



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.			Other Services
Well	Puma Fed 29C-14HZ			Gauge Ring
Field	Wattenberg			
County	Weld			
State	Colorado			
Location:	API # : 05-123-42564			
Permanent Datum	SEC 23	TWP 1N	RGE 67W	
Log Measured From	Kelly Bushing			Elevation 4991'
Drilling Measured From	Kelly Bushing			K.B. 5023' D.F. --- G.L. 4991'

Date	15-MAY-2017
Run Number	Two
Depth Driller	14116 FT
Depth Logger	7906 FT
Bottom Logged Interval	7902 FT
Top Log Interval	Surface
Open Hole Size	8.50"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	235.7°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	13:39 PM
Equipment Number	HD-0343
Location	Fort Lupton, CO
Recorded By	J. Fresquez
Witnessed By	B. 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	J-55	Surface	2247 FT		
Intermediate #1	5 1/2	17	HC P110	Surface	14105 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 6988 FT
Adjusted +5 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7956 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!!

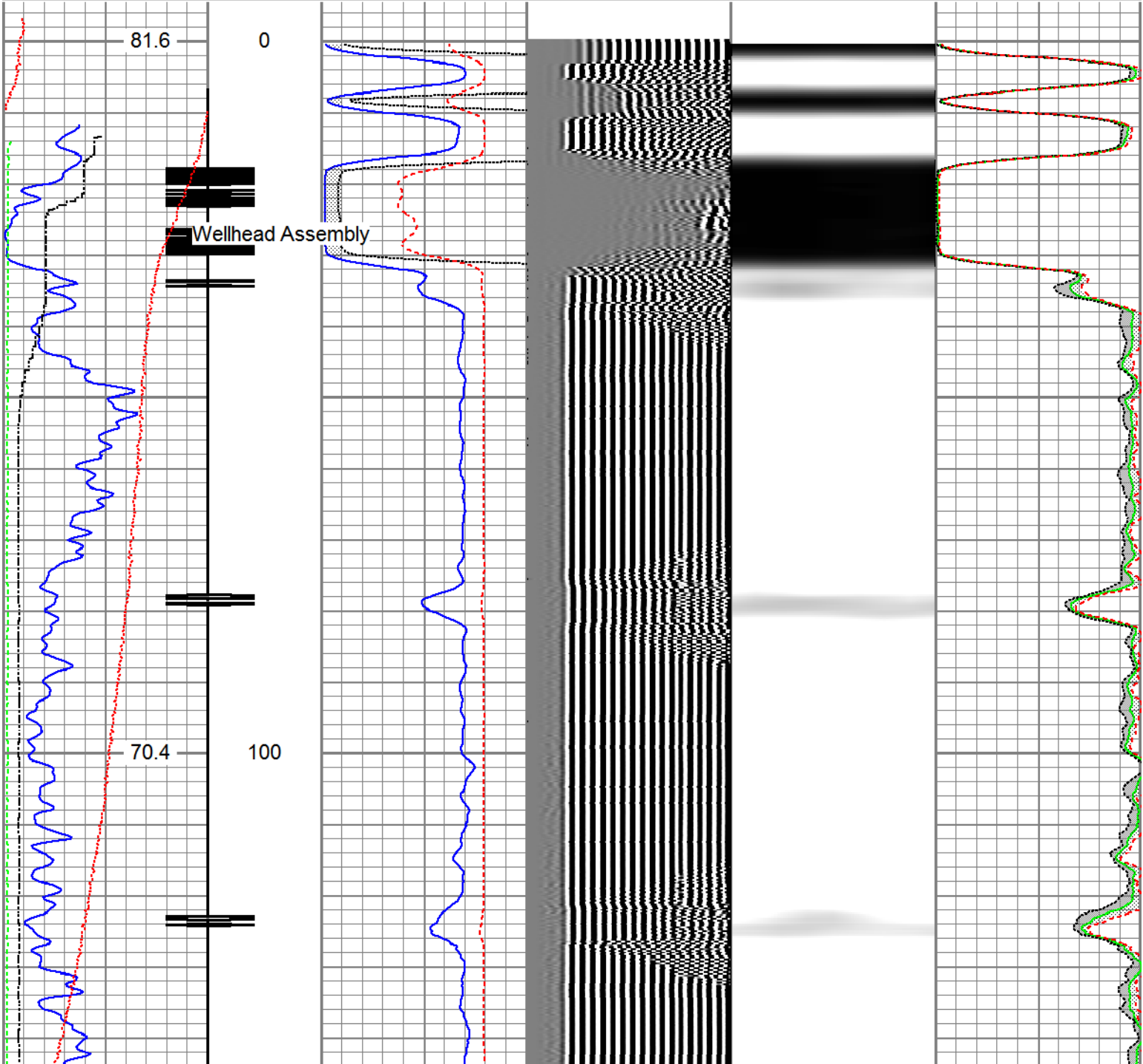


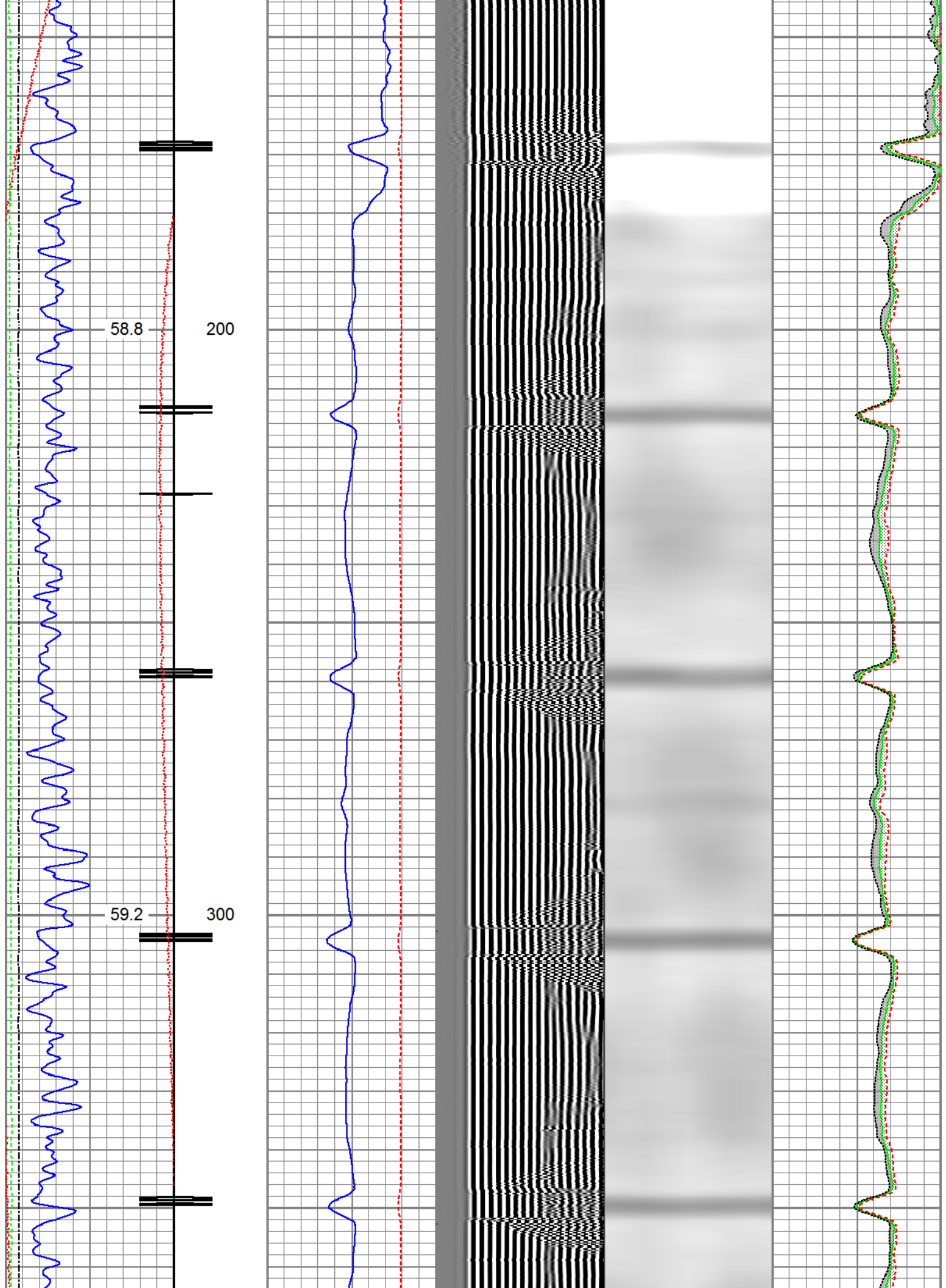
Main Pass

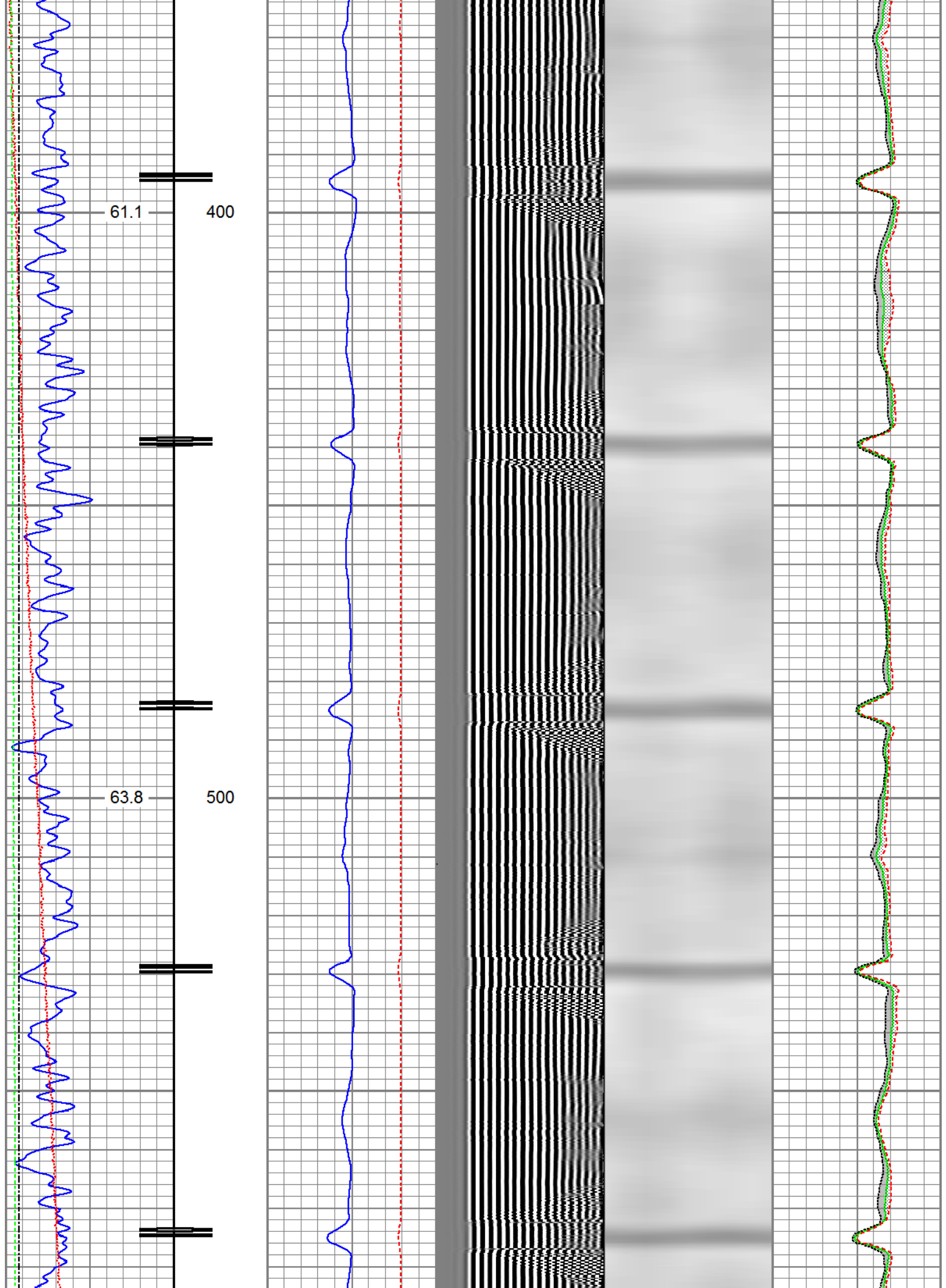
Recorded With 2800 PSI of Surface Induced Pressure

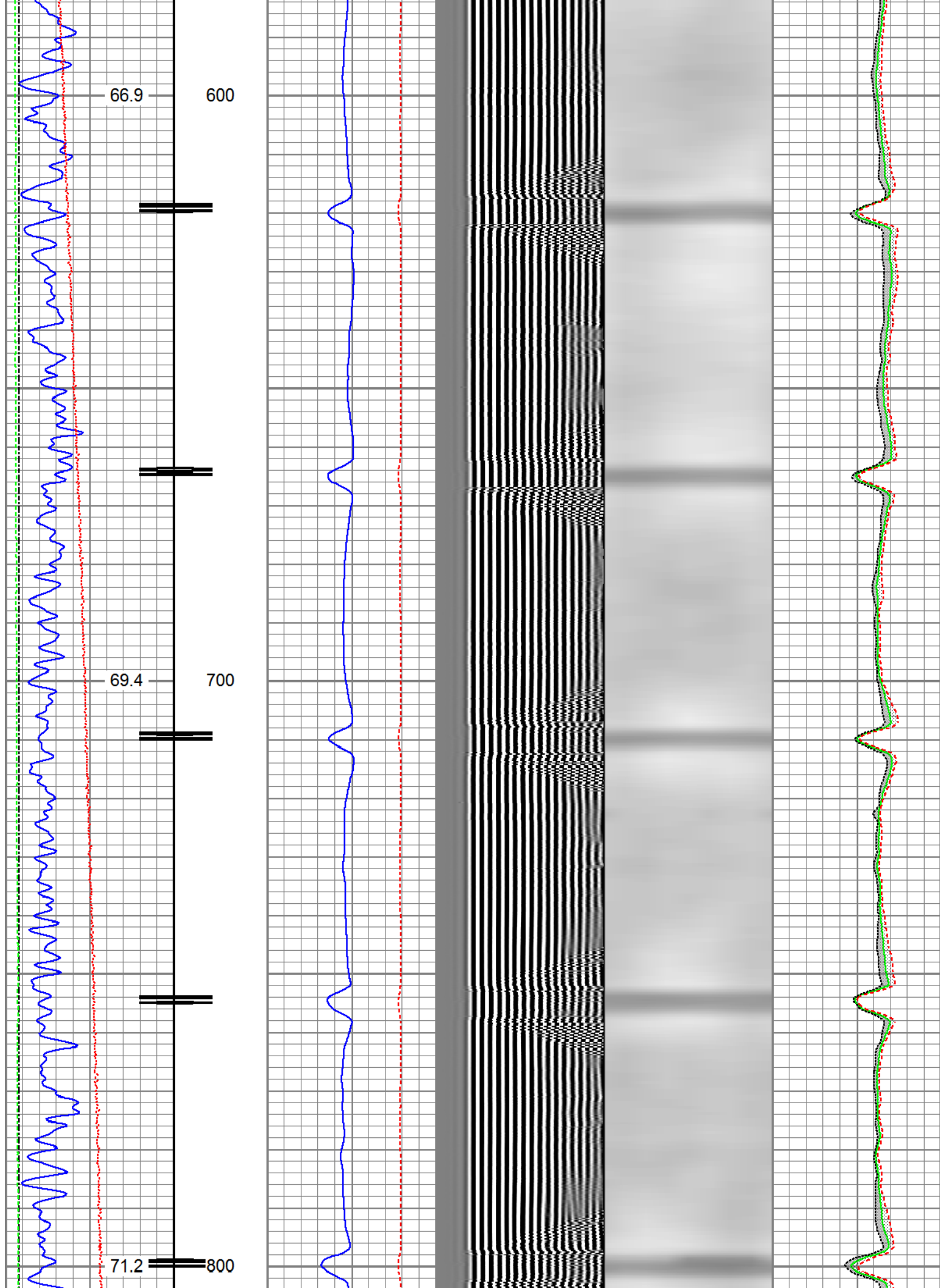
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Dataset Pathname	pass4
Presentation Format	ros_radri
Dataset Creation	Mon May 15 13:39:10 2017
Charted by	Depth in Feet scaled 1:240

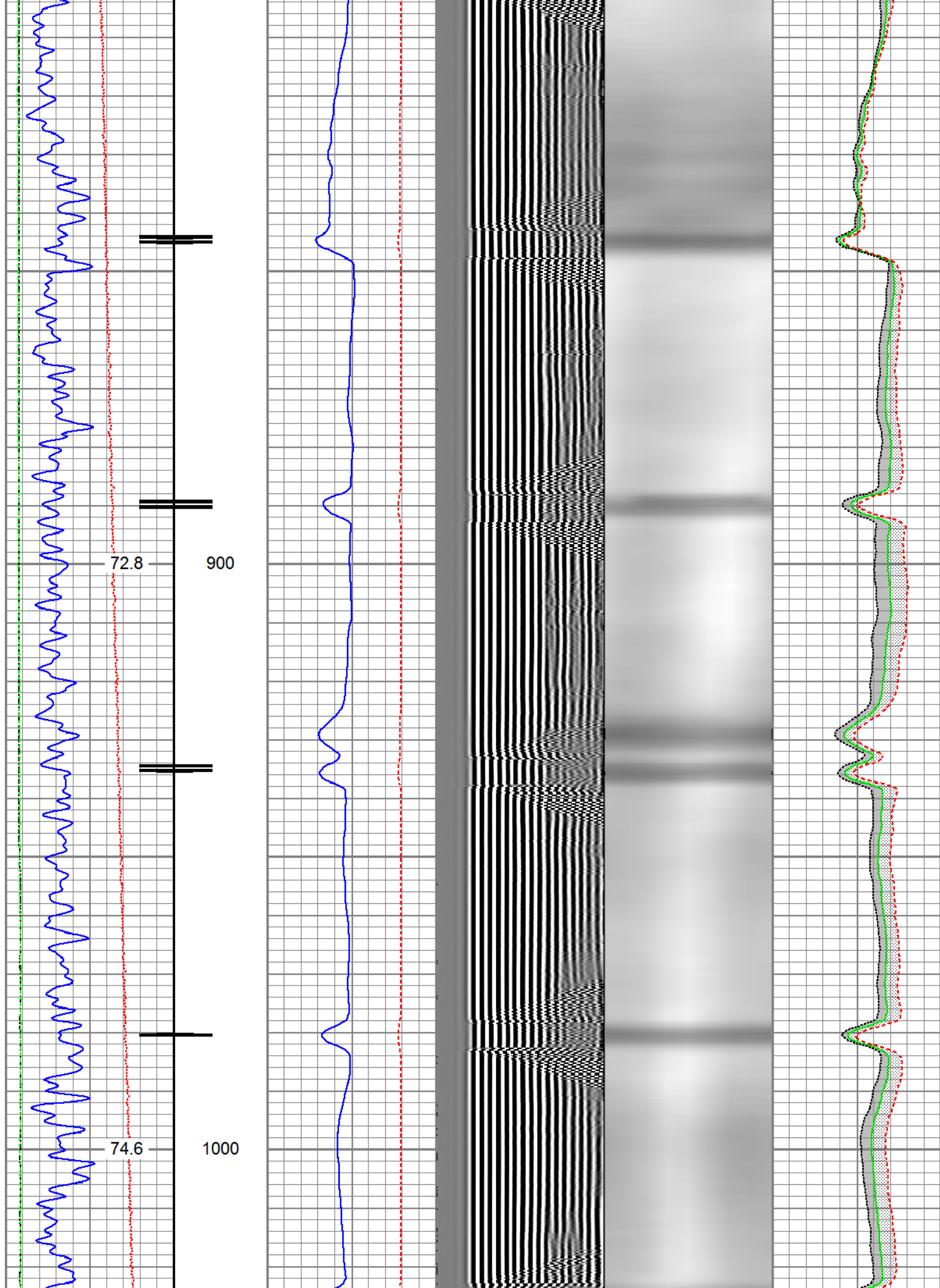
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
Temperature	3' Travel Time			Maximum Amplitude
0 (degF) 20	650 (usec) 150			0 100
Line Speed				
-150 (ft/min)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

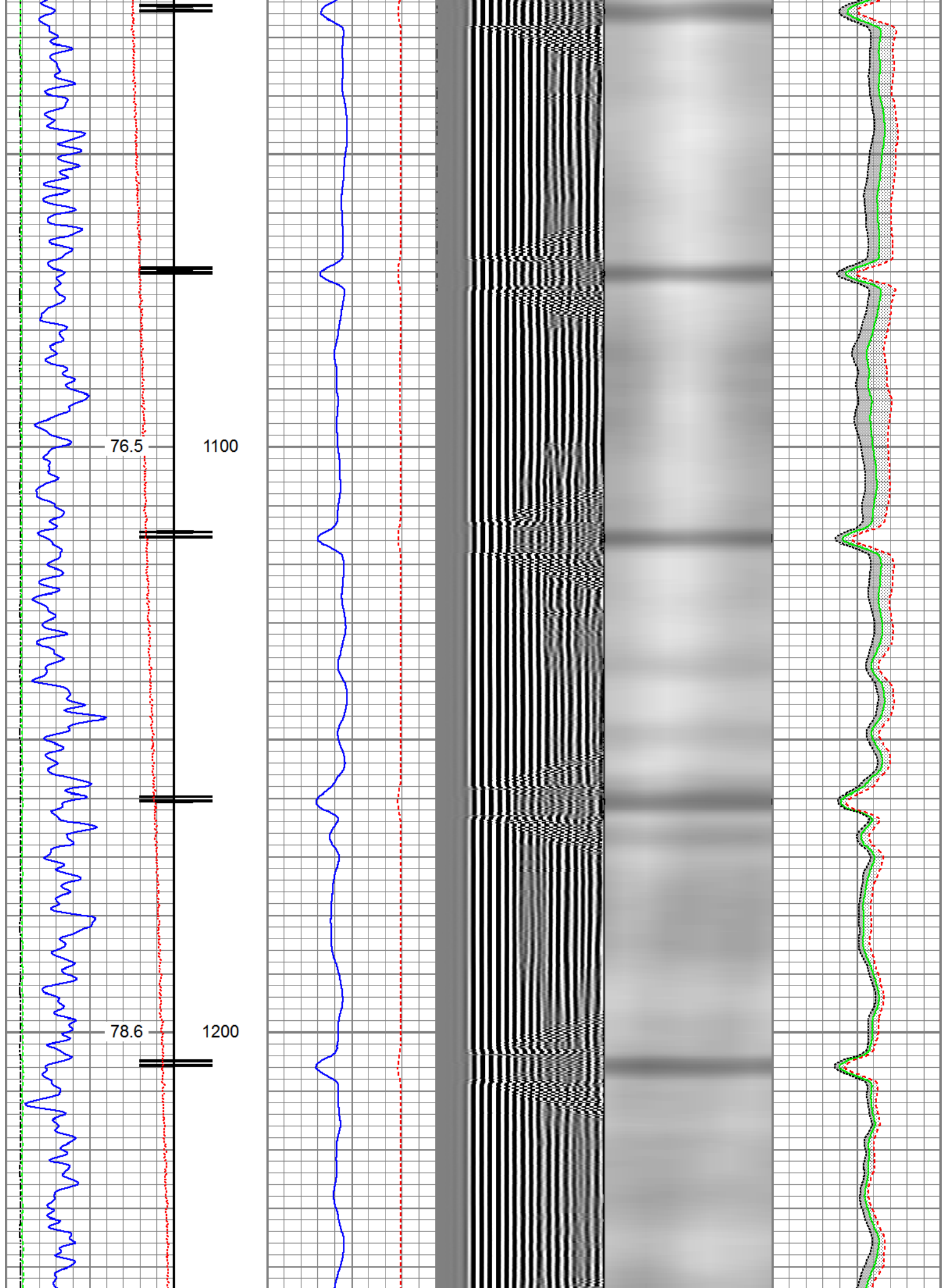


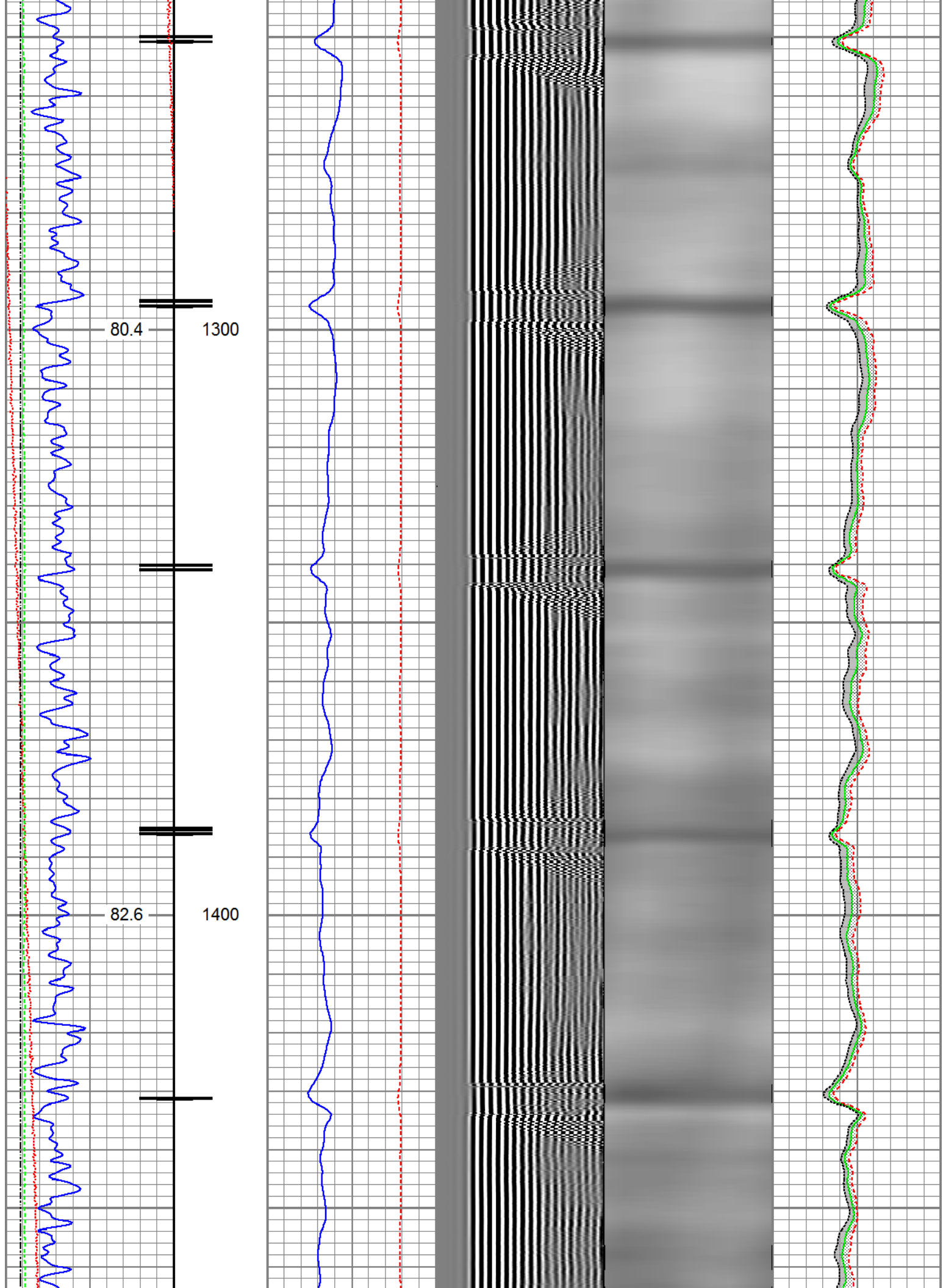


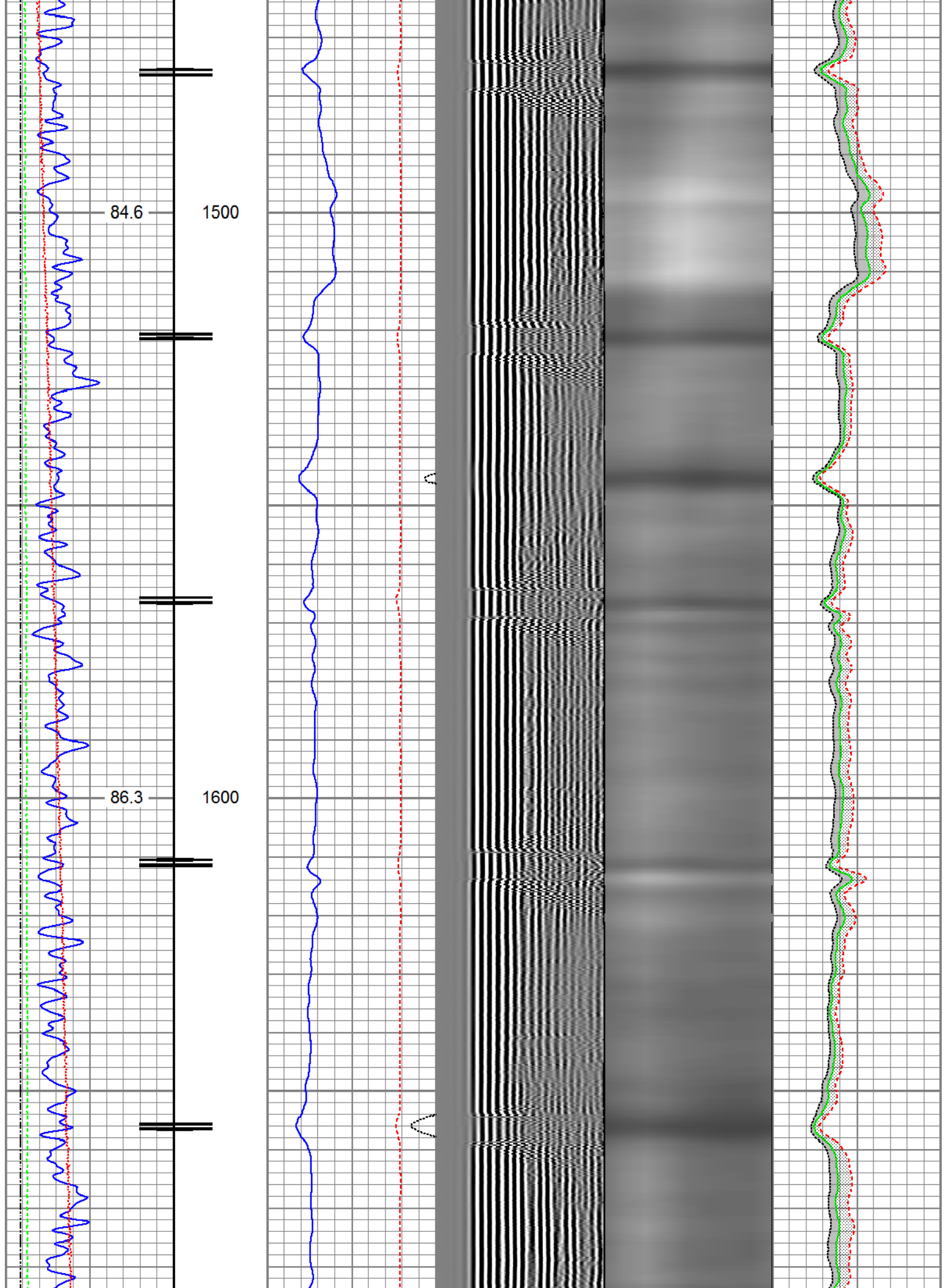


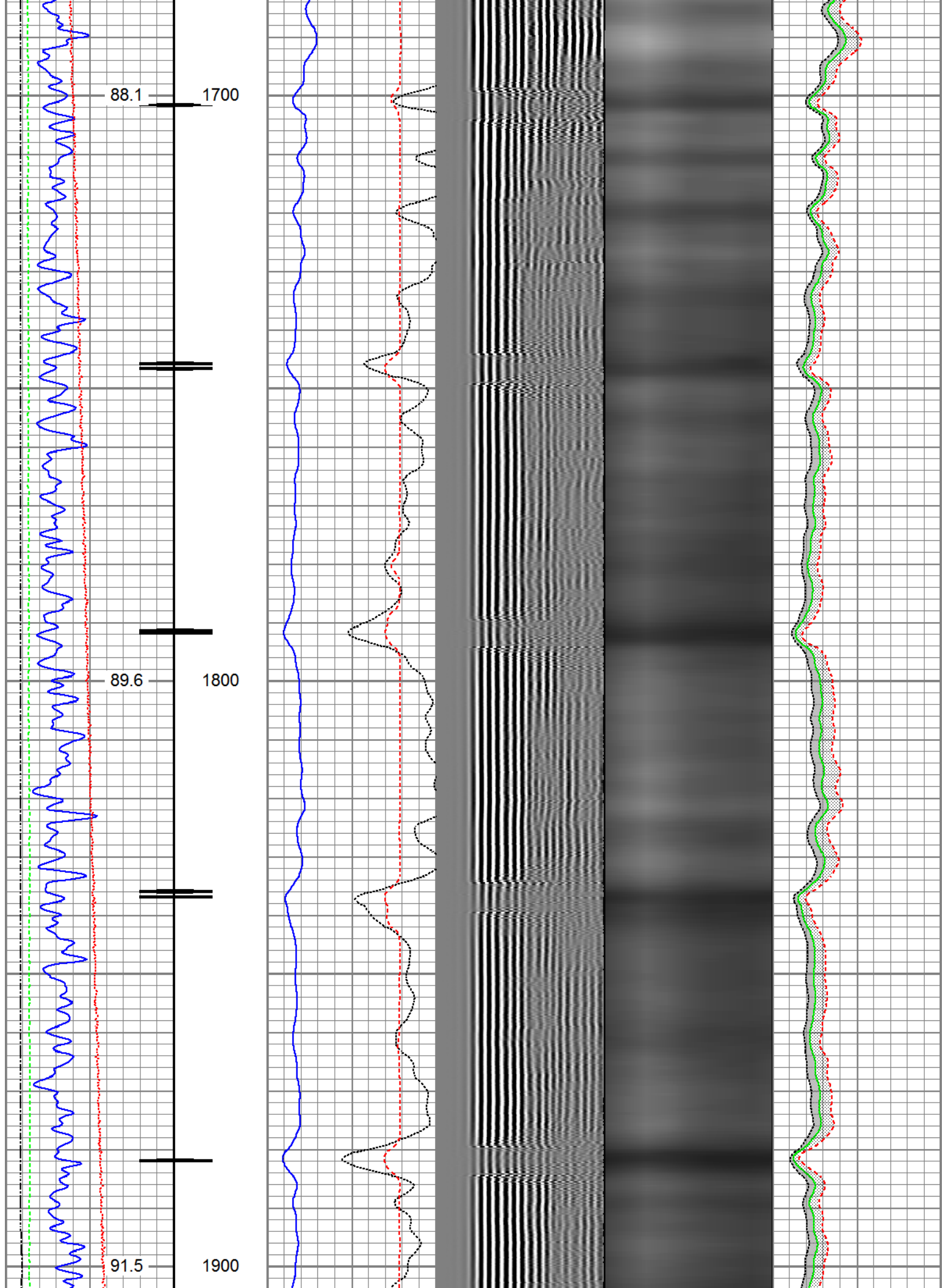


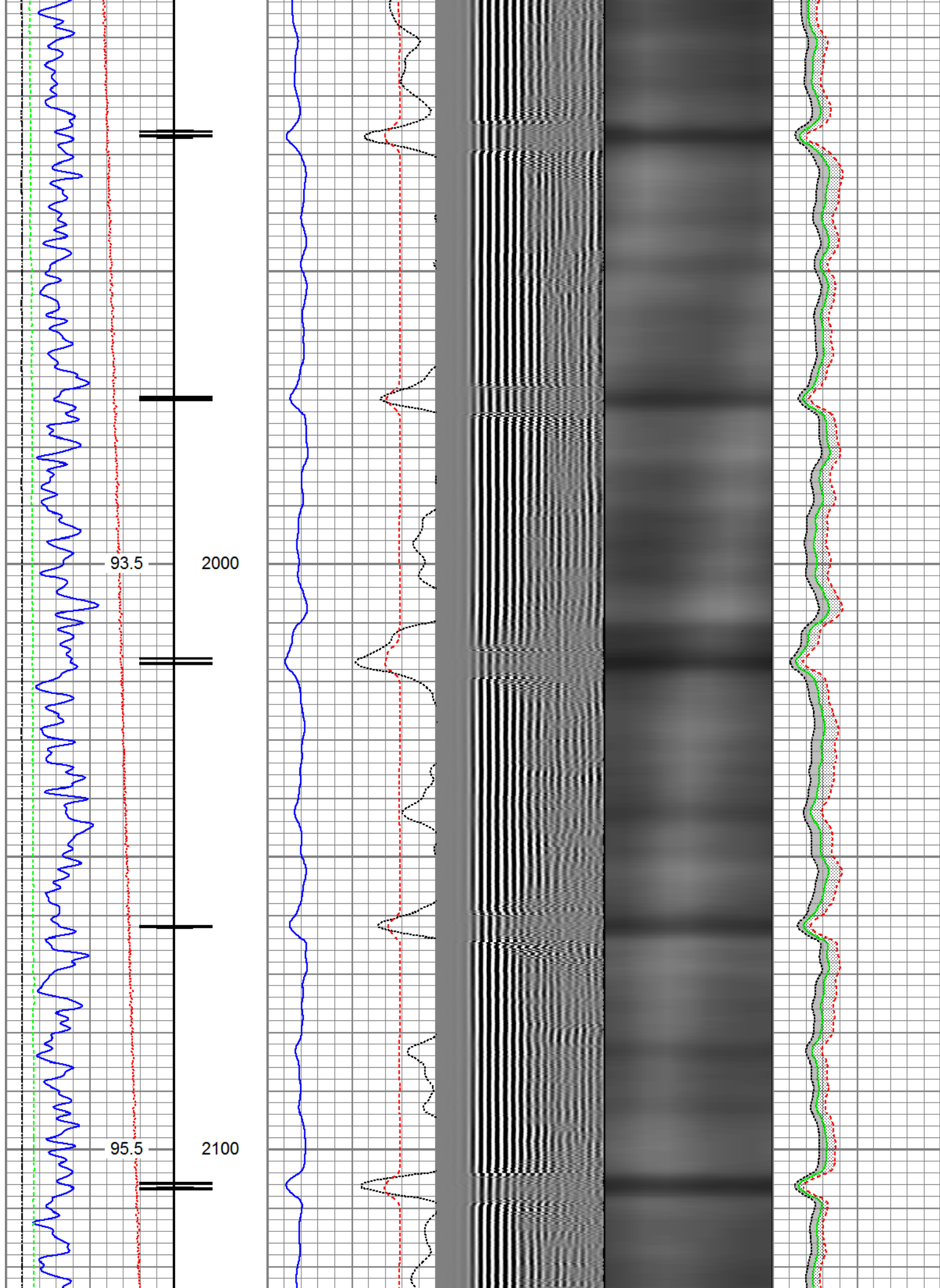


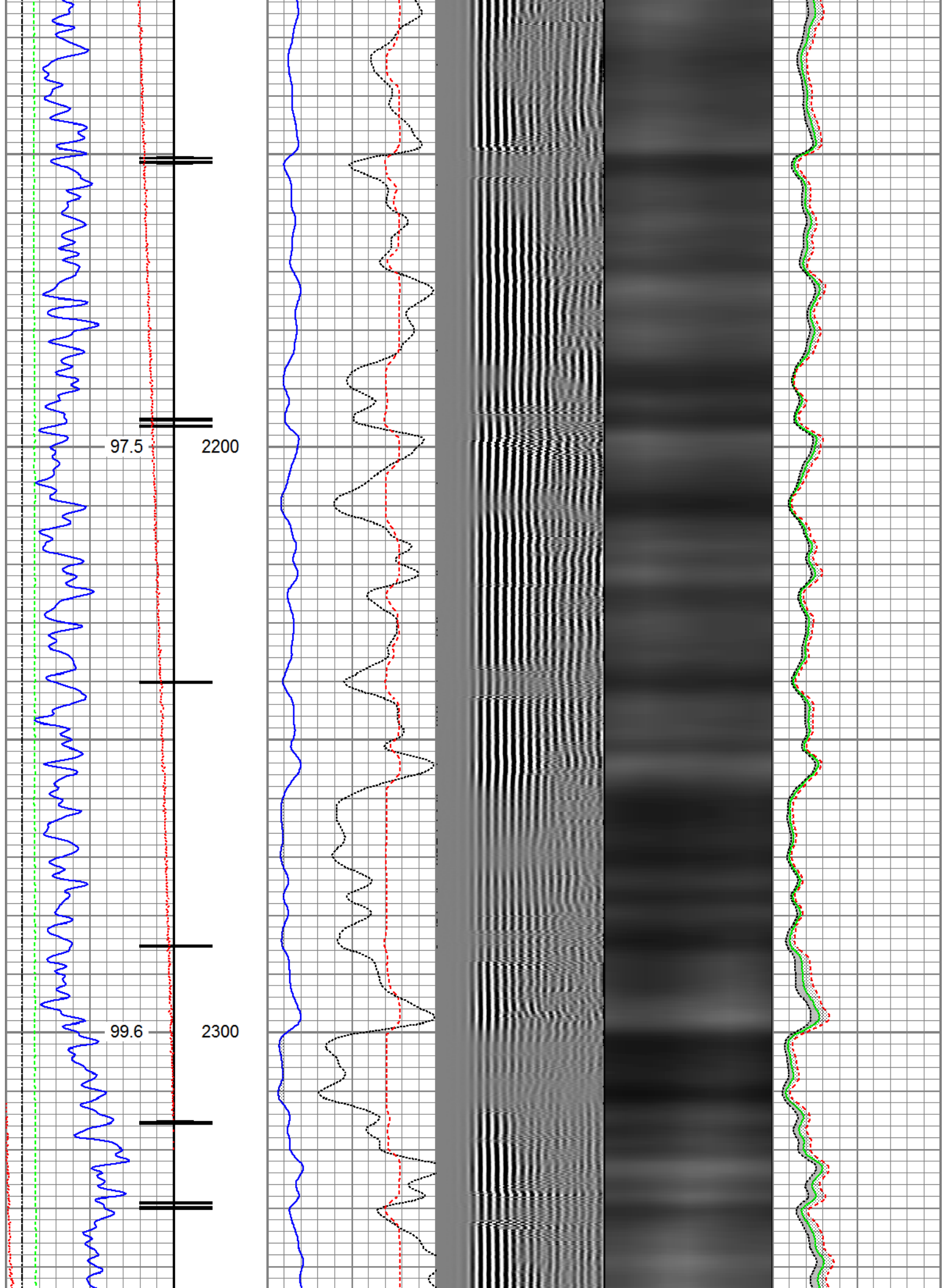


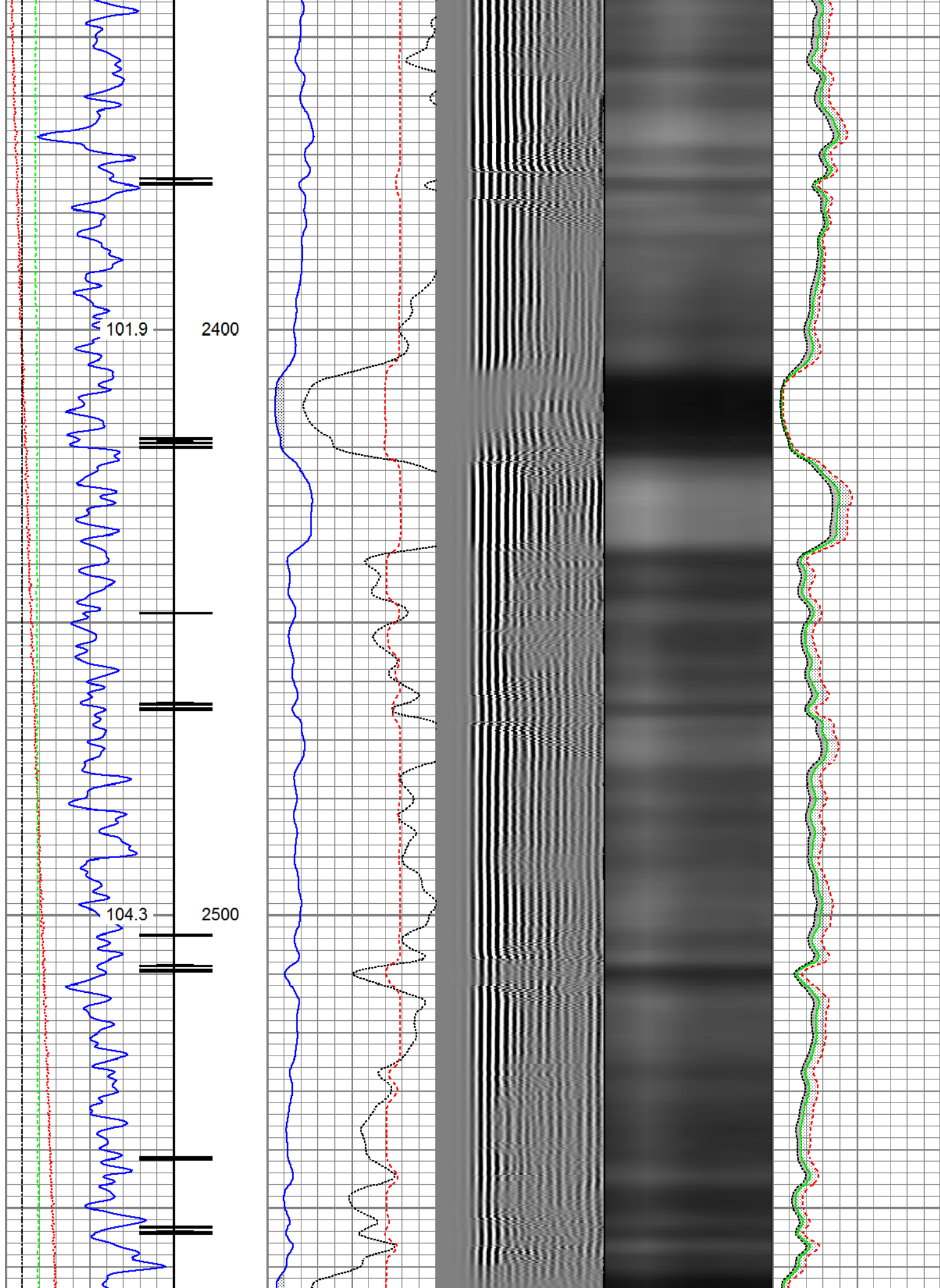


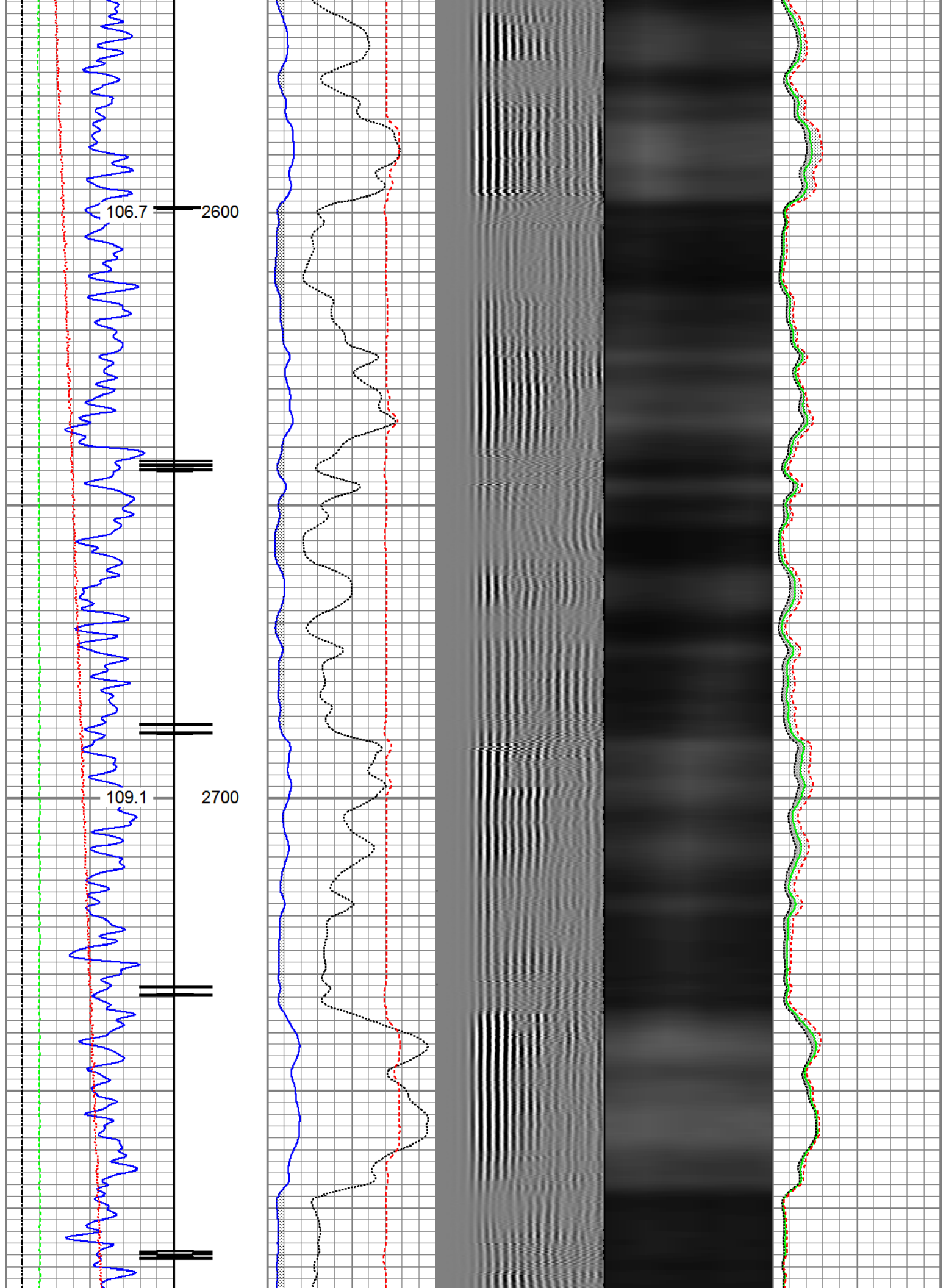


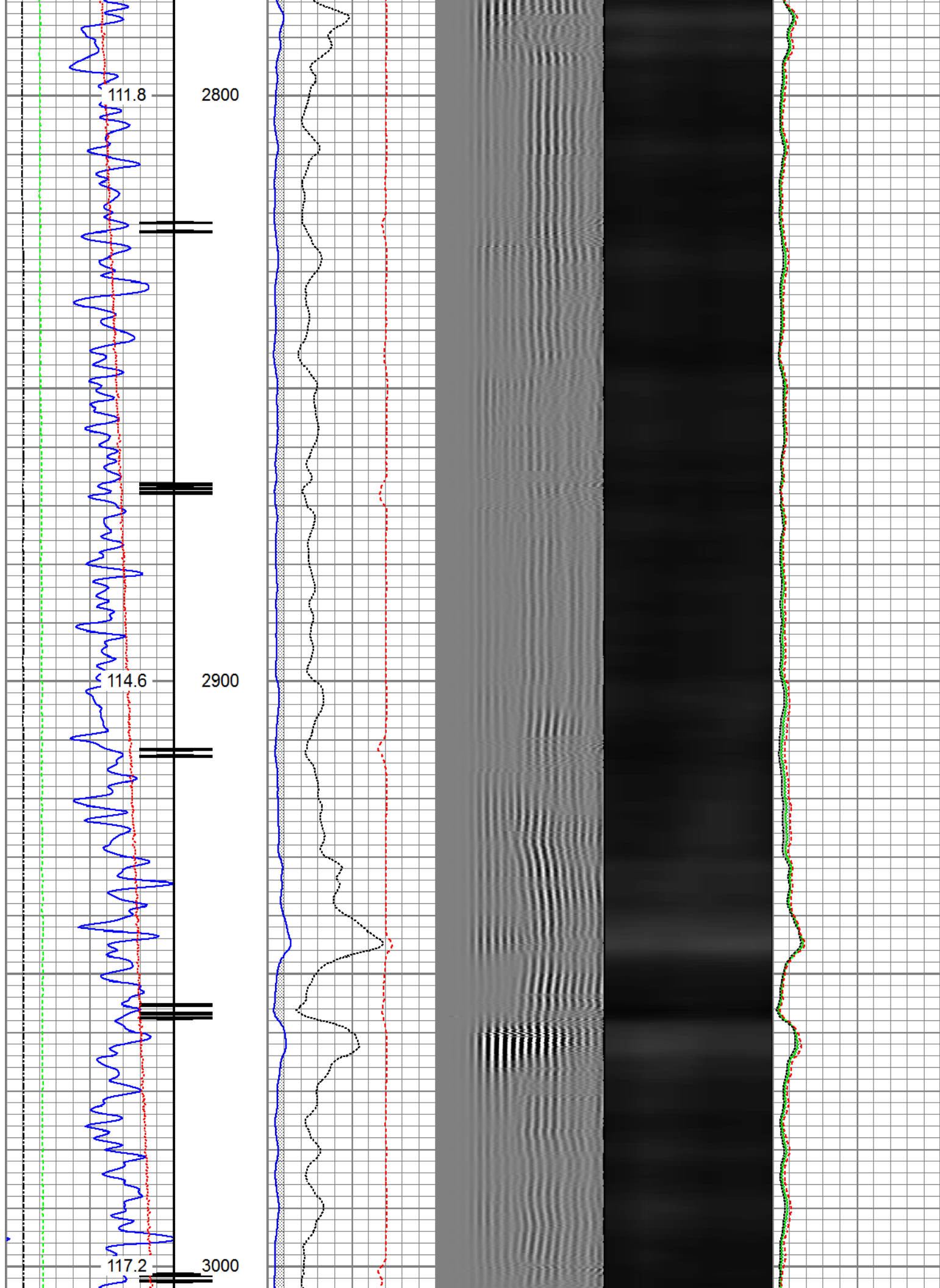


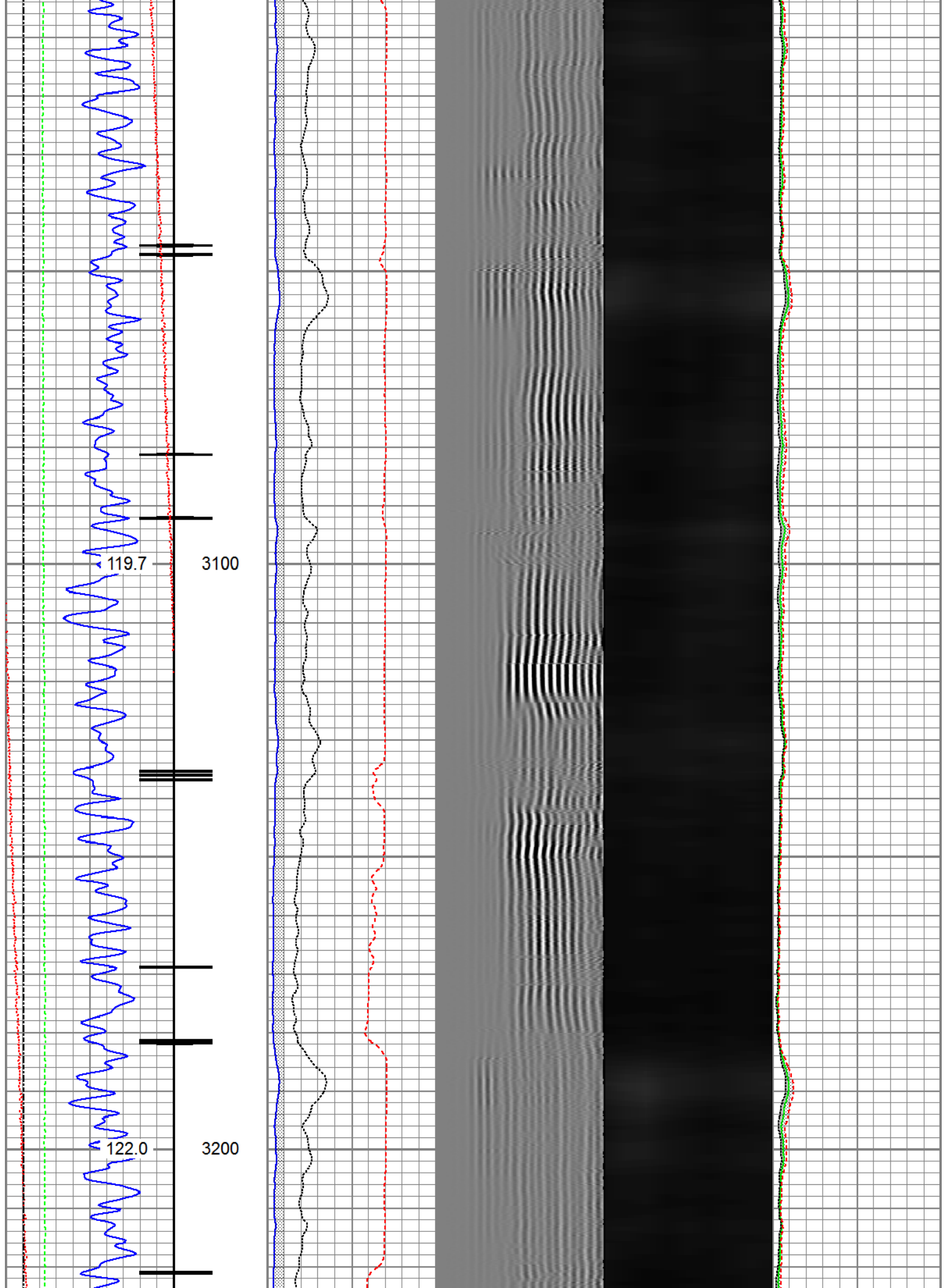


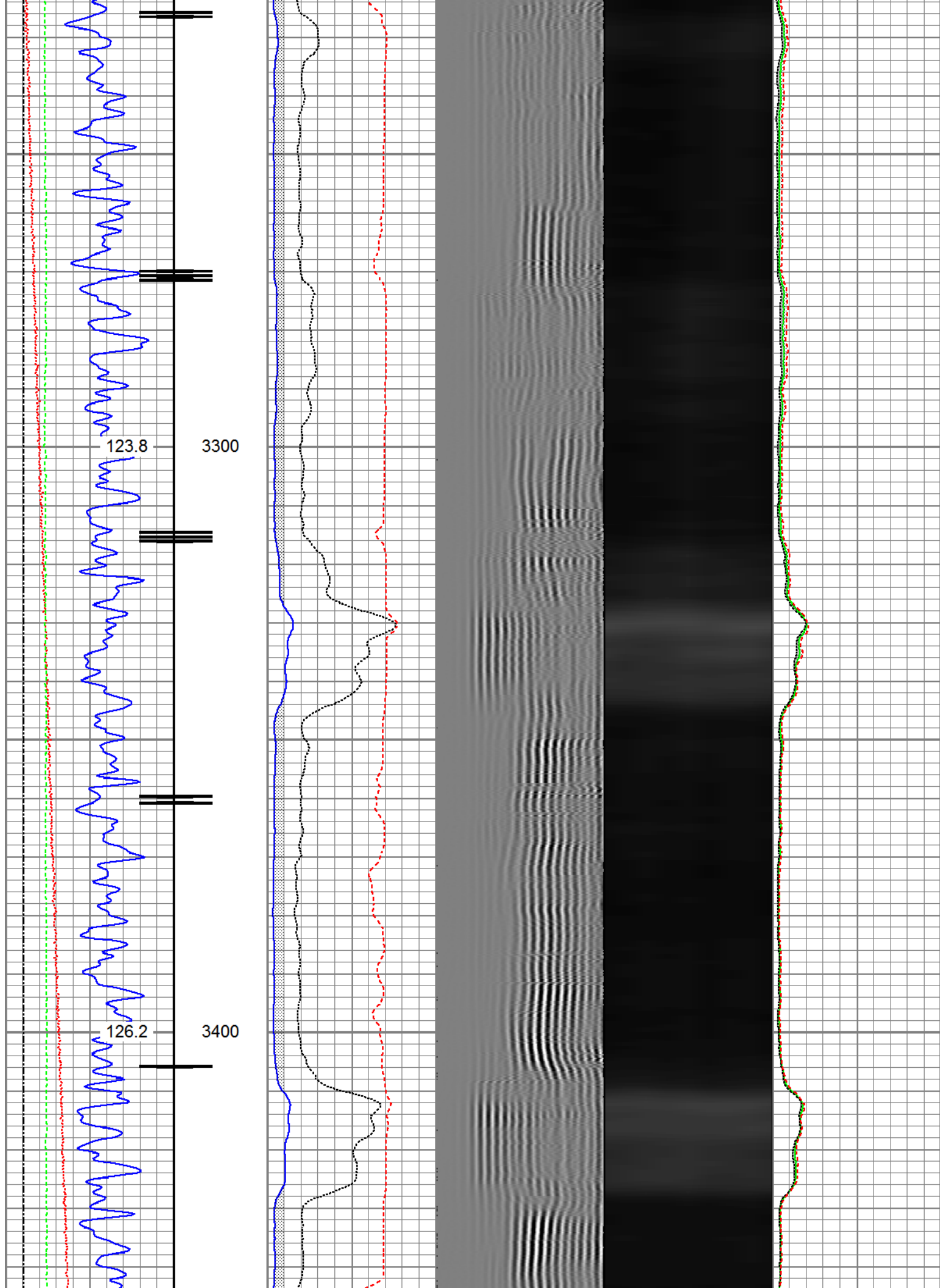


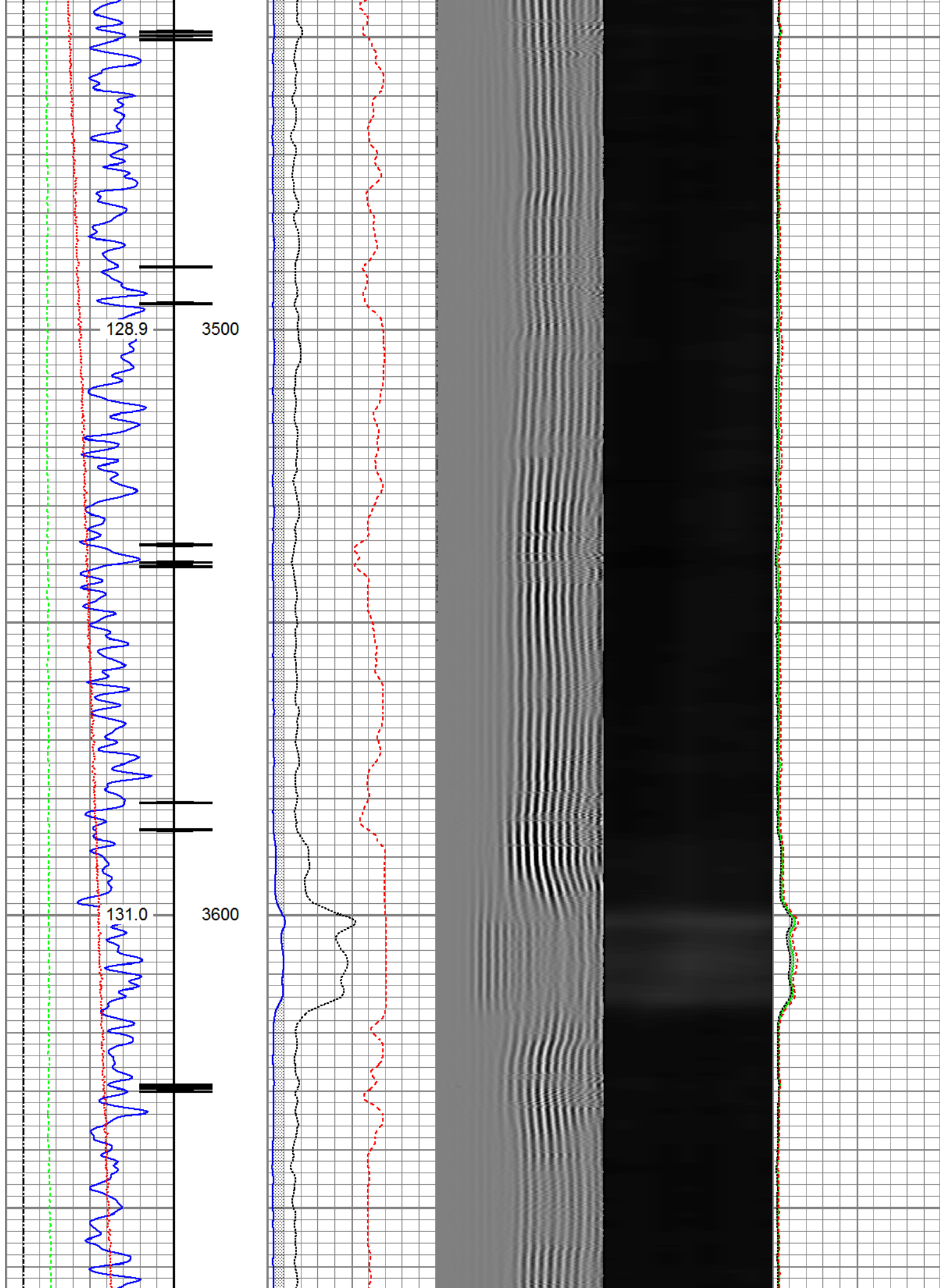


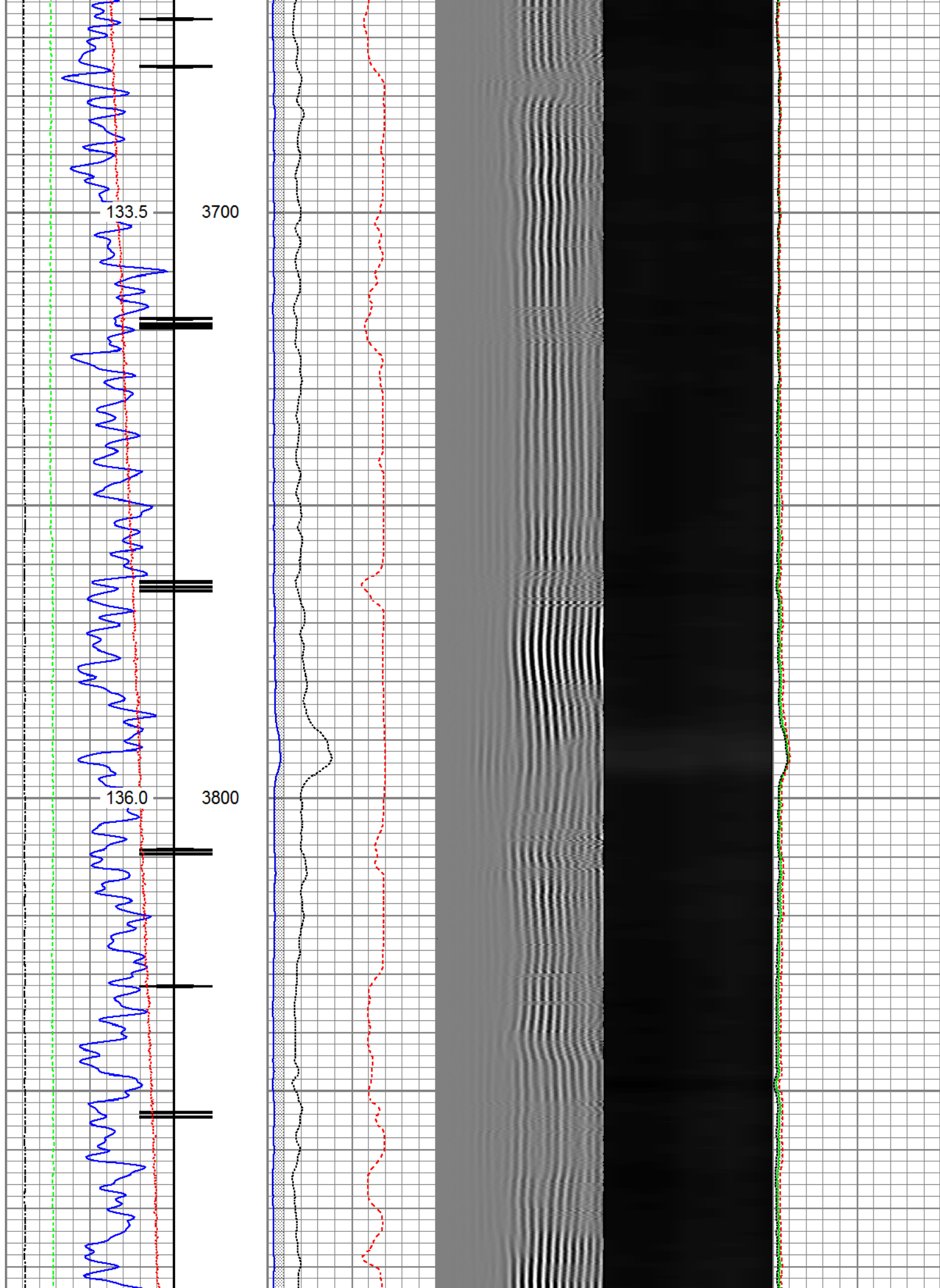


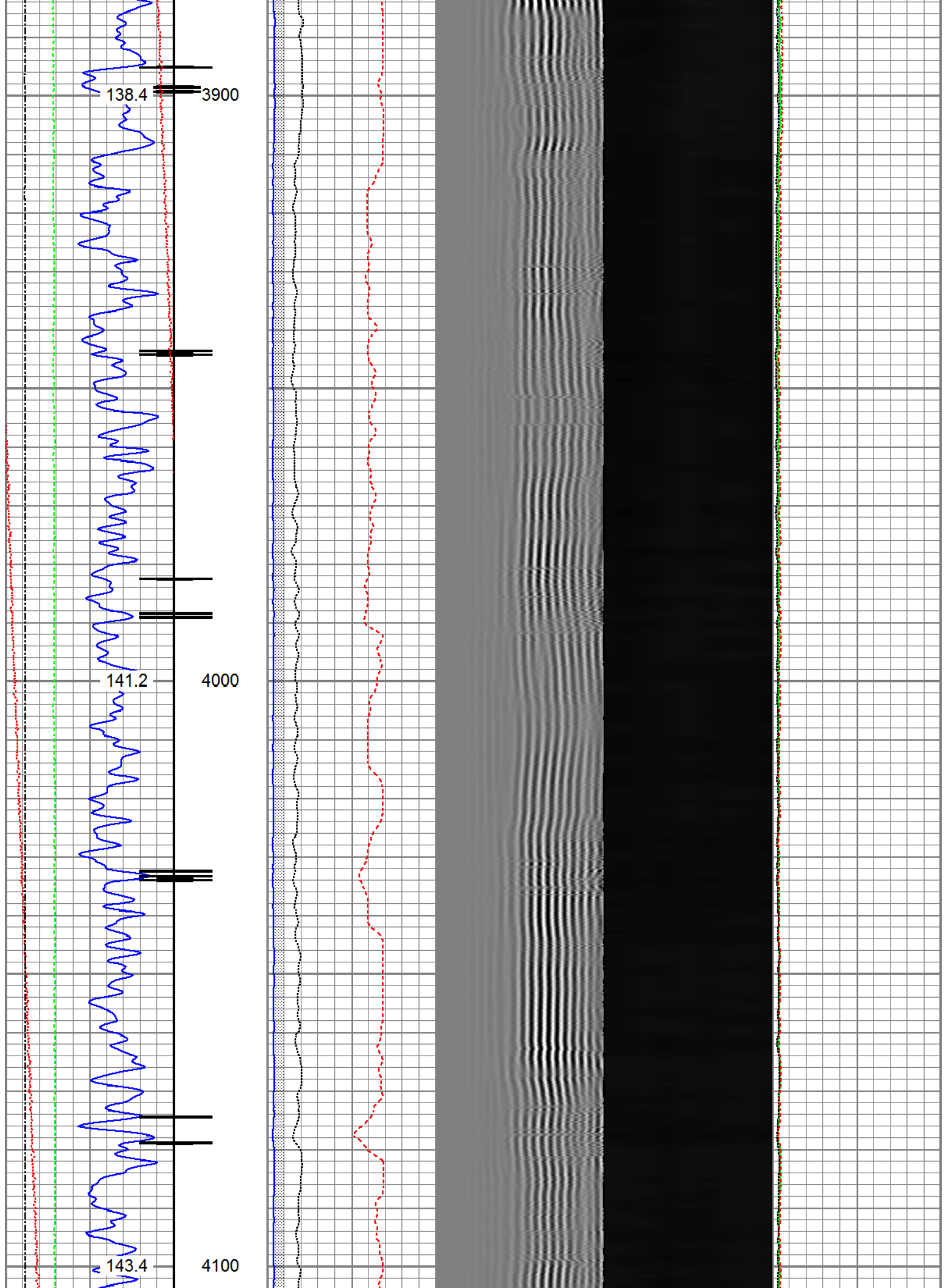


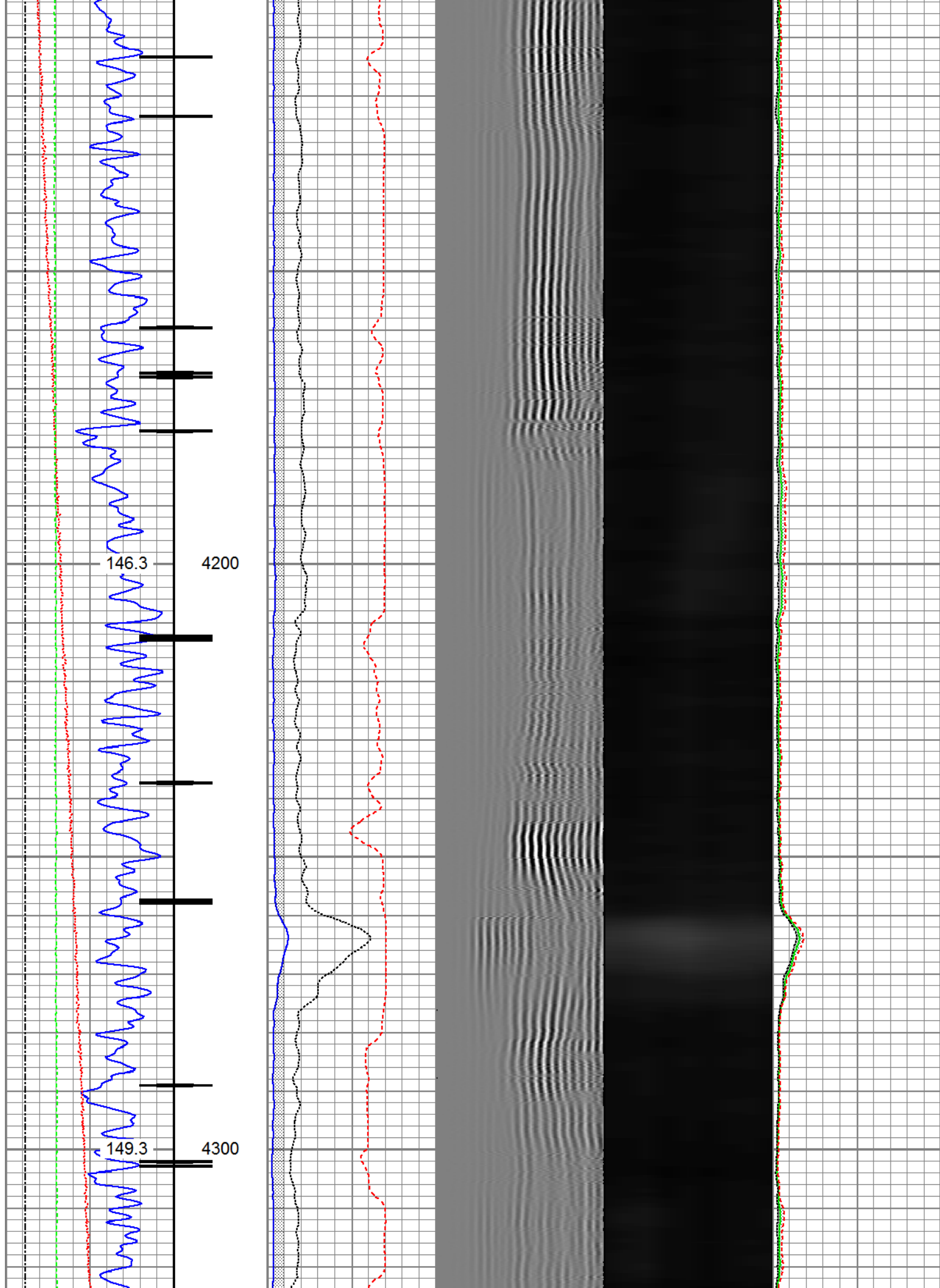


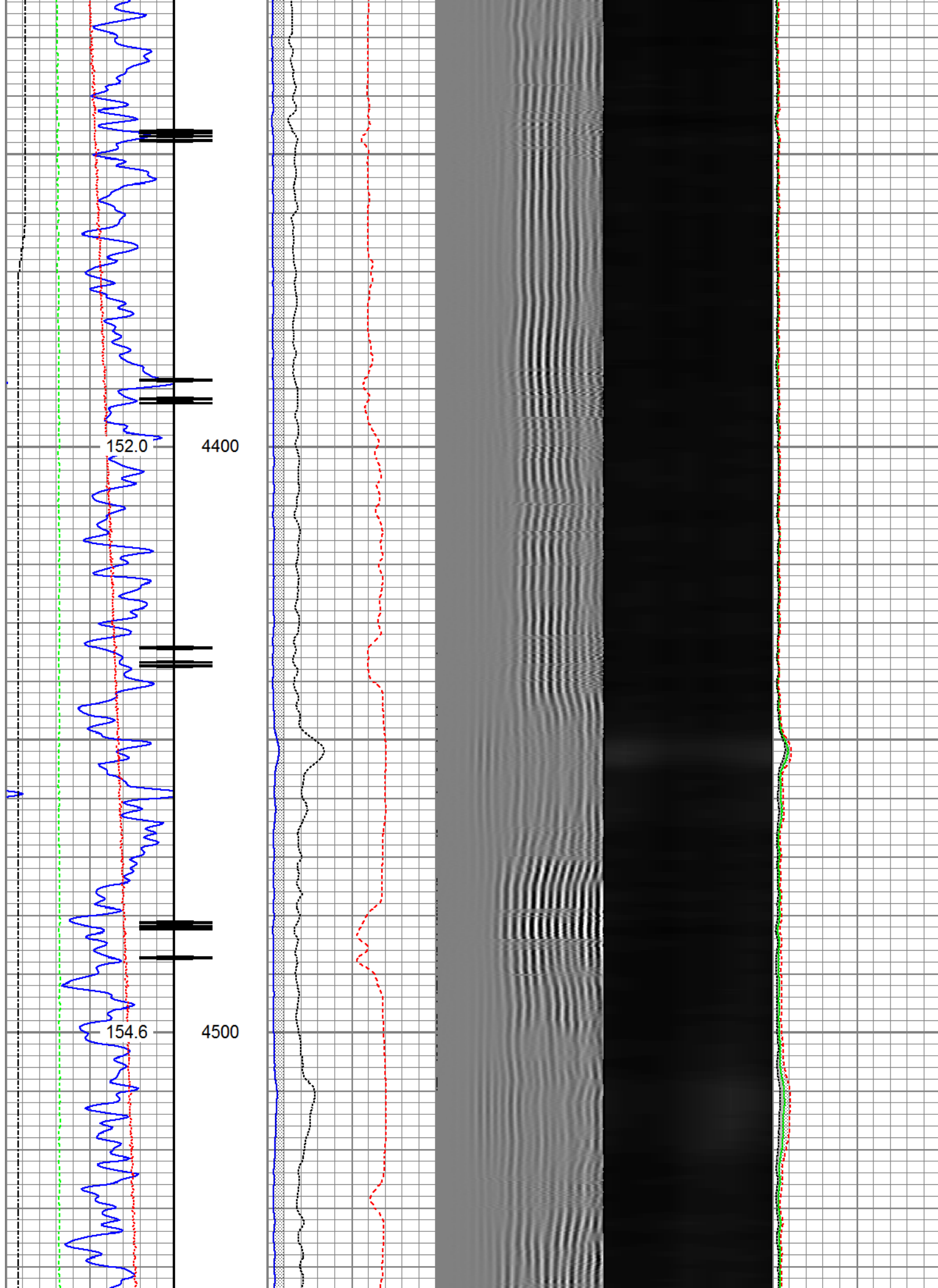


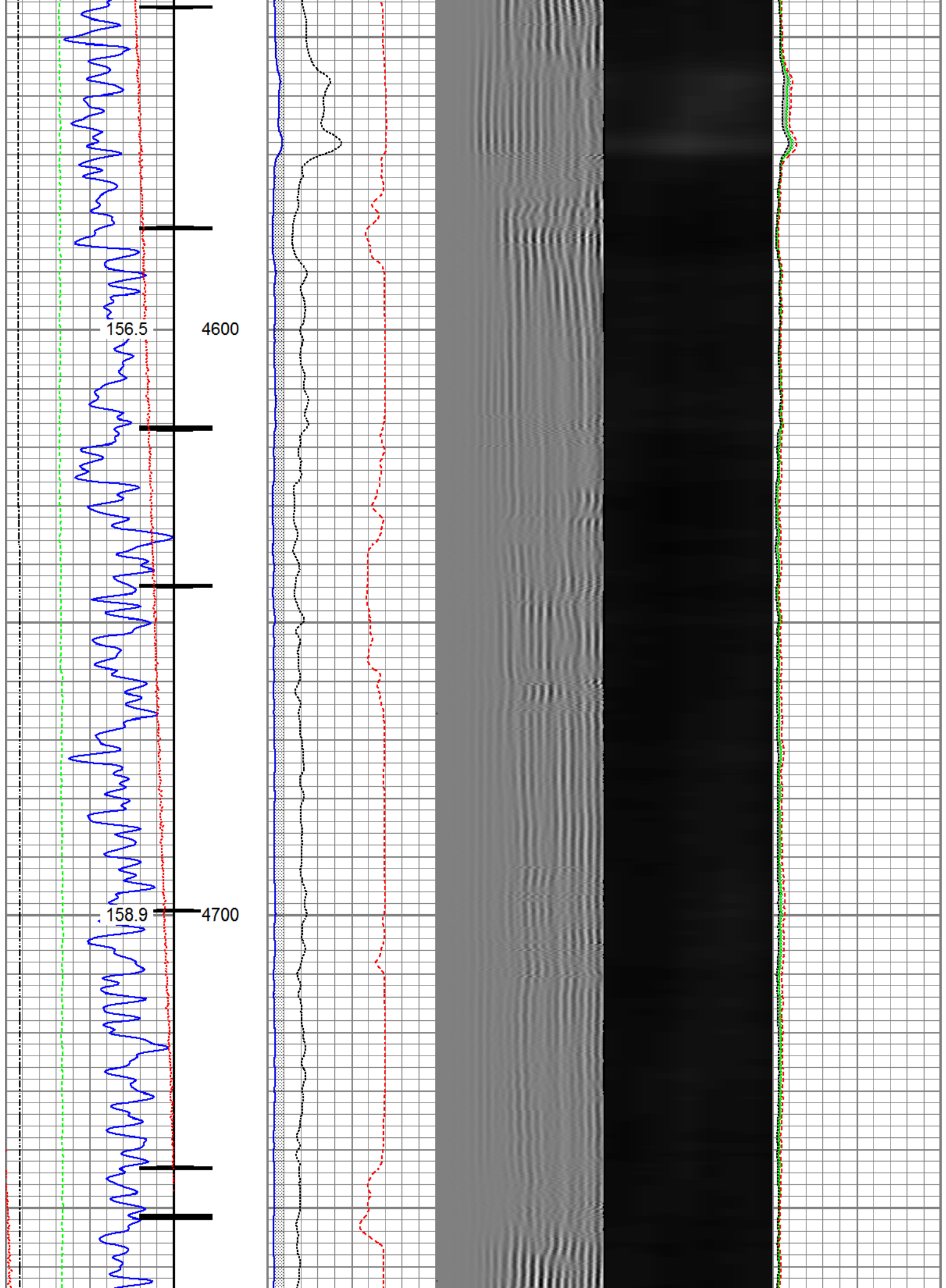


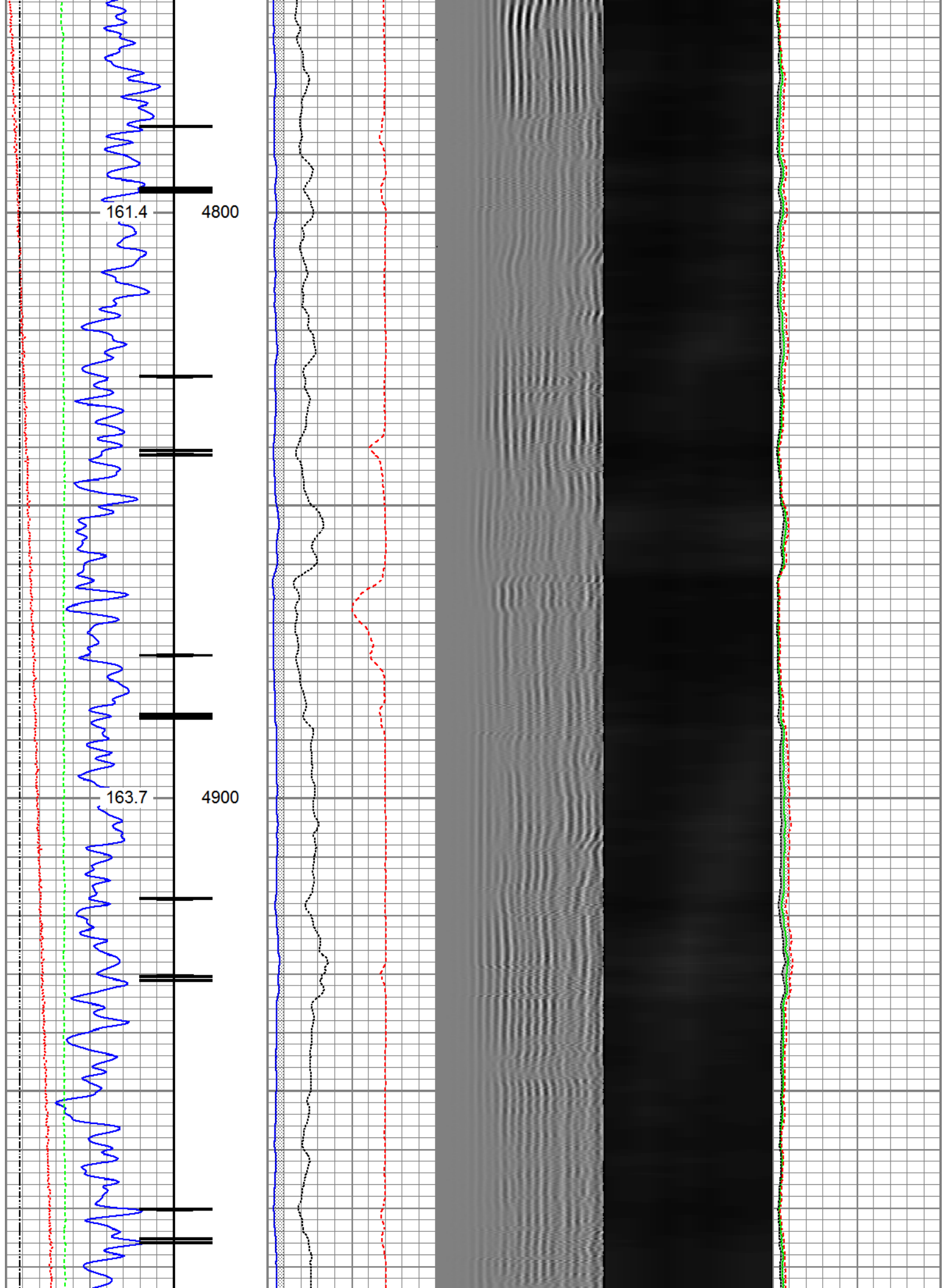


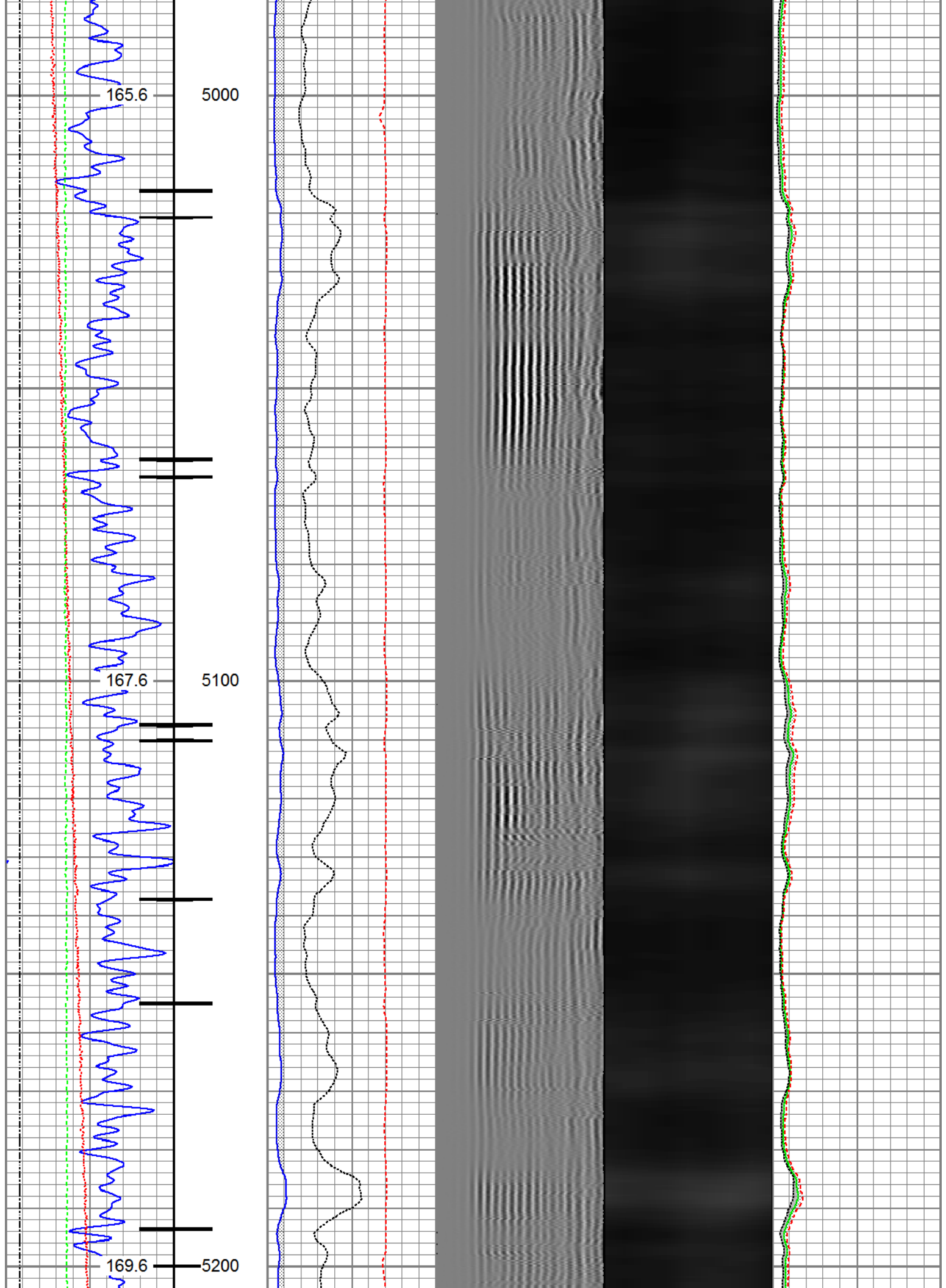


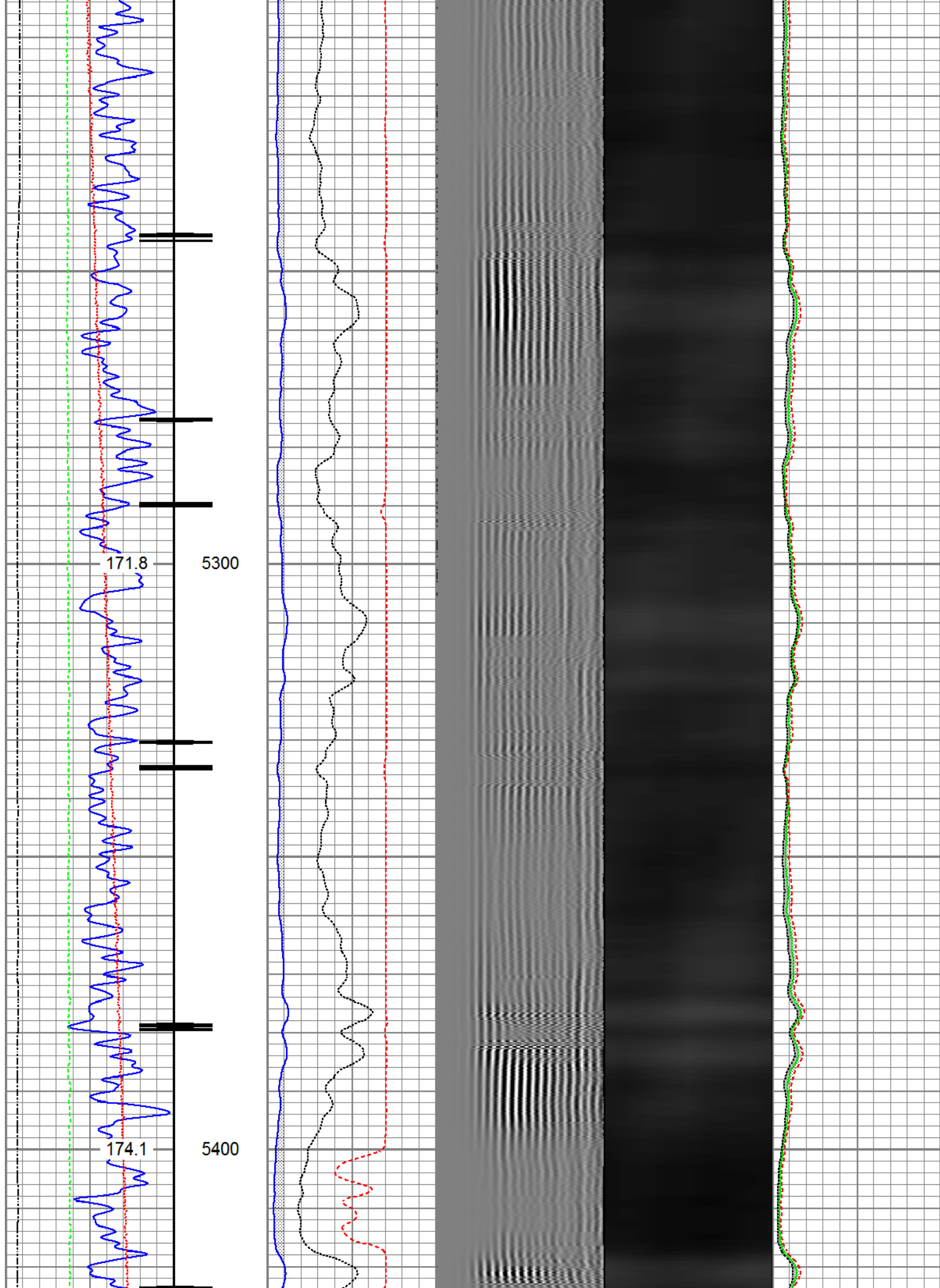


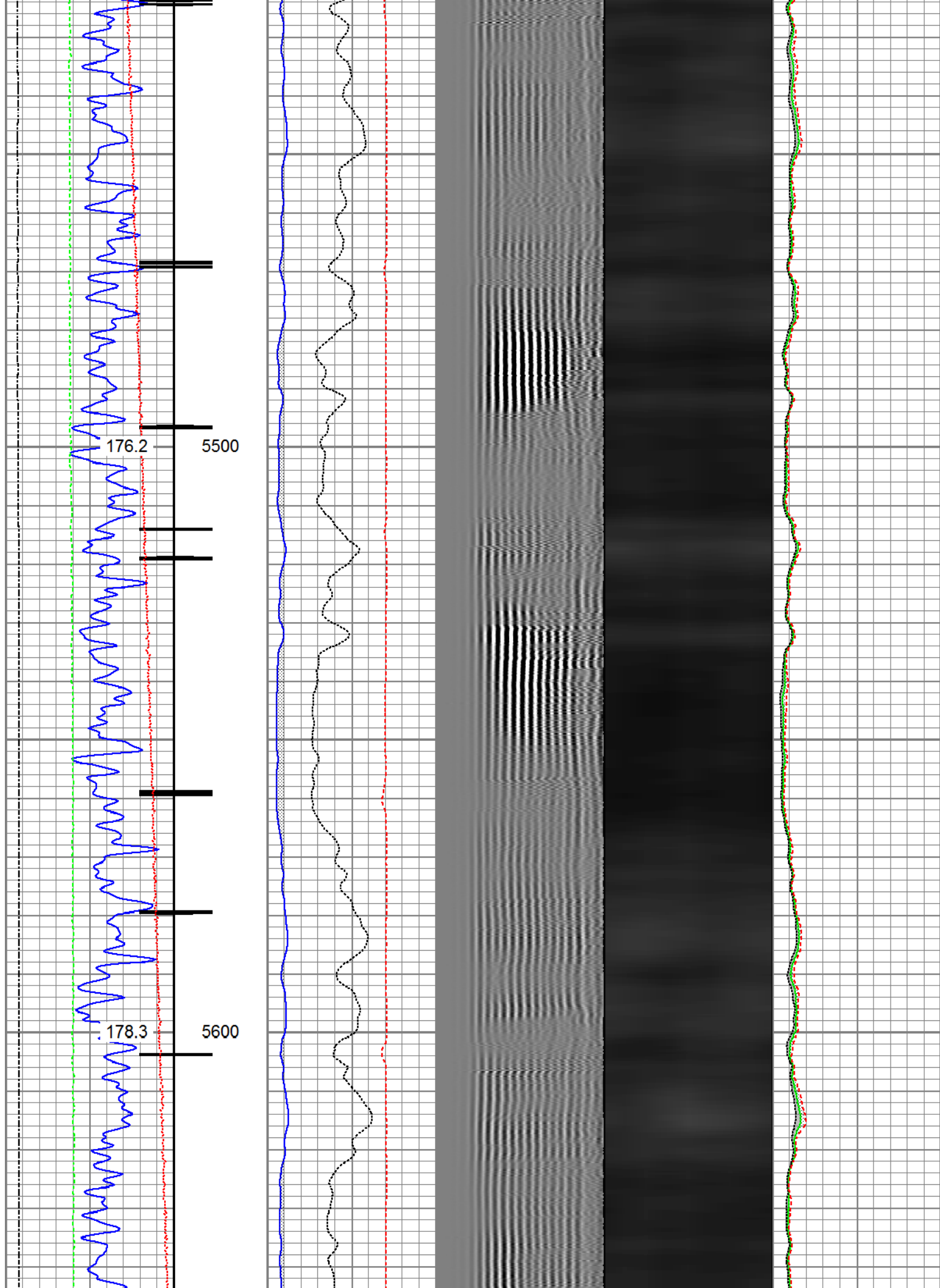


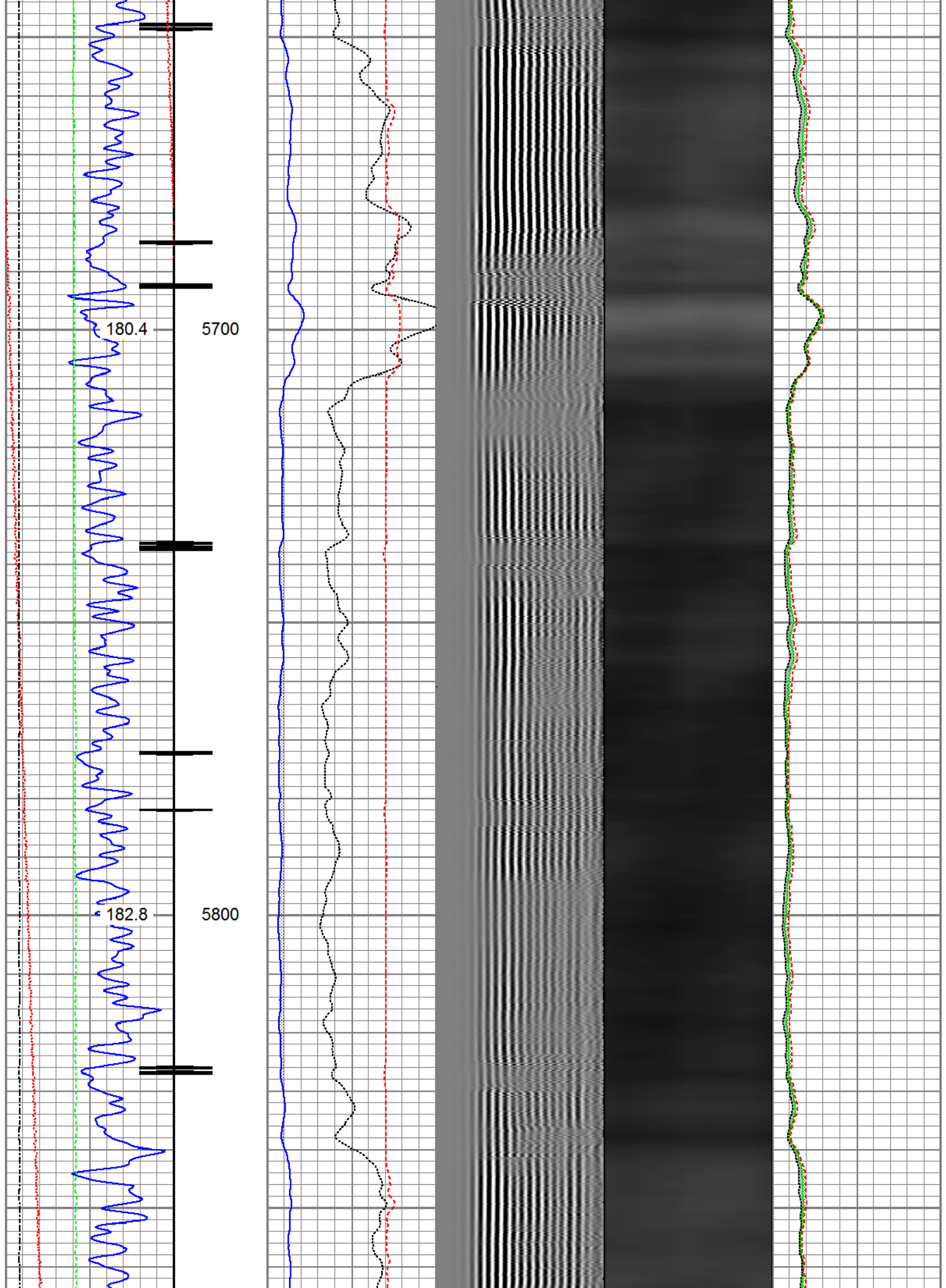


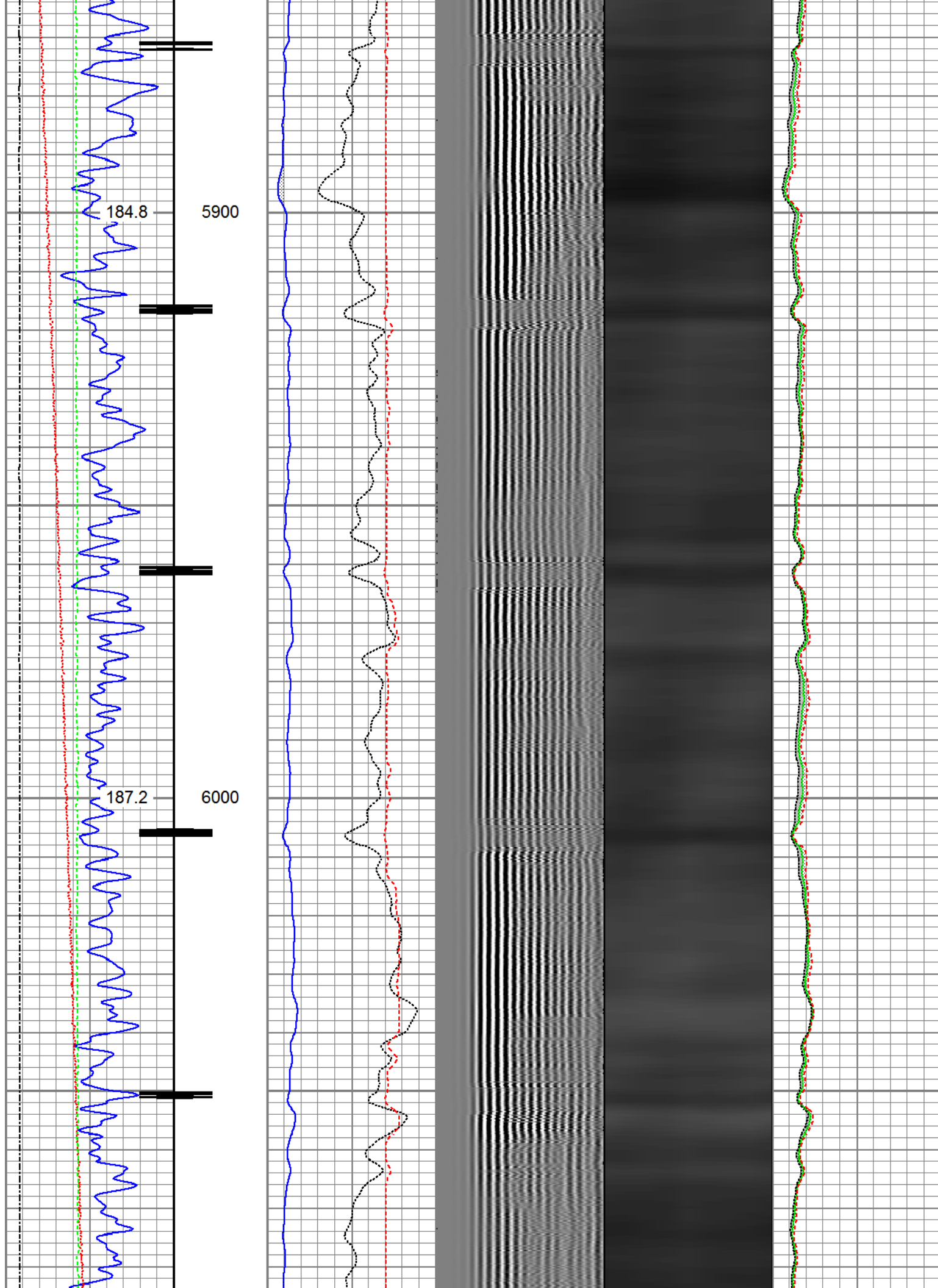


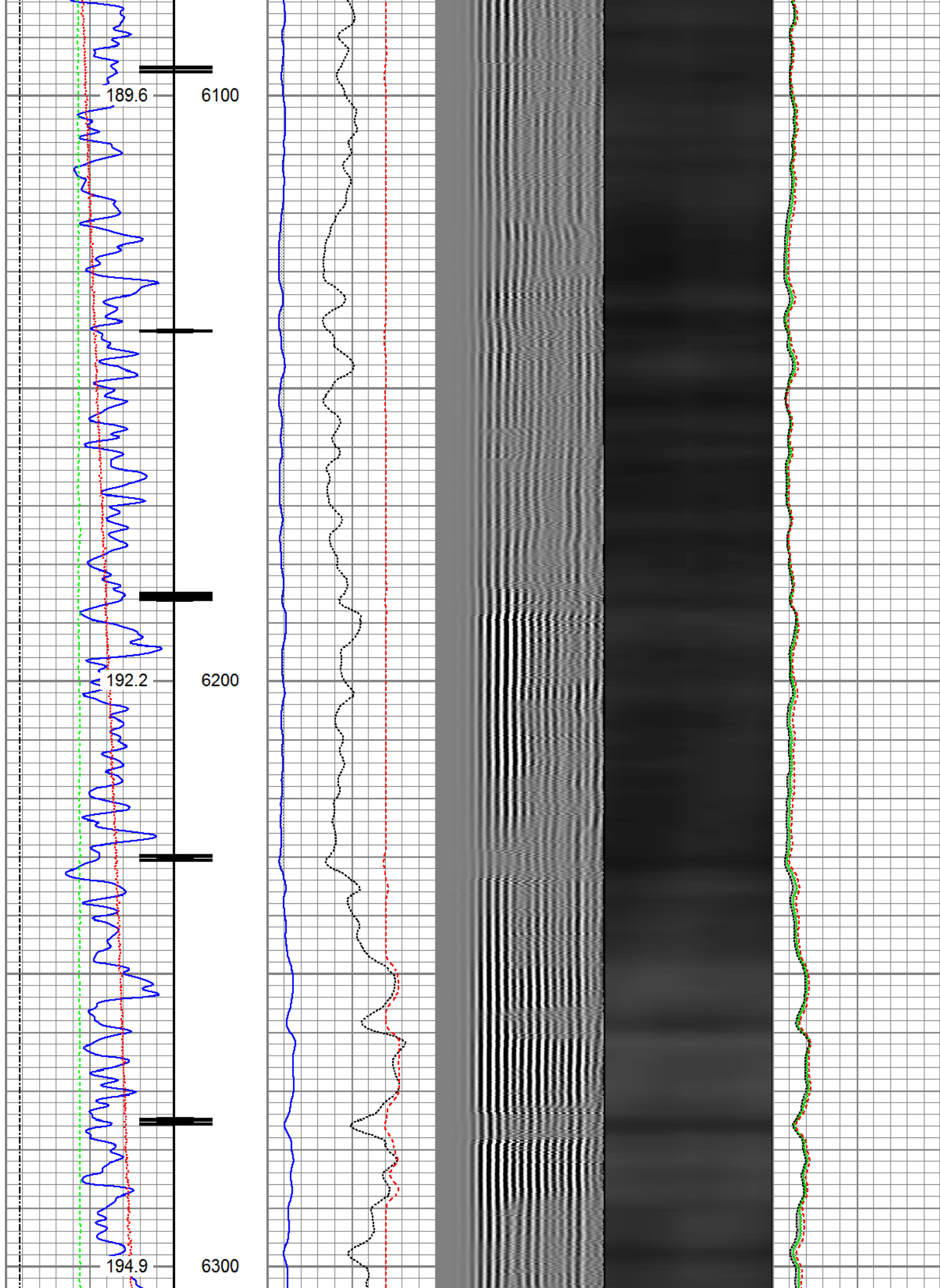


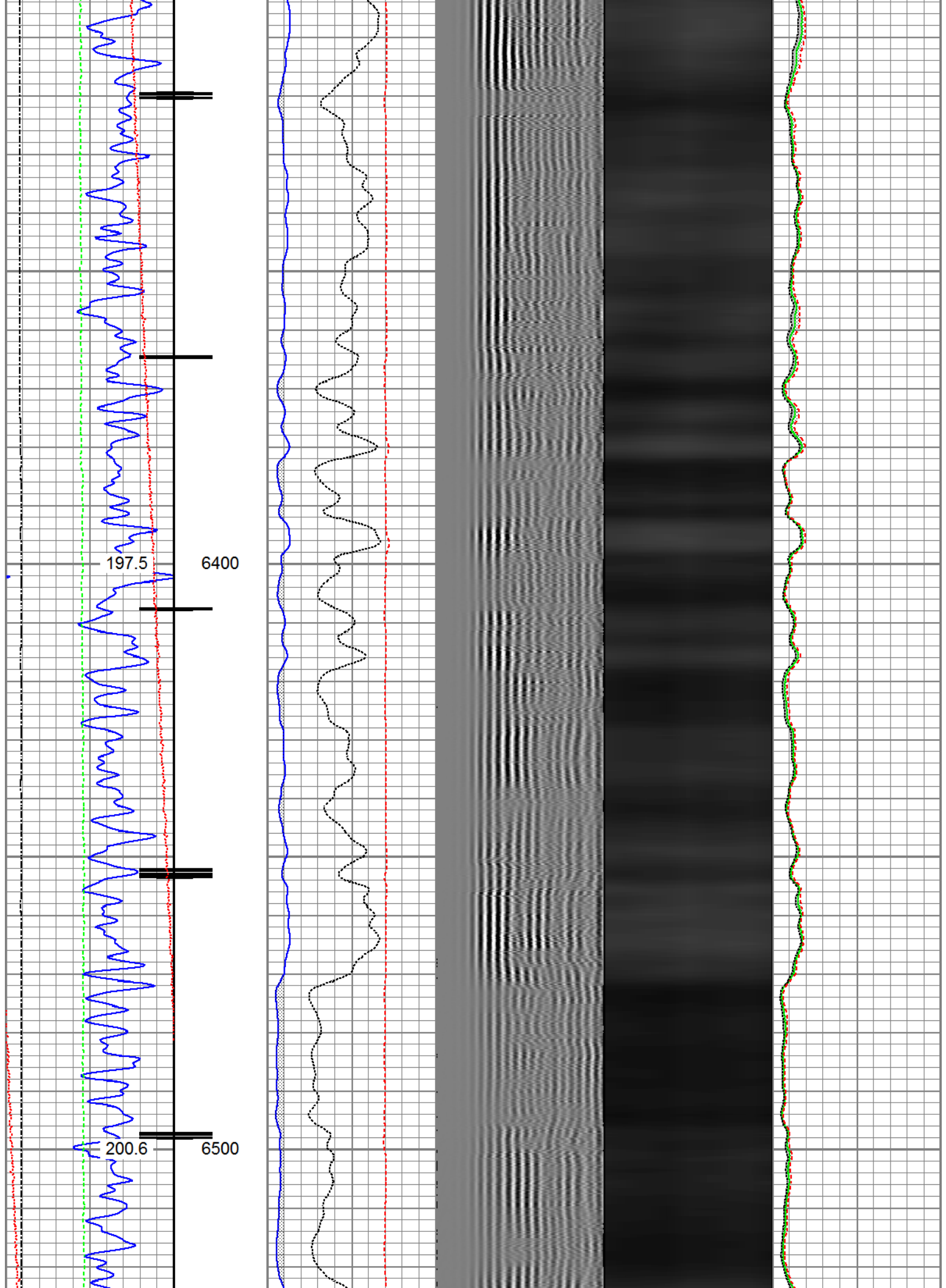


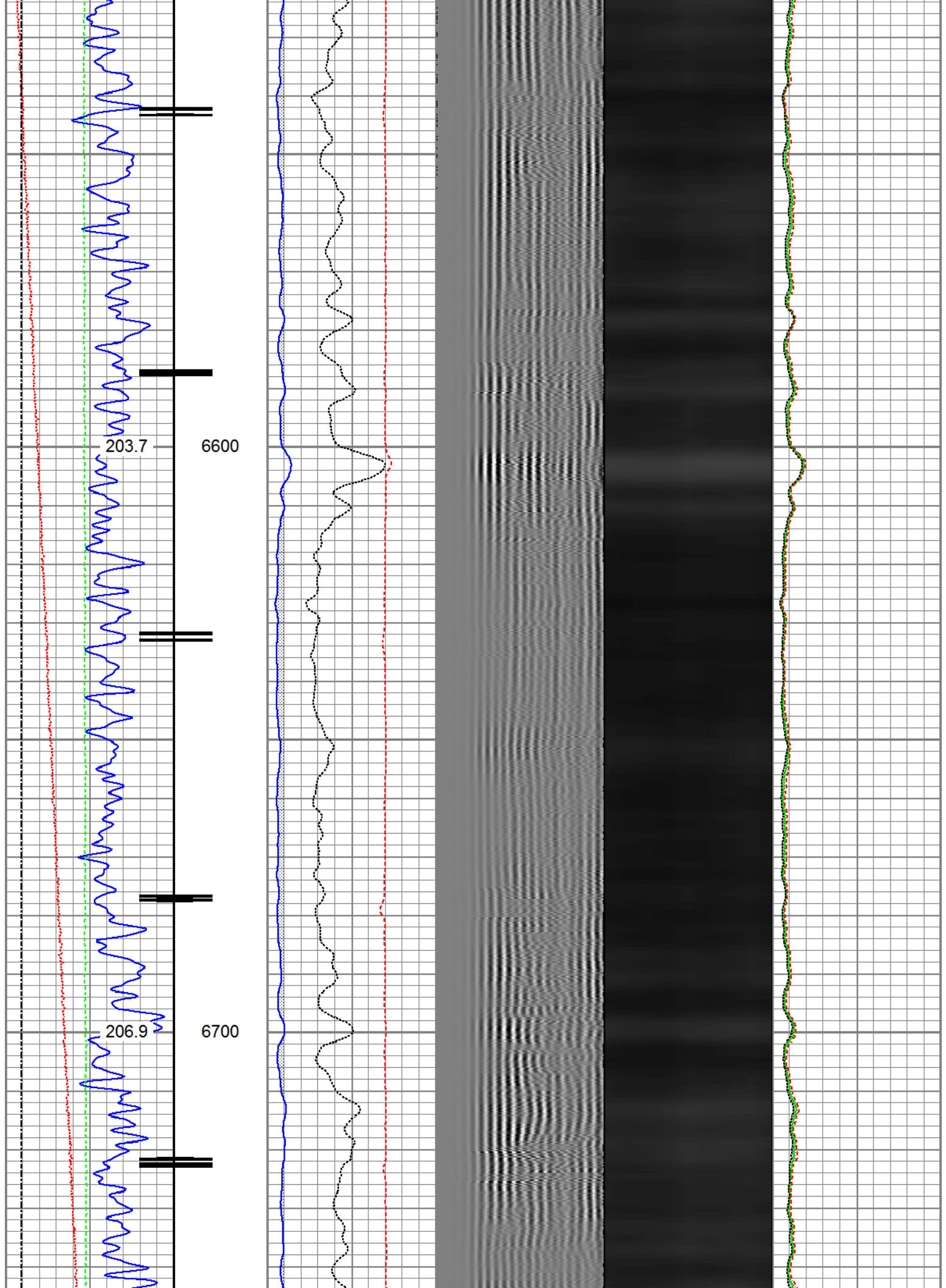


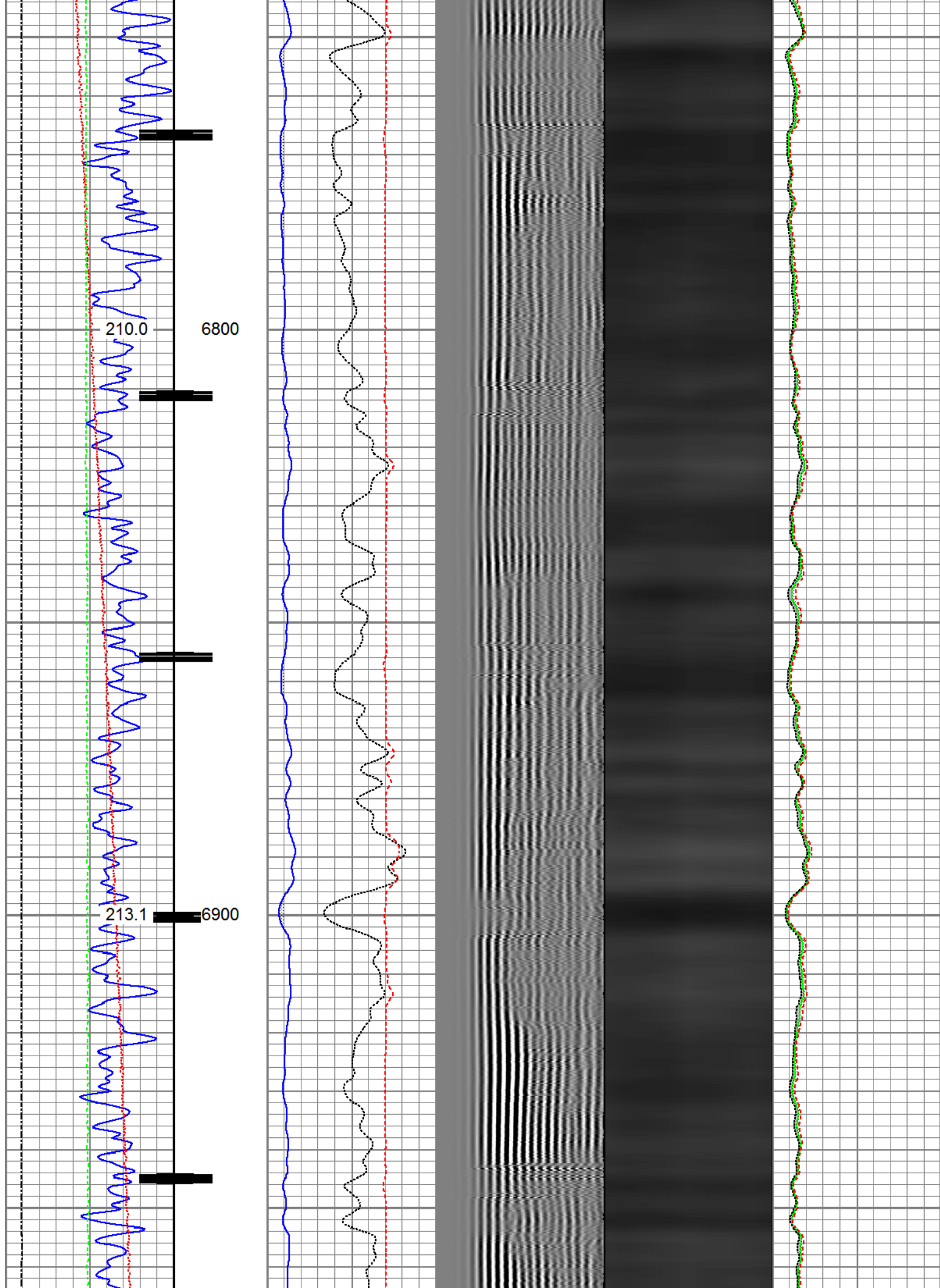


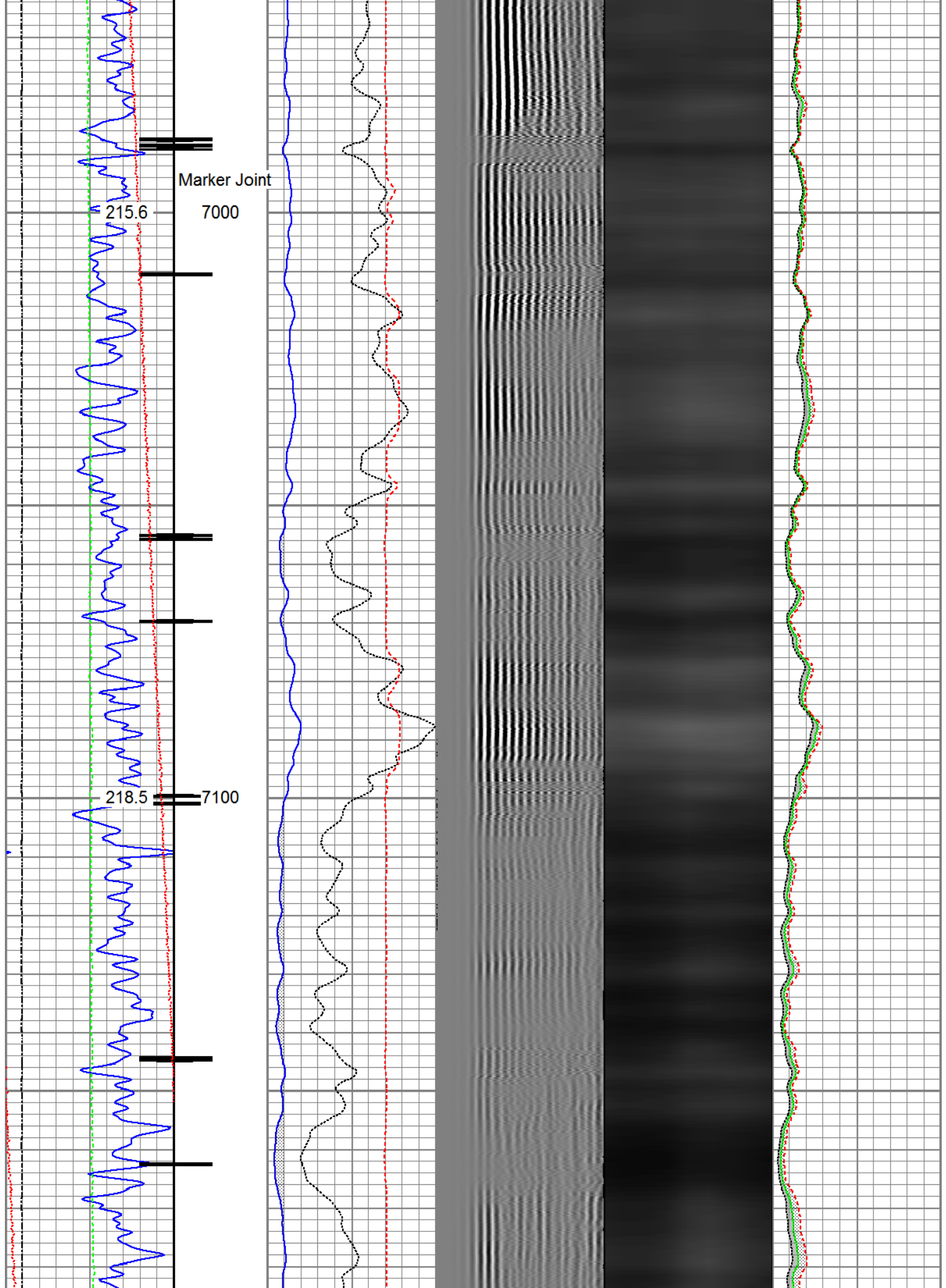


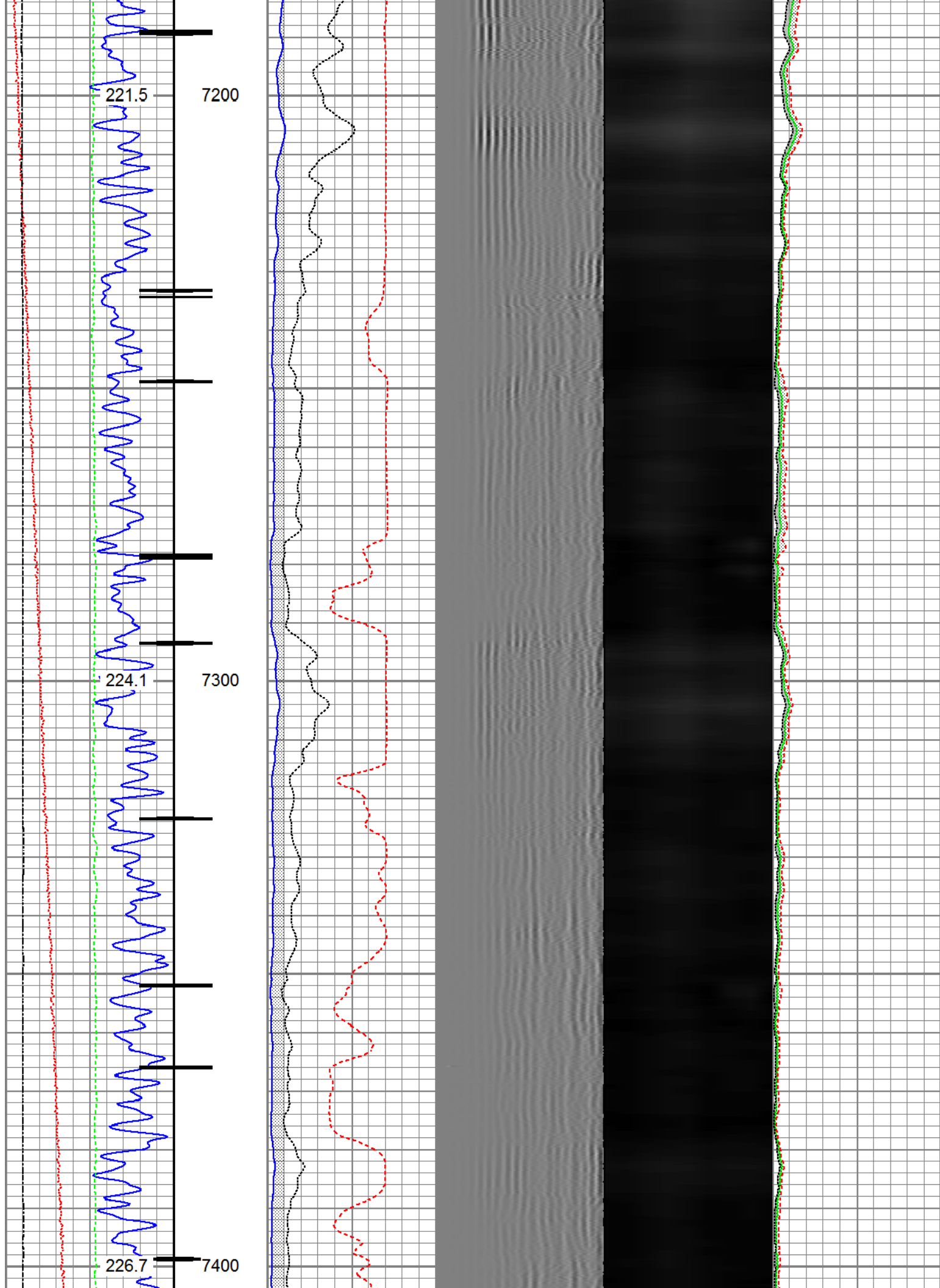


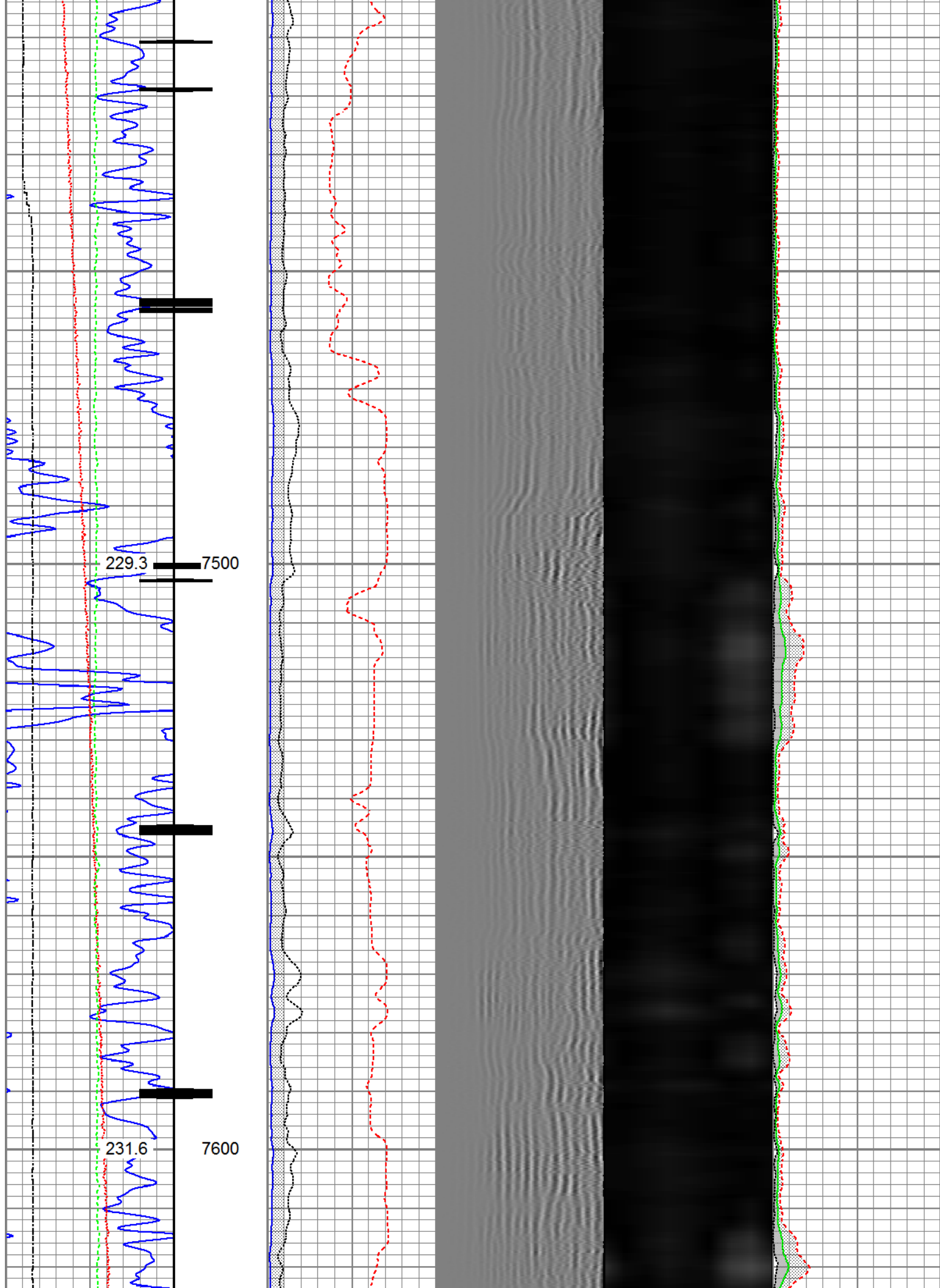


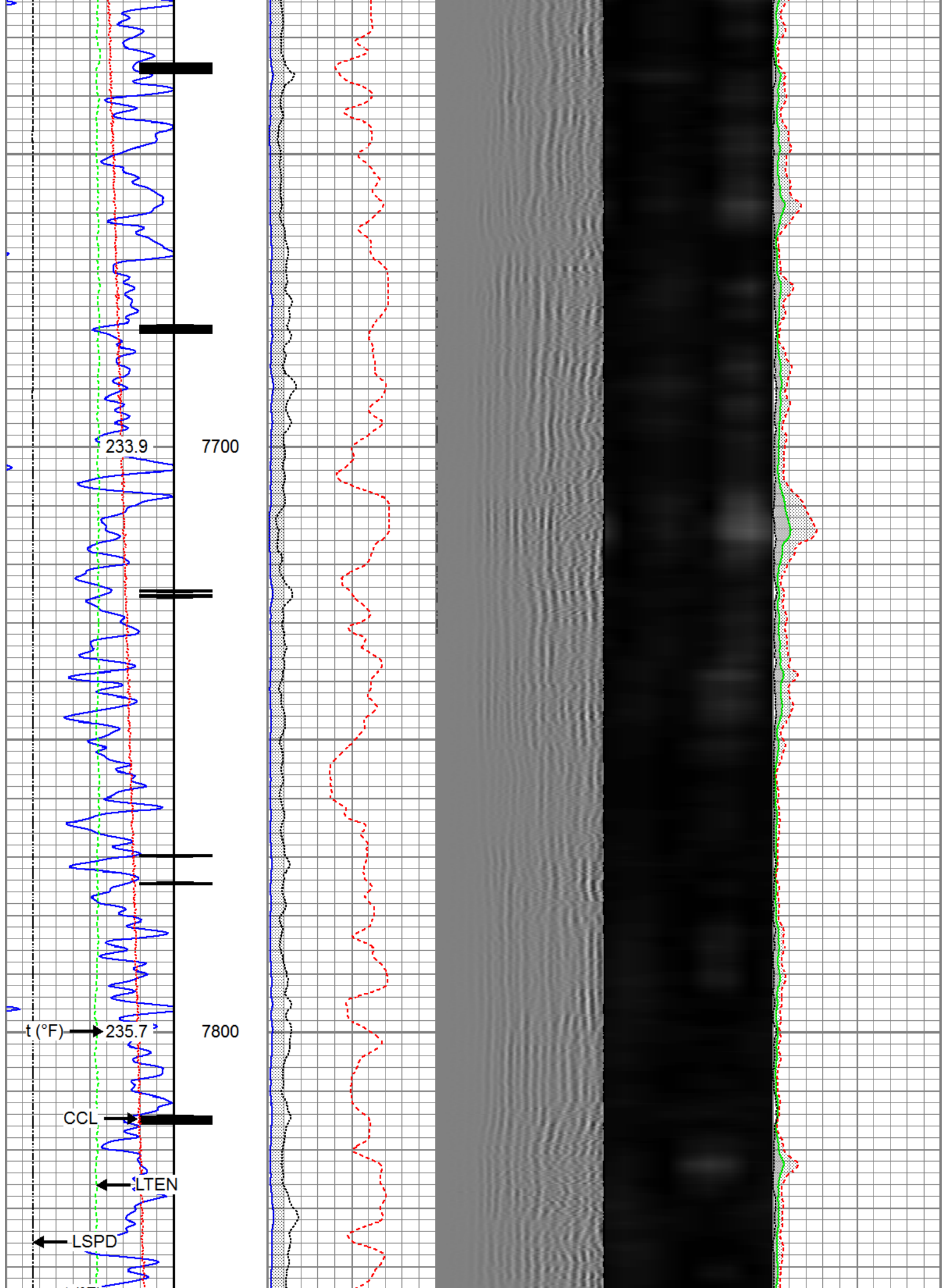


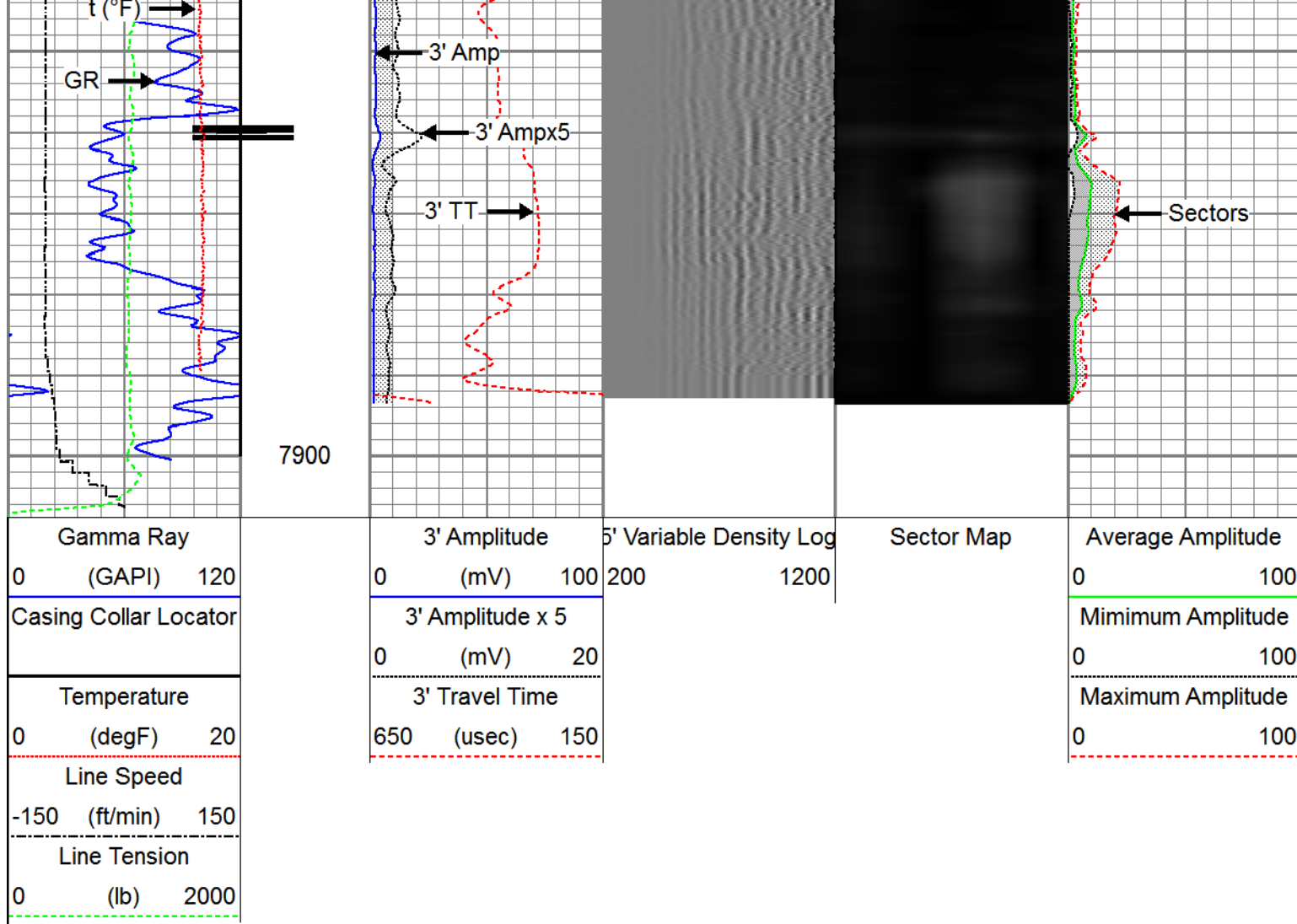








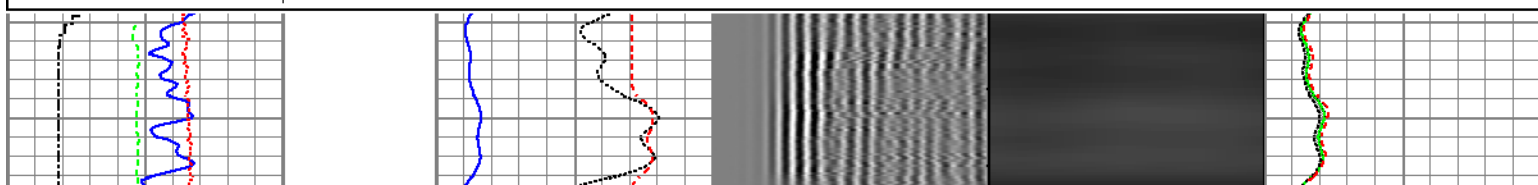
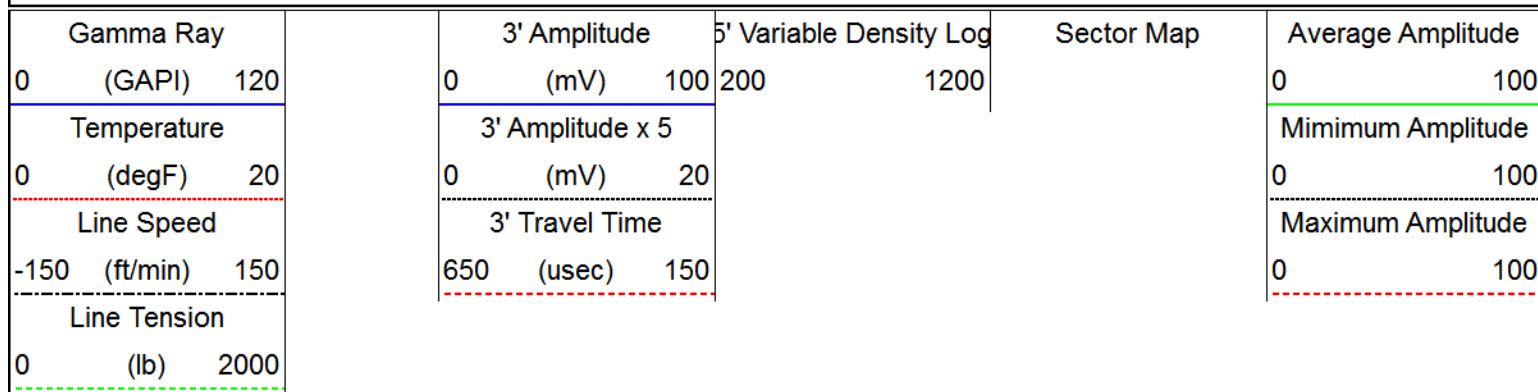


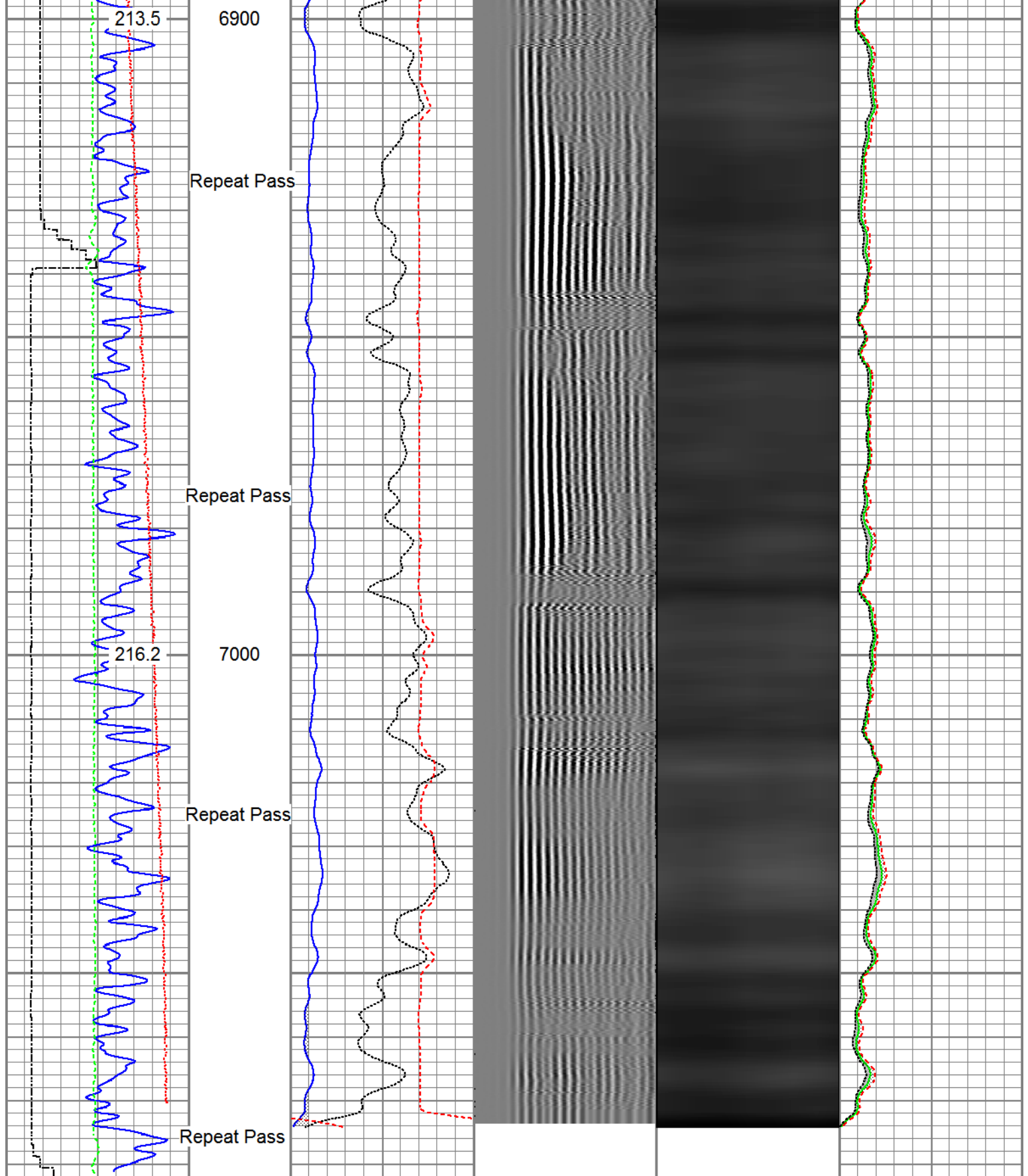


Repeat Pass

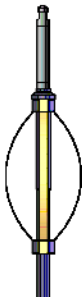

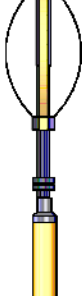

Recorded With 2800 PSI of Surface Induced Pressure

Database File: anadarko_puma fed 29c-14hz_15-may-2017_rbl\processed_0512342564_anadarko_puma fed 29c-
 Dataset Pathname: pass2
 Presentation Format: ros_radri
 Dataset Creation: Mon May 15 13:32:44 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)
HeadVolt	19.54		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_EB52.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.8875	2.75	20.00
Temp	16.75		Probe_RADII-C-P_RBT_2750 (FW1302-0029.19) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	2.75	2.75	105.00
WVFS8	14.58					
WVFS7	14.58					
WVFS6	14.58					
WVFS5	14.58					
WVFS4	14.58					
WVFS3	14.58					
WVFS2	14.58					
WVFS1	14.58					
WVFCAL	14.58					
WVF3FT	14.58					
WVF5FT	13.58					
HEADVOLT	10.33					
DCCL CCL	6.51		Probe_ELine_BowSpring_Centralizer-P_EB52.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.8875	2.75	20.00
	6.51		Probe_GR_CCL-P_CGR_2750_S (FW12124.57) Probe 2-3/4" Digital CCL / Gamma Ray Combined	124.57	2.75	55.00
GR	3.77		Probe_ELine_BowSpring_Centralizer-P_EB52.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.8875	2.75	20.00

PROCESSED_0012017/indianro_1/ama/ed/2007/11/20/11_RDE.dsp: hold/WSH/fan/pack/

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Database File      C:\ProgramData\Warrior\Data\Anadarko_Puma Fed 29C-14HZ_15-MAY-2017_RBL\PROCESSED_0
Dataset Pathname  pass4
Dataset Creation   Mon May 15 13:39:10 2017
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Serial Number:	FW1212-026	
Tool Model:	P_CGR_2750_S	
Performed:	Mon Aug 15 10:19:05 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6000	GAPI/cps


Serial Number:	FW1302-002	
Tool Model:	P_RBT_2750	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	45.102	ft

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.006	0.728	0.800	71.921	96.867	1.399
CAL	0.002	0.821				
5'	-0.002	0.575	0.800	71.921	123.181	1.074
SUM						
S1	-0.006	0.735	0.000	100.000	134.913	0.860
S2	0.000	0.738	0.000	100.000	135.583	-0.065
S3	0.002	0.730	0.000	100.000	137.309	-0.270
S4	0.000	0.710	0.000	100.000	140.934	-0.050
S5	-0.004	0.713	0.000	100.000	139.523	0.533
S6	-0.003	0.720	0.000	100.000	138.178	0.480
S7	-0.008	0.728	0.000	100.000	135.978	1.050
S8	-0.009	0.741	0.000	100.000	133.221	1.223

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	0.821	1.000	0.000

Raw (v)	Calibrated (v)	Results
Zero	Zero	Offset

	Zero	Zero	Onset
3'	0.001	0.000	0.000
5'	0.001	0.000	-0.000
SUM			
S1	0.001	0.000	-0.001
S2	0.000	0.000	0.000
S3	0.001	0.000	0.001
S4	0.002	0.000	-0.000
S5	0.001	0.000	-0.000
S6	0.001	0.000	-0.000
S7	0.001	0.000	0.000
S8	0.001	0.000	0.000

	Company	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Puma Fed 29C-14HZ
	Field	Wattenberg
	County	Weld
	State	Colorado