



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.			Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Whisper Rock 7N-25HZ			Well	Whisper Rock 7N-25HZ		
Field	Wattenberg			Field	Wattenberg		
County	Weld			County	Weld		
State	Colorado			State	Colorado		
Location:				API # : 05-123-41311			
SEC 26 TWP 4N RGE 68W				Other Services			
				Gauge Ring			
Permanent Datum	Ground Level		Elevation	K.B. 5061'			
Log Measured From	Kelly Bushing		Elevation	D.F. 5060'			
Drilling Measured From	Kelly Bushing		Elevation	G.L. 5041'			

Date 01-FEB-2017

Run Number	Two		
Depth Driller	13498 FT		
Depth Logger	7620 FT		
Bottom Logged Interval	7616 FT		
Top Log Interval	Surface		
Open Hole Size	7.875"		
Type Fluid	Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	227 °F		
Estimated Cement Top	Surface		
Time Well Ready	ROA		
Time Logger on Bottom	14:50		
Equipment Number	HD-311		
Location	Fort Lupton, CO		
Recorded By	W.Wacker		
Witnessed By	Brian Jolly		

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	J55	Surface	1896 FT
Intermediate #1	5 1/2	17	HCP 110	Surface	13487 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 Casing Tally reported Marker Joint at 6600 FT
Adjusted log +14 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7615 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!!

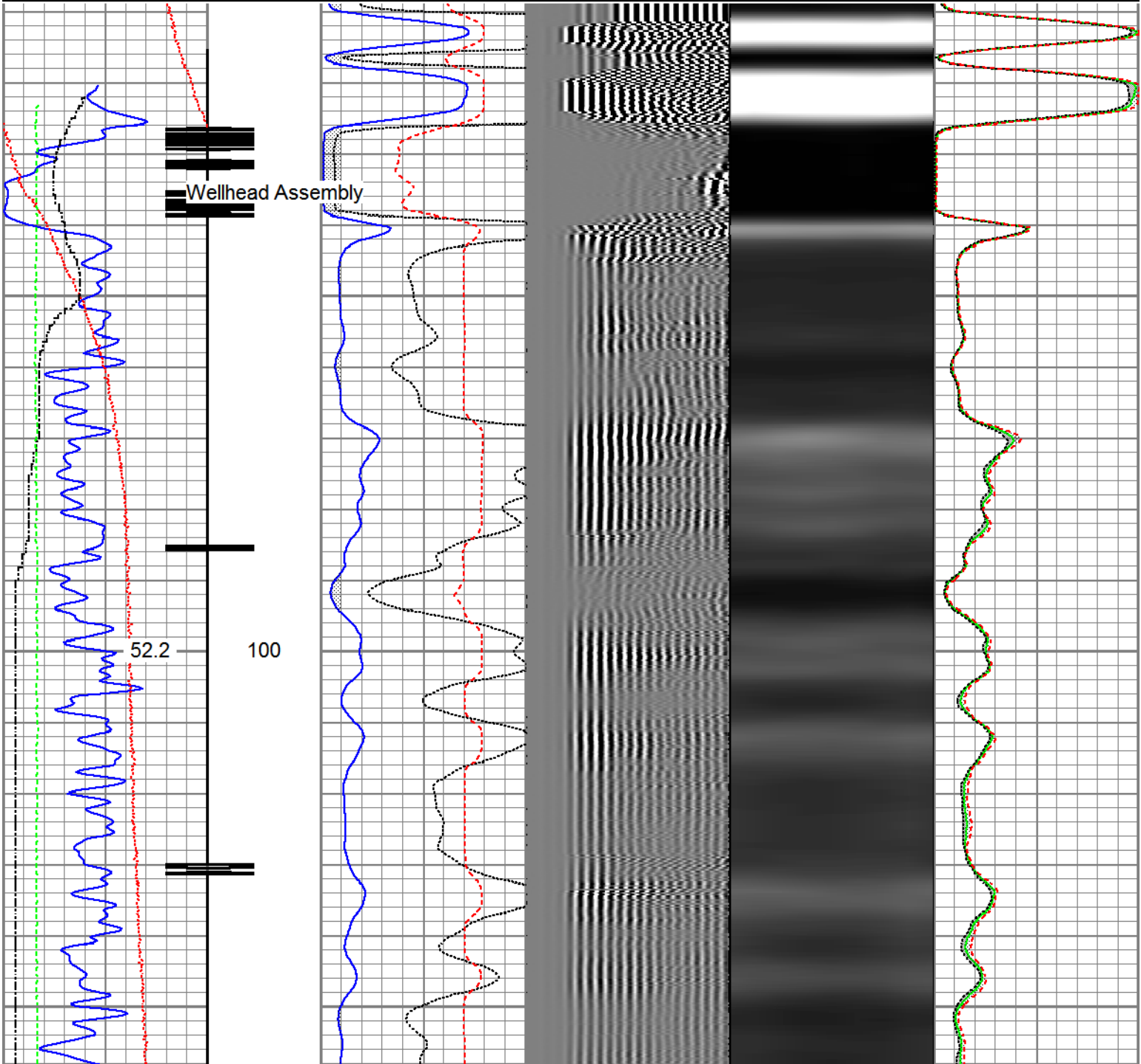


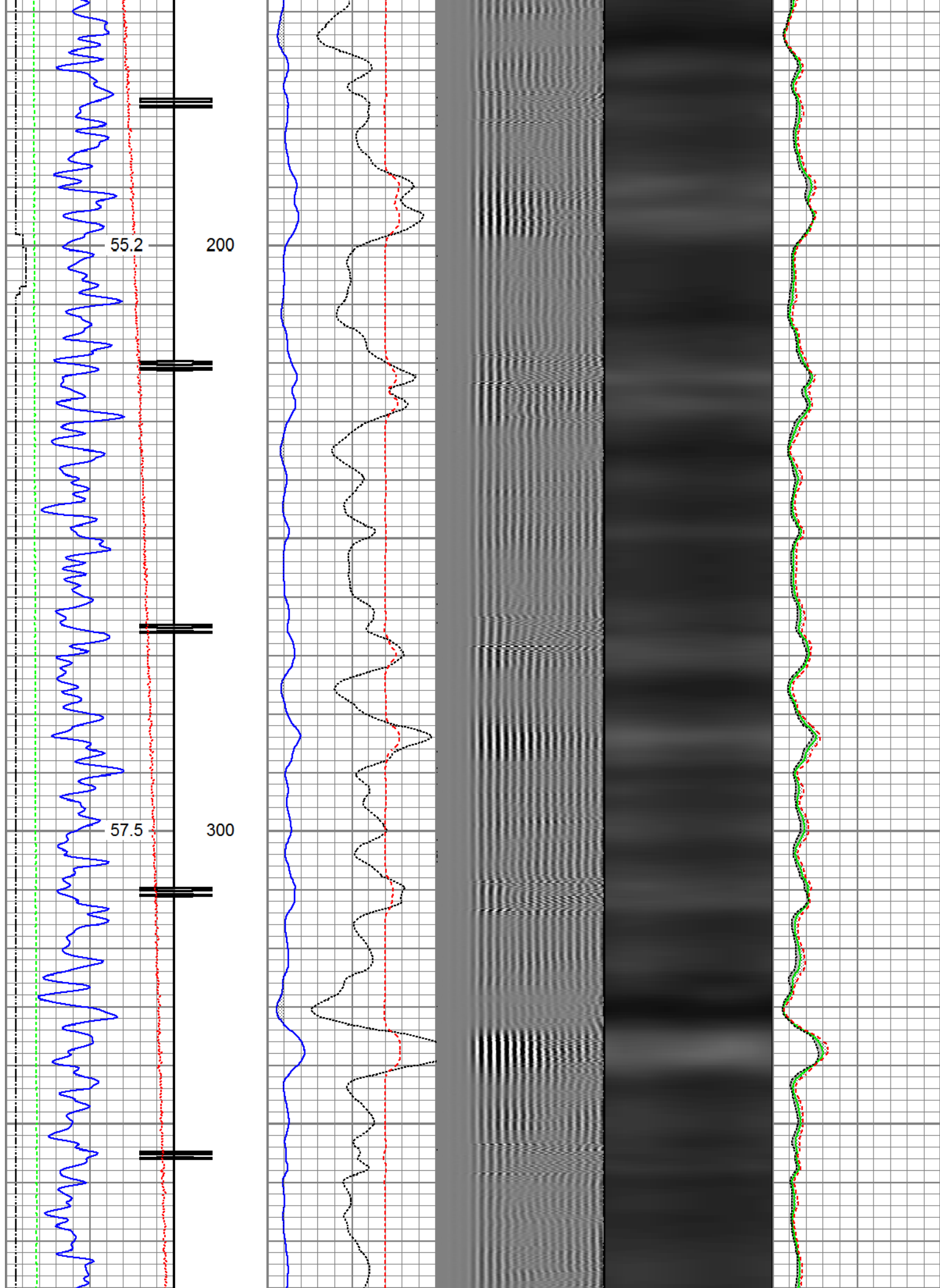
Main Pass

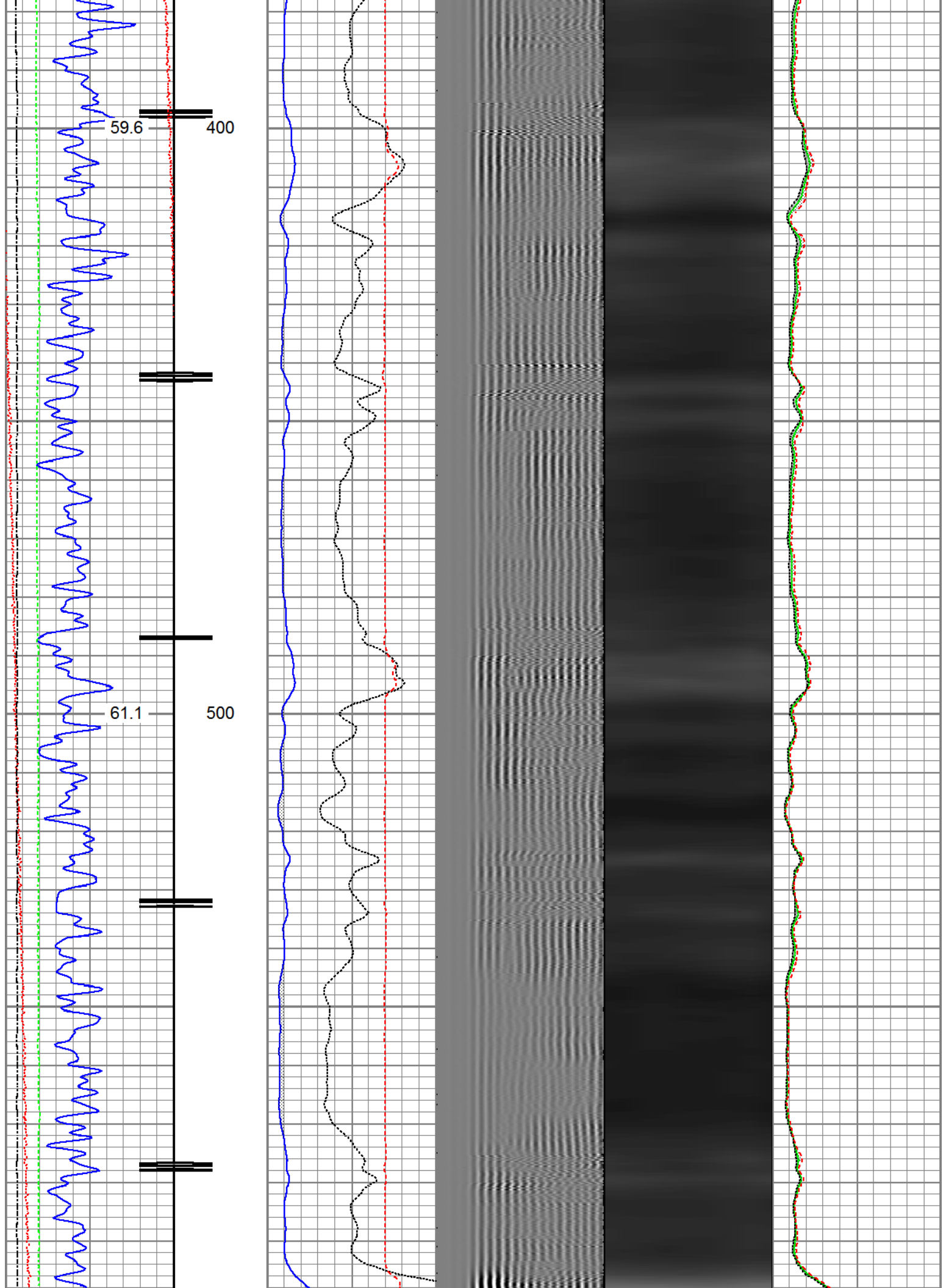
Recorded With 2800 PSI Surface Induced Pressure

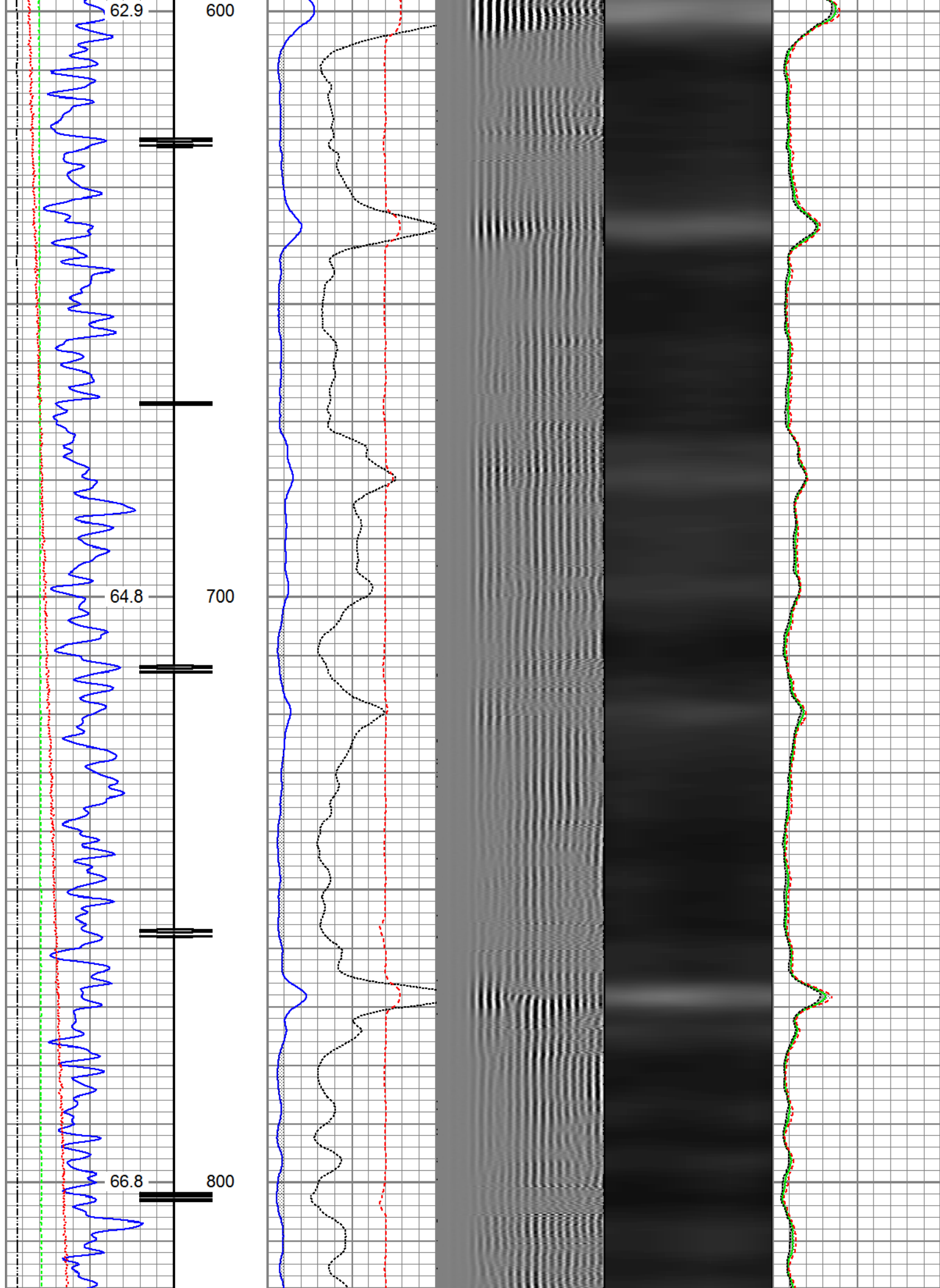
Database File	anadarko whisper rock 7n-25hz rcbl 2-2-2017\processed_0512341311_anadarko_whisper rock 7n-25
Dataset Pathname	main.1
Presentation Format	ros_radri
Dataset Creation	Wed Feb 01 15:56:15 2017
Charted by	Depth in Feet scaled 1:240

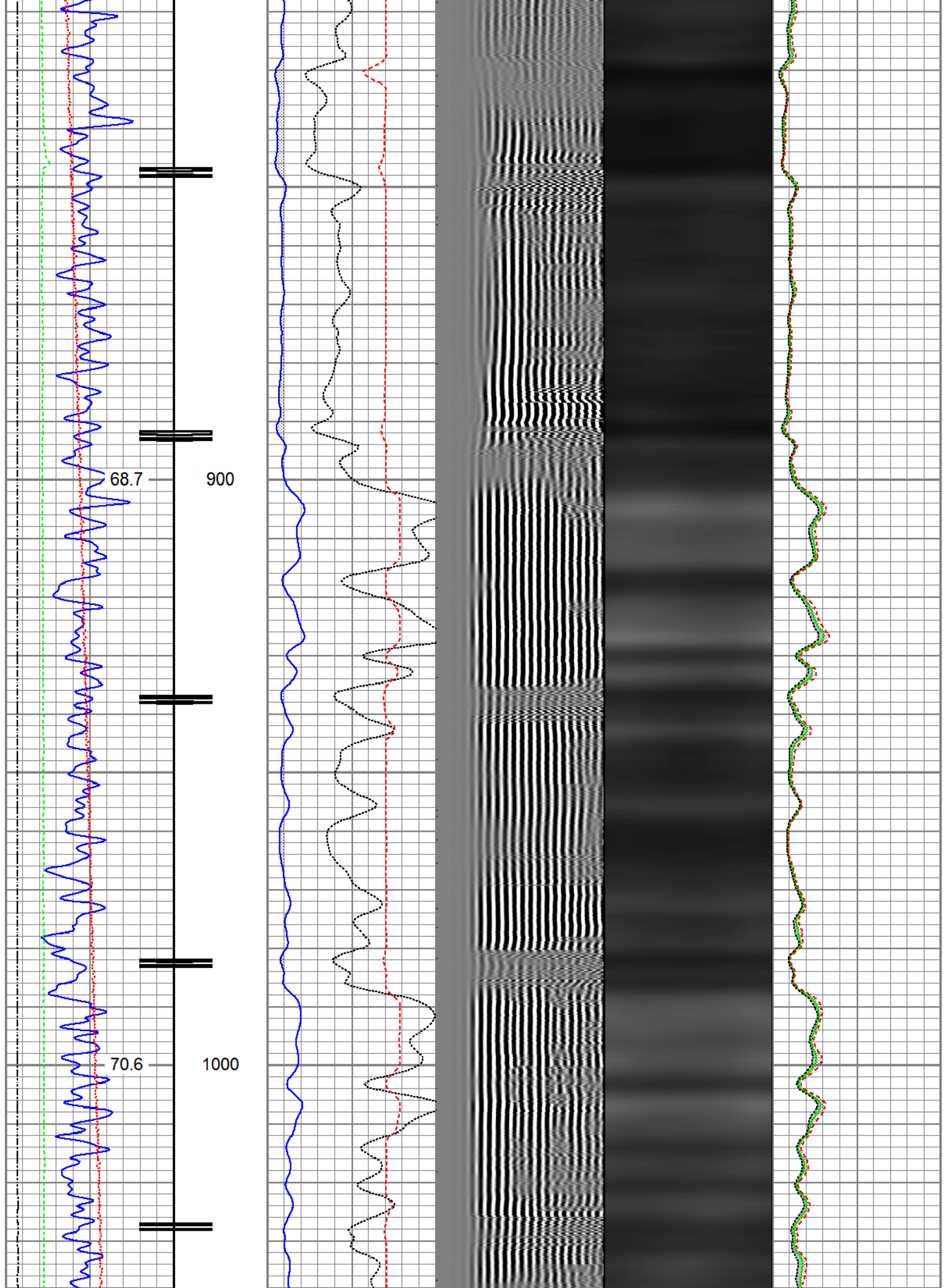
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
	0 (mV) 20			0 100
Temperature	3' Travel Time			Maximum Amplitude
0 (degF) 20	650 (usec) 150			0 100
Line Speed				
-150 (ft/min)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

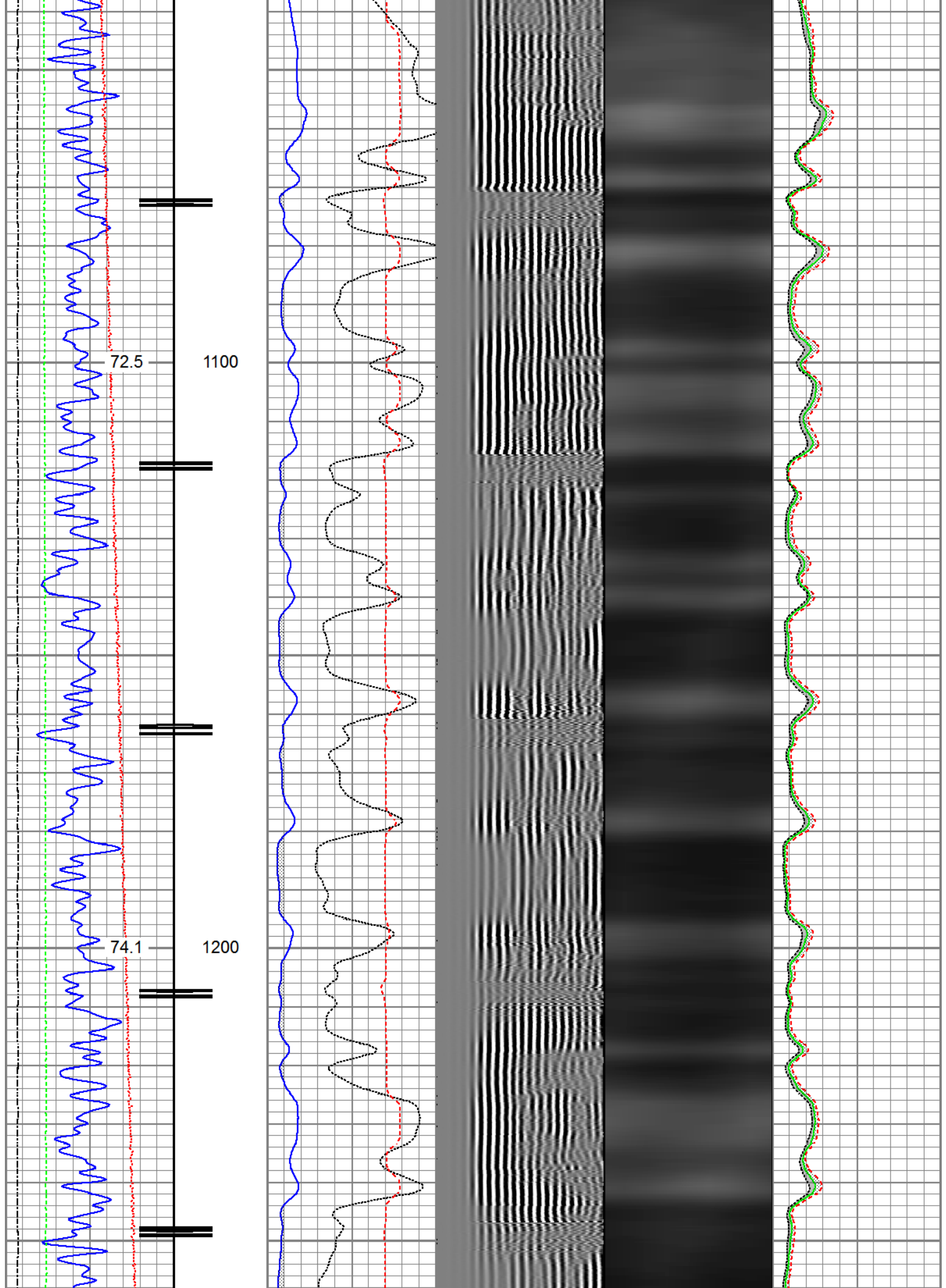


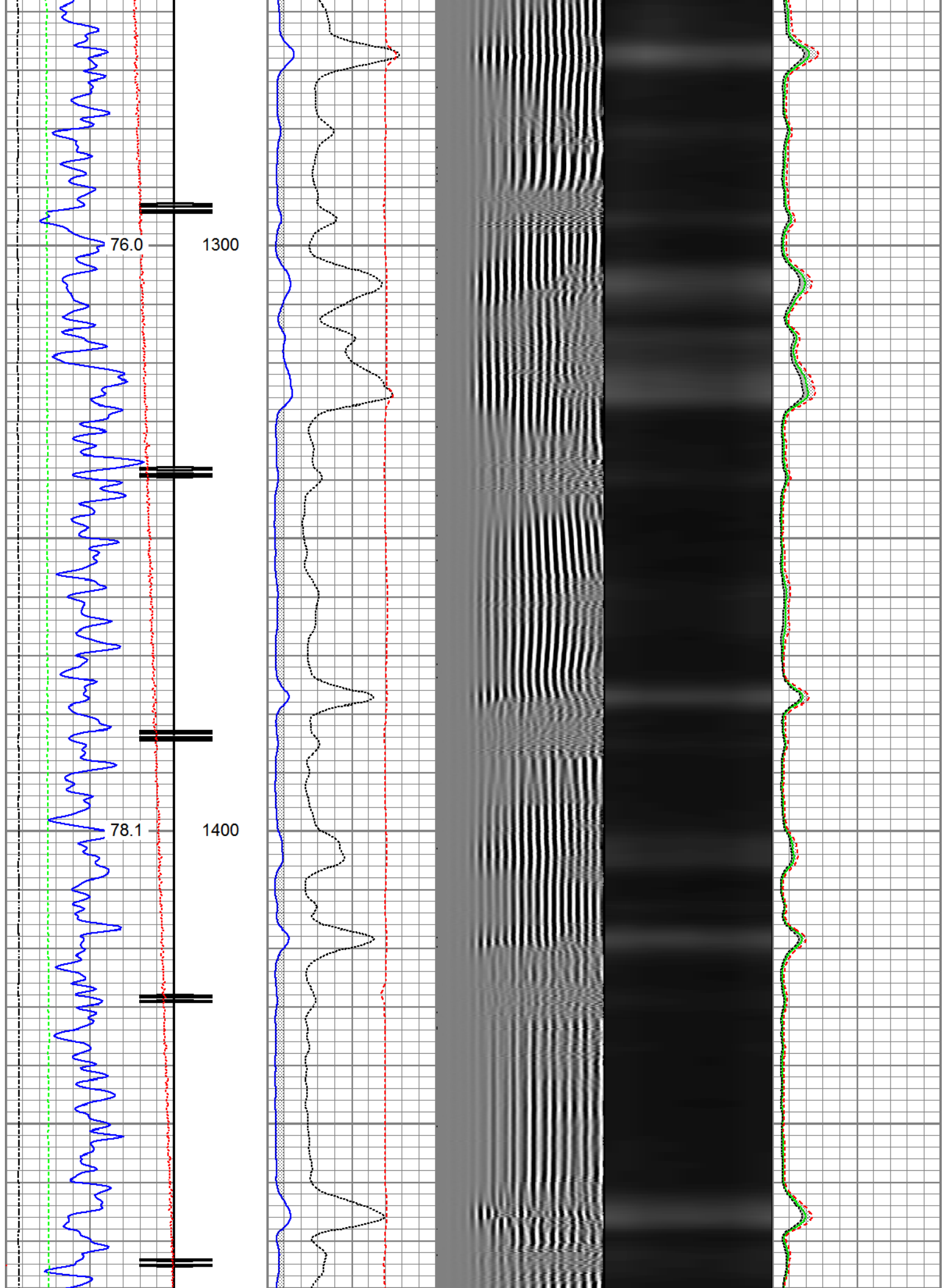


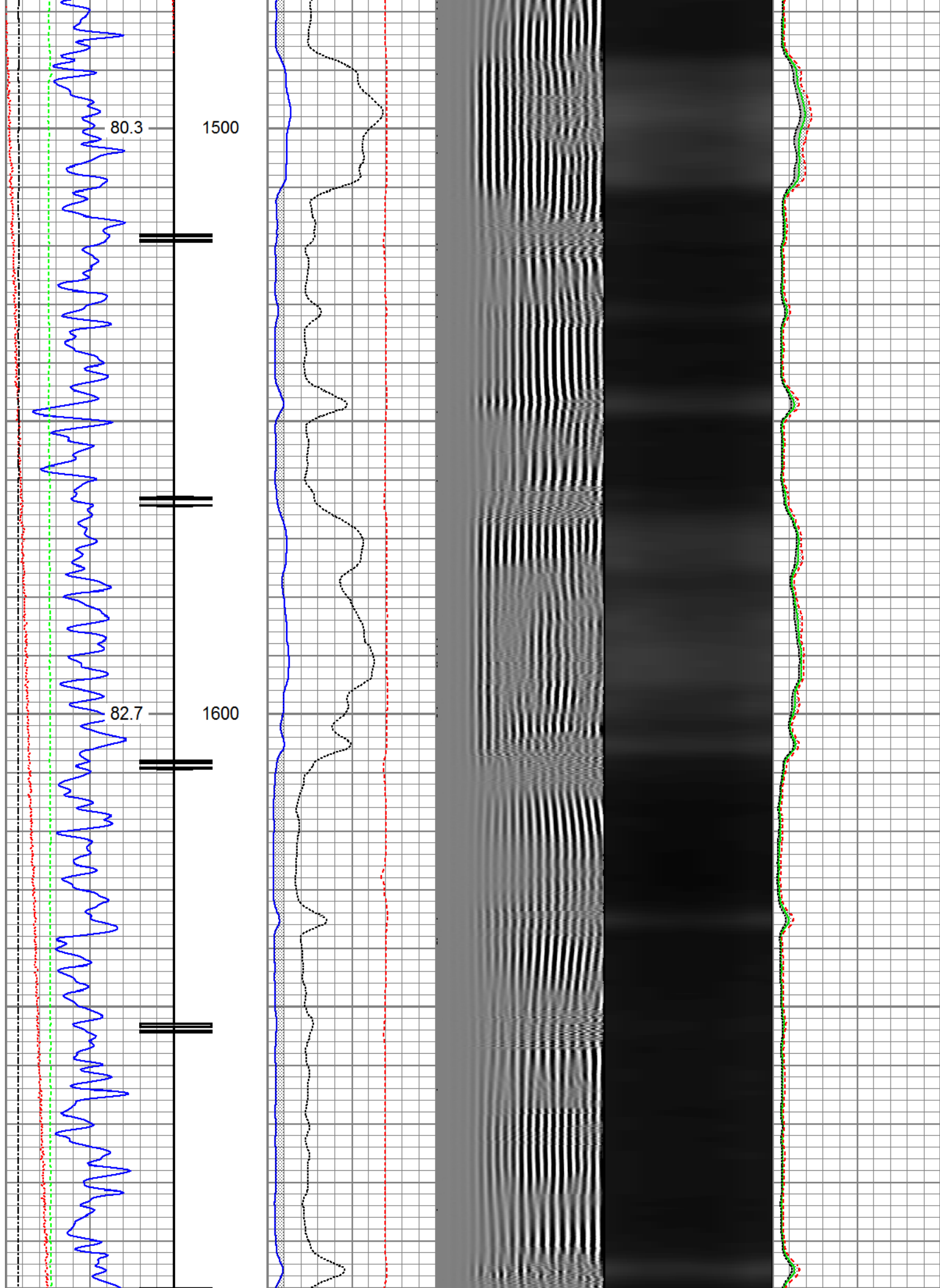


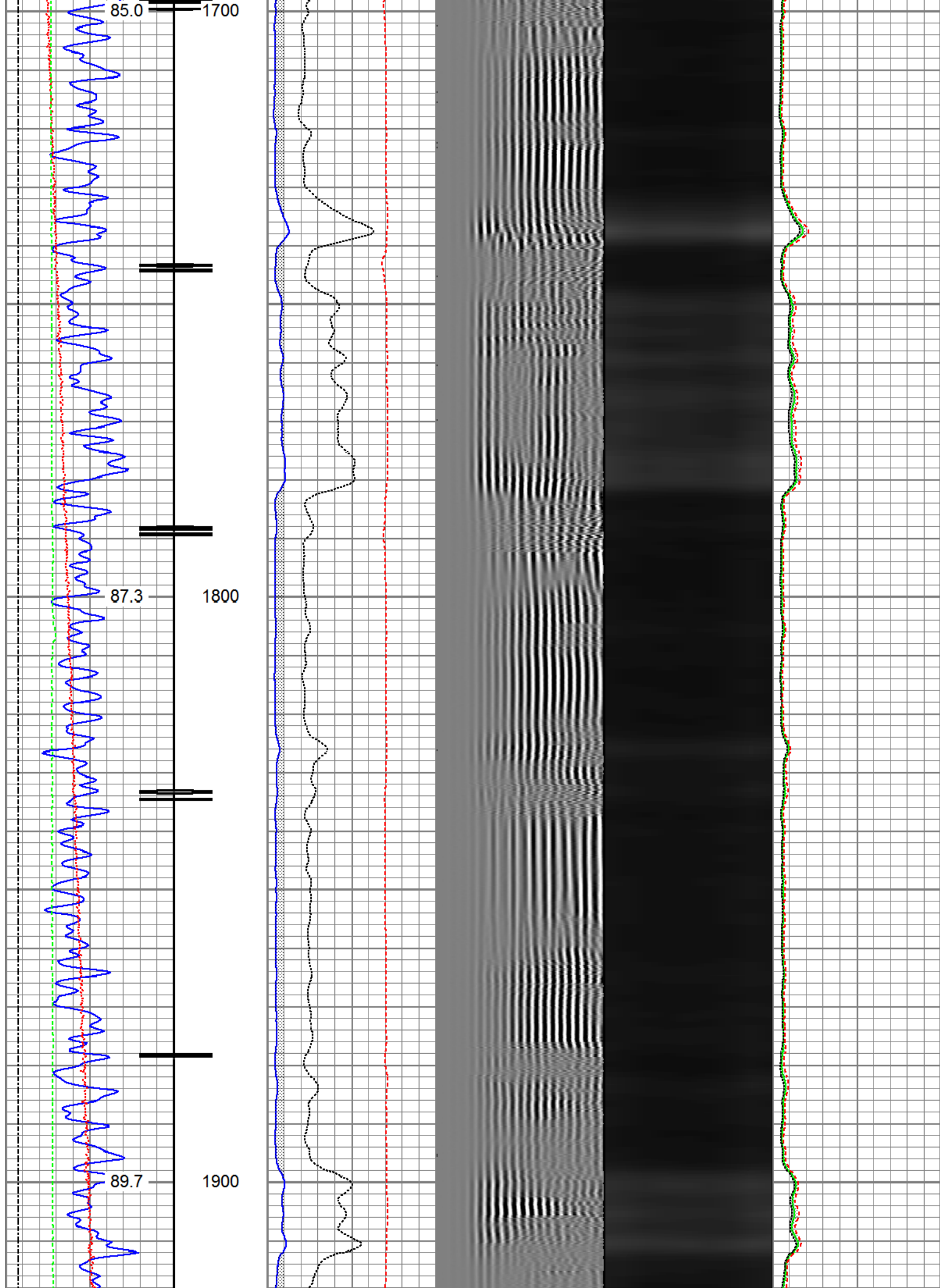


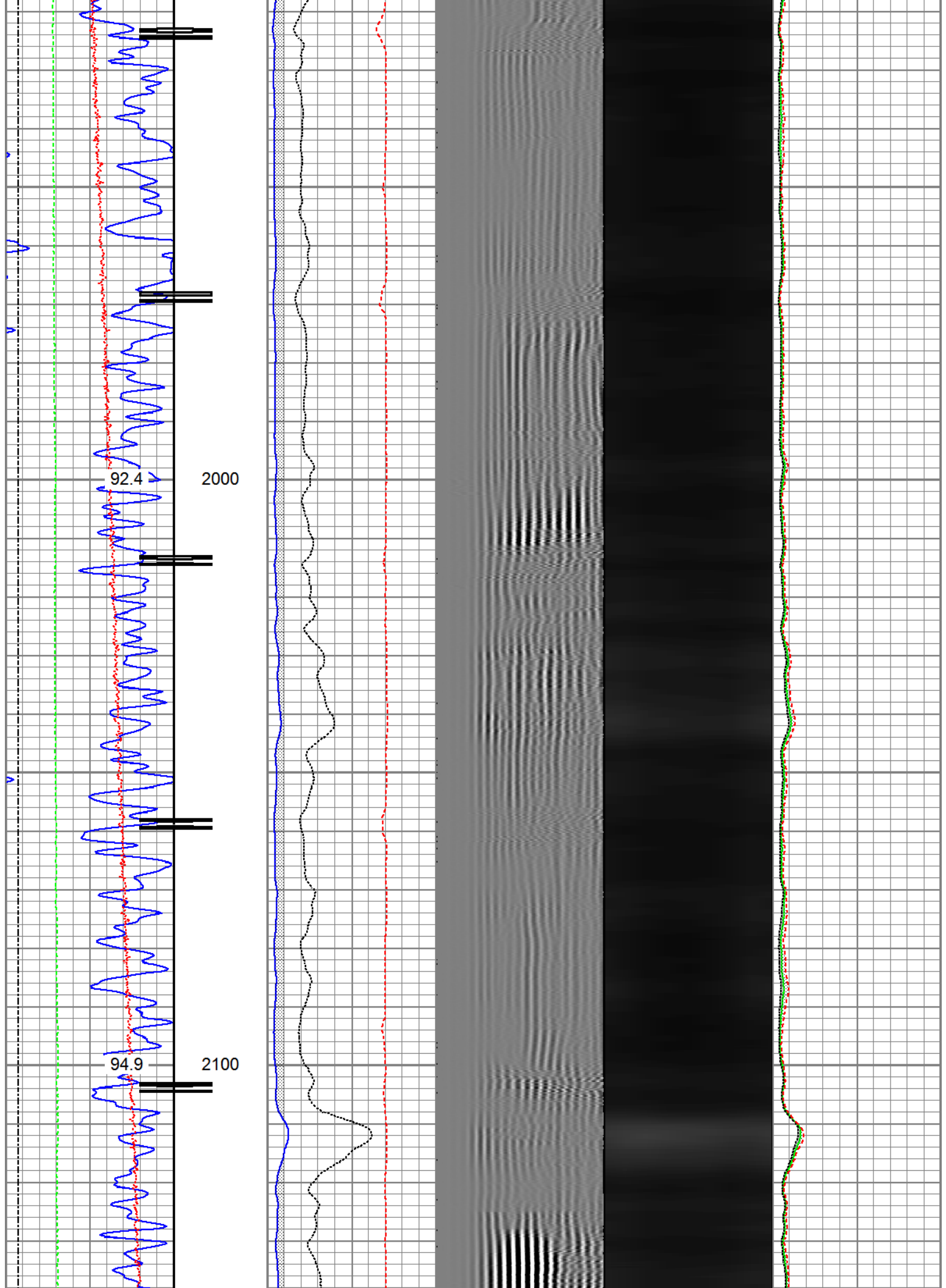


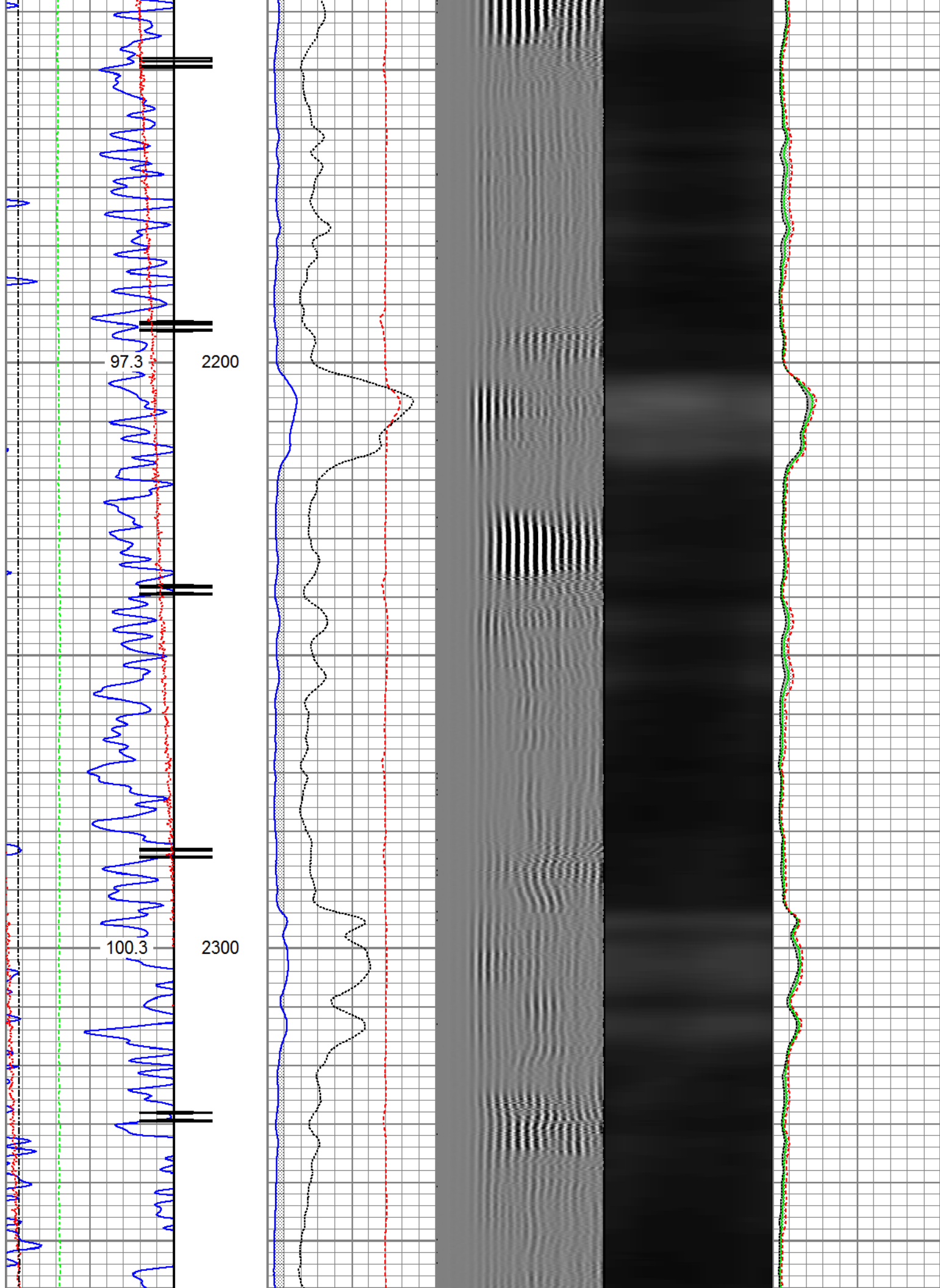


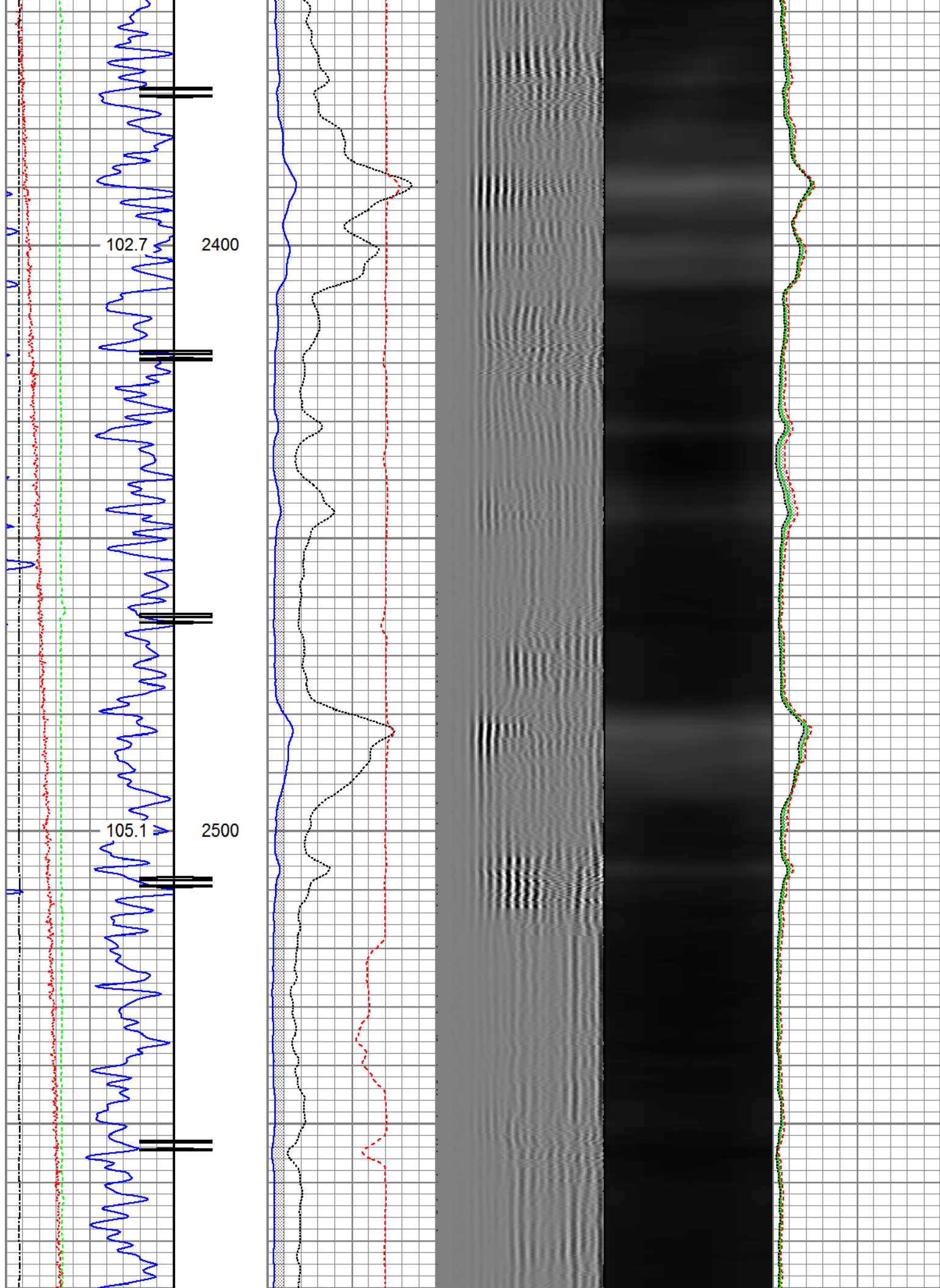


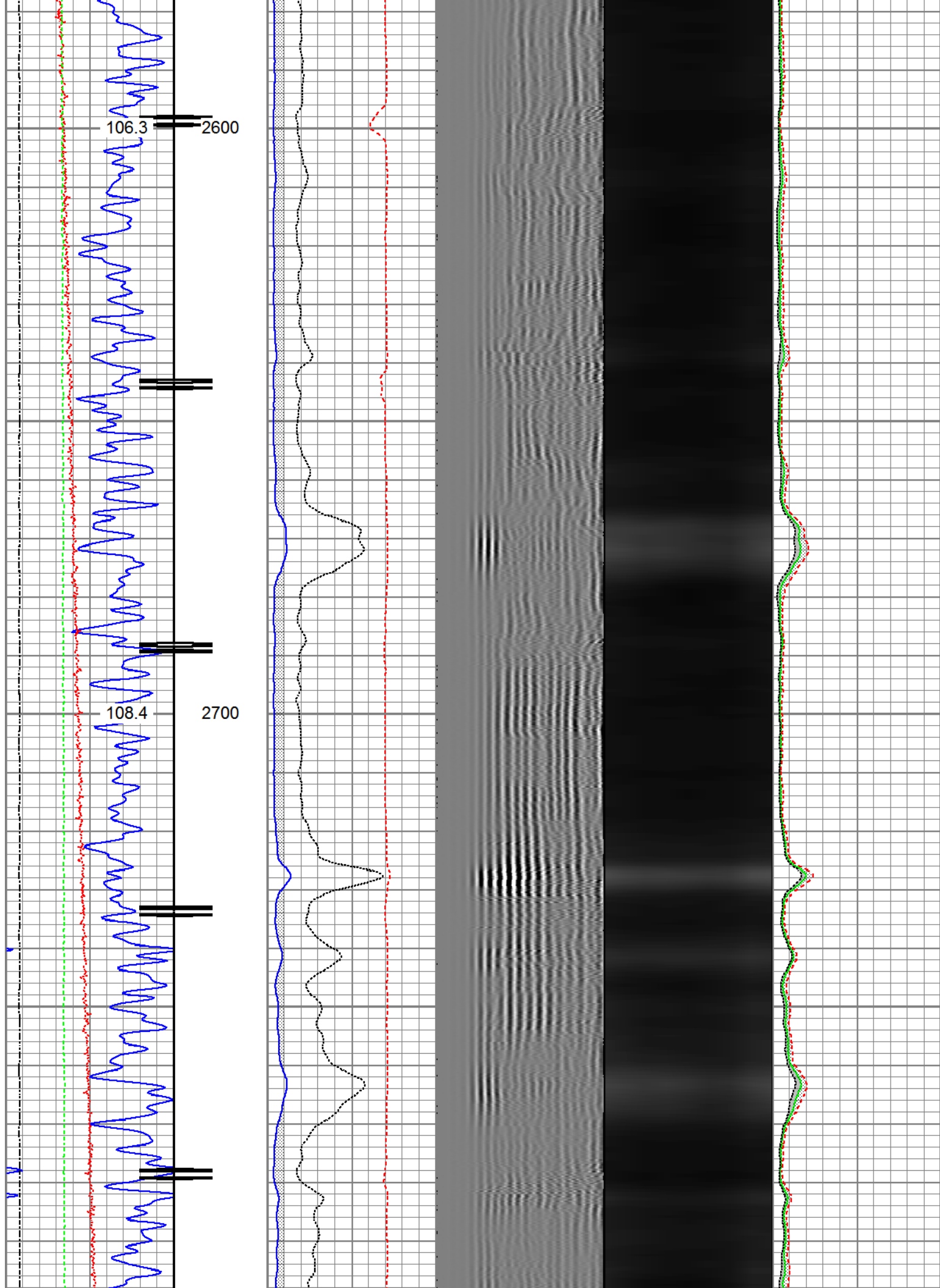


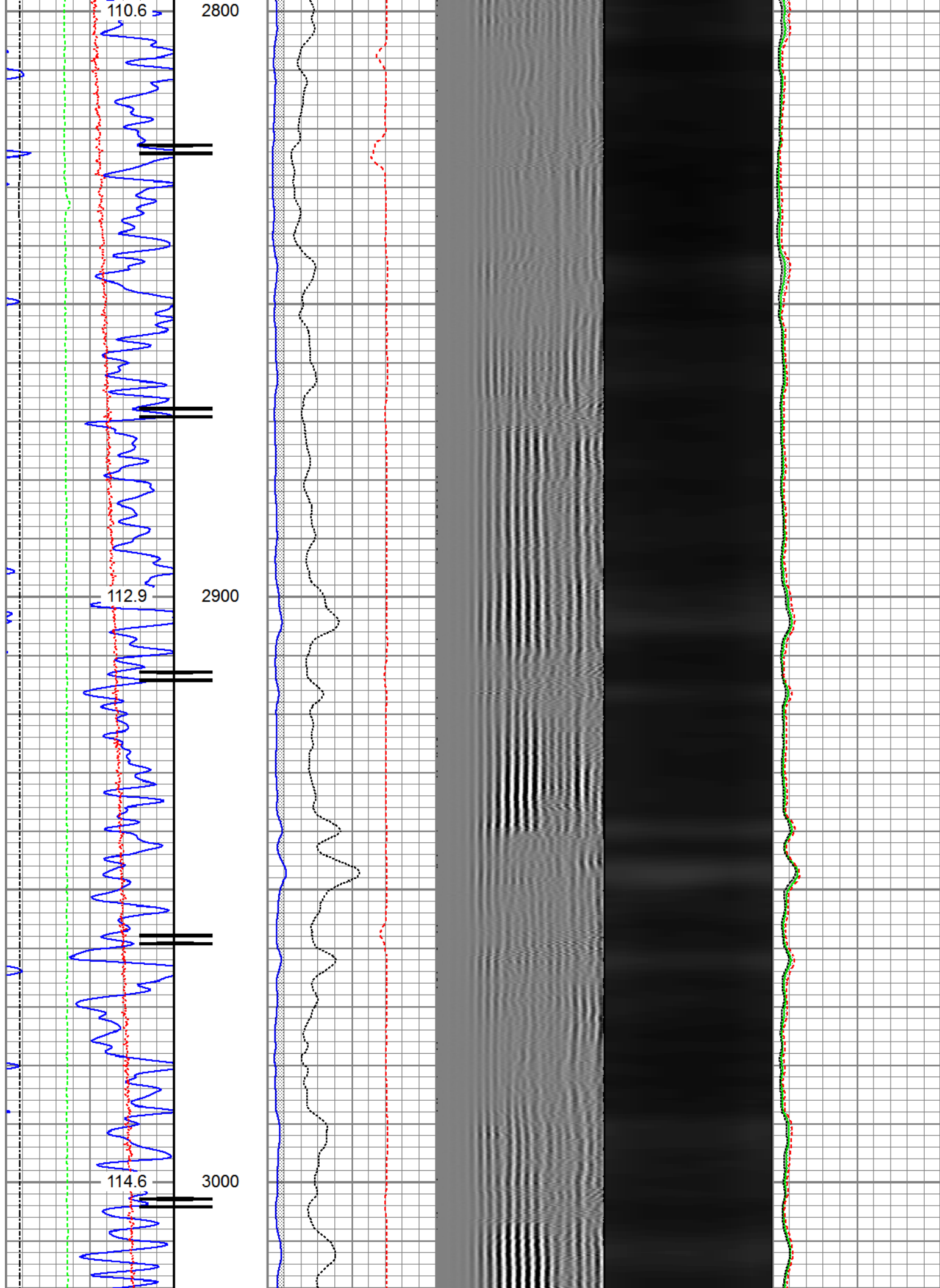


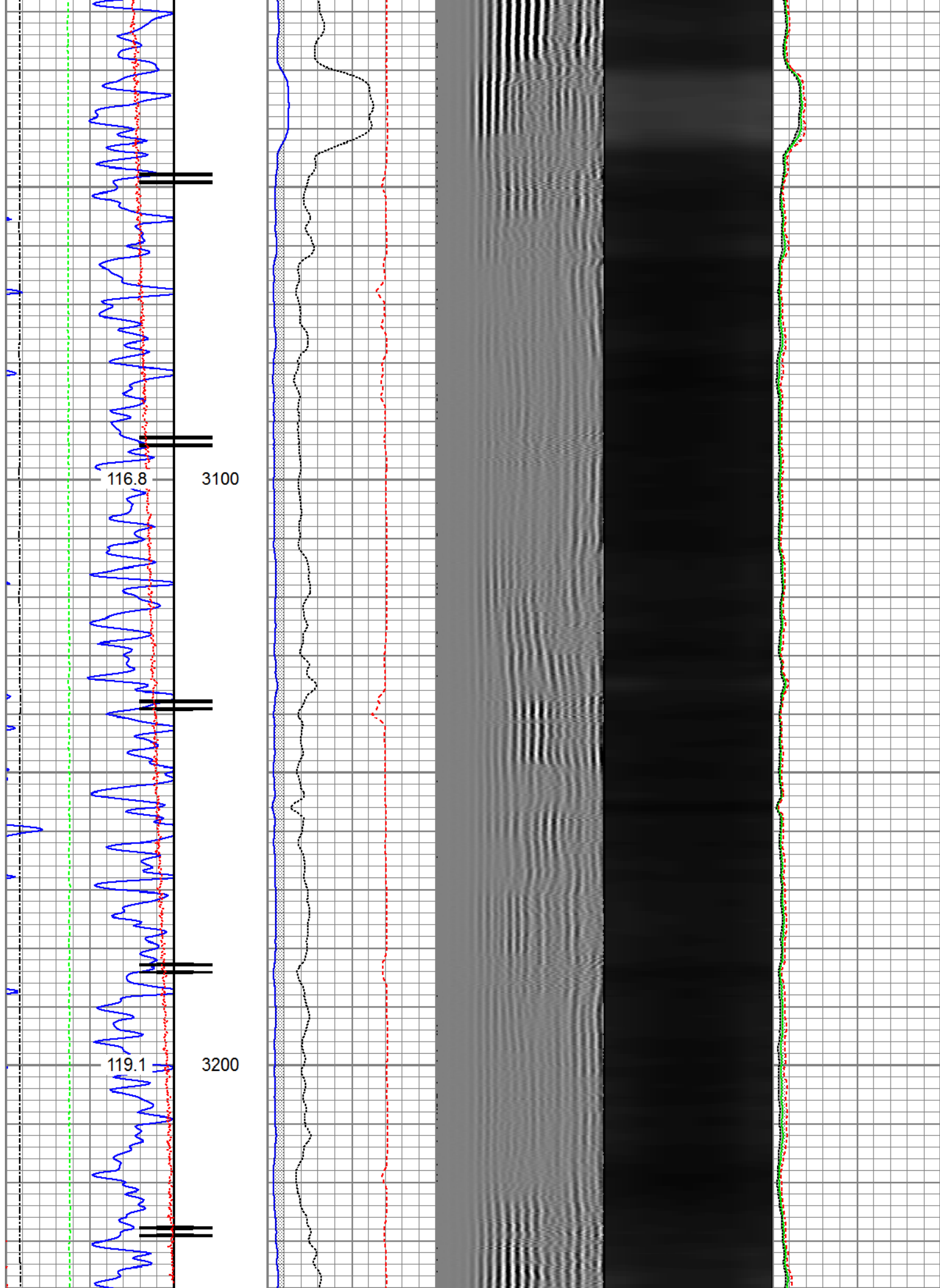


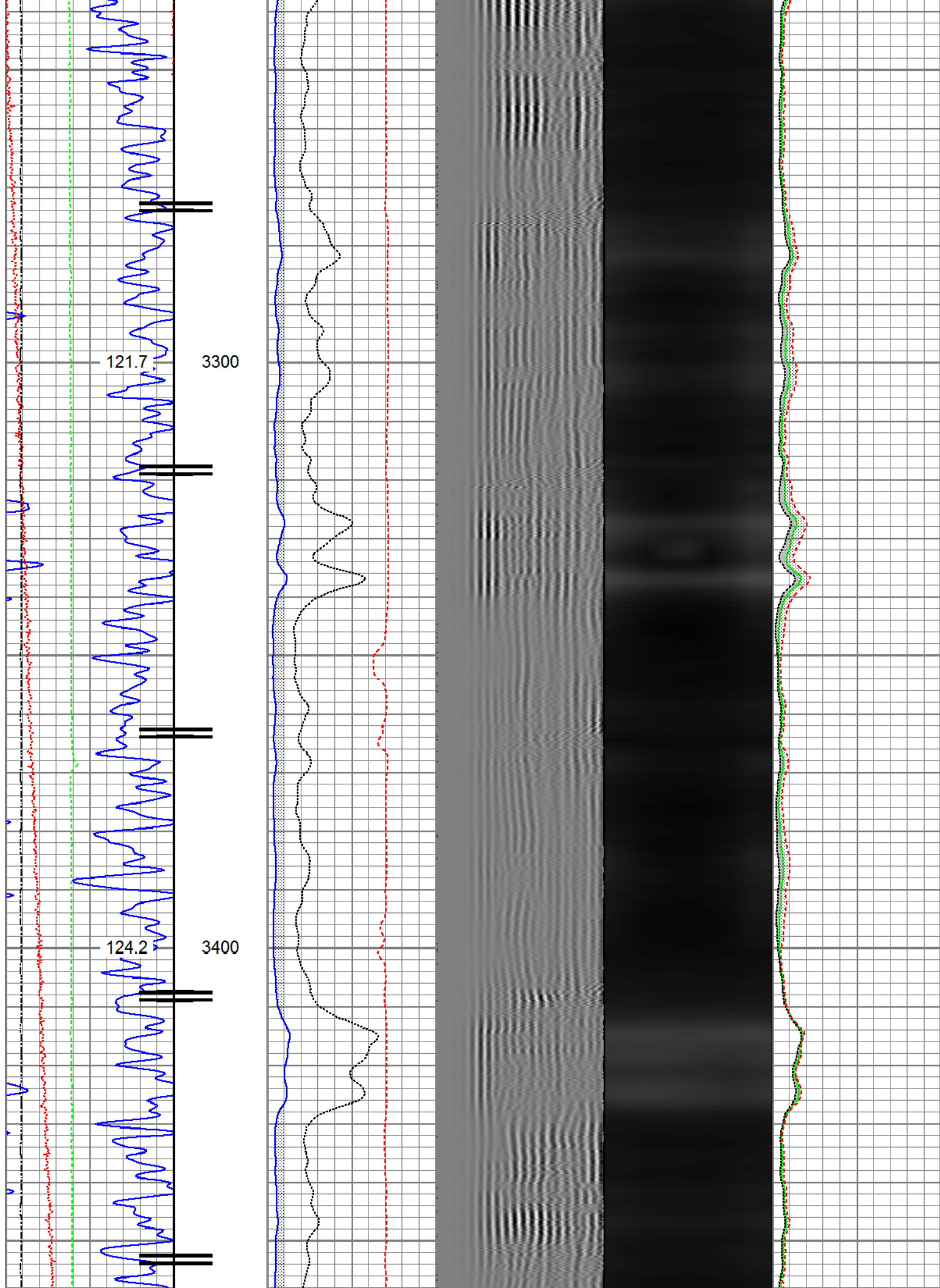


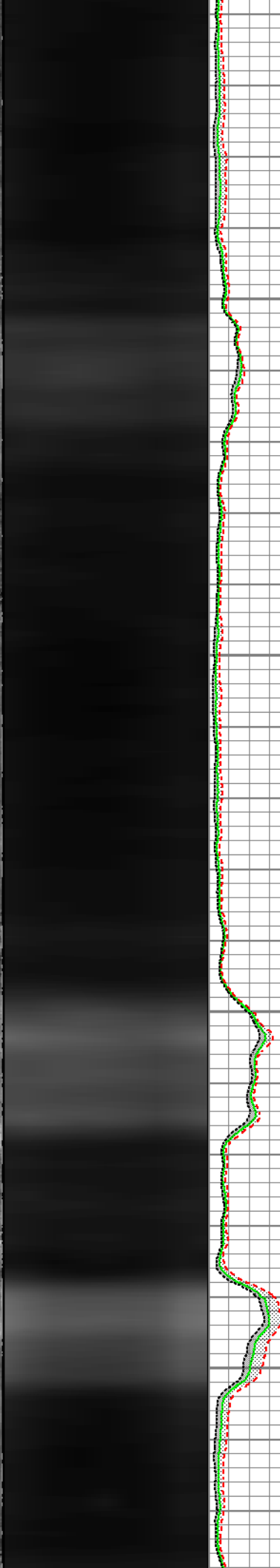
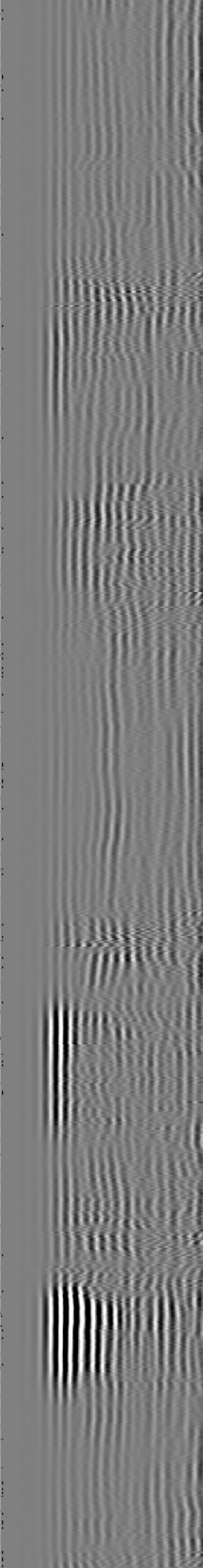
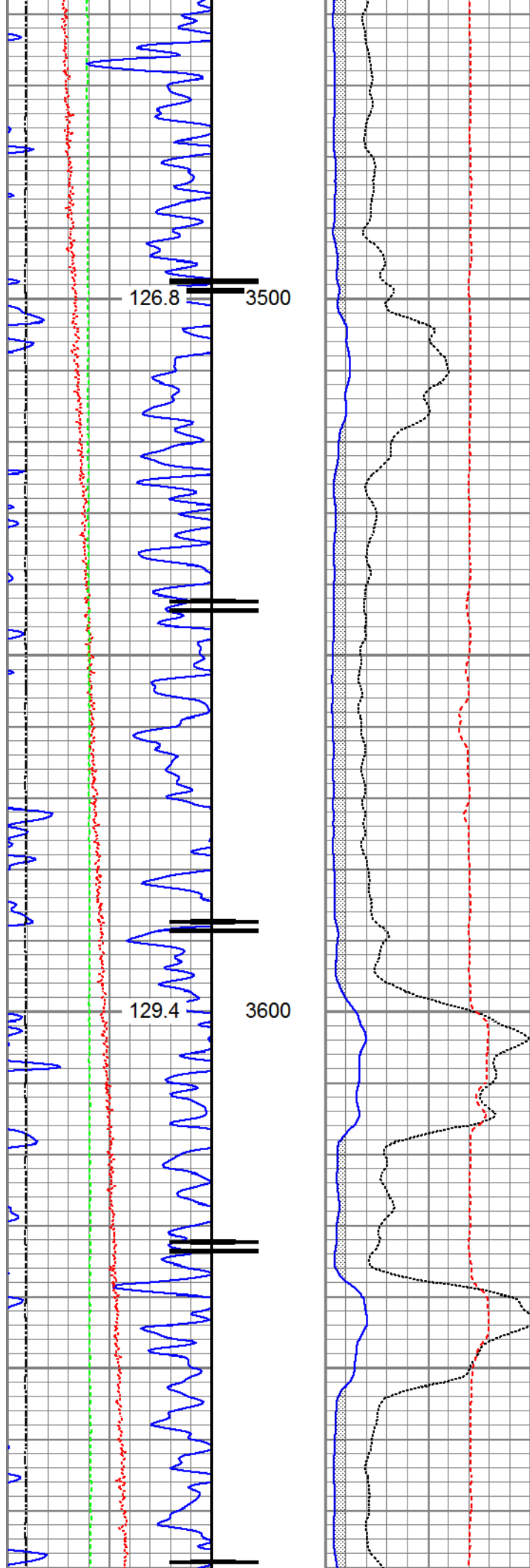


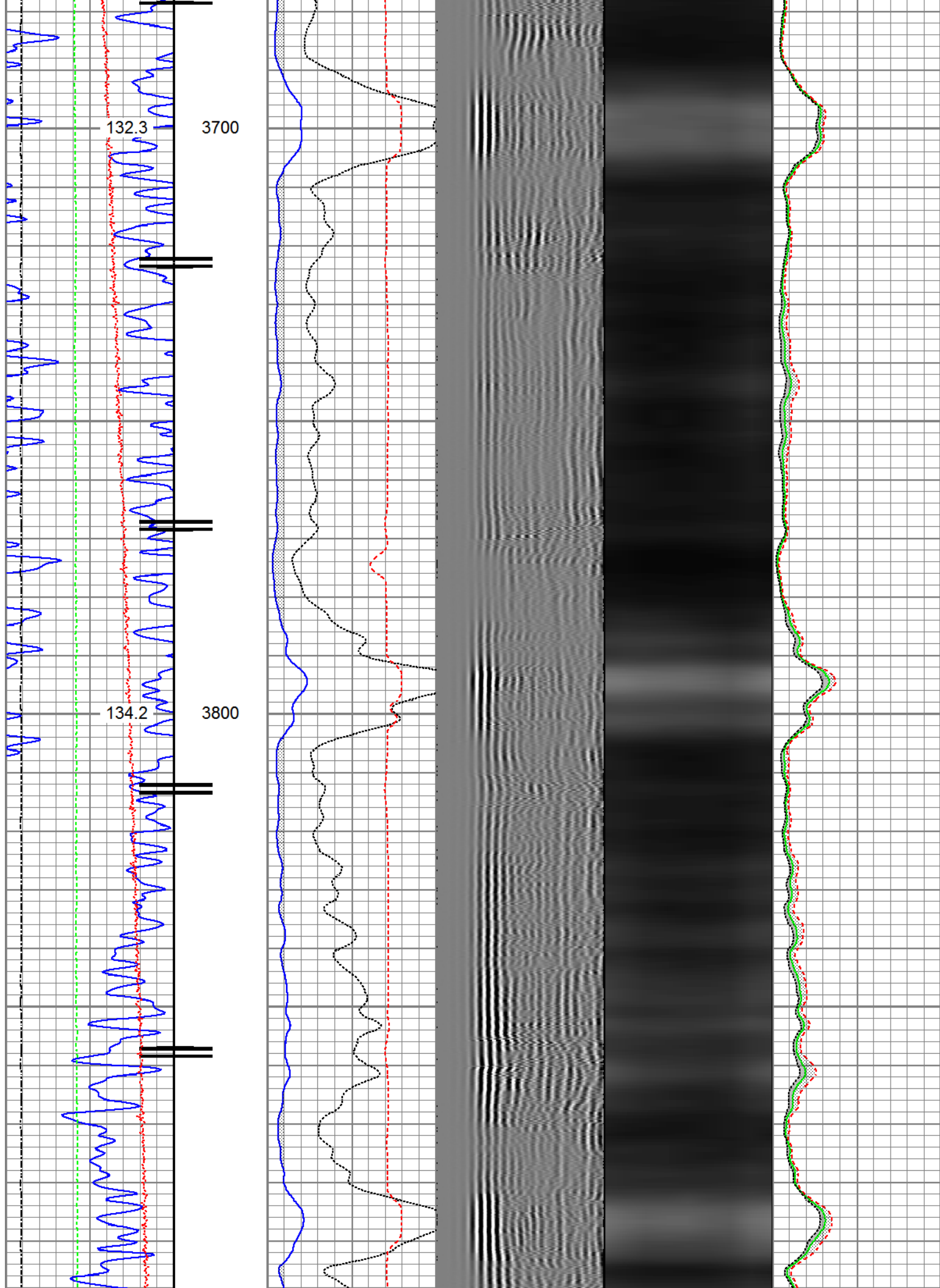


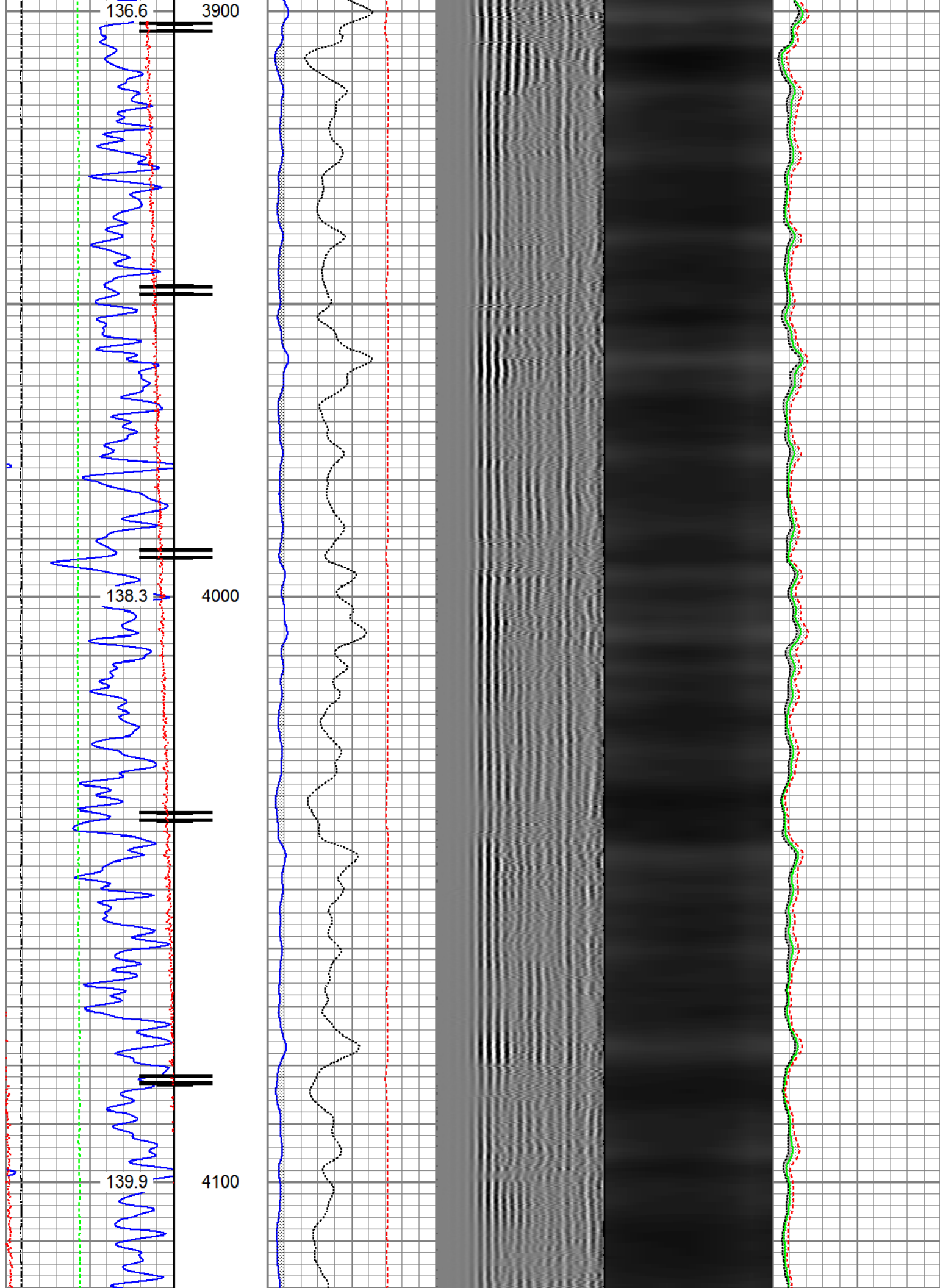


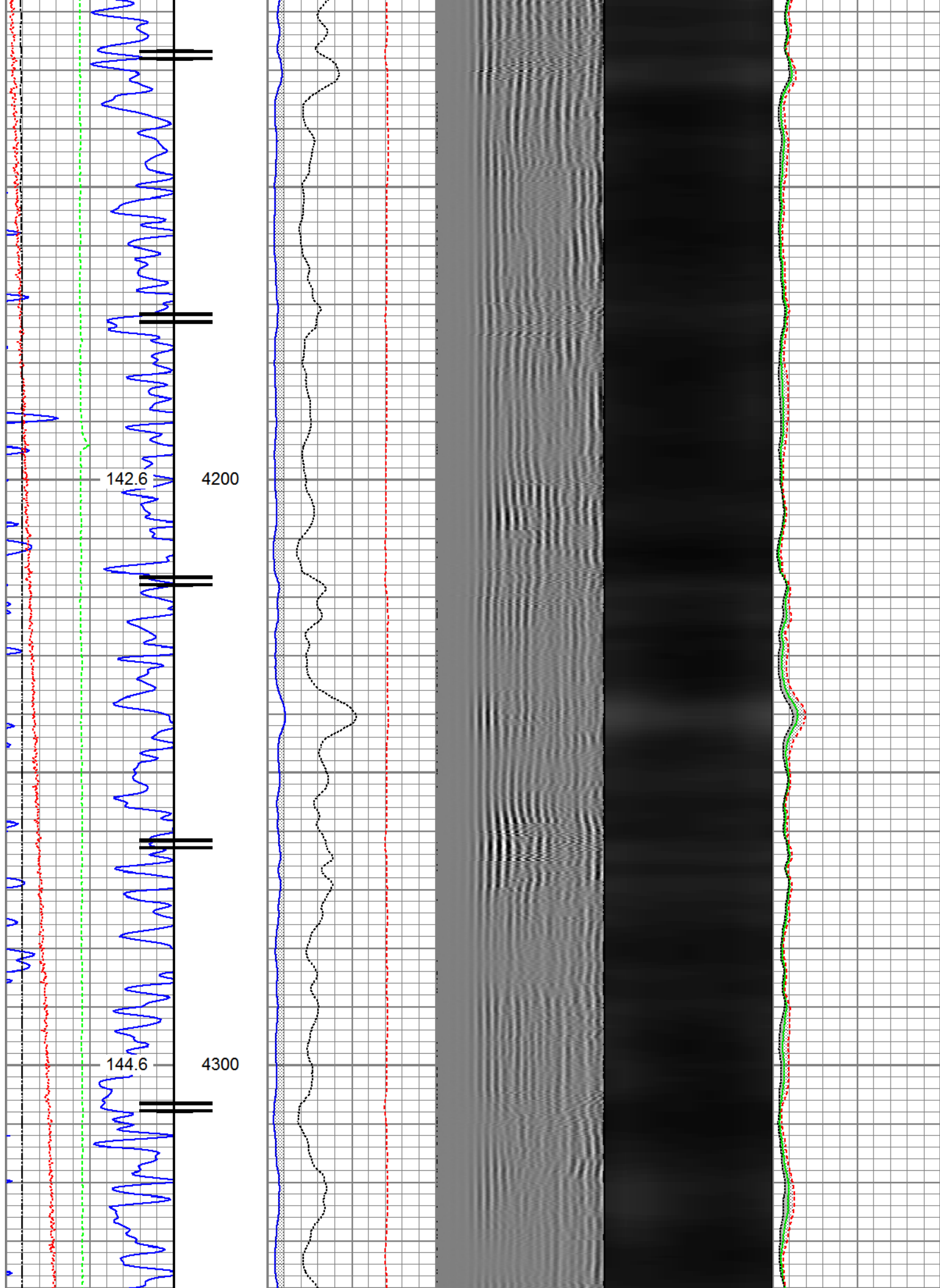


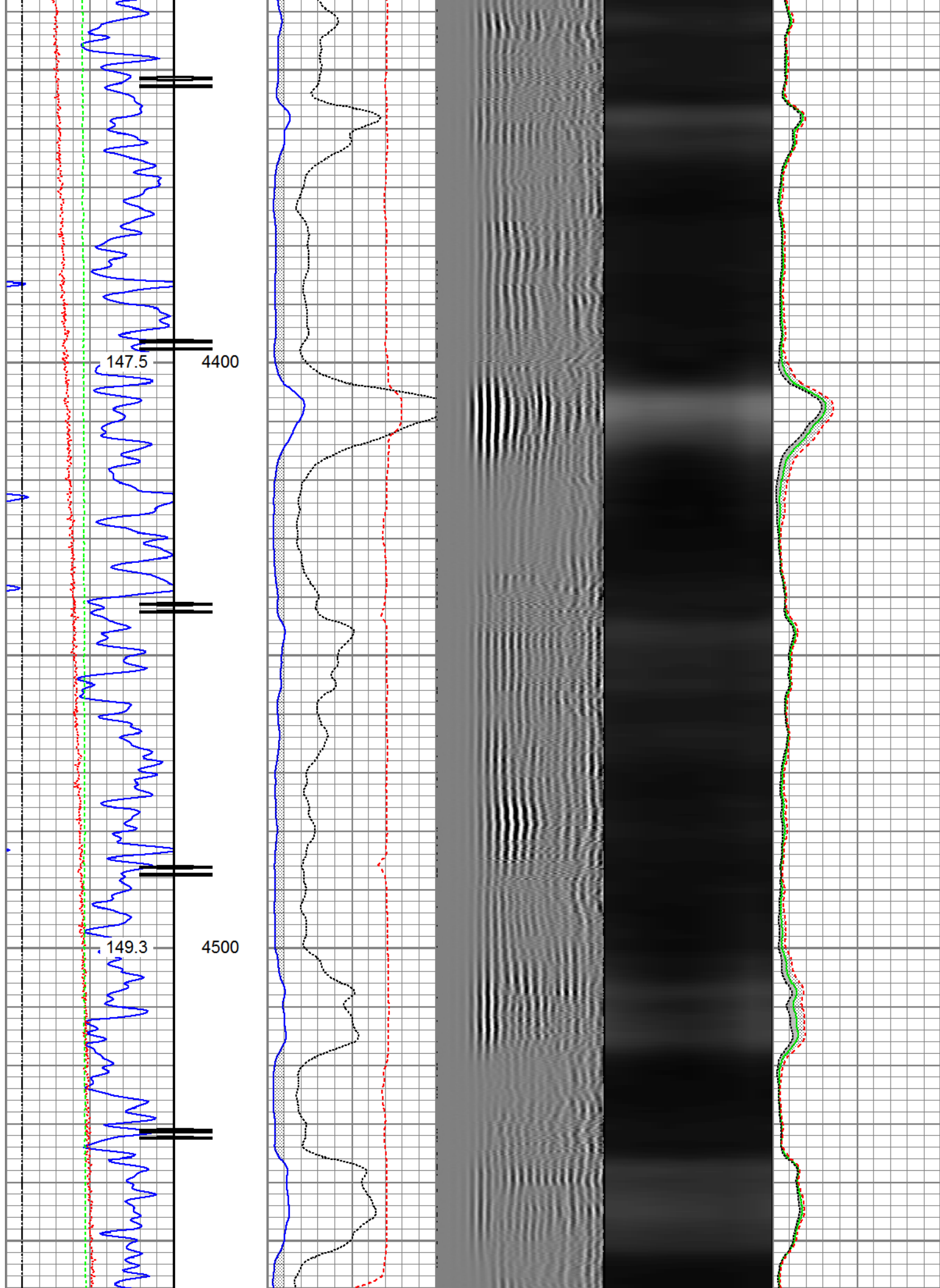


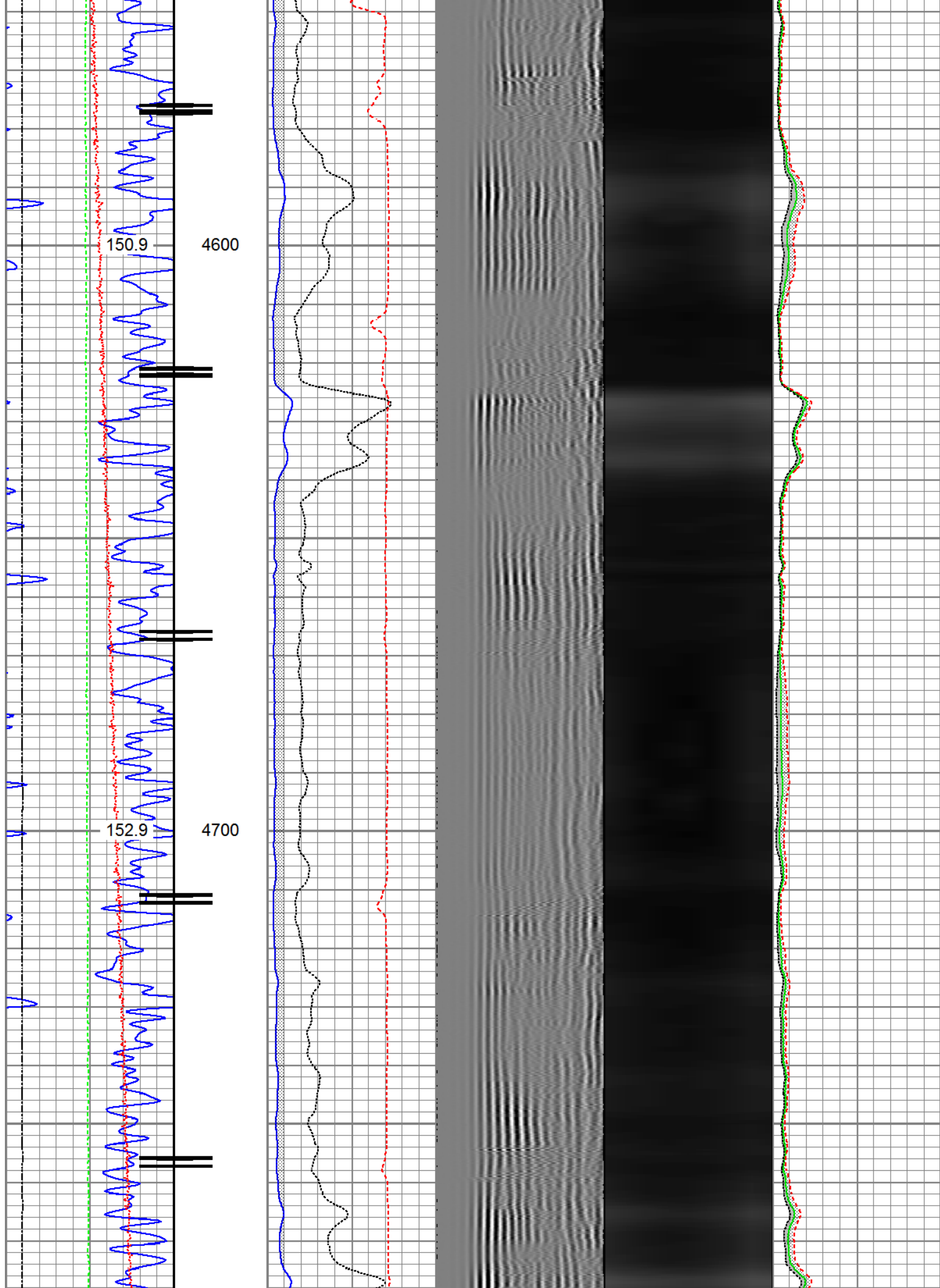


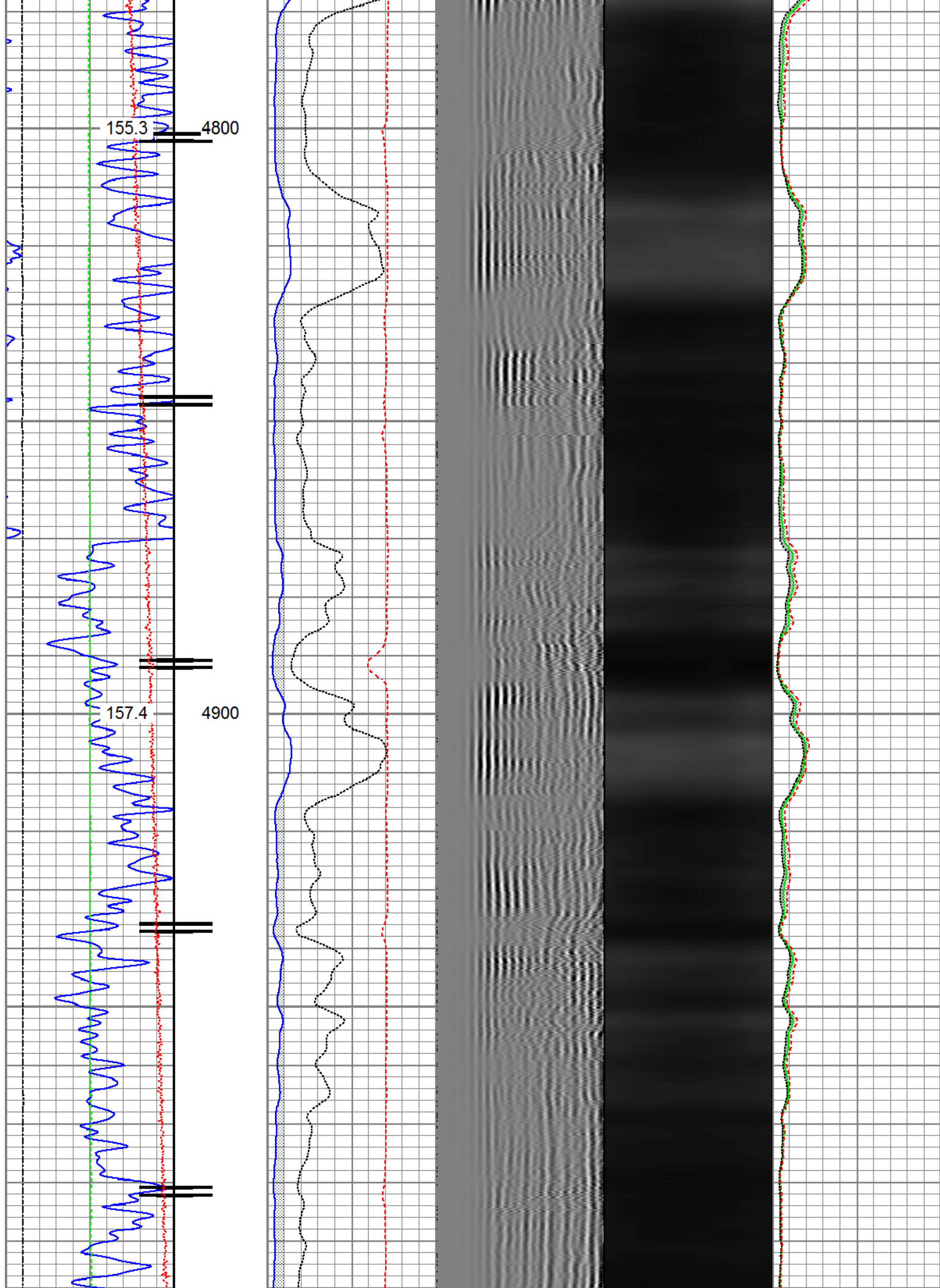


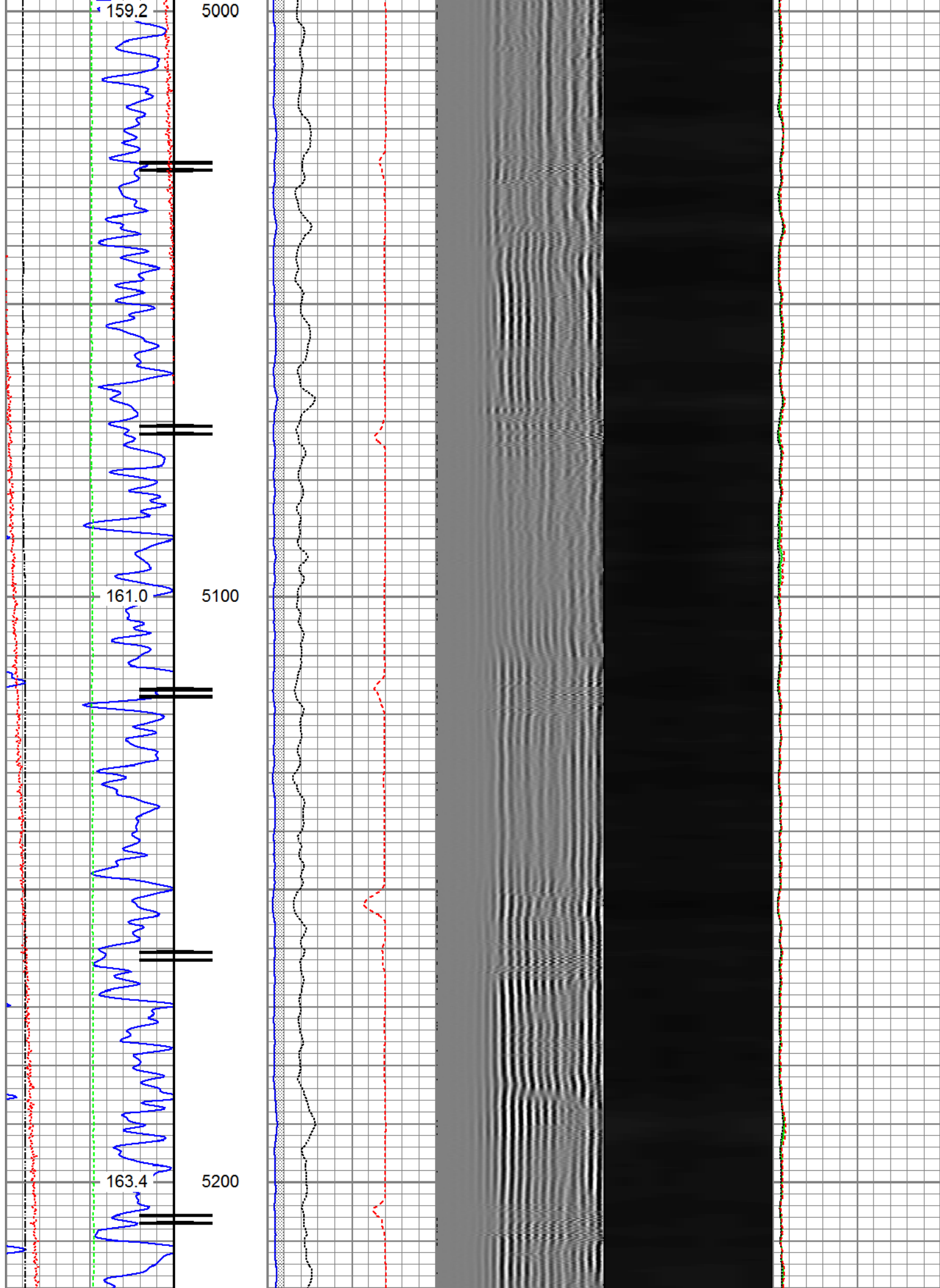


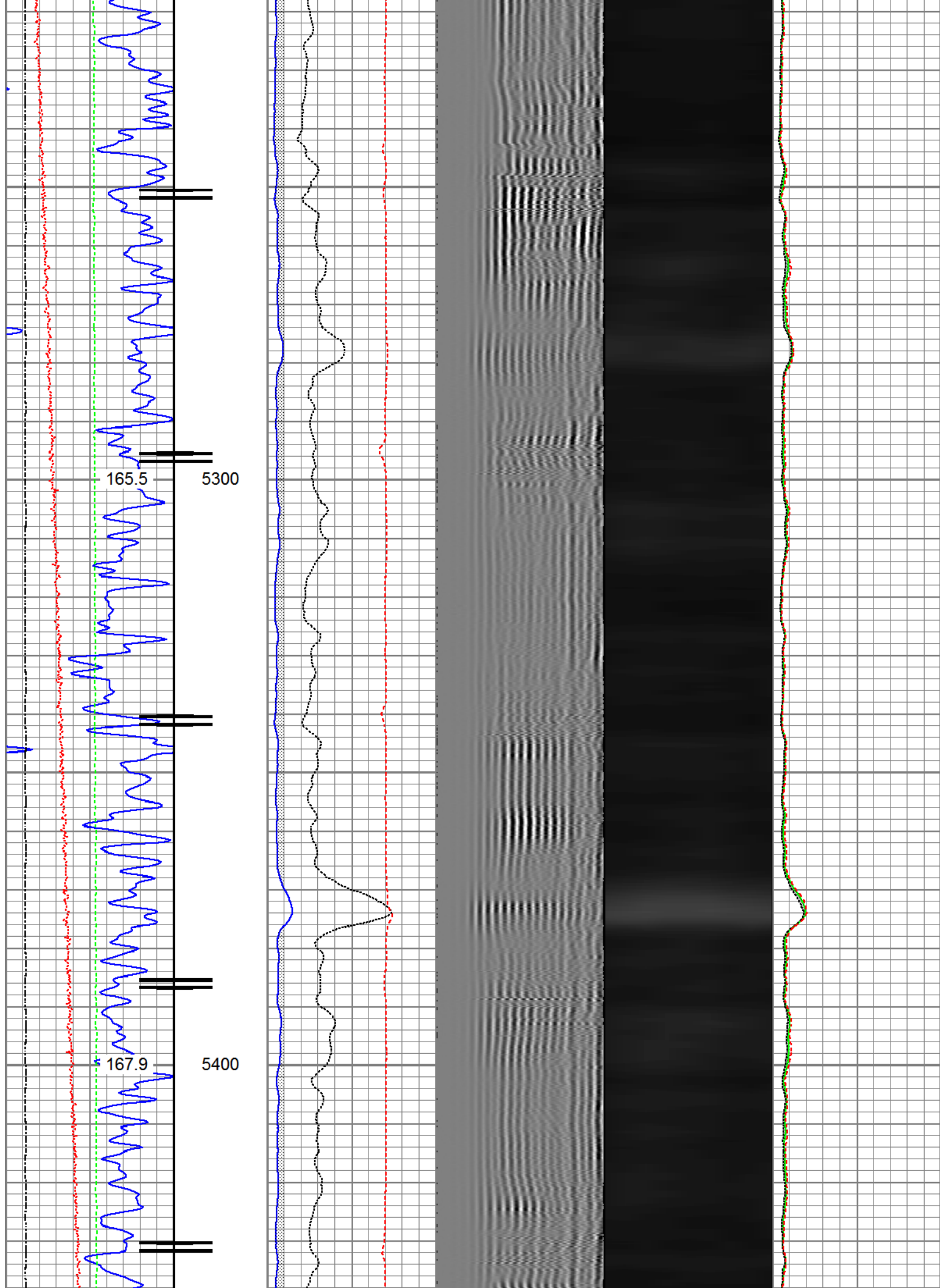


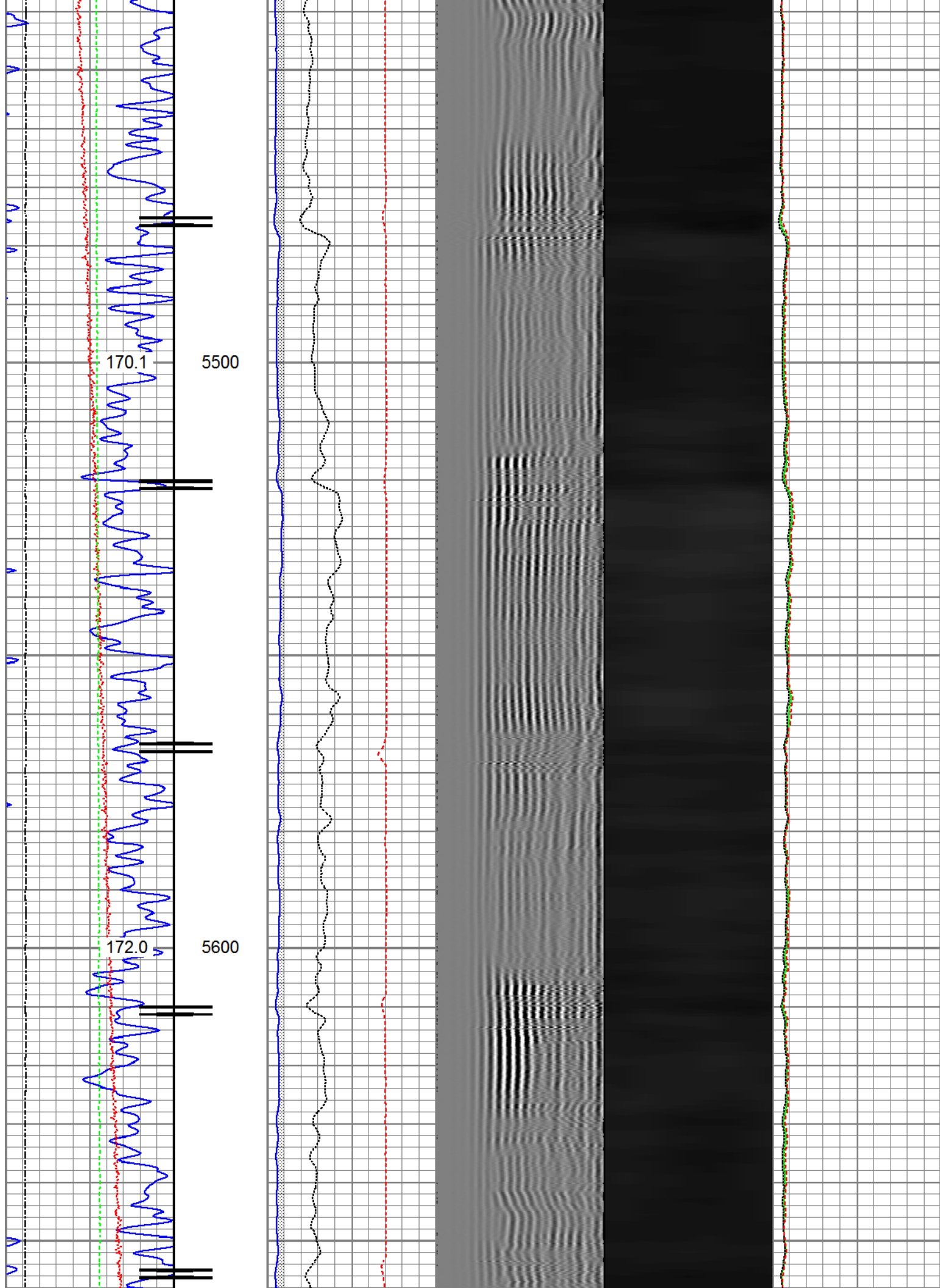


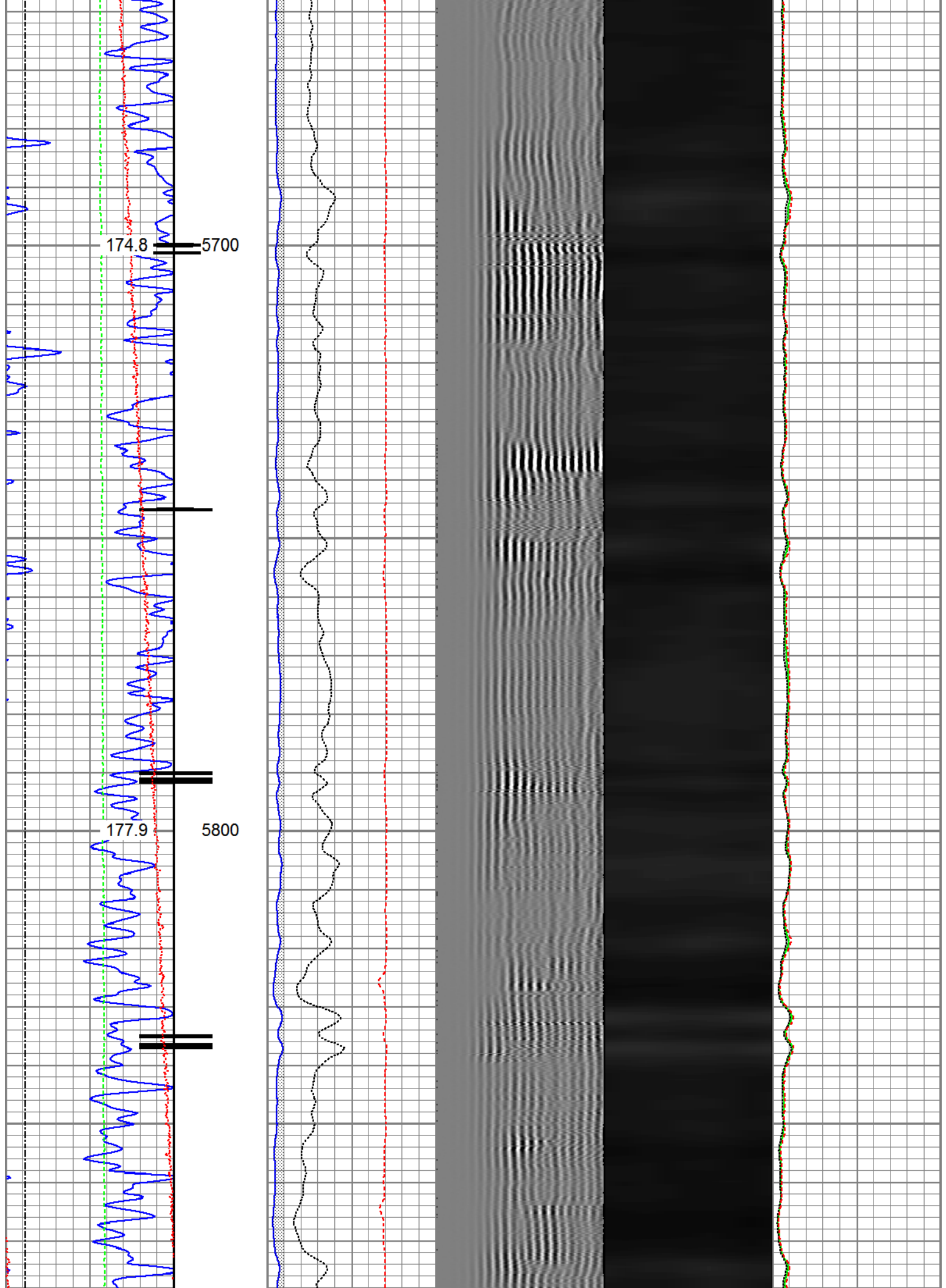


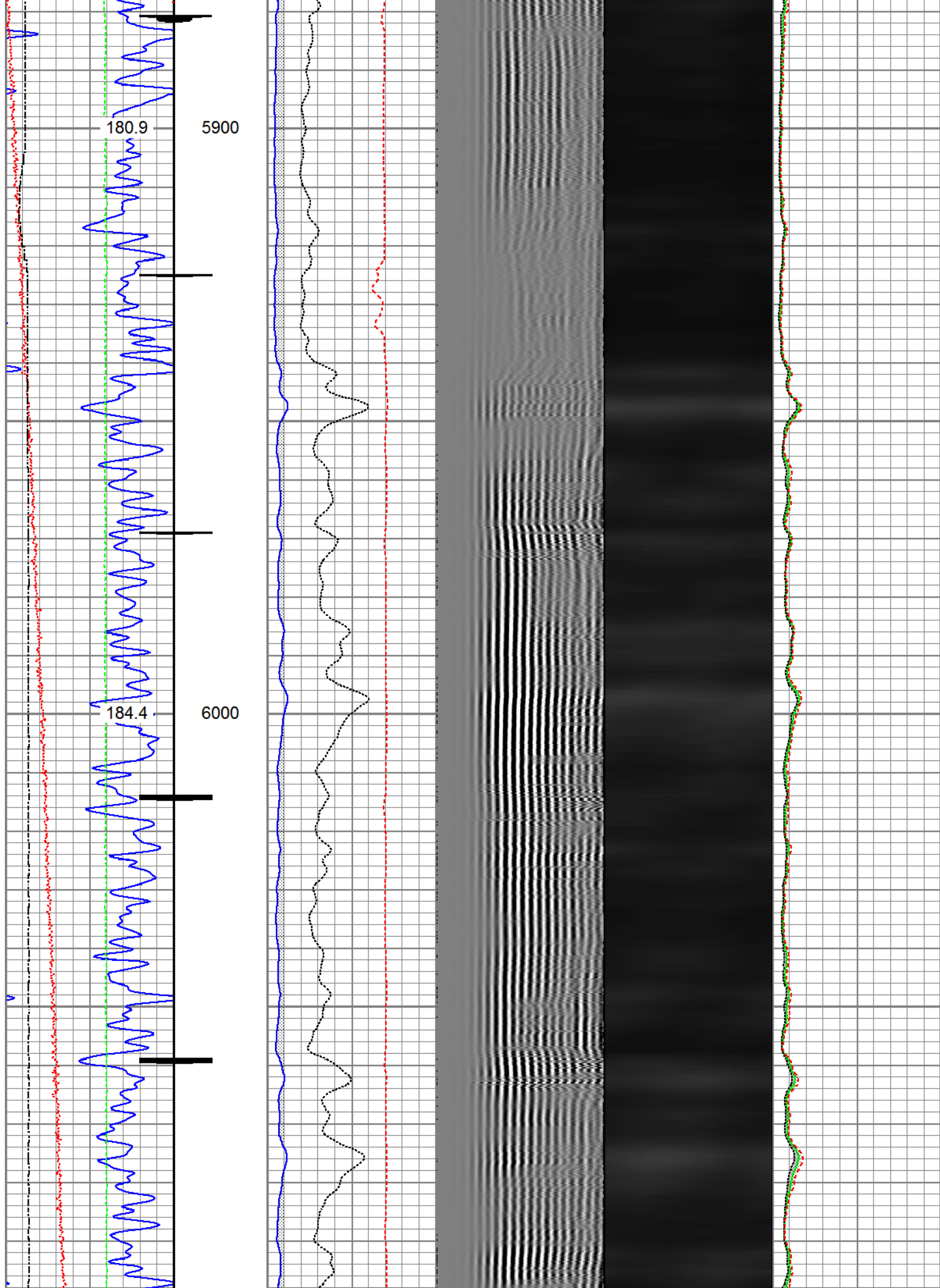


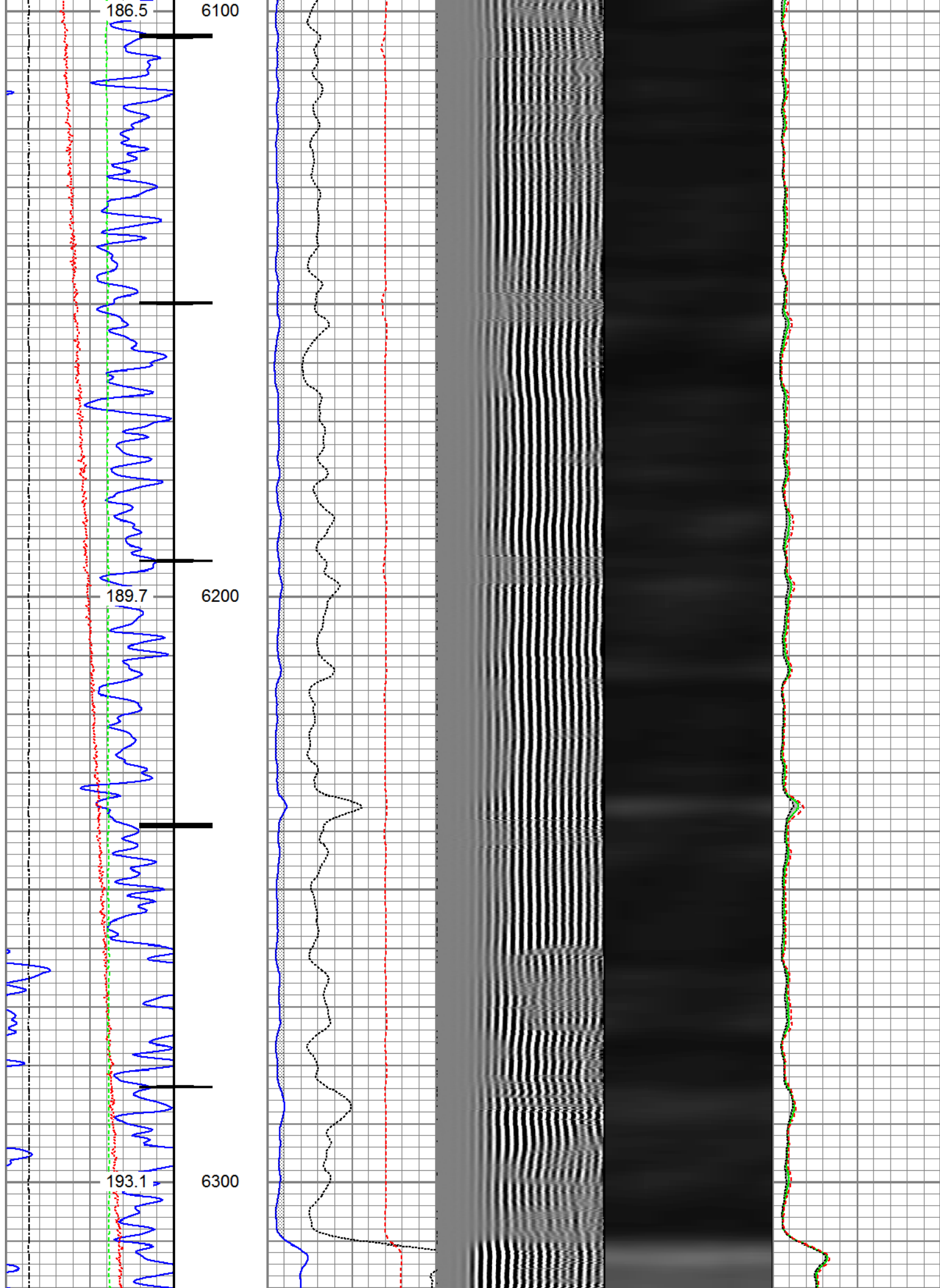


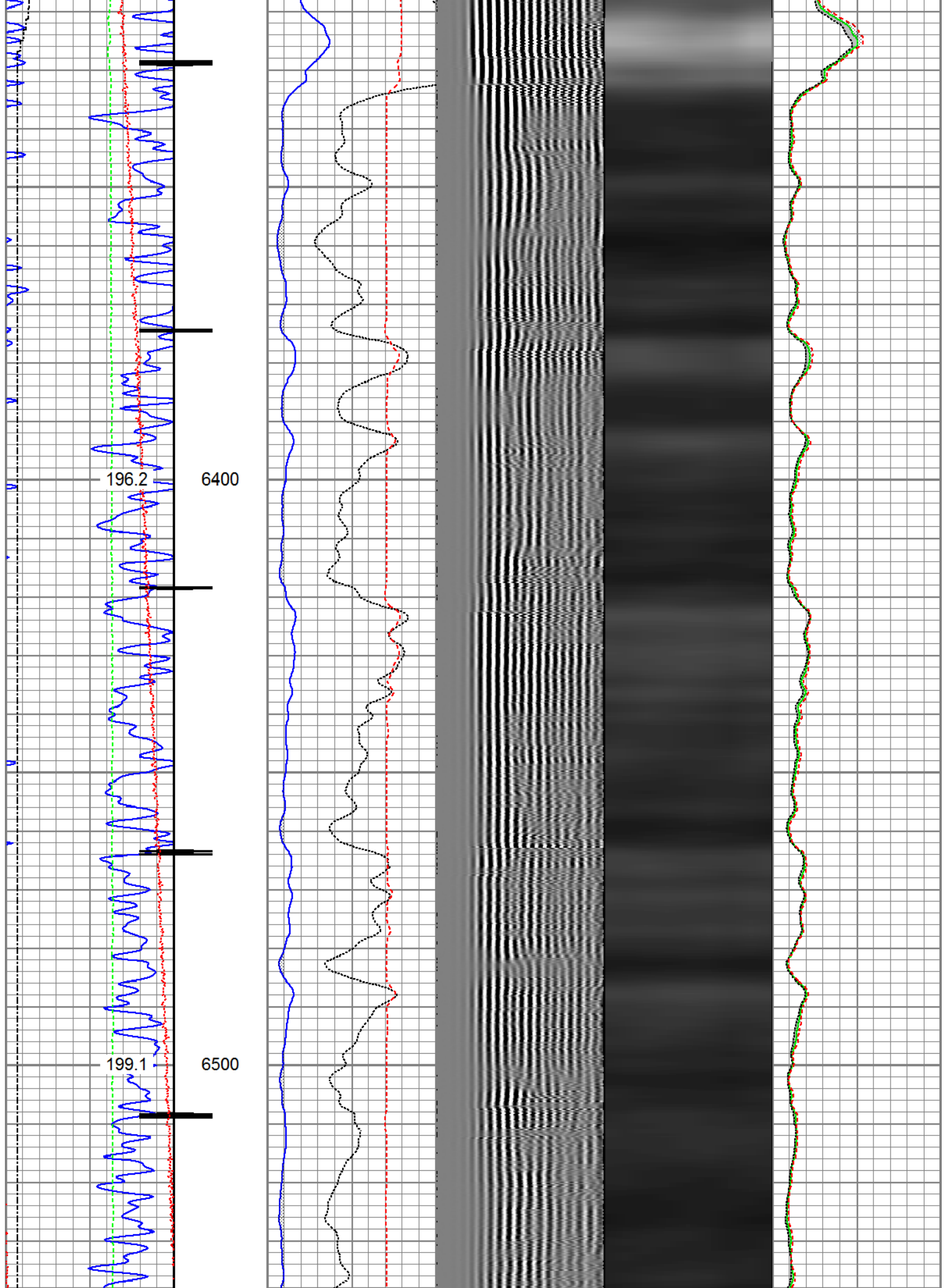


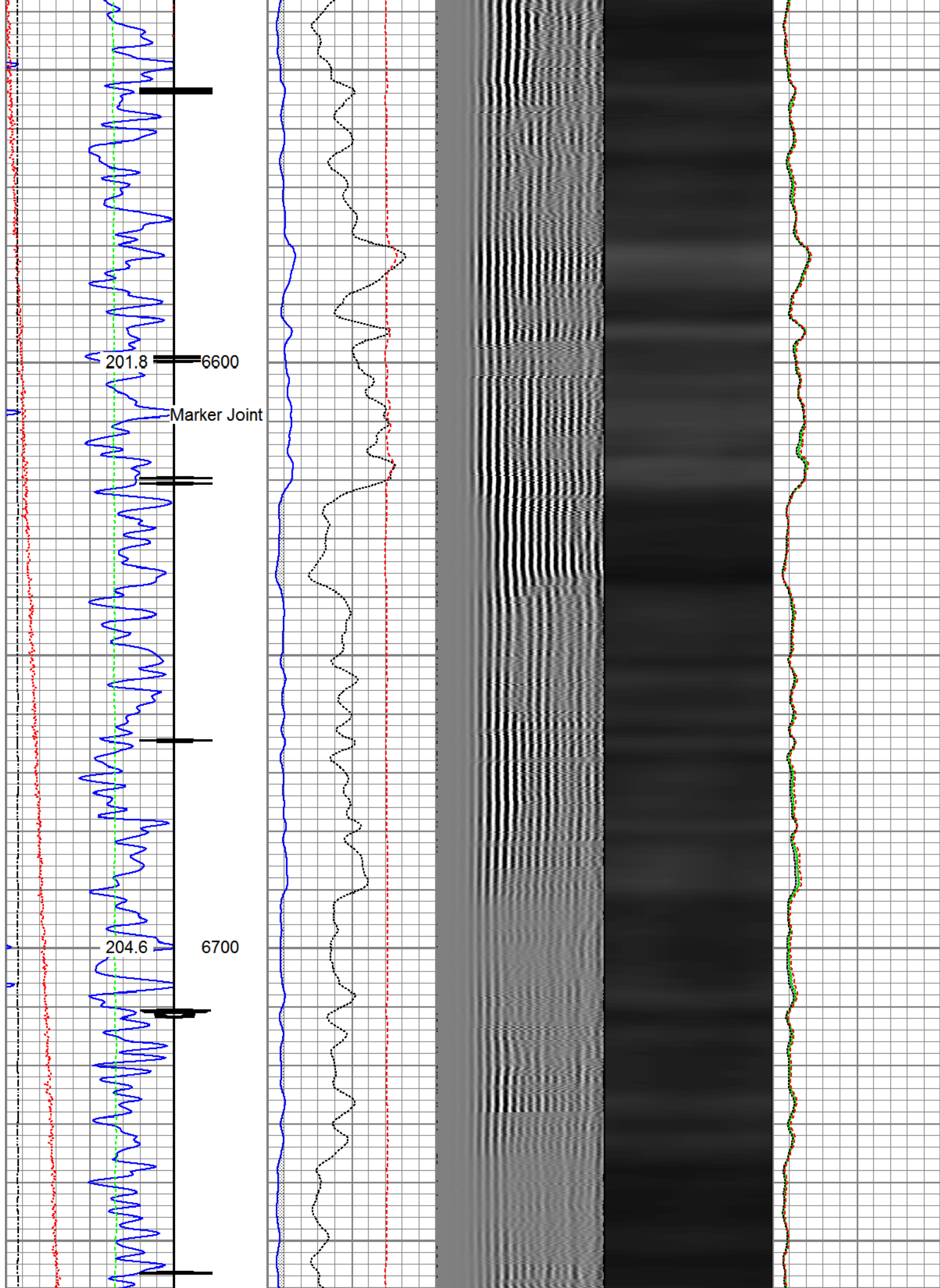


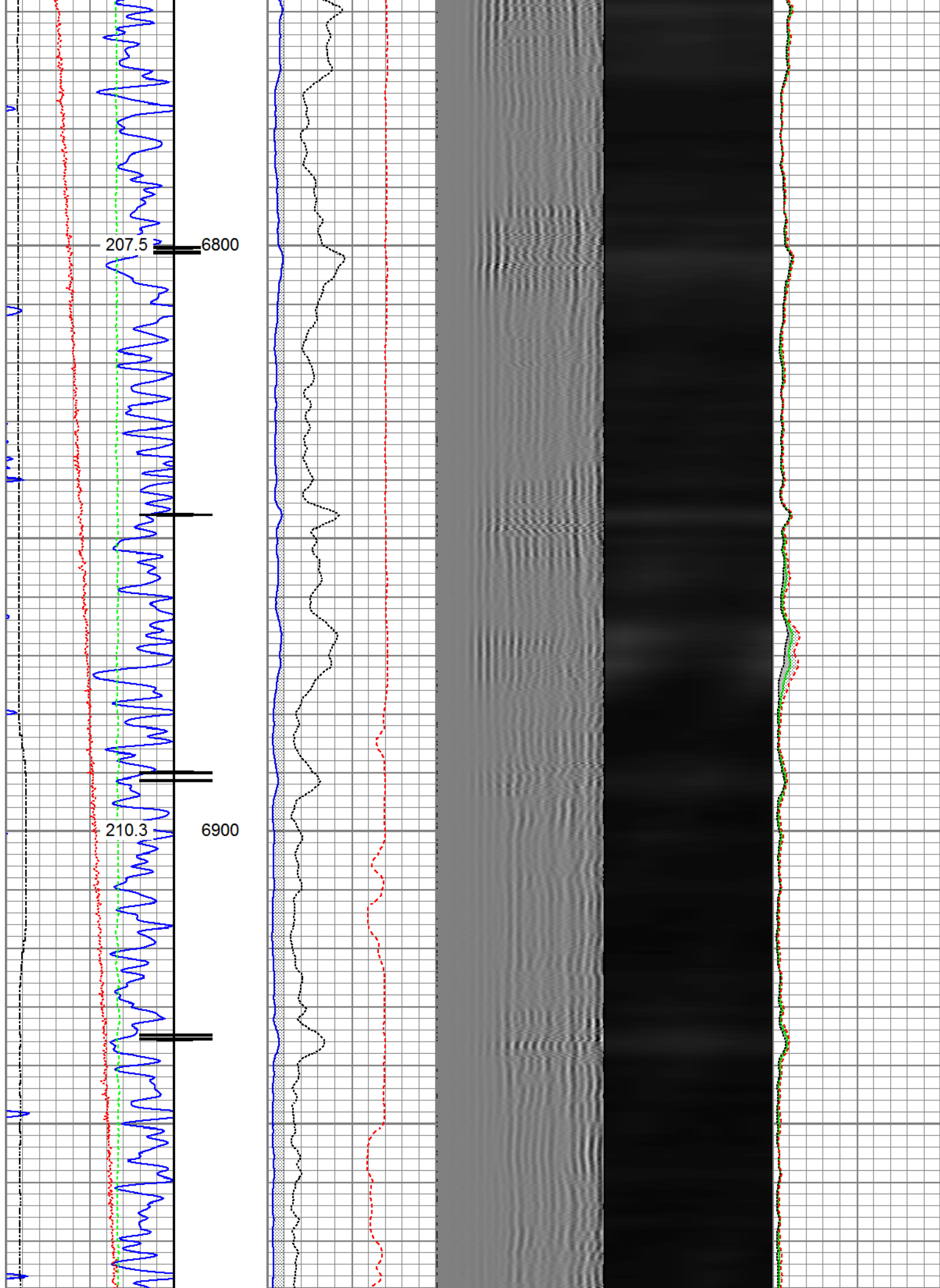


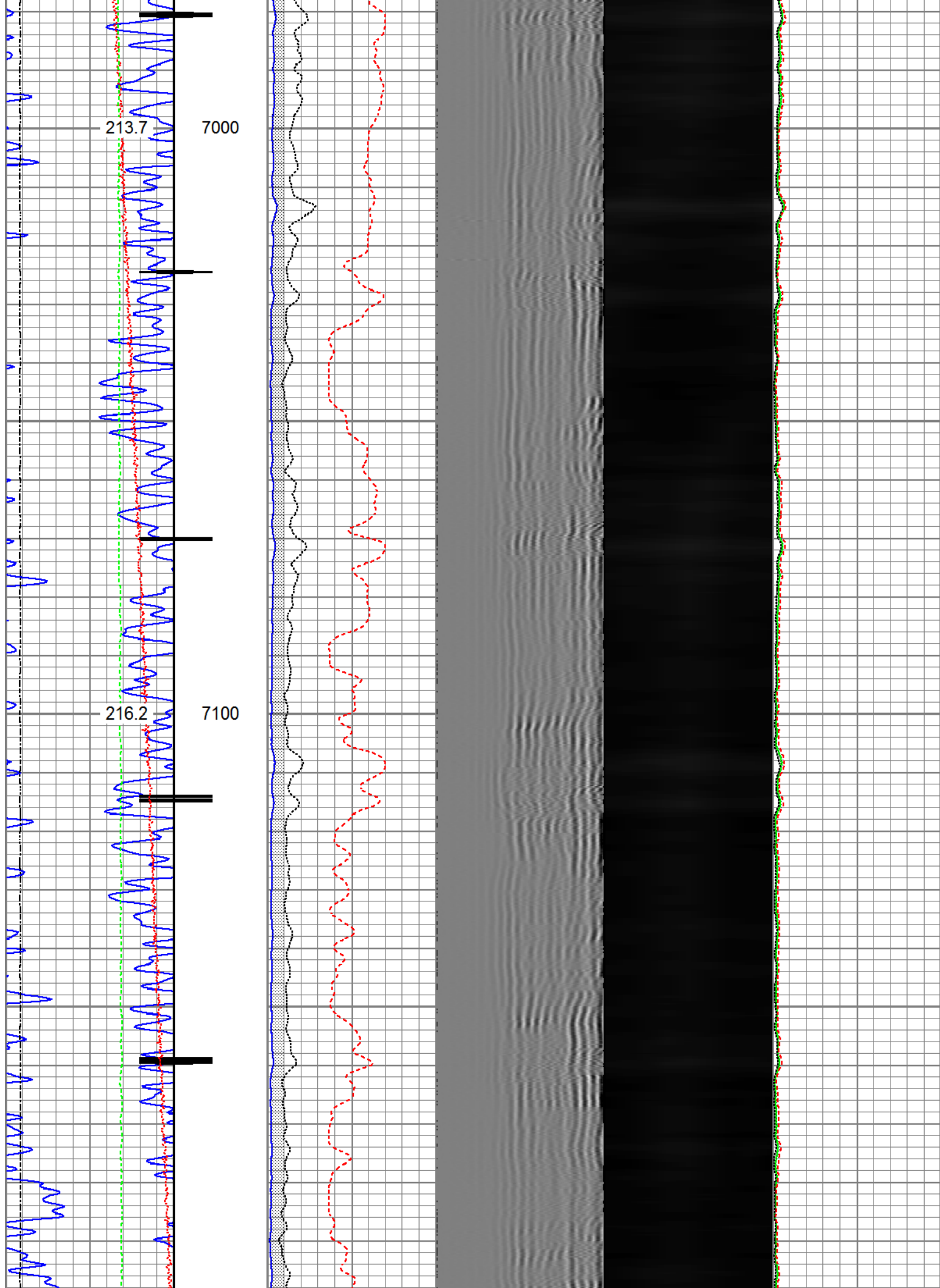


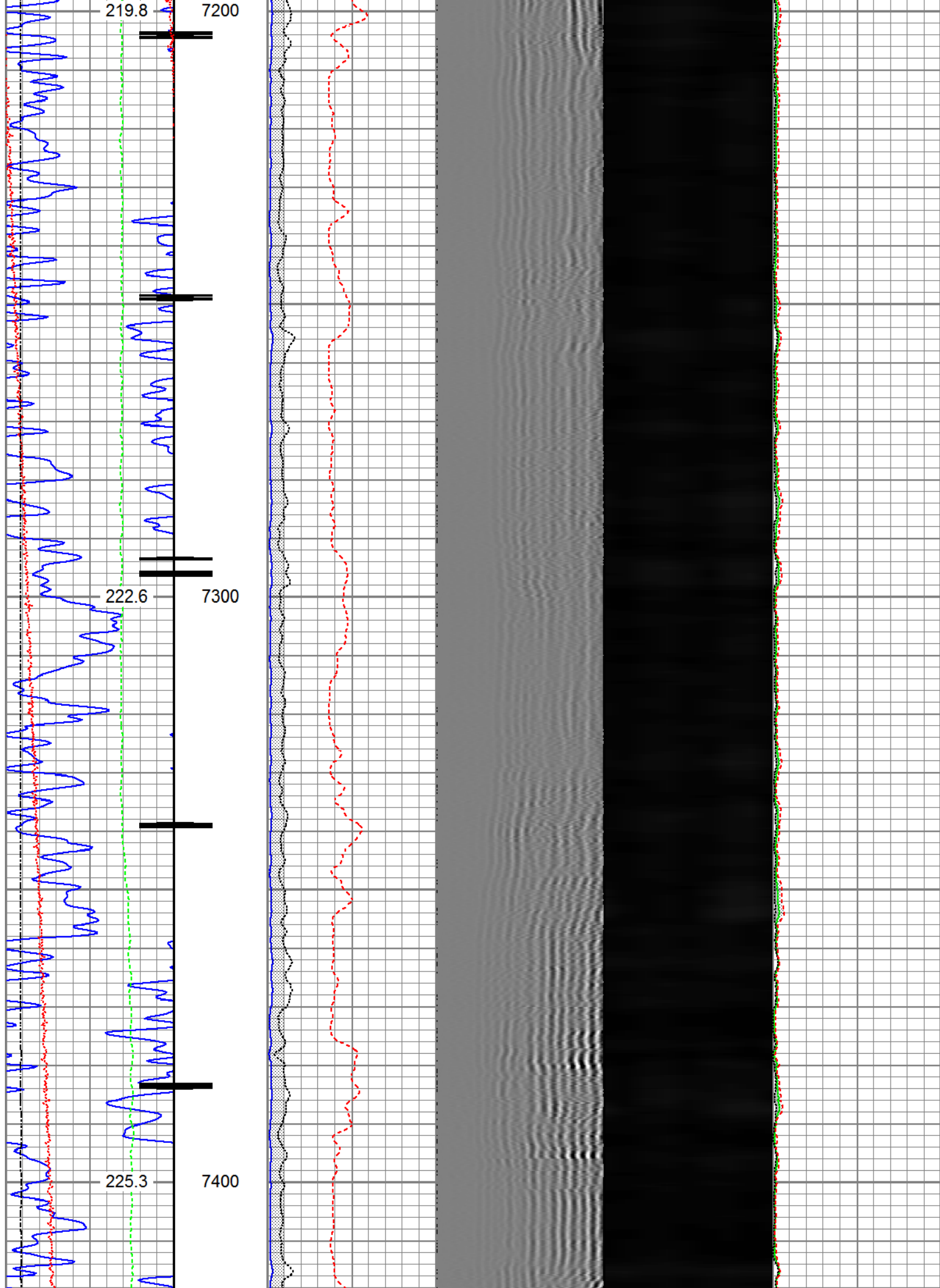


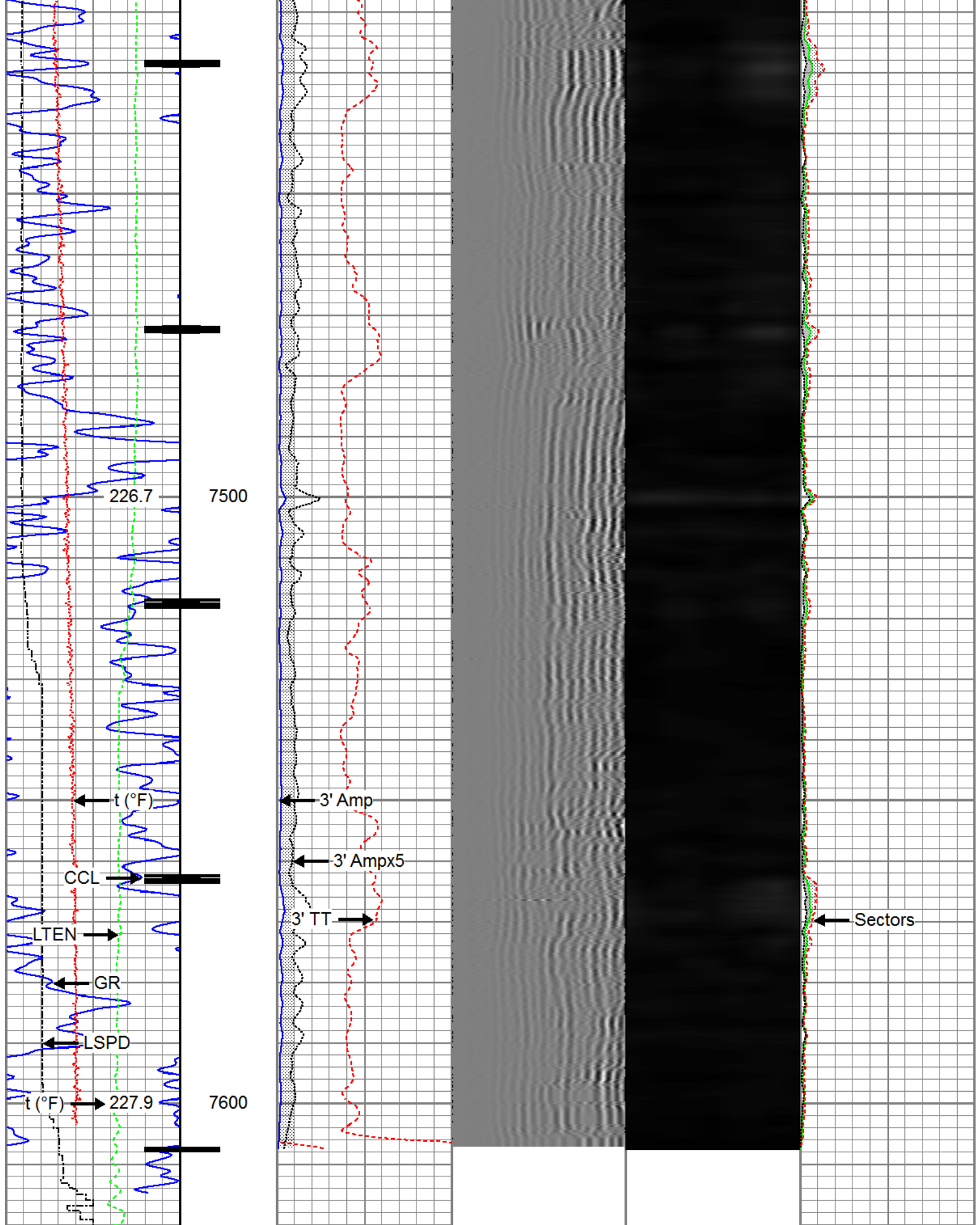












Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5 (mV)			Minimum Amplitude
	0 20			0 100

Temperature 0 (degF) 20	3' Travel Time 650 (usec) 150	Maximum Amplitude 0 100
Line Speed -150 (ft/min) 150		
Line Tension 0 (lb) 2000		

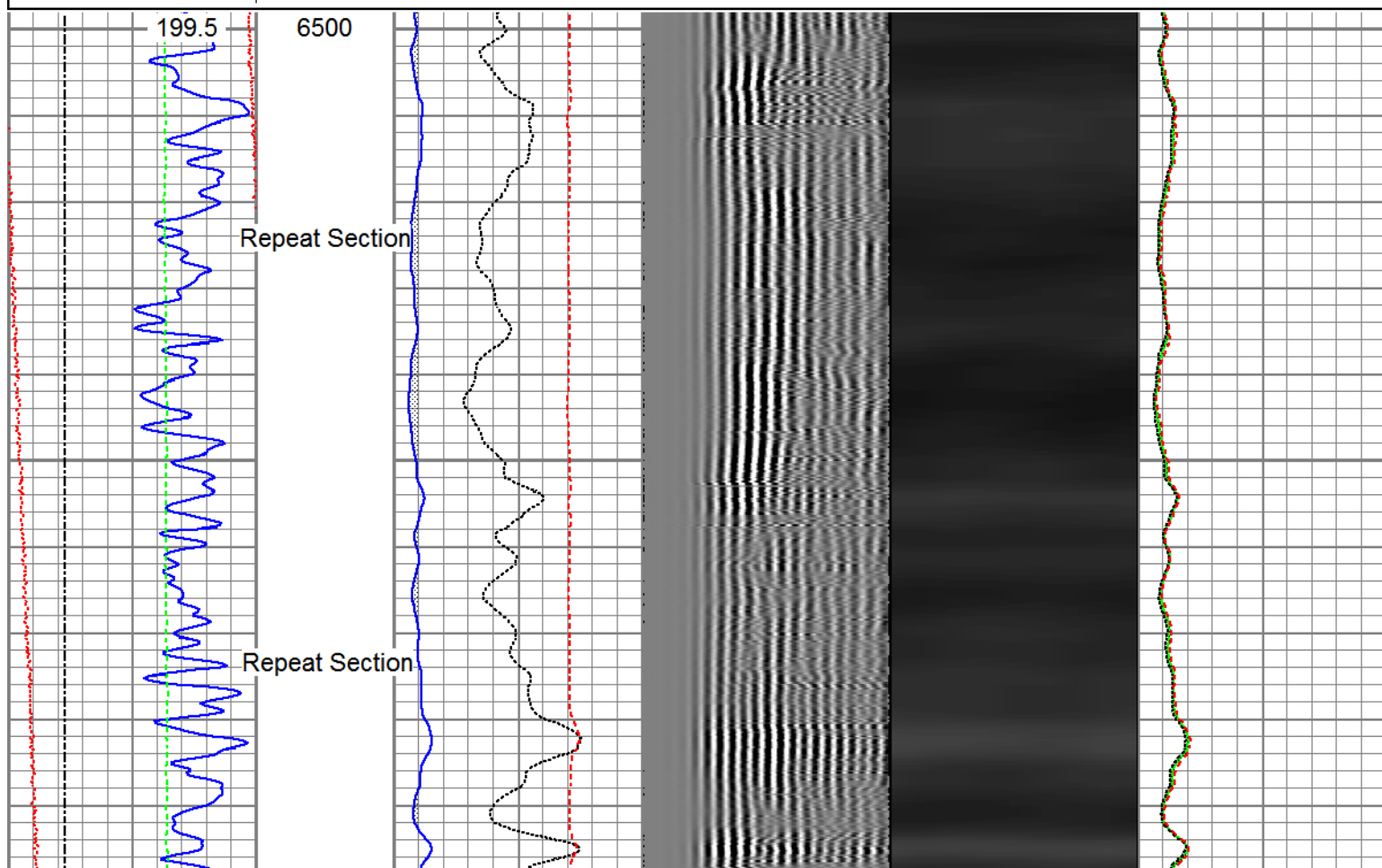


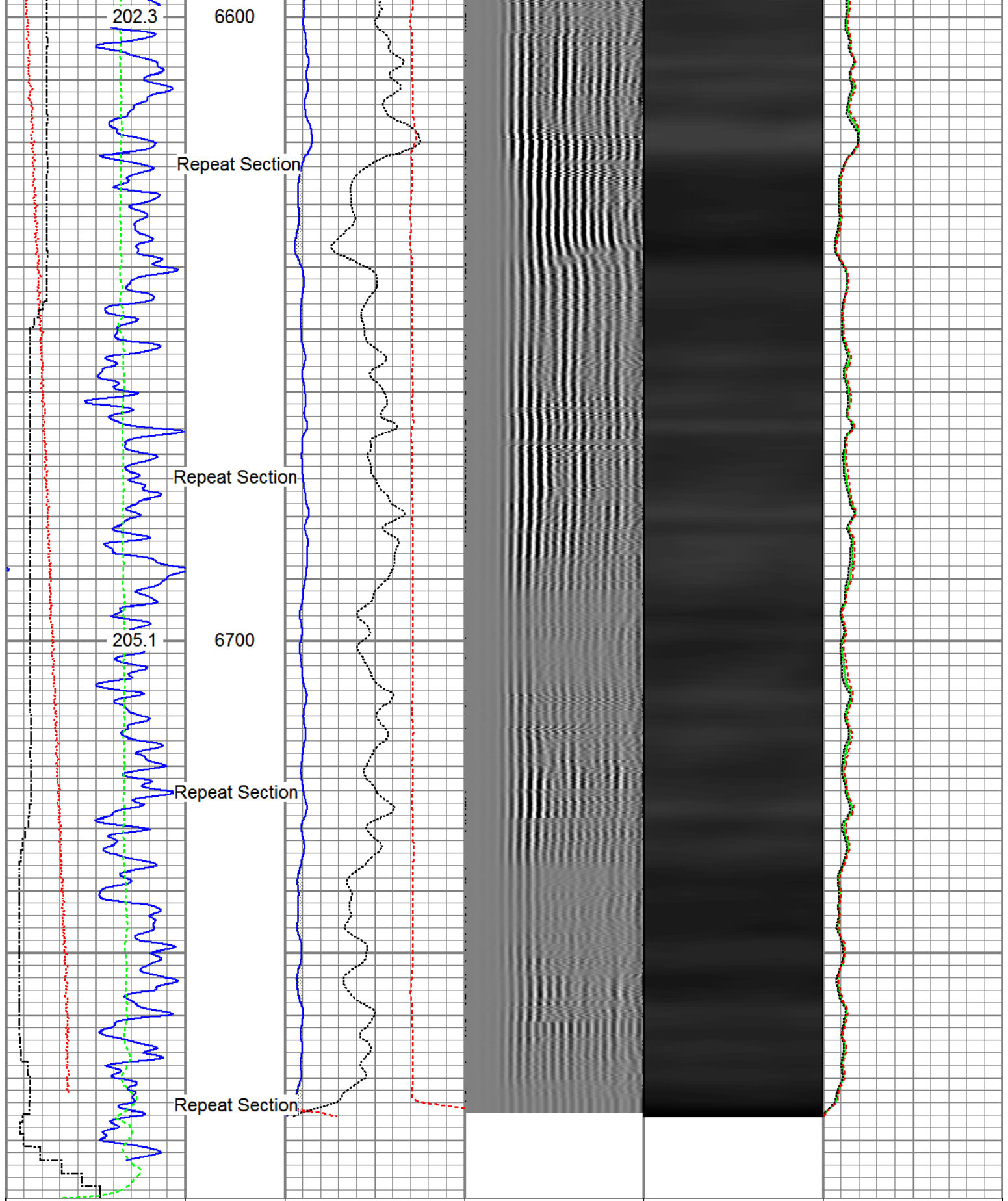
Repeat Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File anadarko whisper rock 7n-25hz rcbl 2-2-2017\processed_0512341311_anadarko_whisper rock 7n-25hz
Dataset Pathname repeat.1
Presentation Format ros_radrii
Dataset Creation Thu Feb 02 18:04:56 2017
Charted by Depth in Feet scaled 1:240

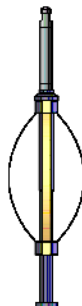

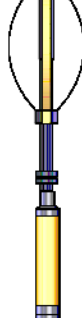
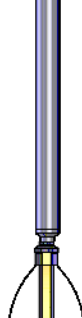
Gamma Ray 0 (GAPI) 120	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Temperature 0 (degF) 20	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Line Tension 0 (lb) 2000				





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

Line Tension		
0	(lb)	2000

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
HeadVolt	19.51		Titan_Electric_Cable_Heads-Titan_1-11/16" 1.03 Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
			Probe_ELine_BowSpring_Centralizer-P_EB&2.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.8875	2.75	20.00
Temp	16.72		Probe_RADII-C-P_RBT_2750 (FW1305-0969.19) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
WVFS8	14.55					
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					
DCCL CCL	6.51		Probe_ELine_BowSpring_Centralizer-P_EB&2.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.8875	2.75	20.00
	6.51		Probe_GR_CCL-P_CGR_2750_S (FW12124.54) Probe 2-3/4" Digital CCL / Gamma Ray Combined	12.54	2.75	55.00
GR	3.77					
		Probe_ELine_BowSpring_Centralizer-P_EB&2.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.8875	2.75	20.00	

Dataset:	PROCESSED_0512341311_Anadarko_Whisper Rock 7N-25HZ_02-01-17_RBL.db: field/well/run1/main
Total length:	23.40 ft
Total weight:	225.40 lb
O.D.:	2.75 in

Calibration Report

Database File	C:\ProgramData\Warrior\Data\Anadarko Whisper Rock 7N-25HZ RCBL 2-2-2017\PROCESSED_051
Dataset Pathname	main.1
Dataset Creation	Wed Feb 01 15:56:15 2017

Gamma Ray Calibration Report

Serial Number:	FW1212-026	
Tool Model:	P_CGR_2750_S	
Performed:	Mon Jun 13 11:30:22 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.8500	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:	0.000	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.639	0.800	71.921	111.344	0.792
CAL	0.004	0.743				
5'	0.000	0.576	0.800	71.921	123.533	0.778
SUM						
S1	0.000	0.640	0.000	100.000	156.287	-0.023
S2	0.000	0.639	0.000	100.000	156.403	-0.008
S3	0.000	0.626	0.000	100.000	159.790	-0.020
S4	0.000	0.619	0.000	100.000	161.597	-0.040
S5	0.000	0.638	0.000	100.000	156.831	-0.023
S6	-0.001	0.662	0.000	100.000	150.724	0.161
S7	0.000	0.676	0.000	100.000	147.946	-0.044
S8	-0.001	0.660	0.000	100.000	151.383	0.132


Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	0.743	1.000	0.000

Air Zero Calibration, performed Tue Jan 31 13:26:44 2017:

	Raw (v)	Calibrated (v)	Results
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	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
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	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Whisper Rock 7N-25HZ
	Field	Wattenberg
	County	Weld
	State	Colorado