



**Segmented Radial Cement Bond  
W/Gamma Ray, CCL  
Log**

Company ANTERO RESOURCES CORPORATION  
Well GULID UNIT 2H  
Field MARCELLUS  
County Tyler  
State WV Country US

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Well GULID UNIT 2H  
Field MARCELLUS  
County Tyler  
State WV Country US

Location: API #: 47095025740000

Other Services  
NONE

SEC N/A TWP N/A RGE N/A

Elevation

Permanent Datum GROUND LEVEL Elevation

Log Measured From R.K.B. 25'

Drilling Measured From R.K.B.

K.B.  
D.F.  
G.L.

Date 26-OCT-2019

Run Number ONE

Depth Driller 13582'

Depth Logger 6800'

Bottom Logged Interval 6800'

Top Log Interval SURFACE

Open Hole Size 8.25"

Type Fluid F/W

Density / Viscosity 8.6

Max. Recorded Temp. 137 degF

Estimated Cement Top 1800'

Time Well Ready 14:00

Time Logger on Bottom 14:30

Equipment Number 214181

Location BRIDGEPORT, WV

Recorded By S.BUTLER

Witnessed By JAYSON LUKES

Run Number	Borehole Record		Tubing Record				
	Bit	From	To	Size	Weight	From	To
ONE	24"	SURFACE	125'				
TWO	17.5"	125'	414'				
THREE	12.25"	414'	2777'				
FOUR	8.25"	2777'	13582'				
Casing Record		Size	Wgt/Ft			Top	Bottom
Surface String		13.375"	54.5			SURFACE	414'
Prot. String		9.625"	40			SURFACE	2777'
Production String		5.5	20			SURFACE	13582'
Liner							

<<< Fold Here >>>

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**

ZERO @ R.K.B. 25'  
MARKER JOINT: 6123' - 6133'  
LOG TD: 6800'  
LOG RAN UNDER 1500 PSI

RECEIVED  
Office of Oil and Gas  
SEP 24 2020  
WV Department of  
Environmental Protection

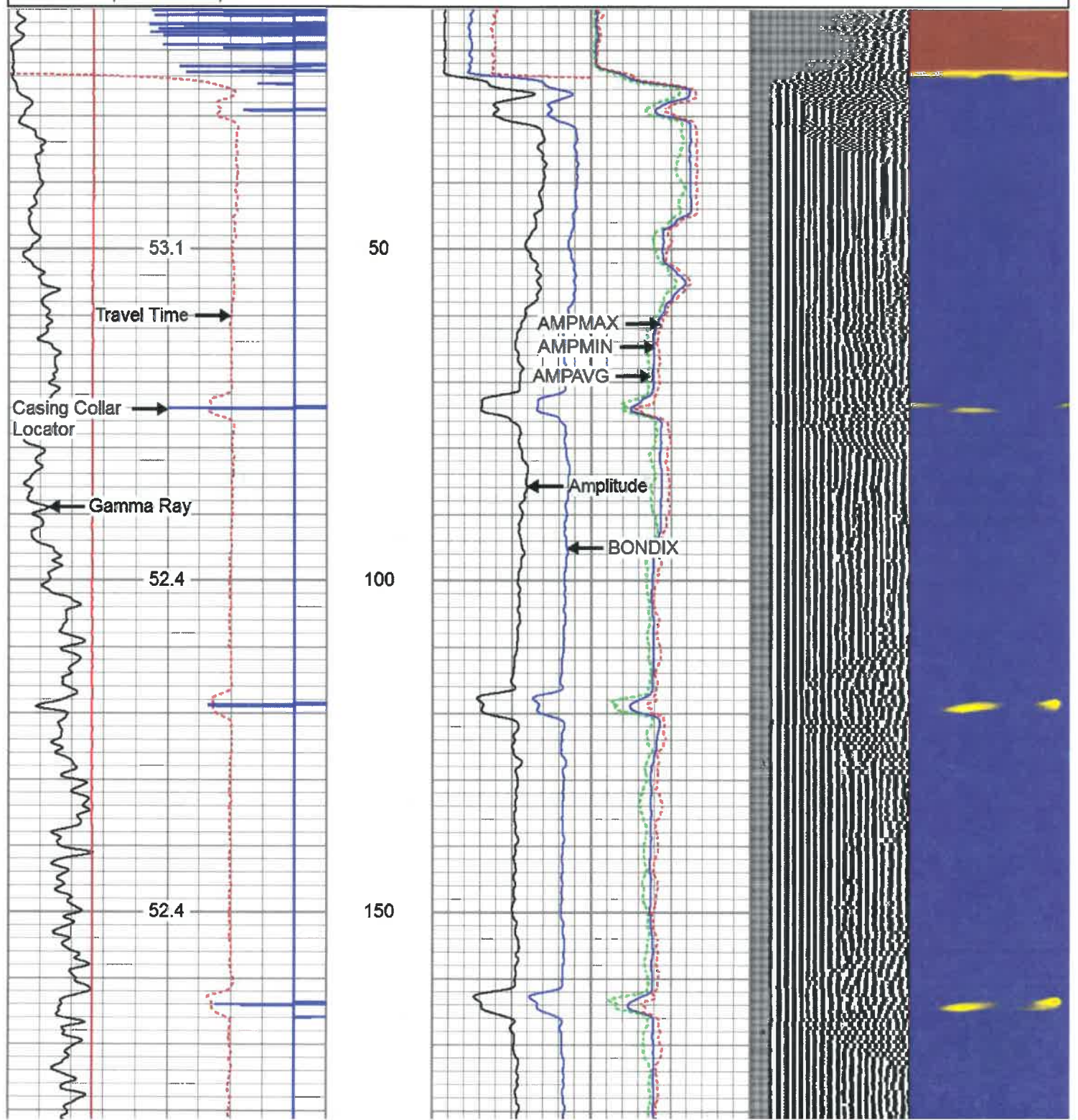
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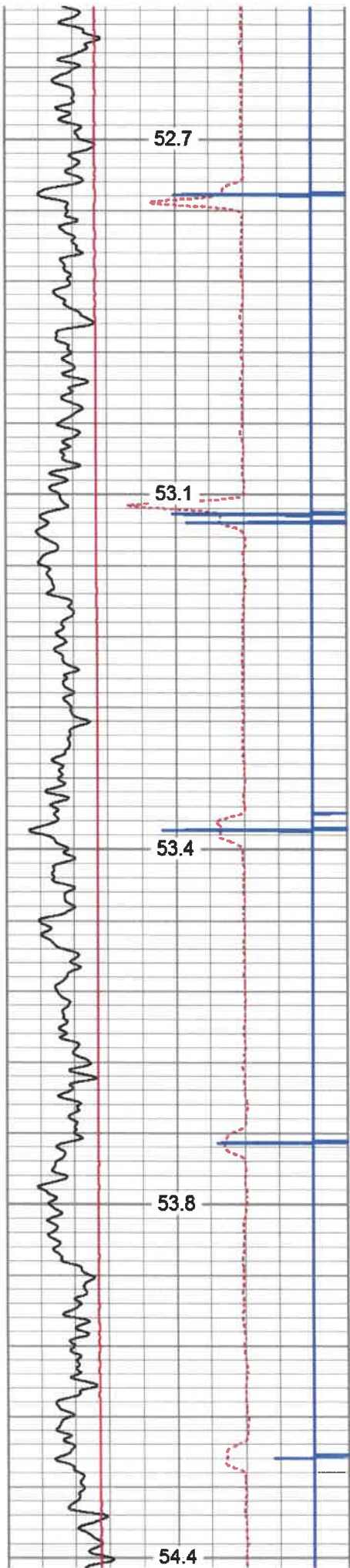


Database File antero\_guild\_unit\_2h.db  
 Dataset Pathname pass4.1  
 Presentation Format antero1  
 Dataset Creation Tue Oct 29 15:27:32 2019  
 Charted by Depth in Feet scaled 1:240

280	Travel Time (usec)	180	Amplitude	Sector Amp AVG	VDL	1	Sector Map	12
9	Casing Collar	-1	0 (mV) 100	Sector Amp MAX	200 (usec) 1200			
0	Gamma Ray (GAPI)	180	Amp X5	Sector Amp MIN				
0	TEMP (degF)	200	0 (mV) 20					
180	GR (GAPI)	360	1 BONDIX	0				

TEMP (degF)





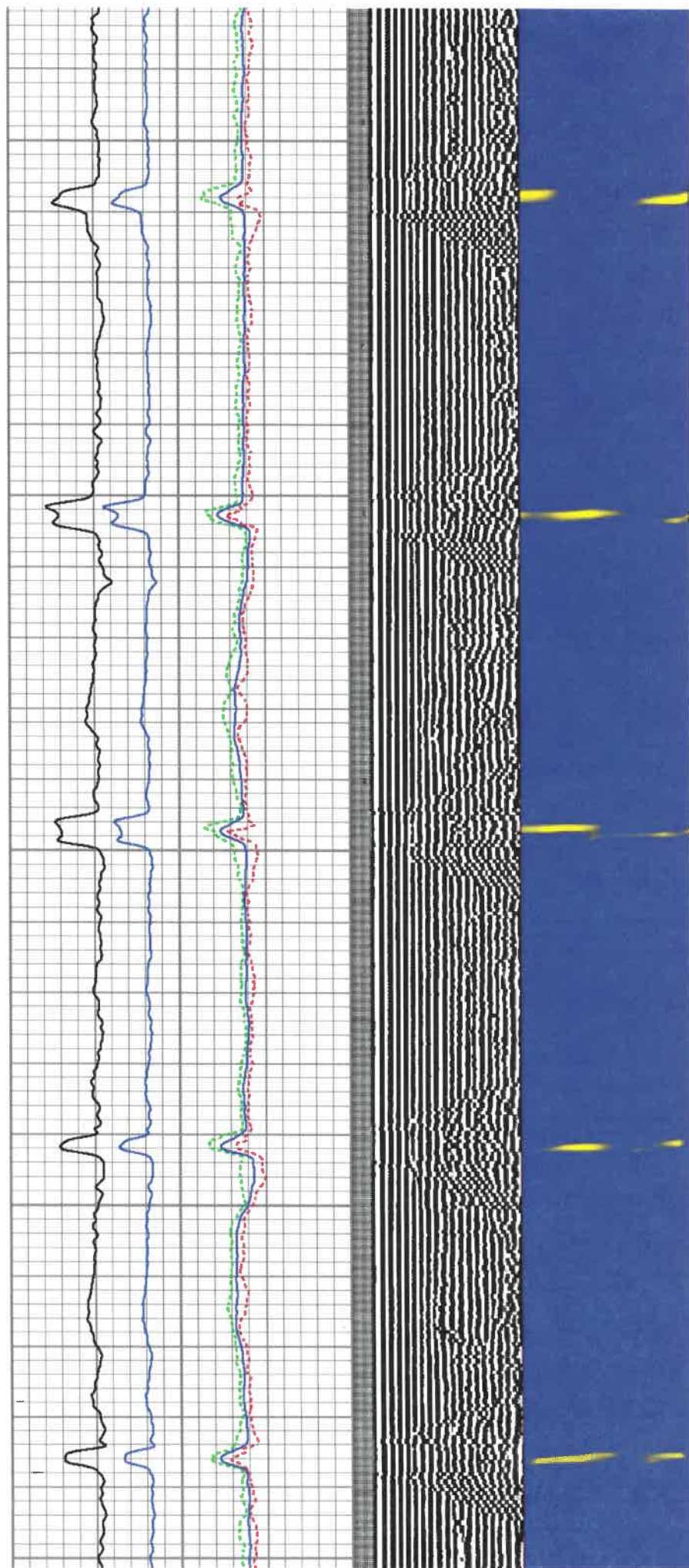
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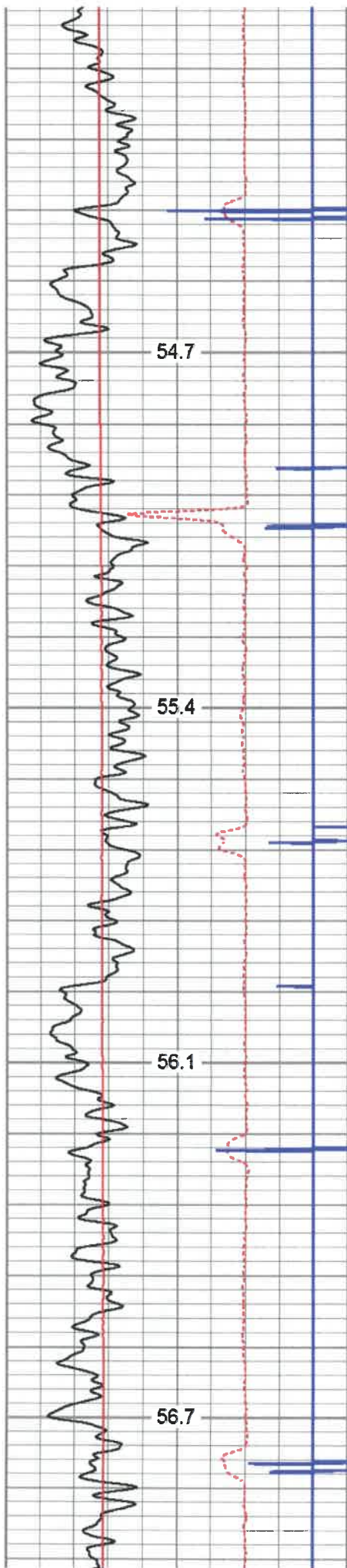
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300

350

400



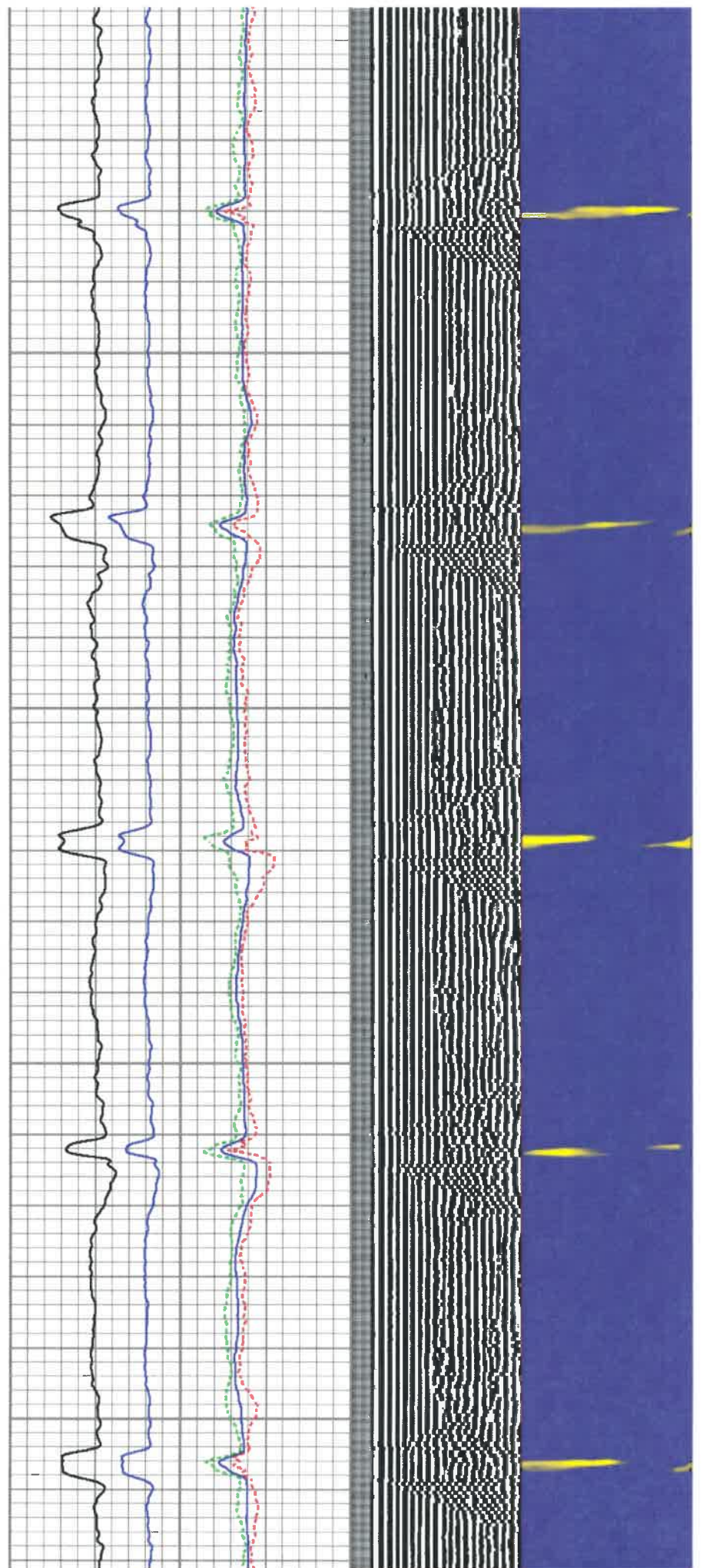


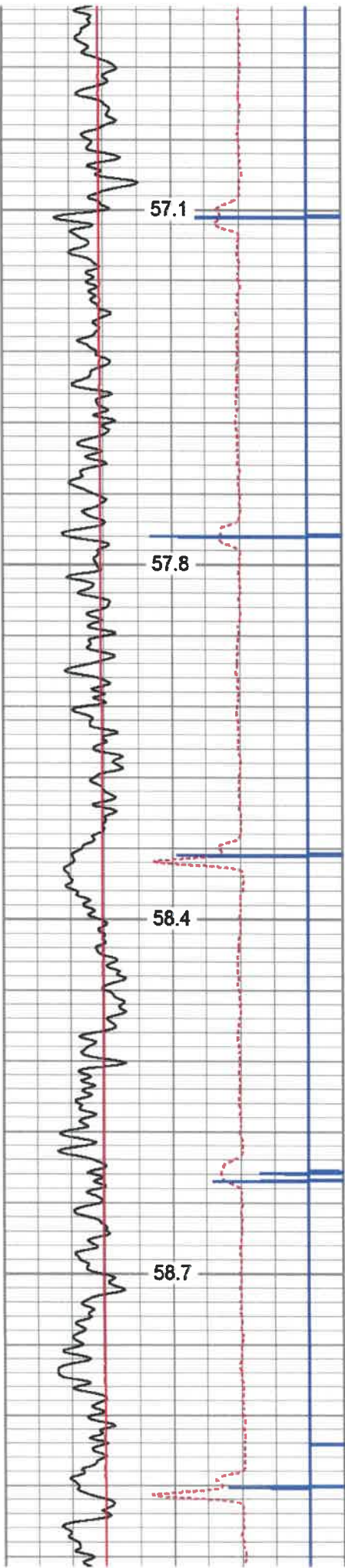
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500

550

600



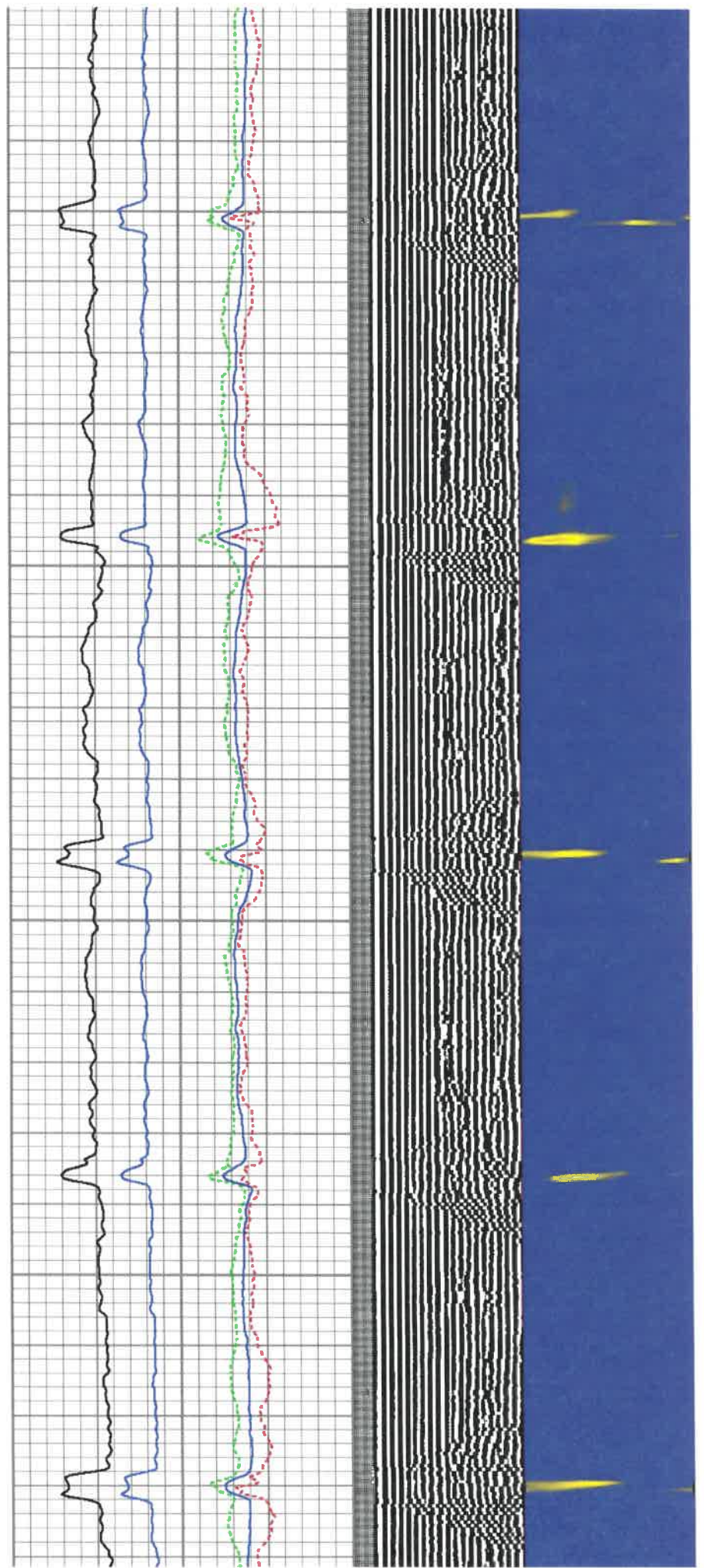


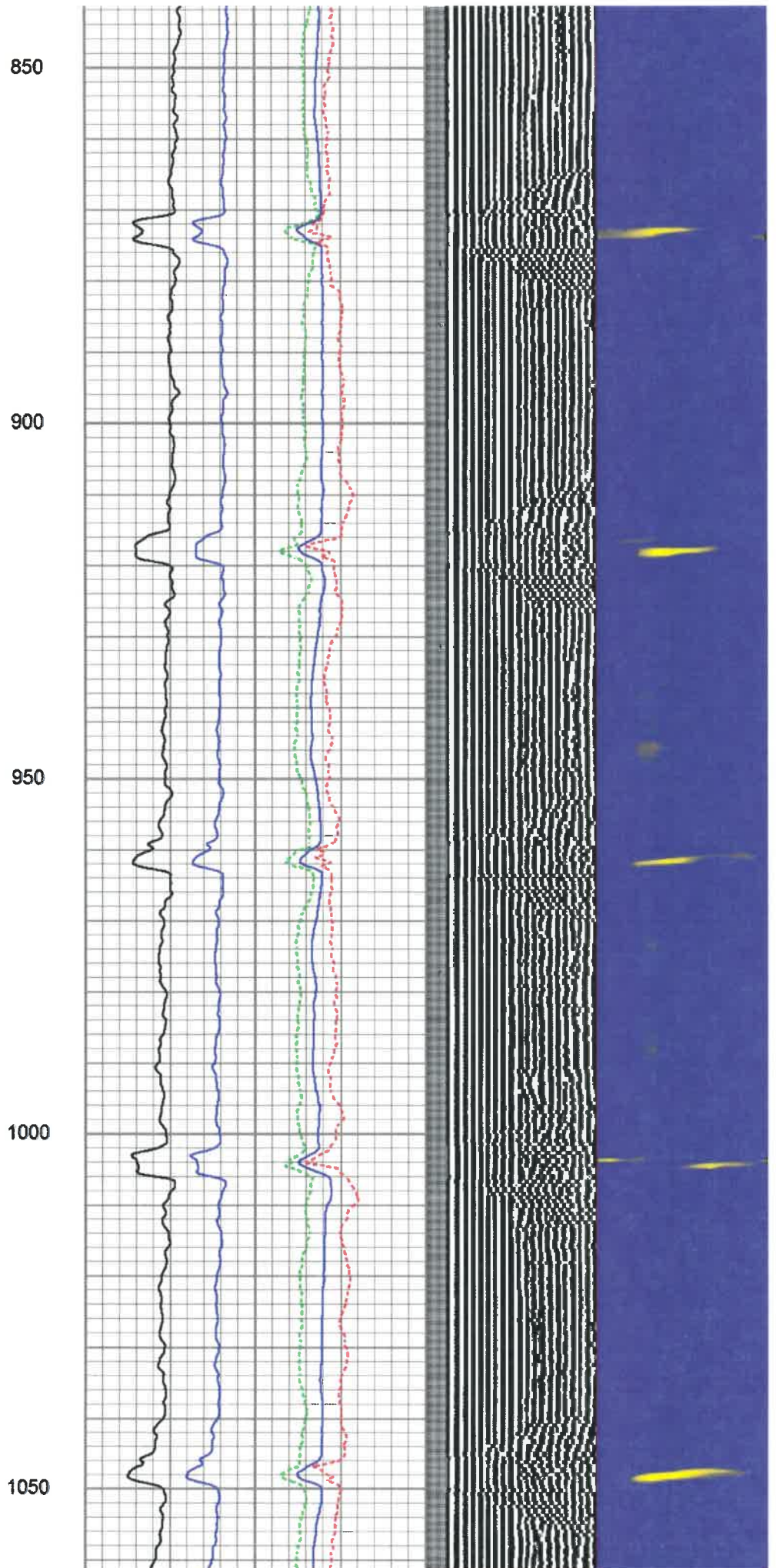
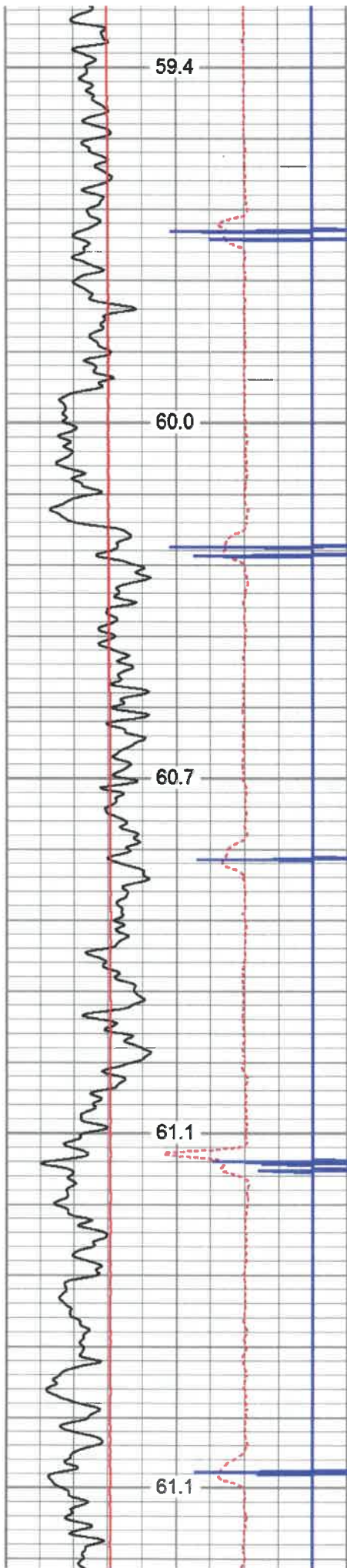
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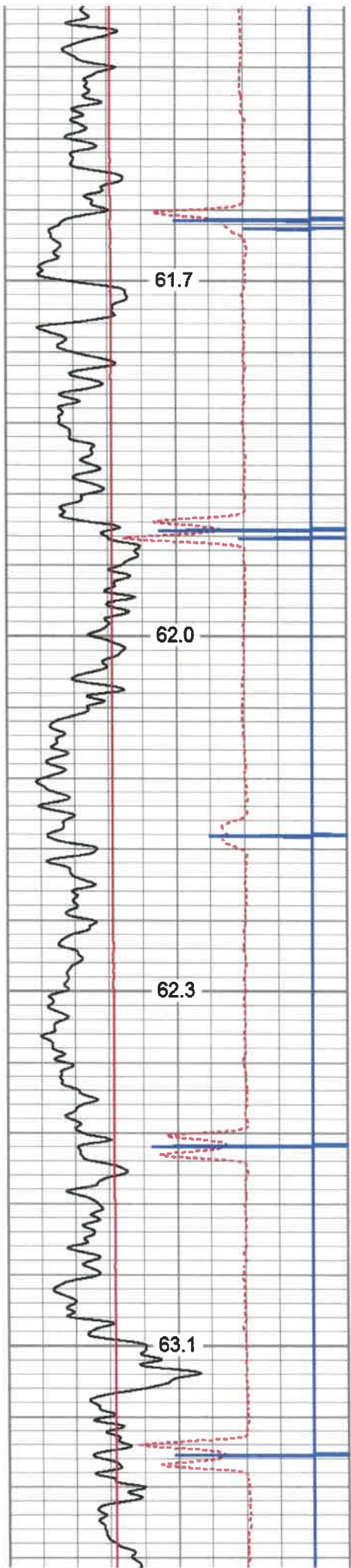
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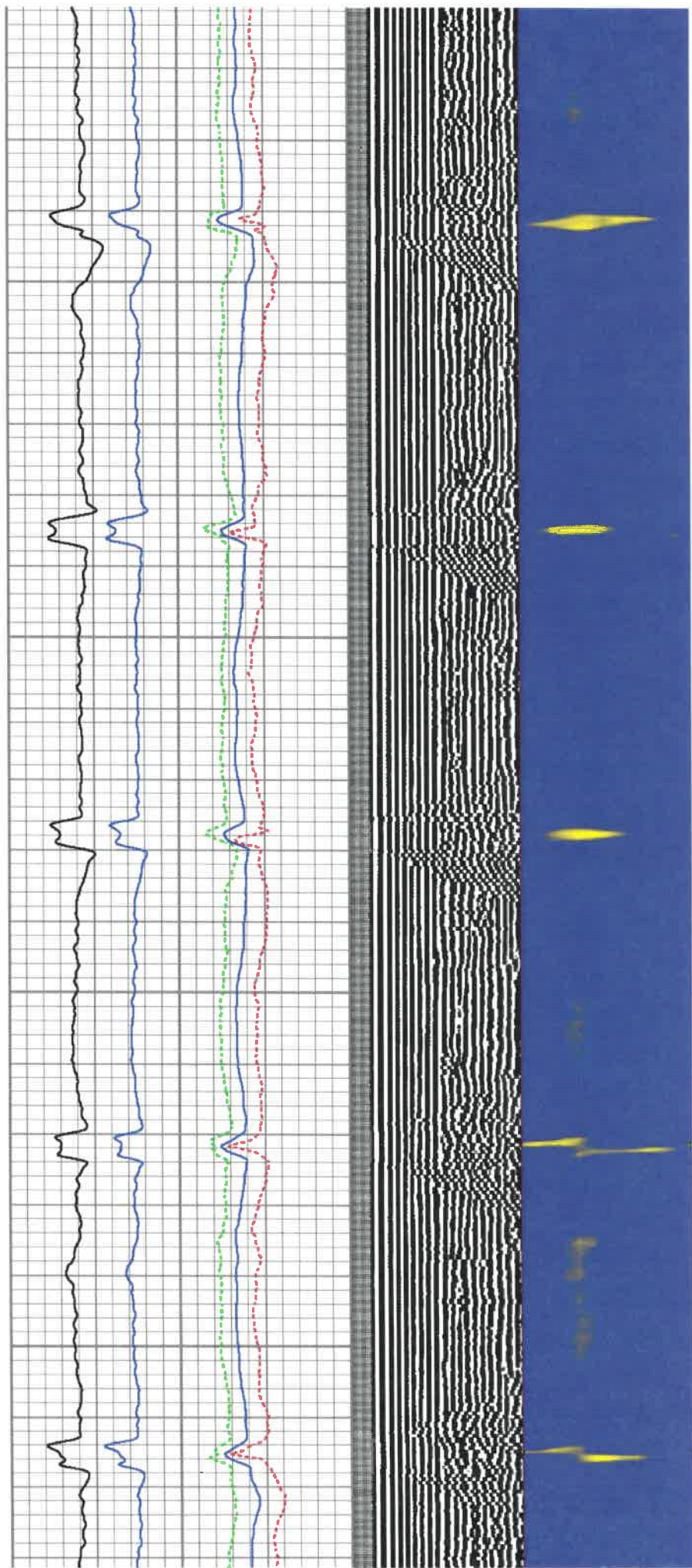


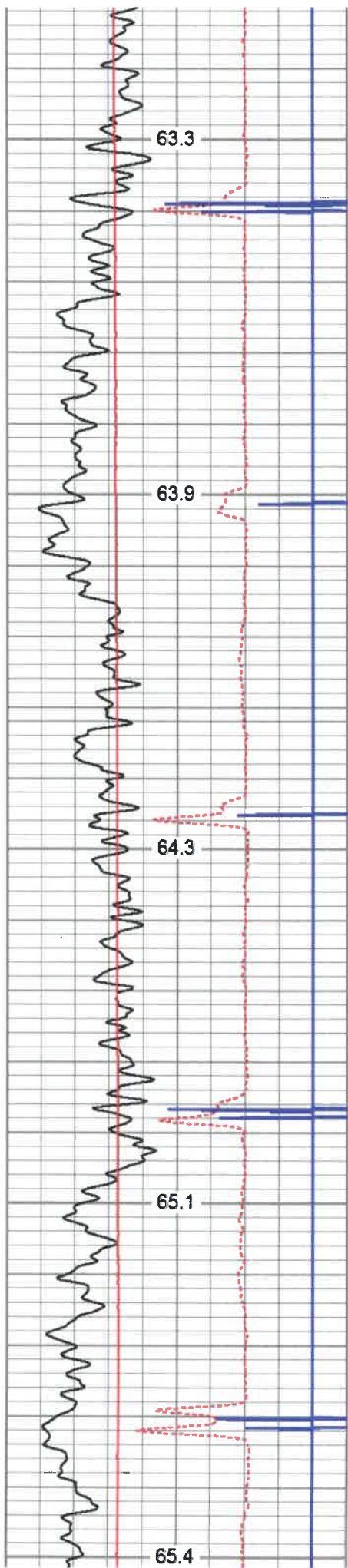
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1150

1200

1250





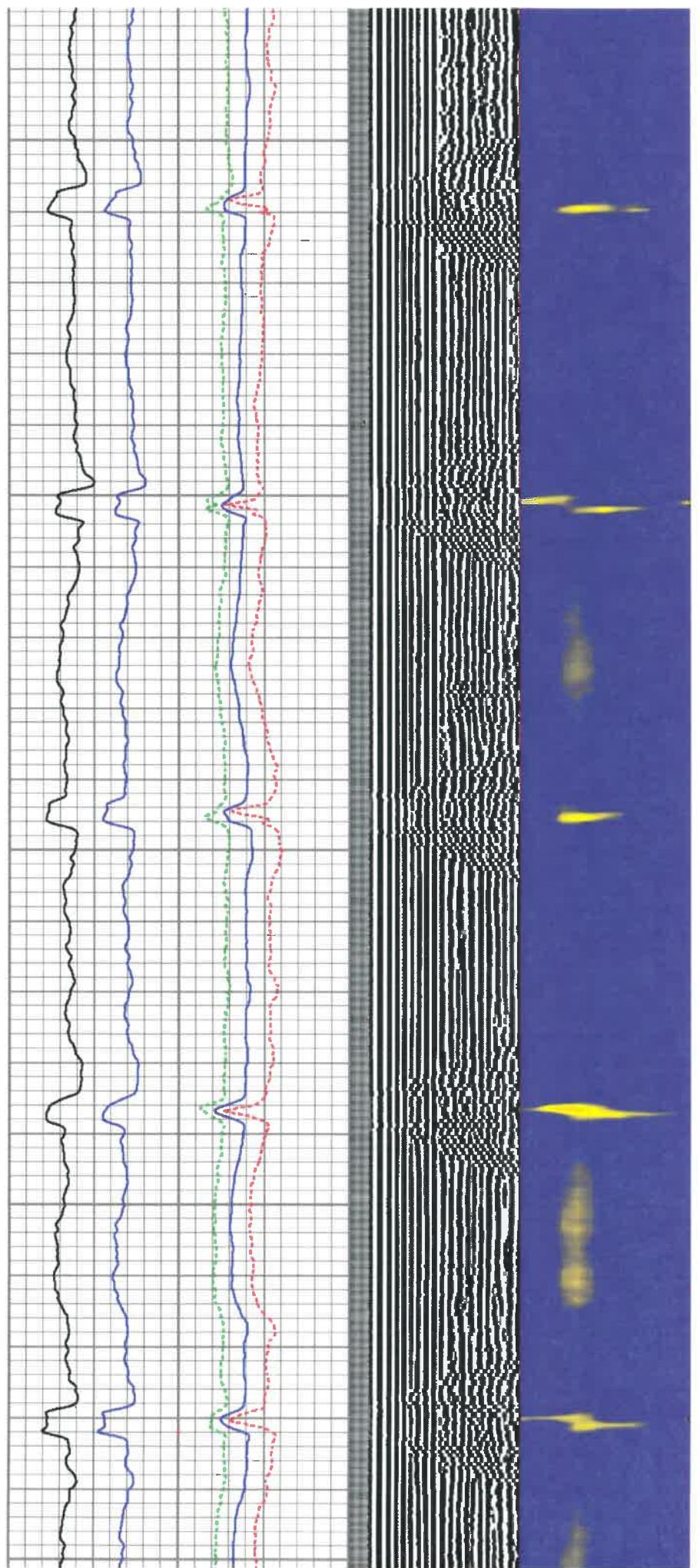
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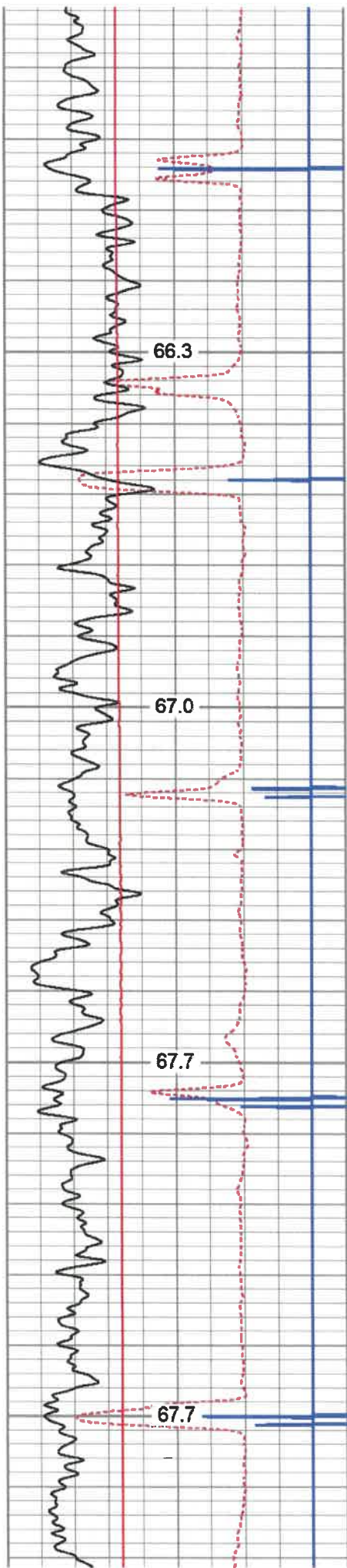
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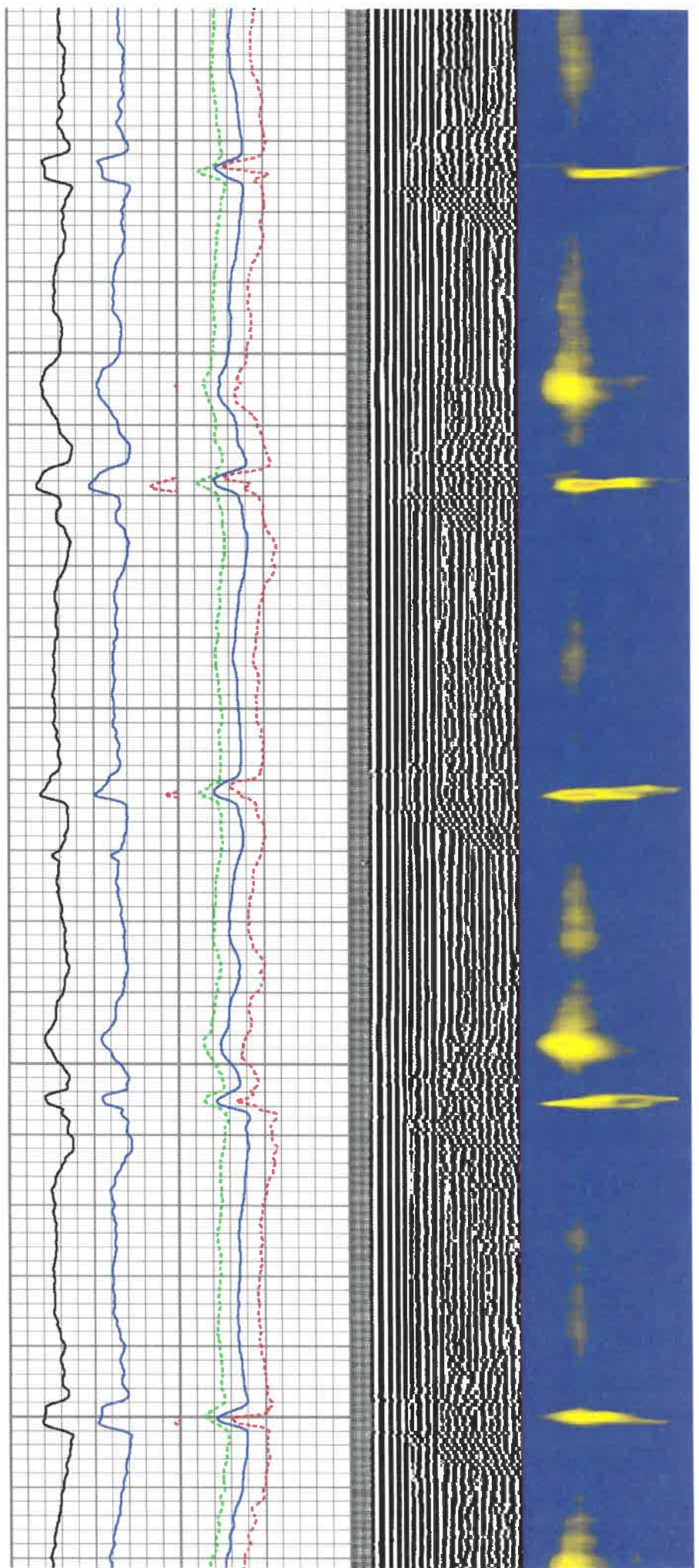


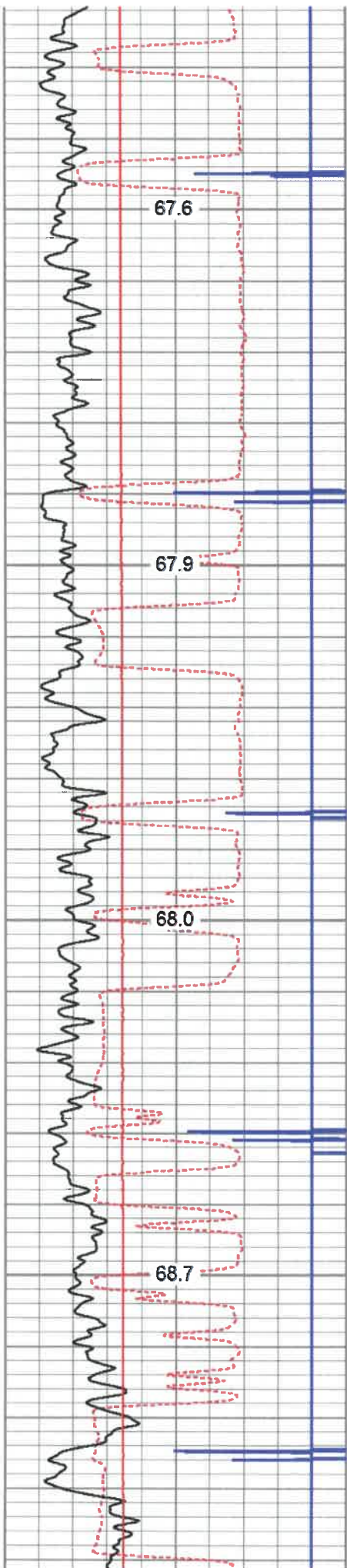
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1650

1700



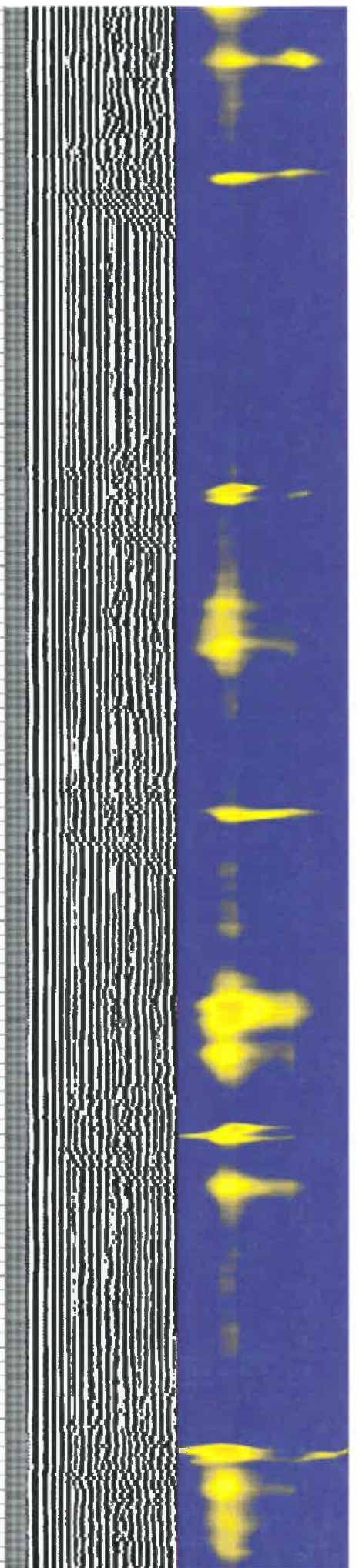
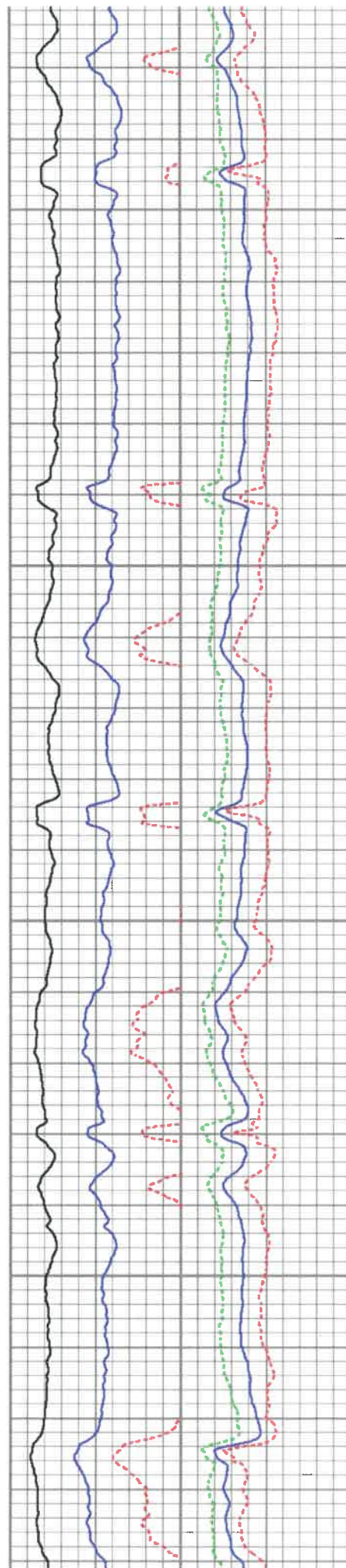


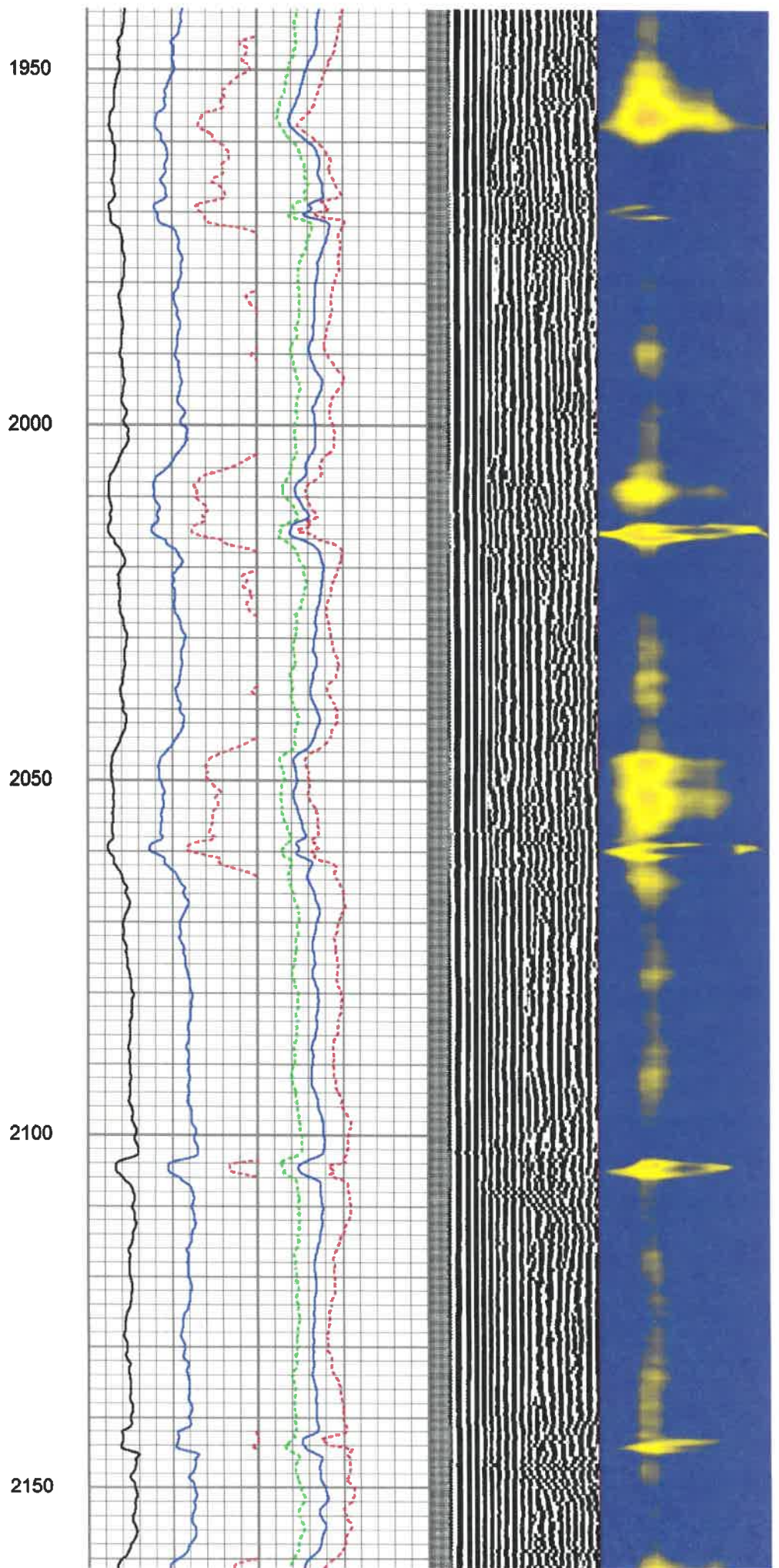
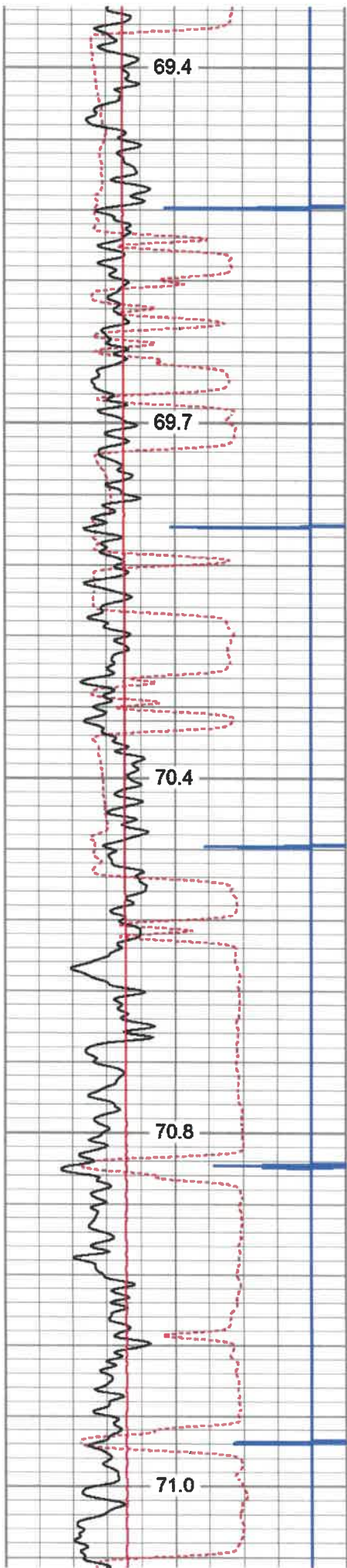
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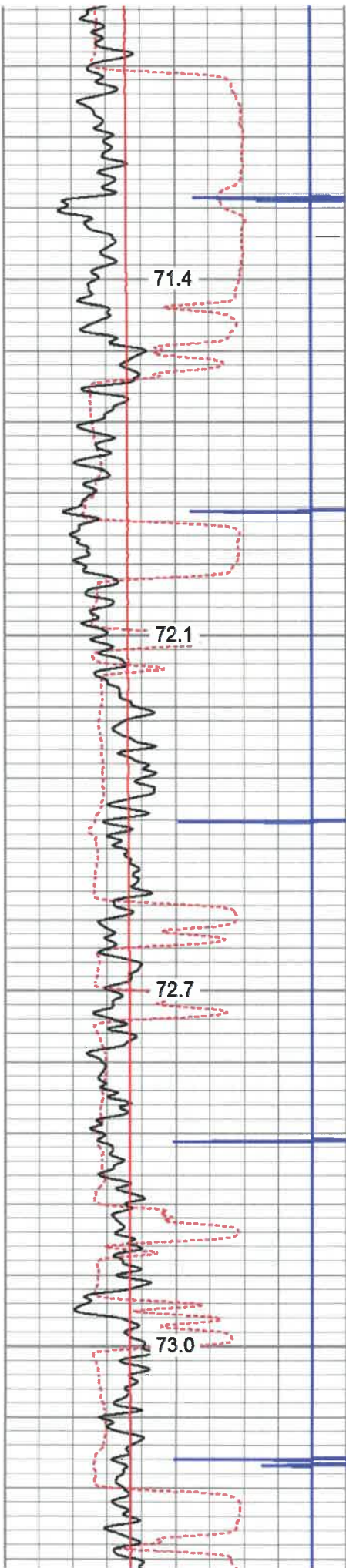
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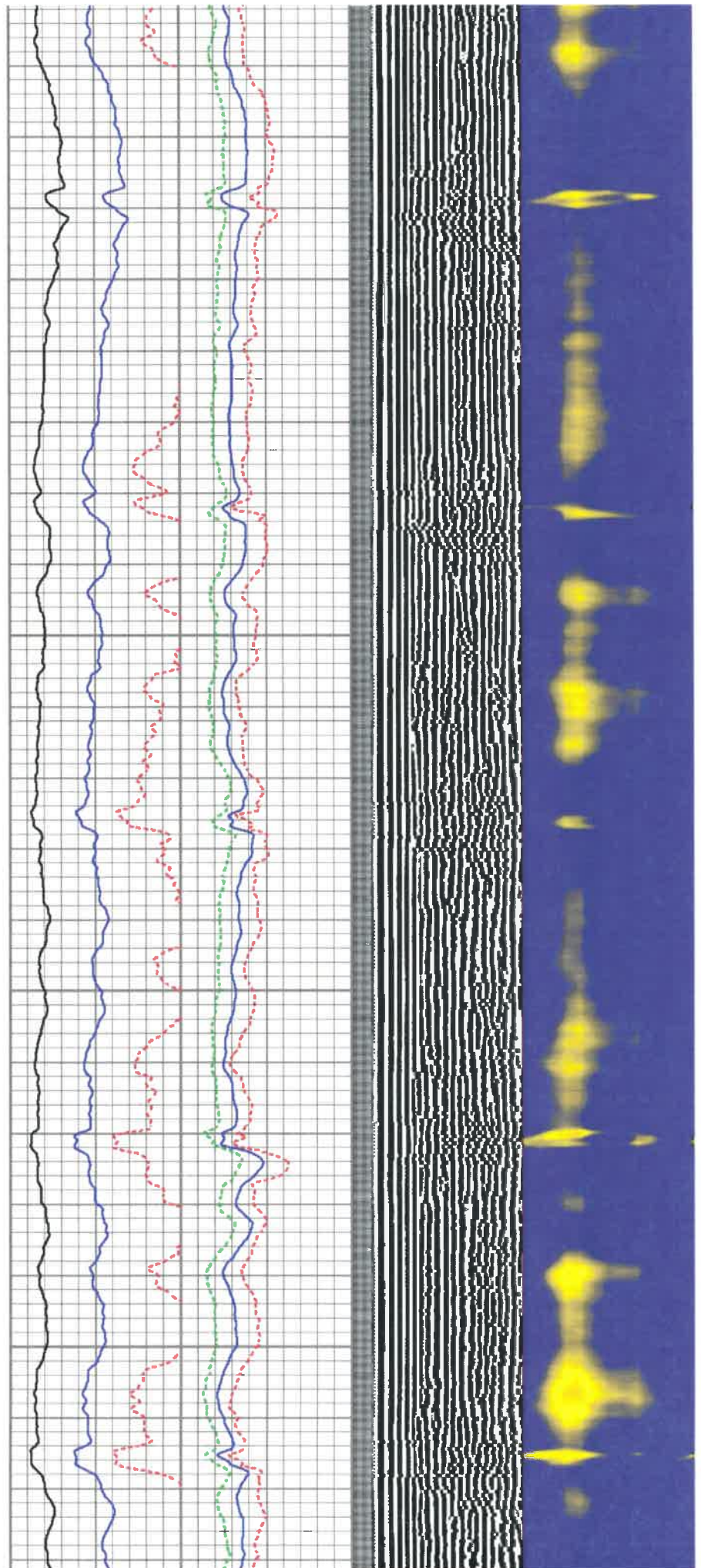


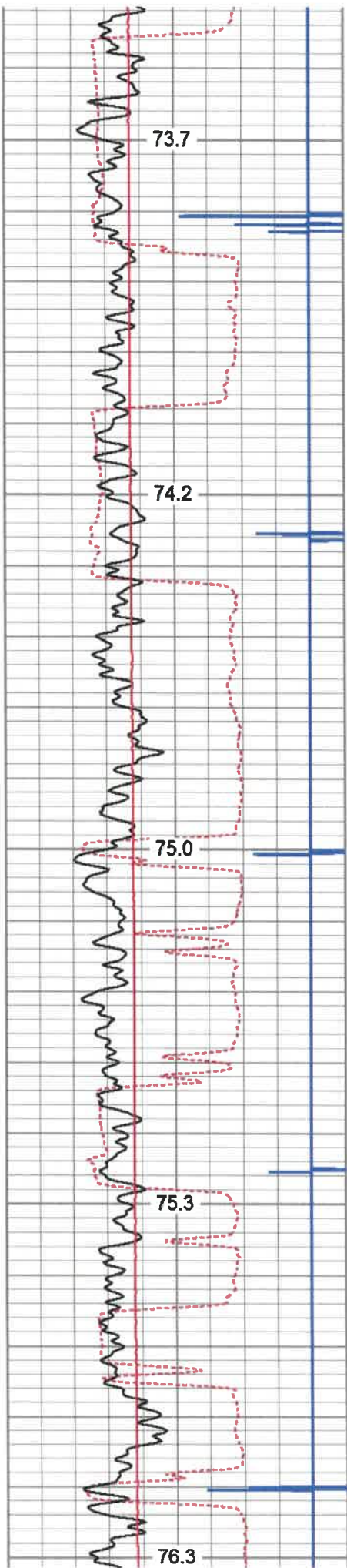
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2350





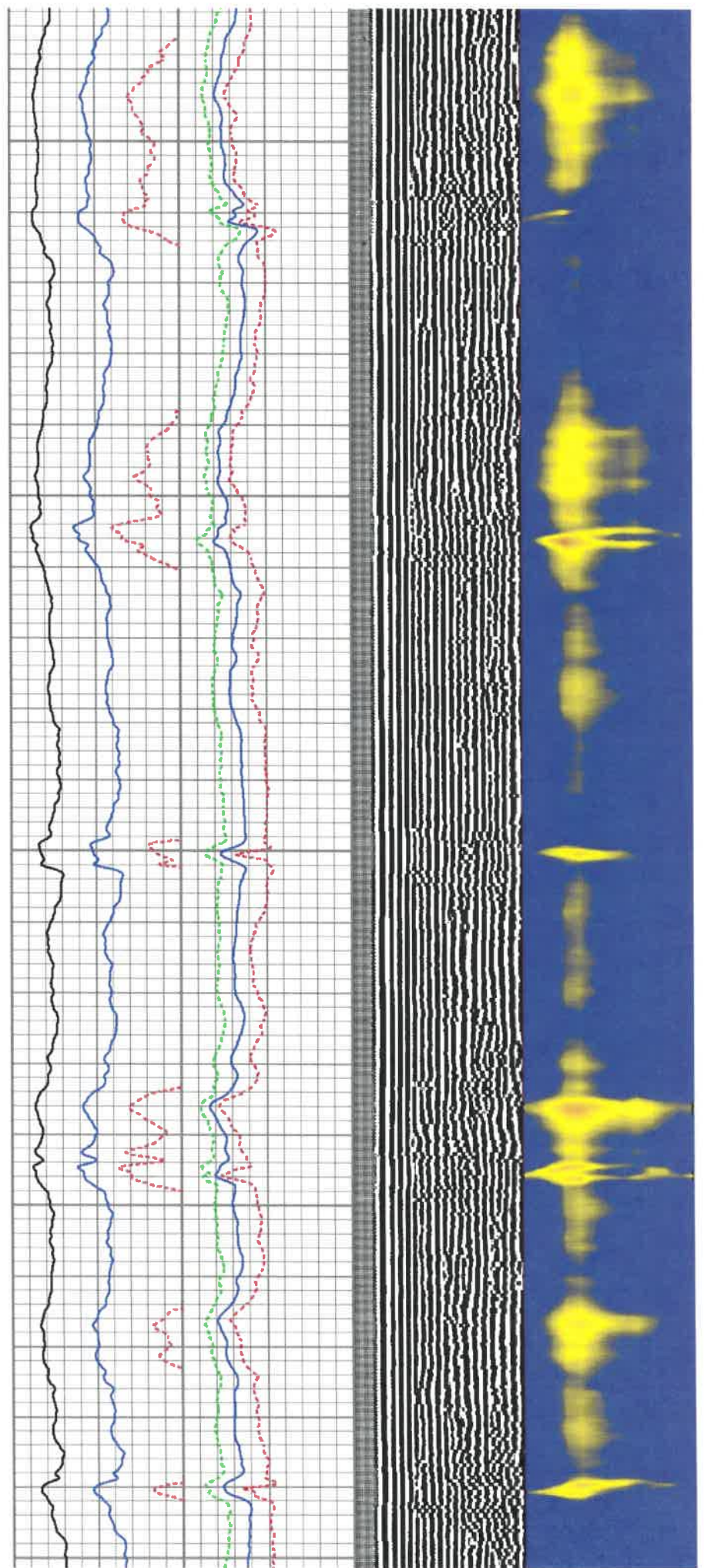
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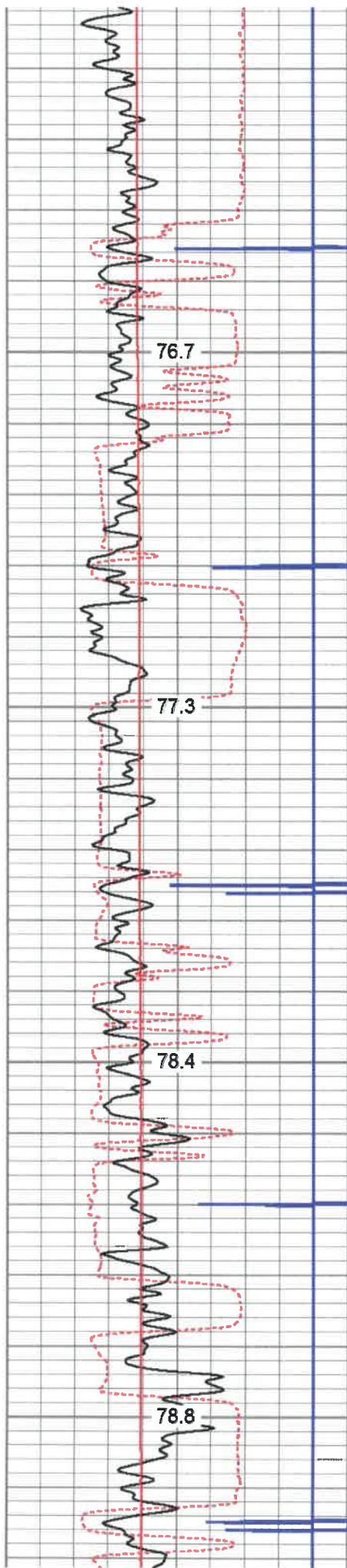
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2550

2600



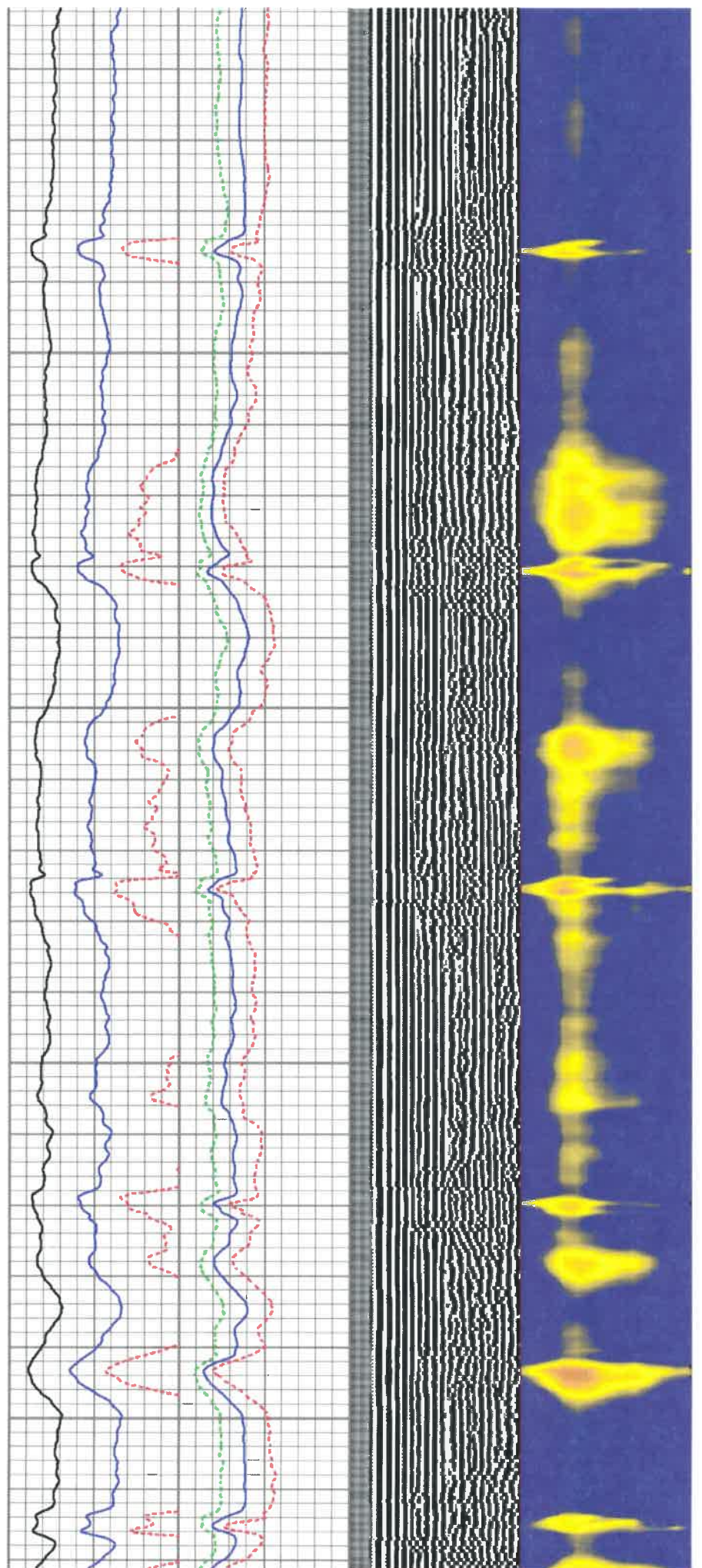


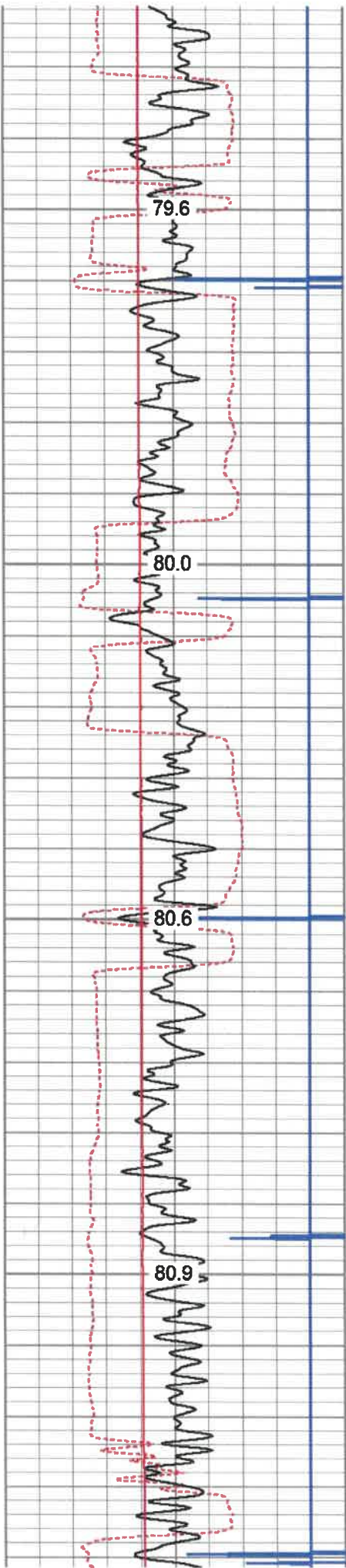
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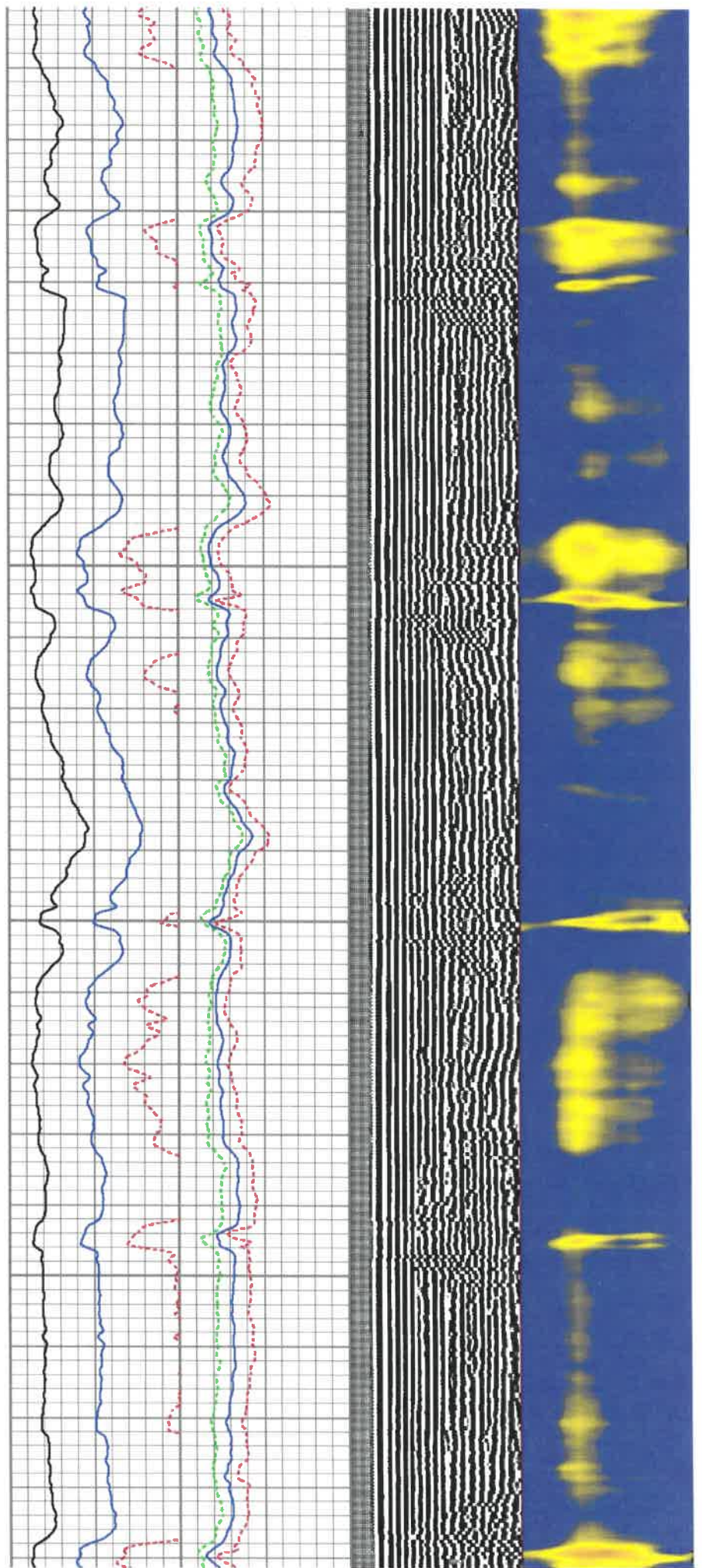


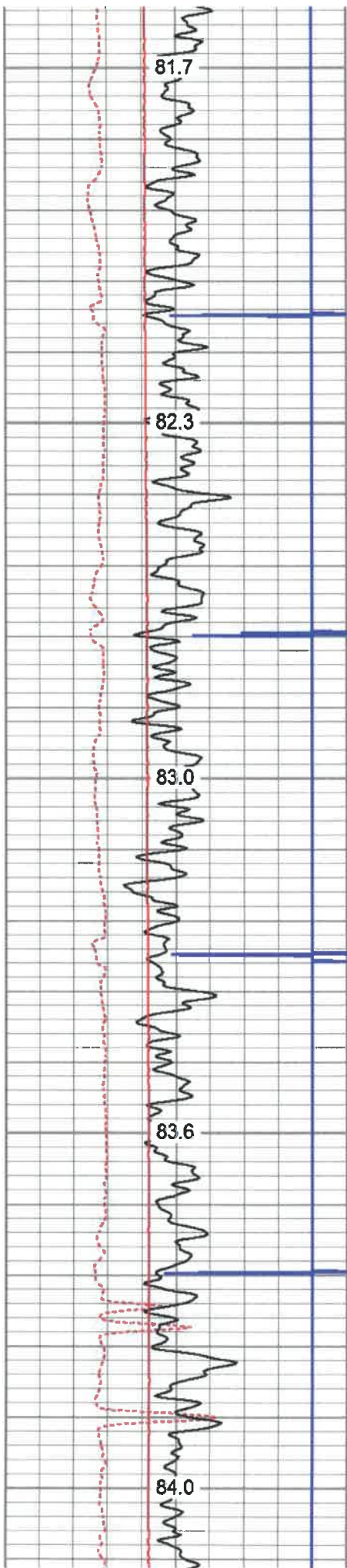
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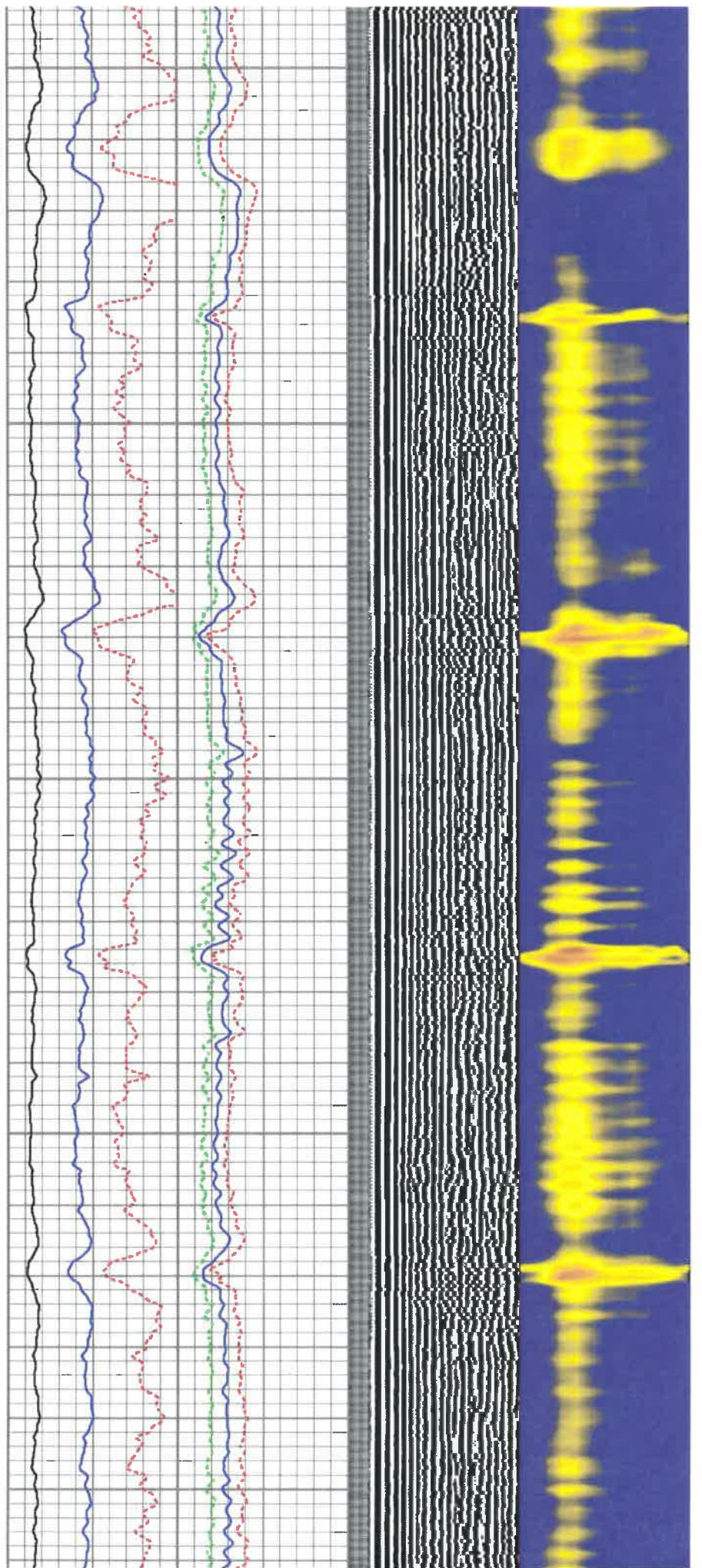
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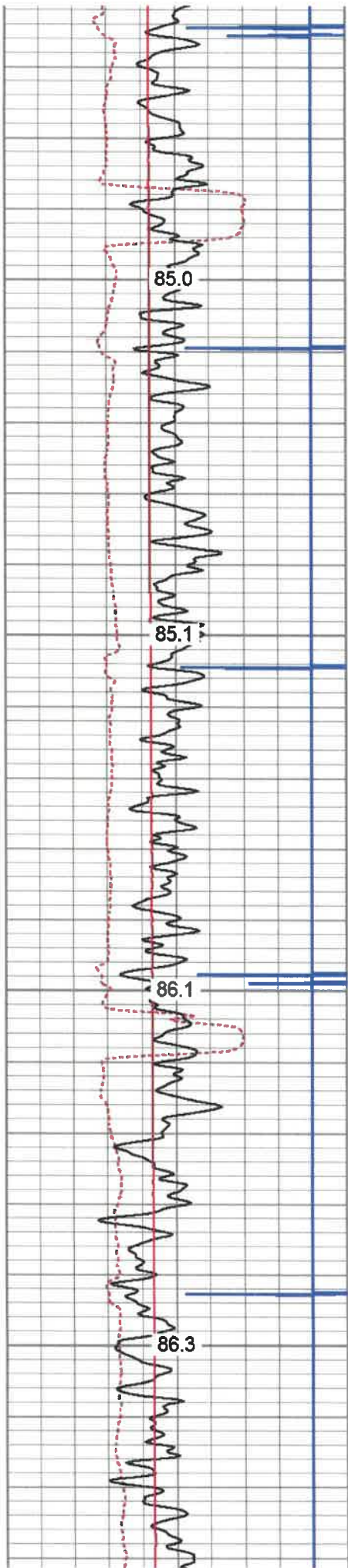




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3150  
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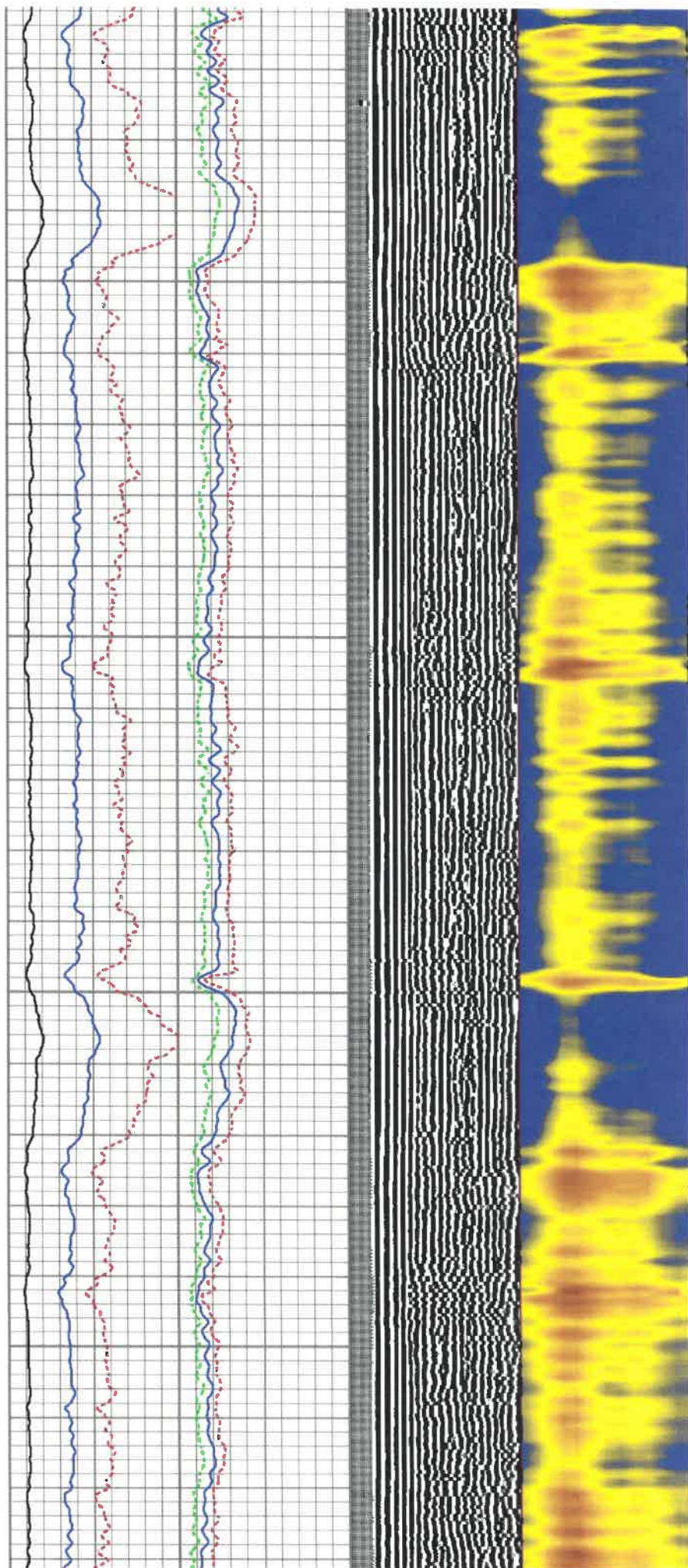


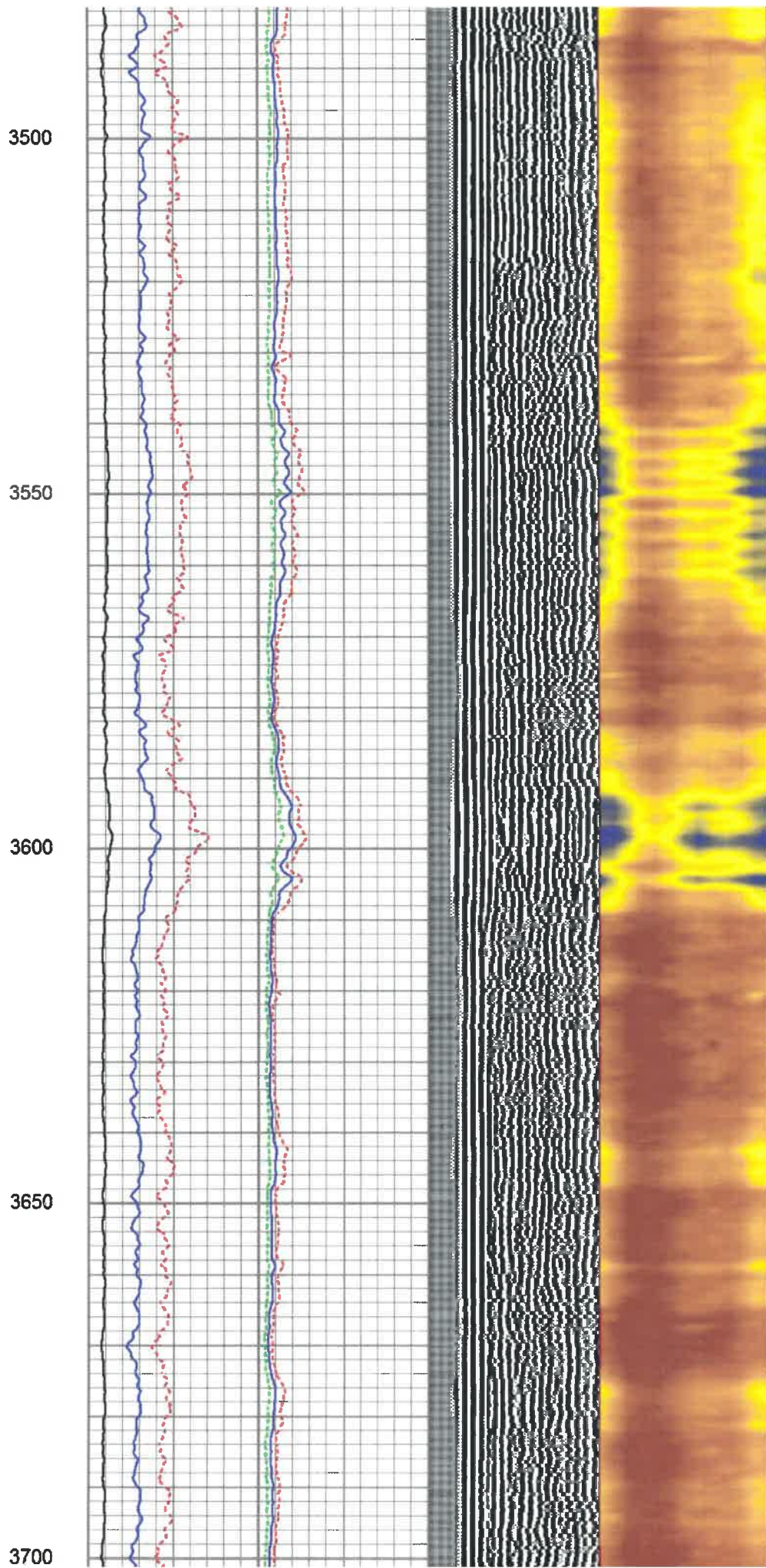
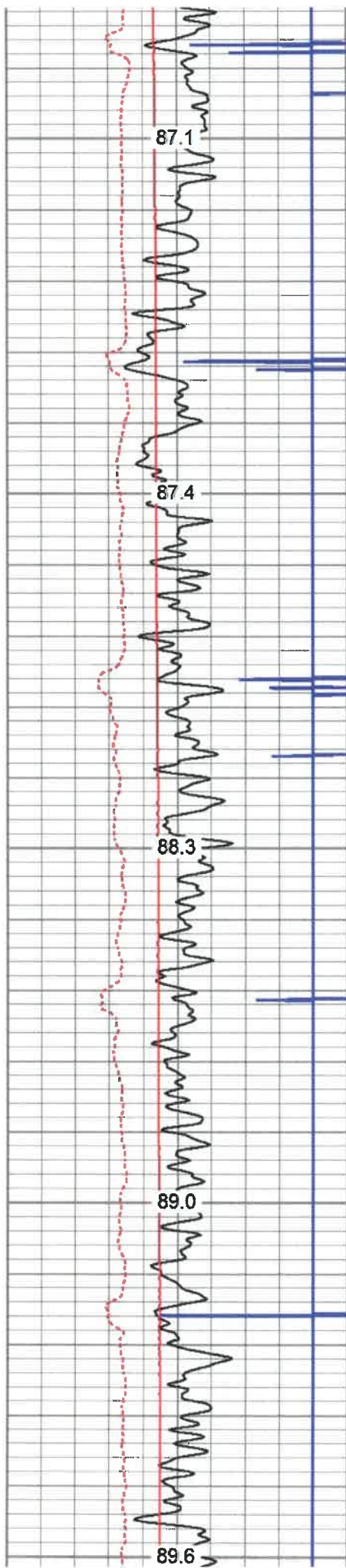
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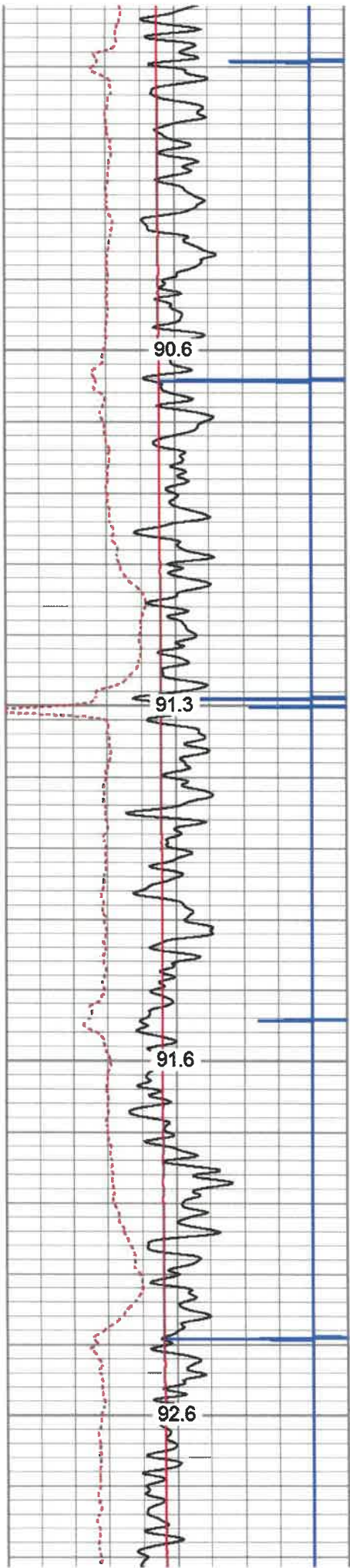
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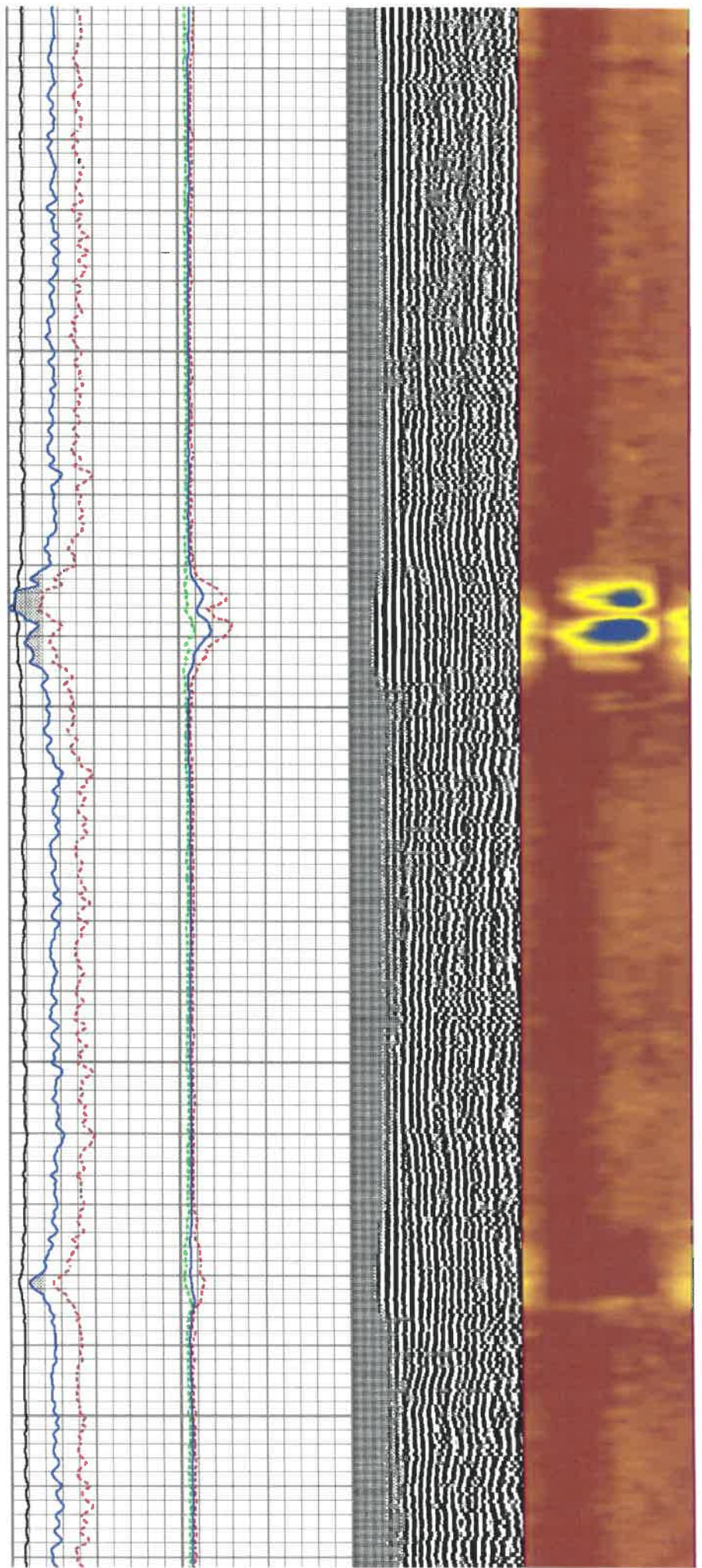


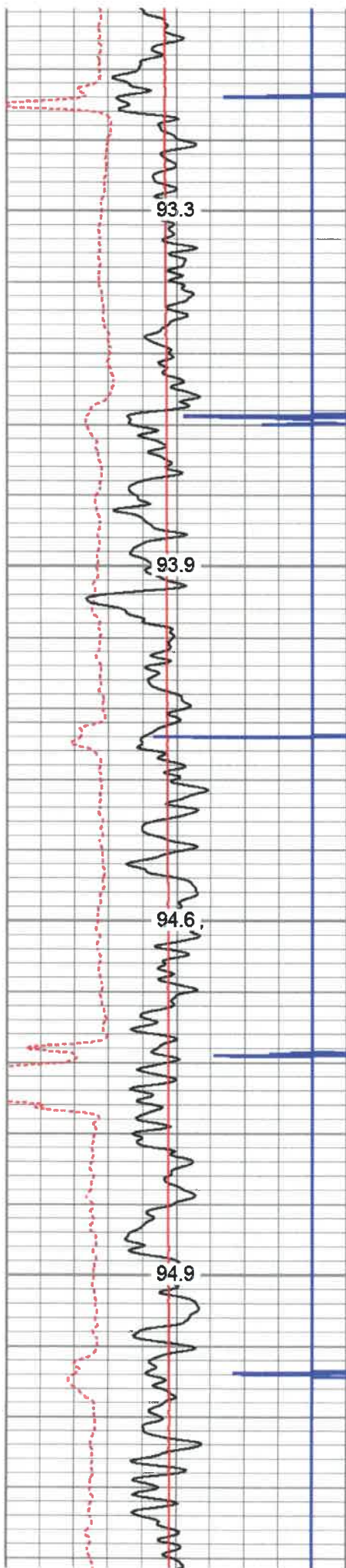
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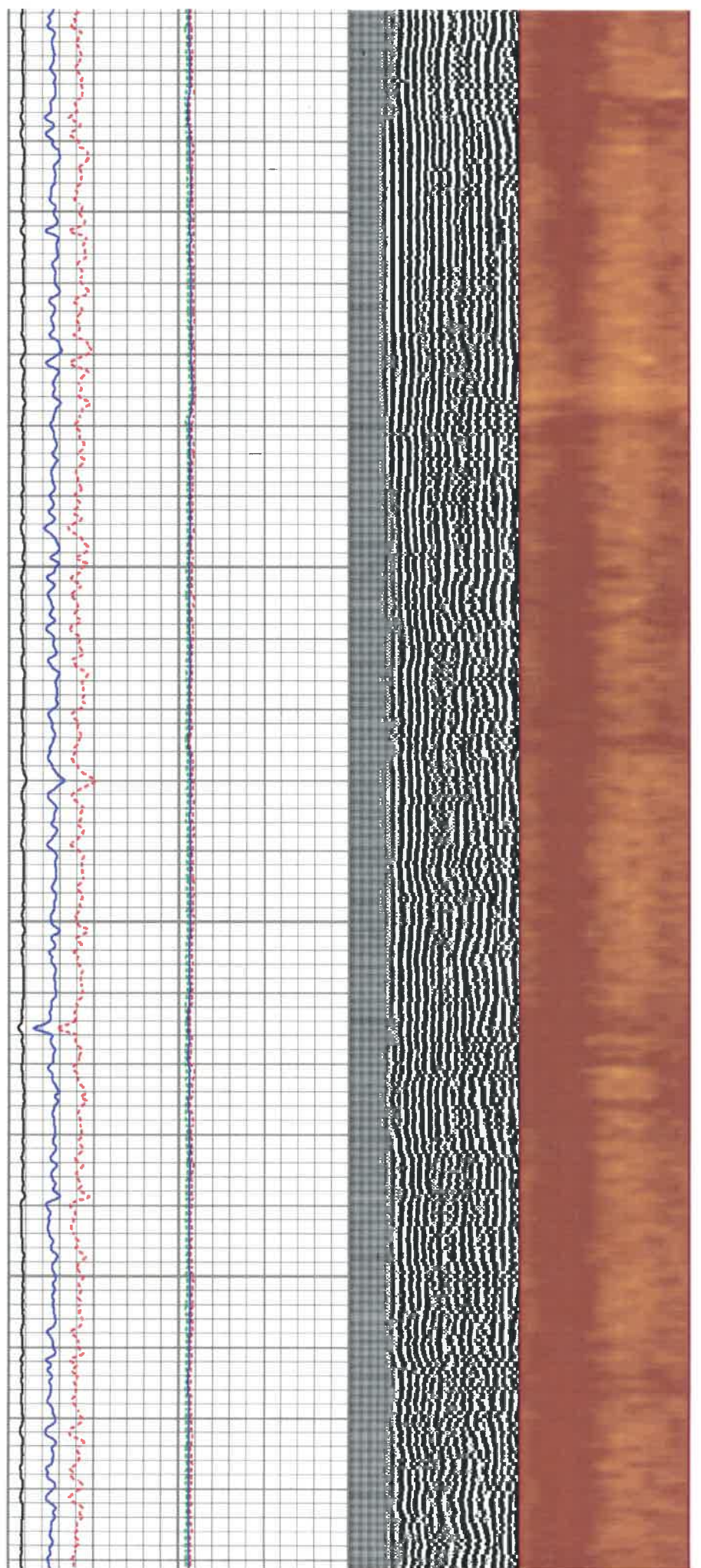


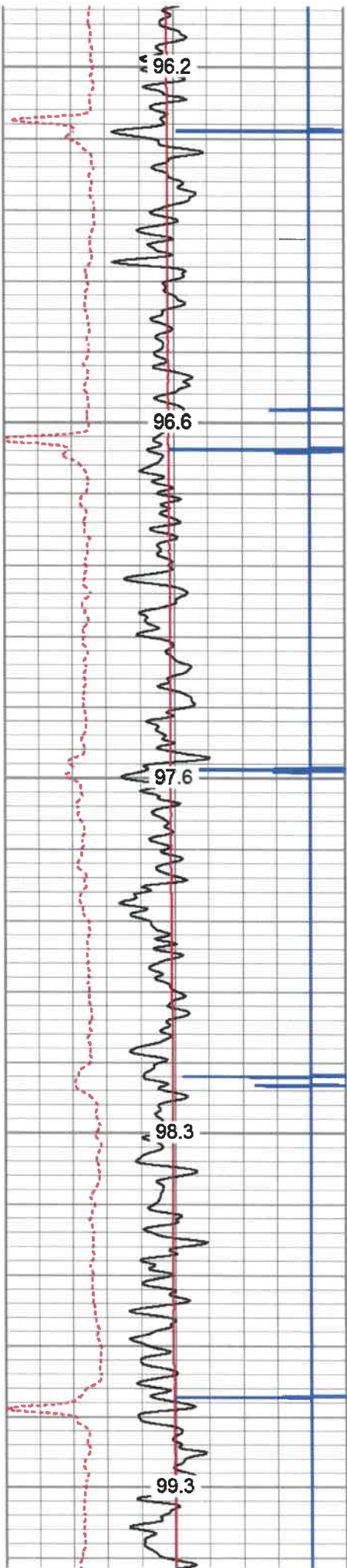
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4050

4100





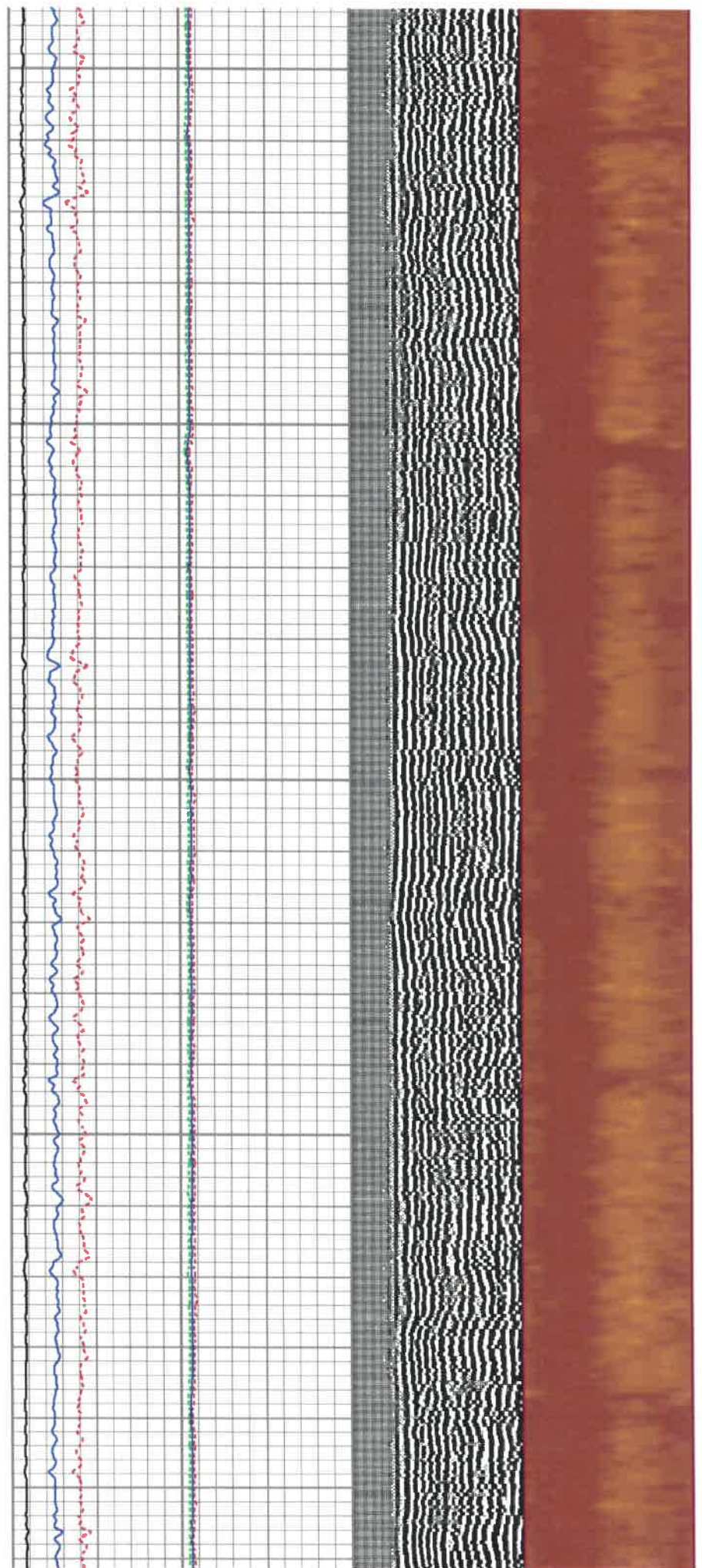
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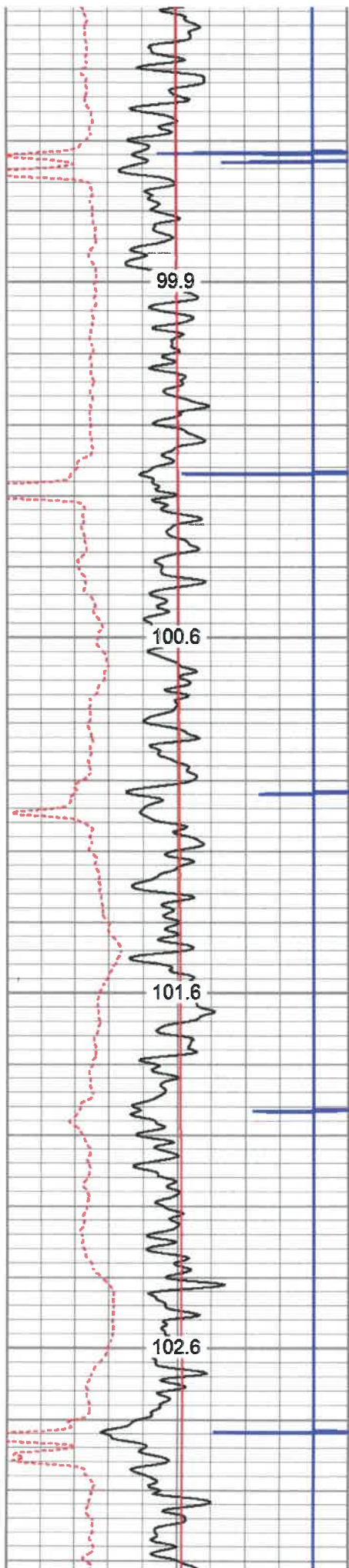
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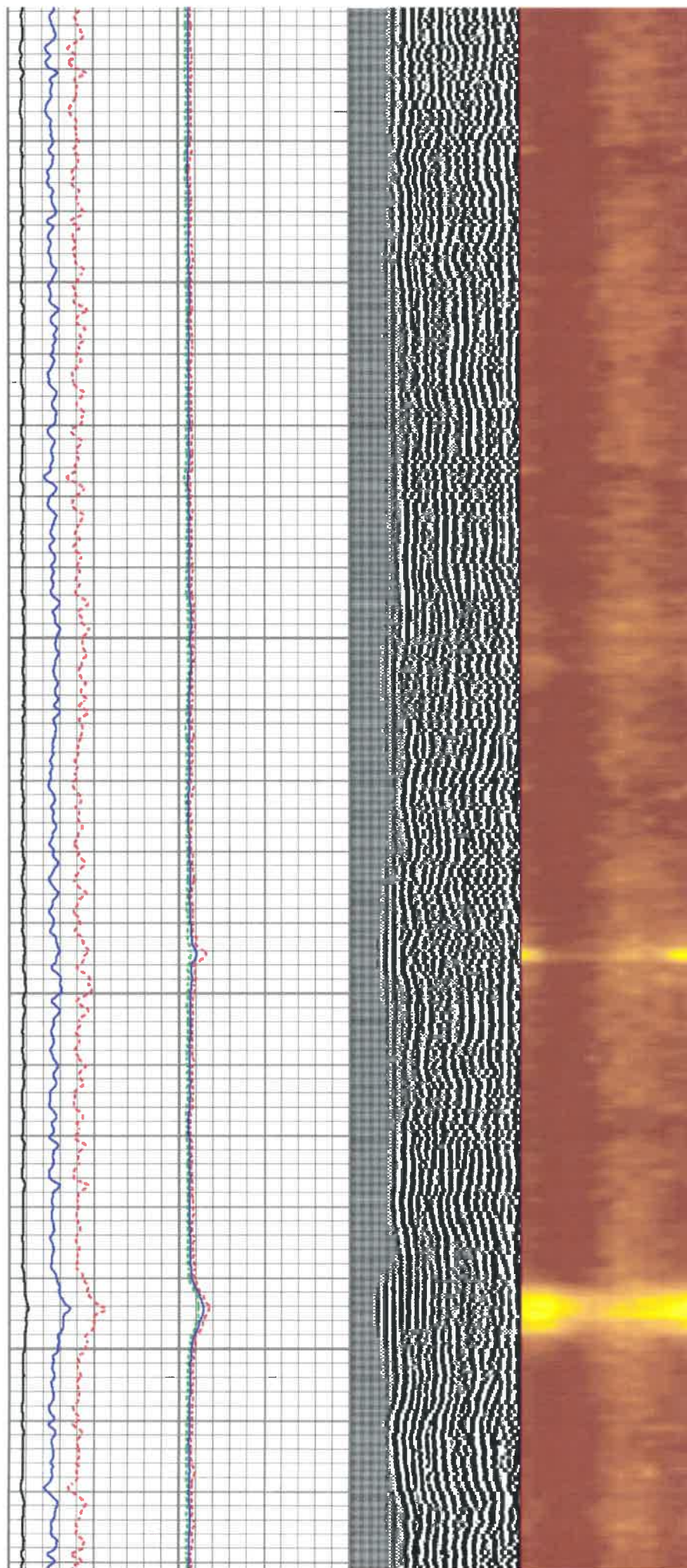


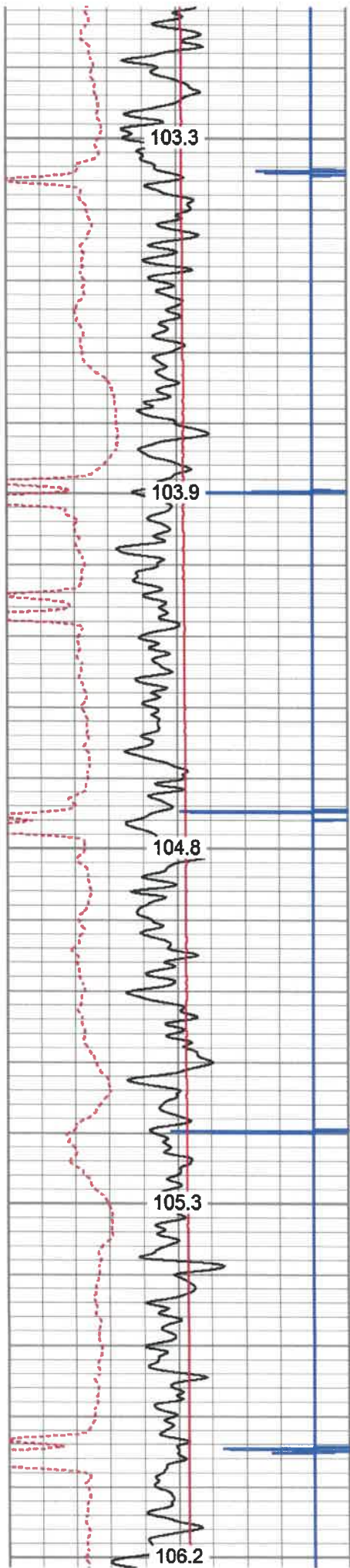
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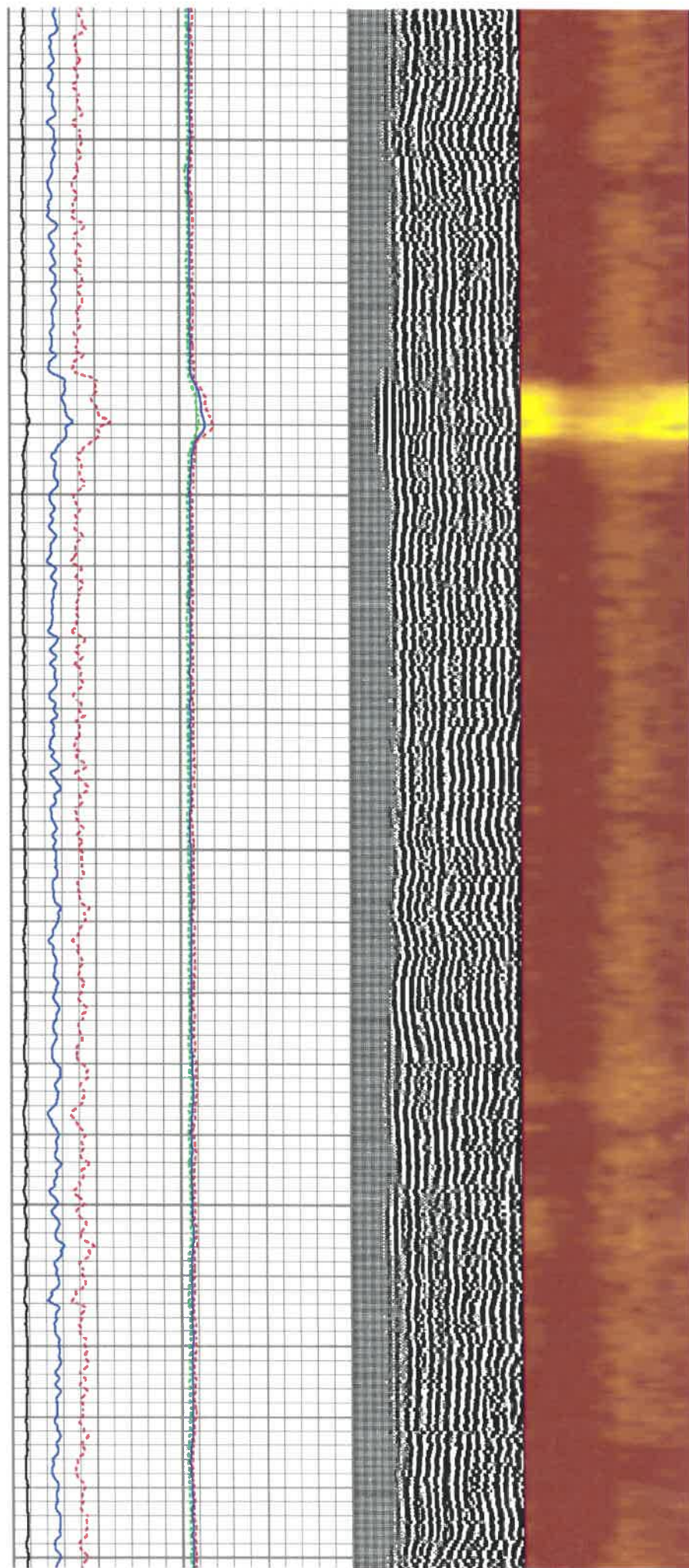
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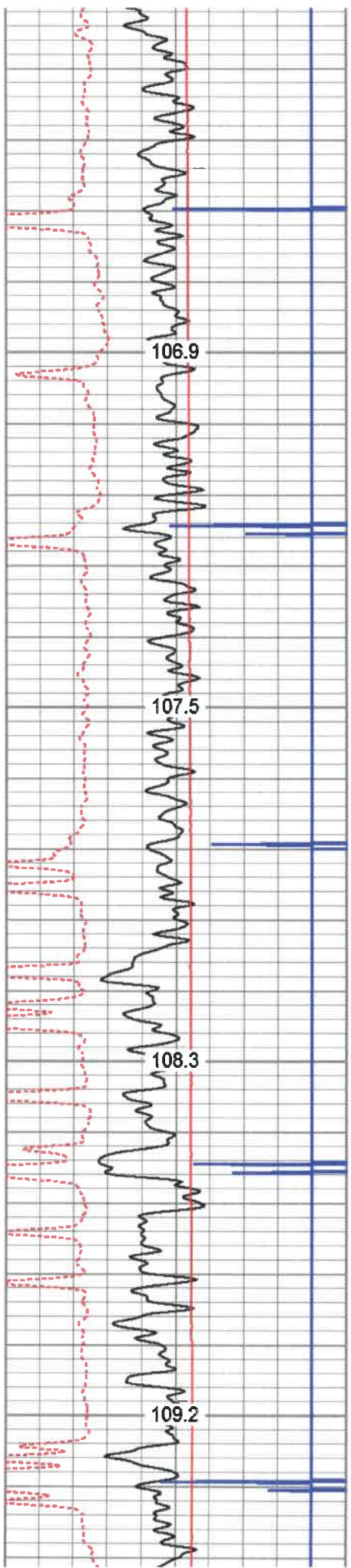
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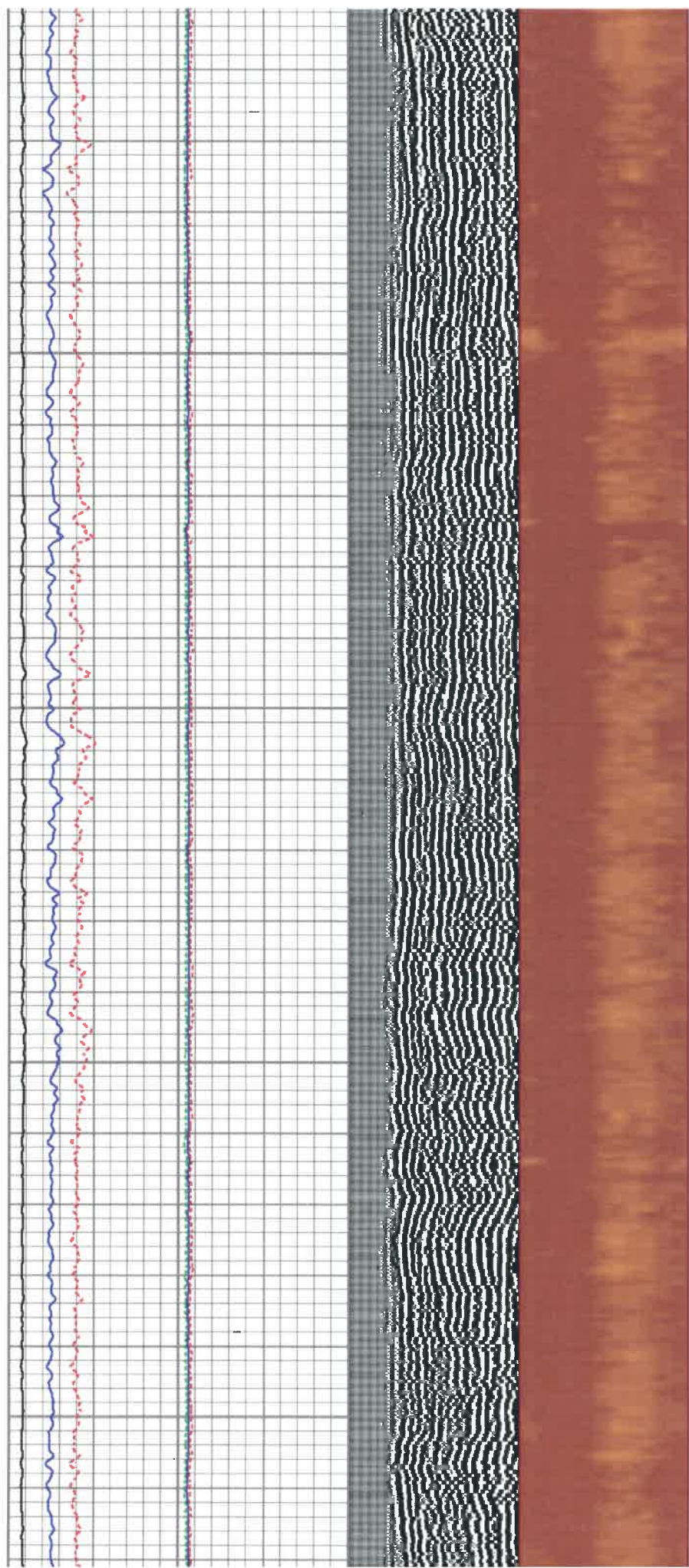
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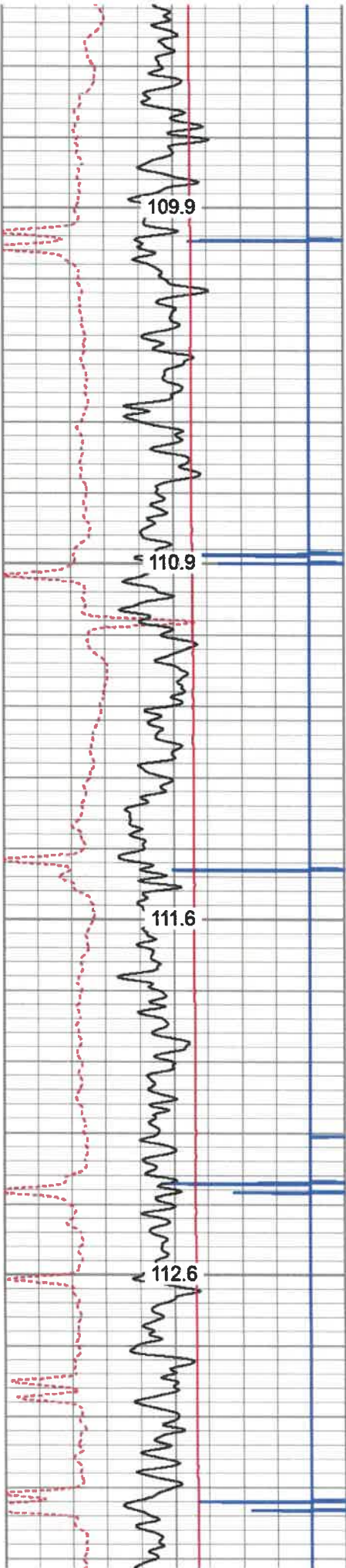




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4950  
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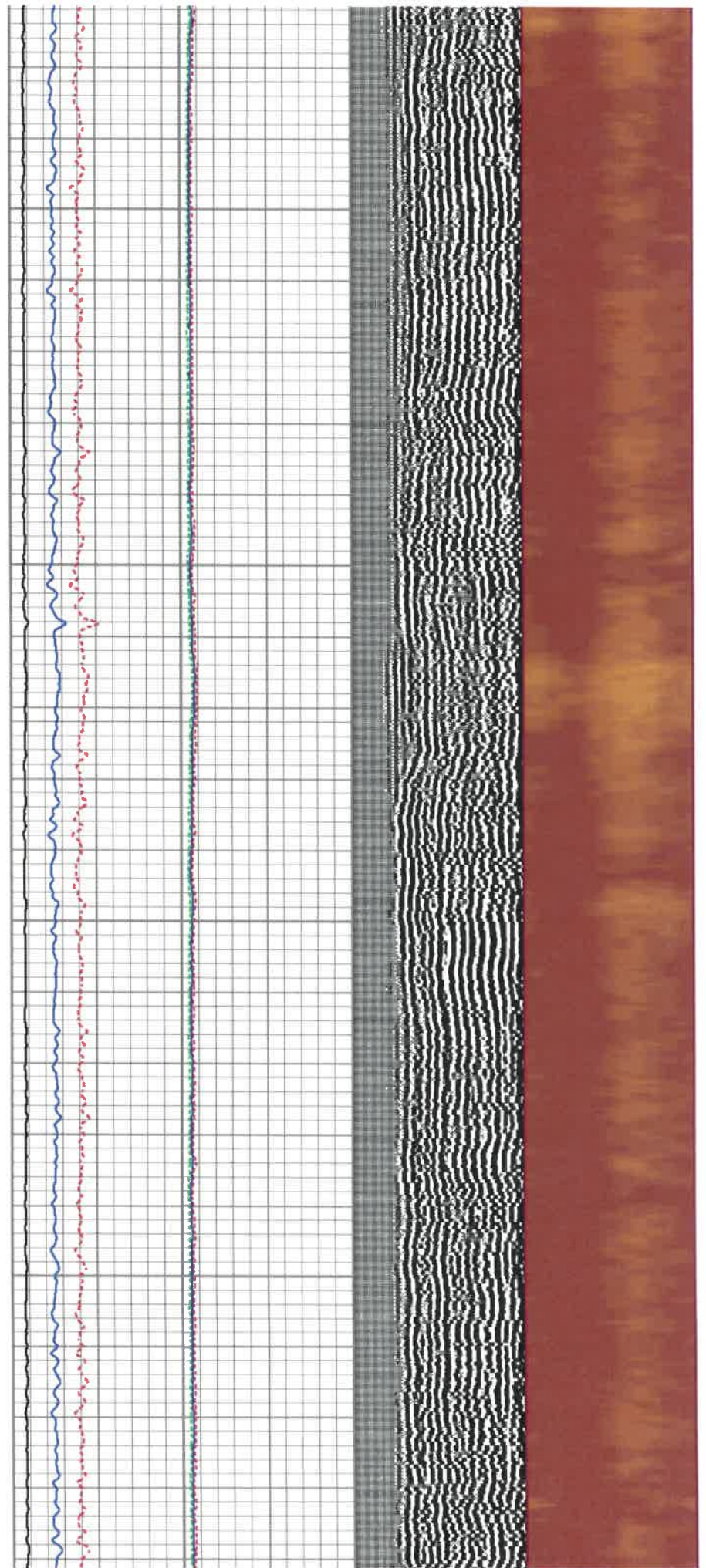


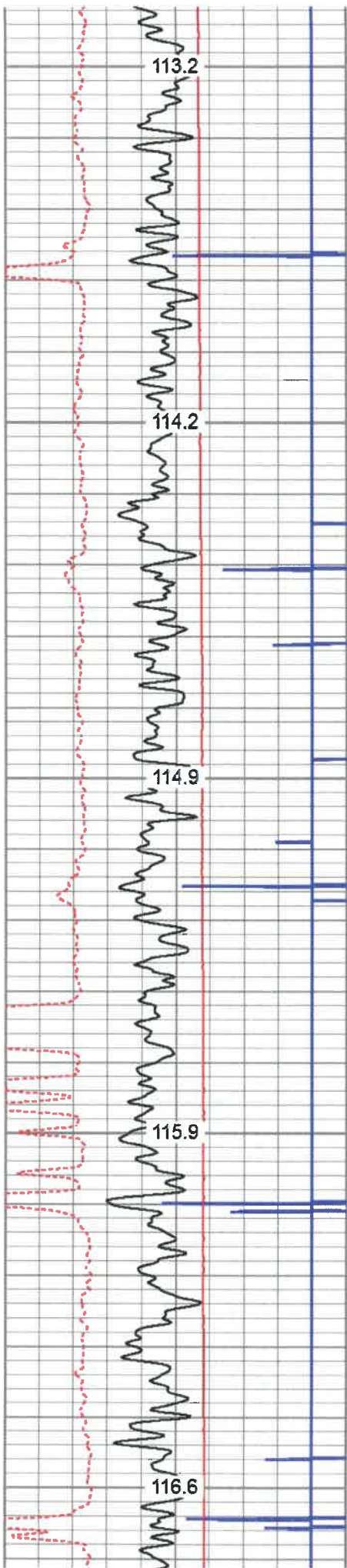
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5200





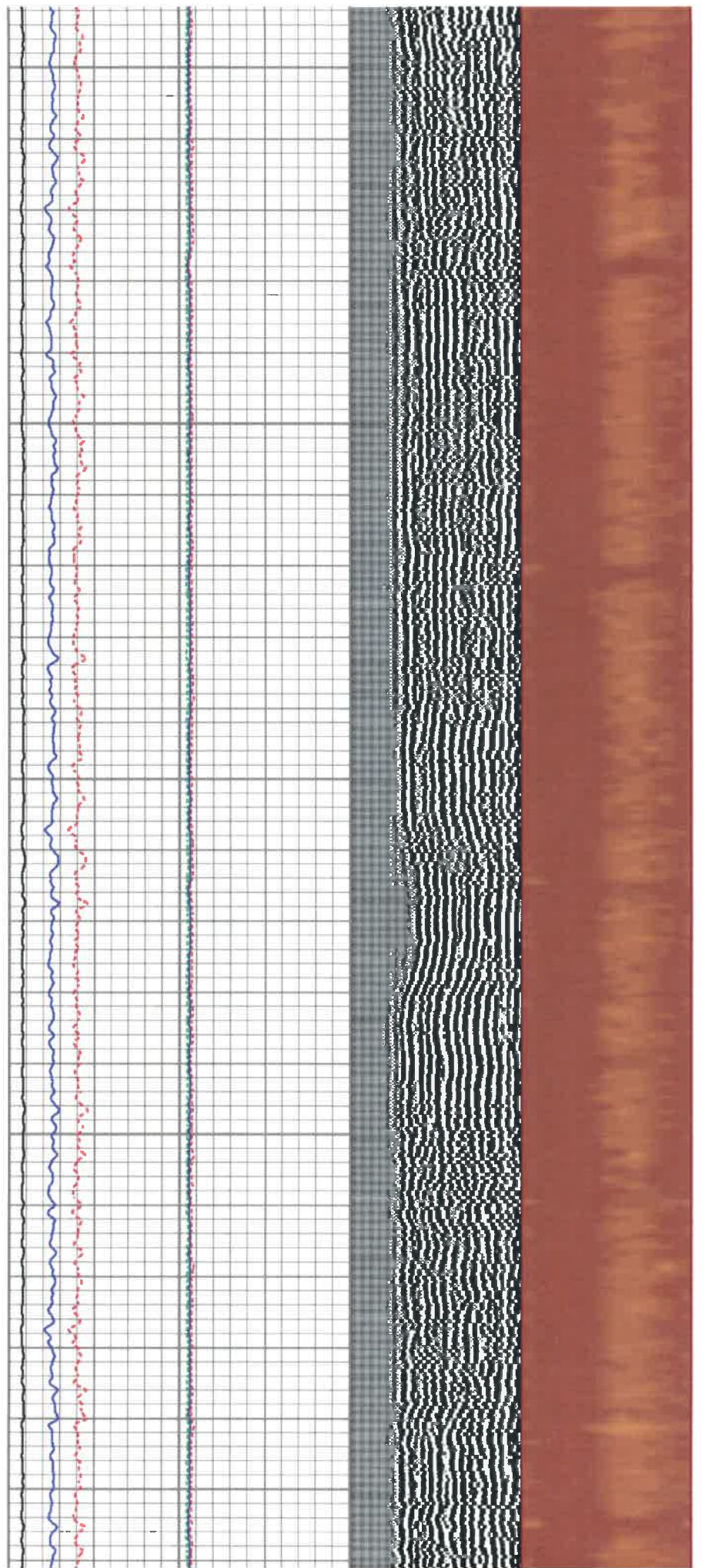
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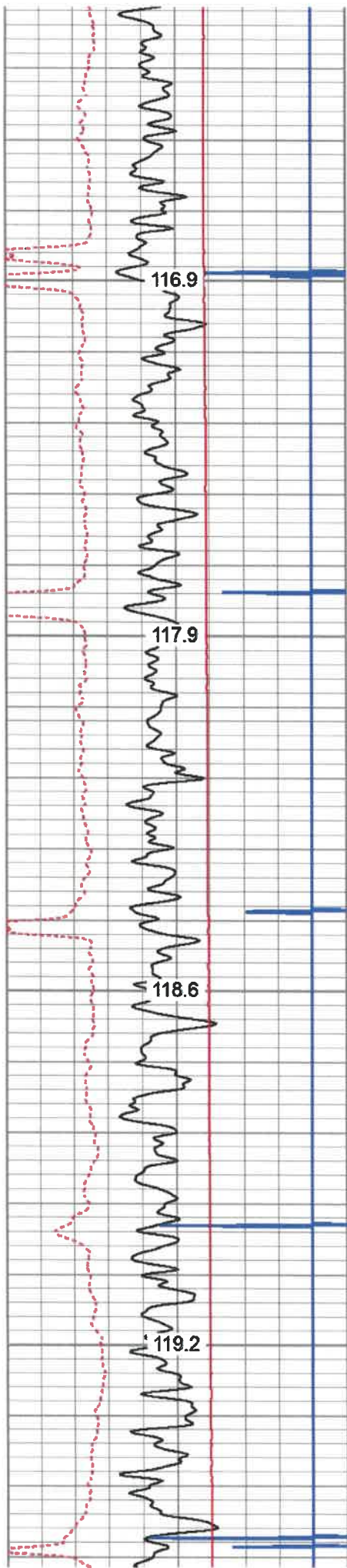
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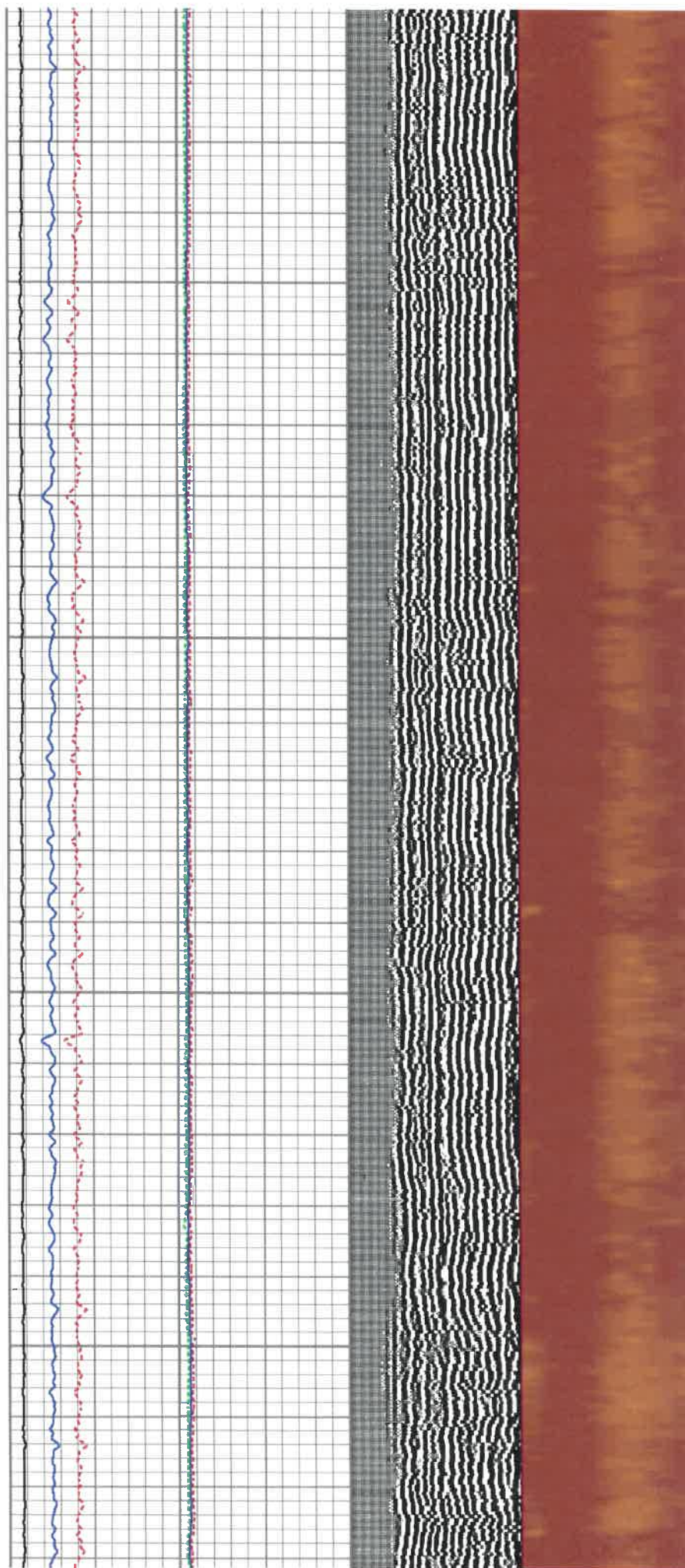


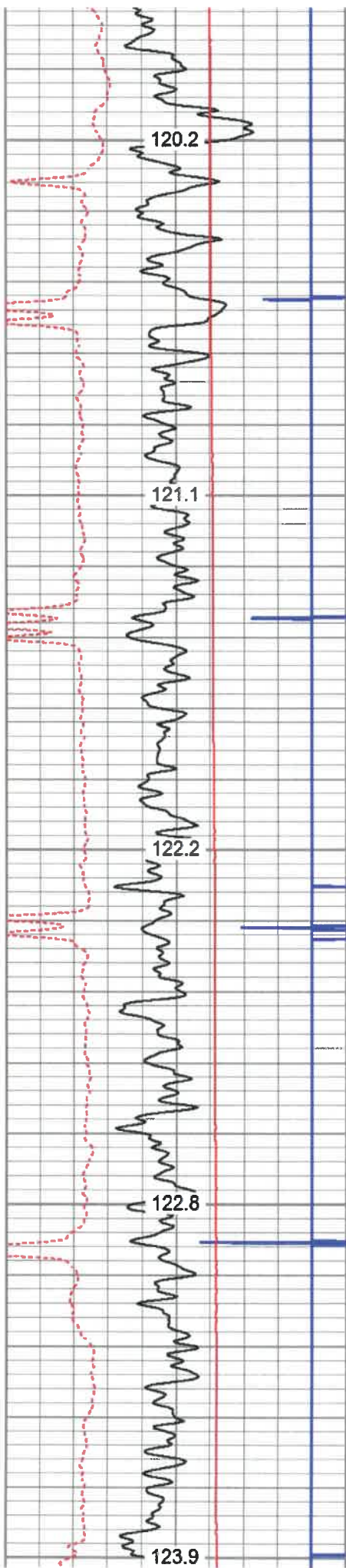
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5650





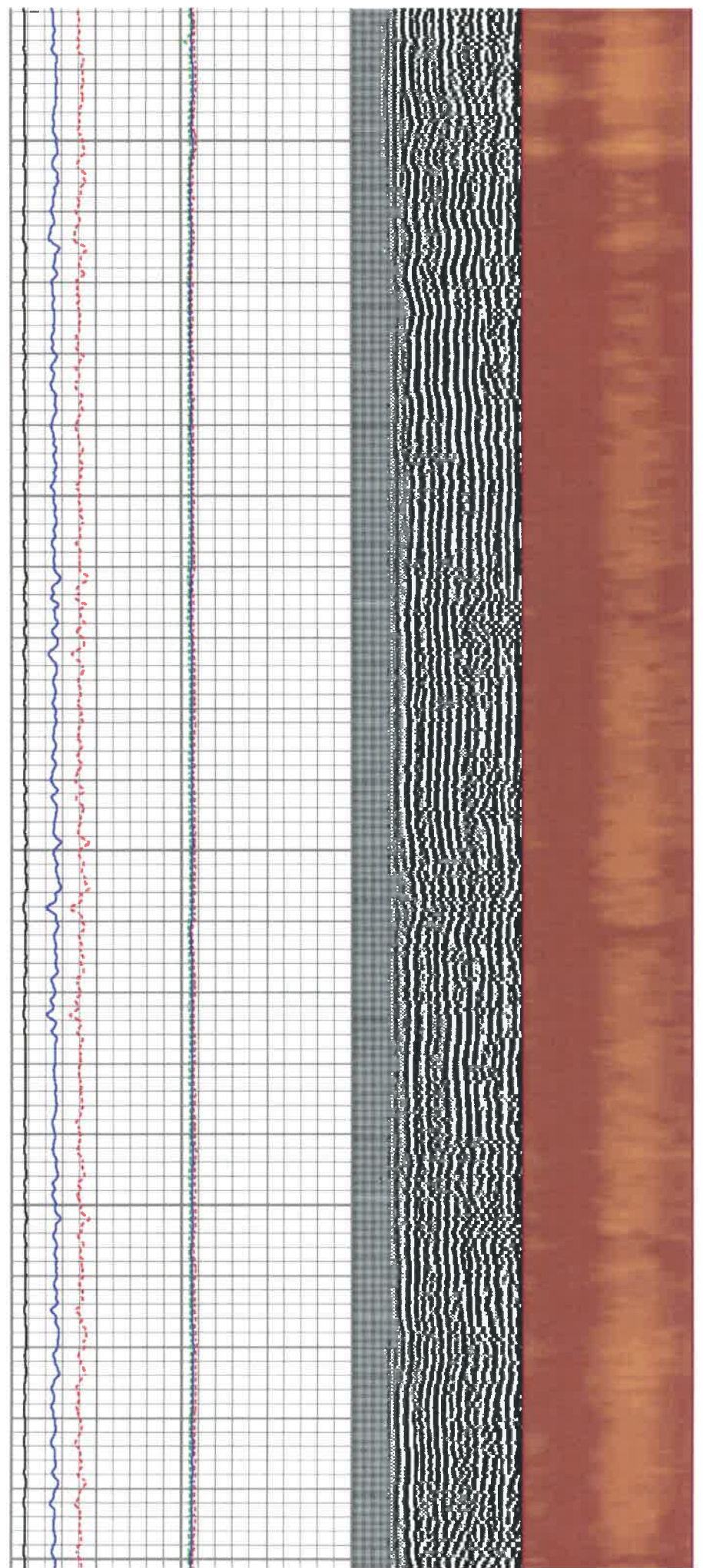
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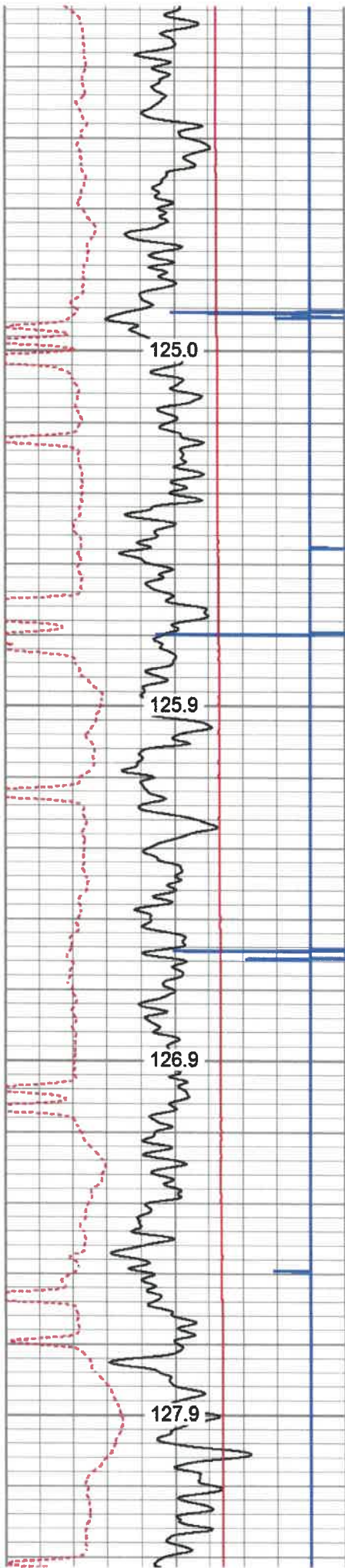
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5900



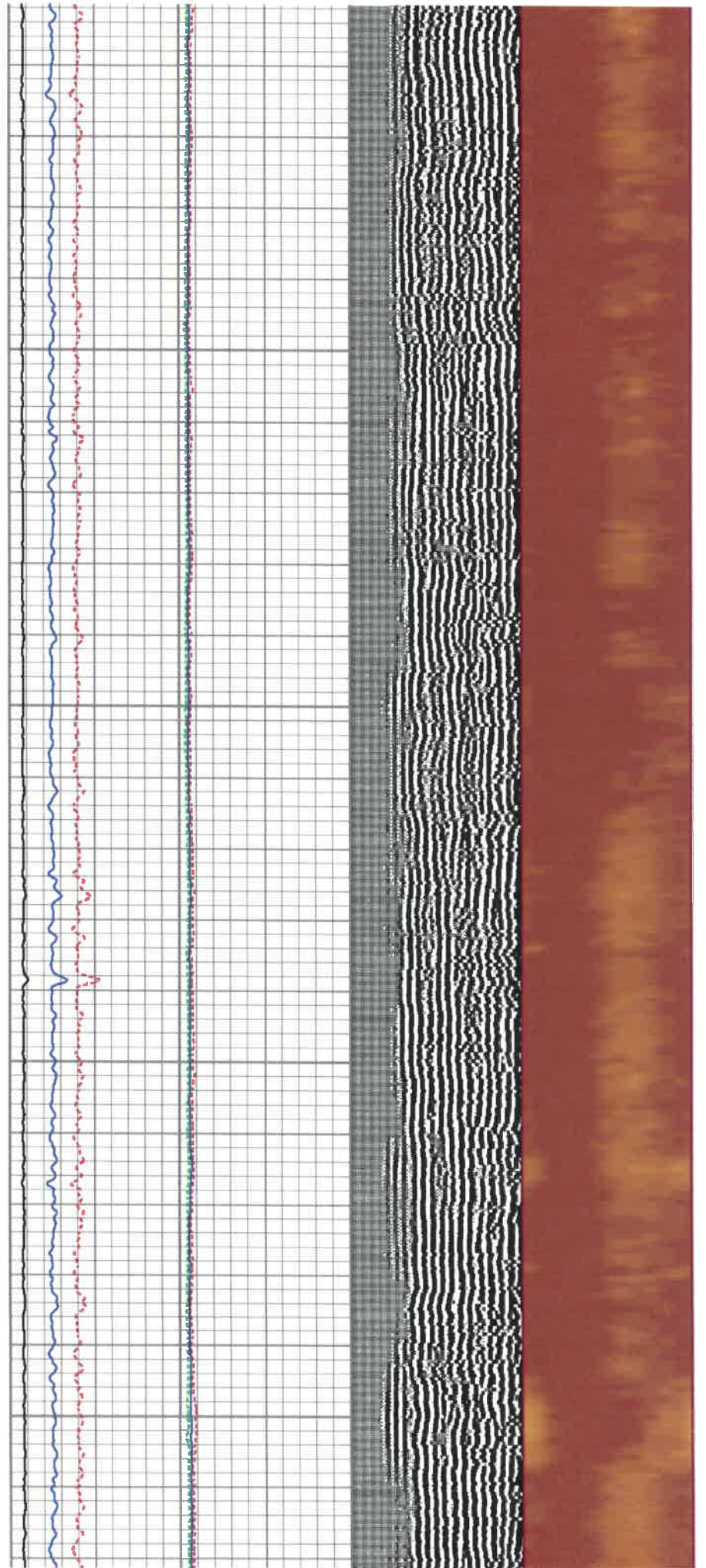


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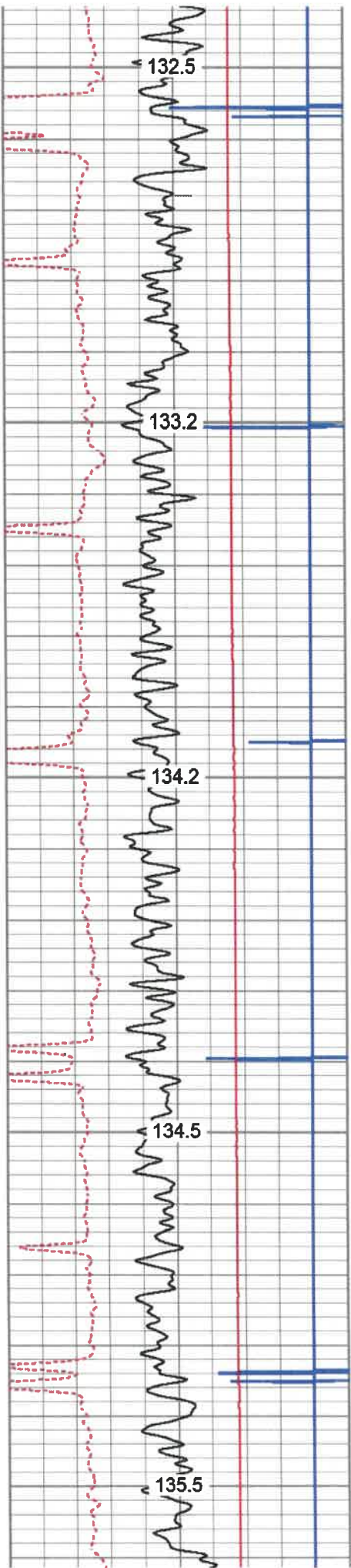
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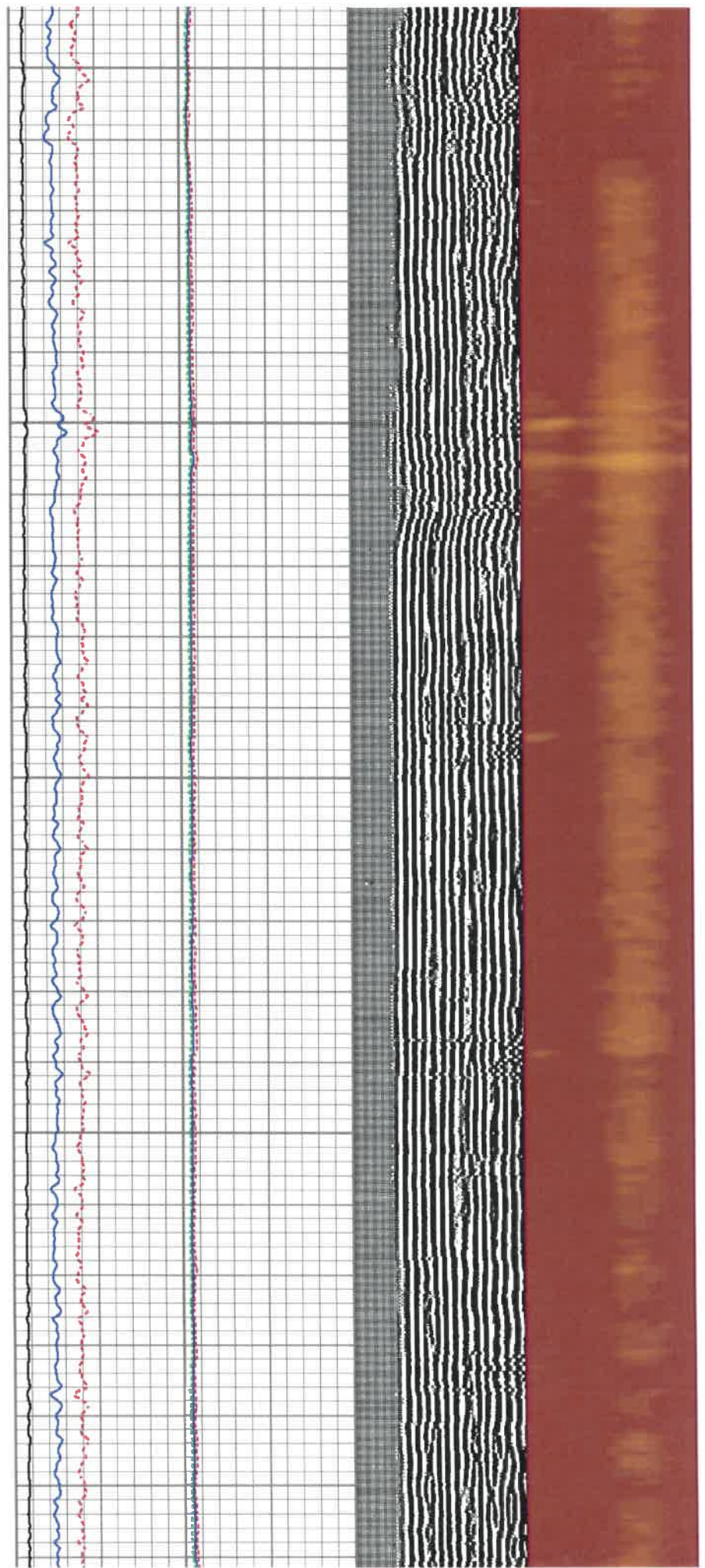
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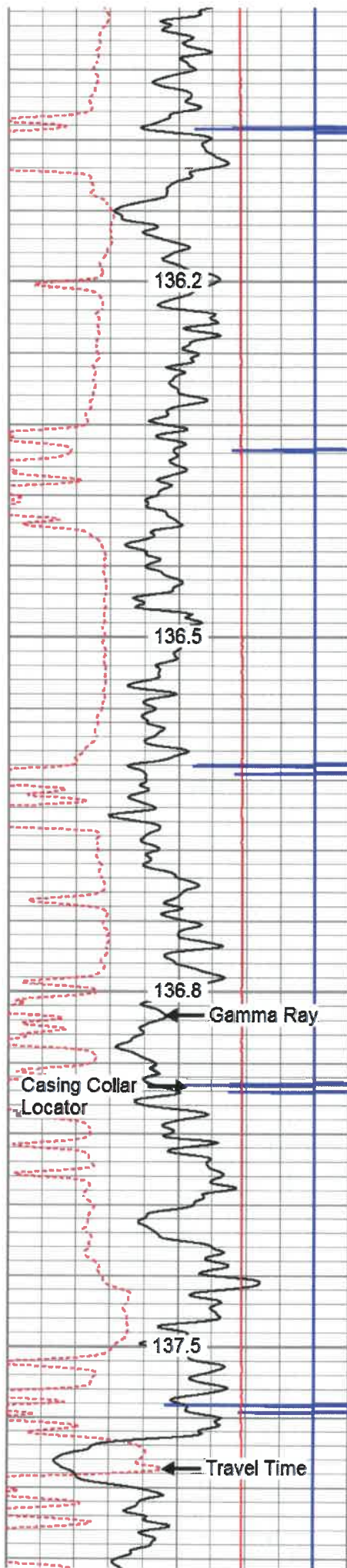
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6550



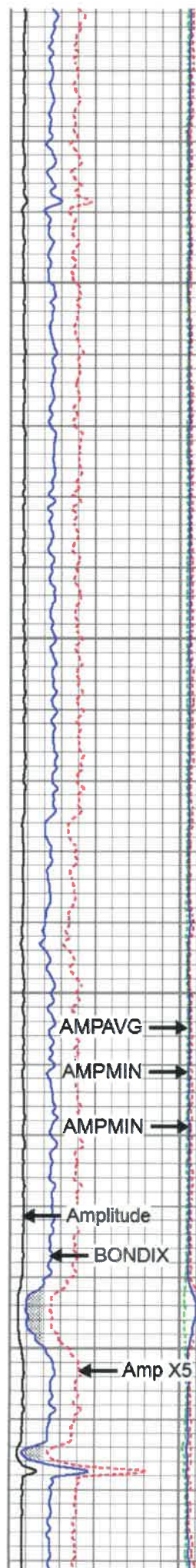


6600

6650

6700

6750



AMPAVG →

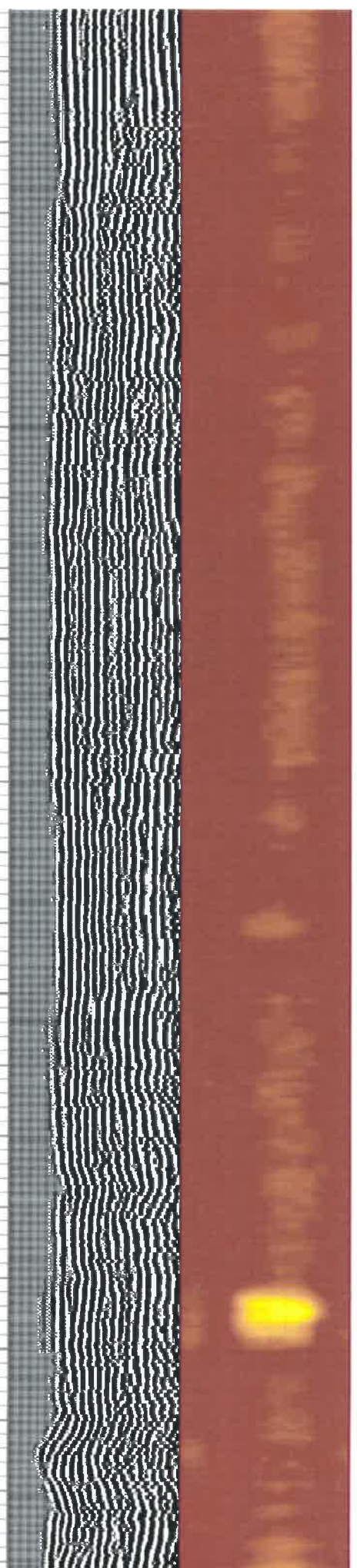
AMPMIN →

AMPMIN →

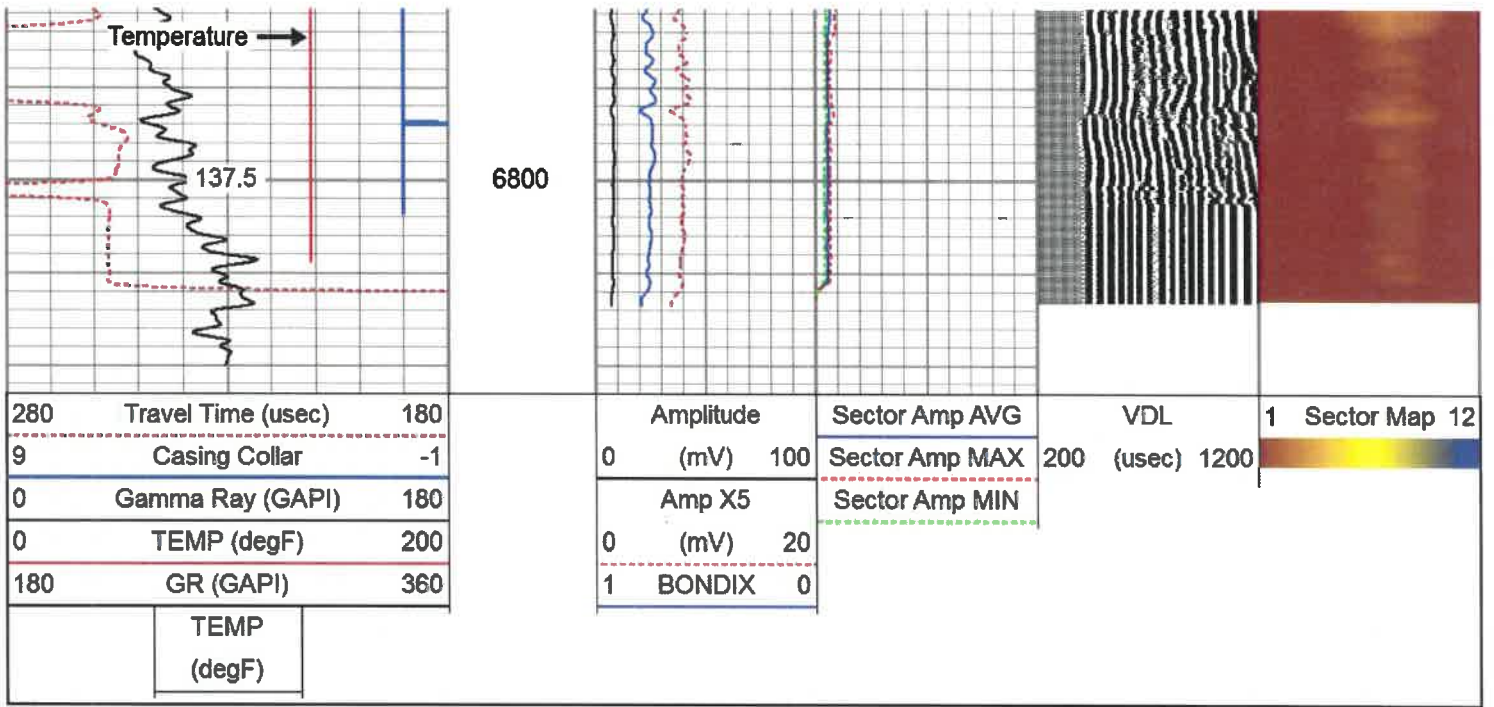
← Amplitude


← BONDIX

← Amp X5









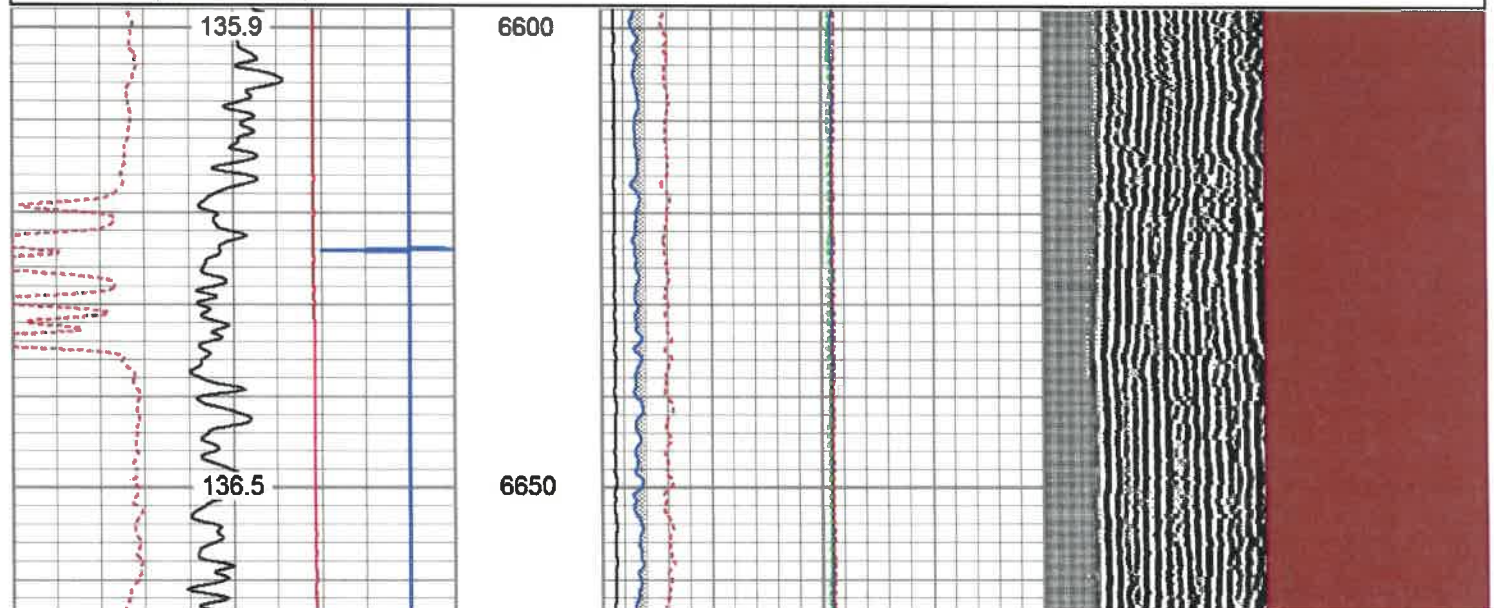
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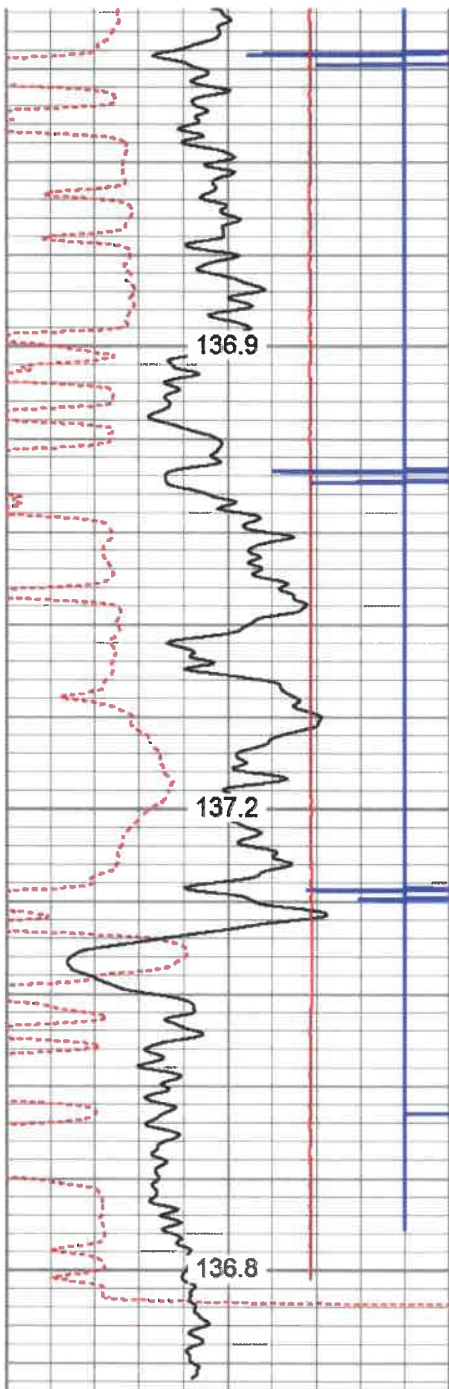
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Database File antero\_guild\_unit\_2h.db  
 Dataset Pathname pass3  
 Presentation Format antero1  
 Dataset Creation Sat Oct 26 15:00:39 2019  
 Charted by Depth in Feet scaled 1:240

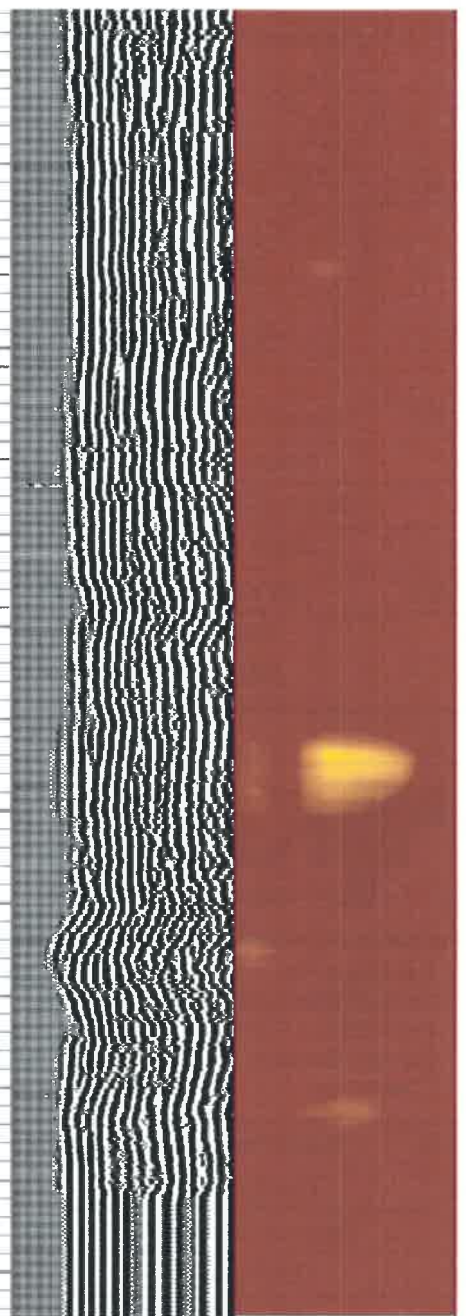
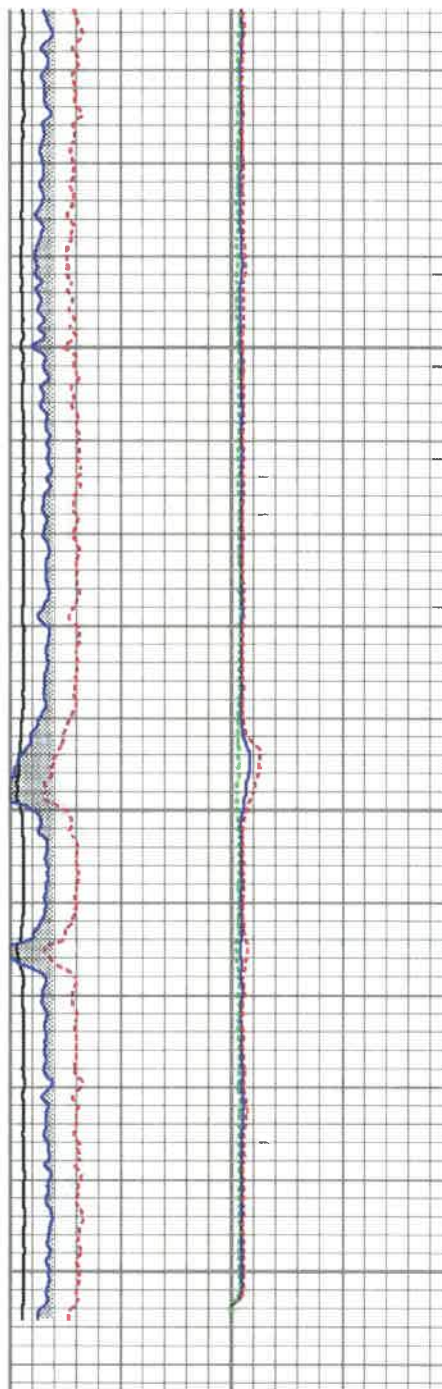
280	Travel Time (usec)	180	Amplitude	Sector Amp AVG	VDL	1	Sector Map 12
9	Casing Collar	-1	0 (mV) 100	Sector Amp MAX	200 (usec) 1200		
0	Gamma Ray (GAPI)	180	Amp X5	Sector Amp MIN			
0	TEMP (degF)	200	0 (mV) 20				
180	GR (GAPI)	360	1 BONDIX 0				

TEMP (degF)
-------------





6700  
6750  
6800



280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray (GAPI)	180
0	TEMP (degF)	200
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
200 (usec) 1200			



**Log Variables** DatabaseC:\ProgramData\Warrior\Data\antero\_guild\_unit\_2h.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
TEMP	8.25	100	5.5	0	20	71.9

MINAMPL mV 3.5	MINATTN db/ft 0.8	PERFS No	PPT usec 219	SRFTEMP degF 0	TDEPTH ft 0
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**Variable Description**

BHTEMP_Src : BHTEMP Input Source Selector	MINAMPL : Minimum Amplitude
BOREID : Borehole I.D.	MINATTN : Minimum Attenuation
BOTTEMP : Bottom Hole Temperature	PERFS : Perforation Flag
CASEOD : Casing O.D.	PPT : Predicted Pipe Time
CASETHCK : Casing Thickness	SRFTEMP : Surface Temperature
CASEWGHT : Casing Weight	TDEPTH : Total Depth
MAXAMPL : Maximum Amplitude	

**Calibration Report**

Database File      antero\_guild\_unit\_2h.db  
Dataset Pathname   pass4  
Dataset Creation    Sat Oct 26 16:06:39 2019

**Gamma Ray Calibration Report**

Serial Number:                    0111  
Tool Model:                        Tek-Co 2 3/4  
Performed:                        Thu Oct 24 08:41:06 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:                57.275                            ft

**Master Calibration, performed Thu Oct 24 13:31:44 2019:**

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.006	0.919	3.500	71.921	50.880	5.245
CAL	0.630	0.627				
5'	-0.001	1.035	3.500	71.921	40.761	4.381
SUM						
S1	0.000	1.103	0.000	100.000	56.543	-0.001
S2	0.000	1.088	0.000	100.000	61.007	-0.001
S3	0.000	1.122	0.000	100.000	64.737	-0.001
S4	0.000	1.089	0.000	100.000	72.448	-0.001
S5	0.000	1.045	0.000	100.000	71.838	-0.001
S6	0.000	0.965	0.000	100.000	74.574	-0.001
S7	0.000	0.897	0.000	100.000	76.604	-0.001
S8	0.000	0.821	0.000	100.000	77.230	-0.001
S9	0.000	0.802	0.000	100.000	76.037	-0.001
S10	0.000	0.932	0.000	100.000	63.640	-0.001
S11	0.000	1.003	0.000	100.000	56.910	-0.001
S12	0.000	1.091	0.000	100.000	55.333	-0.001

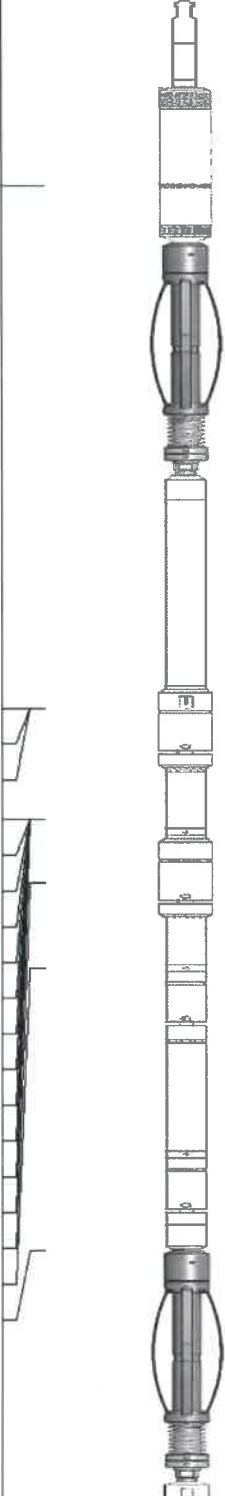
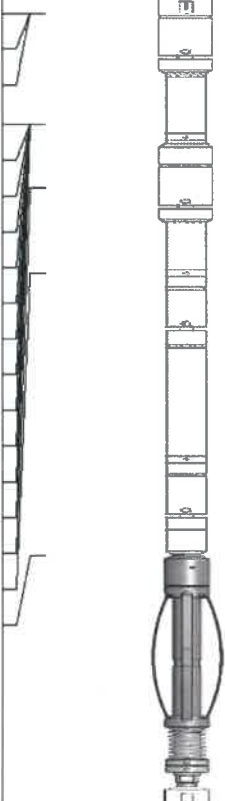
**Temperature Calibration Report**


Serial Number:                    T12\_01  
Tool Model:                        Tek12


LOG MODEL:  
Performed:

LOG ID:  
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)
CCL	19.20		Titan-1.4375 1 7/16 Titan Type II Cable Head	1.03	1.44	5.00
			CCL-312tekco (3.12TEKCO) Tekco 3 1/8" 450 Deg. "F" SmCo Logging CCL	1.82	3.12	25.00
			Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
TEMP	13.04		SCBL-Tek12 (T12_01) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00
WVFSYNC	13.04					
WVFCAL	13.04					
WVFS12	11.75					
WVFS11	11.75					
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	1.31		GR-Tek-Co 2 3/4 (0111) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
			Titan-1.4375_Cap Titan 1 7/16" Cap	0.27	1.44	1.00
Dataset: antero_guild_unit_2h.db: field/well/run1/pass4 Total length: 21.37 ft Total weight: 256.00 lb O.D.: 3.25 in						

	Company	ANTERO RESOURCES					
	Well	GULID UNIT 2H					
	Field	RABBIT EARS					
	County						
	State	WV	Country				US

RECEIVED  
Office of C...  
SEP 24 2010  
WV Dept  
Environmental...

