



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Kerr-McGee Oil & Gas Onshore, L.P.	
Well		Hilgers 12N-22HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-43261	
SEC 22 TWP 3N RGE 68W		Other Services	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		4998'	
Gauge Ring		K.B. 5015 FT	
		D.F. ---	
		G.L. 4998 FT	
Date		23-JUN-2017	
Run Number		Two	
Depth Driller		12324 FT	
Depth Logger		7430 FT	
Bottom Logged Interval		7426 FT	
Top Log Interval		Surface	
Open Hole Size		7.875"	
Type Fluid		Water	
Density / Viscosity		8.34 lb/gal	
Max. Recorded Temp.		223 °F	
Estimated Cement Top		See Log	
Time Well Ready		ROA	
Time Logger on Bottom		15.15	
Equipment Number		HD-0361	
Location		Fort Lupton, CO	
Recorded By		Carlos Sisineros	
Witnessed By		Donnie Frederick	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size (in)		Weight (lb/ft)	
From		To	
Casing Record		Size (in)	
Surface Casing		9 5/8	
Intermediate #1		5 1/2	
Intermediate #2		---	
Liner		---	

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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 6579 FT
Adjusted +4 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7460 FT with no debris
Log ran from as deep as possible in heel to surface
Log ran with 2800 PSI surface induced pressure
Logging tools were clean and free of any debris upon completion of operations

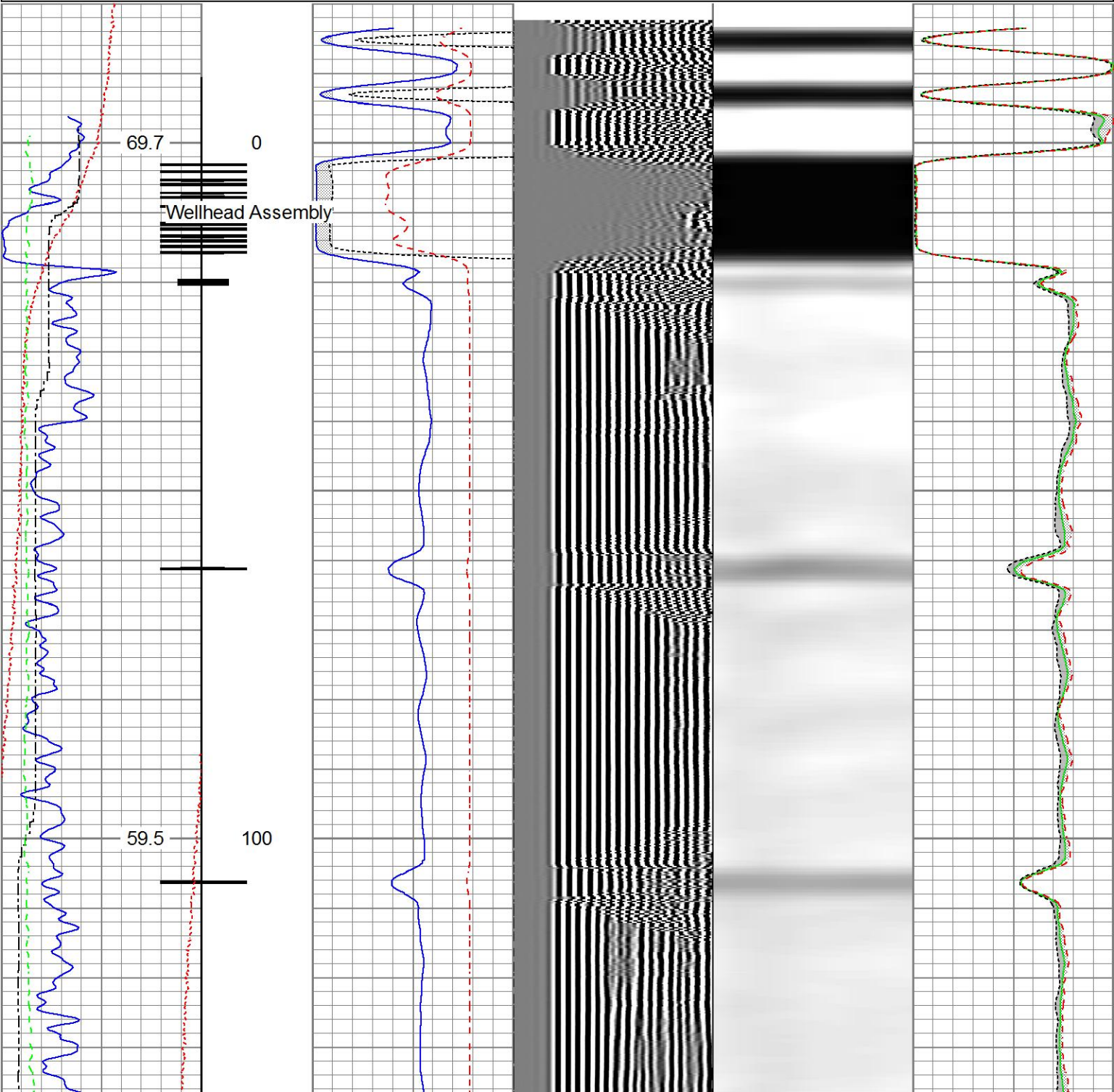
Thank you for choosing Reliance Oilfield Services, LLC!!

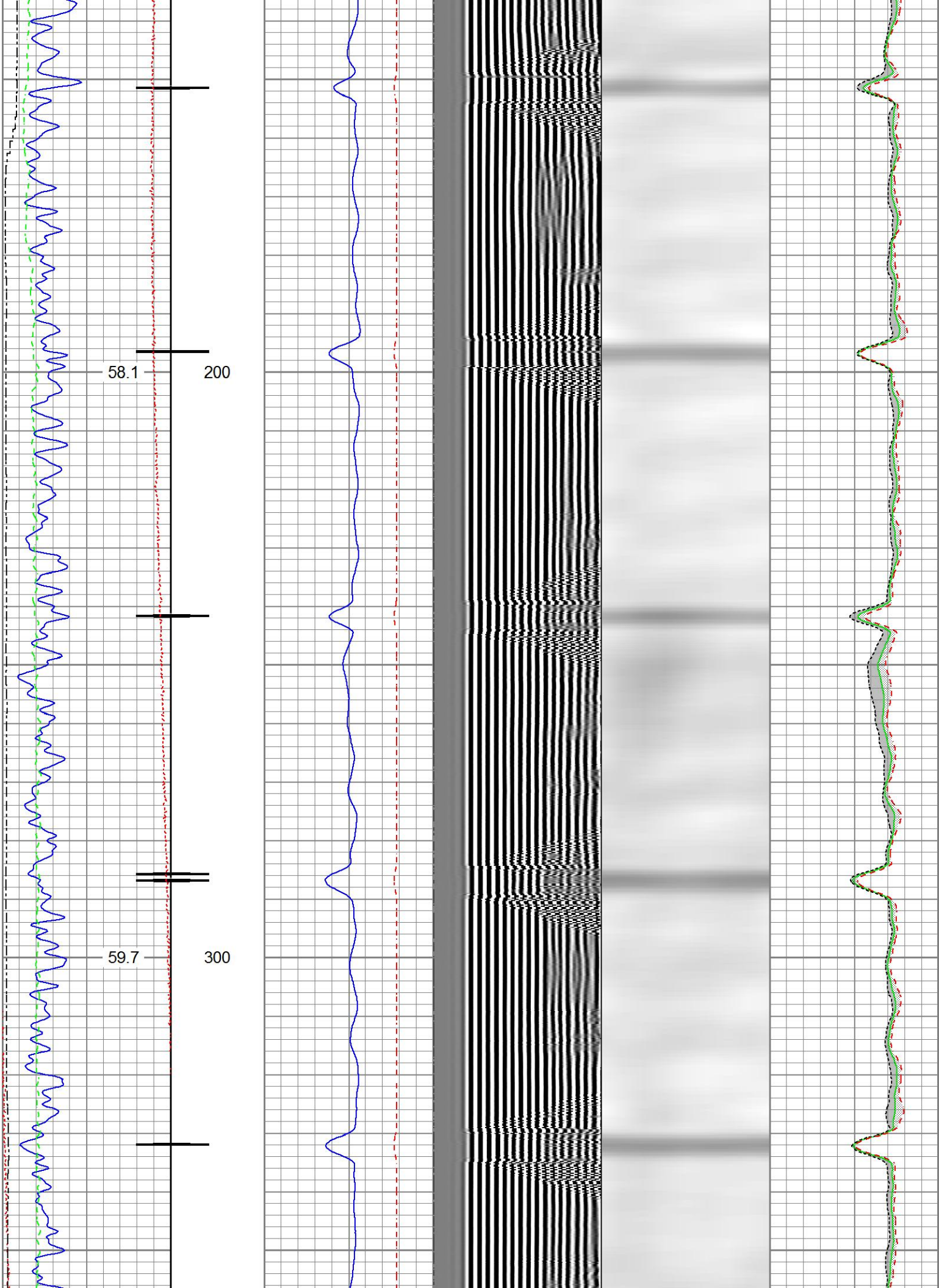


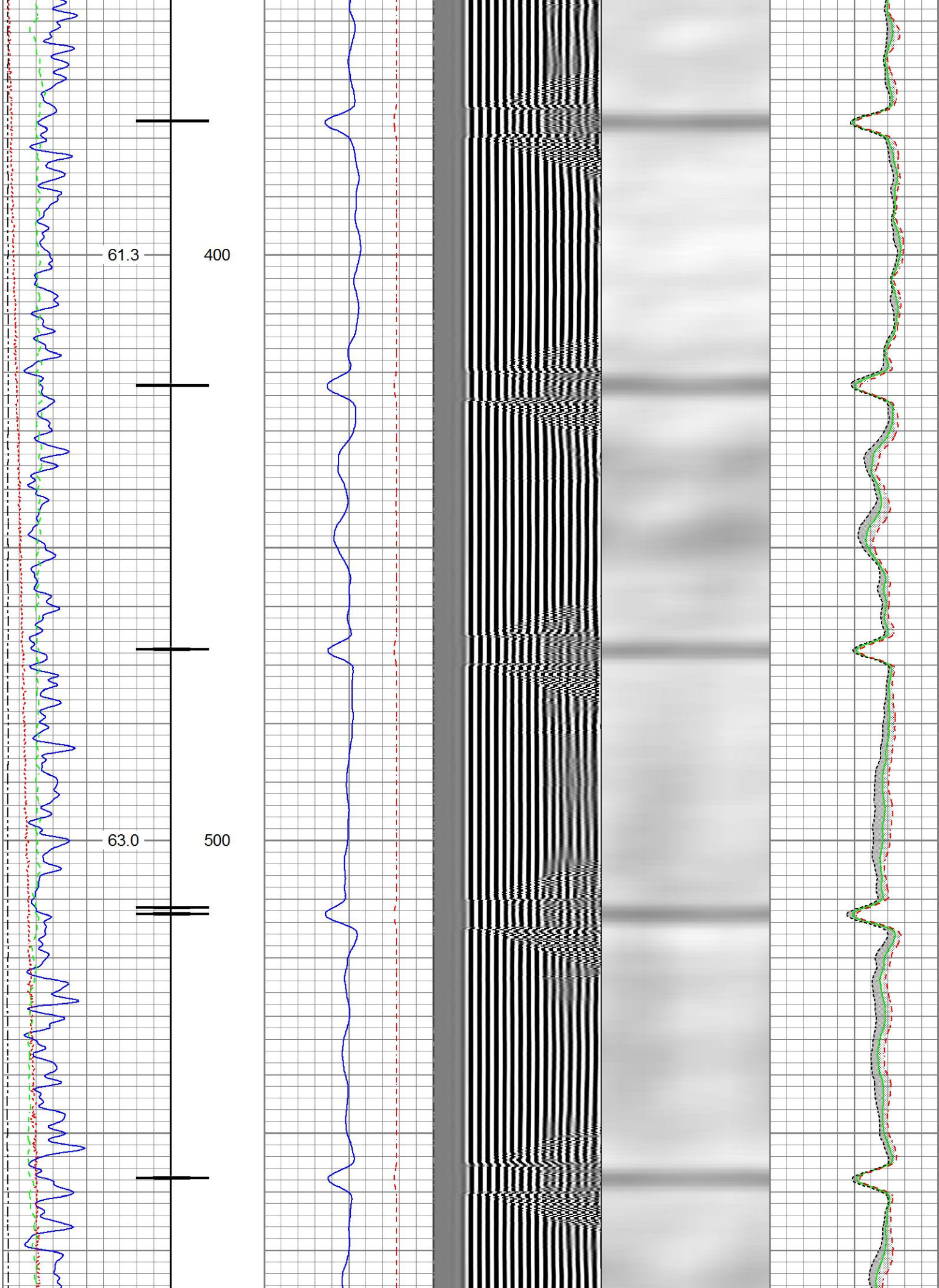
Main Pass

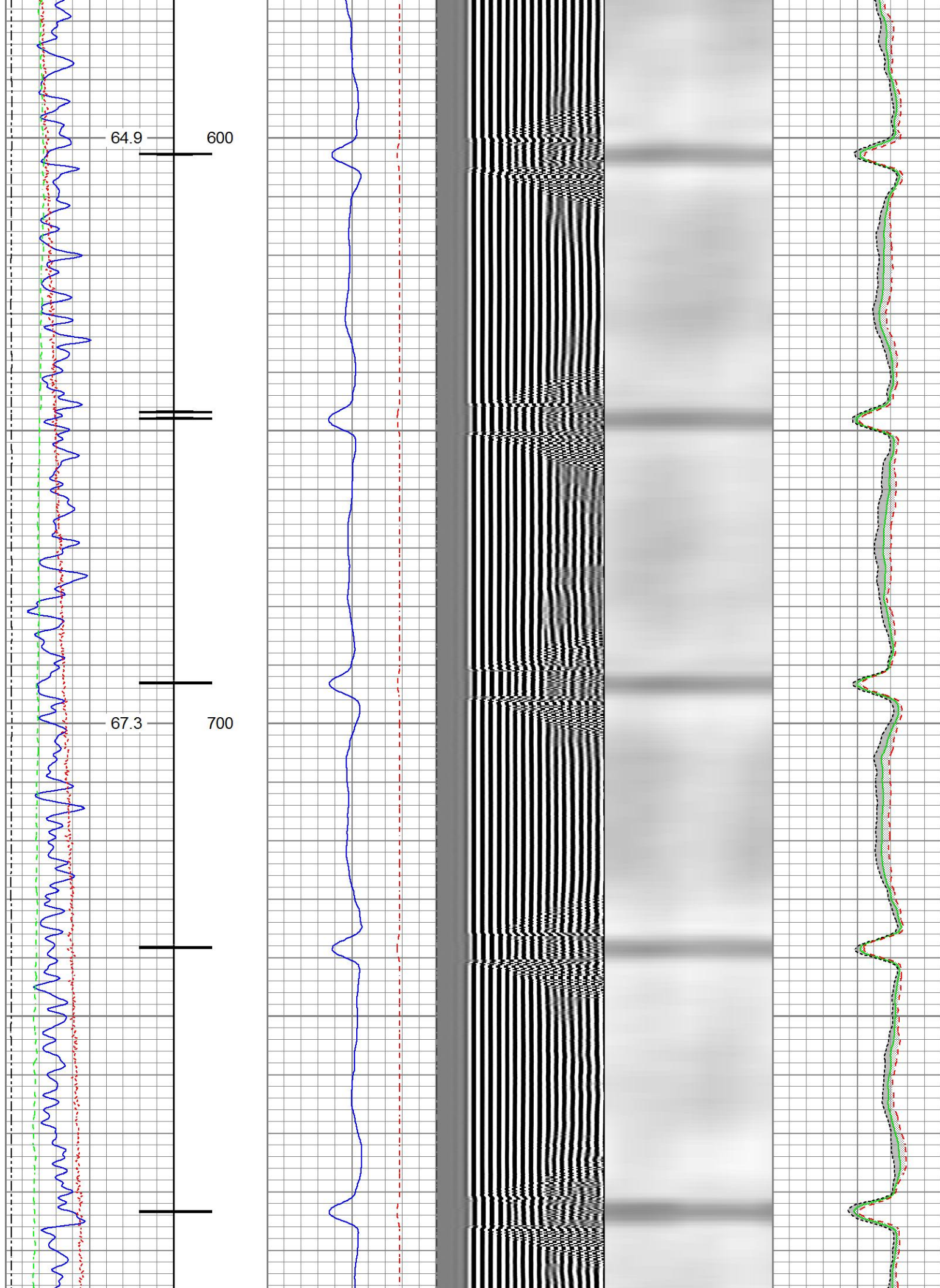
Recorded With 2800 PSI Surface Induced Pressure

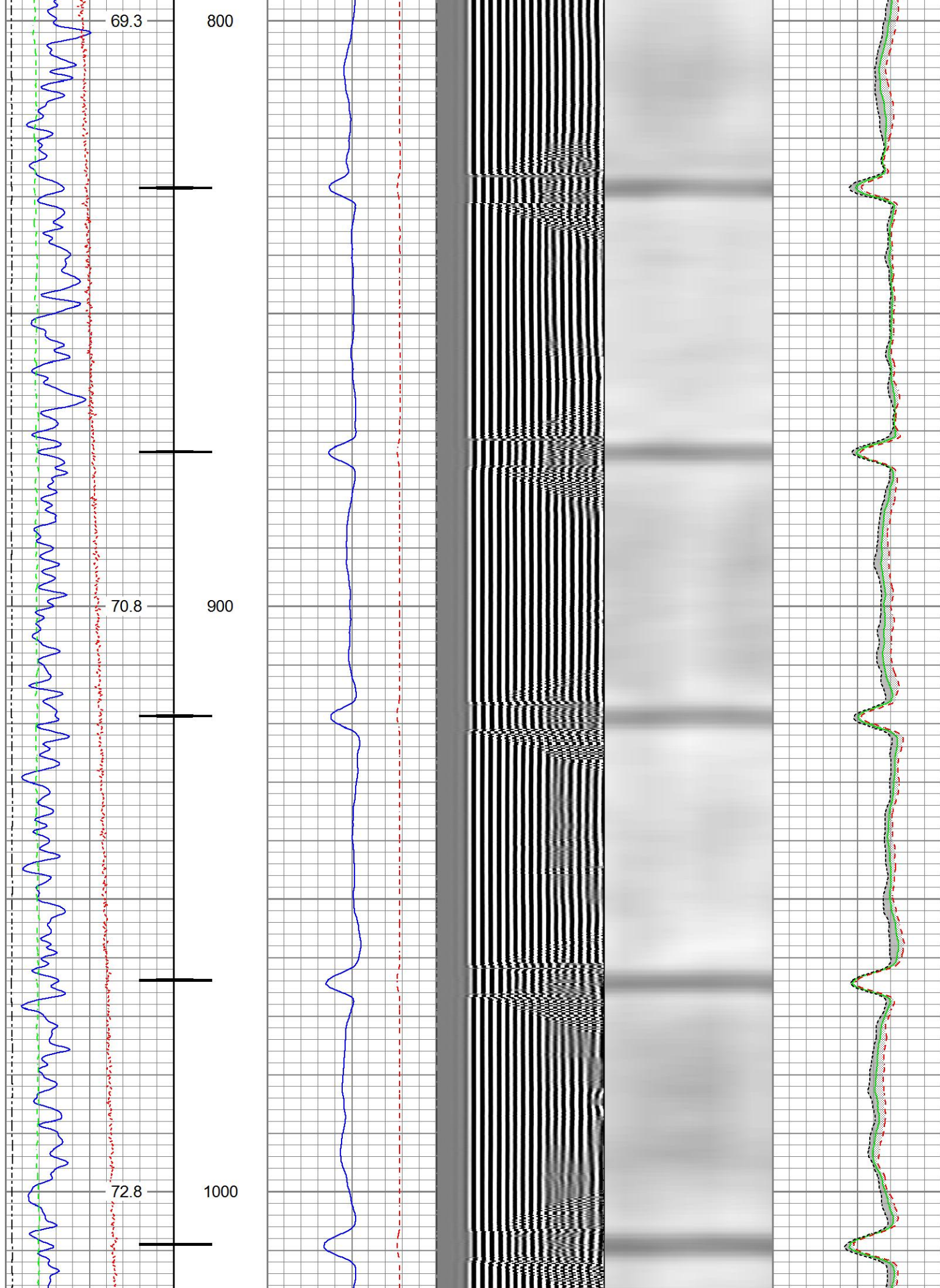
Gamma Ray			3' Amplitude			5' Variable Density Log		Sector Map		Average Amplitude	
0	(GAPI)	120	0	(mV)	100	200	1200			0	100
Casing Collar Locator			3' Amplitude x 5							Minimum Amplitude	
Temperature			0 (mV) 20							0 100	
0 (degF) 20			3' Travel Time							Maximum Amplitude	
Line Speed			650 (usec)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

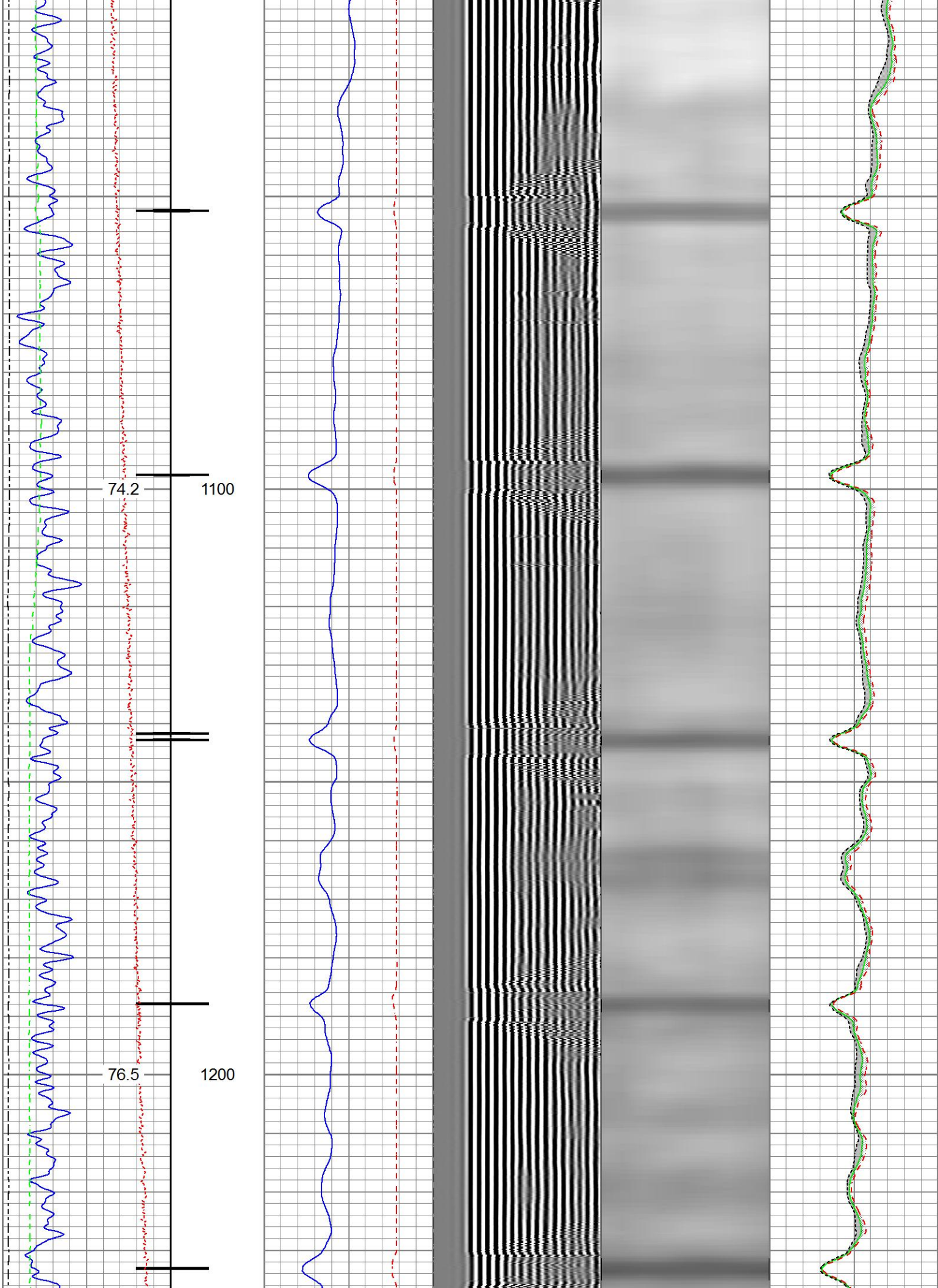


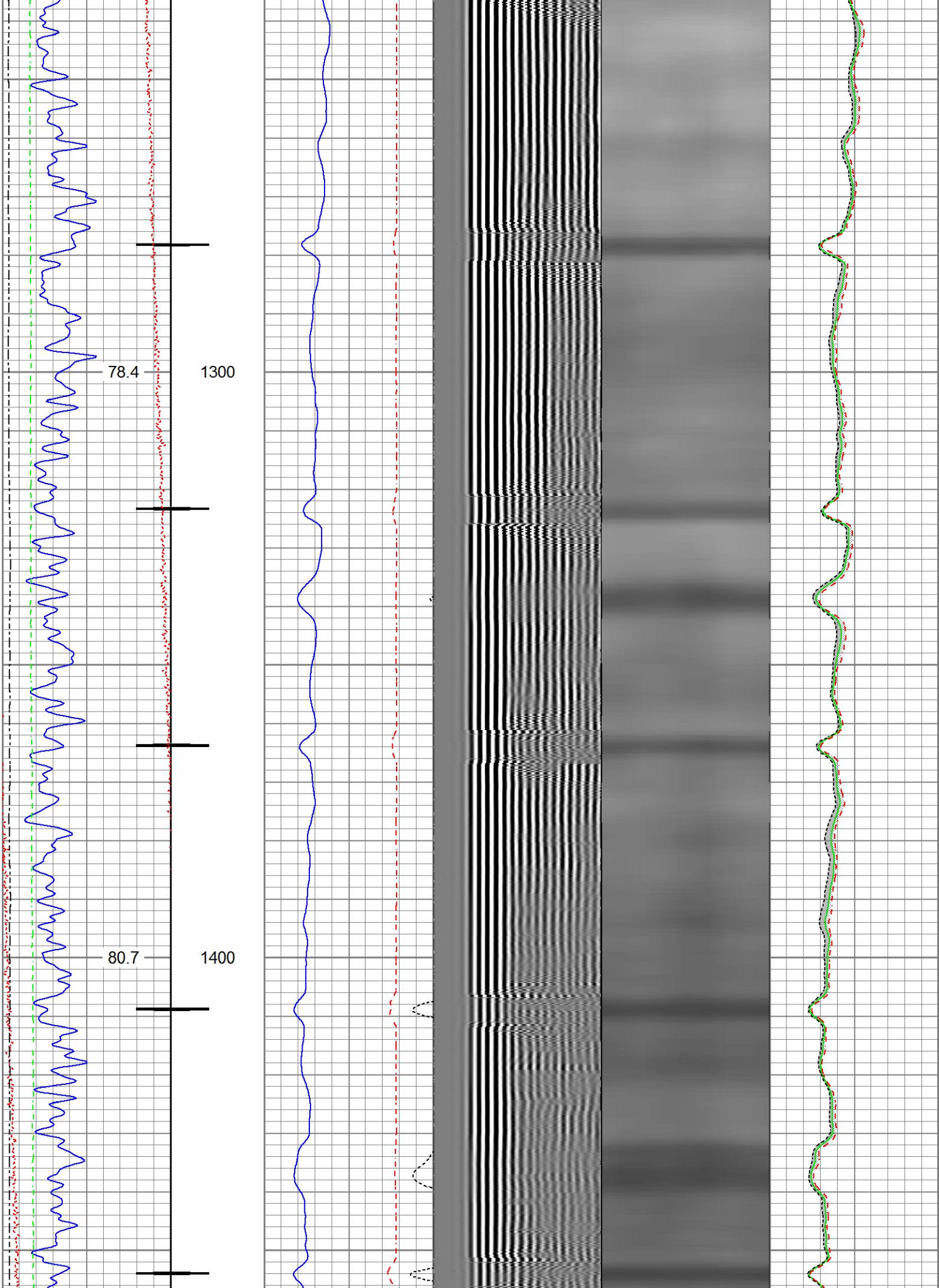


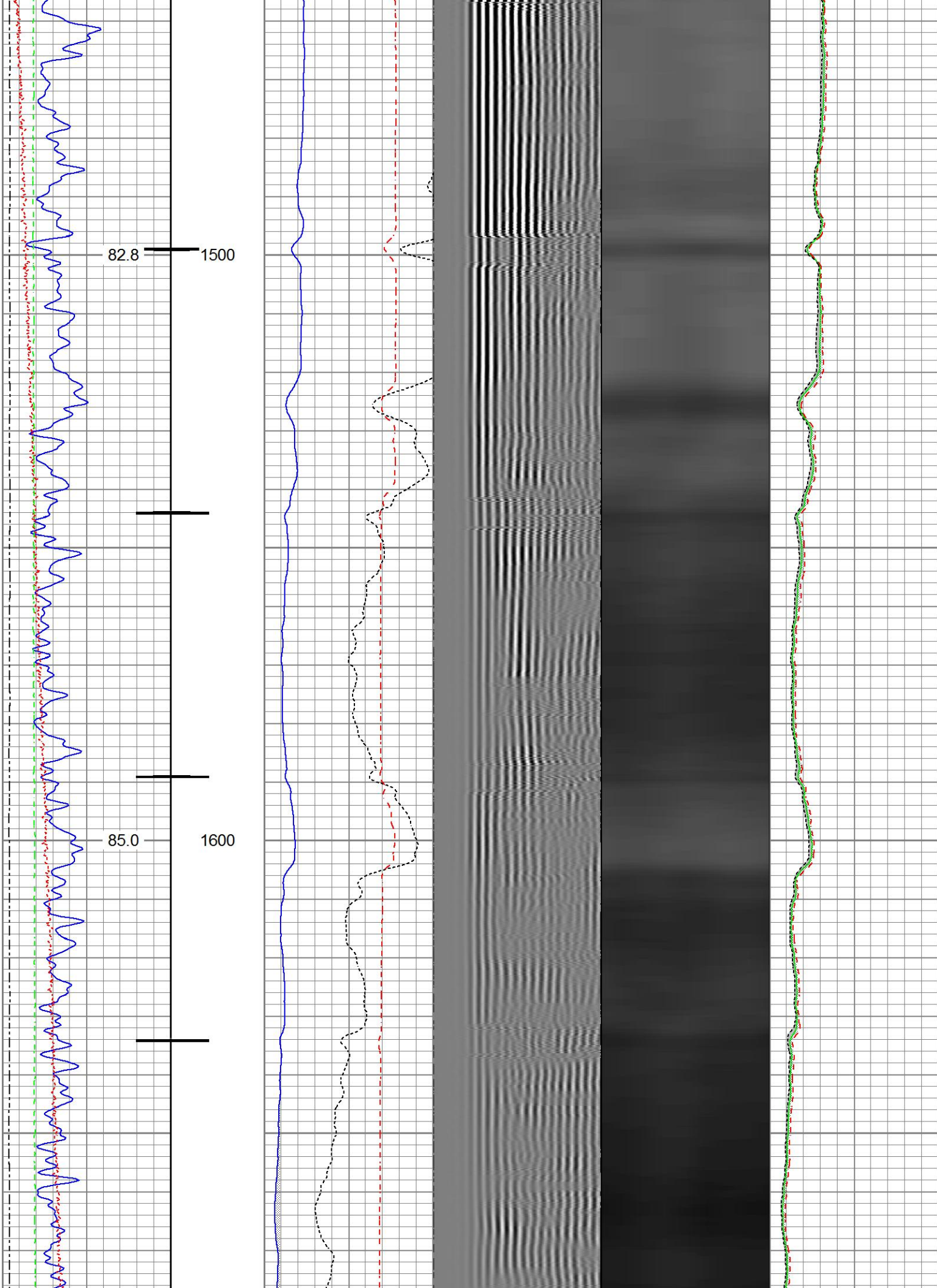


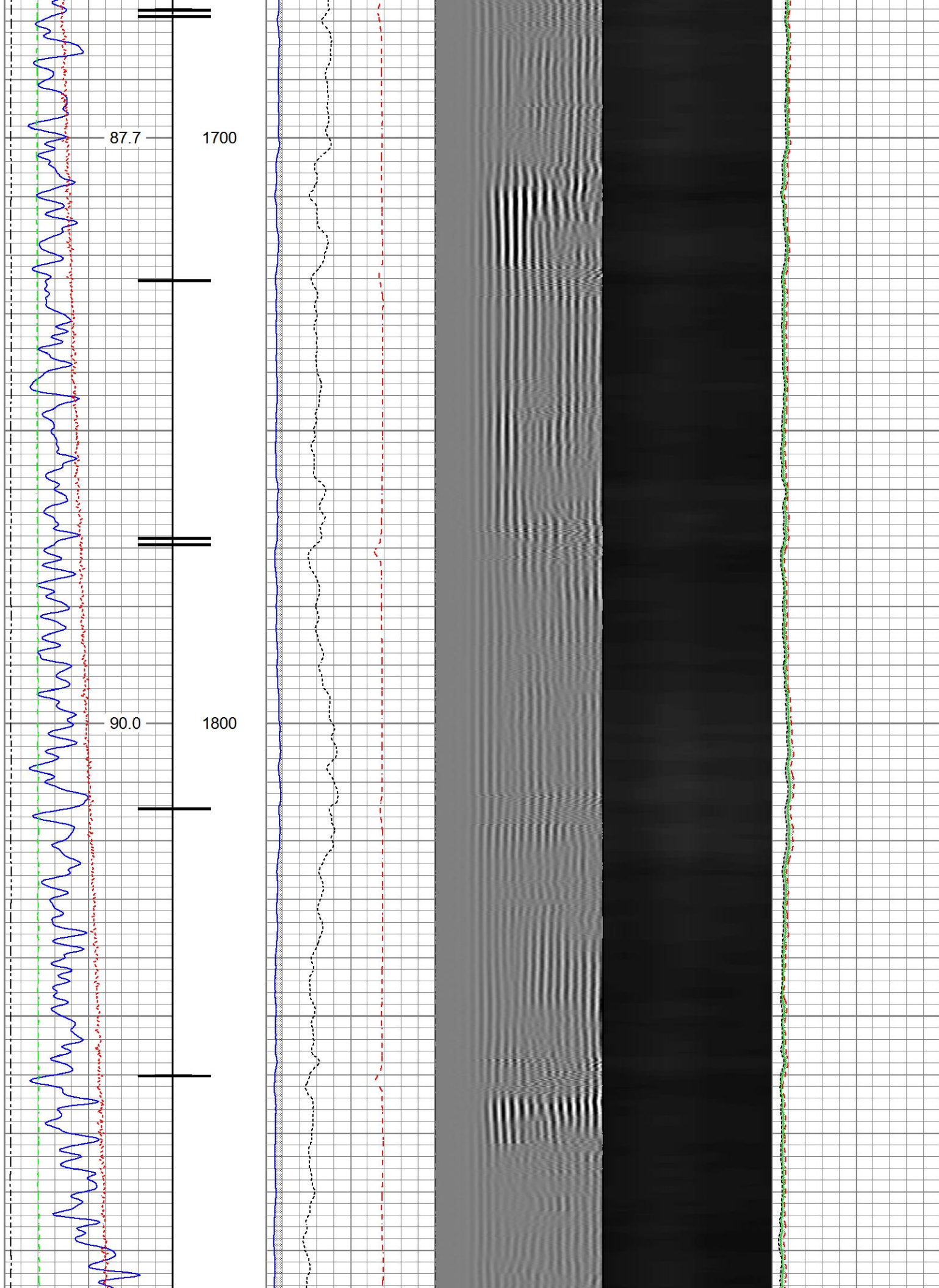


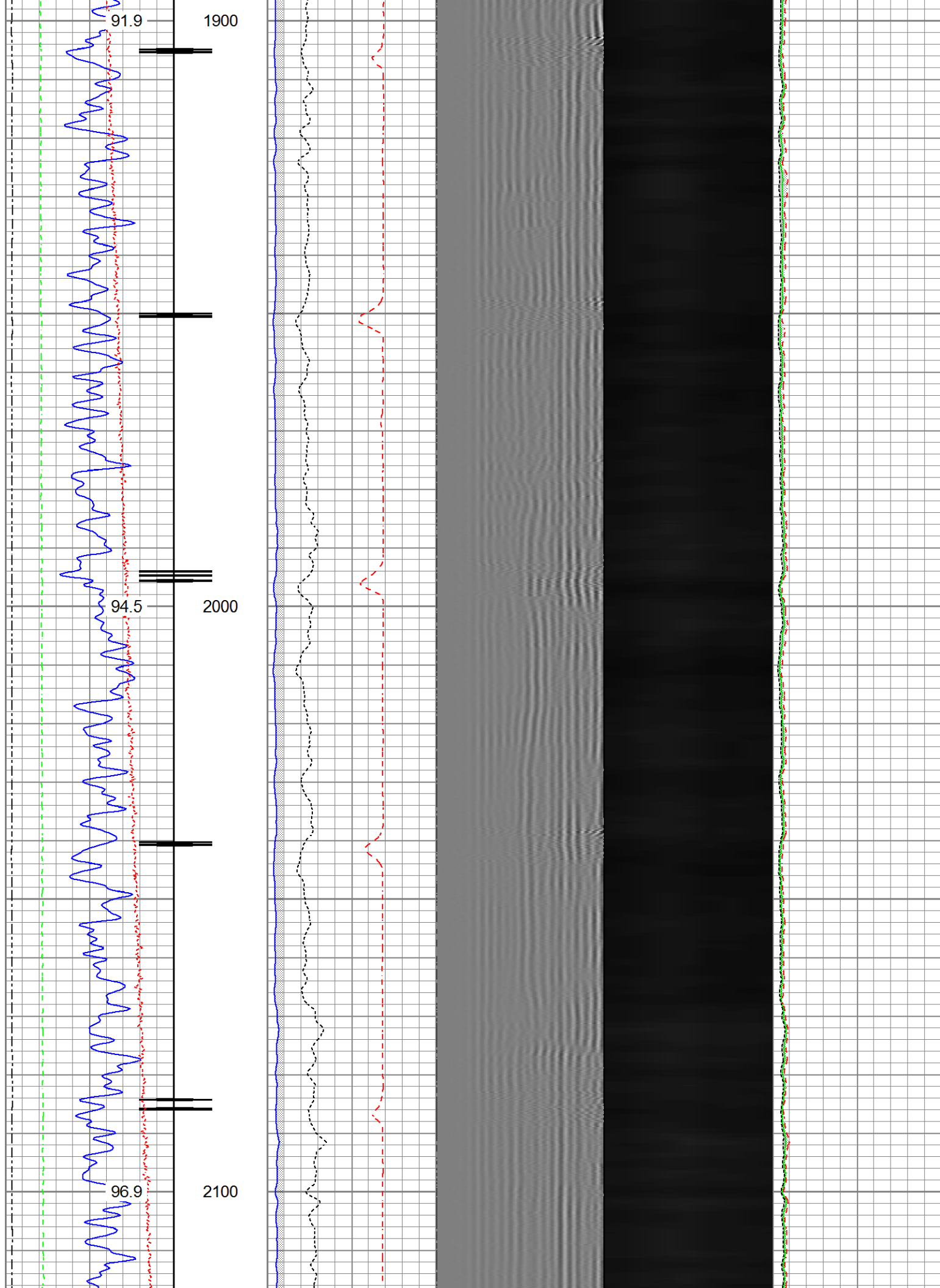


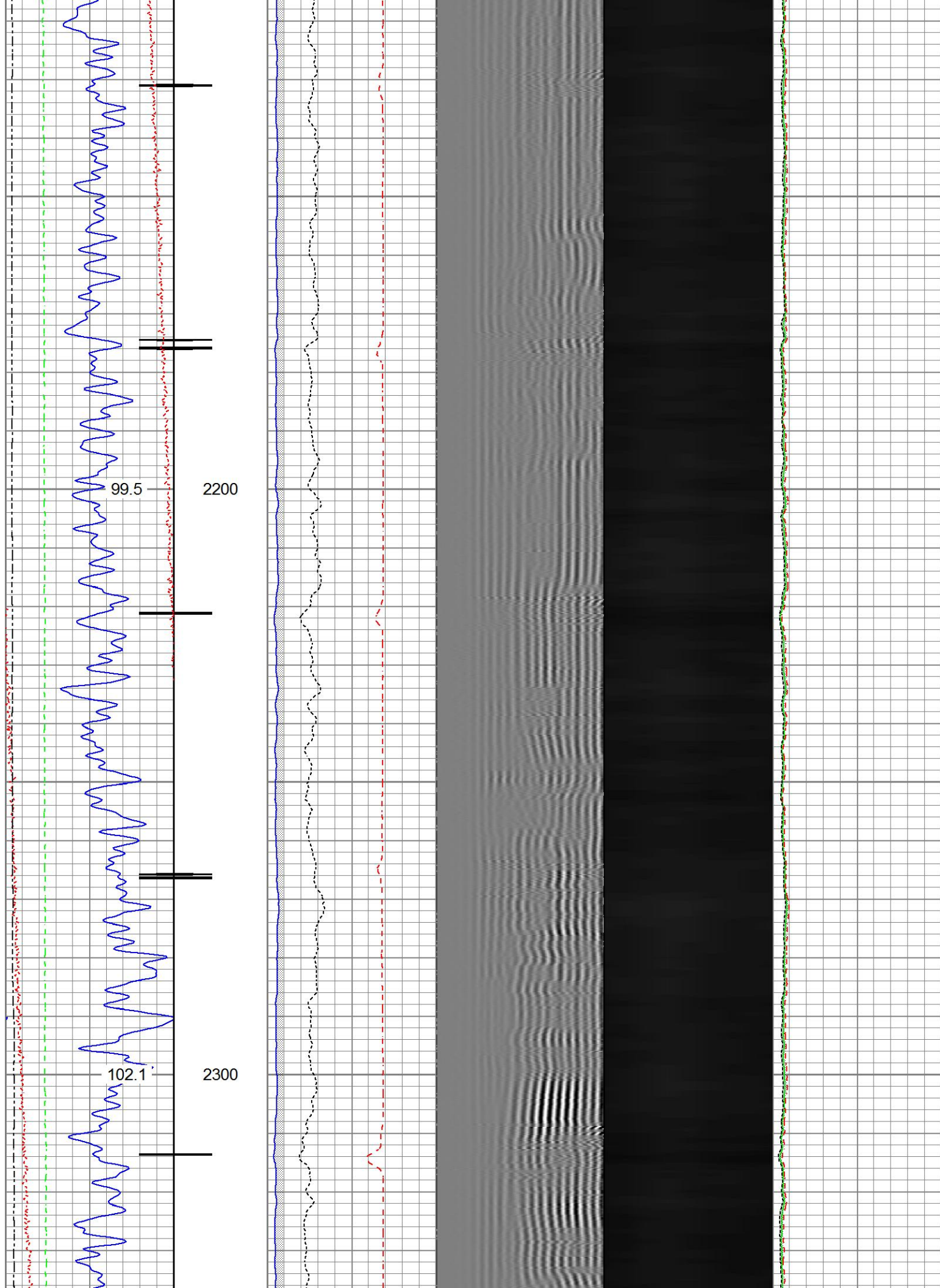


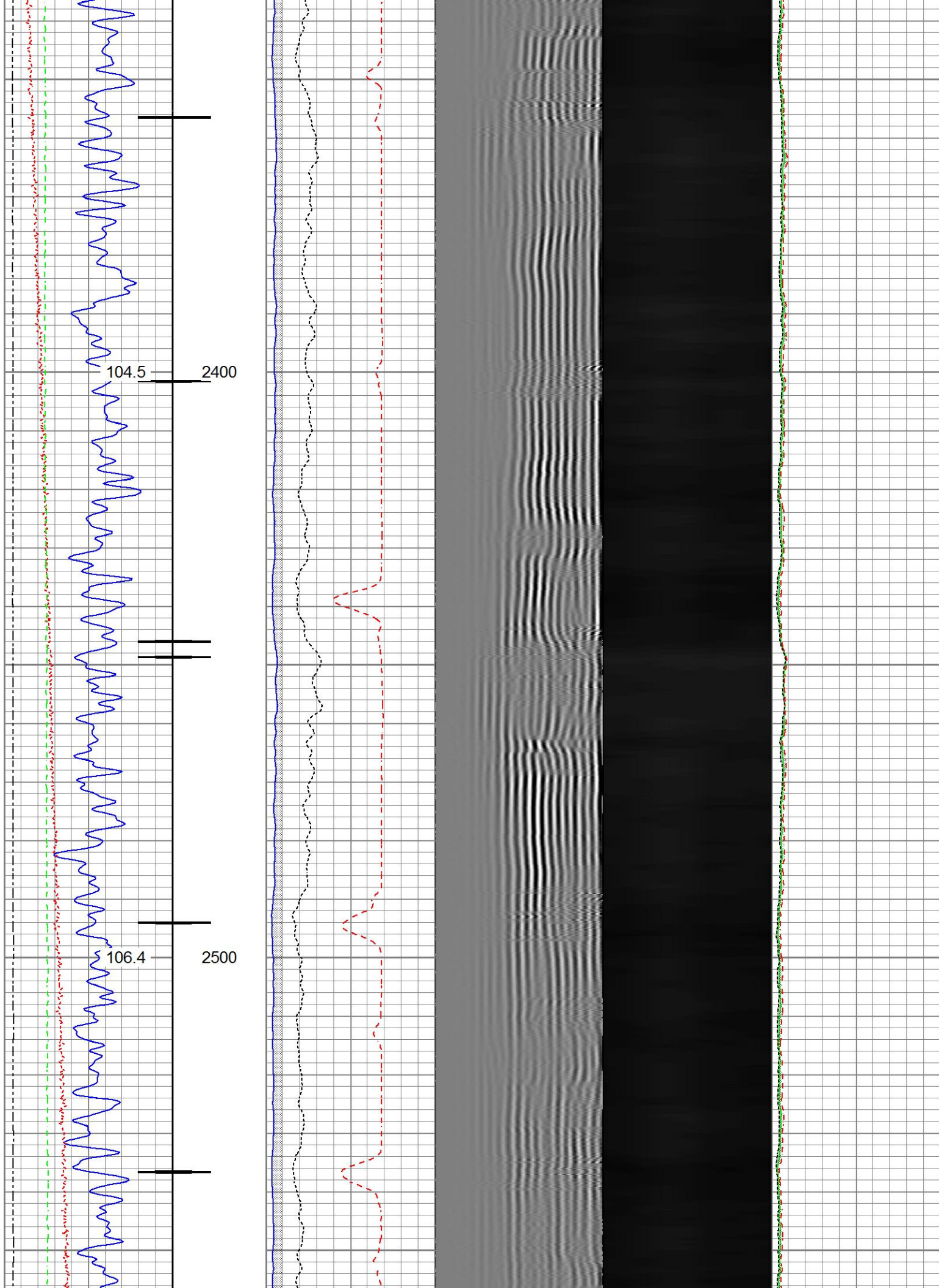


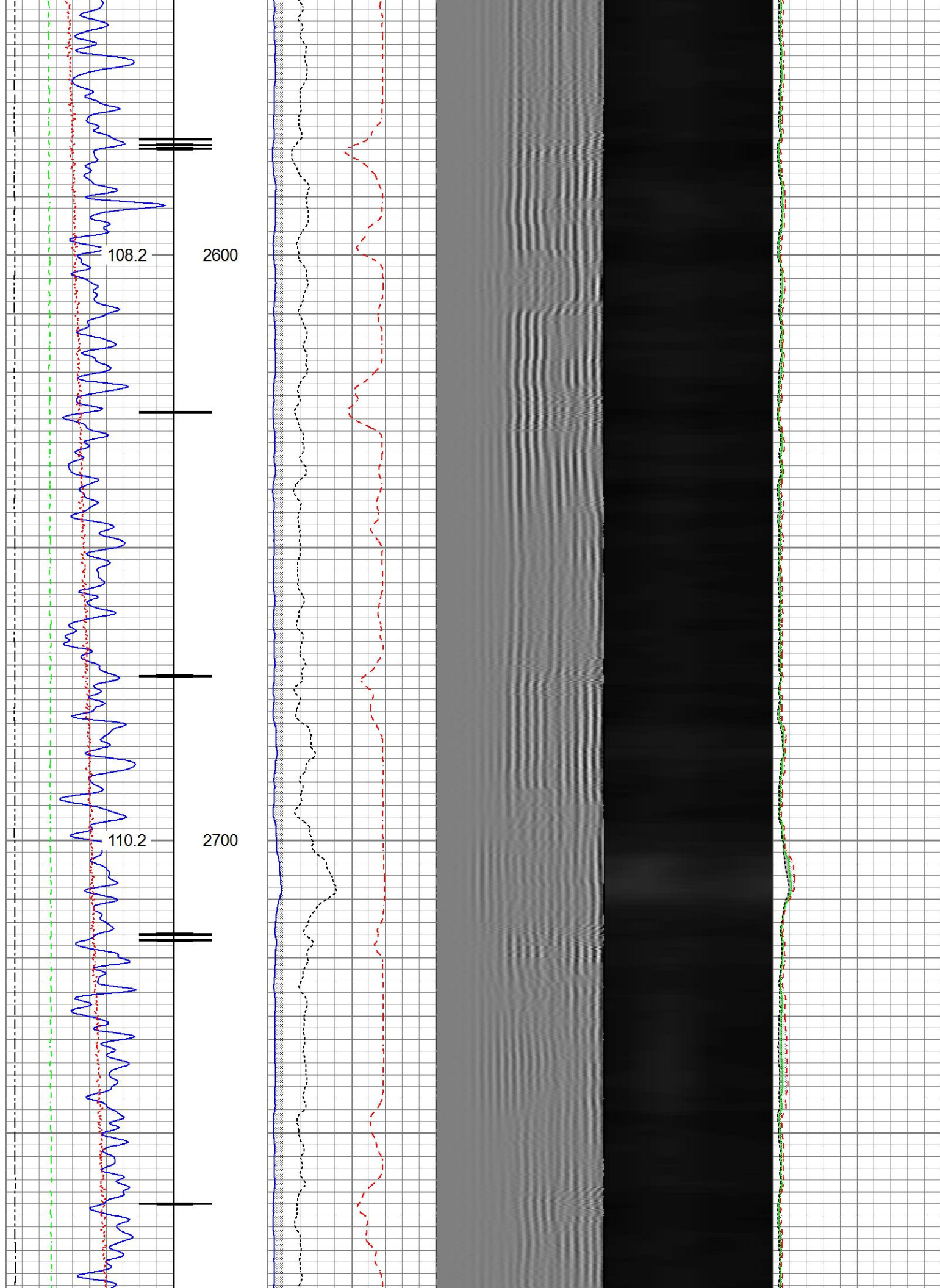


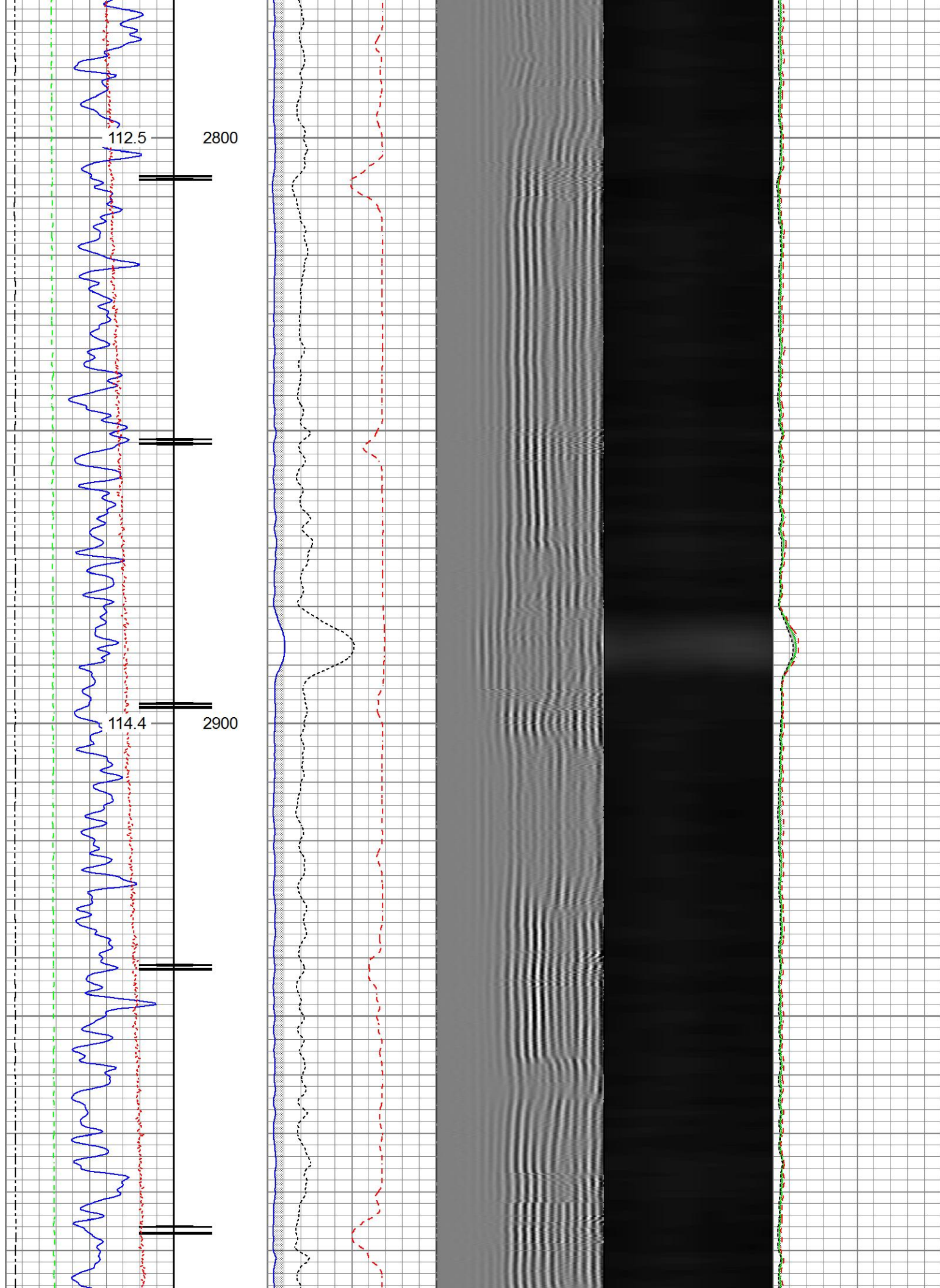


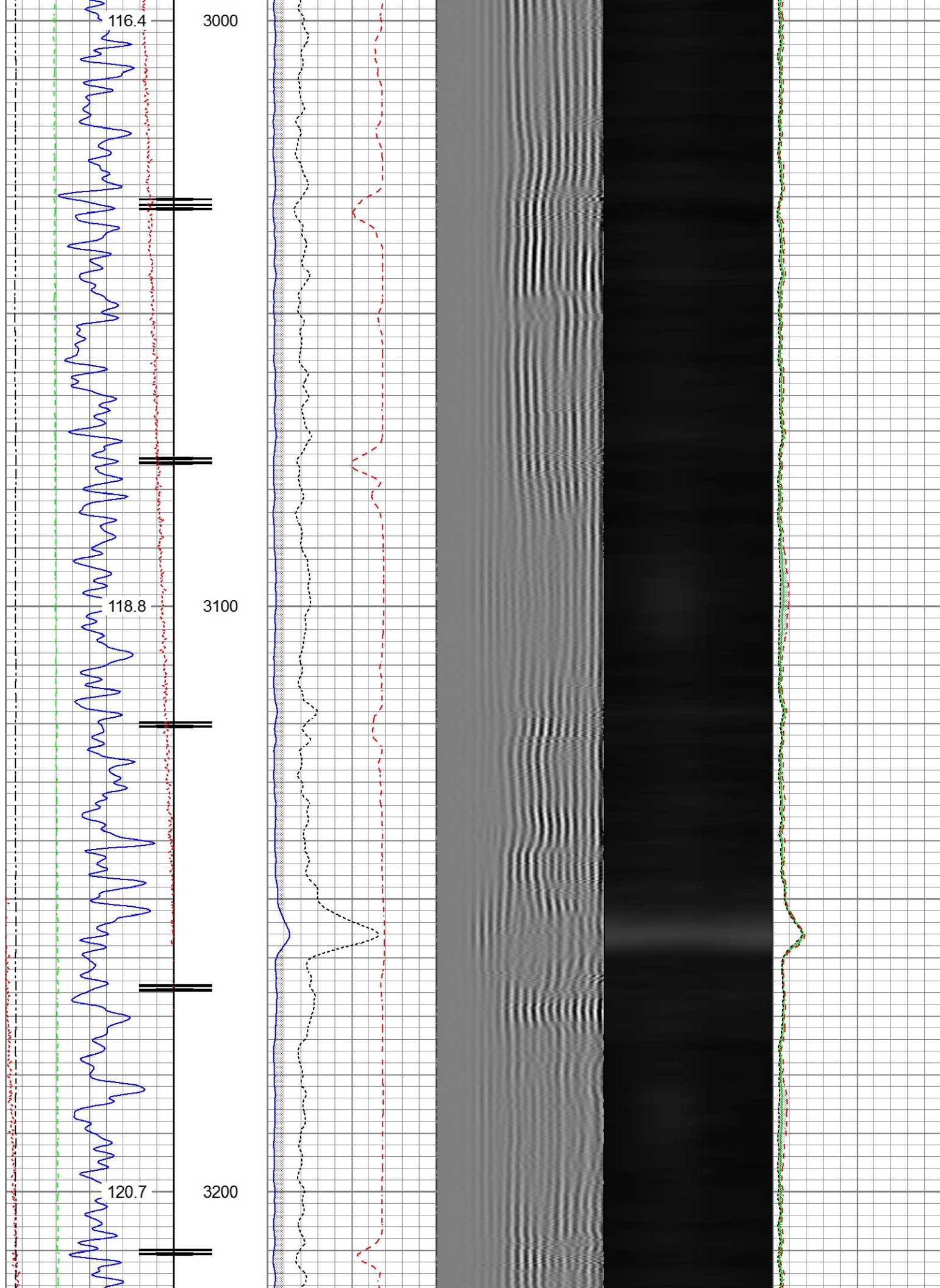


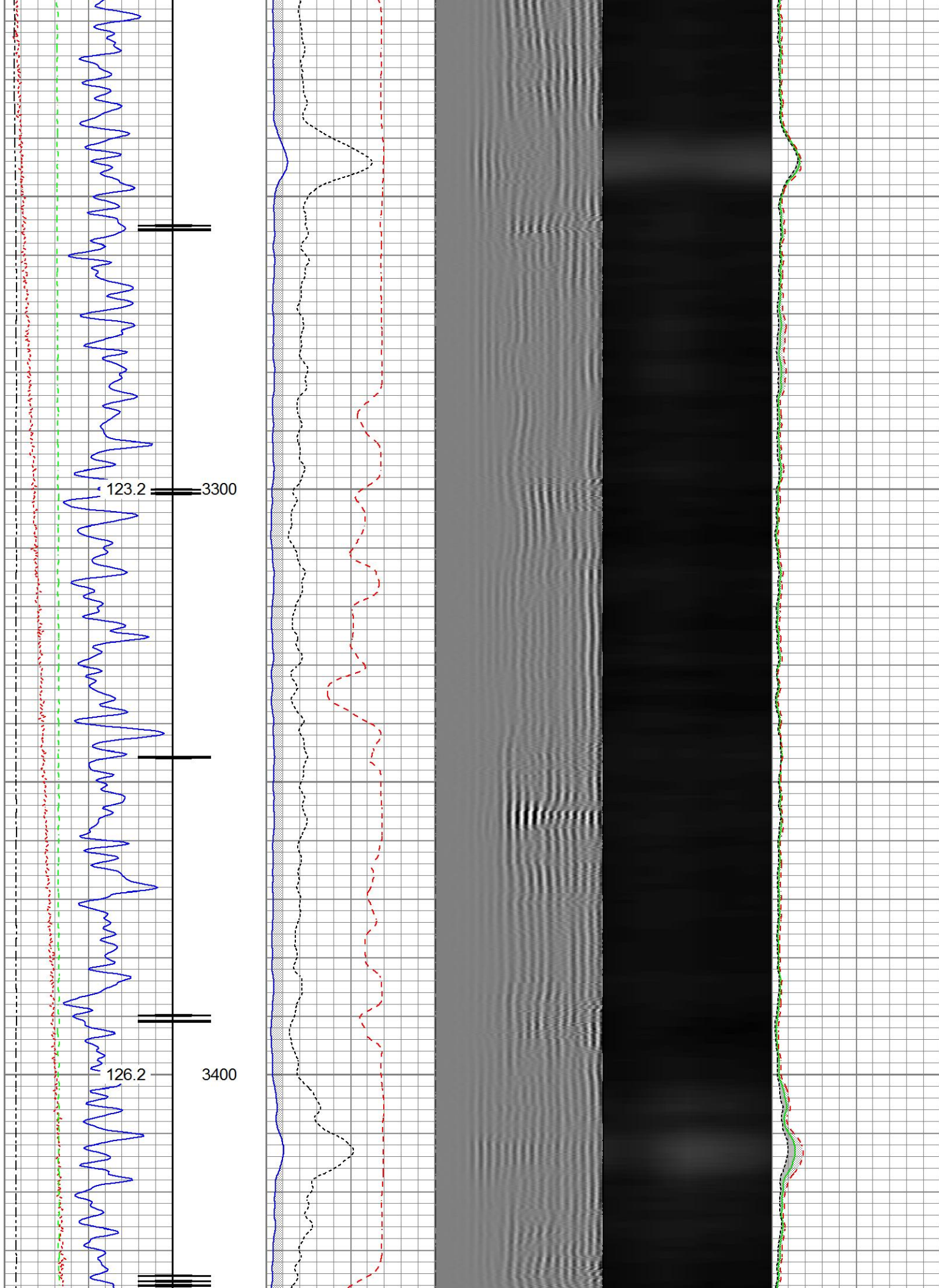


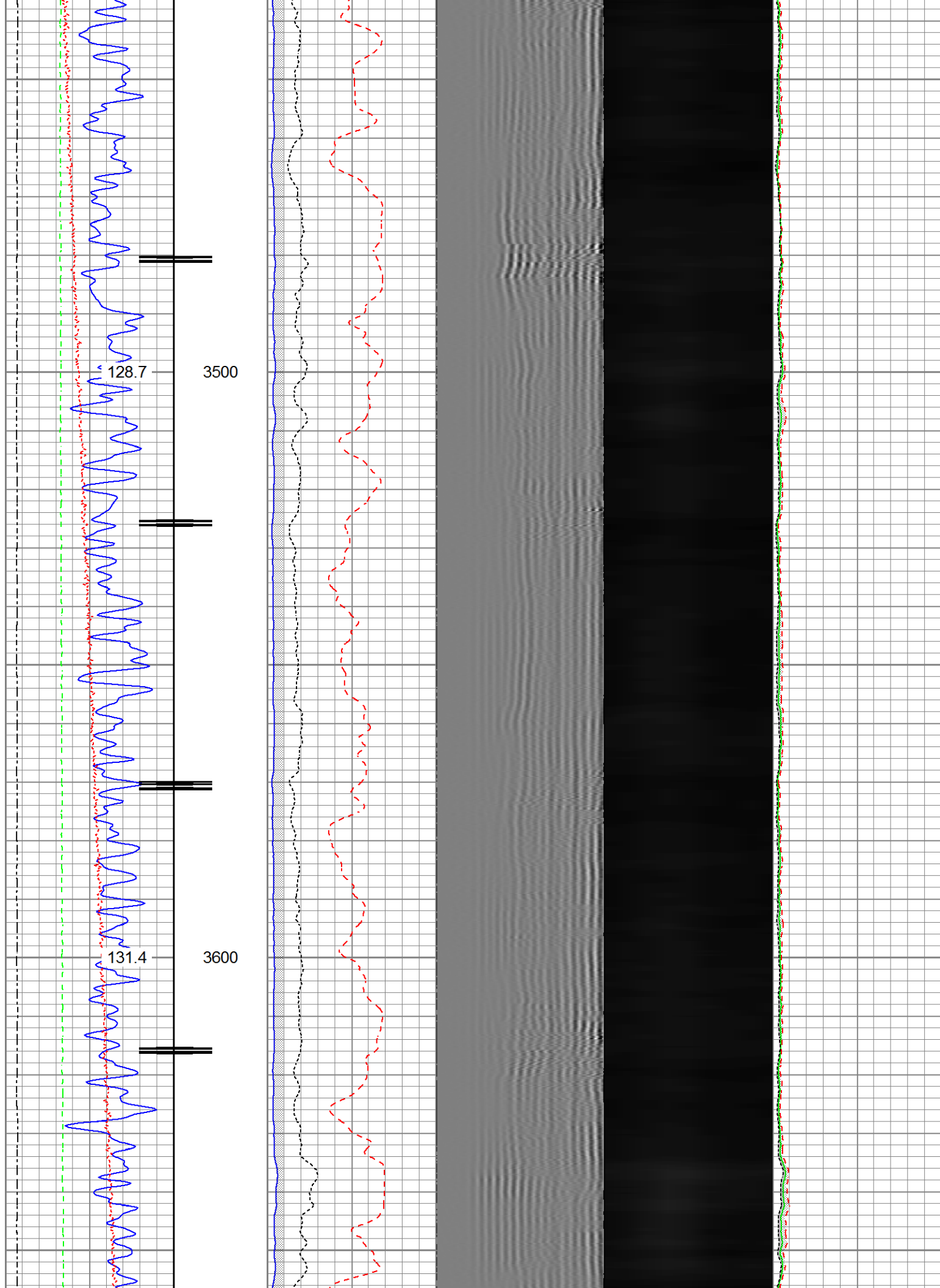


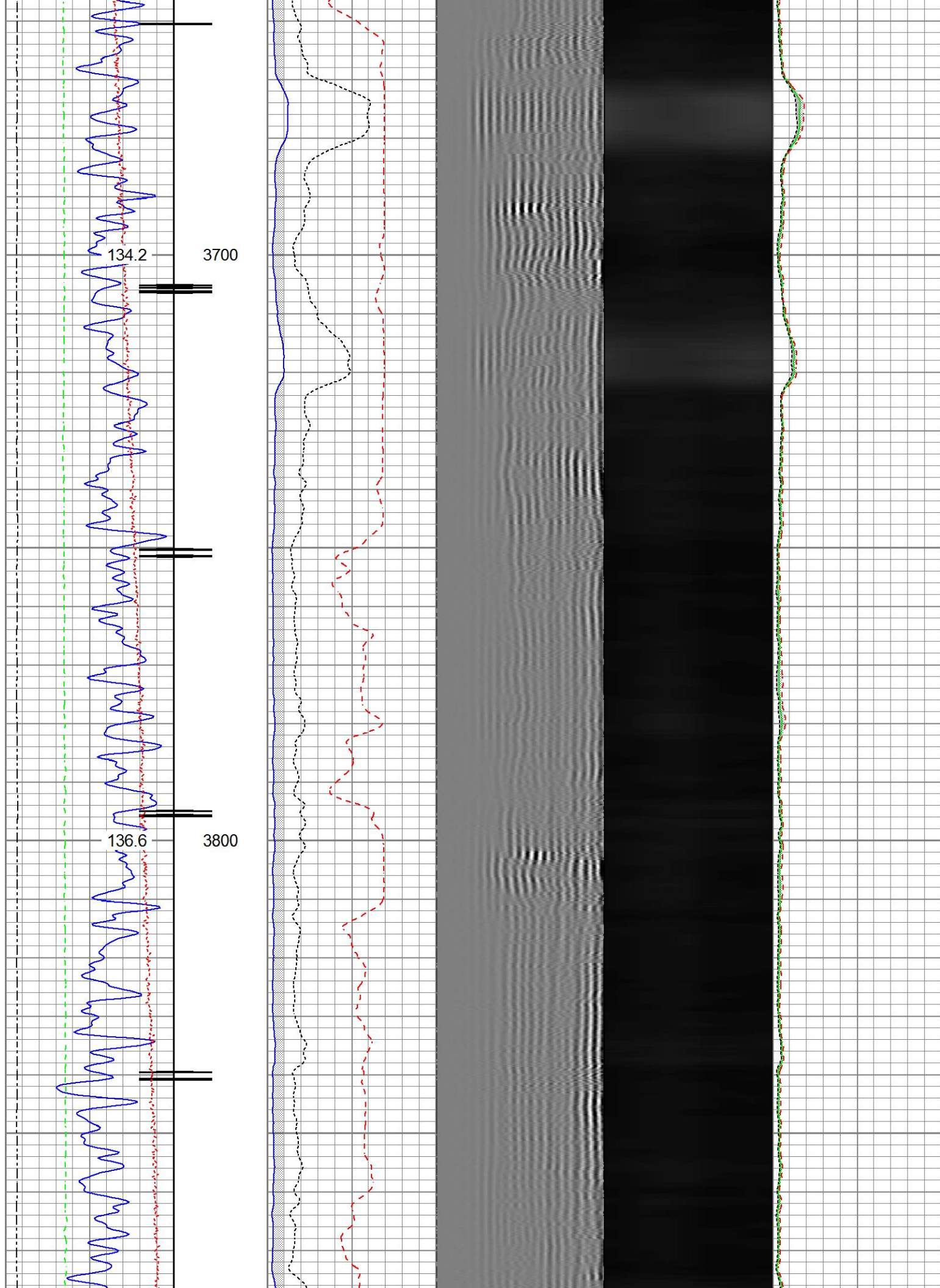


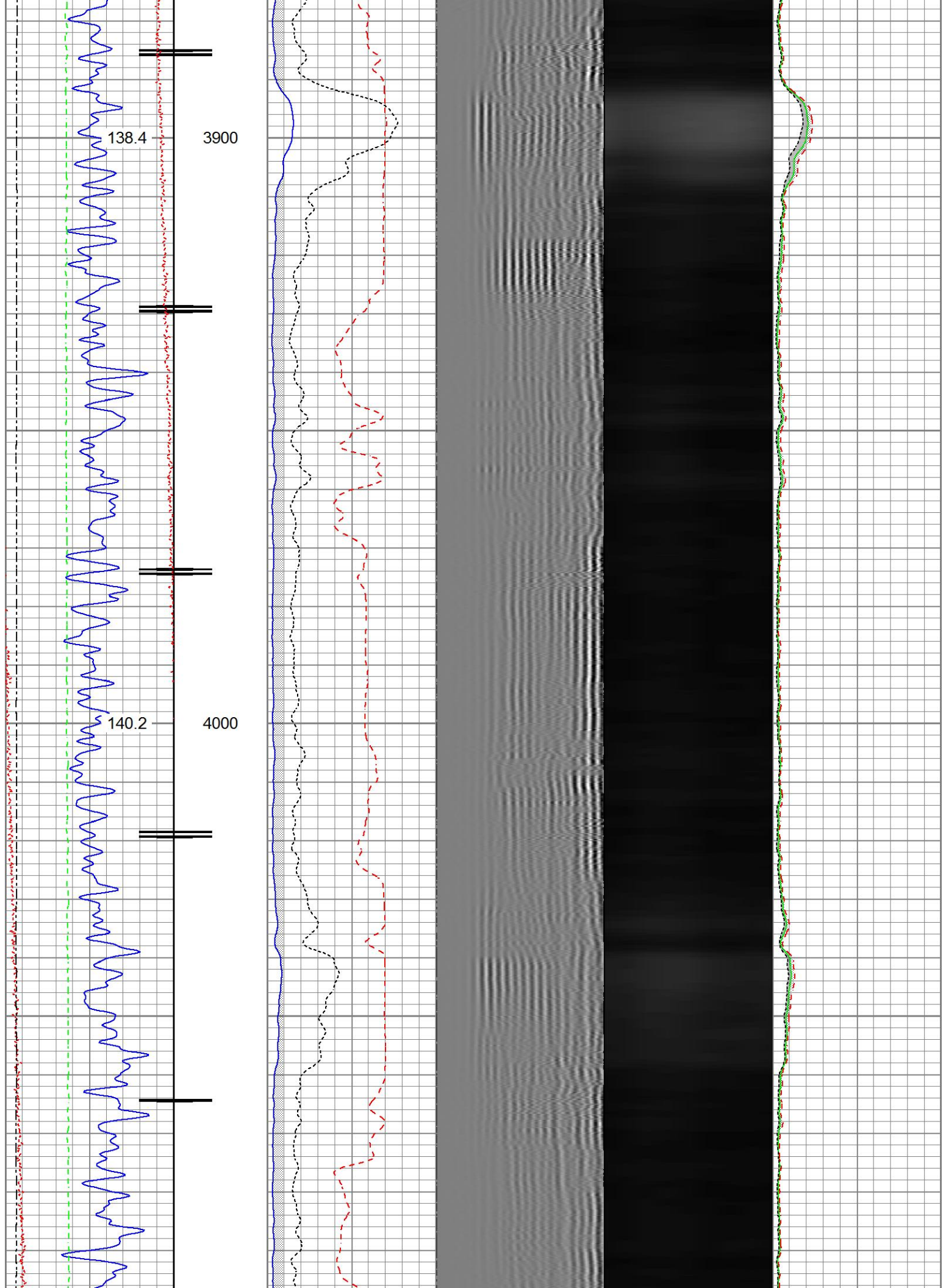


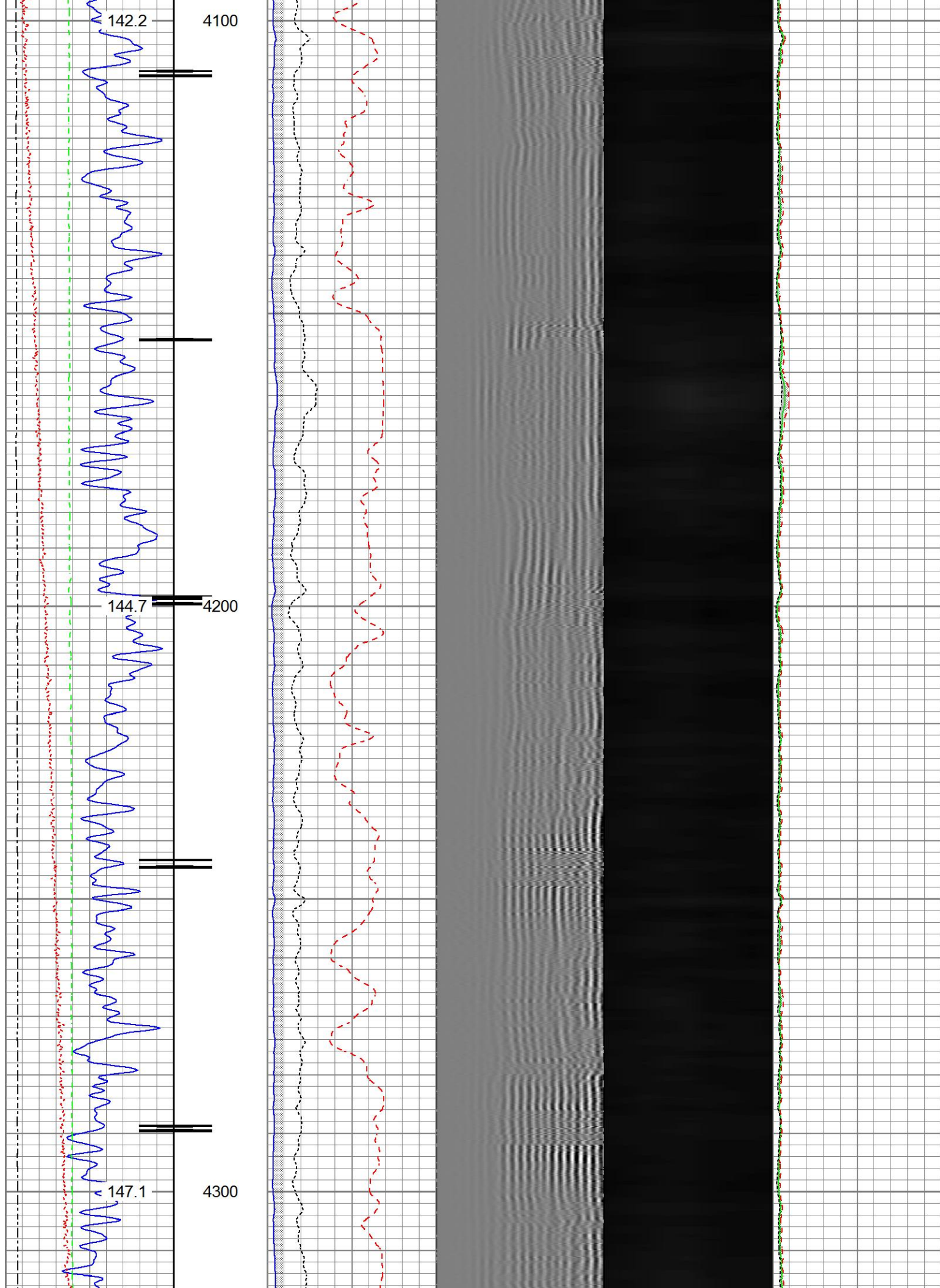


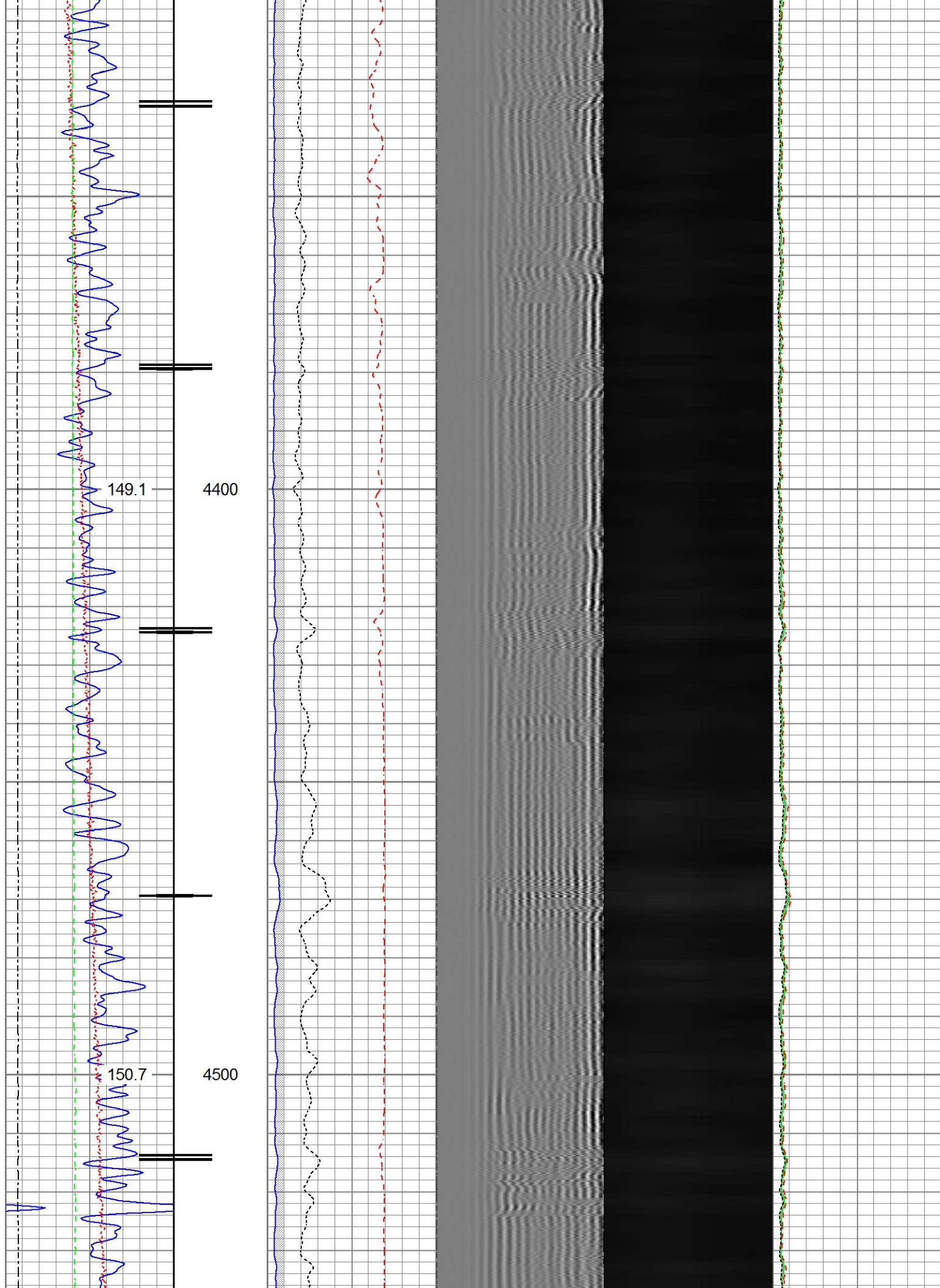


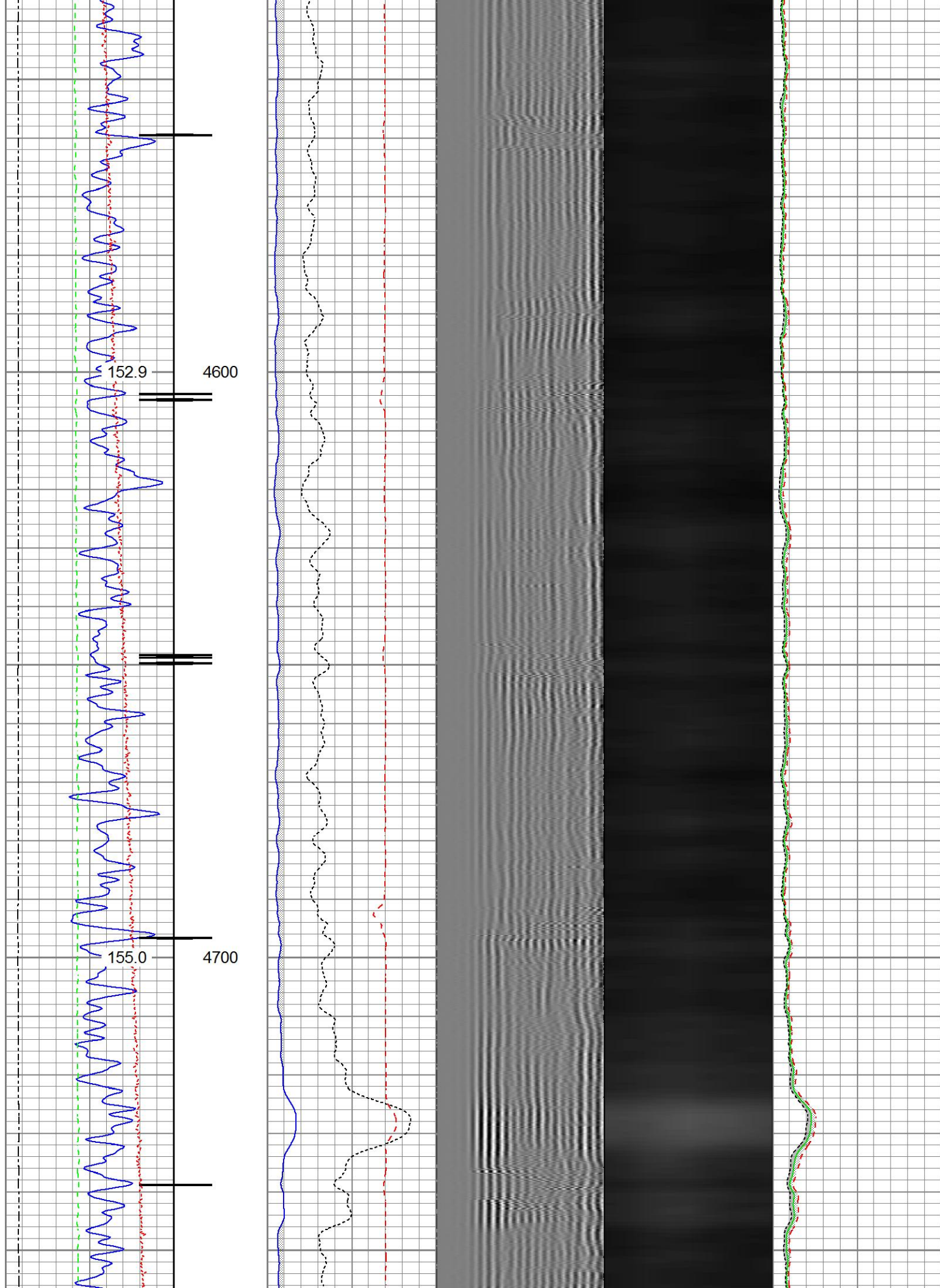


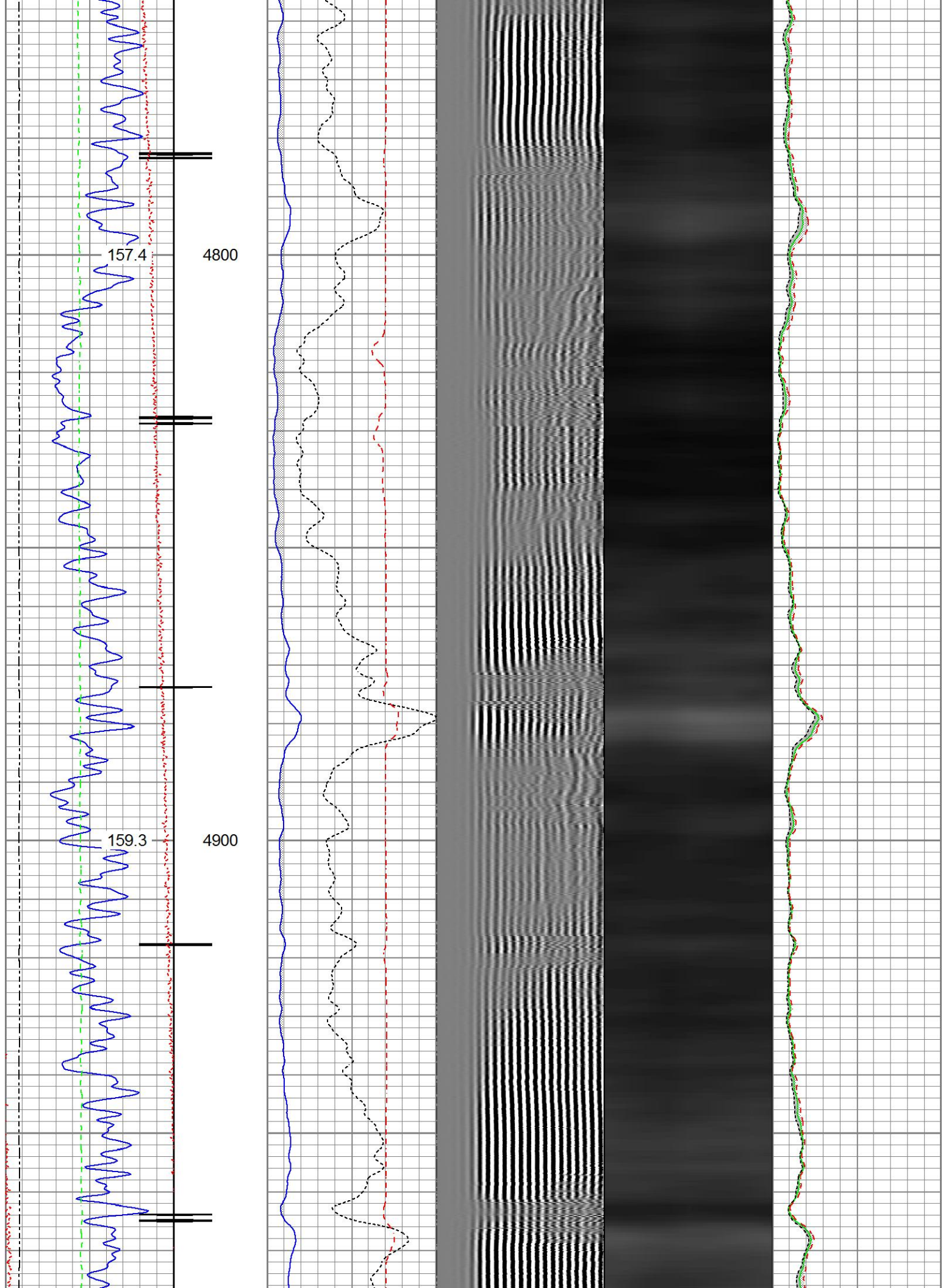


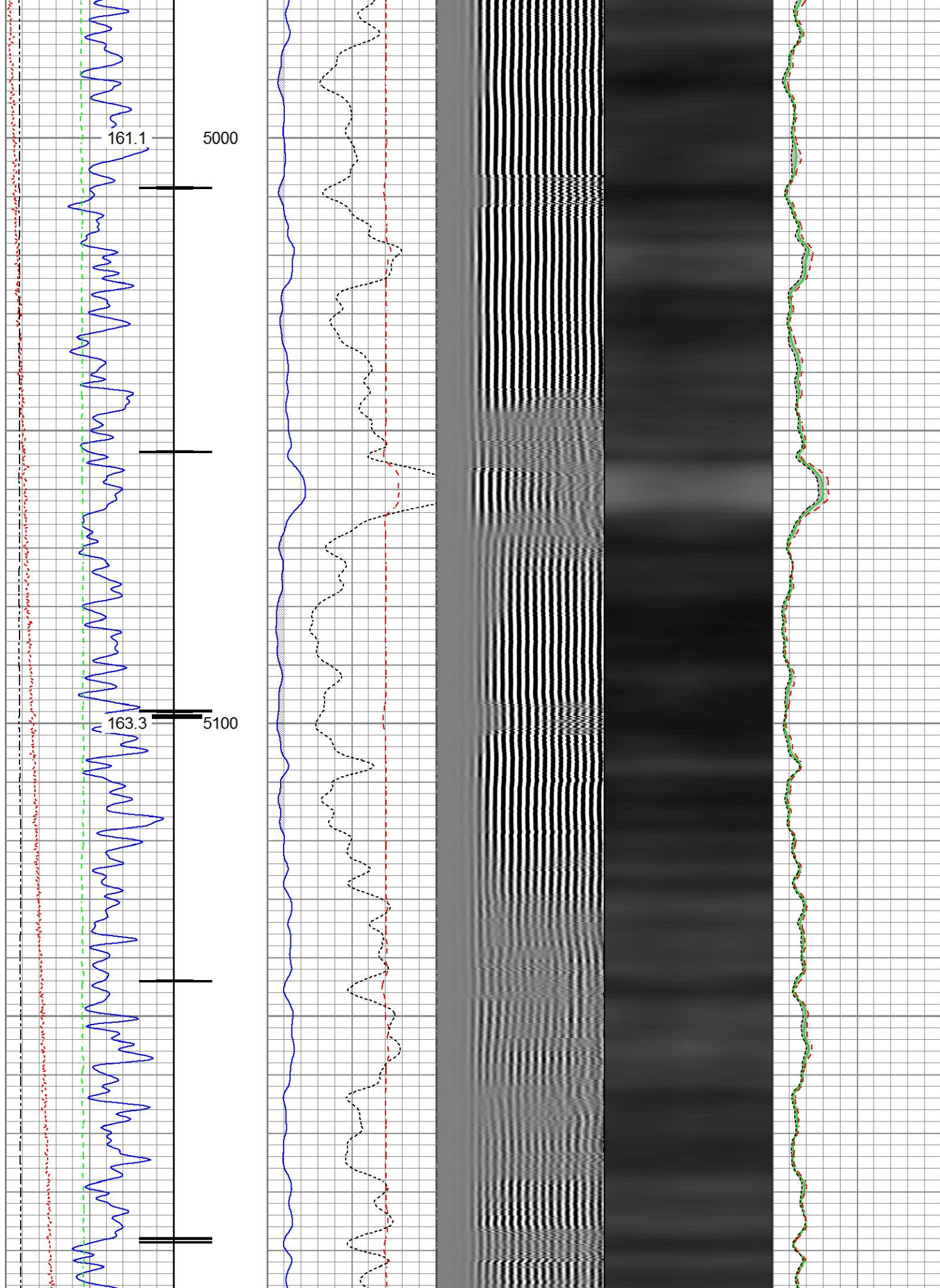


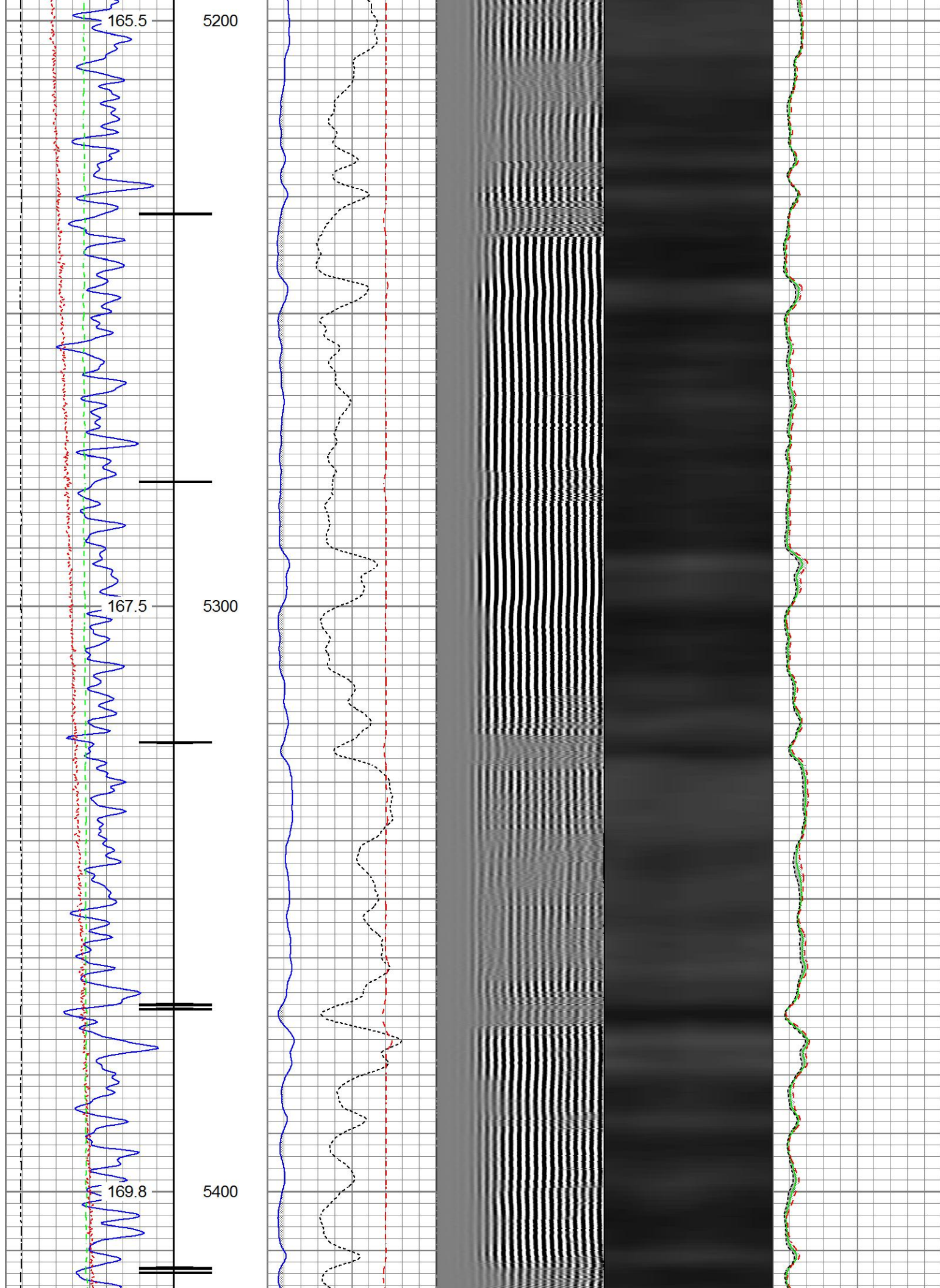


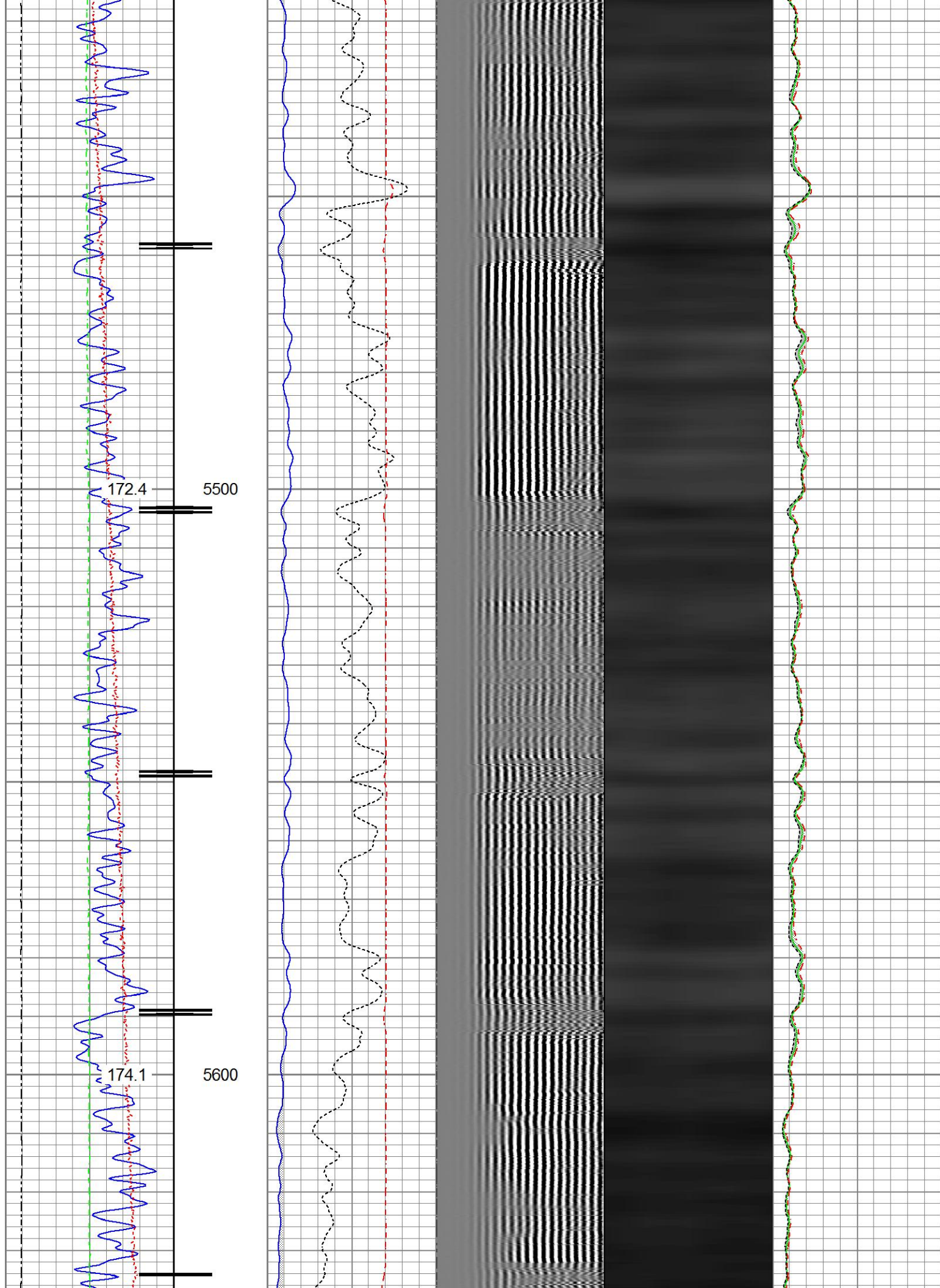


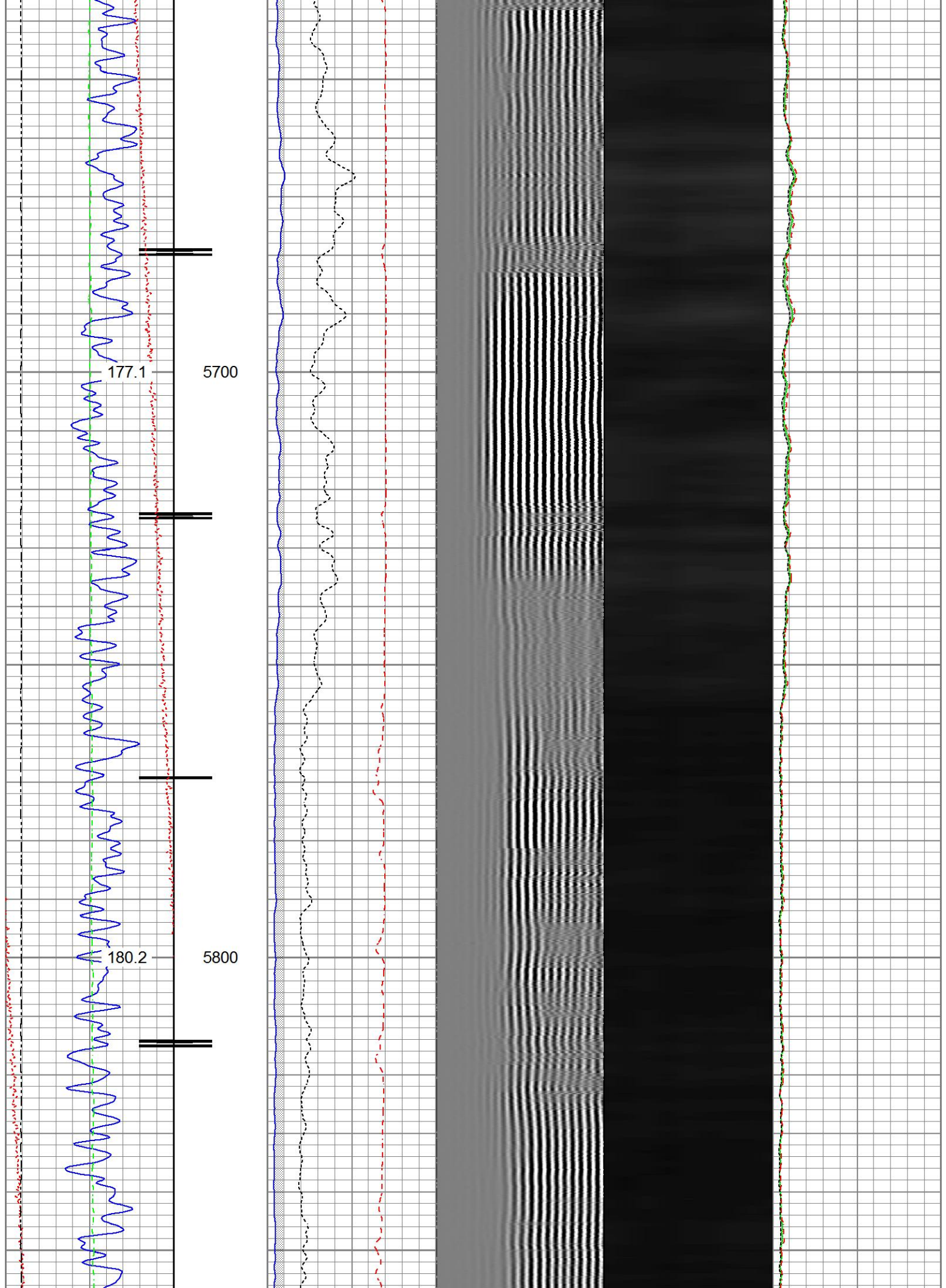


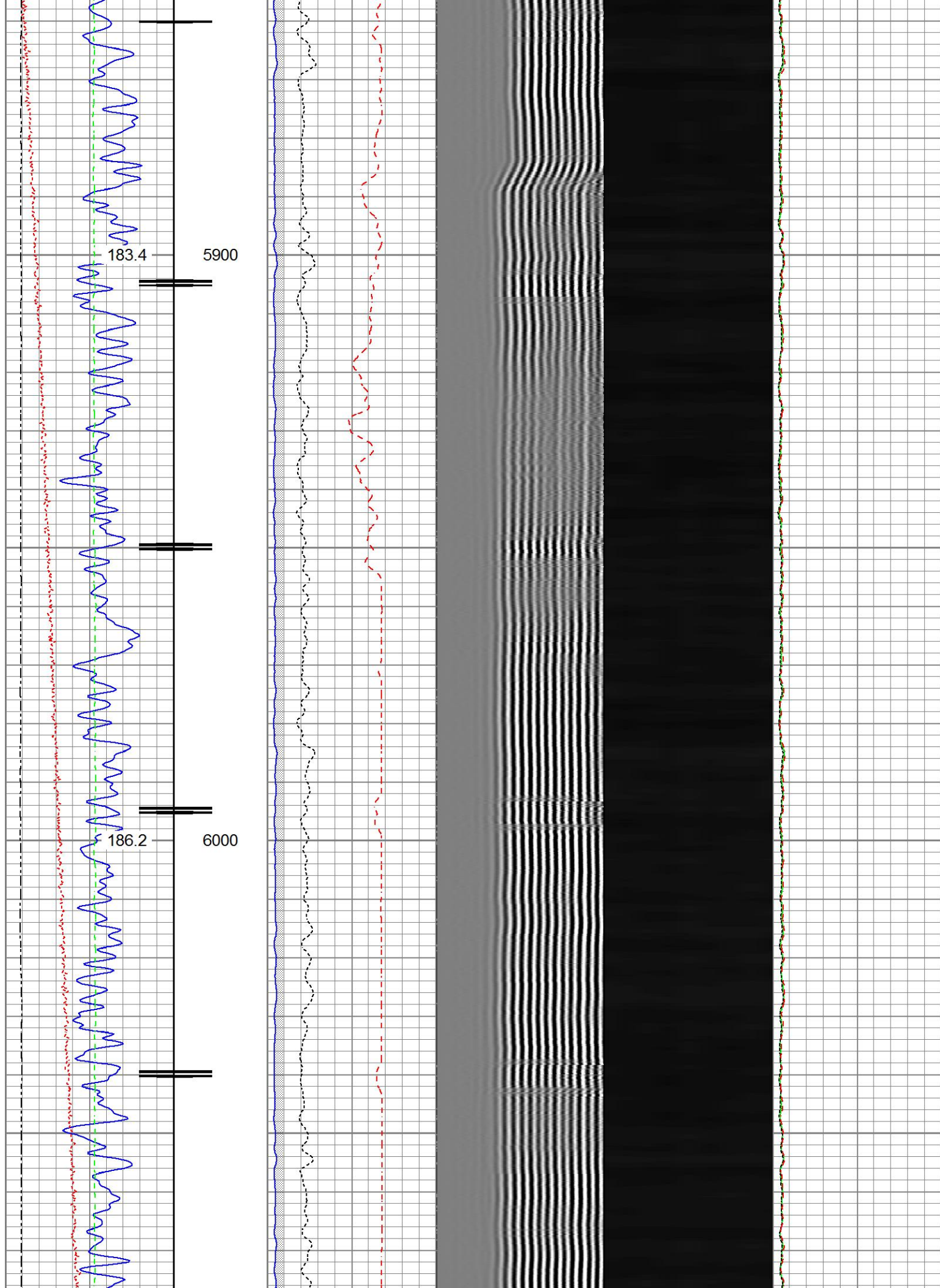


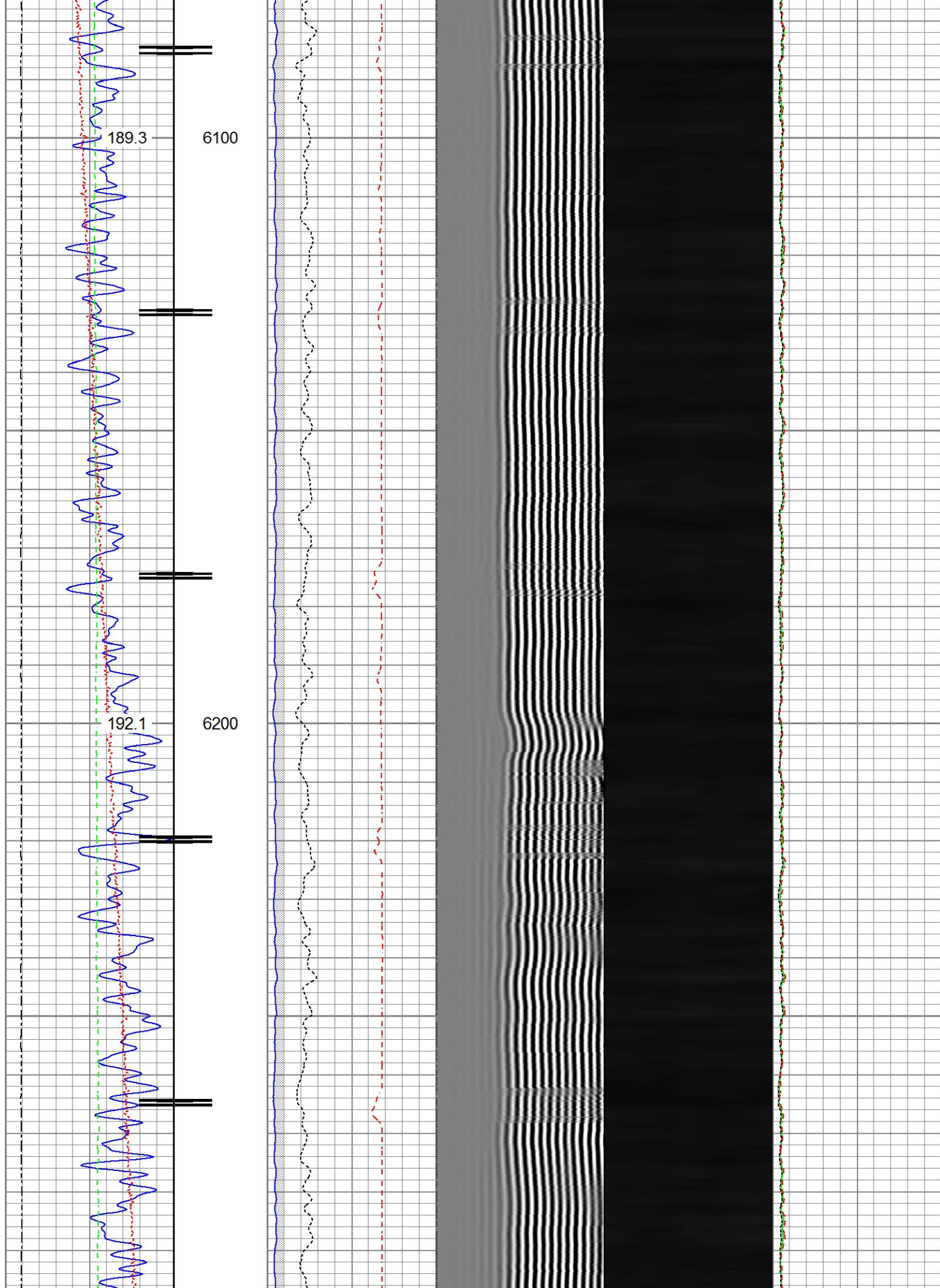


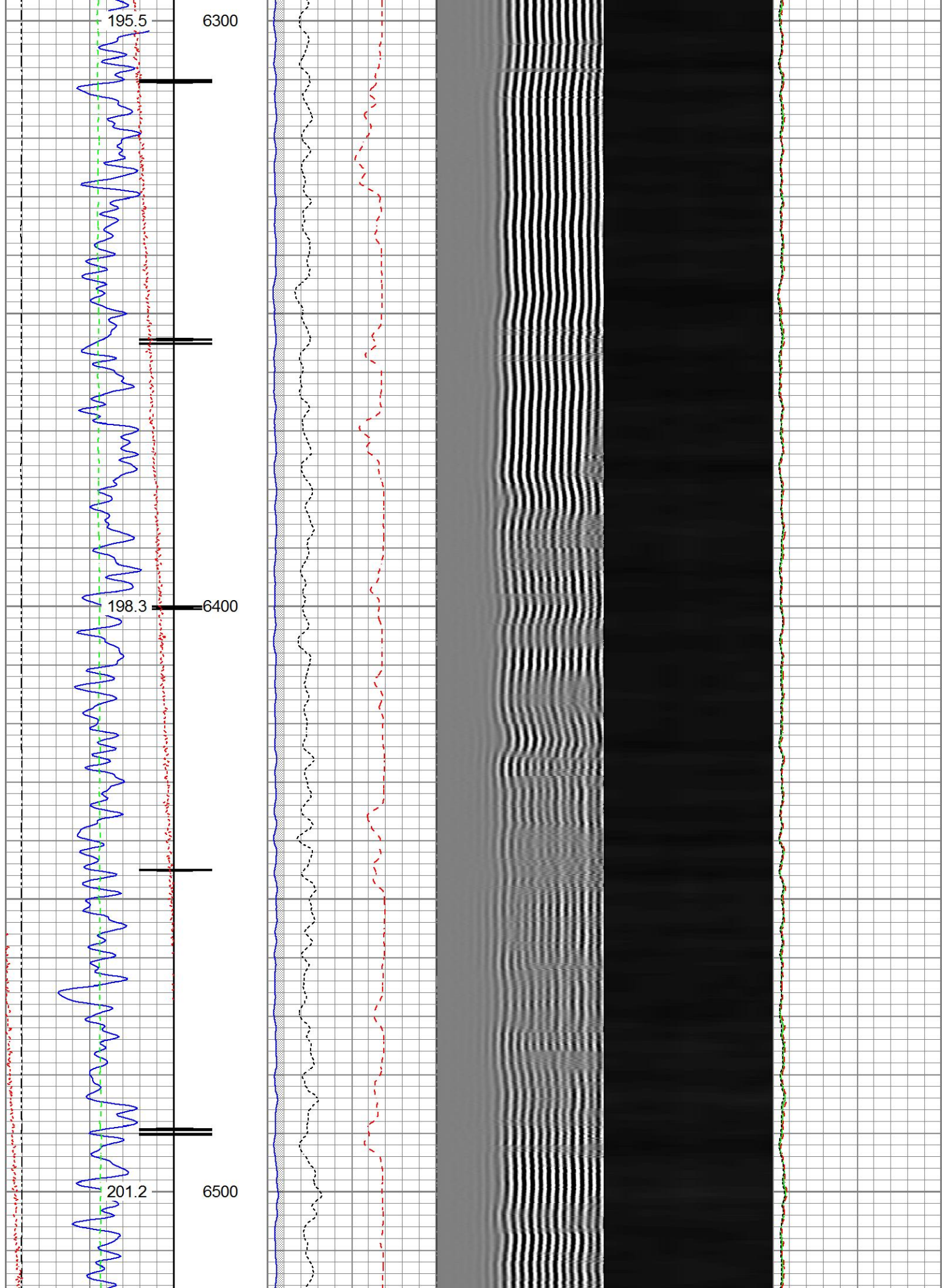


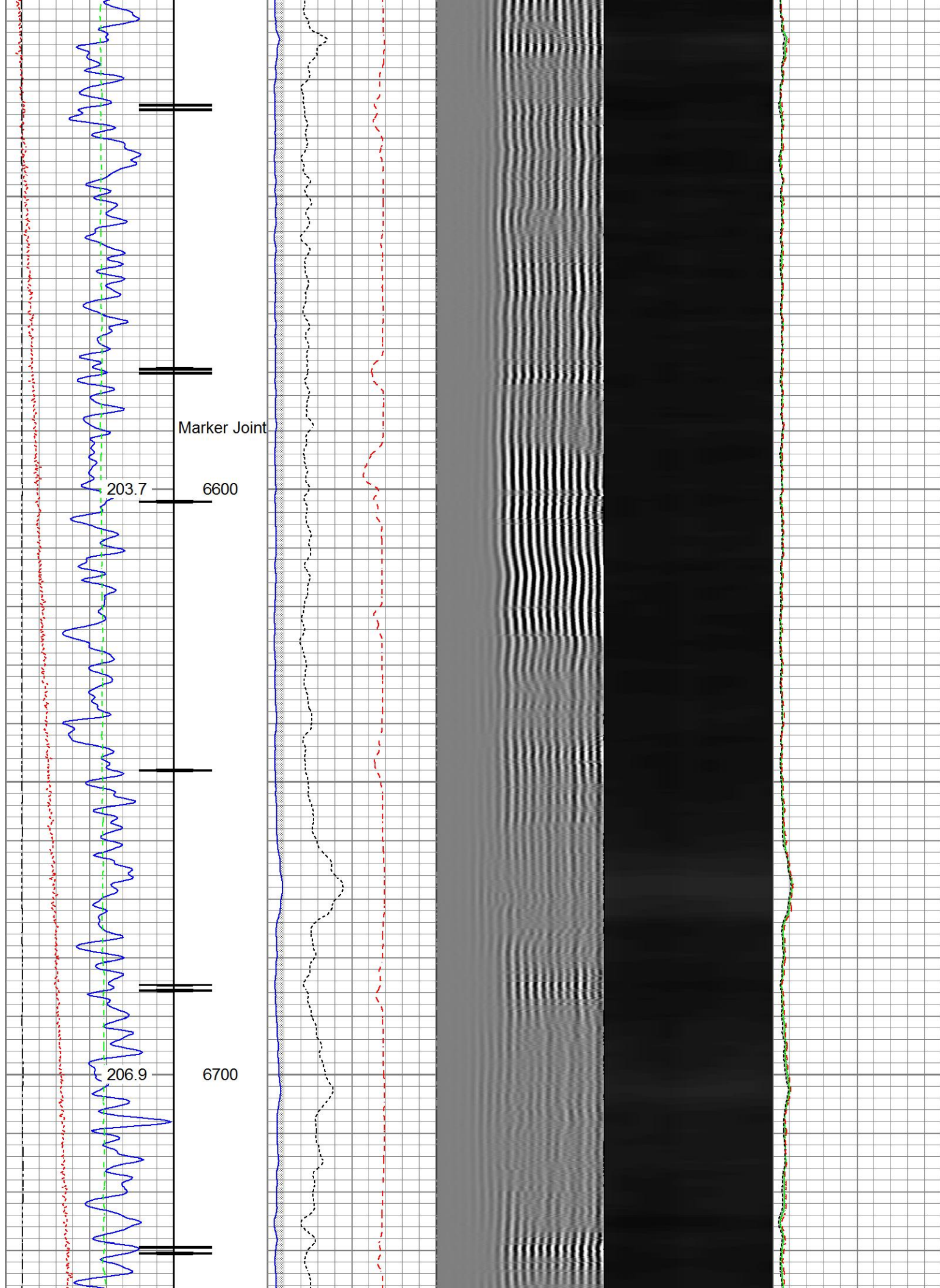


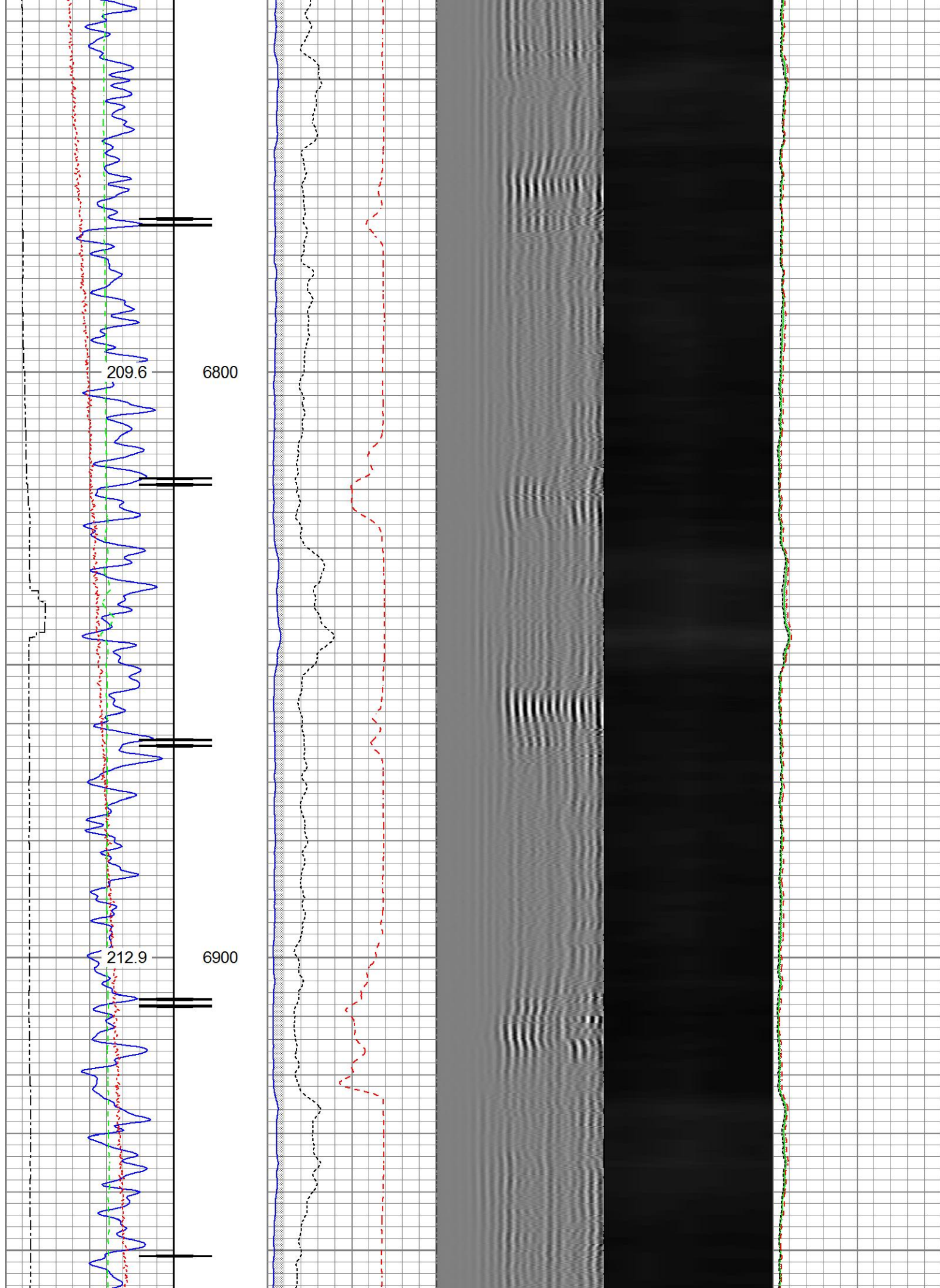


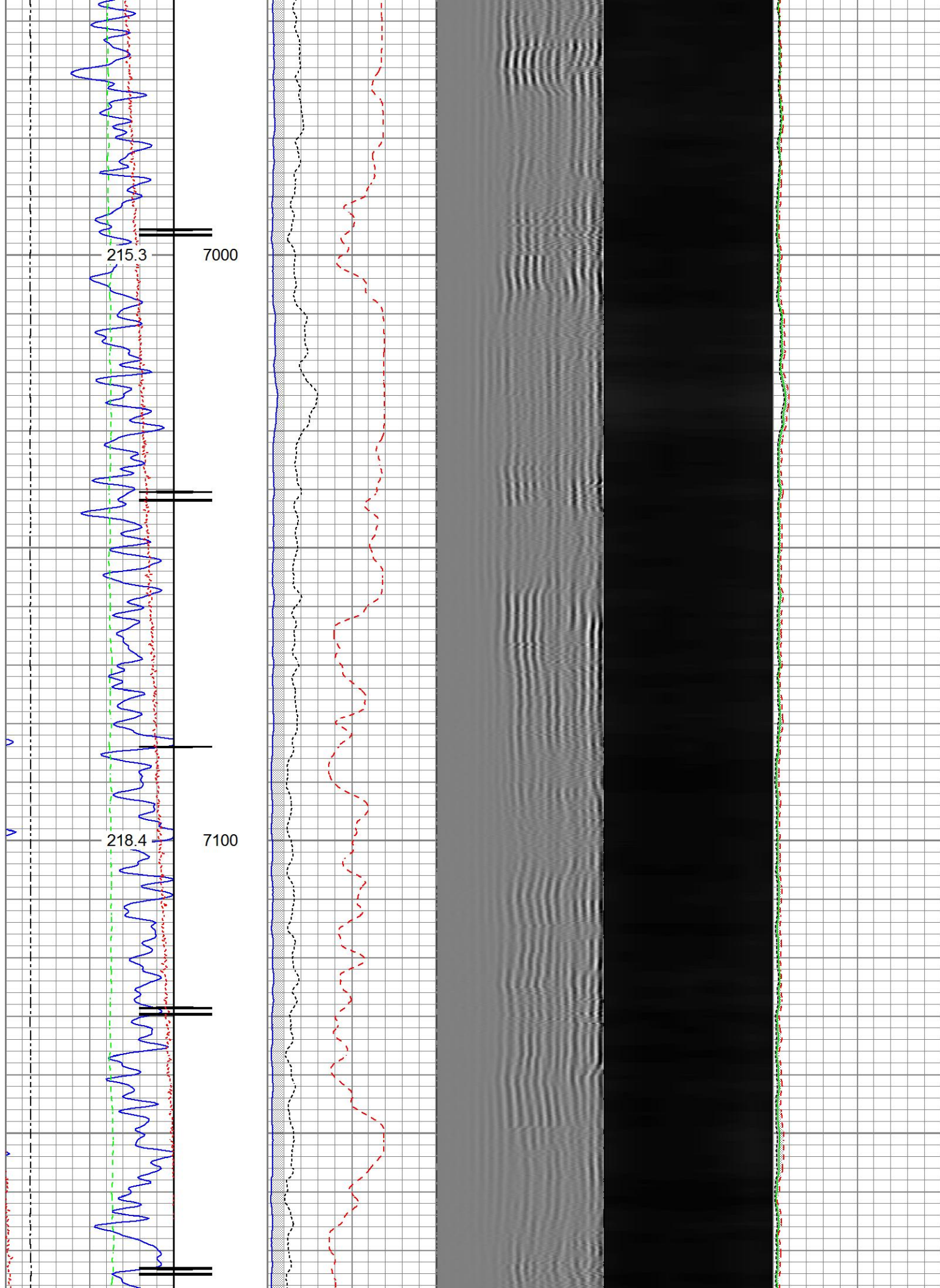


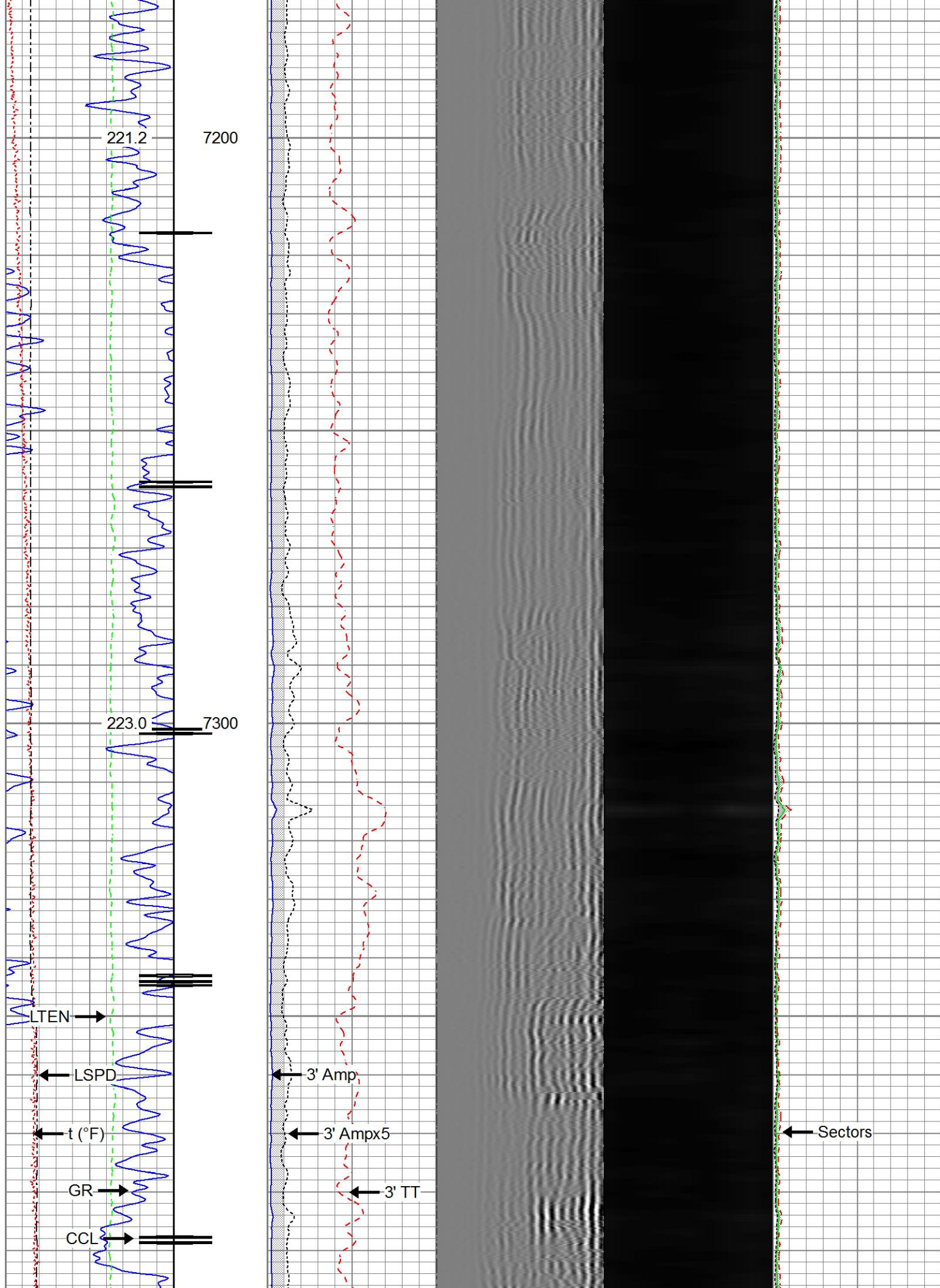


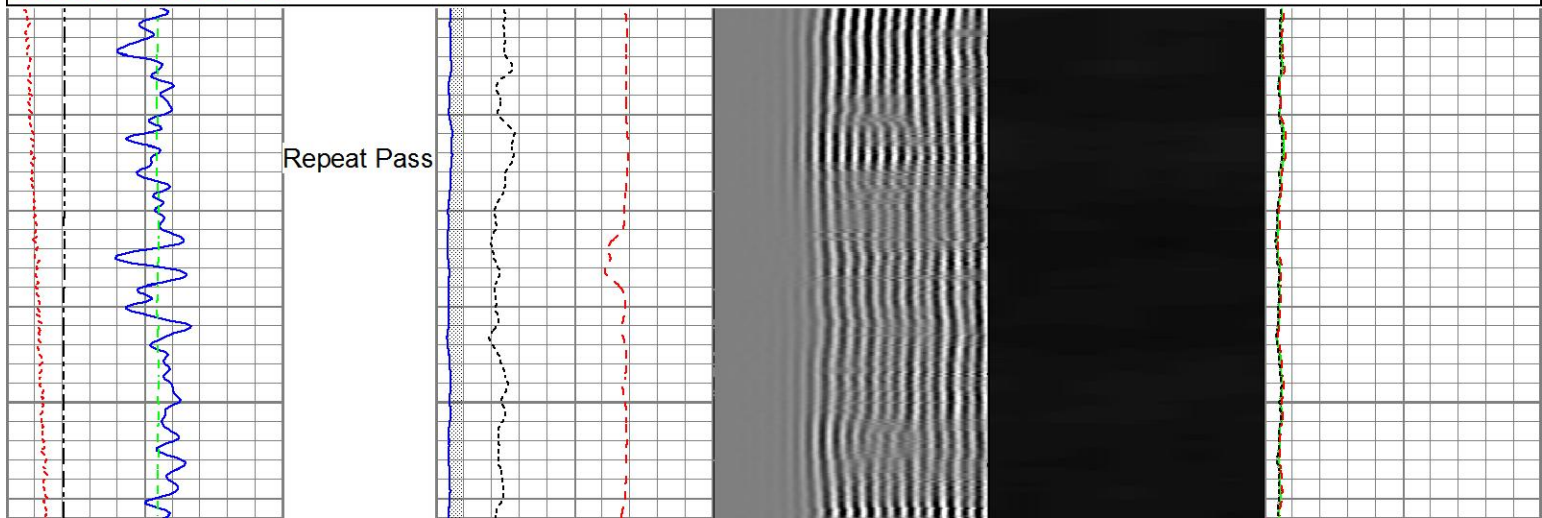
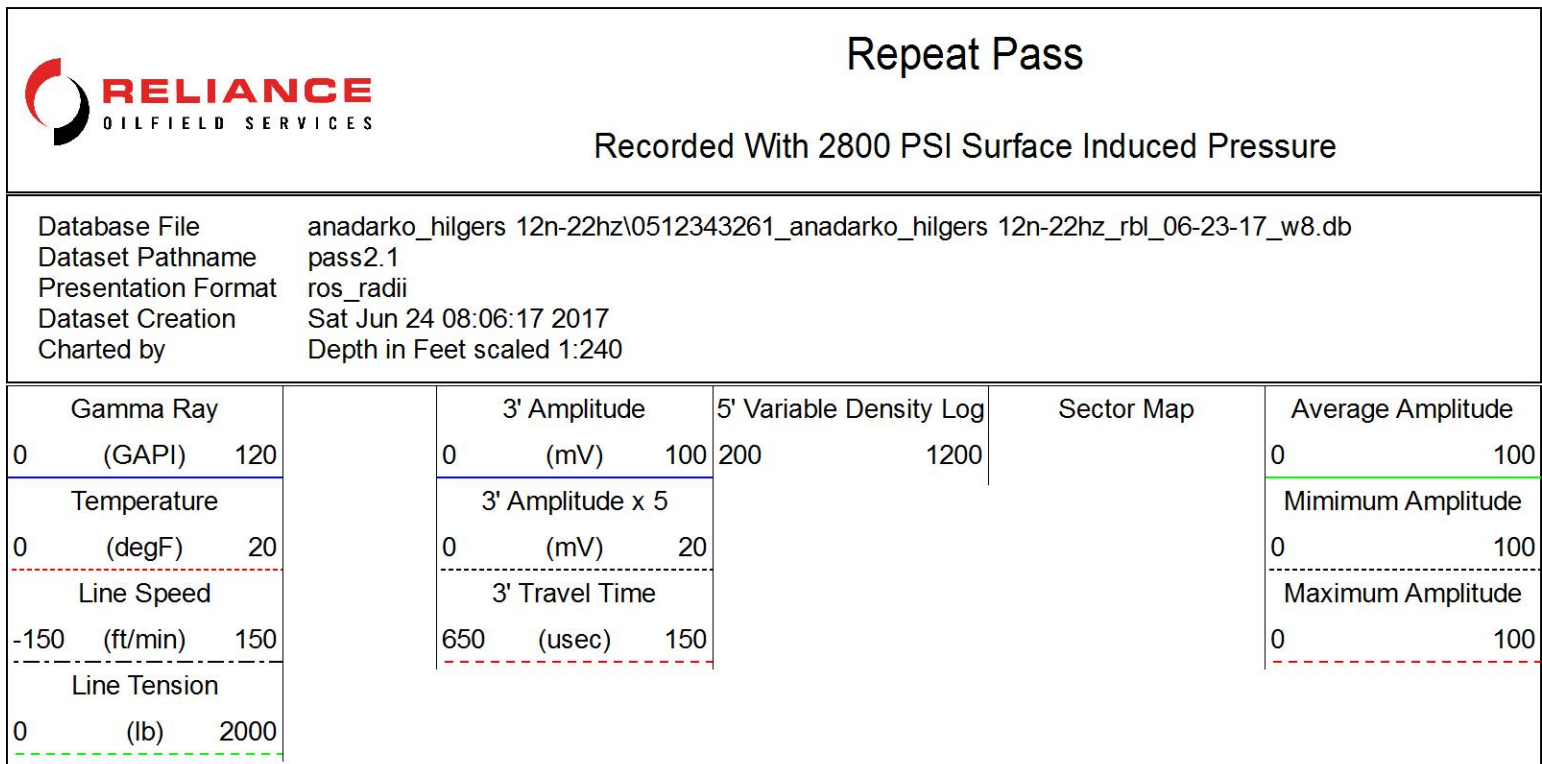
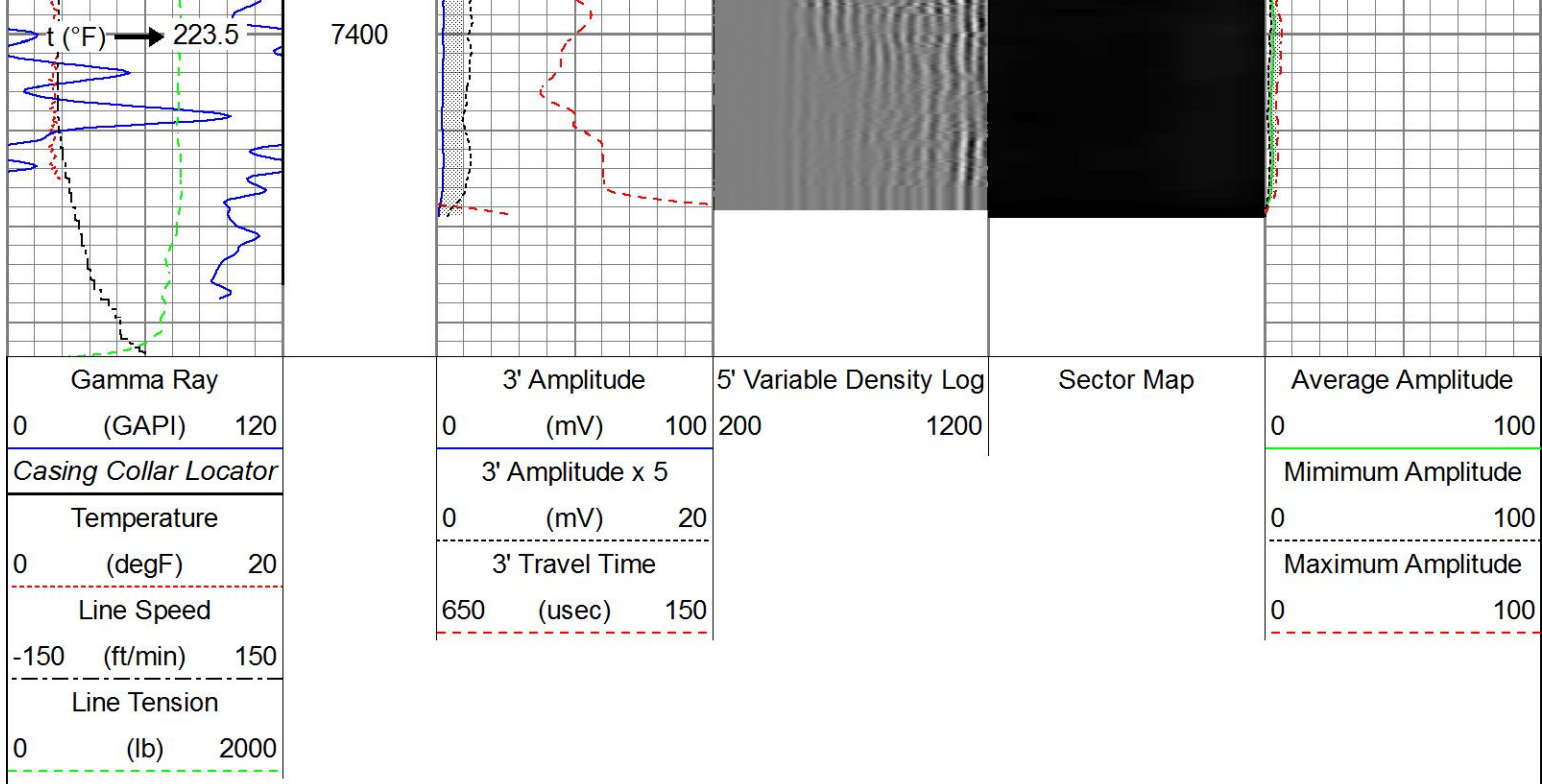


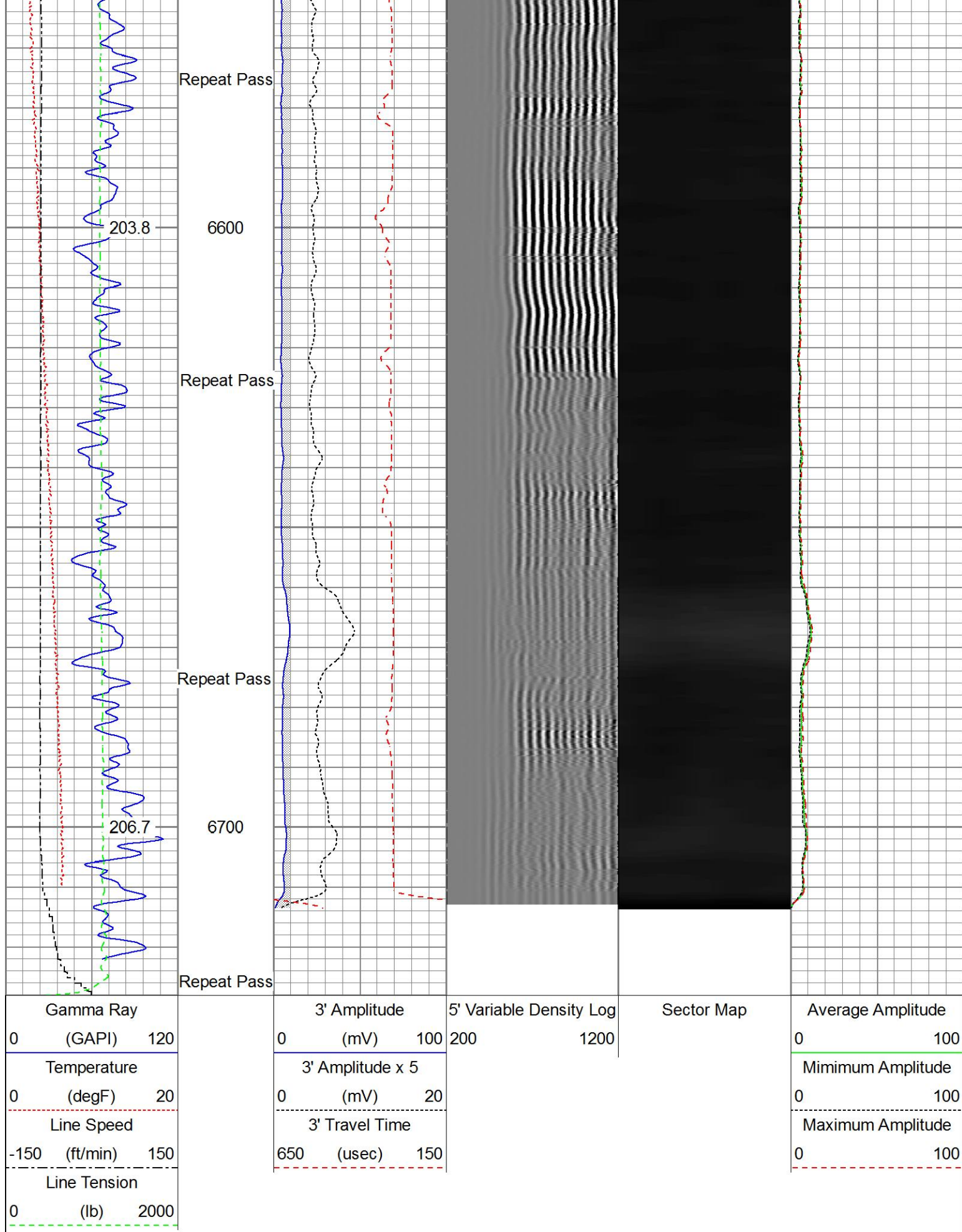













Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan Electric Cable Heads Titan 1 11/161.03		1.00	5.40

[illegible]

Gamma Ray Calibration Report

Serial Number: FW1307-078
 Tool Model: P_GR_2750
 Performed: Sun Feb 07 16:49:28 2016

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.6 cps

Sensitivity: 0.6061 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1302-002
 Tool Model: P_RBT_2750

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 21.128 ft

Master Calibration, performed Fri Jun 23 12:46:42 2017:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.726	0.800	71.921	98.948	0.096
CAL	0.761	0.762				
5'	0.007	0.687	0.800	71.921	104.681	0.042
SUM						
S1	0.005	0.720	0.000	100.000	139.972	-0.714
S2	0.007	0.719	0.000	100.000	140.483	-1.008
S3	0.008	0.719	0.000	100.000	140.609	-1.081
S4	0.008	0.718	0.000	100.000	140.696	-1.056
S5	0.008	0.722	0.000	100.000	140.044	-1.072
S6	0.007	0.728	0.000	100.000	138.777	-1.022
S7	0.008	0.732	0.000	100.000	138.040	-1.053
S8	0.007	0.729	0.000	100.000	138.495	-1.014

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.761	0.762	1.000	0.000

Air Zero Calibration, performed Fri Jun 23 12:47:03 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.007		0.000		-0.000	
5'	0.007		0.000		0.000	
SUM						
S1	0.005		0.000		-0.000	
S2	0.007		0.000		-0.000	
S3	0.008		0.000		-0.000	
S4	0.007		0.000		0.000	
S5	0.005		0.000		-0.000	

S5	0.008	0.000	-0.000
S6	0.008	0.000	-0.001
S7	0.008	0.000	-0.000
S8	0.007	0.000	0.000



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Hilgers 12N-22HZ
Field	Wattenberg
County	Weld
State	Colorado