



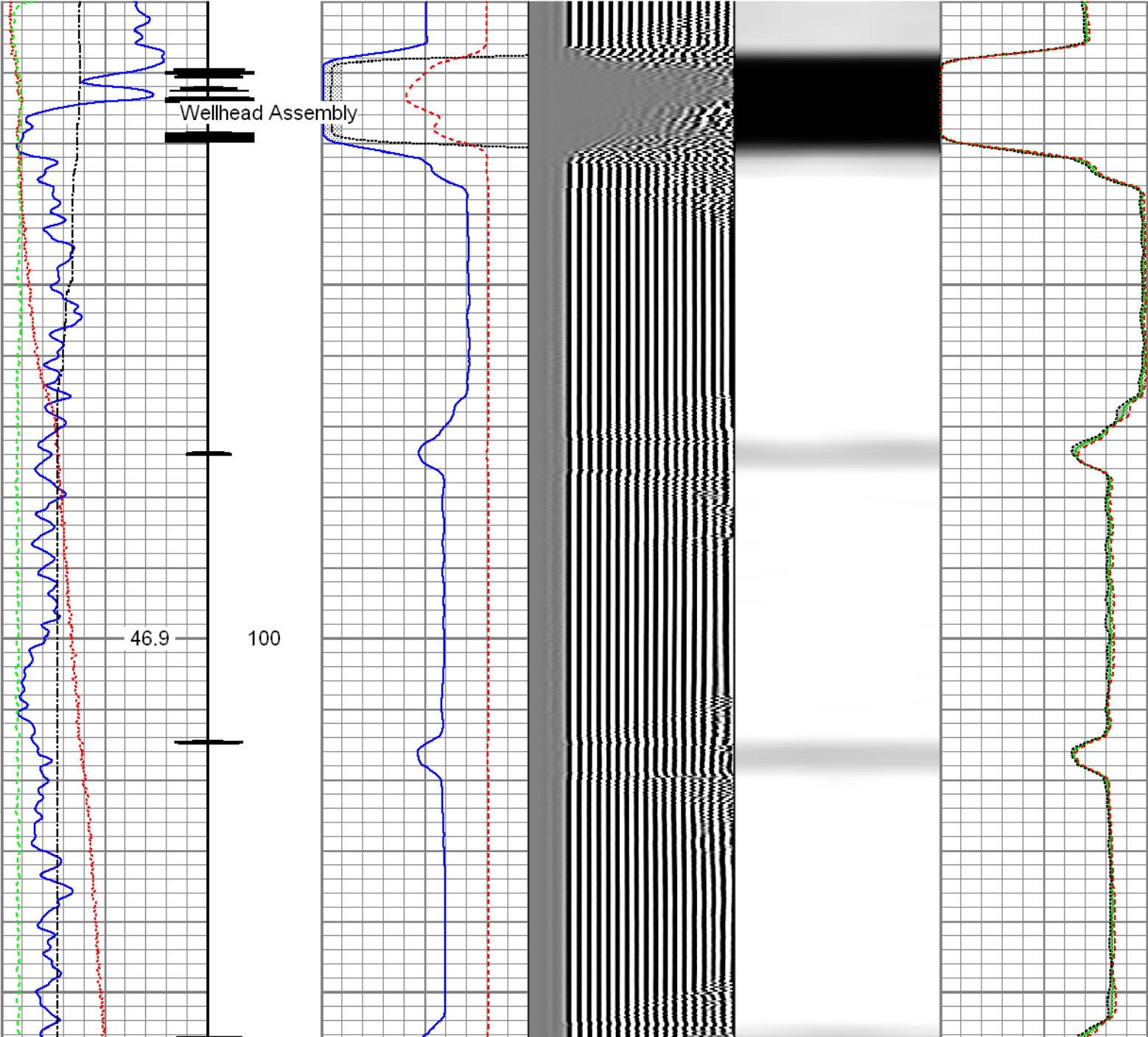
<<< Fold Here >>>
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible 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 Kelly Bushing at 30 FT Adjusted log -5 FT to correlate with Kelly Bushing Log ran from Liner Top to Surface Recorded with 1900 PSI surface induced pressure Logging tools were clean and free of any debris upon completion of operations  Thank you for choosing FMC Technologies Surface Integrated Services.

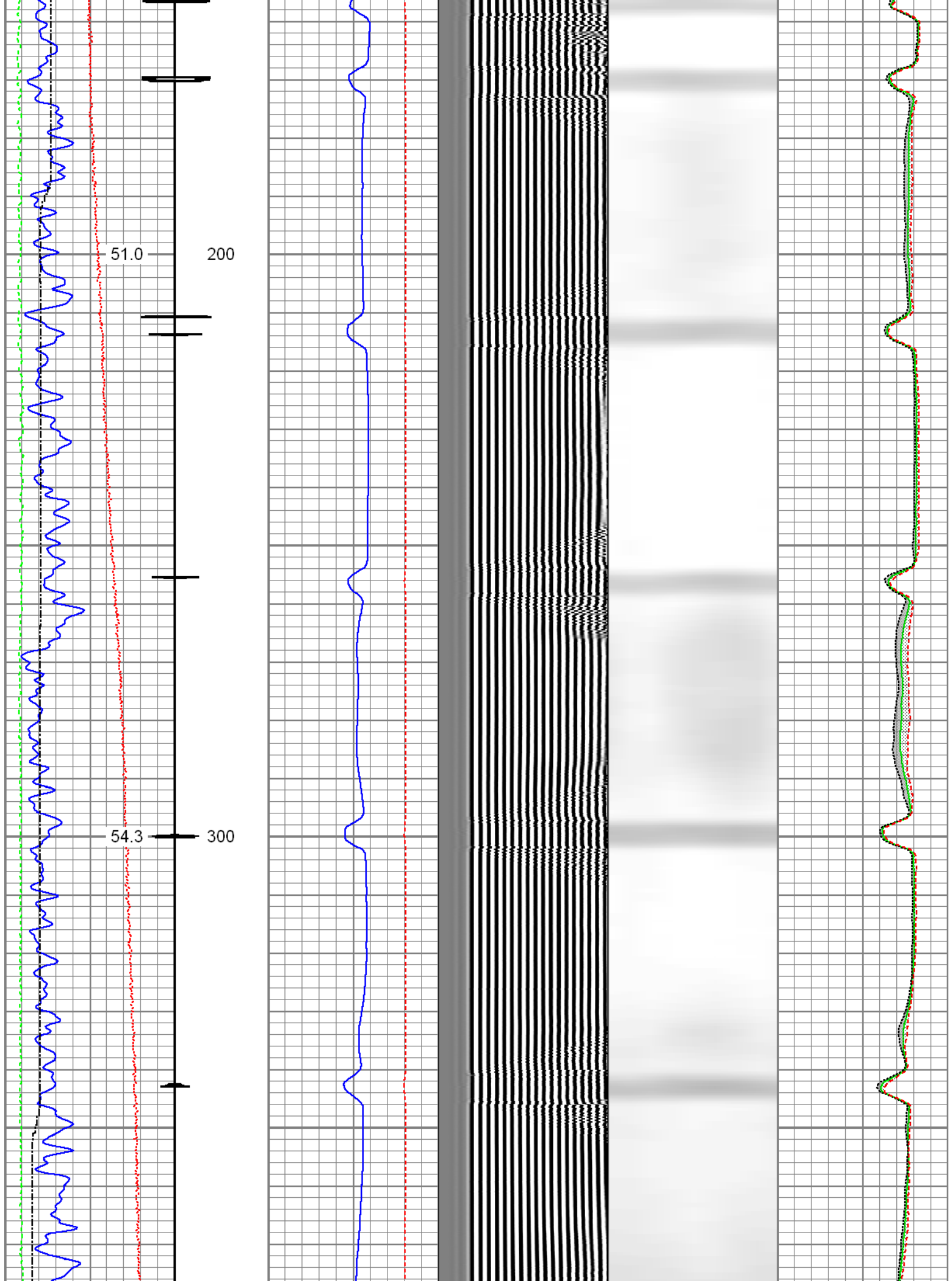


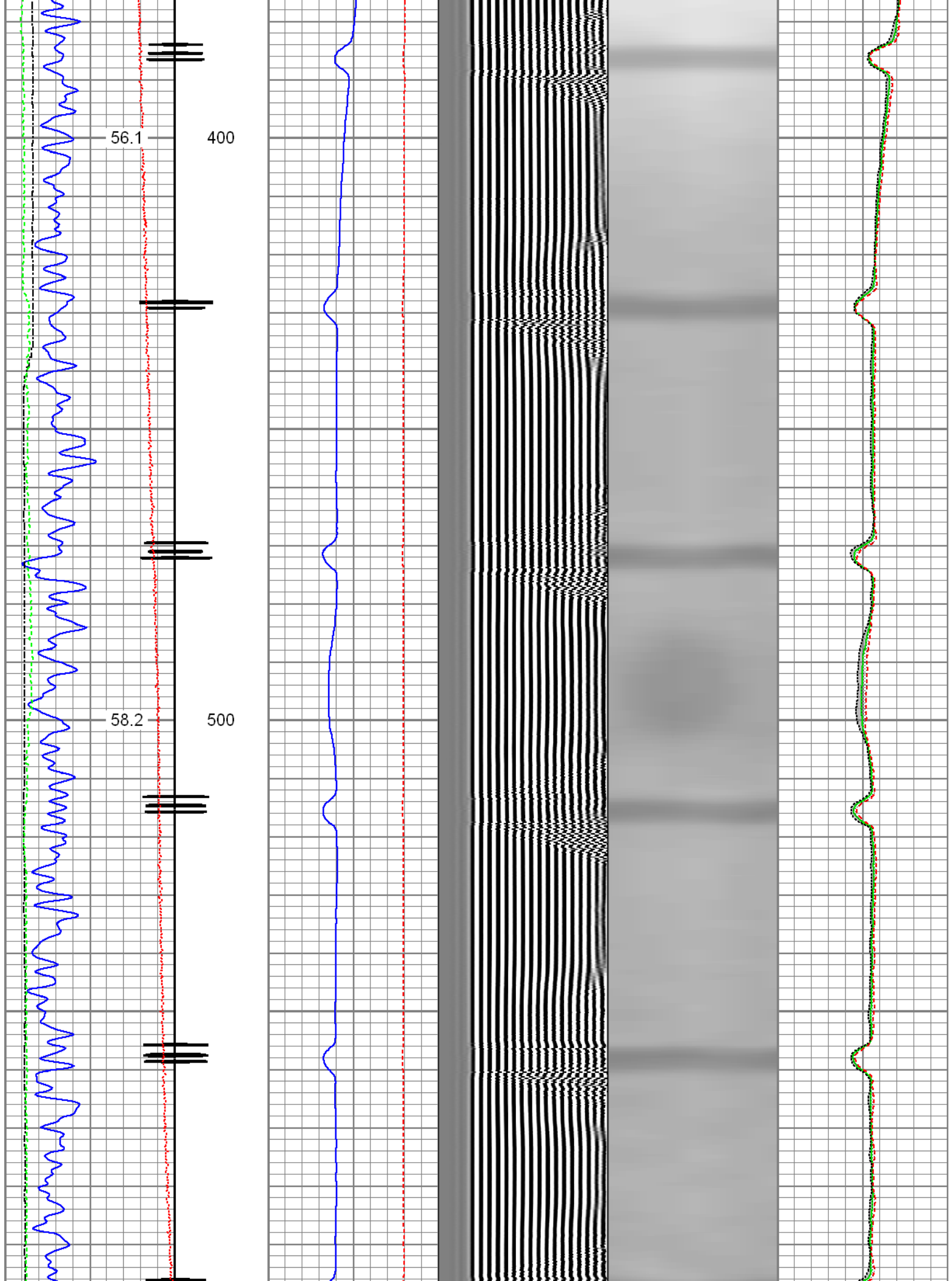
Recorded with 1900 PSI Surface Induced Pressure

Database File: c:\warrior\data\01-25-16\_noble energy\_moser h22-748\_rb\01-25-16\_noble energy\_moser h22-748\_r  
Dataset Pathname: pass7.1  
Presentation Format: radii  
Dataset Creation: Mon Jan 25 16:46:22 2016 by Calc 7.0 B1  
Charted by: Depth in Feet scaled 1:240

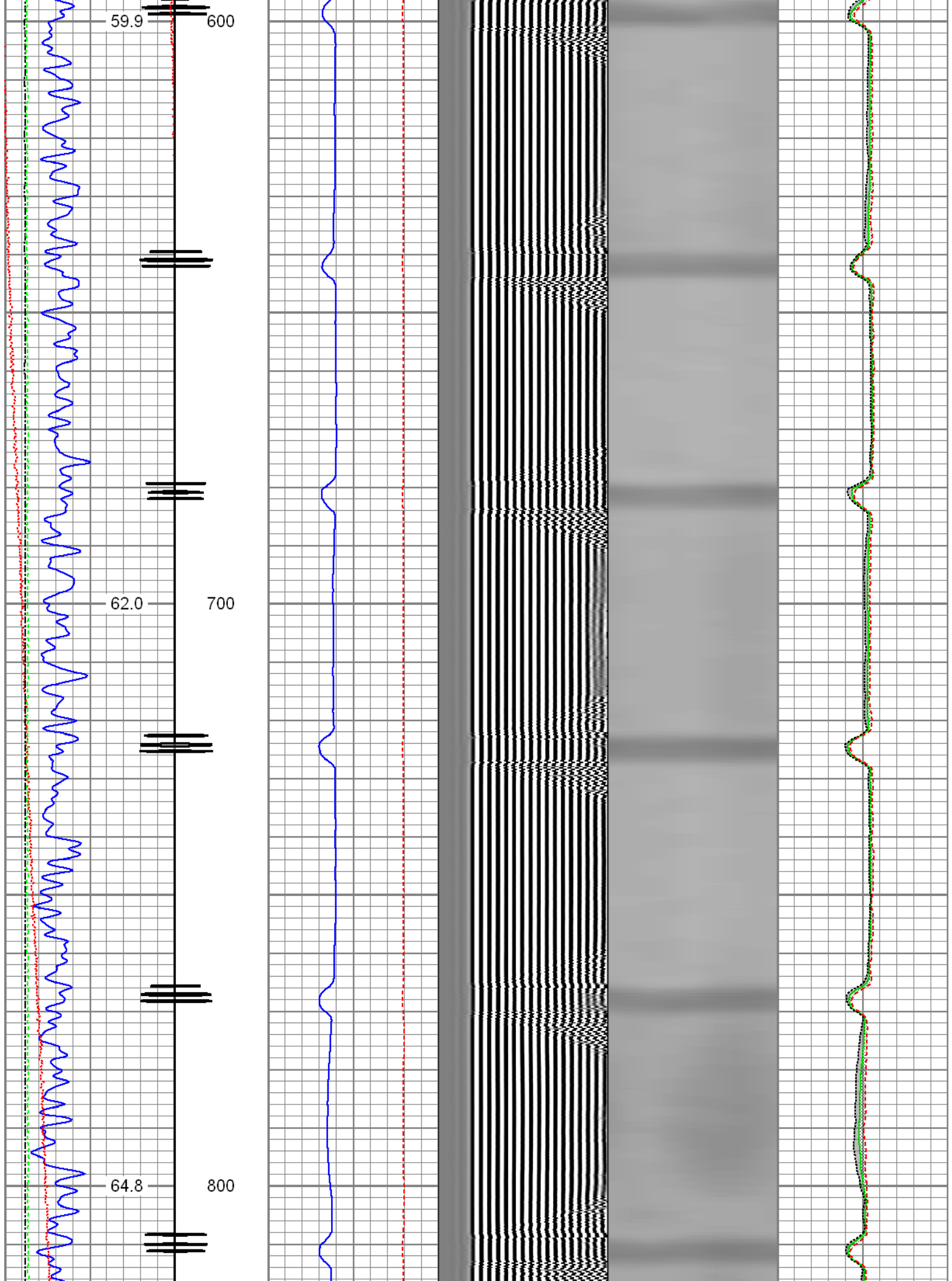
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

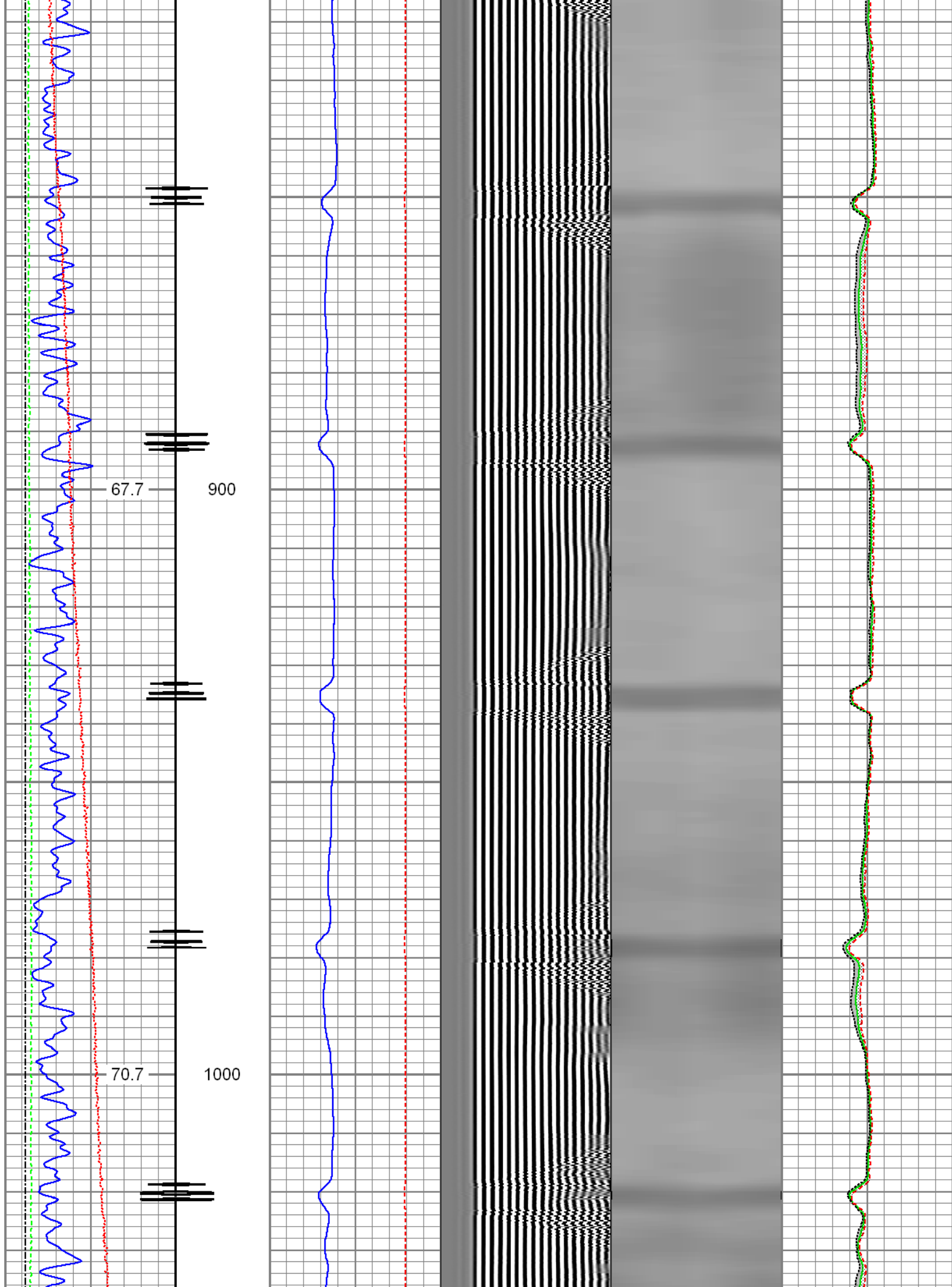


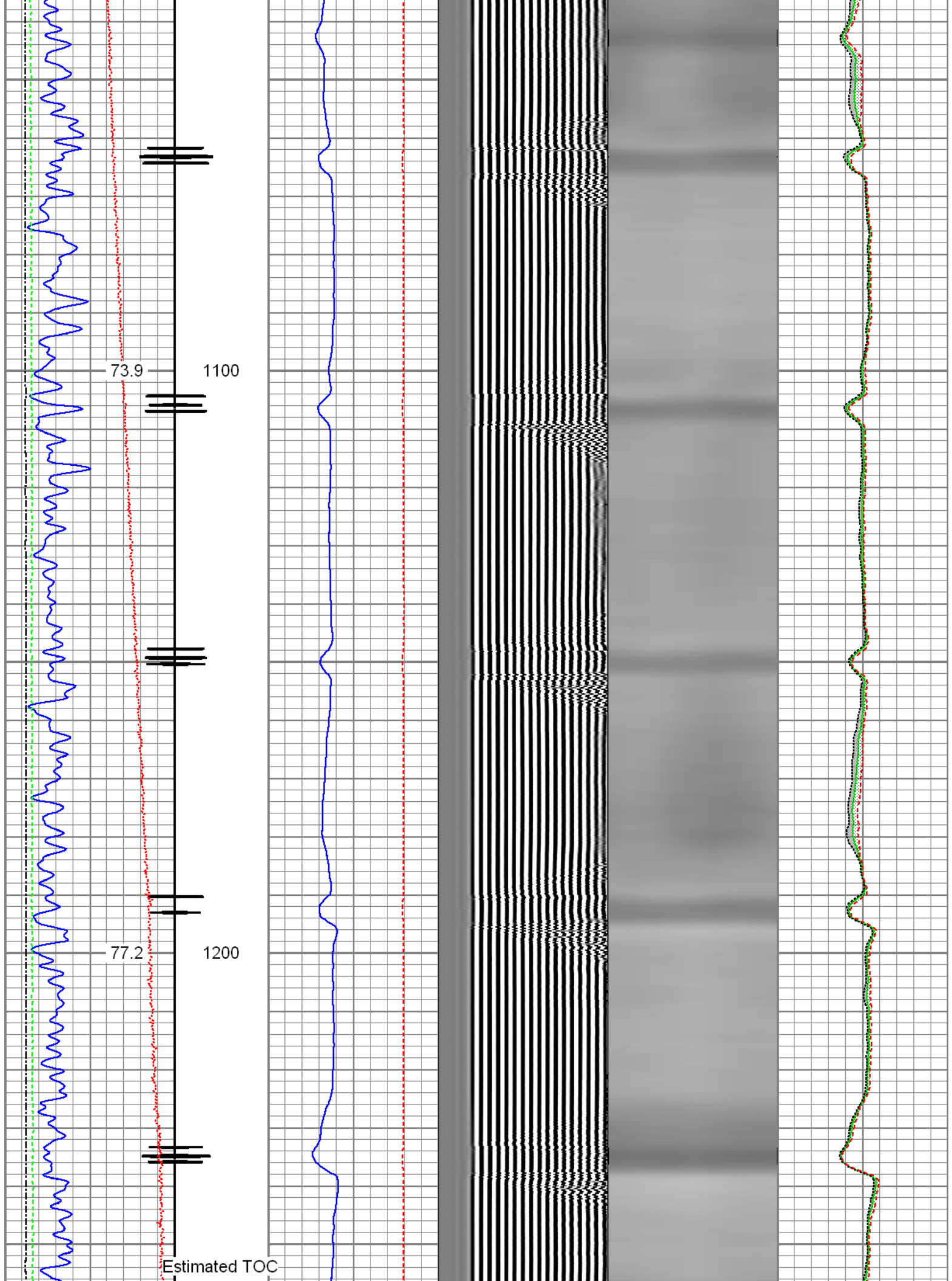


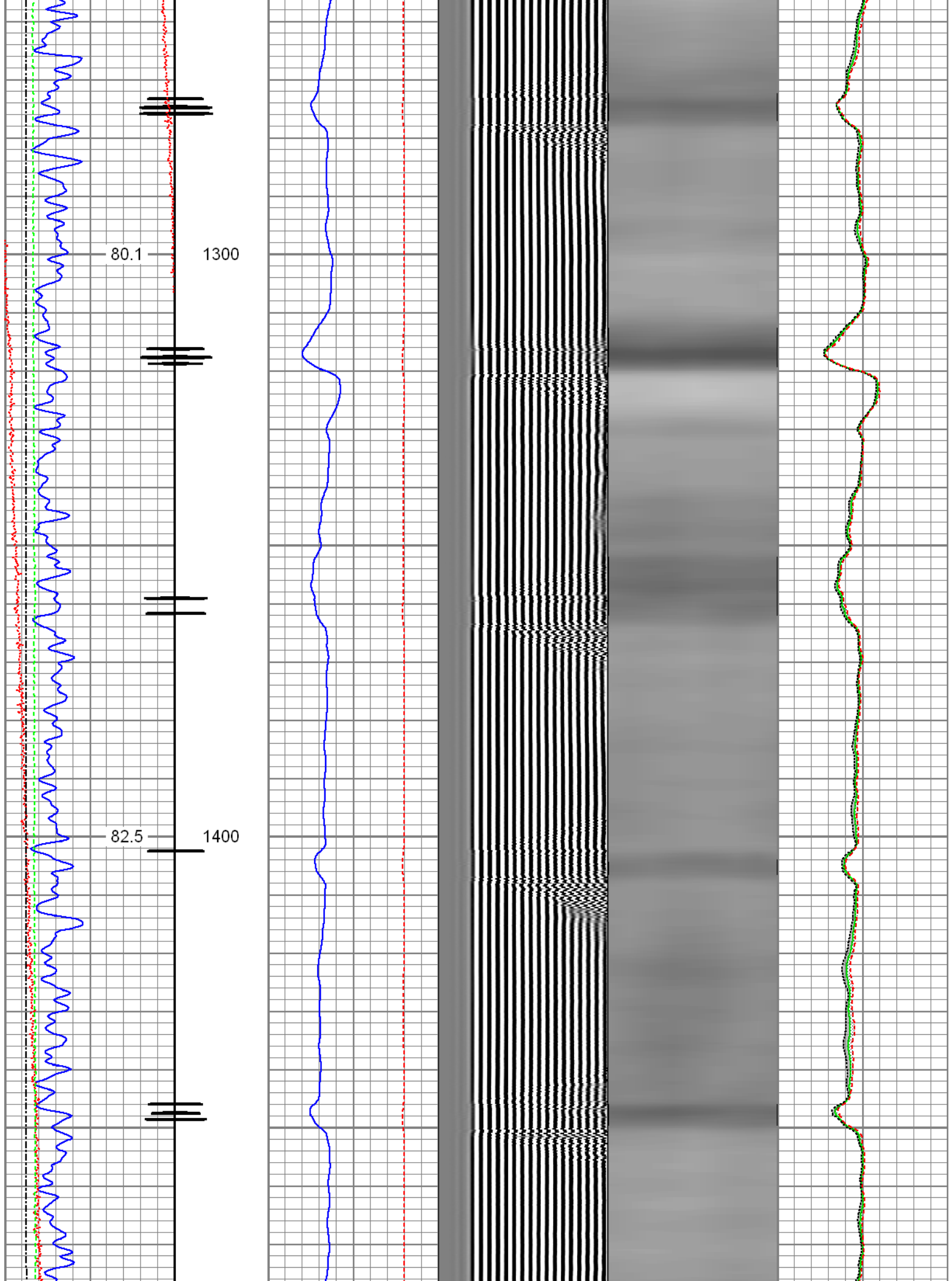


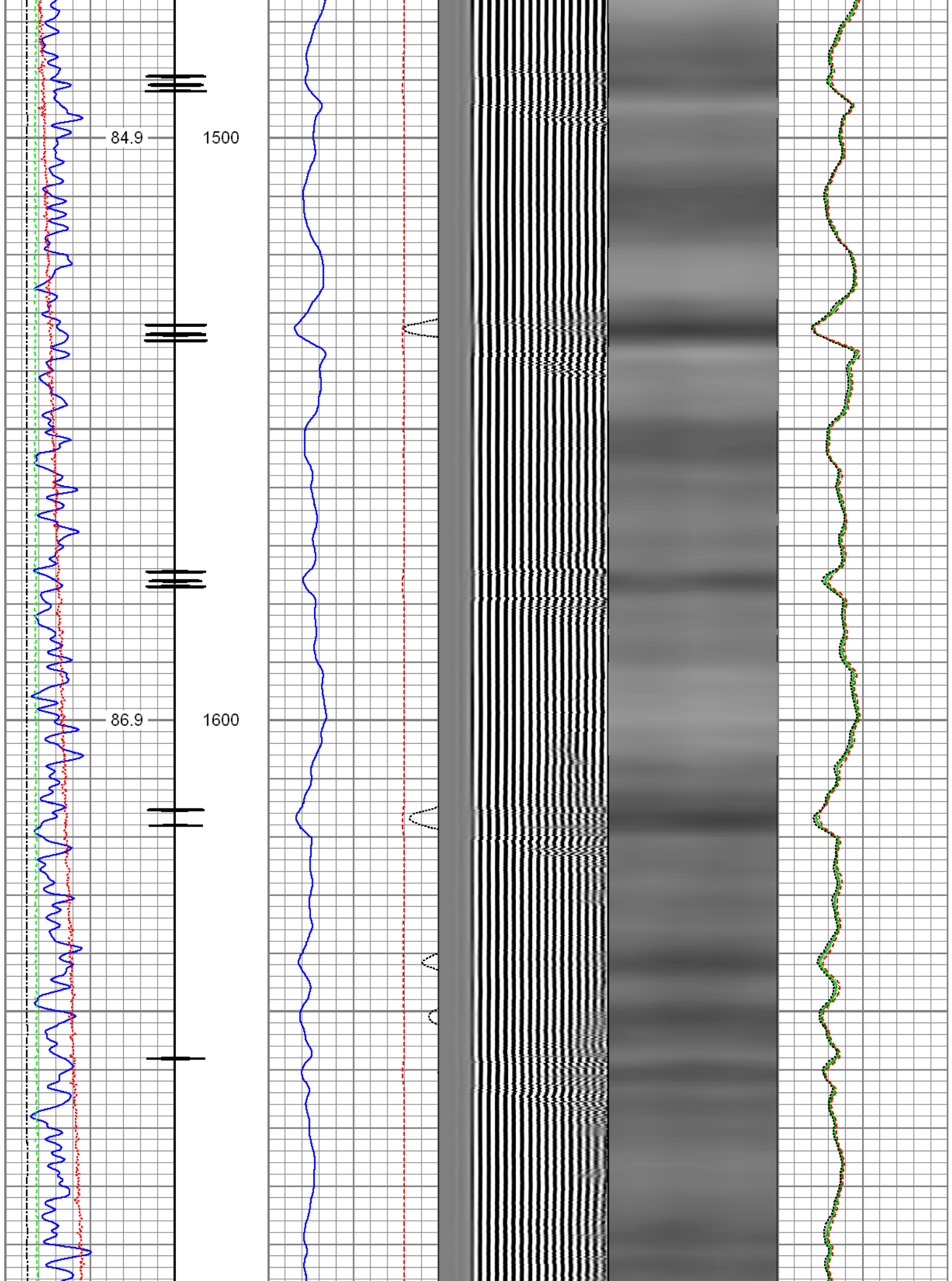




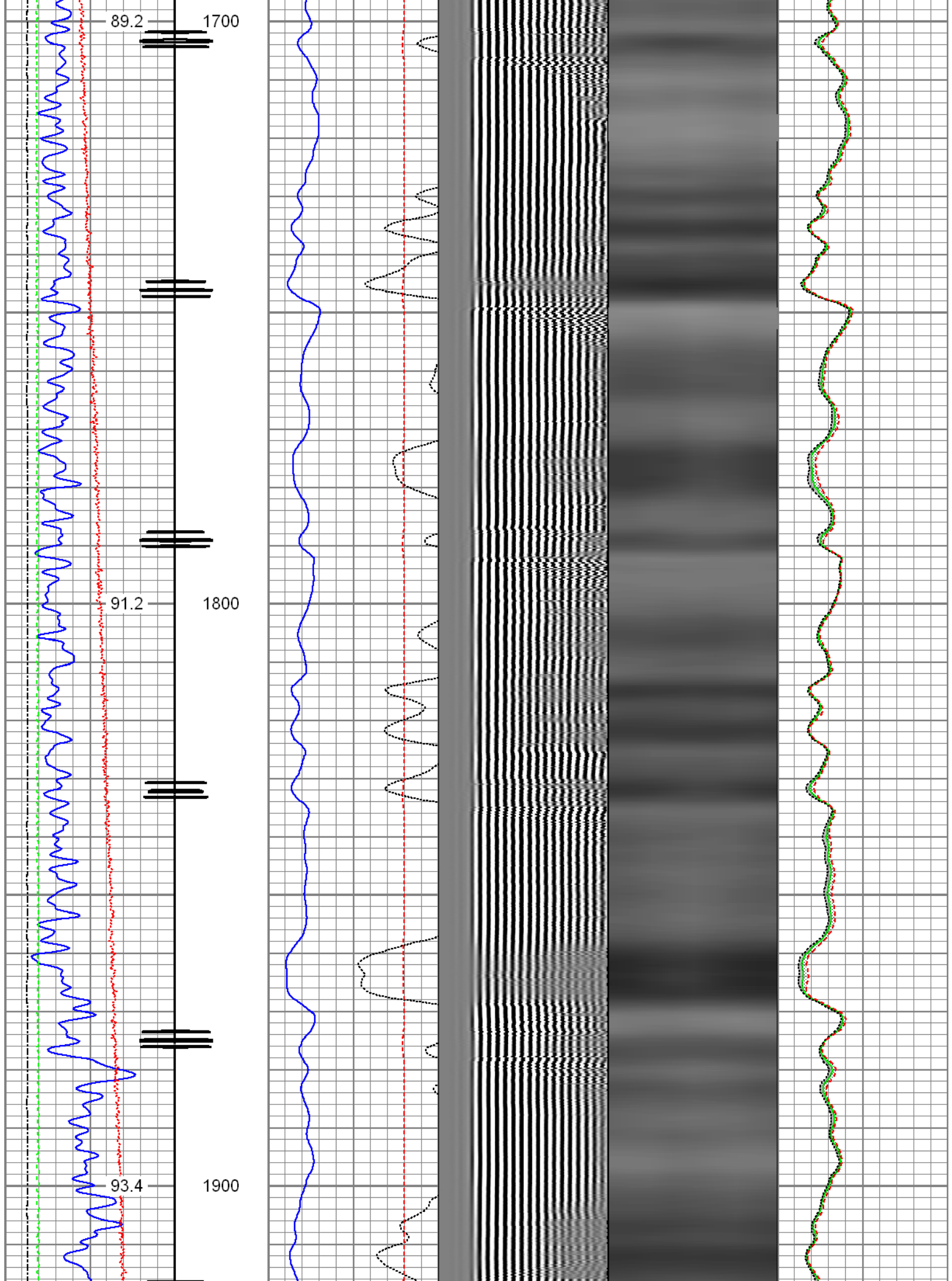


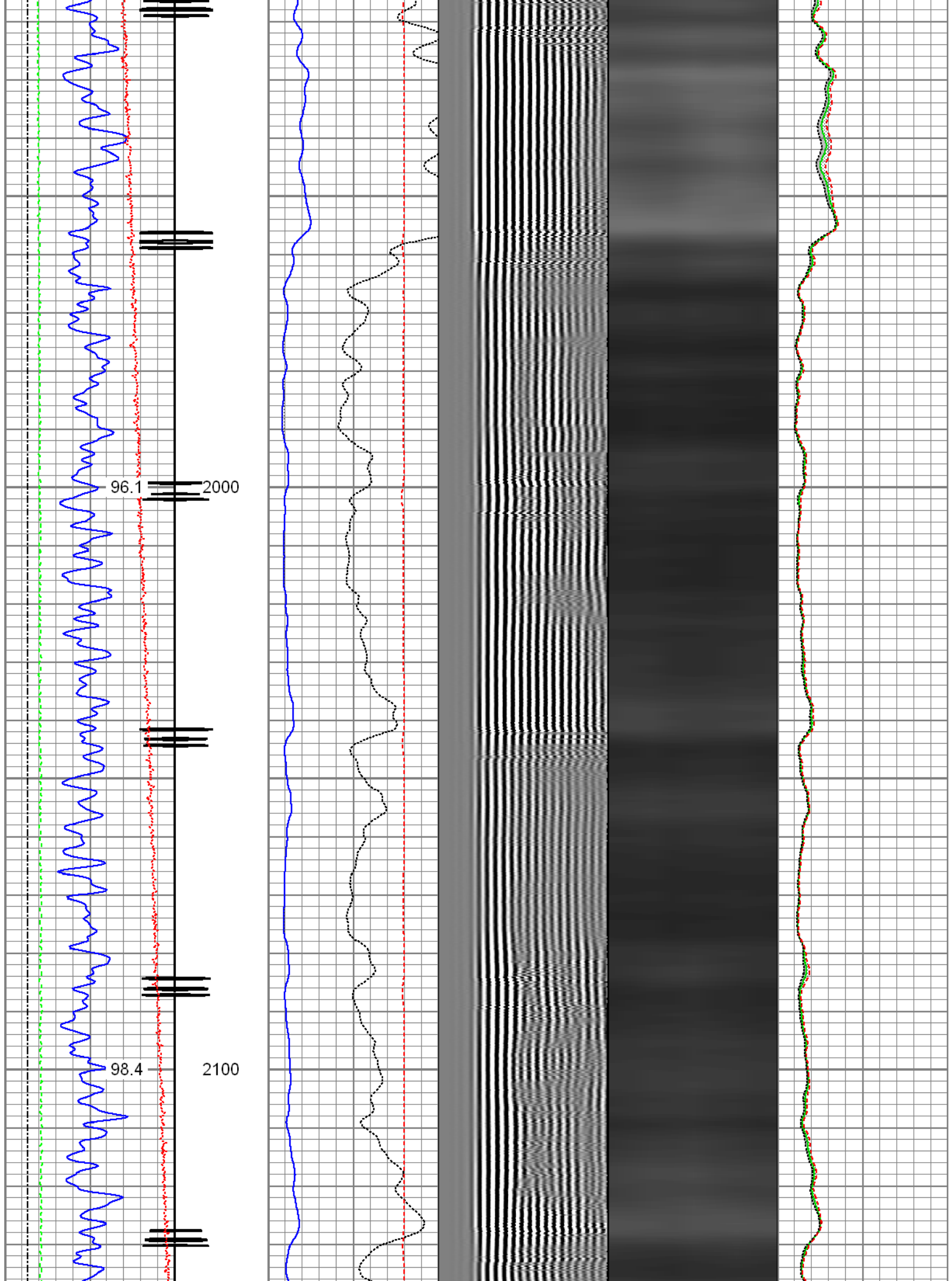


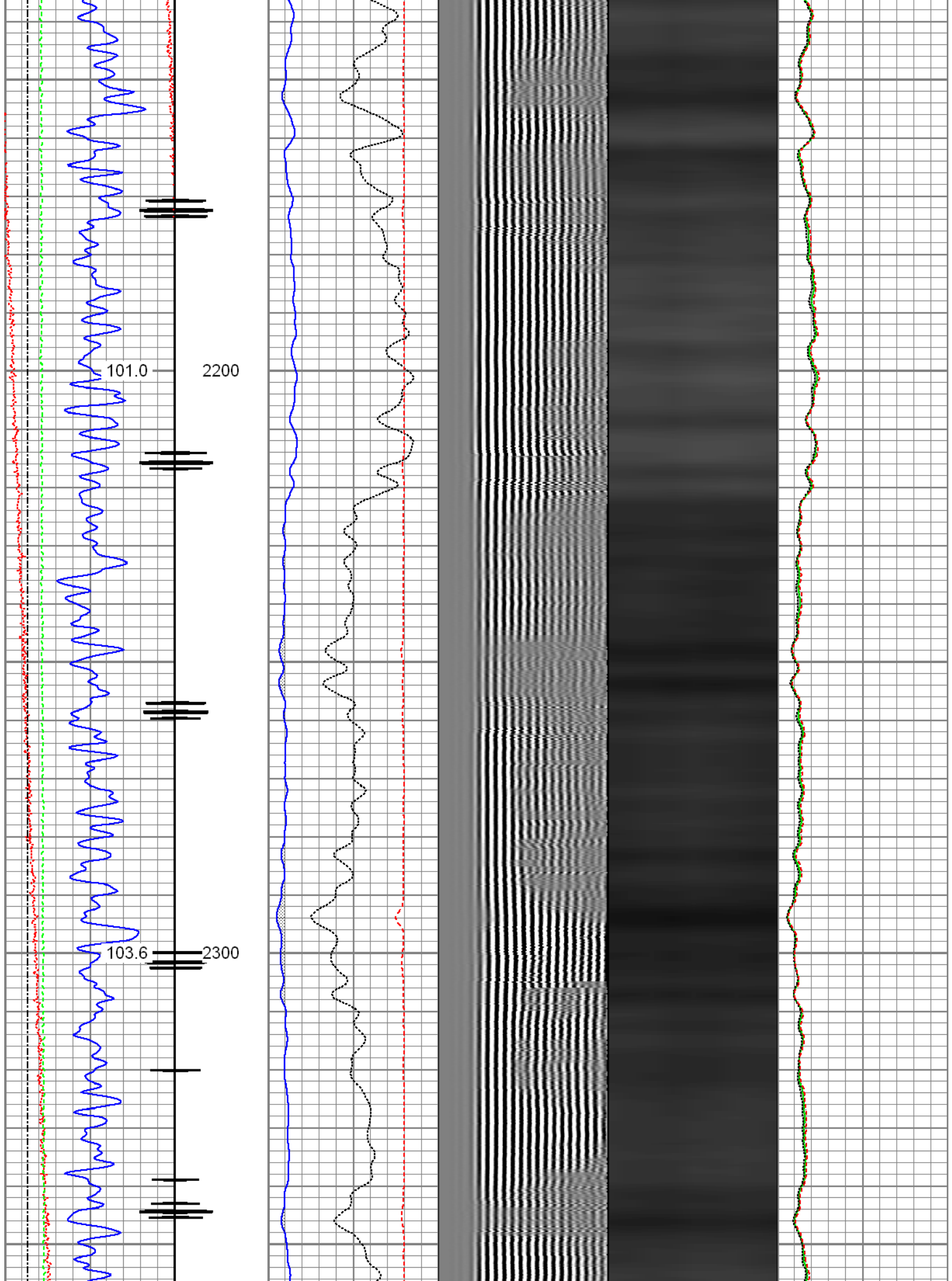


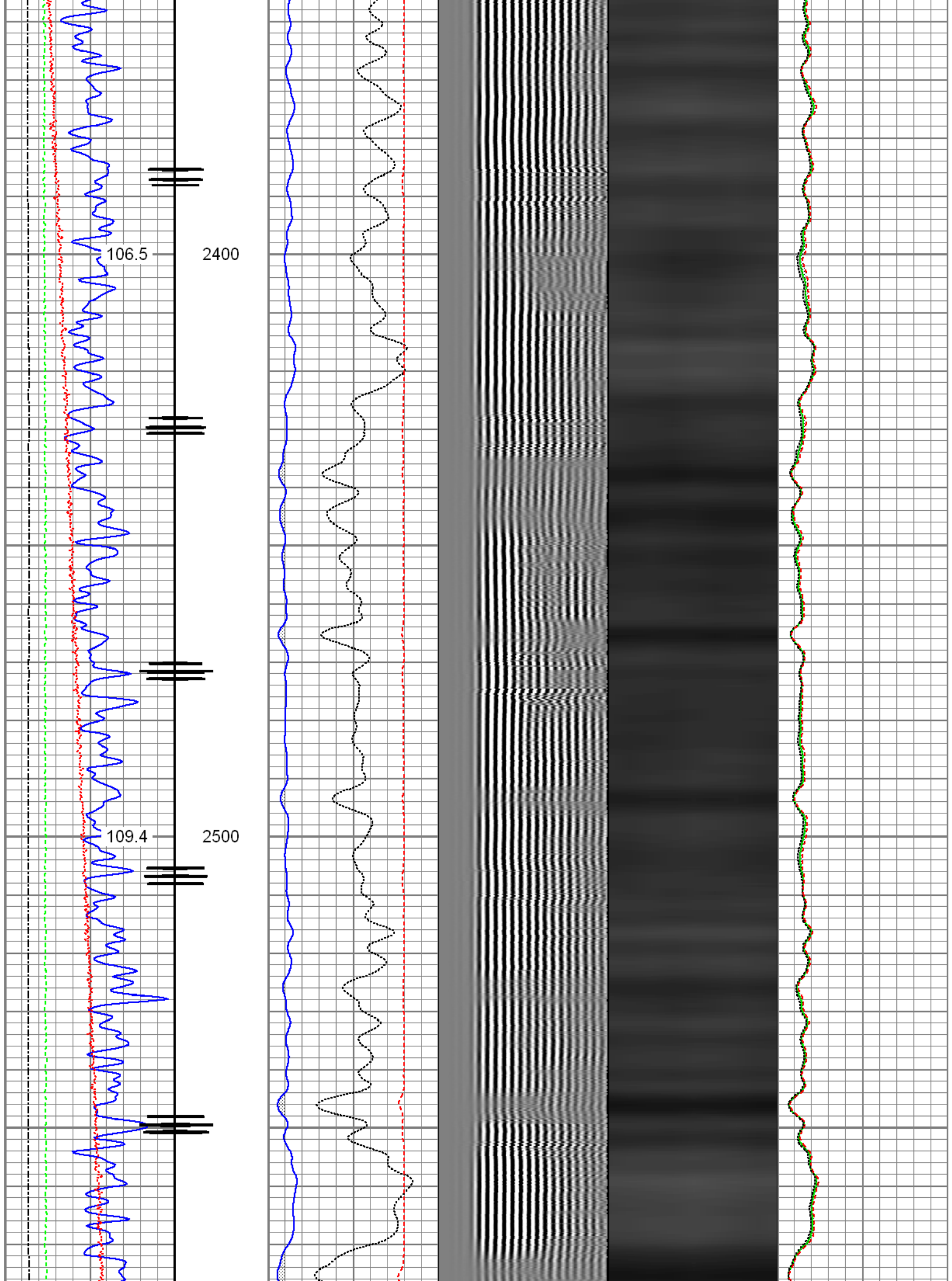




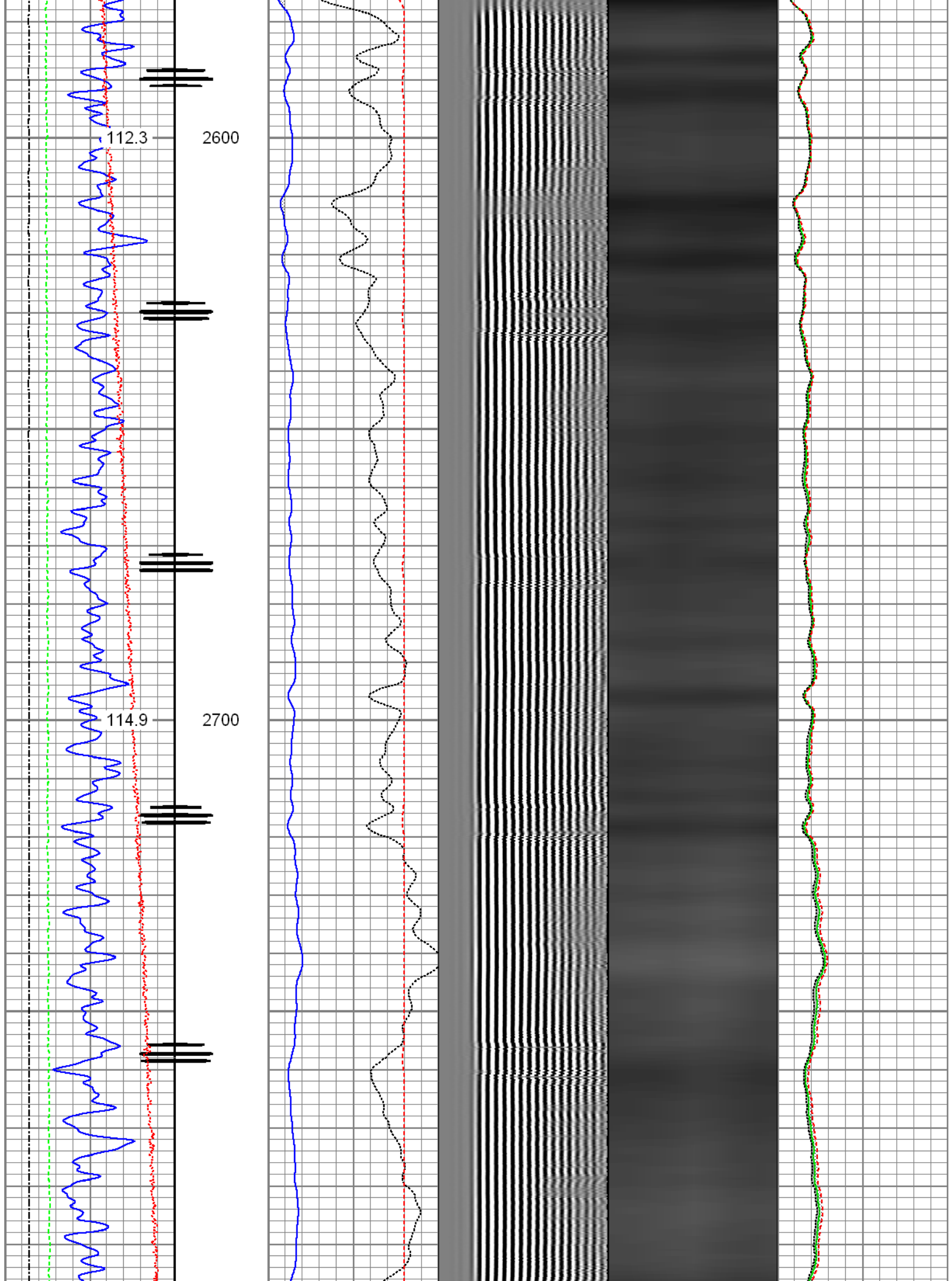




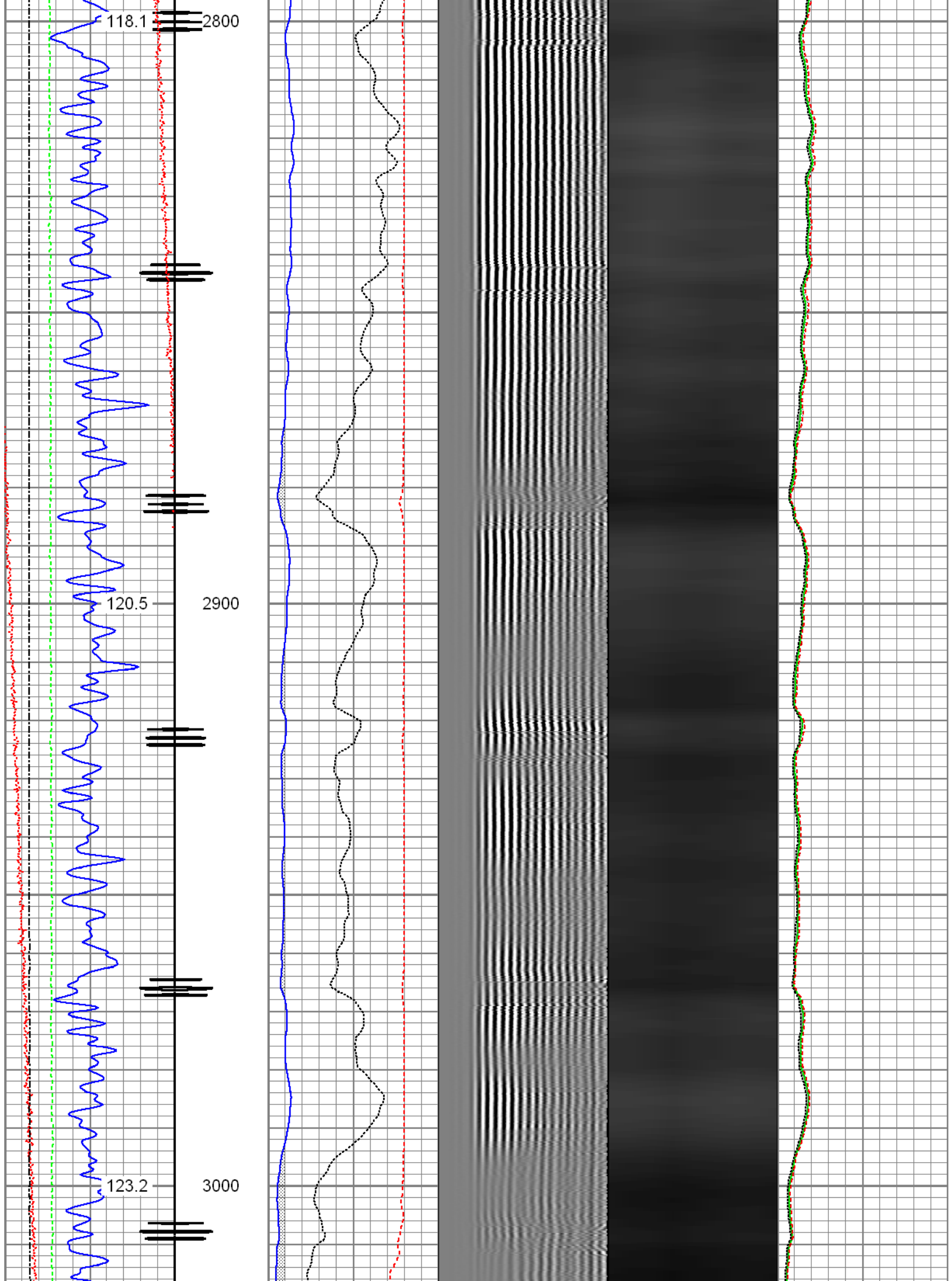


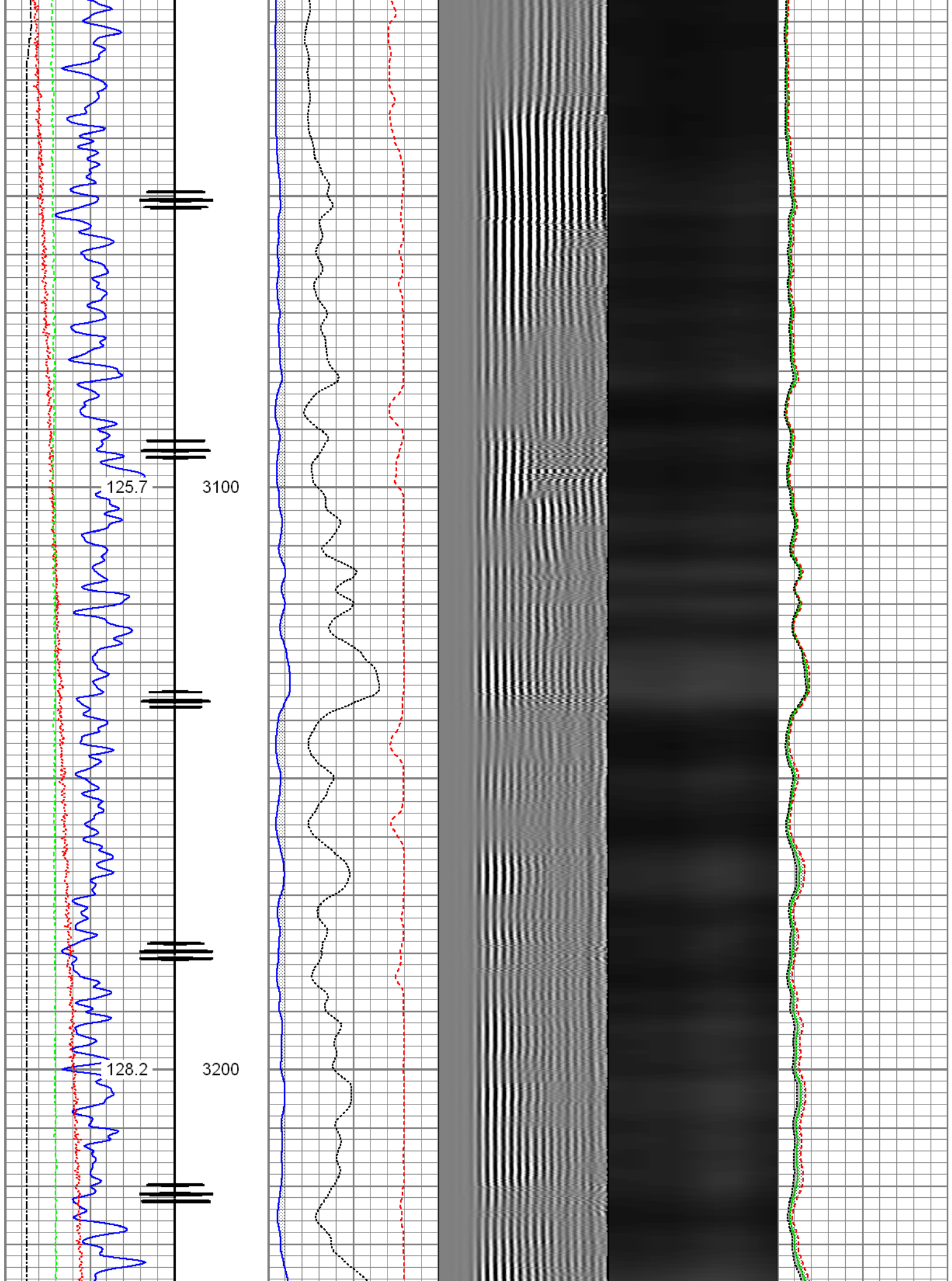


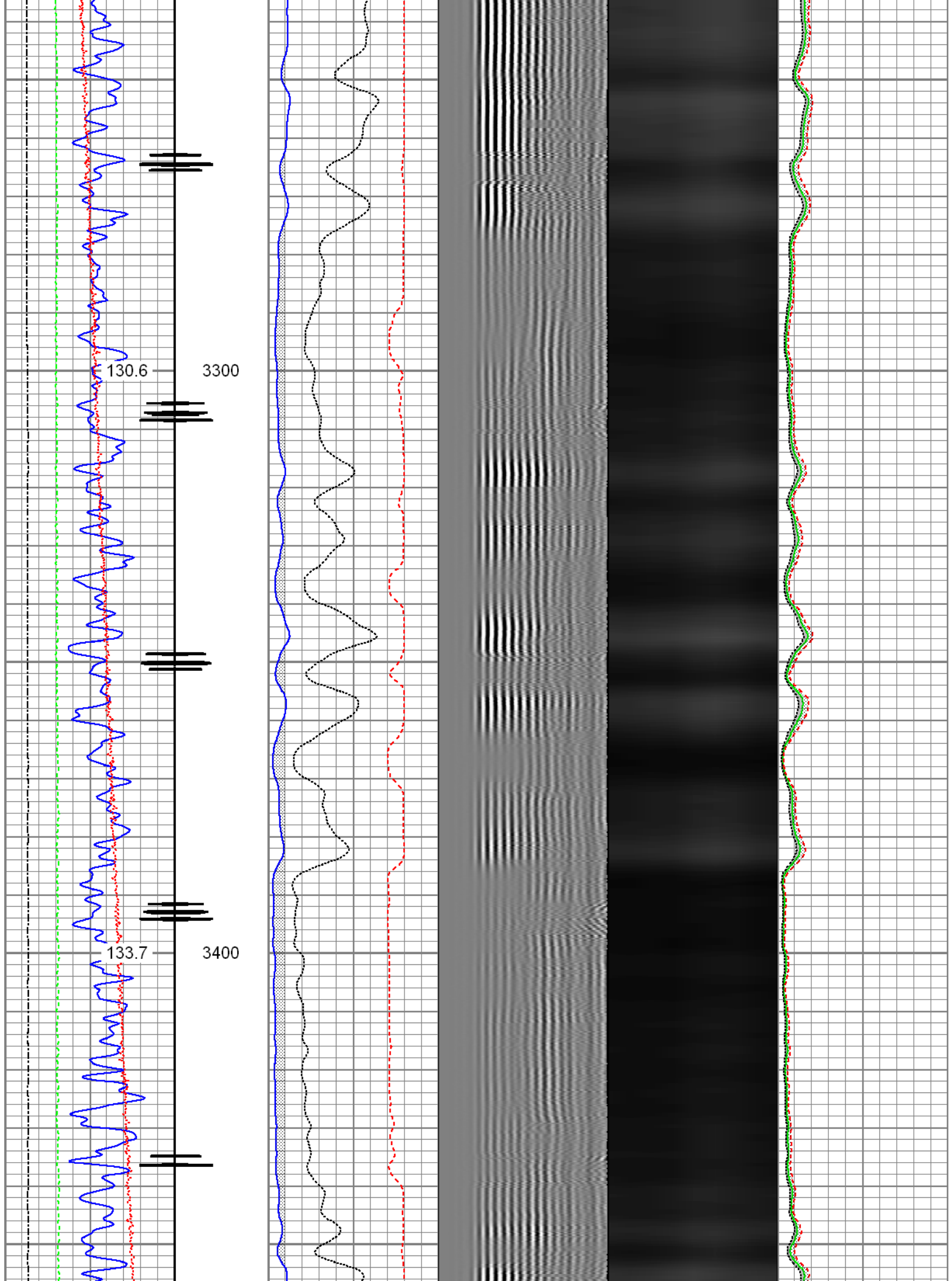


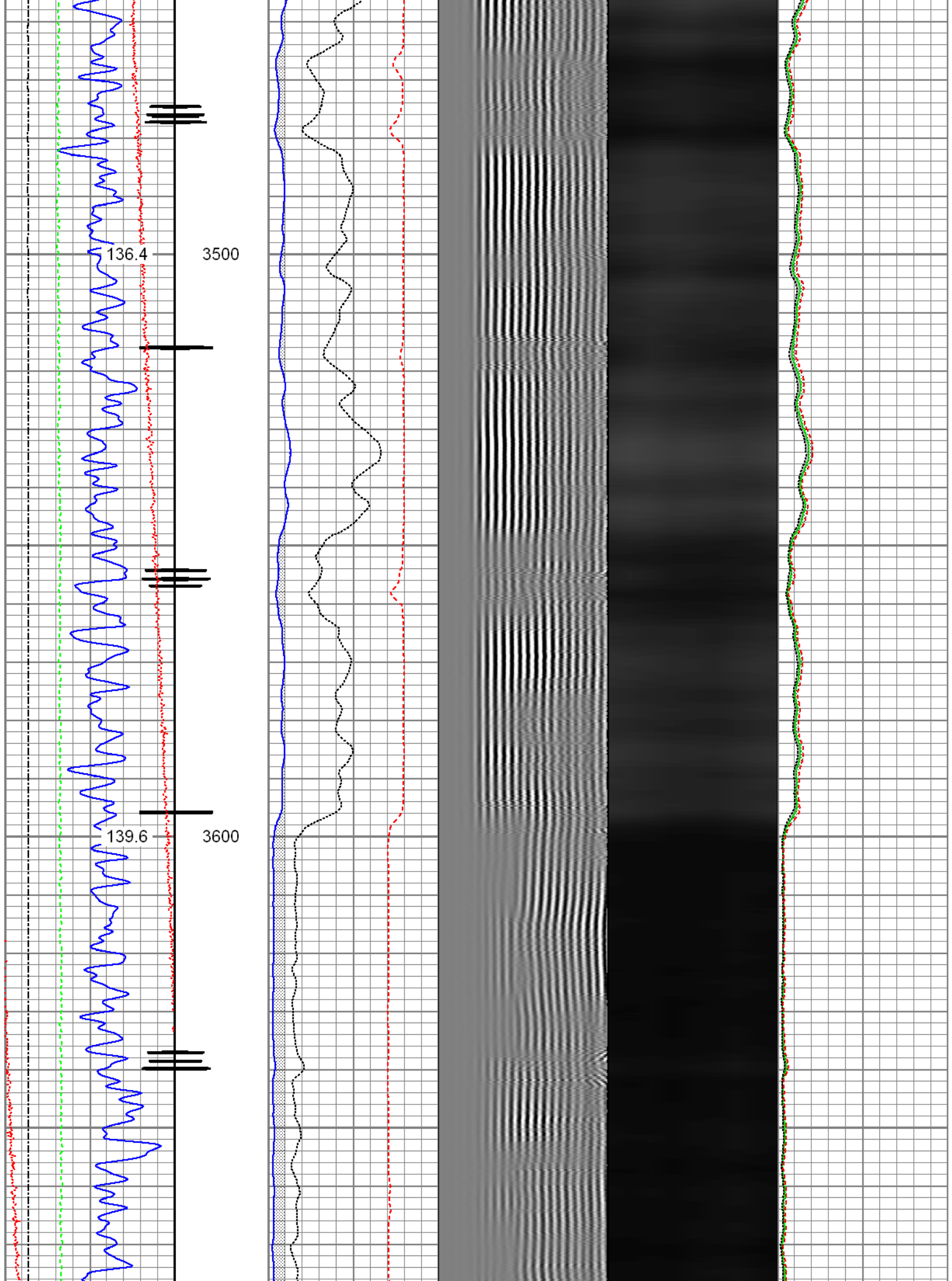




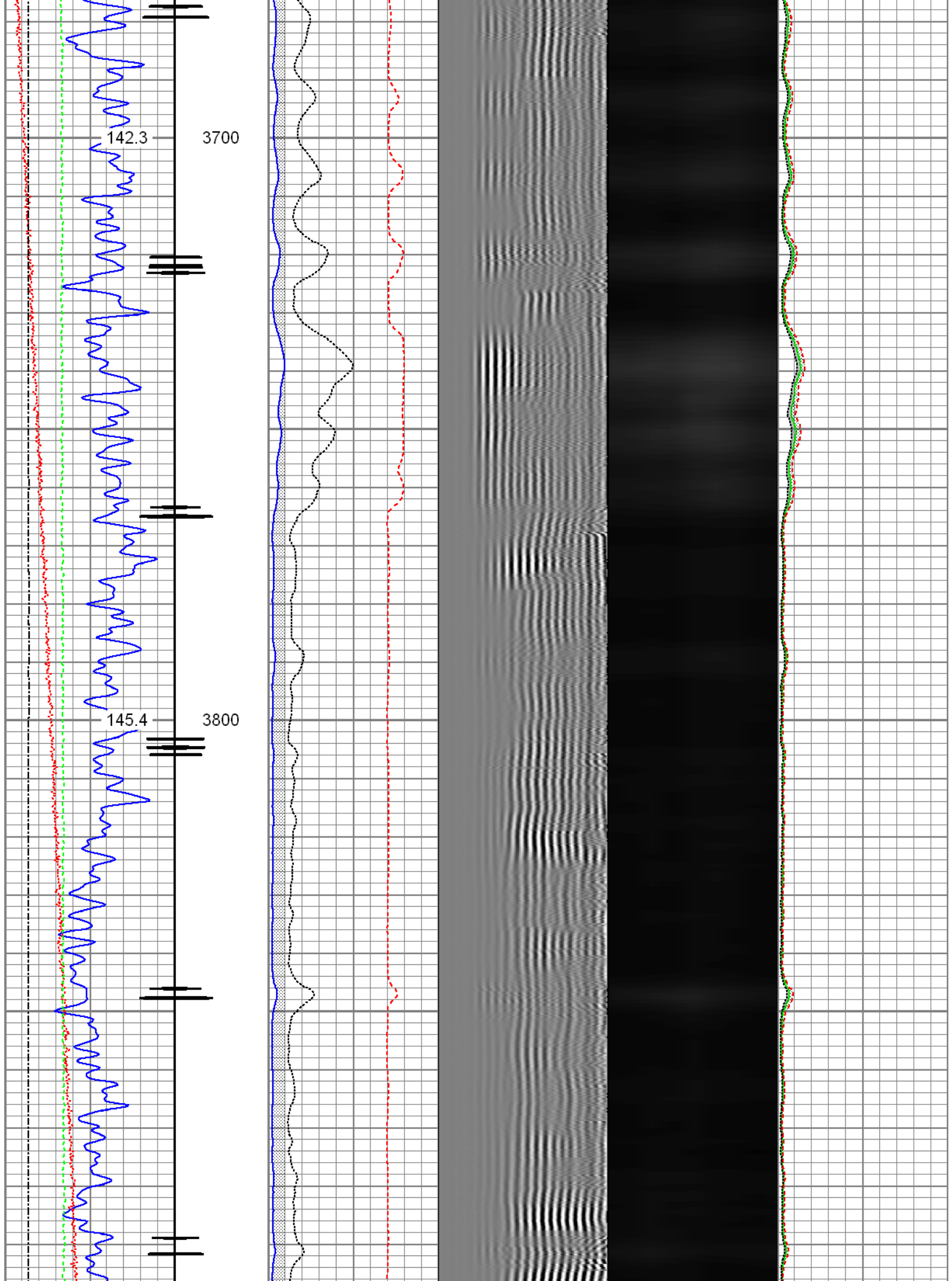




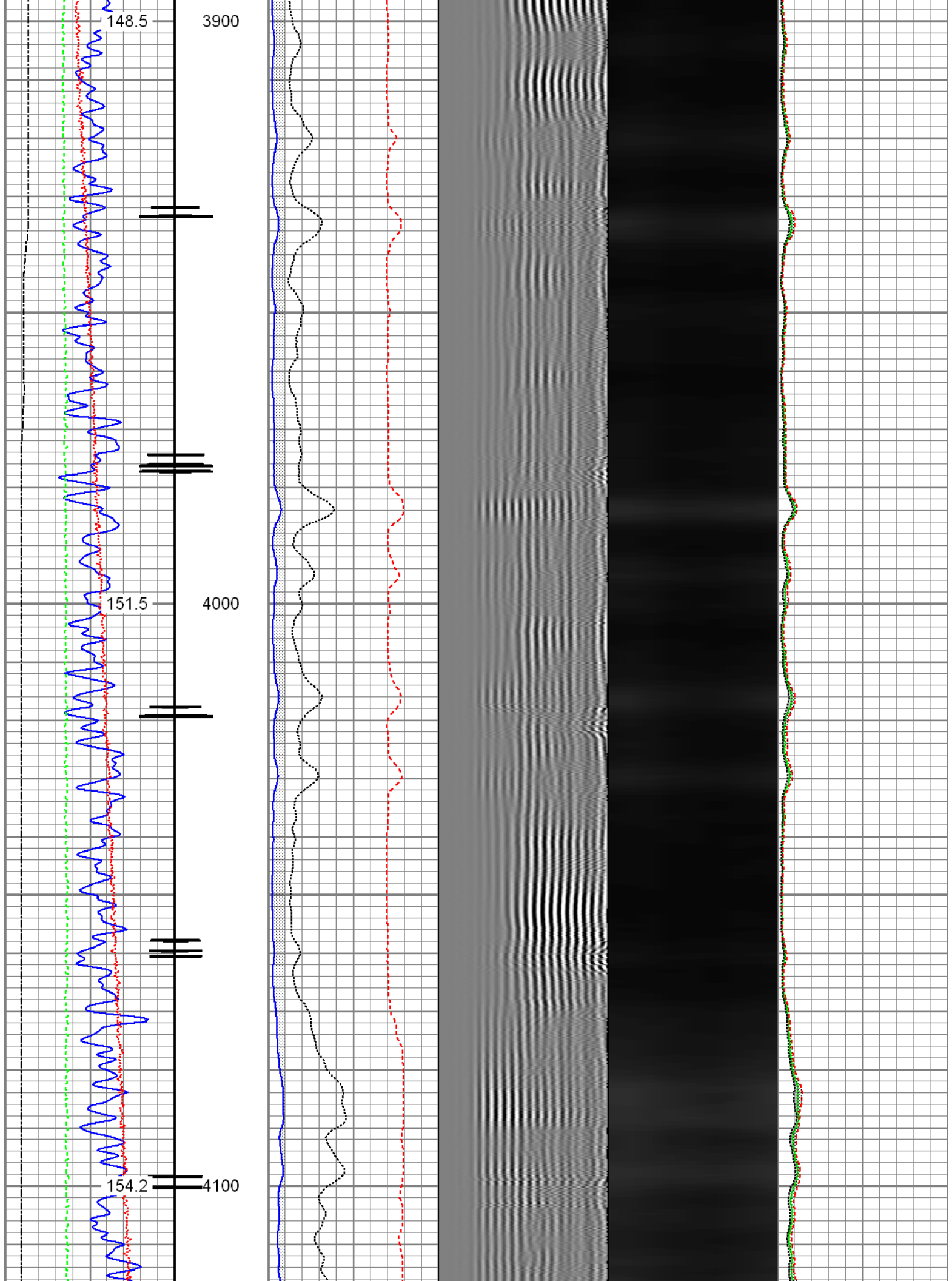


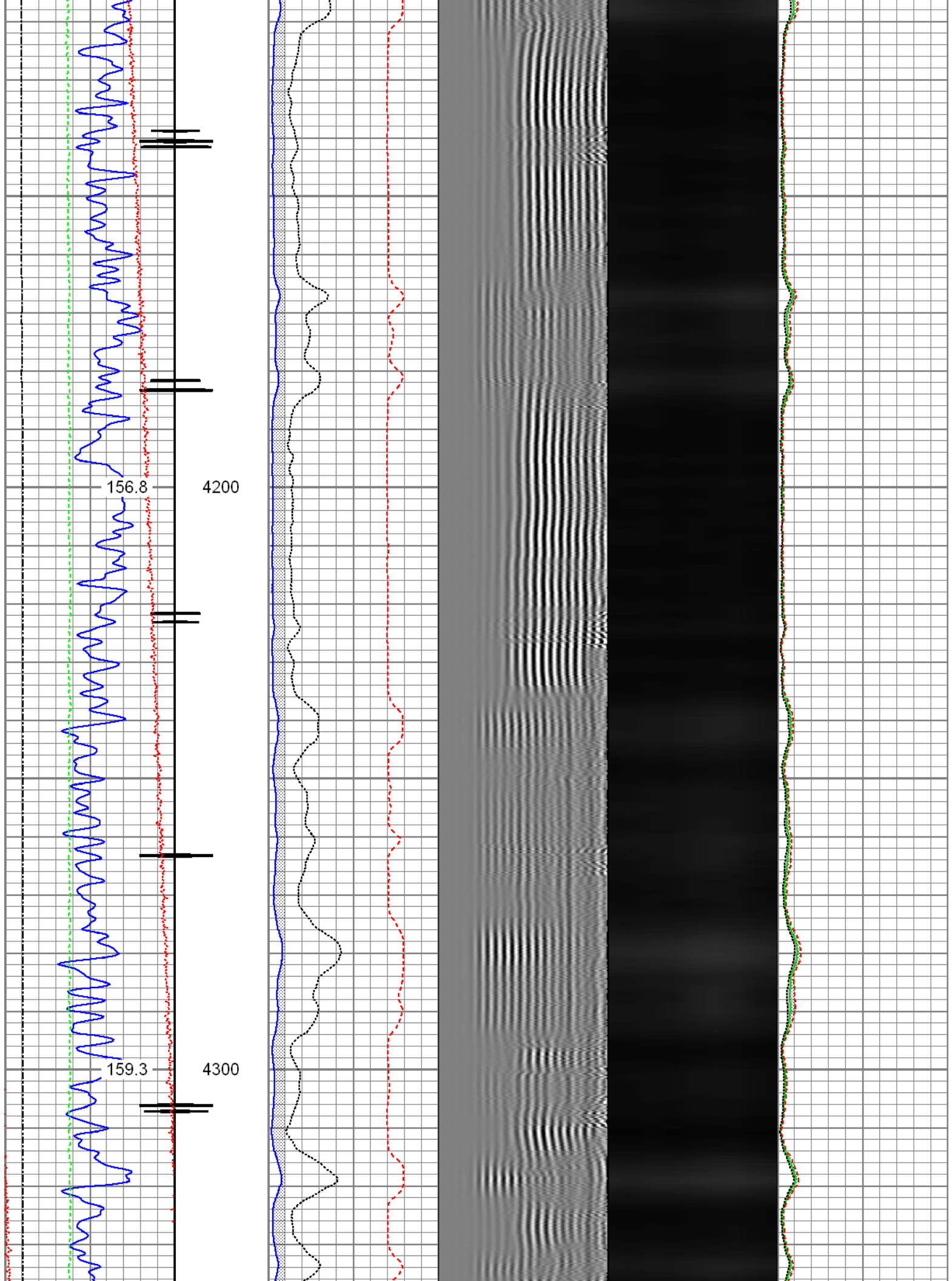


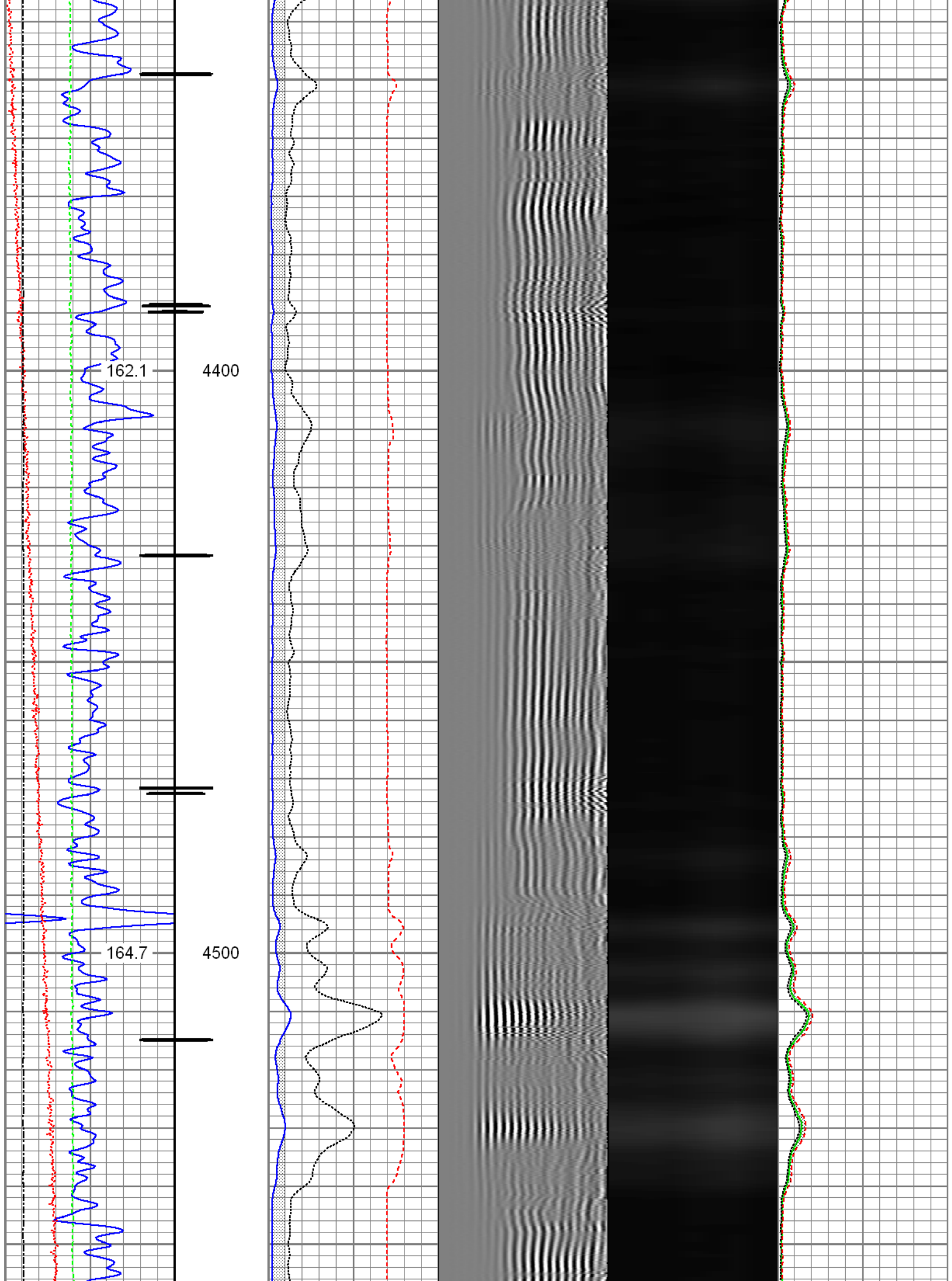


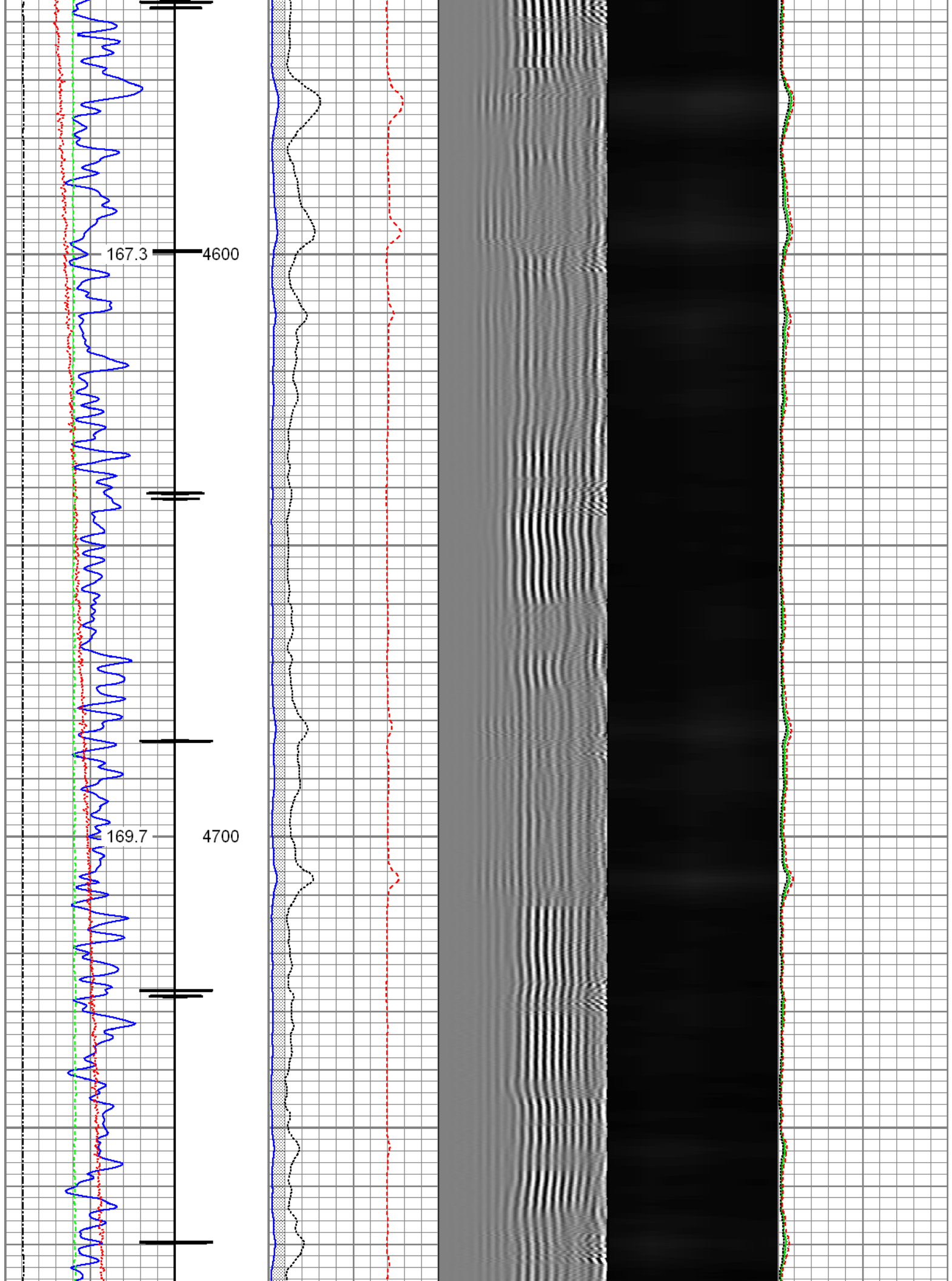




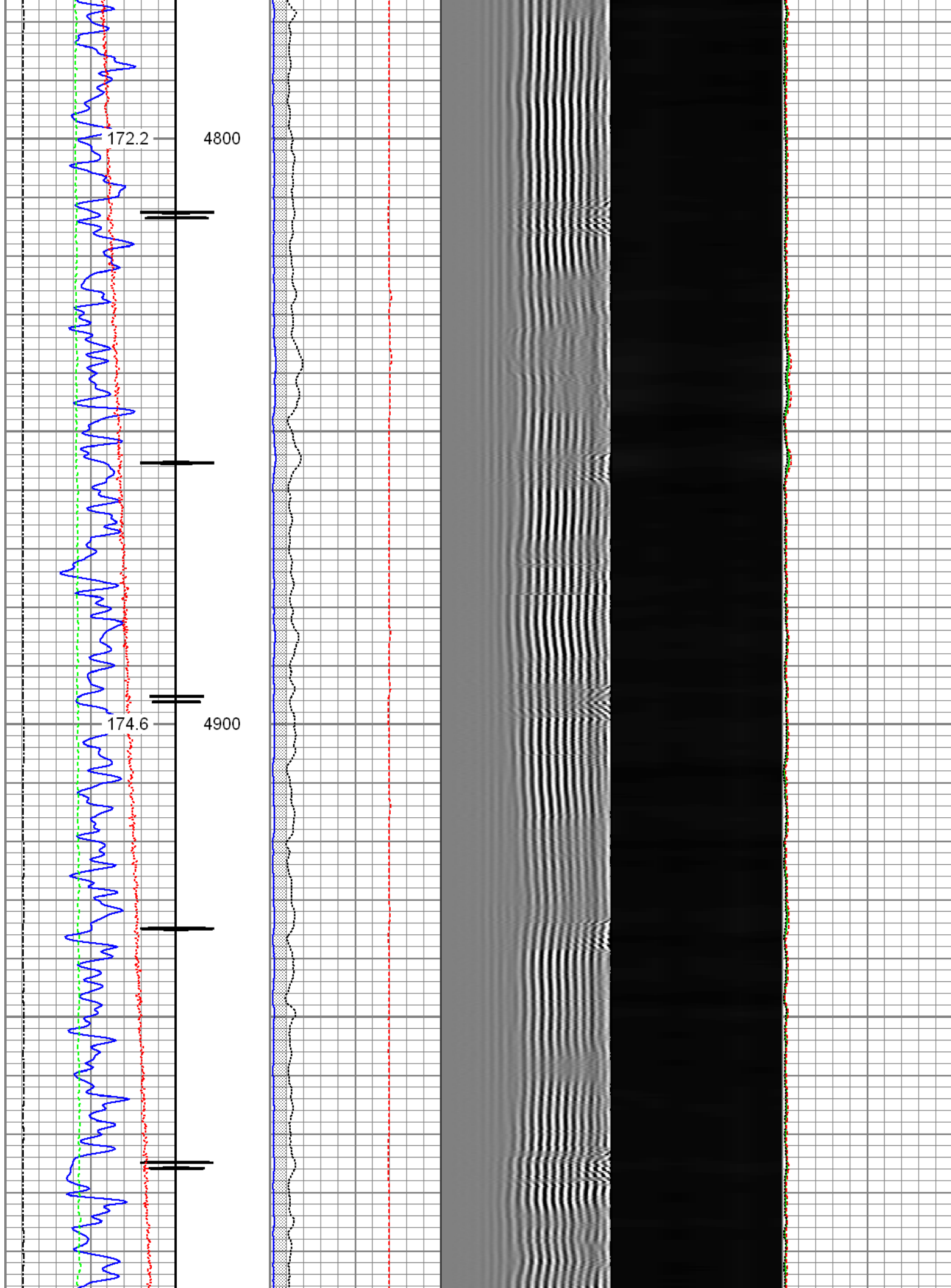




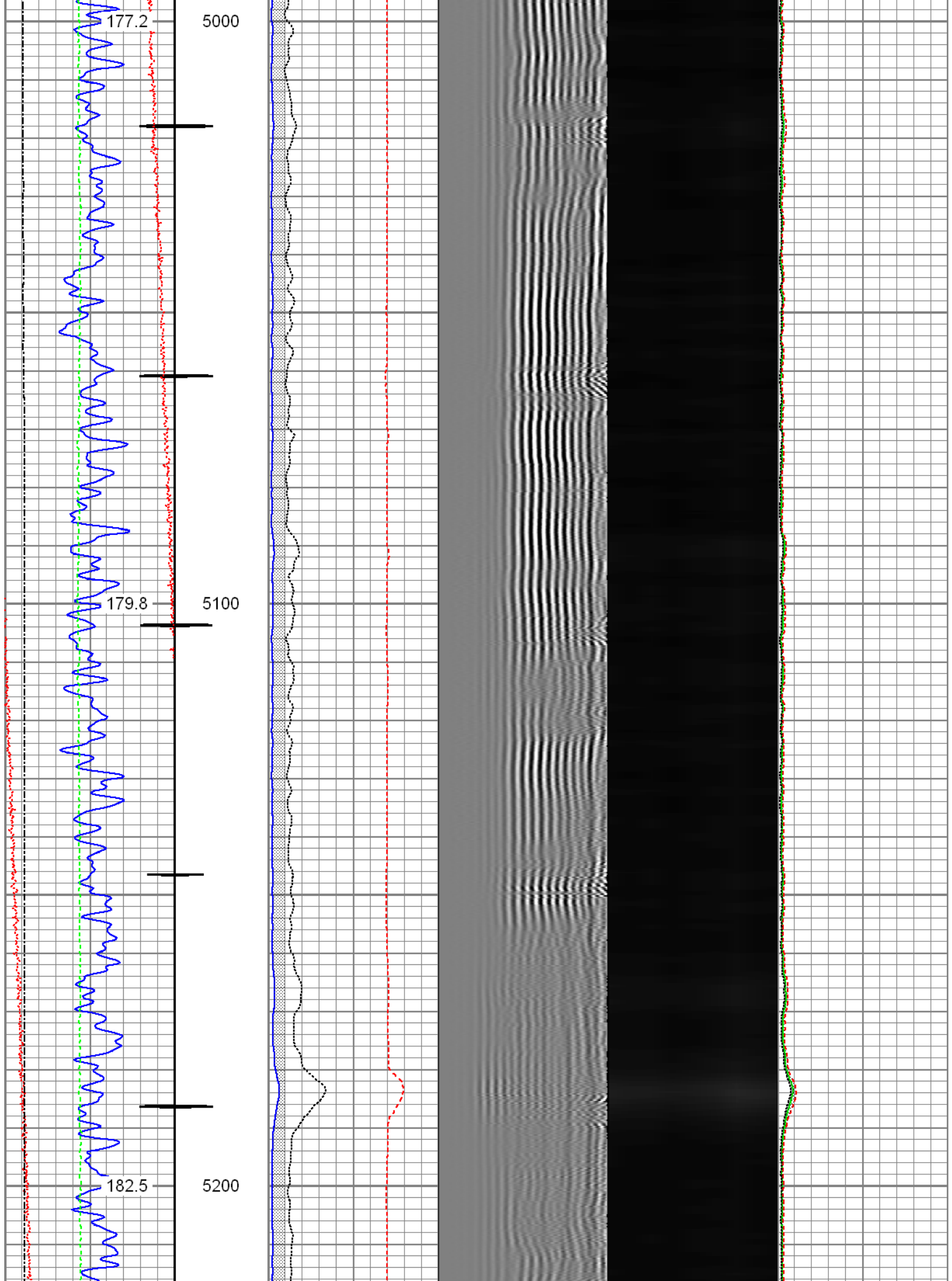


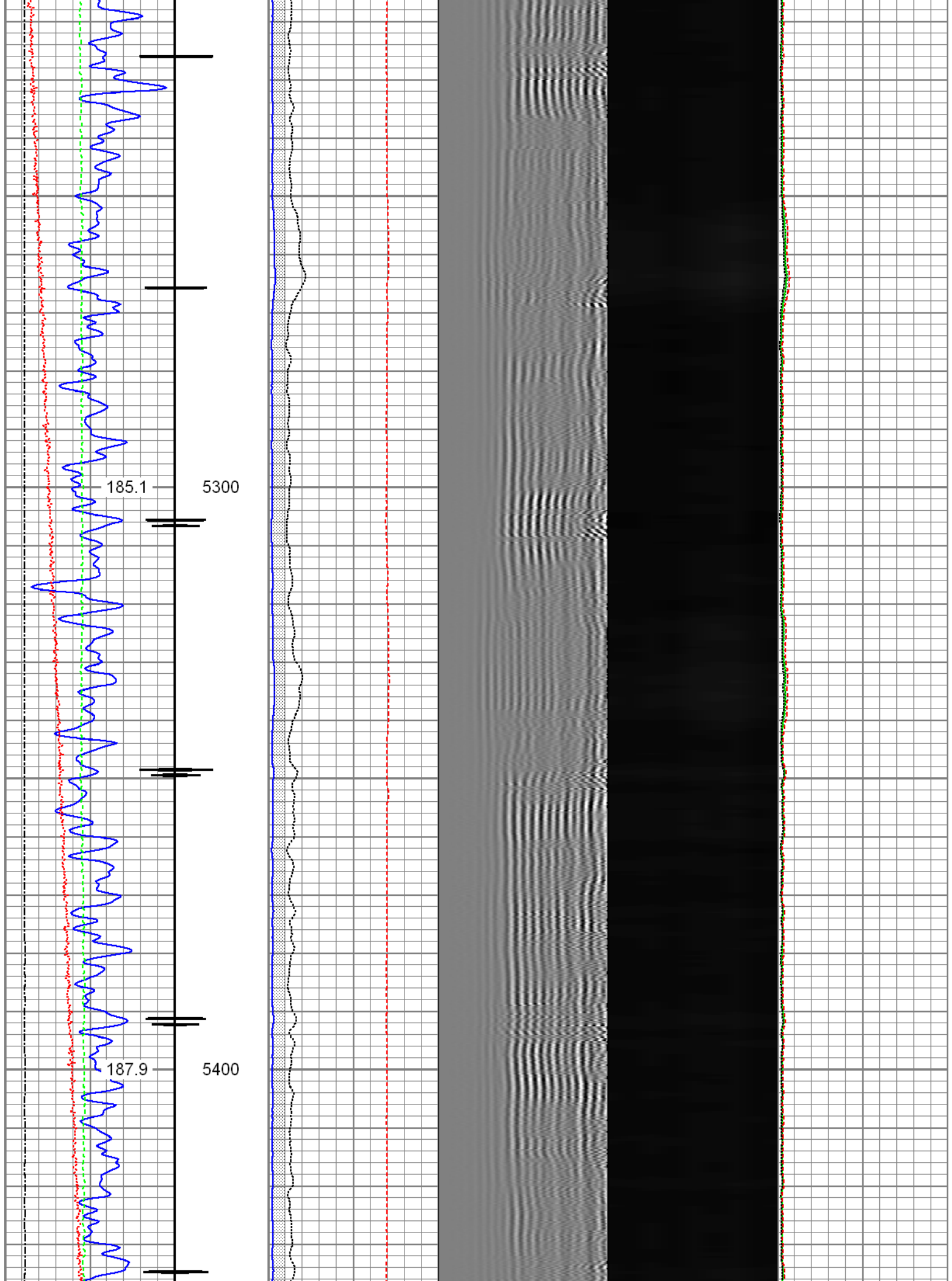


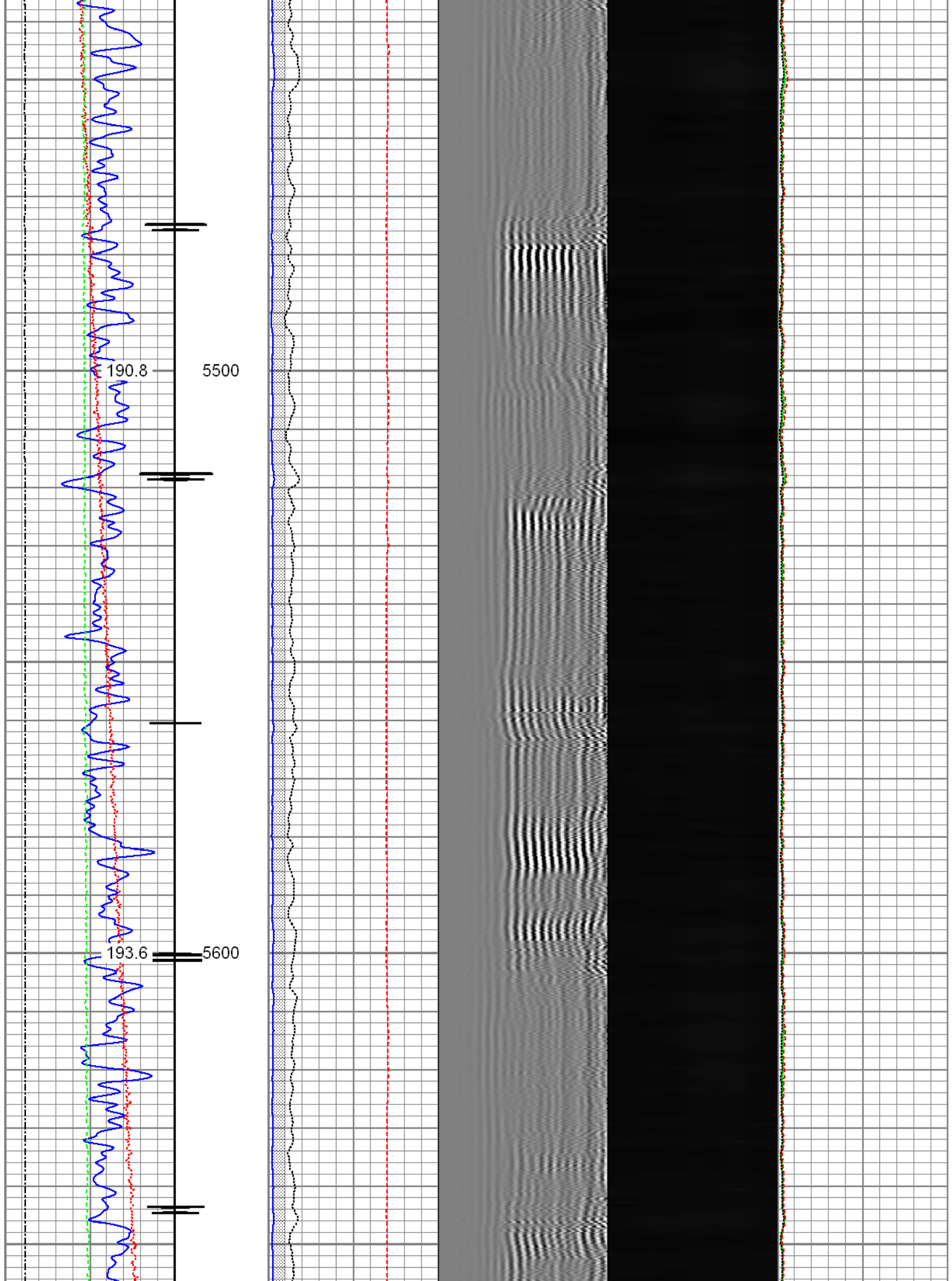


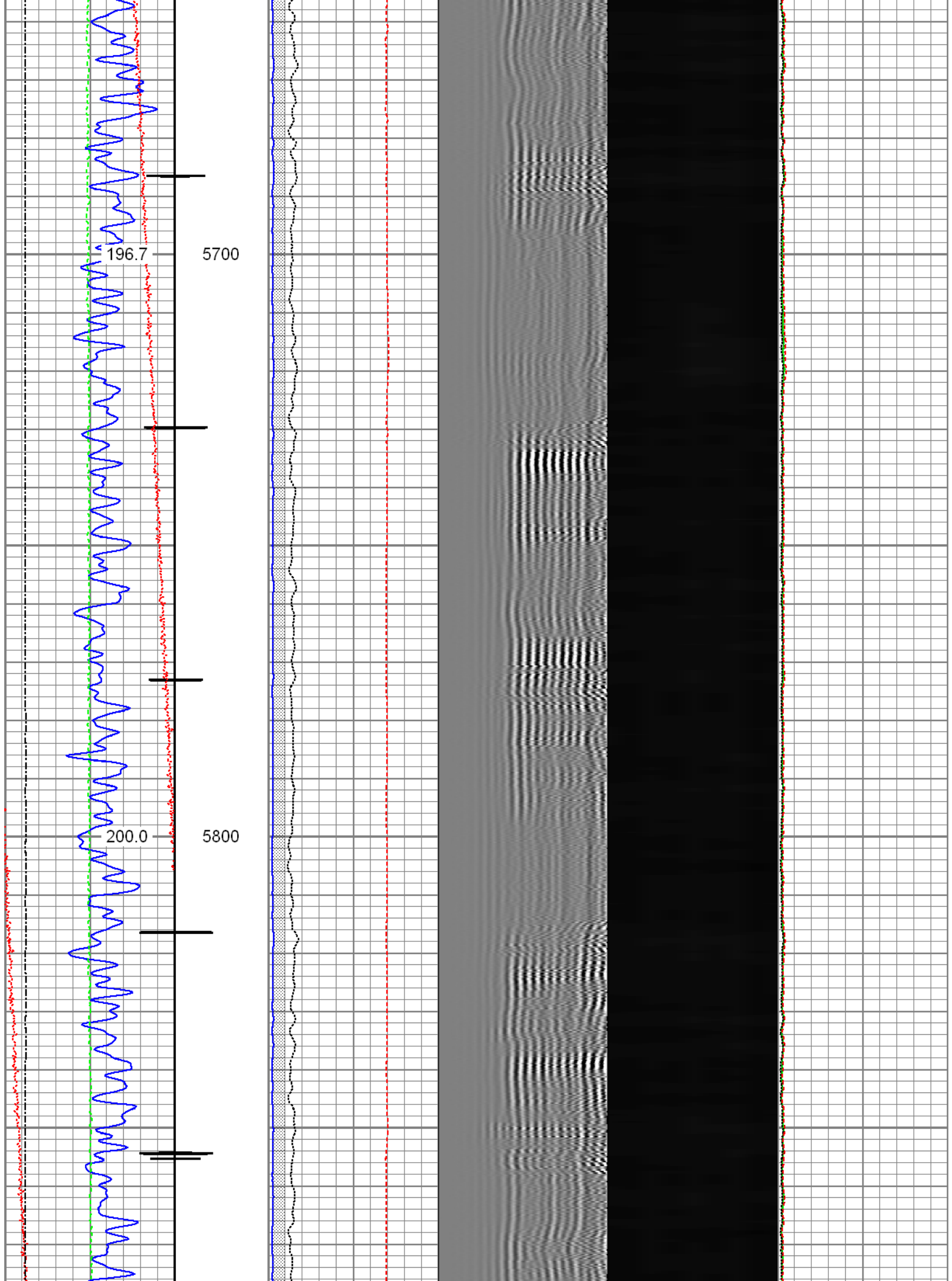




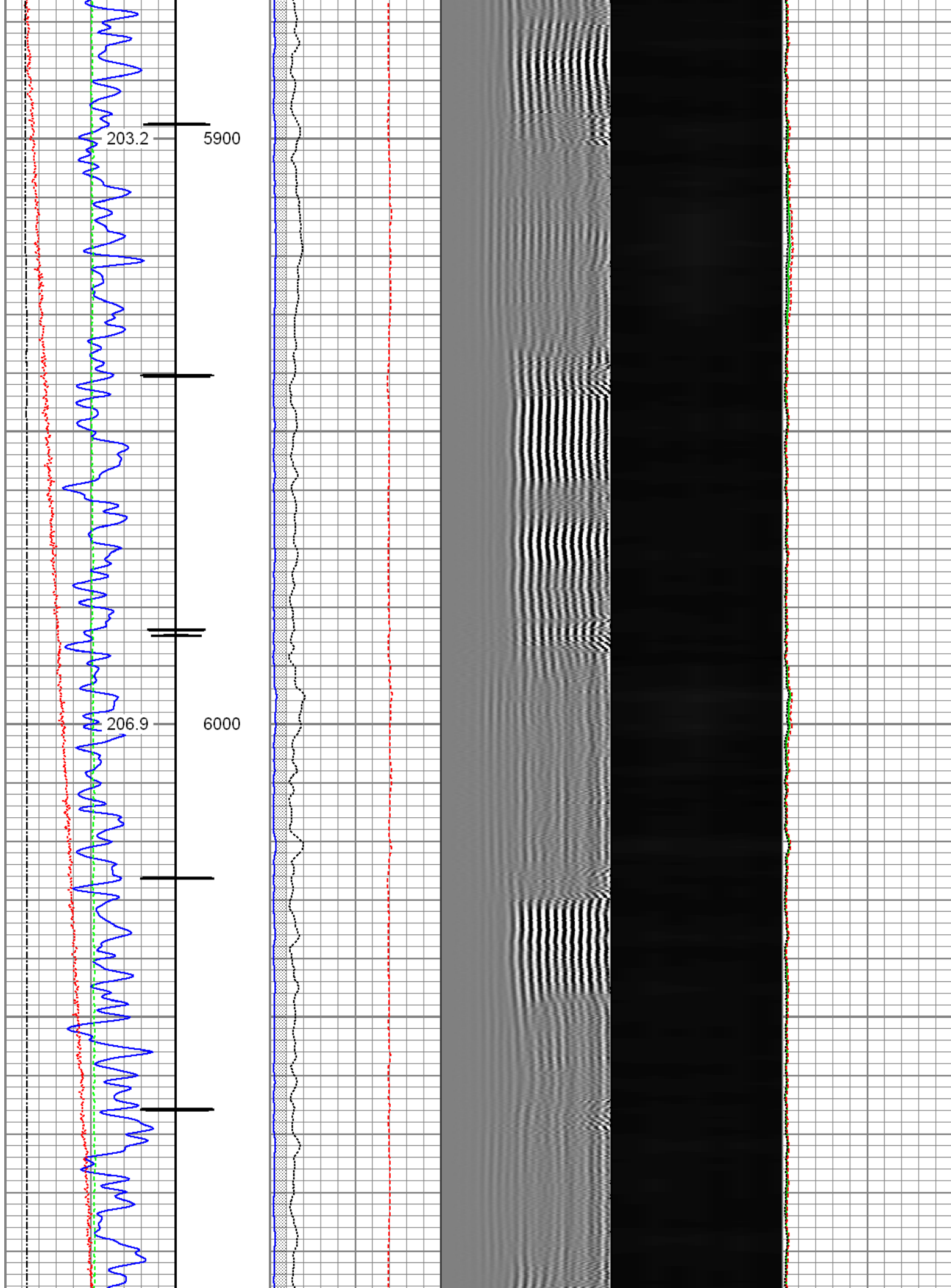


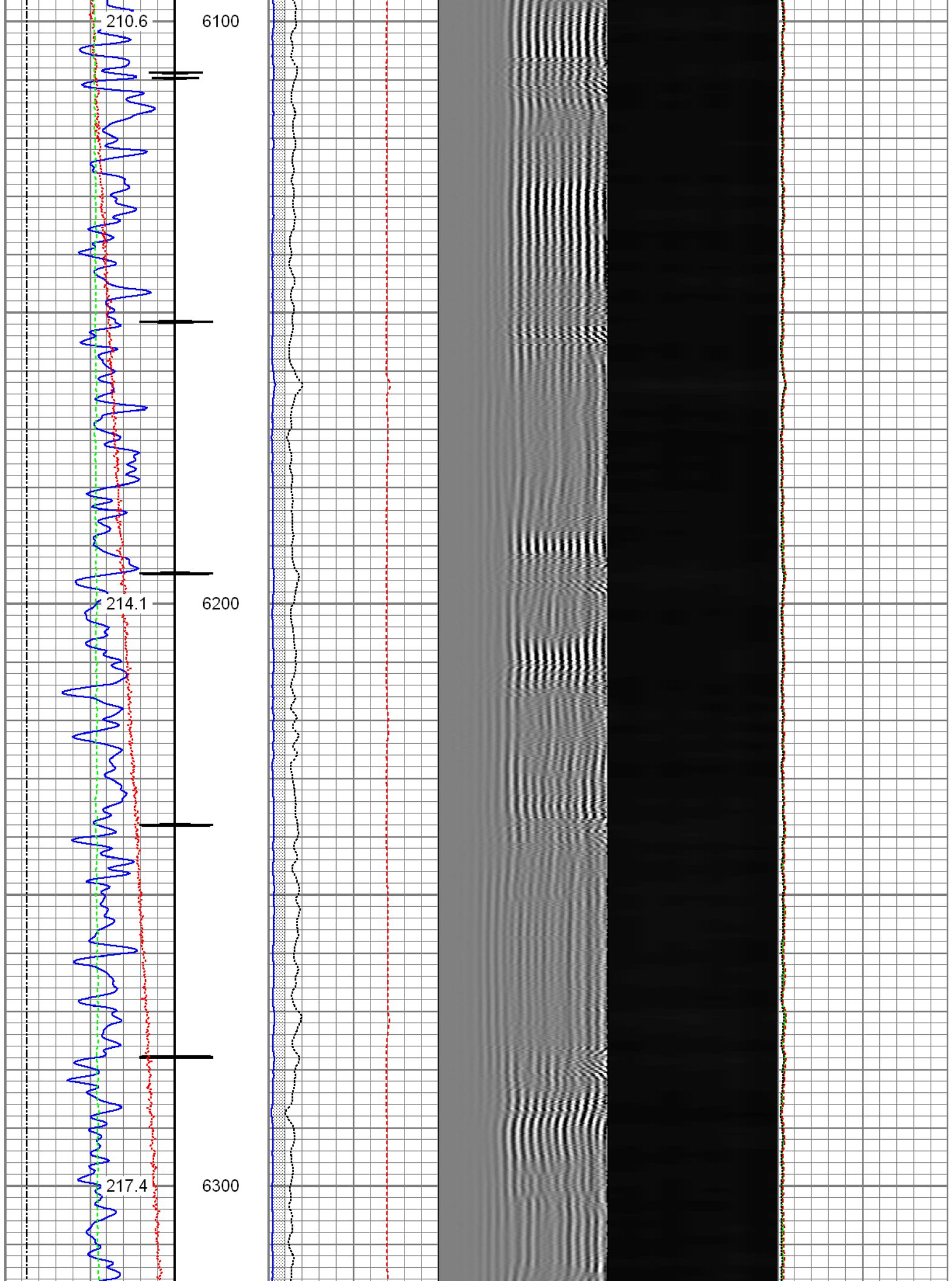


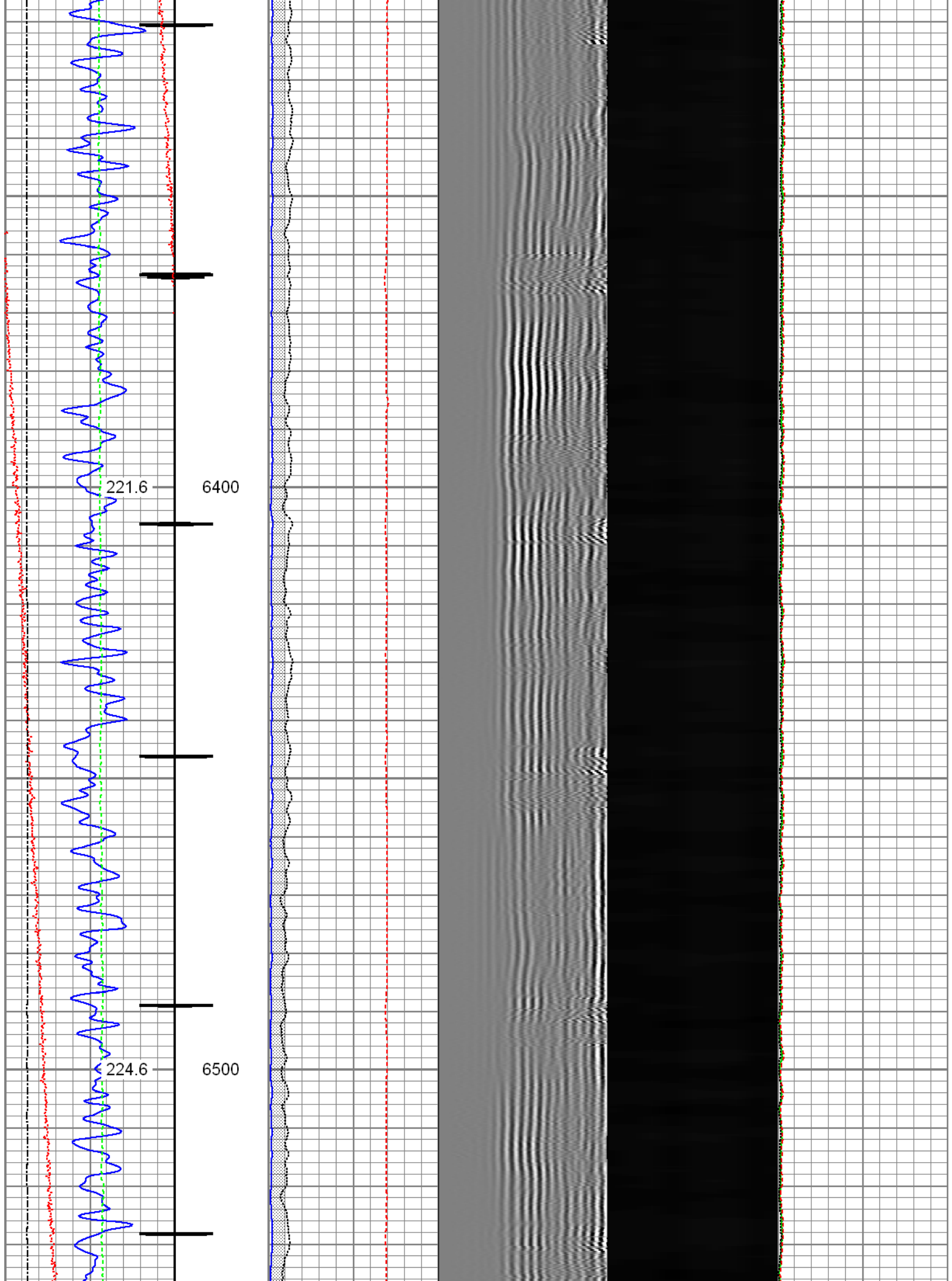


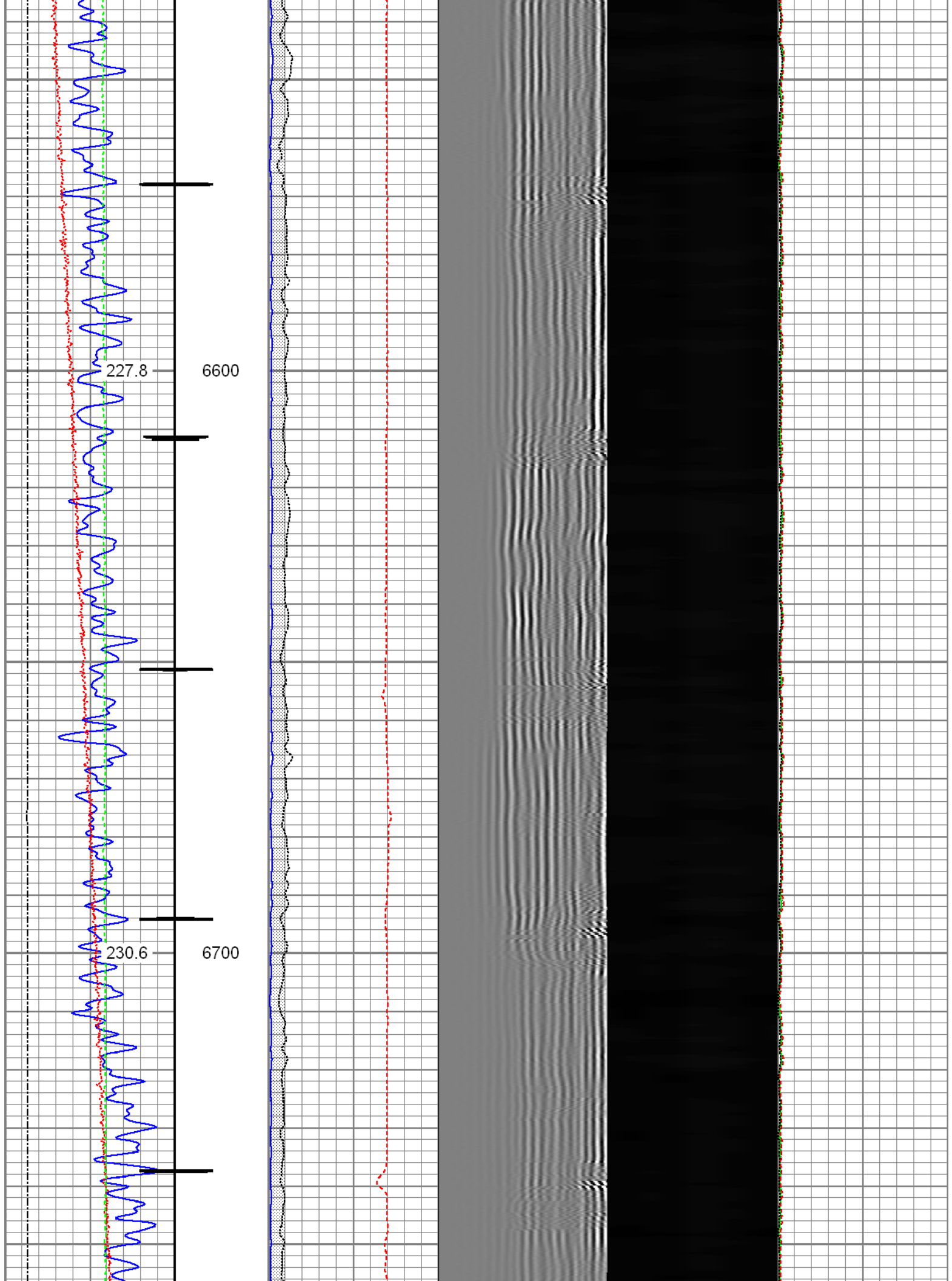




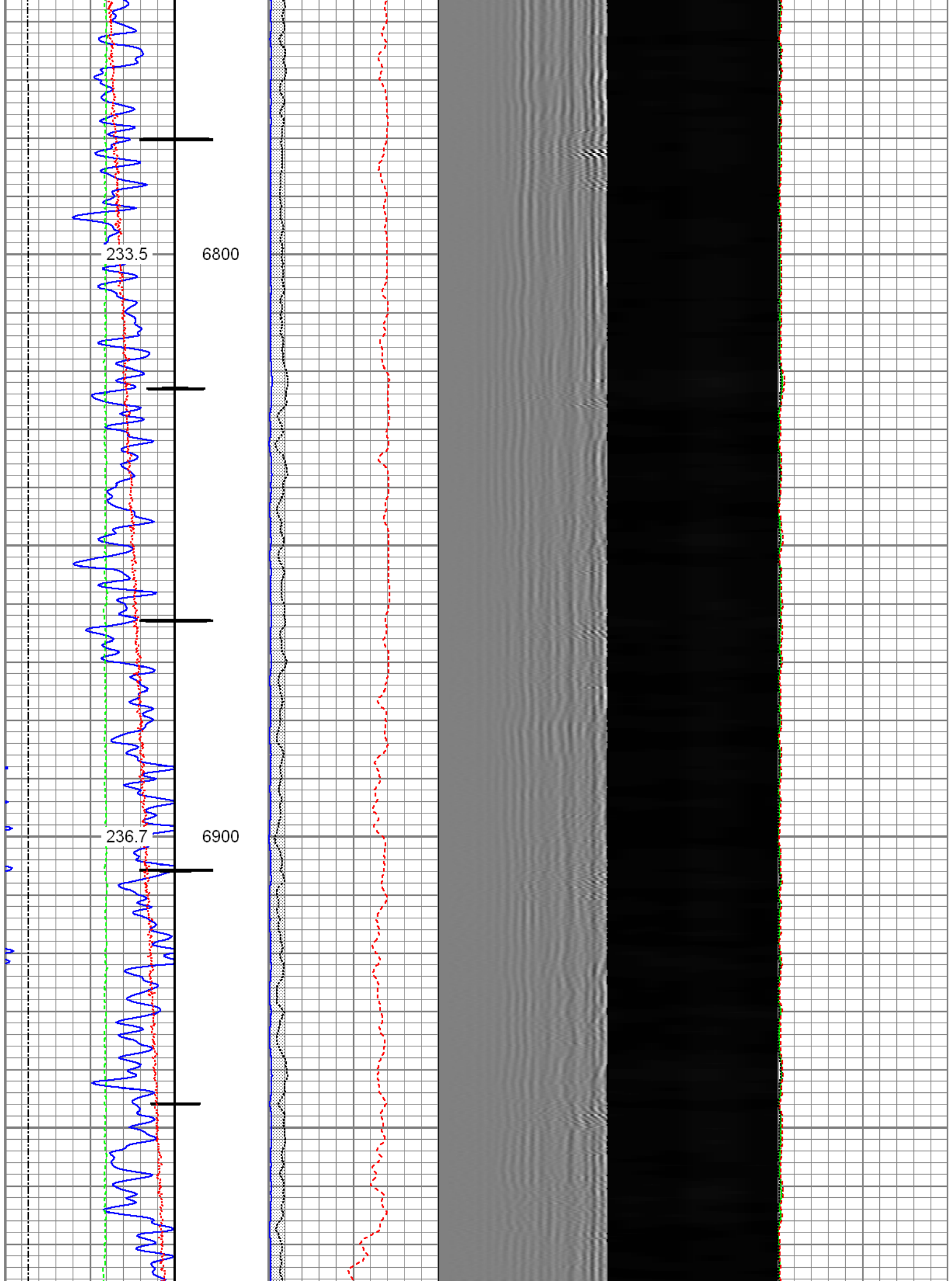


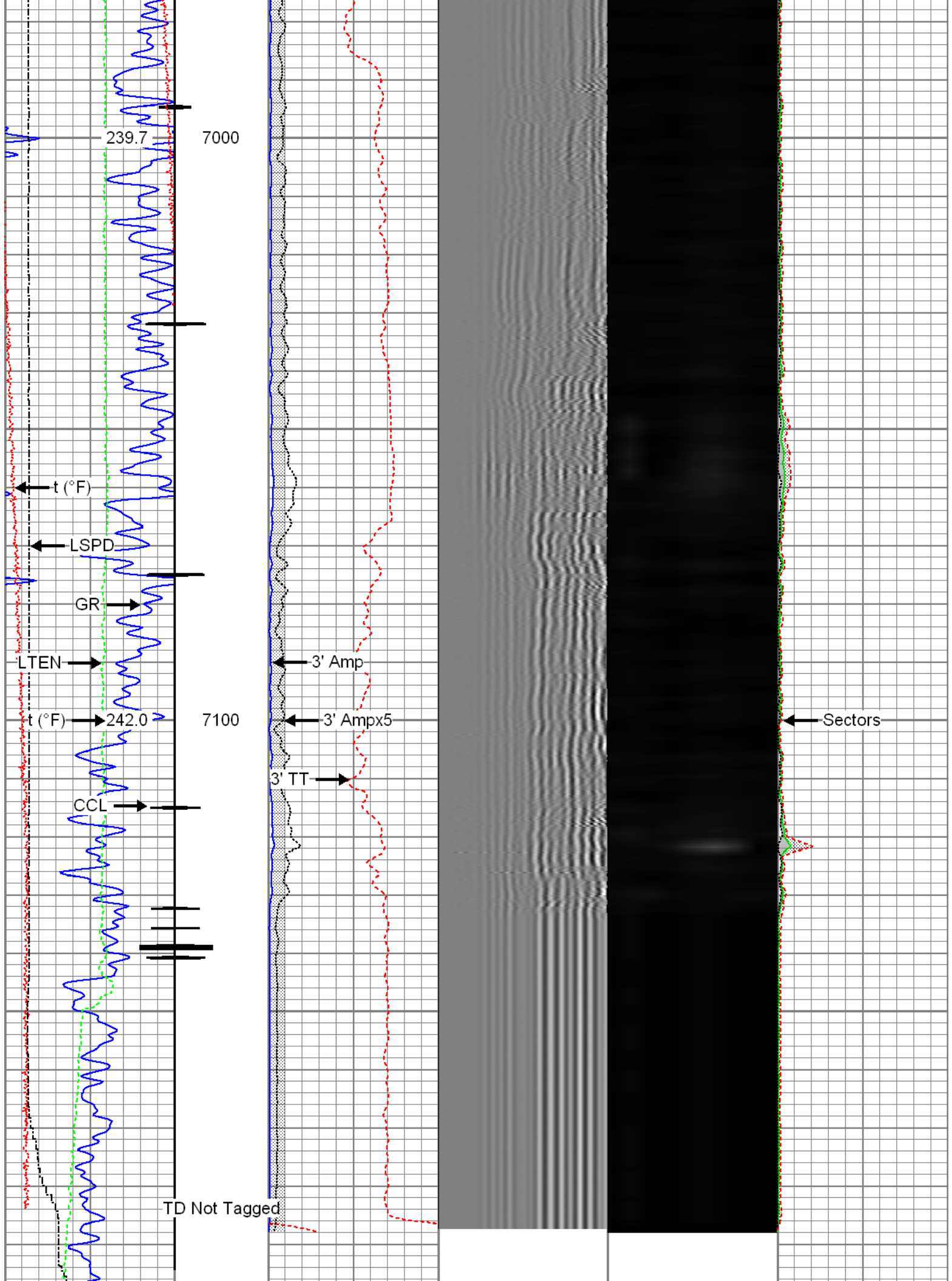


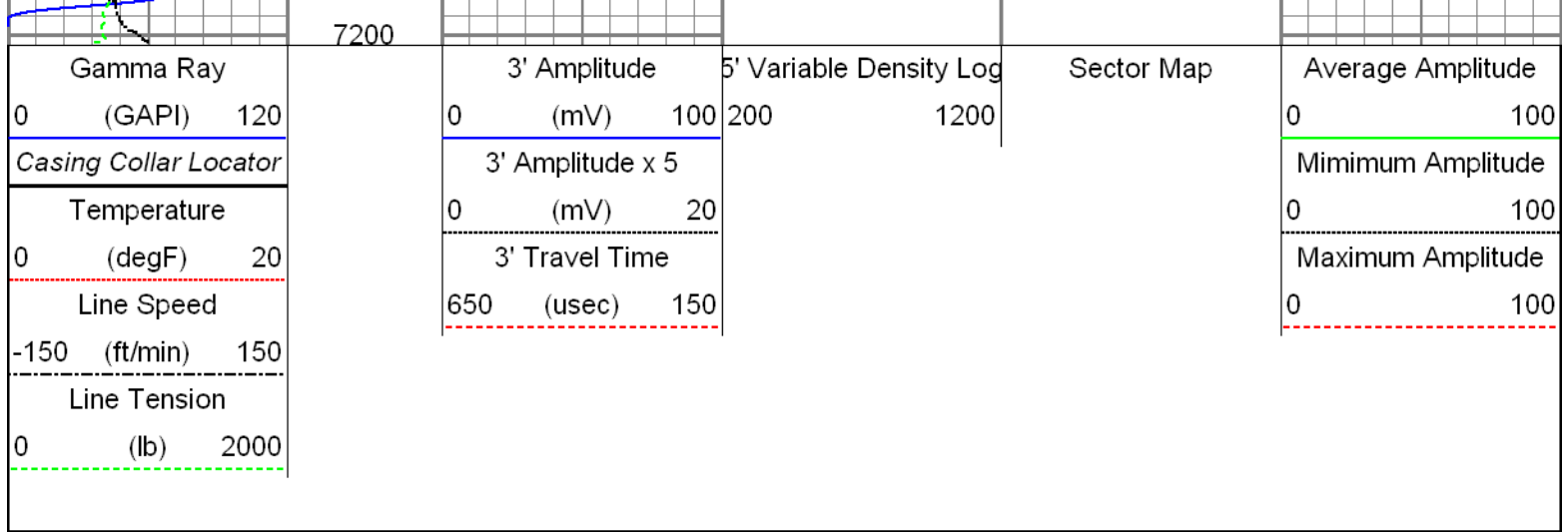












## Repeat Pass

Recorded with 1900 PSI Surface Induced Pressure

Database File: c:\warrior\data\01-25-16\_noble energy\_moser h22-748\_rb\01-25-16\_noble energy\_moser h22-748\_r

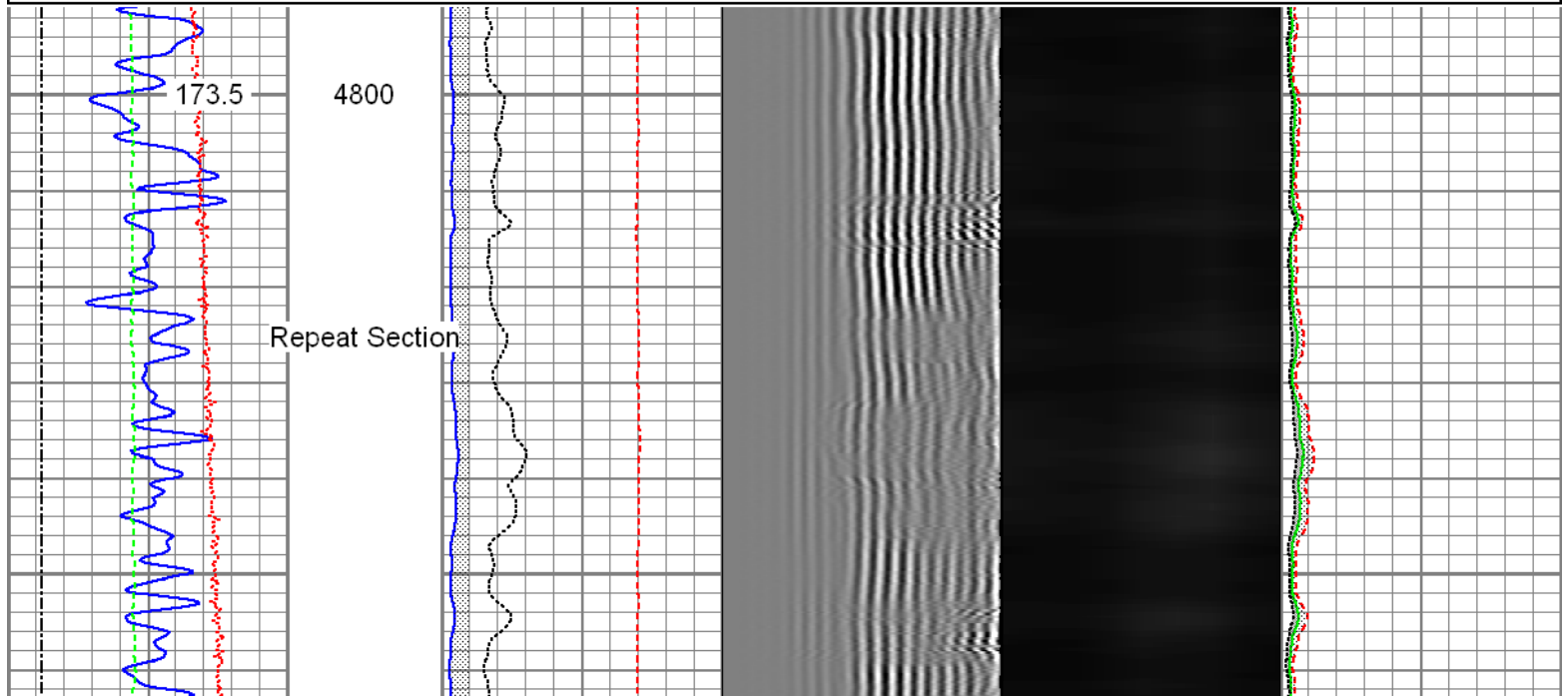
Dataset Pathname: pass5

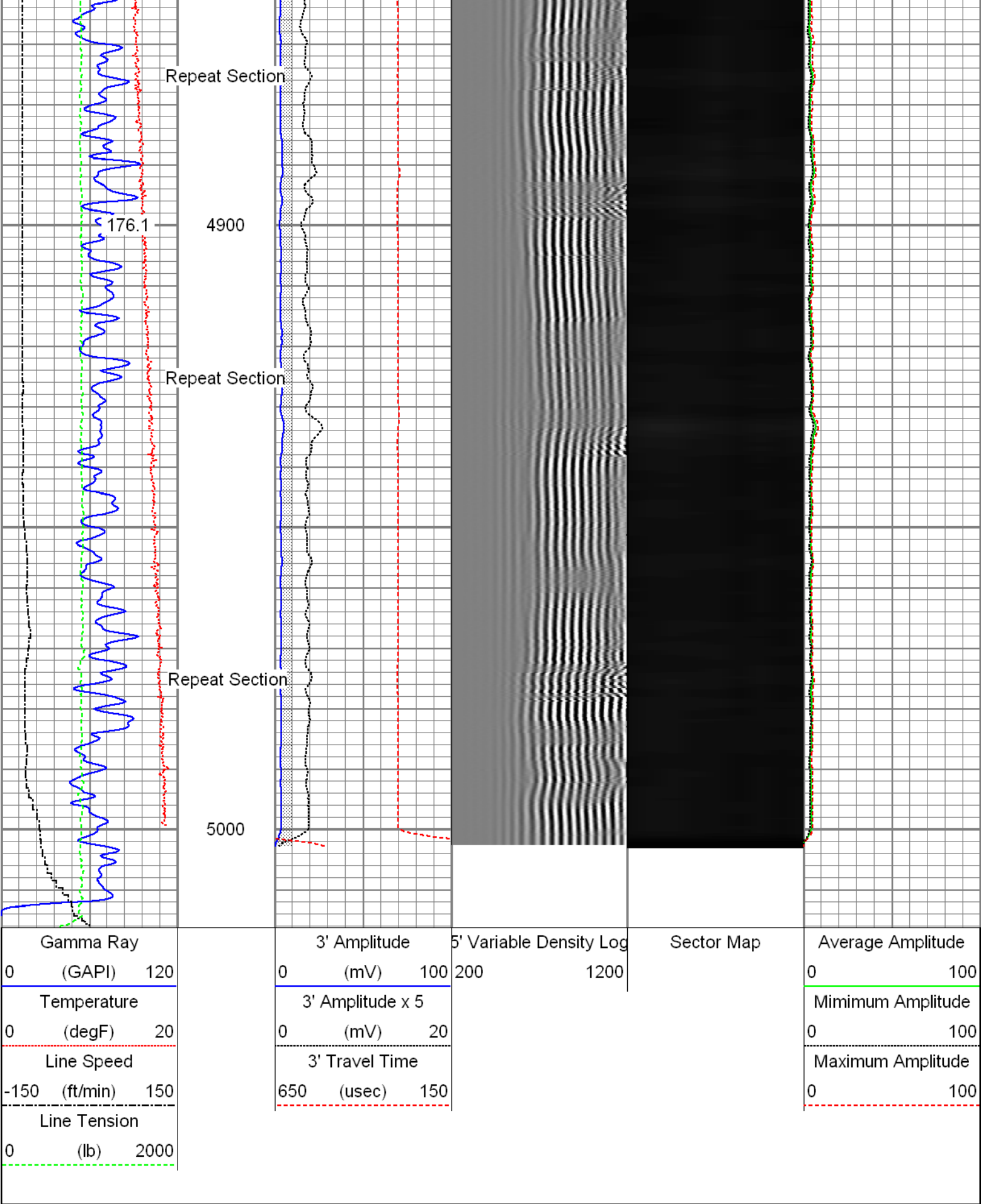
Presentation Format: radii

Dataset Creation: Mon Jan 25 15:15:06 2016 by Log 7.0 B1

Charted by: Depth in Feet scaled 1:240




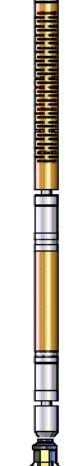

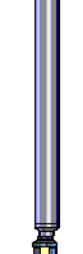
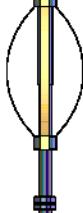
Gamma Ray 0 (GAPI) 120	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Temperature 0 (degF) 20	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Line Tension 0 (lb) 2000				





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00



Head	Volt	19.49		Probe_IL_BS_Cent	2.88	2.75	10.00
				Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer			
Temp		16.72					
WVF3FT	14.55			Probe_RADII-C-2-3/4" (FW1305-098)	9.19	2.75	105.00
WVFCAL	14.55			Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe			
WVFS1	14.55						
WVFS2	14.55						
WVFS3	14.55						
WVFS4	14.55						
WVFS5	14.55						
WVFS6	14.55						
WVFS7	14.55						
WVFS8	14.55						
WVF5FT	13.55						
CCL	DCCL	6.51		Probe_IL_BS_Cent	2.88	2.75	10.00
				Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer			
GR		3.77		Probe_CCL_GR-2.75"Digital (FW1211-081)	4.54	2.75	55.00
				Probe 2-3/4" Digital CCL / Gamma Ray Combined			
				Probe_IL_BS_Cent	2.88	2.75	10.00
				Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer			
Dataset: 01-25-16_Noble Energy_Moser H22-748_RBL.db: field/well/run1/pass7.1							
Total Length: 23.40 ft							
Total Weight: 194.00 lb							
O.D. 2.75 in							

### Gamma Ray Calibration Report

Serial Number: FW1211-081  
 Tool Model: 2.75"Digital  
 Performed: Mon Oct 12 09:41:13 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps

### Segmented Cement Bond Log Calibration Report

Serial Number: FW1305-098  
 Tool Model: 2-3/4"

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 400.096 ft

Master Calibration, performed Mon Jan 25 16:45:49 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.886	0.800	71.921	80.281	0.796
CAL	0.002	0.723				
5'	-0.005	0.746	0.800	71.921	94.695	1.255
SUM						
S1	-0.001	0.864	0.000	100.000	115.606	0.164
S2	-0.002	0.874	0.000	100.000	114.251	0.179
S3	-0.004	0.893	0.000	100.000	111.533	0.442
S4	0.000	0.909	0.000	100.000	109.996	-0.011
S5	0.000	0.911	0.000	100.000	109.821	-0.036
S6	0.000	0.895	0.000	100.000	111.713	-0.033
S7	0.000	0.879	0.000	100.000	113.778	-0.009
S8	0.000	0.865	0.000	100.000	115.626	-0.006


Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	0.723	1.000	0.000

Air Zero Calibration, performed Mon Jan 25 12:38:21 2016:

	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	

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

	Company	Noble Energy Inc.
	Well	Moser H22-748
	Field	Wattenberg
	County	Weld
	State	Colorado