

County	Weld	State	Colorado
--------	------	-------	----------

--	--

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.

Log ran as per customer request  
Depth referenced to Casing Tally reported Marker Joint at 6615 FT  
Adjusted +1 FT to correlate with Marker Joint  
Ran JB/GR down to 7580 FT  
Log ran from 6635 FT to Surface  
Recorded with 2800 PSI Surface Induced Pressure  
Logging tools were clean and free of debris upon completion of operations

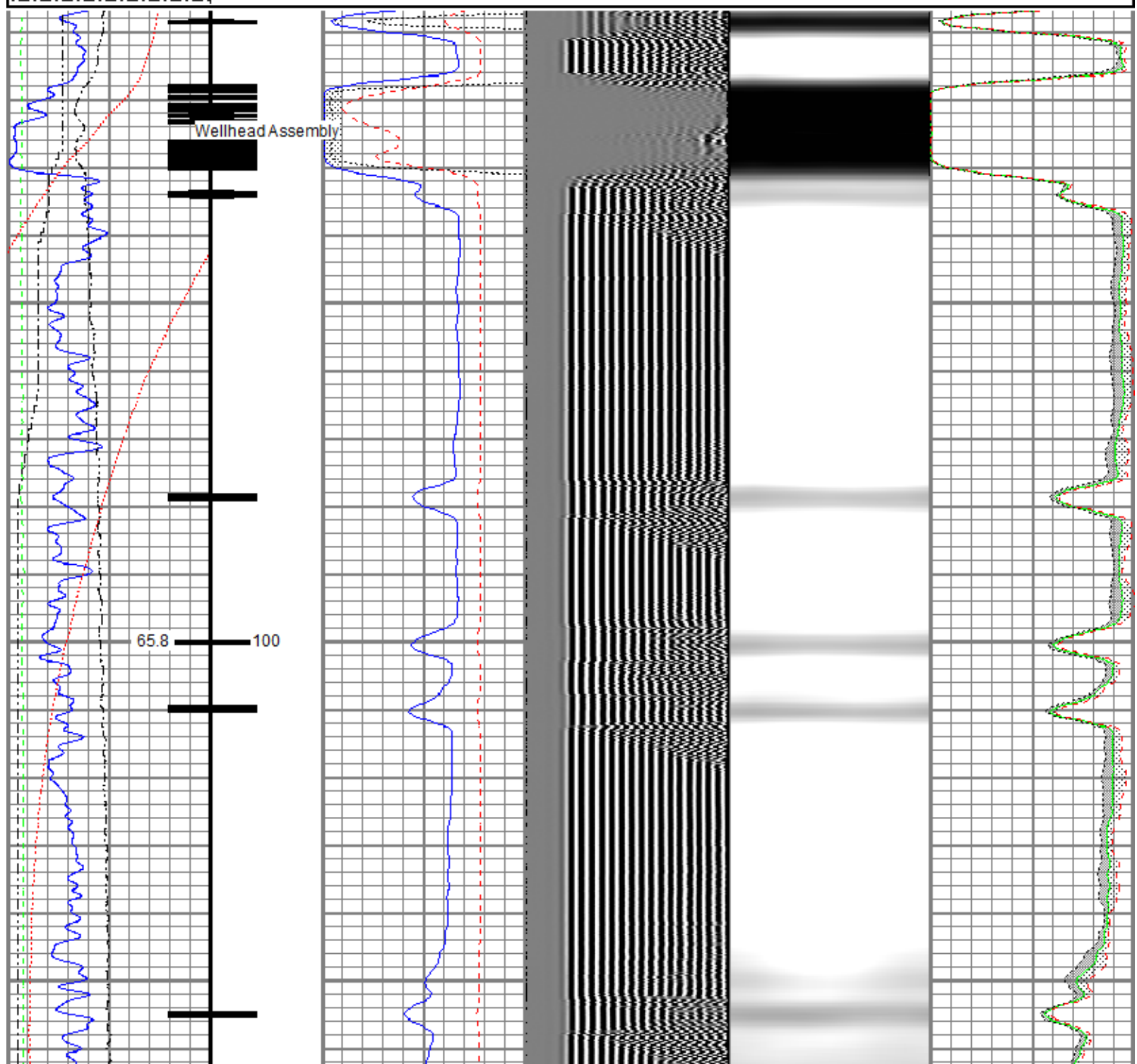
Thank you for choosing Reliance Oilfield Services, LLC!!

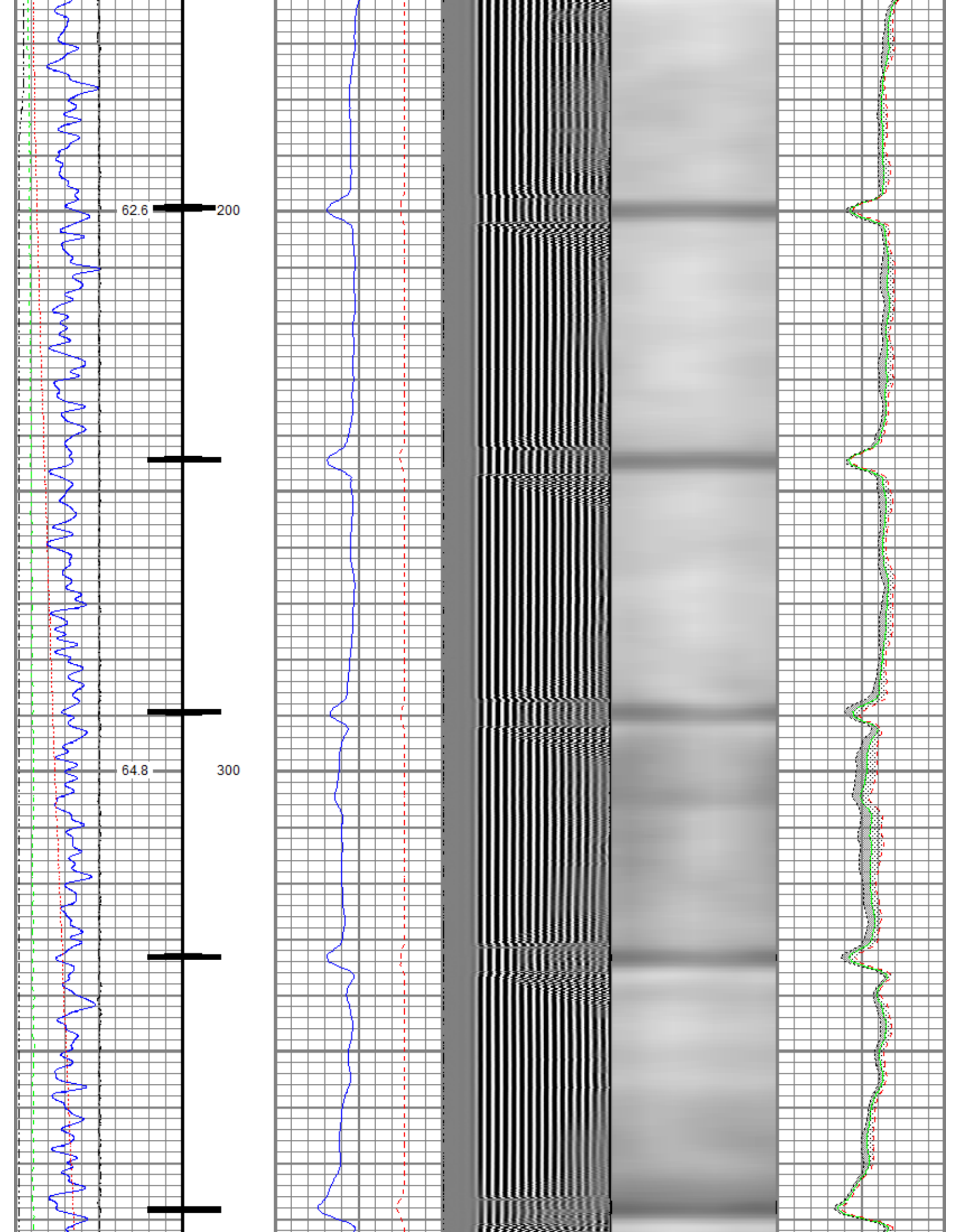


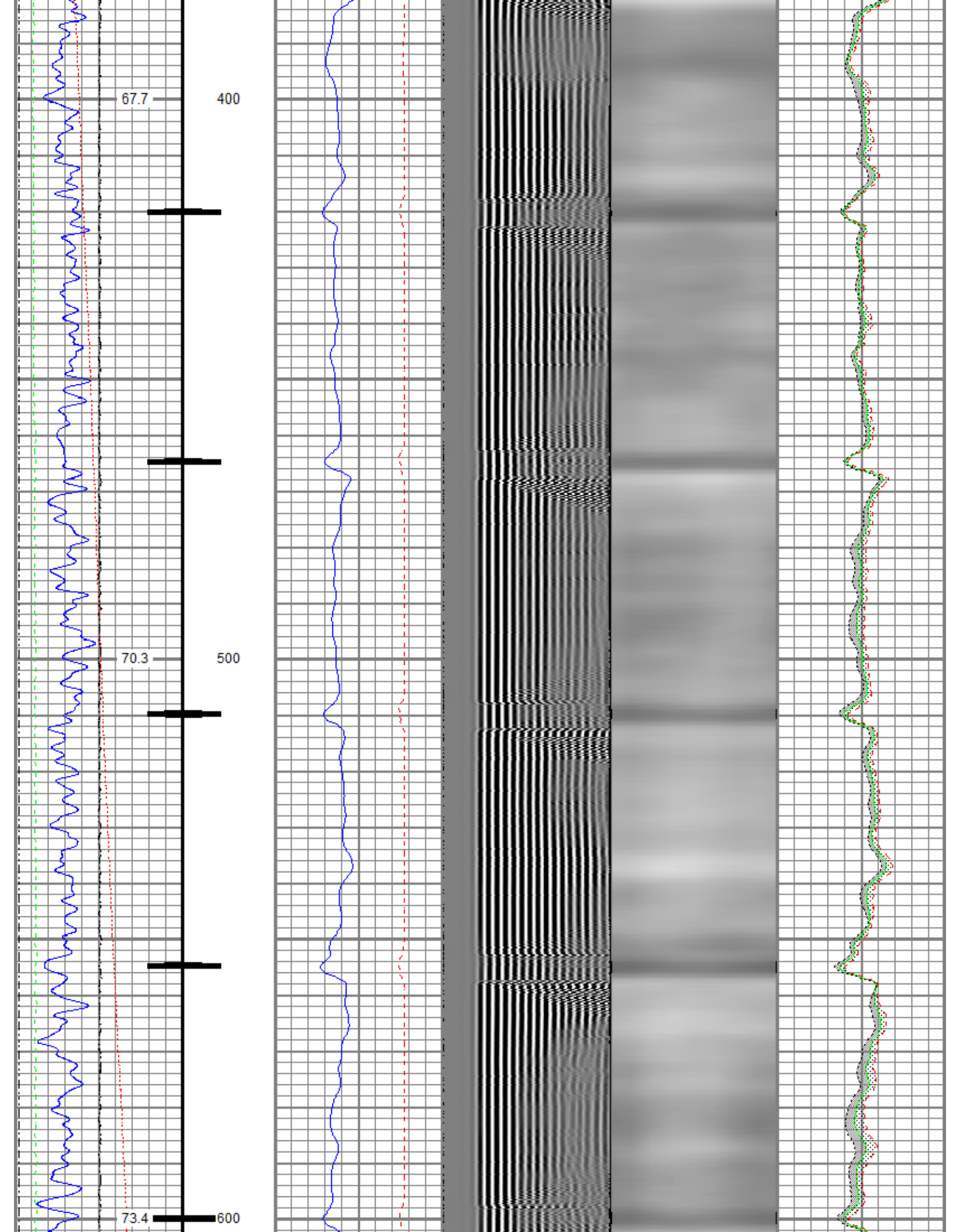
Recorded With 2000 PSI Surface-Induced Pressure

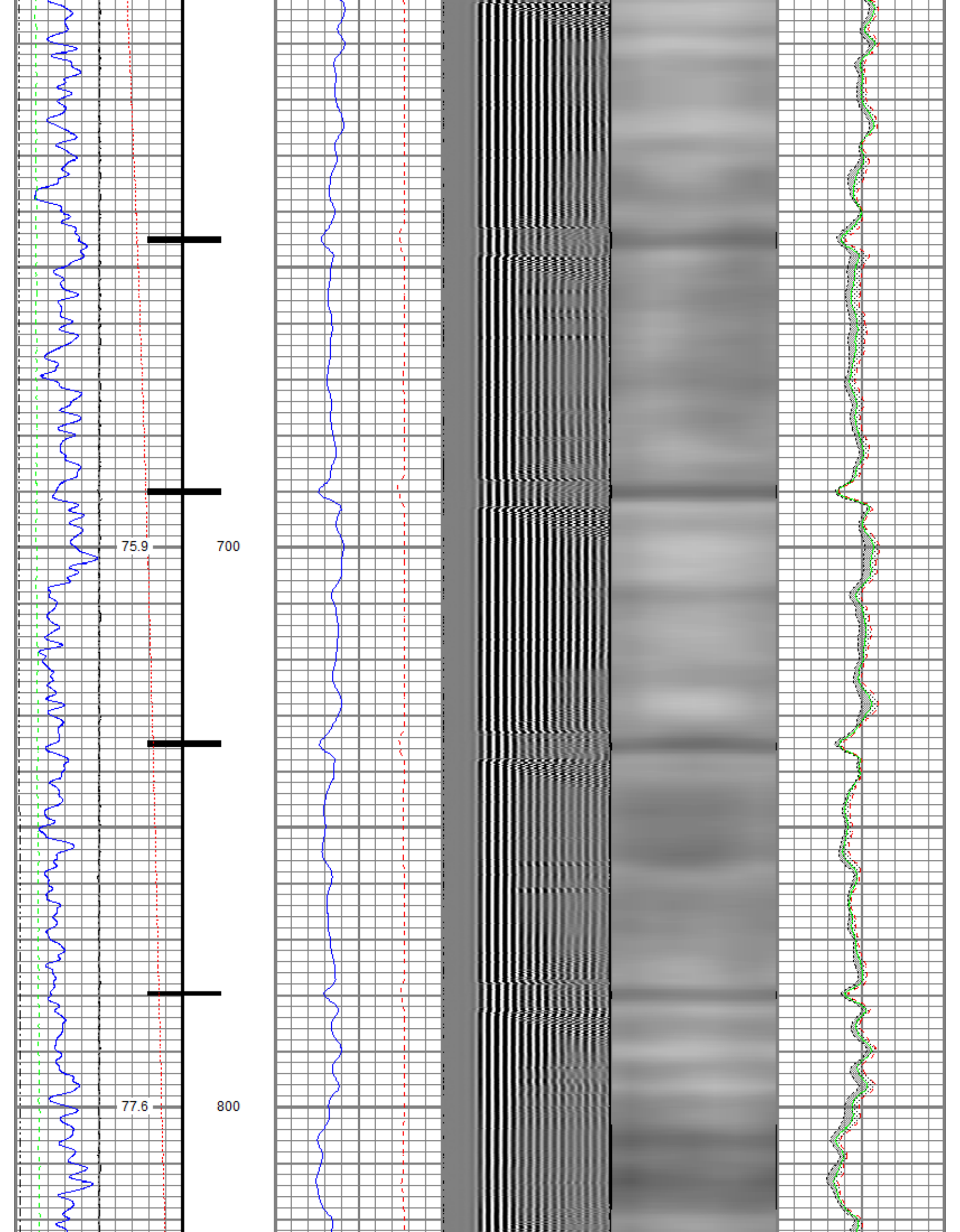
Database File	anadarko\0512346588_anadarko_english farms 8-12hz_rbl_09-13-18\0512346588_anadarko_english farms 8-12hz_rbl_09-13-18
Dataset Pathname	pass4.1
Presentation Format	ros_radri
Dataset Creation	Thu Sep 13 12:45:24 2018
Charted by	Depth in Feet scaled 1:240

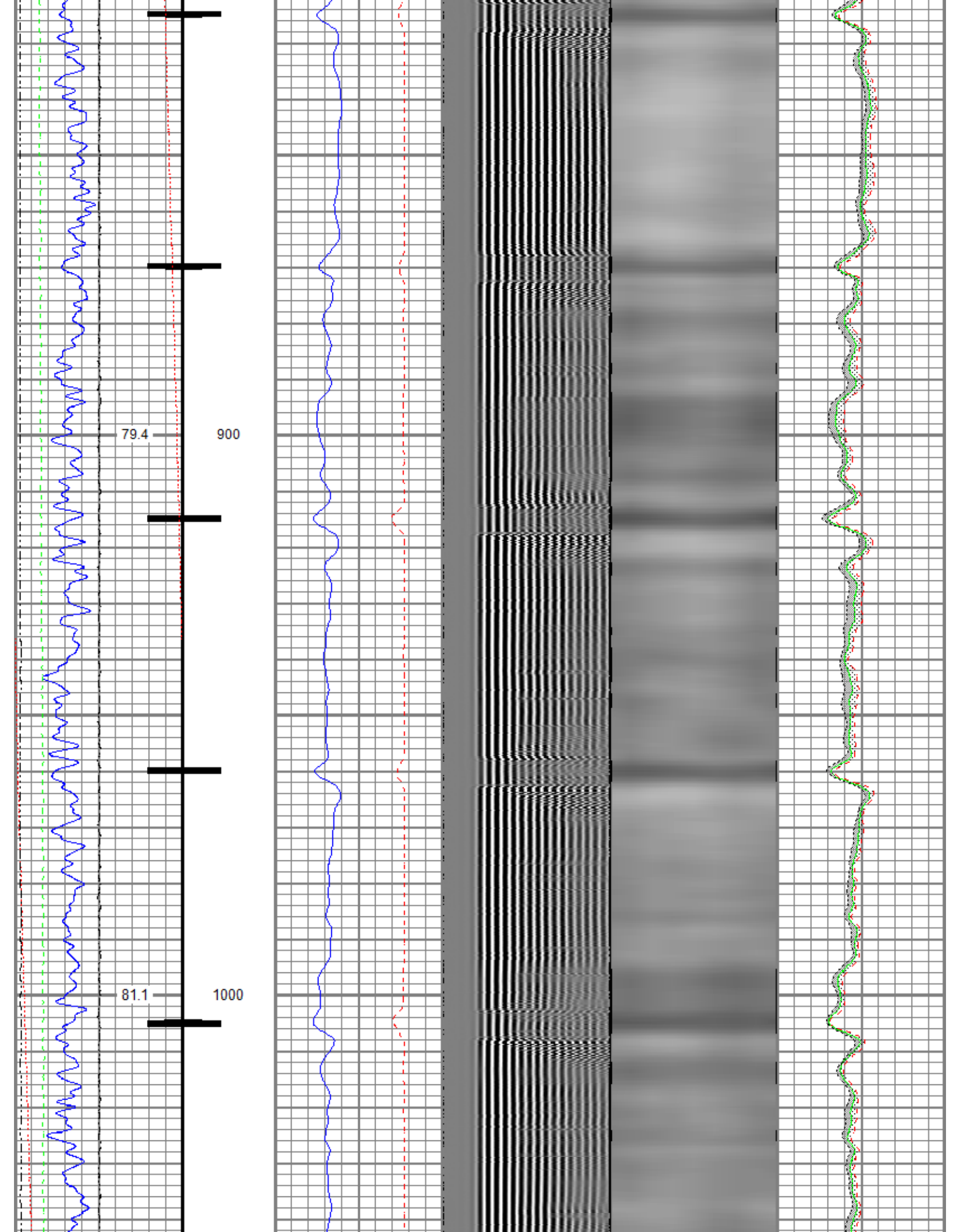
Gamma Ray	0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map	0	Average Amplitude	100
(GAPI)	120	3' Amplitude x 5	200	1200			Minimum Amplitude	
Casing Collar Locator		0	(mV)	20			0	100
Temperature (degF)	20	3' Travel Time					Maximum Amplitude	
Line Speed		650	(usec)	150			0	100
(ft/min)	150							
Line Tension (lb)	2000							
Differential Temperature								
(degF)	2							

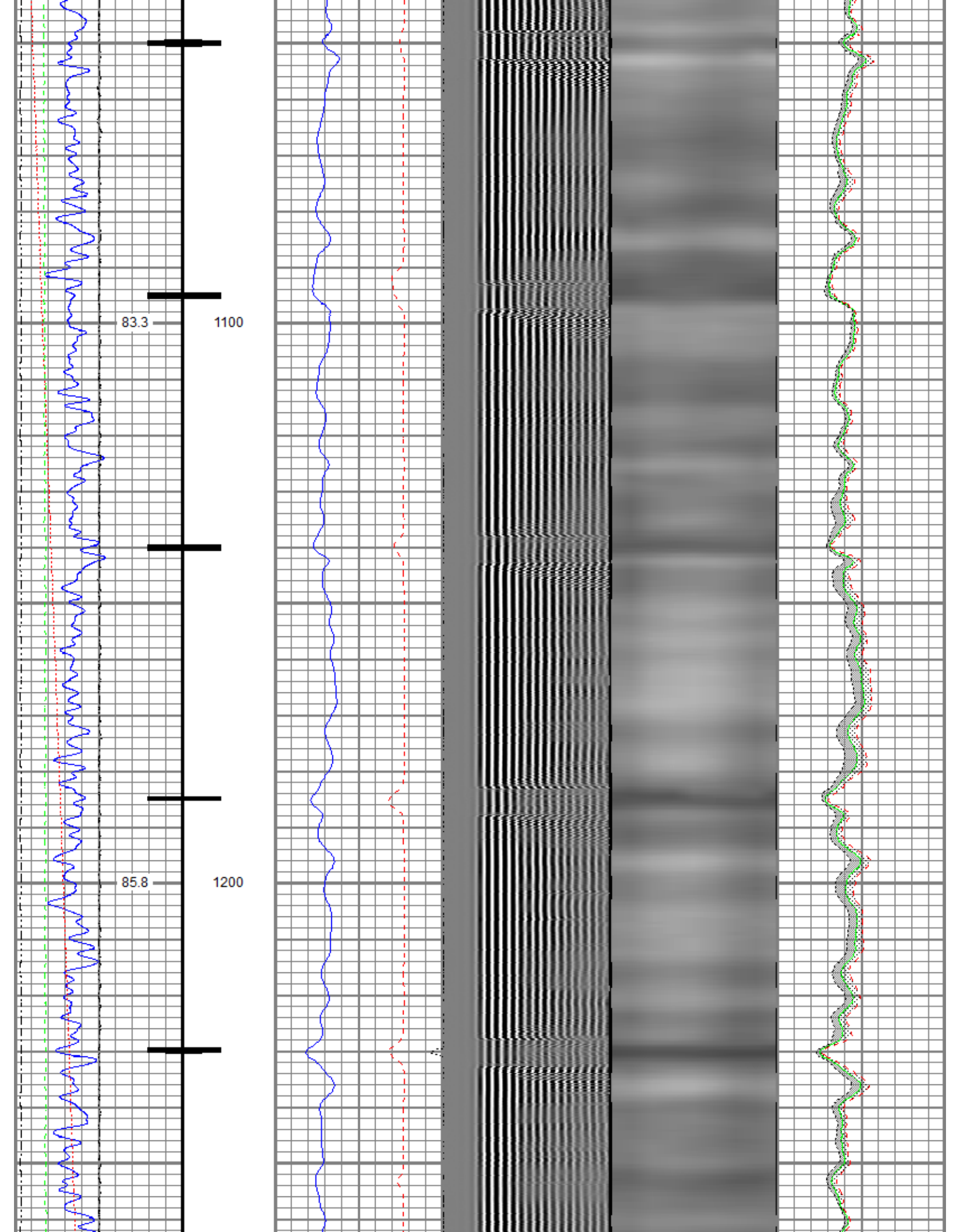


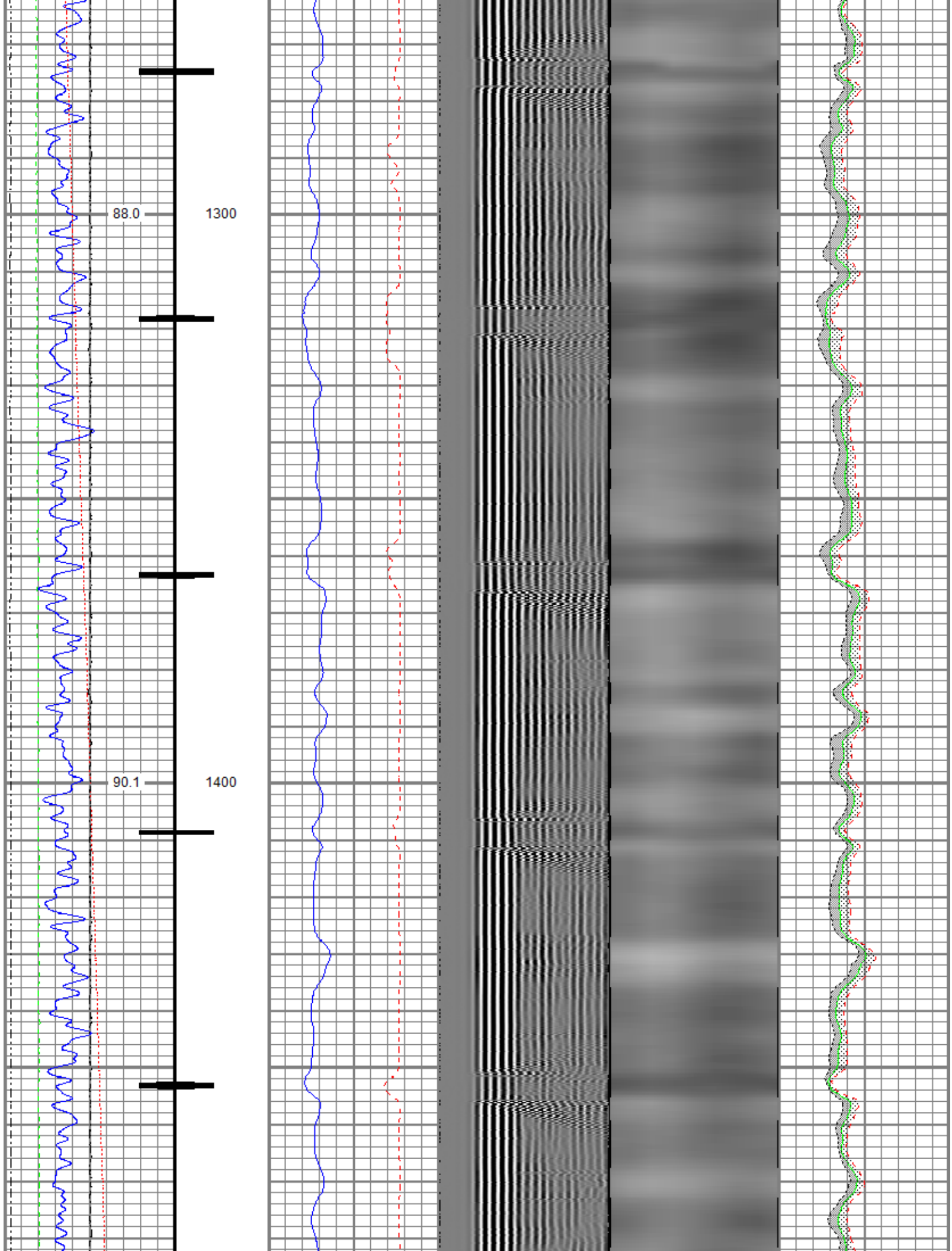


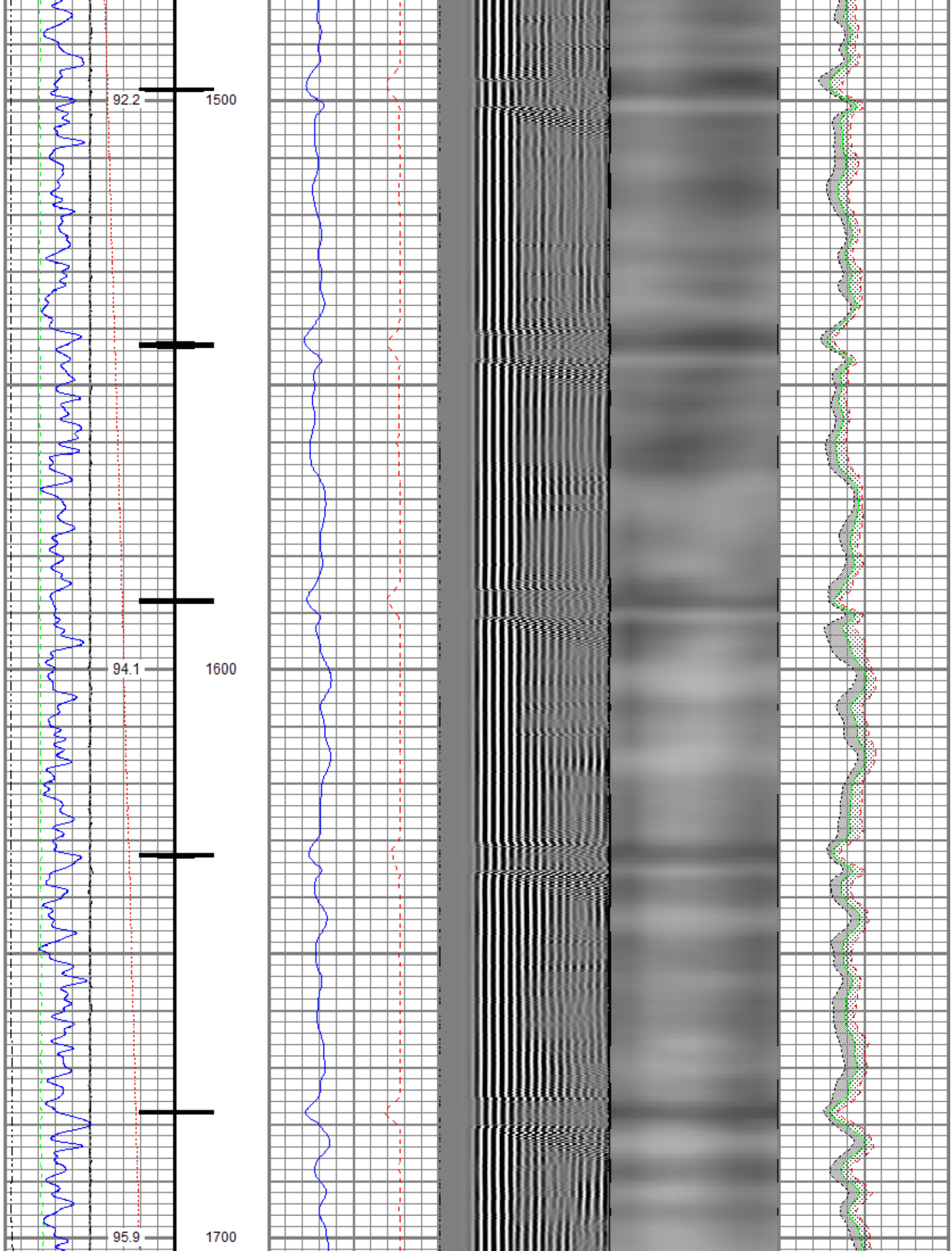


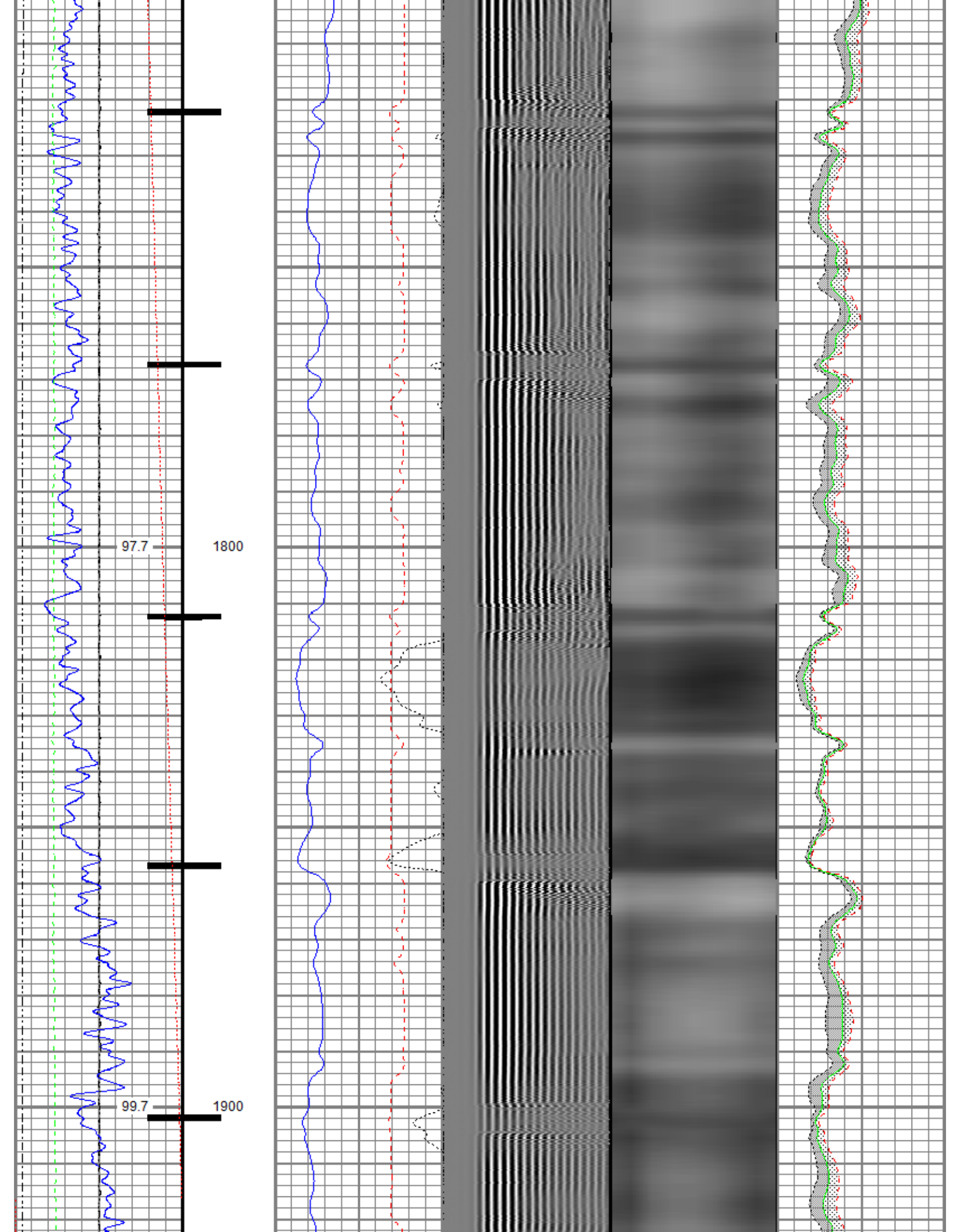


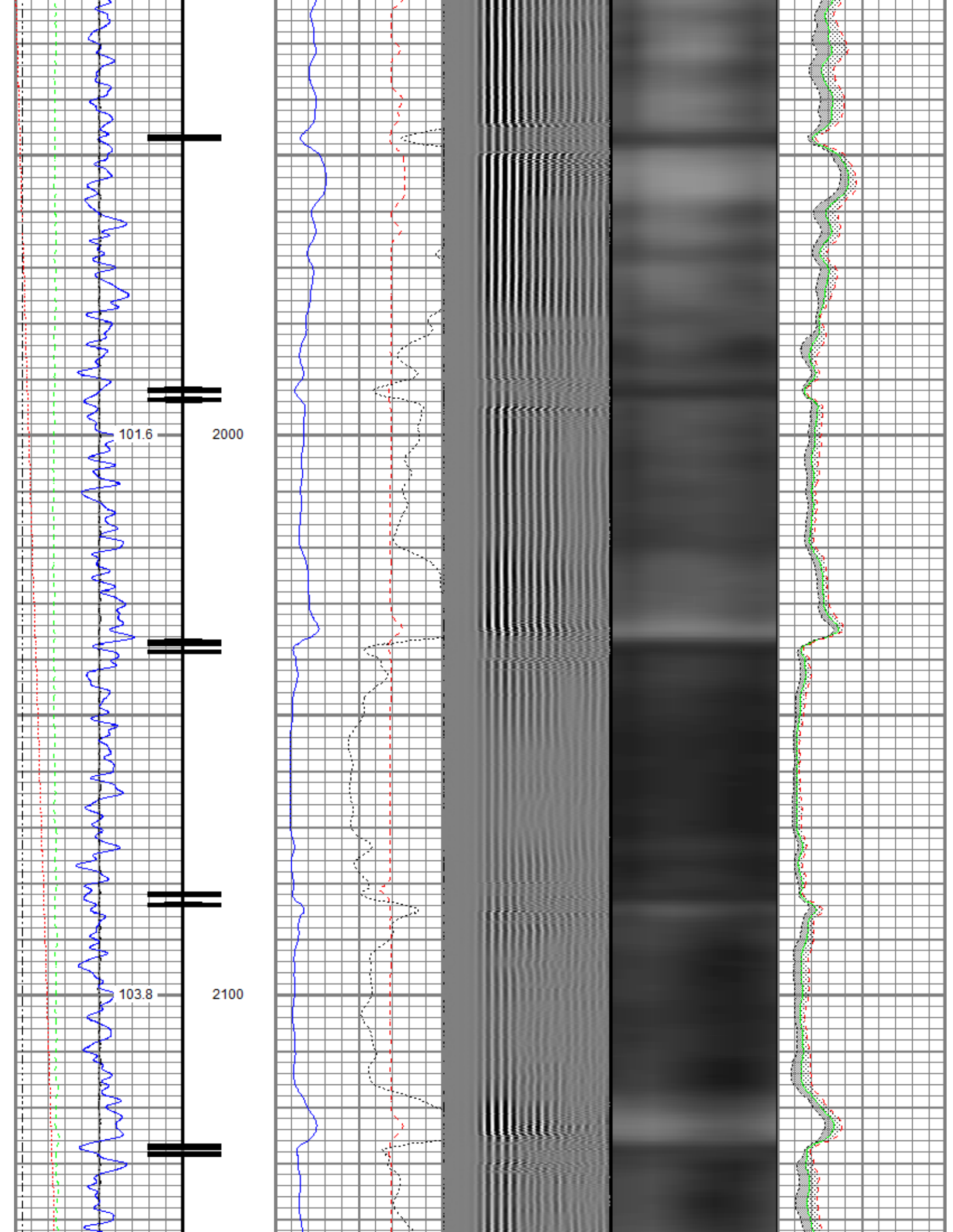


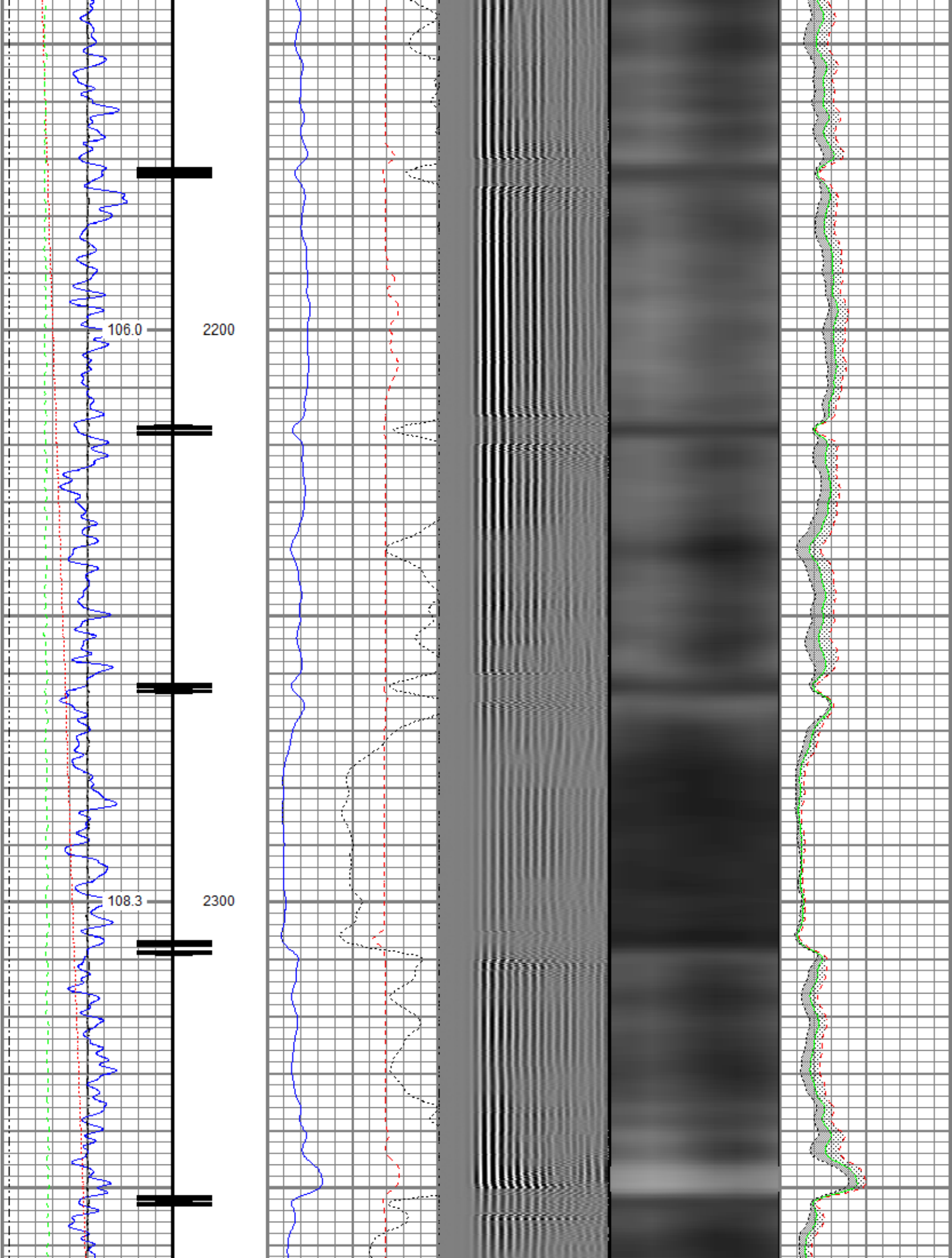


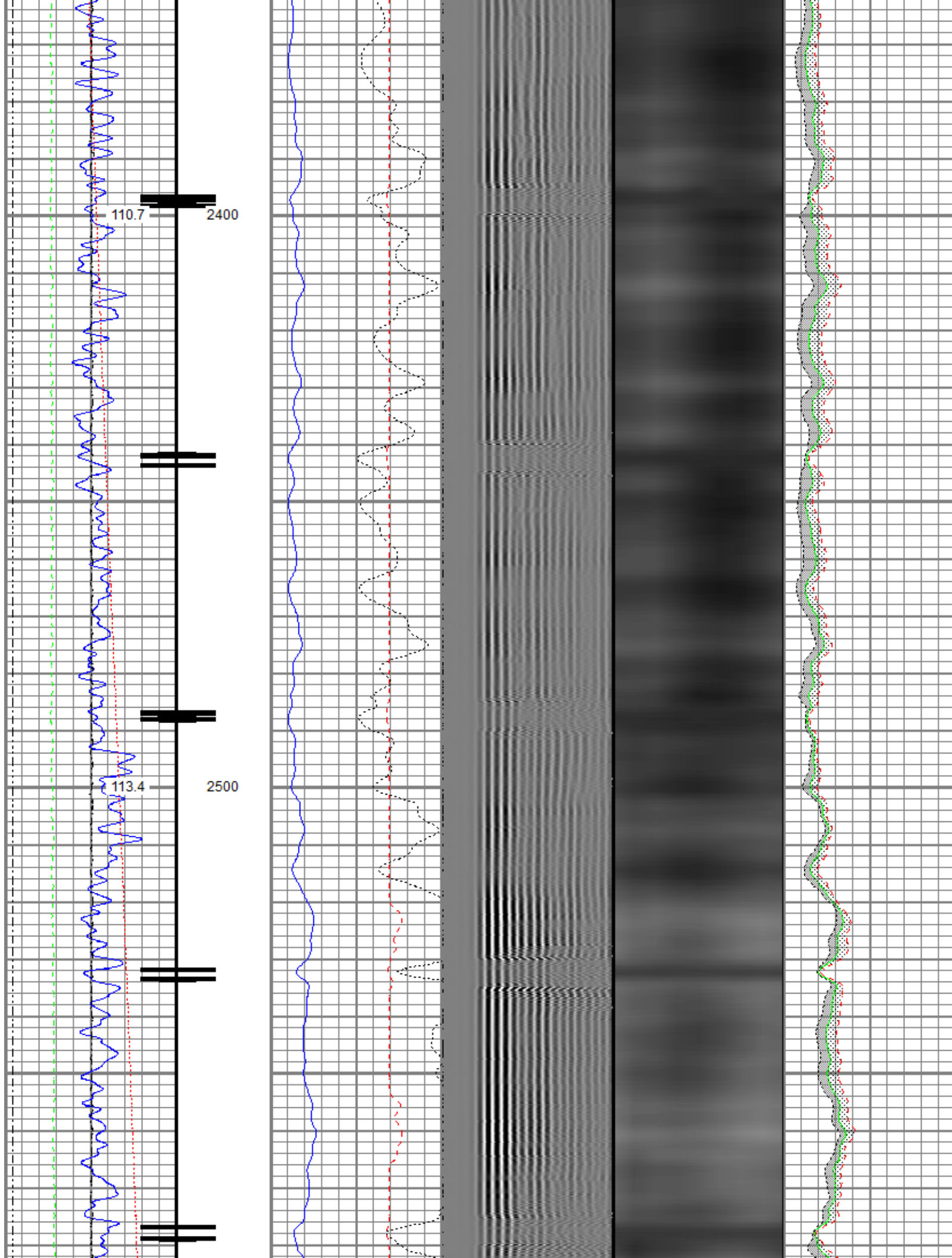


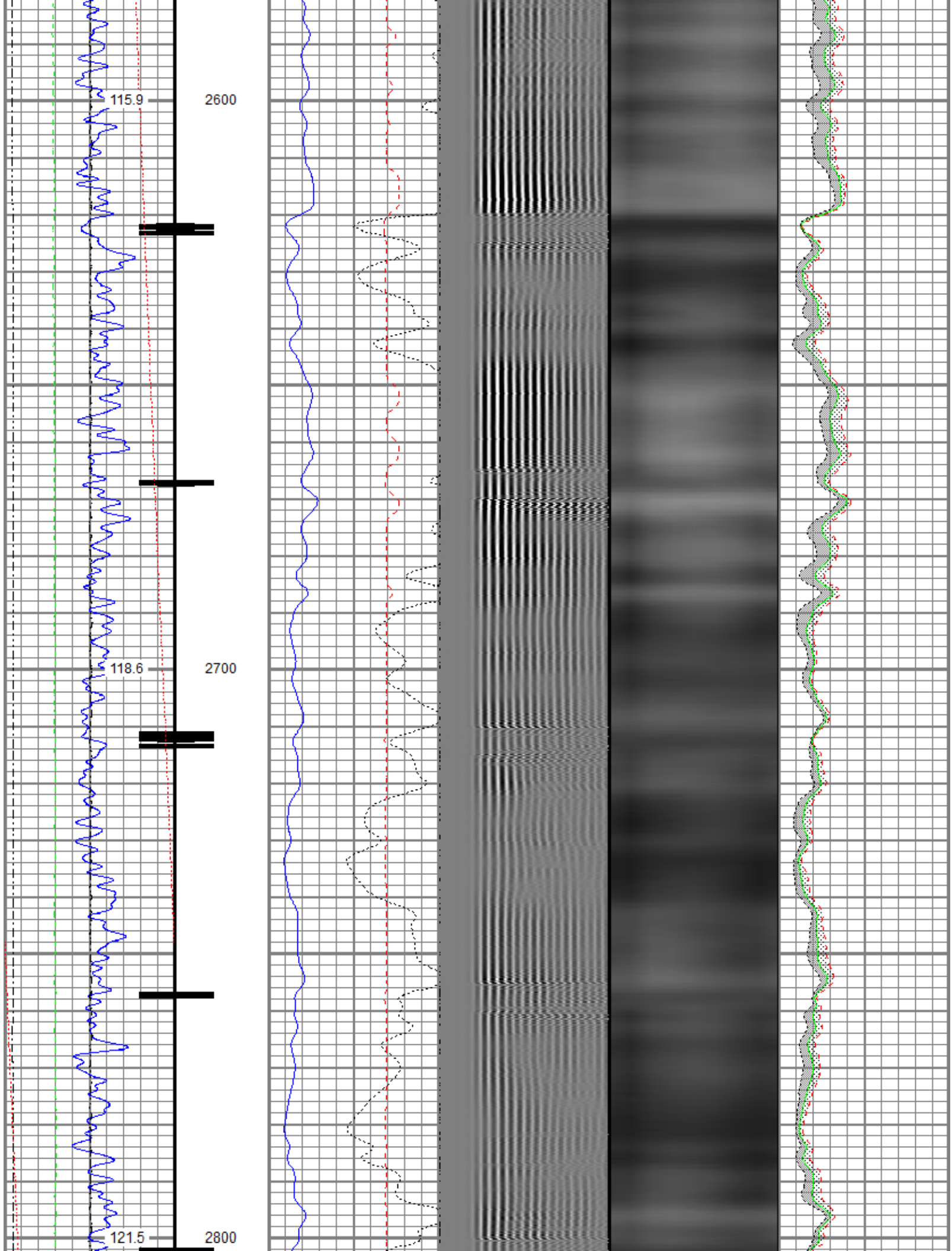


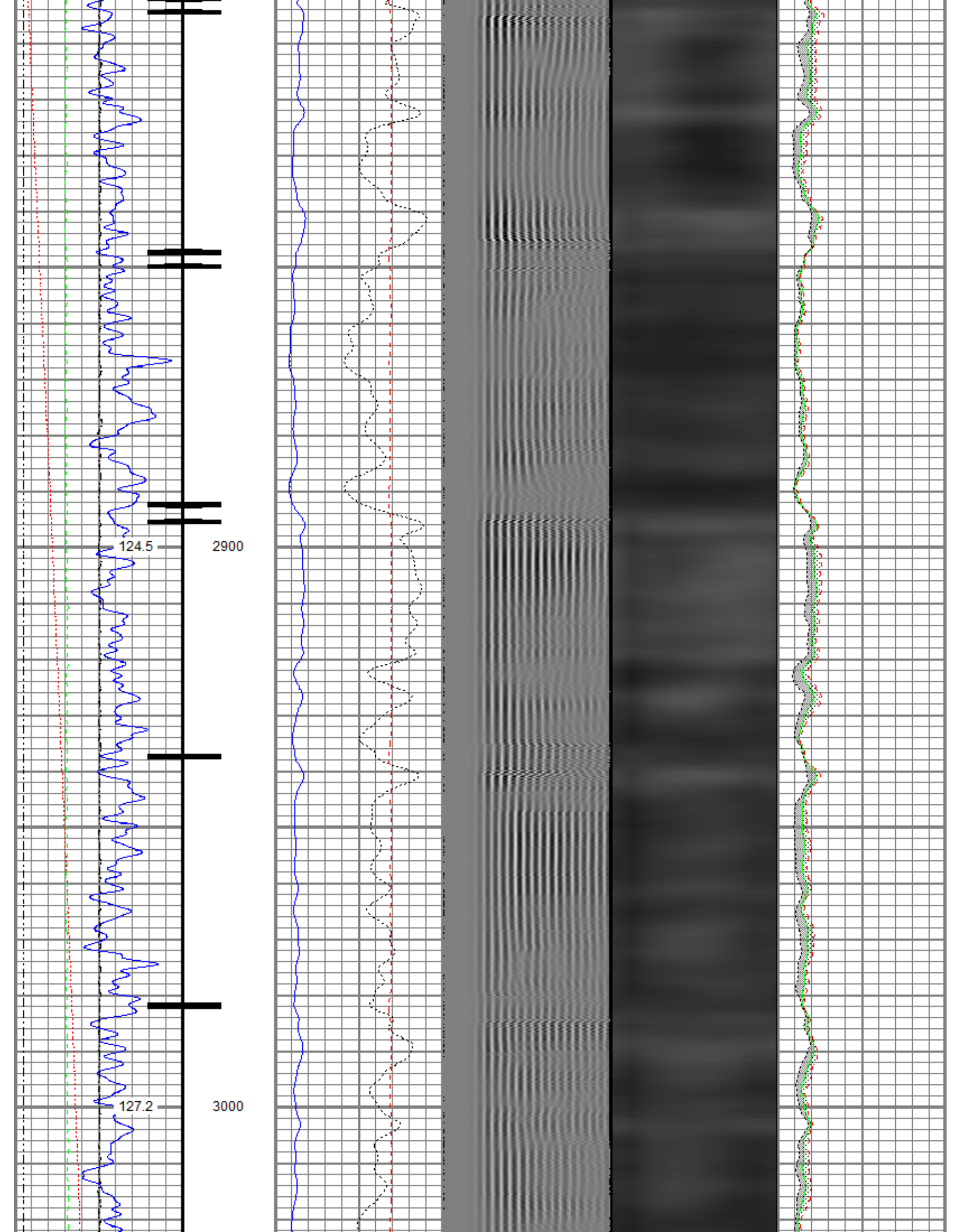


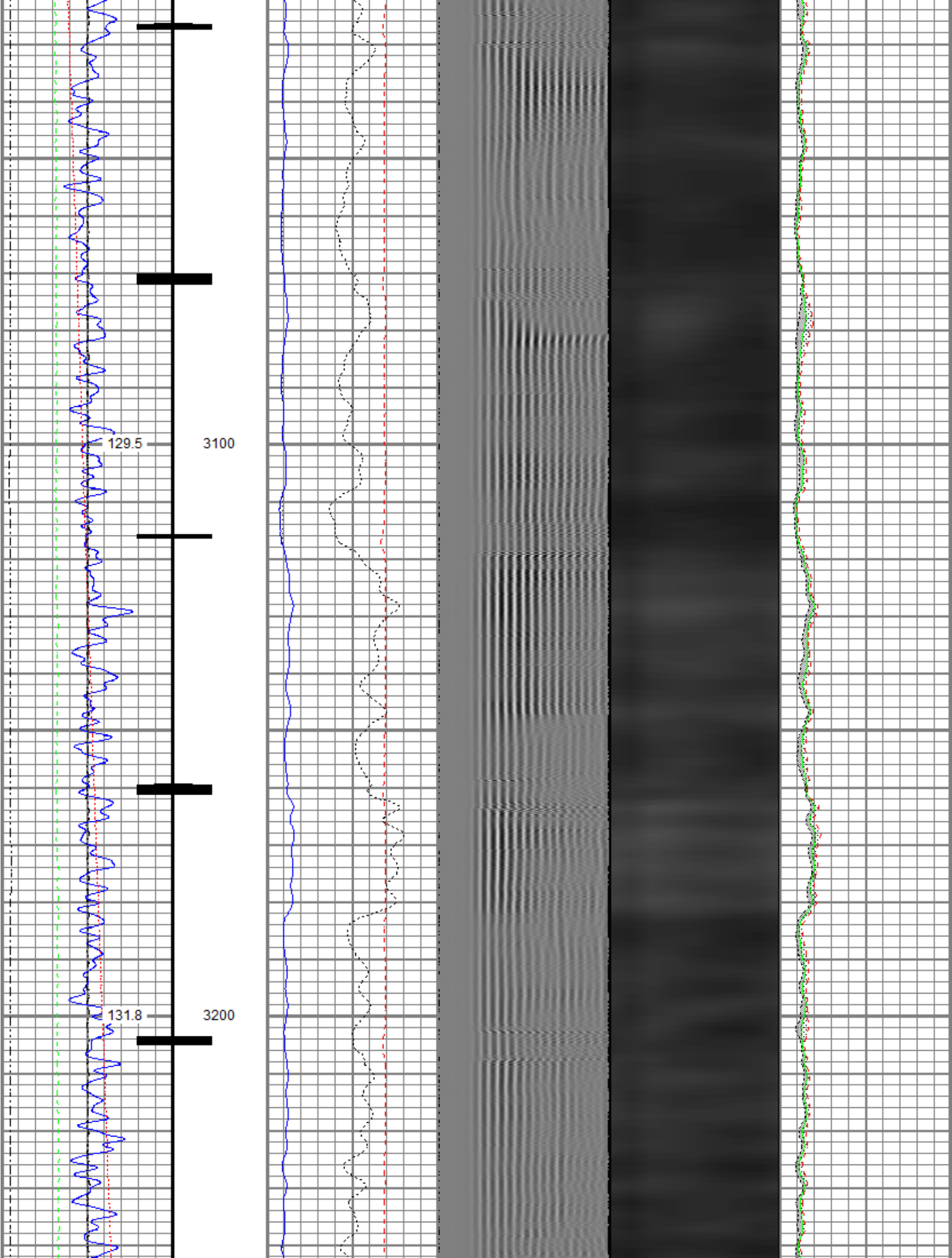


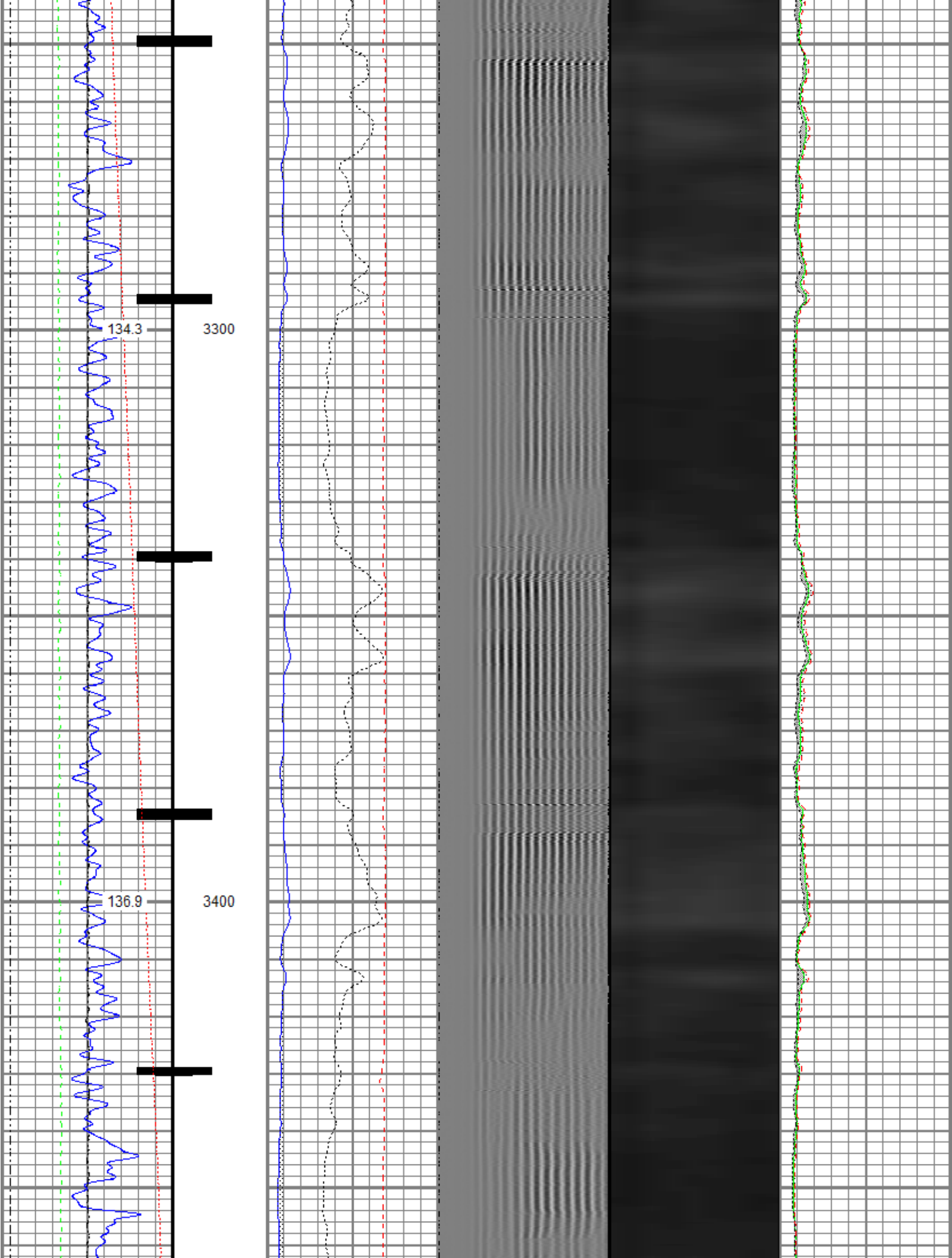


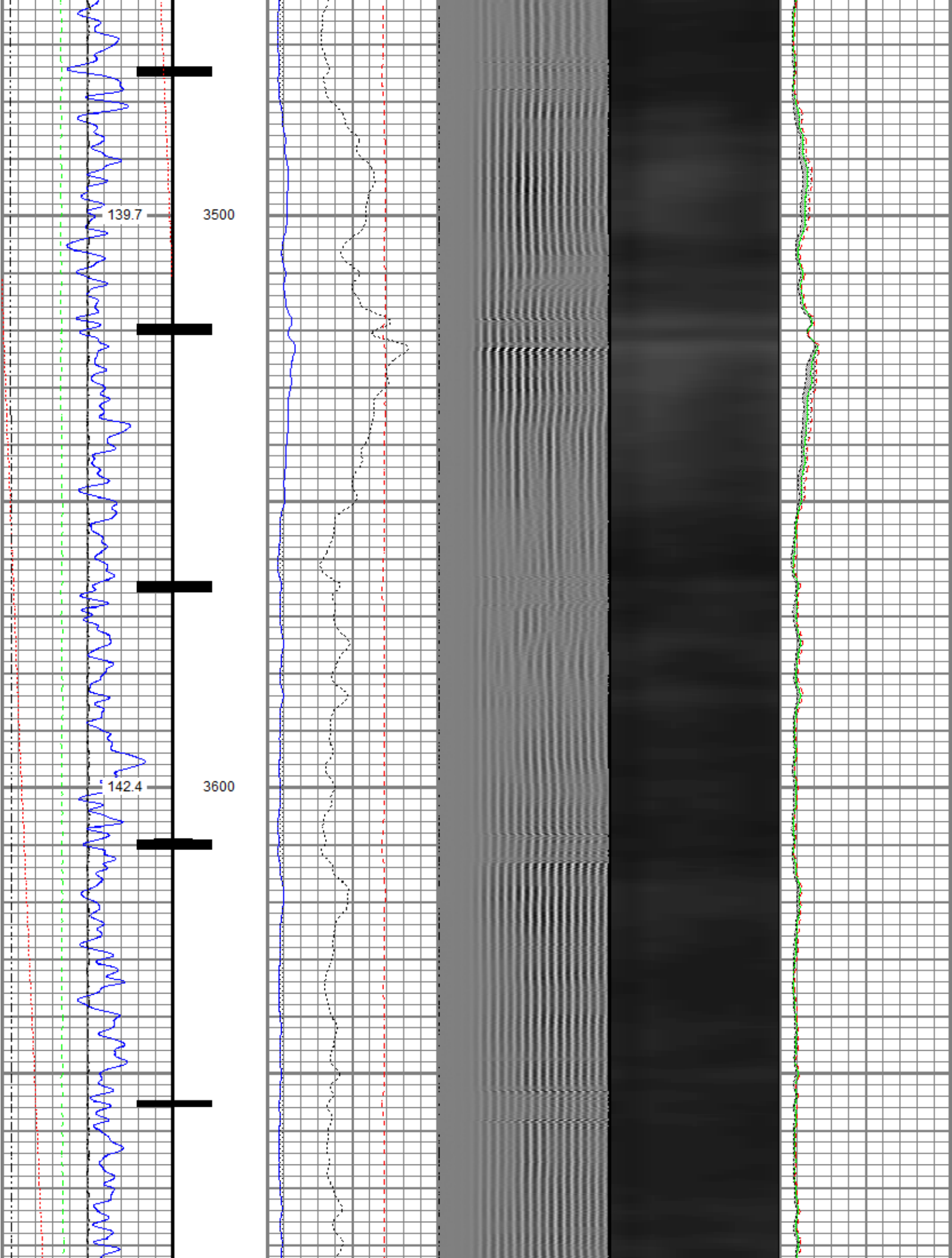


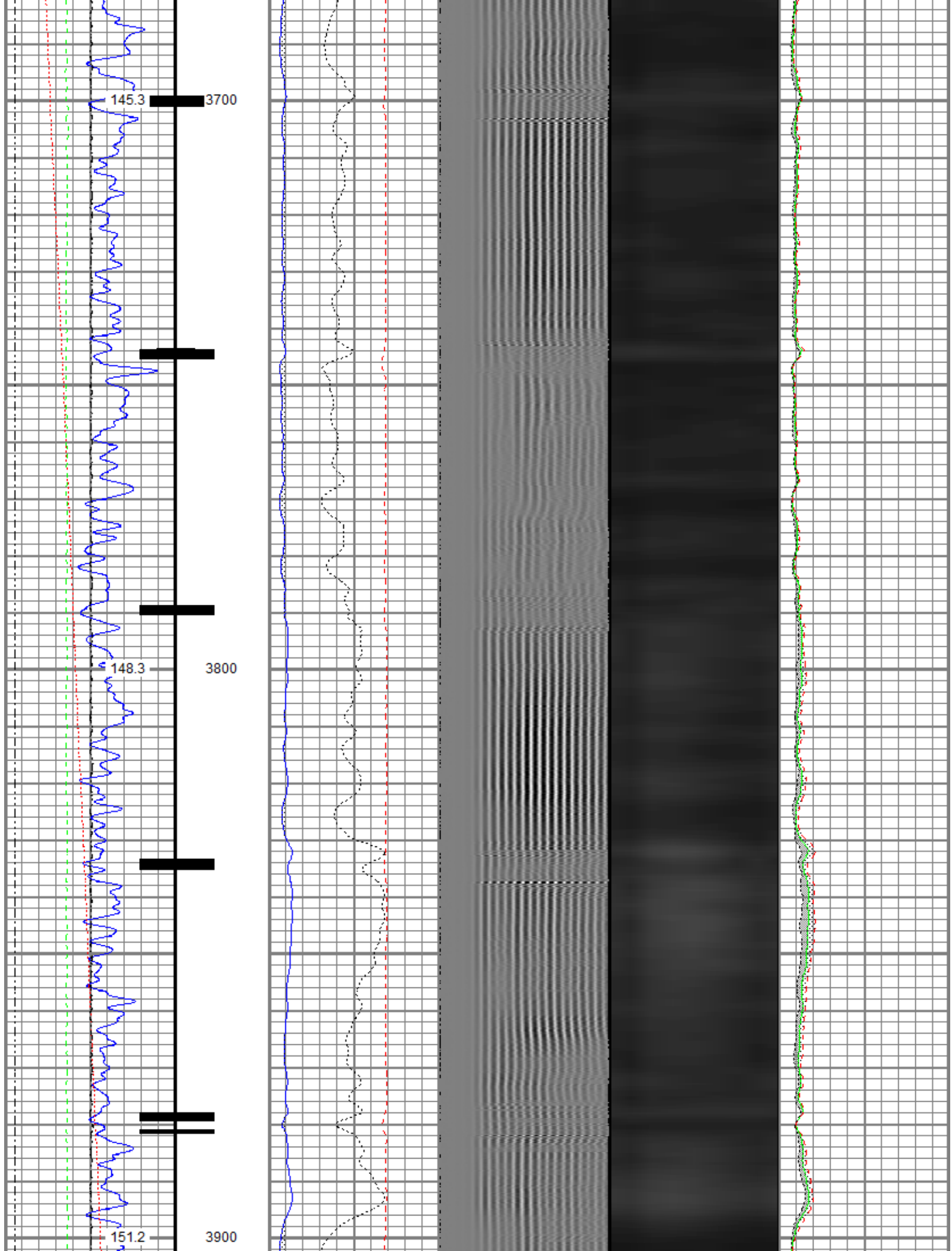


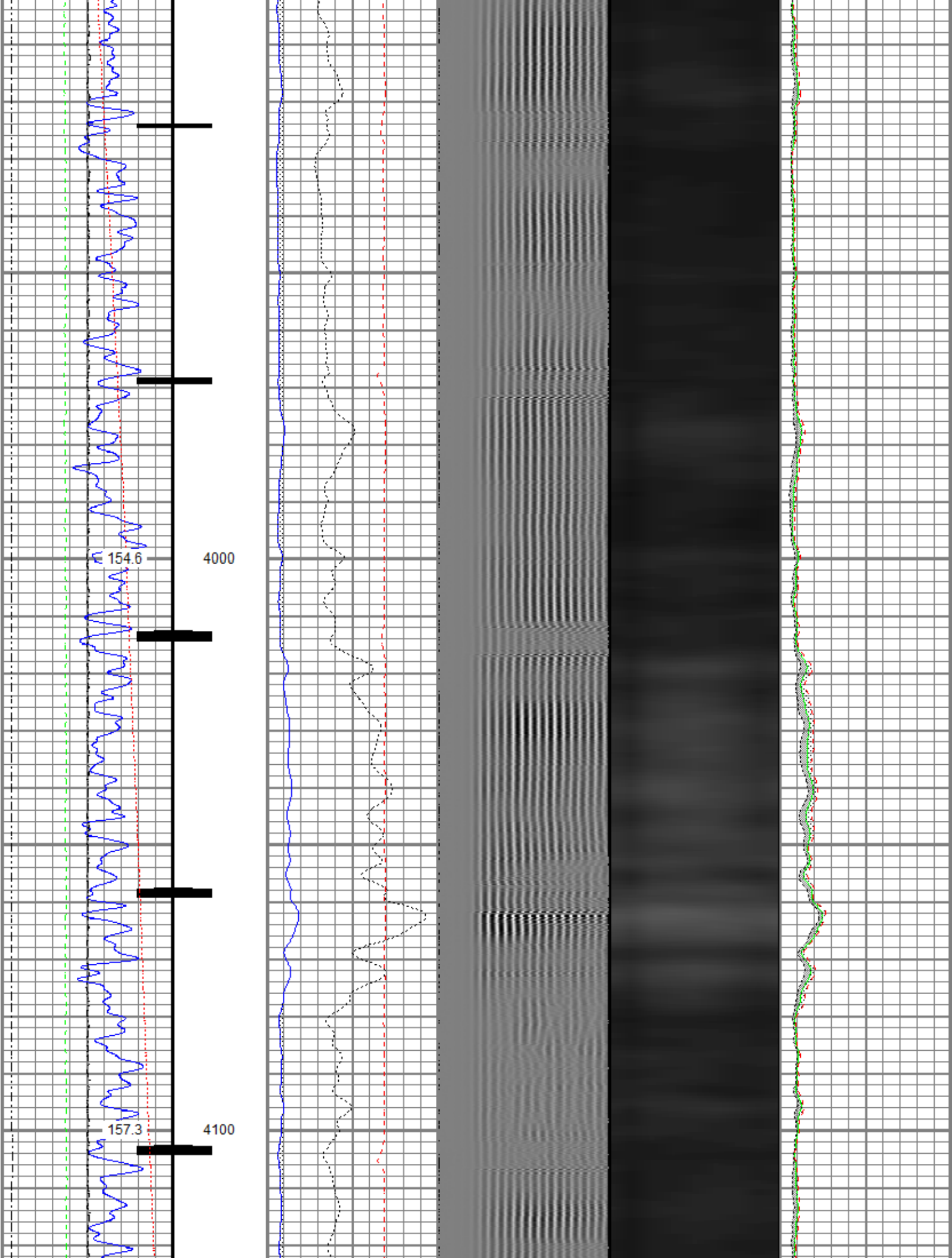


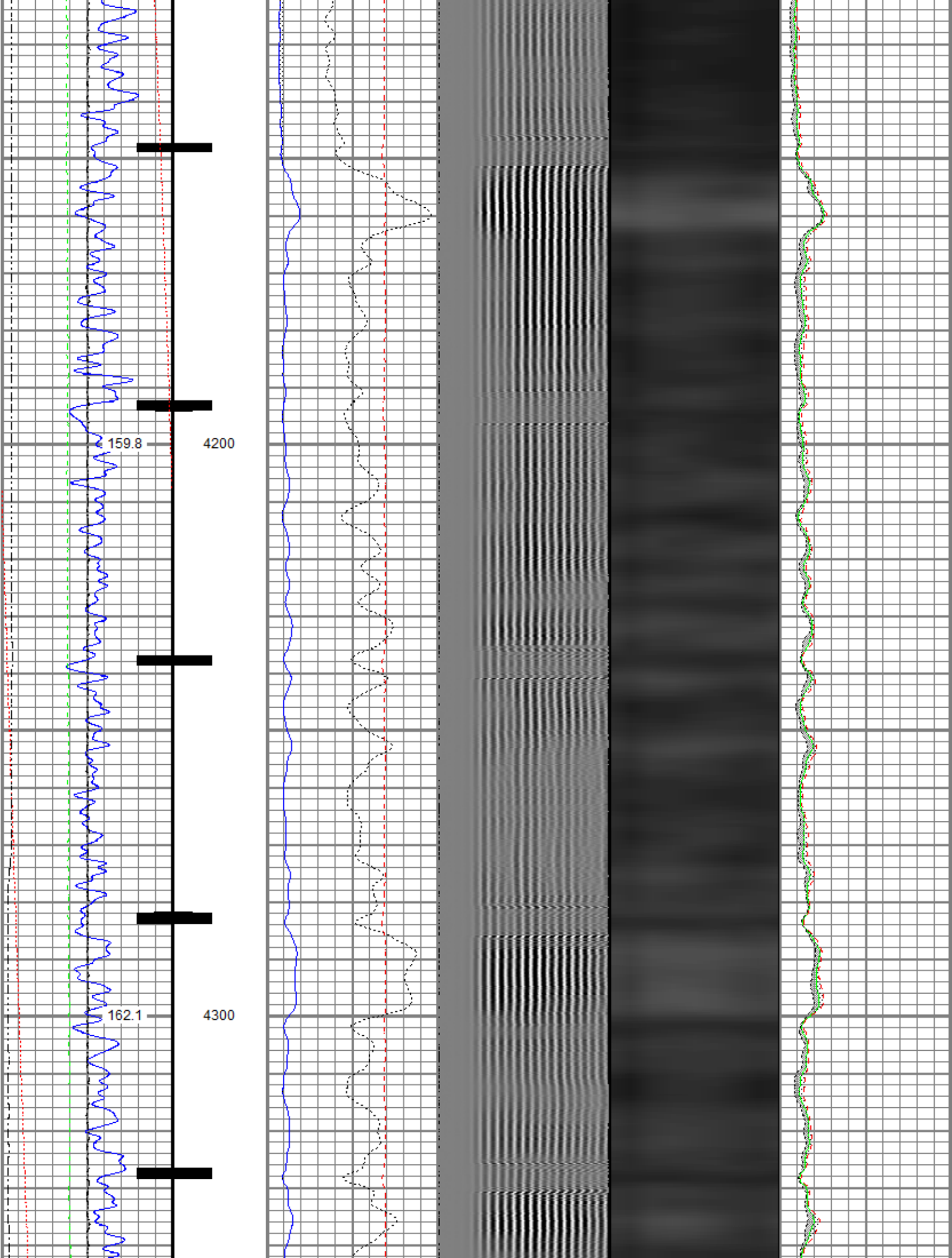


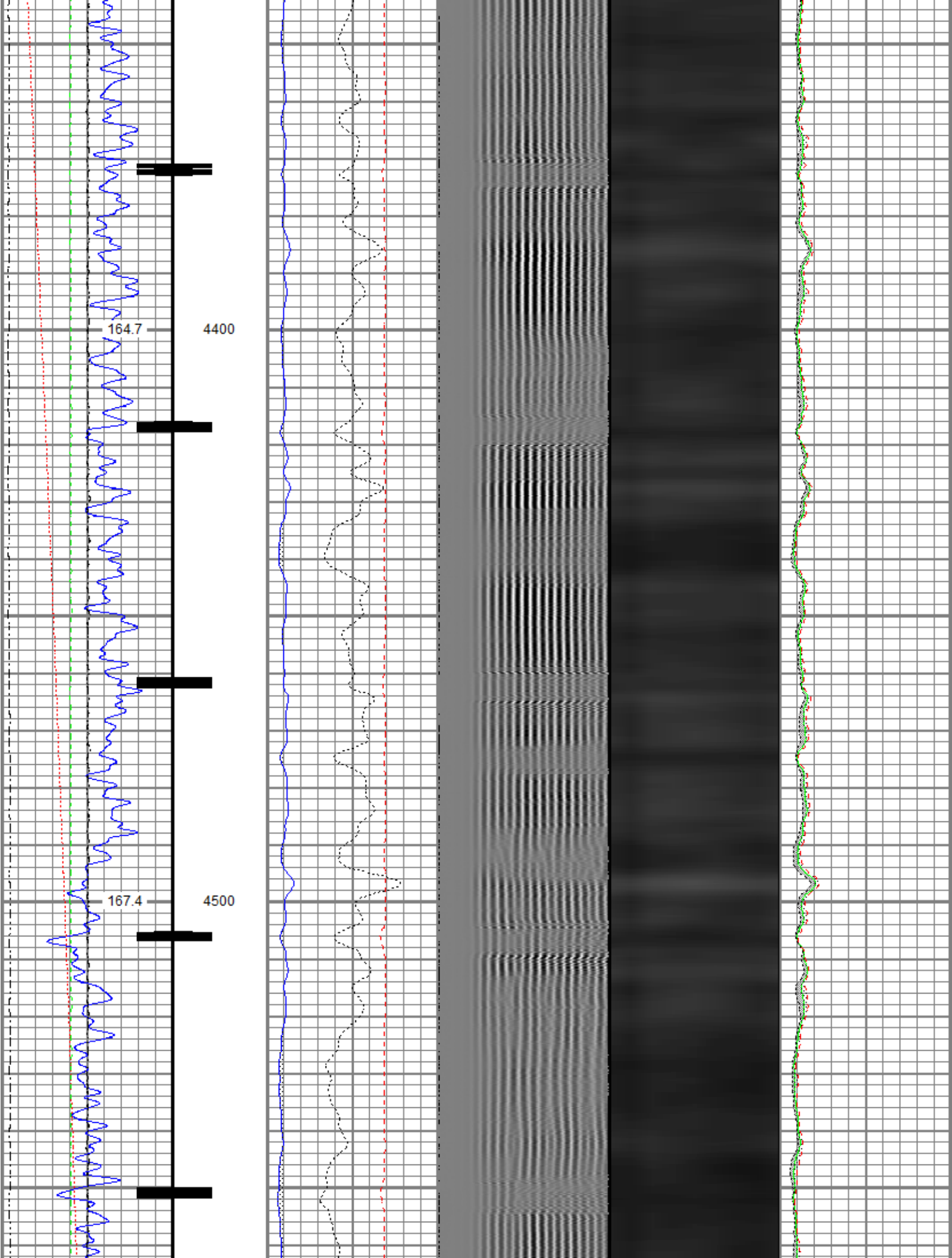


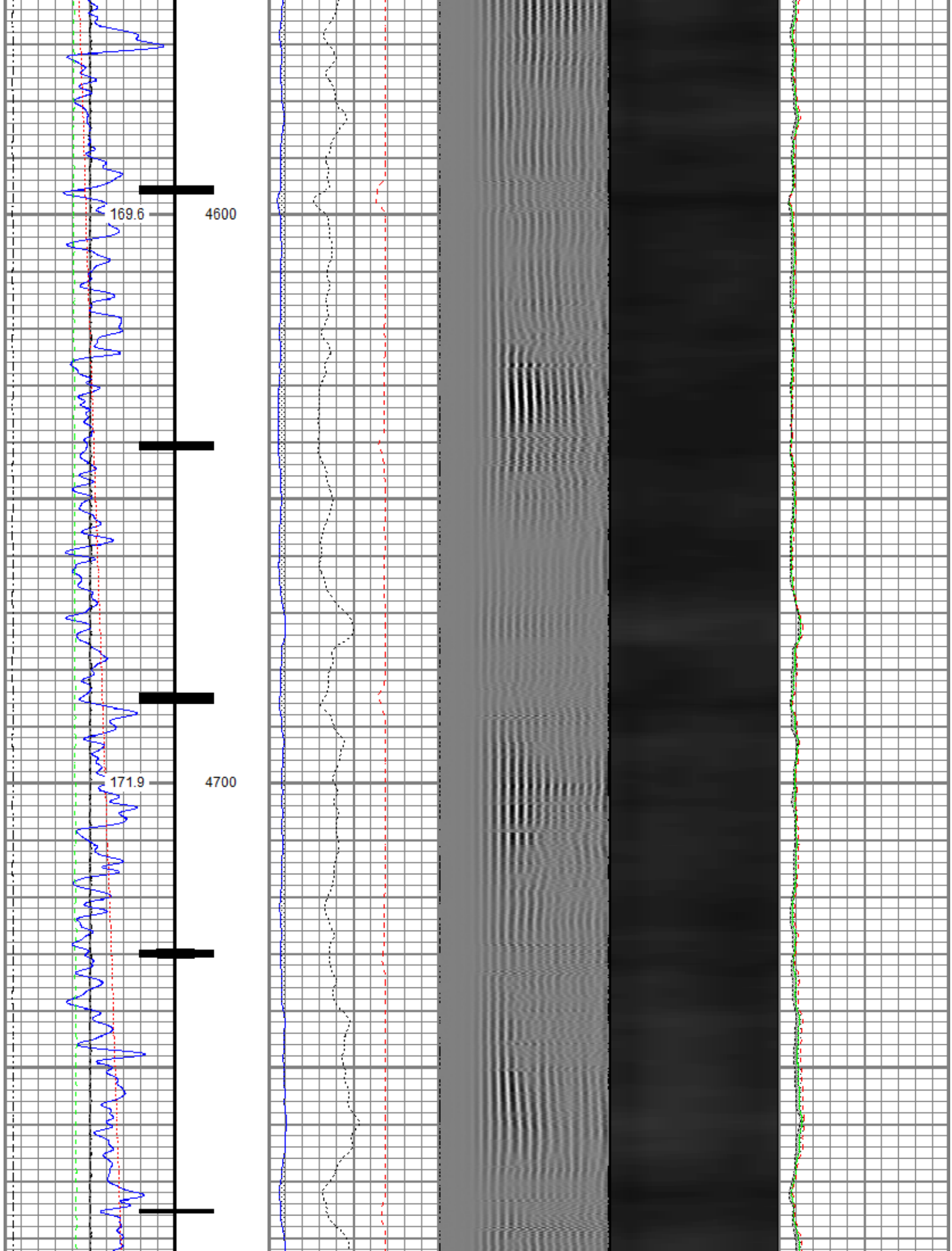


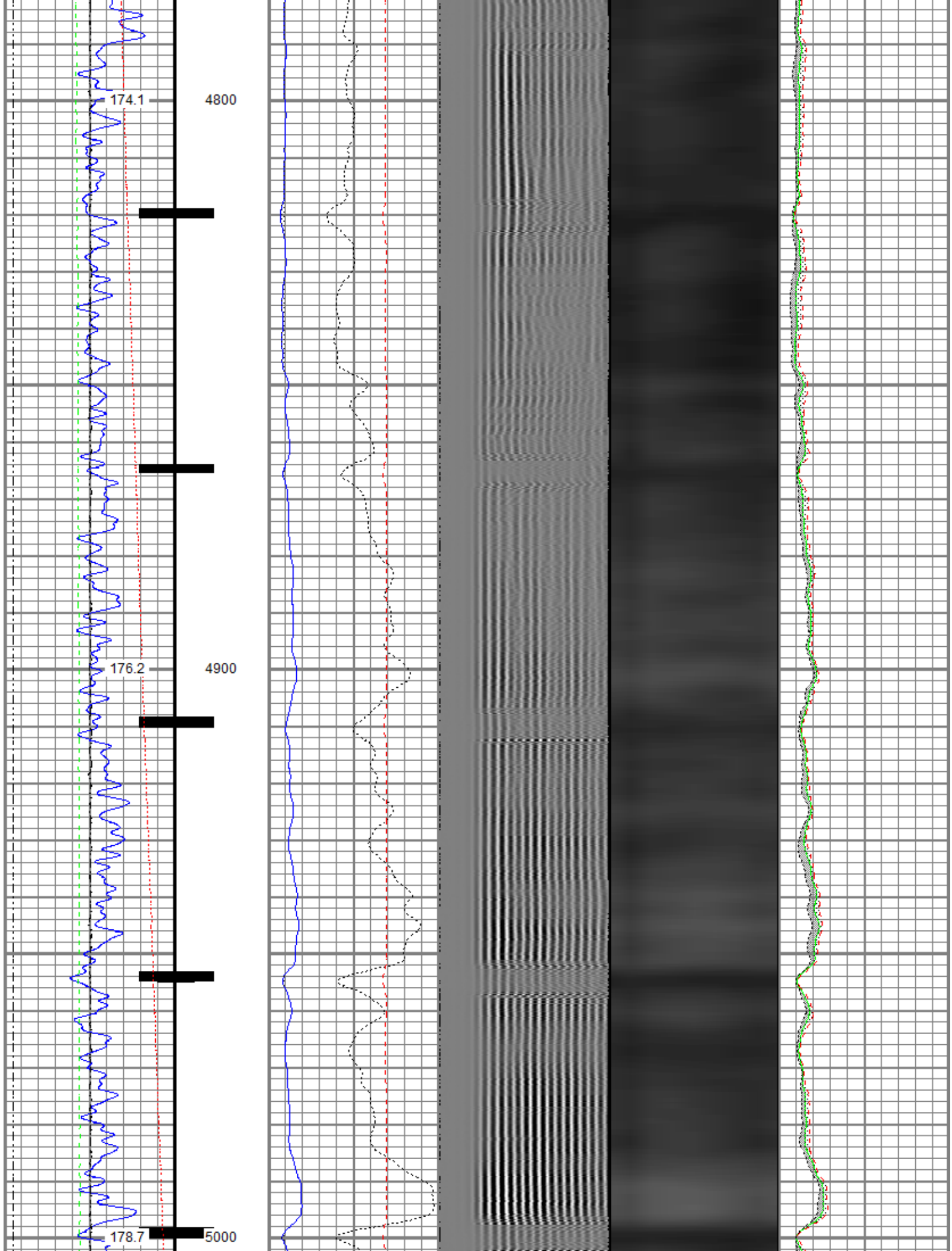


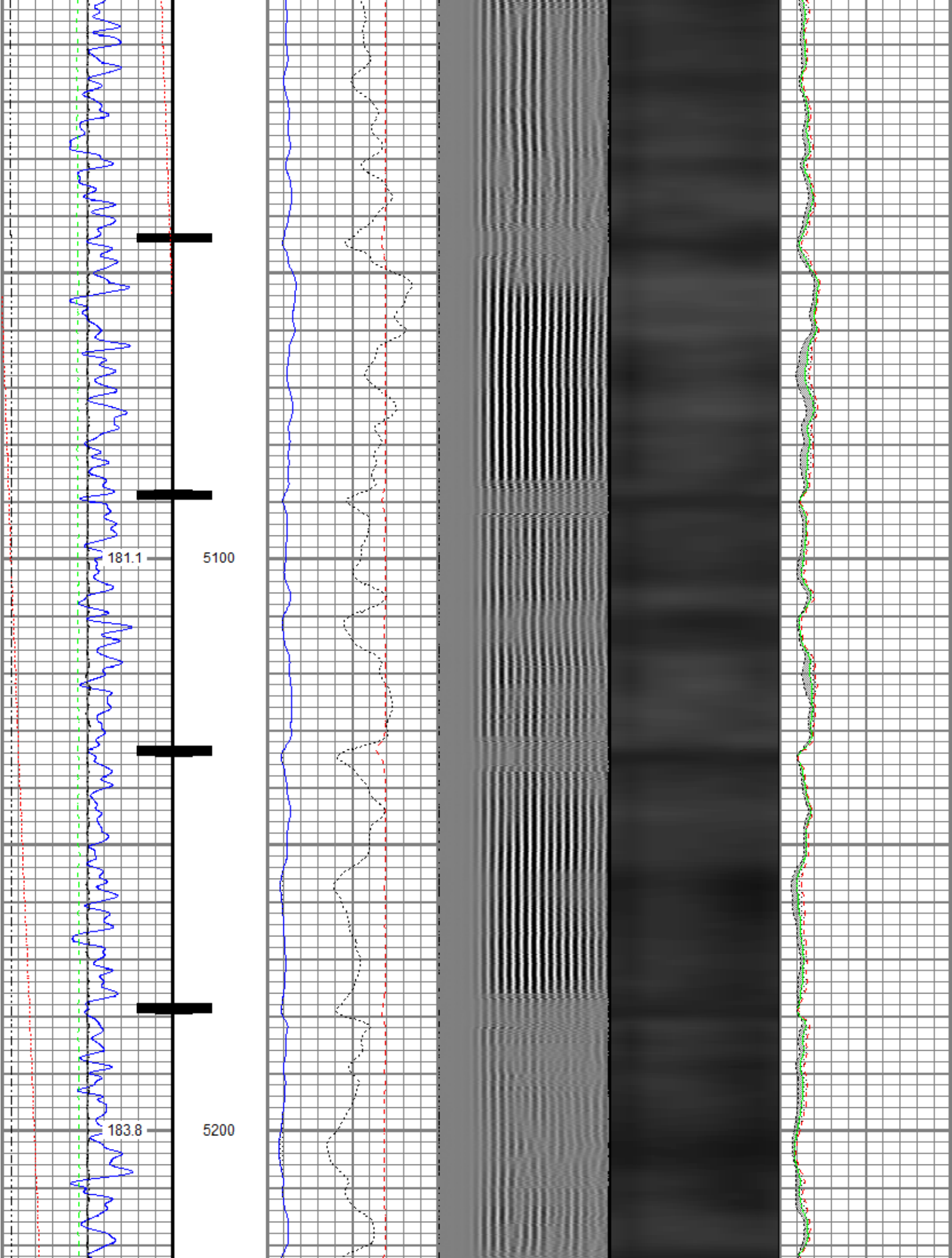


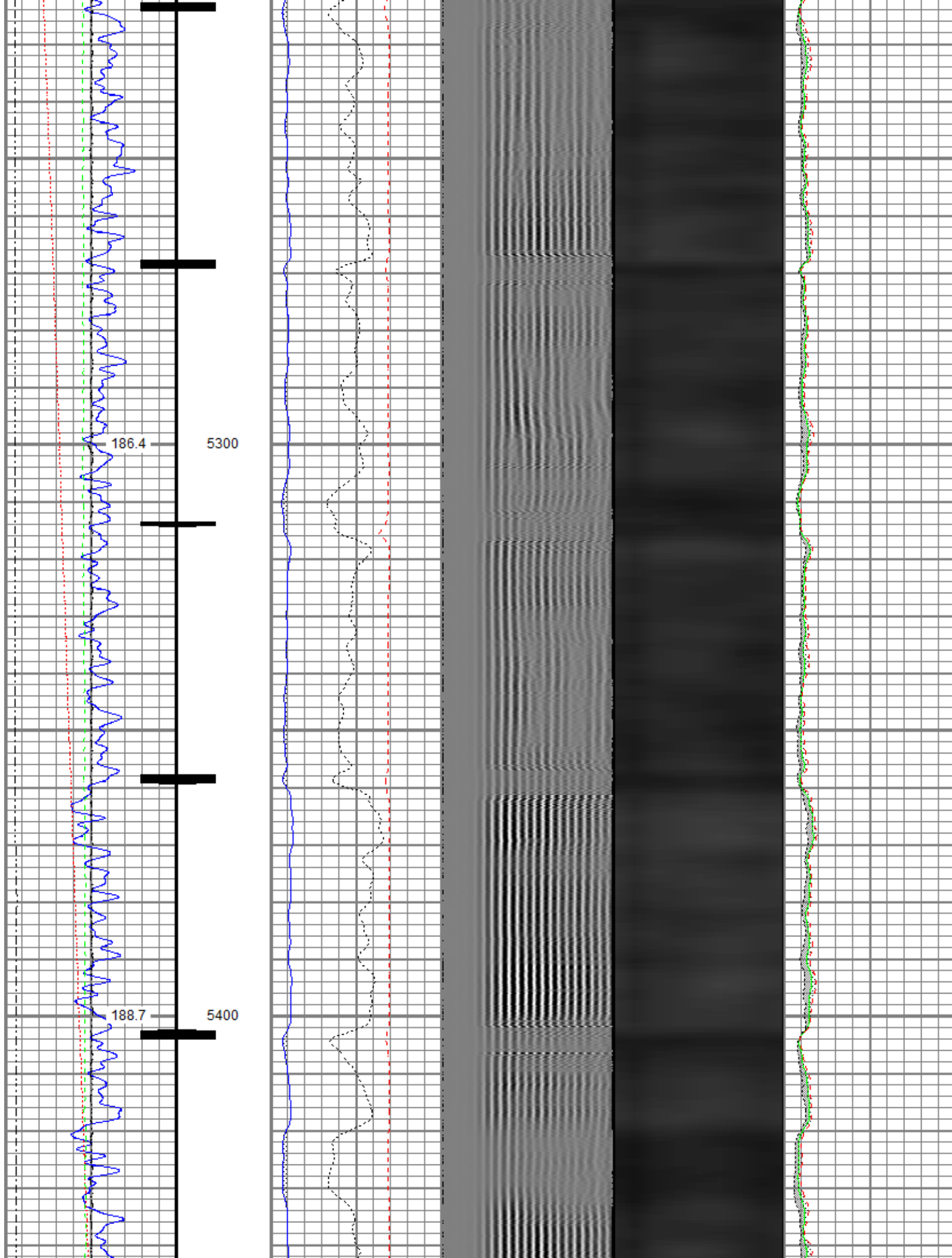


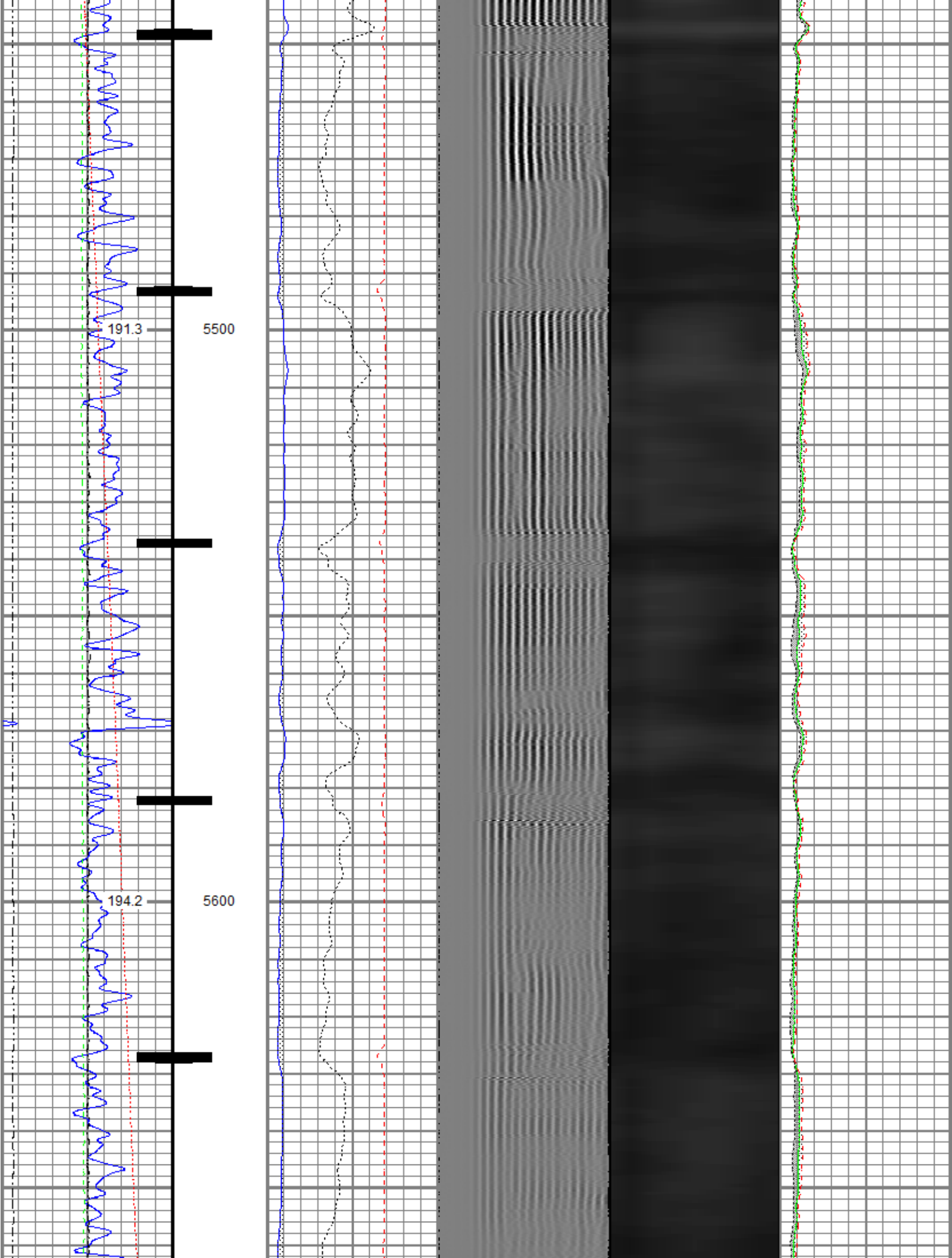


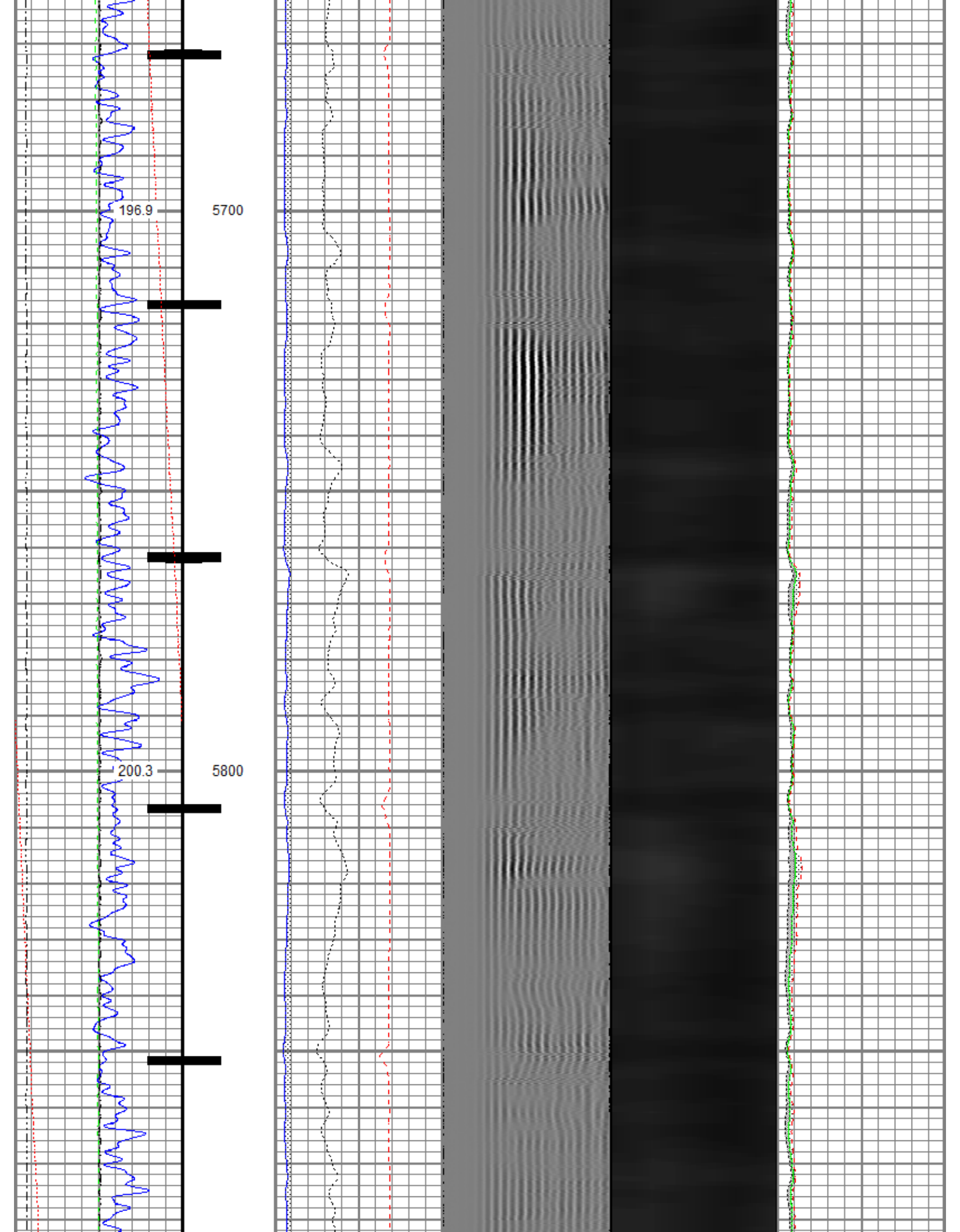


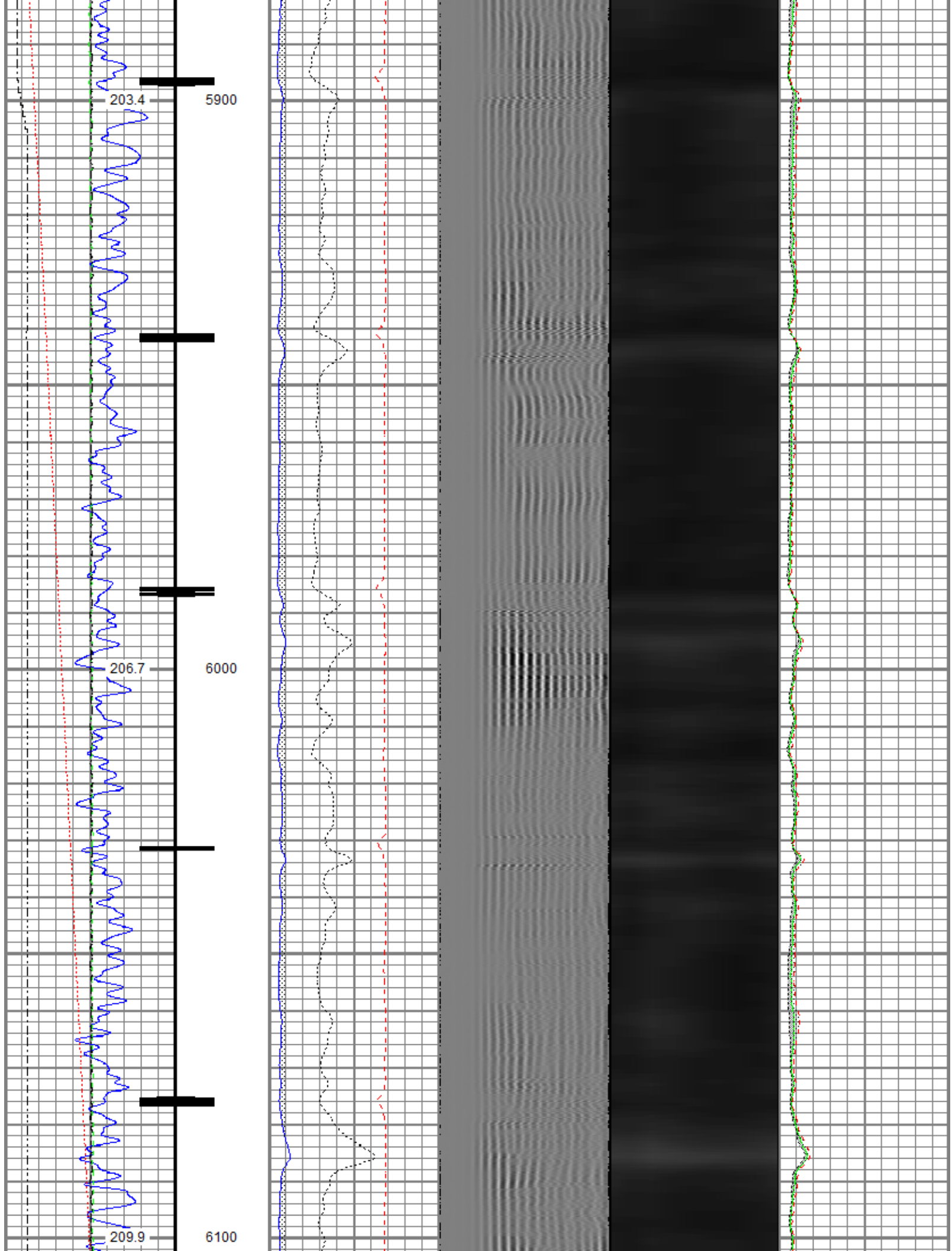


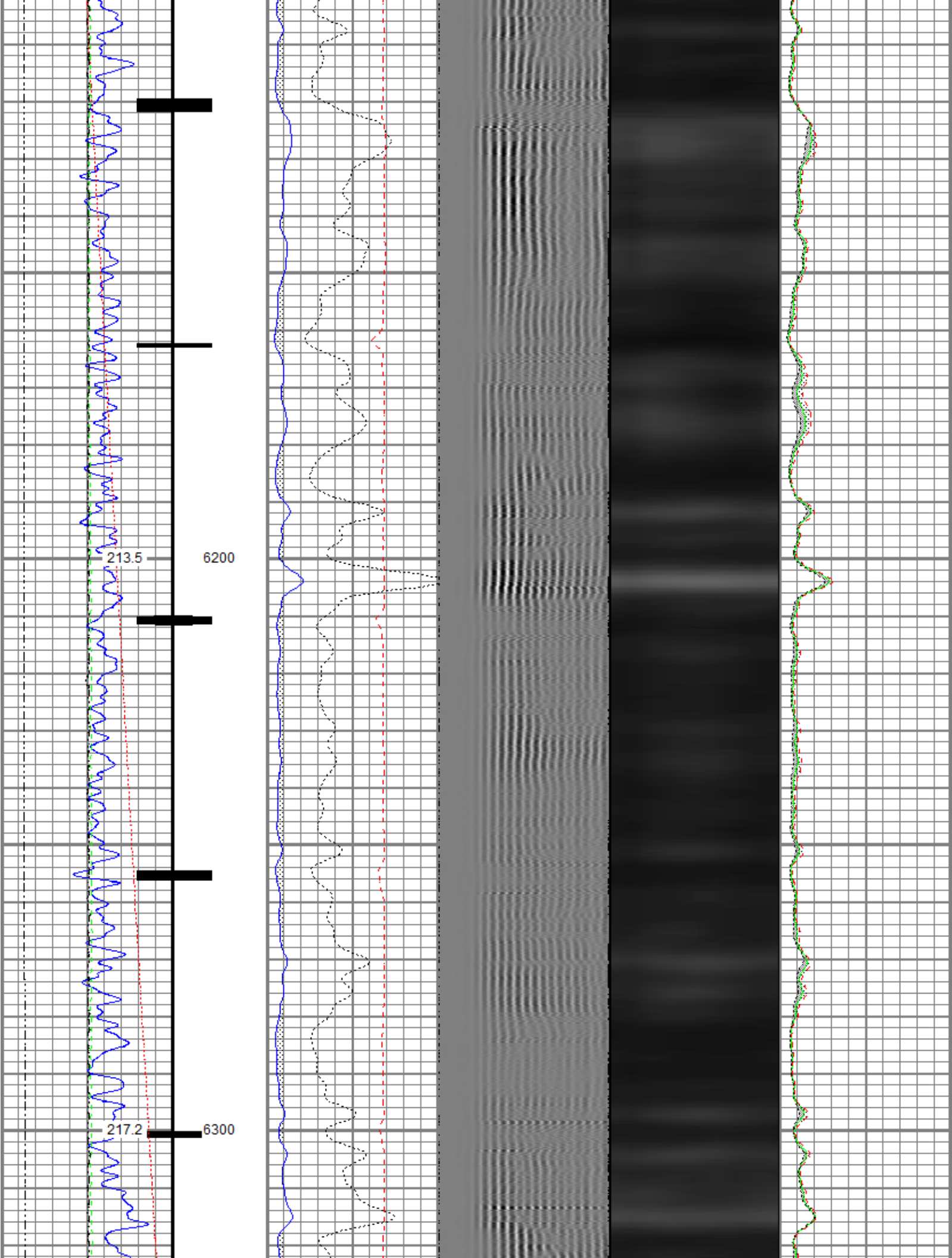












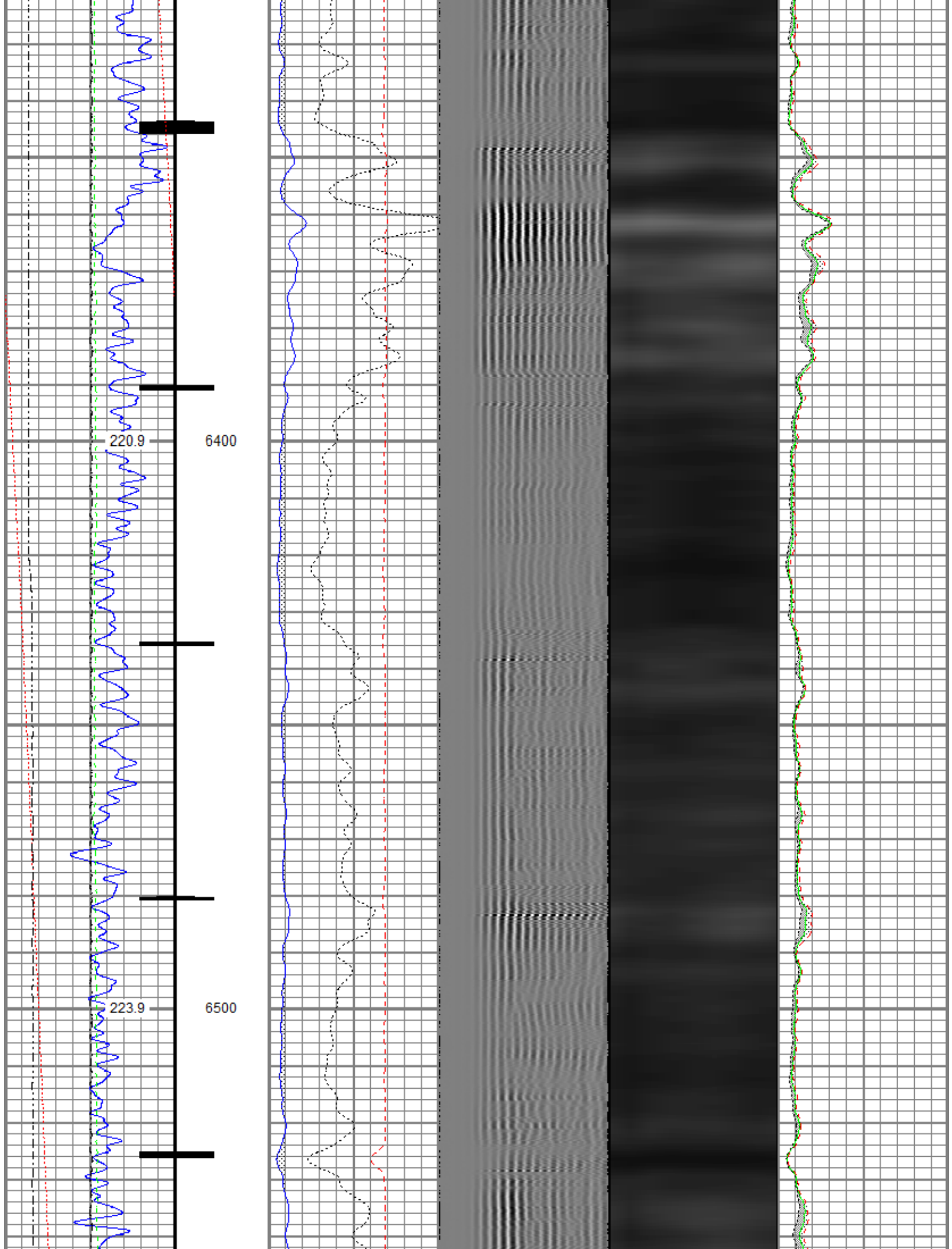
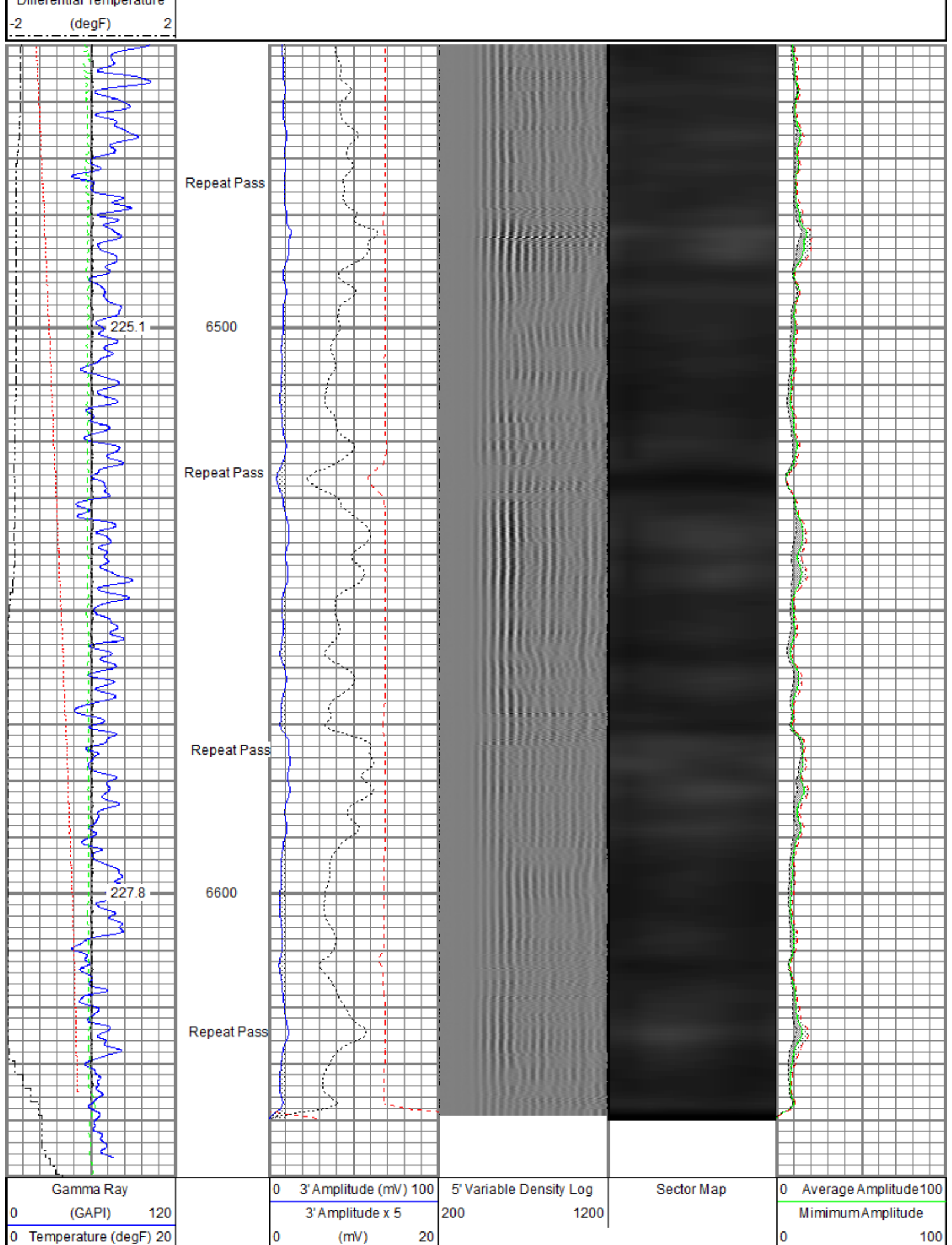


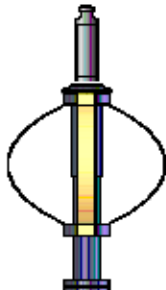

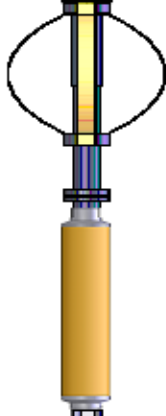
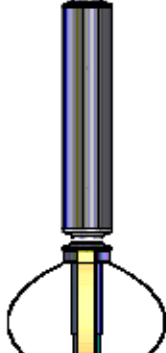
Figure 1 displays a multi-panel log plot showing various well log data. The panels from left to right are:

- Gamma Ray (GAPI):** Scale 0 to 120.
- Casing Collar Locator (CCL):** Scale 0 to 120.
- Temperature (dt):** Scale 0 to 20 (degF).
- Line Speed (LSPD):** Scale -150 to 150 (ft/min).
- Line Tension (LTEN):** Scale 0 to 2000 (lb).
- 3' Amplitude (mV):** Scale 0 to 100.
- 3' Amplitude x 5:** Scale 0 to 20 (mV).
- 3' Travel Time (TT):** Scale 0 to 150 (usec).
- 5' Variable Density Log:** Scale 200 to 1200.
- Sector Map:** Scale 0 to 100.
- Average Amplitude:** Scale 0 to 100.

The plot includes a 'Marker Joint' at 6600 feet. The x-axis for the amplitude and travel time logs ranges from 0 to 100 mV and 0 to 150 usec respectively. The variable density log shows a grayscale representation of the wellbore. The sector map shows the wellbore profile. The average amplitude log shows the average amplitude of the 3' amplitude log.



Line Speed			3' Travel Time			Maximum Amplitude		
-150	(ft/min)	150	650	(usec)	150	0		100
0 Line Tension (lb) 2000								
Differential Temperature								
-2	(degF)	2						

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	18.23		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	2.88	2.75	20.00
			Probe 2-3/4" Electric Inline Bowspring Centralizer			
WVFS8	16.00		Probe Radii-2750 RBT (FW1308-091)	9.39	2.75	105.00
WVFS7	16.00		Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub			
WVFS6	16.00					
WVFS5	16.00					
WVFS4	16.00					
WVFS3	16.00					
WVFS2	16.00					
WVFS1	16.00					
WVFCAL	16.00					
WVF3FT	16.00					
WVF5FT	15.00					
CCL\$2 CCL\$1	7.38		Probe CENT-2750	2.88	2.75	20.00
	7.38		Probe 2-3/4" Electric Inline Bowspring Centralizer			
GR	5.24		Probe CCL-2750 SA (FW1307-076)	2.66	2.75	35.00
			Probe 2-3/4" Digital Six Magnet Logging CCL			
			Probe GR-2750 SA (FW1307-078)	3.33	2.75	55.00
			Probe 2-3/4" Digital Stand Alone Gamma Ray			
			Probe CENT-2750	2.88	2.75	20.00

Dataset: 0512346588\_Anadarko\_English Farms 8-12HZ\_RBL\_09-13-18\_2800 PSI.db: field/well/run1/pass4.1  
 Total length: 25.06 ft  
 Total weight: 258.60 lb  
 O.D.: 2.75 in

## Calibration Report

Database File C:\ProgramData\Warrior\Data\Anadarko\0512346588\_Anadarko\_English Farms 8-12HZ\_RBL\_09-13-18\0512346588\_Anadarko  
 Dataset Pathname pass4.1  
 Dataset Creation Thu Sep 13 12:45:24 2018

## Gamma Ray Calibration Report

Serial Number: FW1307-078  
 Tool Model: 2750 SA  
 Performed: Sun Nov 12 06:08:32 2017  
 Calibrator Value: 637.0 GAPI  
 Background Reading: 108.2 cps  
 Calibrator Reading: 1134.5 cps  
 Sensitivity: 0.6207 GAPI/cps

## Segmented Cement Bond Log Calibration Report

Serial Number: FW1308-091  
 Tool Model: 2750 RBT  
 Calibration Casing Diameter: 5.500 in  
 Calibration Depth: -20.106 ft

Master Calibration, performed Thu Sep 13 06:22:32 2018:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	0.381	0.800	71.921	188.796	-0.039
CAL	0.004	0.384				
5'	0.004	0.359	0.800	71.921	200.359	-0.029
SUM						
S1	0.004	0.383	0.000	100.000	263.671	-1.101
S2	0.004	0.384	0.000	100.000	262.994	-1.088
S3	0.004	0.378	0.000	100.000	267.555	-1.173
S4	0.004	0.378	0.000	100.000	267.616	-1.166
S5	0.004	0.380	0.000	100.000	265.836	-1.146
S6	0.004	0.381	0.000	100.000	265.191	-1.120
S7	0.005	0.382	0.000	100.000	264.993	-1.210
S8	0.004	0.381	0.000	100.000	265.526	-1.147

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	0.384	1.000	0.000

Air Zero Calibration, performed Thu Sep 13 06:22:58 2018:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset

3'	0.005	0.000	-0.000
5'	0.004	0.000	-0.000
SUM			
S1	0.005	0.000	-0.000
S2	0.004	0.000	-0.000
S3	0.004	0.000	0.000
S4	0.004	0.000	-0.000
S5	0.004	0.000	0.000
S6	0.004	0.000	0.000
S7	0.005	0.000	0.000
S8	0.005	0.000	-0.000

#### Temperature Calibration Report

Serial Number: FW1308-091  
Tool Model: 2750 RBT  
Performed: Sun Nov 12 13:50:54 2017

	Reference	Reading
Low Reference:	100.00 degF	104.72 degF
High Reference:	350.00 degF	392.24 degF
Gain:	0.87	
Offset:	8.94	
Delta Spacing	1	



<b>Company</b>	Kerr-McGee Oil & Gas Onshore, L.P.
<b>Well</b>	English Farms 8-12HZ
<b>Field</b>	Wattenberg
<b>County</b>	Weld
<b>State</b>	Colorado