



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

Company ANTERO RESOURCES CORPORATION
Well WALDO UNIT 1H
Field MARCELLUS
County RITCHIE
State WV

Company ANTERO RESOURCES CORPORATION
Well WALDO UNIT 1H
Field MARCELLUS
County RITCHIE State WV

Location: API #: 47085403540000

Permanent Datum	SEC	TWP	RGE	Elevation	Other Services
Log Measured From					K.B. D.F. G.L.
Drilling Measured From					

API#: 47-085-10353

Date	1-12-19
Run Number	1
Depth Driller	17891'
Depth Logger	7334'
Bottom Logged Interval	7334'
Top Log Interval	SURFACE
Open Hole Size	5.5" CASING
Type Fluid	WATER
Density / Viscosity	N/A
Max. Recorded Temp.	138 DEG
Estimated Cement Top	930'
Time Well Ready	N/A
Time Logger on Bottom	7:55
Equipment Number	640
Location	BRIDGEPORT WW
Recorded By	PAT DAVIDSON
Witnessed By	JOHN MAXWELL

Borehole Record

Run Number	Bit	From	To	Size	Weight	From	To
				13.375		SURFACE	554'
				9.625		SURFACE	2682'
				5.5	23#	SURFACE	17891'

Casing Record

Run Number	Bit	From	To	Size	Weight	From	To
				13.375		SURFACE	554'
				9.625		SURFACE	2682'
				5.5	23#	SURFACE	17891'

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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

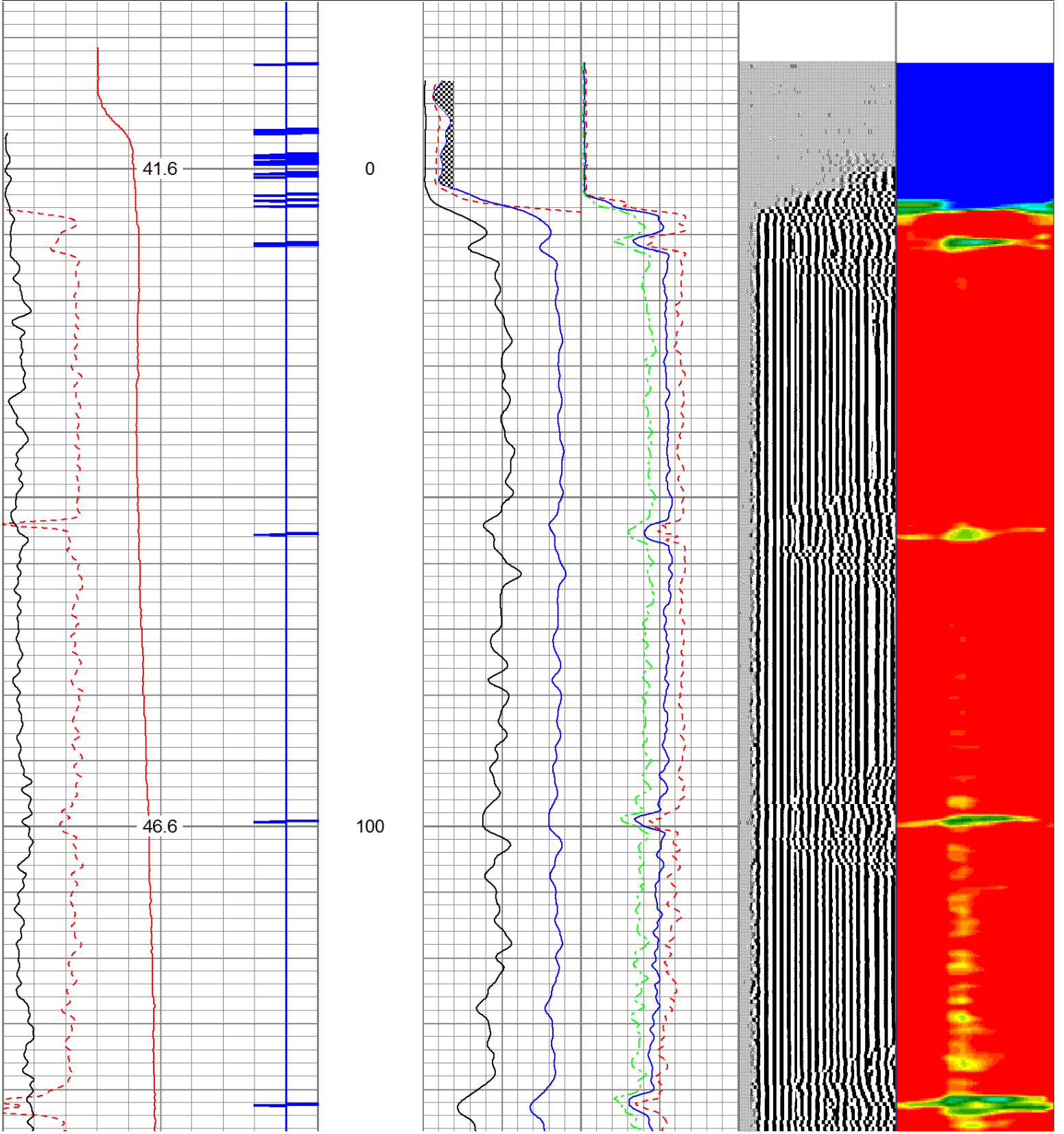
CBL IS CORRELATED TO PRODUCTION CASING TALLEY MARKER JOINT
DEPTH SHIFTED +3 ' TO KB AFTER CORRELATION
MARKER JOINT RECORDED AT 6145' TO 6155'
BOTTOM HOLE TEMP 138 DEG
LOG RAN UNDER PRESSURE @1500PSI

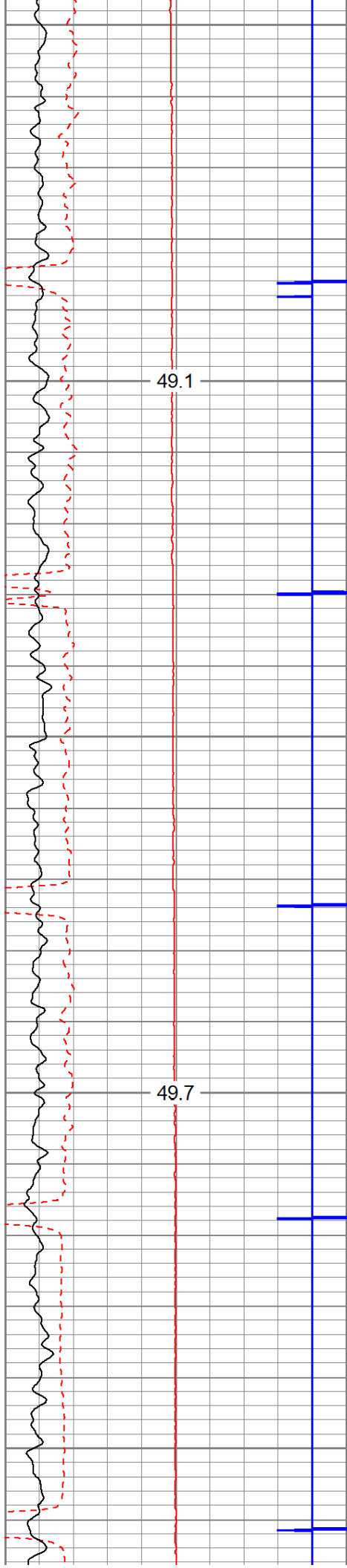


MAIN PASS 1500 PSI

Database File: antero_waldo1h.db
 Dataset Pathname: merge1
 Presentation Format: antero
 Dataset Creation: Tue Jan 15 19:53:50 2019
 Charted by: Depth in Feet scaled 1:240

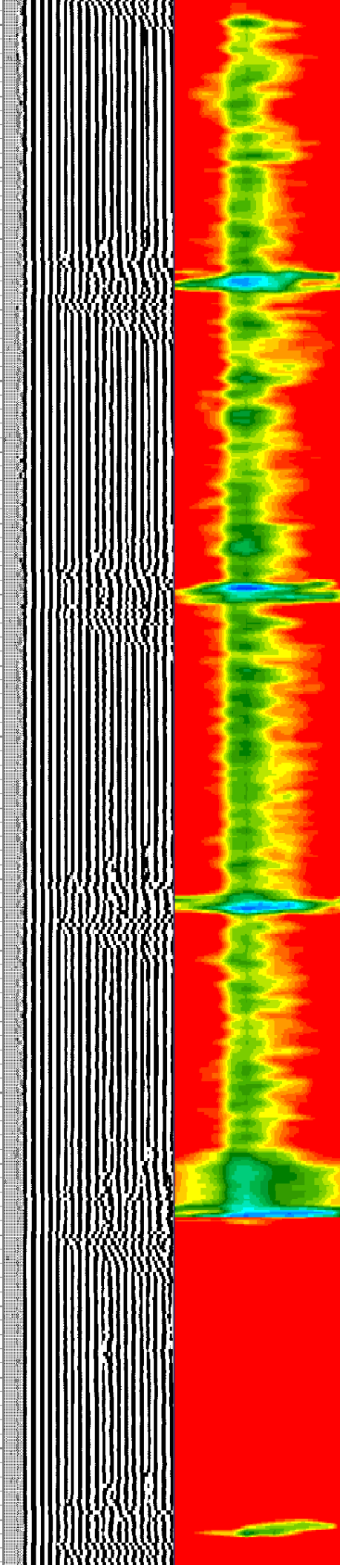
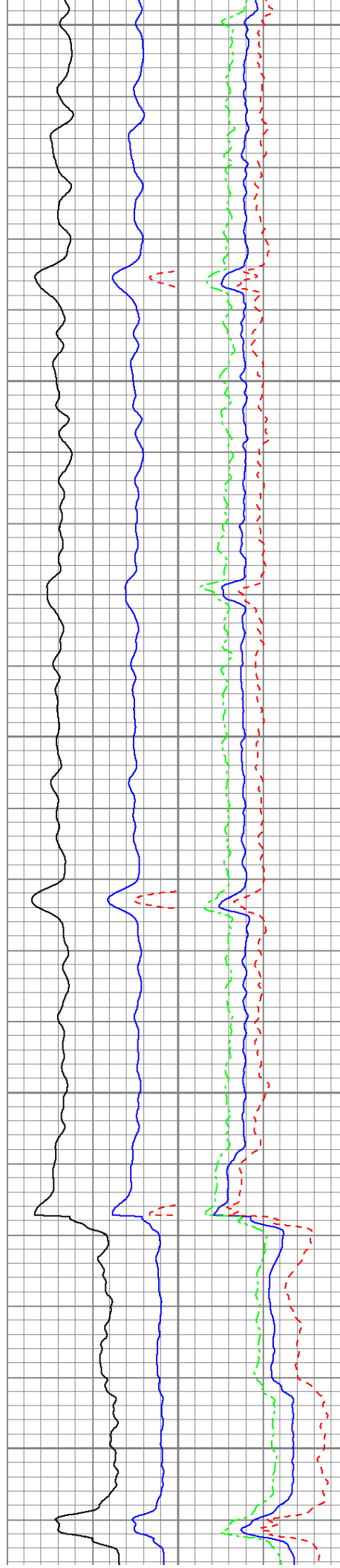
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9	Casing Collars	-1	0 (mV)	100	0	Amp Max	150			20		60
0	Gamma Ray	180	0	AmpX5 (mV)	20	0	Amp Min	150				
0	TEMP (degF)	100	1	BONDIX	0							

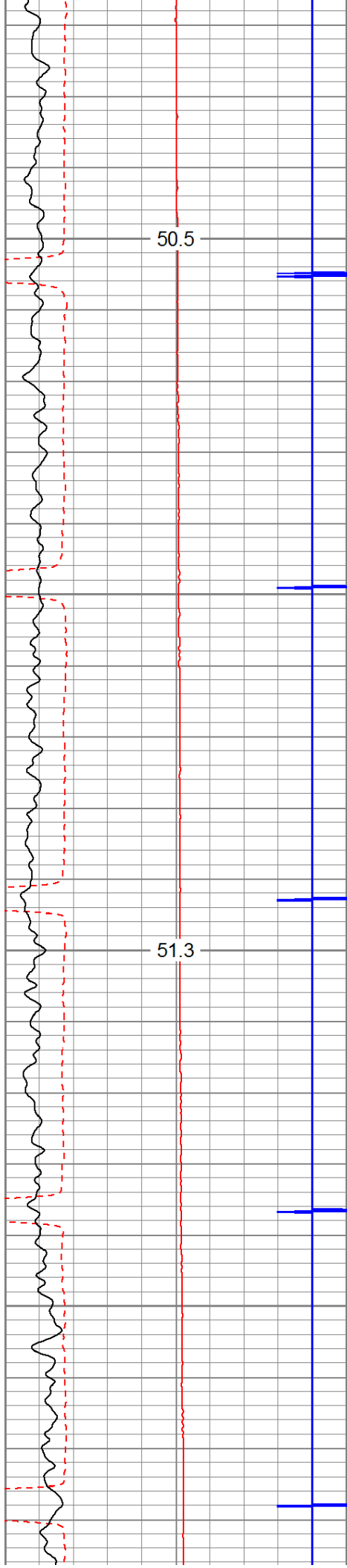




200

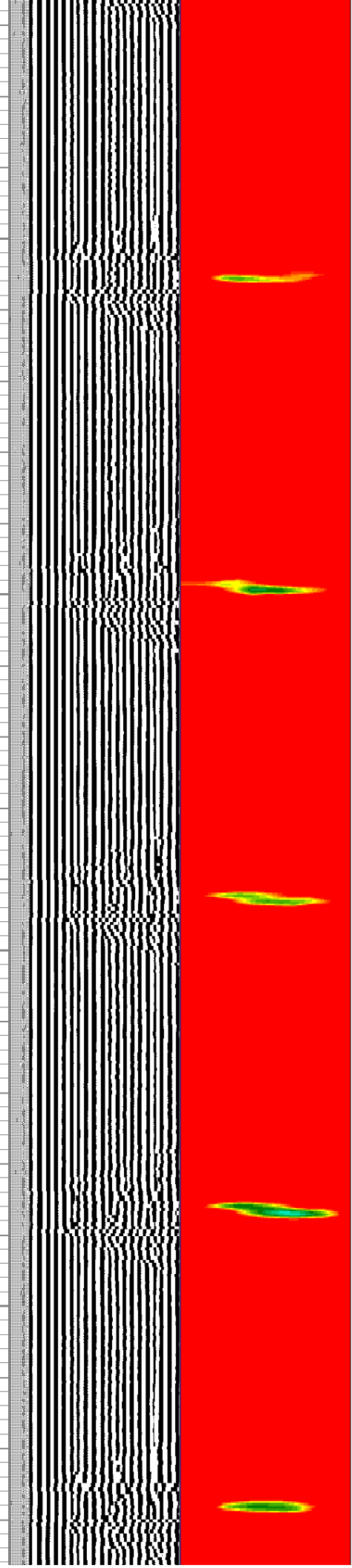
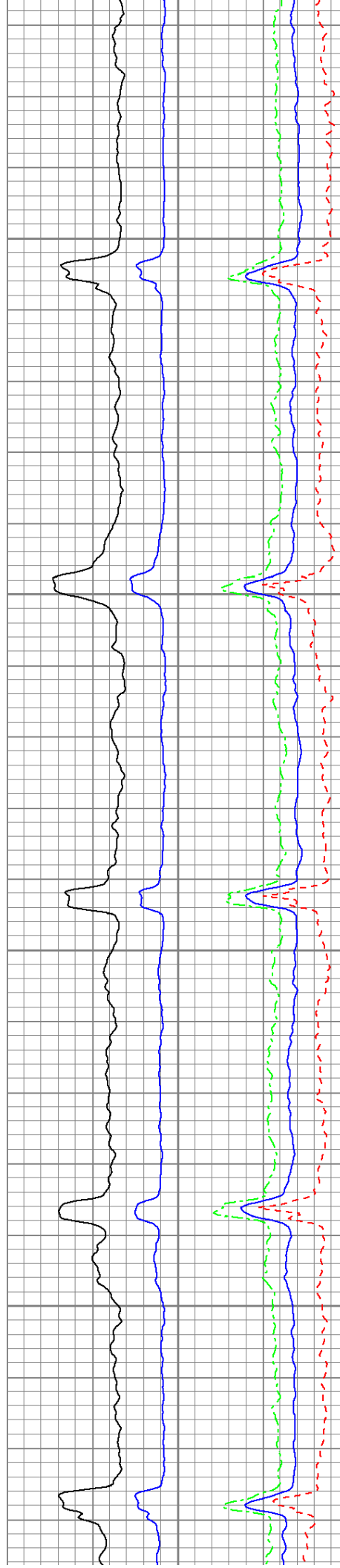
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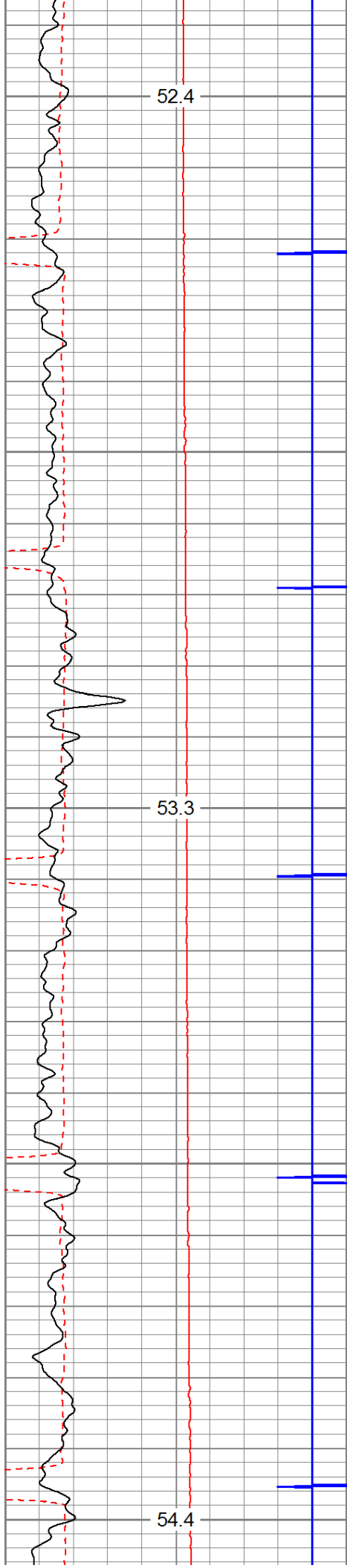




400

500

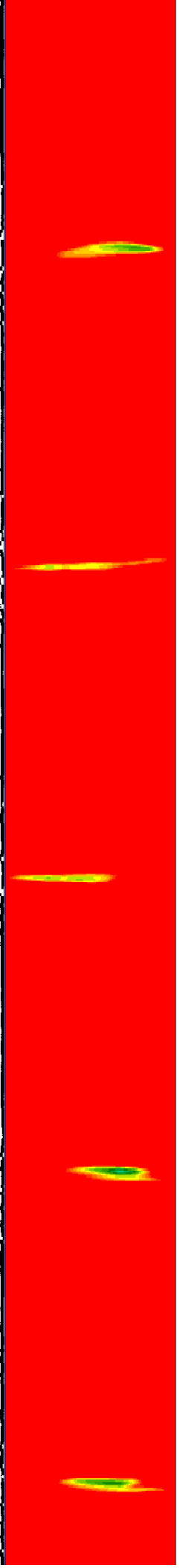
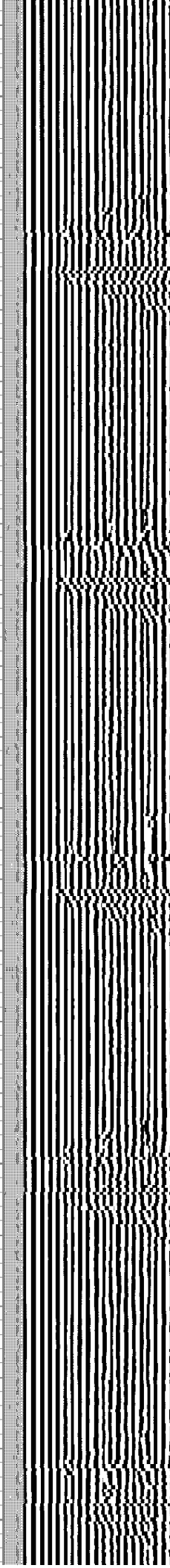
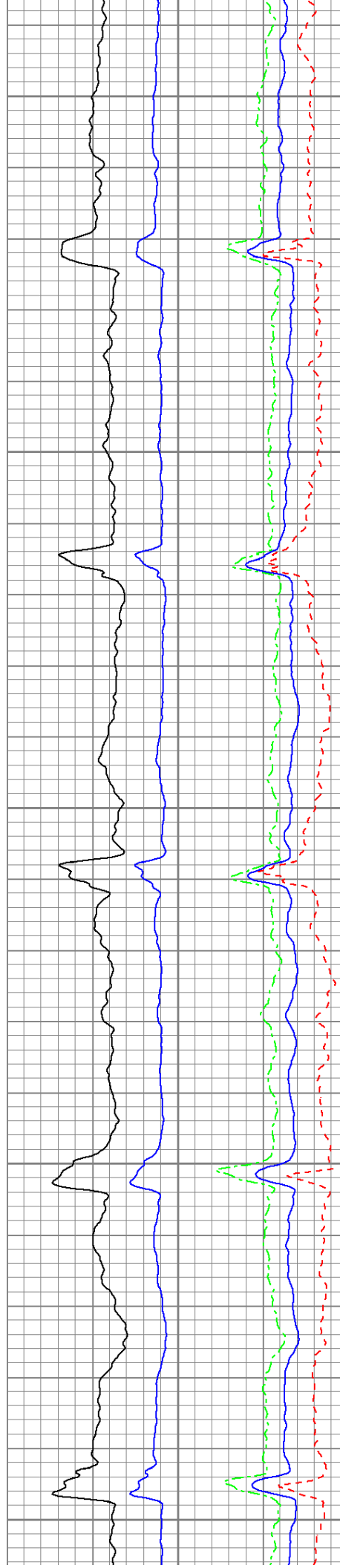


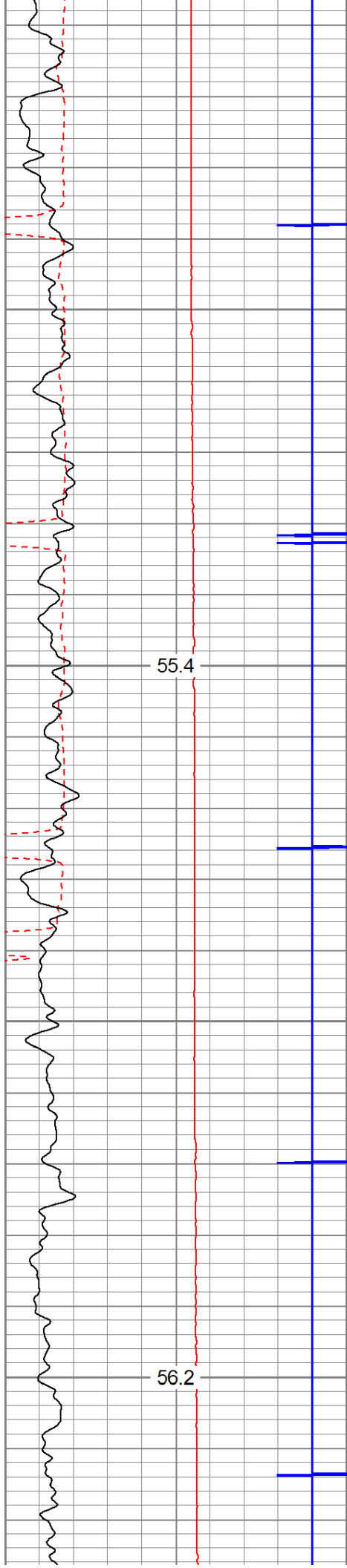


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700

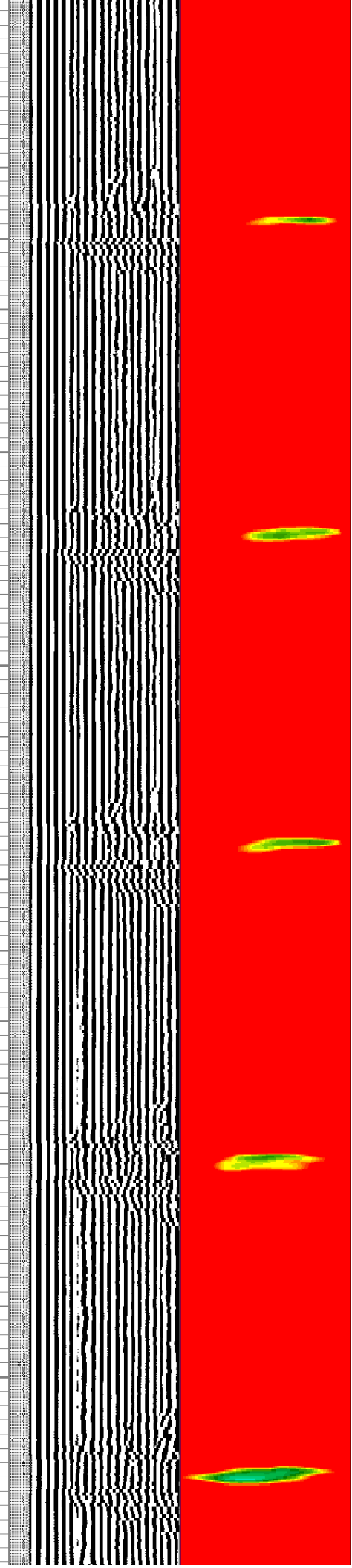
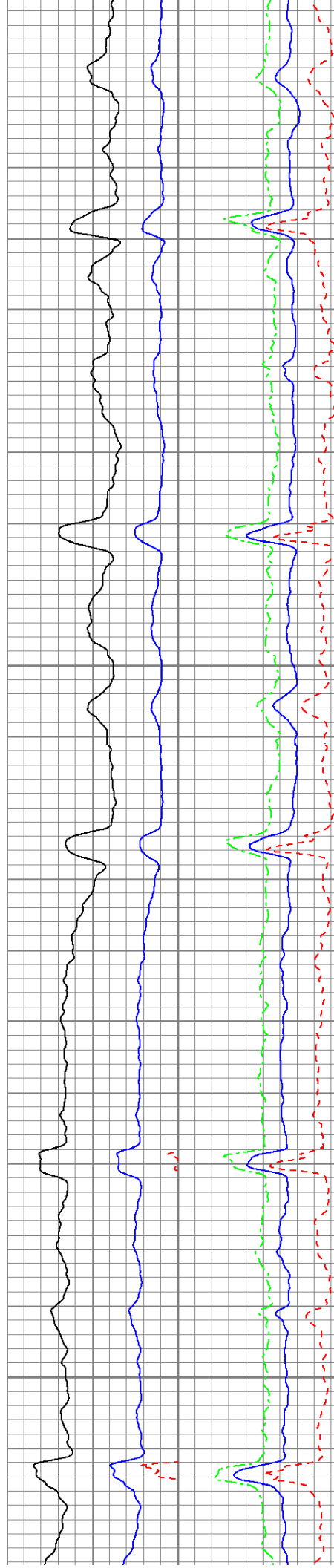
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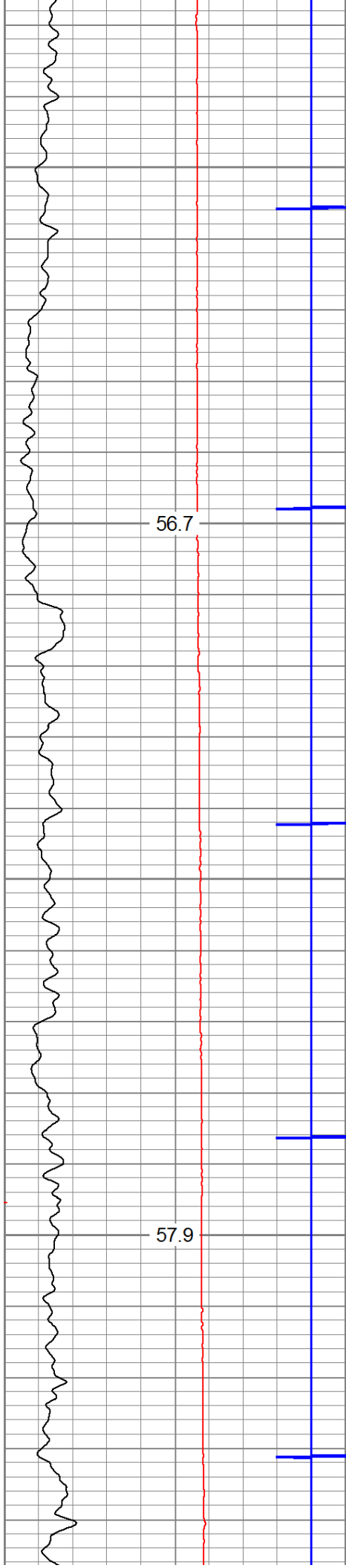




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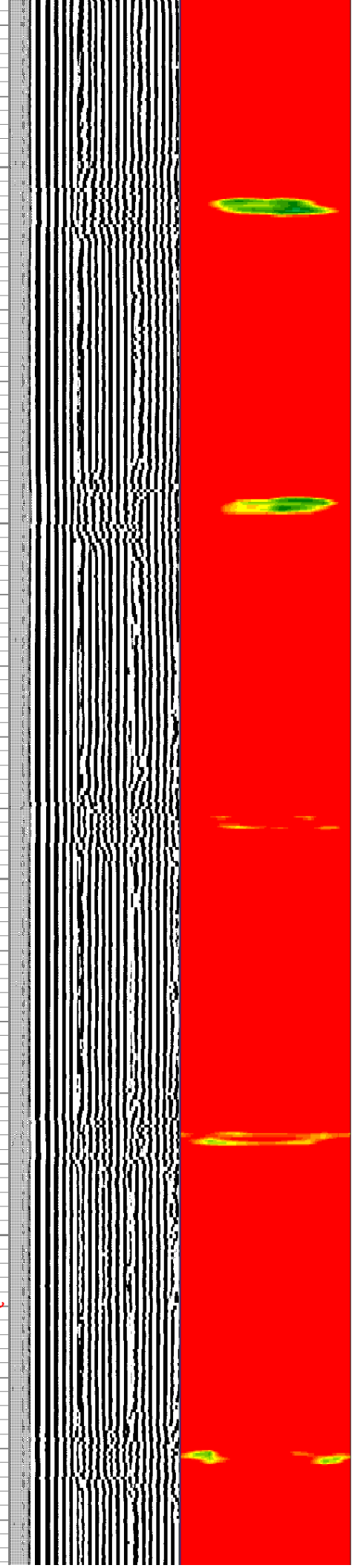
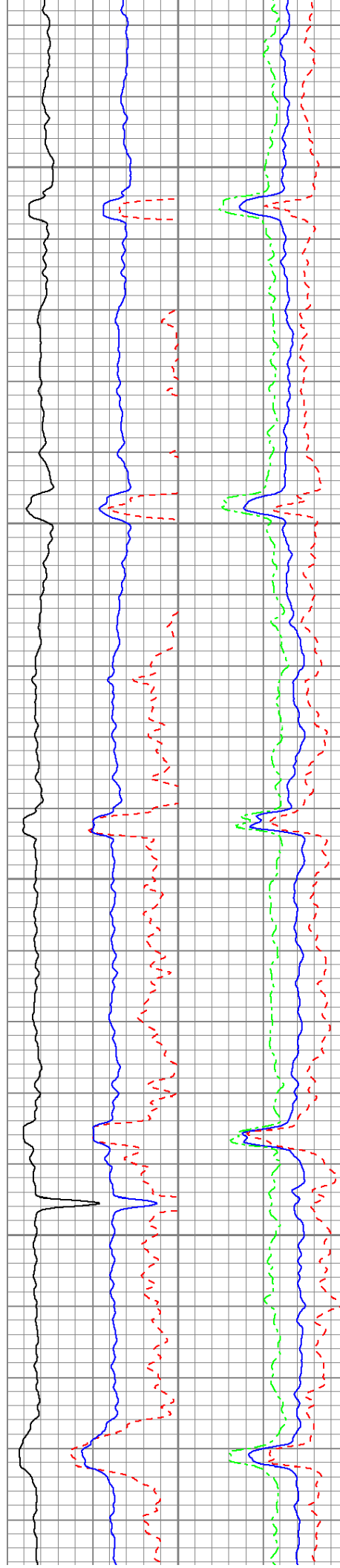
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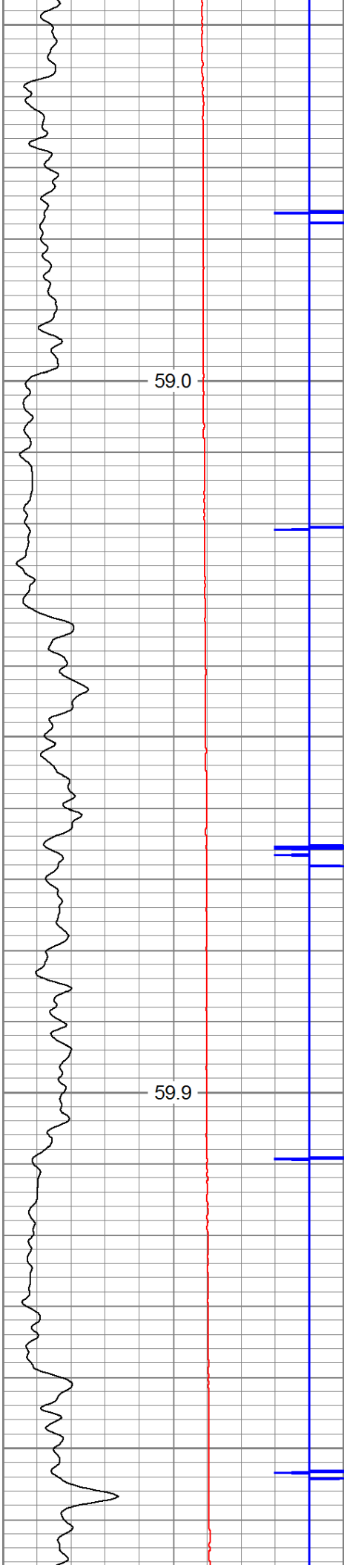




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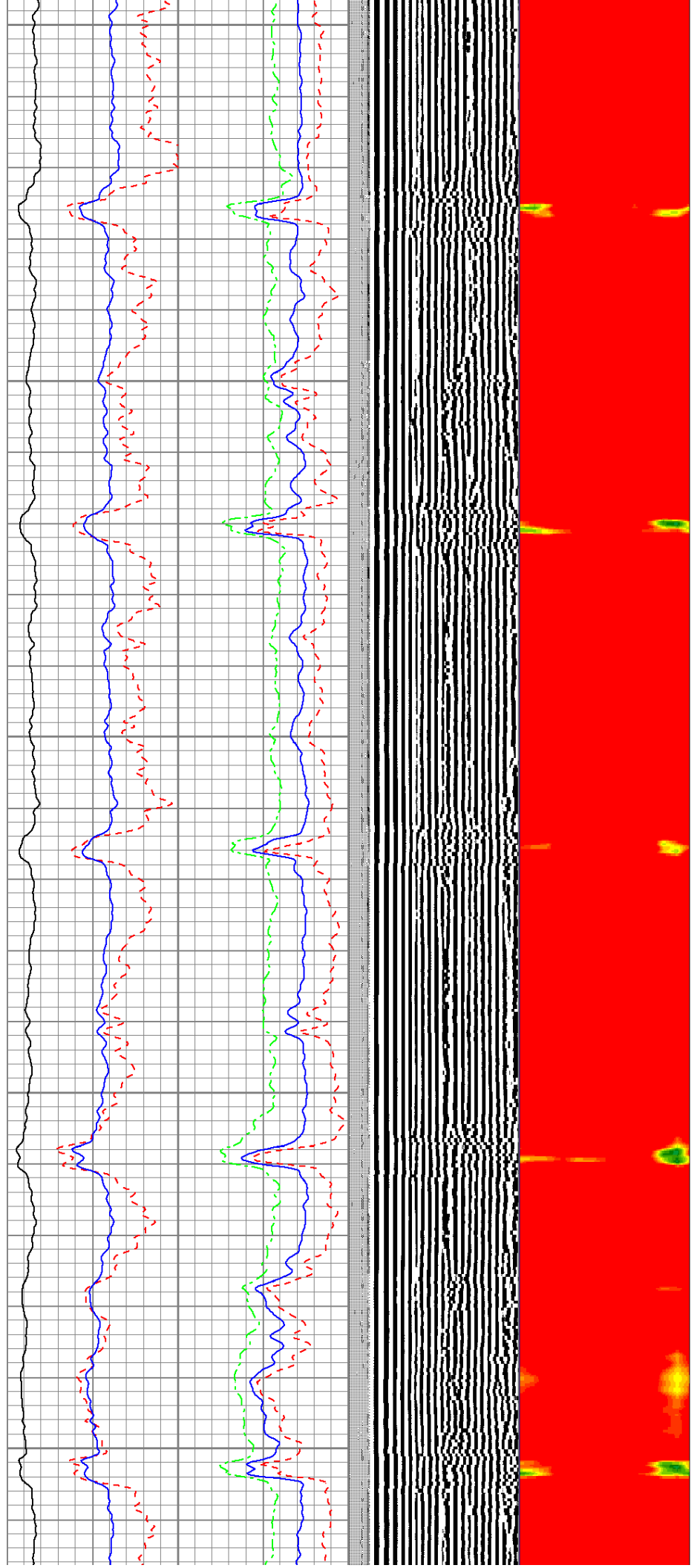
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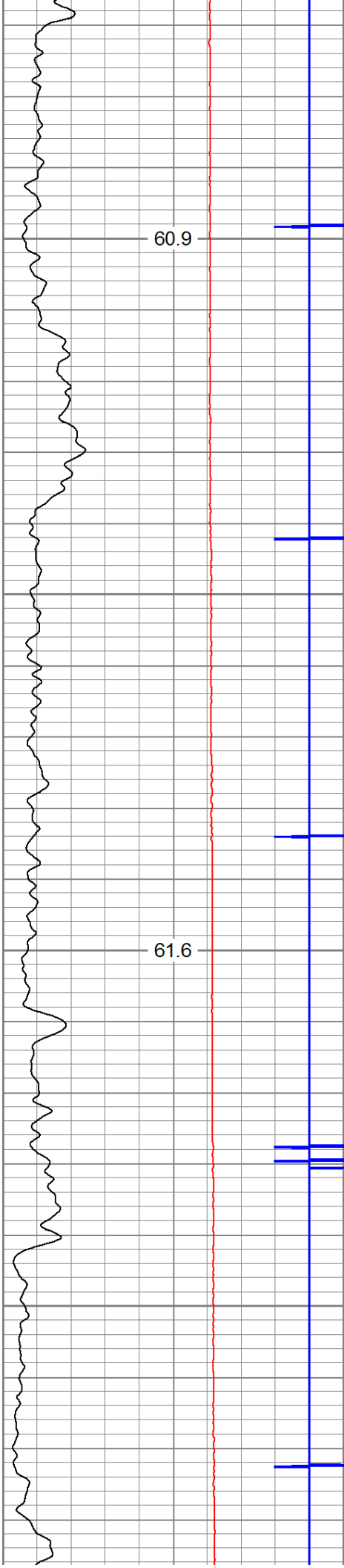




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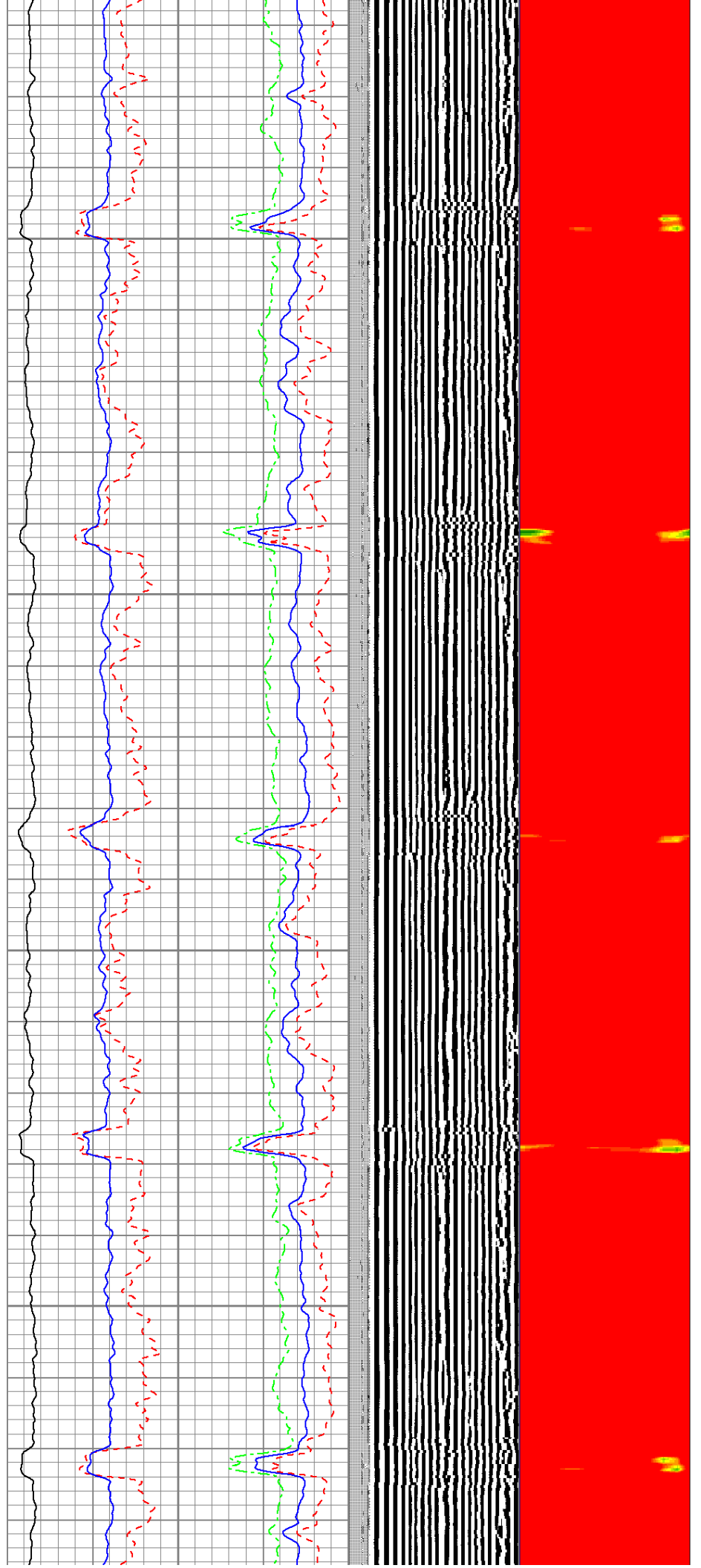
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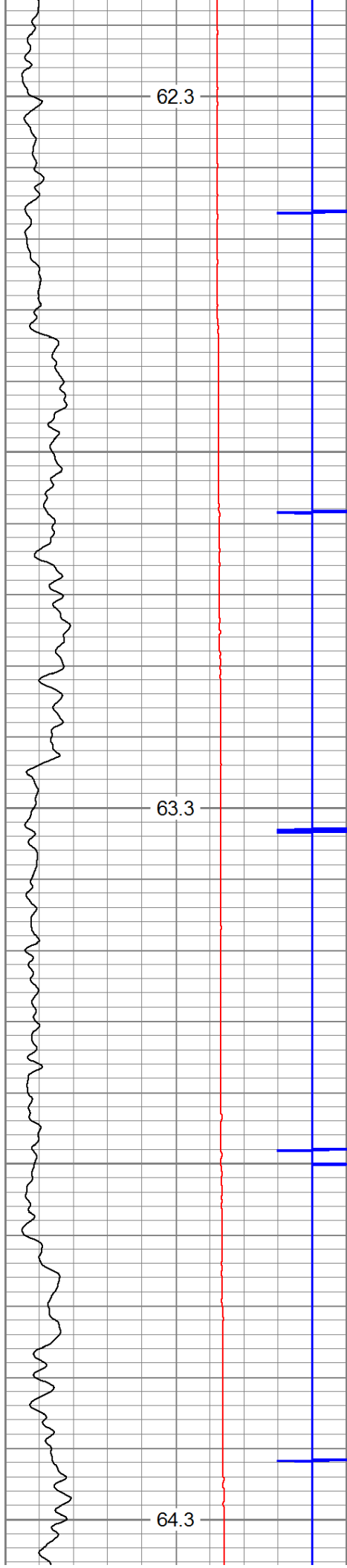




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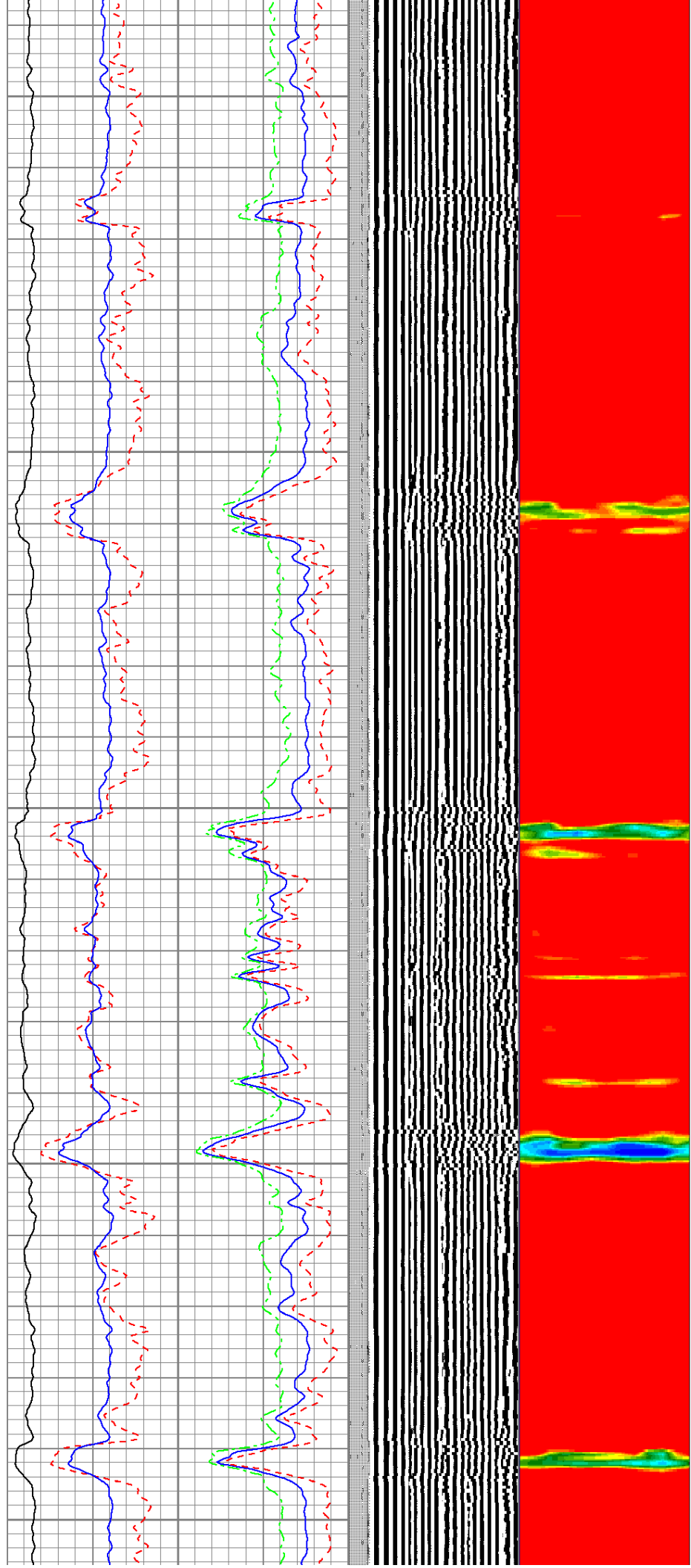




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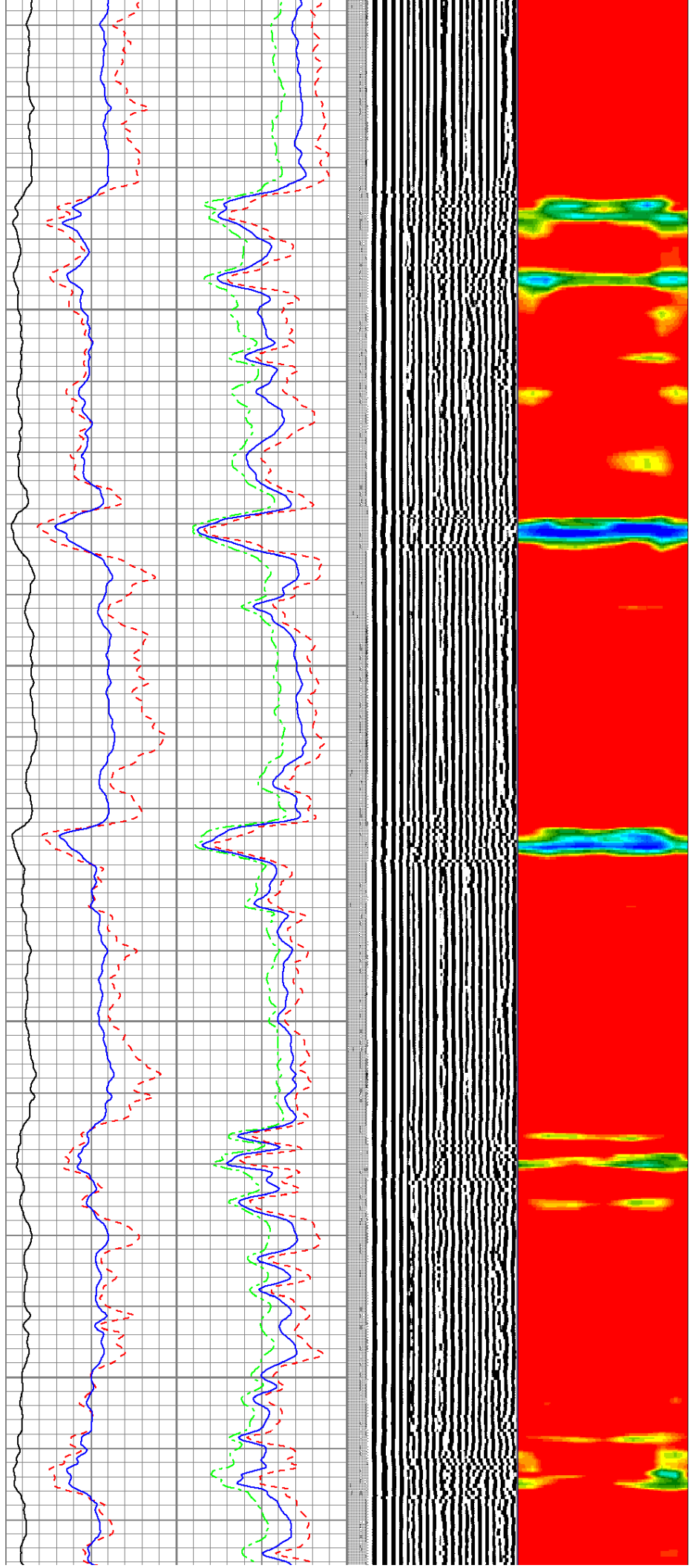
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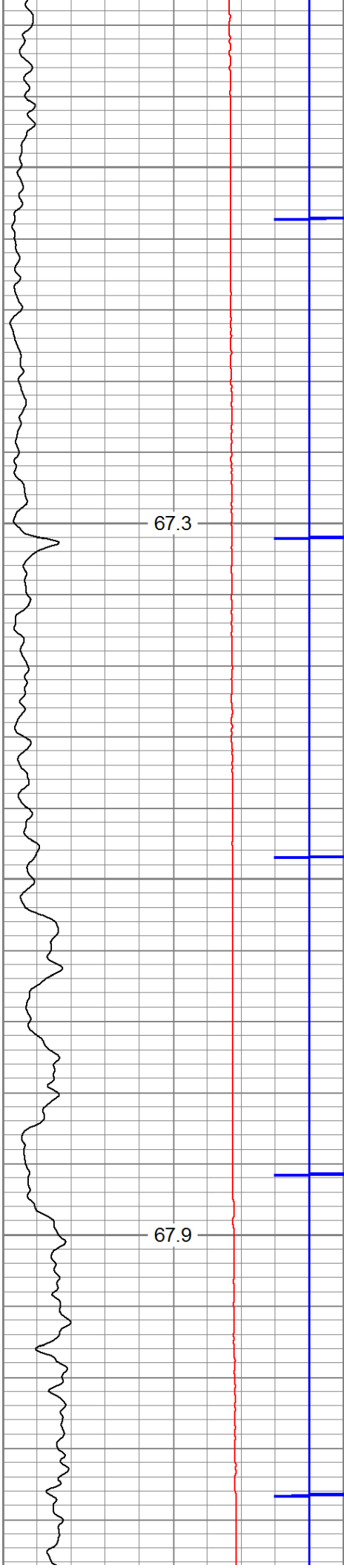




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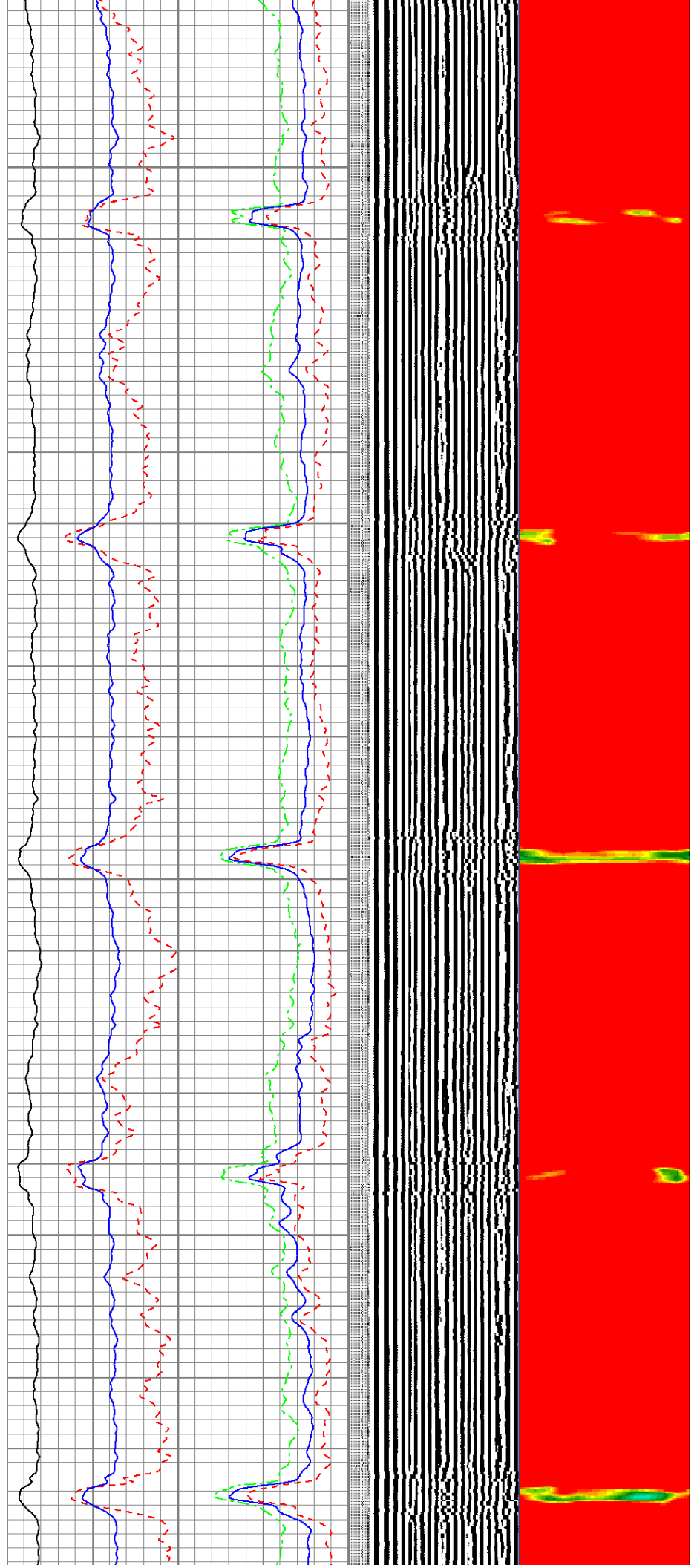
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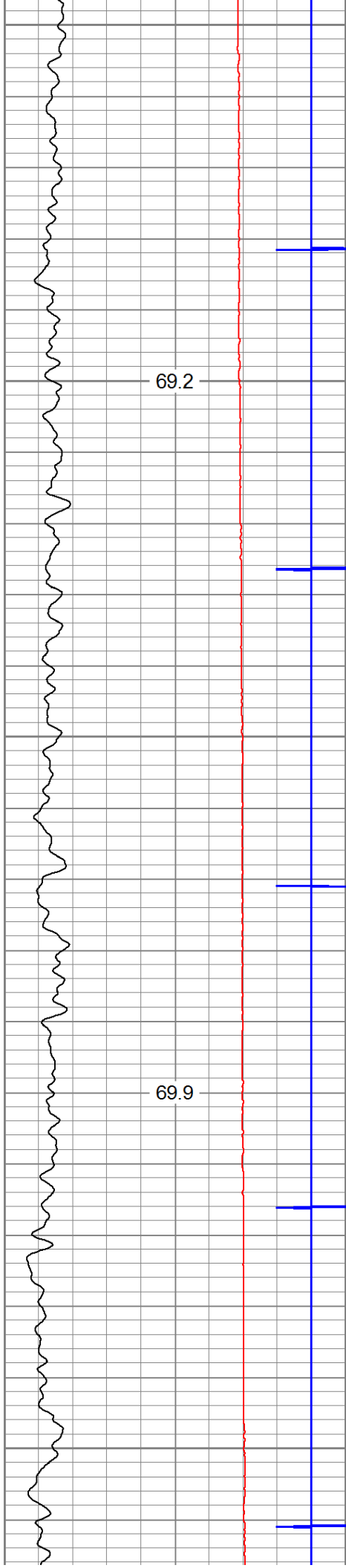




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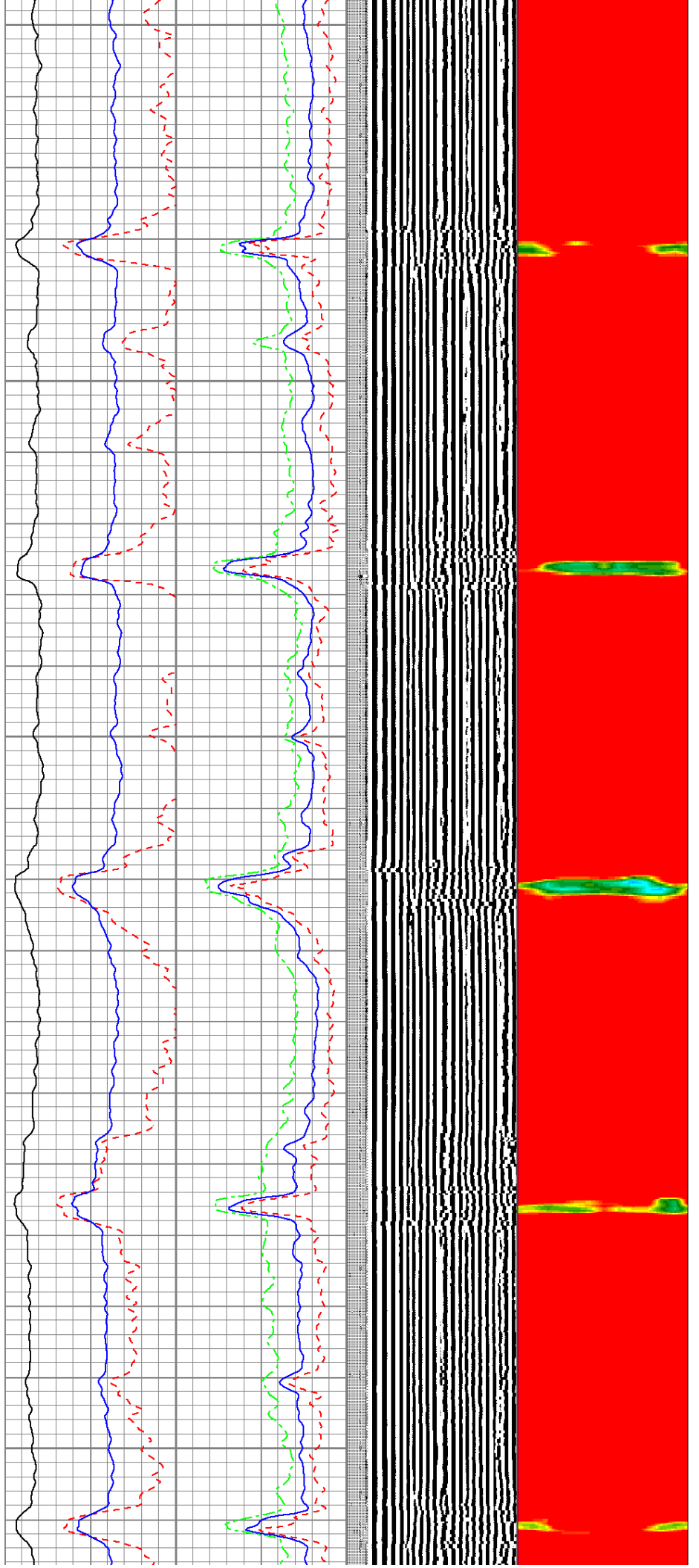


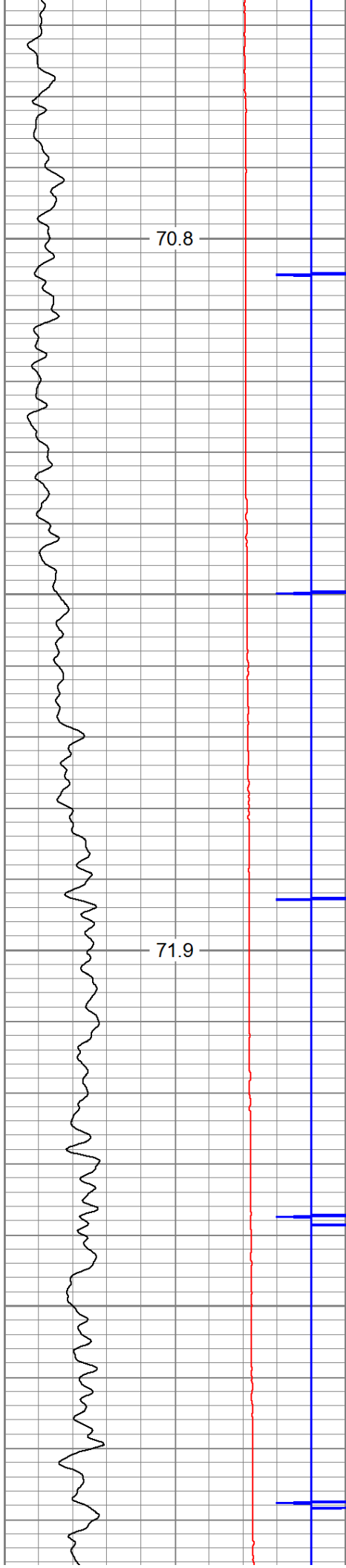
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2400

69.9

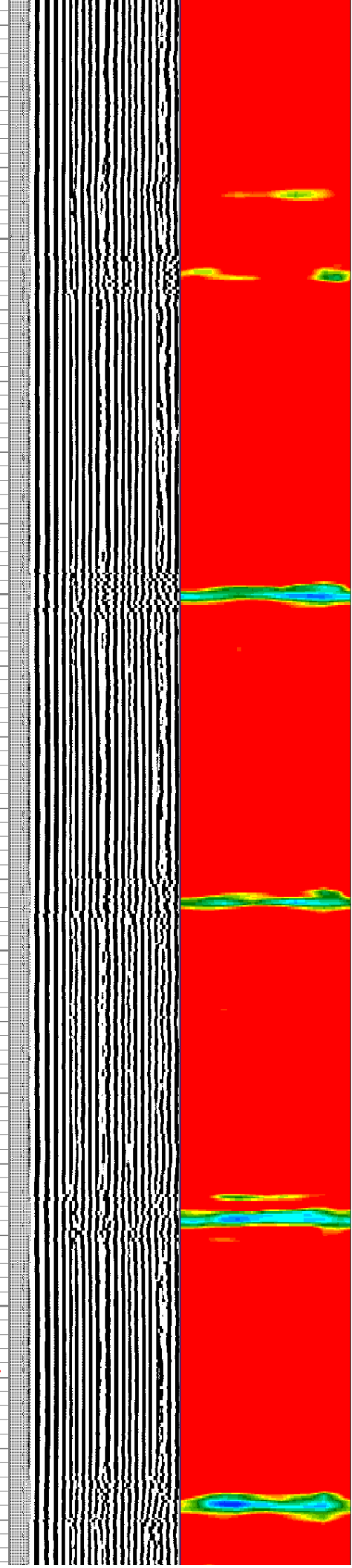
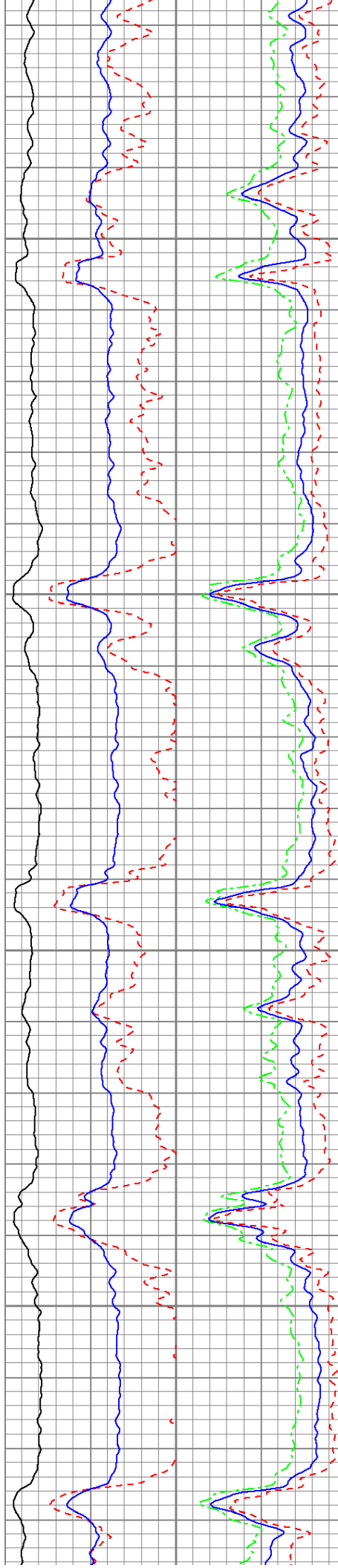
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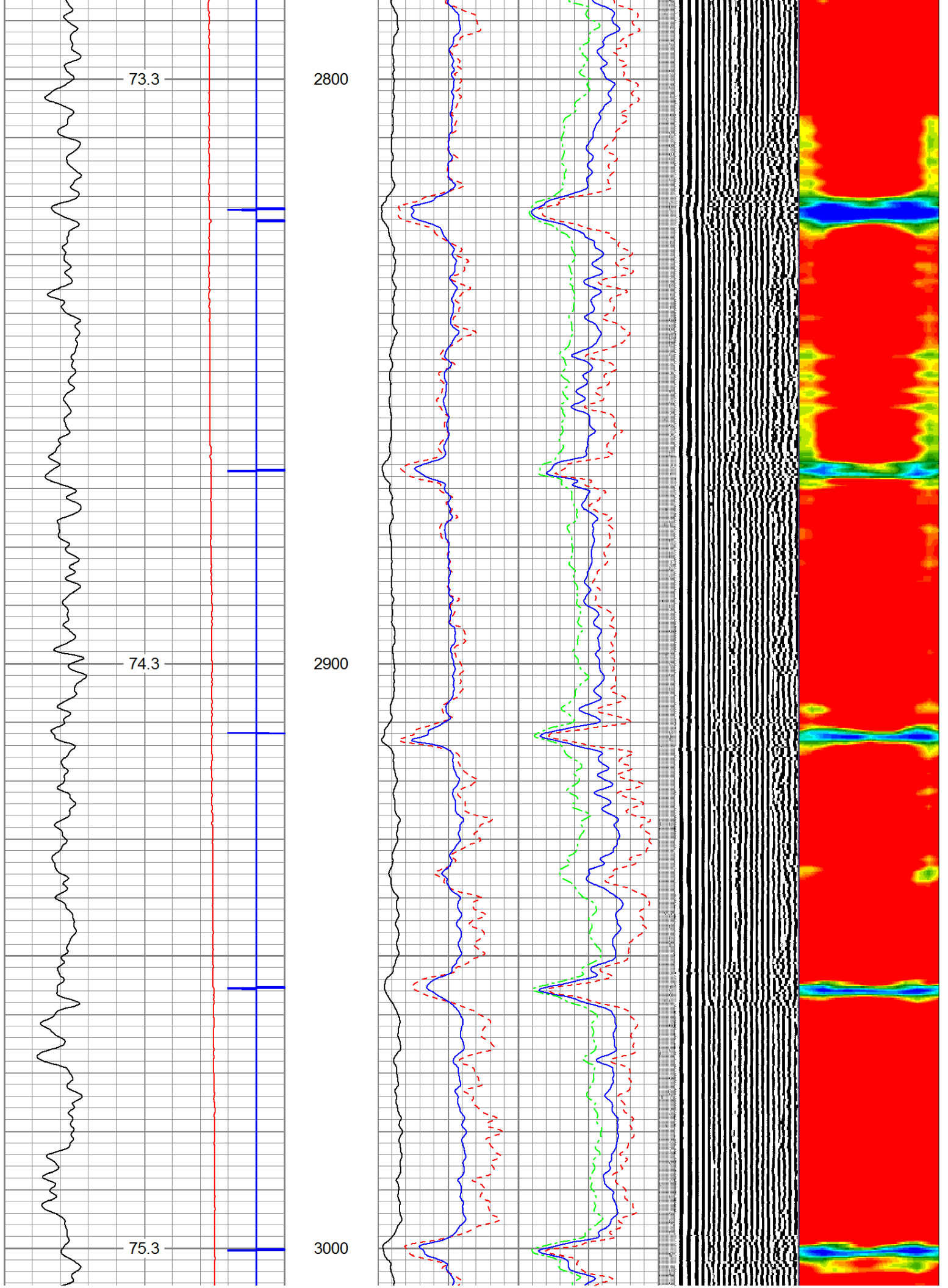


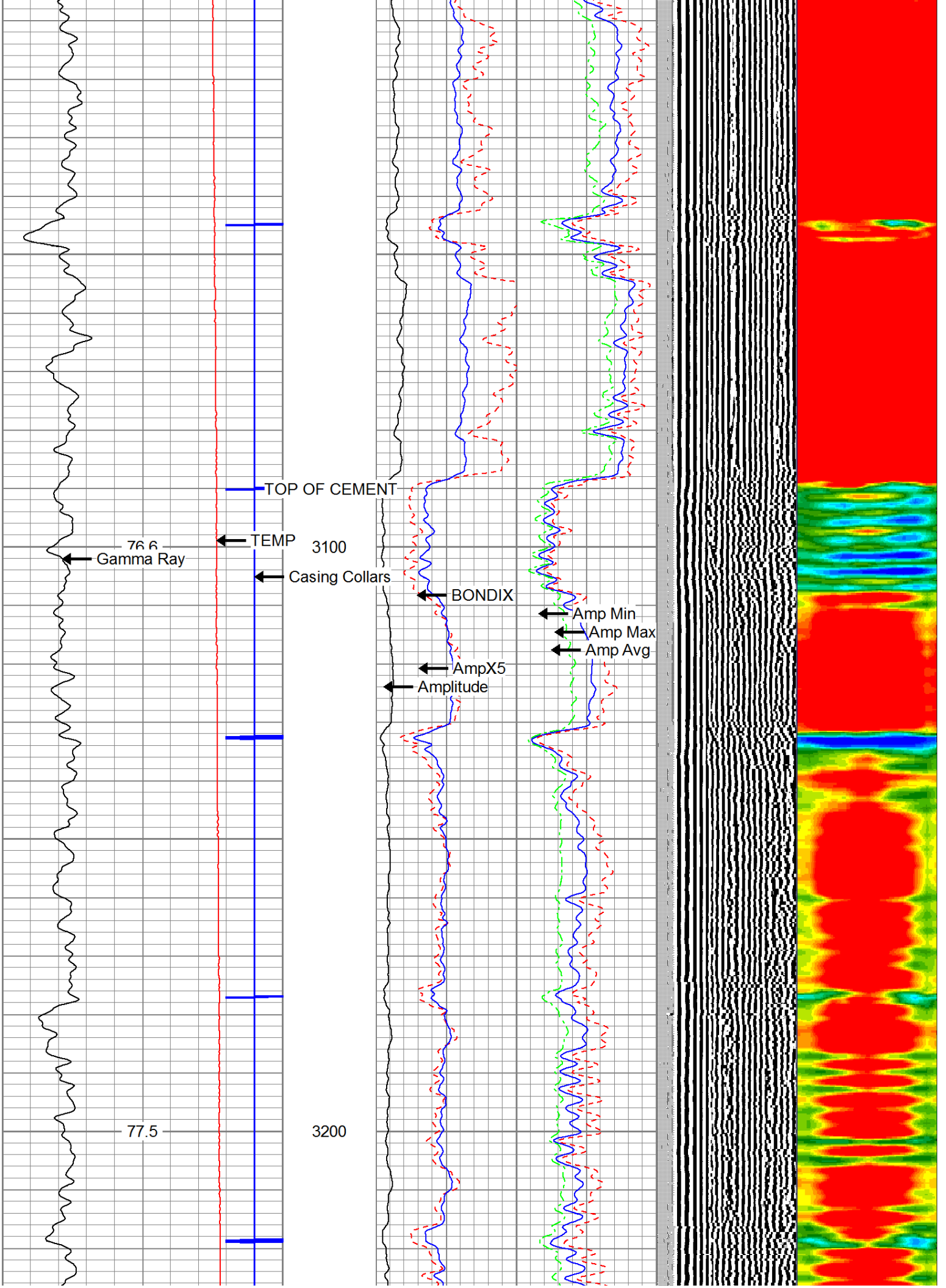


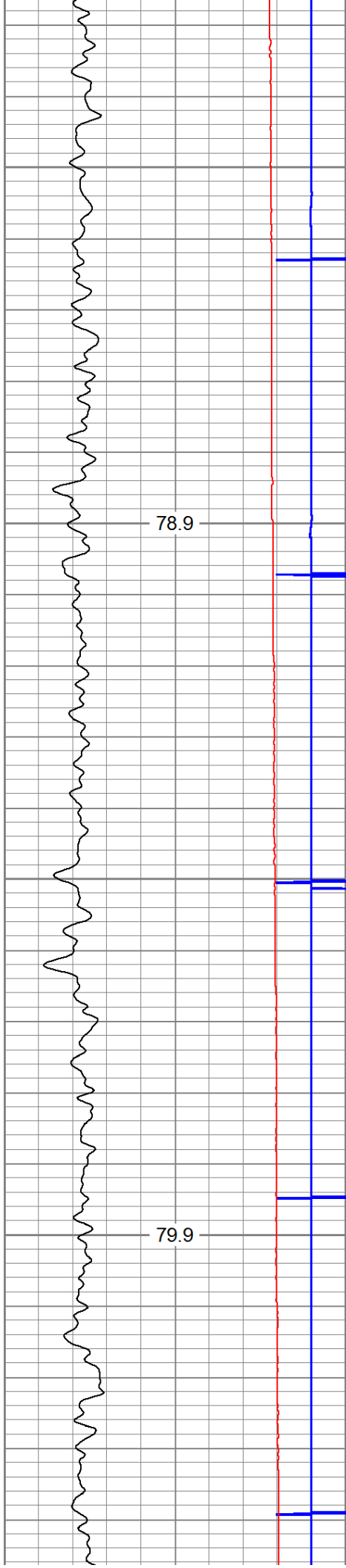
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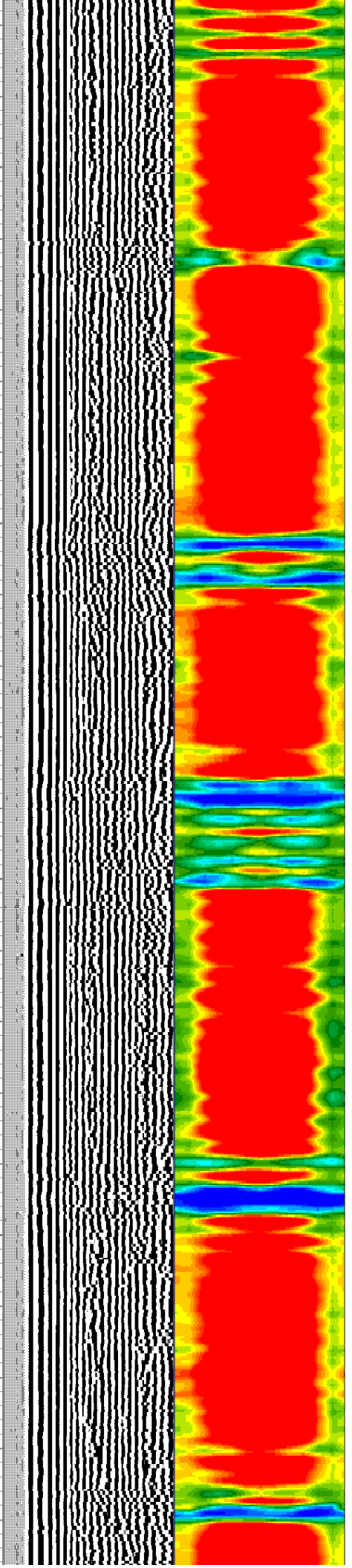
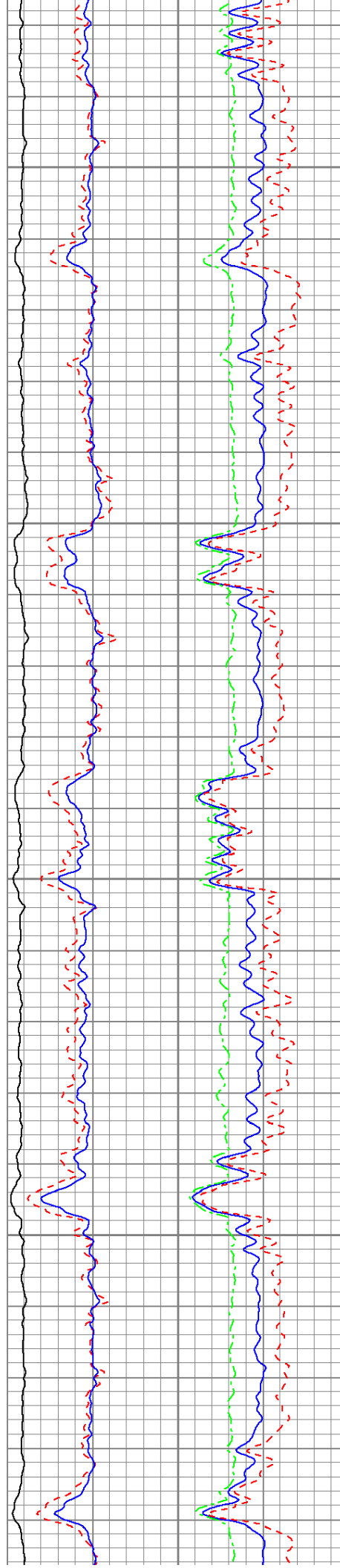


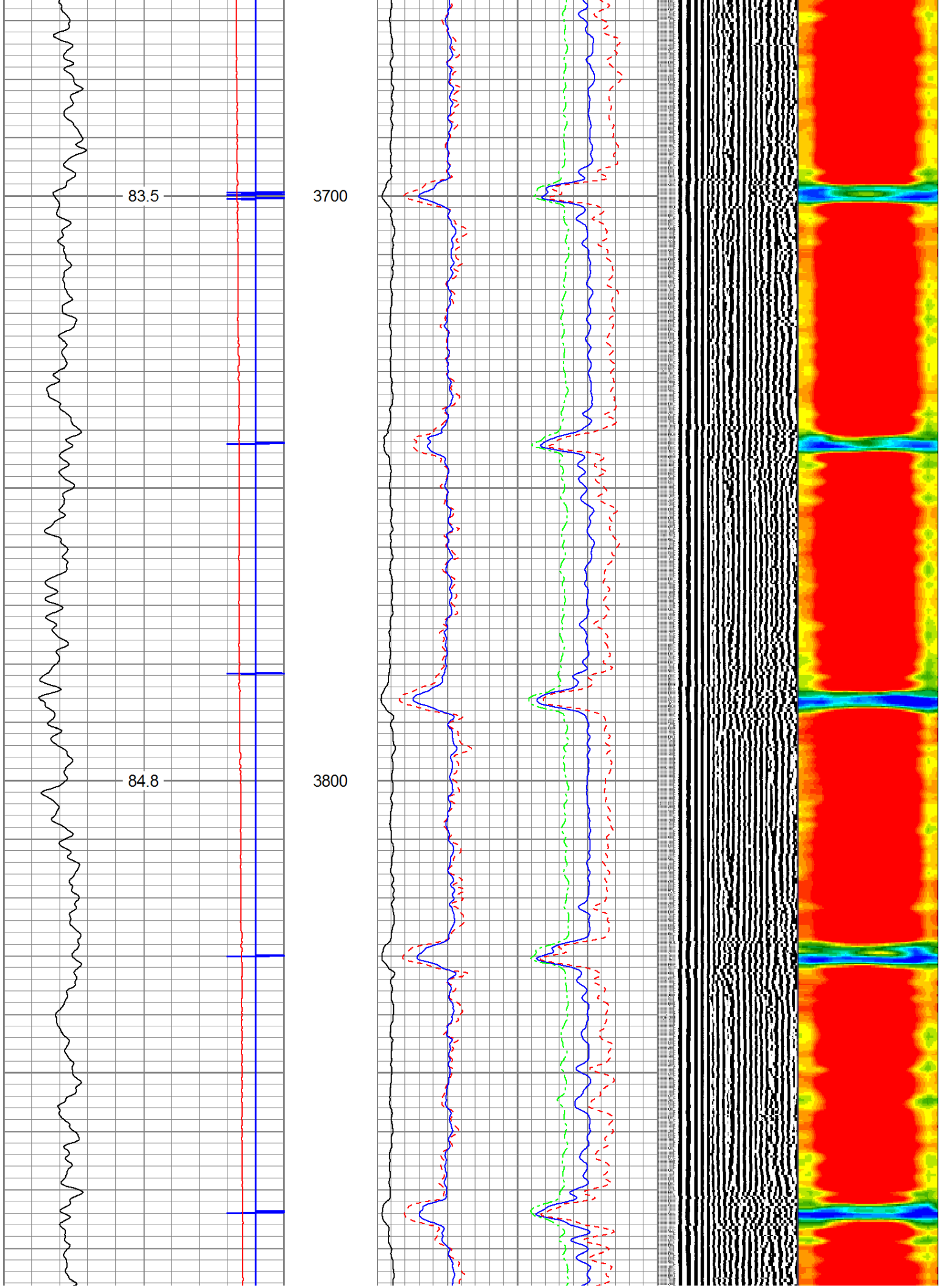


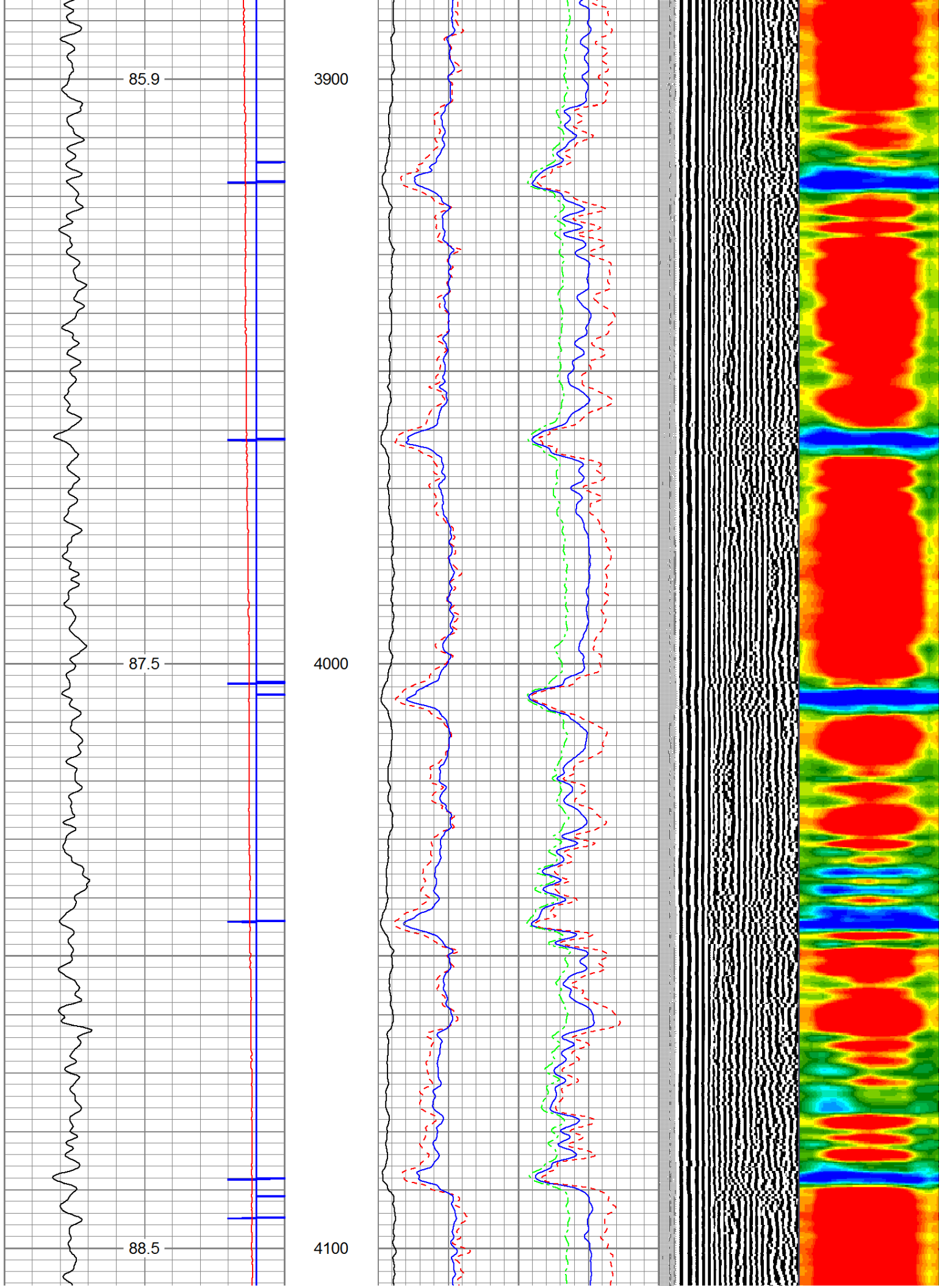


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3400



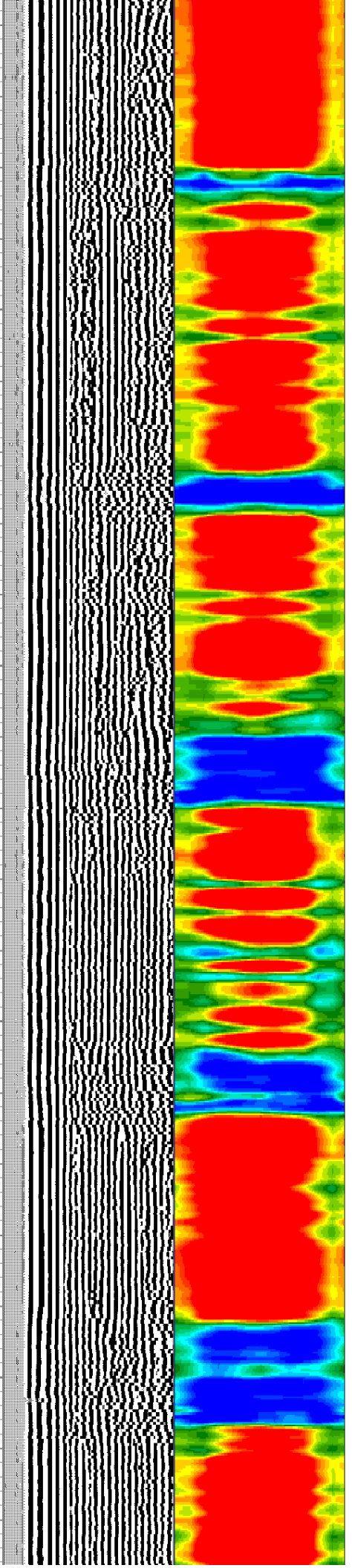
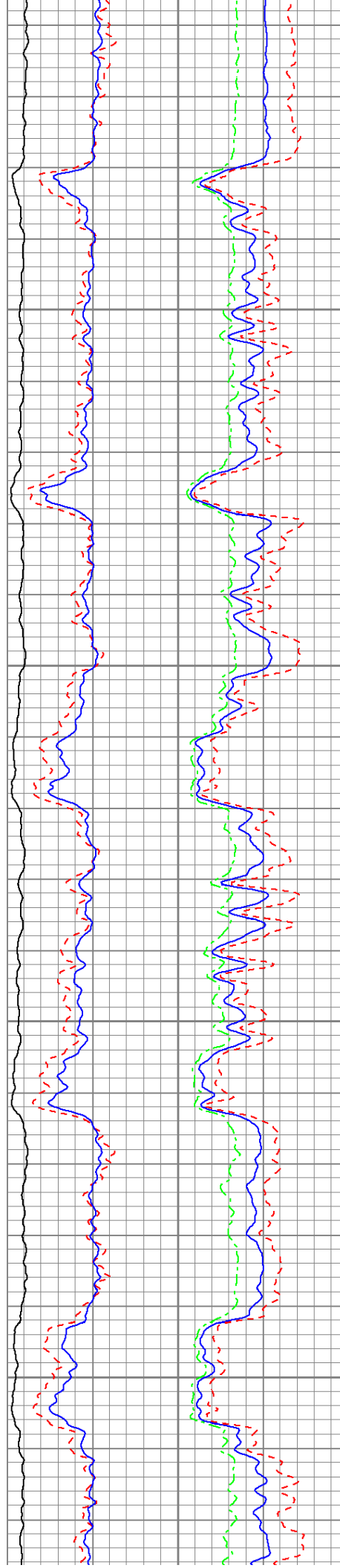


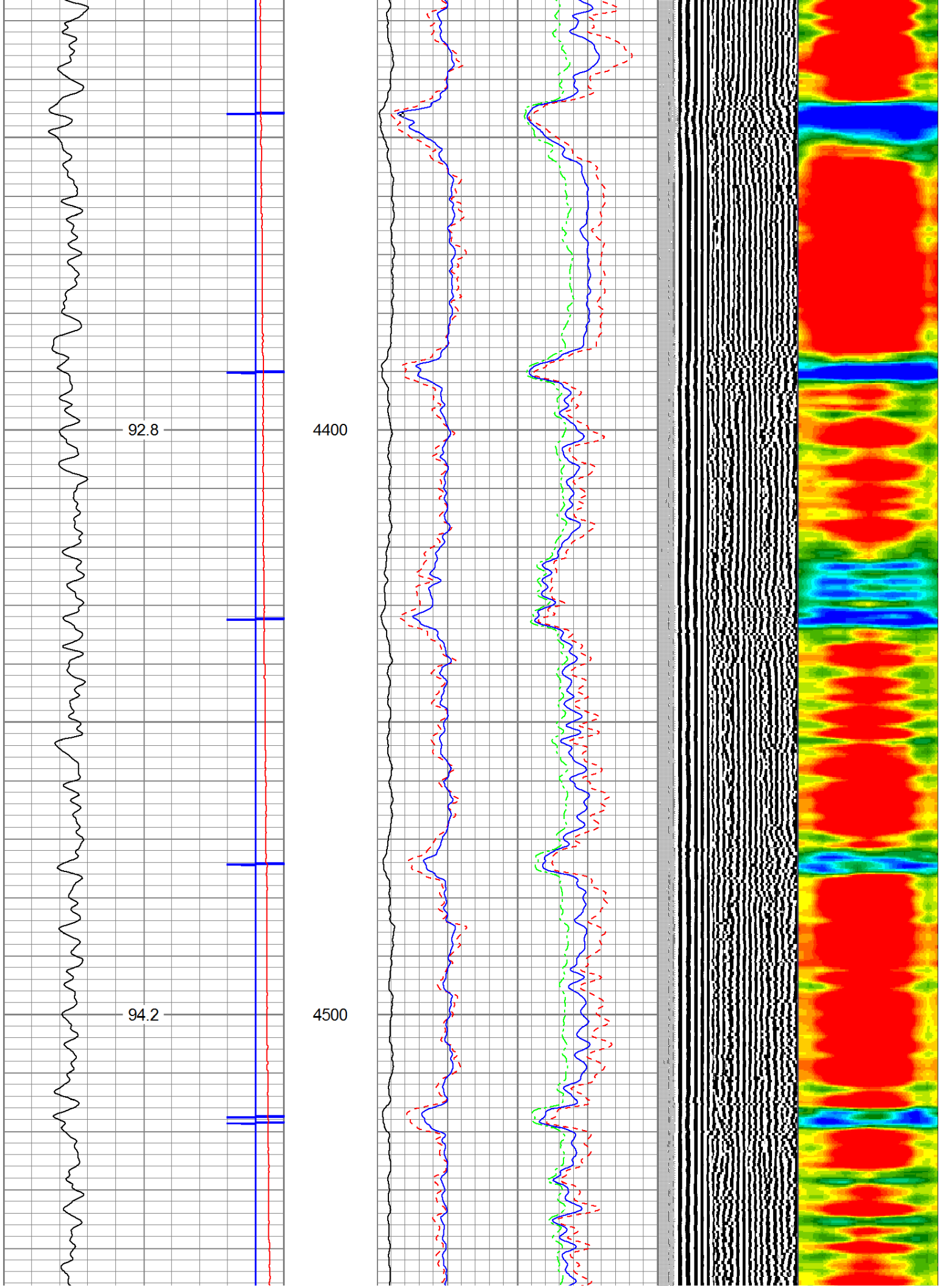


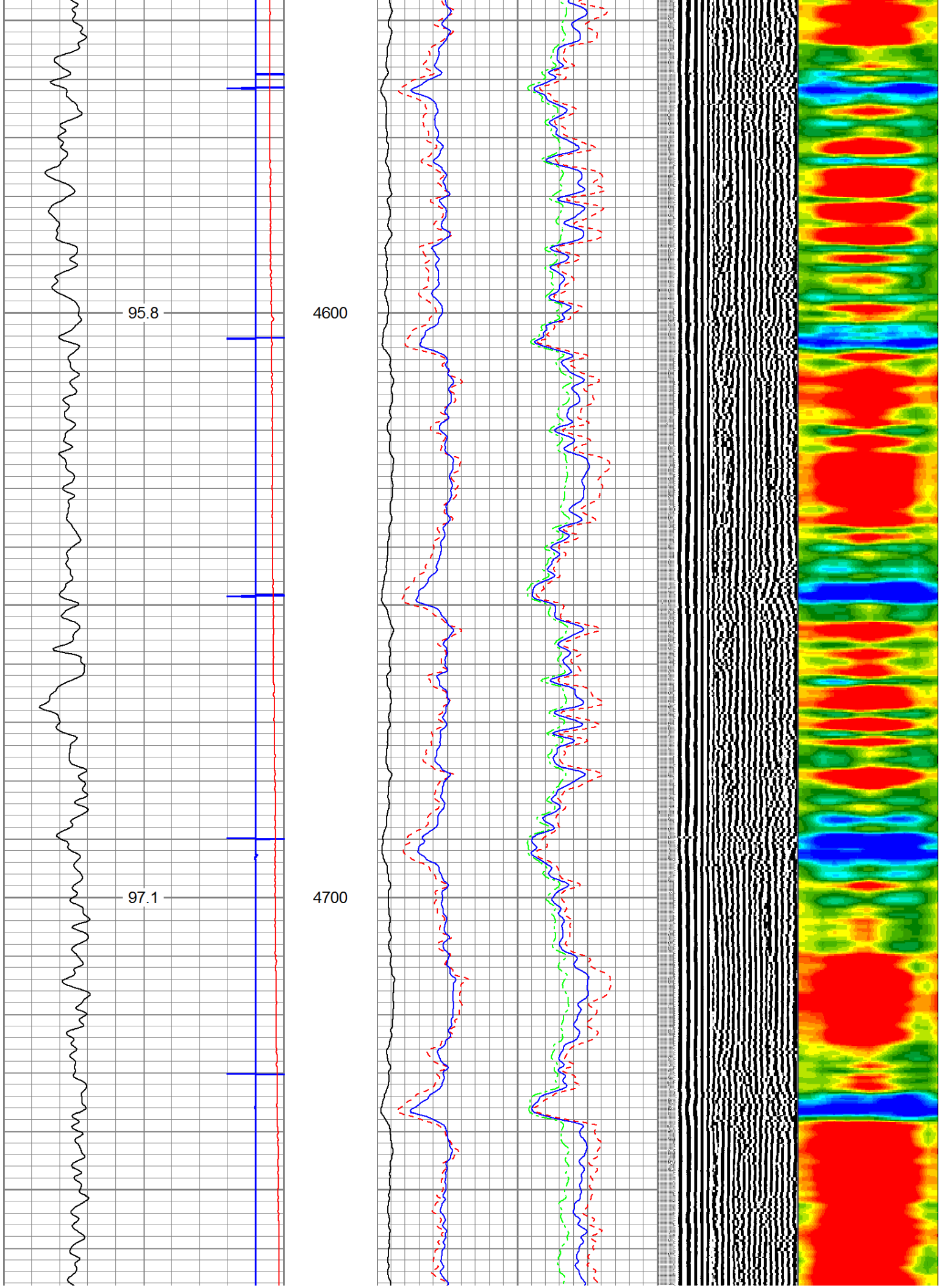


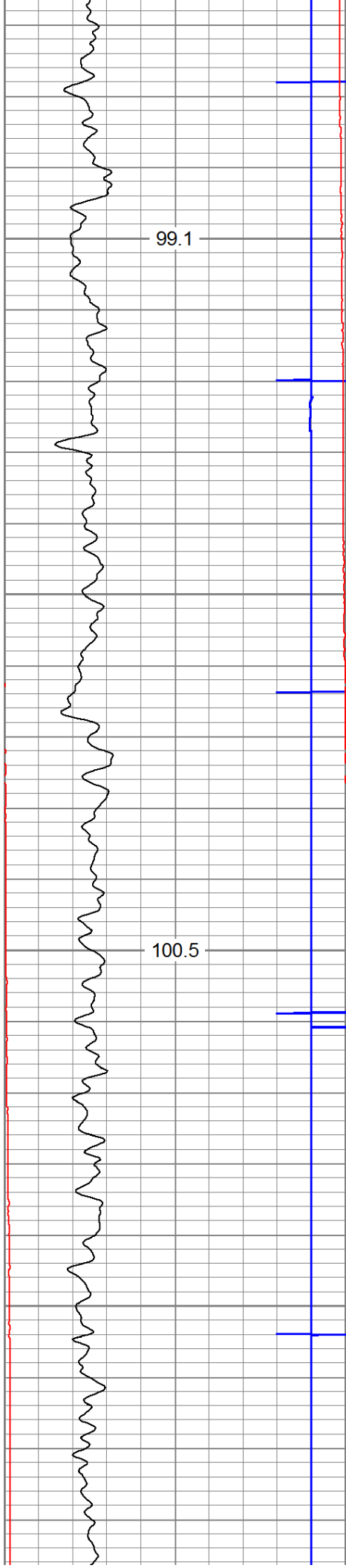
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4300



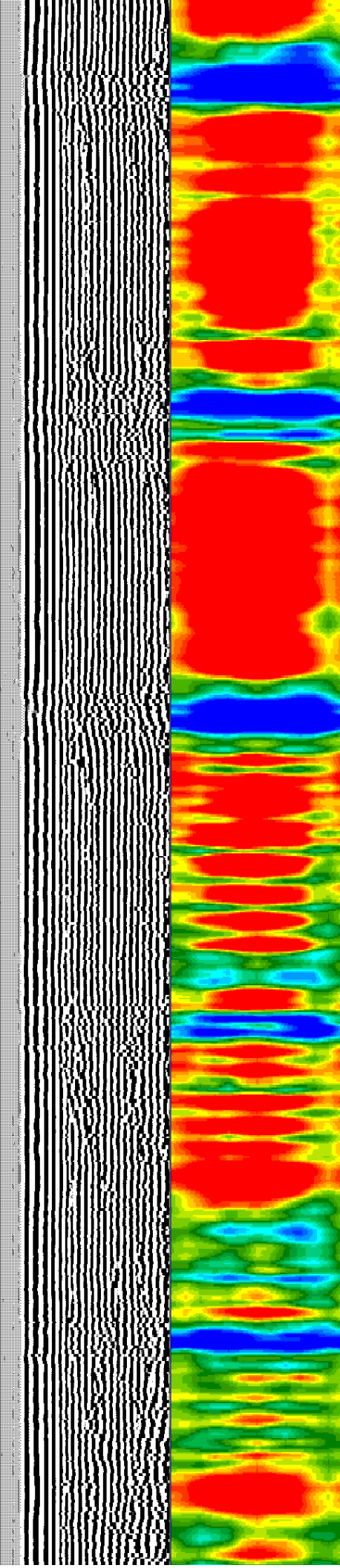
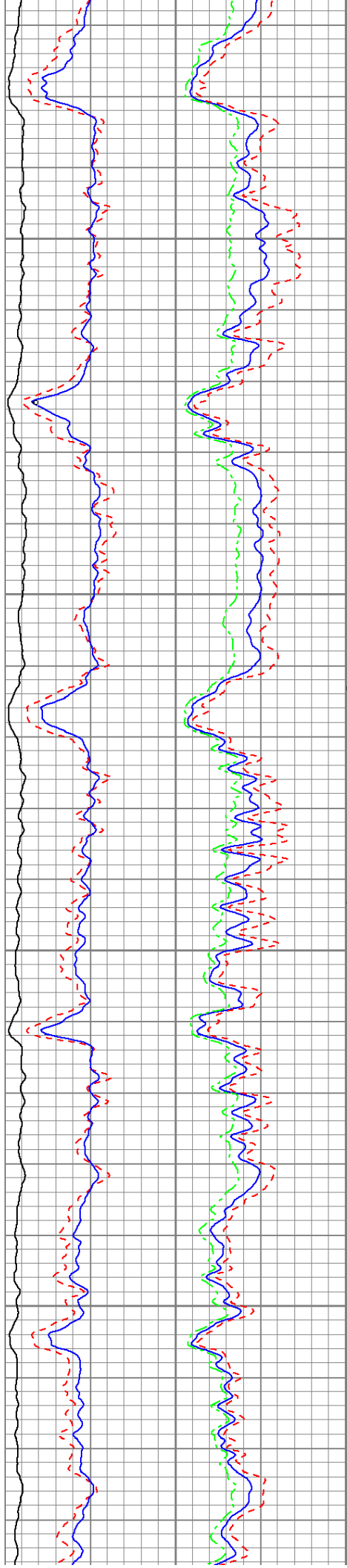


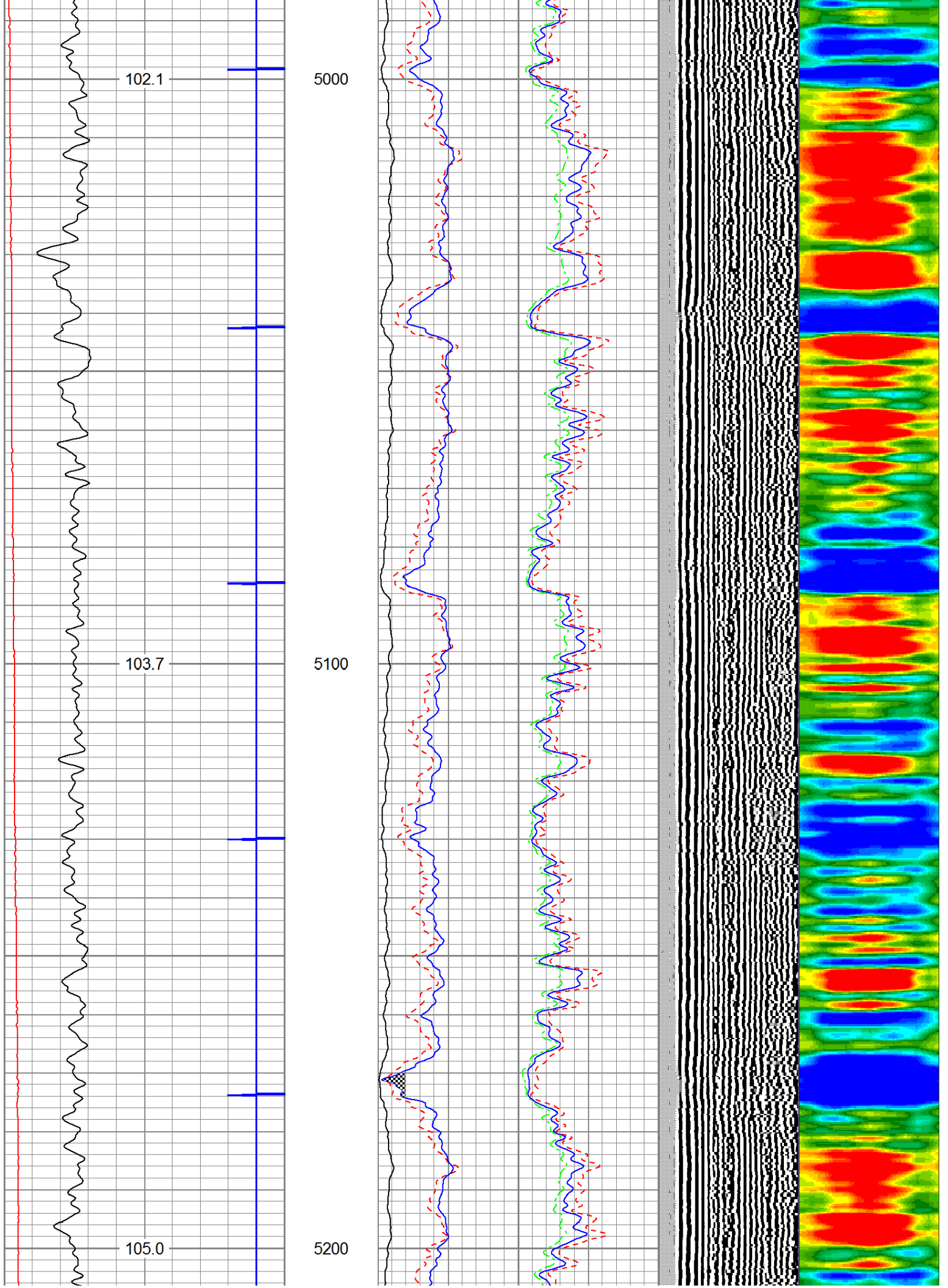


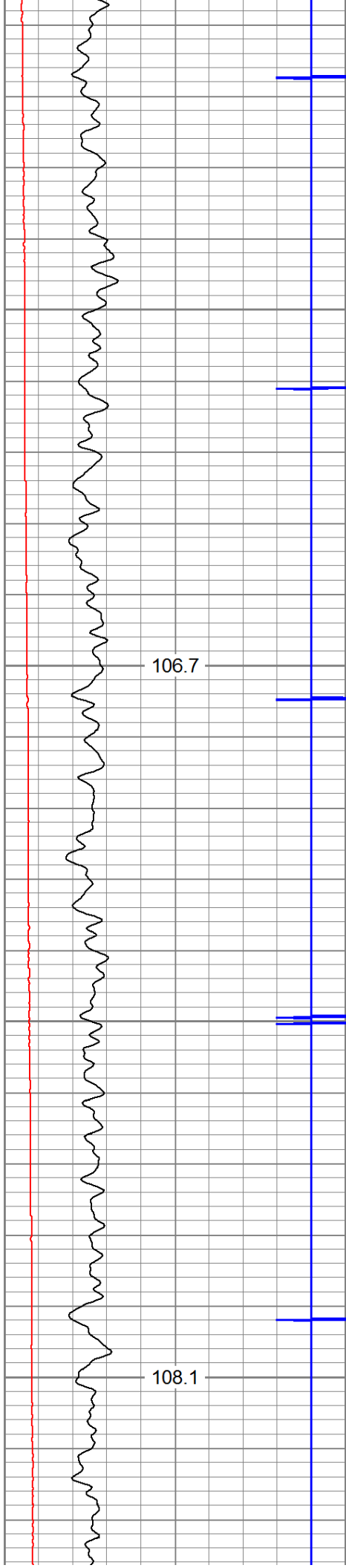


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4900

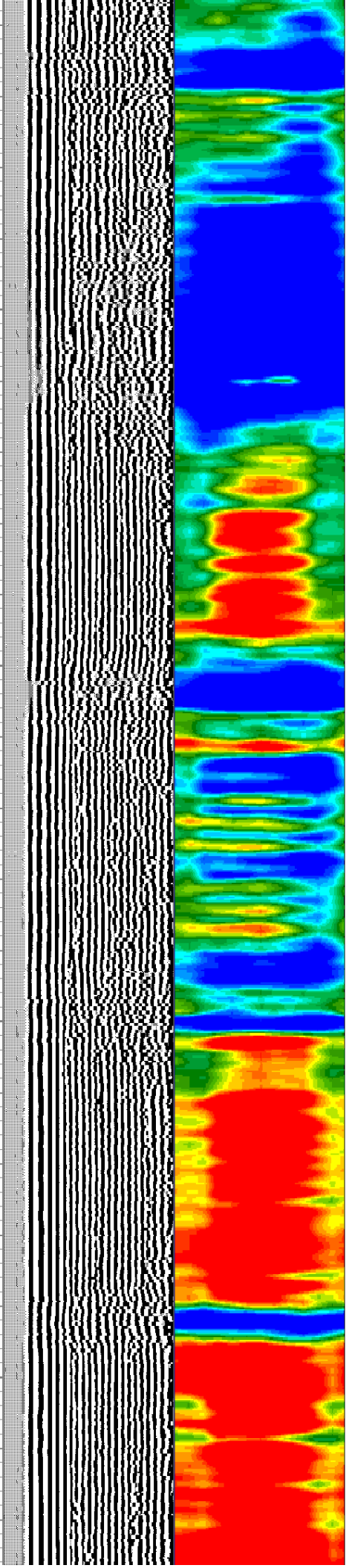
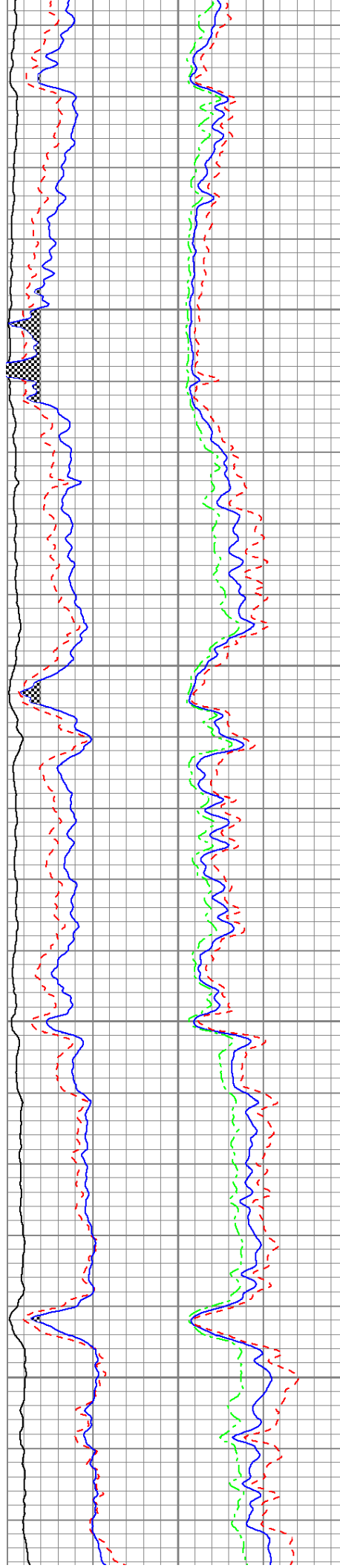


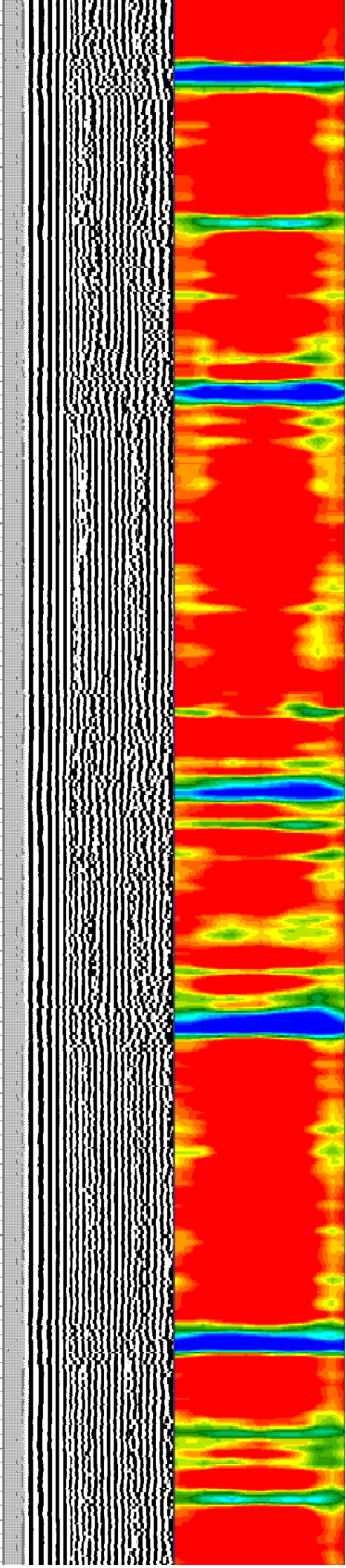
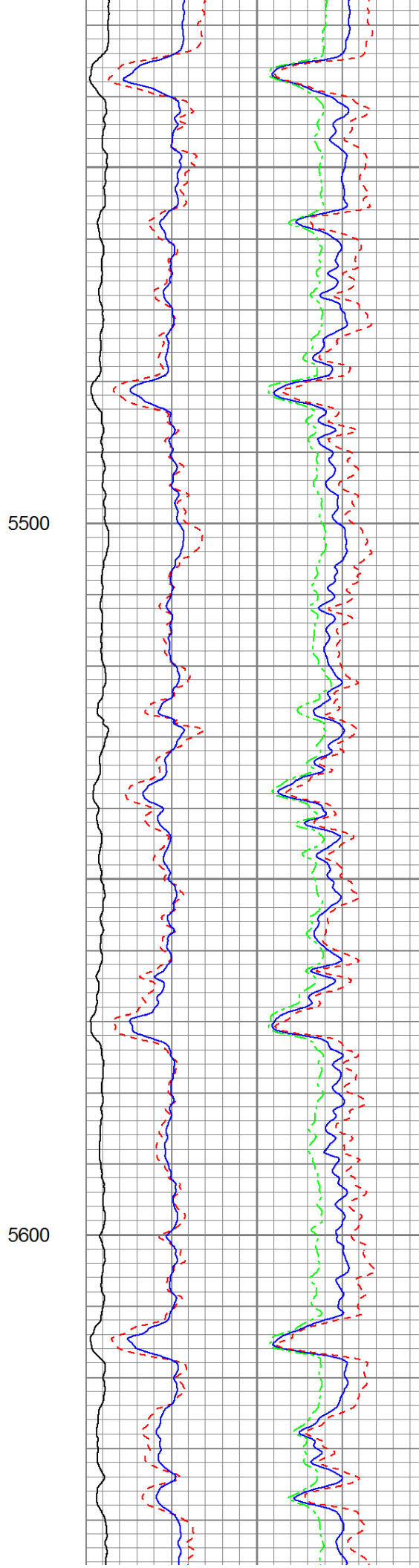
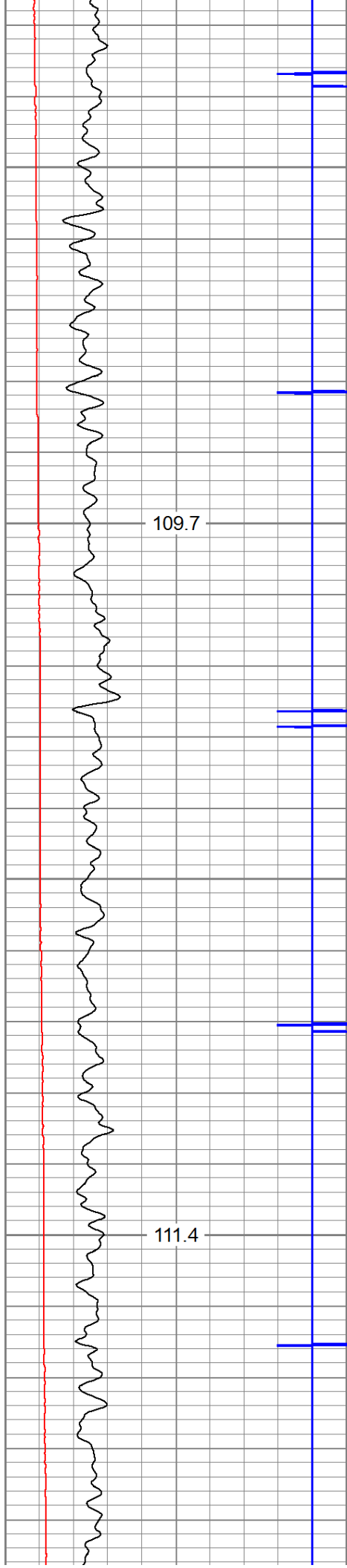


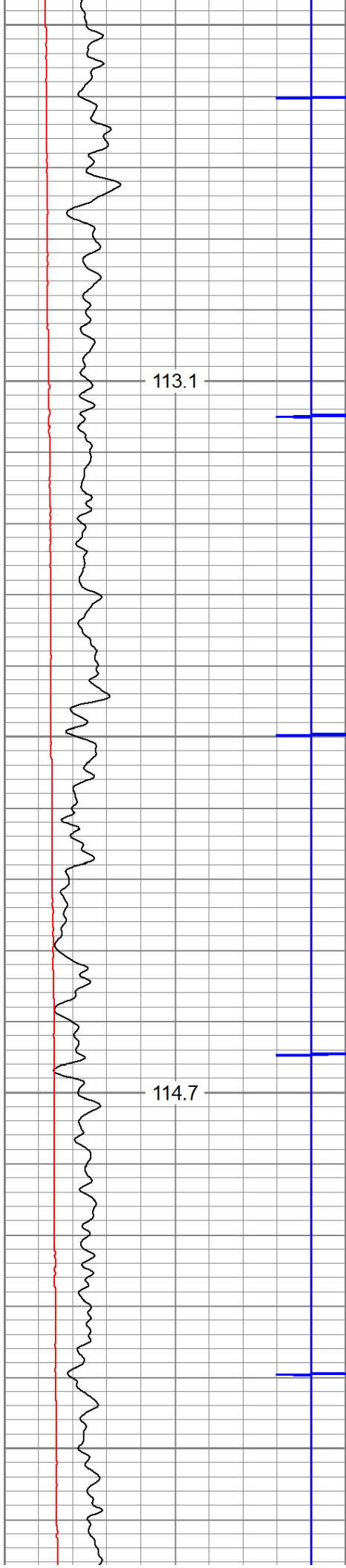


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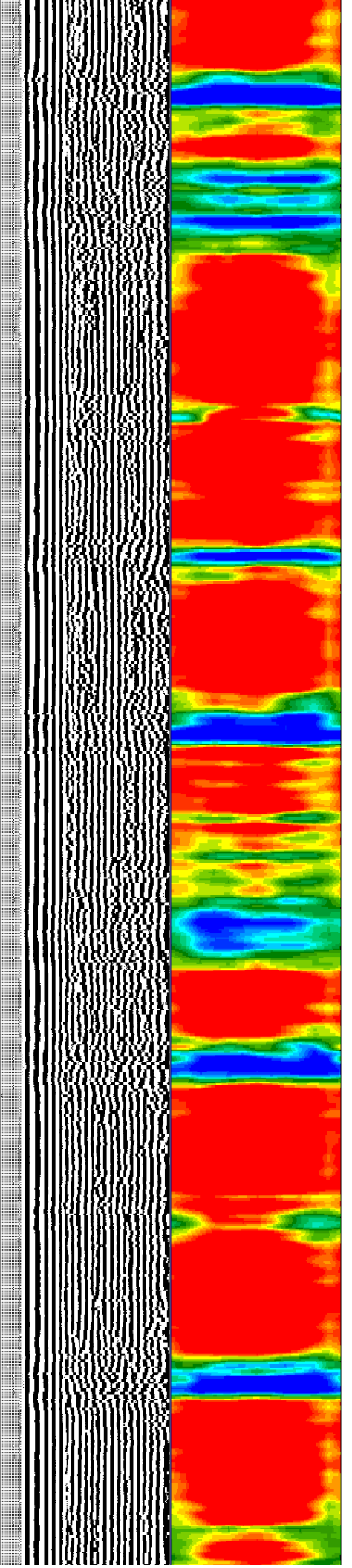
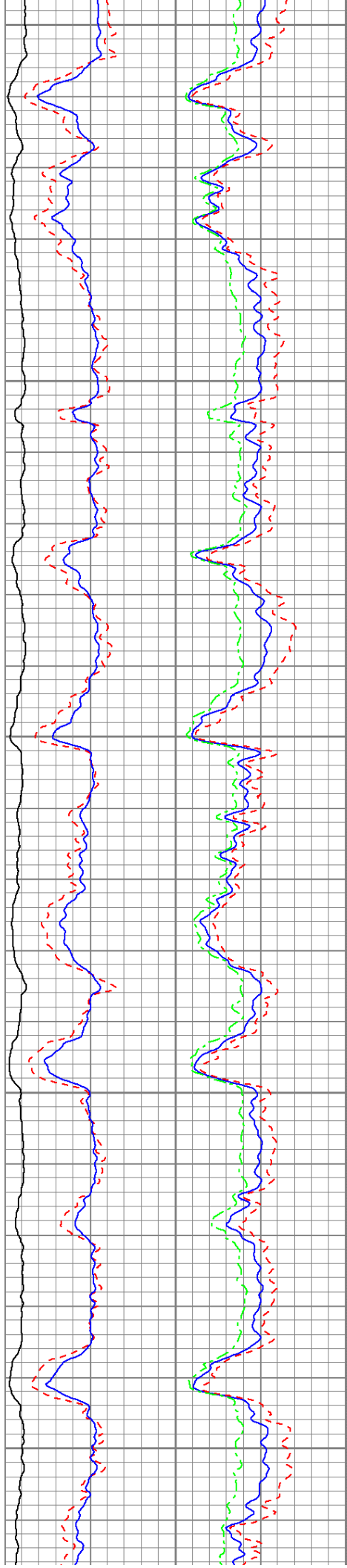


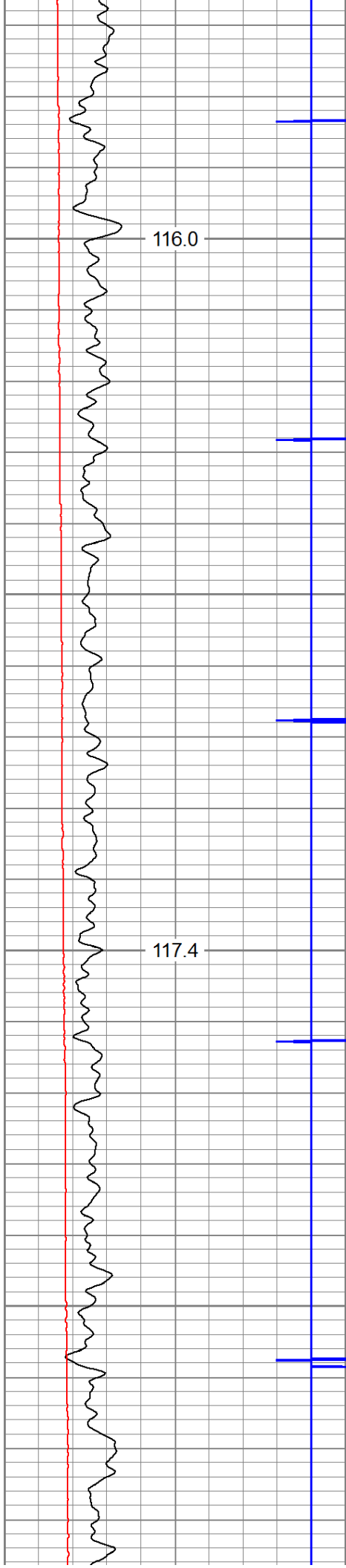




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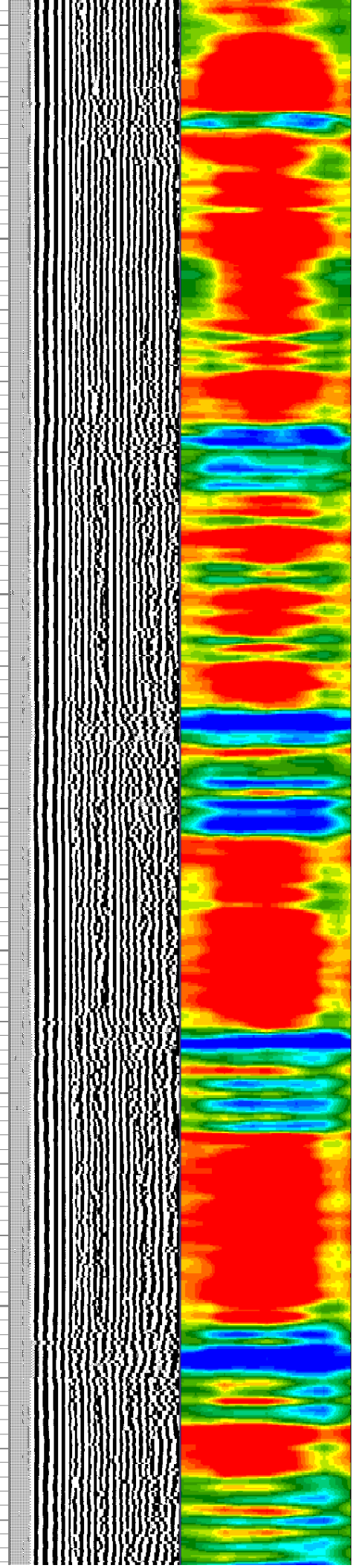
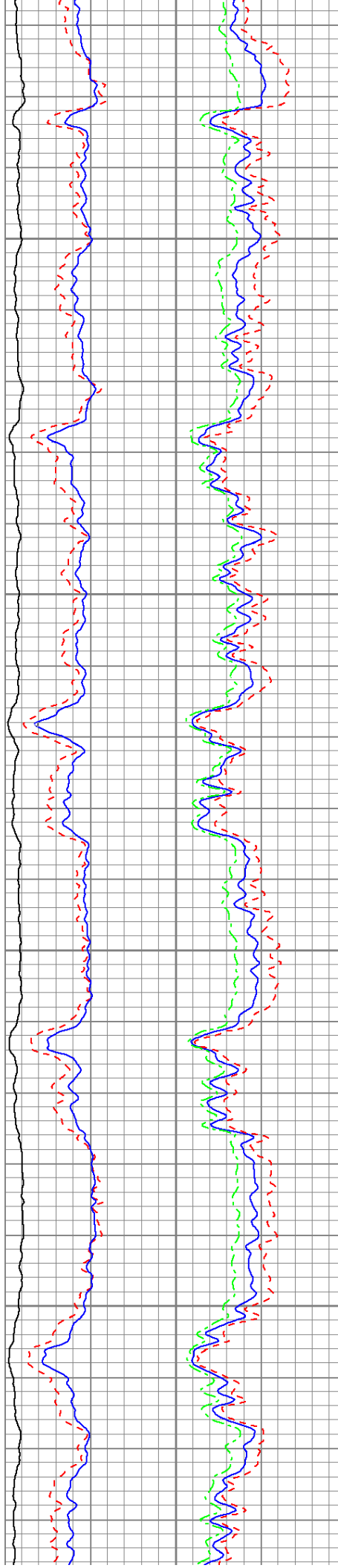
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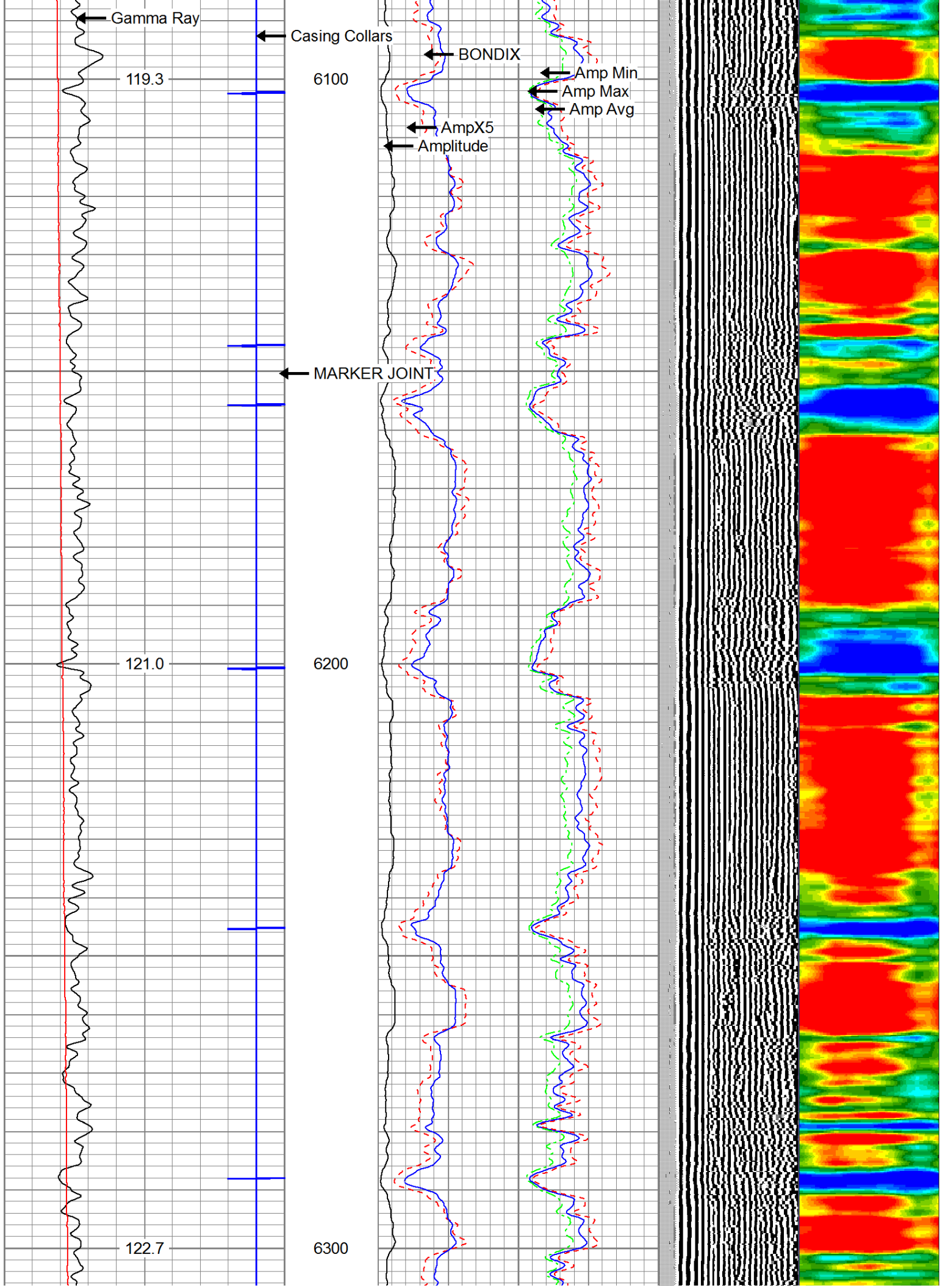


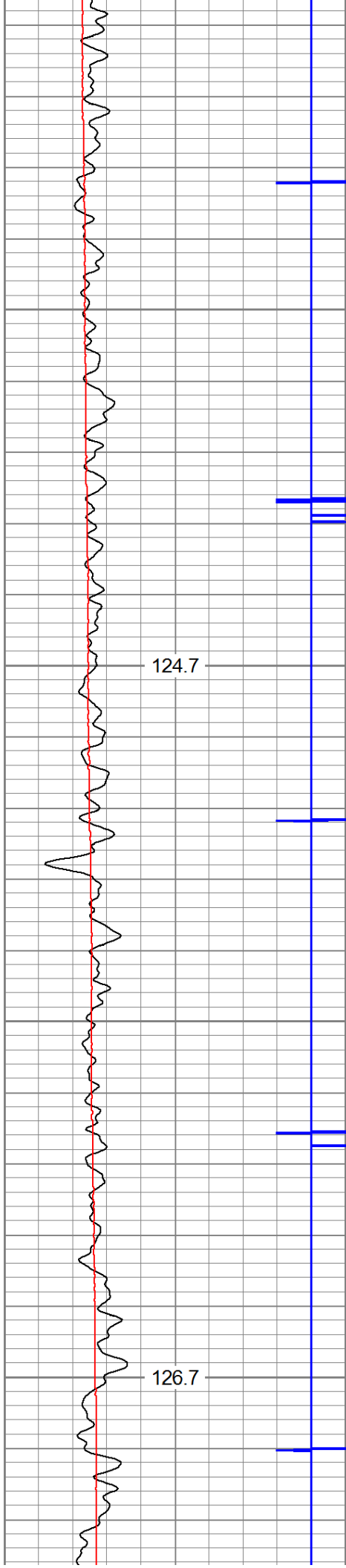


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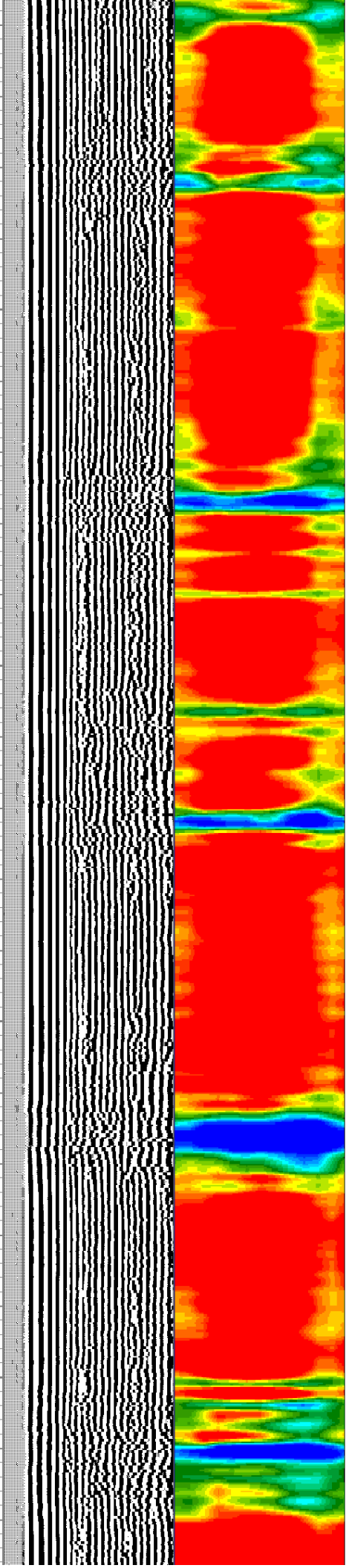
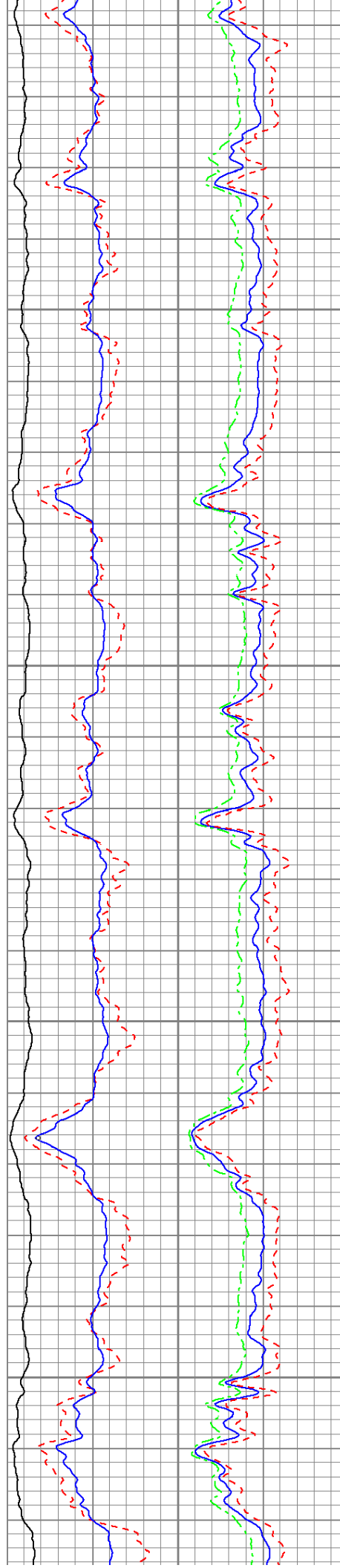


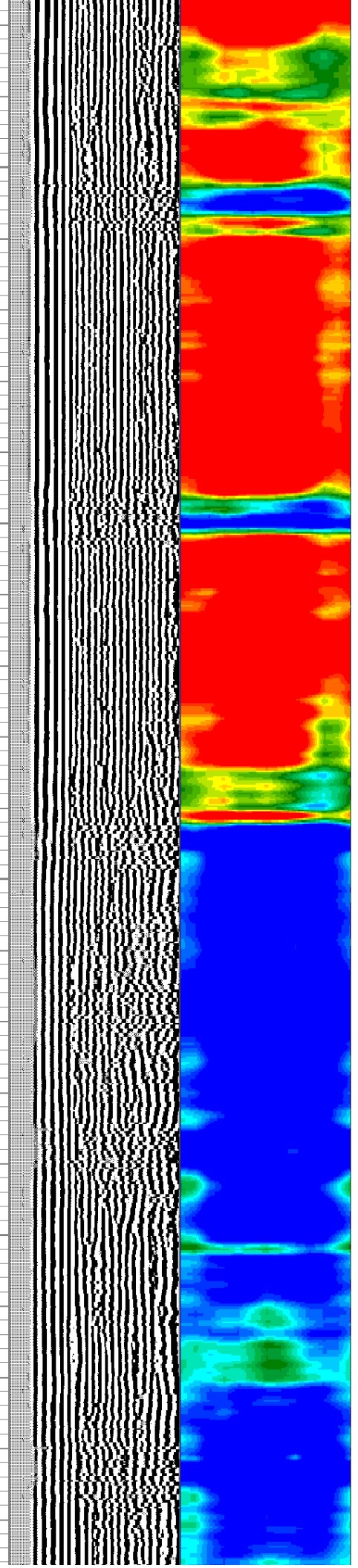
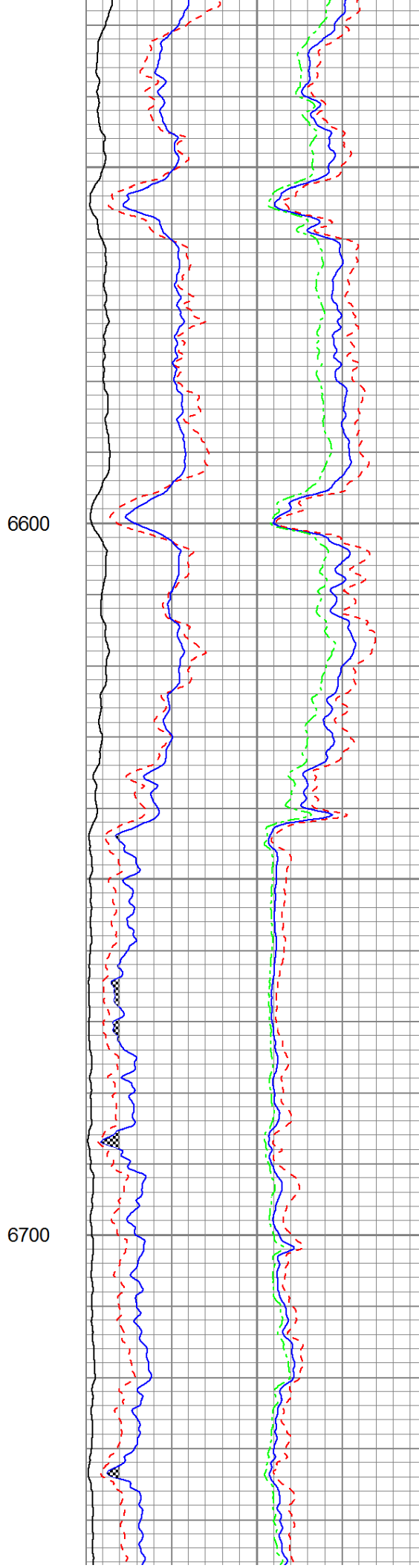
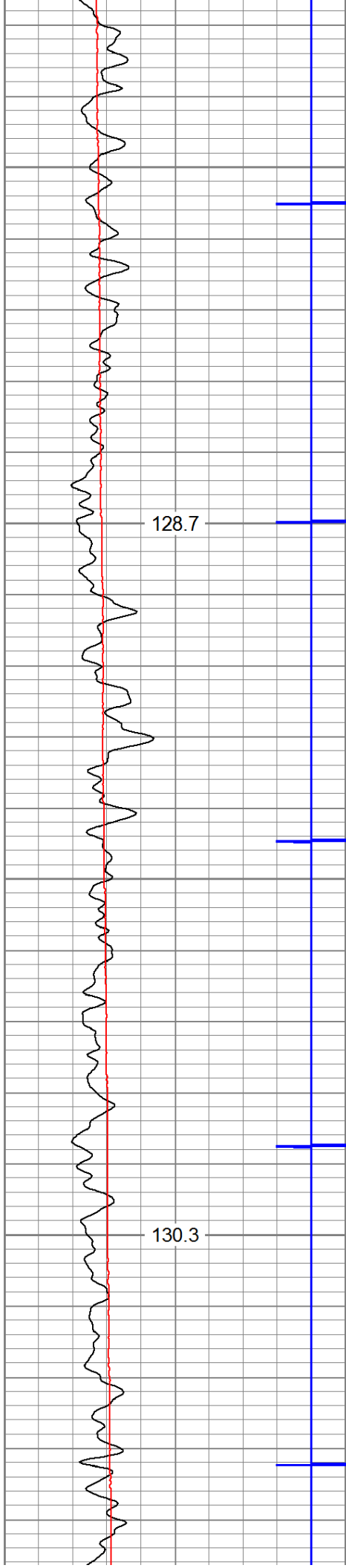


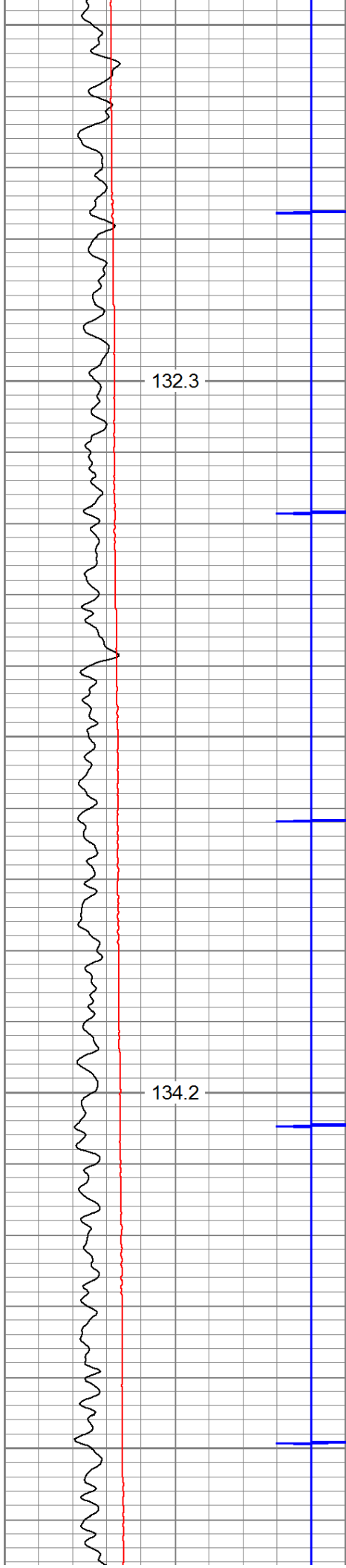


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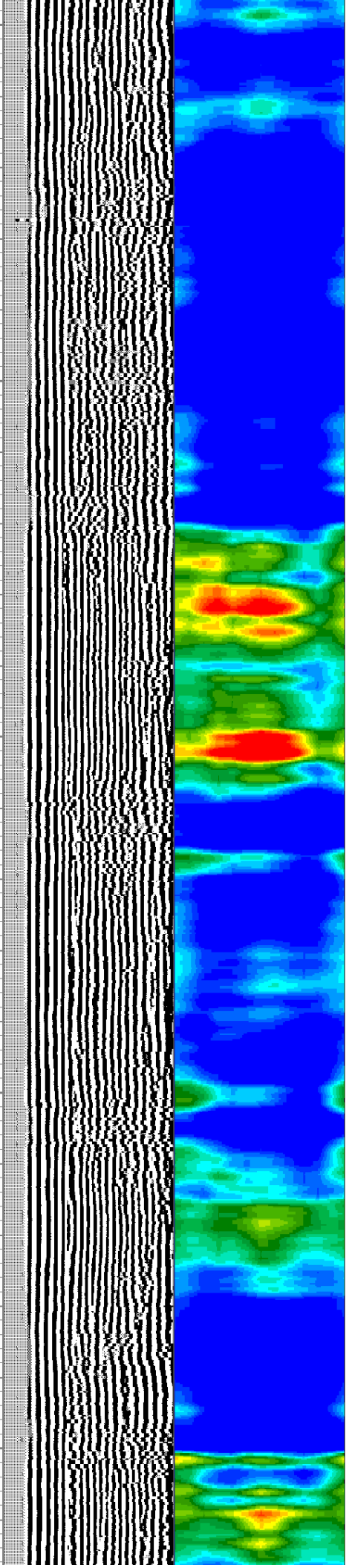
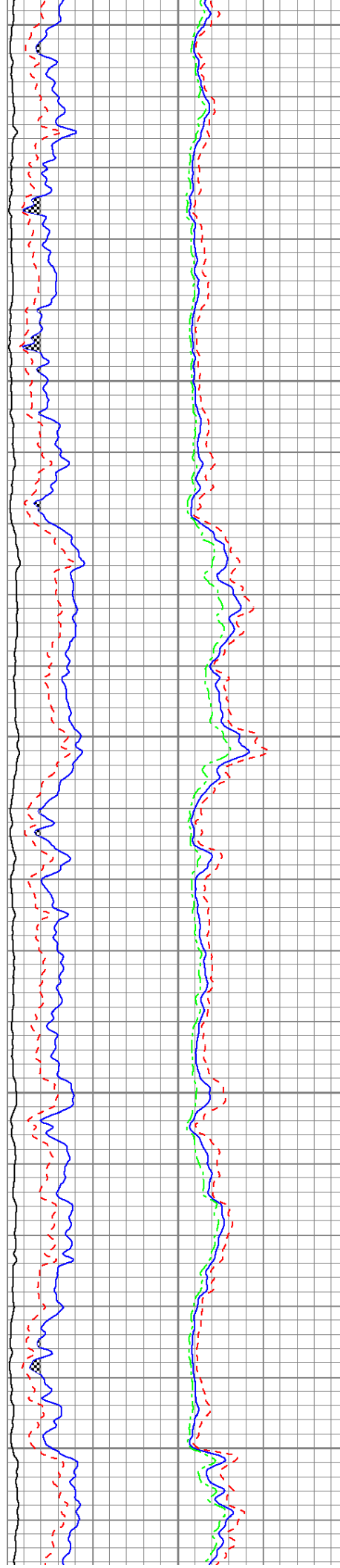


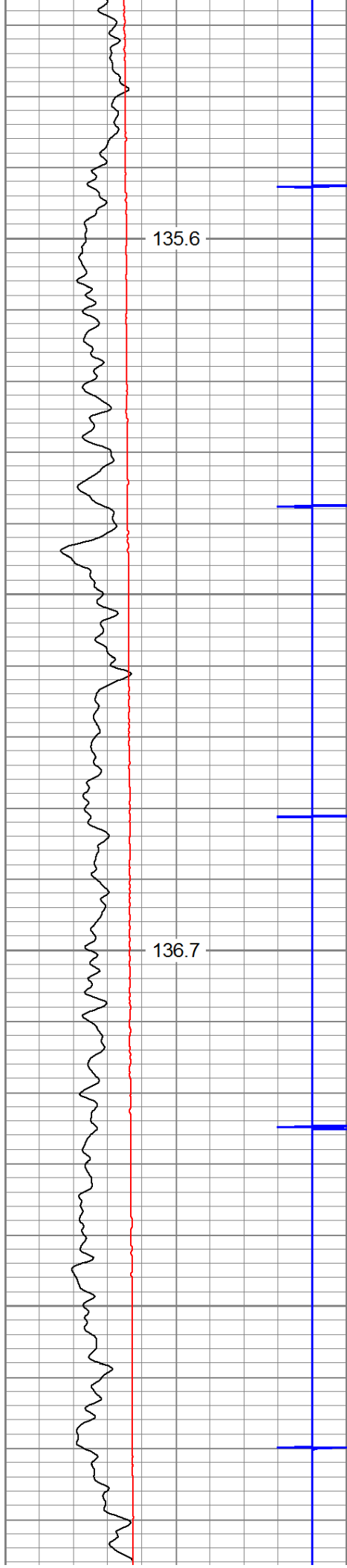




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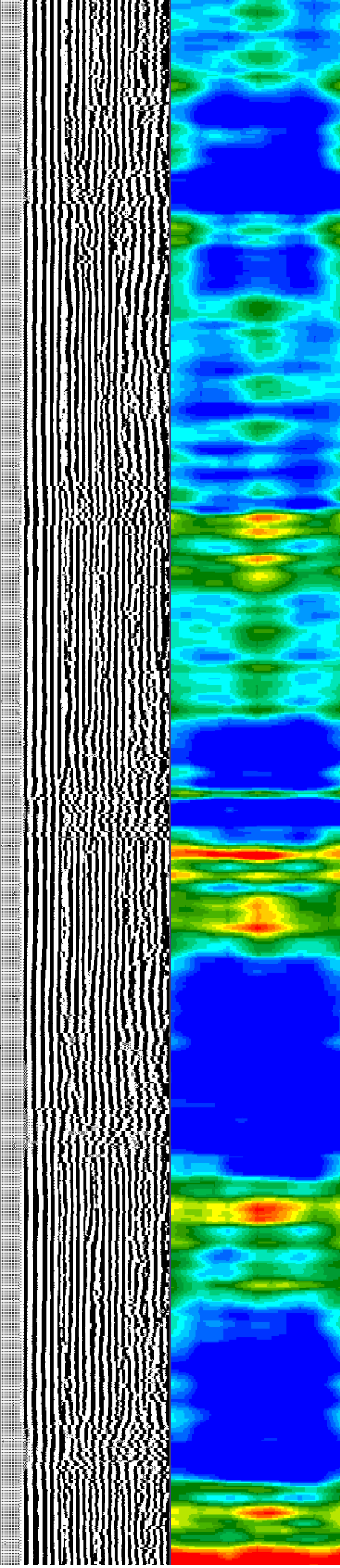
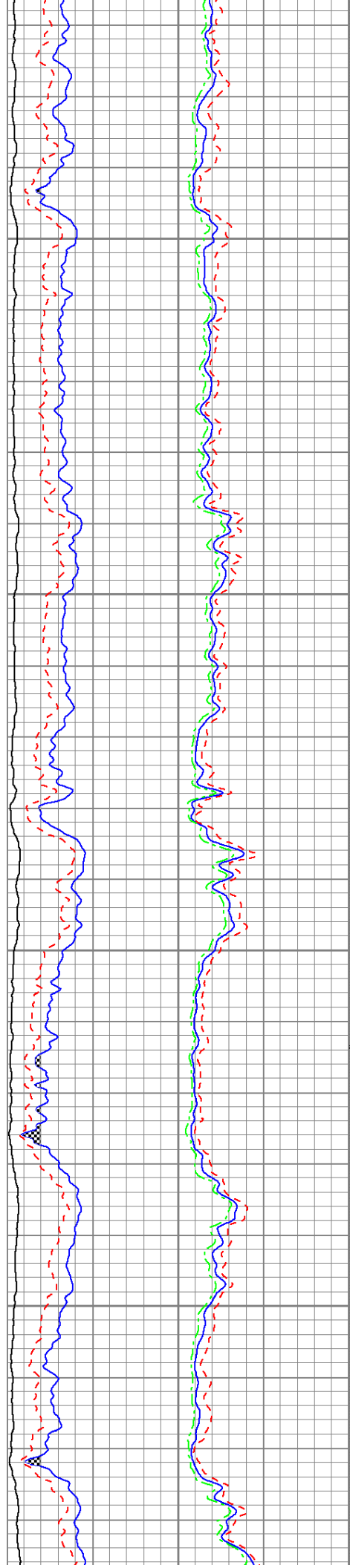
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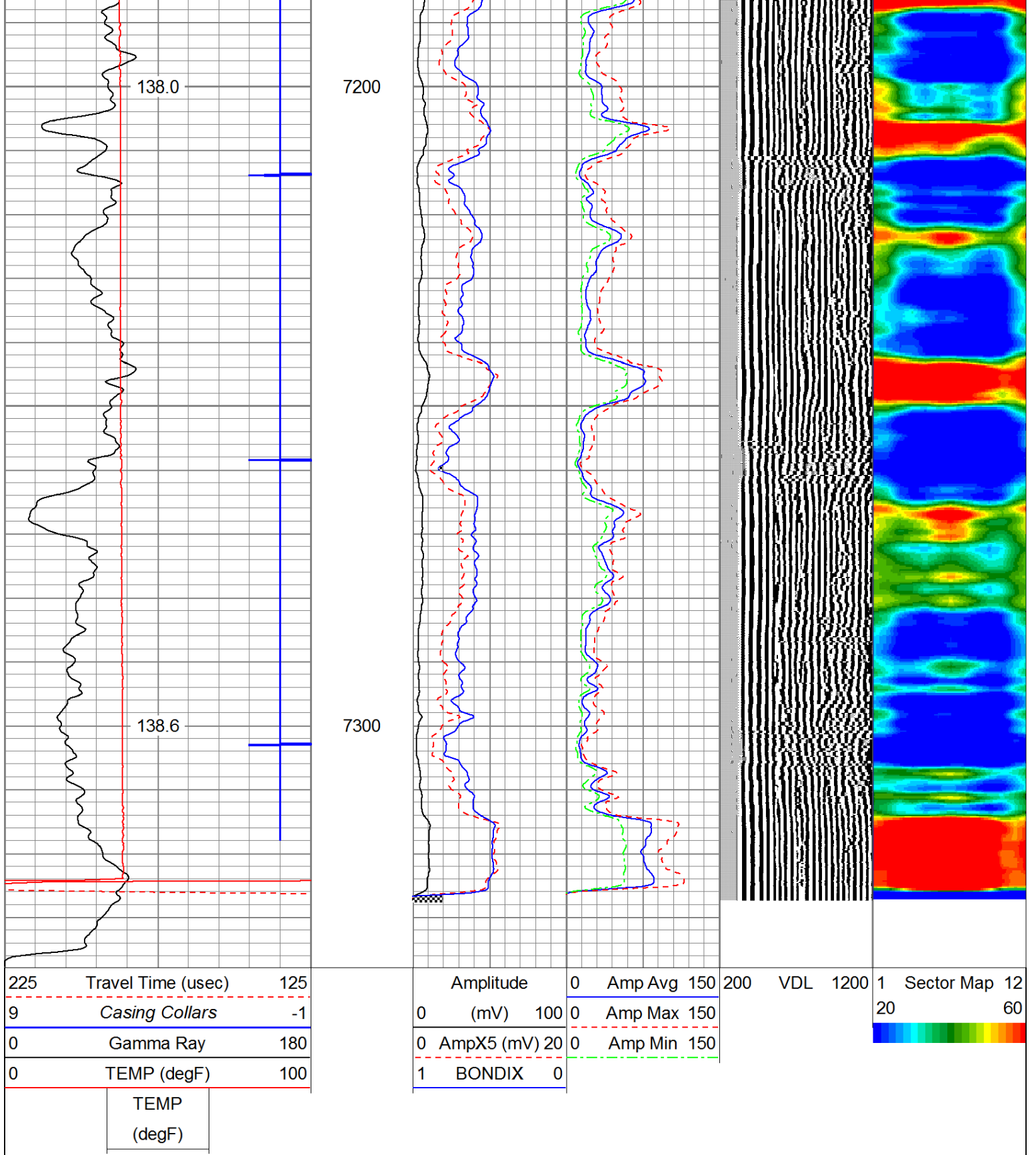




7000

7100





MAIN PASS 1500 PSI



REPEAT PASS

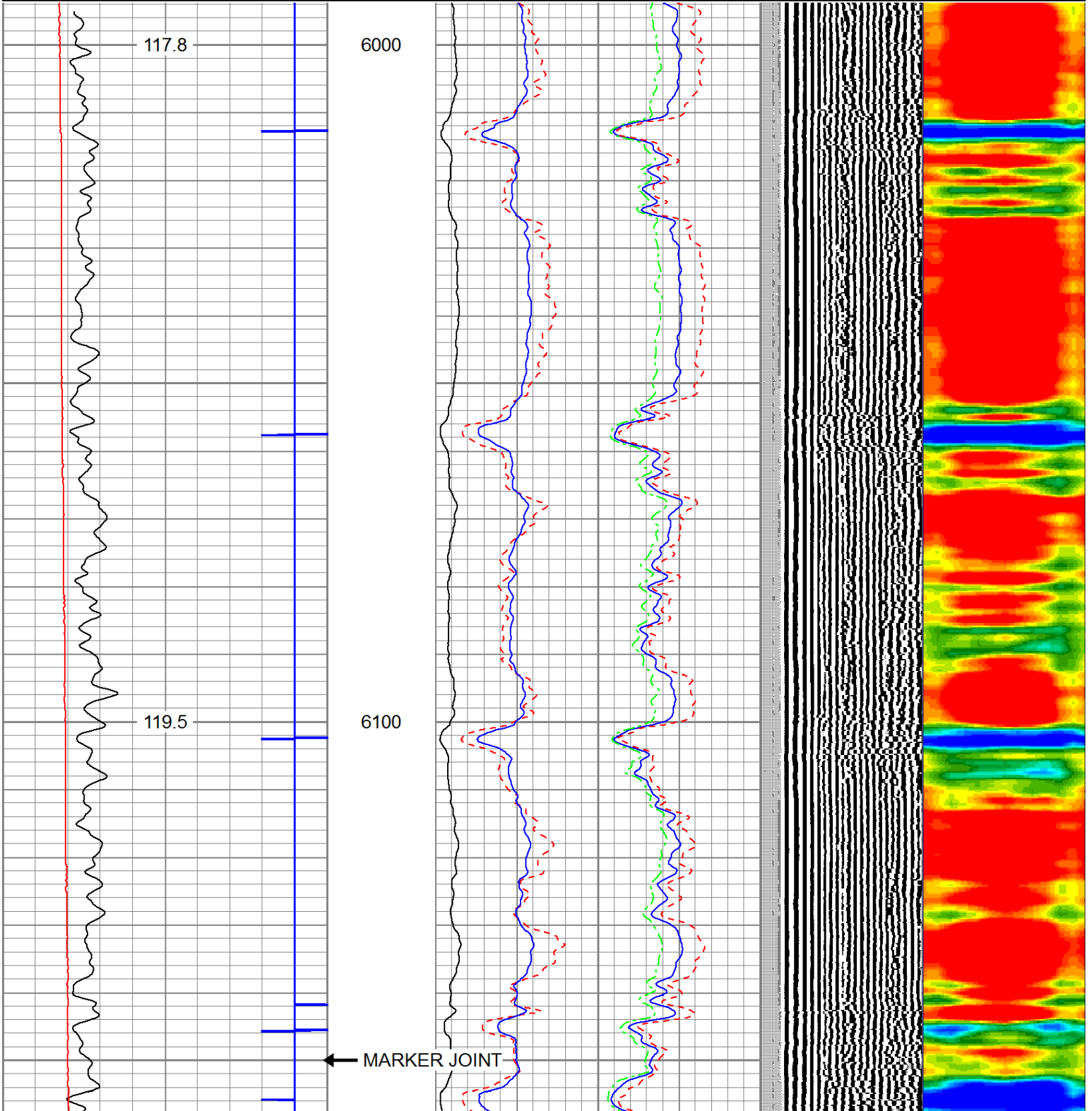
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 Presentation Format: antero
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 Charted by: Depth in Feet scaled 1:240

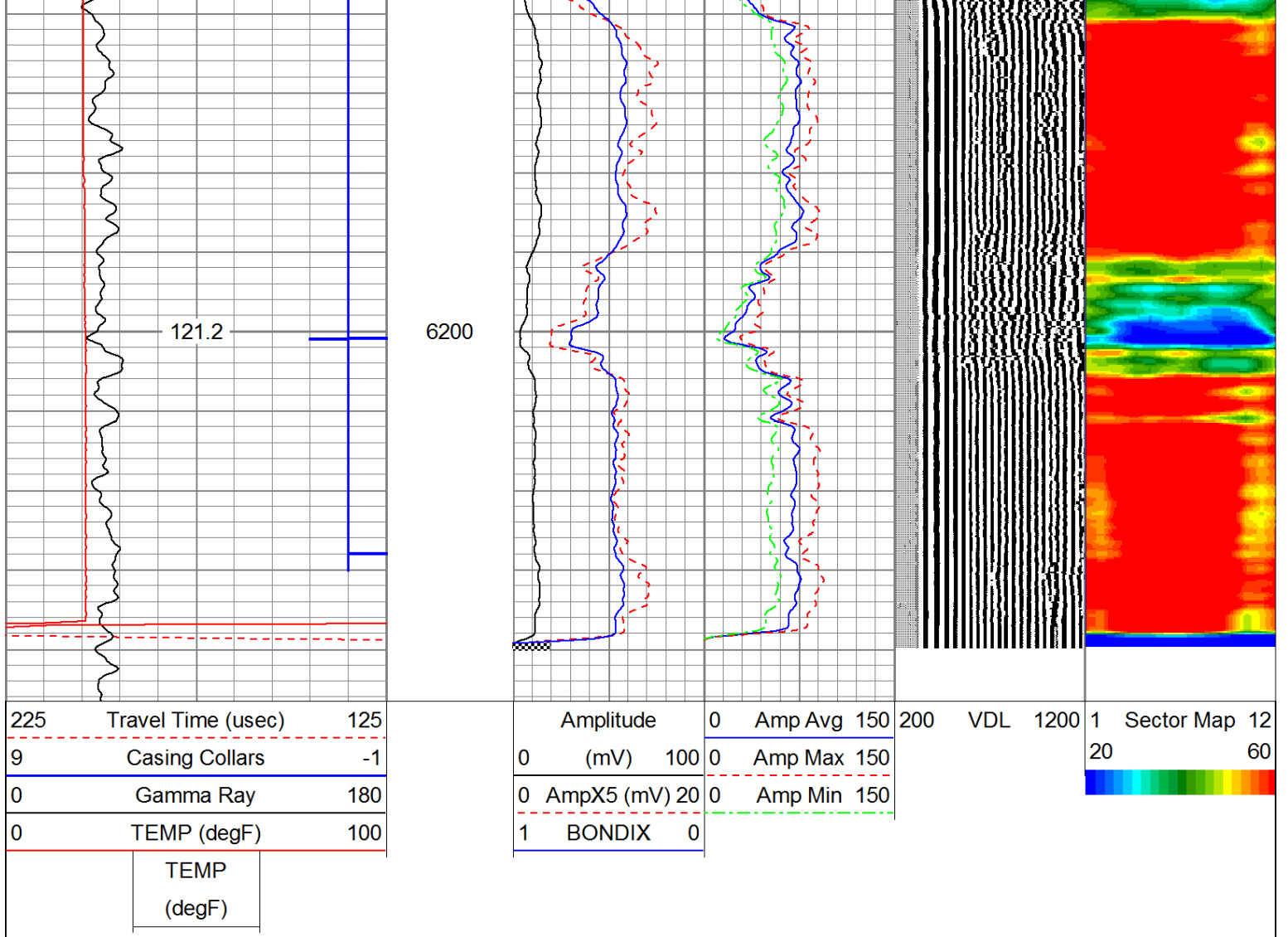
225	Travel Time (usec)	125
9	Casing Collars	-1
0	Gamma Ray	180
0	TEMP (degF)	100

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

200 VDL 1200 1 Sector Map 12
 20 60

TEMP
(degF)





REPEAT PASS

Log Variables

Database: C:\Warrior\Data\antero_waldo1h.db
 Dataset: field/well/run1/merge1

Top - -25.40 ft

XXXX	PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF	CASEOD in
0	0	0	0	0	0	0	0
PERFS	TDEPTH ft	BOTTEMP degF	BOREID in				
0	0	0	0				

-25.40 ft - 317.50 ft

CASEWGHT lb/ft	MINAMPL mV	MINATTN db/ft	CASEOD in	BOTTEMP degF	BOREID in
23	1	0.8	5.5	100	7.875

317.50 ft - 7337.80 ft

7337.80 ft - Bottom

CASEWGHT lb/ft 0	MINAMPL mV 0	MINATTN db/ft 0	CASEOD in 0	BOTTEMP degF 0	BOREID in 0
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Calibration Report

Database File: antero_waldo1h.db
 Dataset Pathname: merge1
 Dataset Creation: Tue Jan 15 19:53:50 2019

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

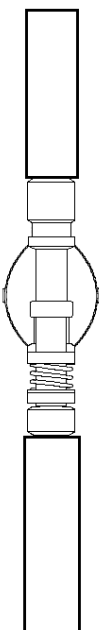
Sensitivity: 0.3000 /cps

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

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

