



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

Company Nickel Road Operating
Well Blehm 8X-HC-10-07-67
Field Wattenberg
County Weld
State Colorado

Company Nickel Road Operating
Well Blehm 8X-HC-10-07-67
Field Wattenberg
County Weld
State Colorado

Location: SEC 9 TWP 7N RGE 67W
 API #: 05-123-51474
 Permanent Datum Ground Level Elevation 5088'
 Log Measured From Kelly Bushing 27 FT
 Drilling Measured From Kelly Bushing
 Other Services ---
 Elevation
 K.B. 5115'
 D.F. ---
 G.L. 5088'

Date	13-JUL-2021						
Run Number	One						
Depth Driller	19976 FT						
Depth Logger	9258 FT						
Bottom Logged Interval	9244 FT						
Top Log Interval	Surface						
Open Hole Size	8.5"						
Type Fluid	Water						
Density / Viscosity	8.34 lb/gal						
Max. Recorded Temp.	201°F						
E. estimated Cement Top	See Log						
Time Well Ready	ROA						
Time Logger on Bottom	07:50						
E. equipment Number	HD-0361						
Location	Platteville, CO						
Recorded By	G. Lueck						
Witnessed By	T. Daniel						
Borehole Record							
Run Number	Bit	From	To	Size	Weight	From	To
Tubing Record							
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom		
Surface Casing	9.5/8	36	---	Surface	1705 FT		
Intermediate #1	5.1/2	20	HCP-110	Surface	19956 FT		
Intermediate #2							
Inner							

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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 8927.96 FT
Adjusted -7 FT to correlate with Marker Joint
Log ran with 500 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

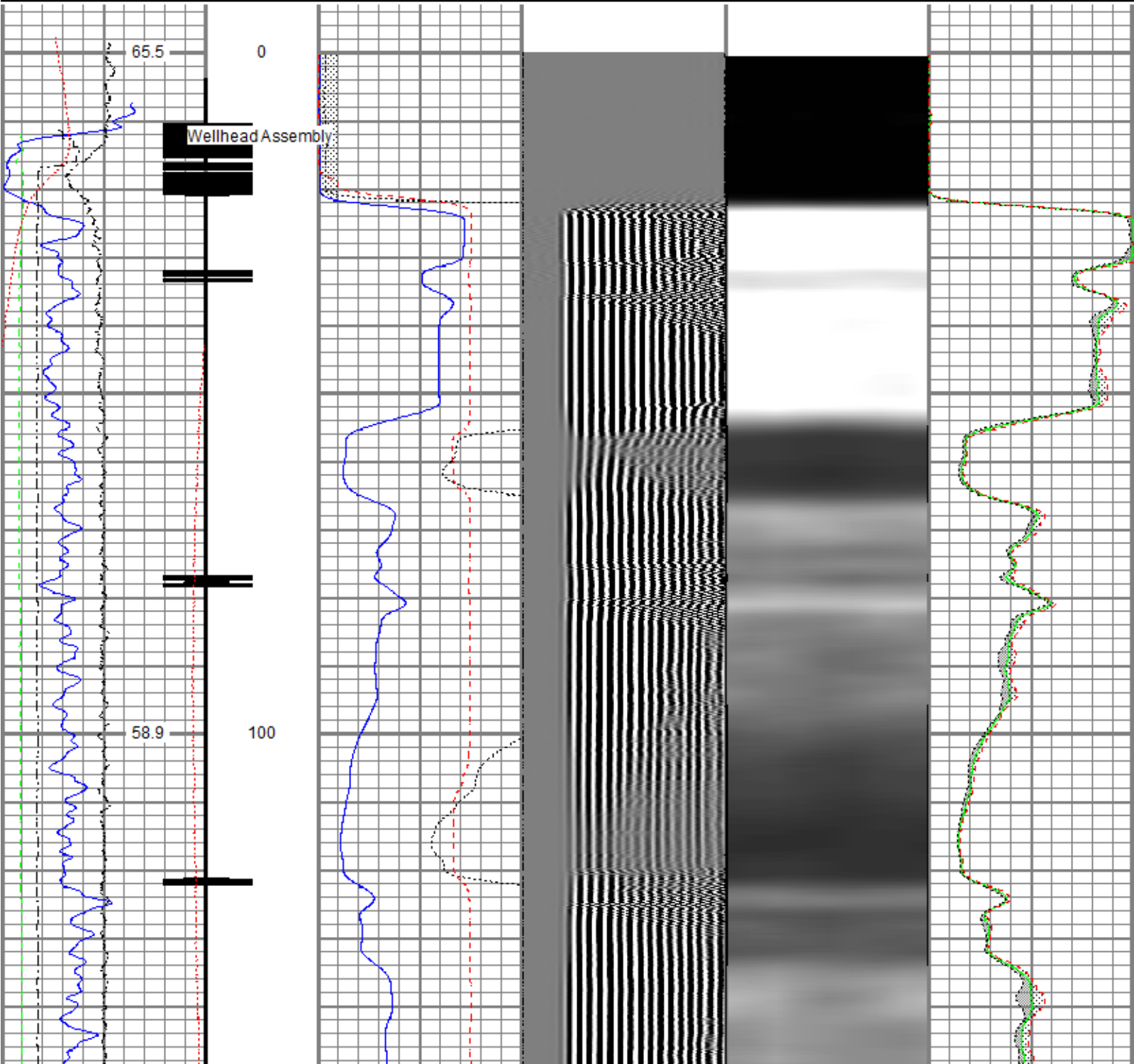


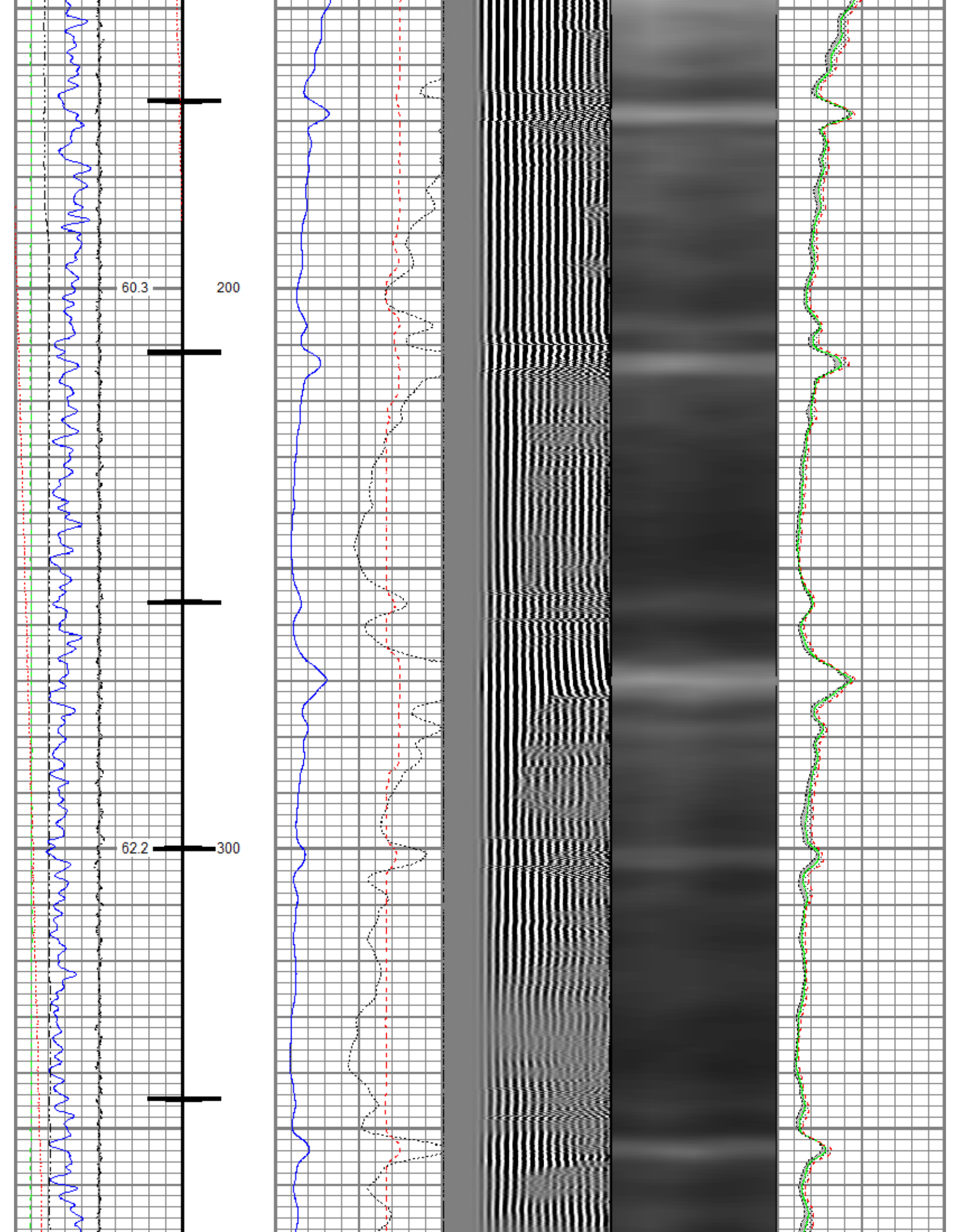
Recorded With 500 PSI Surface Induced Pressure

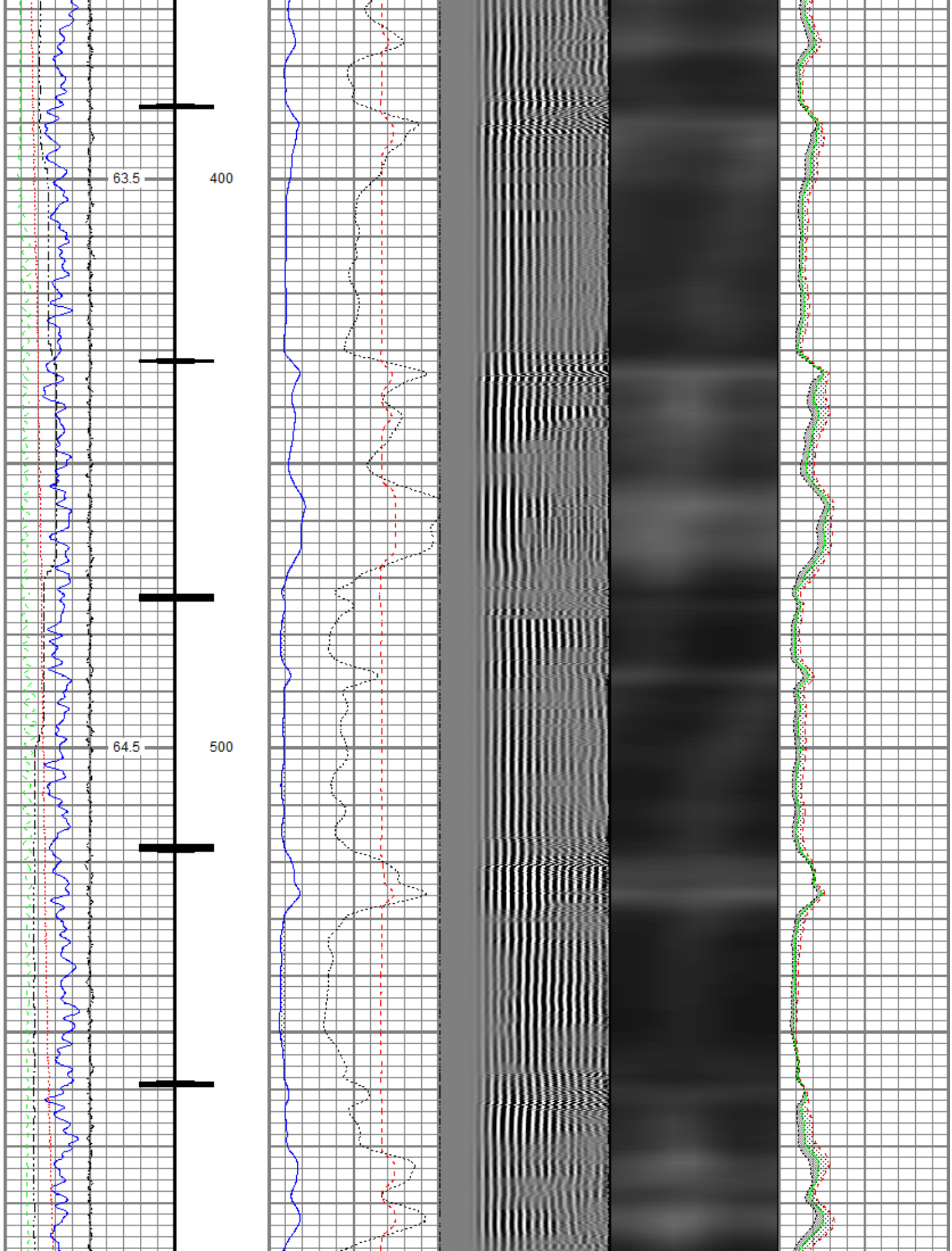
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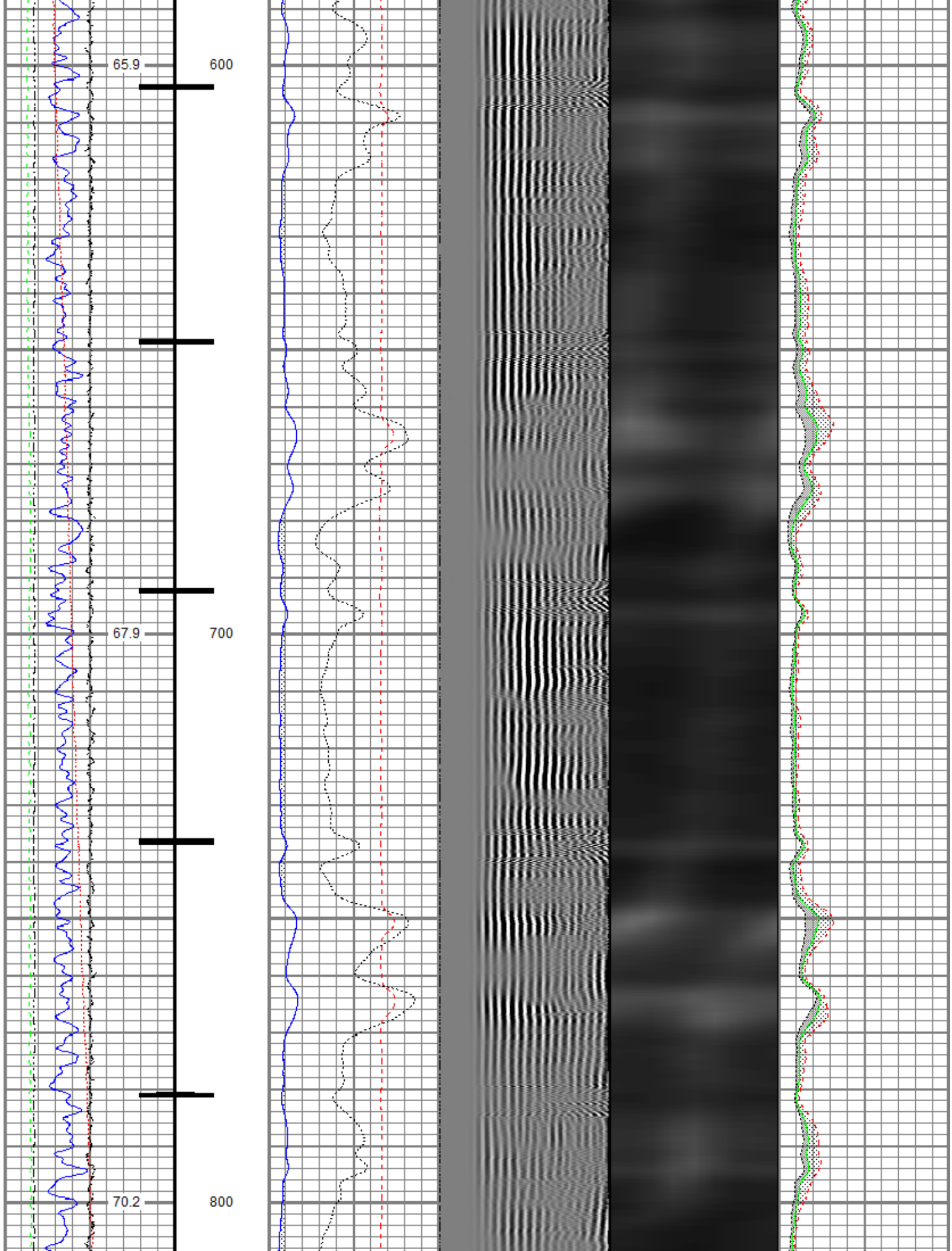
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Dataset Pathname	pass4.2
Presentation Format	ros_radrii
Dataset Creation	Thu Jul 15 08:46:37 2021
Charted by	Depth in Feet scaled 1:240

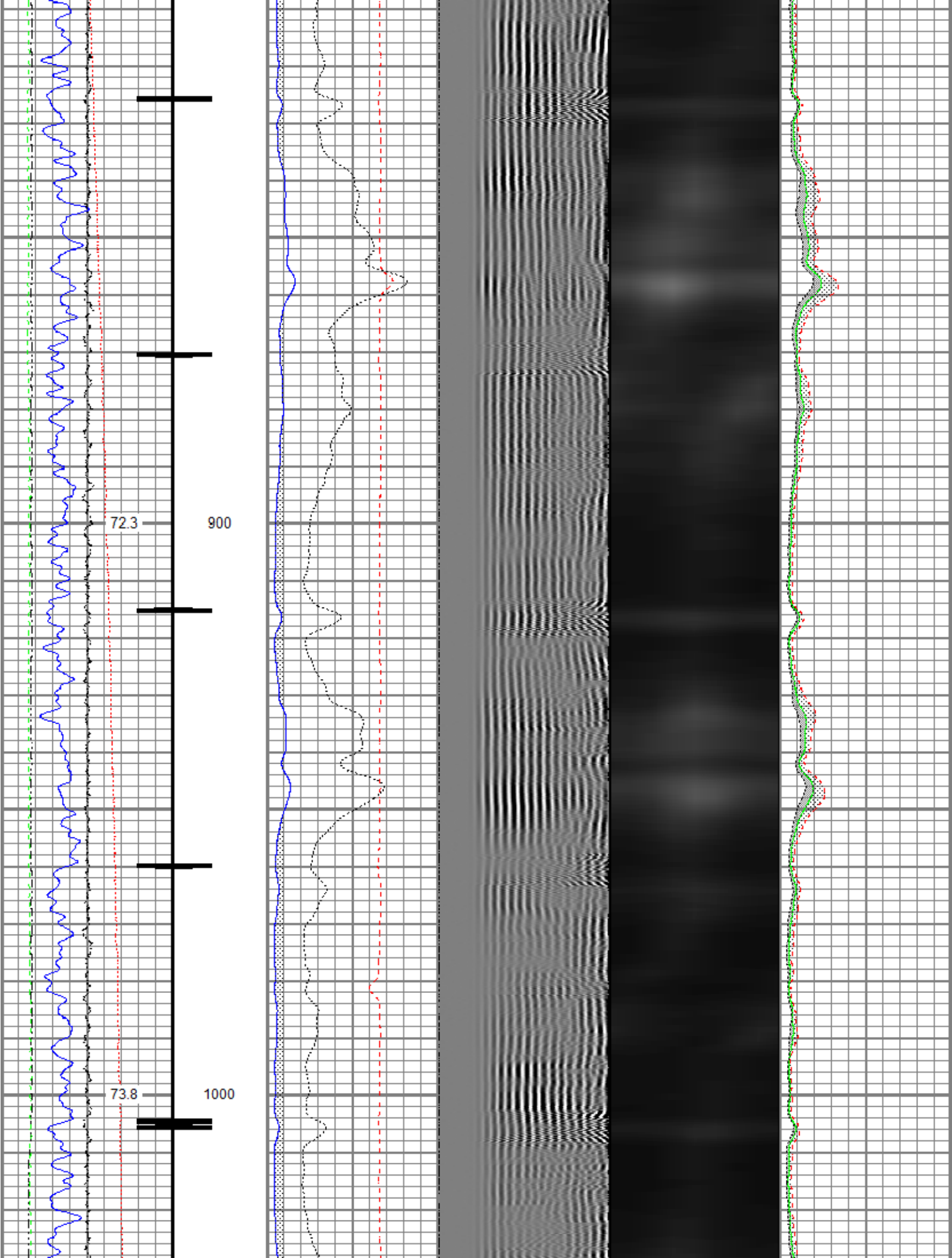
Gamma Ray (GAPI) 120	0 3' Amplitude (mV) 100	5' Variable Density Log (usec) 1200	Sector Map	0 Average Amplitude 100
Casing Collar Locator	0 3' Amplitude x 5 (mV) 20			Minimum Amplitude
0 Temperature (degF) 20				0 100
Line Speed (ft/min) 150	0 3' Travel Time (usec) 150			Maximum Amplitude
0 Line Tension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

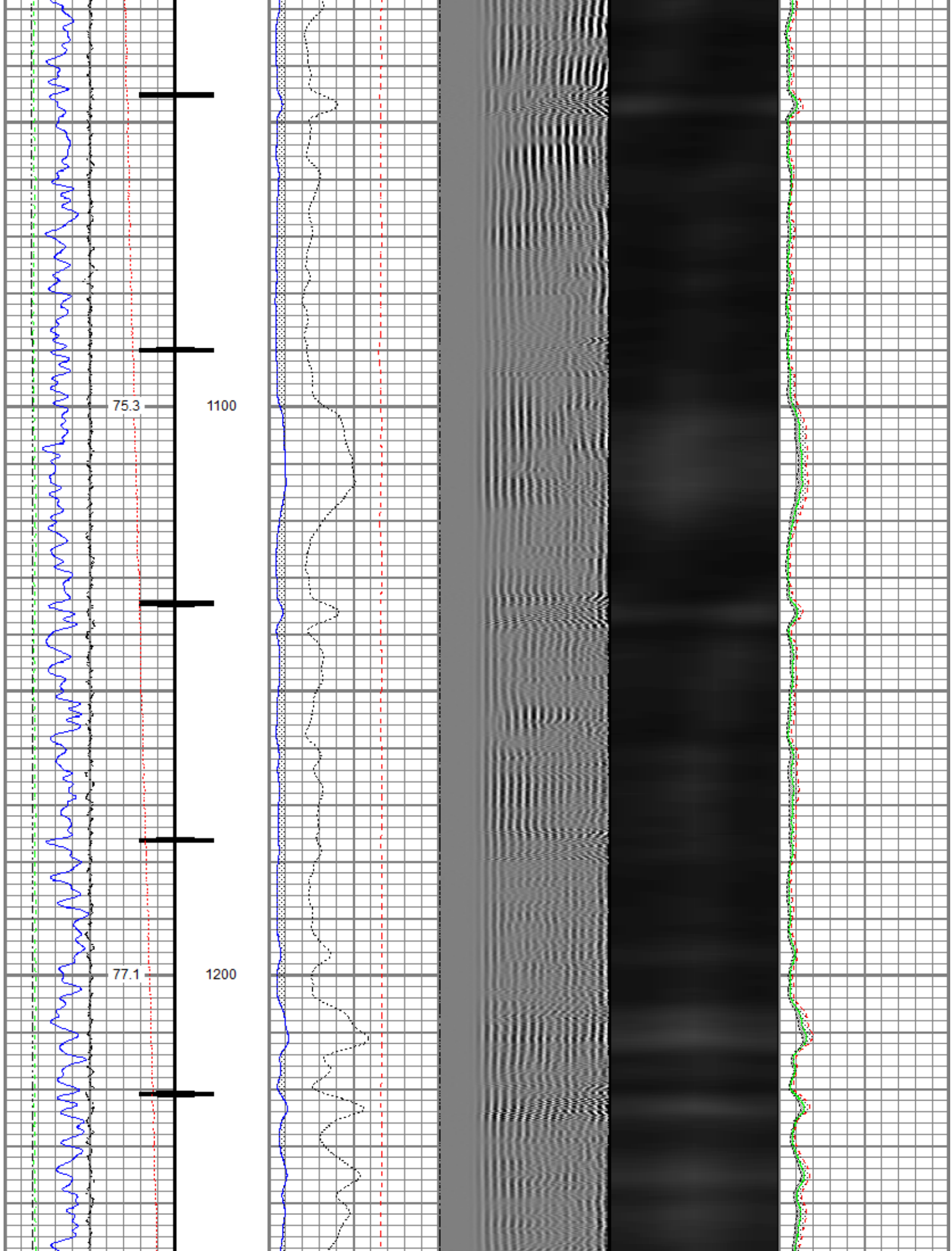


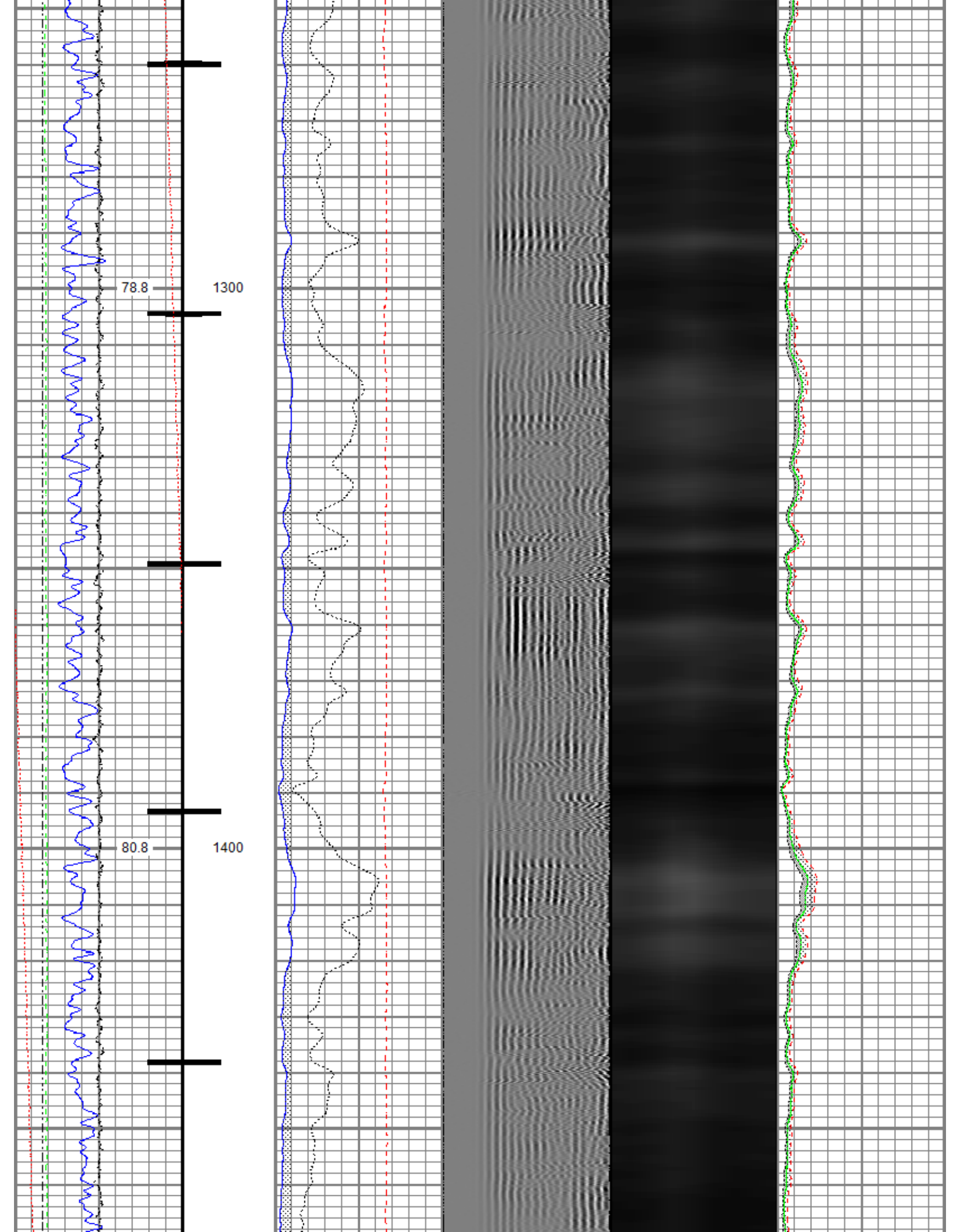


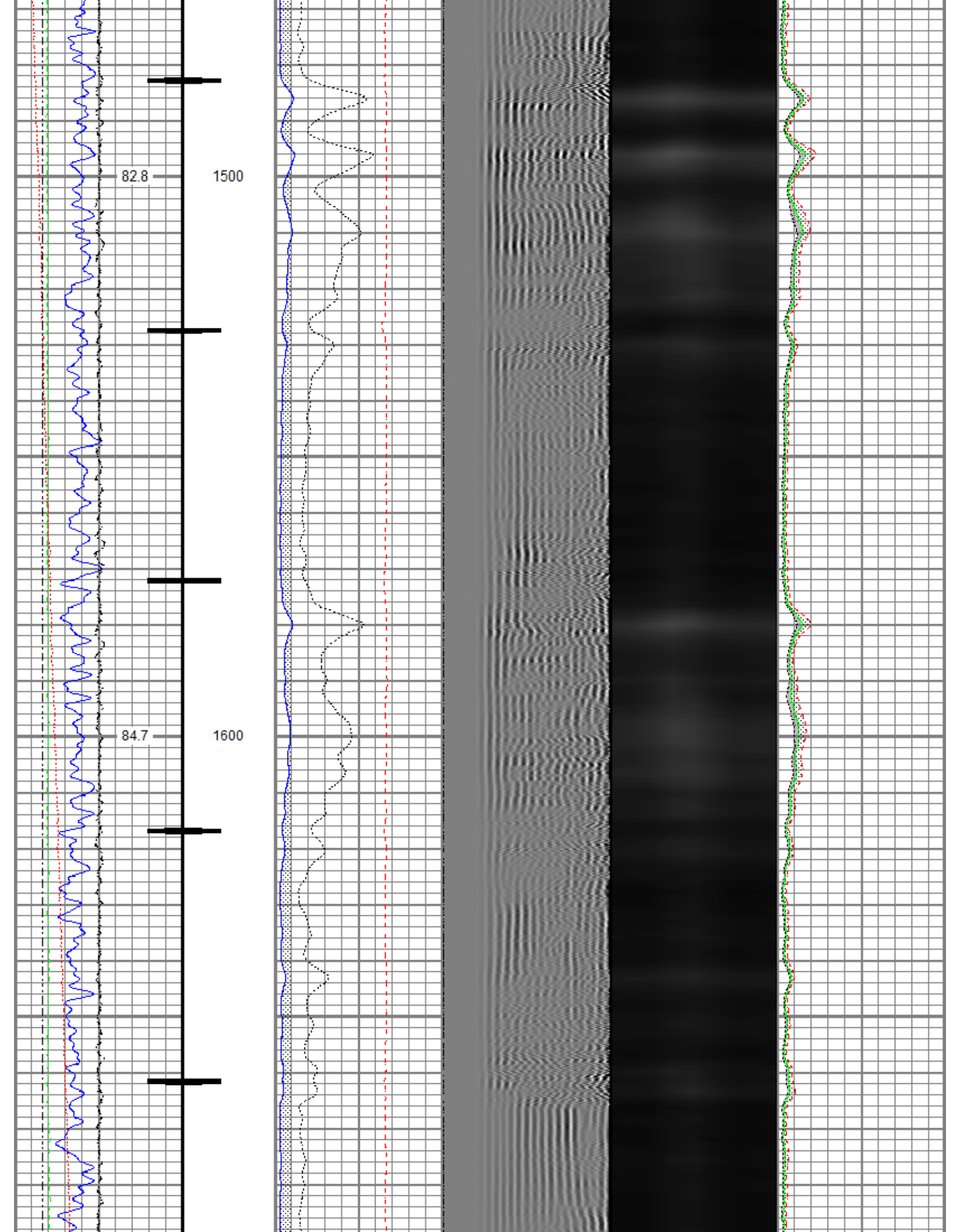


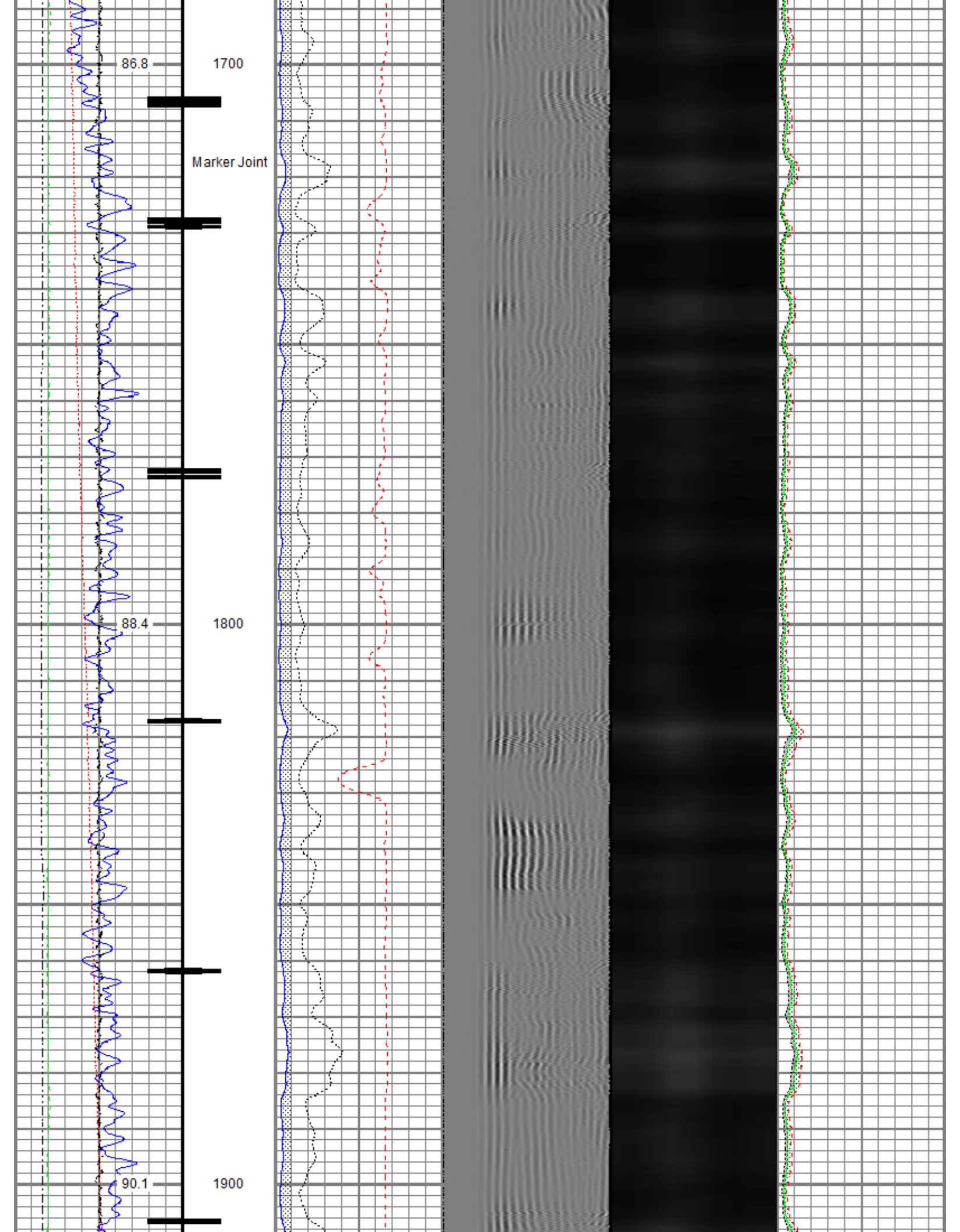


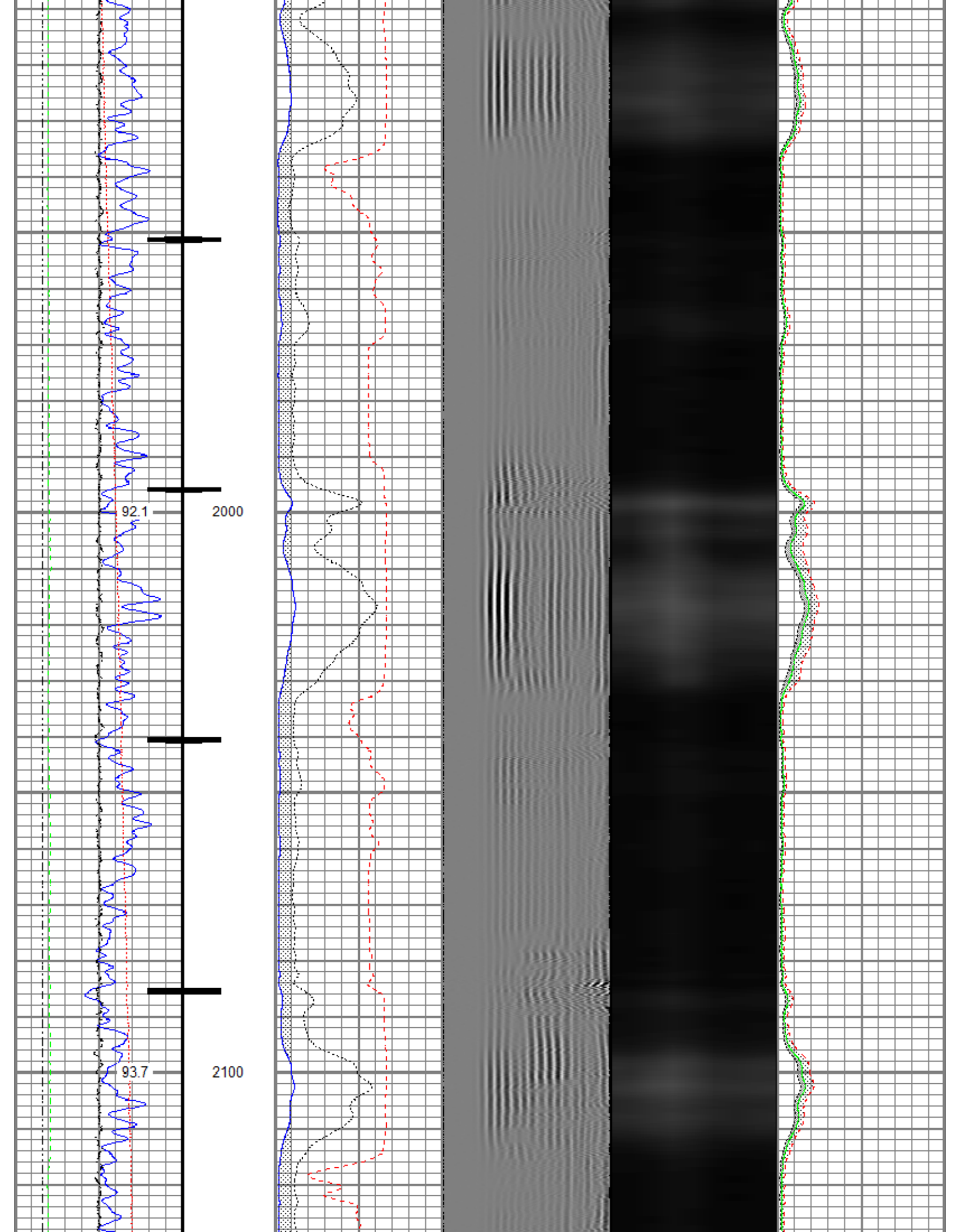


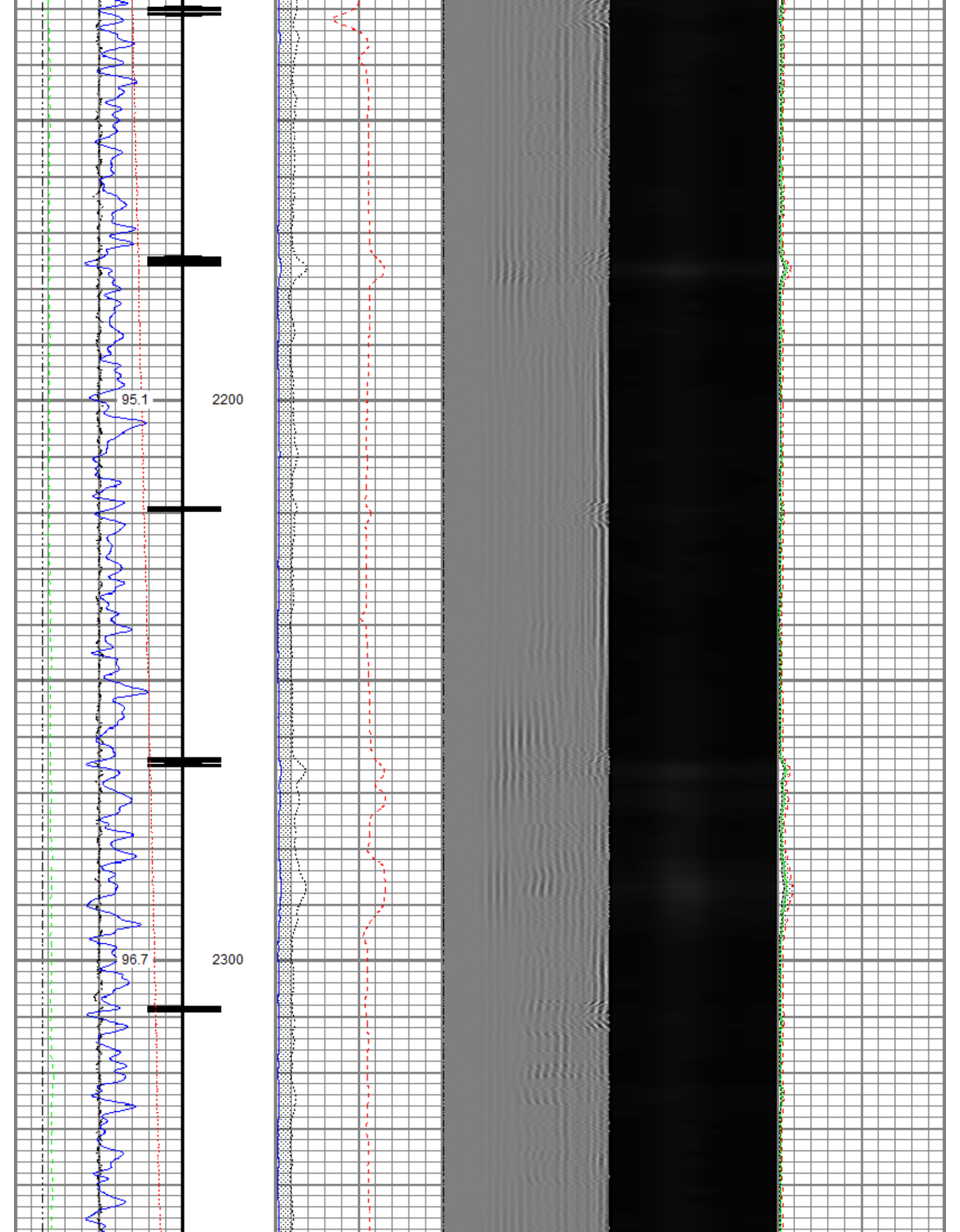


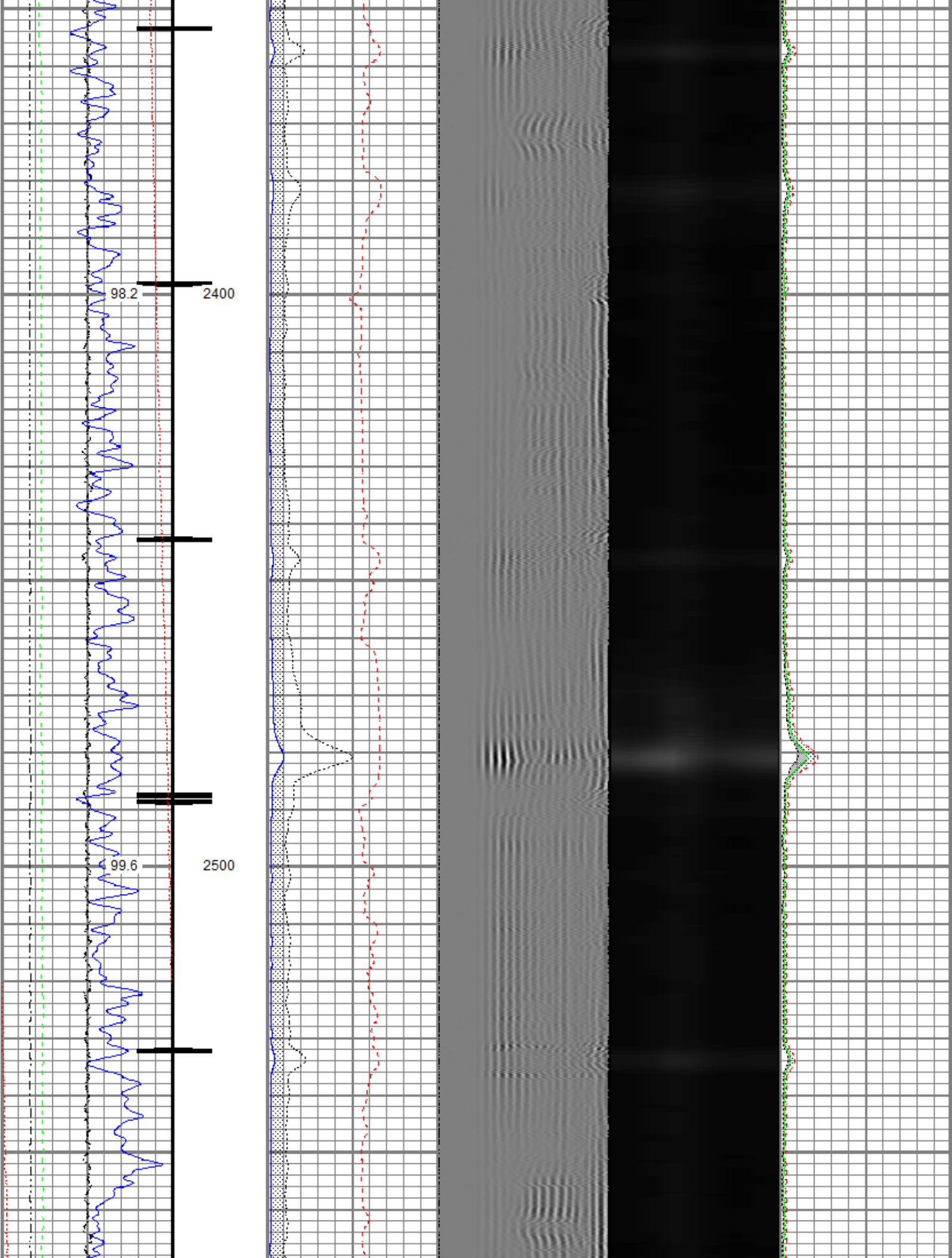


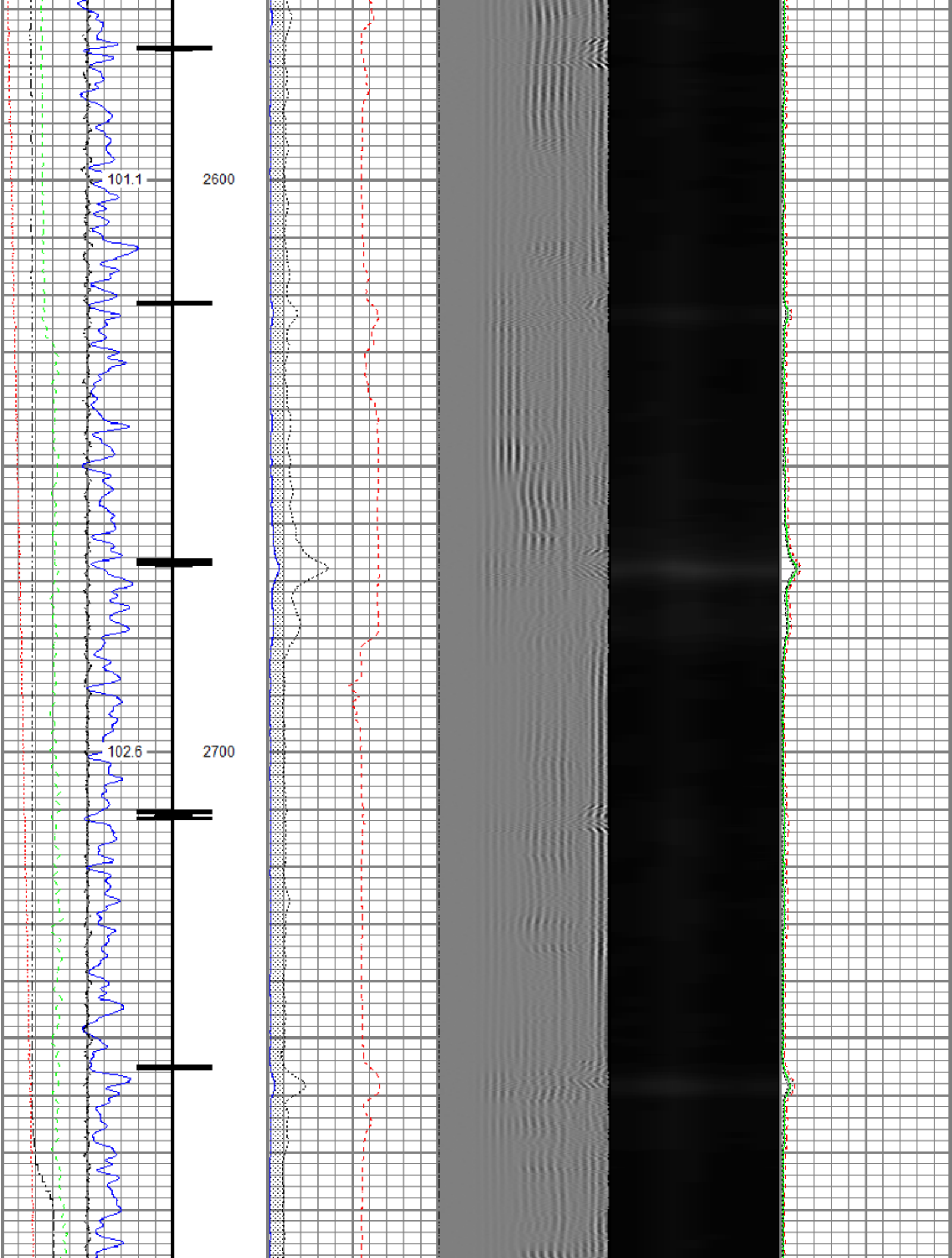


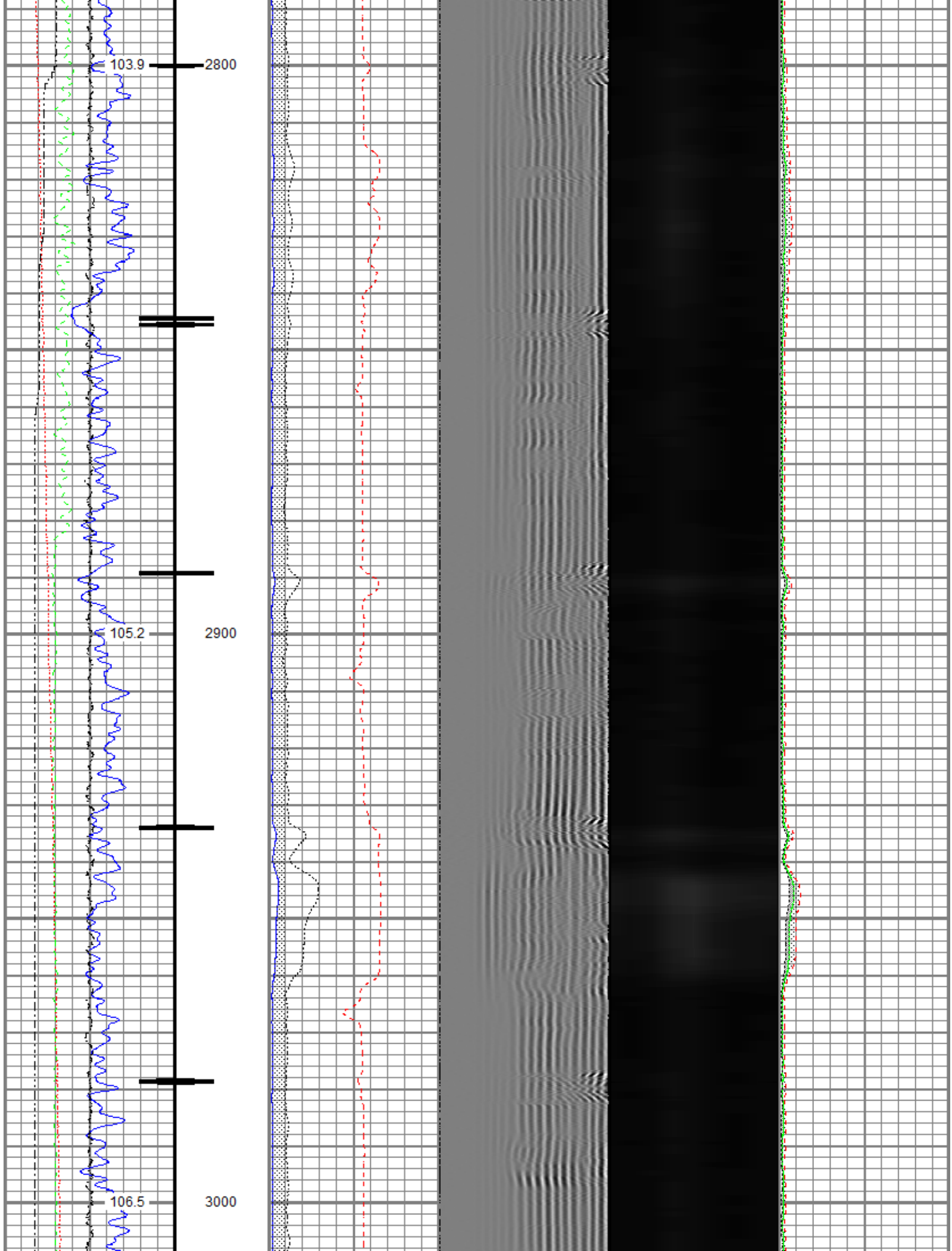


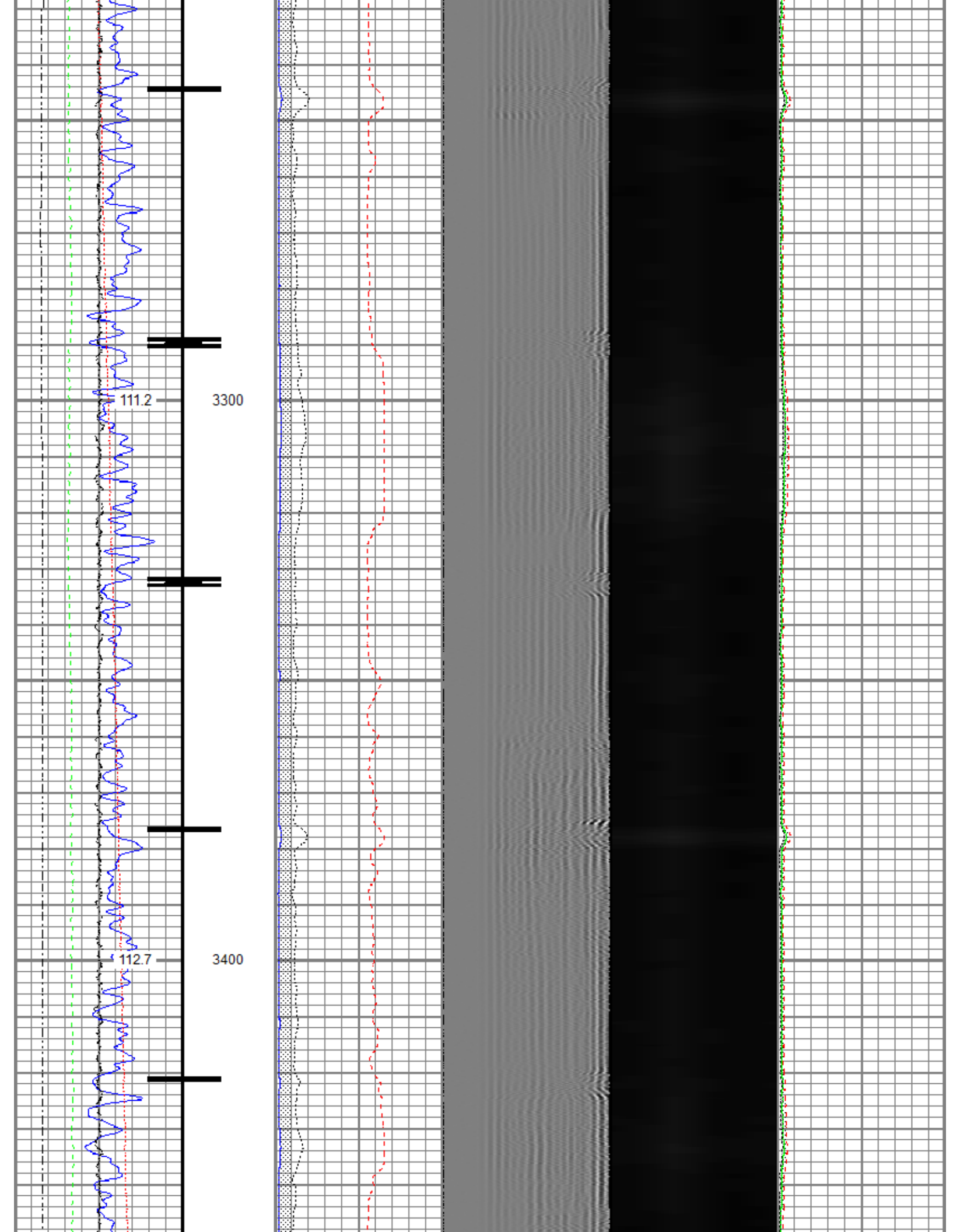


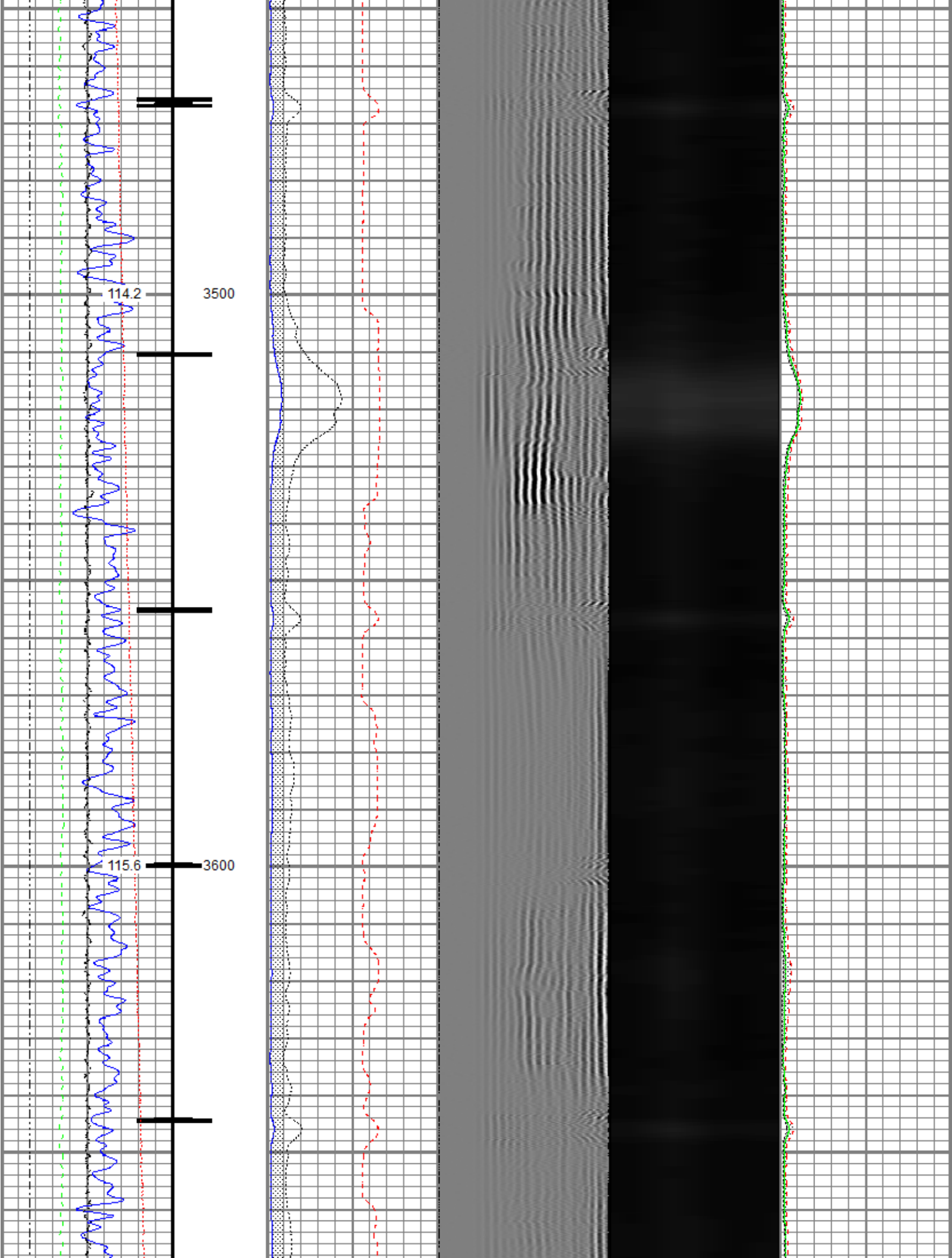


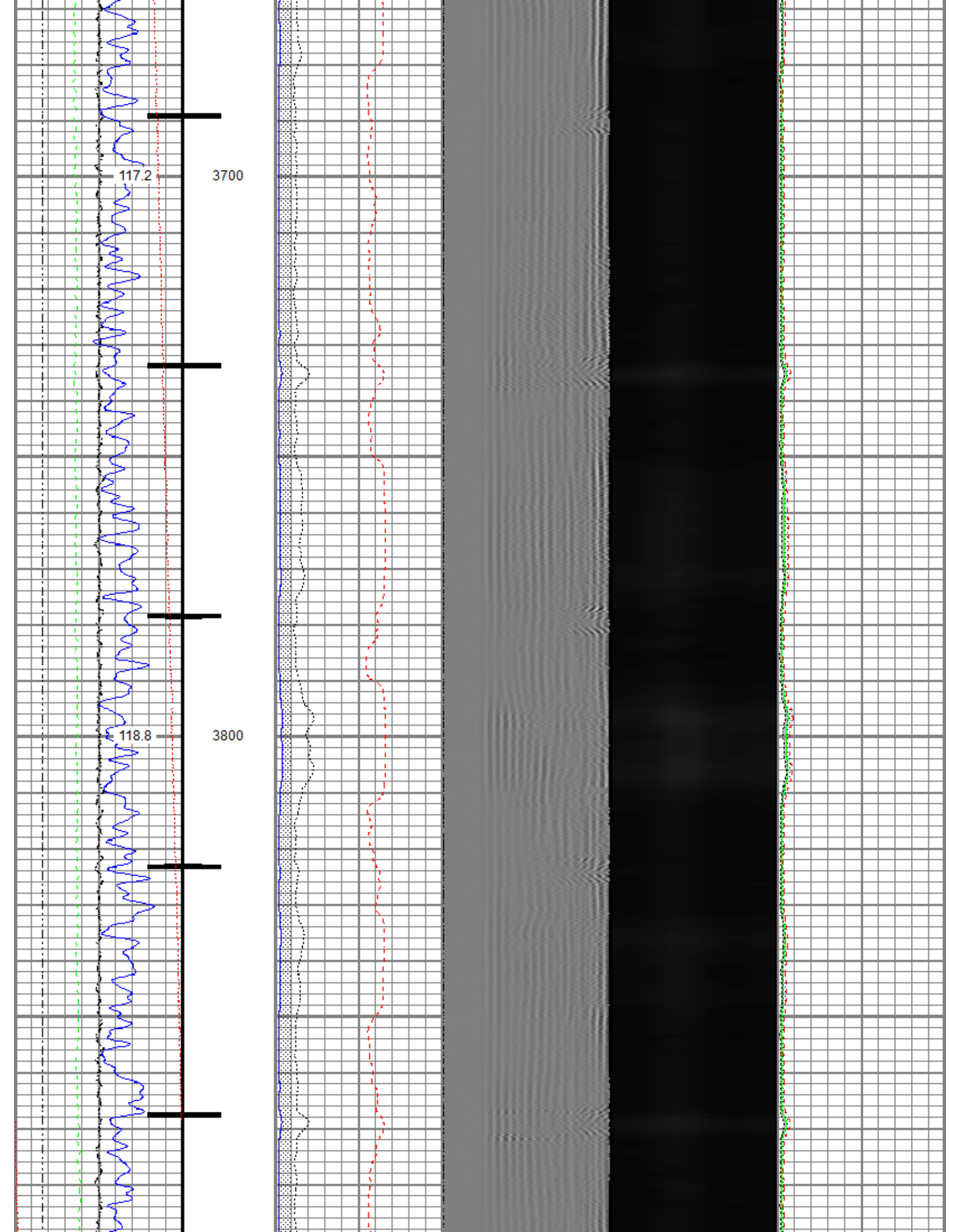


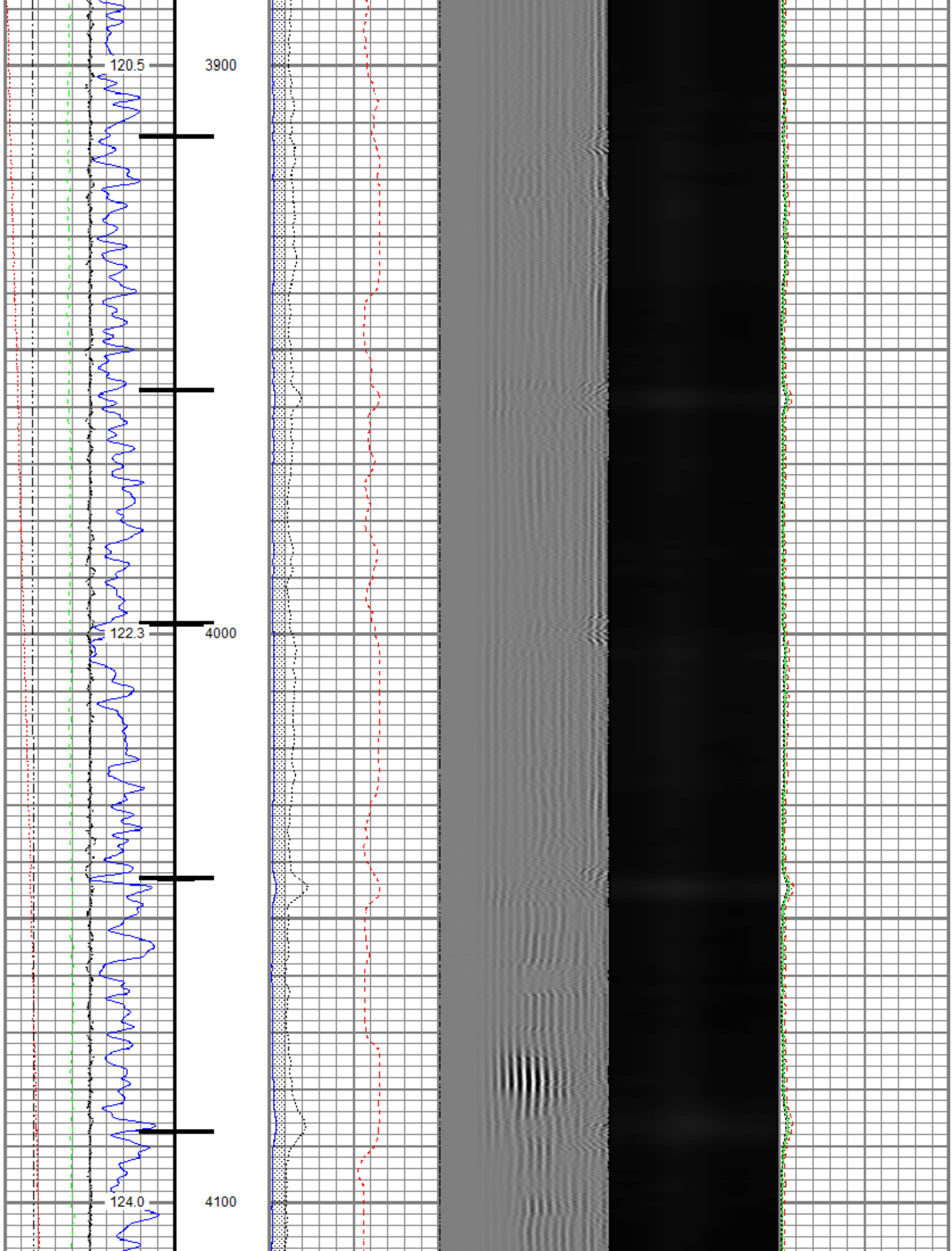


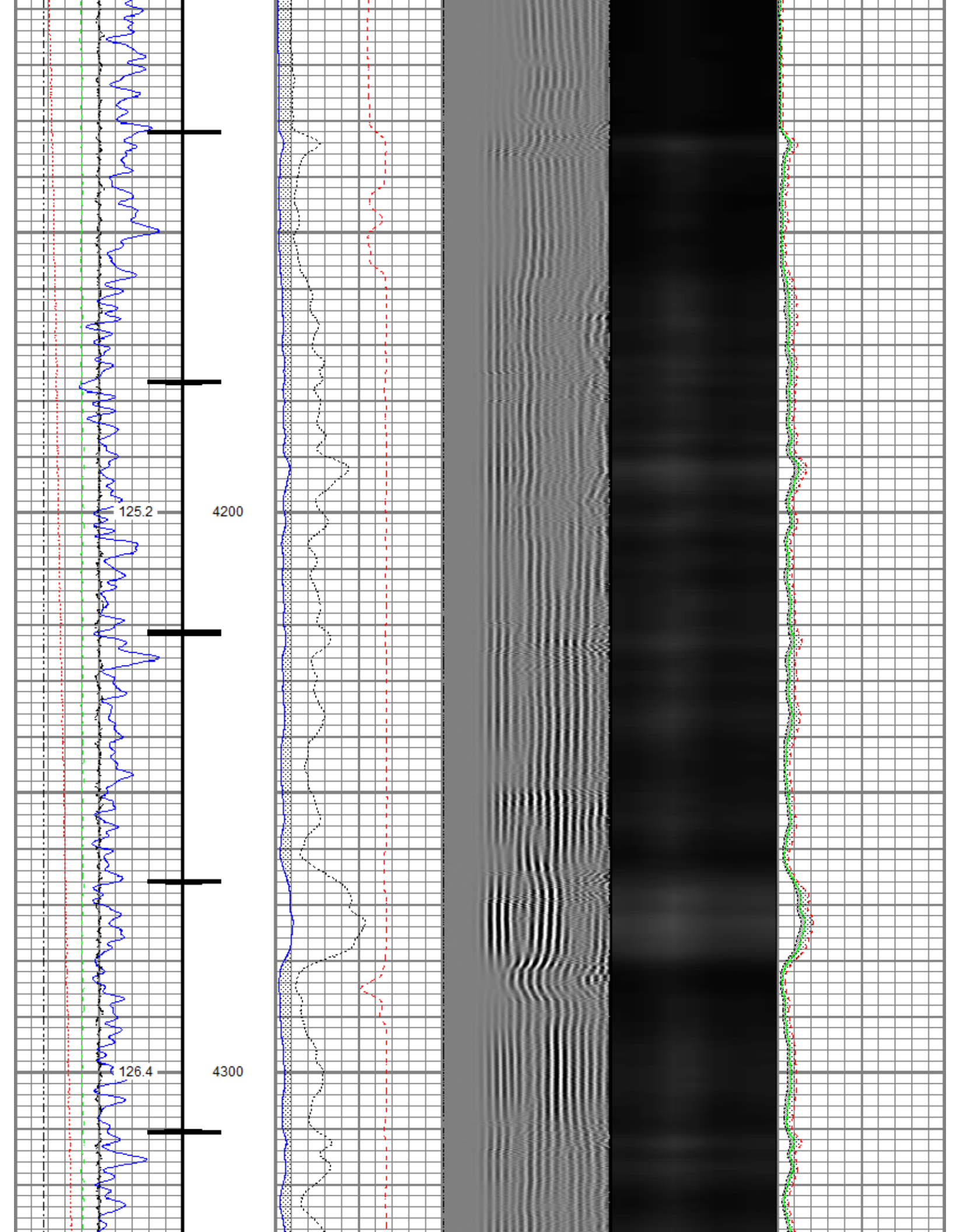


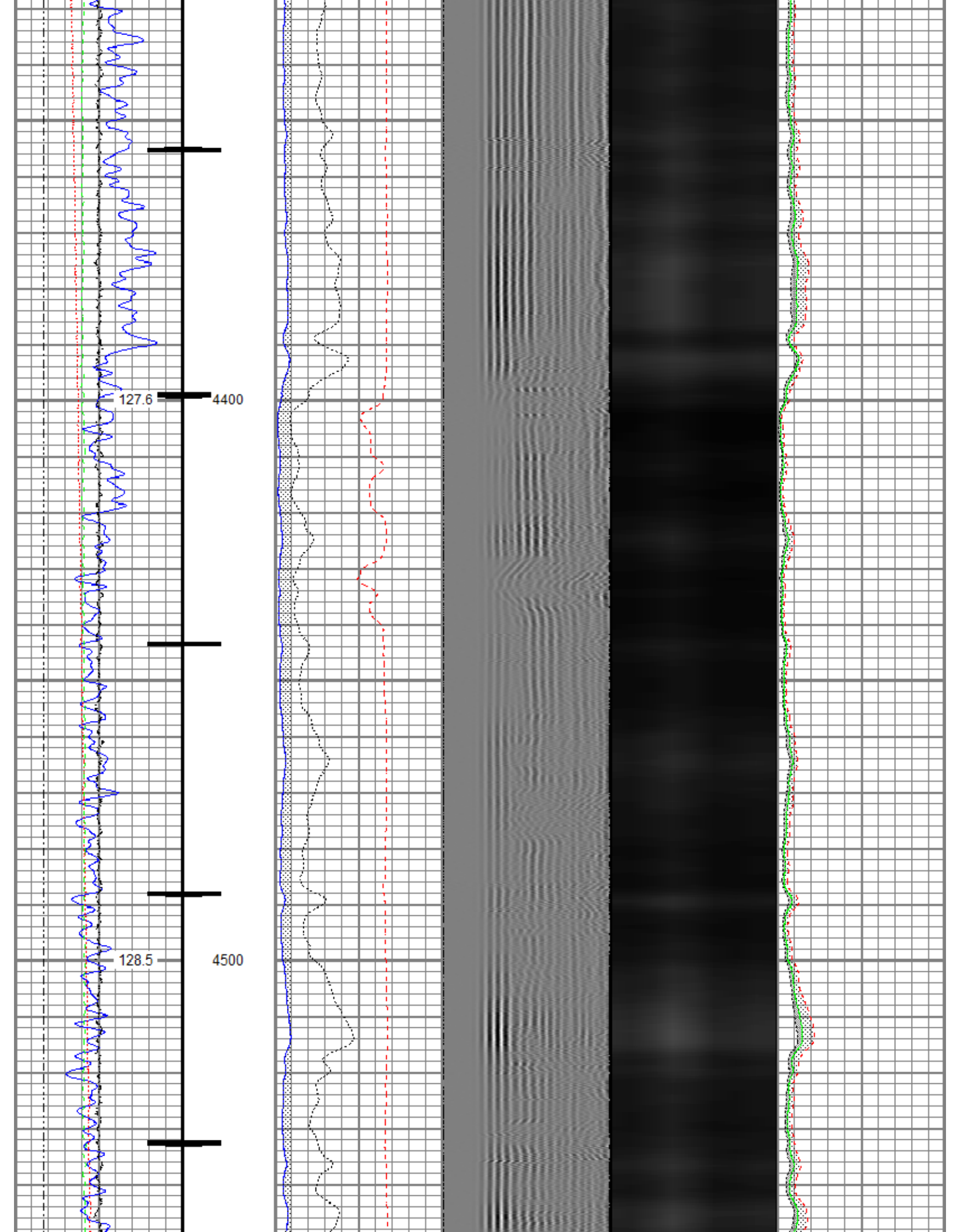


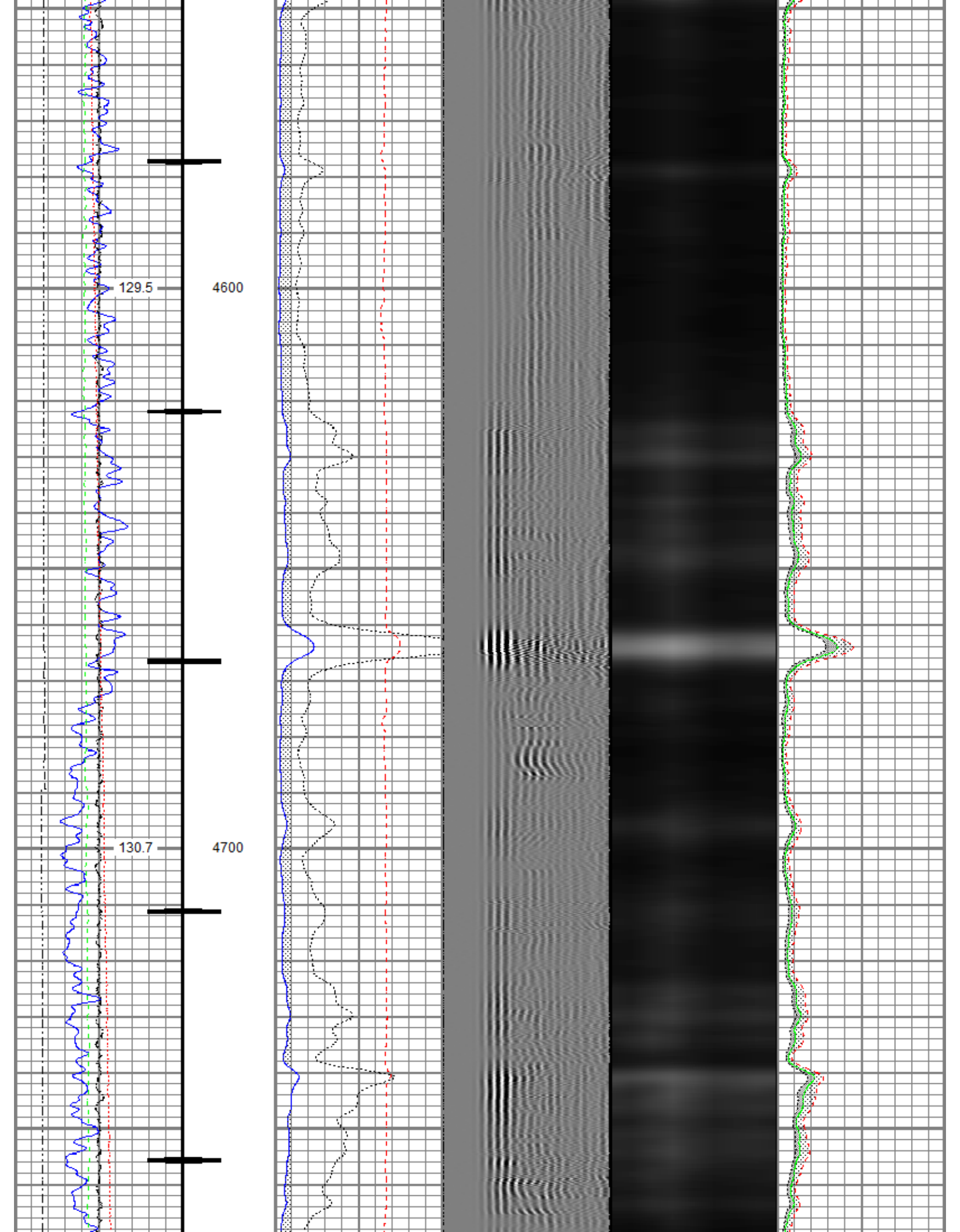


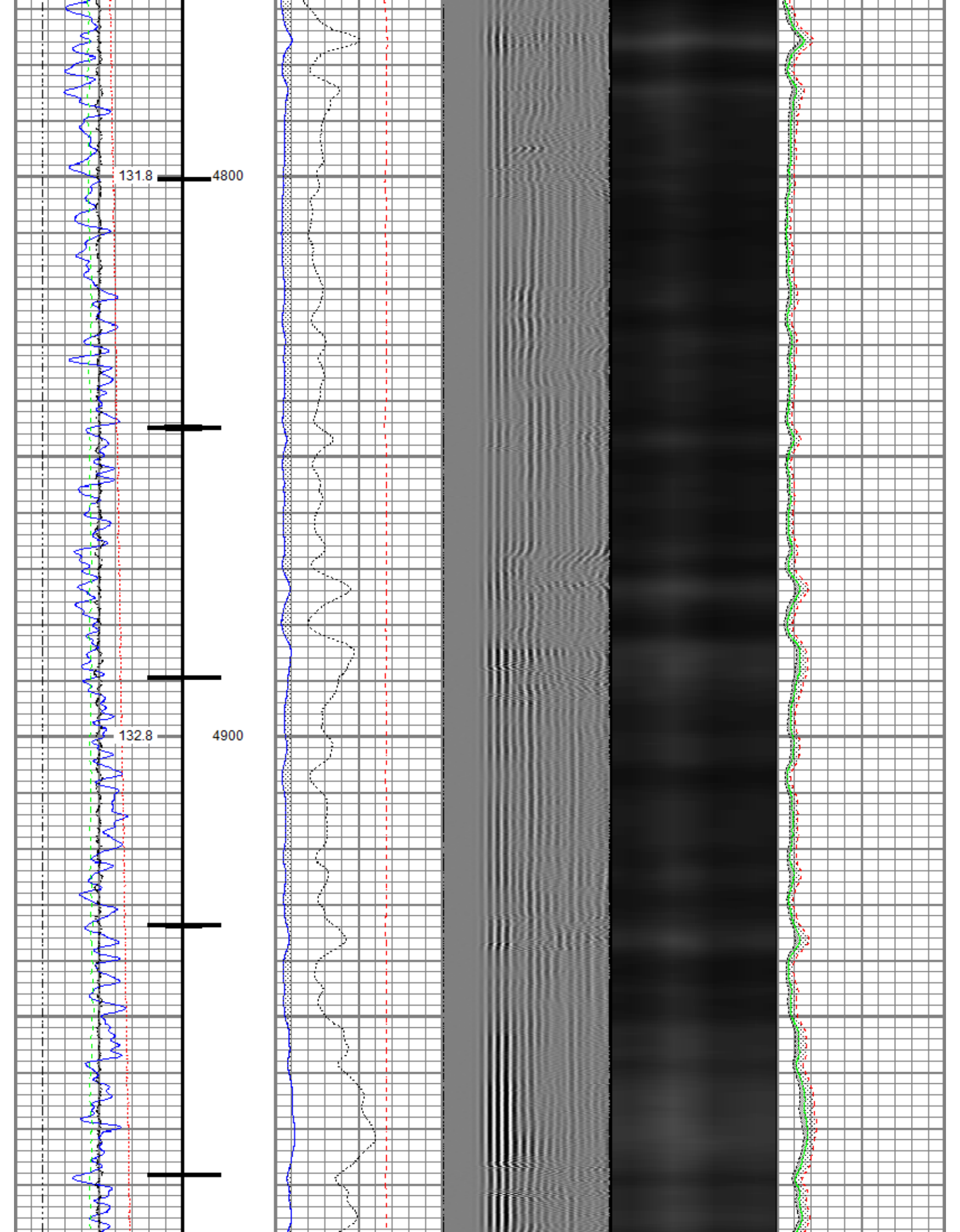


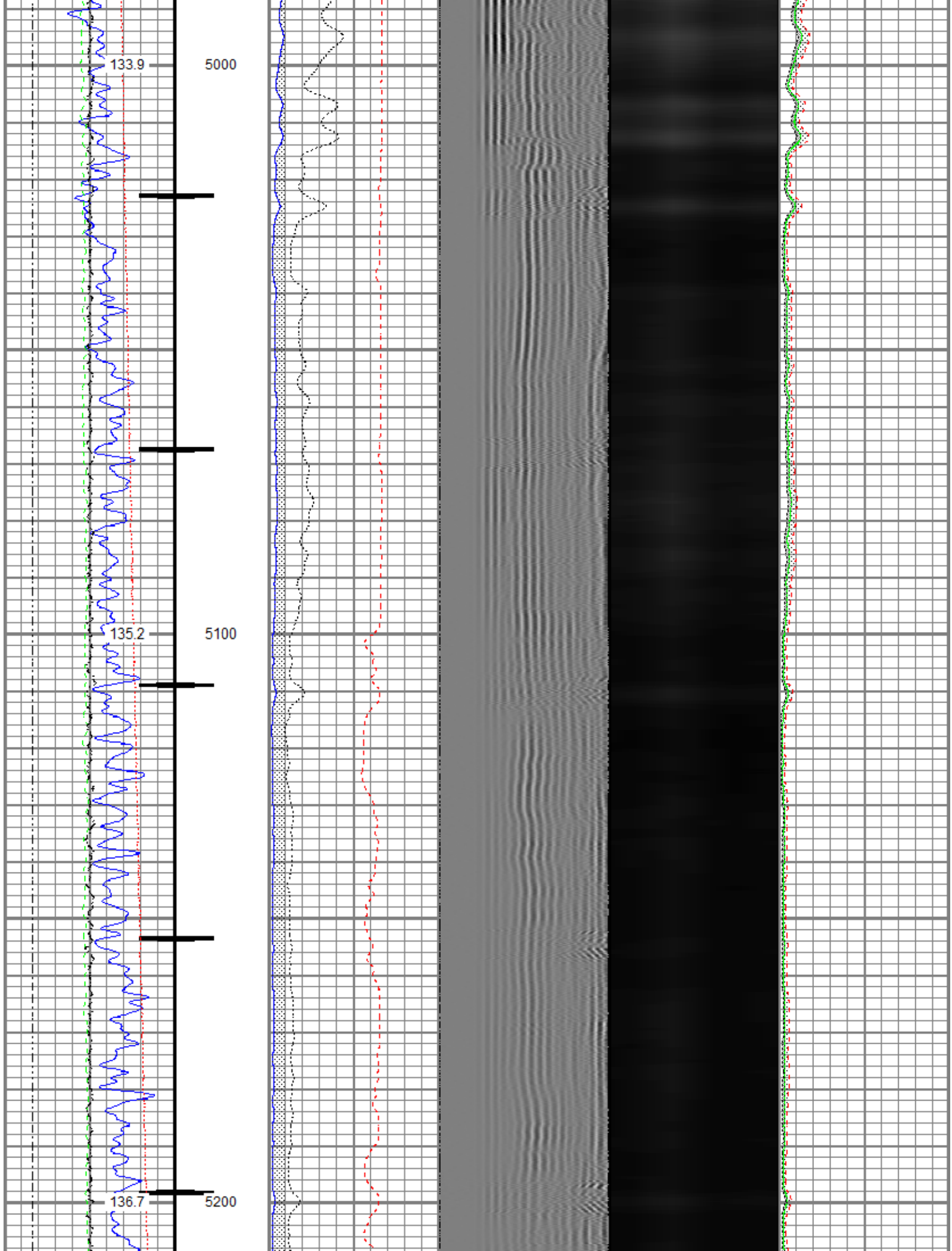


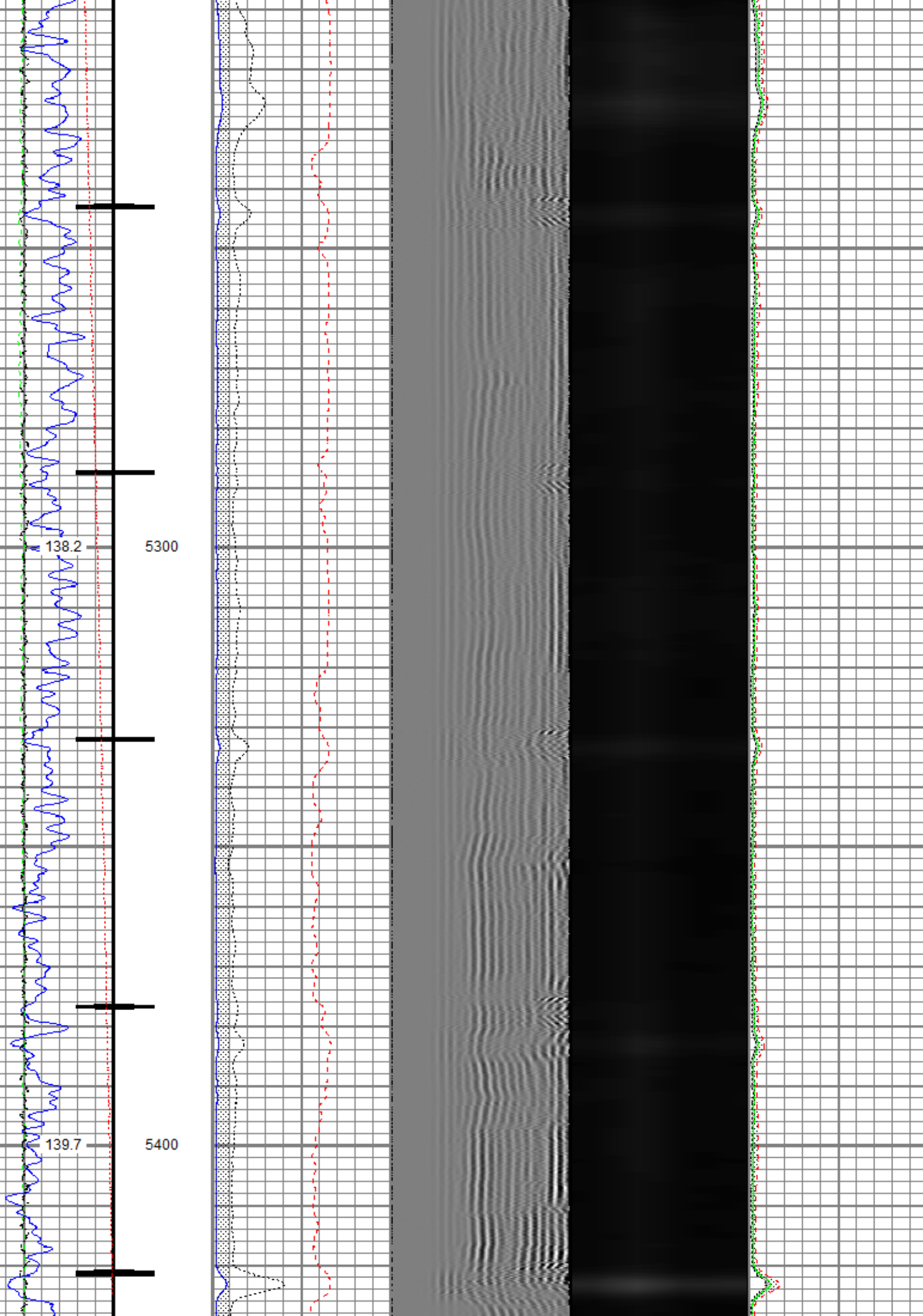


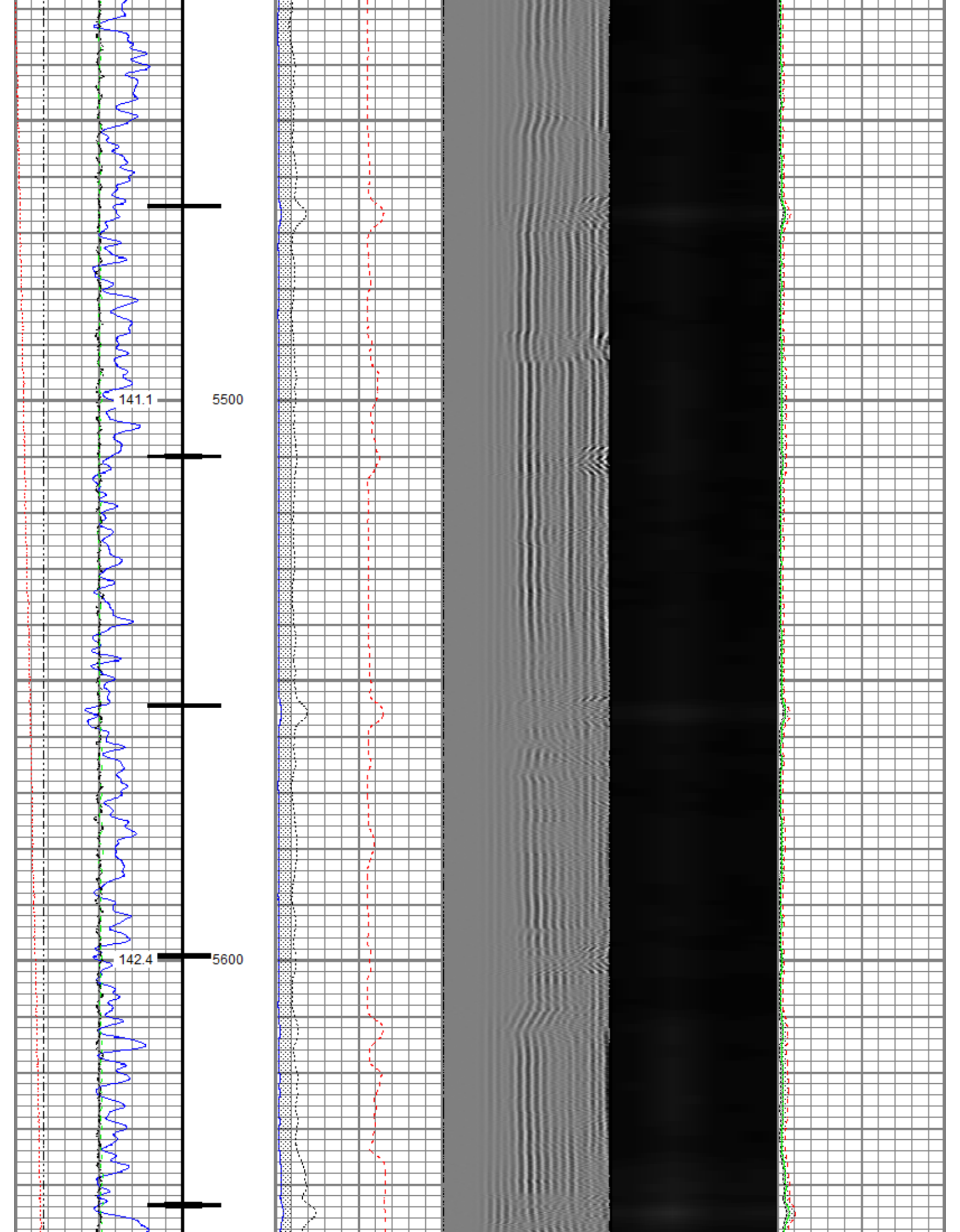


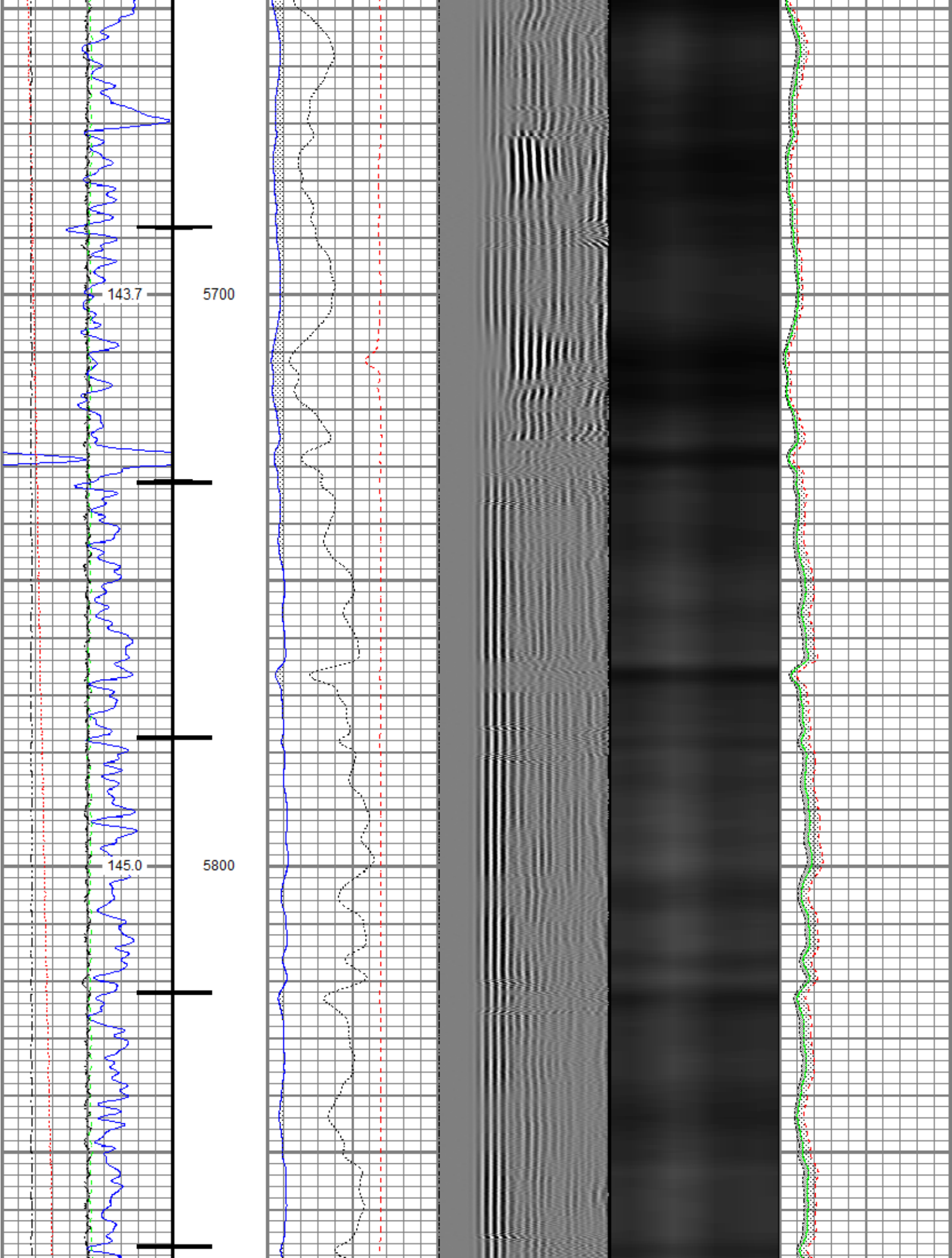


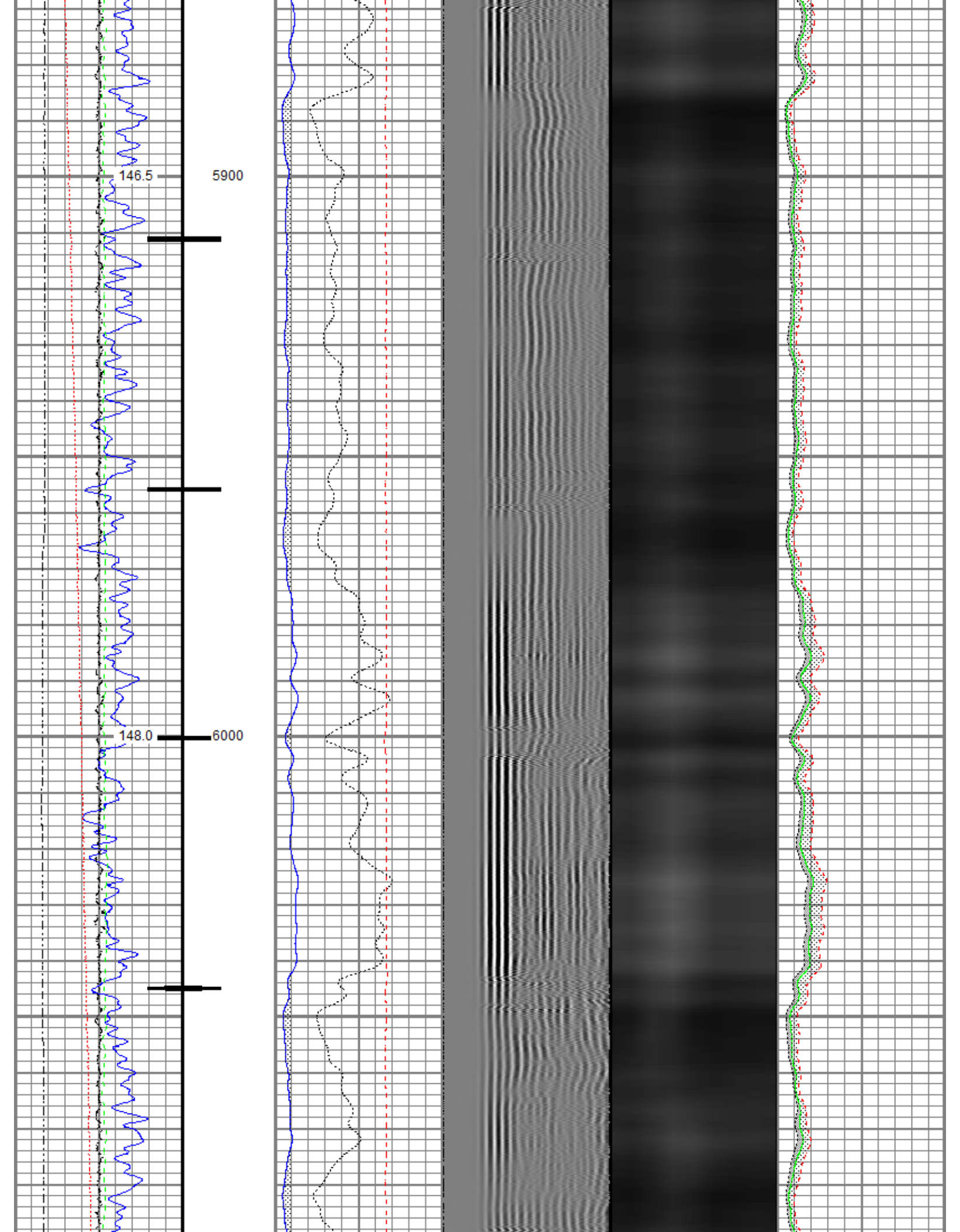


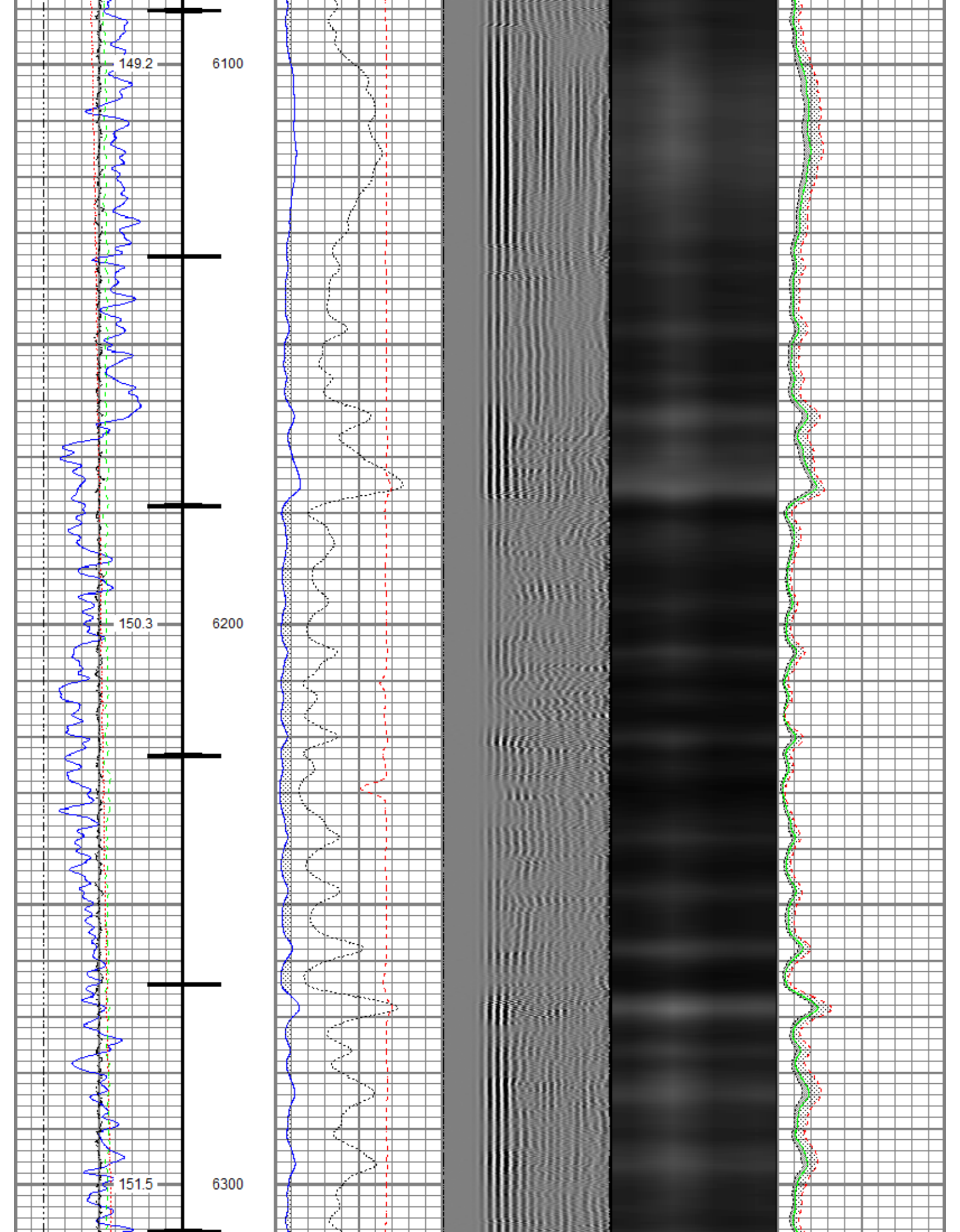


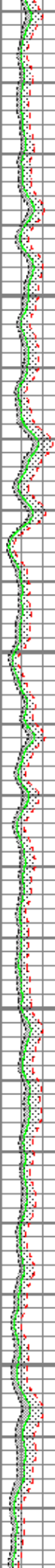
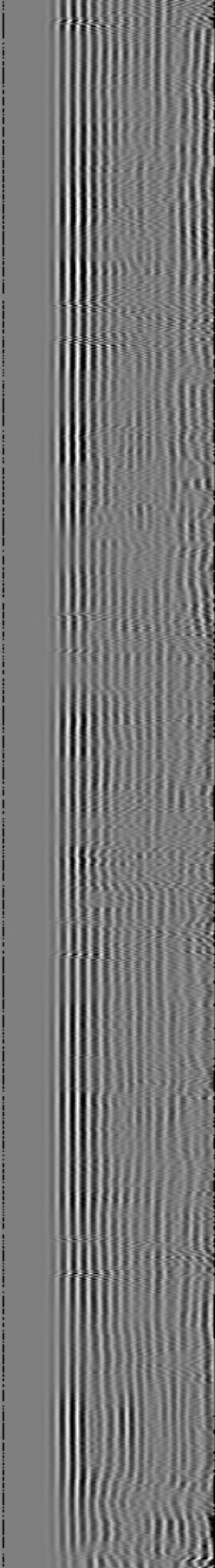
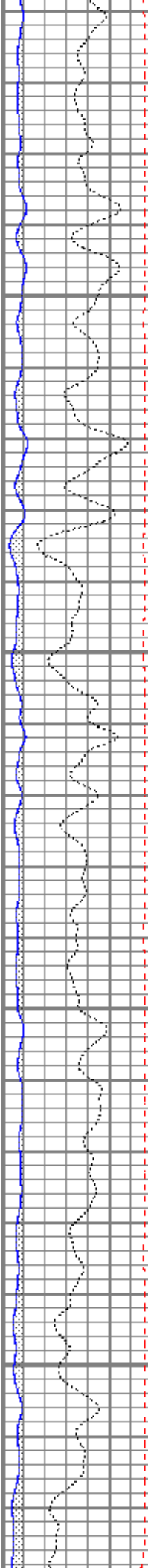
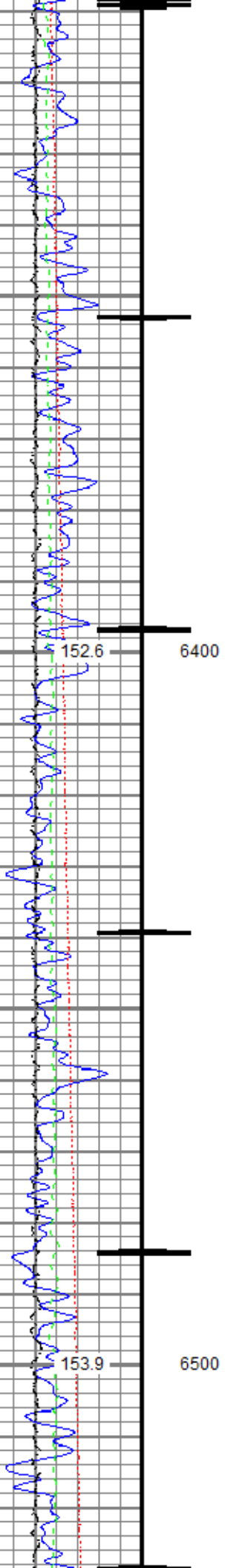


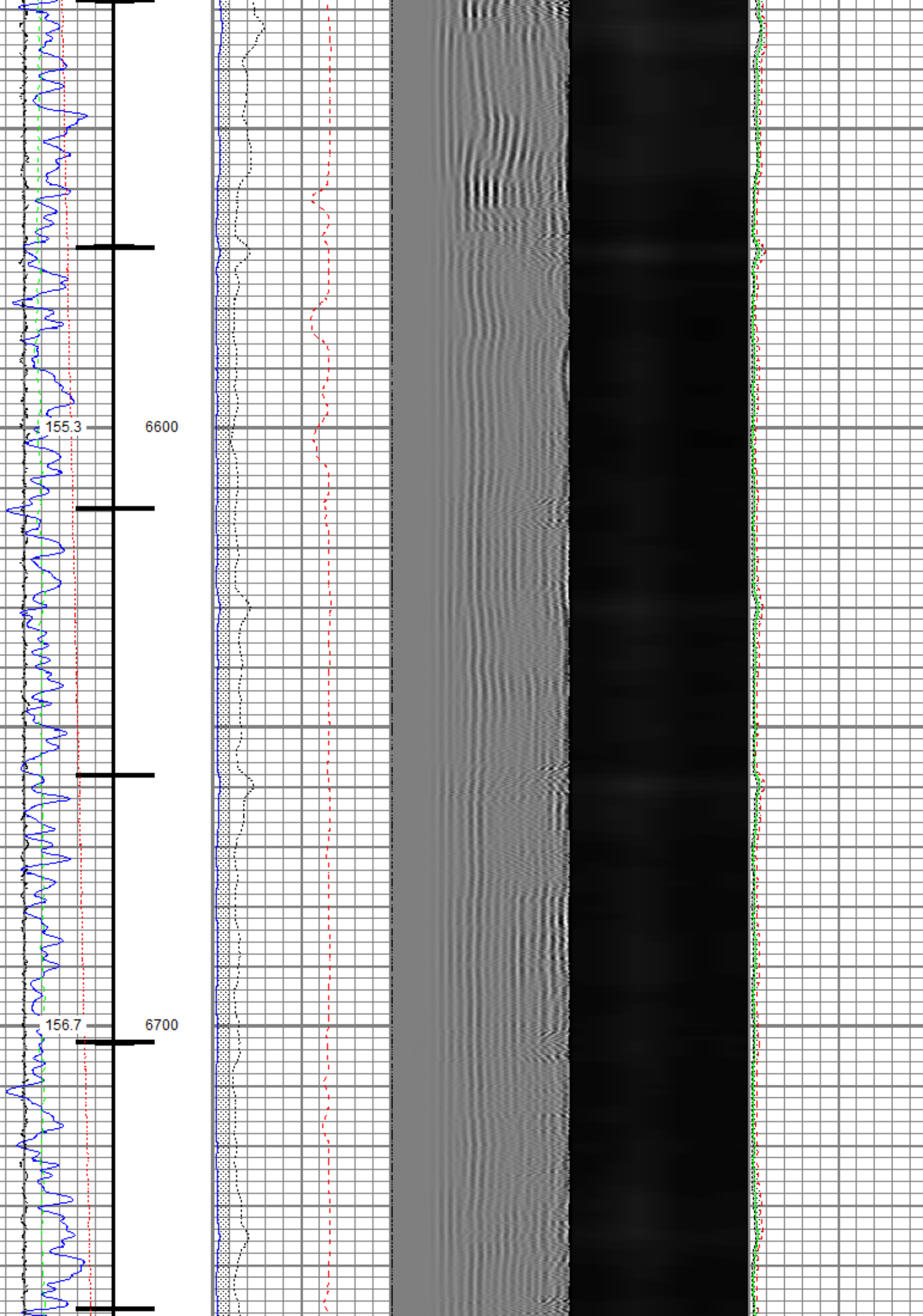


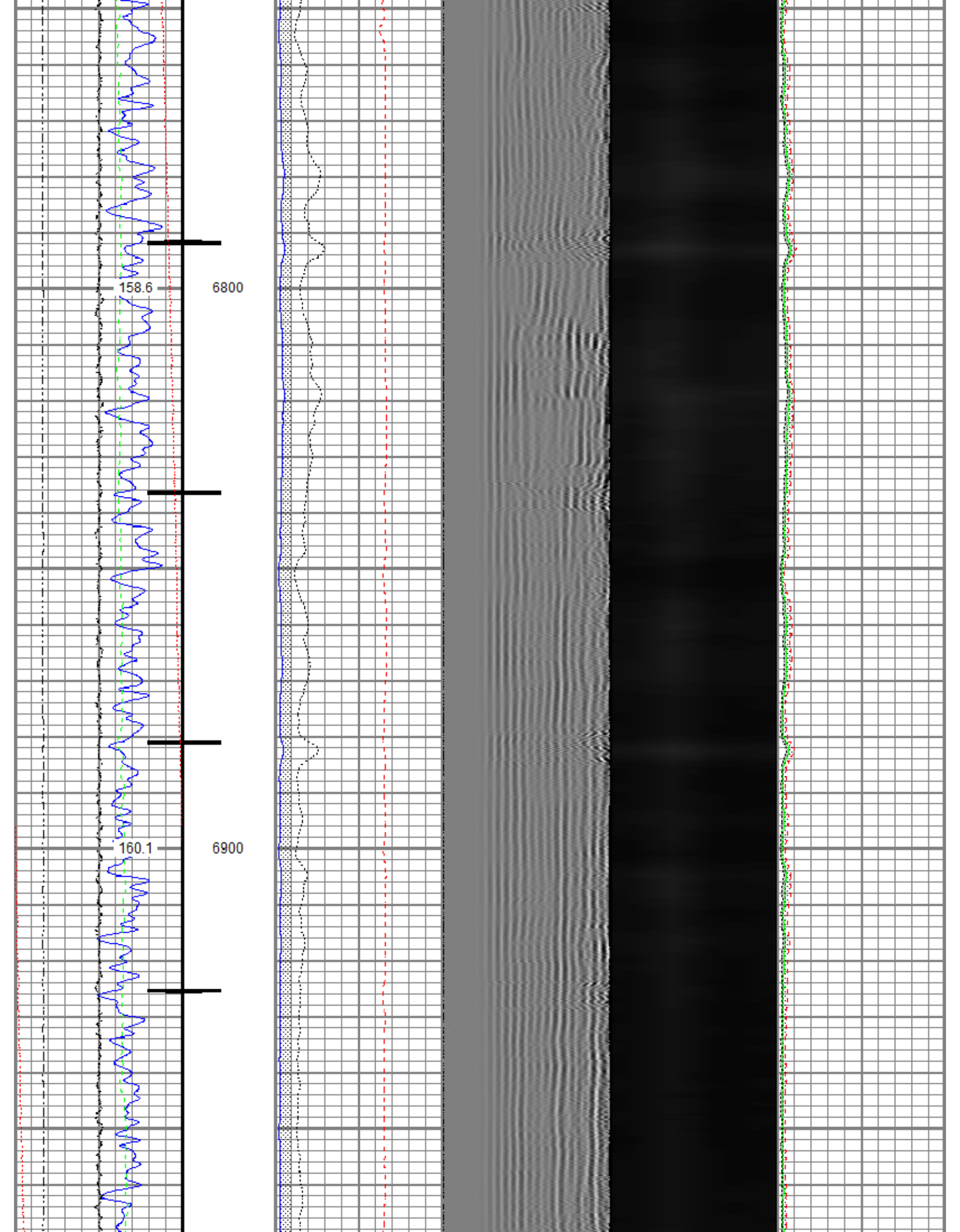


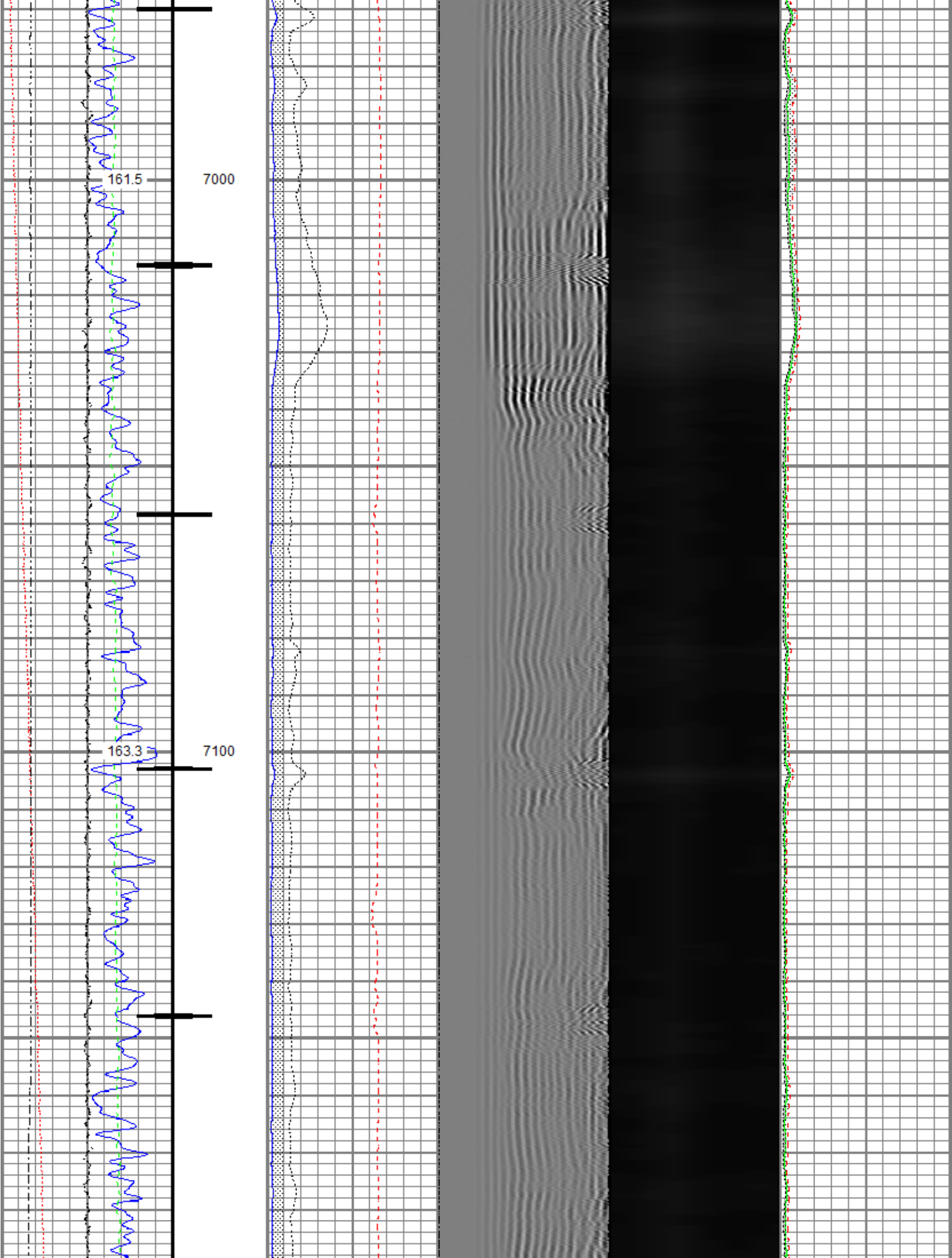


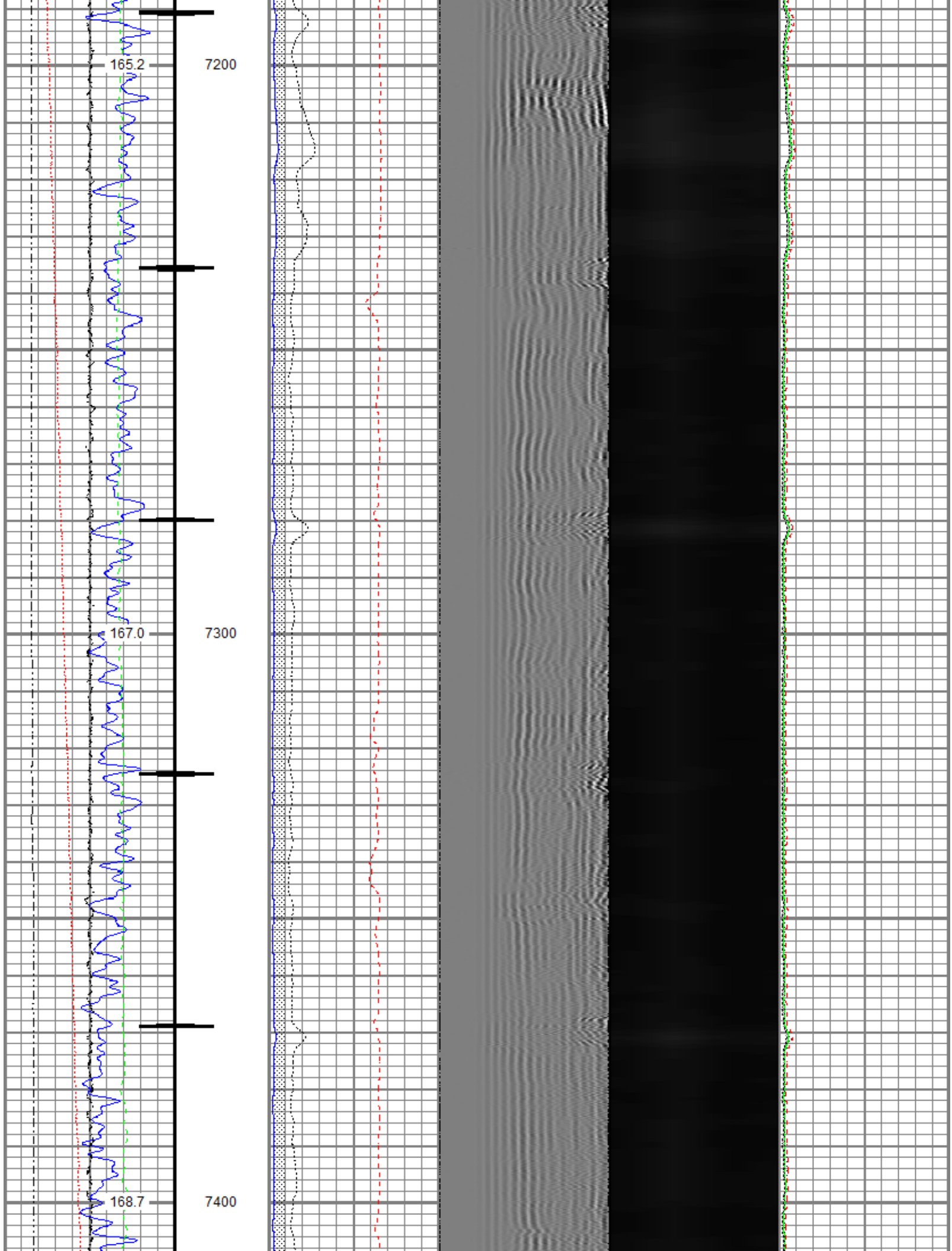


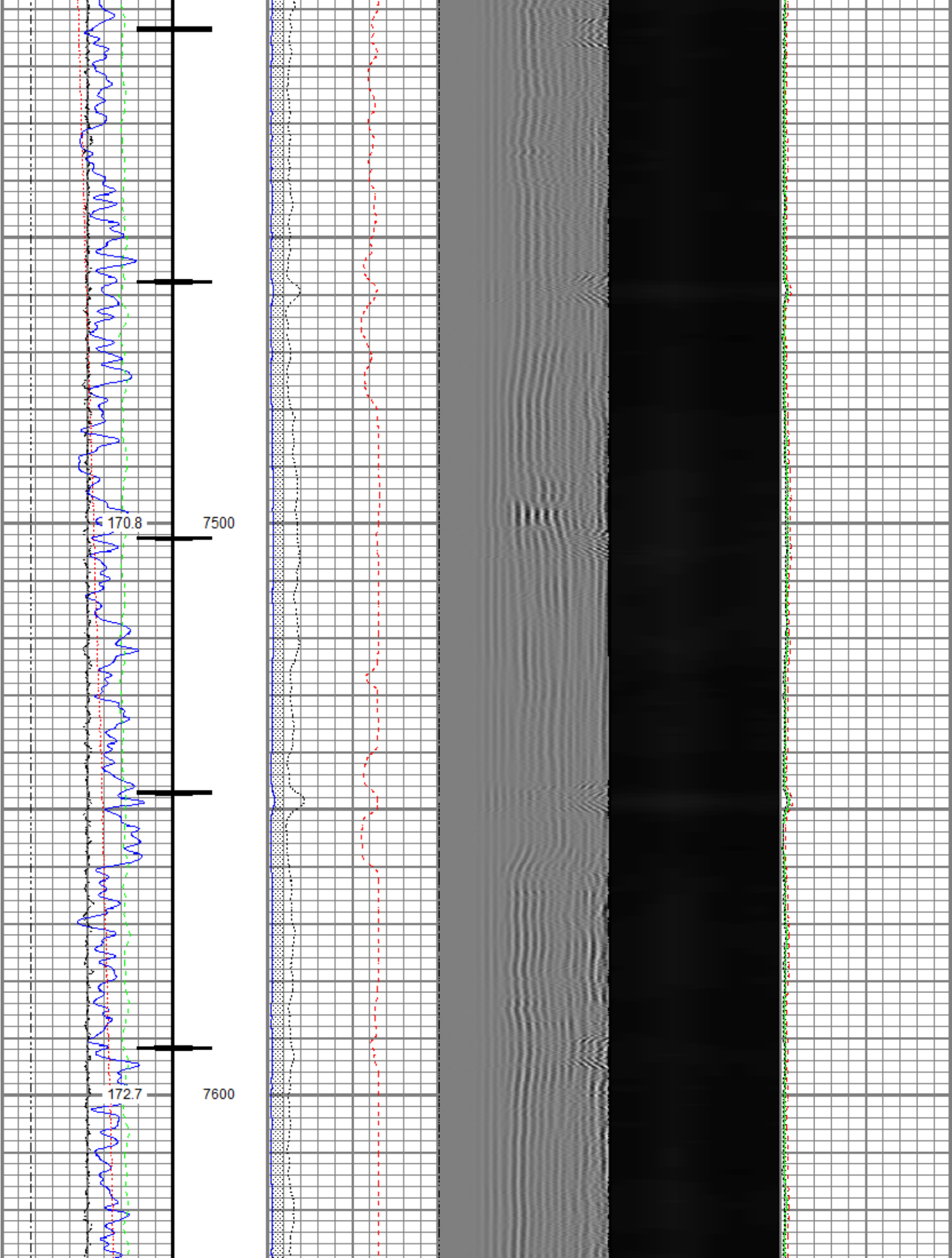


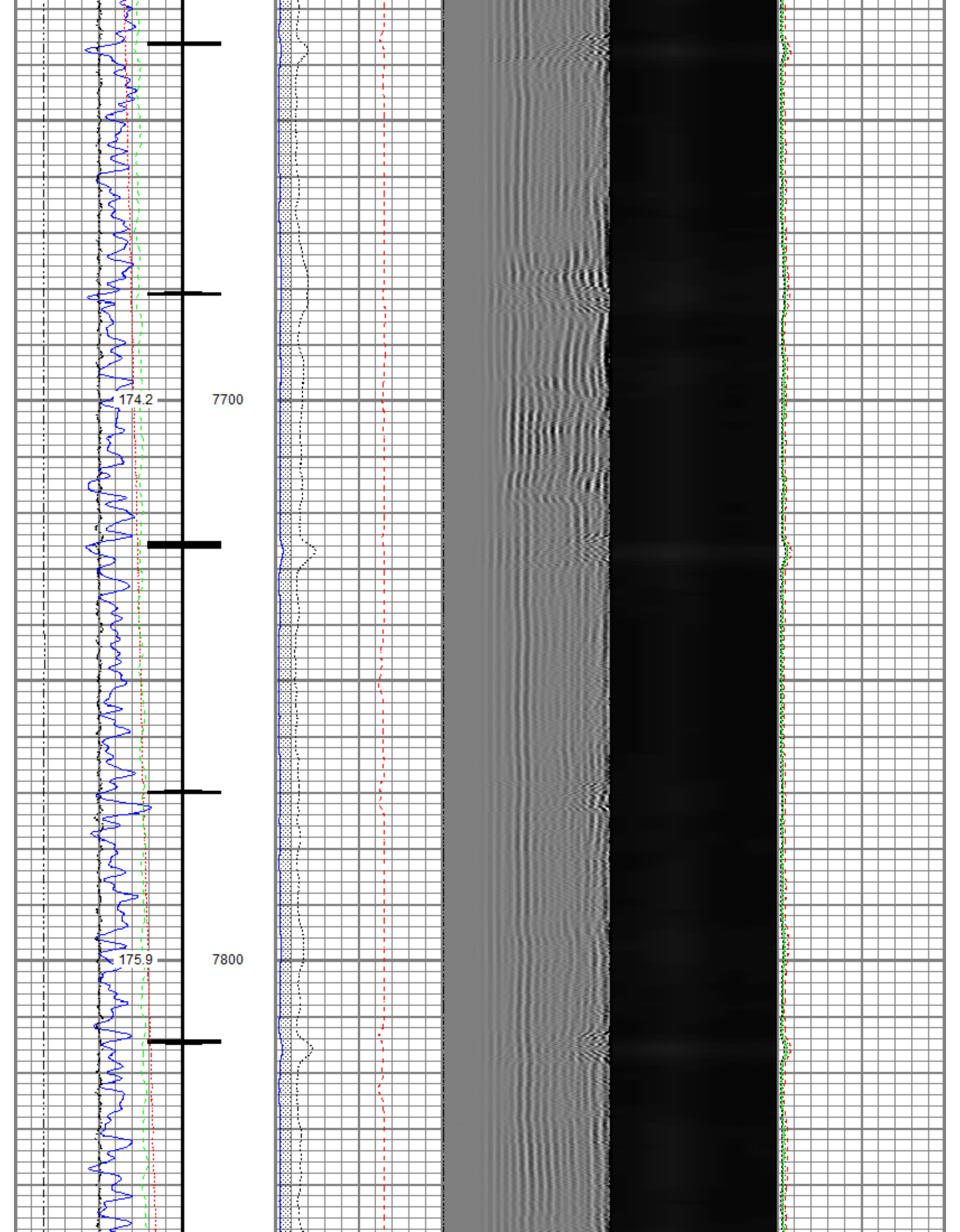


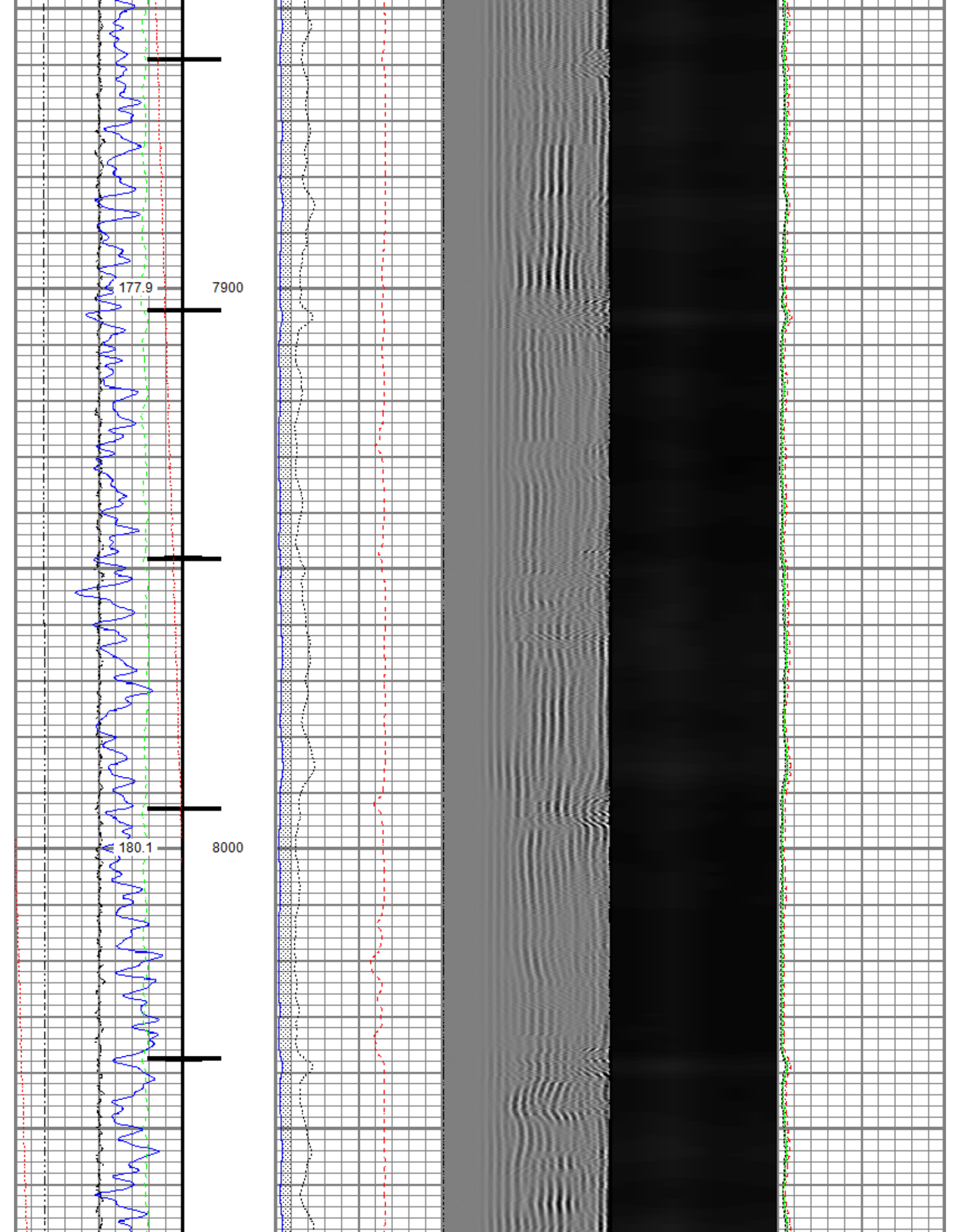


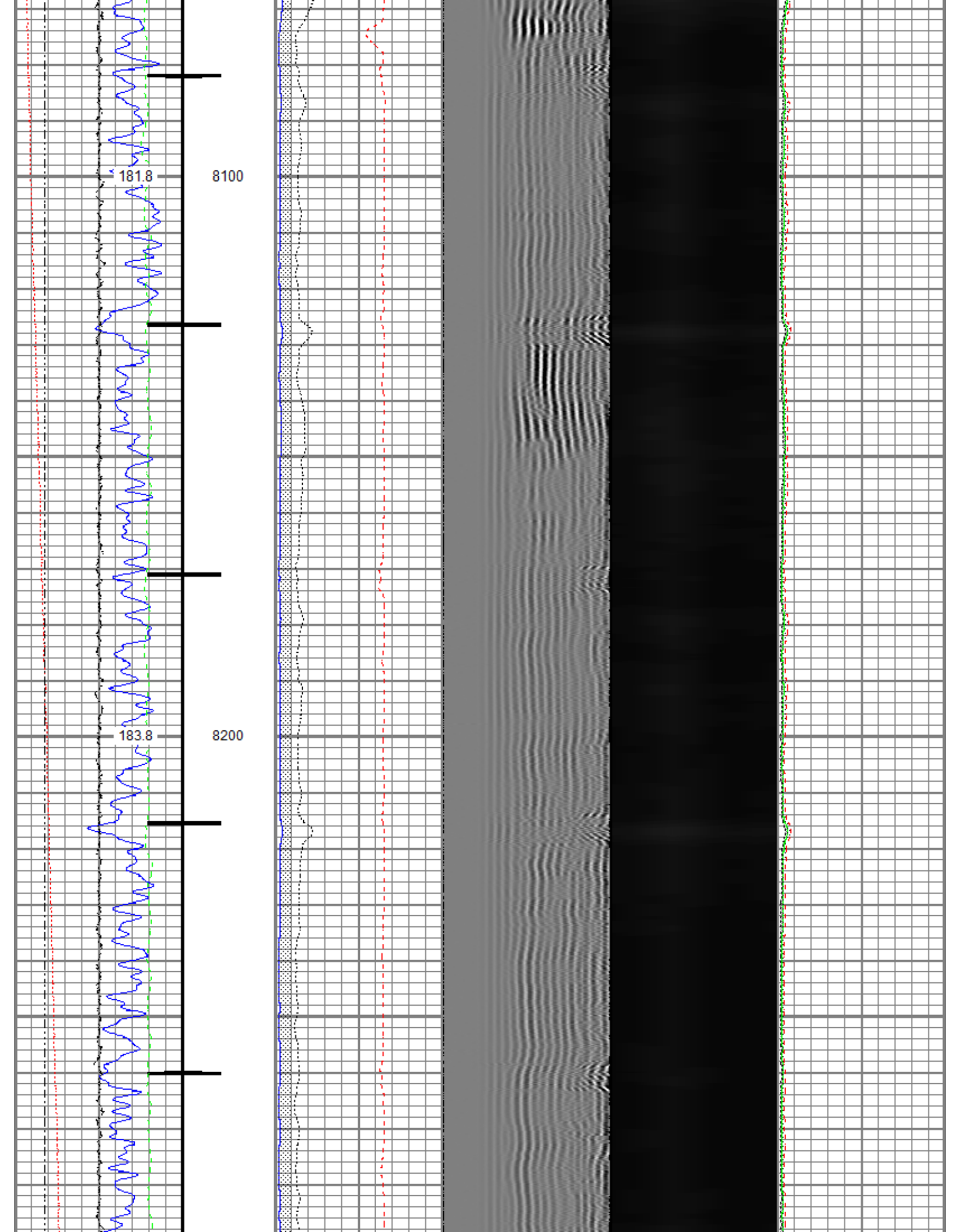


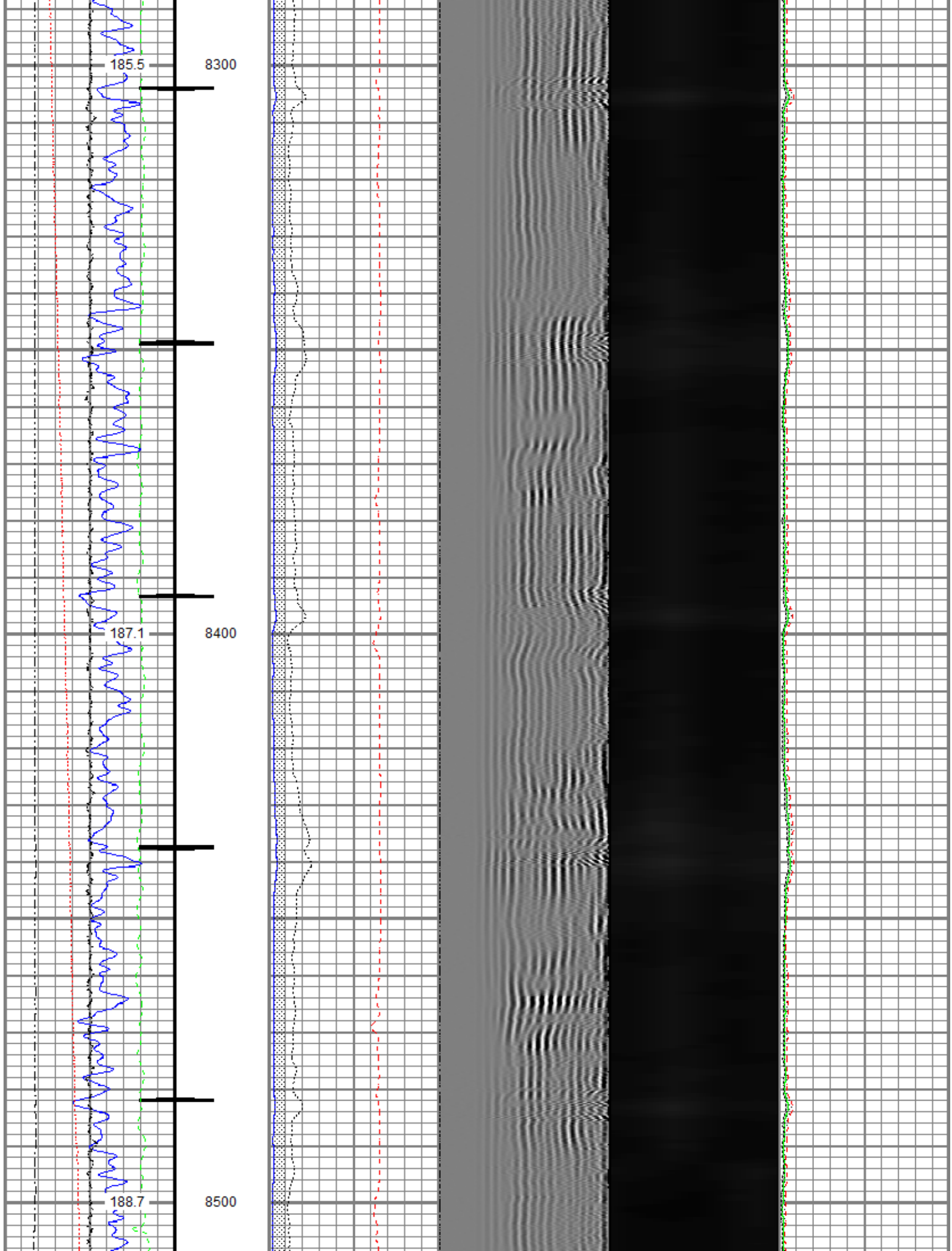


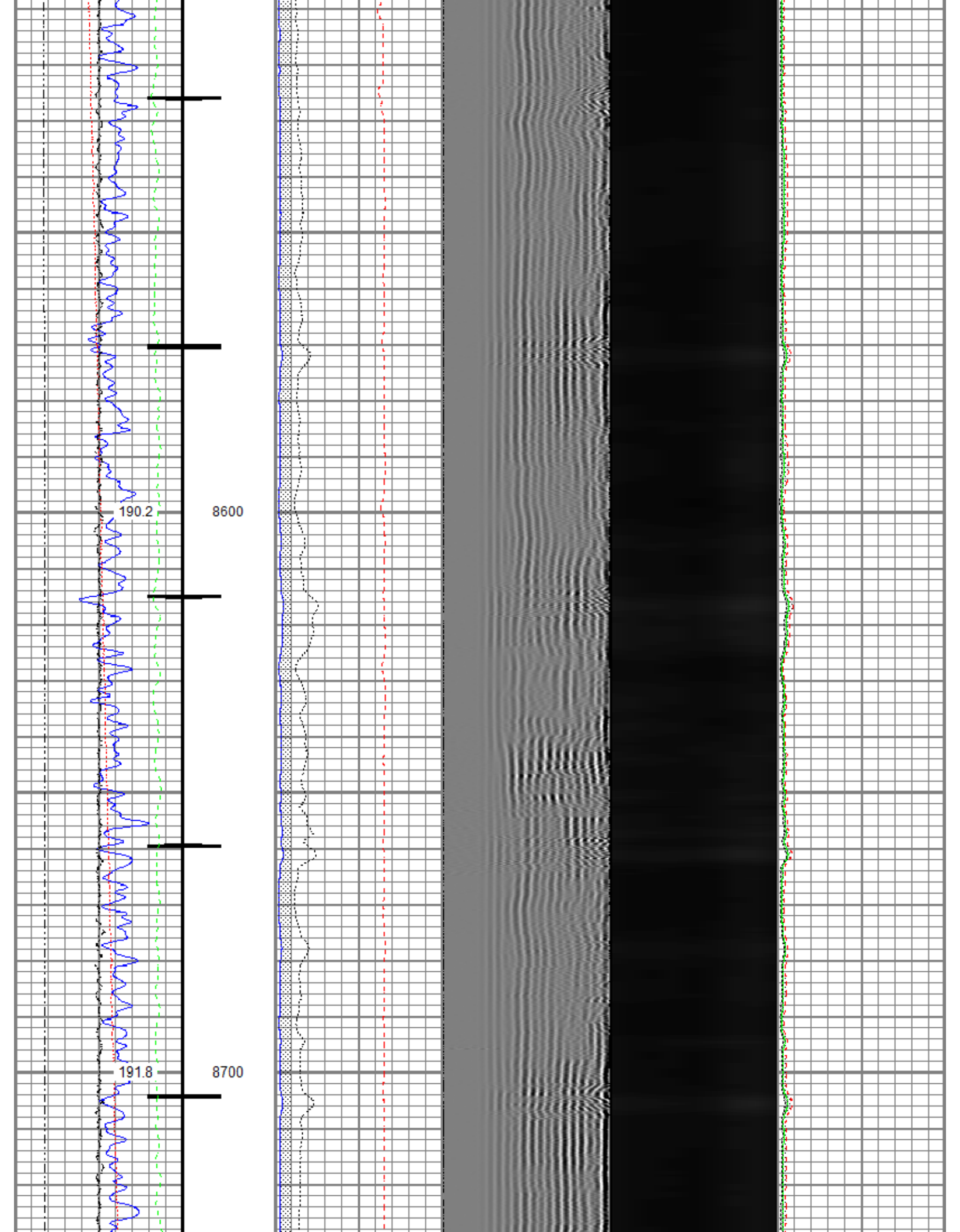


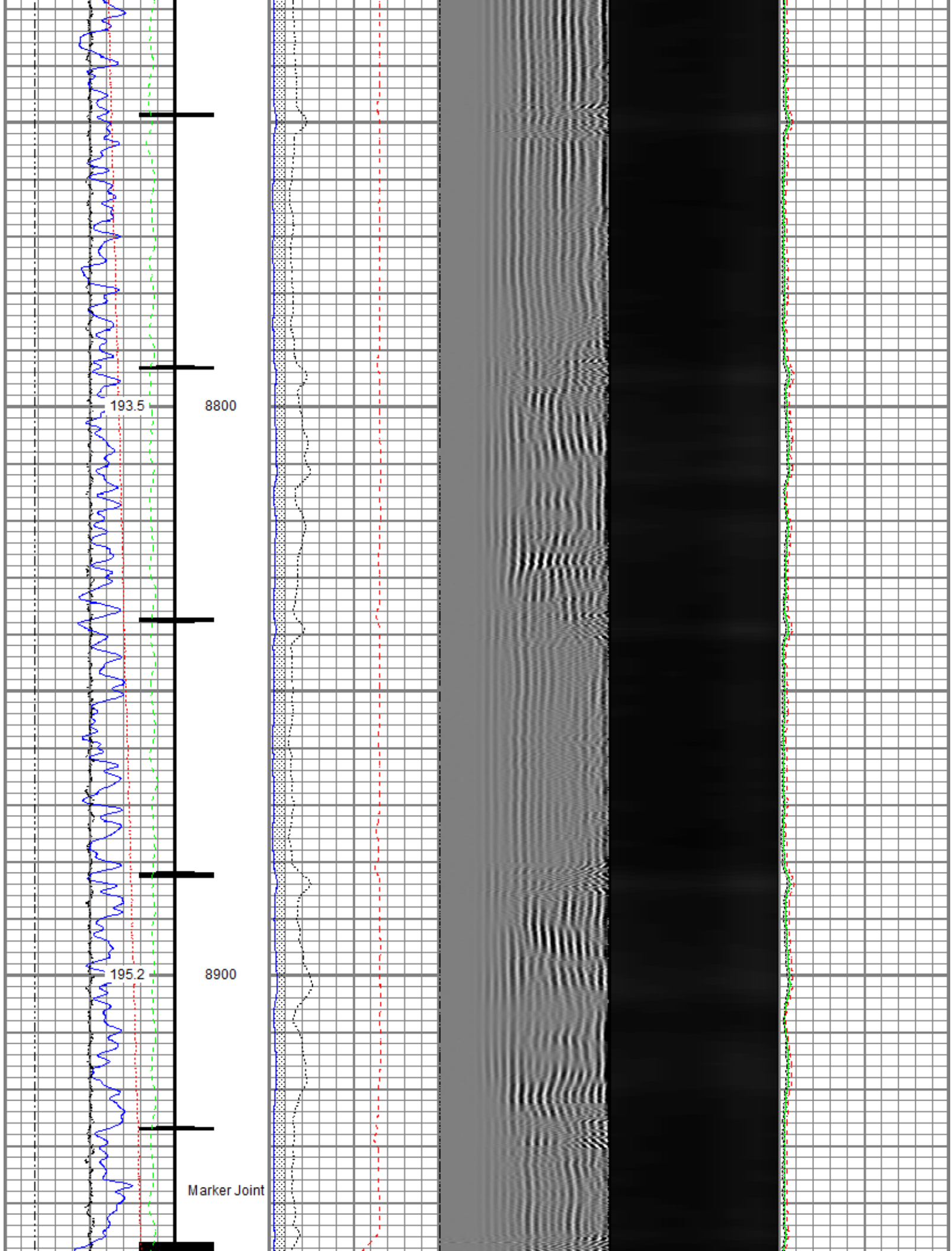


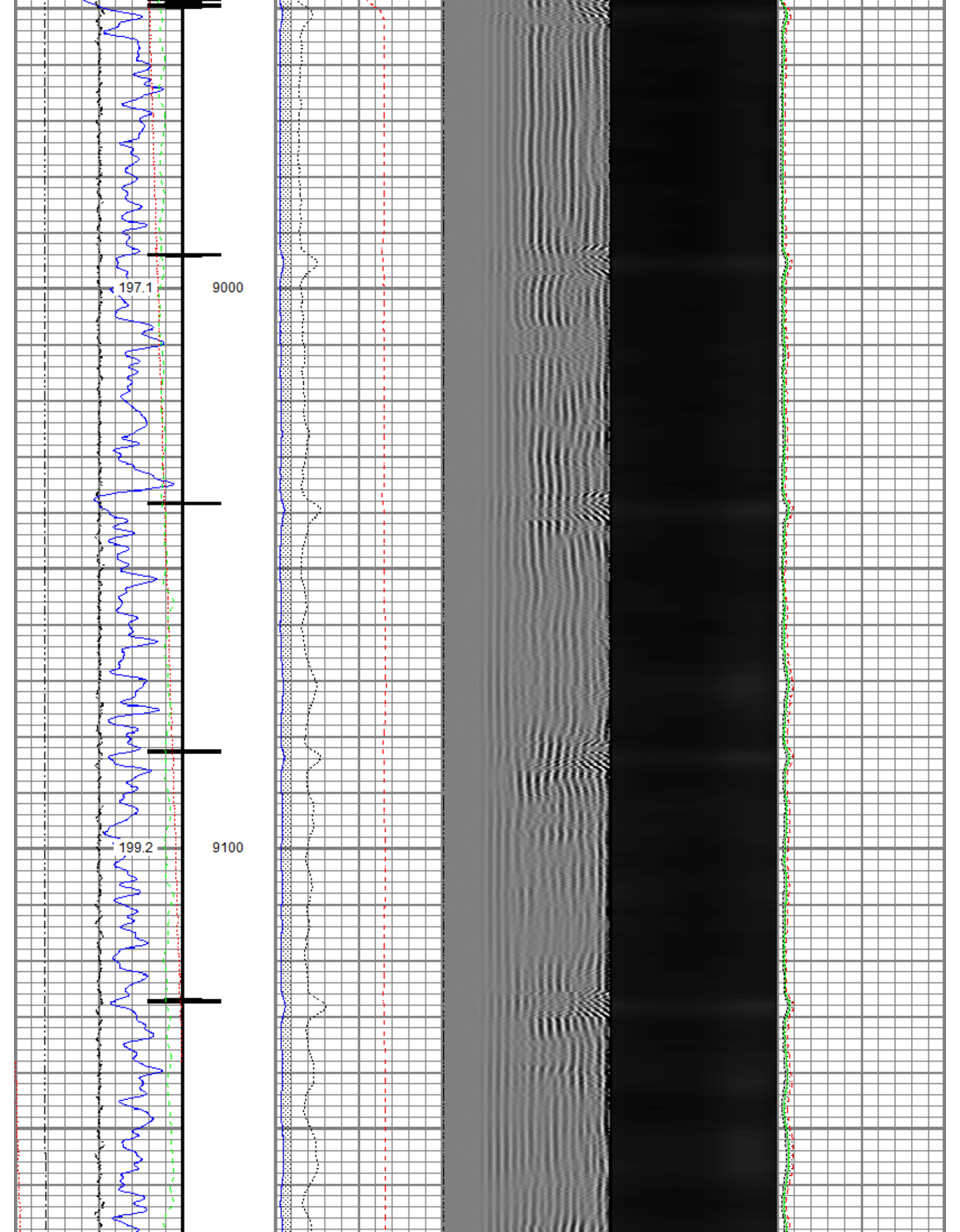


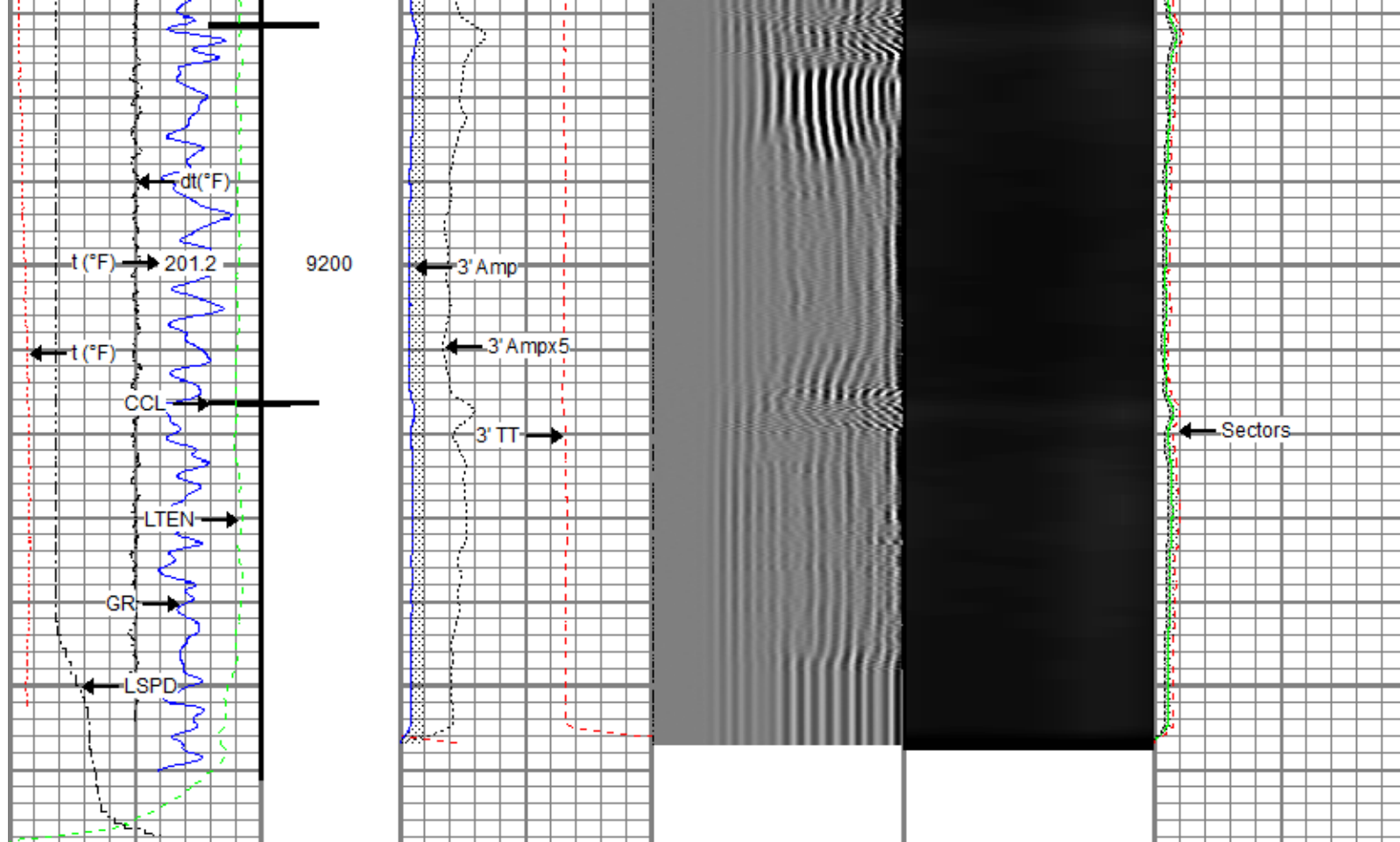












Gamma Ray (GAPI)	0	120	3' Amplitude (mV)	0	100	5' Variable Density Log (usec)	200	1200	Sector Map	Average Amplitude	0	100
Casing Collar Locator												
Temperature (degF)	0	20	3' Amplitude x 5 (mV)	0	20					Minimum Amplitude	0	100
Line Speed (ft/min)	-150	150	3' Travel Time (usec)	650	150					Maximum Amplitude	0	100
Line Tension (lb)	0	2000										
Differential Temperature (degF)	-2	2										

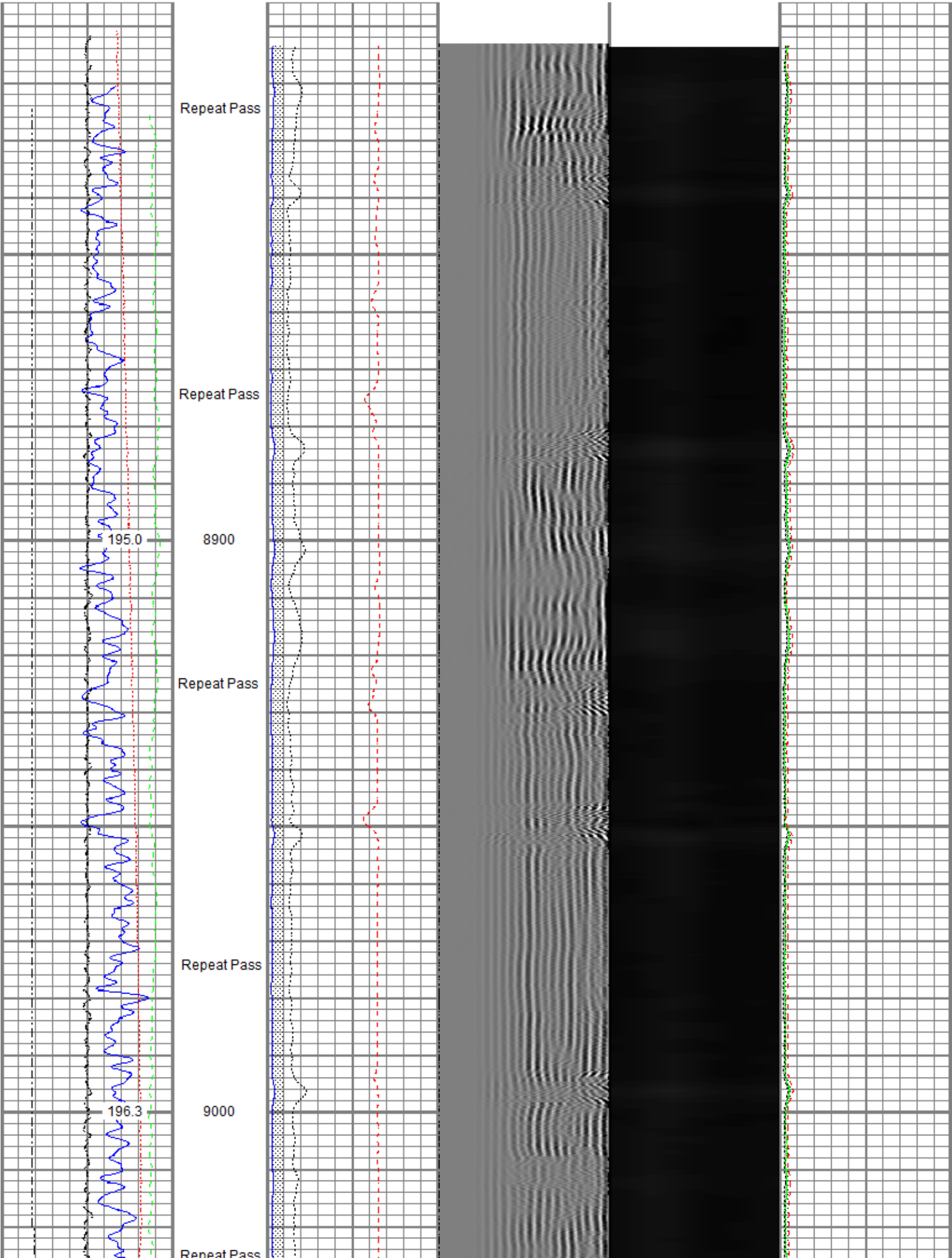


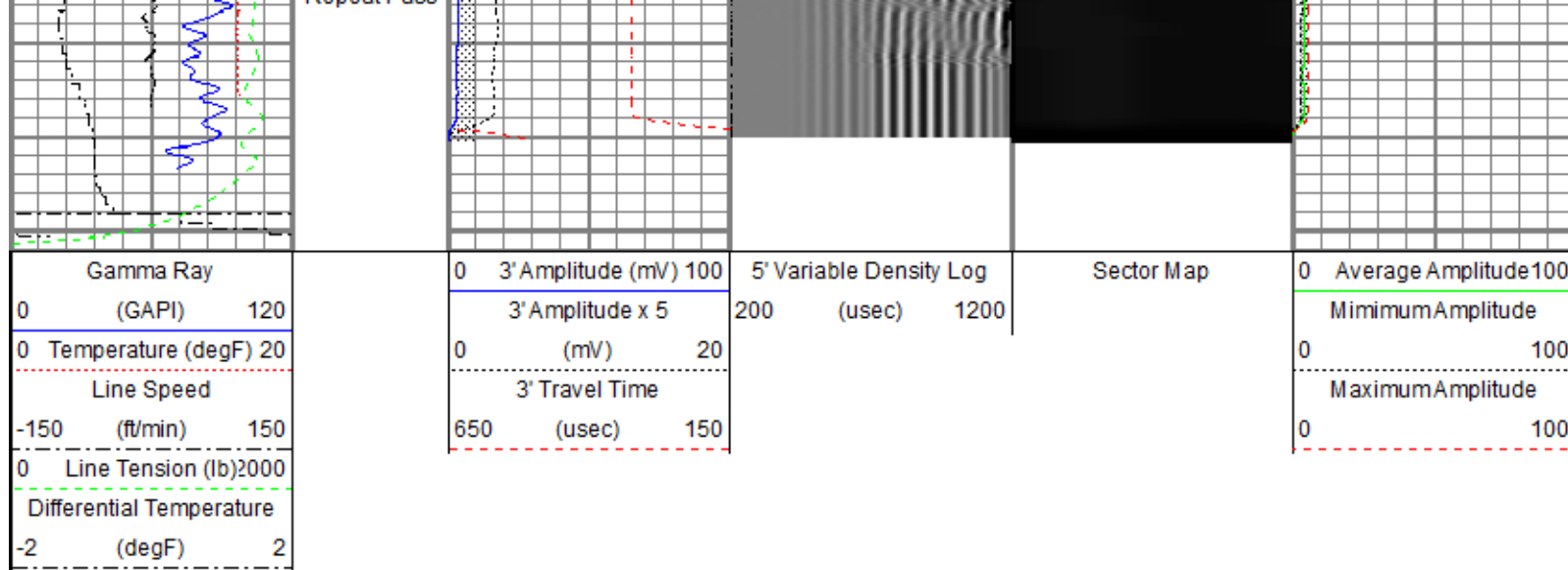
Repeat Pass

Recorded With 500 PSI Surface Induced Pressure

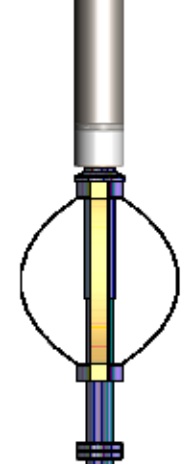
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 Dataset Pathname: pass2.2
 Presentation Format: ros_radrii
 Dataset Creation: Thu Jul 15 08:57:51 2021
 Charted by: Depth in Feet scaled 1:240

Gamma Ray (GAPI)	0	120	3' Amplitude (mV)	0	100	5' Variable Density Log (usec)	200	1200	Sector Map	Average Amplitude	0	100
Casing Collar Locator												
Temperature (degF)	0	20	3' Amplitude x 5 (mV)	0	20					Minimum Amplitude	0	100
Line Speed (ft/min)	-150	150	3' Travel Time (usec)	650	150					Maximum Amplitude	0	100
Line Tension (lb)	0	2000										
Differential Temperature (degF)	-2	2										





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
ErrCt	18.10		Titan CHD-16875 GO	1.03	1.69	5.40
RBT_HV	17.07		Titan 1-11/16" Assembled Electric Cable Head with 1" Fishing Neck			
TEMP	14.16		SO BS CENT-2750-4500 Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer	1.33	3.25	10.00
RBT_ACCZ	11.93		Probe Radii ACC-2750 RBTa (FW1302-002) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub and Accelerometer	9.39	2.75	105.00
RBT_ACCY	11.93					
RBT_ACCX	11.93					
WVFSYNC	11.93					
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-2750-4500 Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer	1.33	3.25	10.00	
		Probe GR-CCL-2750 6PB (FW1304-132)	4.80	2.75	55.00	

			Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT			
LOCTIM	0.00		Probe CENT-2750	2.88	2.75	20.00
UTCTIM	0.00		Probe 2-3/4" Electric Inline Bowspring Centralizer			

Dataset: nickel road_blehm 8x-hc-10-07-67_rbl_07-13-21.db: field/well/run1/pass4.2
 Total length: 18.10 ft
 Total weight: 215.40 lb
 O.D.: 3.25 in

Calibration Report	
Database File	c:\programdata\warrior\data\nickel road_blehm 8x-hc-10-07-67\nickel road_blehm 8x-hc-10-07-67_rbl_07-13-21.db
Dataset Pathname	pass4.2
Dataset Creation	Thu Jul 15 08:46:37 2021

Gamma Ray Calibration Report		
Serial Number:	FW1304-132	
Tool Model:	2750 6PB	
Performed:	Mon Oct 19 14:19:51 2020	
Calibrator Value:	637.0	GAPI
Background Reading:	109.1	cps
Calibrator Reading:	1009.7	cps
Sensitivity:	0.7072	GAPI/cps

Segmented Cement Bond Log Calibration Report		
Serial Number:	FW1302-002	
Tool Model:	2750 RBTa	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	20.393	ft


Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.008	0.573	0.800	71.921	122.291	1.793
CAL	0.671	0.669				
5'	-0.008	0.568	0.800	71.921	123.412	1.792
SUM						
S1	-0.006	0.520	0.000	100.000	190.292	1.051
S2	-0.009	0.541	0.000	100.000	181.826	1.548
S3	-0.008	0.580	0.000	100.000	169.968	1.393
S4	-0.008	0.616	0.000	100.000	160.211	1.348
S5	-0.008	0.643	0.000	100.000	153.405	1.303
S6	-0.009	0.631	0.000	100.000	156.223	1.363
S7	-0.009	0.583	0.000	100.000	168.935	1.579
S8	-0.008	0.541	0.000	100.000	181.983	1.464

Air Zero Calibration, performed Tue Jul 13 06:48:10 2021:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.009	0.000	-0.017
5'	0.008	0.000	-0.016
SUM			
S1	0.007	0.000	-0.013
S2	0.009	0.000	-0.017
S3	0.009	0.000	-0.017
S4	0.009	0.000	-0.017
S5	0.009	0.000	-0.017
S6	0.009	0.000	-0.017
S7	0.009	0.000	-0.018
S8	0.008	0.000	-0.016

Inclinometer Calibration Report					
Performed:	Mon Oct 19 14:19:51 2020				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-891.00	891.00	-1.00	1.00	gee
Y Accelerometer	-899.00	877.00	-1.00	1.00	gee
Z Accelerometer	-7.47	873.36	0.00	1.00	gee

Temperature Calibration Report					
Serial Number:	FW1302-002				
Tool Model:	2750 RBTa				
Performed:	Mon Oct 19 14:19:51 2020				
	Reference		Reading		
Low Reference:	100.00 degF		110.72 degF		
High Reference:	350.00 degF		409.18 degF		
Gain:	0.84				
Offset:	7.26				
Delta Spacing	1				

	Company	Nickel Road Operating
	Well	Blehm 8X-HC-10-07-67
	Field	Wattenberg
	County	Weld
	State	Colorado