



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.			Location:	API # : 05-123-44406	Other Services
Well	Butterball 22C-34HZ					Gauge Ring
Field	Wattenberg					RBP
County	Weld	State	Colorado			
Permanent Datum	SEC 10	TWP 2N	RGE 67W			Elevation
Log Measured From	Kelly Bushing			Elevation	4935'	K.B. 4967'
Drilling Measured From	Kelly Bushing					D.F. 4966'
						G.L. 4935'

Date	30-AUG-2017		
Run Number	One		
Depth Driller	16333 FT		
Depth Logger	6811 FT		
Bottom Logged Interval	6806 FT		
Top Log Interval	Surface		
Open Hole Size	7.875"		
Type Fluid	Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	215°F		
Estimated Cement Top	See Log		
Time Well Ready	0645		
Time Logger on Bottom	0930		
Equipment Number	HD-0331		
Location	Fort Lupton, CO		
Recorded By	J. Amidei		
Witnessed By	K. Carver		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom		
Surface Casing	9 5/8	36	J-55	Surface	1851 FT		
Intermediate #1	5 1/2	17	HC P110	Surface	16321 FT		
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 Kelly Bushing Reported at 32 FT
Adjusted -5 FT To Correlate With Kelly Bushing
Retrievable Bridge Plug set at 6824 FT
Log ran from just above RBP to Surface
Log ran with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of any debris upon completion of operations

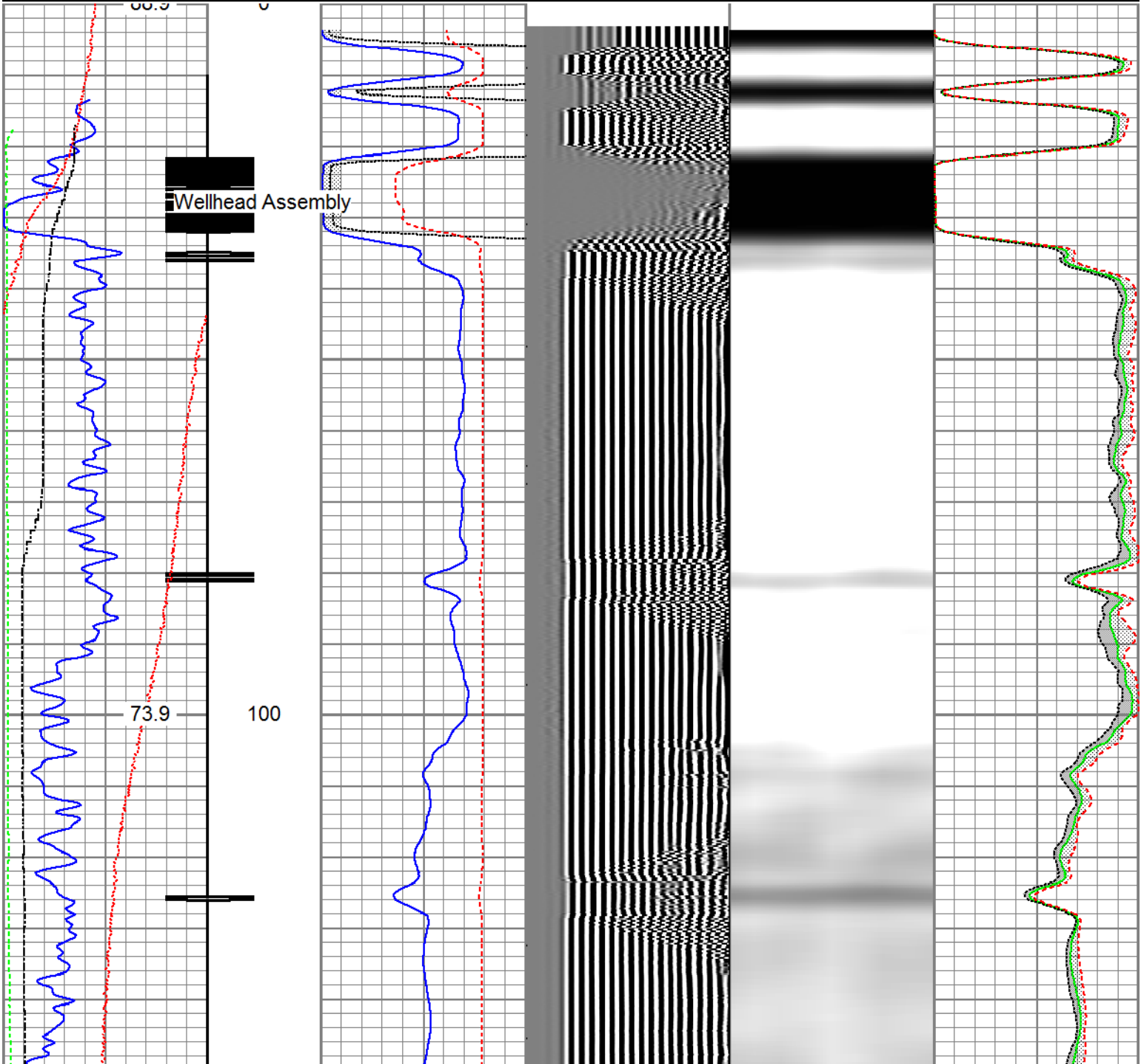
Thank you for choosing Reliance Oilfield Services, LLC!!

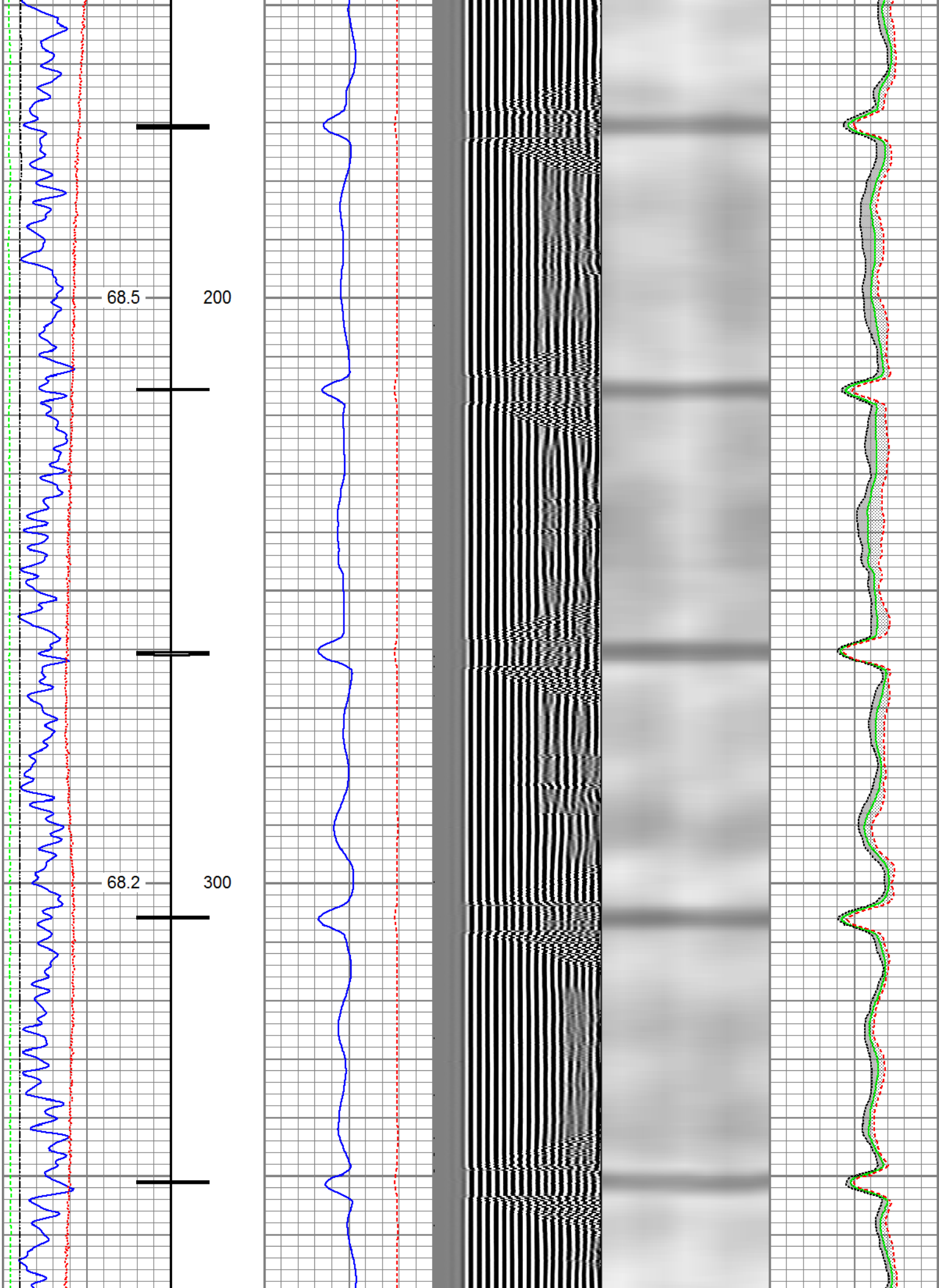


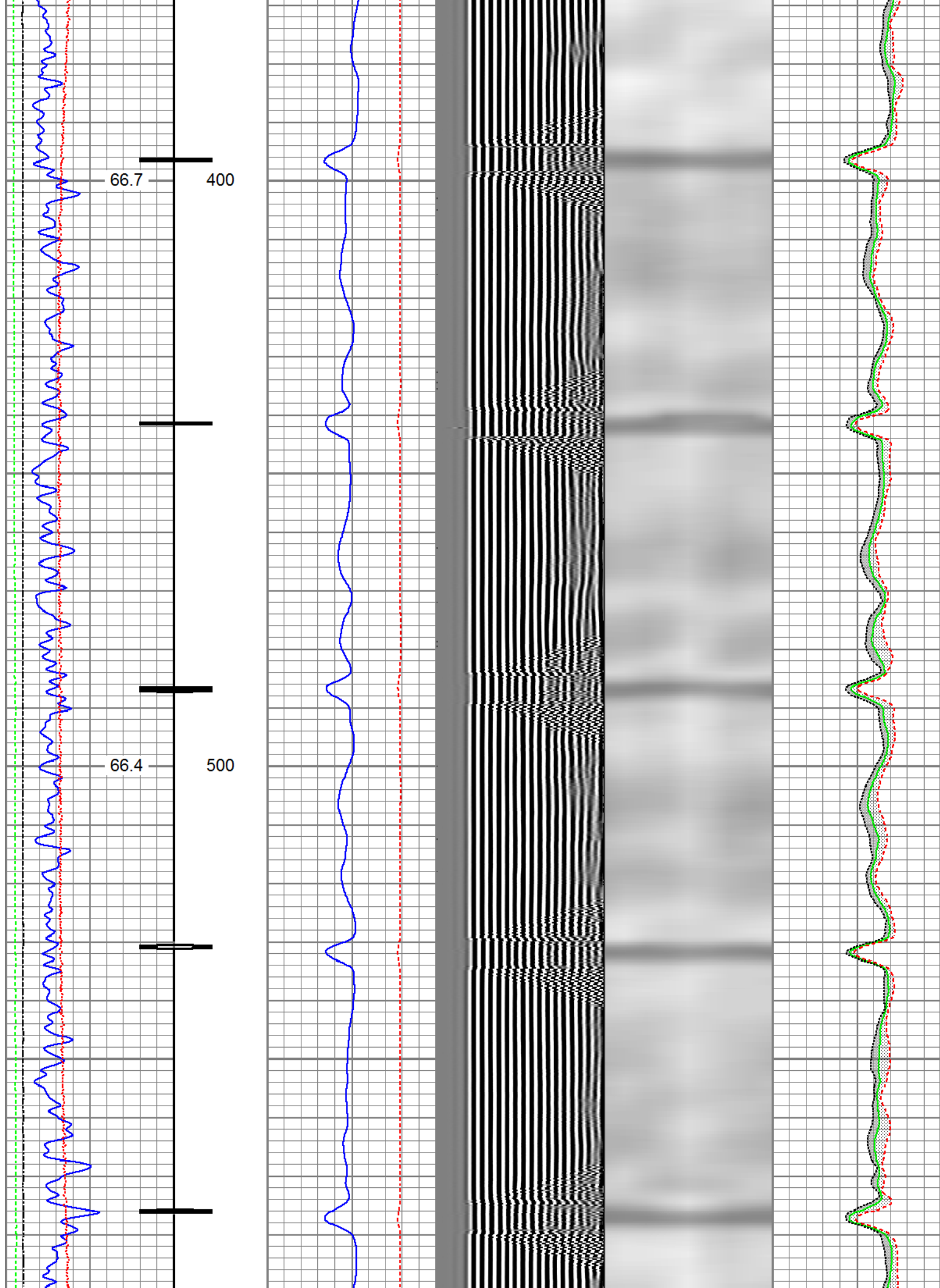
Main Pass

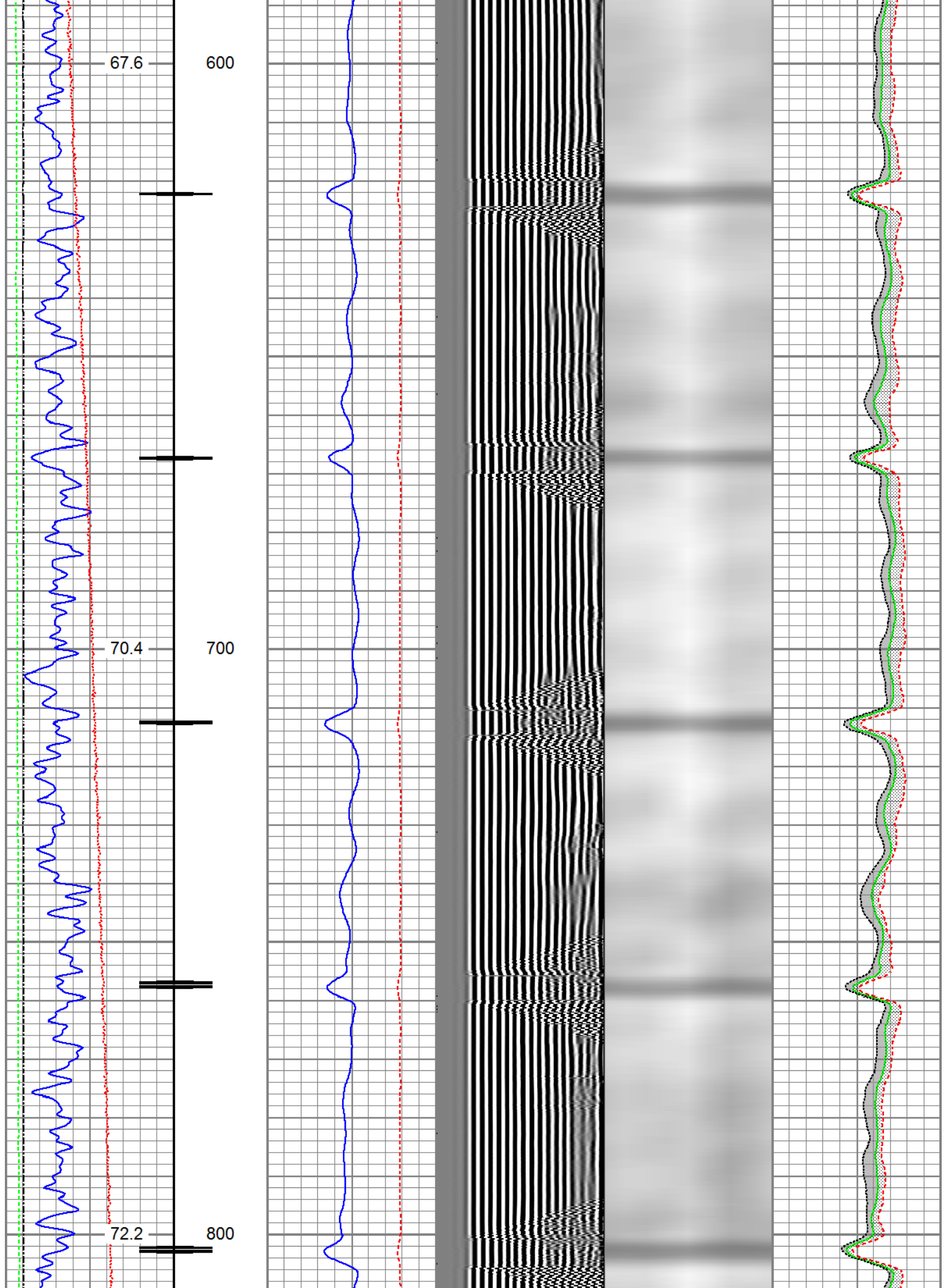
Recorded With 2800 PSI Surface Induced Pressure

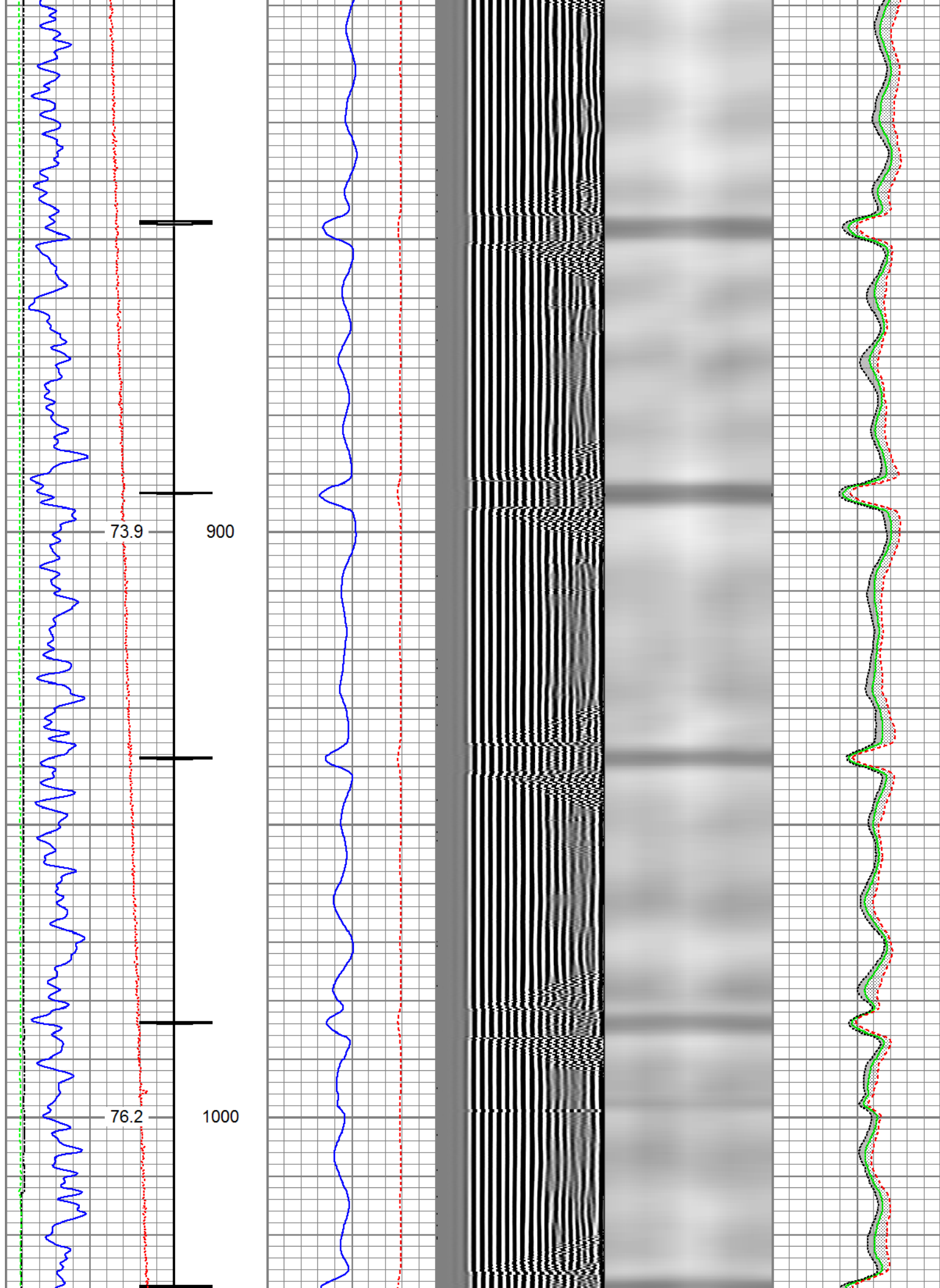
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
	0 (mV) 20			0 100
Temperature	3' Travel Time			Maximum Amplitude
0 (degF) 20	650 (usec) 150			0 100
Line Speed				
-150 (ft/min)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

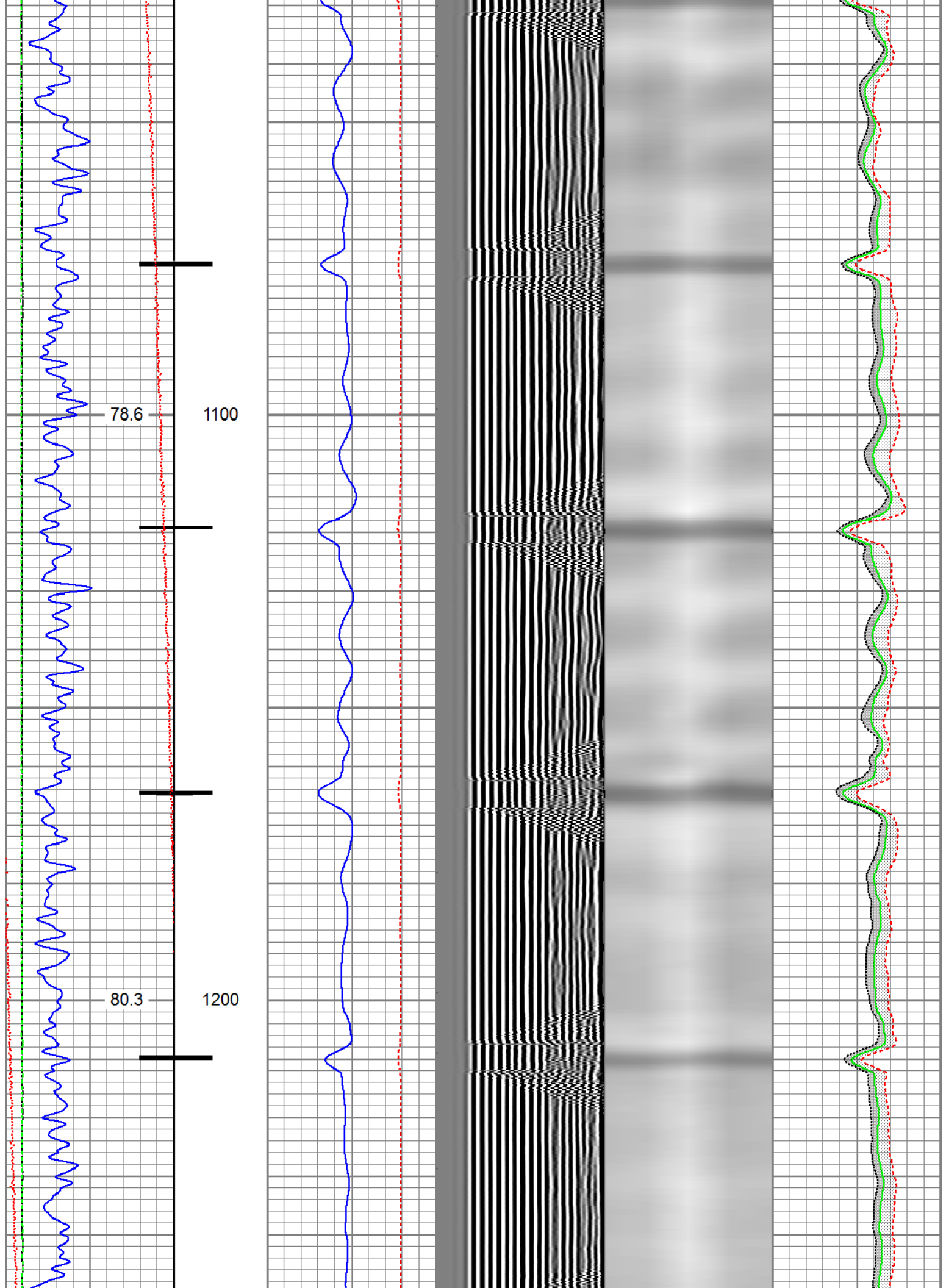


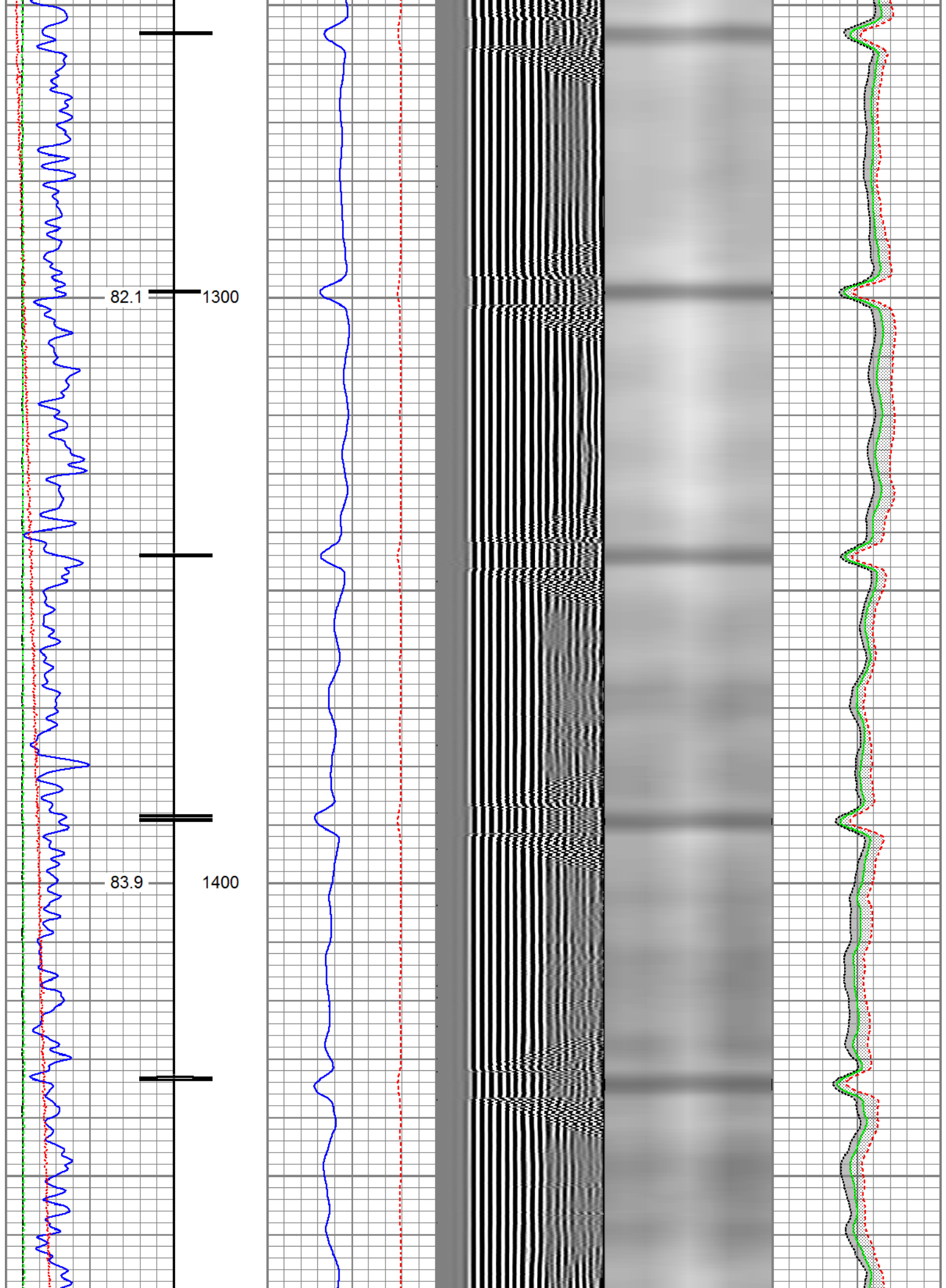


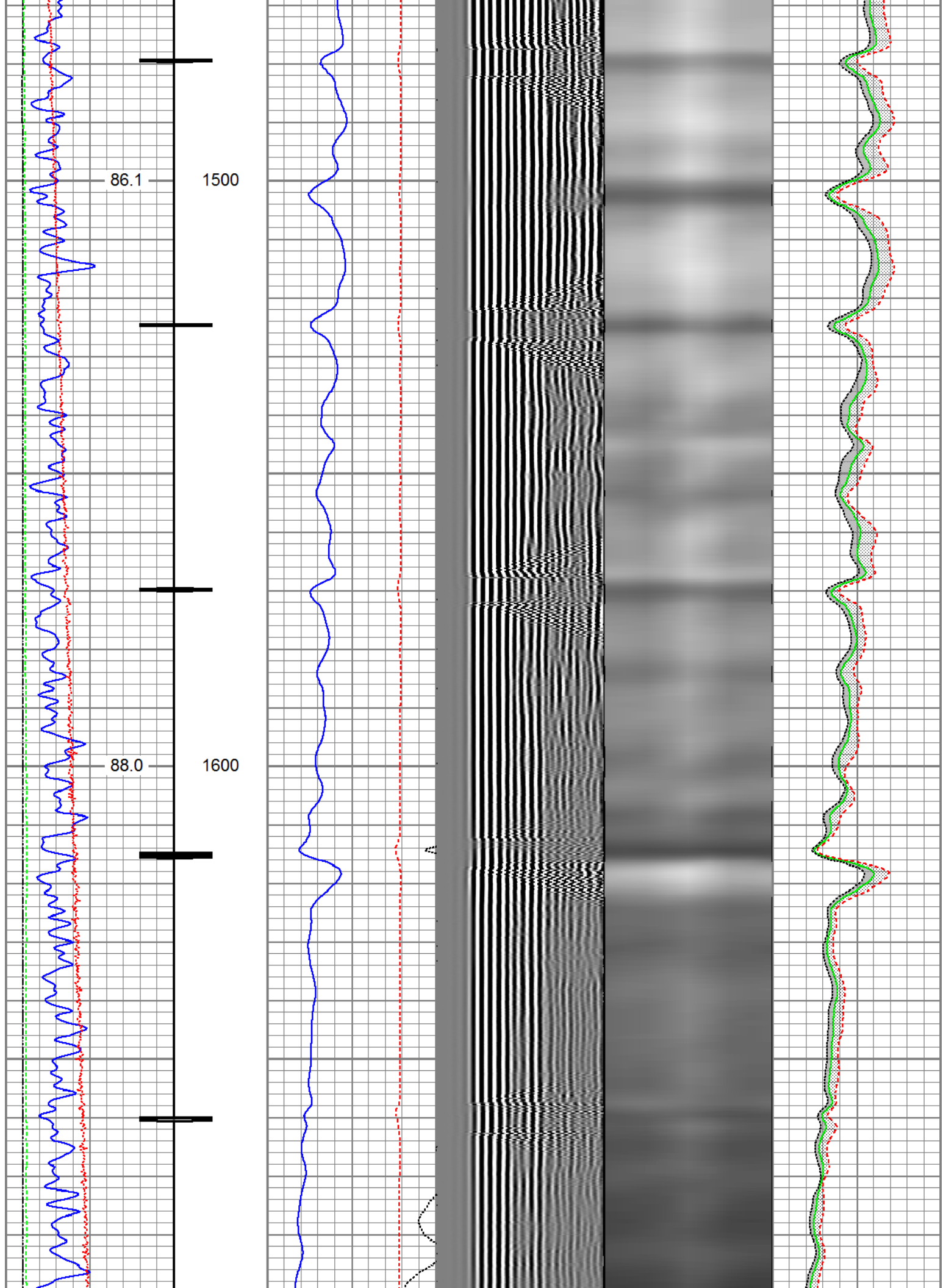


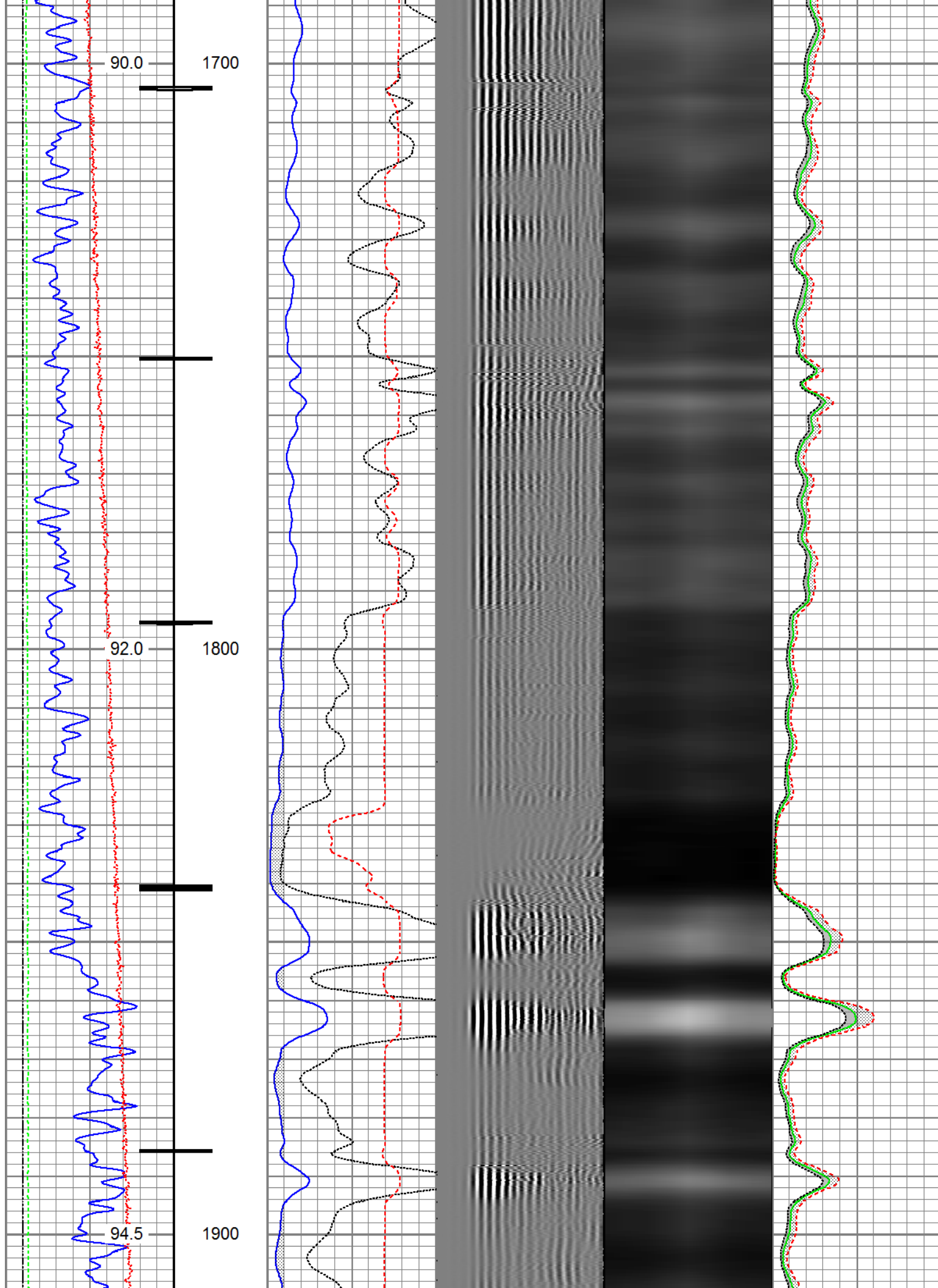


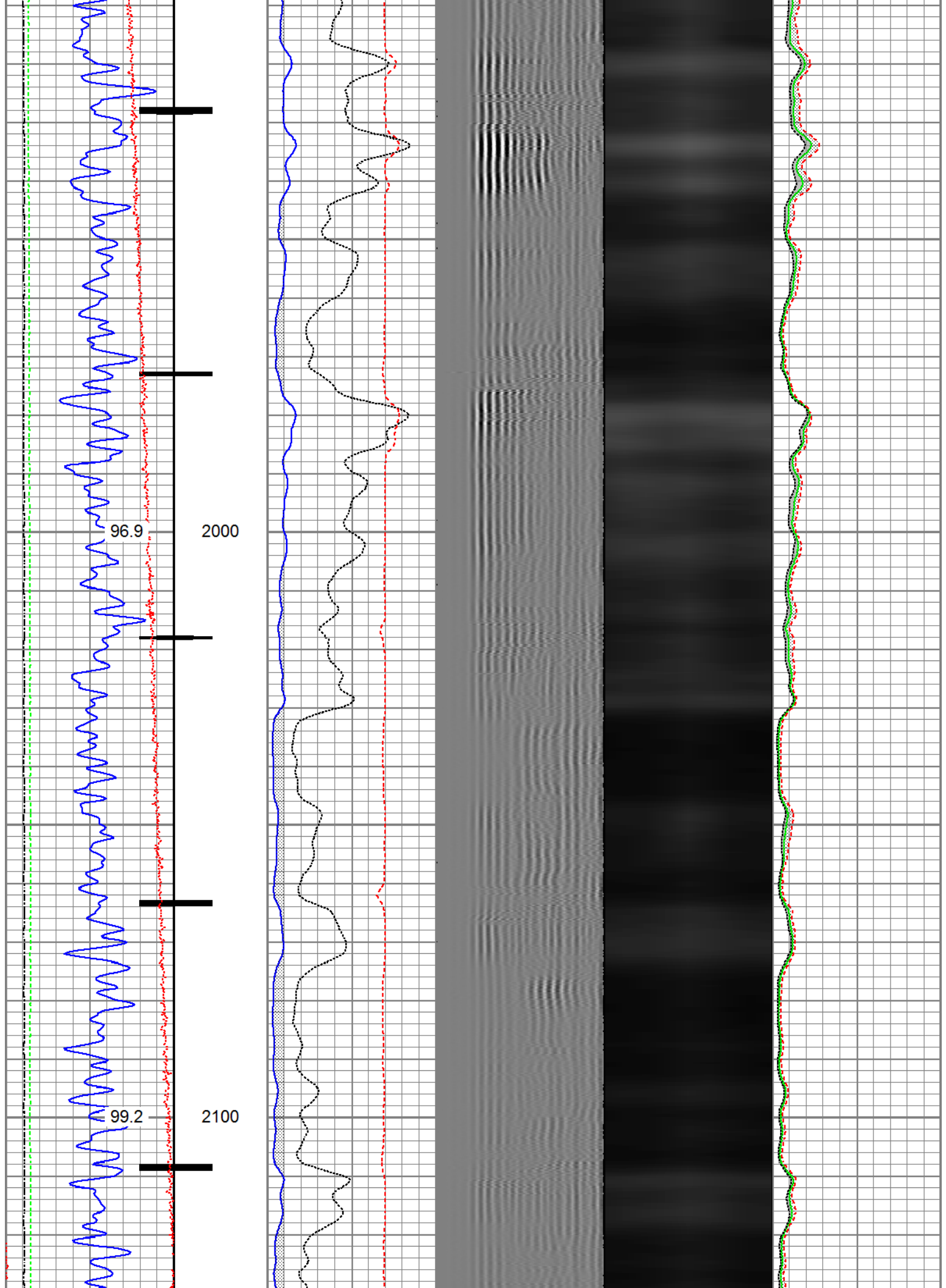


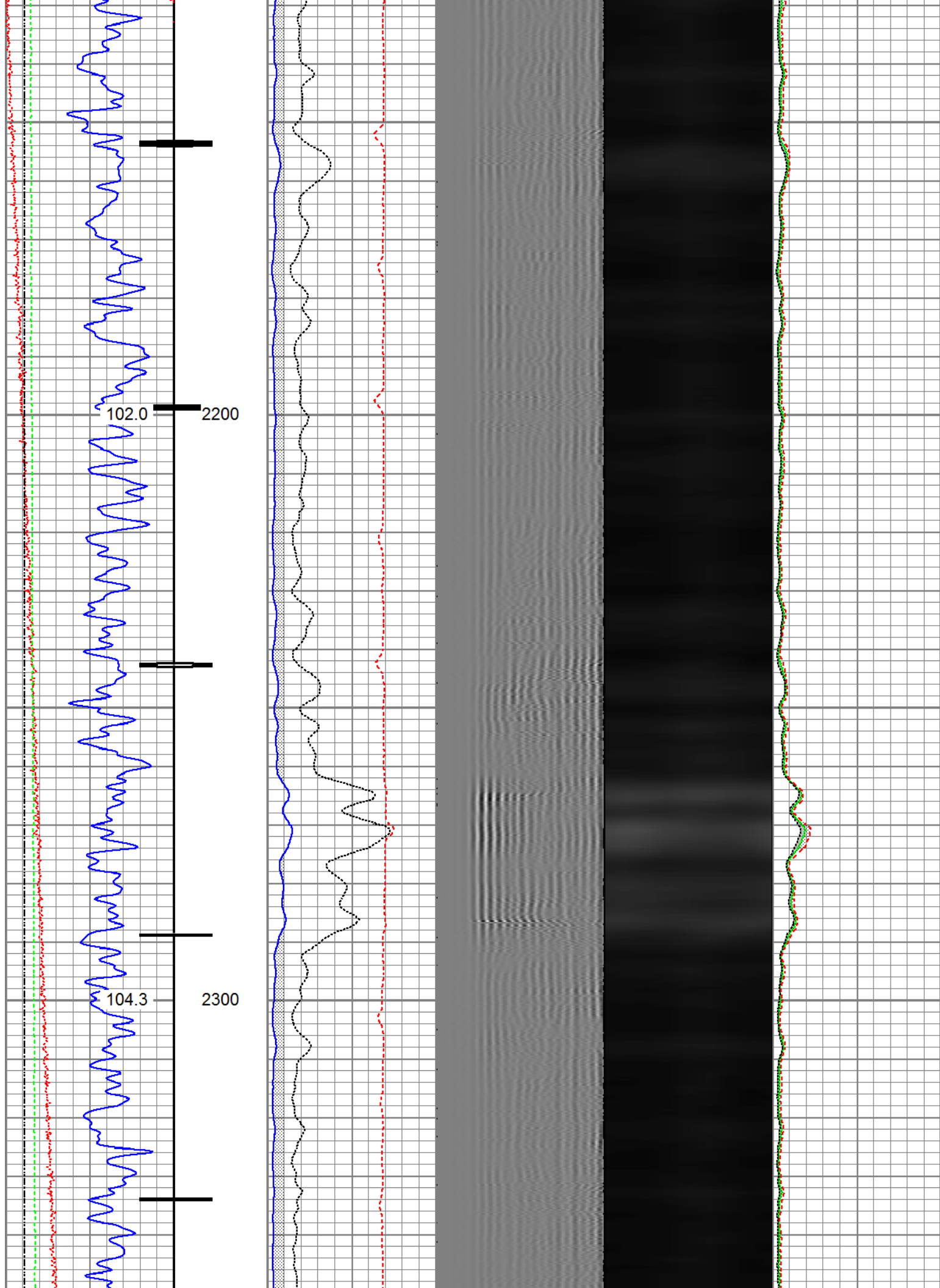


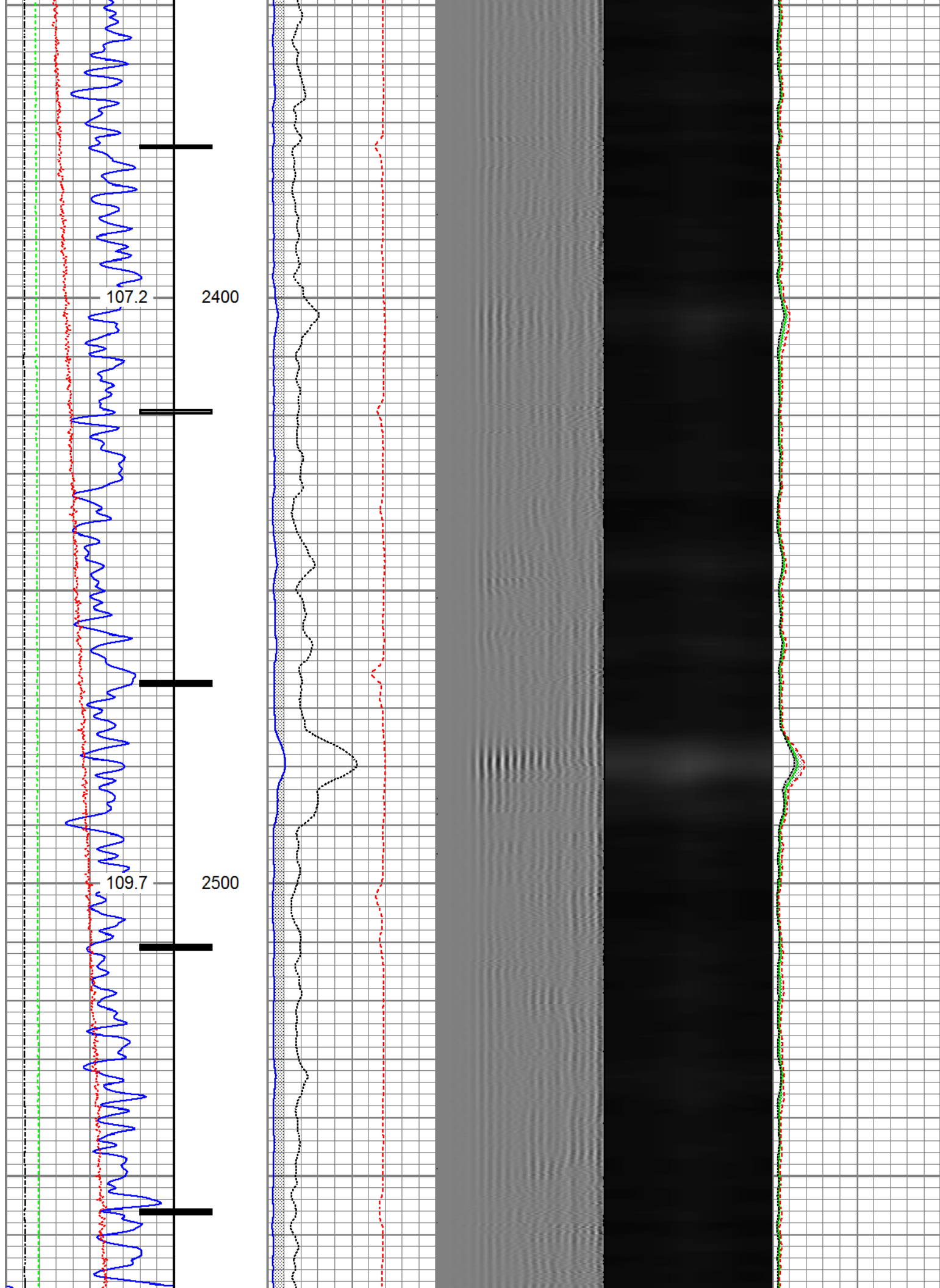


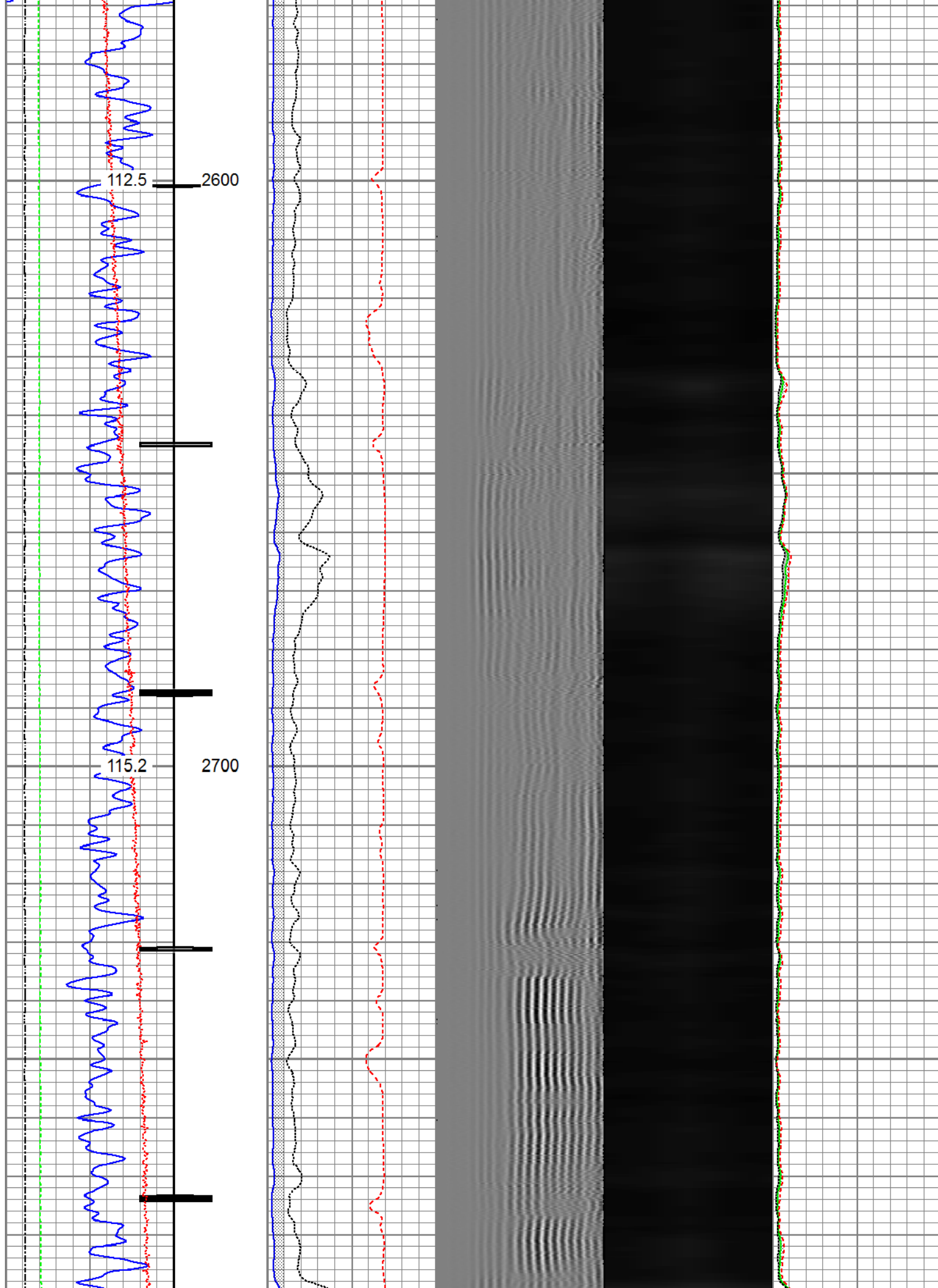


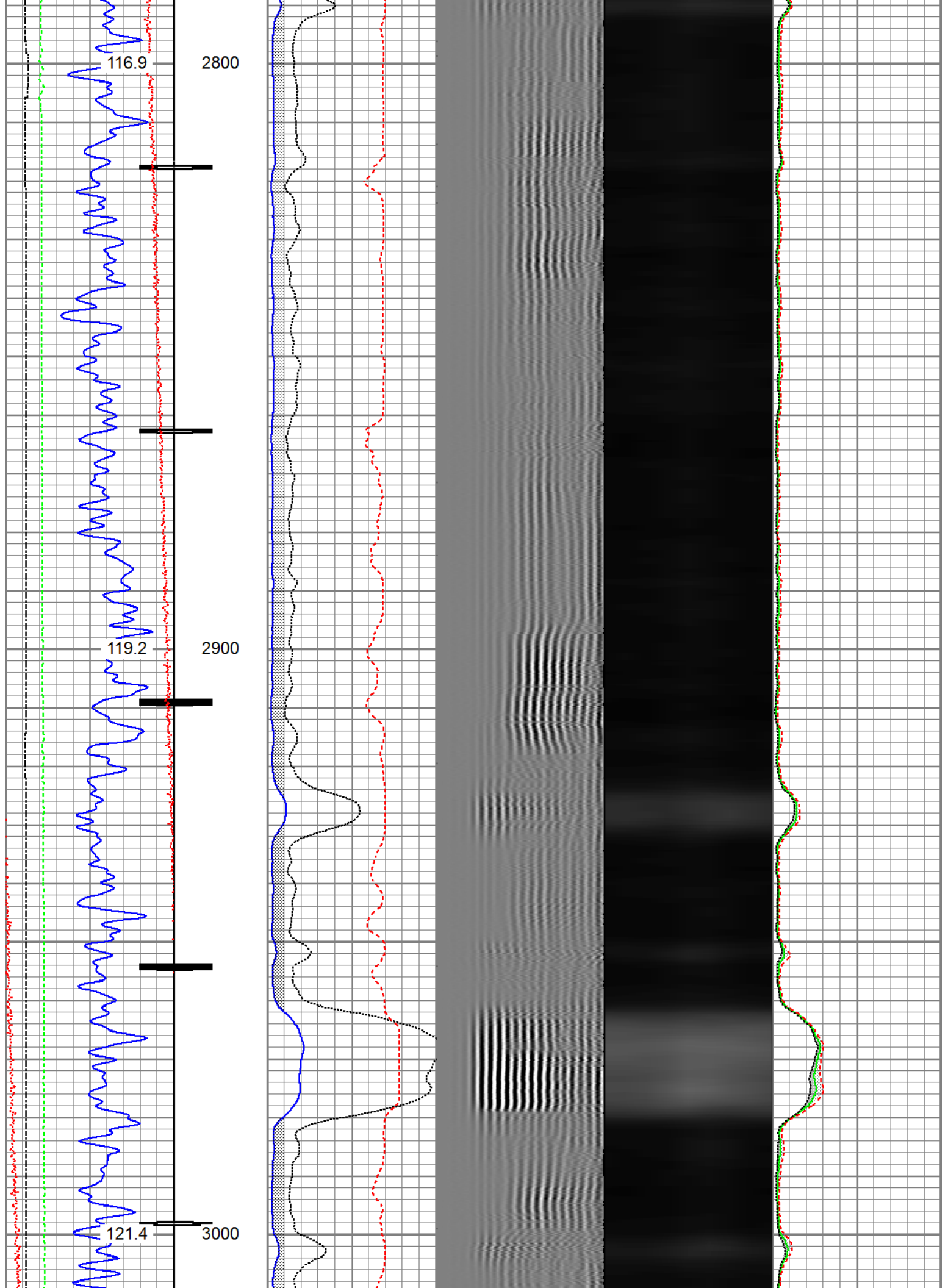


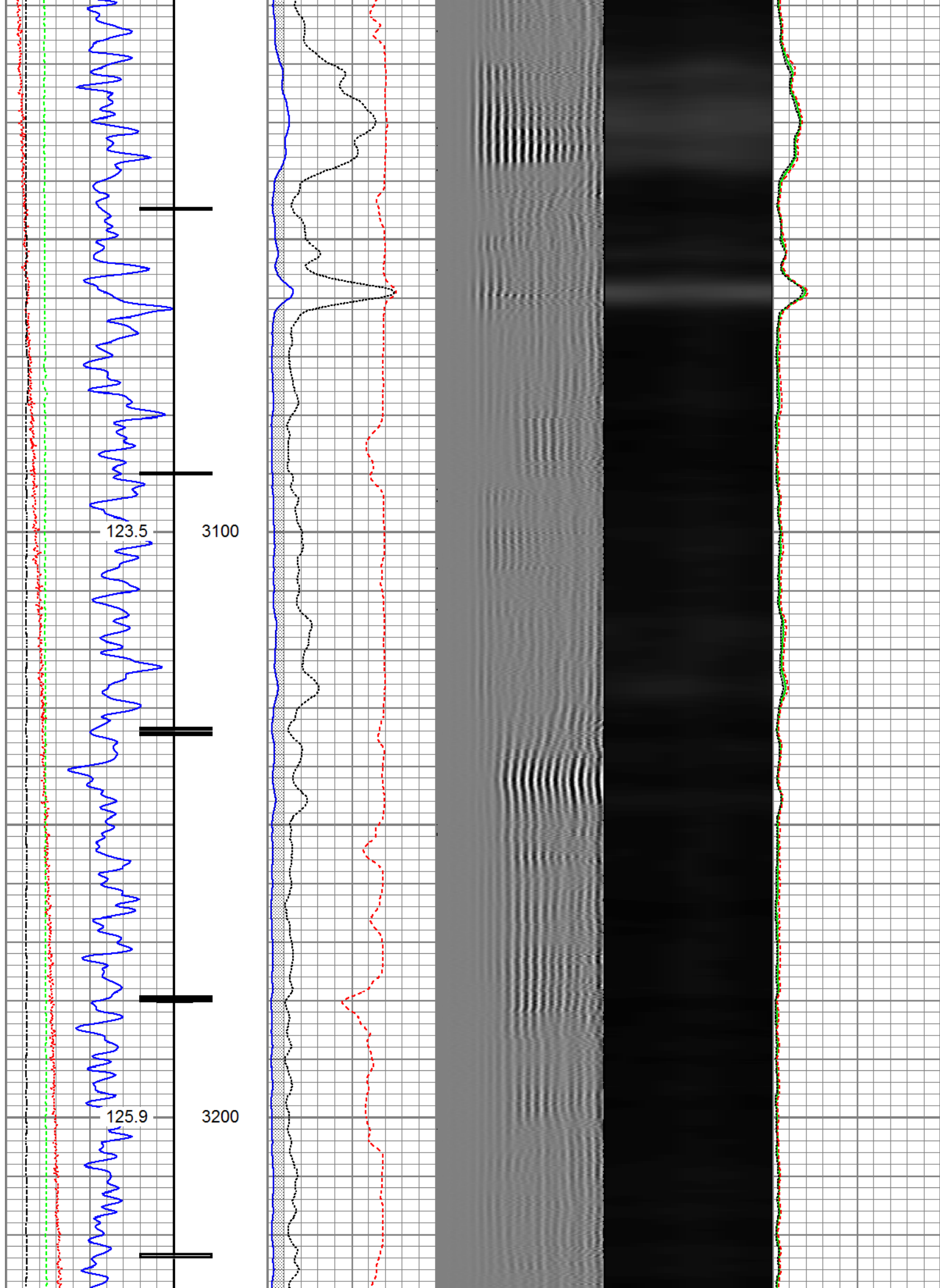


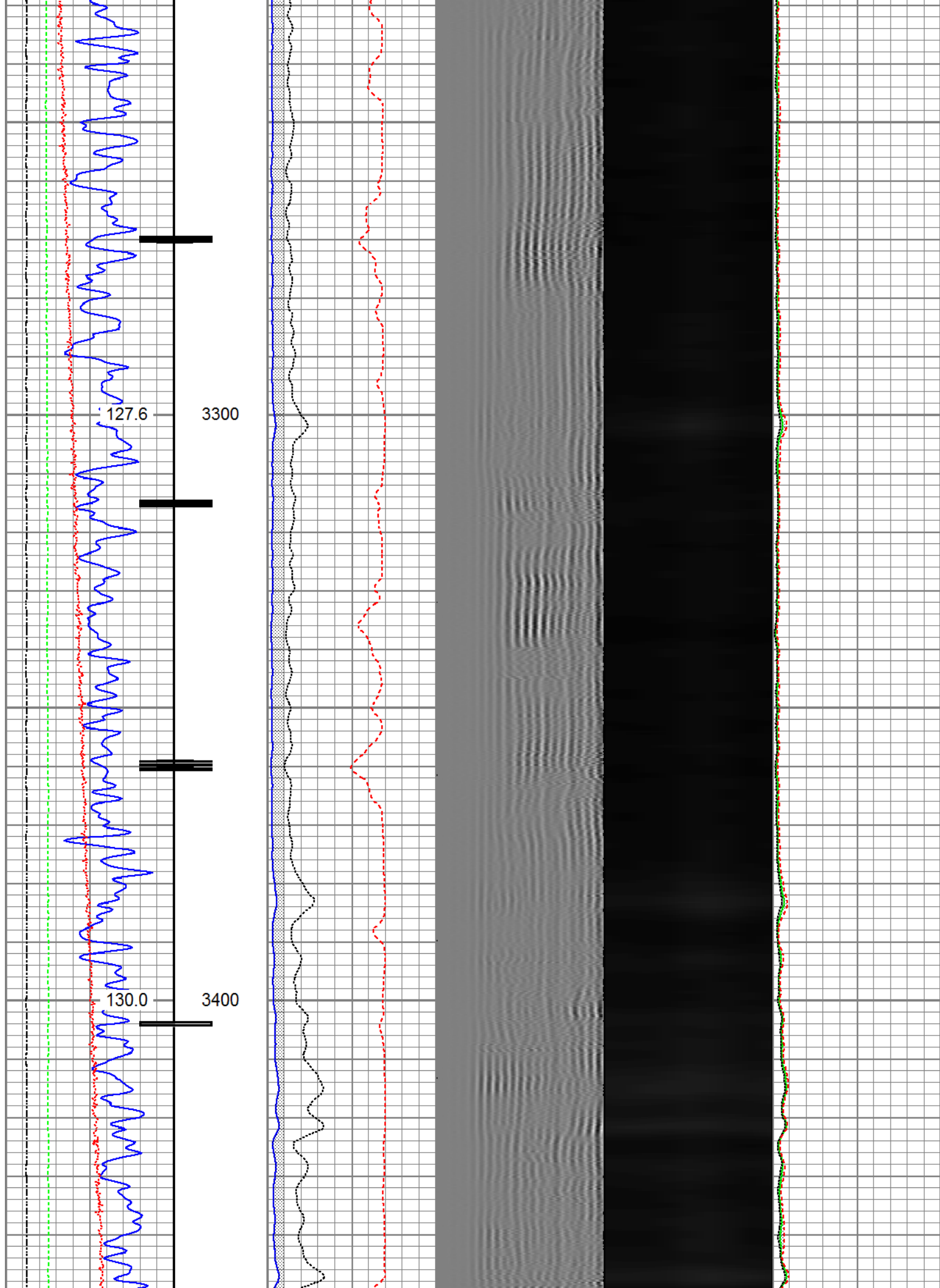


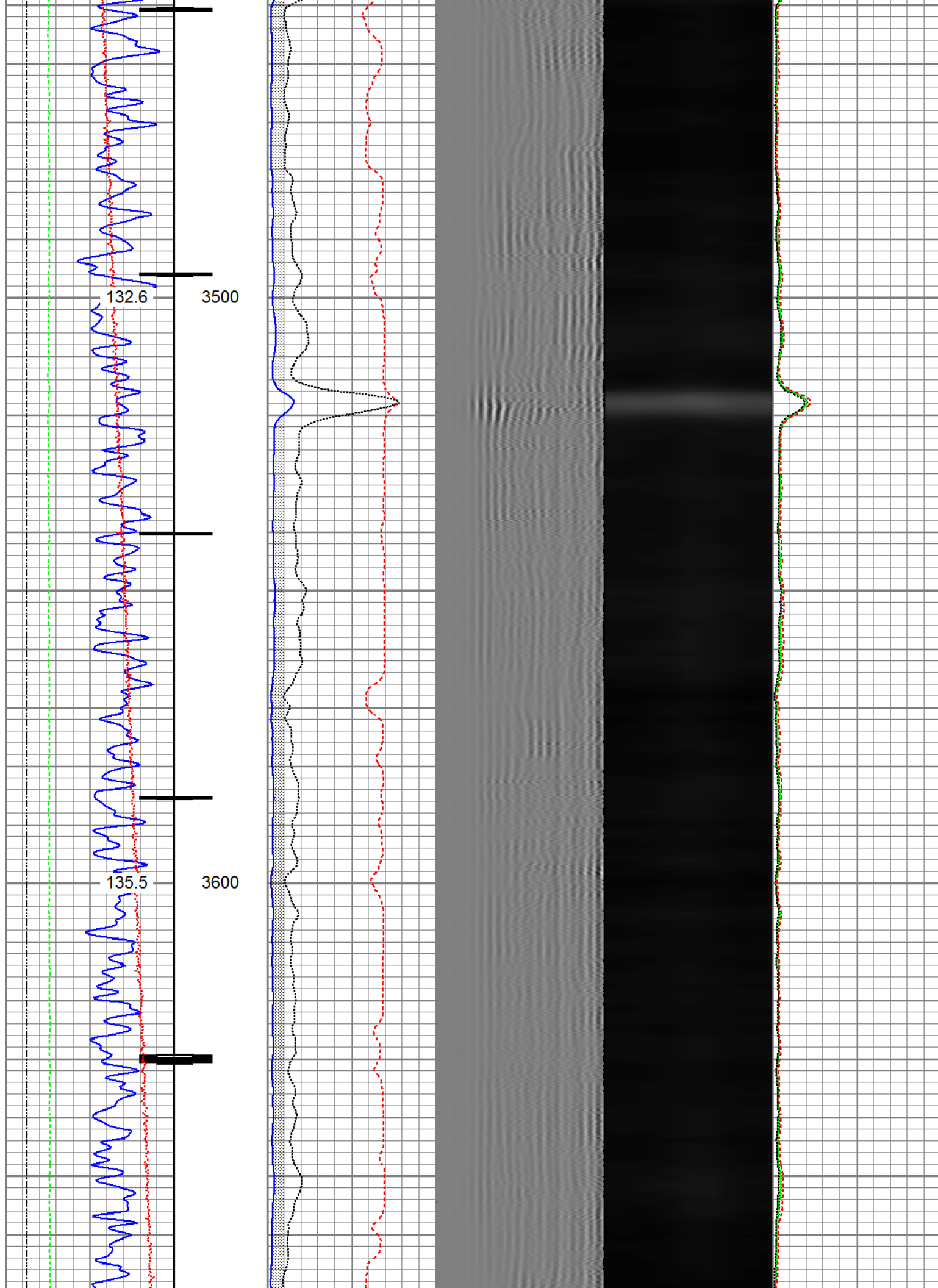


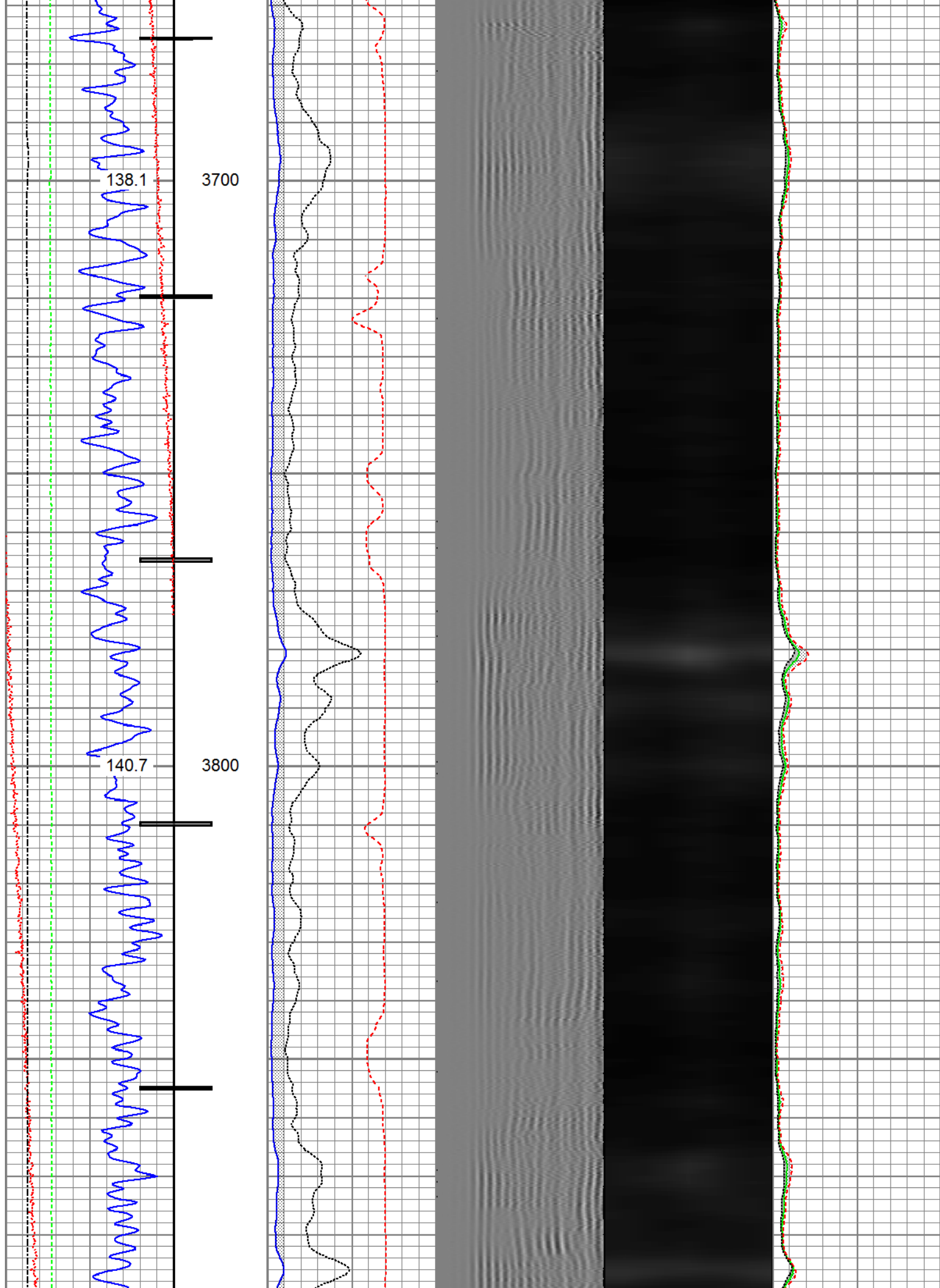


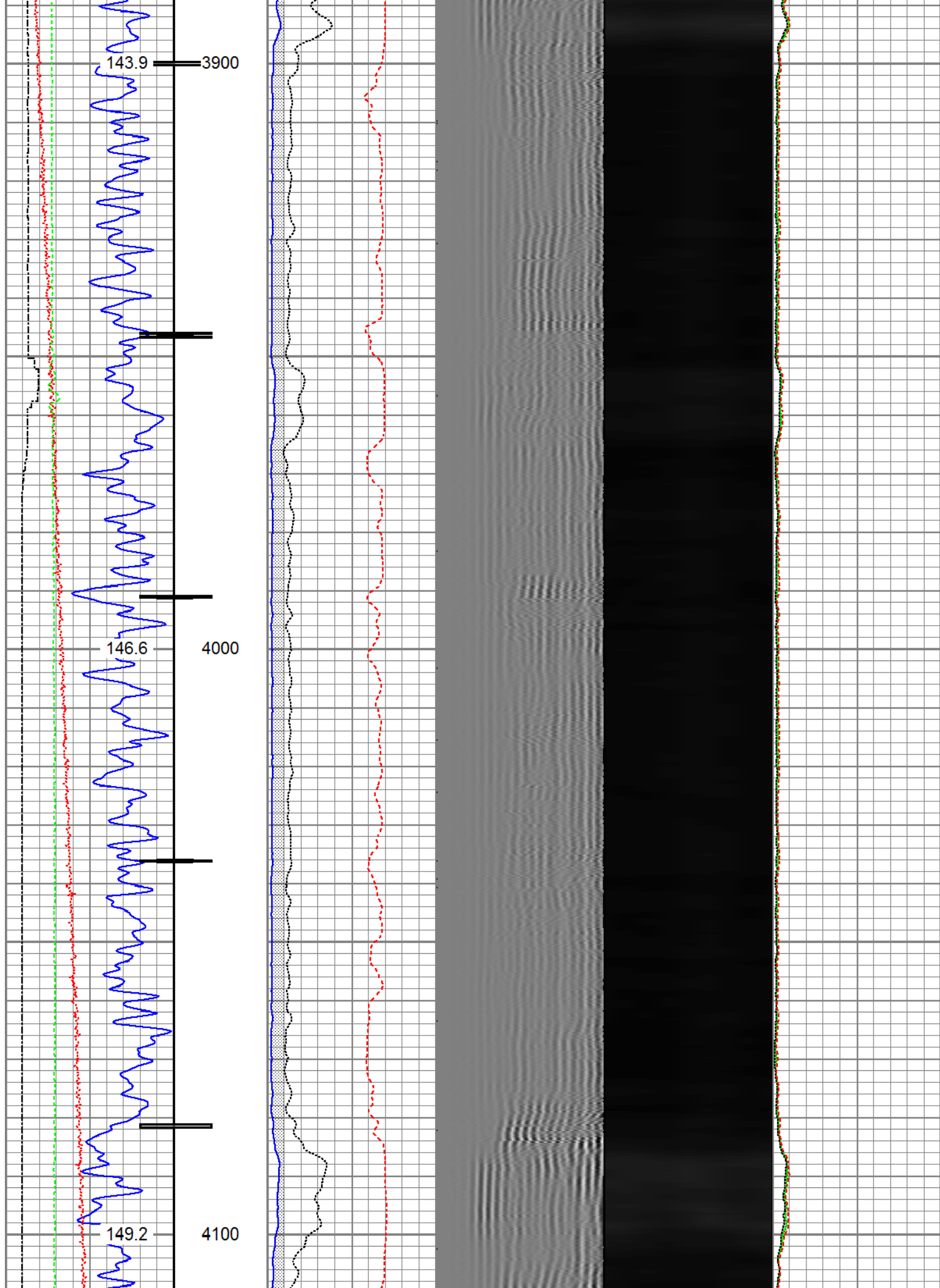


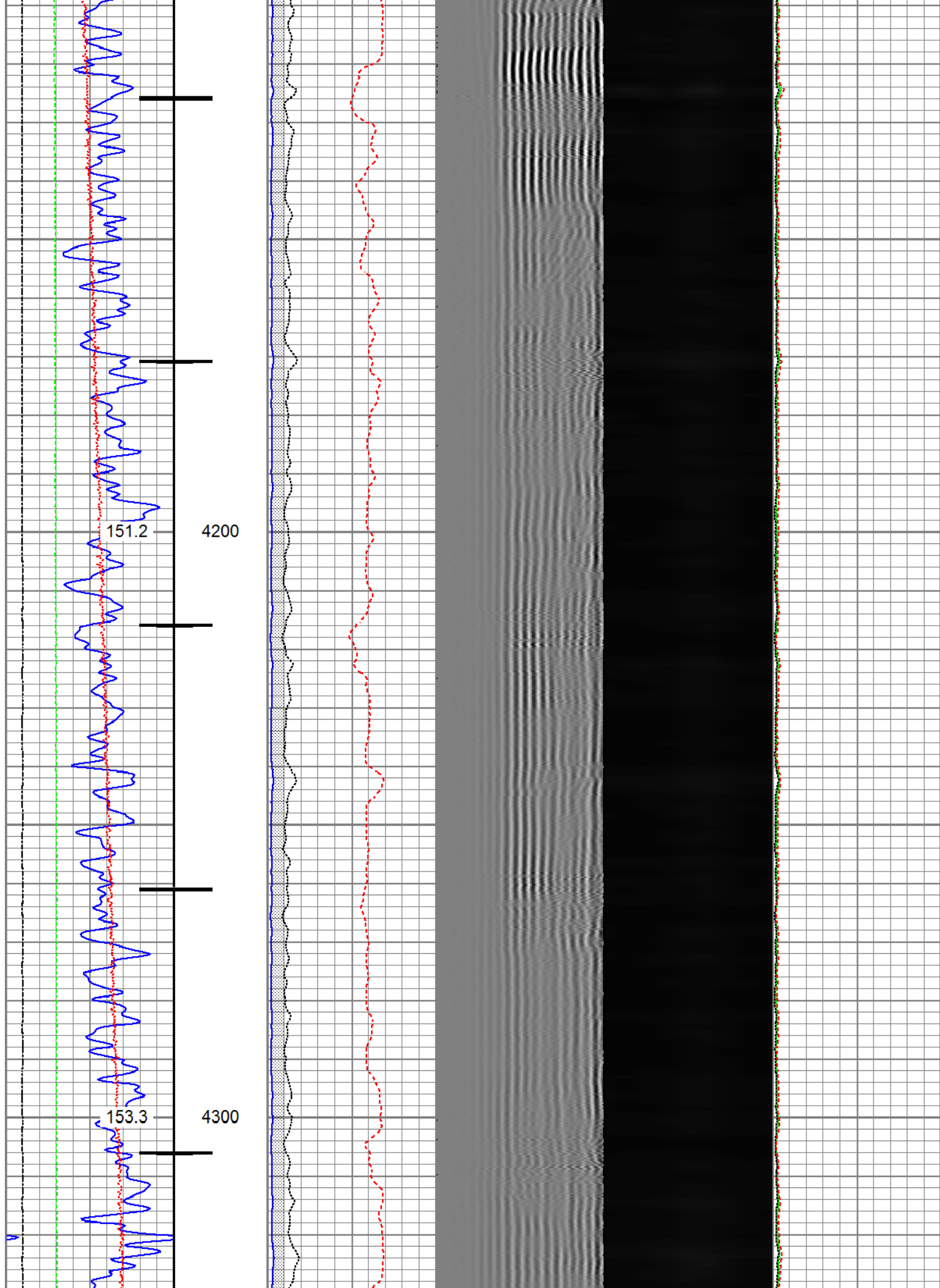


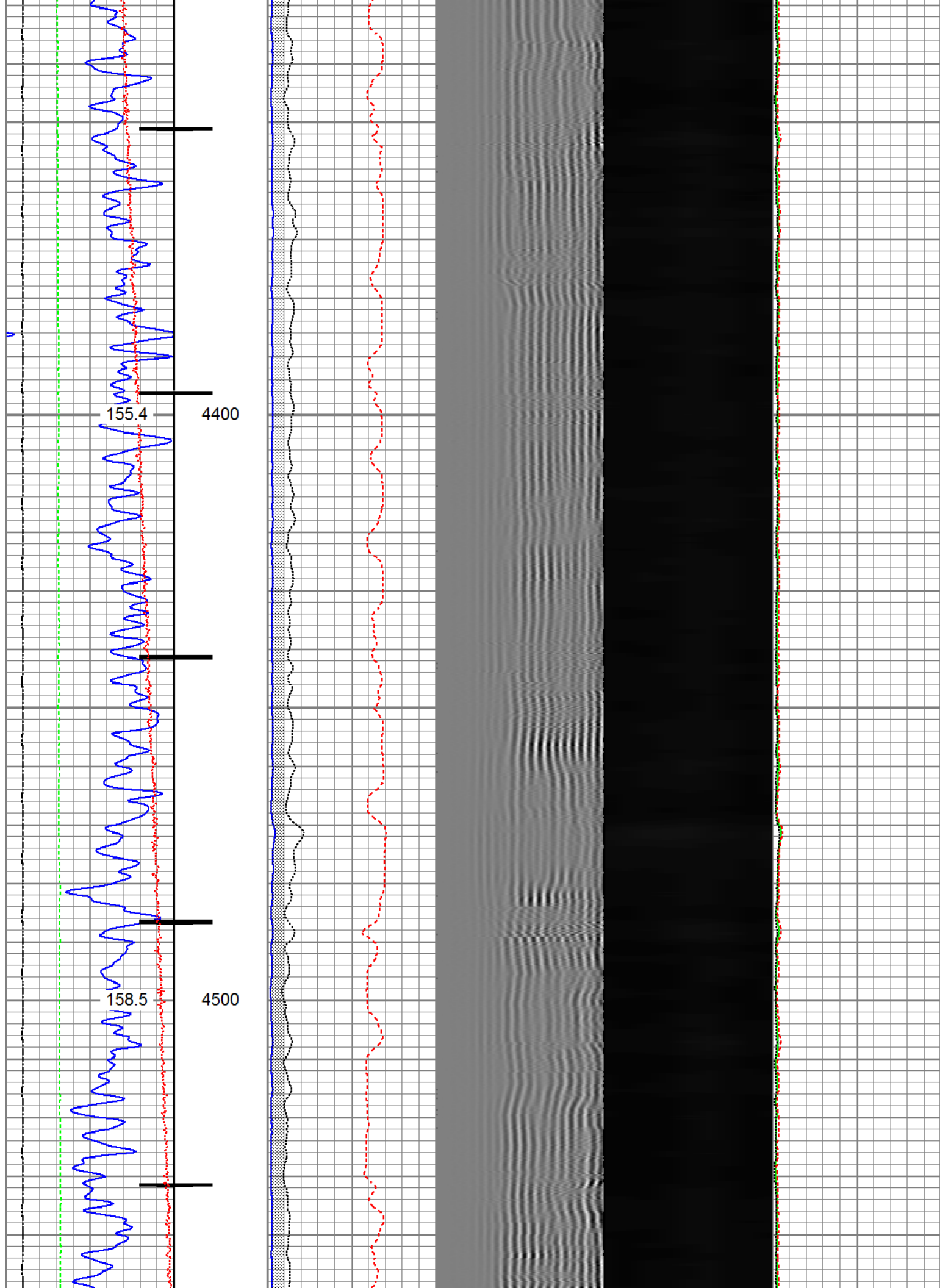


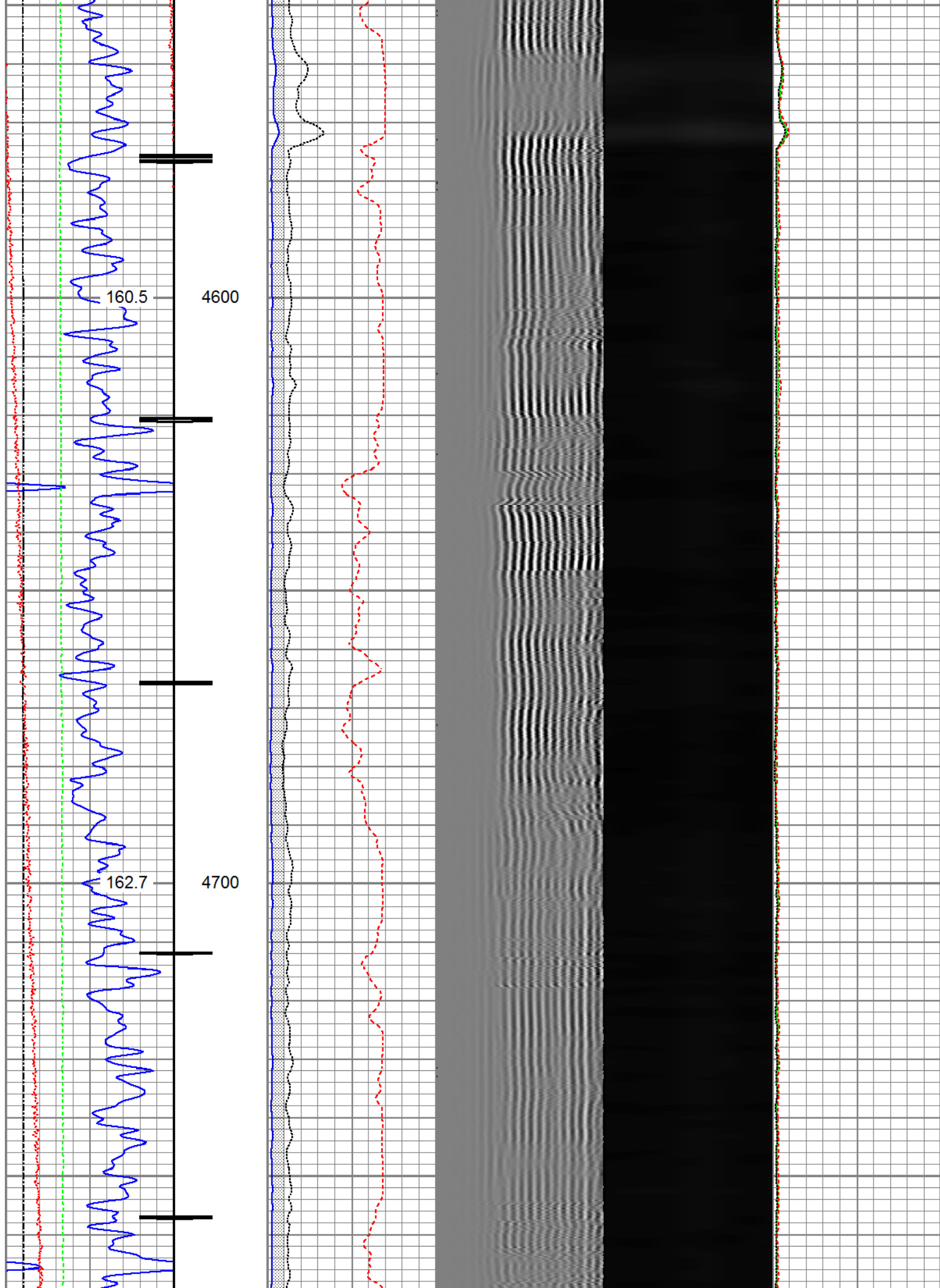


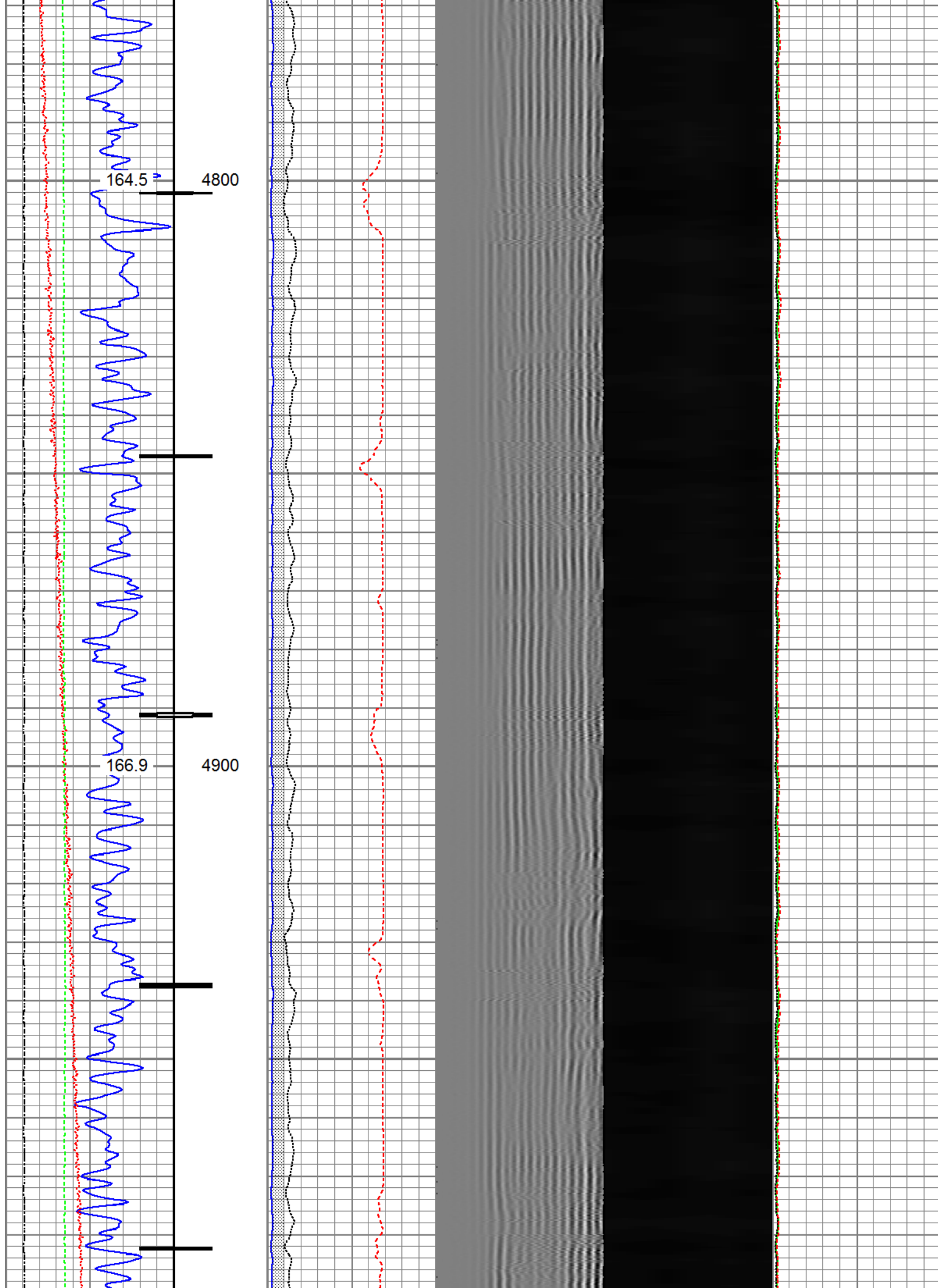


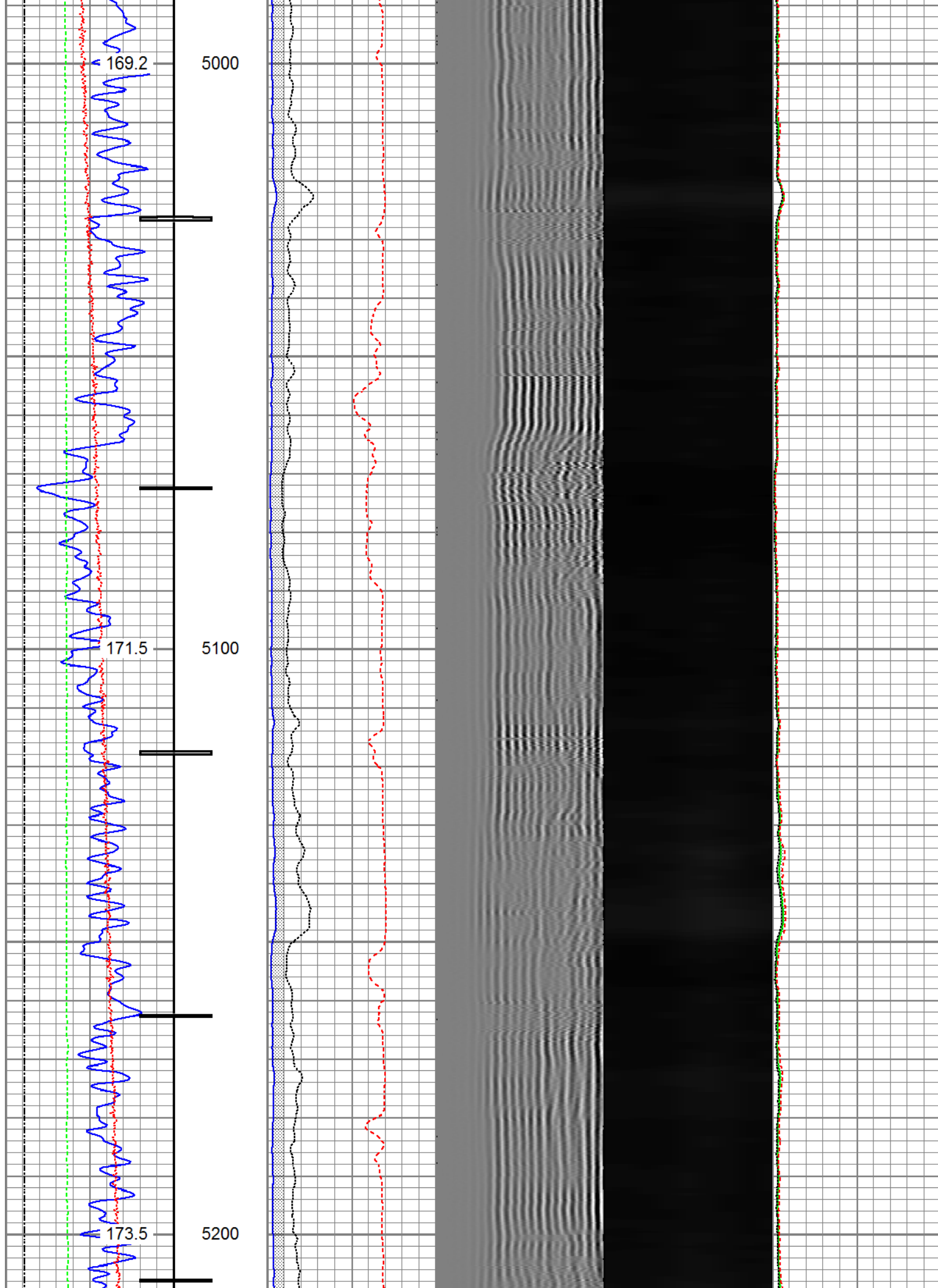


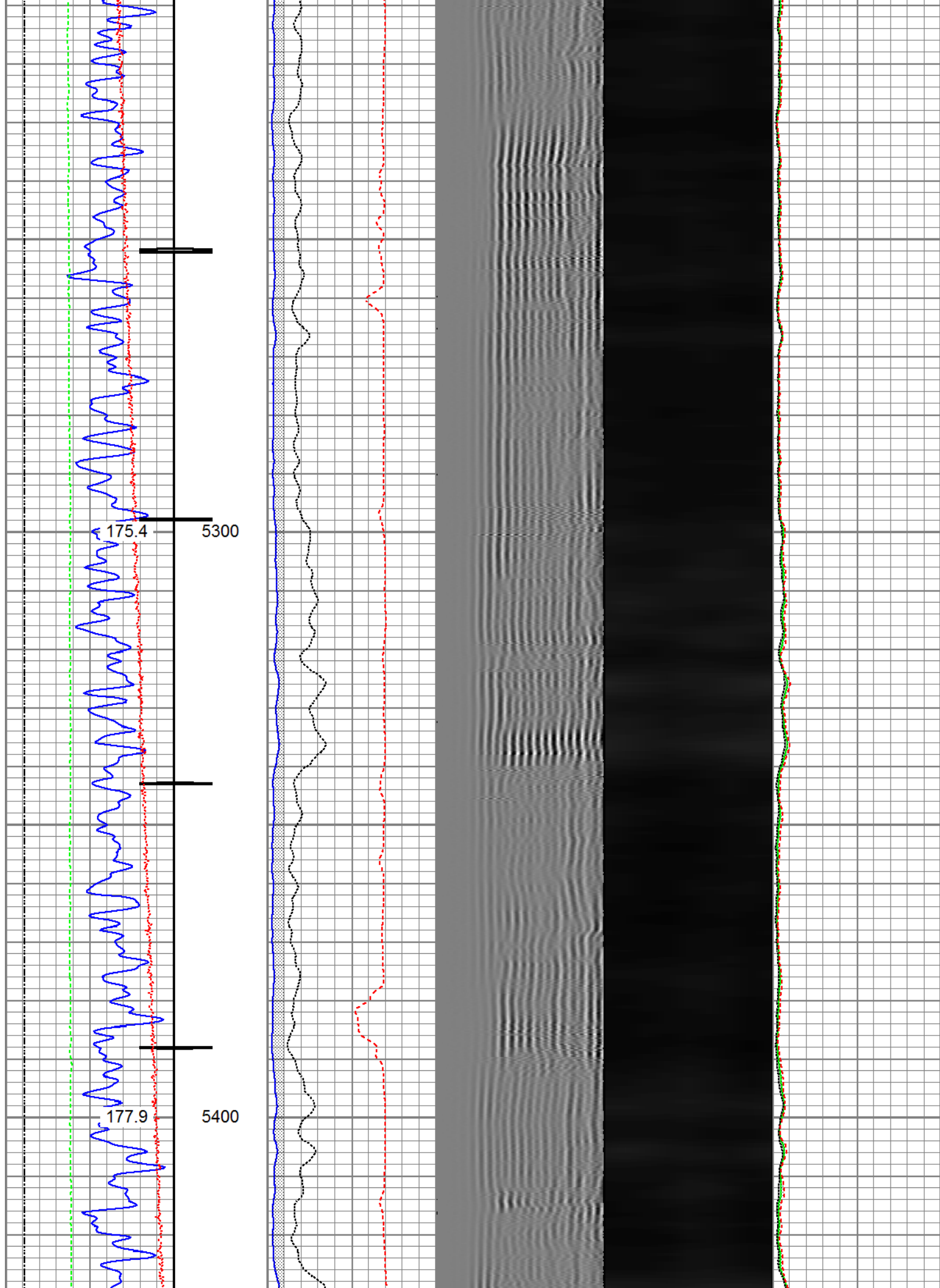


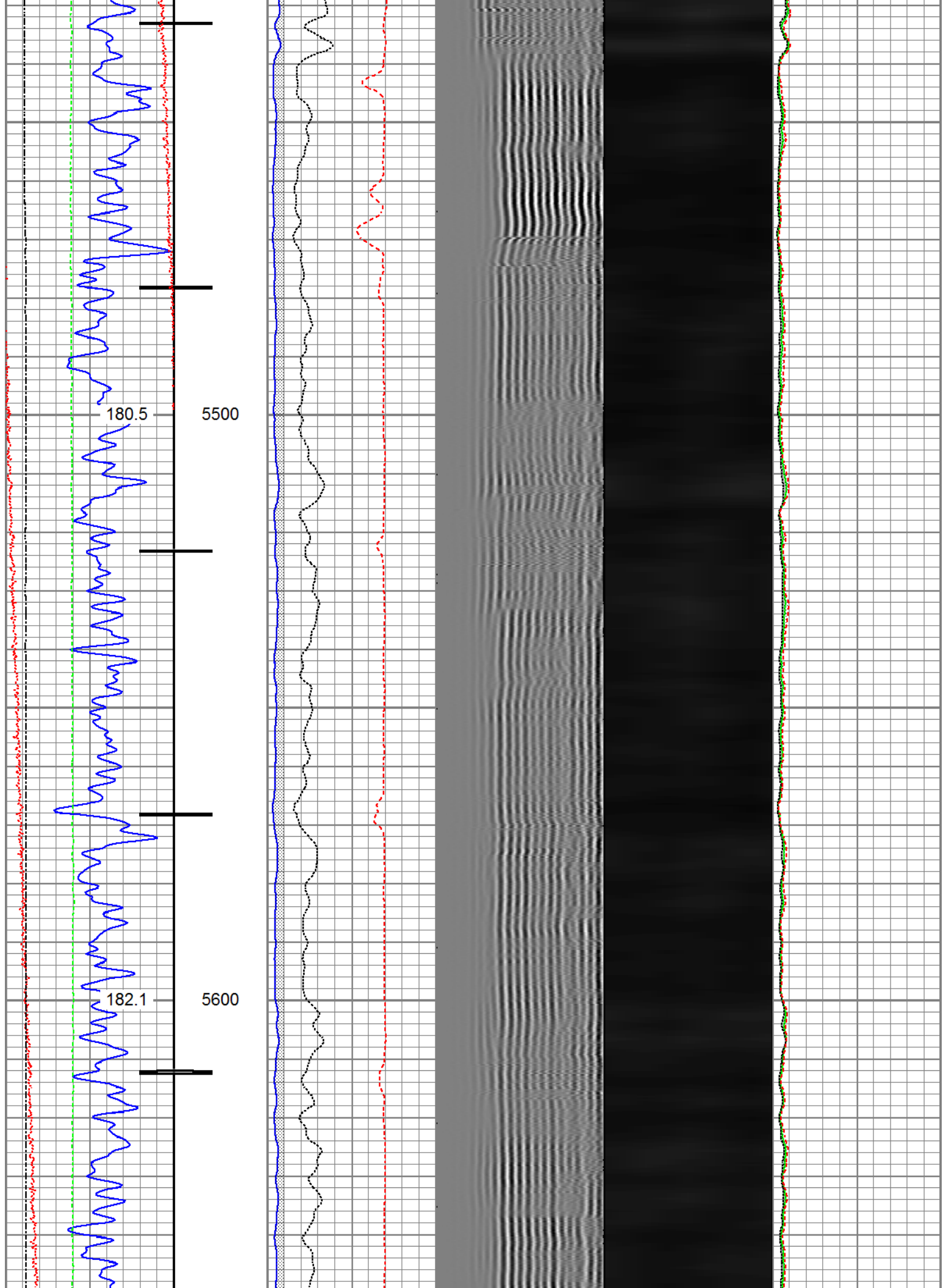


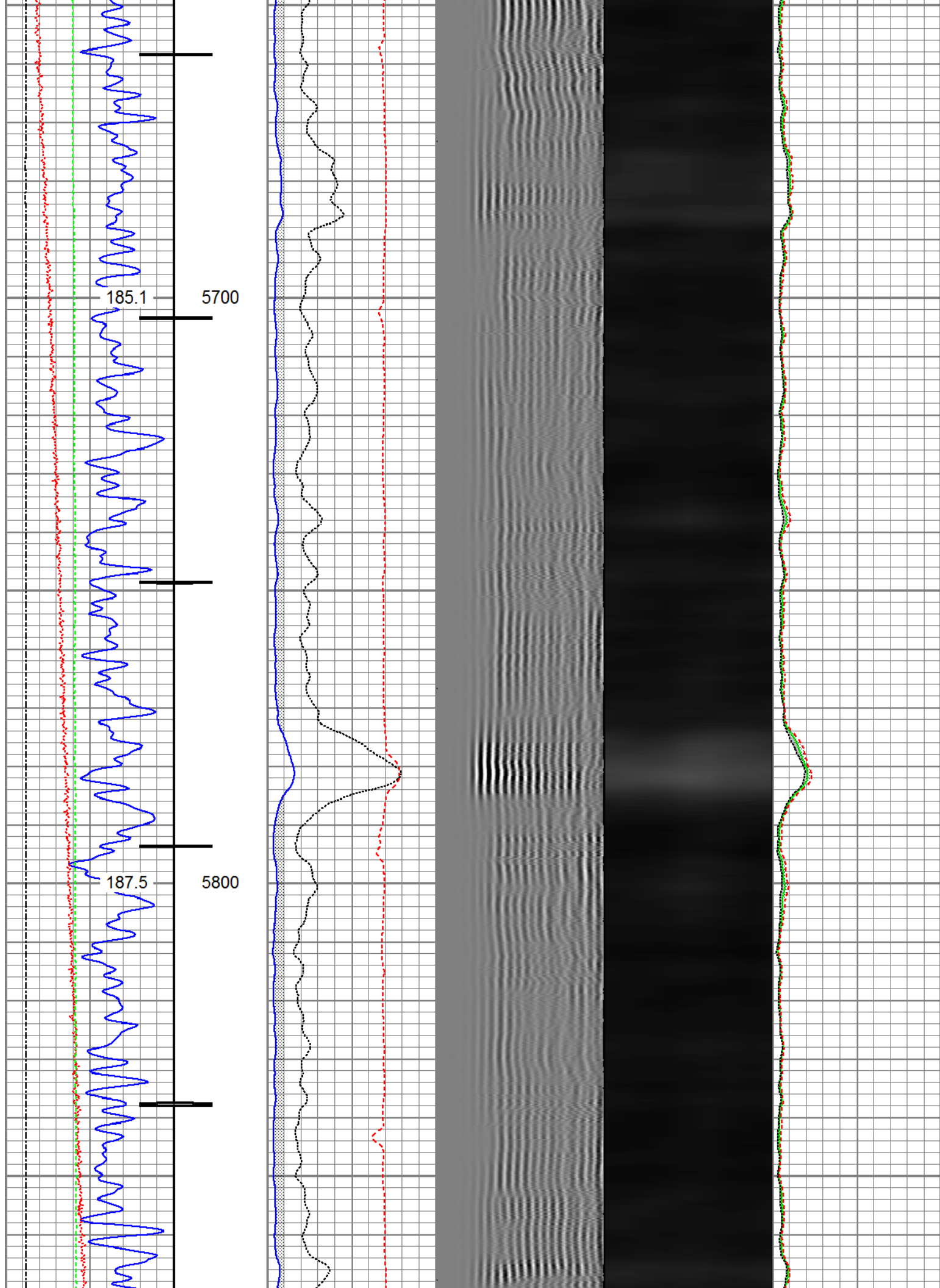


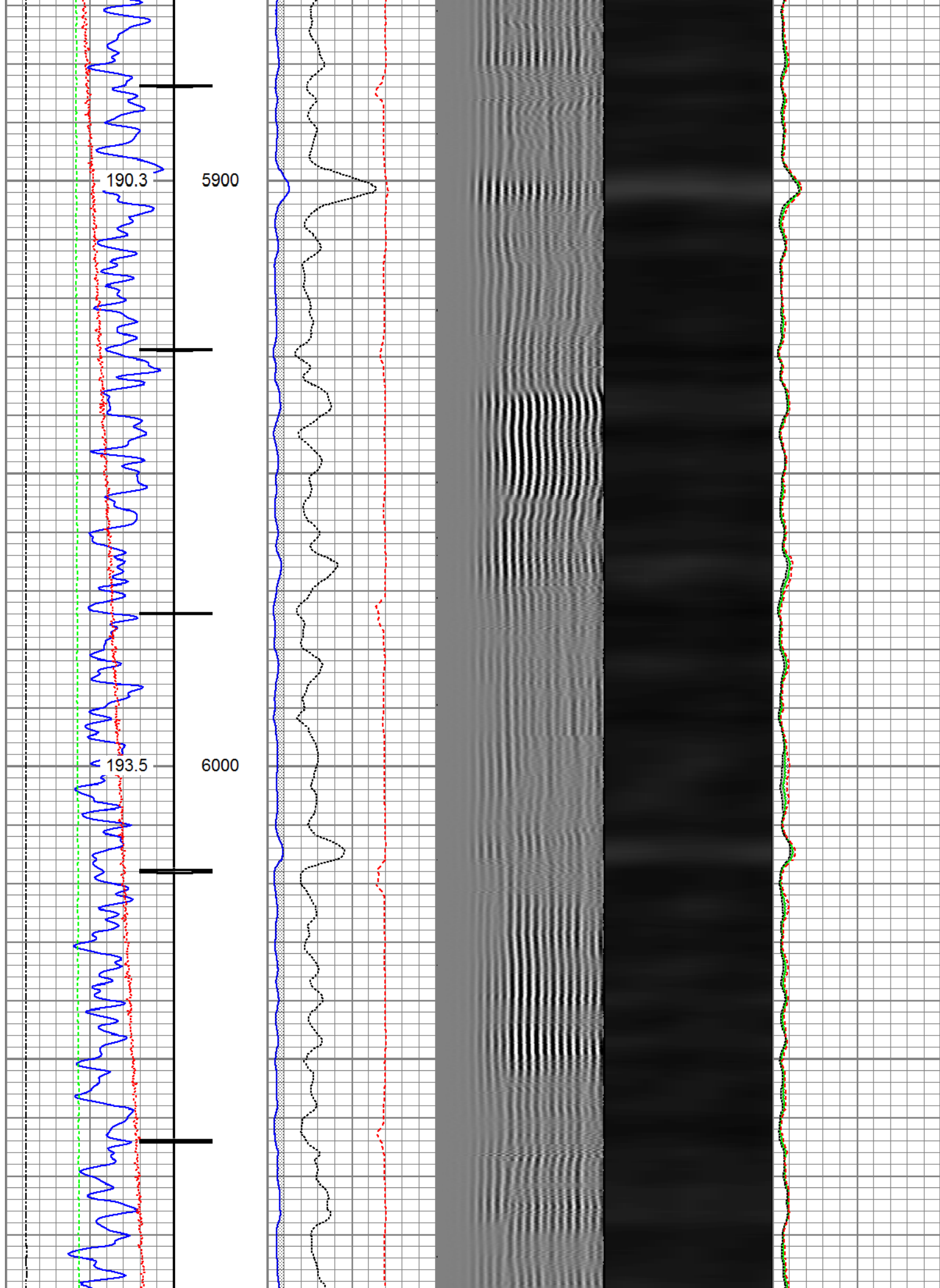


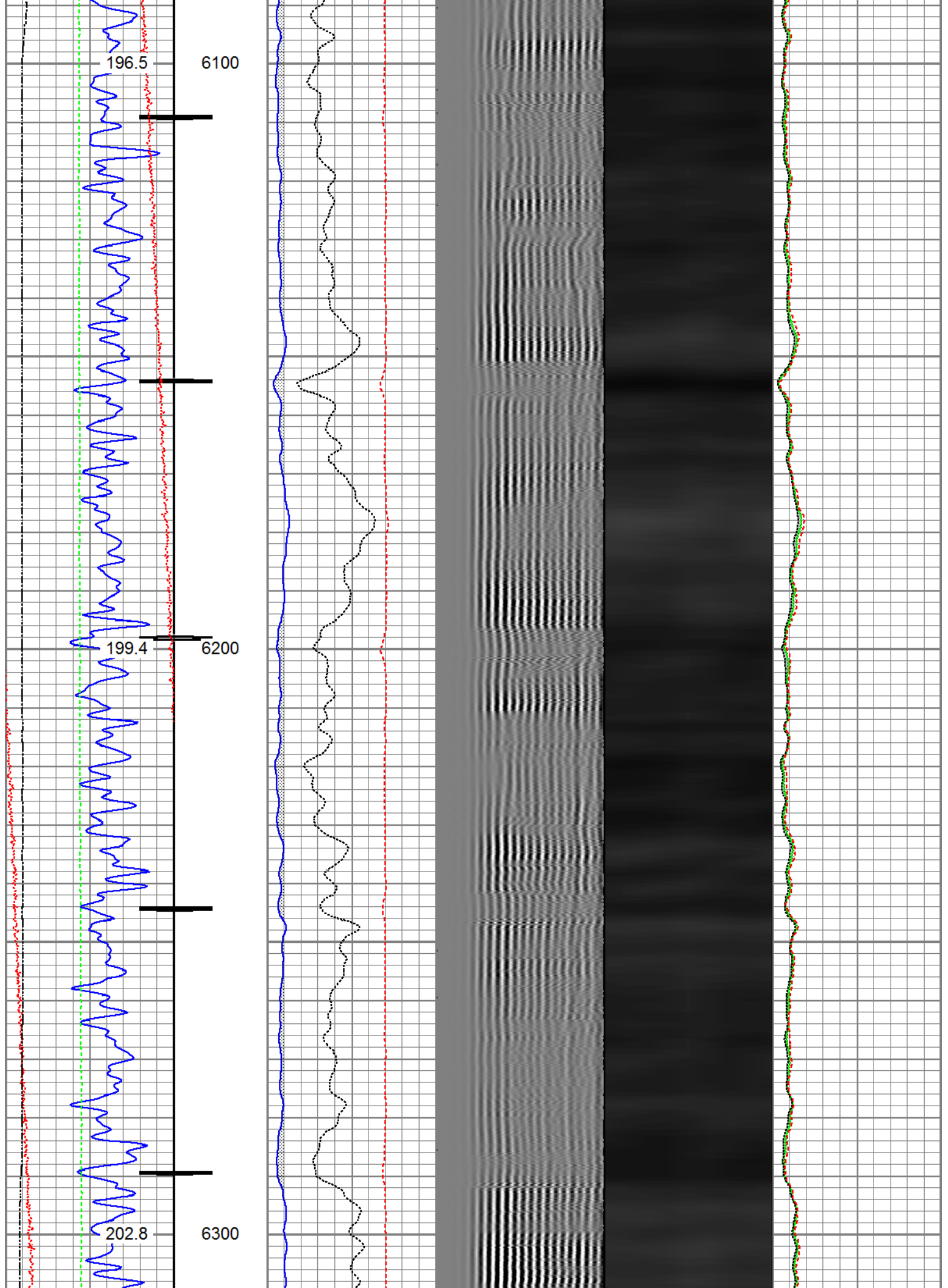


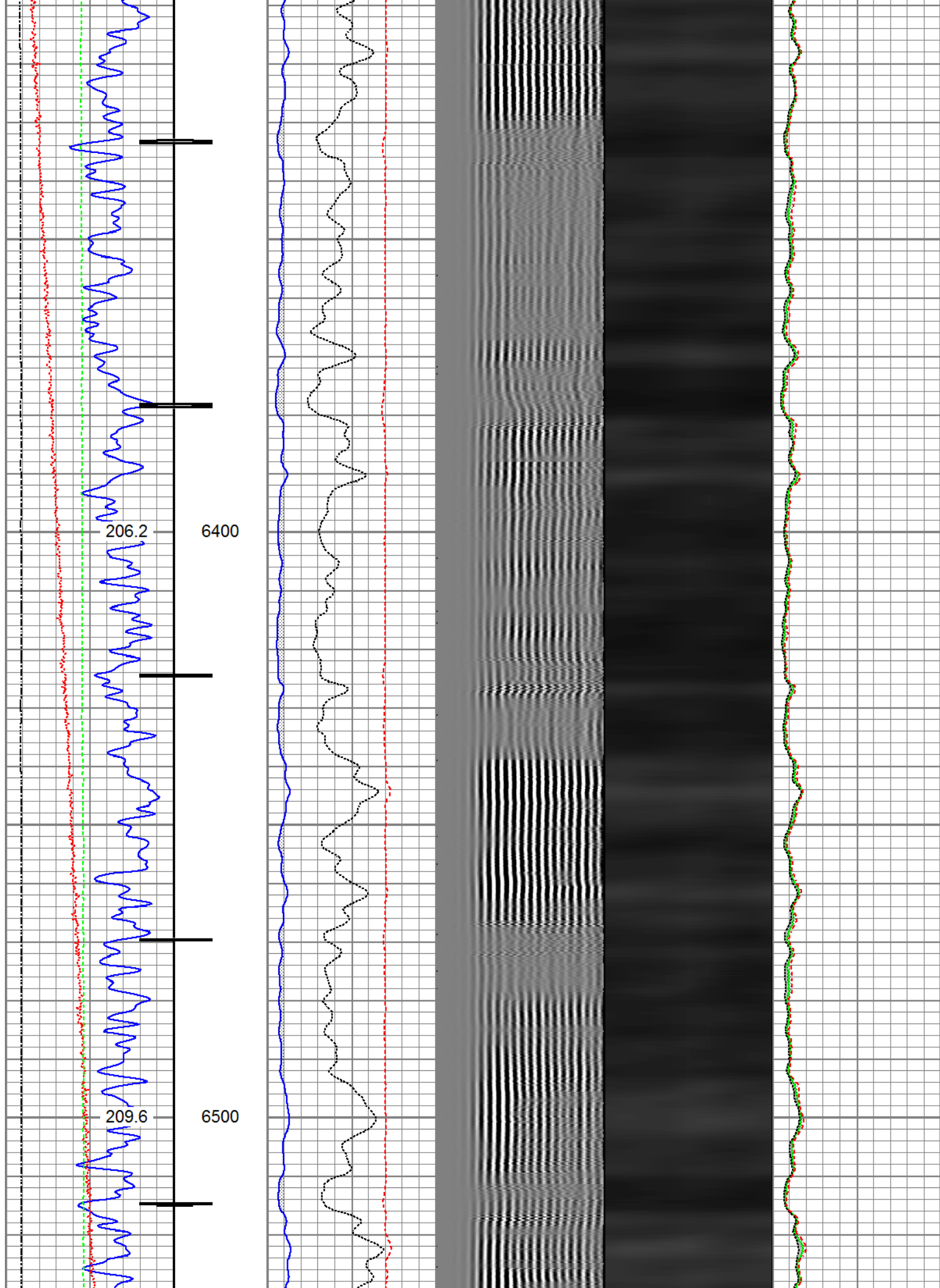


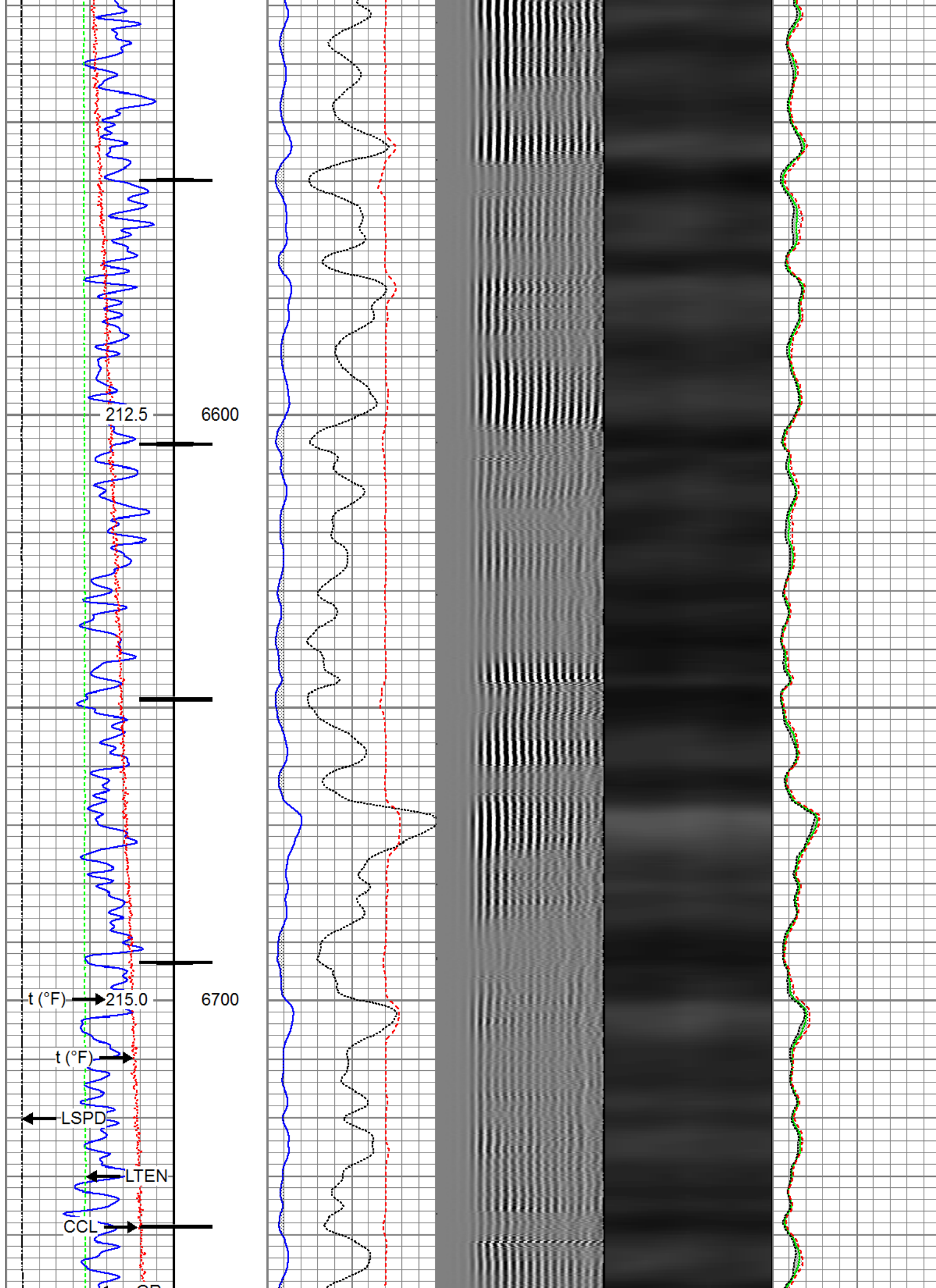


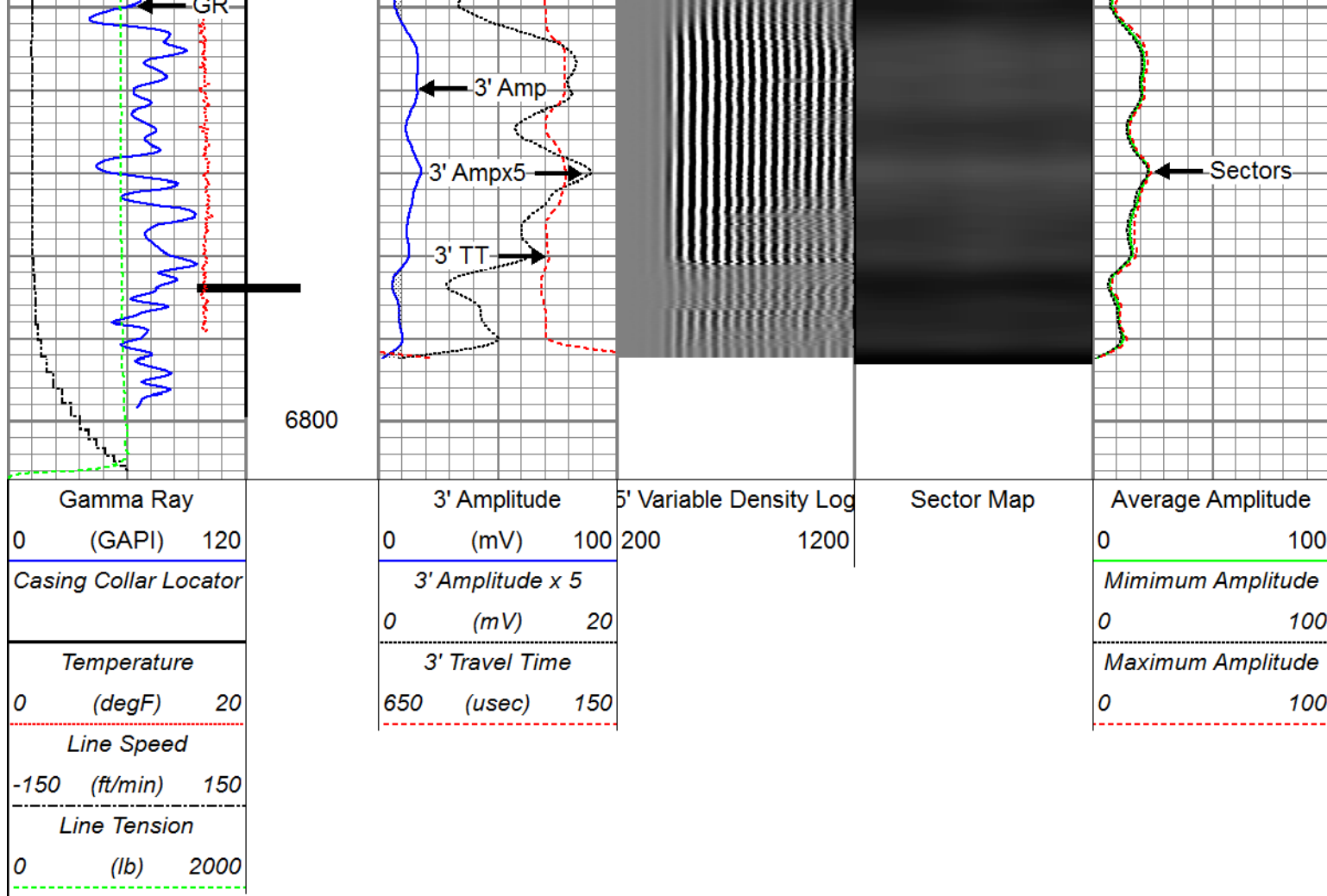








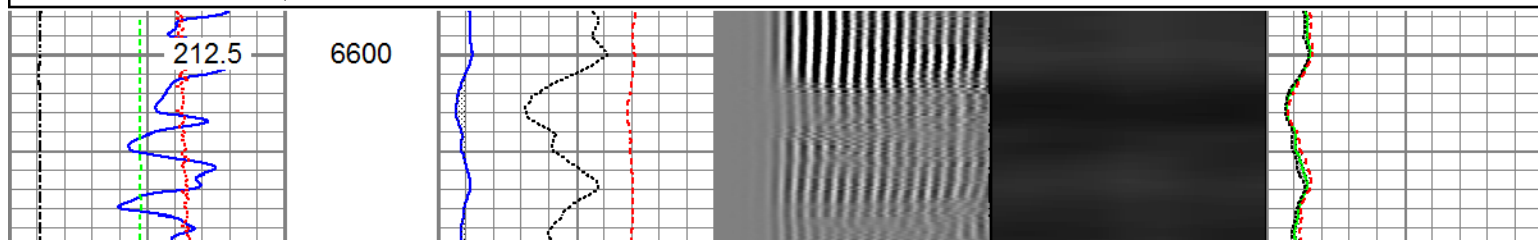
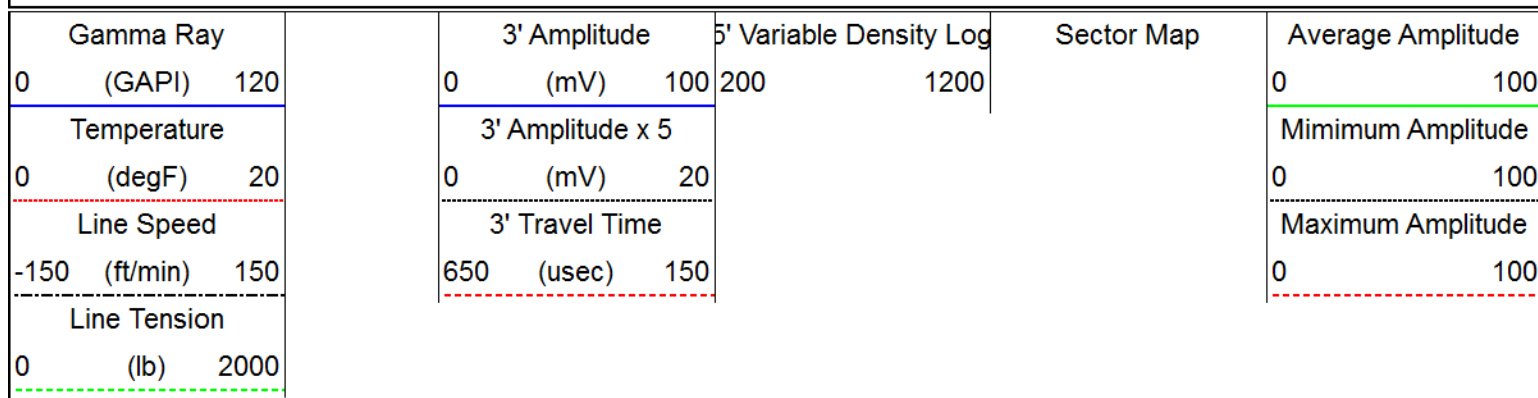


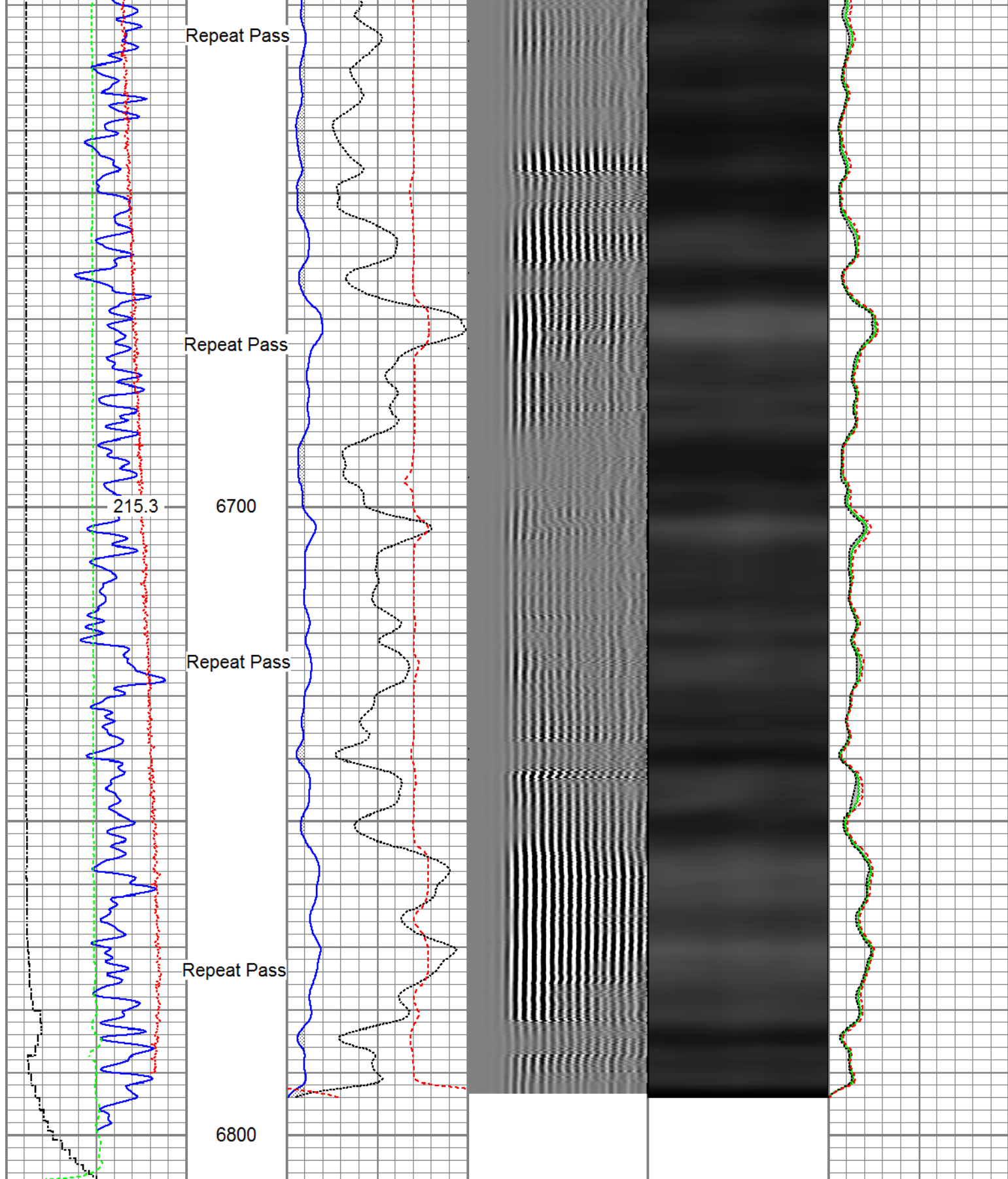


Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File 0512344406_anadarko_butterball 22c-34hz_rbl_08-30-17\processed_0512344406_anadarko_butter
 Dataset Pathname pass3.1
 Presentation Format ros_radrii
 Dataset Creation Wed Aug 30 15:33:50 2017
 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
Temperature		3' Amplitude x 5						Minimum Amplitude	
0	(degF)	20	0	(mV)	20			0	100
Line Speed		3' Travel Time						Maximum Amplitude	
-150	(ft/min)	150	650	(usec)	150			0	100
Line Tension									

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan_Electric_Cable_Heads-Titan_1-11/16" 1.03 Electric Cable Head with 1" Fishing Neck	1.69	1.69	5.40
			Probe_ELine_BowSpring_Centralizer-P_EB&2.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	2.75	20.00
Temp	16.72					
WVFS8	14.55		Probe_RADII-C-P_RBT_2750 (FW1305-09&9.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	2.75	2.75	105.00
WVFS7	14.55					
WVFS6	14.55					
WVFS5	14.55					
WVFS4	14.55					
WVFS3	14.55					
WVFS2	14.55					
WVFS1	14.55					
WVFCAL	14.55					
WVF3FT	14.55					
WVF5FT	13.55					
HeadVolt	10.30					
			Probe_ELine_BowSpring_Centralizer-P_EB&2.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	2.75	20.00
DCCL	6.51					
CCL	6.51					
GR	5.30		Probe_GR_CCL-P_CGR_2750_S (FW1307-4.54) Probe 2-3/4" Digital CCL / Gamma Ray Combined	2.75	2.75	55.00
			Probe_ELine_BowSpring_Centralizer-P_EB&2.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	2.75	20.00

Dataset: PROCESSED_0512344406_Anadarko_Butterball 22C-34HZ_RBL_08-30-17.db: field/well/run1/pass5.1
 Total length: 23.40 ft
 Total weight: 225.40 lb
 O.D.: 2.75 in

Calibration Report

Database File C:\ProgramData\Warrior\Data\0512344406_Anadarko_Butterball 22C-34HZ_RBL_08-30-17\PROCESSED_0512344406_Anadarko_Butterball 22C-34HZ_RBL_08-30-17\pass5.1
 Dataset Pathname pass5.1
 Dataset Creation Wed Aug 30 11:36:23 2017

Gamma Ray Calibration Report

Serial Number: FW1307-038
 Tool Model: P_CGR_2750_S
 Performed: Sat Feb 06 11:43:09 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: FW1305-096
 Tool Model: P_RBT_2750

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 20.259 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.002	0.705	0.800	71.921	101.129	0.605
CAL	0.002	0.729				
5'	0.001	0.635	0.800	71.921	112.065	0.711
SUM						
S1	-0.001	0.694	0.000	100.000	143.916	0.145
S2	0.002	0.694	0.000	100.000	144.459	-0.284
S3	0.002	0.742	0.000	100.000	135.096	-0.297
S4	0.002	0.766	0.000	100.000	130.965	-0.302
S5	0.002	0.753	0.000	100.000	133.261	-0.282
S6	0.002	0.760	0.000	100.000	132.012	-0.267
S7	0.002	0.746	0.000	100.000	134.353	-0.232
S8	0.002	0.718	0.000	100.000	139.582	-0.278


Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	0.729	1.000	0.000

Air Zero Calibration, performed Wed Aug 30 06:50:23 2017:

	Raw (v)	Calibrated (v)	Results
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	Zero	Zero	Offset
3'	0.002	0.000	-0.000
5'	0.002	0.000	0.000
SUM			
S1	0.003	0.000	0.000
S2	0.002	0.000	0.000
S3	0.002	0.000	0.000
S4	0.002	0.000	0.000
S5	0.002	0.000	0.000
S6	0.003	0.000	-0.000
S7	0.002	0.000	-0.000
S8	0.002	0.000	0.000

	Company	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Butterball 22C-34HZ
	Field	Wattenberg
	County	Weld
	State	Colorado