



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

Company PDC Energy Inc
Well Vega 2N
Field Wattenberg
County Weld
State Colorado

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Location: SEC 6 TWP 3N RGE 65W
 Permanent Datum Ground Level Elevation 4967'
 Log Measured From Kelly Bushing 28 FT
 Drilling Measured From Kelly Bushing
 API #: 05-123-48464
 Other Services ---
 Elevation
 K.B. 4995'
 D.F. ---
 G.L. 4967'

Date	09-SEP-2021			
Run Number	One			
Depth Driller	15839 FT			
Depth Logger	7710			
Bottom Logged Interval	7708			
Top Log Interval	Surface			
Open Hole Size	8.5"			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	251°F			
E. estimated Cement Top	---			
Time Well Ready	ROA			
Time Logger on Bottom	08.45			
E. equipment Number	HD-0361			
Location	Platteville, CO			
Recorded By	G. Lueck			
Witnessed By	B. Myers			
Borehole Record				
Run Number	Bit	From	To	Size
				Weight
				From
				To
Tubing Record				
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top
Surface Casing	9.5/8	36	J-55	Surface
Intermediate #1	5.1/2	20	P-110	Surface
Intermediate #2				
Inner				
				Bottom
				1705.1 FT
				15829 FT

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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 6837 - 6849 FT
Adjusted +6 FT to correlate with Marker Joint
Log ran with 0 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

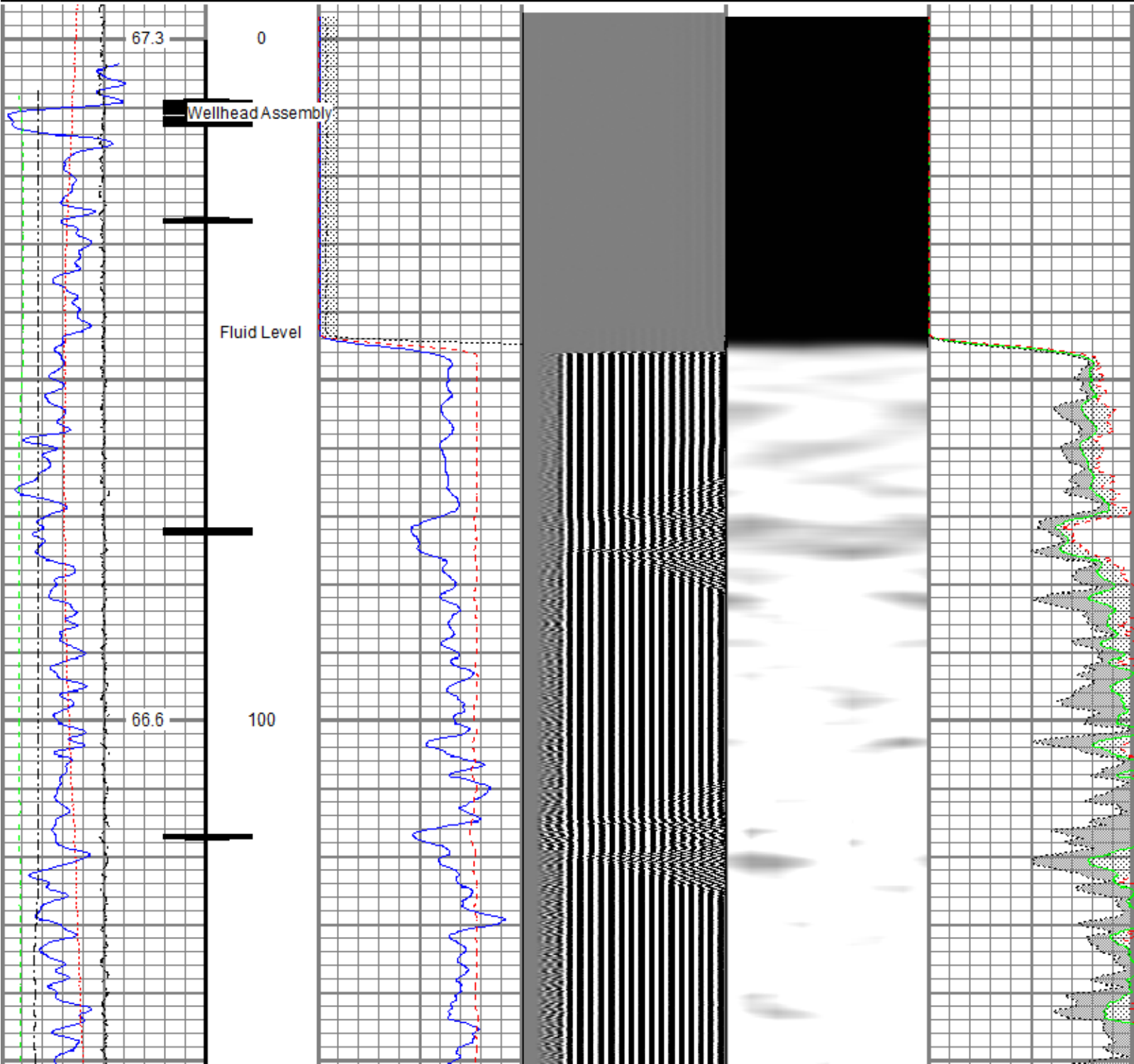


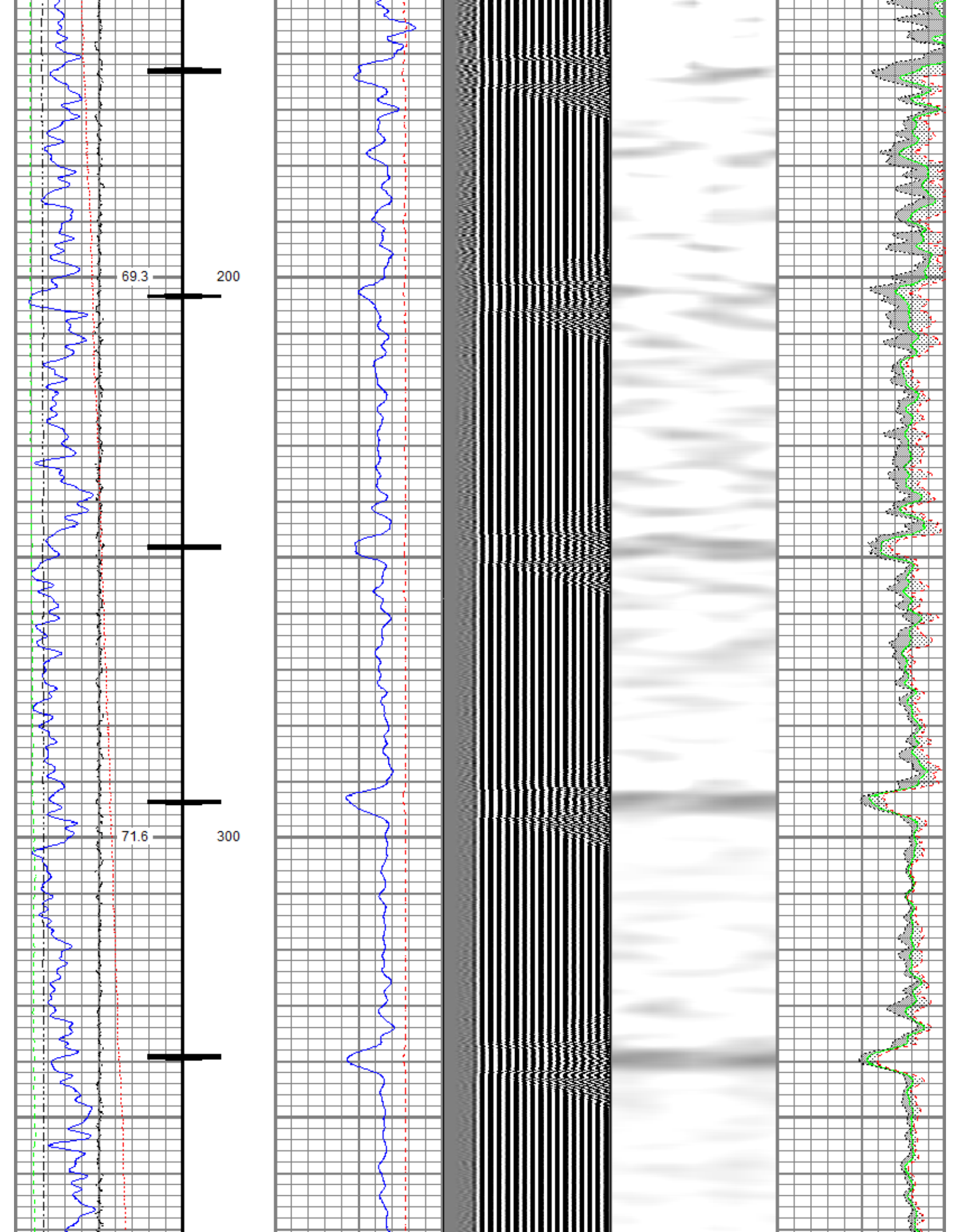
Recorded With 0 PSI Surface Induced Pressure

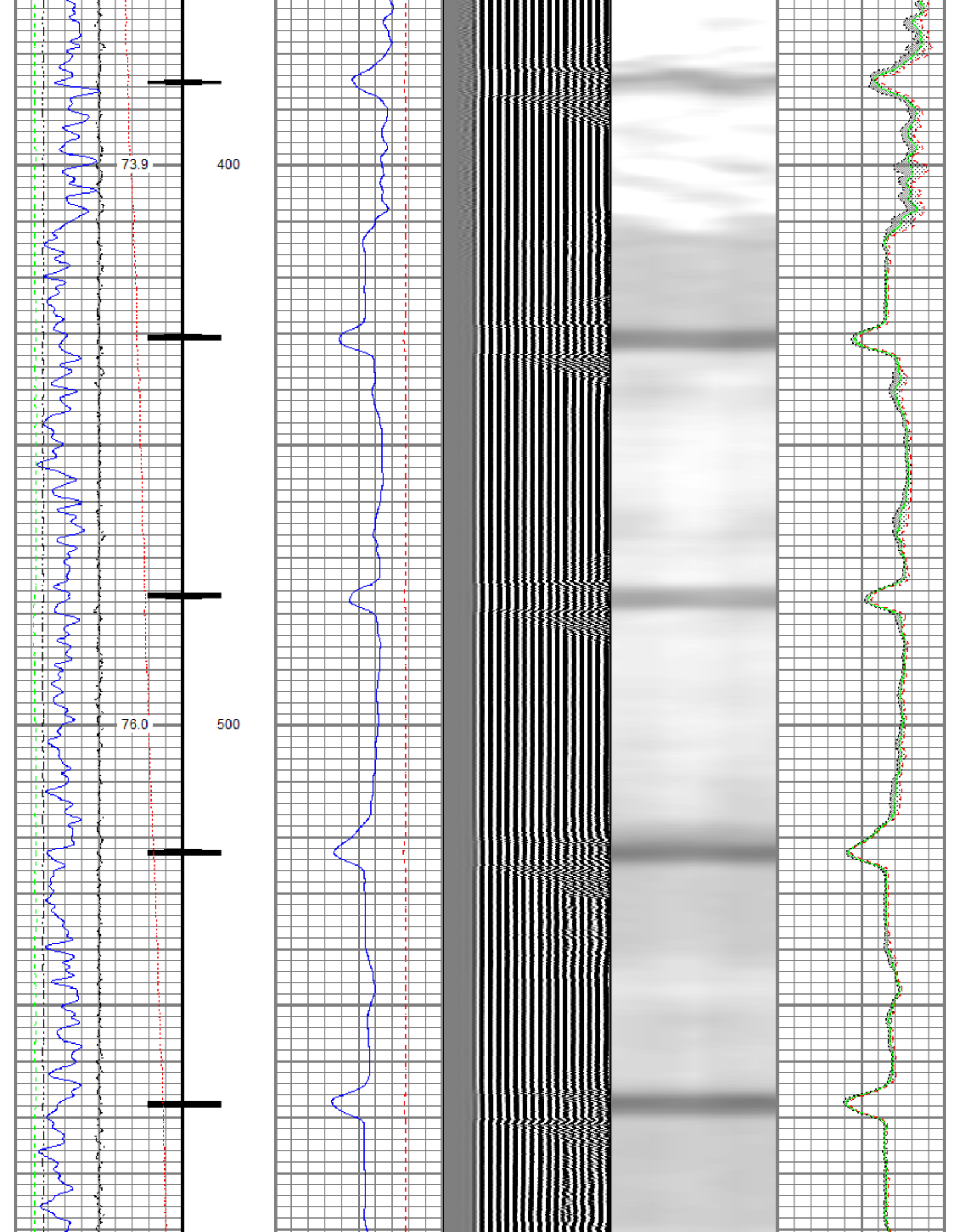
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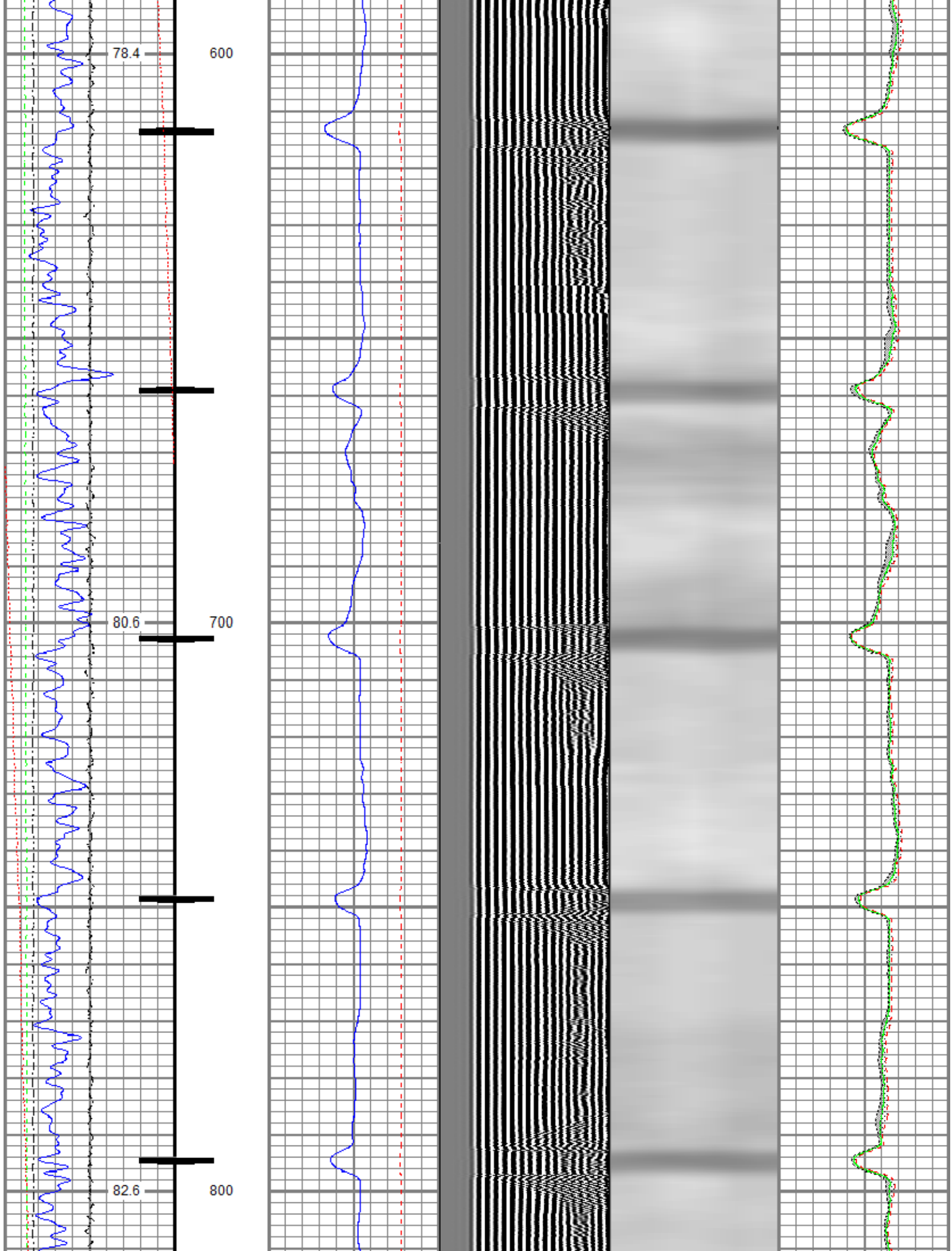
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Presentation Format	ros_radrii
Dataset Creation	Thu Sep 09 14:39:10 2021
Charted by	Depth in Feet scaled 1:240

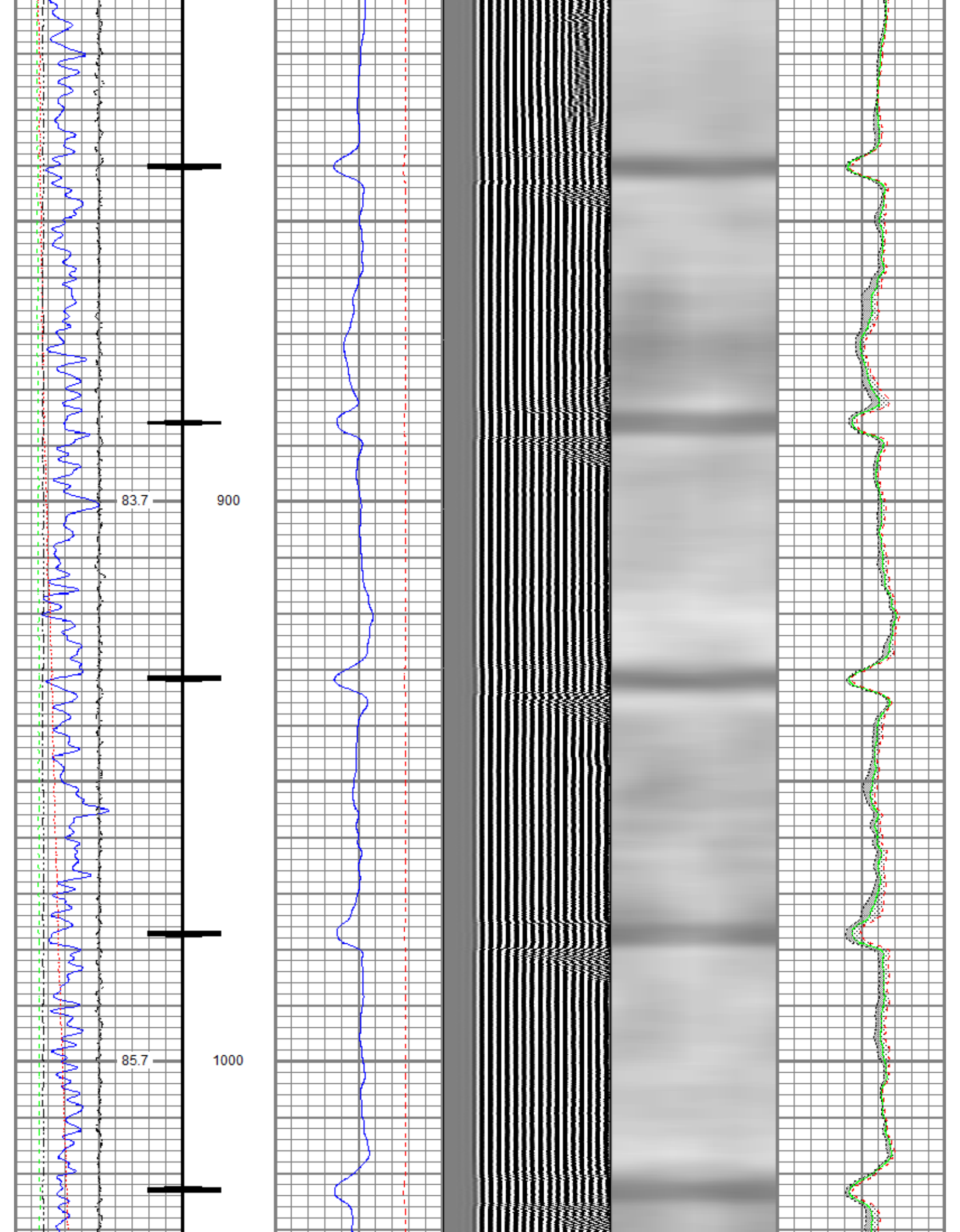
Gamma Ray (GAPI) 120	0 3' Amplitude (mV) 100	5' Variable Density Log (usec) 1200	Sector Map	0 Average Amplitude 100
Casing Collar Locator	0 3' Amplitude x 5 (mV) 20			Minimum Amplitude
0 Temperature (degF) 20	0 3' Travel Time (usec) 150			0 100
Line Speed (ft/min) 150				Maximum Amplitude
0 Line Tension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

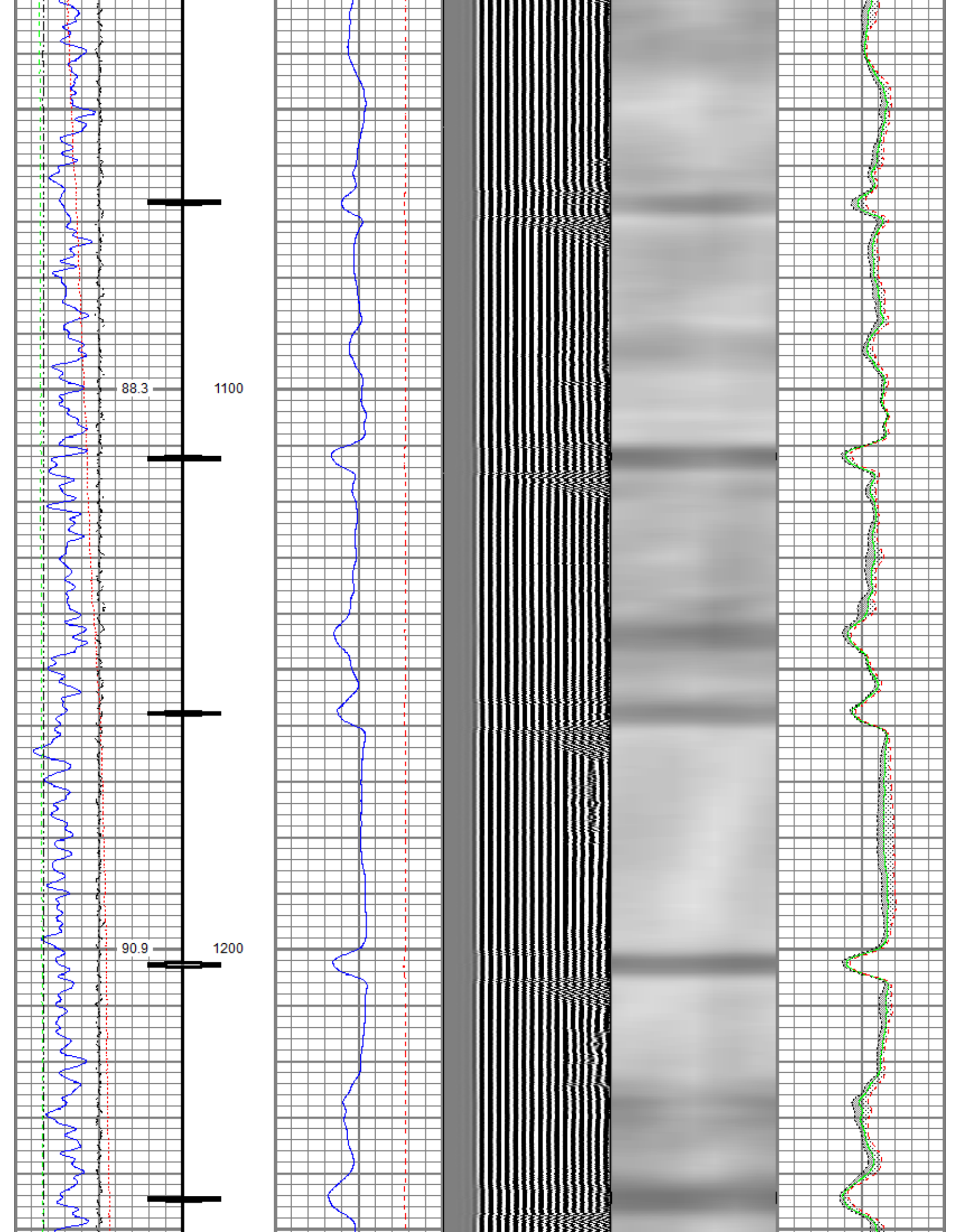


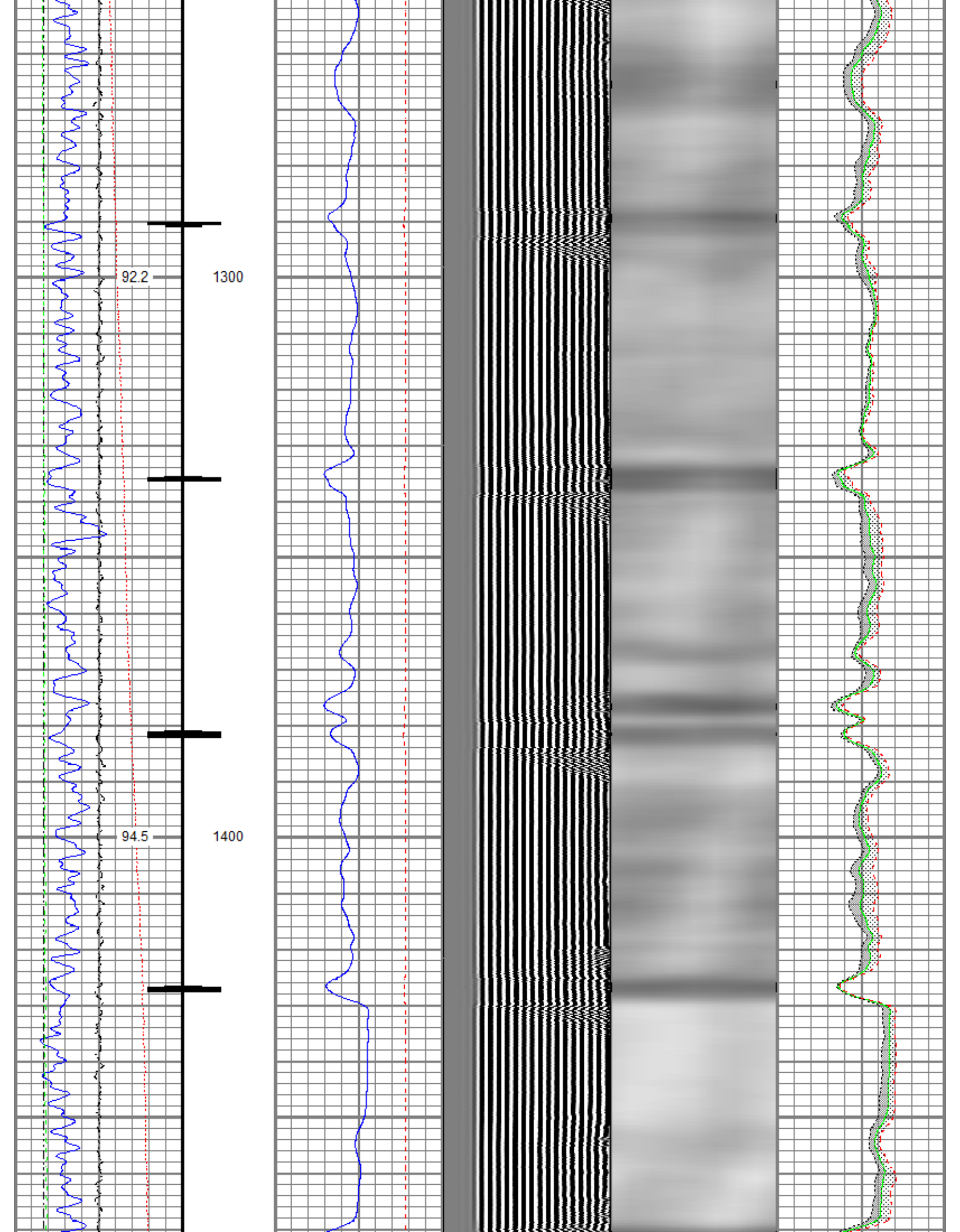


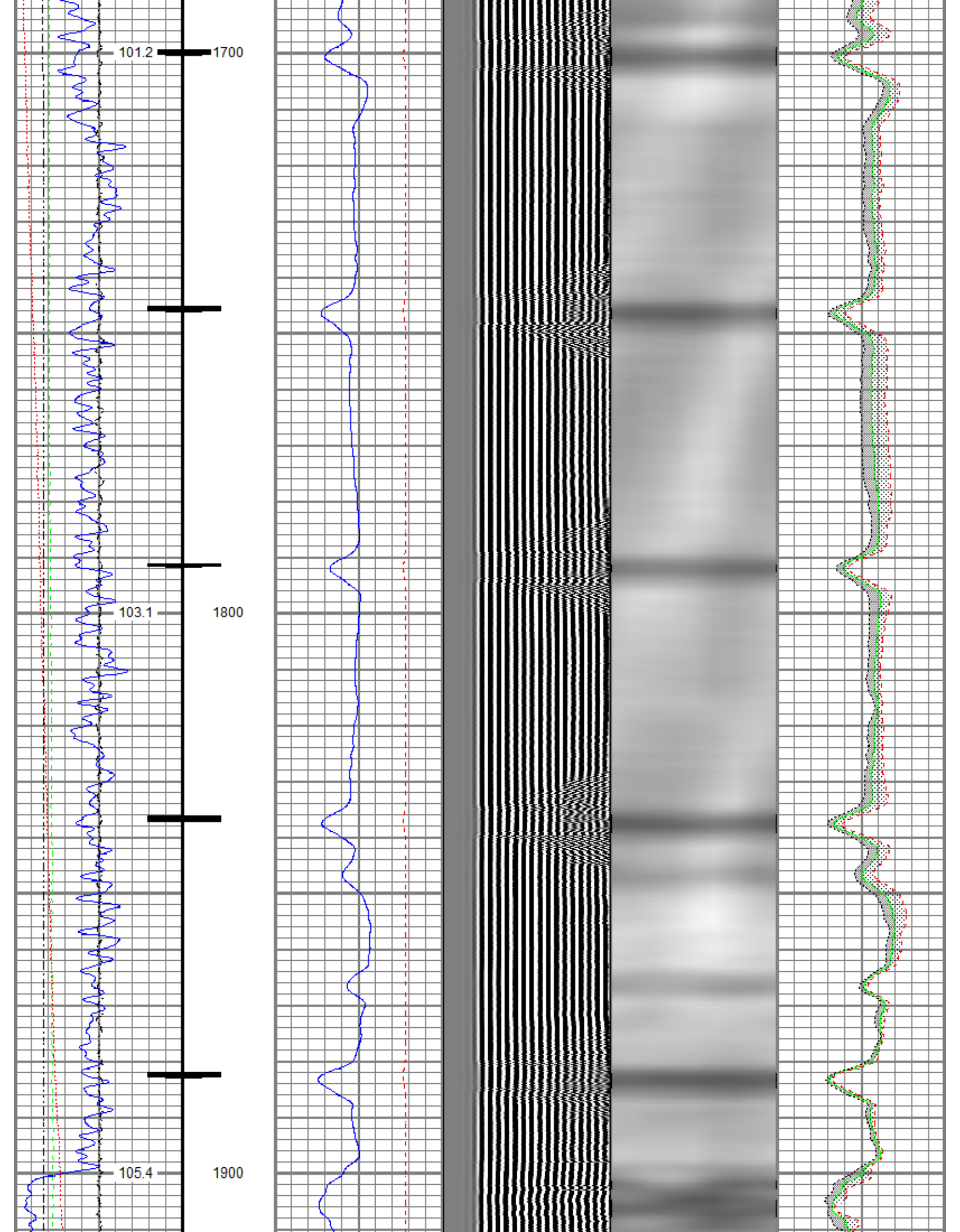


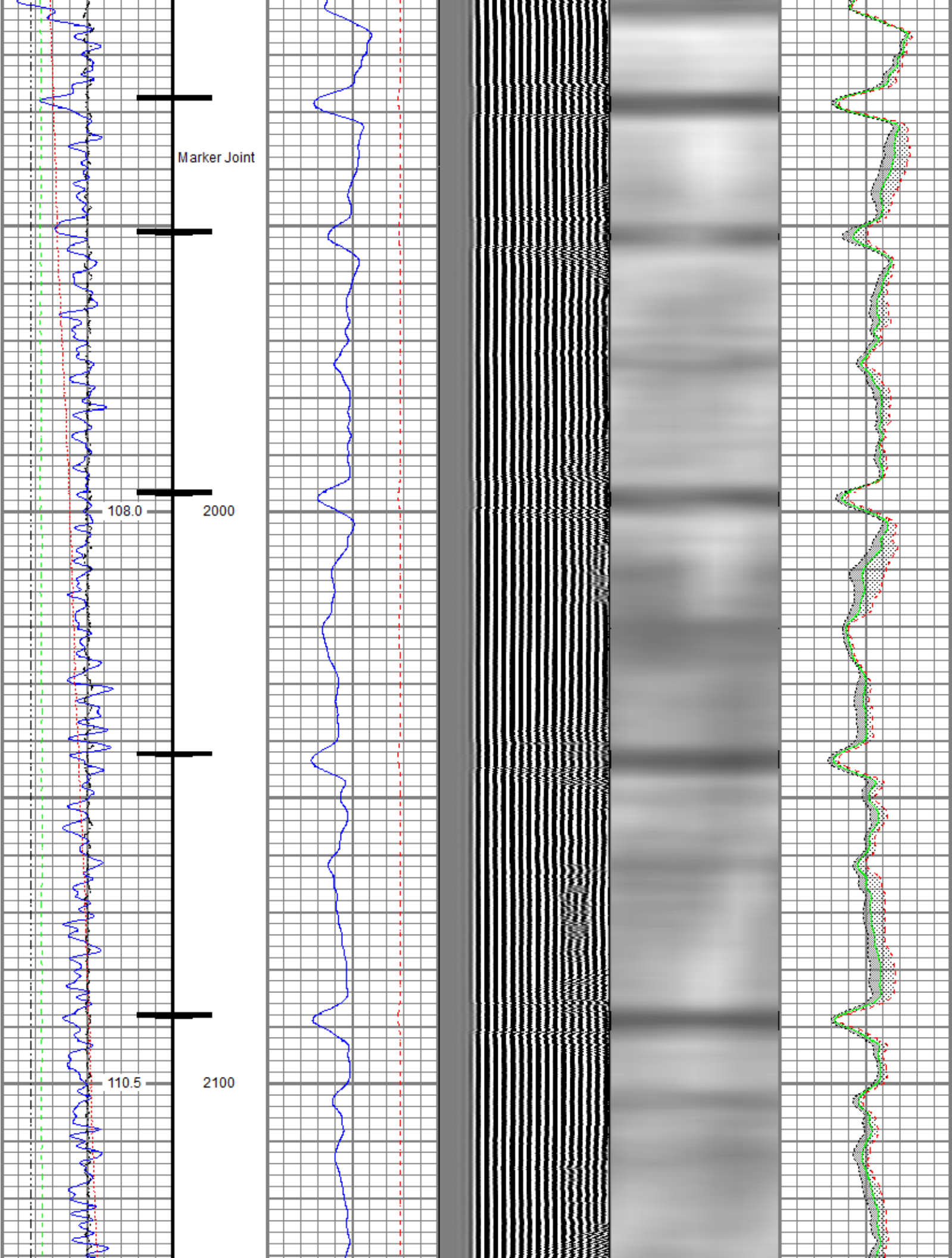


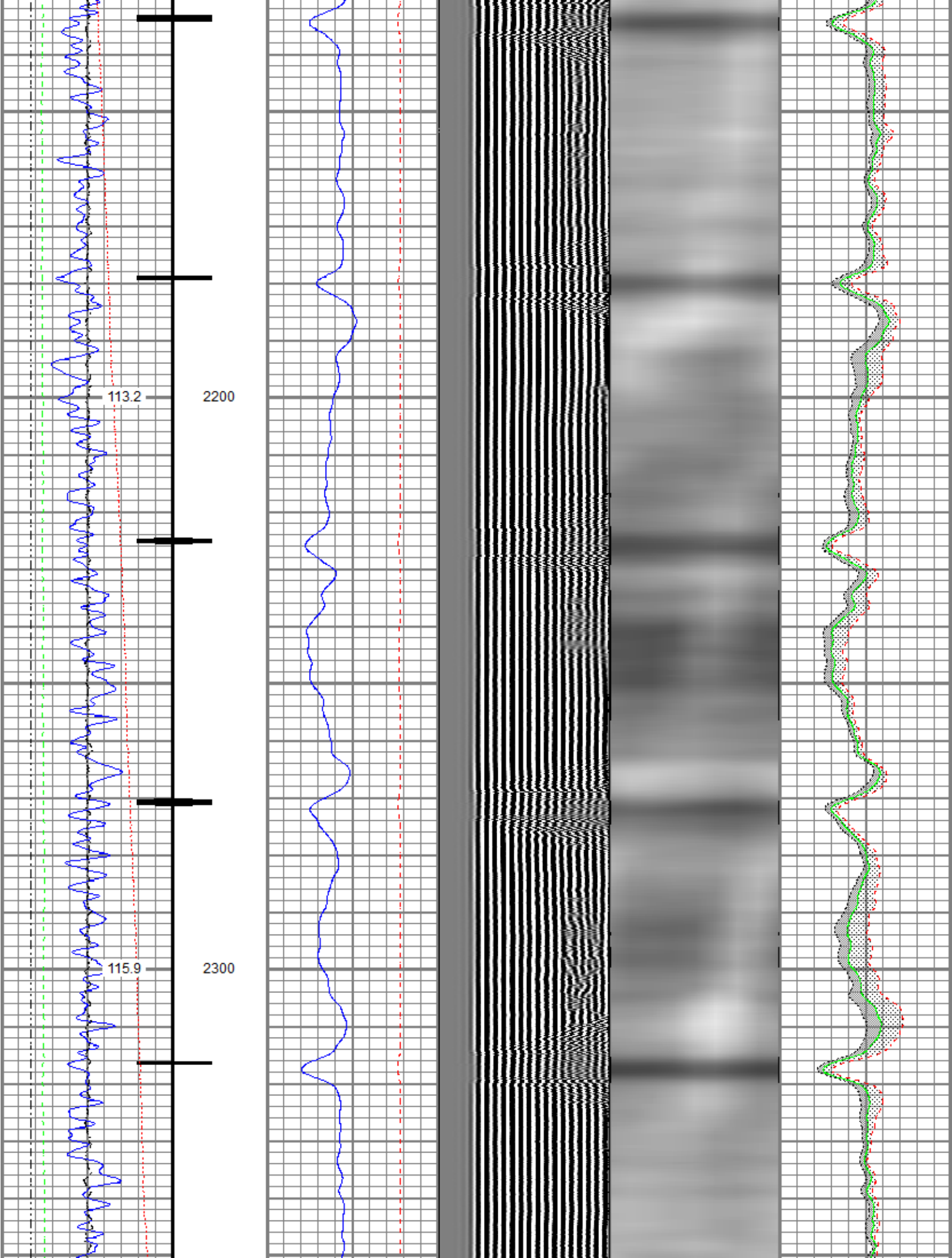


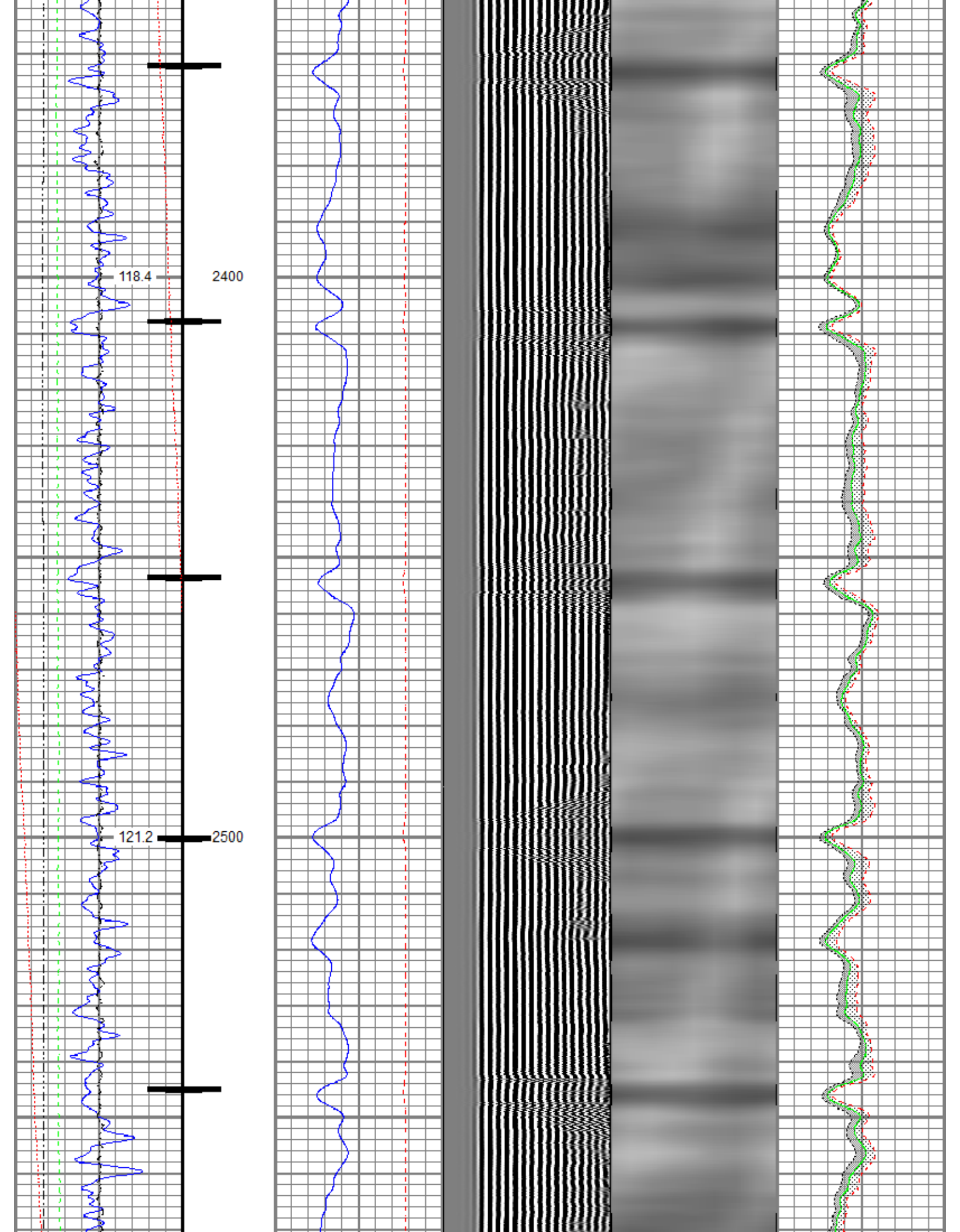


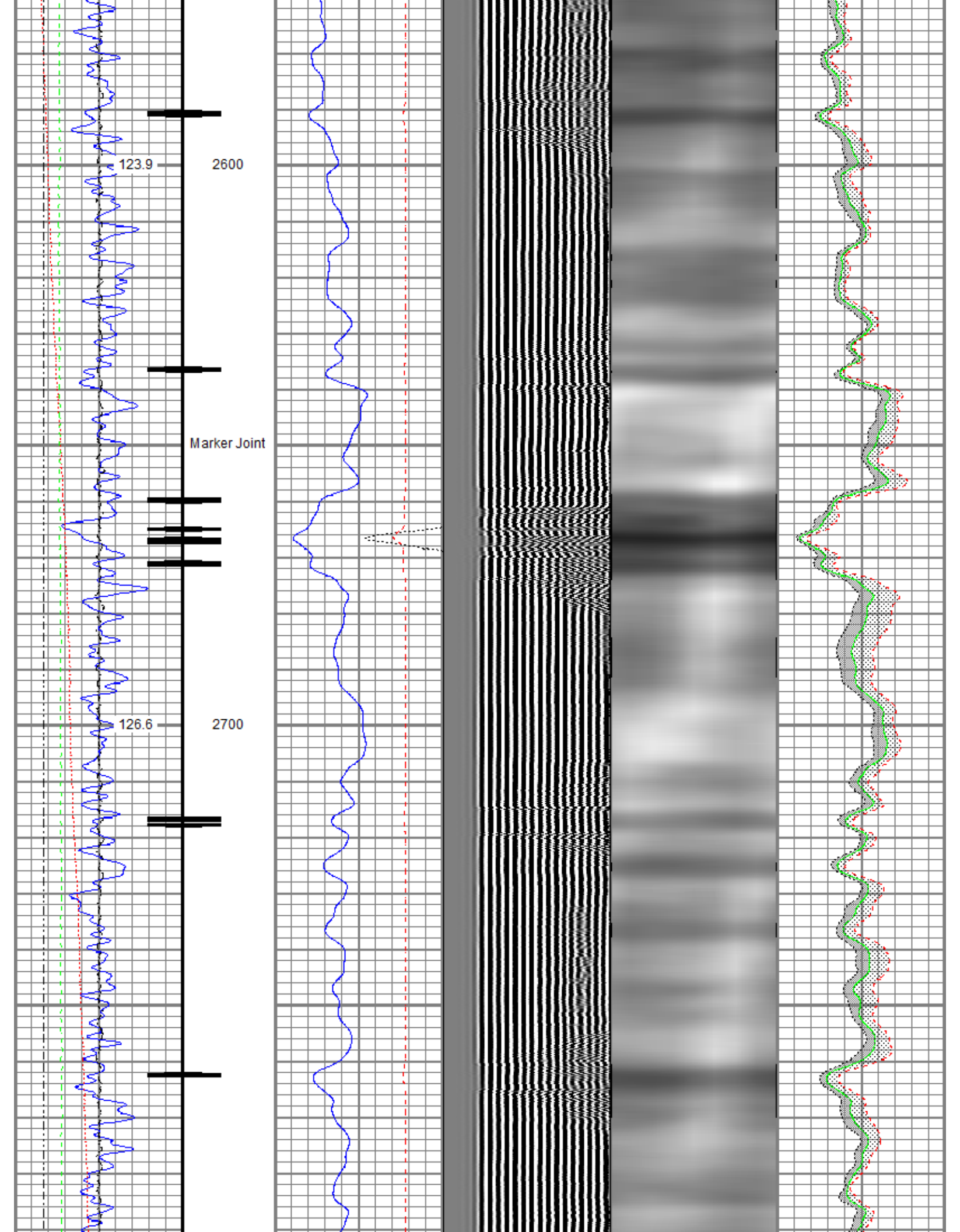


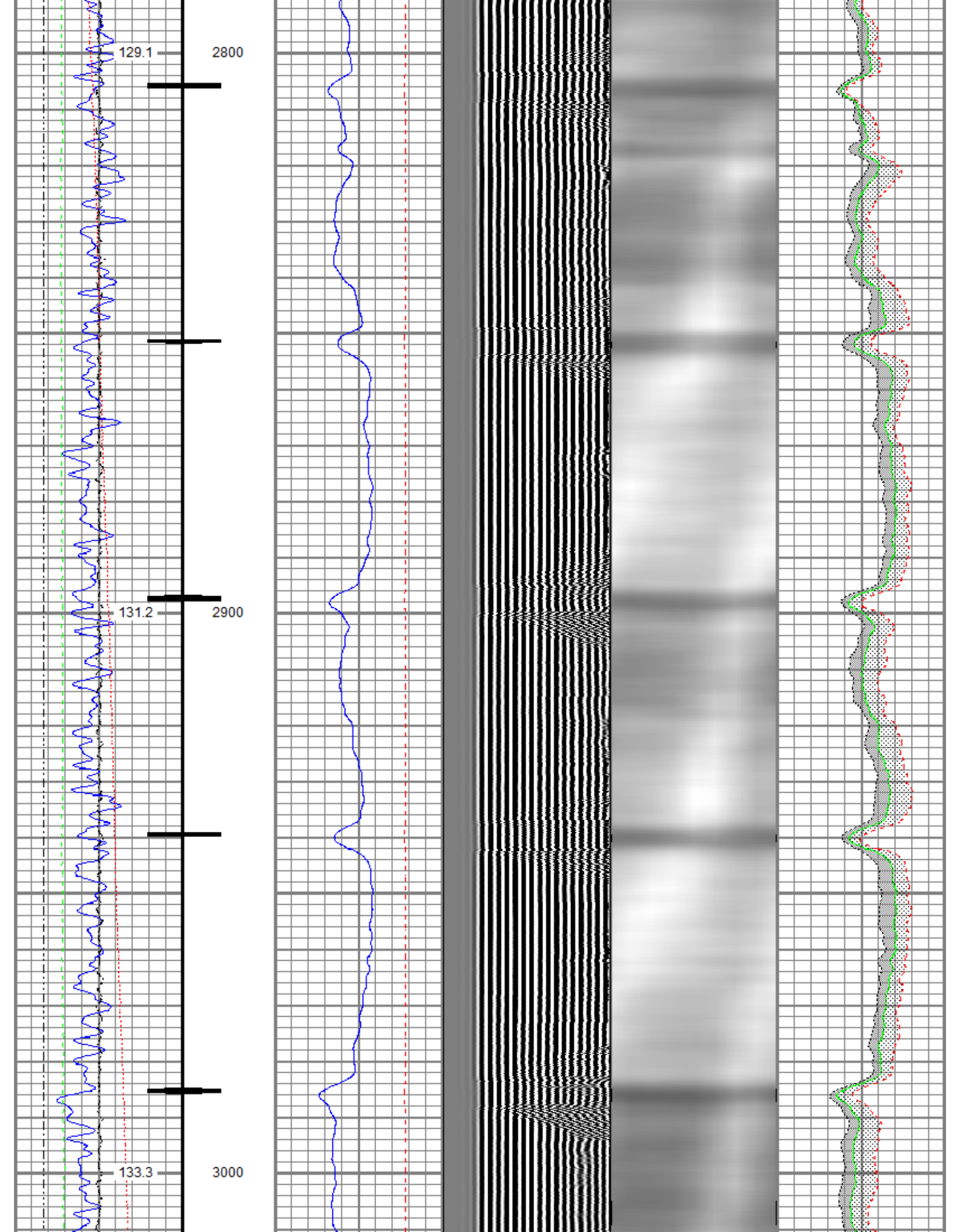


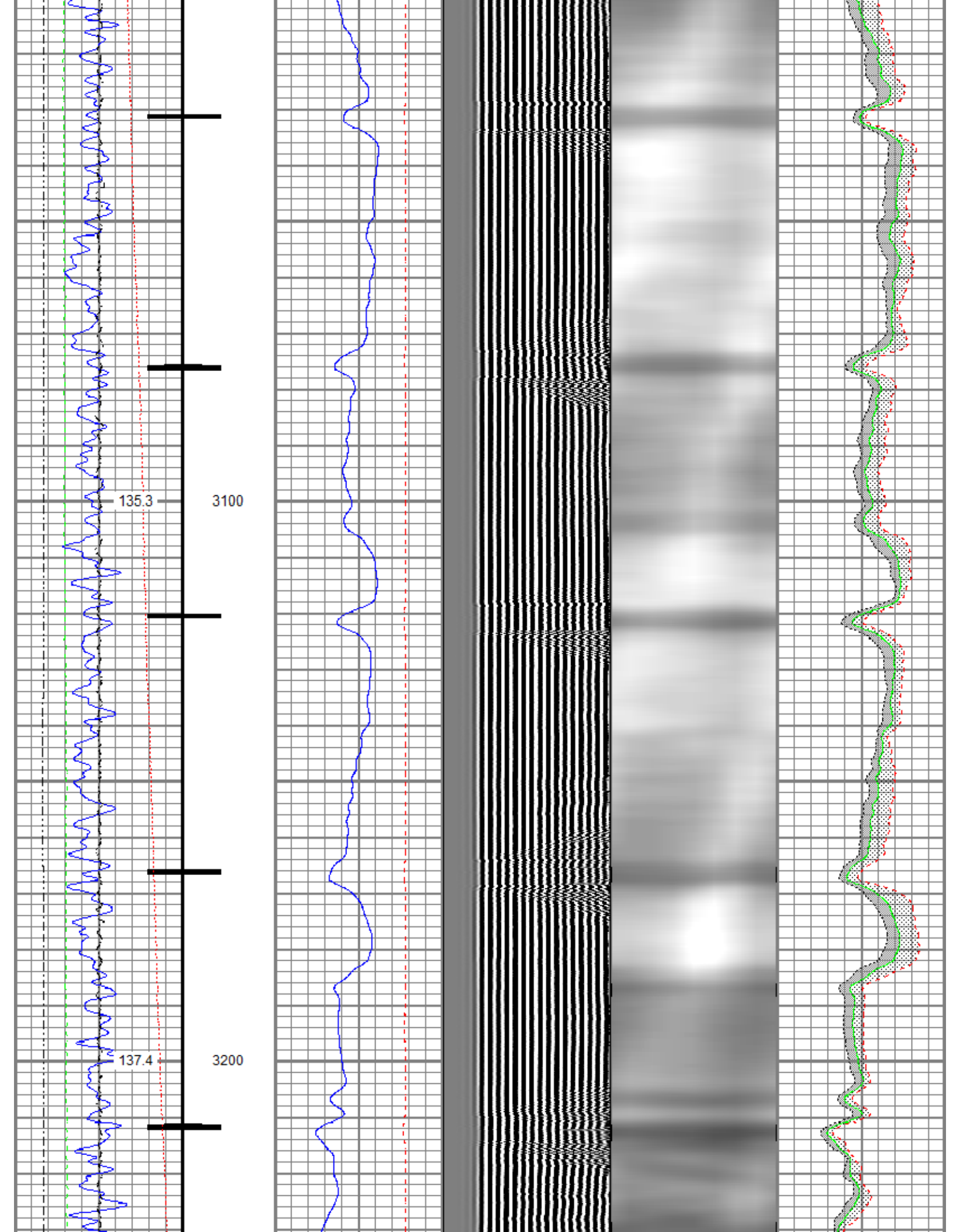


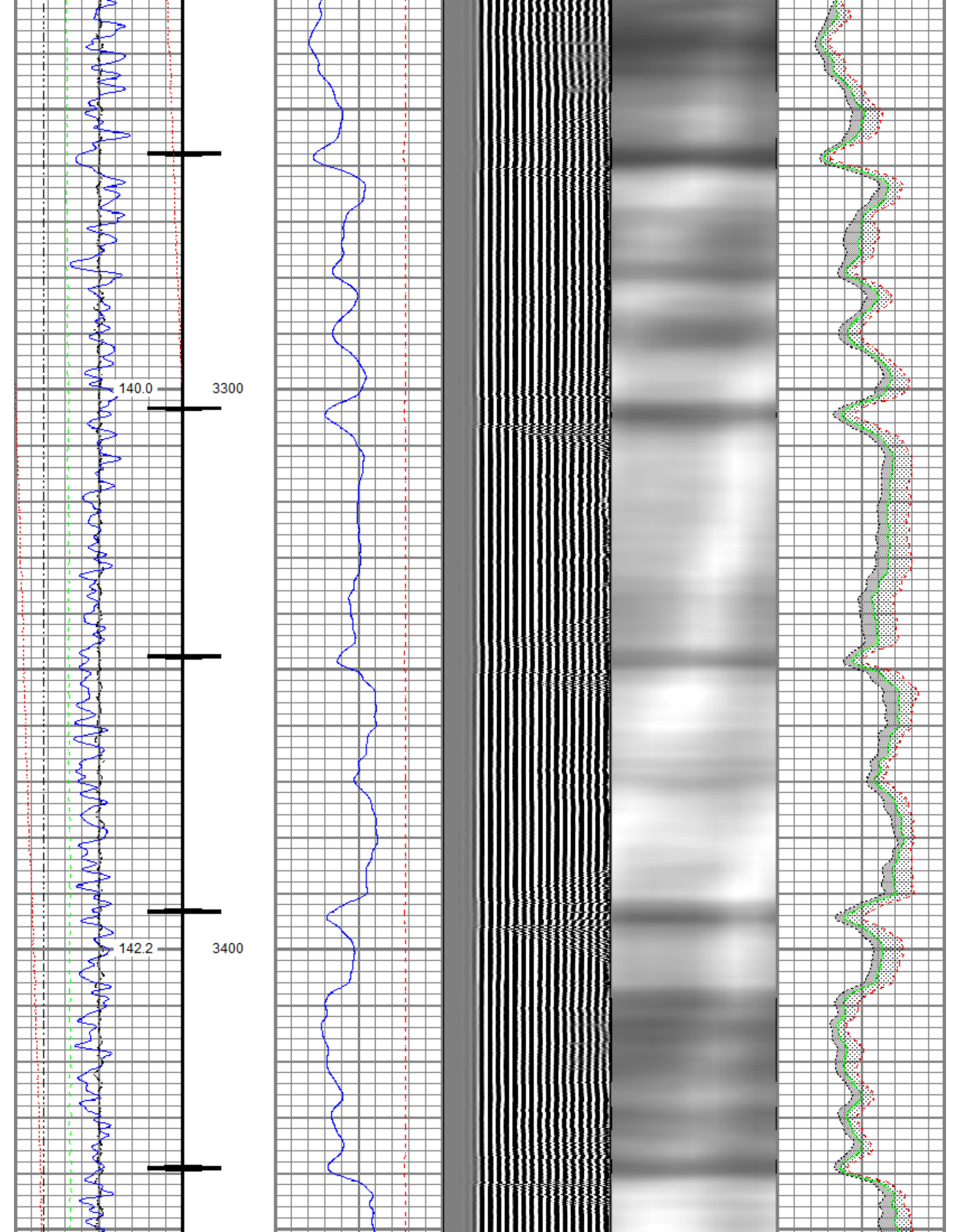


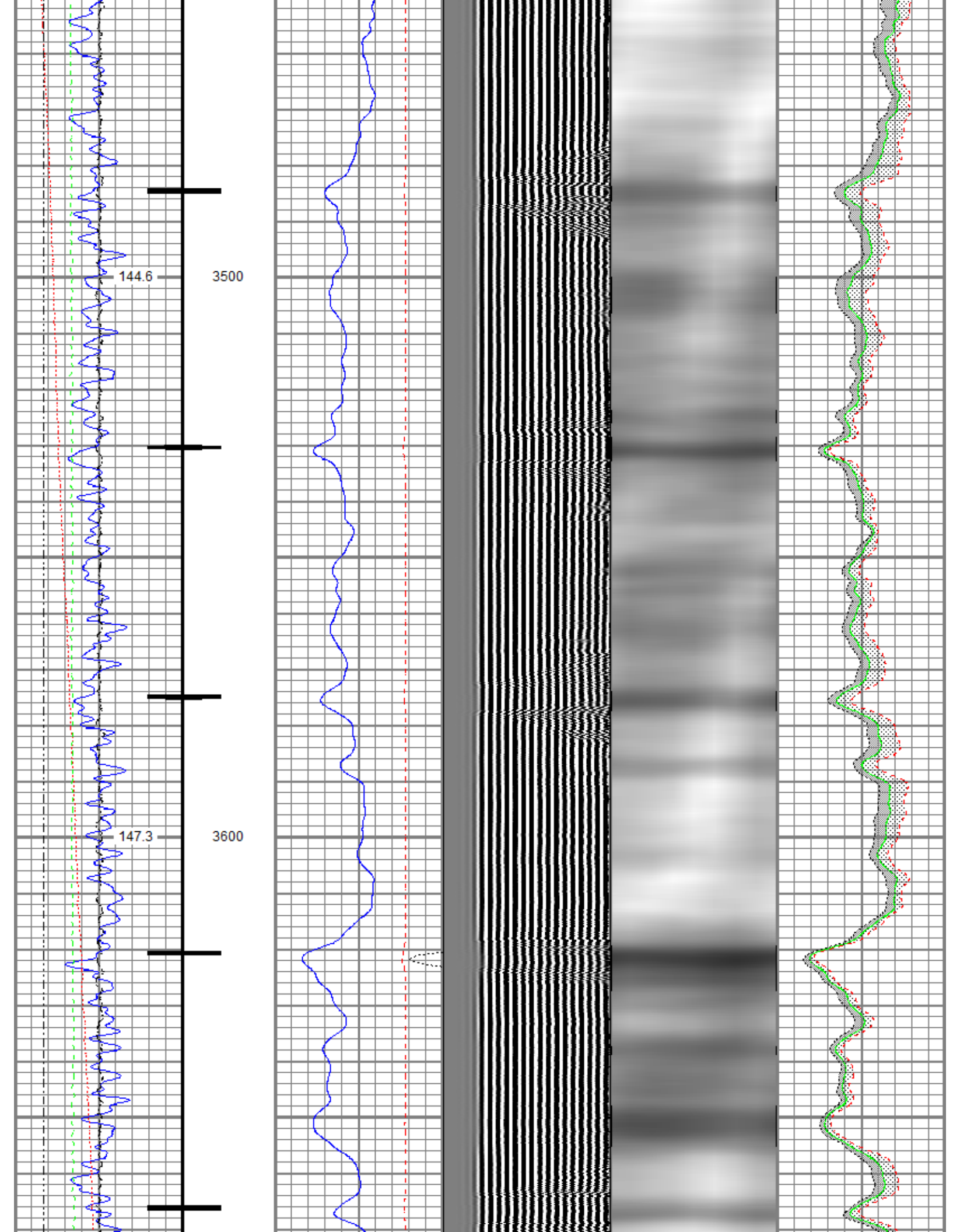


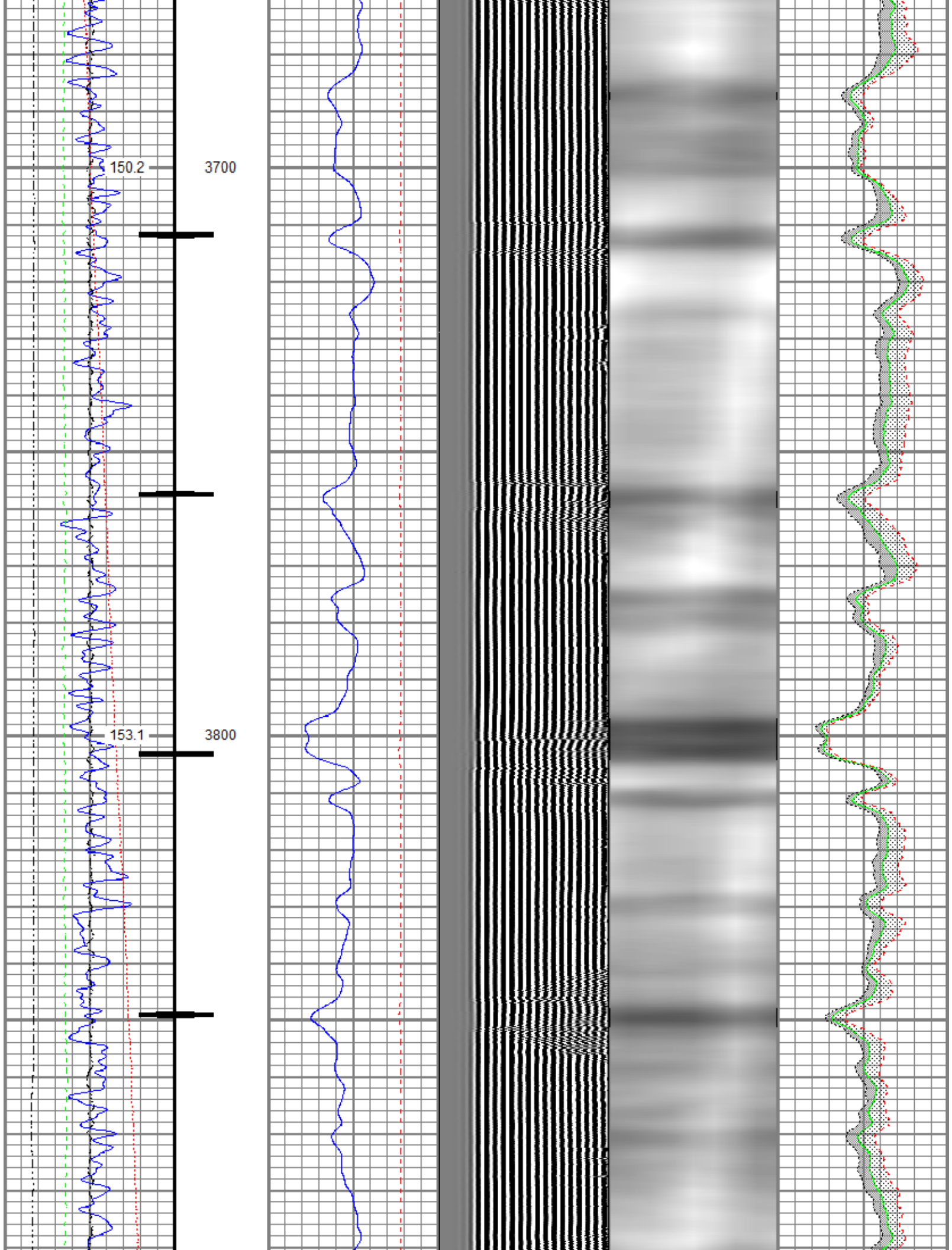


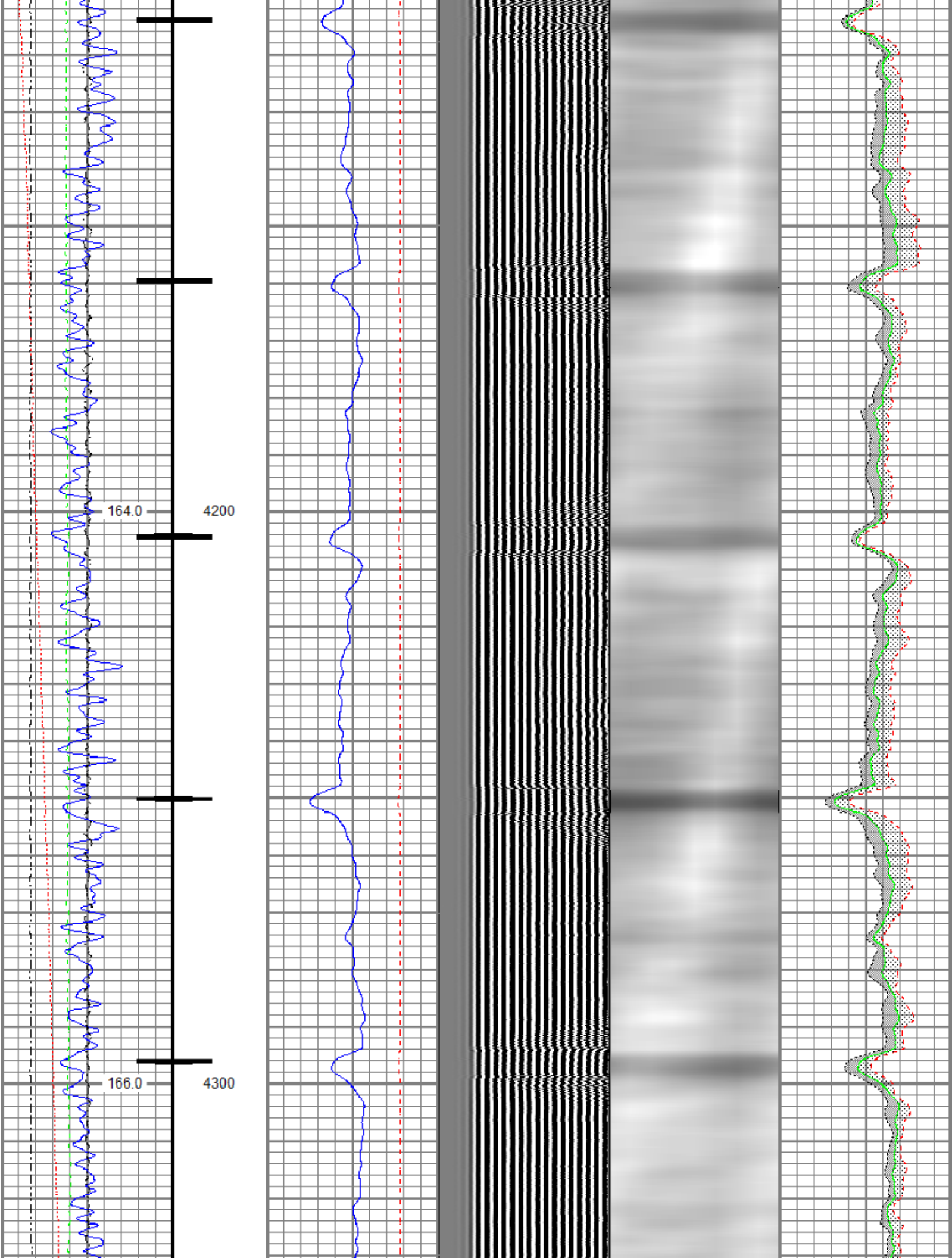


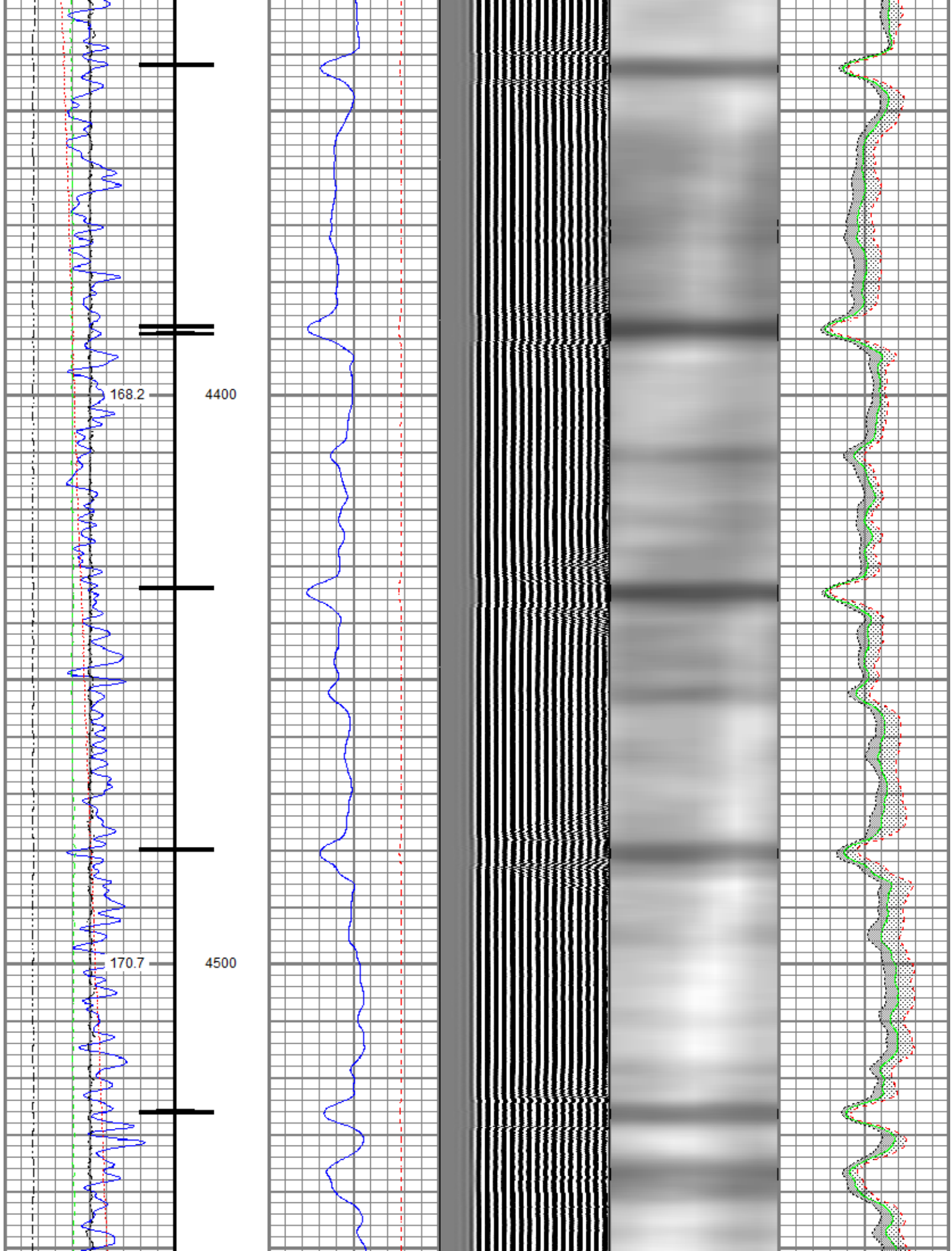


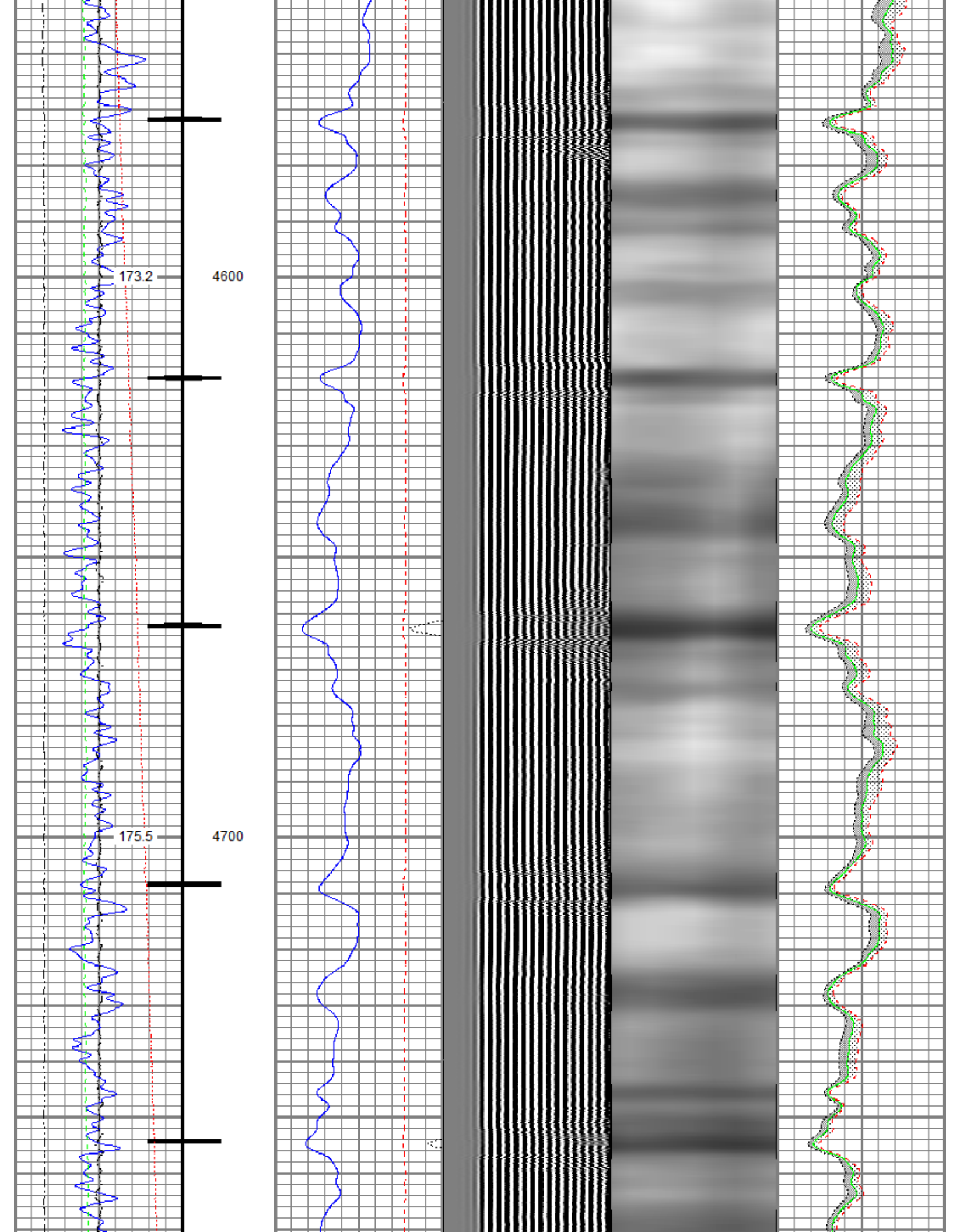


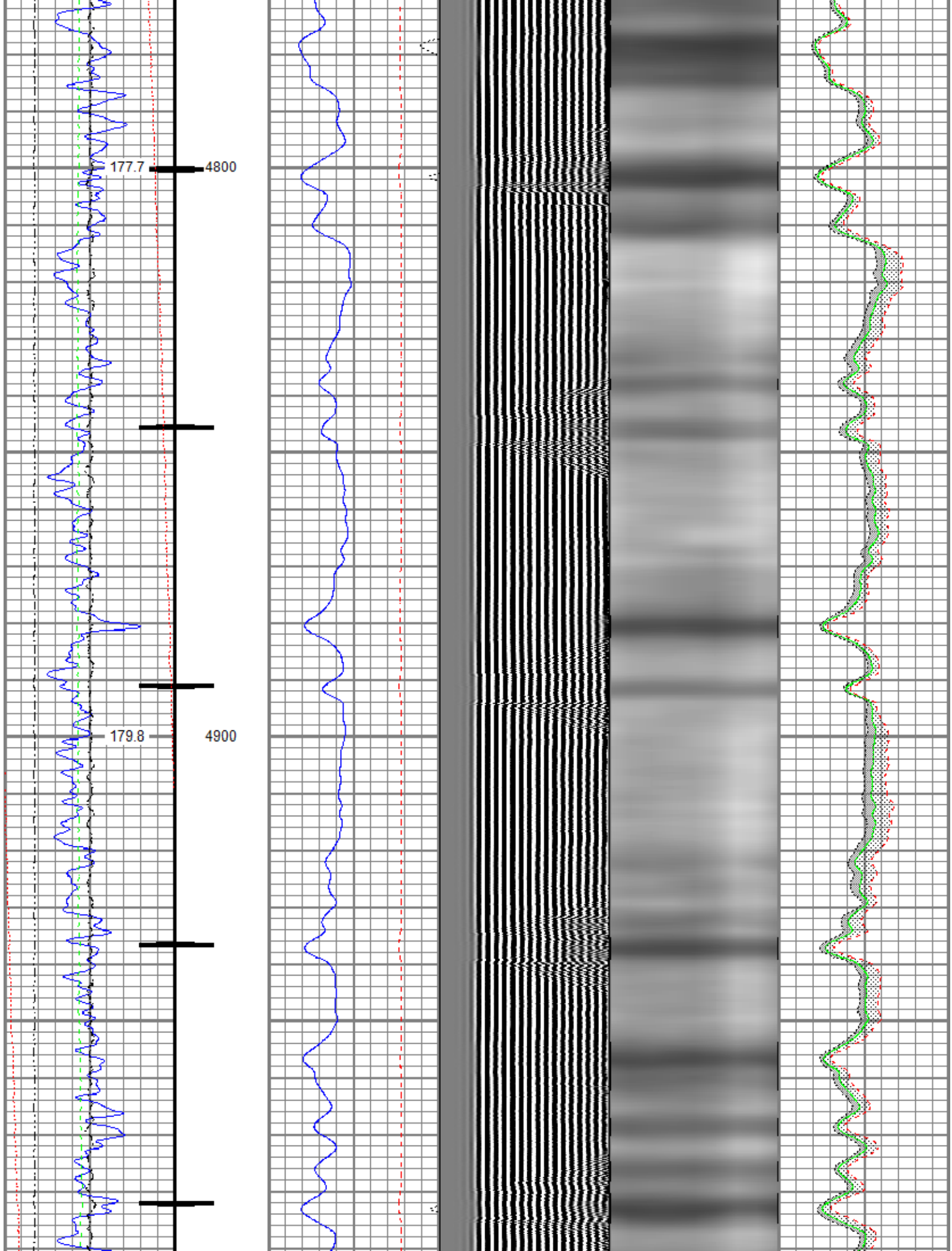


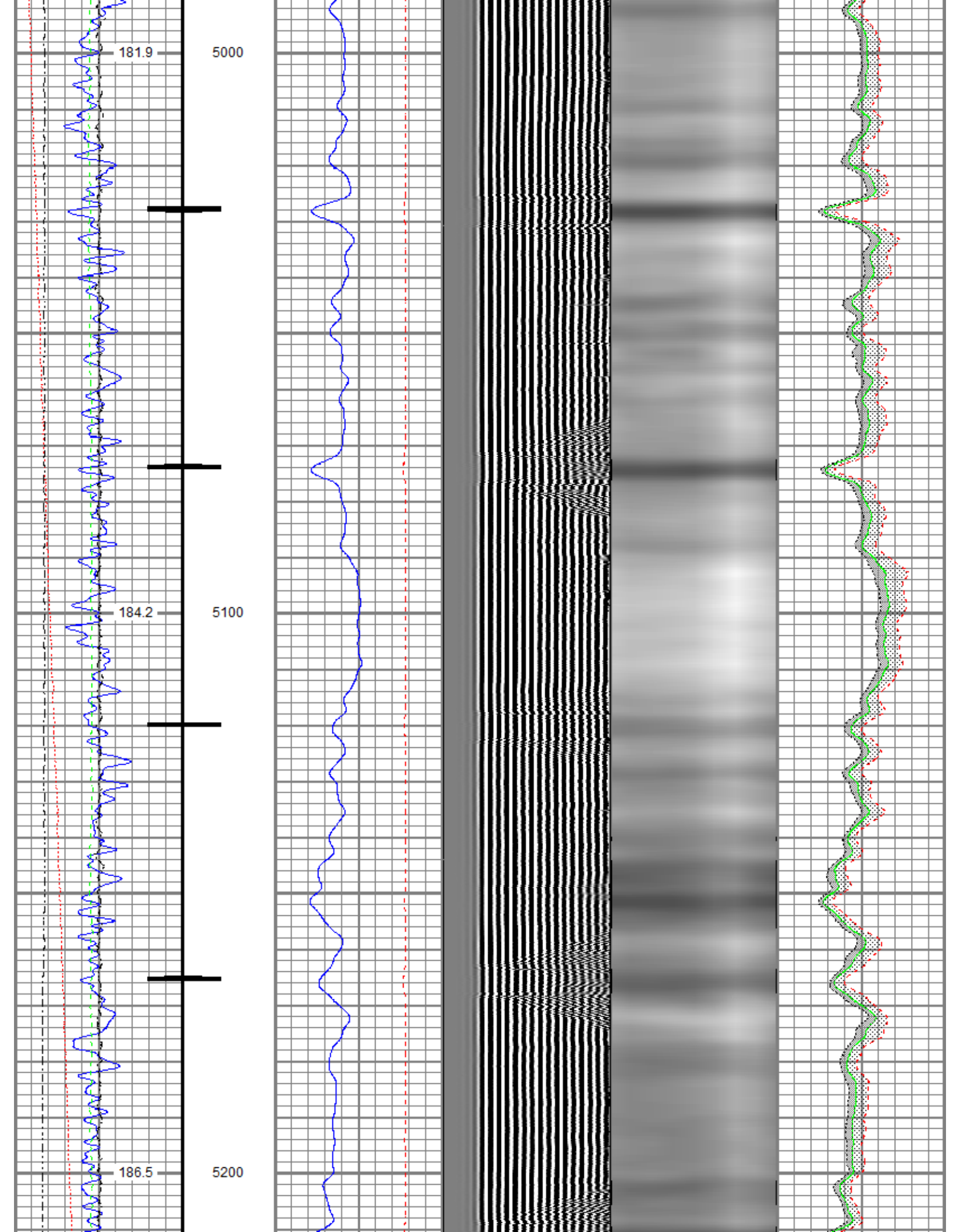


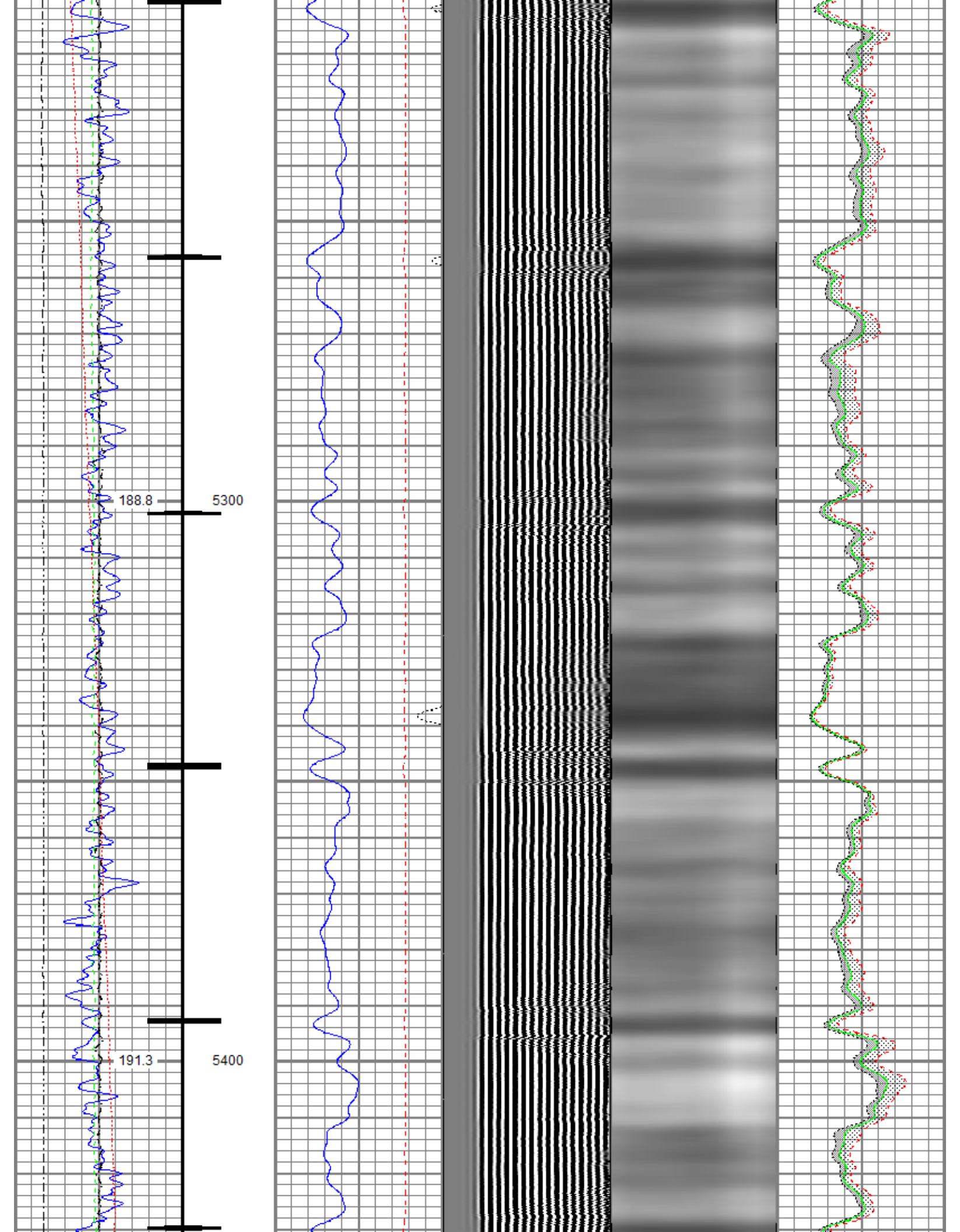


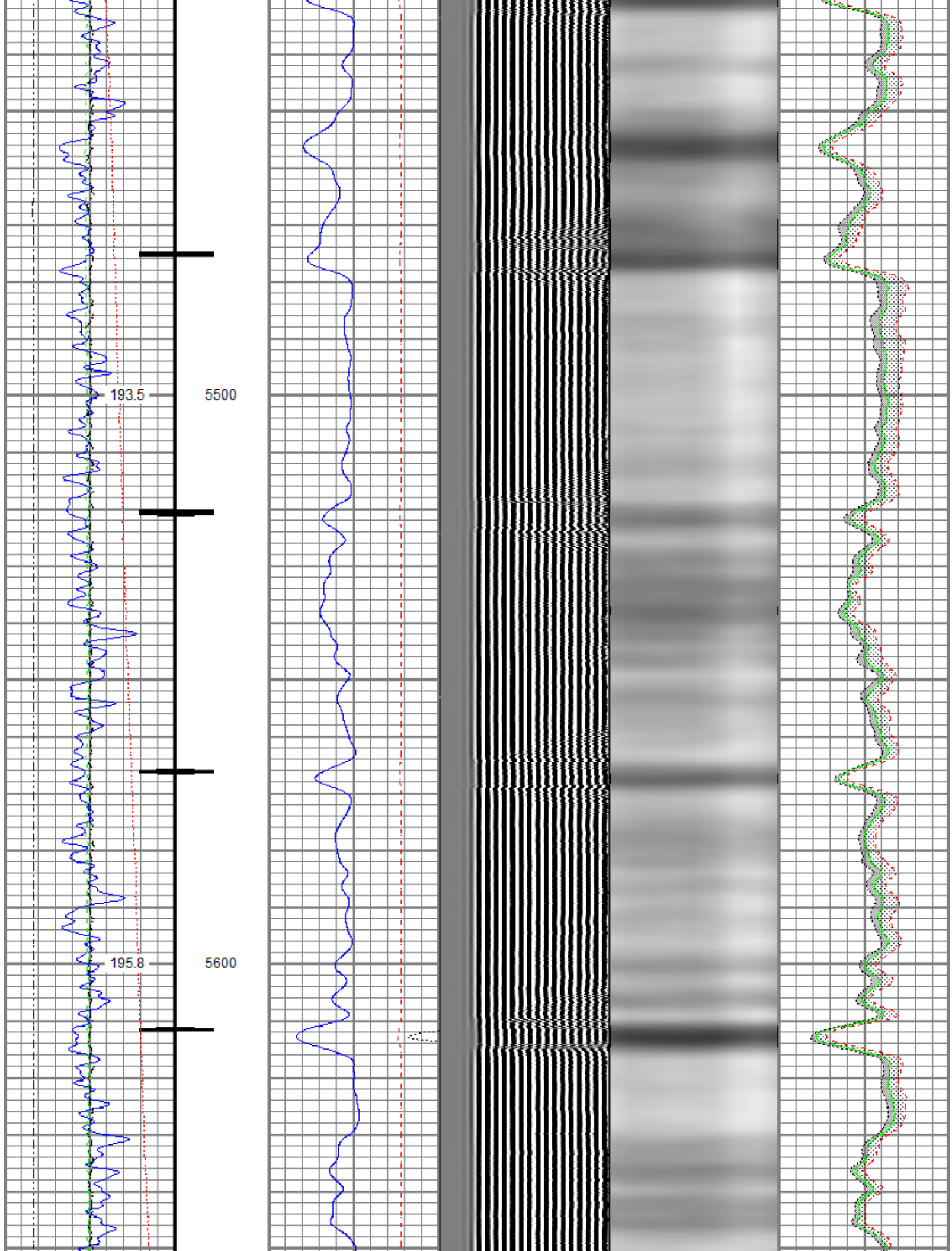


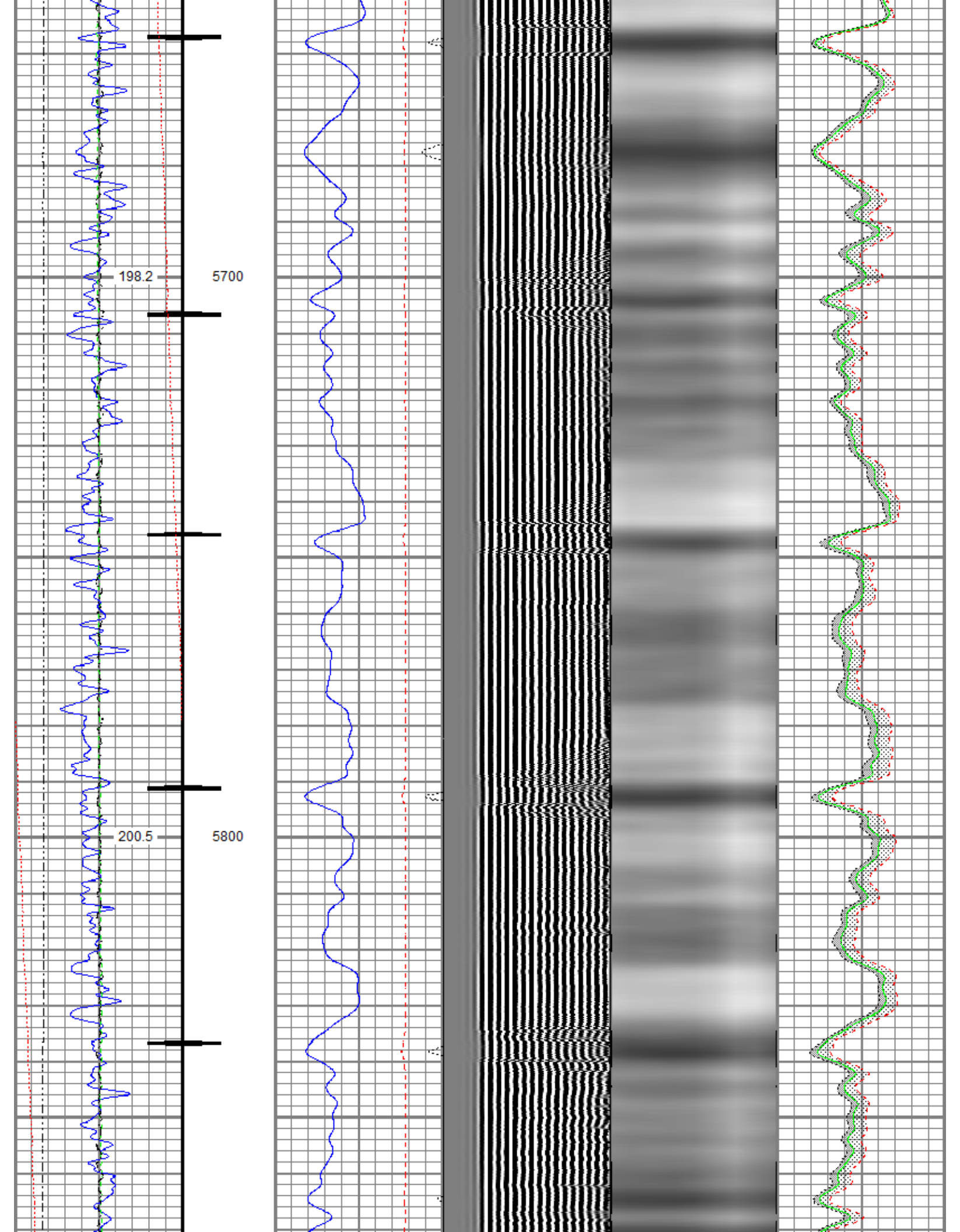


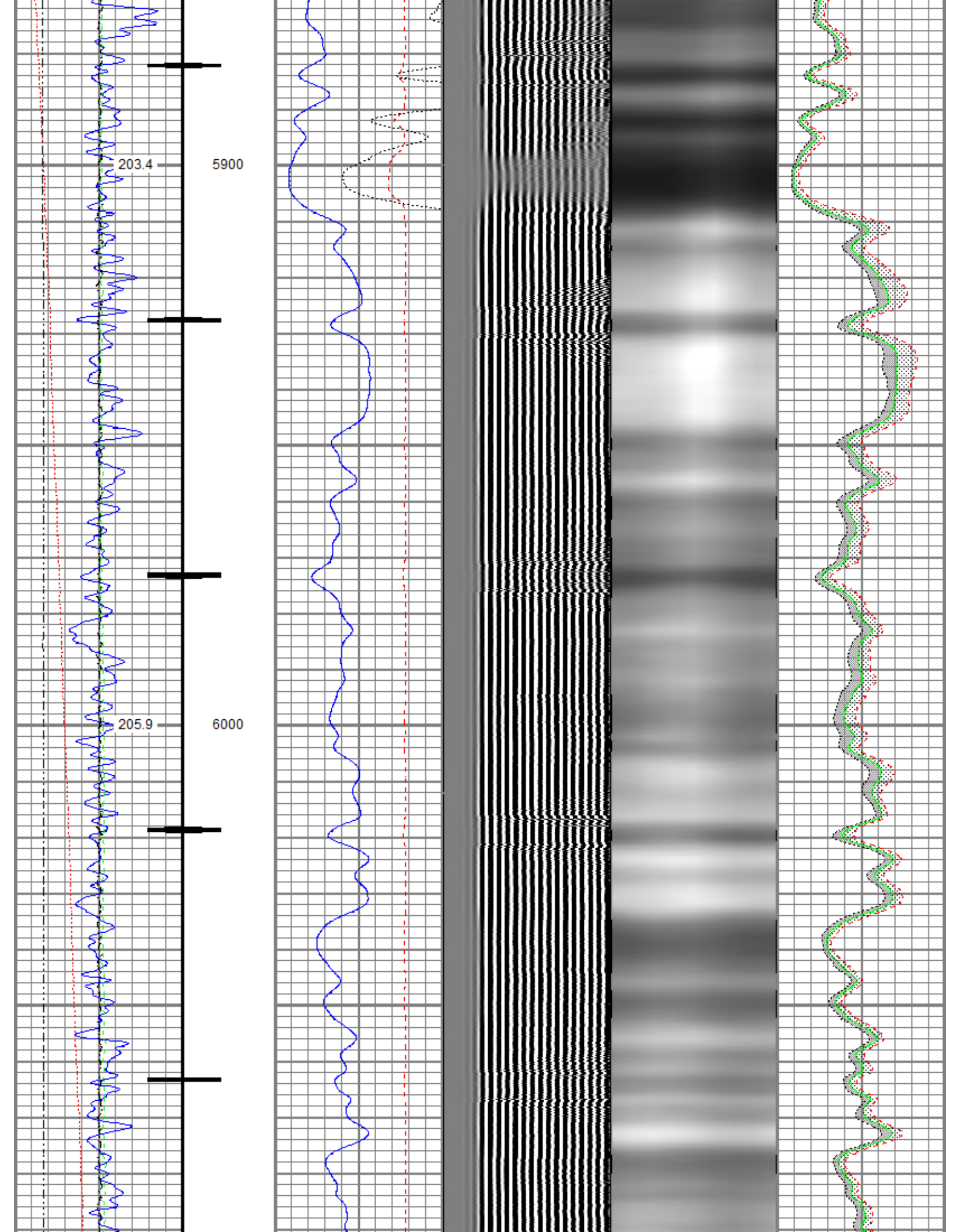


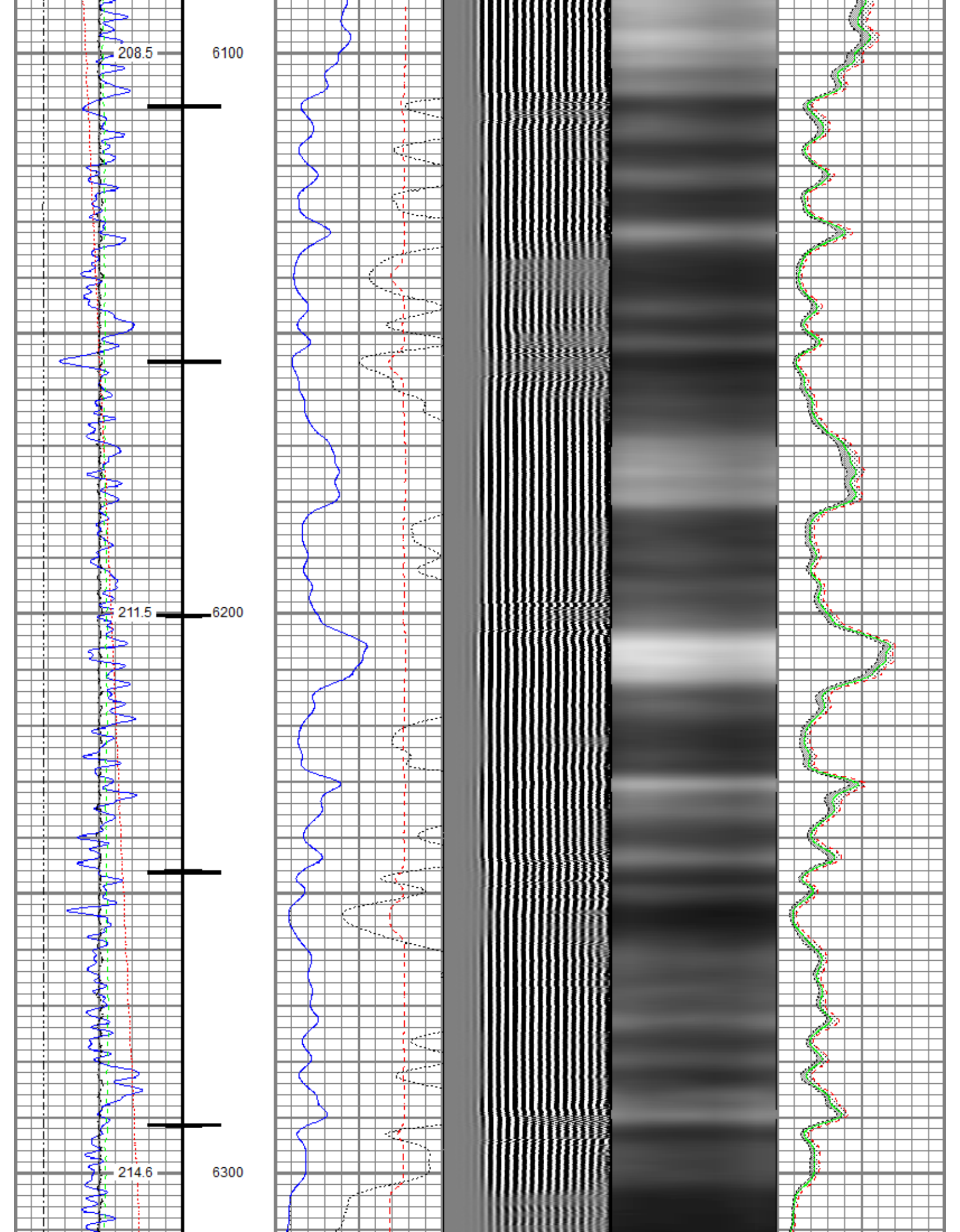


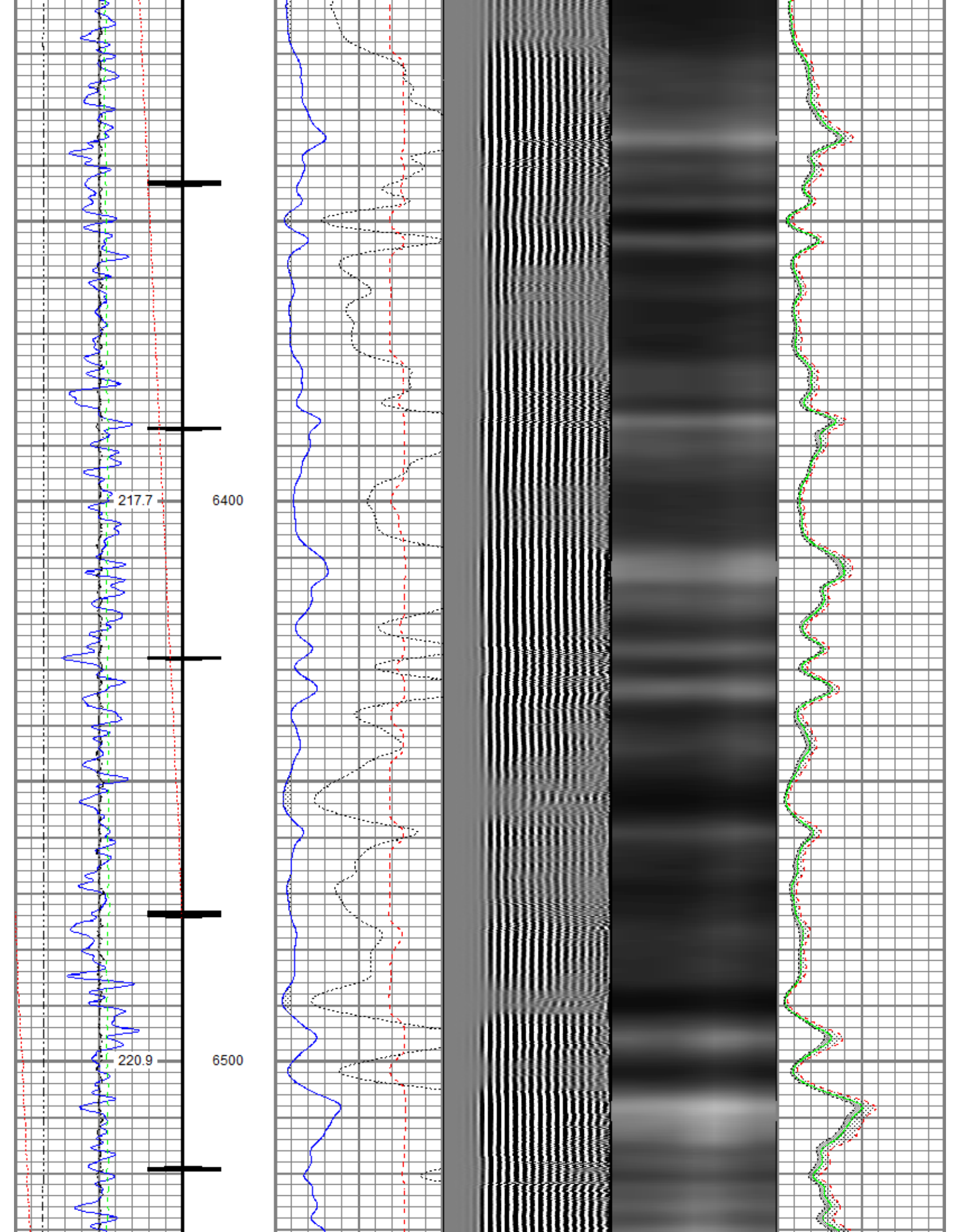


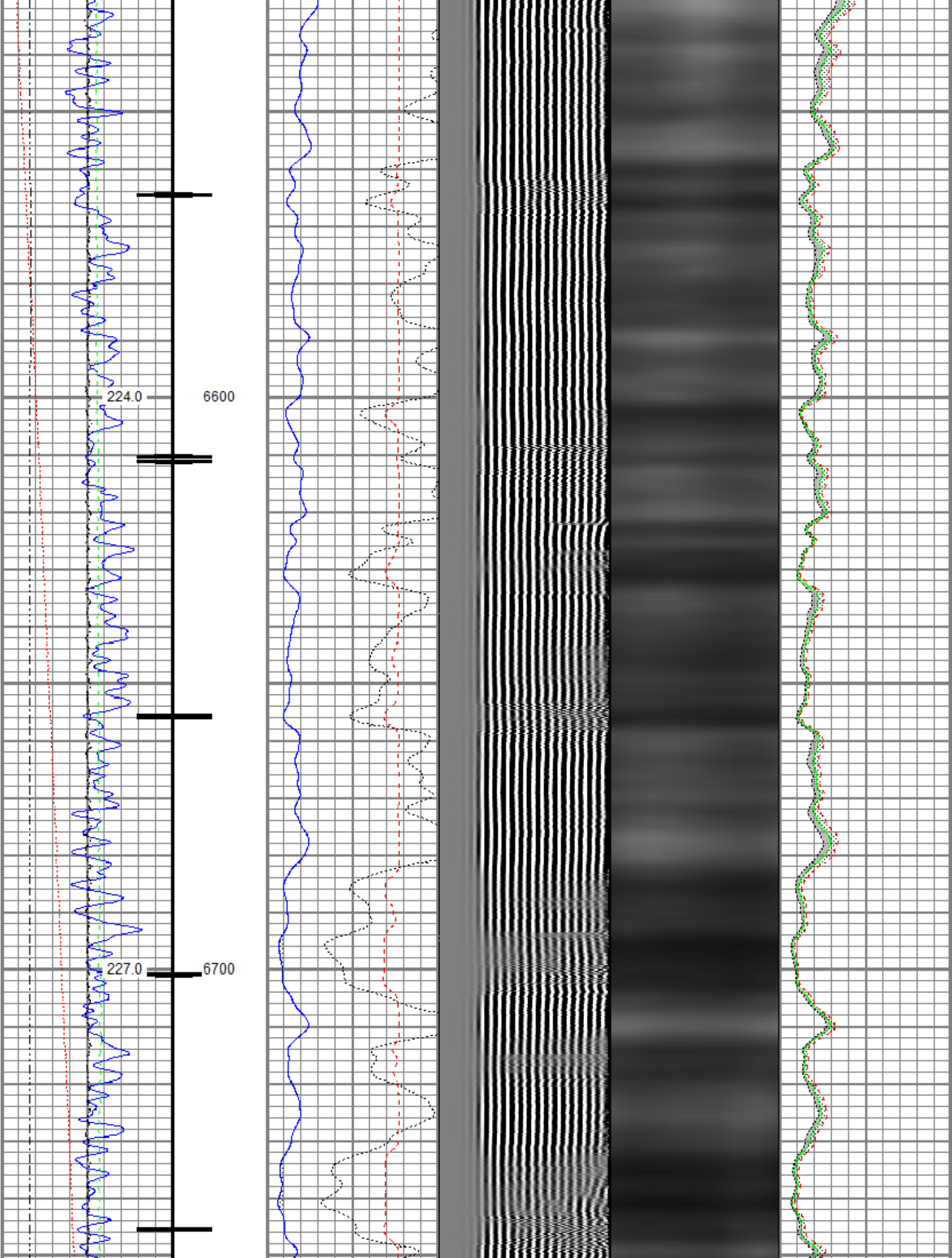


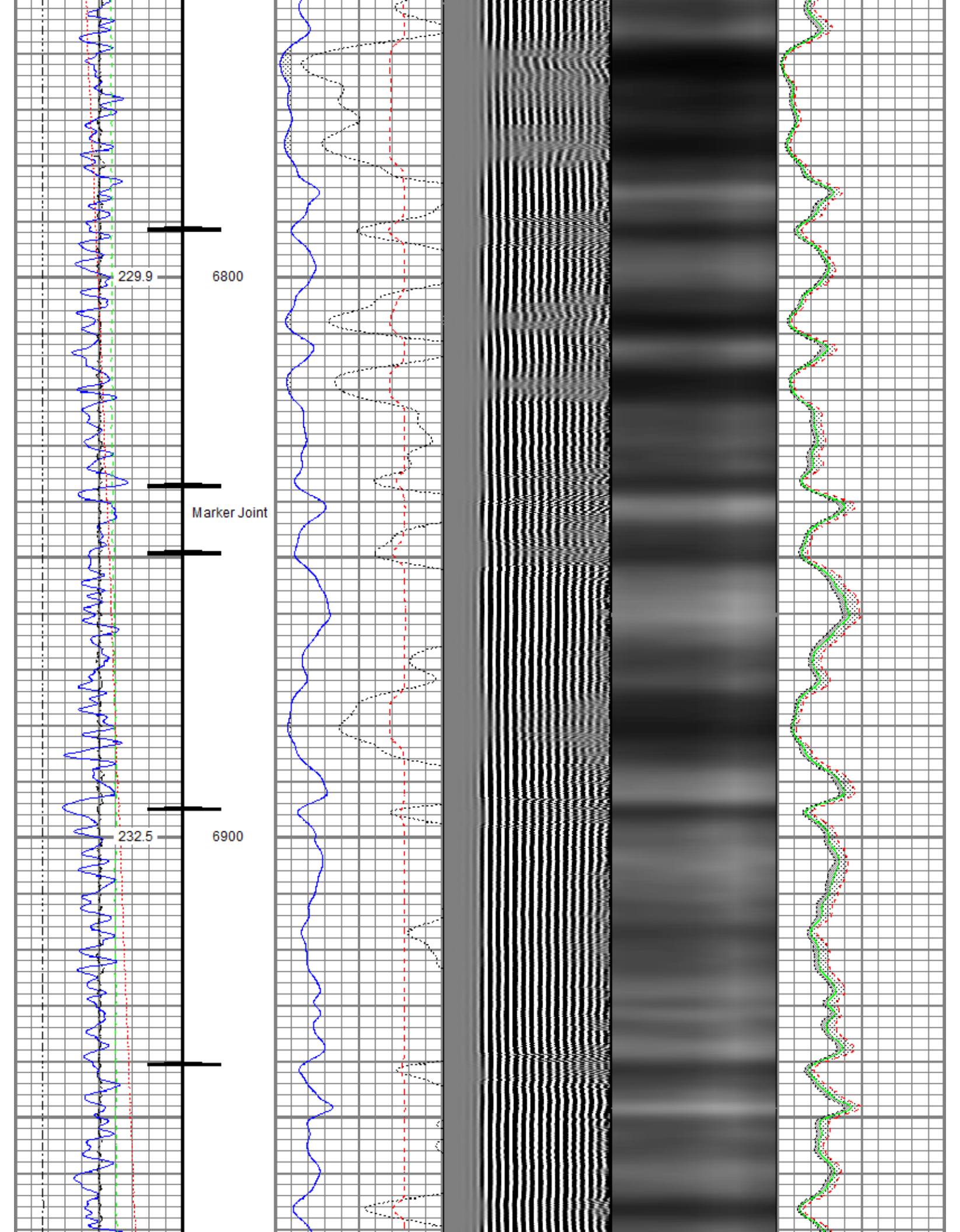


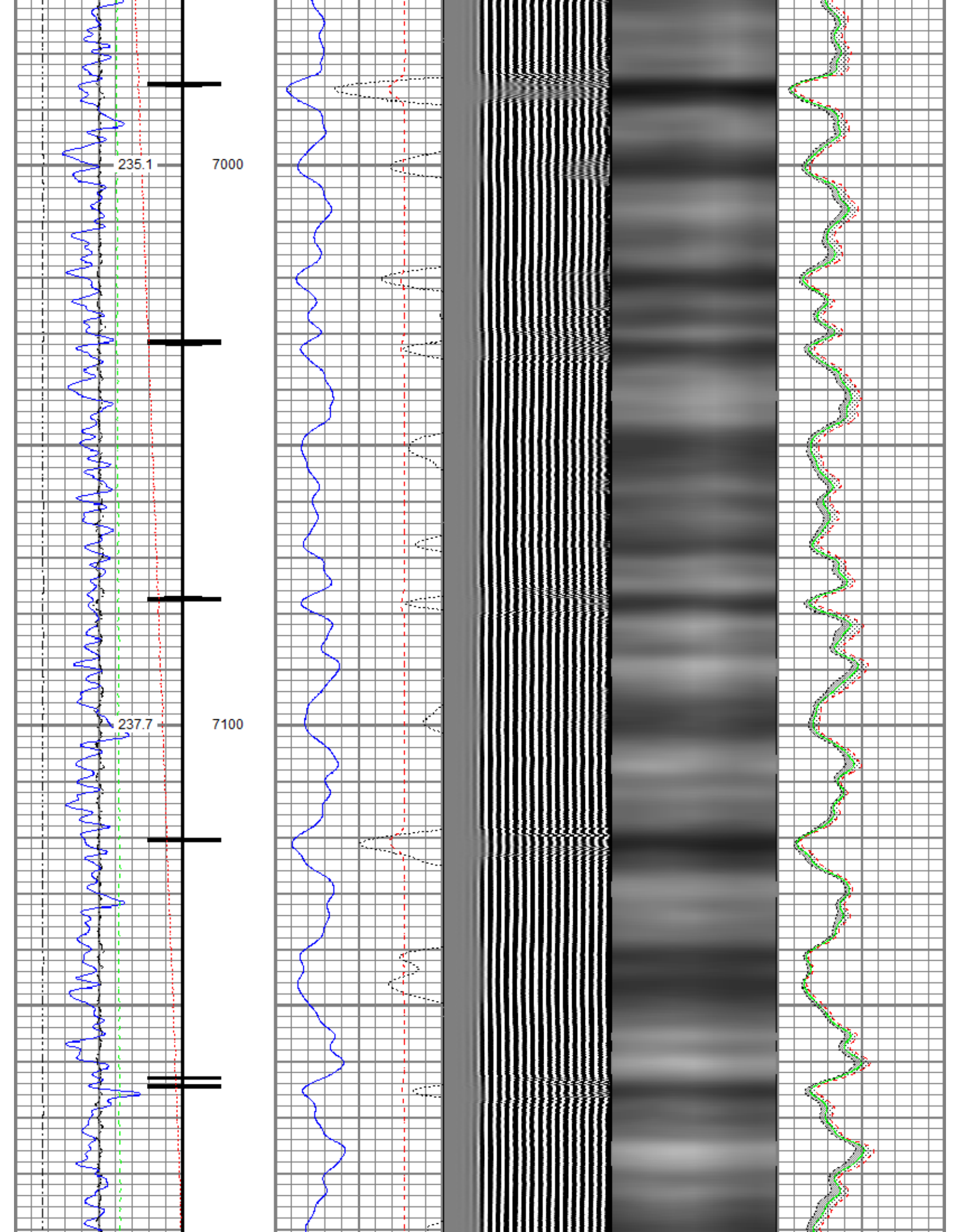


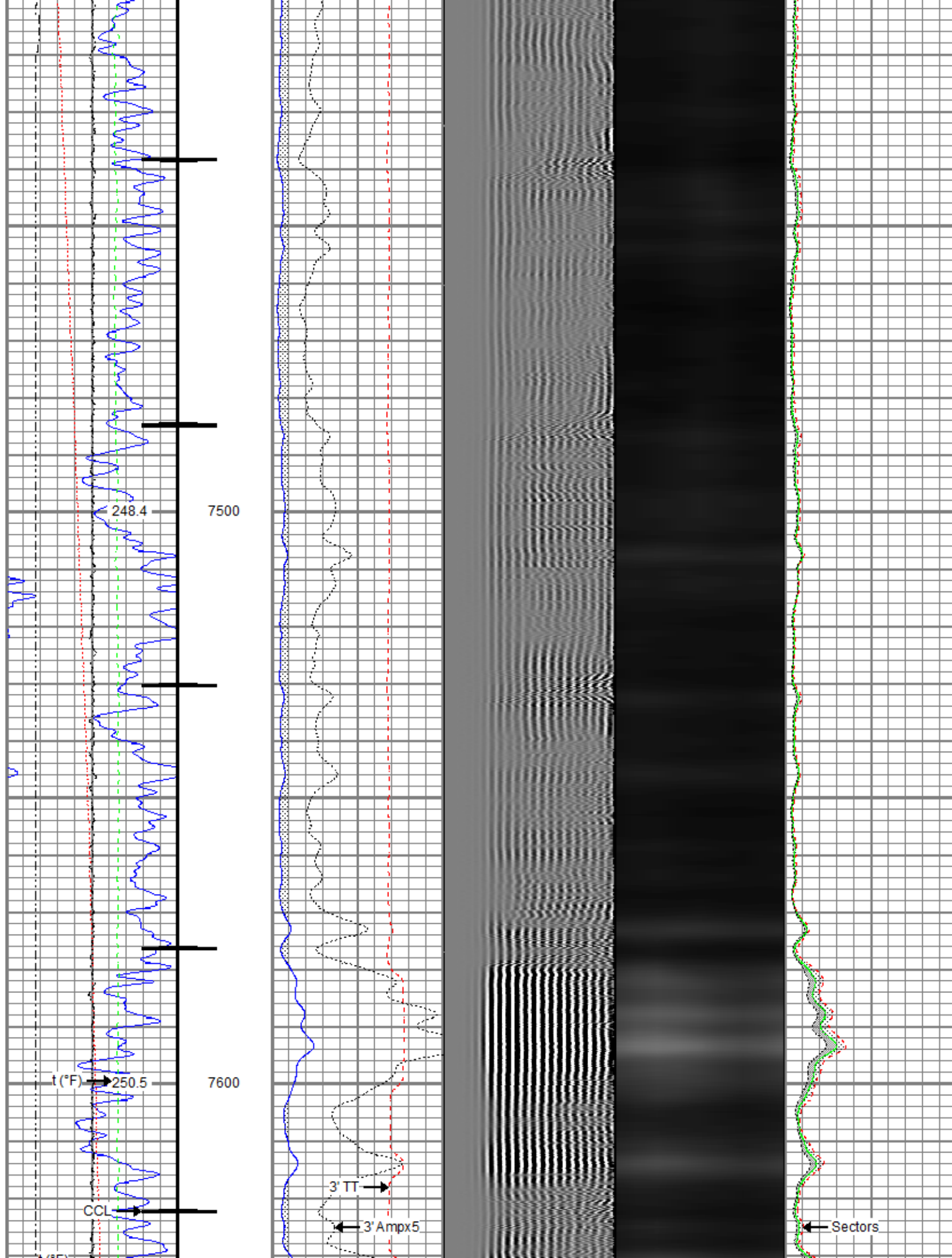


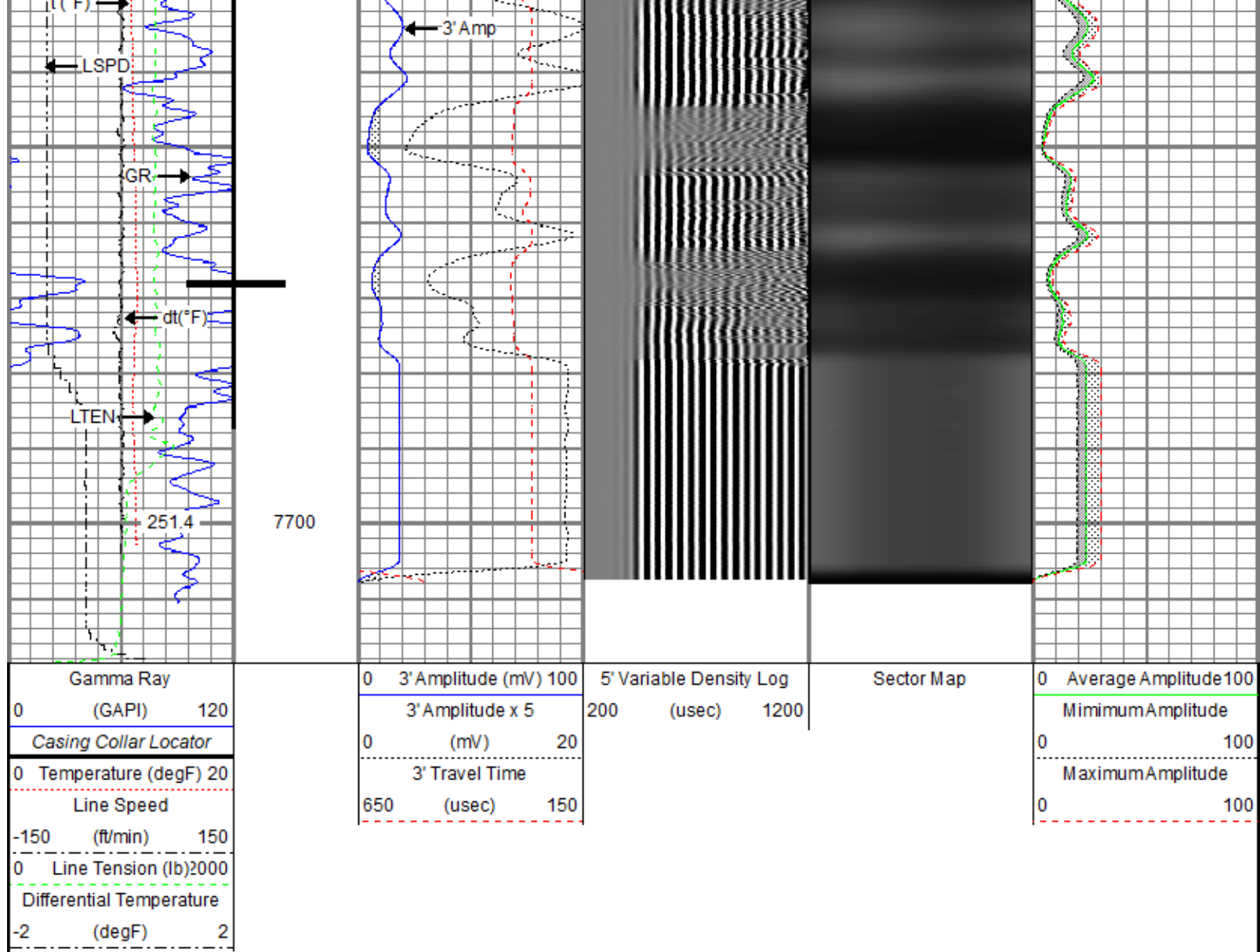








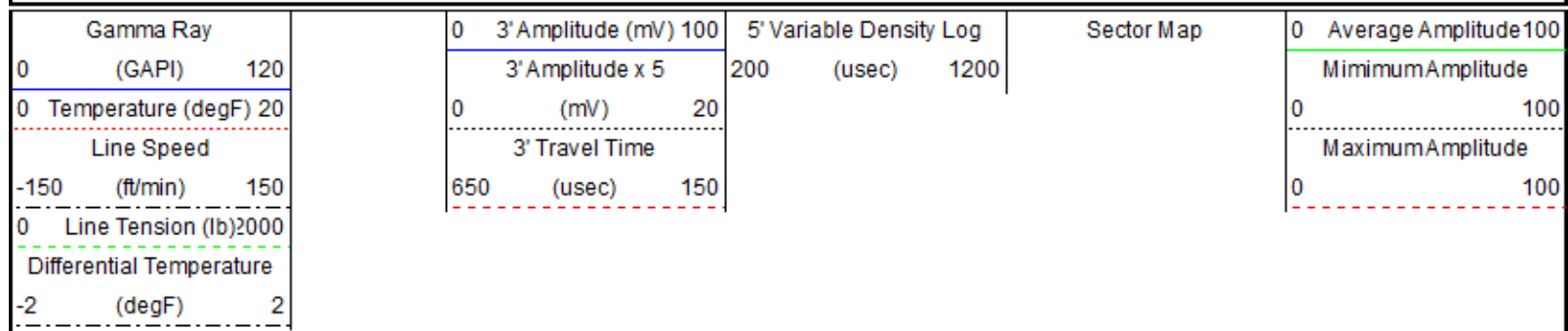




Repeat Pass

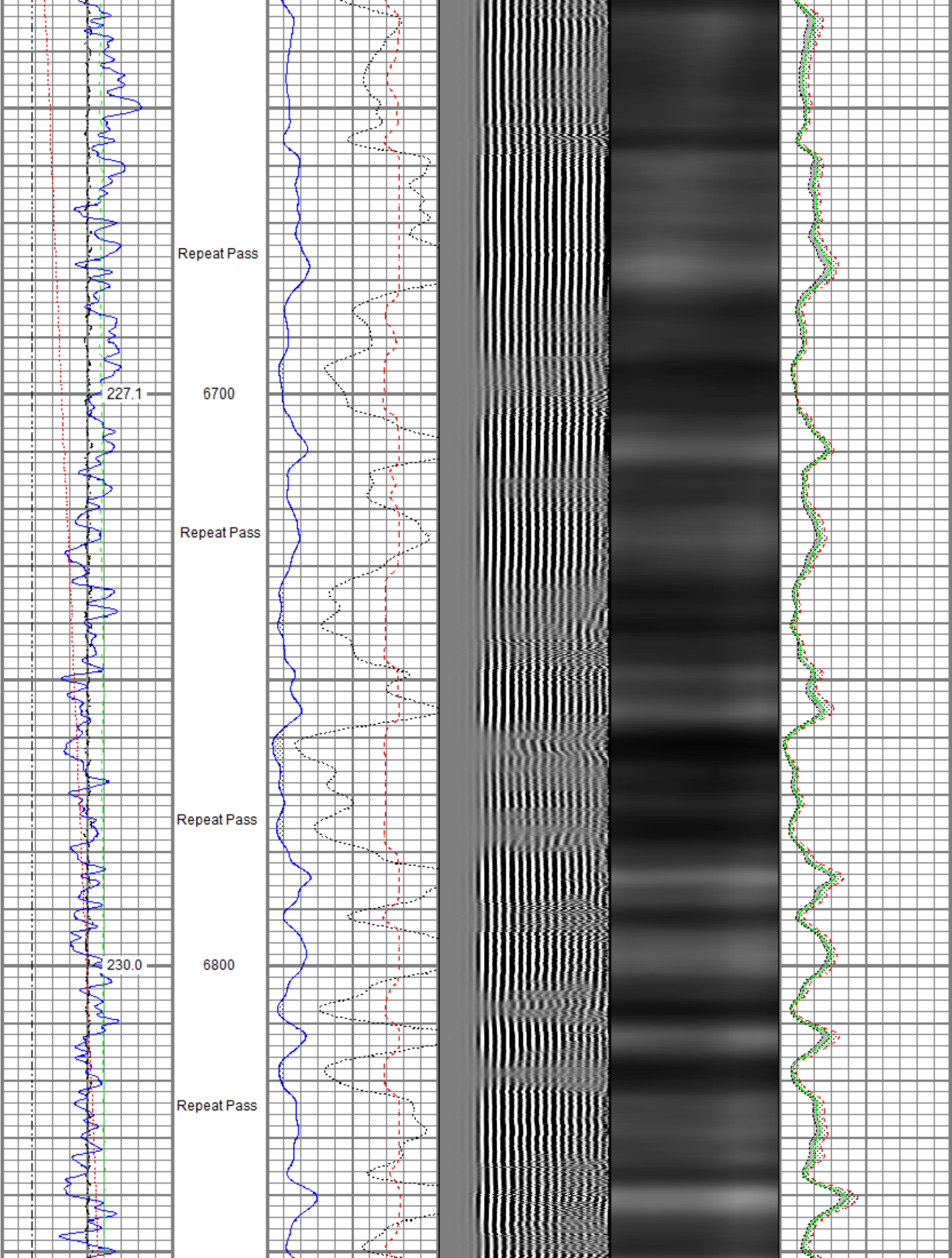
Recorded With 0 PSI Surface Induced Pressure

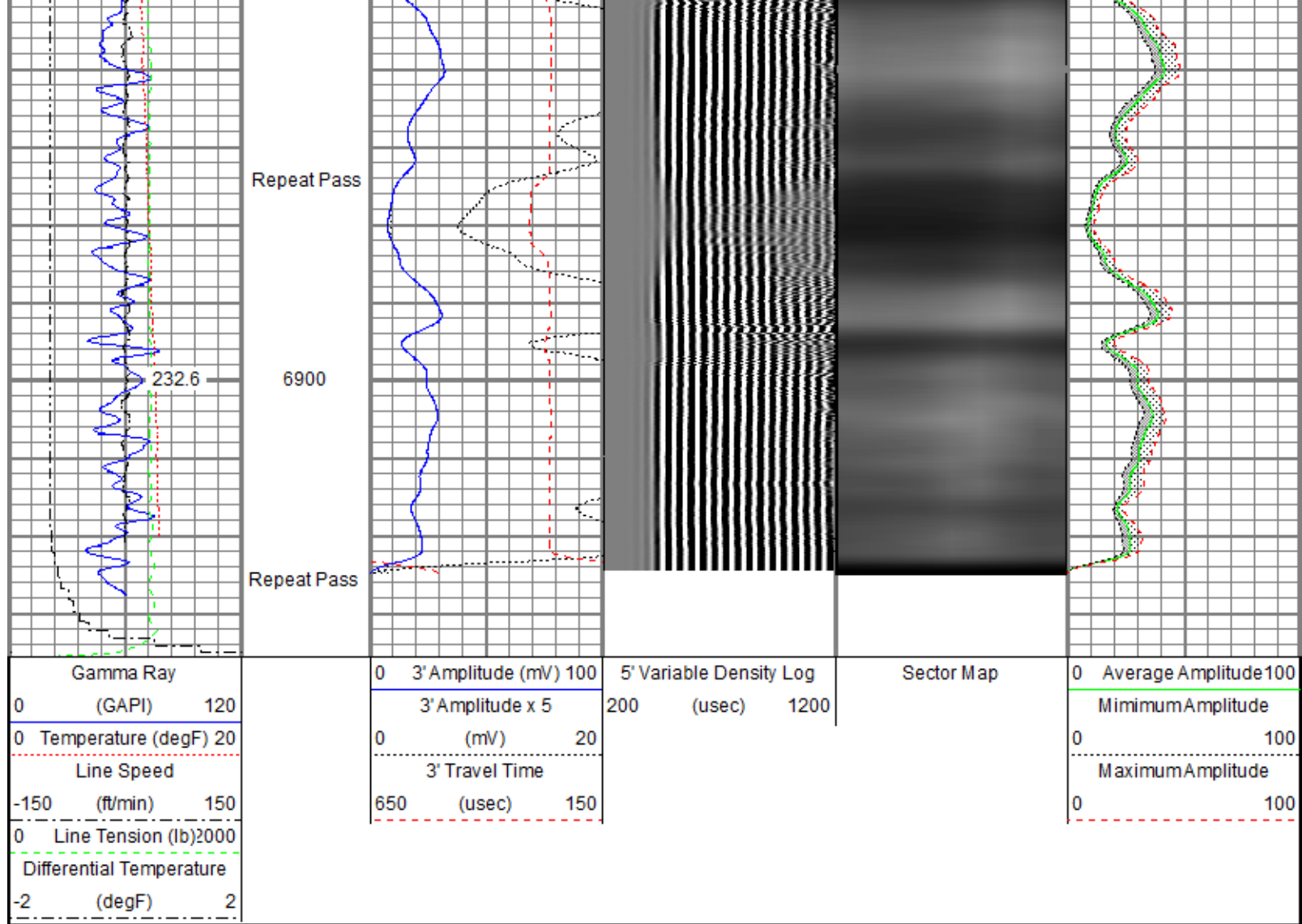
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 Dataset Pathname pass2.2
 Presentation Format ros_radrii
 Dataset Creation Thu Sep 09 12:39:04 2021
 Charted by Depth in Feet scaled 1:240



Repeat Pass







Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	3.60
			SO BS CENT-2750-5500 Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer	1.50	3.25	11.00
			Probe Radii-2750 RBT (071202) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
TEMP	14.16					
WVFS8	11.93					
WVFS7	11.93					
WVFS6	11.93					
WVFS5	11.93					
WVFS4	11.93					
WVFS3	11.93					

WVFS2	11.93					
WVFS1	11.93					
WVFCAL	11.93					
WVF3FT	11.93					
WVF5FT	10.93					
CCL\$2	6.80					
CCL\$1	6.80					
GR	5.46		SO BS CENT-2750-5500 Slip Over 2-3/4" I.D. for 5-1/2" O.D. Casing Bow Spring Centralizer	1.50	3.25	11.00
			Probe GR-CCL-2750 6PB (FW1810-044) Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT	4.80	2.75	55.00
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
LOCTIM	0.00					
UTCTIM	0.00					

Dataset: pdc_vega 2n_rbl_09-09-21.db: field/well/run1/pass4.7
 Total length: 18.10 ft
 Total weight: 216.60 lb
 O.D.: 3.25 in

Calibration Report	
Database File	c:\programdata\warrior\data\pdc\pdc_vega 2n_rbl_09-09-21\pdc_vega 2n_rbl_09-09-21.db
Dataset Pathname	pass4.7
Dataset Creation	Thu Sep 09 14:39:10 2021

Gamma Ray Calibration Report	
Serial Number:	FW1810-044
Tool Model:	2750 6PB
Performed:	Mon Oct 19 14:19:51 2020
Calibrator Value:	637.0 GAPI
Background Reading:	105.3 cps
Calibrator Reading:	1221.0 cps
Sensitivity:	0.5709 GAPI/cps

Segmented Cement Bond Log Calibration Report	
Serial Number:	071202
Tool Model:	2750 RBT
Calibration Casing Diameter:	5.500 in
Calibration Depth:	-43.502 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.759	0.800	71.921	94.601	0.159
CAL	0.006	0.675				
5'	0.008	0.916	0.800	71.921	78.315	0.180
SUM						
S1	0.006	0.832	0.000	100.000	121.191	-0.782
S2	0.006	0.827	0.000	100.000	121.807	-0.778
S3	0.007	0.840	0.000	100.000	120.162	-0.884
S4	0.007	0.863	0.000	100.000	116.748	-0.797
S5	0.007	0.869	0.000	100.000	116.100	-0.843
S6	0.007	0.884	0.000	100.000	113.960	-0.786
S7	0.007	0.888	0.000	100.000	113.516	-0.815
S8	0.007	0.856	0.000	100.000	117.673	-0.771

Air Zero Calibration, performed Thu Sep 9 08:16:25 2021:

	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	

Temperature Calibration Report

Serial Number: 071202
 Tool Model: 2750 RBT
 Performed: Mon Oct 19 14:19:51 2020

	Reference	Reading
Low Reference:	100.00 degF	109.43 degF
High Reference:	350.00 degF	405.87 degF

Gain: 0.84
 Offset: 7.72
 Delta Spacing: 1



Company: PDC Energy Inc
 Well: Vega 2N
 Field: Wattenberg
 County: Weld
 State: Colorado