



**Radial Cement Bond
Variable Density Log
W/Gamma Ray/CCLTemp**

Company Antero Resources
Well Capitol Unit 2H
Field Utica
County Tyler
State WV

Company Antero Resources
Well Capitol Unit 2H
Field Utica
County Tyler State WV

Location: API #: 47095027550000

Other Services

Permanent Datum	SEC N/A TWP N/A RGE N/A	Ground Level	Elevation	Elevation K.B. D.F. G.L.
Log Measured From	RKB 25'			
Drilling Measured From	RKB			

Date	22-Mar-2022	
Run Number	One	
Depth Driller	24084'	
Depth Logger	7410'	
Bottom Logged Interval	7410'	
Top Log Interval	Surface	
Open Hole Size	8.5	
Type Fluid	FW	
Density / Viscosity	8.6	
Max. Recorded Temp.	151.3 degF	
Estimated Cement Top	5090'	
Time Well Ready	18:50	
Time Logger on Bottom	20:15	
Equipment Number	138 (Pt G4)	
Location	Charleroi, PA	
Recorded By	Steven Butler	
Witnessed By	Chris Young	

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
One							
Two							
Three							

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String	5.5	23 #	Surface	24084'
Production String				
Liner				

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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

Log Correlated to RKB
Marker Joint Found at 6050' - 6060'
Casing Tally Marker Joint at 5994' - 6004'

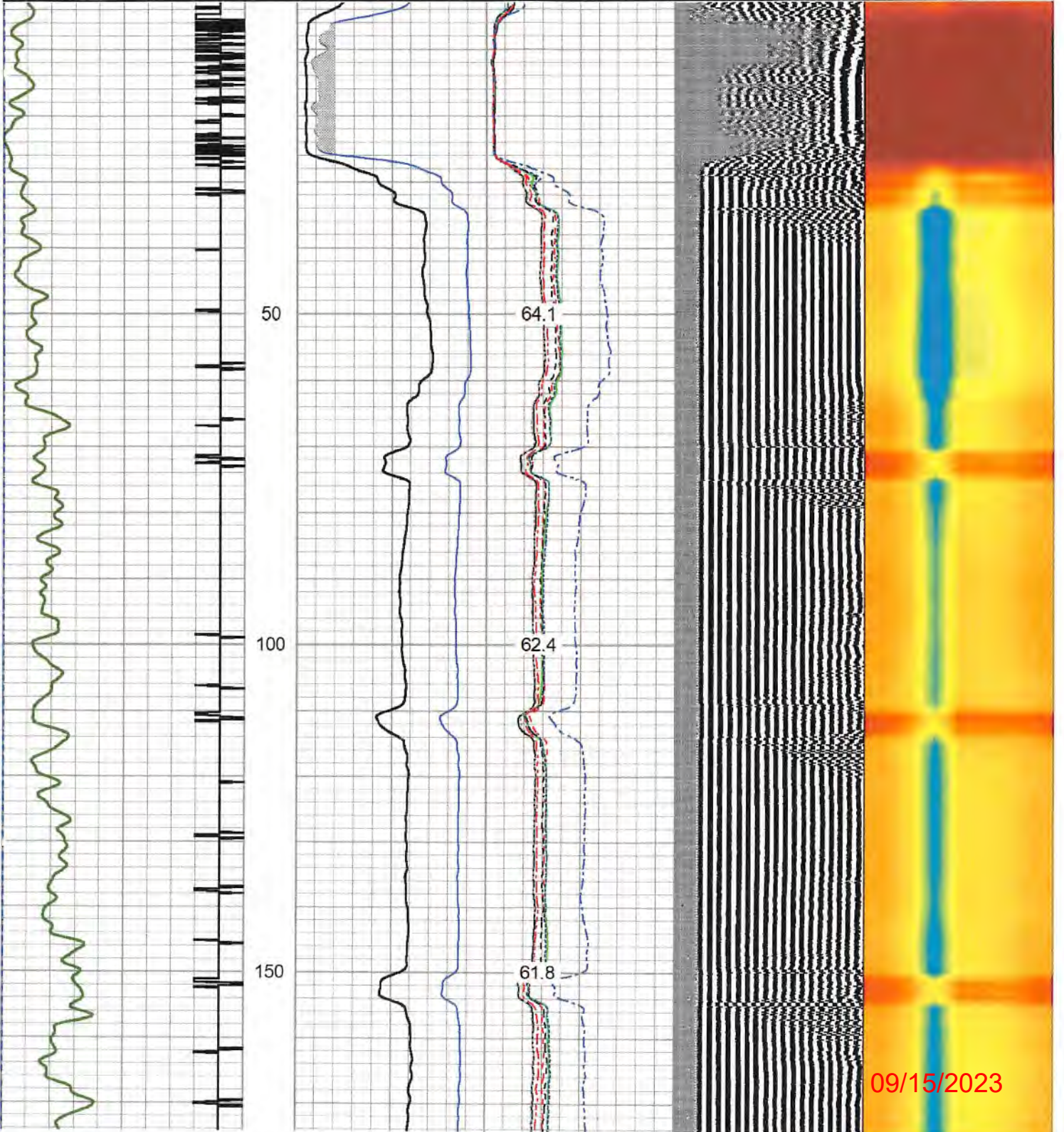
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Dataset Pathname pass7.3
Presentation Format rcbl-bond index for antero 1020
Dataset Creation Thu Mar 24 14:26:54 2022
Charted by Depth in Feet scaled 1:240

255	Travel Time (usec)	60
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	5000
-100	LSPD (ft/min)	100

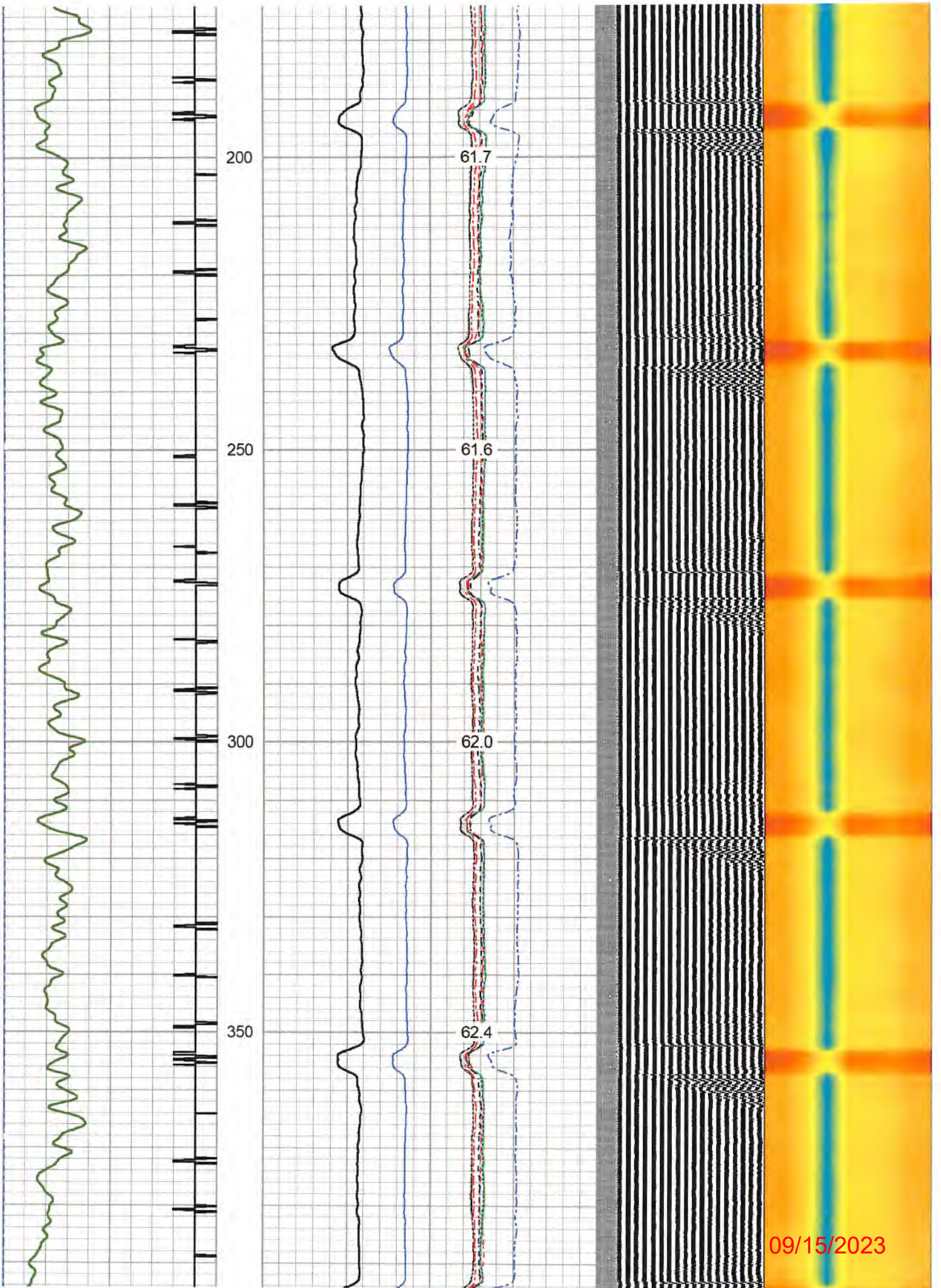
0	Amplitude (mV)	100	-5	Sector 1	150
1	BONDIX	0	-5	Sector 2	150
			-5	Sector 3	150
			-5	Sector 4	150
			-5	Sector 5	150
			-5	Sector 6	150
			-5	Sector 7	150
			-5	Sector 8	150

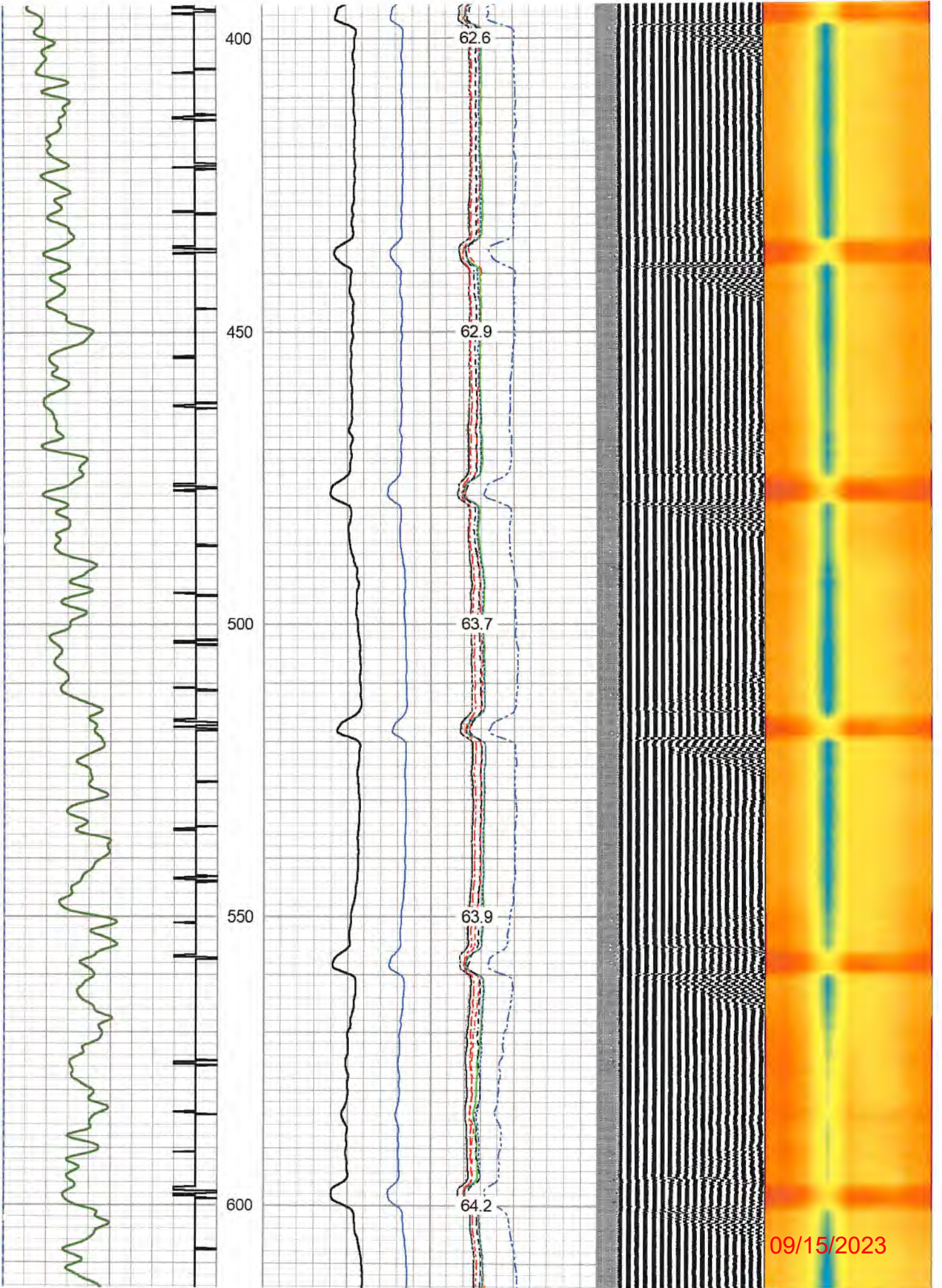
Variable Density 1 Cement Map 8
 200 (usec) 1200

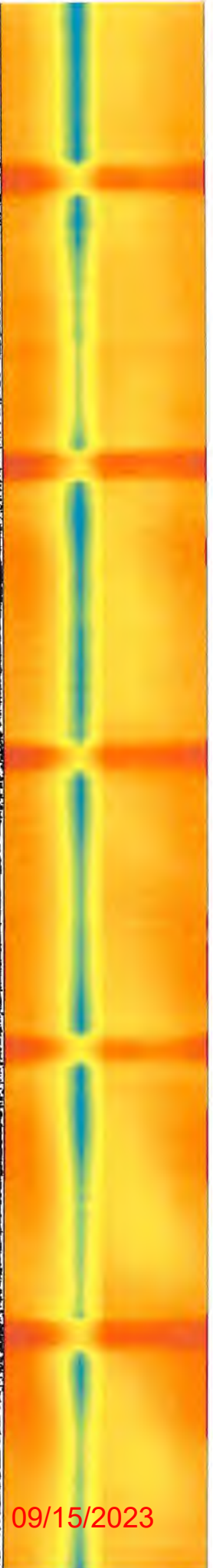
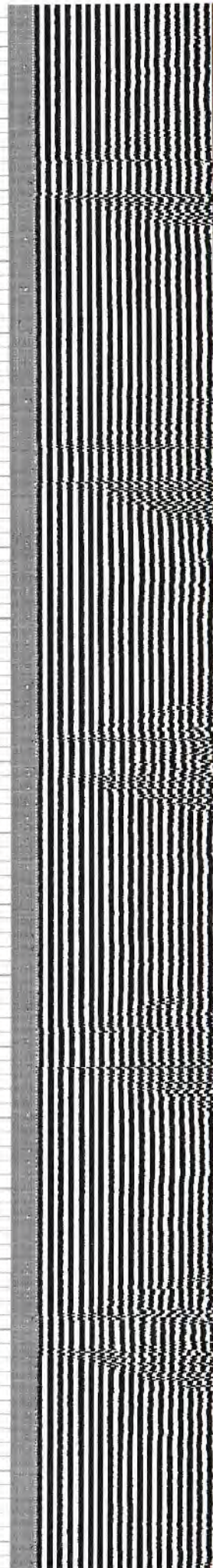
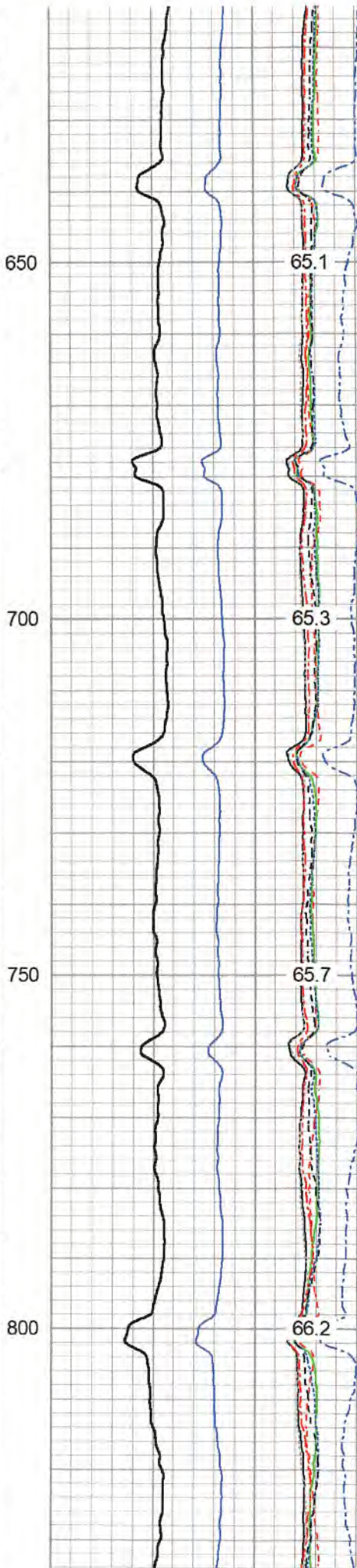
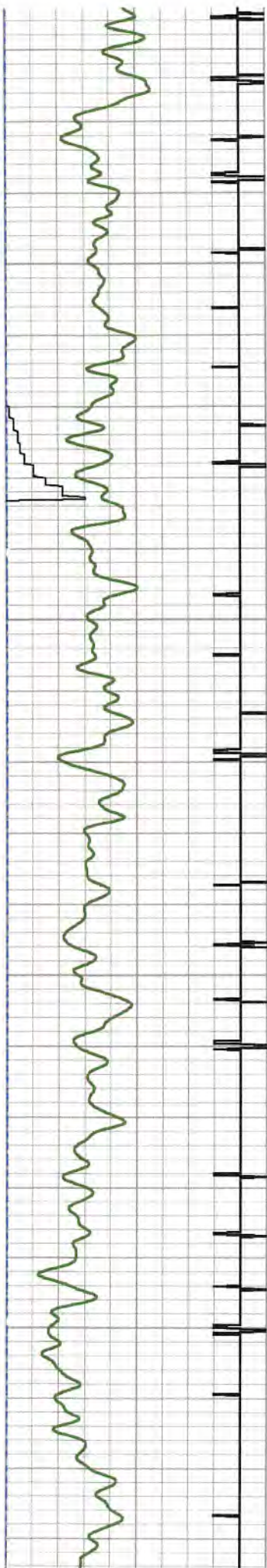
TEMP (degF)



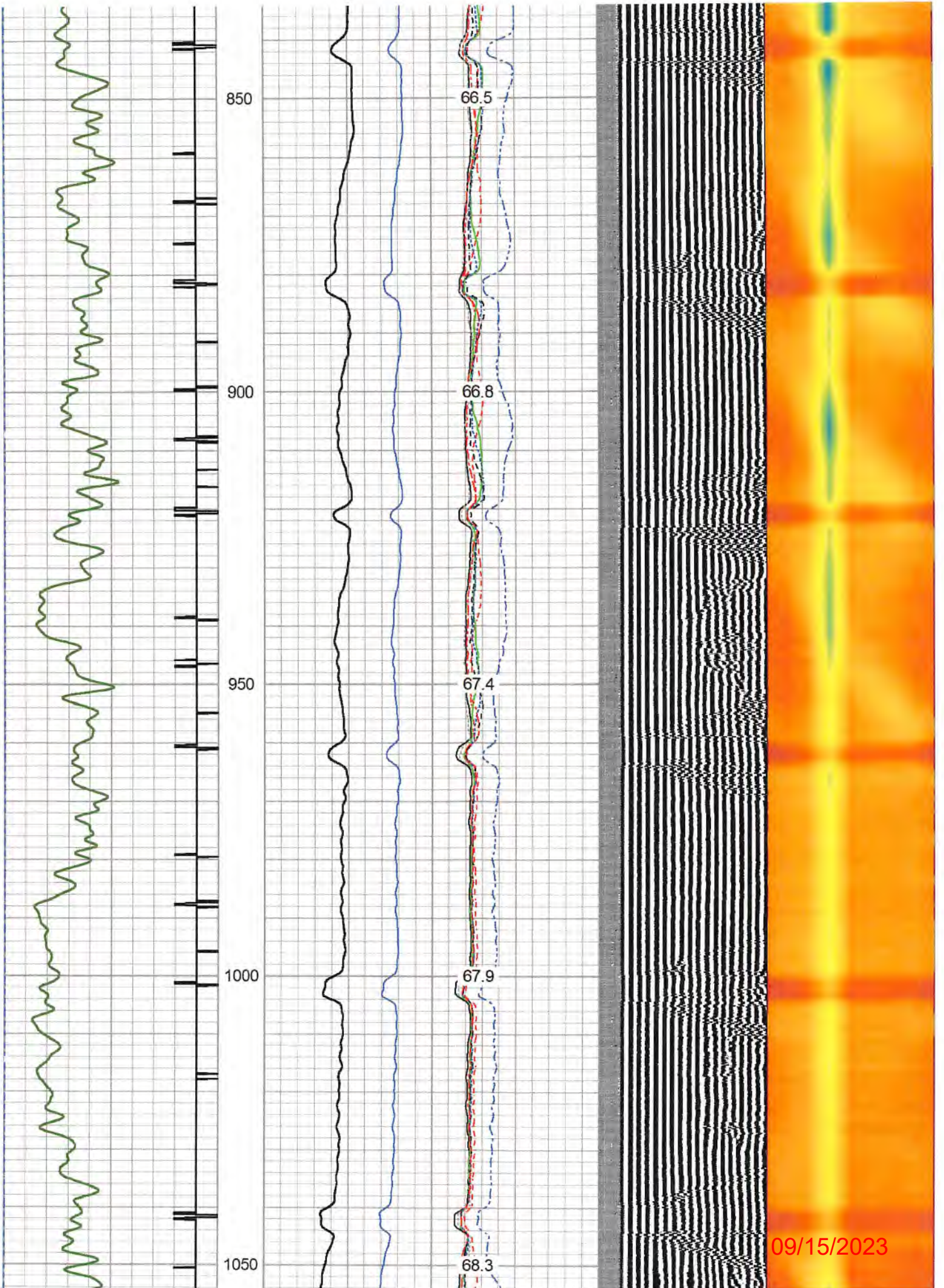
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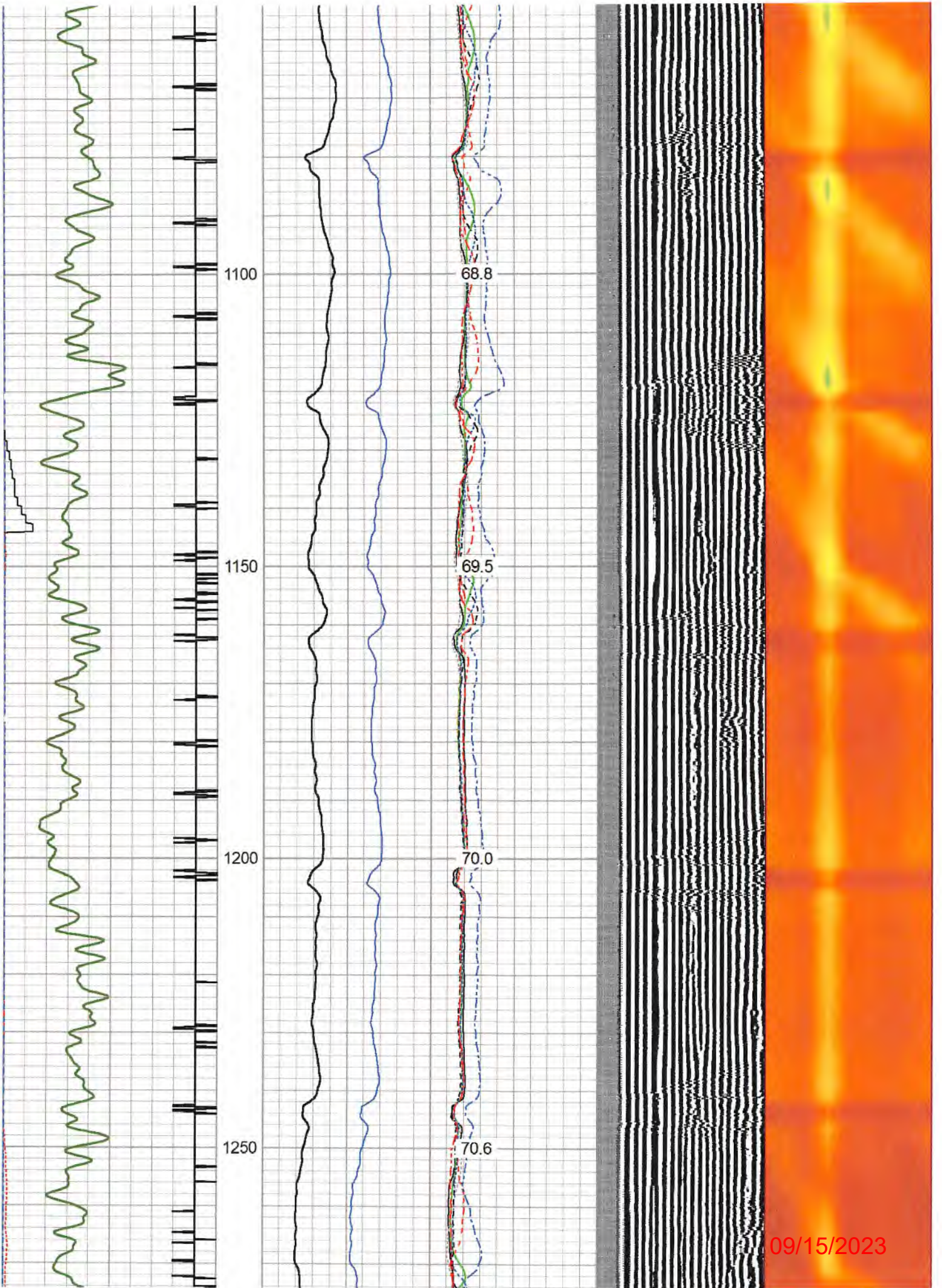




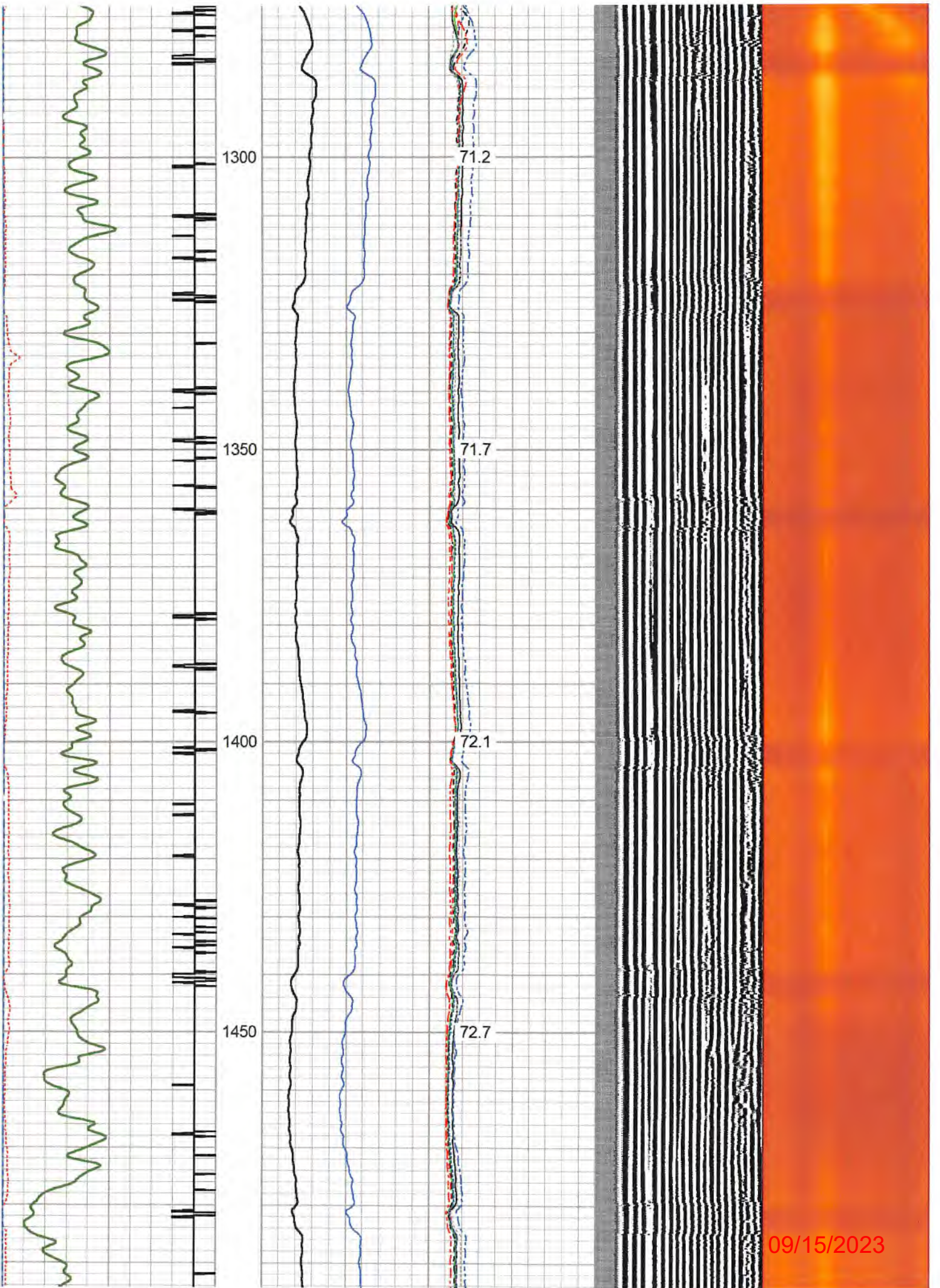


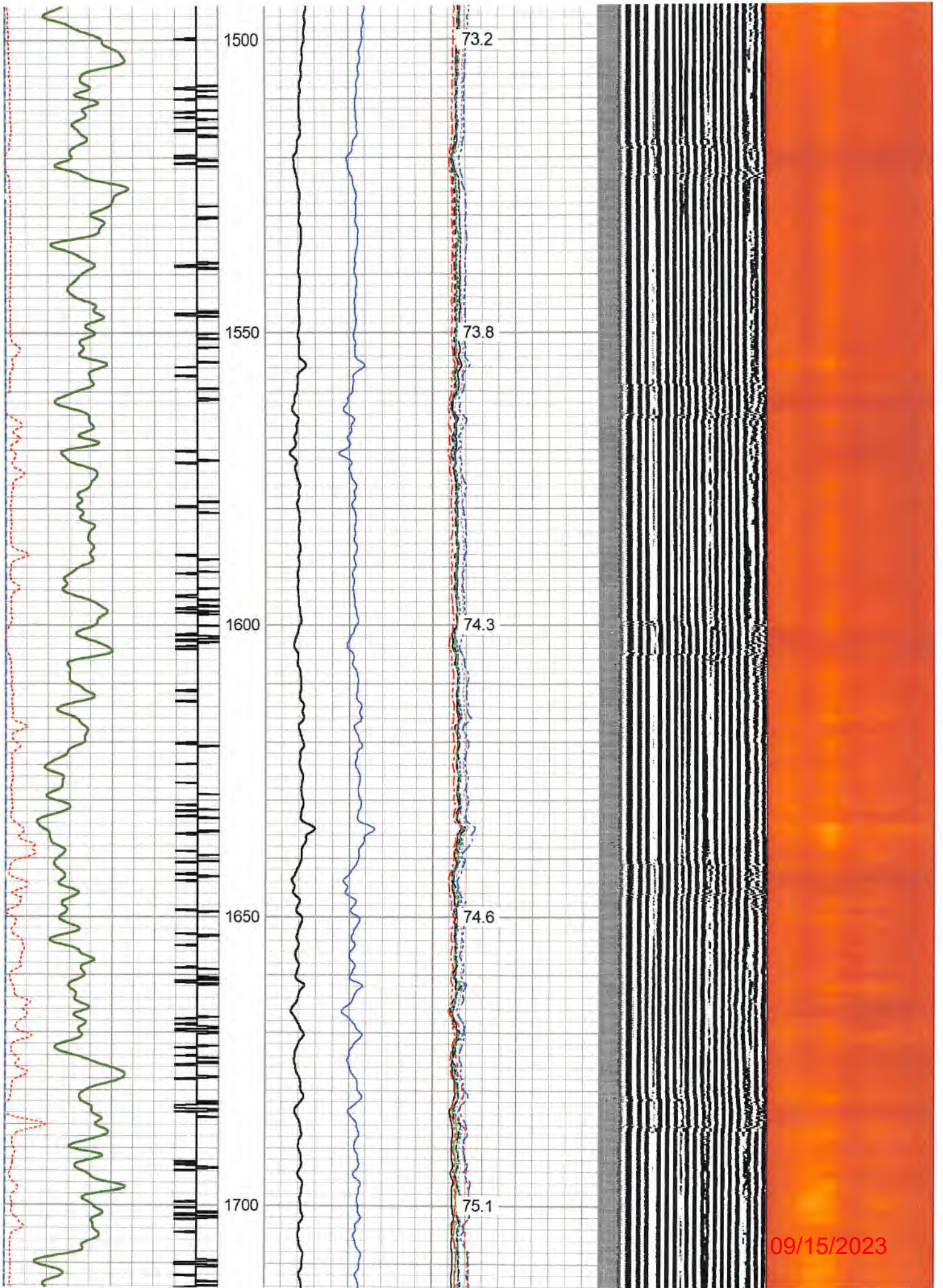
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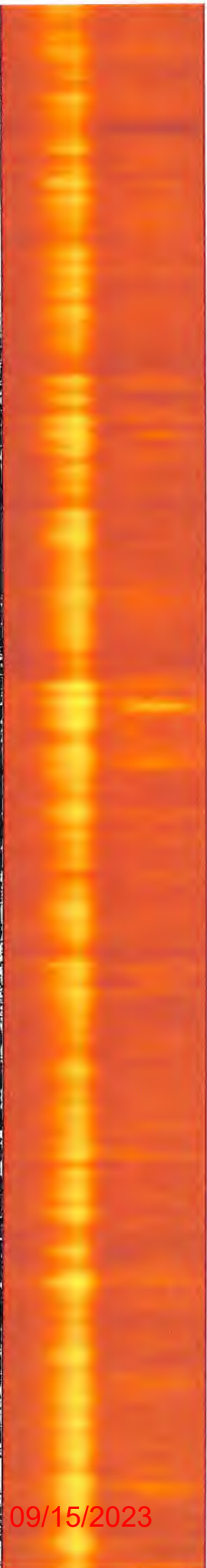
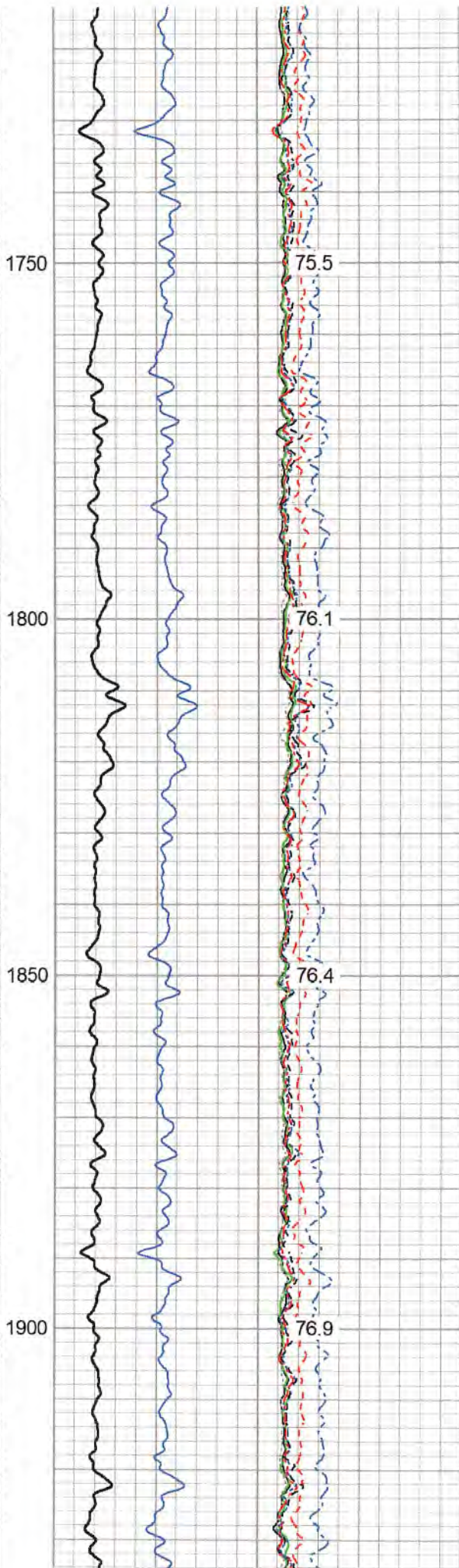
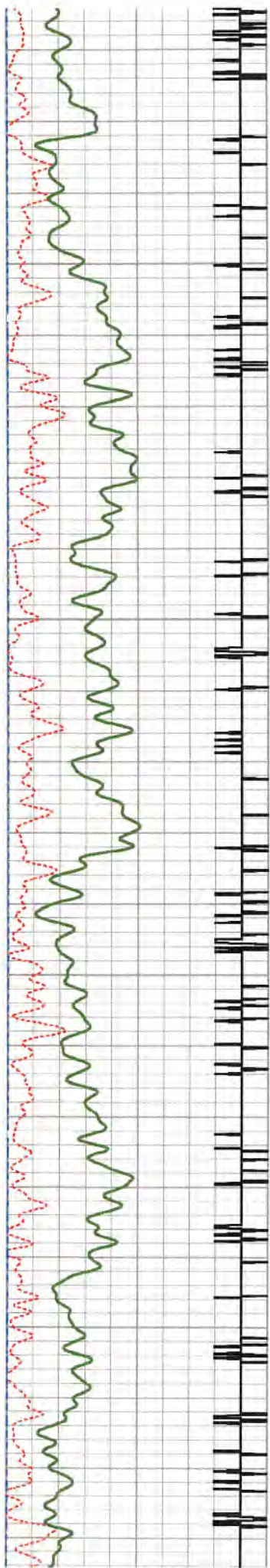


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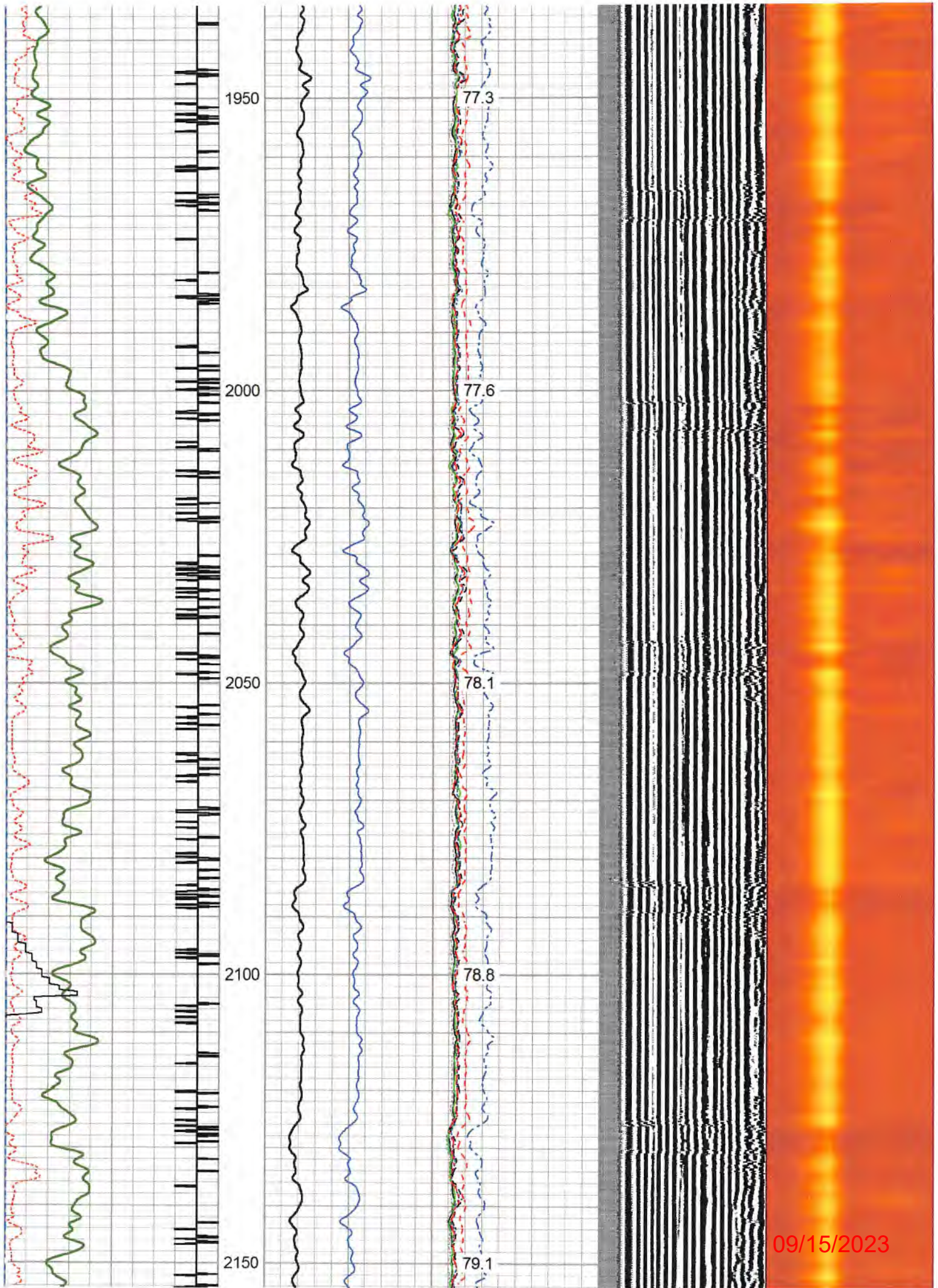




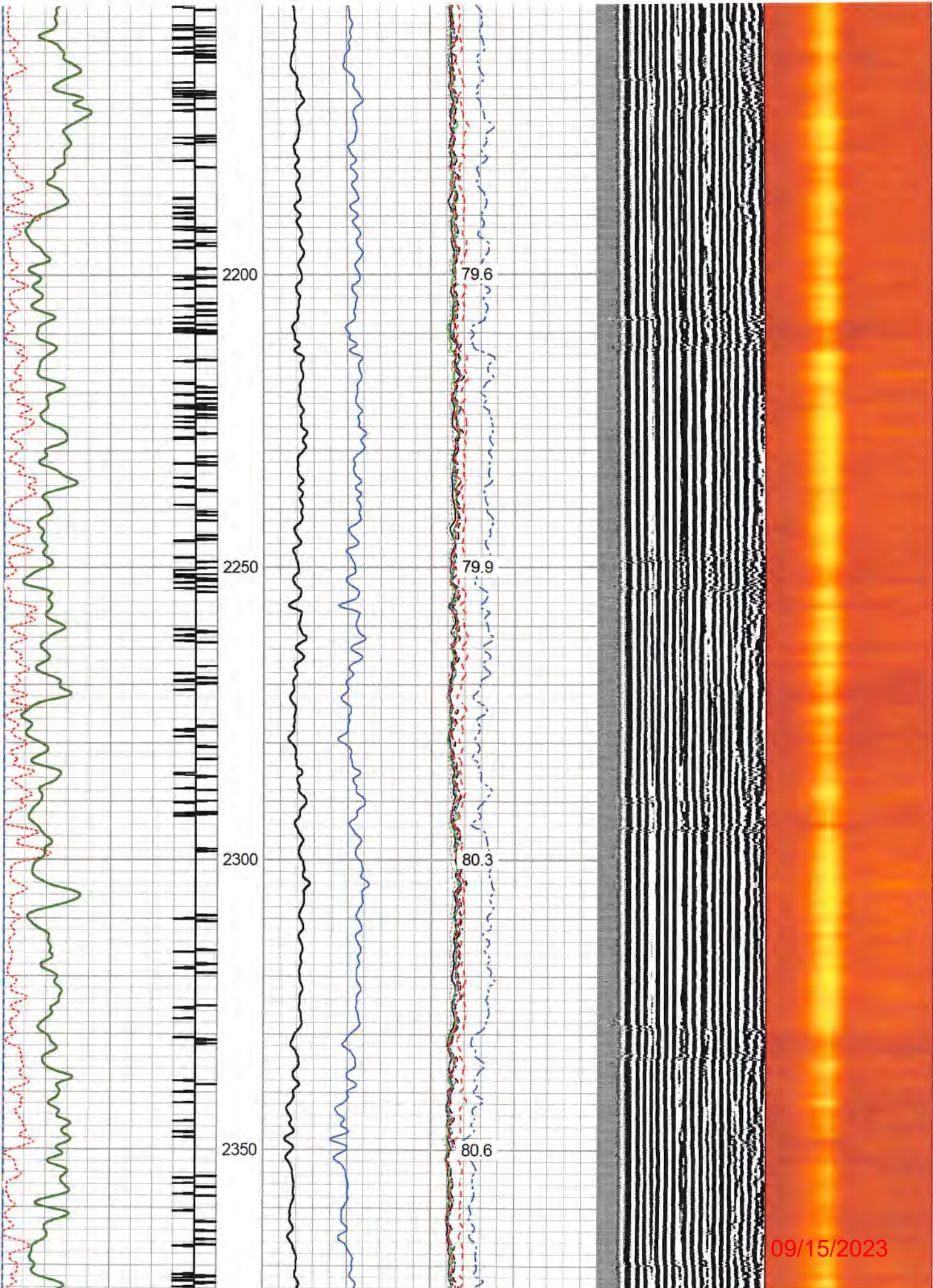
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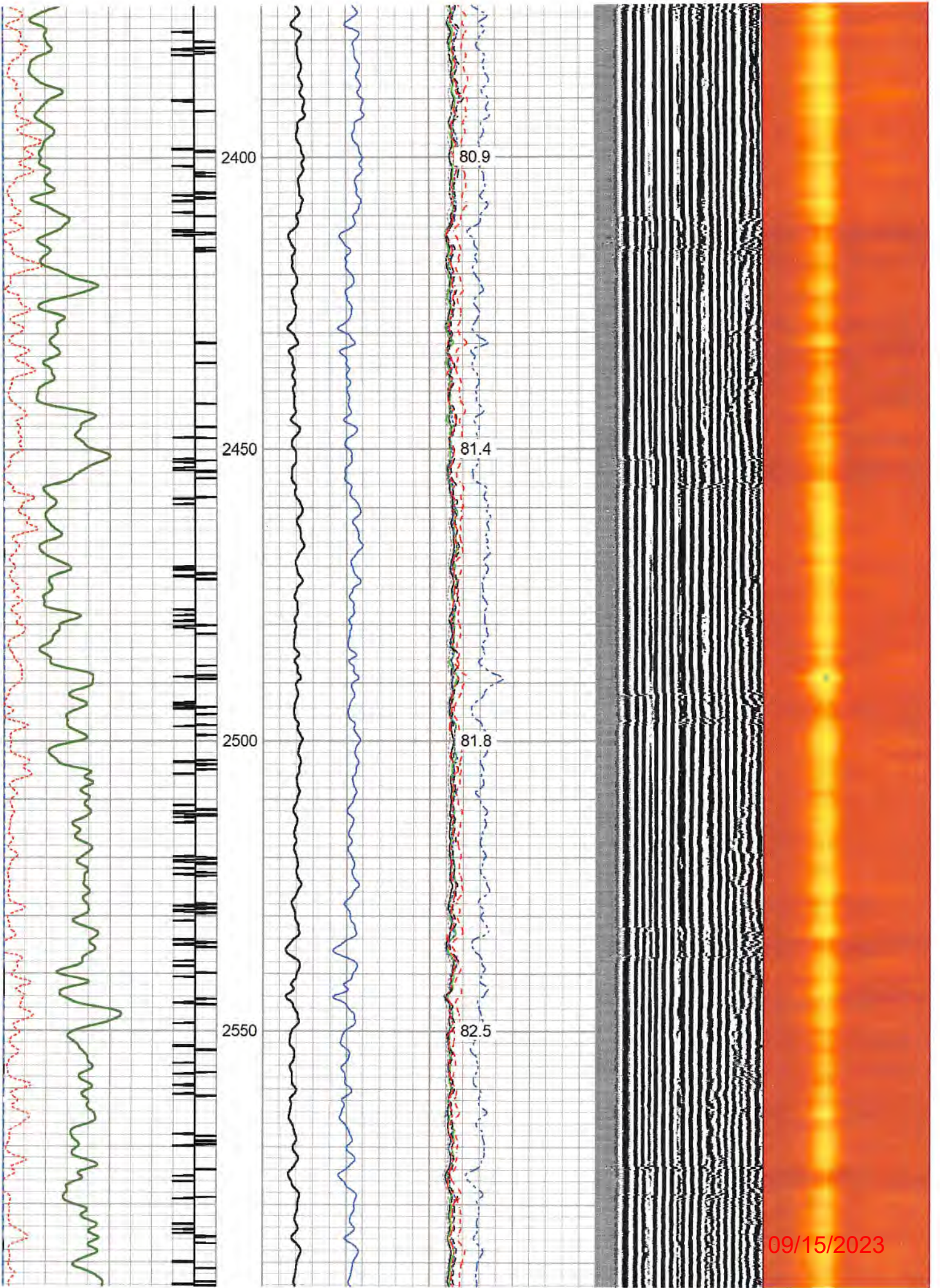
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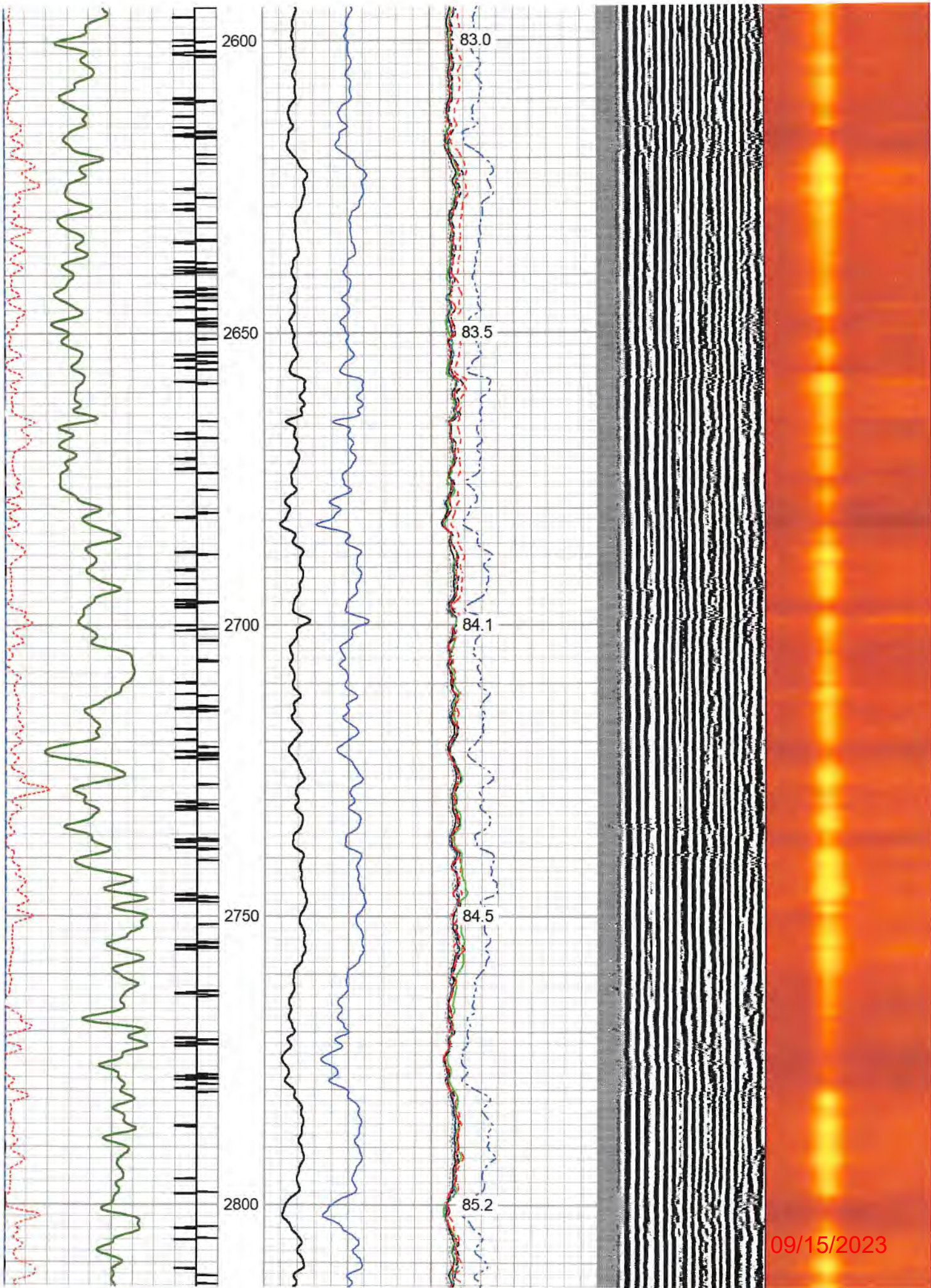


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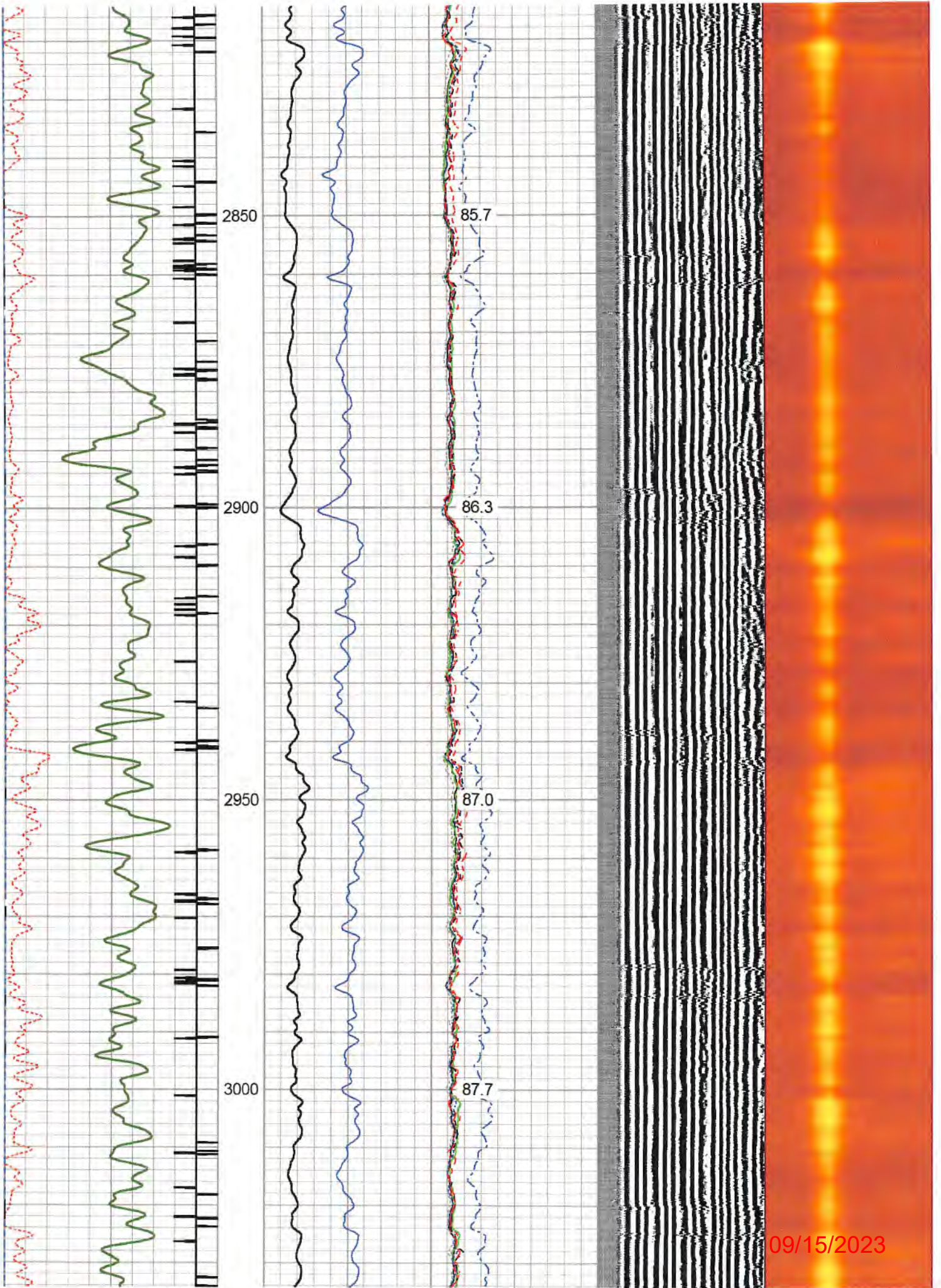


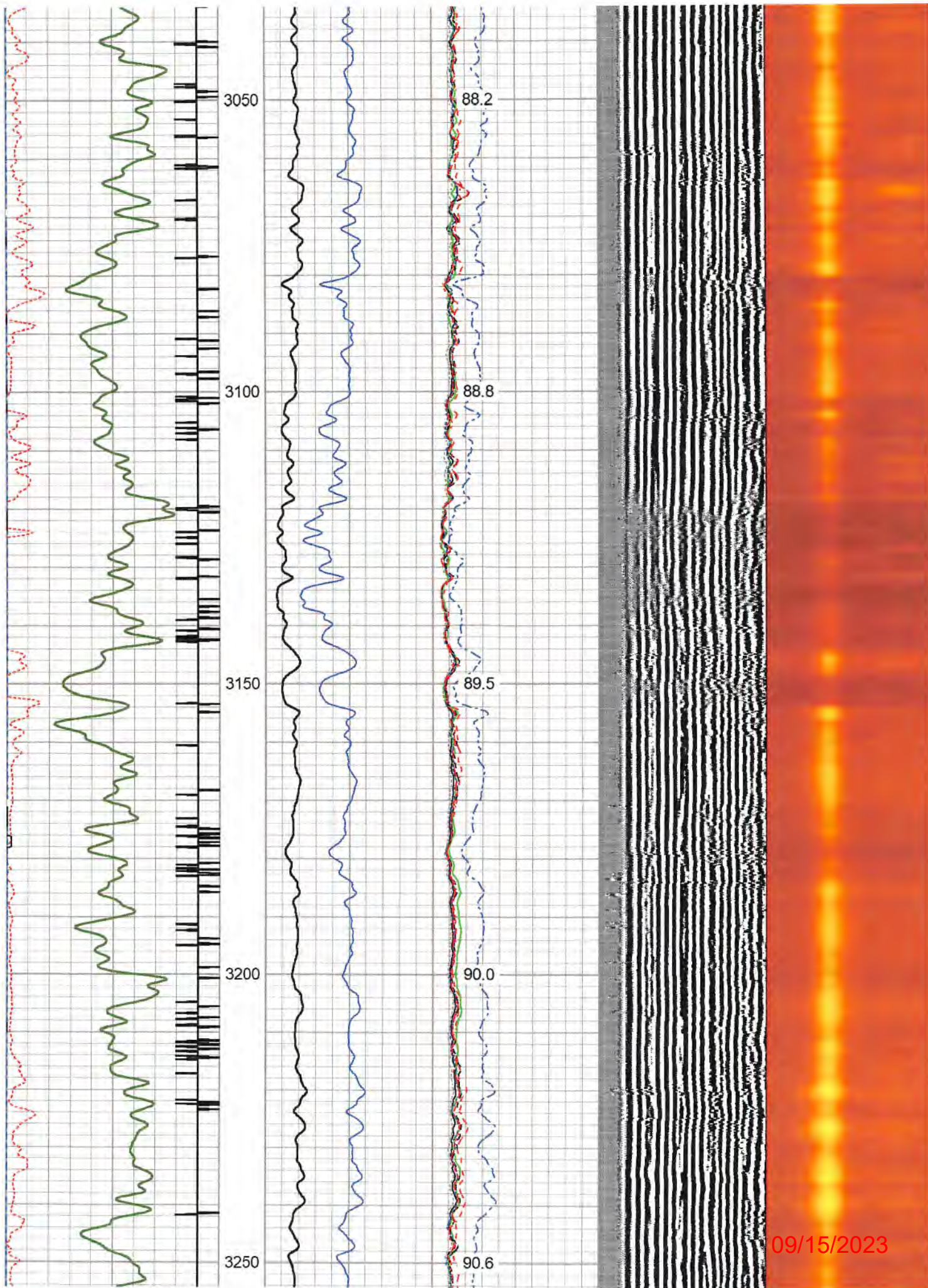
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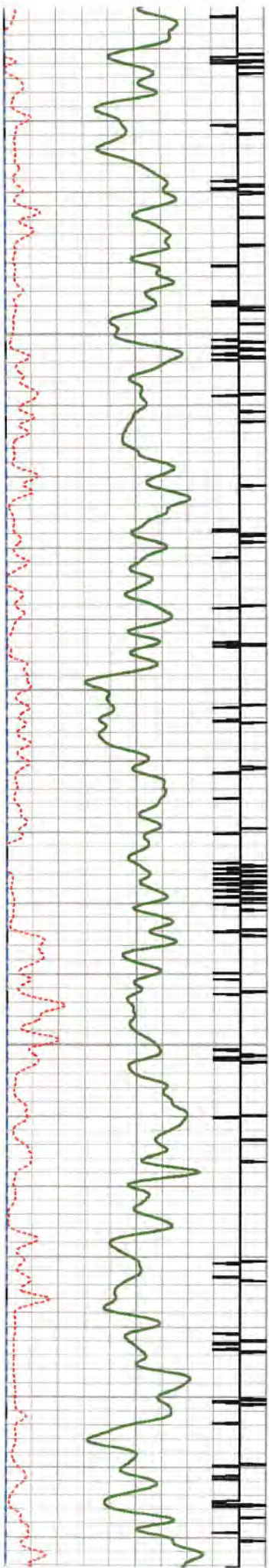




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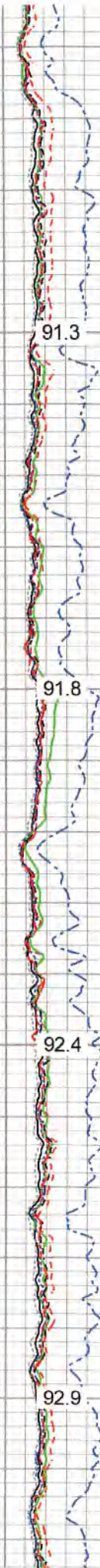
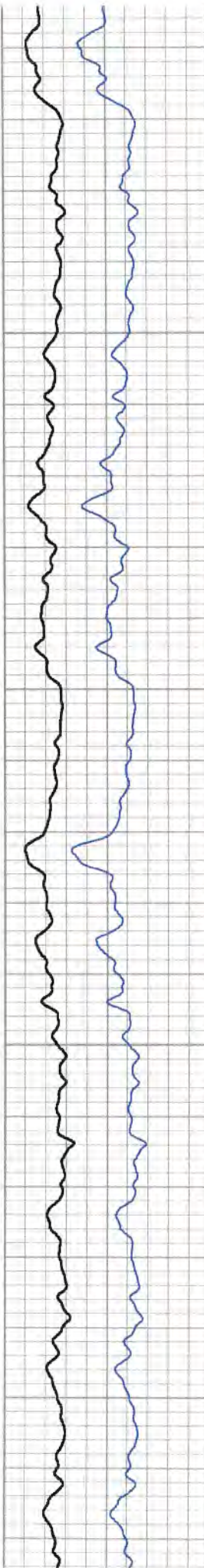


3300

3350

3400

3450

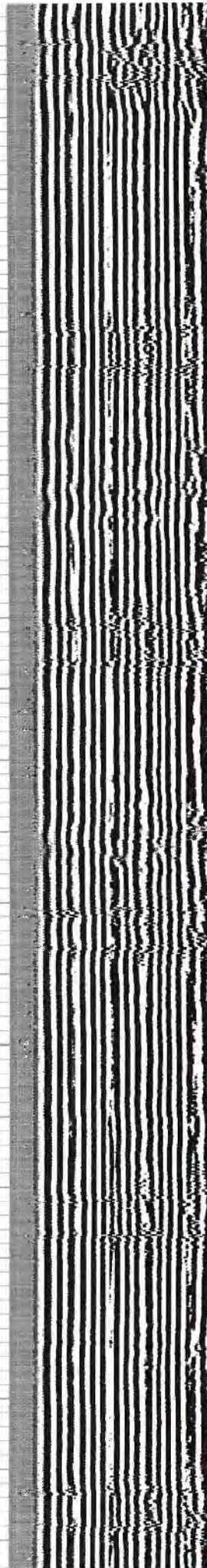


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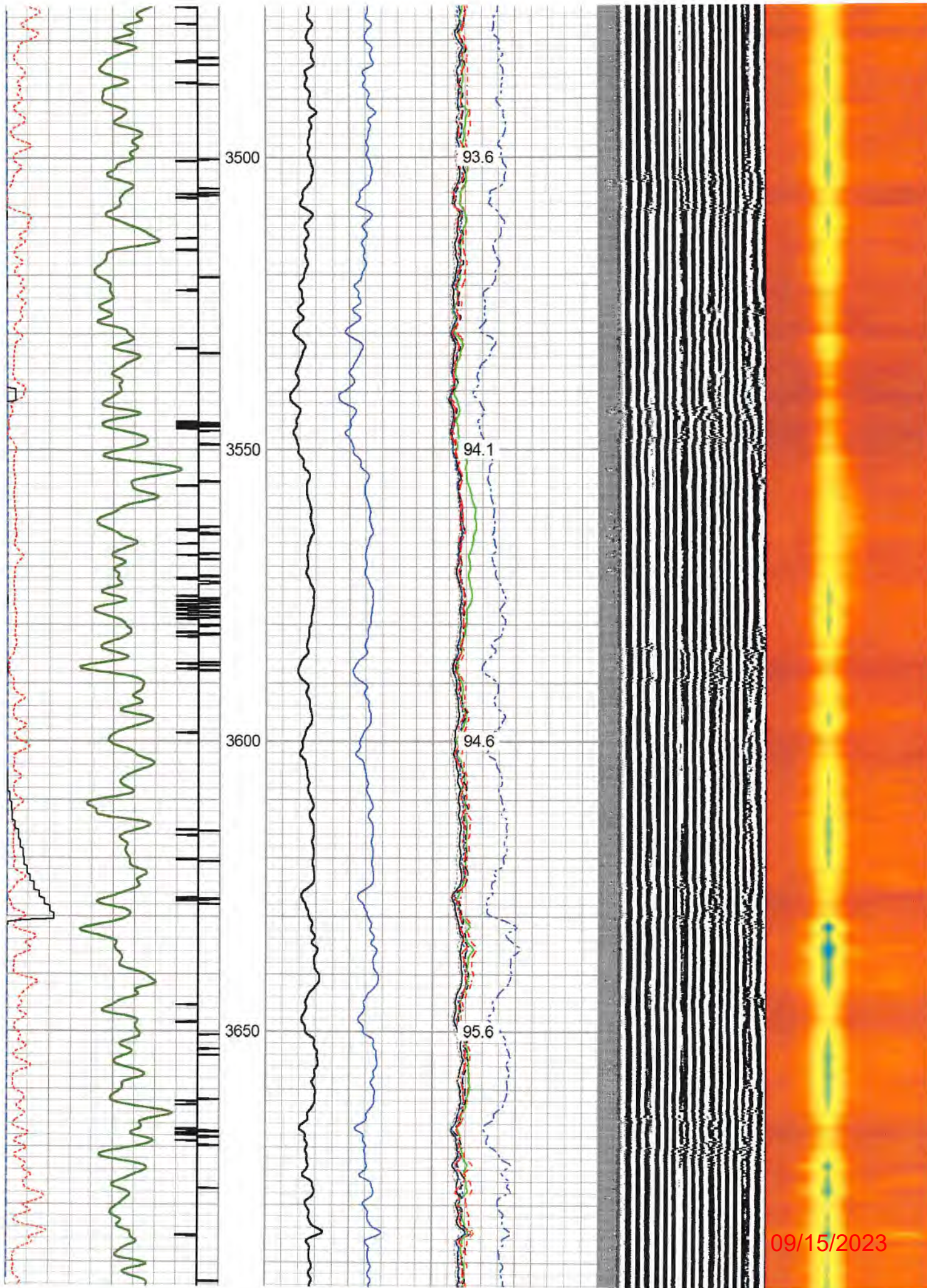
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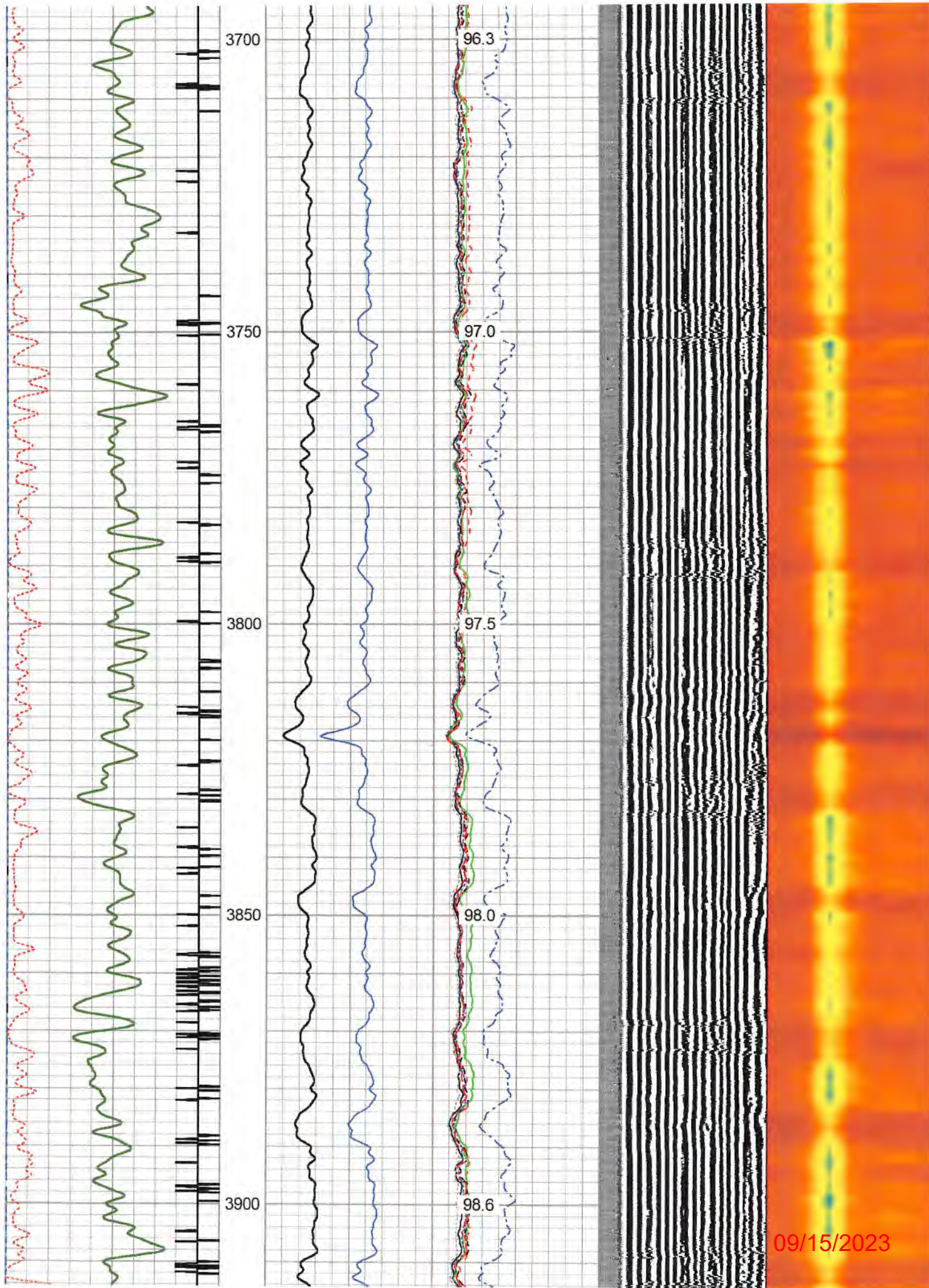
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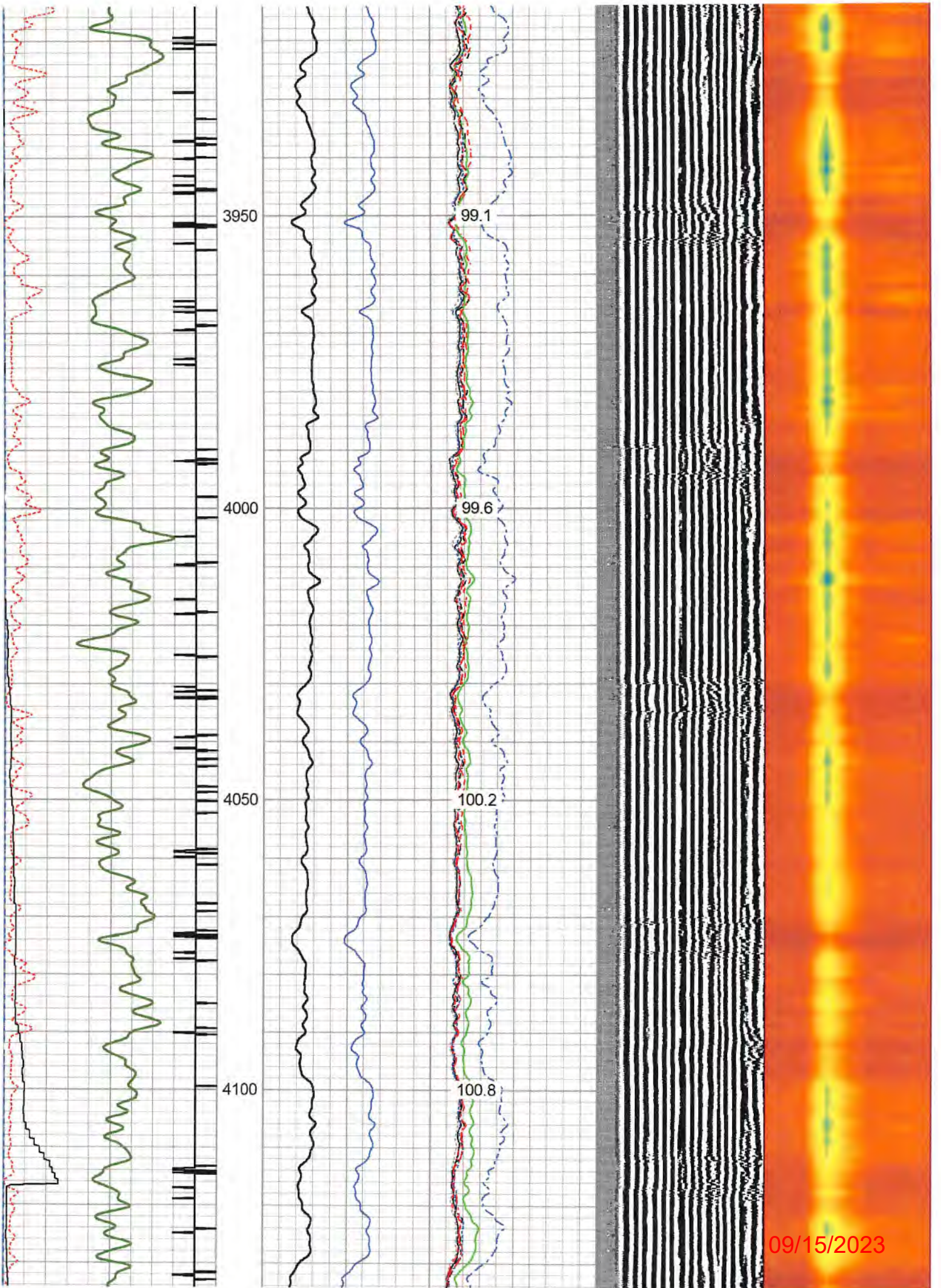
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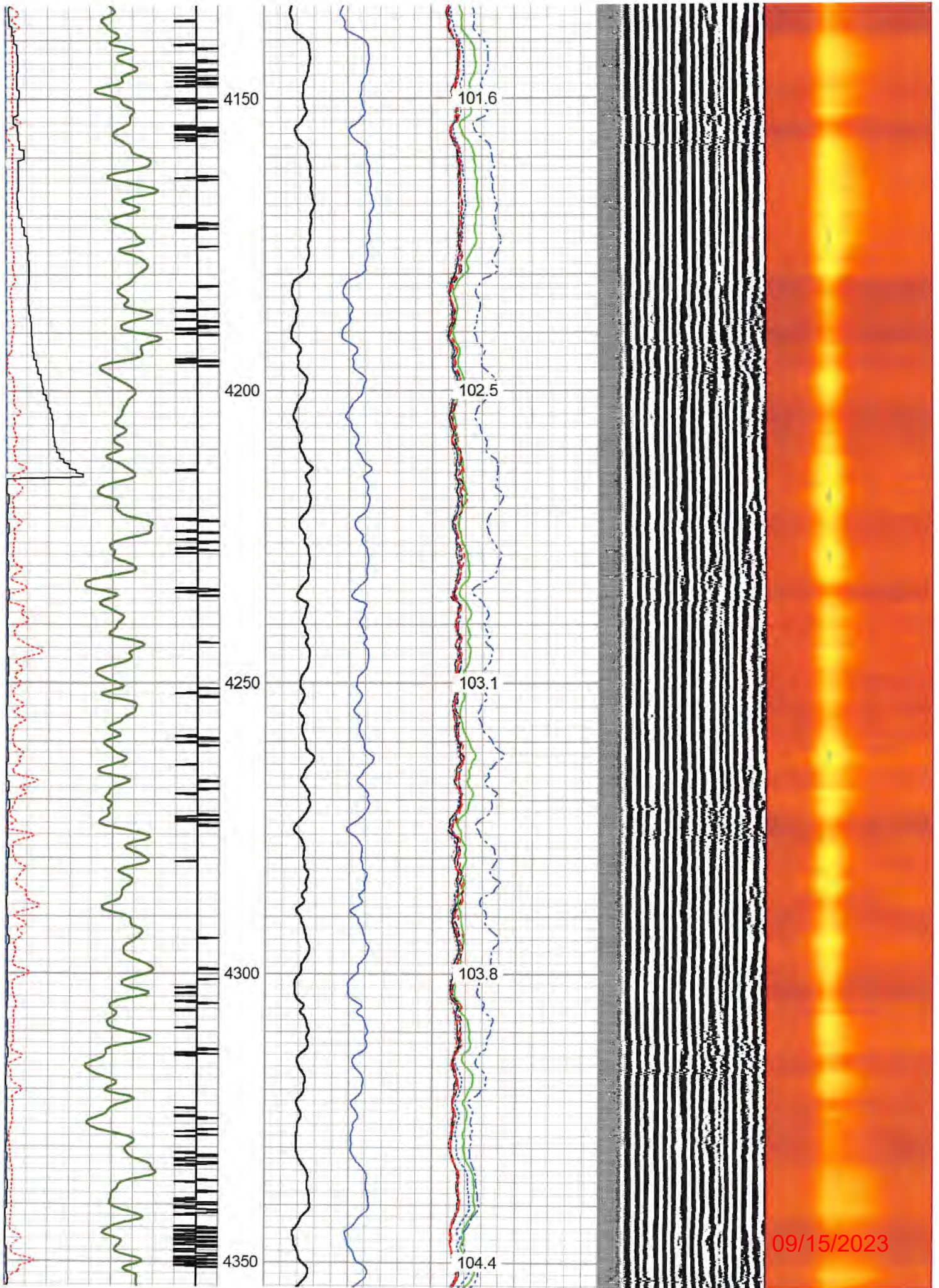


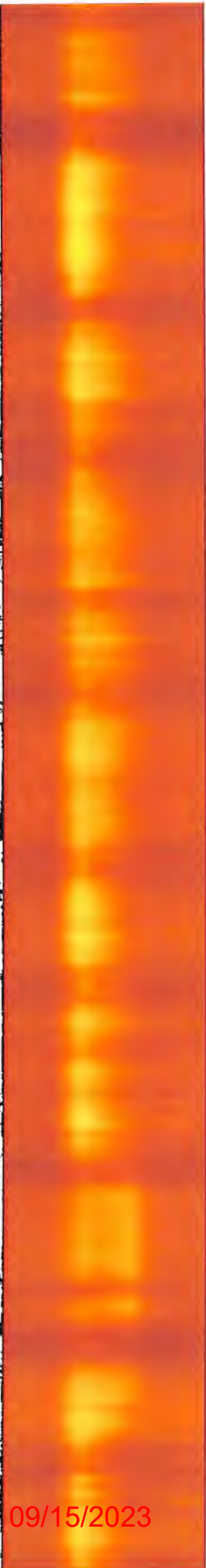
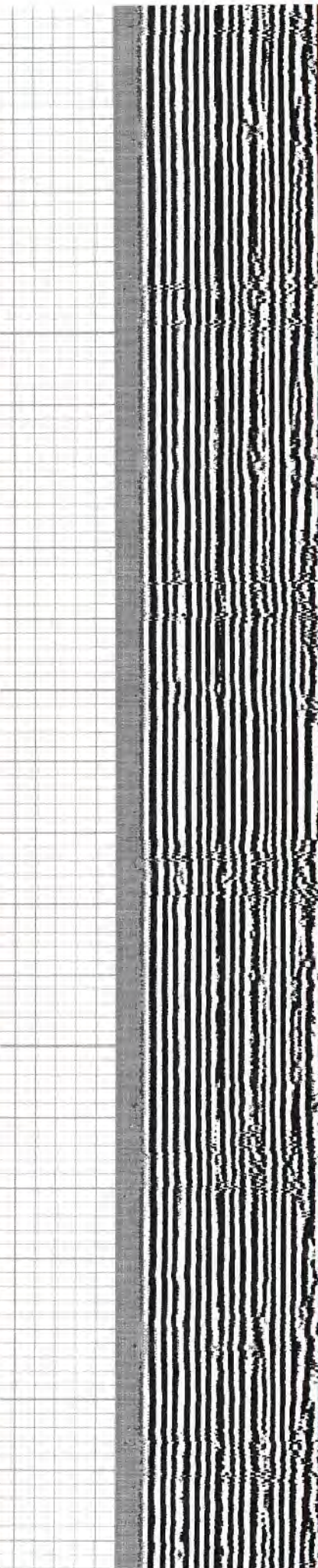
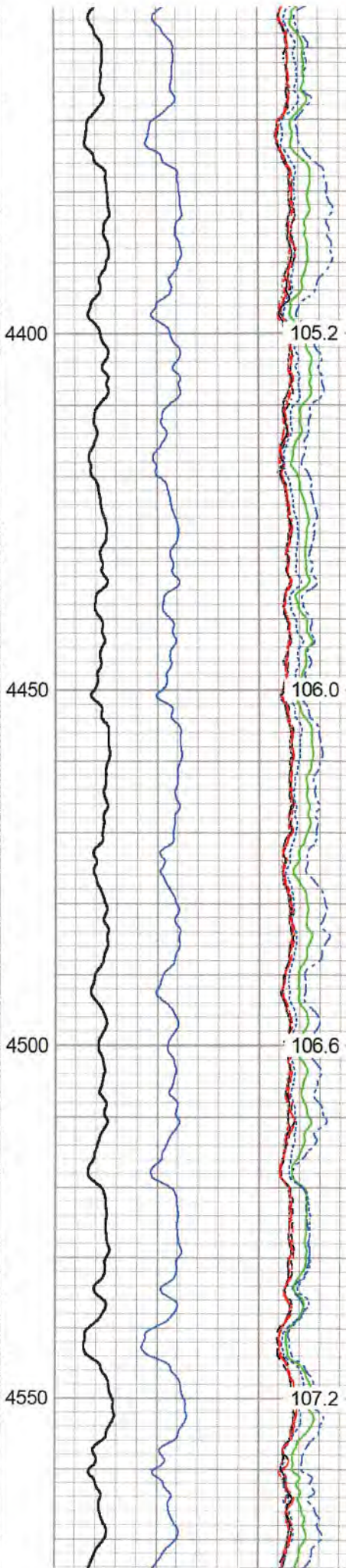
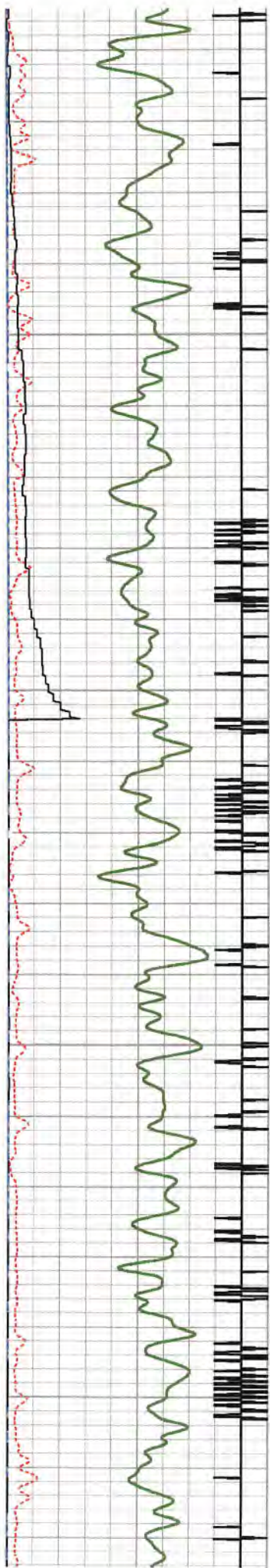
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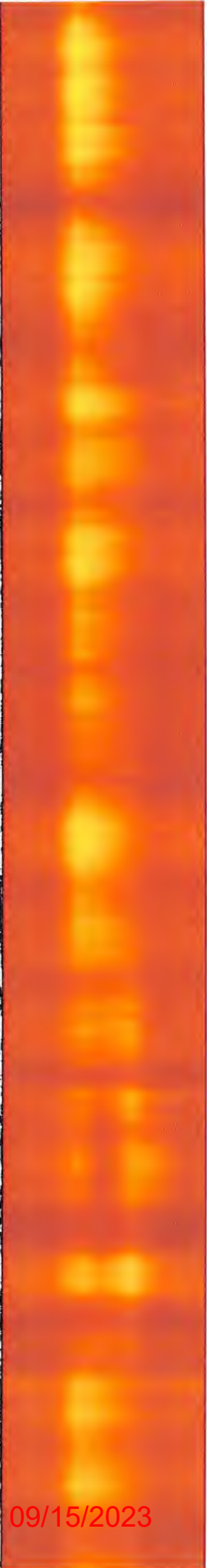
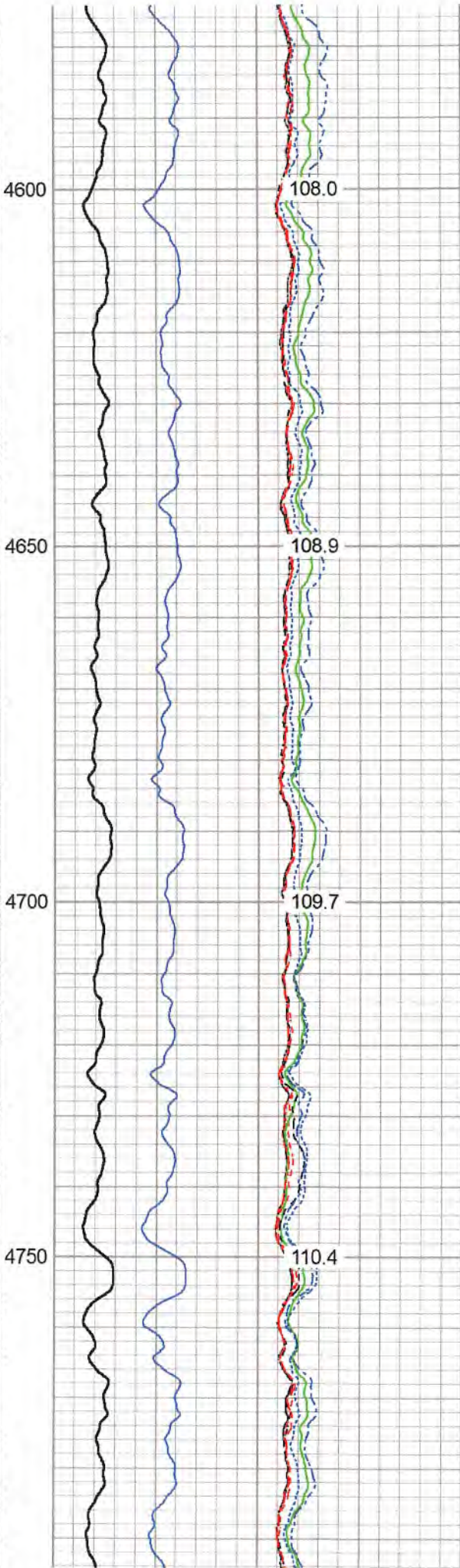
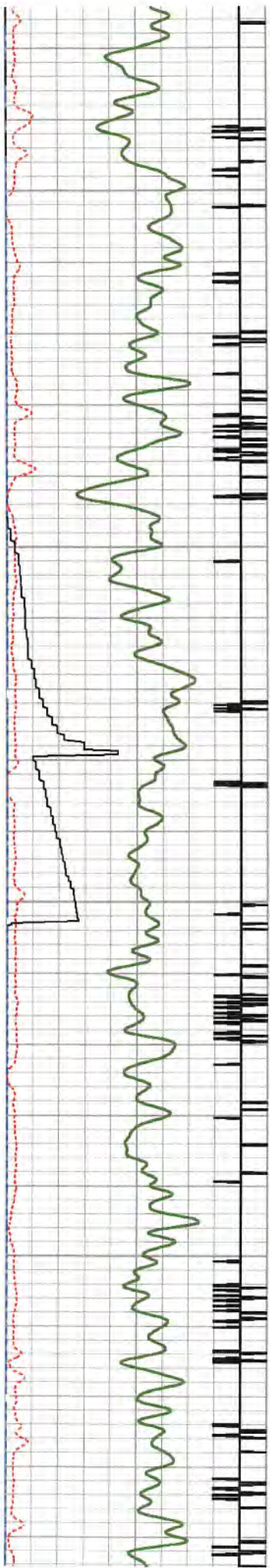








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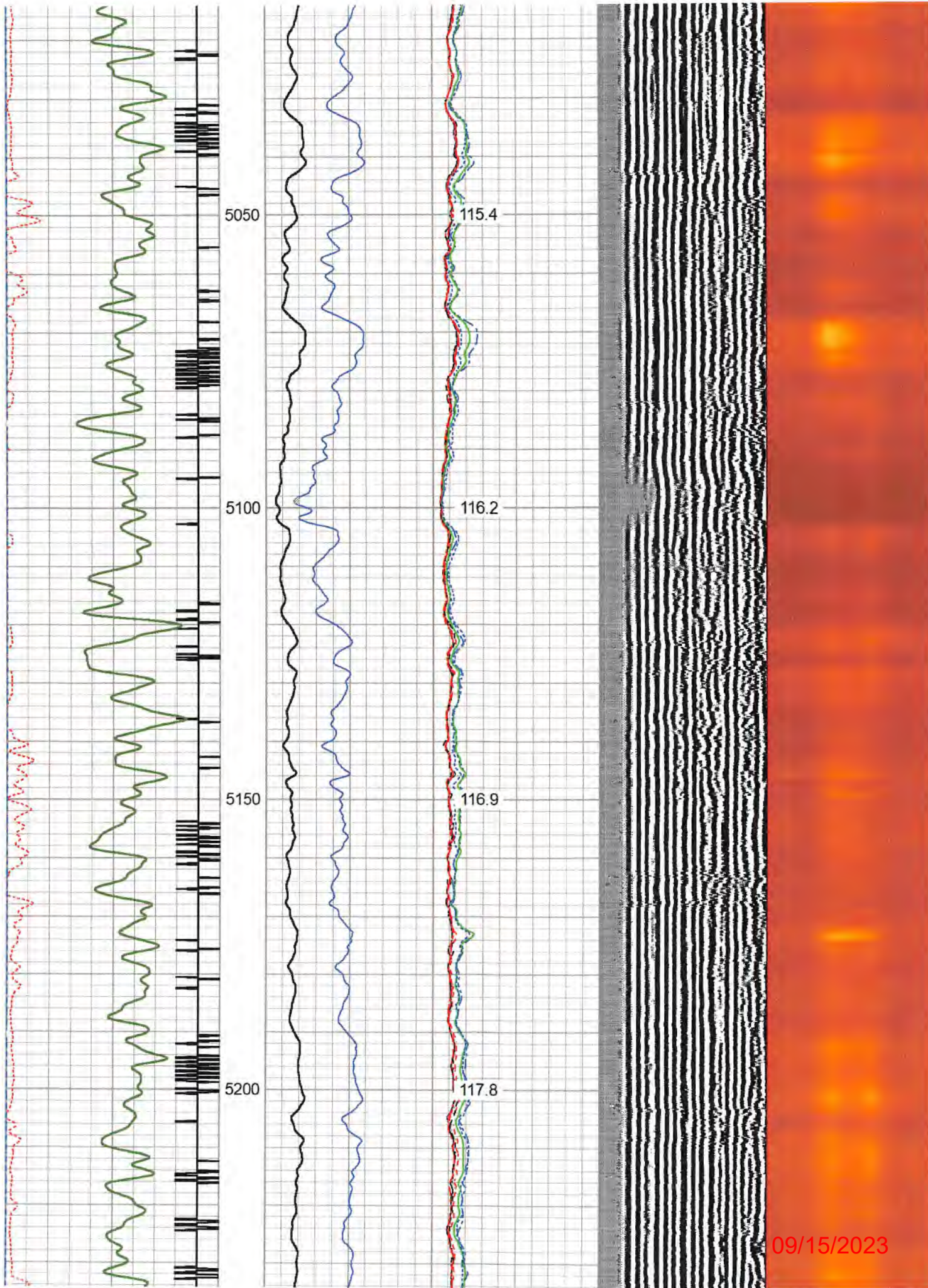
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108.9

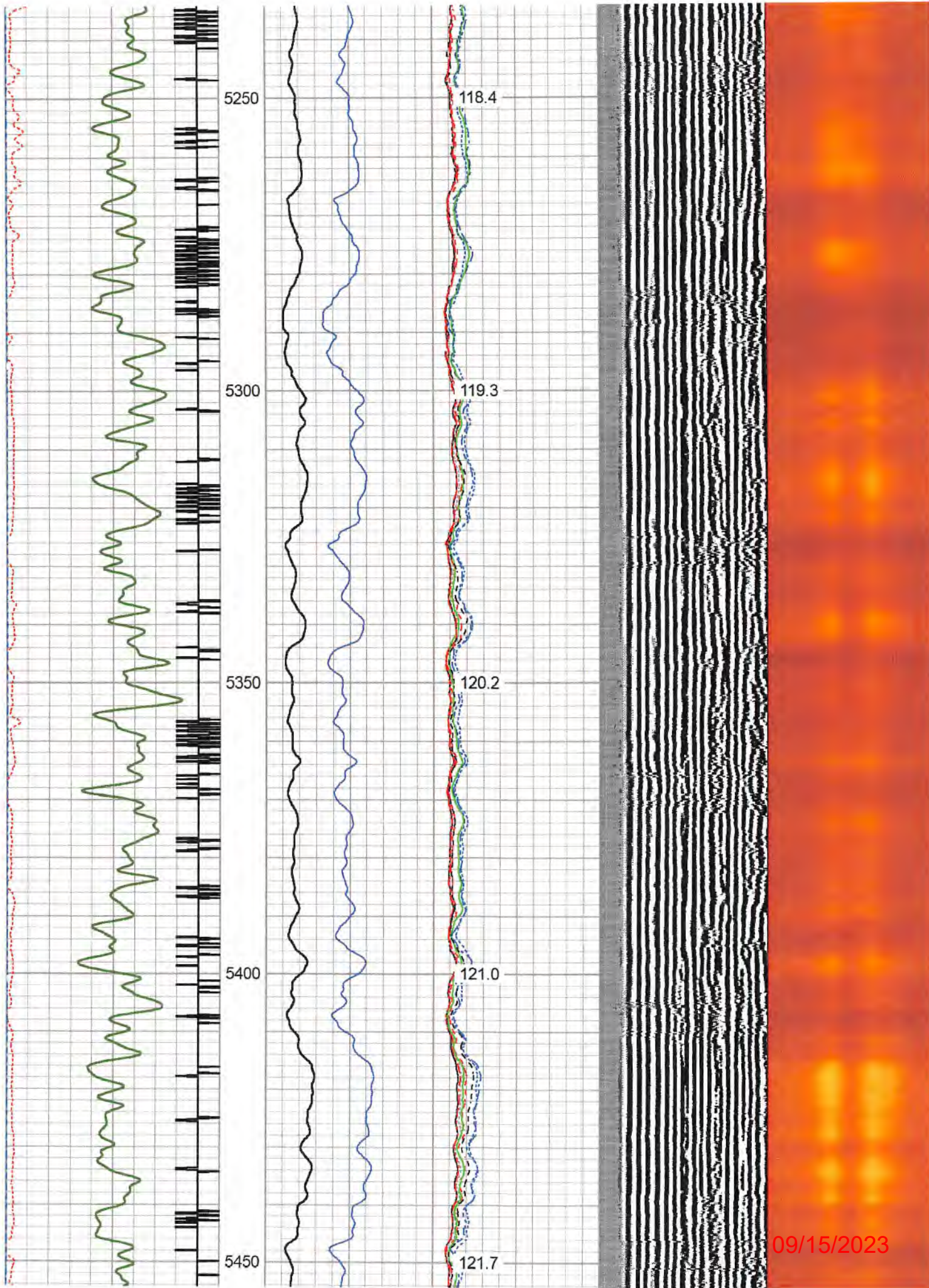
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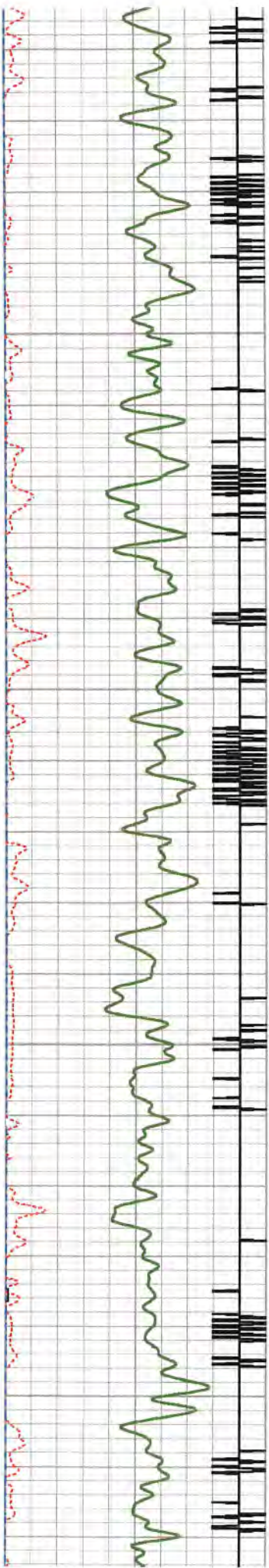
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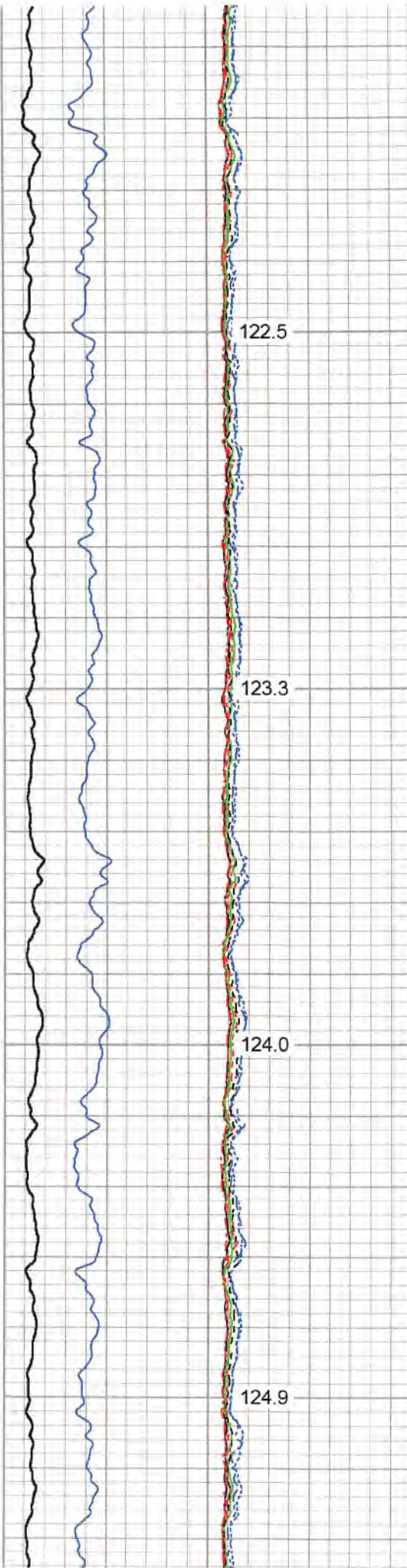


5500

5550

5600

5650



122.5

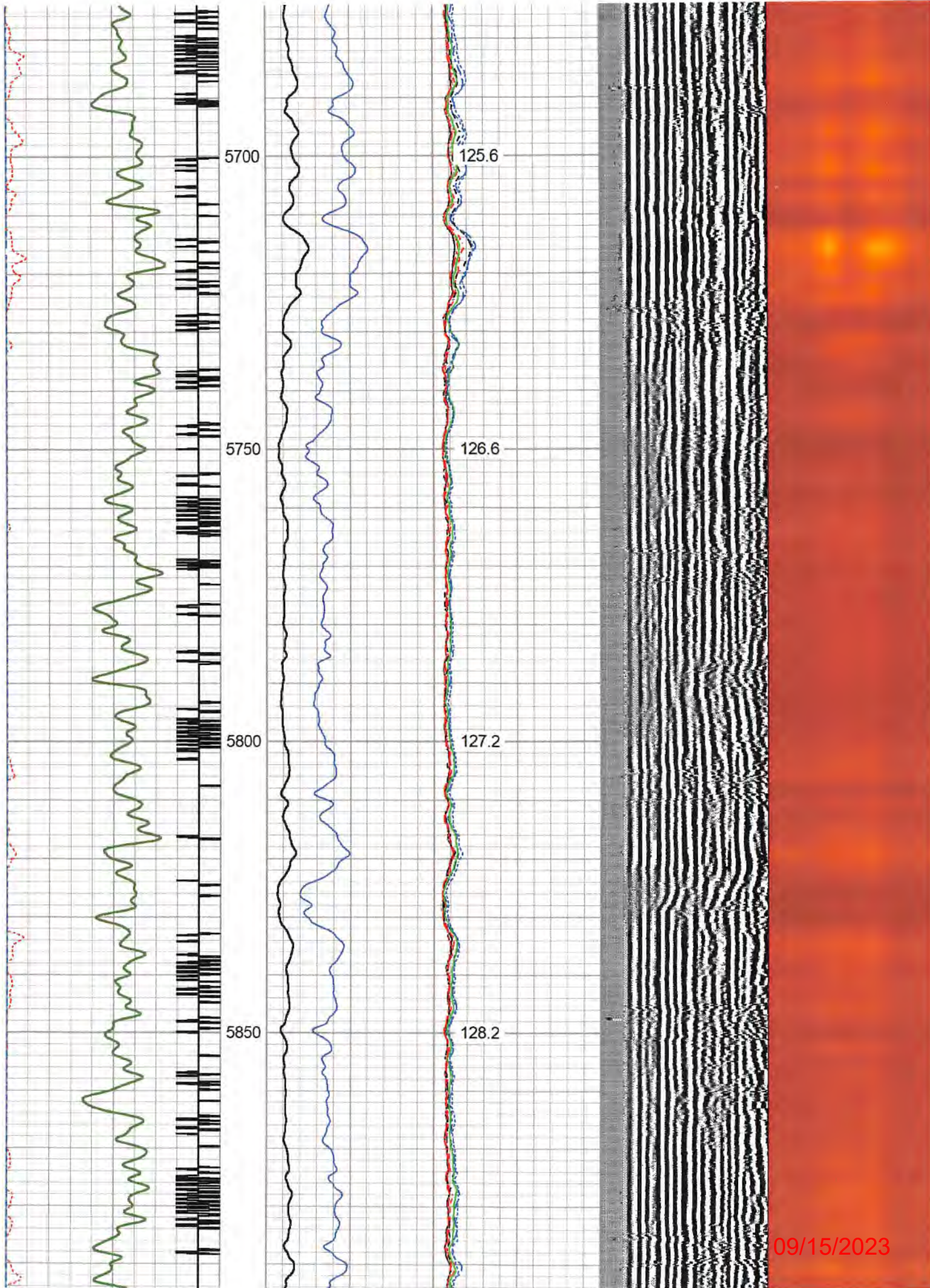
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124.0

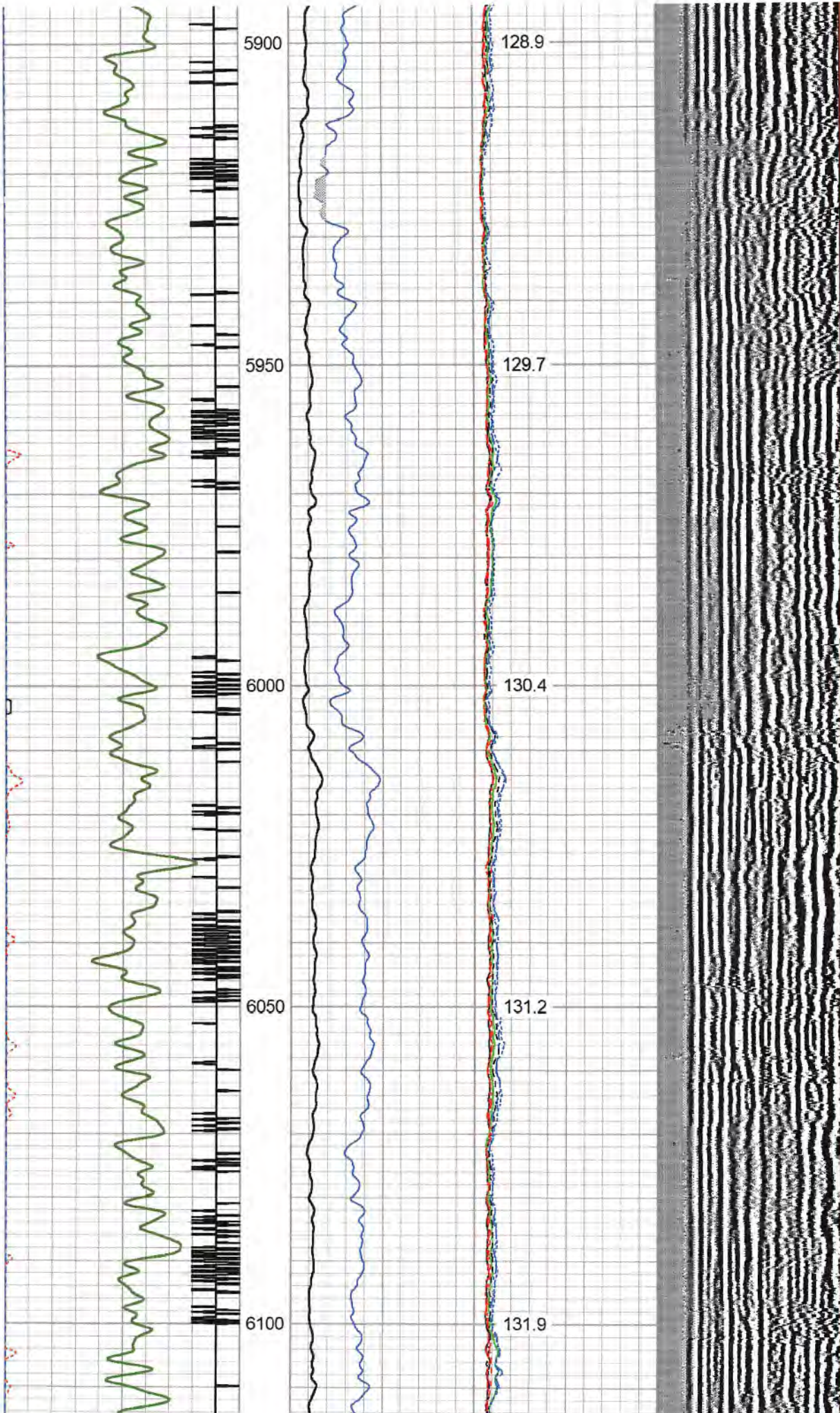
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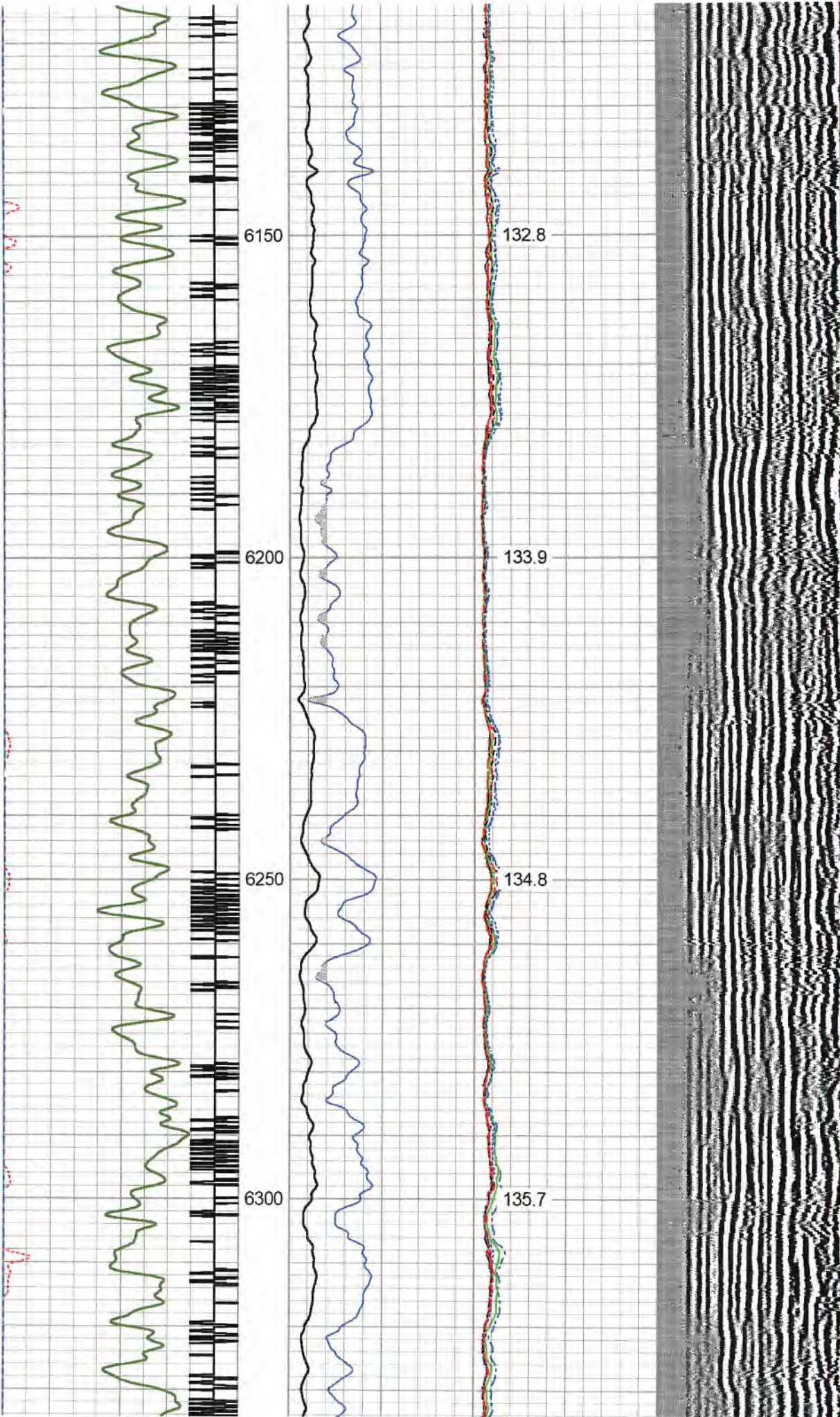
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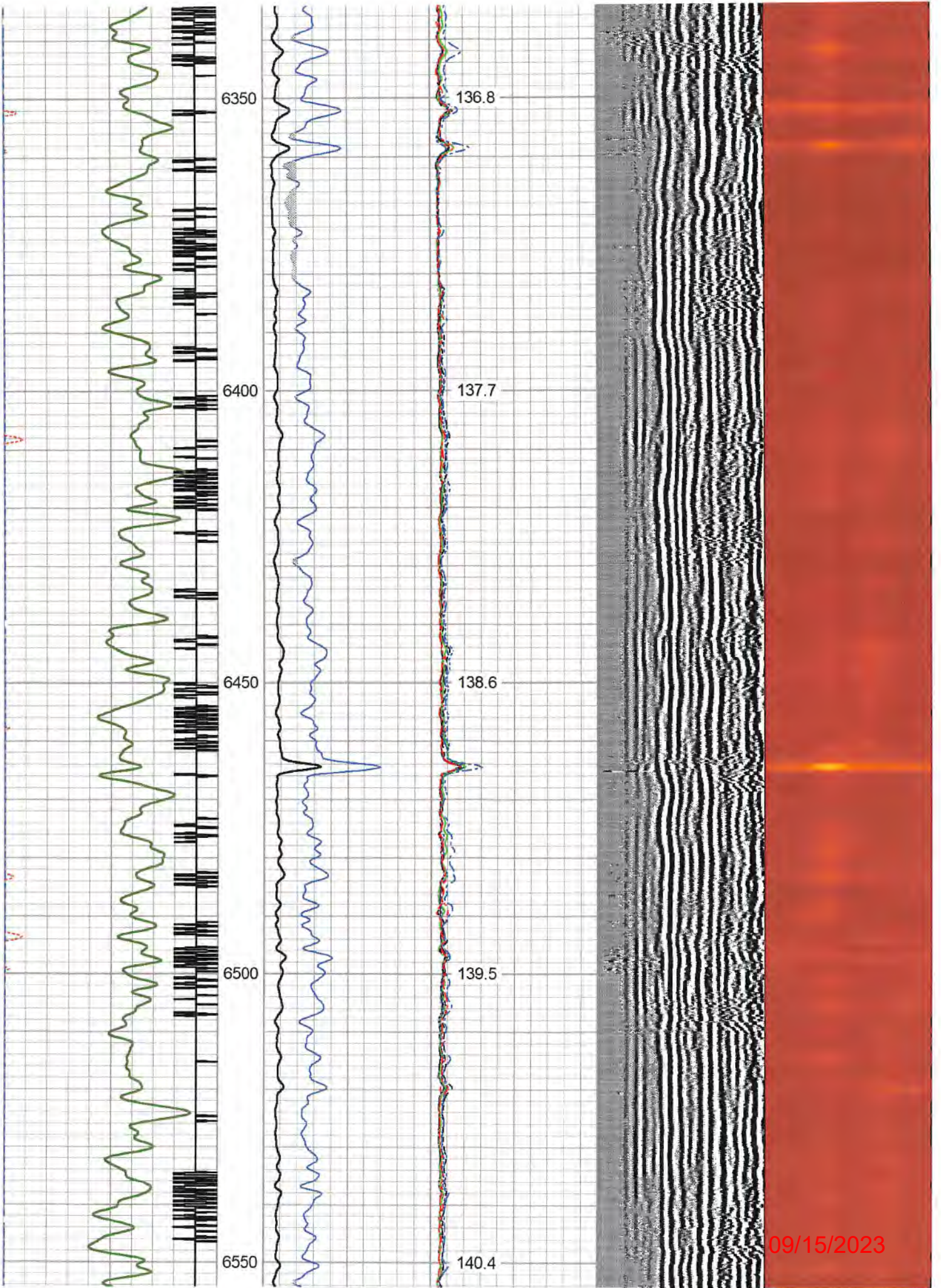
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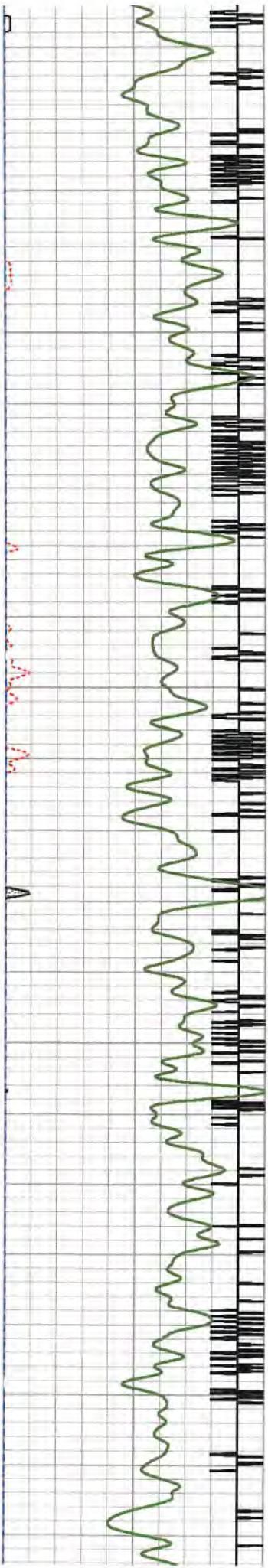


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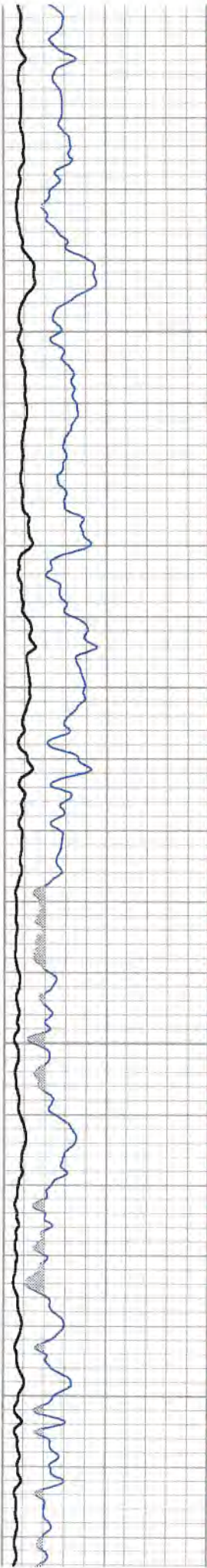


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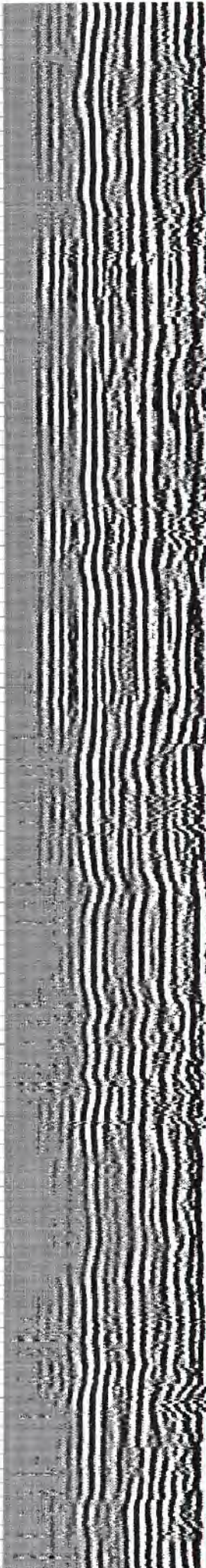




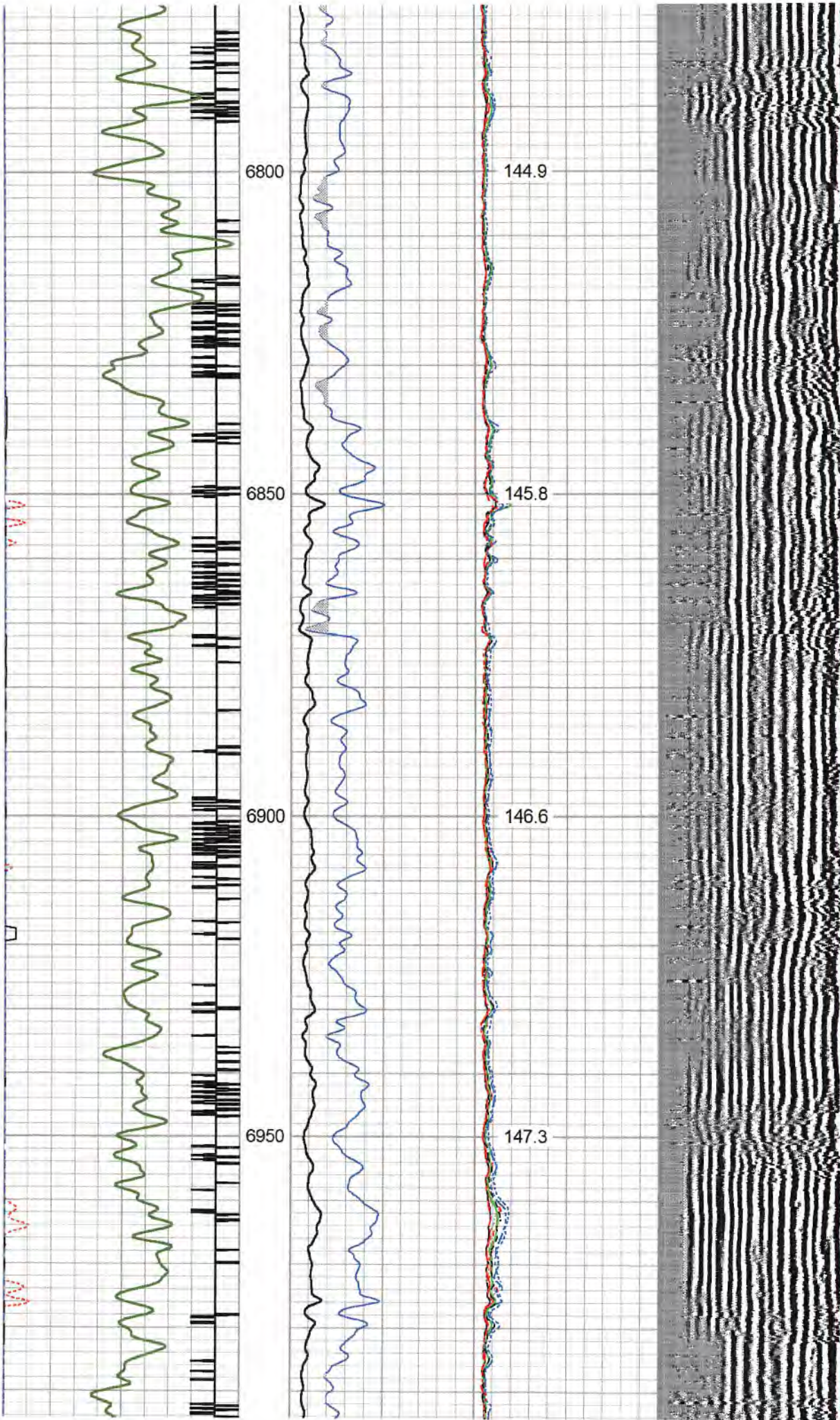
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6650
6700
6750



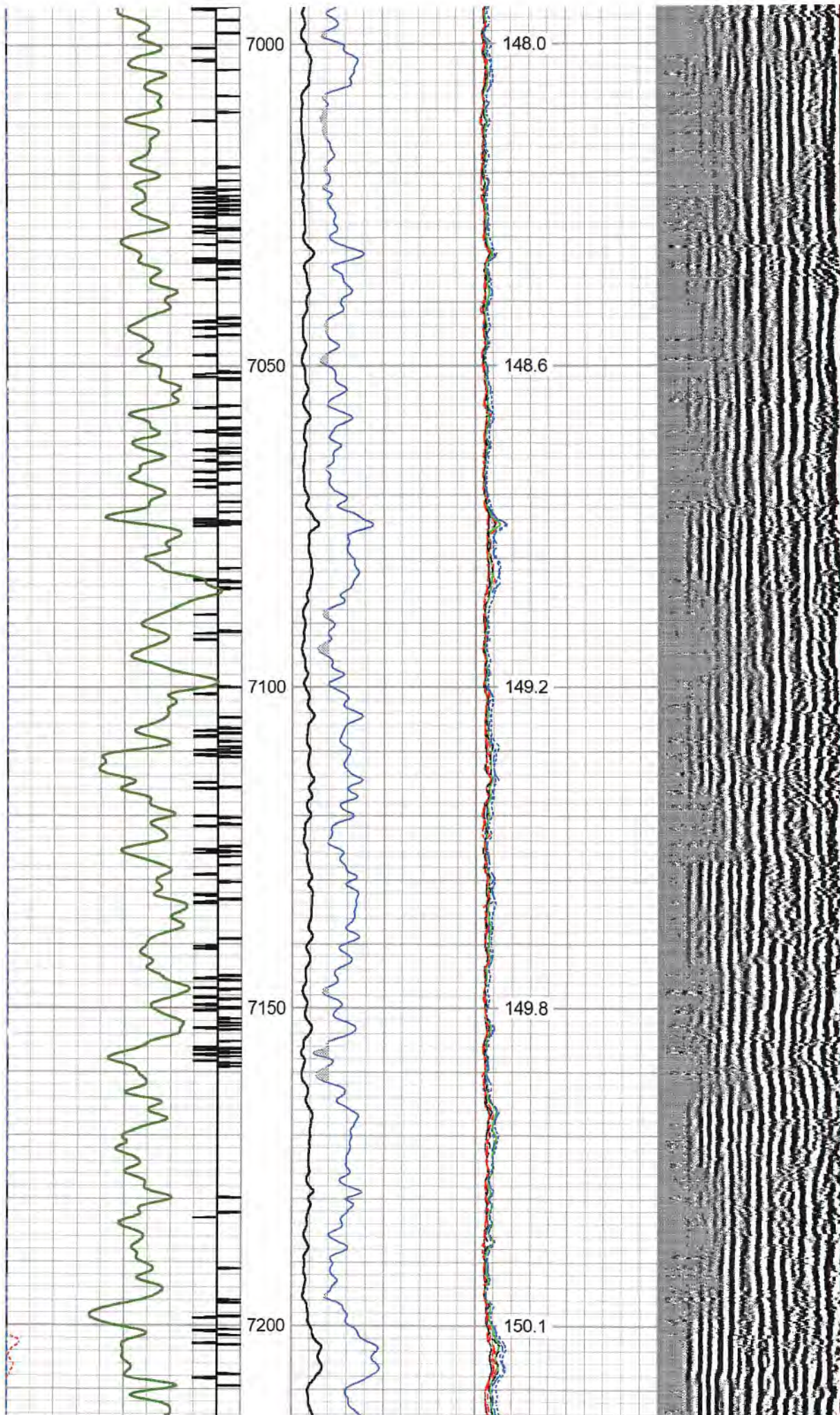
141.4
142.3
143.1
144.1



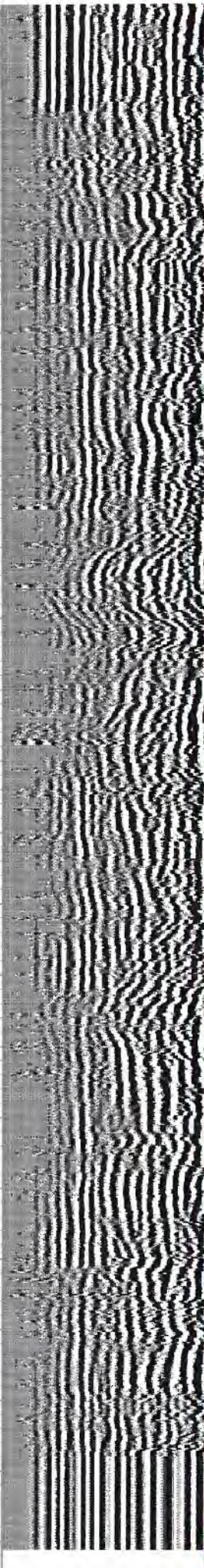
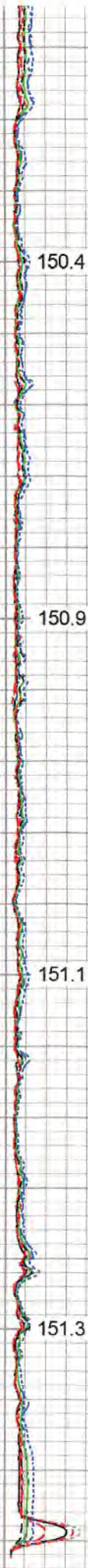
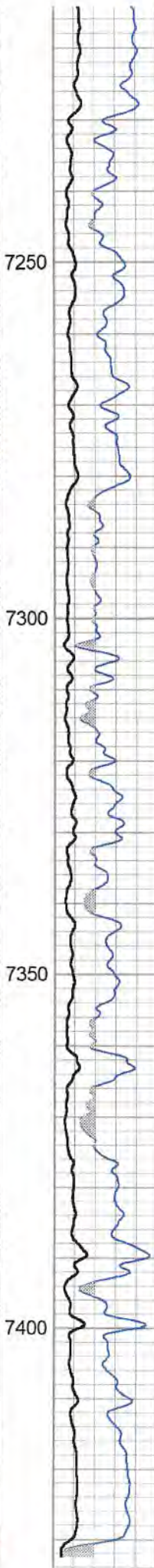
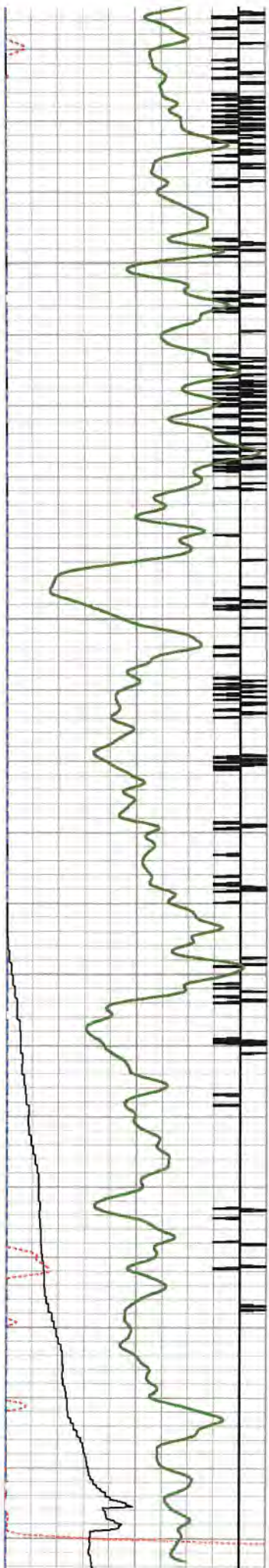
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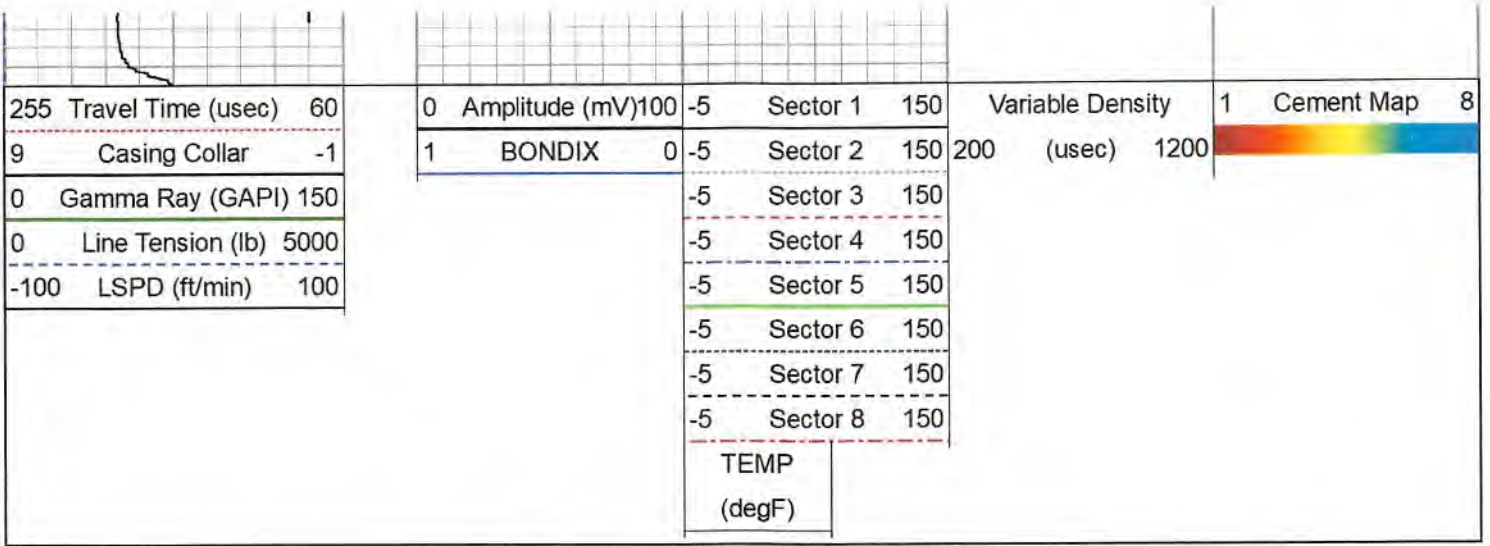
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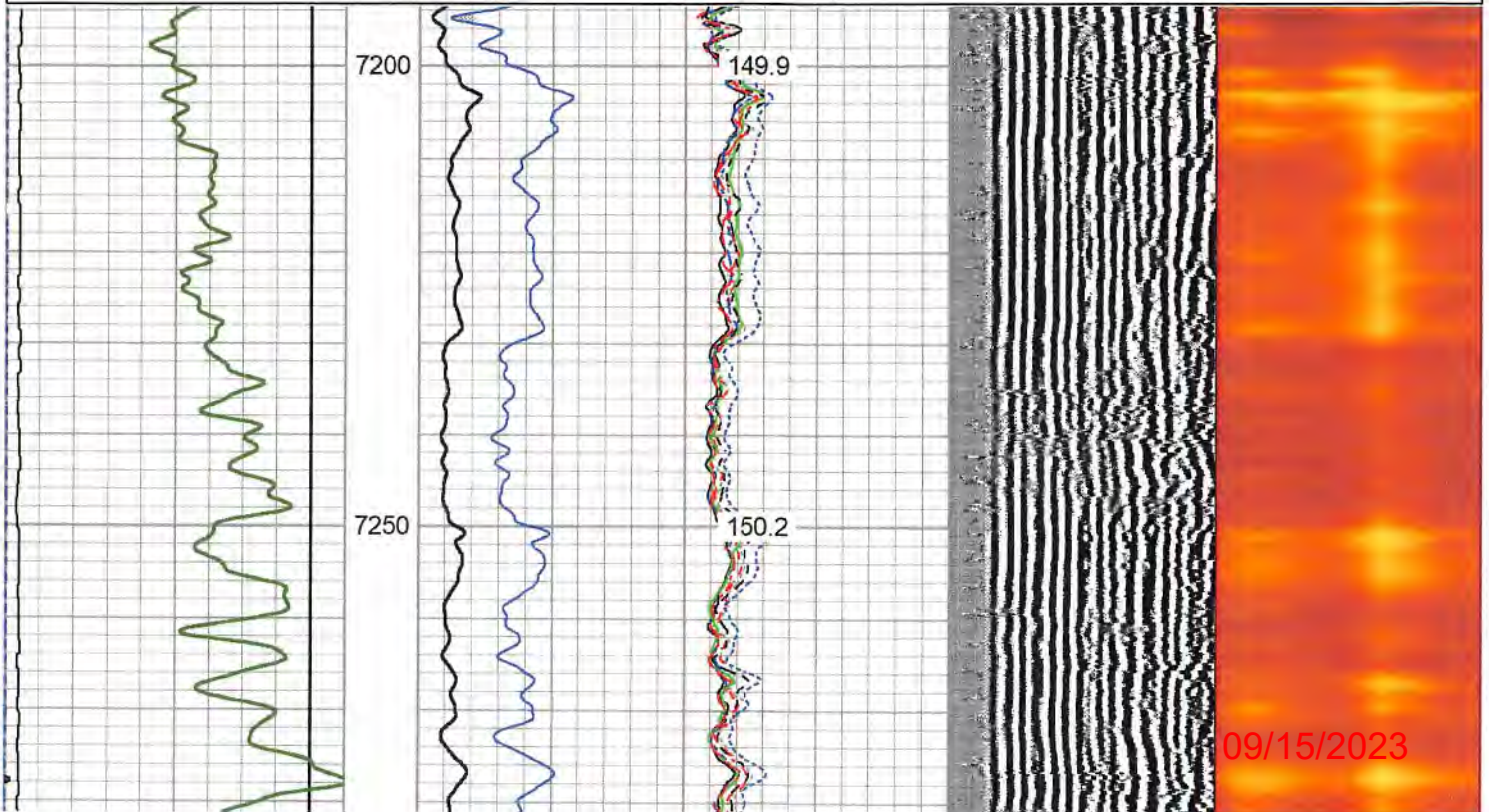
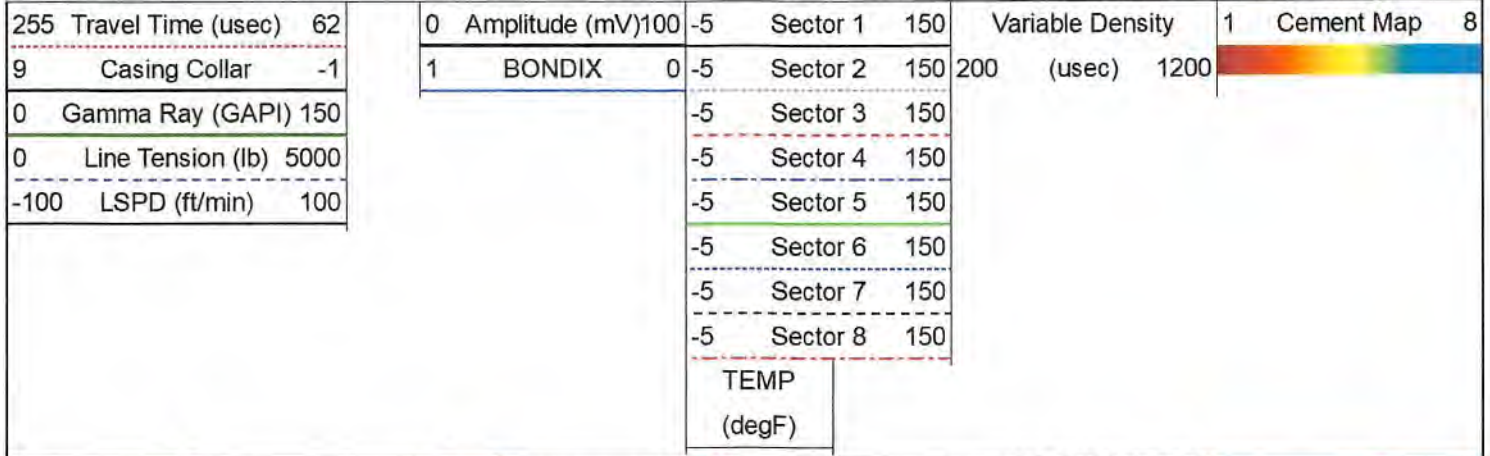
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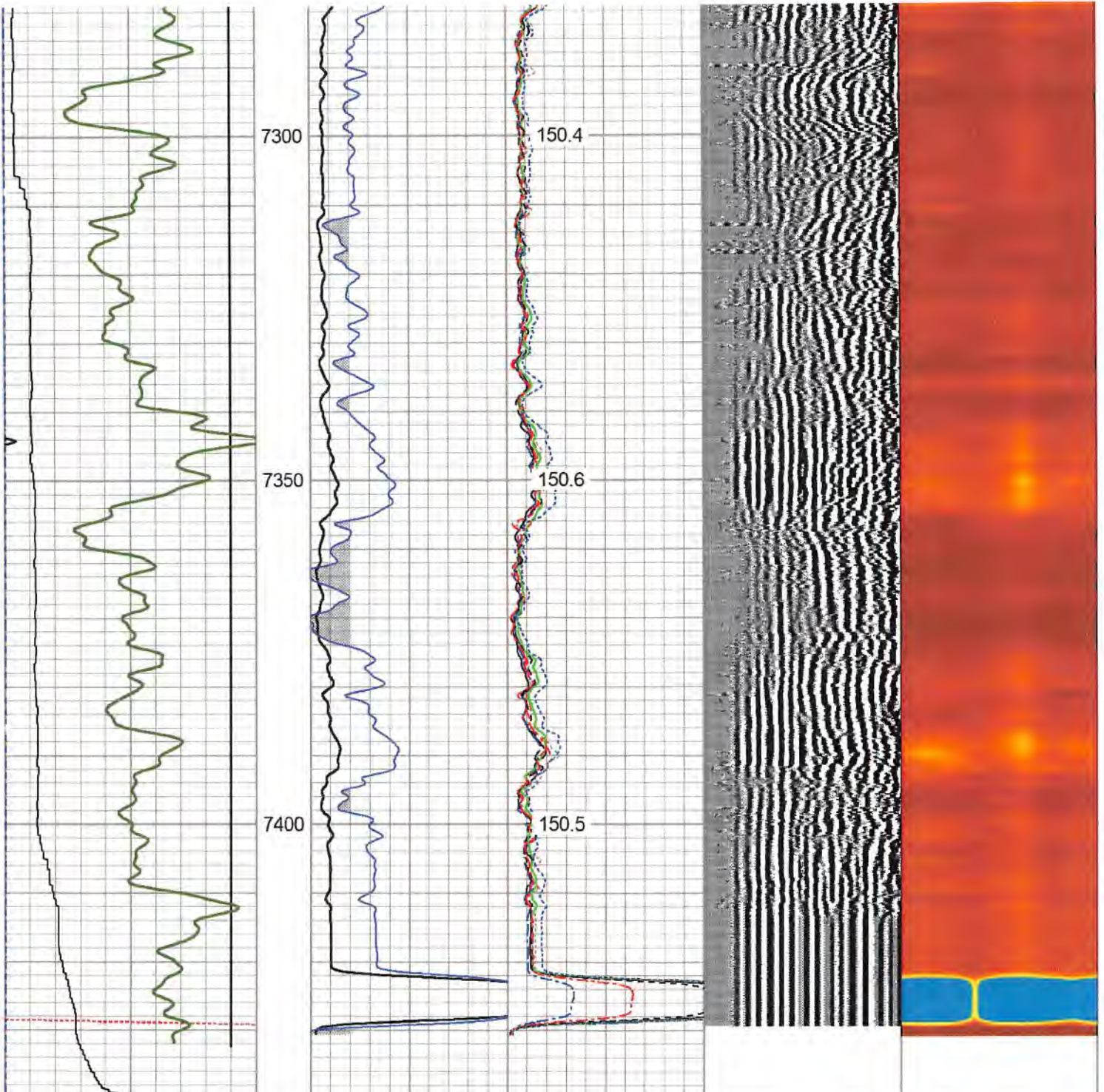


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Database File antero_thin_air_capital_2h_rcbl_22_march_2022.db
 Dataset Pathname pass4.2
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Thu Mar 24 14:29:49 2022
 Charted by Depth in Feet scaled 1:240





255	Travel Time (usec)	62
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	5000
-100	LSPD (ft/min)	100

0	Amplitude (mV)	100	-5	Sector 1	150
1	BONDIX	0	-5	Sector 2	150
			-5	Sector 3	150
			-5	Sector 4	150
			-5	Sector 5	150
			-5	Sector 6	150
			-5	Sector 7	150
			-5	Sector 8	150

Variable Density	1	Cement Map	8
200	(usec)	1200	

TEMP
(degF)

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Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero_thin_air_capital_2h_rcbl_22_march_2022.db
Dataset field\well\run1\mass4 ?\ vars

Top - Bottom

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 100	CASEOD in 5.5	CASETHCK in 0	CASEWGHT lb/ft 23	MAXAMPL mV 72	MINAMPL mV 3.4
MINATTN db/ft 0.8	PERFS No	PPT usec 0	SRFTEMP degF 0	TDEPTH ft 0			

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_thin_air_capital_2h_rcbl_22_march_2022.db
 Dataset Pathname pass5
 Dataset Creation Tue Mar 22 20:17:38 2022

Gamma Ray Calibration Report

Serial Number: 275
 Tool Model: Probe
 Performed: Mon Mar 21 14:37:34 2022

Calibrator Value: 100.0 GAPI

Background Reading: 35.0 cps
 Calibrator Reading: 160.0 cps

Sensitivity: 0.7000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 214.542 ft

Master Calibration, performed Tue Mar 22 15:33:45 2022:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.011	1.026	3.400	71.921	67.512	2.637
CAL	1.109	1.483				
5'	0.012	0.913	3.400	71.921	75.976	2.525
SUM						
S1	0.028	0.936	0.000	100.000	110.121	-3.098
S2	0.012	0.951	0.000	100.000	106.478	-1.280
S3	0.012	0.991	0.000	100.000	102.132	-1.198
S4	0.012	1.059	0.000	100.000	95.491	-1.121
S5	0.014	1.108	0.000	100.000	91.407	-1.243
S6	0.013	1.128	0.000	100.000	89.666	-1.156
S7	0.012	1.064	0.000	100.000	95.080	-1.132
S8	0.015	1.022	0.000	100.000	90.250	-1.181

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50 0.010 1.022 0.000 100.000 99.200 -1.481

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.109	1.483	1.000	0.000

Air Zero Calibration, performed Mon Mar 21 15:14:33 2022:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1	0.000		0.000		0.000	
S2	0.000		0.000		0.000	
S3	0.000		0.000		0.000	
S4	0.000		0.000		0.000	
S5	0.000		0.000		0.000	
S6	0.000		0.000		0.000	
S7	0.000		0.000		0.000	
S8	0.000		0.000		0.000	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
			CHD-Titan Titan 1 7/16" GO Cablehead	1.00	1.44	5.00	
			CENT-Titn275Adj Titan 2 3/4" Adjustable Centralizer	2.86	2.75	35.00	
HeadVolt	16.95						
Temp	14.10						
			RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00	
WWFS8	11.86						
WWFS7	11.86						
WWFS6	11.86						
WWFS5	11.86						
WWFS4	11.86						
WWFS3	11.86						
WWFS2	11.86						
WWFS1	11.86						
WWFS3ET	11.86						

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WVF5FT	10.86				
WVFCAL	7.61				
HEADVOLT	7.61				
CCL	6.71				
GR	5.38		GR-Probe (275) Probe 2 3/4" Logging Gamma Ray	4.78	2.75
		CENT-PTS275 2 3/4" Probe Centralizer	2.83	2.75	20.00

Dataset: antero_thin_air_capital_2h_rcbl_22_march_2022.db: field/well/run1/pass5
 Total length: 20.87 ft
 Total weight: 207.00 lb
 O.D.: 2.75 in

	Company	Antero Resources
	Well	Capitol Unit 2H
	Field	Utica
	County	Tyler
	State	WV