



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

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

Well MAB 15-3HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-49241

SEC 15 TWP 1N RGE 66W

Permanent Datum Ground Level Elevation 5113'  
Log Measured From Ground Level 0 FT  
Drilling Measured From Kelly Bushing

Other Services  
GR/JB  
RBP  
RBL 0 PSI  
Elevation  
K.B. 5130'  
D.F. ---  
G.L. 5113'

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well MAB 15-3HZ  
Field Wattenberg  
County Weld  
State Colorado

Date	20-JUN-2019	Four		
Run Number		17990 FT		
Depth Driller		6685 FT		
Depth Logger		6670 FT		
Bottom Logged Interval		Surface		
Top Log Interval		7.875'		
Open Hole Size		Water		
Type Fluid		8.34 lb/gal		
Density / Viscosity		214°F		
Max. Recorded Temp.		See Log		
Estimated Cement Top		ROA		
Time Well Ready		10:30		
Time Logger on Bottom		HD-0363		
Equipment Number		Platteville, CO		
Location		C. Sisneros		
Recorded By	John McCarthy			
Witnessed By				
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 6643 FT  
Adjusted +10 FT to correlate with Marker Joint  
Gauge Ring/Junk Basket ran to 7785 FT  
Retrievable Bridge Plug set at 6690 FT  
Log ran 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!!

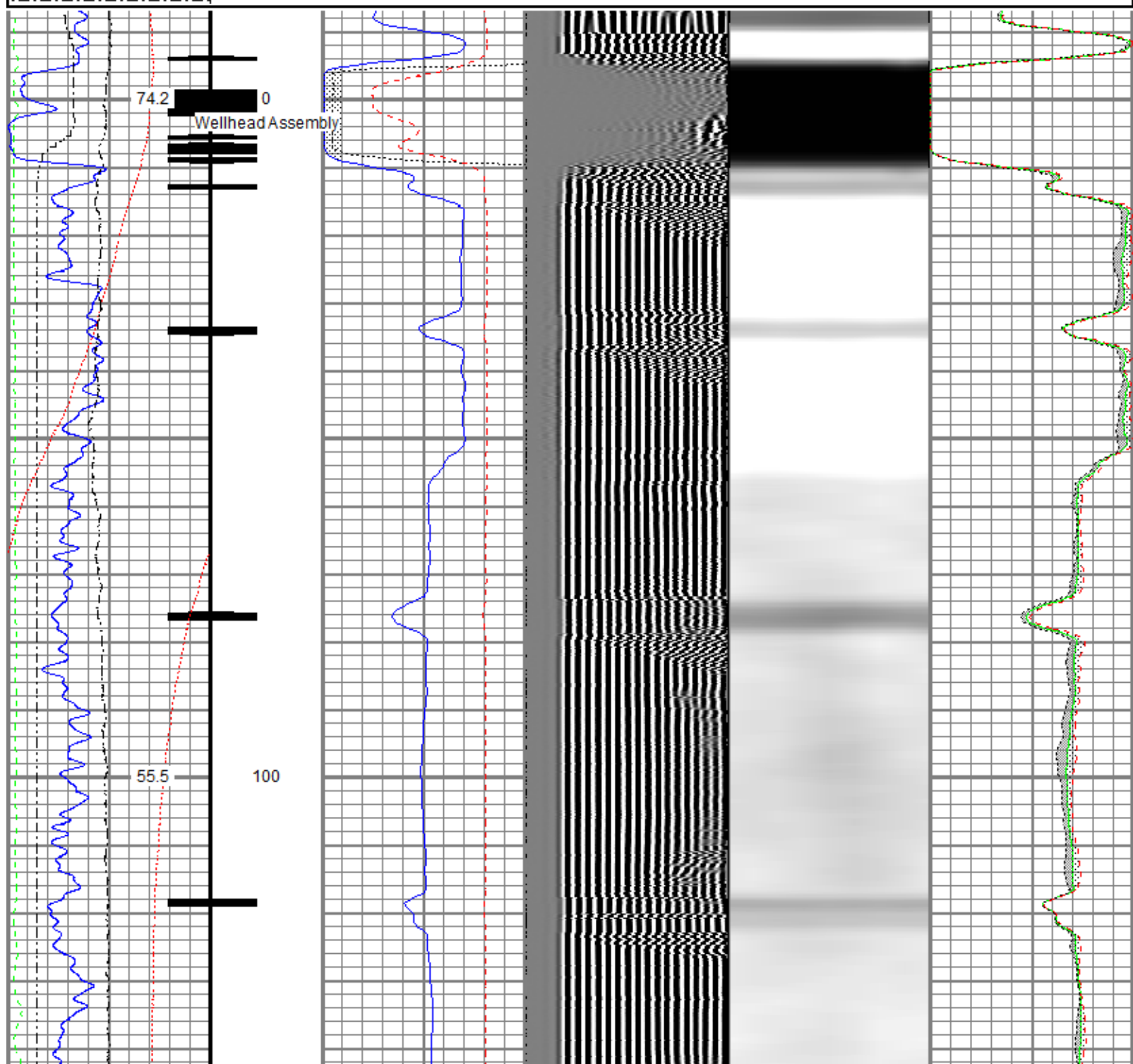
Main Pass

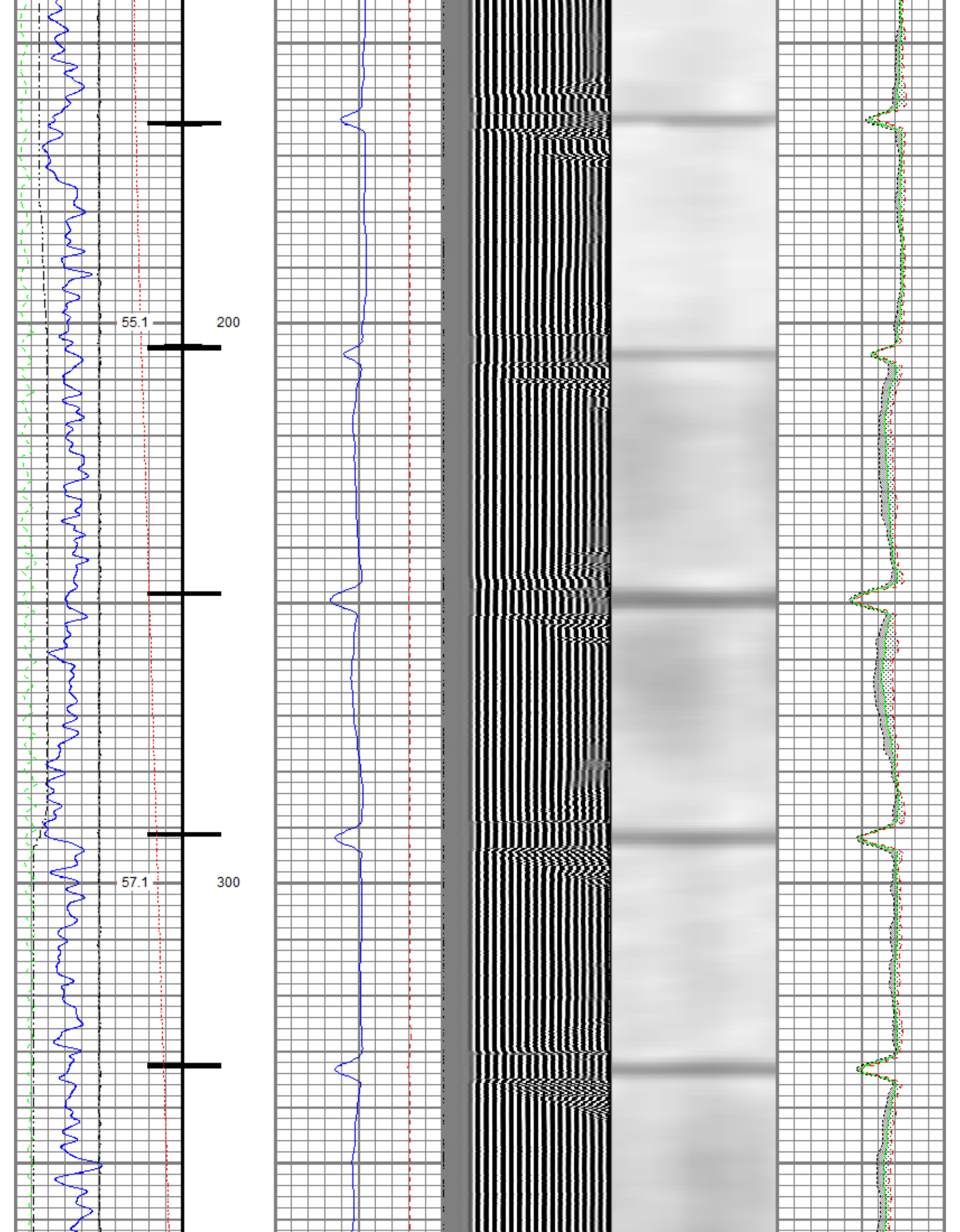


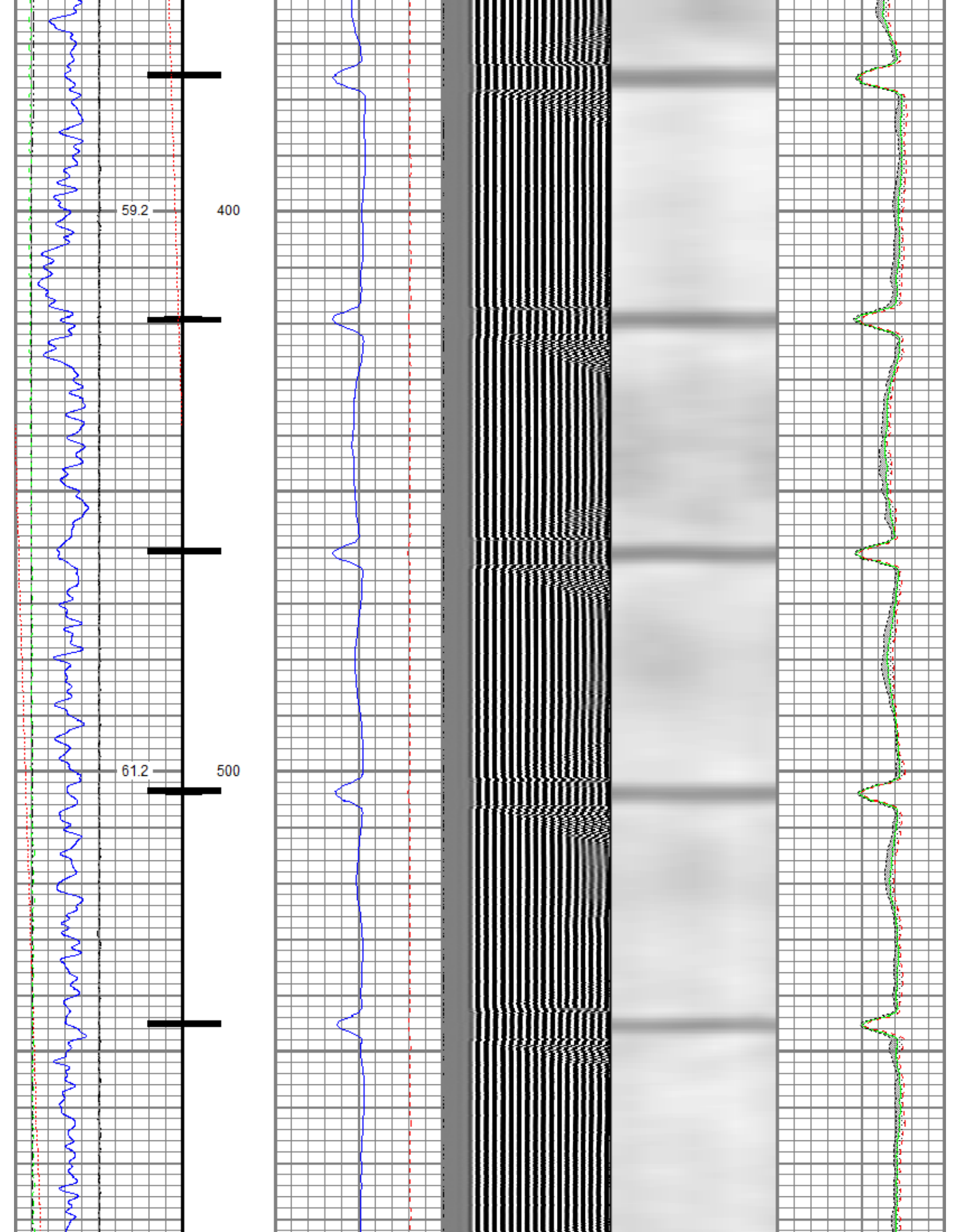
Recorded With 2800 PSI Surface Induced Pressure

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 Presentation Format ros\_radrii  
 Dataset Creation Fri Jun 21 14:12:57 2019  
 Charted by Depth in Feet scaled 1:240

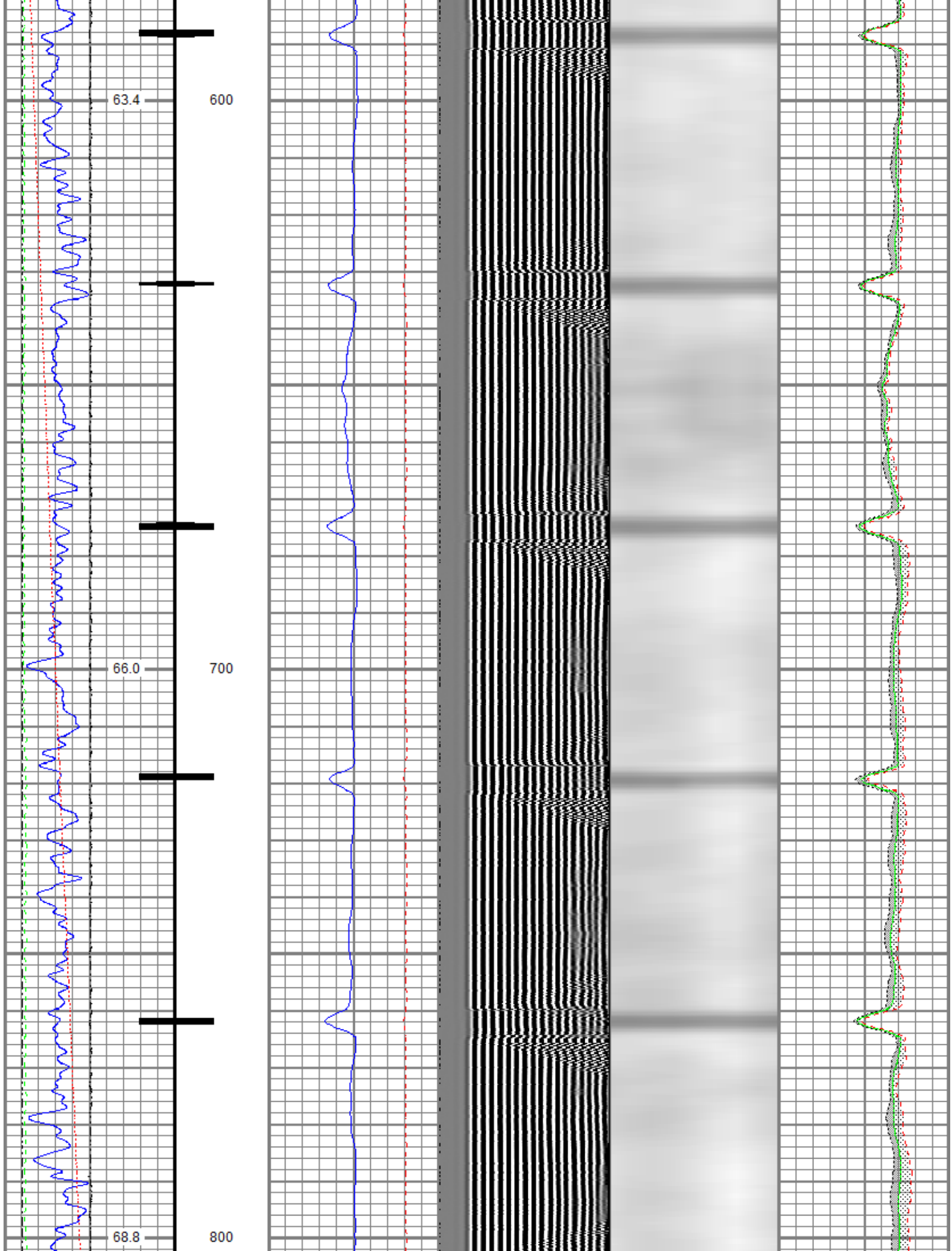
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
(ft/min) 150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

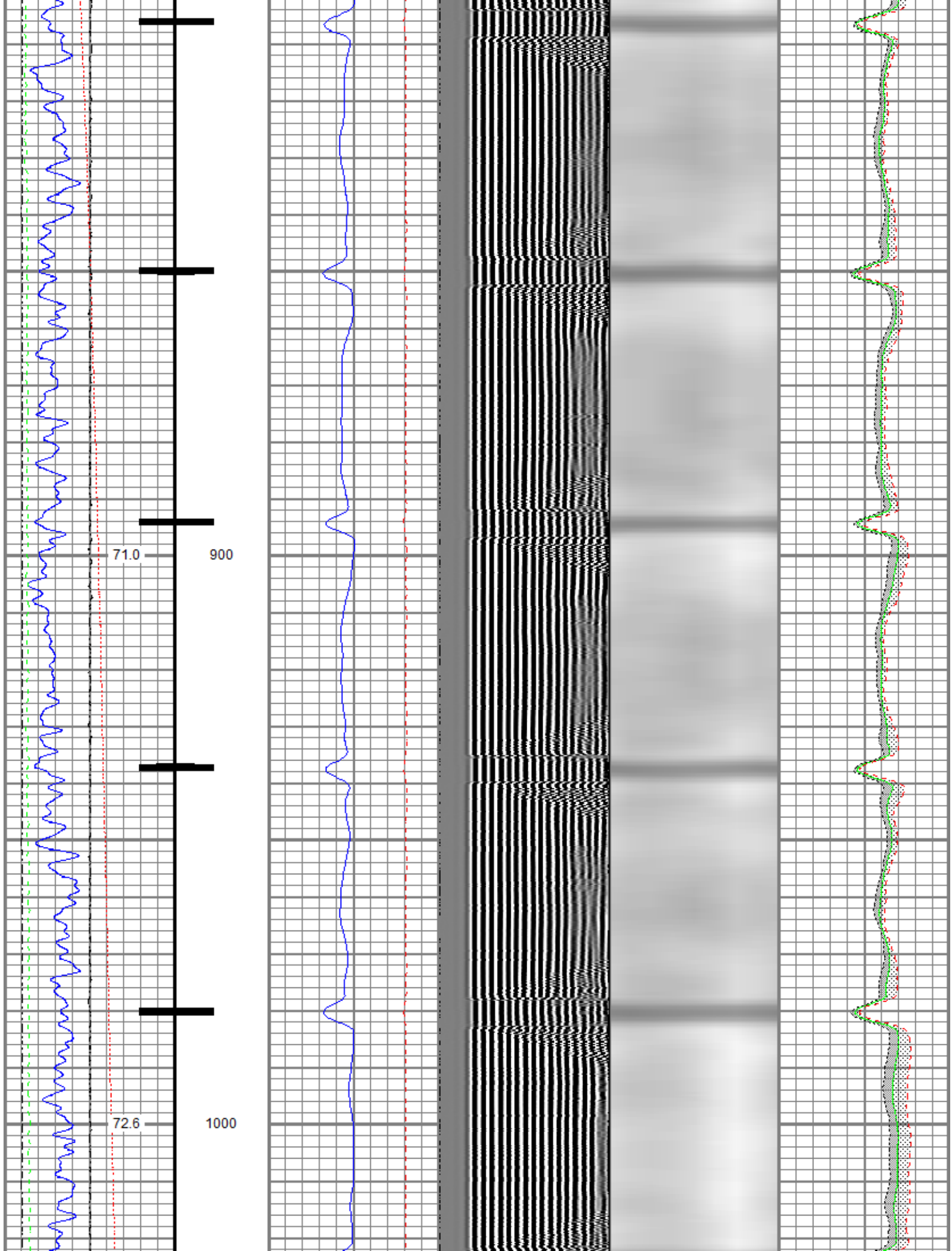


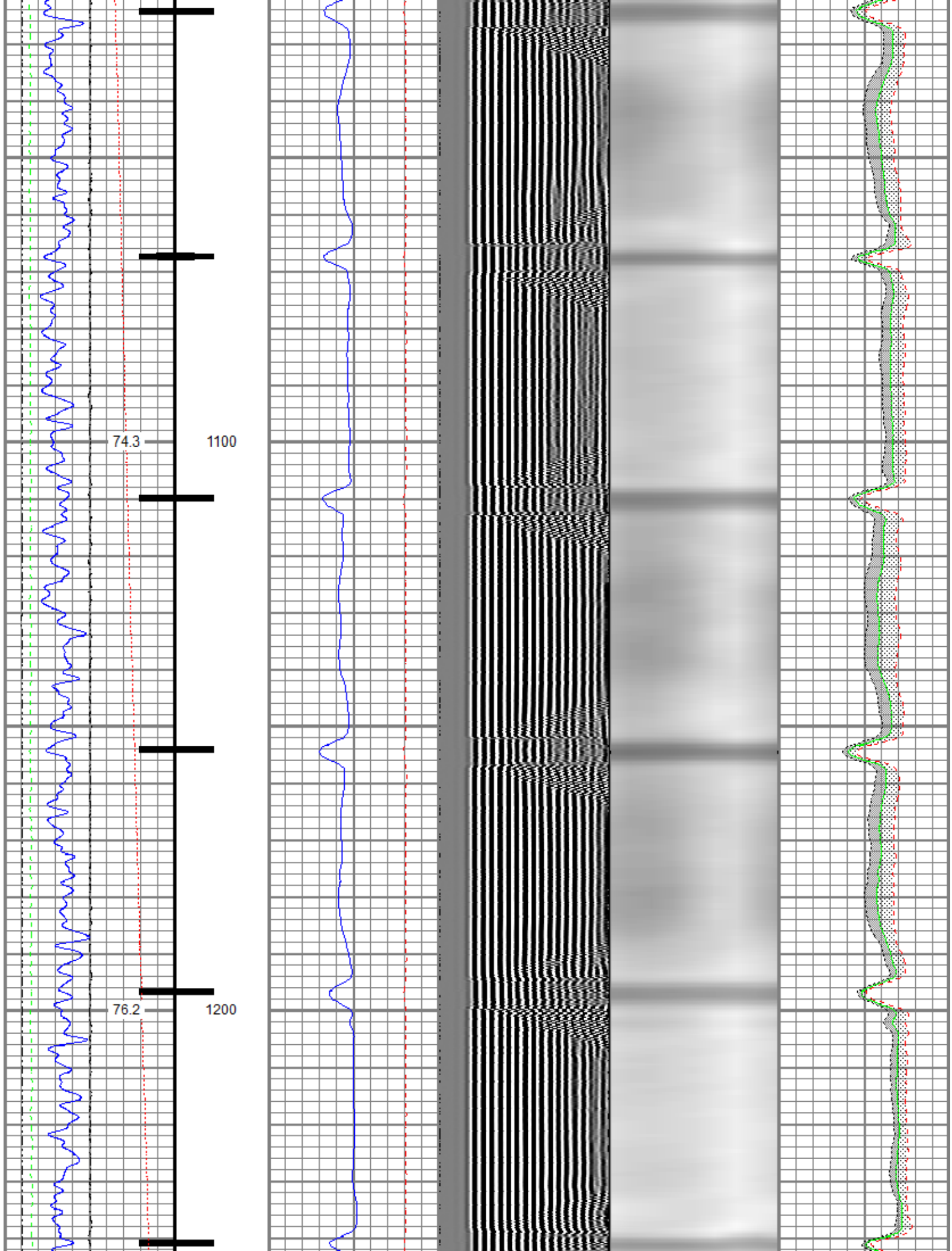




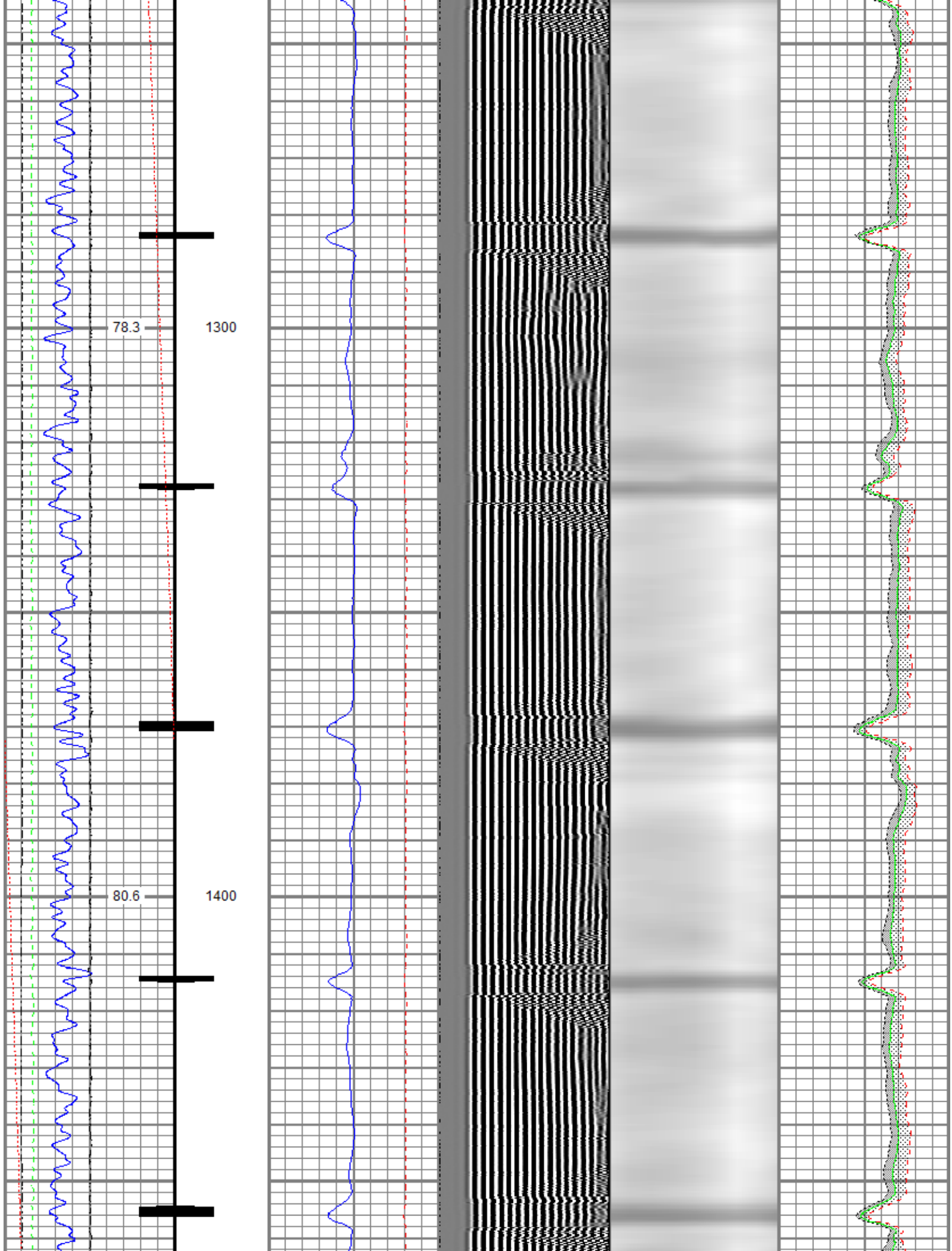




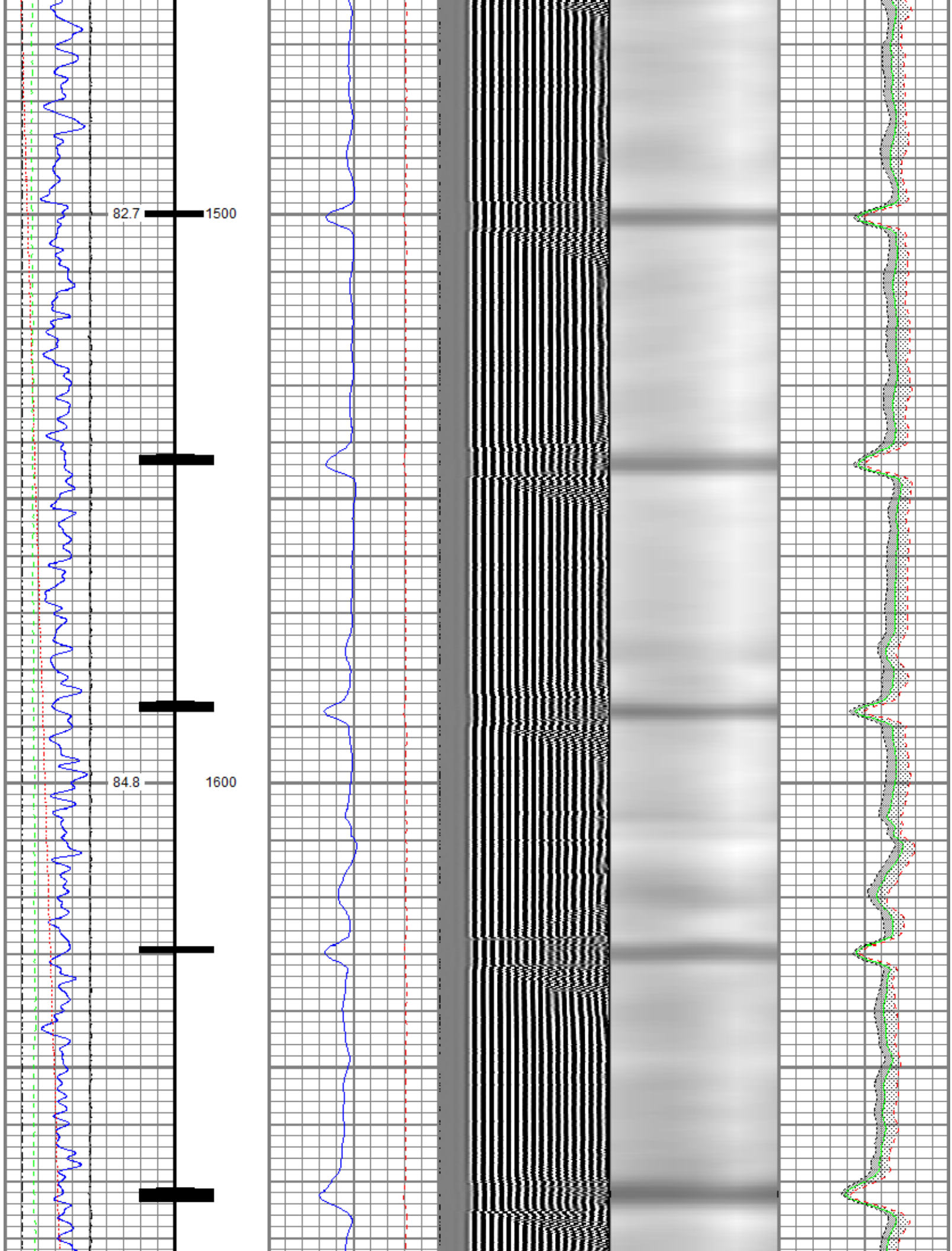


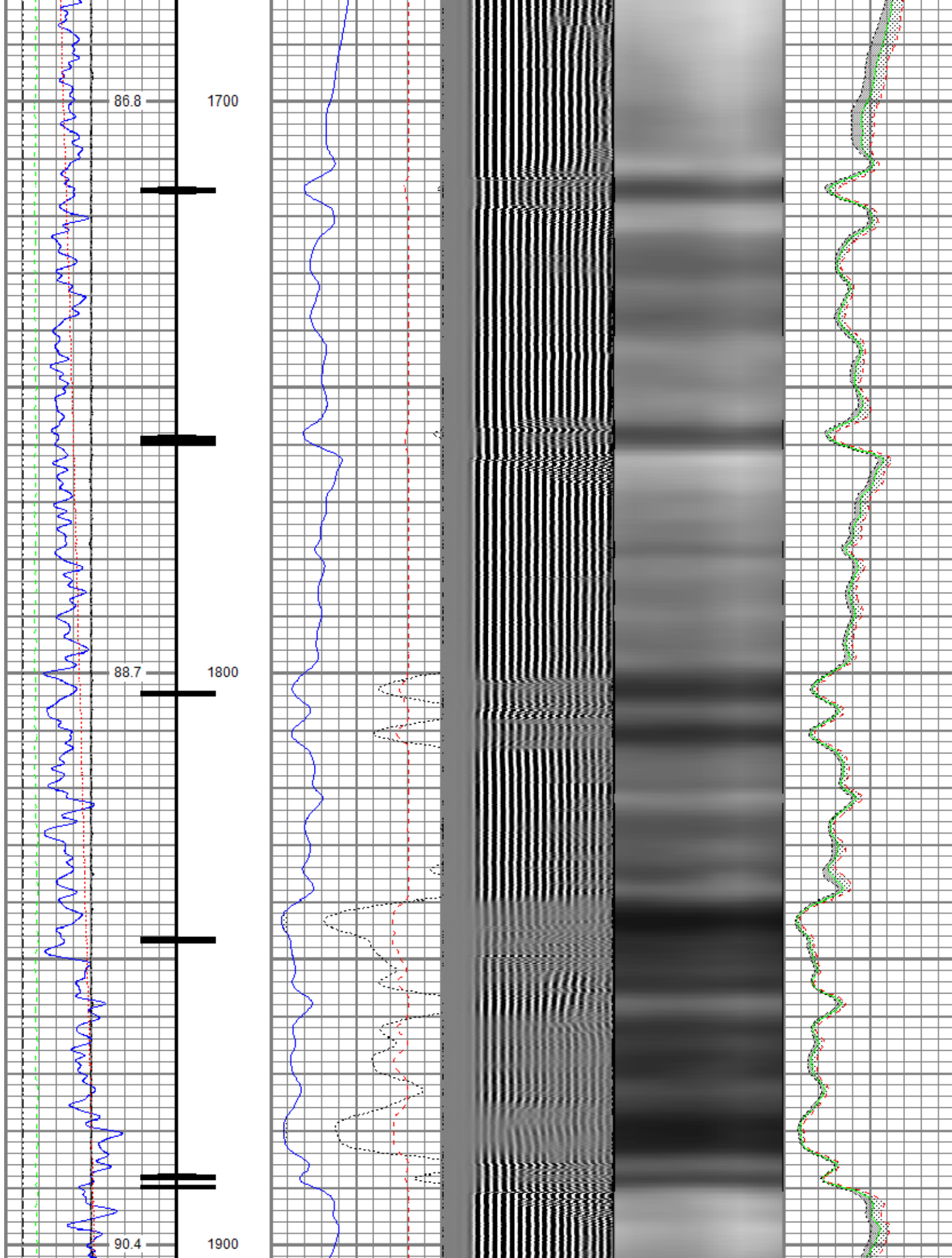


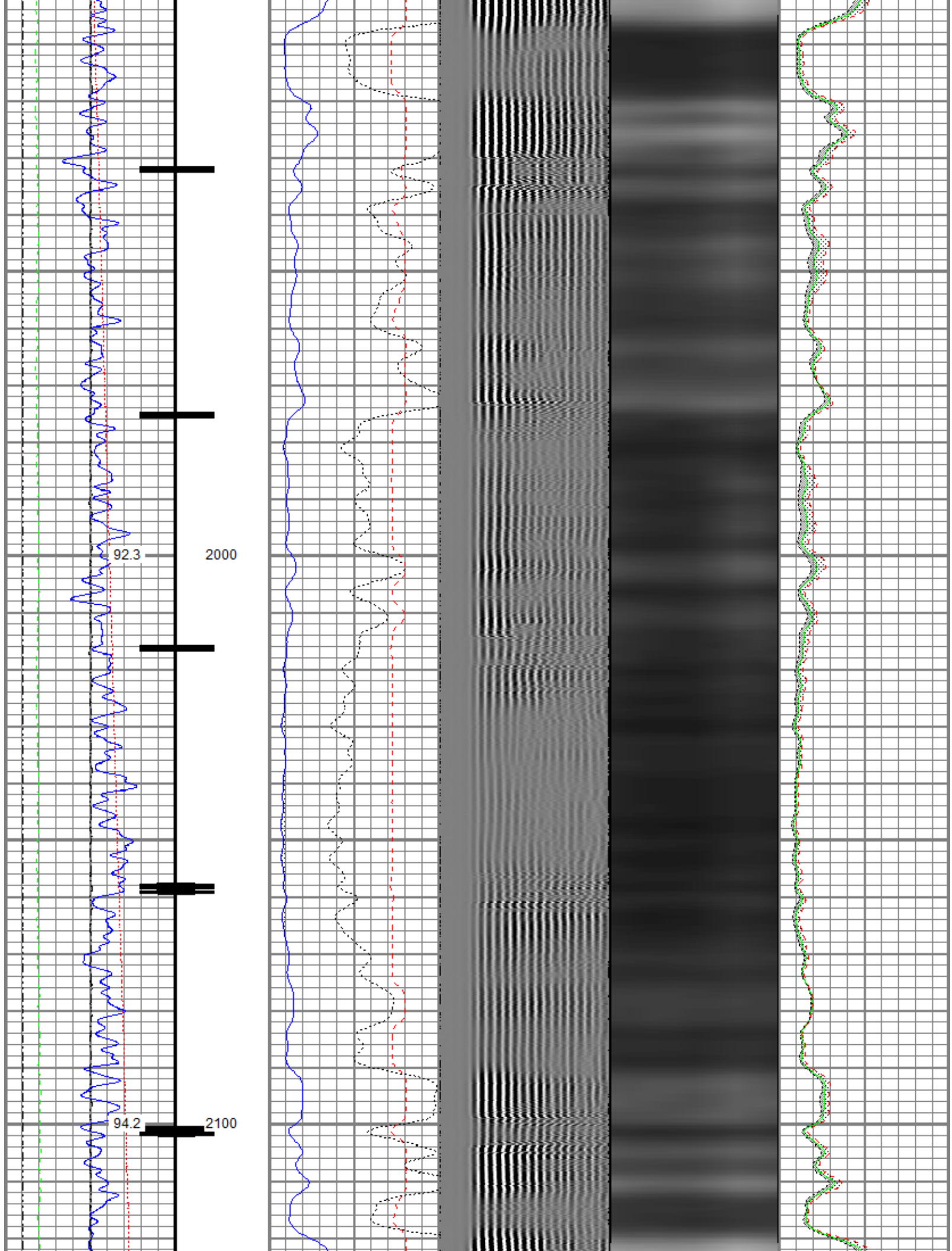




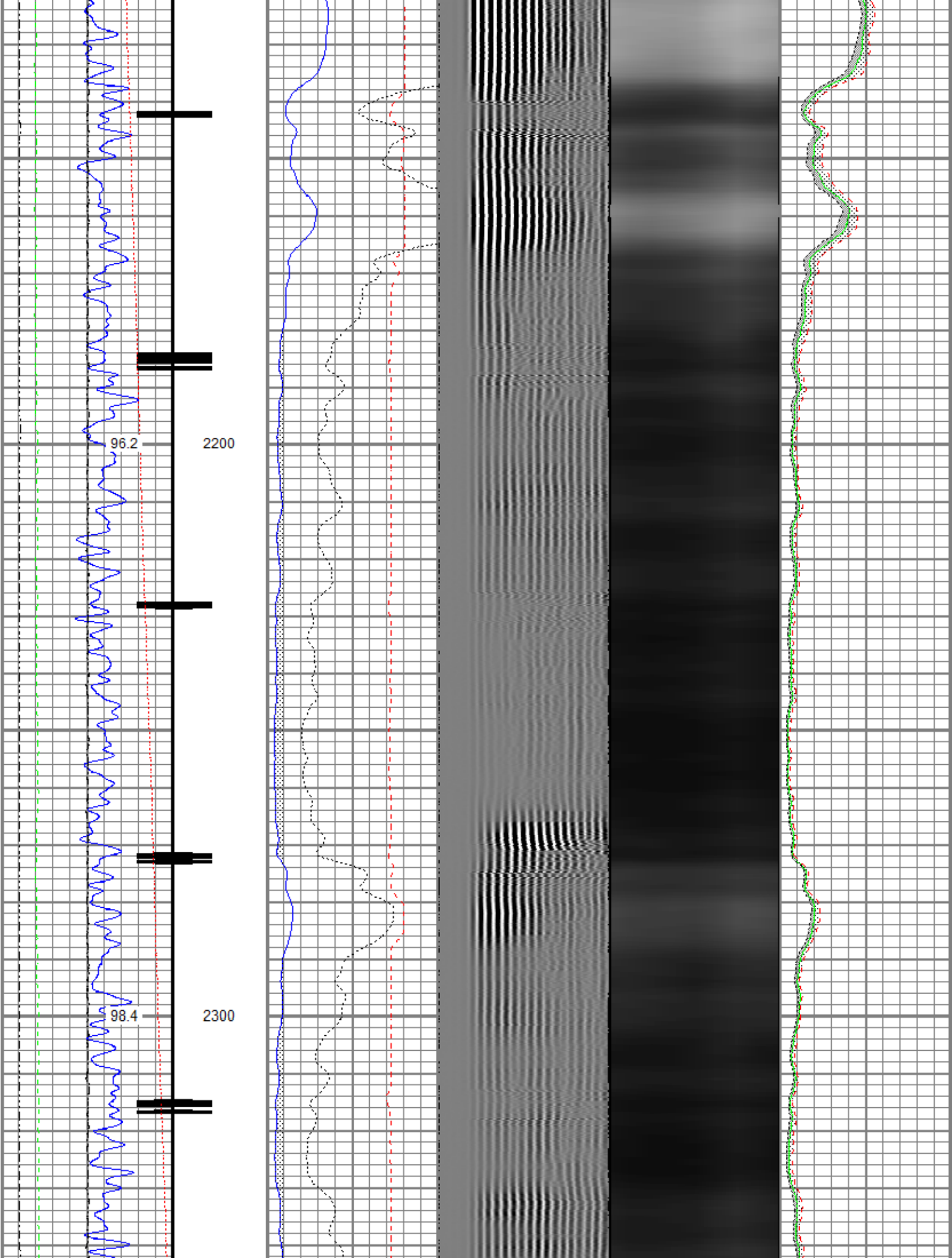




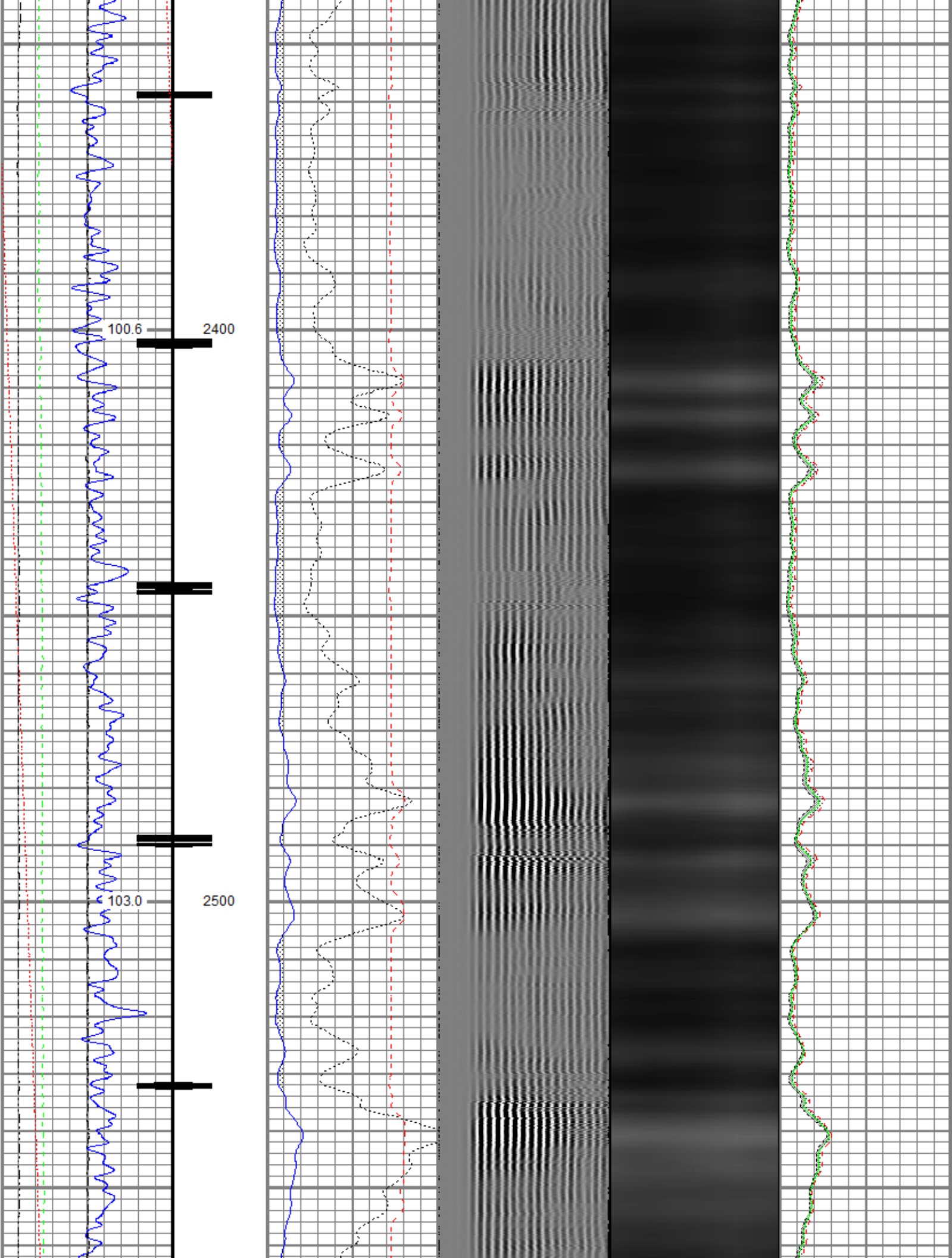


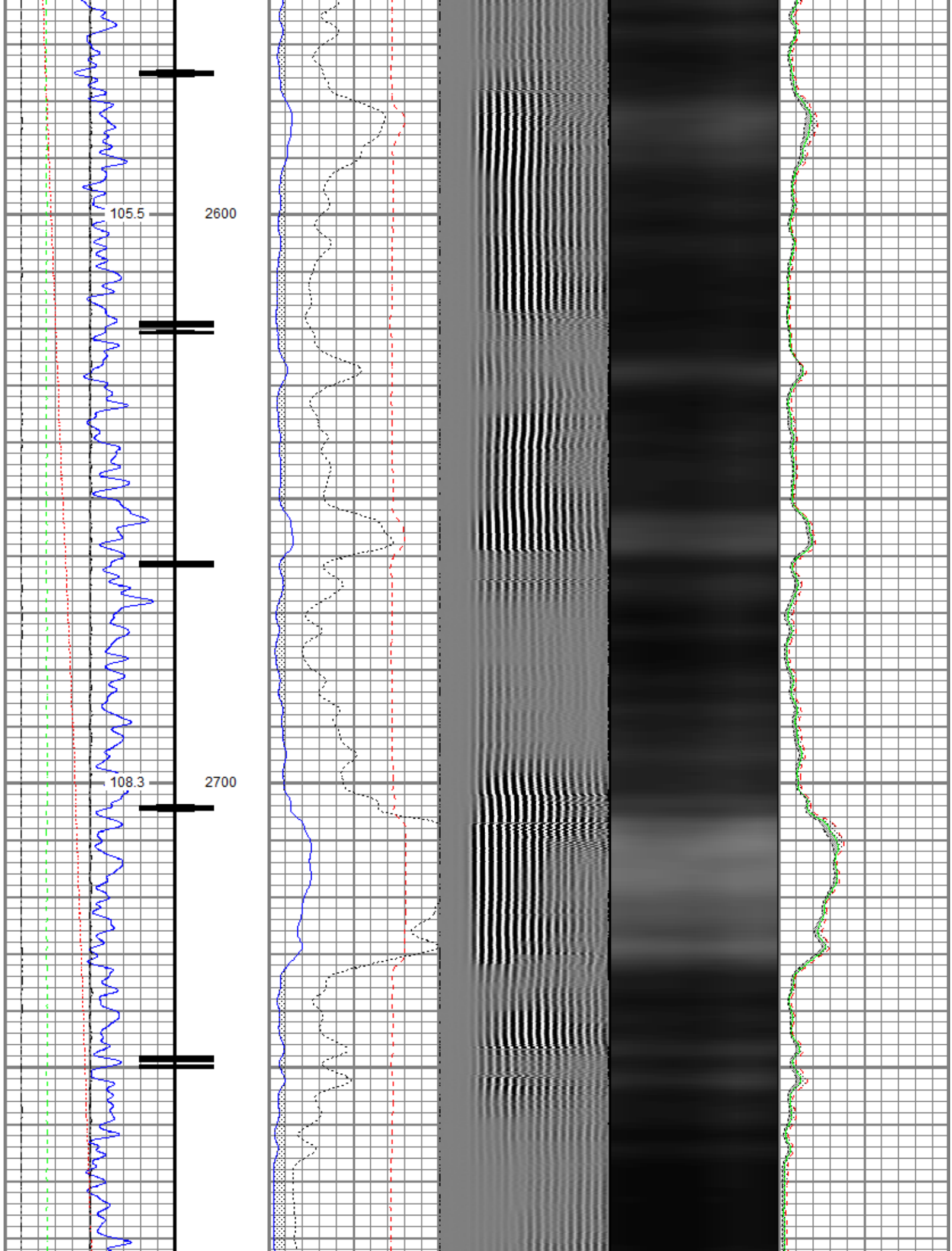


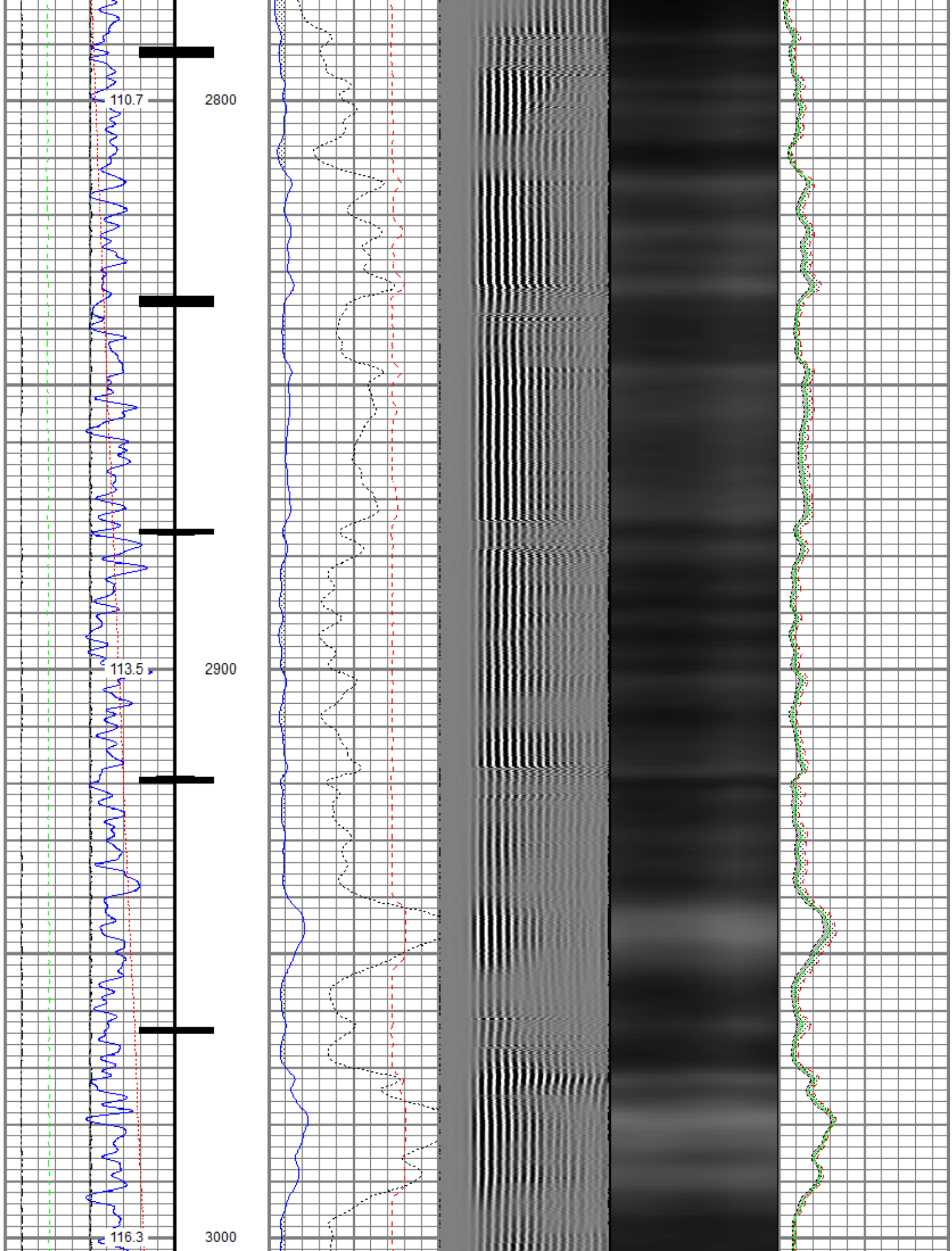




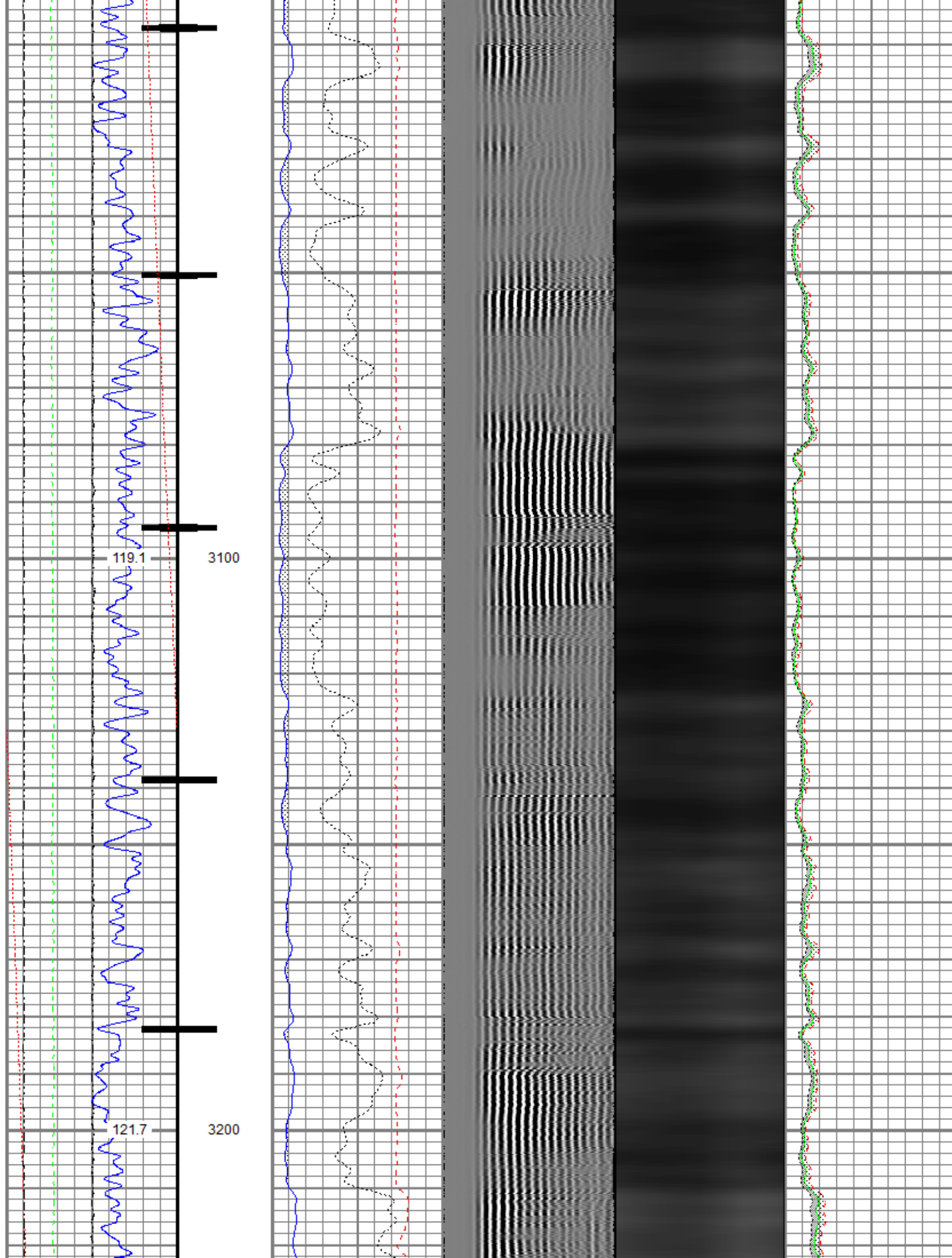




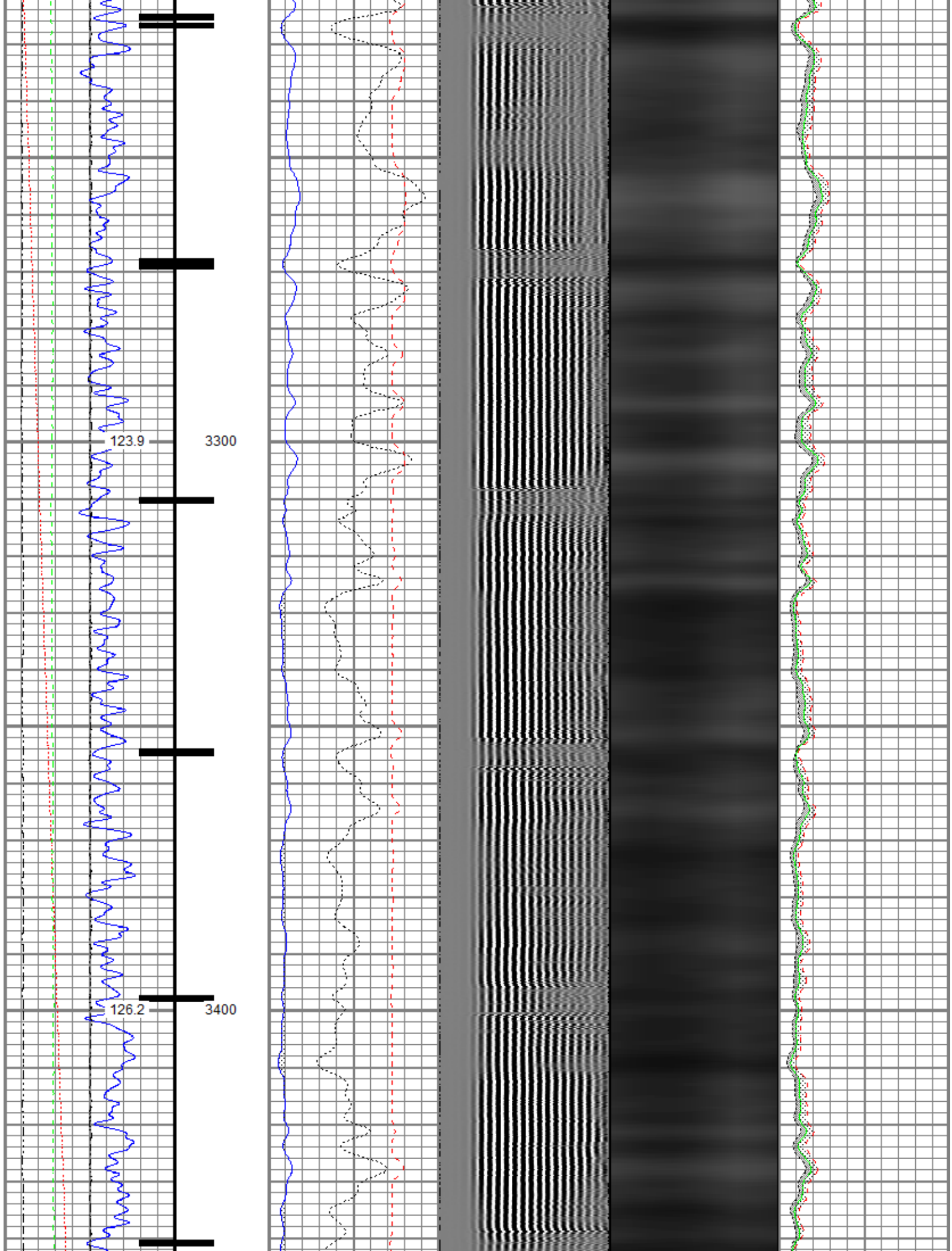


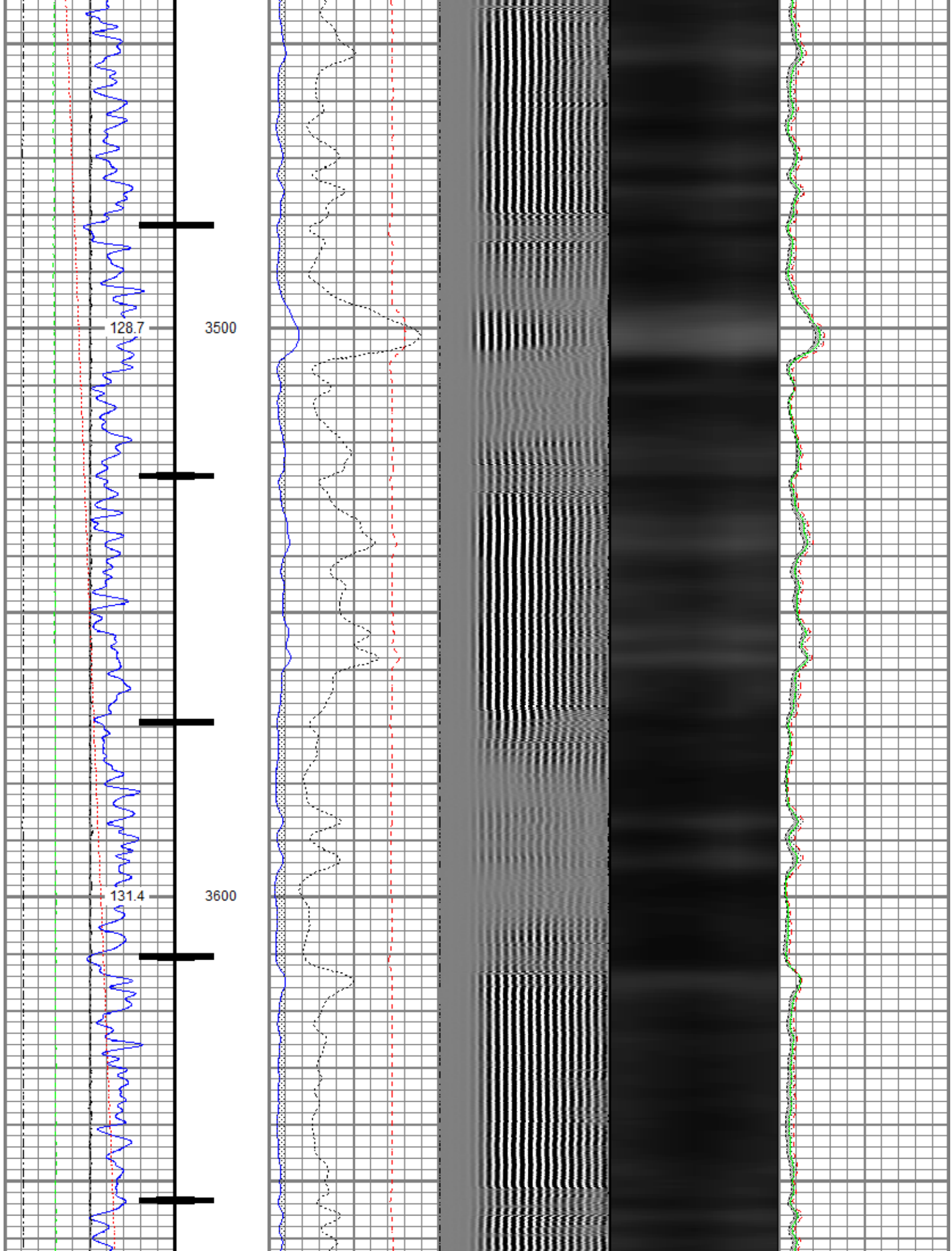


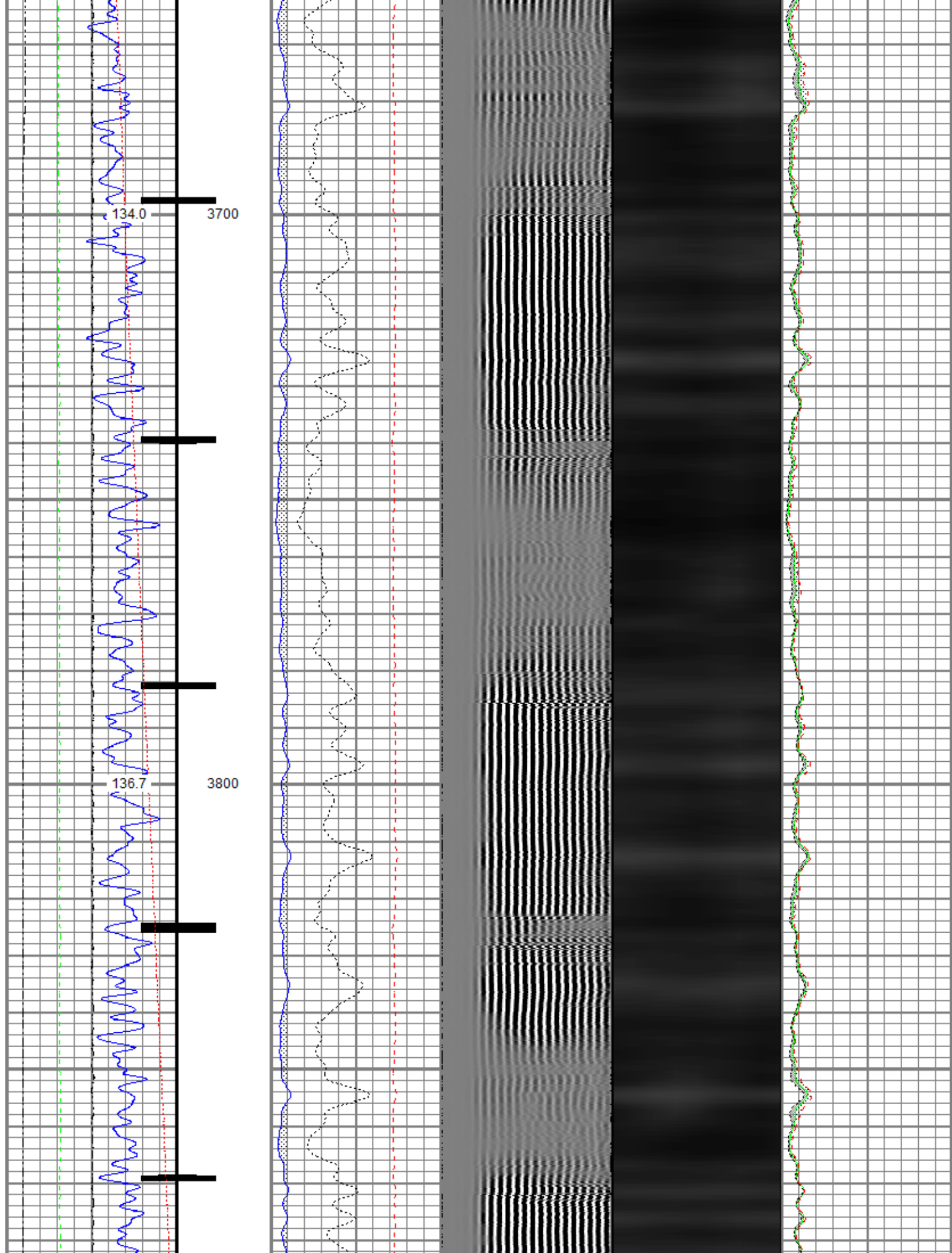




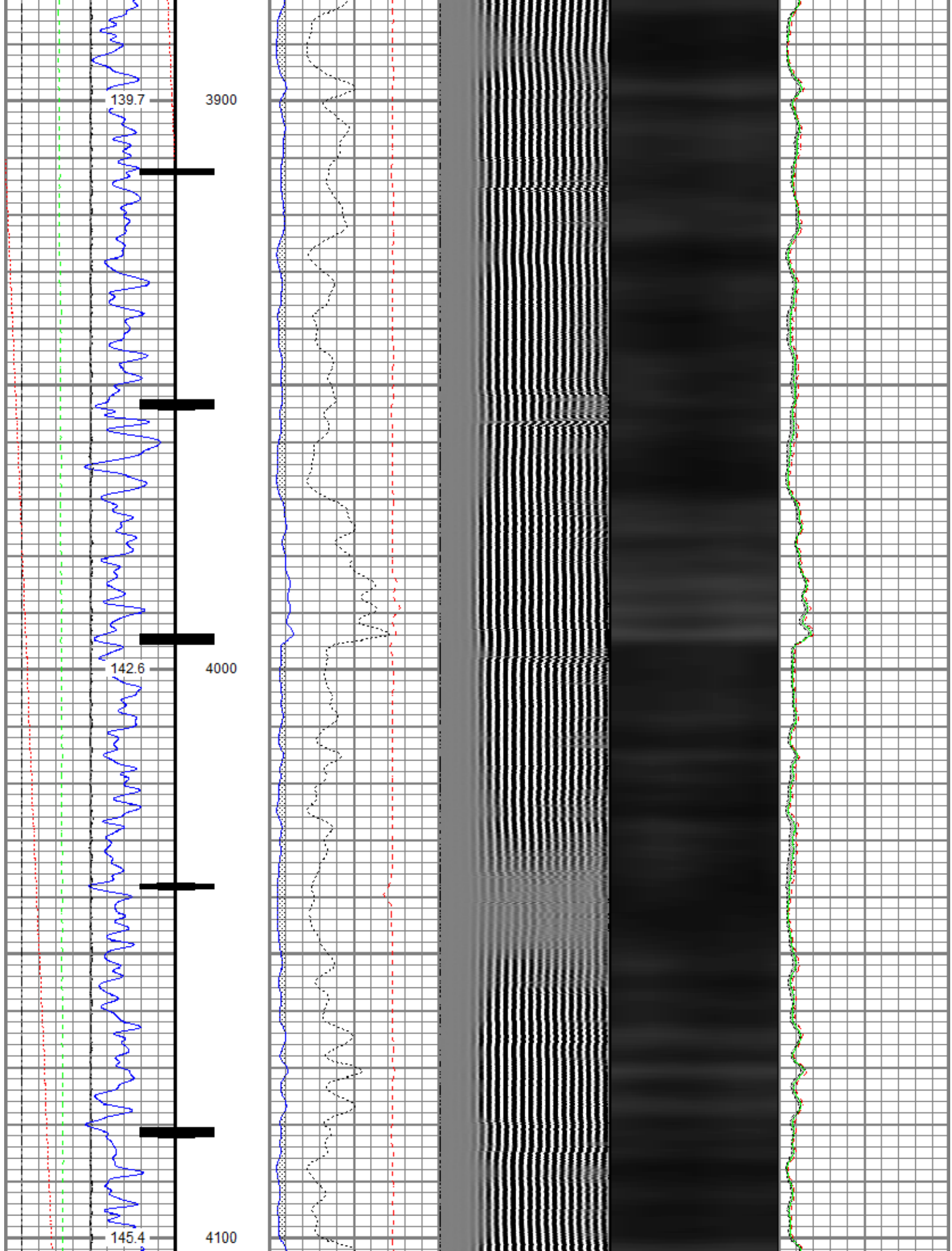




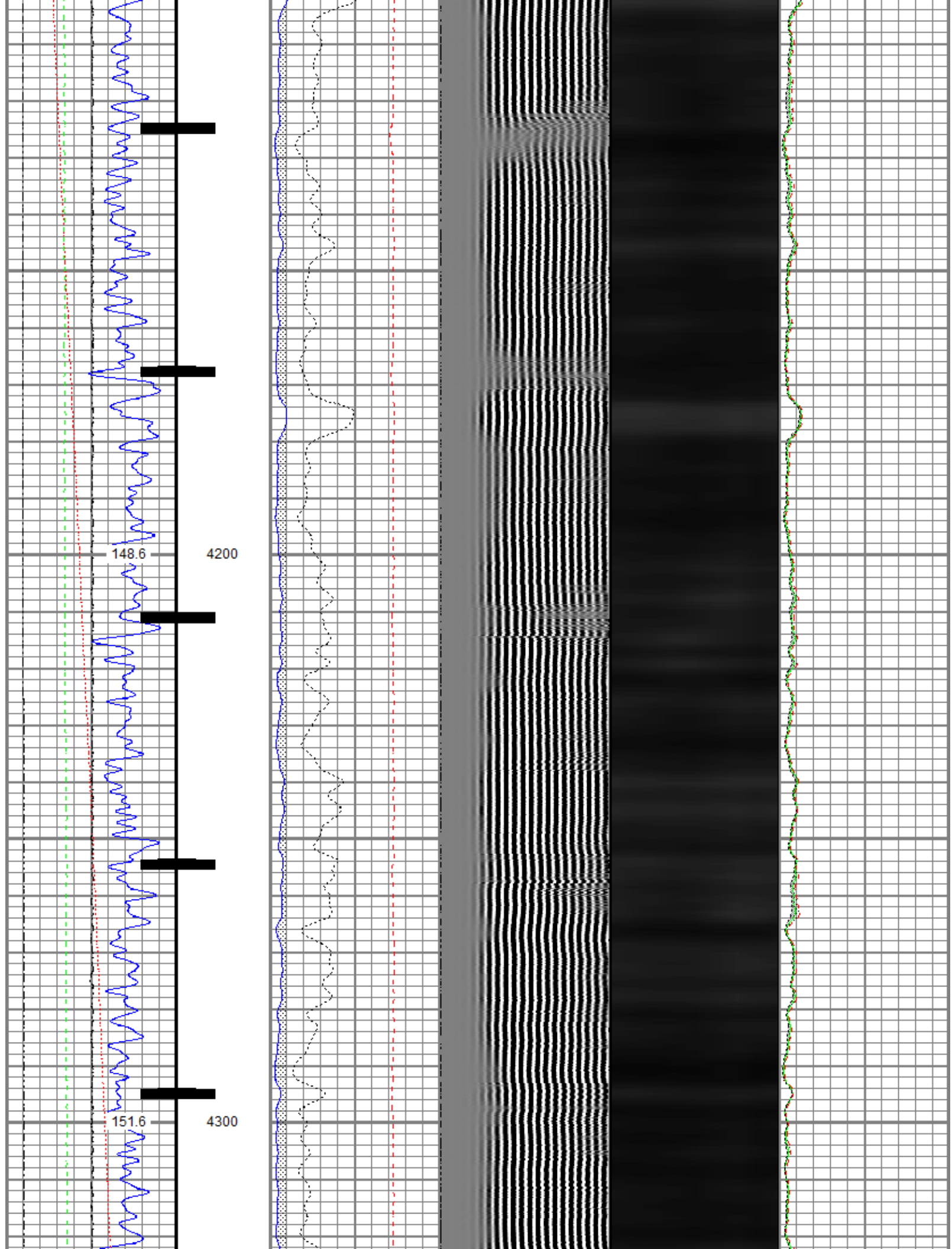


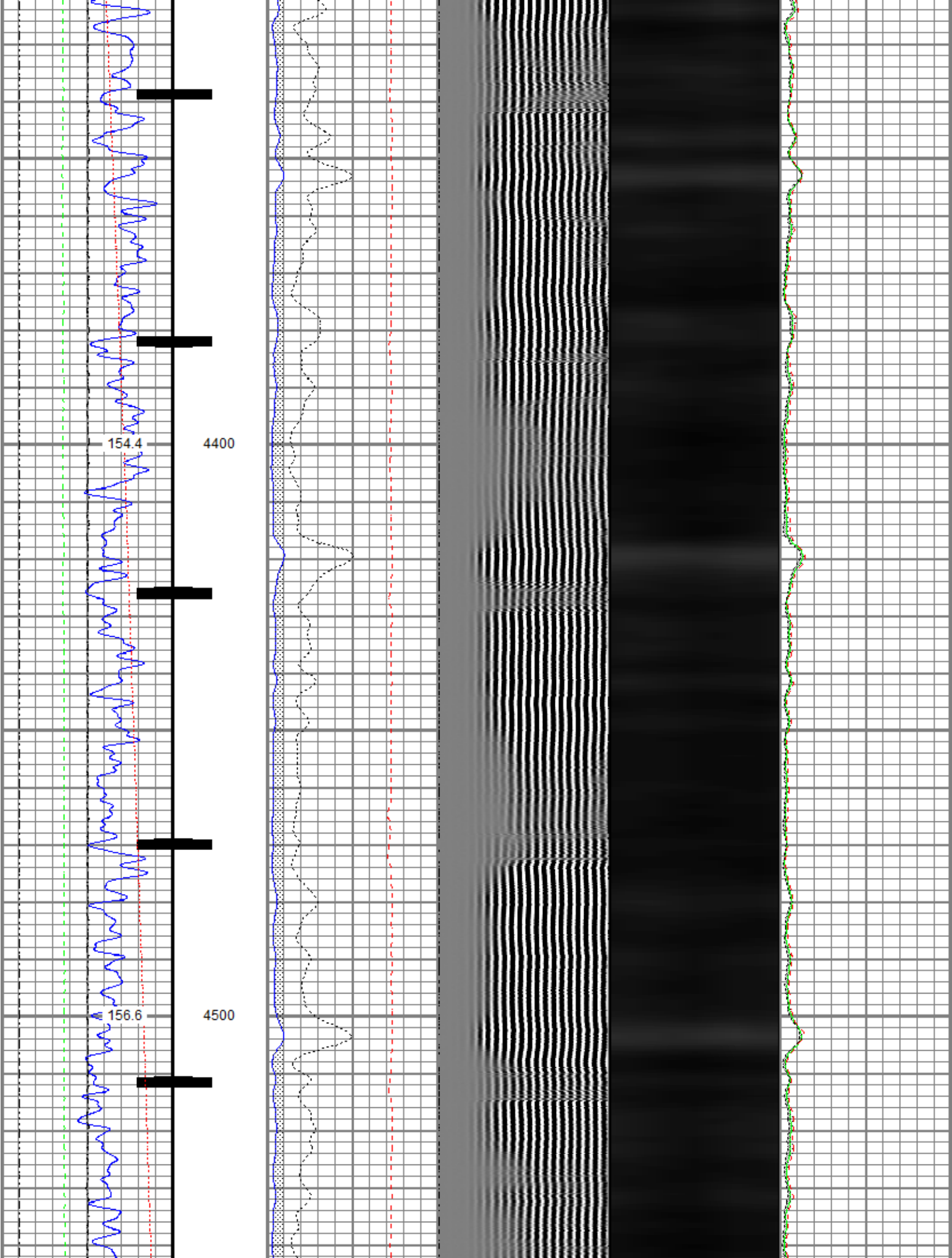


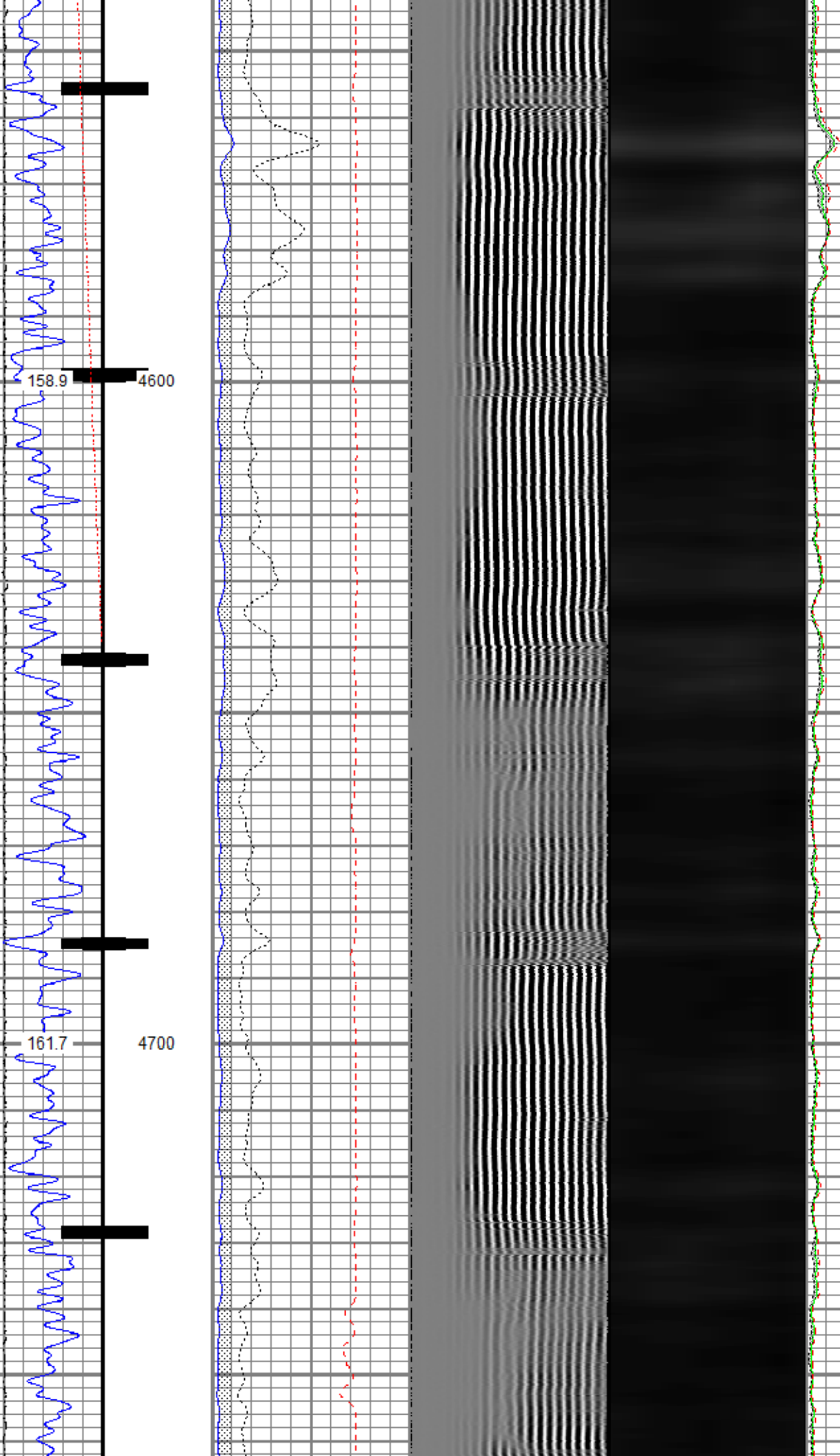




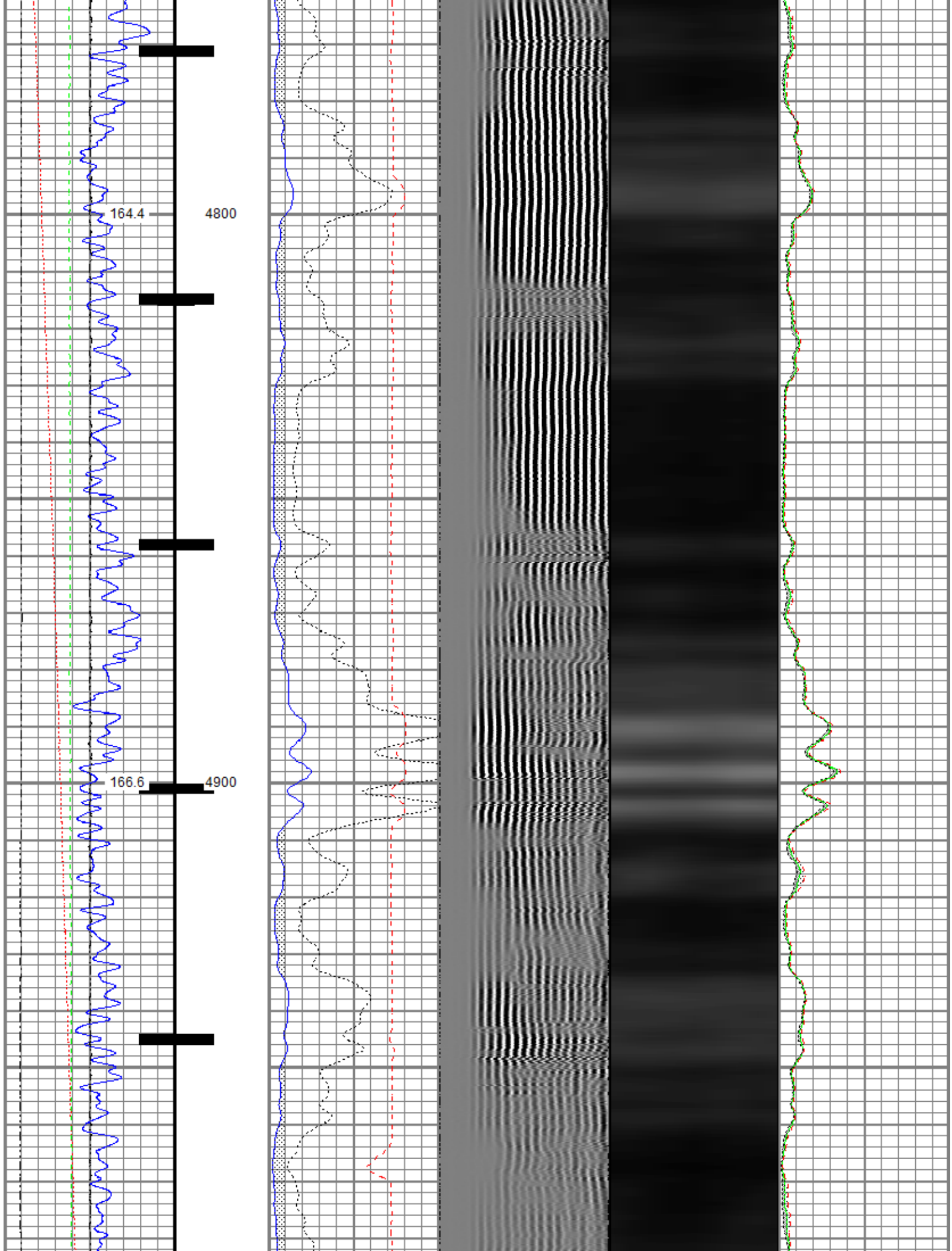


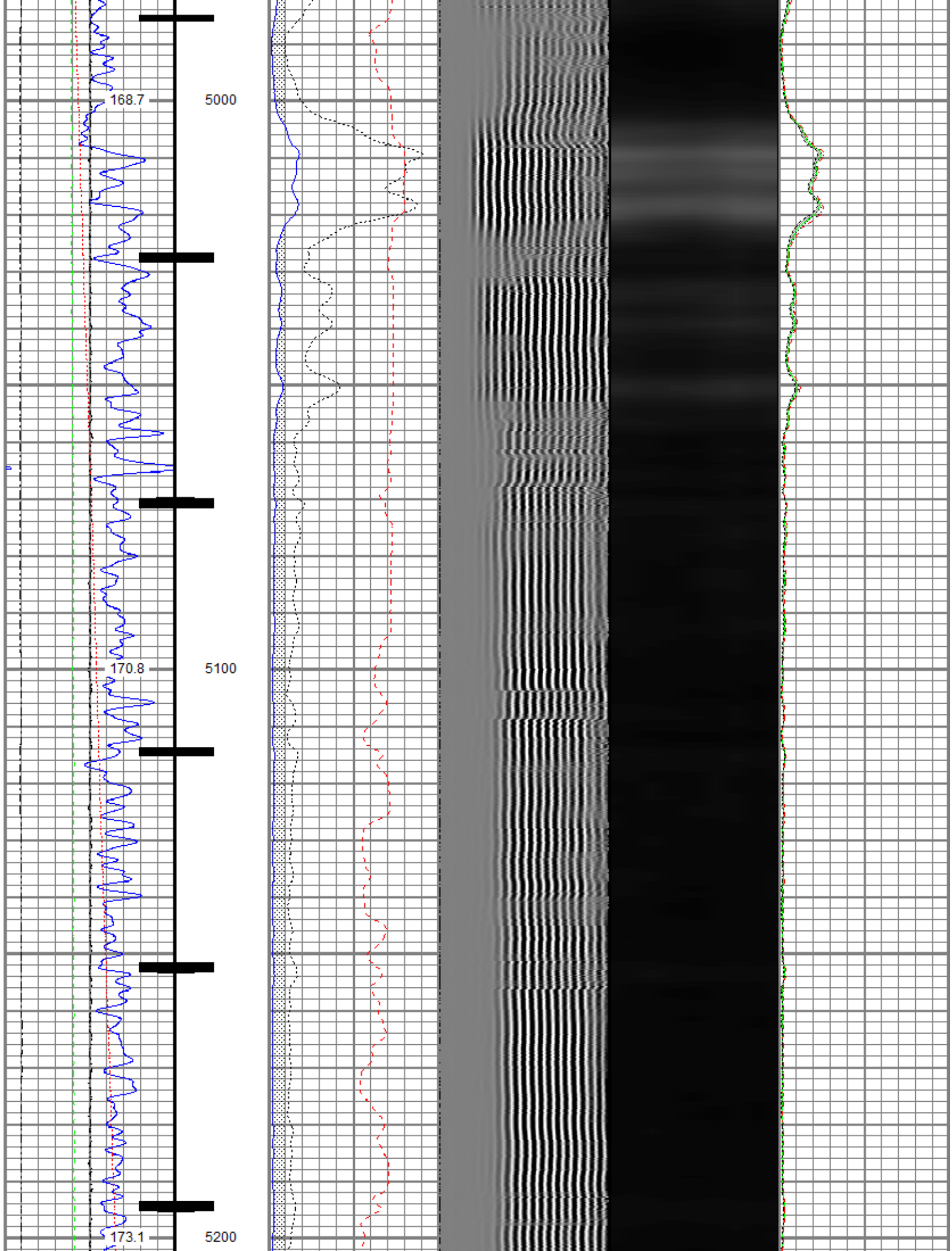


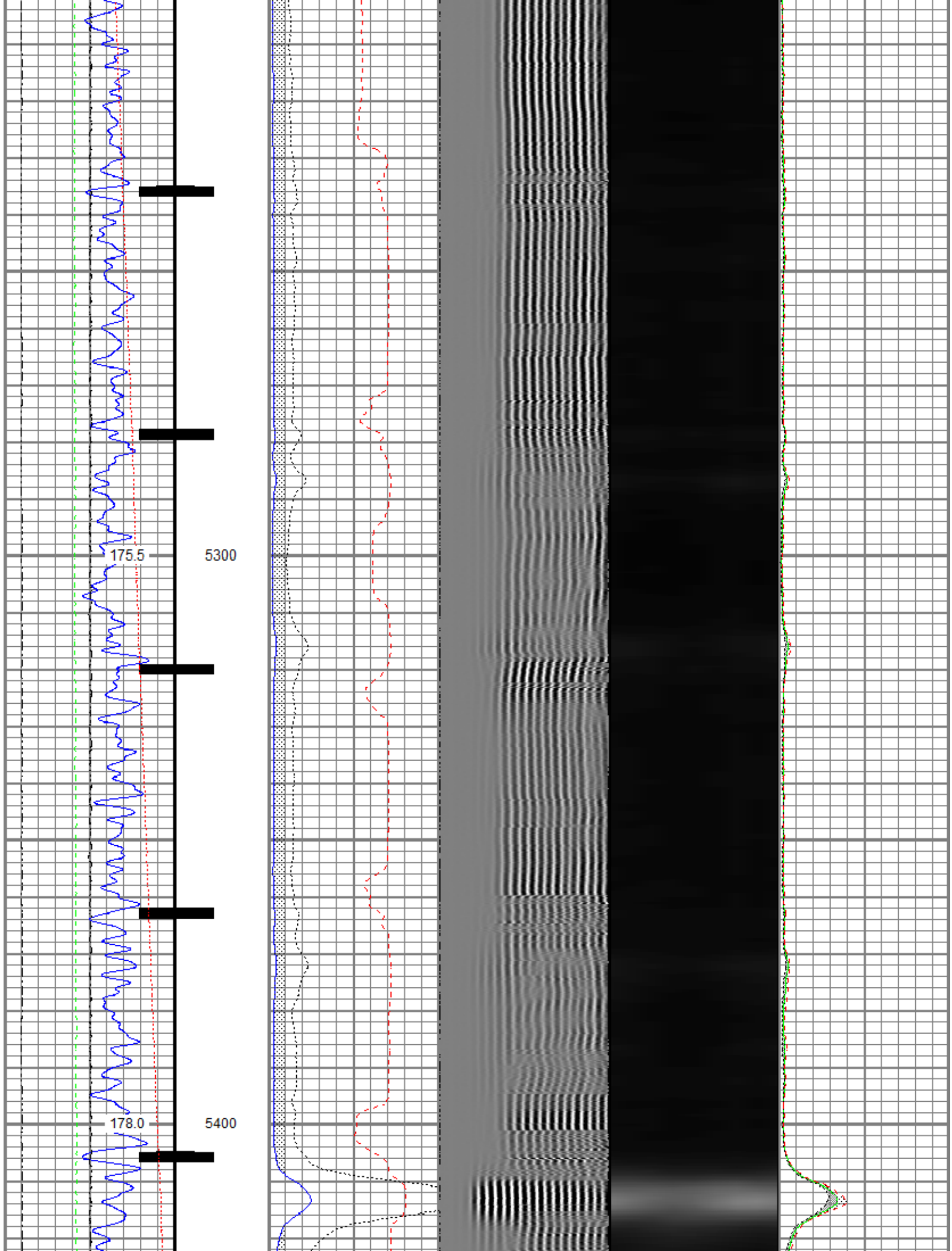




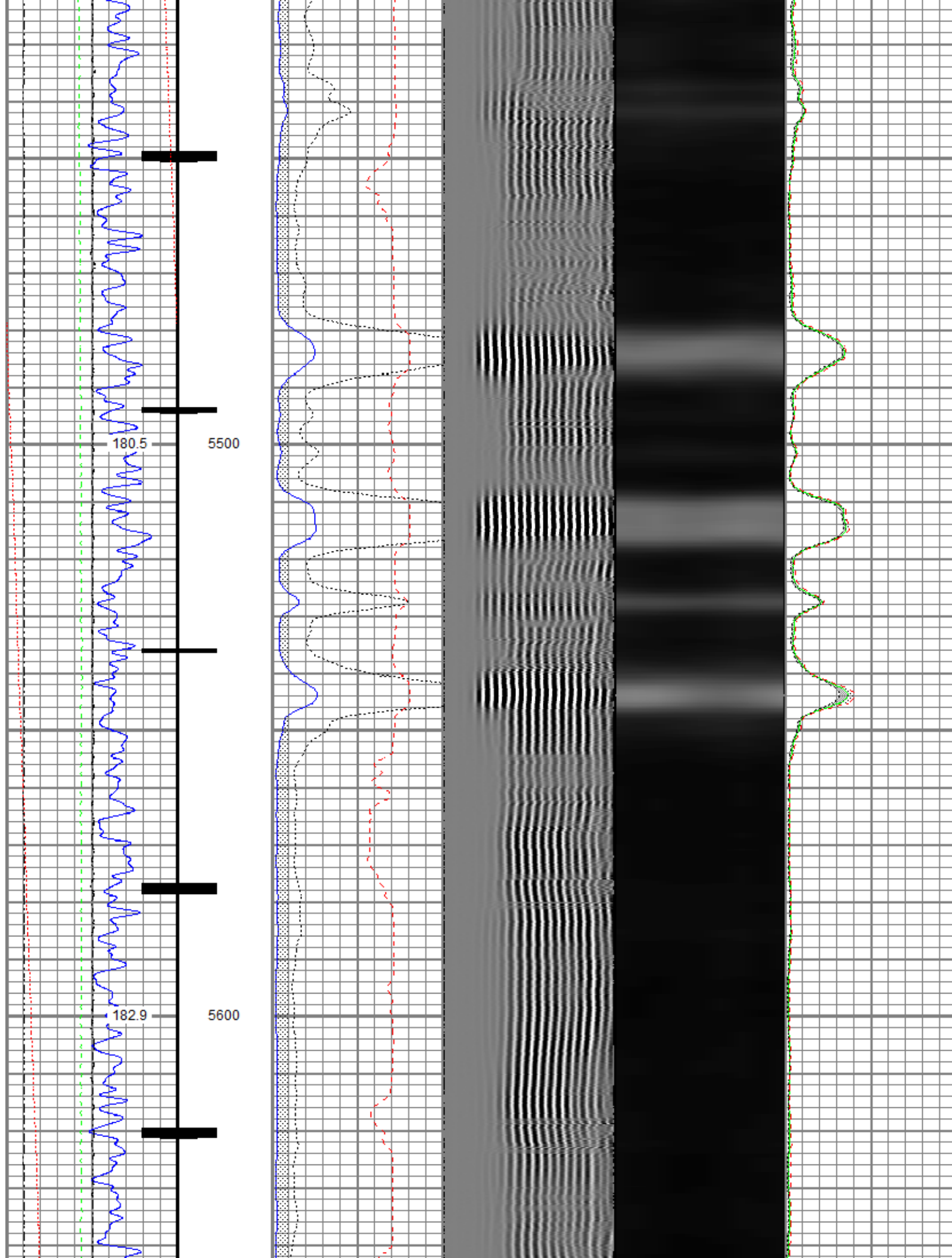


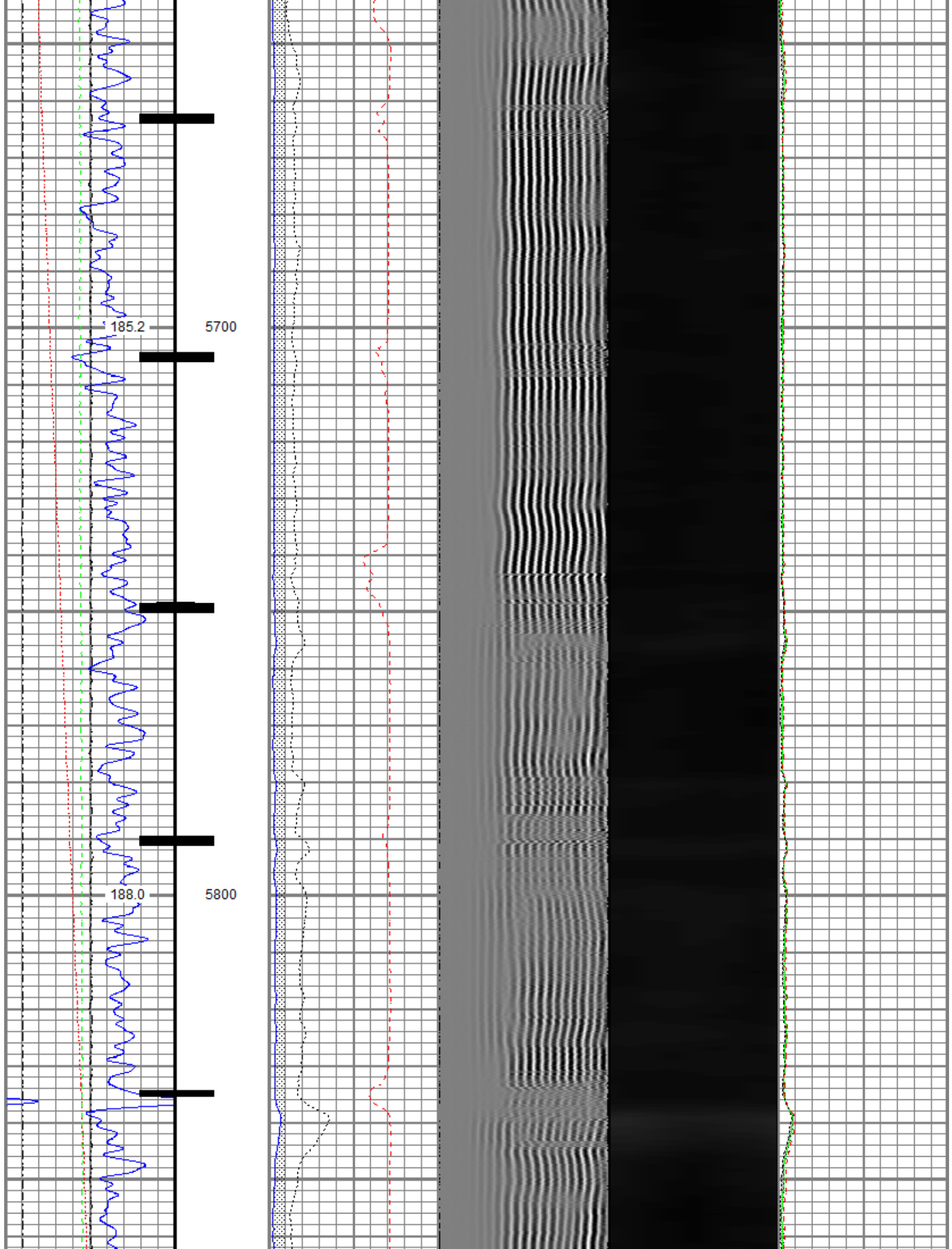


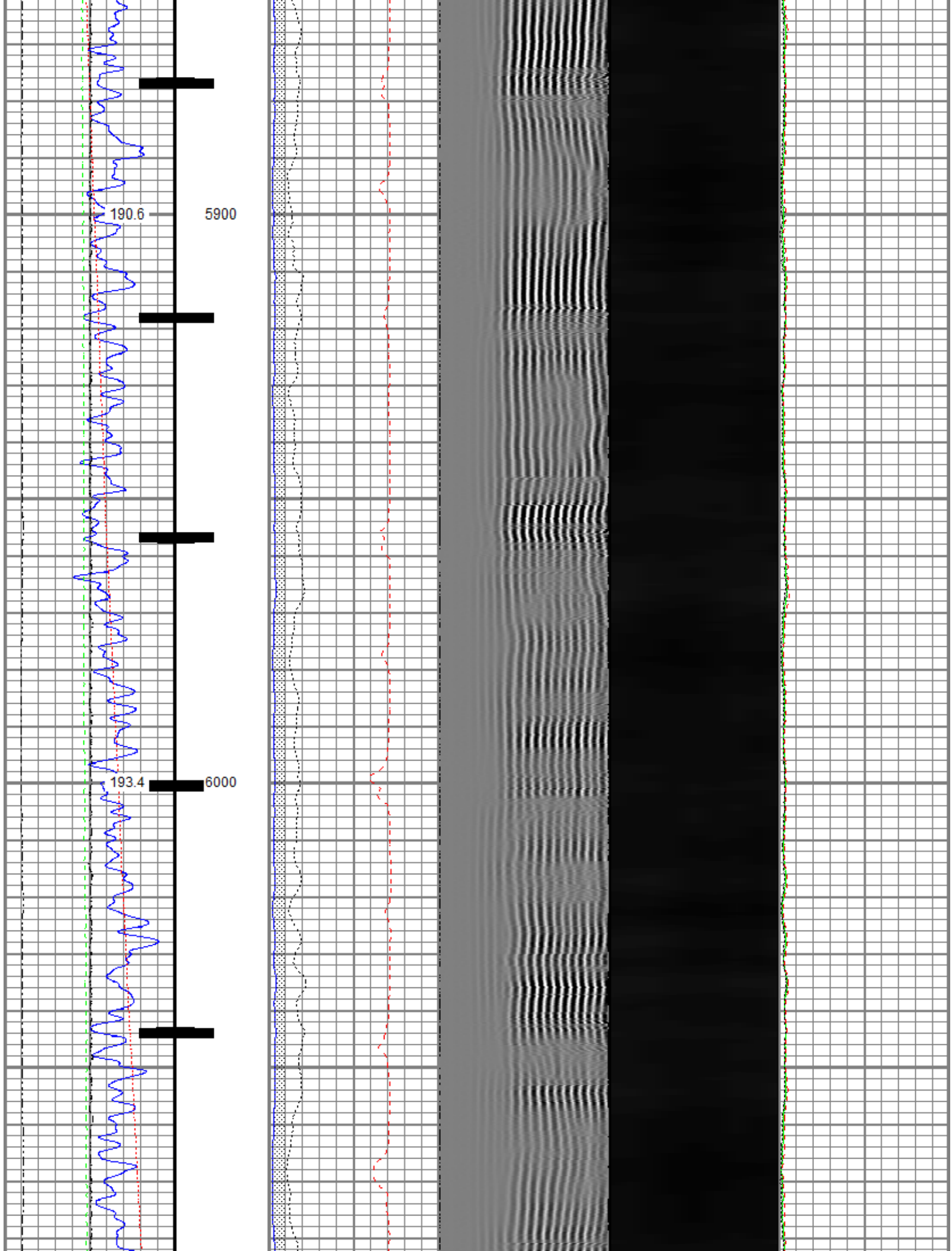




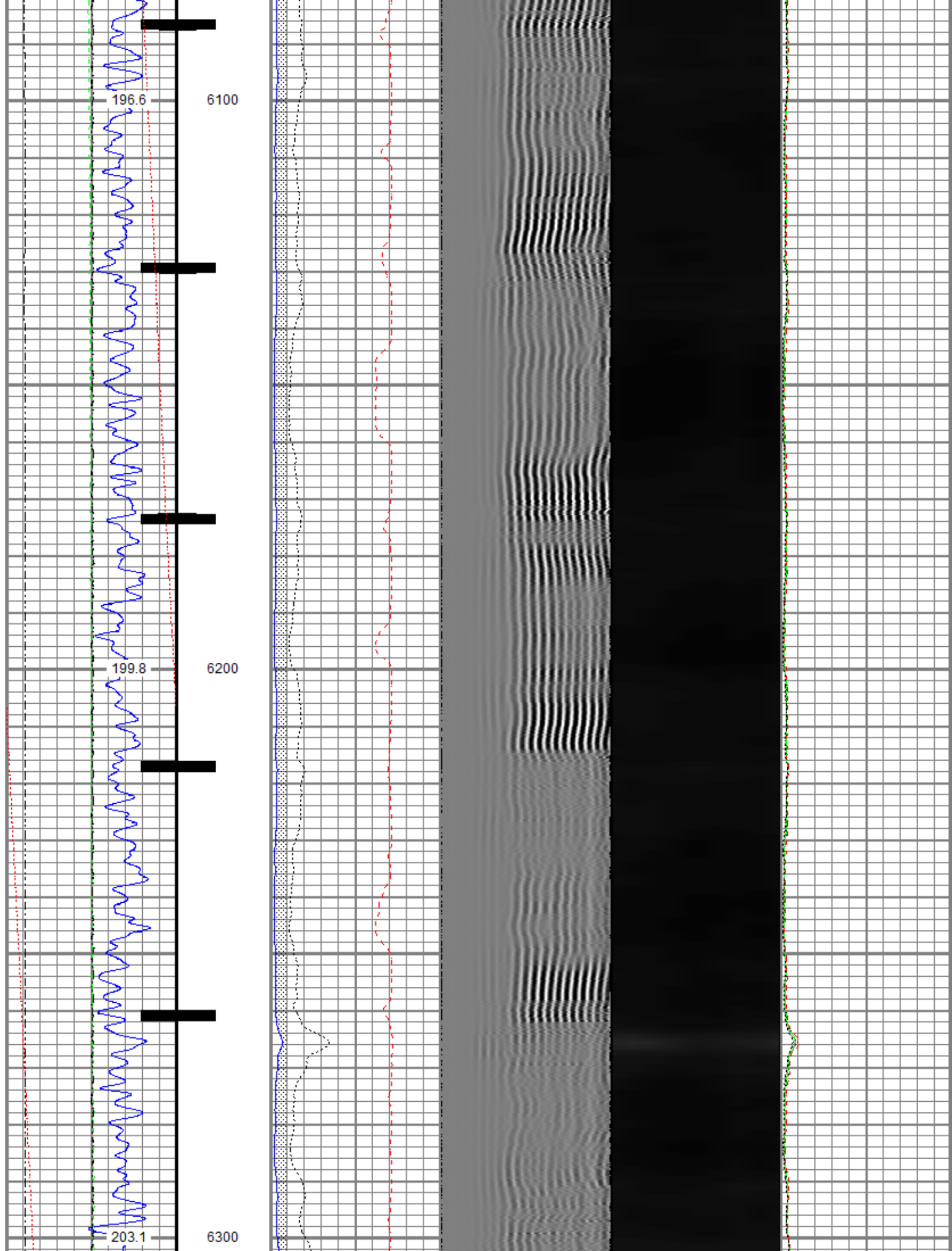


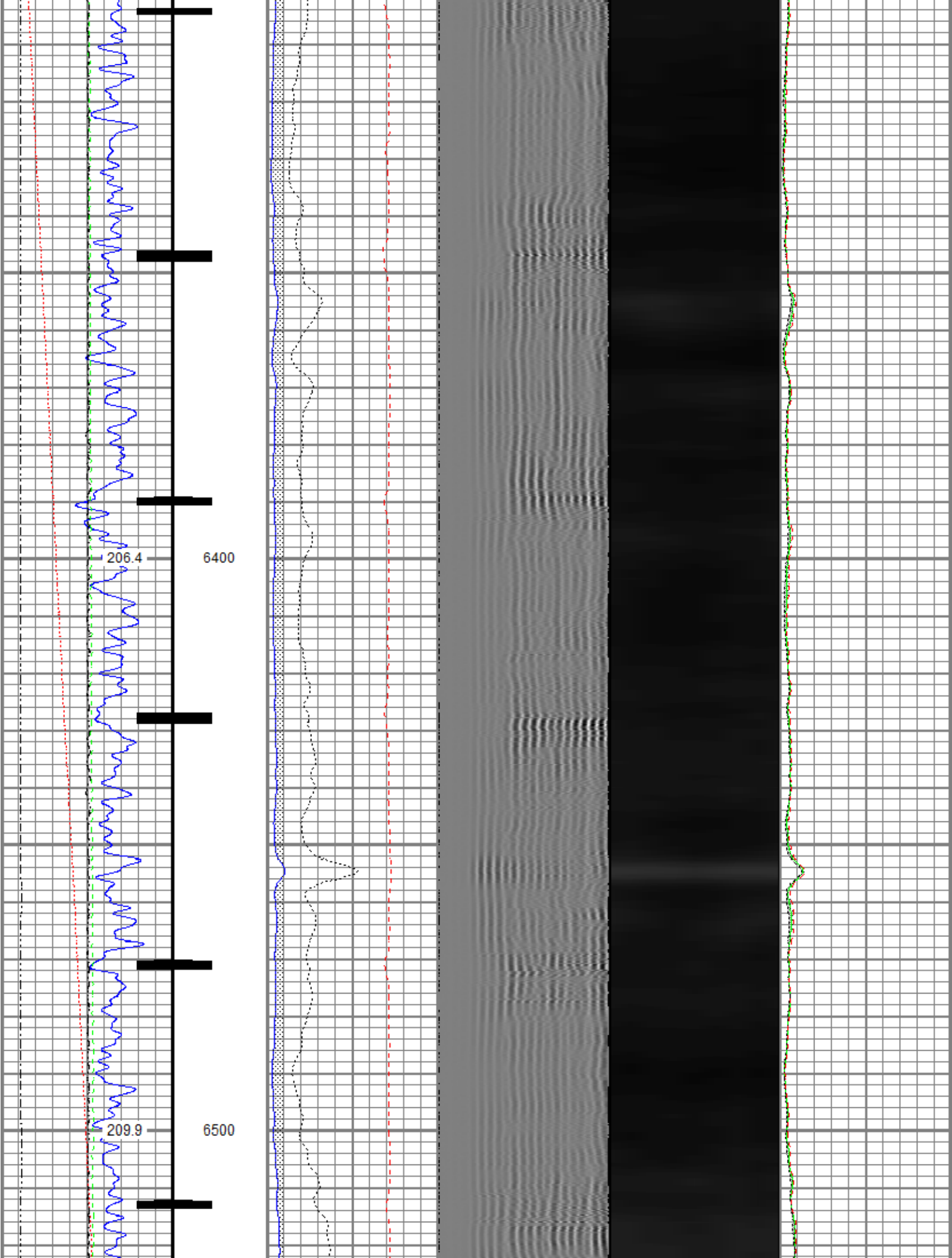


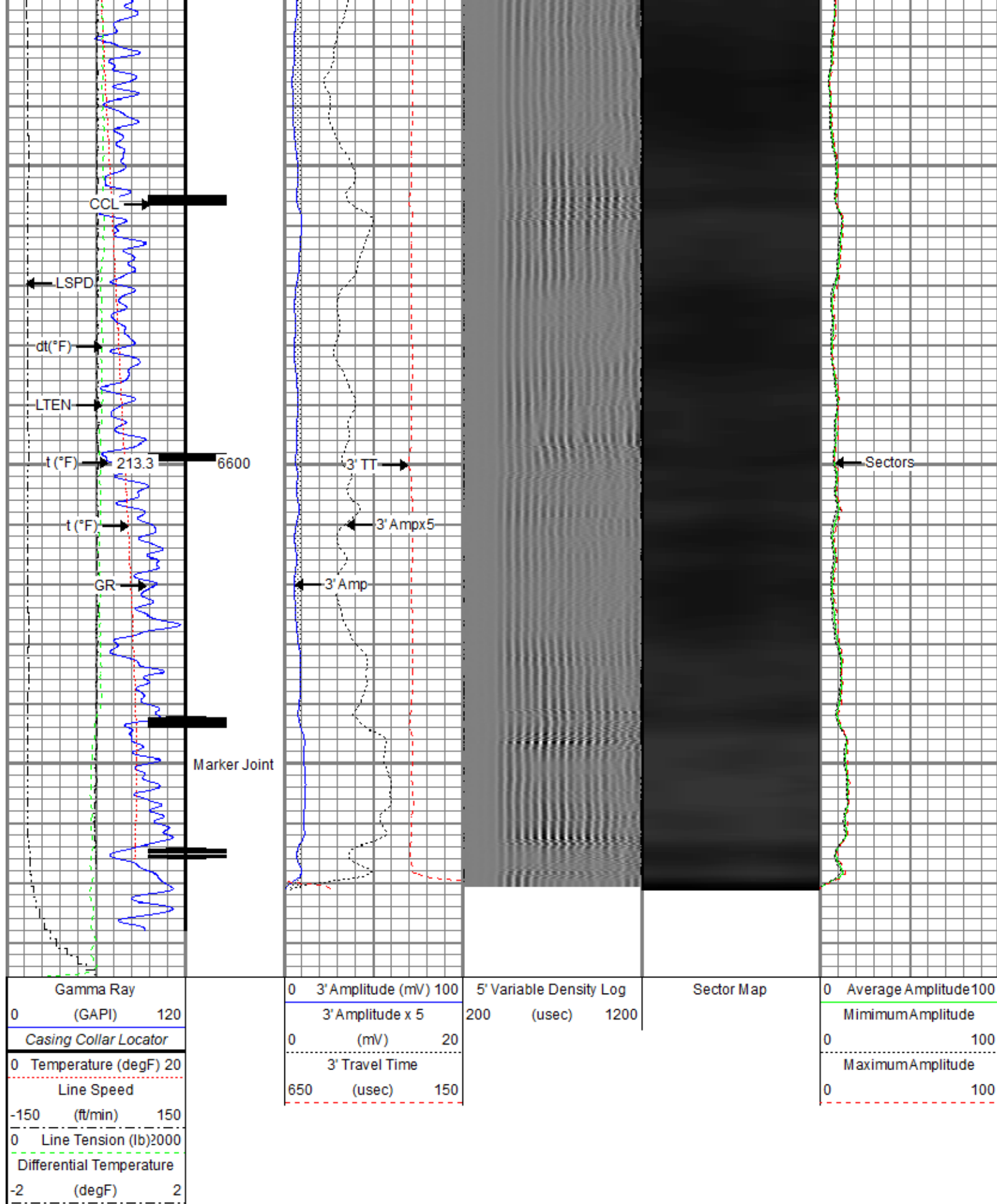








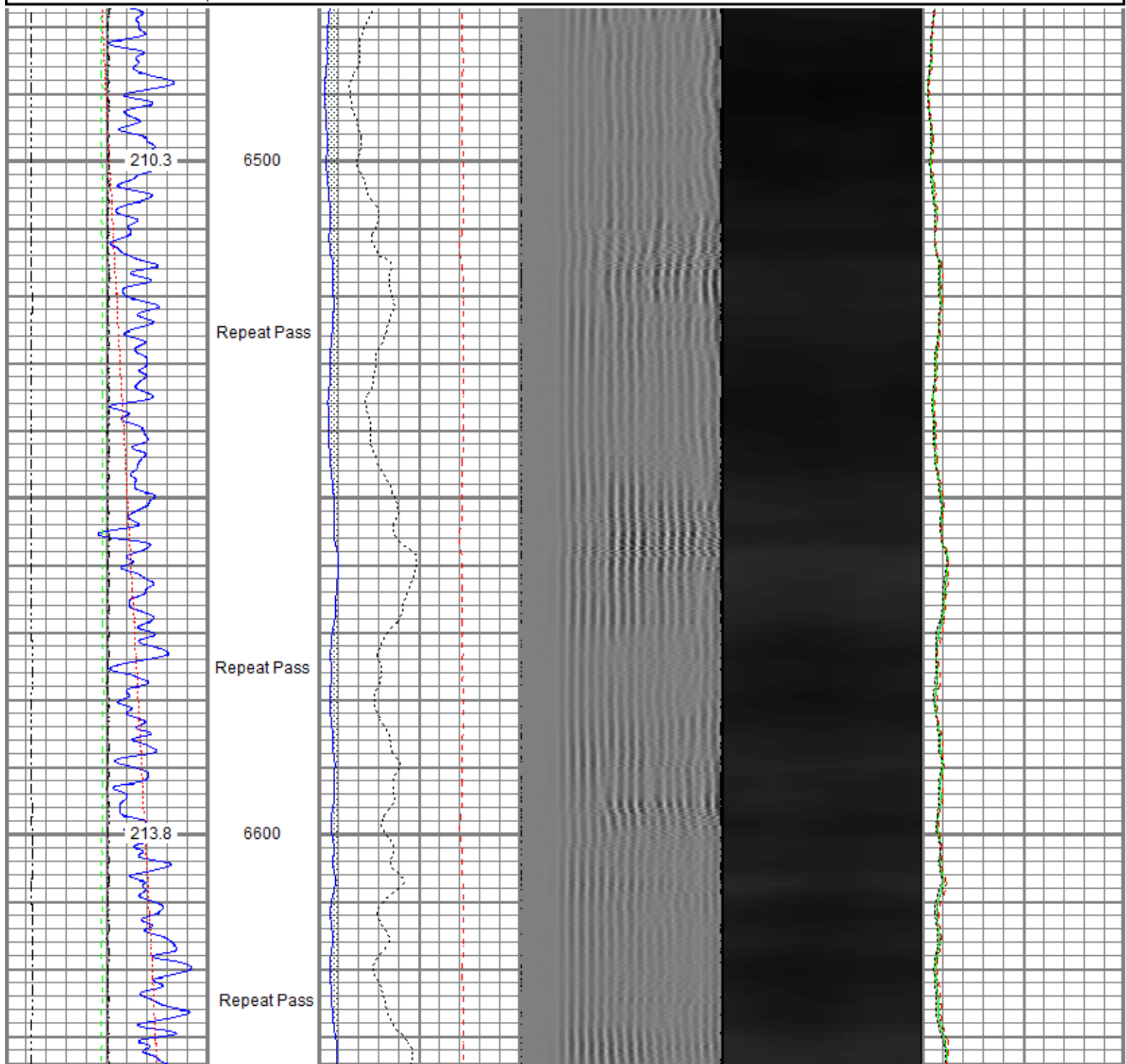


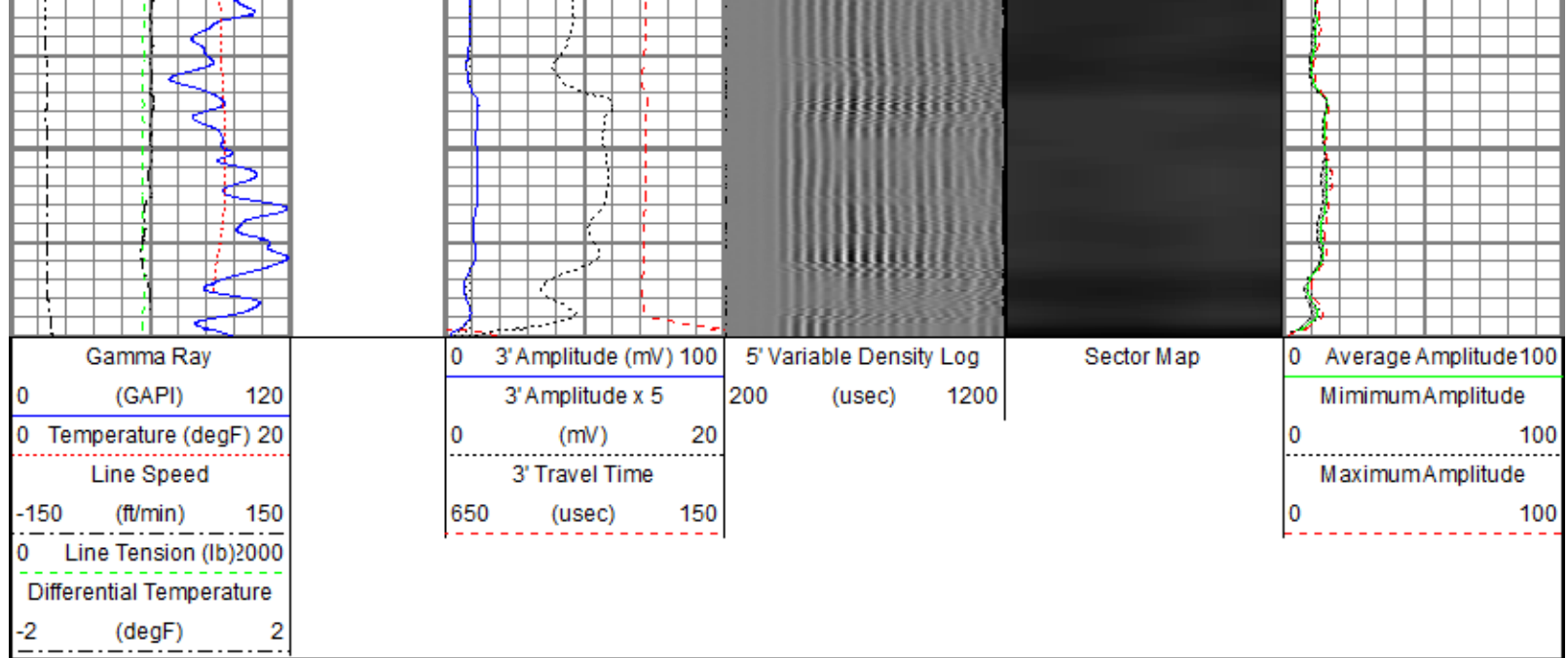




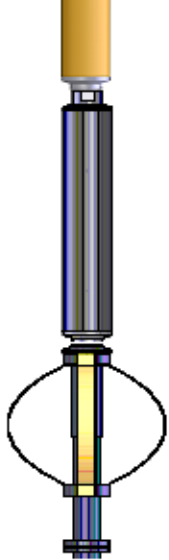
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 Presentation Format ros\_radrii  
 Dataset Creation Fri Jun 21 14:14:50 2019  
 Charted by Depth in Feet scaled 1:240

Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
0 Temperature (degF) 20	0	(mV) 20			0	100
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			
			Probe Radii-2750 RBT (120855)	9.39	2.75	105.00
			Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub			
			Probe CENT-2750	2.88	2.75	20.00
			Probe 2-3/4" Electric Inline Bowspring Centralizer			
			Probe CCL-2750 SA (FW1307-076)	2.66	2.75	35.00
WVFS8	16.00					
WVFS7	16.00					
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	7.38		Probe 2-3/4" Digital Stand Alone Six Magnet Logging CCL			
CCL\$1	7.38					
GR	5.24		Probe GR-2750 SA (FW1307-078) Probe 2-3/4" Digital Stand Alone Gamma Ray	3.33	2.75	55.00
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
Dataset: 0512349241_anadarko_mab 15-3hz_rbl_06-20-19_2800 psi.db: field/well/run1/main.2 Total length: 25.06 ft Total weight: 258.60 lb O.D.: 2.75 in						

Calibration Report						
Database File	c:\programdata\warrior\data\anadarko_mab 15-3hz\0512349241_anadarko_mab 15-3hz_rbl_06-20-19_2800 psi.db					
Dataset Pathname	main.2					
Dataset Creation	Fri Jun 21 14:12:57 2019					
Gamma Ray Calibration Report						
Serial Number:	FW1307-078					
Tool Model:	2750 SA					
Performed:	Mon Oct 01 11:32:38 2018					
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:	120855					
Tool Model:	2750 RBT					
Calibration Casing Diameter:	5.500	in				
Calibration Depth:	12.047	ft				
Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	0.707	0.800	71.921	101.247	0.373
CAL	0.734	0.734				
5'	0.006	0.675	0.800	71.921	106.227	0.200
SUM						
S1	0.003	0.698	0.000	100.000	143.895	-0.464
S2	0.005	0.697	0.000	100.000	144.433	-0.735
S3	0.004	0.698	0.000	100.000	144.029	-0.556
S4	0.004	0.713	0.000	100.000	141.013	-0.566
S5	0.005	0.734	0.000	100.000	137.056	-0.638
S6	0.004	0.738	0.000	100.000	136.288	-0.581
S7	0.004	0.726	0.000	100.000	138.436	-0.548
S8	0.005	0.715	0.000	100.000	140.850	-0.671



## Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.734	0.734	1.000	0.000

## Air Zero Calibration, performed Wed Jun 19 13:11:49 2019:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.005		0.000		0.000	
5'	0.007		0.000		0.000	
SUM						
S1	0.003		0.000		0.001	
S2	0.005		0.000		0.001	
S3	0.005		0.000		0.000	
S4	0.005		0.000		-0.000	
S5	0.005		0.000		0.000	
S6	0.005		0.000		0.000	
S7	0.005		0.000		-0.000	
S8	0.006		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



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State Colorado