



**Radial
Cement
Bond Log**

Company Antero Resources
Well Spili 2H
Field Marcellus
County Tyler
State WV
Country USA

Location: API #: 47-095-028440000
Ed Yost Pad
SEC TWP RGE
Permanent Datum GL
Log Measured From KB
Drilling Measured From KB
Elevation 30'
Other Services
Gamma
CCL
Elevation
K.B. 30'
D.F. N/A
G.L. N/A

Run Number Bit From To Size Weight From To
Borehole Record
Tubing Record
Inch Diameter 111/16
Date 11/11/2023
One
Depth Driller 26,721'
Depth Logger 7,246'
Bottom Logged Interval 7,239'
Top Log Interval Surface
Open Hole Size 7" 7/8
Type Fluid Water
Viscosity / Viscosity 8.3#
Max. Recorded Temp. 143 F
Estimated Cement Top 6,510'
Time Well Ready 13:20
Time Logger on Bottom 13:50
Equipment Number 104
Location Charleroi, PA
Recorded By B. Lane
Witnessed By Mr. Corey Woods

Run Number	Bit	From	To	Size	Weight	From	To
Logging Record							
Surface String				13" 3/8	Wgt/Ft	Top	Bottom
Production String				9" 5/8	54.5 #	Surface	Surface
Production String				5" 1/2	36 #	Surface	Surface
Production String					23 #	Surface	Surface

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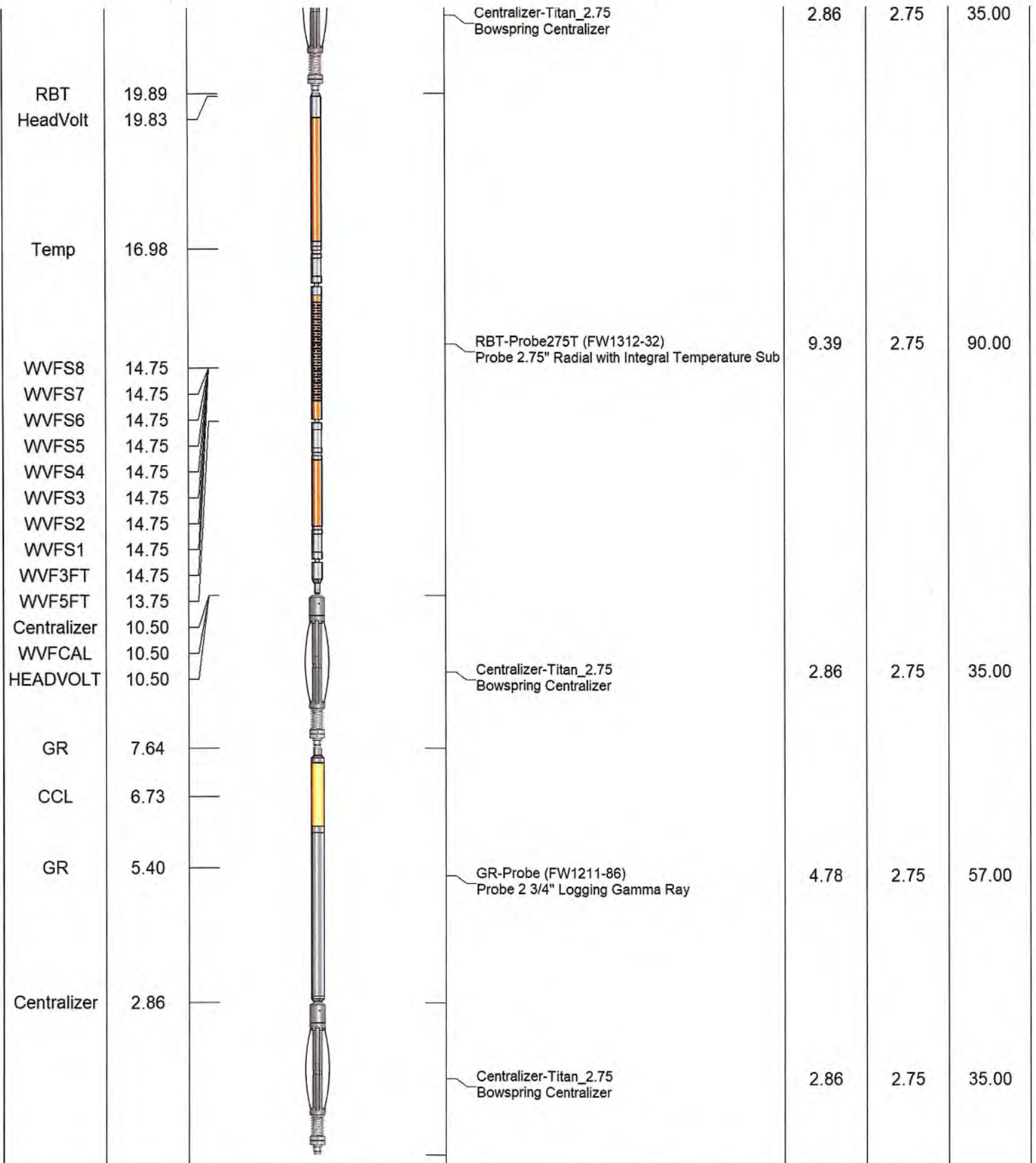
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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 Marker Joint (6,243'- 6,253') Per Well Schematic
 Depth Shift of +11
 Free Pipe = 71.9mv
 Bond Pipe = 3.4mv
 ETOC = 6,510'
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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
Centralizer	32.54		CABLE_HEADS-TITAN_1_7/16	1.04	1.44	4.00
CABLE_HEADS	23.79					
Centralizer	22.75					



Dataset: antero_ed_yost_spill_2h_rcbl_may-10-2023.db: field/well/RCBL/main2
 Total length: 23.79 ft
 Total weight: 261.00 lb
 O.D.: 3.12 in

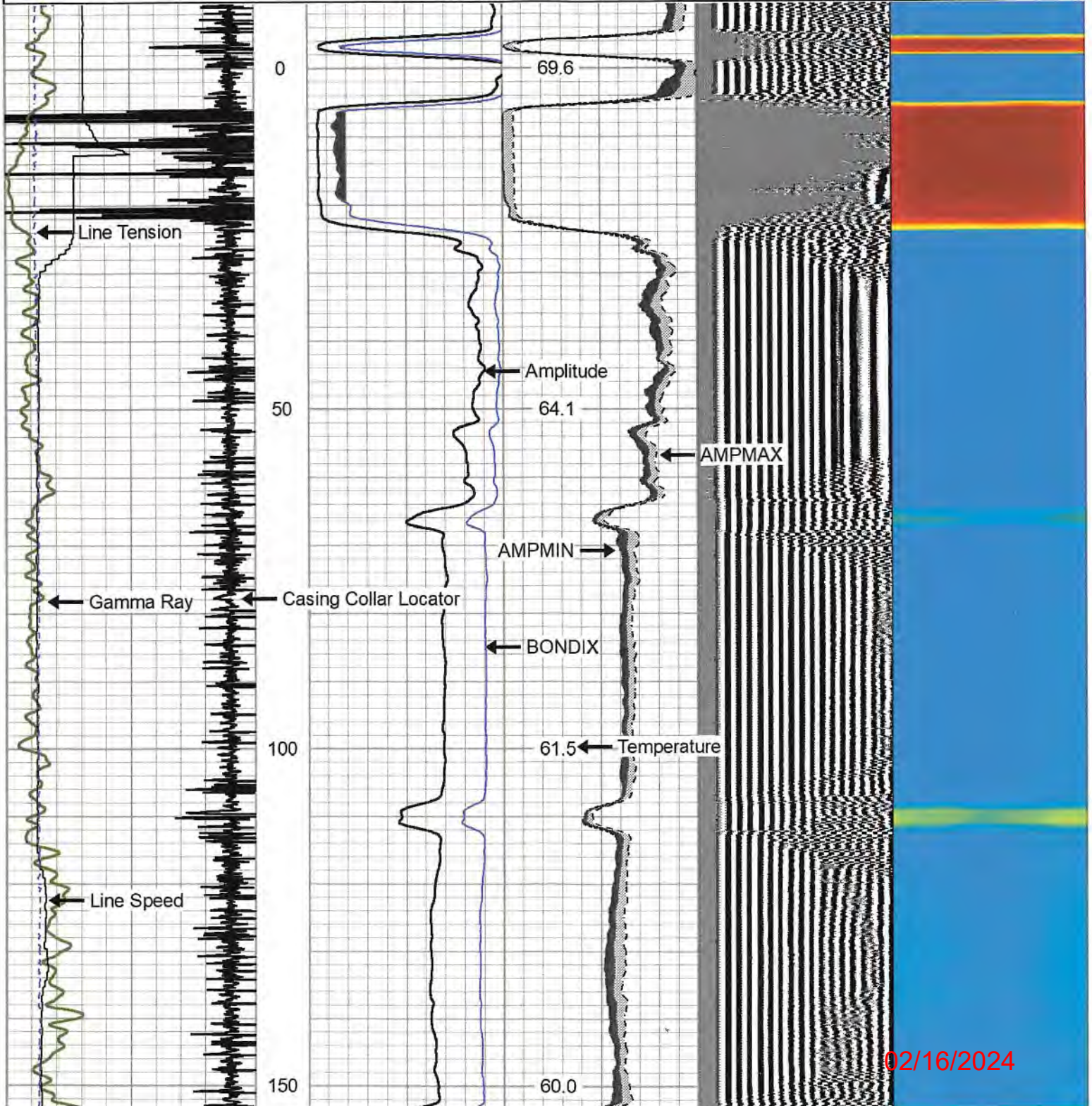


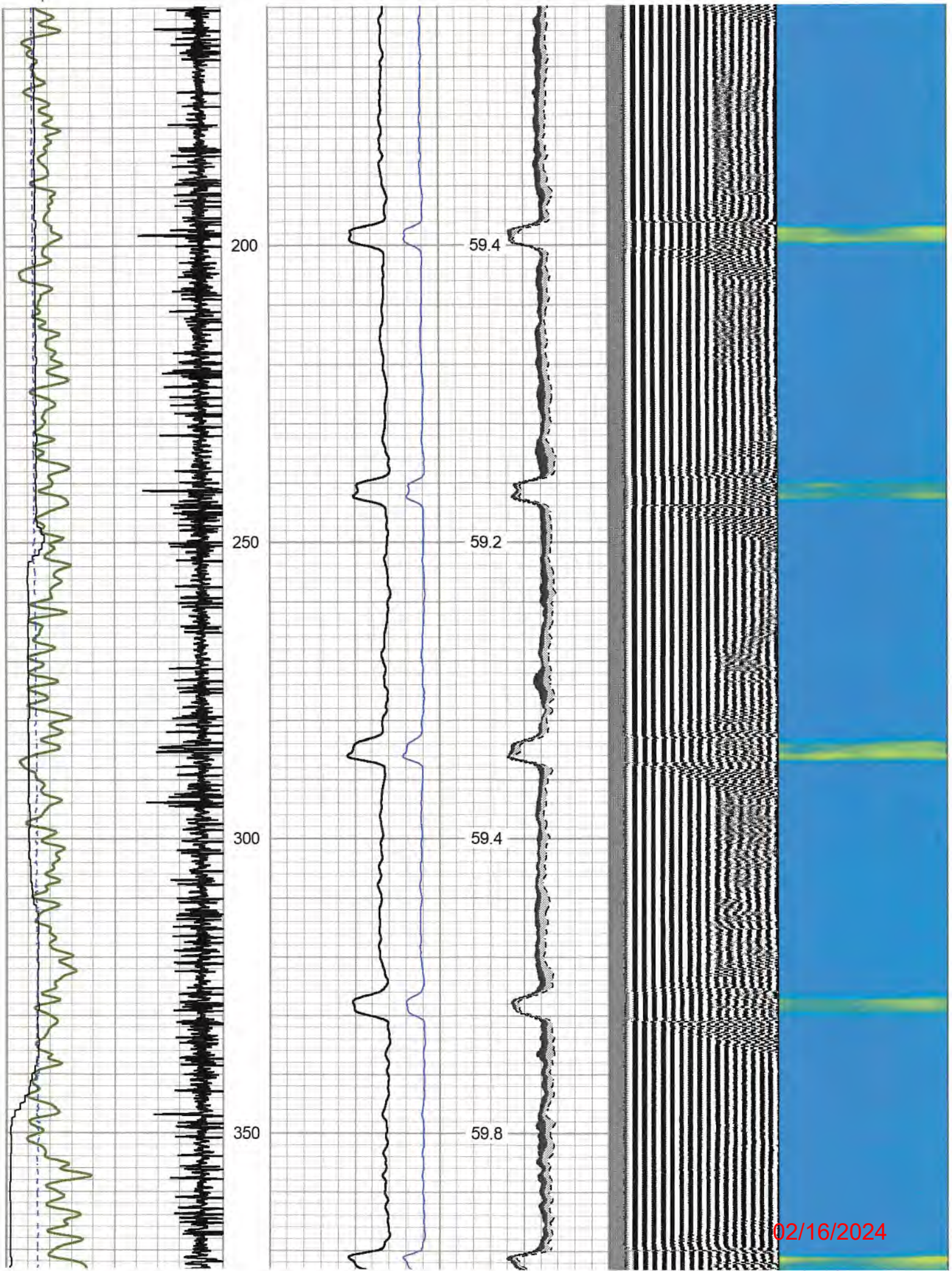
Database File antero_ed_yost_spill_2h_rcbl_may-10-2023.db
 Dataset Pathname RCBL/main2
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Thu May 11 17:08:41 2023
 Charted by Depth in Feet scaled 1:240

265	Travel Time (usec)	165
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
Line Speed		
-100	(ft/min)	100
0	Line Tension (lb)	2000

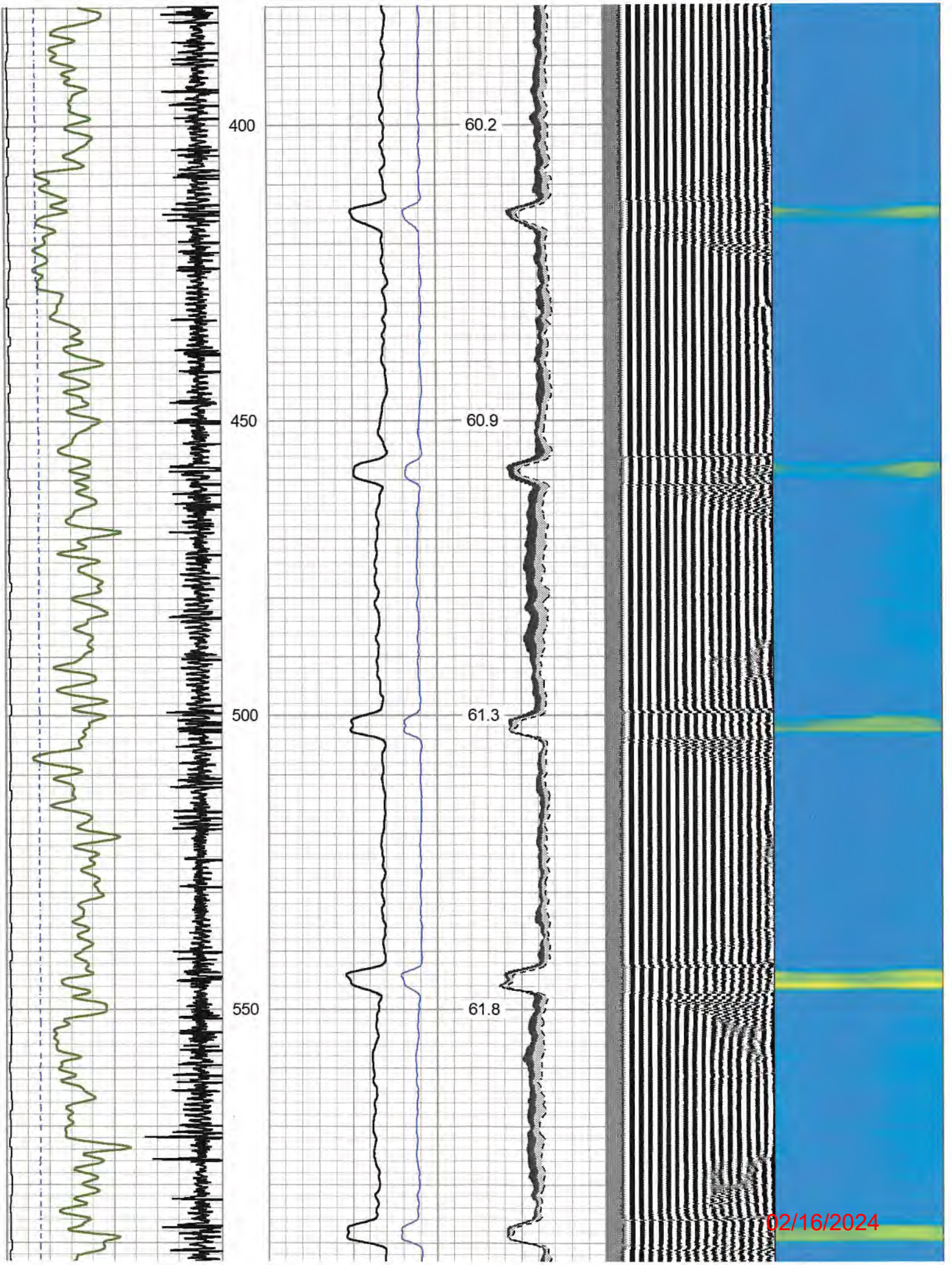
0	Amplitude (mV)	100
1	BONDIX	0
0	AMPMIN	150
0	AMPMAX	150
0	AMPAVG	150
TEMP		
(degF)		

Variable Density	1	Cement Map	8
300 (usec)	1200		

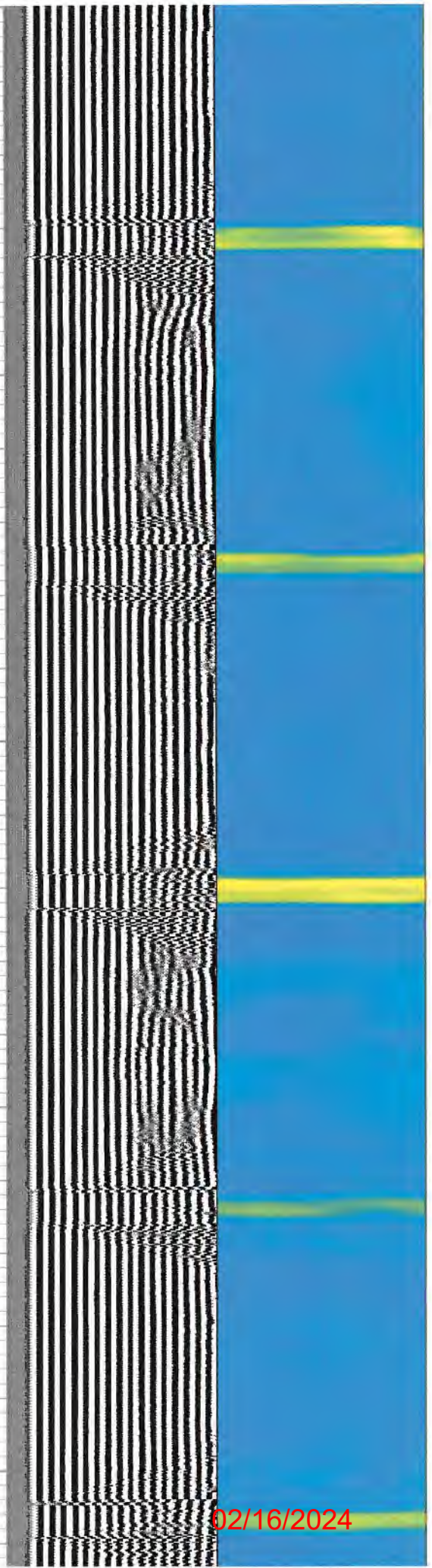
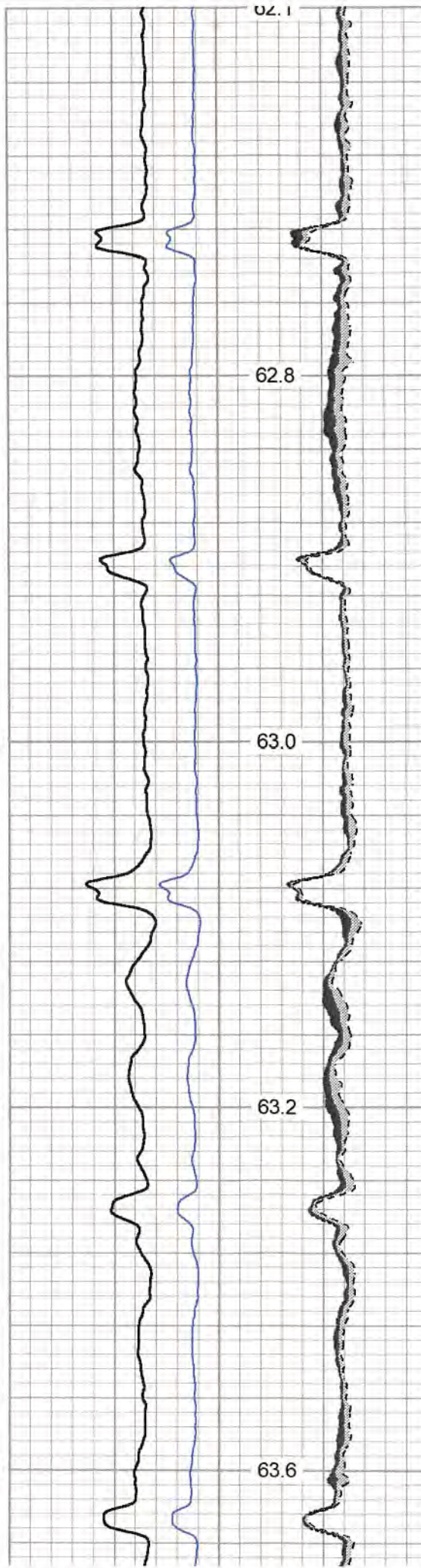
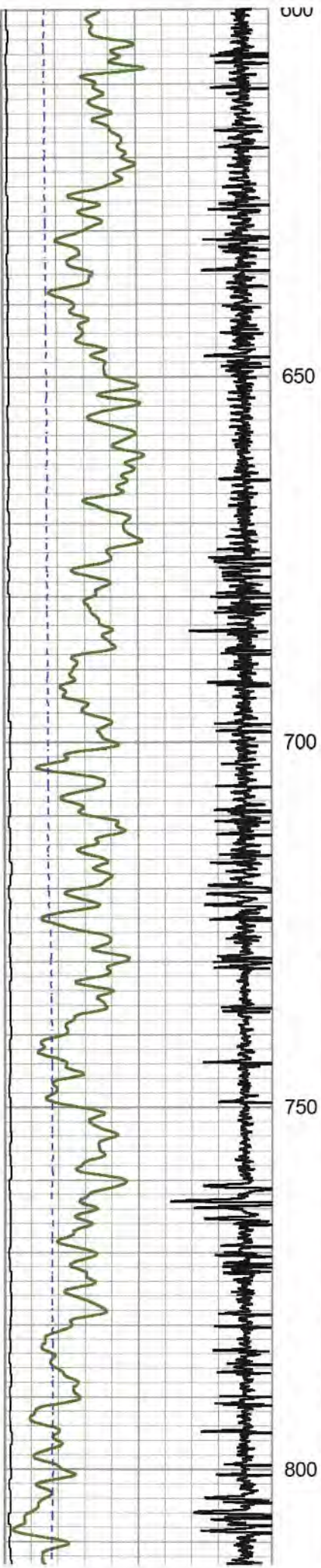


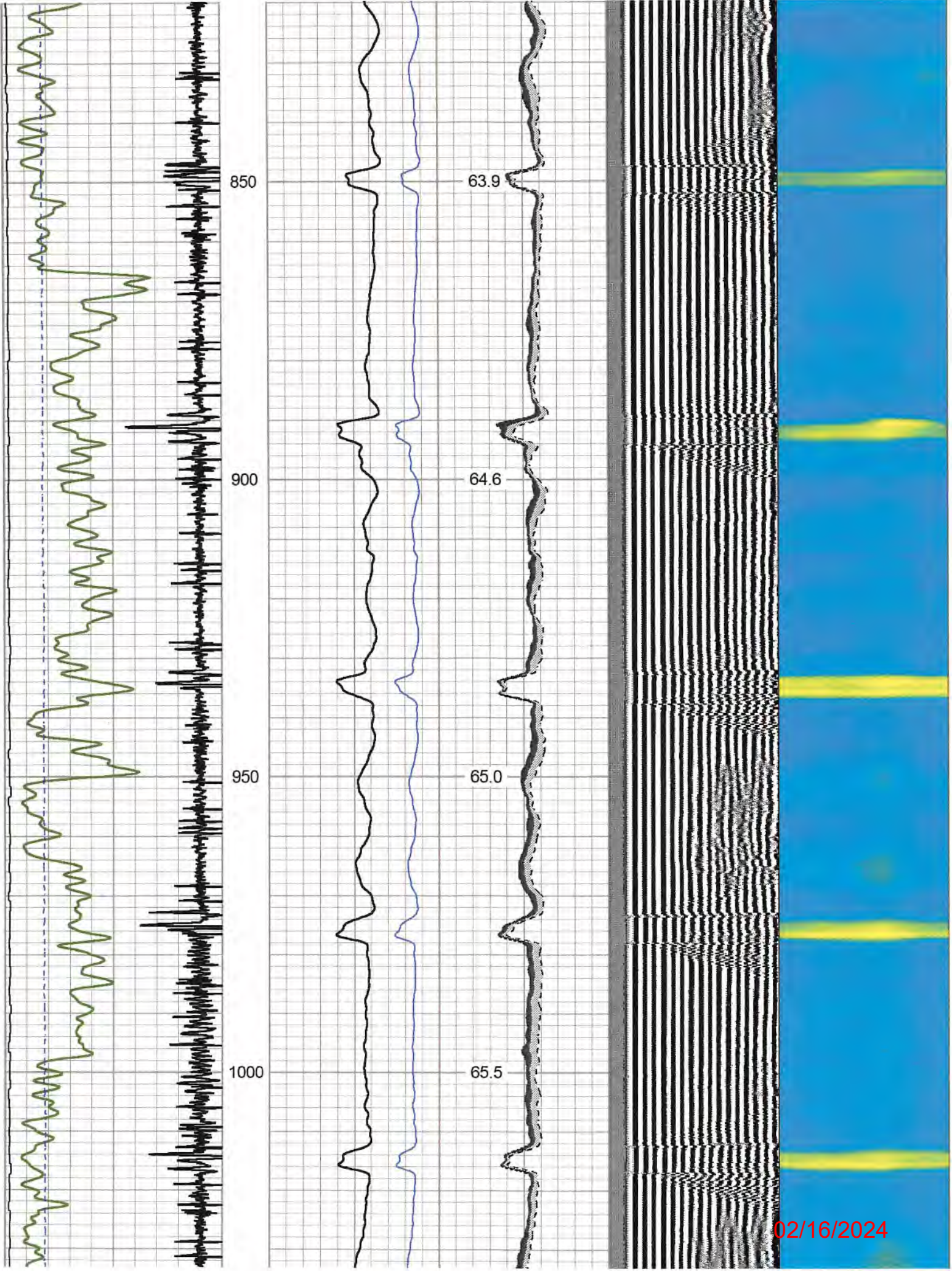


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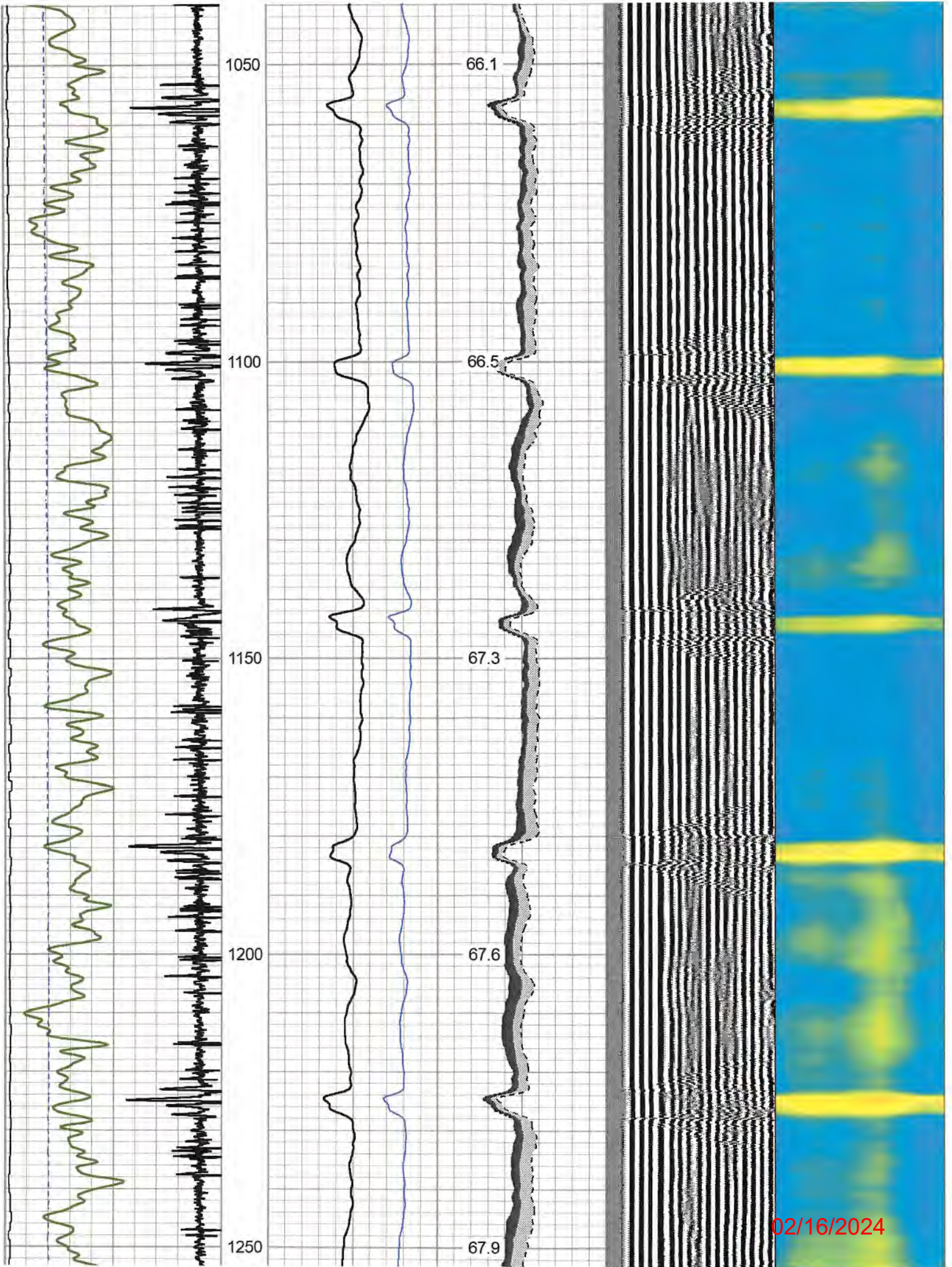


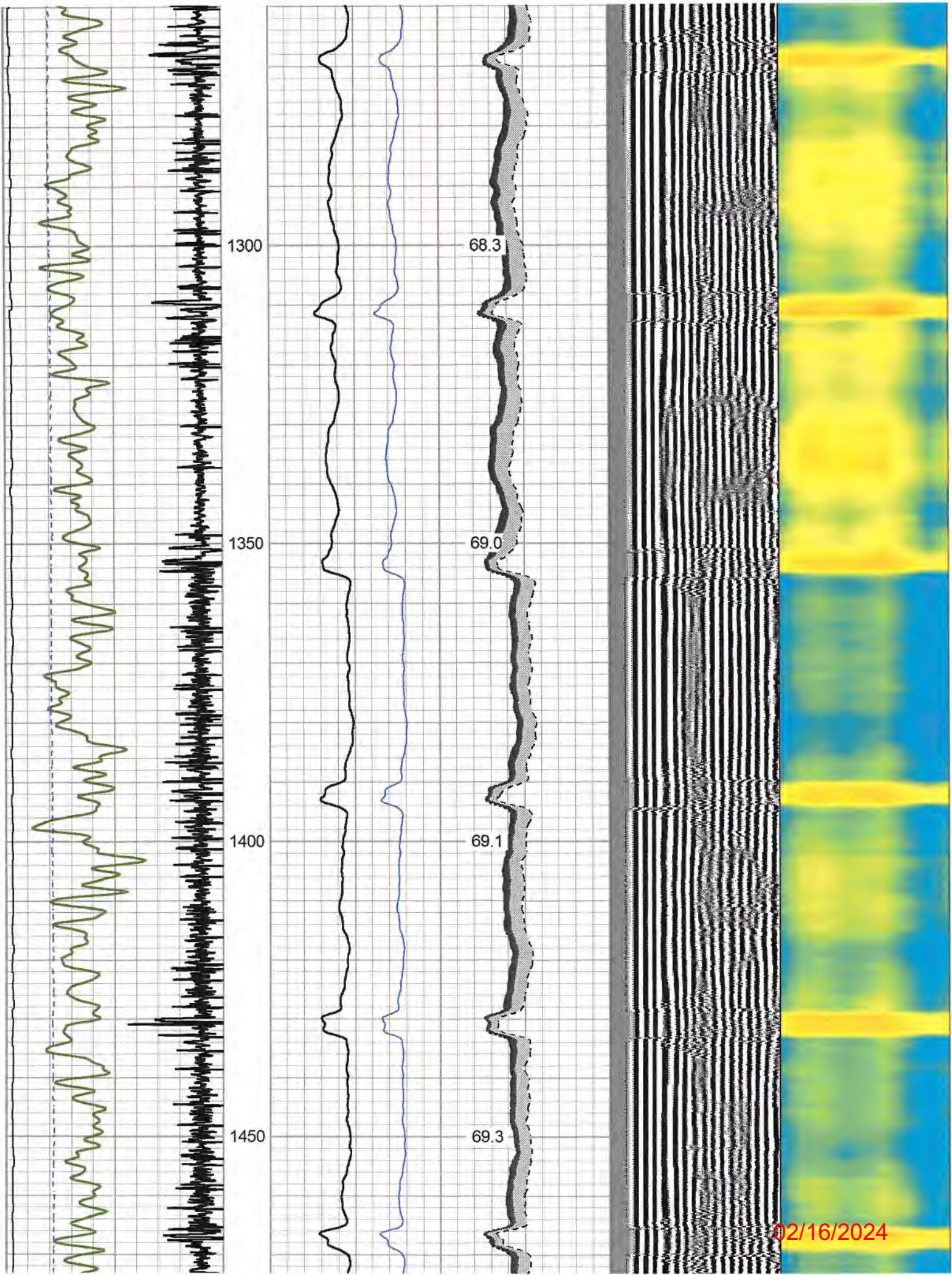
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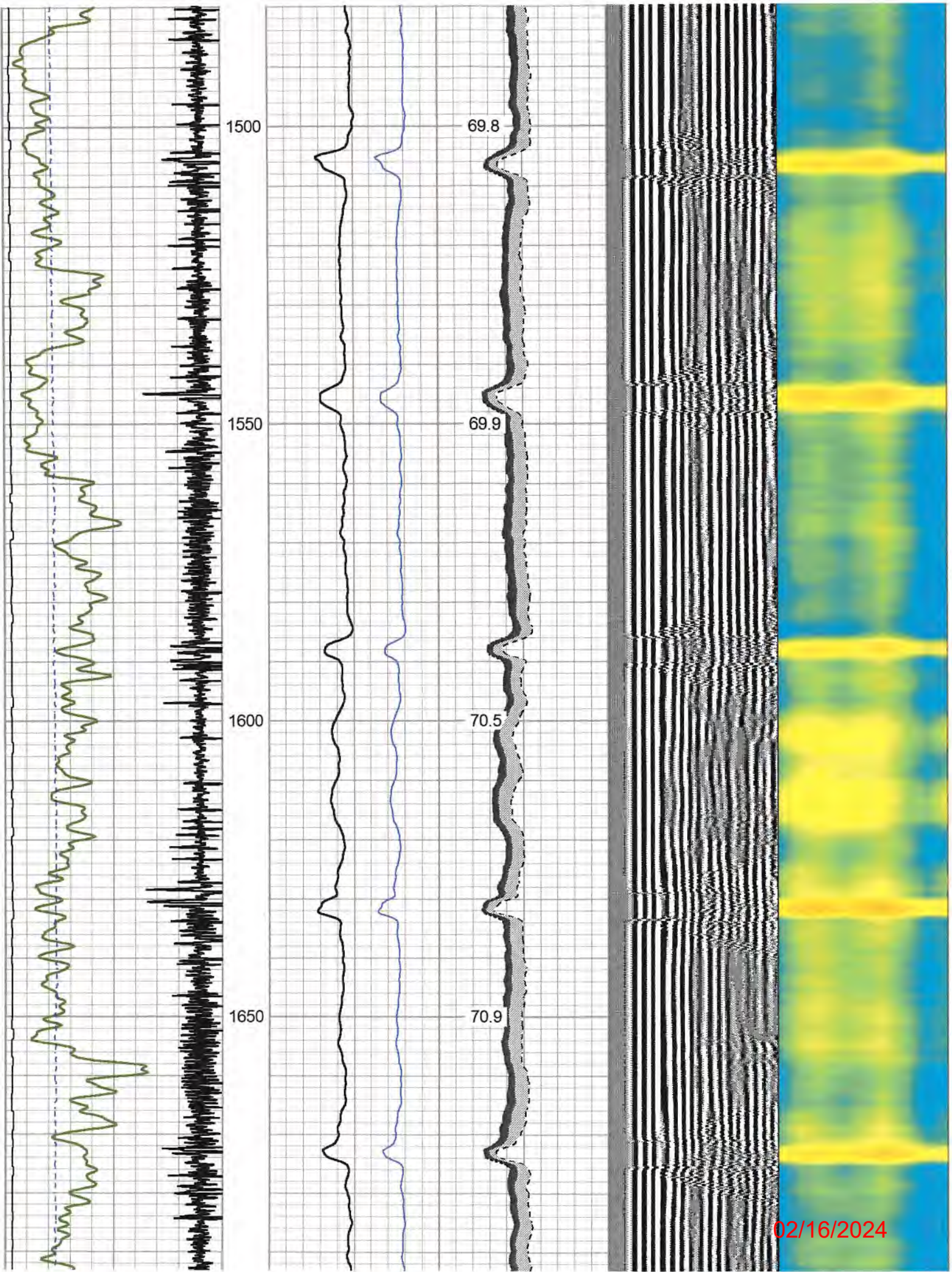




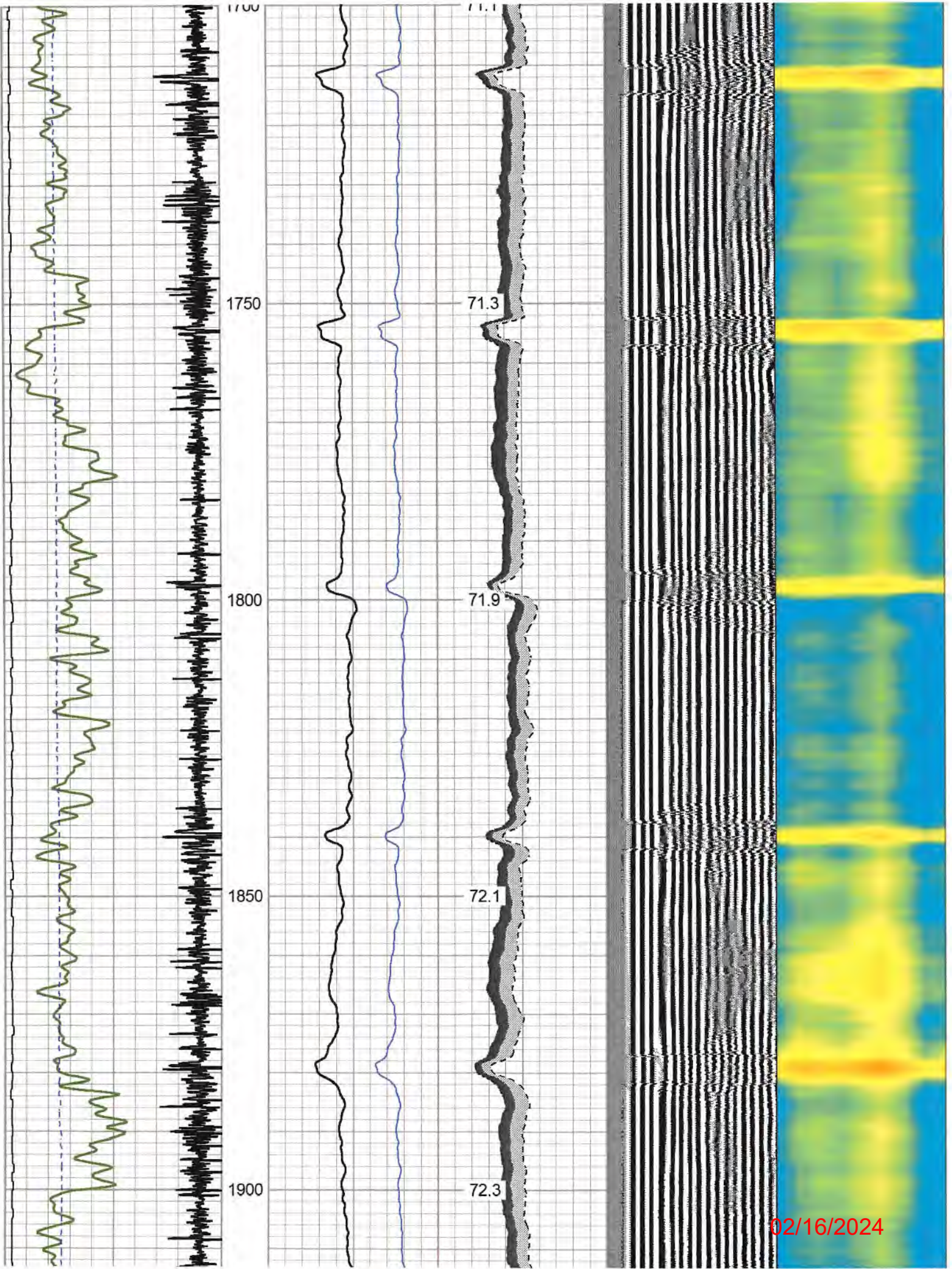
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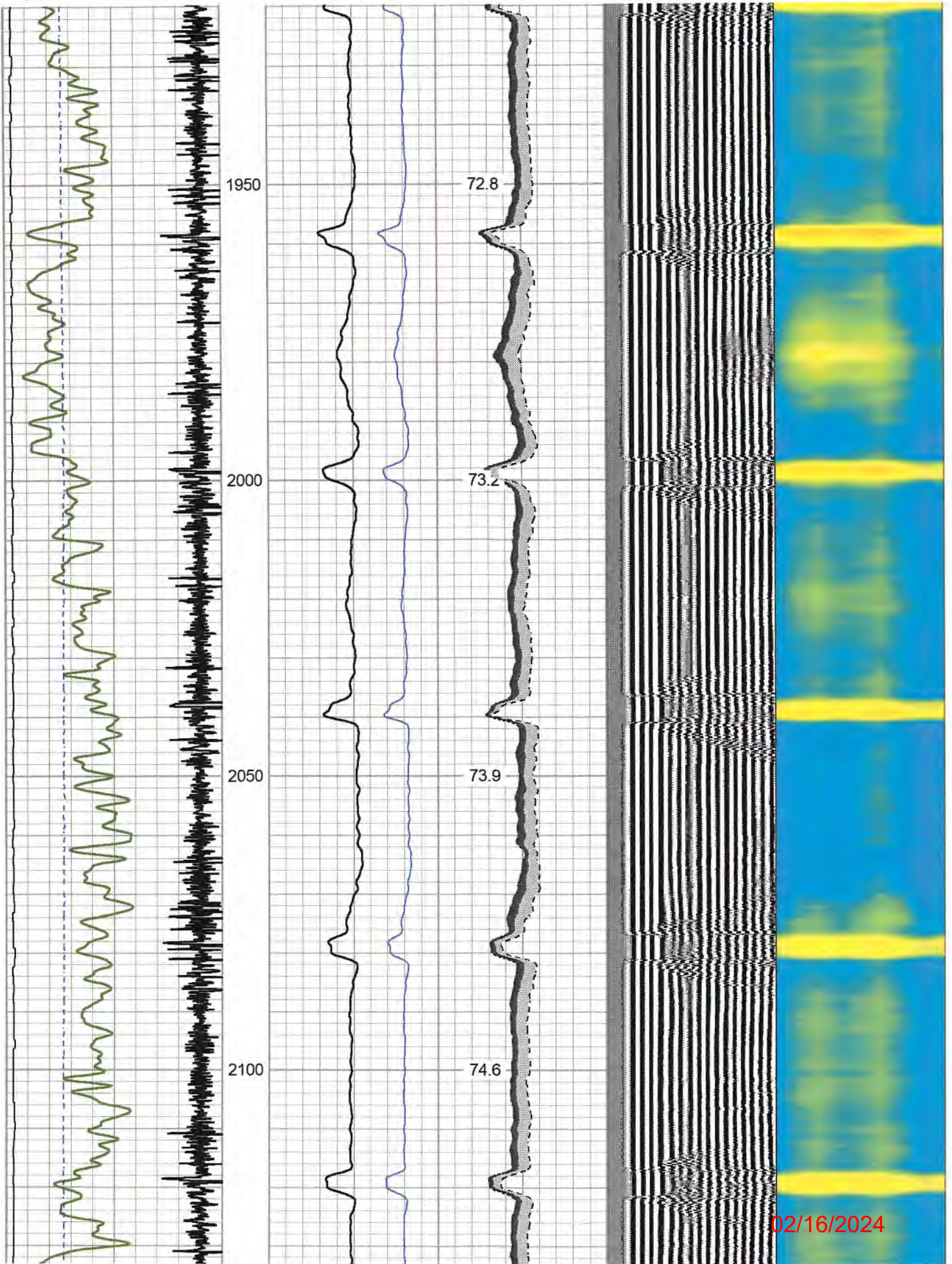


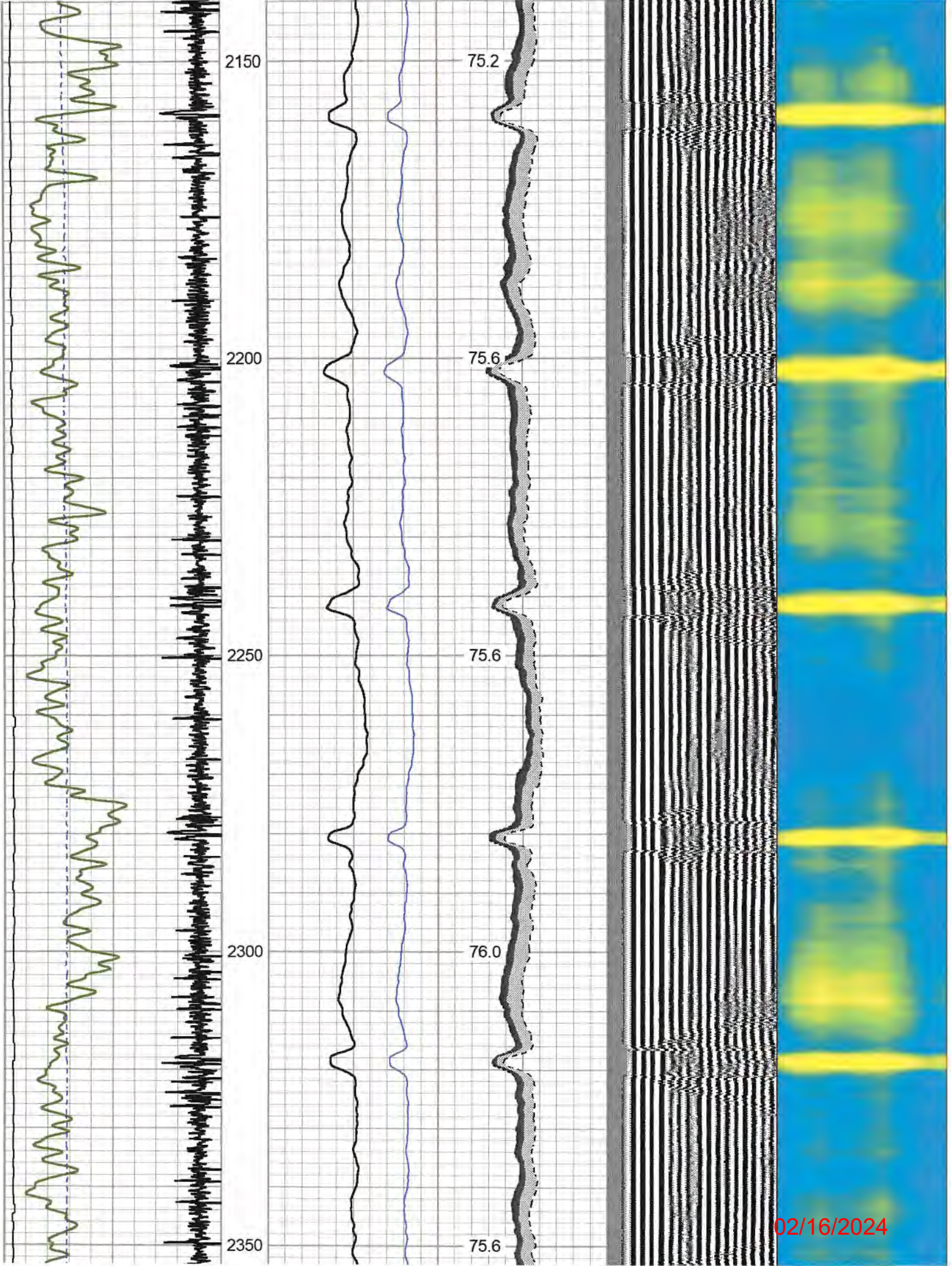


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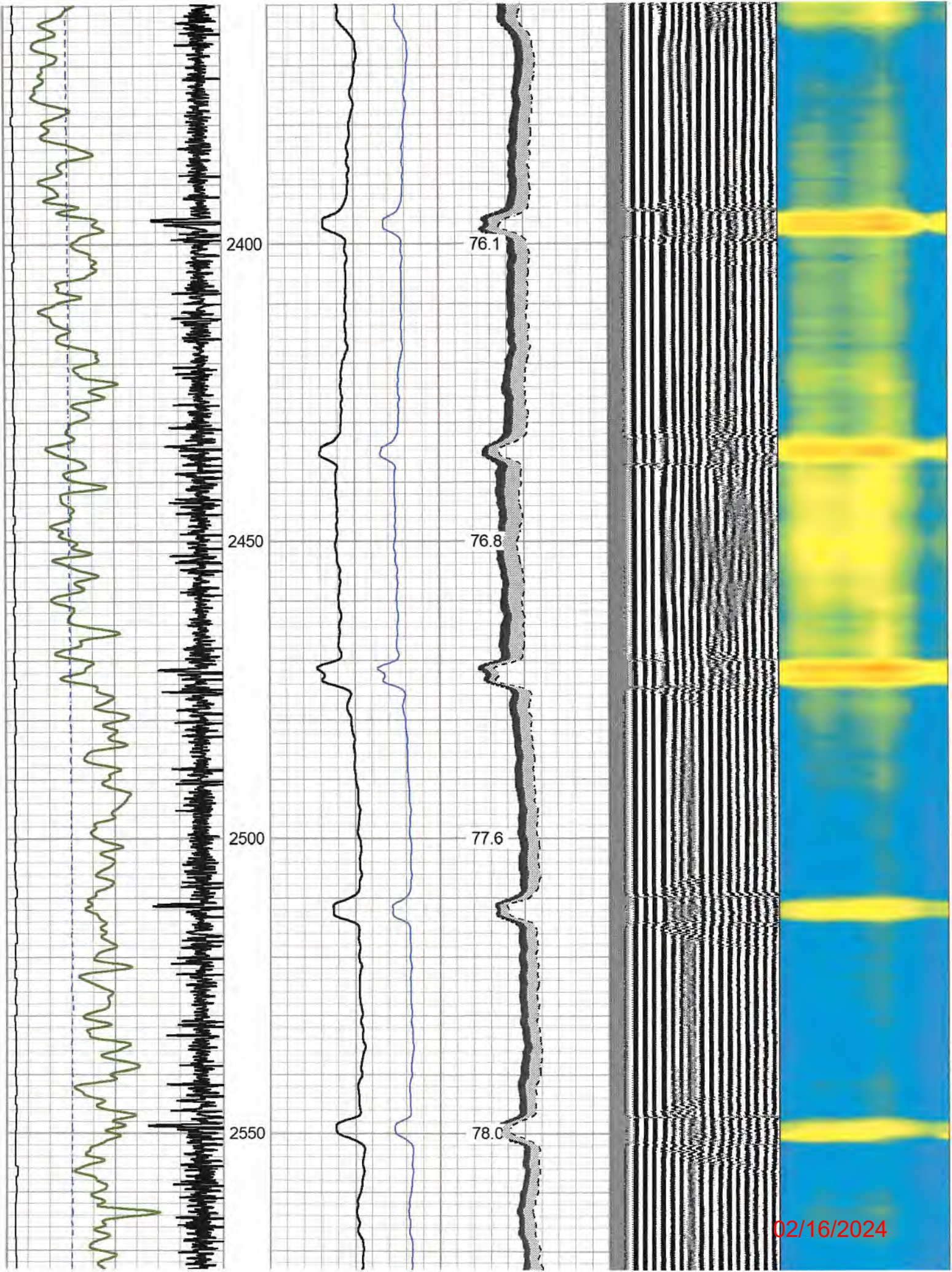


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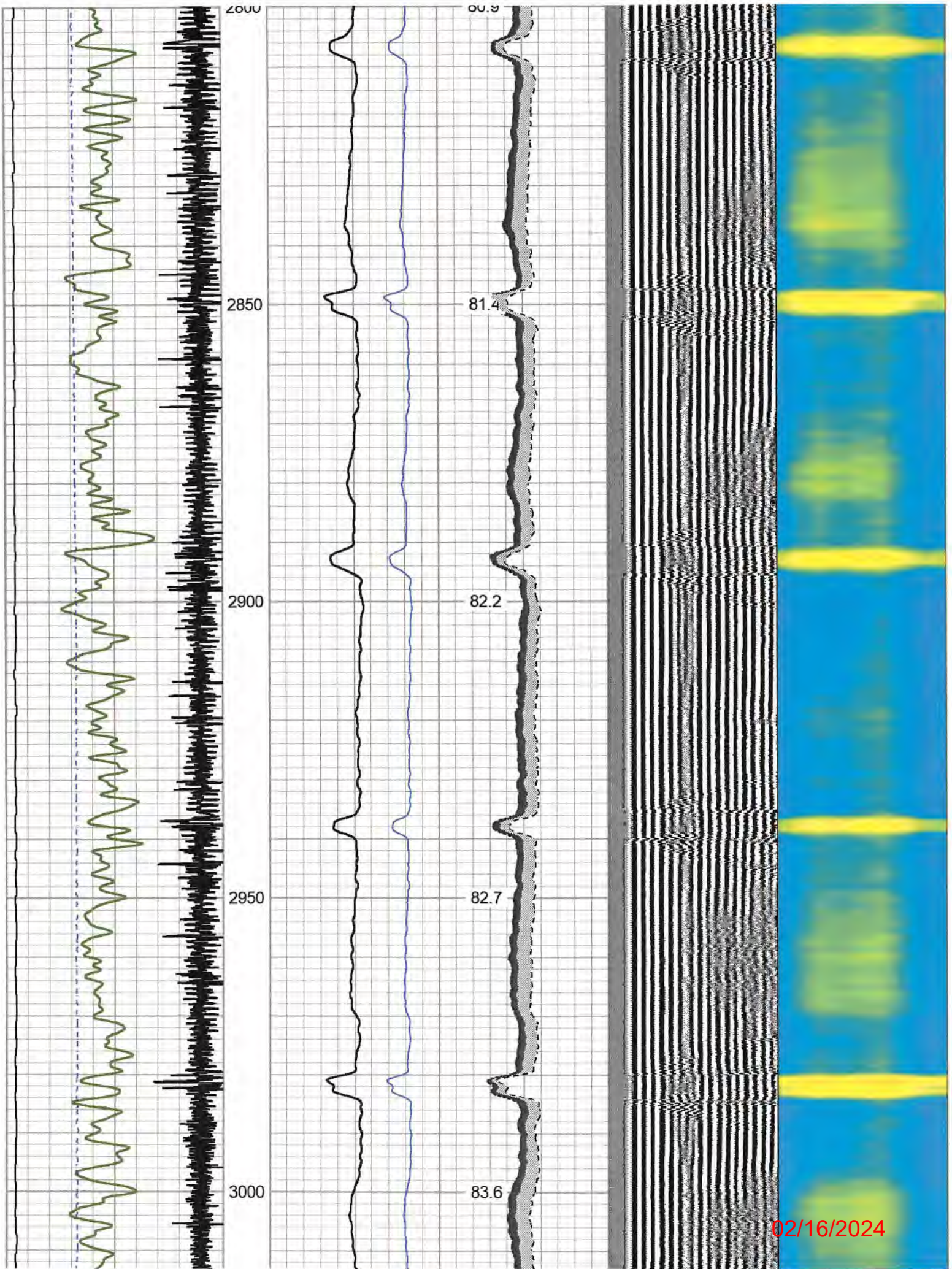




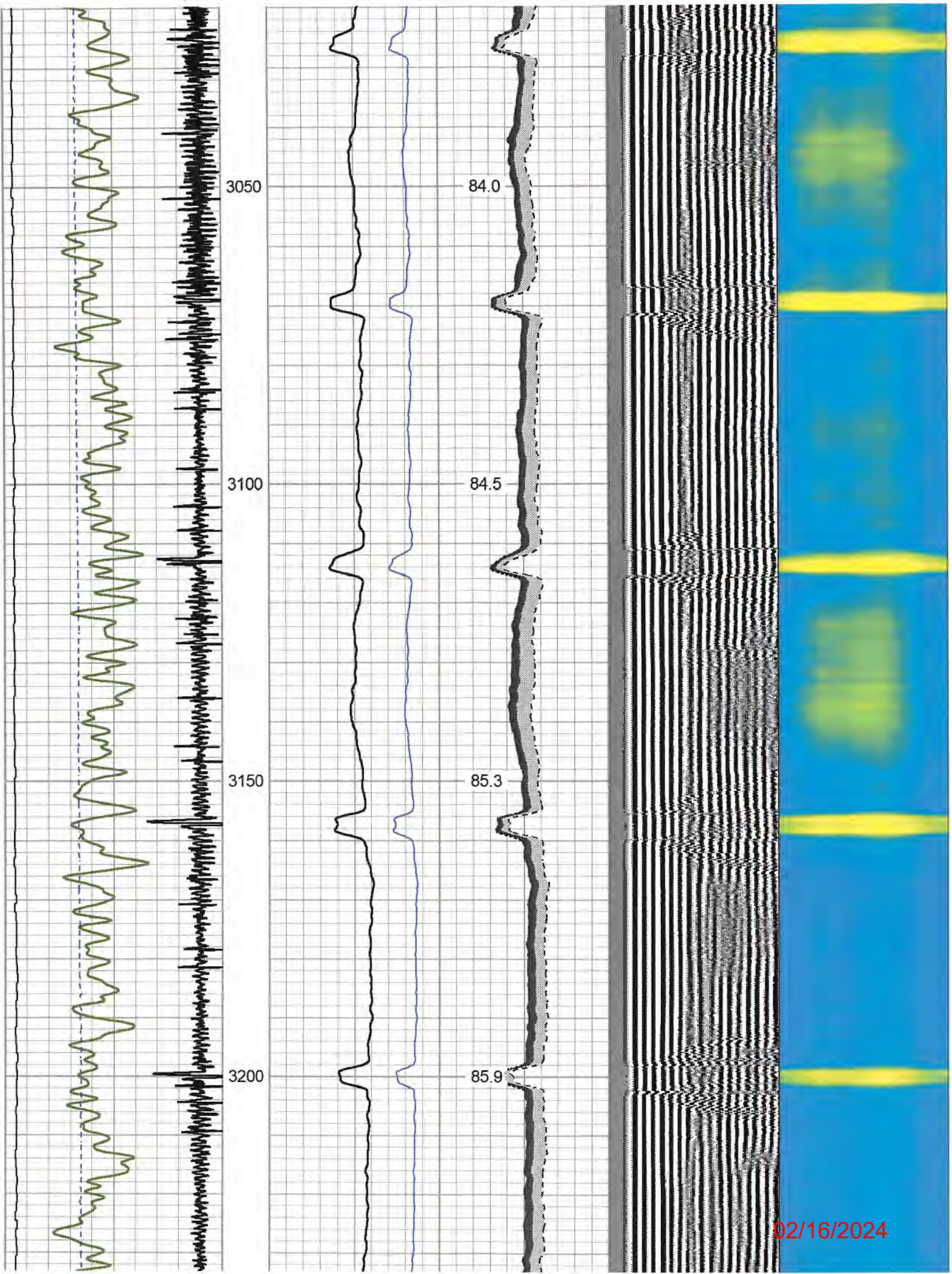
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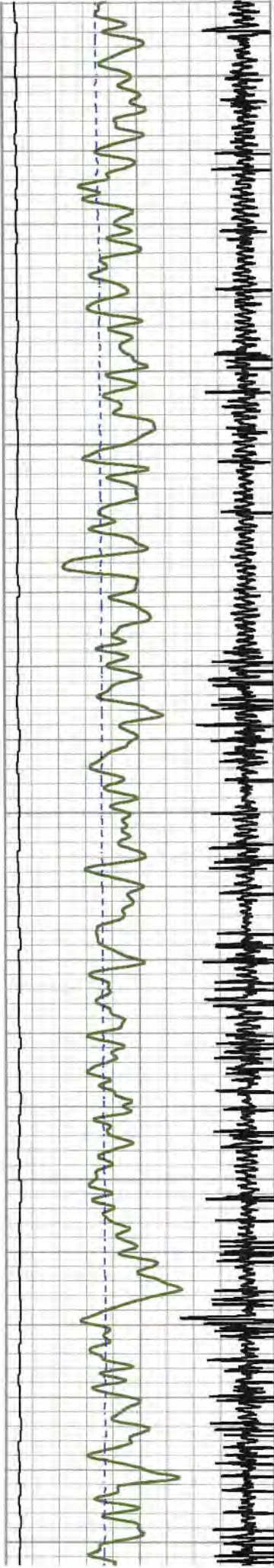
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3250

3300

3350

3400

3450

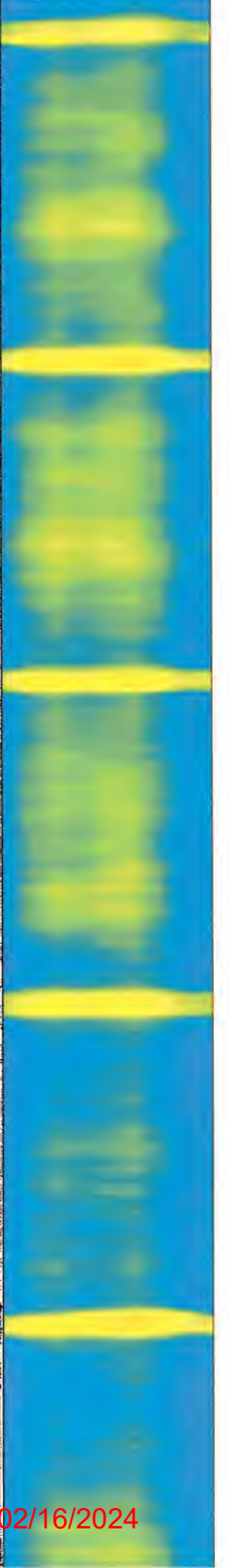
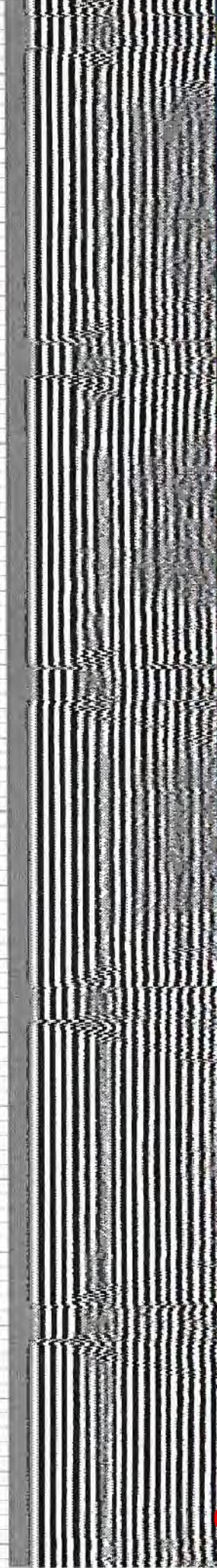
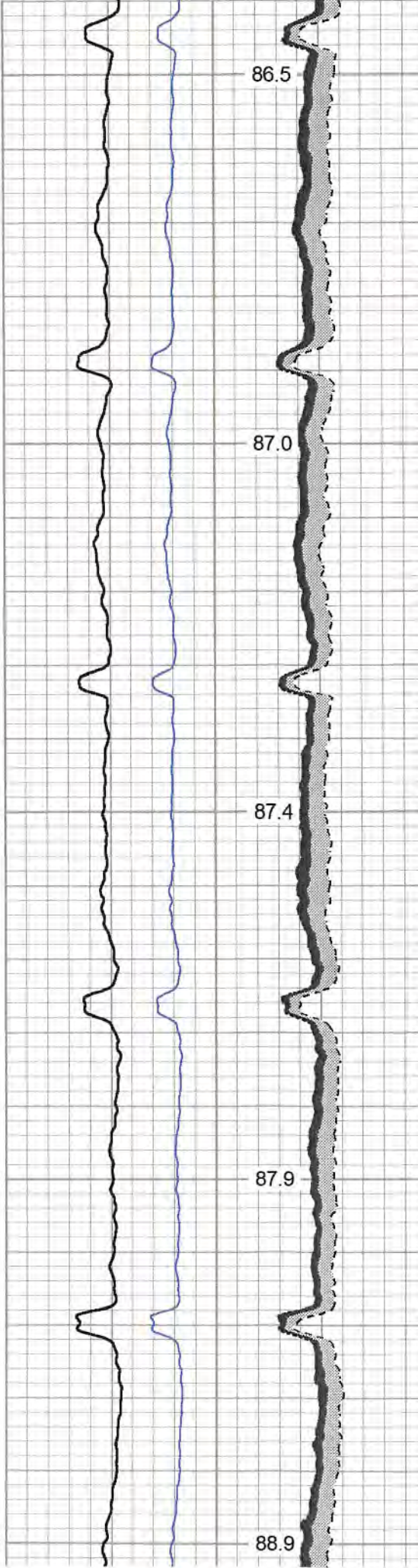
86.5

87.0

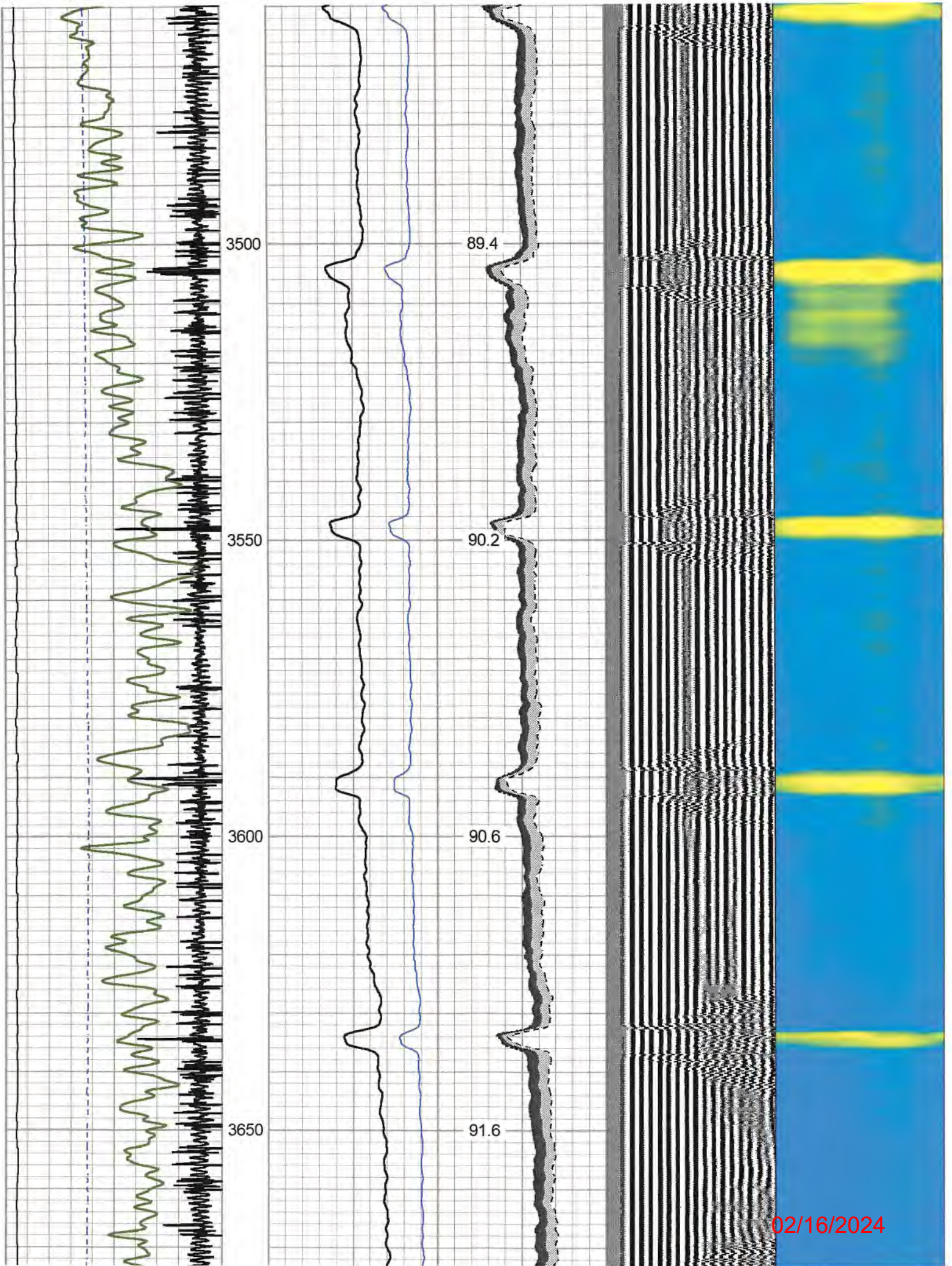
87.4

87.9

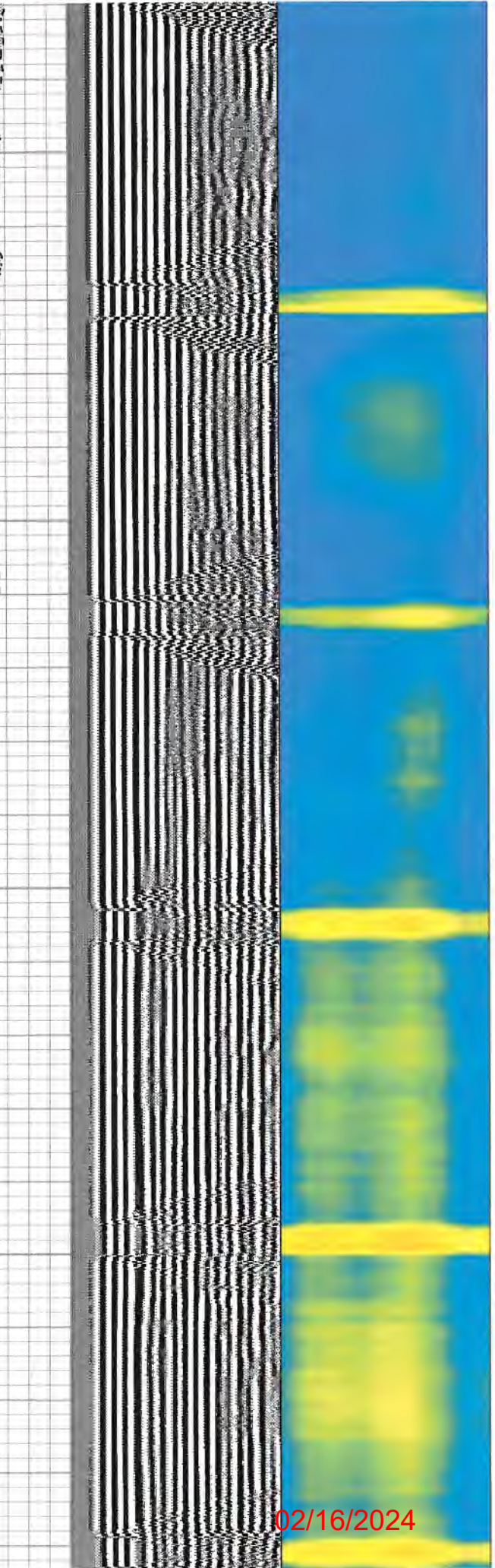
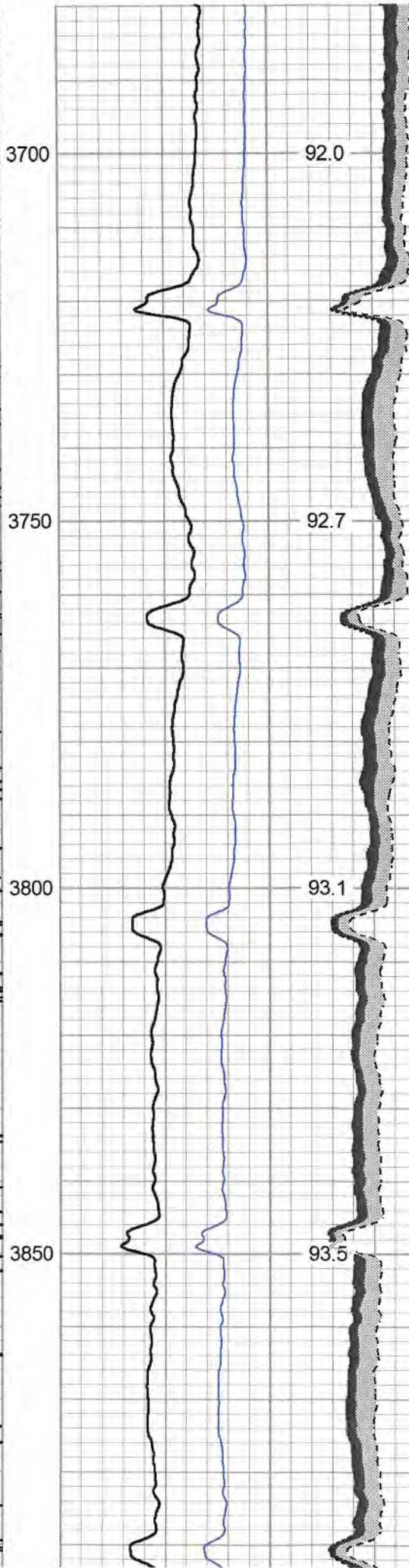
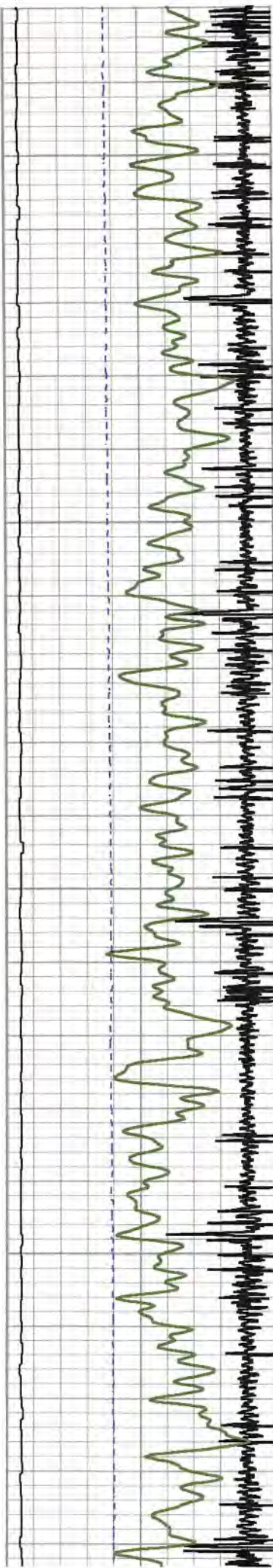
88.9

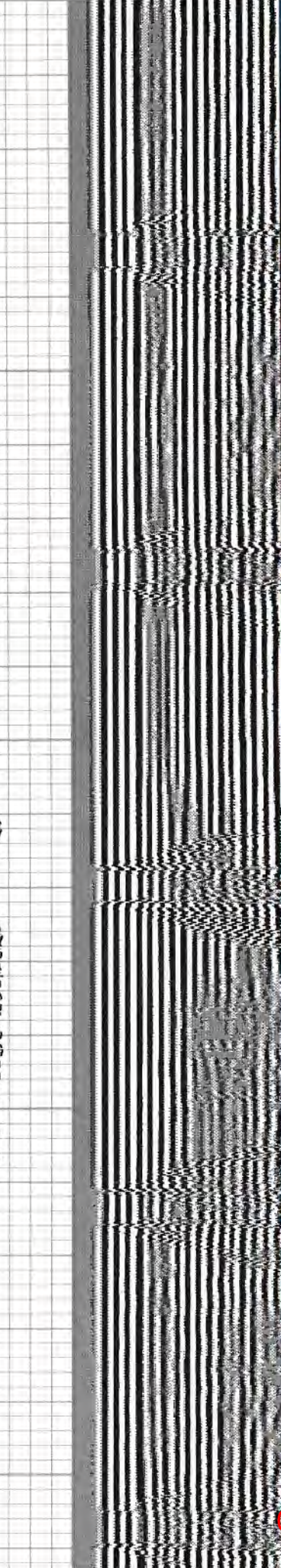
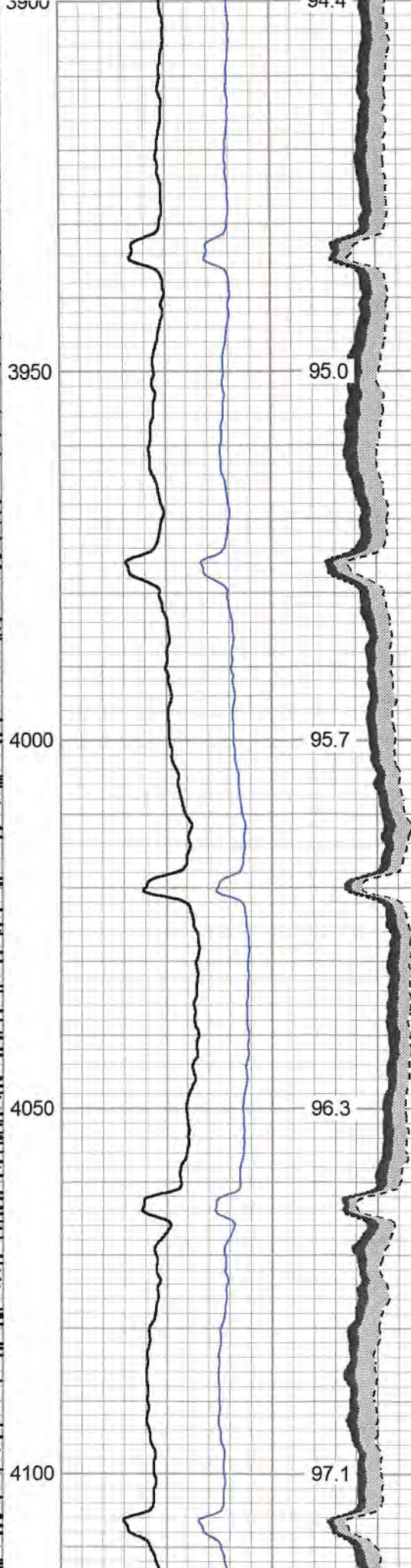
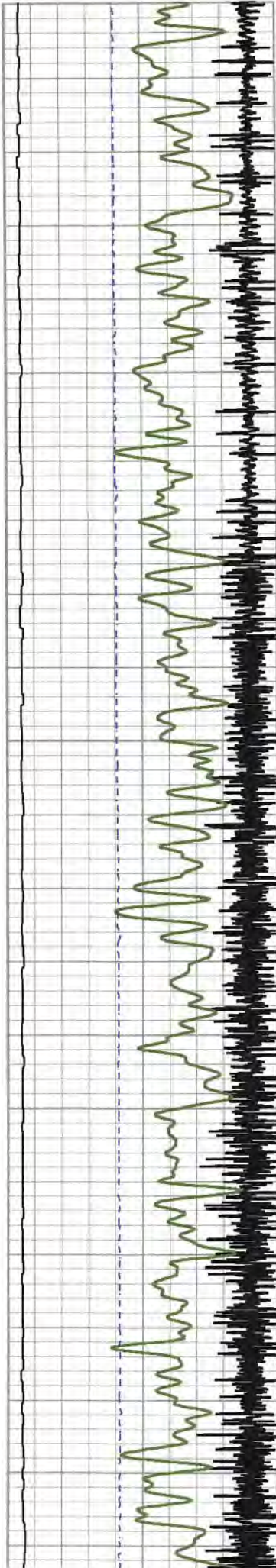


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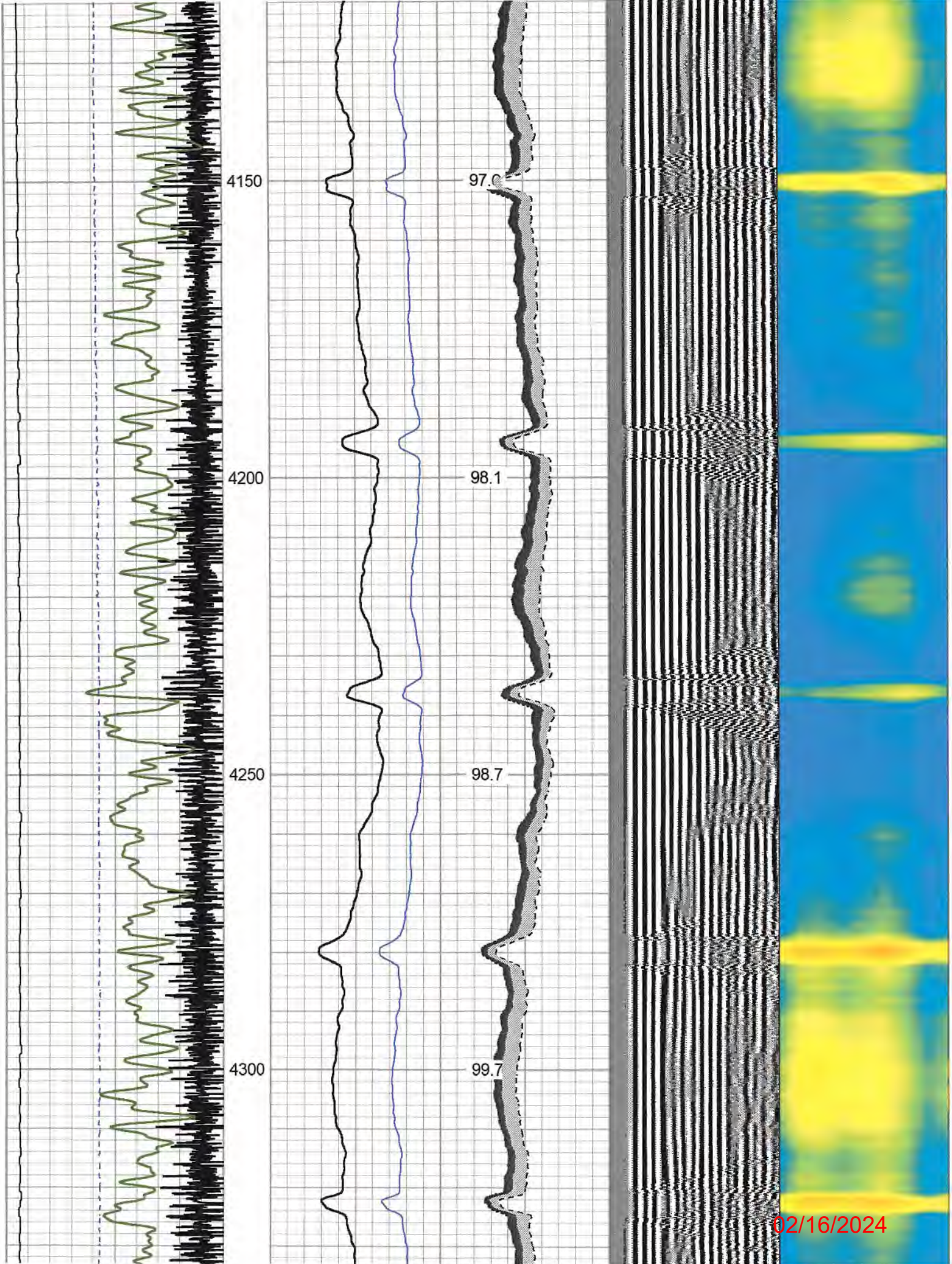


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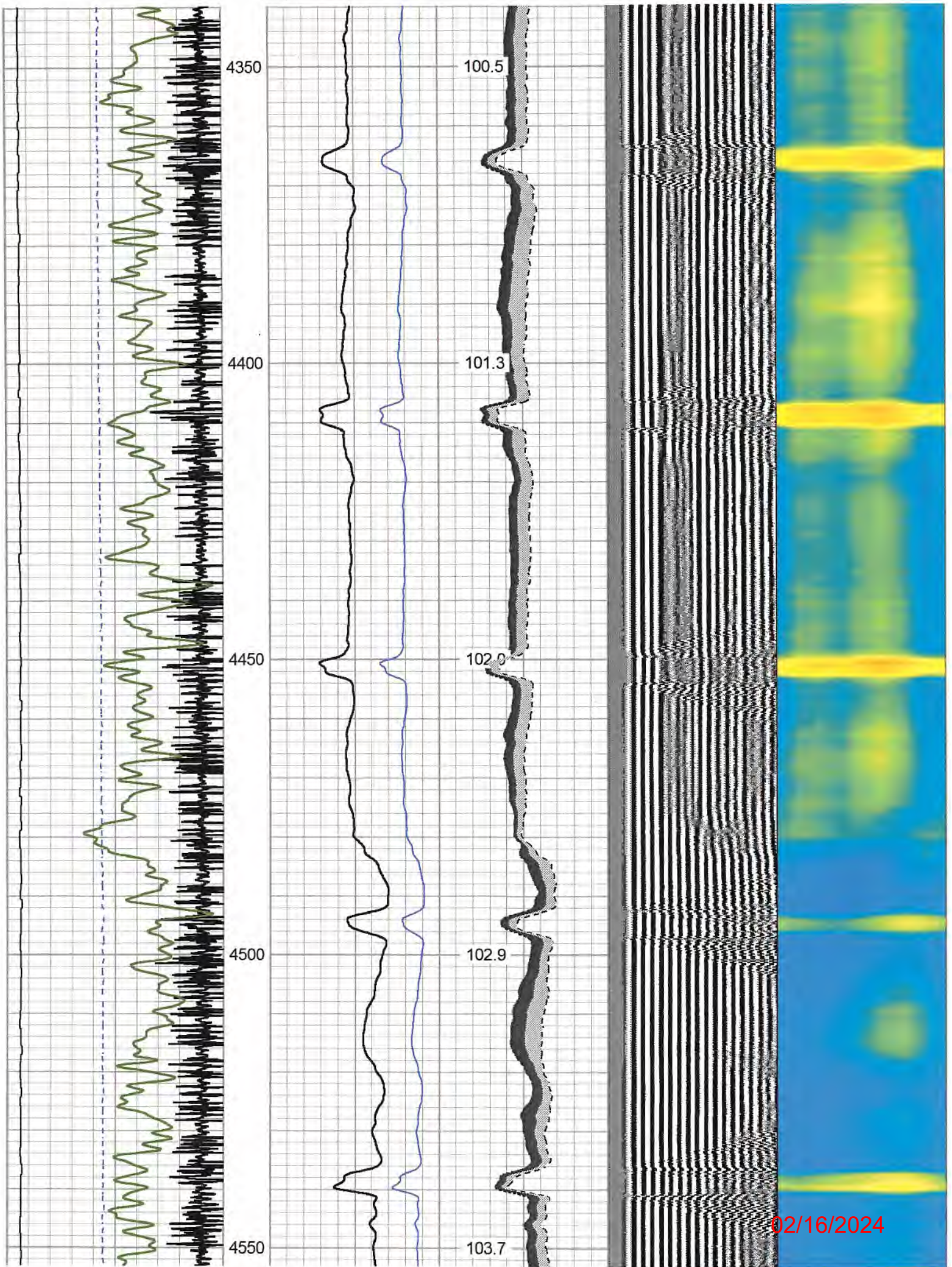


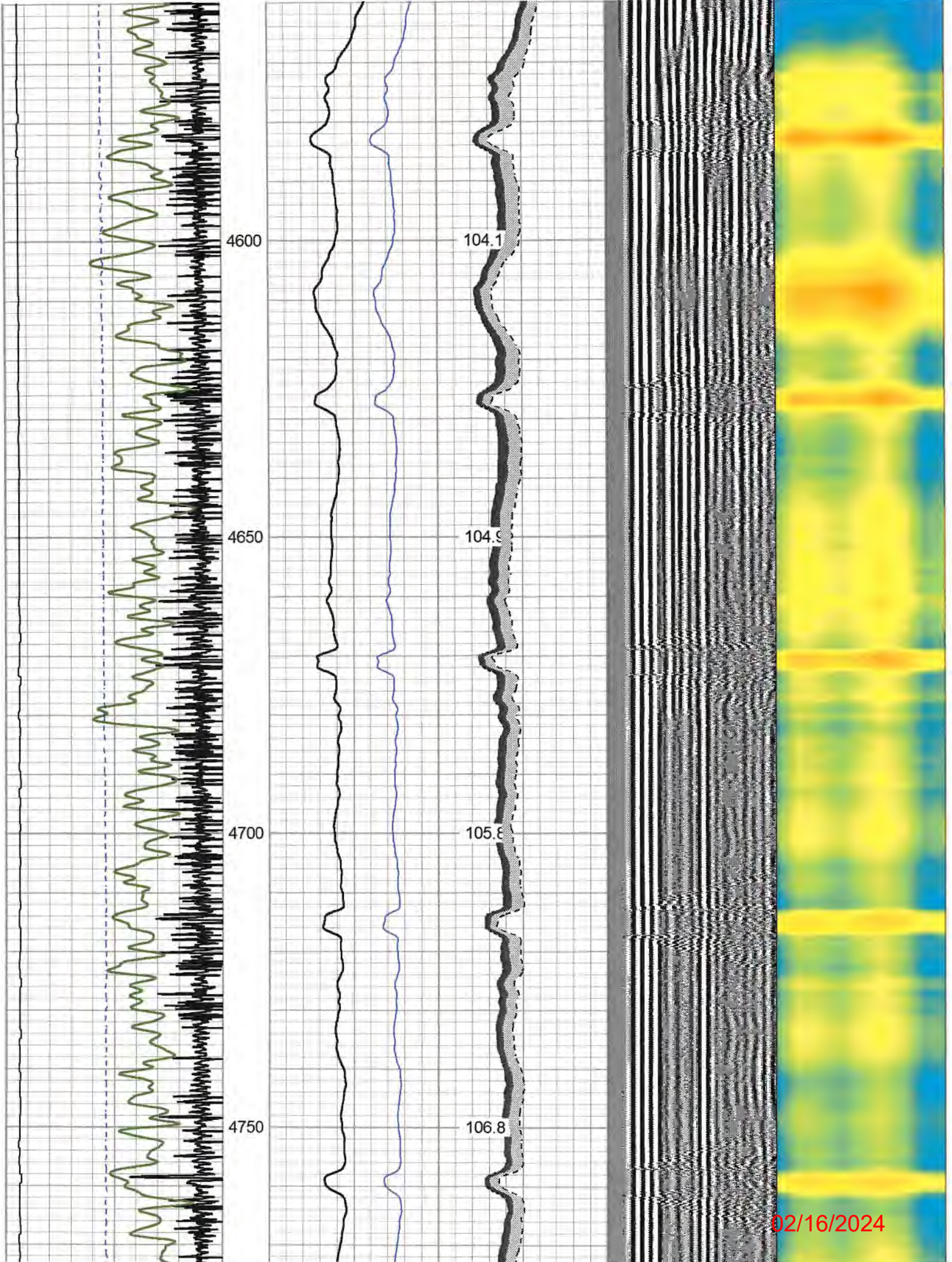


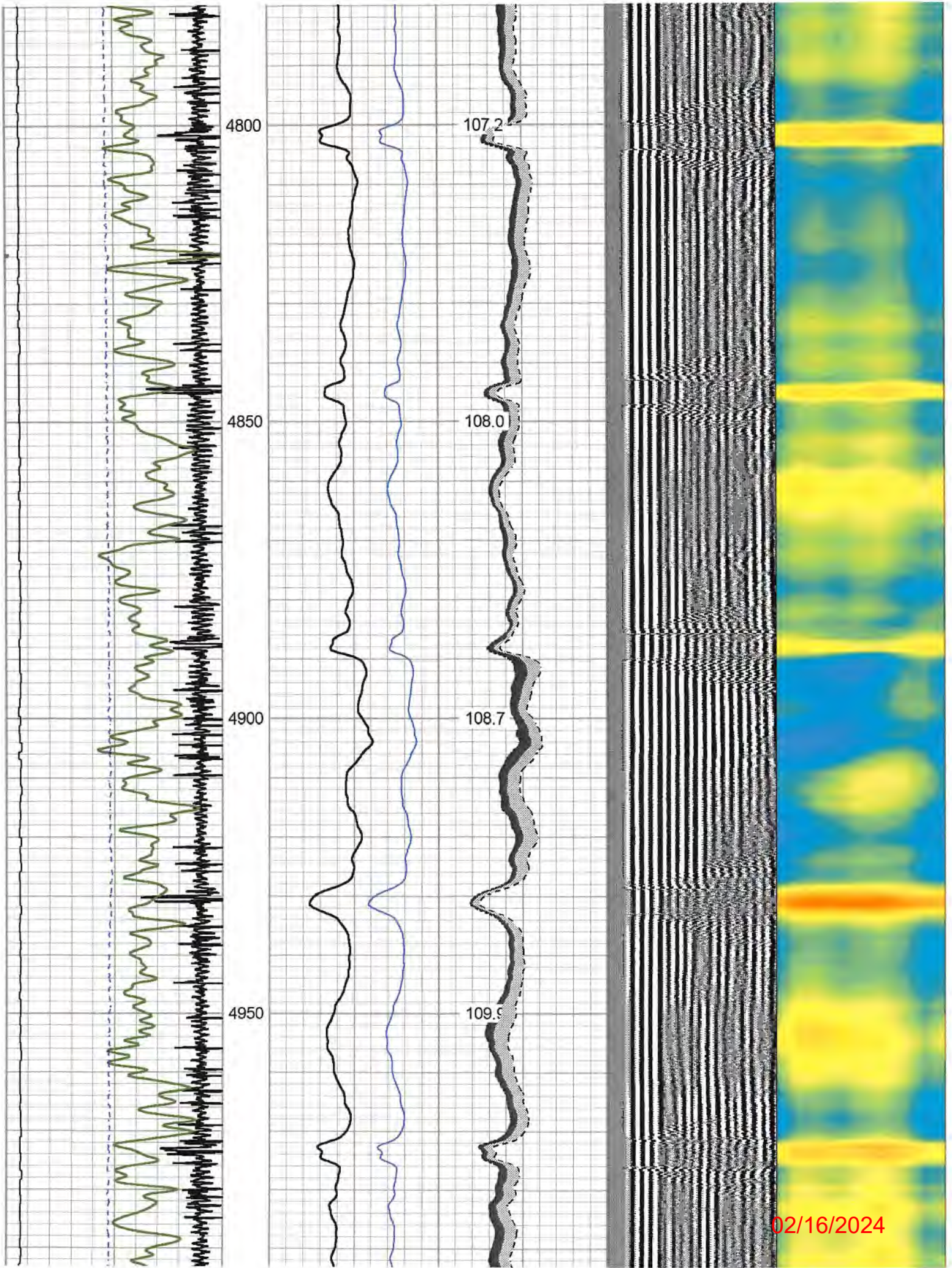
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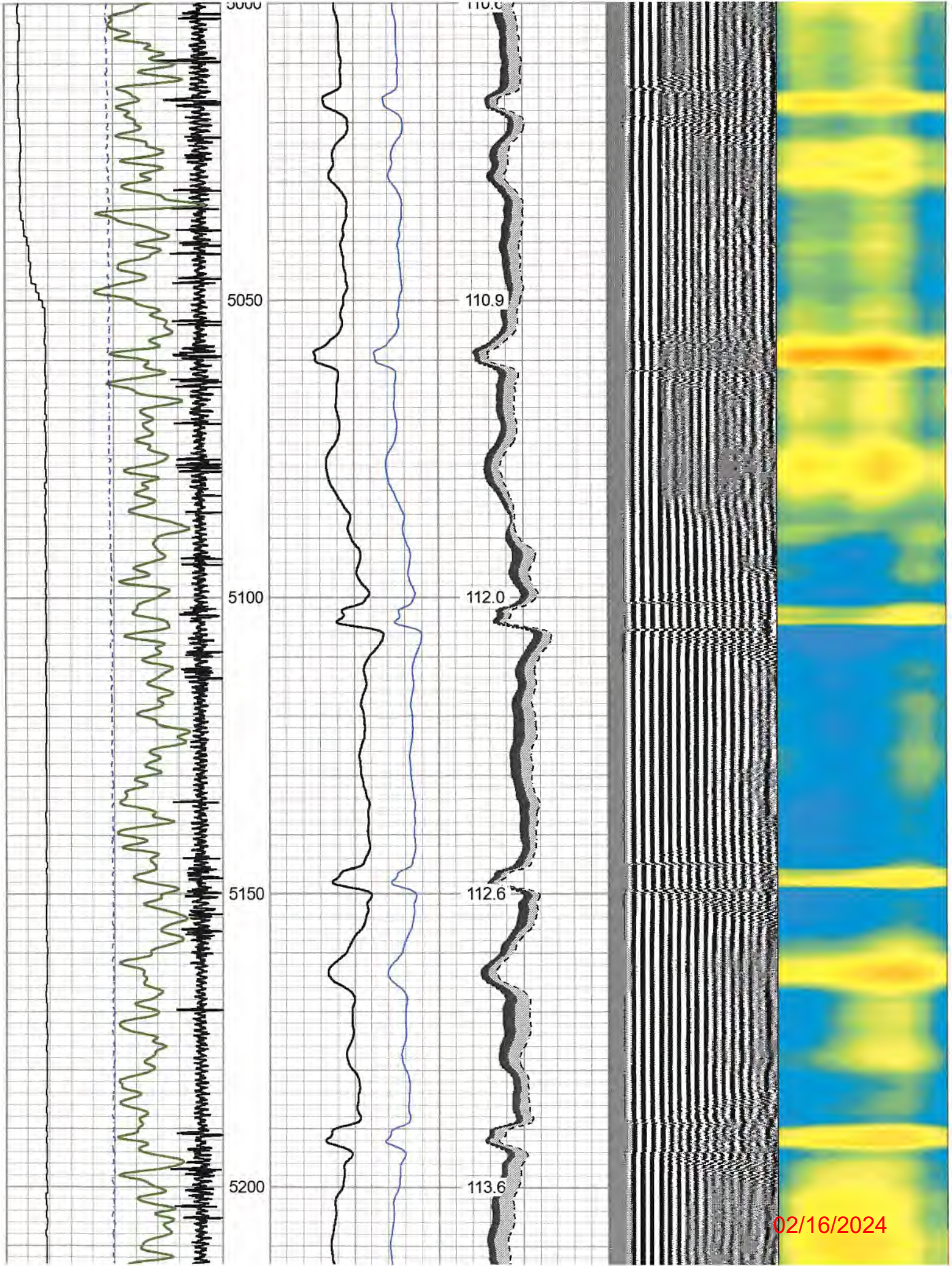


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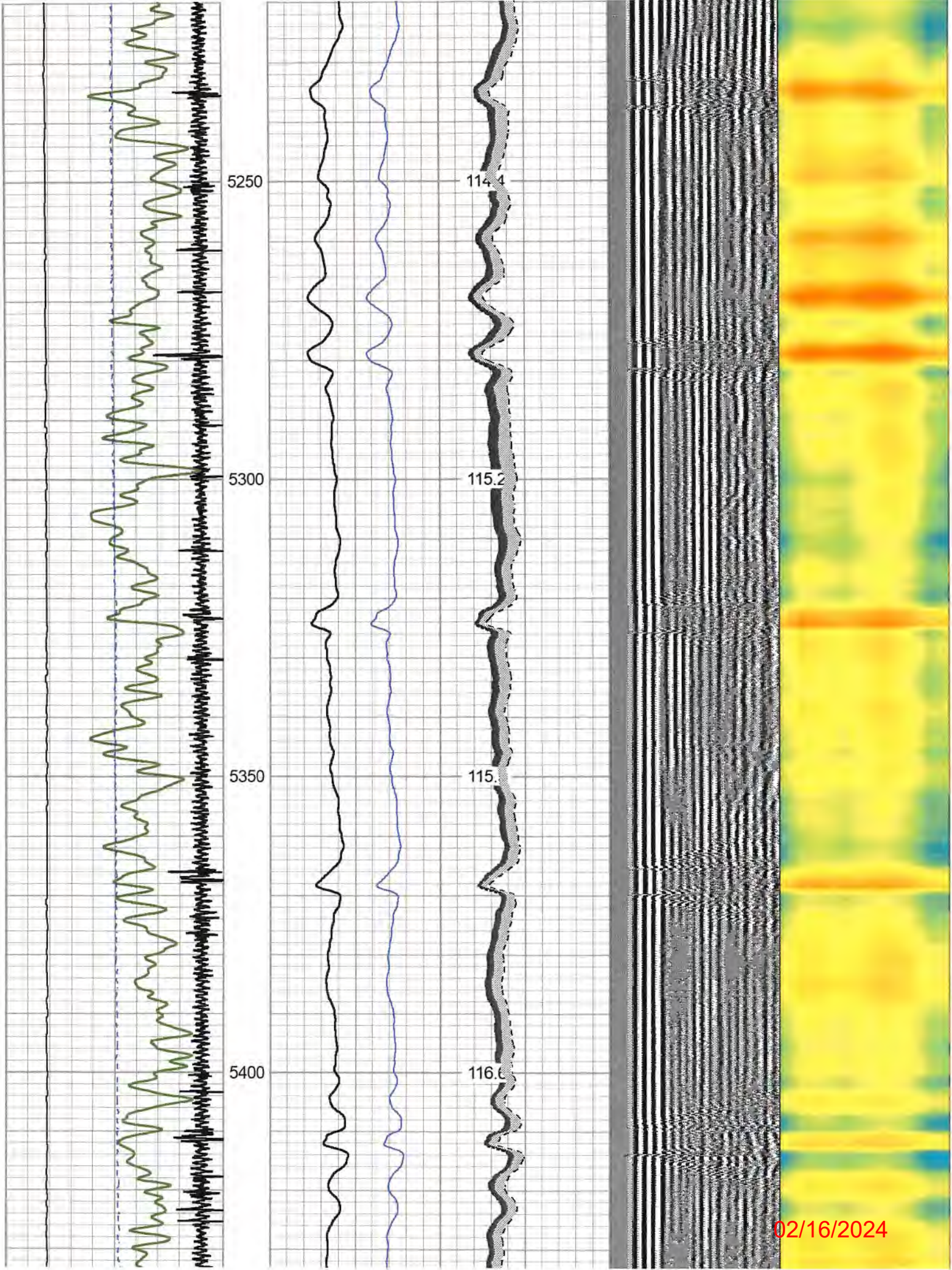




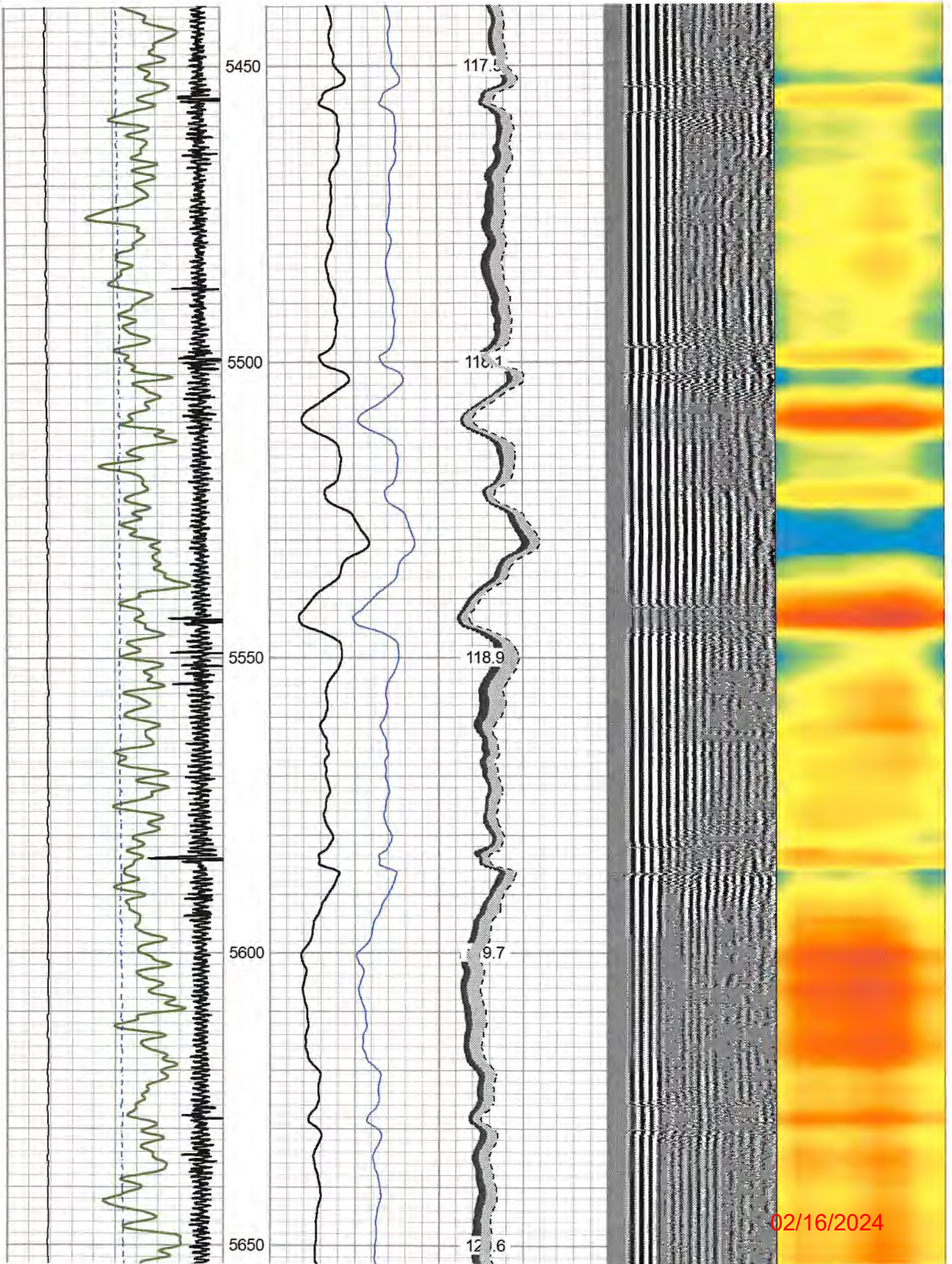


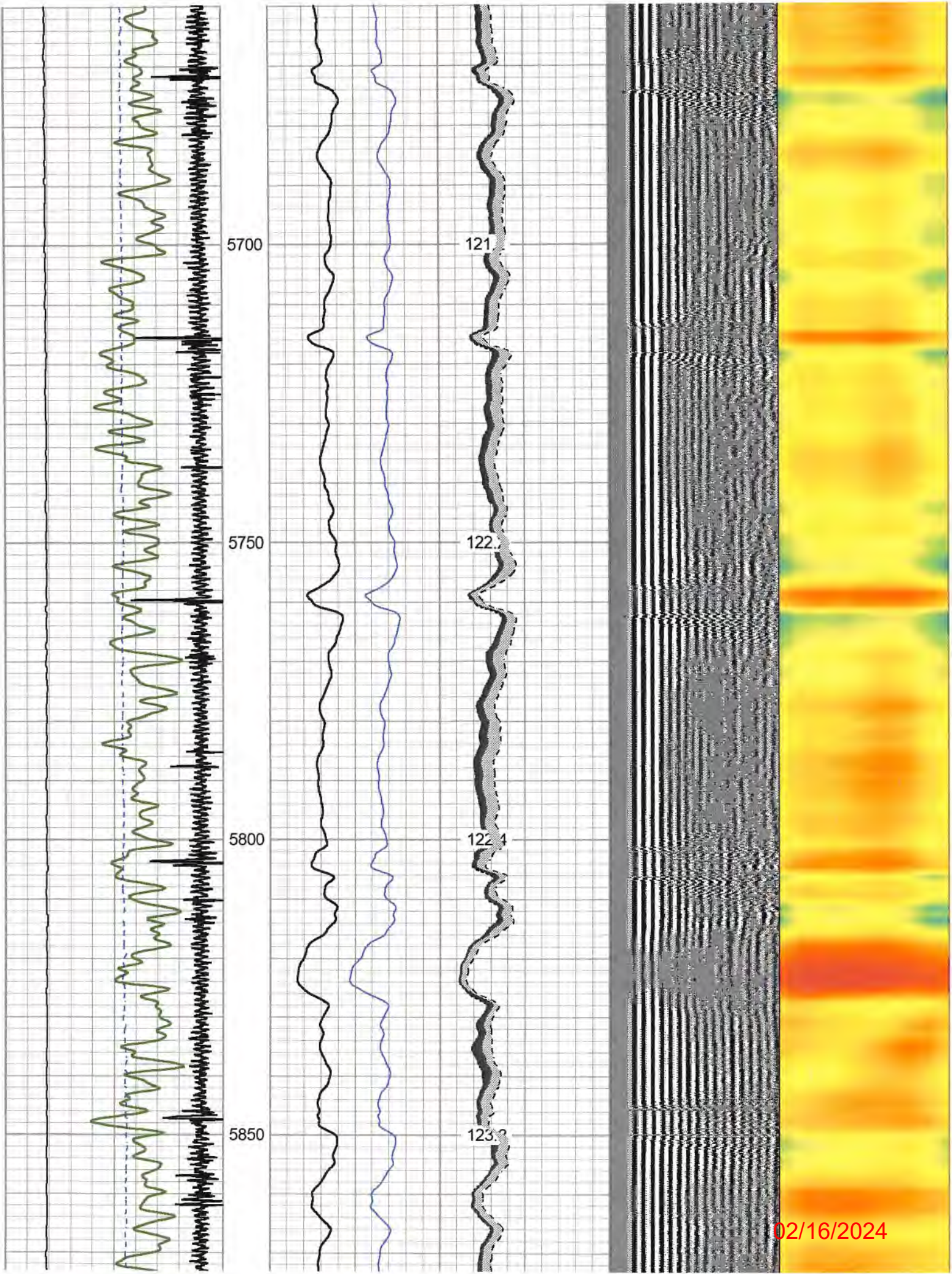


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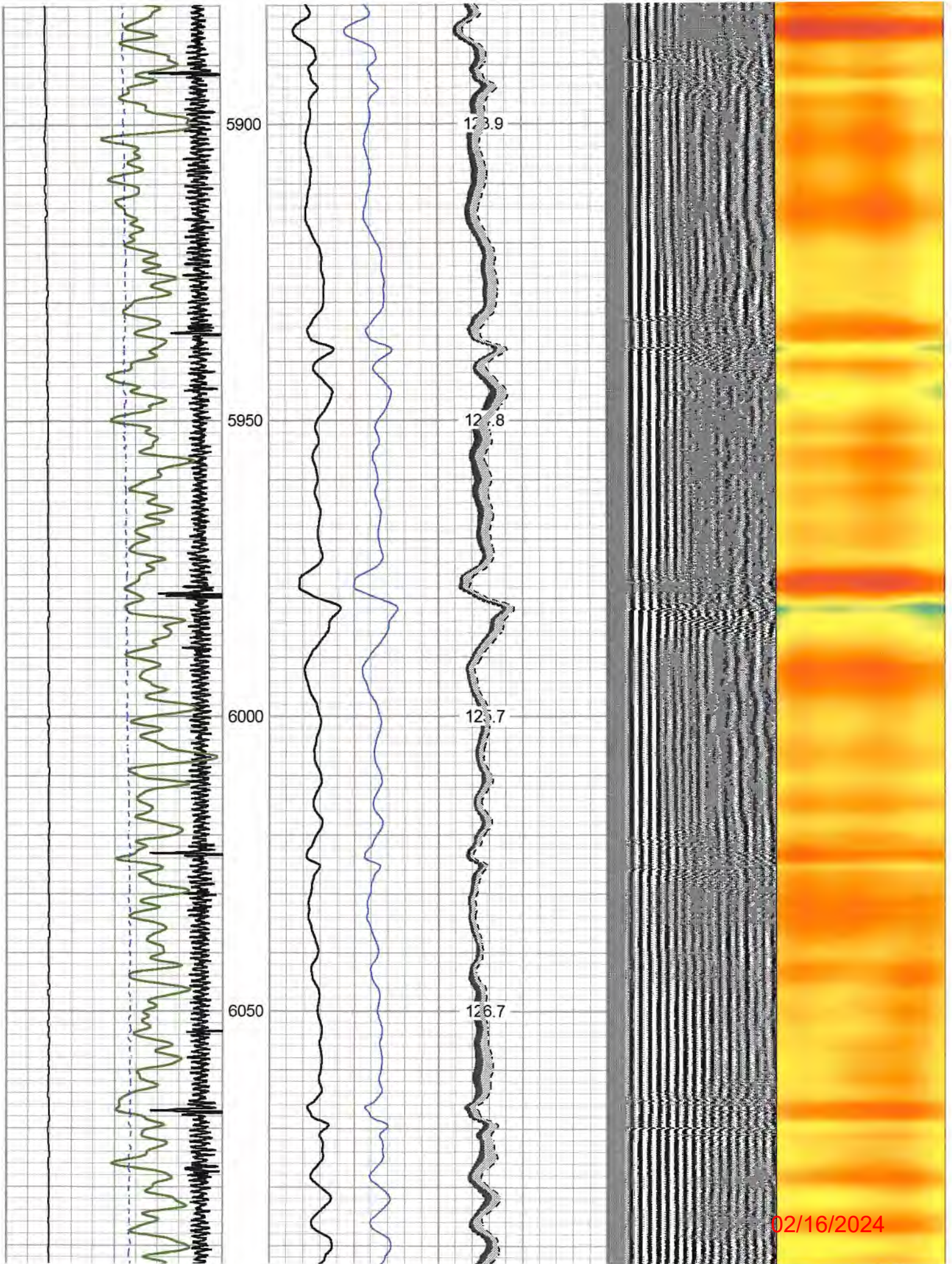


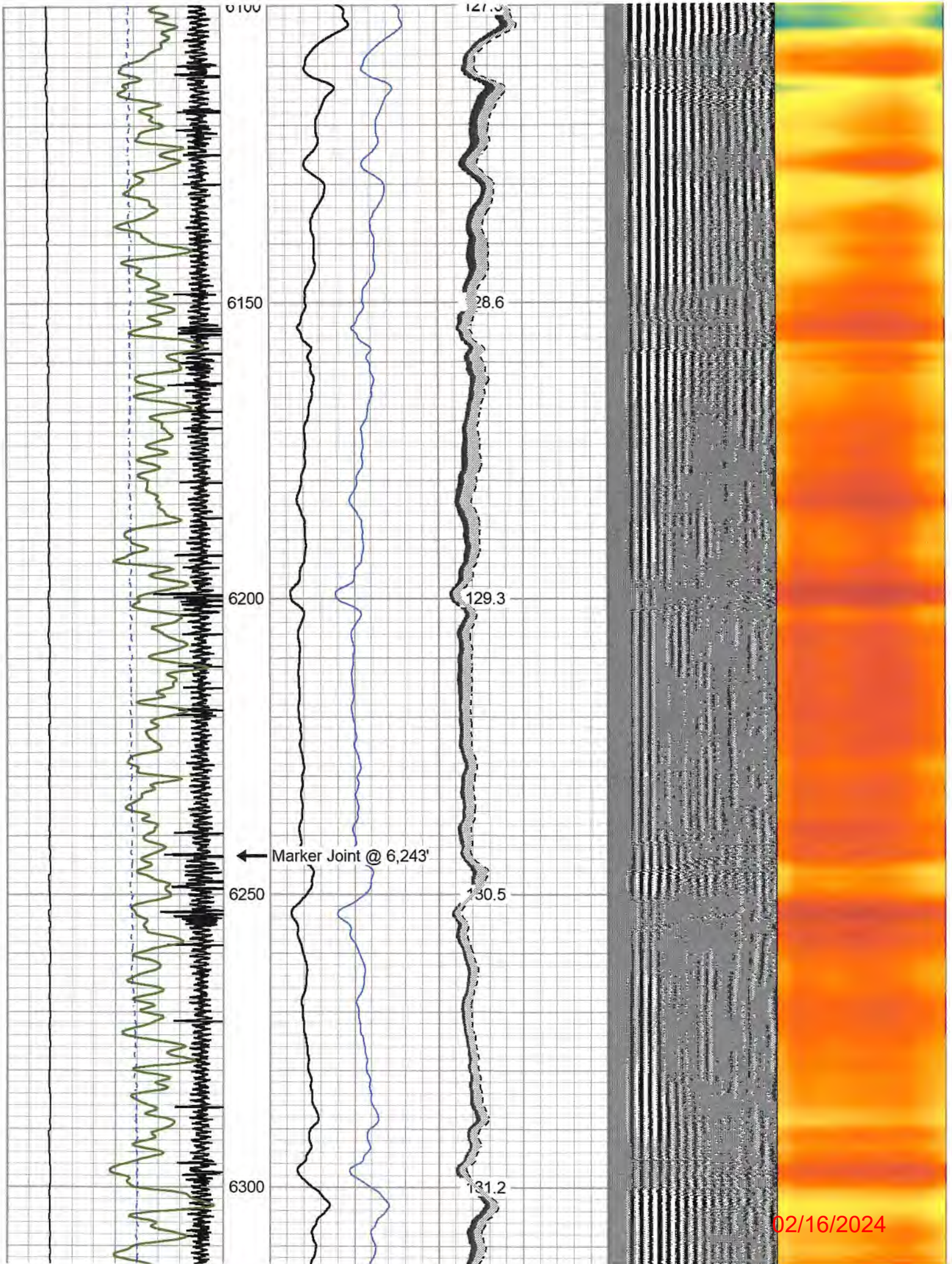
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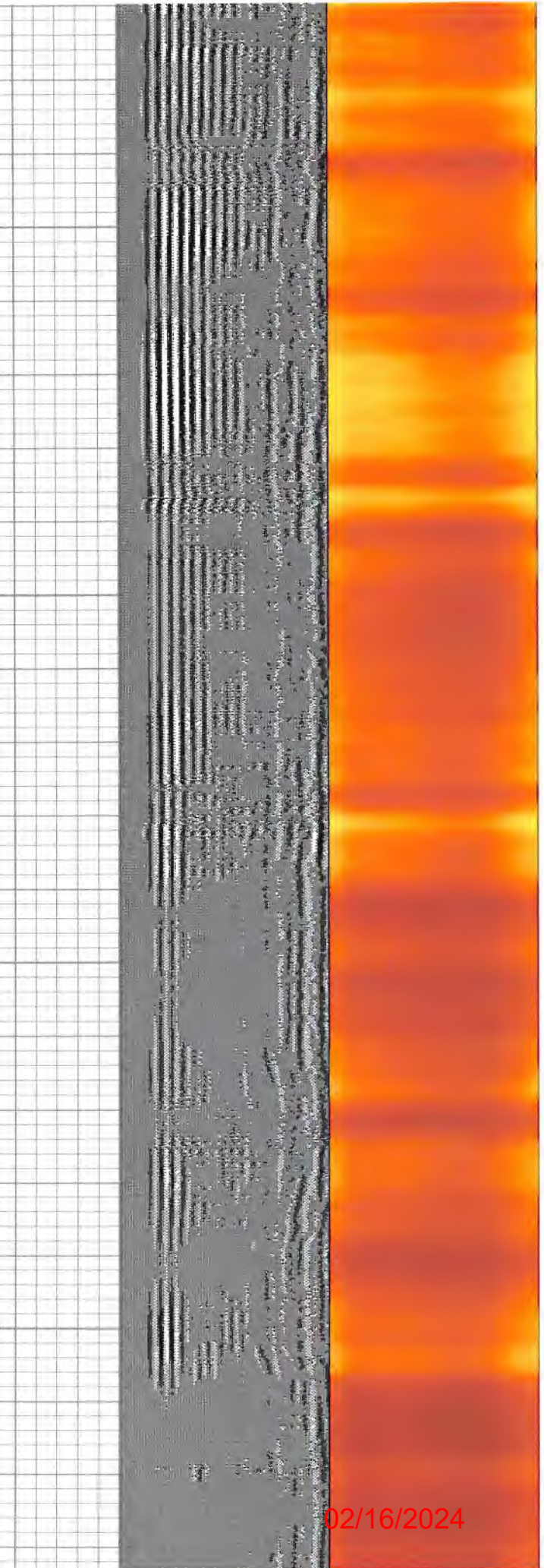
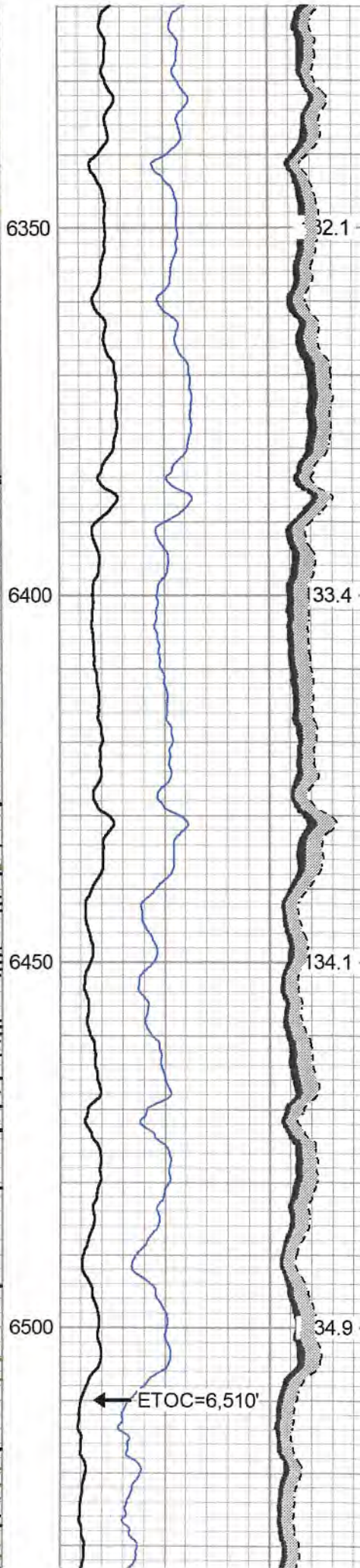
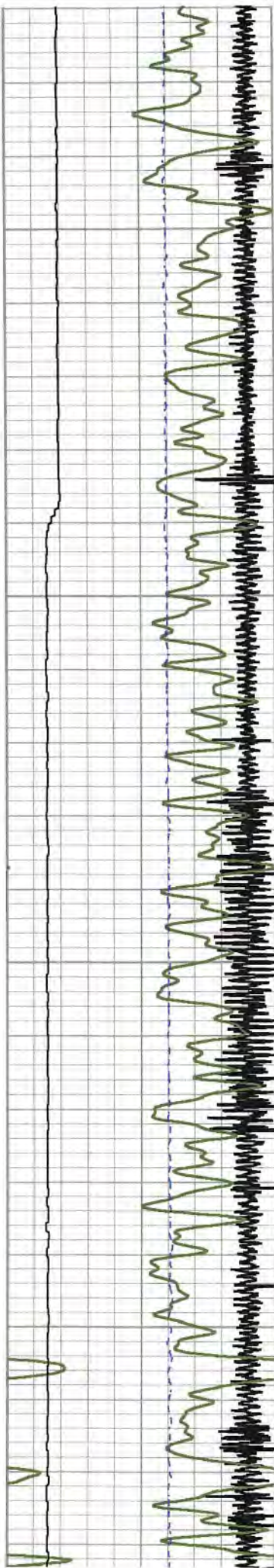


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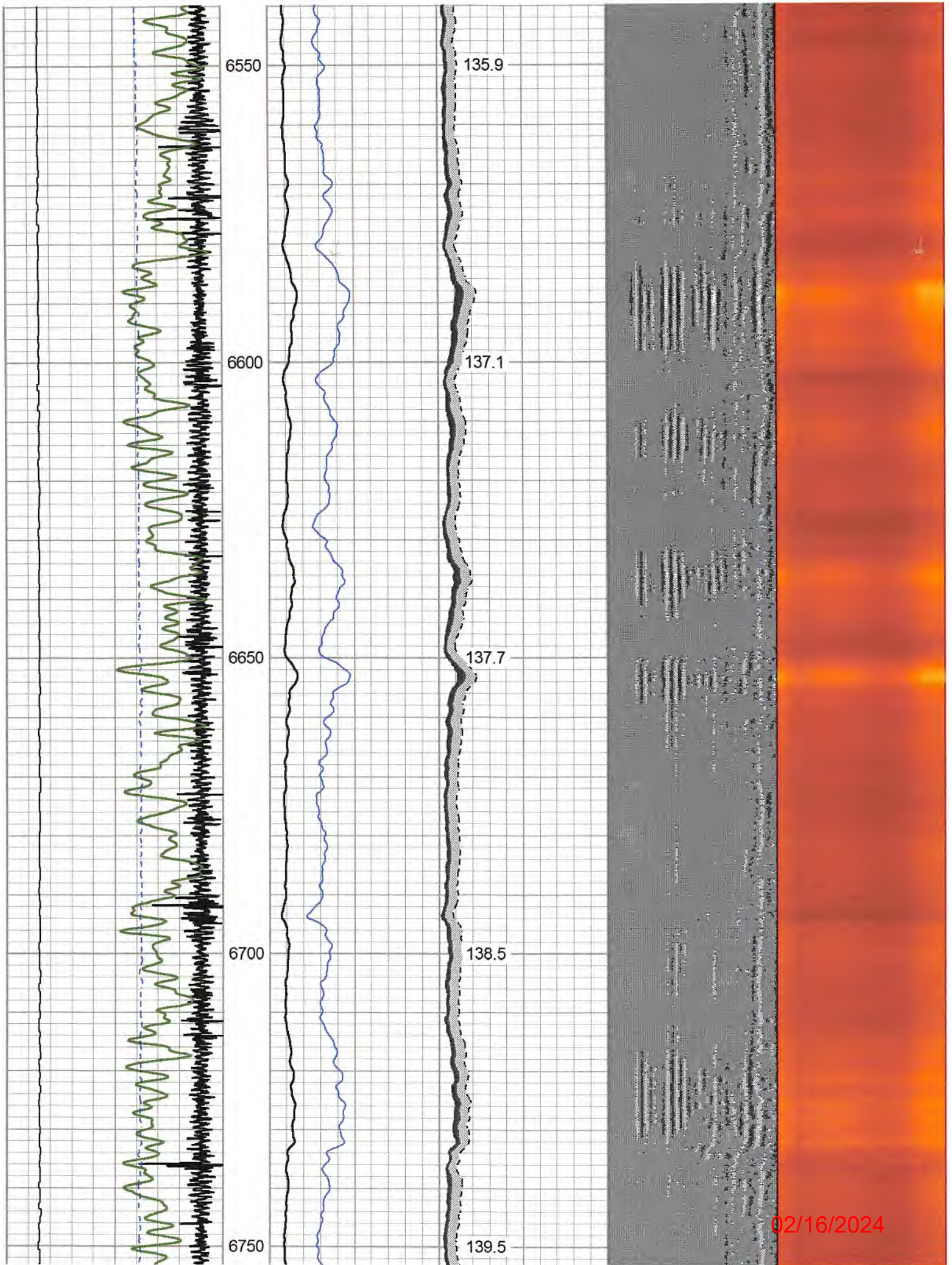


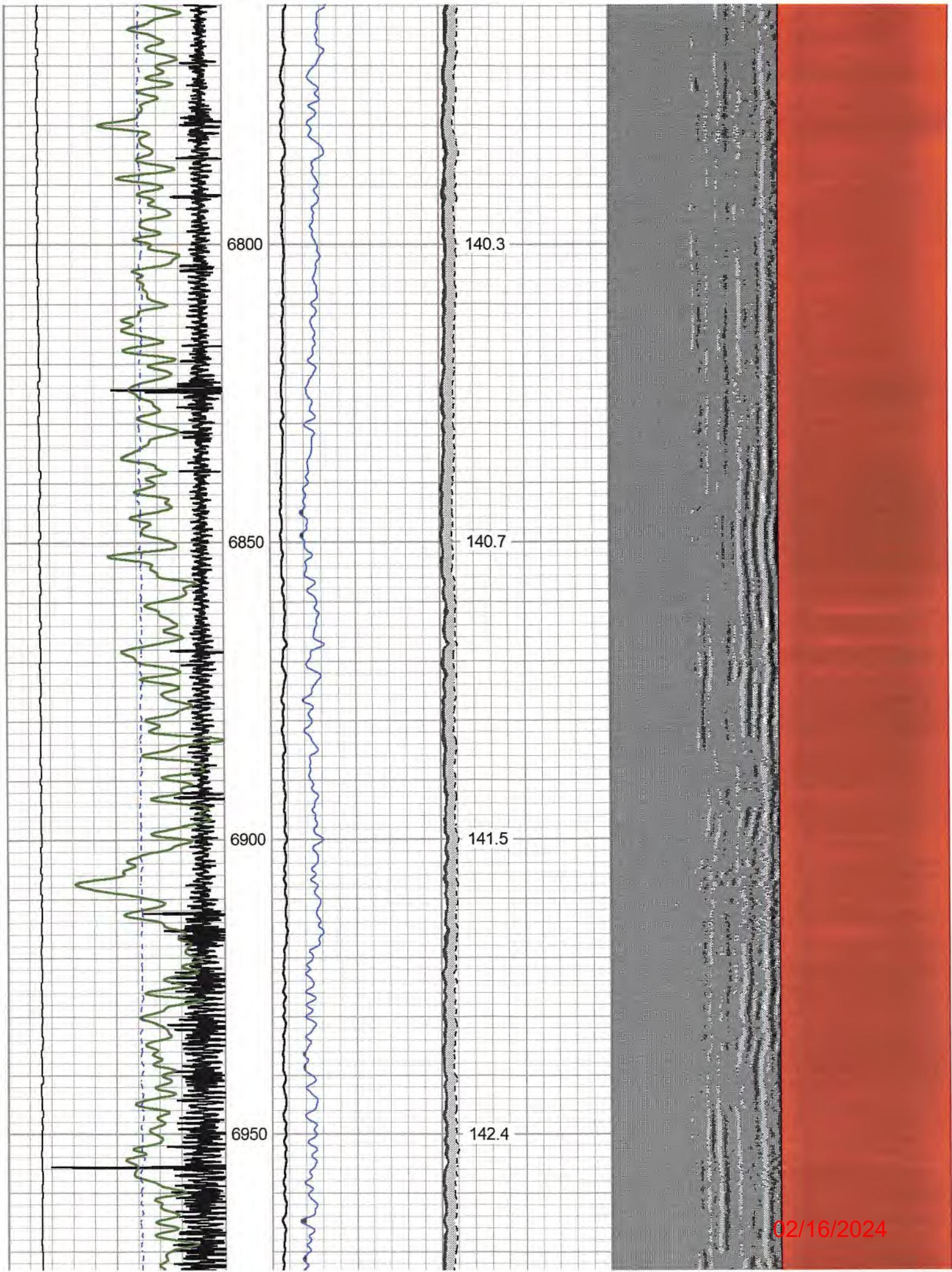


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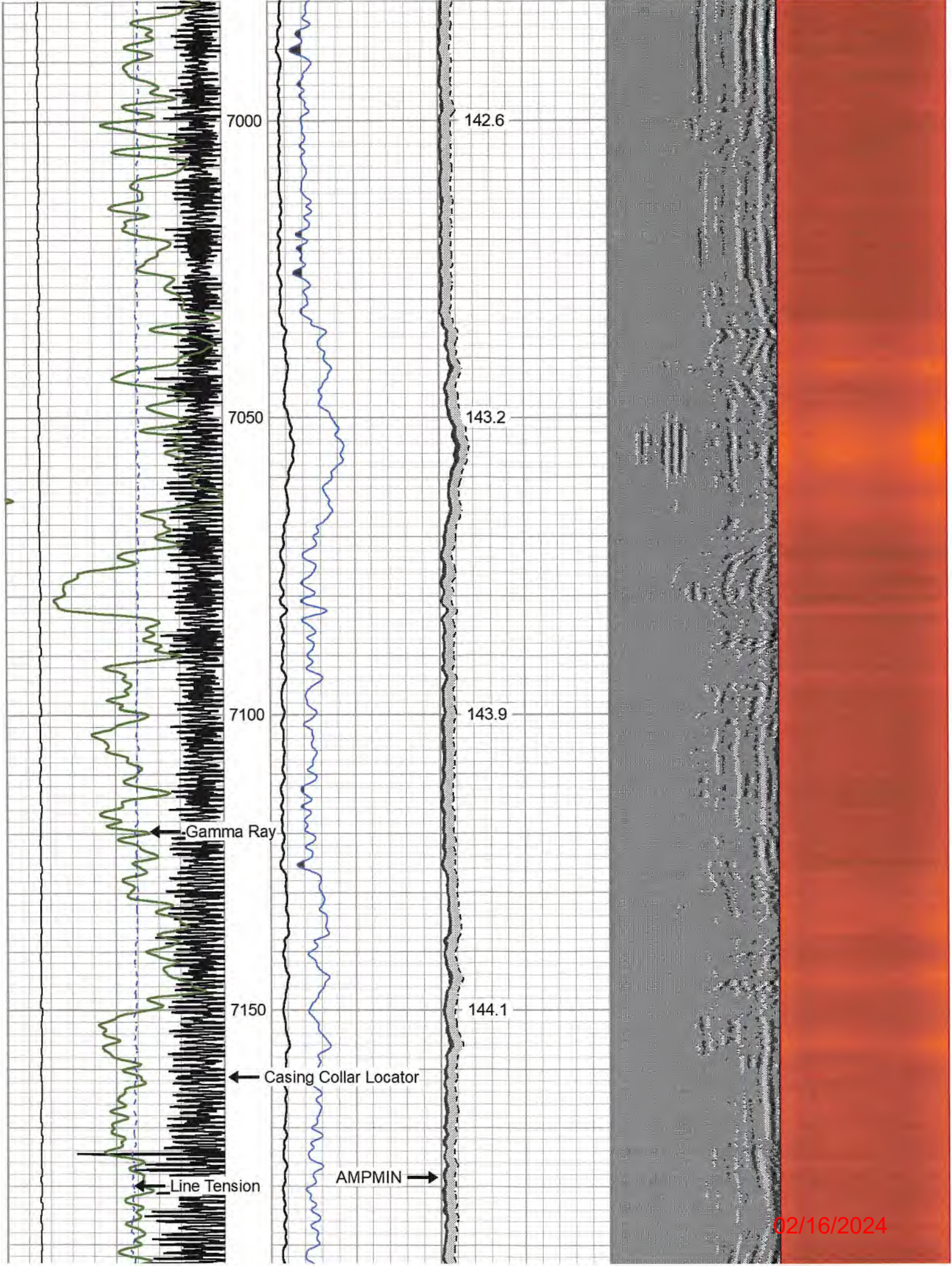


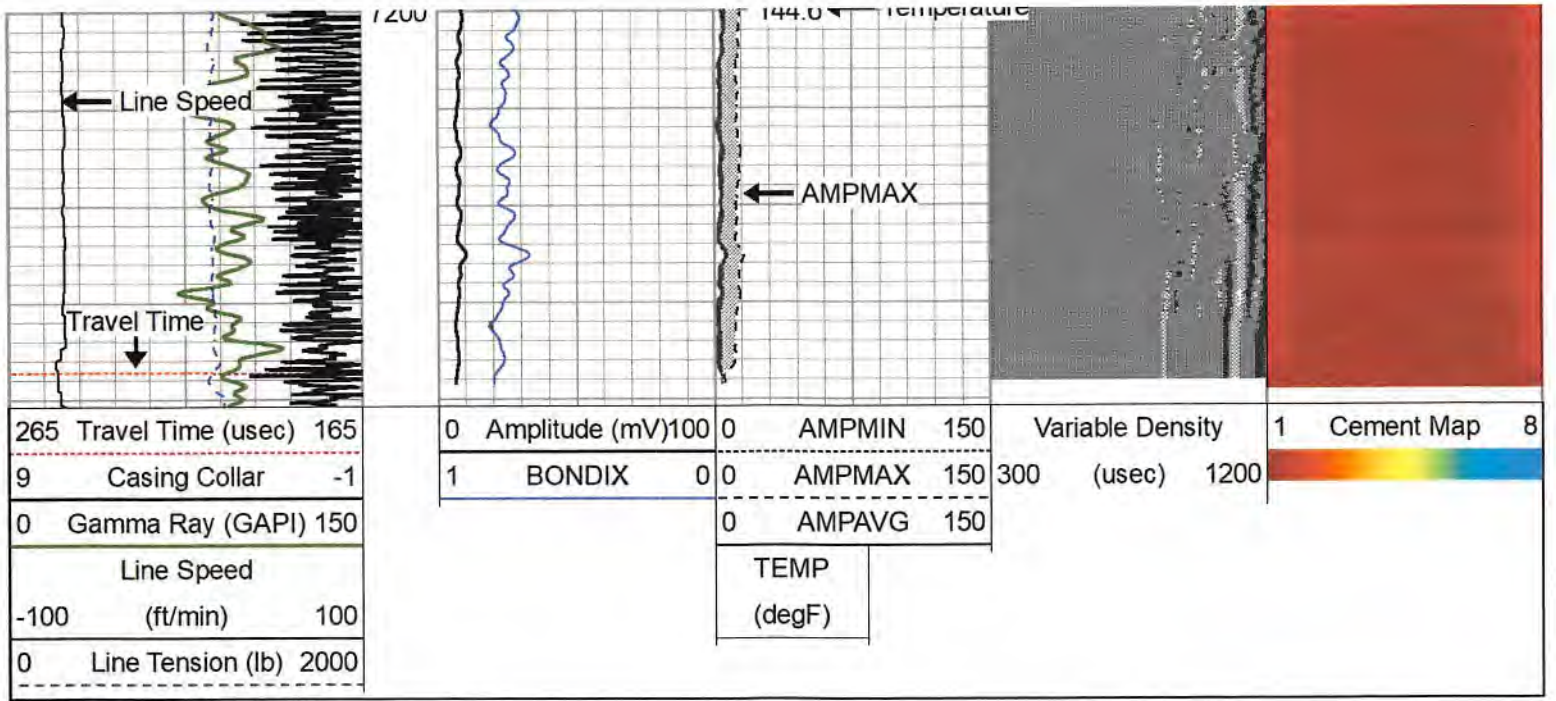
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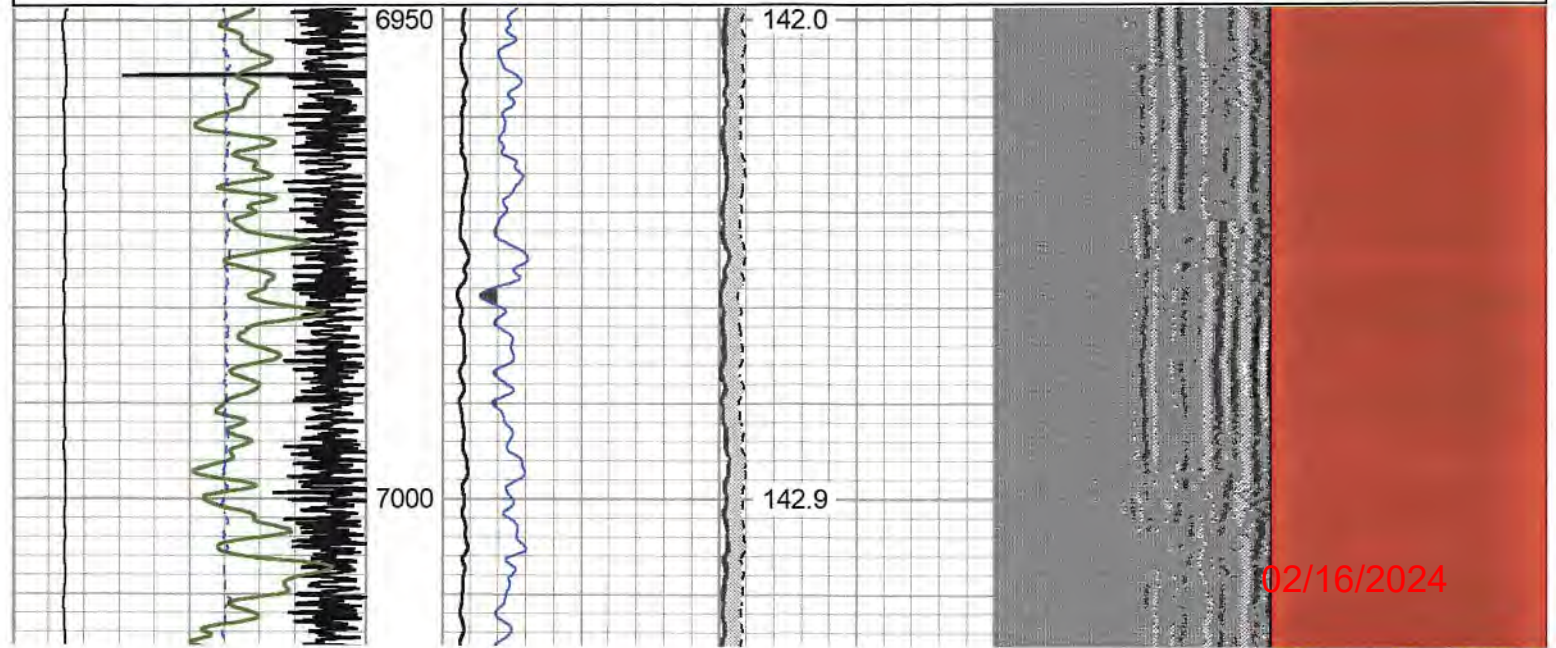


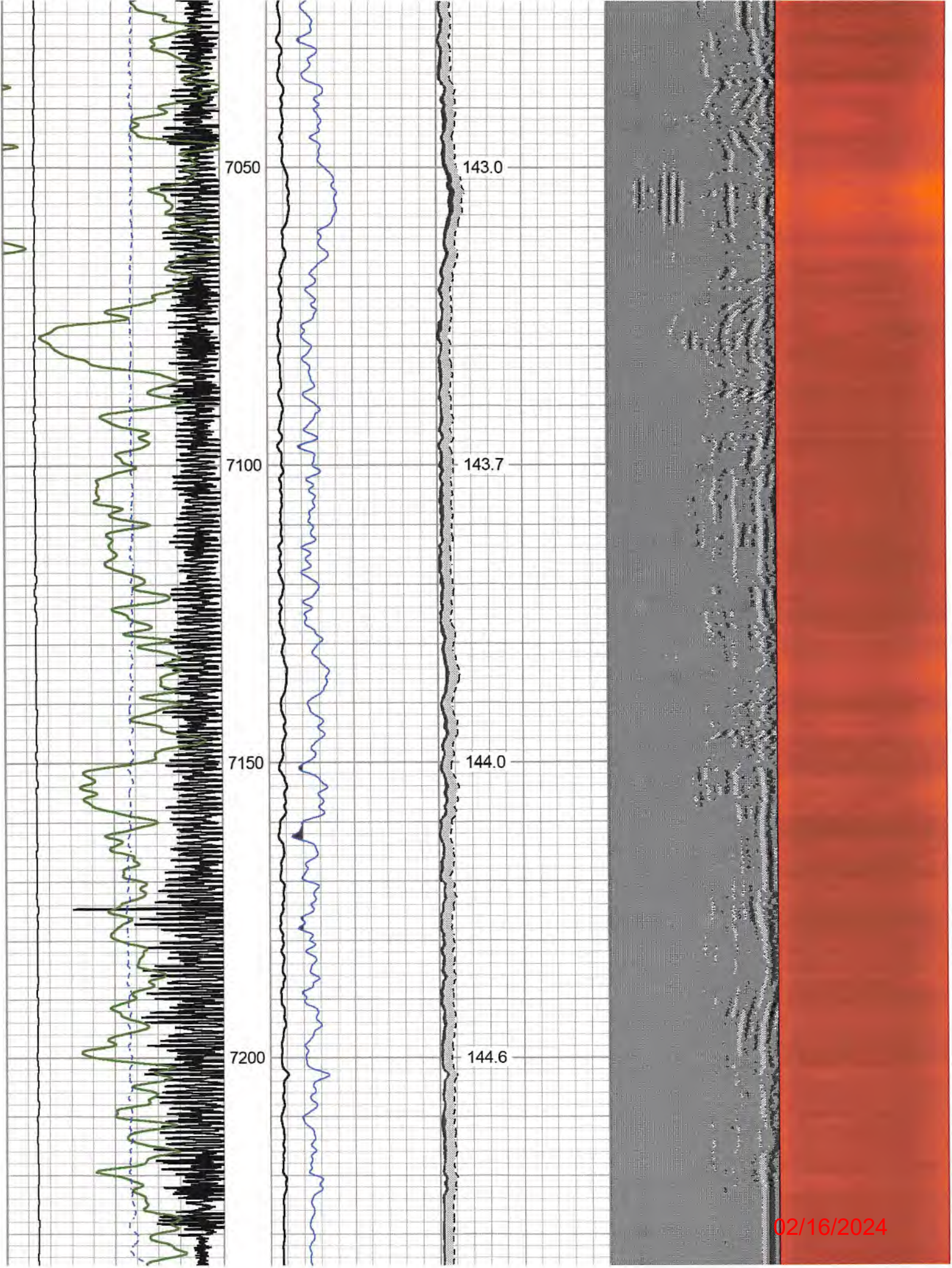
Repeat Pass

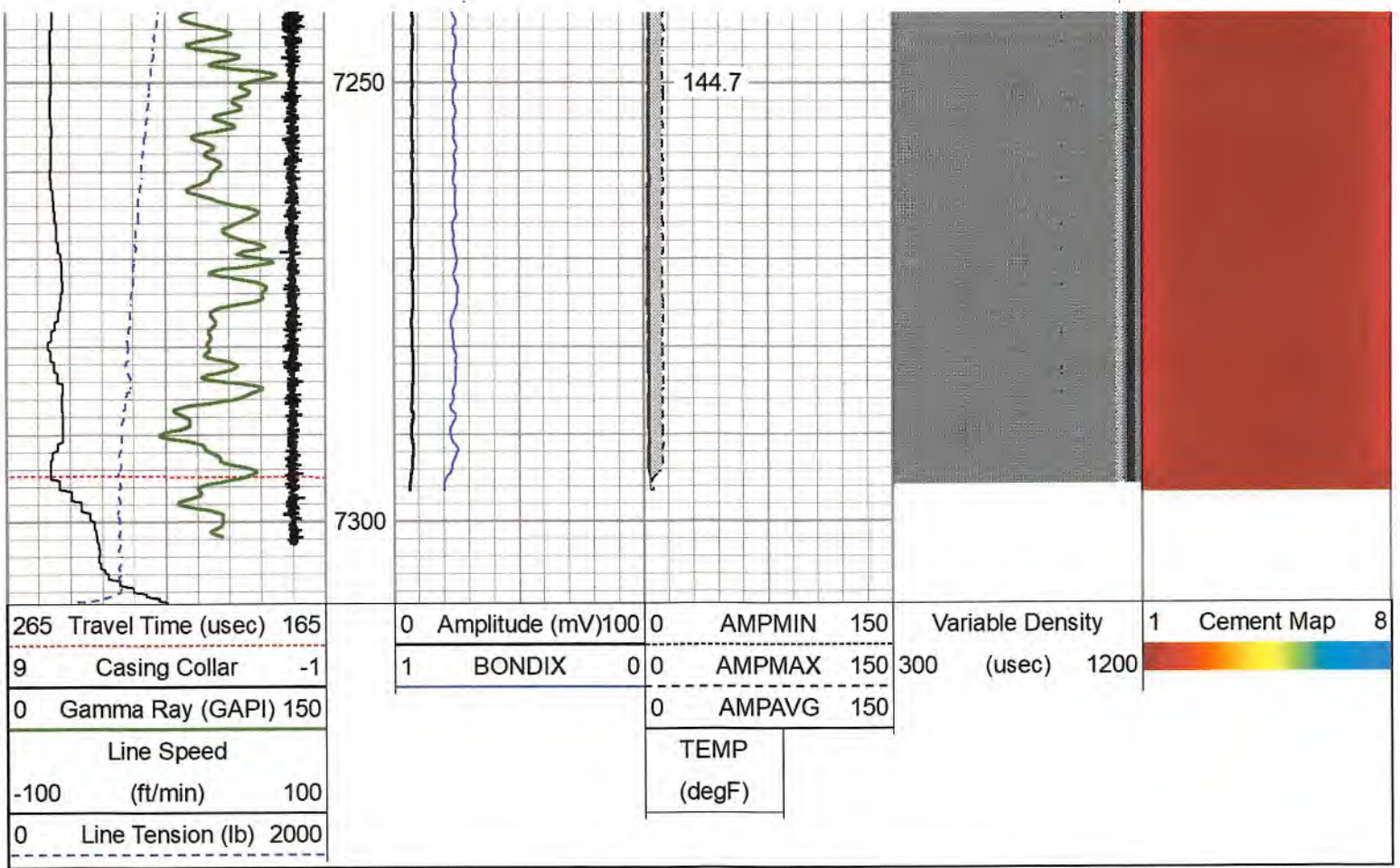
1,500 PSI Applied

Database File	antero_ed_yost_spill_2h_rcbl_may-10-2023.db											
Dataset Pathname	RCBL/repeat1											
Presentation Format	rcbl-bond index for antero 1020											
Dataset Creation	Thu May 11 16:56:55 2023											
Charted by	Depth in Feet scaled 1:240											

265	Travel Time (usec)	165	0	Amplitude (mV)	100	0	AMP MIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMP MAX	150	300 (usec)	1200		
0	Gamma Ray (GAPI)	150	0	AMPAVG	150							
	Line Speed			TEMP								
-100	(ft/min)	100		(degF)								
0	Line Tension (lb)	2000										







Calibration Report

Database File antero_ed_yost_spill_2h_rcbl_may-10-2023.db
 Dataset Pathname RCBL/main2
 Dataset Creation Thu May 11 17:08:41 2023

Gamma Ray Calibration Report

Serial Number:	FW1211-86		
Tool Model:	Probe		
Performed:	Sun Apr 2 11:15:39 2023		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.8000	GAPI/cps	

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Segmented Cement Bond Log Calibration Report

Serial Number:	FW1312-32		
Tool Model:	Probe275T		
Calibration Casing Diameter:	5.500	in	
Calibration Depth:	707.750	ft	

Master Calibration, performed Thu May 11 13:24:12 2023:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.019	0.385	3.400	71.900	169.517	6.572

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SUM							
S1	-0.019	0.428	0.000	100.000	223.868	4.176	
S2	-0.019	0.339	0.000	100.000	279.610	5.260	
S3	-0.019	0.374	0.000	100.000	254.925	4.749	
S4	-0.019	0.363	0.000	100.000	262.119	4.873	
S5	-0.018	0.375	0.000	100.000	254.418	4.696	
S6	-0.018	0.408	0.000	100.000	234.728	4.332	
S7	-0.018	0.436	0.000	100.000	219.931	4.065	
S8	-0.019	0.447	0.000	100.000	214.748	4.027	

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.019	0.891	1.000	0.000

Air Zero Calibration, performed Thu May 11 07:20:21 2023:

	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	

Log Variables

Database: C:\ProgramData\Warrior\Data\antero_ed_yost_spill_2h_rcbl_may-10-2023.db
 Dataset field/well/RCBL/main2/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 144	in 5.5	in 0	lb/ft 23	mV 71.9	mV 3.4
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 0.8	No	usec 260	degF 0	ft 0			

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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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02/16/2024



Nine

Field
County
State

Marcellus
Tyler
WV

Country USA

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