



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.

Well Buddy 7-16HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-48459

SEC 7 TWP 1N RGE 67W

Permanent Datum Ground Level Elevation 5072'

Log Measured From Ground Level 0 FT

Drilling Measured From Kelly Bushing

Other Services  
JBGR  
RBP  
Elevation  
K.B. 5093'  
D.F. ---  
G.L. 5072'

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Well Buddy 7-16HZ  
Field Wattenberg  
County Weld  
State Colorado

Date	22-JUL-2019	One		
Run Number		18292 FT		
Depth Driller		7031 FT		
Depth Logger		7016 FT		
Bottom Logged Interval		Surface		
Top Log Interval		7 875"		
Open Hole Size		Water		
Type Fluid		8.34 lb/gal		
Density / Viscosity		219°F		
Max. Recorded Temp.		See Log		
Estimated Cement Top		ROA		
Time Well Ready		7:08		
Time Logger on Bottom		HD-363		
Equipment Number		Platteville, CO		
Location		J. Morrison		
Recorded By		J. Blockberger		
Witnessed By		J. McCarthy		
Borehole Record				
Run Number	Bit	From	To	Size
				Weight
				From
				To
Tubing Record				
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top
Surface Casing	9 5/8	36	J-55	Surface
Intermediate #1	5 1/2	17	HCP-110	Surface
Intermediate #2				
Inner				

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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

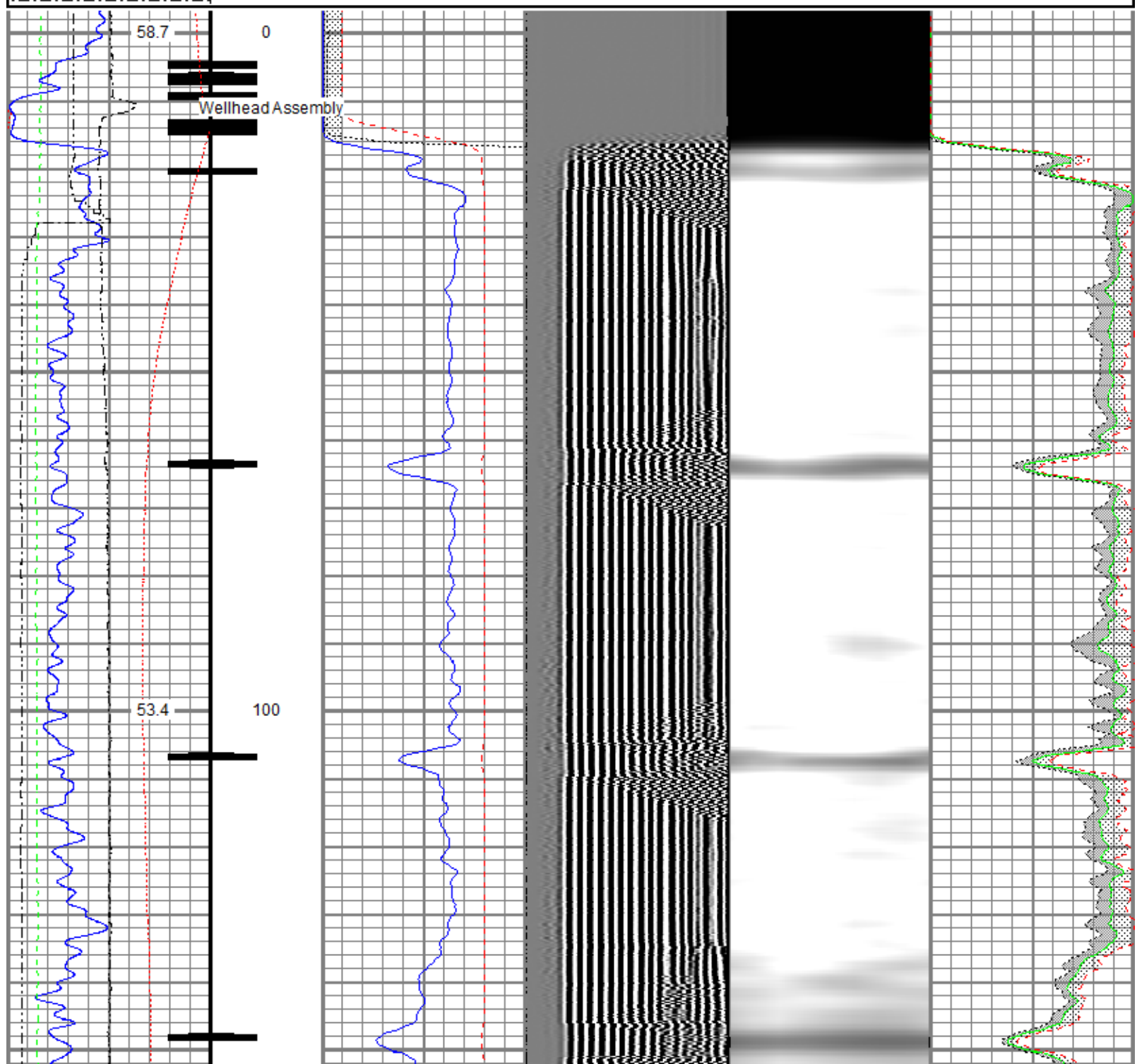
Log ran as per customer request  
Depth referenced to Casing Tally reported Marker Joint at 6961 FT  
Adjusted -3 FT to correlate with Marker Joint  
Gauge Ring/Junk Basket ran to 7961 FT  
Retrievable Bridge Plug set at 7040 FT  
Log ran with 0 PSI Surface Induced Pressure  
Logging tools were clean and free of debris upon completion of operations  
  
Thank you for choosing Reliance Oilfield Services, LLC!!

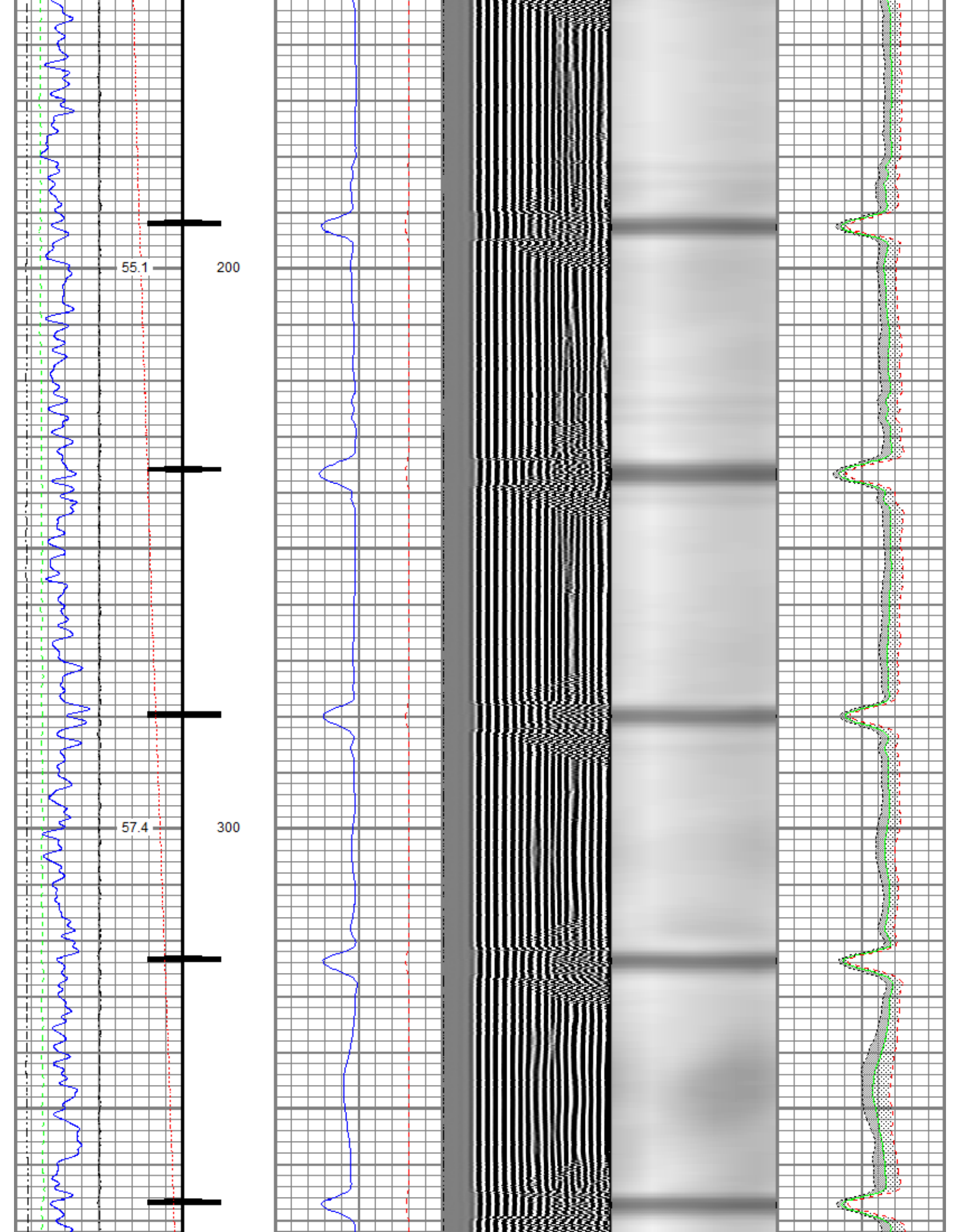
Main Pass

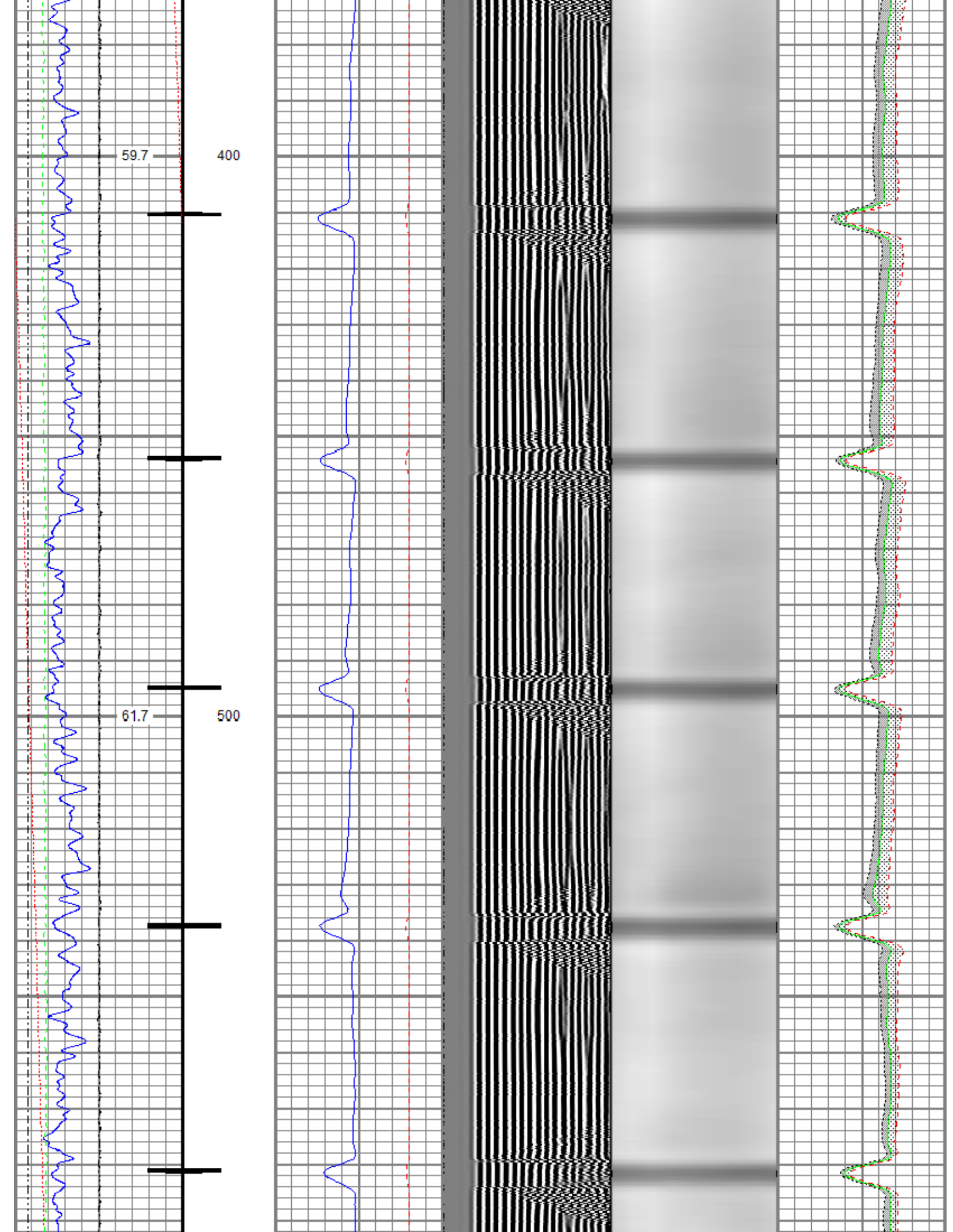


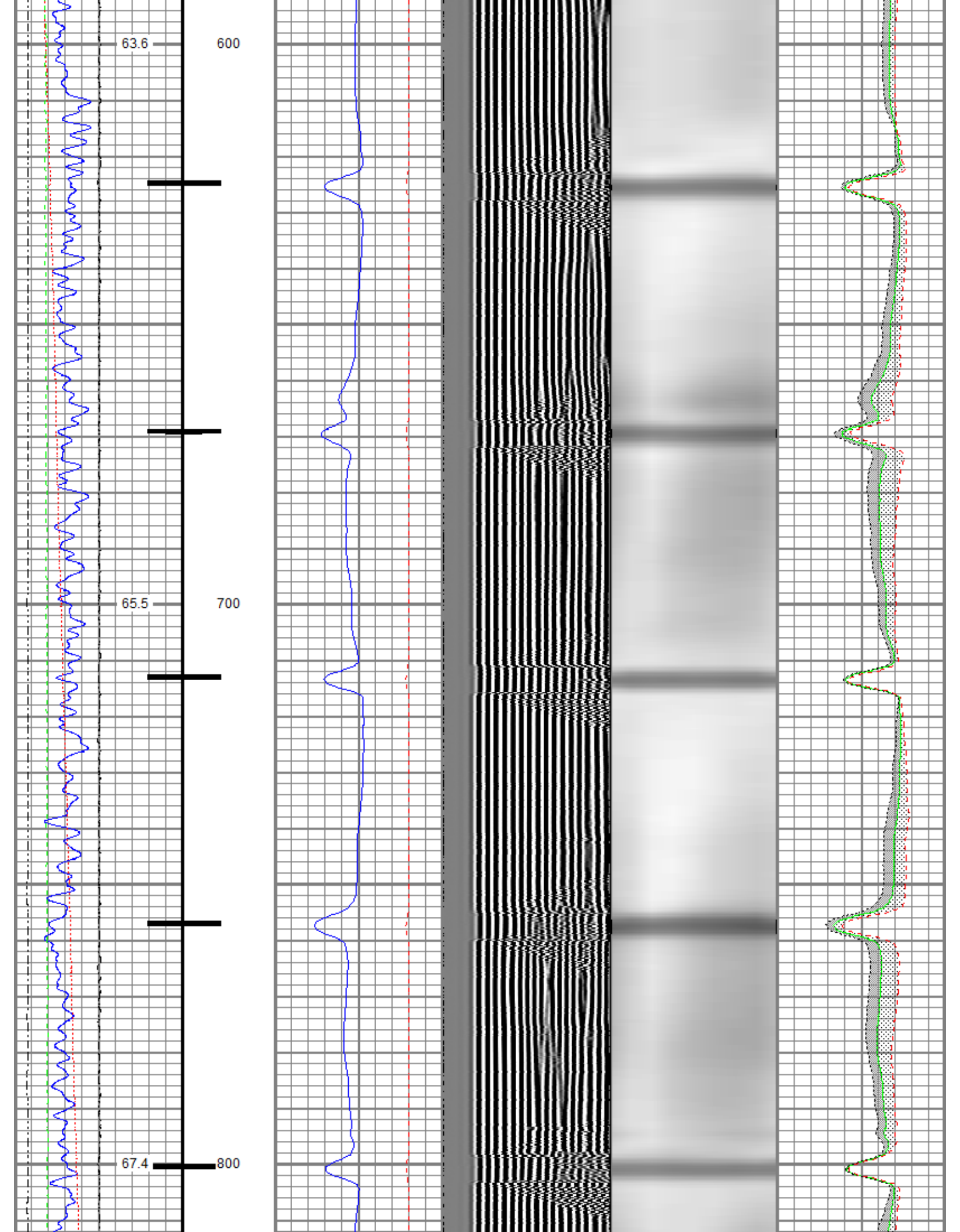
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Dataset Pathname	RCBL_0PSI/Main
Presentation Format	ros_radri
Dataset Creation	Mon Jul 22 07:11:39 2019
Charted by	Depth in Feet scaled 1:240

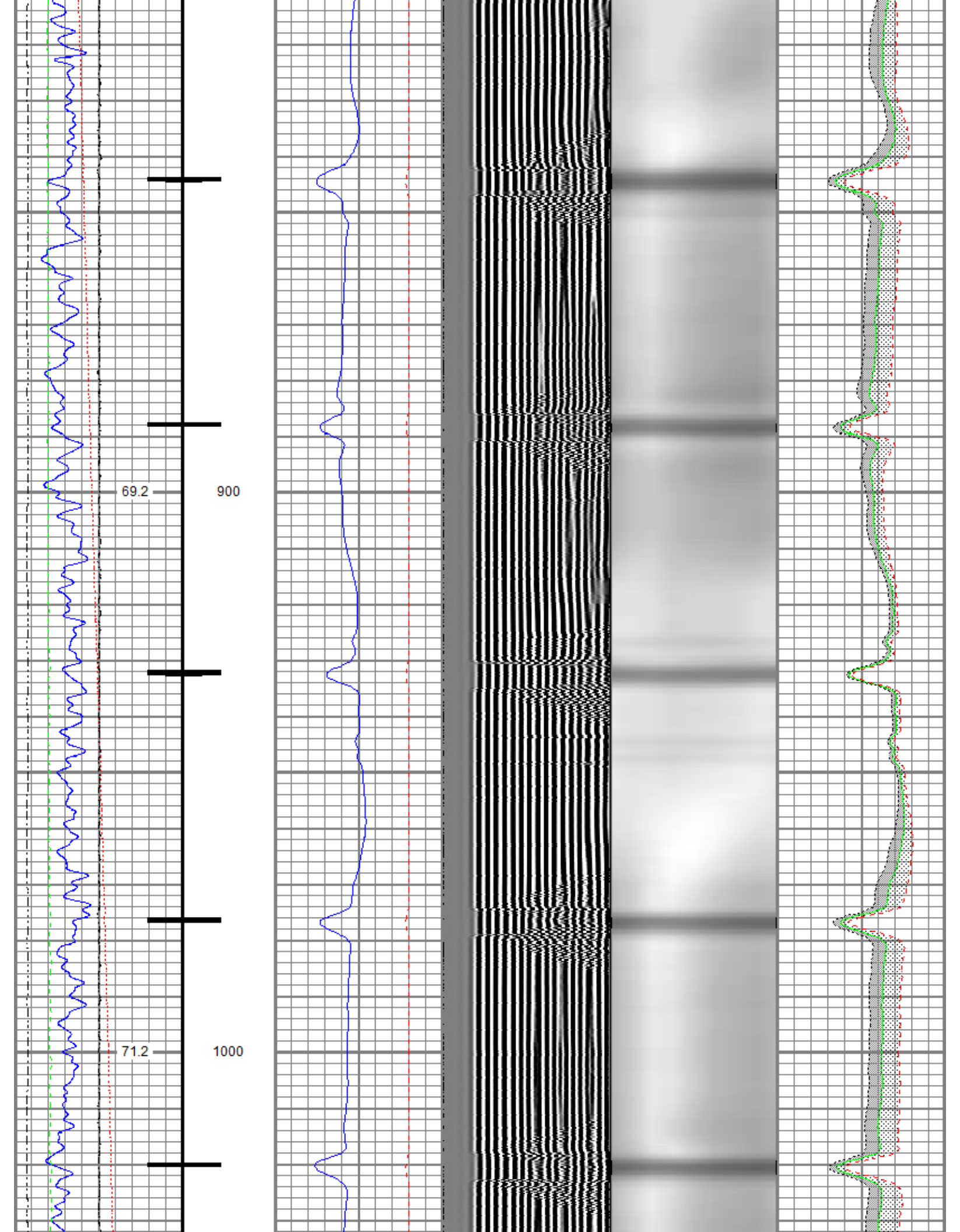
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
(ft/min) 150						
Line Tension (lb) 2000						
Differential Temperature						
(degF) 2						

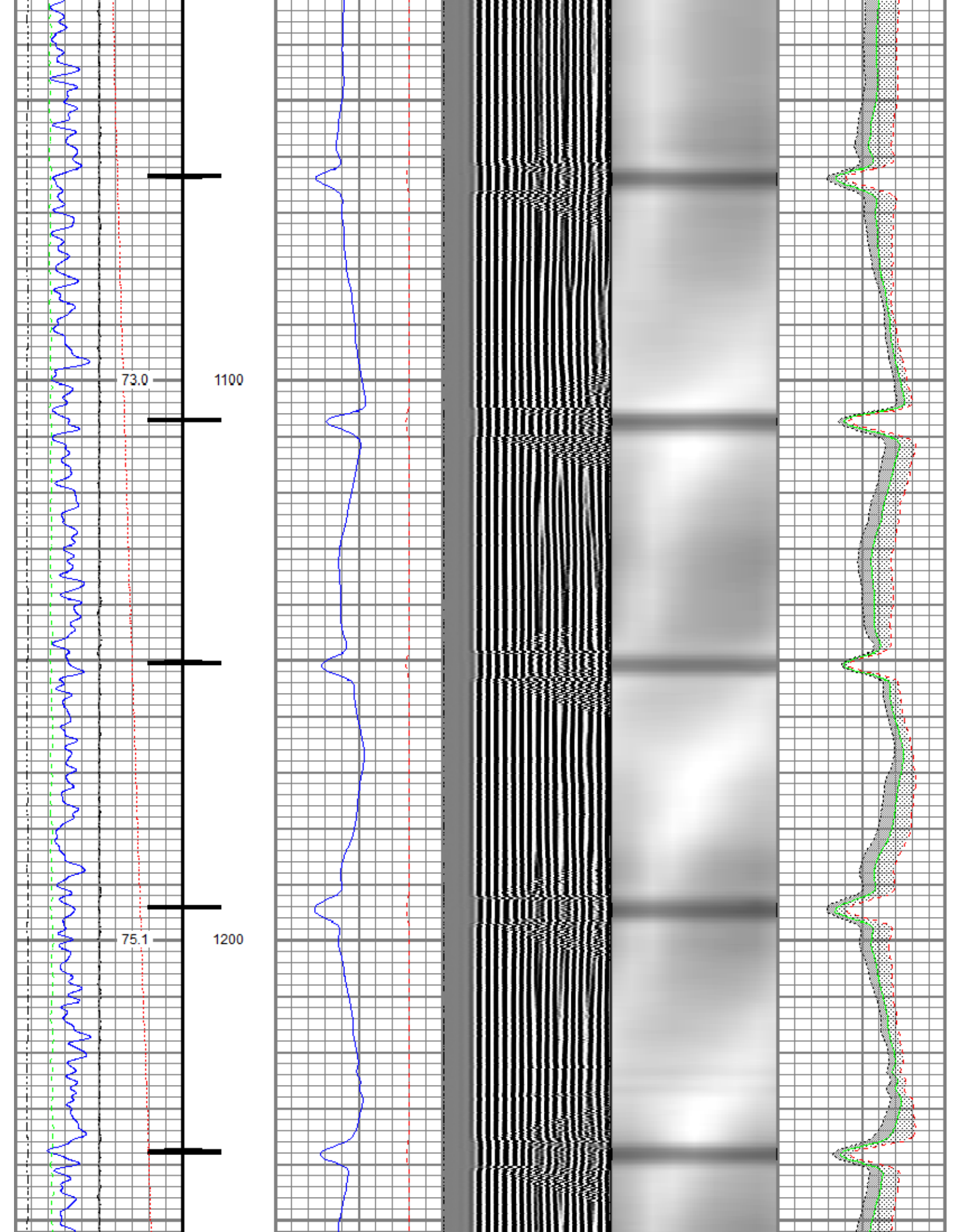


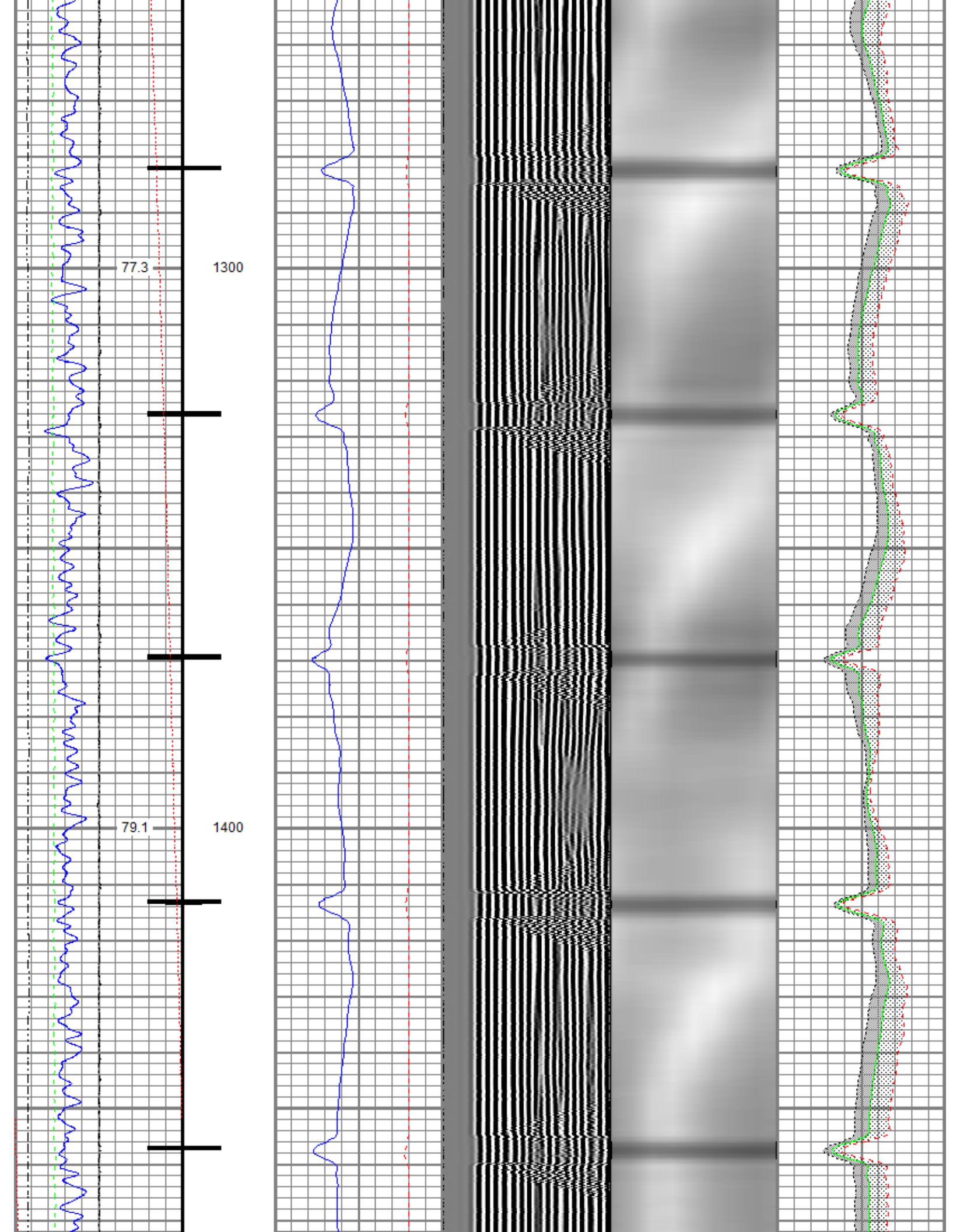


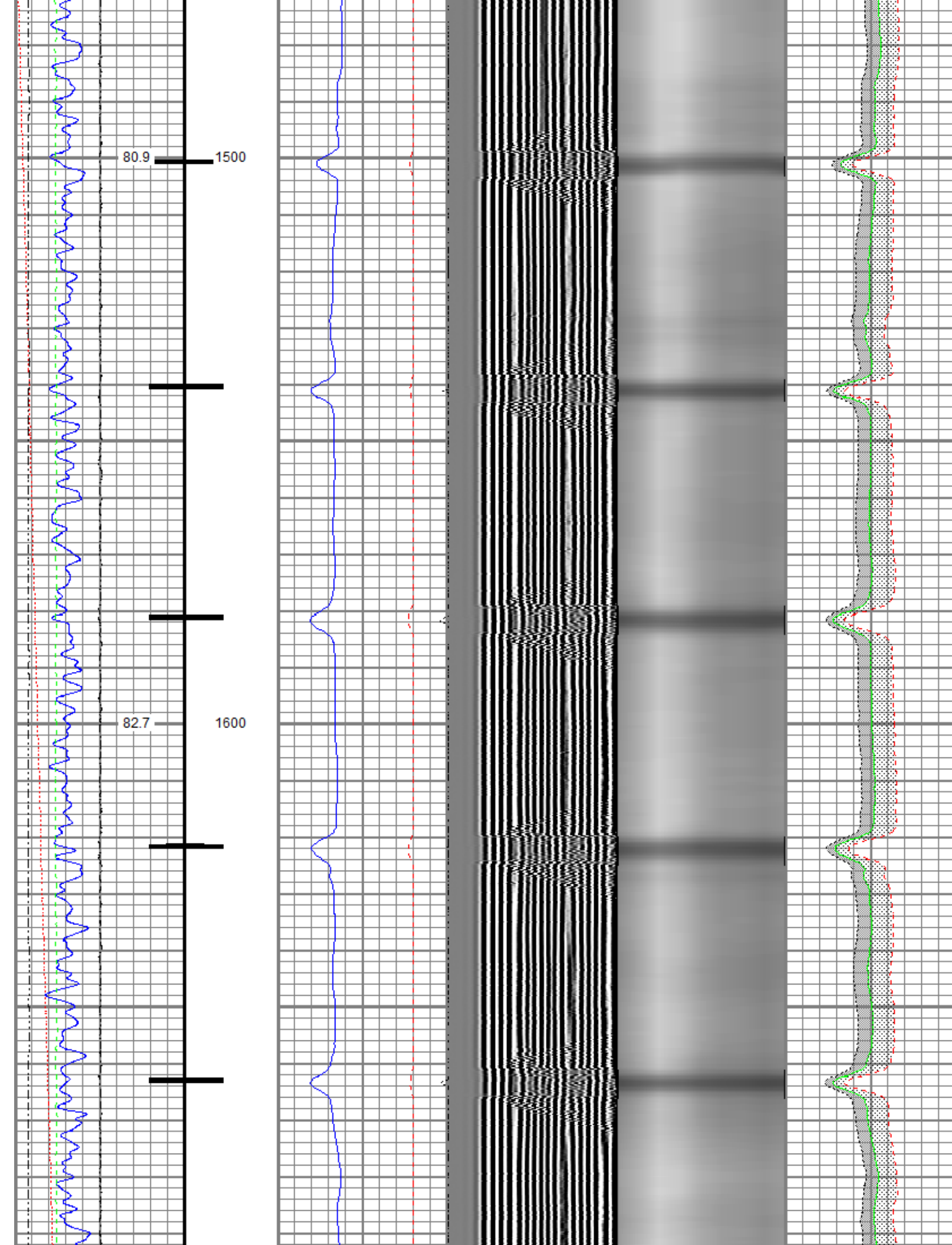


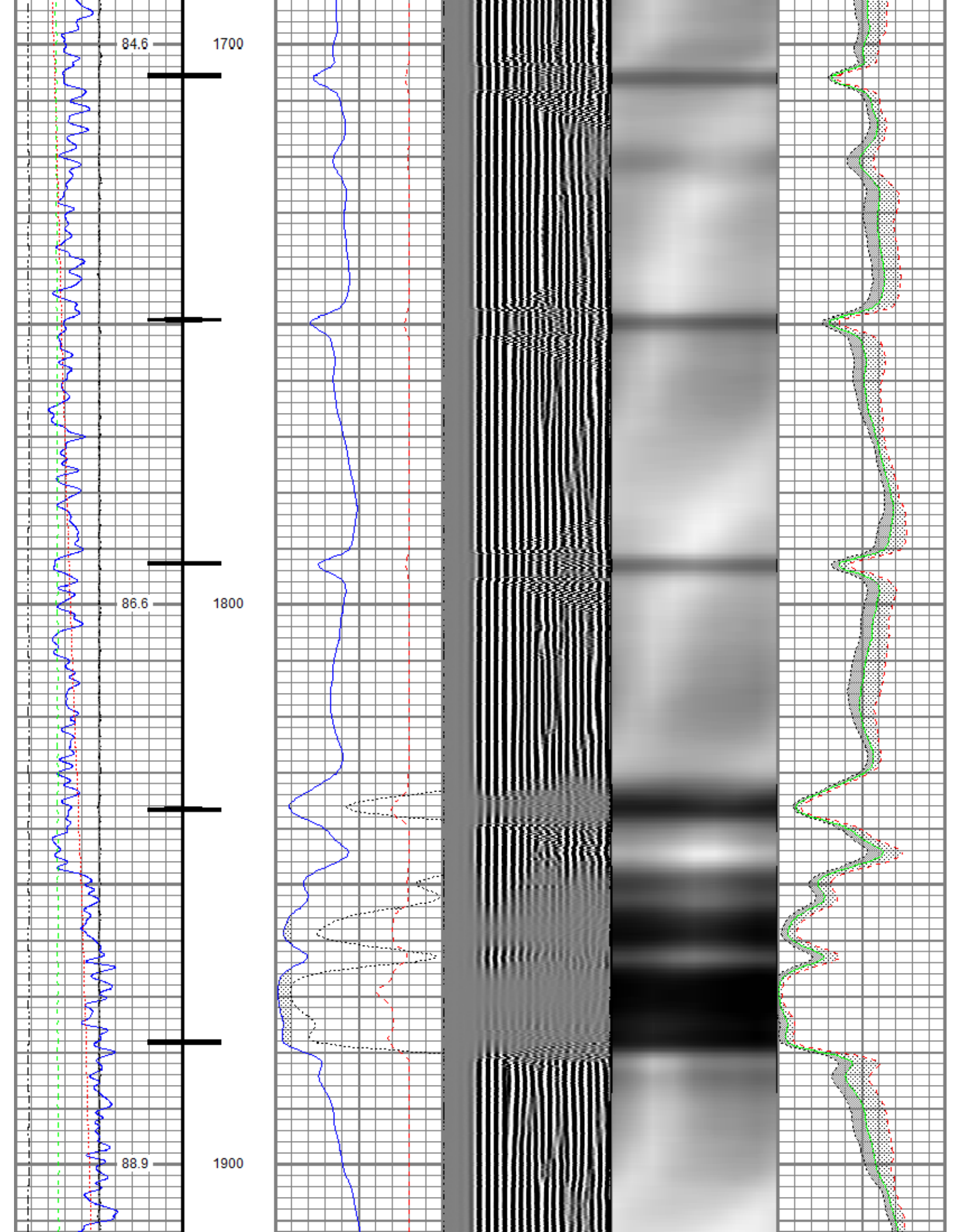


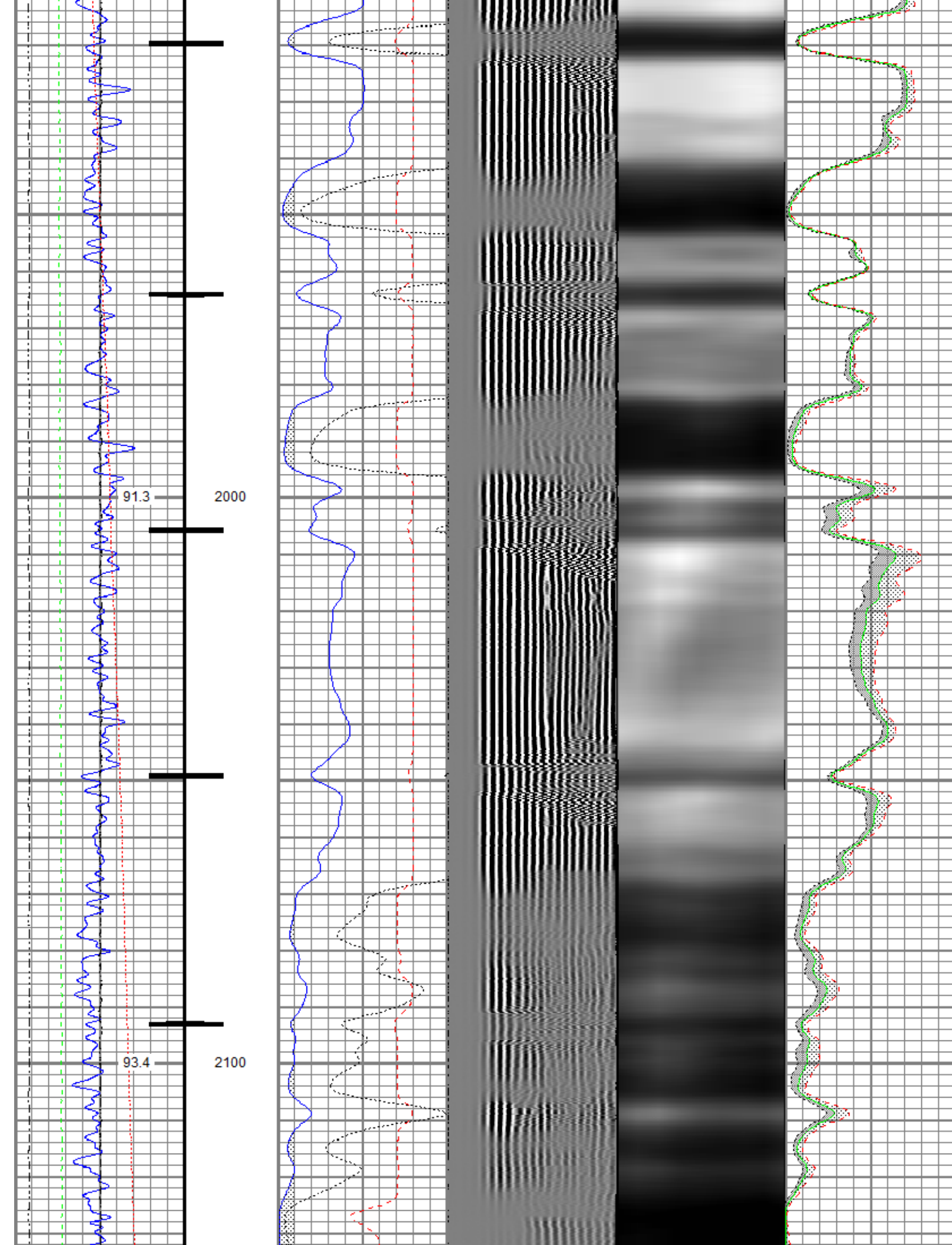


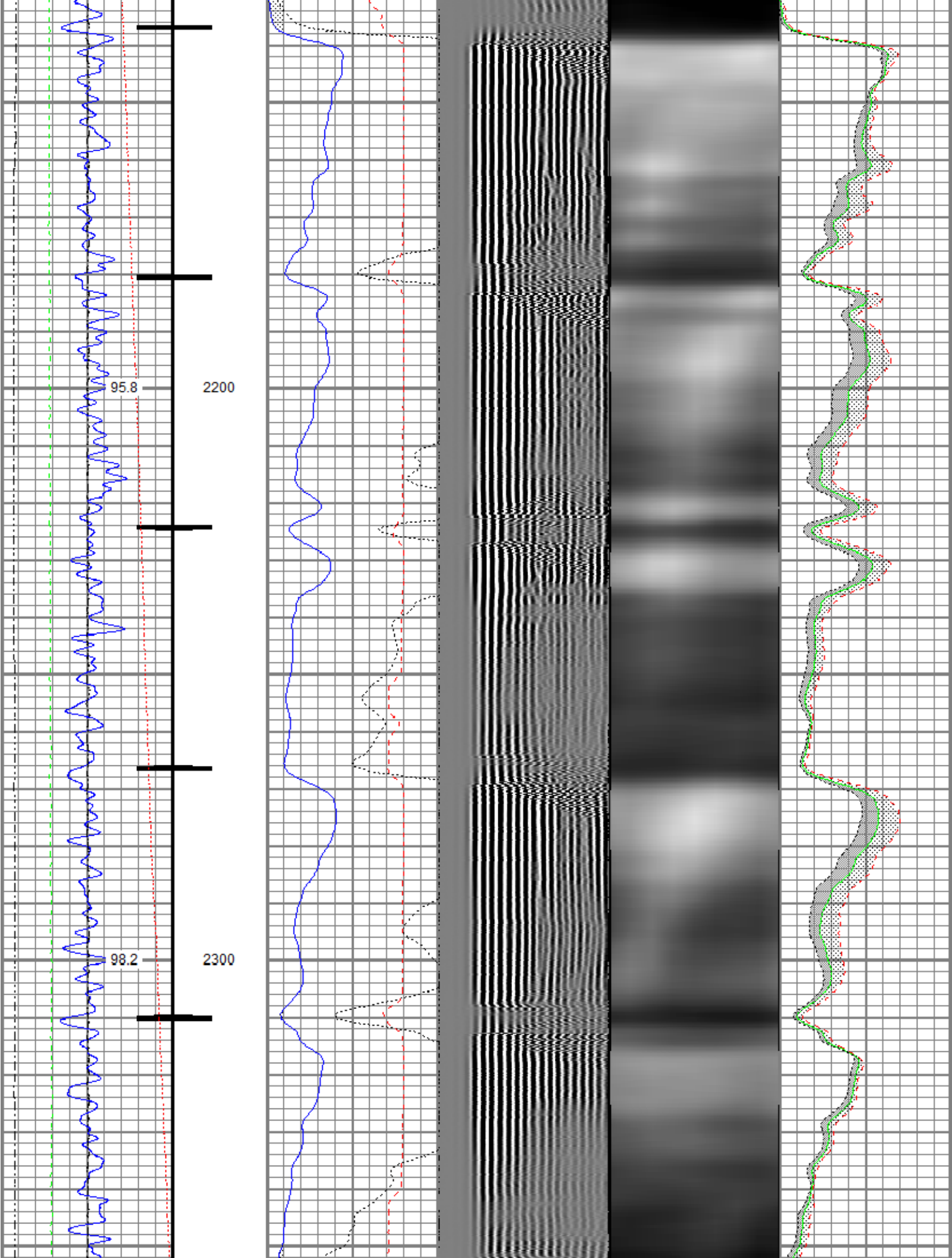


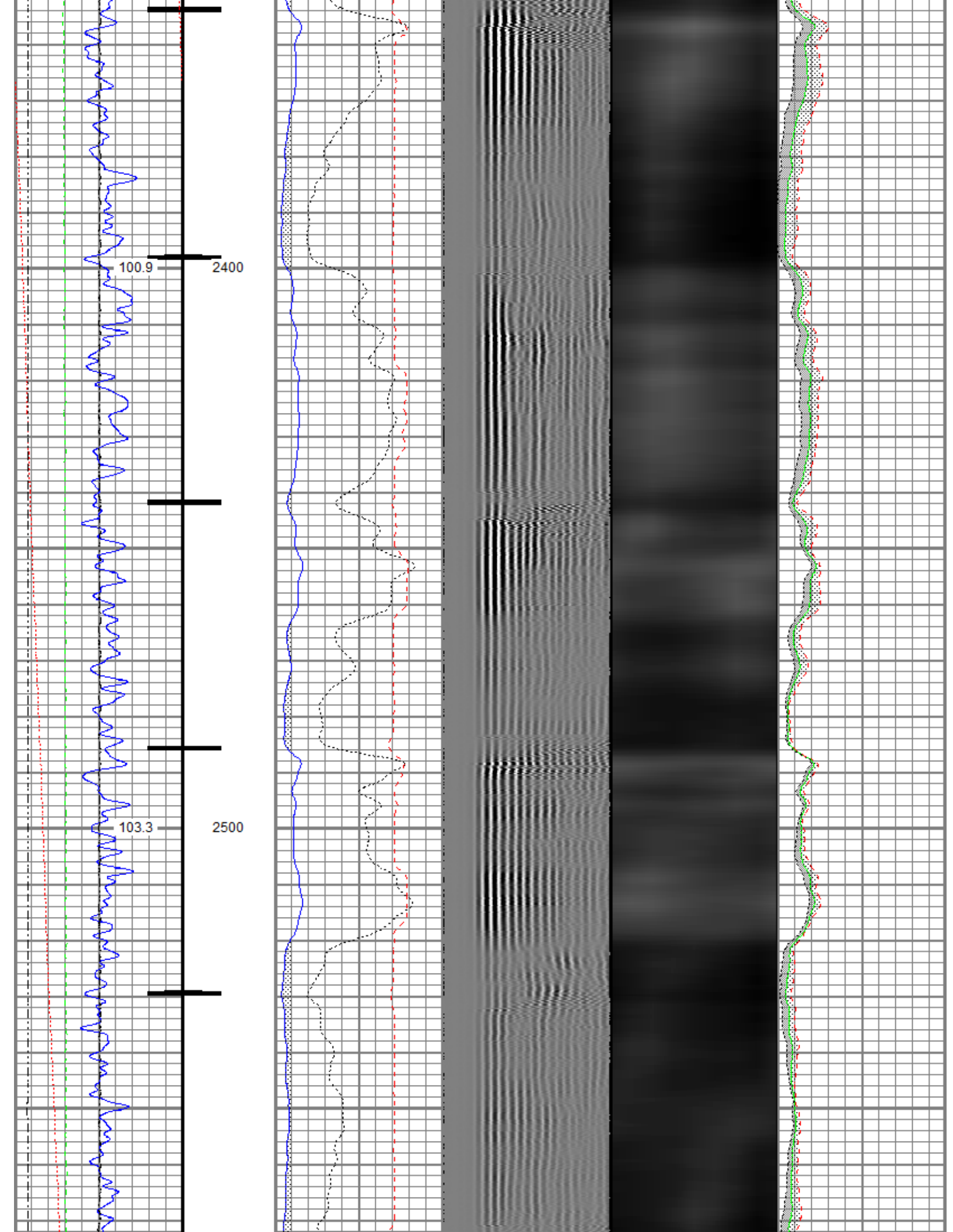


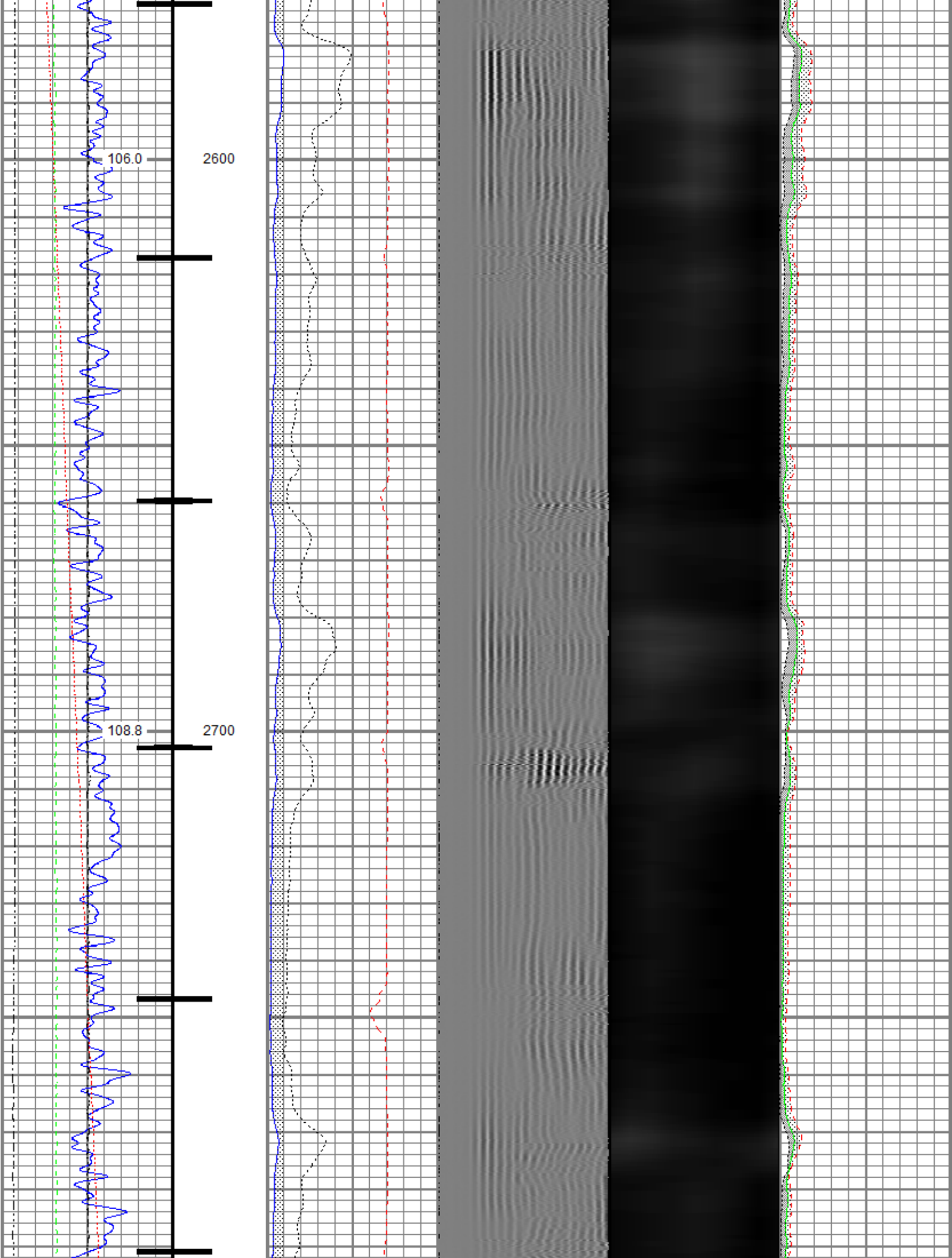


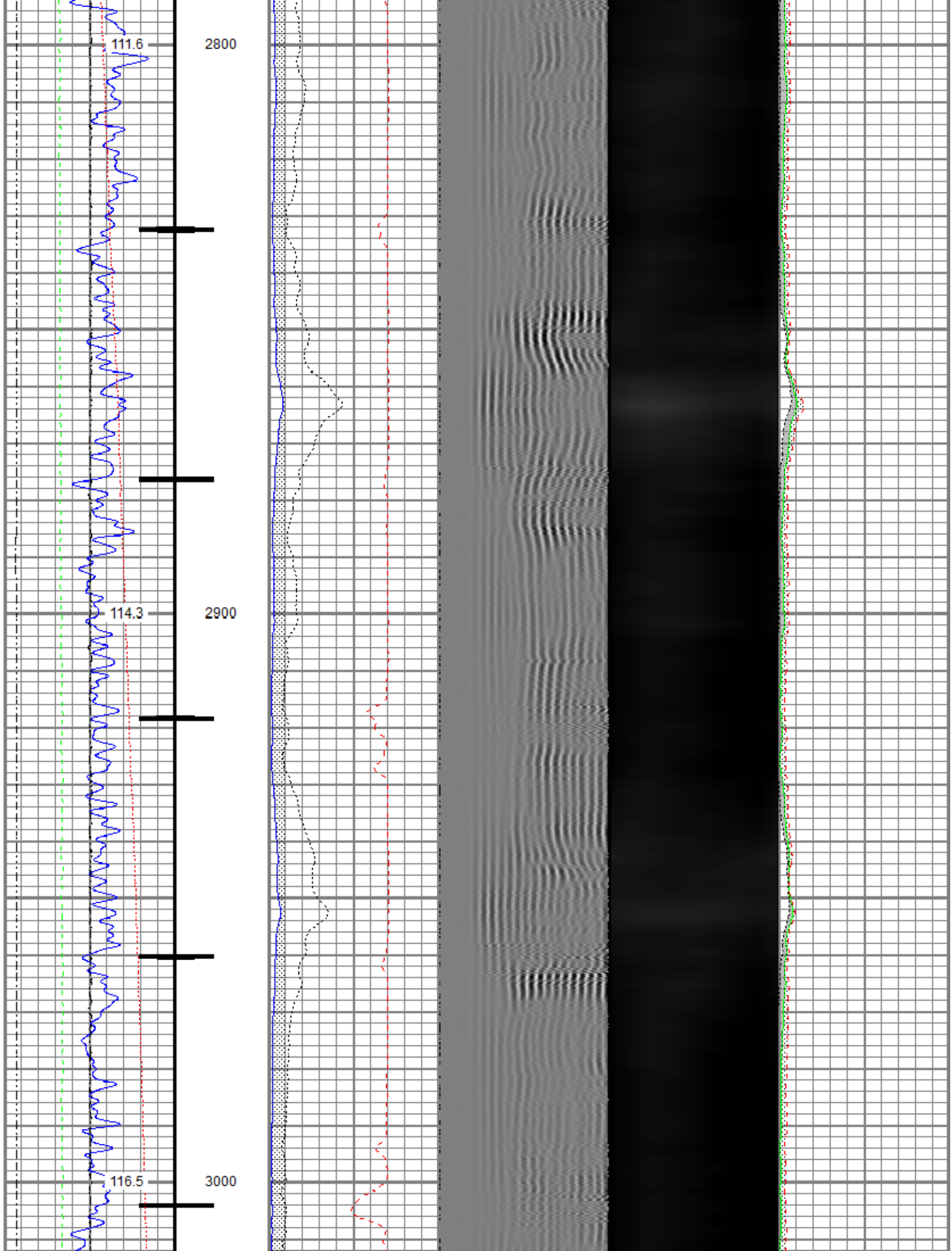


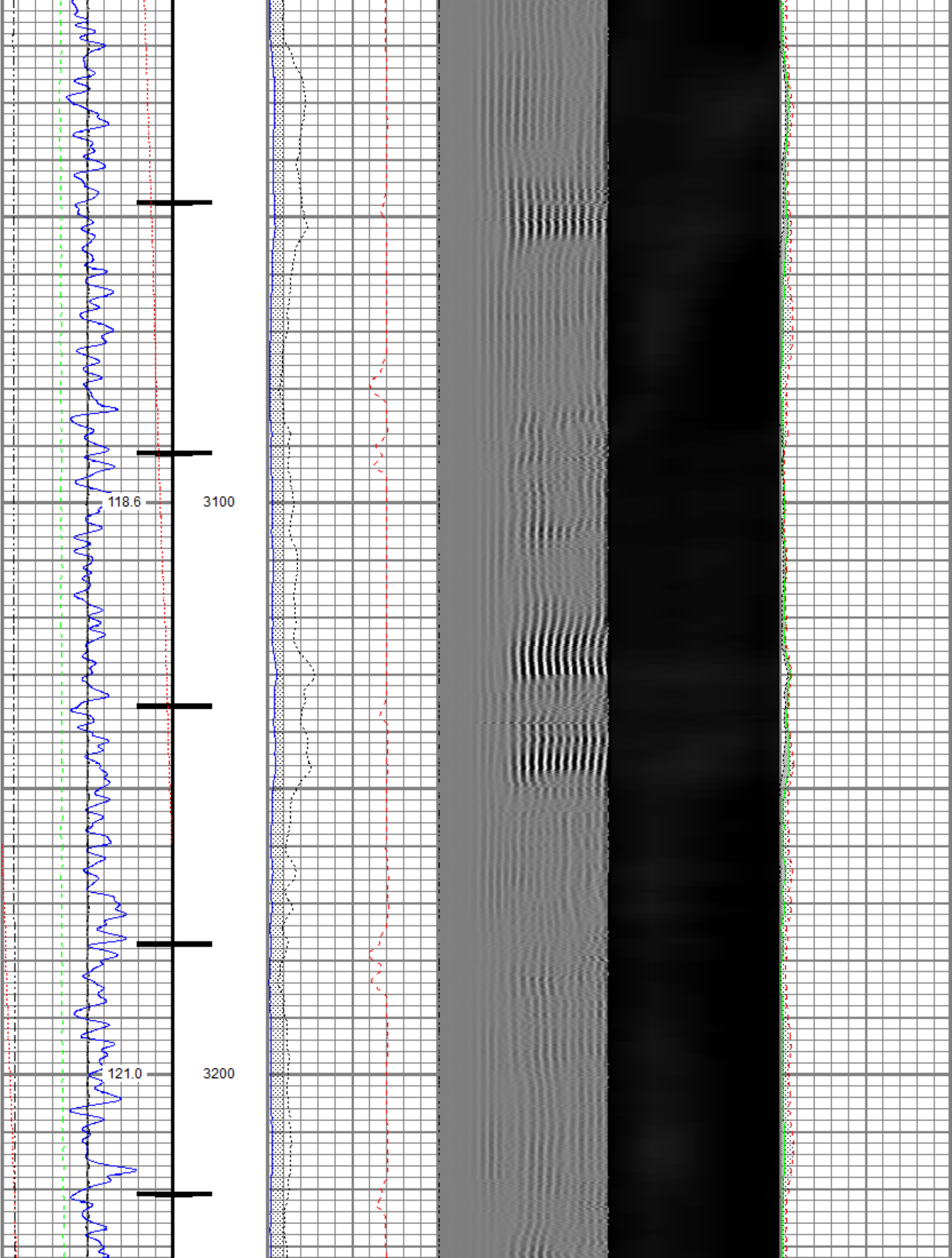


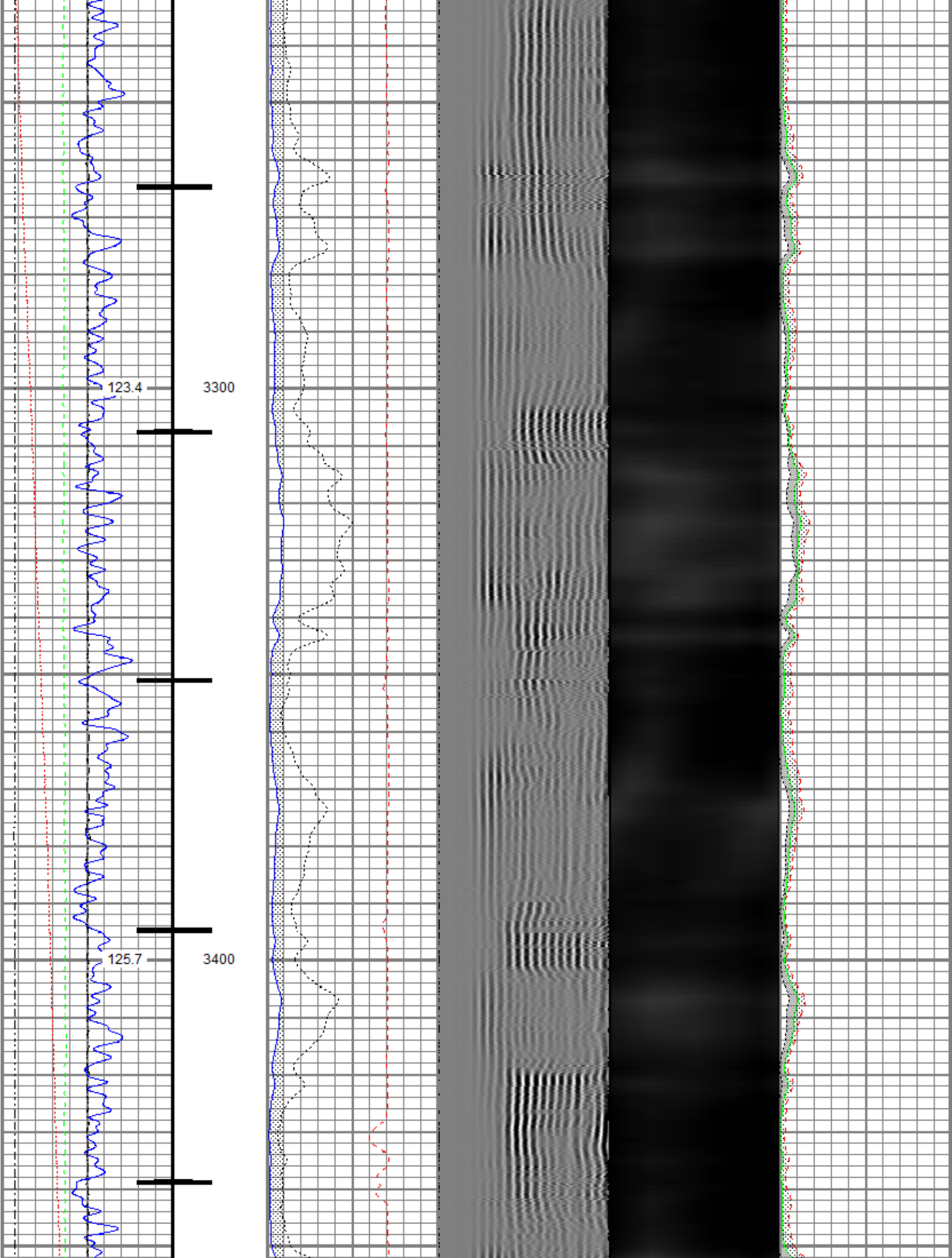


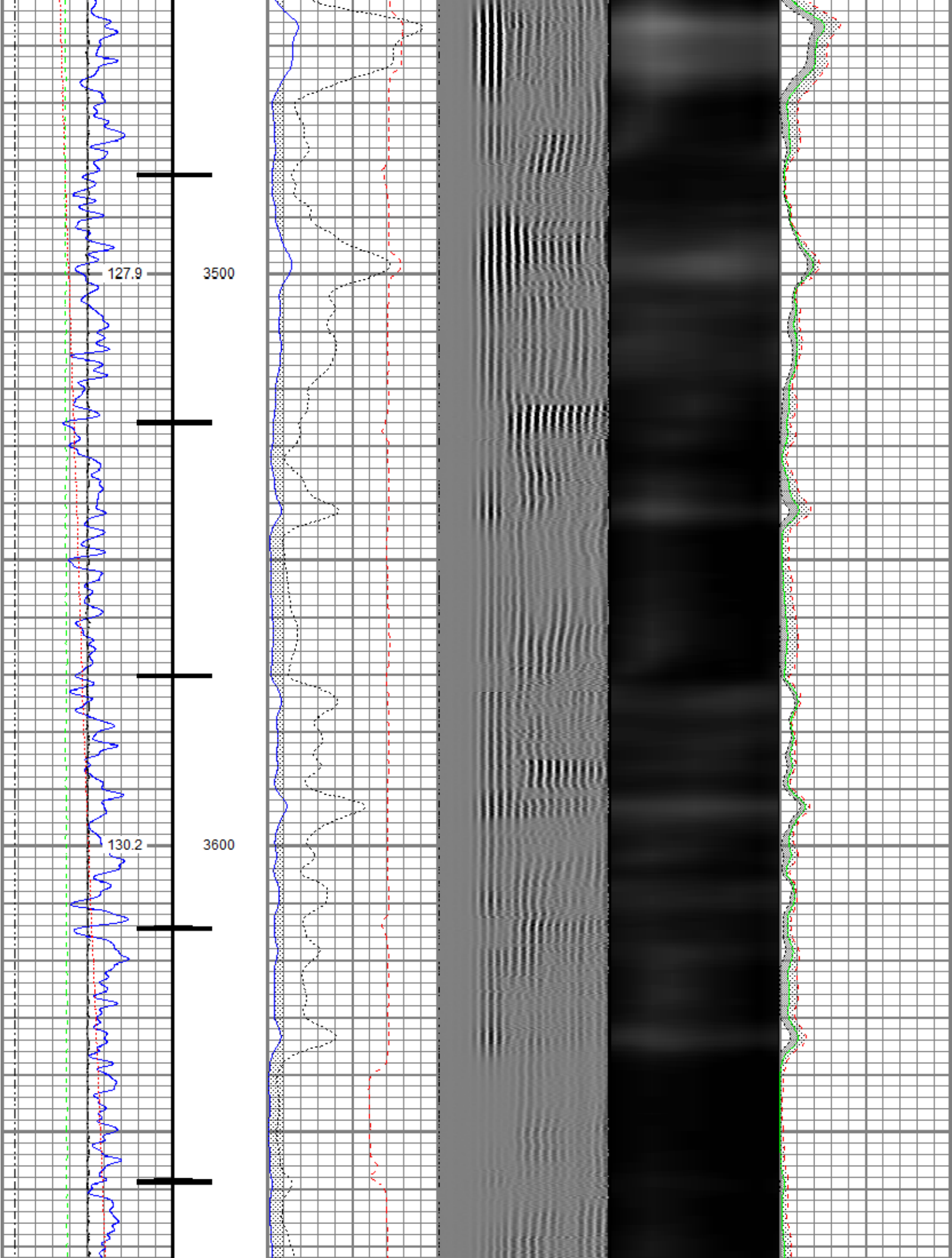










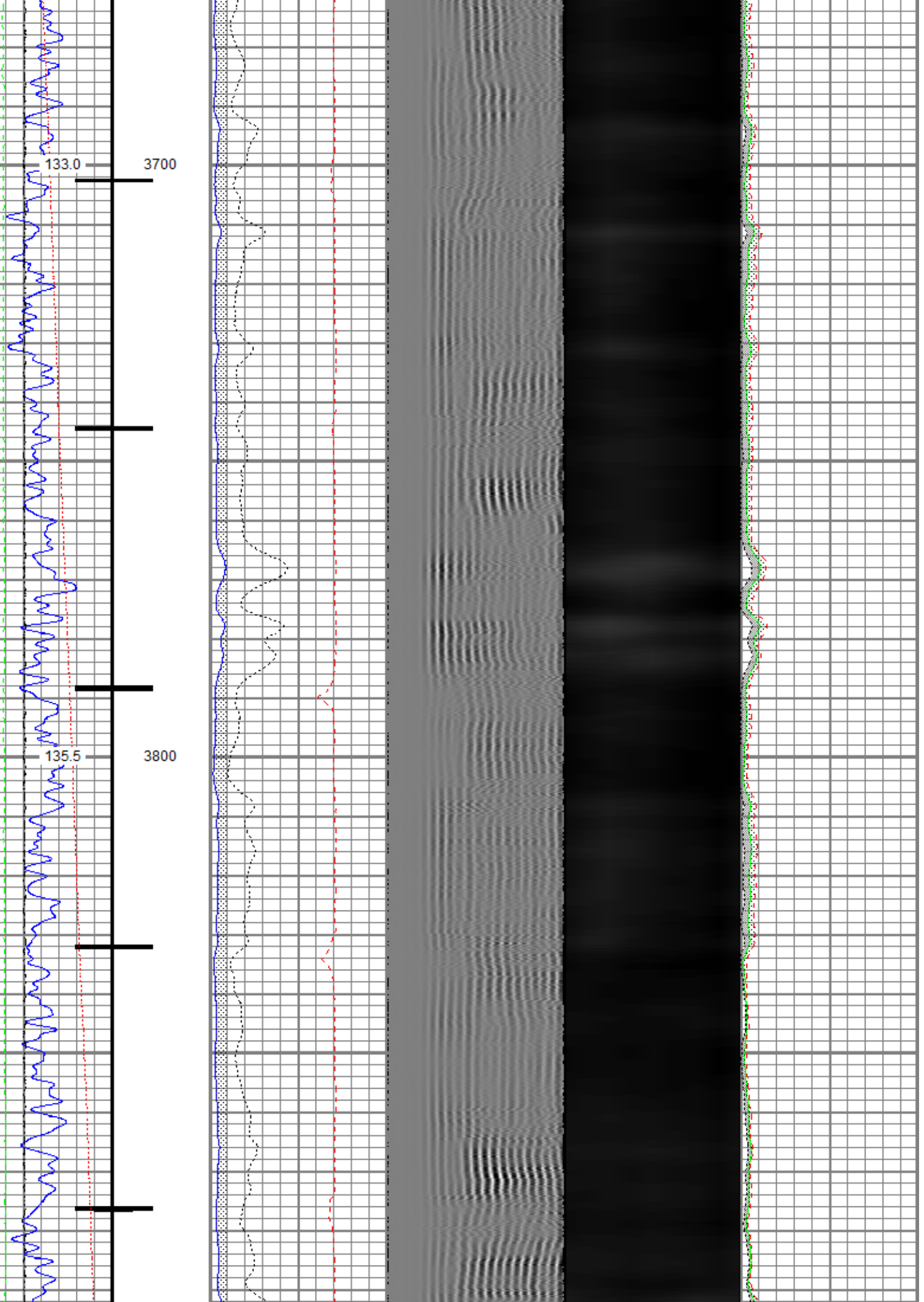


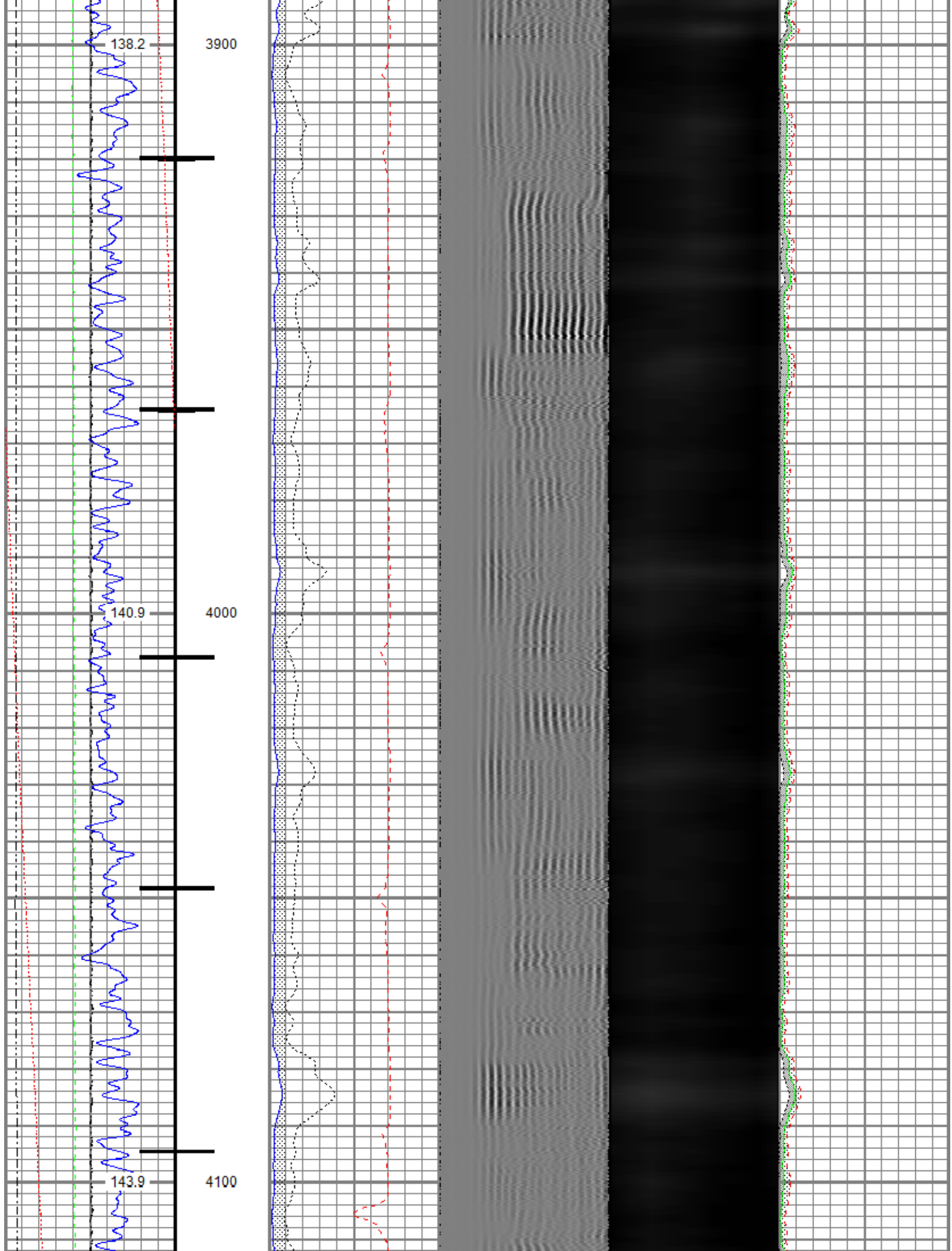
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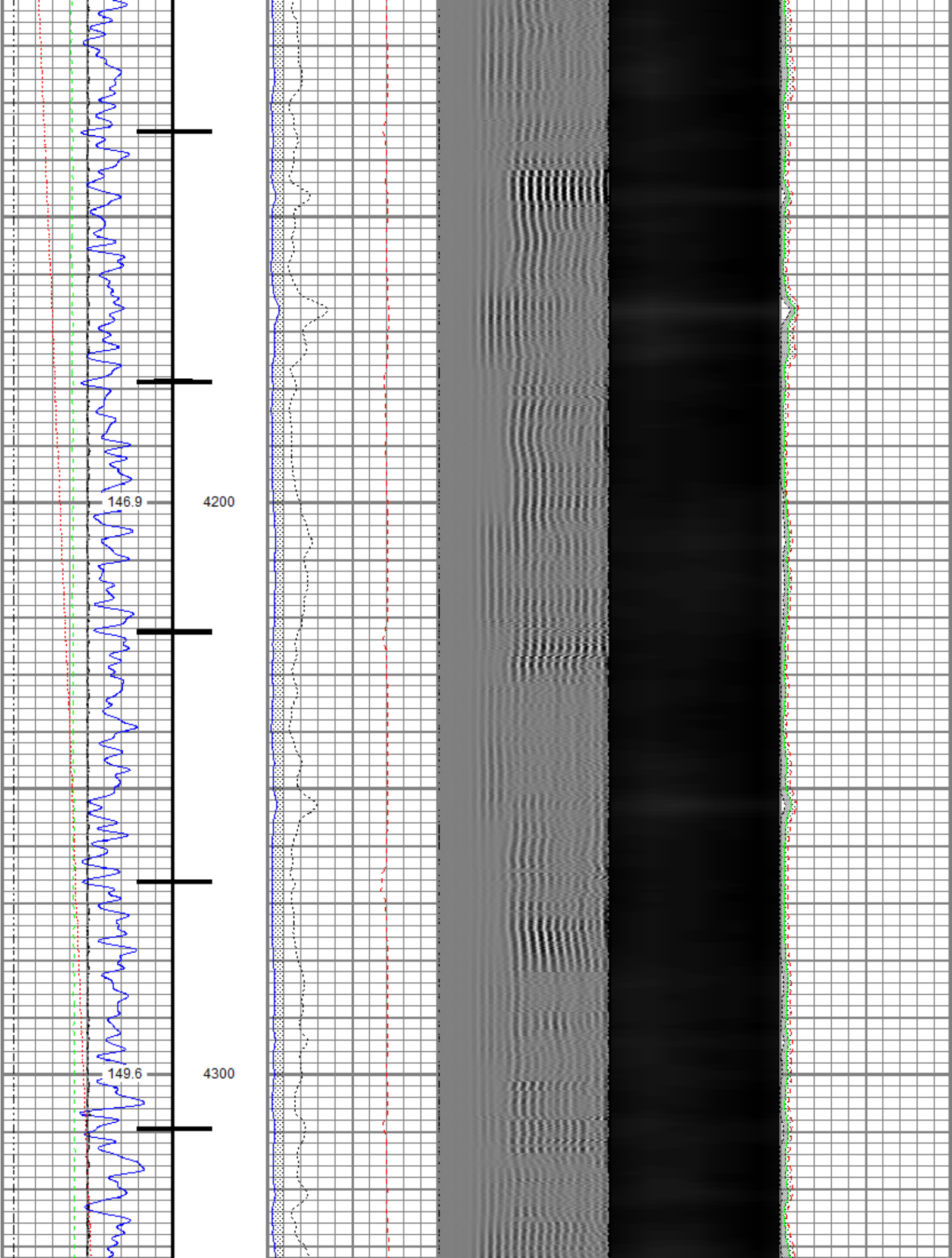
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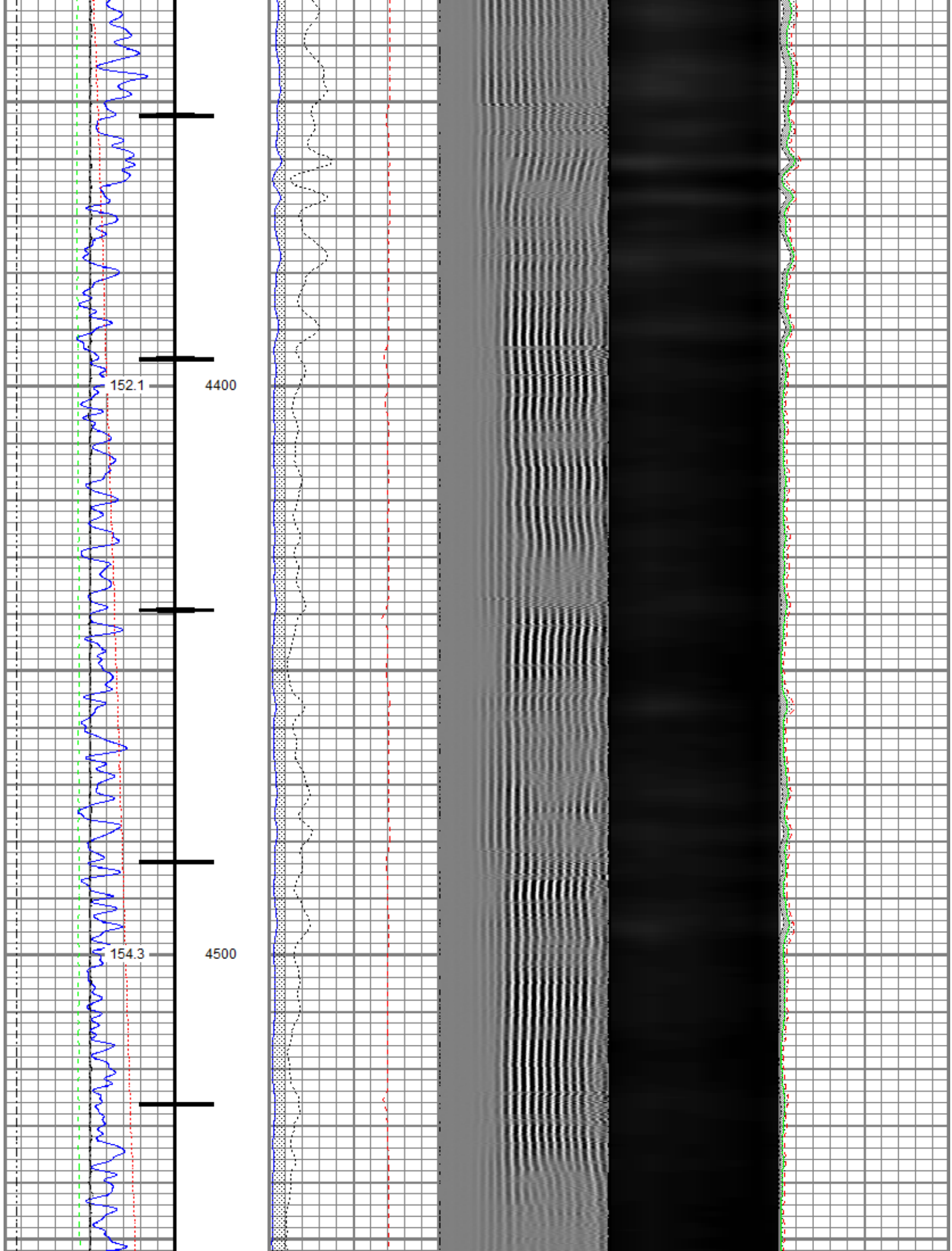
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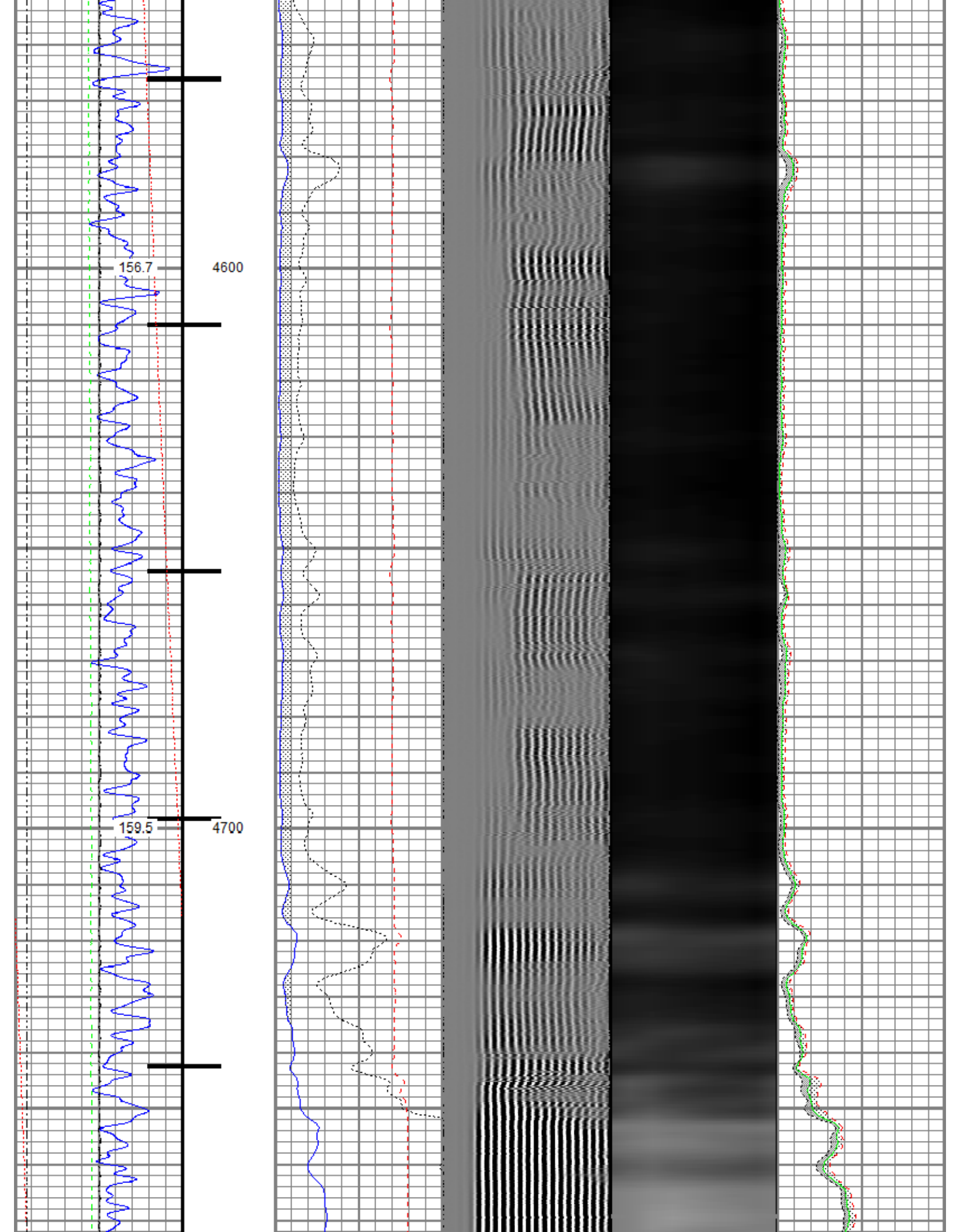
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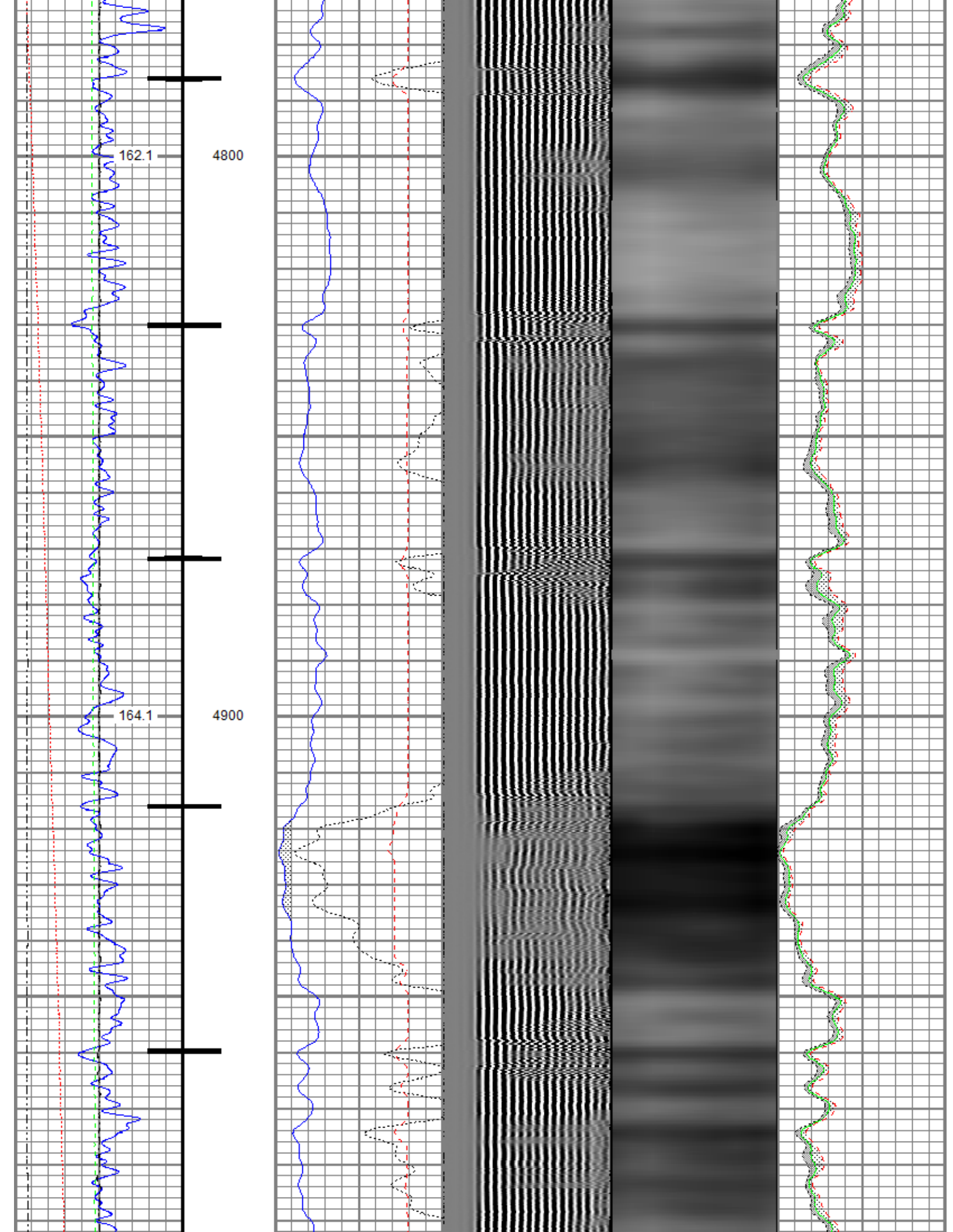


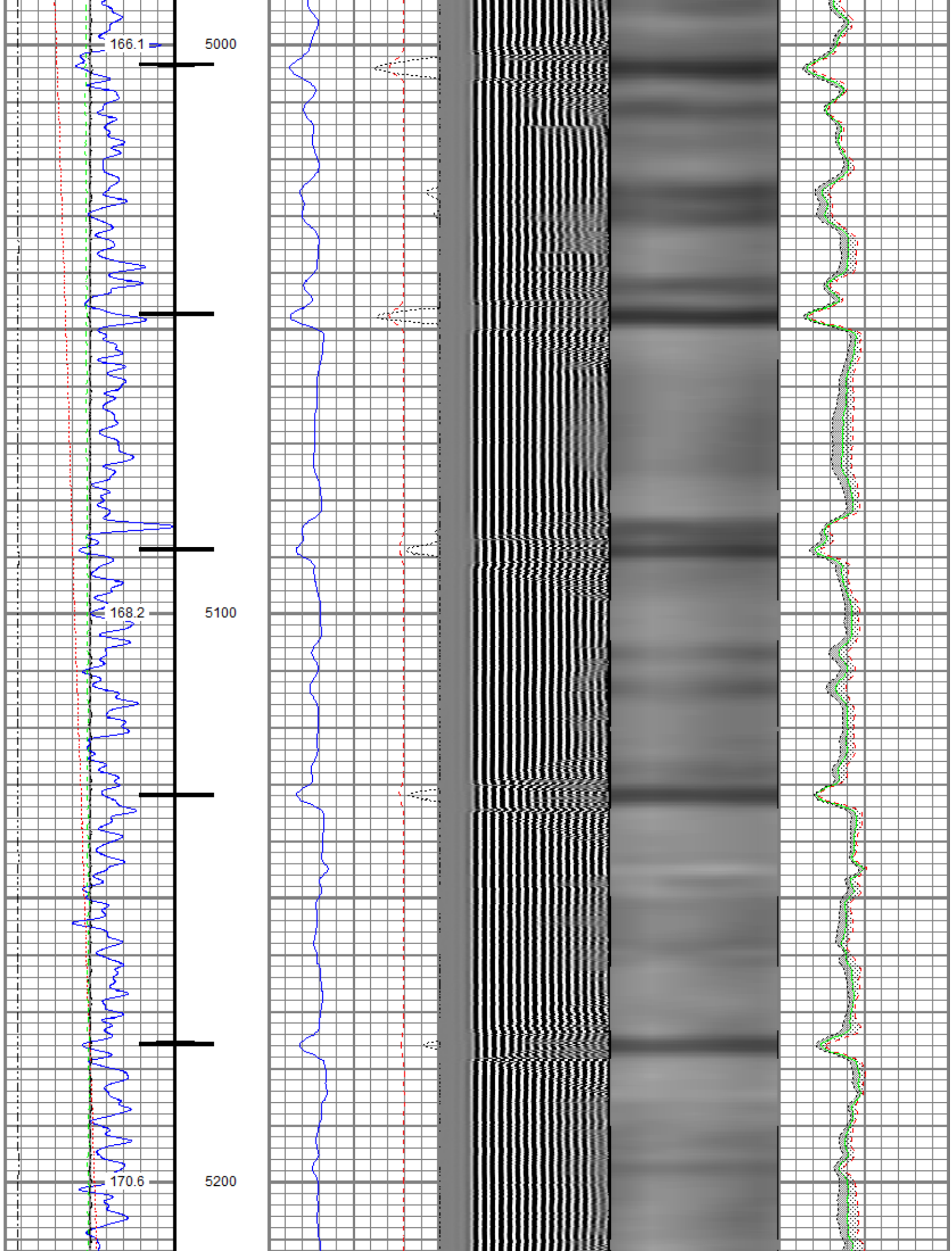


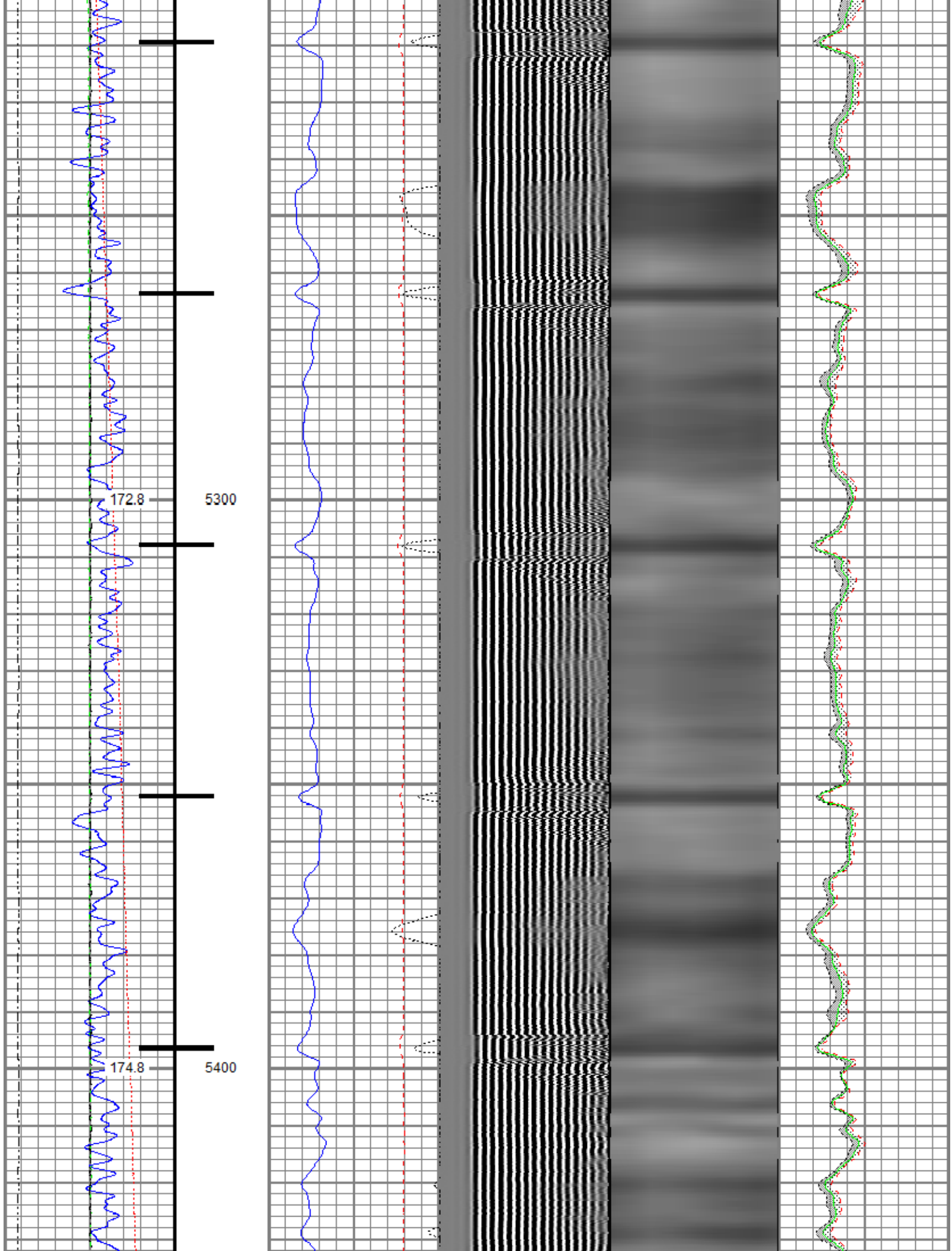


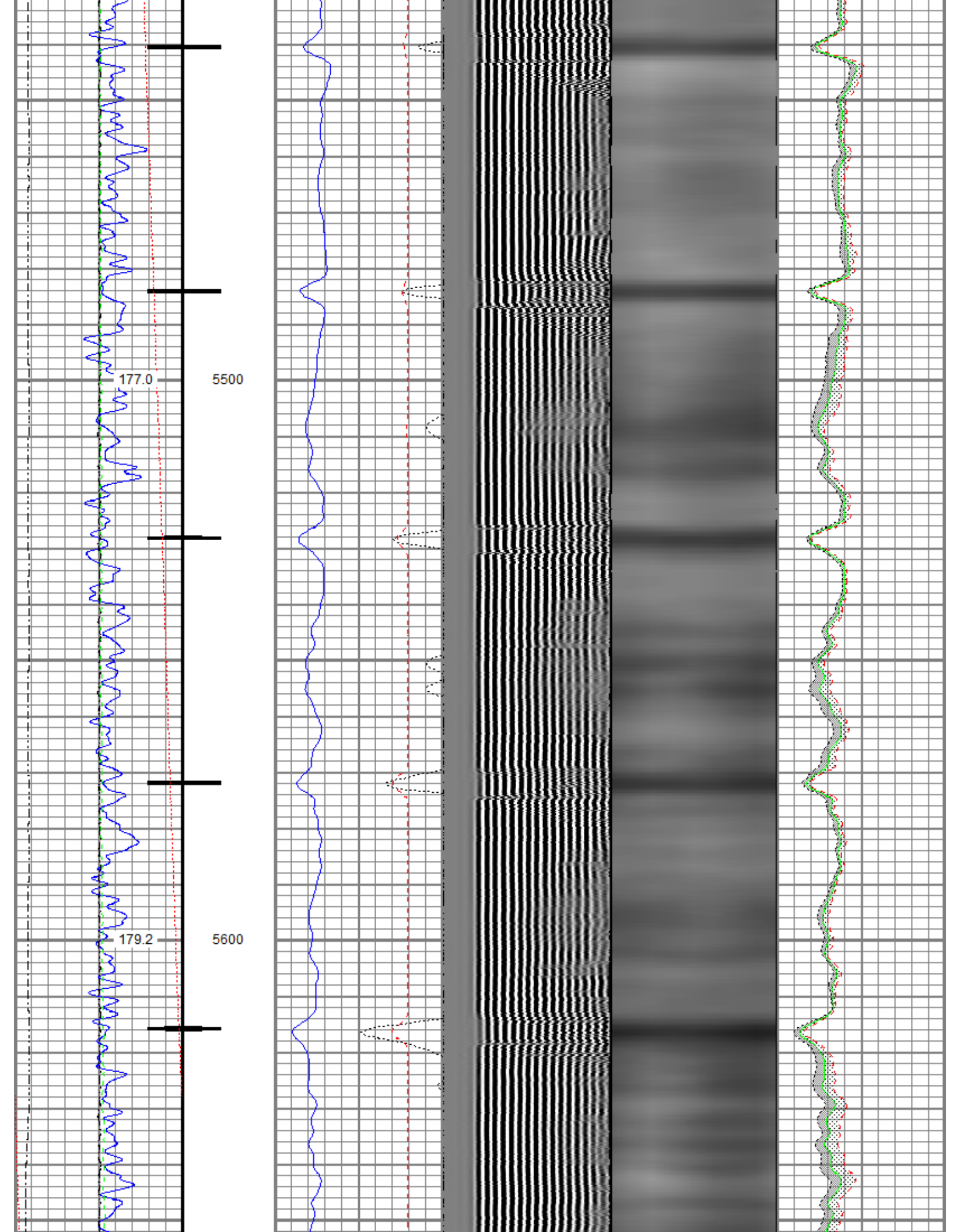


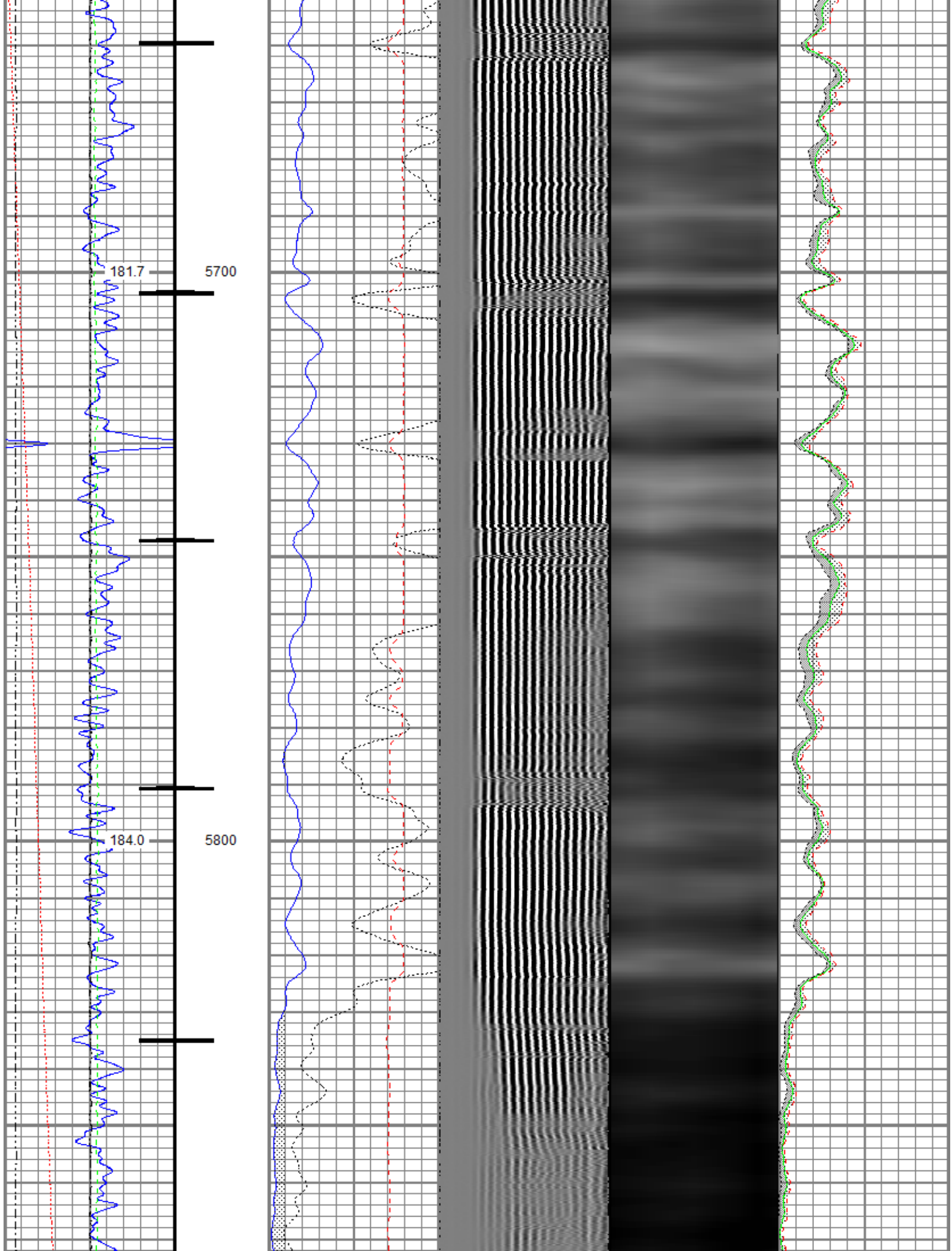










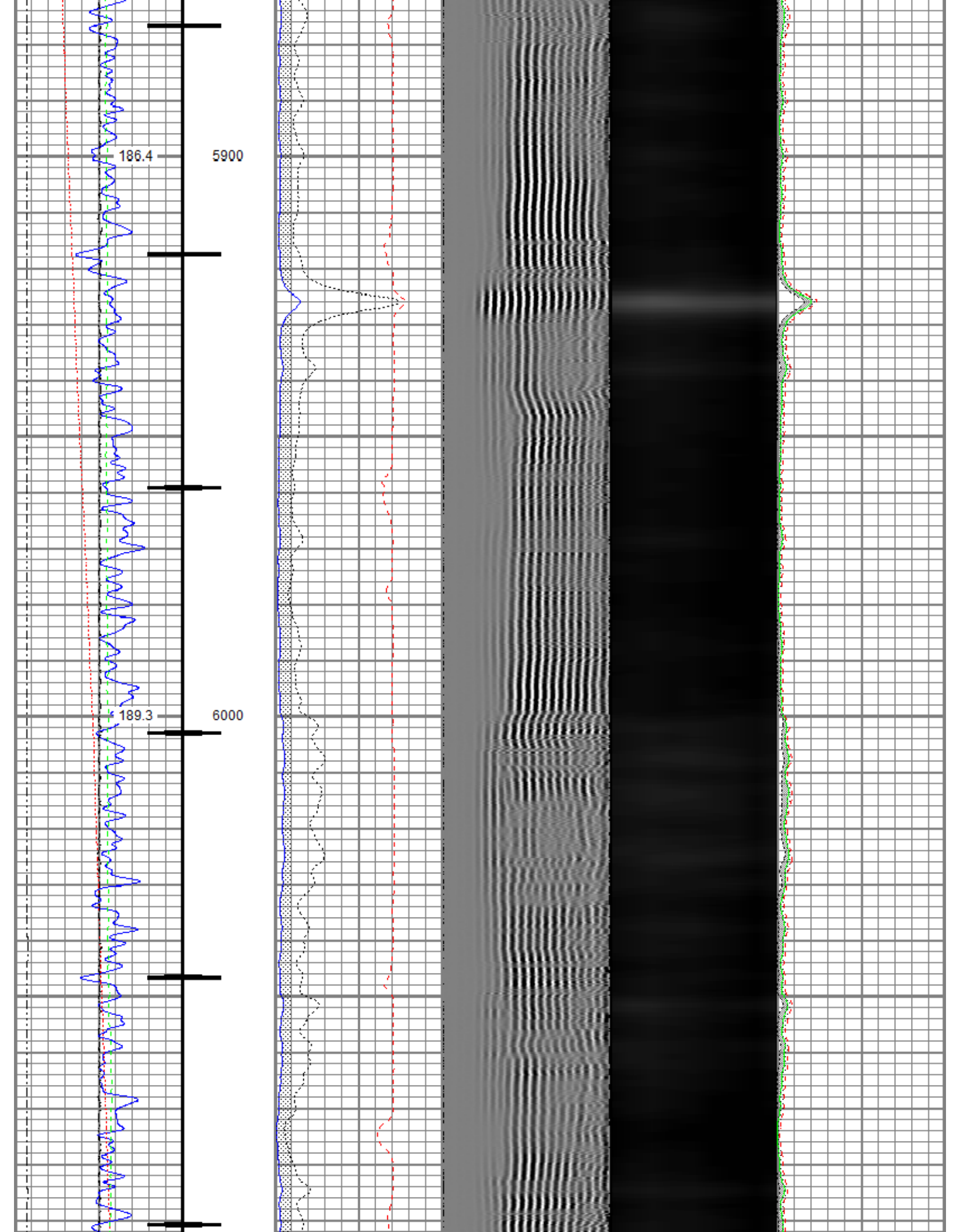


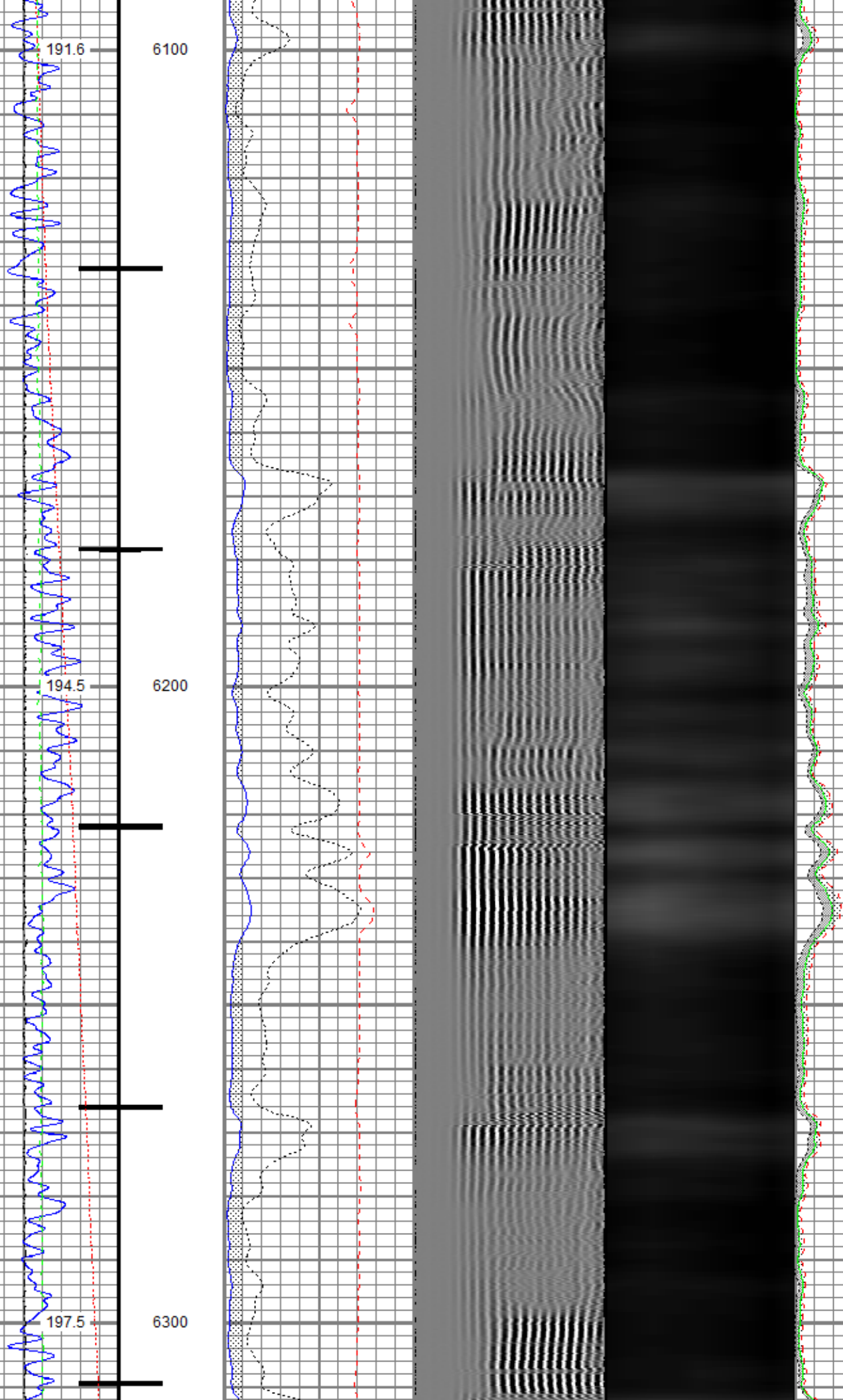
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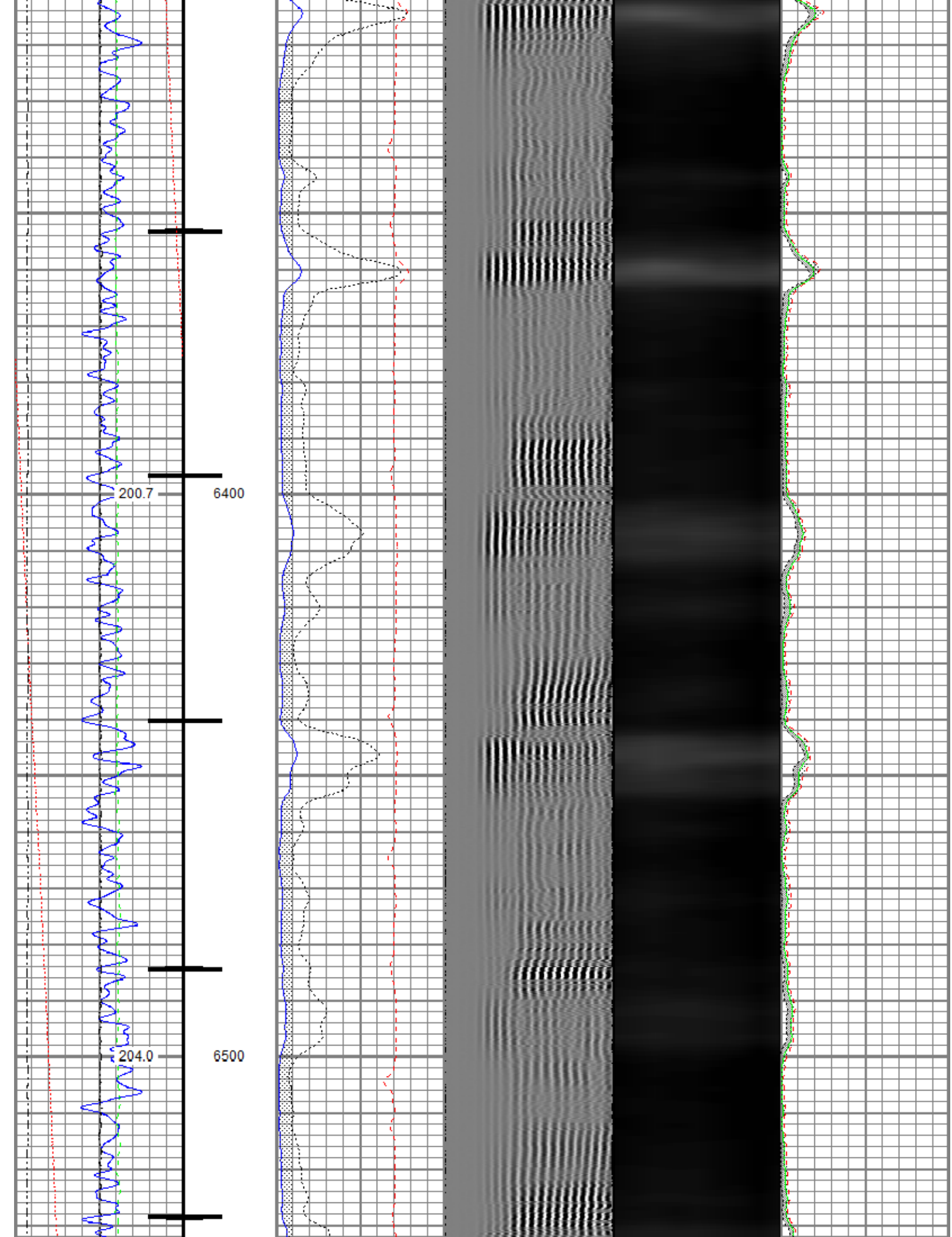
5900

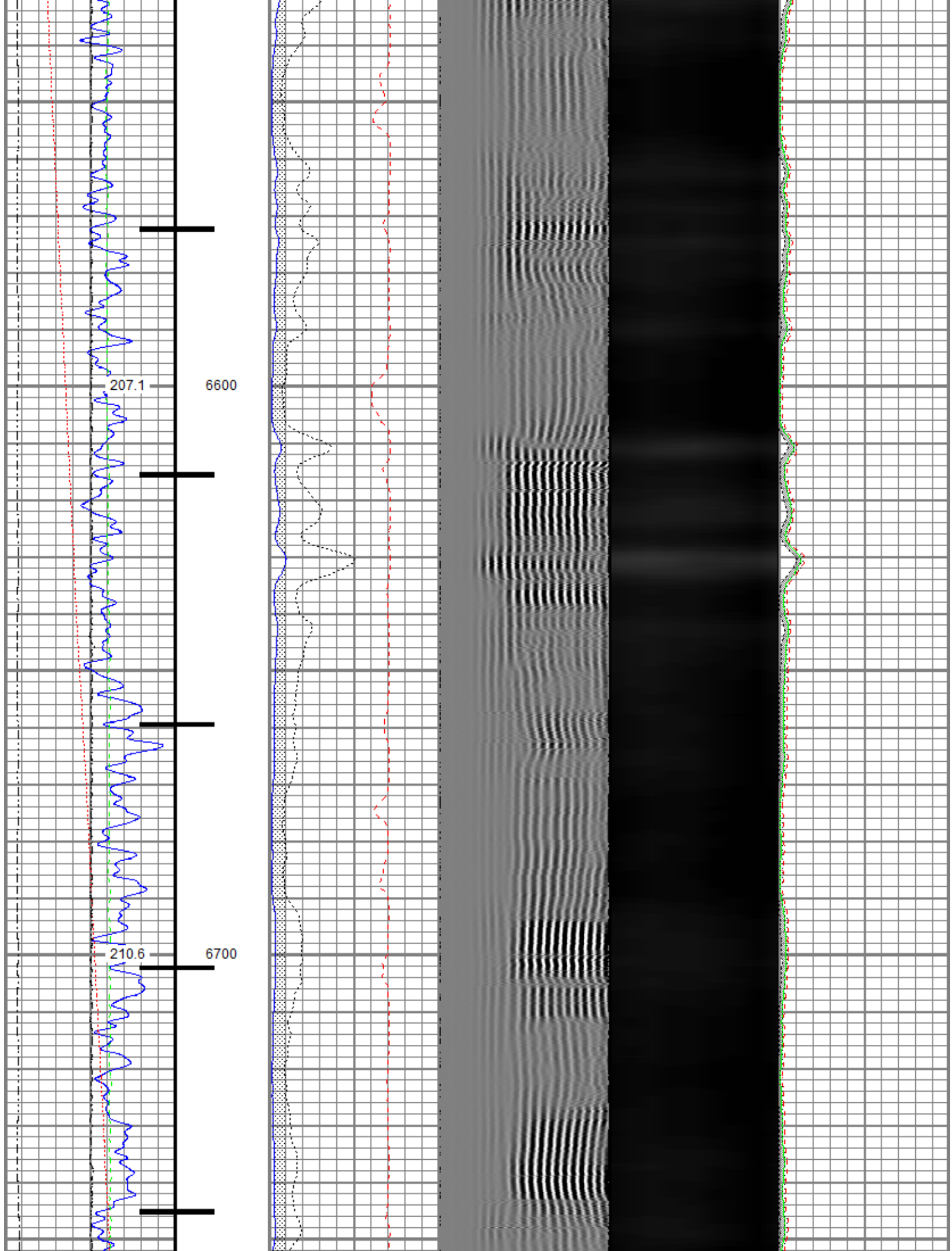
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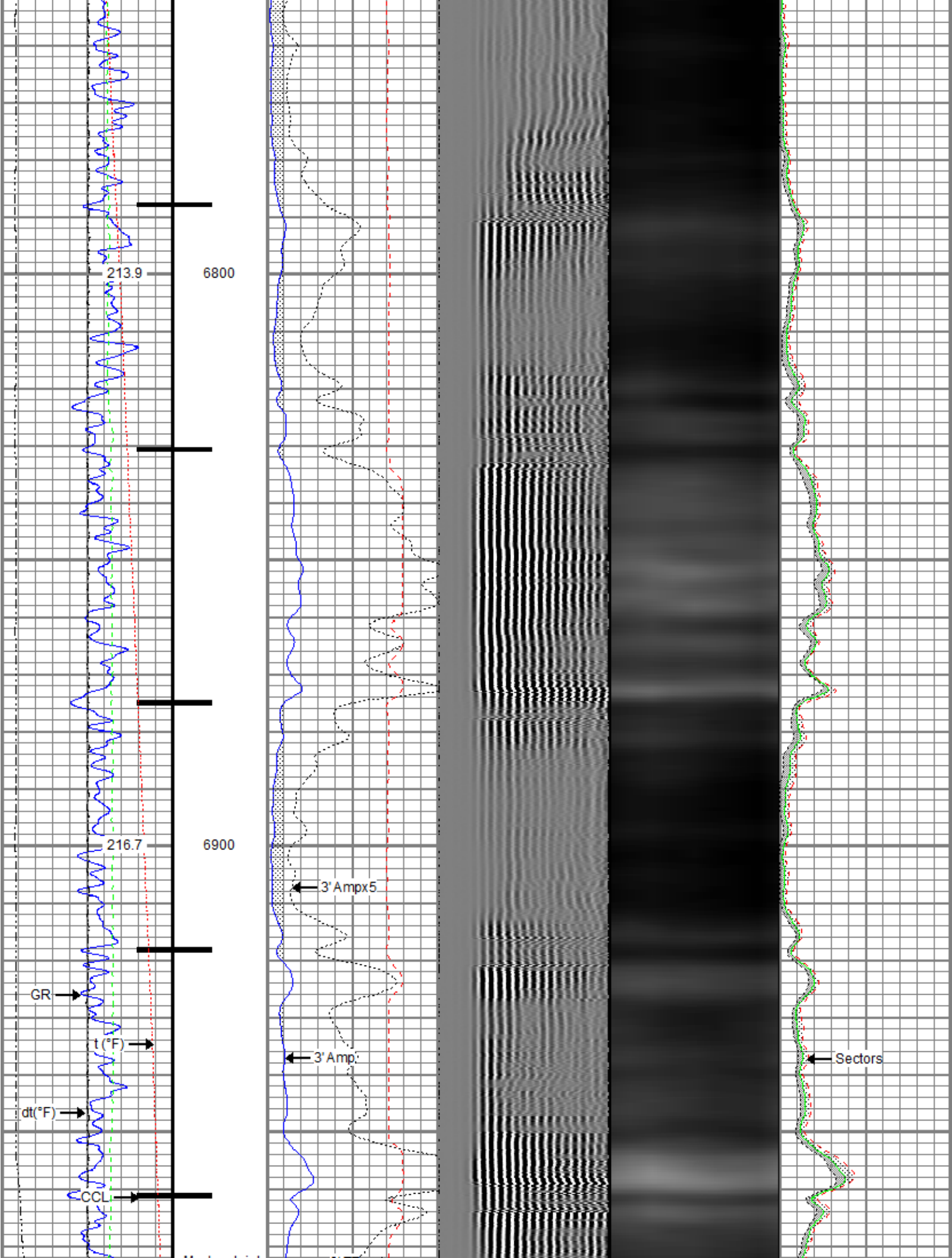
6000











Marker Joint

LTEN

LSPD

t (°F) 219.3

7000

3' TI

Gamma Ray		
0	(GAPI)	120
Casing Collar Locator		
0	Temperature (degF)	20
Line Speed		
-150	(ft/min)	150
0	Line Tension (lb)	2000
Differential Temperature		
-2	(degF)	2

0	3' Amplitude (mV)	100
3' Amplitude x 5		
0	(mV)	20
3' Travel Time		
650	(usec)	150

5' Variable Density Log	
200	1200

Sector Map

0	Average Amplitude	100
Minimum Amplitude		
0		100
Maximum Amplitude		
0		100



## Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	anadarko\0512348459_anadarko_buddy 7-16hz_rbl_07-22-19\processed_0512348459_anadarko_buddy 7-16hz_rbl_07-22-19
Dataset Pathname	RCBL_0PSI/Repeat
Presentation Format	ros_radii
Dataset Creation	Mon Jul 22 07:08:35 2019
Charted by	Depth in Feet scaled 1:240

Gamma Ray		
0	(GAPI)	120
0	Temperature (degF)	20
Line Speed		
-150	(ft/min)	150
0	Line Tension (lb)	2000
Differential Temperature		
-2	(degF)	2

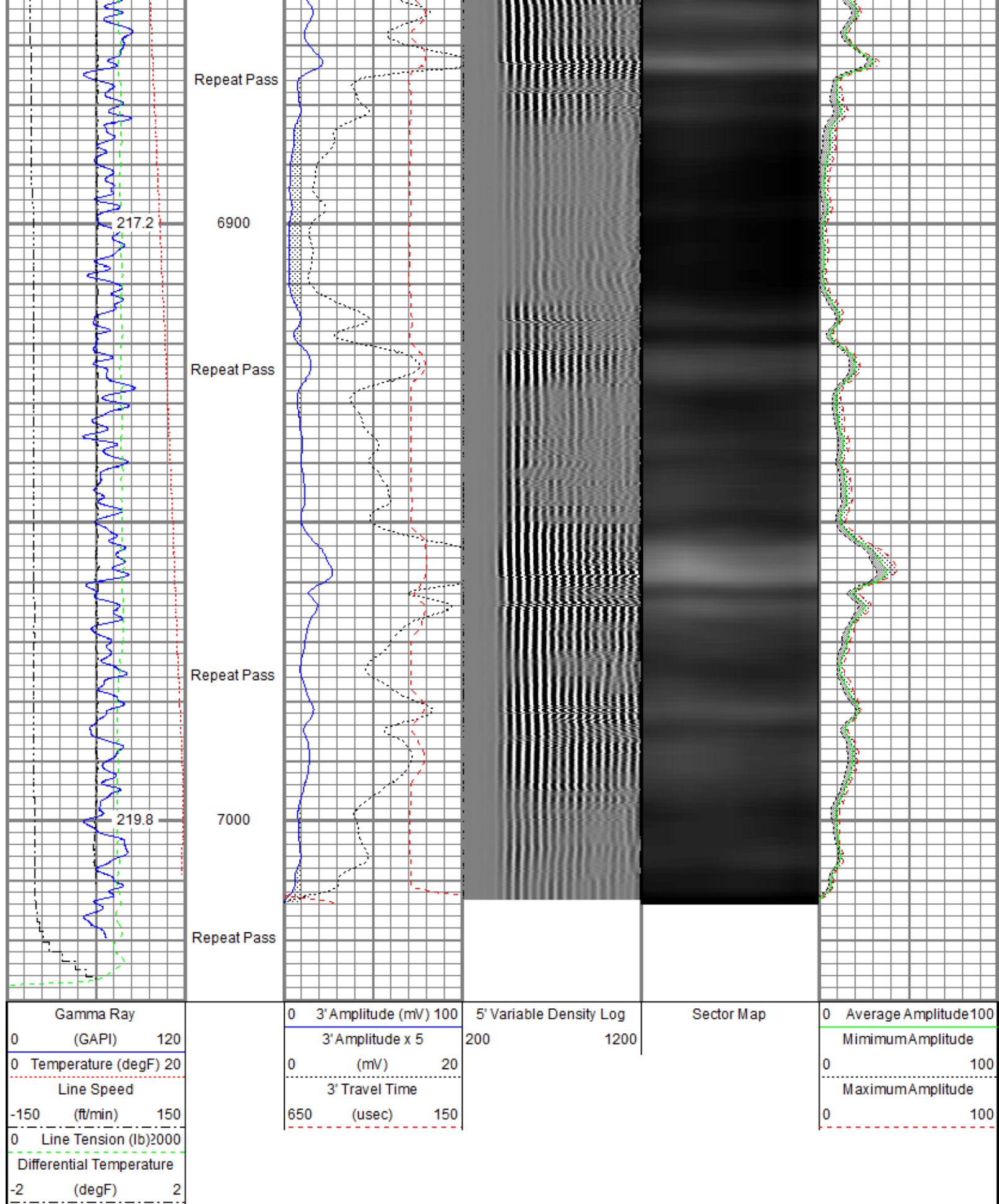
0	3' Amplitude (mV)	100
3' Amplitude x 5		
0	(mV)	20
3' Travel Time		
650	(usec)	150


5' Variable Density Log	
200	1200

Sector Map

0	Average Amplitude	100
Minimum Amplitude		
0		100
Maximum Amplitude		
0		100

Repeat Pass



Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO	1.03	1.44	3.60

			Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck			
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
TEMP	17.04					
WVFS8	14.81		Probe Radii-2750 RBT (120855) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS7	14.81					
WVFS6	14.81					
WVFS5	14.81					
WVFS4	14.81					
WVFS3	14.81					
WVFS2	14.81					
WVFS1	14.81					
WVFCAL	14.81					
WVF3FT	14.81					
WVF5FT	13.81					
HEADVOLT	10.56		Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
CCL\$2	6.80					
CCL\$1	6.80					
GR	5.46		Probe GR-CCL-2750 6PB (FW1810-044) Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT	4.80	2.75	55.00
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
Dataset: processed_0512348459_anadarko_buddy 7-16hz_rbl_07-22-19.db: field/well/RCBL_0PSI/Main Total length: 23.86 ft Total weight: 223.60 lb O.D.: 2.75 in						

### Gamma Ray Calibration Report

Serial Number: FW1810-044  
 Tool Model: 2750 6PB  
 Performed: Sat Nov 10 12:23:27 2018

Calibrator Value: 637.0 GAPI

Background Reading: 105.3 cps  
 Calibrator Reading: 1221.0 cps

Sensitivity: 0.5709 GAPI/cps

### Segmented Cement Bond Log Calibration Report

Serial Number: 120855  
 Tool Model: 2750 RBT

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: -0.067 ft

Master Calibration, performed Mon Jul 22 05:48:38 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.009	0.664	0.800	71.921	108.544	-0.206
CAL	0.668	0.669				
5'	0.006	0.627	0.800	71.921	114.550	0.108
SUM						
S1	0.014	0.668	0.000	100.000	152.947	-2.155
S2	0.008	0.669	0.000	100.000	151.423	-1.250
S3	0.006	0.660	0.000	100.000	153.007	-0.928
S4	0.006	0.663	0.000	100.000	152.259	-0.944
S5	0.006	0.666	0.000	100.000	151.547	-0.977
S6	0.010	0.664	0.000	100.000	152.879	-1.562
S7	0.017	0.667	0.000	100.000	153.823	-2.640
S8	0.026	0.664	0.000	100.000	156.644	-4.075

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.668	0.669	1.000	0.000

Air Zero Calibration, performed Mon Jul 22 05:48:59 2019:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.009		0.000		0.000	
5'	0.006		0.000		0.000	
SUM						
S1	0.014		0.000		0.000	
S2	0.009		0.000		-0.001	
S3	0.006		0.000		0.000	
S4	0.007		0.000		-0.001	
S5	0.006		0.000		0.000	
S6	0.010		0.000		-0.000	
S7	0.017		0.000		0.000	
S8	0.026		0.000		0.000	

### Temperature Calibration Report

Serial Number: 120855  
Tool Model: 2750 RBT  
Performed: Mon Oct 01 11:32:15 2018

	Reference	Reading
Low Reference:	100.00 degF	112.30 degF
High Reference:	350.00 degF	394.75 degF
Gain:	0.89	
Offset:	0.60	
Delta Spacing	1	



<b>Company</b>	Kerr-McGee Oil & Gas Onshore, L.P.
<b>Well</b>	Buddy 7-16HZ
<b>Field</b>	Wattenberg
<b>County</b>	Weld
<b>State</b>	Colorado