



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.

Well HUBER 4-27

Field Wattenberg

County Weld

State Colorado

Location:

API #: 0512321267

Other Services
None

SEC 27 TWP 1N RGE 68W

Permanent Datum Ground Level Elevation
Log Measured From Kelly Bushing 12FT
Drilling Measured From Kelly Bushing

Elevation
K.B. 5212'
D.F. ---
G.L. 5200'

Date

12-MAR-2019

Run Number

ONE

Depth Driller

8602 FT

Depth Logger

7500 FT

Bottom Logged Interval

7496 FT

Top Log Interval

Surface

Open Hole Size

Type Fluid

Water

Density / Viscosity

8.34 lb/gal

Max. Recorded Temp.

229°F

Estimated Cement Top

See Log

Time Well Ready

ROA

Time Logger on Bottom

08:30

Equipment Number

HD-343

Location

Platteville, CO

Recorded By

Dennis Roberts

Witnessed By

Brandon Tracy

Borehole Record

Run Number

Bit

From

To

Size

Weight

From

To

Tubing Record

Run Number

Bit

From

To

Size

Weight

From

To

Casing Record

Size (in)

Wgt (lbs/ft)

Grade

Top

Bottom

Surface Casing

8 5/8"

24

Surface

1040 FT

Intermediate #1

4 1/2"

11.6

I-80

Surface

8585 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 Kelly Bushing at 5212 FT
Adjusted 23 FT to correlate with Kelly Bushing
Shop calibrations preformed on the RBL Tool on 11-MAR-2019
Free Pipe Calibrated at 3256 FT (or comment "No Free Pipe found to Calibrate at in the Well")
GOBO indicates 80% Bond Index for 4.5-inch casing (16.24 mV)
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!!

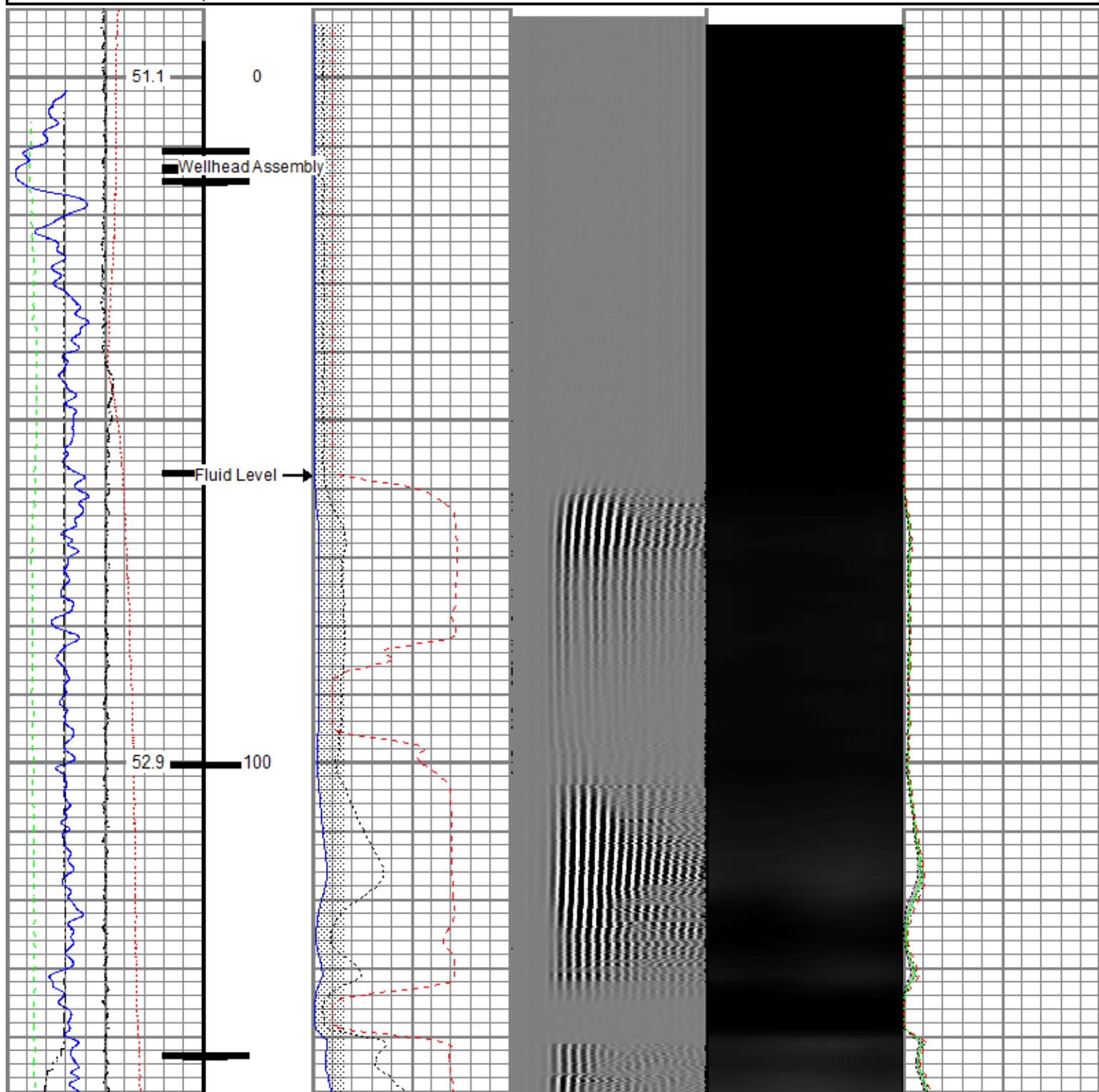


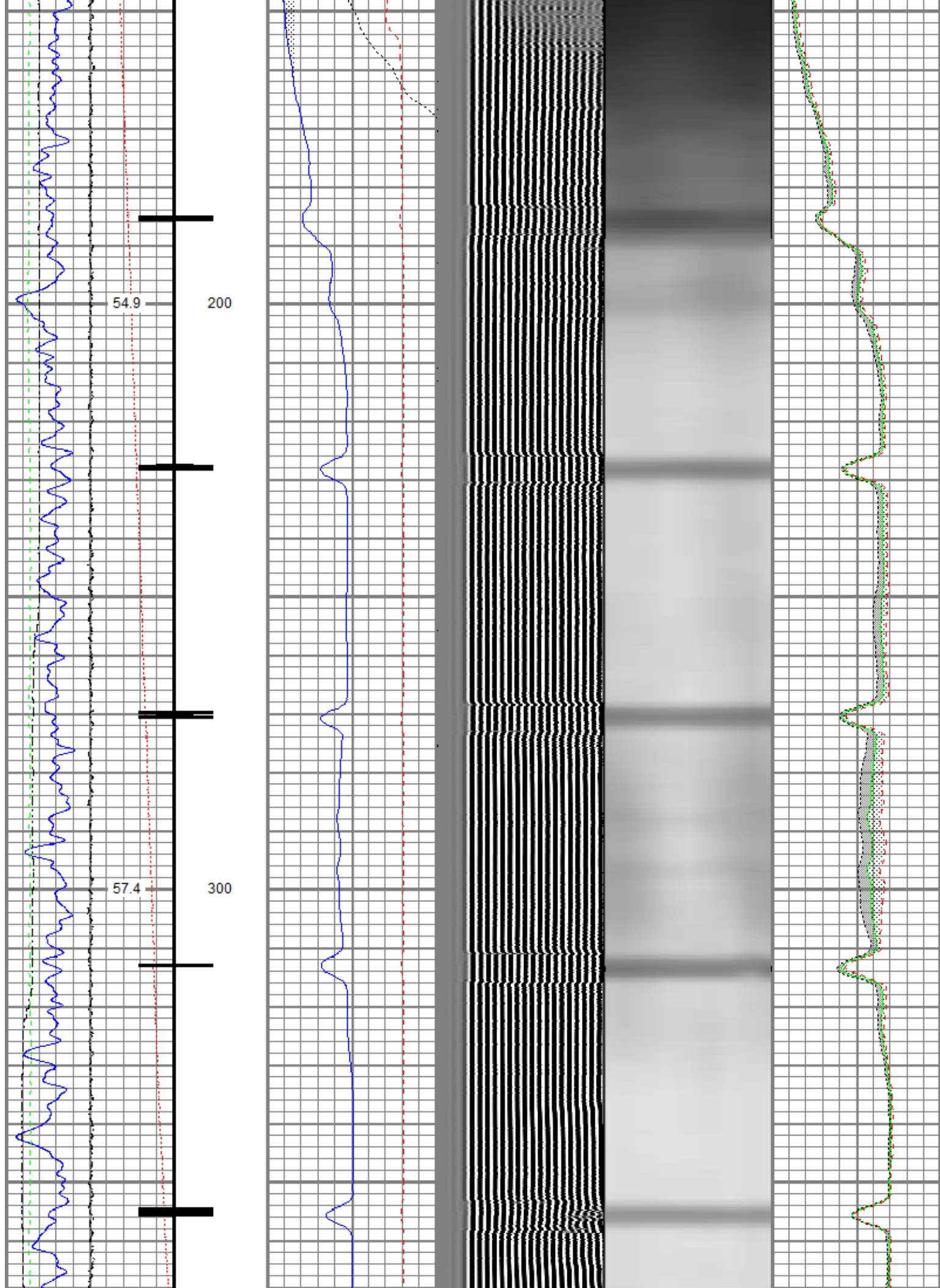
Main Pass

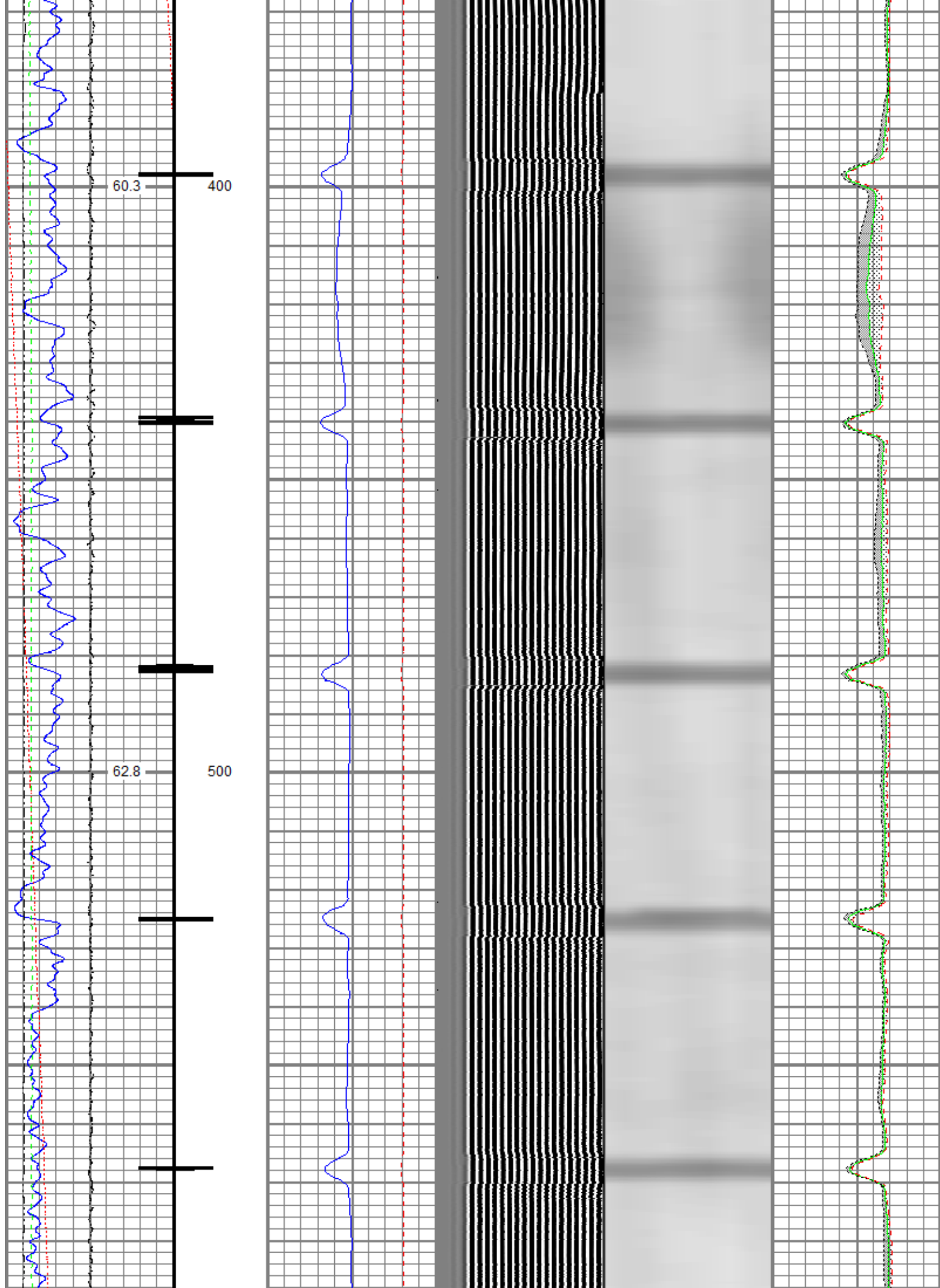
Recorded With 0 PSI Surface Induced Pressure

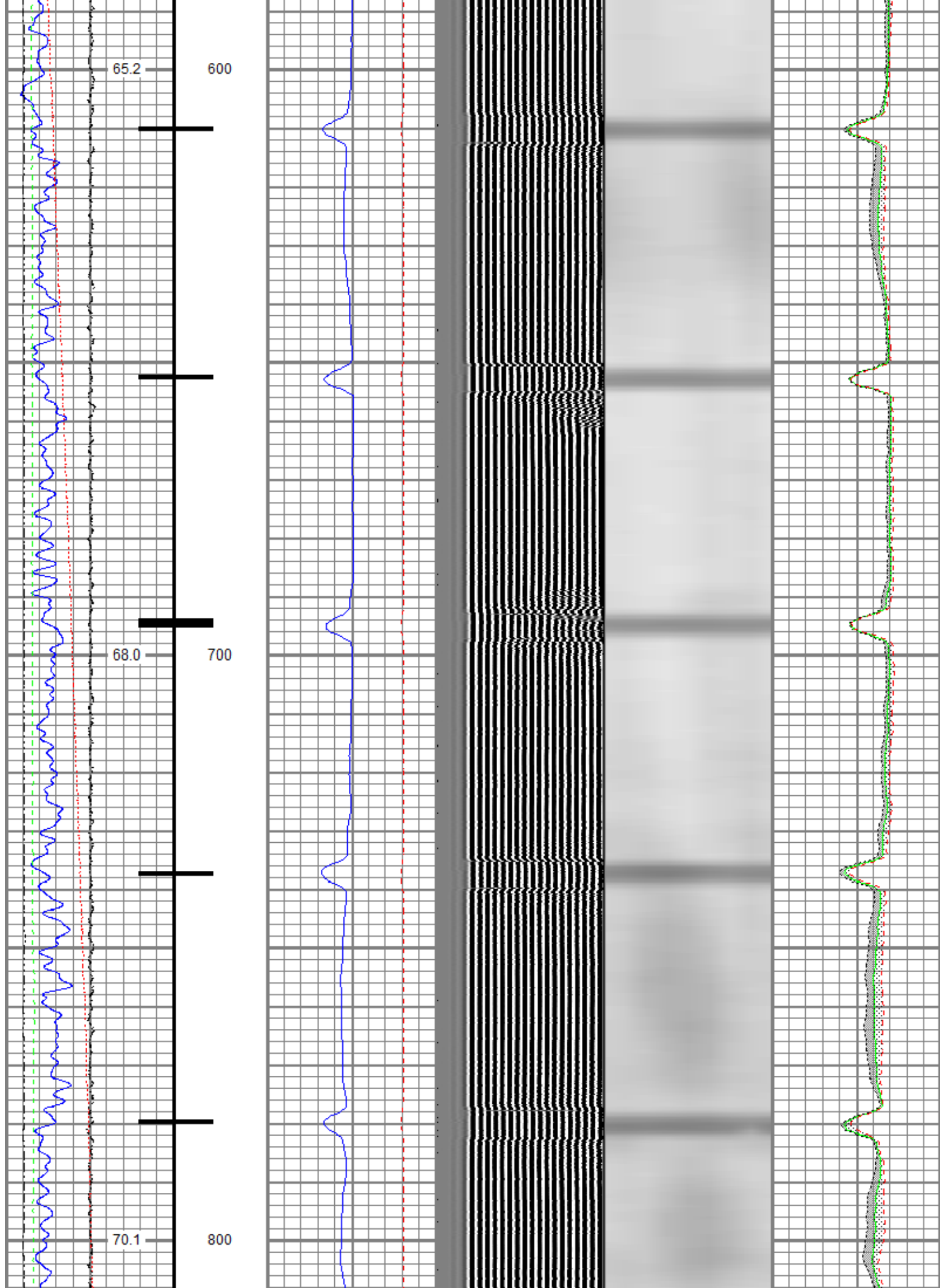
Database File anadarko_huber_4-27_rcbl_12_mar_2019.db
Dataset Pathname RCBL/pass4.1
Presentation Format ros_radli_anadarko_vert_gobo_45
Dataset Creation Tue Mar 12 09:46:22 2019
Charted by Depth in Feet scaled 1:240

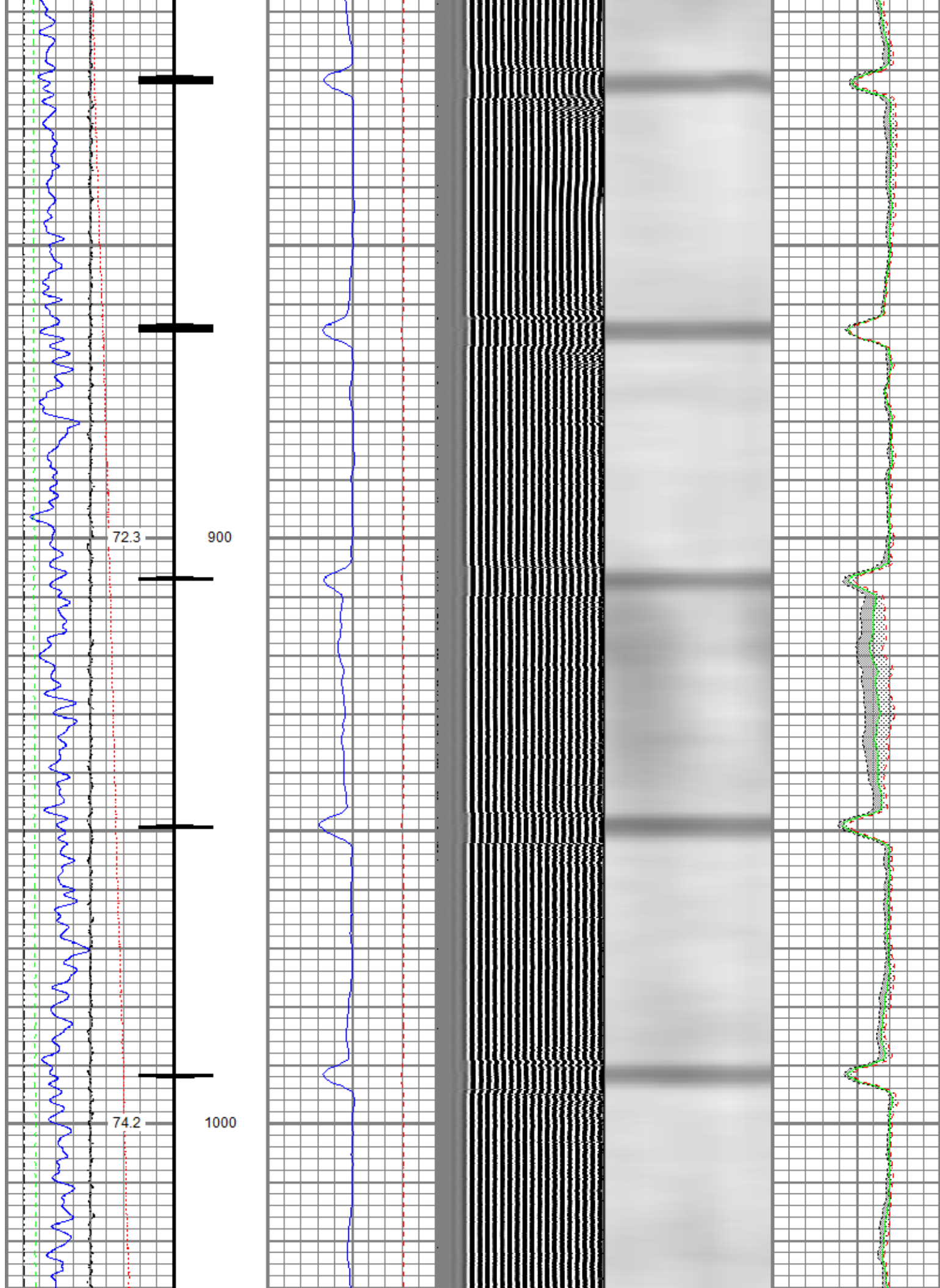
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	Average Amplitude
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200		0 100
Temperature		(mV) 20			Minimum Amplitude
(degF) 20		3' Travel Time			0 100
Line Speed		650 (usec) 150			Maximum Amplitude
-150 (ft/min) 150					0 100
Line Tension (lb) 000					
Differential Temperature					
-2 (degF) 2					
Casing Collar Locator					

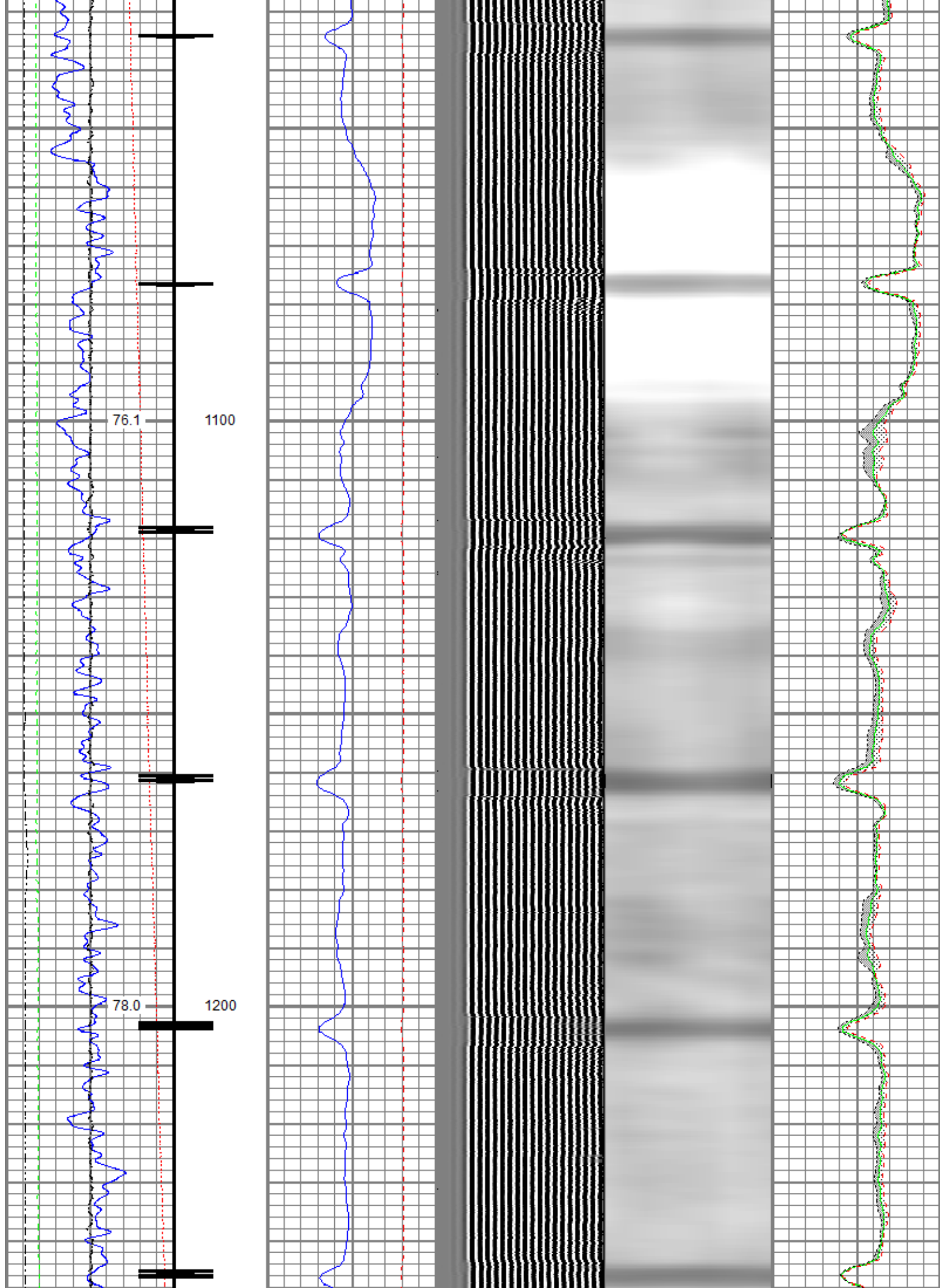


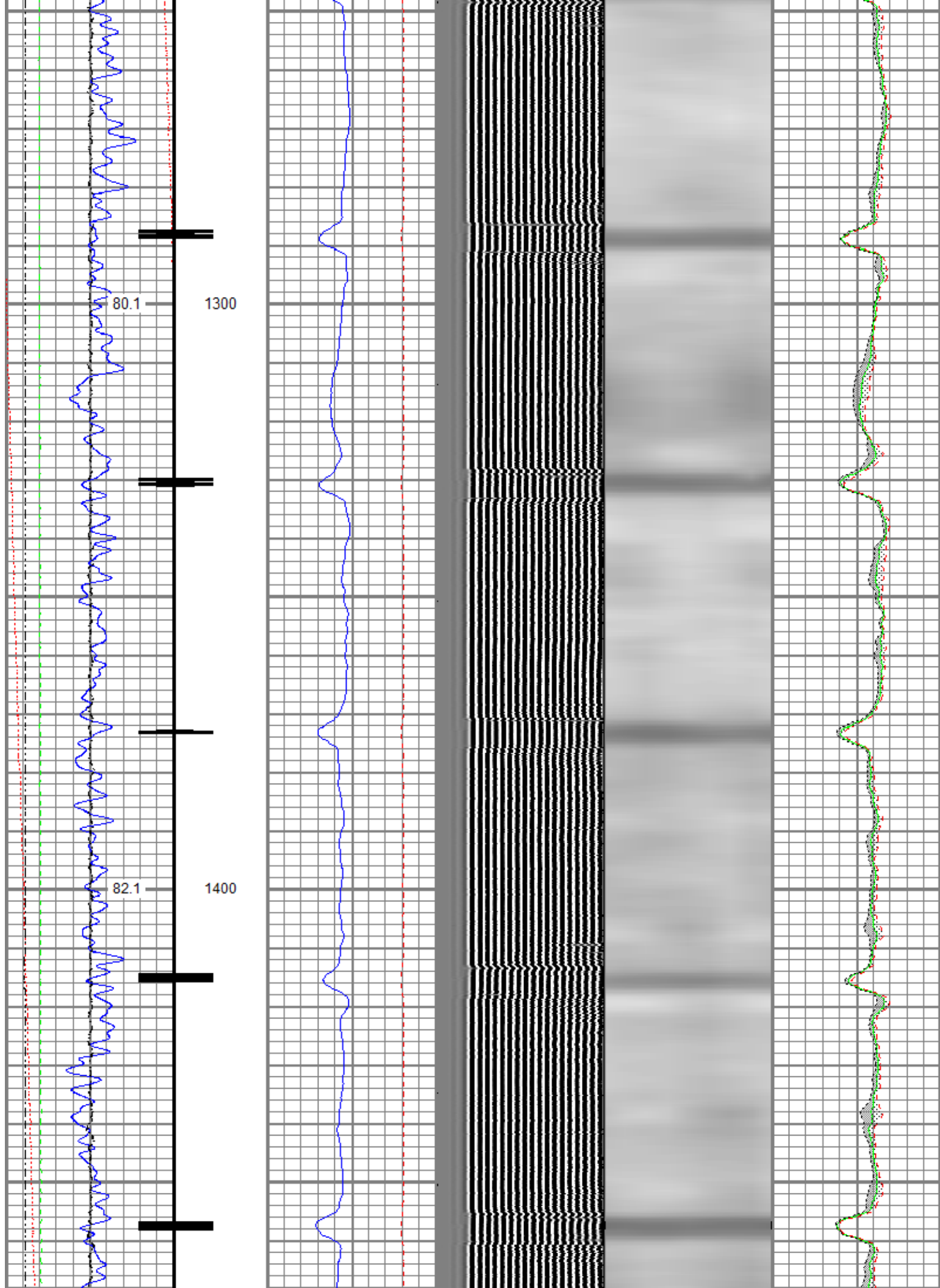


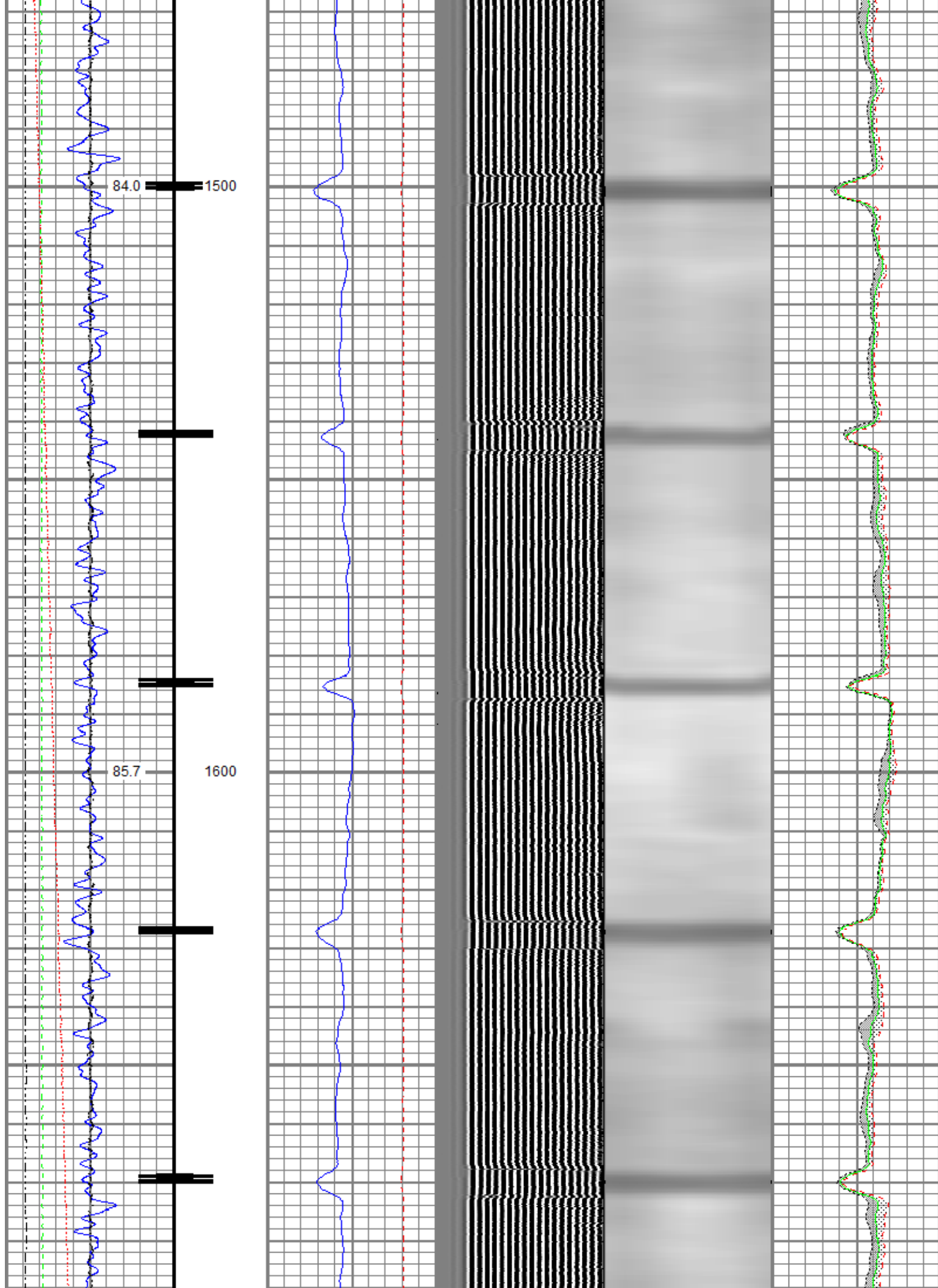


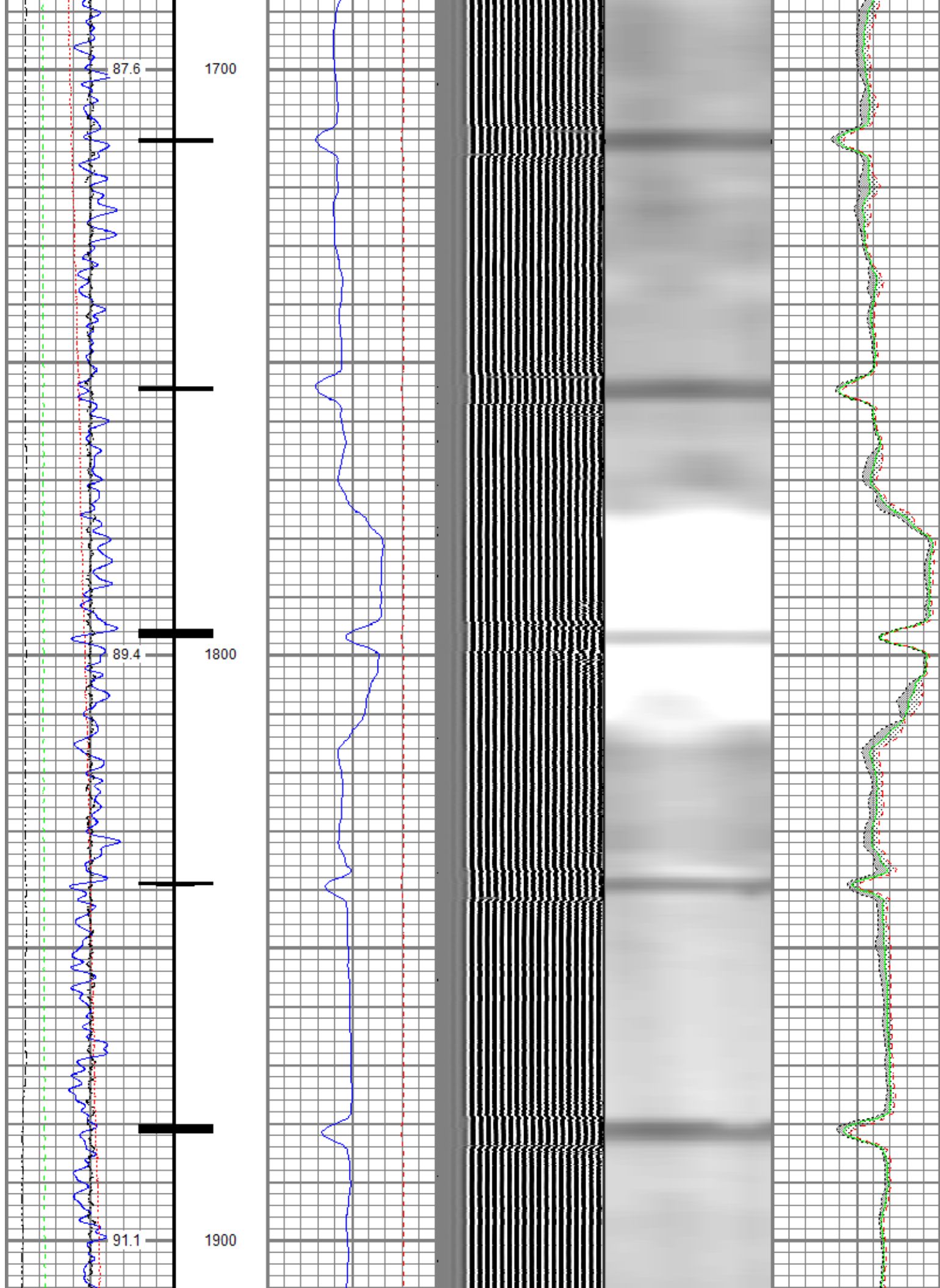


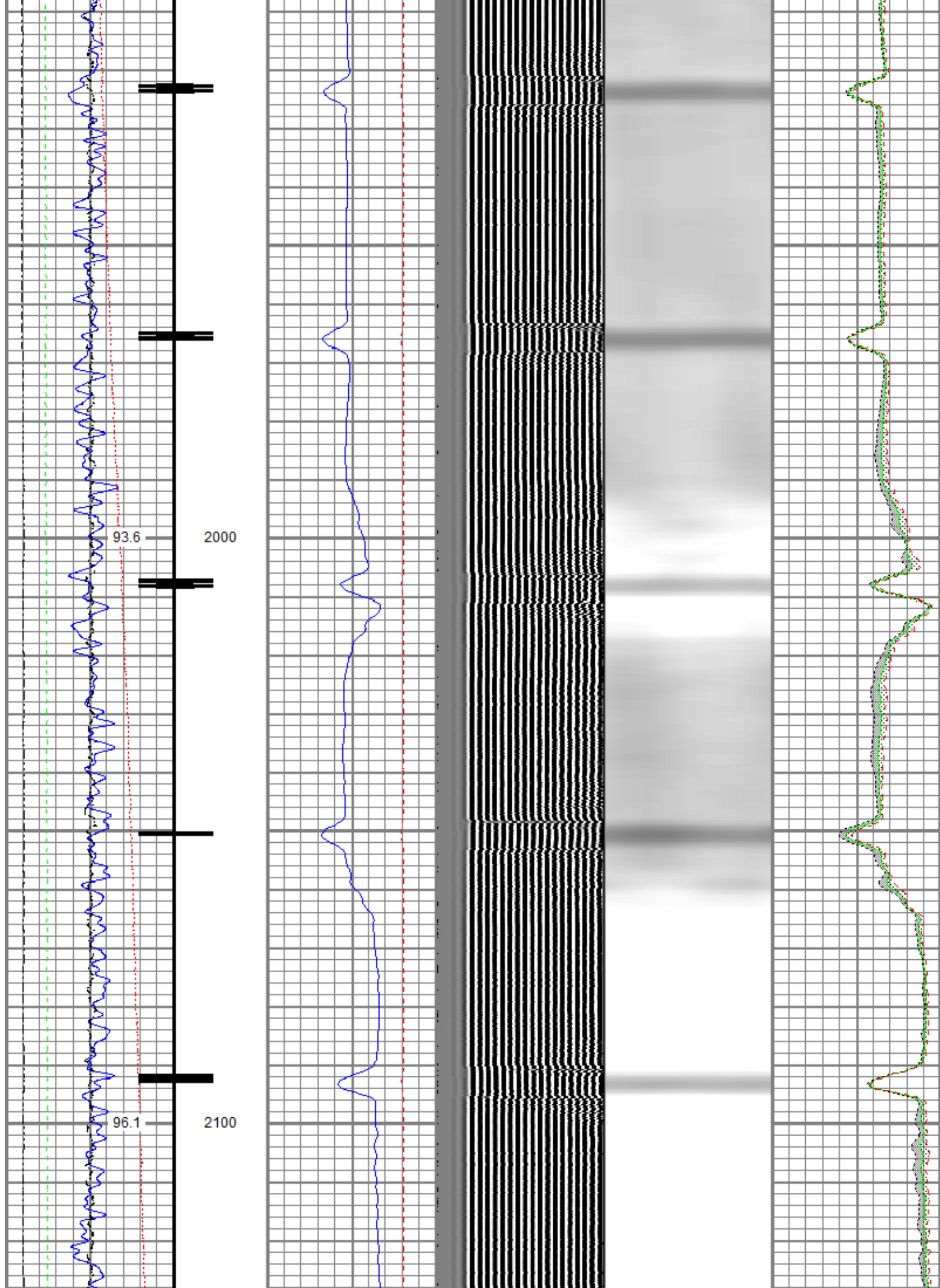


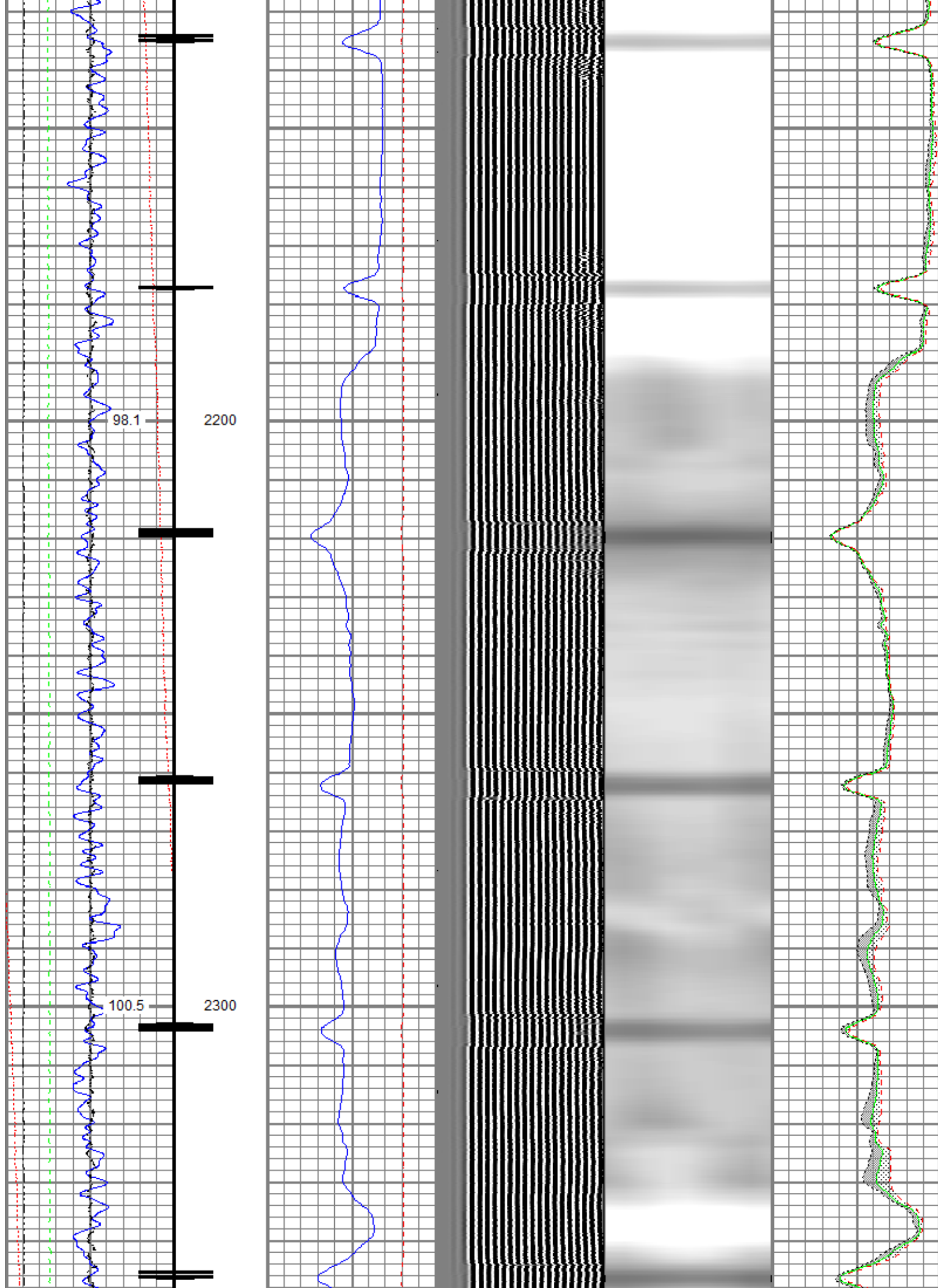


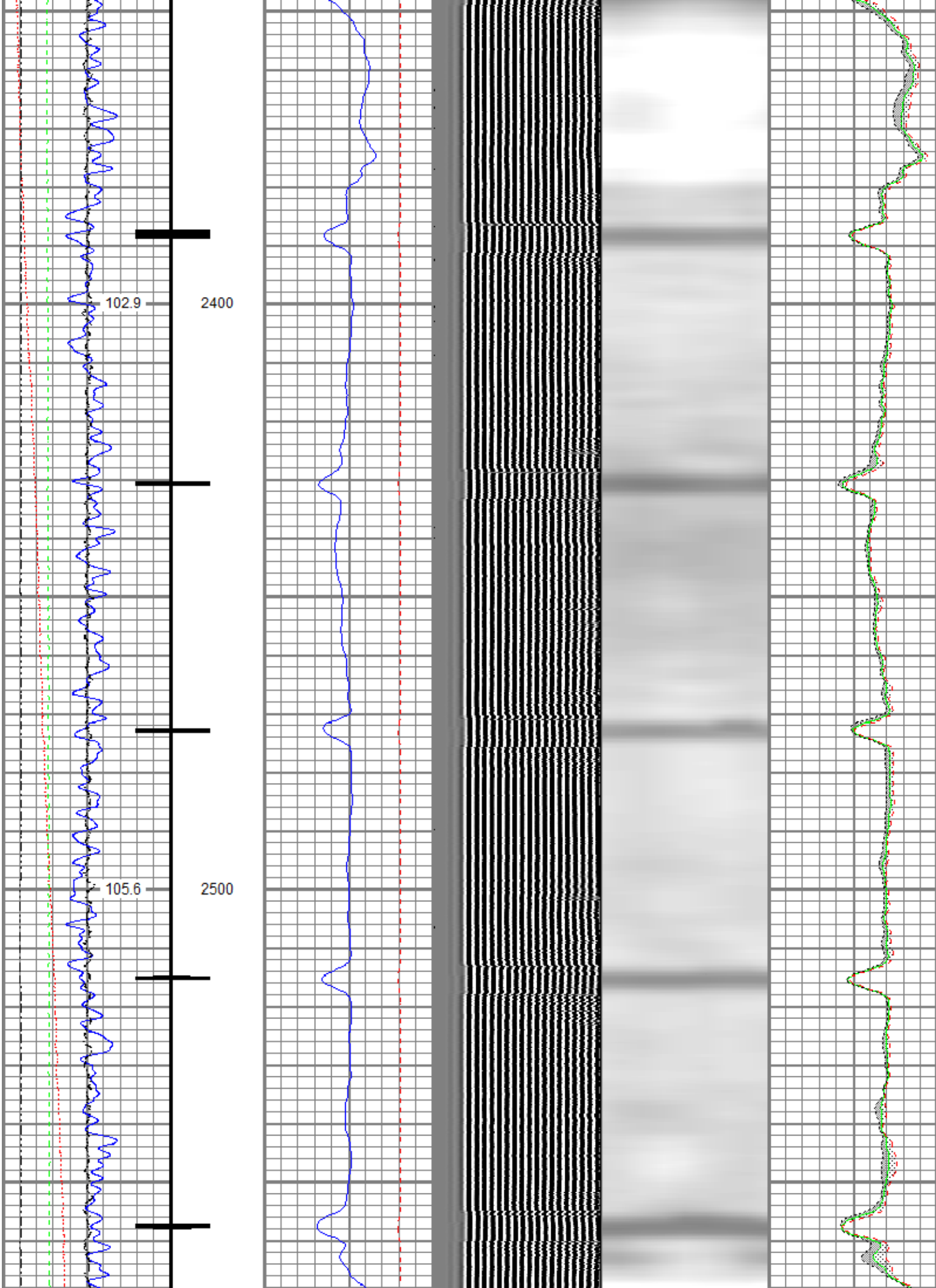


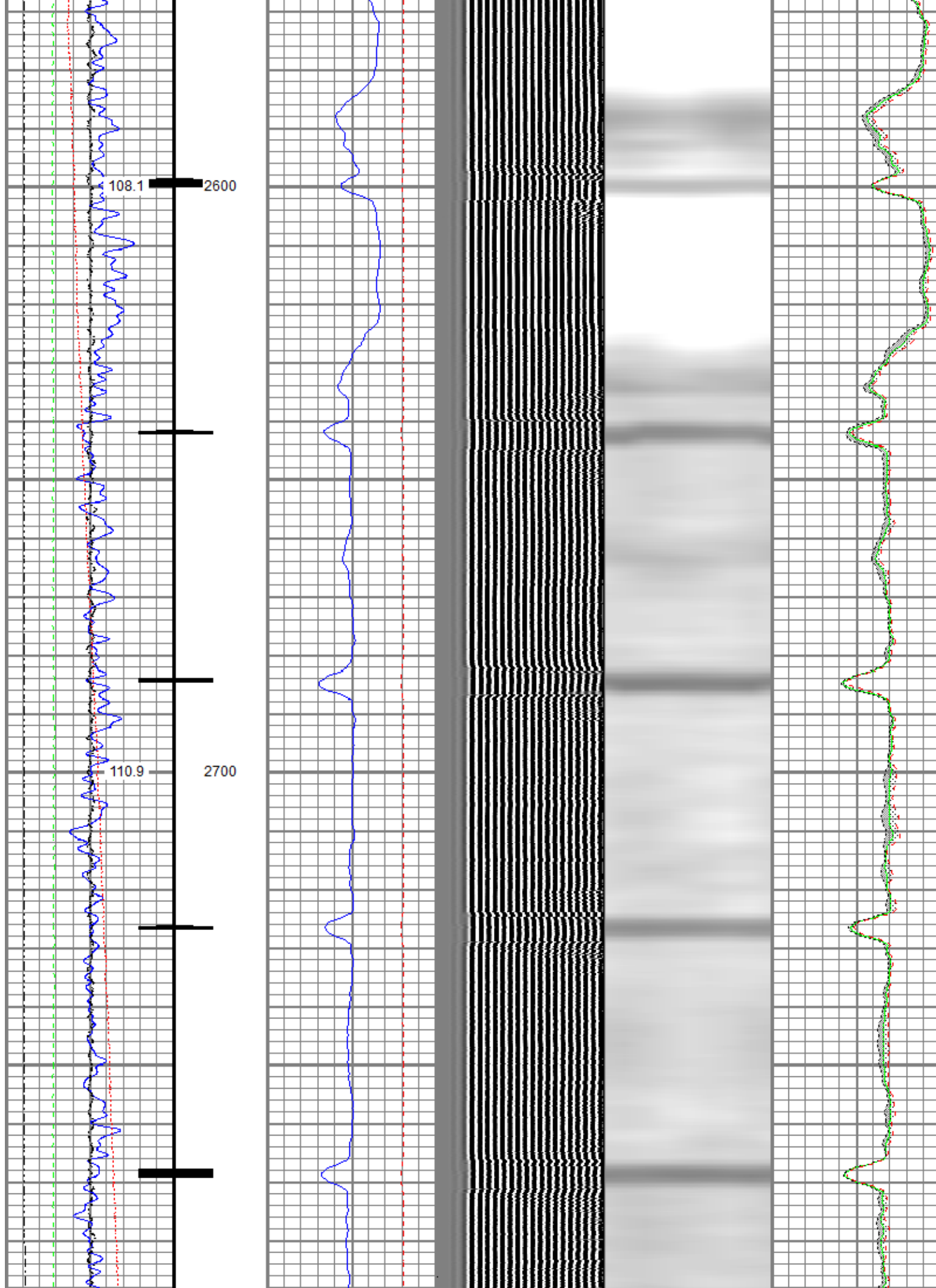


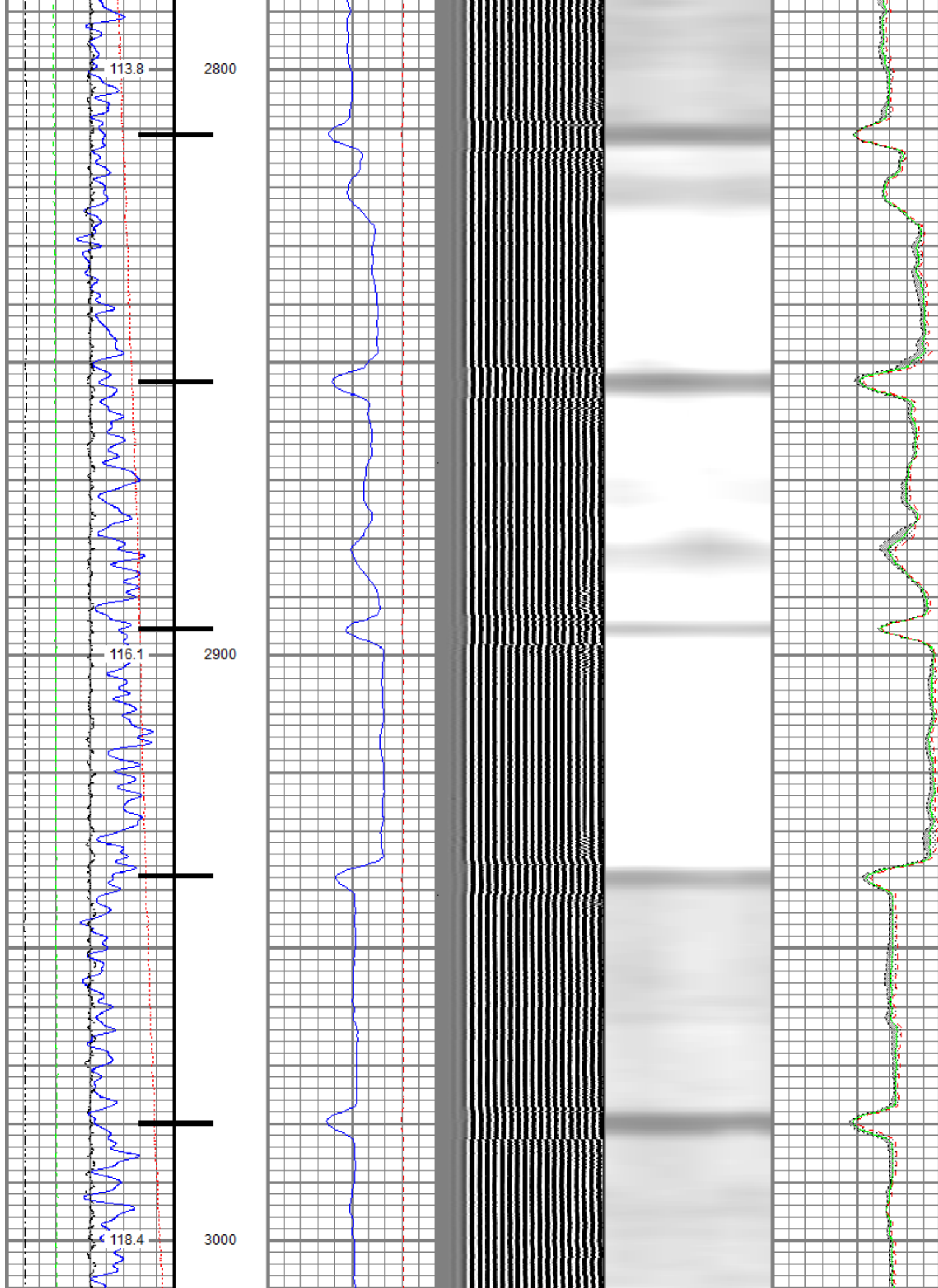


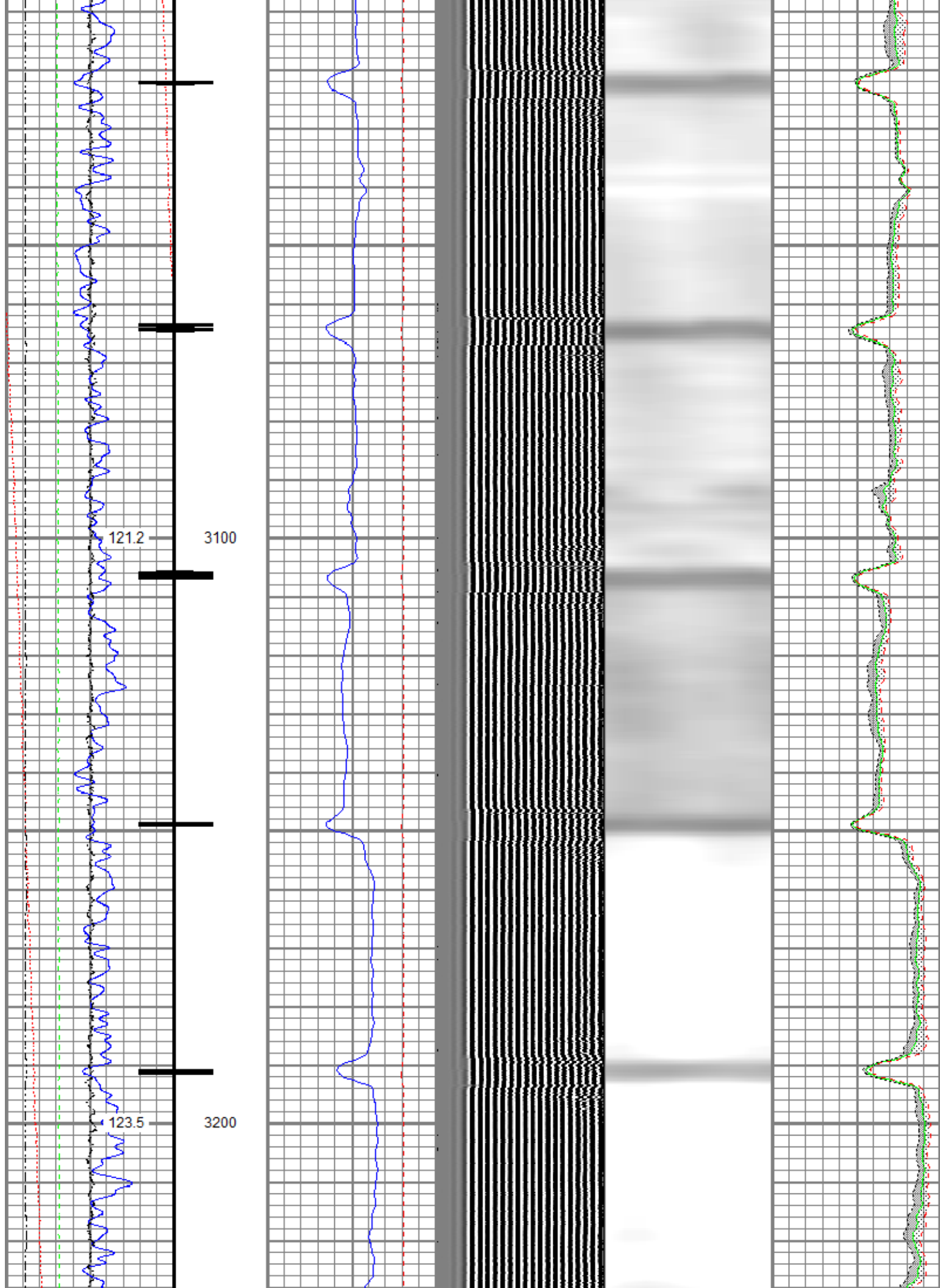


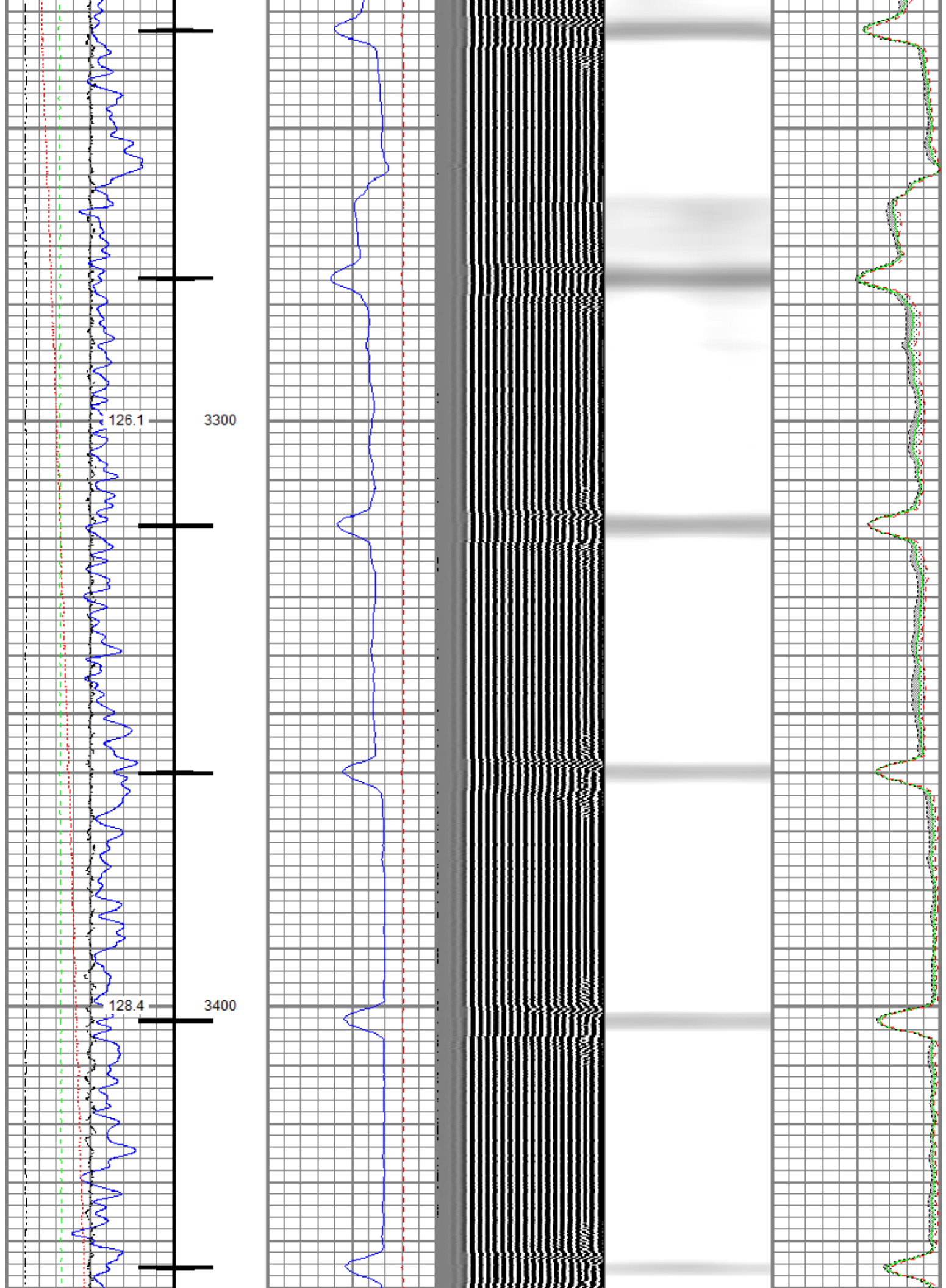


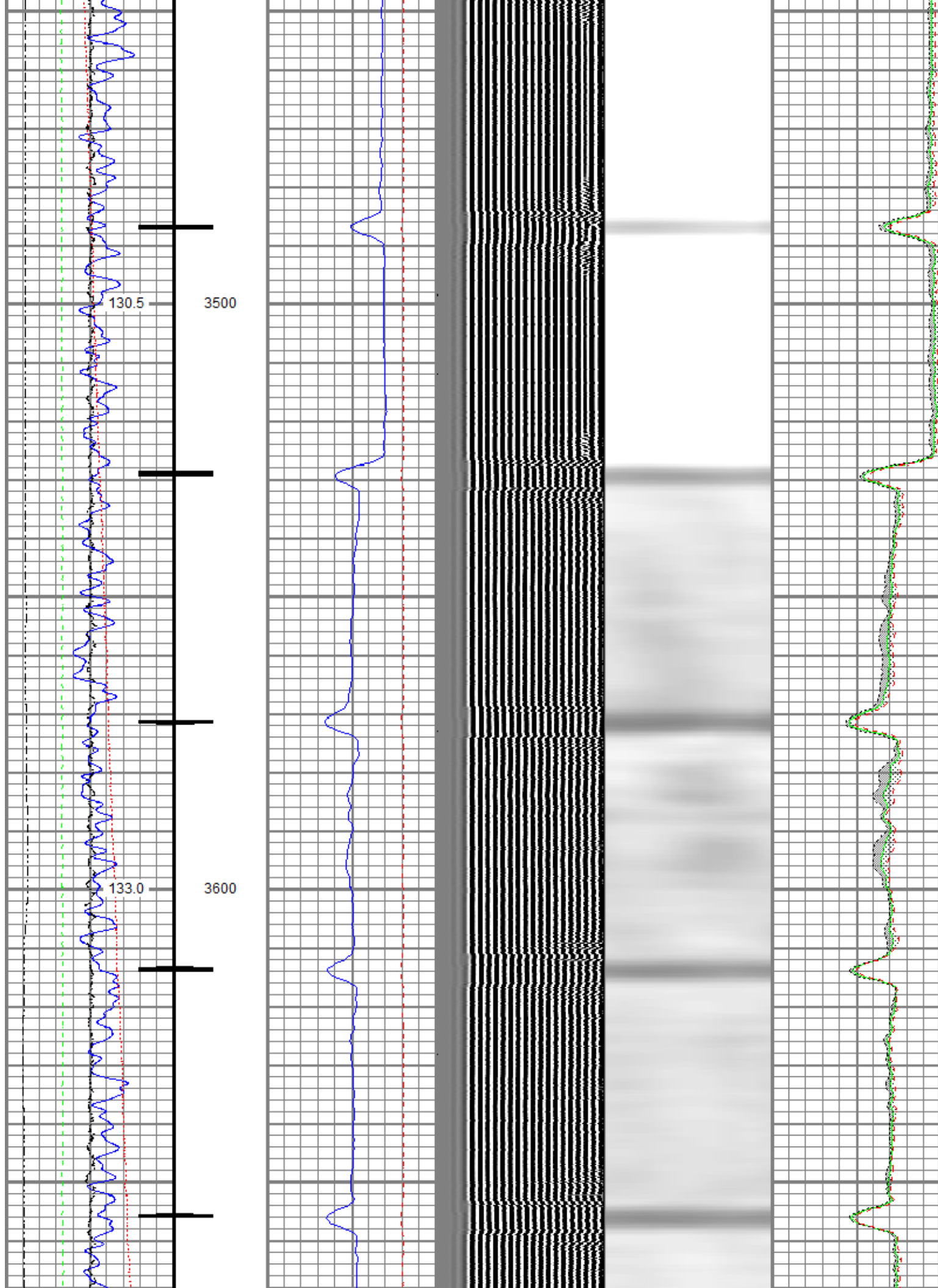


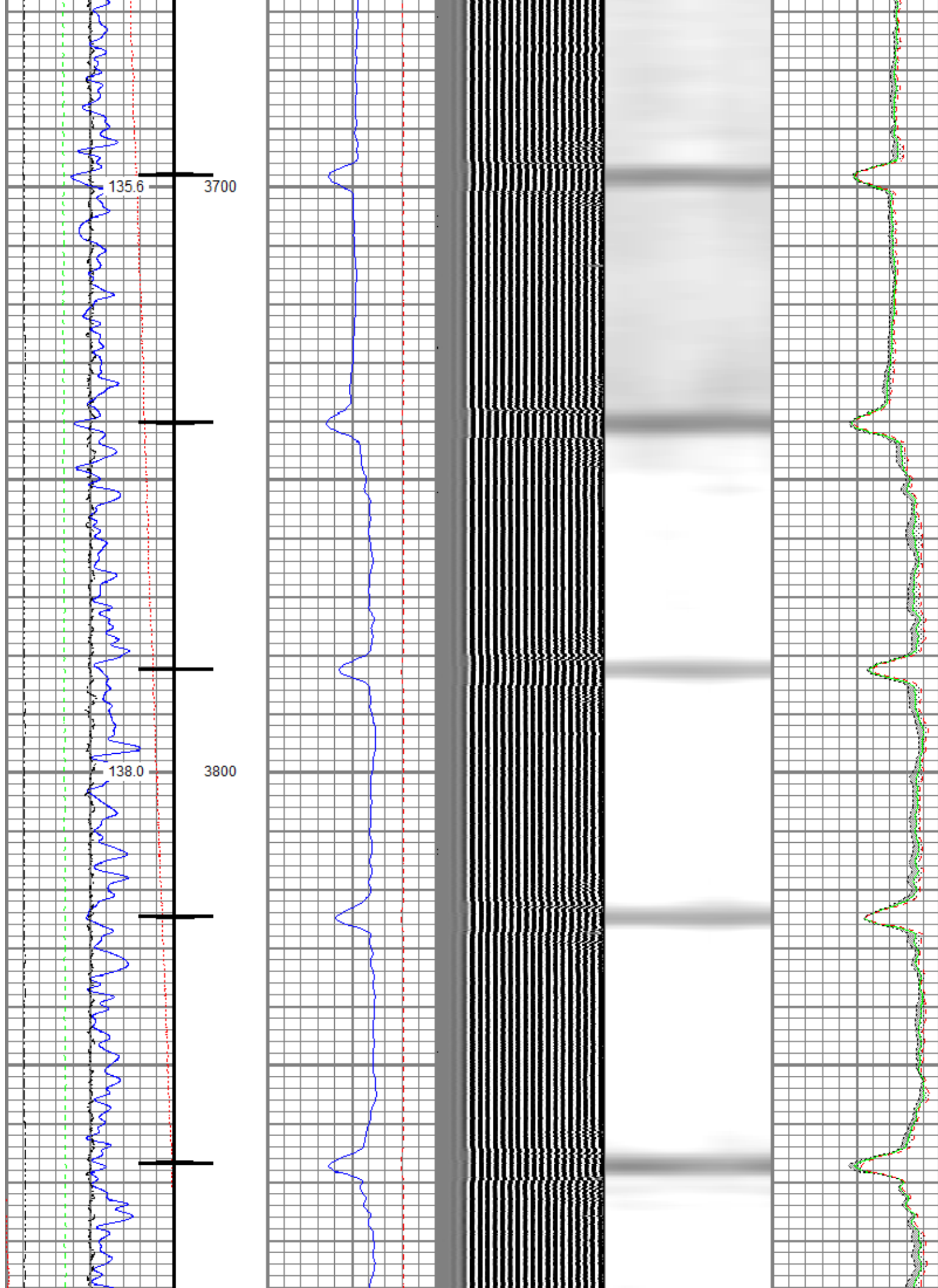


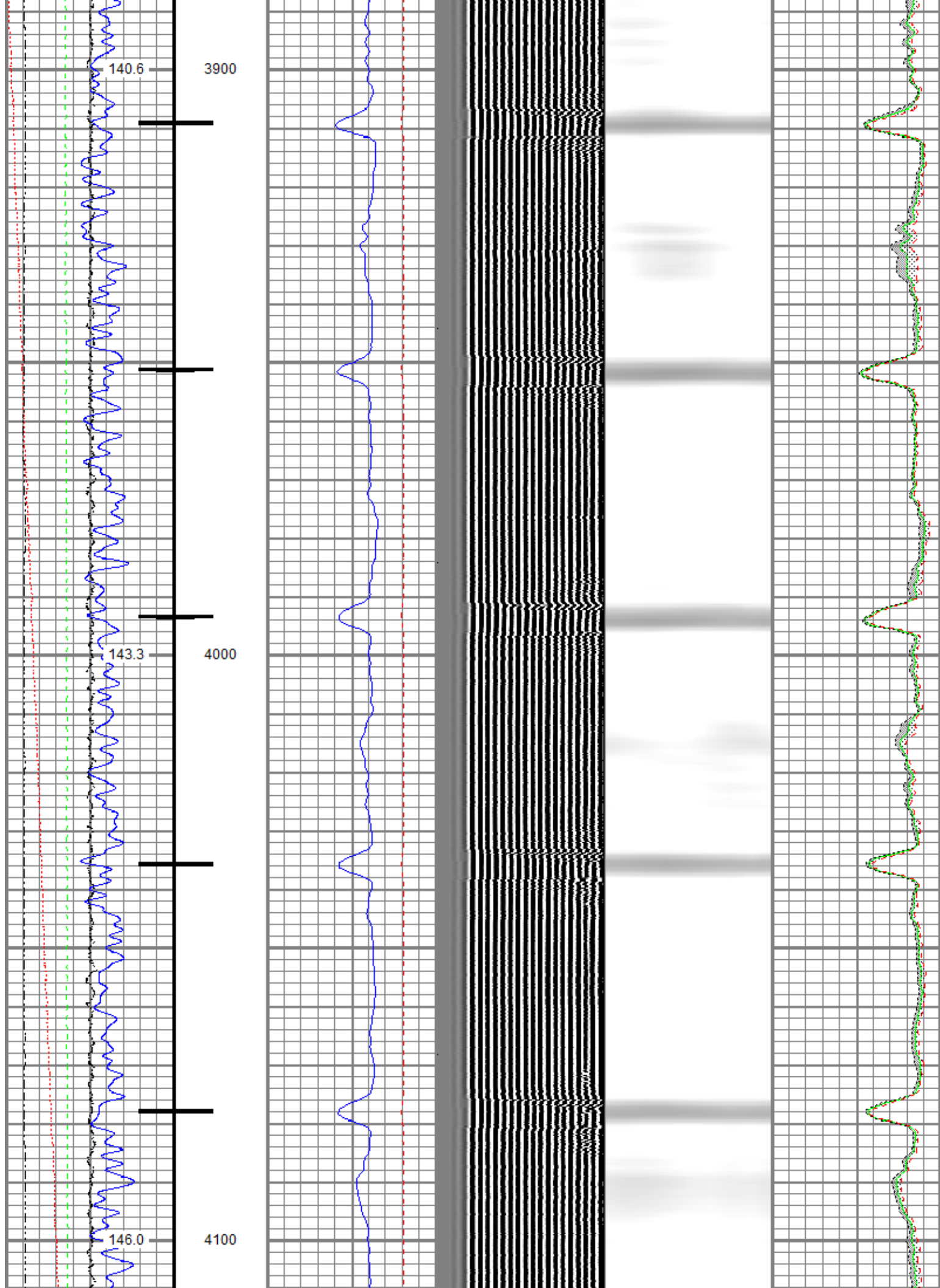


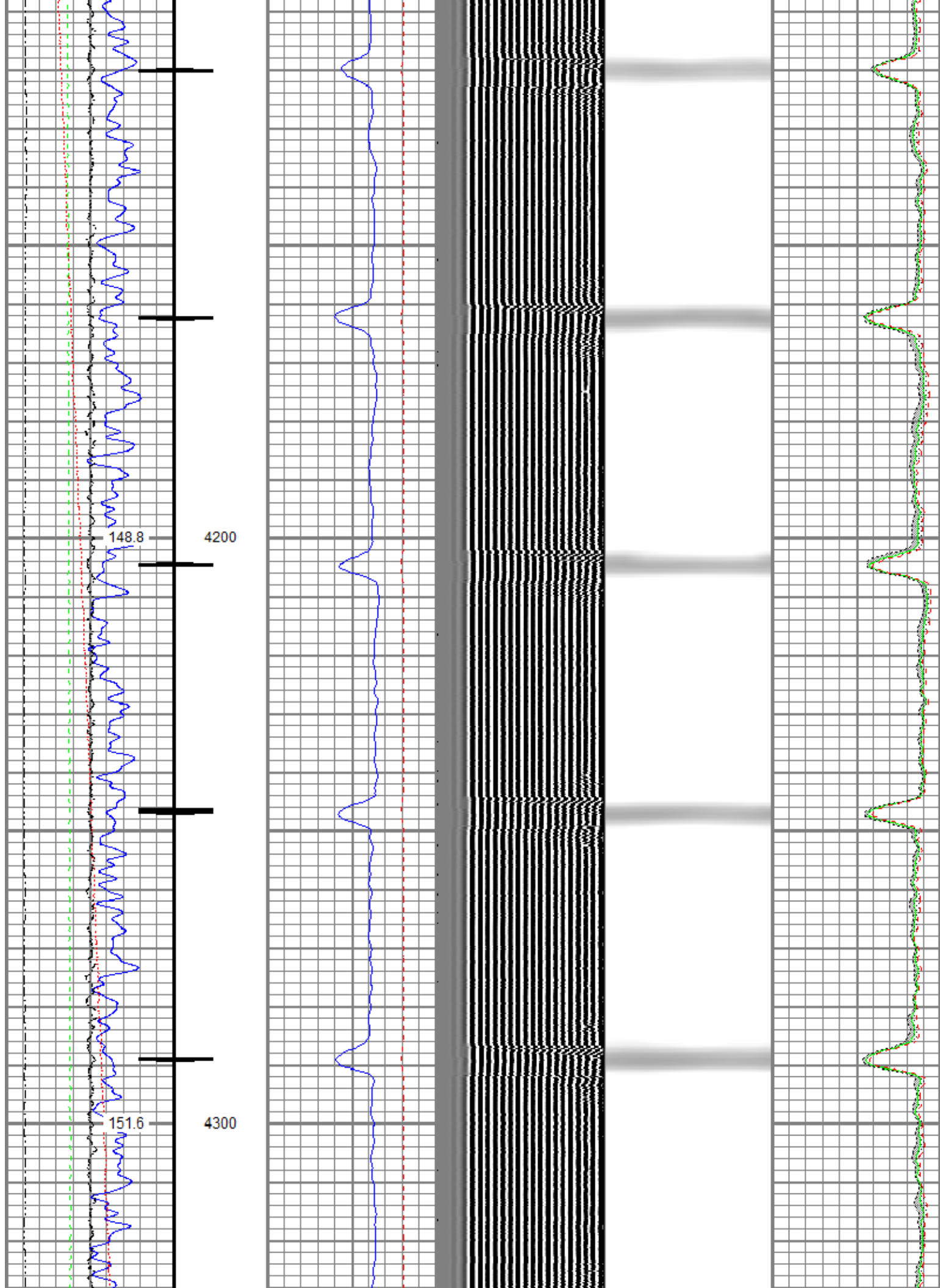


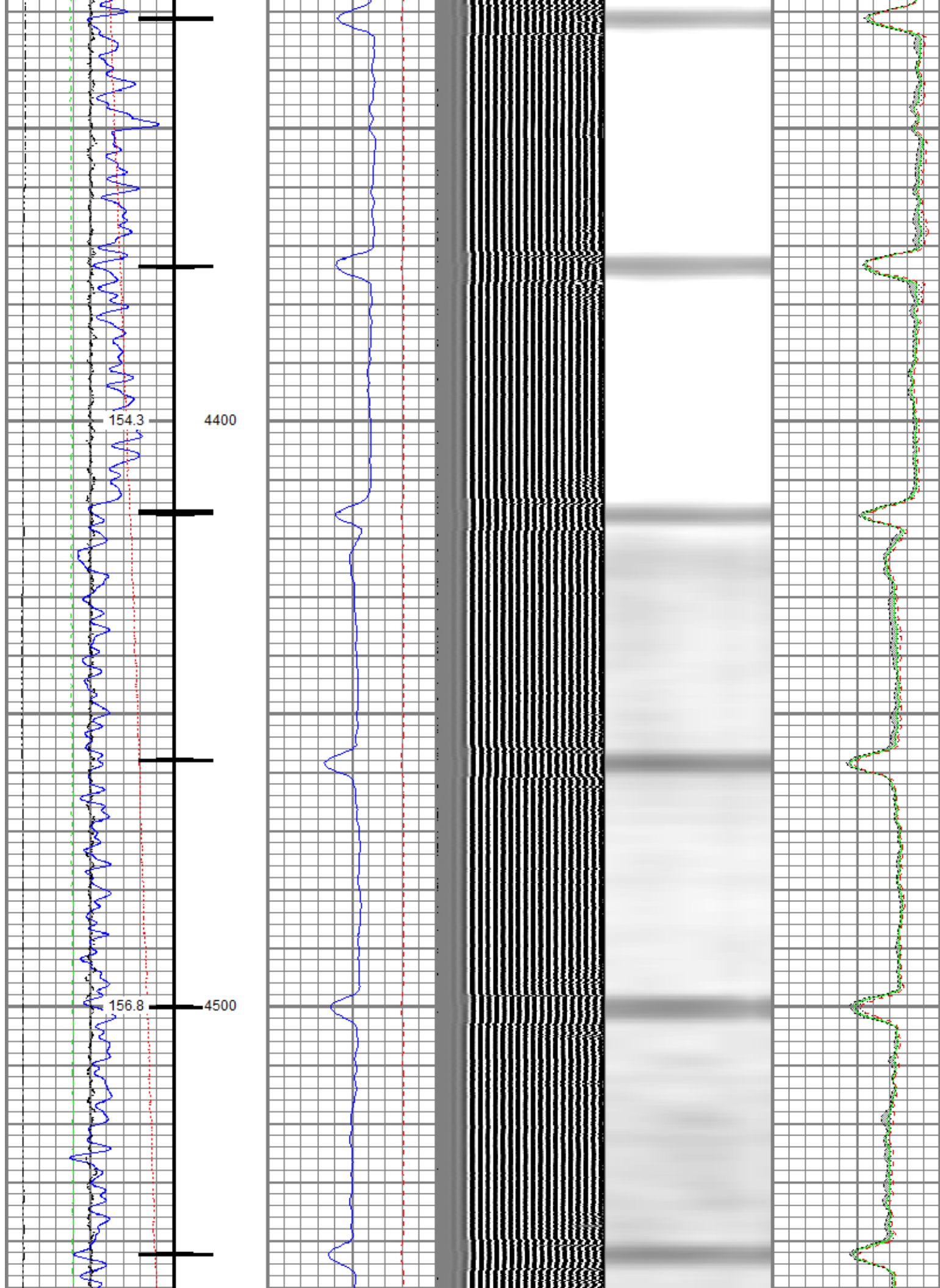


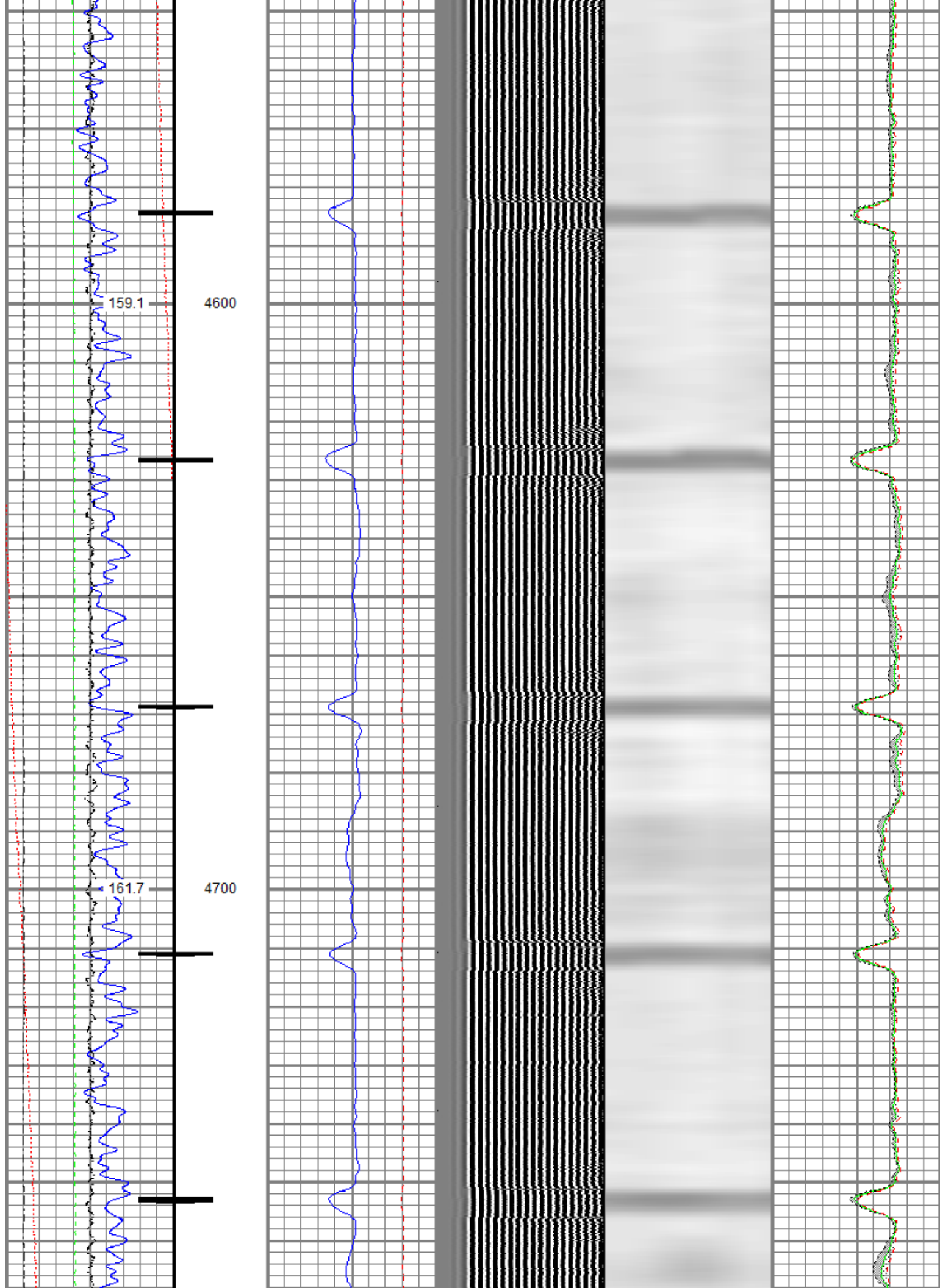


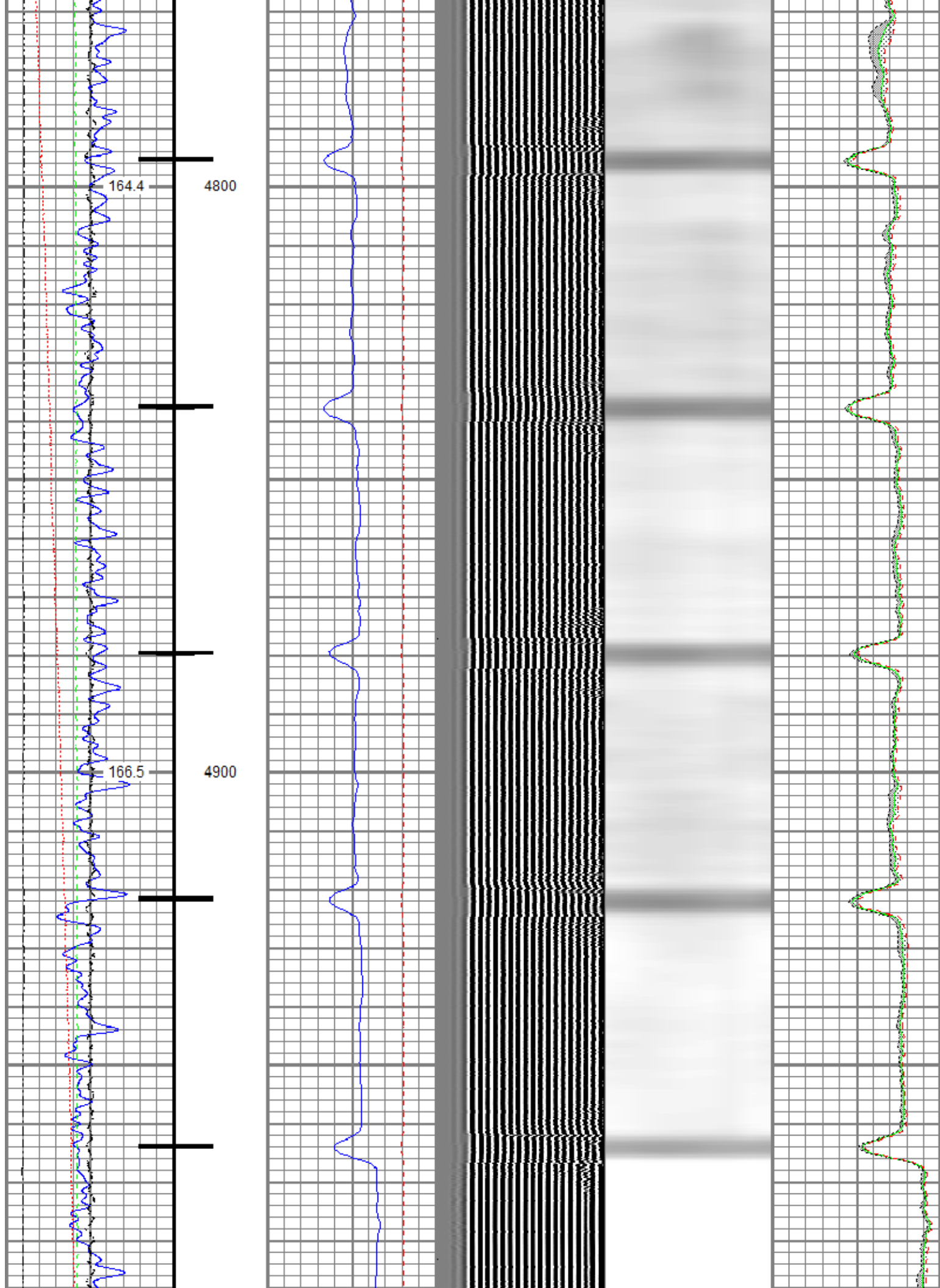


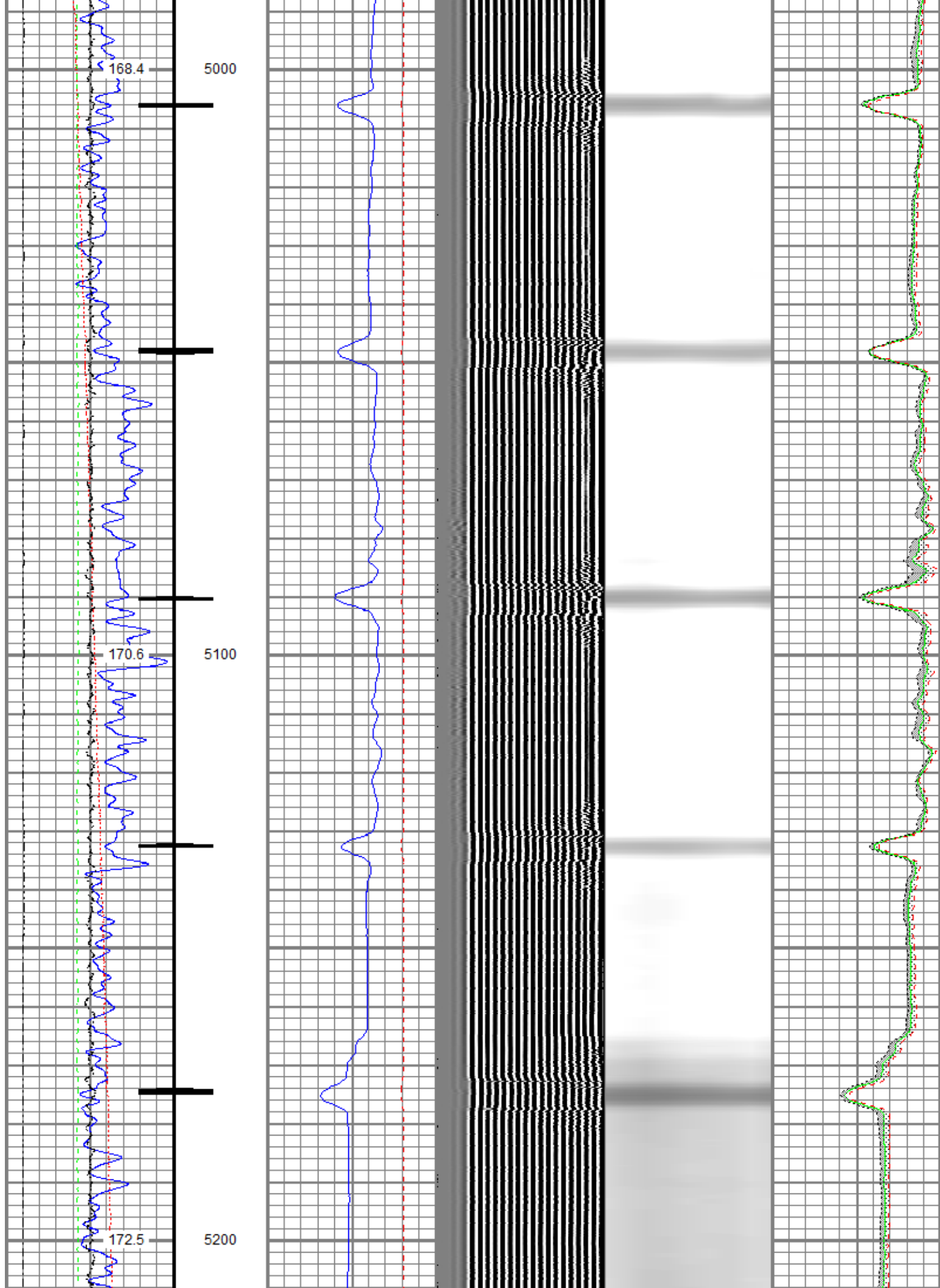


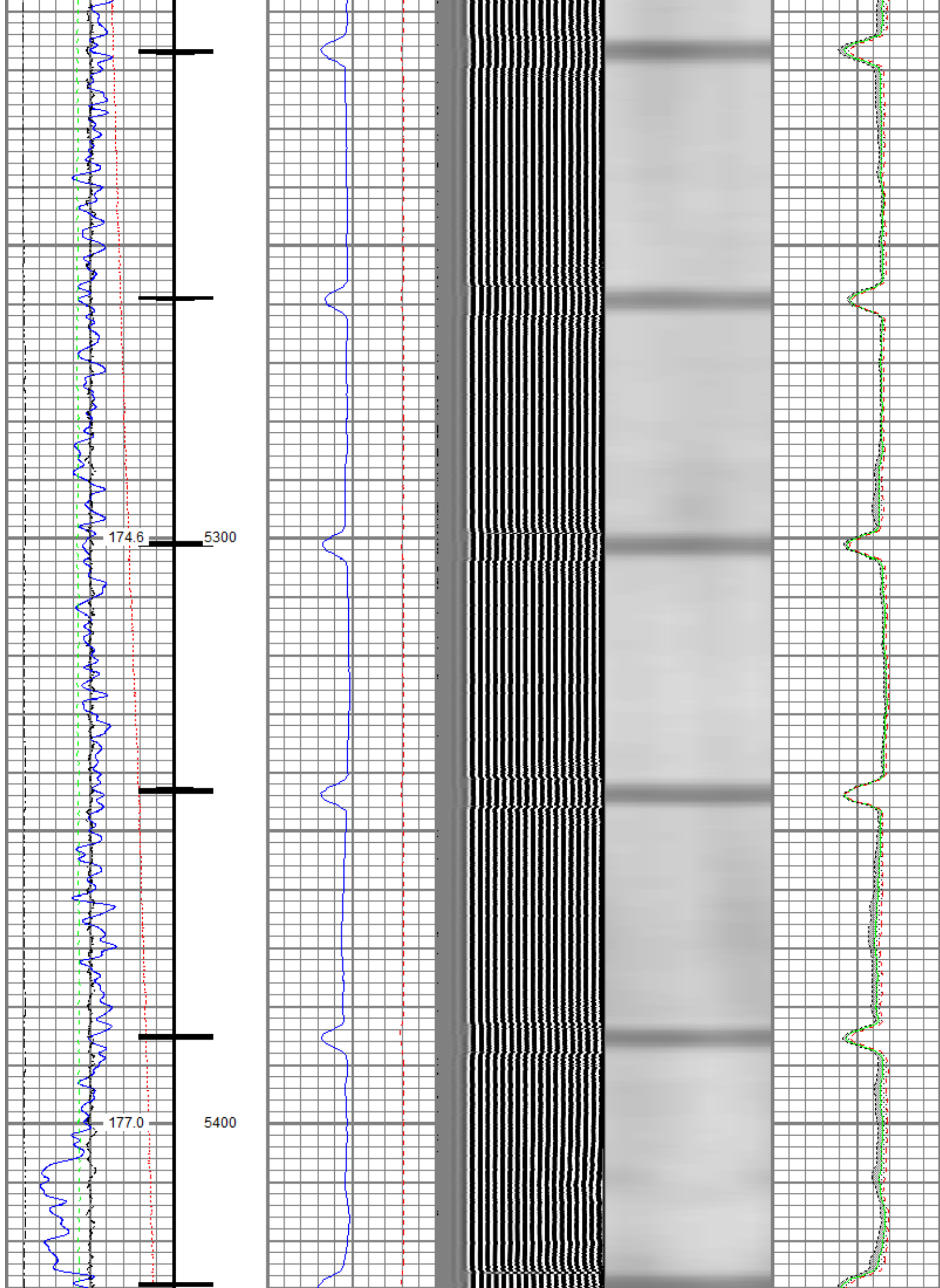


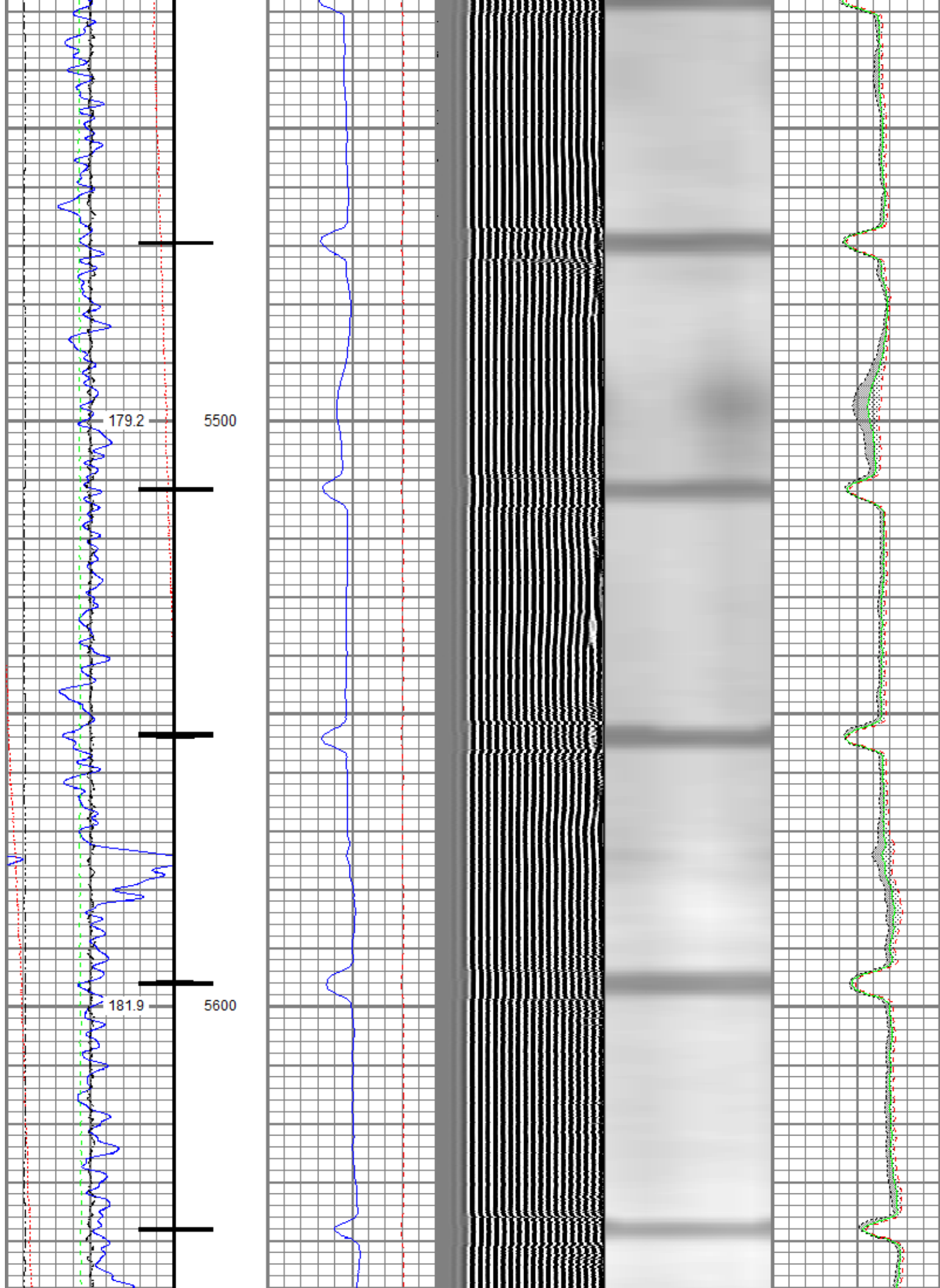


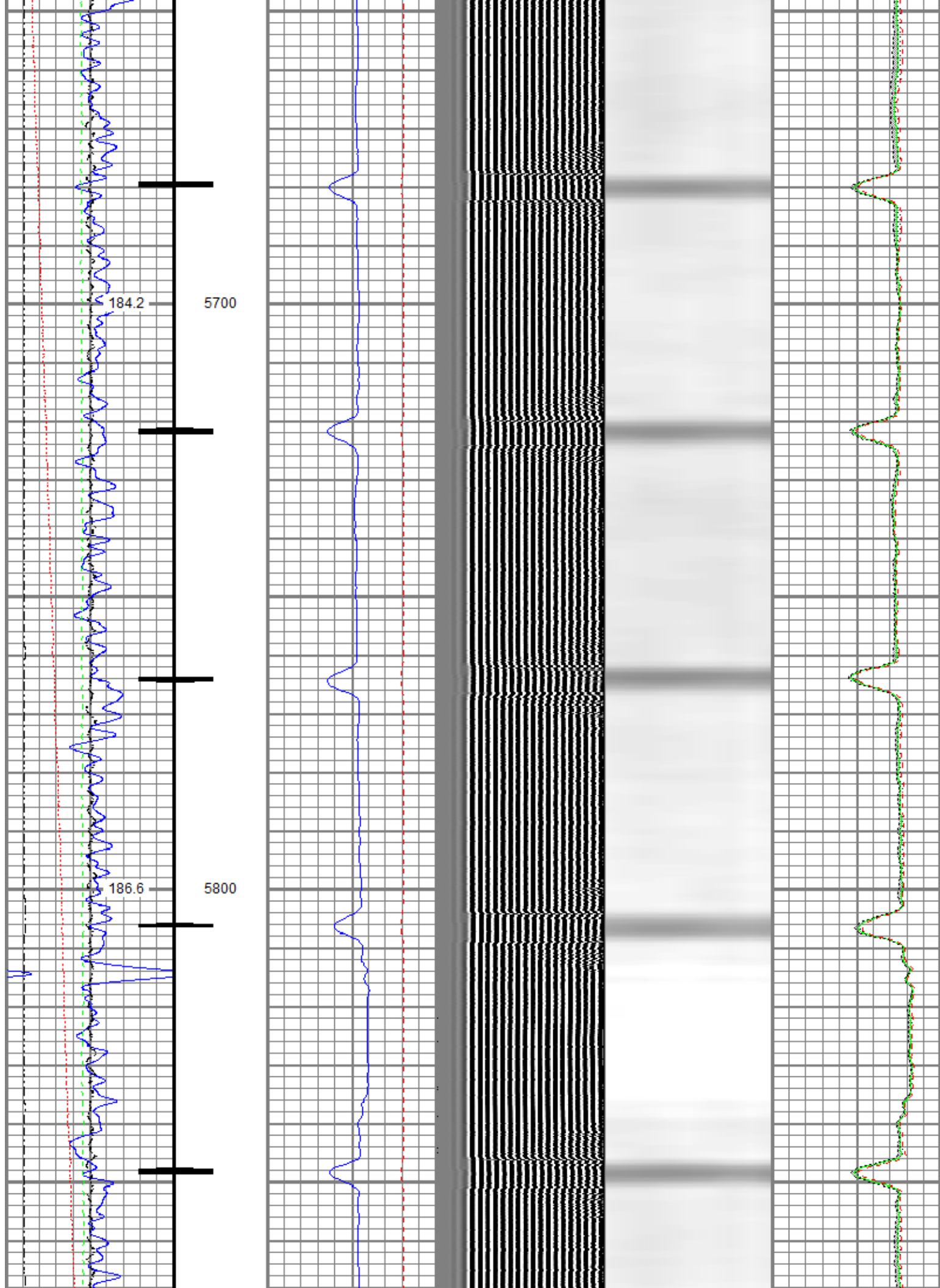


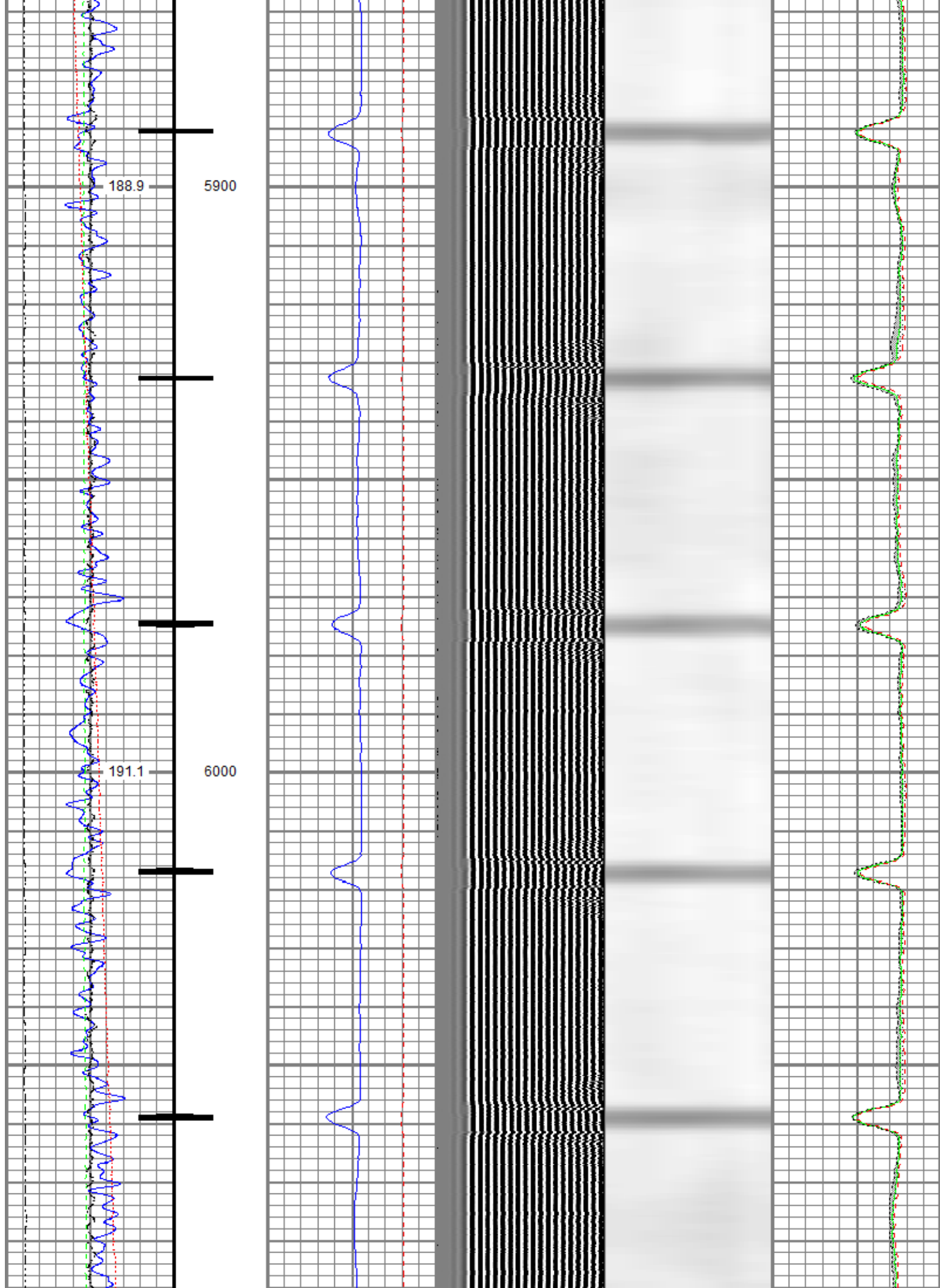


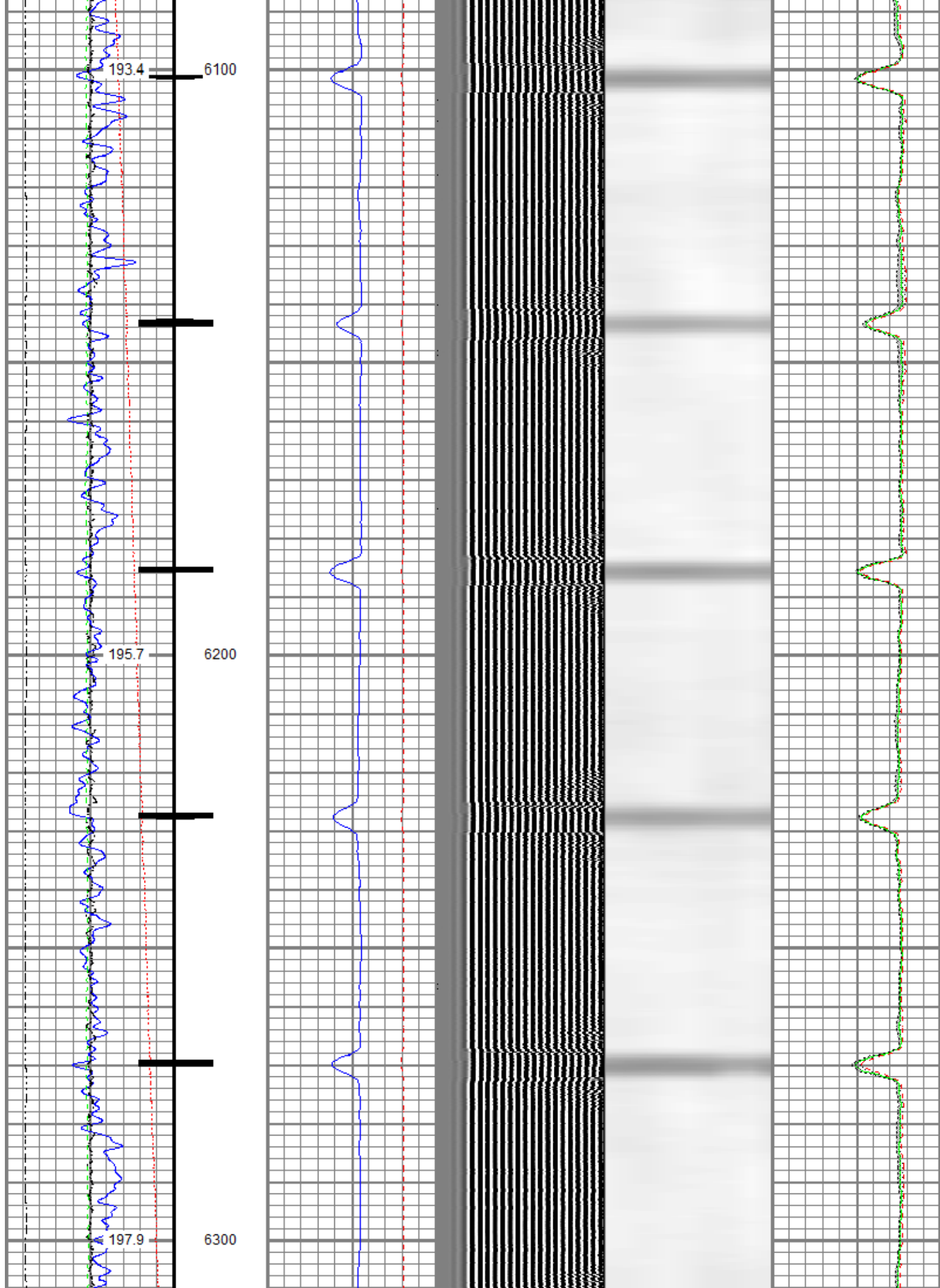


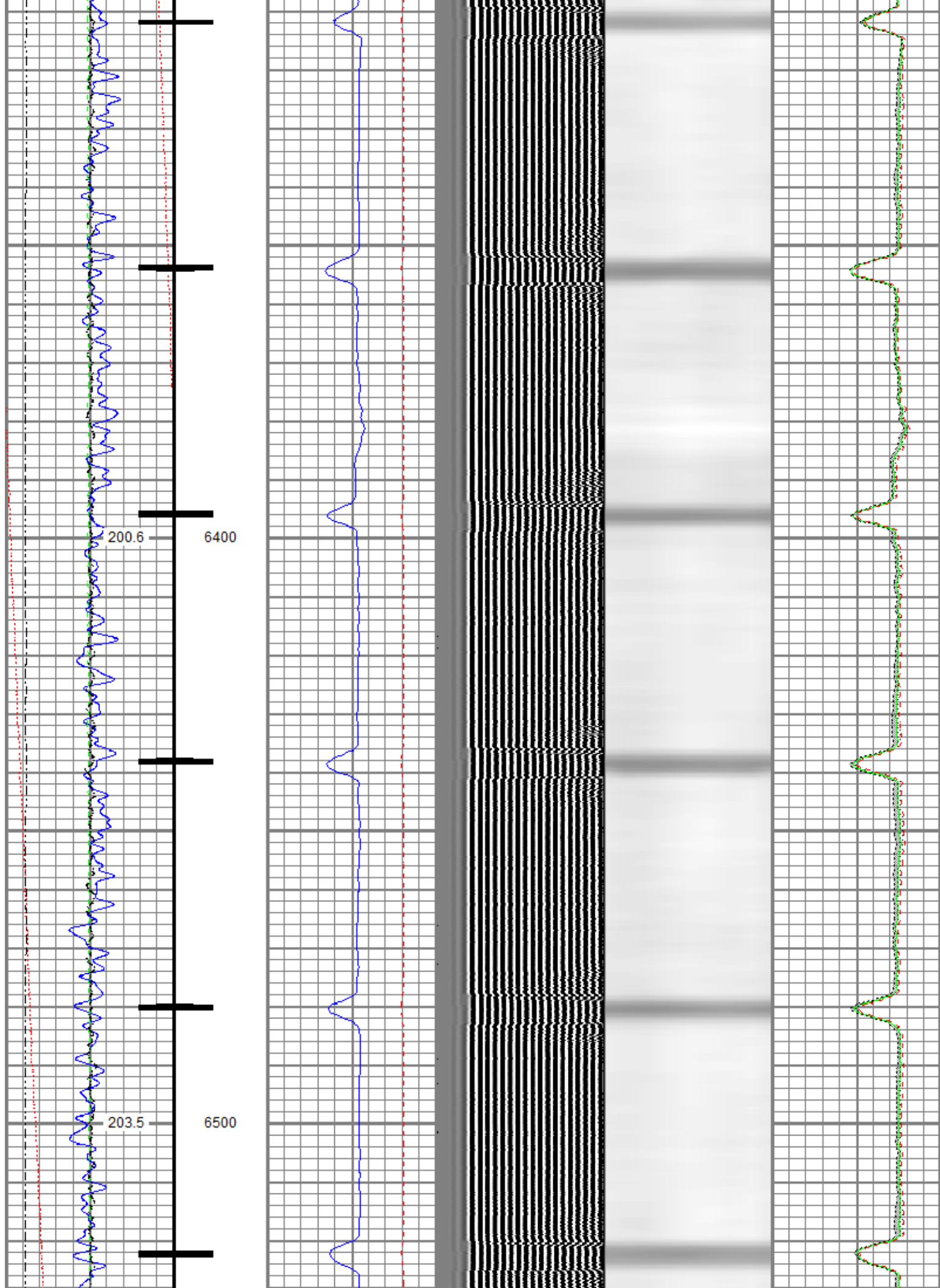


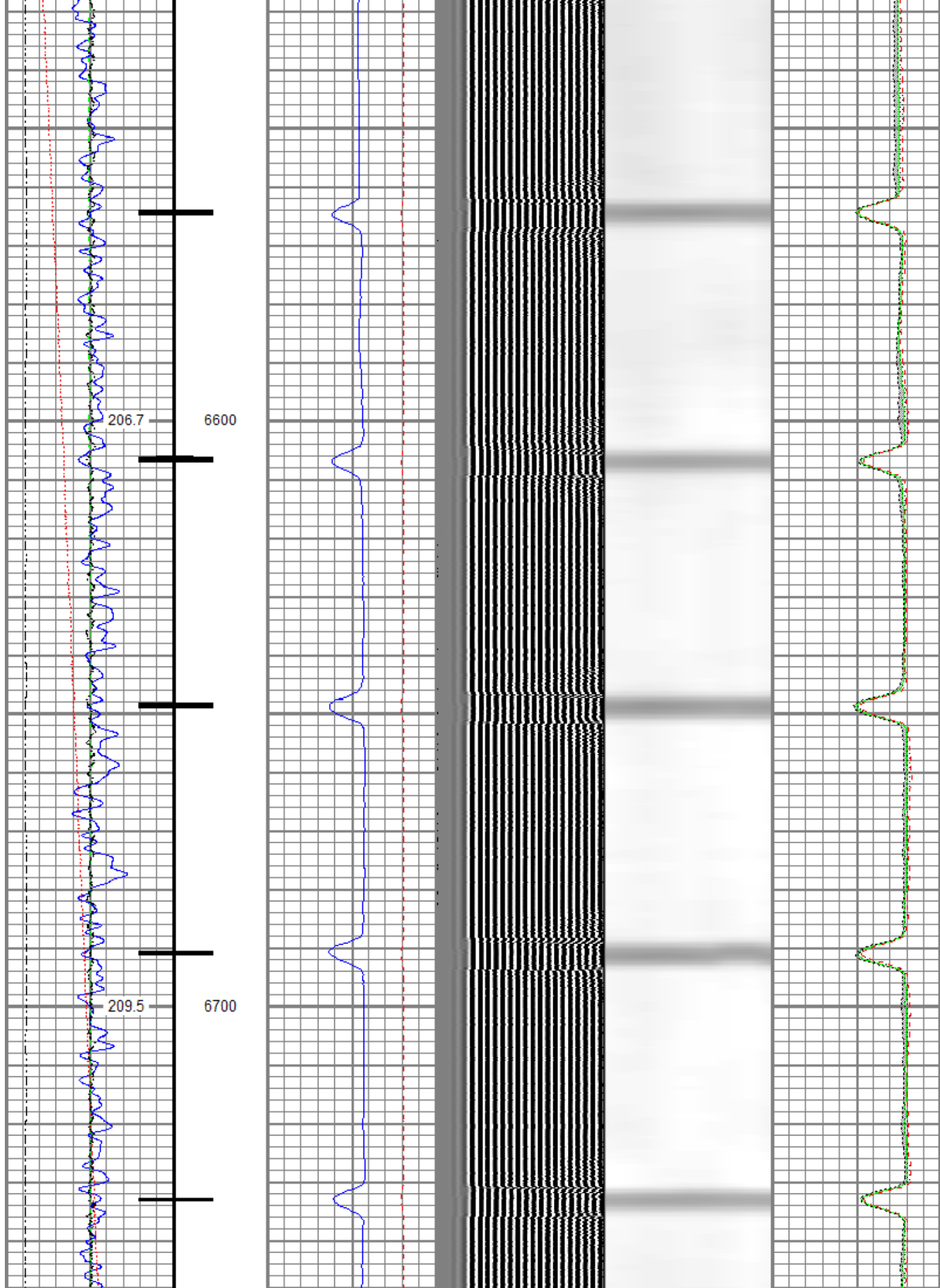


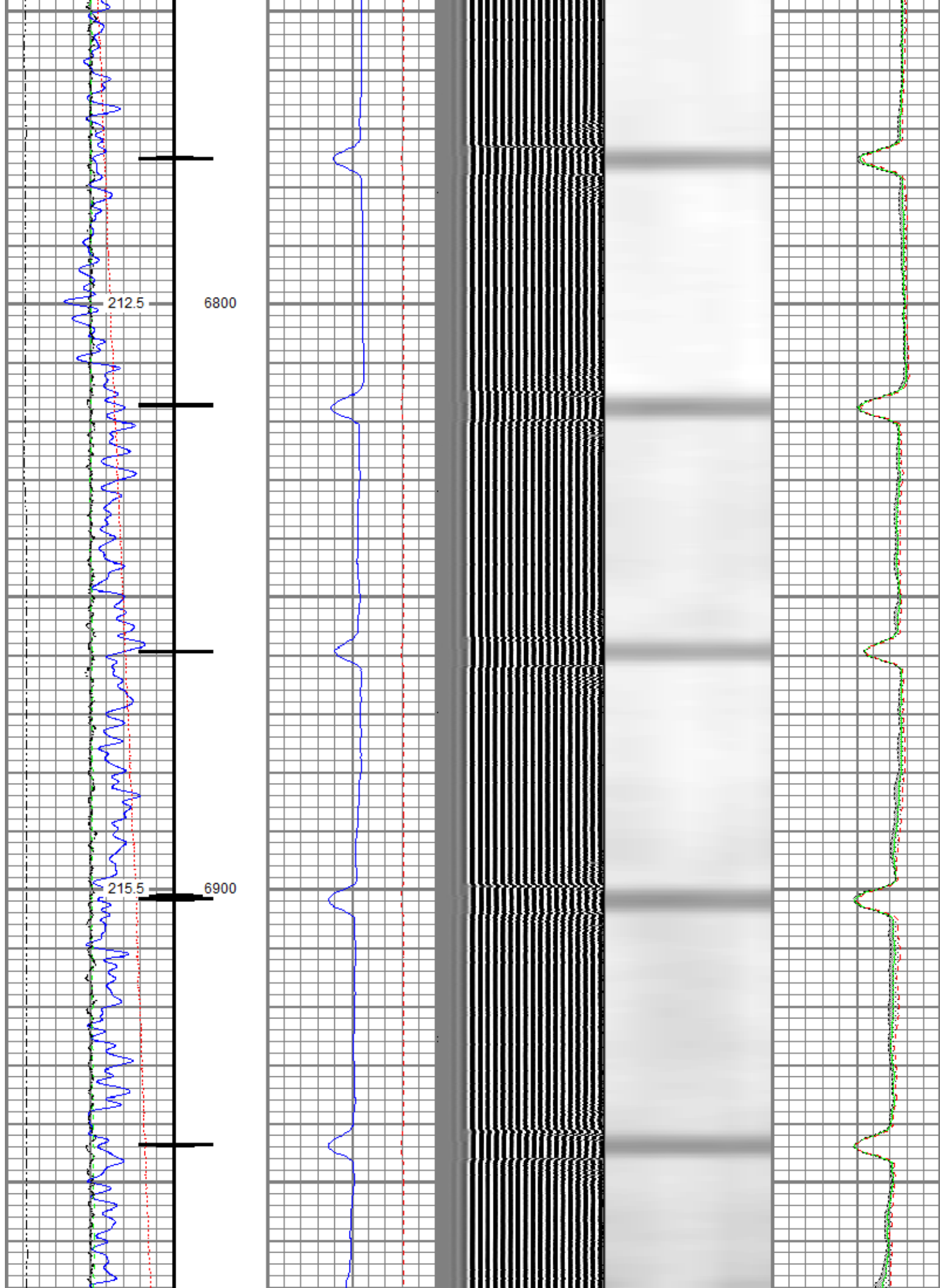


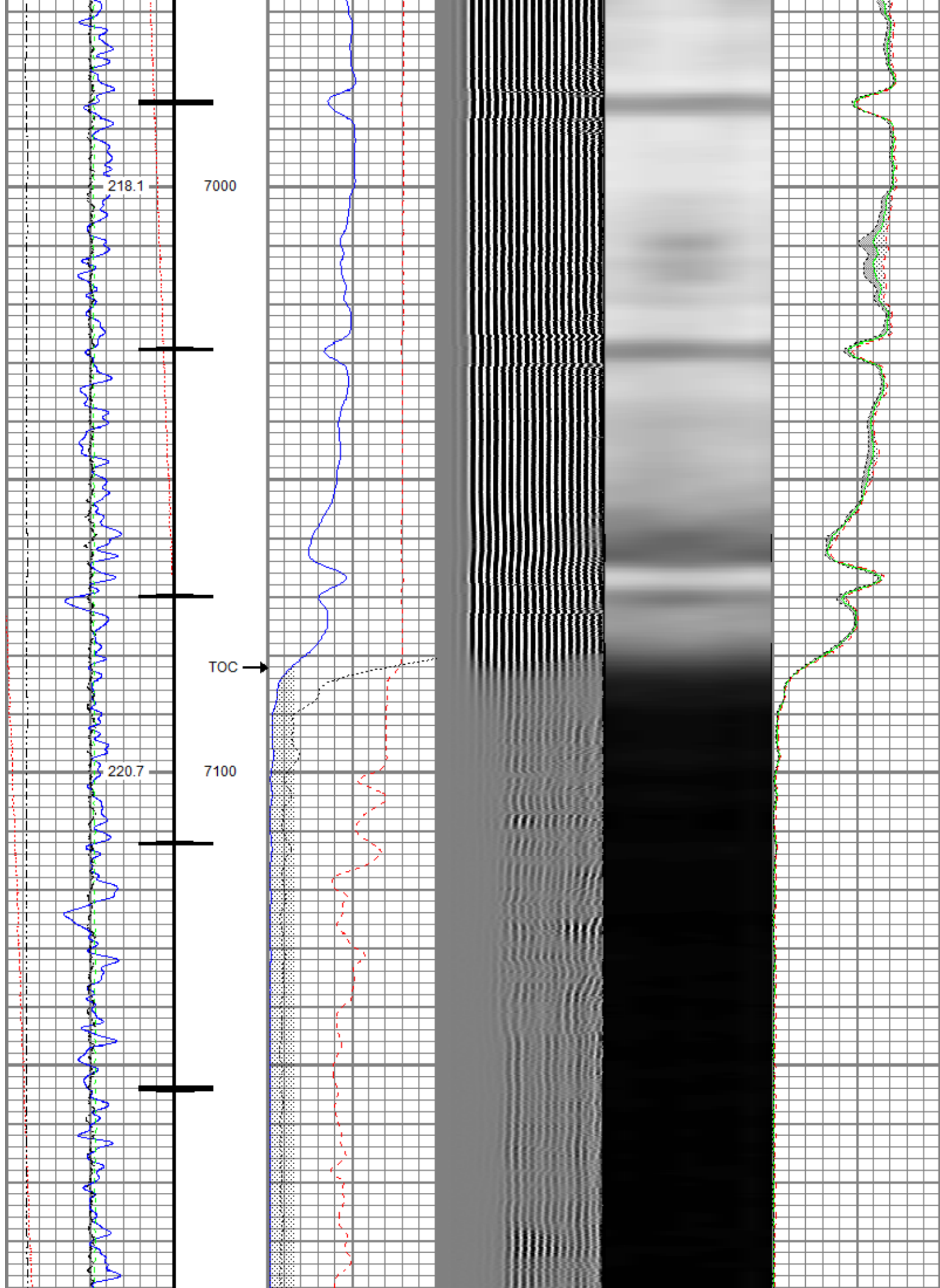


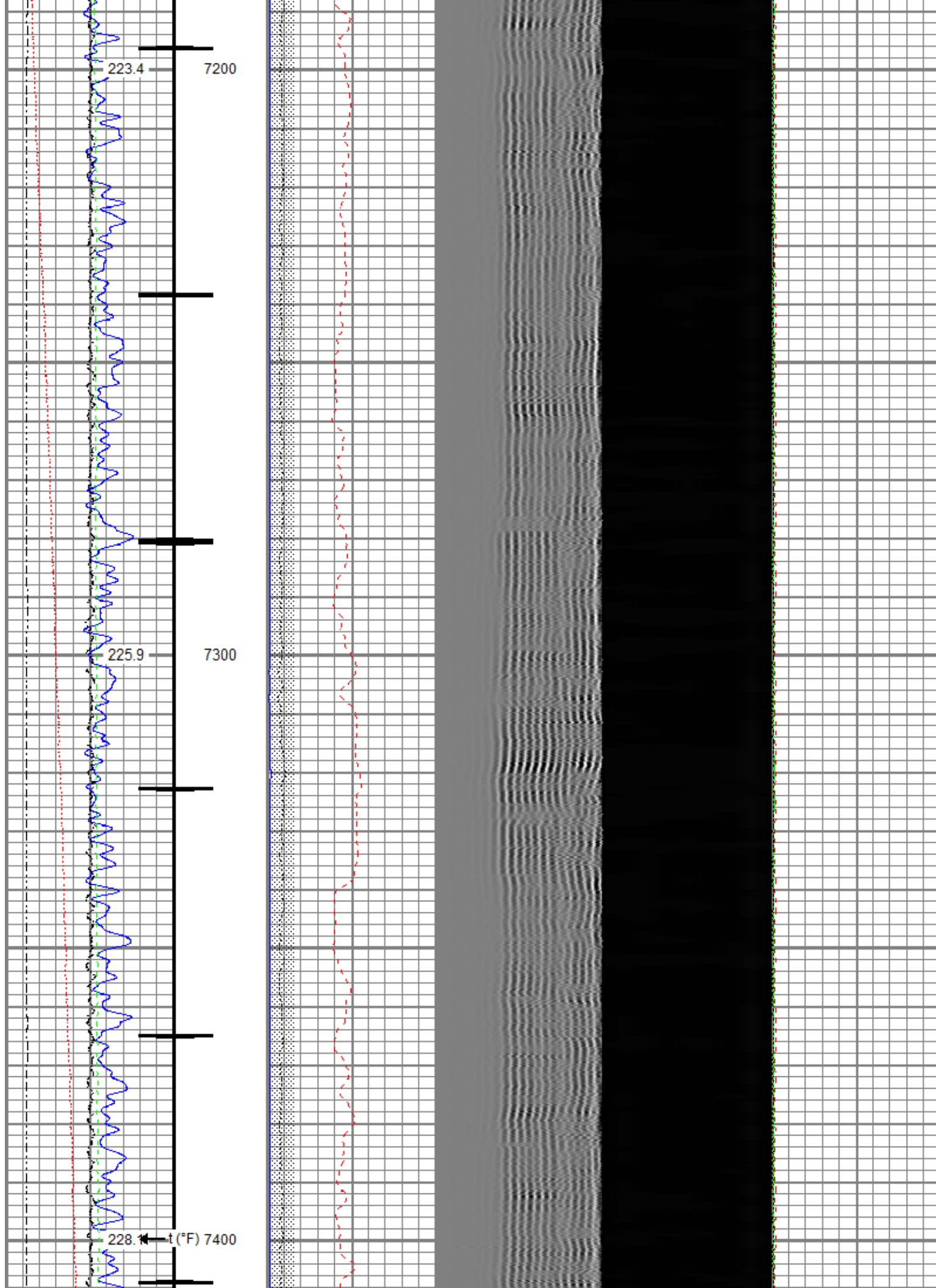


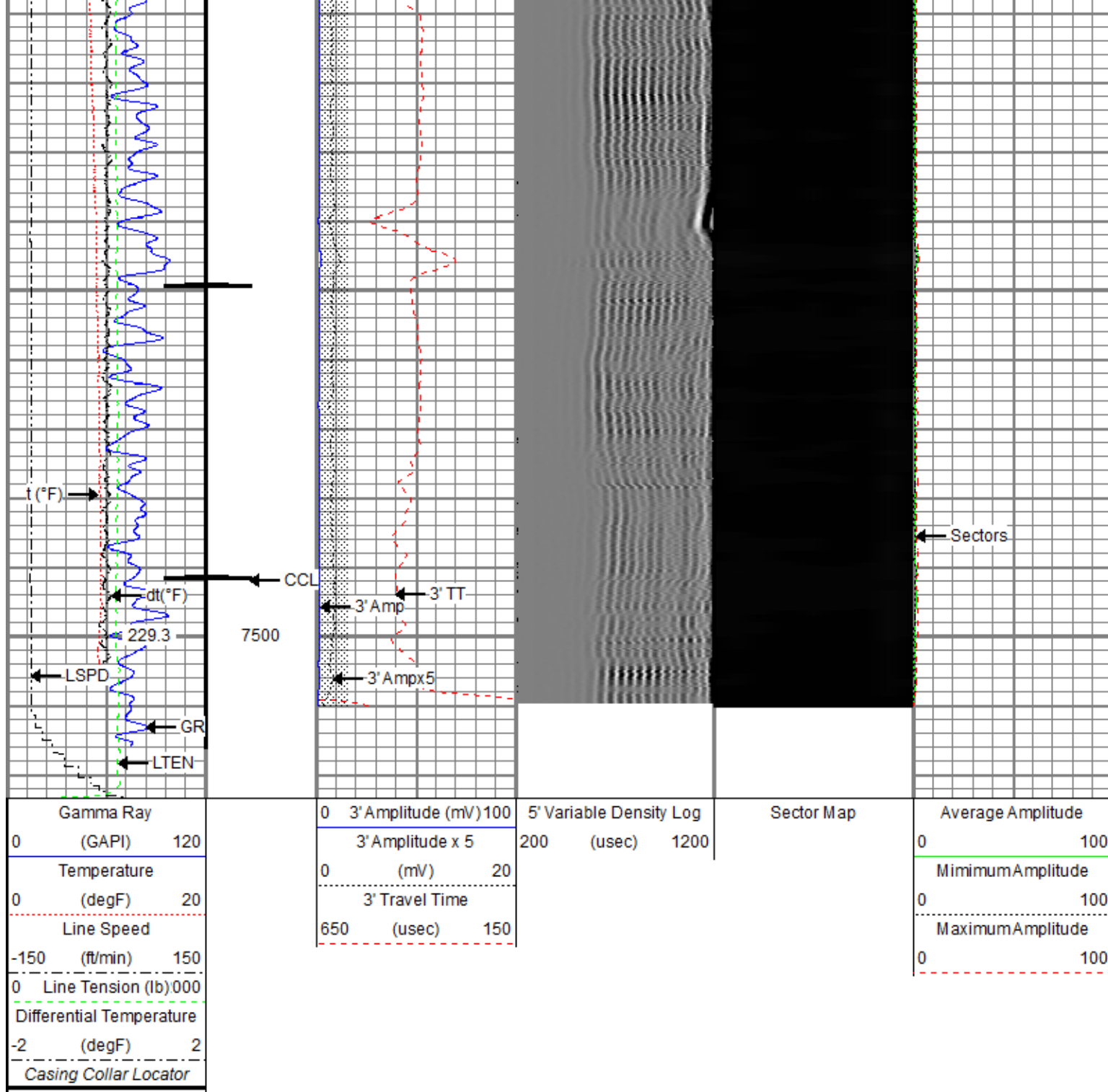








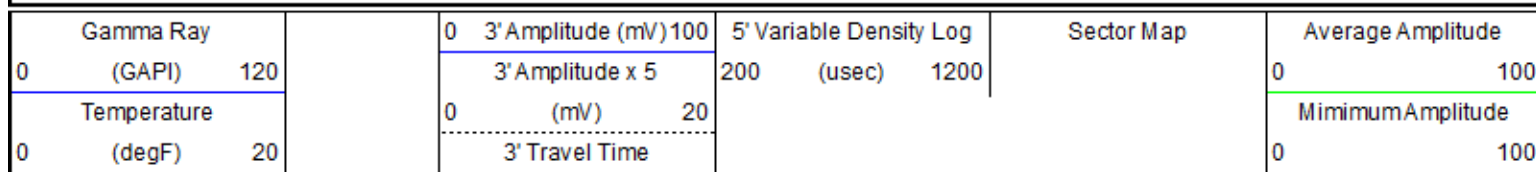




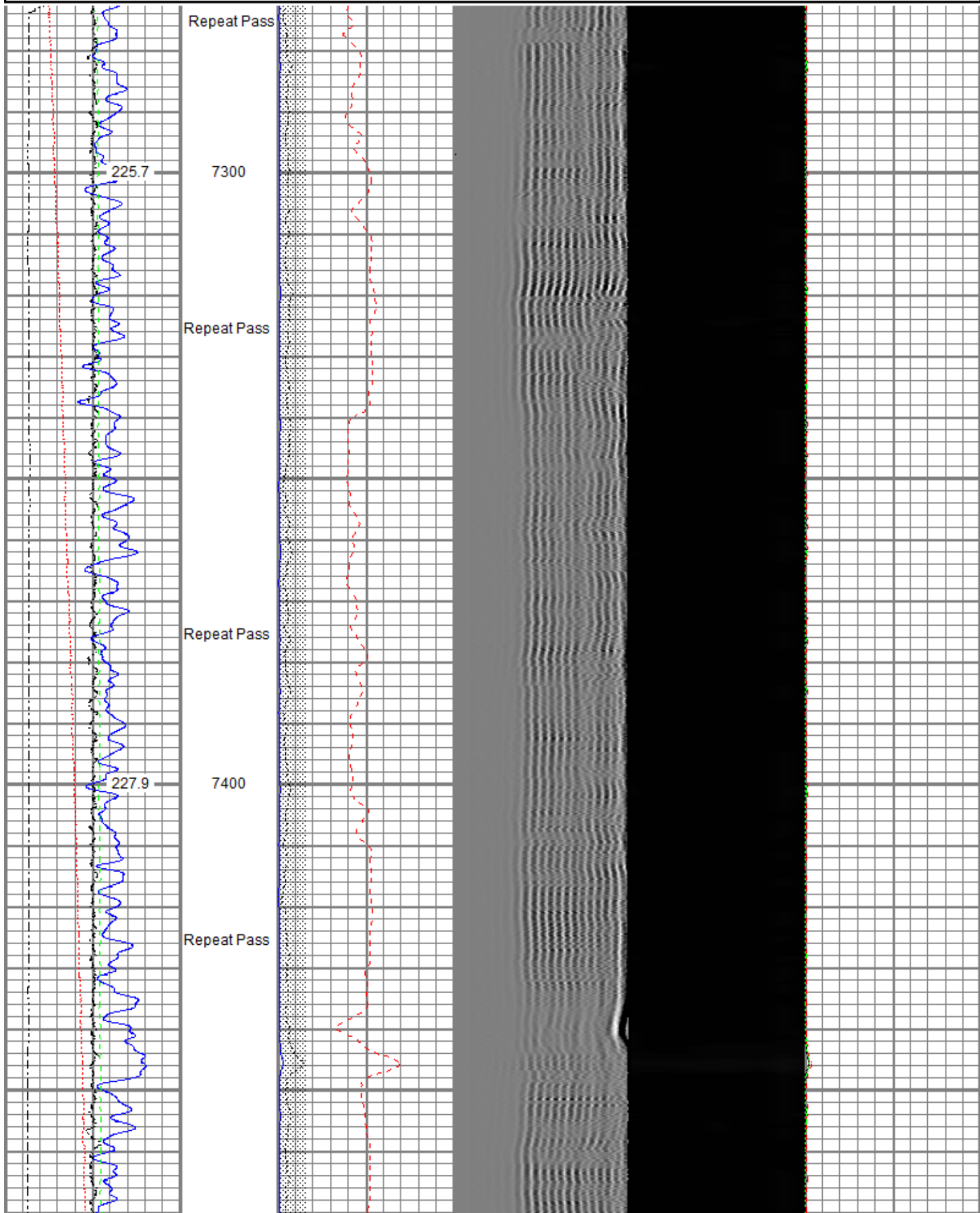
Repeat Pass

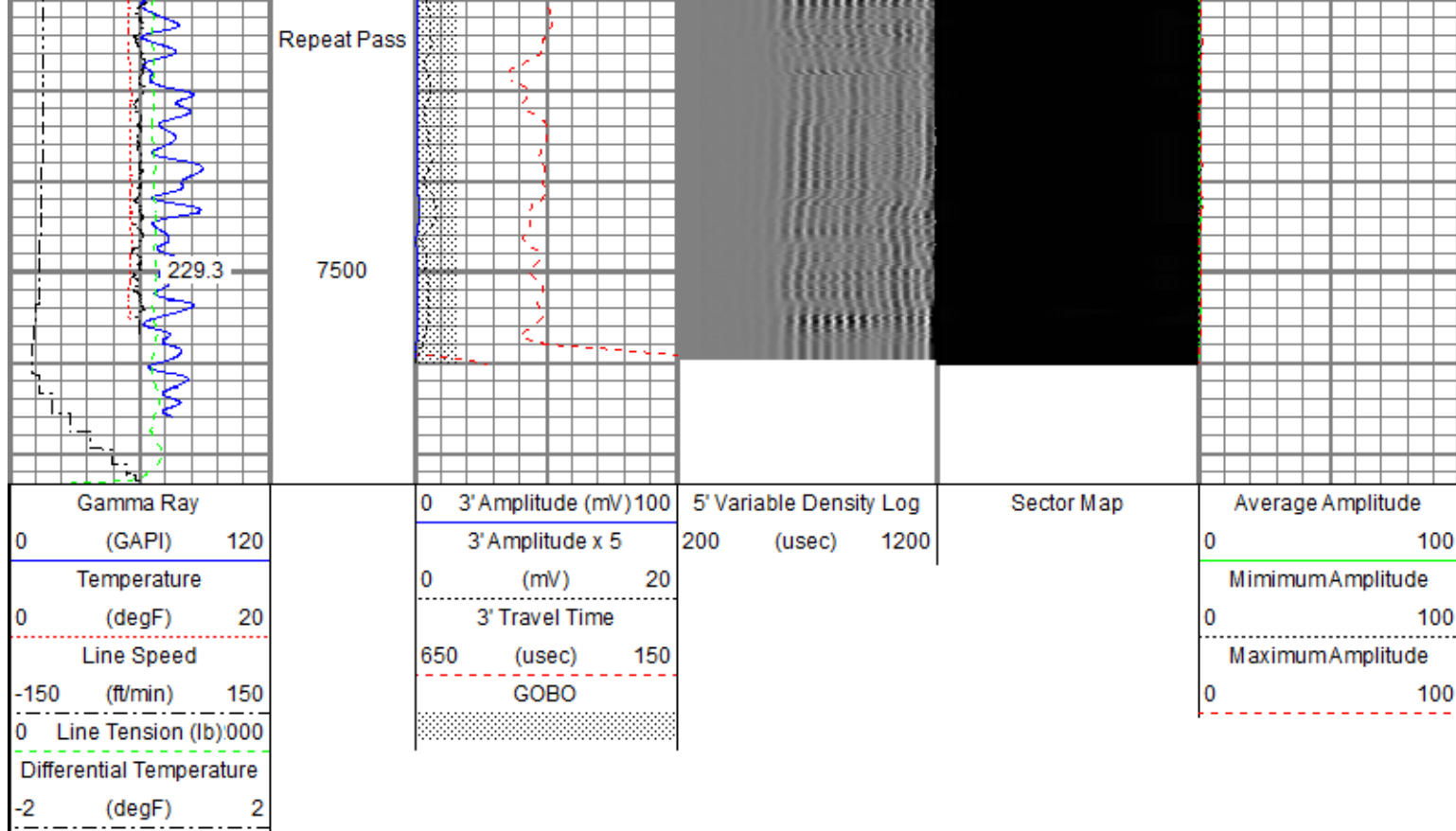
Recorded With 0 PSI Surface Induced Pressure

Database File anadarko_huber_4-27_rcbl_12_mar_2019.db
 Dataset Pathname RCBL/pass2
 Presentation Format ros_radii_anadarko_vert_gobo_45
 Dataset Creation Tue Mar 12 08:30:45 2019
 Charted by Depth in Feet scaled 1:240

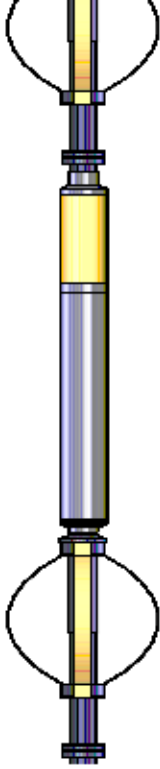


Line Speed			650	(usec)	150	Maximum Amplitude	
-150	(ft/min)	150	GOBO			0	100
Line Tension (lb) 000							
Differential Temperature							
-2	(degF)	2					





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	16.75		Titan CHD-14375 GO	1.03	1.44	3.60
			Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck			
			Probe CENT-2750	2.88	2.75	20.00
			Probe 2-3/4" Electric Inline Bowspring Centralizer			
WVFS8	14.52		Probe Radii-2750 RBT (FW1302-001)	9.39	2.75	105.00
WVFS7	14.52		Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub			
WVFS6	14.52					
WVFS5	14.52					
WVFS4	14.52					
WVFS3	14.52					
WVFS2	14.52					
WVFS1	14.52					
WVFCAL	14.52					
WVF3FT	14.52					
WVF5FT	13.52					

				Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
CCL\$2 CCL\$1	6.51 6.51			Probe GR-CCL-2750 GOB (FW1212-026) Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined with GO Bottom	4.51	2.75	55.00
GR	5.26			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
Dataset: anadarko_huber_4-27_rcbl_12_mar_2019.db: field/well/RCBL/pass4.1 Total length: 23.57 ft Total weight: 223.60 lb O.D.: 2.75 in							

Calibration Report						
Database File	anadarko_huber_4-27_rcbl_12_mar_2019.db					
Dataset Pathname	RCBL/pass4.1					
Dataset Creation	Tue Mar 12 09:46:22 2019					
Gamma Ray Calibration Report						
Serial Number:	FW1212-026					
Tool Model:	2750 GOB					
Performed:	Mon Mar 11 15:20:32 2019					
Calibrator Value:	637.0	GAPI				
Background Reading:	113.7	cps				
Calibrator Reading:	1029.1	cps				
Sensitivity:	0.5000	GAPI/cps				
Segmented Cement Bond Log Calibration Report						
Serial Number:	FW1302-001					
Tool Model:	2750 RBT					
Calibration Casing Diameter:	5.500	in				
Calibration Depth:	-0.008	ft				
Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.827	0.800	71.921	85.966	0.794
CAL	0.730	0.733				
5'	0.000	0.668	0.800	71.921	106.544	0.787
SUM						
S1	-0.001	0.688	0.000	100.000	145.048	0.201
S2	0.001	0.688	0.000	100.000	145.048	0.201

S2	0.001	0.693	0.000	100.000	144.443	-0.137
S3	0.001	0.719	0.000	100.000	139.280	-0.136
S4	0.001	0.765	0.000	100.000	130.915	-0.109
S5	0.001	0.831	0.000	100.000	120.474	-0.105
S6	0.001	0.835	0.000	100.000	119.840	-0.104
S7	0.001	0.774	0.000	100.000	129.378	-0.112
S8	0.001	0.728	0.000	100.000	137.621	-0.156

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.730	0.733	1.000	0.000

Air Zero Calibration, performed Mon Mar 11 15:25:40 2019:

	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: FW1302-001
Tool Model: 2750 RBT
Performed: Mon Oct 01 11:32:14 2018

	Reference	Reading
Low Reference:	100.00 degF	107.47 degF
High Reference:	350.00 degF	404.08 degF
Gain:	0.84	
Offset:	9.42	
Delta Spacing	1	



RELIANCE
OILFIELD SERVICES

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well HUBER 4-27
Field Wattenberg
County Weld
State Colorado