



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

Company ANTERO RESOURCES CORPORATION  
 Well OXFORD 97 FHS  
 Field MARCELLUS  
 County DODDRIDGE  
 State WV

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Location: AFE A06743  
 API #: 47017065840000  
 Other Services

Permanent Datum SEC TWP RGE Elevation  
 Log Measured From  
 Drilling Measured From

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

Date	8-28-19						
Run Number	1						
Depth Driller	16120						
Depth Logger	7168						
Bottom Logged Interval	7168						
Top Log Interval	SURFACE						
Open Hole Size	N/A						
Type Fluid	WATER						
Density / Viscosity	N/A						
Max. Recorded Temp.	140.7 DEG						
Estimated Cement Top	SURFACE						
Time Well Ready	N/A						
Time Logger on Bottom	N/A						
Equipment Number	624874						
Location	BRIDGEPORT						
Recorded By	P DAVIDSON						
Witnessed By	MIKE KOCH						
Borehole Record		Casing Record					
Run Number	Bit	From	To	Size	Weight	From	To
				5.5	23	16120	0

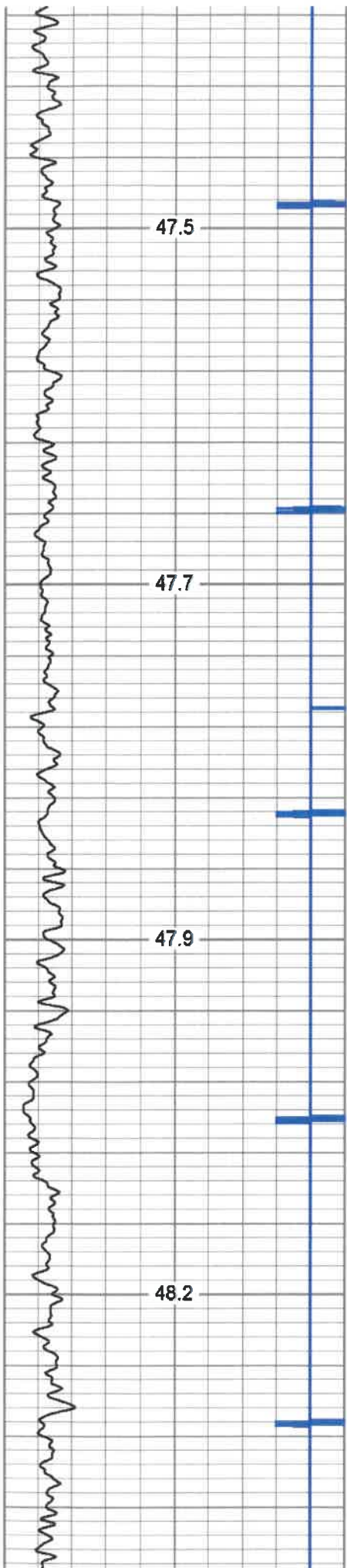
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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 @ 7016'-7037'  
 LOG TD 7168'  
 CEMENT TOP @ SURFACE  
 LOGGED UNDER 1500 PSI.

THANK YOU FOR CHOOSING KLX ENERGY

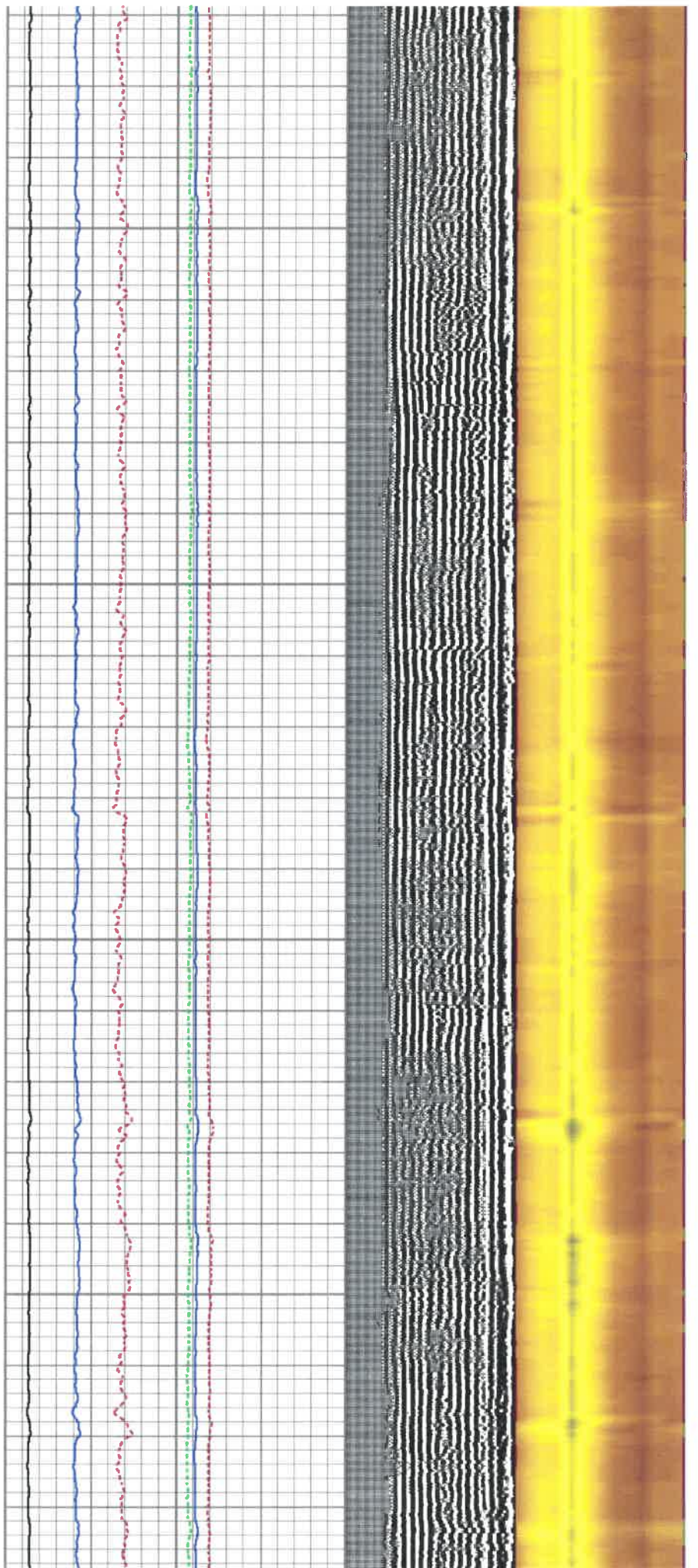


200

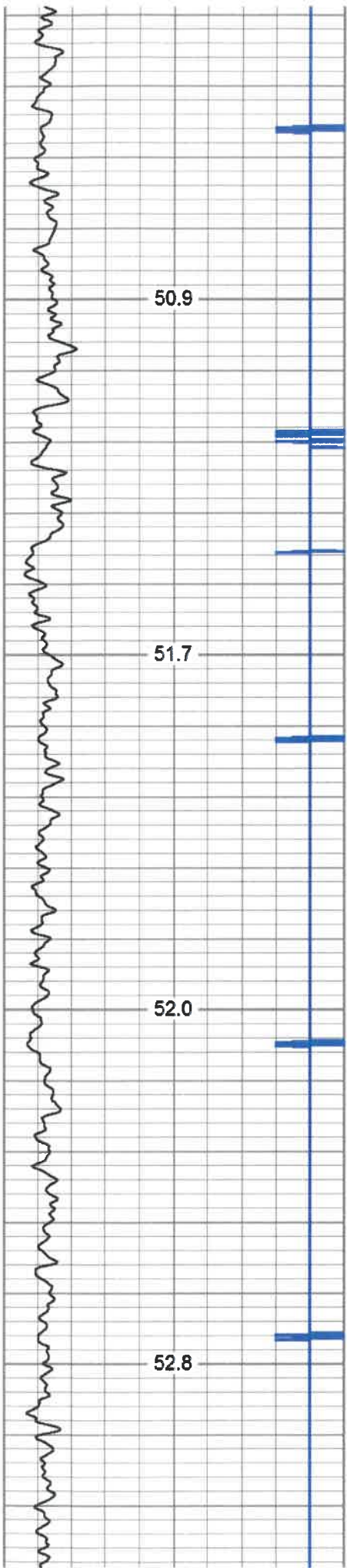
250

300

350





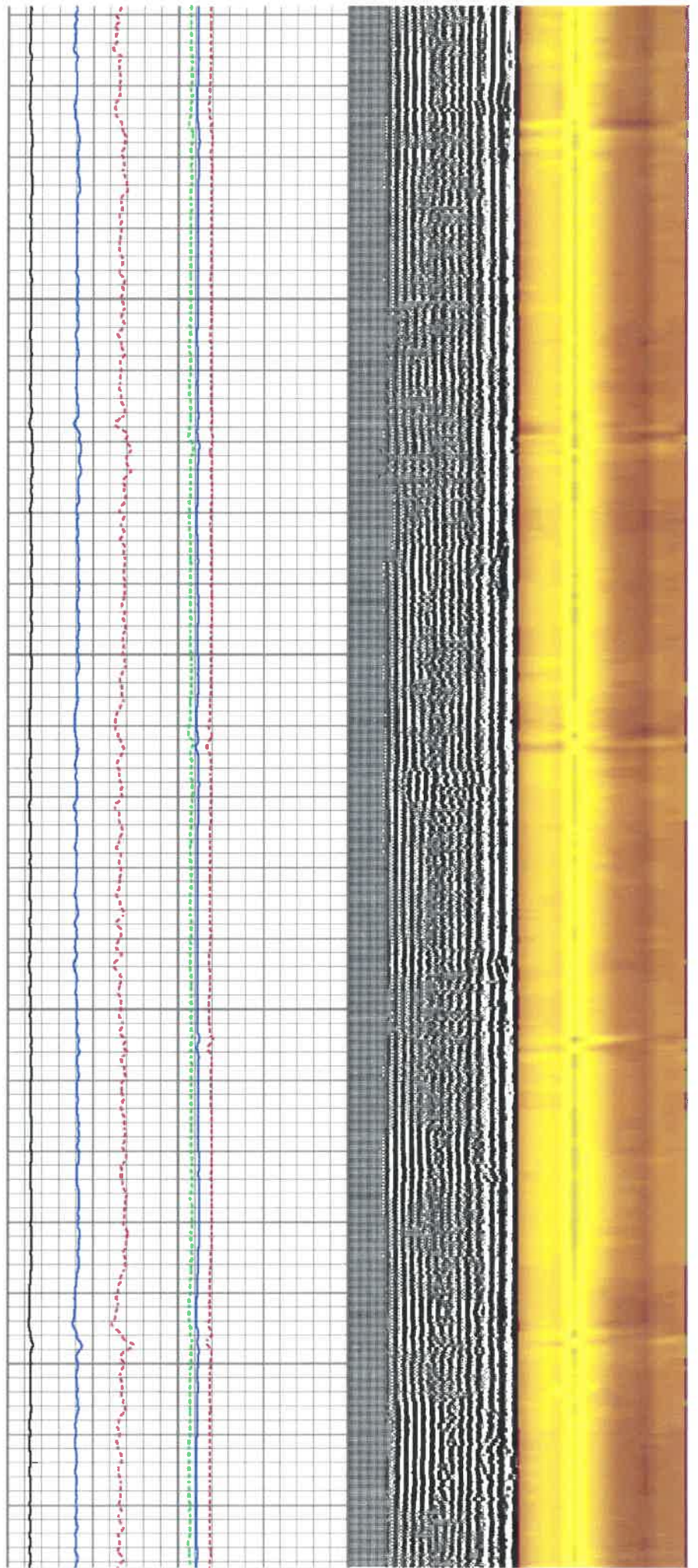


650

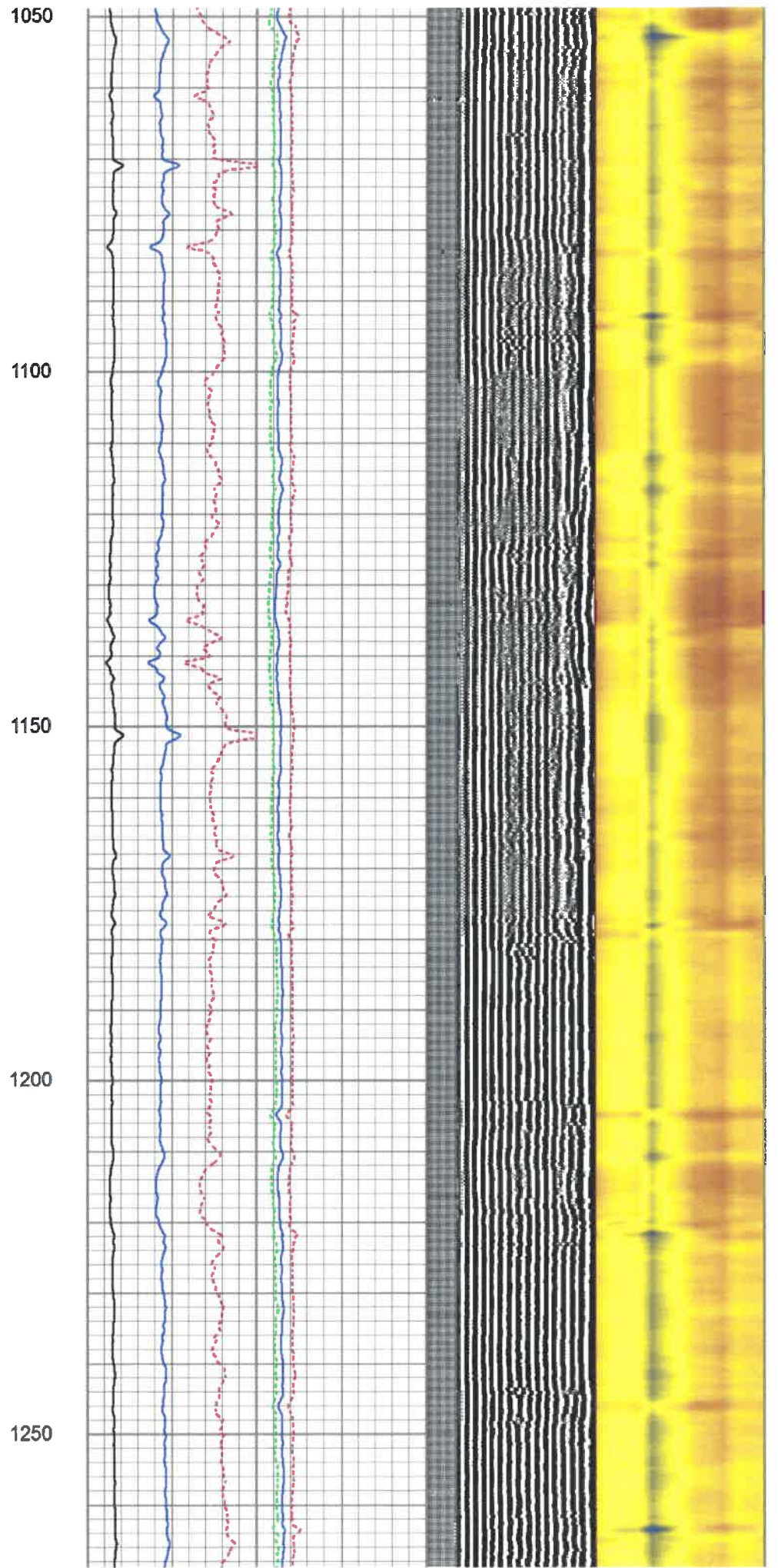
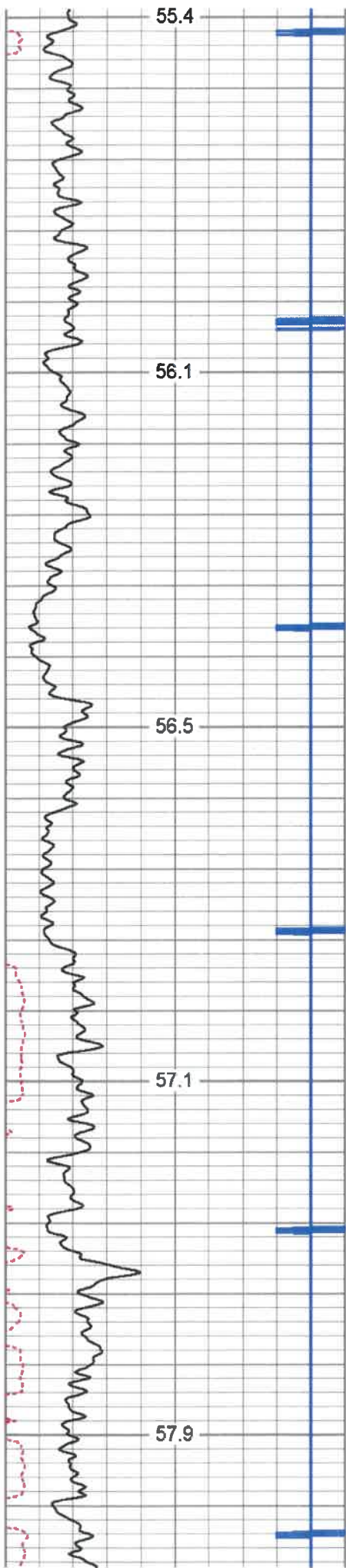
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750

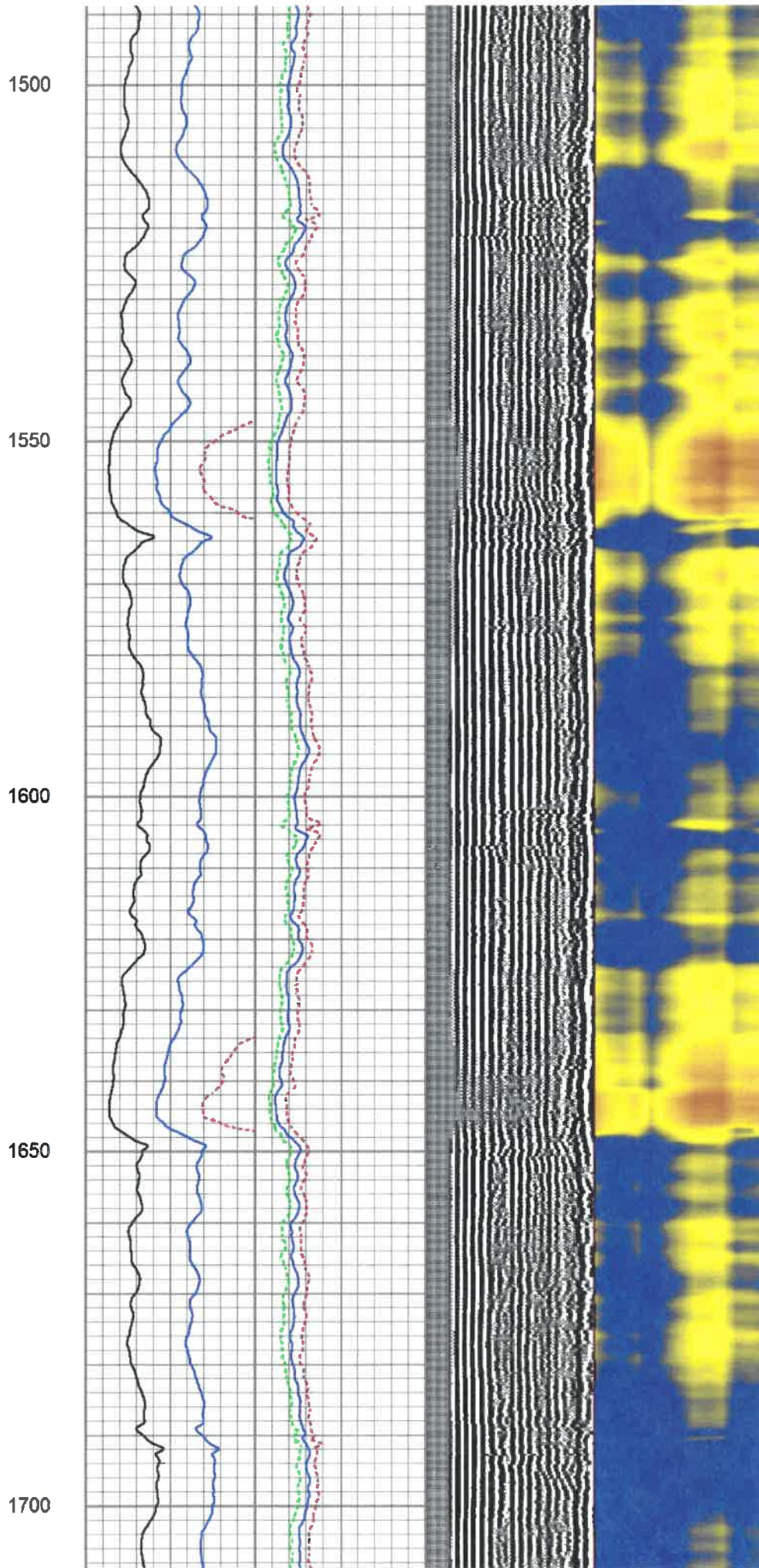
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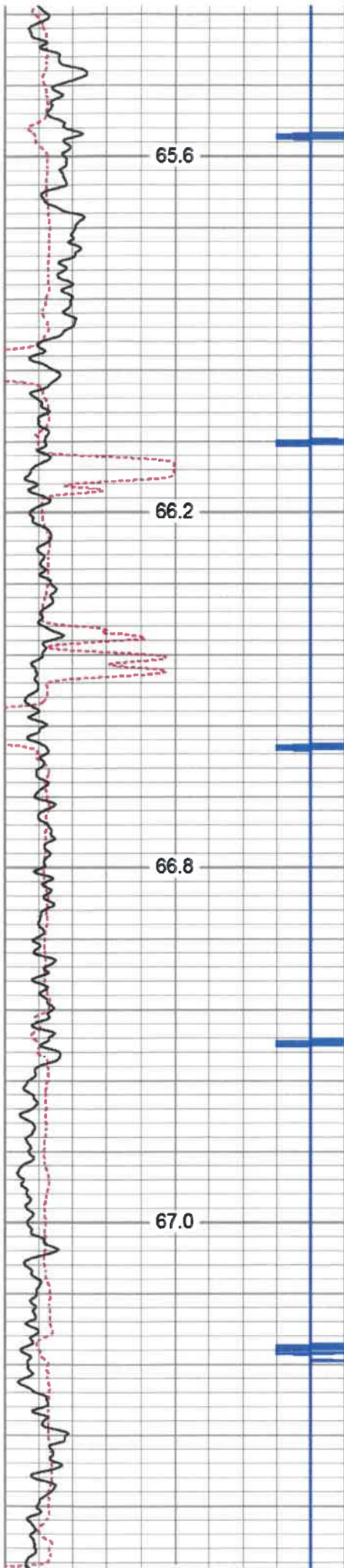










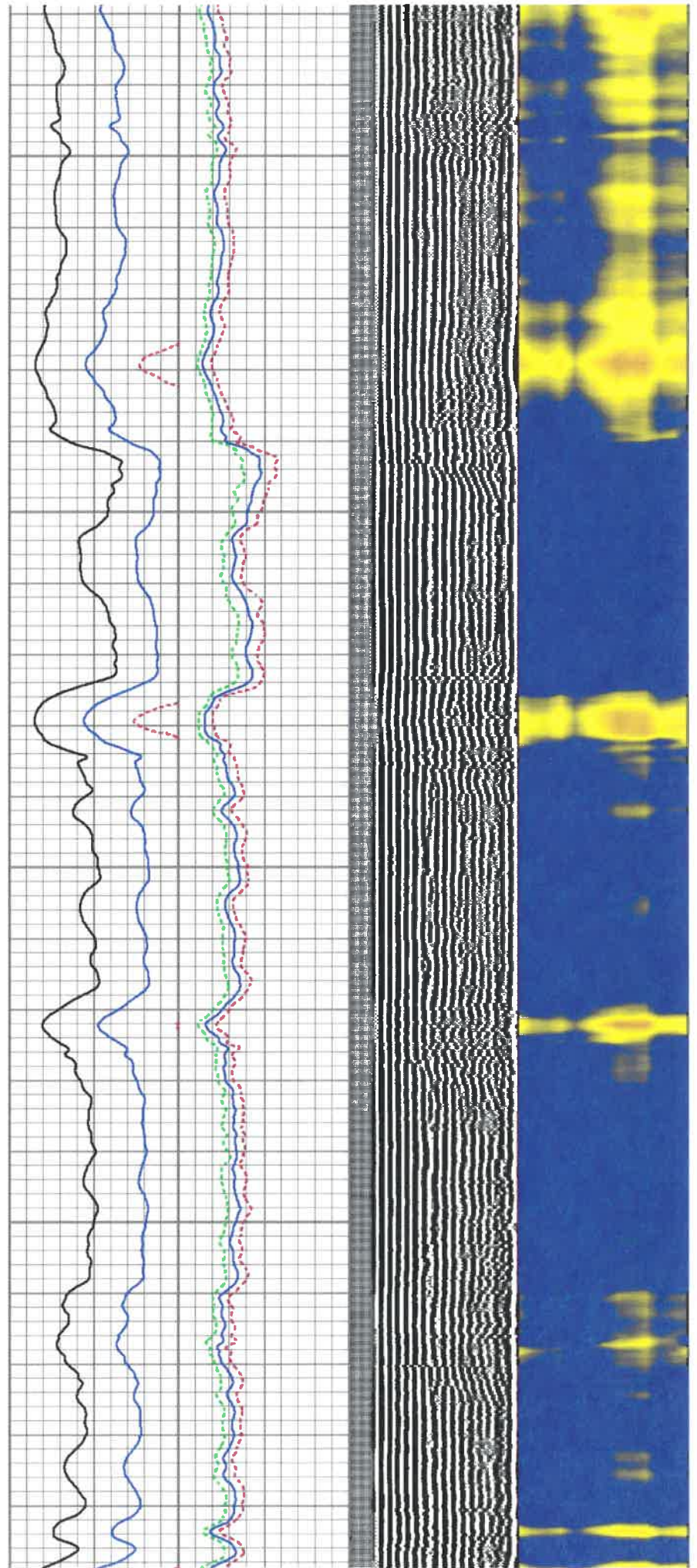


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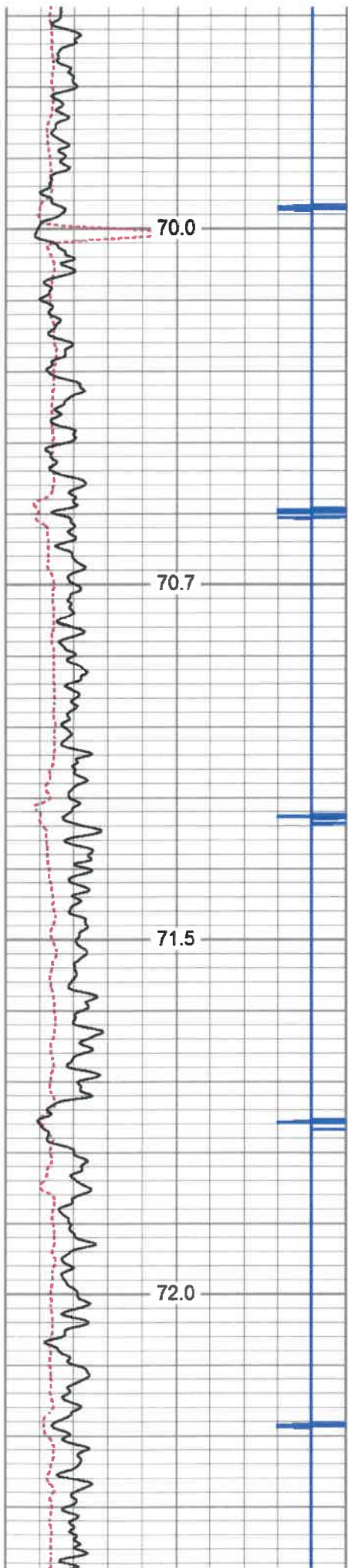
2000

2050

2100







2400

2450

2500

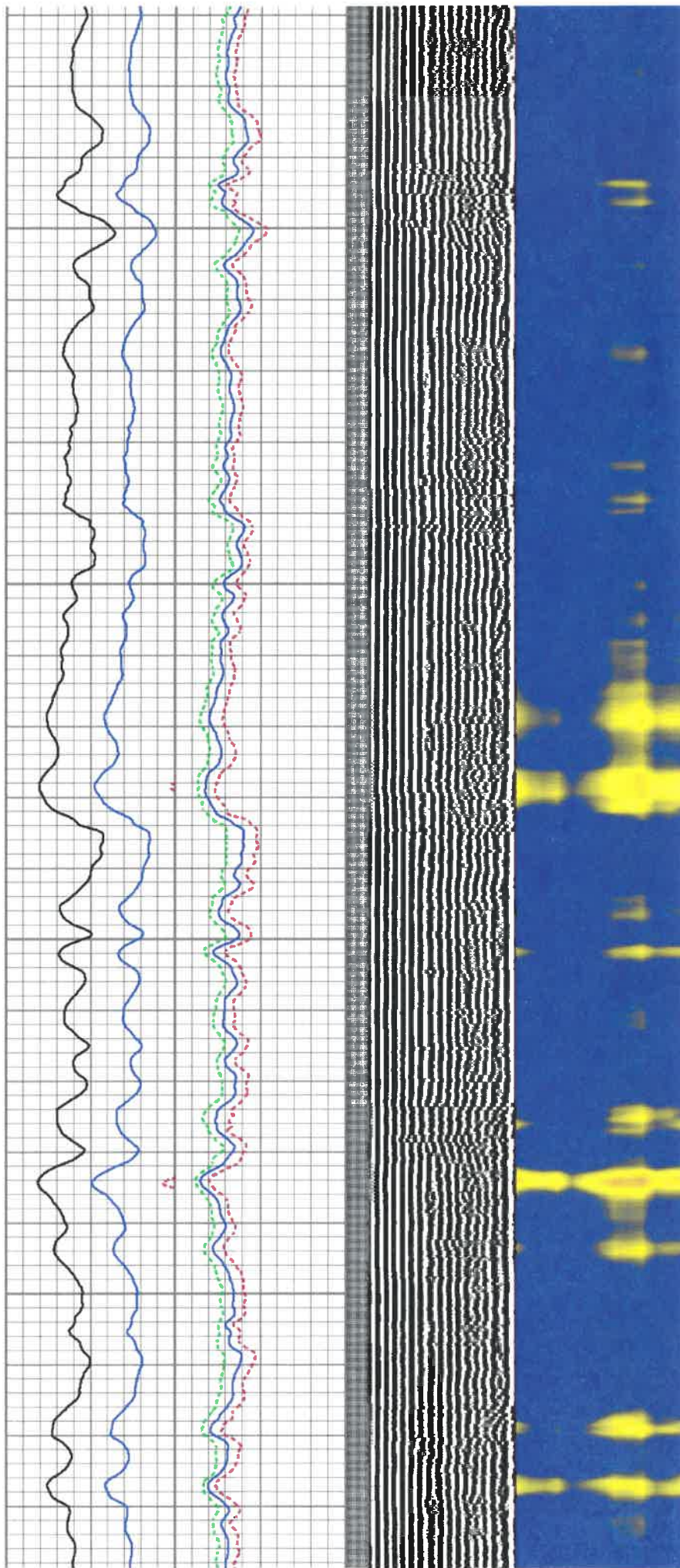
2550

70.0

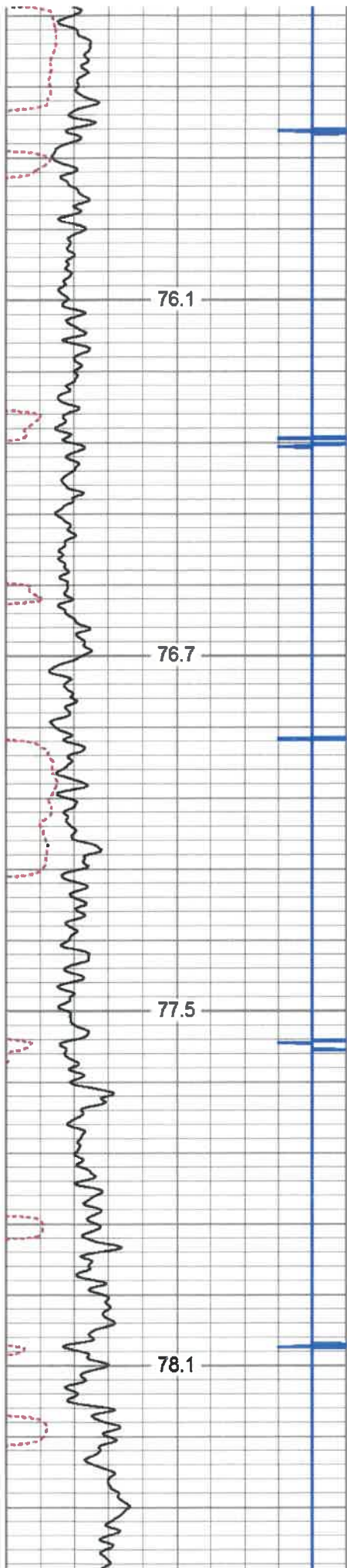
70.7

71.5

72.0





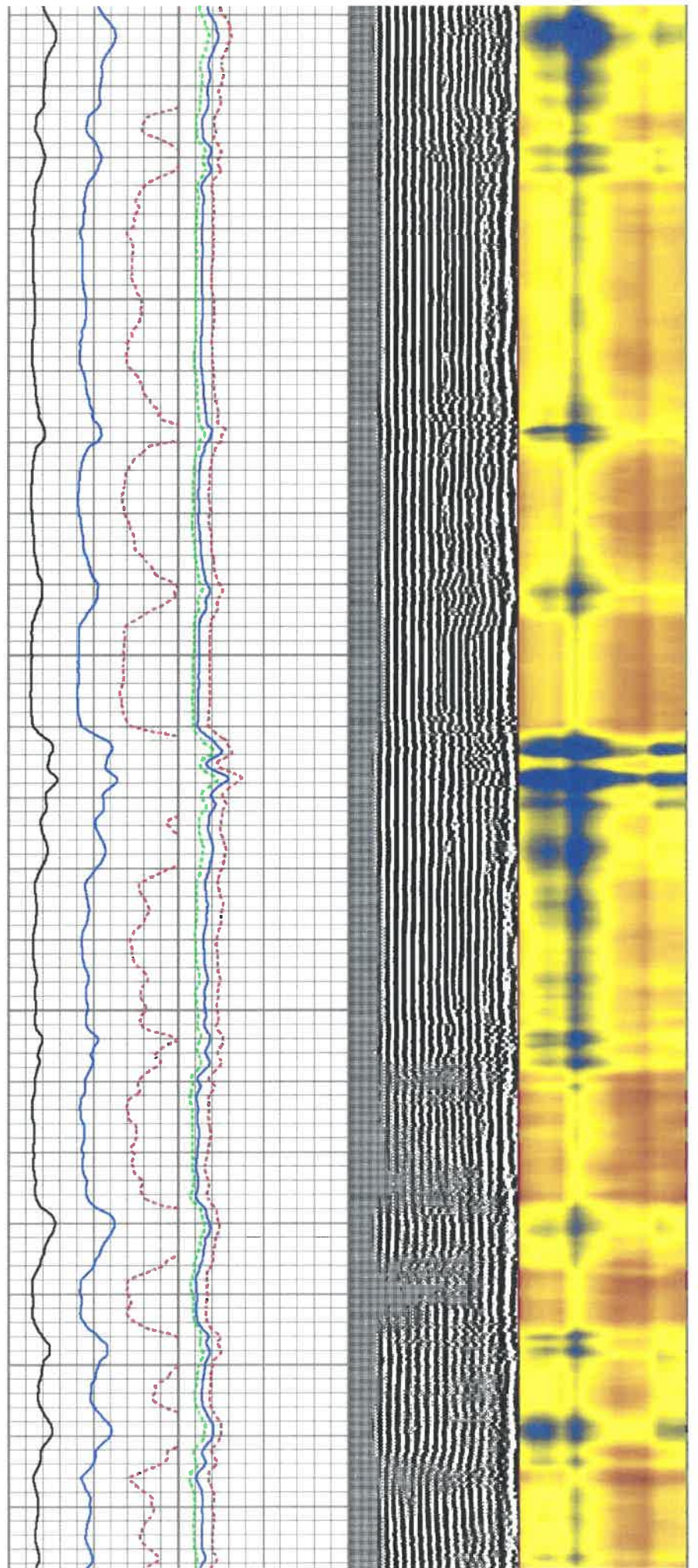


2850

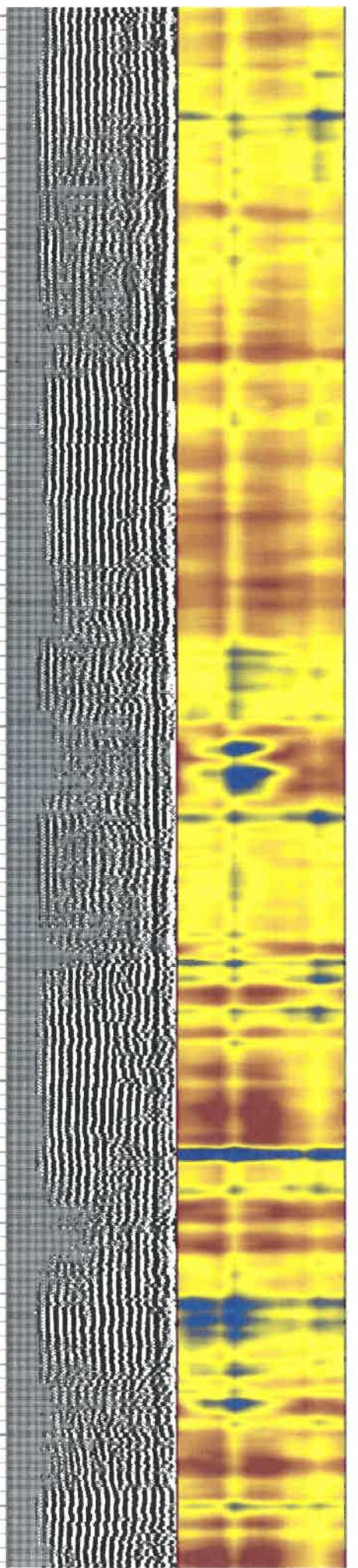
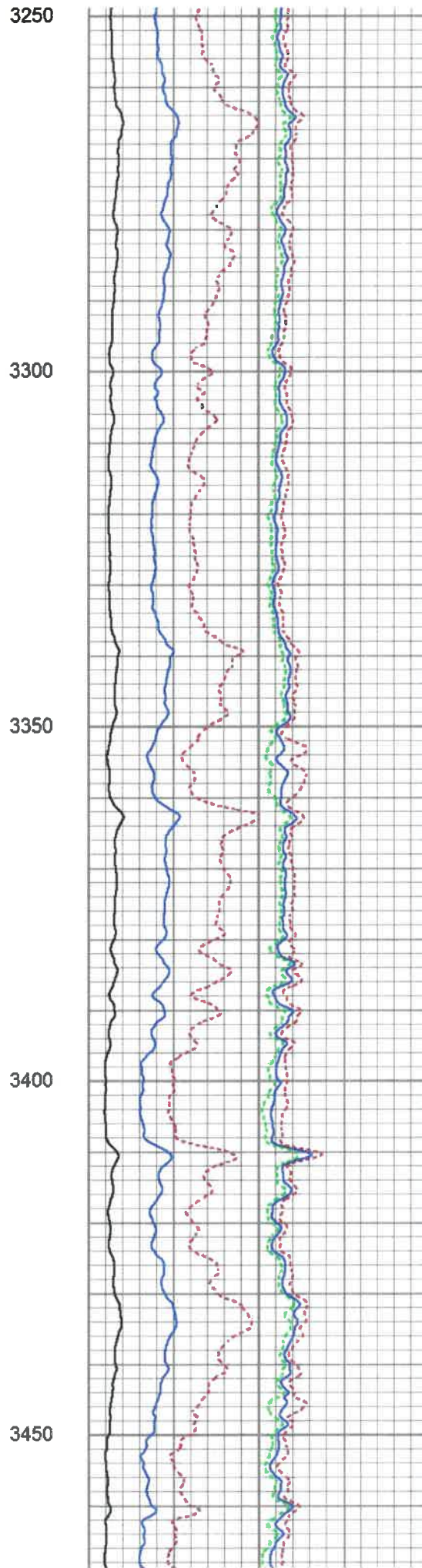
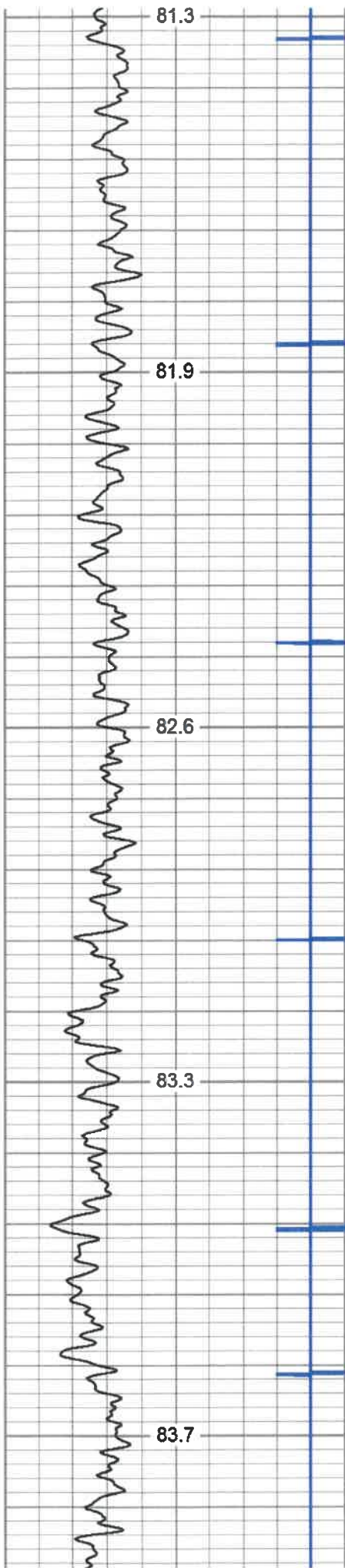
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2950

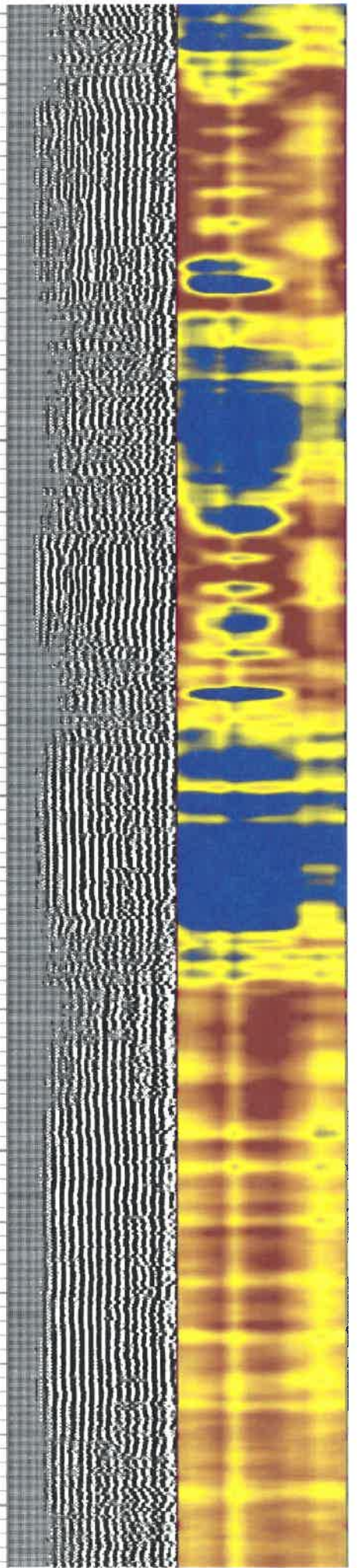
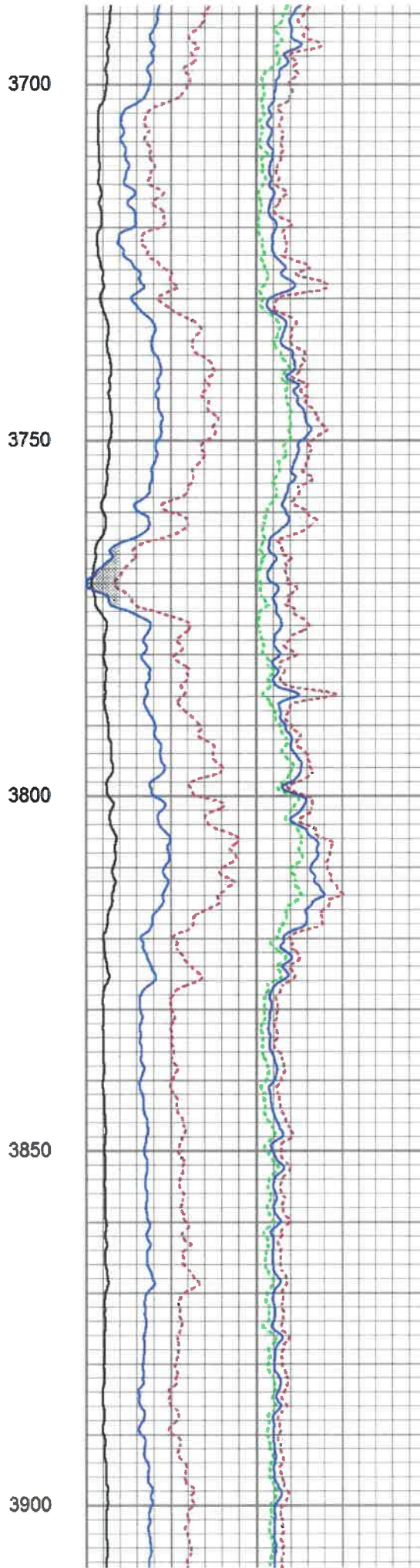
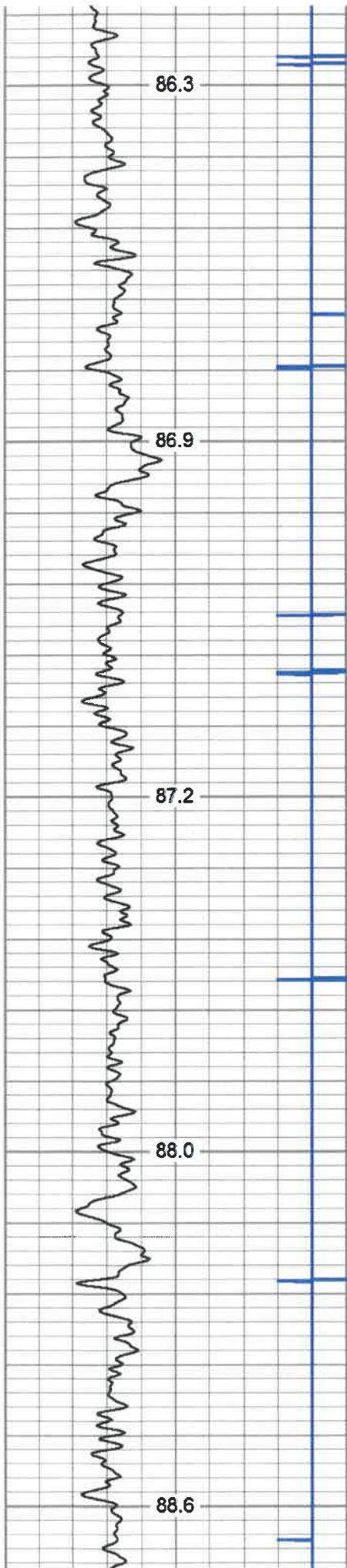
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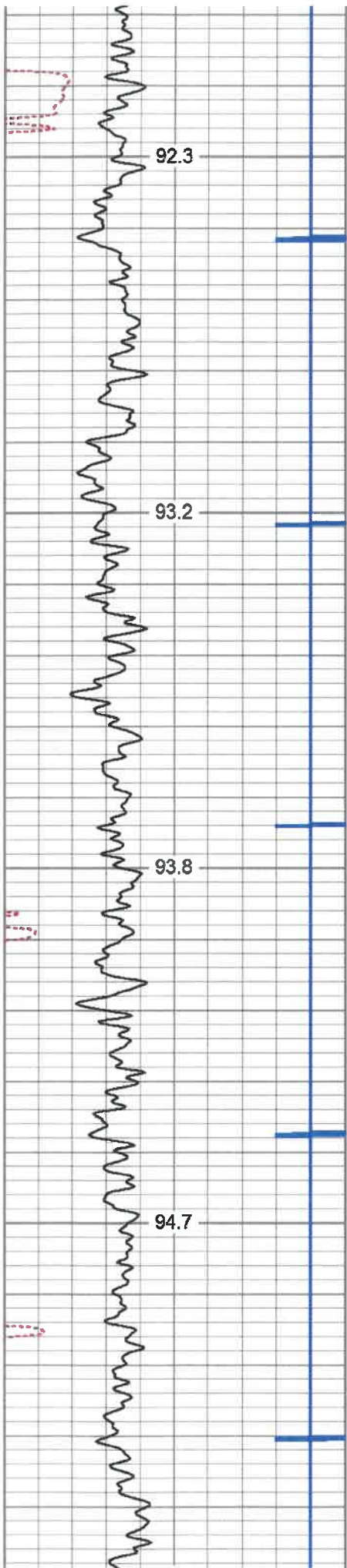










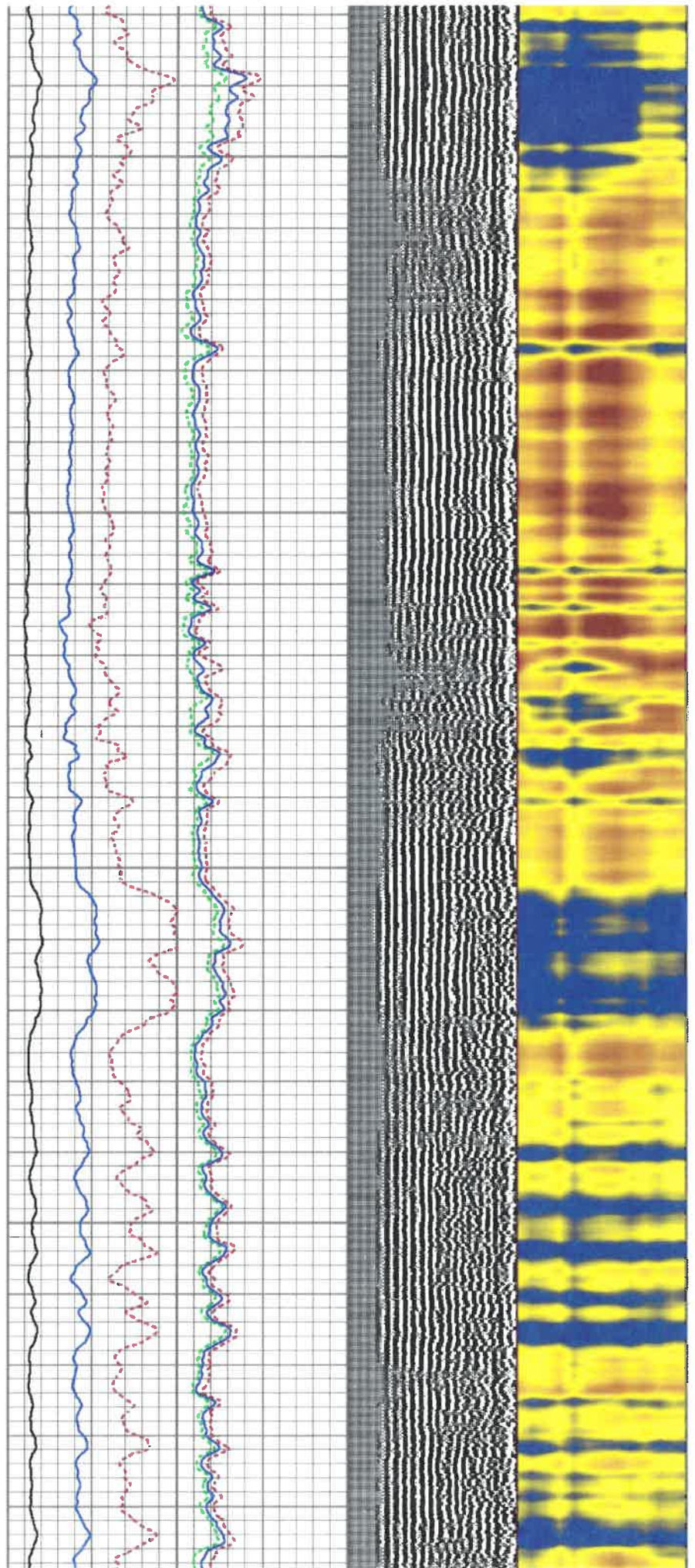


4150

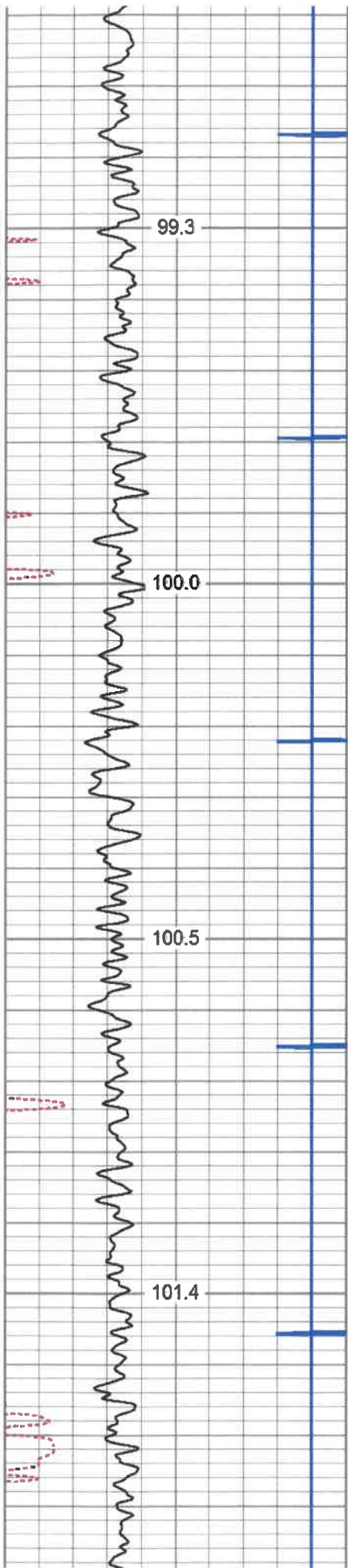
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4250

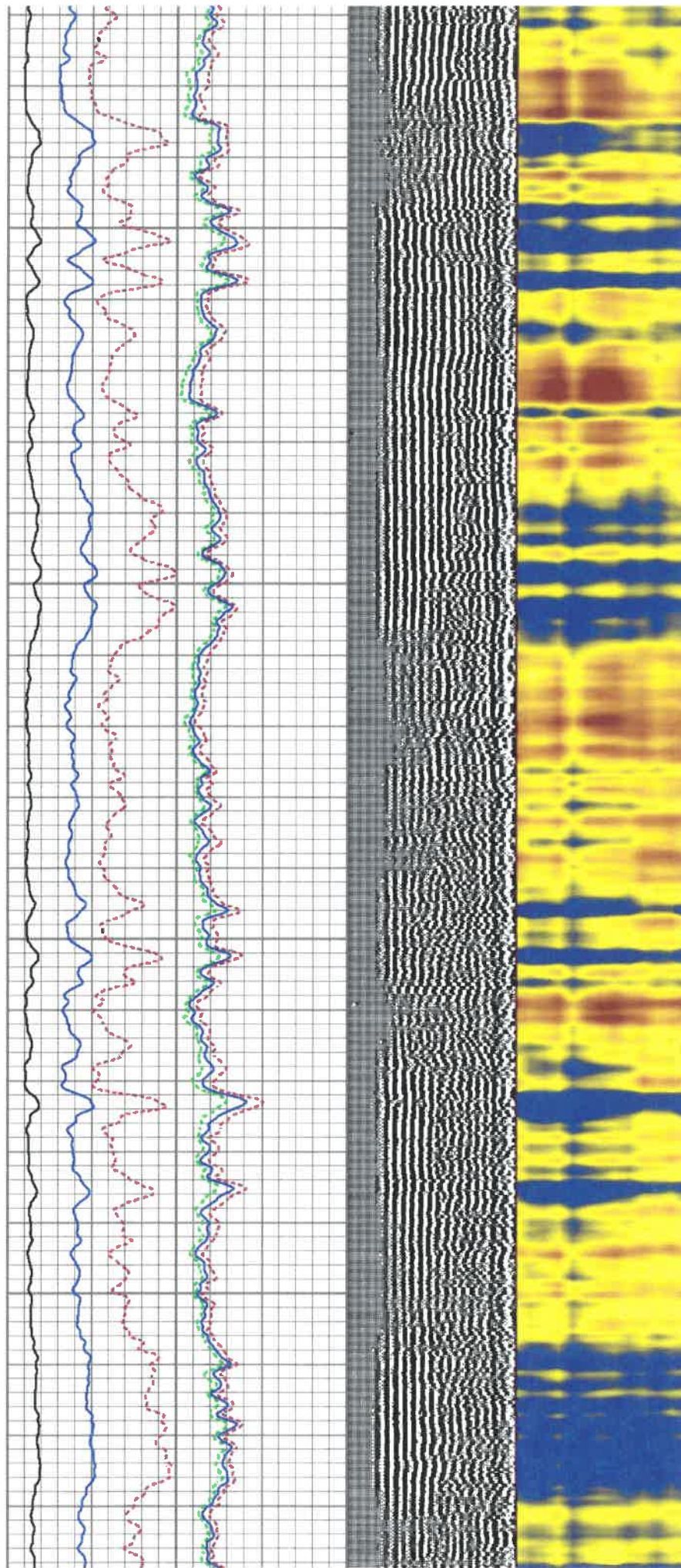
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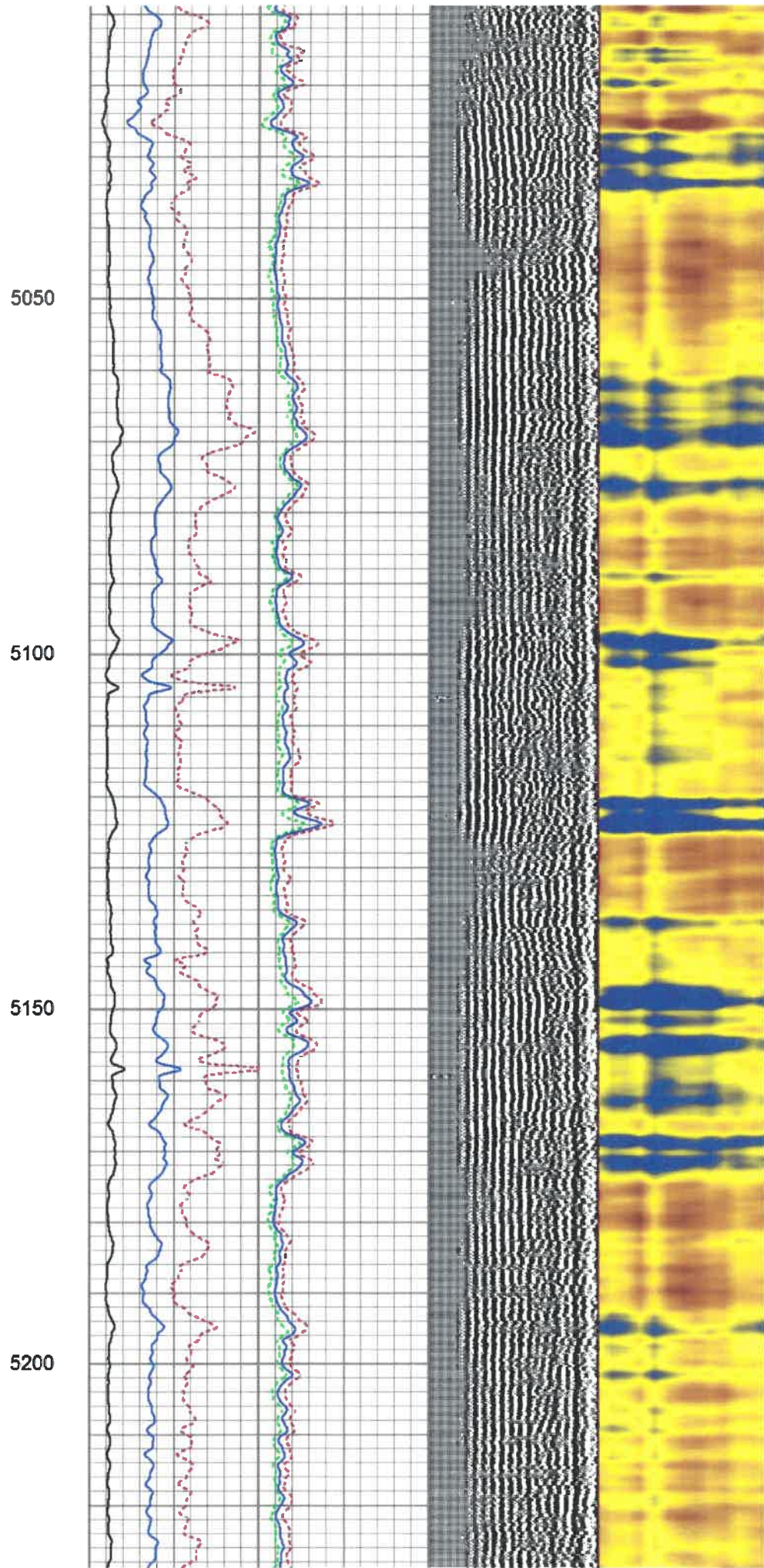
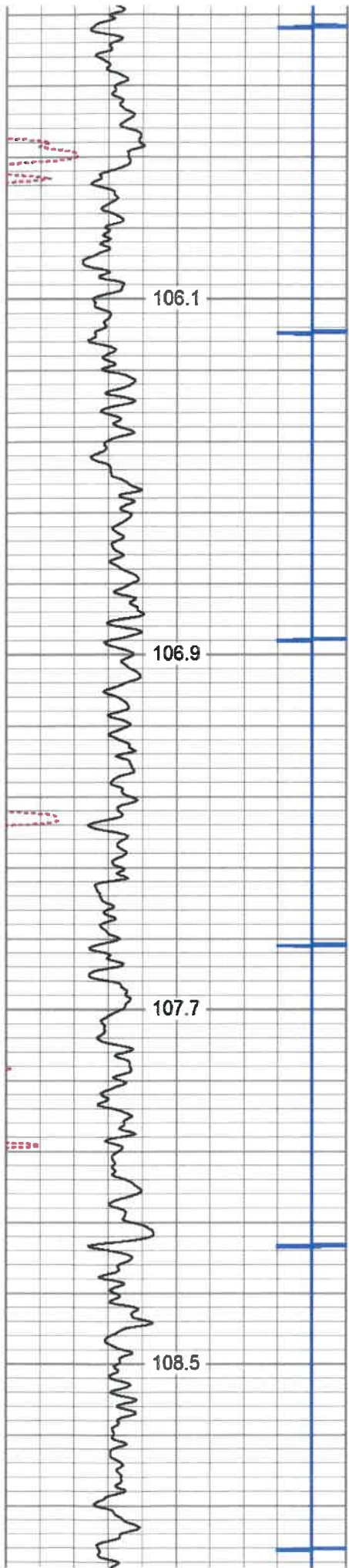




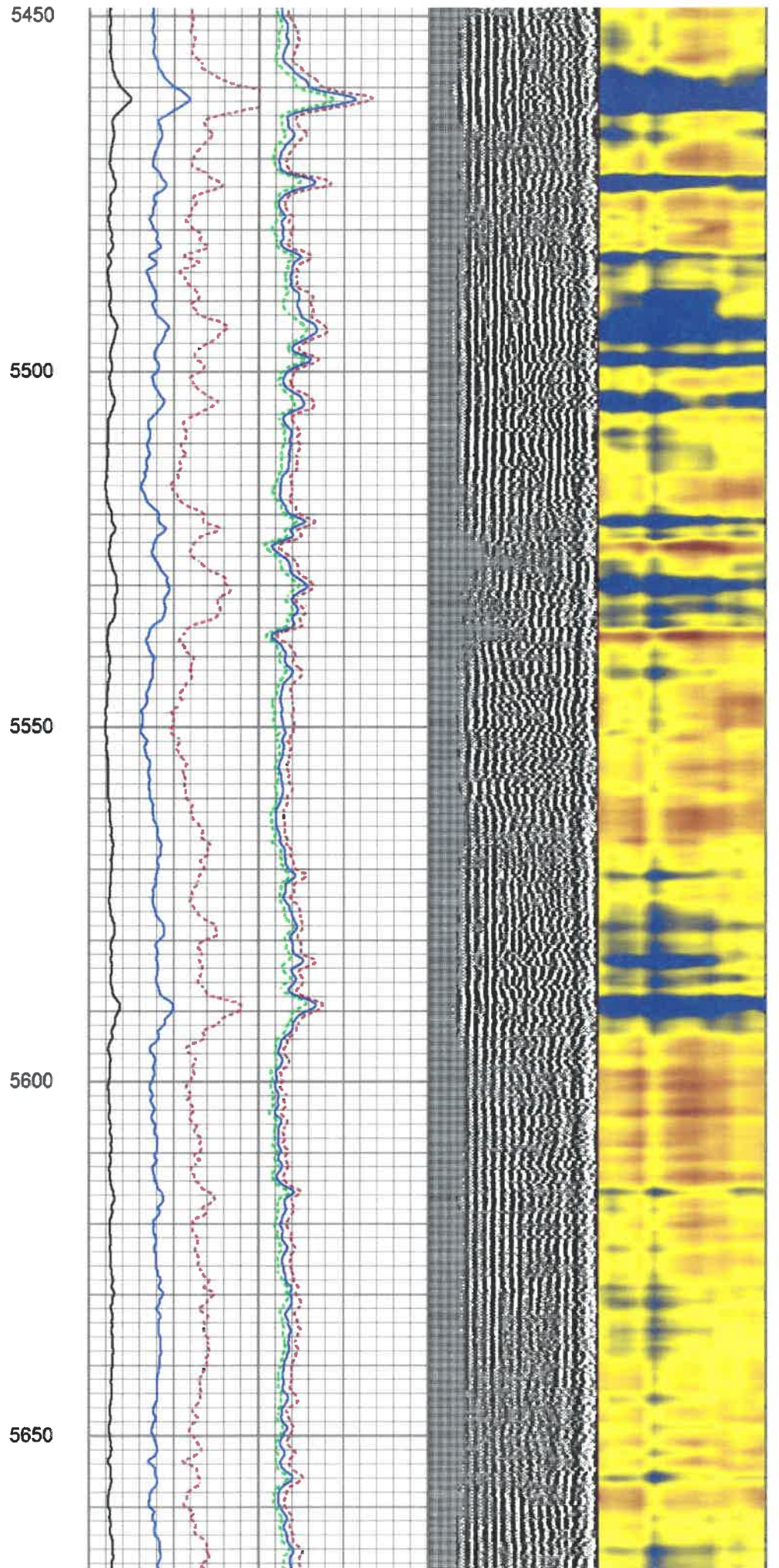
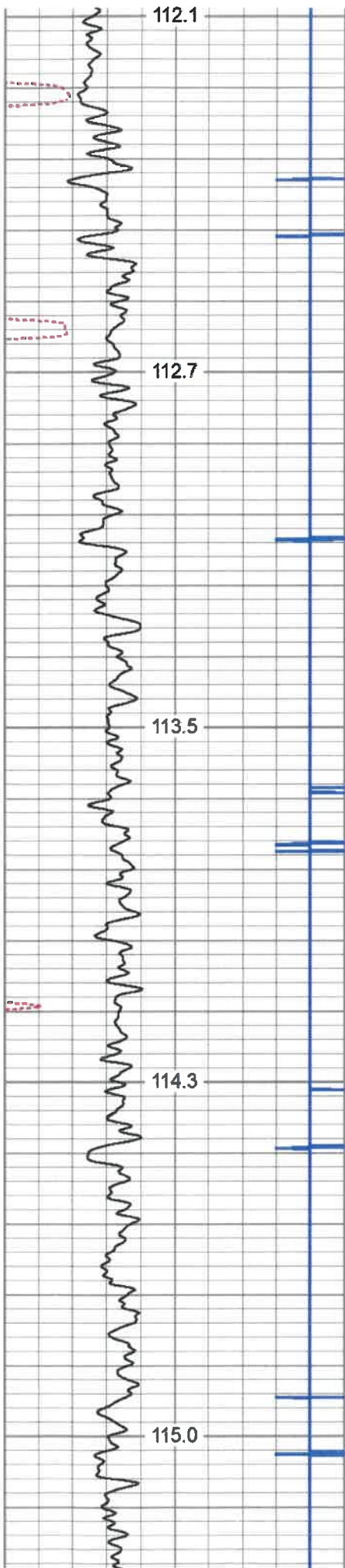
4600  
4650  
4700  
4750



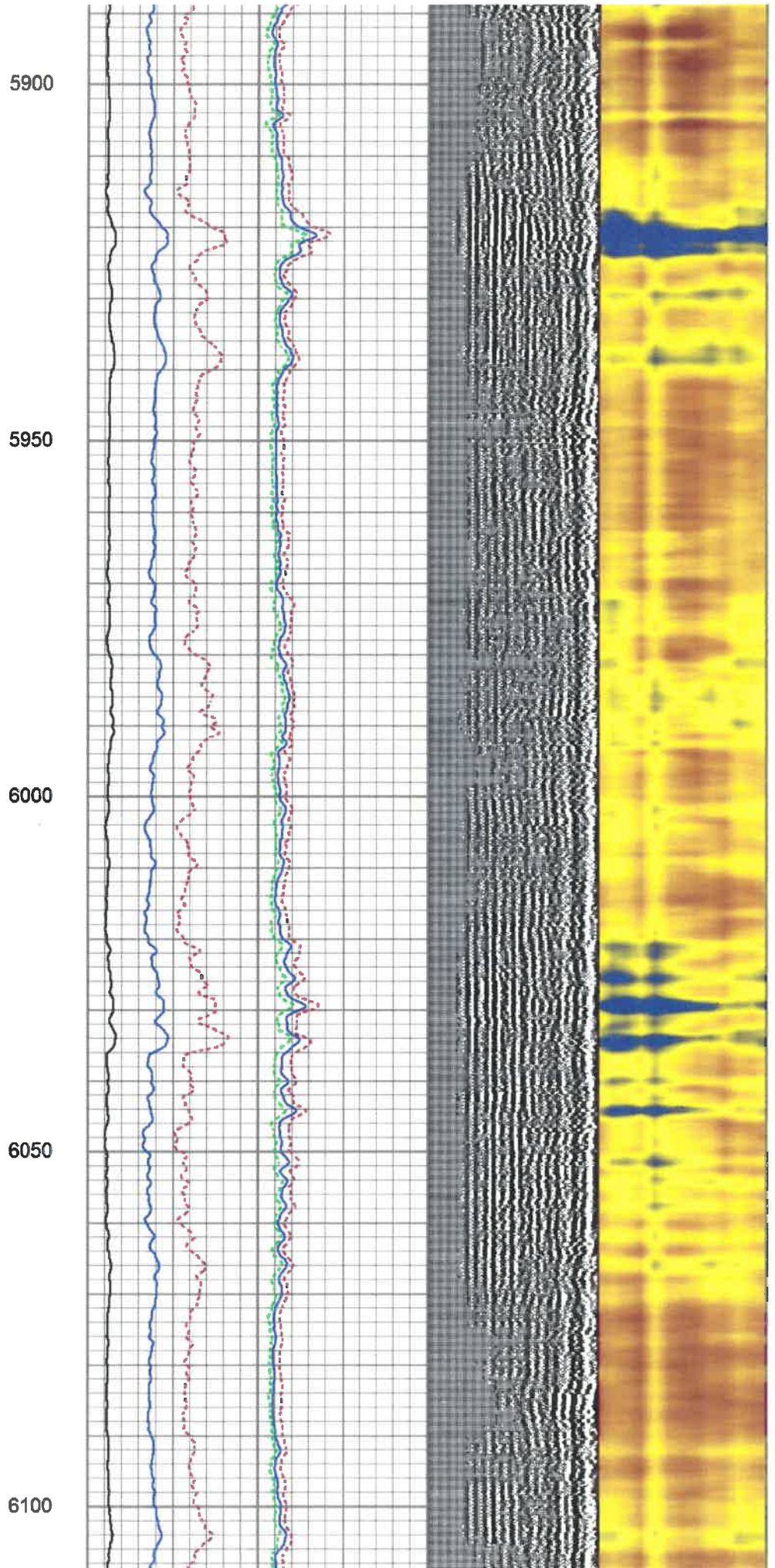
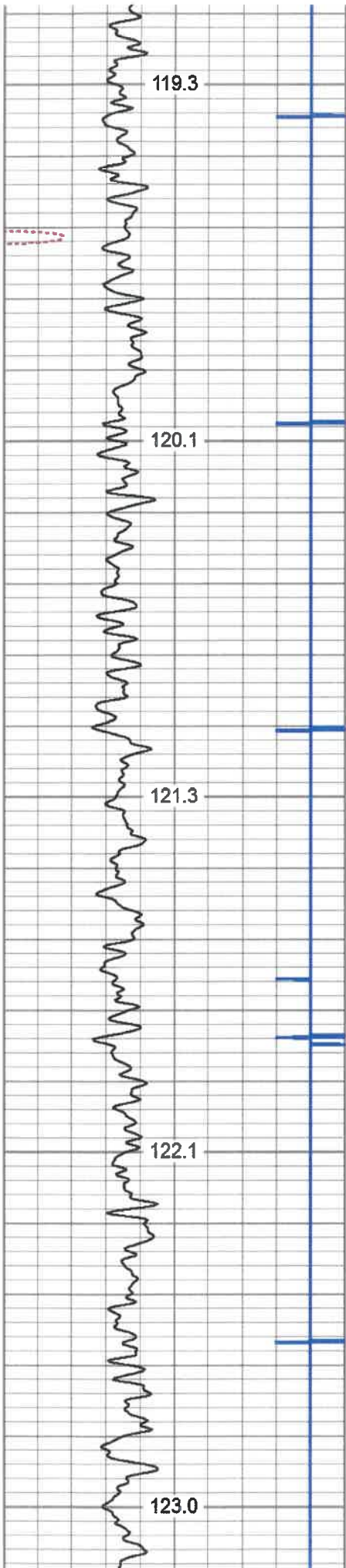




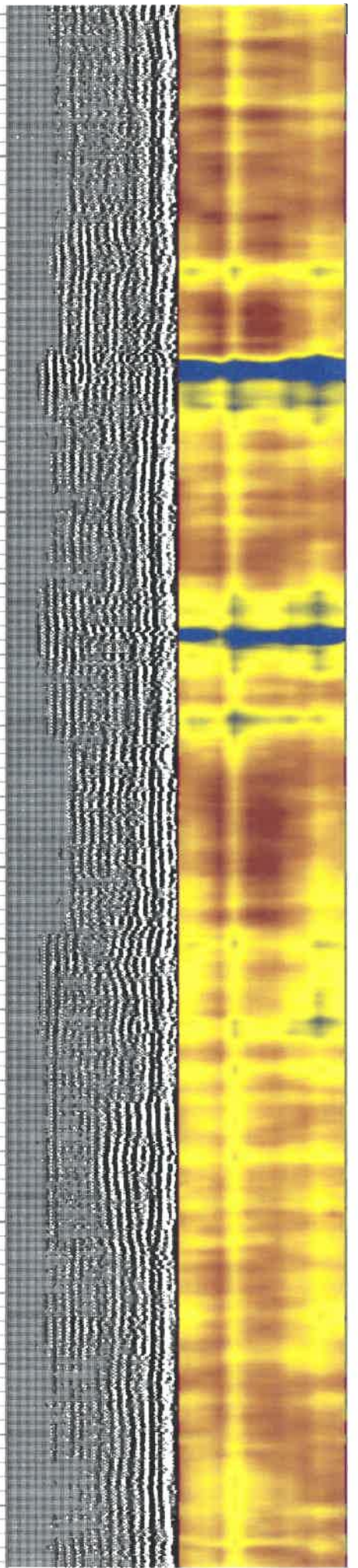
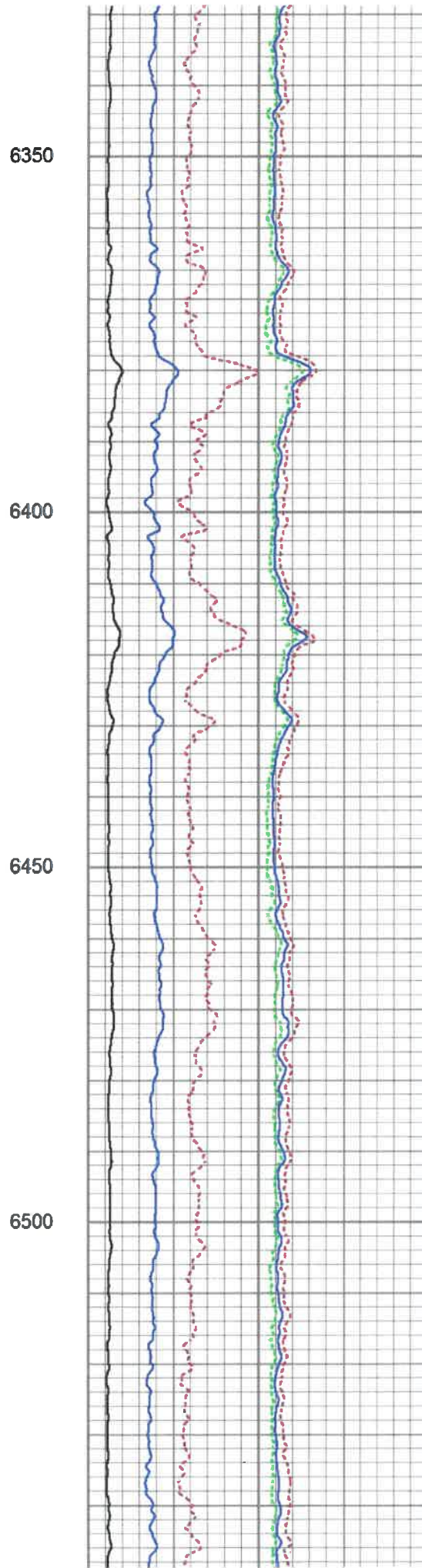
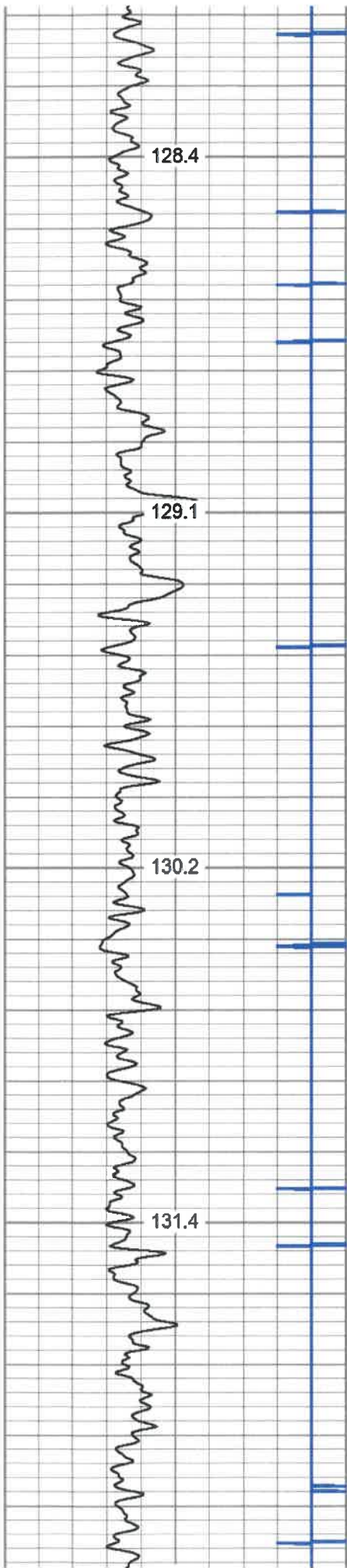




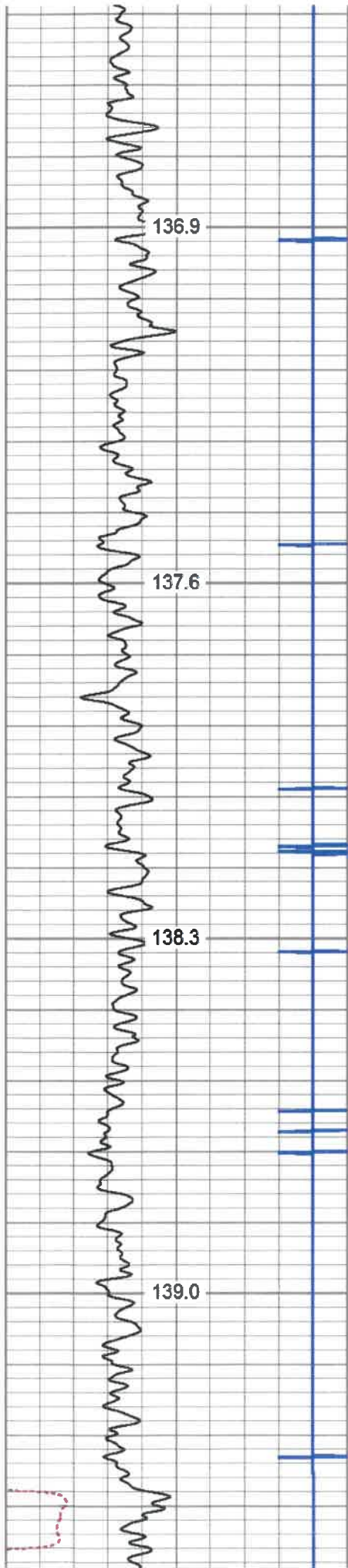




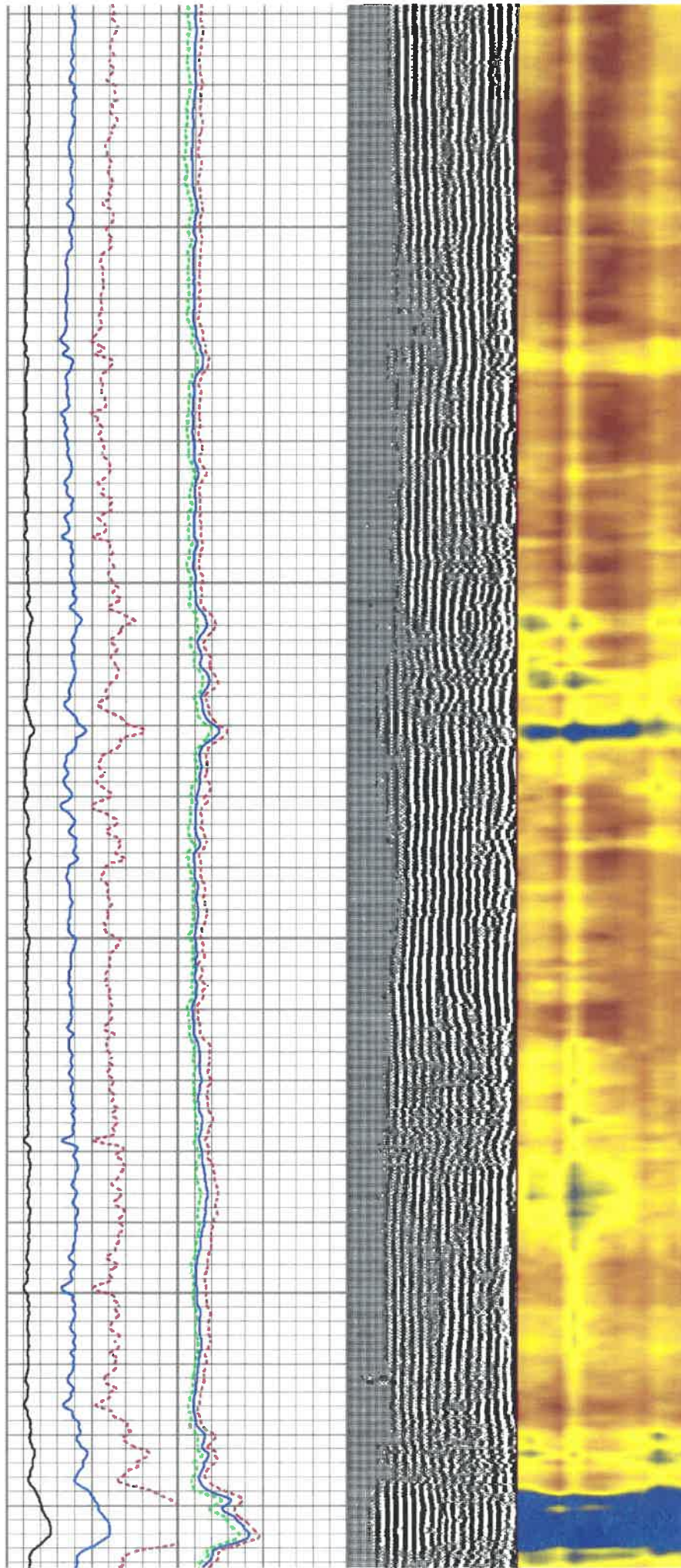








6800  
6850  
6900  
6950







# REPEAT PASS

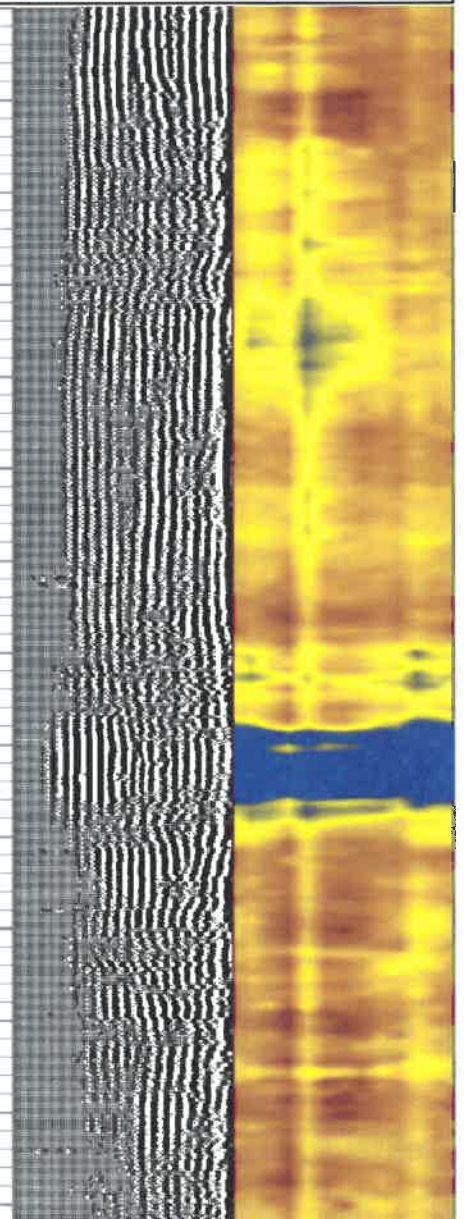
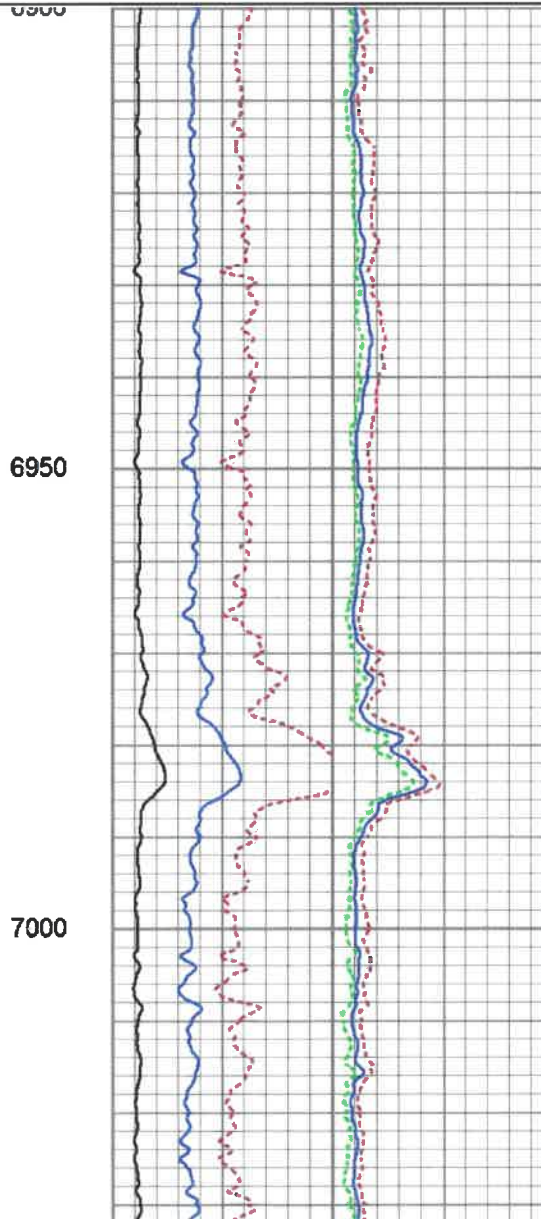
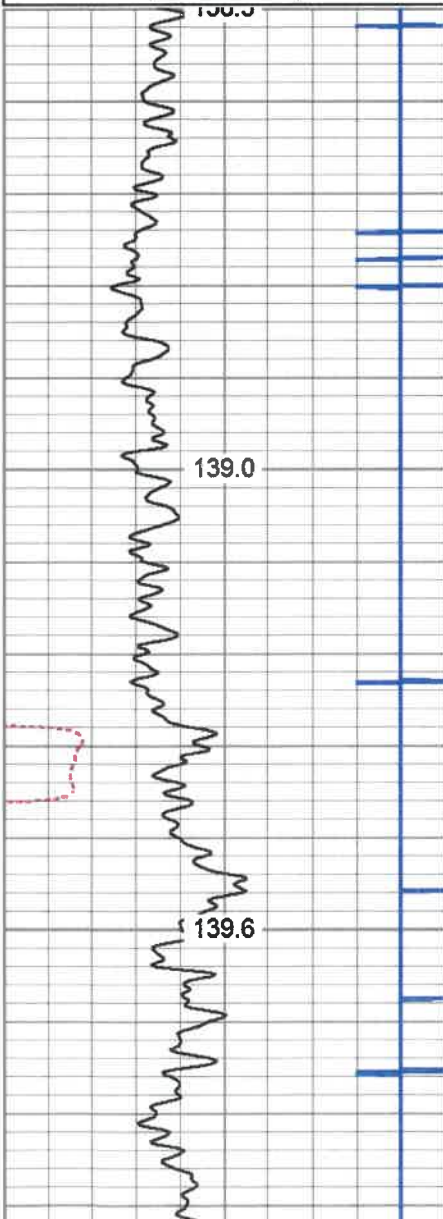
Database File e:\anterof.db  
 Dataset Pathname pass5.3  
 Presentation Format antero  
 Dataset Creation Fri Aug 30 14:49:57 2019  
 Charted by Depth in Feet scaled 1:240

280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray (GAPI)	180
0	TEMP (degF)	100
180	GR (GAPI)	360

TEMP  
(degF)

Amplitude		Sector Amp AVG
0	(mV) 100	Sector Amp MAX 200
Amp X5		Sector Amp MIN
0	(mV) 20	
1	BONDIX 0	

VDL	1	Sector Map 12
(usec) 1200		





IMGCCCLTH	IMGRWCSRC	MAXAMPL mV	MINAMPL mV	MinAPIWall in	MINATTN db/ft	PERFS
0.15	Ecc-Cor	71.9	3.5	0	0.8	No
PPT usec	SRFTEMP degF	TDEPTH ft				
219	0	0				

**Variable Description**

BHTEMP\_Src : BHTEMP Input Source Selector  
 BOREID : Borehole I.D.  
 BOTTEMP : Bottom Hole Temperature  
 CASEID : Casing I.D.  
 CASEOD : Casing O.D.  
 CASETHCK : Casing Thickness  
 CASEWGHT : Casing Weight  
 IMGCCCLTH : IMG Computed CCL threshold: fraction over nominal  
 IMGRWCSRC : IMG Remaining Wall computation source  
 MAXAMPL : Maximum Amplitude  
 MINAMPL : Minimum Amplitude  
 MinAPIWall : Minimum API Wall Thickness  
 MINATTN : Minimum Attenuation  
 PERFS : Perforation Flag  
 PPT : Predicted Pipe Time  
 SRFTEMP : Surface Temperature  
 TDEPTH : Total Depth

**Calibration Report**

Database File e:\anterof.db  
 Dataset Pathname pass5.8  
 Dataset Creation Sun Sep 01 15:01:37 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: 0.3000 GAPI/cps

**Segmented Cement Bond Log Calibration Report**

Serial Number: T12\_01  
 Tool Model: Tek12  
  
 Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 28.925 ft

**Master Calibration, performed (Derived):**

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.045	0.622	3.500	71.921	104.696	8.087
CAL	0.000	0.440				
5'	-0.179	0.869	1.000	71.921	67.677	13.114
SUM						



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: anterof.db: field/well/run1/pass5.4  
 Total length: 21.37 ft  
 Total weight: 256.00 lb  
 O.D.: 3.25 in



Company	ANTERO RESOURCES CORPORATION	
Well	OXFORD 97 FHS	
Field	MARCELLUS	
County	DODDRIDGE	
State	WV	Country USA