ALLIED WIRELINE

Radial Cement Bond
Variable Density Log
W/Gamma Ray/CCL

Company Noble Energy
Well NCLP PC AA04-62-1HN
Field Wattenberg
County Weld State Colorado
Location: API # : 05-123-37175
BHL: 1060' FSL & 535' FEL
SEC 4 TWP 6N RGE 63W

Other Services	Elevation
TEMP	K.B. 4740'
	D.F. 4739'
	G.L. 4710'

Permanent Datum	Ground Level	Elevation	4710'
Log Measured From	Kelly Bushing 30' APD		
Drilling Measured From	Kelly Bushing		

Company	Noble Energy
Well	NCLP PC AA04-62-1HN
Field	Wattenberg
County	Weld
State	Colorado

Date	Feb 5, 2014
Run Number	One
Depth Driller	16189'
Depth Logger	6764'
Bottom Logged Interval	6751'
Top Log Interval	Surface
Open Hole Size	8 3/4"
Type Fluid	Water
Density / Viscosity	8.33
Max. Recorded Temp.	214°
Estimated Cement Top	1086'
Time Well Ready	12:00
Time Logger on Bottom	13:30
Equipment Number	13034
Location	Brighton, CO
Recorded By	J. Olson
Witnessed By	Bill Mansfield

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9 5/8"	36#	Surface	631'
Prot. String				
Production String	7"	26#	Surface	7065'
Liner	4.5"	11.6#	6950'	16174'
Short Joint			5642'	5656'

<<< Fold Here >>>

Comments

Primary Log On Well 30' KB

Main Pass and Repeat Pass logged with Zero Pressure on surface

Top of Cement @ 1086'
Short Joint @ 5642'-5656'

Logged at 120 f/m (Requested by Customer)
Thank You for using Allied Wireline
(303)659-4609

ALLIED WIRELINE

Main Pass (0 PSI)

Database File:	noble energynclp pc aa04-62-1hn_rcbl.db
Dataset Pathname:	merge1.1
Presentation Format:	scbl03
Dataset Creation:	Wed Feb 05 15:05:10 2014 by Calc 7.0 B1
Charted by:	Depth in Feet scaled 1:240

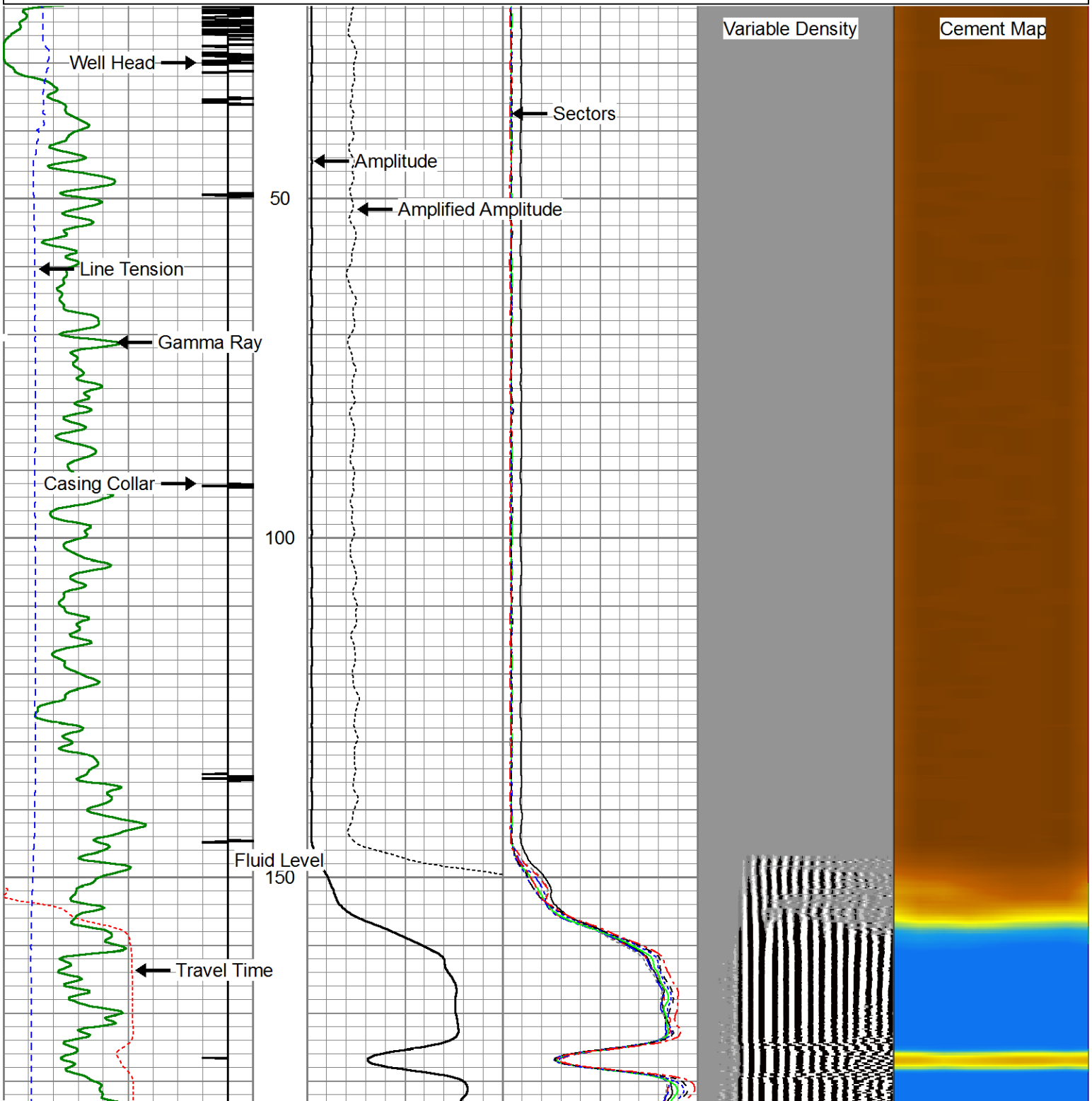
400	Travel Time (usec)	200
9	*Casing Collar*	-1
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	2000

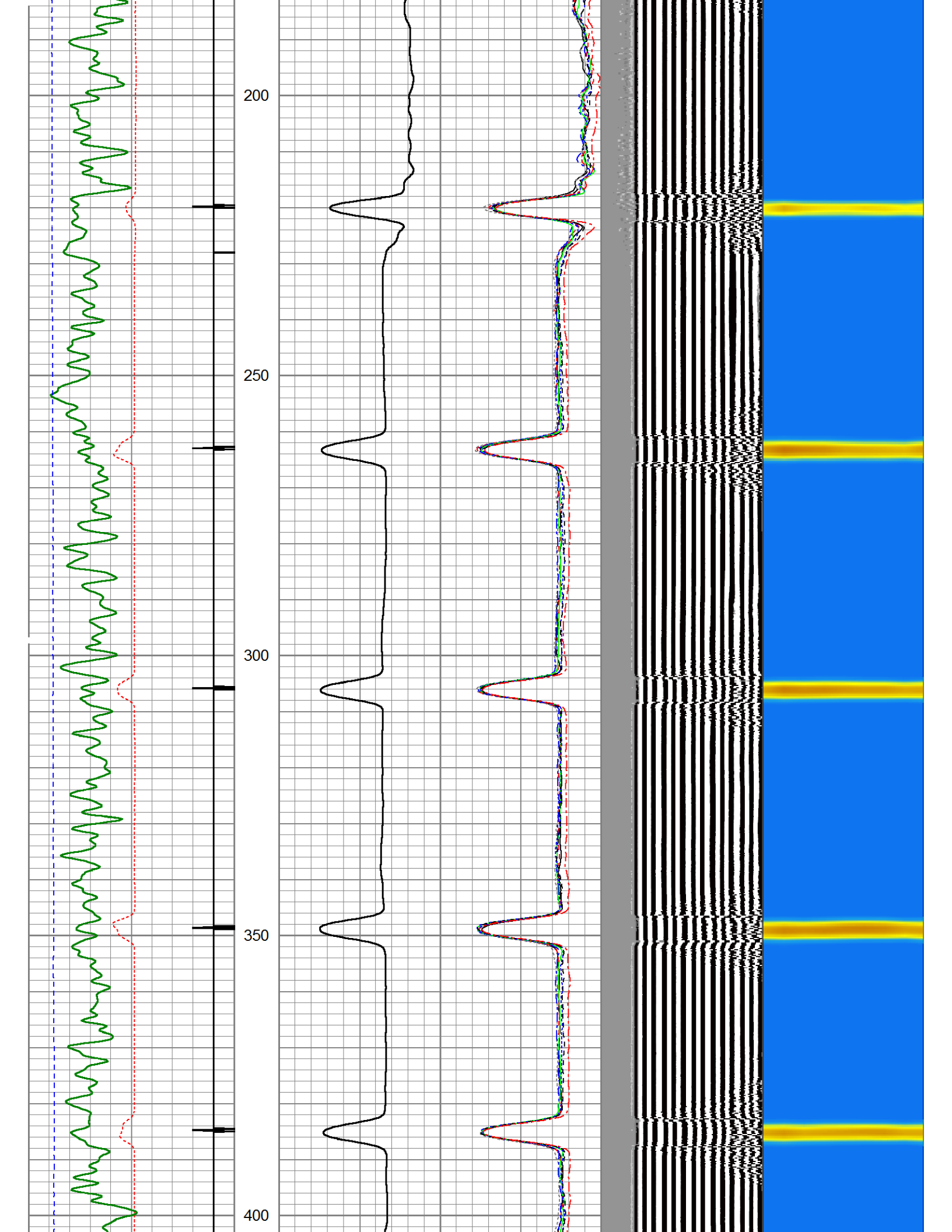
0	Amplitude (mV)	100
	Amplified Amplitude	
0	(mV)	10

-5	AMPS1	150
-5	AMPS2	150
-5	AMPS3	150
-5	AMPS4	150
-5	AMPS5	150
-5	AMPS6	150
-5	AMPS7	150
-5	AMPS8	150

	Variable Density	
200		1200

1	Cement Map	8
0		100

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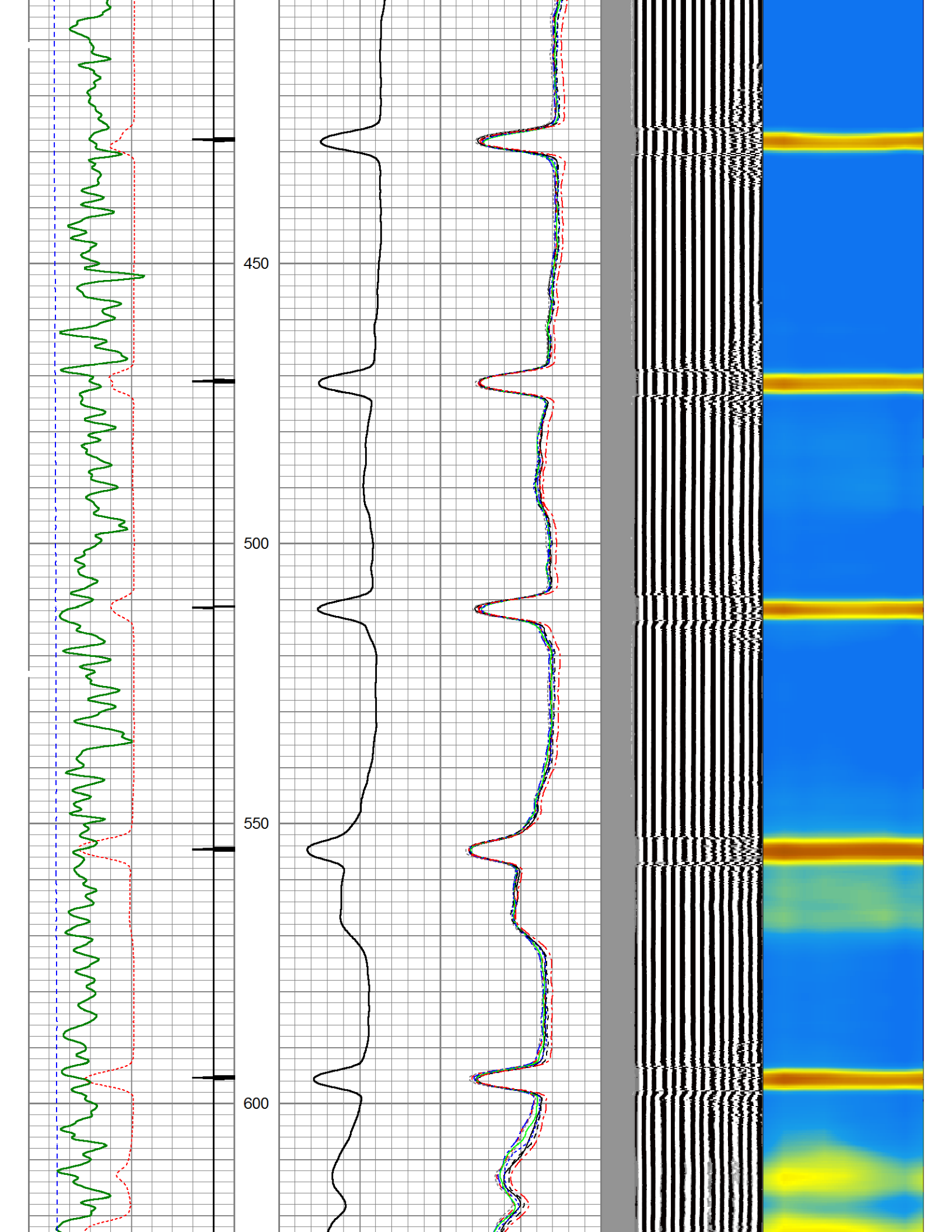
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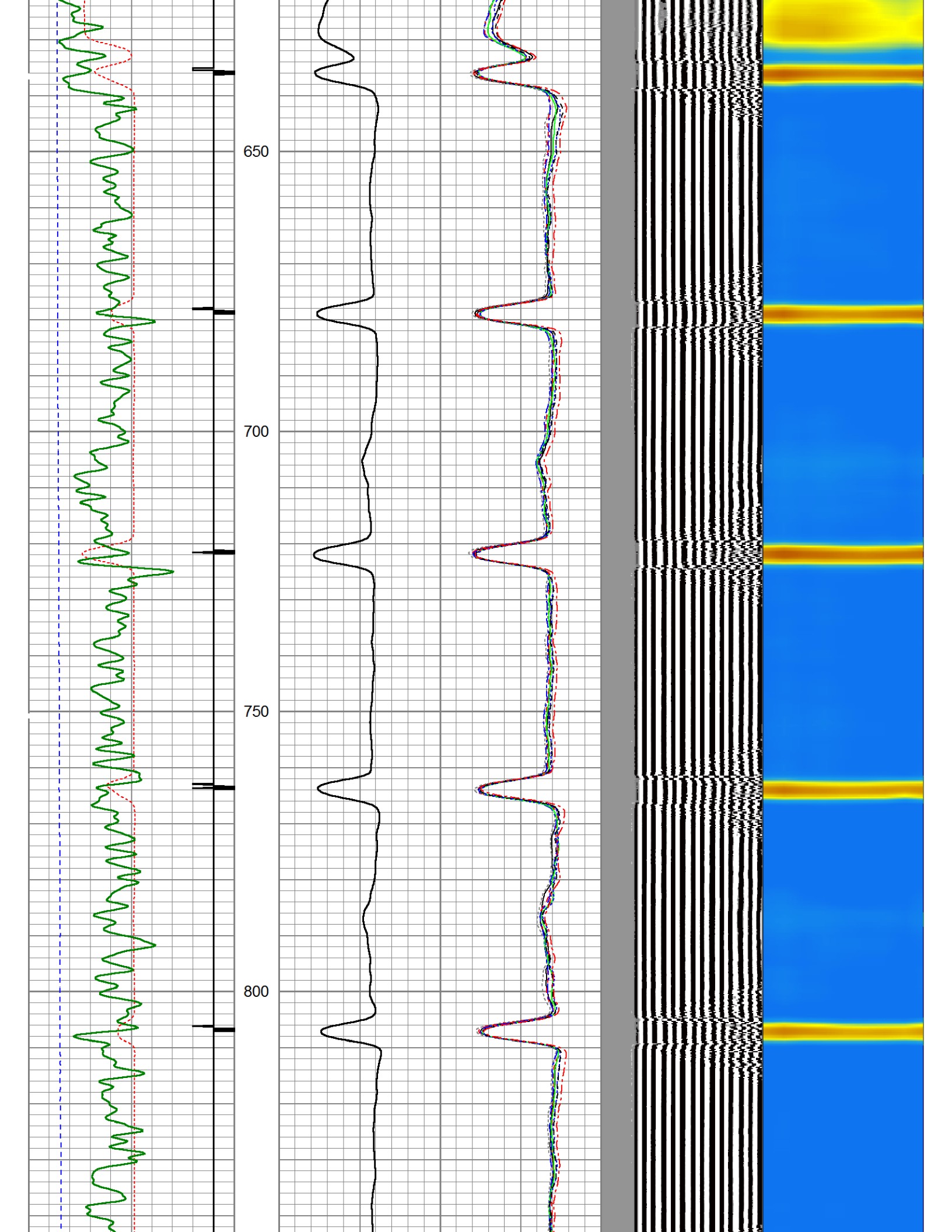
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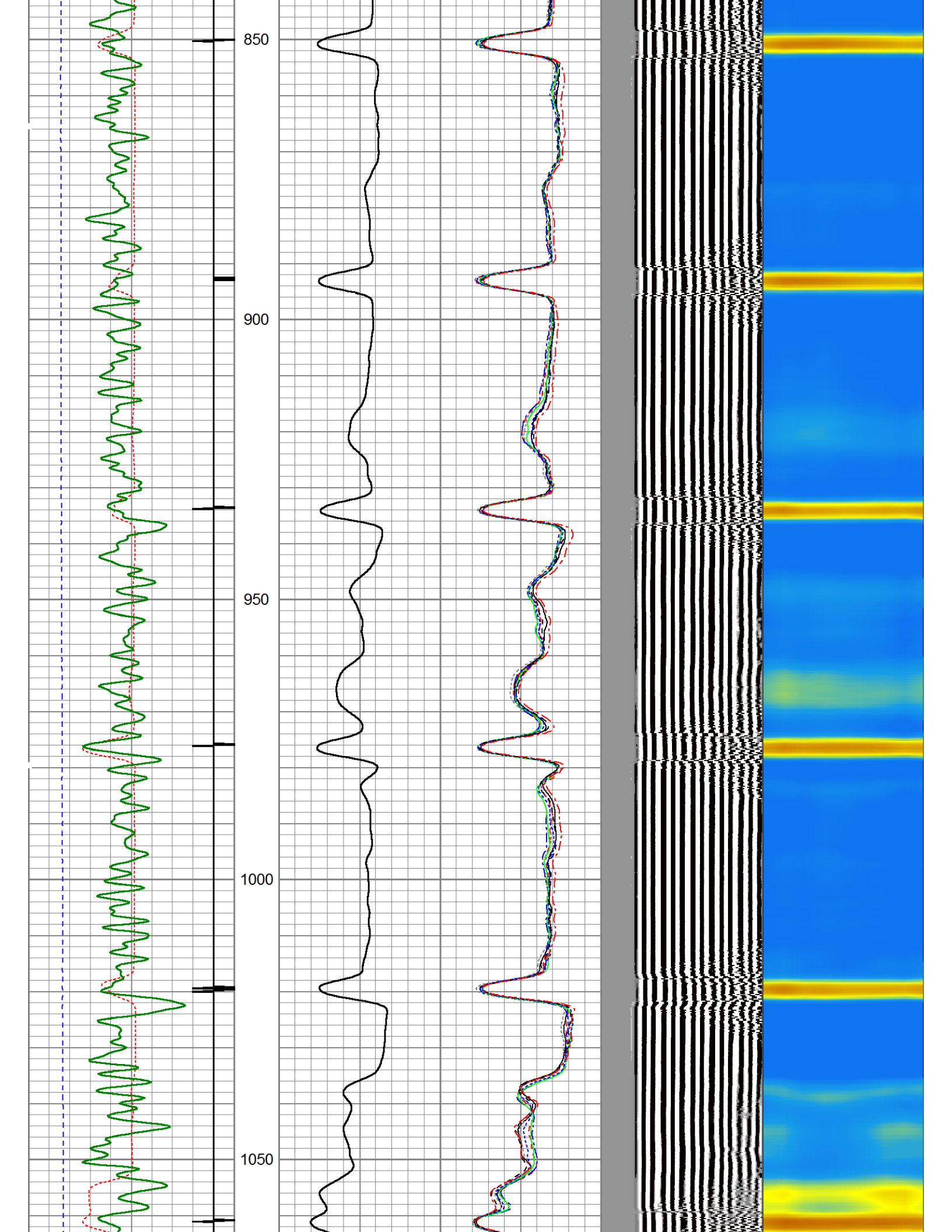
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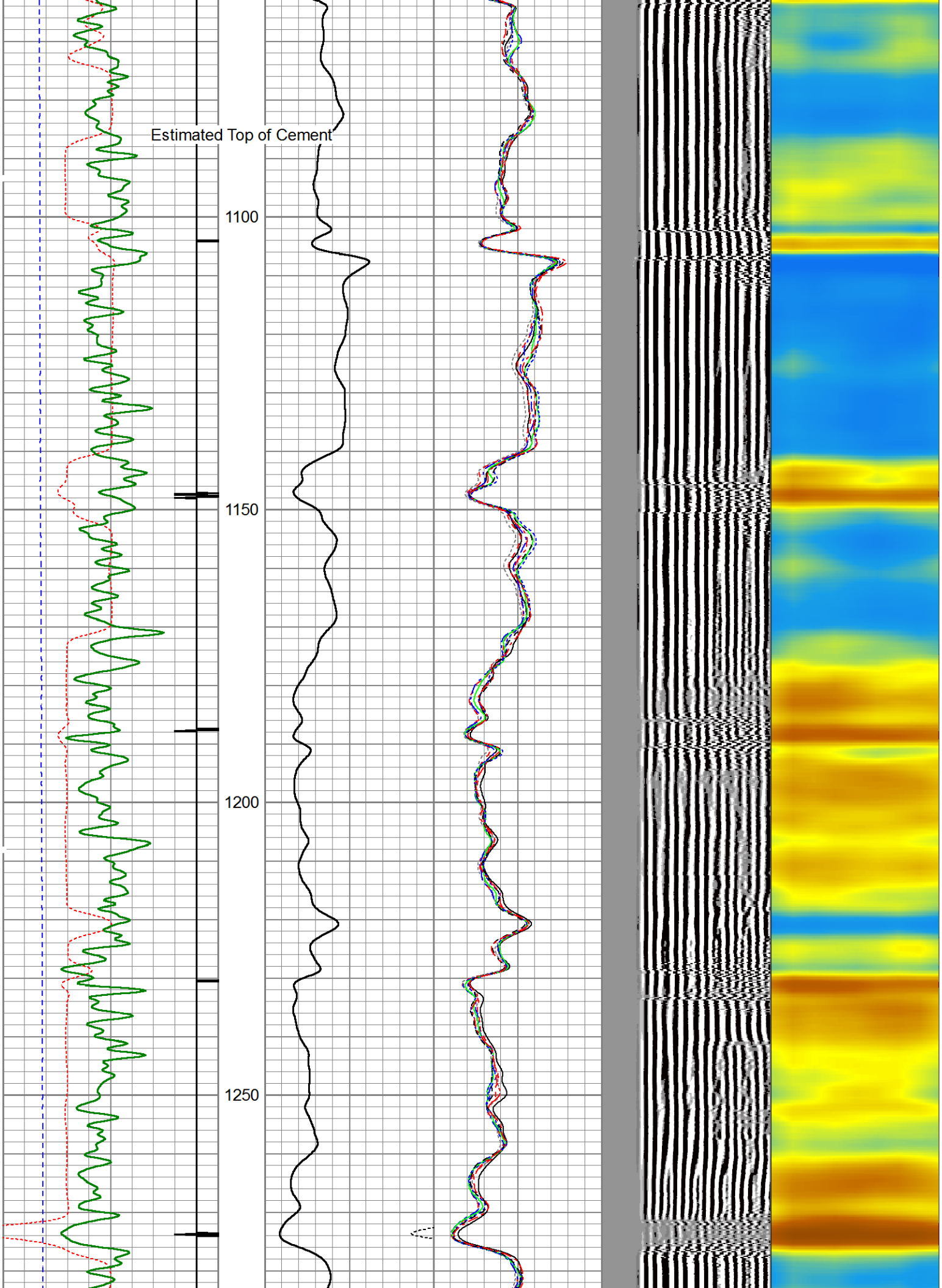
Estimated Top of Cement
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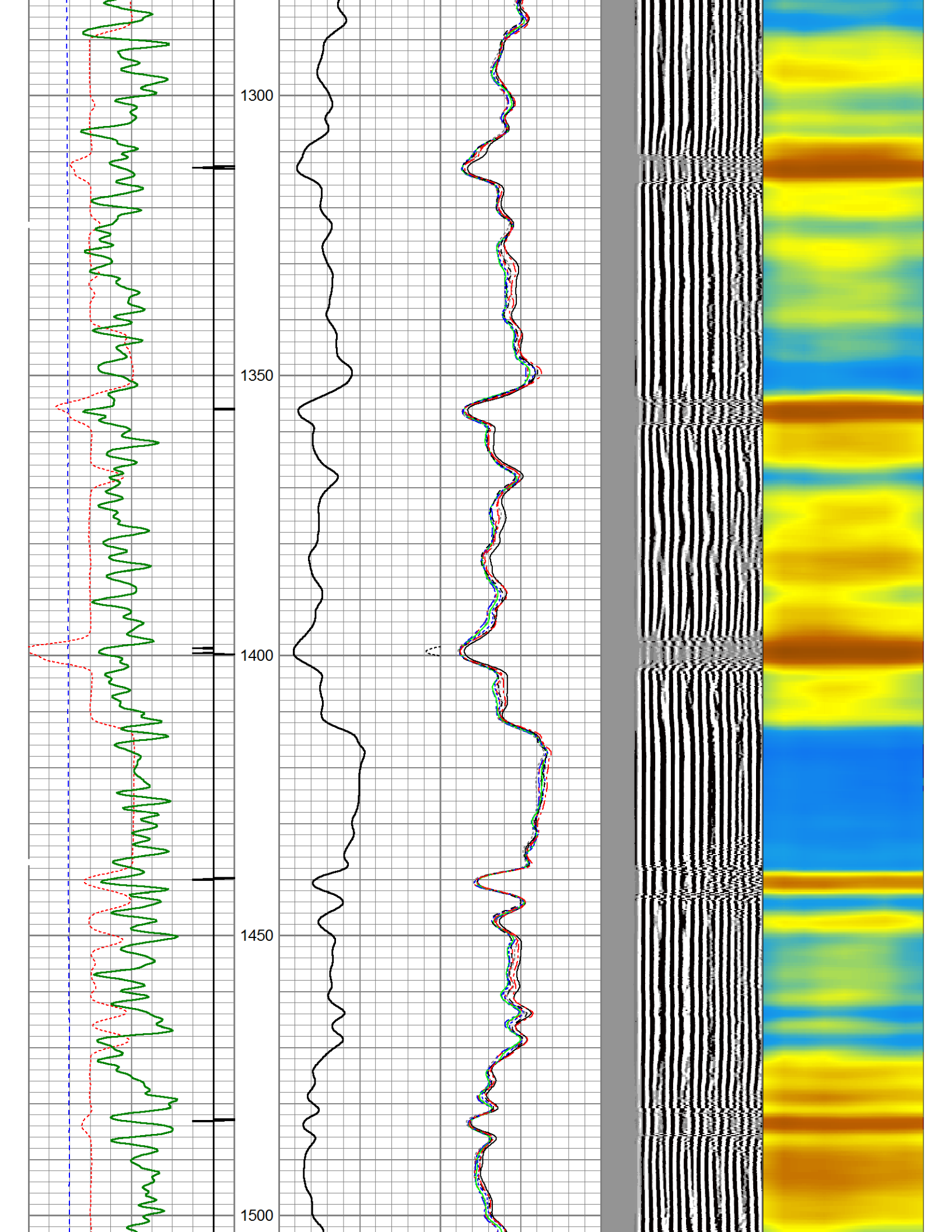
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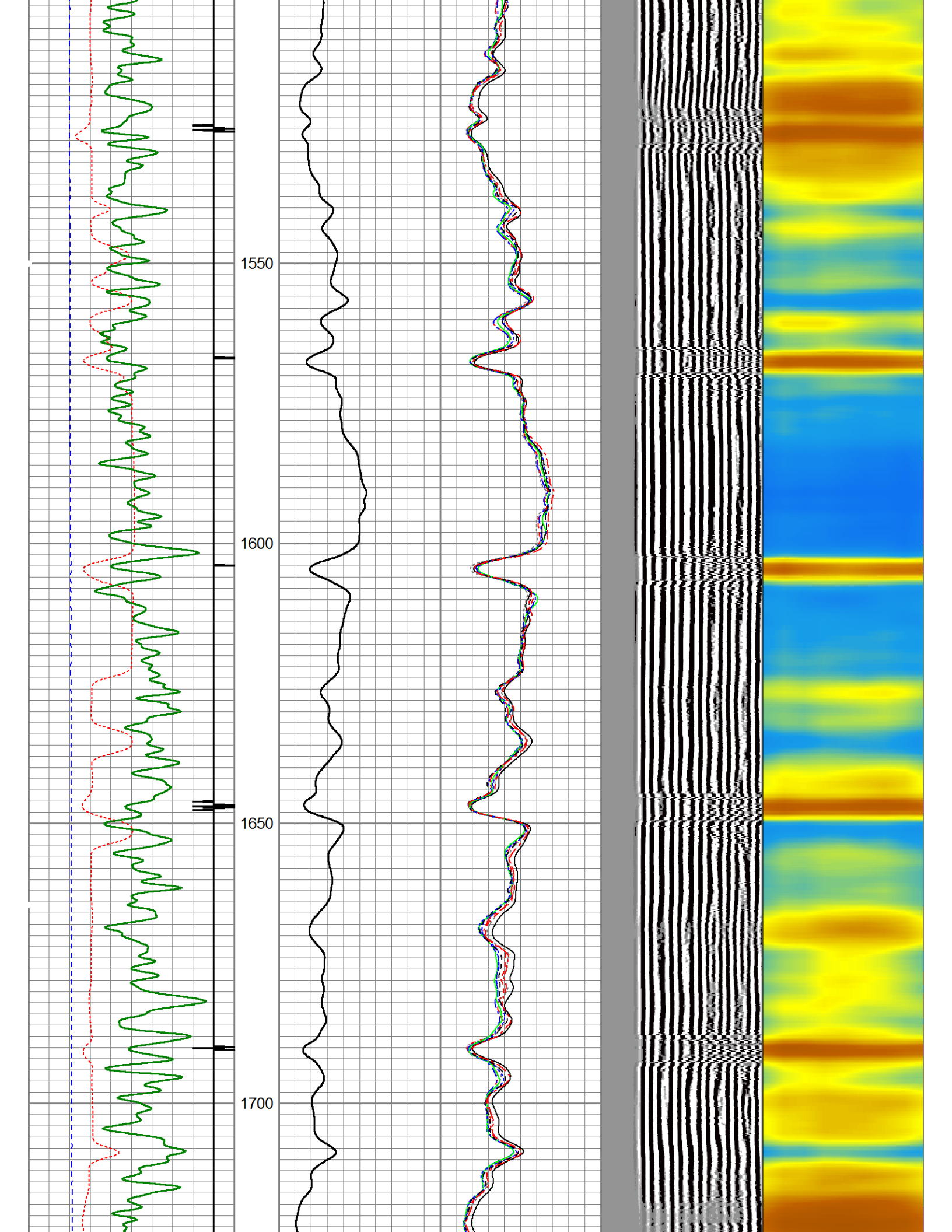
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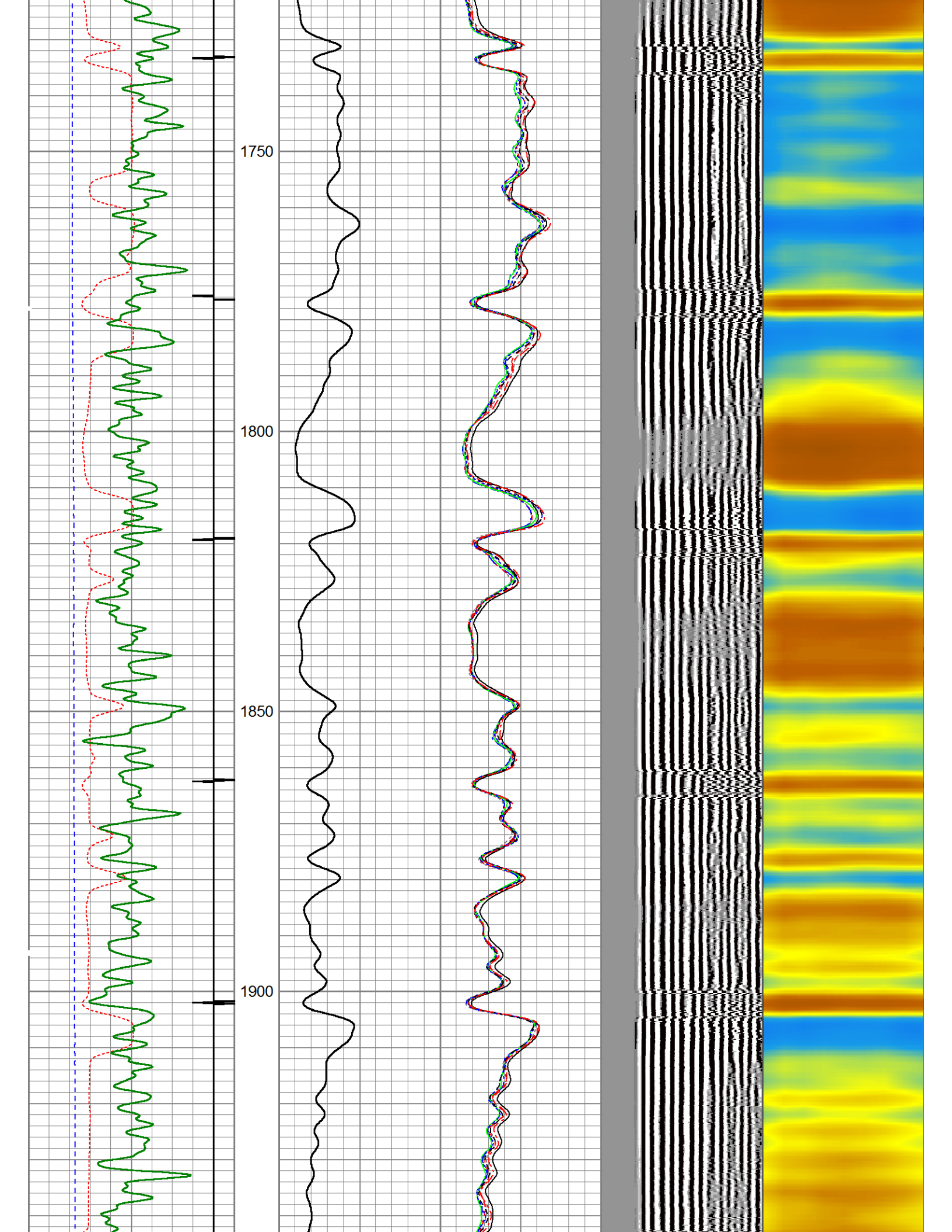
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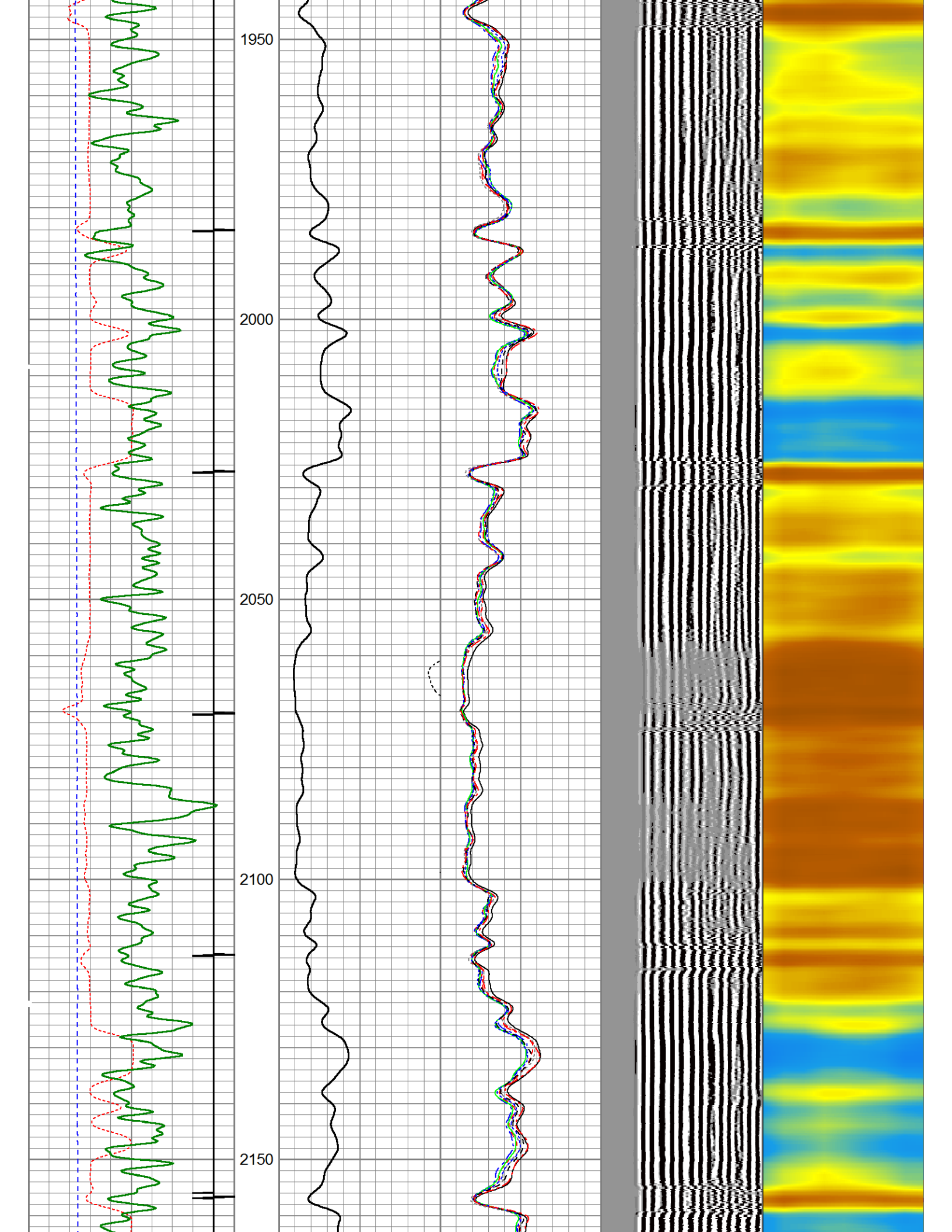
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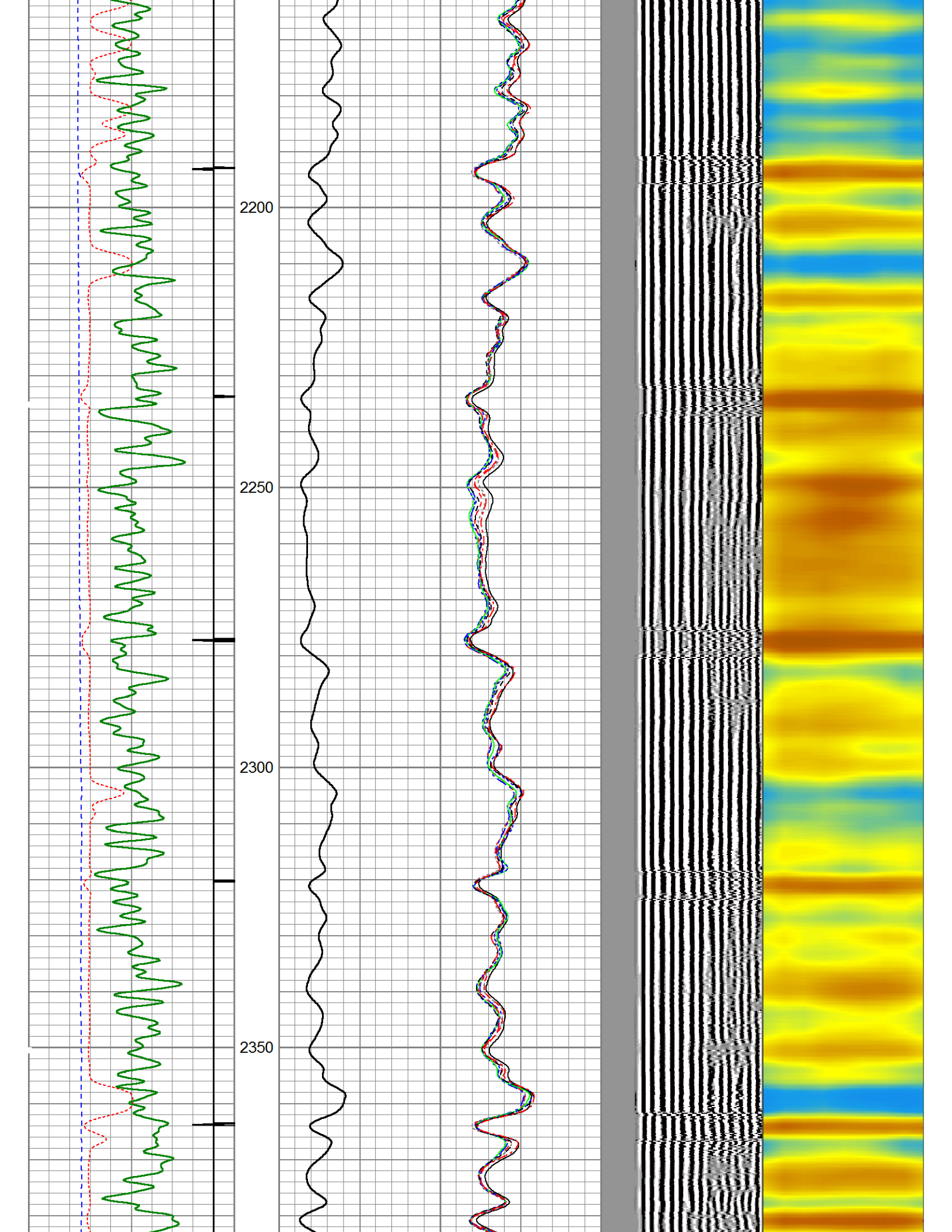
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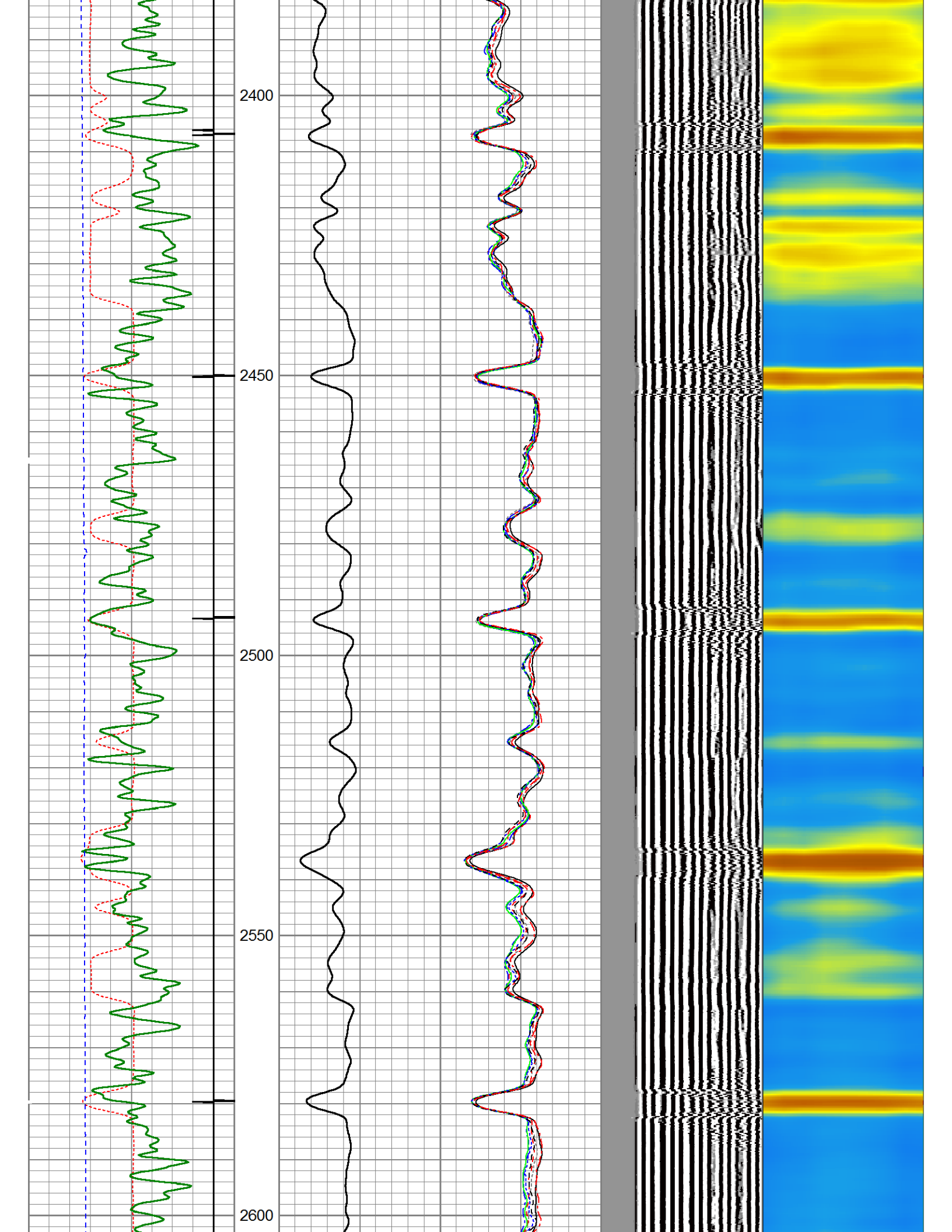
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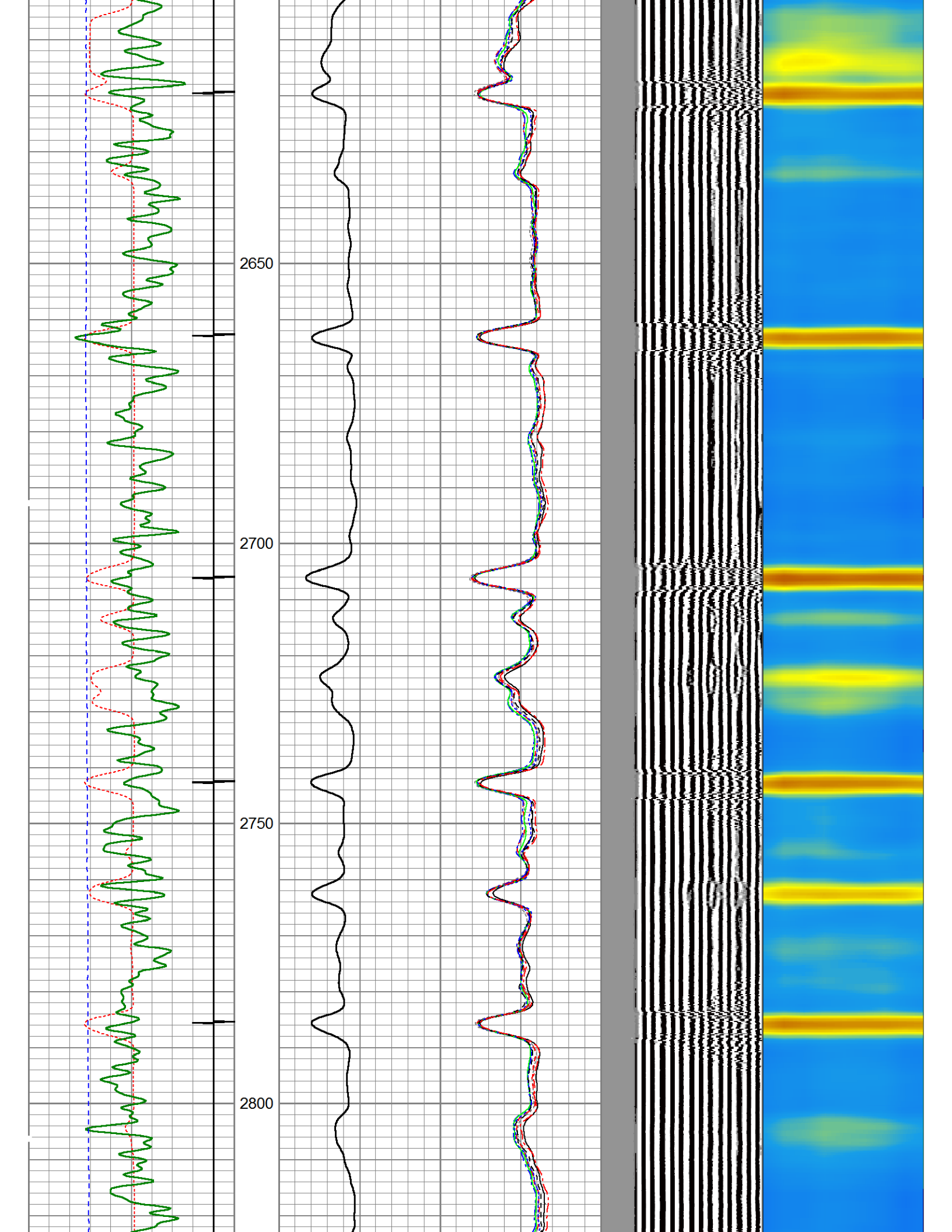
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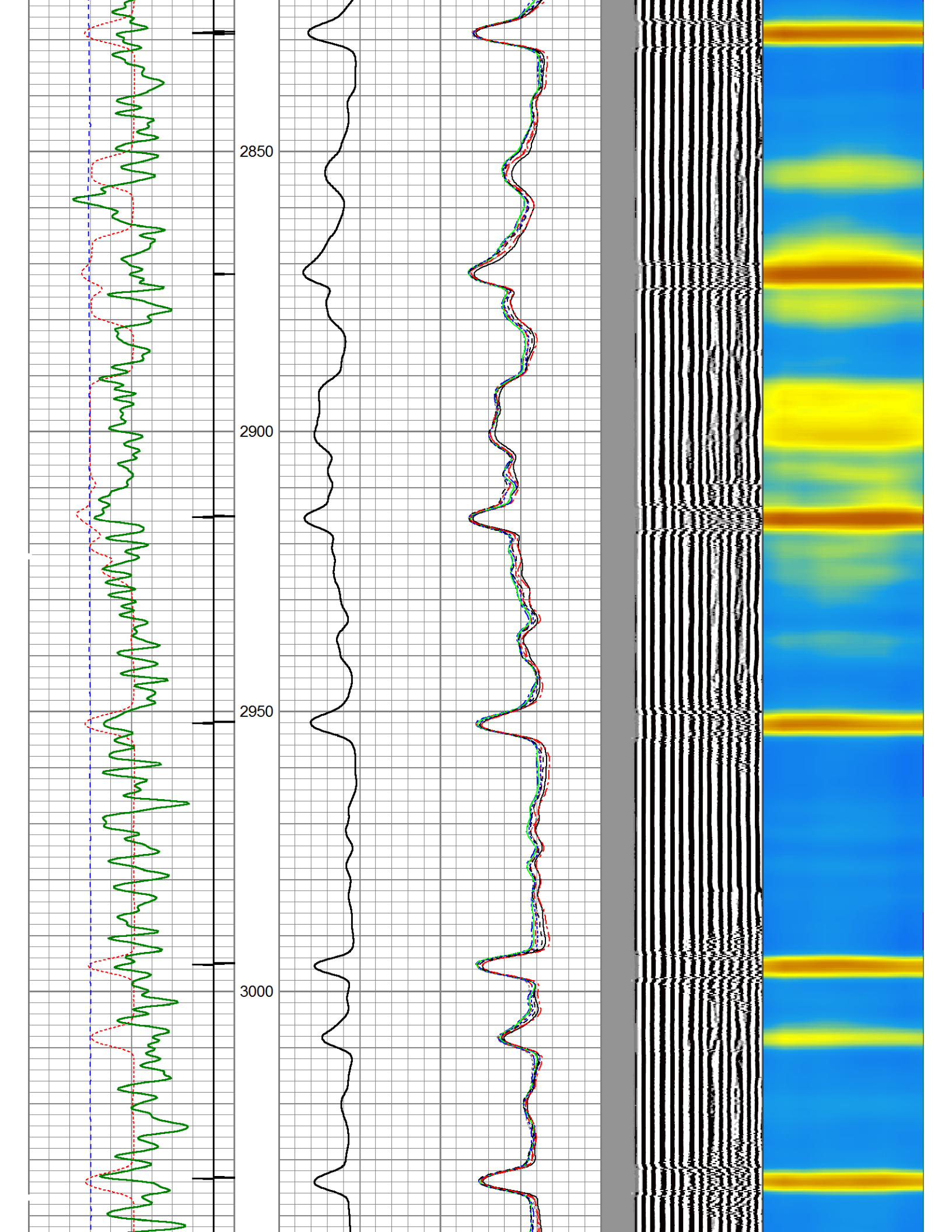
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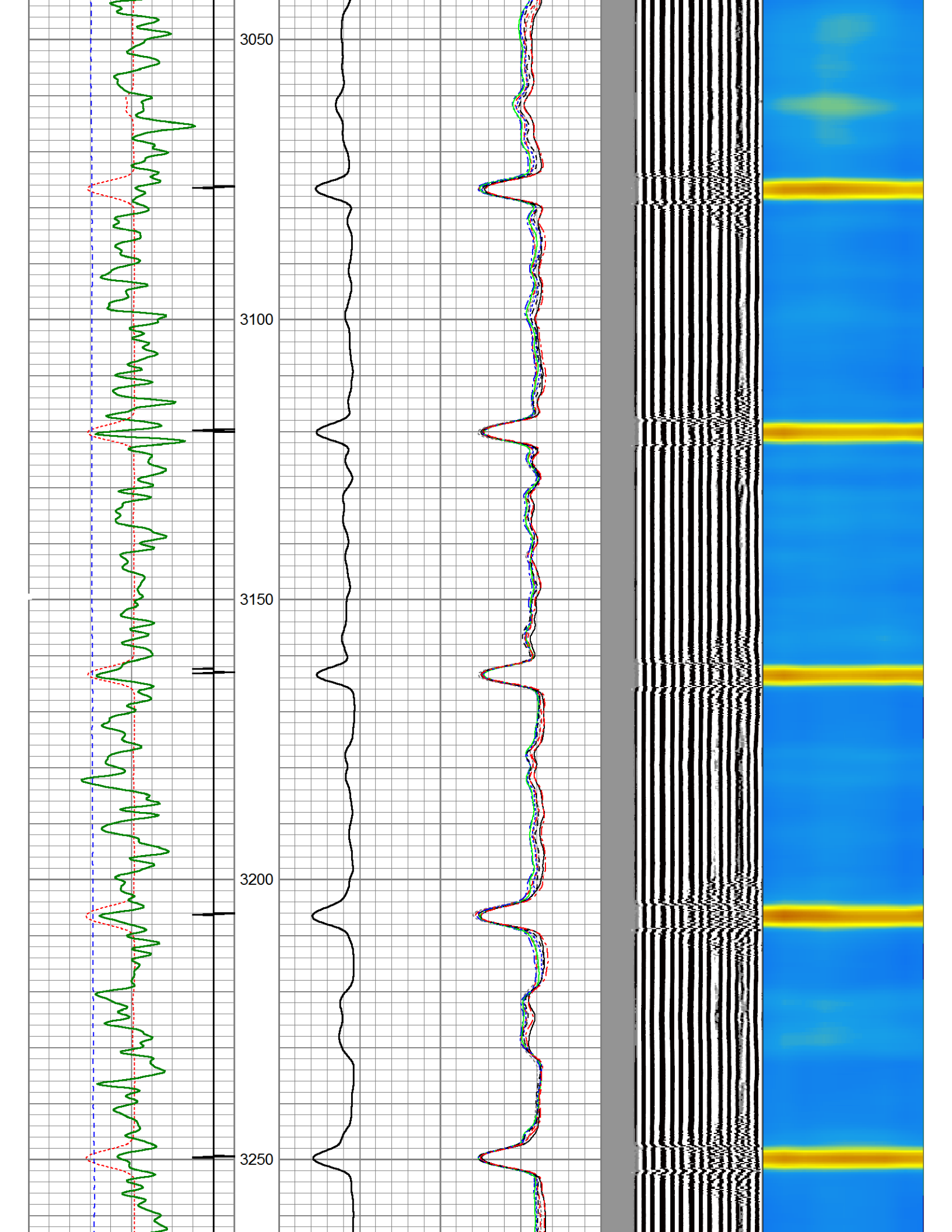
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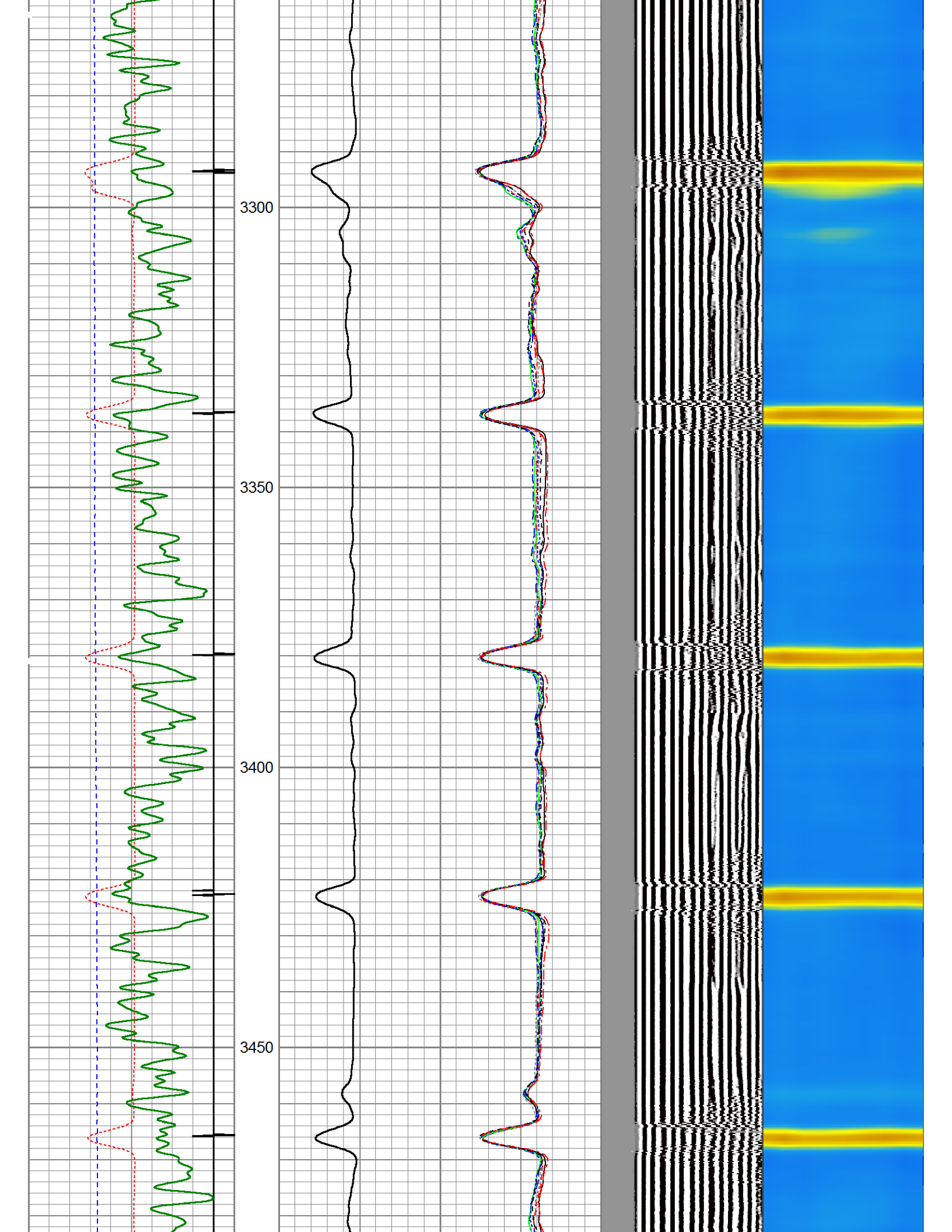
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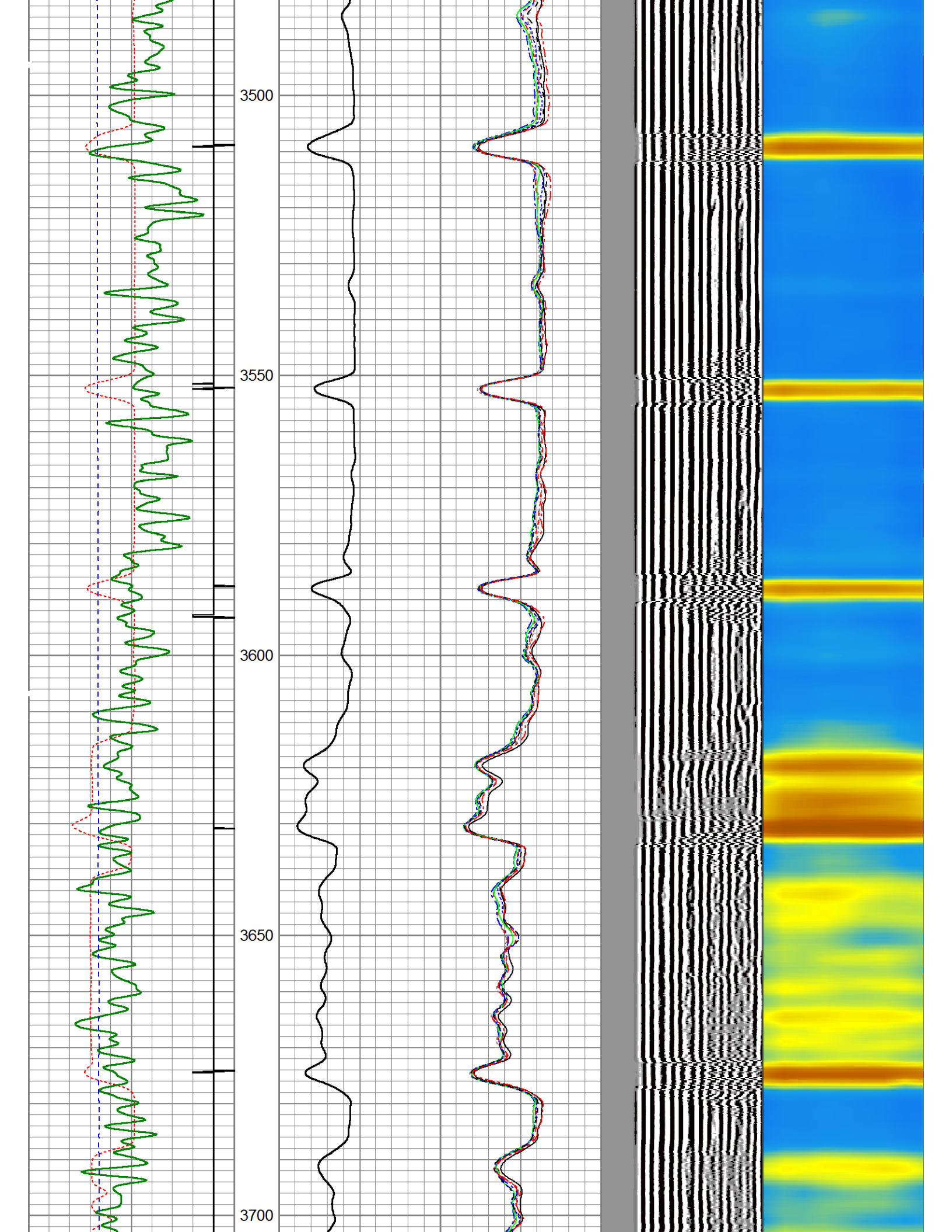
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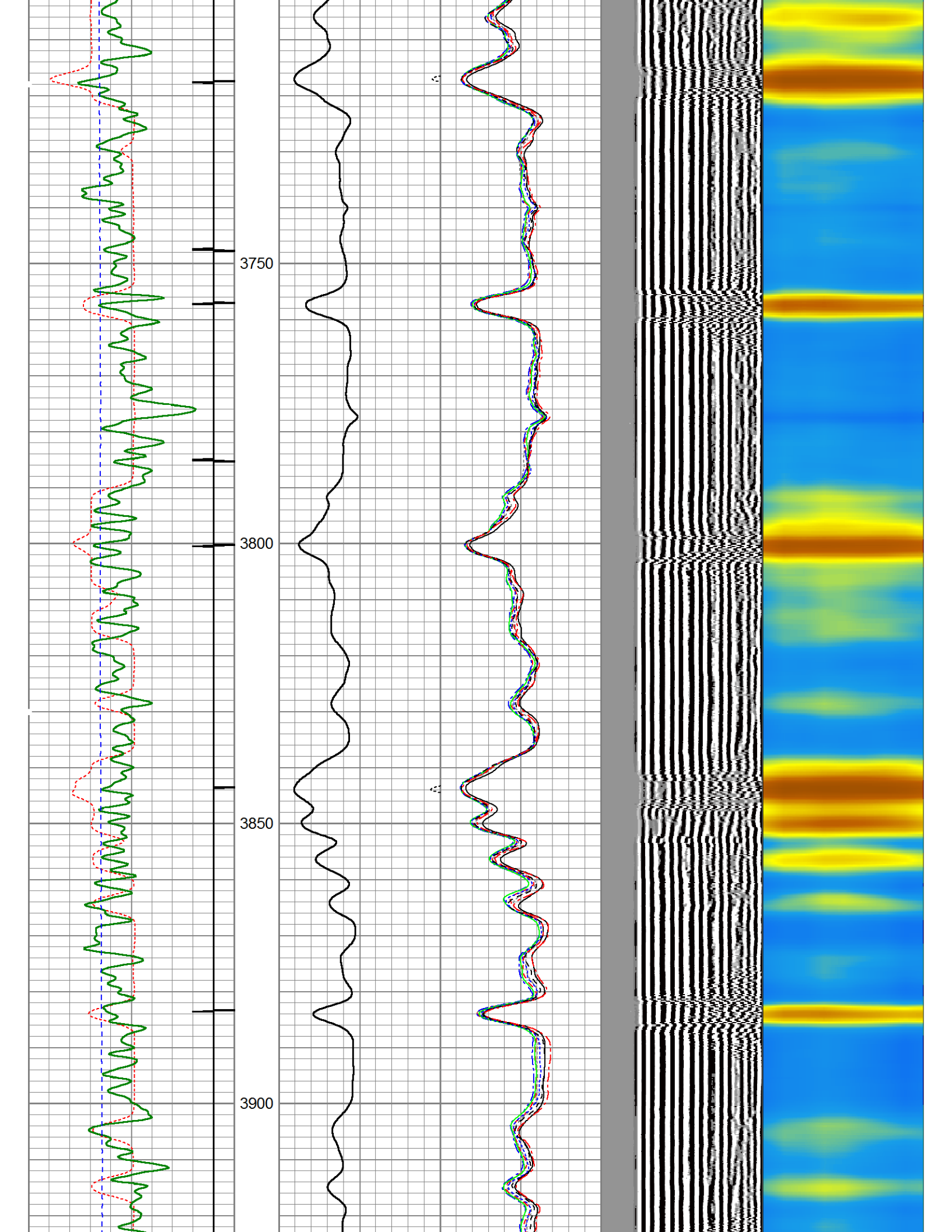
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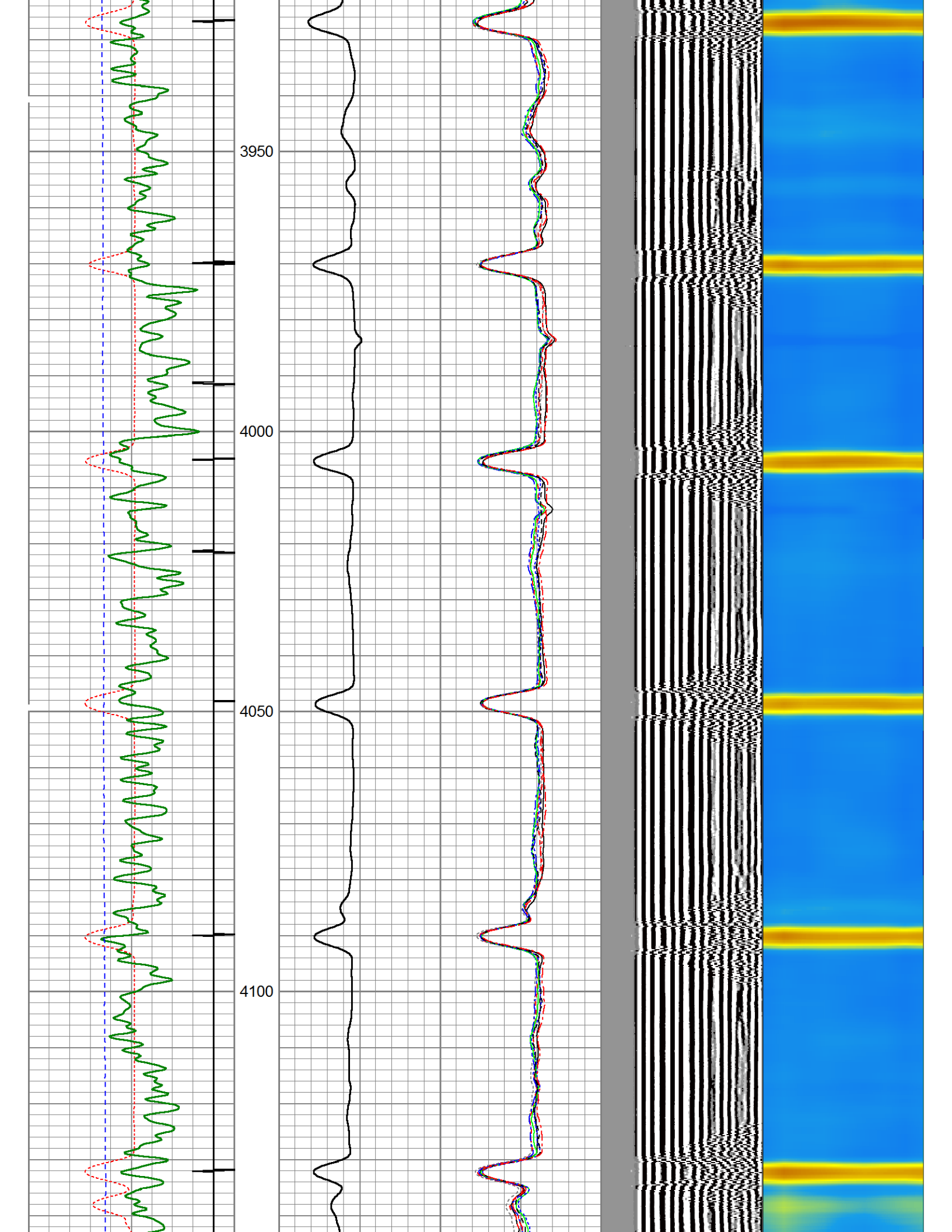
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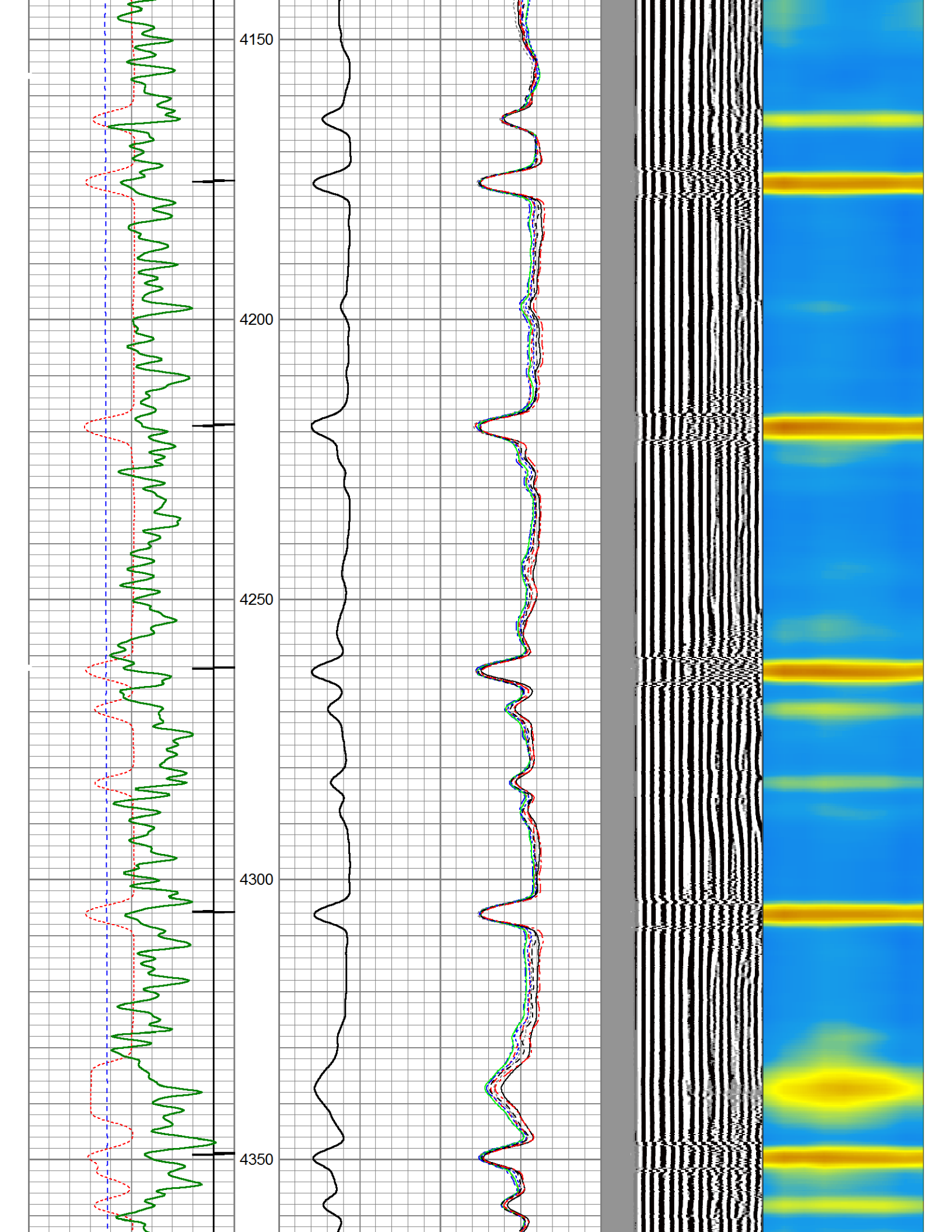
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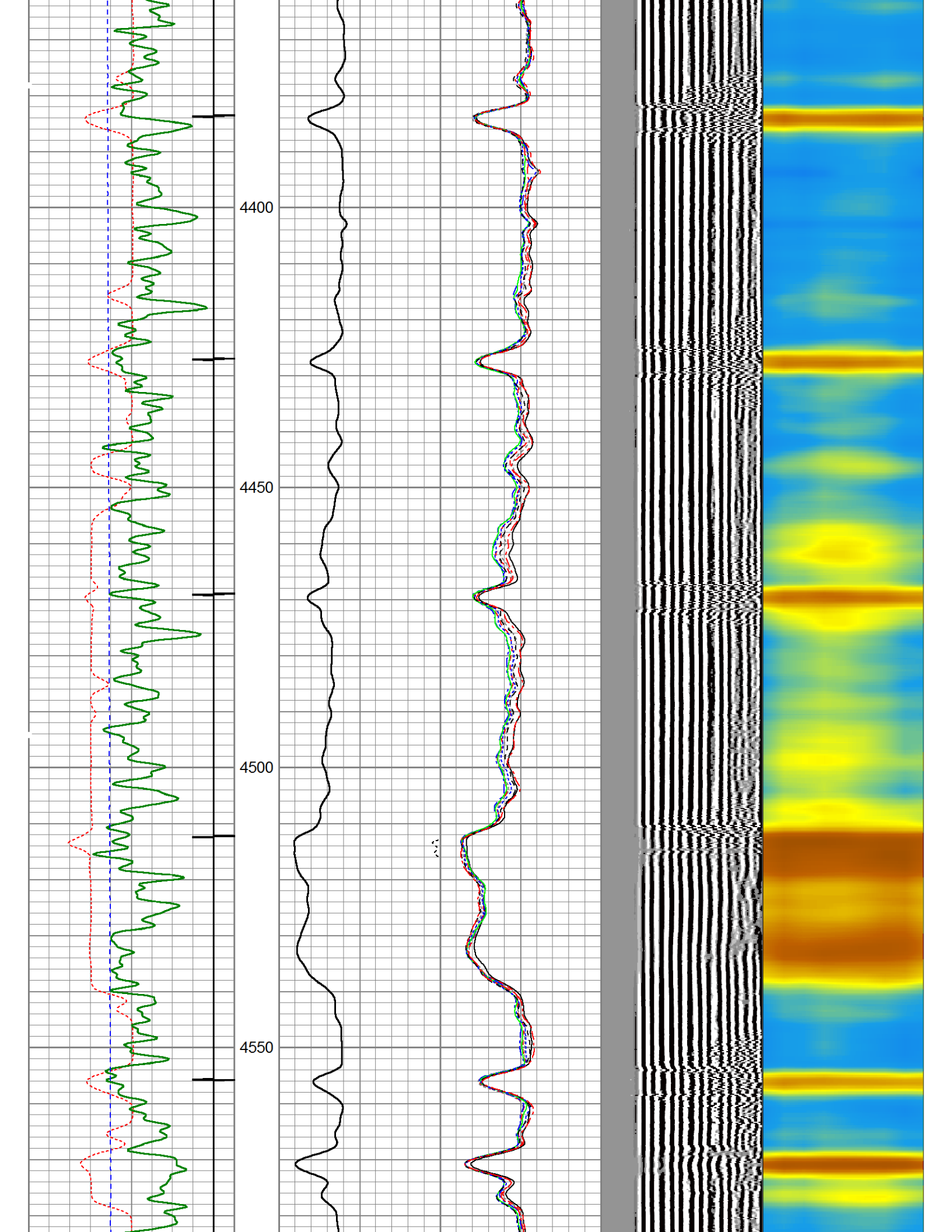
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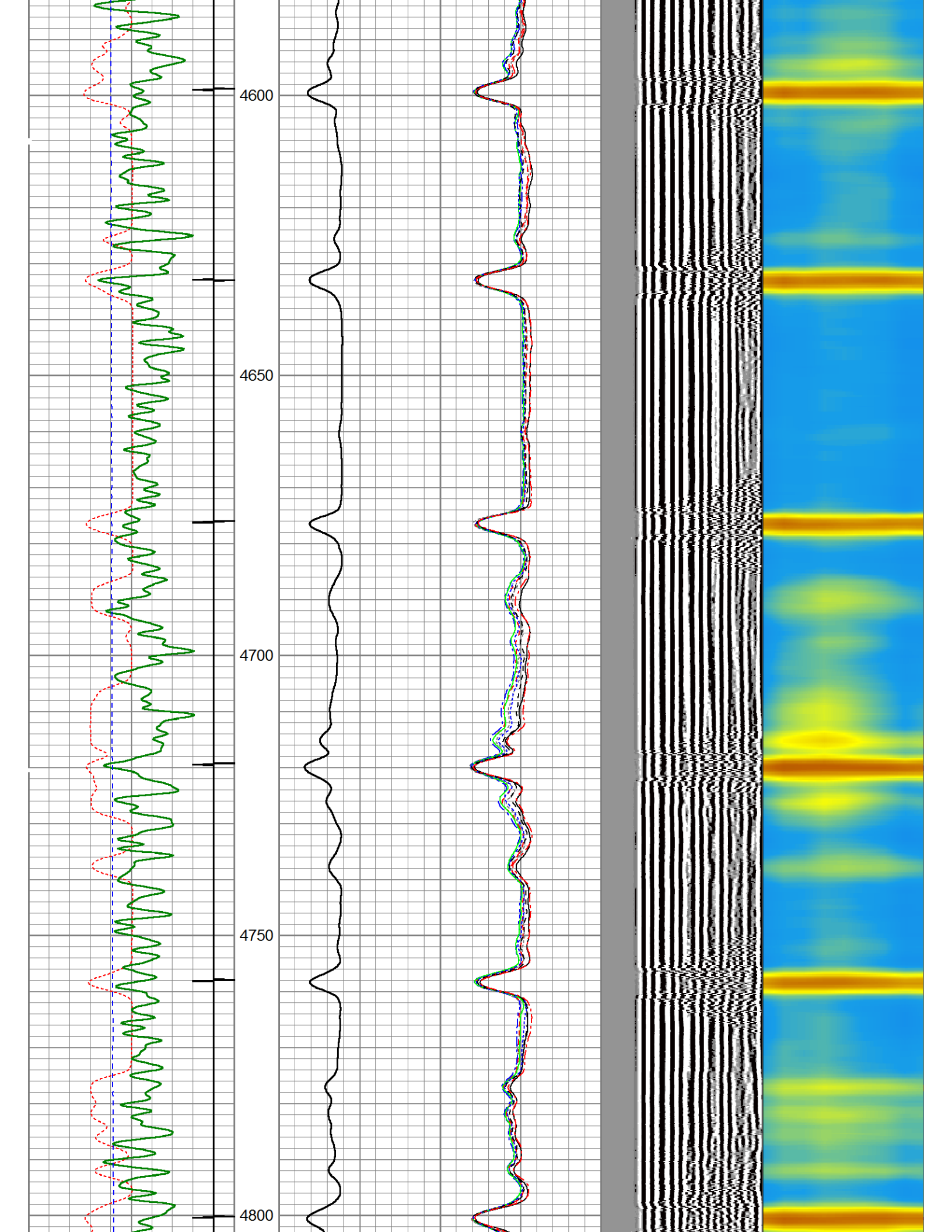
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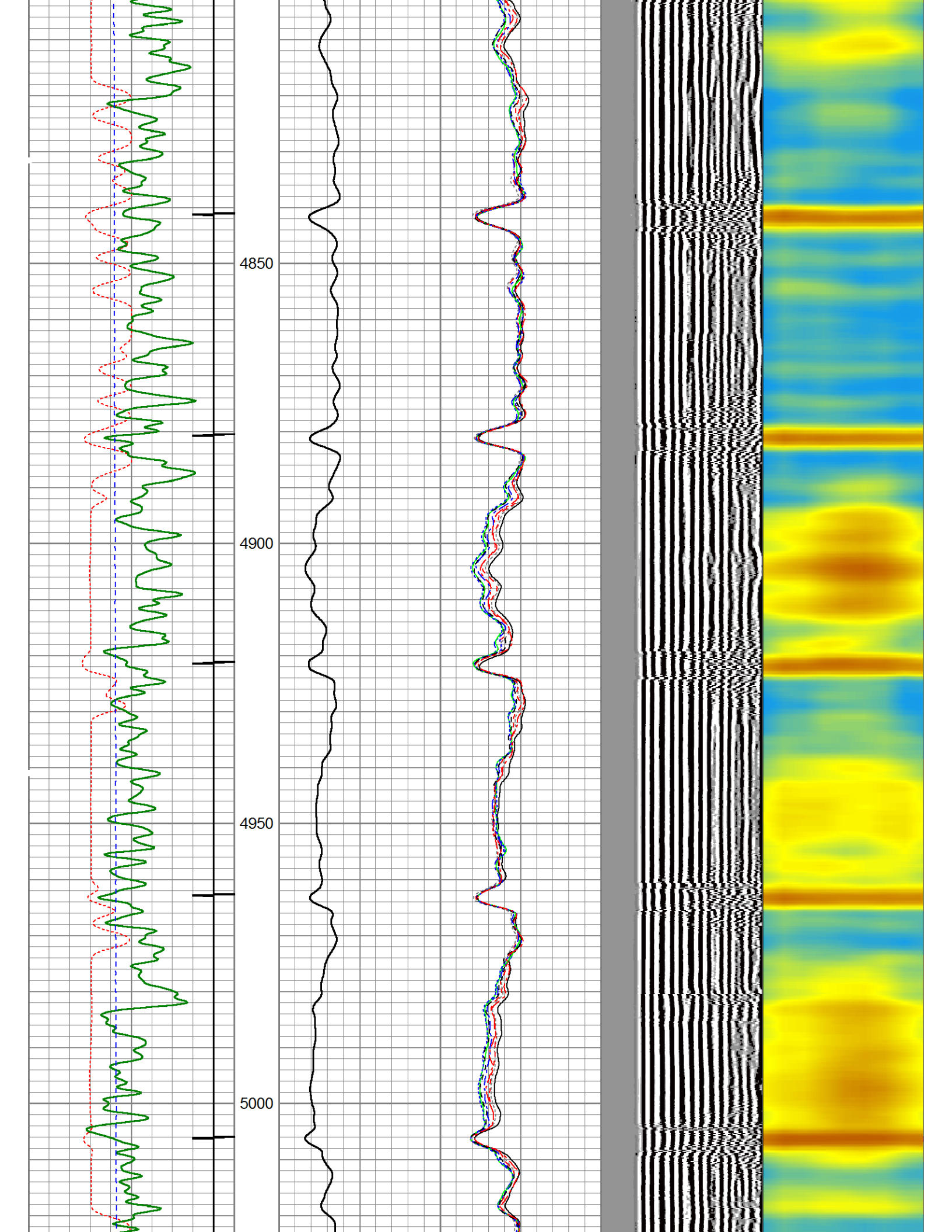
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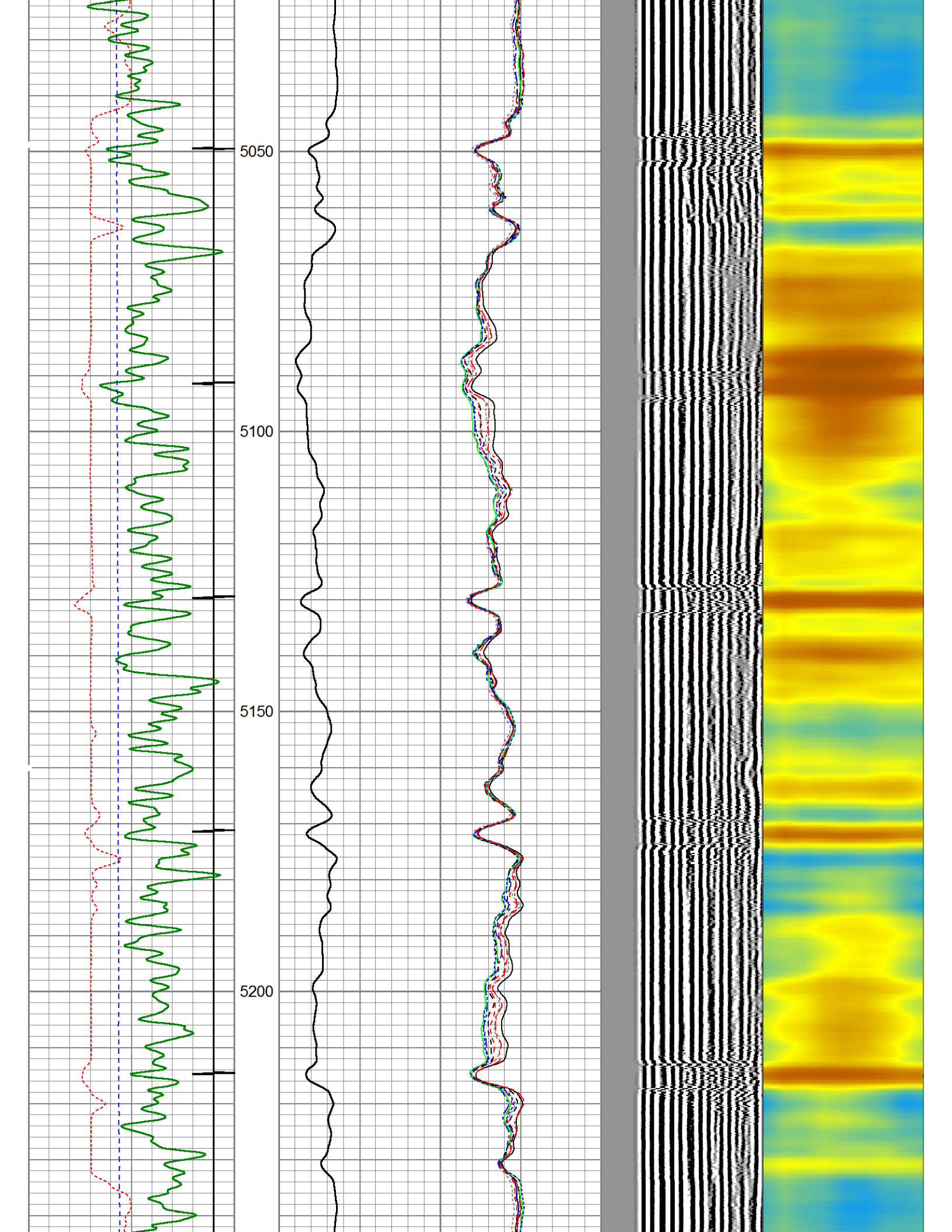
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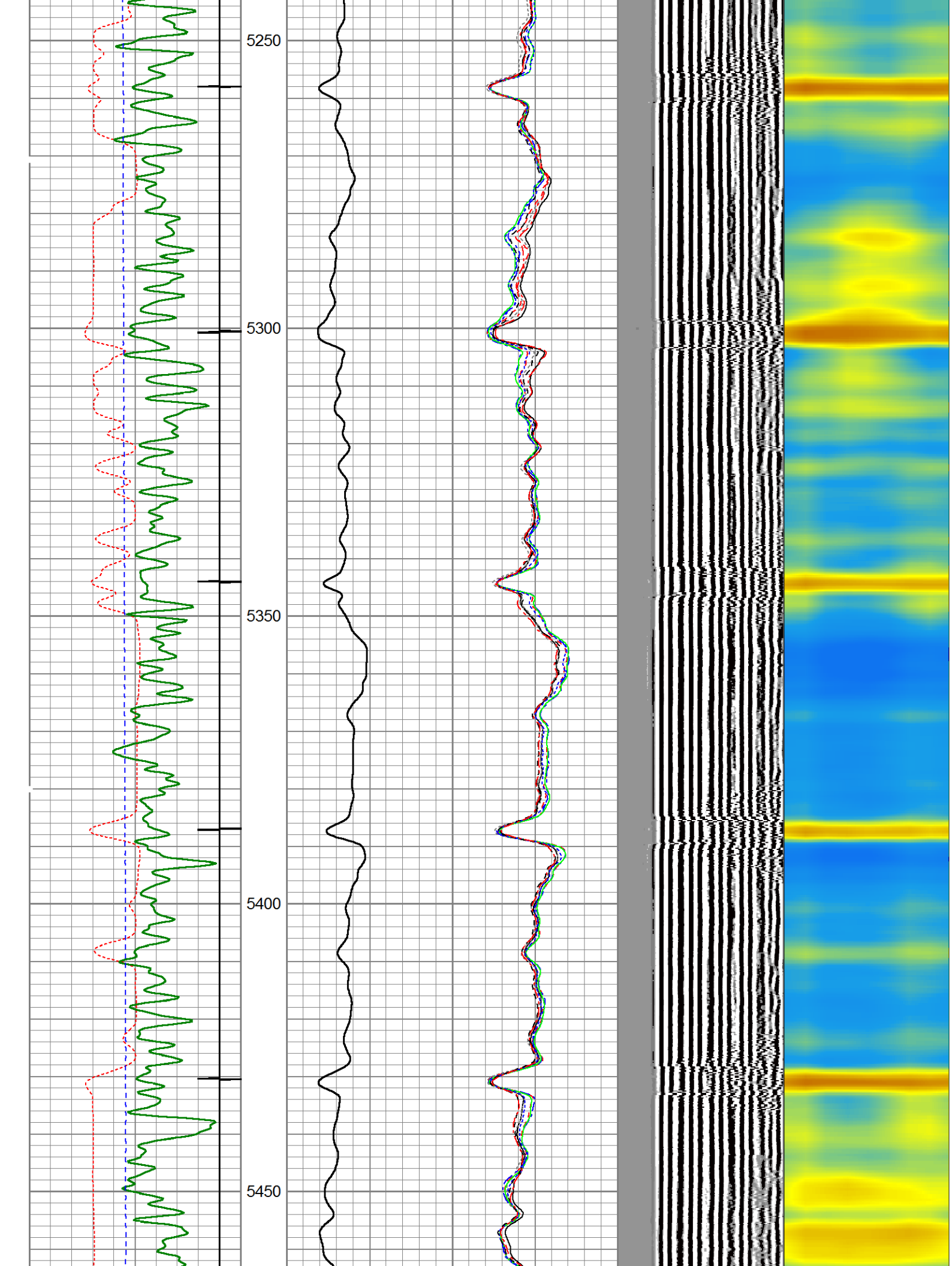
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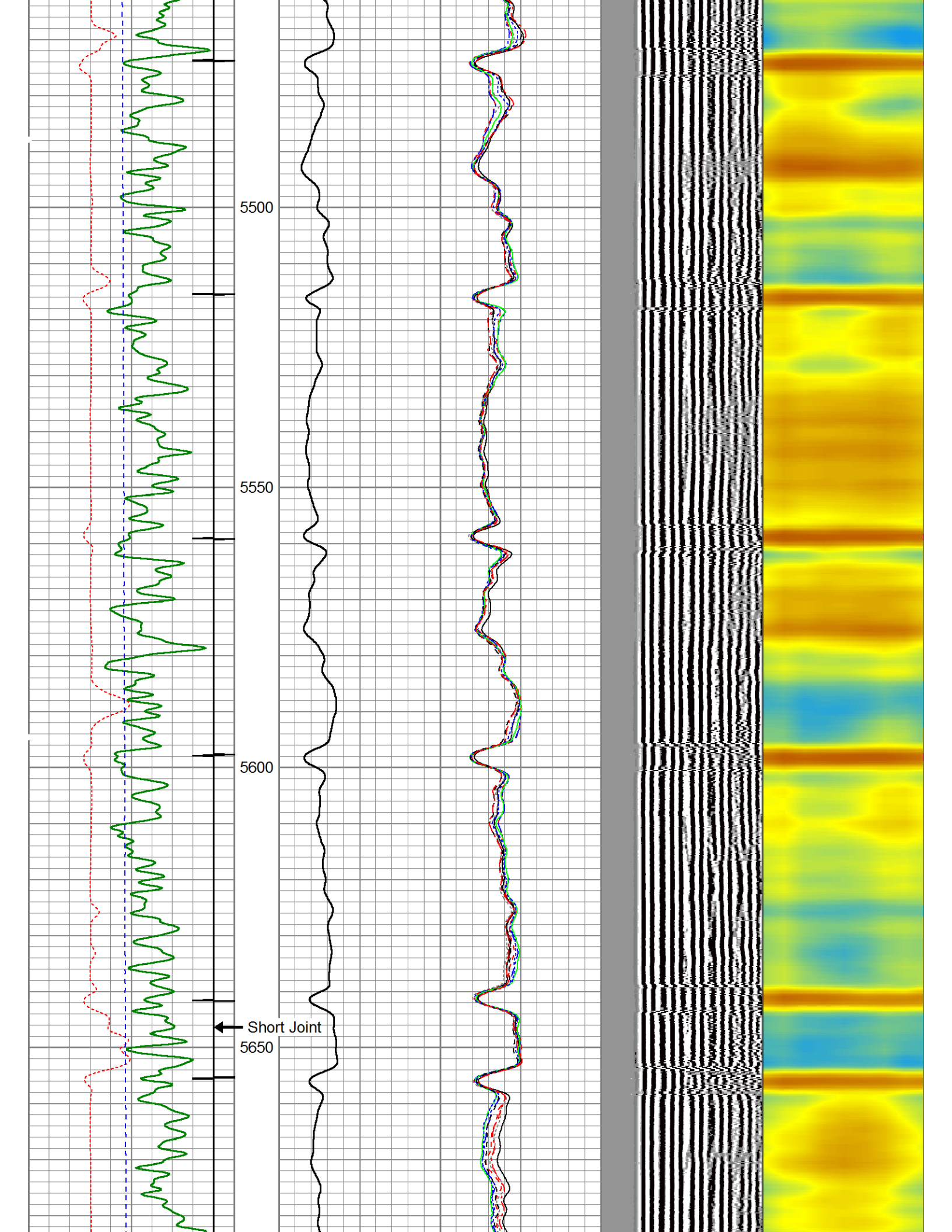
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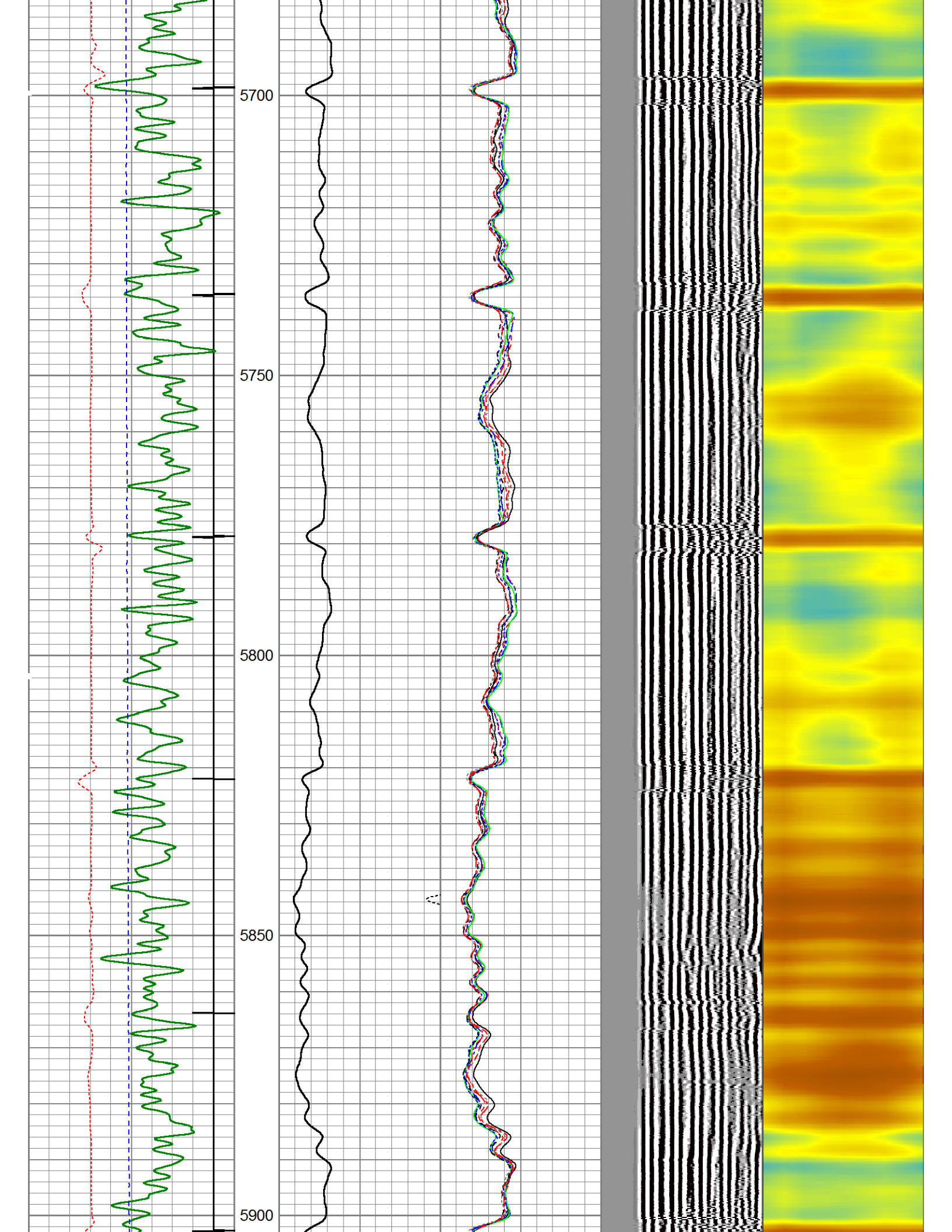
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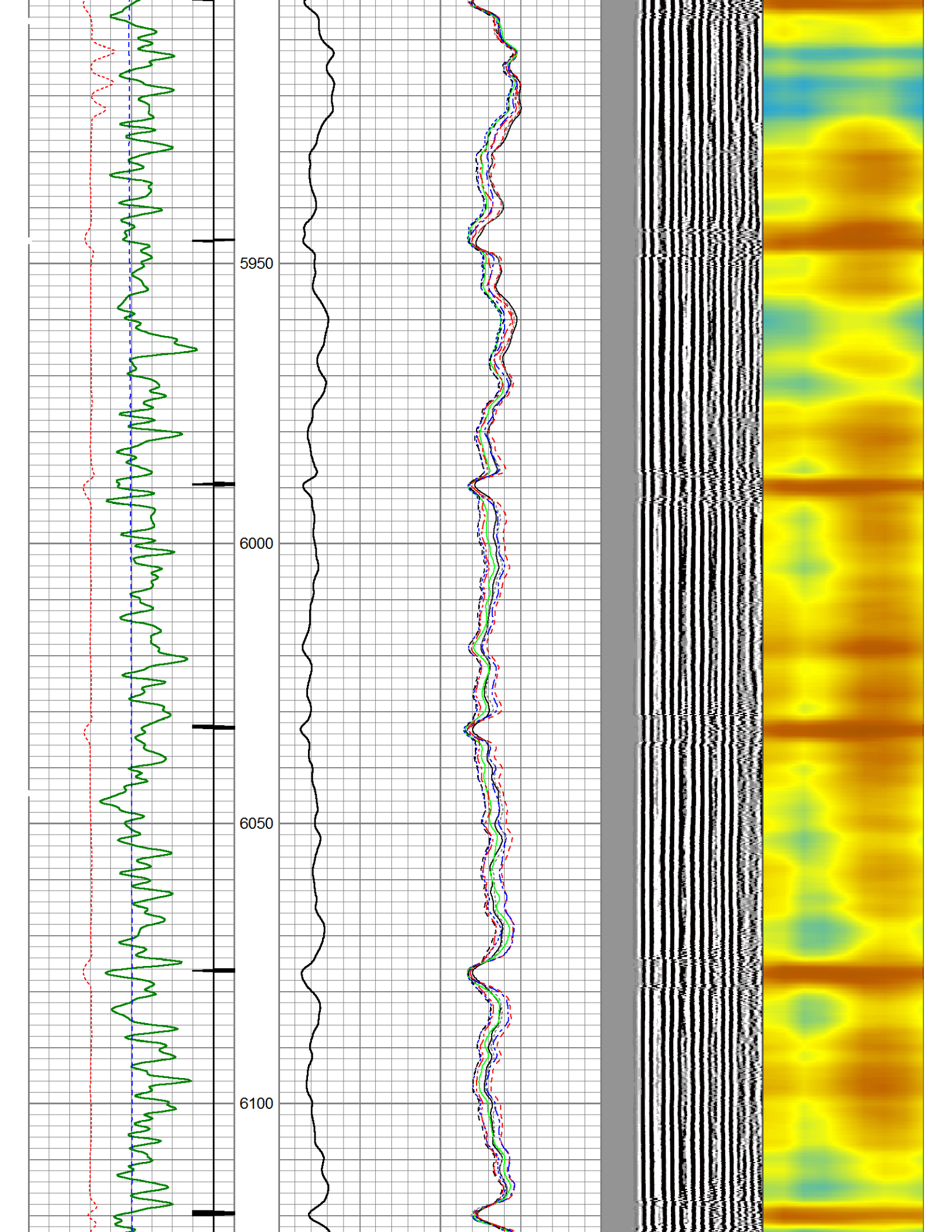
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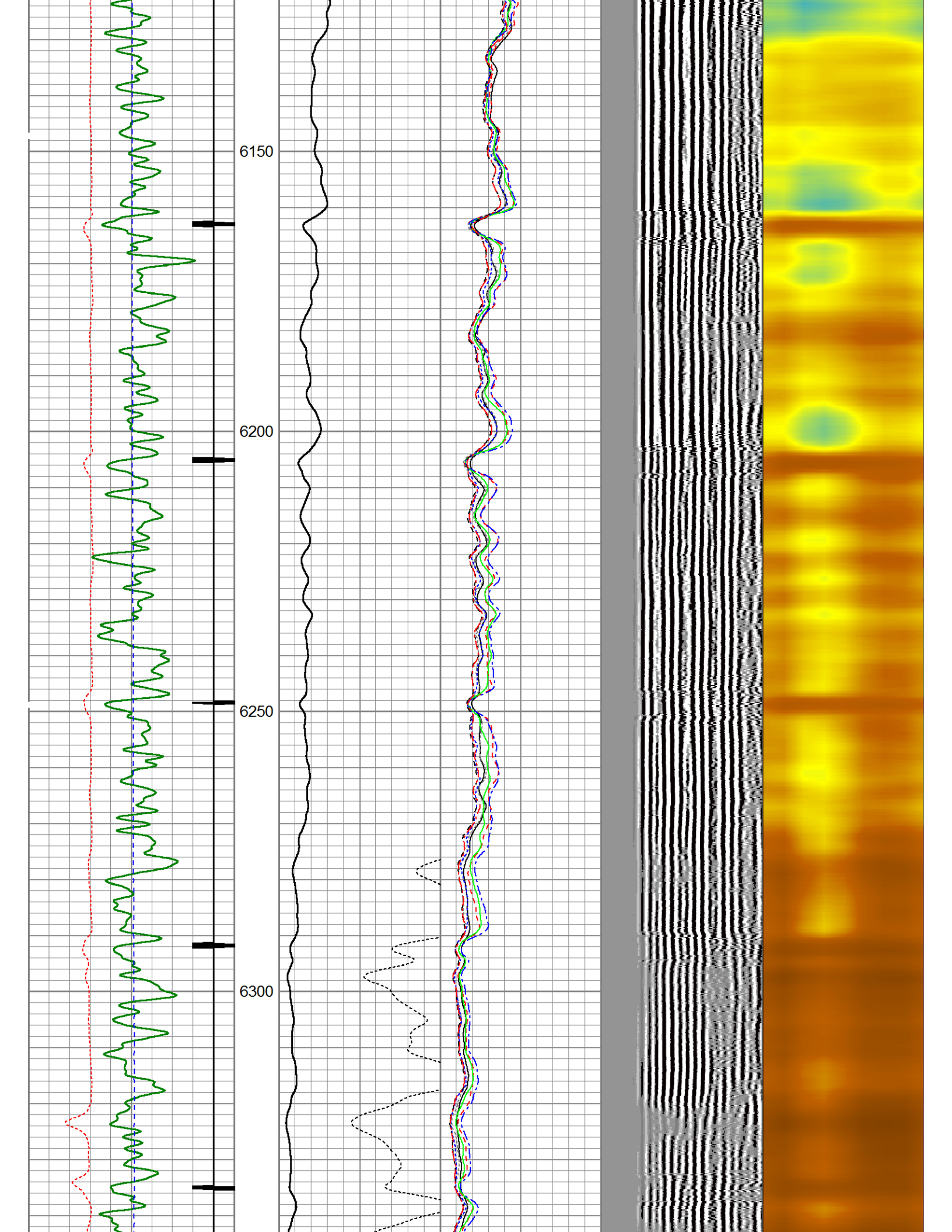
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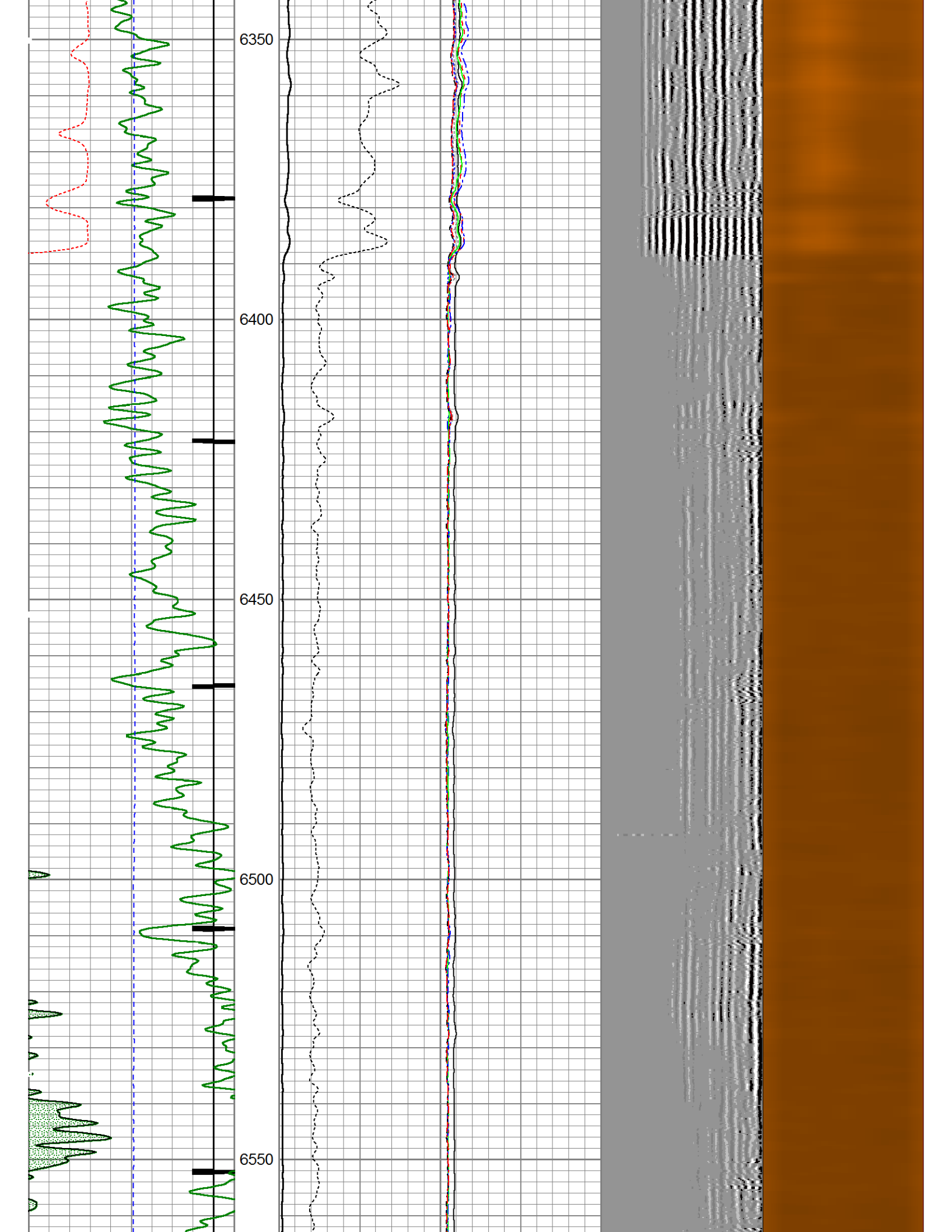
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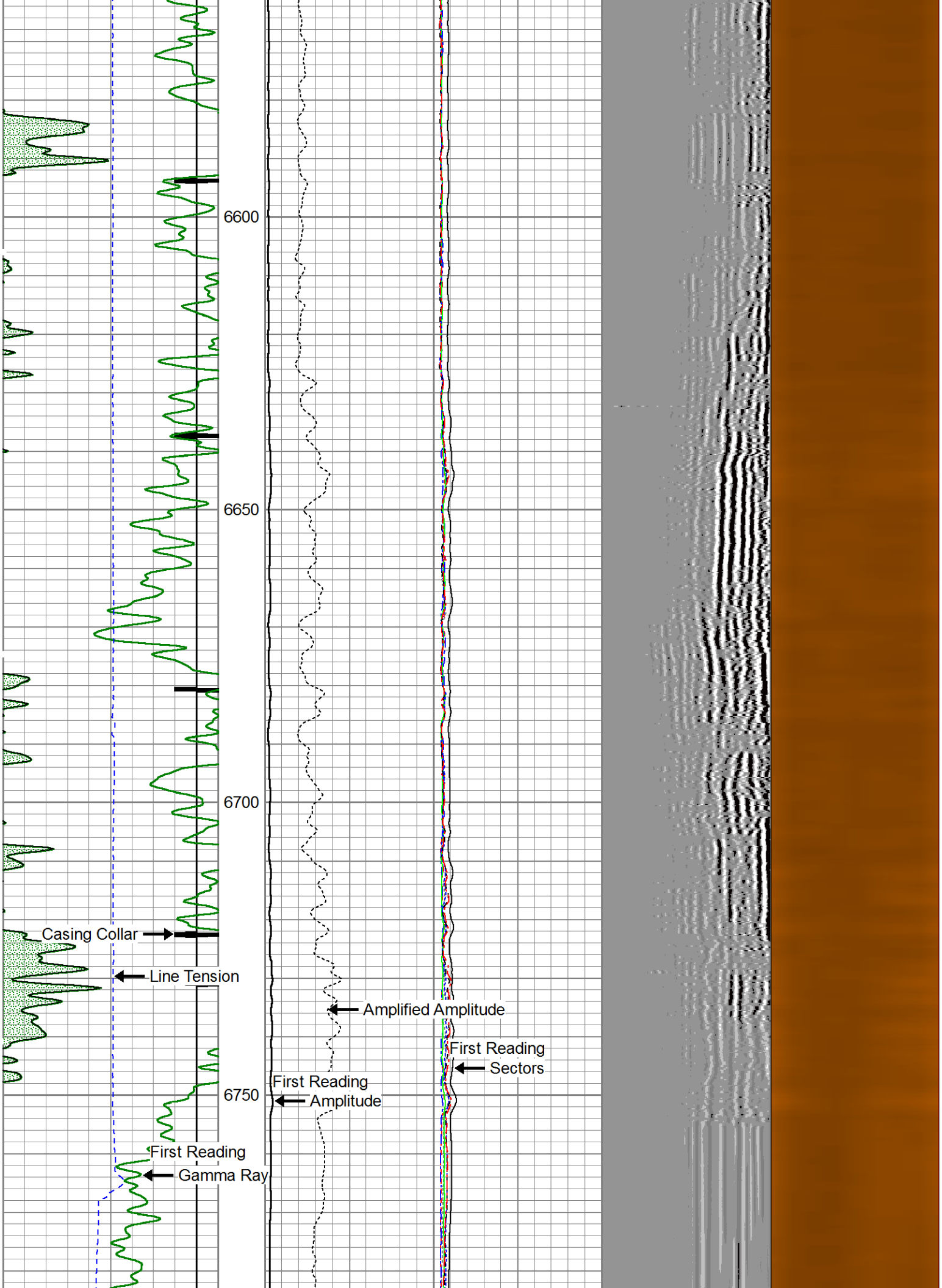
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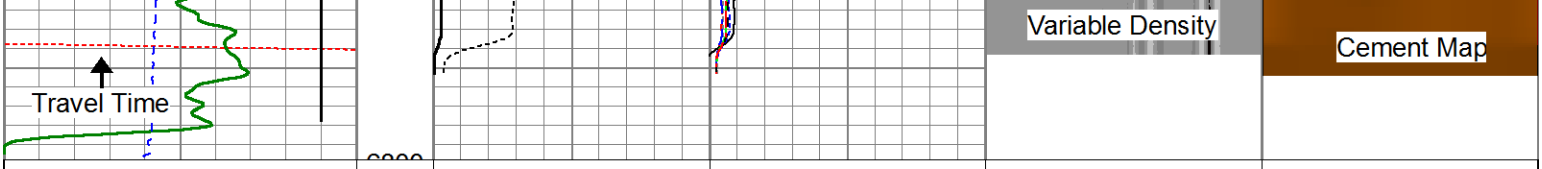
Casing Collar
Line Tension
Amplified Amplitude
First Reading
Sectors
First Reading
Amplitude
First Reading
Gamma Ray



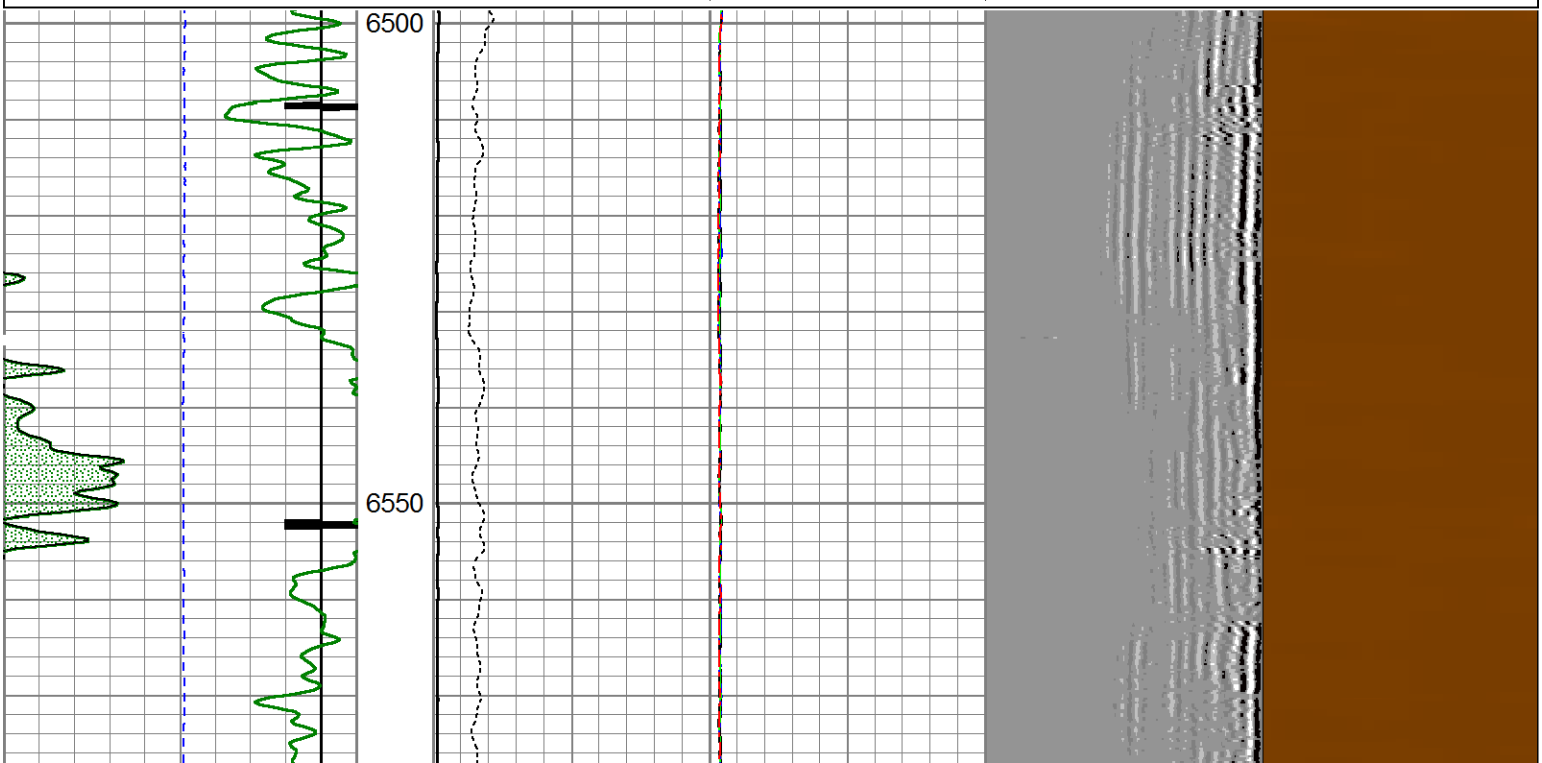
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map 8
9	*Casing Collar*	-1		Amplified Amplitude		-5	AMPS2	150	200 1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150			
0	Line Tension (lb)	2000				-5	AMPS4	150			
						-5	AMPS5	150			
						-5	AMPS6	150			
						-5	AMPS7	150			
						-5	AMPS8	150			

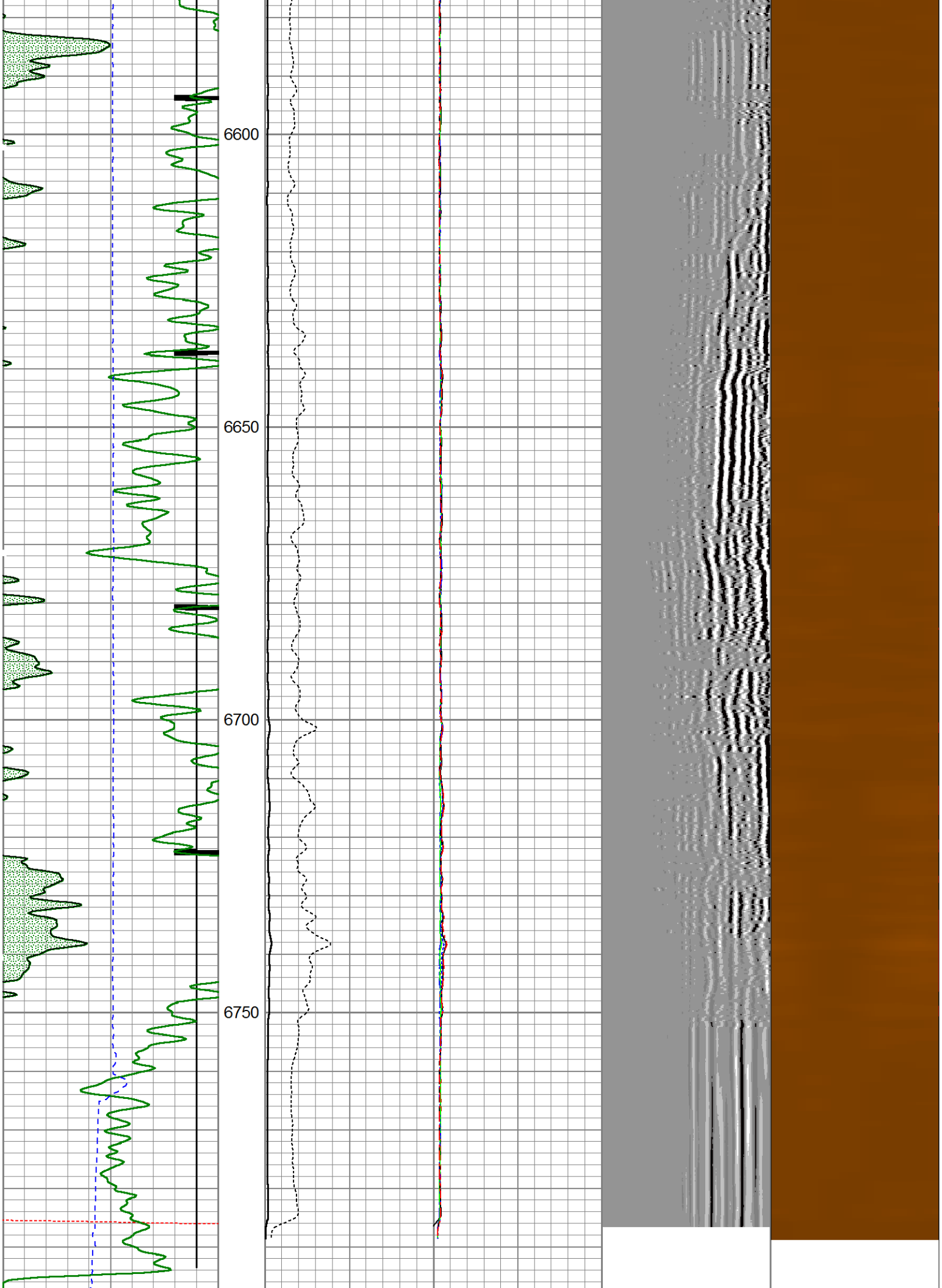
ALLIED WIRELINE

Repeat Pass (0 PSI)

Database File:	noble energynclp pc aa04-62-1hn_rcbl.db
Dataset Pathname:	pass8
Presentation Format:	scbl03
Dataset Creation:	Wed Feb 05 13:35:09 2014 by Log 7.0 B1
Charted by:	Depth in Feet scaled 1:240

400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map 8
9	Casing Collar	-1		Amplified Amplitude		-5	AMPS2	150	200 1200	0	100
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150			
0	Line Tension (lb)	2000				-5	AMPS4	150			
						-5	AMPS5	150			
						-5	AMPS6	150			
						-5	AMPS7	150			
						-5	AMPS8	150			

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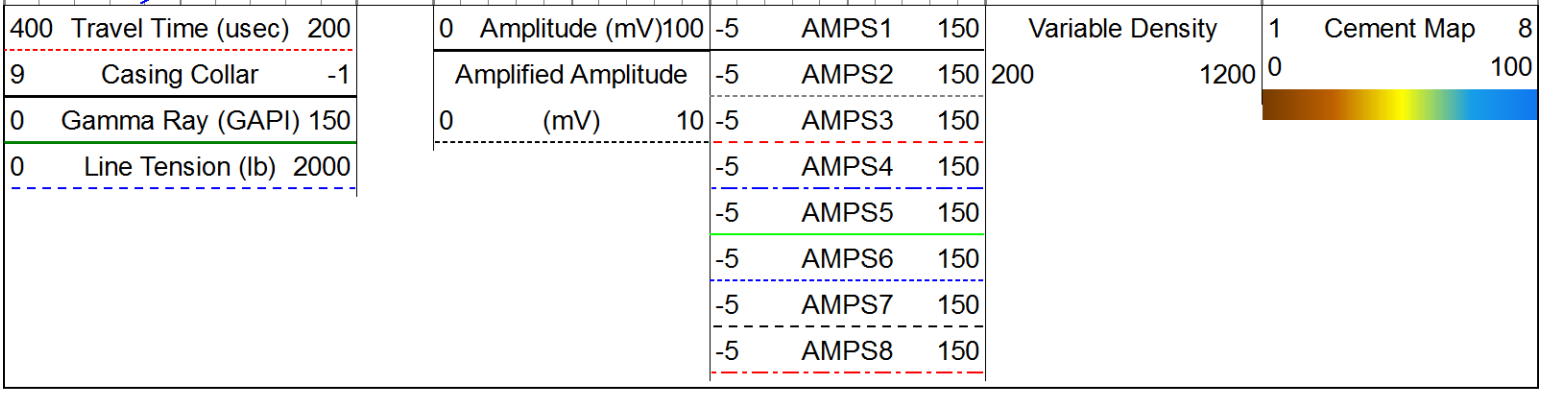


Calibration Report

Database File: noble energynclp pc aa04-62-1hn_rcbl.db
Dataset Pathname: merge1.1
Dataset Creation: Wed Feb 05 15:05:10 2014 by Calc 7.0 B1

Gamma Ray Calibration Report

Serial Number:	101135-Dig	
Tool Model:	Probe275	
Performed:	Tue Jan 15 09:21:57 2013	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.8000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	101224	
Tool Model:	Probe	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	1001.708	ft

Master Calibration, performed Wed Feb 05 13:00:43 2014:

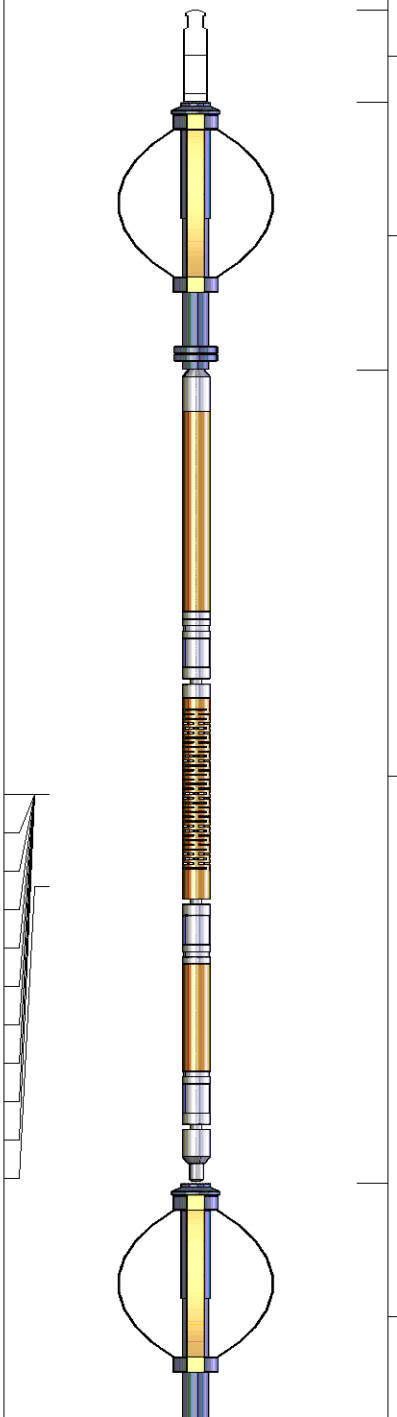
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.715	1.000	62.165	134.356	0.406
CAL	0.009	0.789				
5'	0.012	0.653	1.000	62.165	95.441	-0.134
SUM						
S1	0.047	0.760	0.000	100.000	264.734	-6.636
S2	0.003	0.705	0.000	100.000	268.512	-0.410
S3	0.007	0.718	0.000	100.000	265.047	-0.971
S4	0.006	0.725	0.000	100.000	262.248	-0.869
S5	0.006	0.717	0.000	100.000	265.124	-0.822
S6	0.006	0.718	0.000	100.000	264.834	-0.833
S7	0.006	0.713	0.000	100.000	266.767	-0.893
S8	0.006	0.715	0.000	100.000	266.069	-0.887

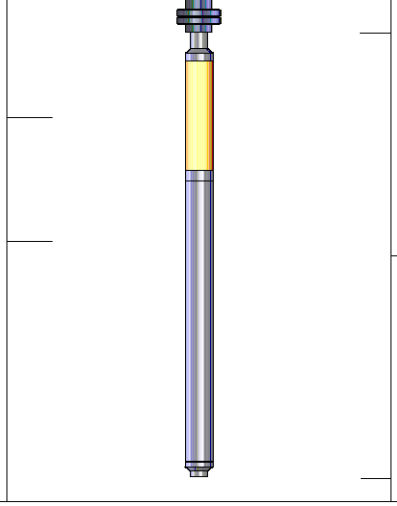
Internal Reference Calibration, performed Mon Oct 10 09:42:03 2005:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.009	0.789	1.000	0.000

Air Zero Calibration, performed Mon Oct 10 09:41:05 2005:

	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	Len (ft)	OD (in)	Wt (lb)
			Titan Cable_head	1.00	1.44	10.00
			Probe275 2.75" Centralizer	2.88	2.75	20.00
			RBT-Probe (101224) Probe Radii Bond Tool with Digital Telemetry	8.75	2.75	90.00
WVF3FT	11.84					
WVFCAL	11.84					
WVFS1	11.84					
WVFS2	11.84					
WVFS3	11.84					
WVFS4	11.84					
WVFS5	11.84					
WVFS6	11.84					
WVFS7	11.84					
WVFS8	11.84					
WVF5FT	10.84					
			Probe275 2.75" Centralizer	2.88	2.75	20.00

CCL	3.88					
GR	2.54		GR-Probe275 (101135-Dig) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00

Dataset:	noble energynclp pc aa04-62-1hn_rcbl.db: field/well/run1/merge1.1
Total Length:	20.28 ft
Total Weight:	197.00 lb
O.D.	2.75 in