



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Puma Fed 34C-35HZ
Field Wattenberg
County Weld
State Colorado

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Puma Fed 34C-35HZ
Field Wattenberg
County Weld
State Colorado

Location: API #: 05-123-42570
SEC 23 TWP 1N RGE 67W
Permanent Datum Ground Level Elevation 4991'
Log Measured From Kelly Bushing 32 FT
Drilling Measured From Kelly Bushing
Other Services
Gauge Ring
Elevation
K.B. 5023'
D.F. ---
G.L. 4991'

Run Number	13-May-2017						
Depth Driller	Two						
Depth Logger	17758 FT						
Bottom Logged Interval	7885 FT						
Top Log Interval	7881 FT						
Open Hole Size	Surface						
Type Fluid	8.50"						
Density / Viscosity	Water						
Max. Recorded Temp.	8.34 lb/gal						
Estimated Cement Top	238°F						
Time Well Ready	See Log						
Time Logger on Bottom	ROA						
Equipment Number	14:45 PM						
Location	HD-0343						
Recorded By	Fort Lupton, CO						
Witnessed By	J. Fresquez						
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	2242 FT		
Intermediate #1	5 1/2	17	HC P110	Surface	17781 FT		
Intermediate #2							
Liner							

<<< 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 Casing Tally reported Marker Joint at 6945 FT
Adjusted 0 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7878 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!!

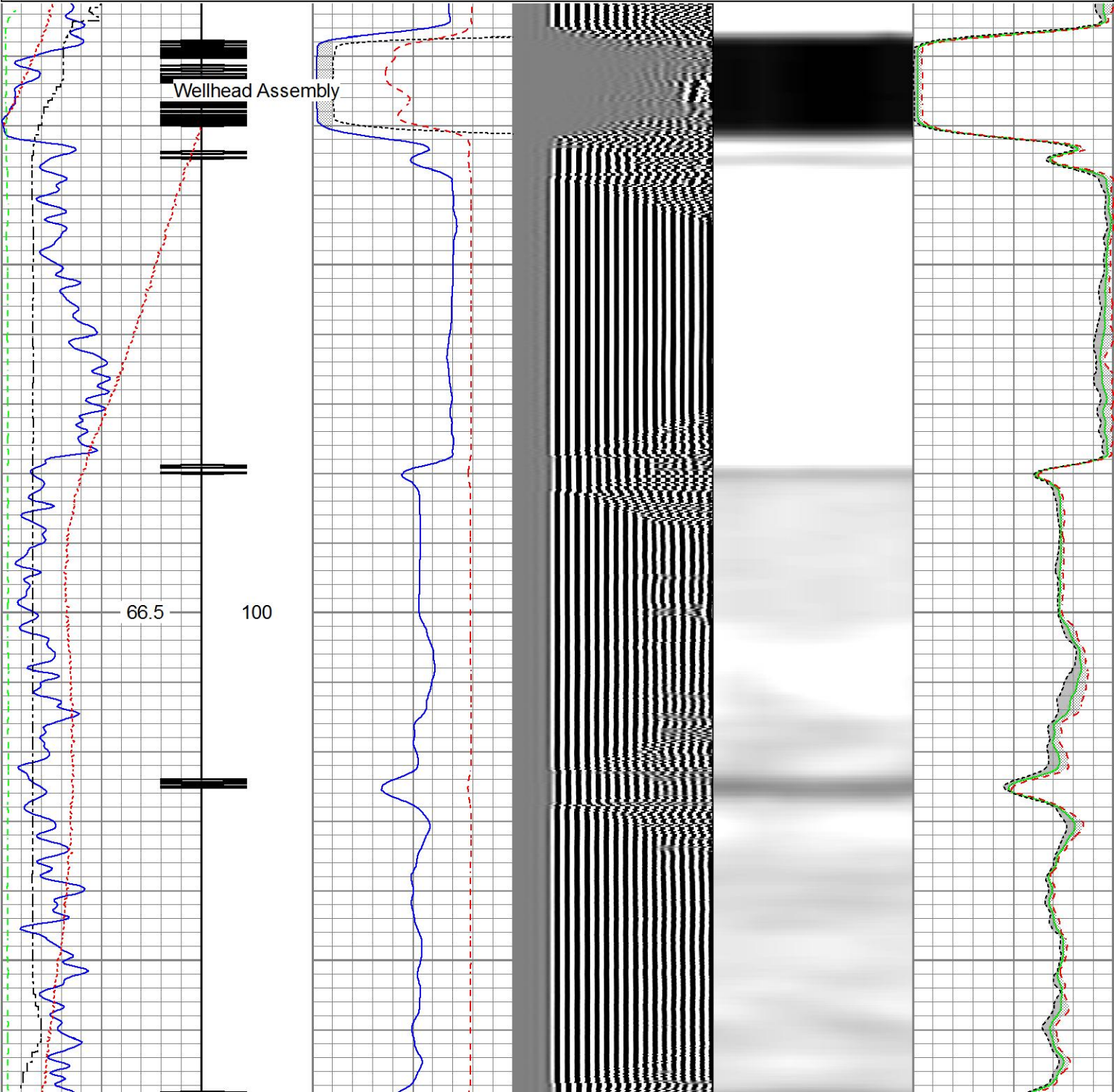


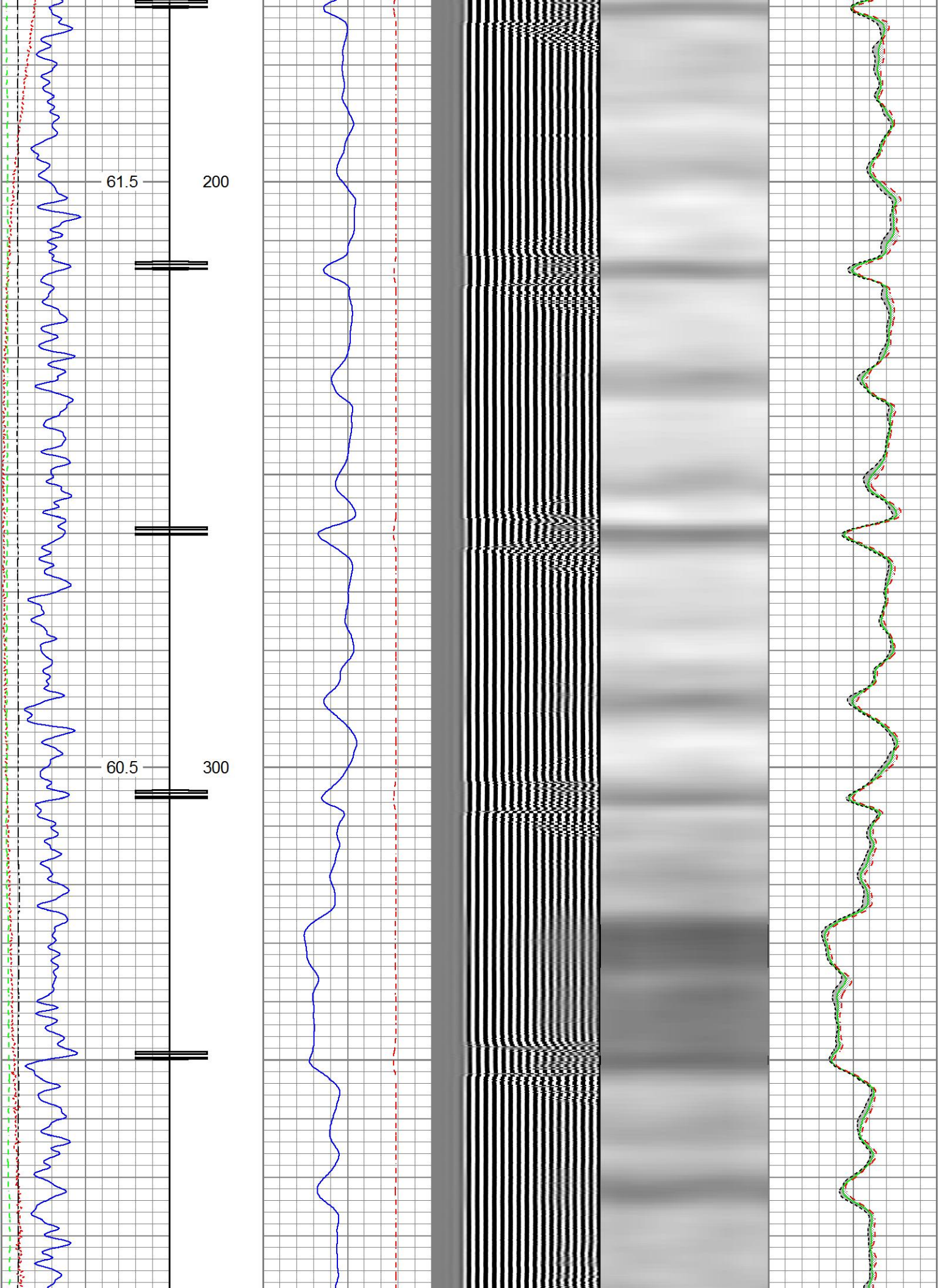
Main Pass

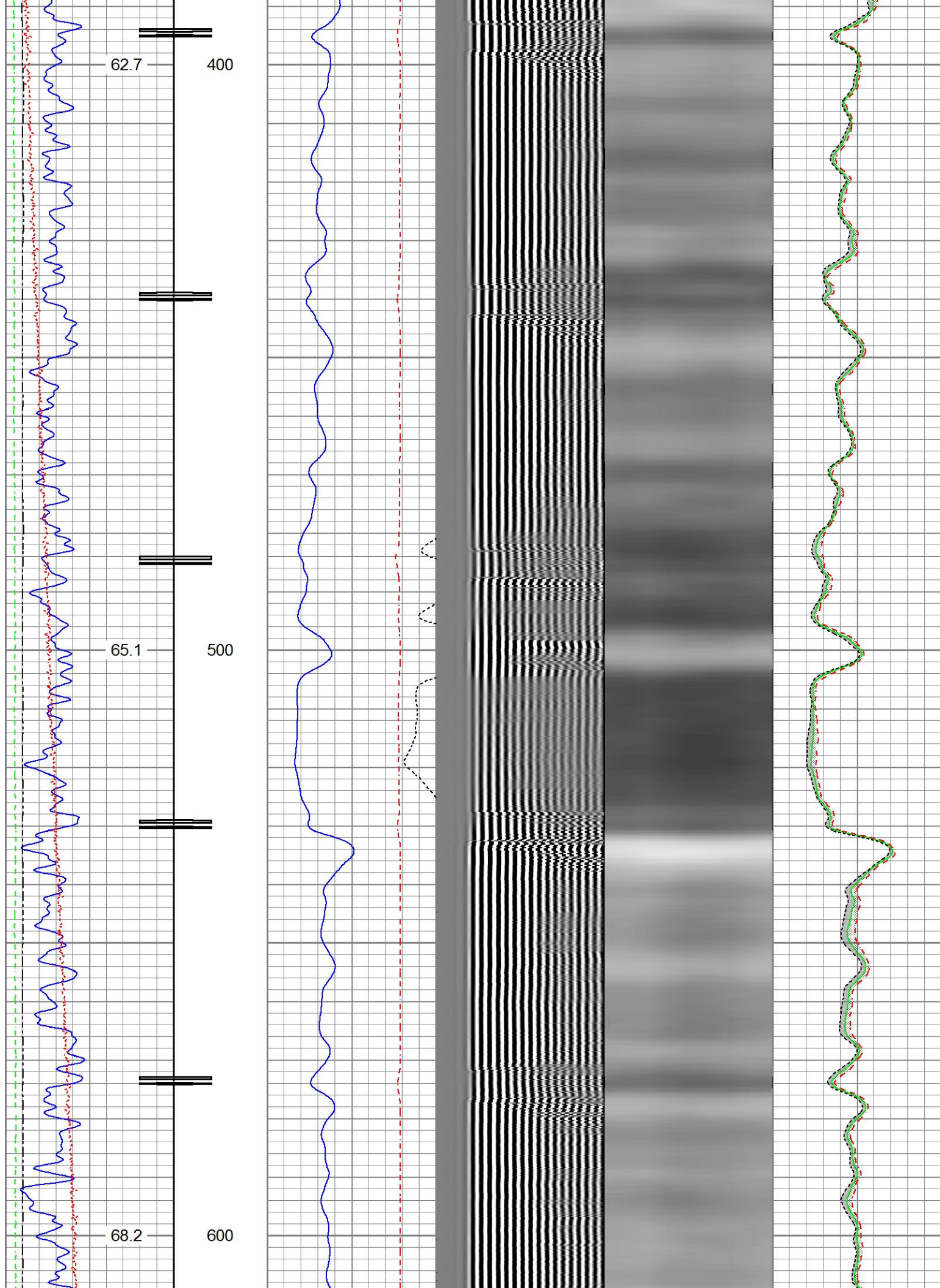
Recorded With 2800 PSI Surface Induced Pressure

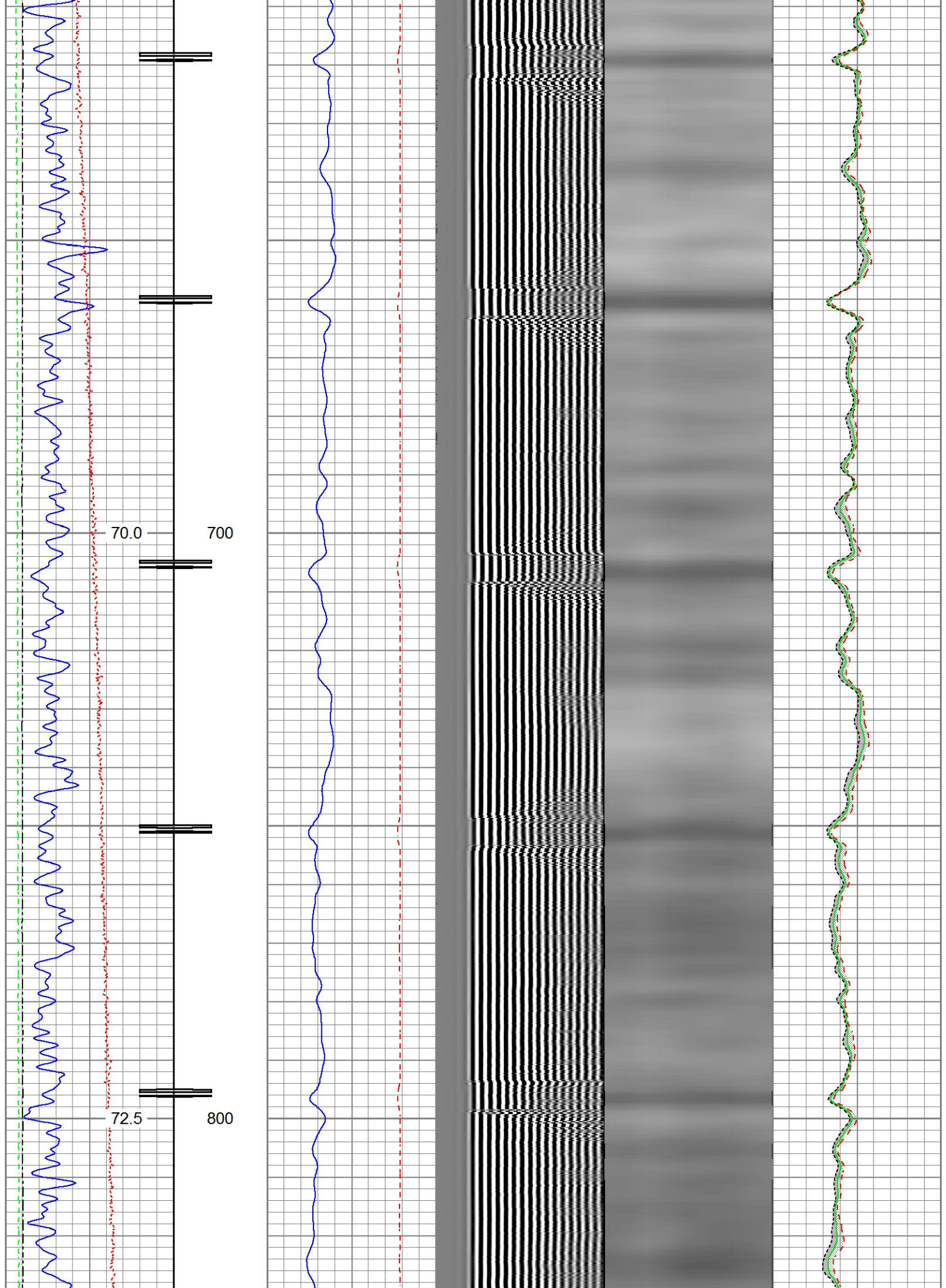
Database File	anadarko_puma fed 34c-35hz\0512342570_anadarko_puma fed_34c-35hz_05-13-17_rbl.db
Dataset Pathname	pass14.1
Presentation Format	ros_radri
Dataset Creation	Sat May 13 16:03:55 2017
Charted by	Depth in Feet scaled 1:240

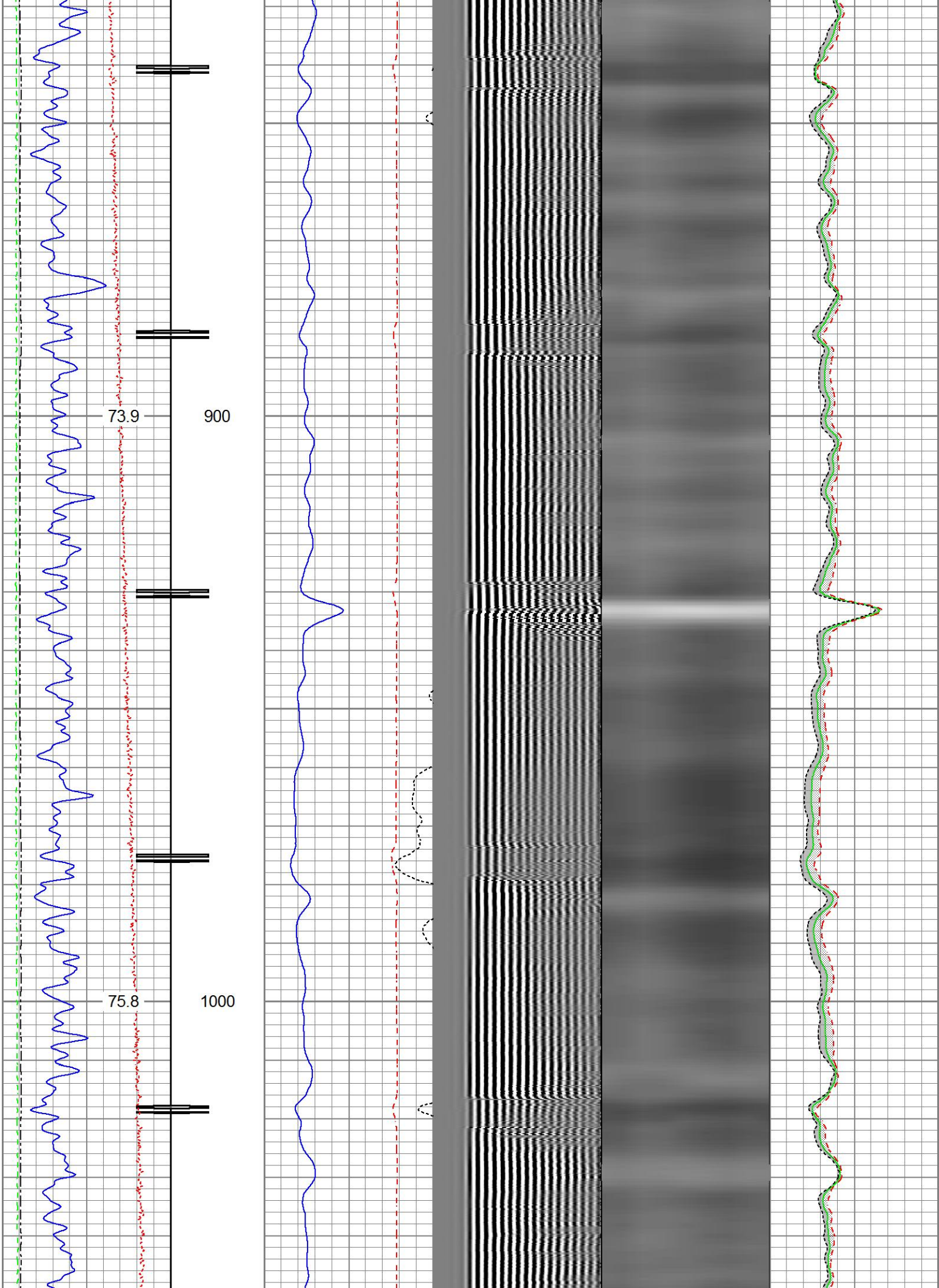
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Mimimum Amplitude
Temperature		0 (mV) 20			0 100
0 (degF) 20		3' Travel Time			Maximum Amplitude
Line Speed		650 (usec) 150			0 100
-150 (ft/min)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

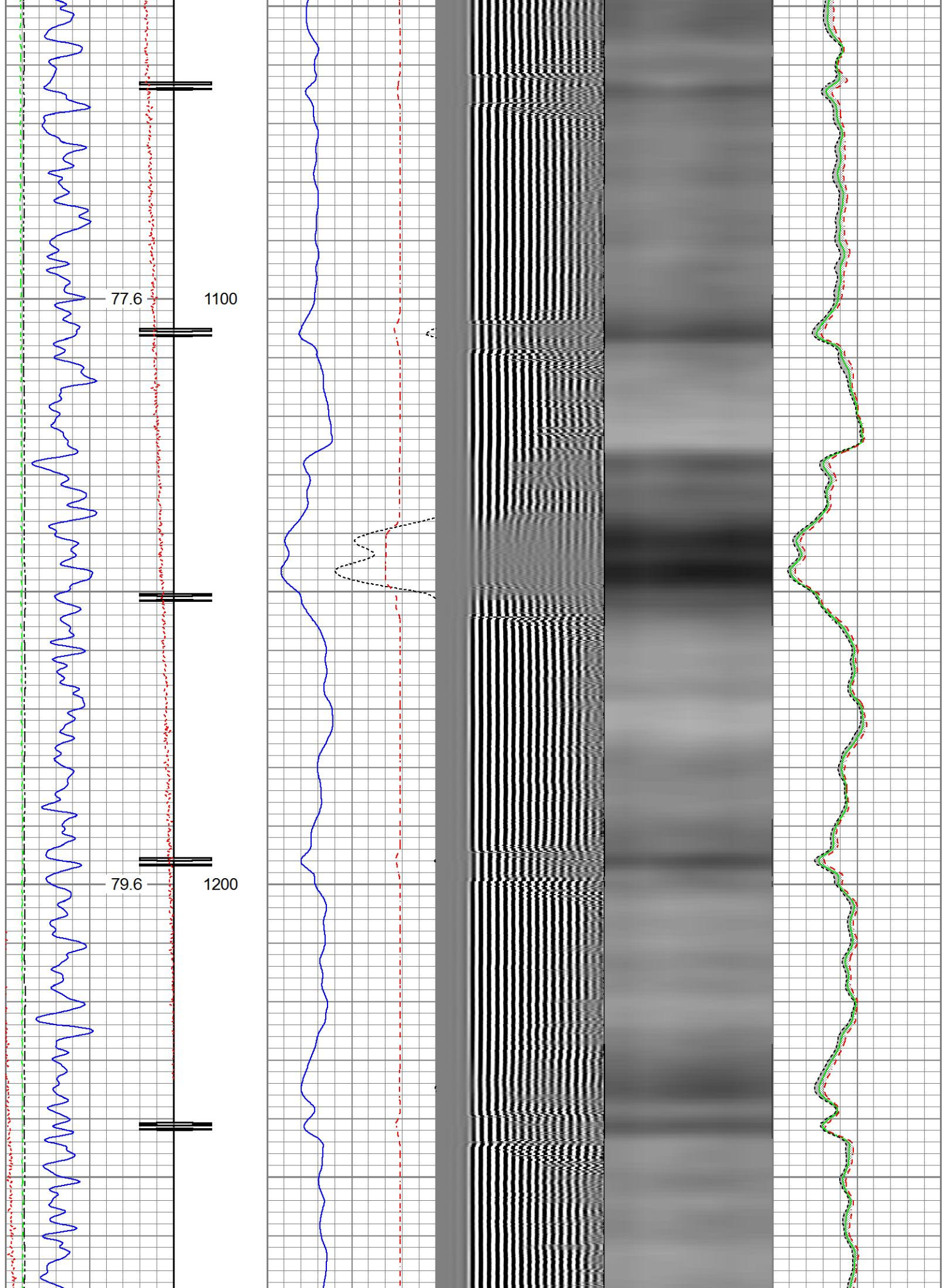


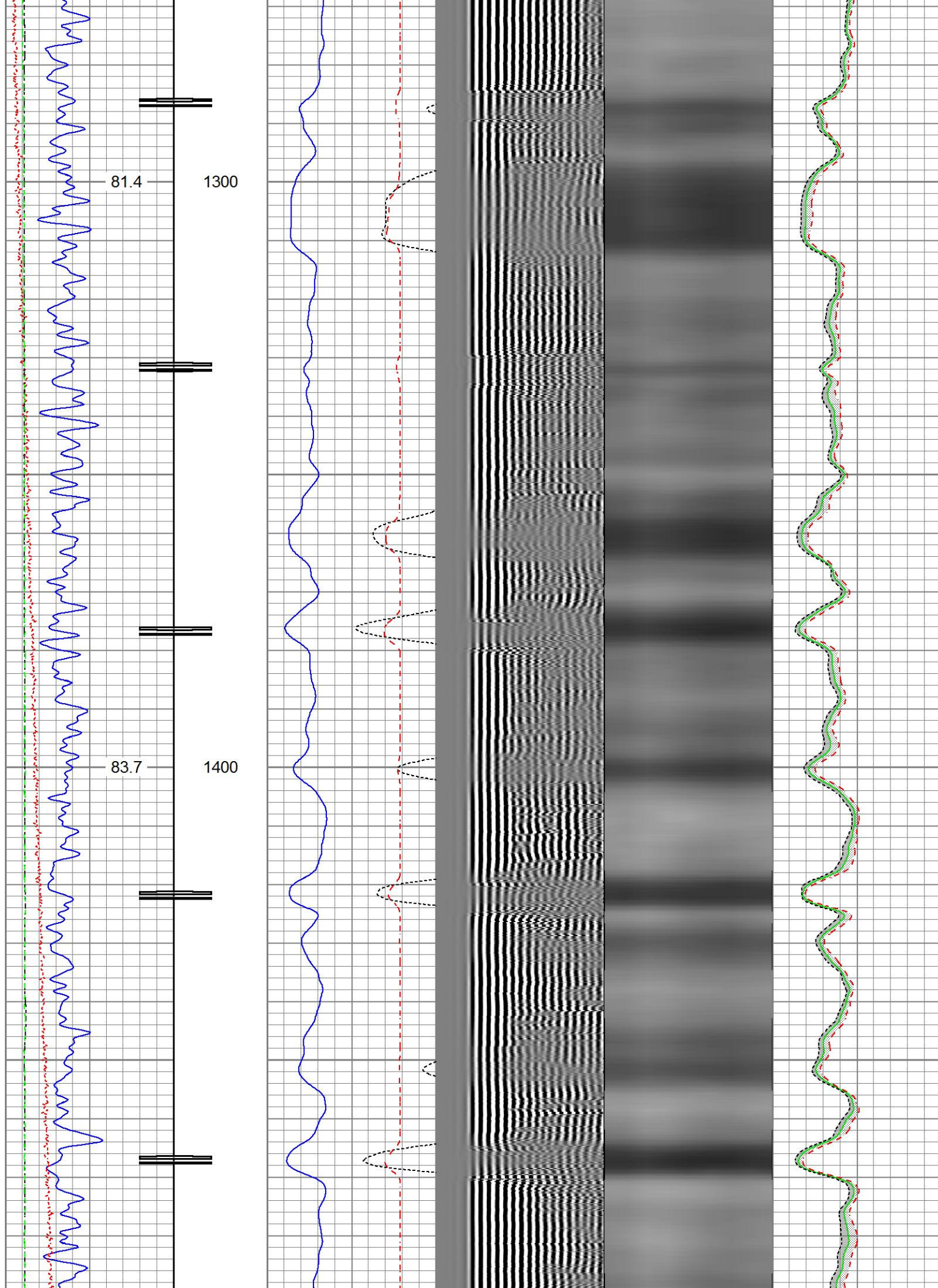


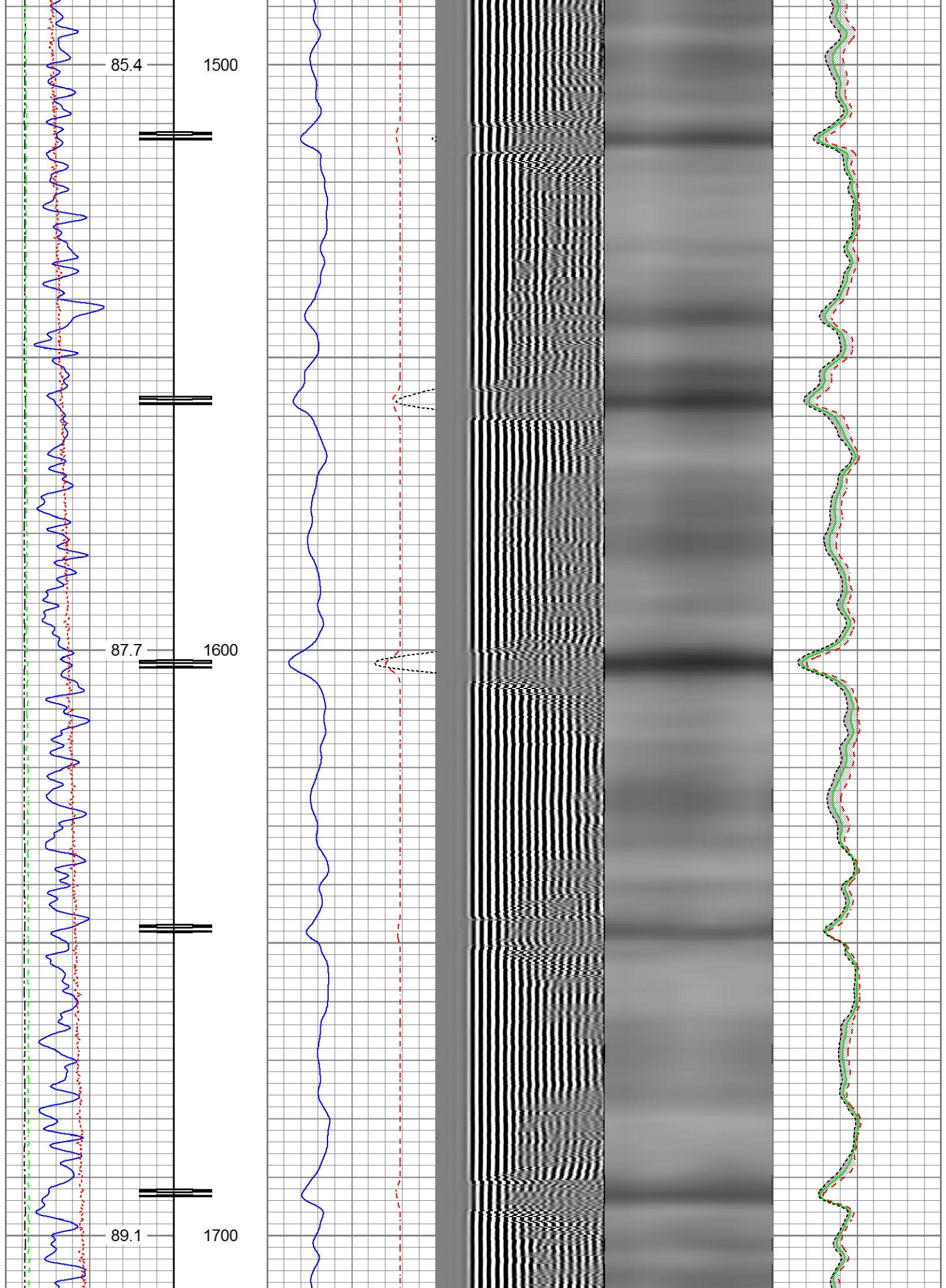


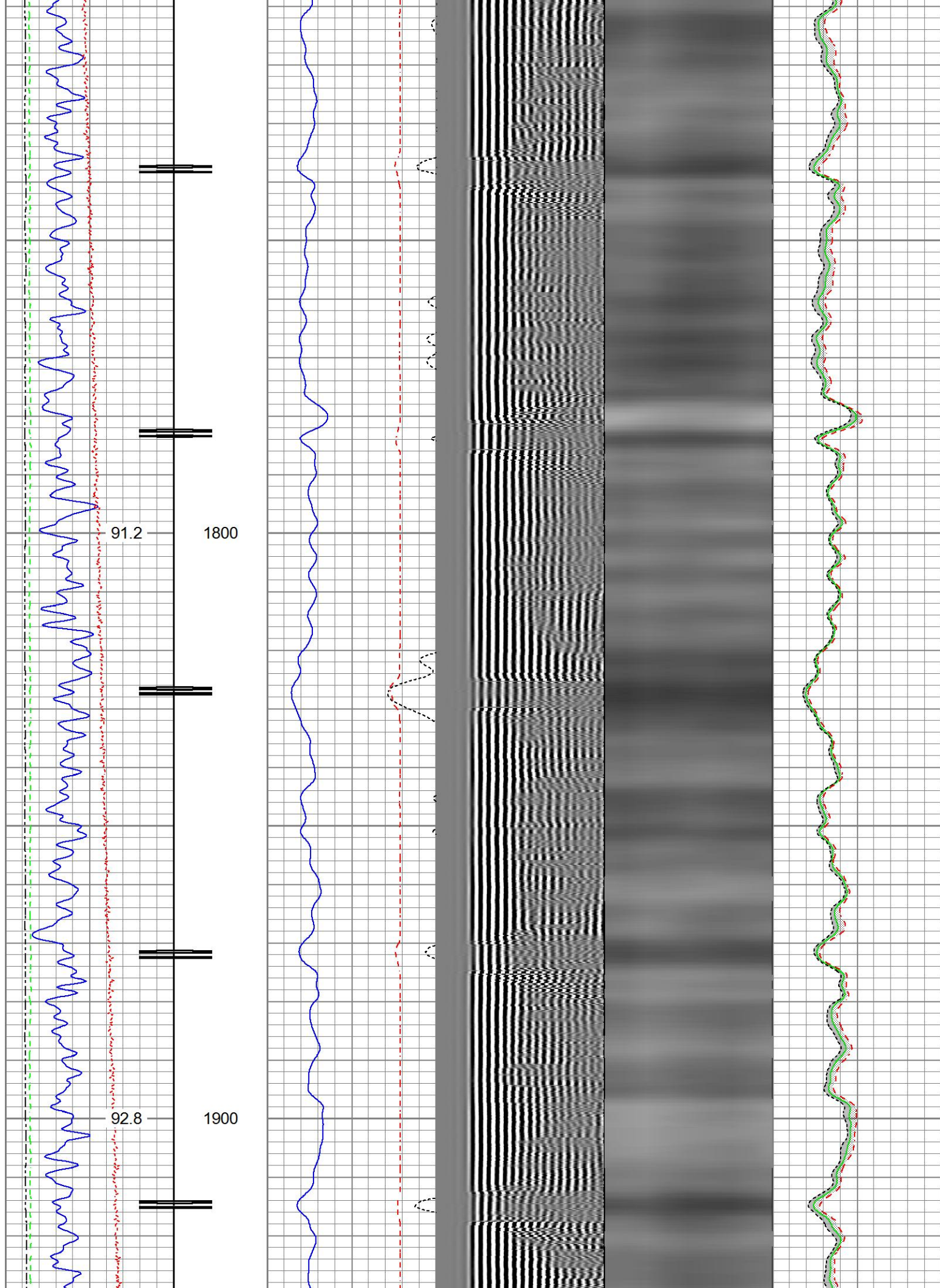


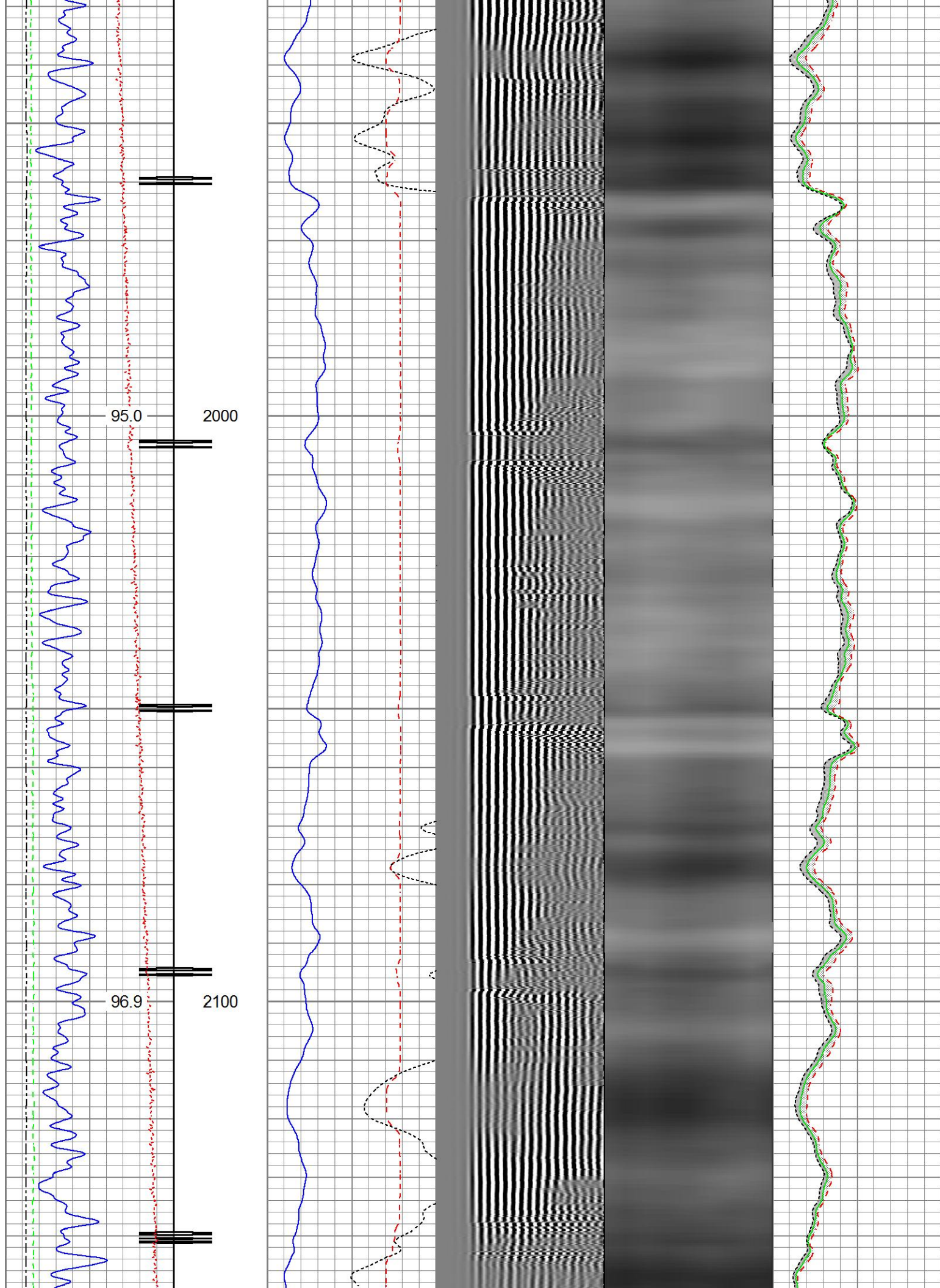


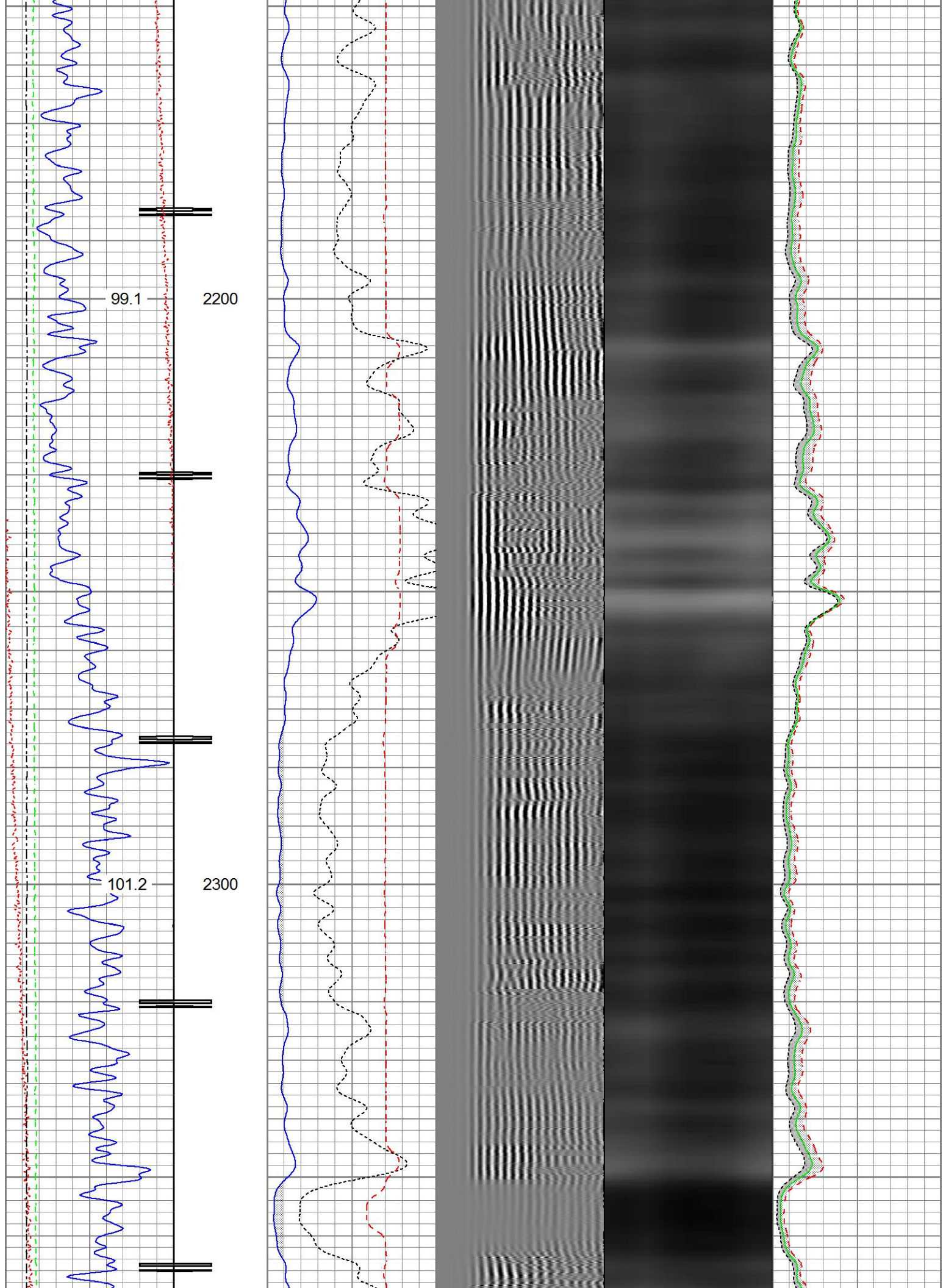


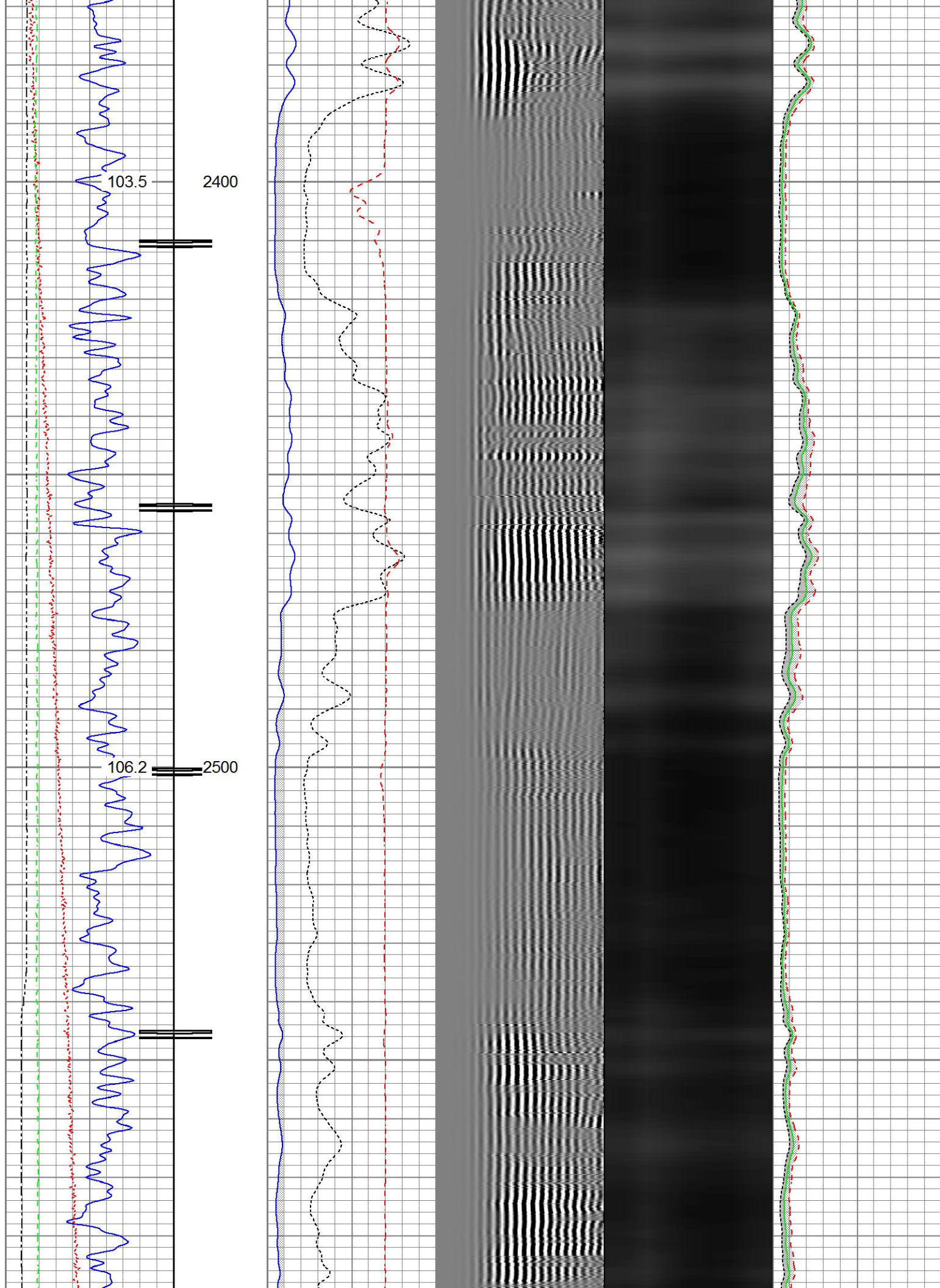


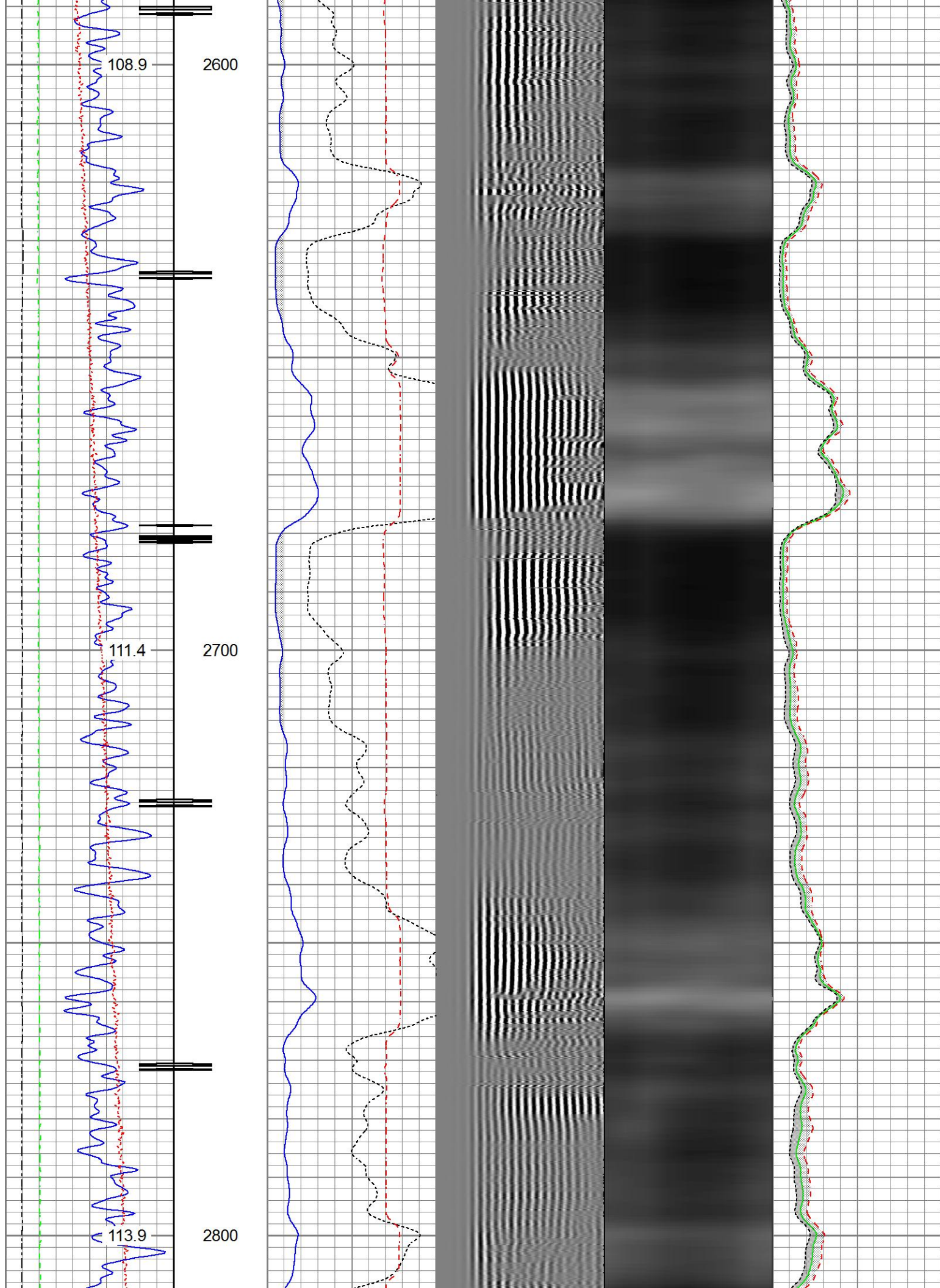


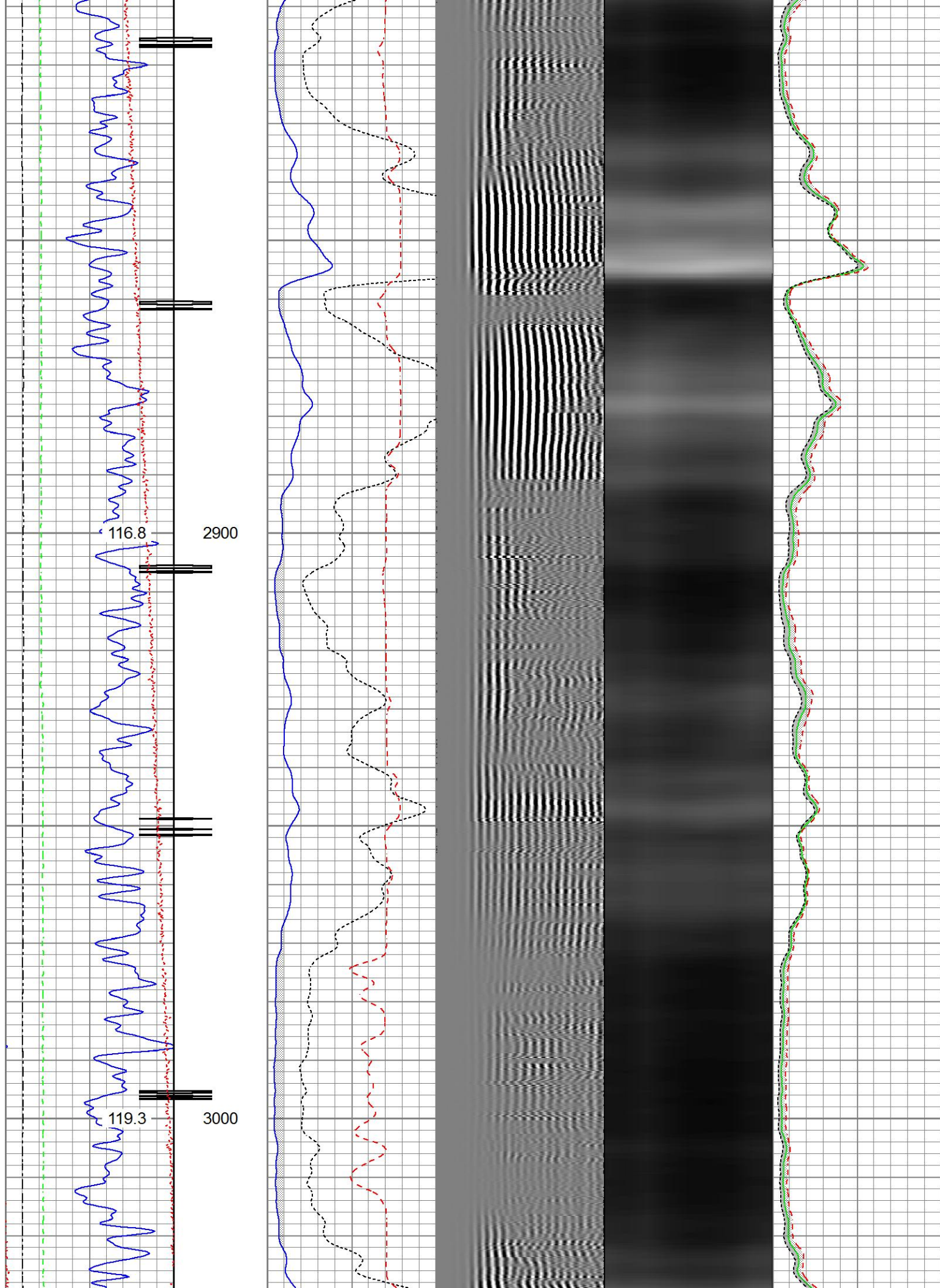


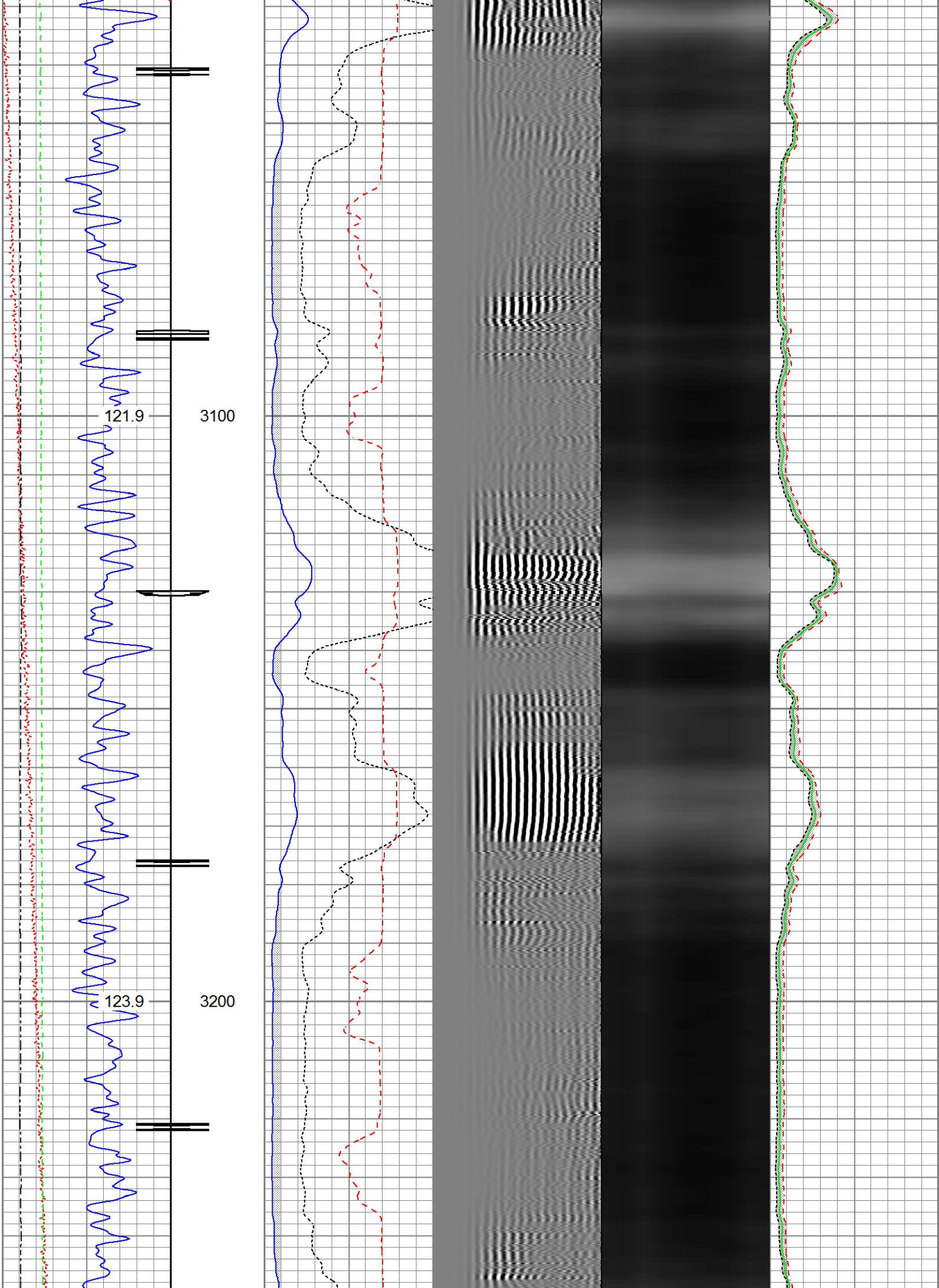


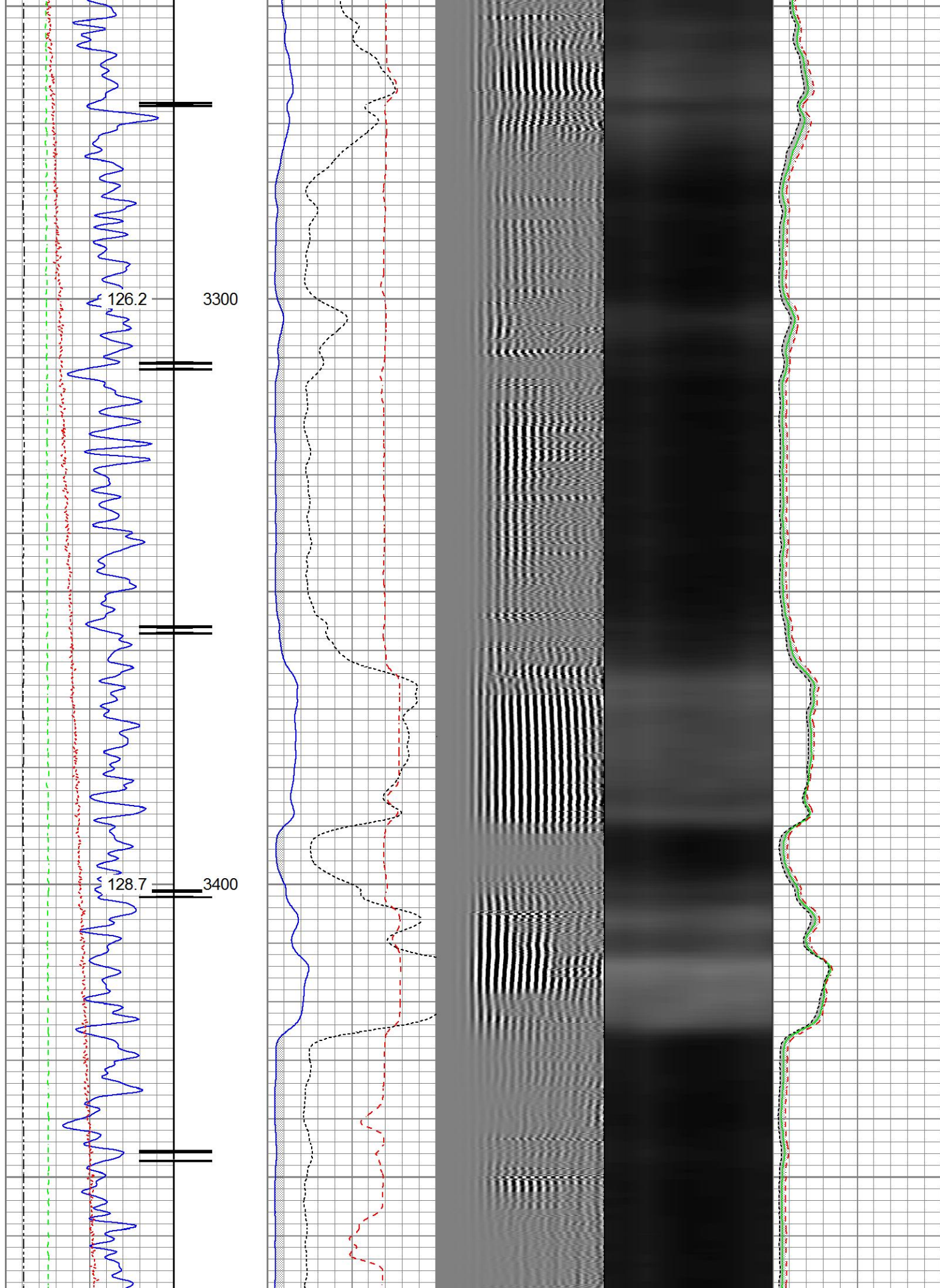


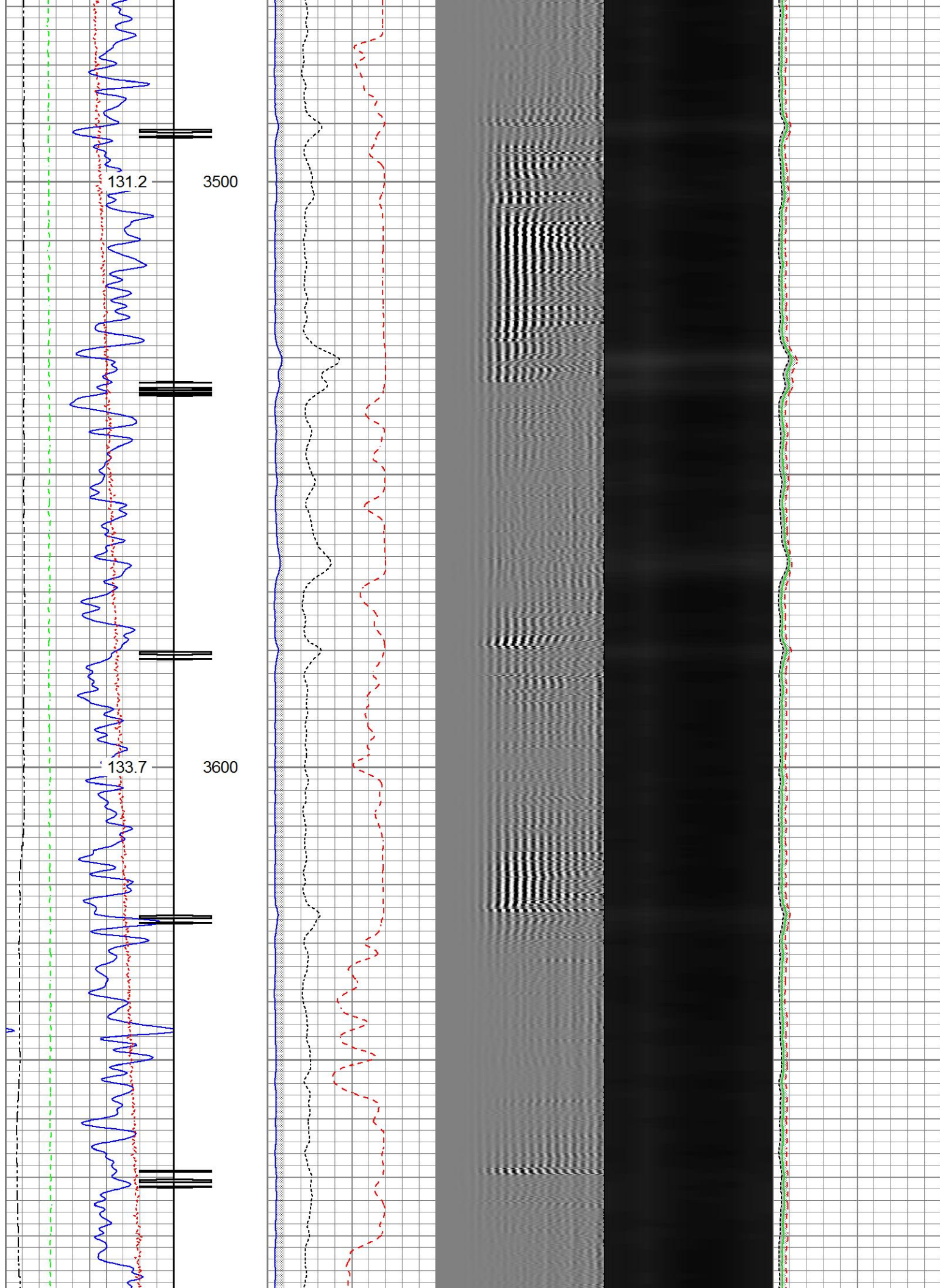


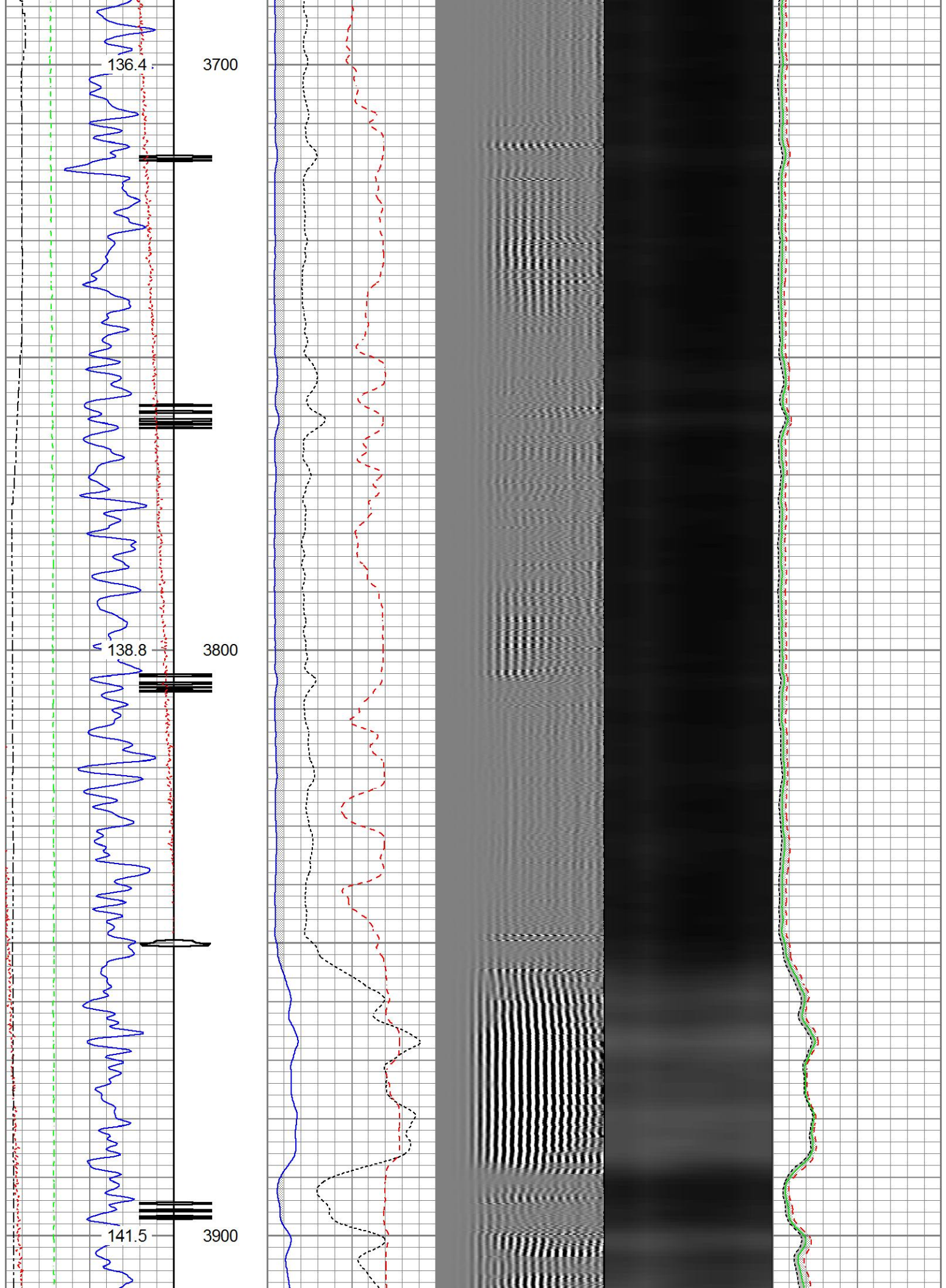


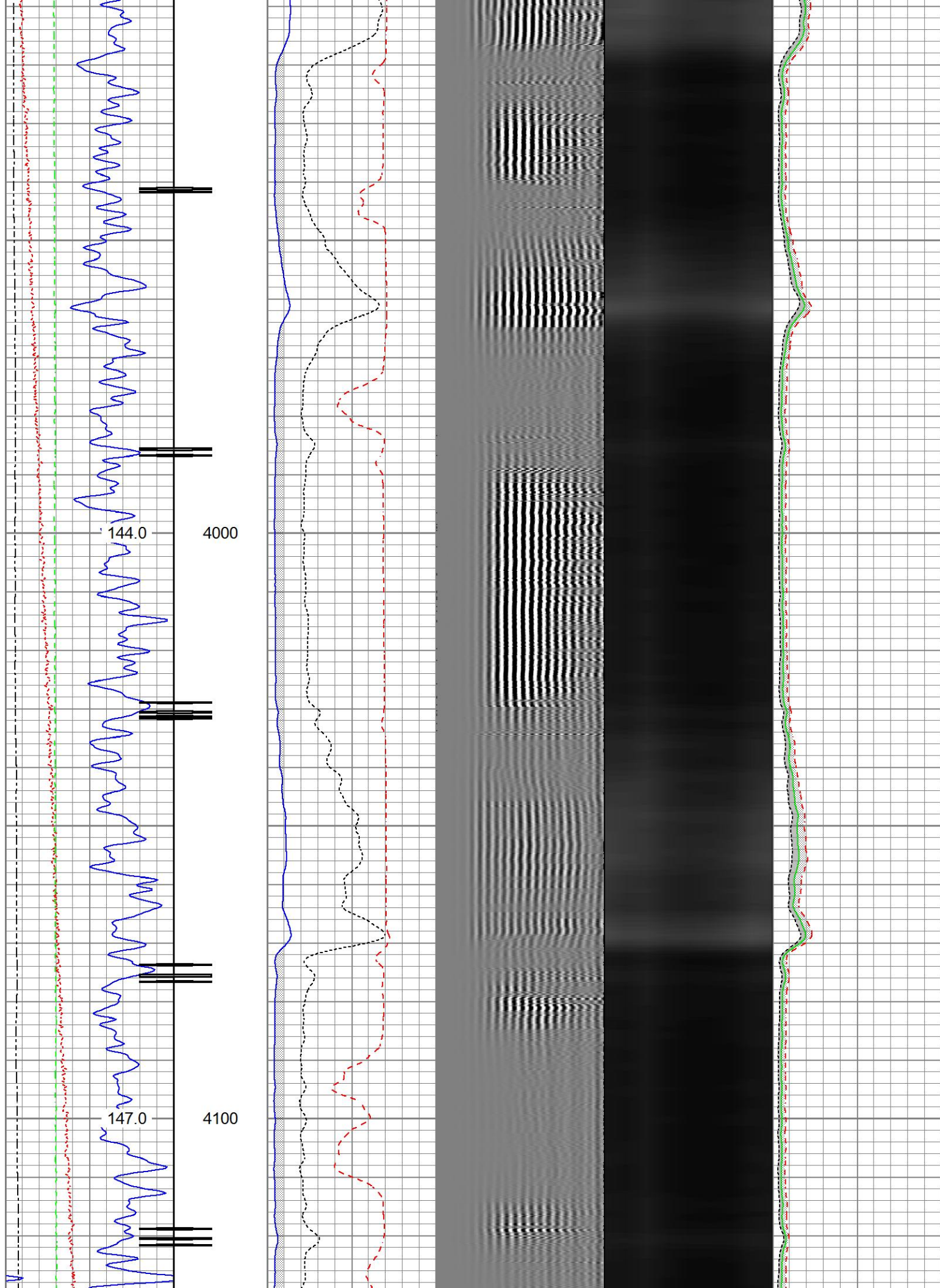


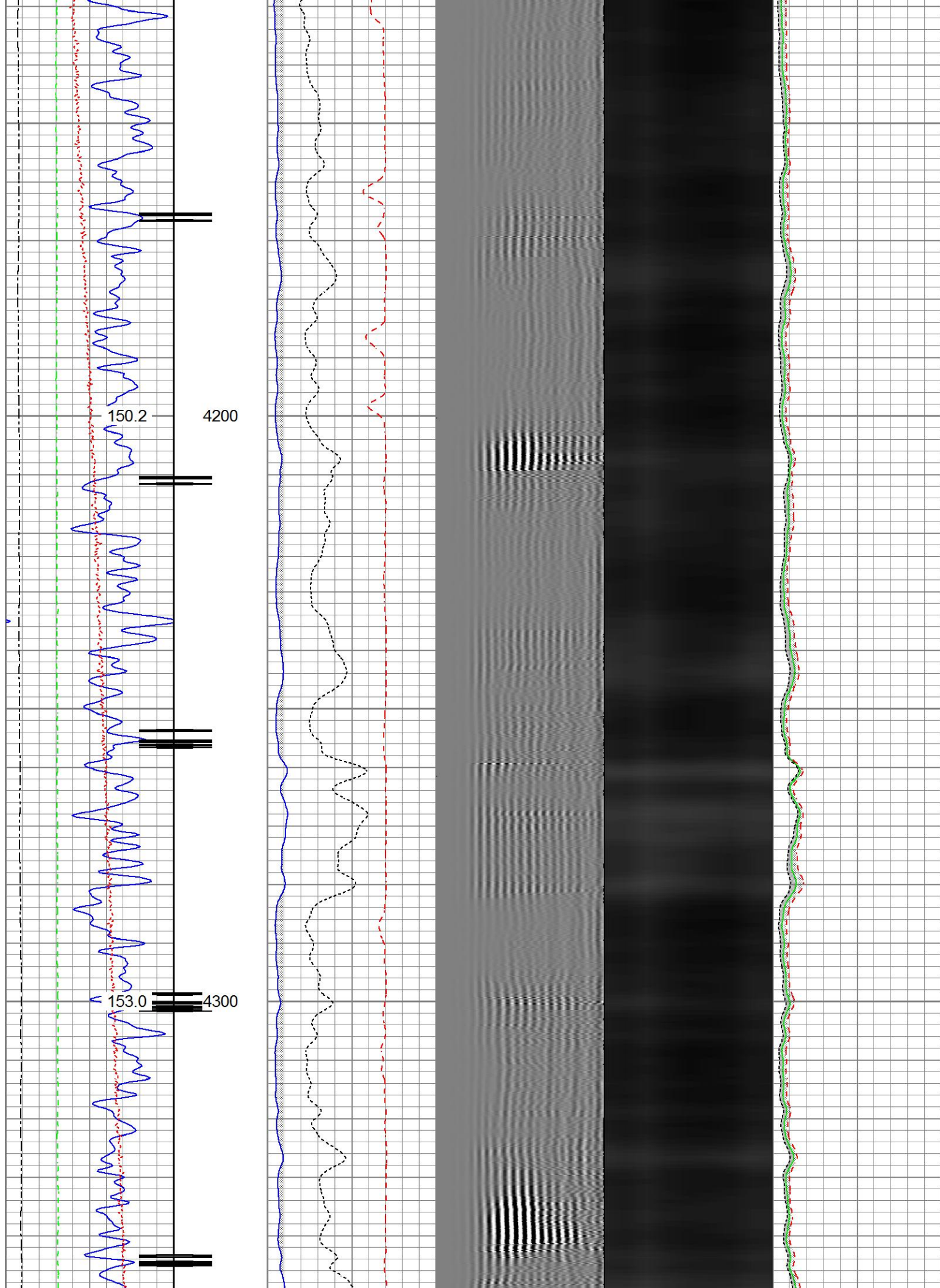


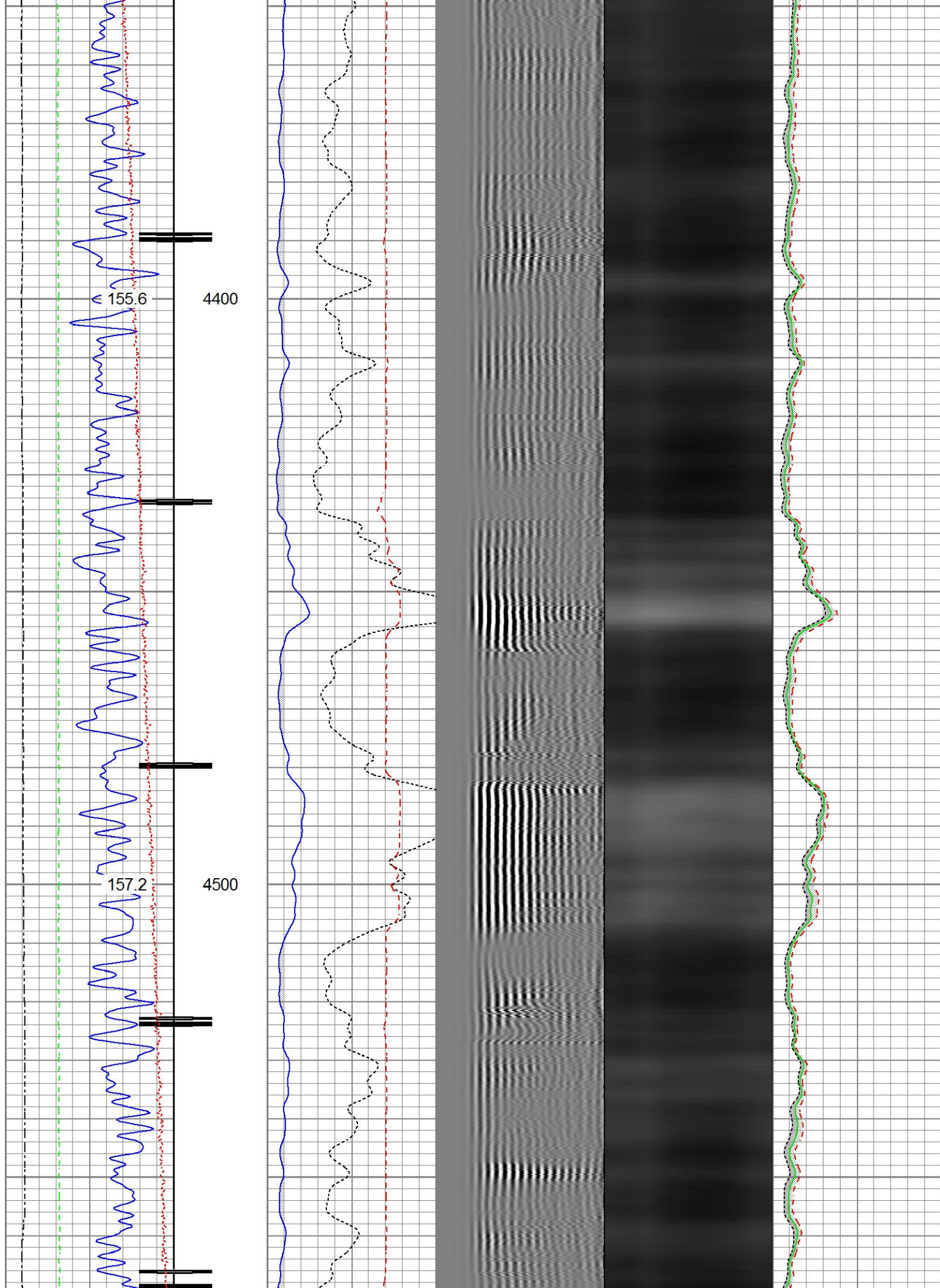


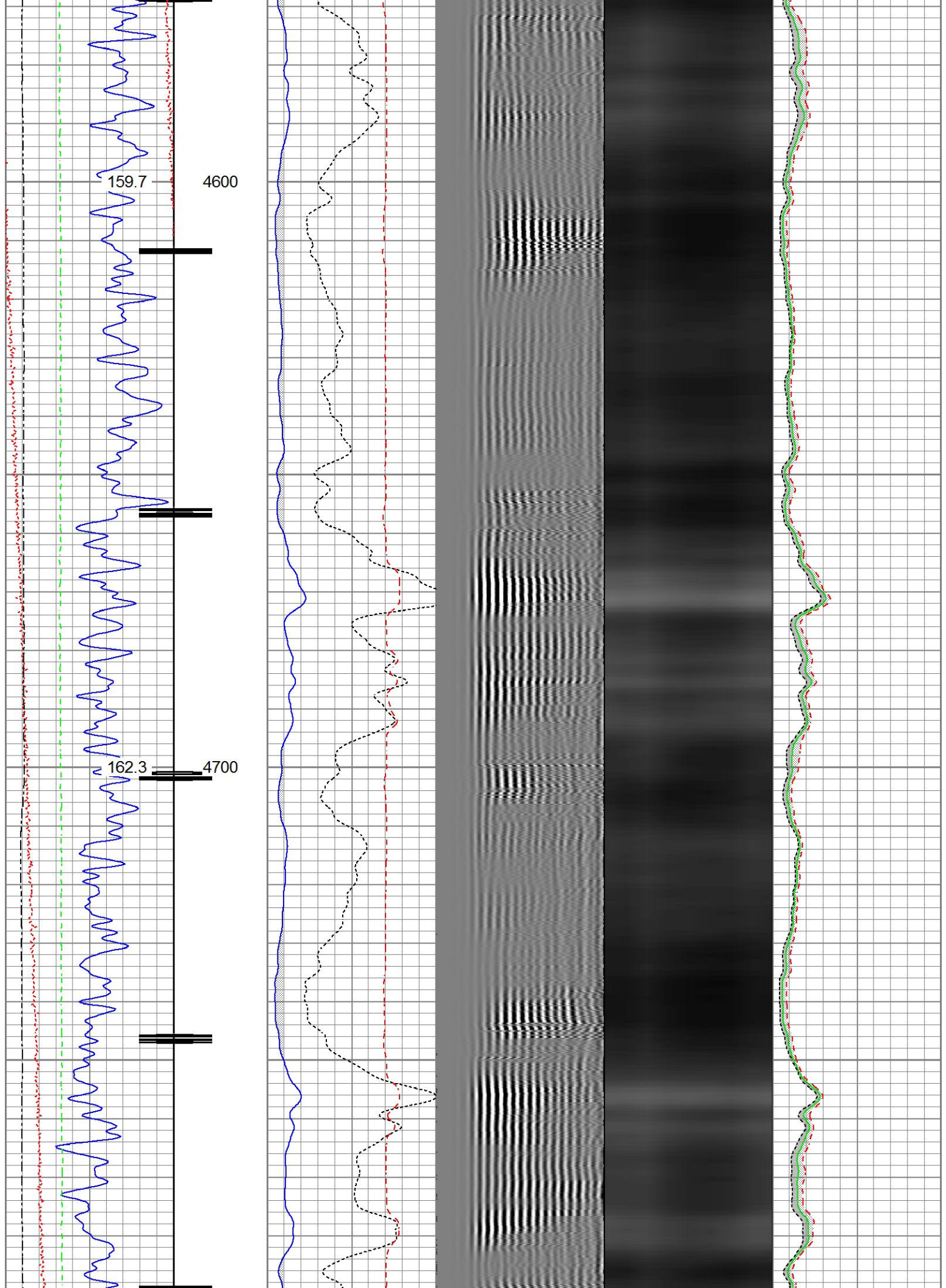


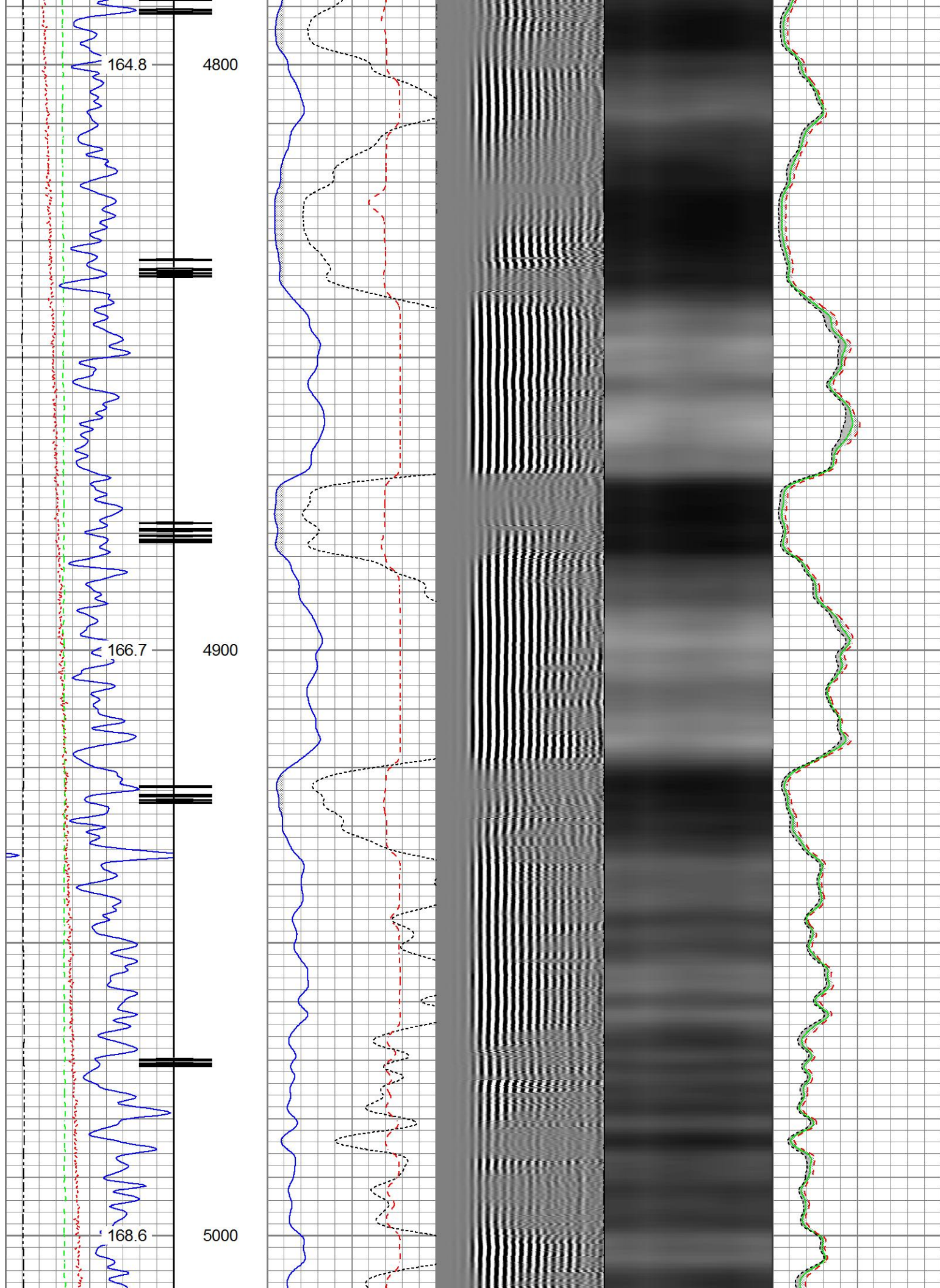


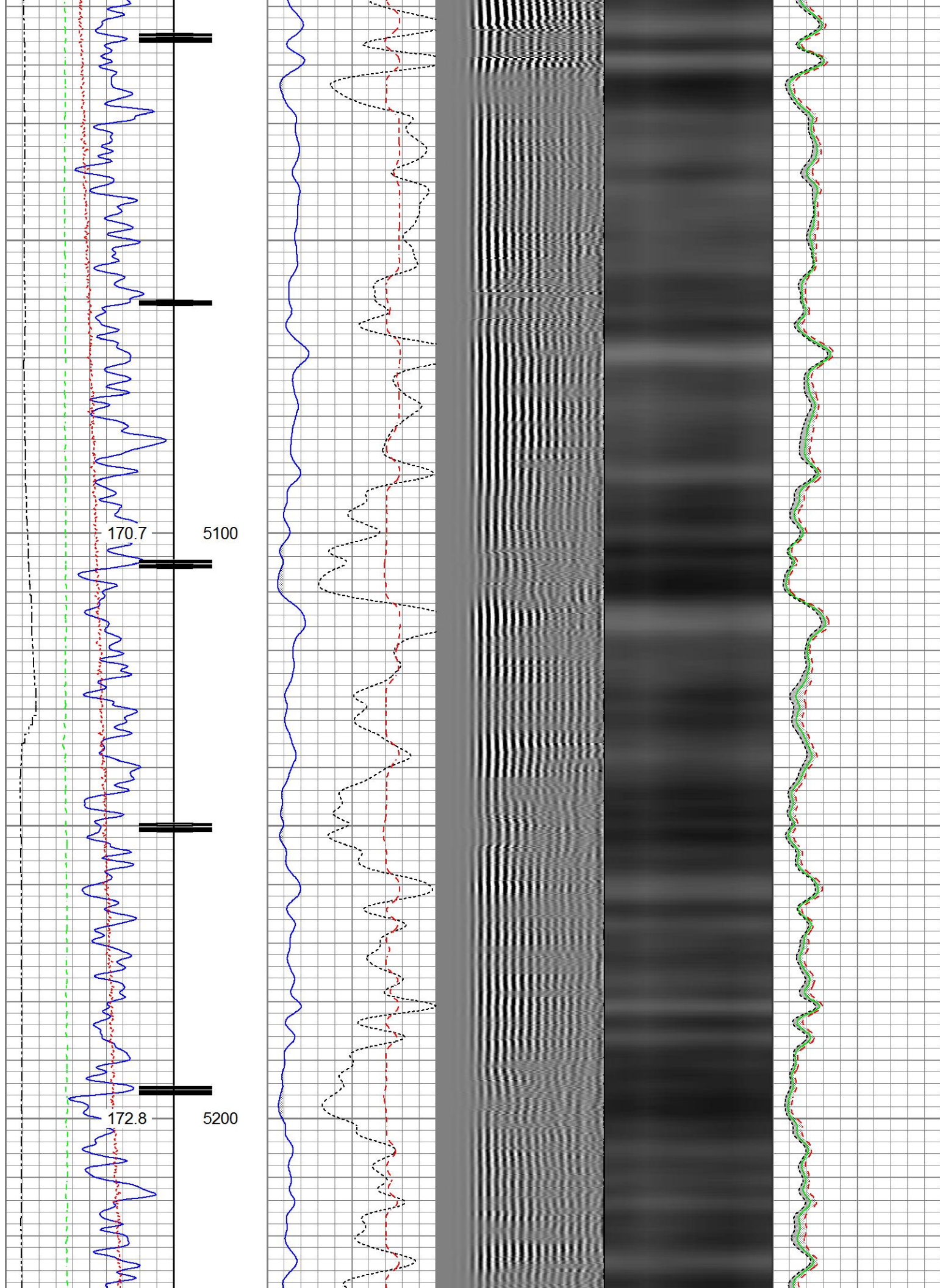


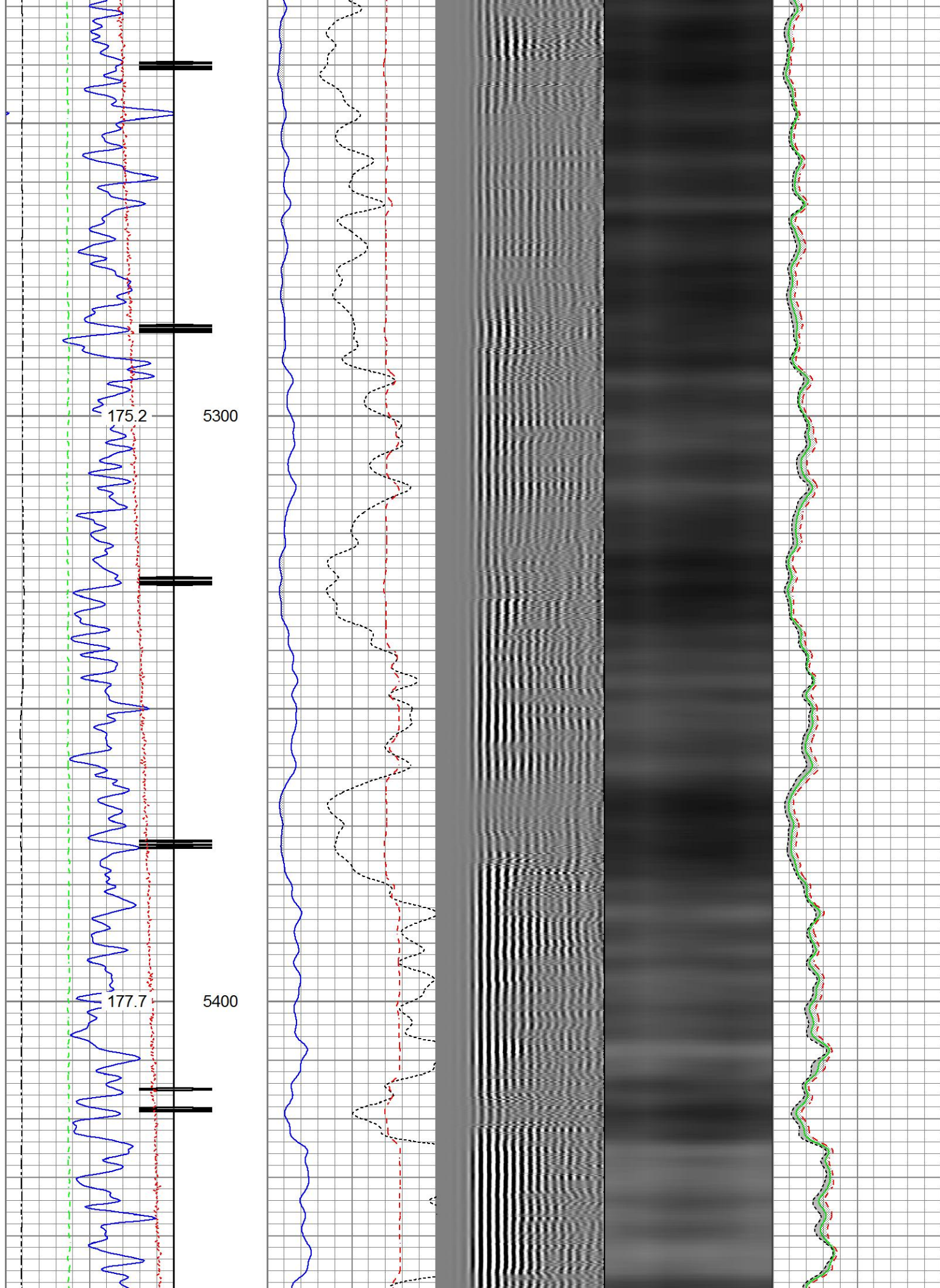


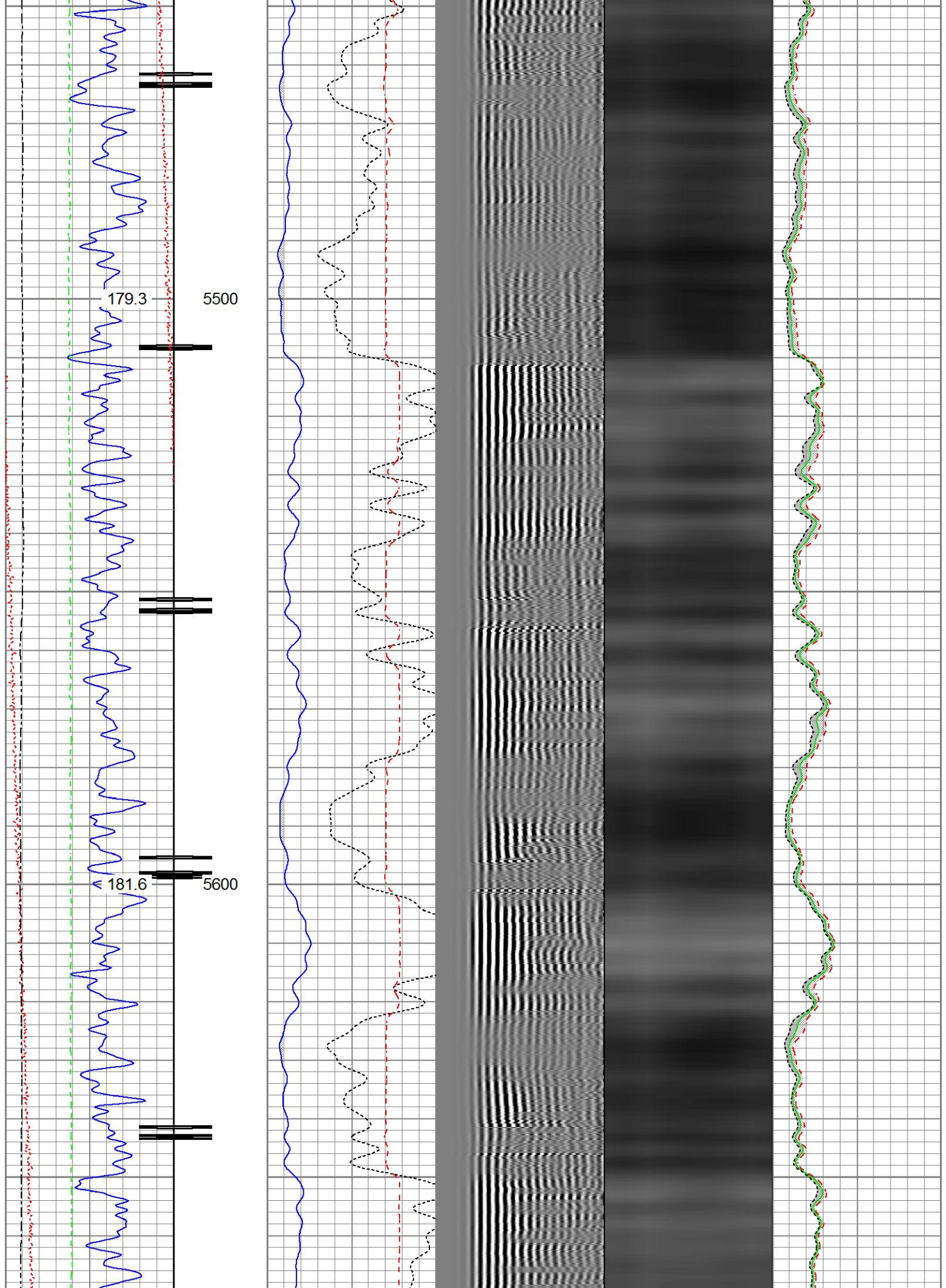


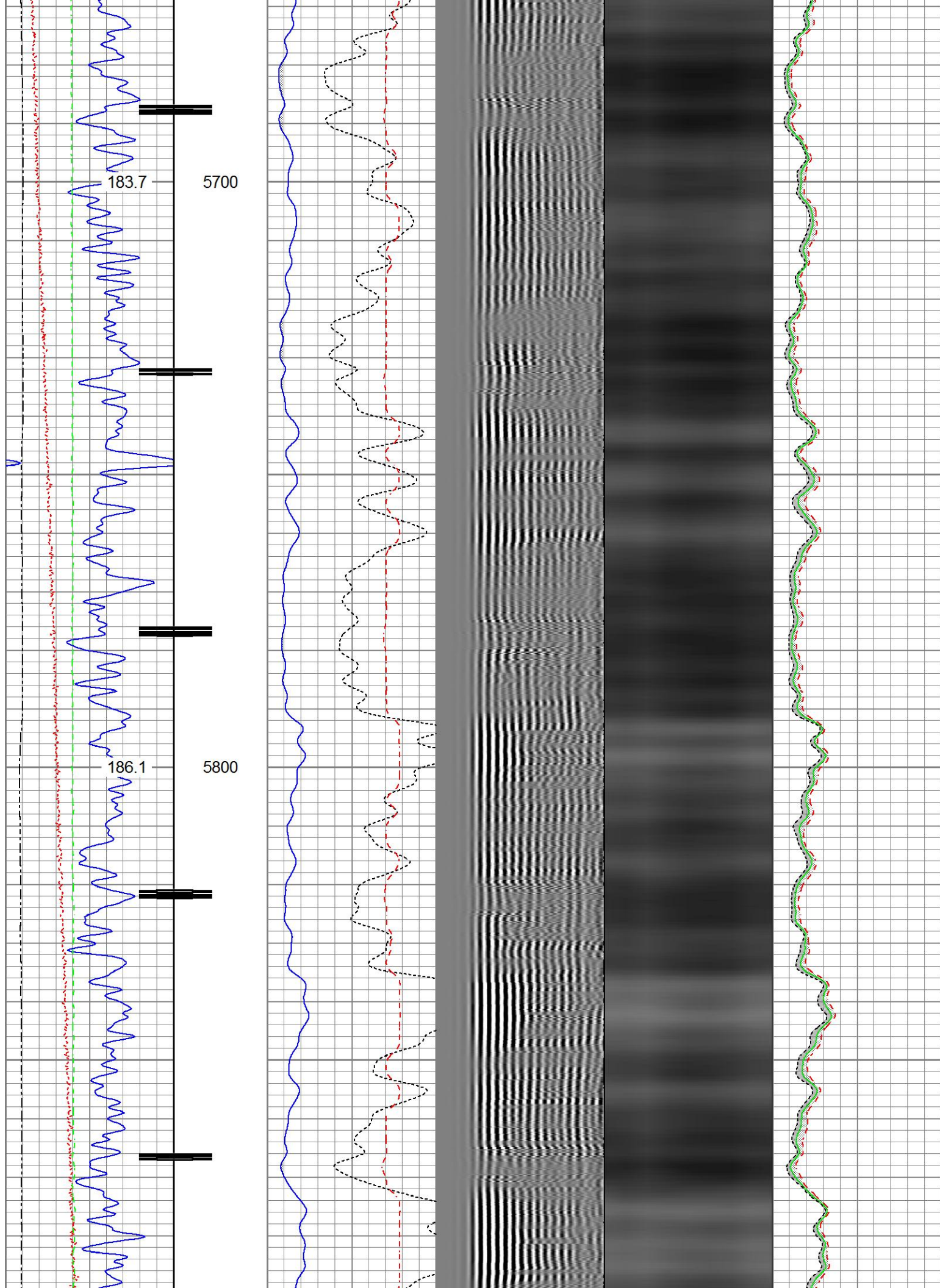


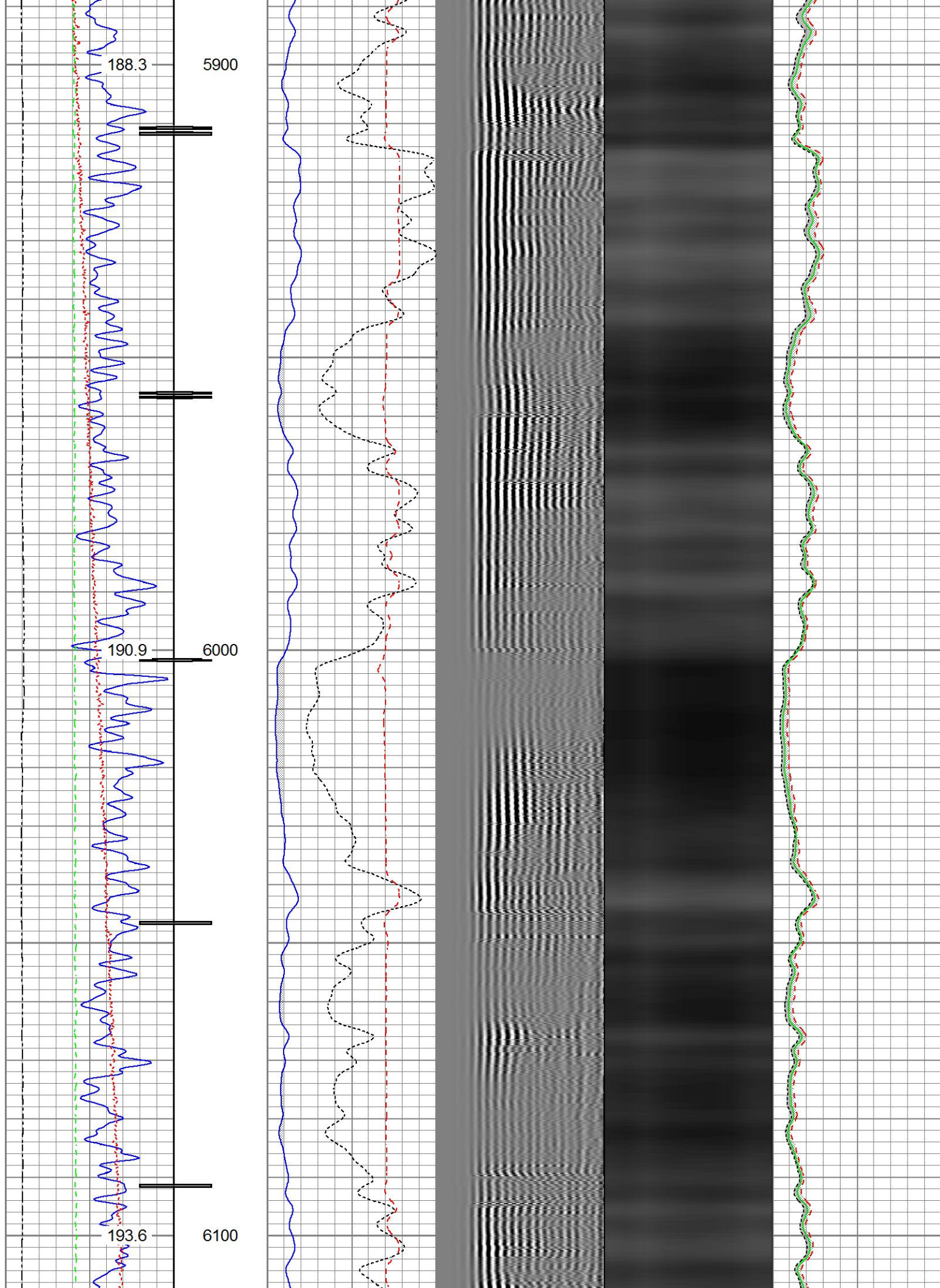


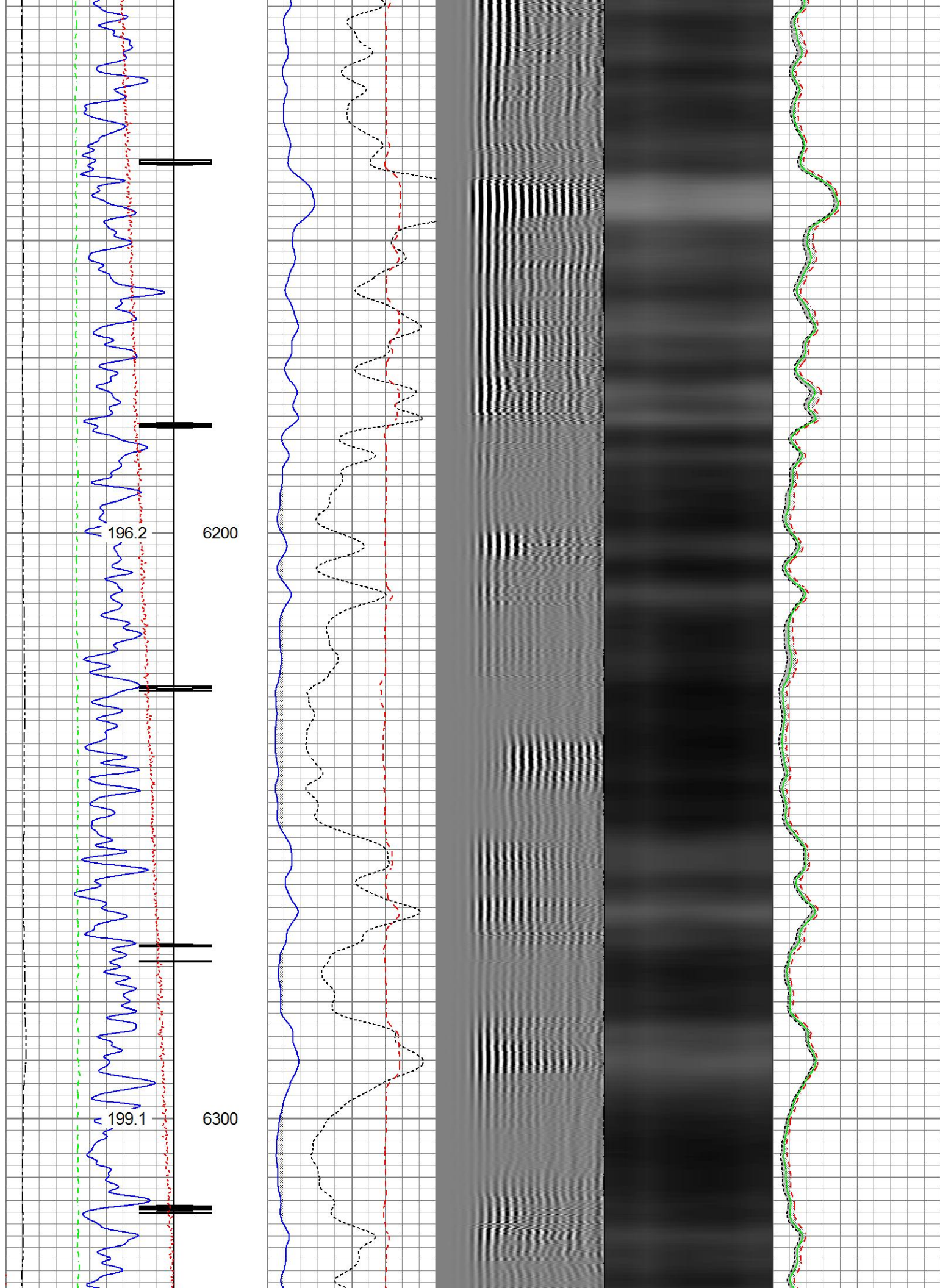


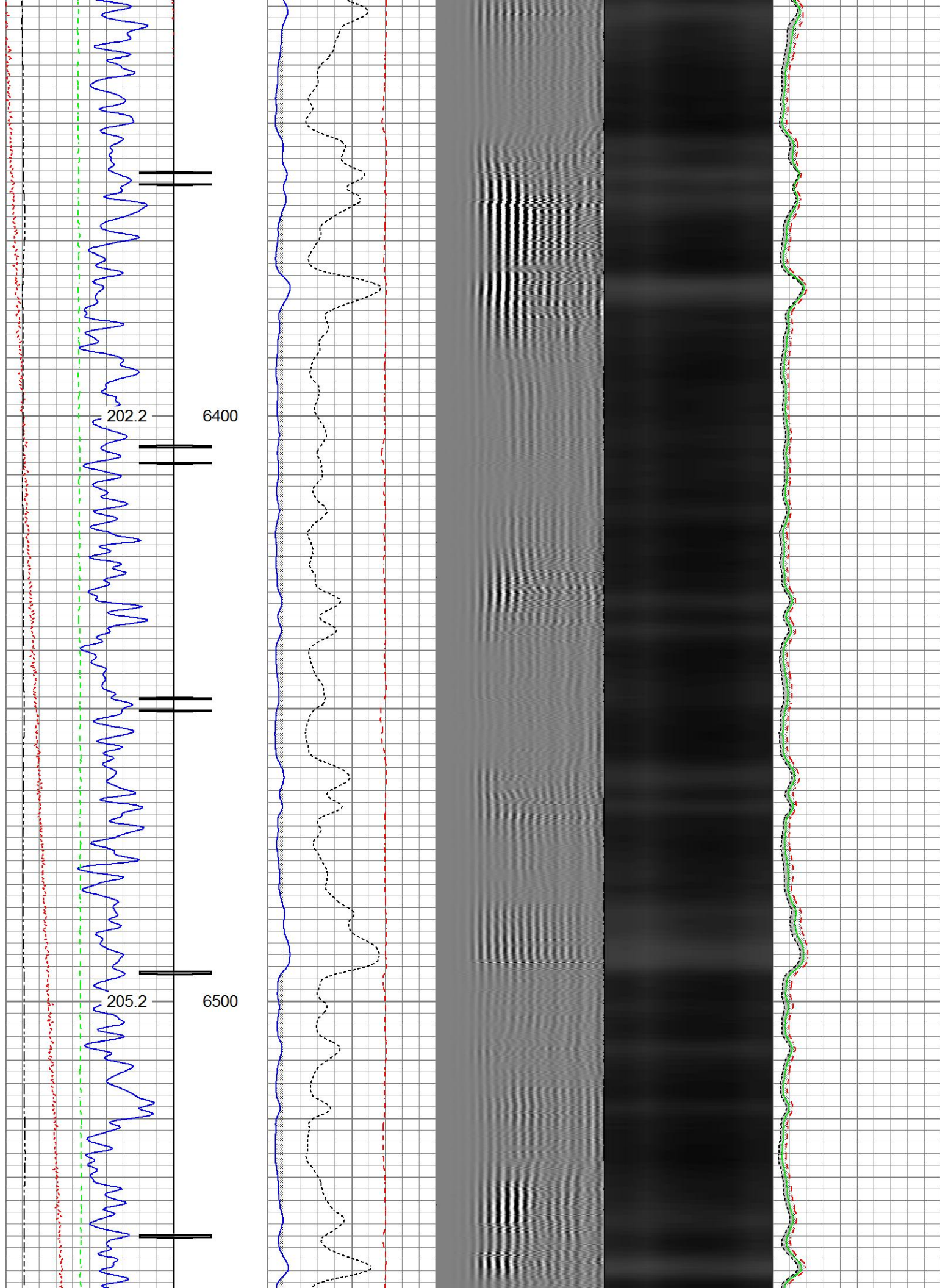


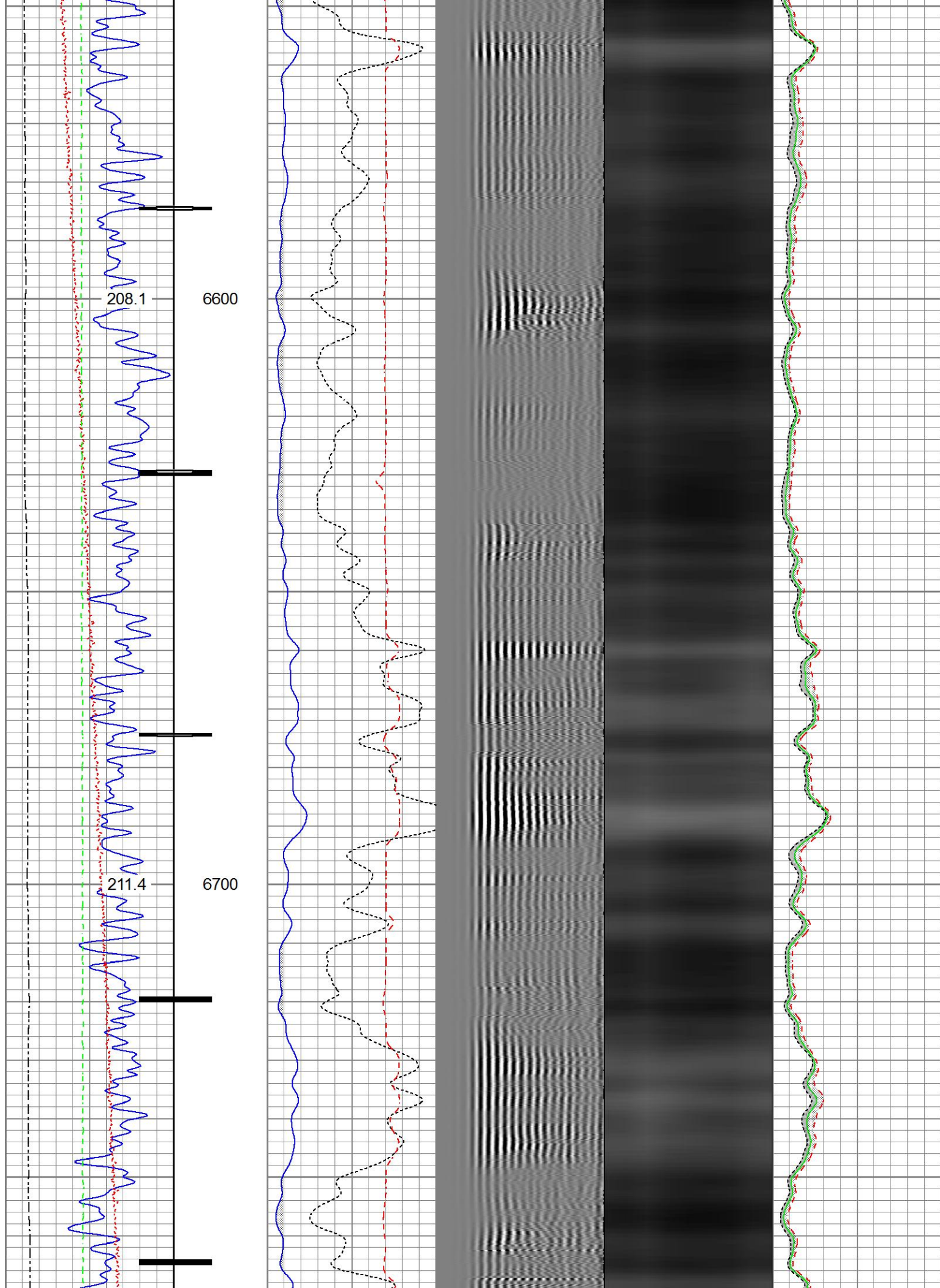


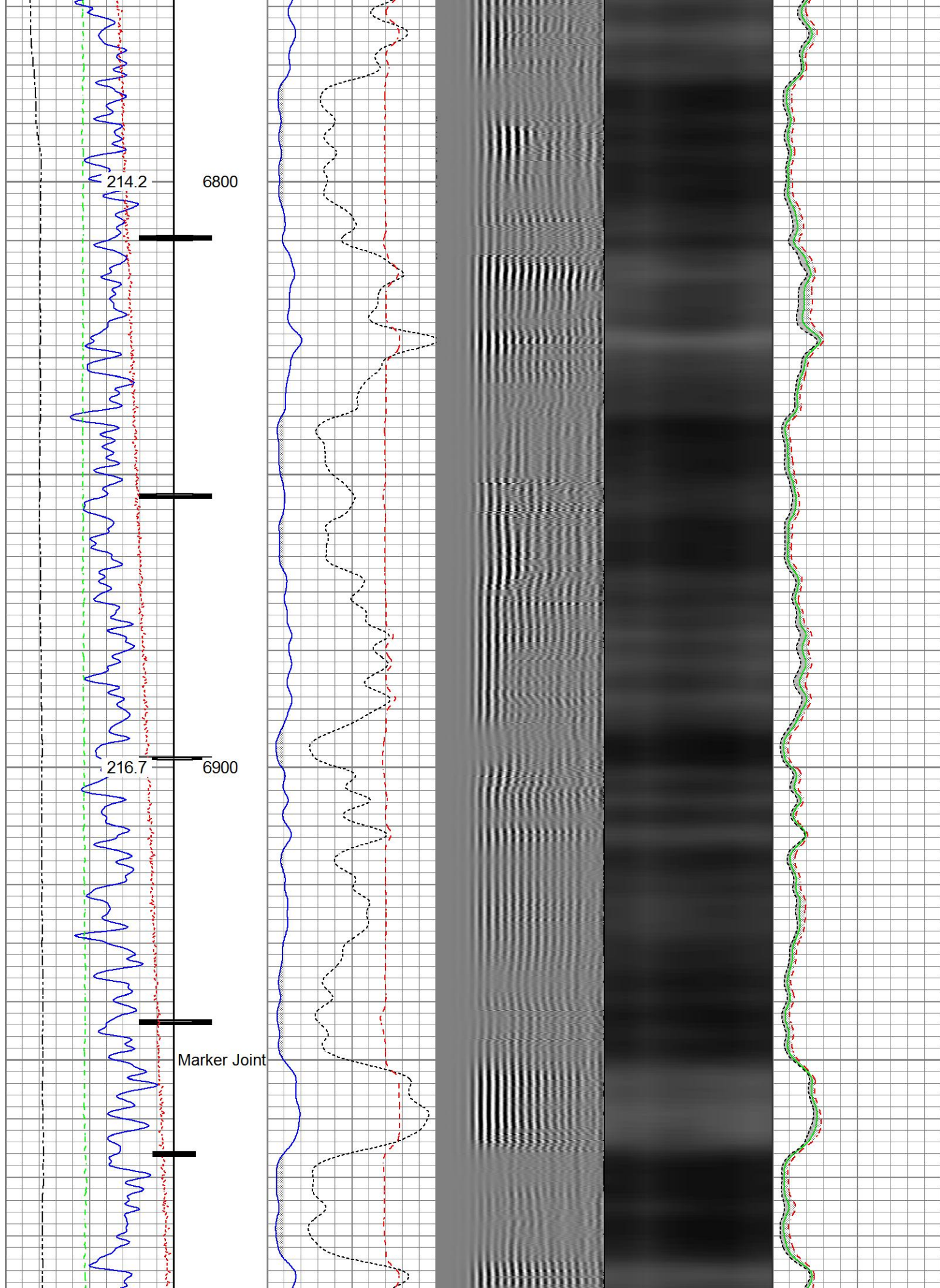


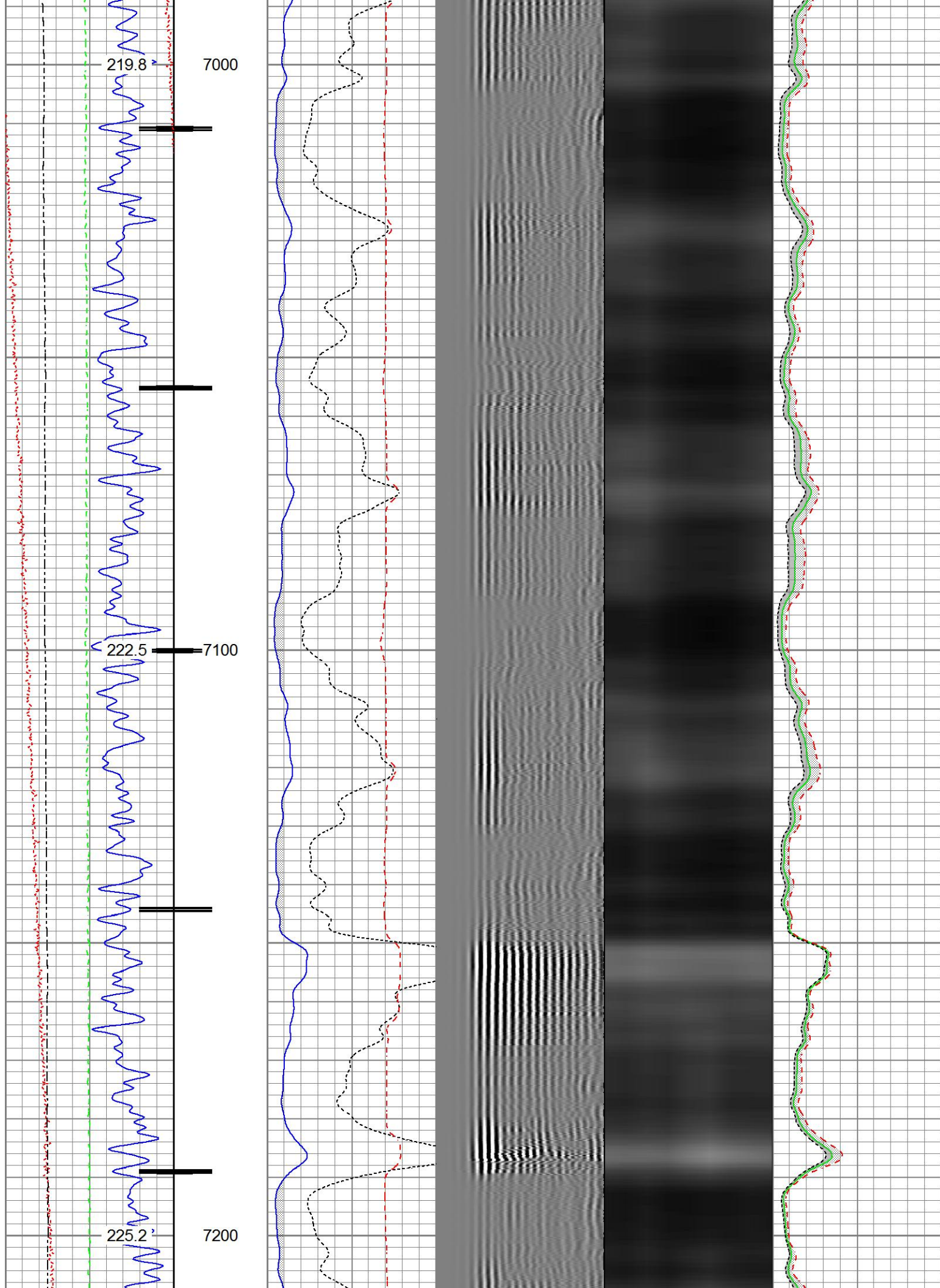


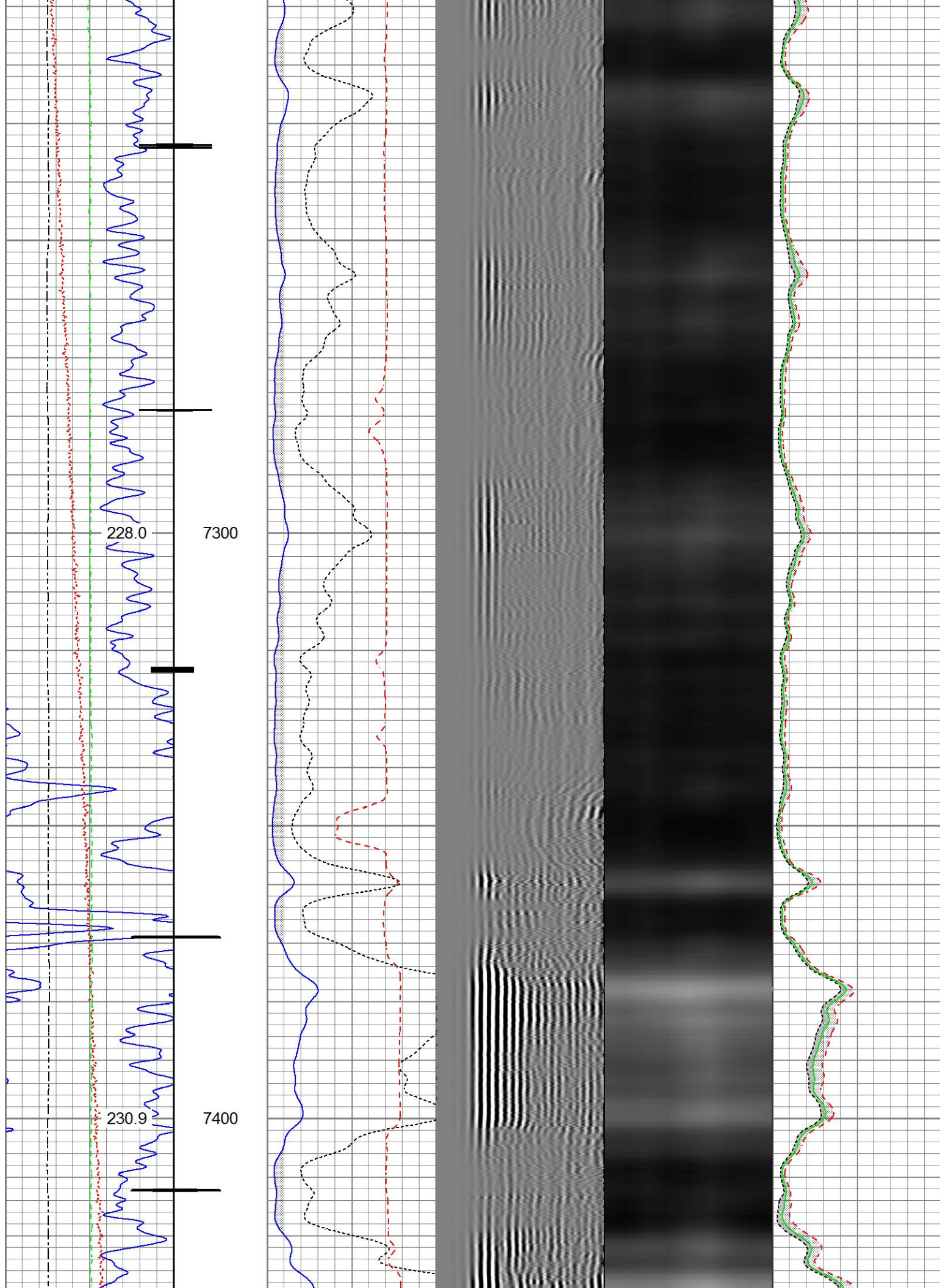


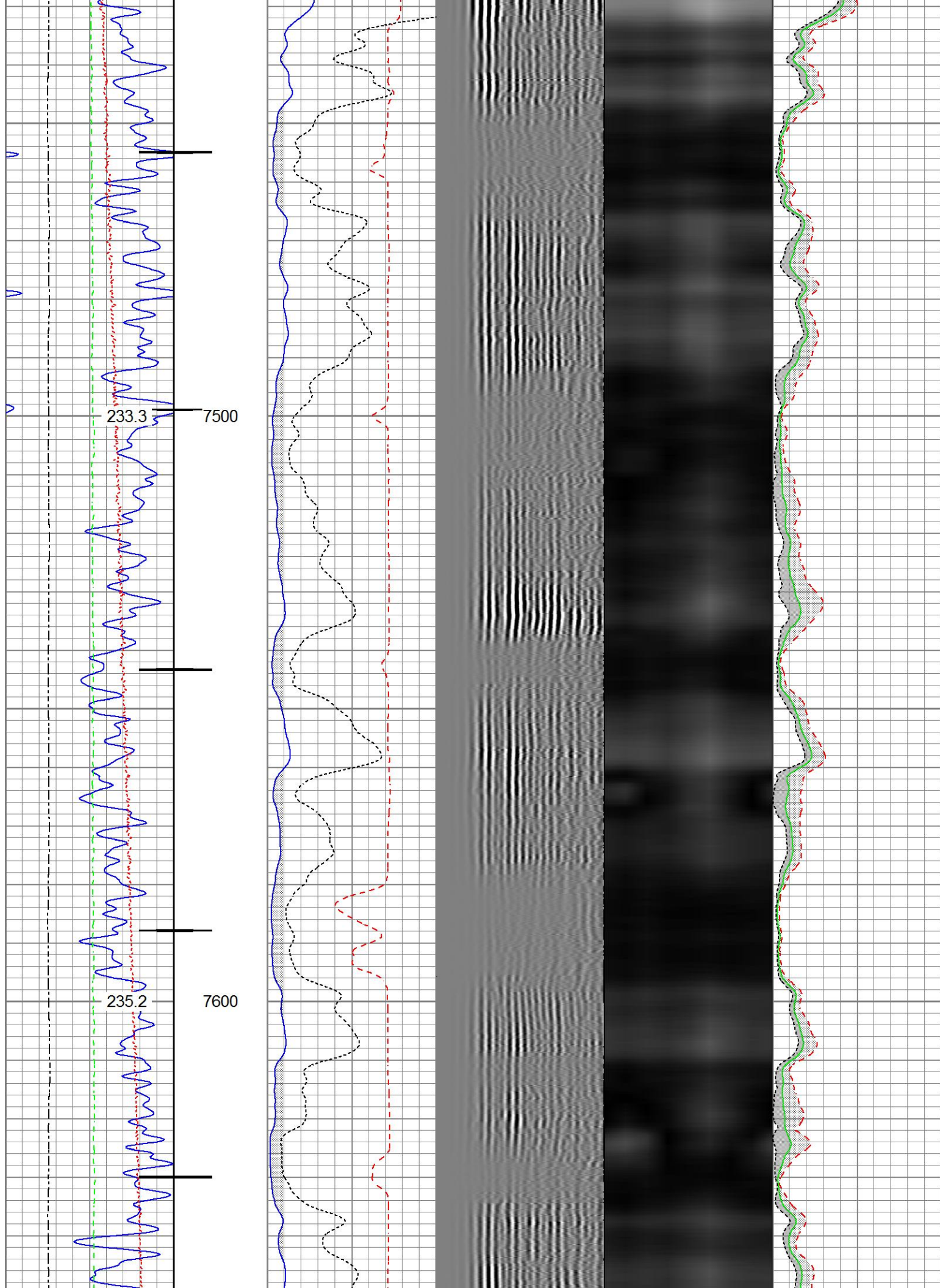


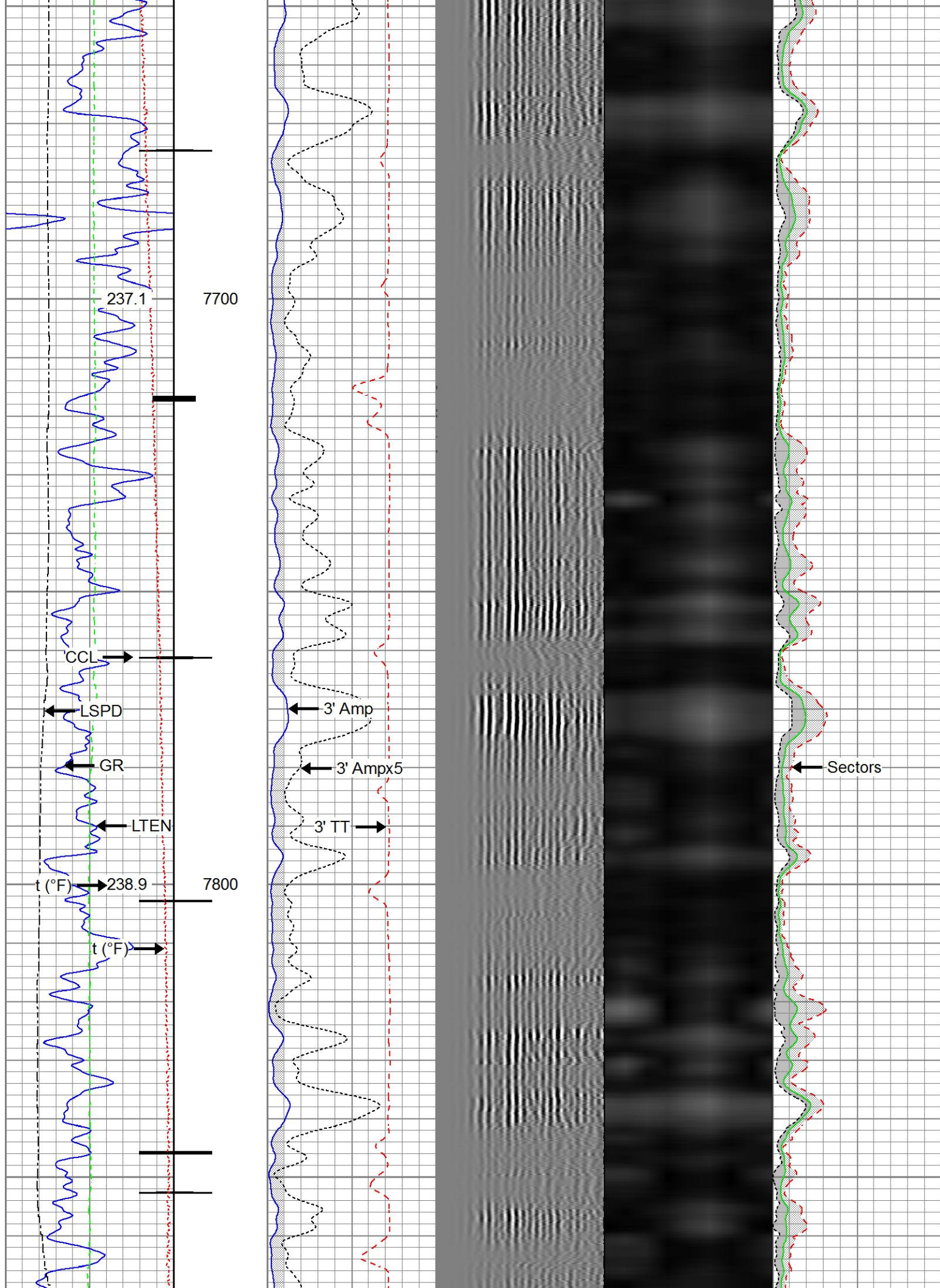


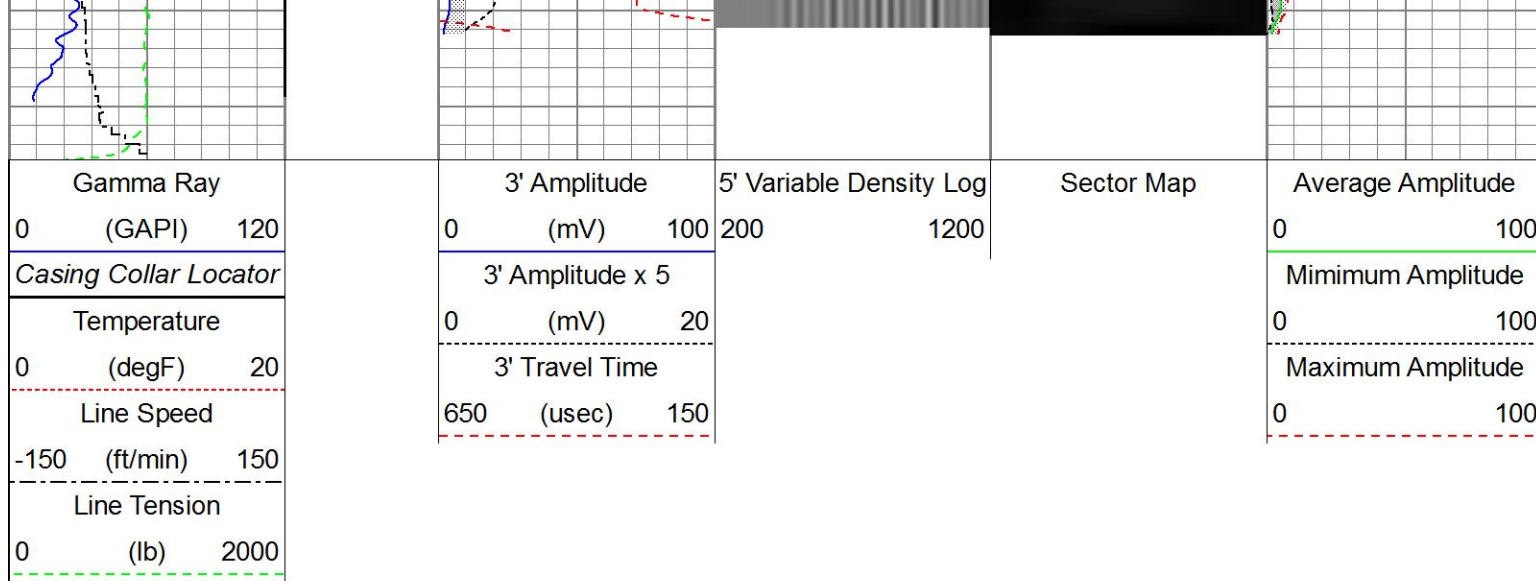








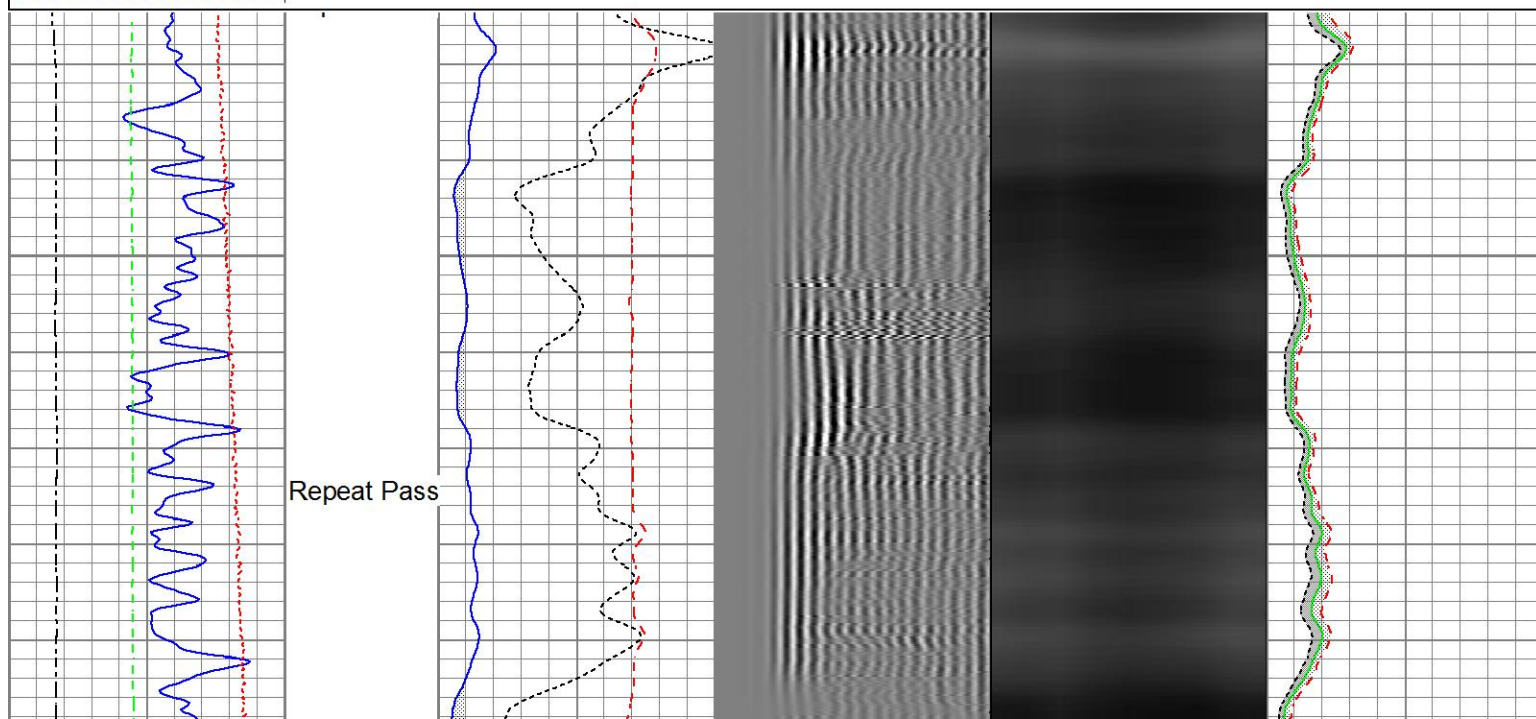
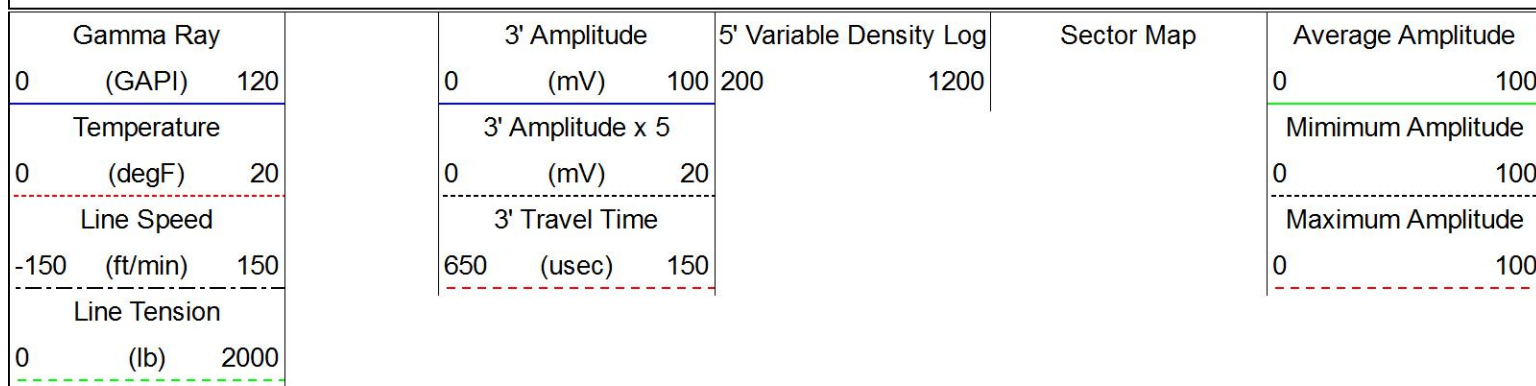


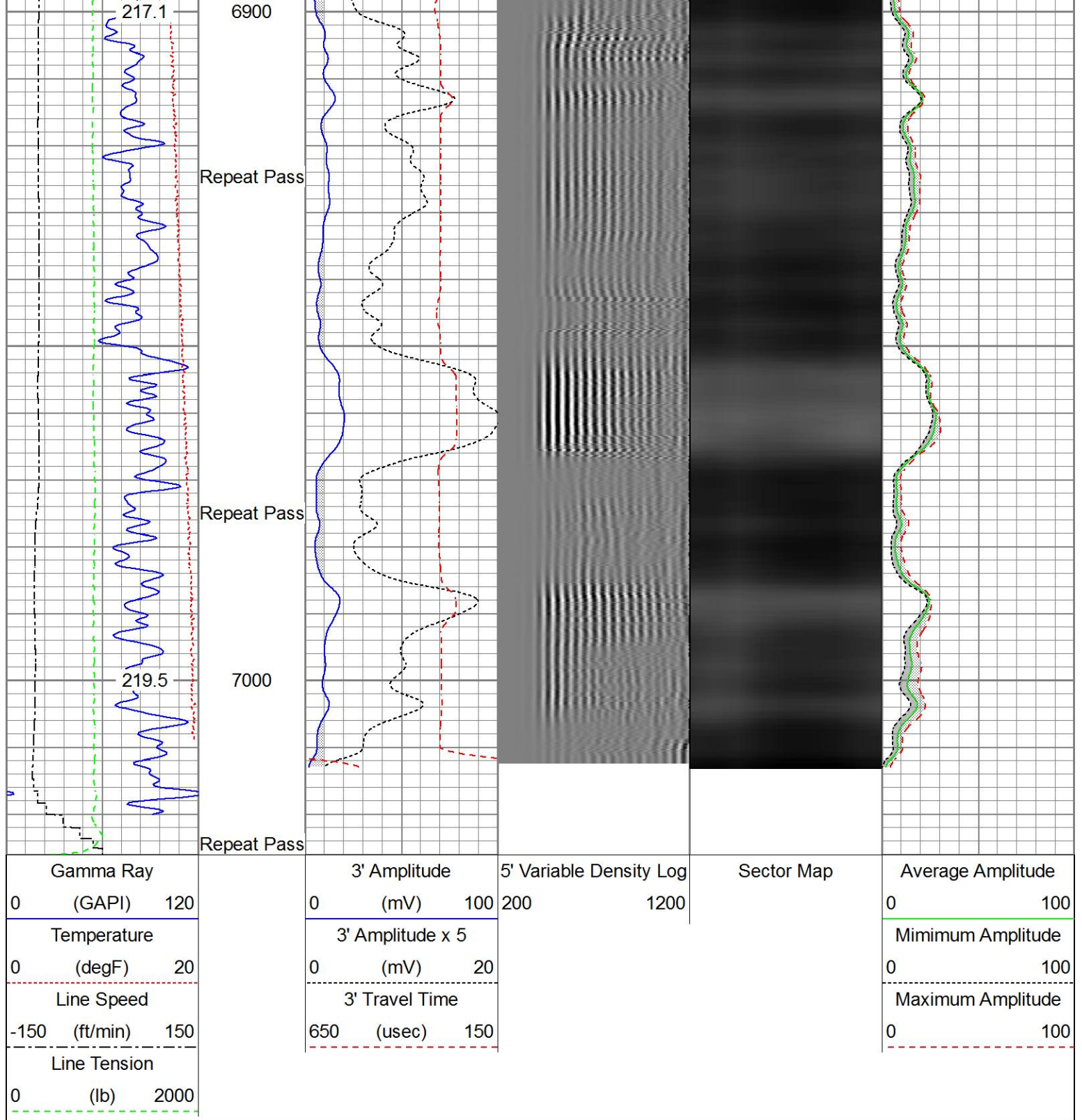


Repeat Pass

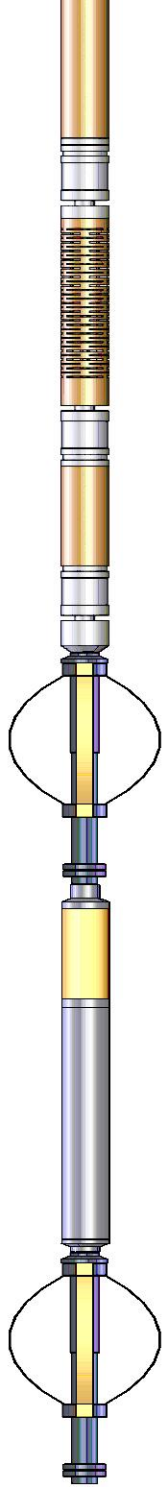
Recorded With 2800 PSI Surface Induced Pressure

Database File: anadarko_puma fed 34c-35hz\0512342570_anadarko_puma fed_34c-35hz_05-13-17_rbl.db
 Dataset Pathname: pass12.1
 Presentation Format: ros_radil
 Dataset Creation: Mon May 15 05:51:23 2017
 Charted by: Depth in Feet scaled 1:240





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan_Electric_Cable_Heads-Titan_1-11/161.03 Electric Cable Head with 1" Fishing Neck	1.69	1.69	5.40
			Probe_ELine_BowSpring_Centralizer-P_EE2.88_275 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	2.75	20.00

Temp	16.75				
WVFS8	14.58		Probe_RADII-C-P_RBT_2750 (FW1302-009.19)	2.75	105.00
WVFS7	14.58		Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe		
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	6.51		Probe_ELine_BowSpring_Centralizer-P	2.75	20.00
CCL	6.51		Probe 2-3/4" Electric Inline Bowspring Centralizer		
GR	3.77		Probe_GR_CCL-P_CGR_2750_S (FW1214.573)	2.75	55.00
			Probe 2-3/4" Digital CCL / Gamma Ray Combined		
			Probe_ELine_BowSpring_Centralizer-P	2.75	20.00
			Probe 2-3/4" Electric Inline Bowspring Centralizer		
Dataset: 0512342570_Anadarko_Puma Fed_34C-35HZ_05-13-17_RBL.db: field/well/run1/pass14.1					
Total length: 23.43 ft					
Total weight: 225.40 lb					
O.D.: 2.75 in					

Calibration Report		
Database File	C:\ProgramData\Warrior\Data\Anadarko_Puma Fed 34C-35HZ\0512342570_Anadarko_Puma Fed_34C-35HZ_05-13-17_RBL.db: field/well/run1/pass14.1	
Dataset Pathname	pass14.1	
Dataset Creation	Sat May 13 16:03:55 2017	
Gamma Ray Calibration Report		
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

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1302-002
Tool Model:	P_RBT_2750

Calibration Casing Diameter:	5.500	in
Calibration Depth:	45.102	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.010	0.720	0.800	71.921	97.475	1.752
CAL	0.002	0.821				
5'	-0.017	0.606	0.800	71.921	114.112	2.794
SUM						
S1	-0.027	0.709	0.000	100.000	135.932	3.647
S2	-0.018	0.712	0.000	100.000	137.018	2.463
S3	-0.030	0.721	0.000	100.000	133.106	3.983
S4	-0.012	0.718	0.000	100.000	137.037	1.593
S5	0.001	0.731	0.000	100.000	136.953	-0.145
S6	0.001	0.736	0.000	100.000	136.140	-0.144
S7	-0.001	0.724	0.000	100.000	137.851	0.172
S8	-0.019	0.724	0.000	100.000	134.642	2.575

Internal Reference Calibration, performed Wed Aug 03 10:40:08 2016:

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

Air Zero Calibration, performed Sat May 13 09:53:02 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
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 34C-35HZ
Field	Wattenberg

County

Weld

State

Colorado