



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

Company	ANTERO RESOURCES CORPORATION			Other Services
Well	WICK 2H			
Field	MARCELLUS			
County	TYLER			
State	WV			
Location:	AFE AO8788		API #: 47095025940000	
Permanent Datum	SEC	TWP	RGE	Elevation
Log Measured From	GL			
Drilling Measured From				

Date	9-5-19		
Run Number	1		
Depth Driller	16986'		
Depth Logger	6512'		
Bottom Logged Interval	6512'		
Top Log Interval	SURFACE		
Open Hole Size	N/A		
Type Fluid	WATER		
Density / Viscosity	N/A		
Max. Recorded Temp.	137.7 DEG		
Estimated Cement Top	2250'		
Time Well Ready	N/A		
Time Logger on Bottom	10:54		
Equipment Number	624874		
Location	BRIDGEPORT		
Recorded By	P DAVIDSON		
Witnessed By	R RIVERA		

Run Number	Borehole Record		Casing Record				
	Bit	From	To	Size	Weight	From	To
				13 3/8	54.5	660'	0
				9 5/8	36	2604'	0
				5 1/2	23	16986	0

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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

MARKER JOINT @5207'-5222'
LOG TD 6512'
CEMENT TOP @ 2531'
LOG RAN UNDER 1500 PSI

THANK YOU FOR CHOOSING KLX ENERGY

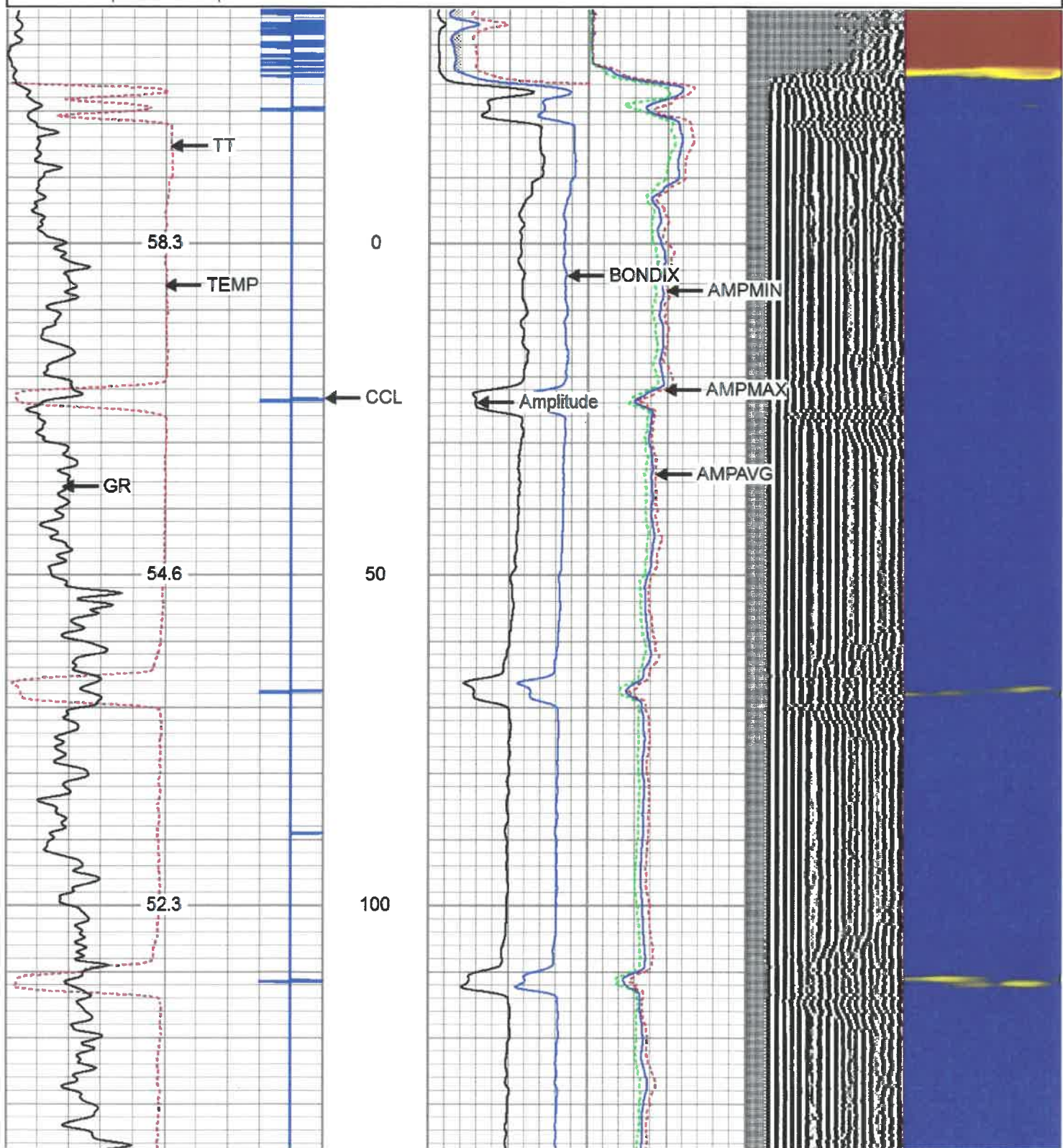
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 Dataset Pathname pass4.1
 Presentation Format antero
 Dataset Creation Thu Sep 05 12:28:24 2019
 Charted by Depth in Feet scaled 1:240

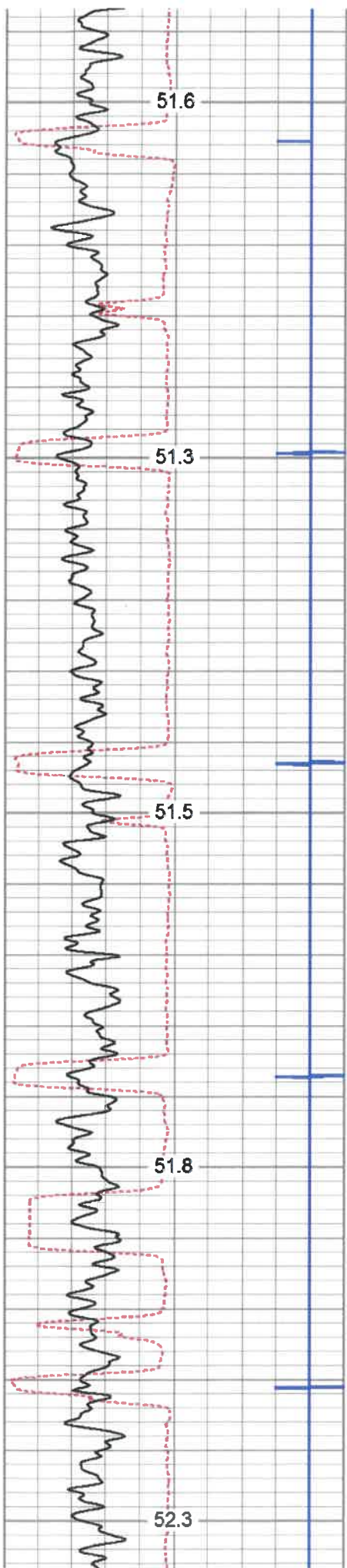
280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray (GAPI)	180
180	GR (GAPI)	360

TEMP
(degF)

Amplitude		Sector Amp AVG
0	(mV) 100	Sector Amp MAX
Amp X5		Sector Amp MIN
0	(mV) 20	
1	BONDIX 0	

VDL	1	Sector Map 12
(usec) 1200		





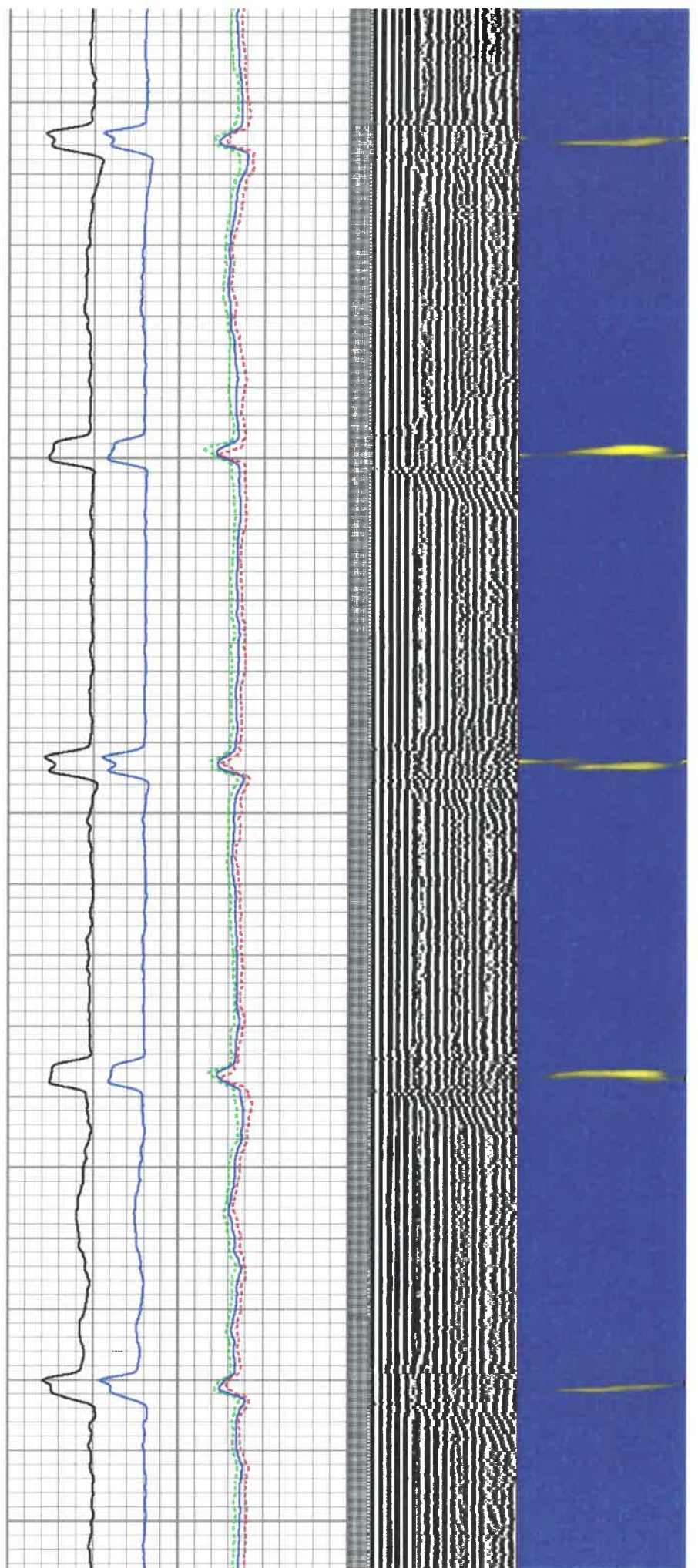
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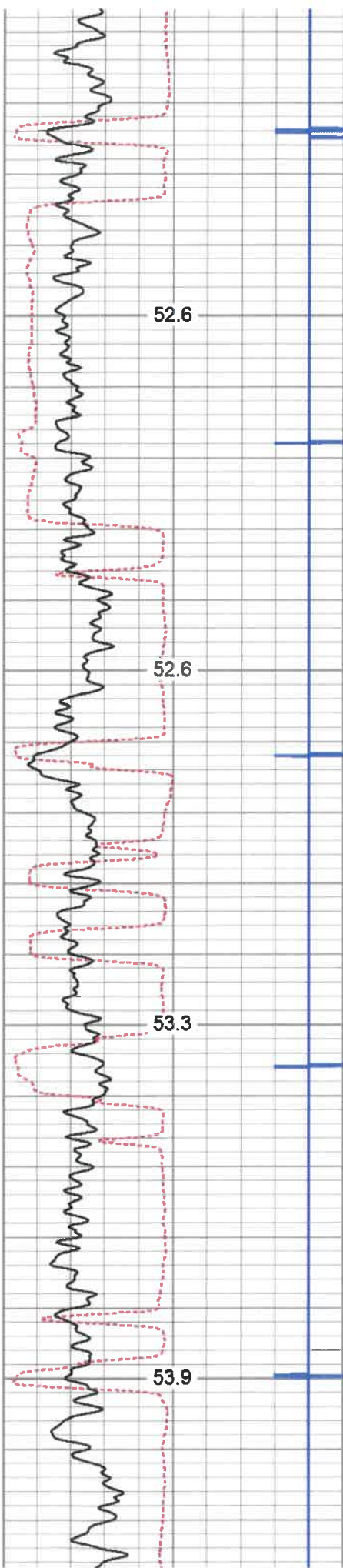
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250

300

350



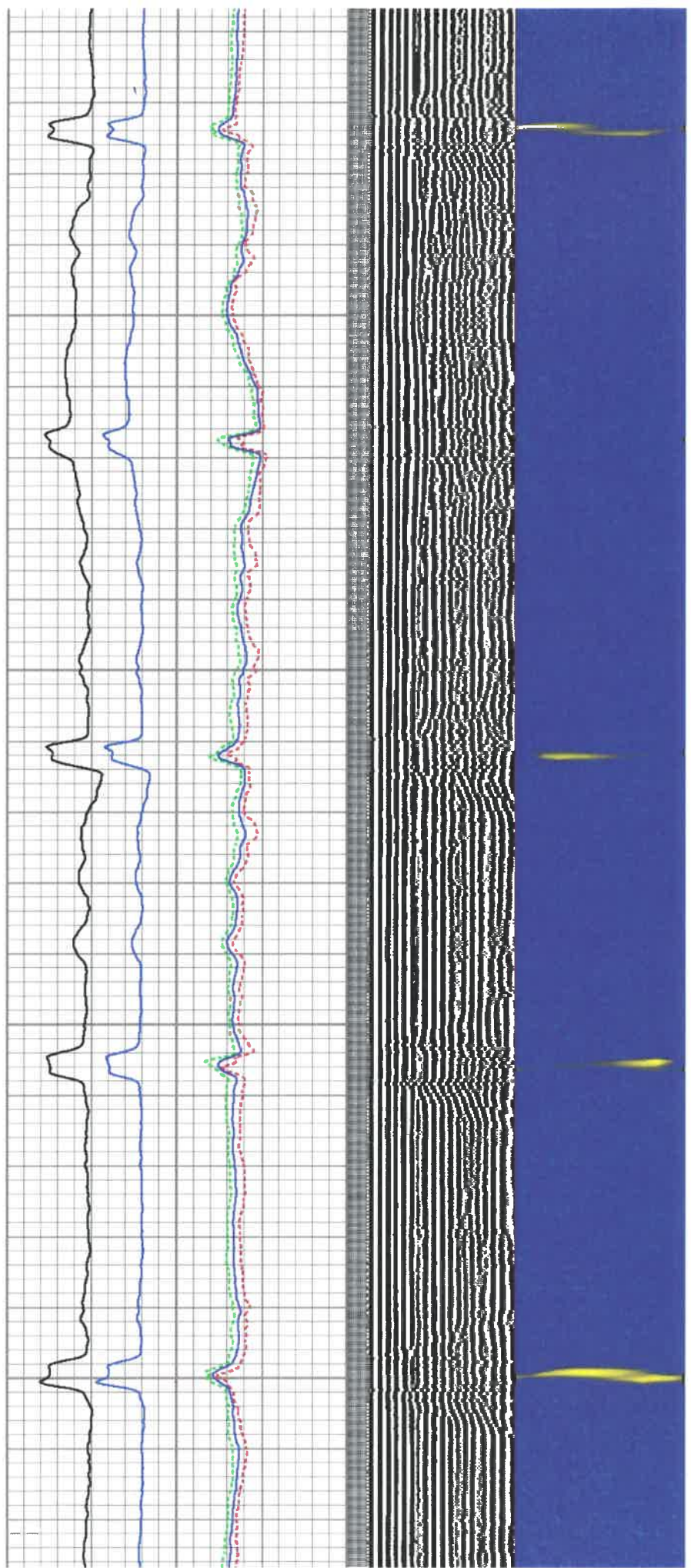


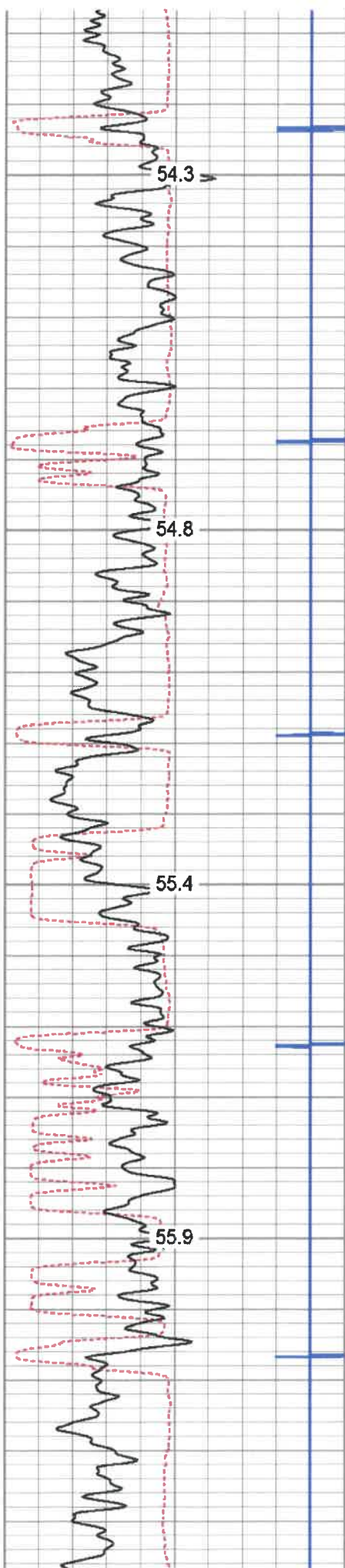
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450

500

550



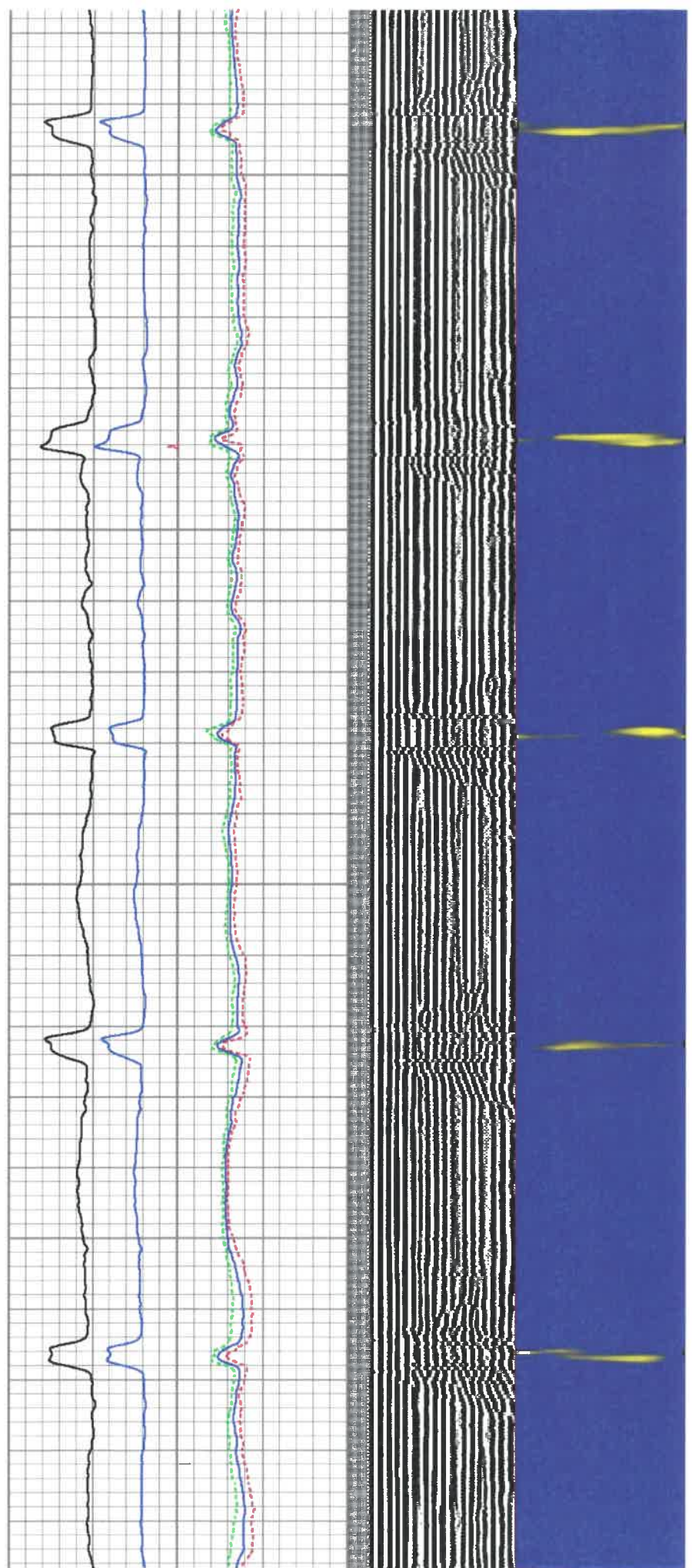


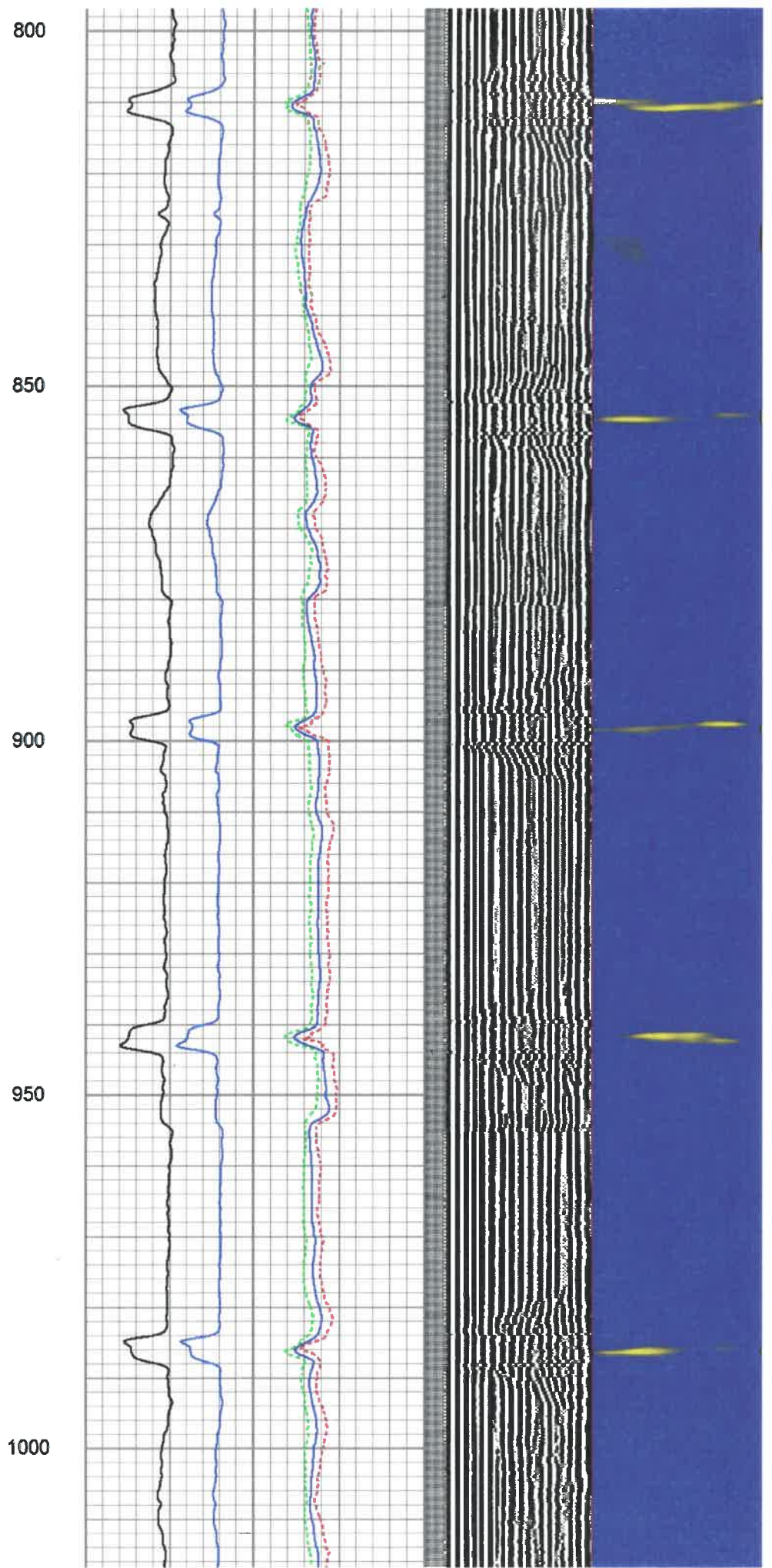
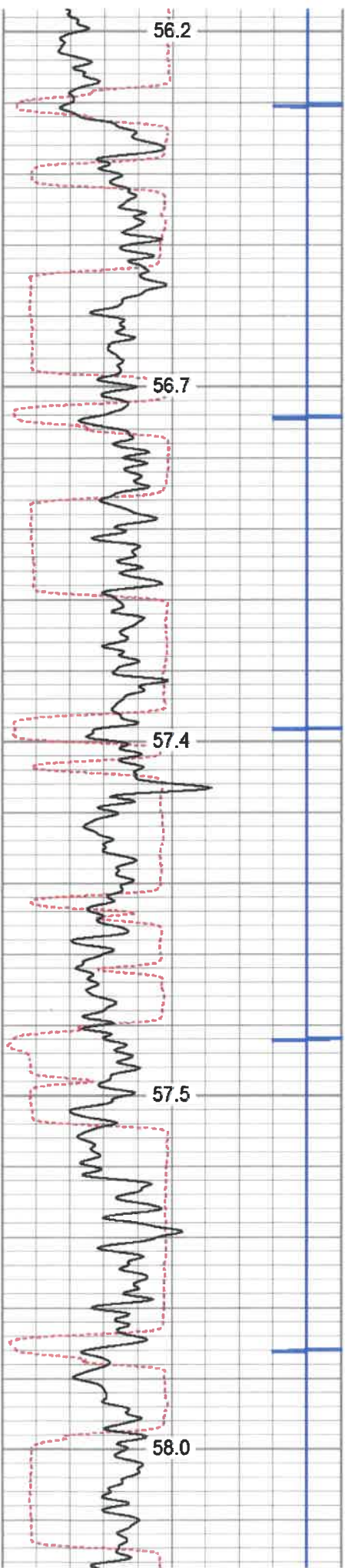
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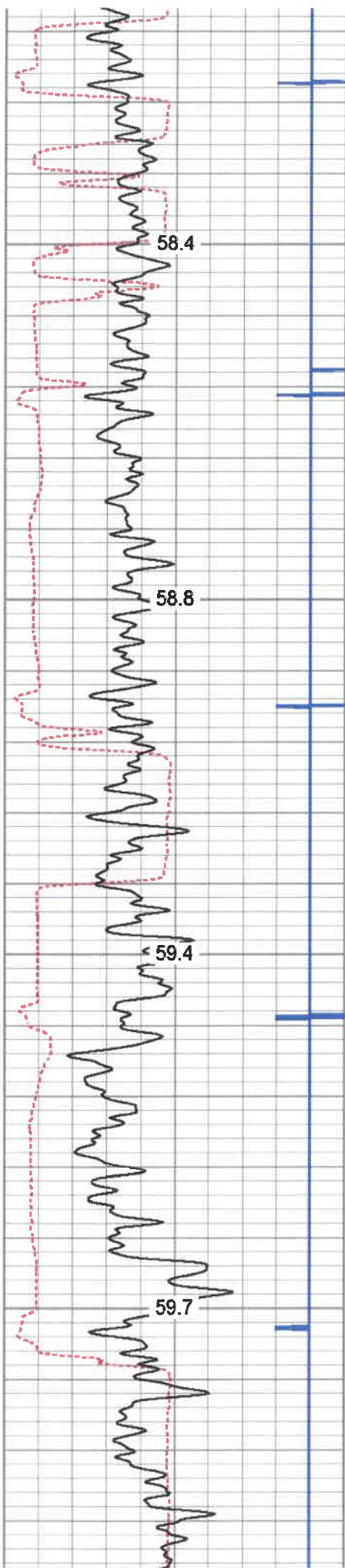
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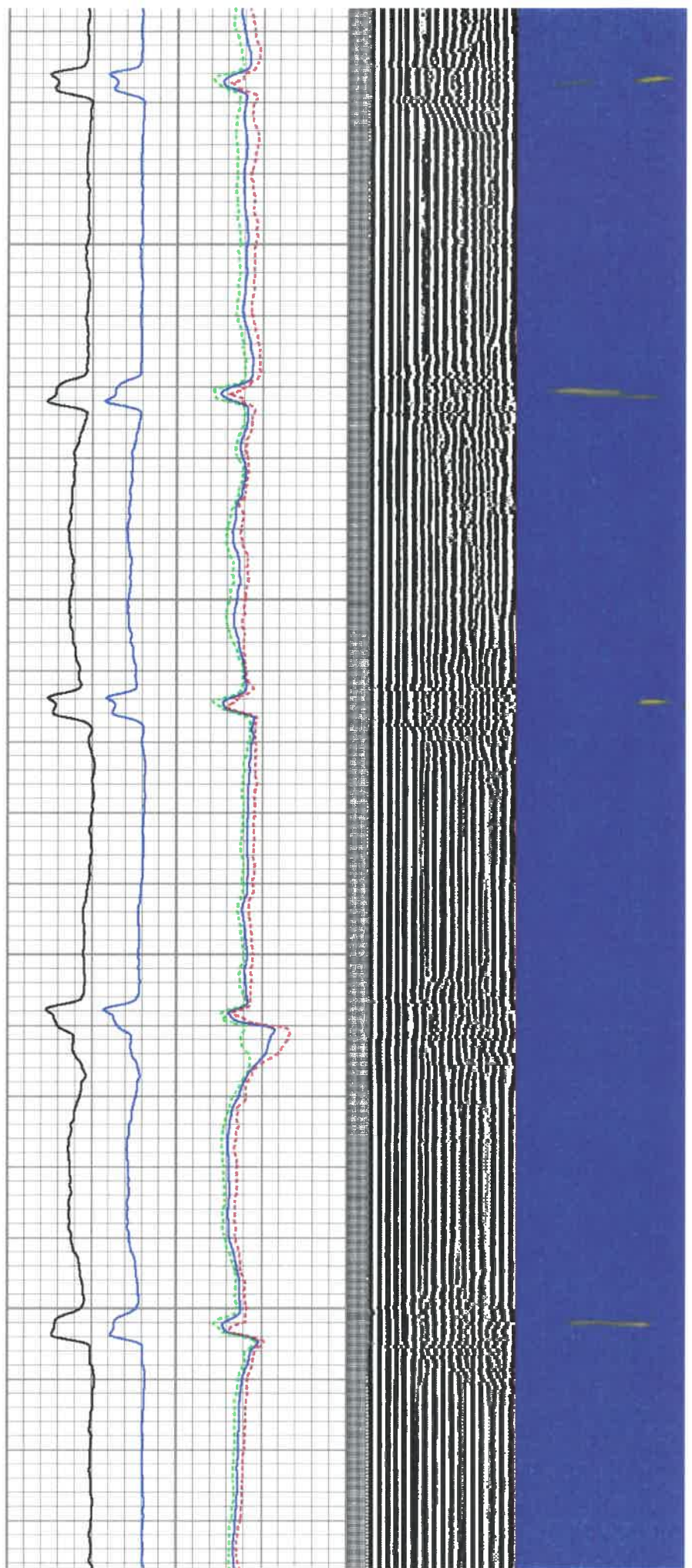


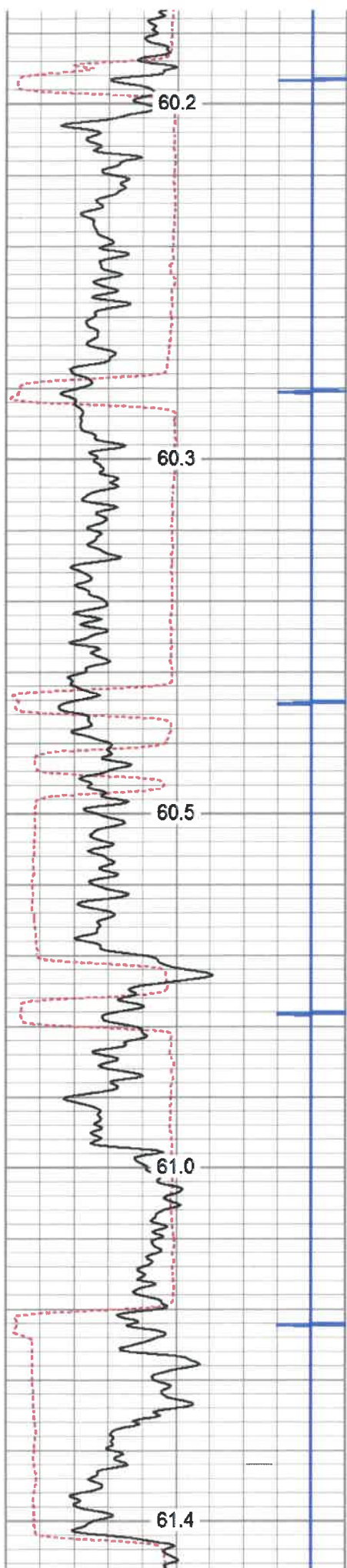
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1100

1150

1200





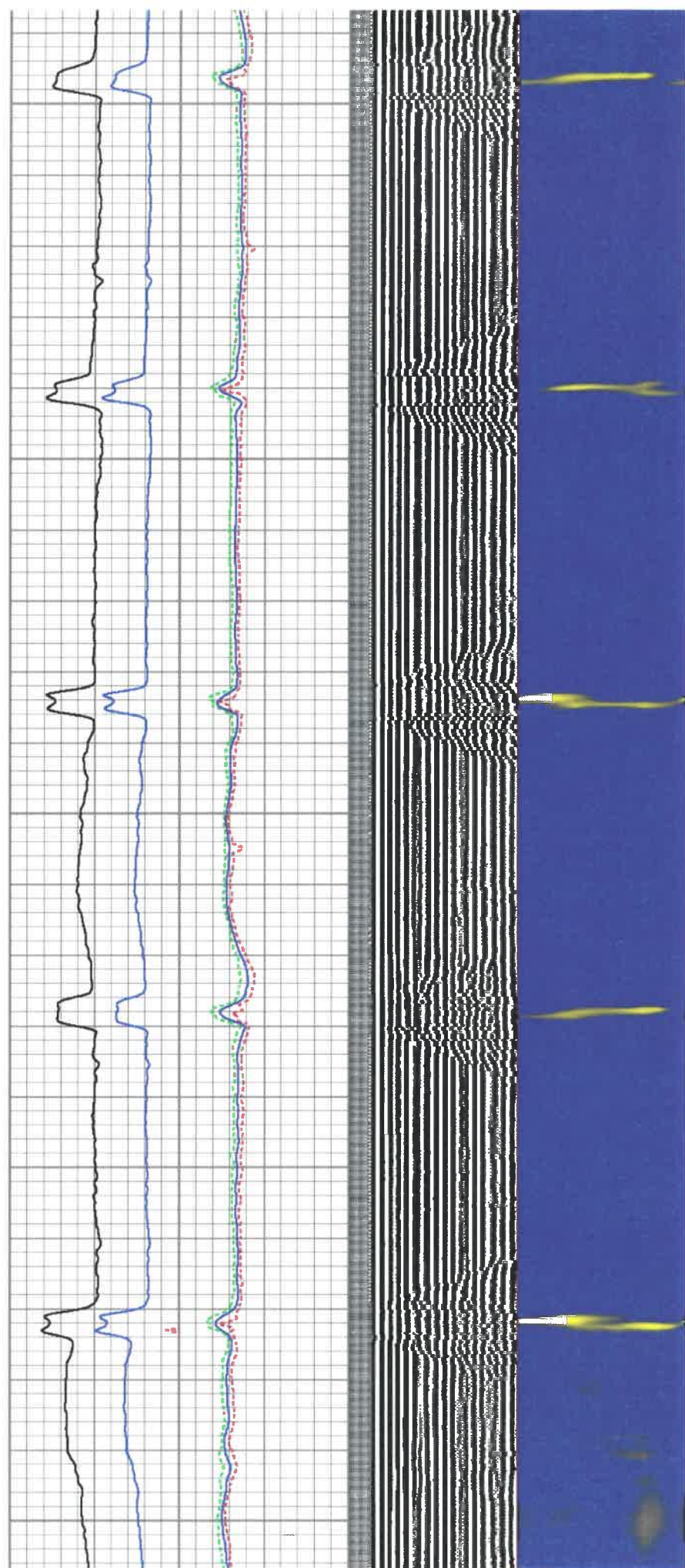
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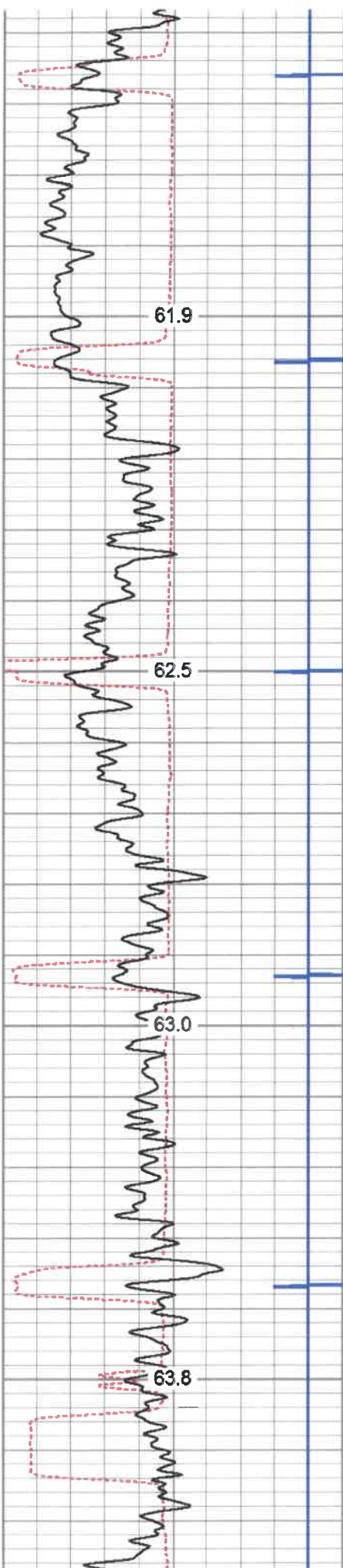
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1400

1450



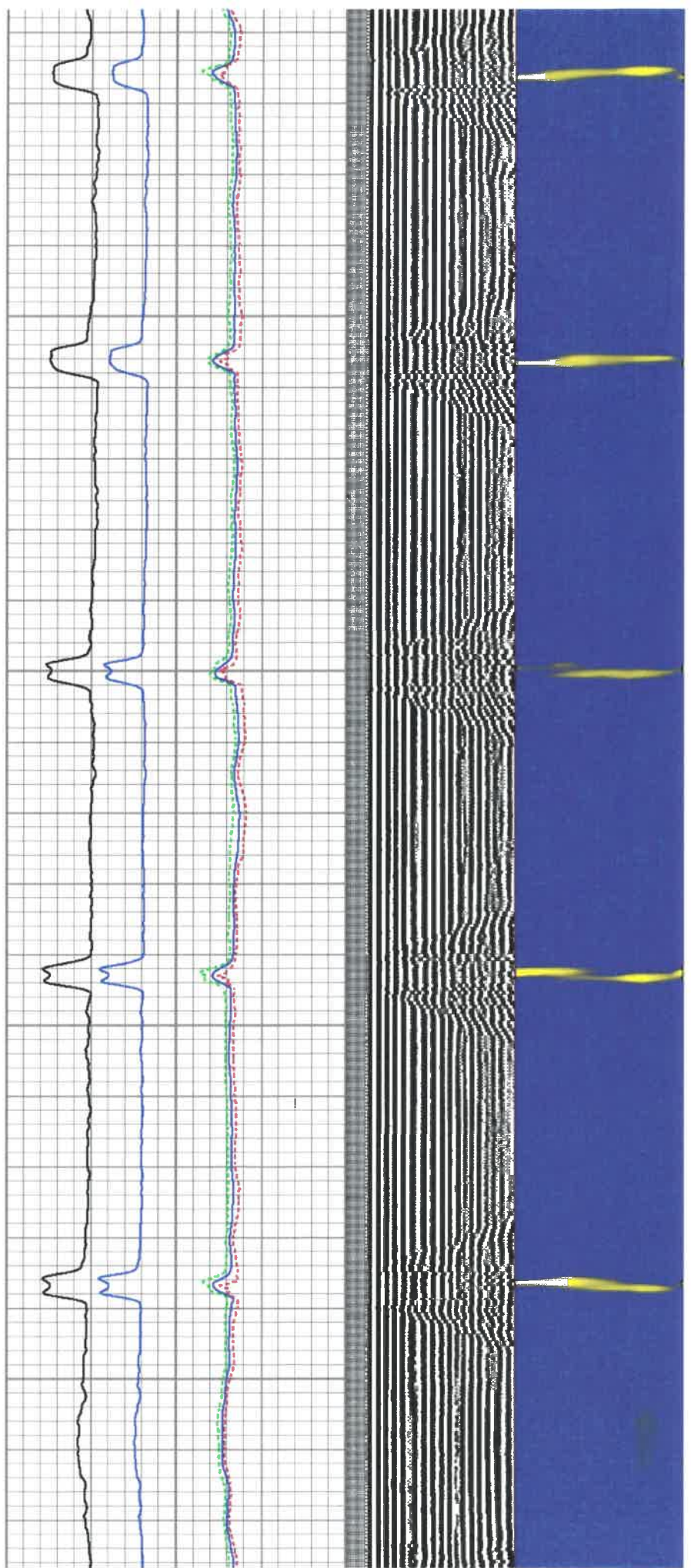


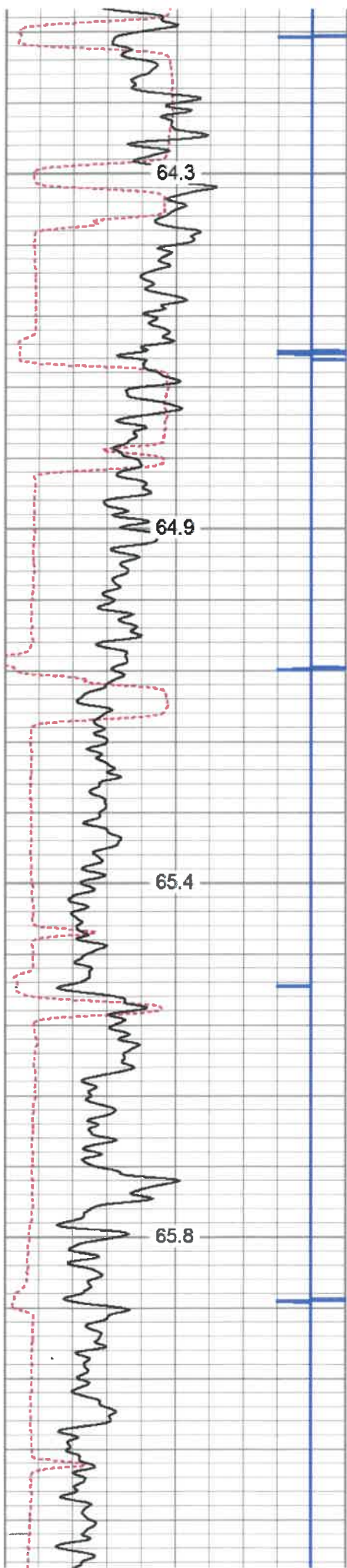
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1650



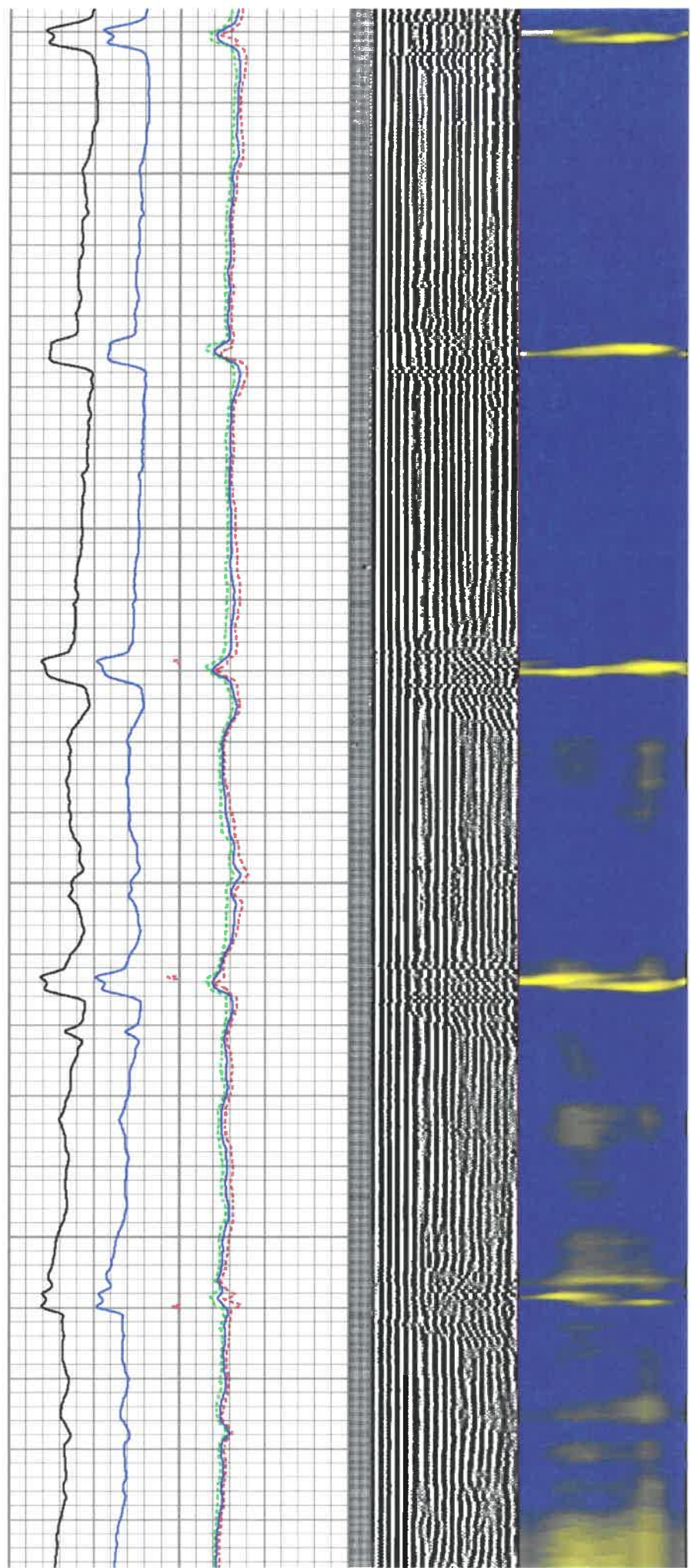


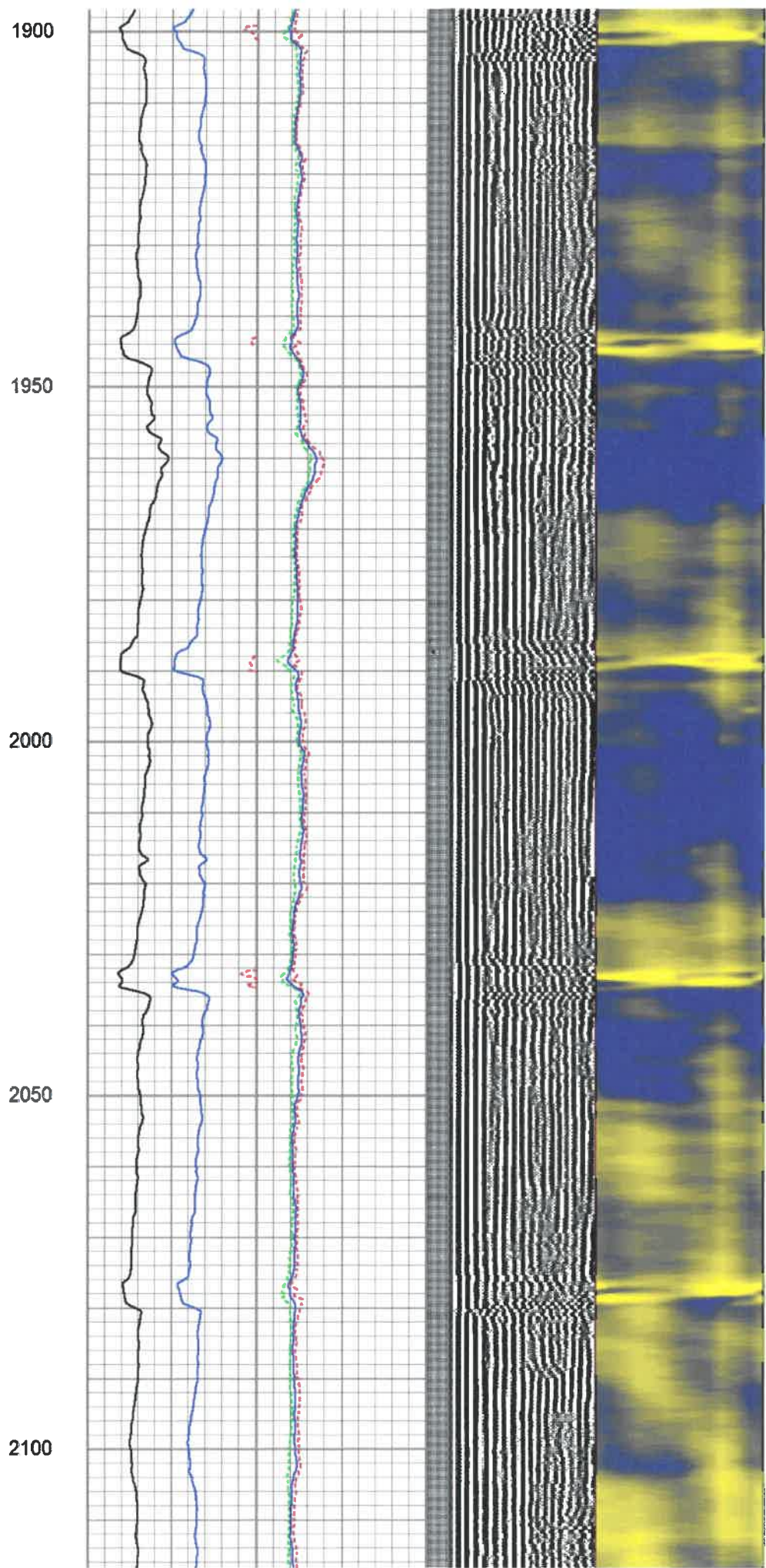
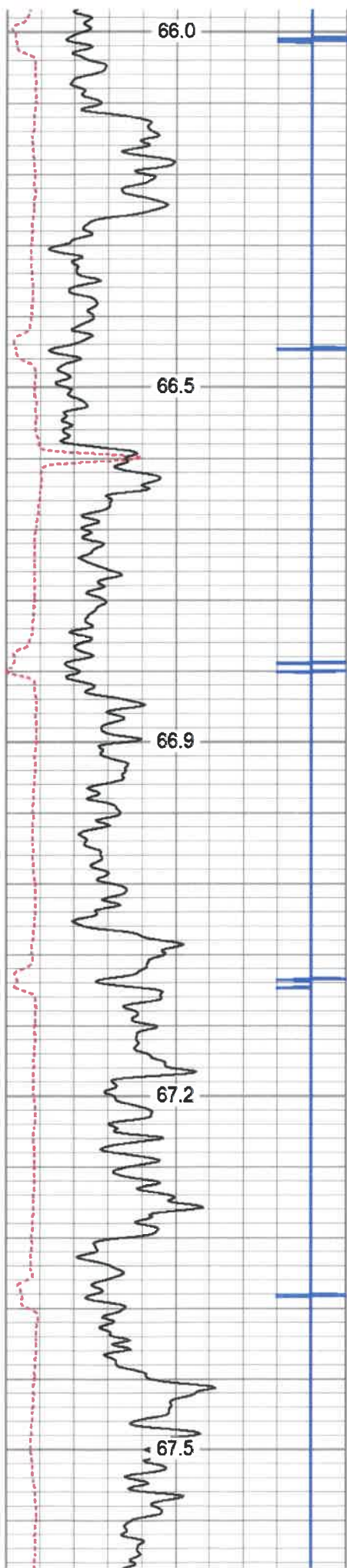
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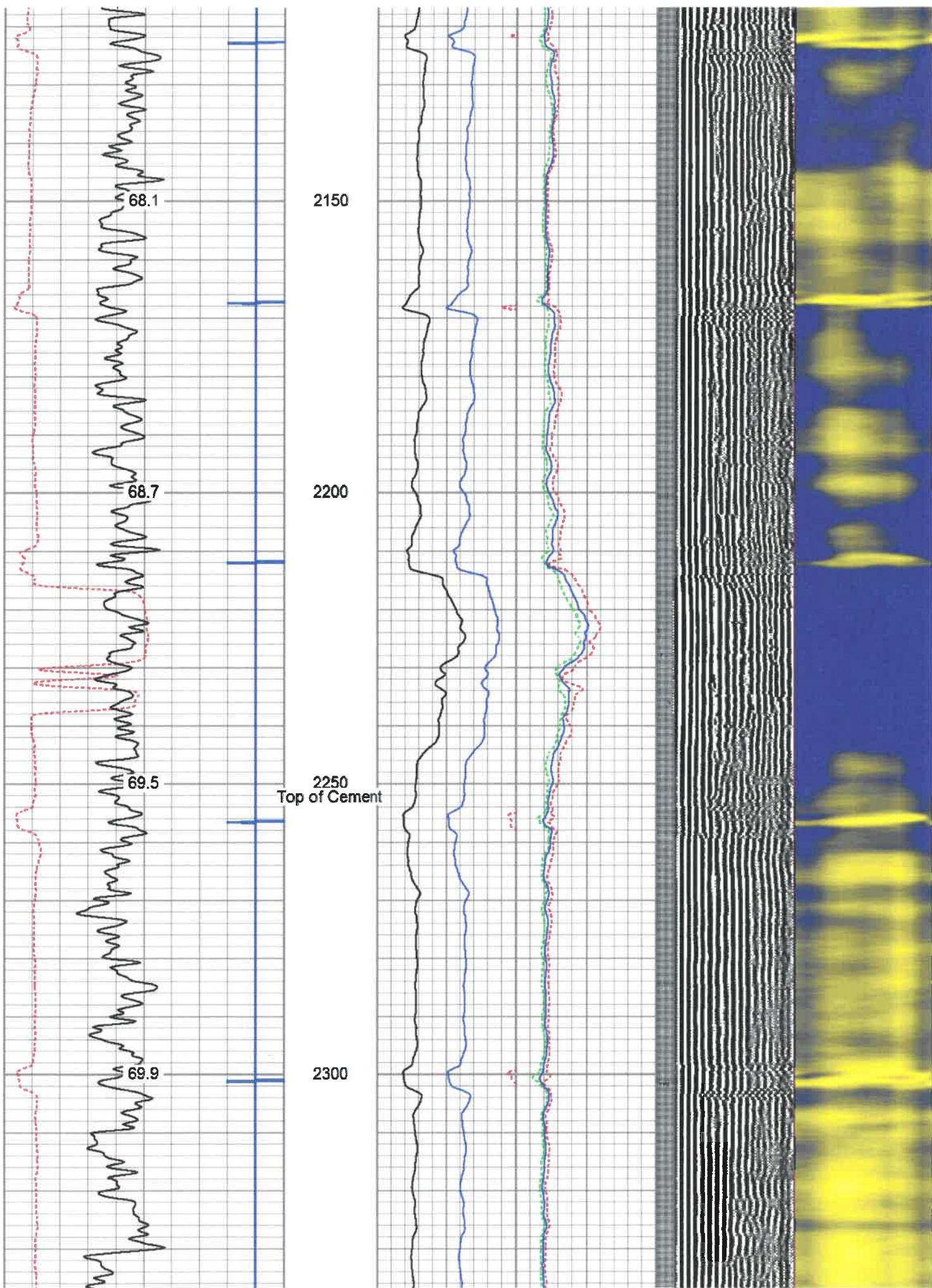
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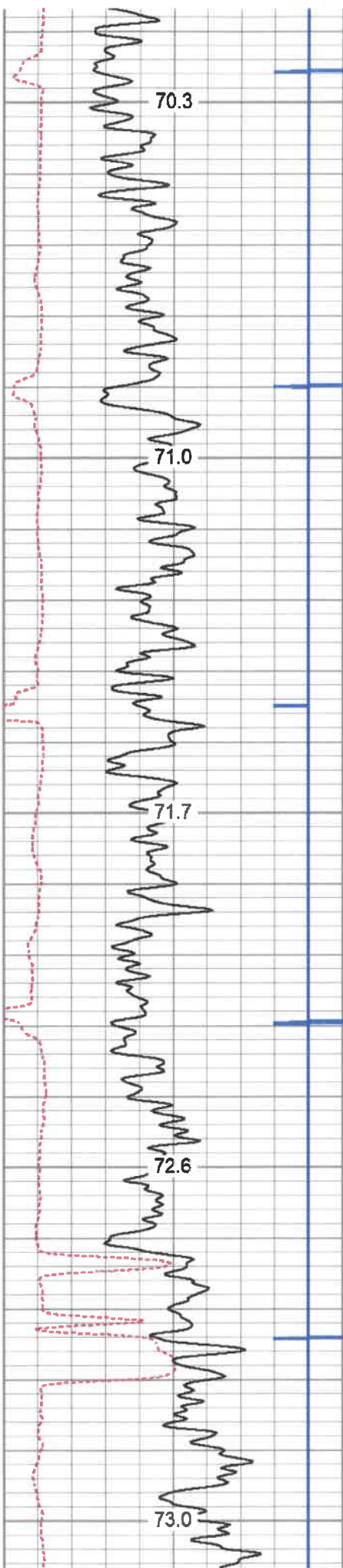
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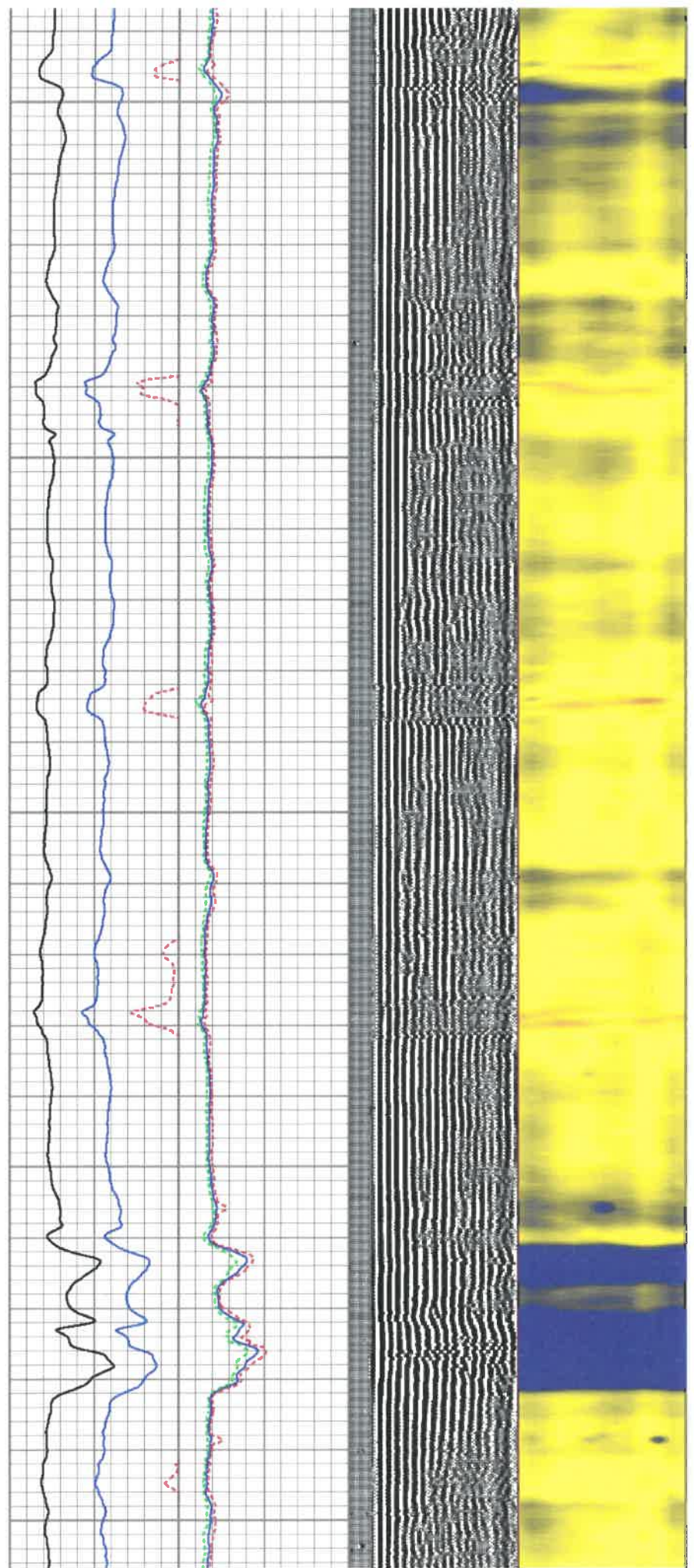
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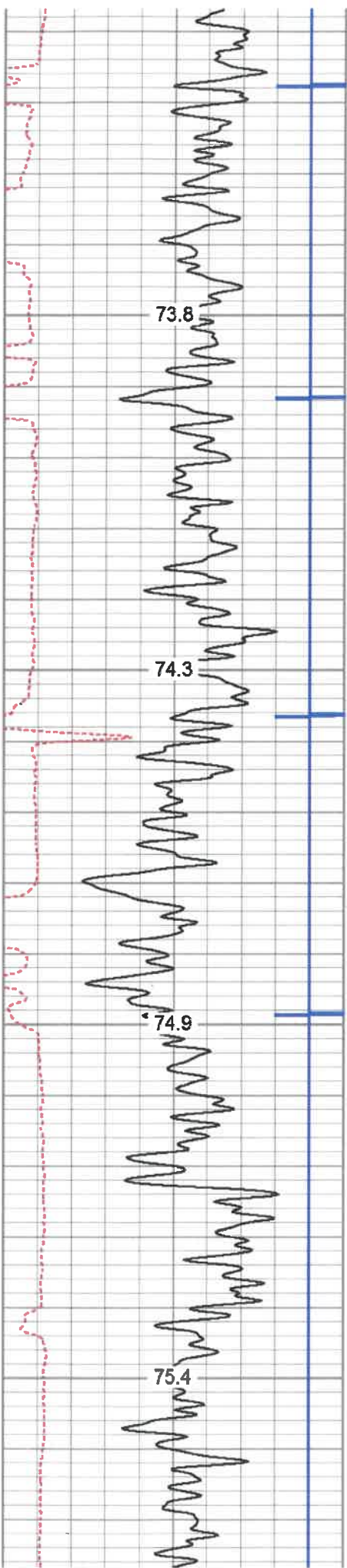
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2550



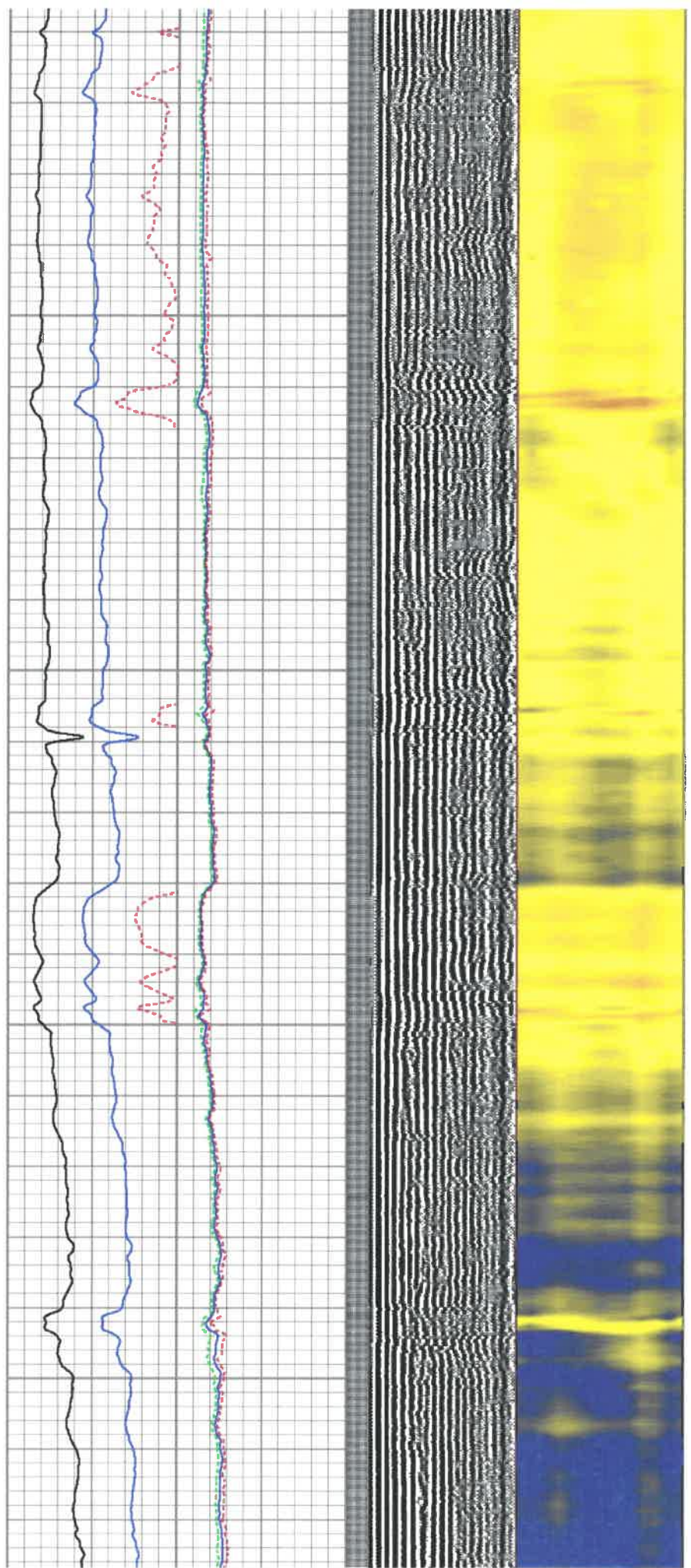


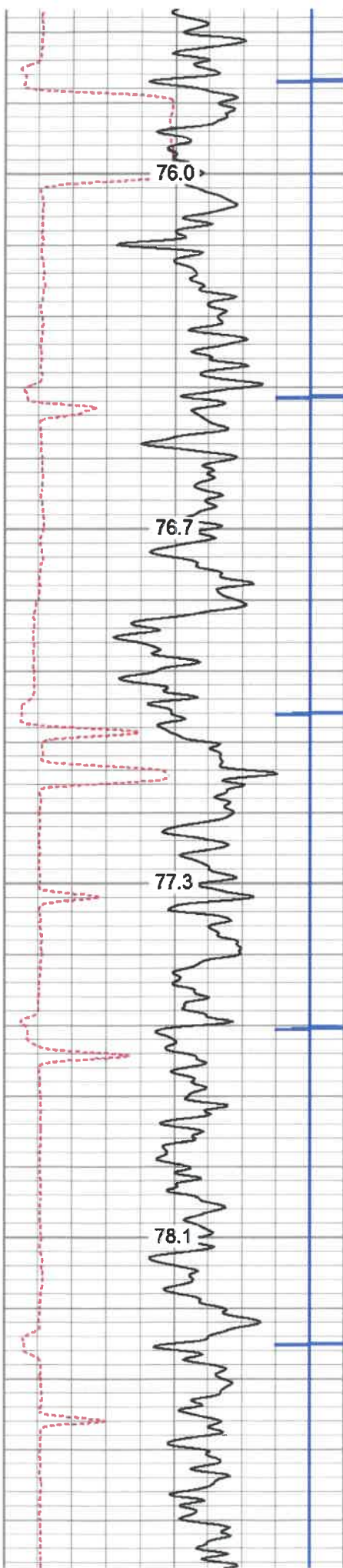
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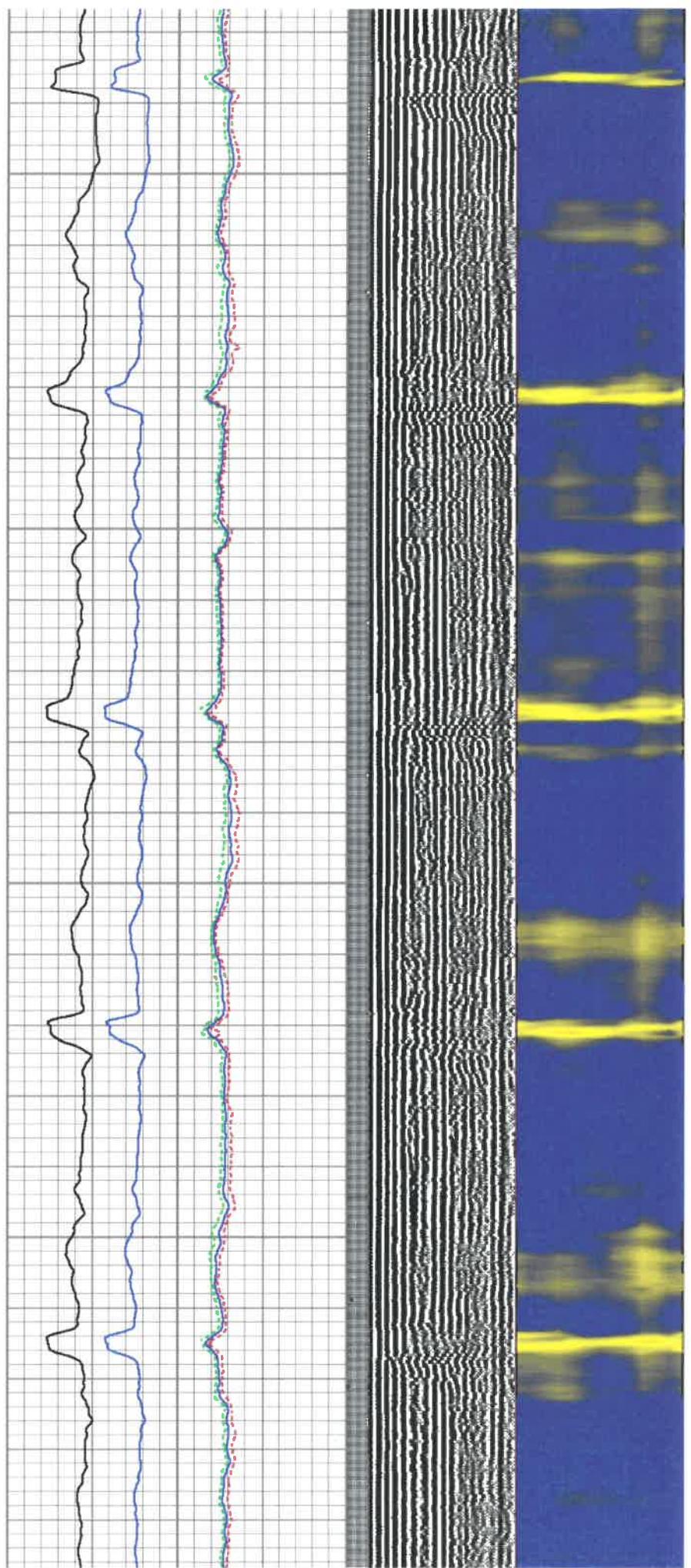
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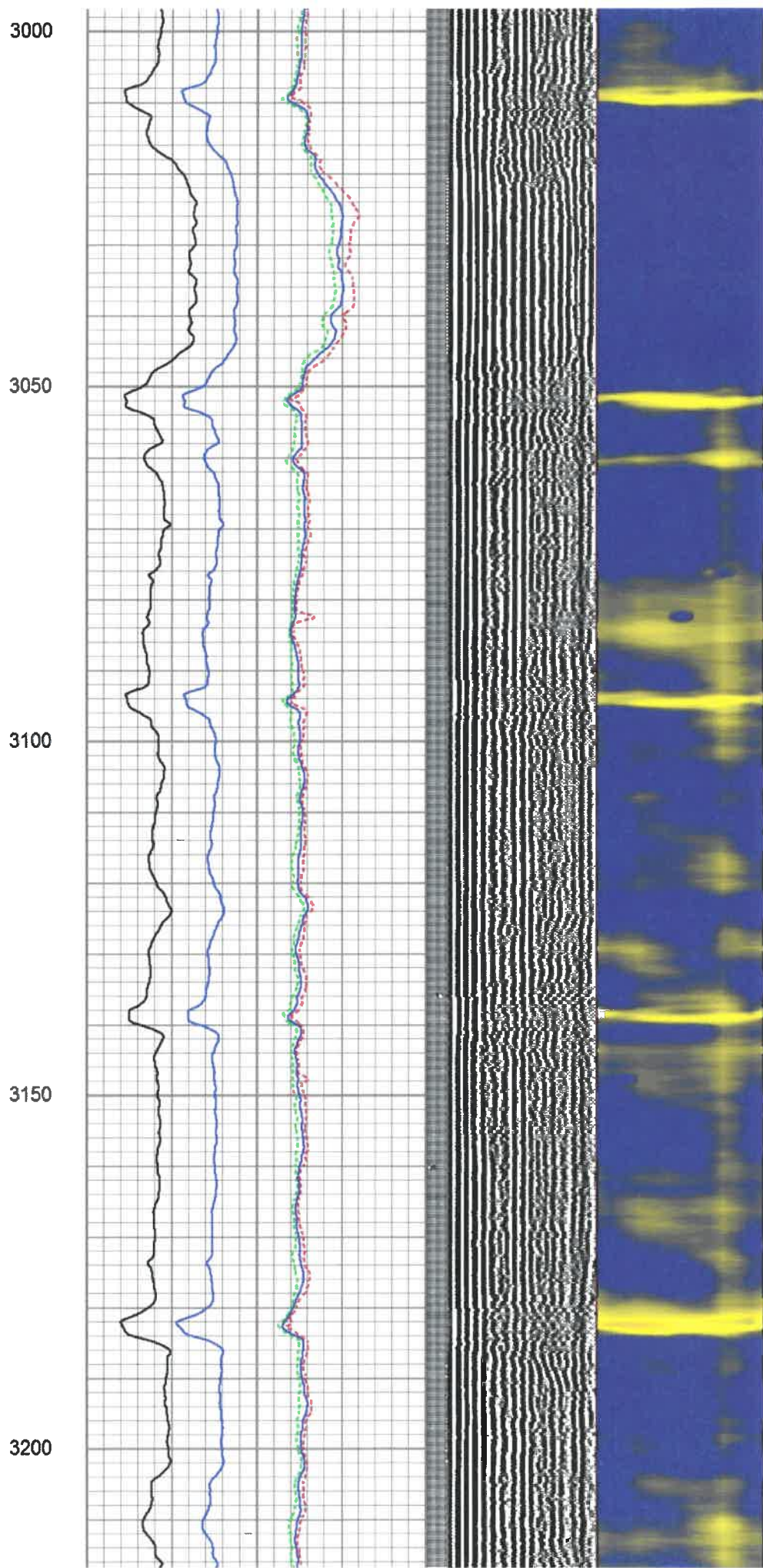
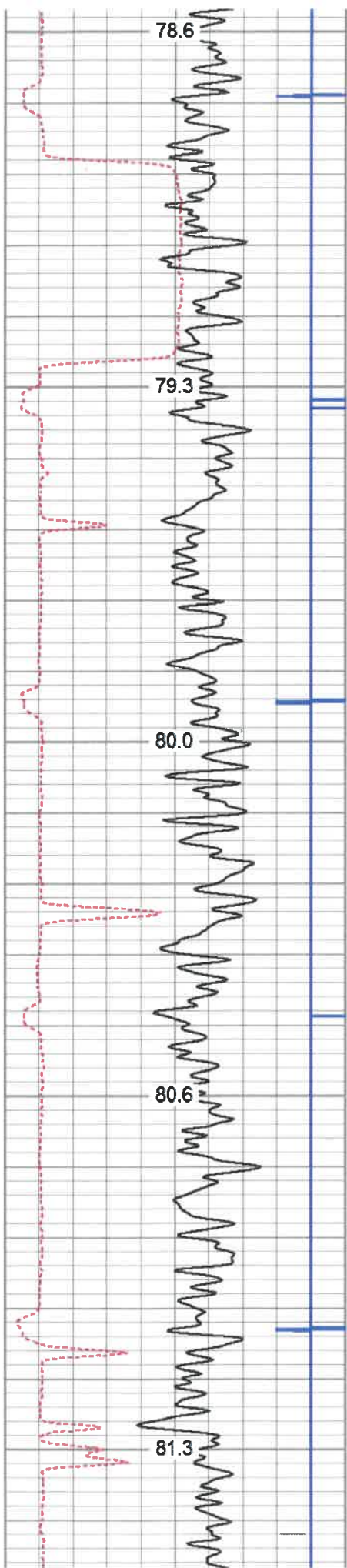
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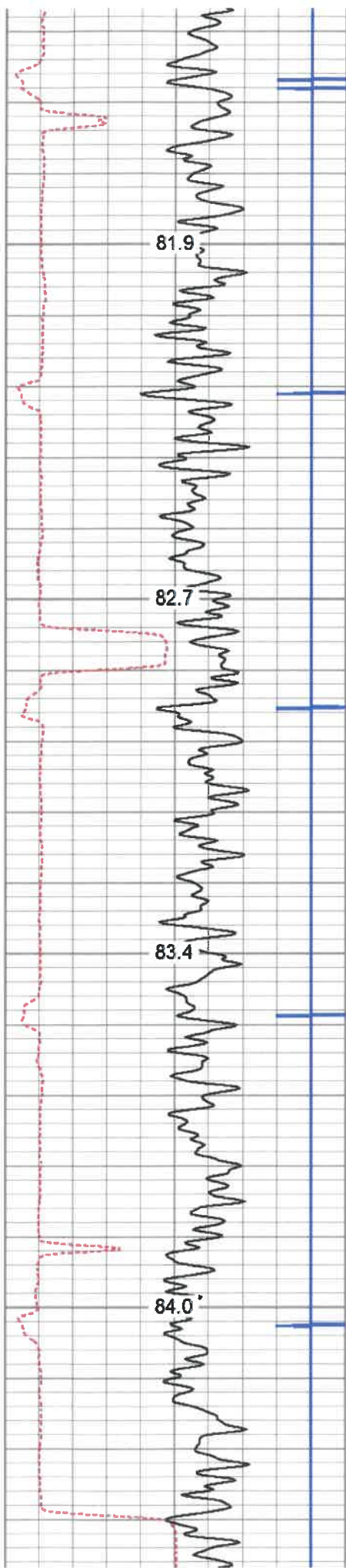




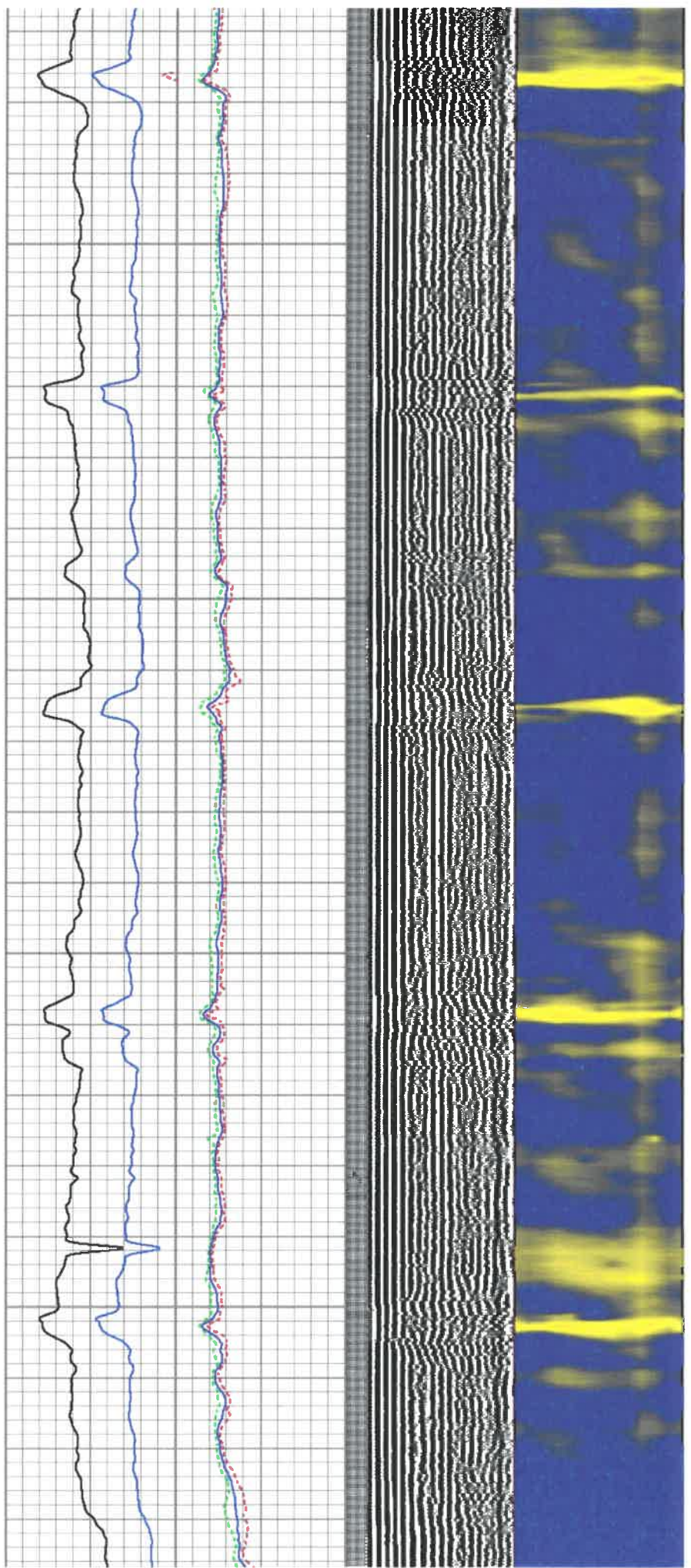
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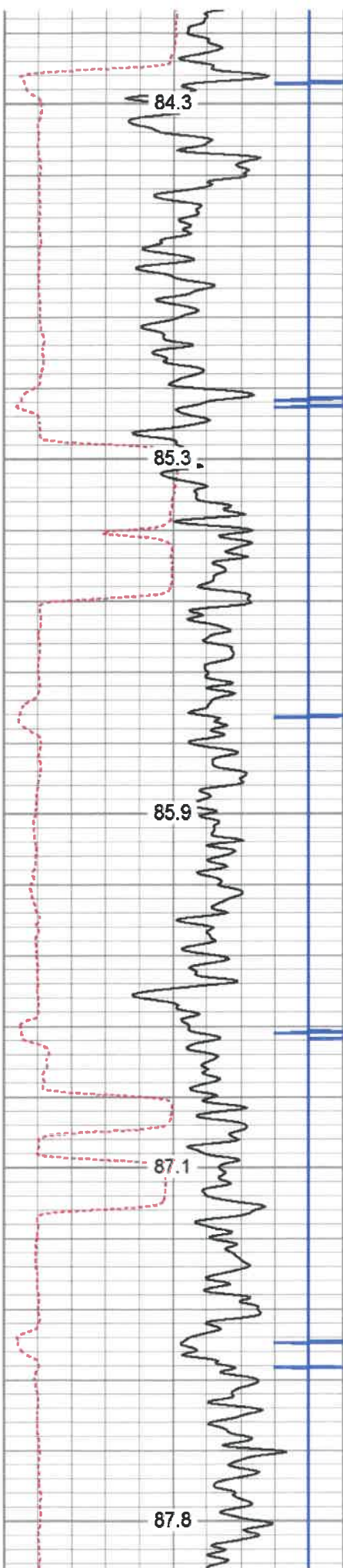






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3300
3350
3400





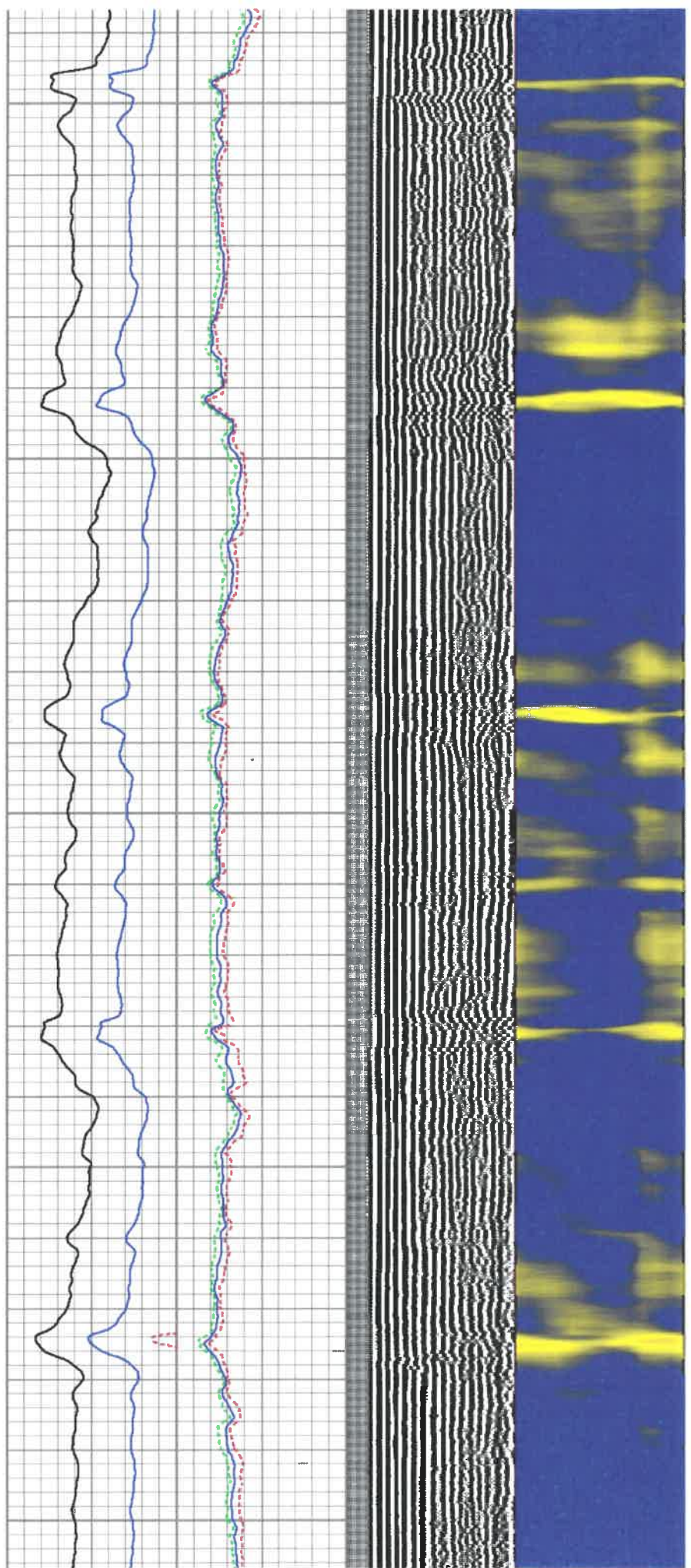
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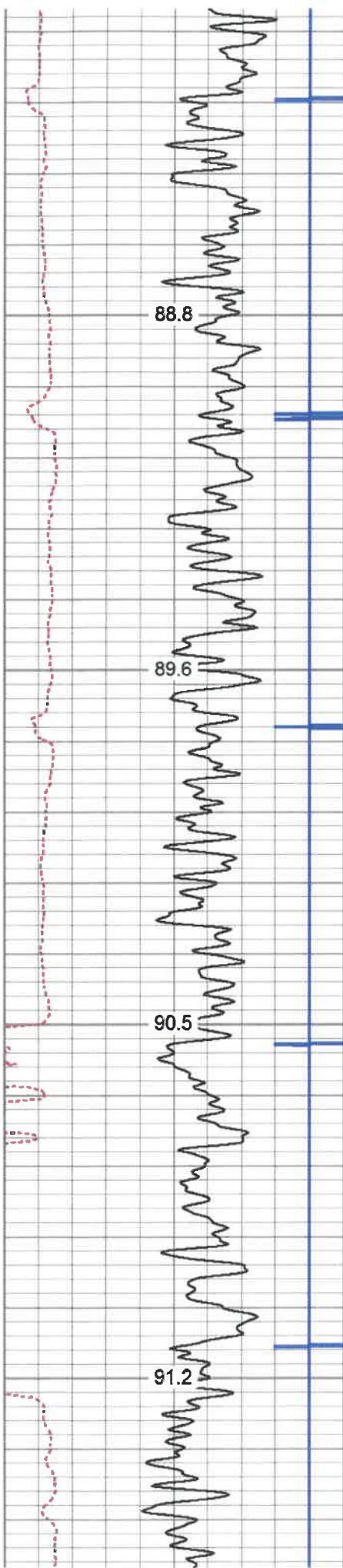
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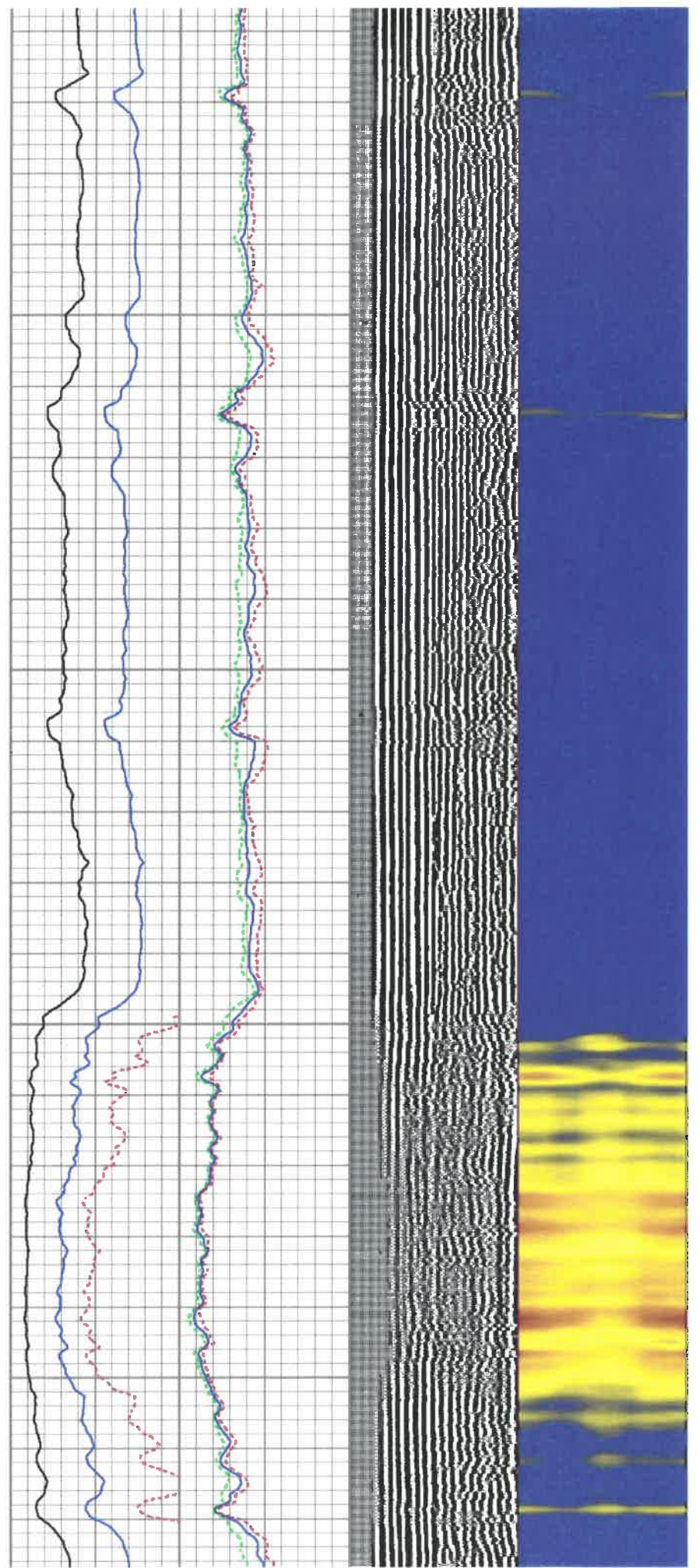


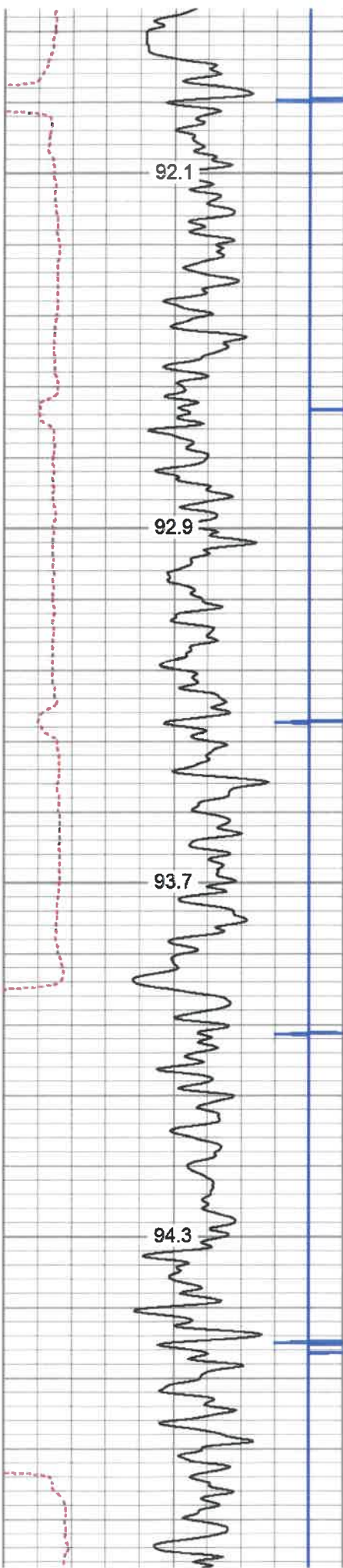
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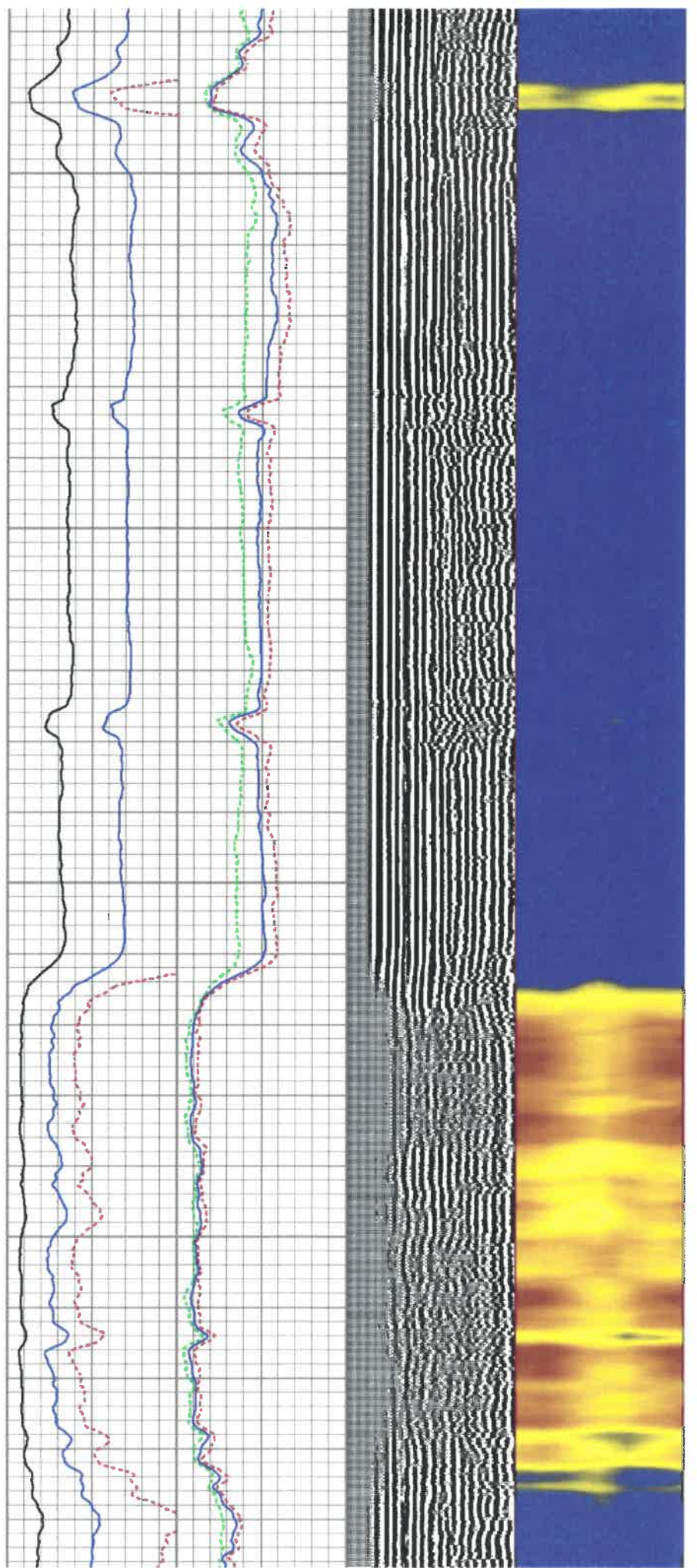
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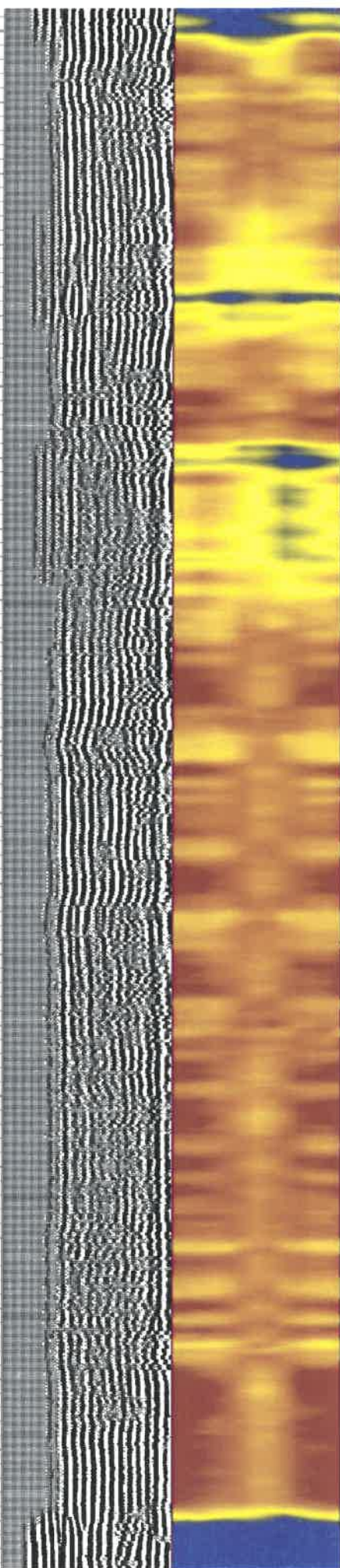
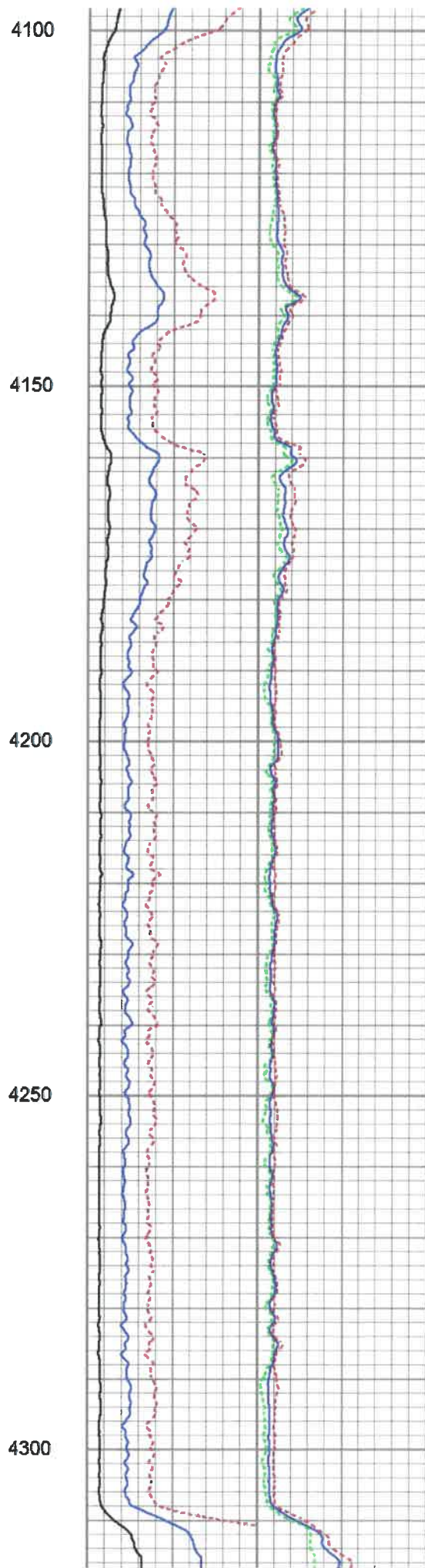
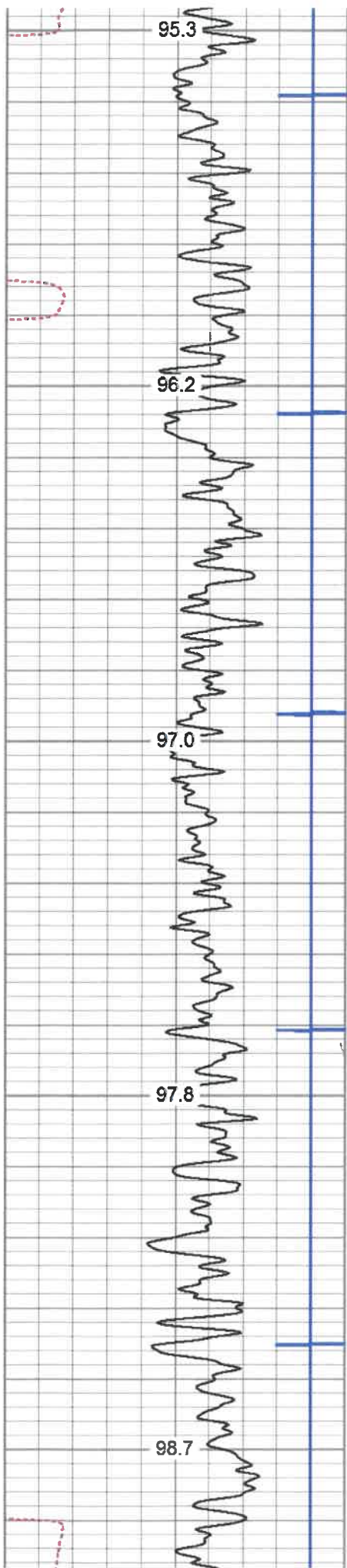
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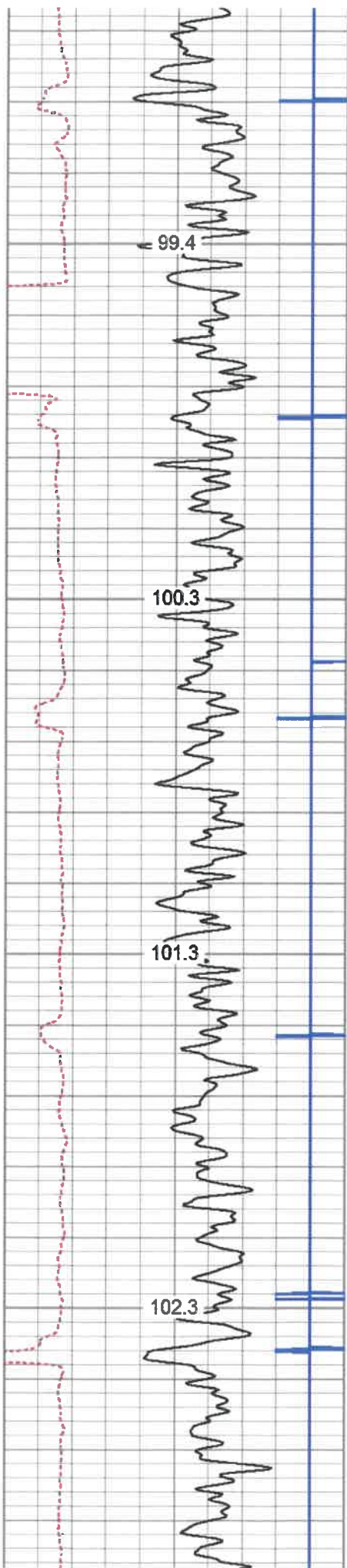




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4050





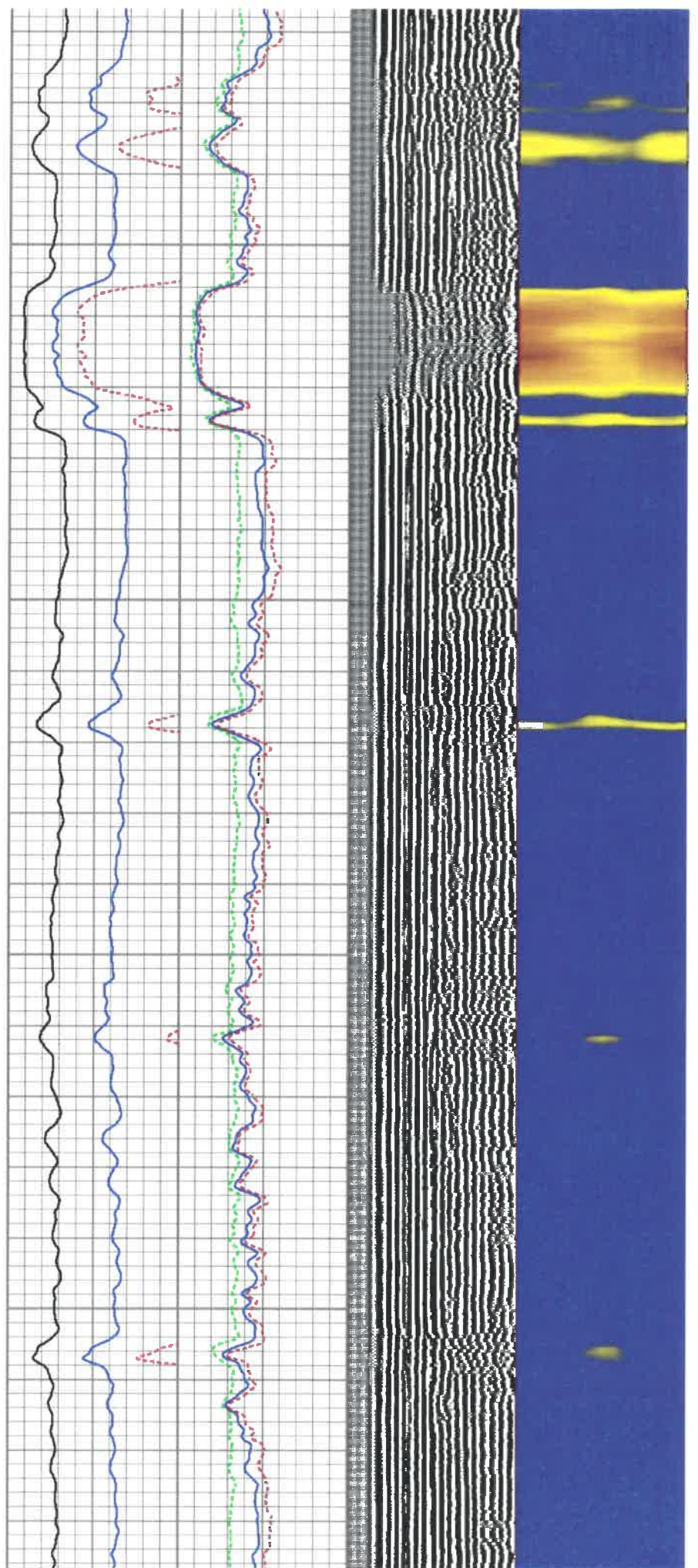


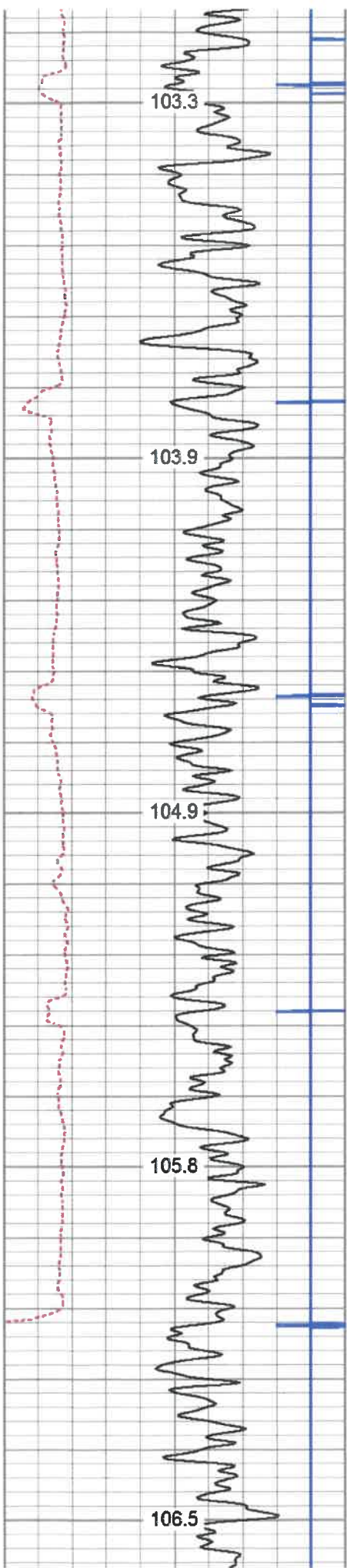
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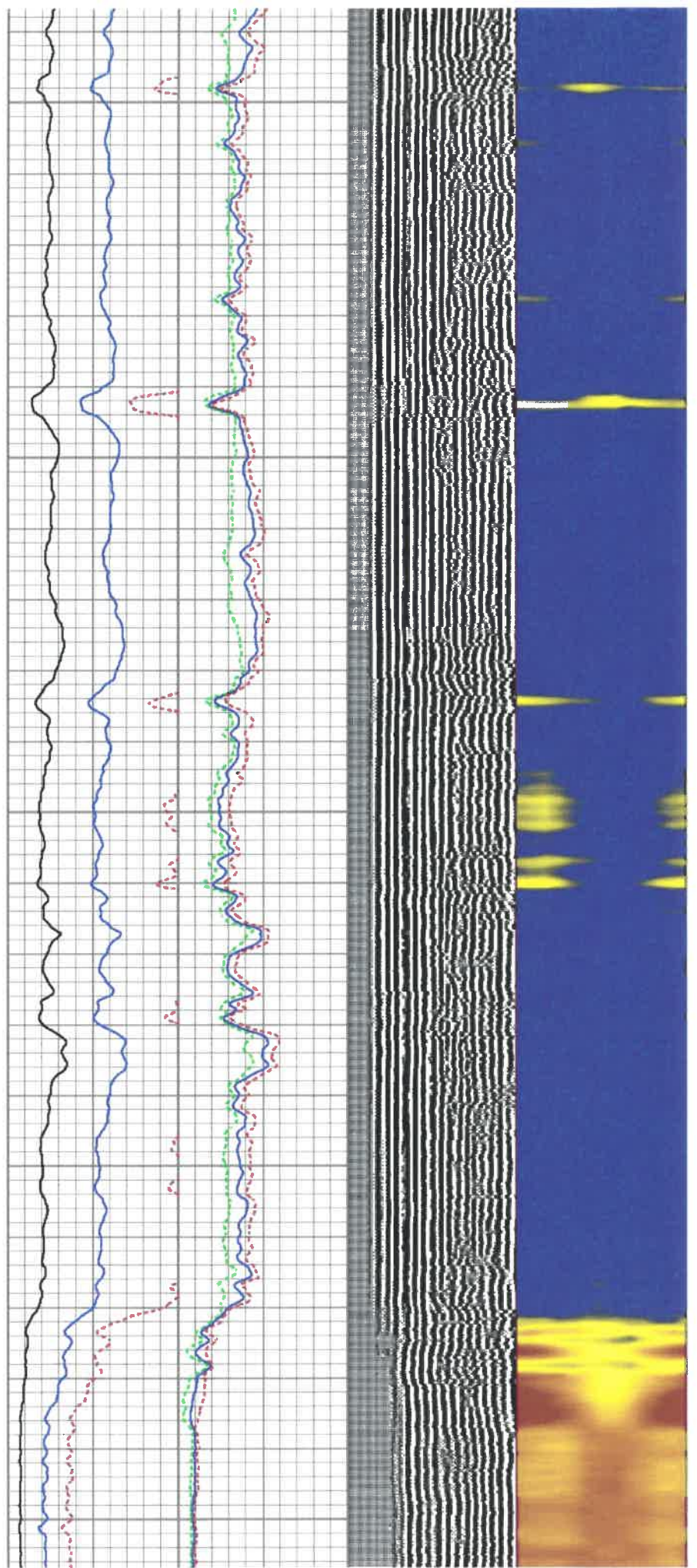
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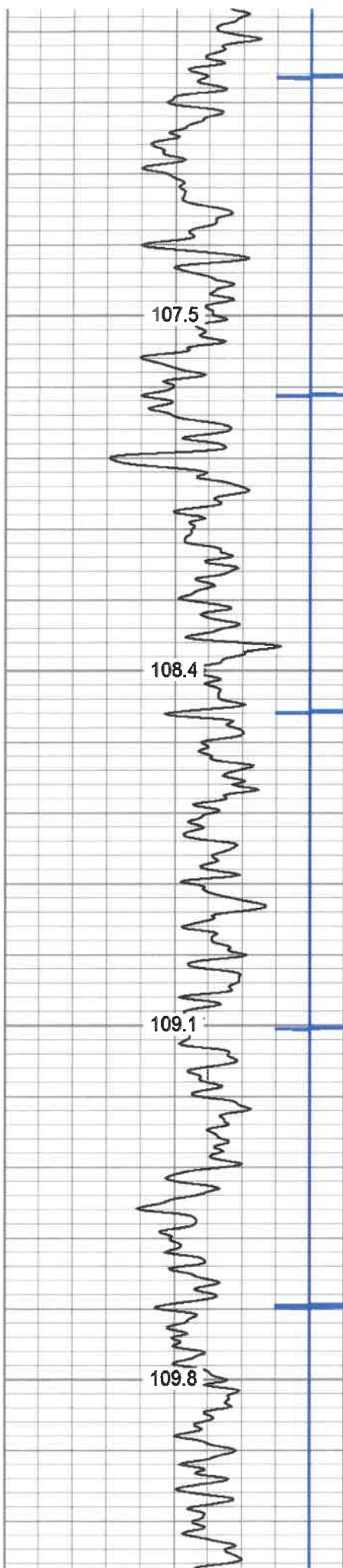
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4600
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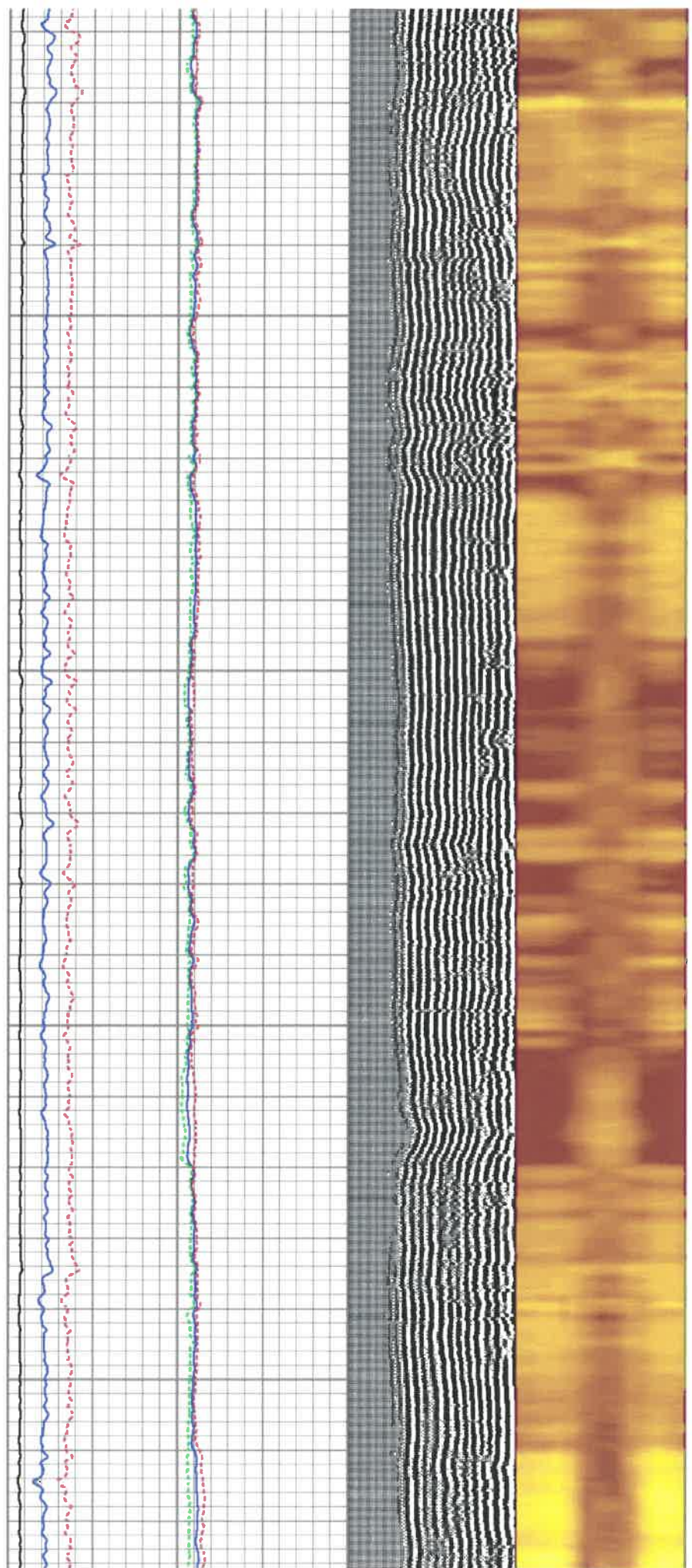


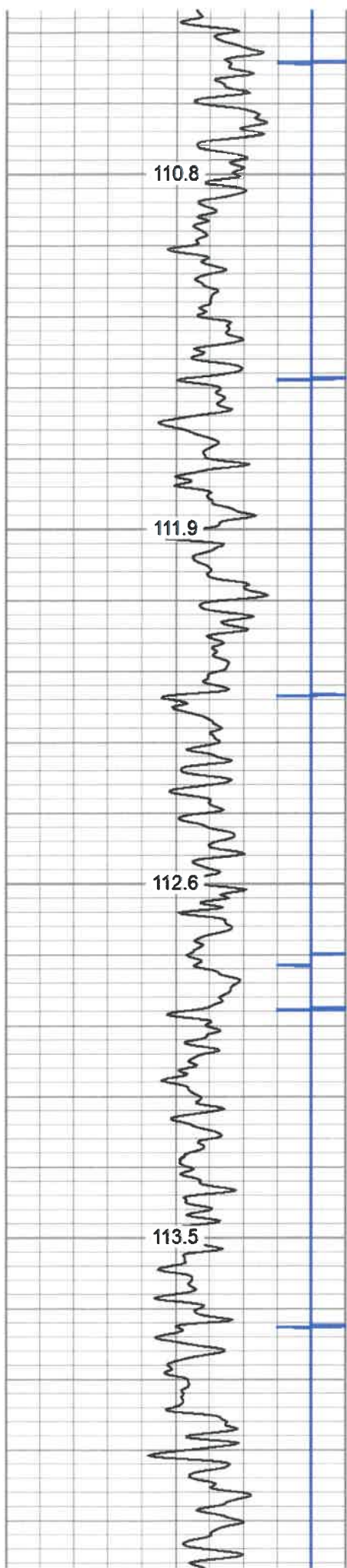
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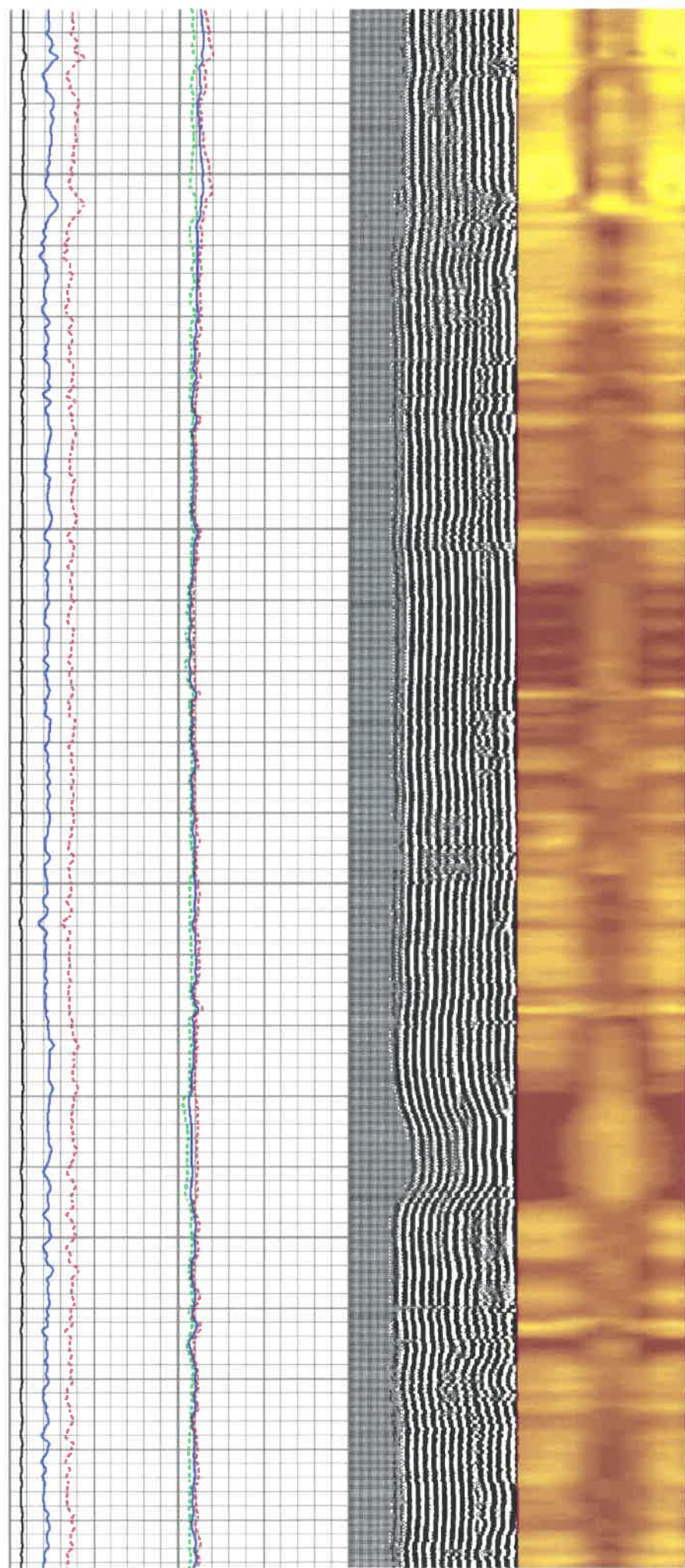


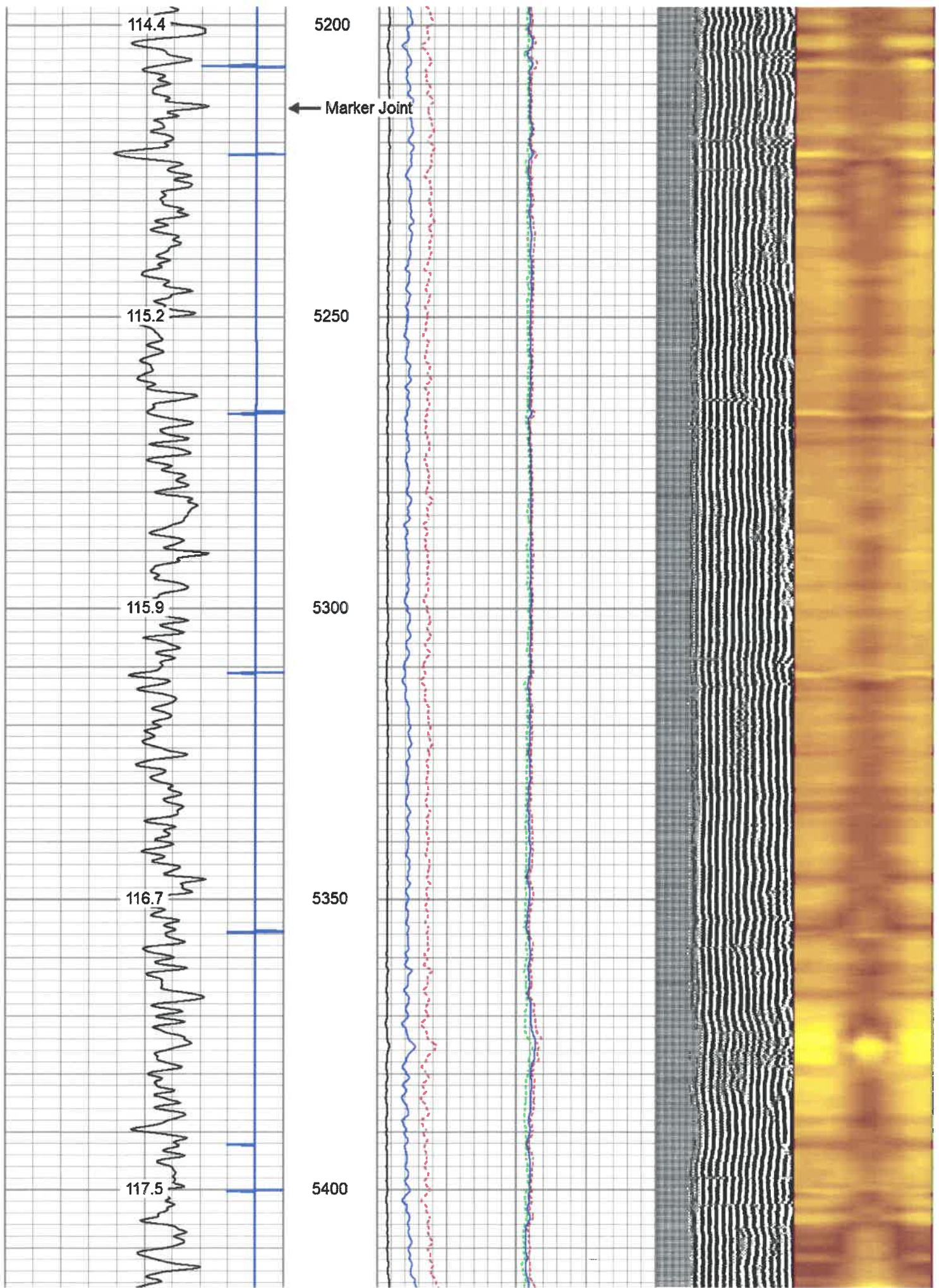
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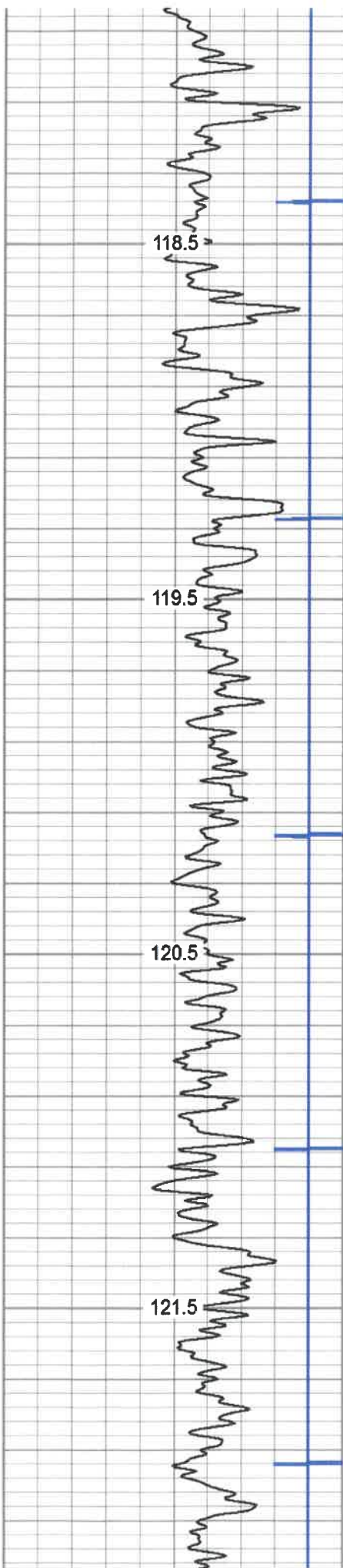
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5150





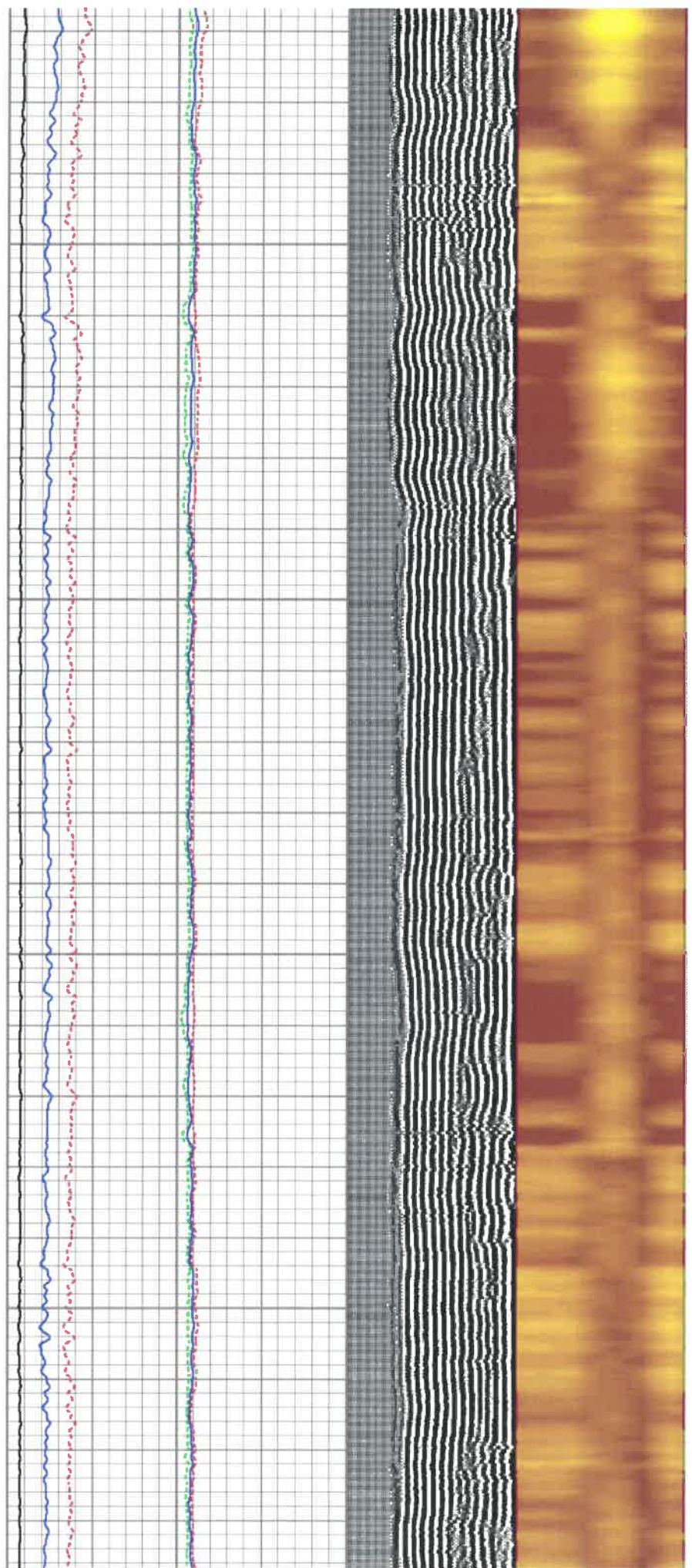


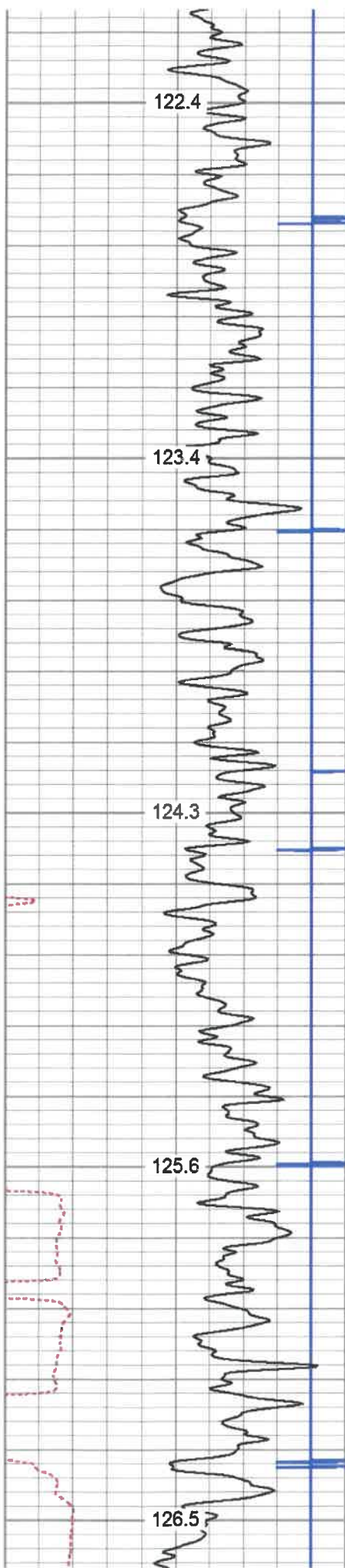
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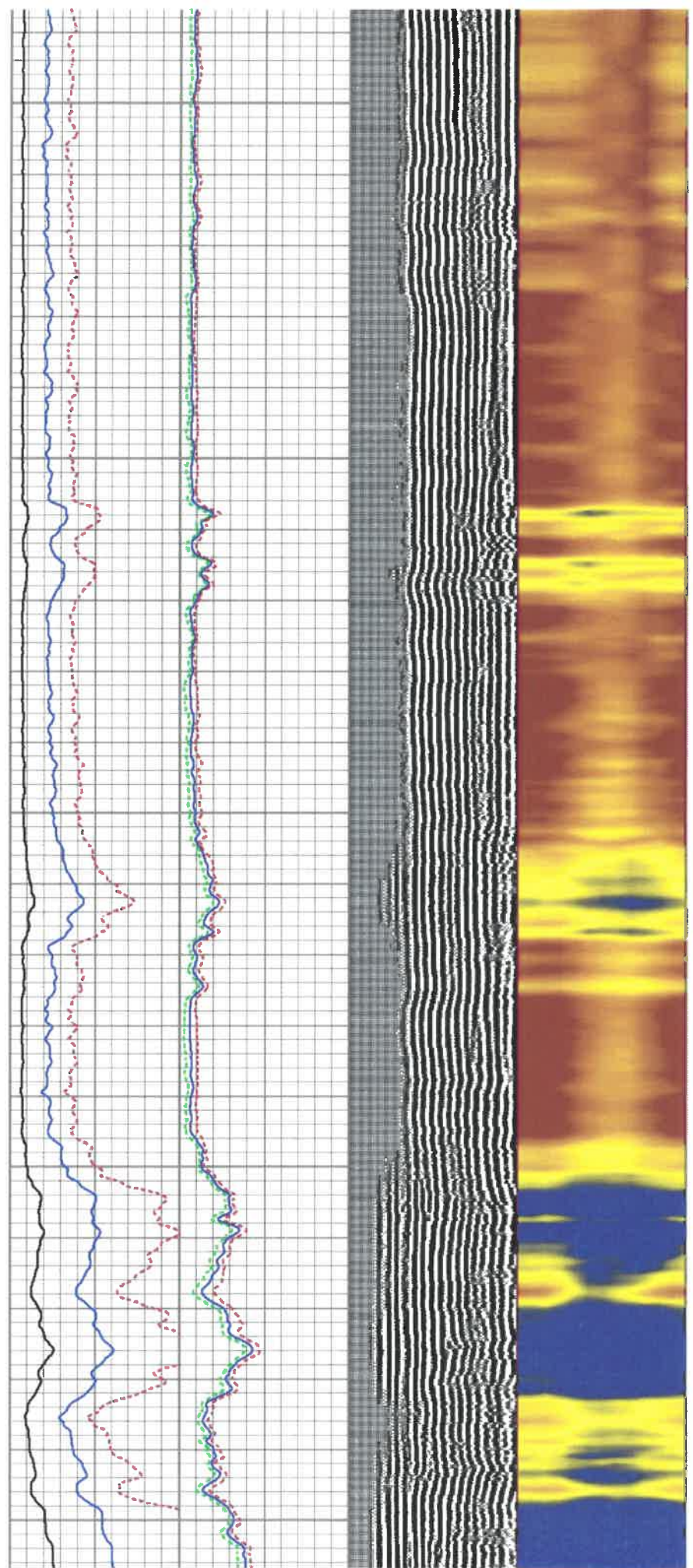
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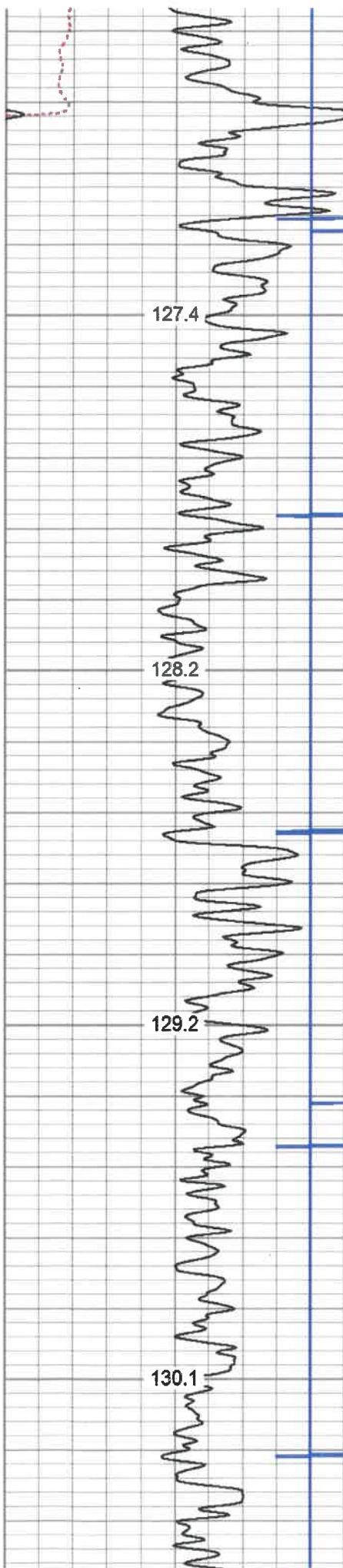
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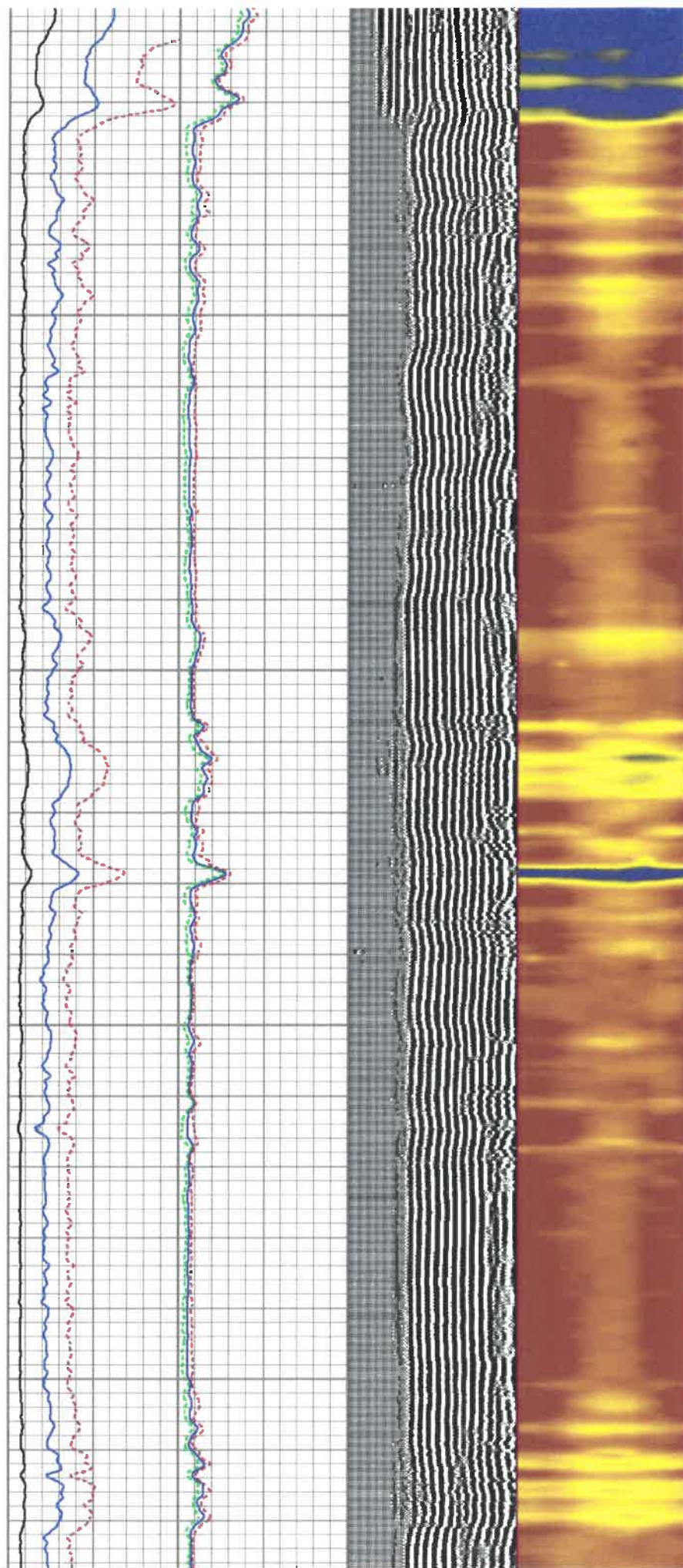


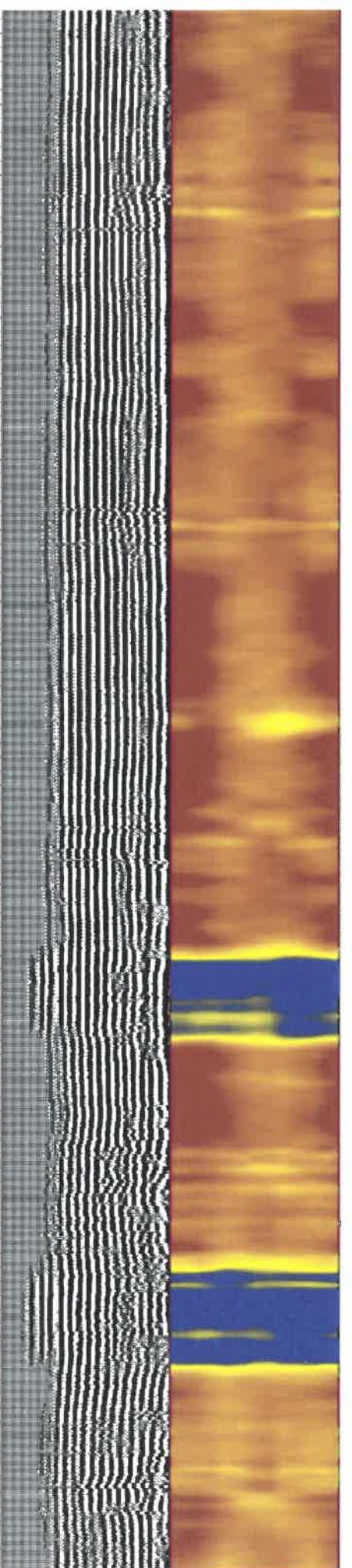
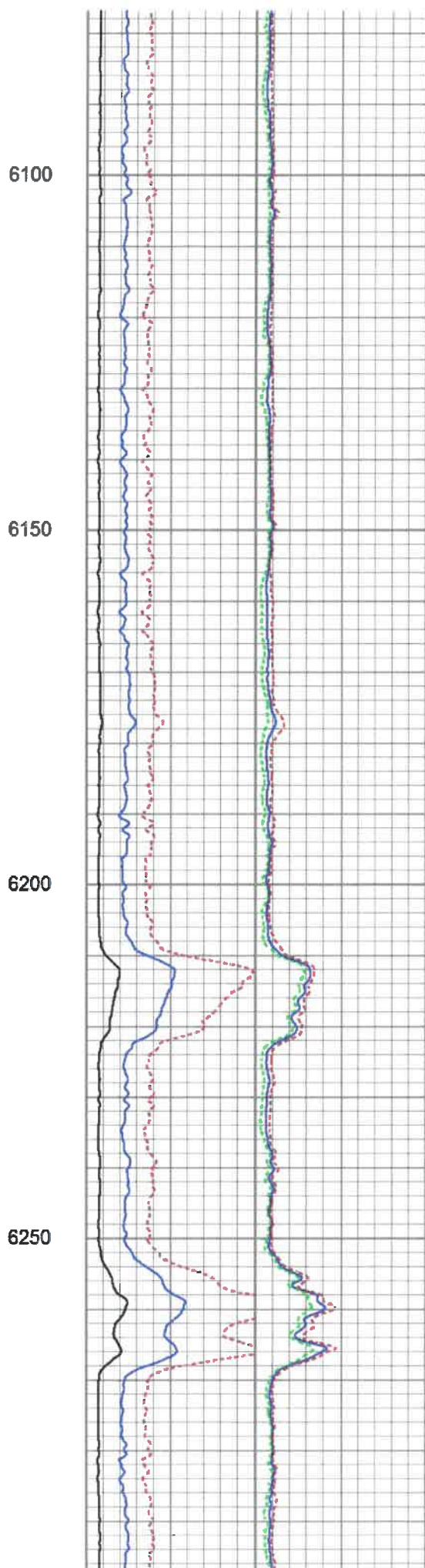
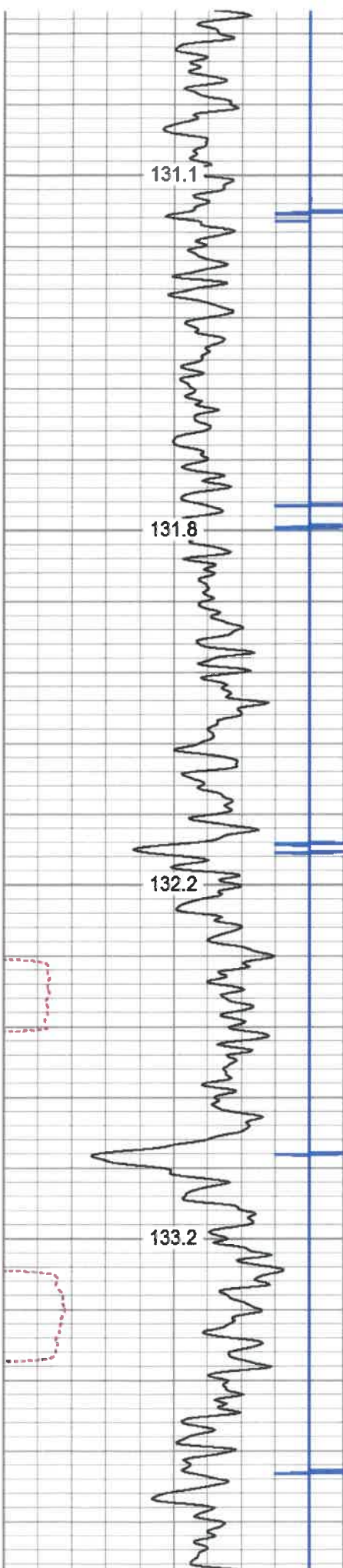
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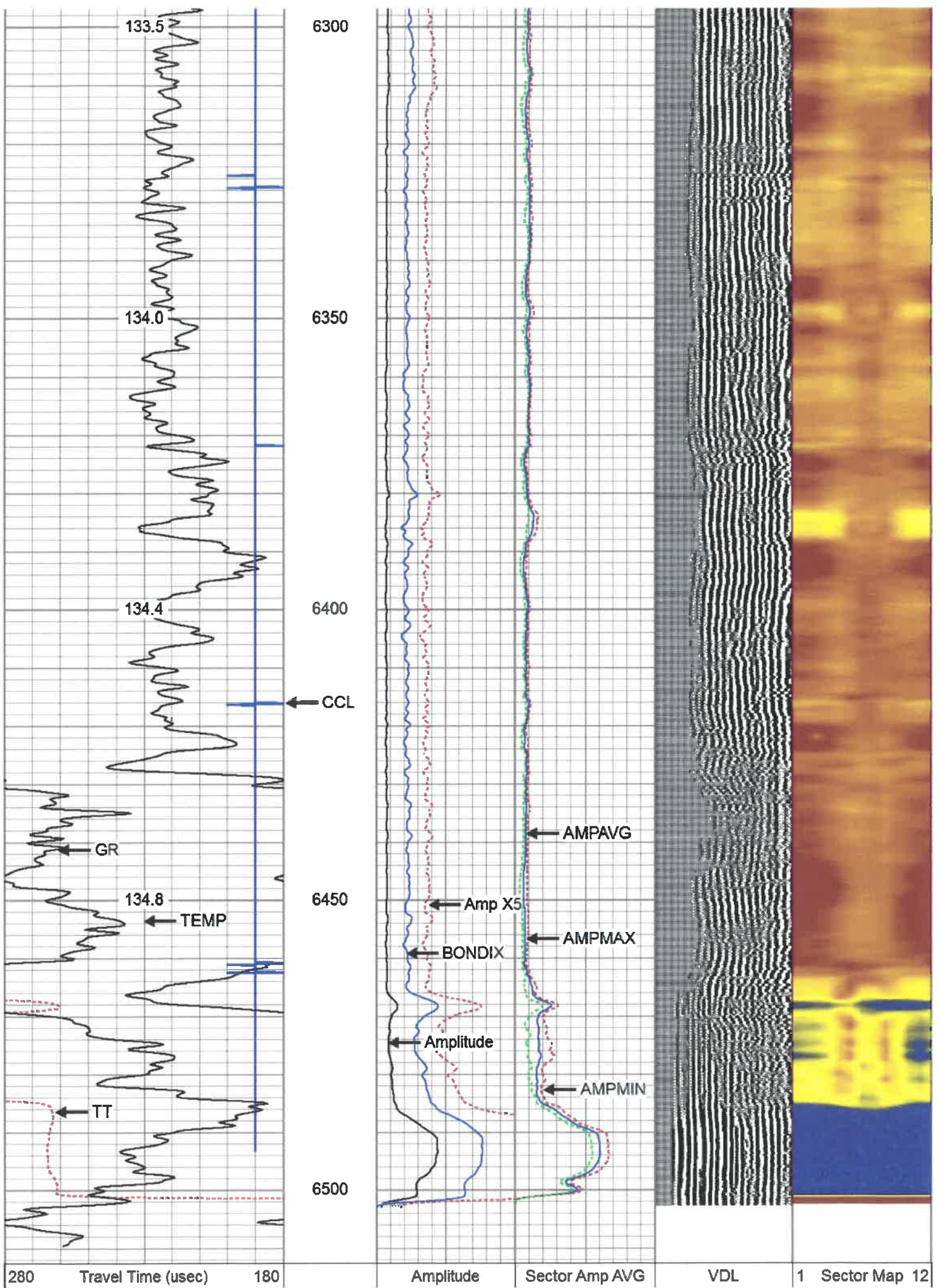
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6000

6050







9	Casing Collar	-1
0	Gamma Ray (GAPI)	180
180	GR (GAPI)	360
	TEMP	
	(degF)	

0	(mV)	100
	Amp X5	
0	(mV)	20
1	BONDIX	0

Sector Amp MAX	200	(usec)	1200
Sector Amp MIN			

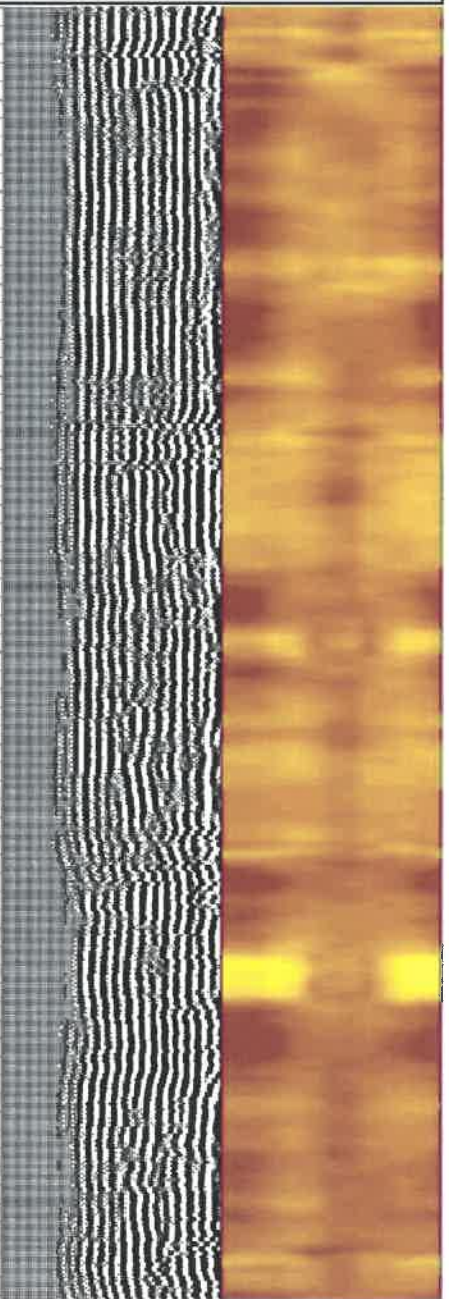
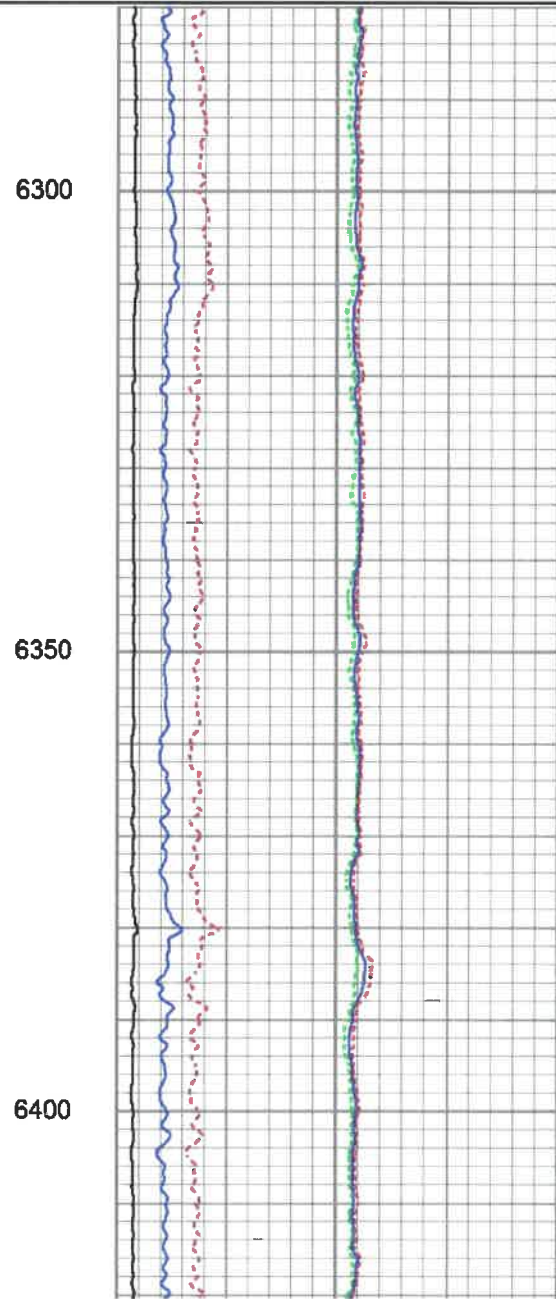
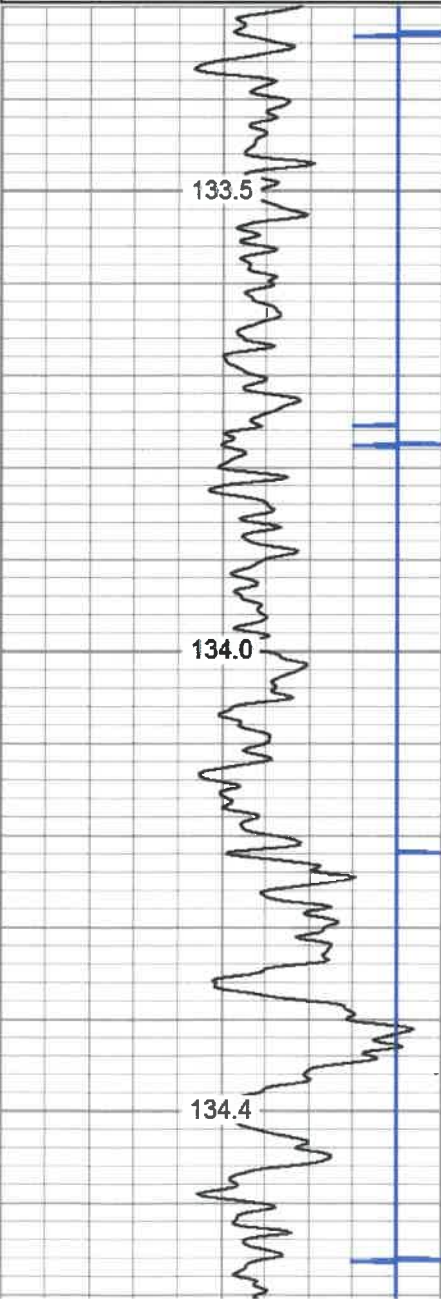


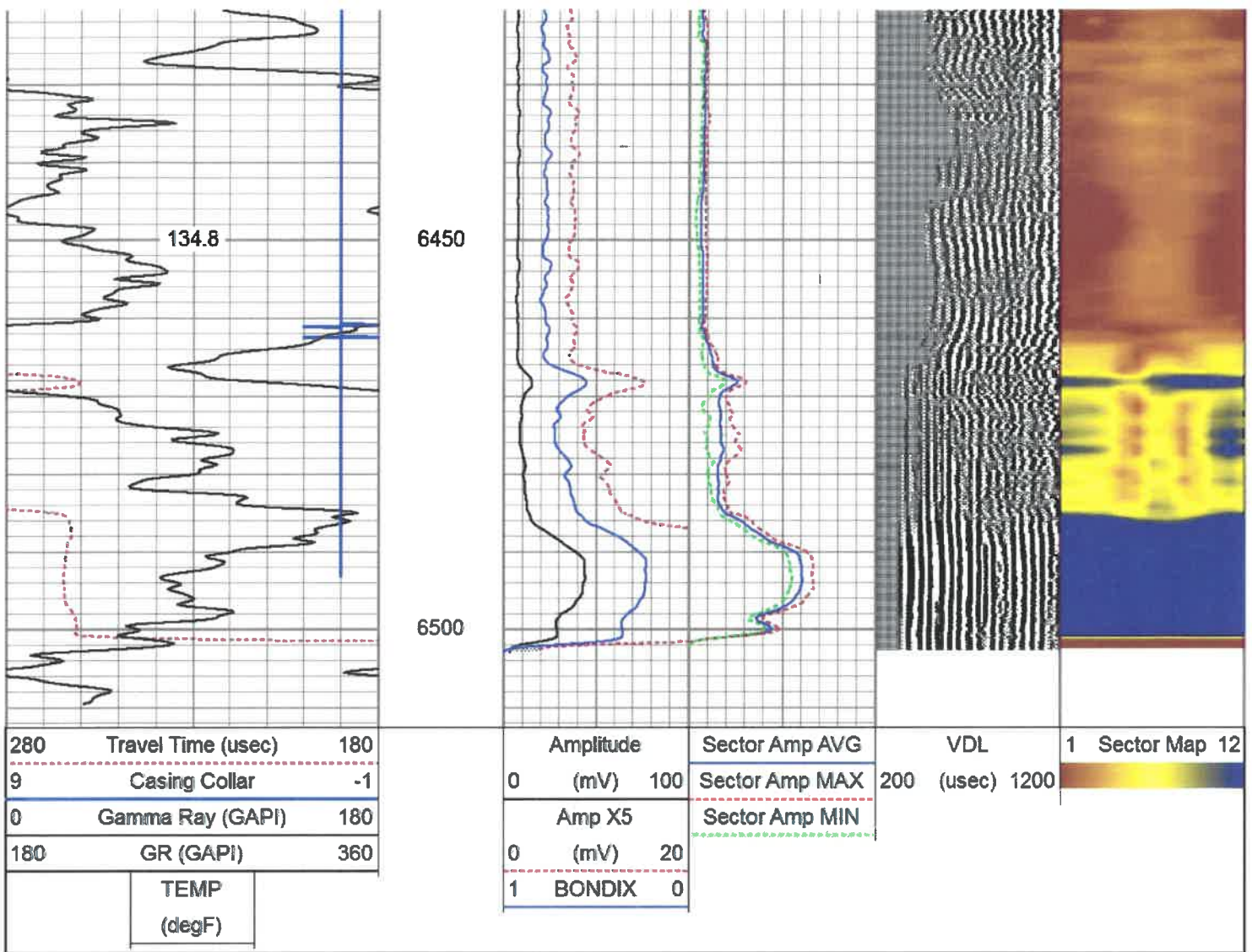
Database File wick2h.db
 Dataset Pathname pass4.2
 Presentation Format antero
 Dataset Creation Fri Sep 06 08:47:19 2019
 Charted by Depth in Feet scaled 1:240

280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray (GAPI)	180
180	GR (GAPI)	360
	TEMP	
	(degF)	

Amplitude		
0	(mV)	100
	Amp X5	
0	(mV)	20
1	BONDIX	0

Sector Amp AVG		VDL		1	Sector Map	12
Sector Amp MAX	200	(usec)	1200			
Sector Amp MIN						





Log Variables

DatabaseC:\ProgramData\Warrior\Data\wick2h.db
Dataset field/well/run1/pass4/_vars_

Top - Bottom						
BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL
TEMP	in	degF	in	in	lb/ft	mV
	7.875	100	5.5	0	23	71.9
MINAMPL	MINATTN	PERFS	PPT	SRFTEMP	TDEPTH	
mV	db/ft		usec	degF	ft	
3.5	0.8	No	219	0	0	

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
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Calibration Report	
Database File	wick2h.db
Dataset Pathname	pass4
Dataset Creation	Thu Sep 05 10:49:22 2019

Gamma Ray Calibration Report

Serial Number: 0111
 Tool Model: Tek-Co 2 3/4
 Performed: Fri Aug 02 20:12:43 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.5000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: T12_01
 Tool Model: Tek12

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 174.250 ft



Master Calibration, performed Thu Sep 05 10:24:00 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.593	3.500	71.921	115.468	3.500
CAL	0.000	0.436				
5'	0.000	0.830	3.500	71.921	82.454	3.500
SUM						
S1	0.000	0.529	0.000	100.000	189.174	0.000
S2	0.000	0.550	0.000	100.000	181.822	0.000
S3	0.000	0.596	0.000	100.000	167.834	0.000
S4	0.000	0.645	0.000	100.000	154.946	0.000
S5	0.000	0.636	0.000	100.000	157.354	0.000
S6	0.000	0.605	0.000	100.000	165.318	0.000
S7	0.000	0.570	0.000	100.000	175.542	0.000
S8	0.000	0.530	0.000	100.000	188.782	0.000
S9	0.000	0.524	0.000	100.000	190.822	0.000
S10	0.000	0.485	0.000	100.000	206.150	0.000
S11	0.000	0.512	0.000	100.000	195.438	0.000
S12	0.000	0.516	0.000	100.000	193.651	0.000

Temperature Calibration Report

Serial Number: T12_01
 Tool Model: Tek12
 Performed: Fri Oct 22 17:21:06 2010

	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	Length (ft)	O.D. (in)	Weight (lb)
			Titan-1.4375 1 7/16 Titan Type II Cable Head	1.03	1.44	5.00
			CCL-312tekco (101)	1.82	3.12	25.00

CCL		19.20	Tekco 3 1/8" 450 Deg. "F" SMC Logging CCL			
			Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
TEMP	13.04					
WVFSYNC	13.04					
WVFCAL	13.04					
WVFS12	11.75					
WVFS11	11.75		SCBL-Tek12 (T12_01) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00
WVFS10	11.75					
WVFS9	11.75					
WVFS8	11.75					
WVFS7	11.75					
WVFS6	11.75					
WVFS5	11.75					
WVFS4	11.75					
WVFS3	11.75					
WVFS2	11.75					
WVFS1	11.75					
WVF3FT	11.00					
WVF5FT	10.00					
WVFTEMP	6.67					
			Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
			GR-Tek-Co 2 3/4 (0111) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
GR	1.31					
			Titan-1.4375_Cap Titan 1 7/16" Cap	0.27	1.44	1.00

Dataset: wick2h.db: field/well/run1/pass4
 Total length: 21.37 ft
 Total weight: 256.00 lb
 O.D.: 3.25 in



Company ANTERO RESOURCES CORPORATION
 Well WICK 2H
 Field MARCELLUS

■ Energy Services

County
State

TYLER
WV

Country