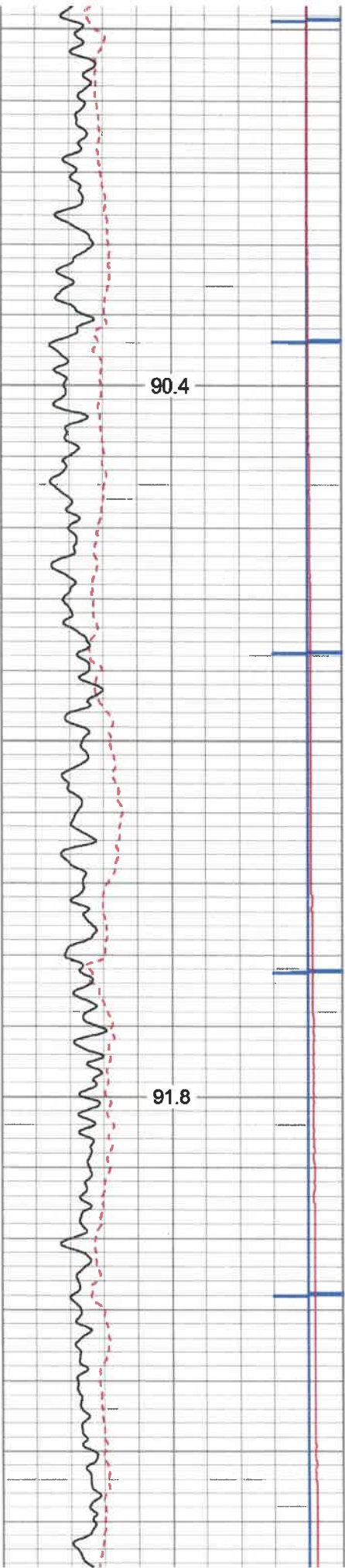




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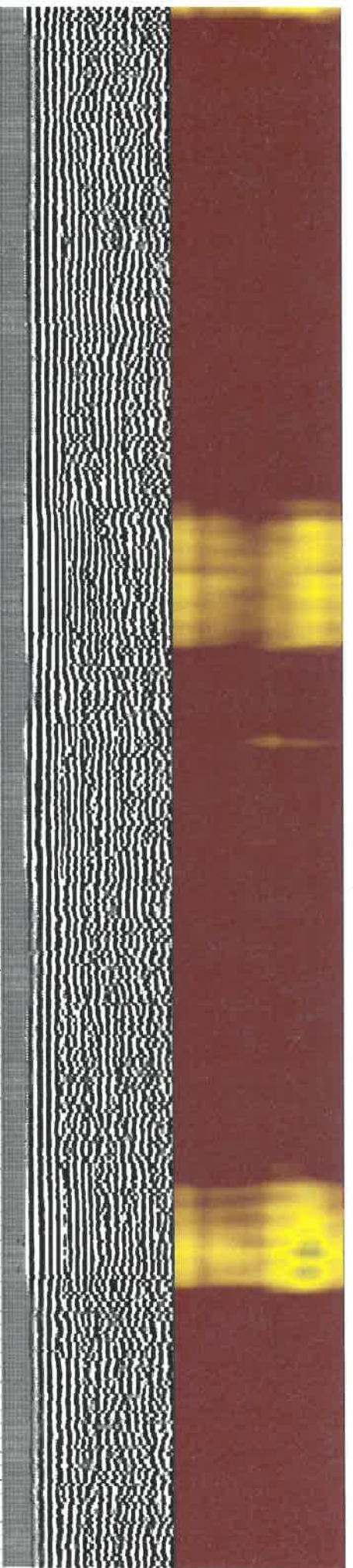
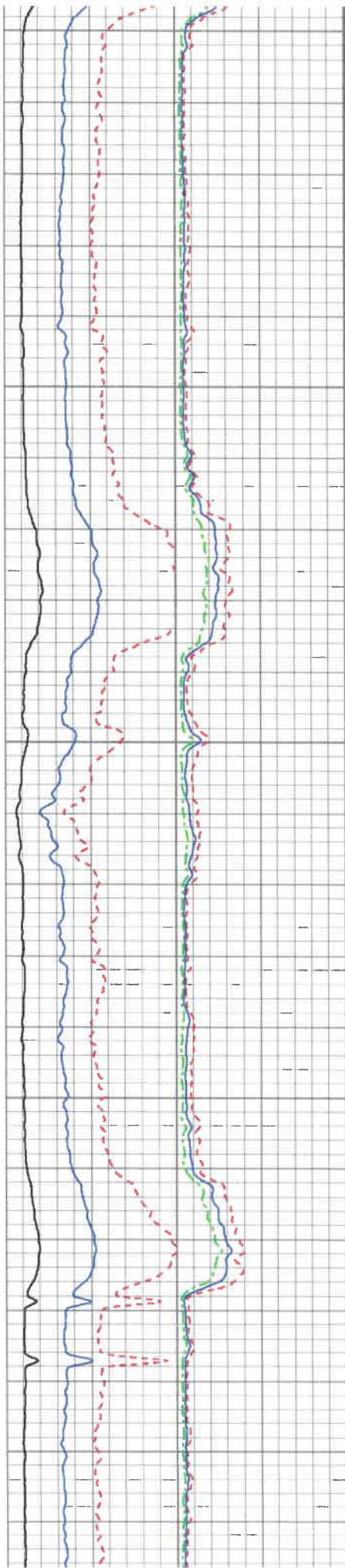
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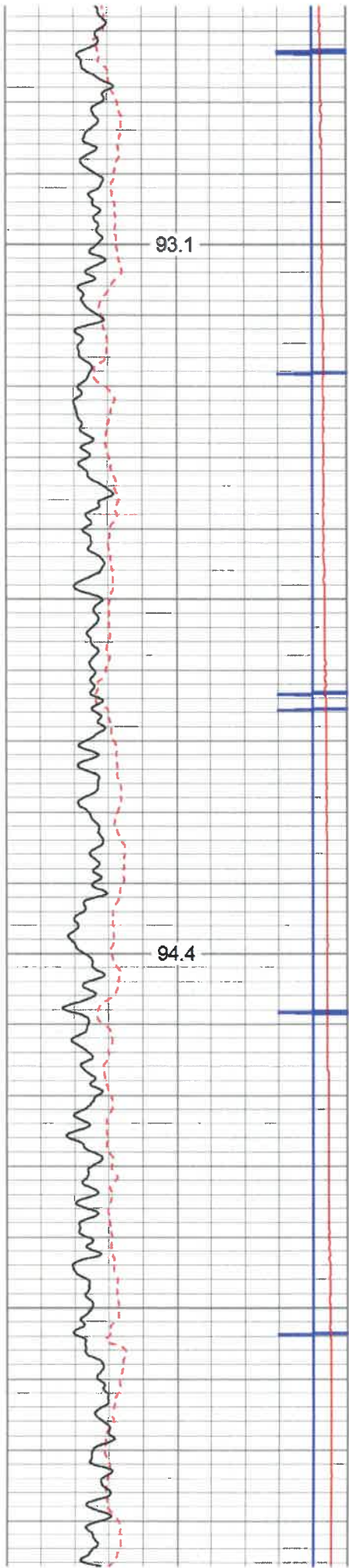




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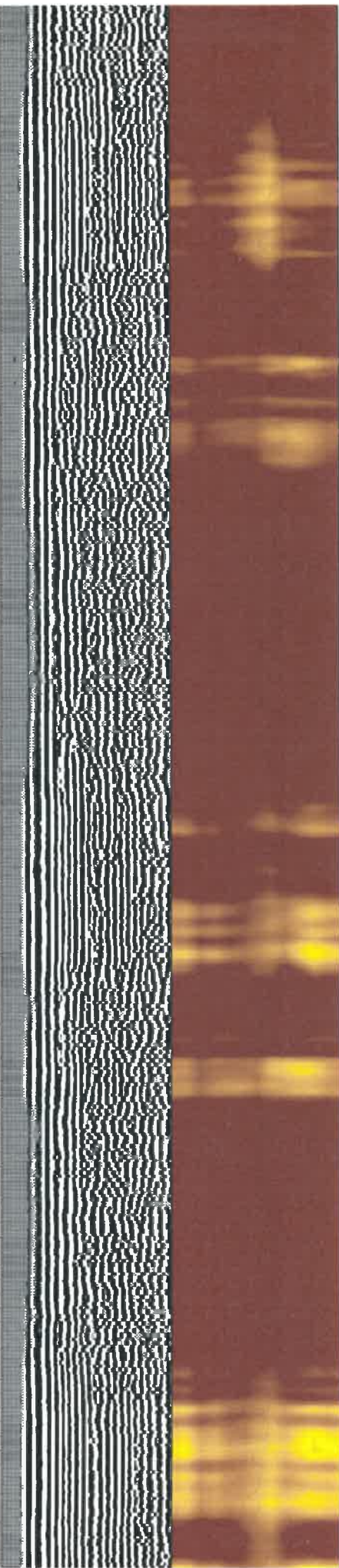
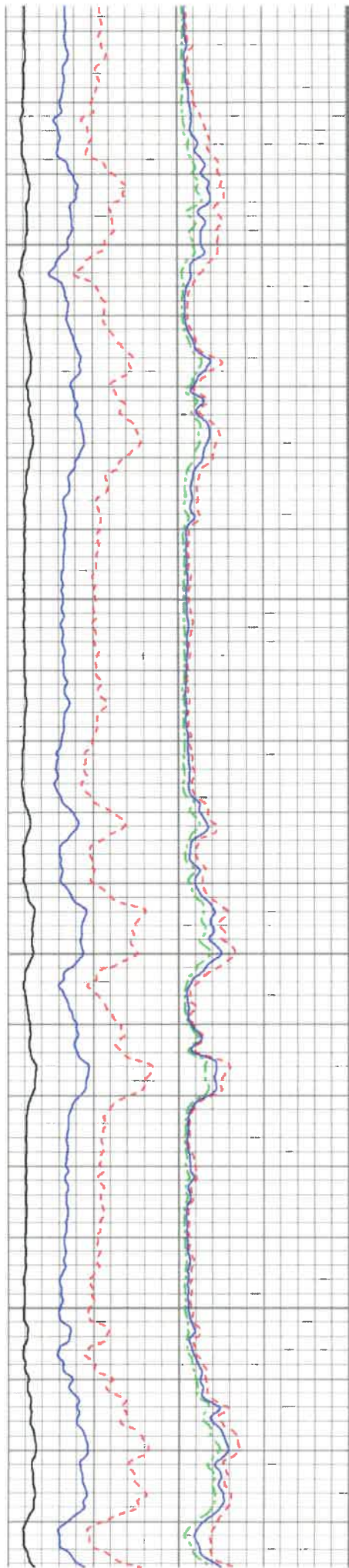
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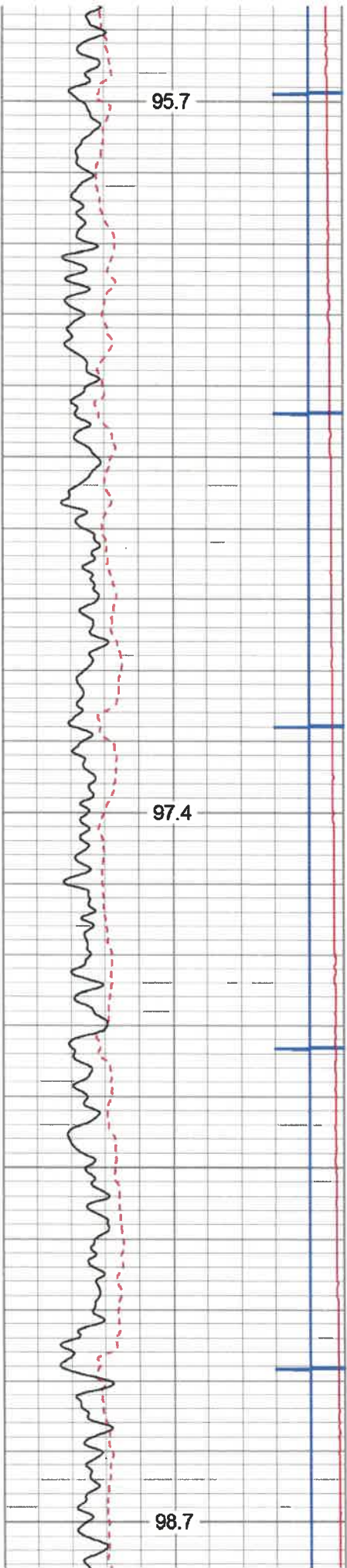




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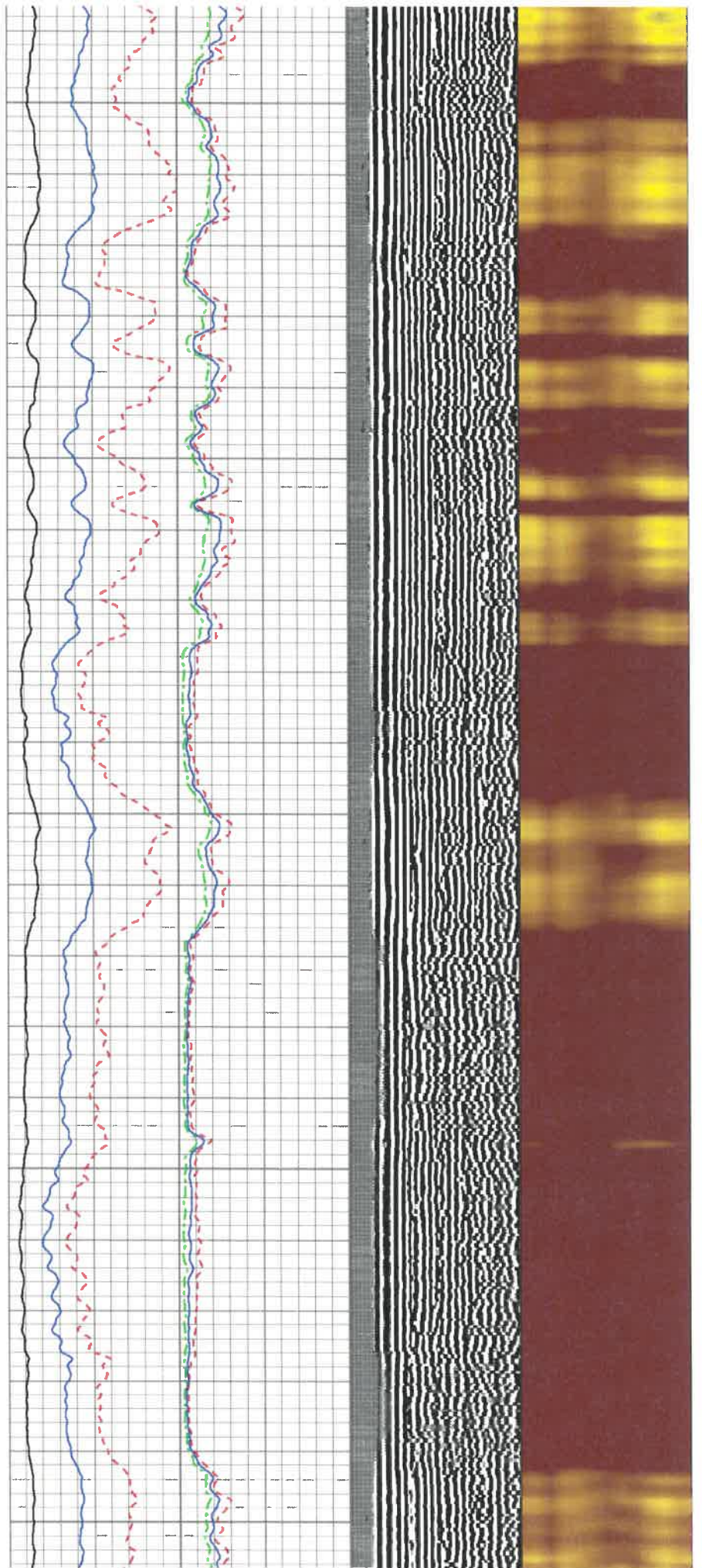


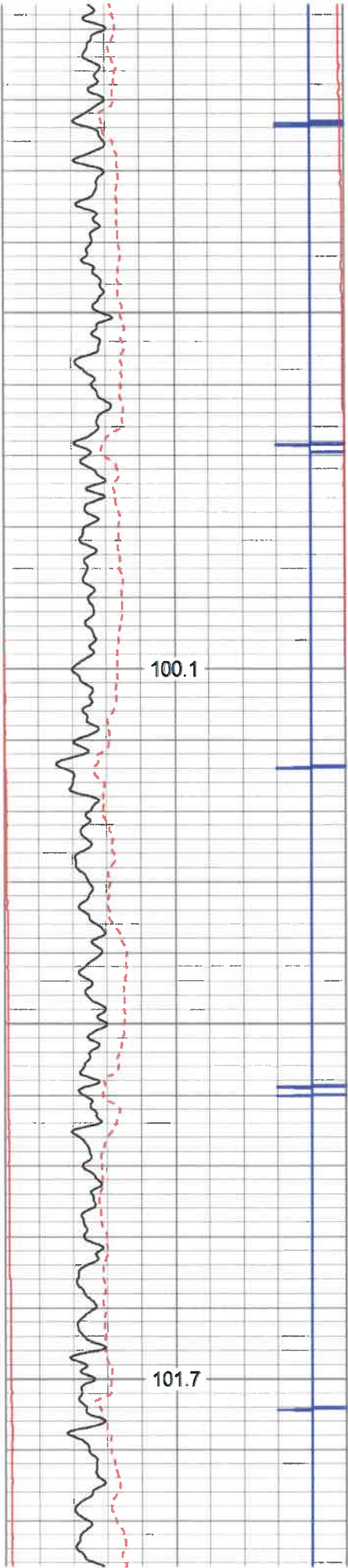


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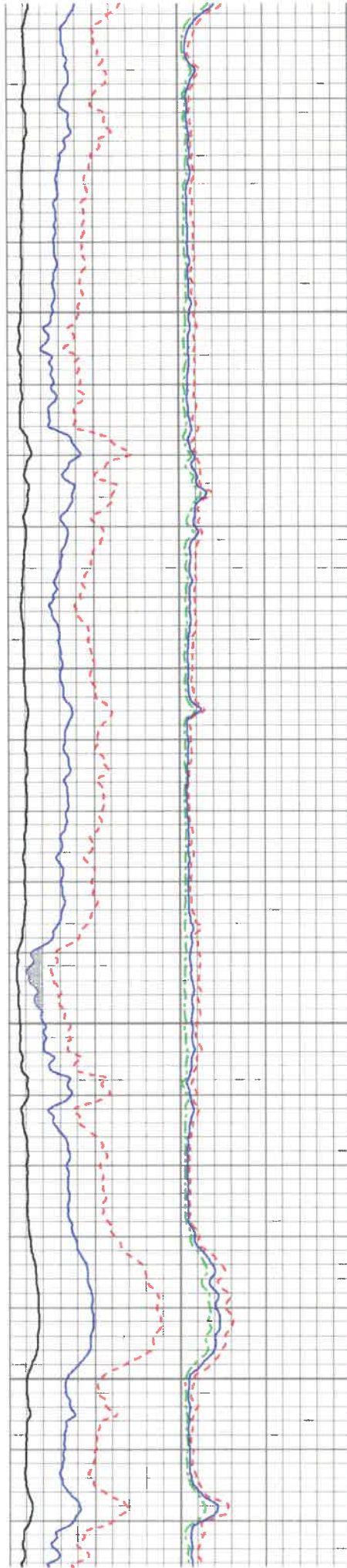
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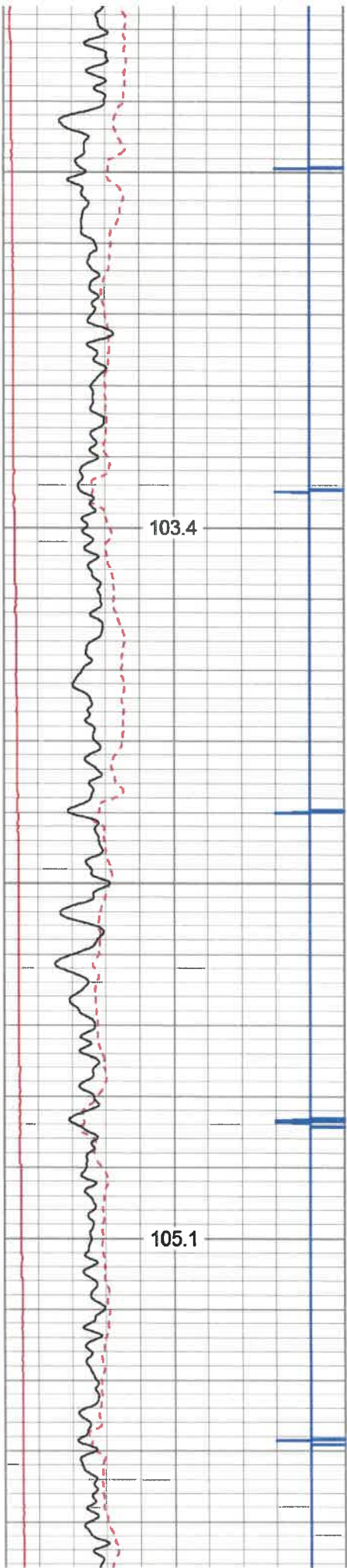




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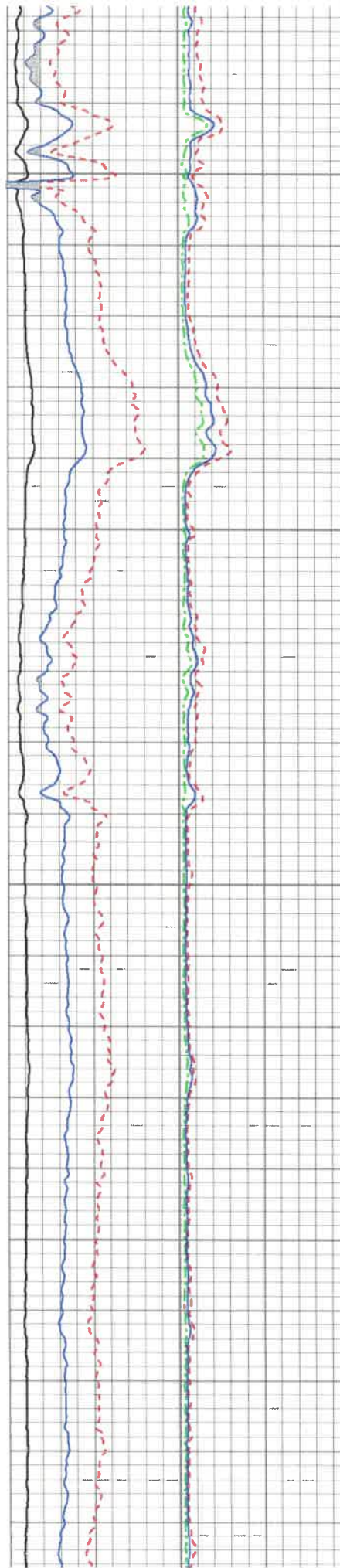
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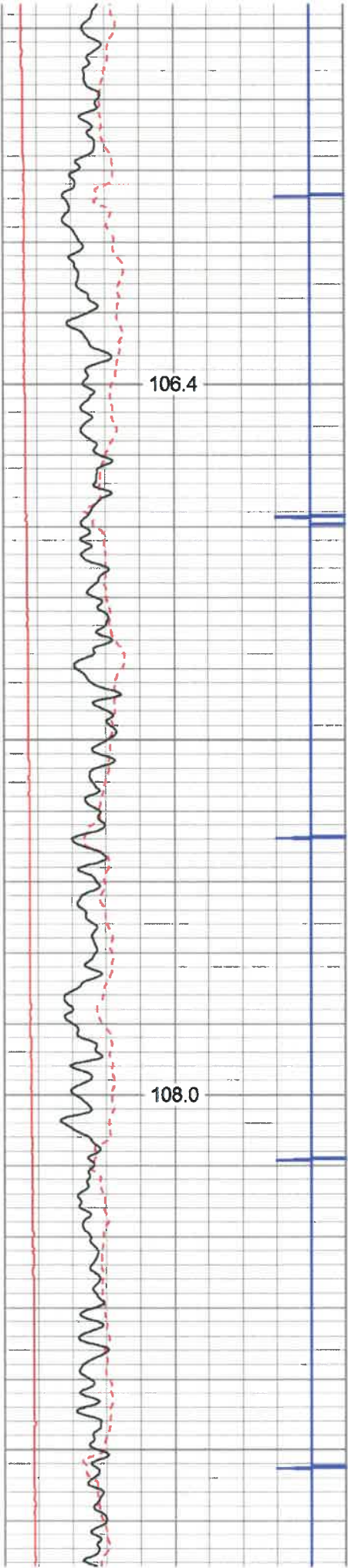




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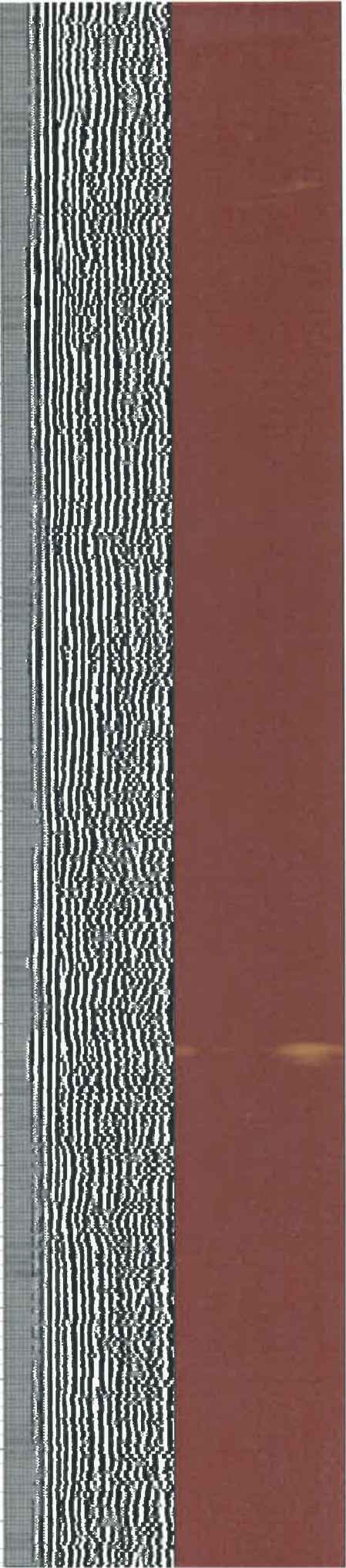
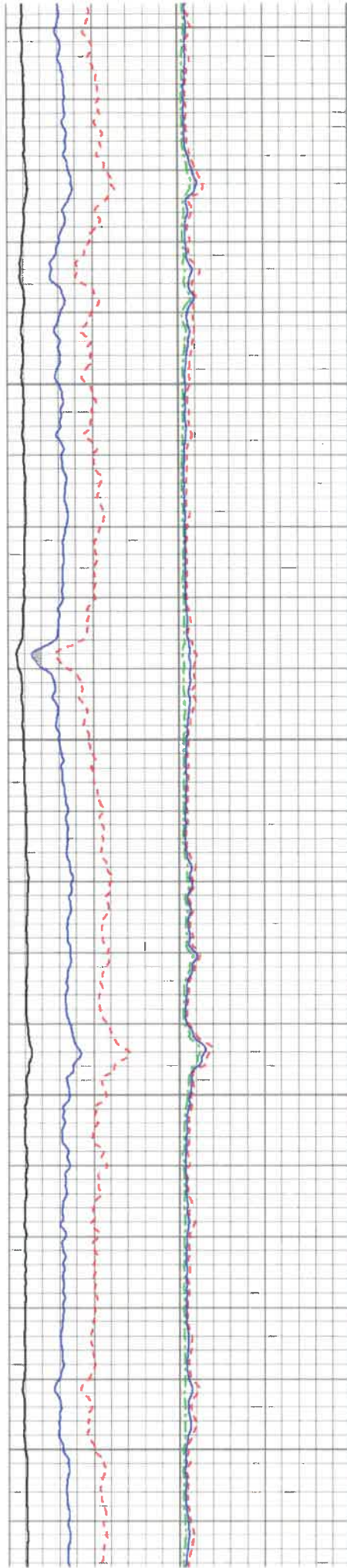
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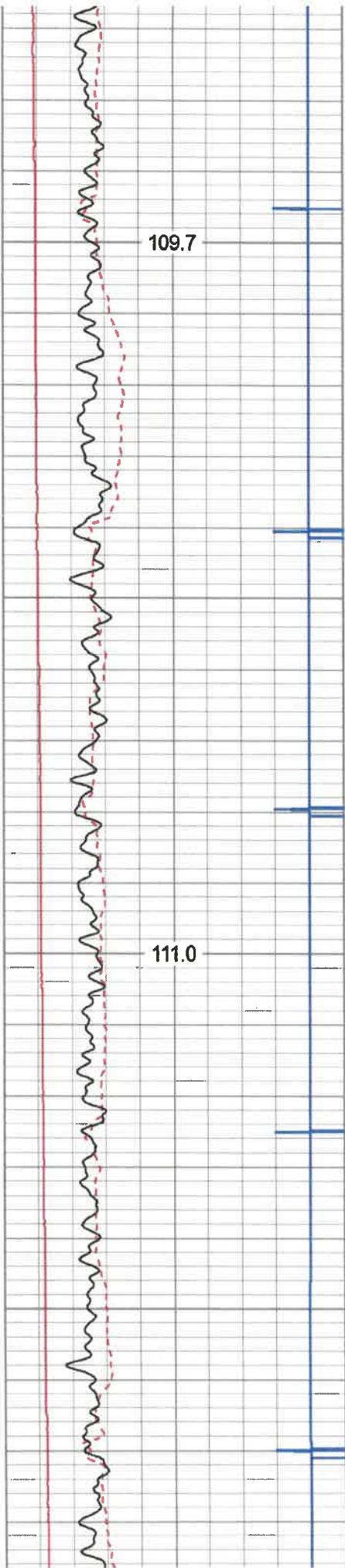




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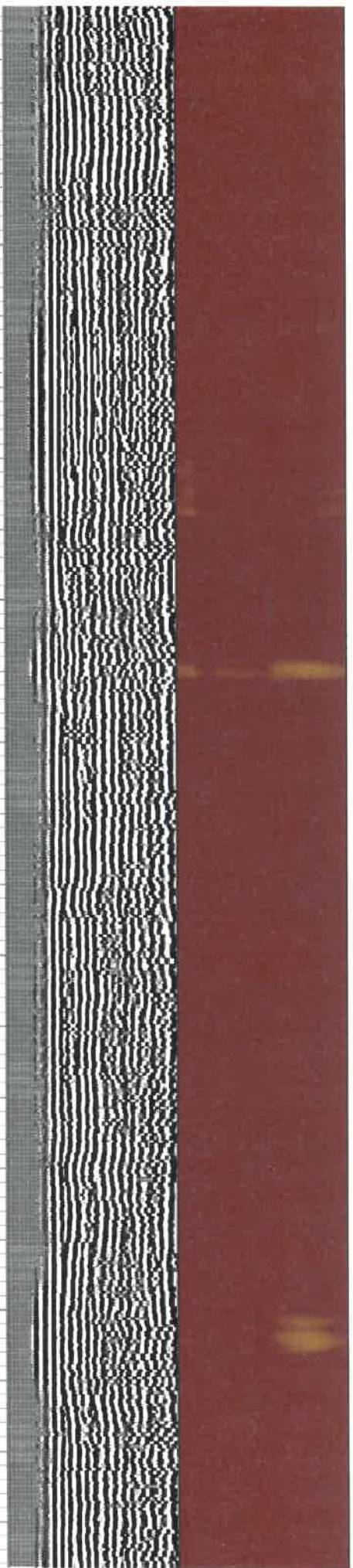
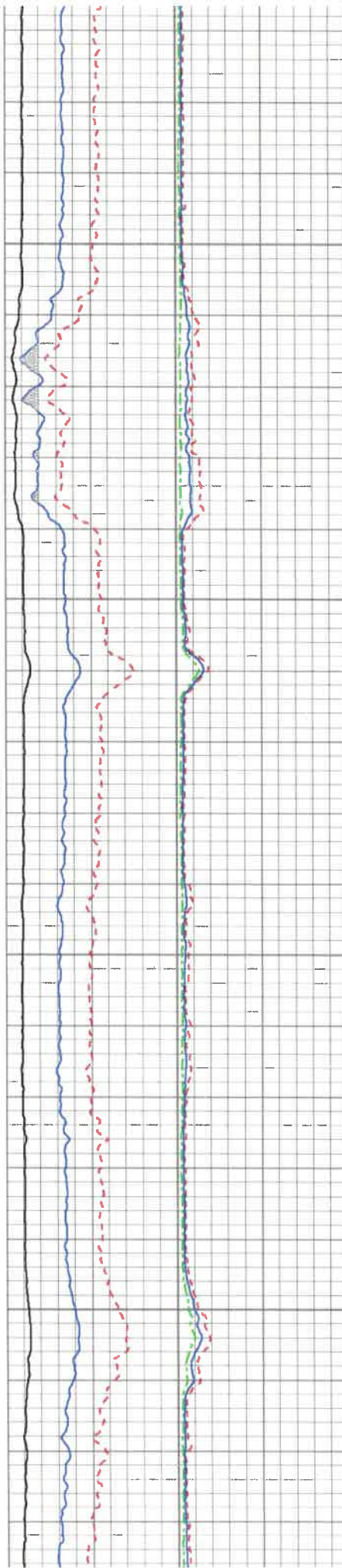
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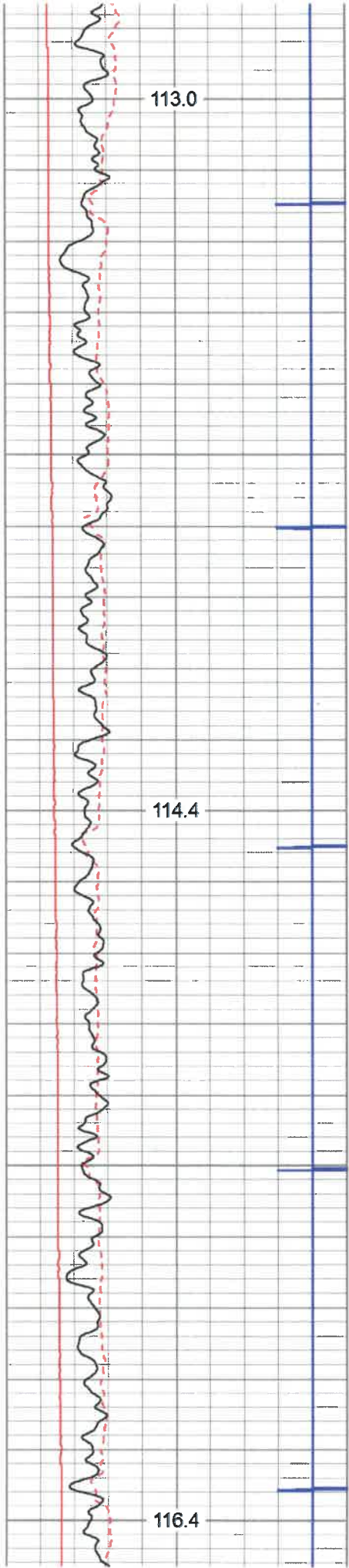




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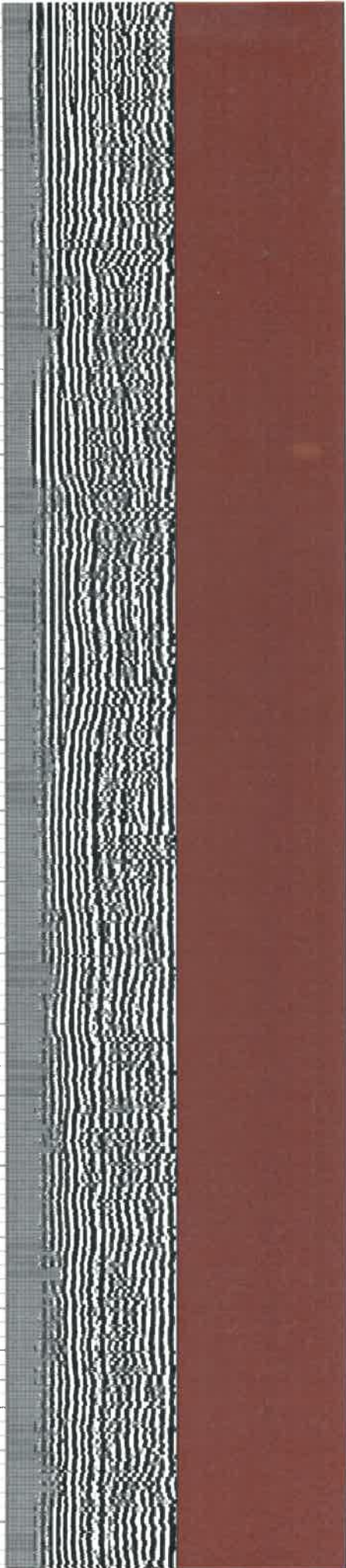
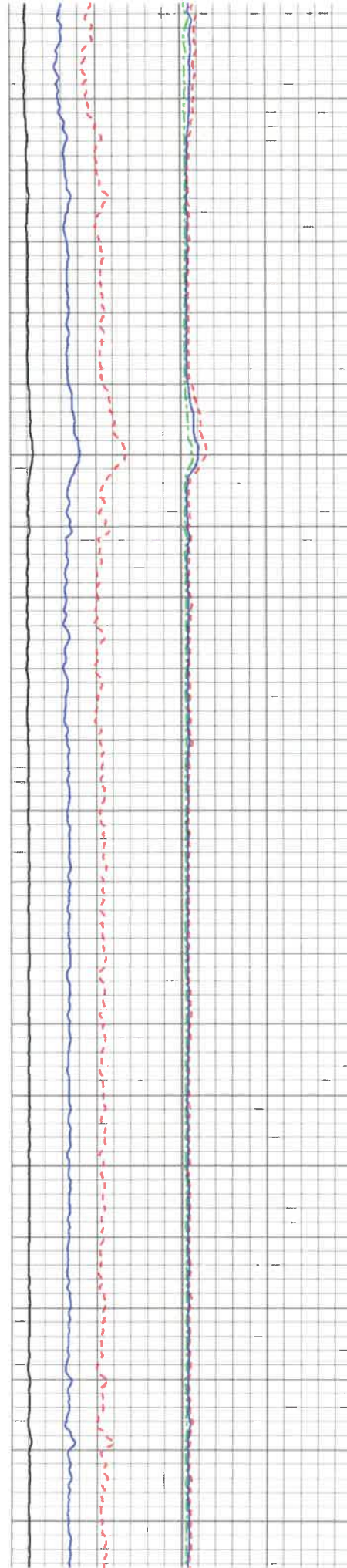


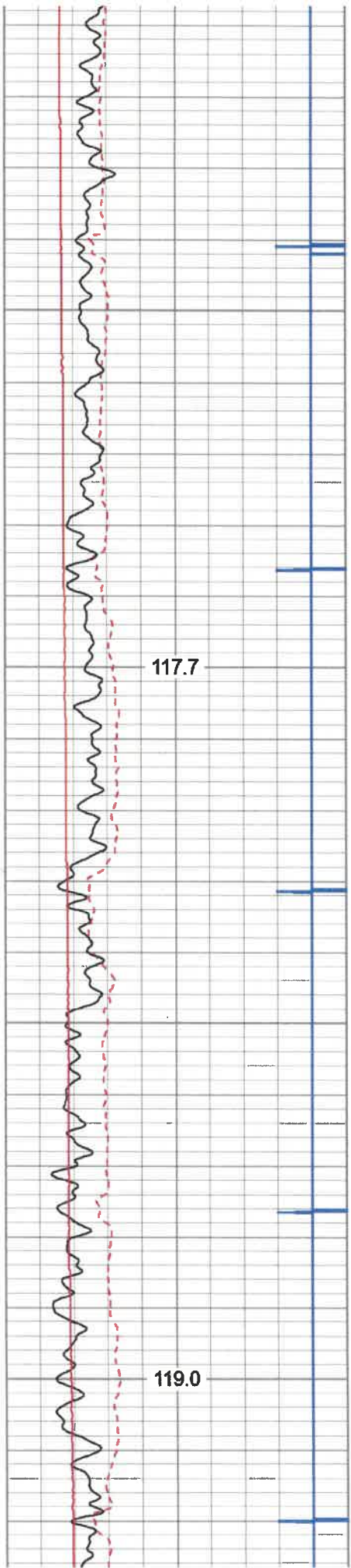


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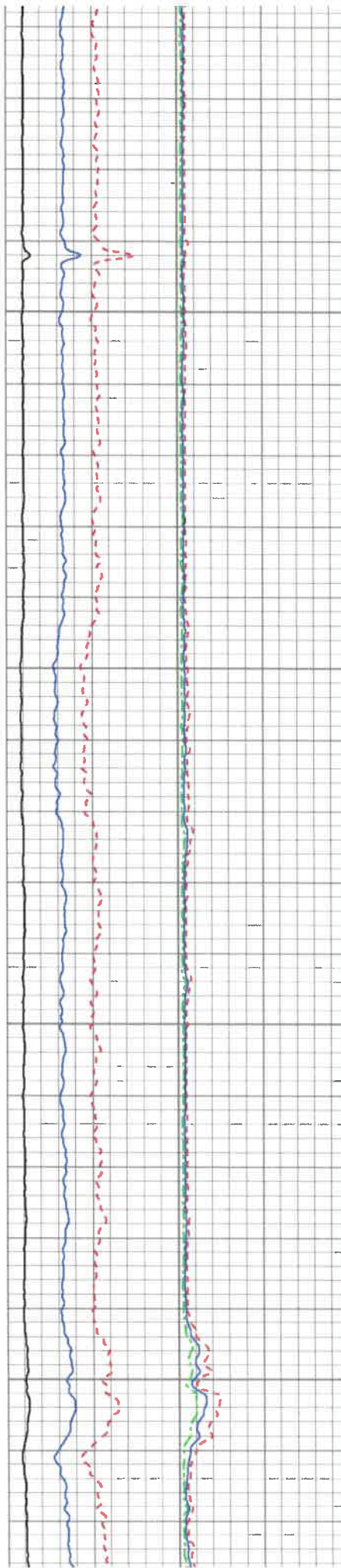
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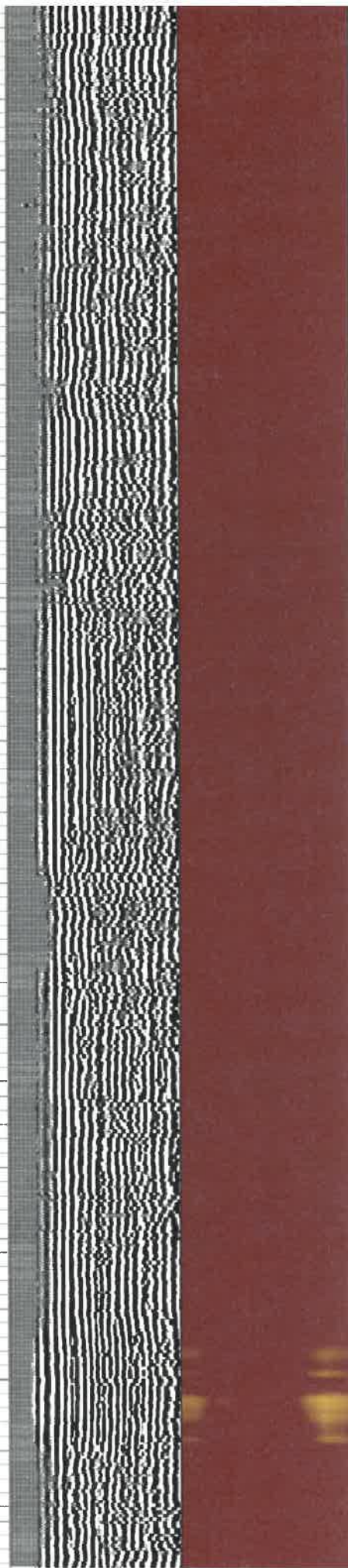


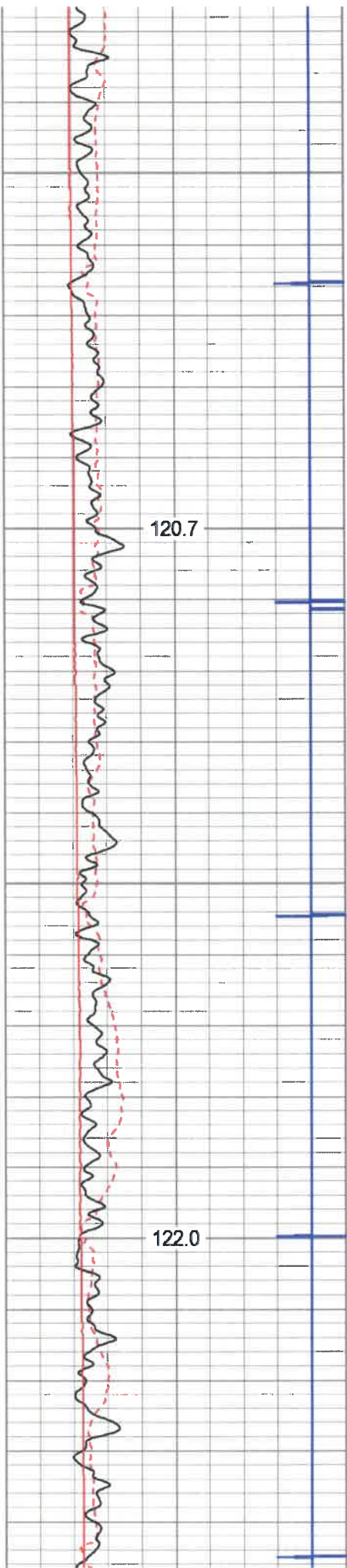


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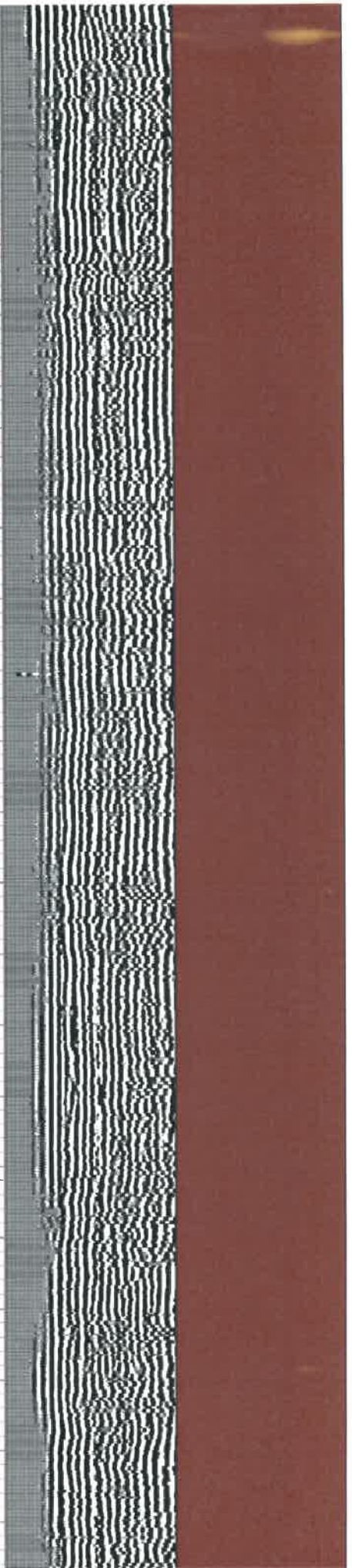
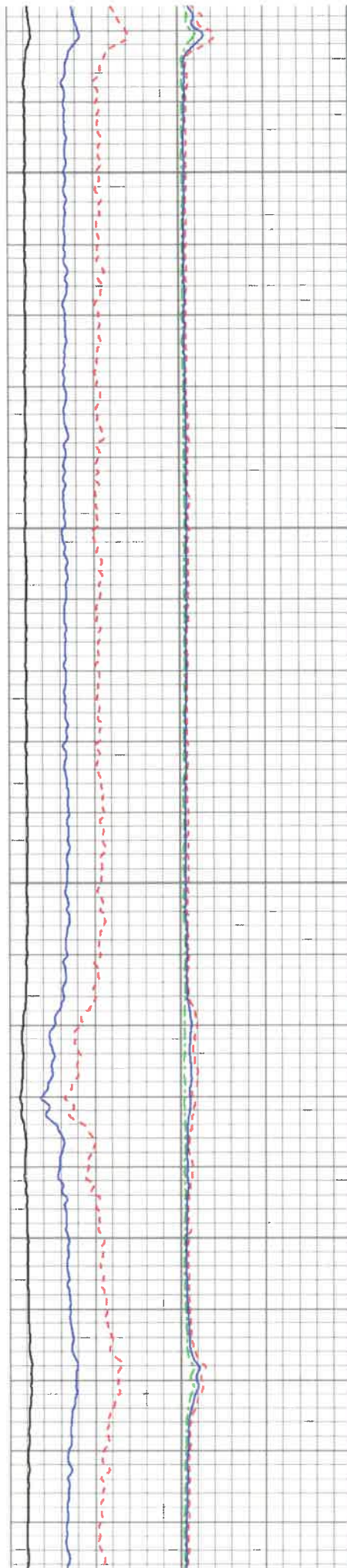
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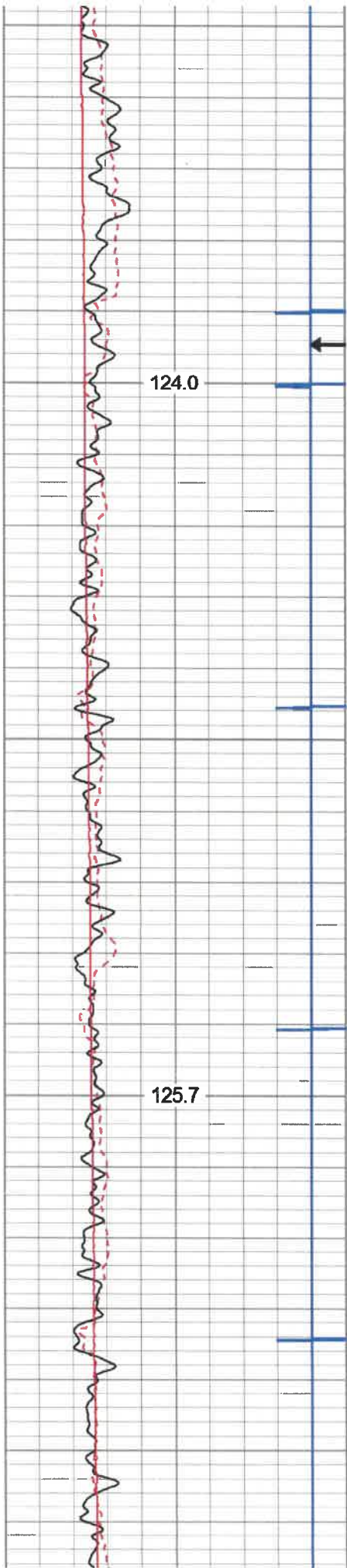




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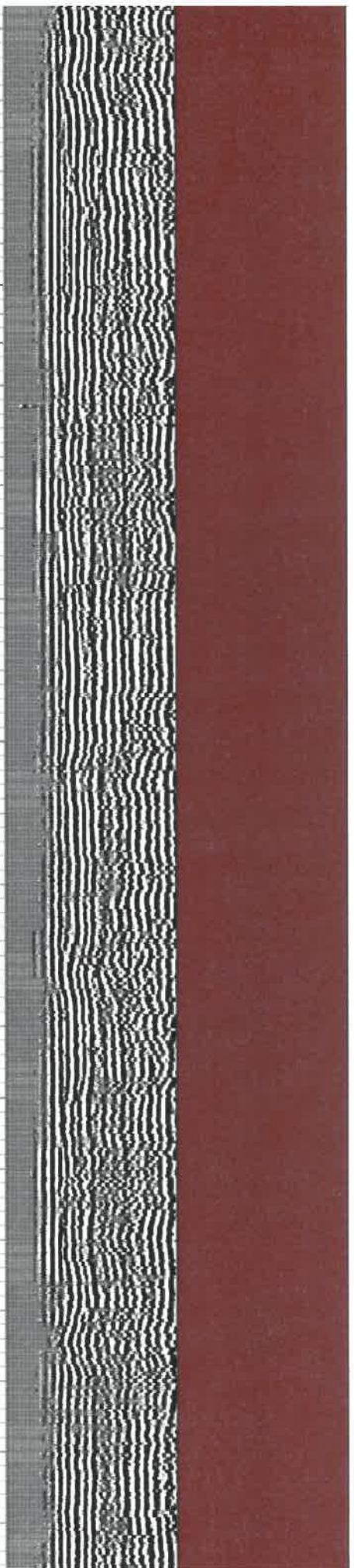
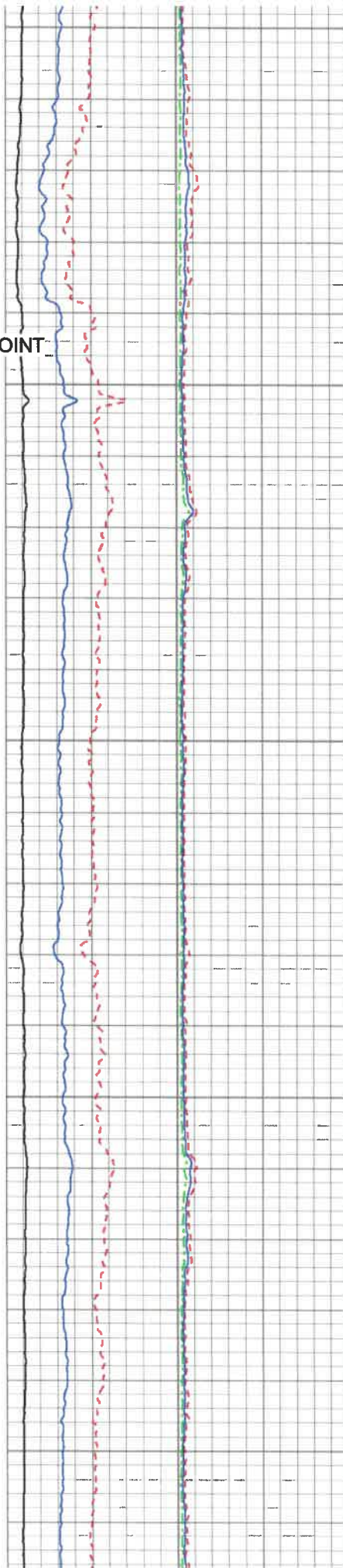


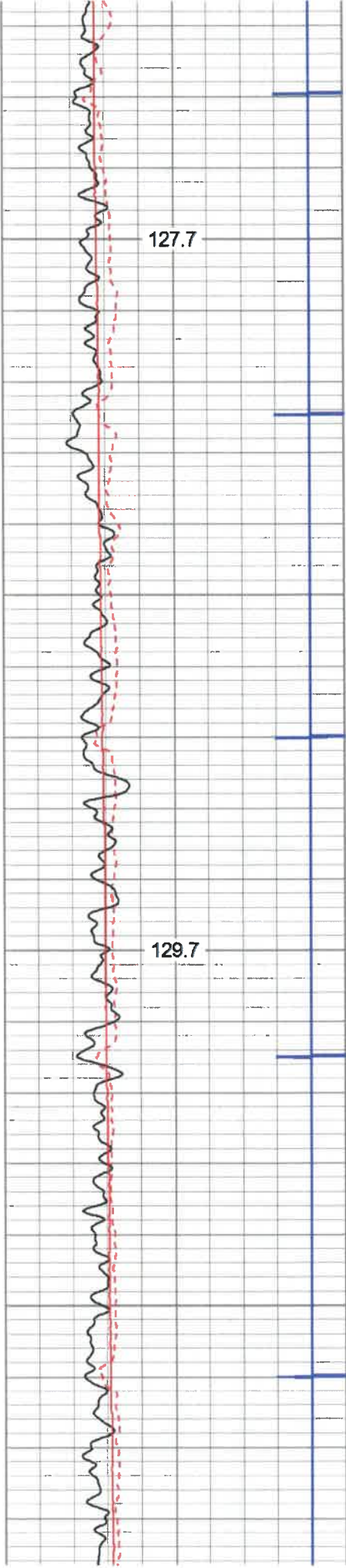


← MARKER JOINT

5500

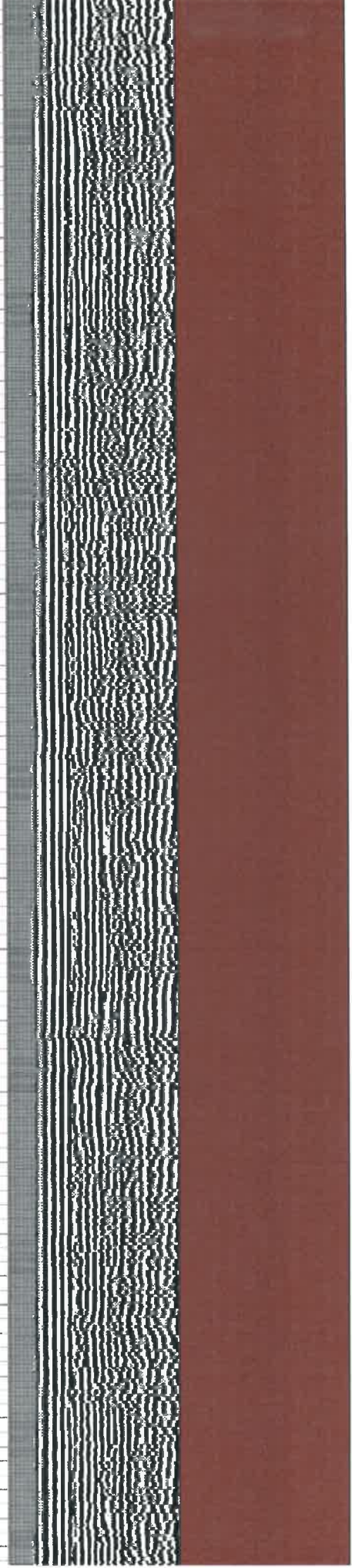
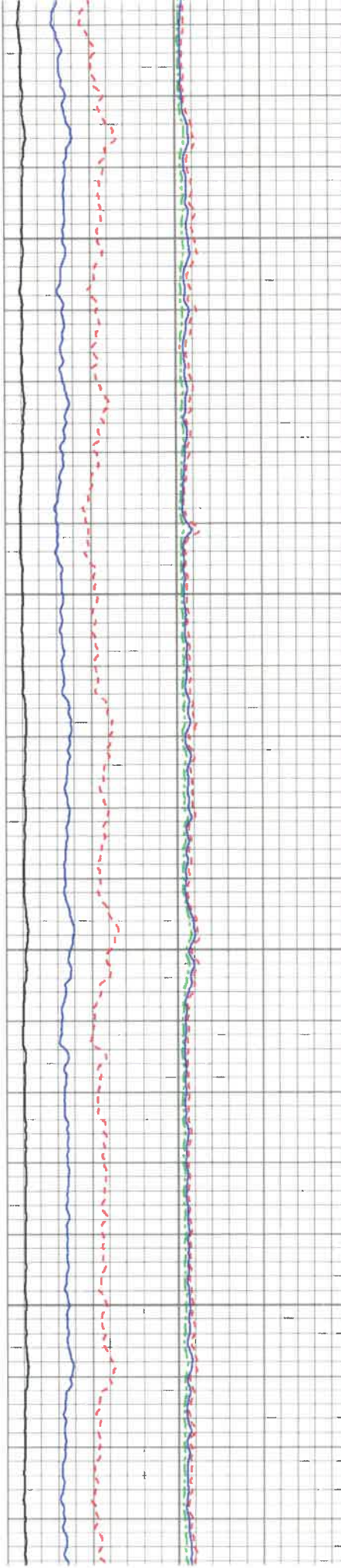
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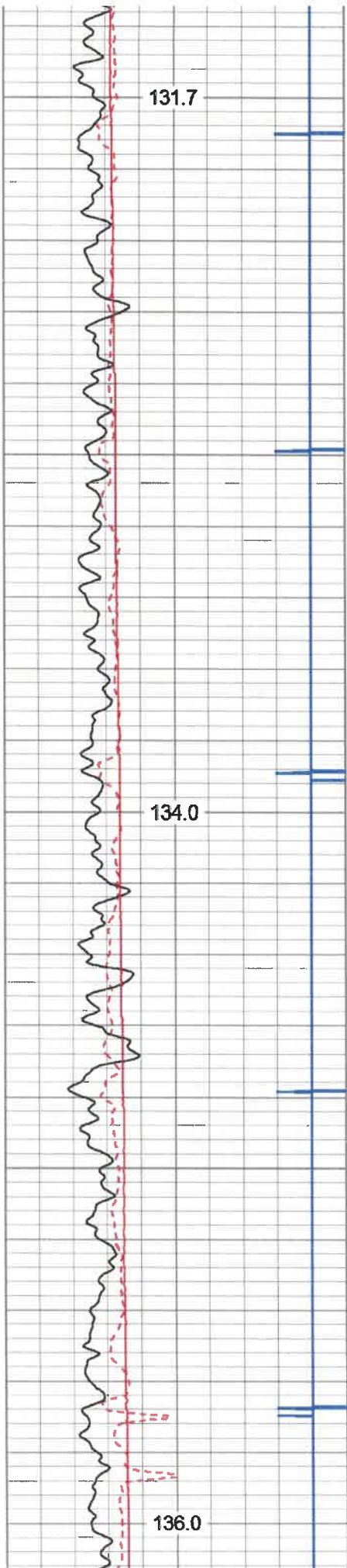




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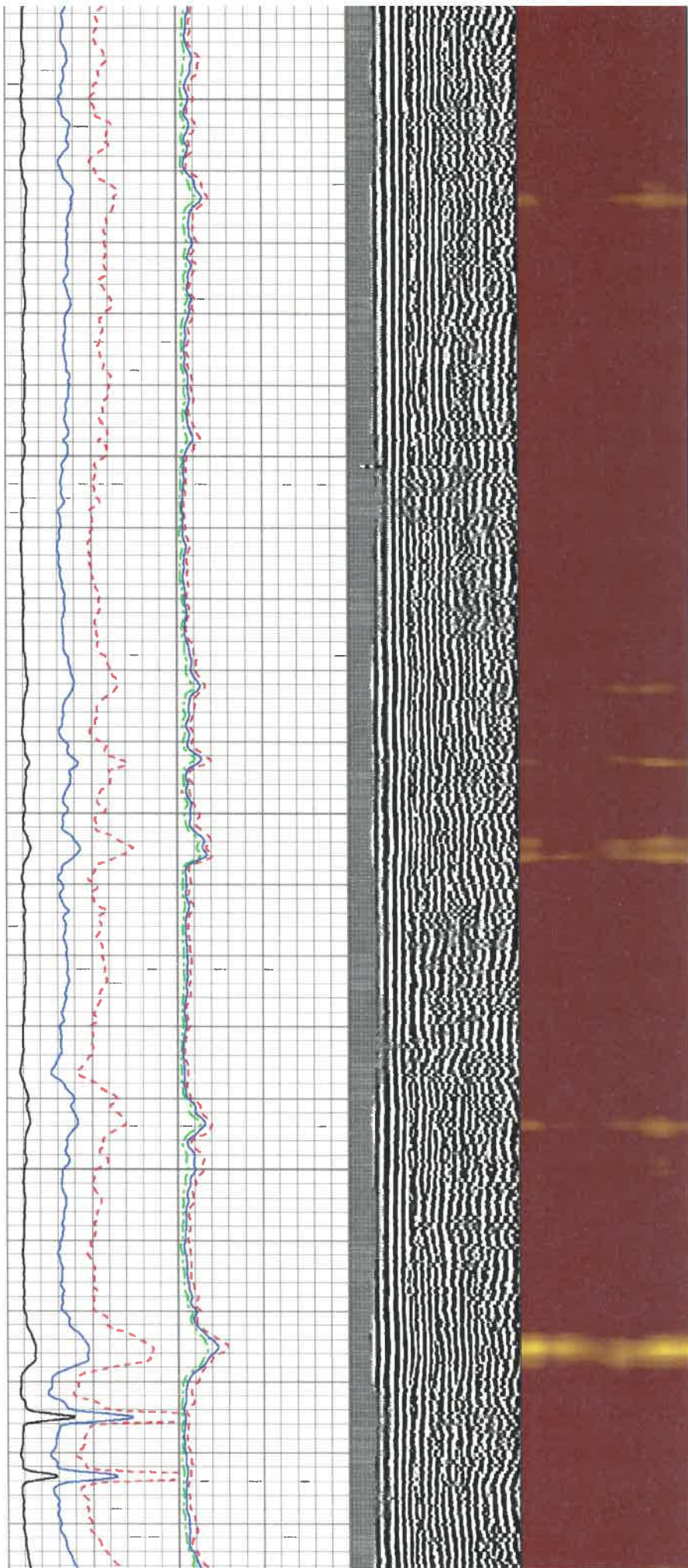


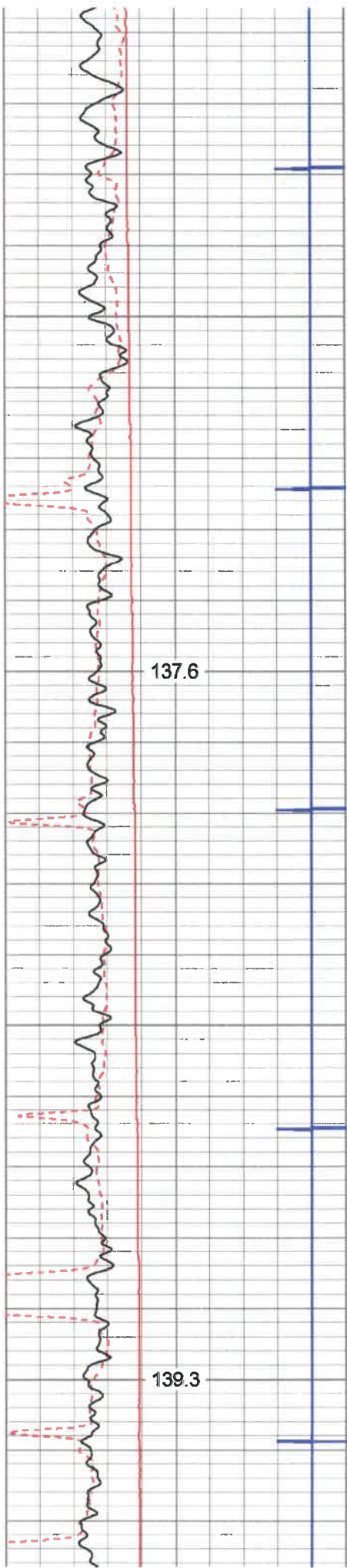


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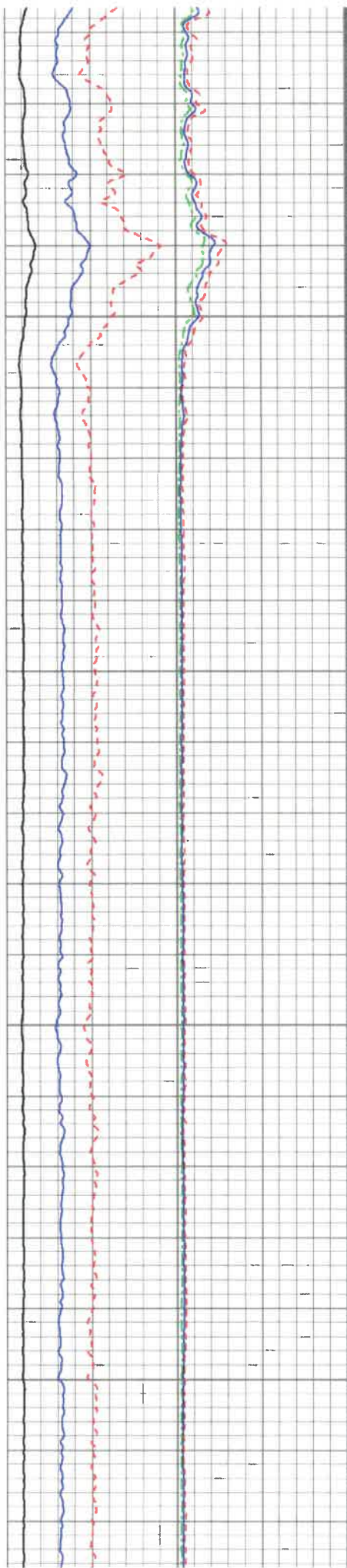
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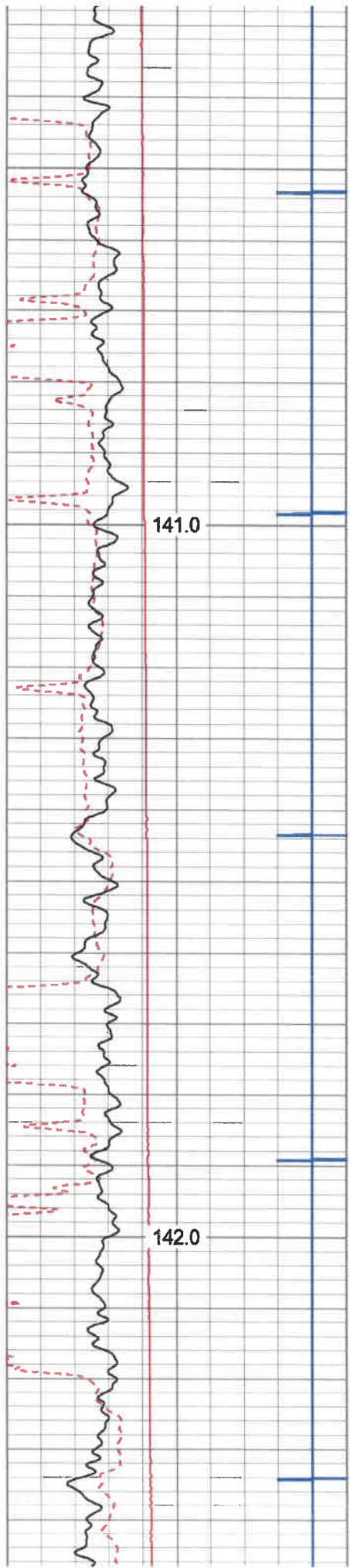




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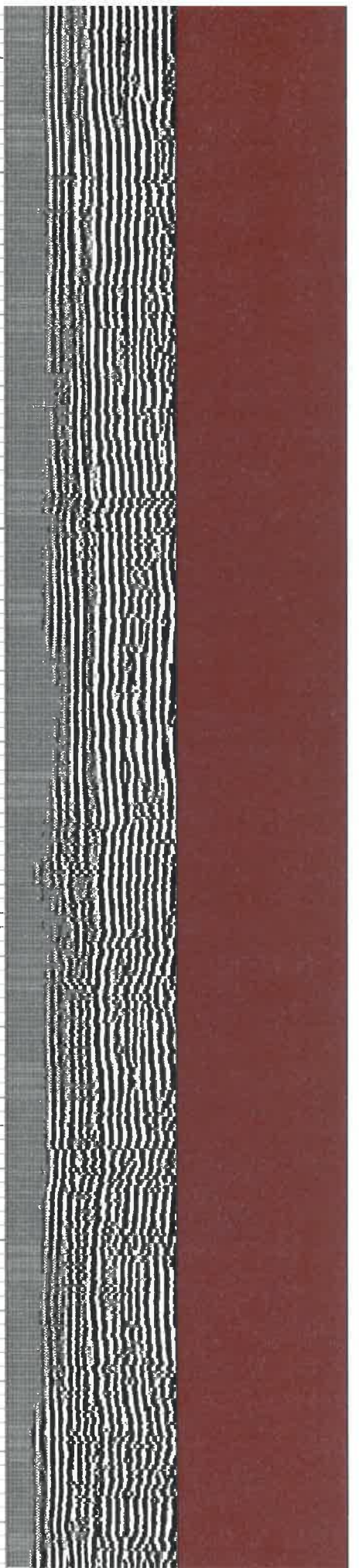
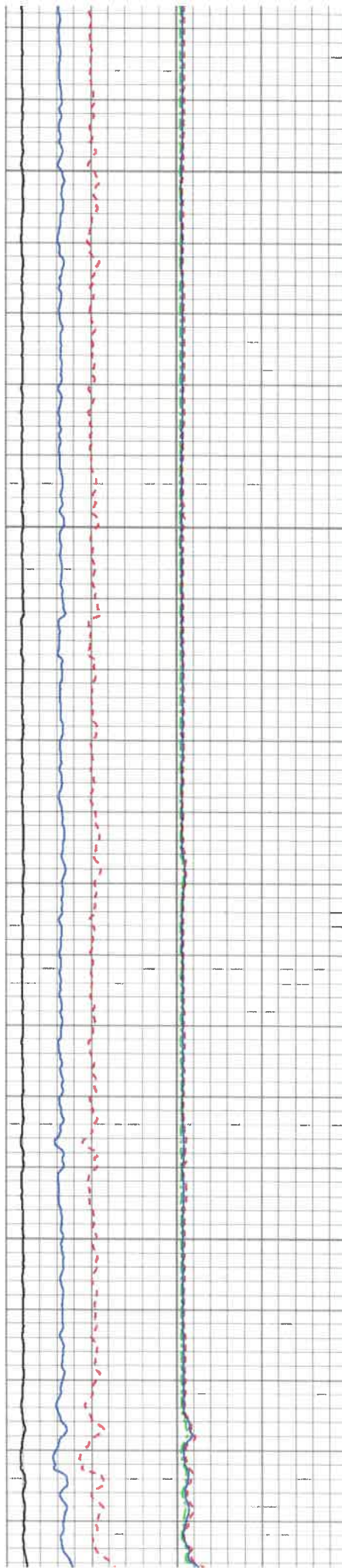
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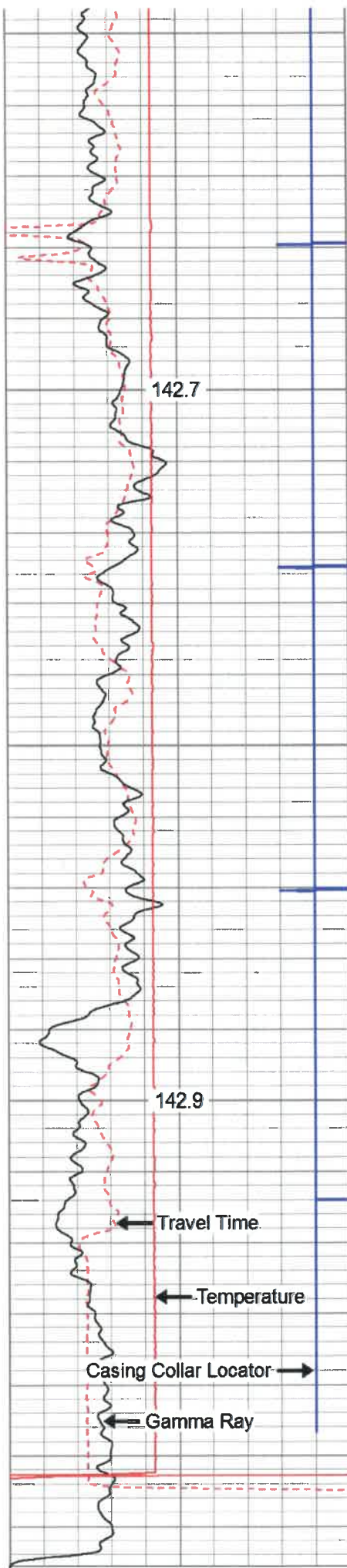




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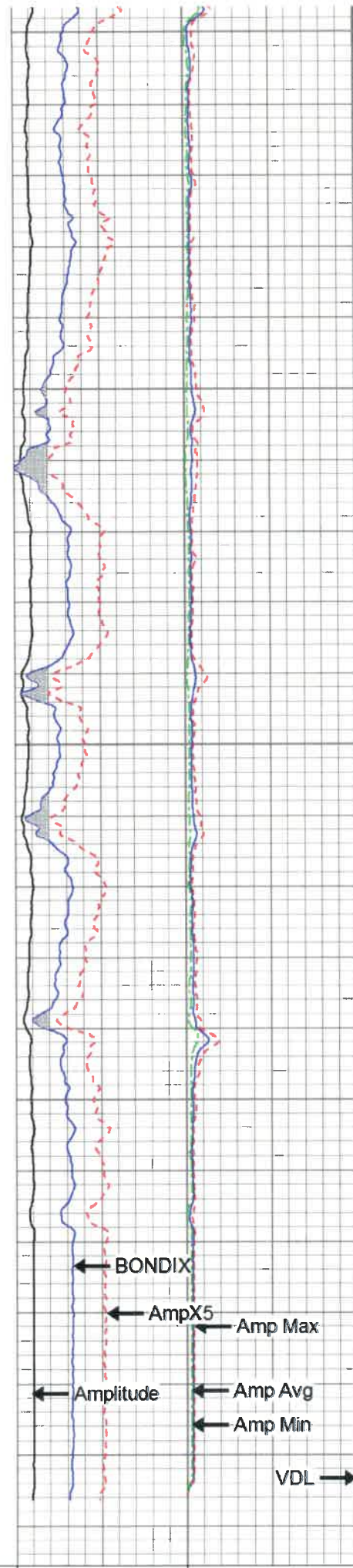
6500





6600

6700



Amp Max

Amp Avg

Amp Min

280	Travel Time (usec)	180
9	Casing Collars	-1
0	Gamma Ray	180
0	TEMP (degF)	100
TEMP (degF)		

0	Amplitude (mV)	100	0	Amp Avg	150	200	VDL	1200
0	AmpX5 (mV)	20	0	Amp Max	150			
1	BONDIX	0		Amp Min	150			

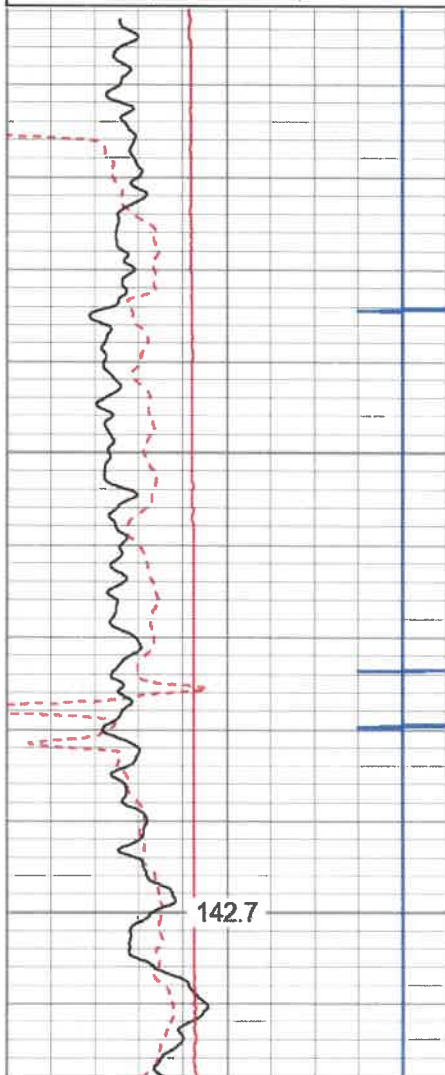


REPEAT SECTION

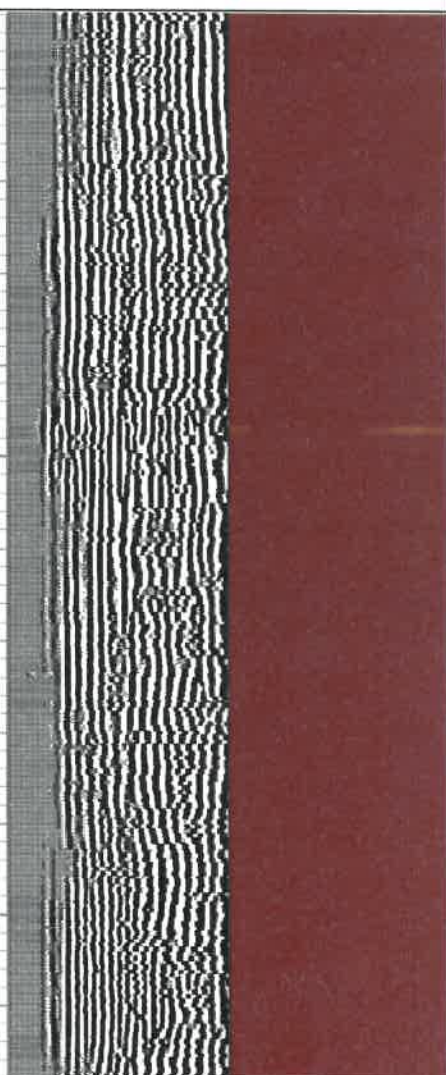
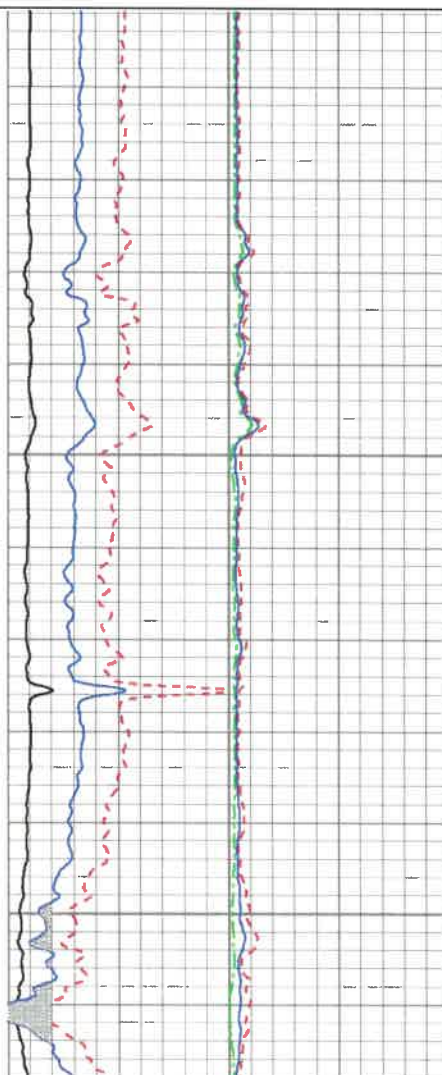
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 Dataset Pathname: pass2
 Presentation Format: antero f
 Dataset Creation: Wed Apr 03 13:46:16 2019 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

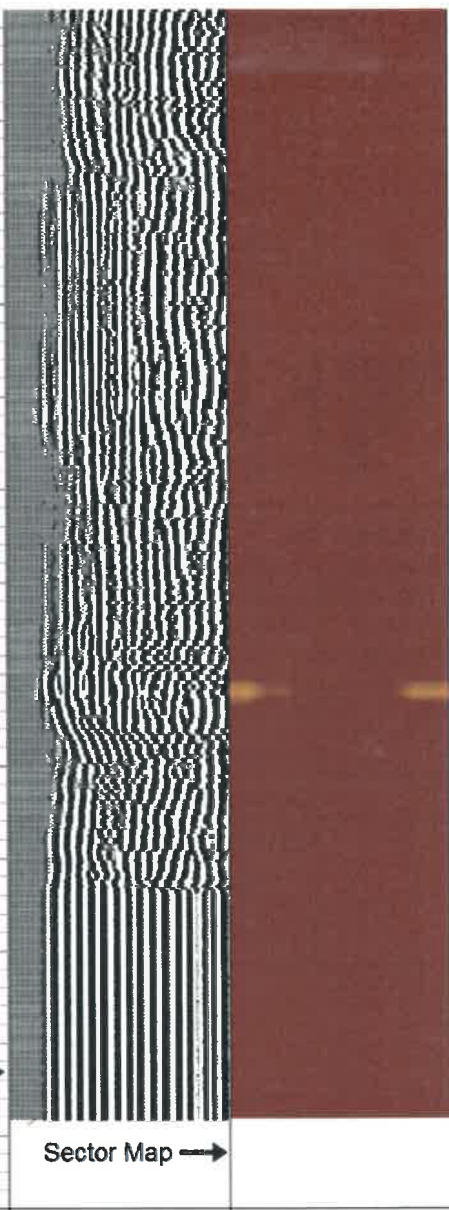
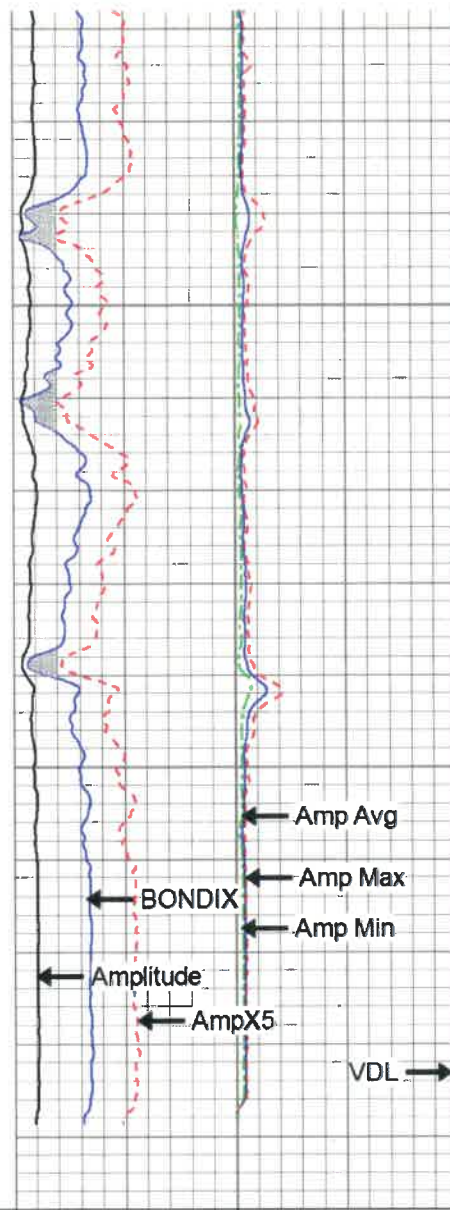
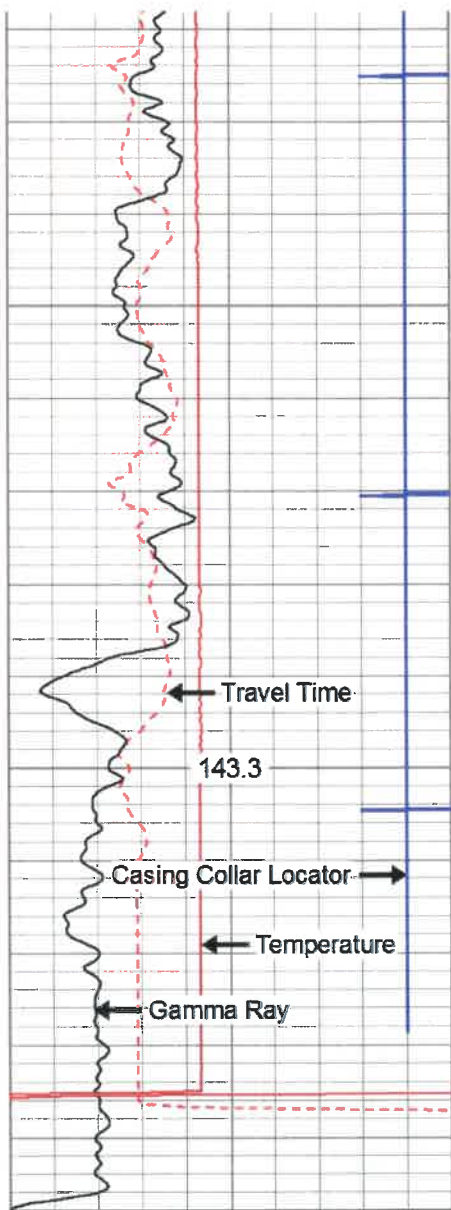
280	Travel Time (usec)	180
9	Casing Collars	-1
0	Gamma Ray	180
0	TEMP (degF)	100
TEMP (degF)		

0	Amplitude (mV)	100	0	Amp Avg	150	200	VDL	1200
0	AmpX5 (mV)	20	0	Amp Max	150			
1	BONDIX	0		Amp Min	150			



6600





280	Travel Time (usec)	180
9	Casing Collars	-1
0	Gamma Ray	180
0	TEMP (degF)	100

0	Amplitude (mV)	100	0	Amp Avg	150
0	AmpX5 (mV)	20	0	Amp Max	150
1	BONDIX	0	0	Amp Min	150

200	VDL	1200	1	Sector Map	12
					80

TEMP
(degF)

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
CCL	18.93		CCL-312tekco (3.12TEKCO) Tekco 3 1/8" 450 Deg. "F" SmCo Logging CCL	1.82	3.12	25.00
			2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00

TEMP	12.77					
WVFS1	11.48					
WVFS2	11.48					
WVFS3	11.48		SCBL-Tek12 (IOL40-05) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00
WVFS4	11.48					
WVFS5	11.48					
WVFS6	11.48					
WVFS7	11.48					
WVFS8	11.48					
WVFS9	11.48					
WVFS10	11.48					
WVFS11	11.48					
WVFS12	11.48					
WVF3FT	10.73					
WVFCAL	10.73					
WVF5FT	9.73					
WVFTEMP	6.40					
WVFSYNC	6.40	2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00	
		GR-Tek-Co 2 3/4 (IPSNO-03) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00	
GR	1.04					

Dataset: antero-karen3h.db: field/well/run1/pass3
 Total Length: 20.07 ft
 Total Weight: 250.00 lb
 O.D.: 3.25 in

Calibration Report

Database File: C:\Warrior\Data\2019 antero\antero-karen3h.db
 Dataset Pathname: pass3
 Dataset Creation: Wed Apr 03 13:52:08 2019 by Log 7.0 B1

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 Environmental Protection

Gamma Ray Calibration Report

Serial Number: IPSNO-03
 Tool Model: Tek-Co 2 3/4
 Performed: Mon Nov 07 10:23:17 2016

 Calibrator Value: 1.0

 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity:

0.3000

/cps

Temperature Calibration Report

Serial Number: IOL40-05
Tool Model: Tek12
Performed: Wed Jul 31 10:53:14 2013

	Reference		Reading	
Low Reference:	0.00	degF	0.00	usec
High Reference:	1.00	degF	1.00	usec

Gain: 0.33
Offset: 0.00
Delta Spacing 2



Company ANTERO RESOURCES CORPORATION

Well KAREN UNIT 3H

Field MARCELLUS

County RITCHIE

State W.V.

Country