



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

Company Antero Resources Corporation Well DANIELS 2H Field Marcellus County TYLER State WV Country USA	Company Antero Resources Corporation Well DANIELS 2H Field Marcellus County TYLER State WV Country USA
Location: API #: 47095025670000 SEC TWP RGE Permanent Datum Ground Level Elevation Log Measured From R.K.B. 30' Drilling Measured From R.K.B.	Other Services API A06294 Elevation K.B. D.F. G.L.

Date	17-DEC-2019	
Run Number	ONE	
Depth Driller	19473	
Depth Logger	6594'	
Bottom Logged Interval	6594'	
Top Log Interval	Surface	
Open Hole Size	8.25"	
Type Fluid	F/W	
Density / Viscosity	N/A	
Max. Recorded Temp.	134.4 DEG	
Estimated Cement Top	3650'	
Time Well Ready	N/A	
Time Logger on Bottom	N/A	
Equipment Number	214182	
Location	Bridgeport, WV	
Recorded By	P DAVIDSON	
Witnessed By	B ETCHER	
Borehole Record		
Run Number	Bit	From To
ONE	24"	
TWO	17.5"	
THREE	12.25"	
FOUR	8.25"	
Tubing Record		
Casing Record	Size	Wgt/Ft
Surface String	13.375"	54.5
Prot. String	9.625"	40
Production String	5.5"	20
Liner		
		Bottom
		19473'

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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

Zero @ R.K.B. 30'
 Marker Joint 5353.5-5363.5'
 Log TD 6594'
 Cement Top @ 3650'
 Log Ran Under 1500 PSI

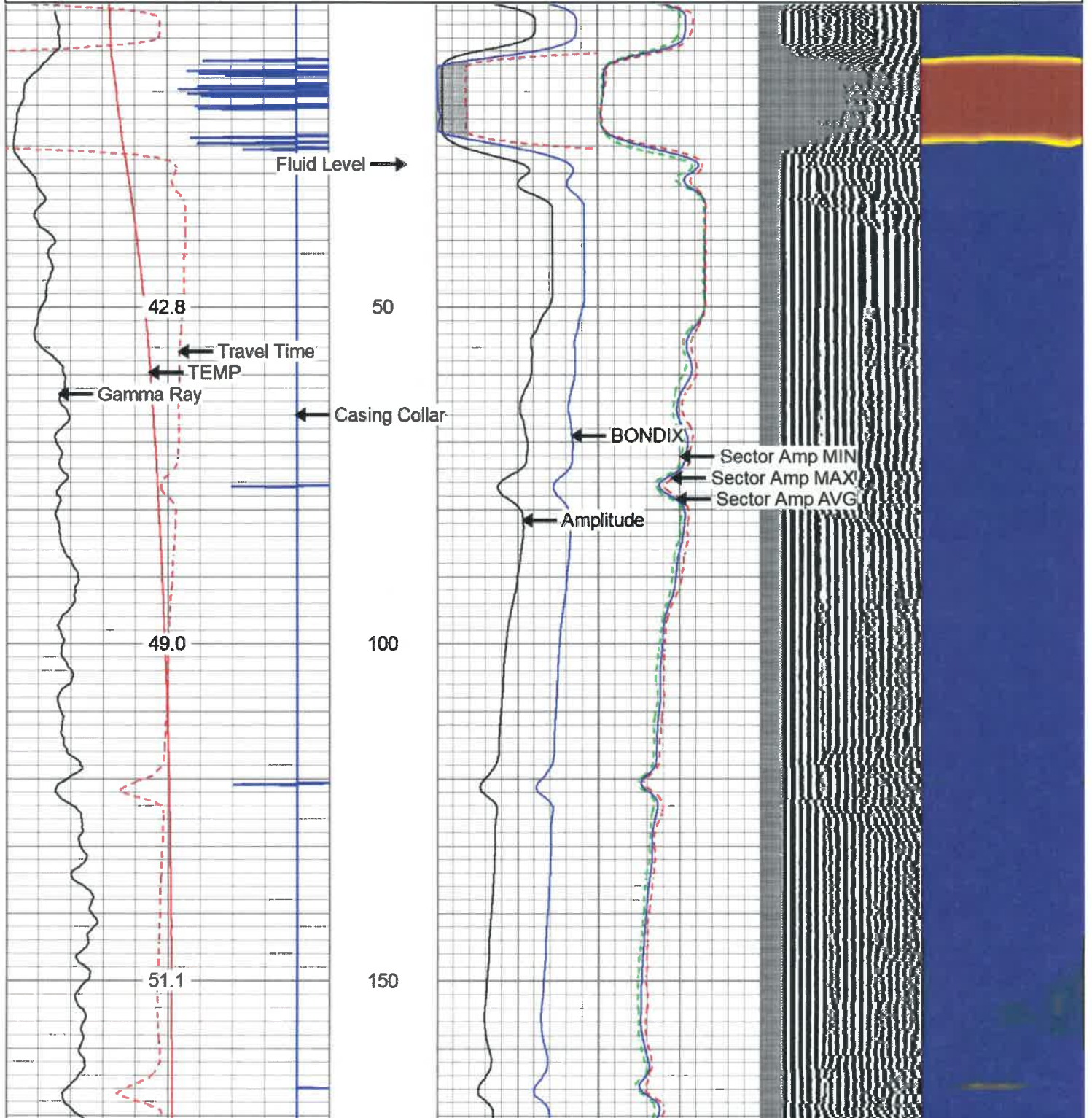
RECEIVED
 Office of Oil and Gas
 SEP 24 2020
 WV Department of Environmental Protection

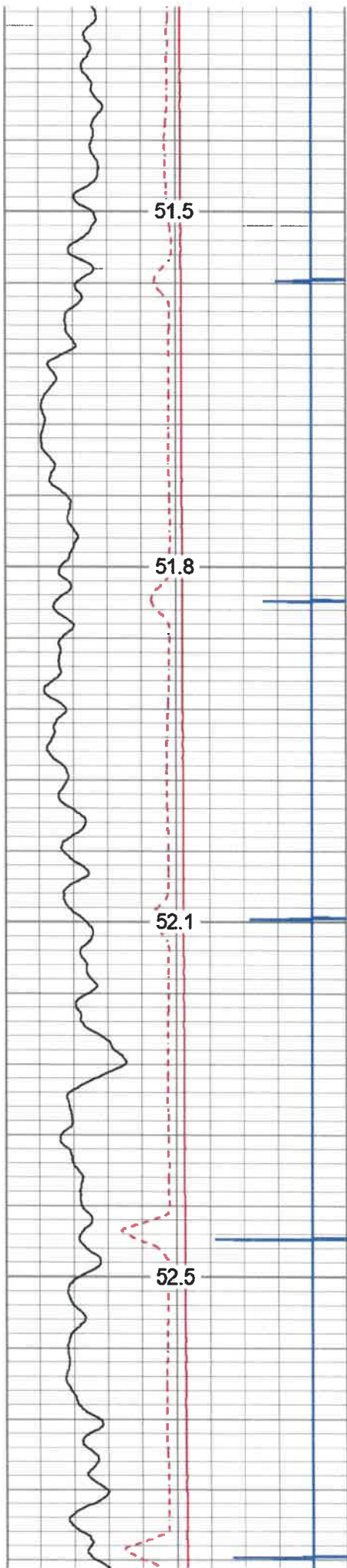


1500 PRESSURE PASS

Database File ant_dan2h.db
 Dataset Pathname pass4.1
 Presentation Format antero
 Dataset Creation Tue Dec 17 08:32:23 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	180	Amp X5	Sector Amp MIN				
0	TEMP (degF)	100	0 (mV) 20					
180	GR	360	1 BONDIX	0				
TEMP (degF)								



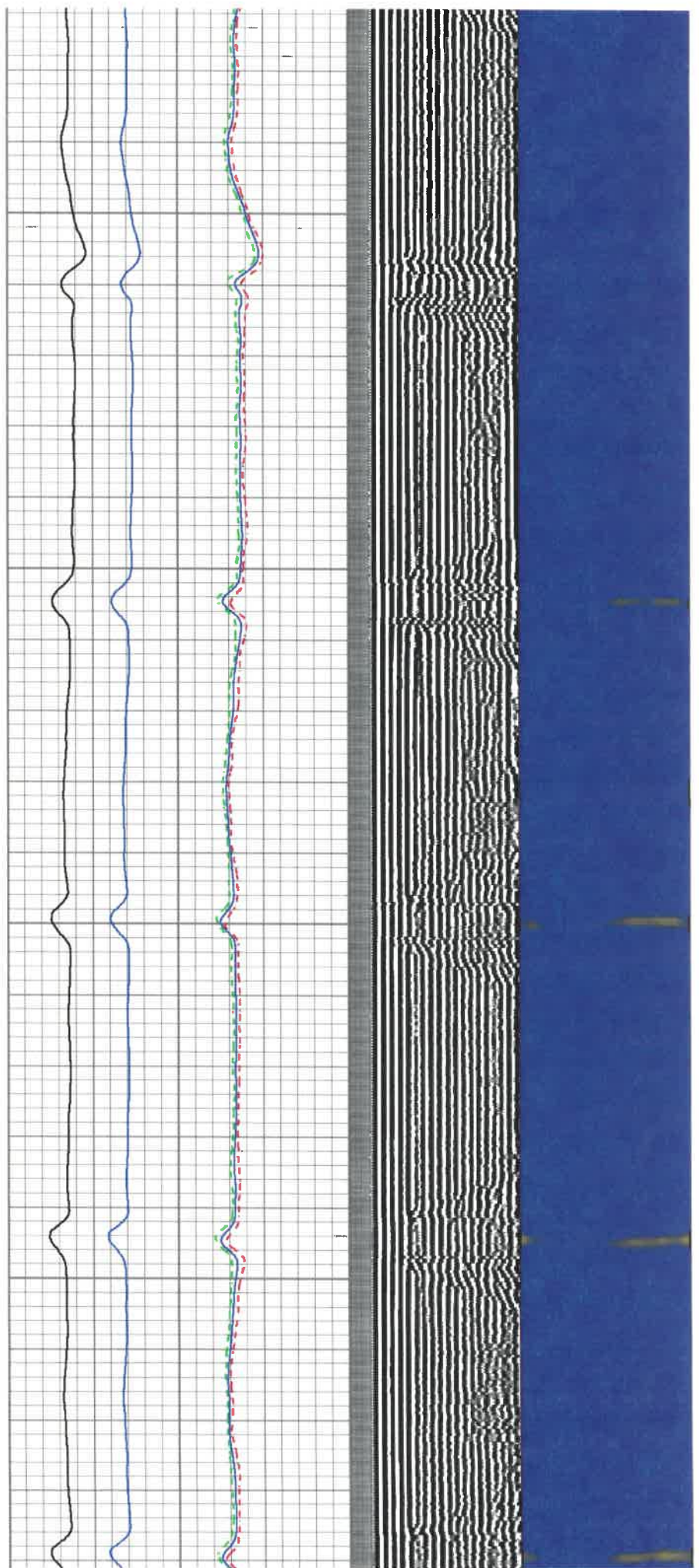


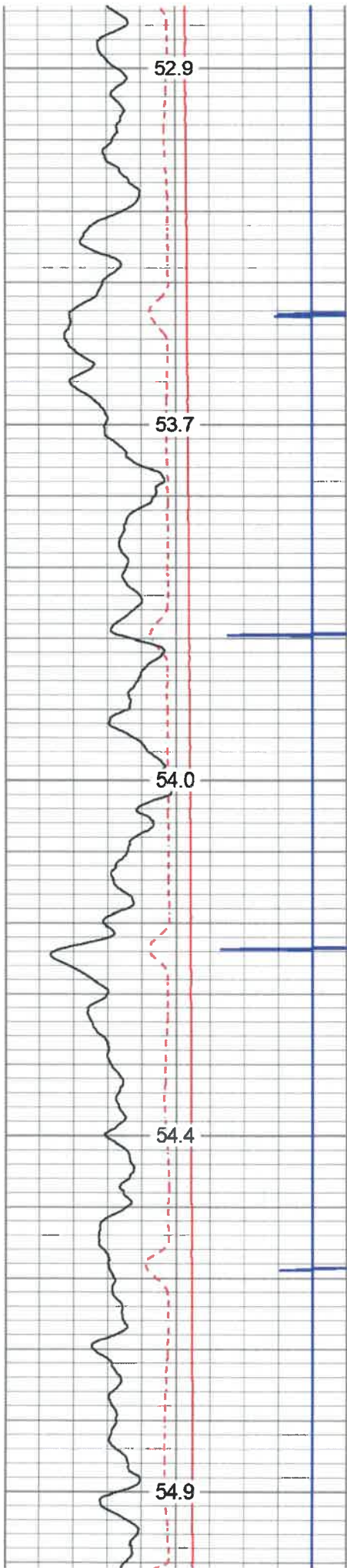
200

250

300

350





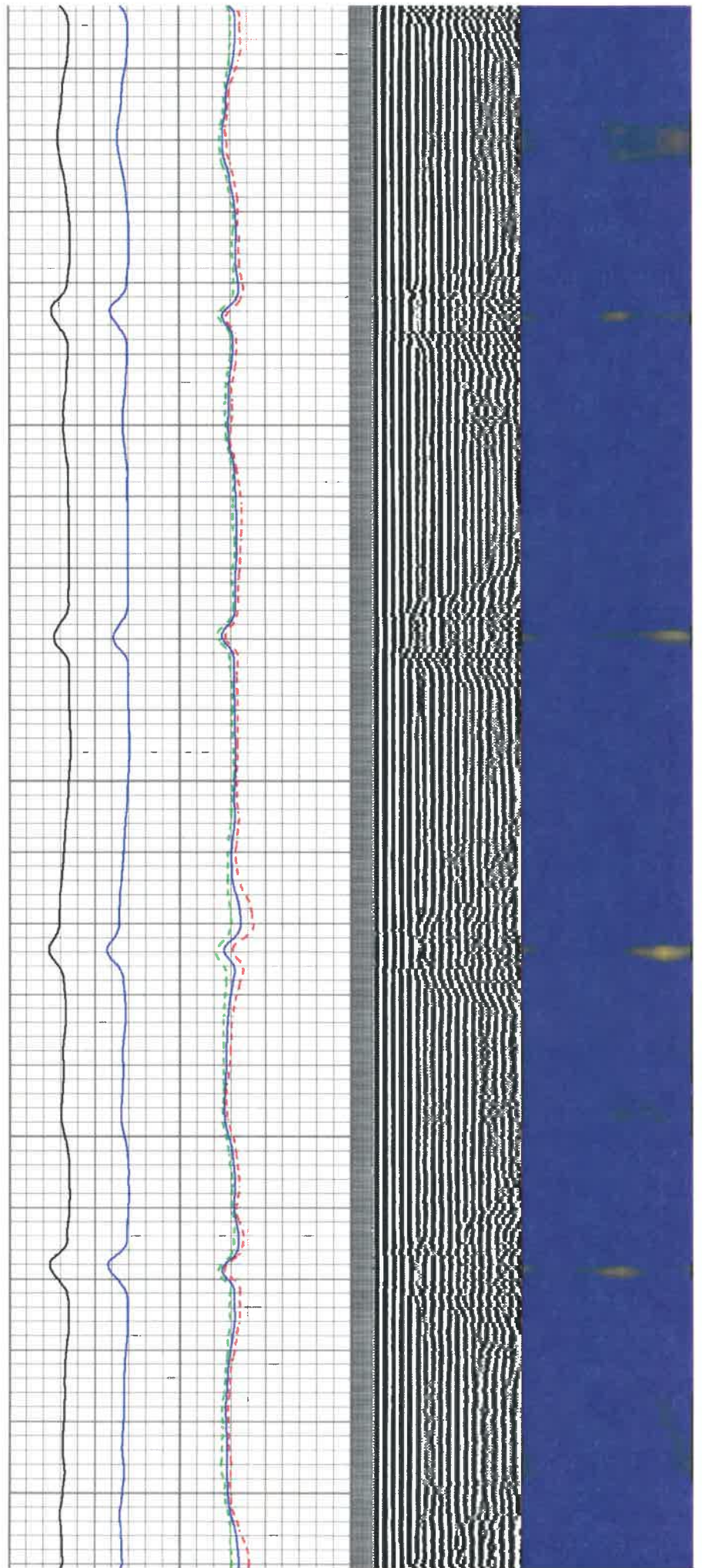
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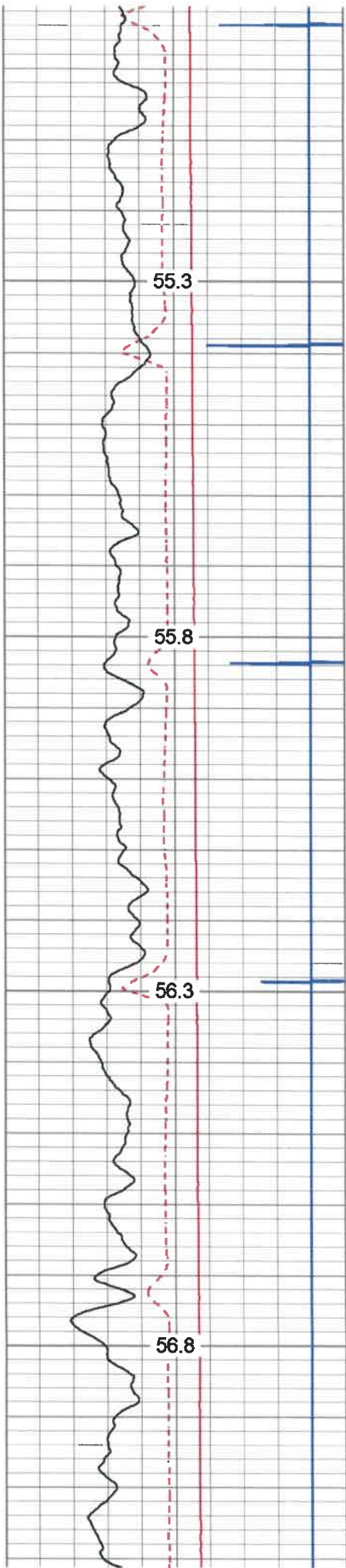
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500

550

600



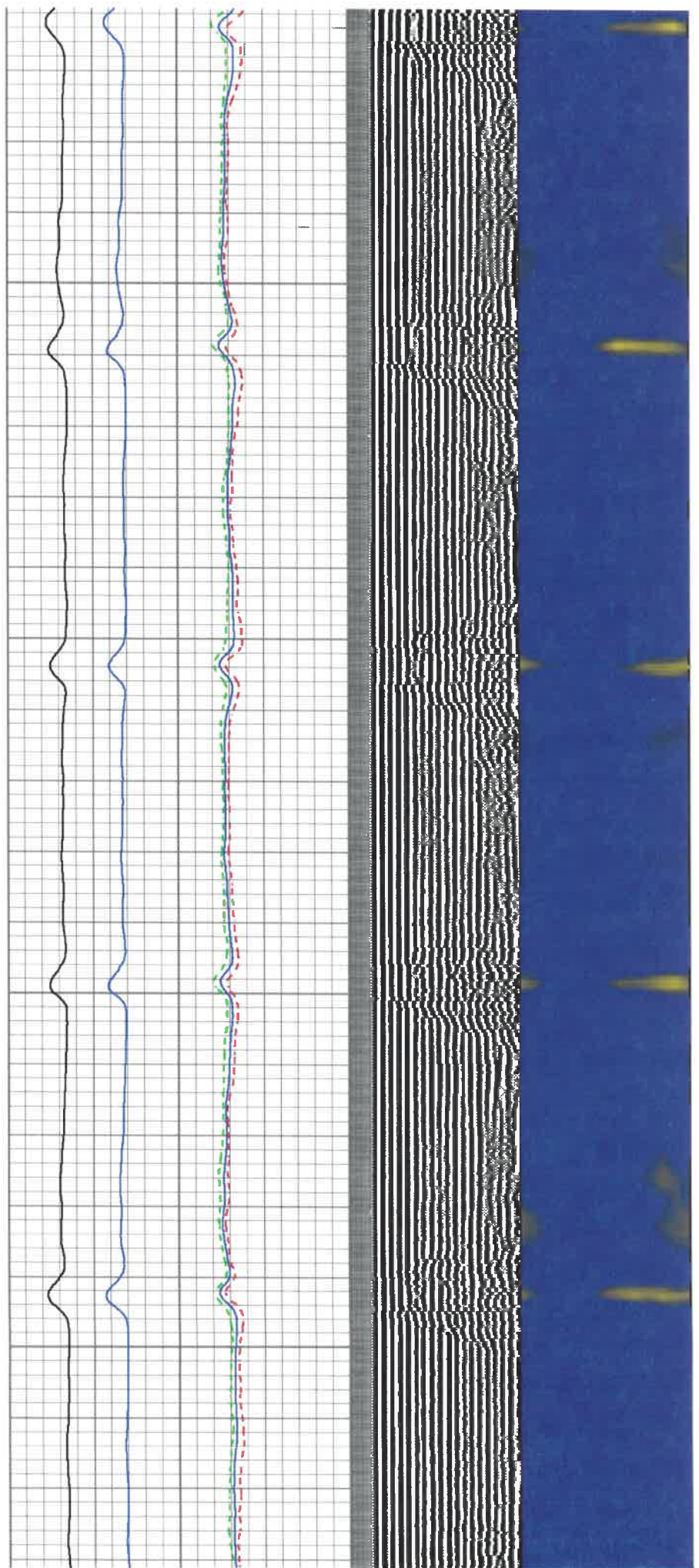


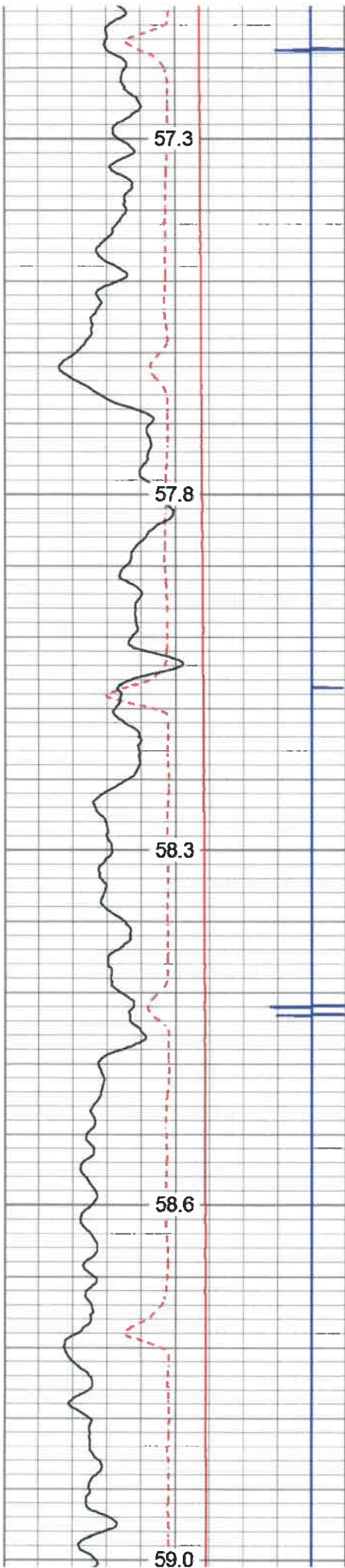
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700

750

800





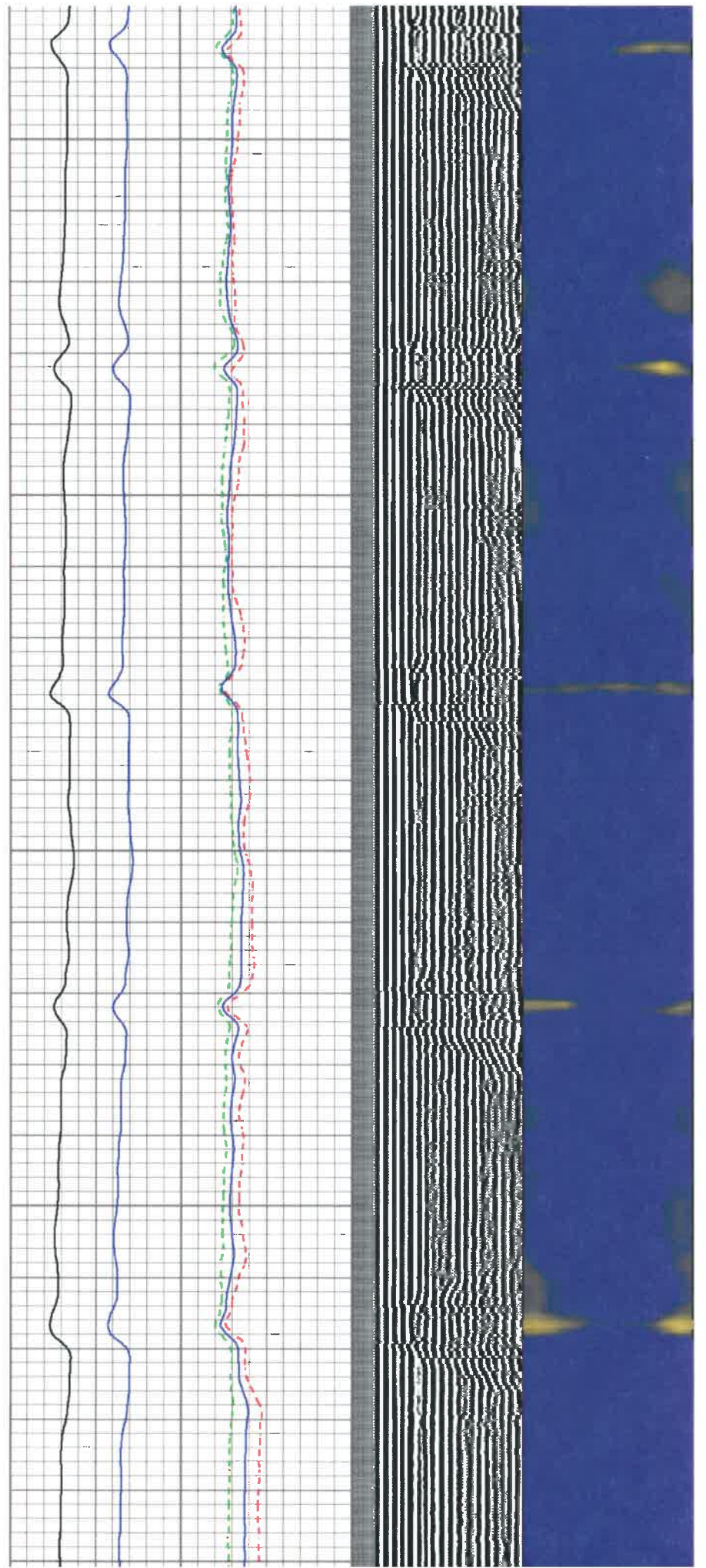
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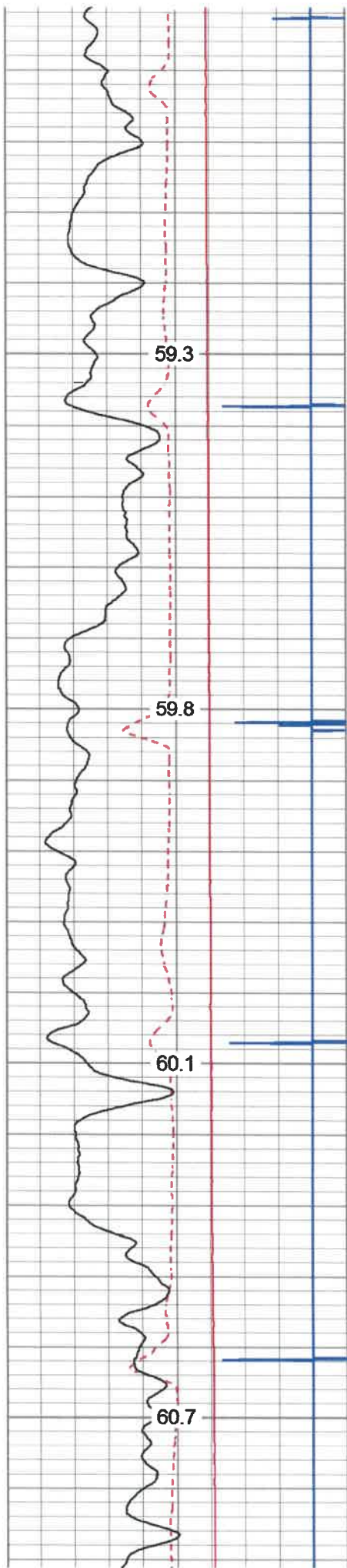
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950

1000

1050



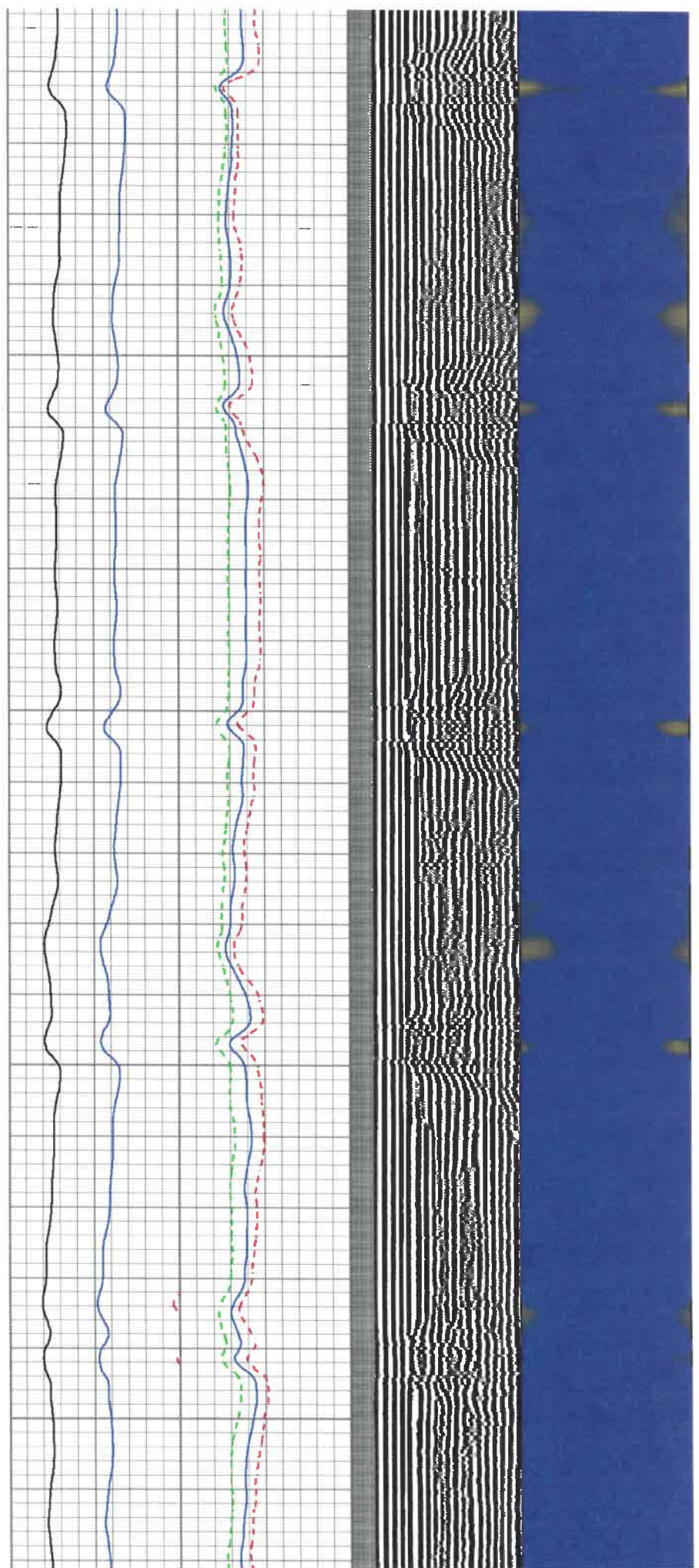


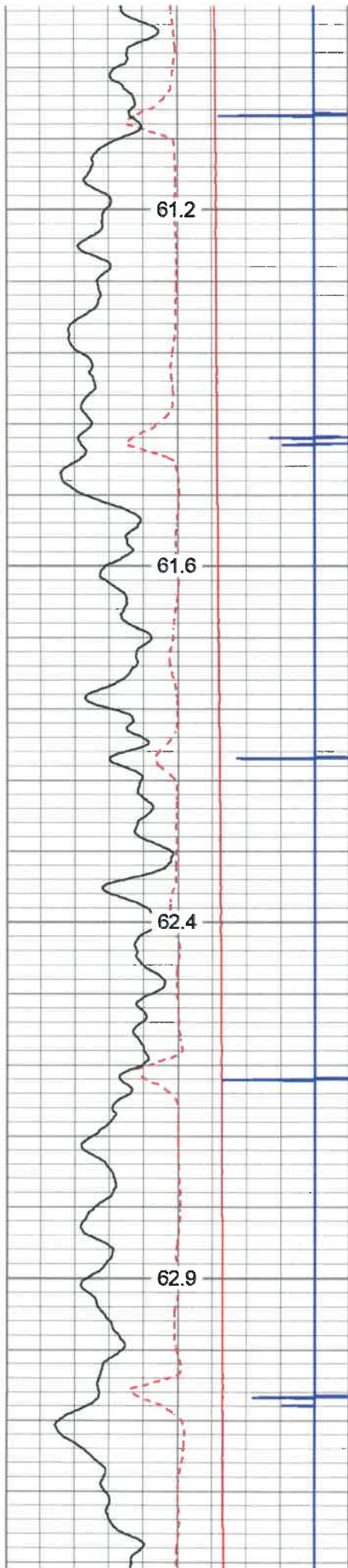
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1150

1200

1250



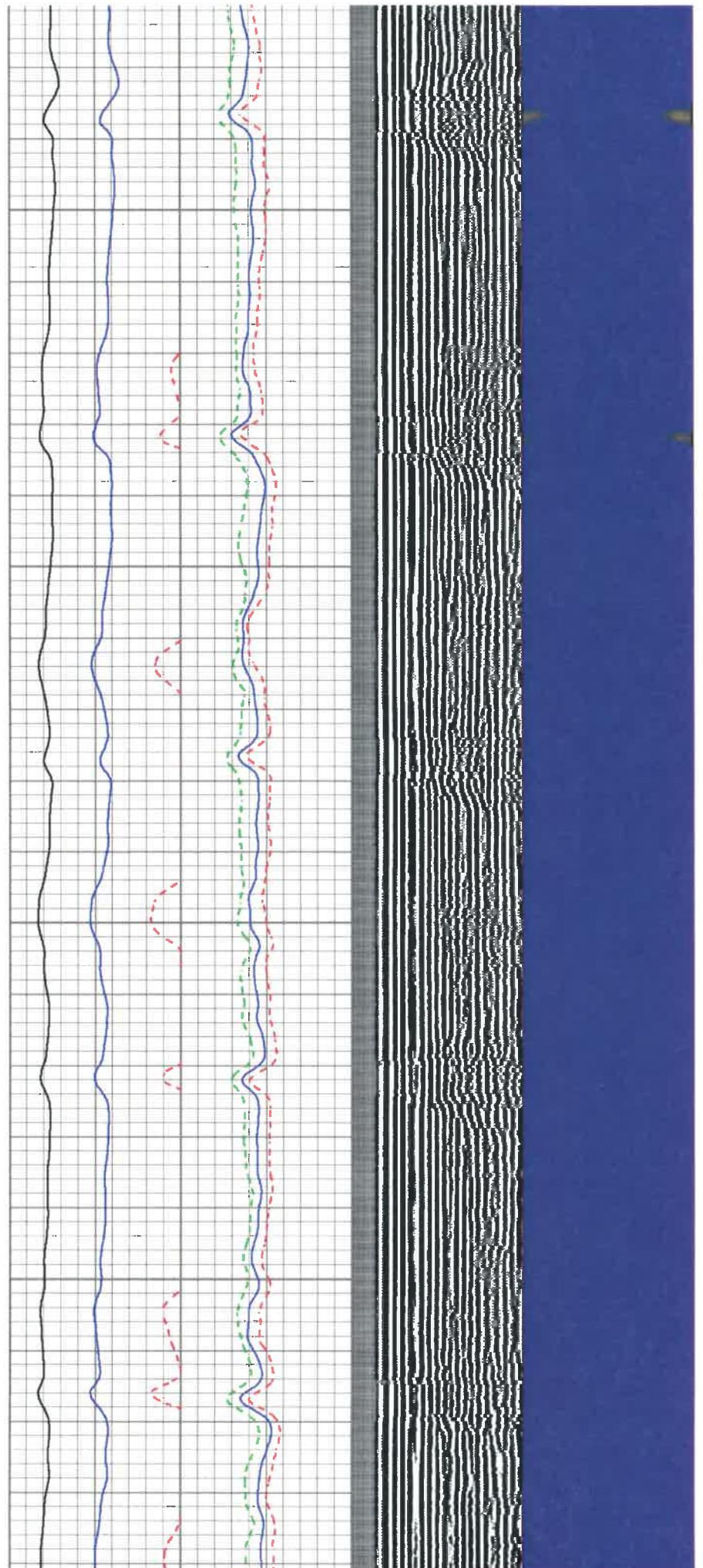


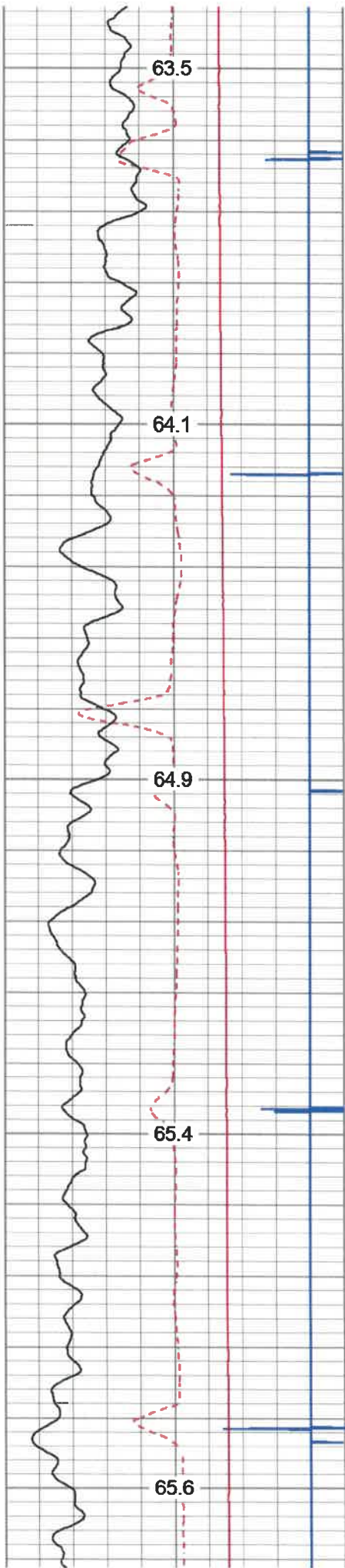
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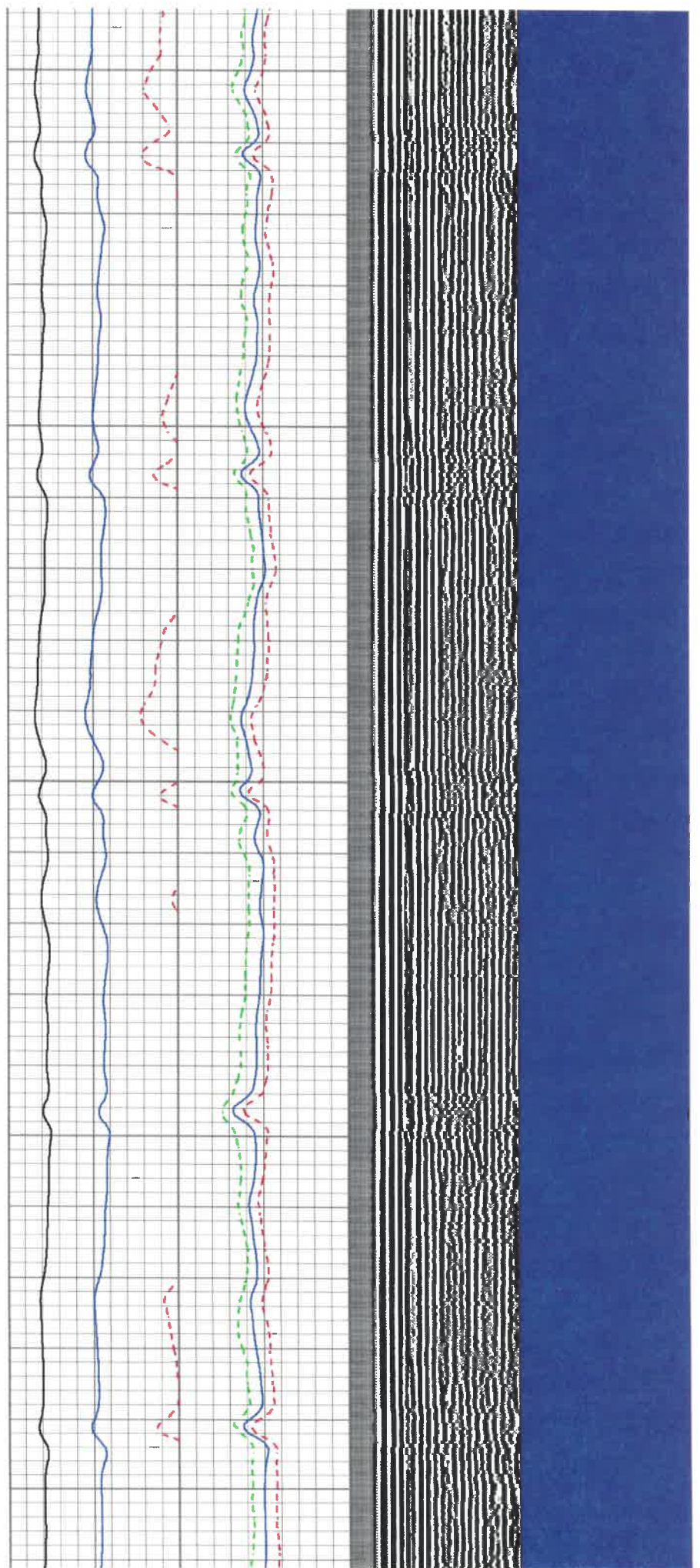
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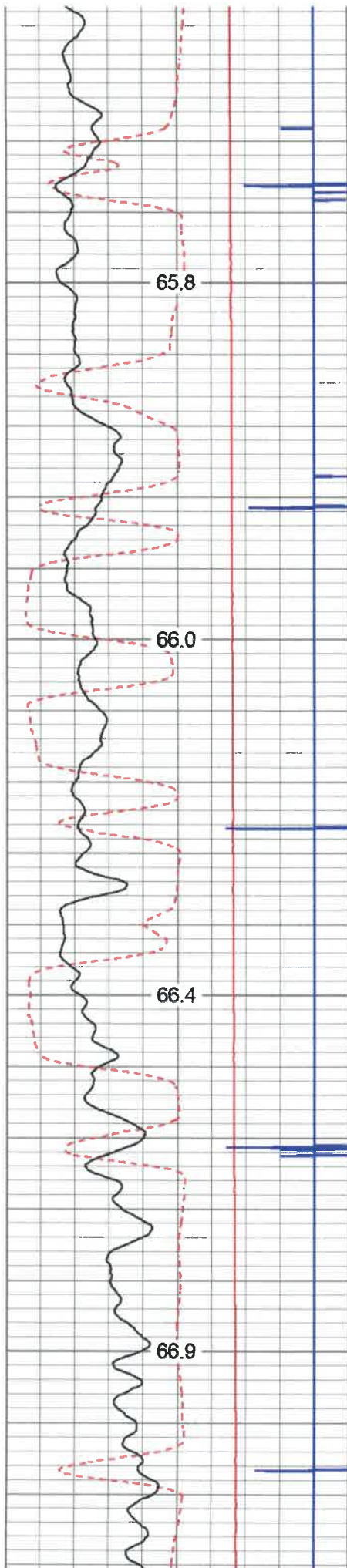
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1500
1550
1600
1650
1700





1750

1800

1850

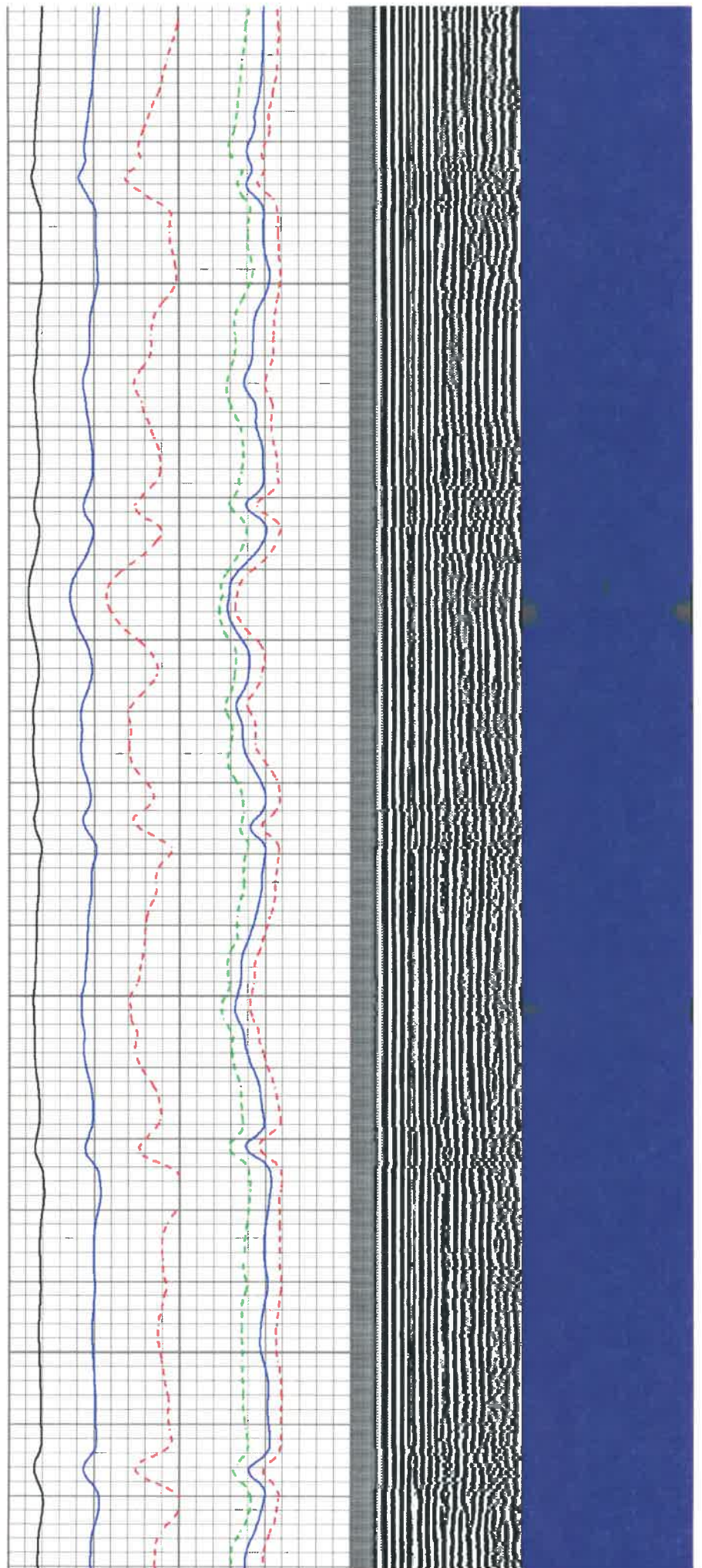
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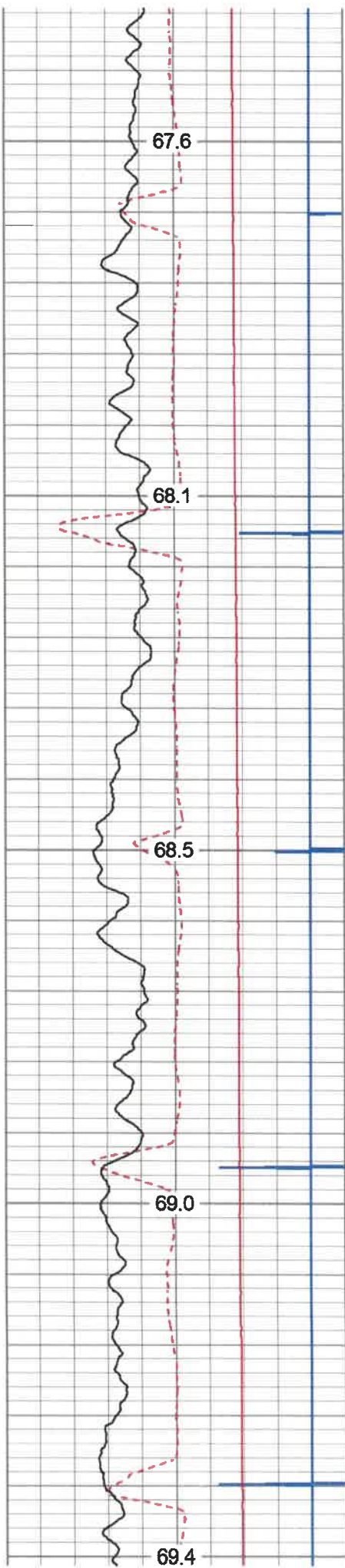
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66.0

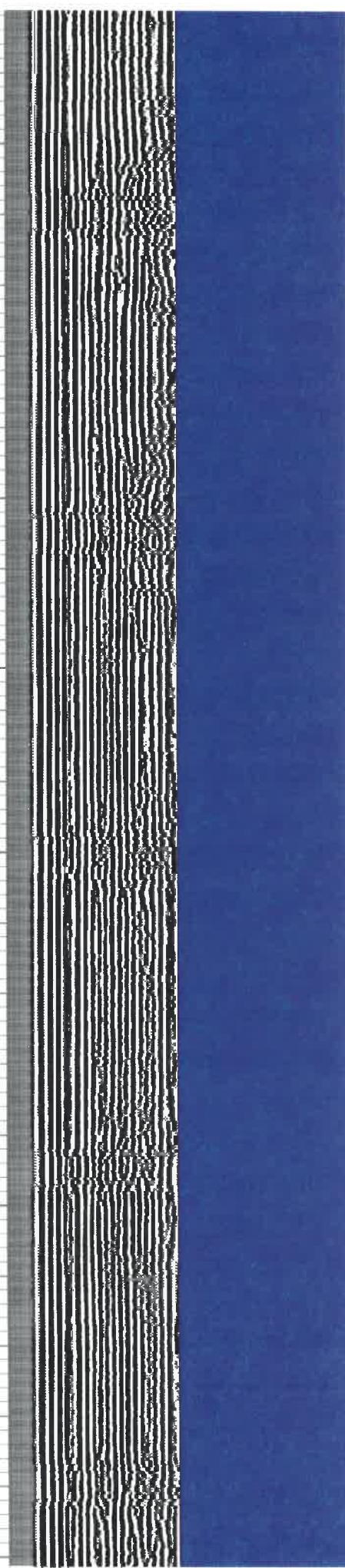
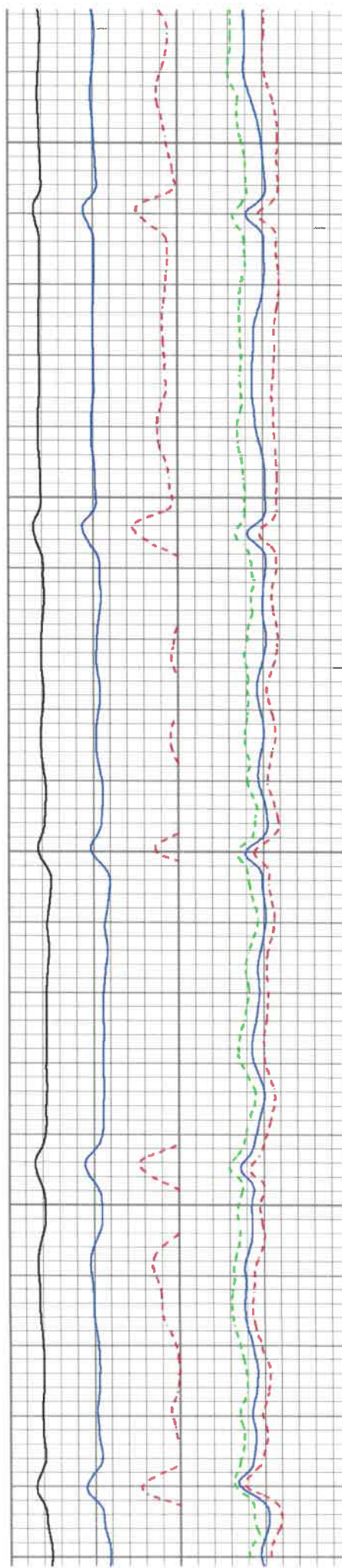
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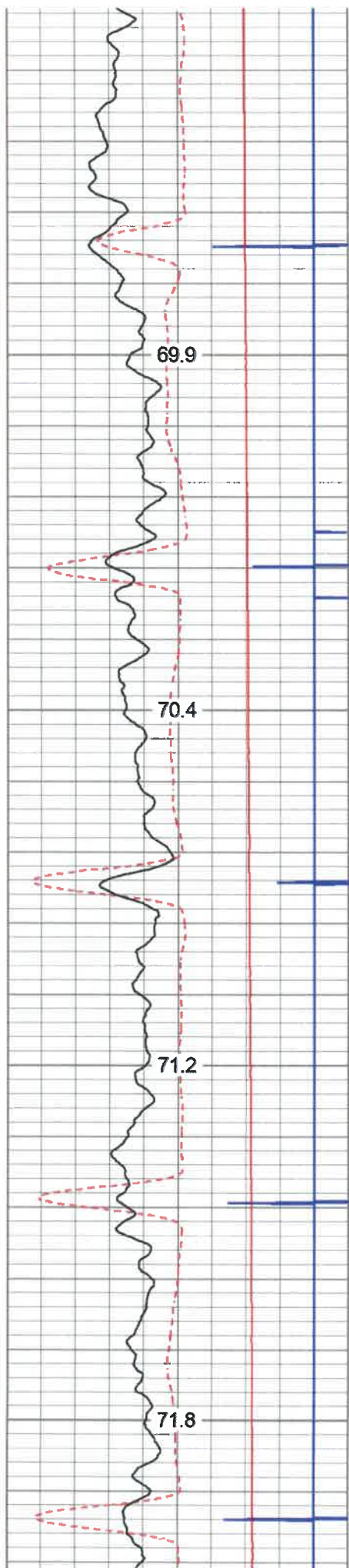
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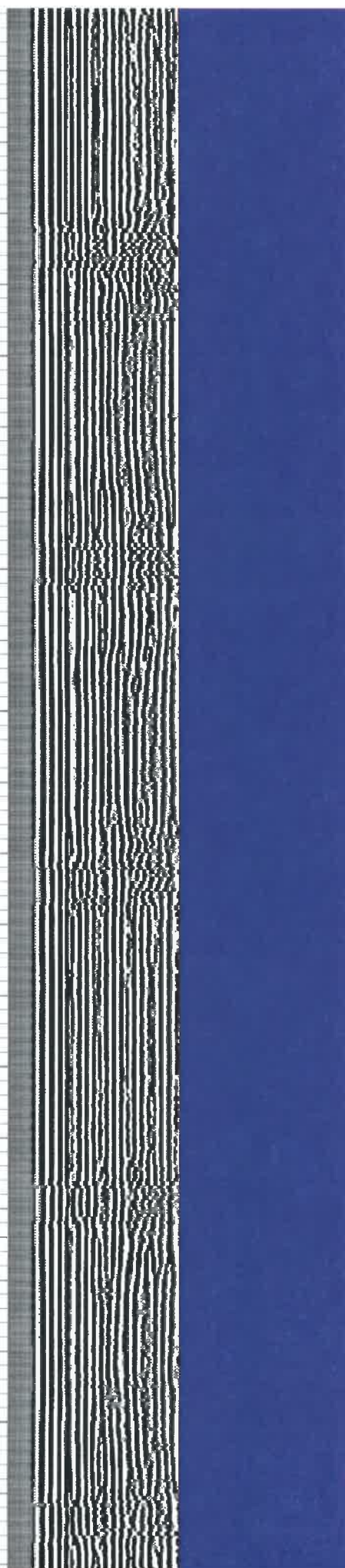
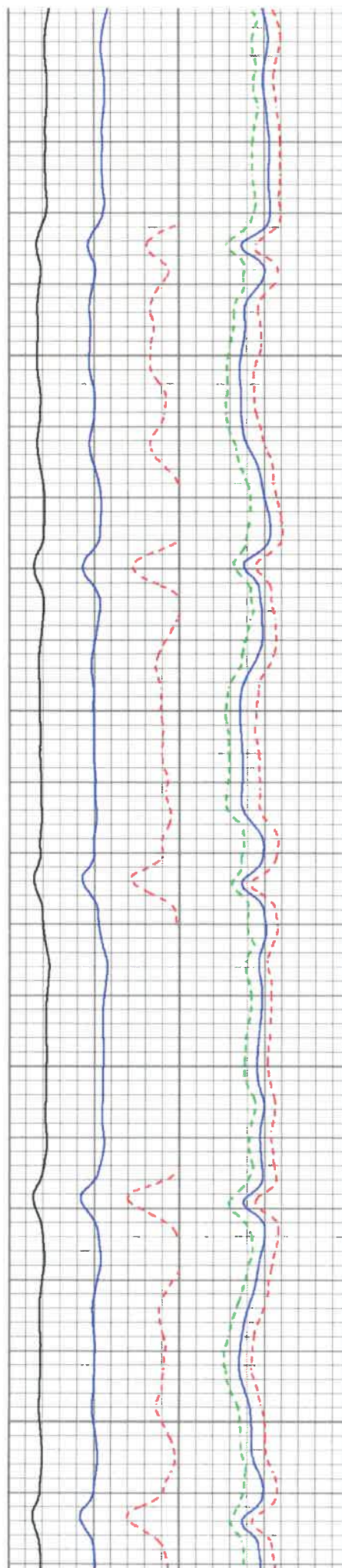


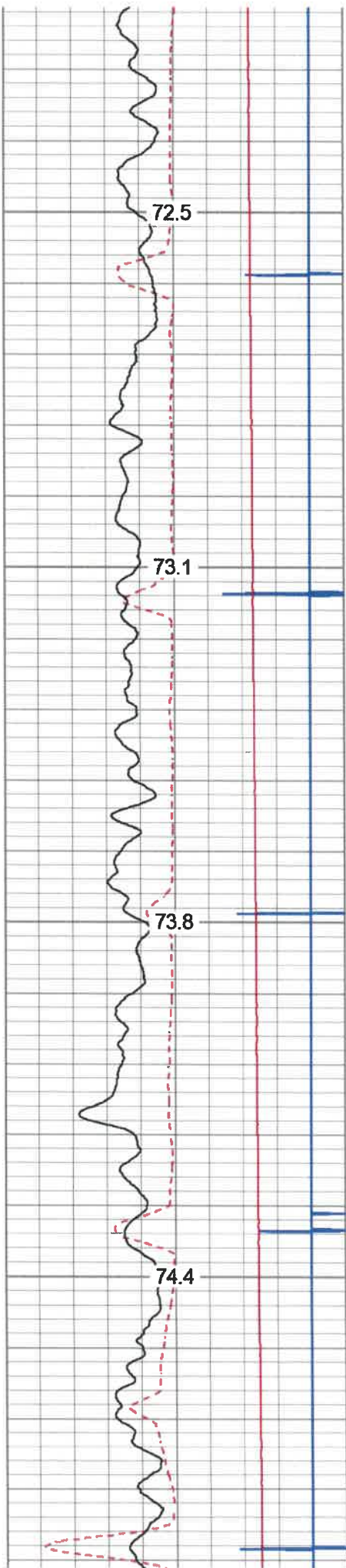
1950
2000
2050
2100
2150





2200
2250
2300
2350



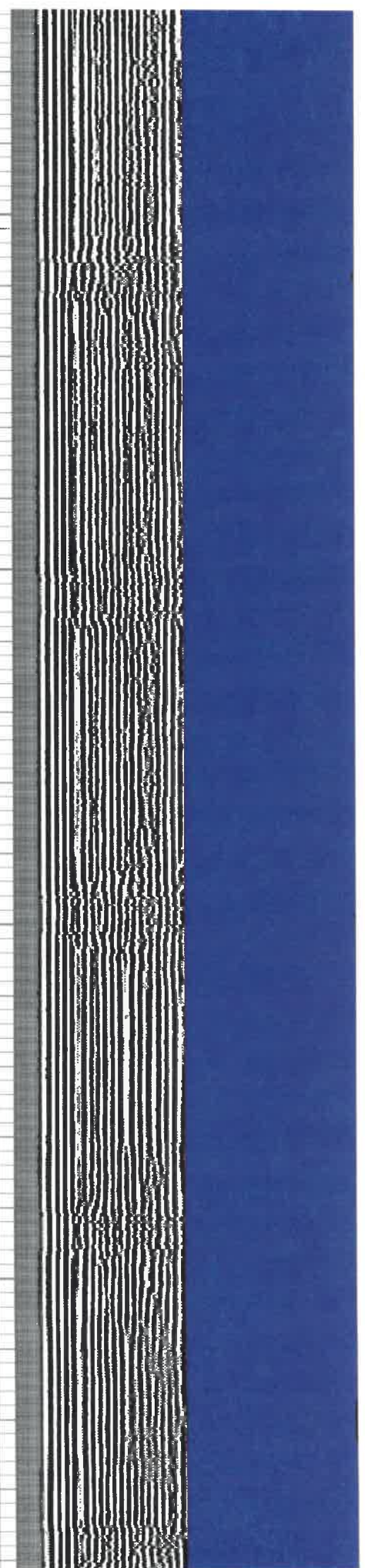
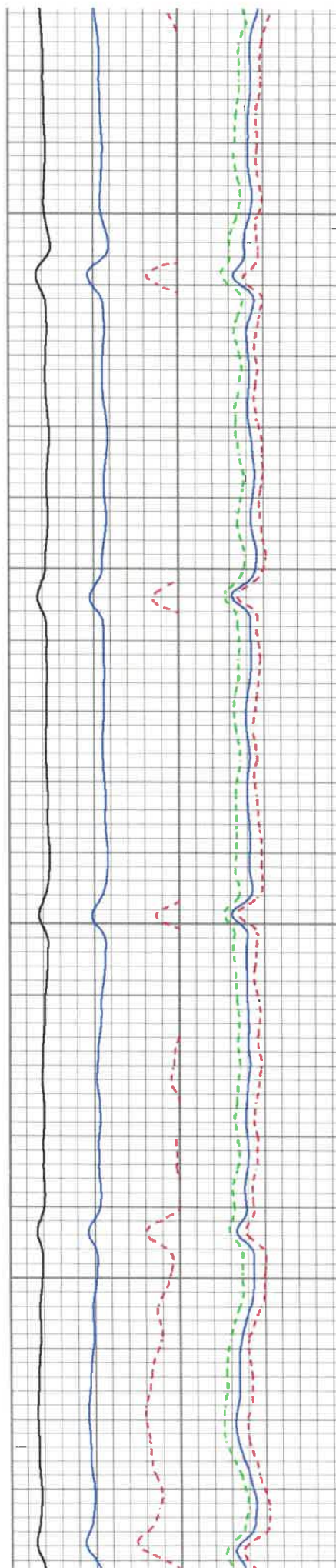


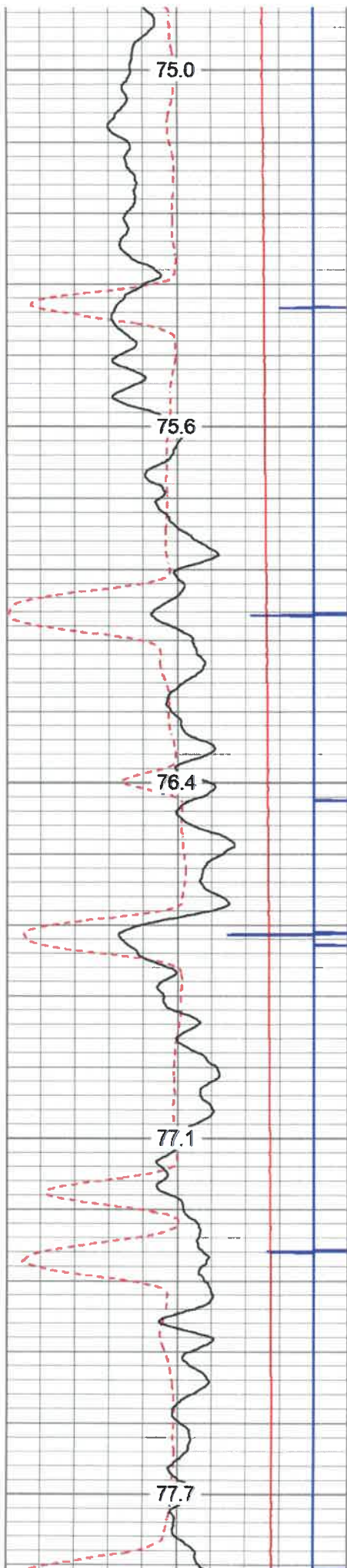
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2450

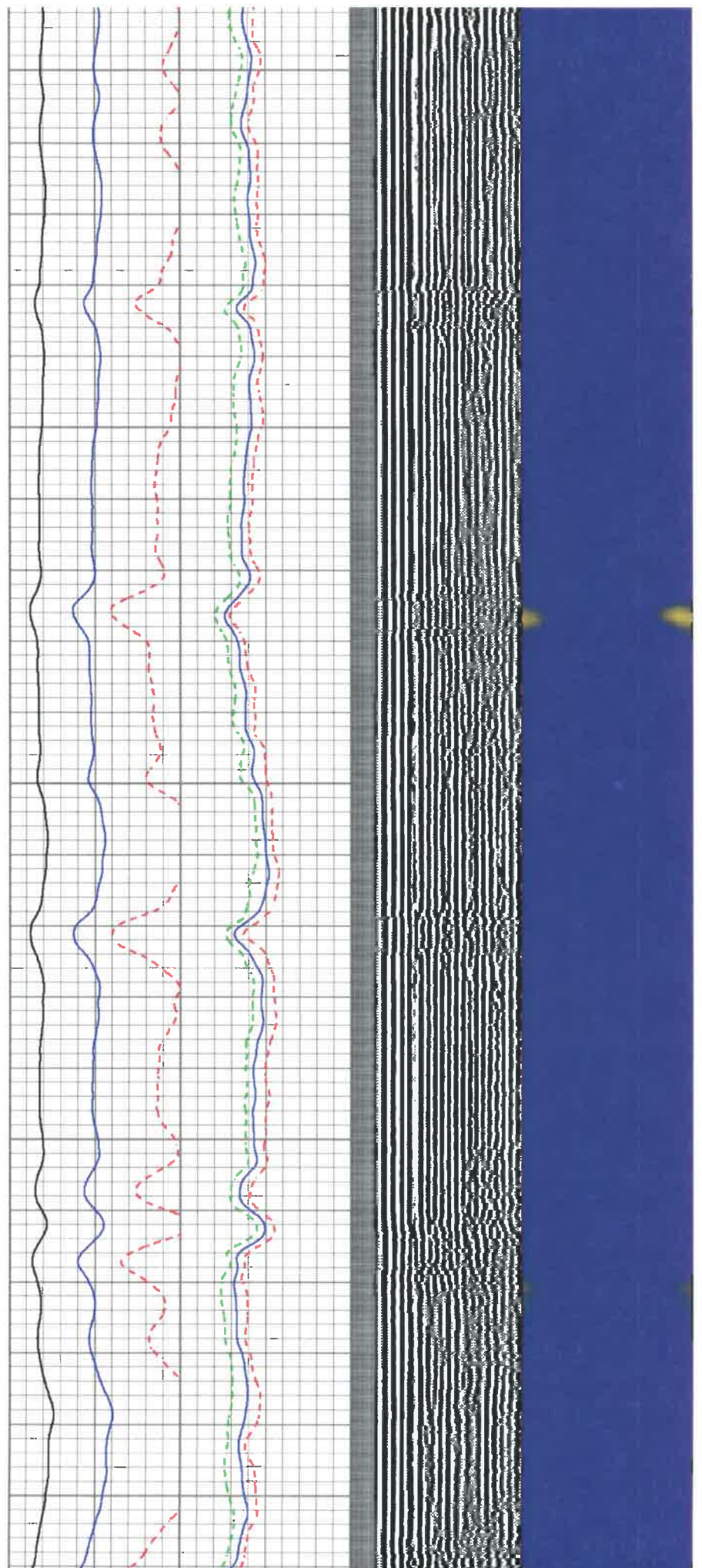
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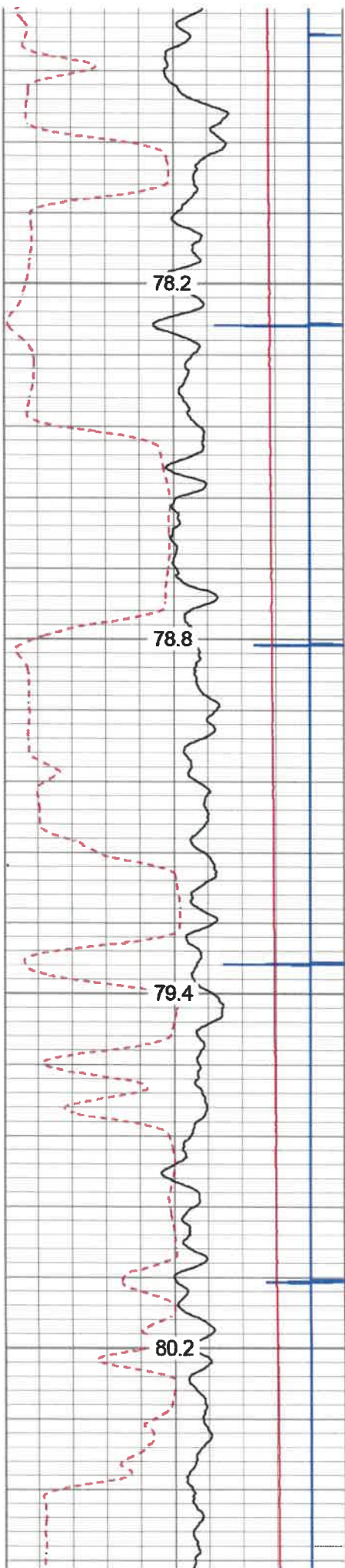
2550





2600
2650
2700
2750
2800



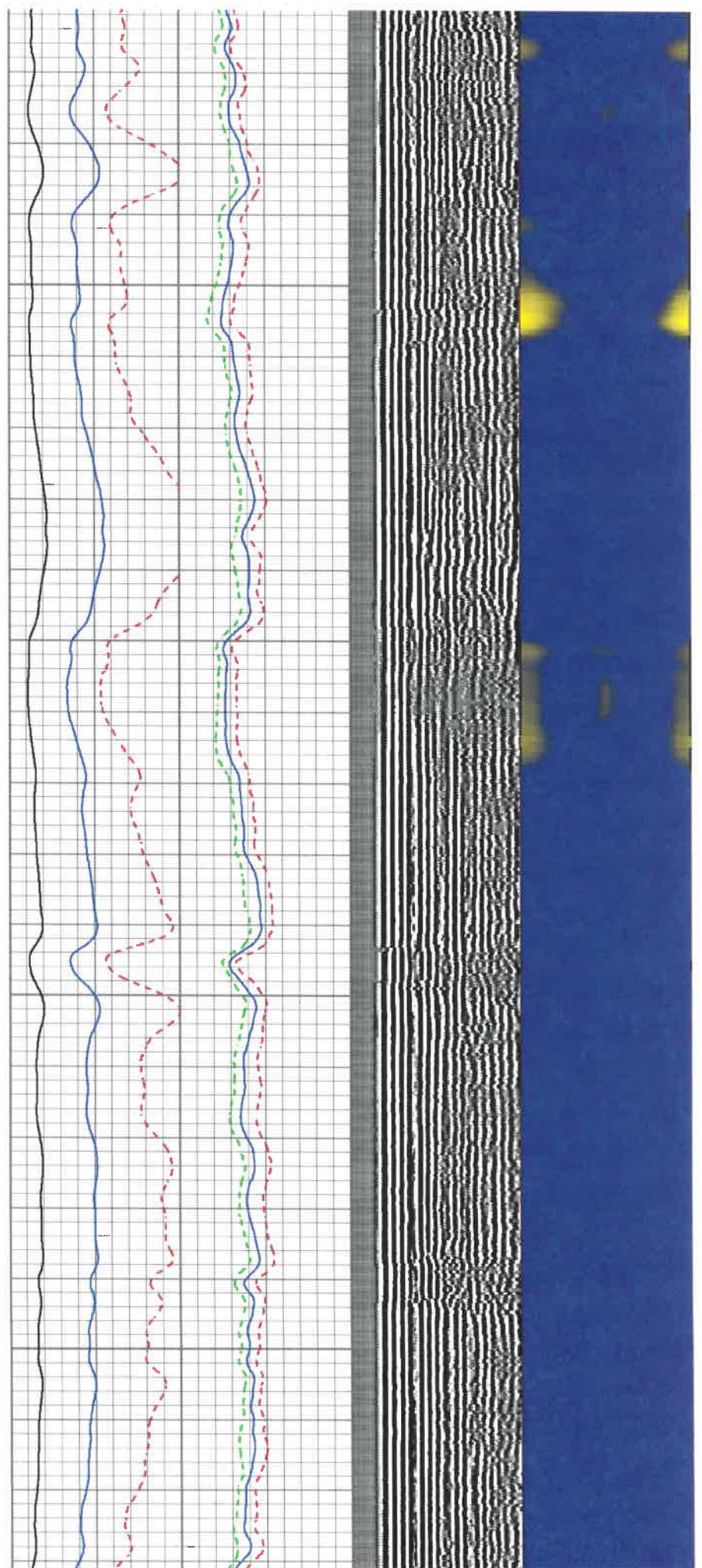


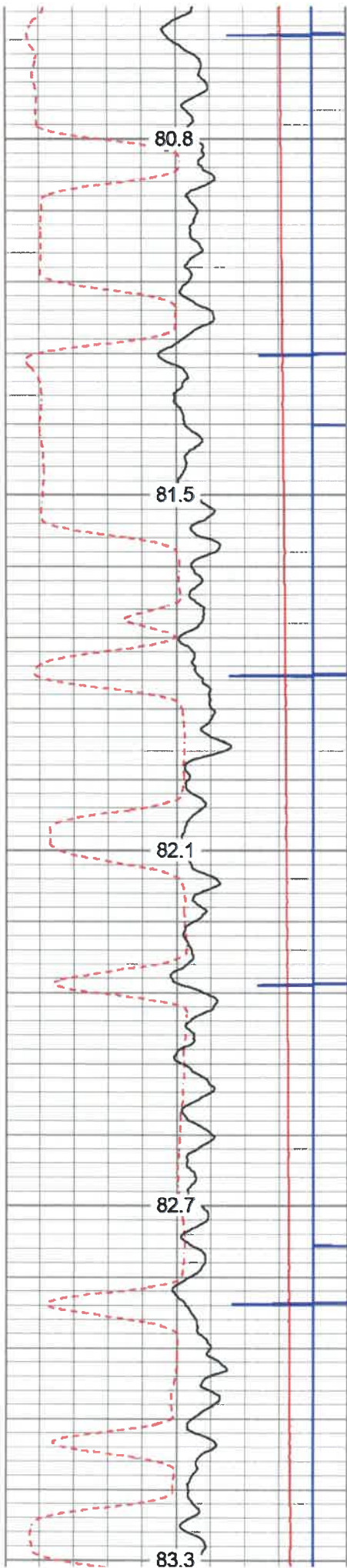
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2900

2950

3000





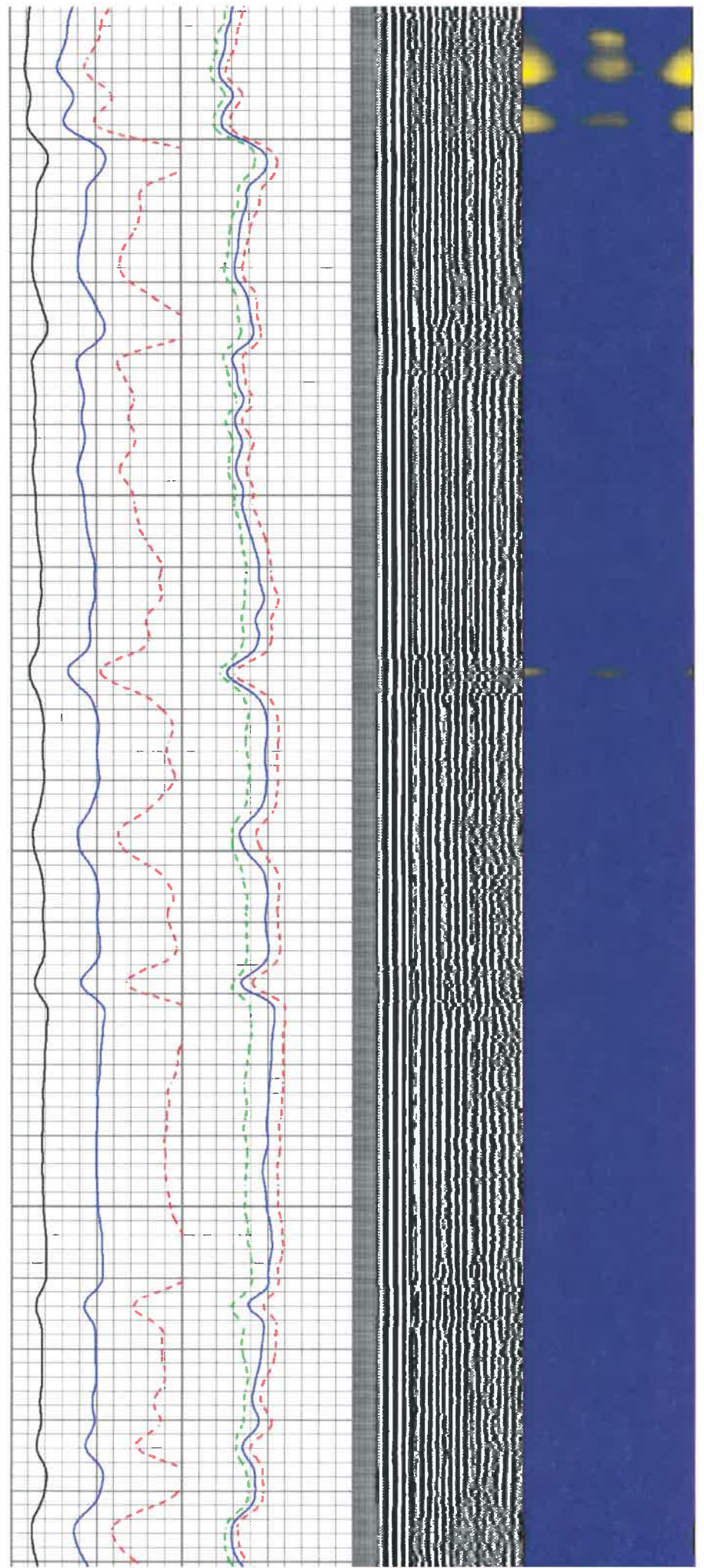
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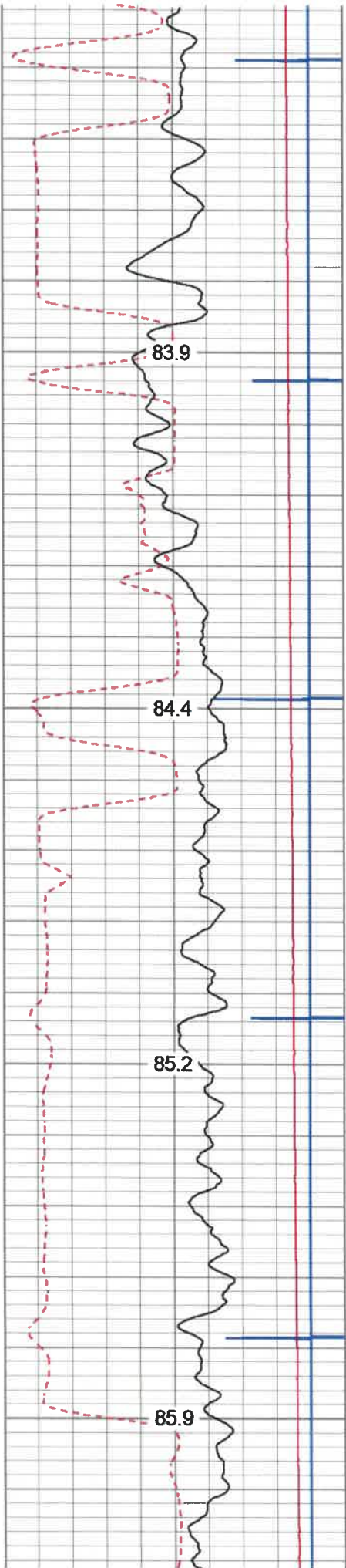
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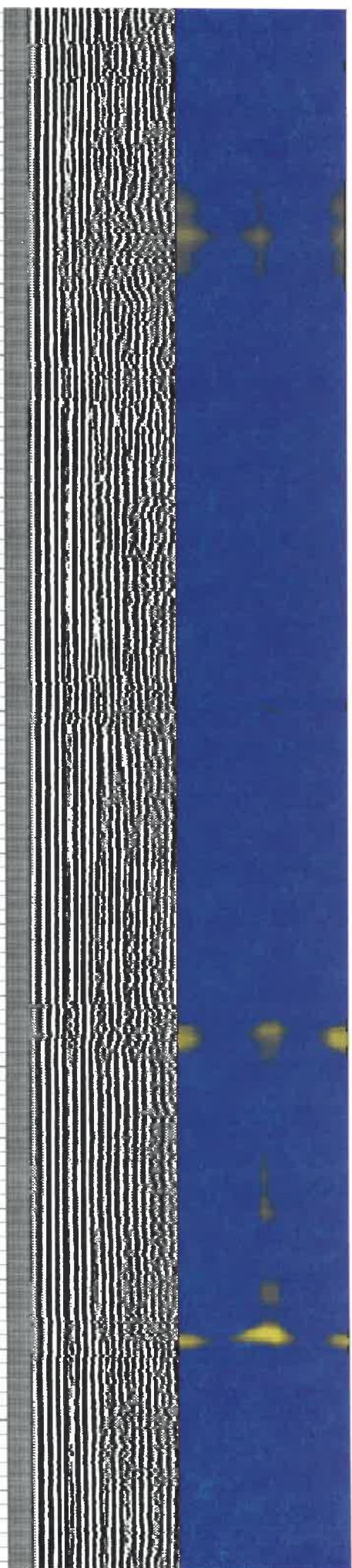
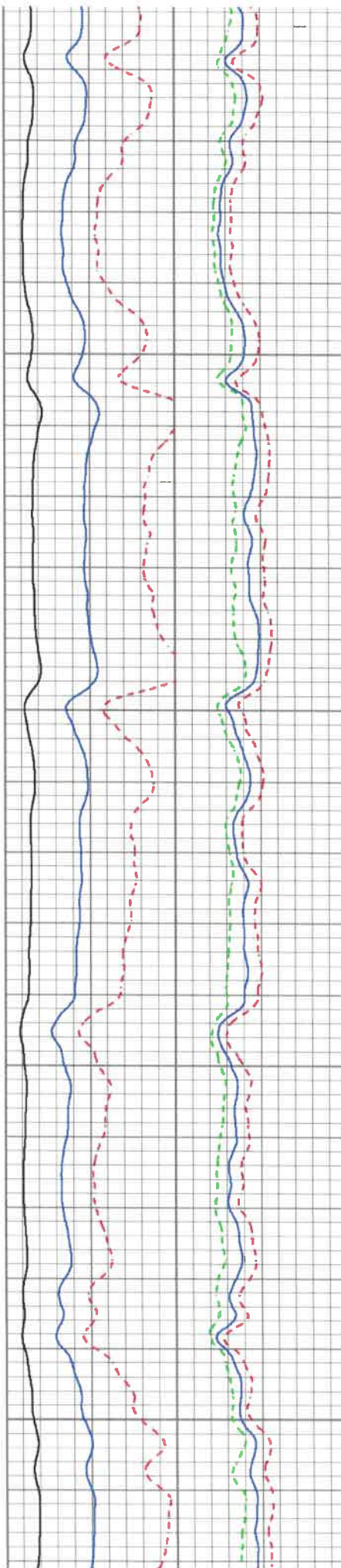
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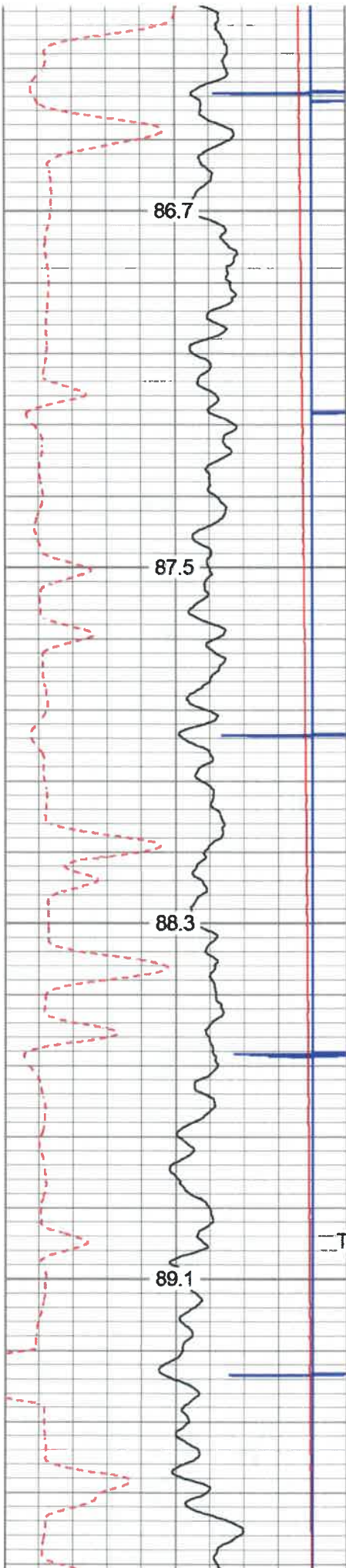
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3300
3350
3400
3450





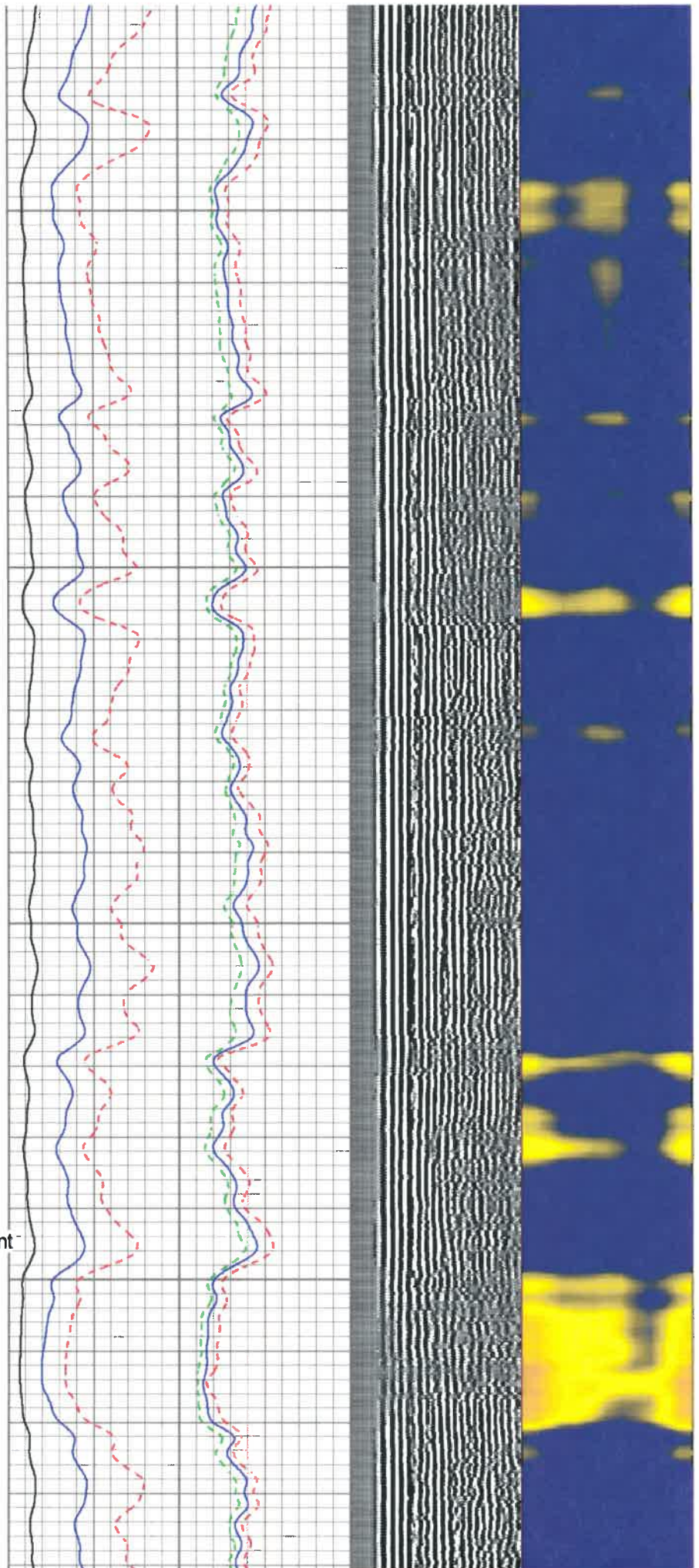
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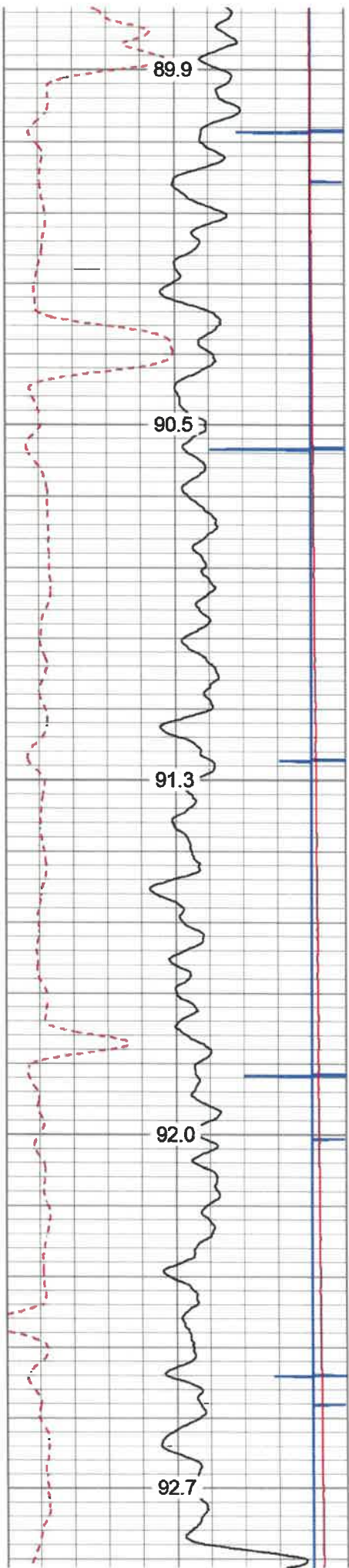
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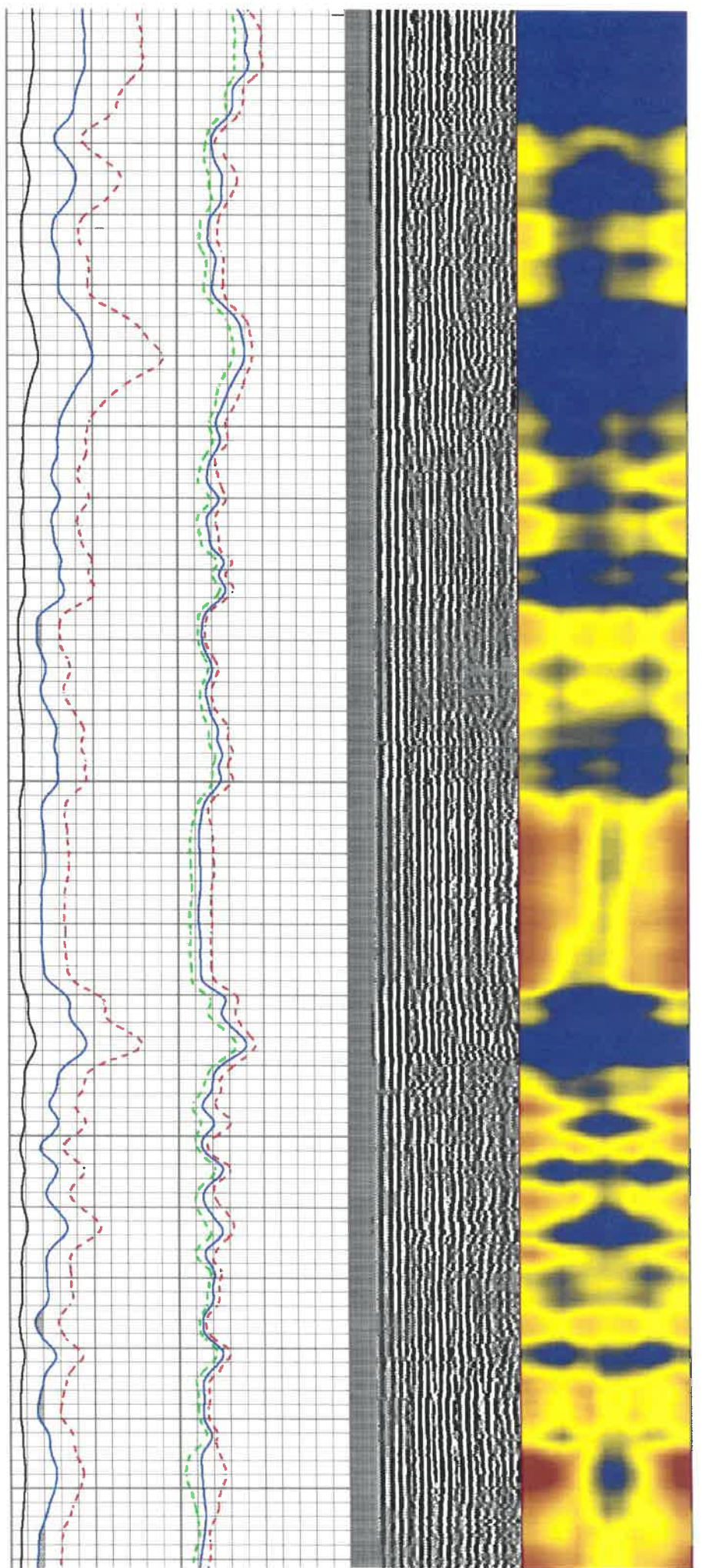
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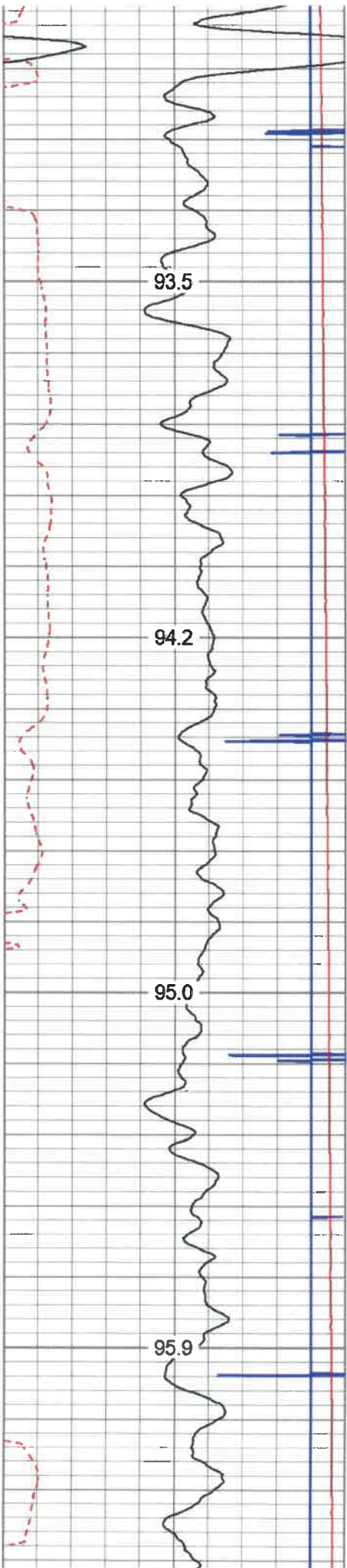
Top of Cement





3700
3750
3800
3850
3900



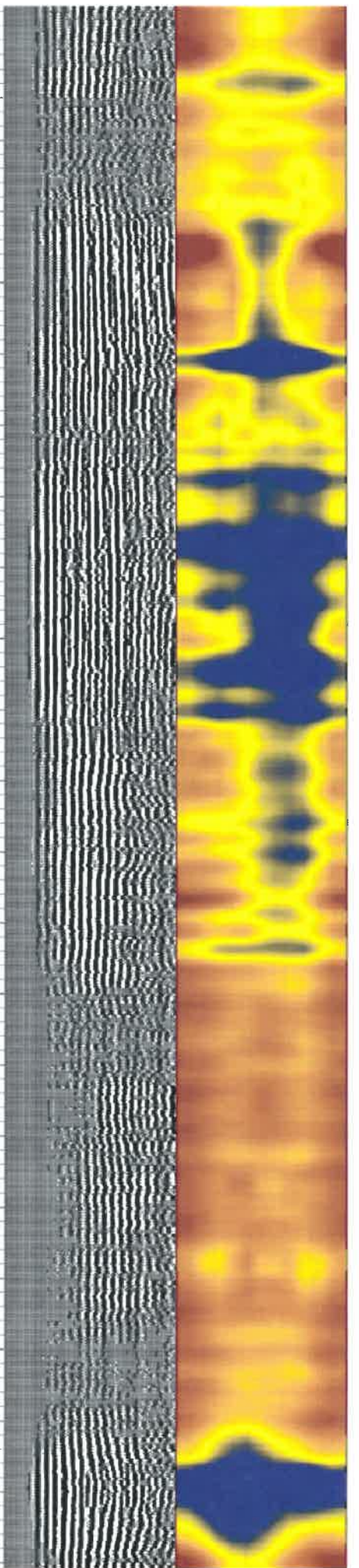
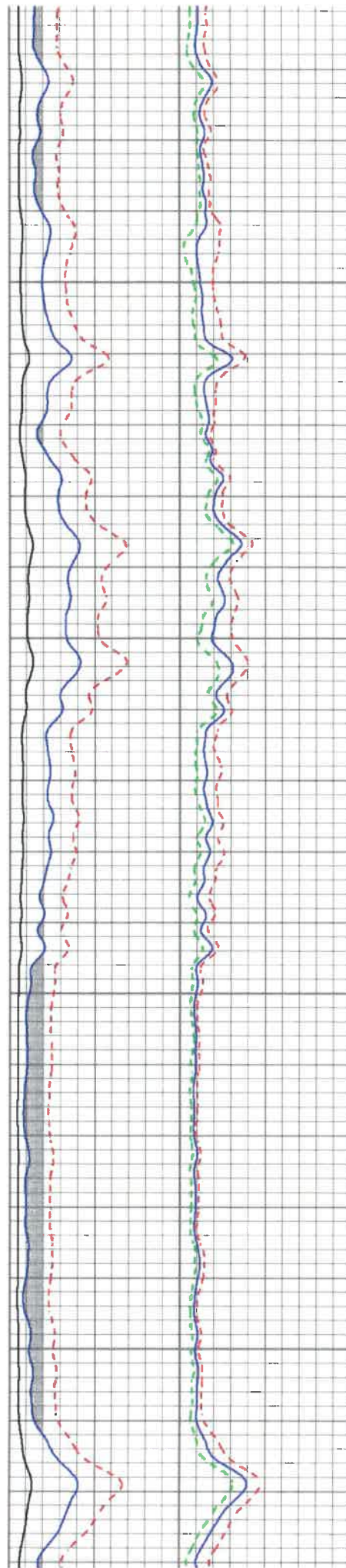


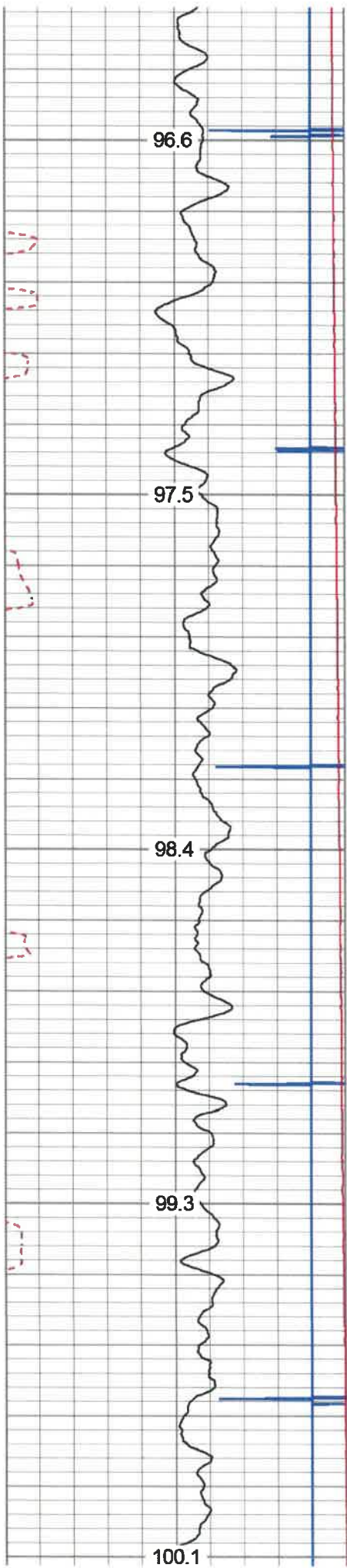
3950

4000

4050

4100





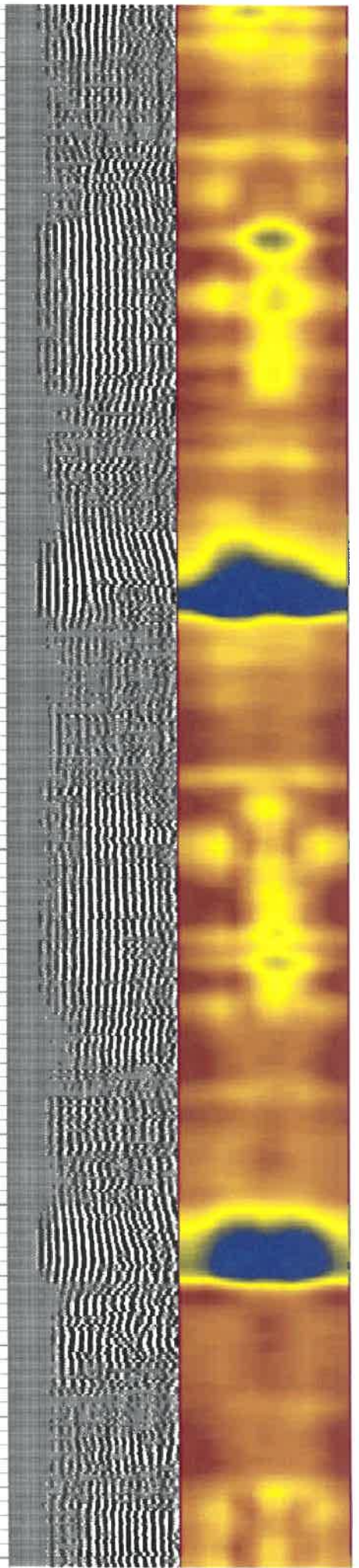
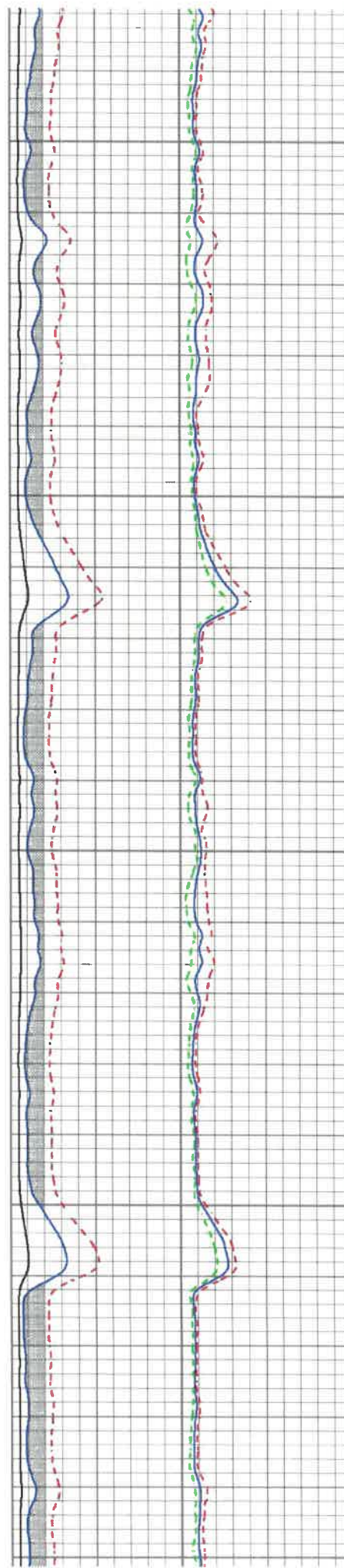
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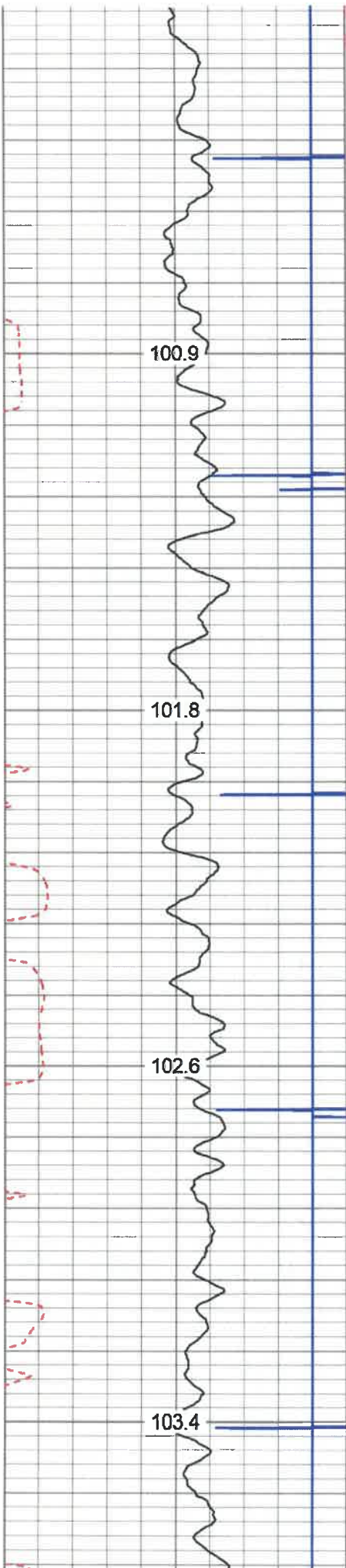
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4250

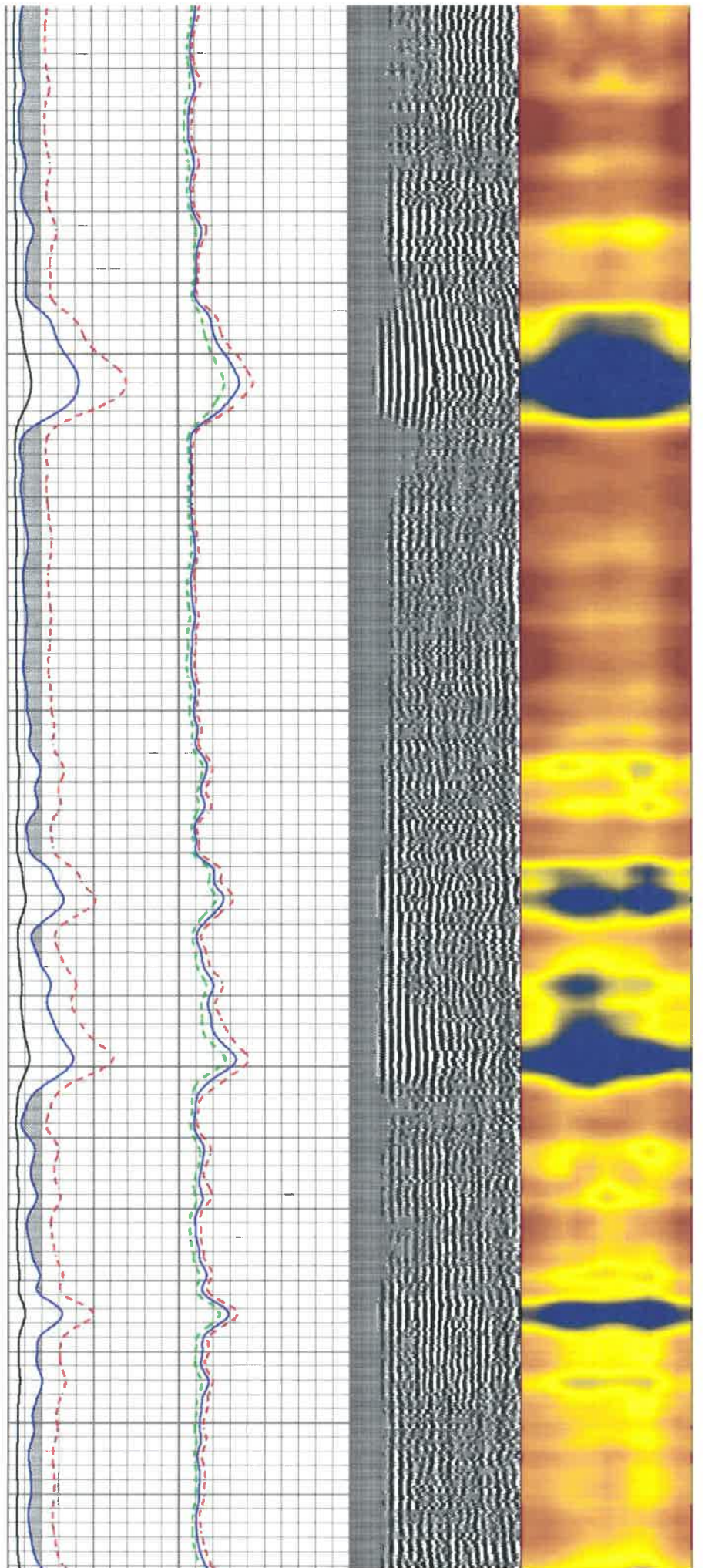
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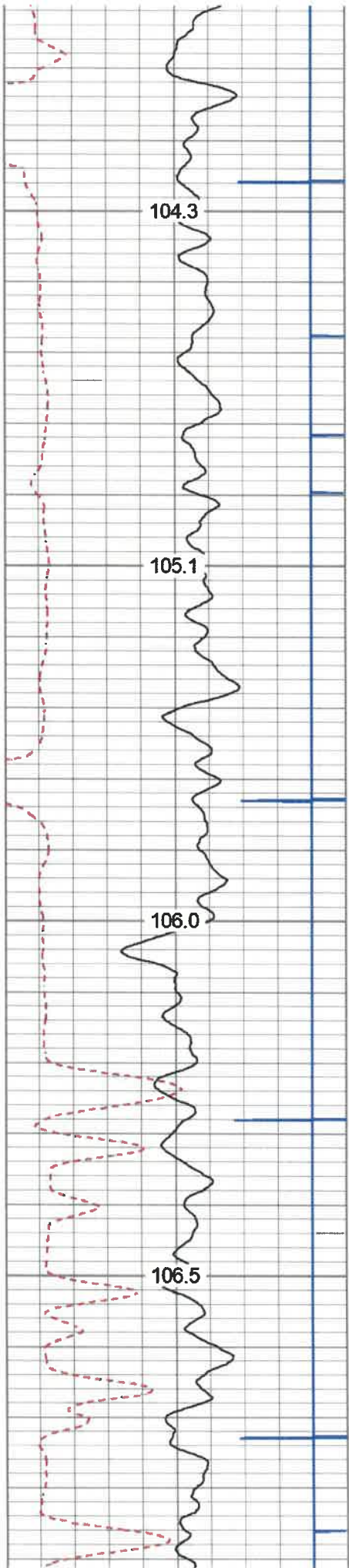
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4400
4450
4500
4550



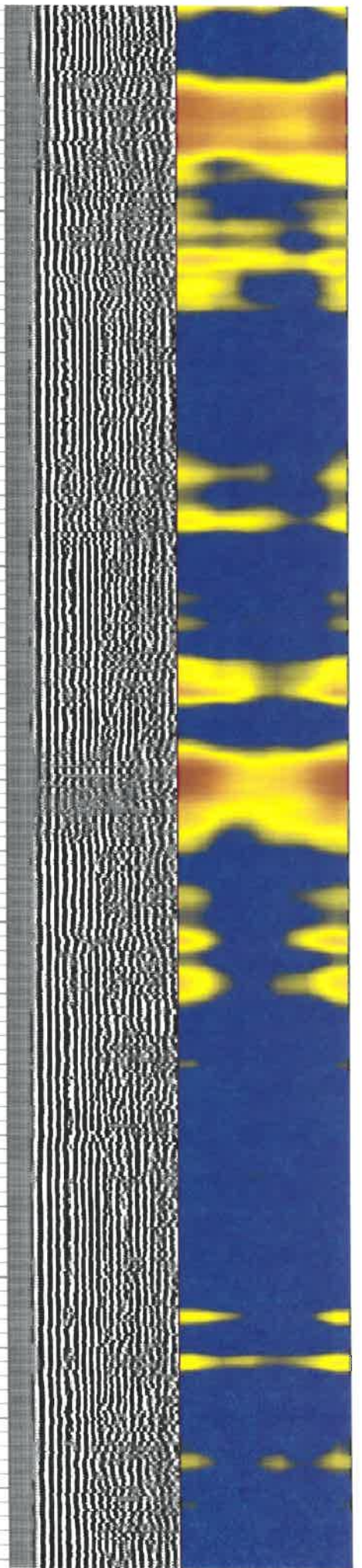
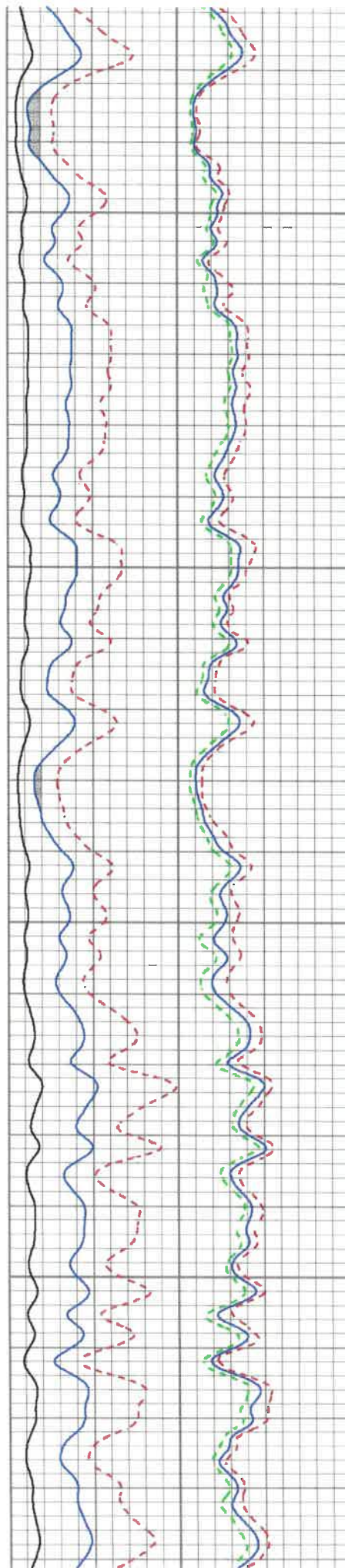


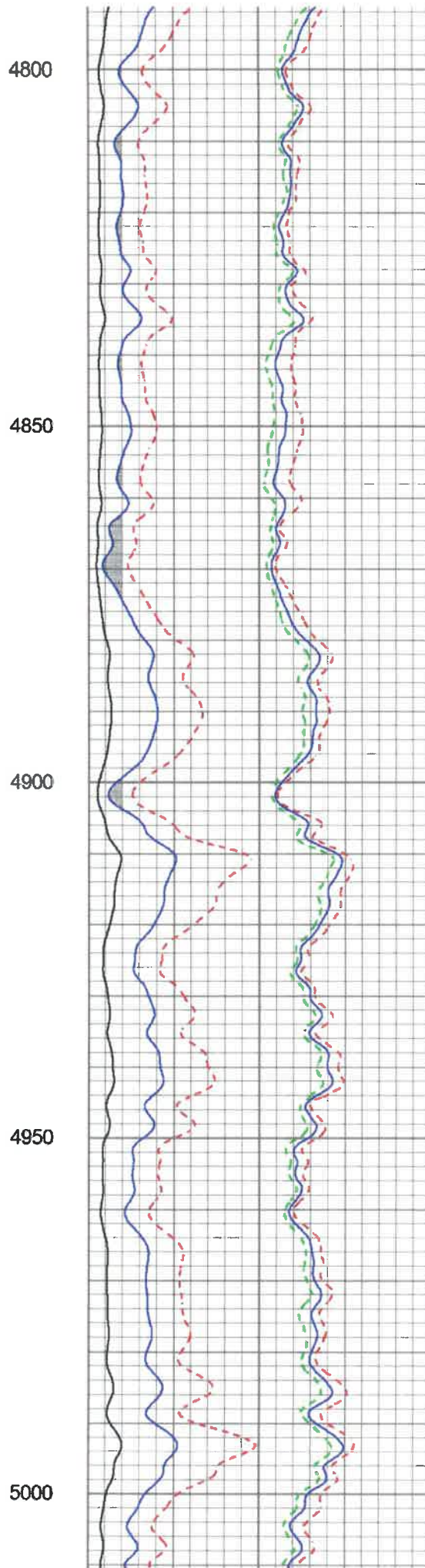
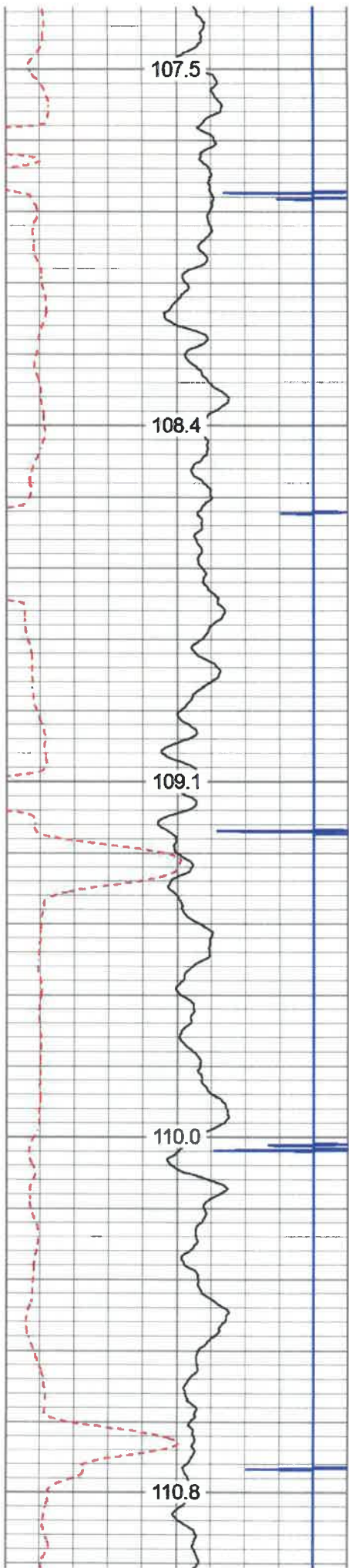
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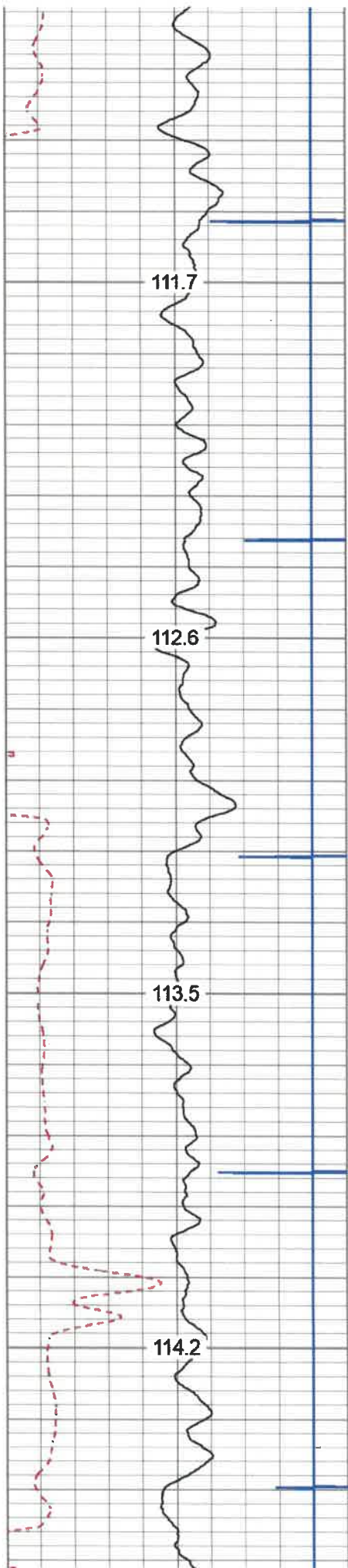
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4700

4750





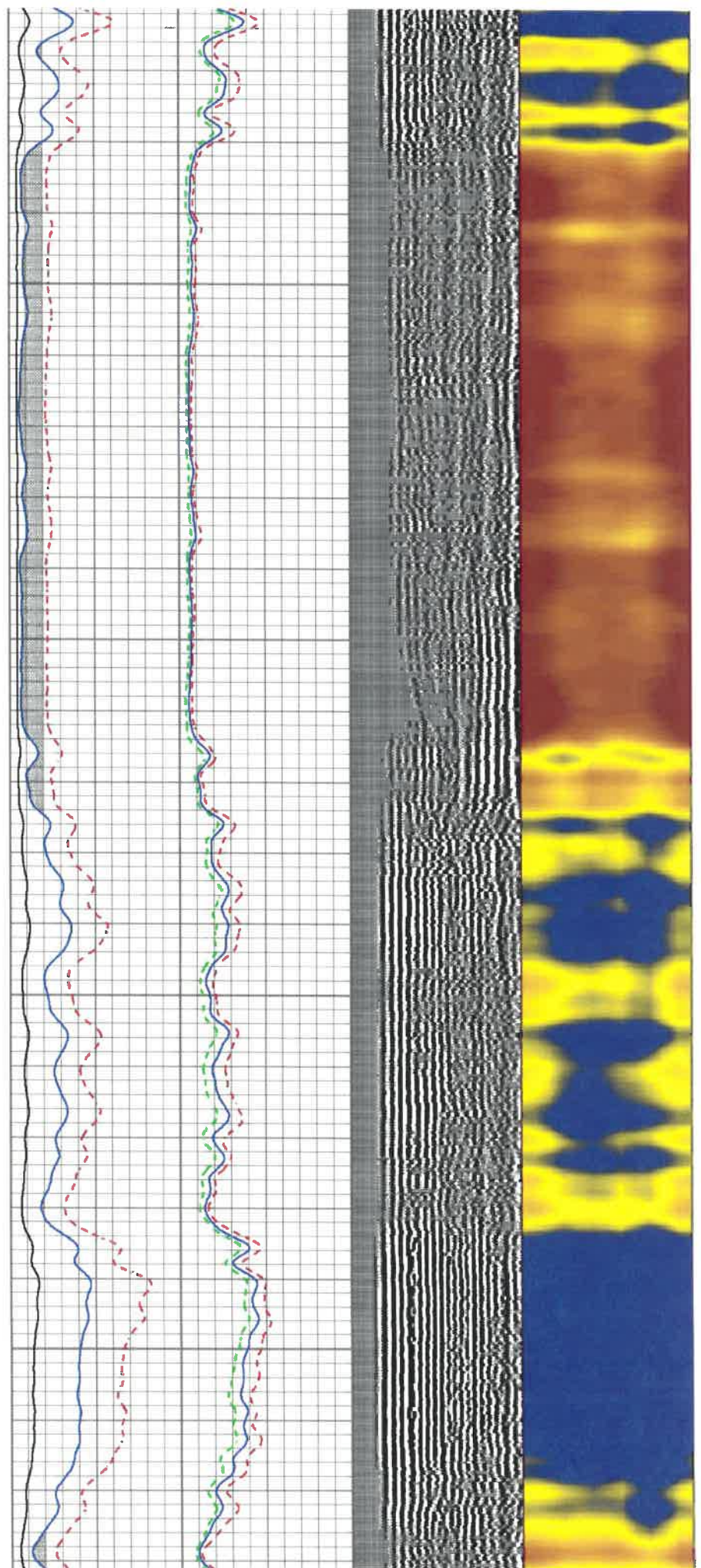


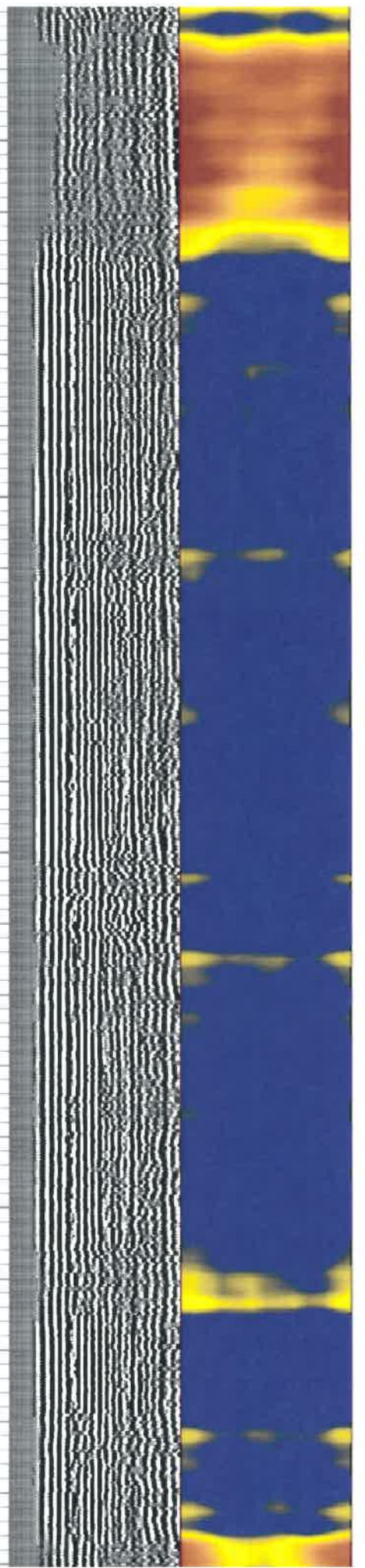
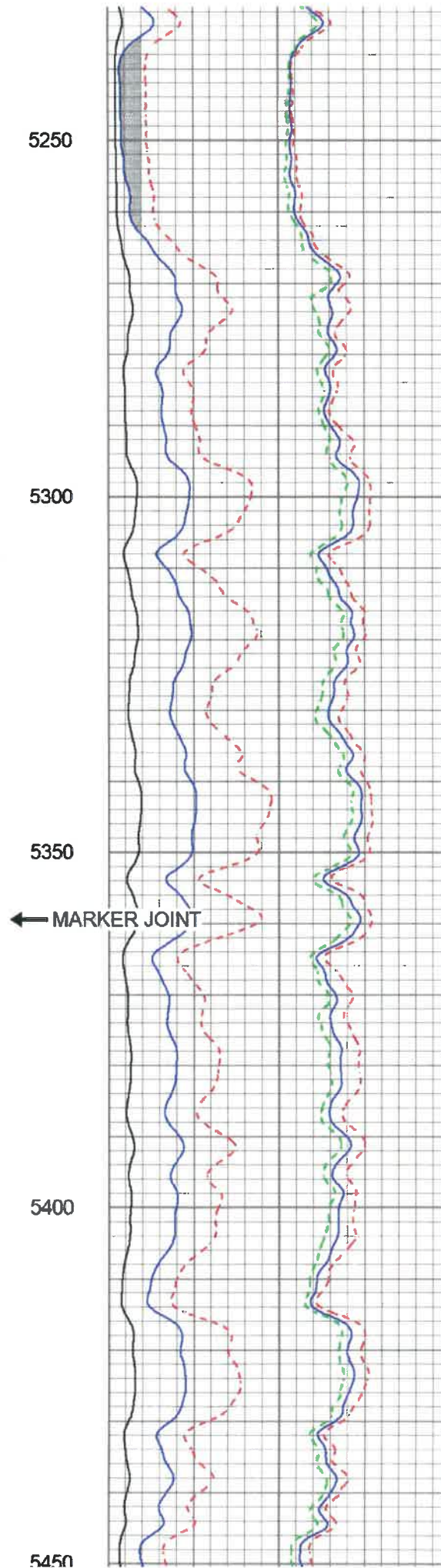
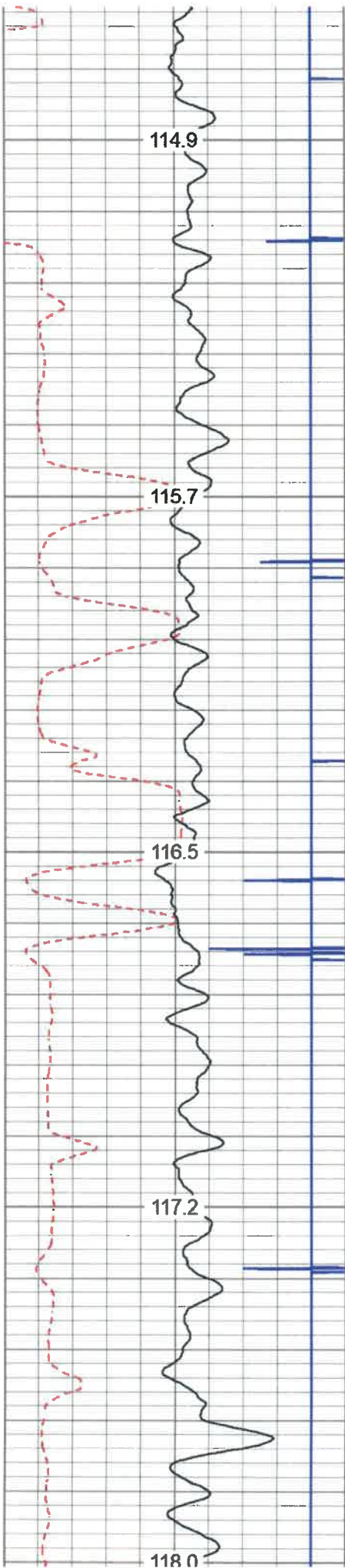
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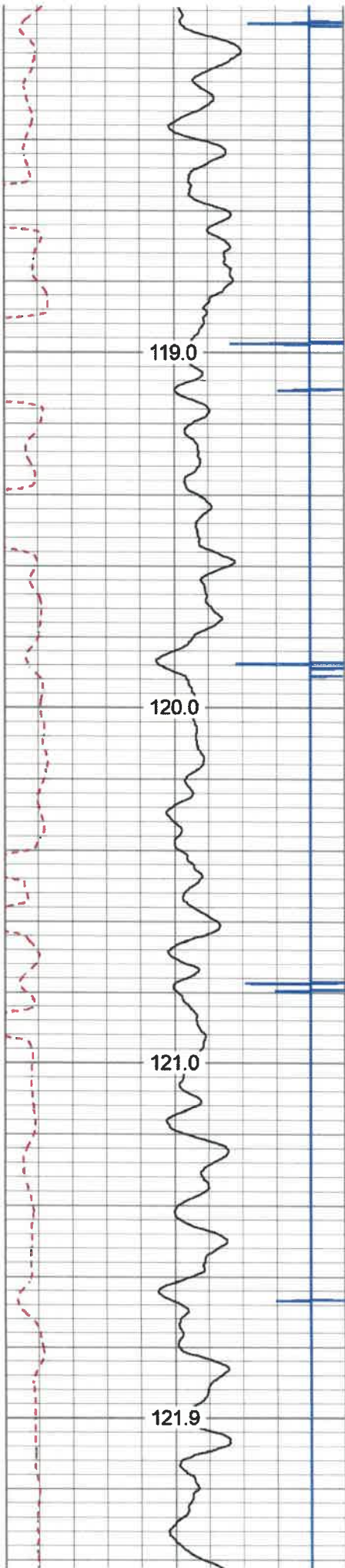
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5150

5200





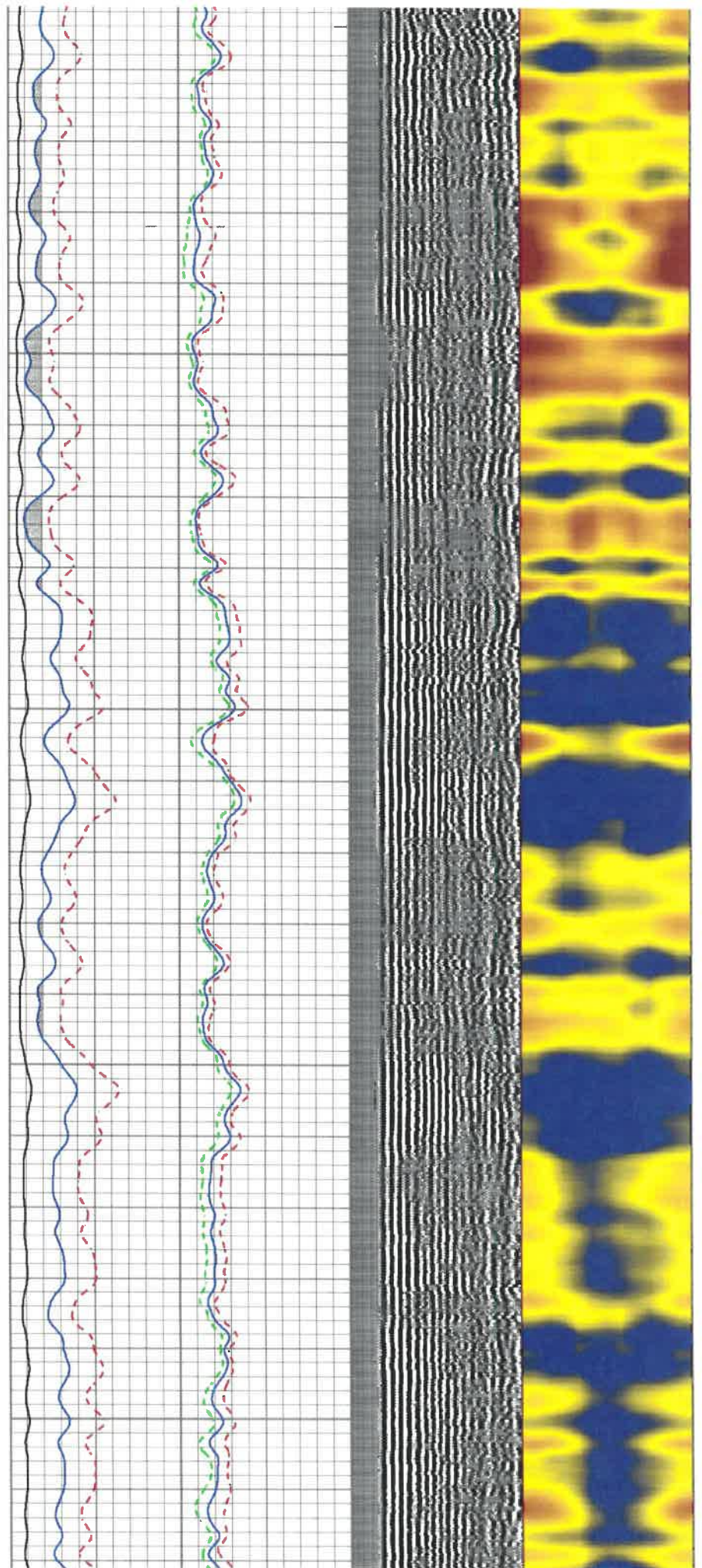


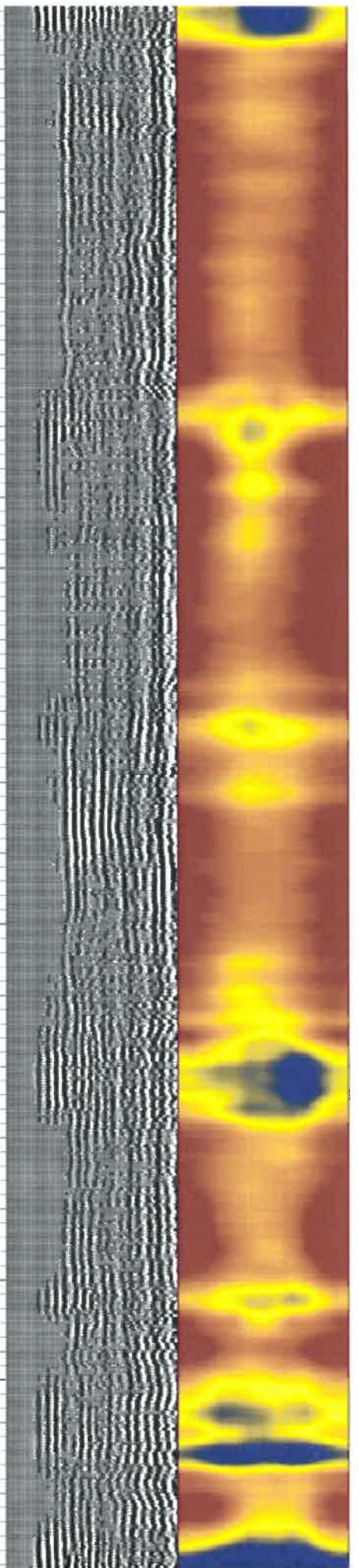
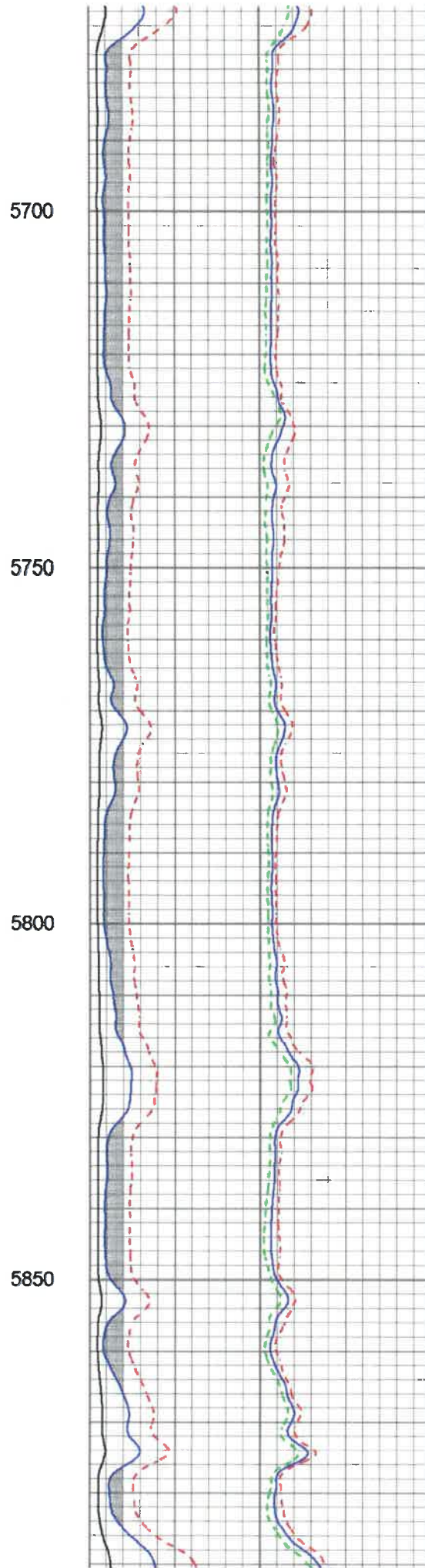
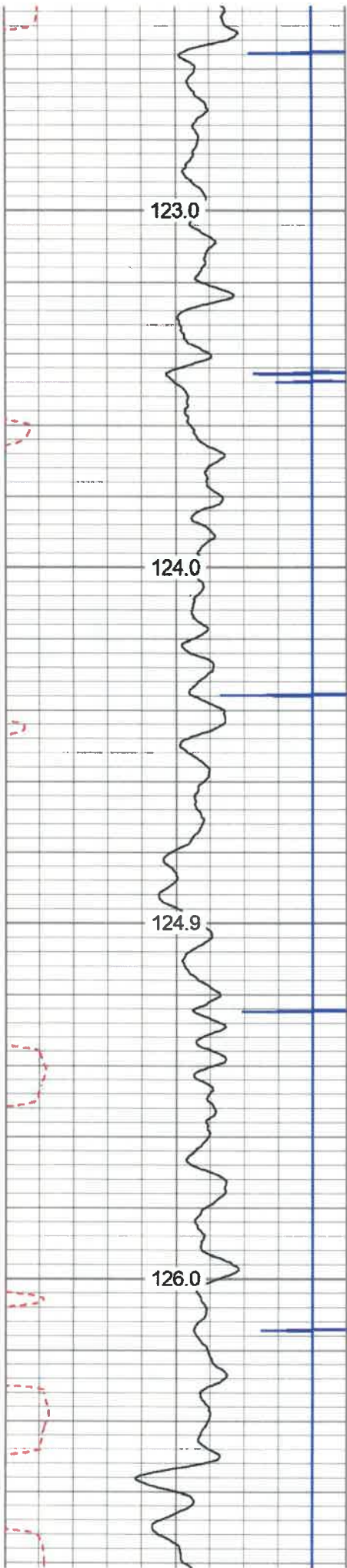
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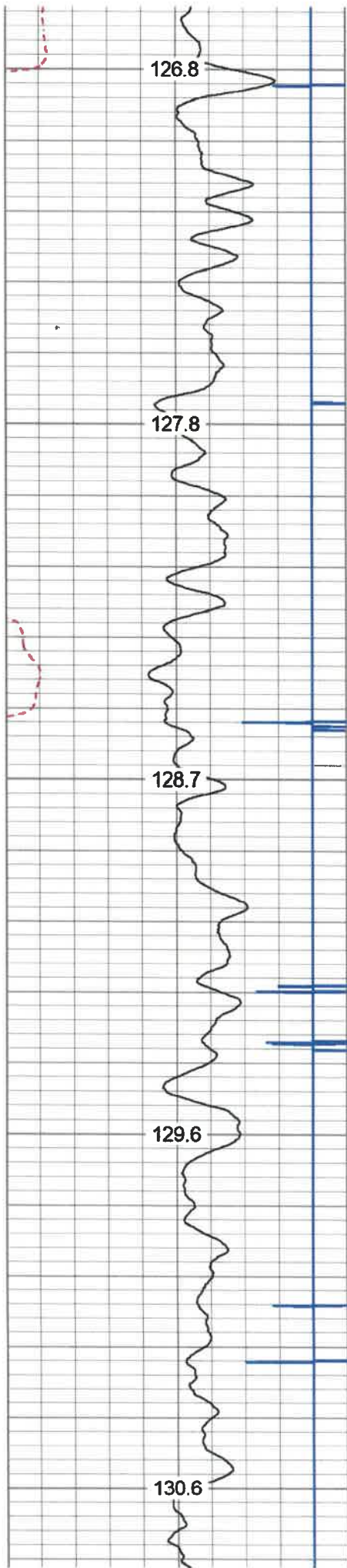
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5600

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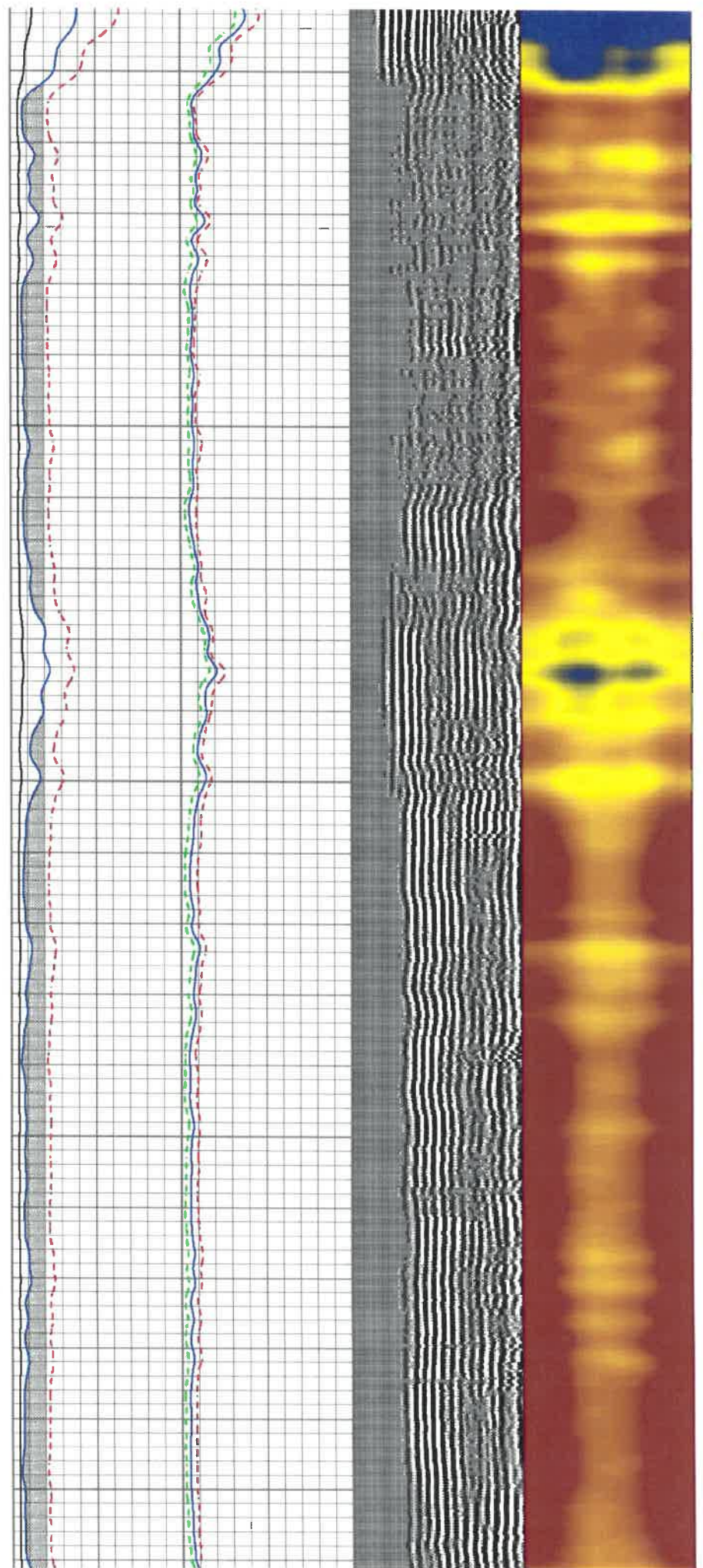
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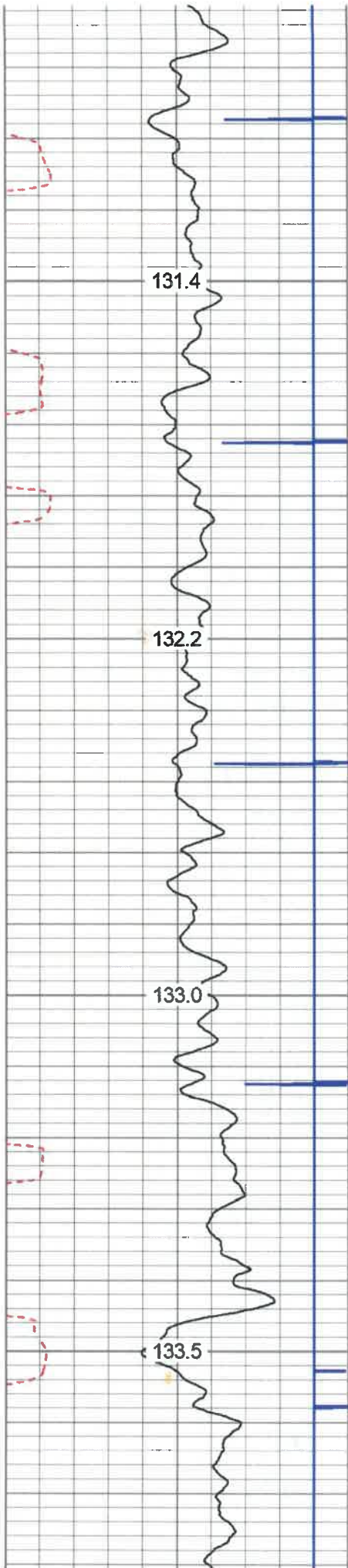
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6000

6050

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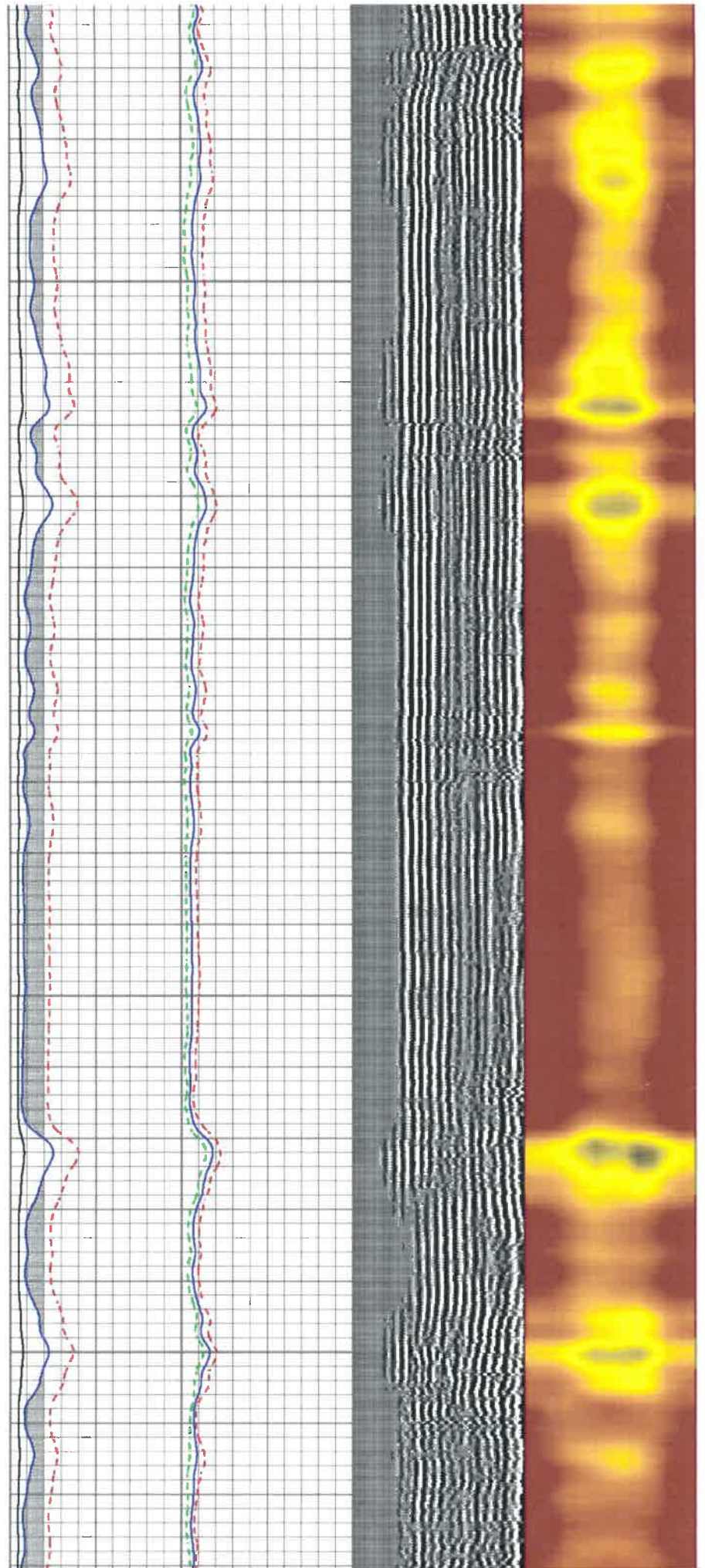


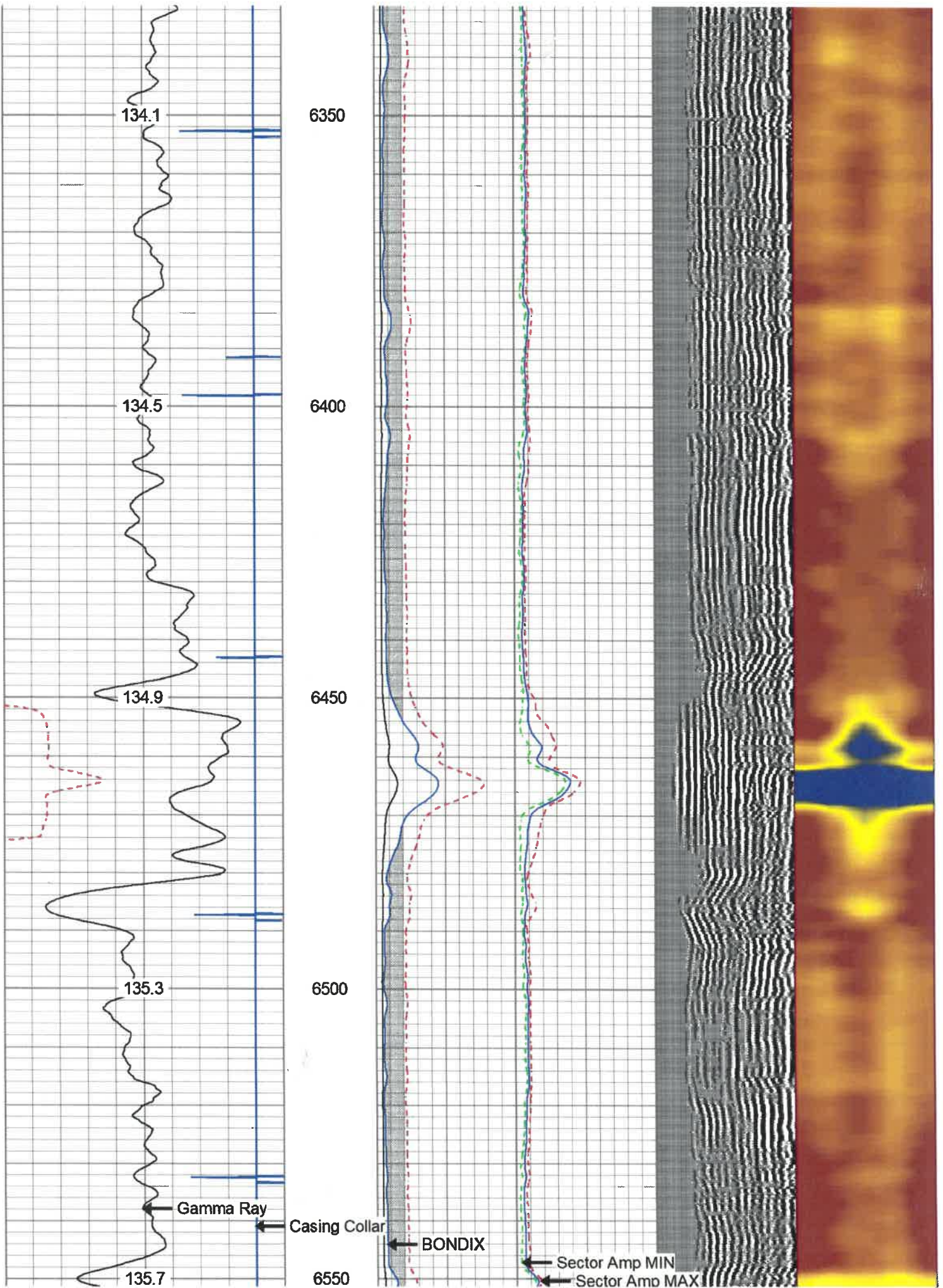
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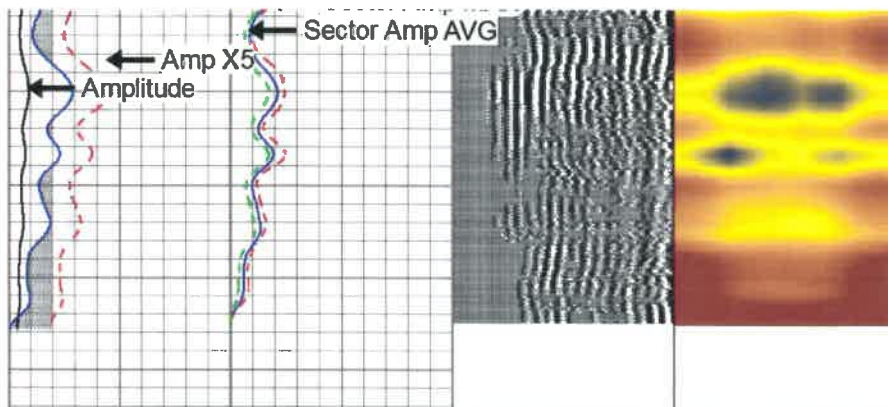
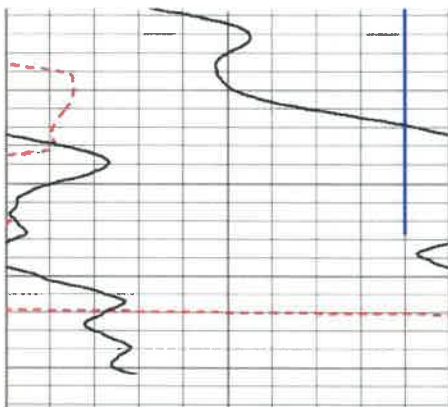
6200

6250

6300







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

Amplitude	Sector Amp AVG	VDL	1	Sector Map	12
0 (mV) 100	Sector Amp MAX	200 (usec) 1200			
Amp X5	Sector Amp MIN				
0 (mV) 20					
1 BONDIX 0					

TEMP
(degF)



1500 PRESSURE PASS



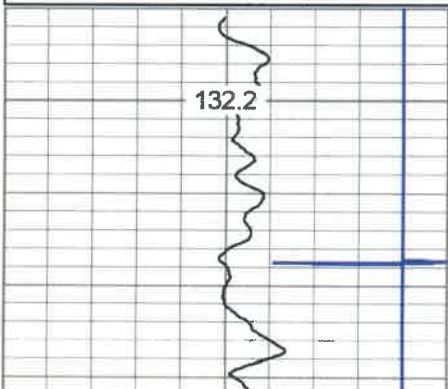
REPEAT PASS

Database File ant_dan2h.db
 Dataset Pathname REPEAT1
 Presentation Format antero
 Dataset Creation Tue Dec 17 18:31:18 2019
 Charted by Depth in Feet scaled 1:240

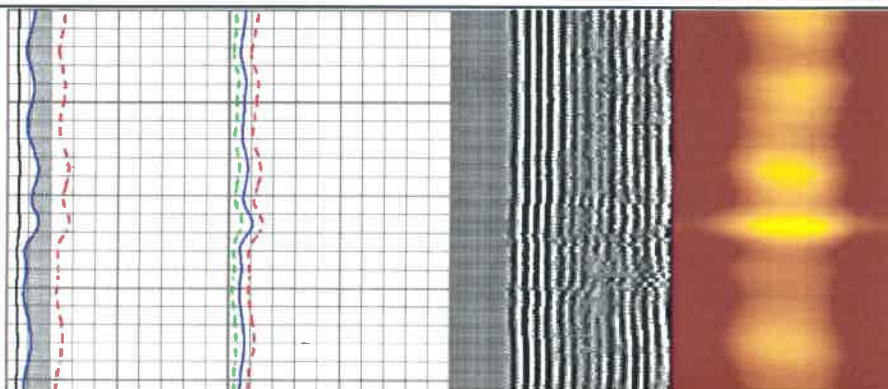
280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray	180
0	TEMP (degF)	100
180	GR	360

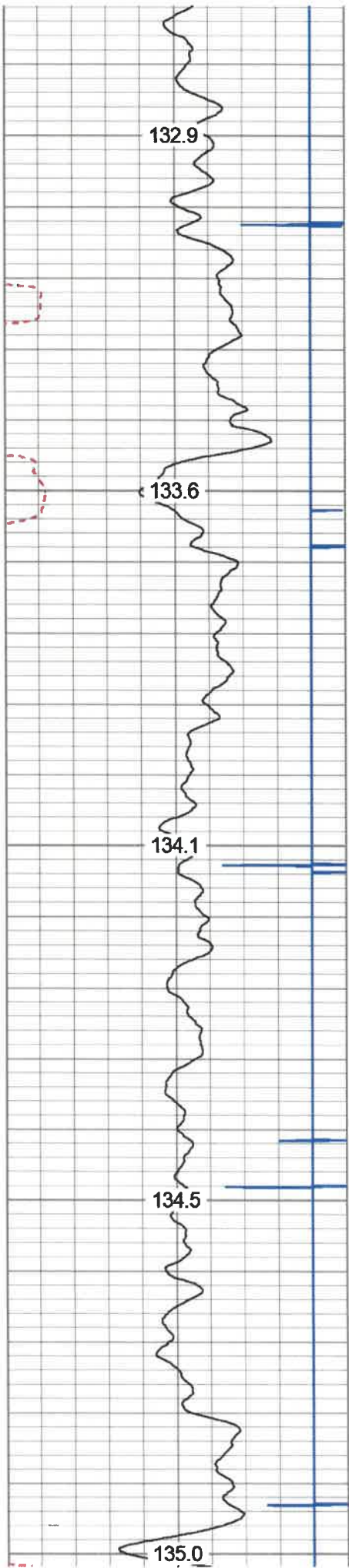
Amplitude	Sector Amp AVG	VDL	1	Sector Map	12
0 (mV) 100	Sector Amp MAX	200 (usec) 1200			
Amp X5	Sector Amp MIN				
0 (mV) 20					
1 BONDIX 0					

TEMP
(degF)



6200





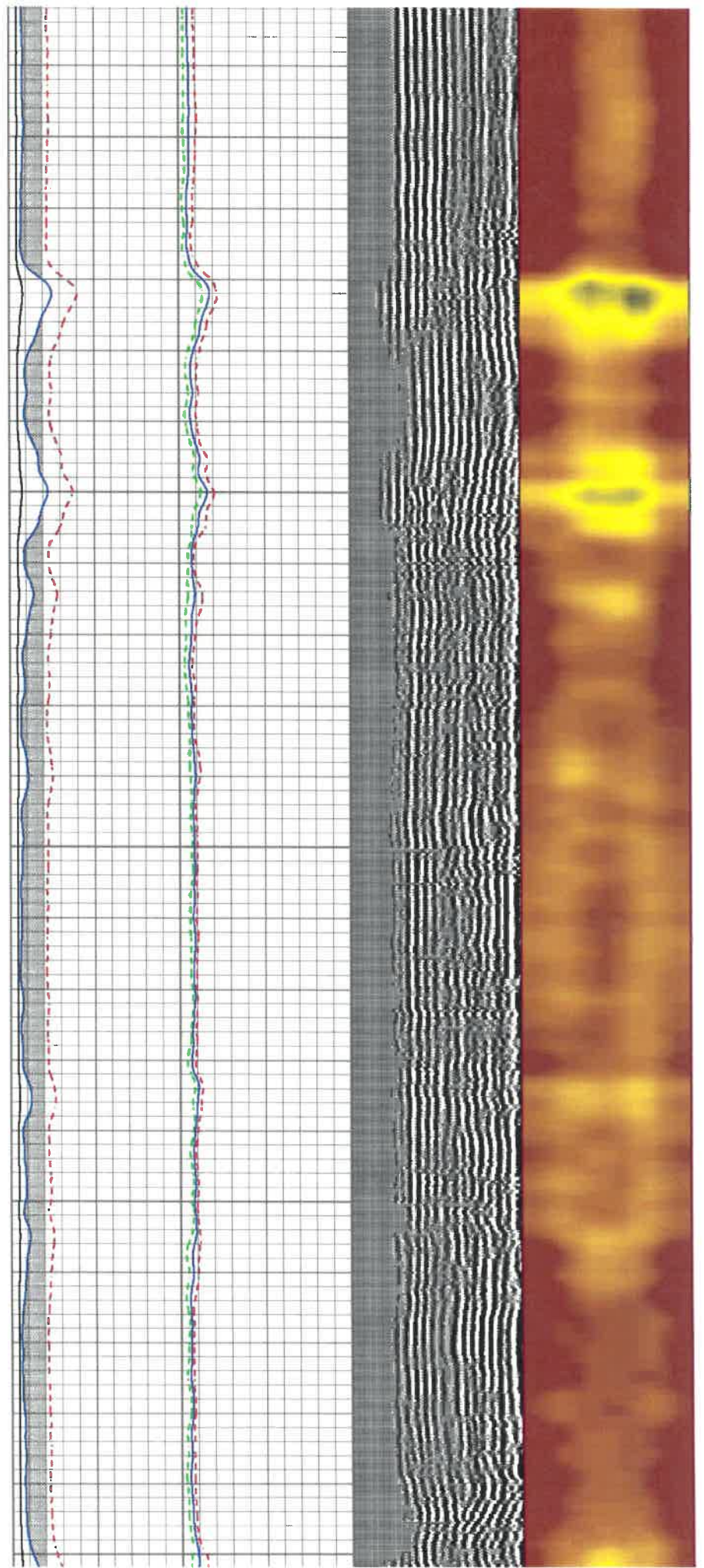
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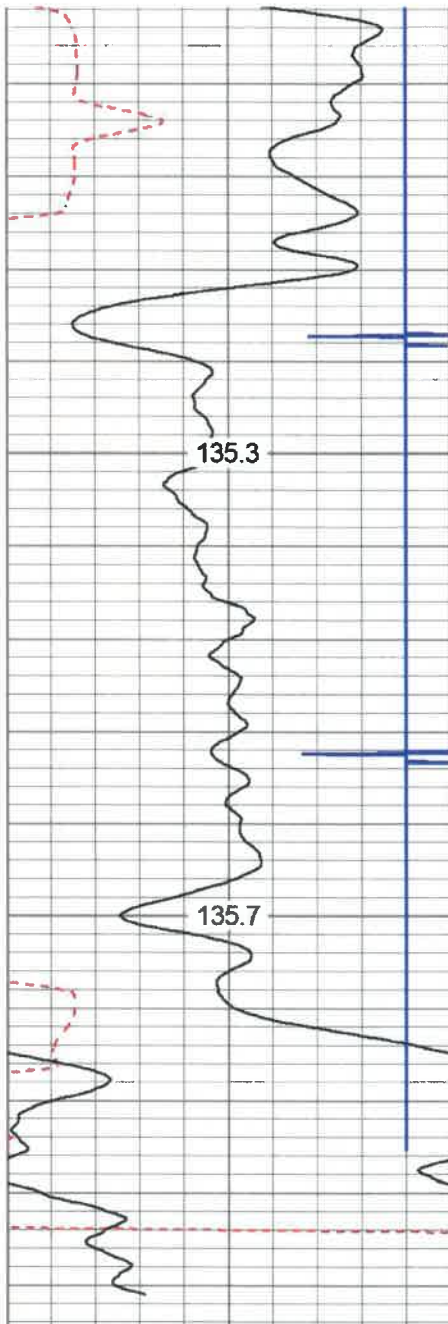
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6350

6400

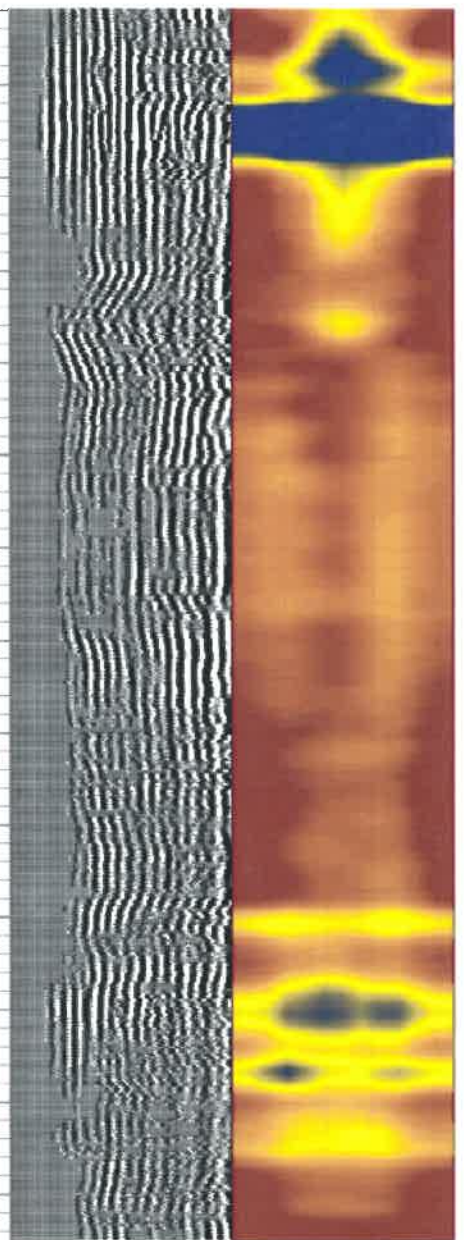
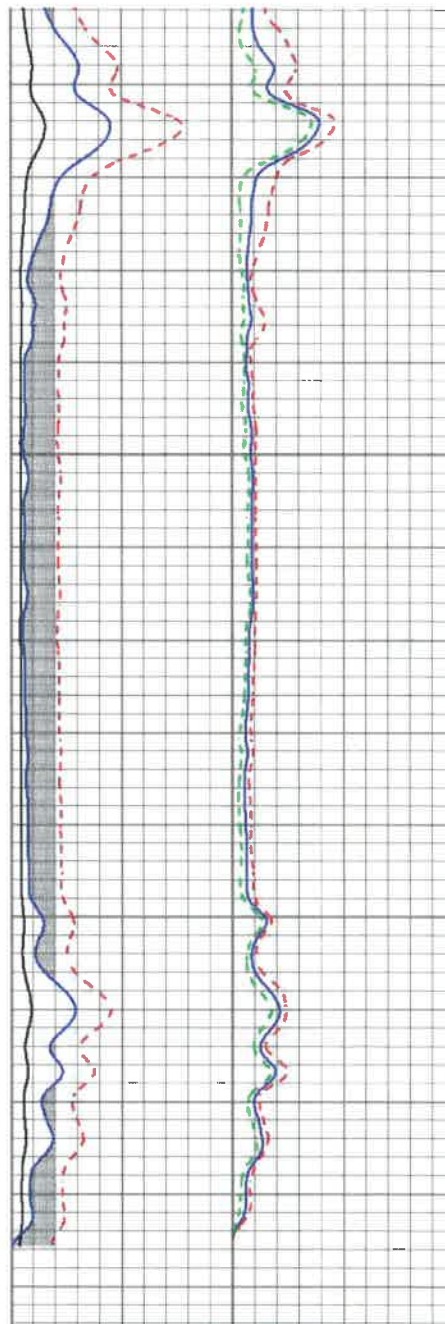
6450





6500

6550



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



REPEAT PASS

Log Variables

DatabaseC:\ProgramData\Warrior\Data\ant_dan2h.db
Dataset field/well/run1/pass4.1/_vars_

Top - Bottom

BUTEMP	BOPEID	BOTTEMP	CASEOD	CASETHICK	CASEWIDT	MAXAMP	MINAMP
--------	--------	---------	--------	-----------	----------	--------	--------

BHTEMP_Src	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV
TEMP	8.25	100	5.5	0	20	71.9	3.5
MINATTN db/ft	PERFS	PPT usec	SRFTEMP degF	TDEPTH ft			
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

Calibration Report

Database File ant_dan2h.db
Dataset Pathname pass4.1
Dataset Creation Tue Dec 17 08:32:23 2019

Gamma Ray Calibration Report

Serial Number: IPSNO-03
Tool Model: Tek-Co 2 3/4
Performed: Tue Nov 12 16:11:18 2019

Calibrator Value: 1.0

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.5000 /cps

Segmented Cement Bond Log Calibration Report

Serial Number: IOL40-03_5_5
Tool Model: Tek12

Calibration Casing Diameter: 5.500 in
Calibration Depth: 411.992 ft

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Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	1.427	3.500	71.921	47.973	3.478
CAL	0.037	0.415				
5'	-0.006	1.529	3.500	71.921	44.576	3.778
SUM						
S1	0.002	2.300	0.000	100.000	43.504	-0.077
S2	0.002	2.307	0.000	100.000	43.372	-0.080
S3	0.002	2.370	0.000	100.000	42.243	-0.101
S4	0.003	2.376	0.000	100.000	42.141	-0.133
S5	0.003	2.364	0.000	100.000	42.373	-0.148
S6	0.004	2.385	0.000	100.000	41.994	-0.166
S7	0.004	2.349	0.000	100.000	42.646	-0.175
S8	0.004	2.333	0.000	100.000	42.934	-0.181
S9	0.004	2.332	0.000	100.000	42.958	-0.174
S10	0.004	2.326	0.000	100.000	43.059	-0.151
S11	0.002	2.296	0.000	100.000	43.593	-0.108

S12

0.002

2.290

0.000

100.000

43.702


-0.085


Temperature Calibration Report

Serial Number: IOL40-03_5_5
 Tool Model: Tek12
 Performed: Fri Oct 20 09:51:21 2017

	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	18.93		CCL-312tekco (I08X3-01) 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	12.77		SCBL-Tek12 (IOL40-03_5_5) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00	
WVFS12	11.48						
WVFS11	11.48						
WVFS10	11.48						
WVFS9	11.48						
WVFS8	11.48						
WVFS7	11.48						
WVFS6	11.48						
WVFS5	11.48						
WVFS4	11.48						
WVFS3	11.48						
WVFS2	11.48						
WVFS1	11.48						
WVFCAL	10.73						
WVF3FT	10.73						
WVF5FT	9.73						
WVFSYNC	6.40						
WVFTEMP	6.40		Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00	

GR	1.04		GR-Tek-Co 2 3/4 (IPSNO-03) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
Dataset: ant_dan2h.db: field/well/run1/pass4.1 Total length: 20.07 ft Total weight: 250.00 lb O.D.: 3.25 in						

	<table> <tr> <td>Company</td> <td>Antero Resources Corporation</td> </tr> <tr> <td>Well</td> <td>DANIELS 2H</td> </tr> <tr> <td>Field</td> <td>Marcellus</td> </tr> <tr> <td>County</td> <td>TYLER</td> </tr> <tr> <td>State</td> <td>WV</td> </tr> <tr> <td></td> <td>Country USA</td> </tr> </table>	Company	Antero Resources Corporation	Well	DANIELS 2H	Field	Marcellus	County	TYLER	State	WV		Country USA
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