



**Radial Cement Bond
Gamma Ray
Casing Collar Log**

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Buddy 7-10HZ
Field Wattenberg
County Weld **State** Colorado

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Well Buddy 7-10HZ
Field Wattenberg
County Weld
State Colorado

Location: SEC 7 TWP 1N RGE 67W
 API #: 05-123-48448
 Permanent Datum Ground Level Elevation 5072'
 Log Measured From Ground Level 0 FT
 Drilling Measured From Kelly Bushing
 Other Services
 JBGR
 RBP
 RBL 0 PSI
 Elevation
 K.B. 5093'
 D.F. ---
 G.L. 5072'

Date	18-JUL-2019						
Run Number	One						
Depth Driller	18278 FT						
Depth Logger	7046 FT						
Bottom Logged Interval	7030 FT						
Top Log Interval	Surface						
Open Hole Size	7.875"						
Type Fluid	Water						
Density / Viscosity	8.34 lb/gal						
Max. Recorded Temp.	219°F						
E. estimated Cement Top	See Log						
Time Well Ready	ROA						
Time Logger on Bottom	10-11						
E. equipment Number	HD-363						
Location	Platteville, CO						
Recorded By	J. Morrison						
Witnessed By	J. McCarthy						
Run Number	Borehole Record		Tubing Record				
	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	1883 FT		
Intermediate #1	5.1/2	17	HCP-110	Surface	18267 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 6985 FT
Adjusted 0 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7904 FT
Retrievable Bridge Plug set at 7055 FT
Log ran with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

Main Pass

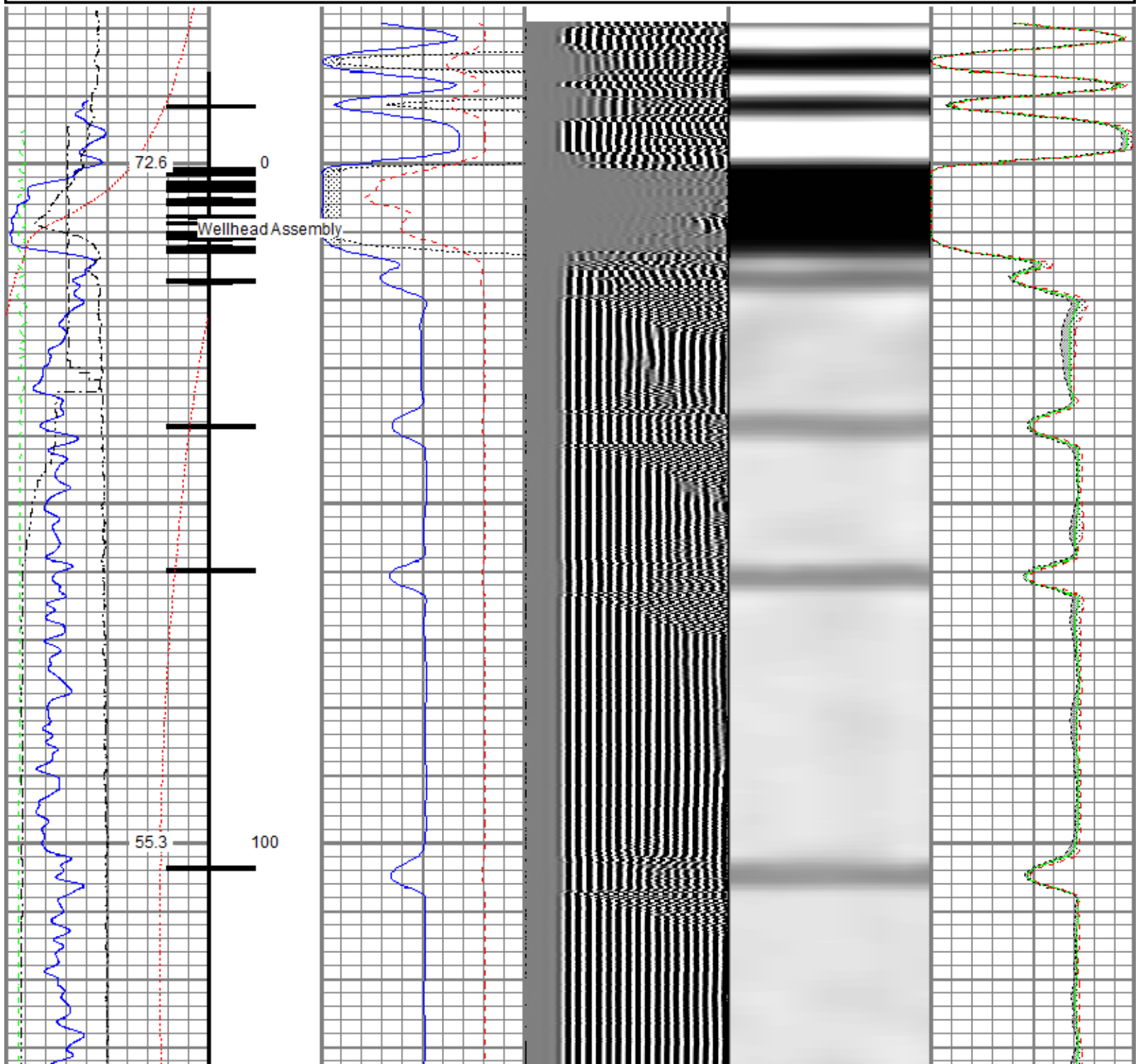


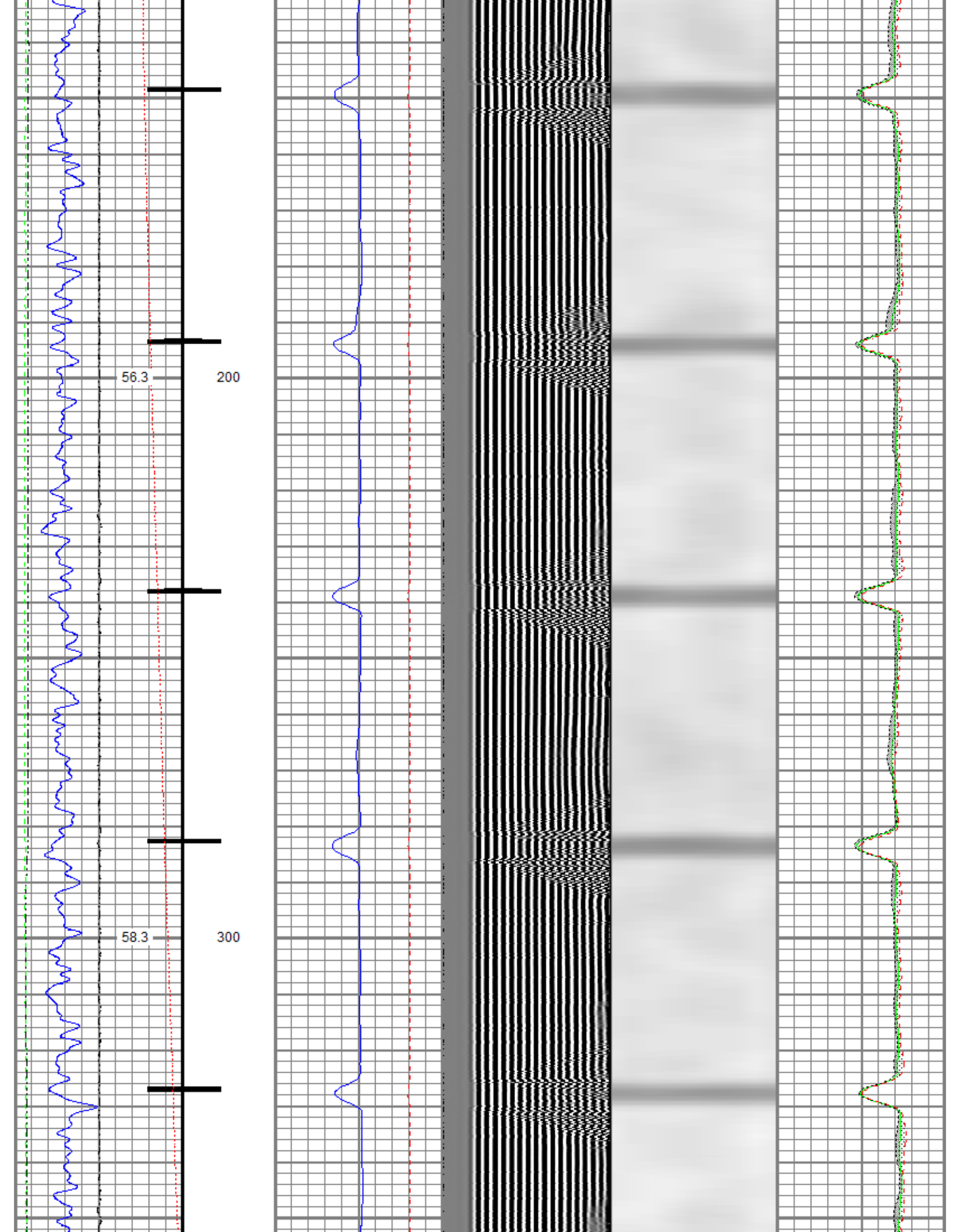
Recorded With 2800 PSI Surface Induced Pressure

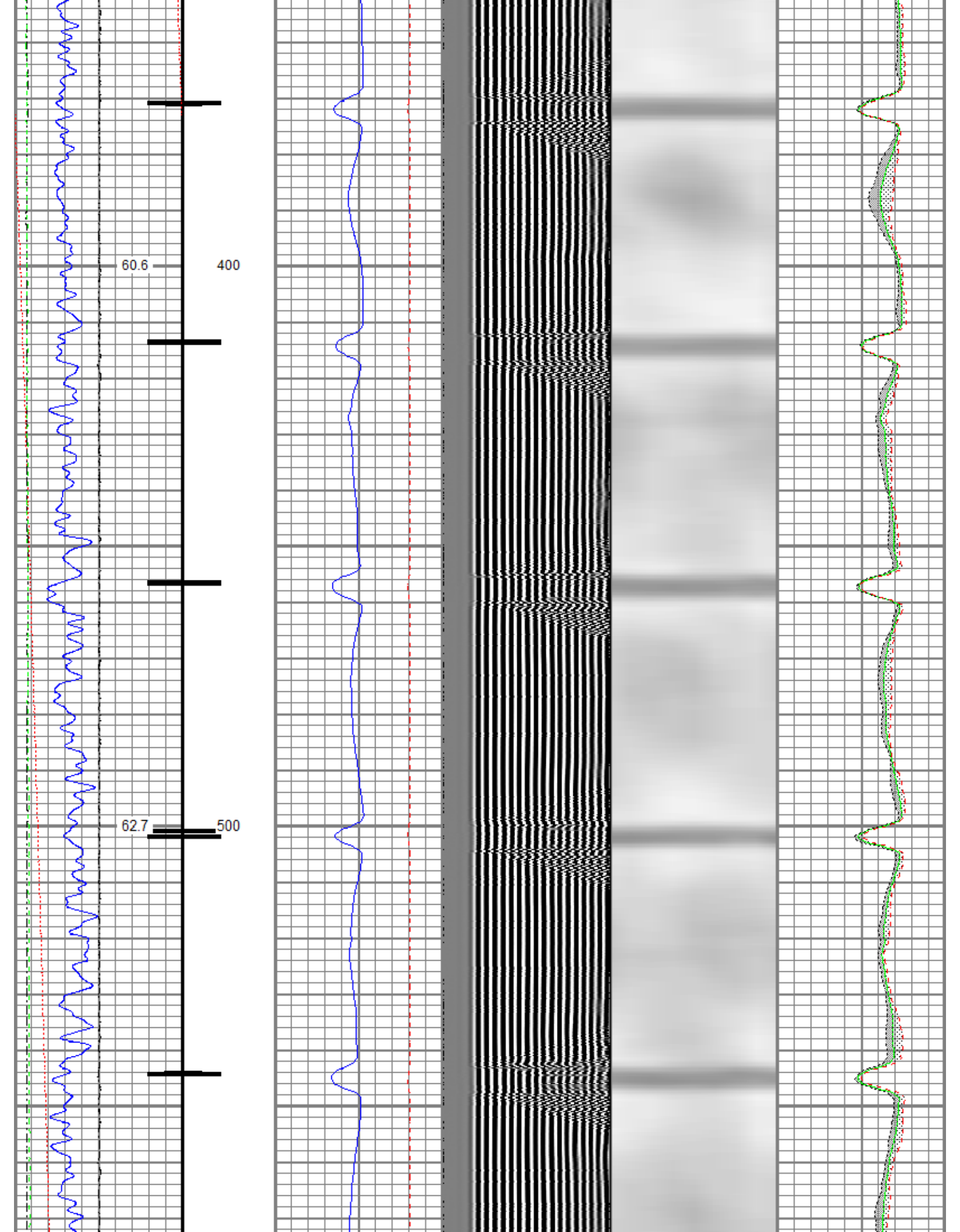
Recorded with 2800 PSI Surface Induced Pressure

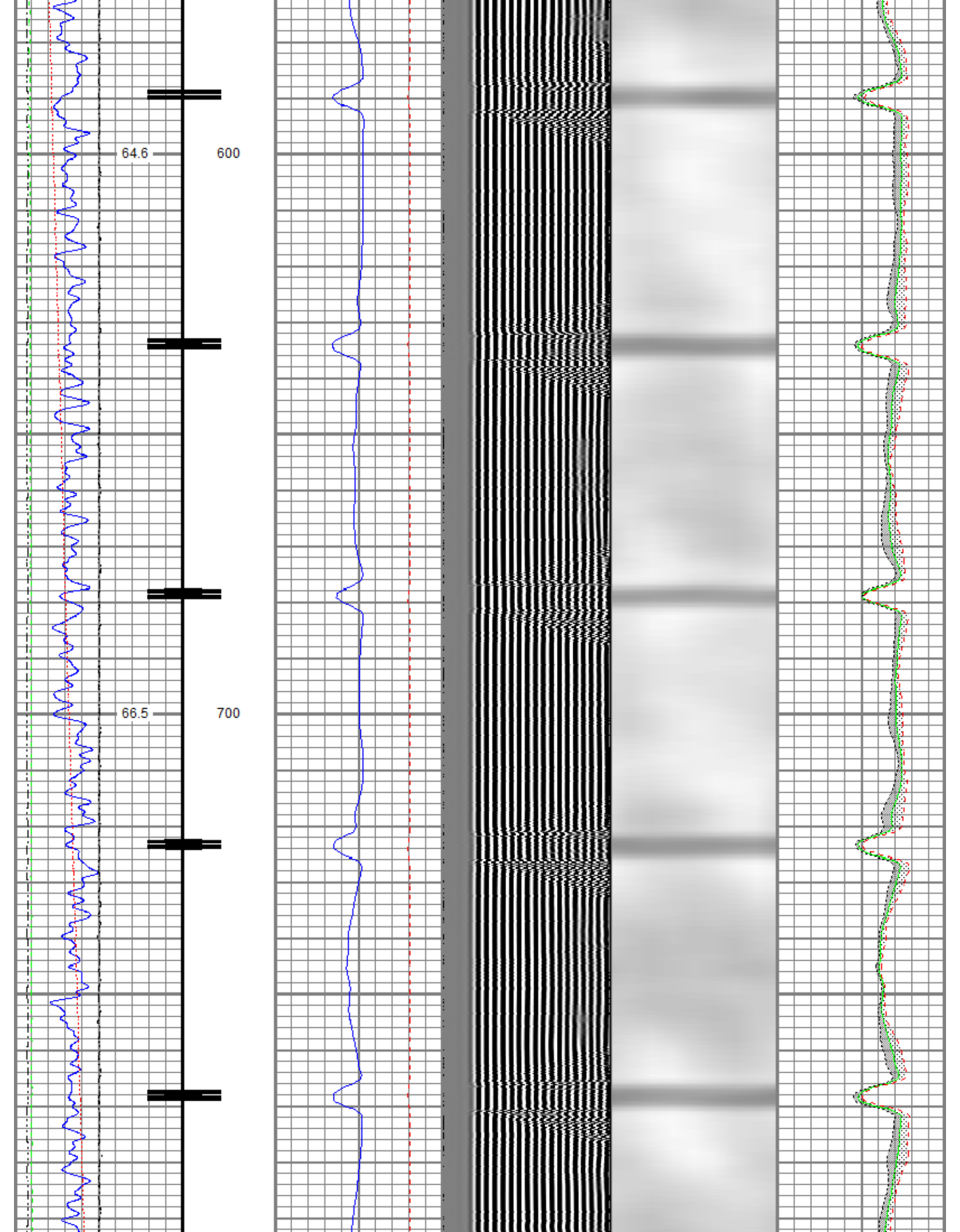
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Presentation Format	ros_radri
Dataset Creation	Thu Jul 18 10:22:49 2019
Charted by	Depth in Feet scaled 1:240

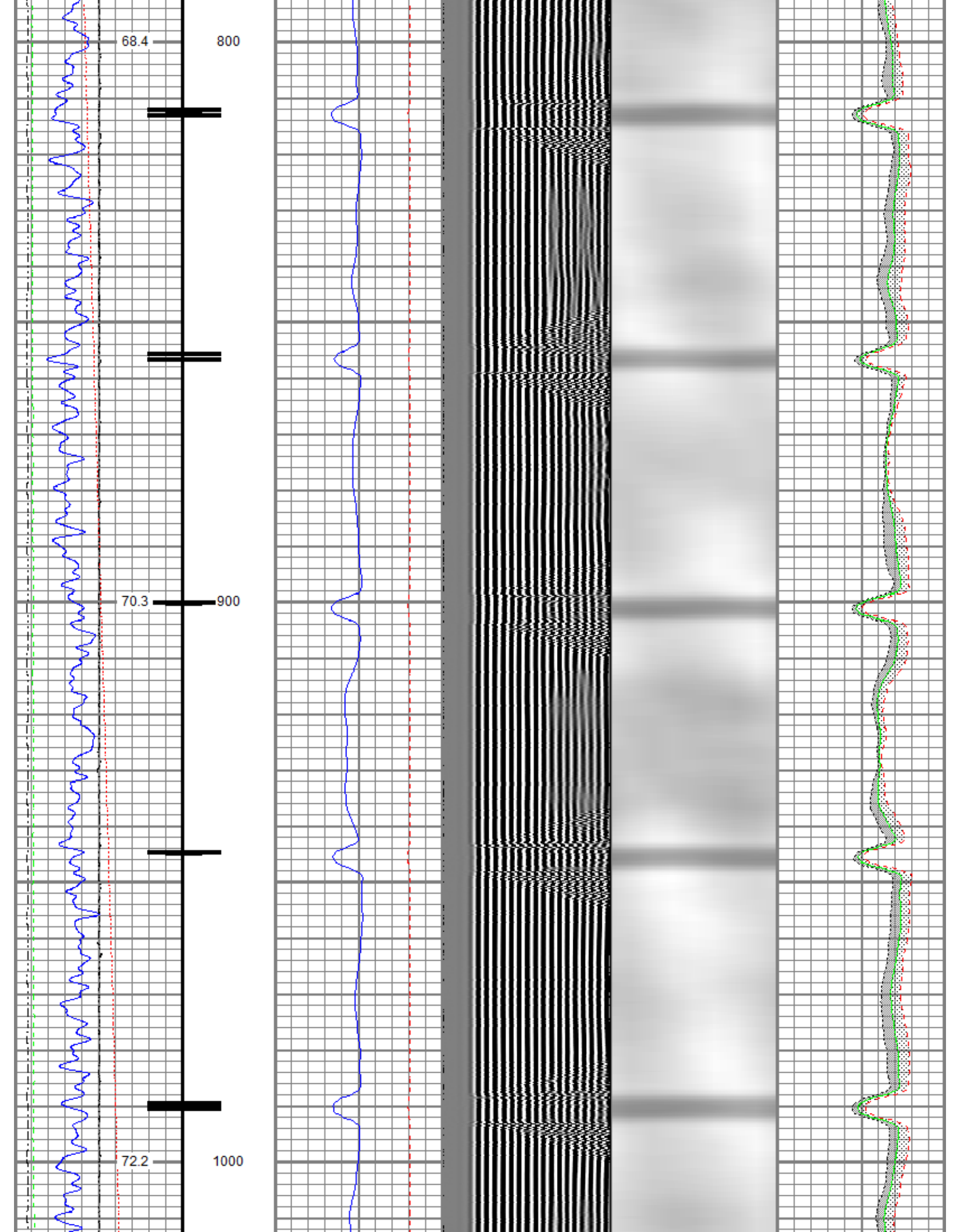
Gamma Ray (GAPI) 120	0 3' Amplitude (mV) 100	5' Variable Density Log (usec) 1200	Sector Map	0 Average Amplitude 100
<i>Casing Collar Locator</i>	3' Amplitude x 5 (mV) 20			Minimum Amplitude 0 100
0 Temperature (degF) 20	3' Travel Time (usec) 150			Maximum Amplitude 0 100
Line Speed (ft/min) 150				
0 Line Tension (lb) 2000				
Differential Temperature (degF) 2				

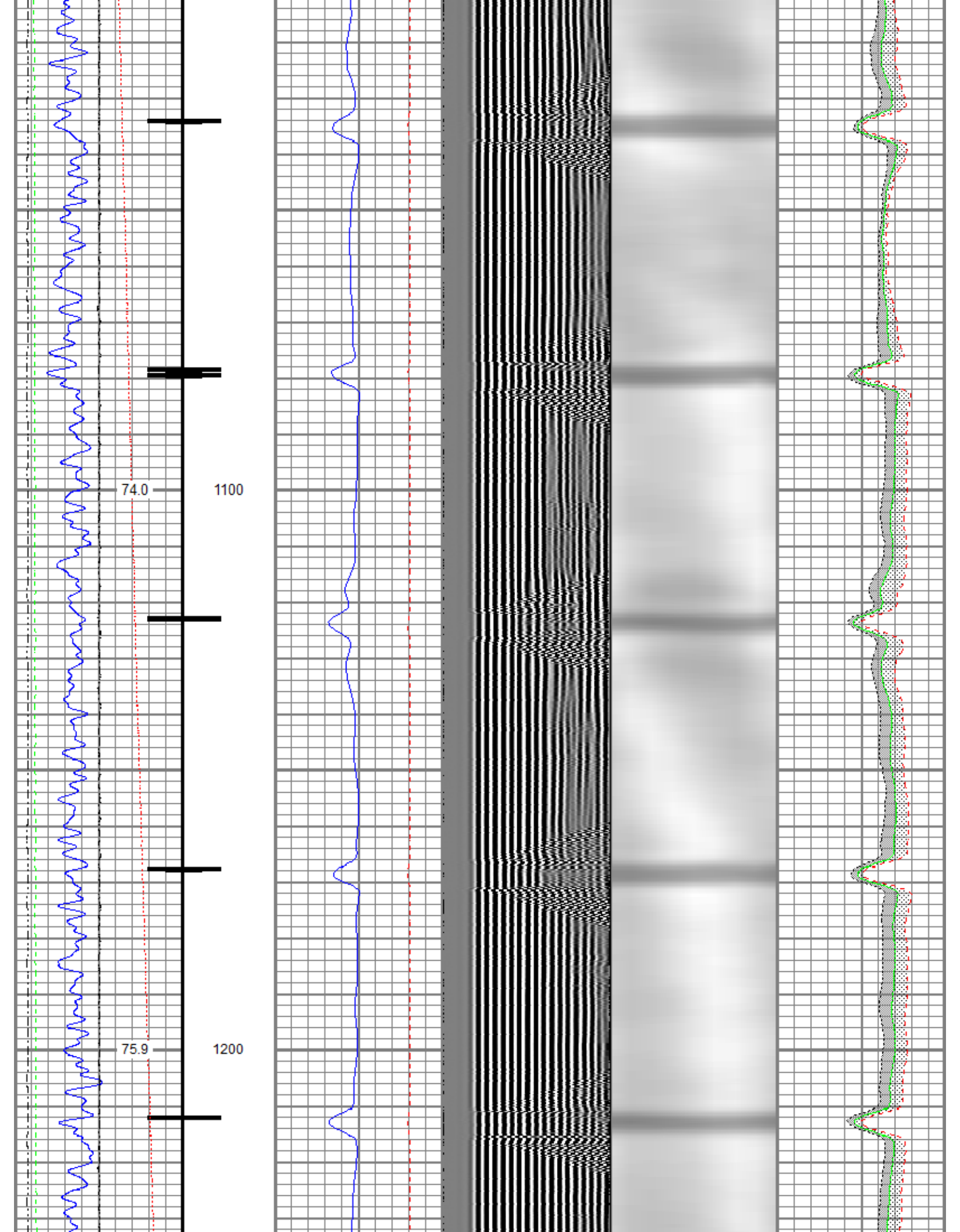


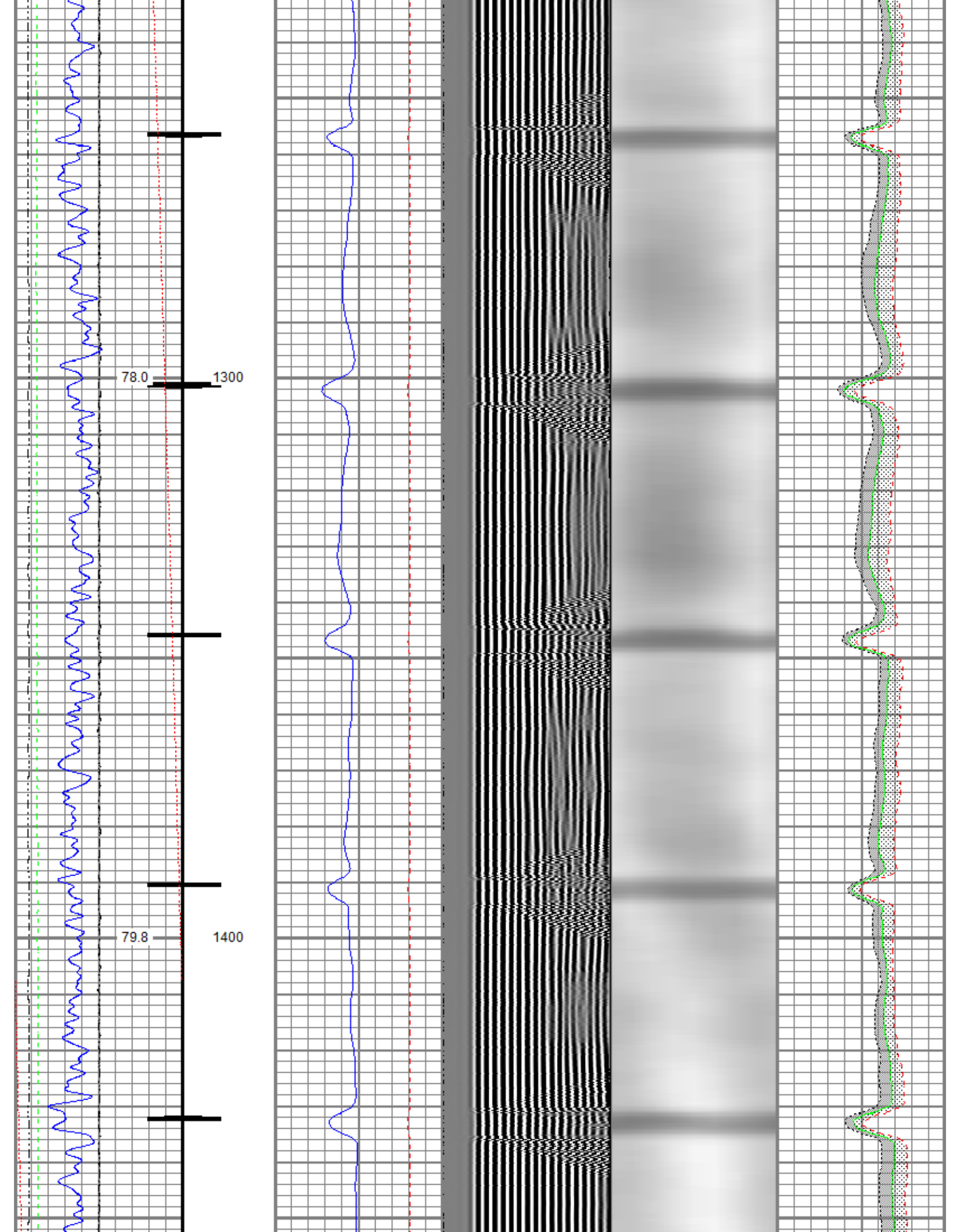


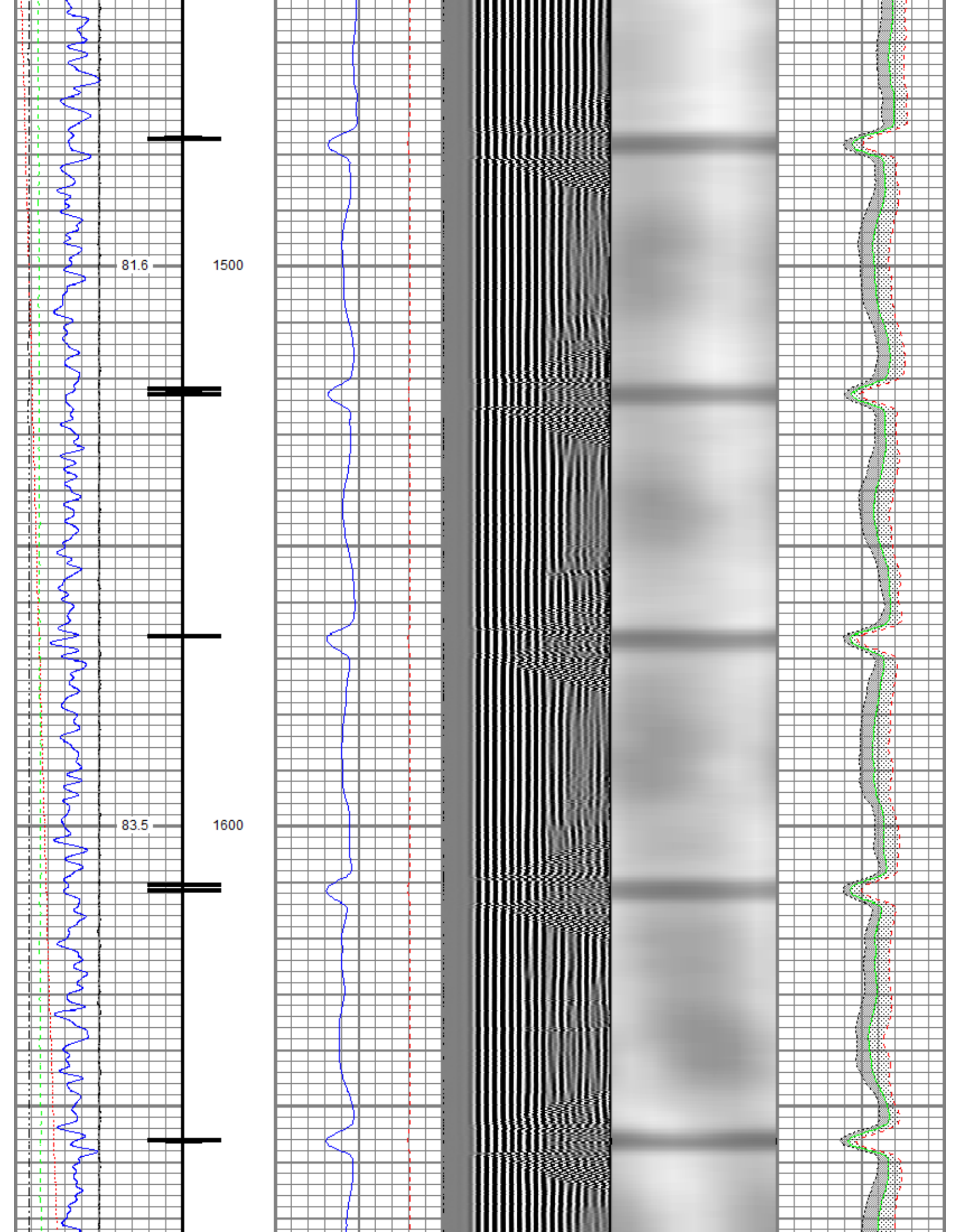


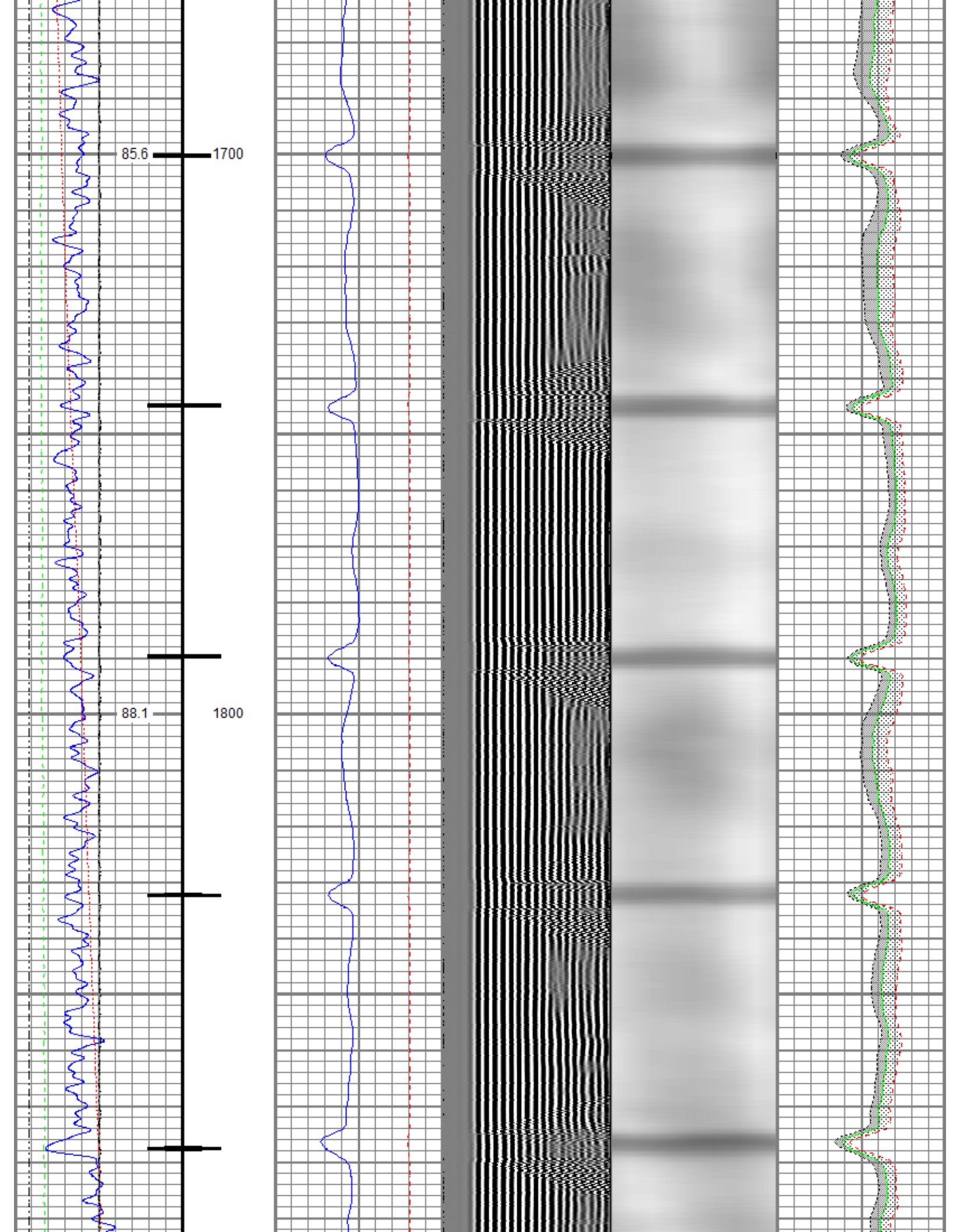


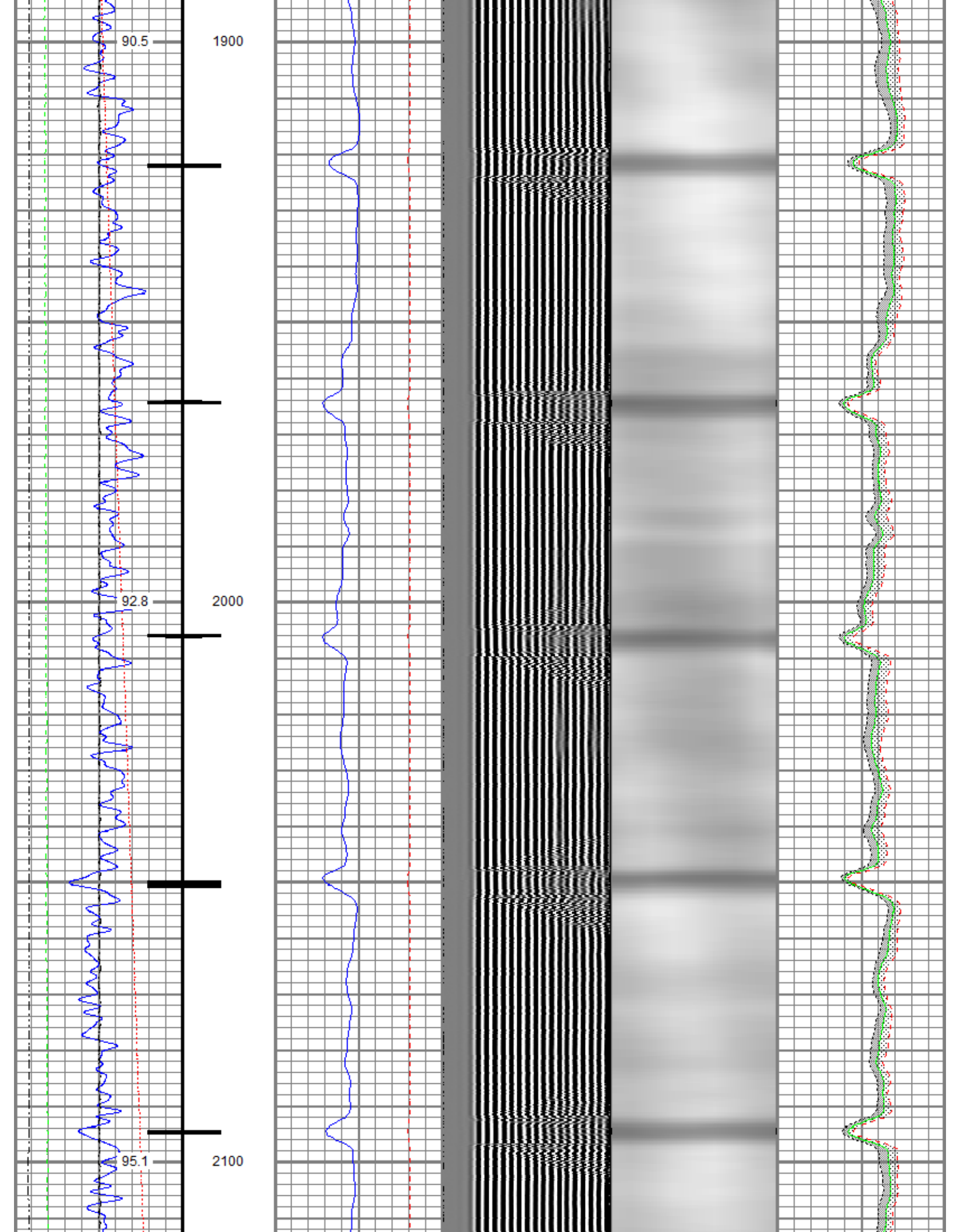


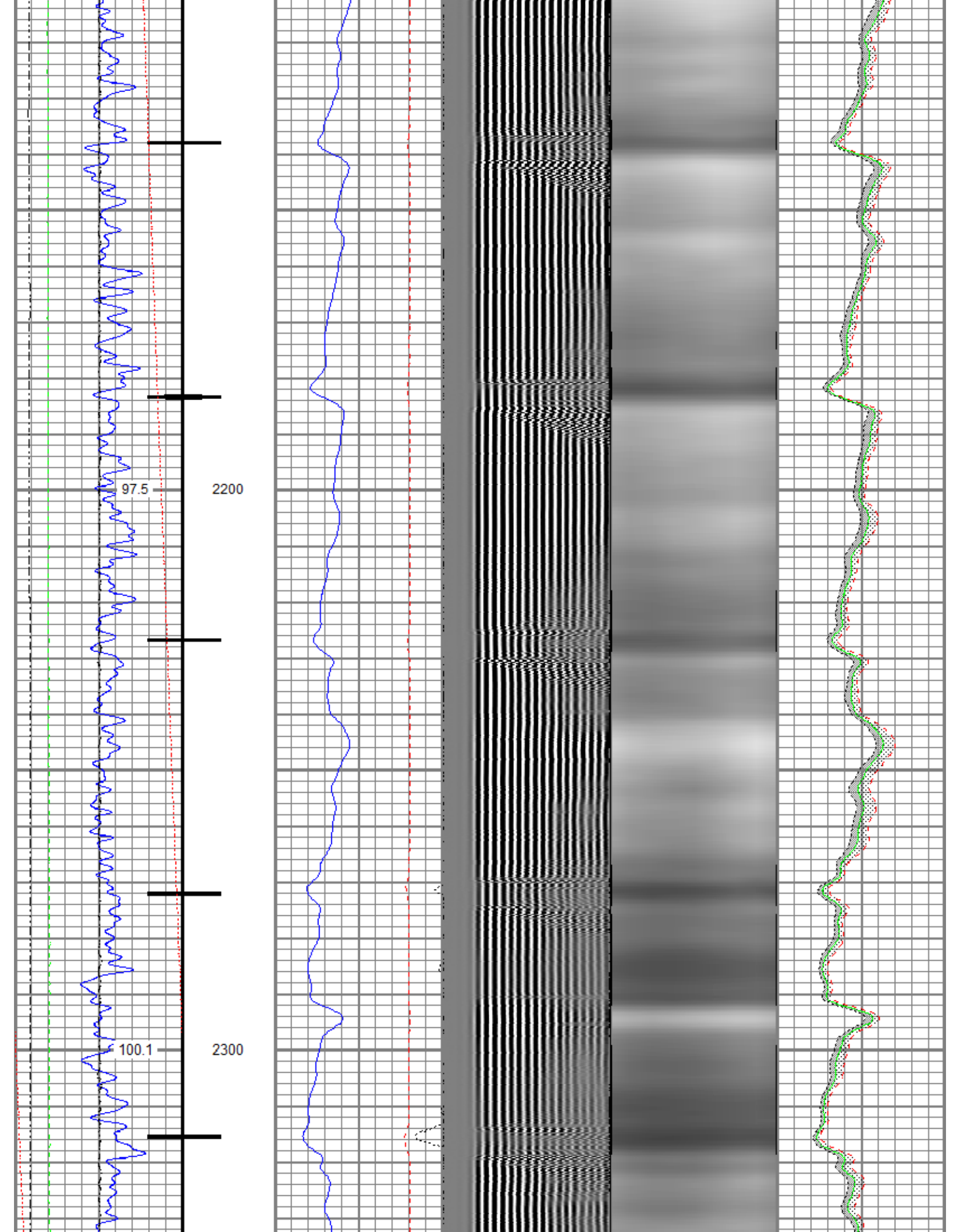


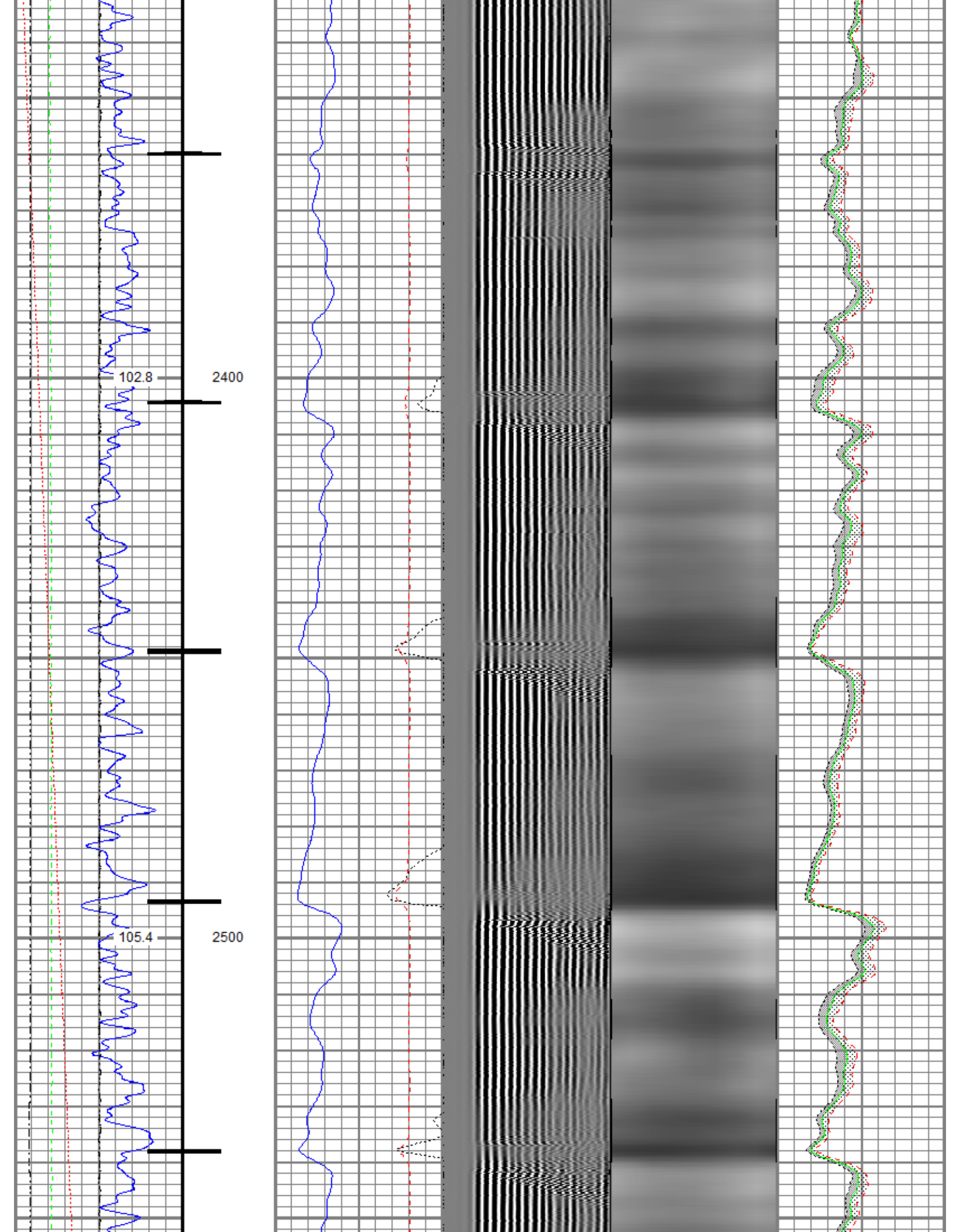


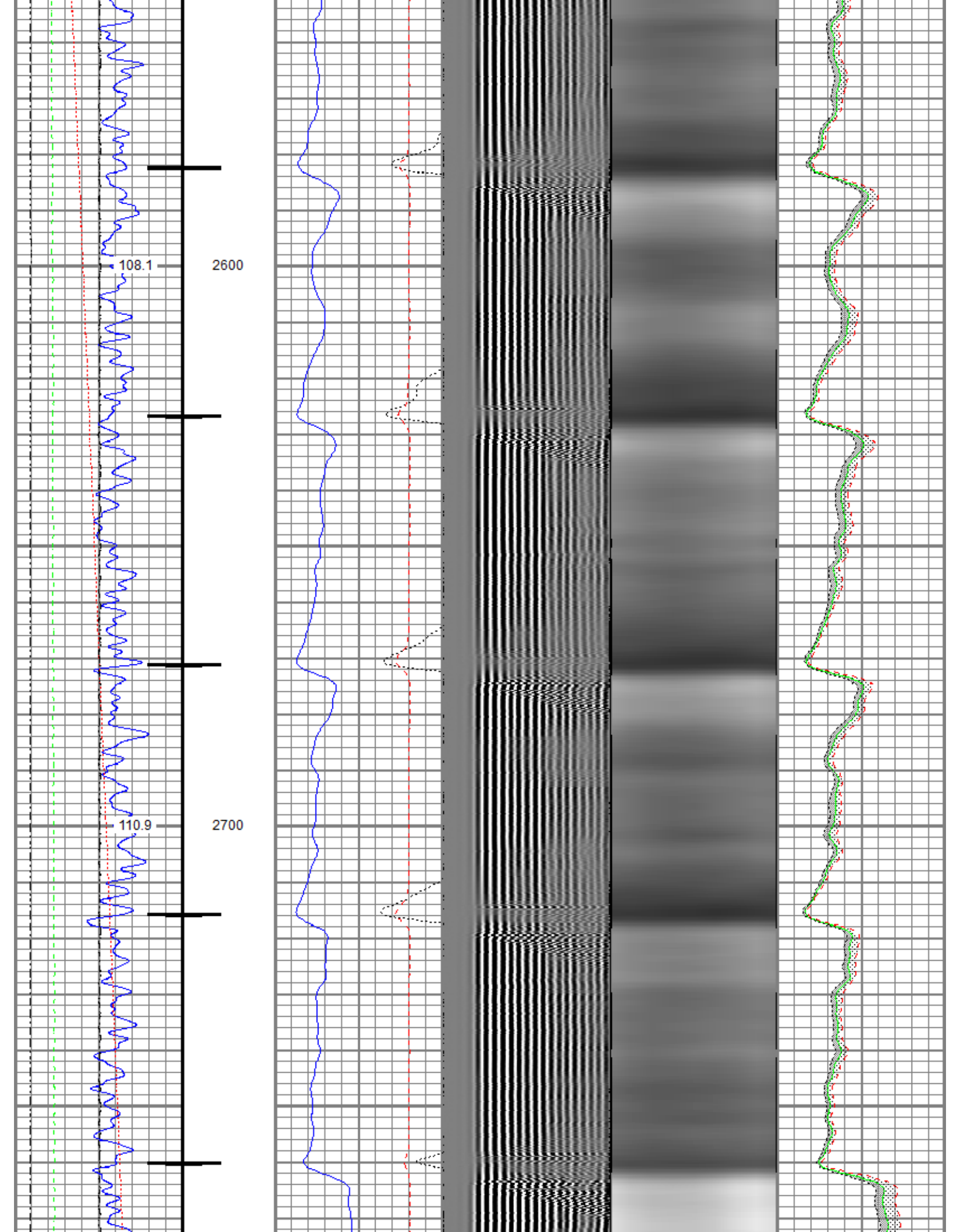


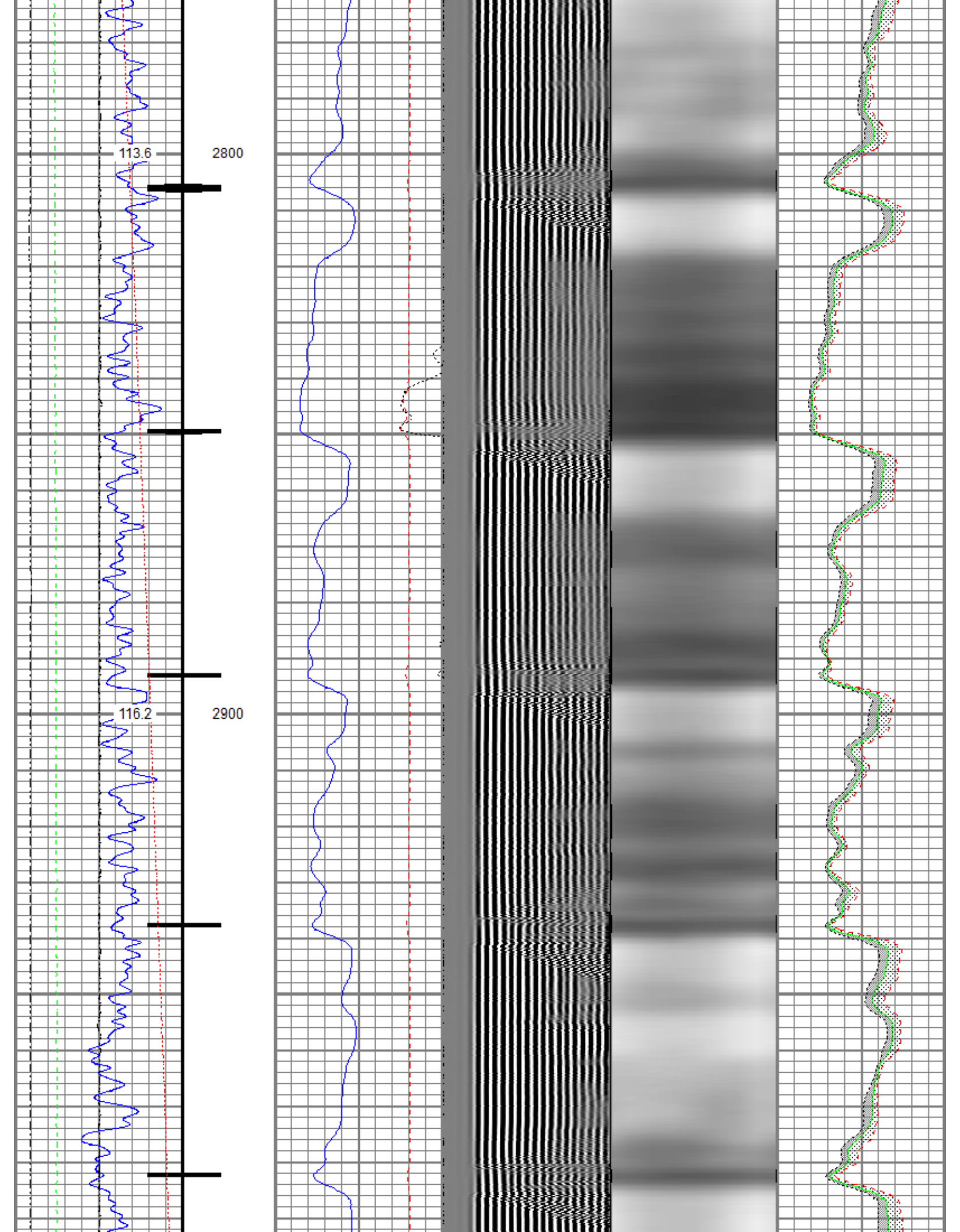


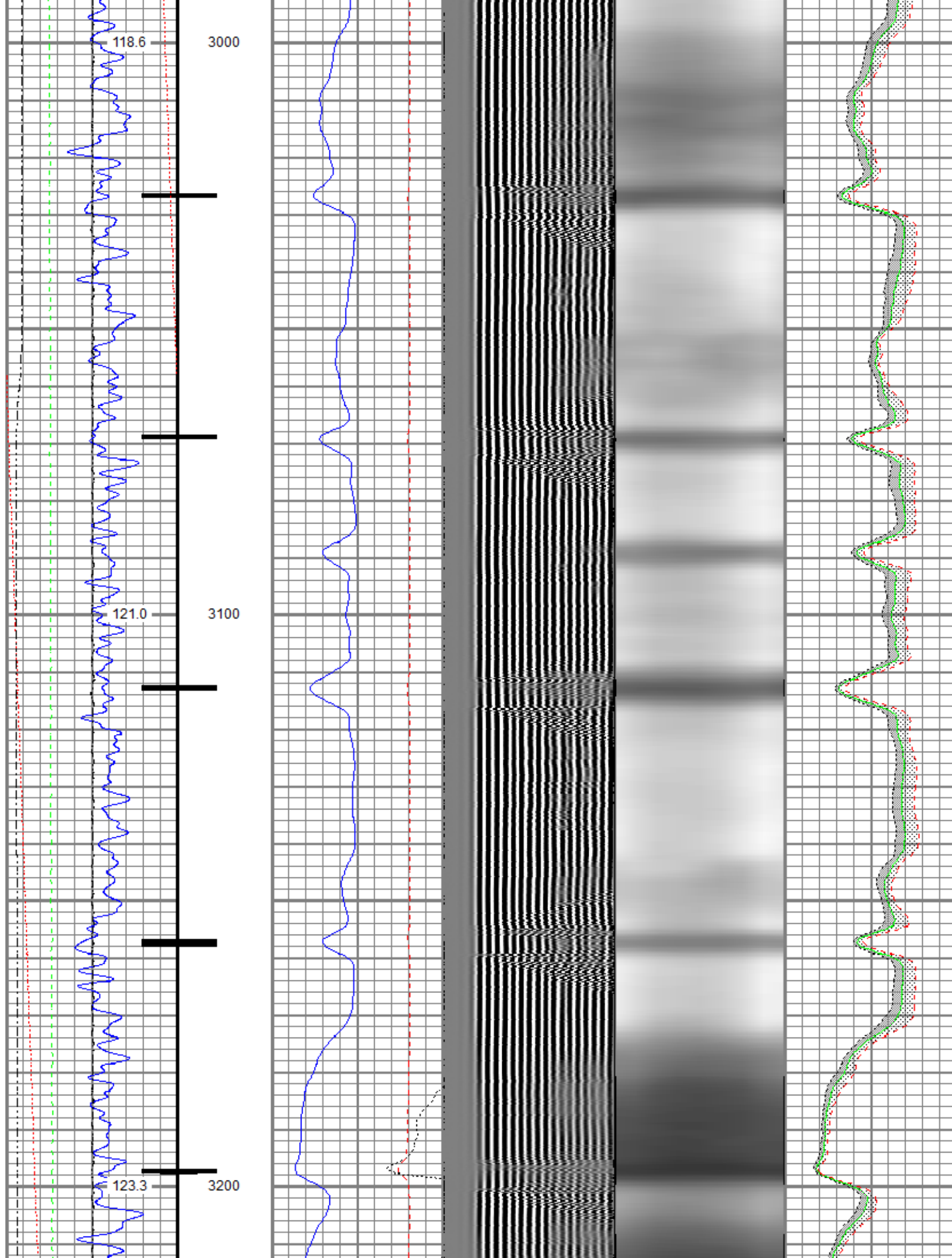


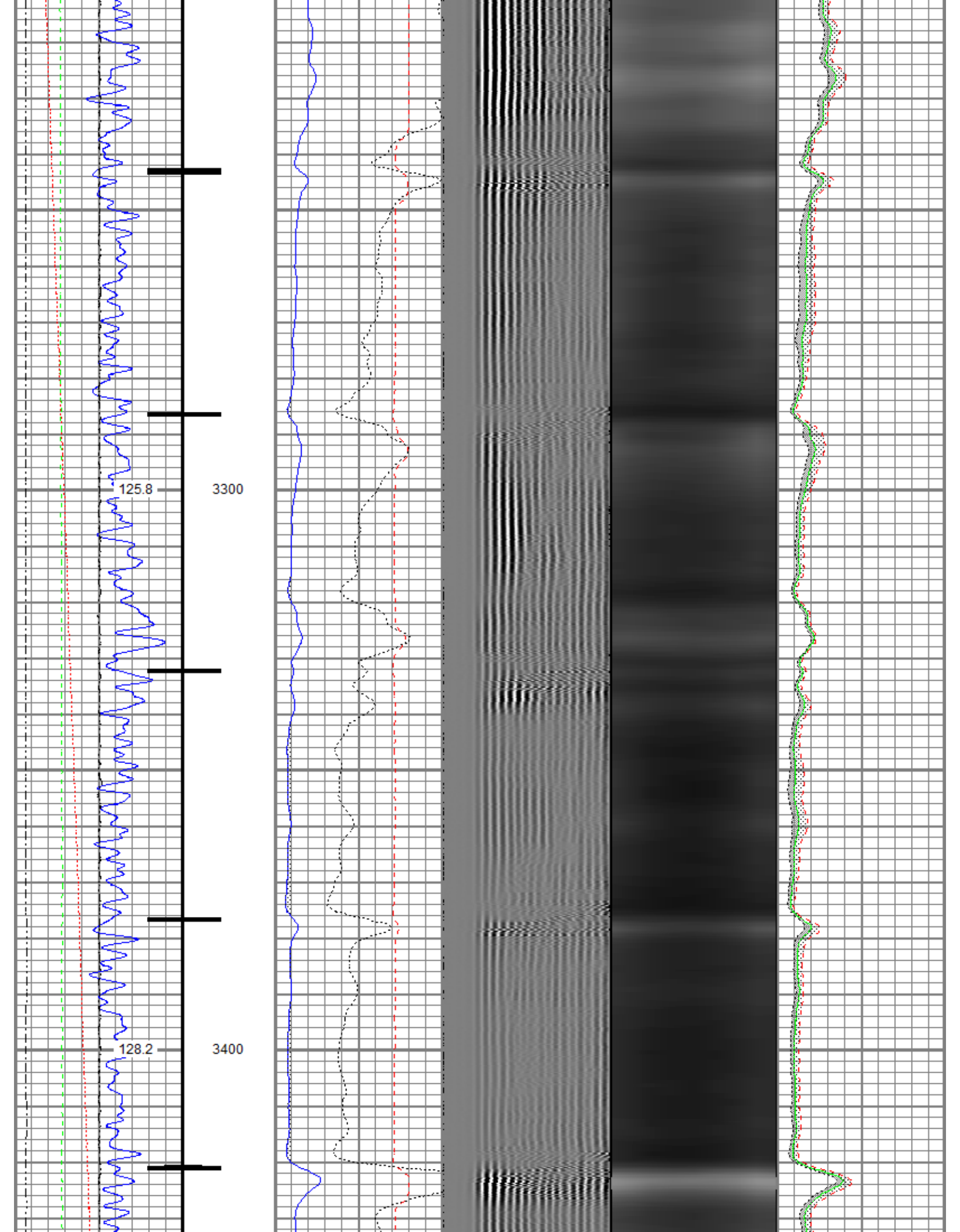


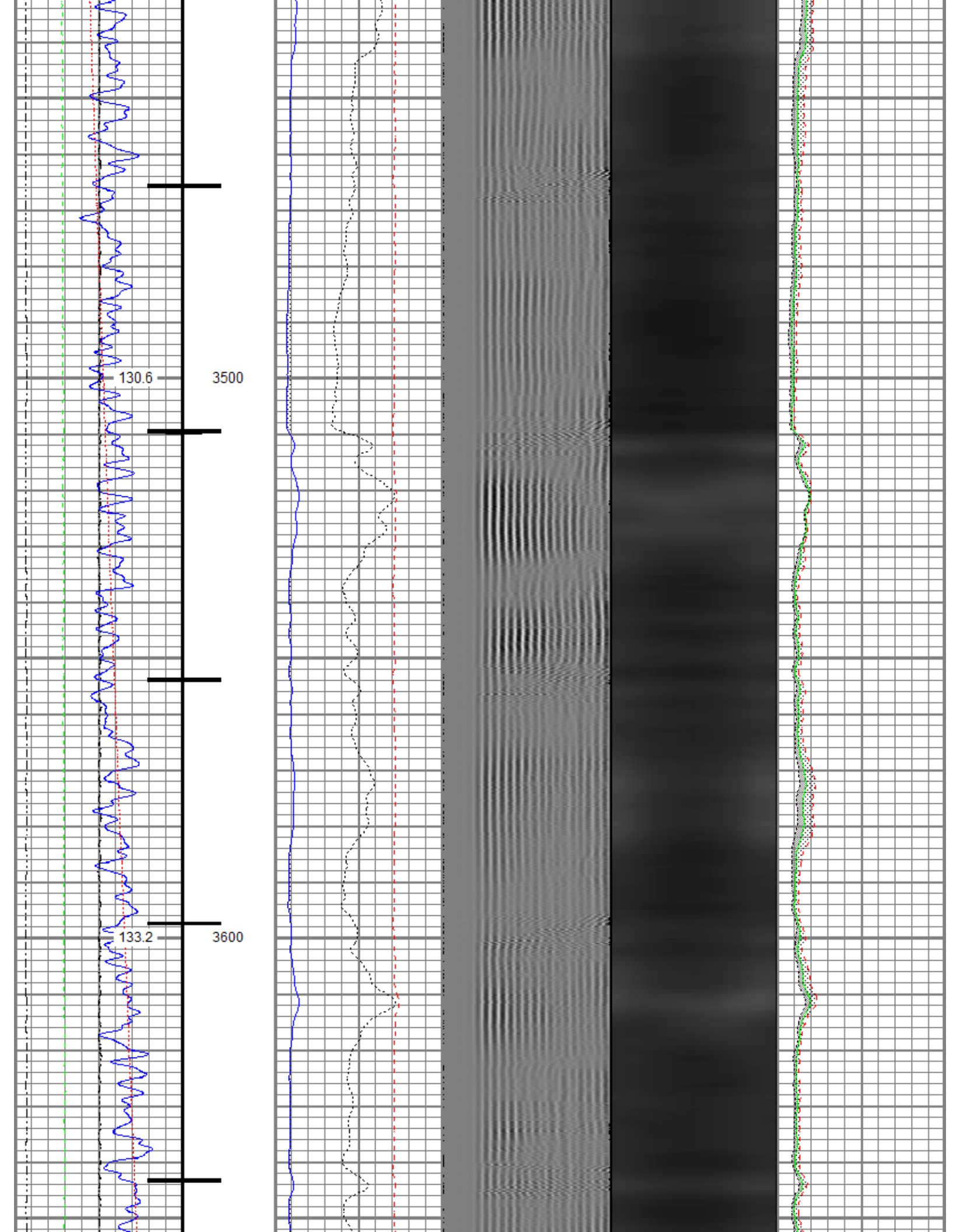


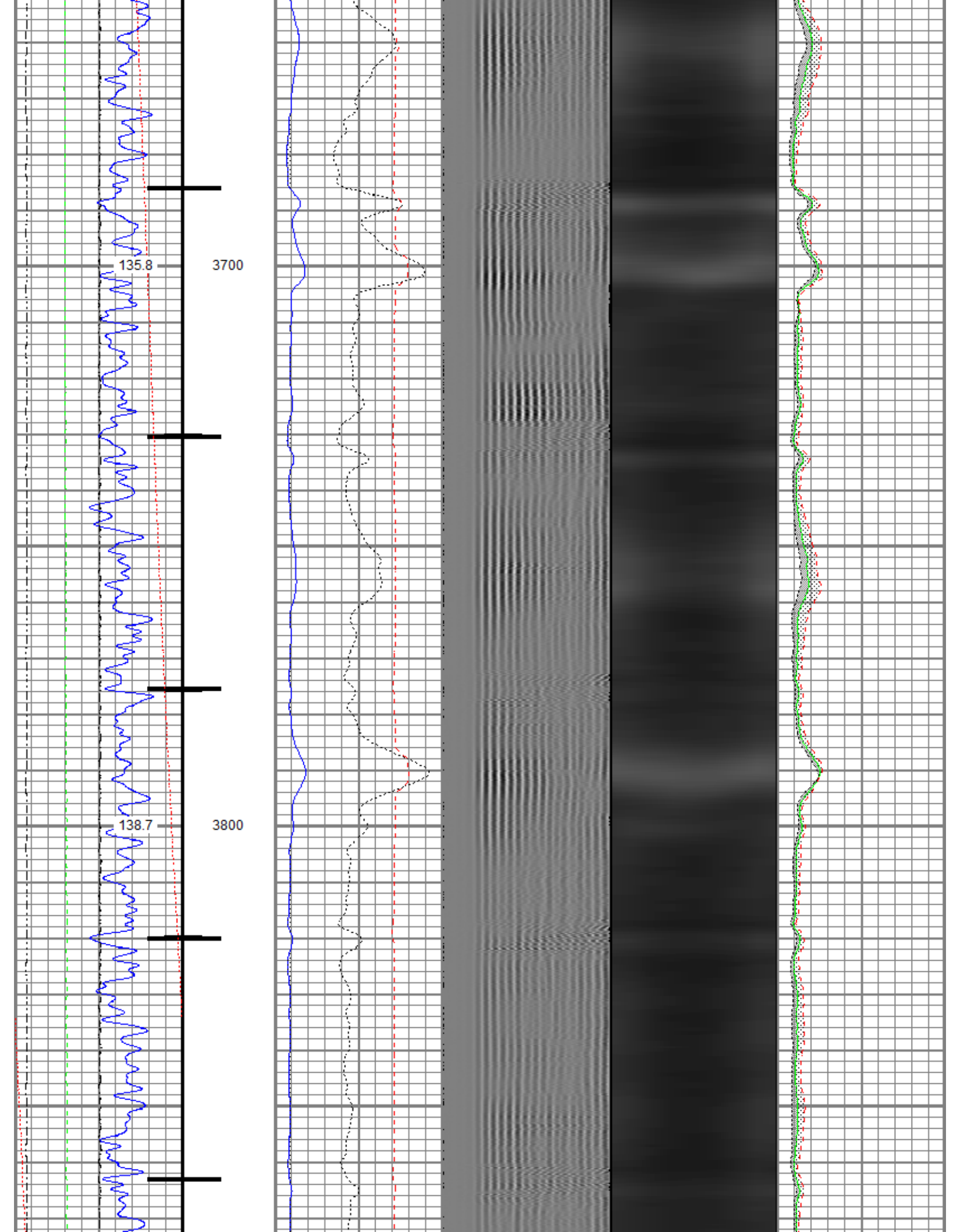


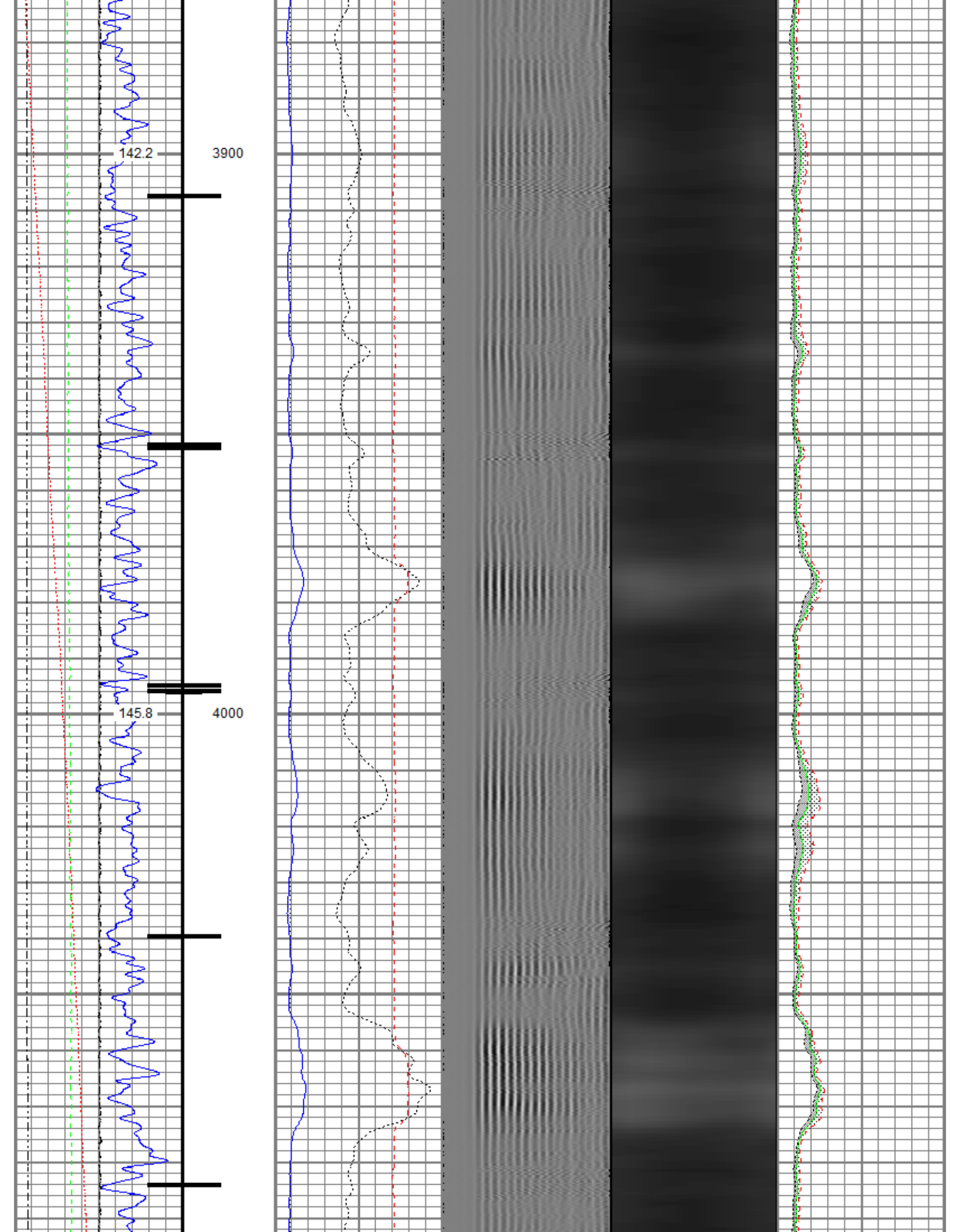


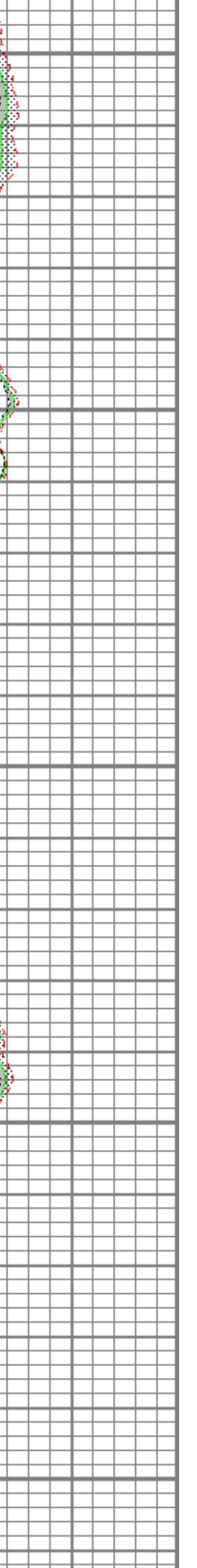
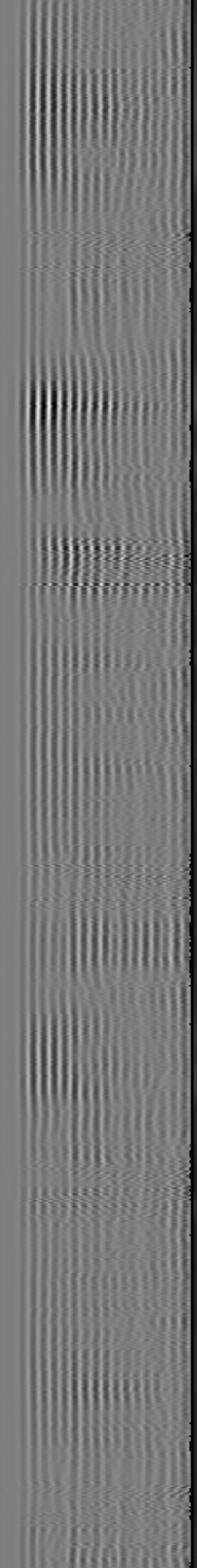
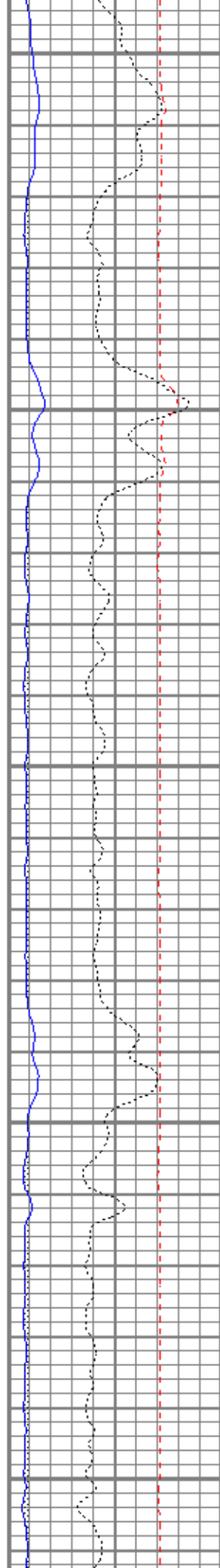
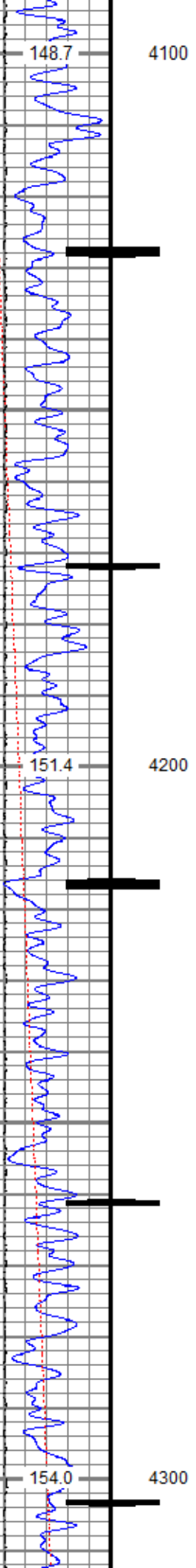


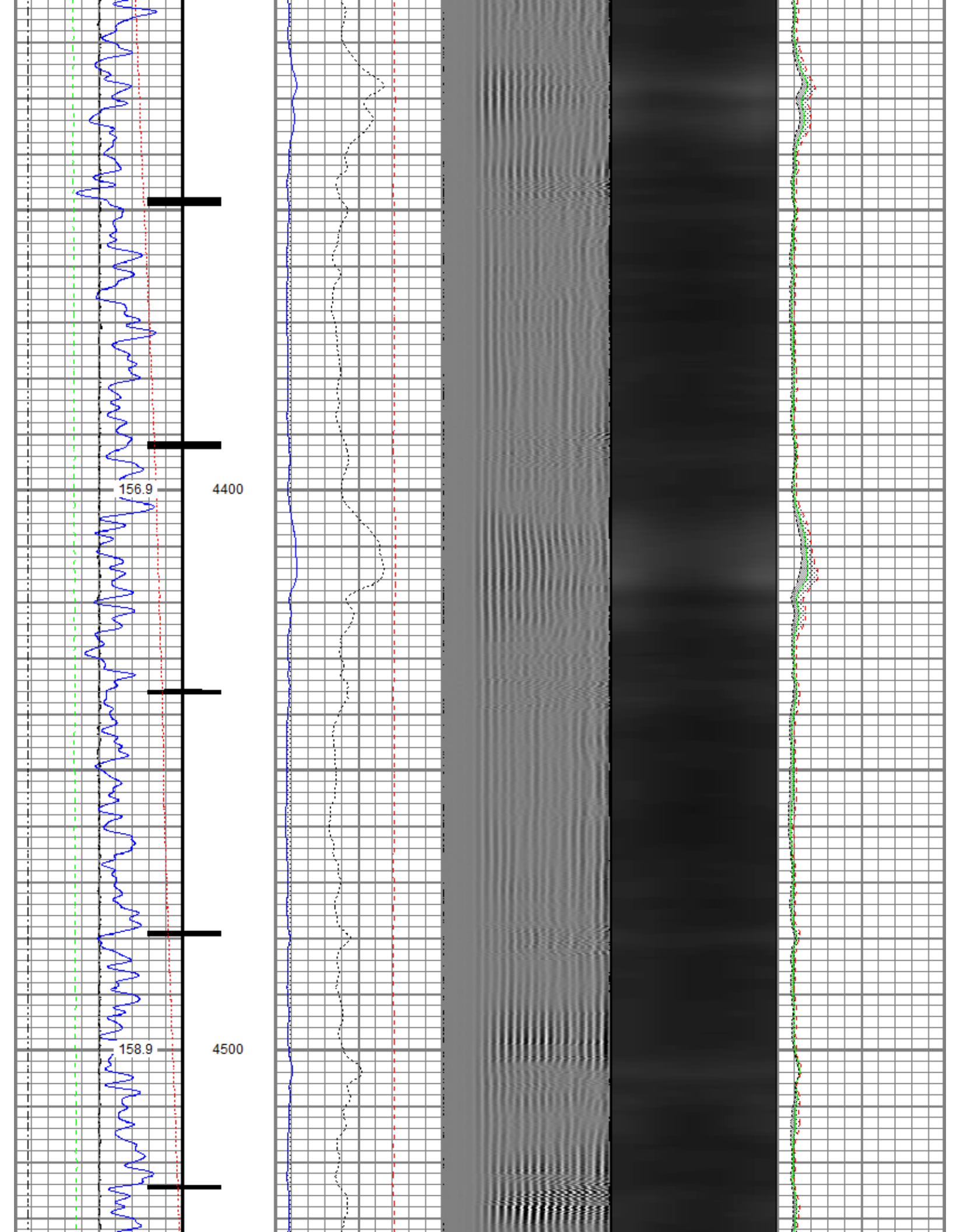


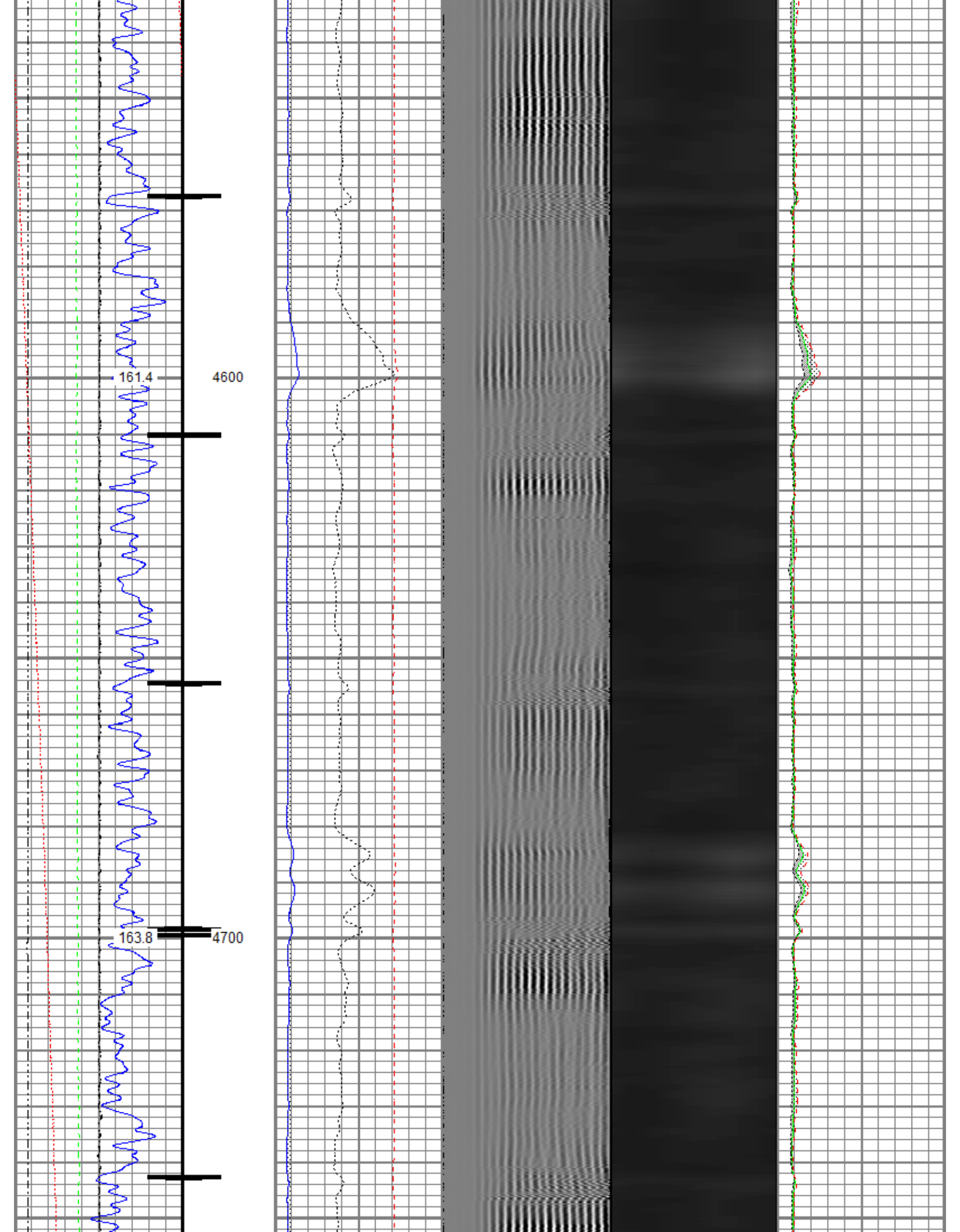


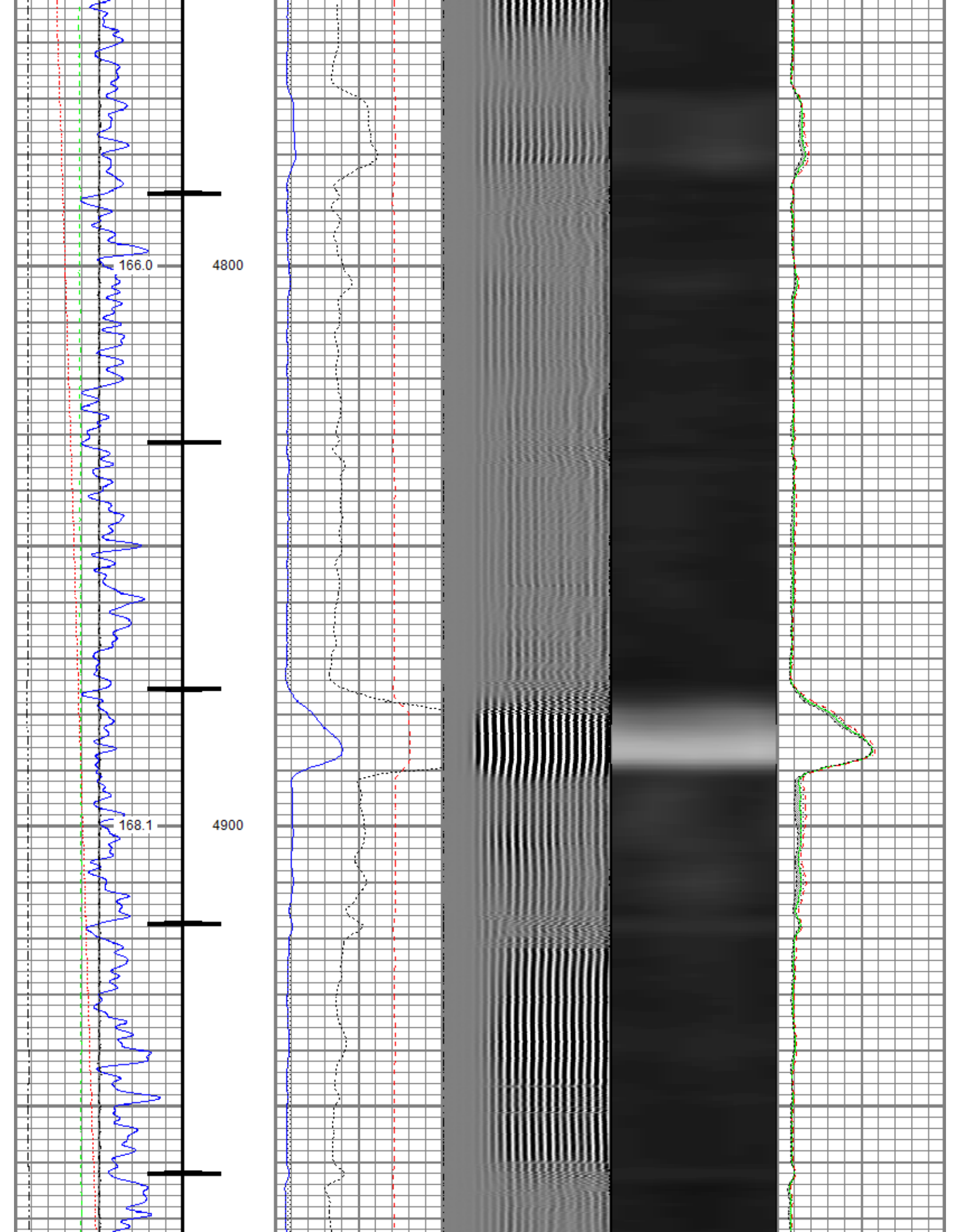


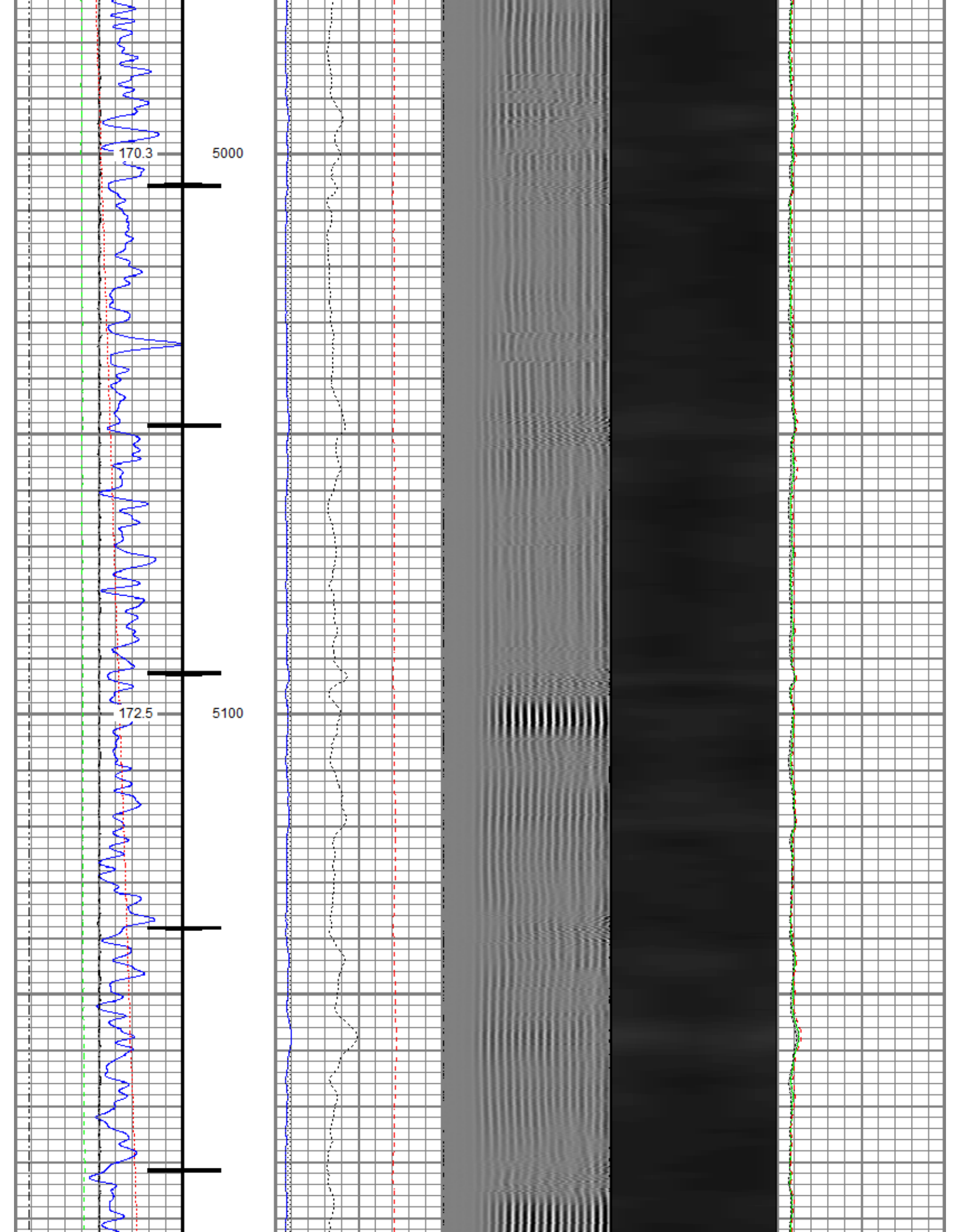


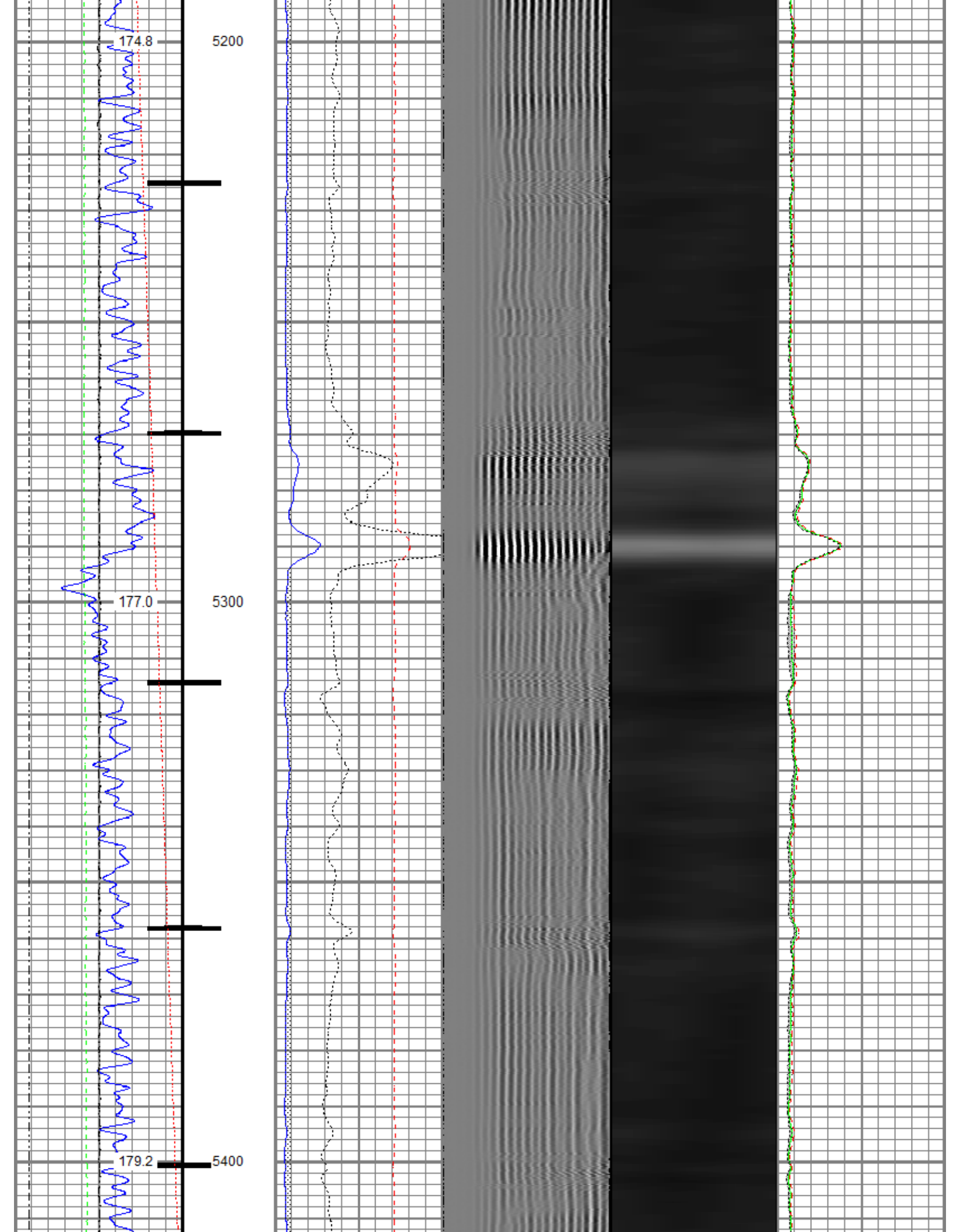


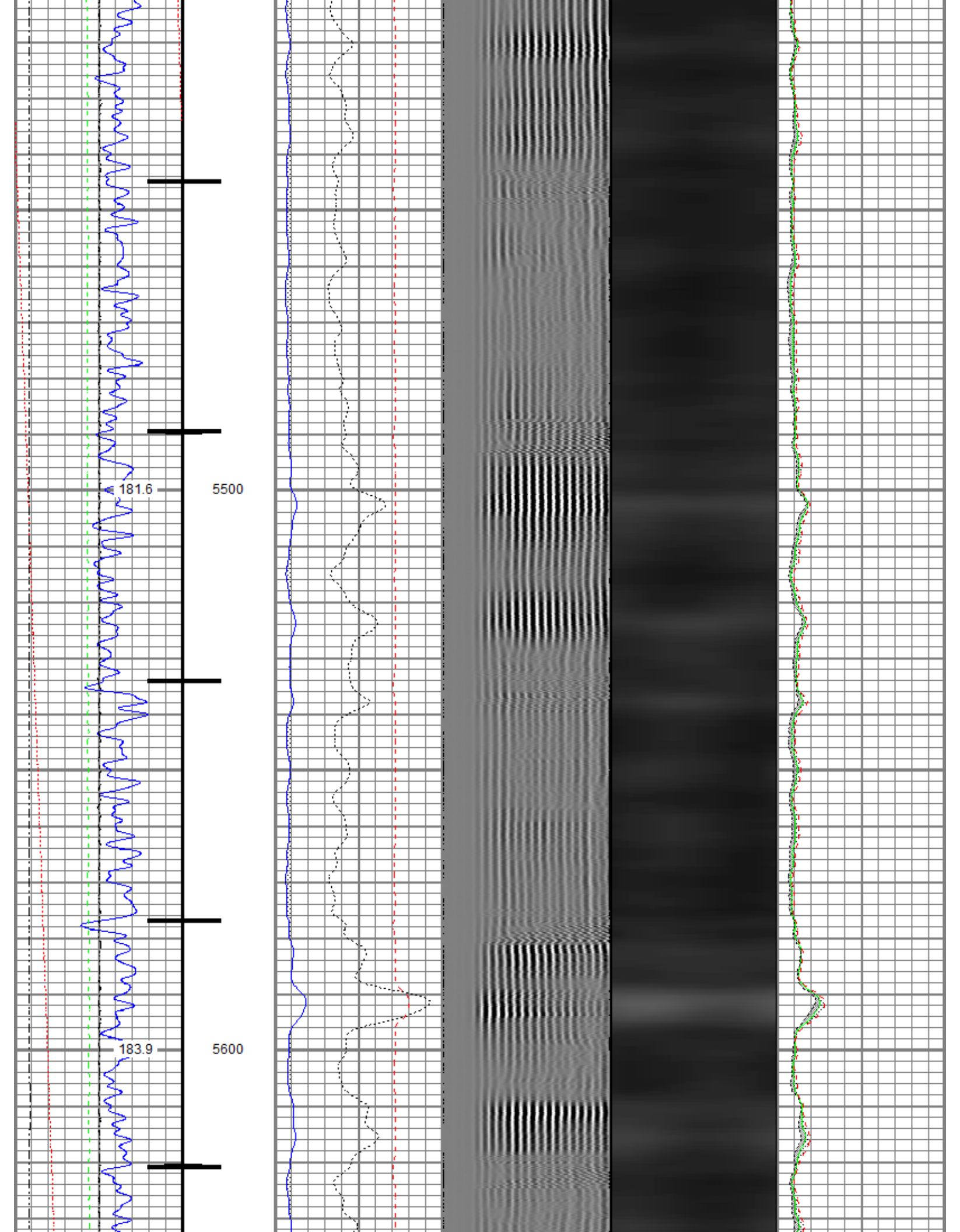


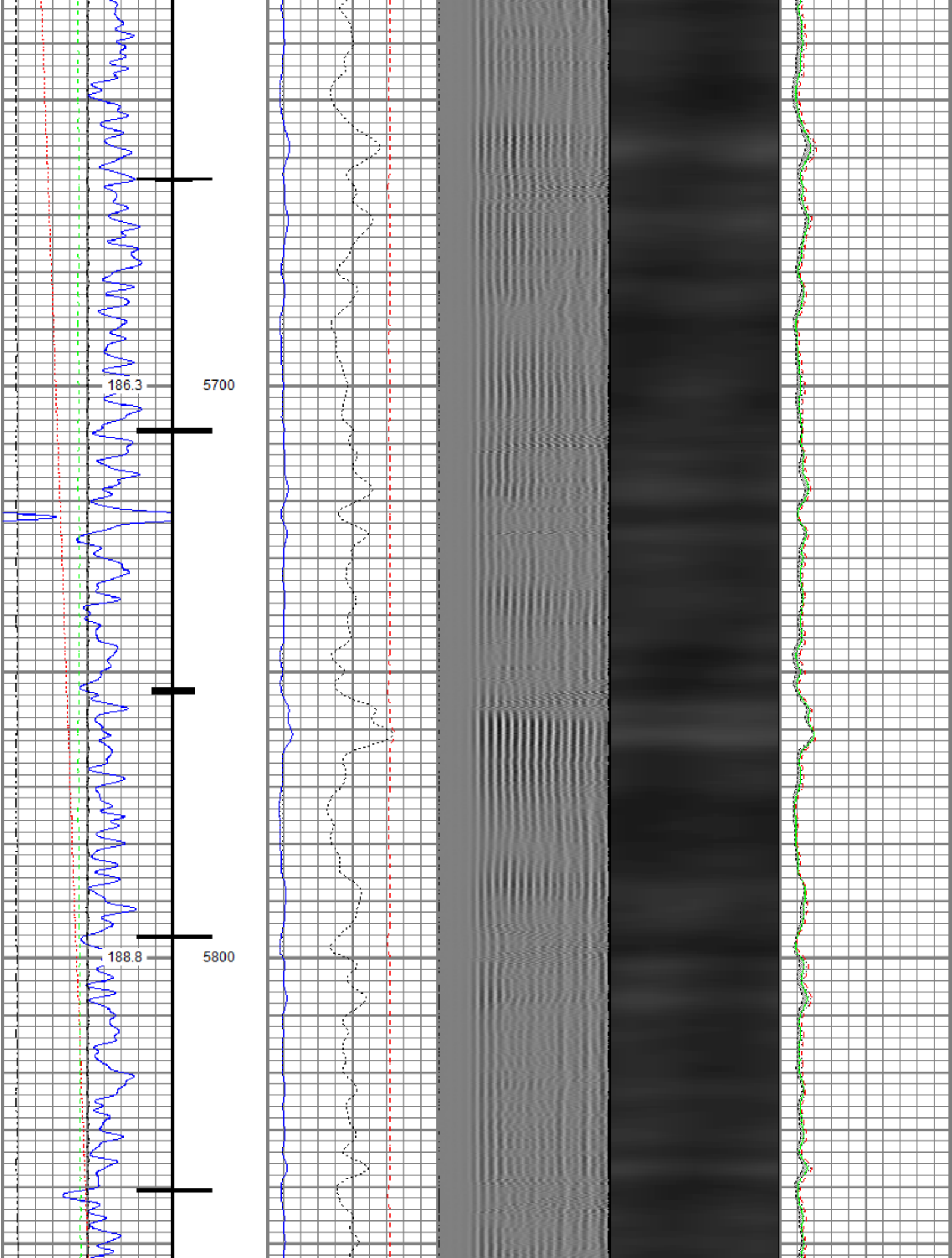


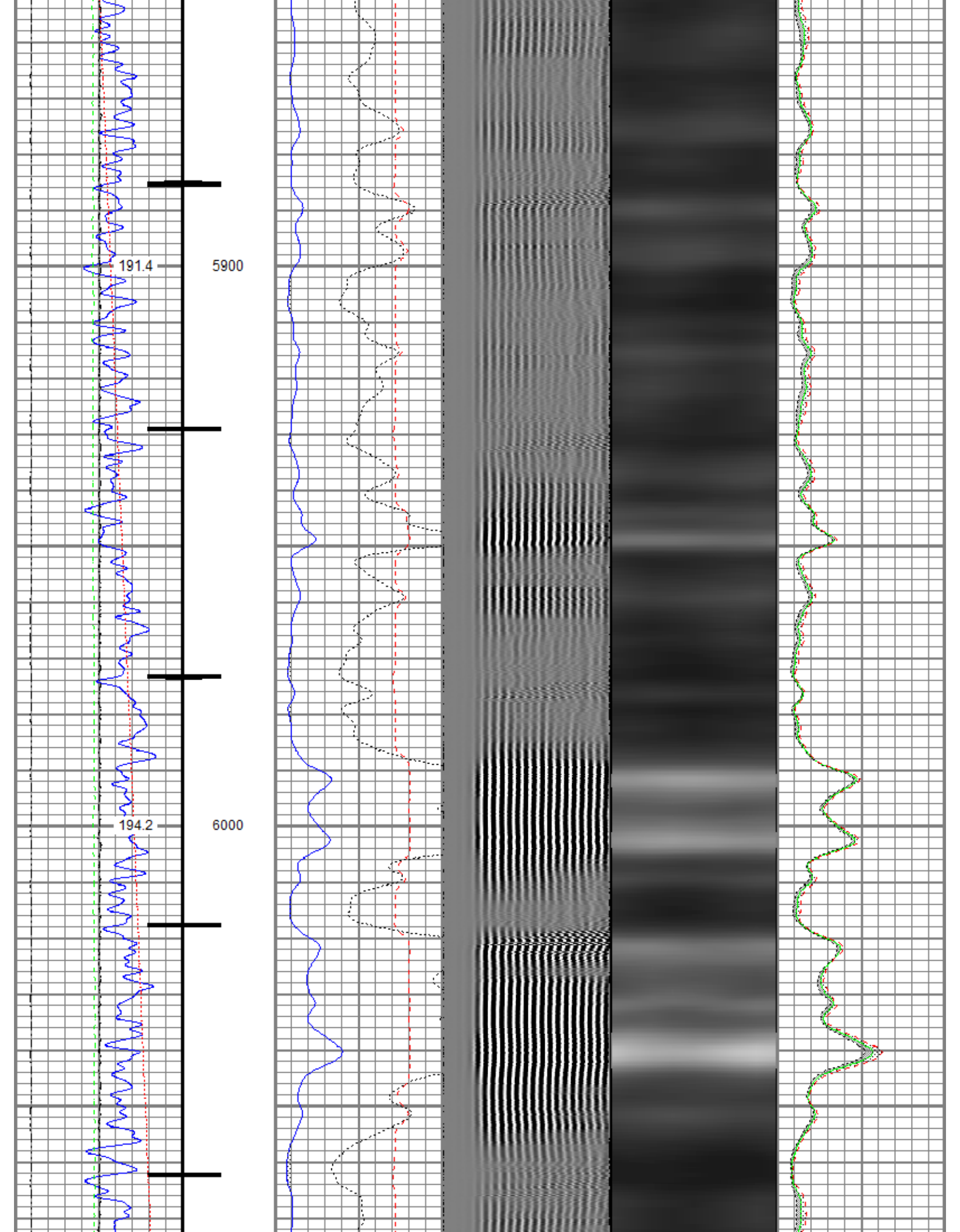


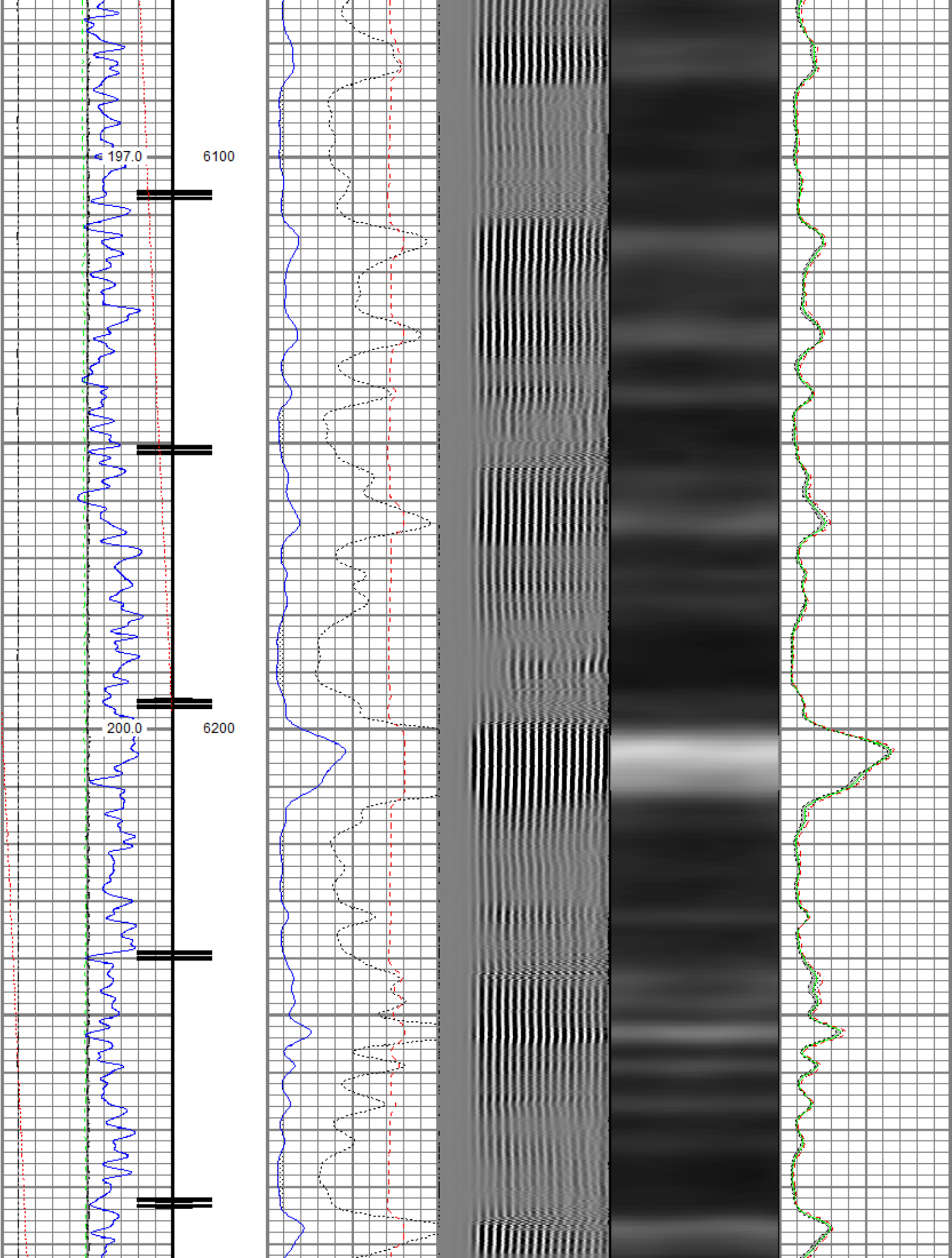


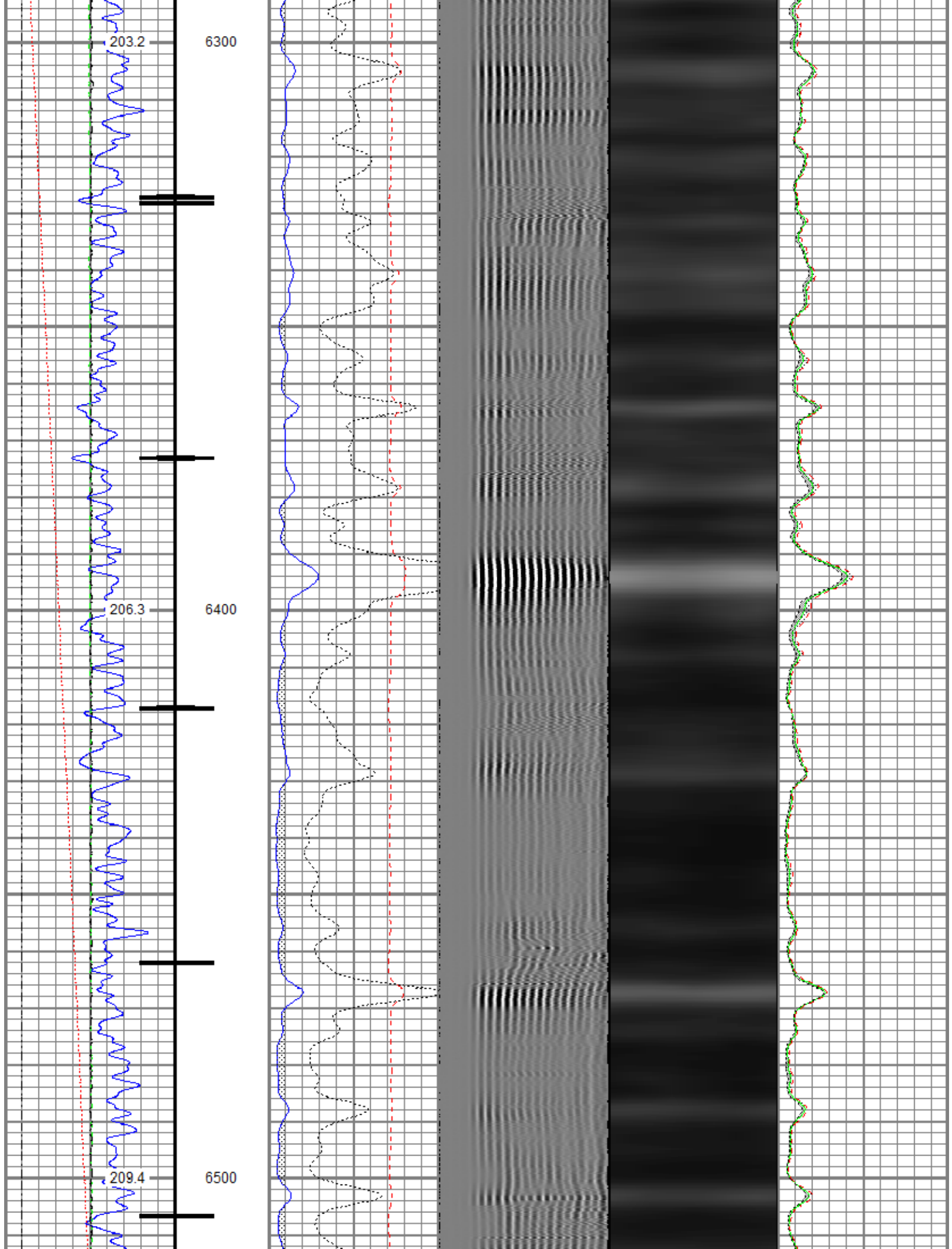


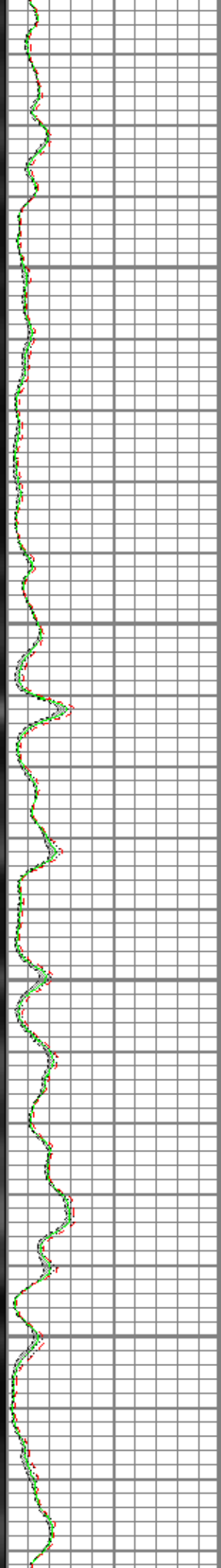
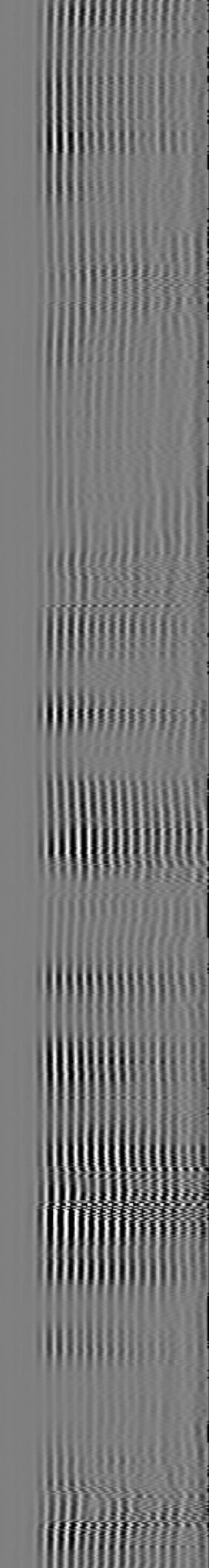
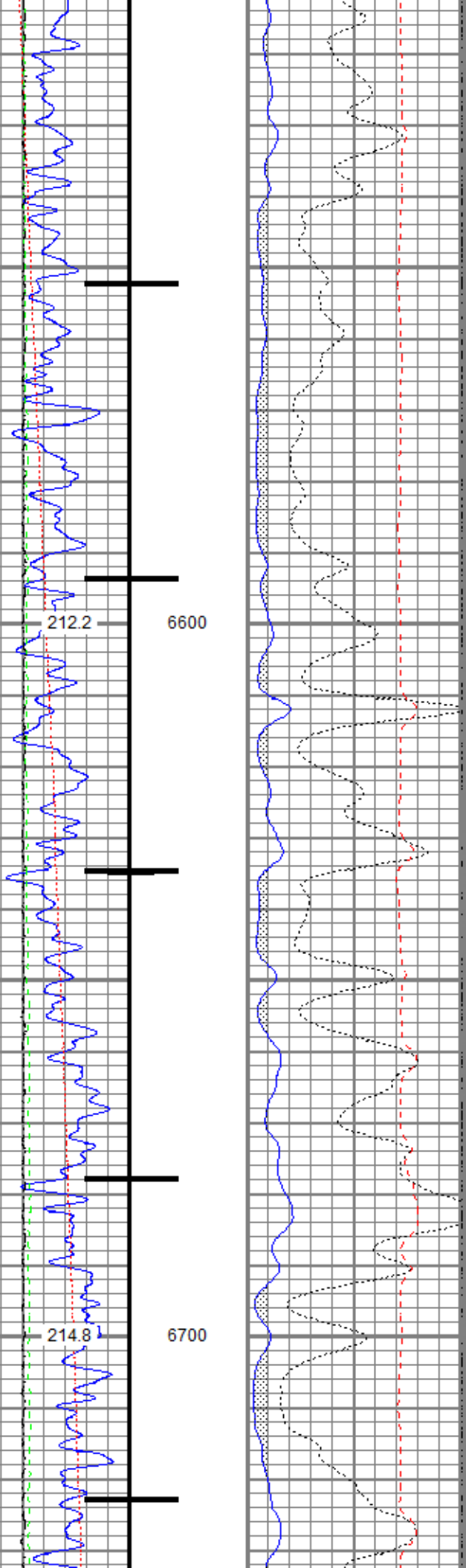


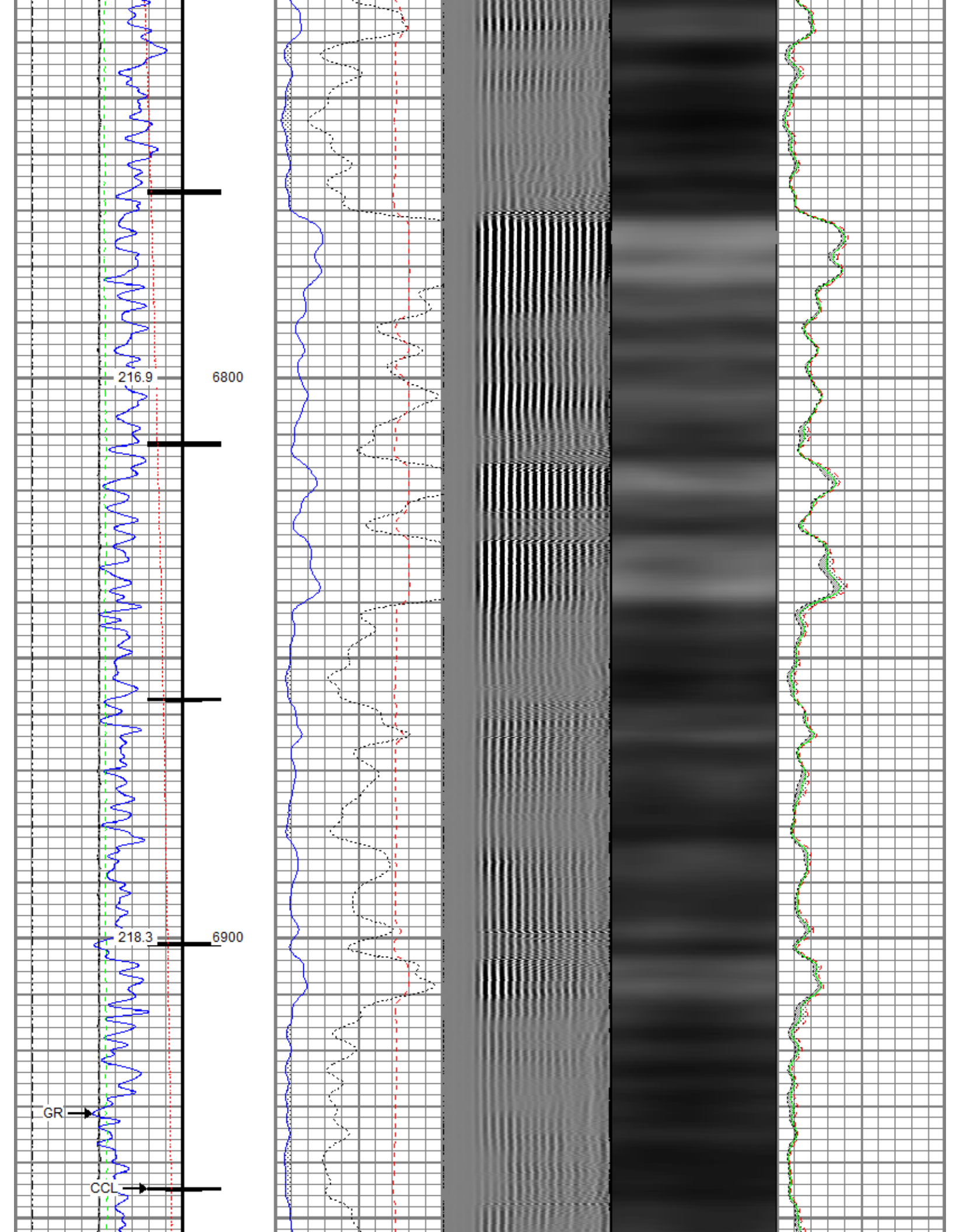


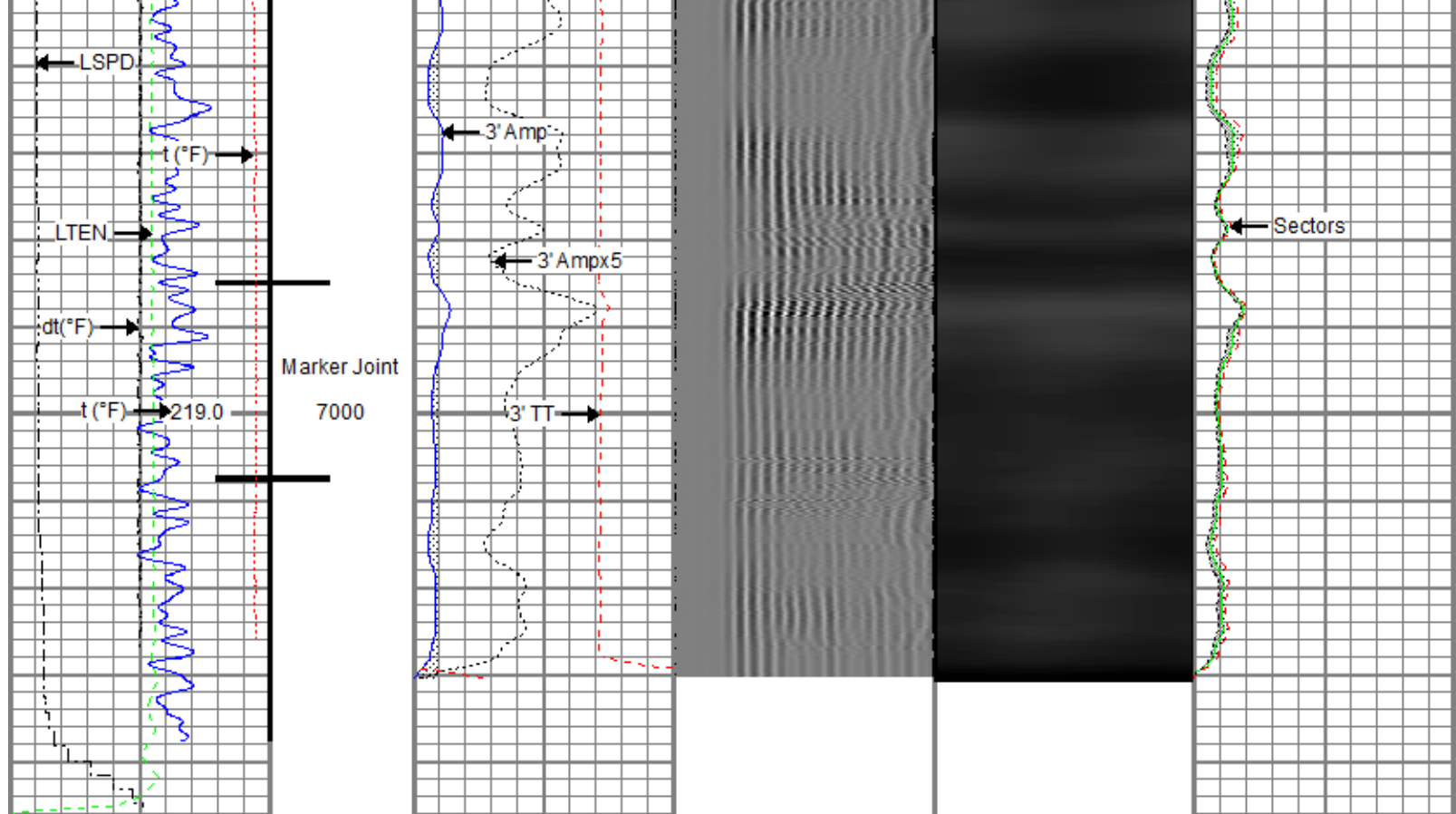













Gamma Ray (GAPI) 0 120	0 3' Amplitude (mV) 100 3' Amplitude x 5 (mV) 20	5' Variable Density Log 200 (usec) 1200	Sector Map	0 Average Amplitude 100 Minimum Amplitude 0 100 Maximum Amplitude 0 100
Casing Collar Locator	0 3' Travel Time (usec) 150			
Temperature (degF) 20				
Line Speed (ft/min) -150 150				
Line Tension (lb) 2000				
Differential Temperature (degF) -2 2				



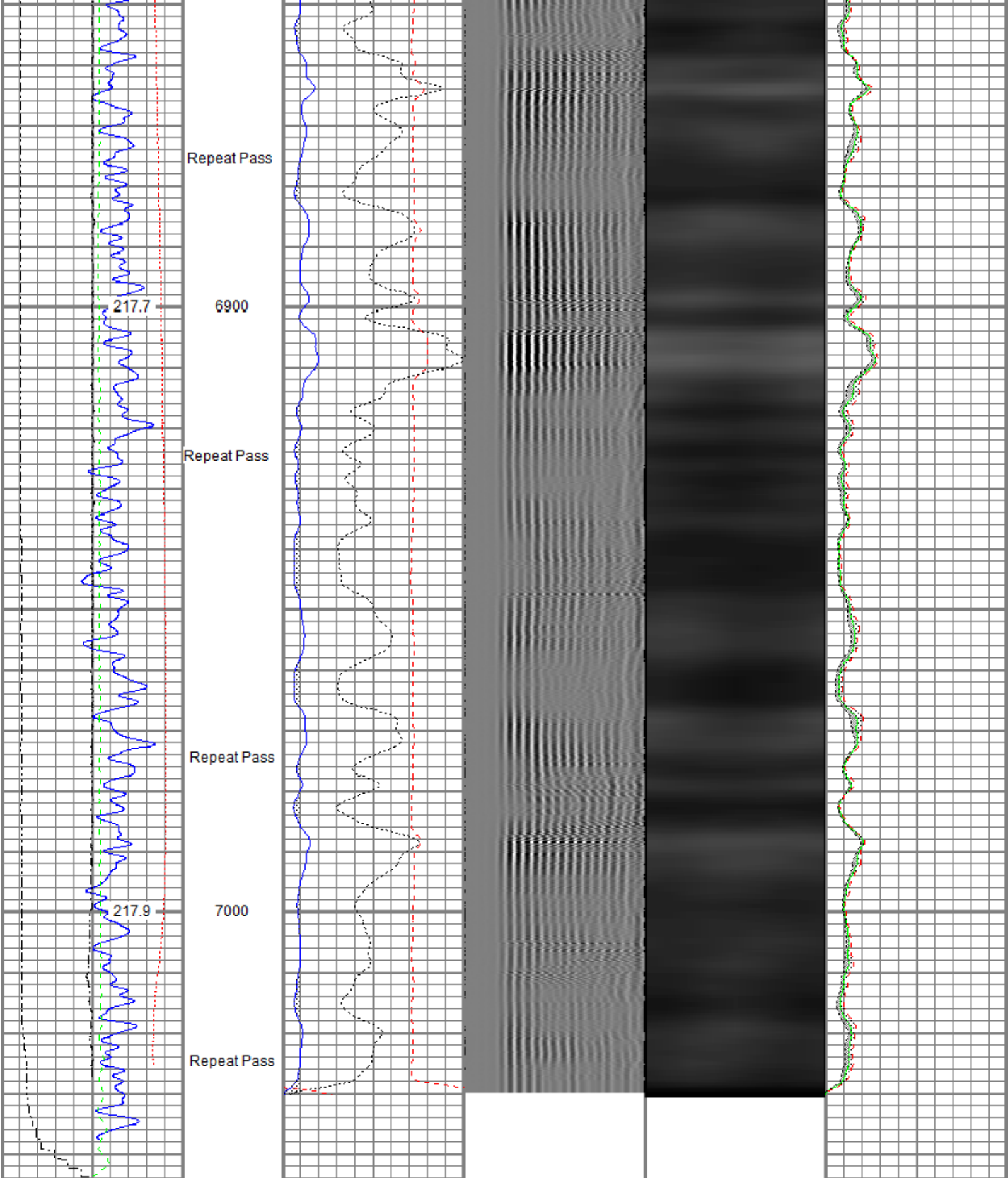
Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File: anadarko\0512348448_anadarko_buddy 7-10hz_rbl_07-18-19\processed_0512348448_anadarko_buddy 7-10hz_rbl_07-18-19
 Dataset Pathname: 2800psi/Repeat
 Presentation Format: ros_radrii
 Dataset Creation: Thu Jul 18 10:19:28 2019
 Charted by: Depth in Feet scaled 1:240

Gamma Ray (GAPI) 0 120	0 3' Amplitude (mV) 100 3' Amplitude x 5 (mV) 20	5' Variable Density Log 200 (usec) 1200	Sector Map	0 Average Amplitude 100 Minimum Amplitude 0 100 Maximum Amplitude 0 100
Temperature (degF) 20	0 3' Travel Time (usec) 150			
Line Speed (ft/min) -150 150				
Line Tension (lb) 2000				
Differential Temperature (degF) -2 2				





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

Differential Temperature

-2 (degF) 2

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.44	3.60	
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	
TEMP	18.23						
WVFS8	16.00			Probe Radii-2750 RBT (120855) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS7	16.00						
WVFS6	16.00						
WVFS5	16.00						
WVFS4	16.00						
WVFS3	16.00						
WVFS2	16.00						
WVFS1	16.00						
WVFCAL	16.00						
WVF3FT	16.00						
WVF5FT	15.00						
HEADVOLT	11.75		Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	
CCL\$2	7.38		Probe CCL-2750 SA (FW1307-076) Probe 2-3/4" Digital Stand Alone Six Magnet Logging CCL	2.66	2.75	35.00	
CCL\$1	7.38						
GR	5.24		Probe GR-2750 SA (FW1307-078) Probe 2-3/4" Digital Stand Alone Gamma Ray	3.33	2.75	55.00	
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	

Dataset: PROCESSED_0512348448_Anadarko_Buddy 7-10HZ_RBL_07-18-19.db: field/well/2800psi/Main
 Total length: 25.06 ft
 Total weight: 258.60 lb
 O.D.: 2.75 in

Calibration Report

Database File C:\ProgramData\Warrior\Data\Anadarko\0512348448_Anadarko_Buddy 7-10HZ_RBL_07-18-19\PROCESSED_0512348448_An
 Dataset Pathname 2800psi/Main
 Dataset Creation Thu Jul 18 10:22:49 2019

Gamma Ray Calibration Report

Serial Number: FW1307-078
 Tool Model: 2750 SA
 Performed: Mon Oct 01 11:32:38 2018
 Calibrator Value: 637.0 GAPI
 Background Reading: 108.2 cps
 Calibrator Reading: 1134.5 cps
 Sensitivity: 0.6207 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 120855
 Tool Model: 2750 RBT
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: -73.253 ft

Master Calibration, performed Thu Jul 18 05:54:50 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.005	0.613	0.800	71.921	116.957	0.222
CAL	0.613	0.613				
5'	0.005	0.578	0.800	71.921	124.206	0.127
SUM						
S1	0.004	0.615	0.000	100.000	163.644	-0.607
S2	0.006	0.618	0.000	100.000	163.373	-0.983
S3	0.005	0.610	0.000	100.000	165.308	-0.868
S4	0.005	0.606	0.000	100.000	166.650	-0.915
S5	0.005	0.609	0.000	100.000	165.435	-0.828
S6	0.006	0.609	0.000	100.000	165.682	-0.938
S7	0.005	0.612	0.000	100.000	164.730	-0.863
S8	0.006	0.608	0.000	100.000	166.022	-0.934

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.613	0.613	1.000	0.000

Air Zero Calibration, performed Thu Jul 18 05:55:11 2019:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero			Offset
3'	0.005		0.000			0.000
5'	0.005		0.000			0.001
SUM						
S1	0.004		0.000			0.000

S1	0.004	0.000	0.000
S2	0.006	0.000	0.000
S3	0.005	0.000	-0.000
S4	0.006	0.000	-0.000
S5	0.005	0.000	-0.000
S6	0.005	0.000	0.000
S7	0.005	0.000	0.000
S8	0.005	0.000	0.000

Temperature Calibration Report

Serial Number: 120855
Tool Model: 2750 RBT
Performed: Mon Oct 01 11:32:15 2018

	Reference	Reading
Low Reference:	100.00 degF	112.30 degF
High Reference:	350.00 degF	394.75 degF
Gain:	0.89	
Offset:	0.60	
Delta Spacing	1	



Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Buddy 7-10HZ
Field Wattenberg
County Weld
State Colorado