				SECTOR BOND LOG			
COMPANY WELL FIELD PROVINCE/COUNTY COUNTRY/STATE LOCATION				CAERUS OIL & GAS LLC PUCKETT 13B-1 GRAND VALLEY GARFIELD USA / COLORADO SHL: 2111 N 1322 W & BHL: 2130 N 886 W			
SEC 1	TWP 7S	RGE 97W	Other Services NONE				
Latitude							
Longitude							
API Number		5045228620000					
Permanent Datum GROUND LEVEL, Elevation 8329 feet				Elevations: KB 8351.00 DF 8351.00 GL 8329.00			
Log Measured From KB							
Drilling Measured From KB @ 22'							
Date	13-DEC-2015	PERFORATION RECORD					
Run Number	ONE	Shot	Number	Depth From	Depth To		
Service Order	136820485	Density	of Shots	feet	feet		
Type Log	SBT						
Depth Driller	8805.00						
Depth Logger	8713.00						
Top Log Interval	0.00						
Bottom Log Interval	8709.00						
Hole Fluid Type	1.4% KCL						
Hole Fluid Level	0.00						
Restriction ID	3.875						
Max Recorded Temp	225.00						
Well Head Pressure	0.00						
Well Head Equipment	N/A						
Time Well Ready	ROA						
Time Logger Bottom	1841						
Unit	14113						
Equipment Name	WSS-E						
Base	CASPER						
Recorded By	MAZUR						
Witnessed By	NOT WITNESSED						

BOREHOLE RECORD						Last Edited: 09-DEC-2015 14:36
Bit Size inches		Depth From feet		Depth To feet		
14.750		0.00		2498.00		
8.750		2498.00		9371.00		
CASING / TUBING RECORD						
Type	Grade	TypeJoint	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	J-55	LT&C	9.625	0.00	2497.00	36.00
PRODUCTION	P-110	LT&C	4.500	0.00	8805.00	11.60

REMARKS
SOFTWARE VERSION 16.00.6296 - DEVELOPMENT BUILD VERSION
ALL DEPTH CONTROL PROCEDURES FOR SUBSEQUENT RUN IN HOLE WERE FOLLOWED. LOG WAS CORRELATED TO WEATHERFORD RAPTOR NVISION LOG DATED 08-DEC-2015
SHORT JOINT LOCATED AT 4503' - 4513'
SURFACE SYSTEM USED: WCM-D 307
TOOLS RUN: CENA, CTBA, GRBA, CENB, SBTA, CENC WERE RAN IN COMBINATION
PREDICTED 3' AMPLITUDE FOR 4.5" WITH 11.6 LB/FT CASING: 81 mv
FREE PIPE CALIBRATION DONE AT 2500 FT
UNKNOWN CEMENT CLASS DUE MISSING DATA FROM CLIENT

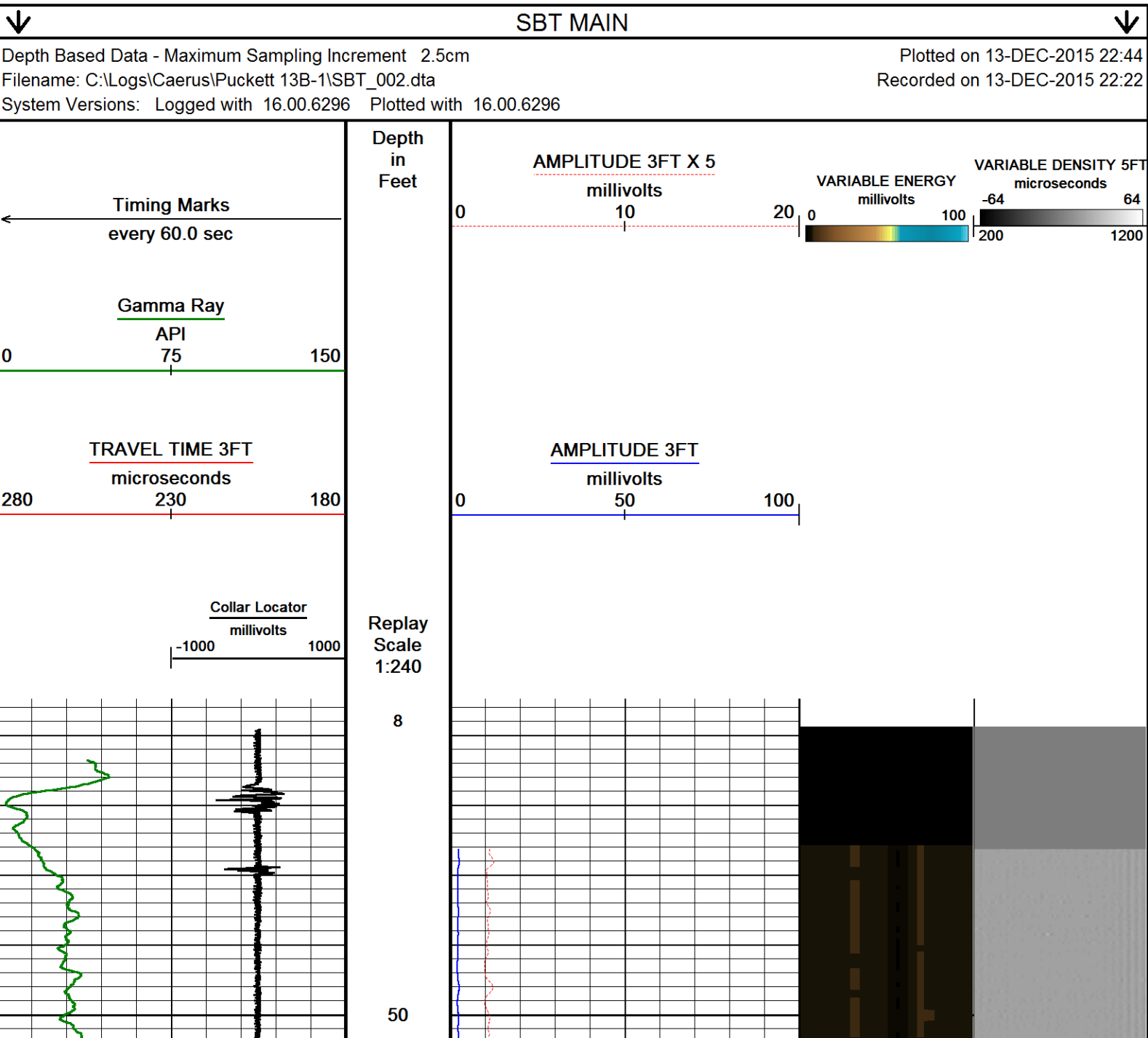
UNKNOWN CEMENT JOB ENDED TIME DUE TO MISSING DATA FROM CLIENT

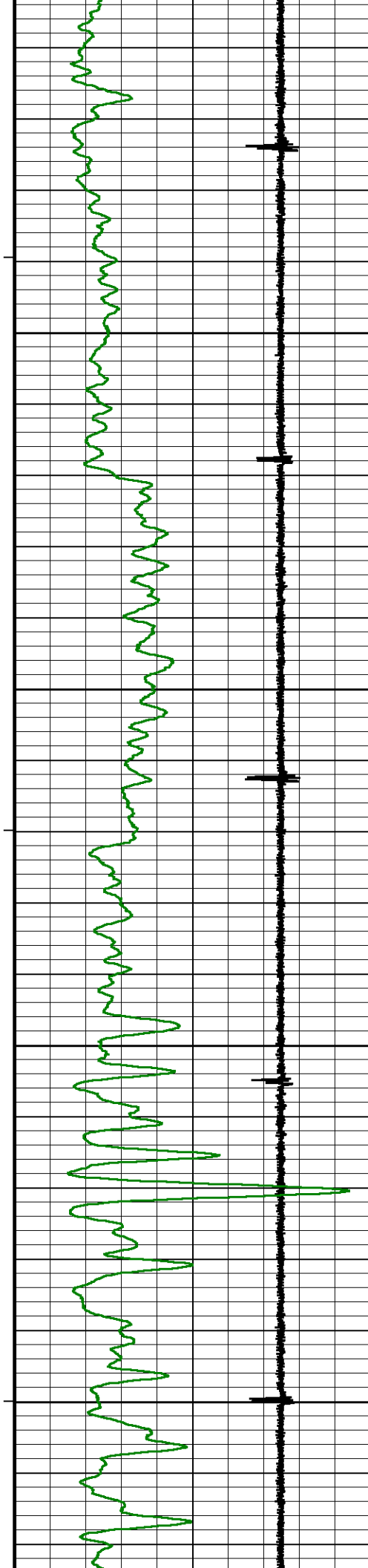
UNKNOWN CEMENT JOB ENDED TIME DUE TO MISSING DATA FROM CLIENT

BOTTOM HOLE TEMPERATURE WAS DEG. 225F

CREW: PAUL MAZUR, BRYAN DIESBURG, JAMES BARNETT

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.



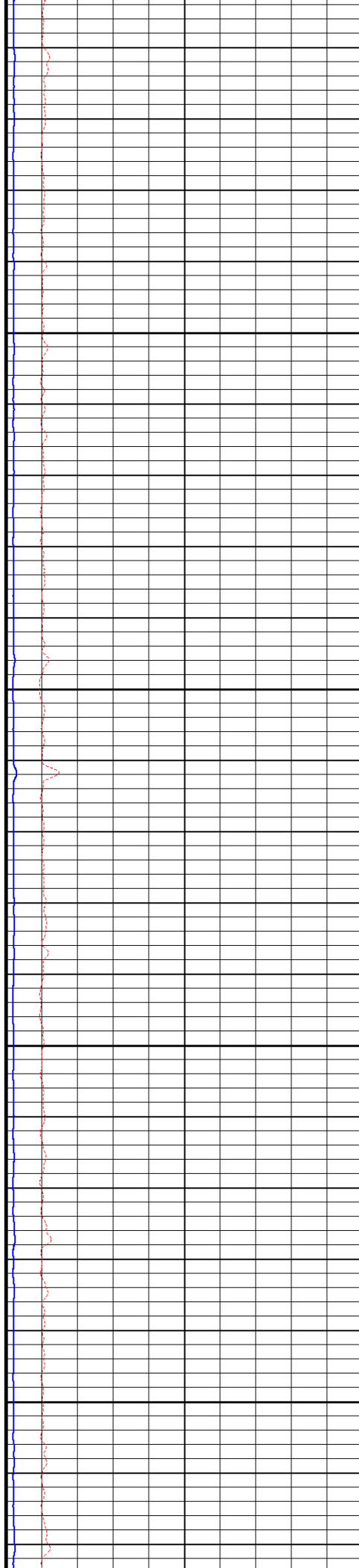


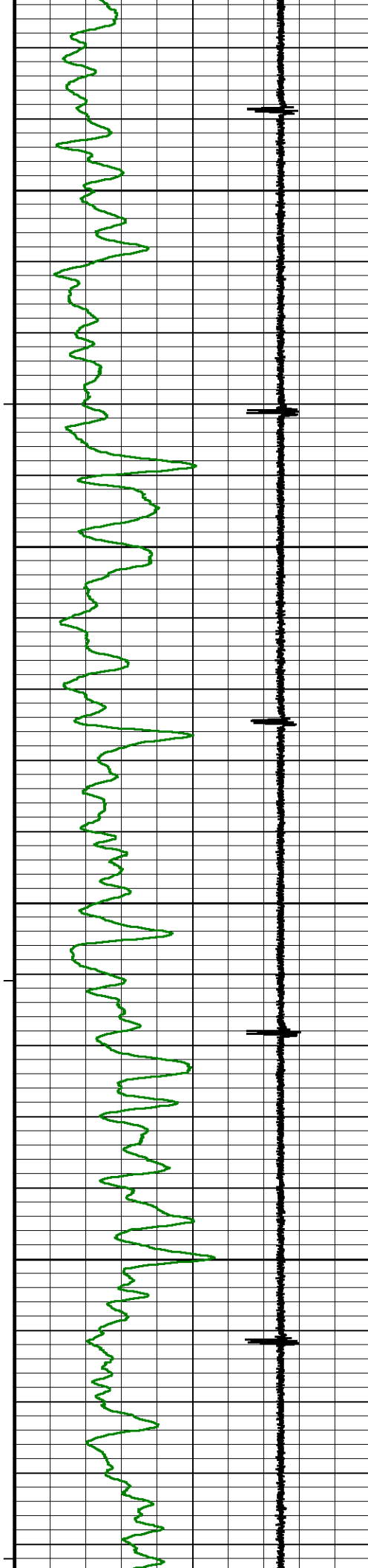
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150

200

250



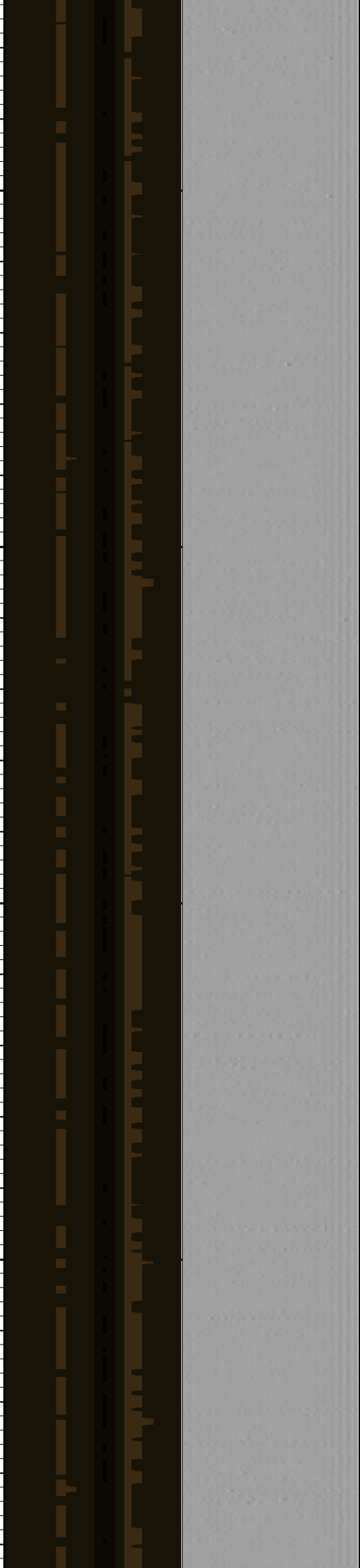
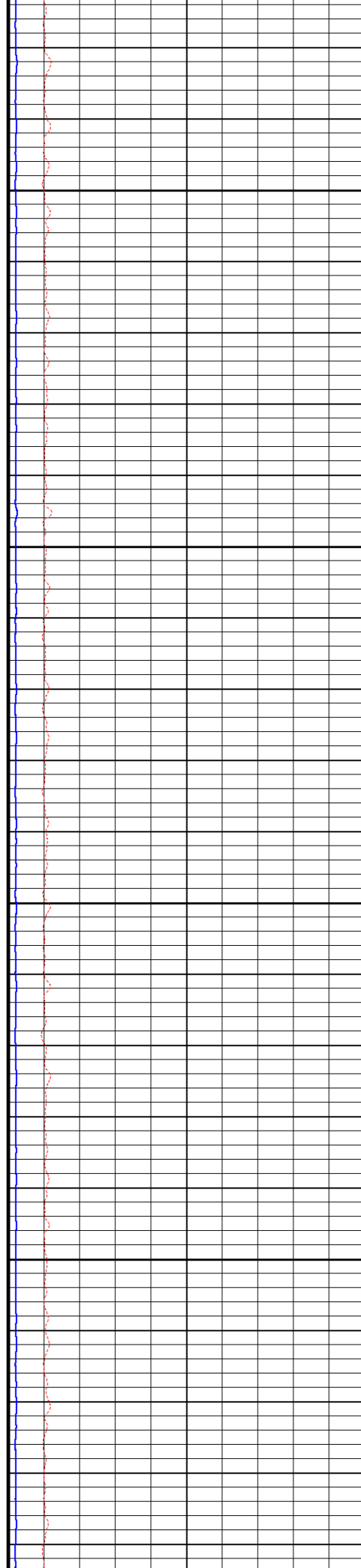


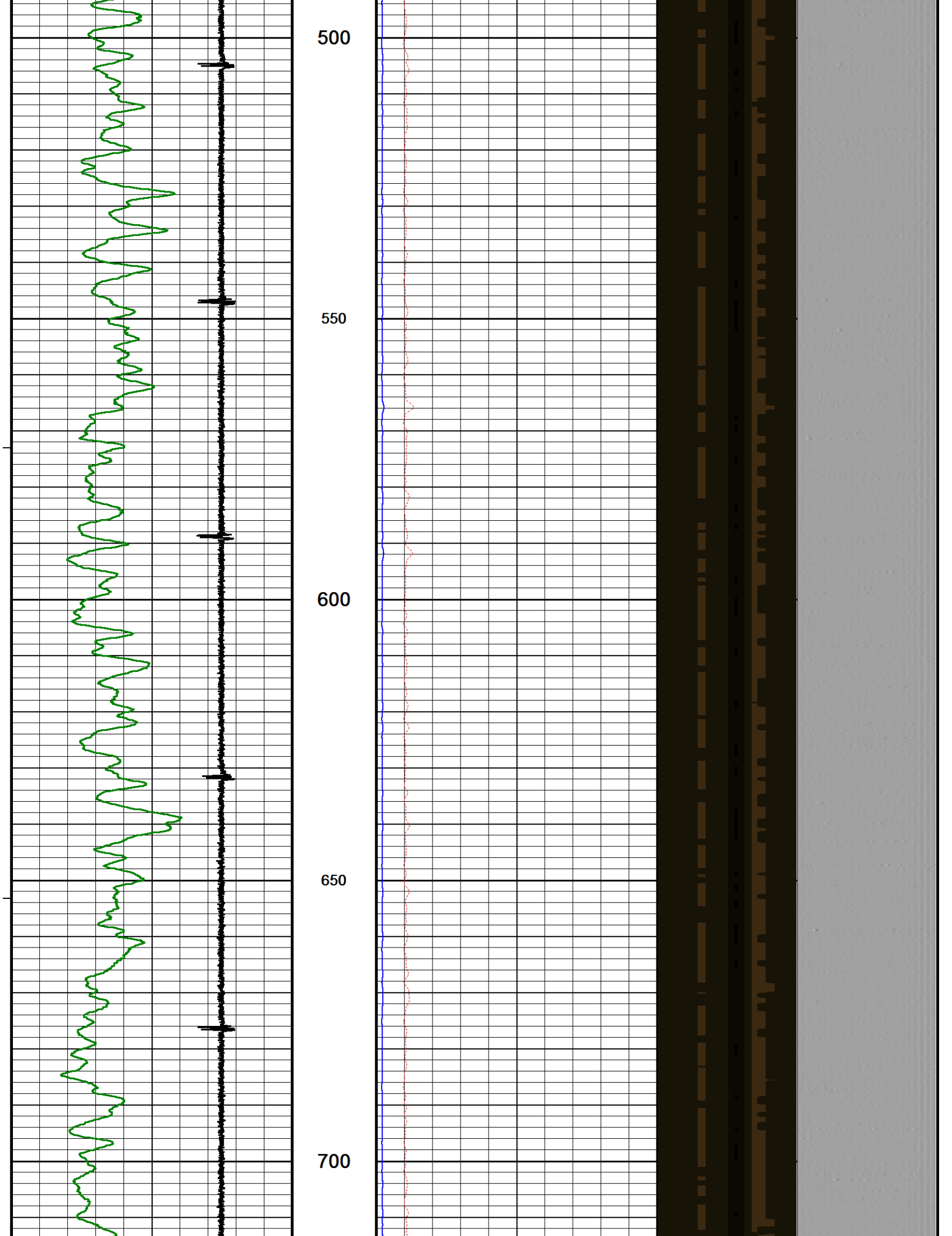
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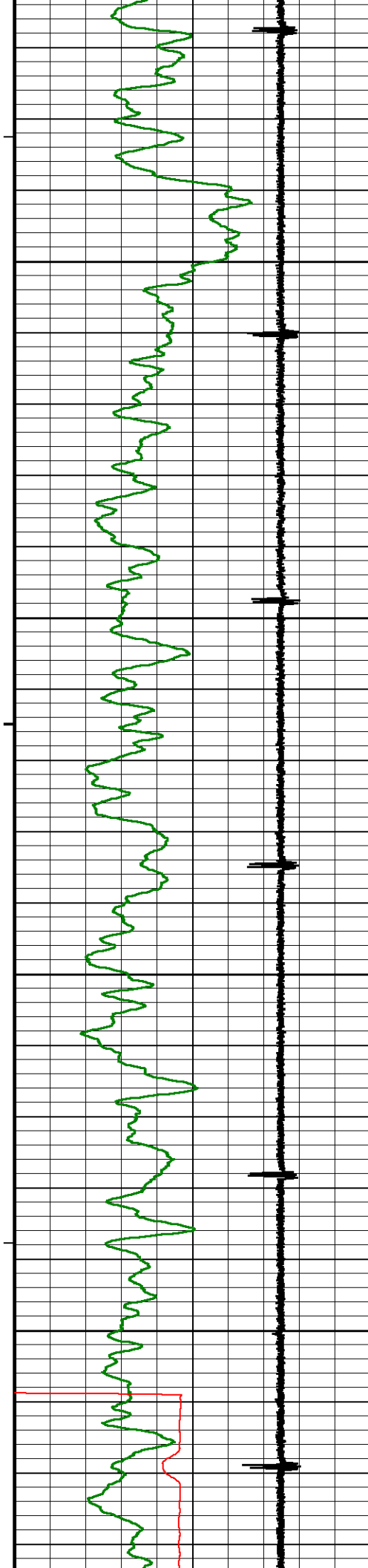
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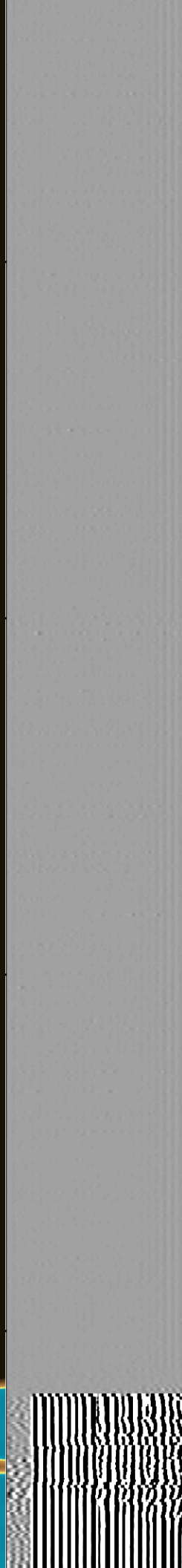
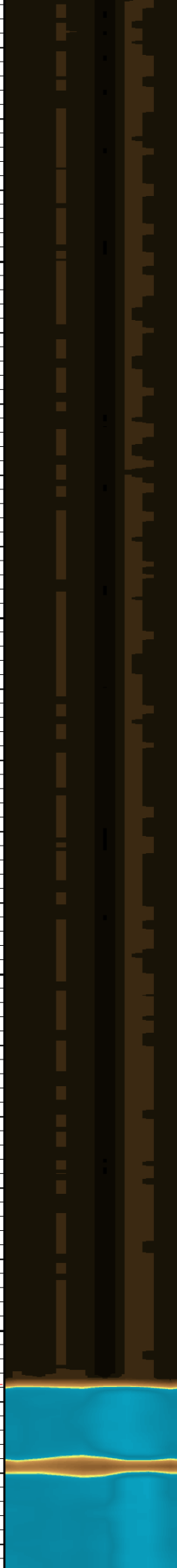
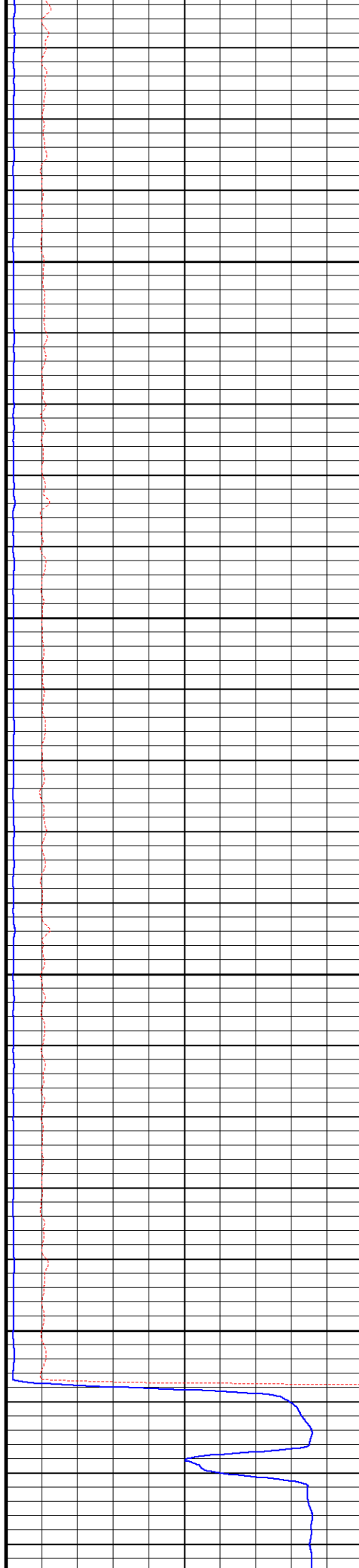


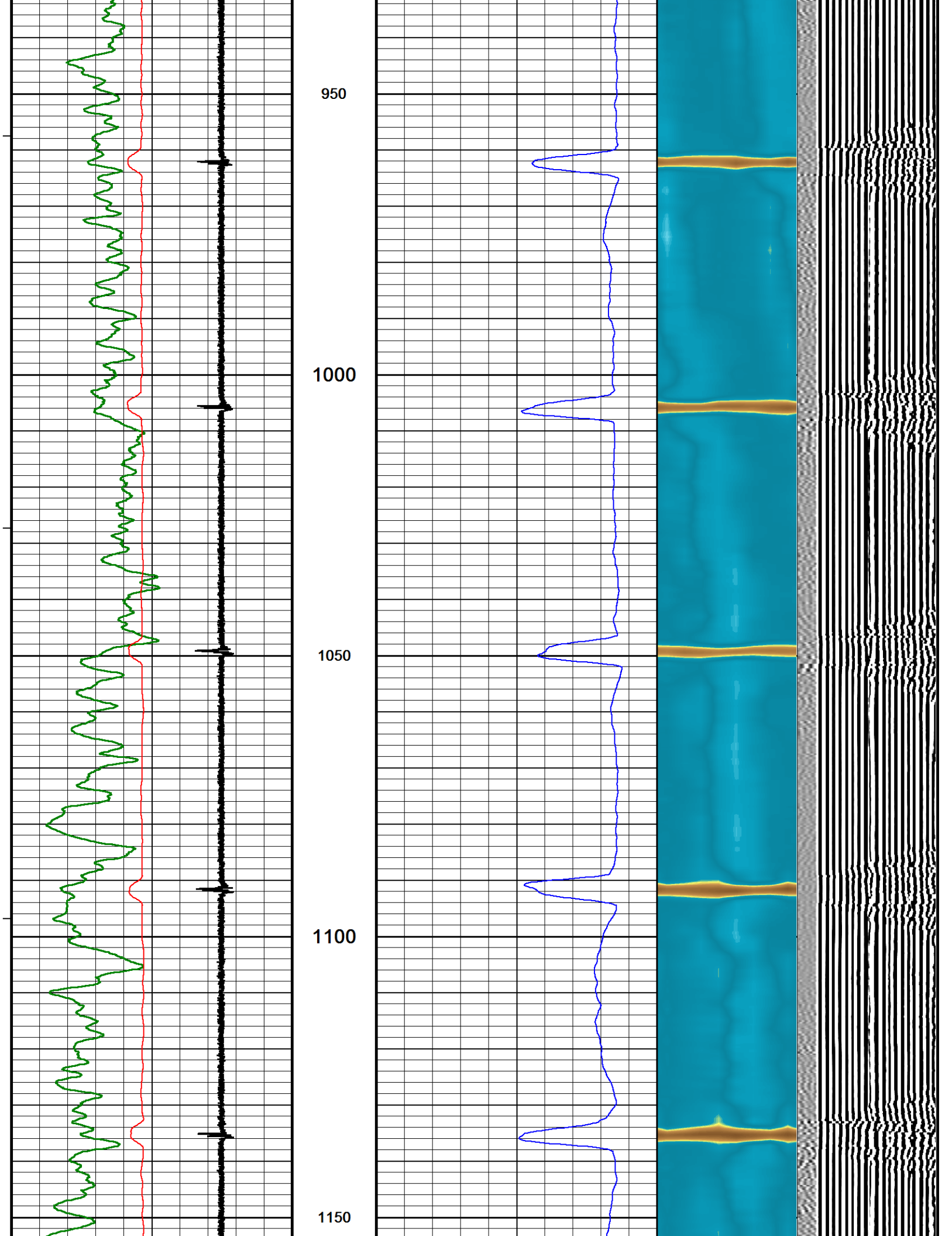
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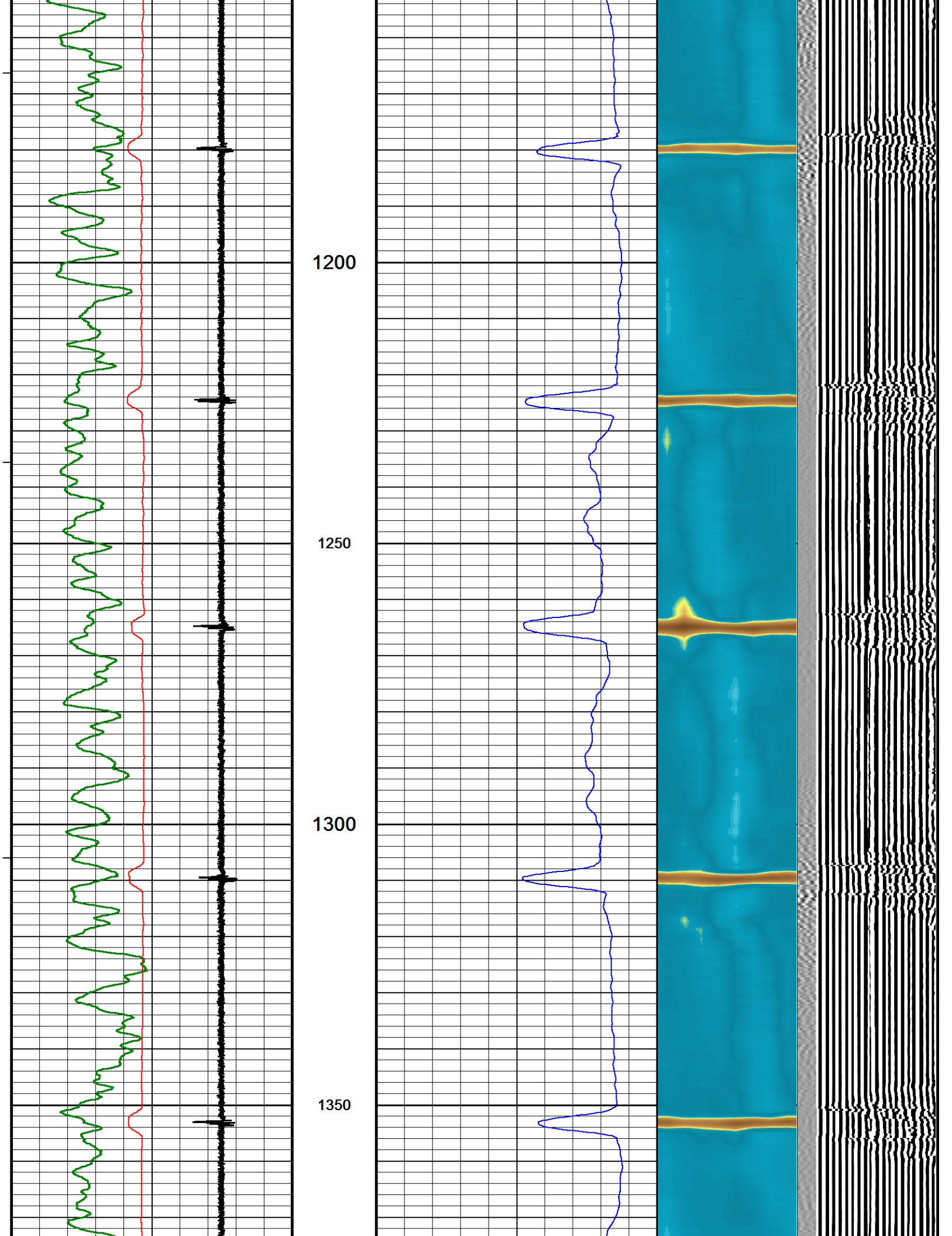
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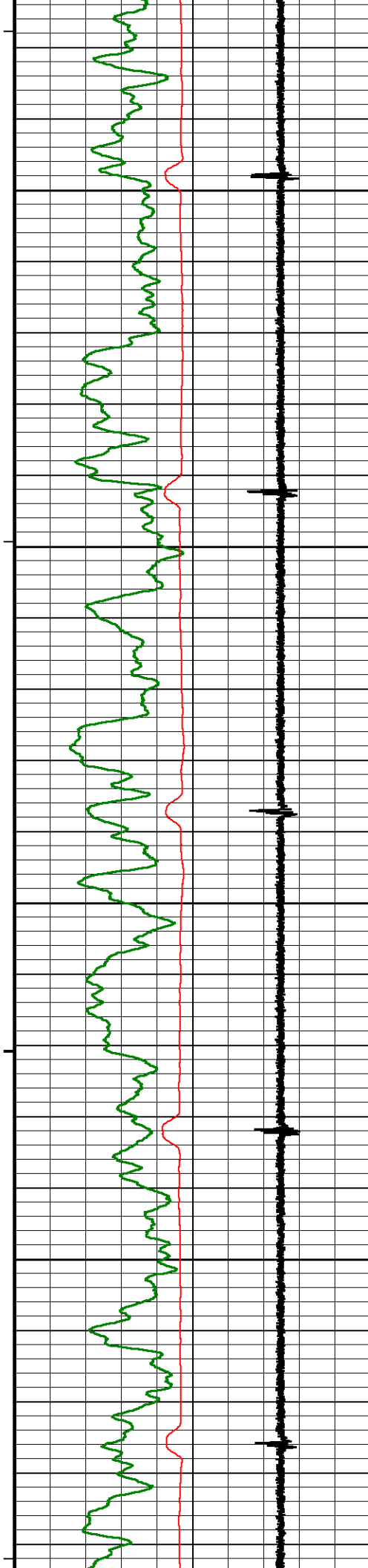
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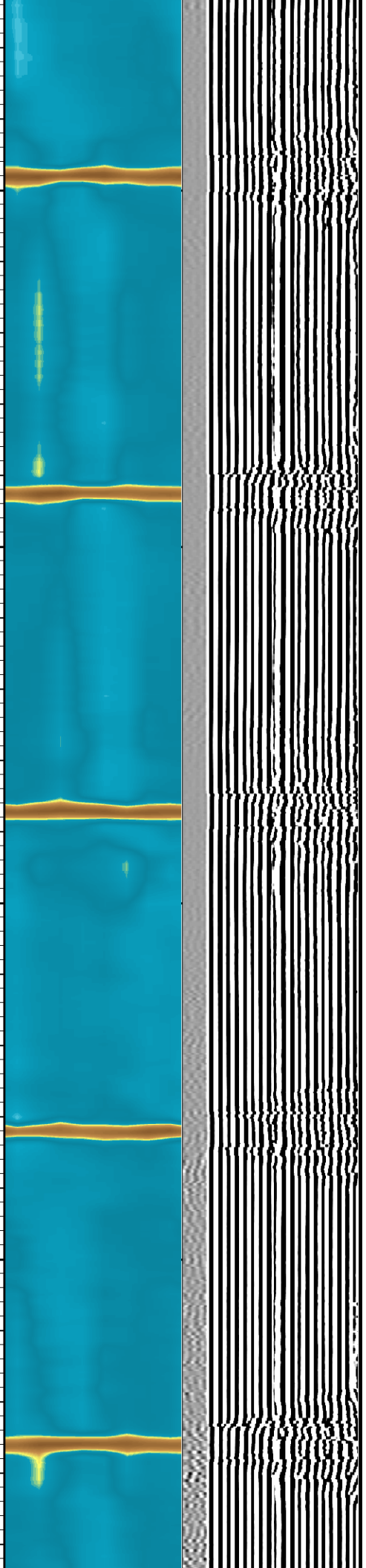
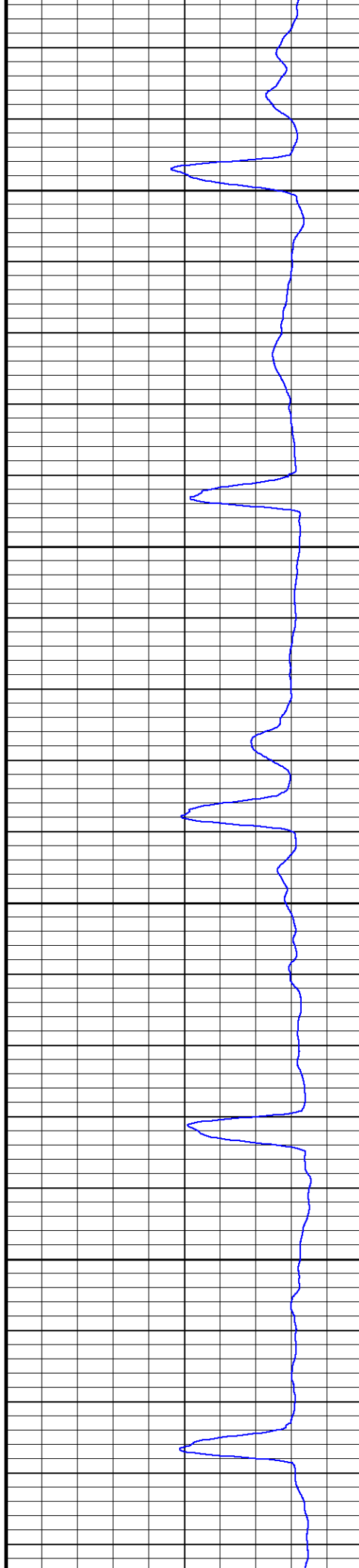


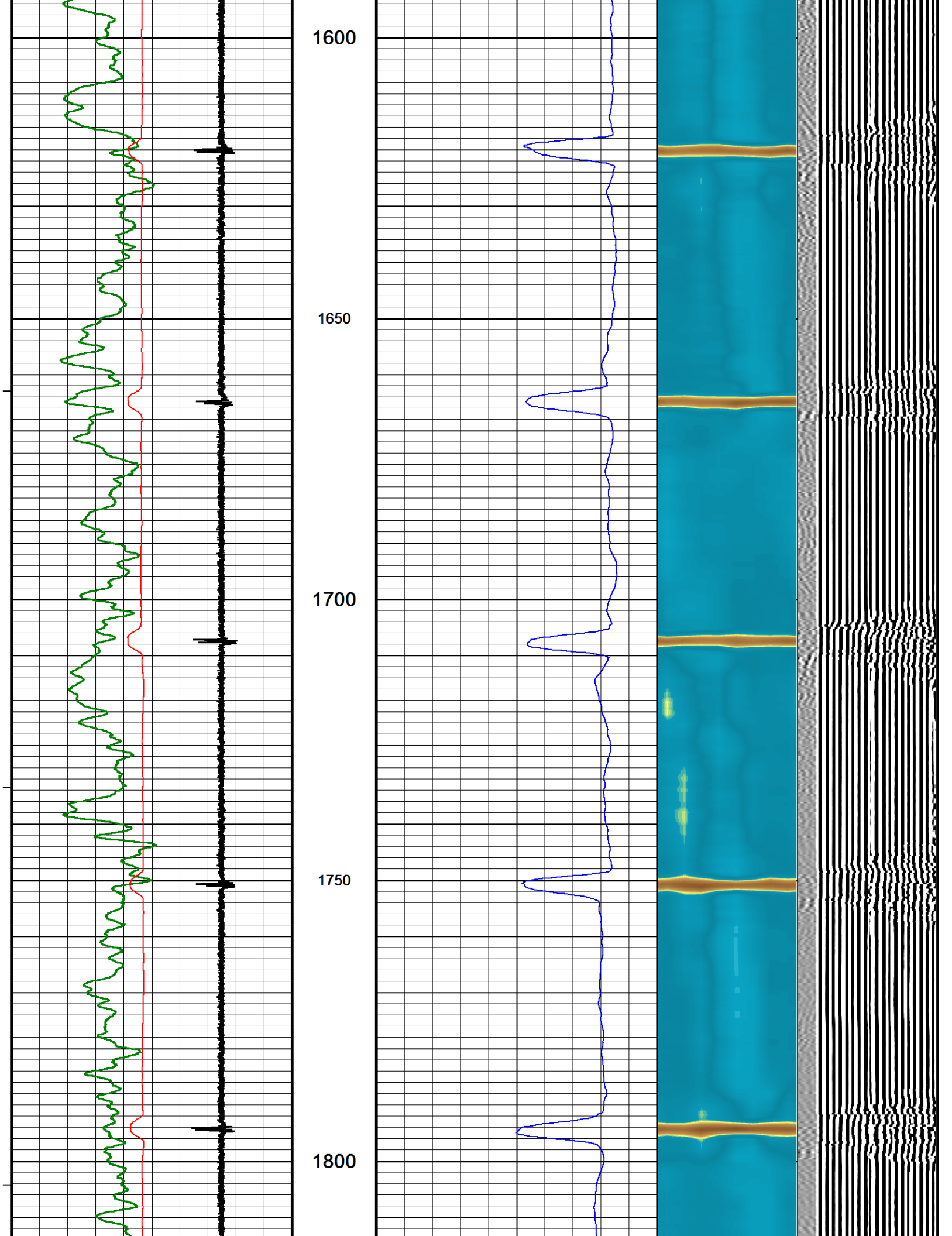
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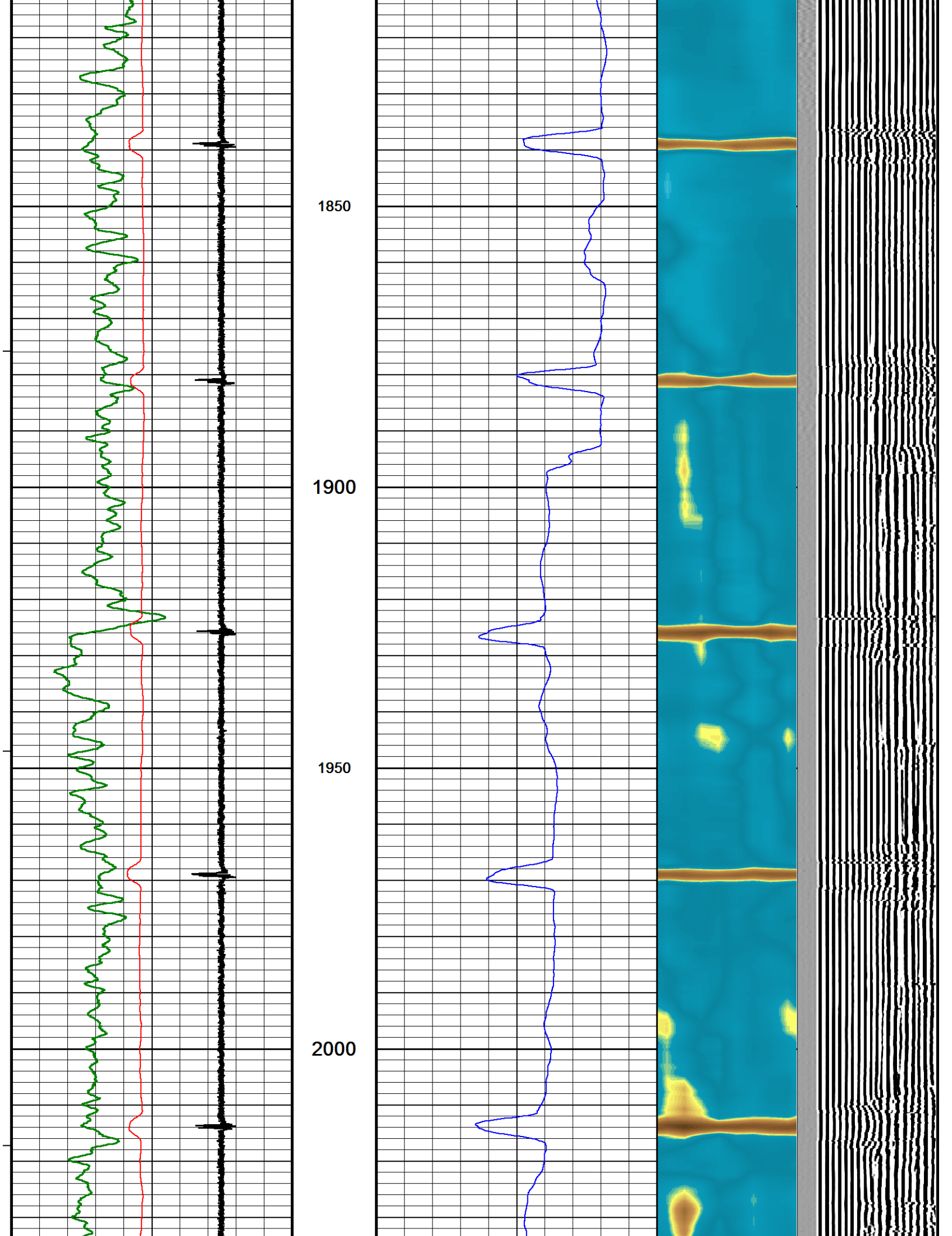
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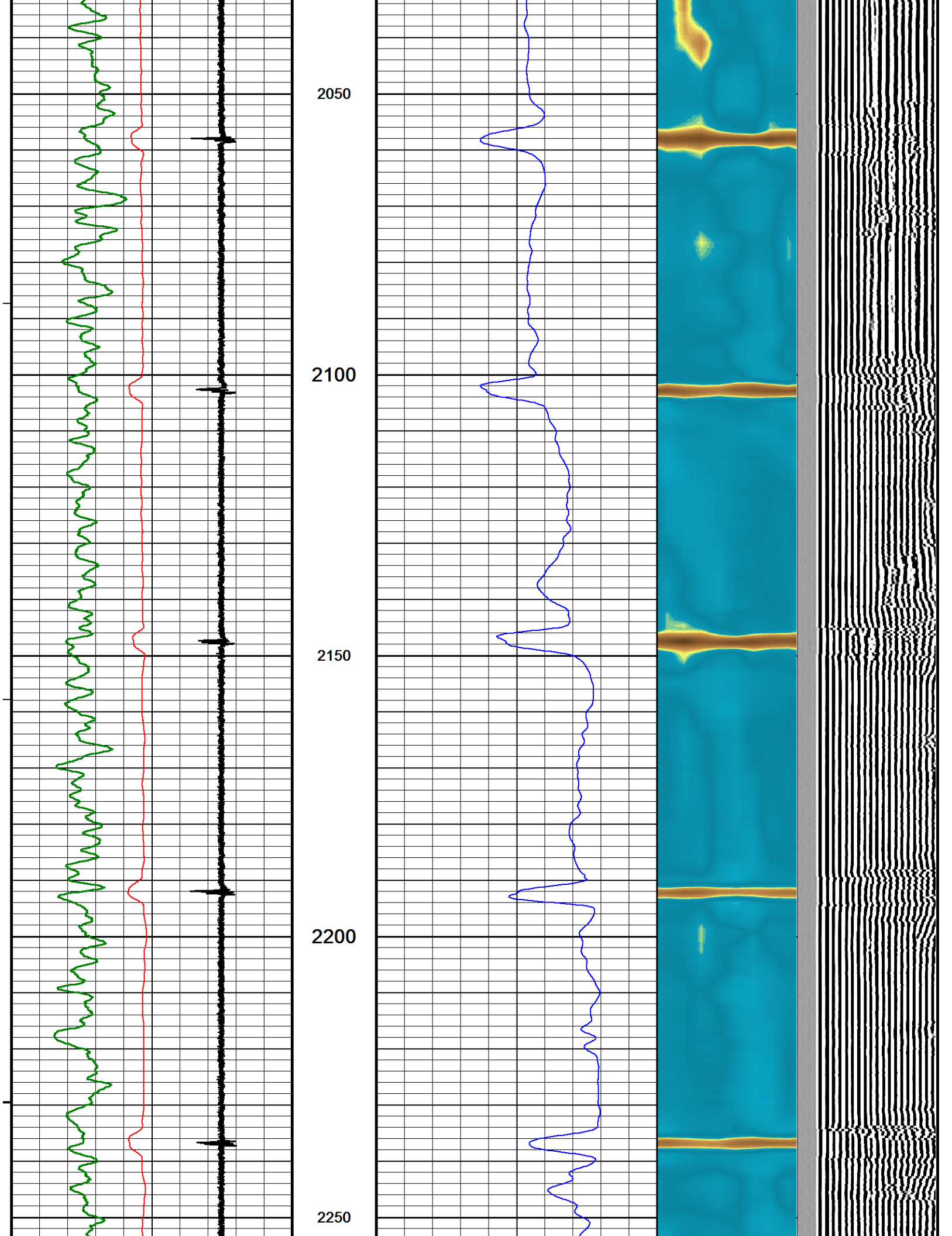
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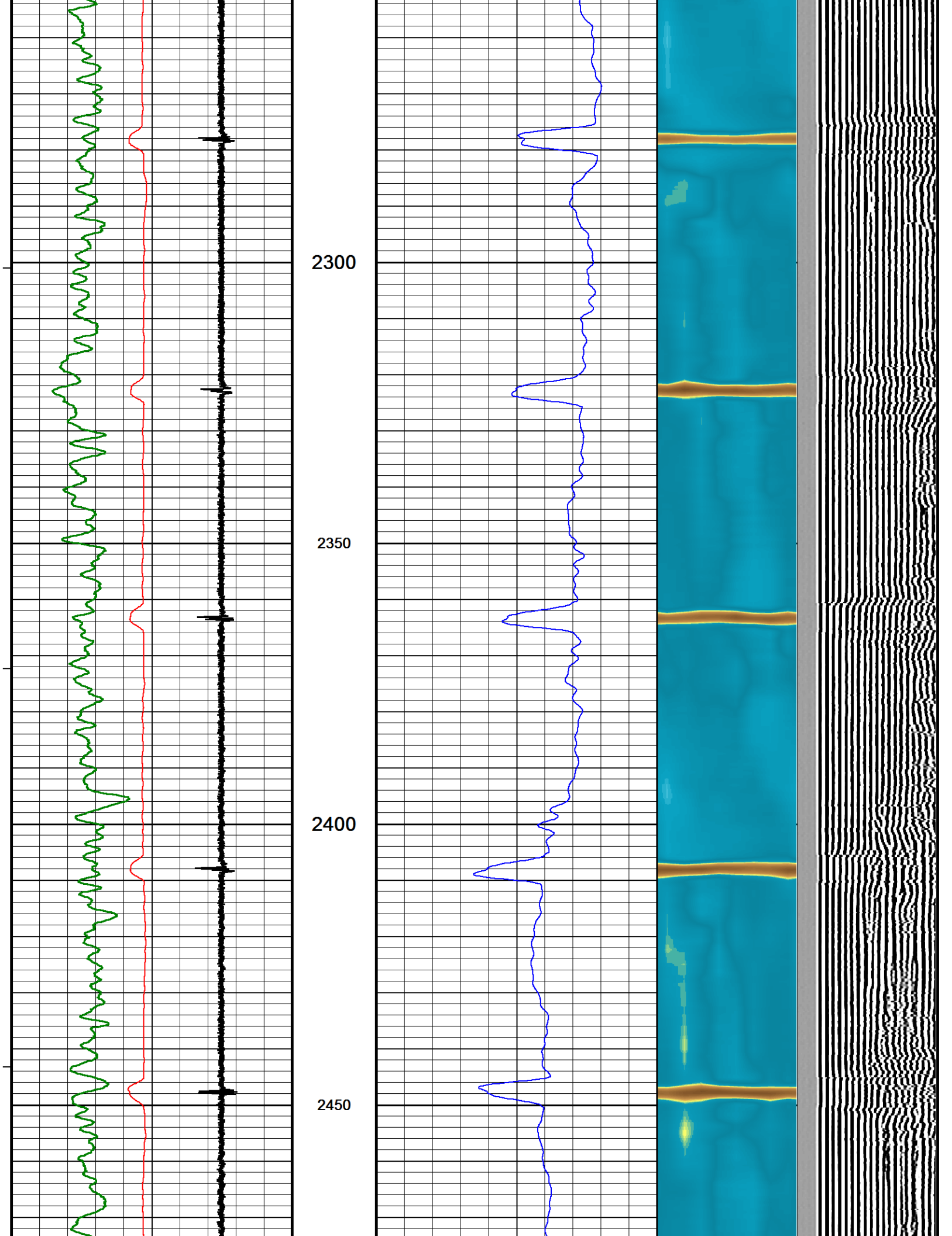
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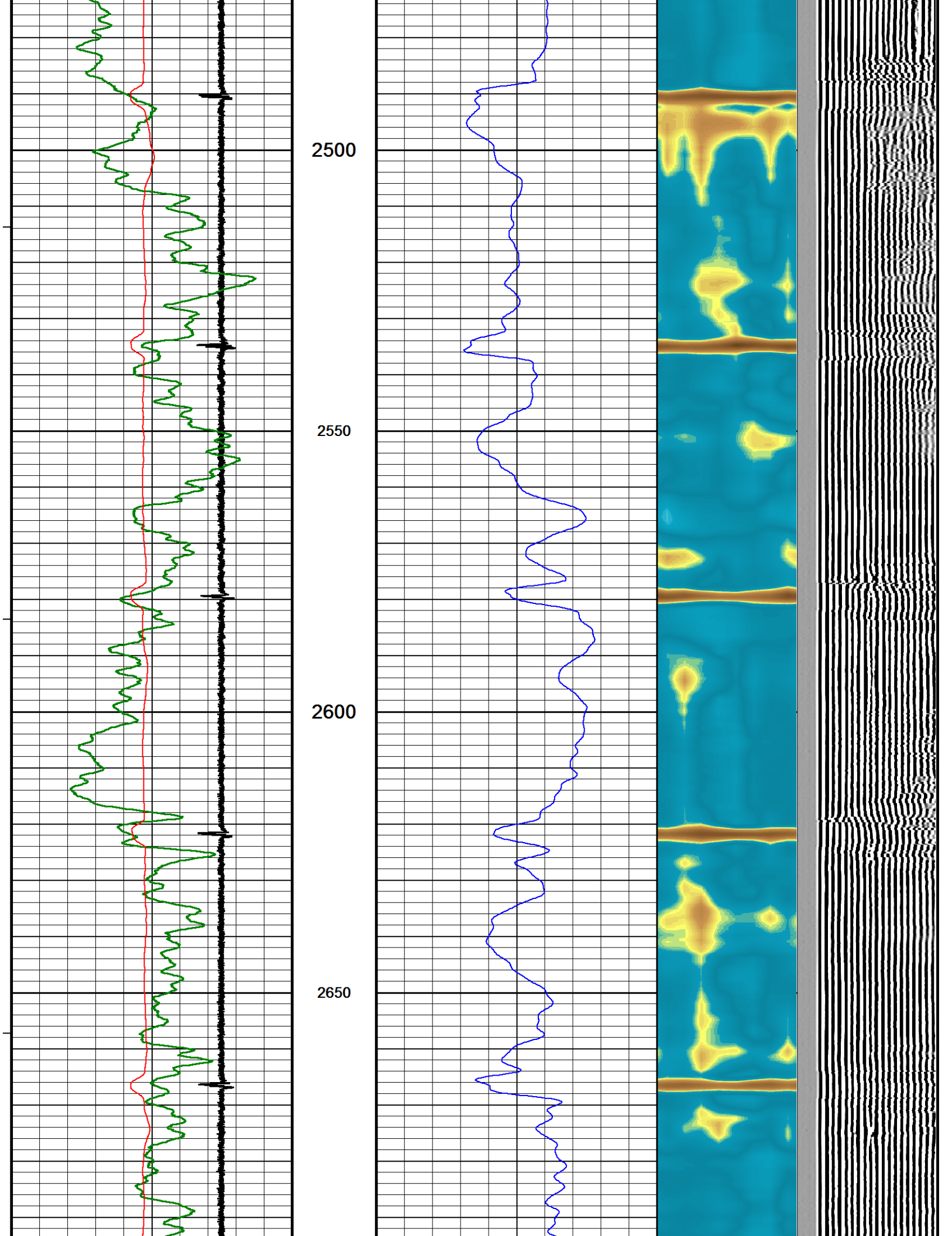


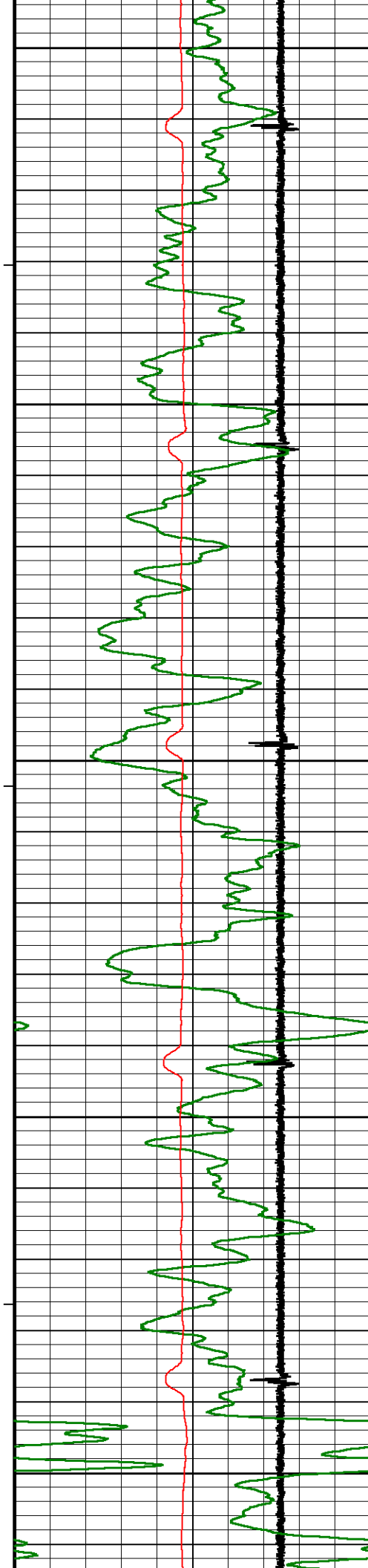












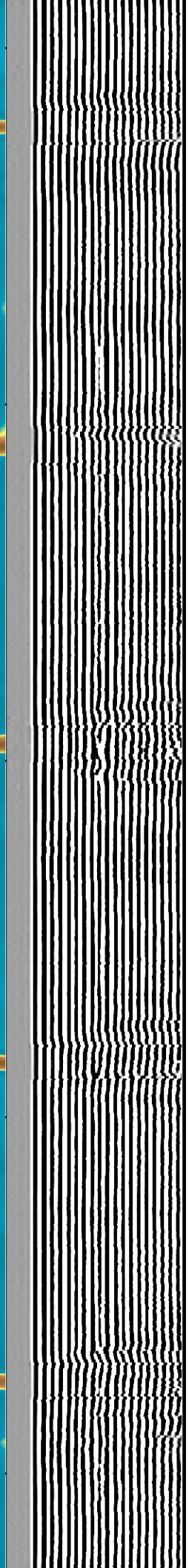
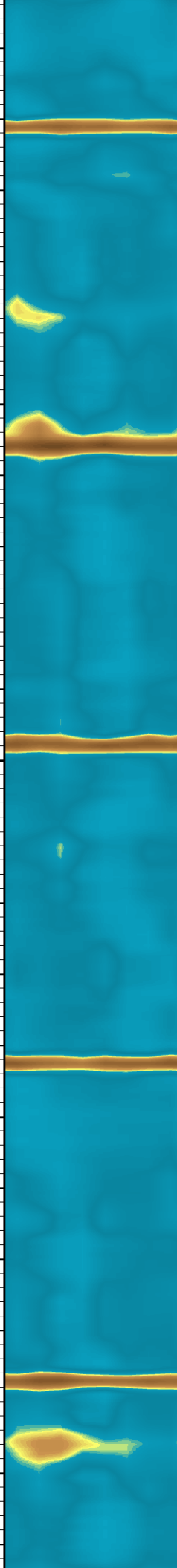
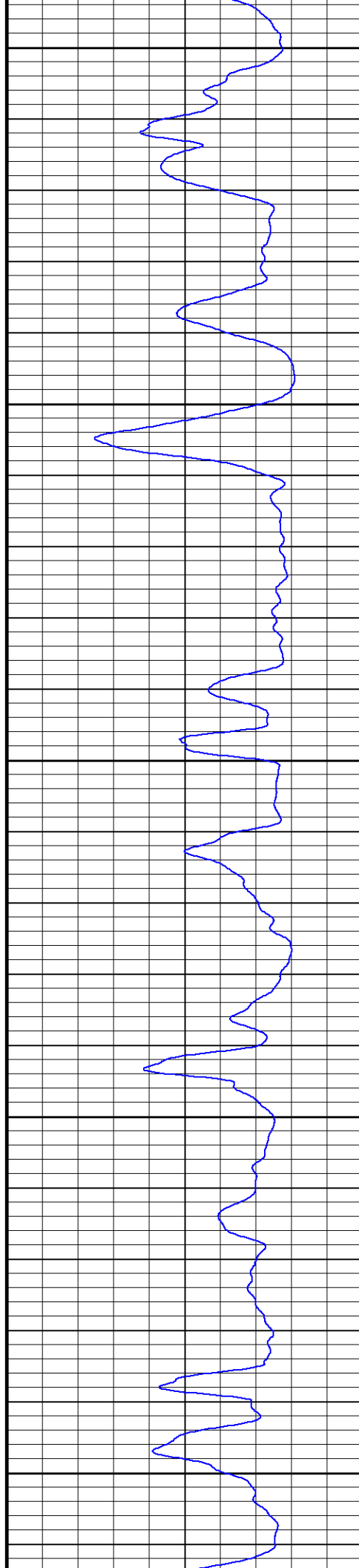
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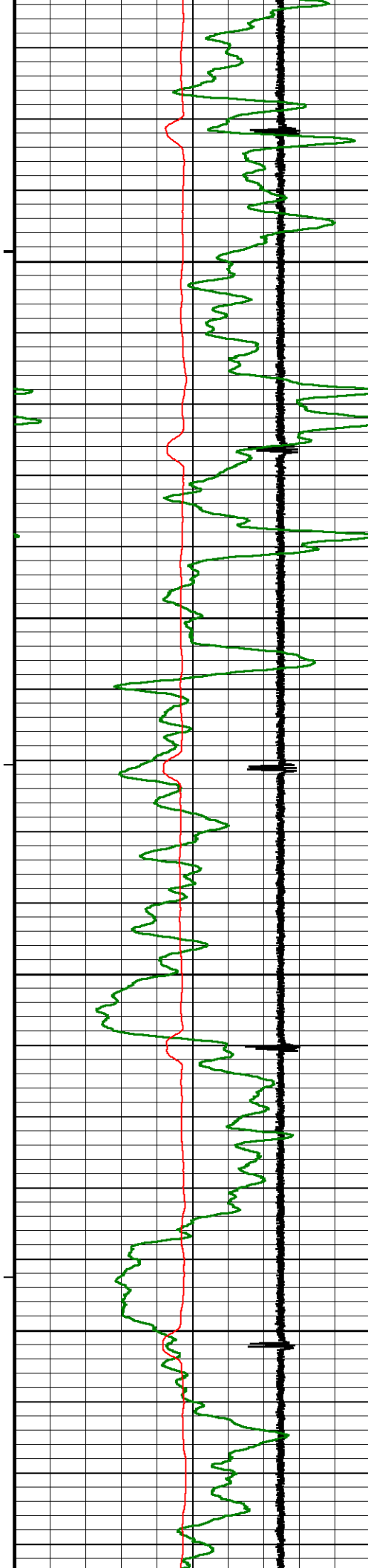
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2900



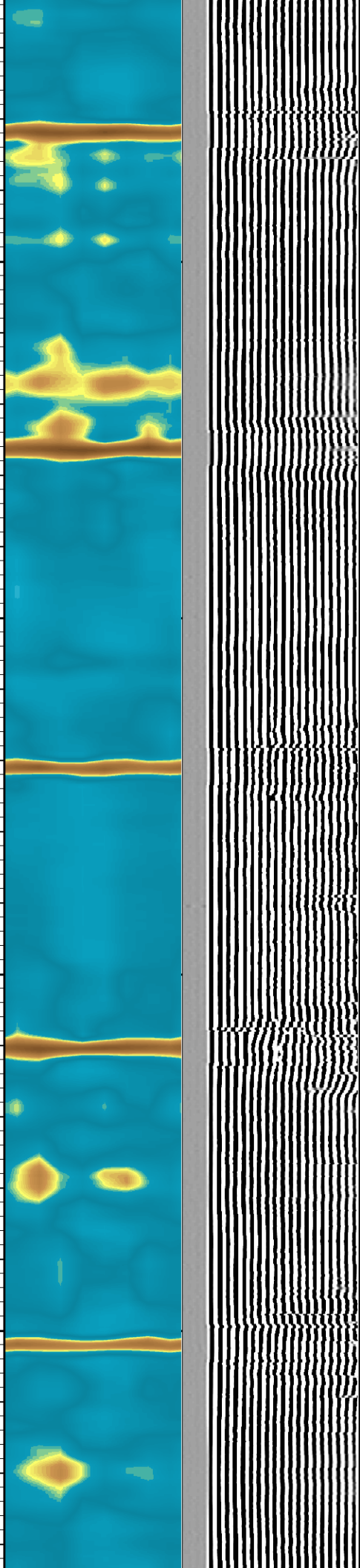
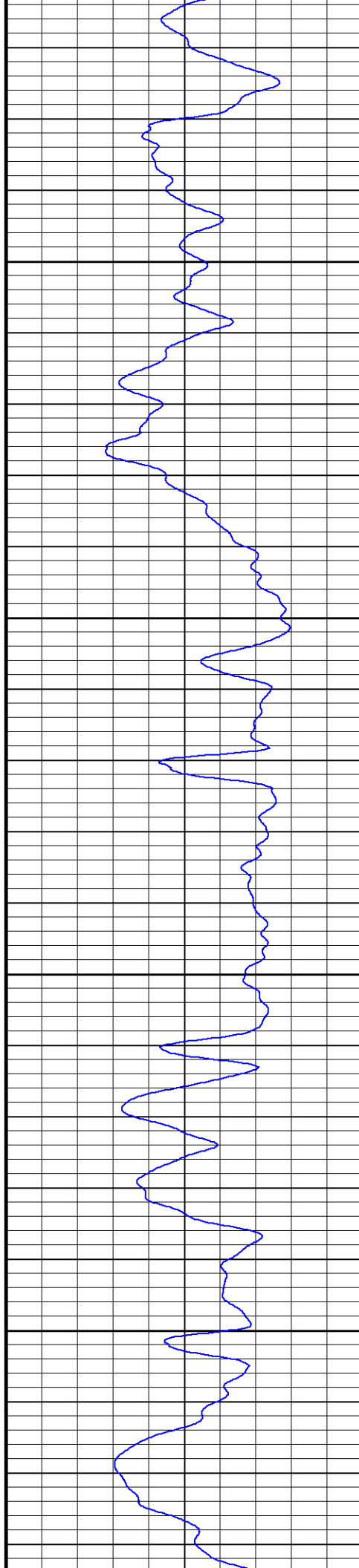


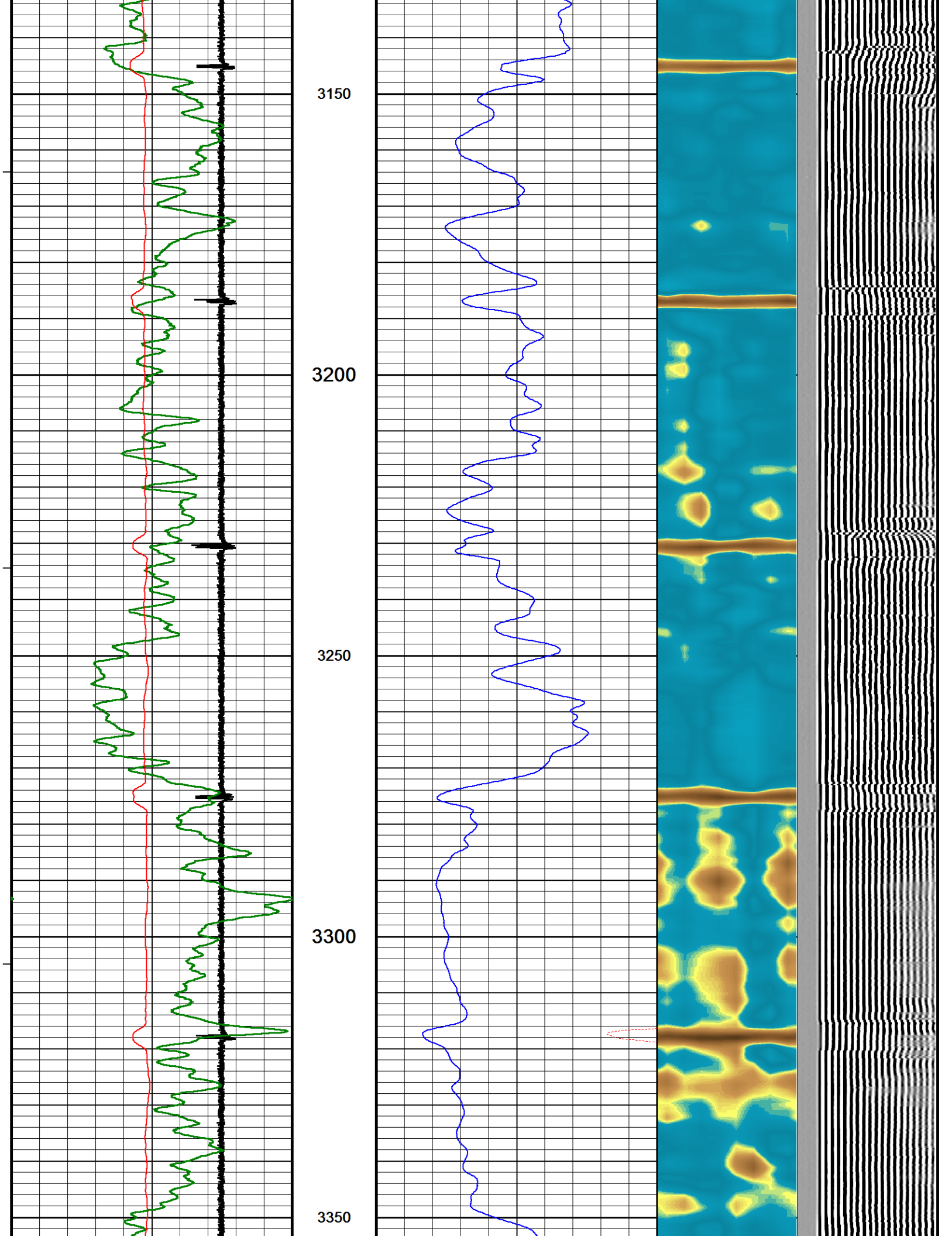
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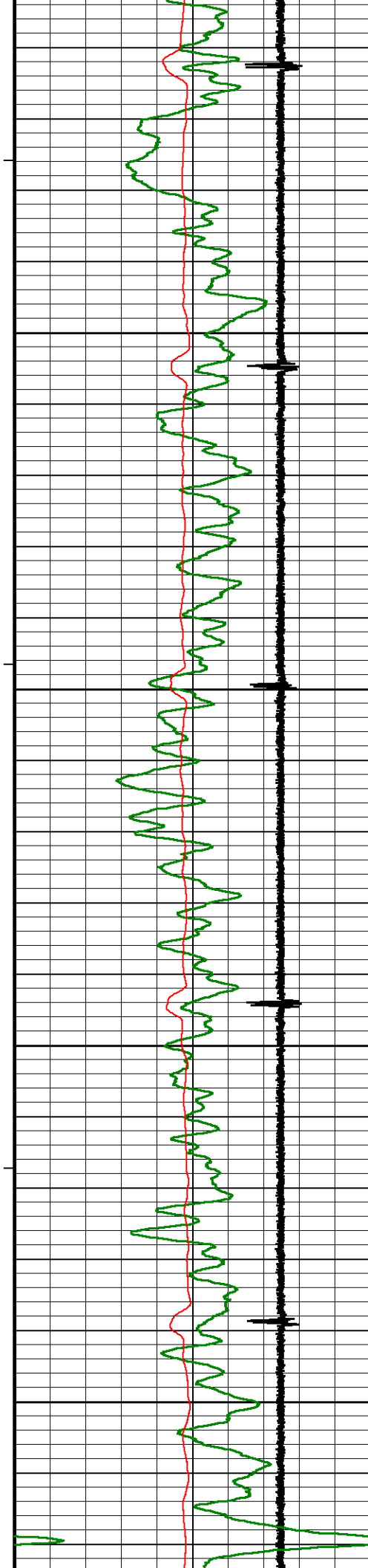
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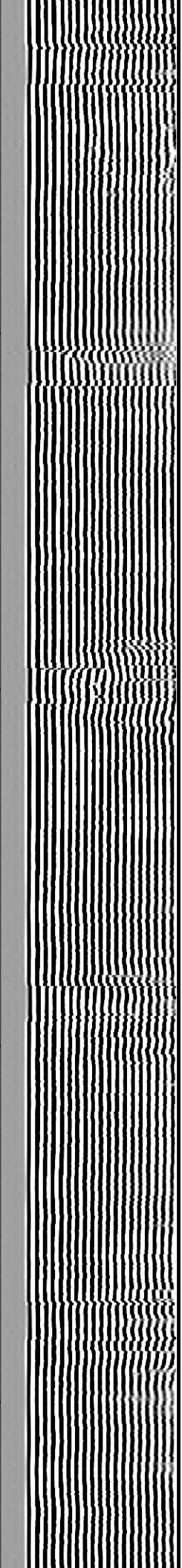
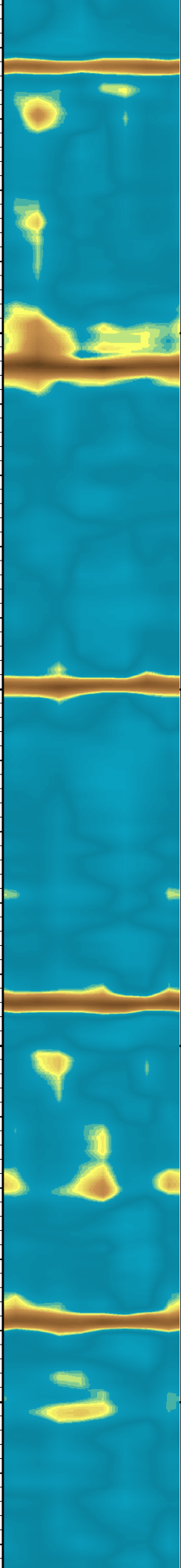
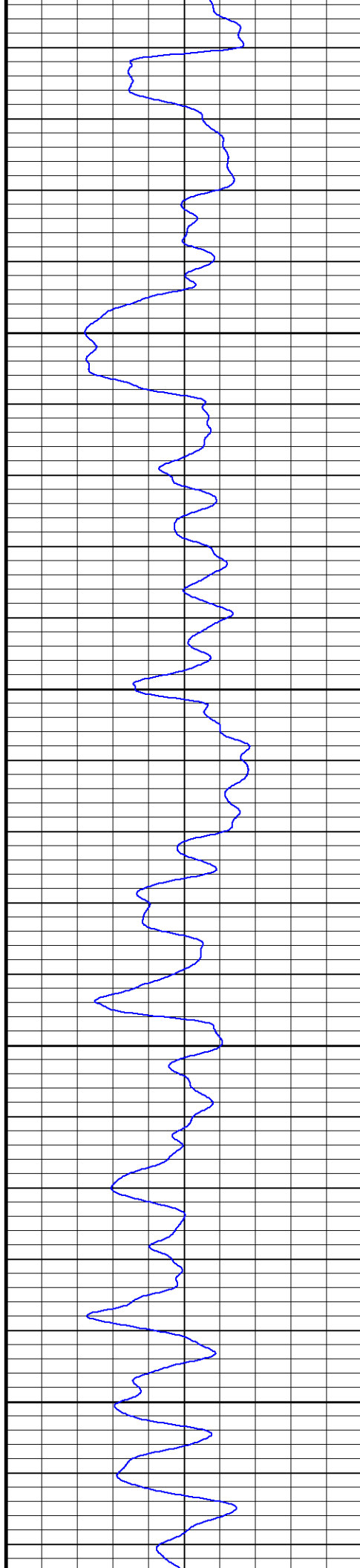


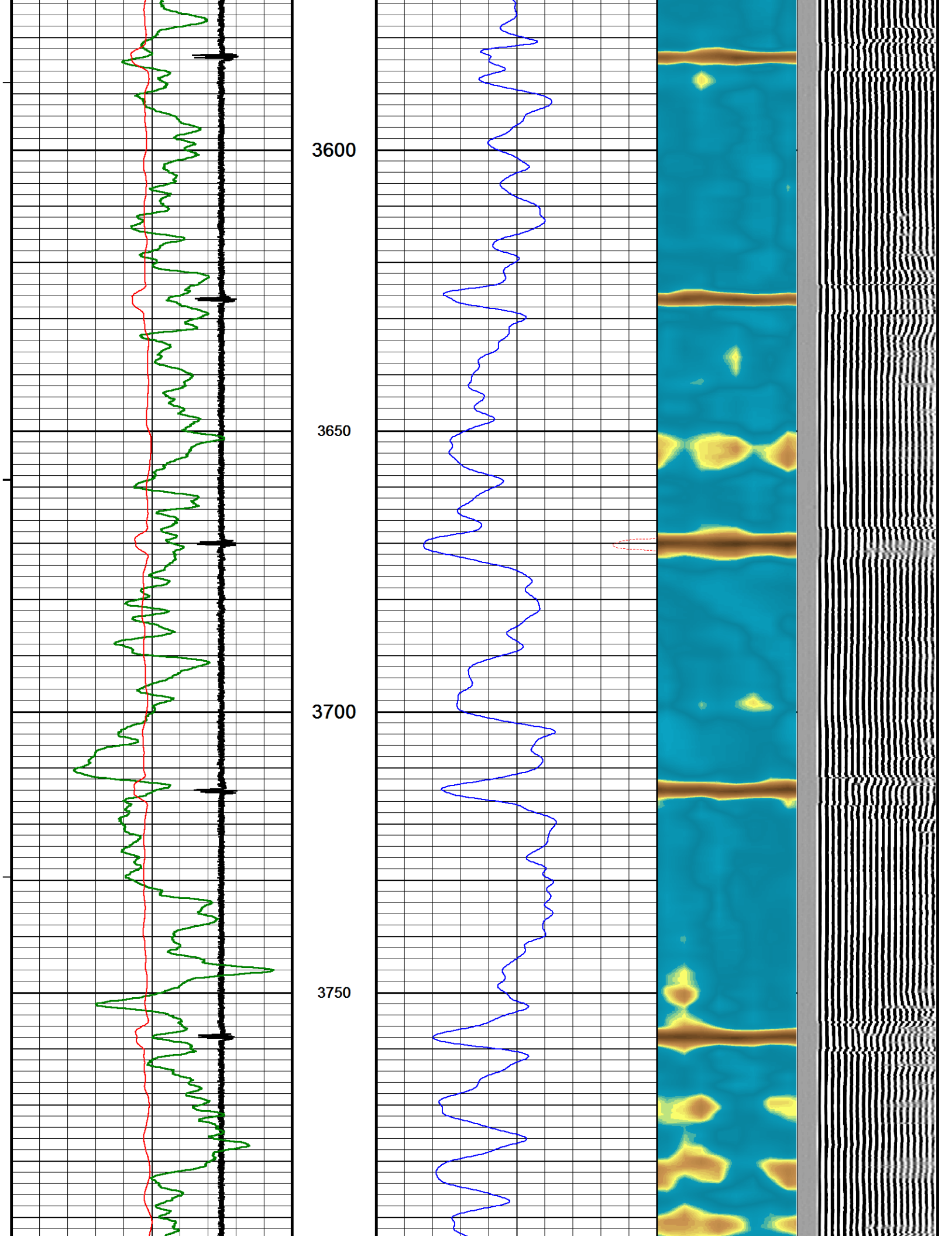
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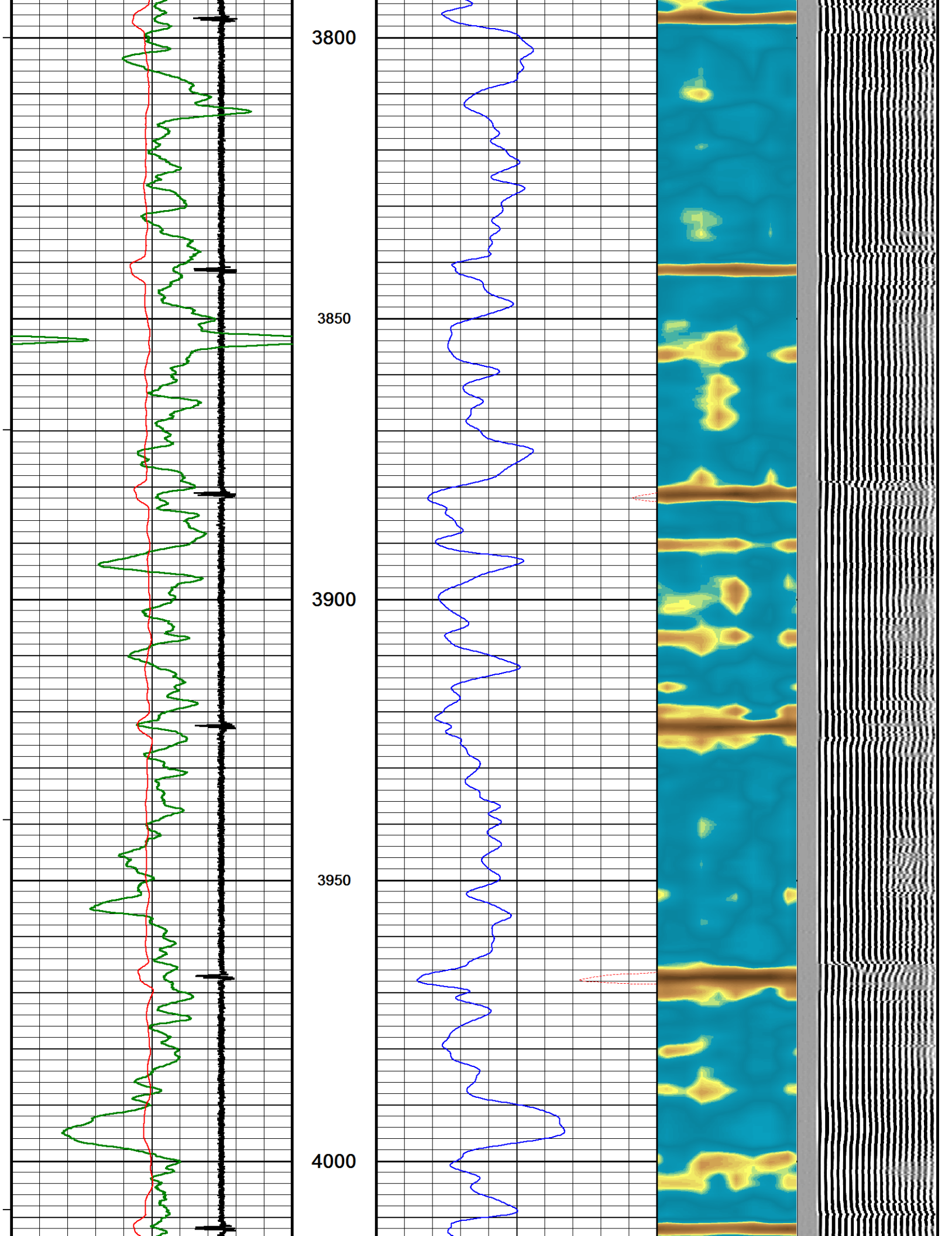
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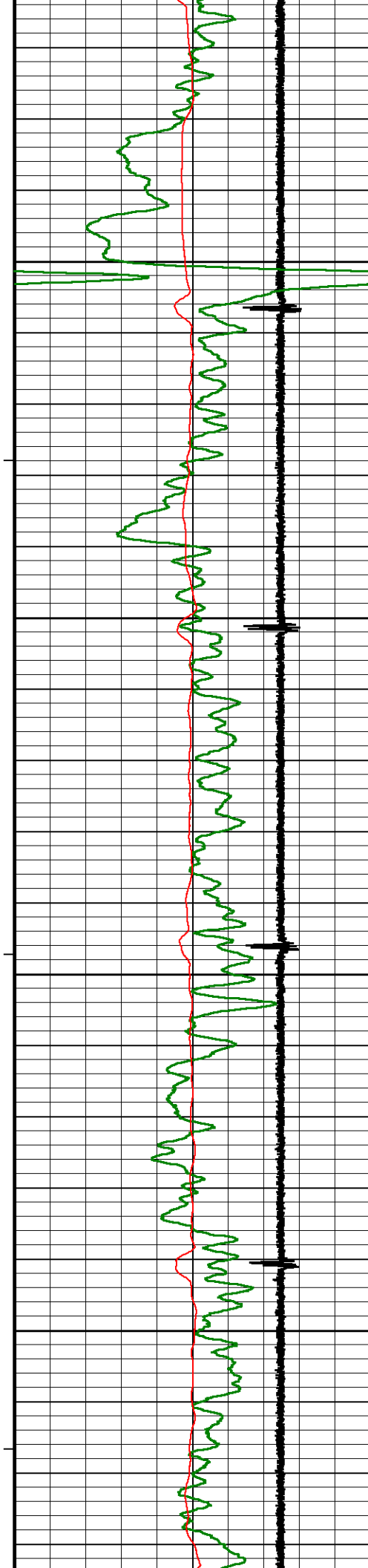
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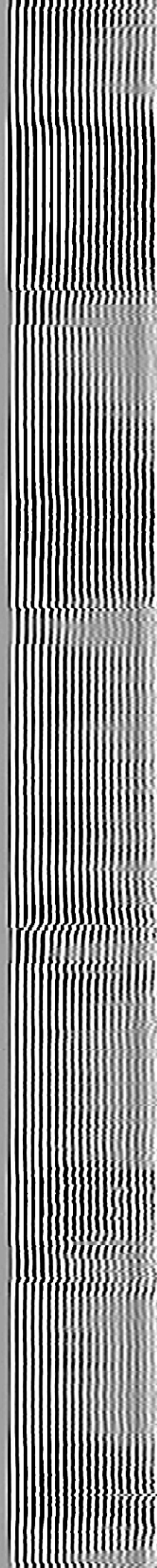
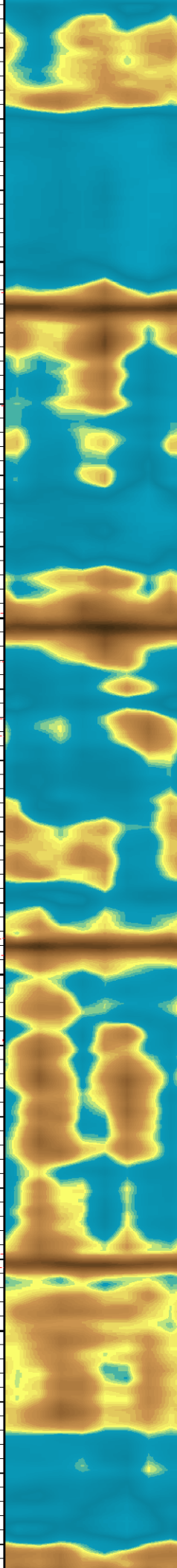
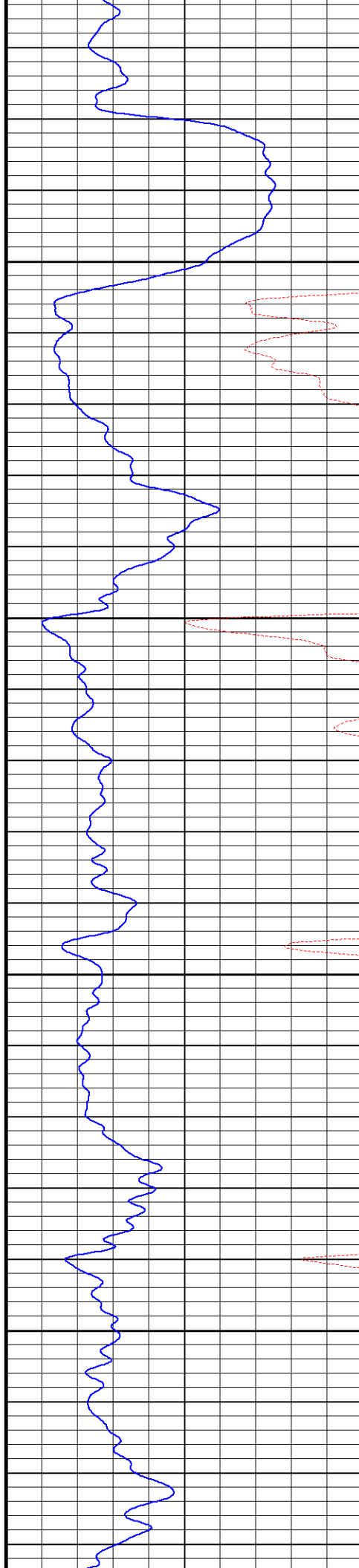


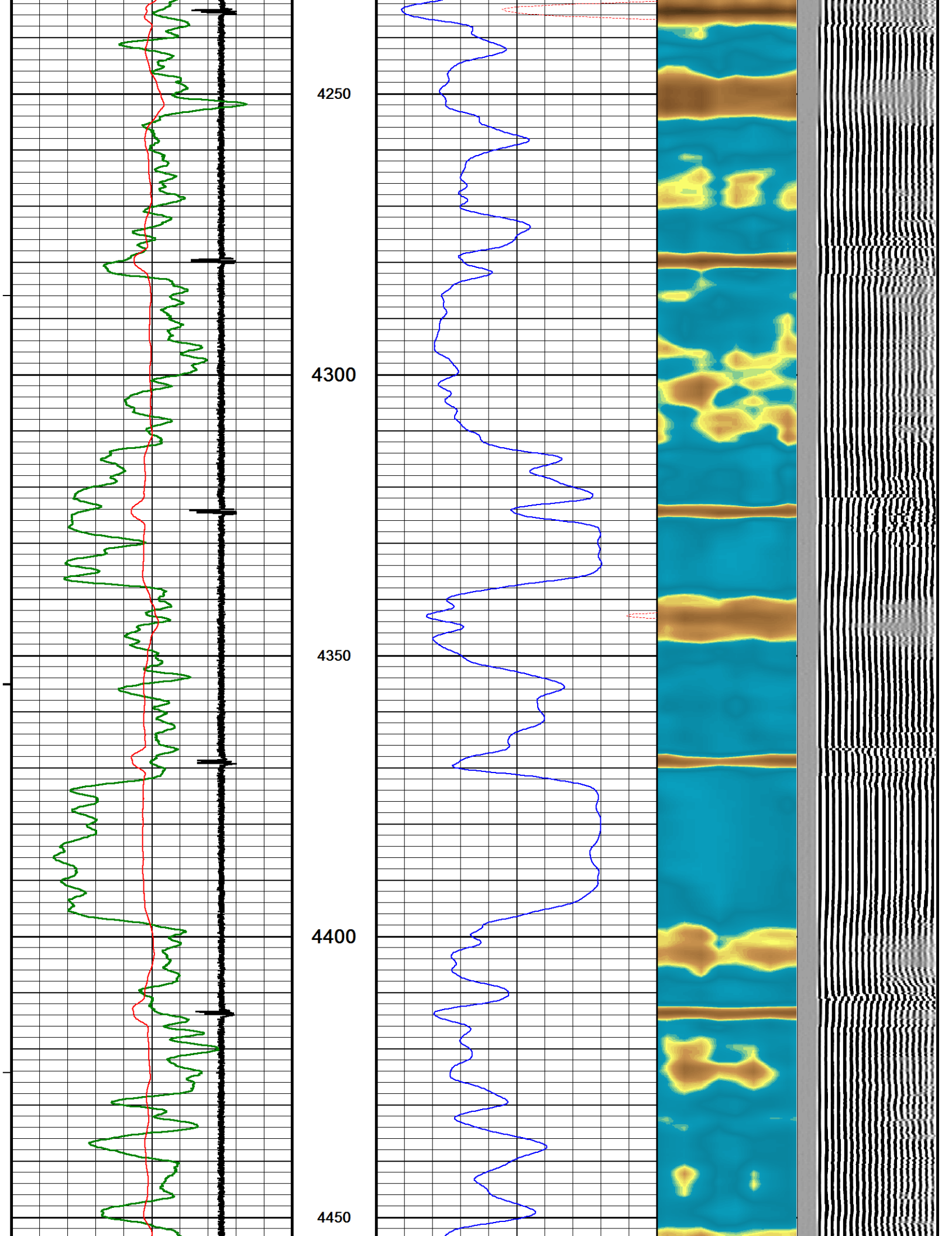
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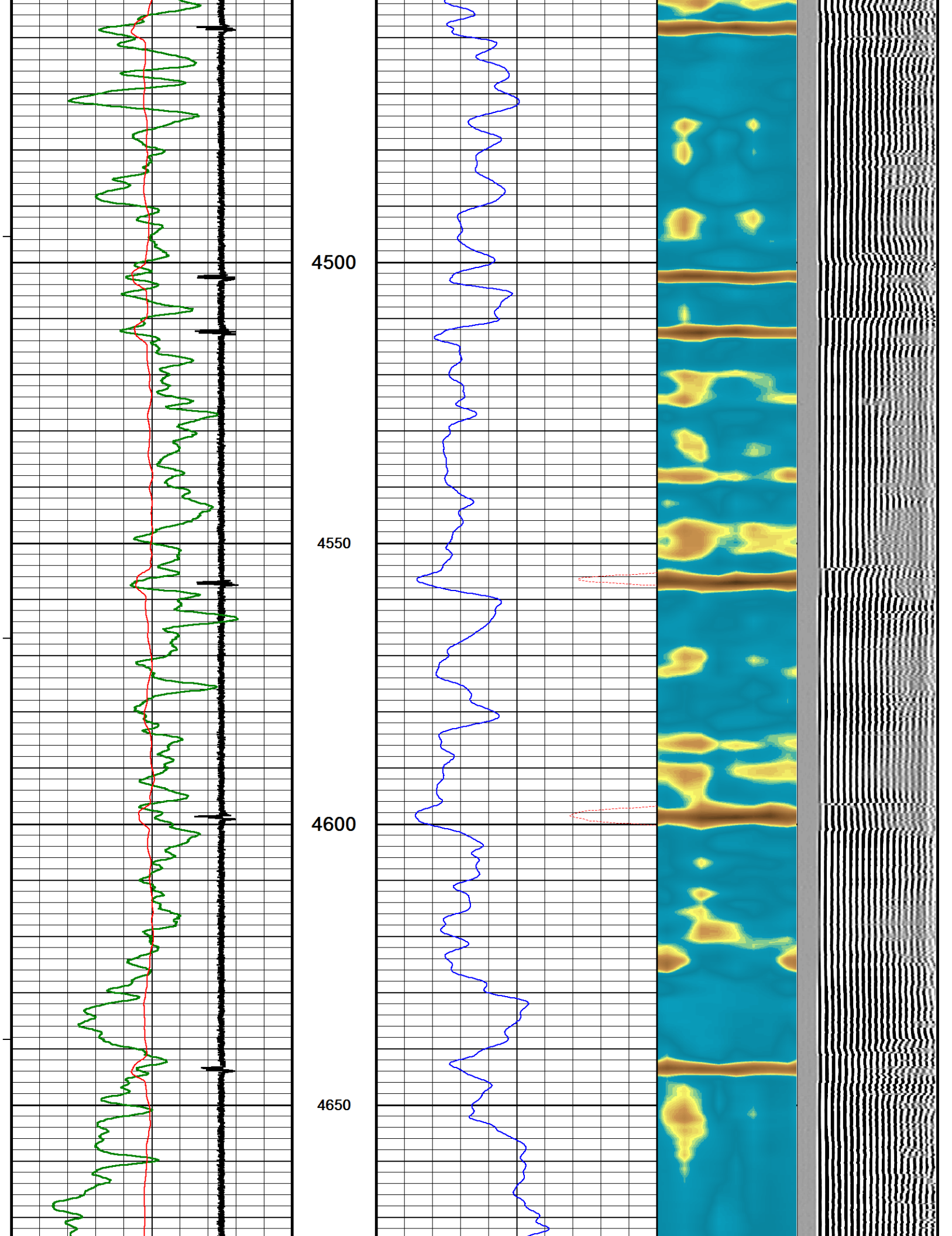
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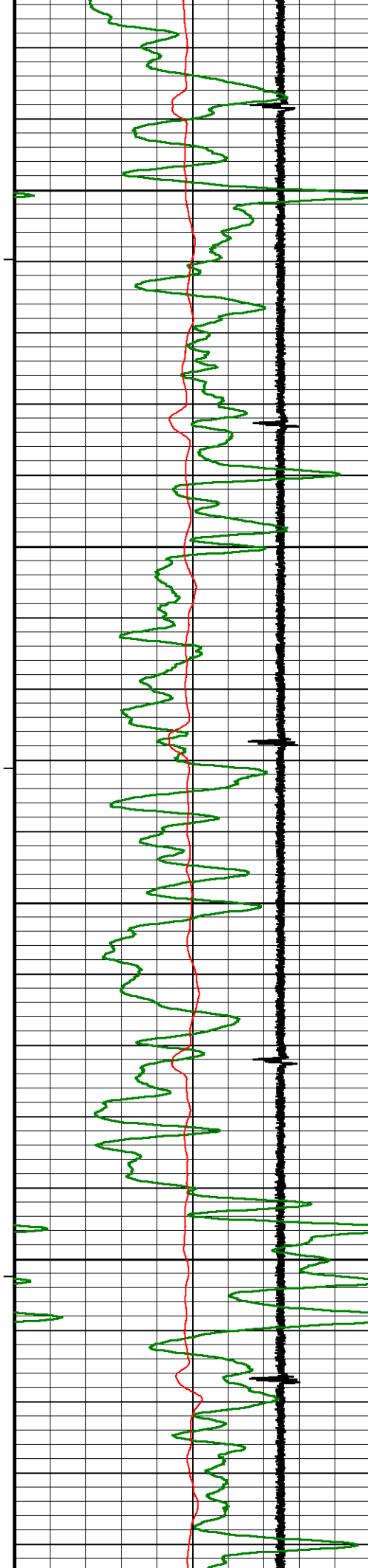
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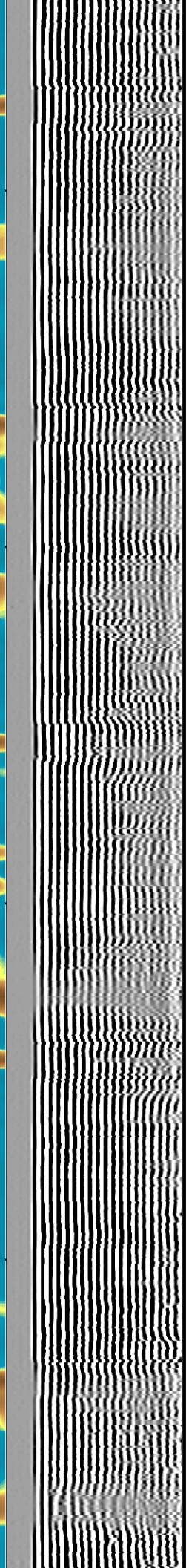
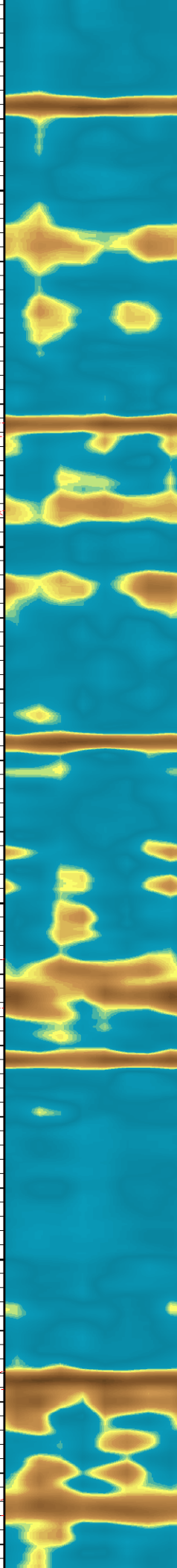
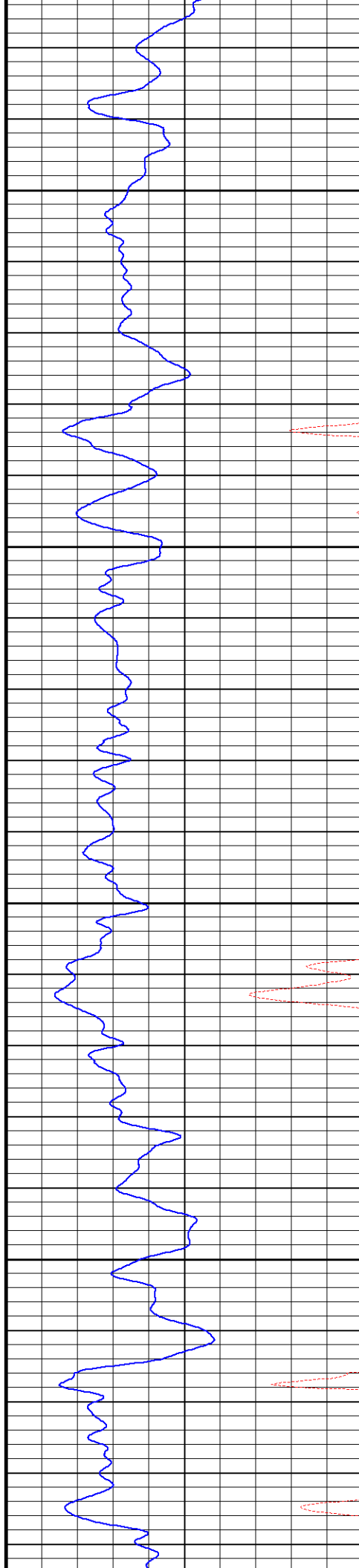


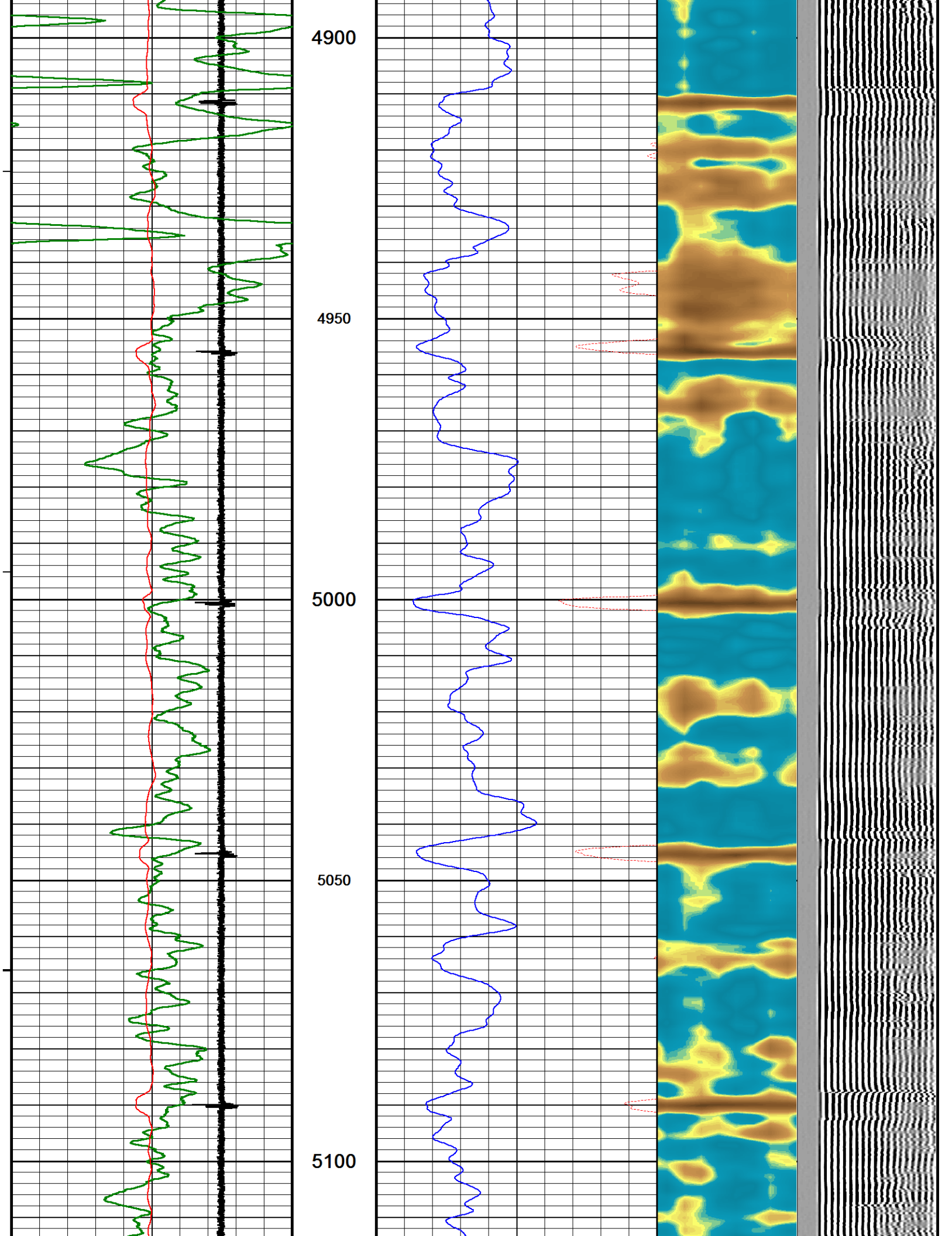
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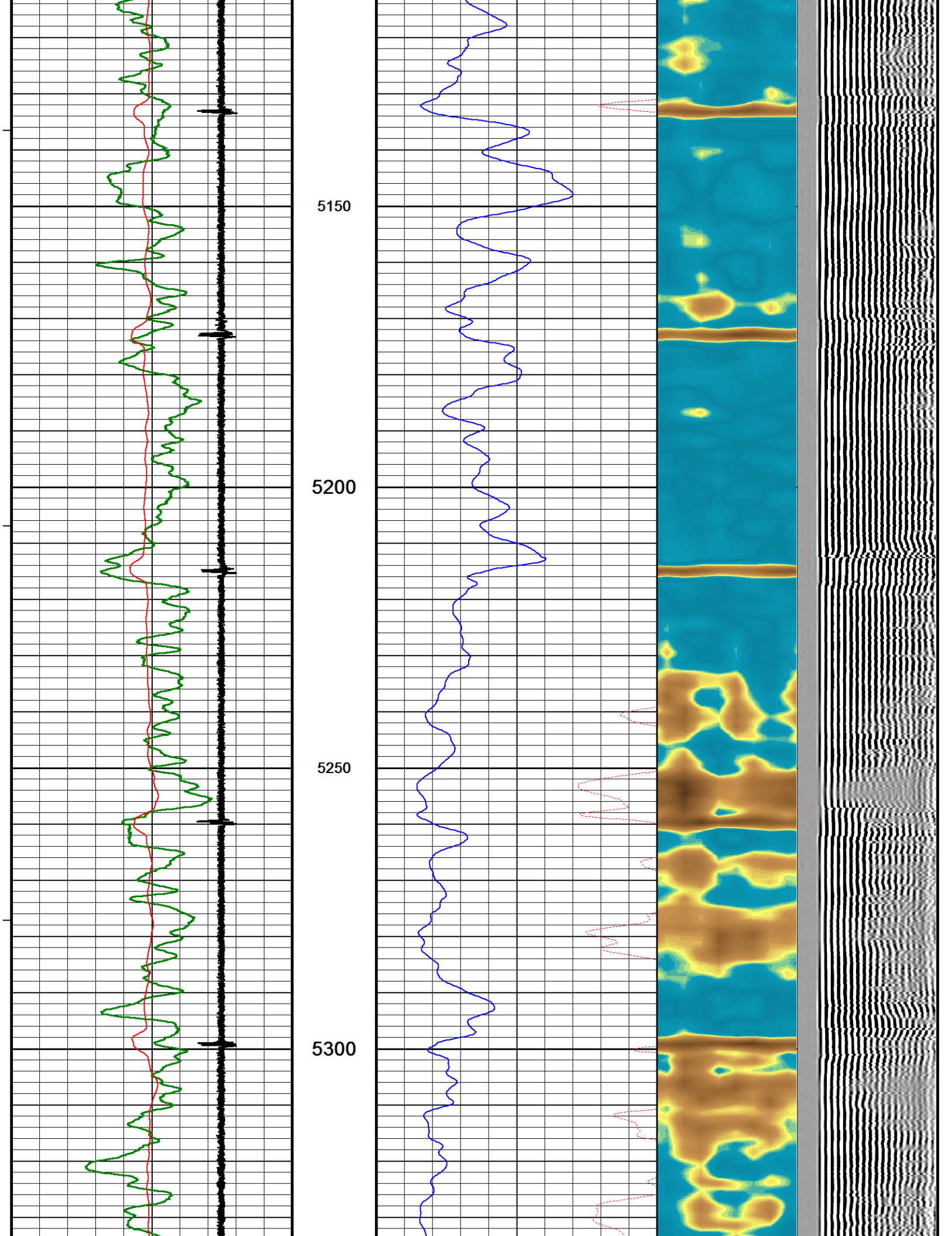
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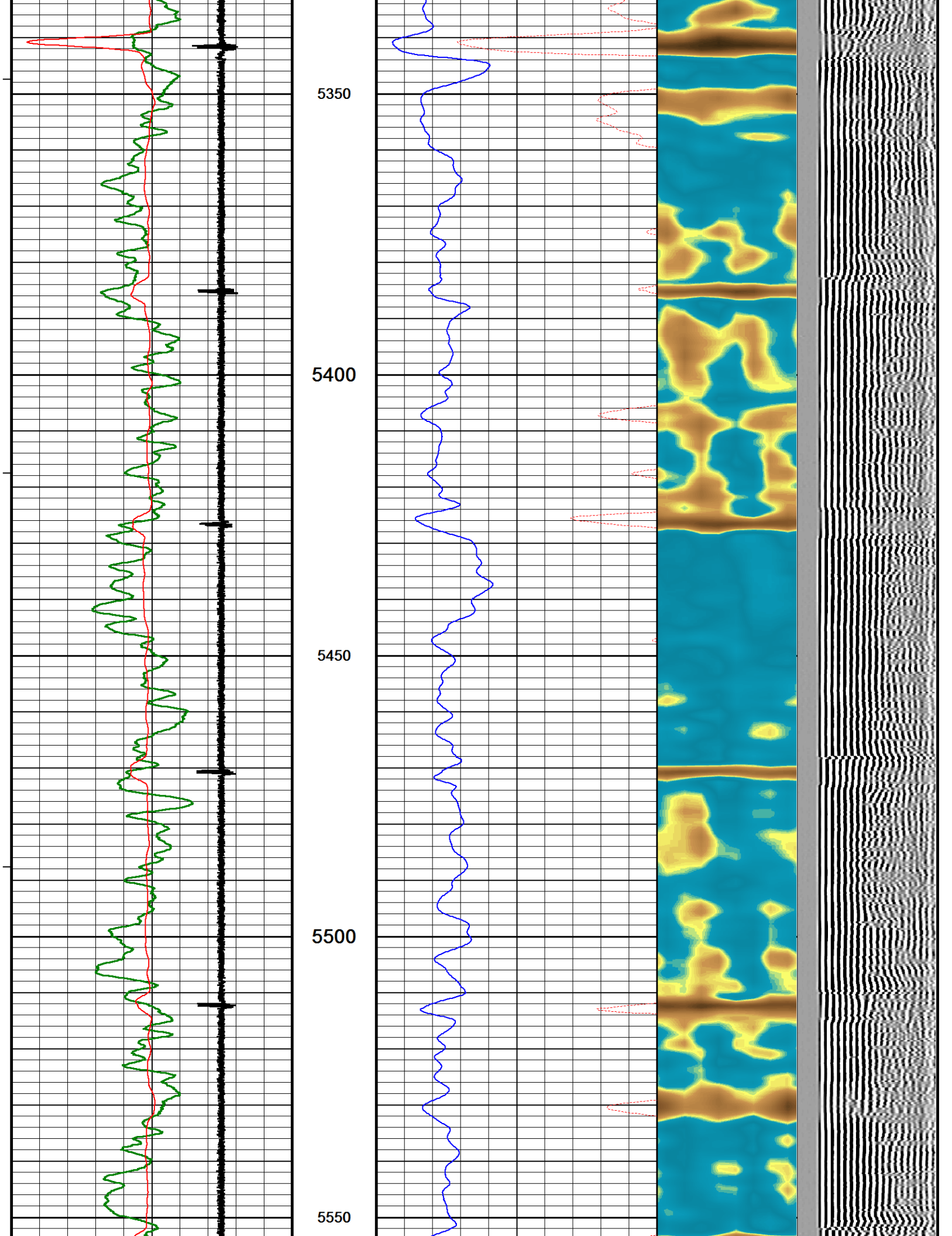
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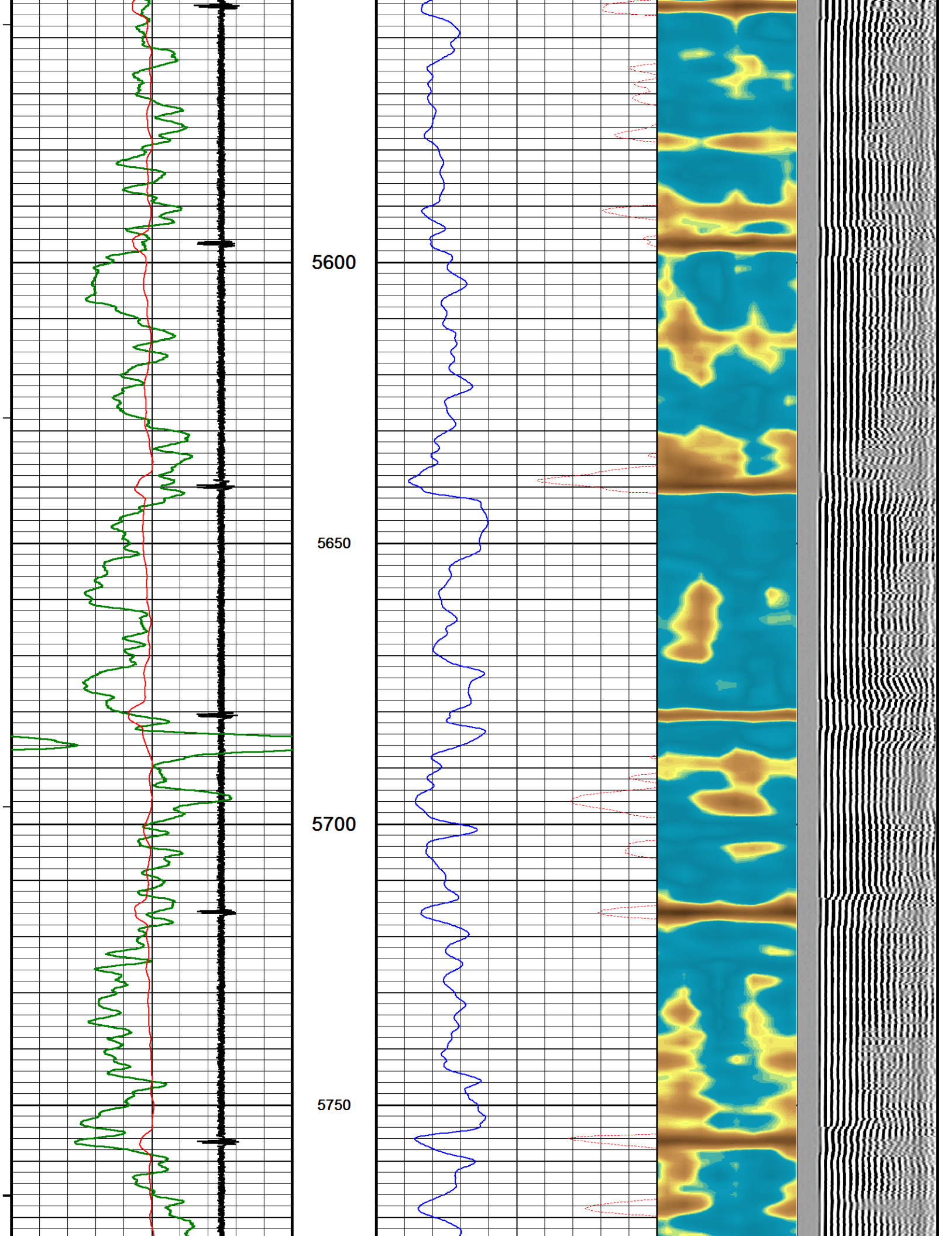
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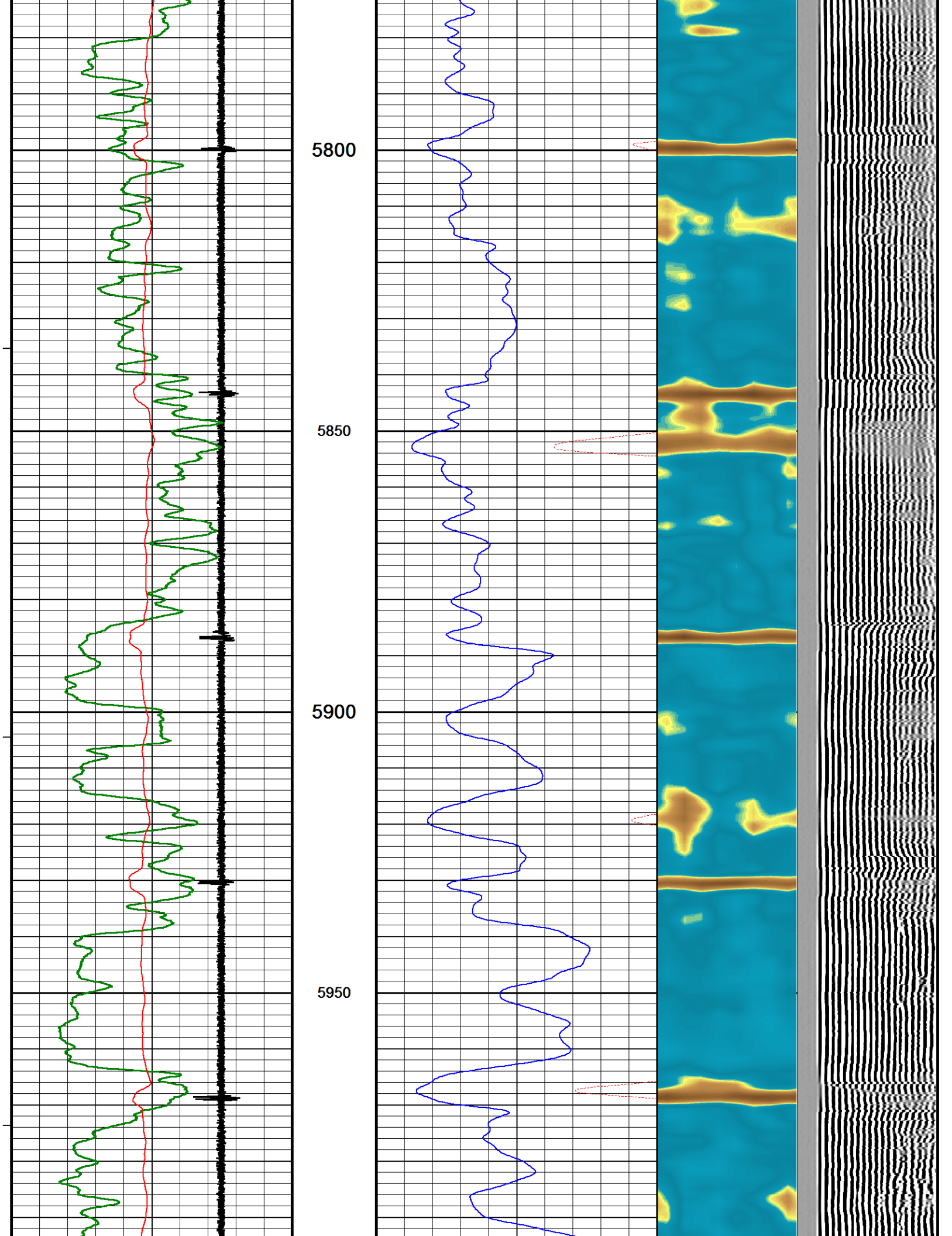


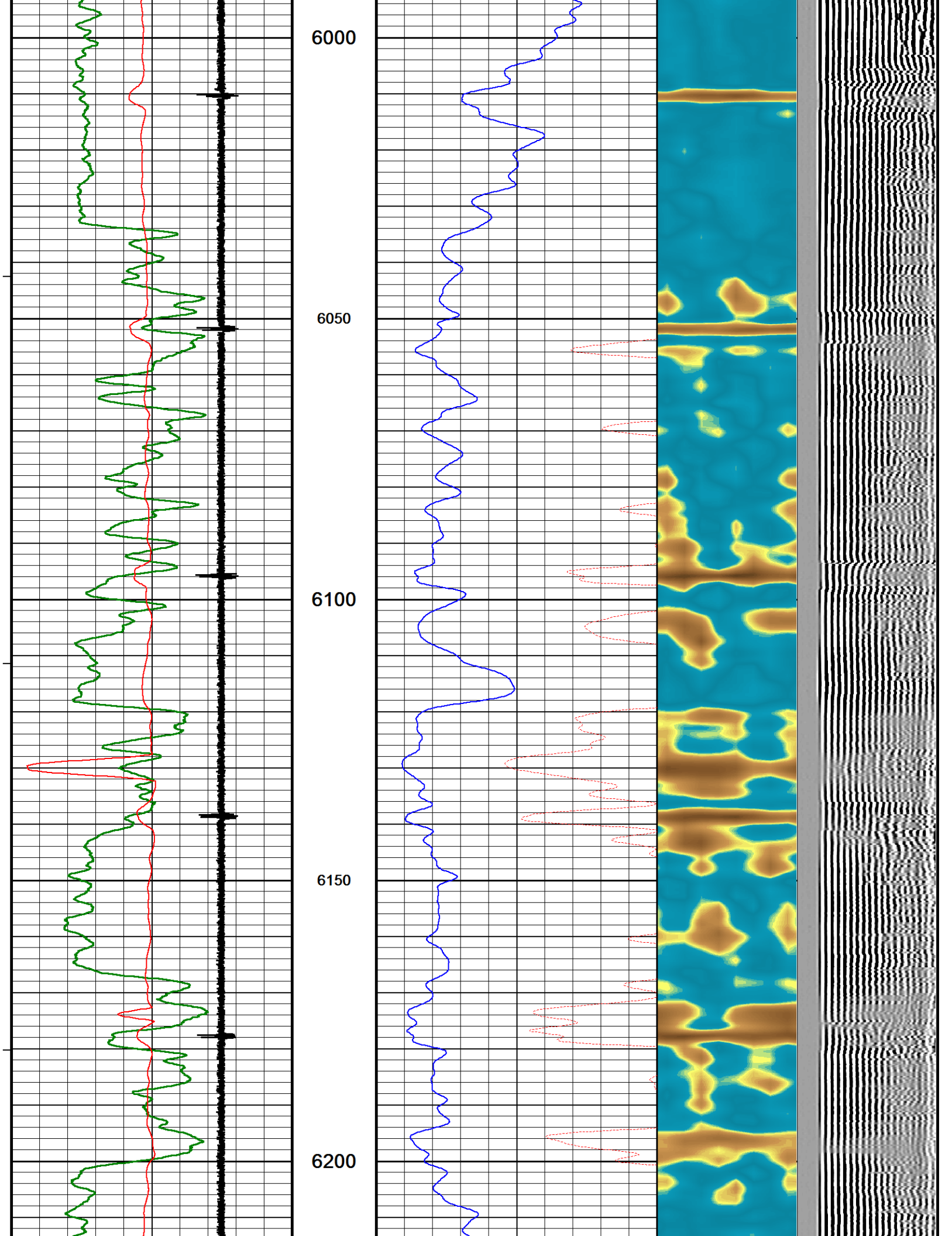


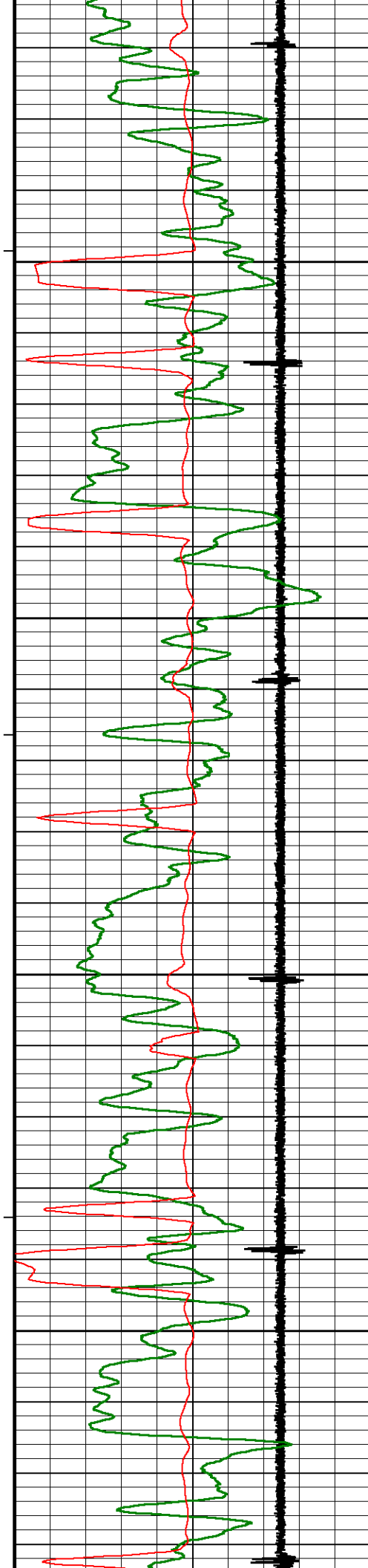










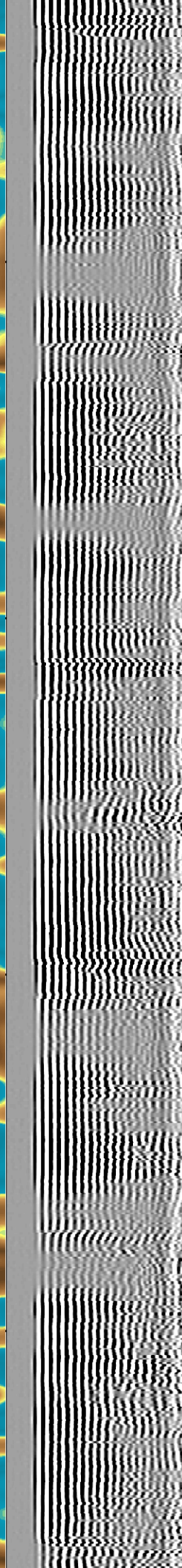
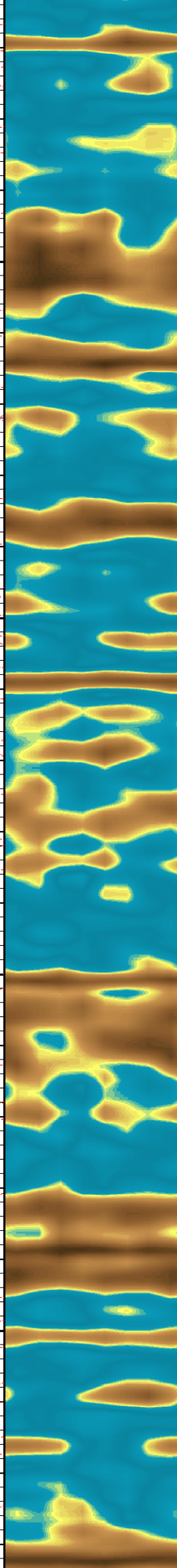
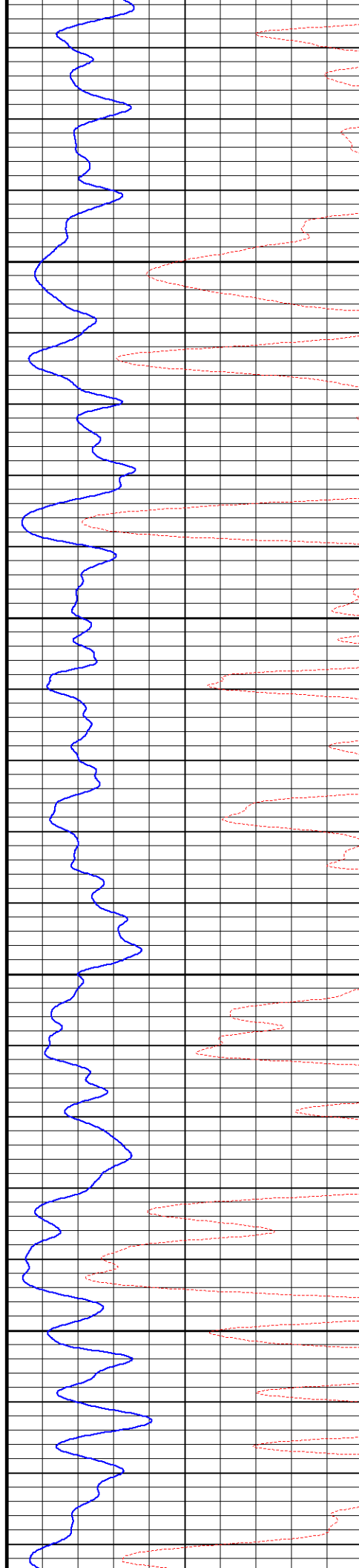


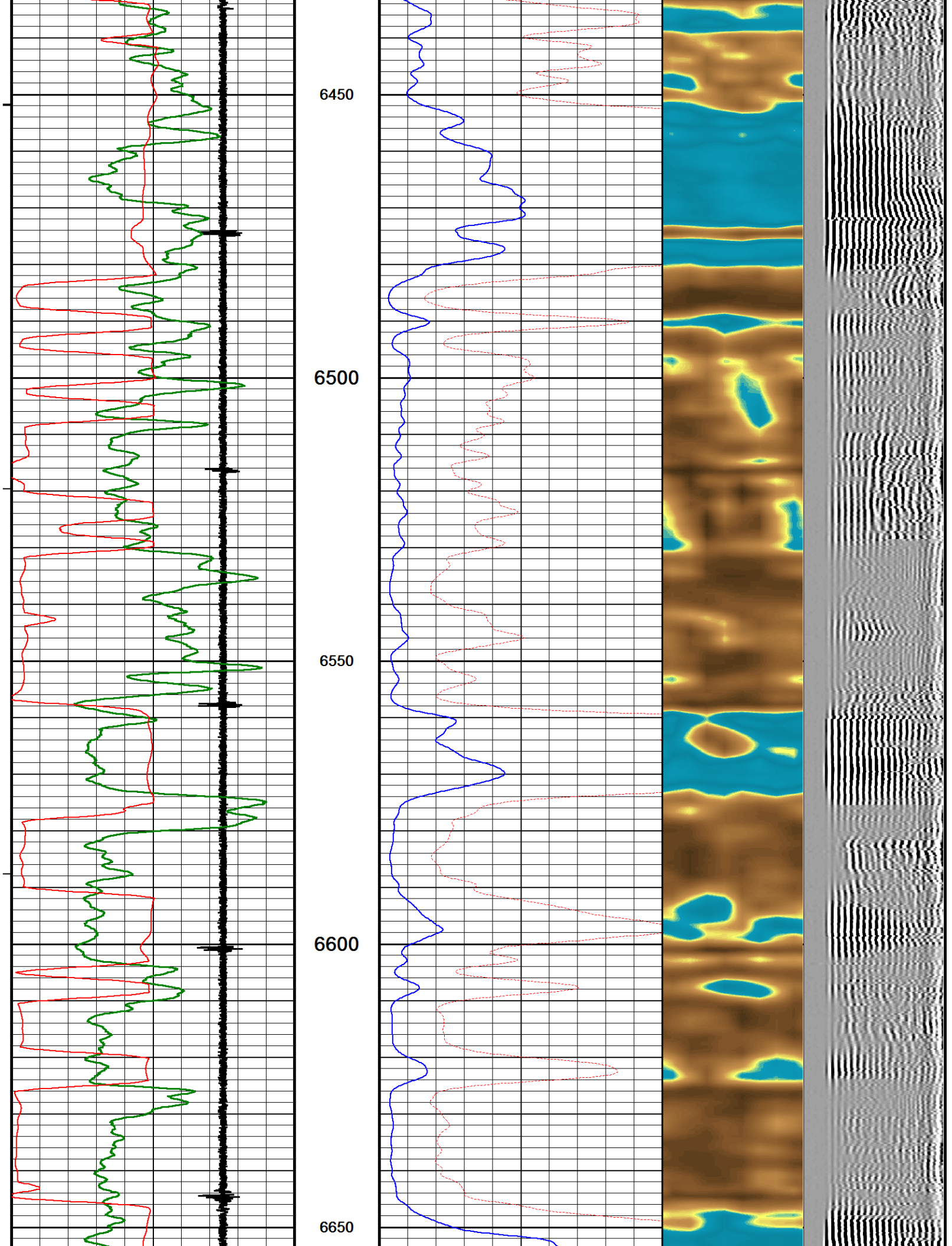
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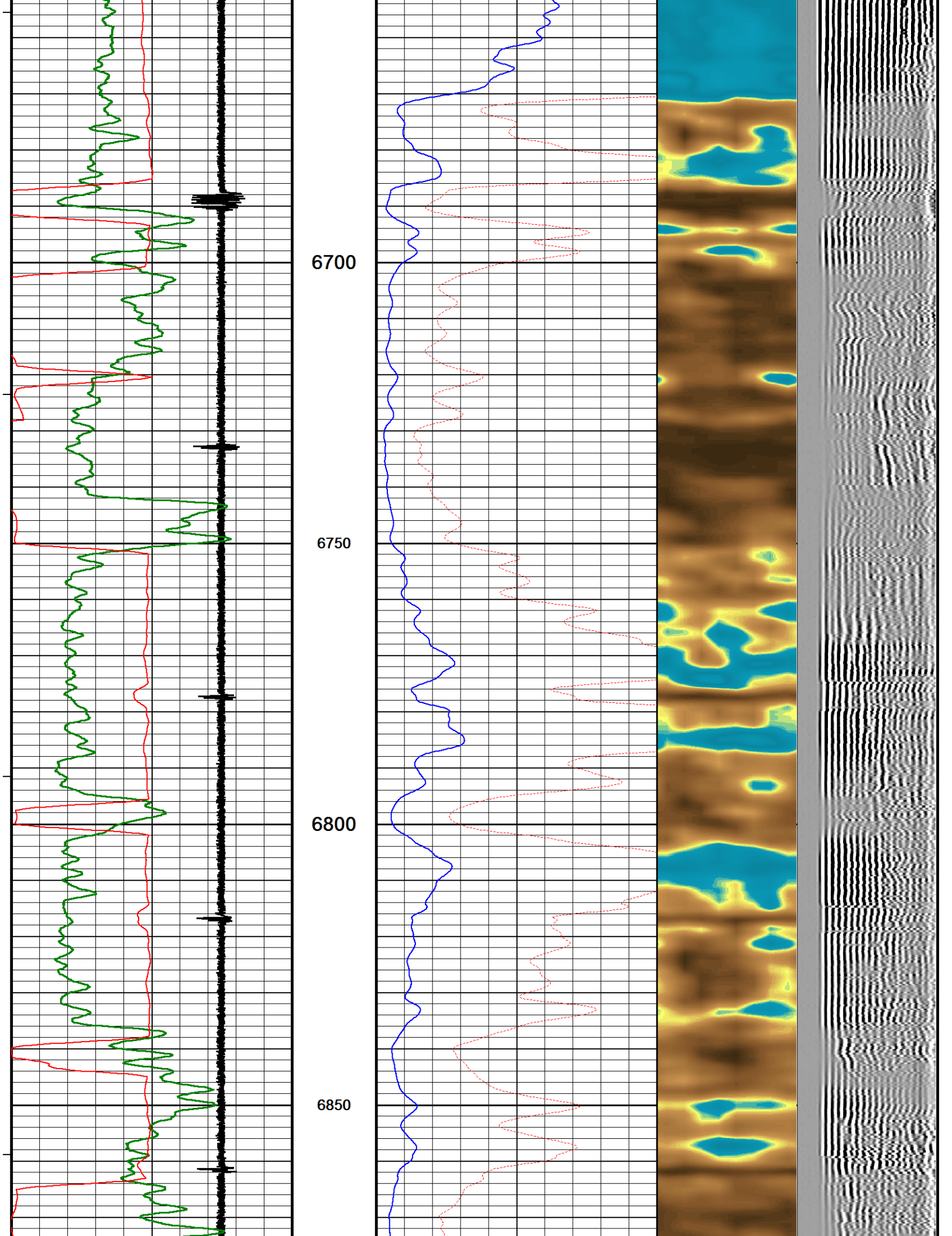
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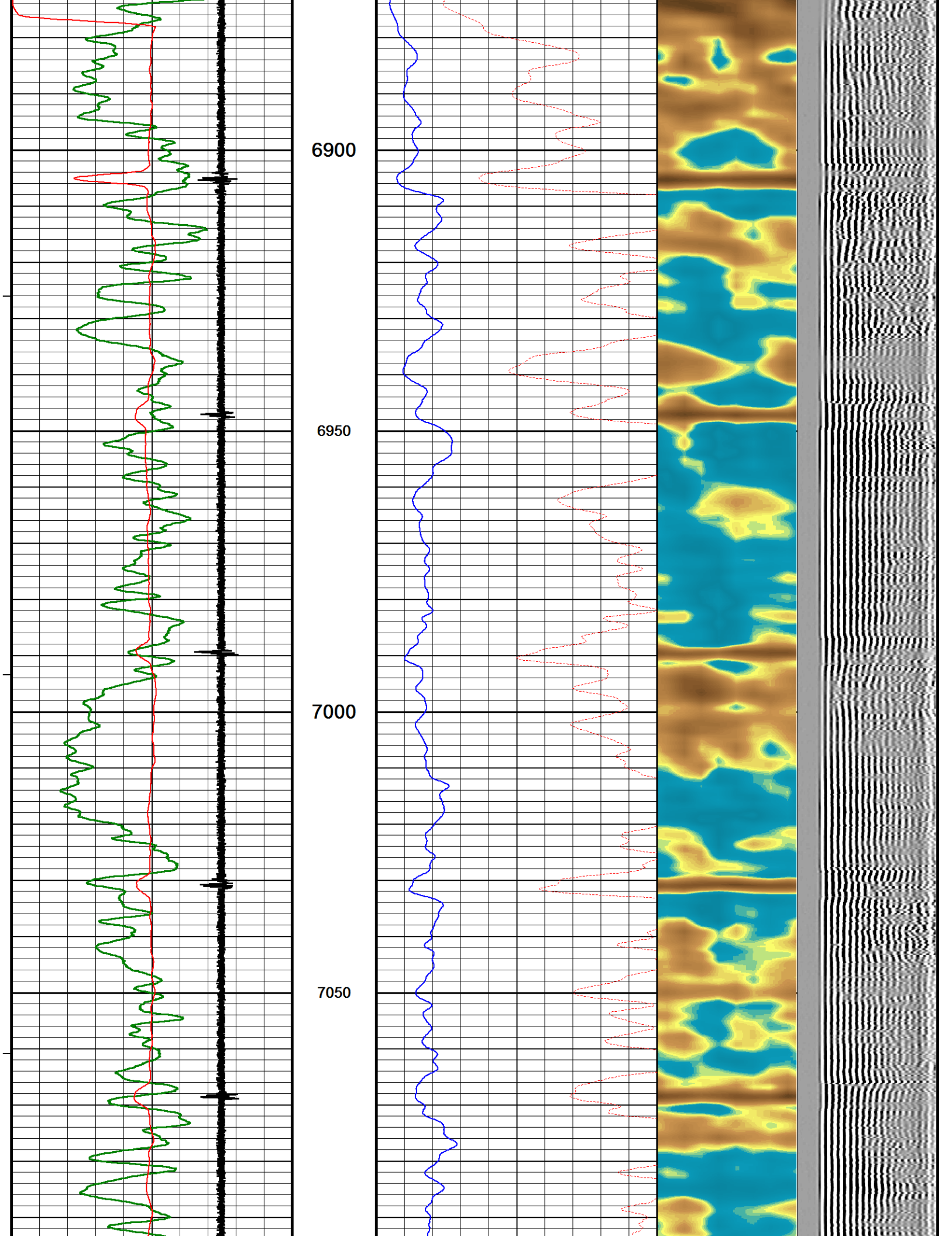
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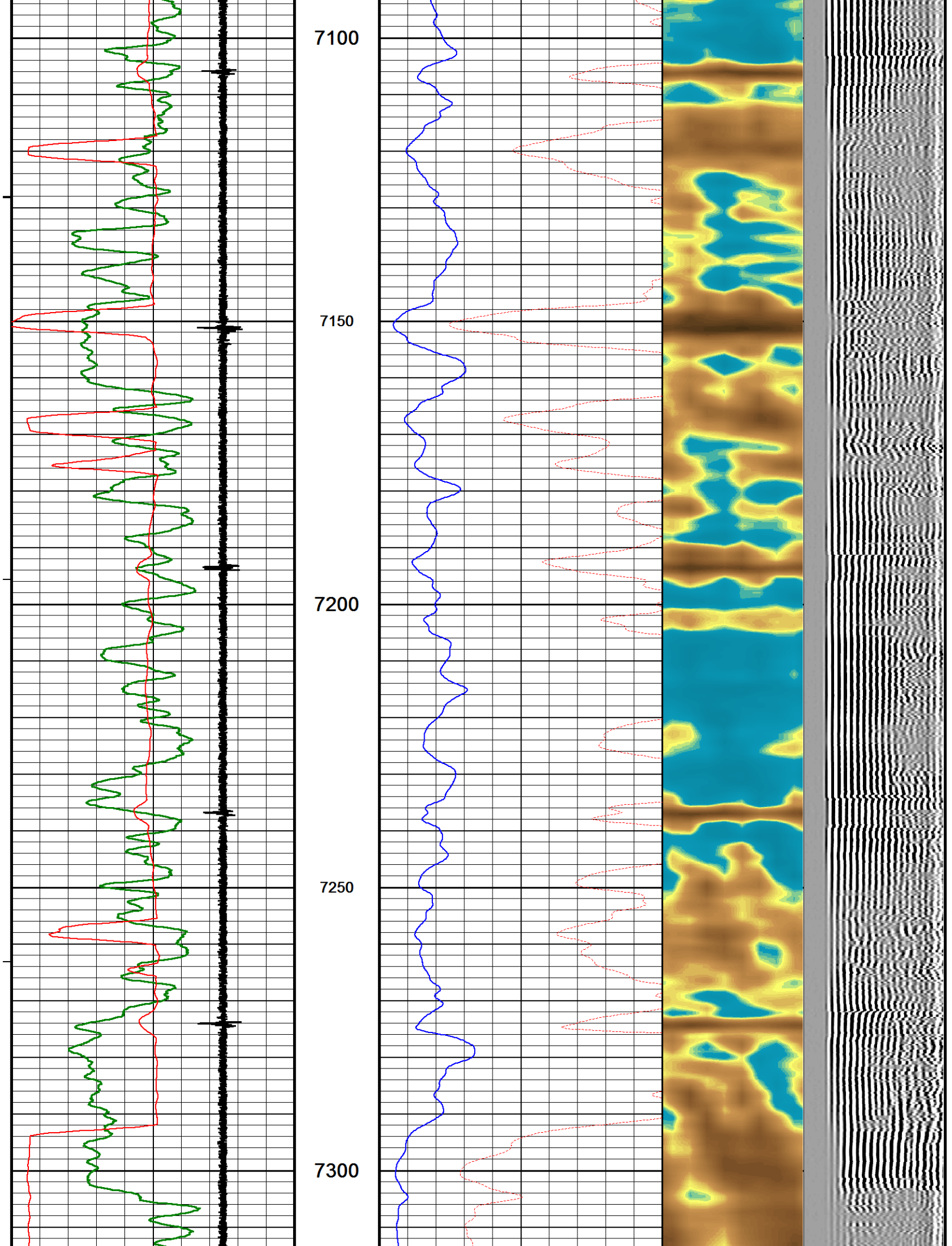
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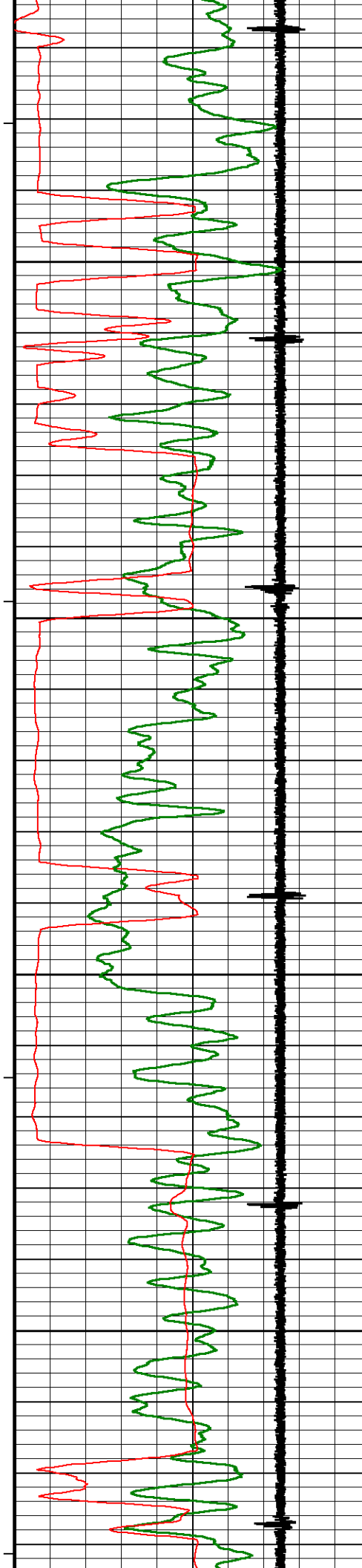










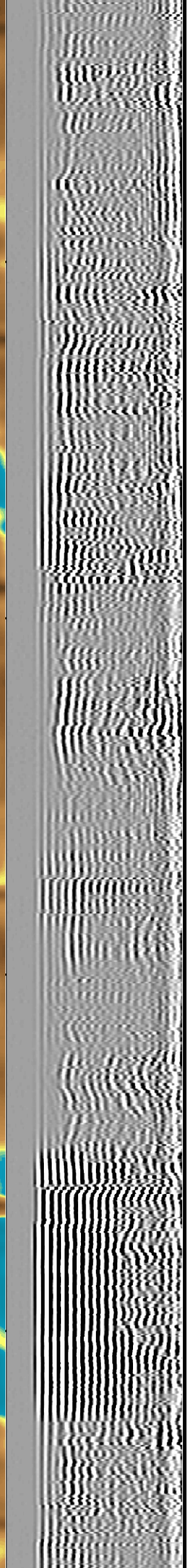
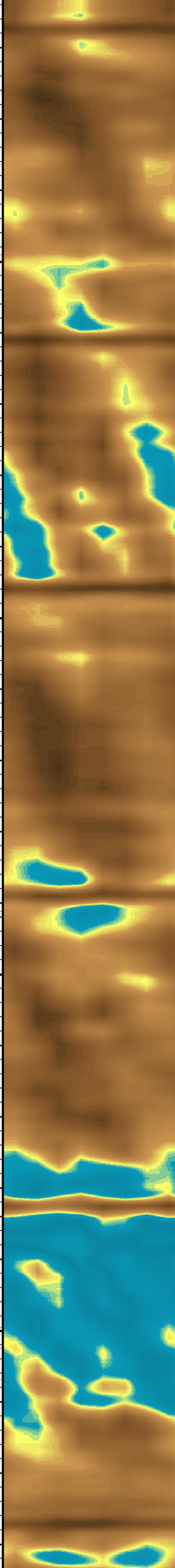
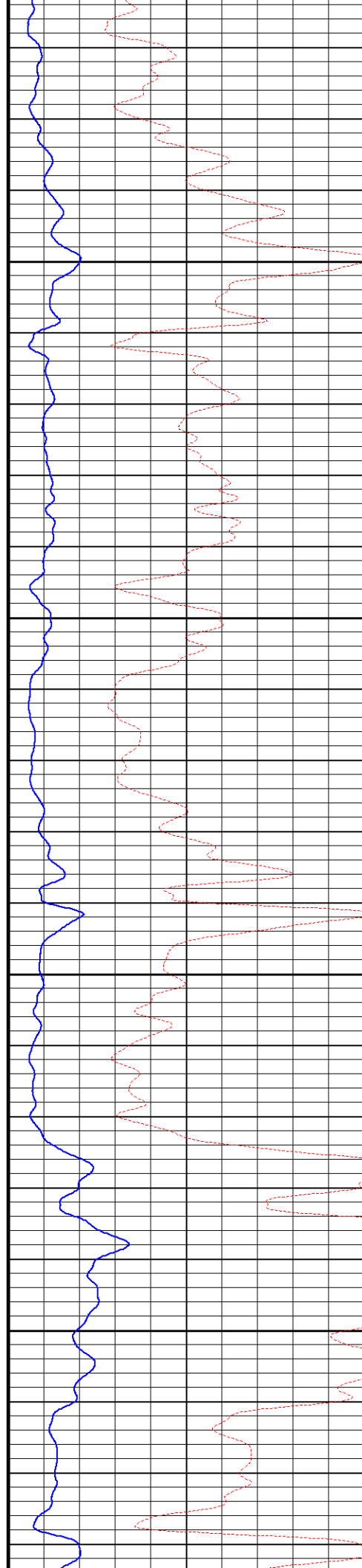


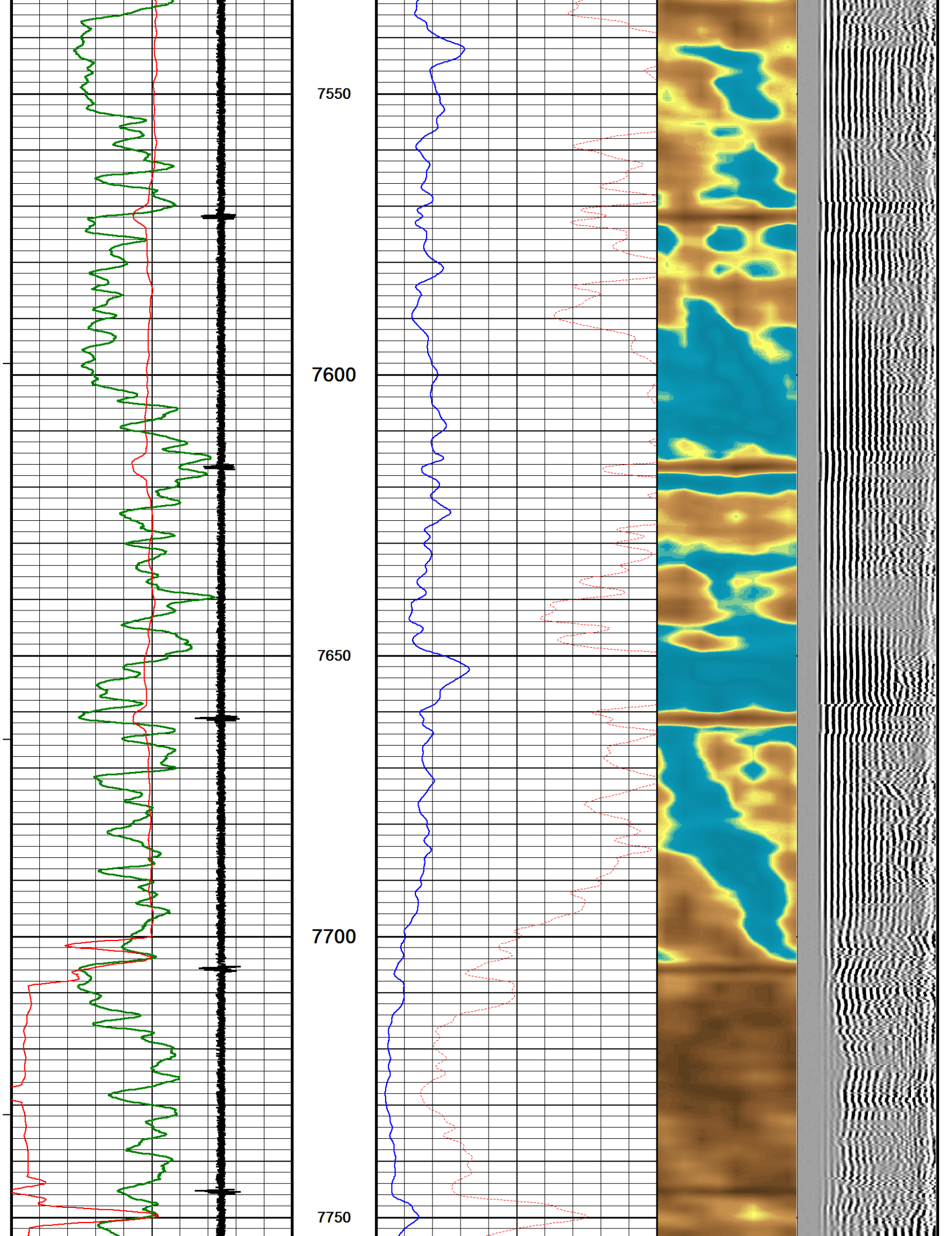
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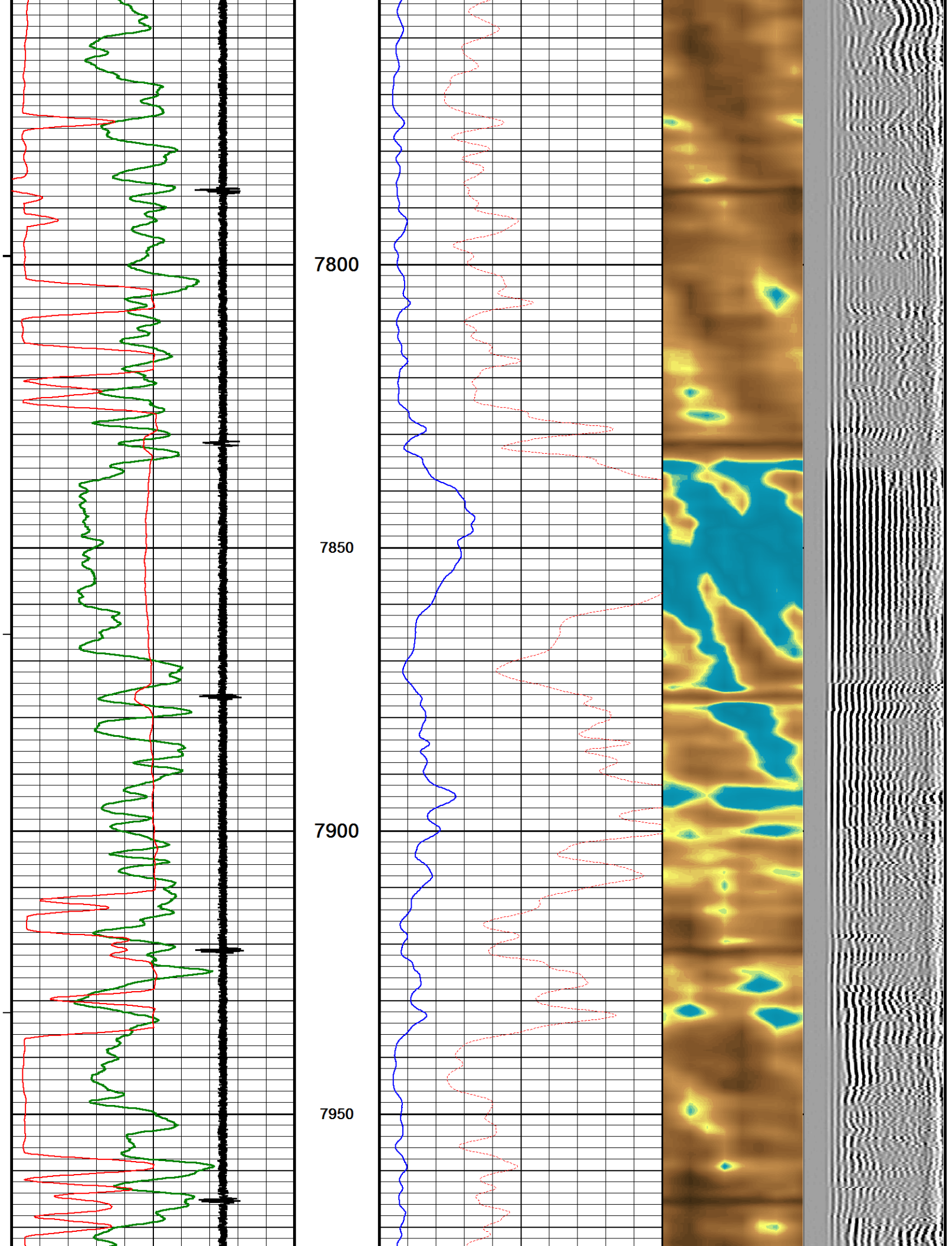
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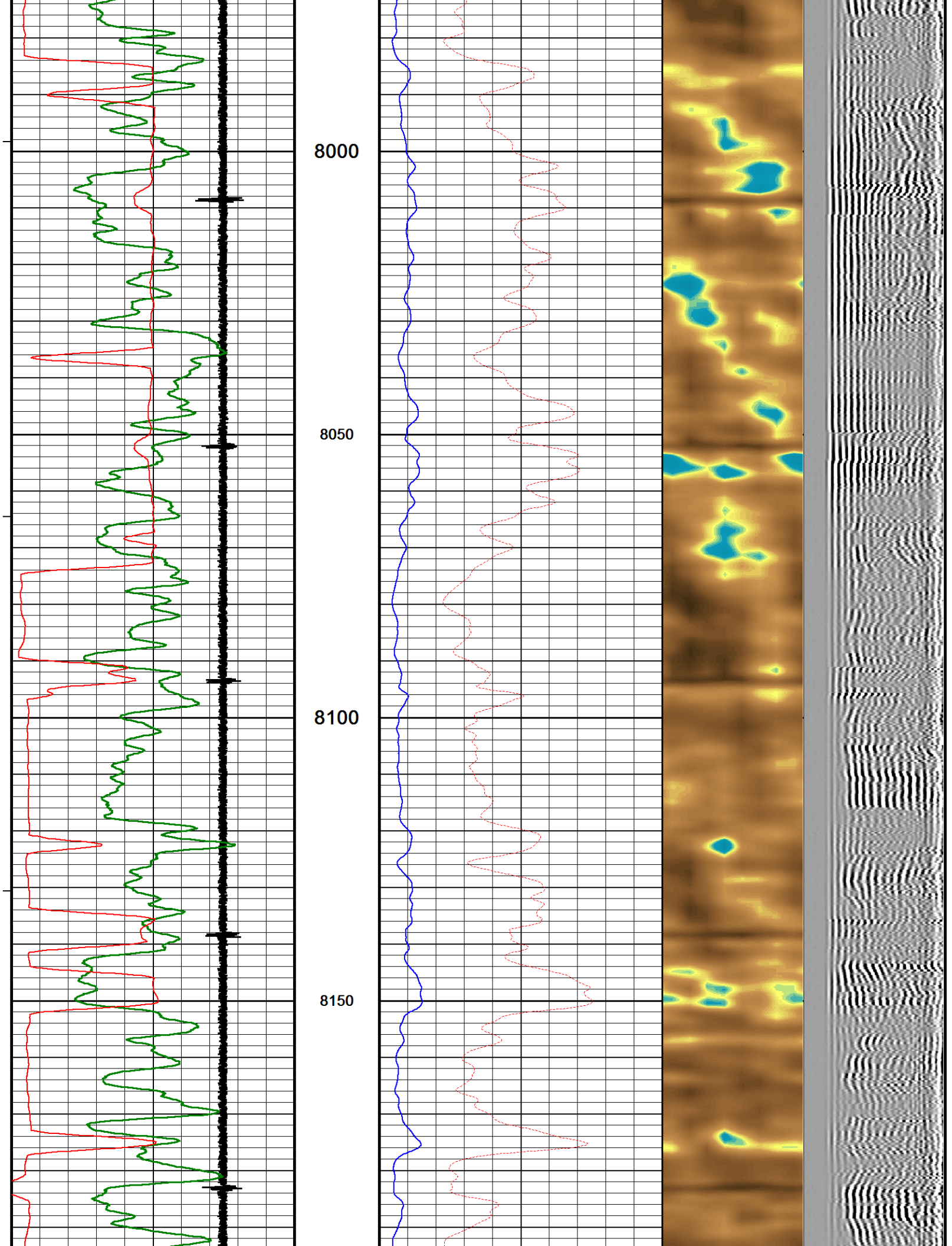
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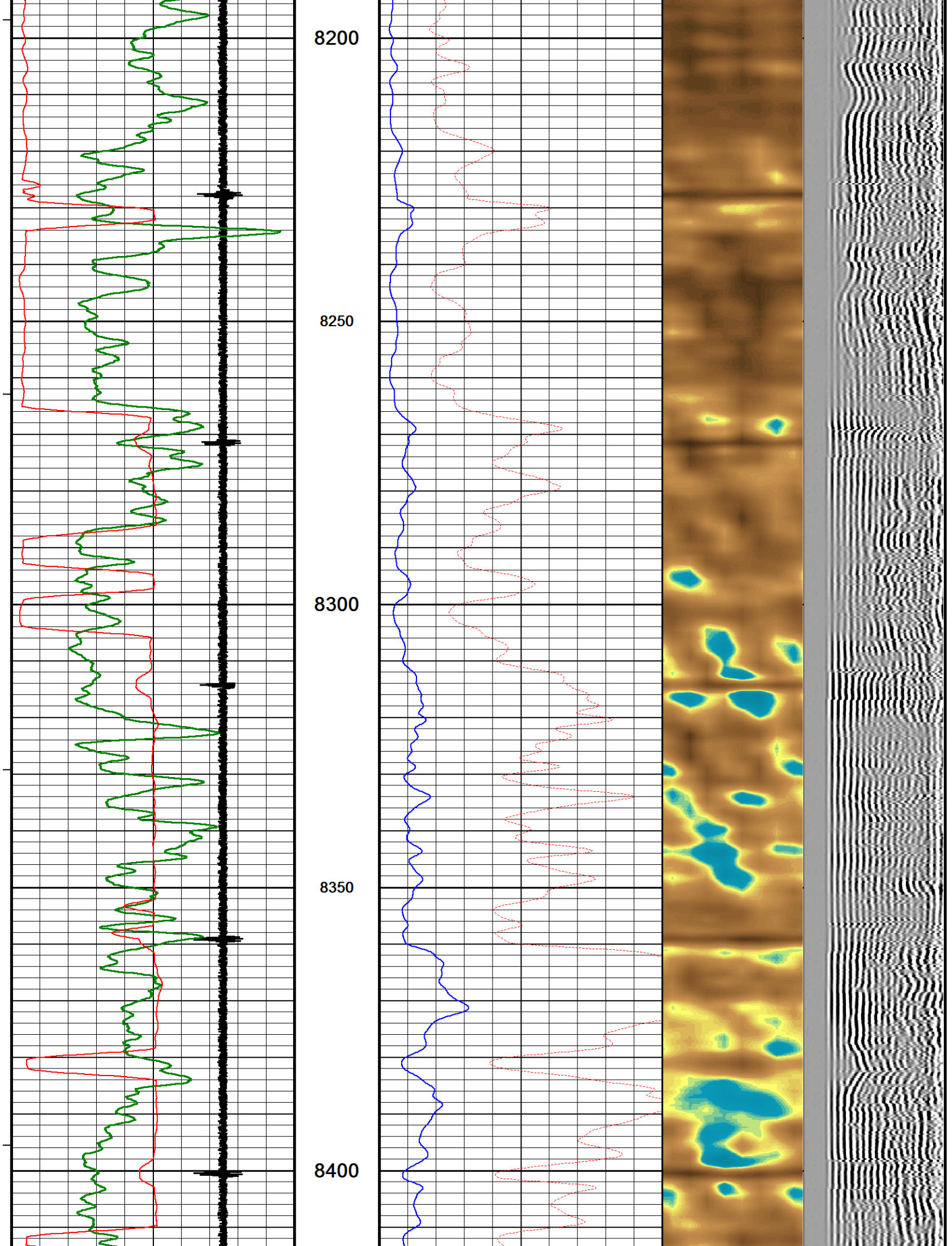
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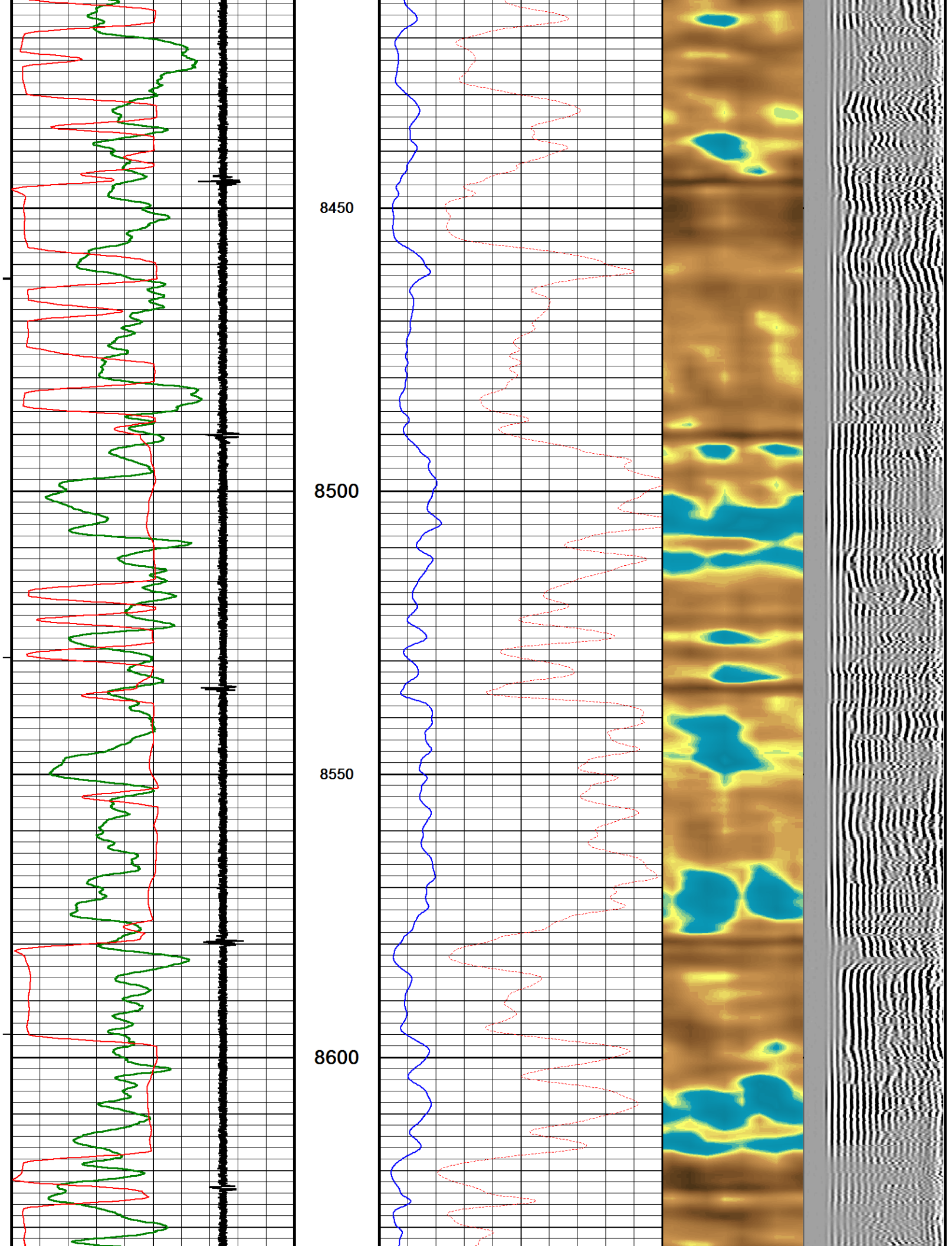


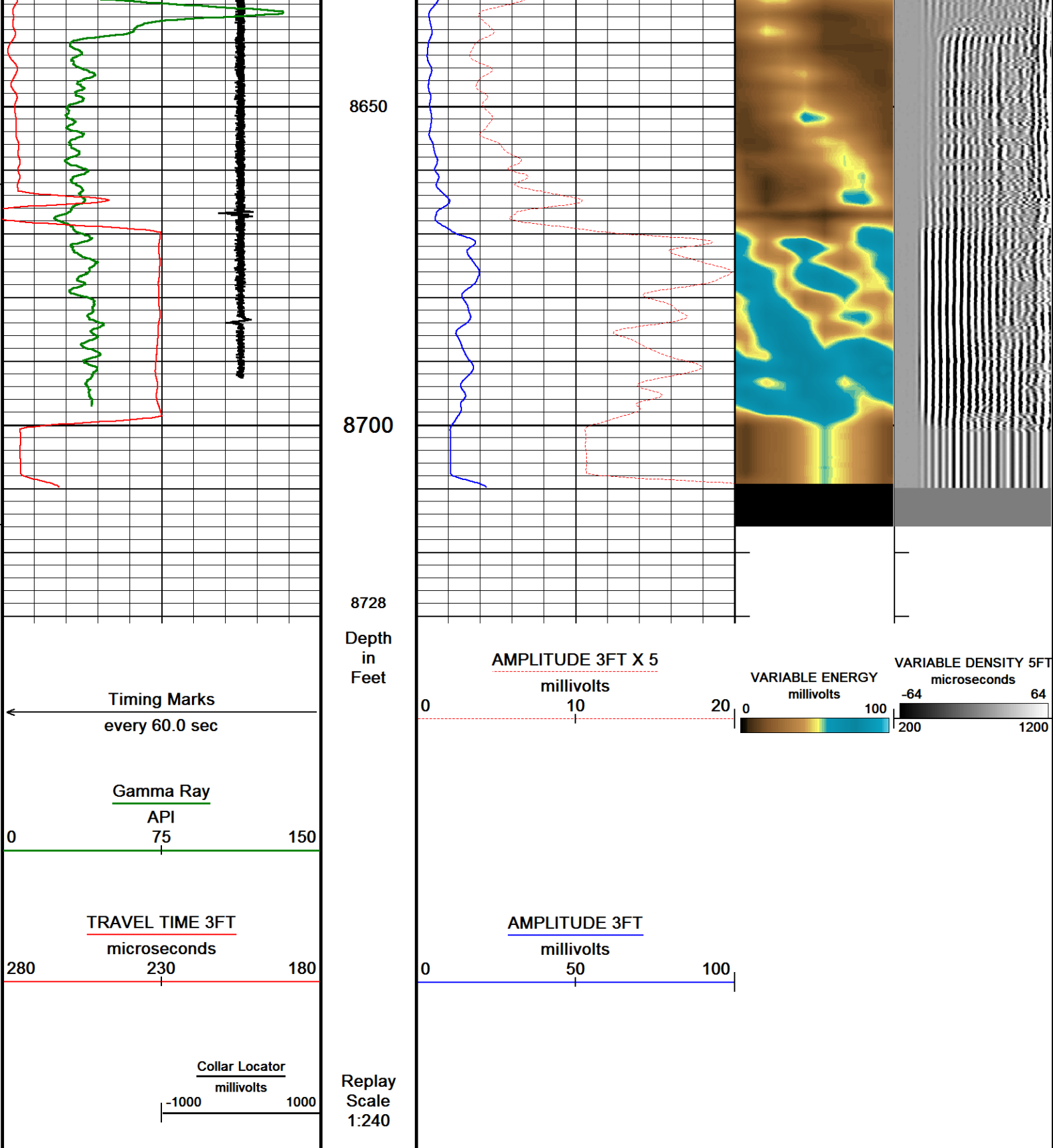












Depth Based Data - Maximum Sampling Increment 2.5cm
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System Versions: Logged with 16.00.6296 Plotted with 16.00.6296

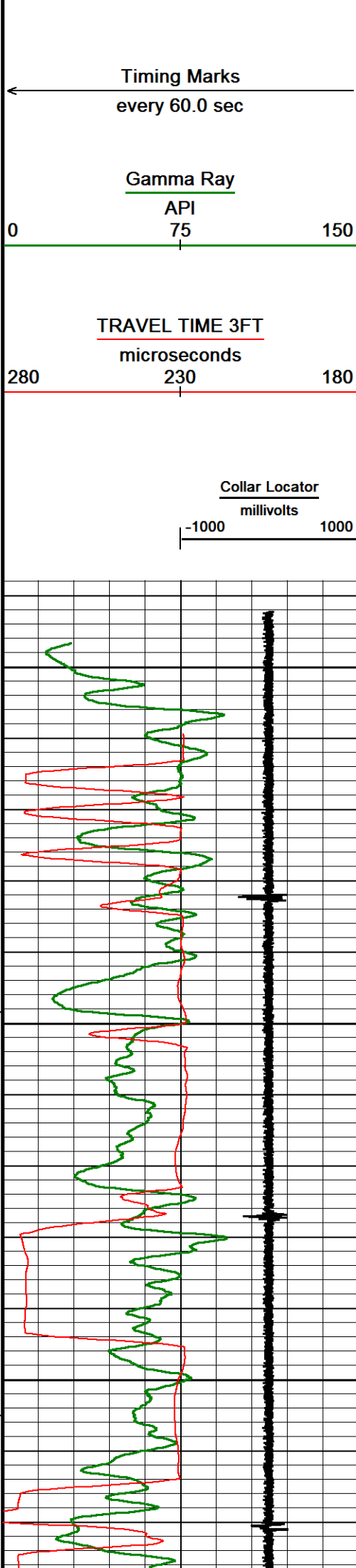
Plotted on 13-DEC-2015 22:44
Recorded on 13-DEC-2015 22:22

↑ SBT MAIN ↑

↓ SBT REPEAT ↓

Depth Based Data - Maximum Sampling Increment 2.5cm
Filename: C:\Logs\Caerus\Puckett 13B-1\SBT_003.dta
System Versions: Logged with 16.00.6296 Plotted with 16.00.6296

Plotted on 13-DEC-2015 22:44
Recorded on 13-DEC-2015 22:42



Depth
in
Feet

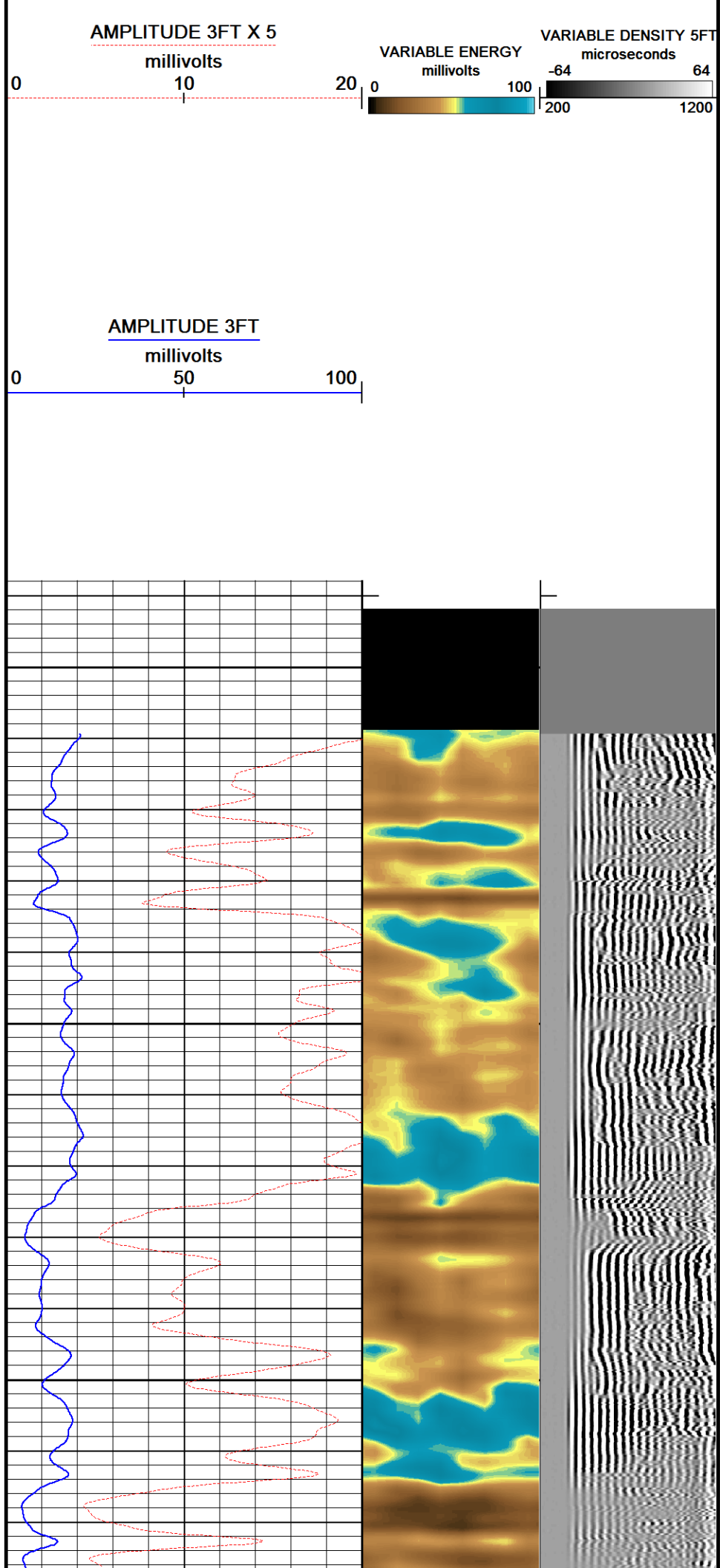
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Scale
1:240

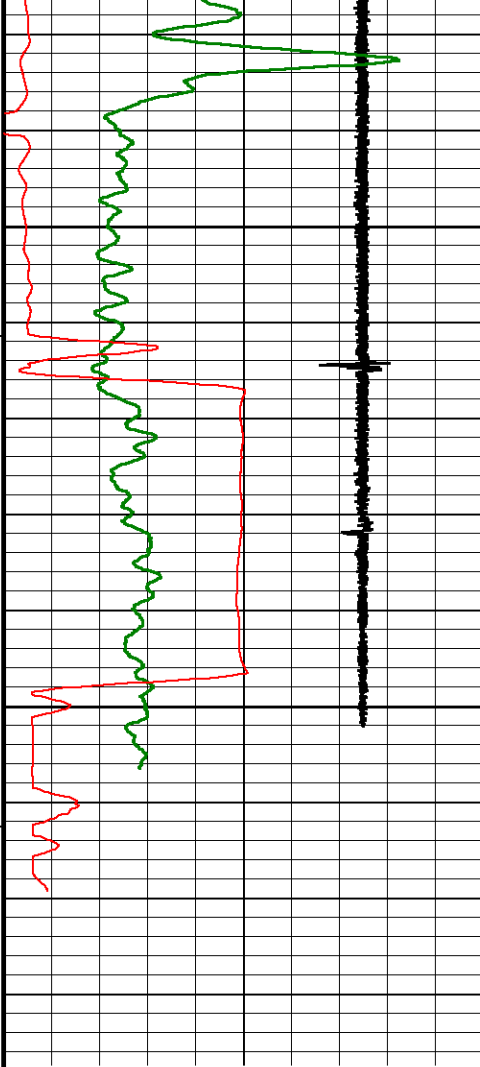
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8500

8550

8600





8650

8700

8734

Depth
in
Feet

Timing Marks
every 60.0 sec

Gamma Ray

API

75

0 150

TRAVEL TIME 3FT

microseconds

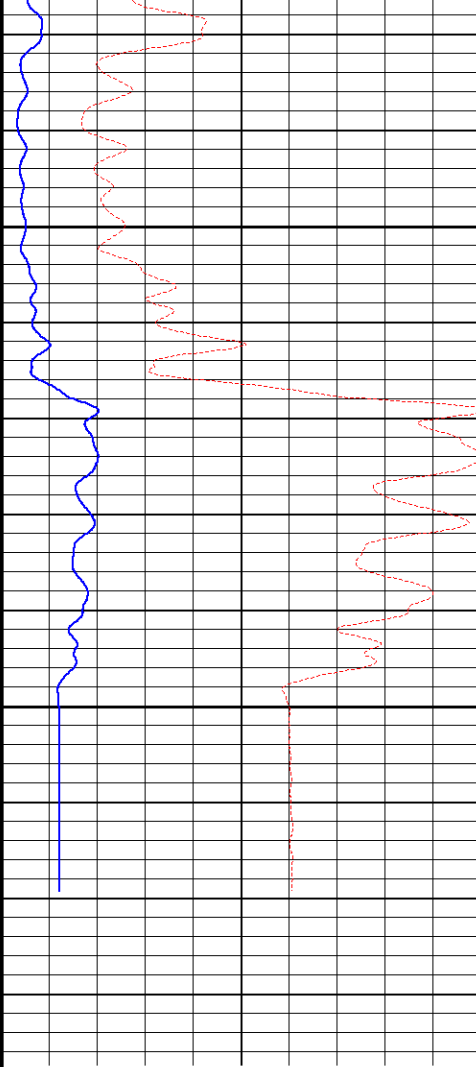
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Collar Locator

millivolts

-1000 1000

Replay
Scale
1:240



AMPLITUDE 3FT X 5

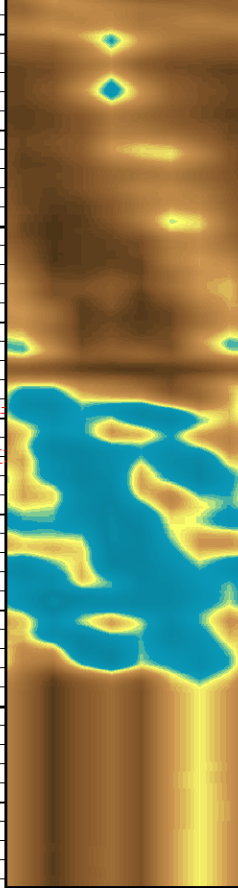
millivolts

0 10 20

AMPLITUDE 3FT

millivolts

0 50 100



VARIABLE ENERGY

millivolts

0 100

VARIABLE DENSITY 5FT

microseconds

-64 64

200 1200

Depth Based Data - Maximum Sampling Increment 2.5cm

Filename: C:\Logs\Caerus\Puckett 13B-1\SBT_003.dta

System Versions: Logged with 16.00.6296 Plotted with 16.00.6296

Plotted on 13-DEC-2015 22:44

Recorded on 13-DEC-2015 22:42



SBT REPEAT



DOWNHOLE EQUIPMENT

2.75in Bond Cent
CEN-AA 370 LG: 2.49 ft WT: 11.0 lb OD: 2.717 in

2.75" CCL/Telemetry Sub
CTB-AB 228 LG: 3.40 ft WT: 39.7 lb OD: 2.756 in

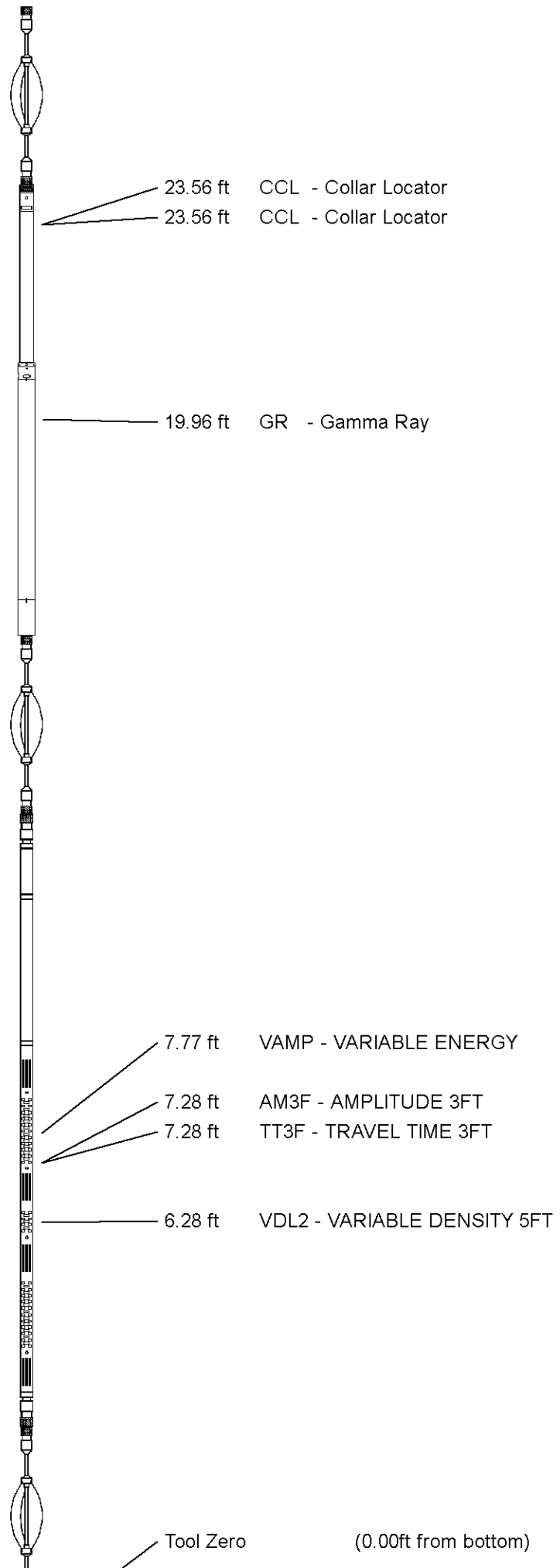
2.75" Gamma Ray Tool
GRB-AB 314 LG: 4.71 ft WT: 59.5 lb OD: 2.756 in

2.75in SBT Middle
CEN-BA 153 LG: 3.08 ft WT: 22.0 lb OD: 2.717 in

Sector Bond Tool
SBT-AA 283 LG: 10.32 ft WT: 90.4 lb OD: 2.717 in

2.75 Bond Centw/bp
CEN-C 220 LG: 2.82 ft WT: 11.0 lb OD: 2.720 in

Total Length: 26.82 ft Weight: 233.7 lb





SHOP AND FIELD CALIBRATIONS

C:\Logs\Caerus\Puckett 13B-1\SBT_002.dta

UGR Field Survey Cal GRB-AB 314

Field calibration on 00-JAN-1988 00:00

Gamma Ray Field Survey Calibration

Tool Type: GRB-AB
Calibrator No:

Serial No: 314

Background	Calibrator	Standard	Units
102.2	492.8	140.0	CPS

Delta Counts Per Sec: 390.6 CPS/API = 2.790

SBT Field Calibration SBT-AA 283

Field calibration on 13-DEC-2015 18:02

Sector Bond Field Calibration

Tool Type SBT-AA Serial No 283

TO Gain -21dB Free Pipe Depth

Sensor	Description	Standard(mv)	Measured(mv)
AMP 3FT	100% Bond	2.70	6.00
	Free Pipe	81.00	544.70
AMP 5FT	100% Bond	1.80	0.80
	Free Pipe	54.00	1135.80
1 SECTOR AMP	100% Bond	5.00	13.70
	Free Pipe	95.00	546.00
2 SECTOR AMP	100% Bond	5.00	34.60
	Free Pipe	95.00	588.30
3 SECTOR AMP	100% Bond	5.00	7.30
	Free Pipe	95.00	574.00
4 SECTOR AMP	100% Bond	5.00	10.40
	Free Pipe	95.00	583.00
5 SECTOR AMP	100% Bond	5.00	25.10
	Free Pipe	95.00	556.50
6 SECTOR AMP	100% Bond	5.00	9.20
	Free Pipe	95.00	595.50
7 SECTOR AMP	100% Bond	5.00	15.60
	Free Pipe	95.00	574.20
8 SECTOR AMP	100% Bond	5.00	47.50
	Free Pipe	95.00	571.70

SBT Constants SBT-AA 283

Min Ampl 100% Bond	2.00 MV
Max Ampl 0% Bond	81.00 MV
Casing Size	4.50 IN
Casing Weight	11.6 LB/F
3' TT Correction	-999.0 US
DT Fluid	200.0 US/F
Fast Formation TT	38.5 US/F
Cement Cmpr Strength	580 PSI
Casing Velocity	57.00 US/F
Maximum Attenuation	12.00 DB/F
Cement Weight	0.00 LB/G

SMS Constants SMS-A 0

Last Edited on 00-JAN-1988 00:00

Cement Weight	0.00 LB/G
Cement Weight	0.00 LB/G

COMPANY	CAERUS OIL & GAS LLC
WELL	PUCKETT 13B-1
FIELD	GRAND VALLEY
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	USA / COLORADO

Elevation Kelly Bushing	8351.00	feet	Bottom Log Interval	8709.00	feet
Elevation Drill Floor	8351.00	feet	Depth Driller	8805.00	feet
Elevation Ground Level	8329.00	feet	Depth Logger	8713.00	feet



SECTOR BOND LOG

Weatherford®