



**Radial Cement Bond  
Gamma Ray CCL  
Temperature Log**

Company	Antero Resources	Company	Antero Resources
Well	Smelt Unit 2H	Well	Smelt Unit 2H
Field	Ritchie	Field	Ritchie
County	Ritchie	County	Ritchie
State	WV	State	WV
API # :	47-085-10424-0000	Other Services	
APE # :			
Location (LAT,LON):	39.1714, -80.8576		
Township:	West Union	Elevation	
Permanent Datum	KB=30' Above GL Elevation	K.B.	
Log Measured From	KB	D.F.	
Drilling Measured From	KB	G.L.	
Date	October 15, 2022		
Run Number	One		
Depth Driller (ft)	18,702'		
Depth Logger (ft)	7,705'		
Bottom Logged Interval (ft)	7,691'		
Top Log Interval	Surface		
Open Hole Size (in)	NA		
Type Fluid	Water		
Density / Viscosity (lb/gal)	NA		
Max. Recorded Temp. (°F)	144.3F		
Estimated Cement Top (ft)	796'		
Time Well Ready	8:00AM		
Time Logger on Bottom	12:13PM		
Equipment Number	8018		
Location	Delmont, PA		
Recorded By	Matthew Scott		
Witnessed By	Mr. Robert Jones		
Casing Record	Size (in)	Weight (lb/ft)	Top (ft)
Conductor String	20		30
Surface String	13 1/2		130
1st Intermediate String	9 7/8		0
2nd Intermediate String			
Production String	5		0
Inclination Information (Approximated Values from Directional Survey)			
KOP	30°	1430'	60°
		7459'	90°
			8027'

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**

Correlated to Casing Tally Marker Joint Located at  
6,485' - 6,495'  
Log Depth Shifted -1'  
Estimated Top of Cement 796'

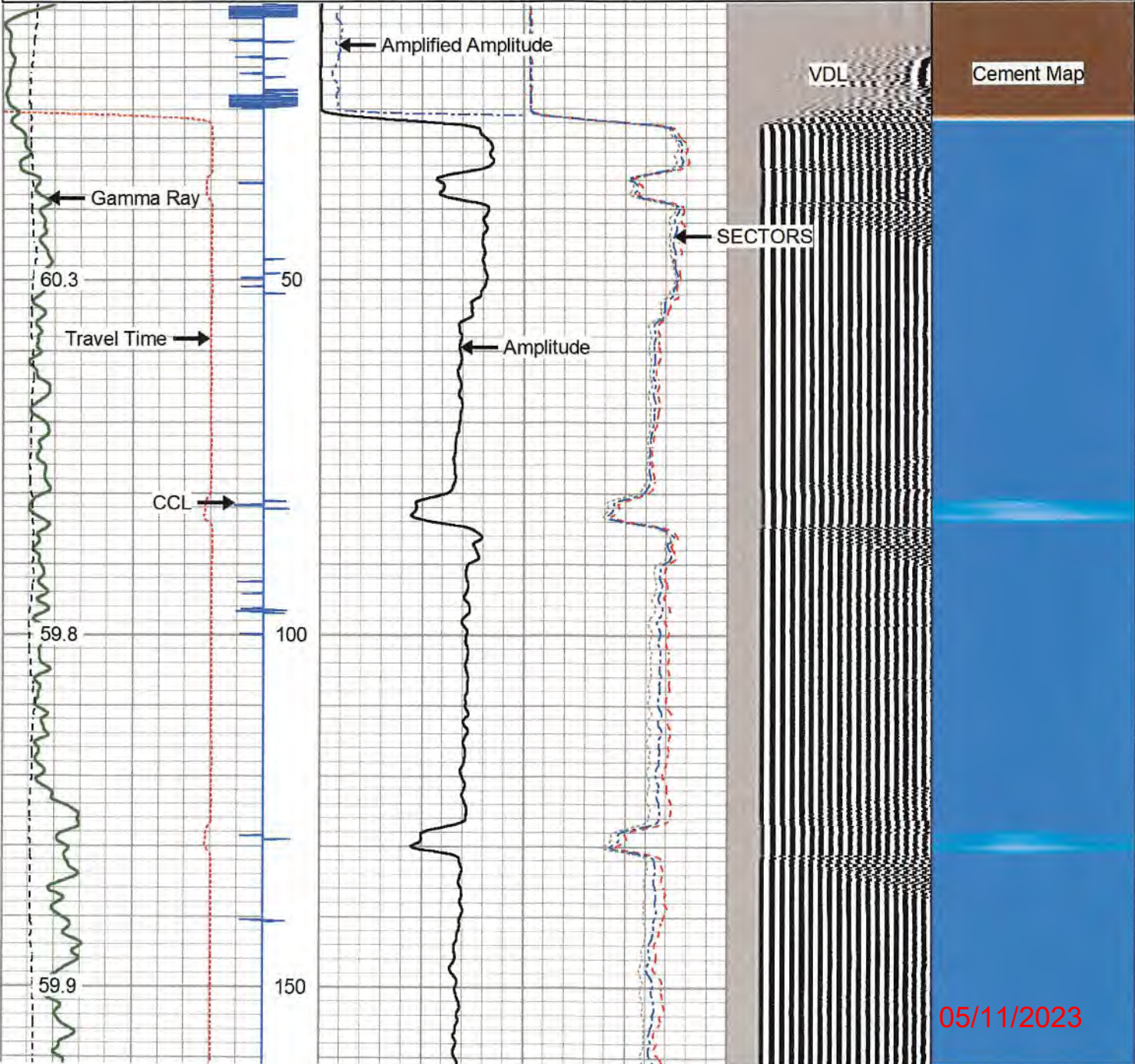
RECEIVED  
Office of Oil and Gas  
APR 07 2023  
WV Department of  
Environmental Protection



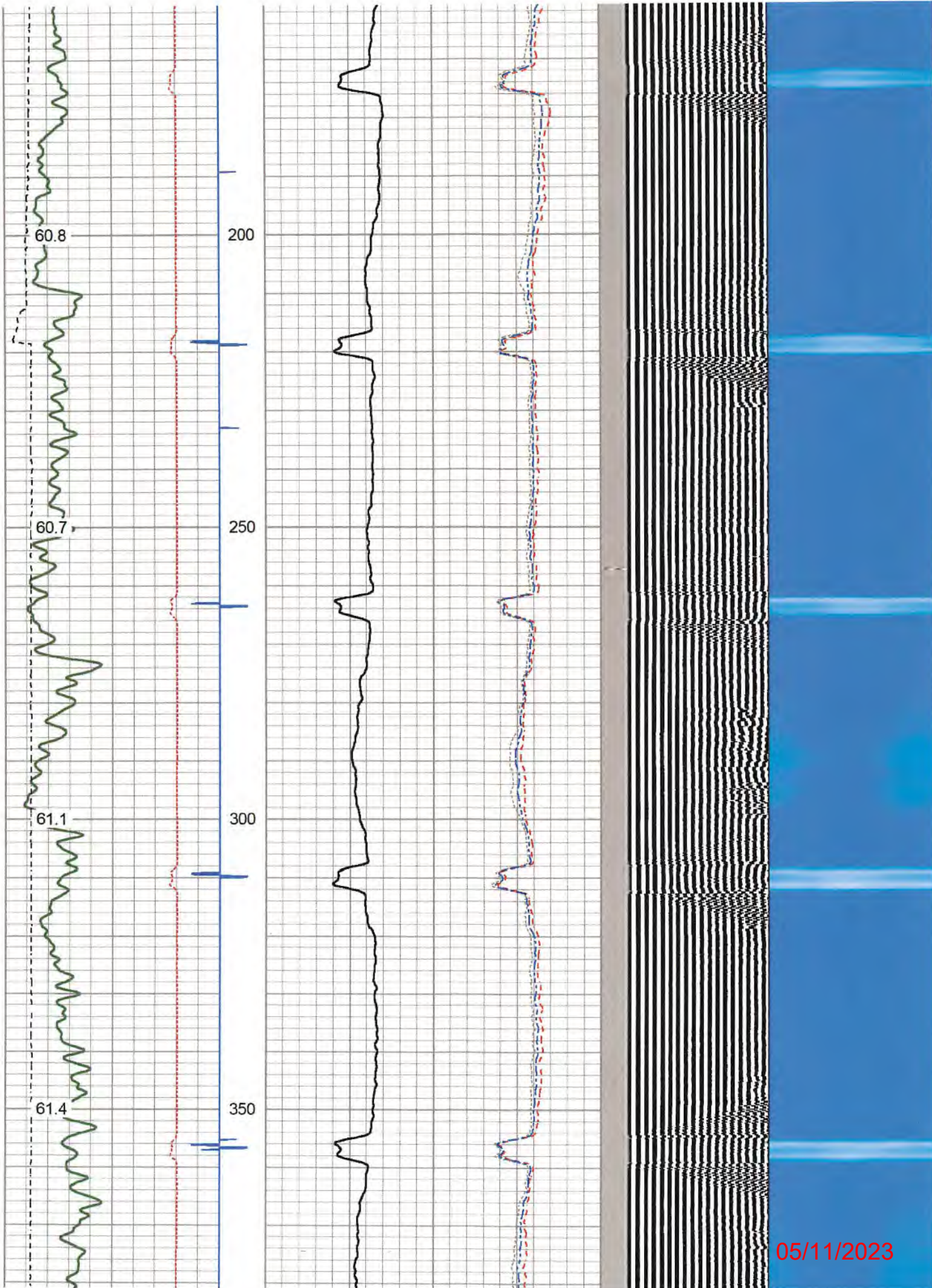
# Main Pass (1500 PSI)

Database File smelt unit 2h.db  
 Dataset Pathname pass9  
 Presentation Format RCBL\_S~4  
 Dataset Creation Sat Oct 15 13:58:10 2022  
 Charted by Depth in Feet scaled 1:240

413	TT (usec)	213	0	Amplitude (mV)	100	-5	AMPMin	150	200	VDL (usec)	1200	Cement Map
0	GR (GAPI)	150	Amplified Amplitude			-5	AMPMax	150	[Color Scale]			
0	LTEN (lb)	3000	0	(mV)	10	-5	AMPAvg	150				
TEMP (degF)		CCL										

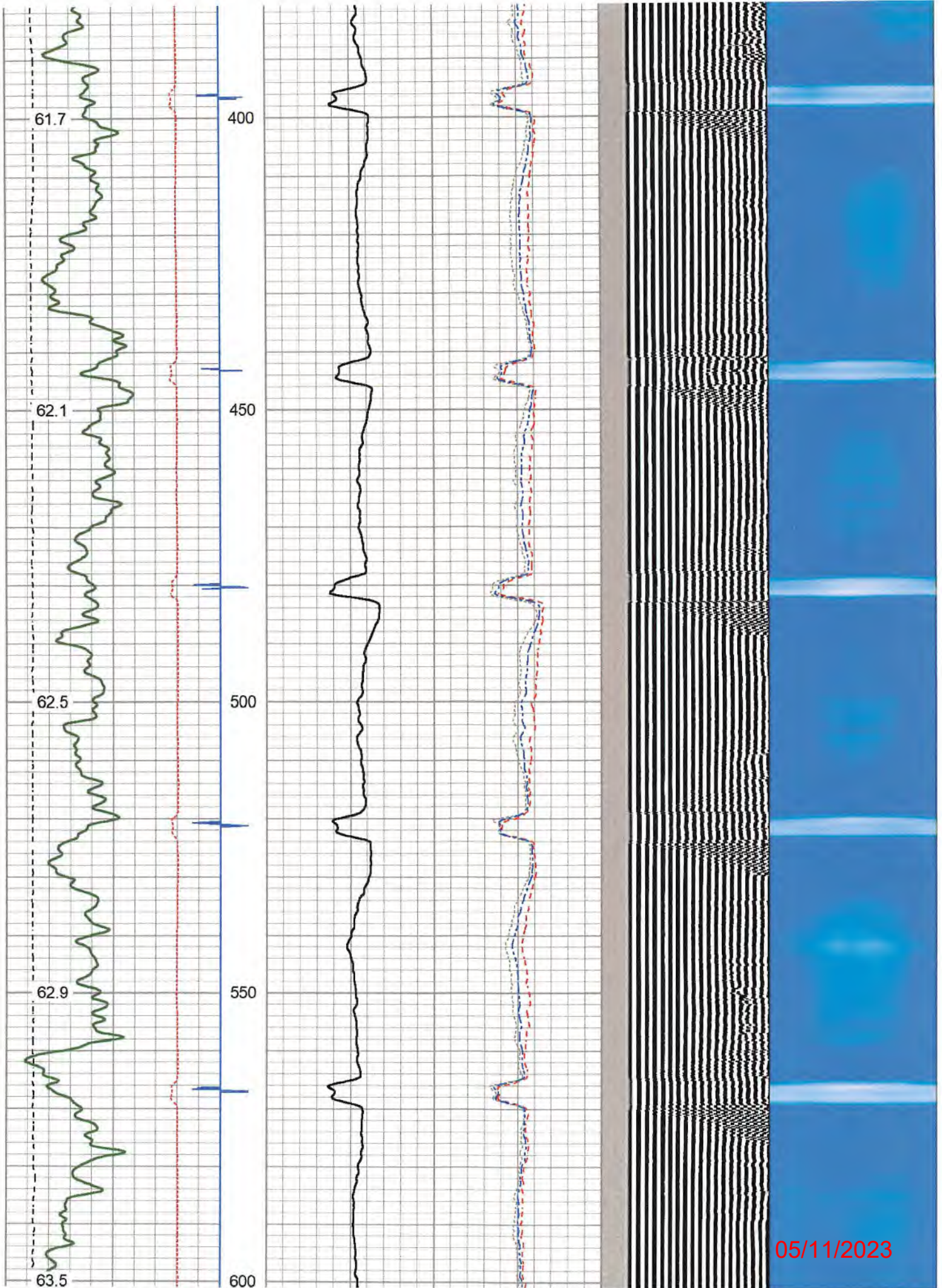






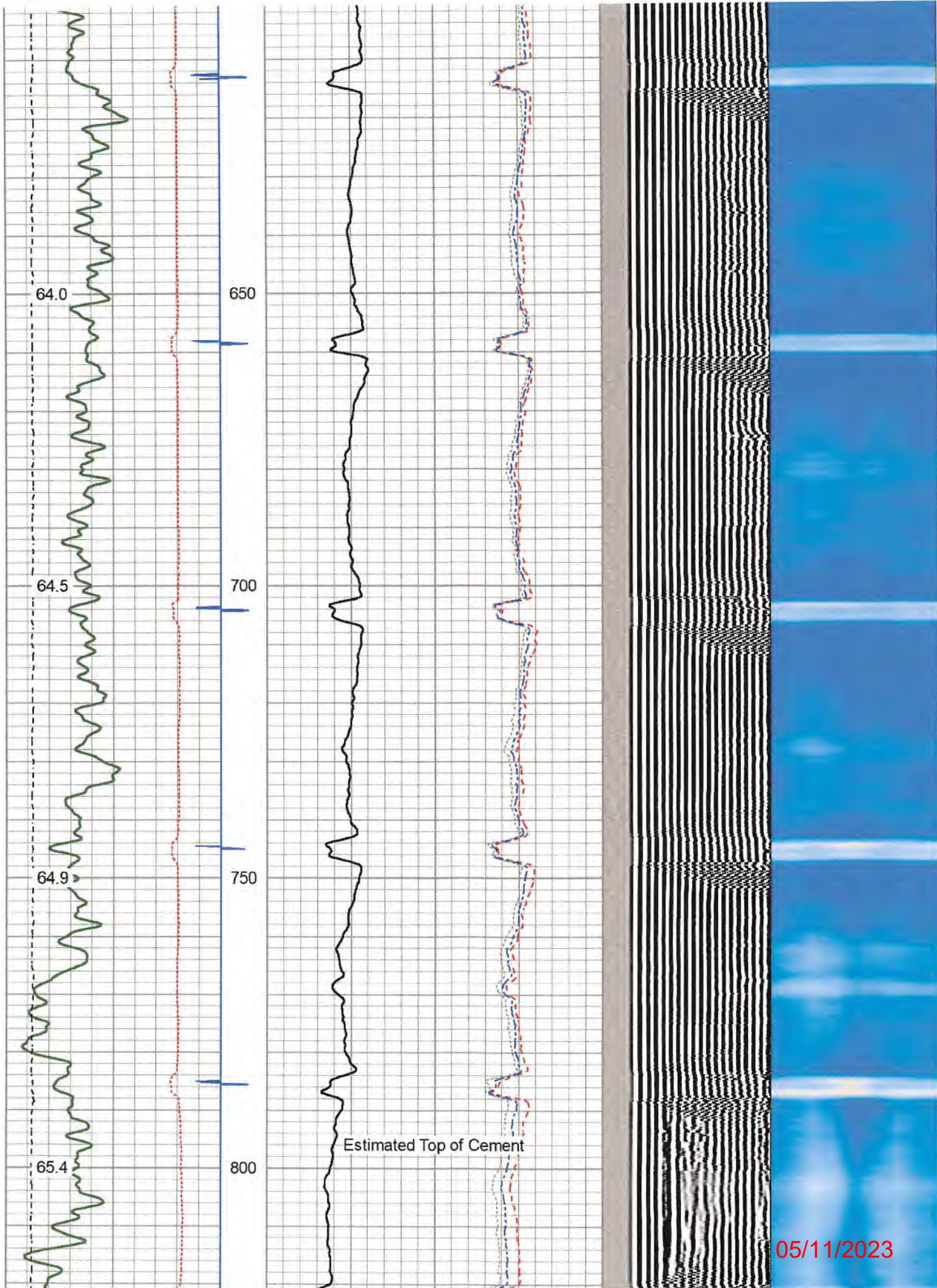
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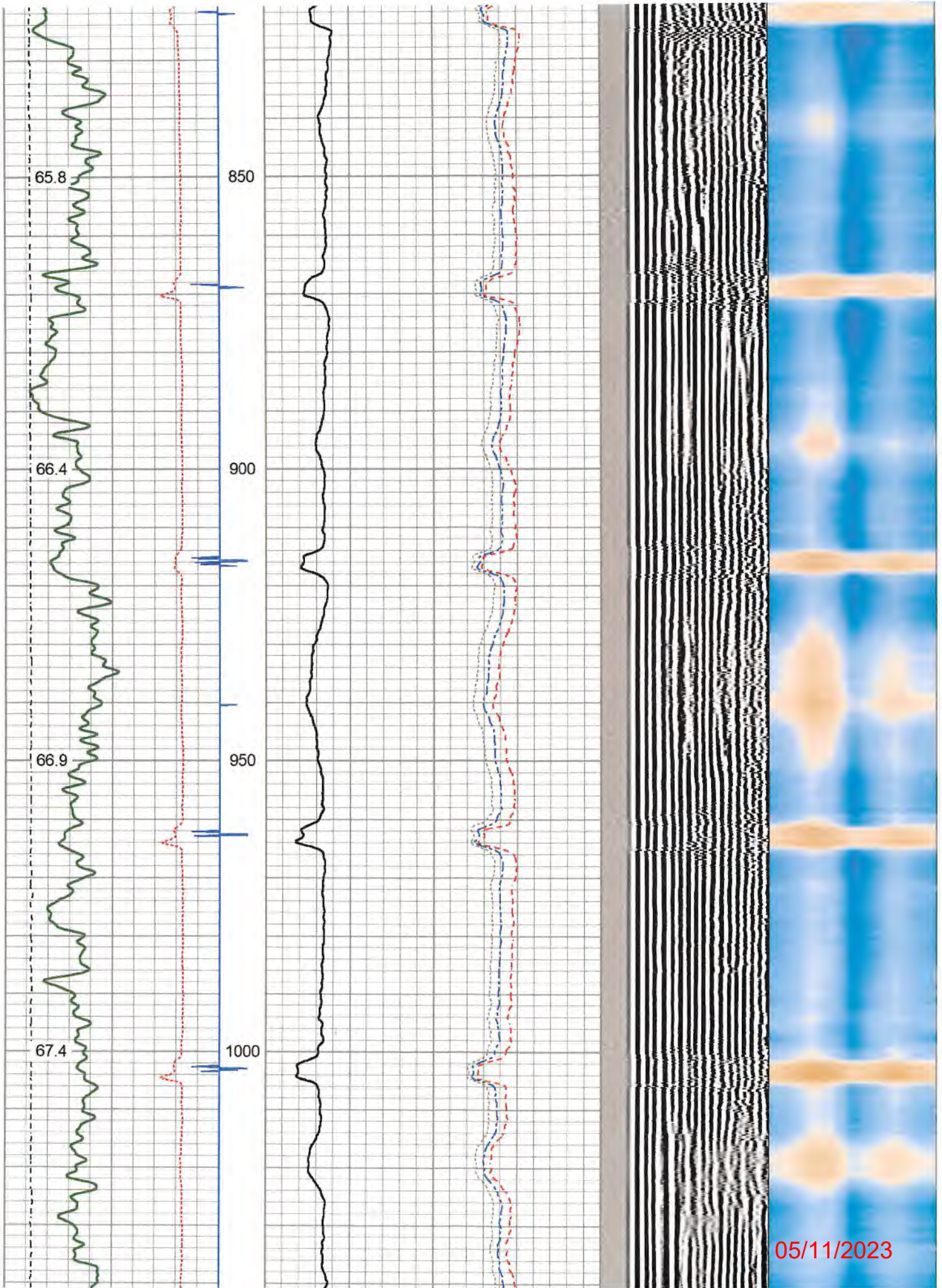
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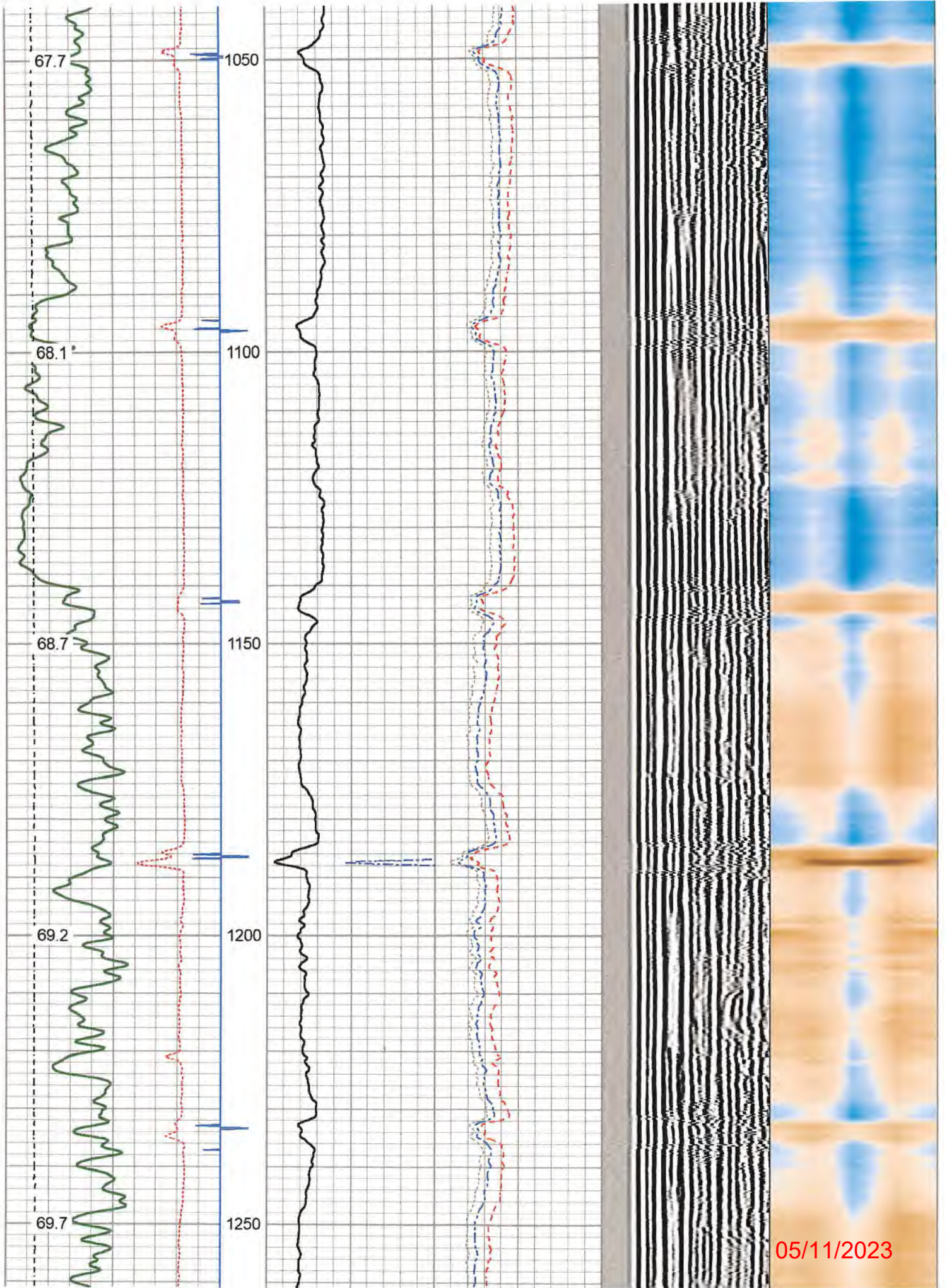


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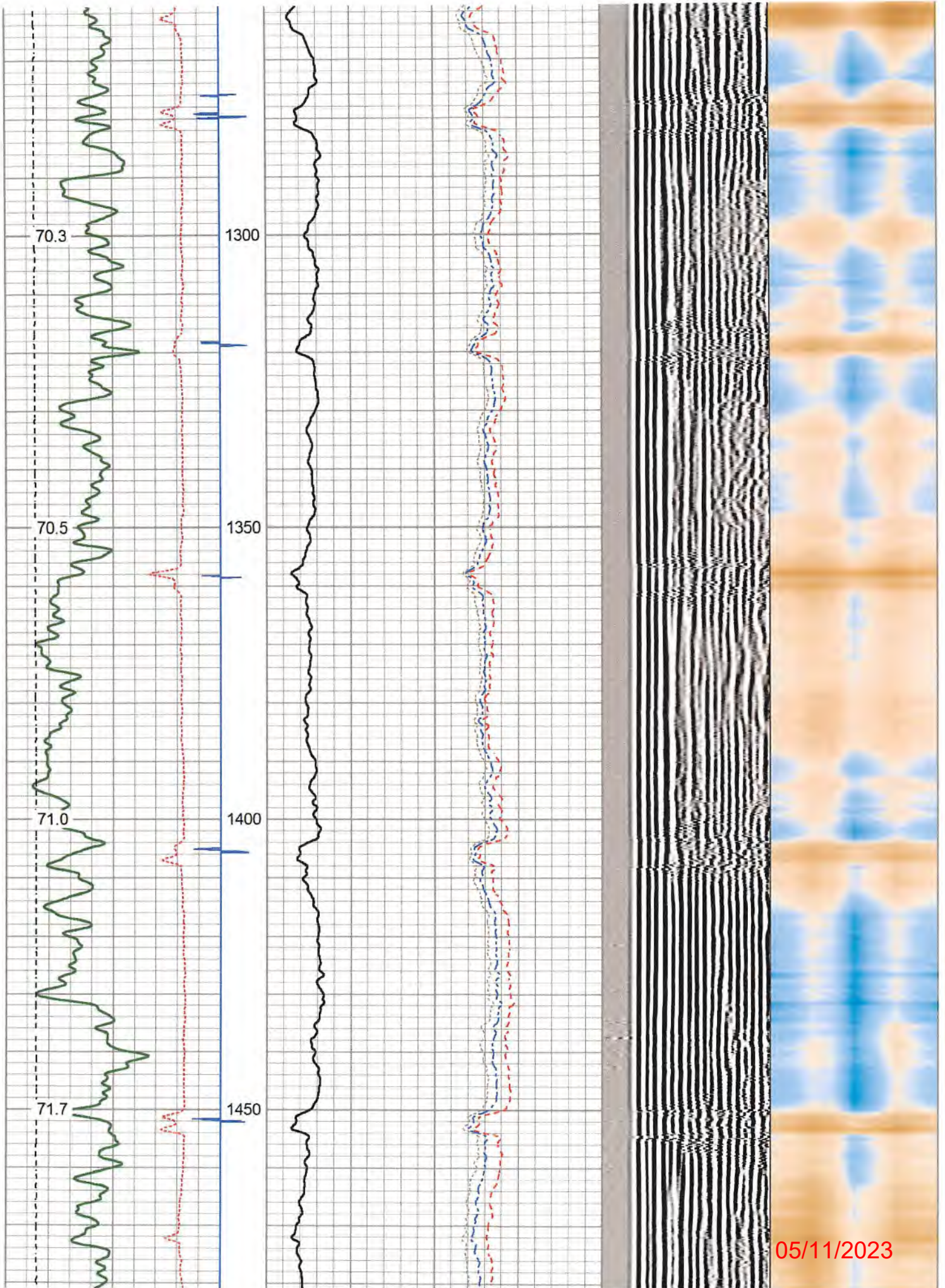




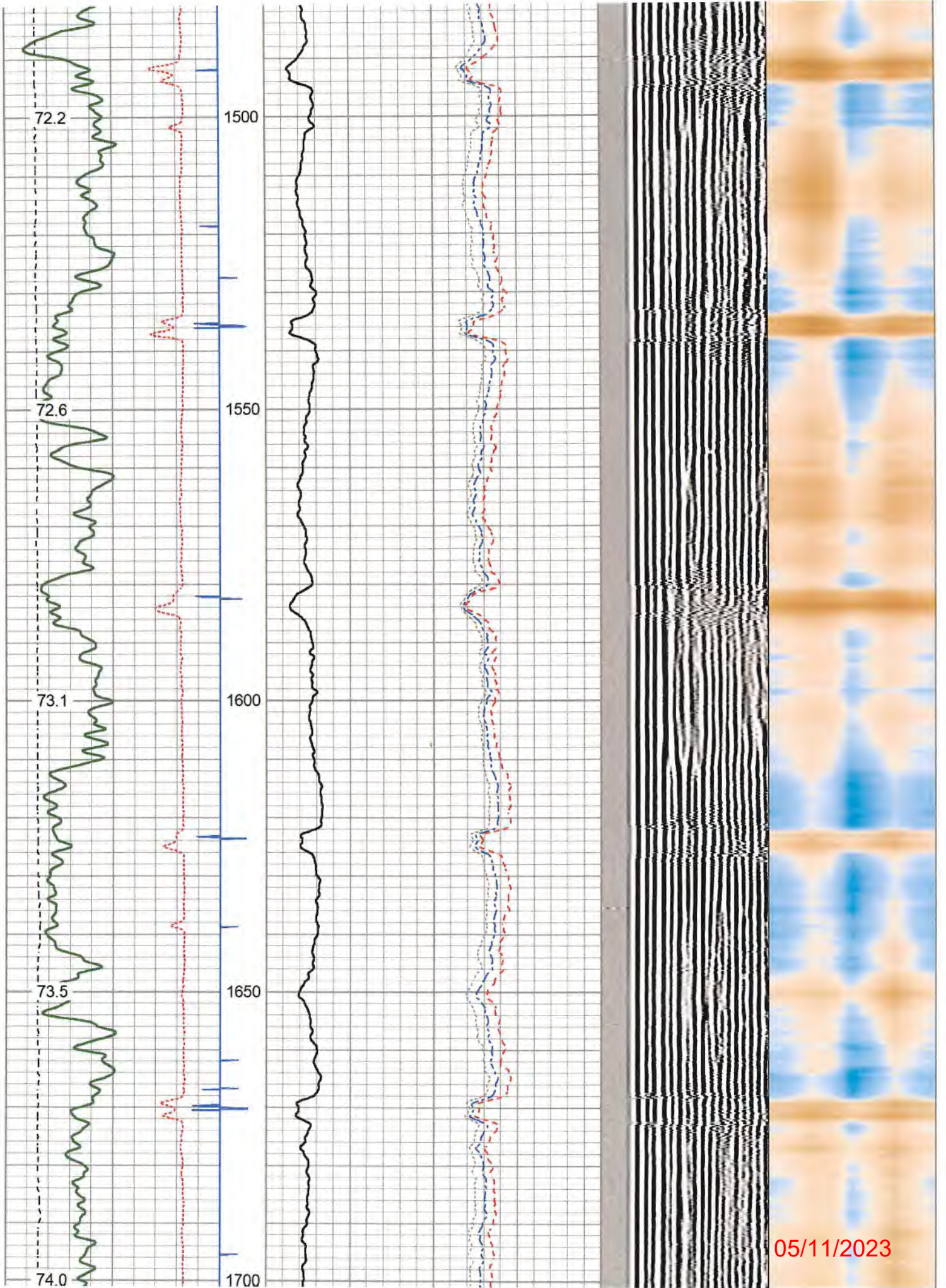


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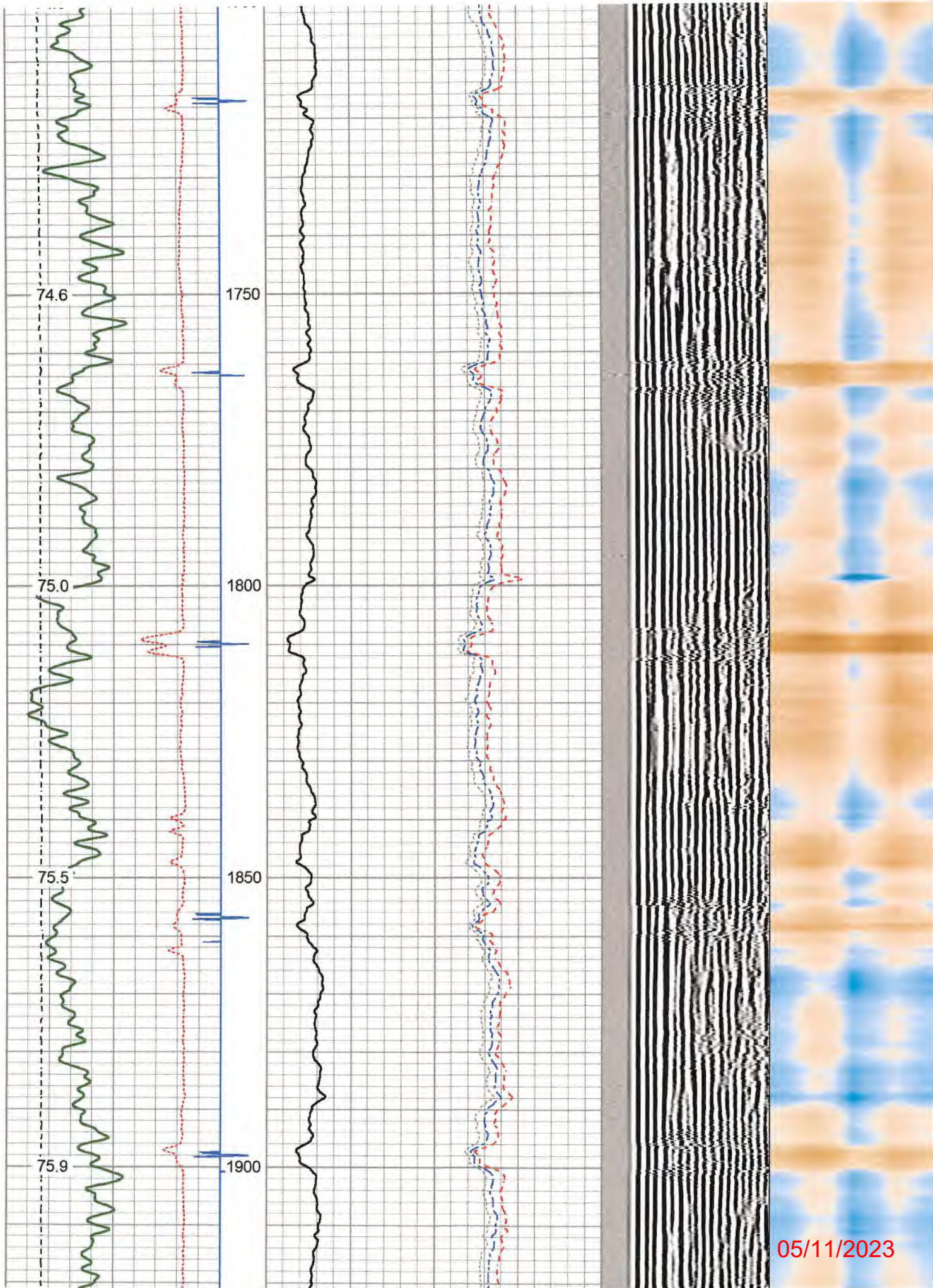






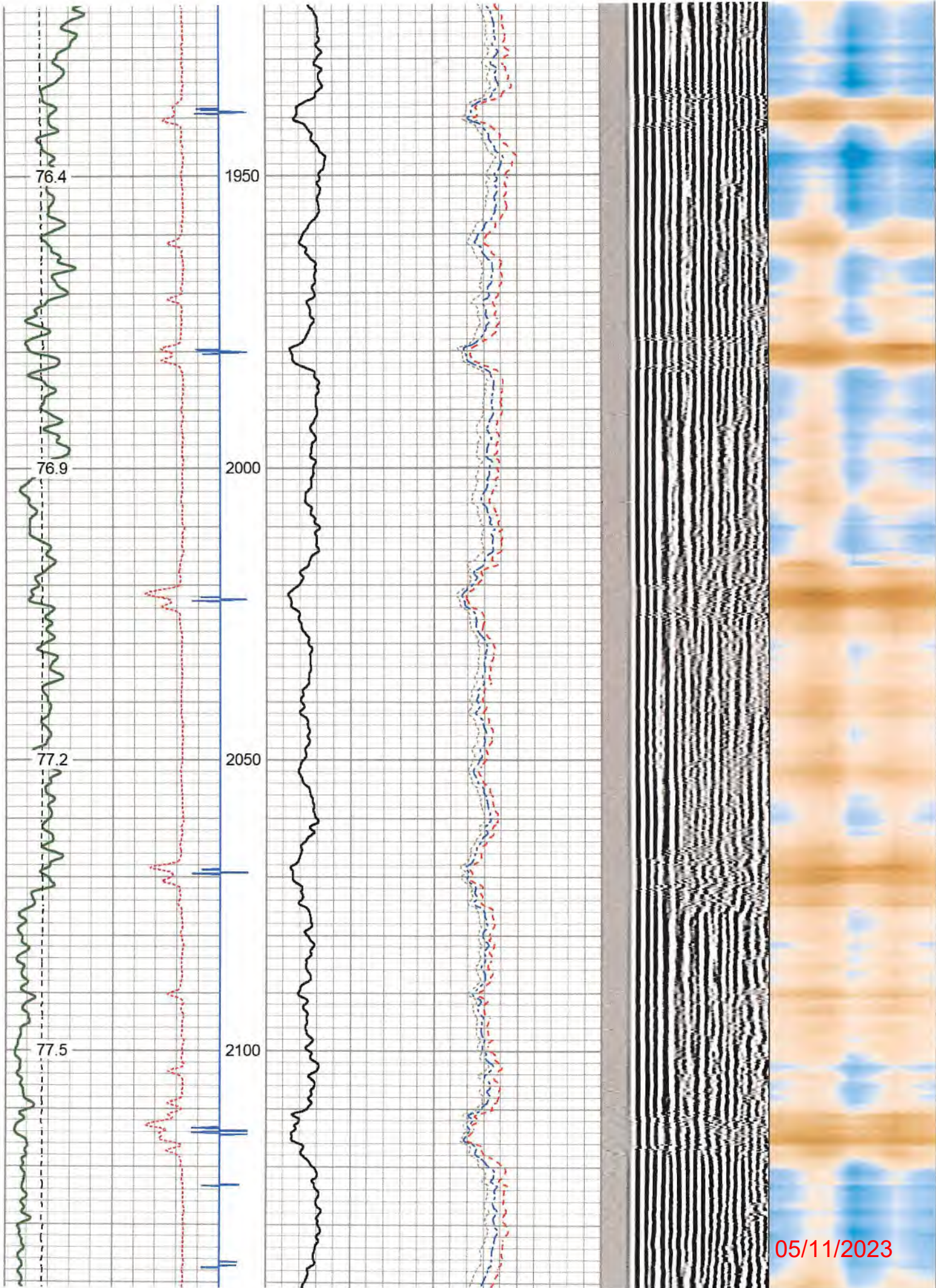
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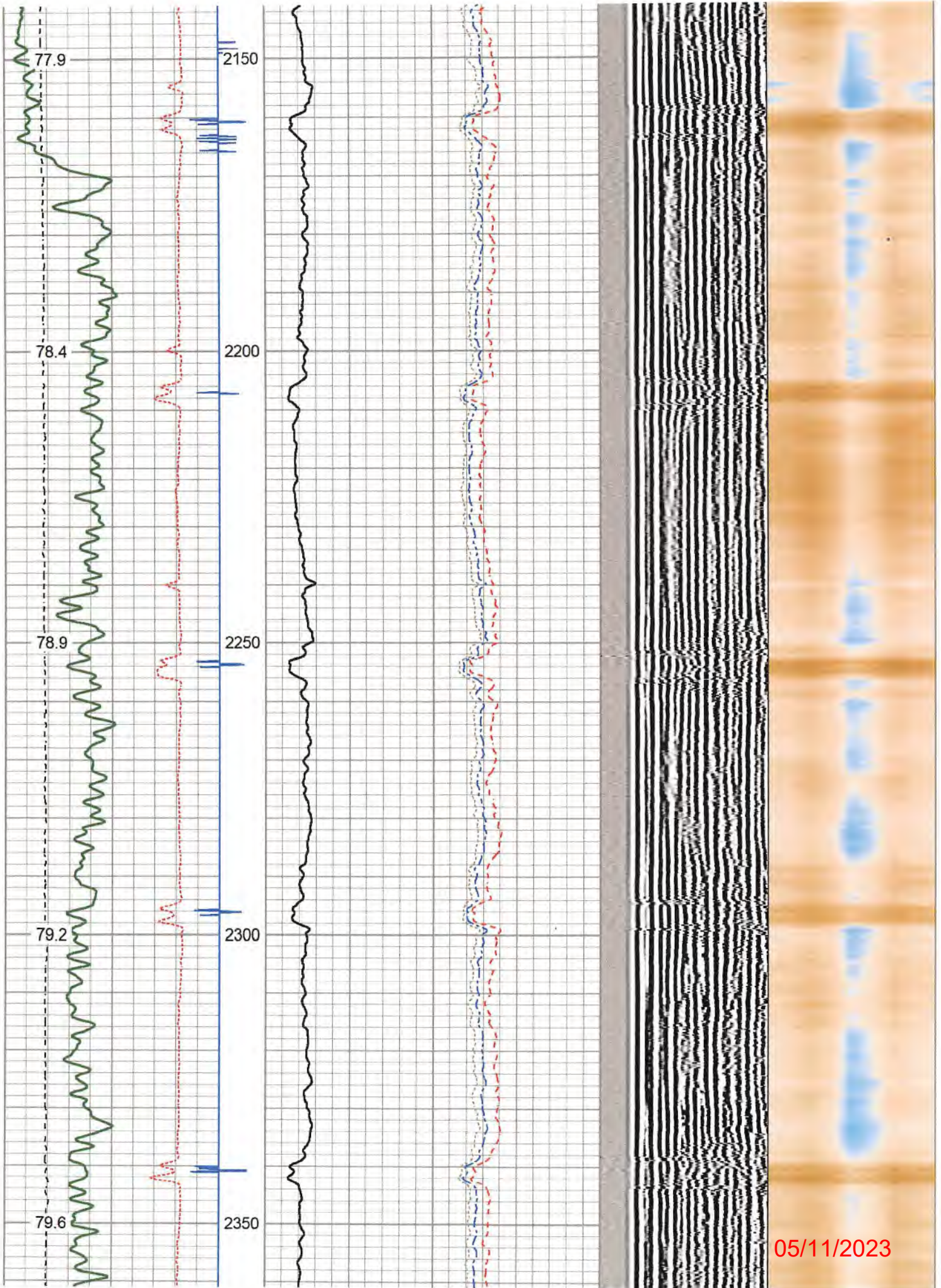
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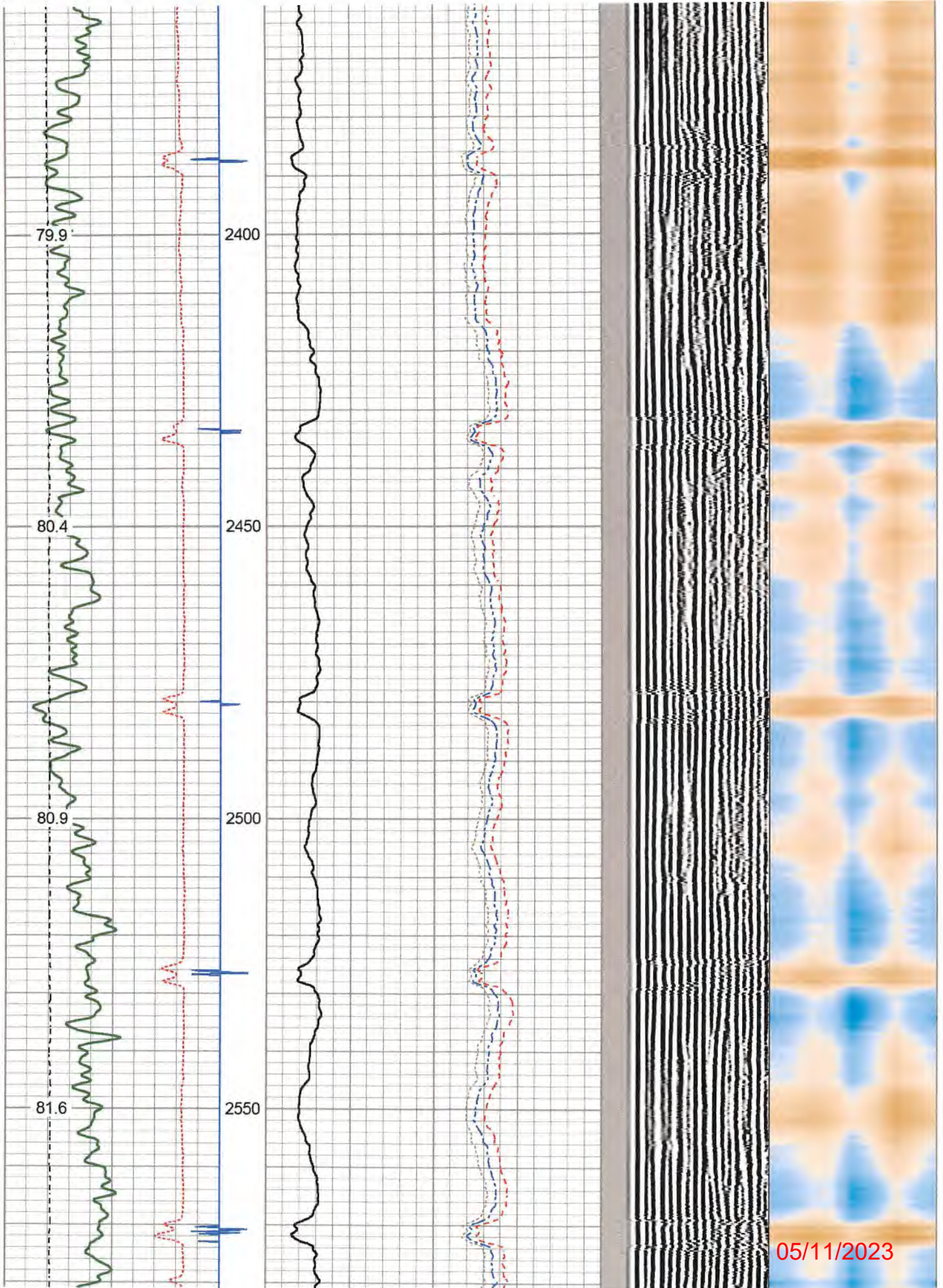


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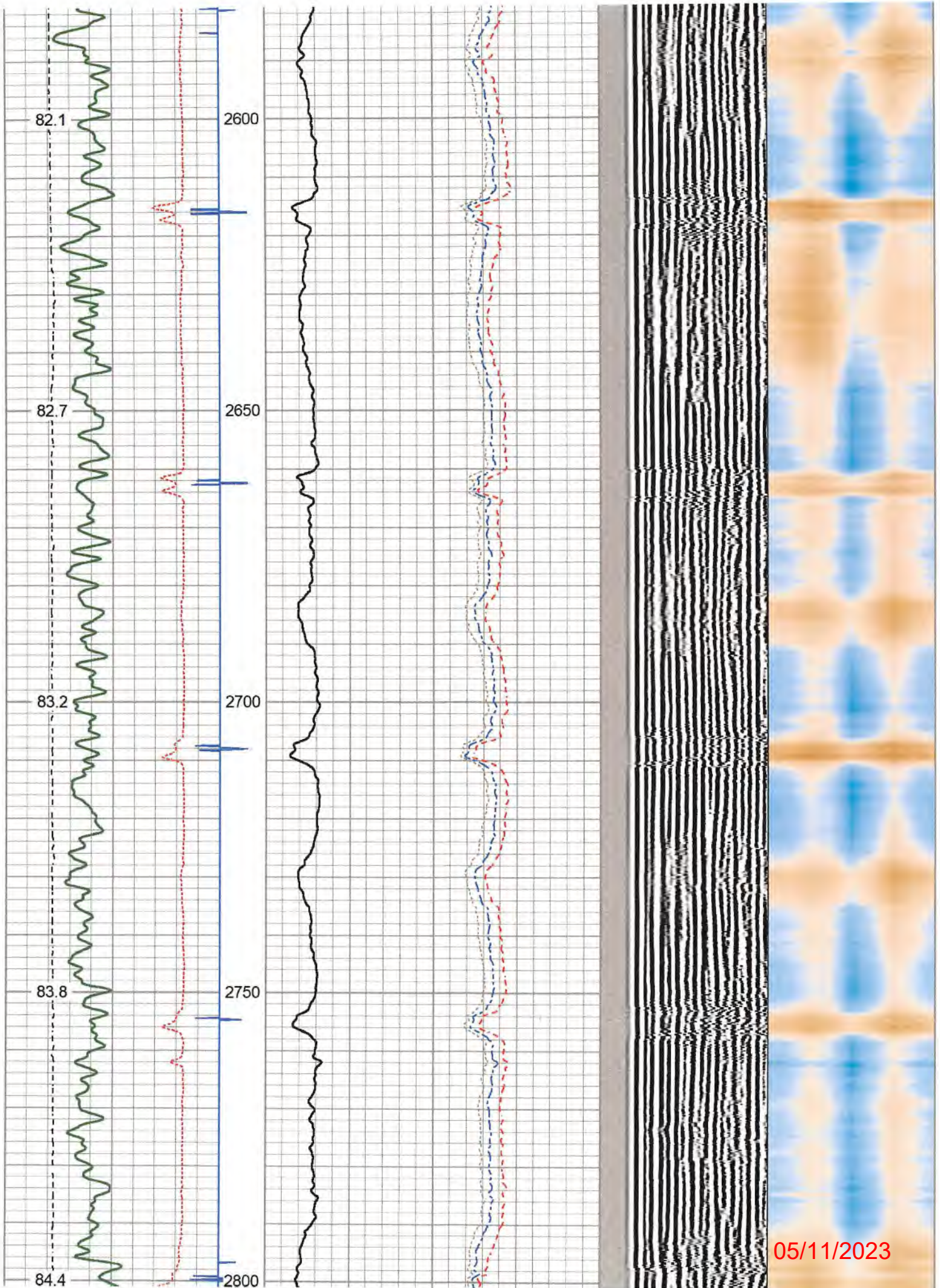






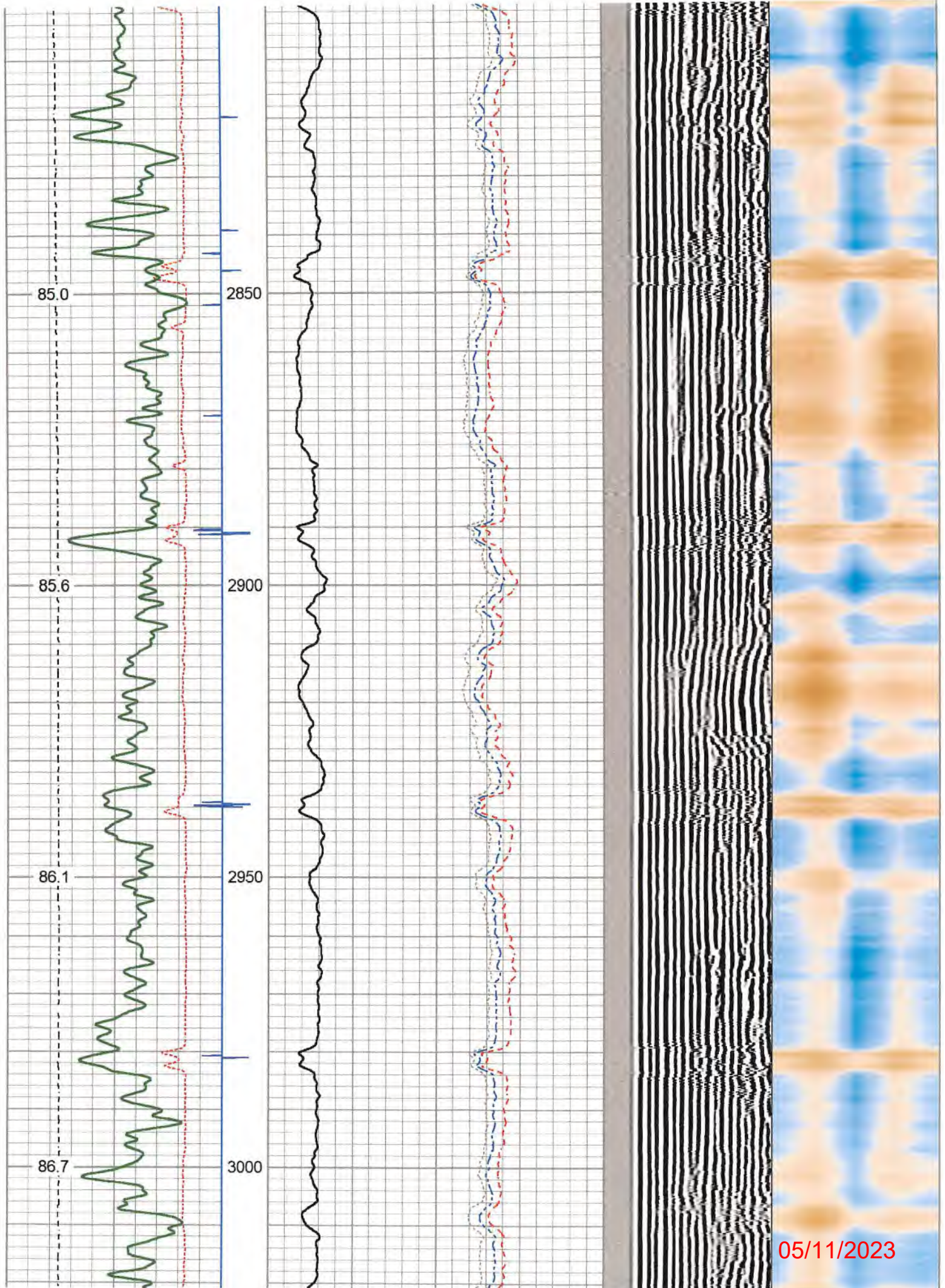




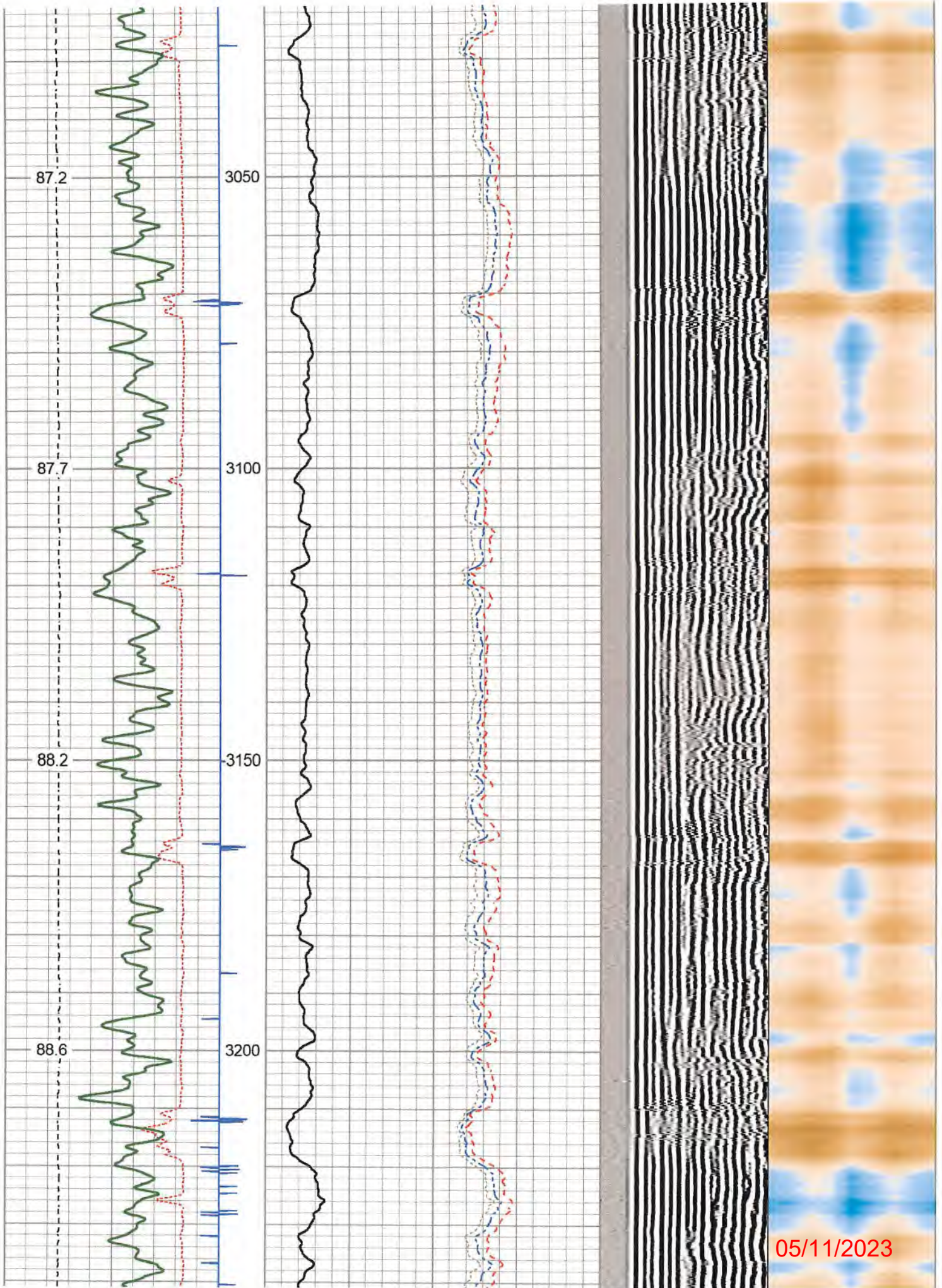


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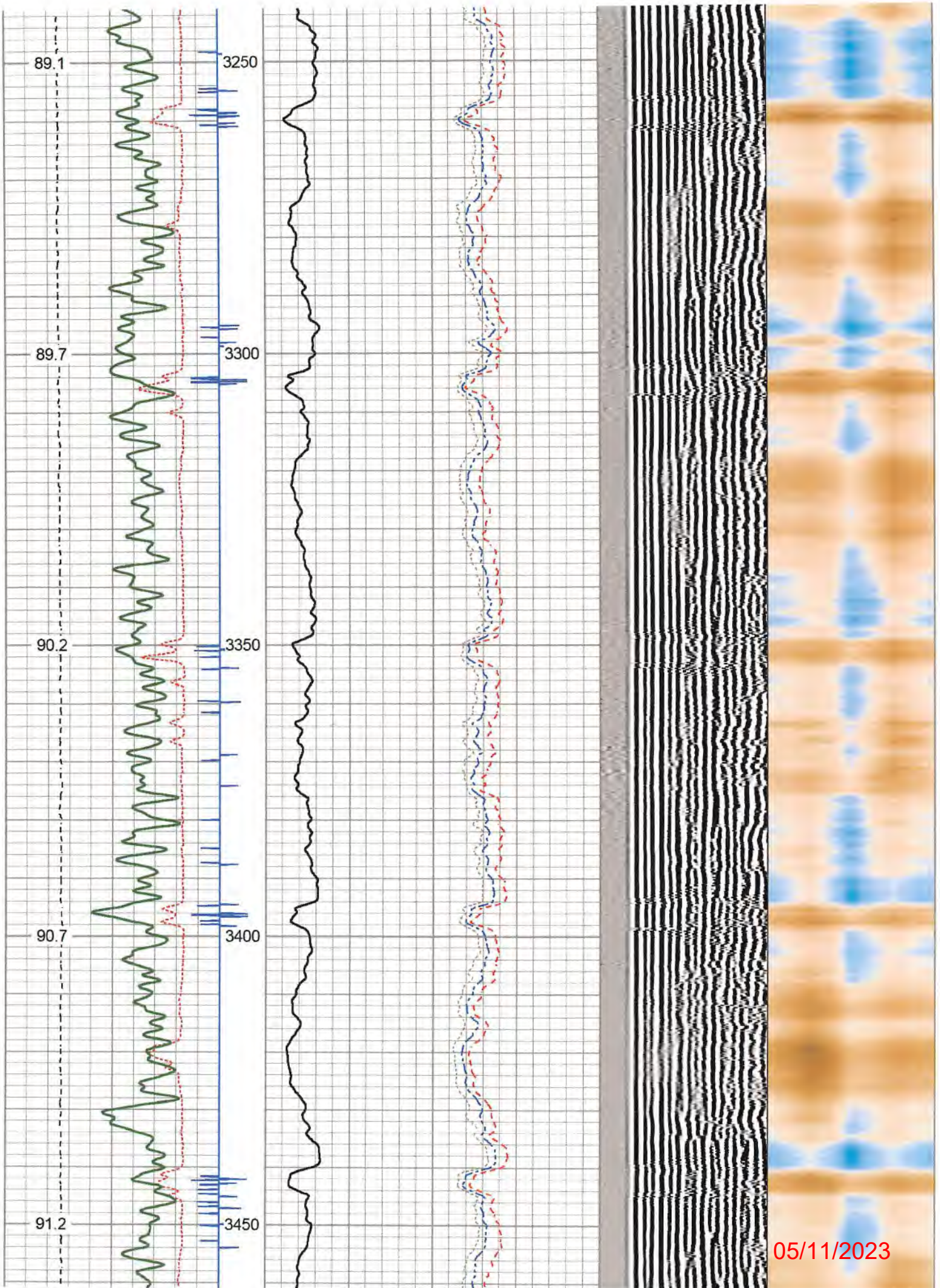






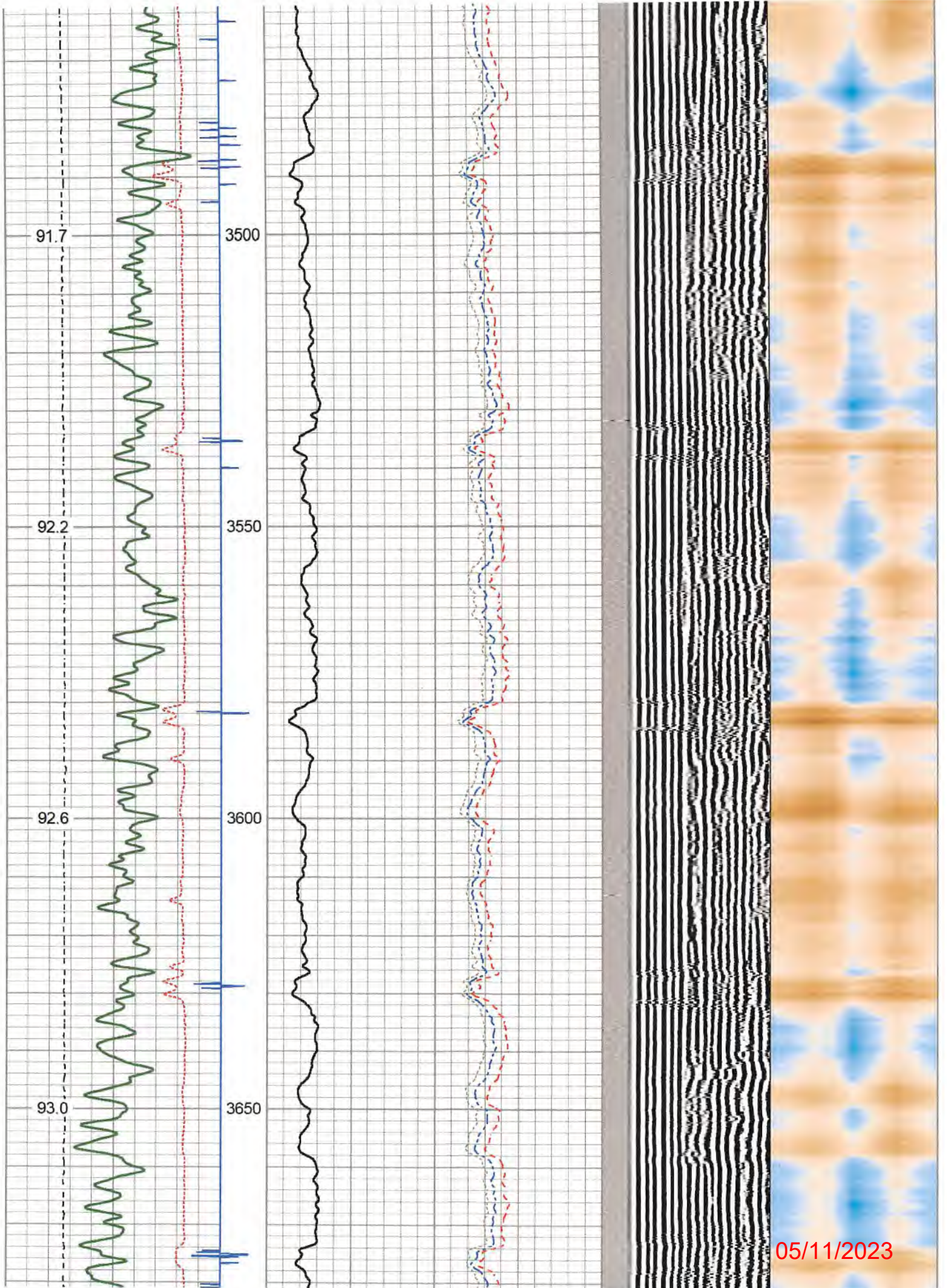
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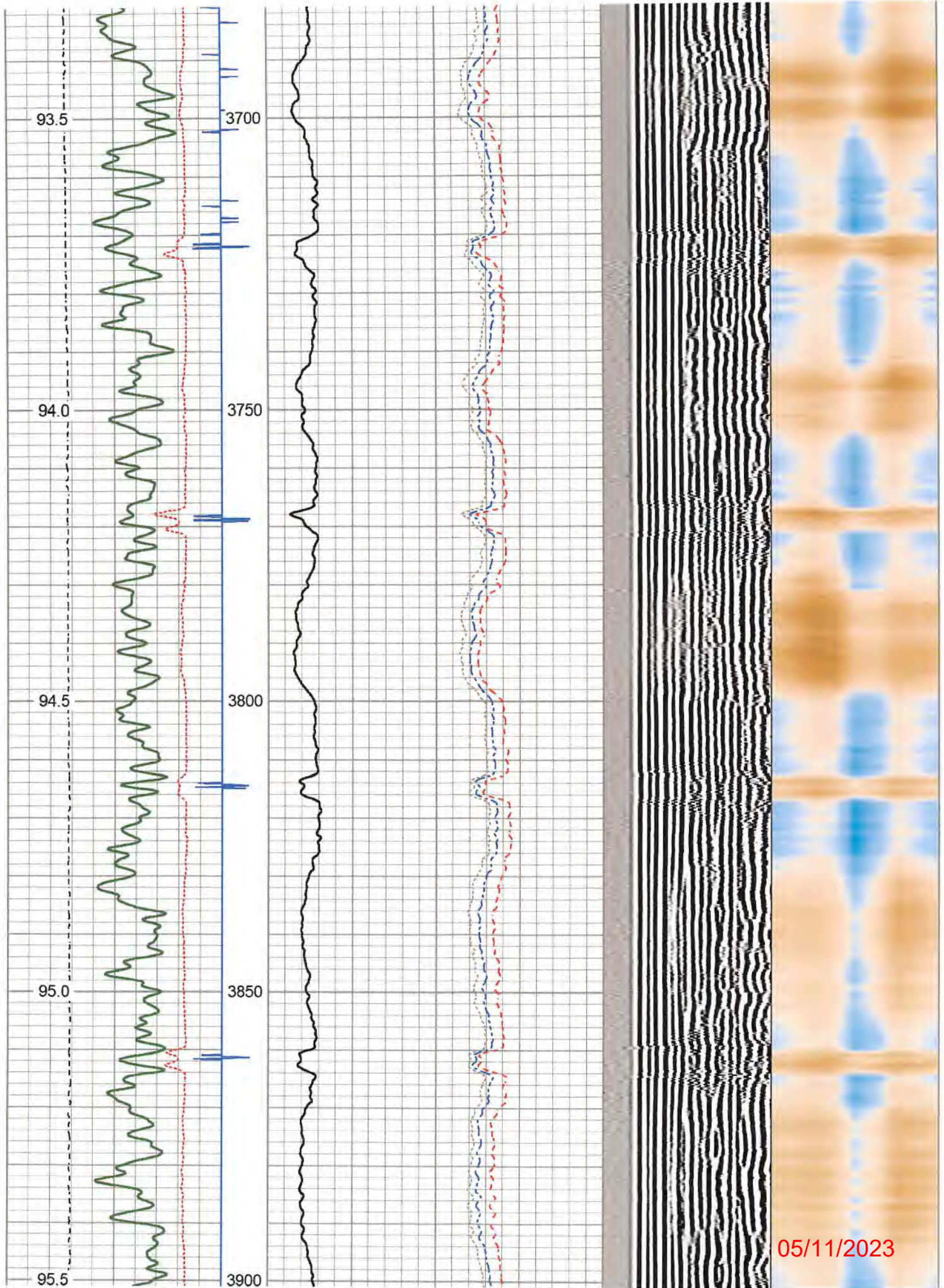
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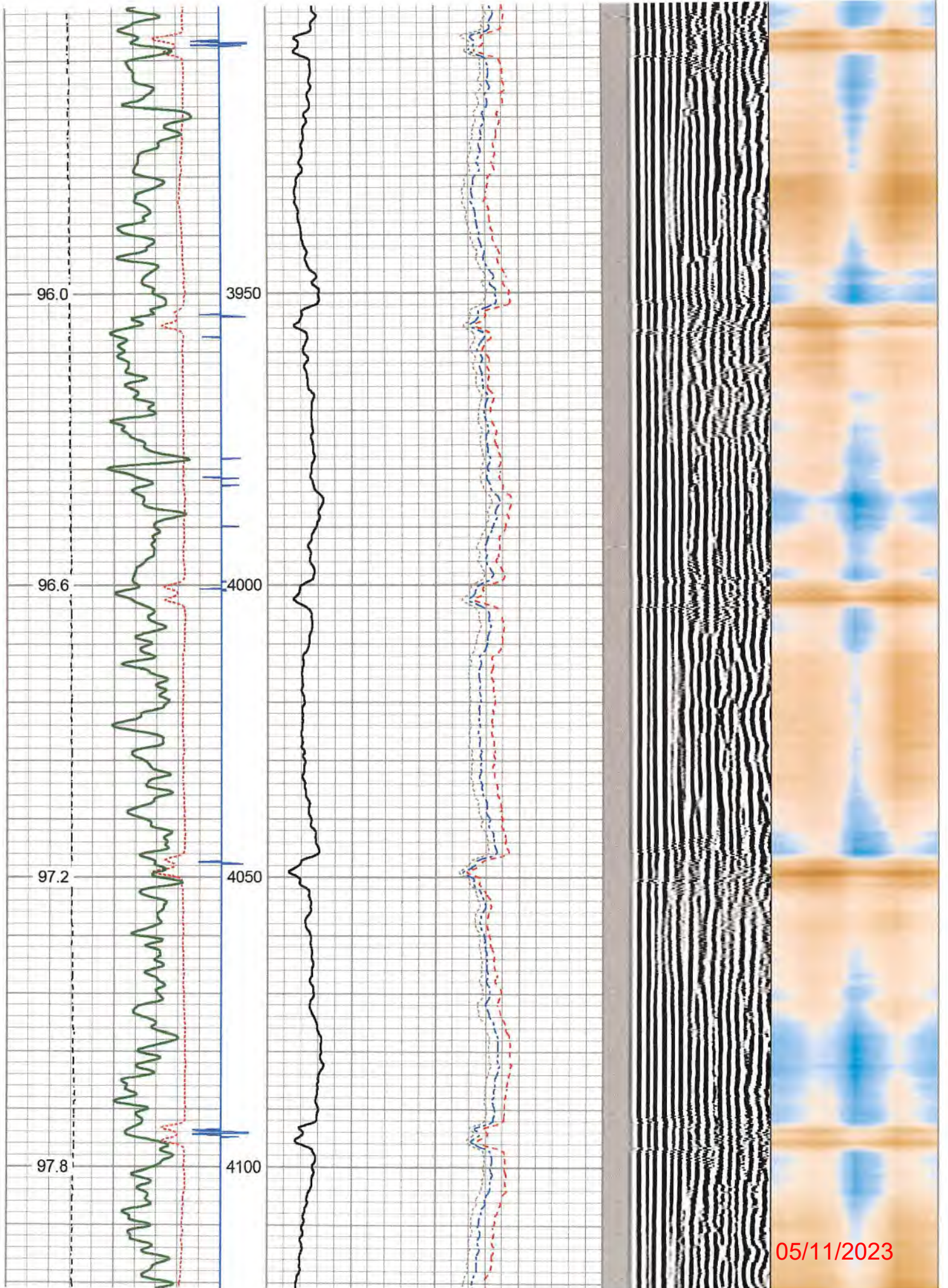
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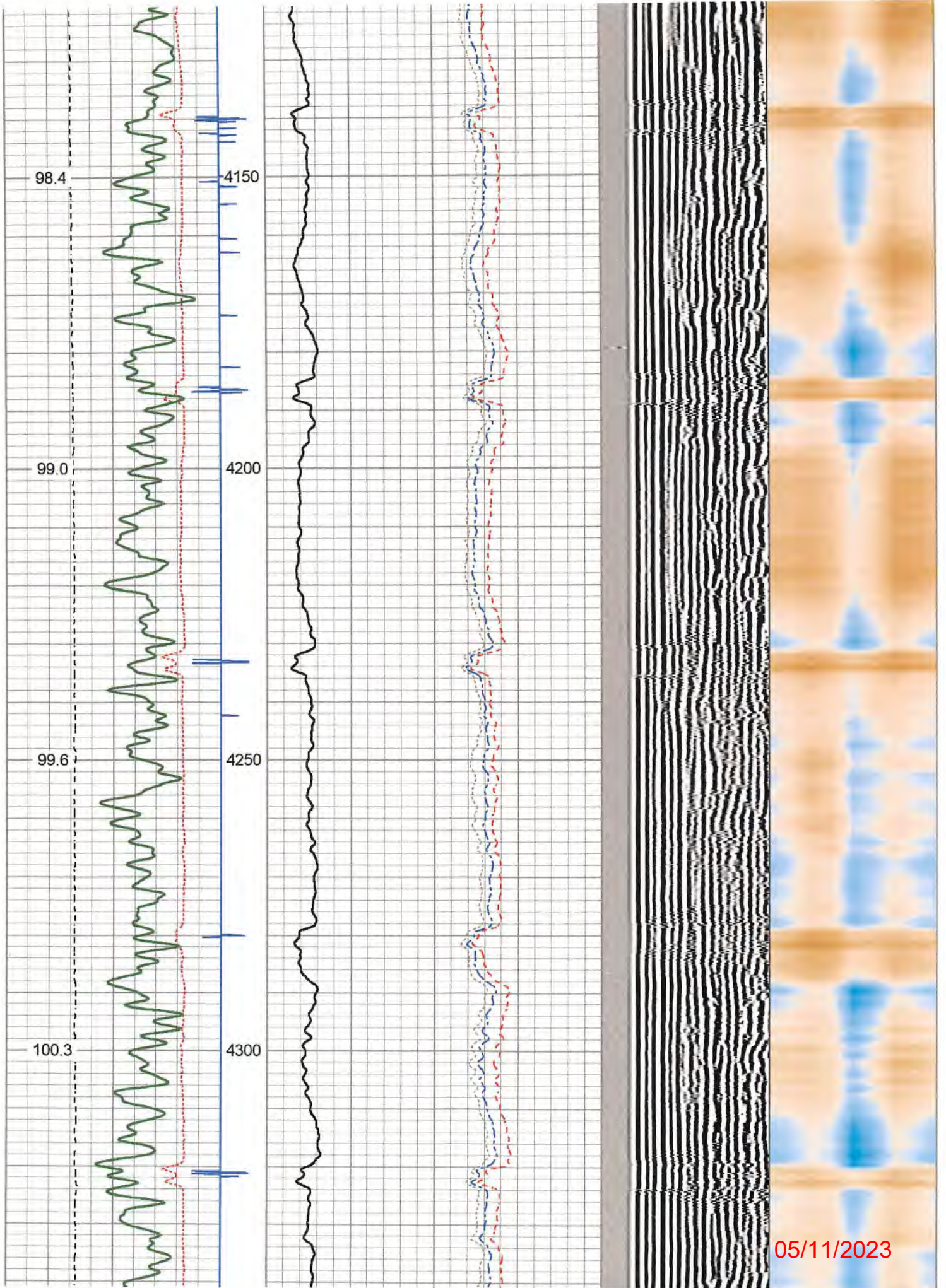
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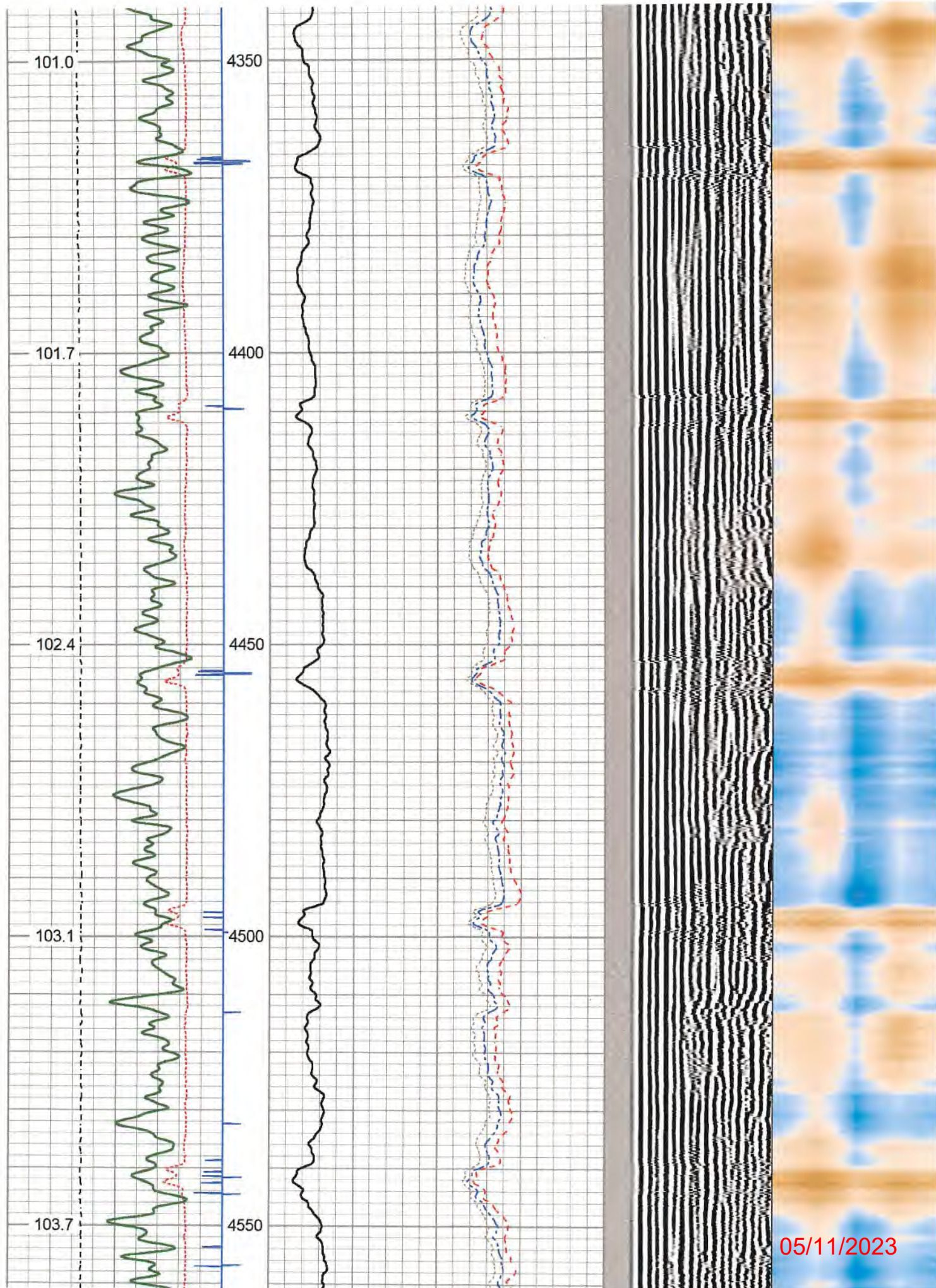


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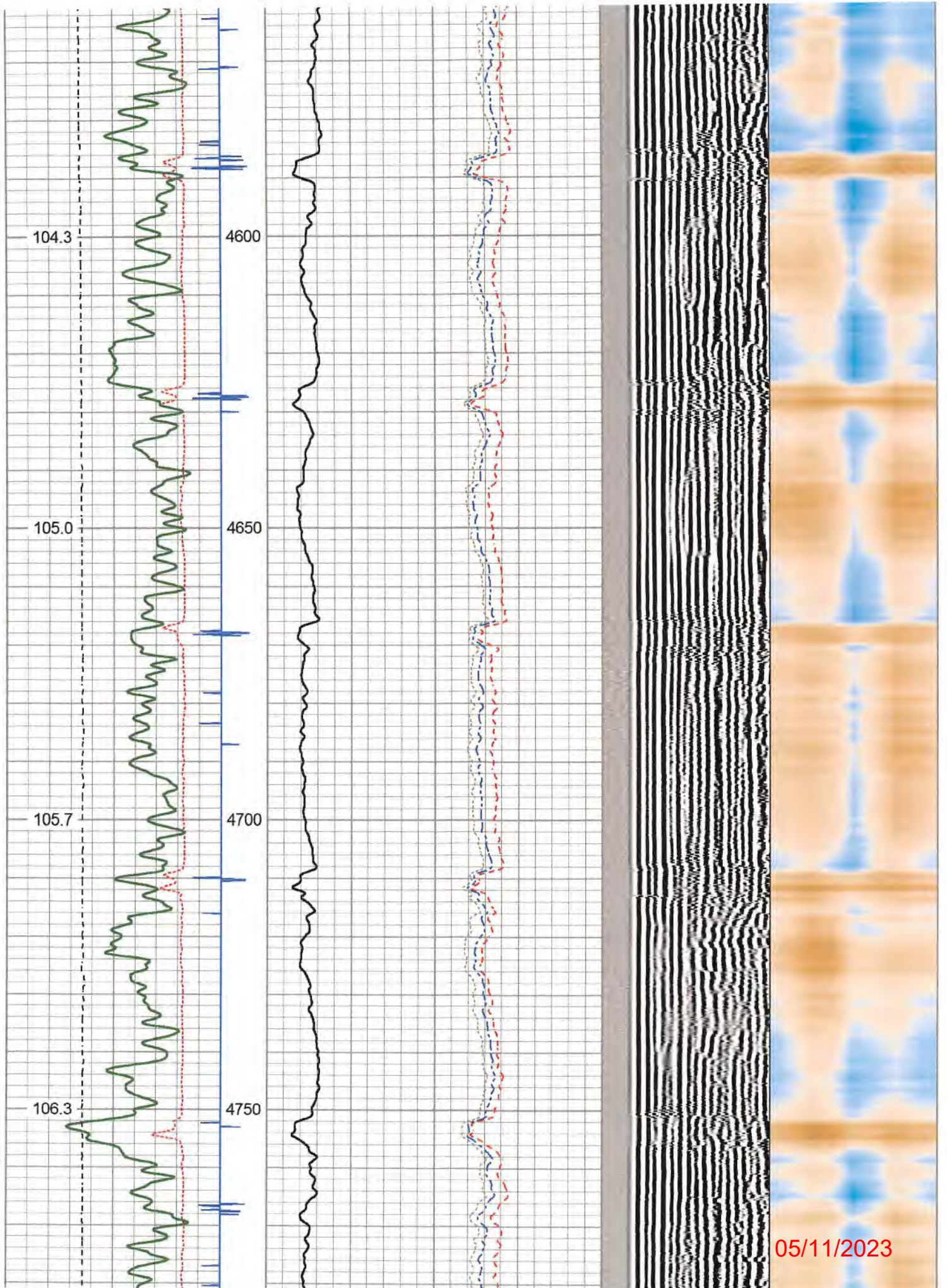






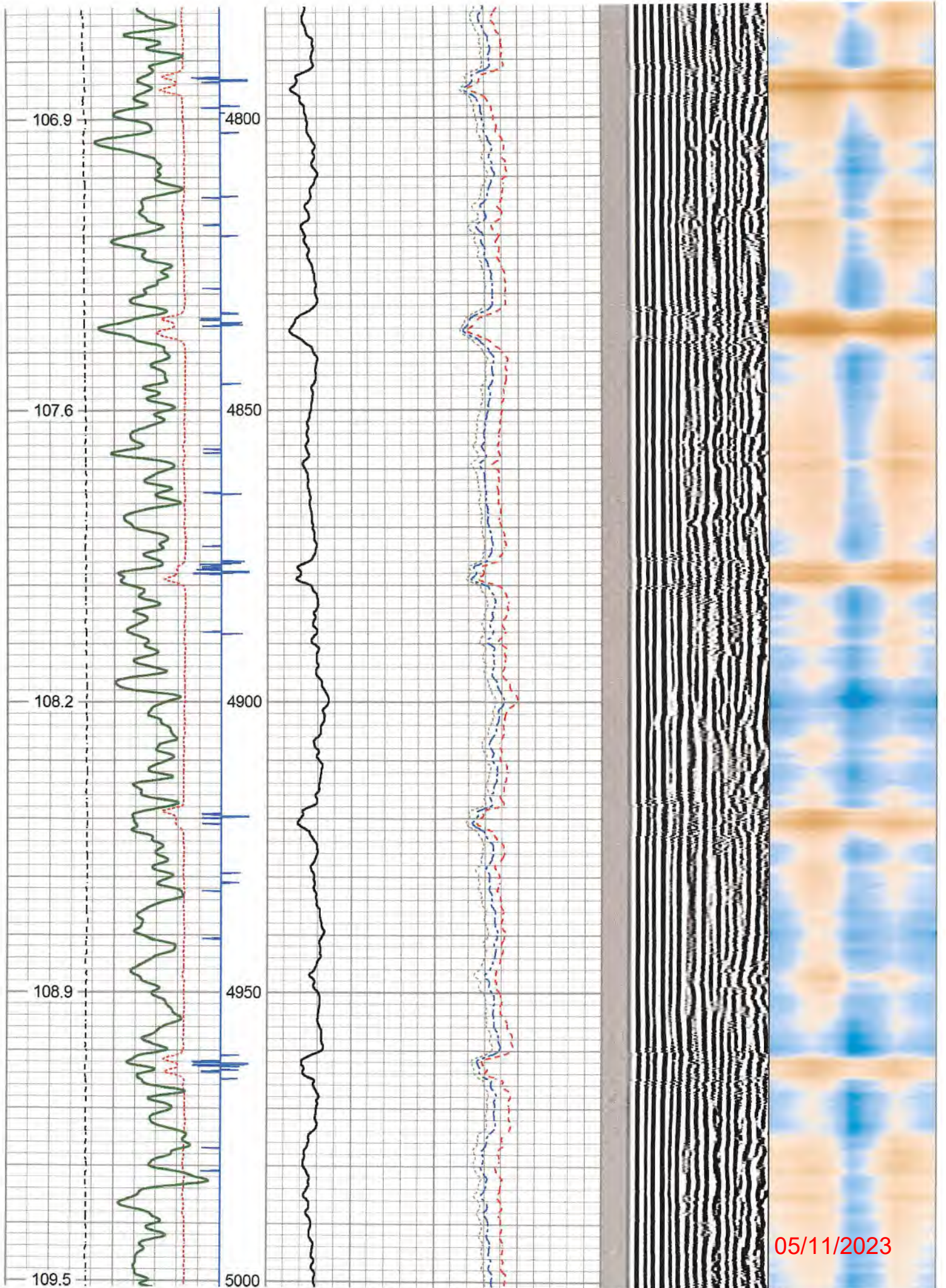
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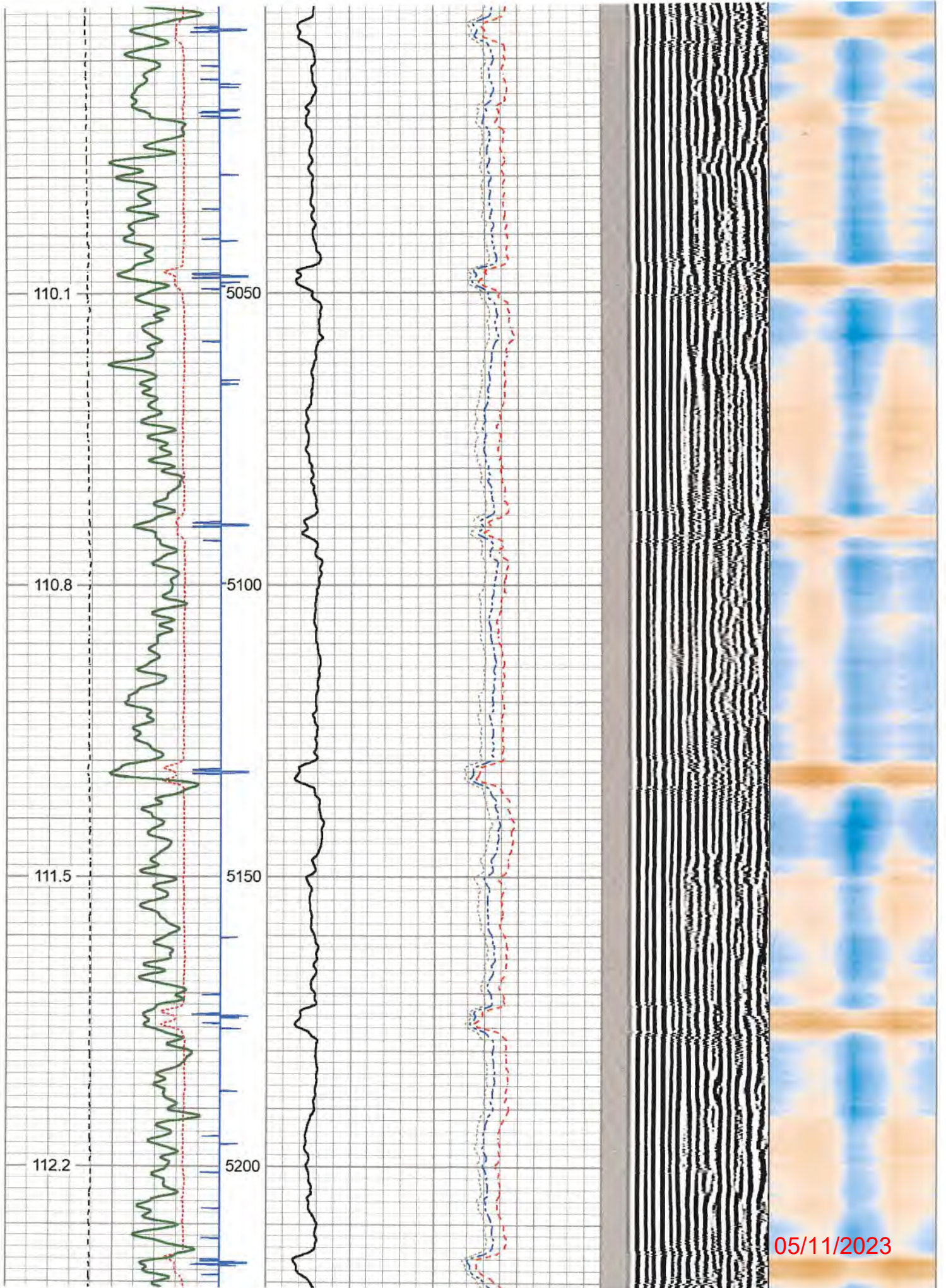
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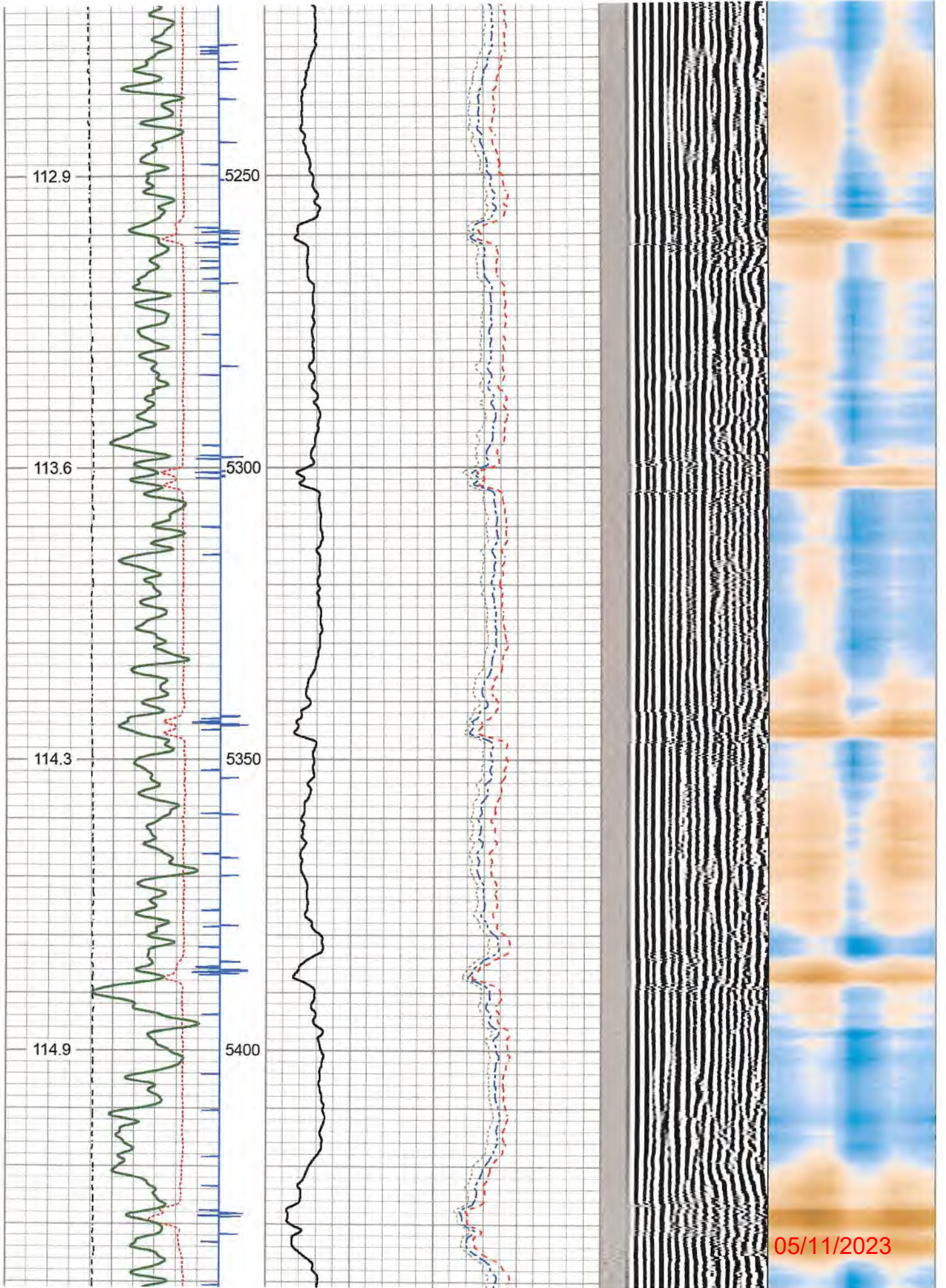


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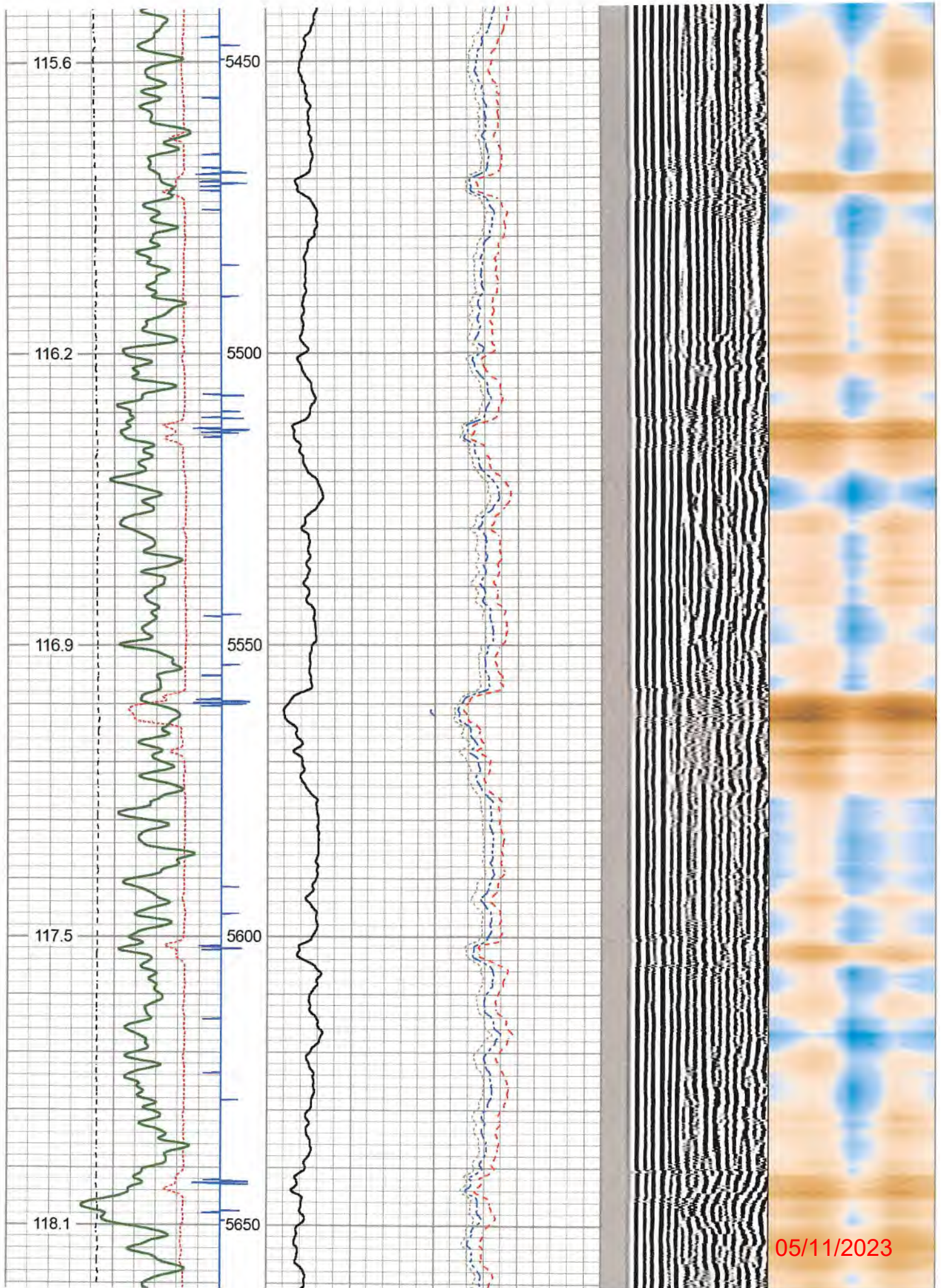




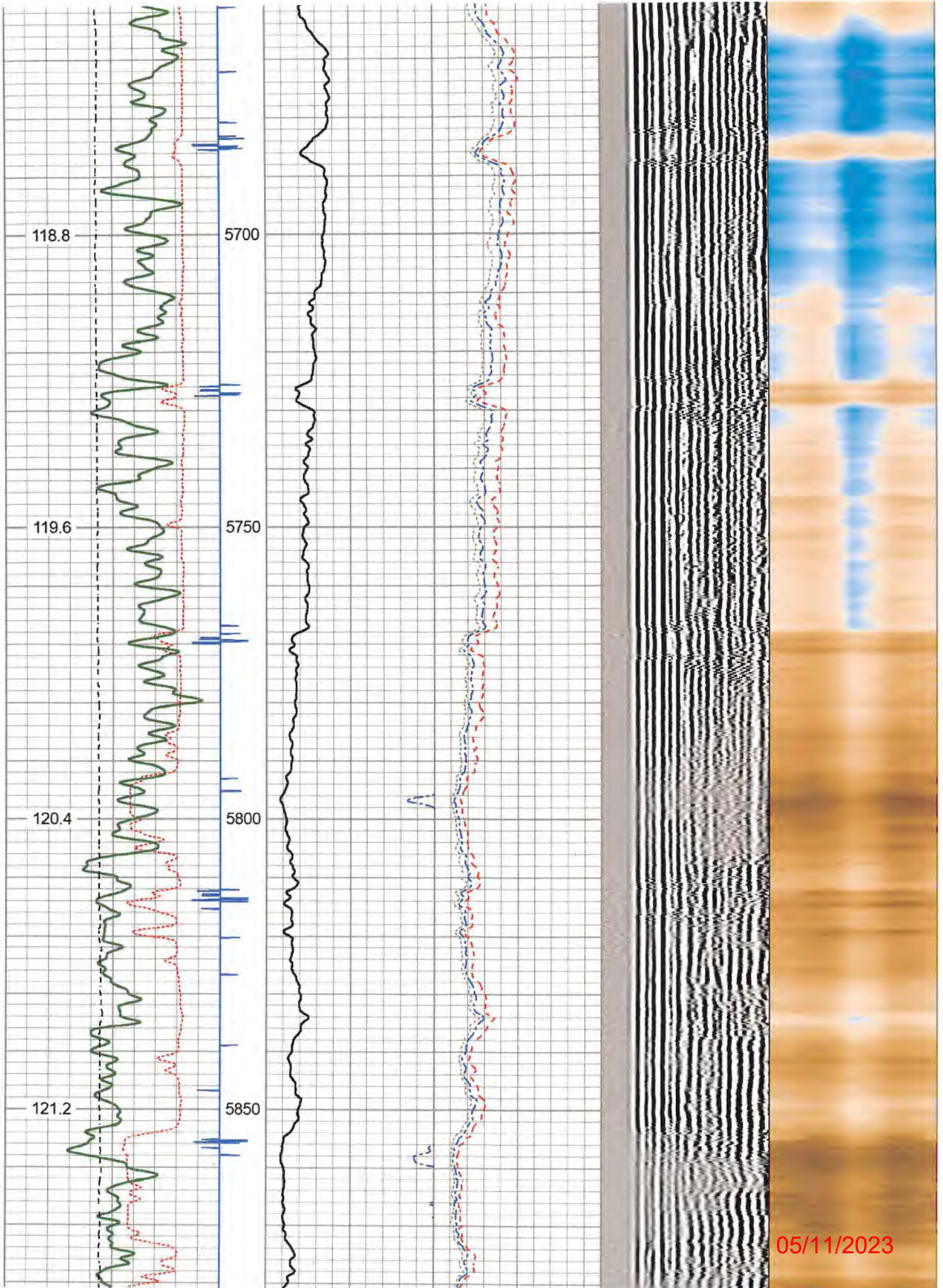




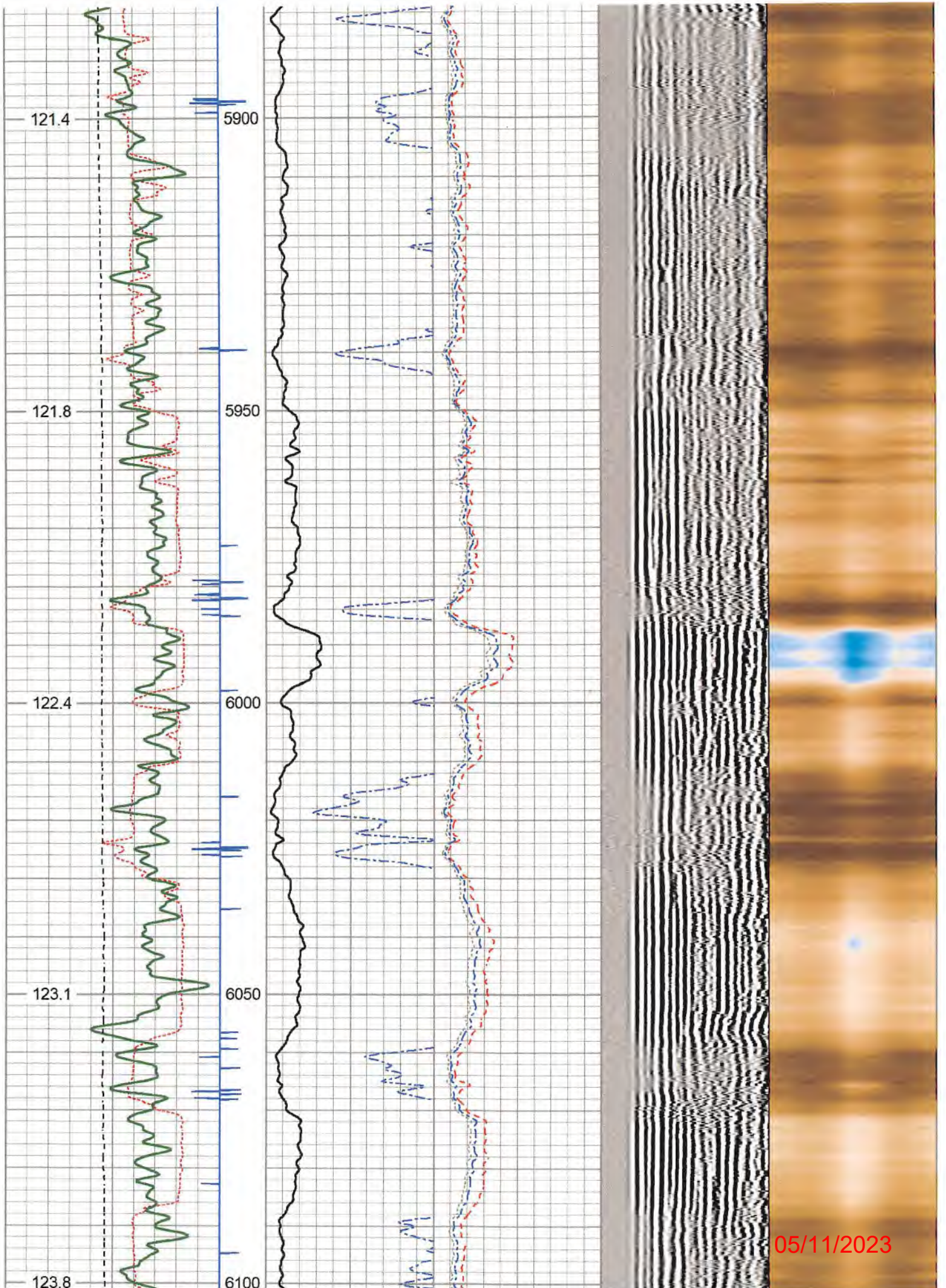




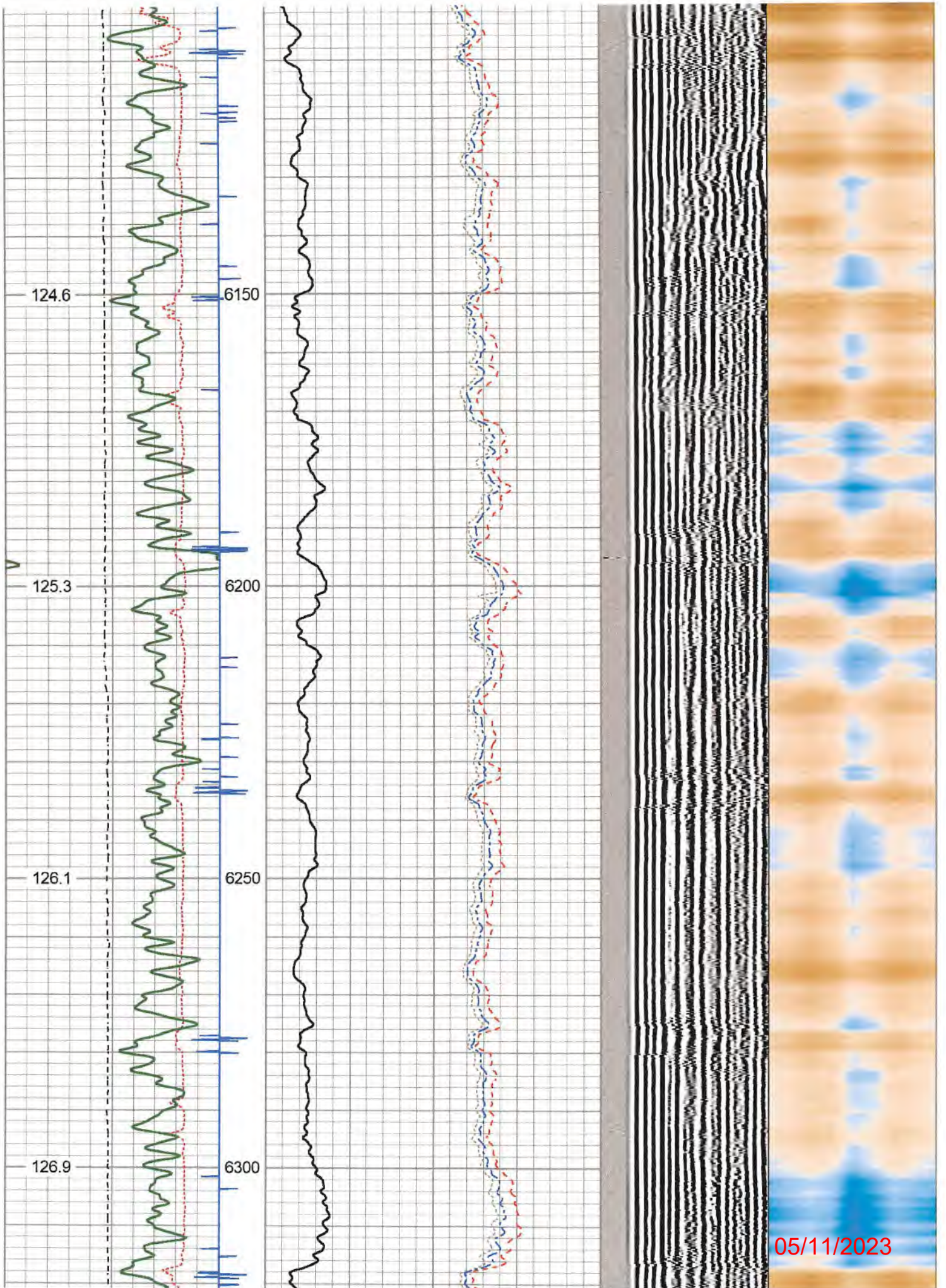




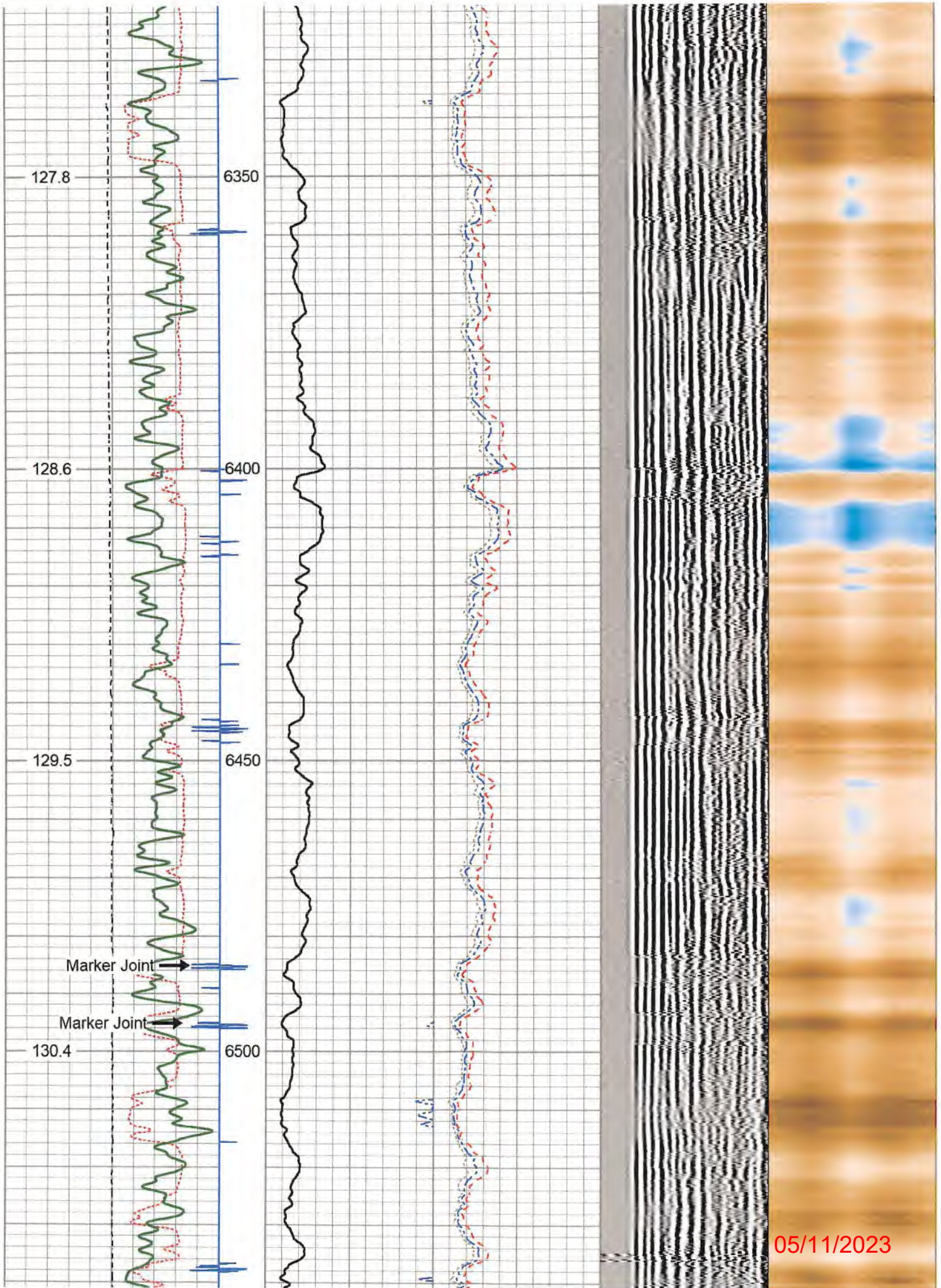










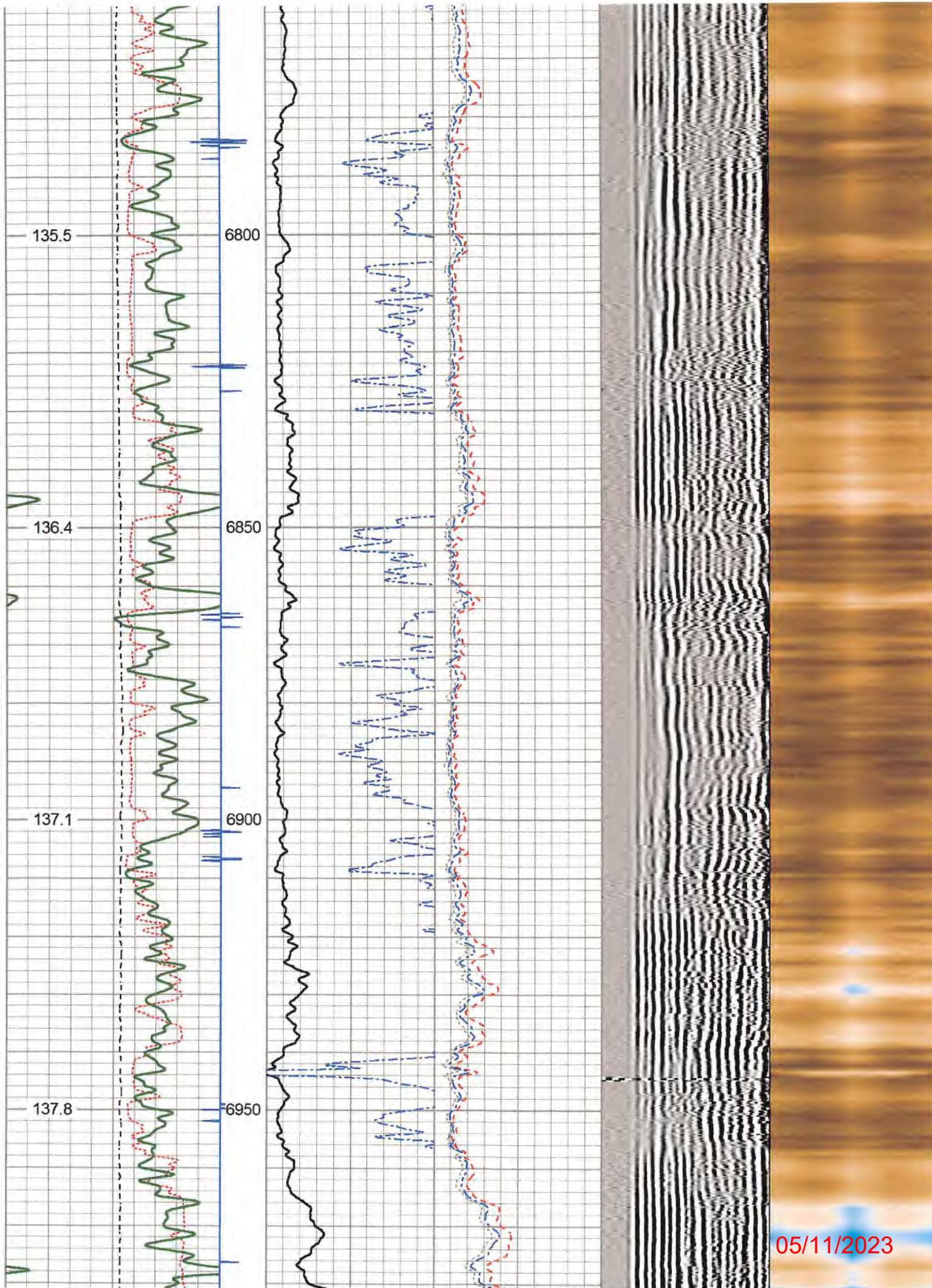


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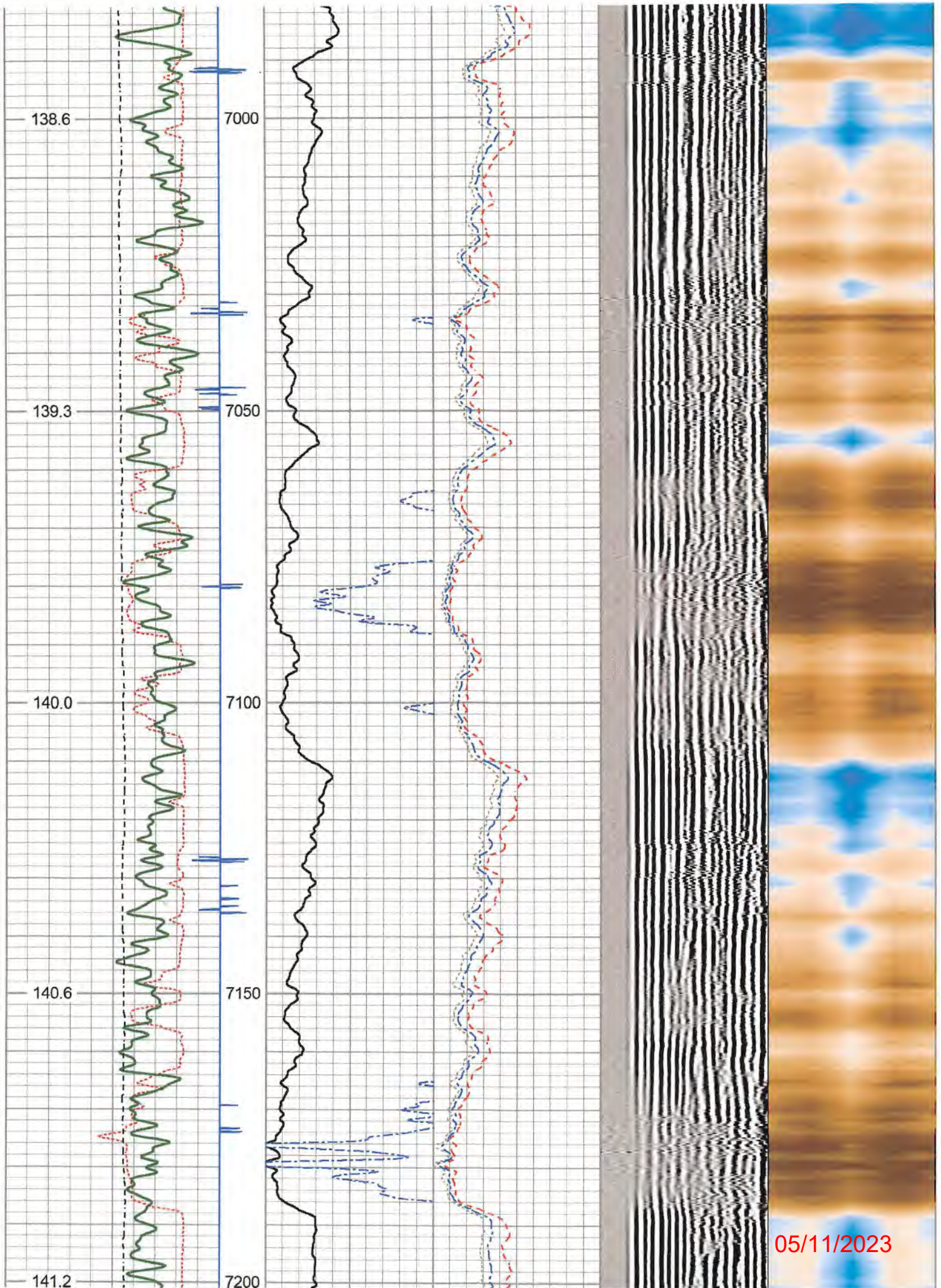




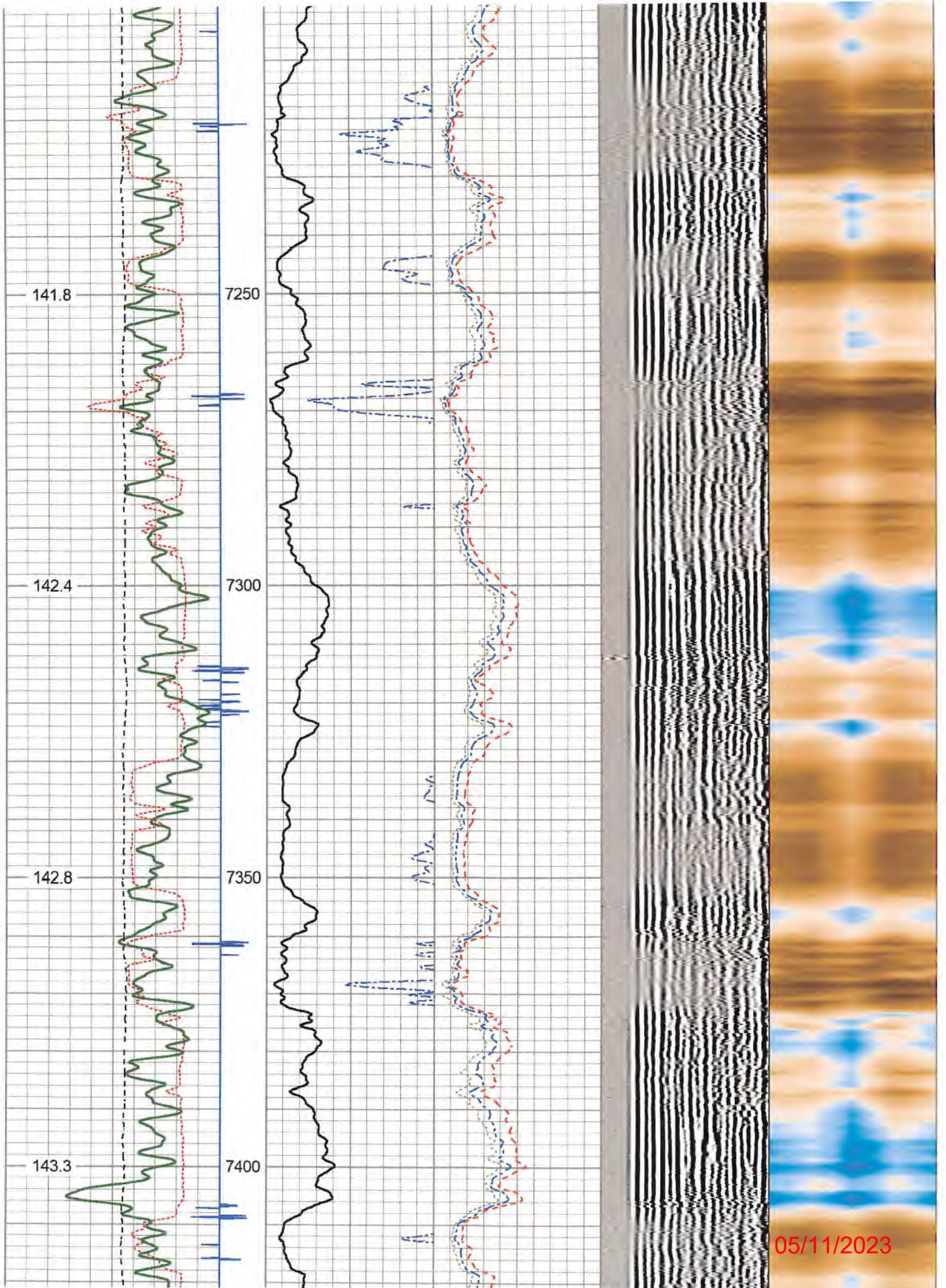


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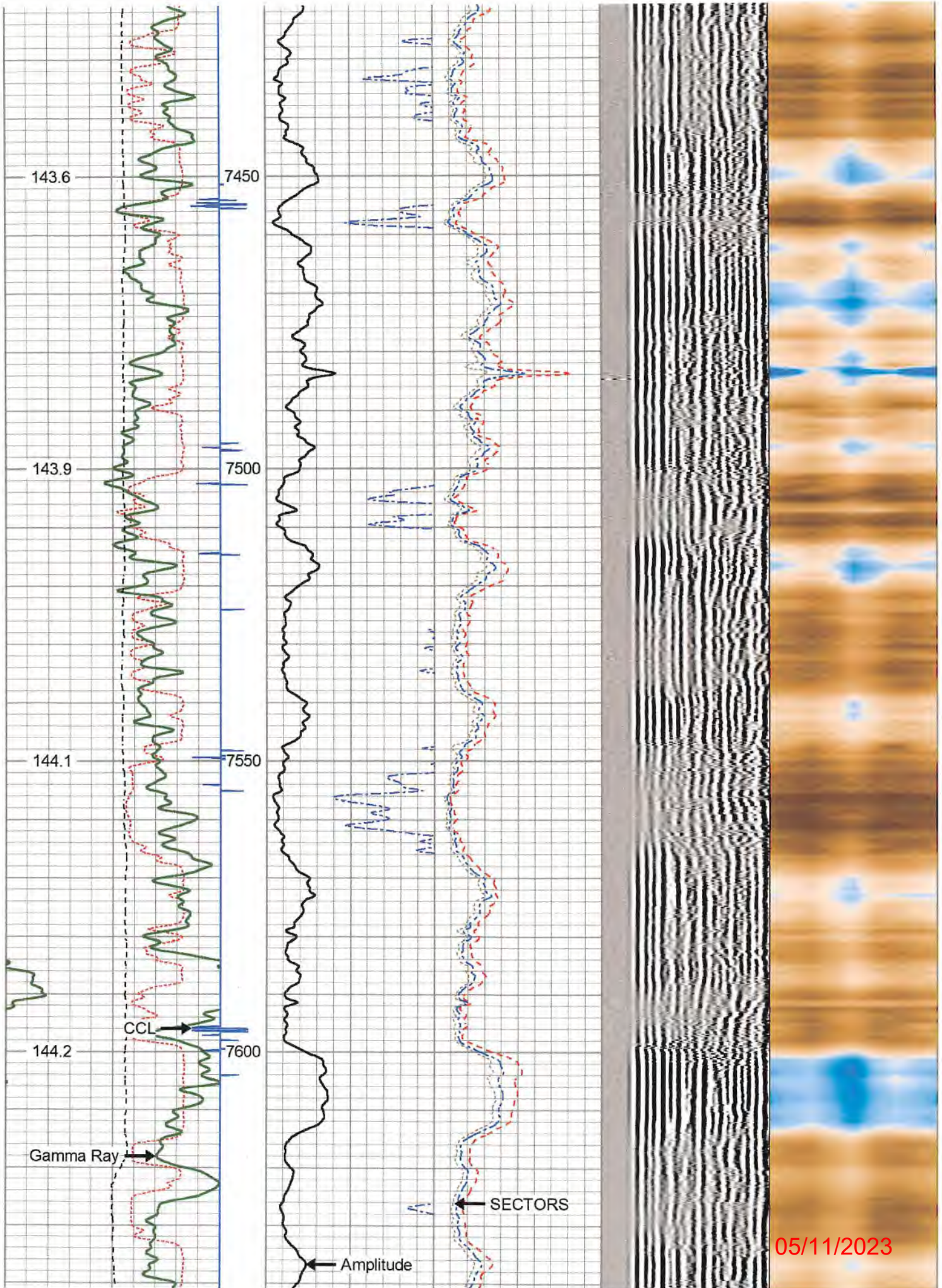






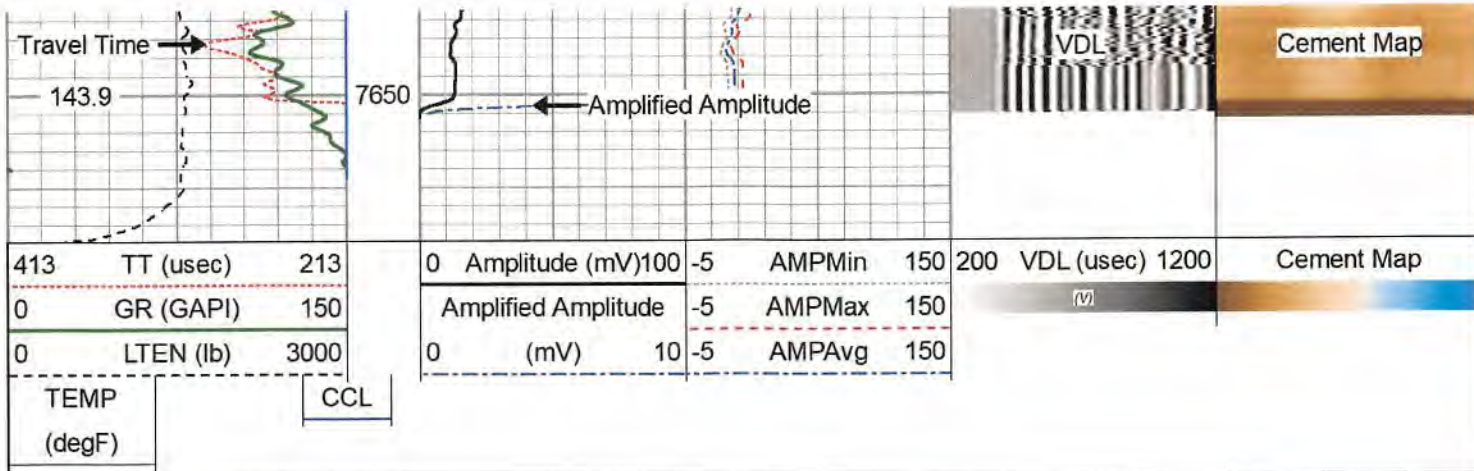






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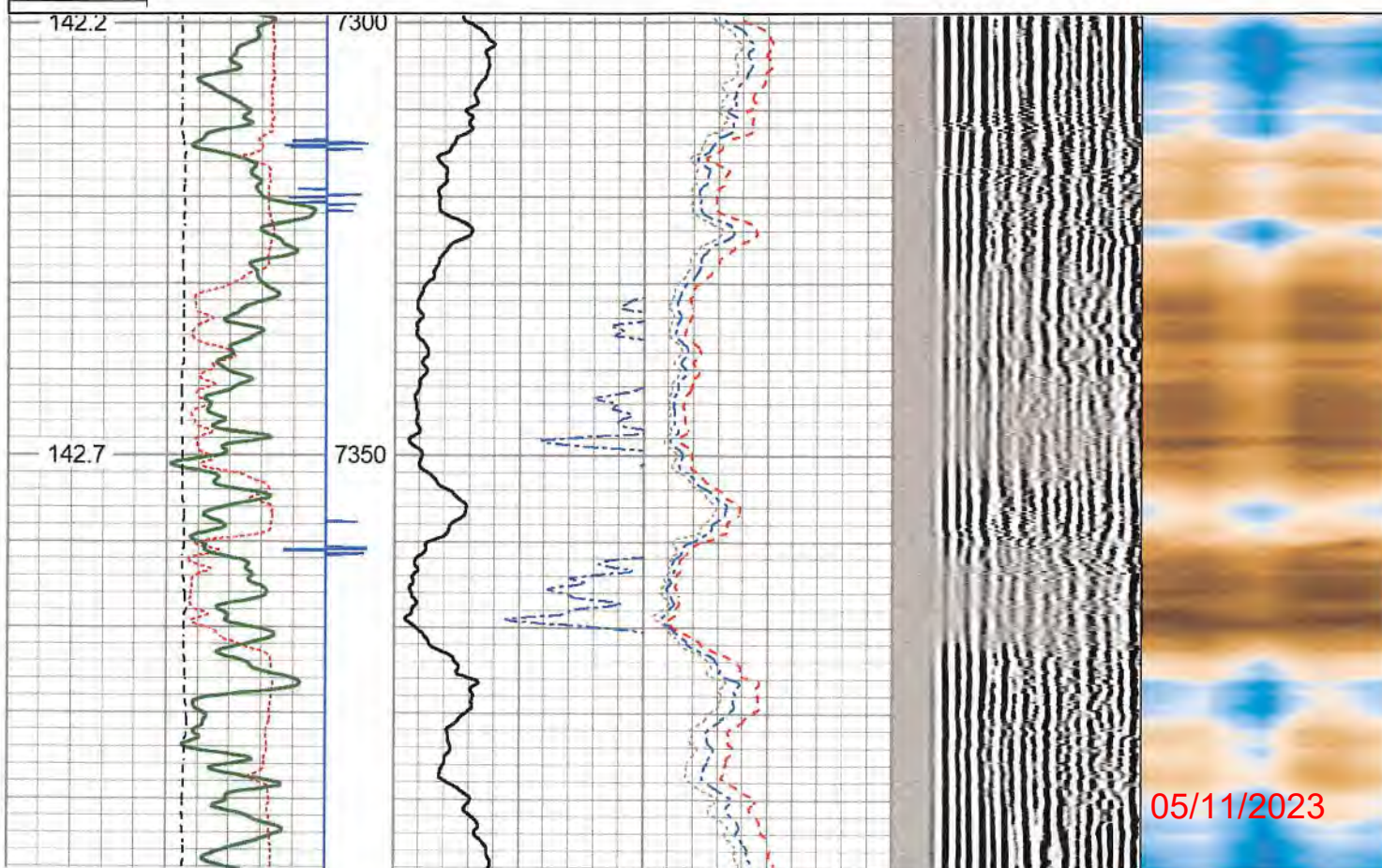
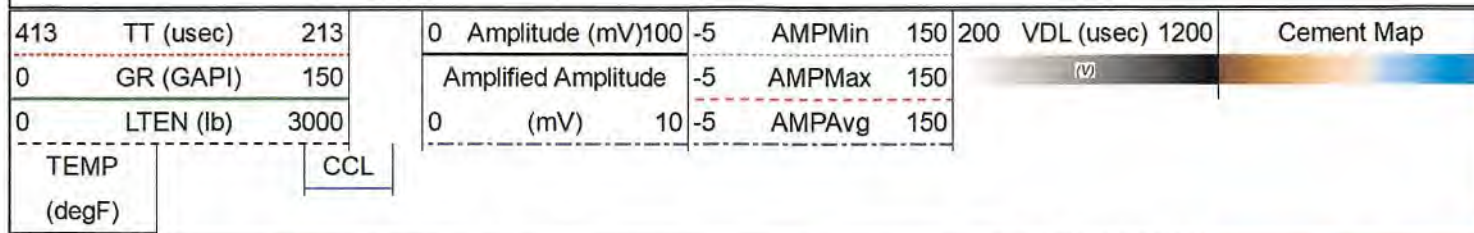




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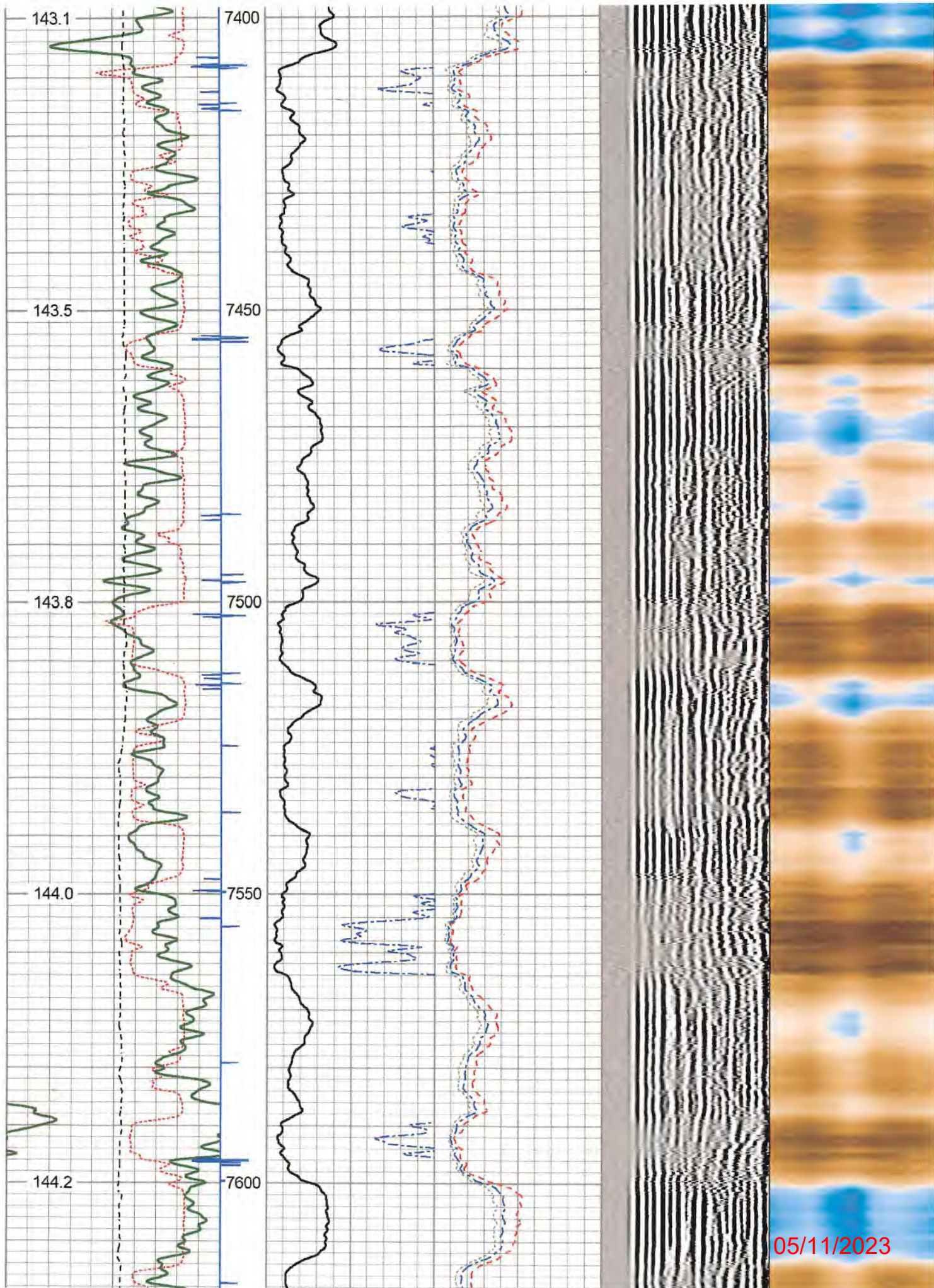
# Repeat Pass (1500 PSI)

Database File smelt unit 2h.db  
 Dataset Pathname pass5  
 Presentation Format RCBL\_S~4  
 Dataset Creation Sat Oct 15 12:18:47 2022  
 Charted by Depth in Feet scaled 1:240



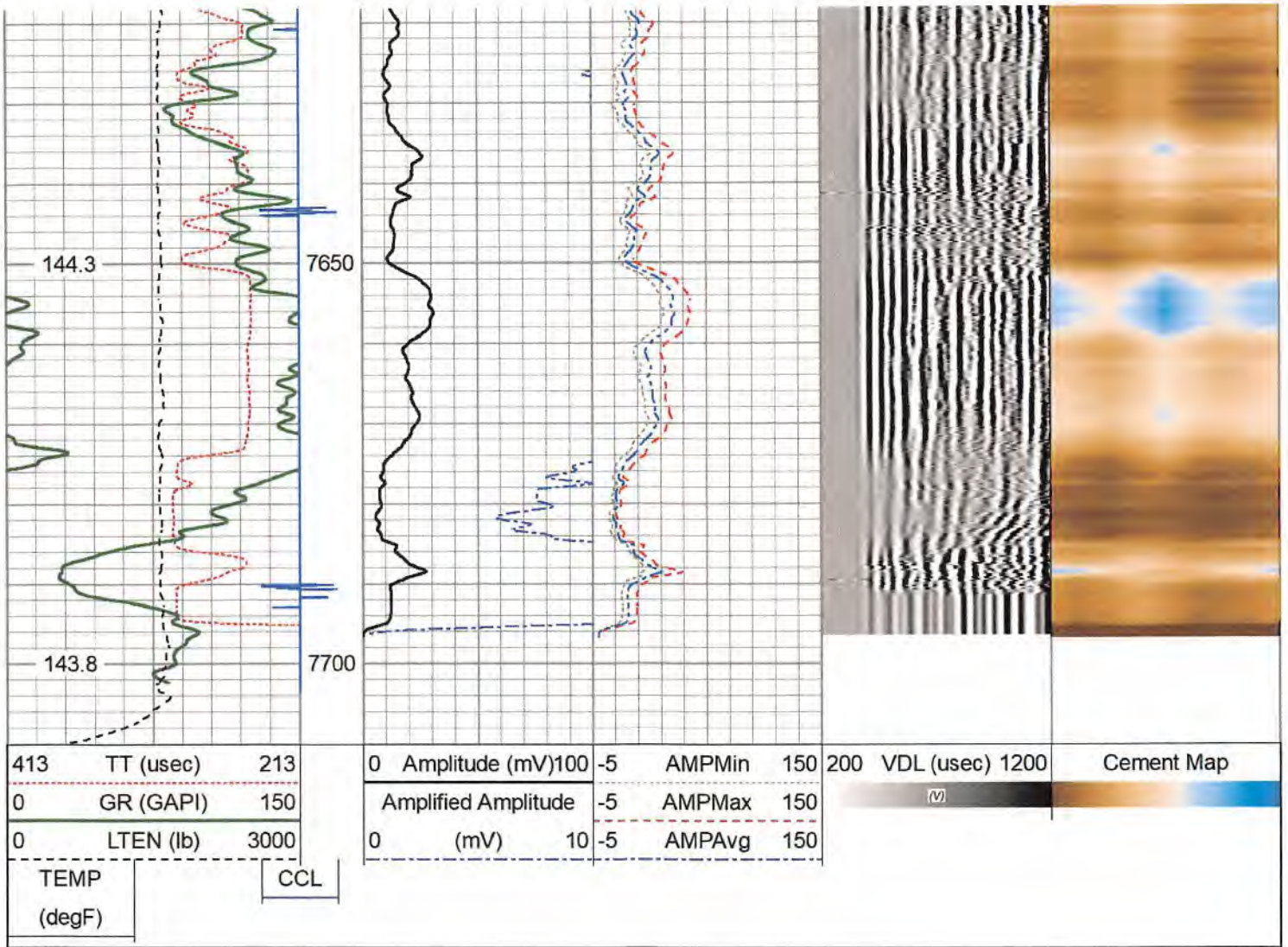
05/11/2023





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Calibration Report			
Database File	smelt unit 2h.db		
Dataset Pathname	pass9		
Dataset Creation	Sat Oct 15 13:58:10 2022		
Gamma Ray Calibration Report			
Serial Number:	GCT275-0000_base		
Tool Model:	GCT275-0000		
Performed:	Wed May 29 12:12:35 2019		
Calibrator Value:	1094.2	GAPI	
Background Reading:	55.7	cps	
Calibrator Reading:	1704.2	cps	
Sensitivity:	0.6638	GAPI/cps	
Segmented Cement Bond Log Calibration Report			
Serial Number:	RBT275C_Base		
Tool Model:	RADII-275C		
Calibration Casing Diameter:	5.000	in	
Calibration Depth:	199.425	ft	

Master Calibration, performed Sat Oct 15 12:09:43 2022:

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Raw (v)

Calibrated (mv)

Results



	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.643	1.000	75.000	116.288	0.205
CAL	0.891	0.883				
5'	0.004	0.523	1.000	75.000	142.664	0.406
SUM						
S1	0.010	0.590	0.000	100.000	172.291	-1.693
S2	0.006	0.596	0.000	100.000	169.700	-1.059
S3	0.006	0.607	0.000	100.000	166.517	-1.033
S4	0.005	0.634	0.000	100.000	158.845	-0.770
S5	0.007	0.635	0.000	100.000	159.184	-1.053
S6	0.007	0.633	0.000	100.000	159.721	-1.107
S7	0.006	0.637	0.000	100.000	158.308	-0.887
S8	0.005	0.621	0.000	100.000	162.307	-0.796

Internal Reference Calibration, performed Wed Aug 24 11:56:29 2022:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.891	0.883	1.000	0.000

Air Zero Calibration, performed Sat Oct 15 09:38:33 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

### Inclinometer Calibration Report

Performed:	(Not Performed)				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	0.00	1.00	0.00	1.00	gee
Y Accelerometer	0.00	1.00	0.00	1.00	gee
Z Accelerometer	0.00	1.00	0.00	1.00	gee

## Log Variables

DatabaseC:\ProgramData\Warrior\Data\smelt unit 2h.db  
Dataset field/well/run1/pass9/\_vars\_

### Top - Bottom

BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL	MINATTN
in	degF	in	in	lb/ft	mV	mV	db/ft
---	---	-	-	---	--	.	---

05/11/2023



1.875	100	5	0	18	75	1	0.8
PERFS	PPT usec	SRFTEMP degF	TDEPTH ft				
No	362	0	0				

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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
			Cable_Head-1_7/16 Titan 1 7/16" Cable Head	1.02	1.44	3.31	
			CENT-BC275-0000 Probe 2.75" Bowspring Centralizer	2.83	2.75	24.00	
RBT_HV	19.19						
WVFS8	14.69			RBT8-RADII-275C (RBT275C_Base) Probe 2.75" RADII 8 Sector Bond Tool	8.75	2.75	
WVFS7	14.69						
WVFS6	14.69						
WVFS5	14.69						
WVFS4	14.69						
WVFS3	14.69						
WVFS2	14.69						
WVFS1	14.69						
WVF3FT	14.69						
WVF5FT	13.69						
RBT_ACCZ	10.44						
RBT_ACCY	10.44						
RBT_ACCX	10.44						
WVFSYNC	10.44		CENT-BC275-0000 Probe 2.75" Bowspring Centralizer	2.83	2.75	24.00	
WVFCAL	10.44						
GCT_HV	7.60						
CCL\$2	6.64						
CCL\$1	6.64						
GCT_Temp	6.09						
GR	5.22		GC-GCT275-0000 (GCT275-0000_base) Probe Gamma Ray - CCL w/ Temp	4.77	2.75	55.00	

05/11/2023





CENT-BC275-0000  
Probe 2.75" Bowspring Centralizer

2.83

2.75

24.00

Dataset: smelt unit 2h.db: field/well/run1/pass9  
Total length: 23.04 ft  
Total weight: 130.31 lb  
O.D.: 2.75 in



Company Antero Resources  
Well Smelt Unit 2H  
Field Ritchie  
County Ritchie  
State WV

Country