



Radial Cement Bond
Gamma Ray
Casing Collar Log

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

Well George 25-4HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-46335

SEC 25 TWP 2N RGE 65W

Permanent Datum Ground Level Elevation 4900'
Log Measured From Kelly Bushing 17 FT
Drilling Measured From Kelly Bushing

Other Services
JB/GR
RBP
RBL 0 PSI

Elevation

K.B. 4917'
D.F. ---
G.L. 4900'

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Well George 25-4HZ
Field Wattenberg
County Weld
State Colorado

Date	13-AUG-2018	One		
Run Number		15621 FT		
Depth Driller		6297 FT		
Depth Logger		6282 FT		
Bottom Logged Interval		Surface		
Top Log Interval		7.88'		
Open Hole Size		Water		
Type Fluid		8.34 lb/gal		
Density / Viscosity		210°F		
Max. Recorded Temp.		See Log		
Estimated Cement Top		ROA		
Time Well Ready		14.47		
Time Logger on Bottom		HD-363		
Equipment Number		Platteville Co		
Location		J. Morrison		
Recorded By		S. Hopper		
Witnessed By		Kyle Carver		
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	17	HCP-110	Surface
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 6216 FT
Adjusted log 0 FT to correlate with Marker Joint
Ran JB/GR down to 7323 FT
Log ran from 6282 FT to Surface
Log ran with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

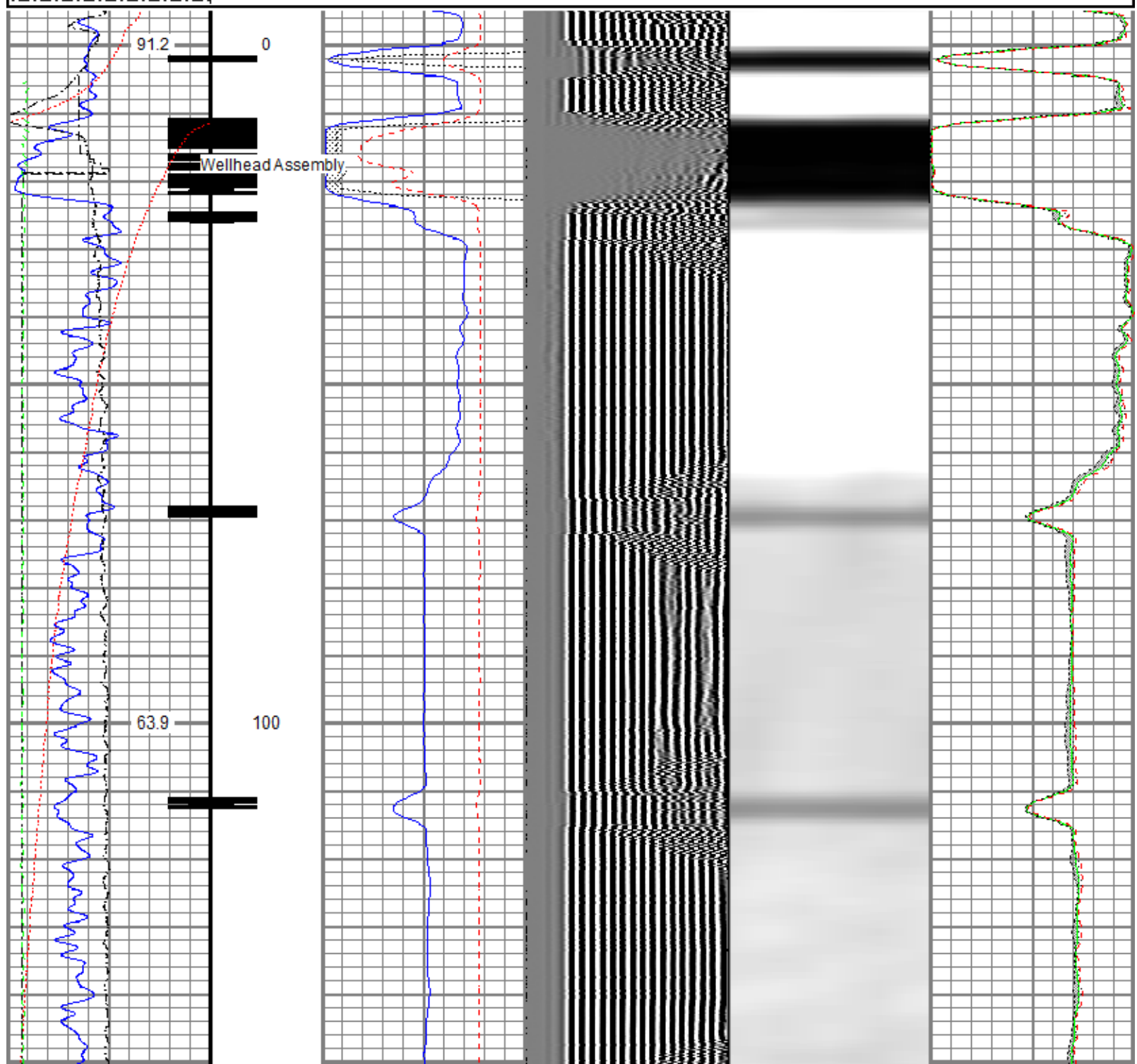
Thank you for choosing Reliance Oilfield Services, LLC!!

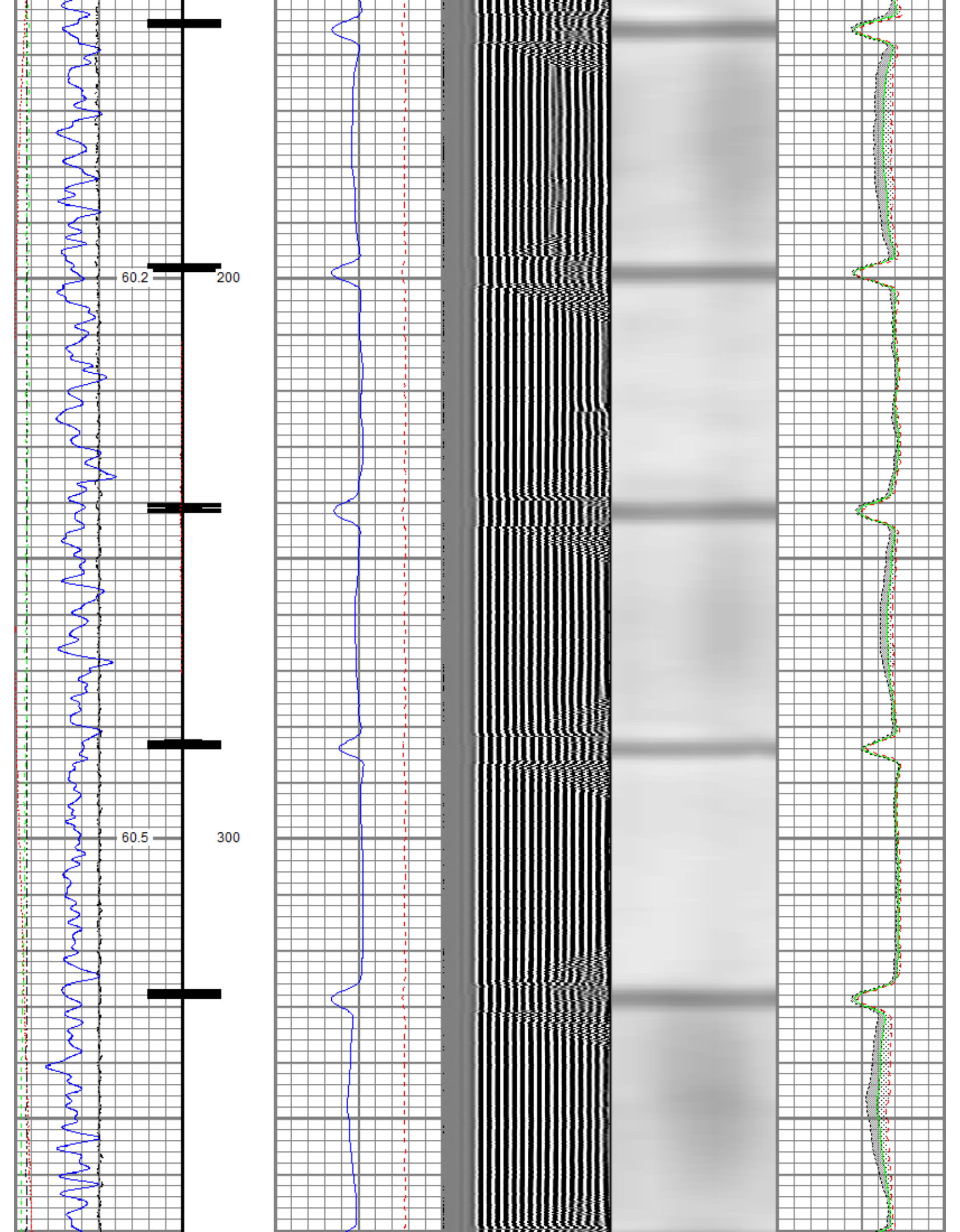
Main Pass

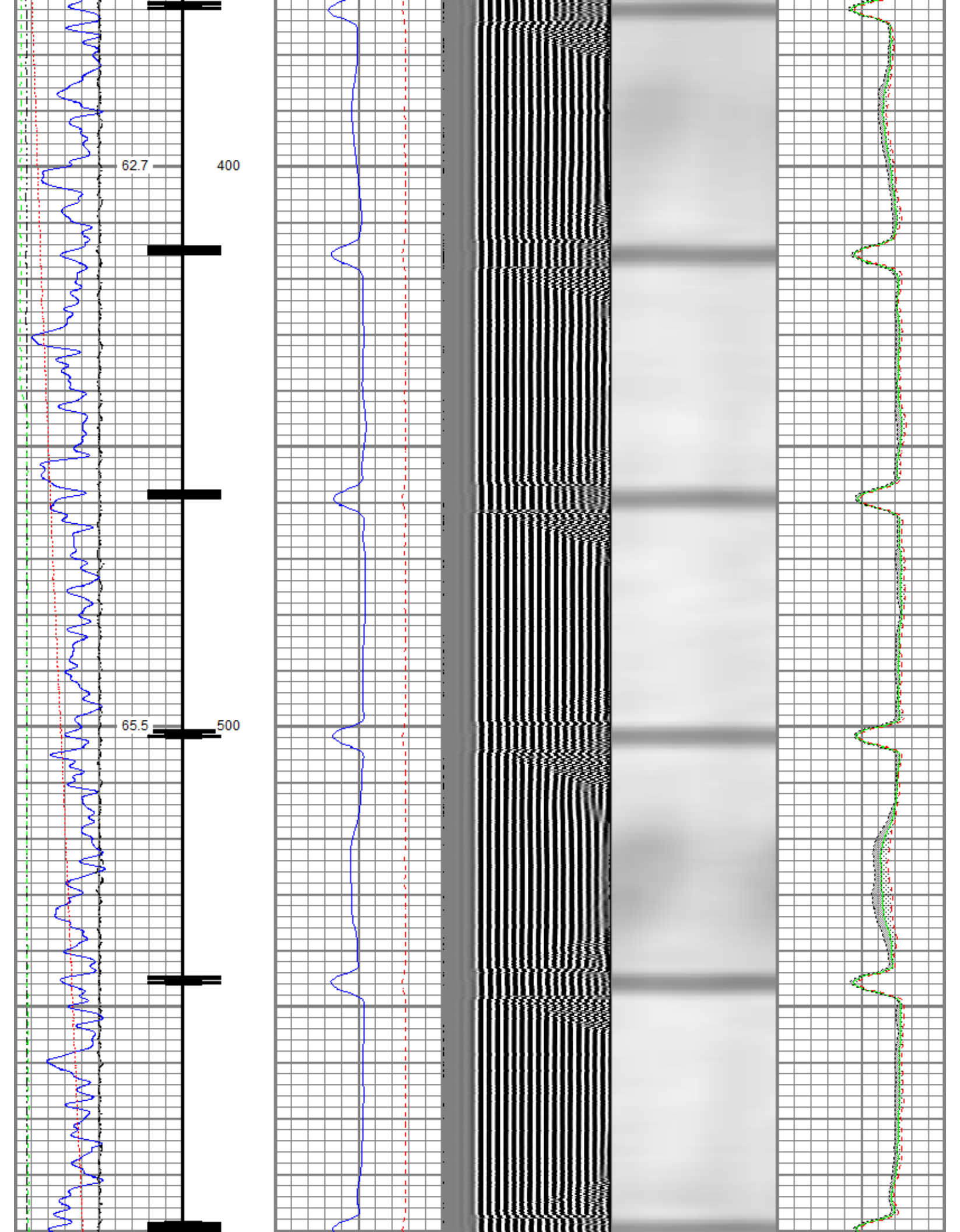


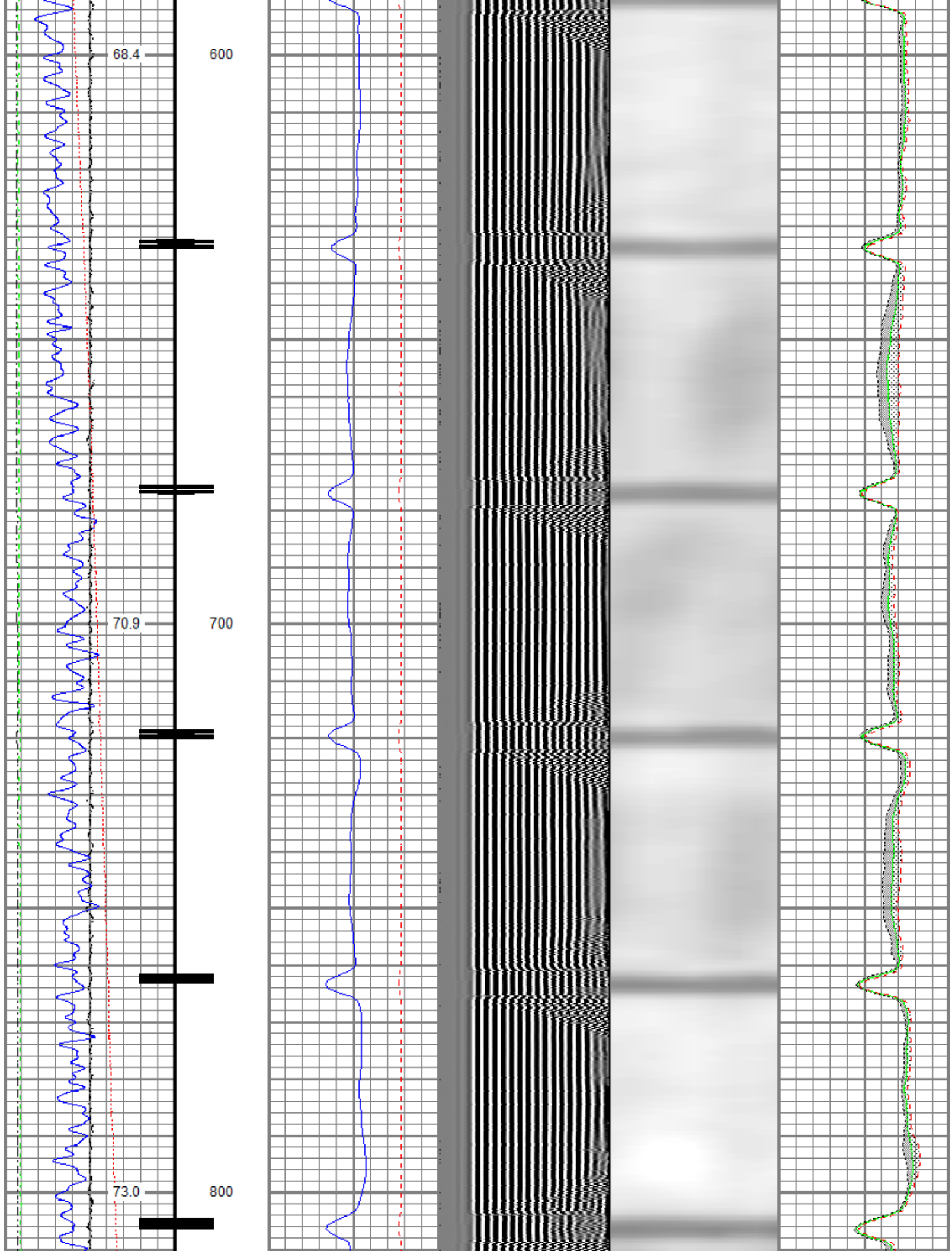
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Presentation Format	ros_radri
Dataset Creation	Mon Aug 13 16:10:14 2018
Charted by	Depth in Feet scaled 1:240

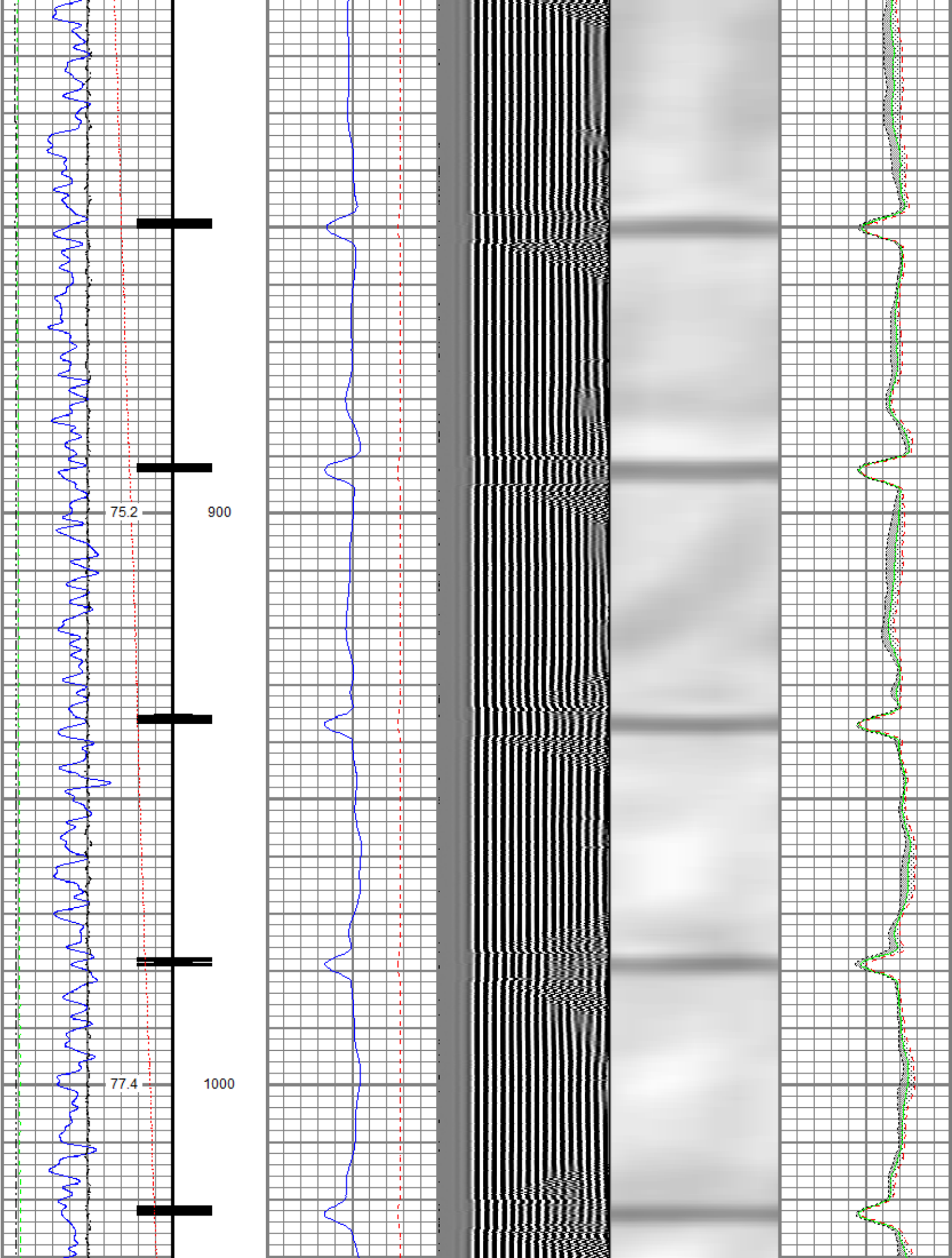
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200			Minimum Amplitude
Casing Collar Locator		0 (mV) 20			0	100
0 Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed		650 (usec) 150			0	100
-150 (ft/min) 150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

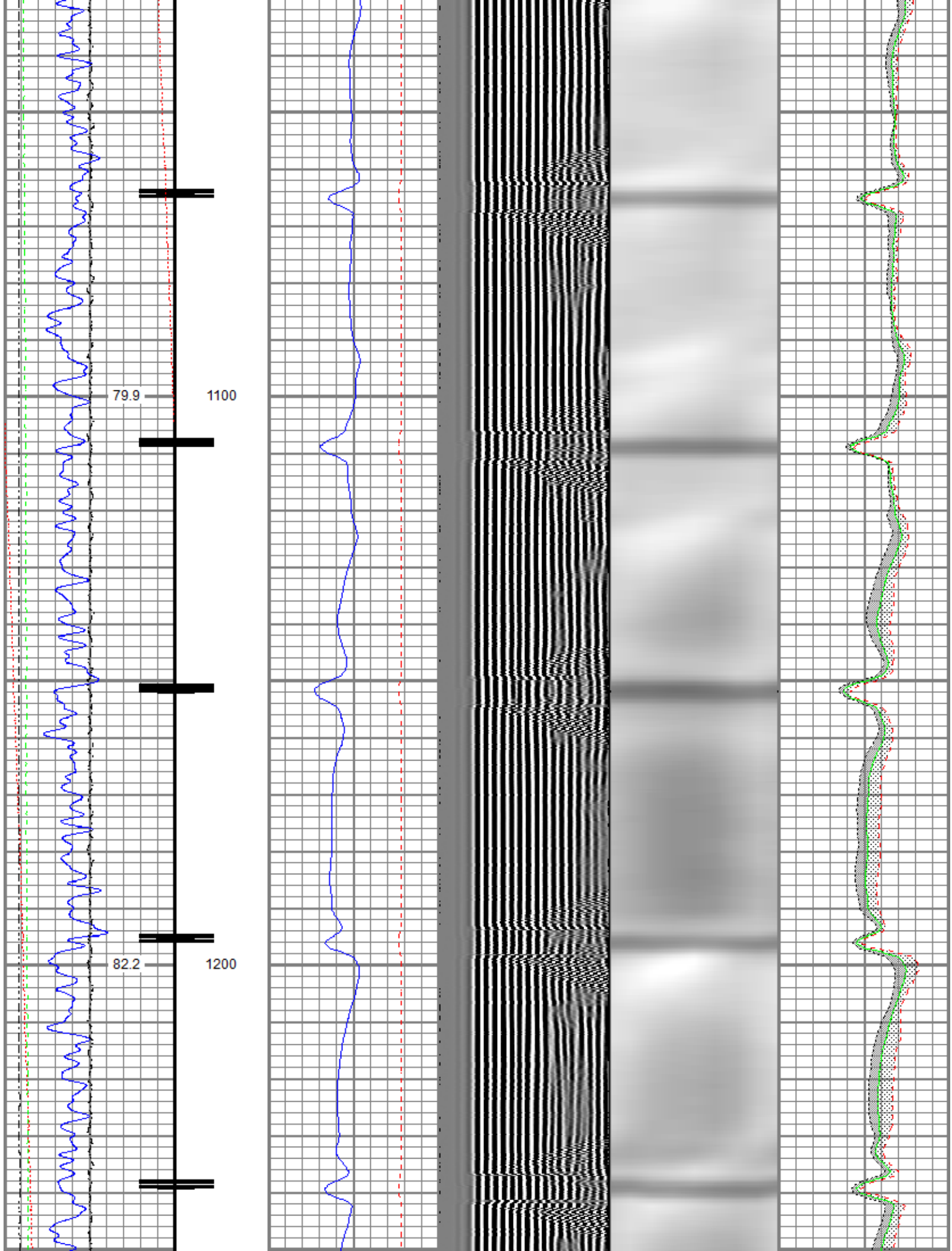


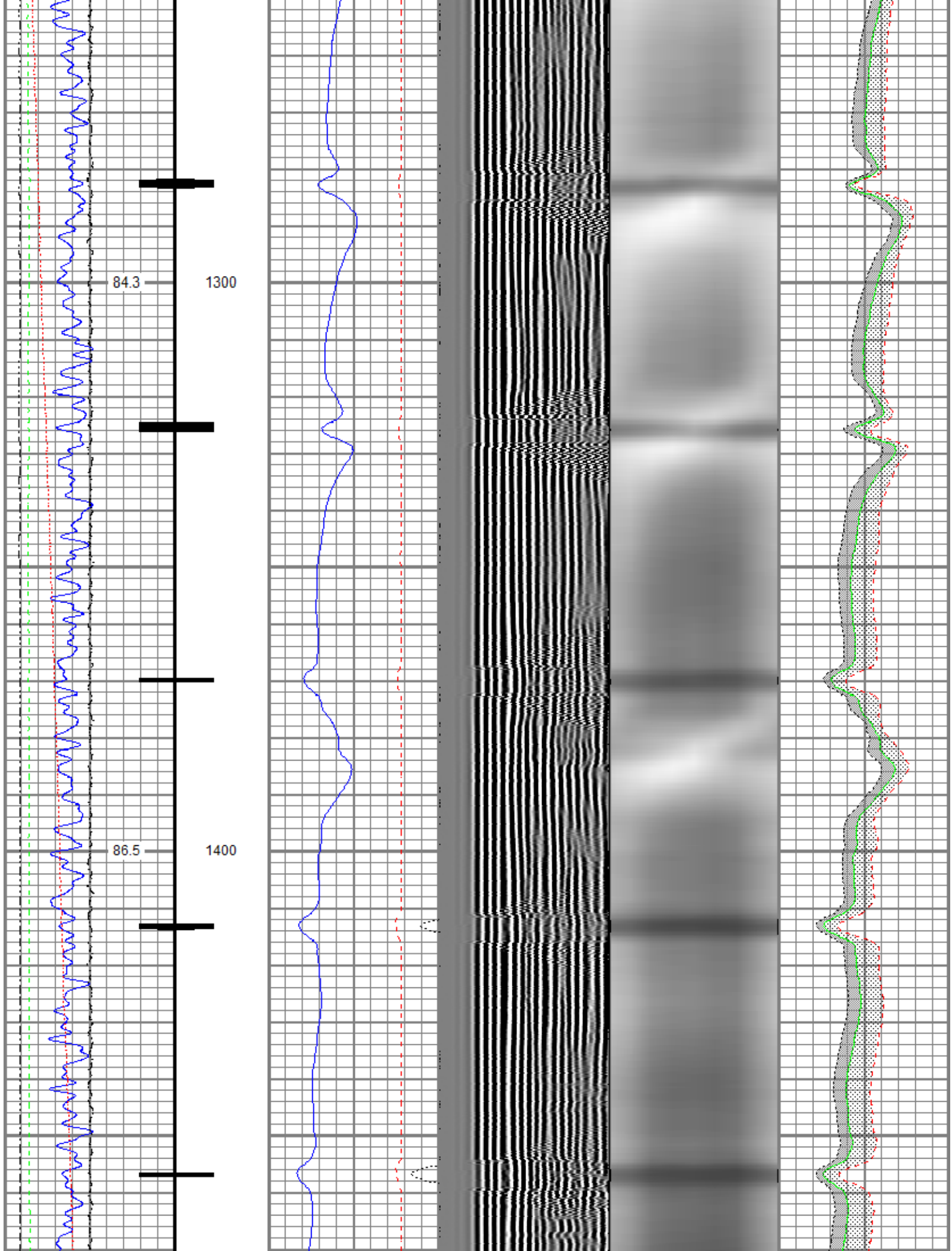


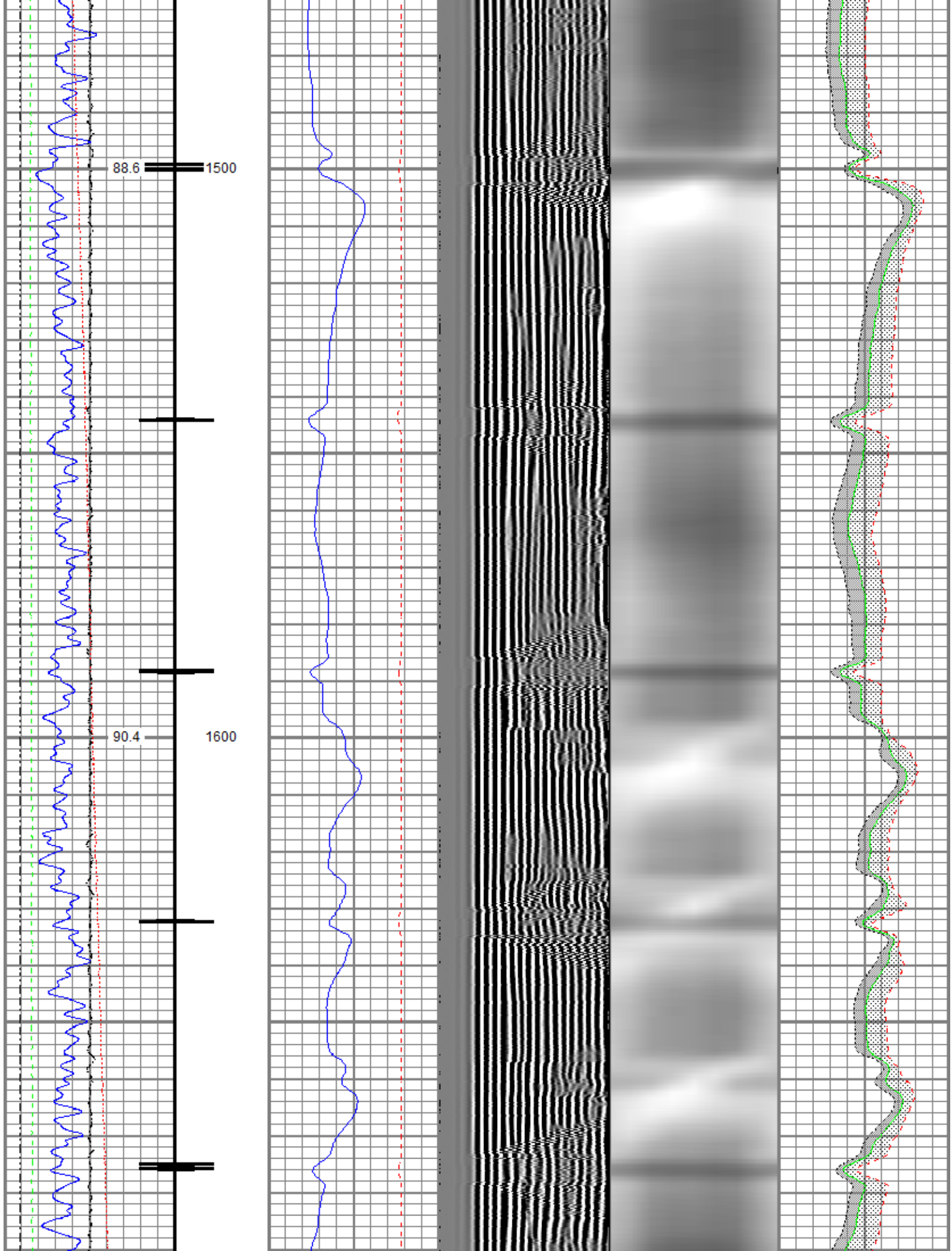


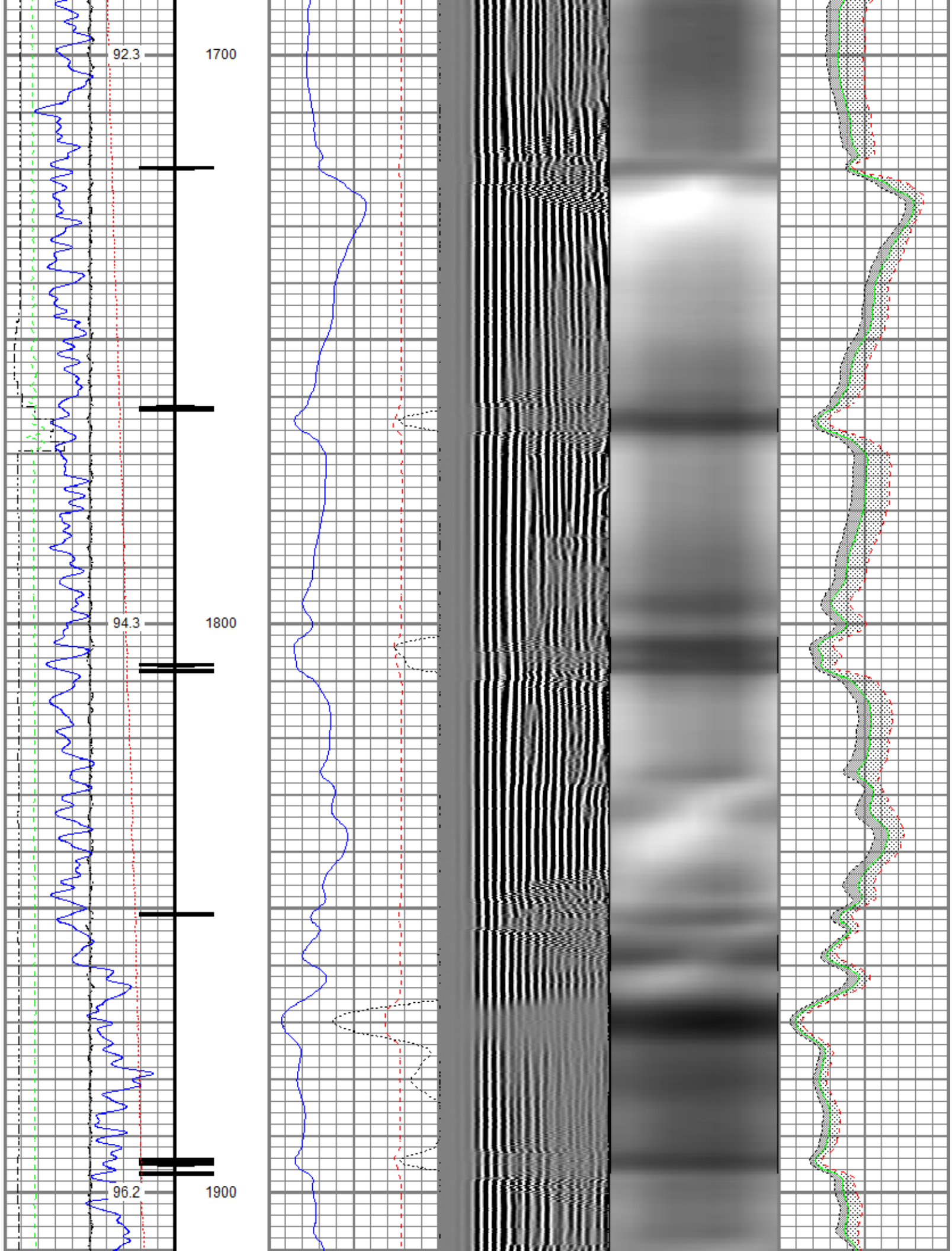


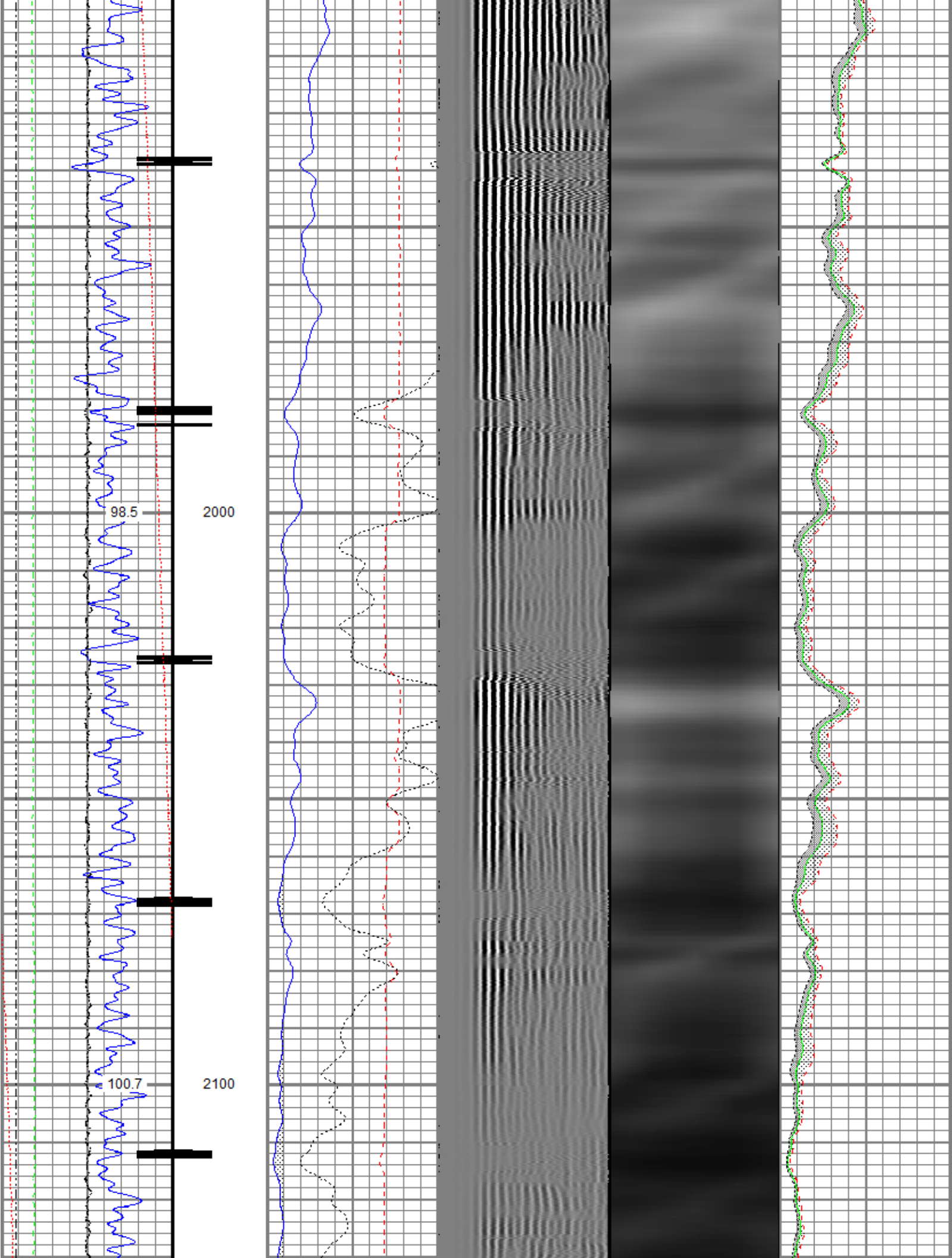


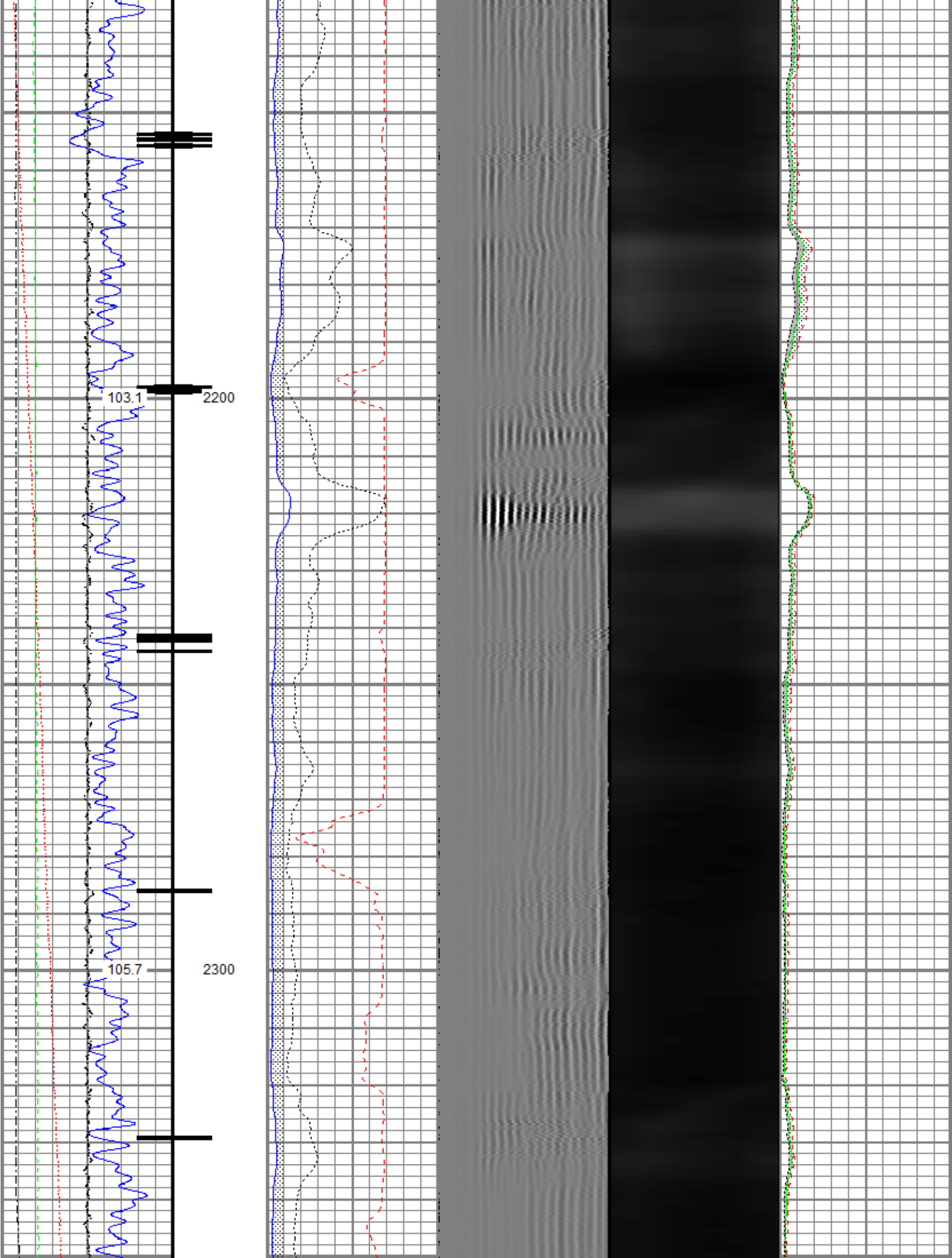


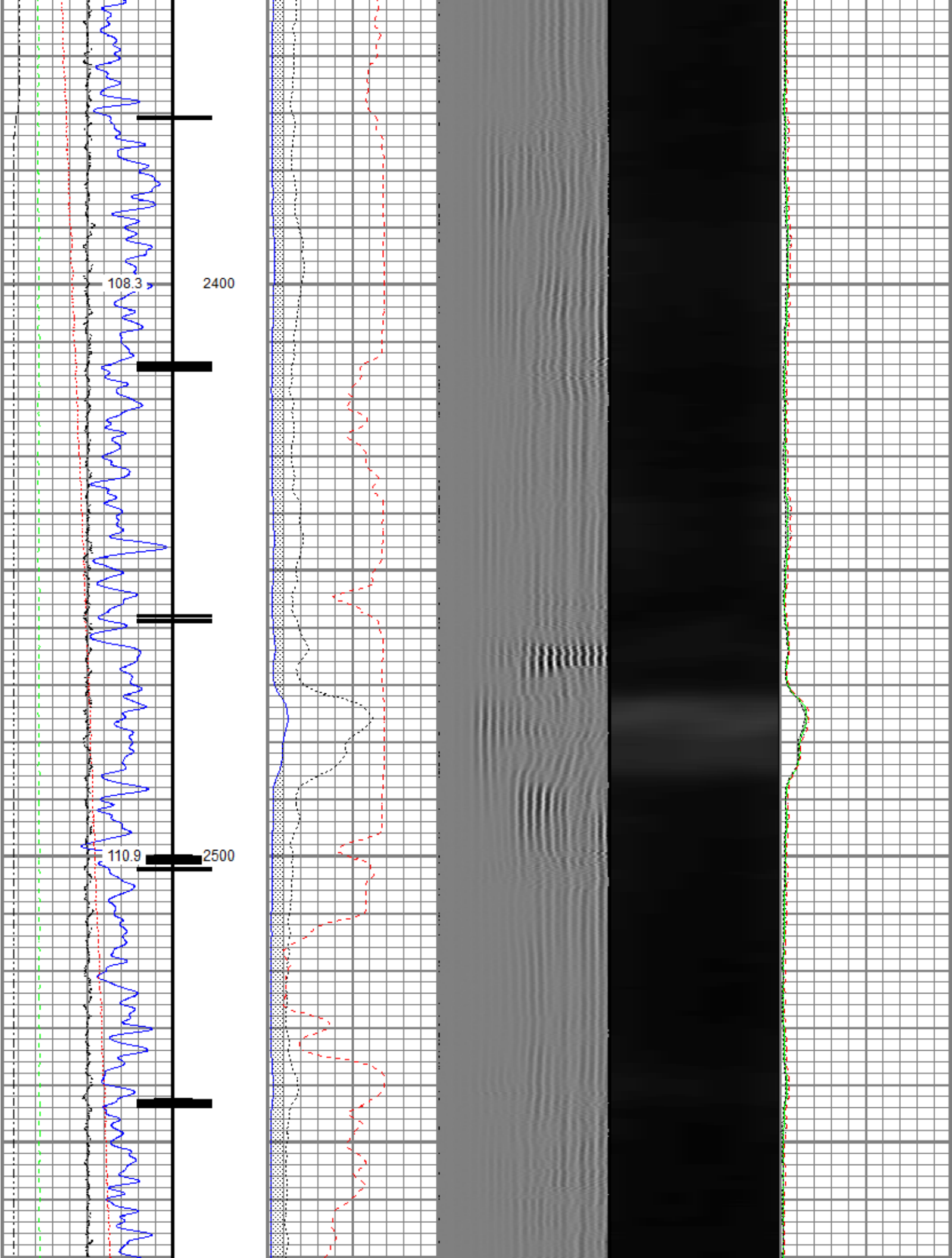


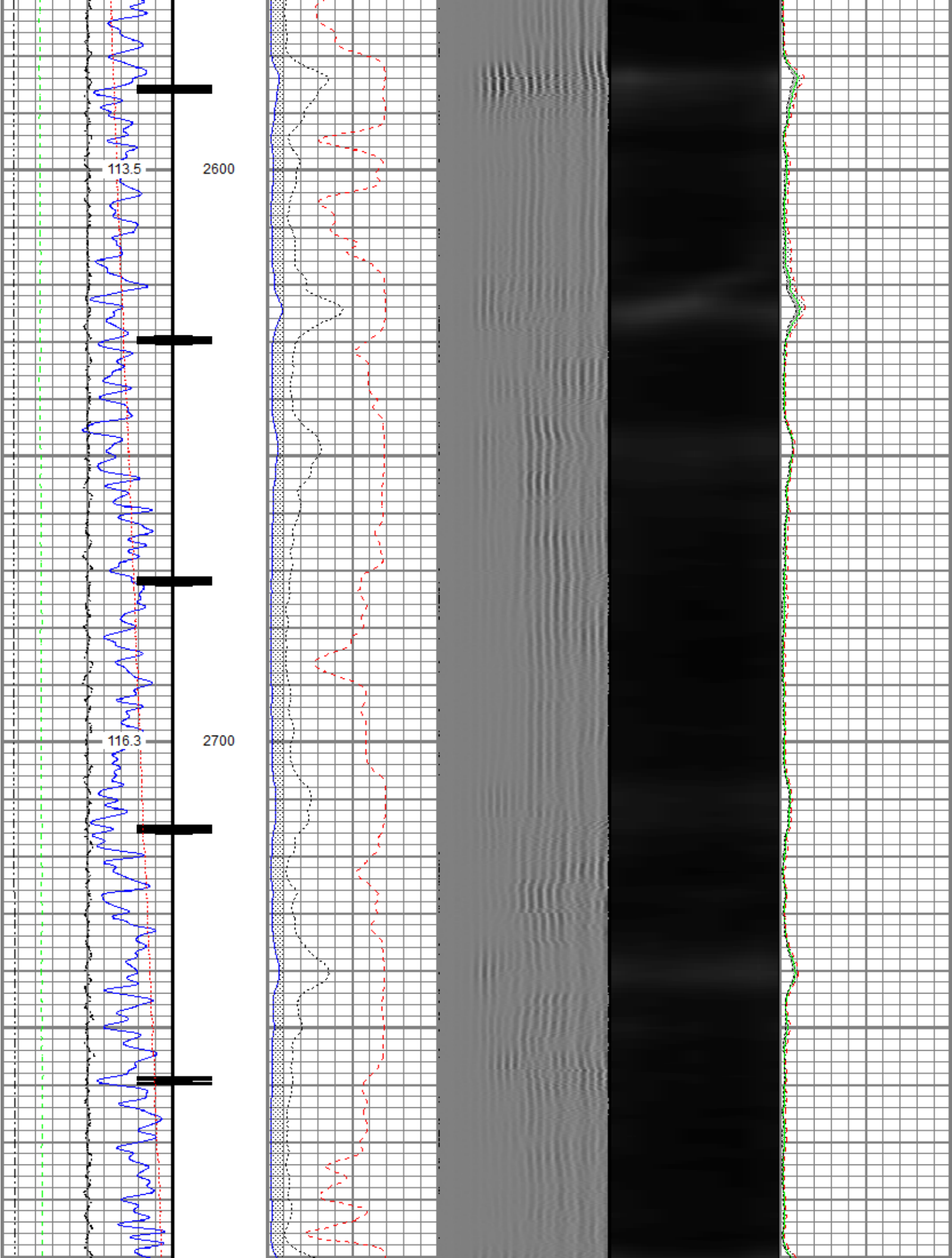


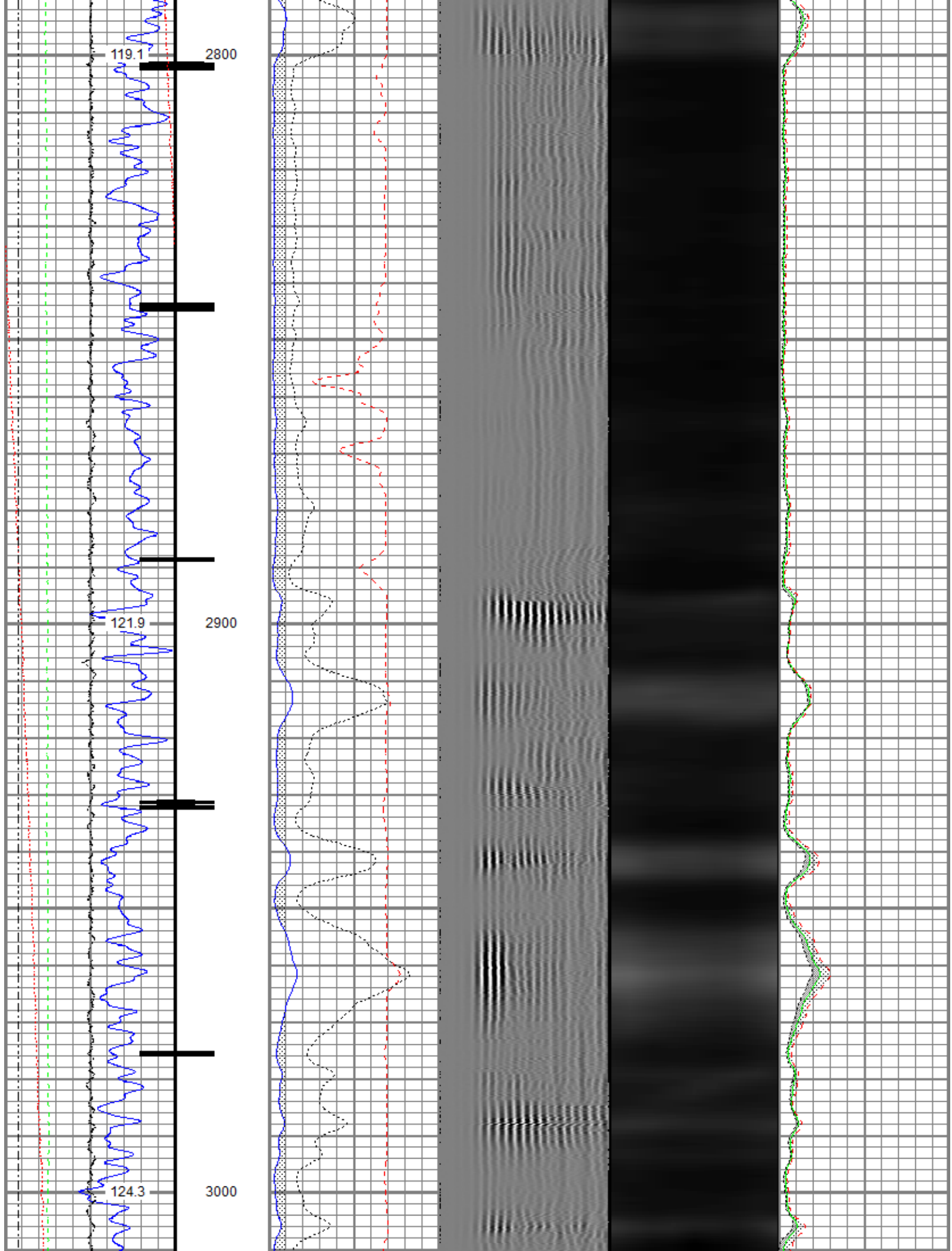


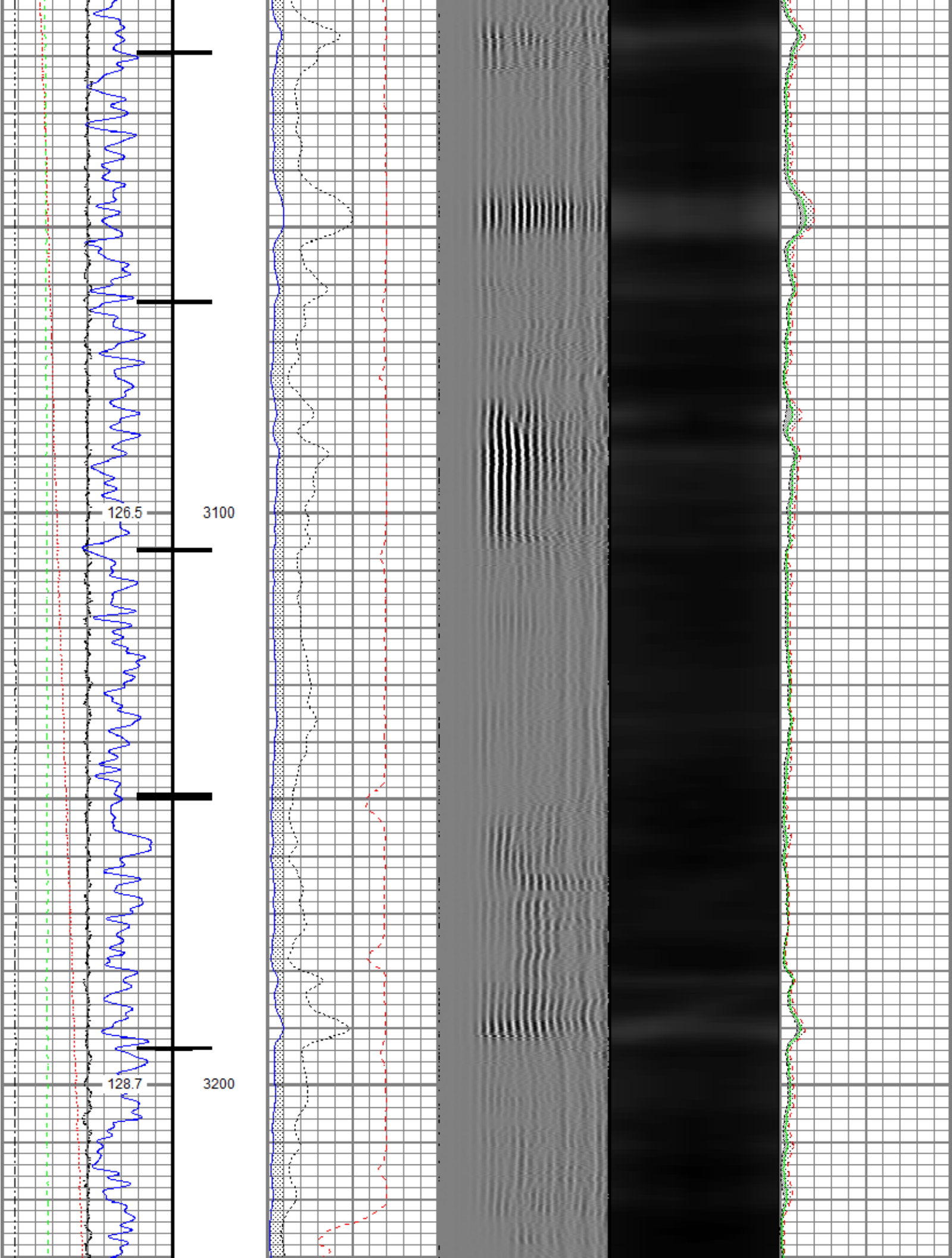


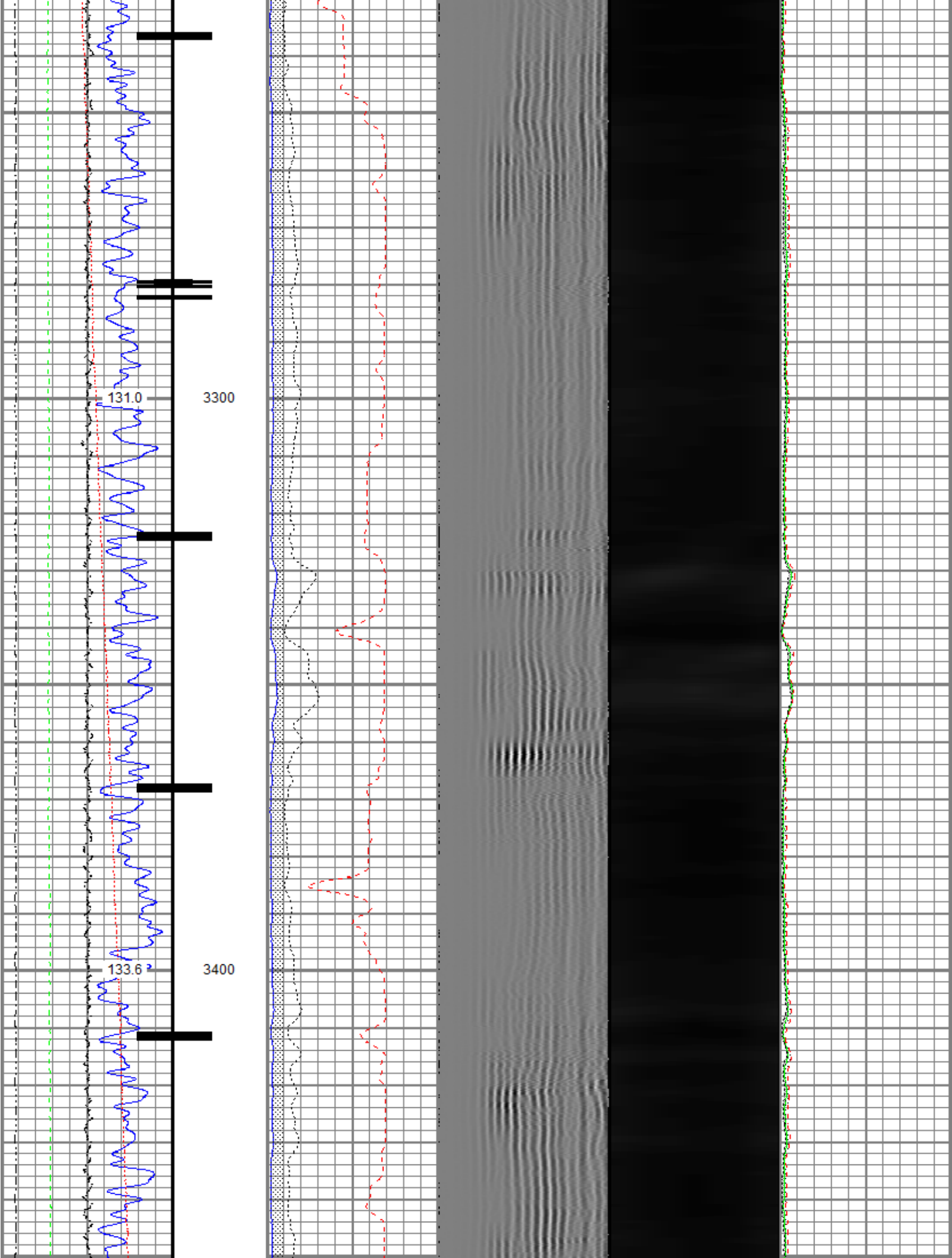


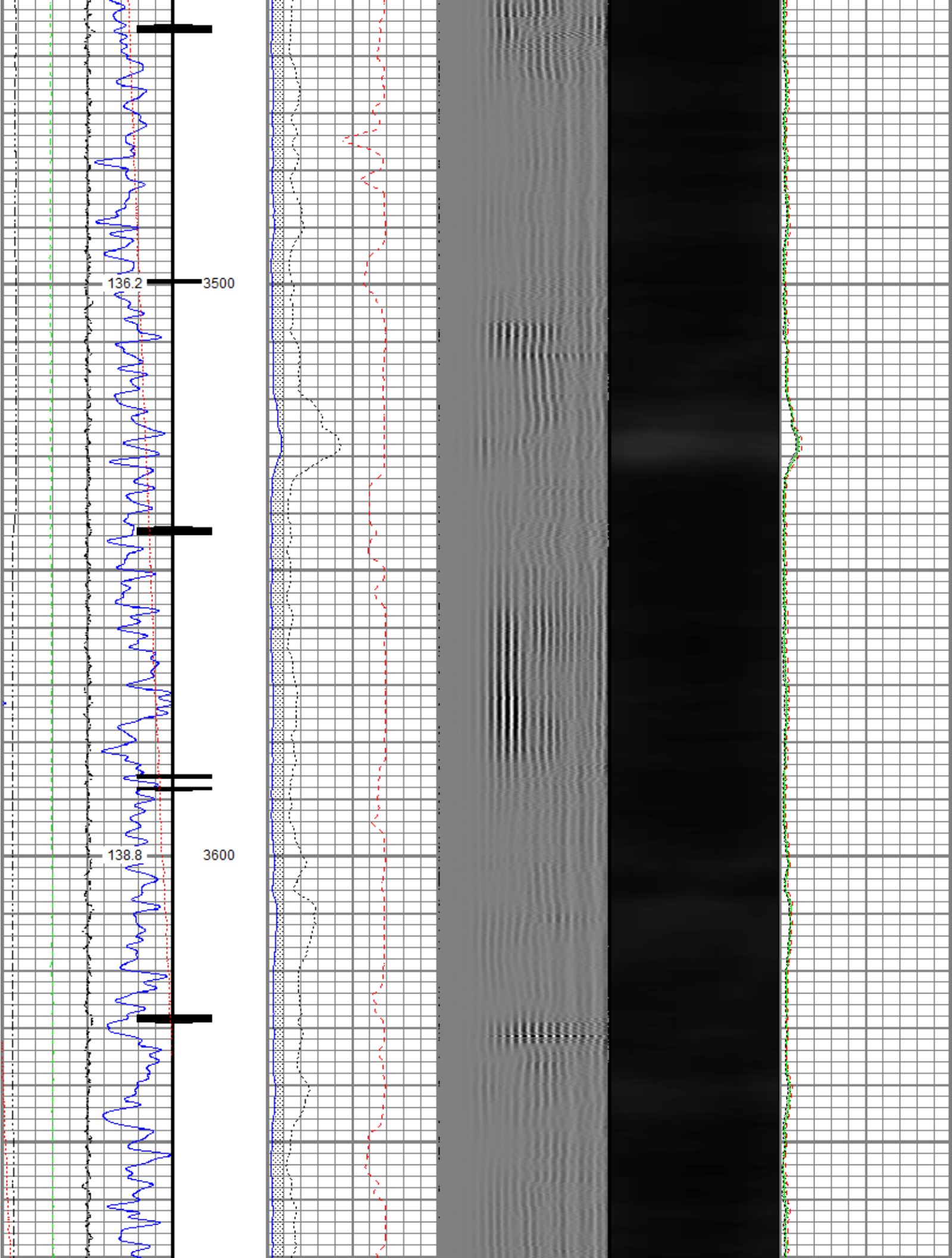


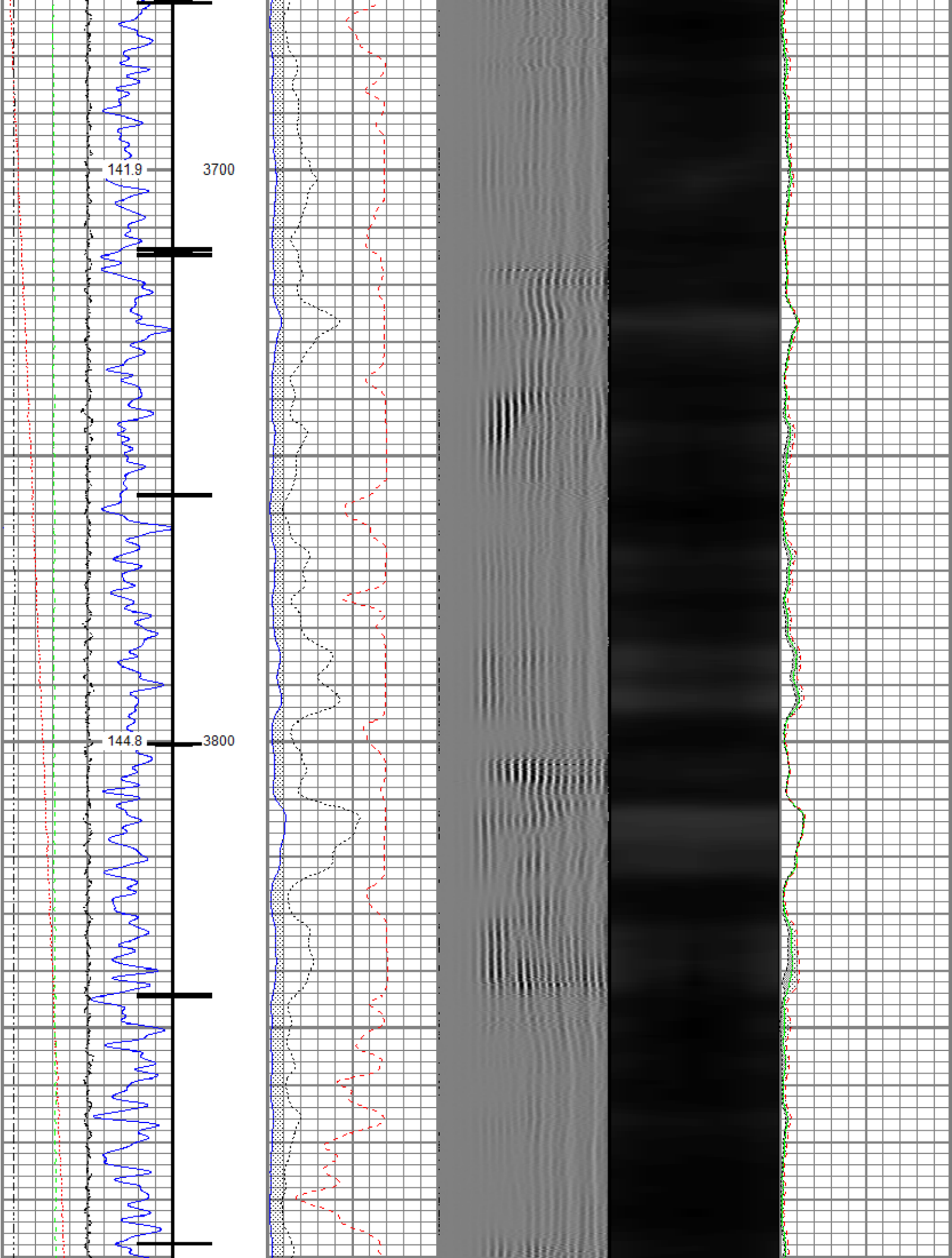


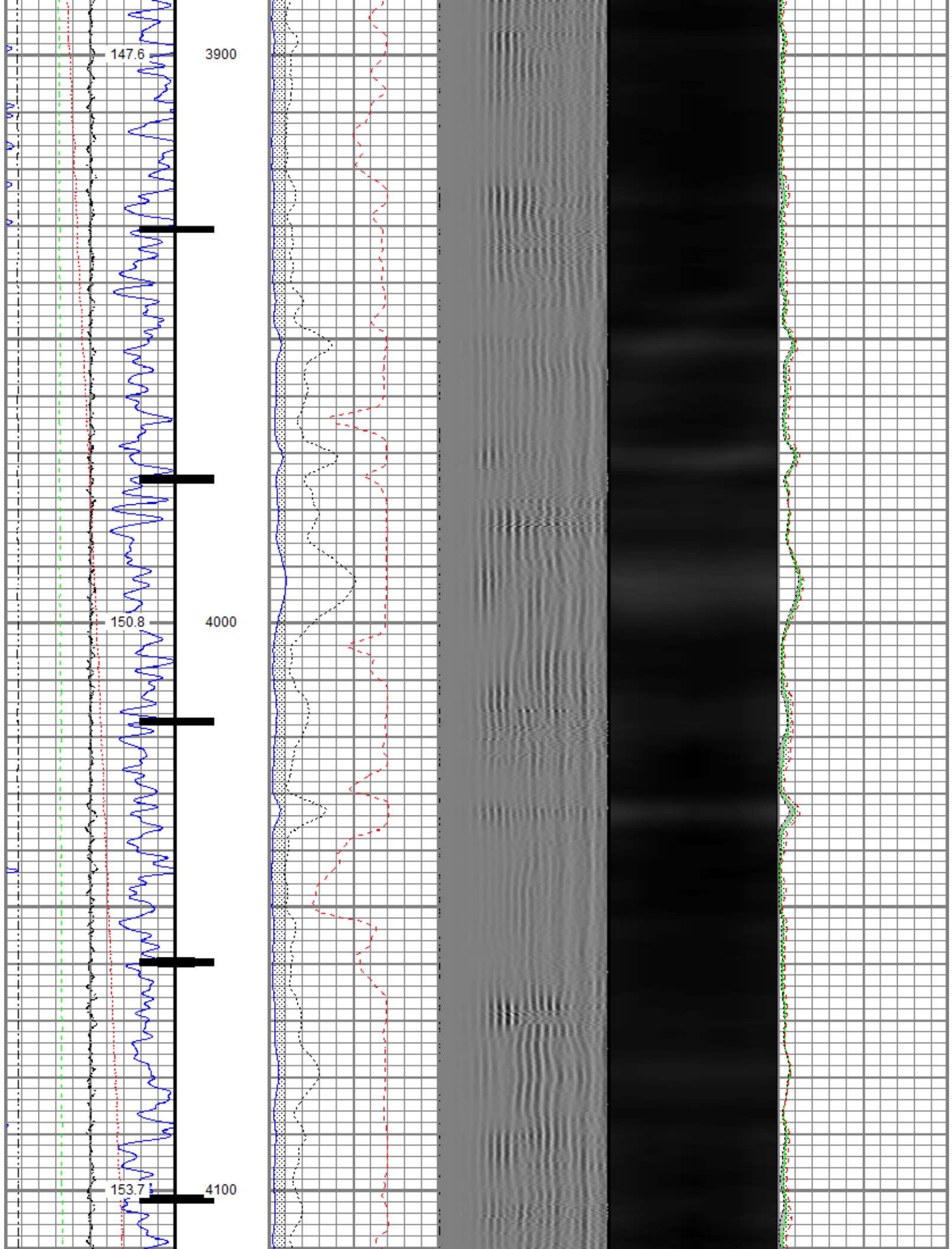


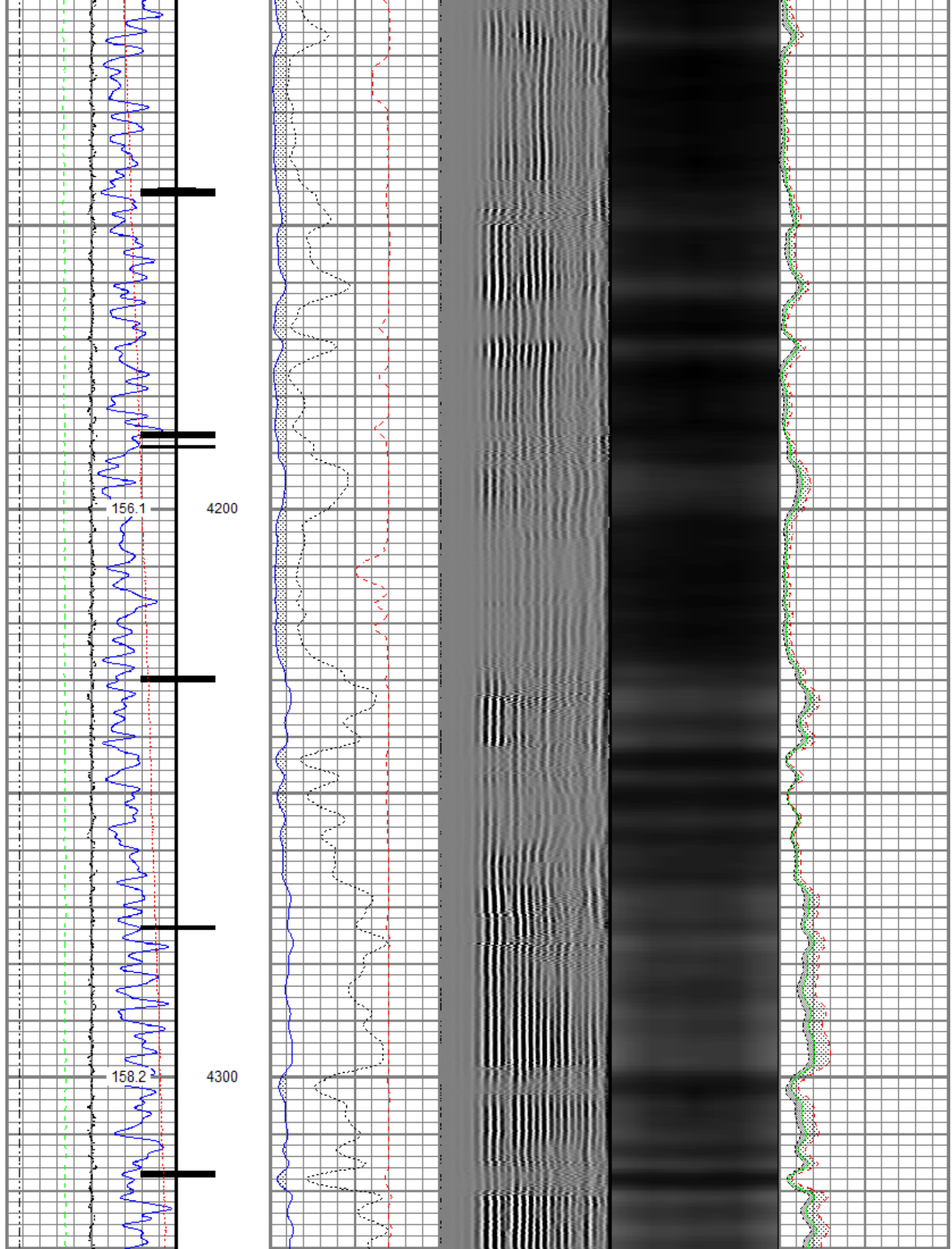


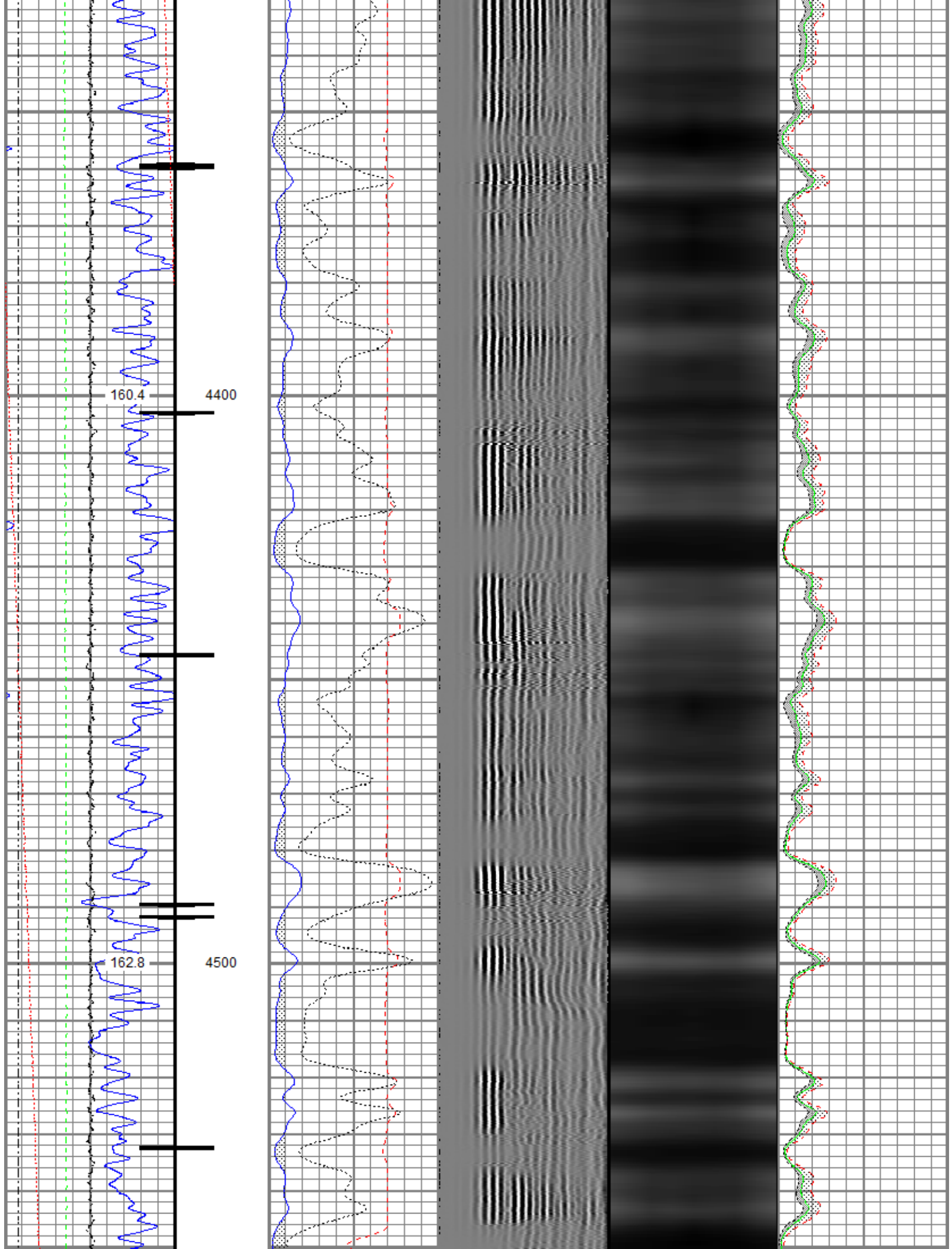


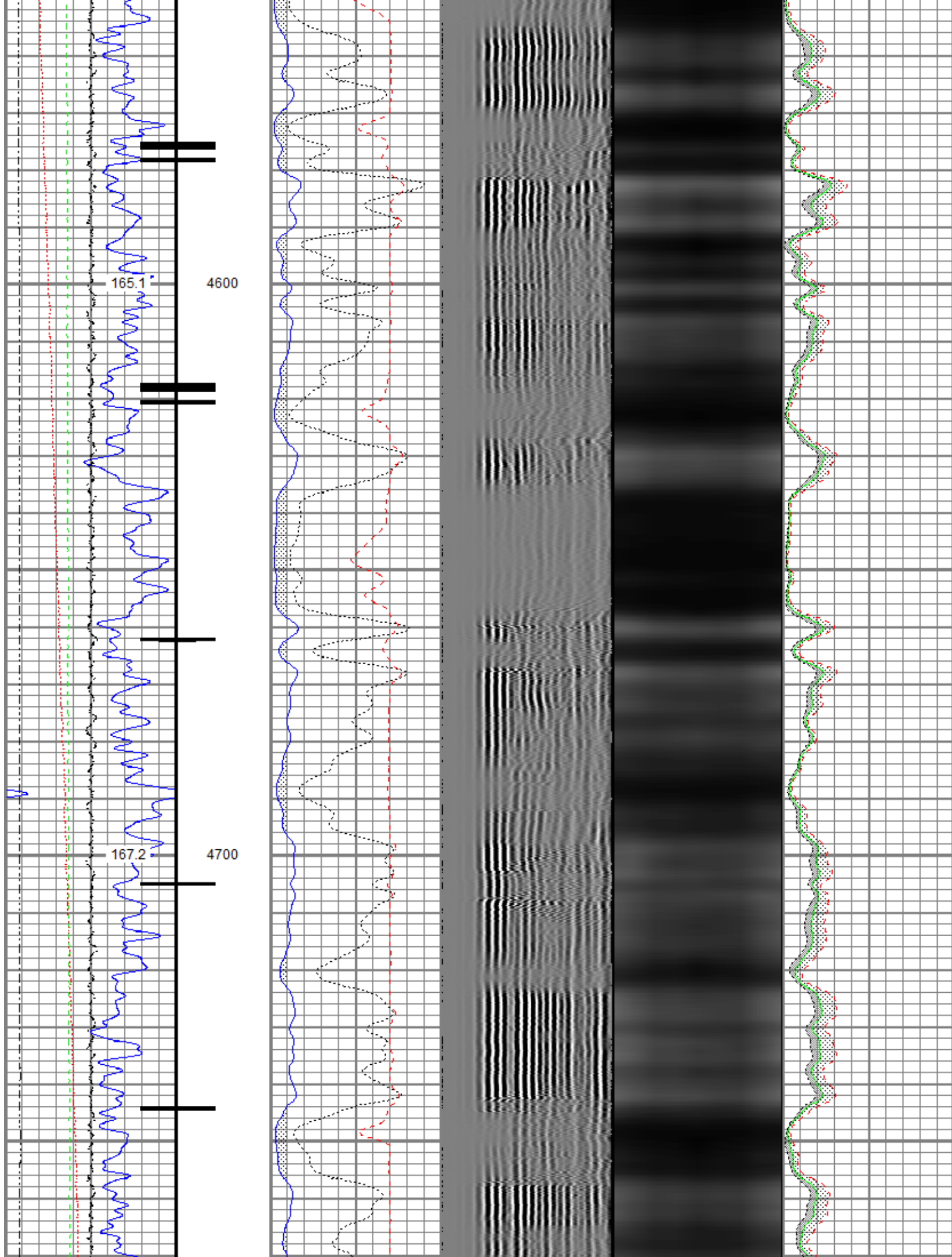


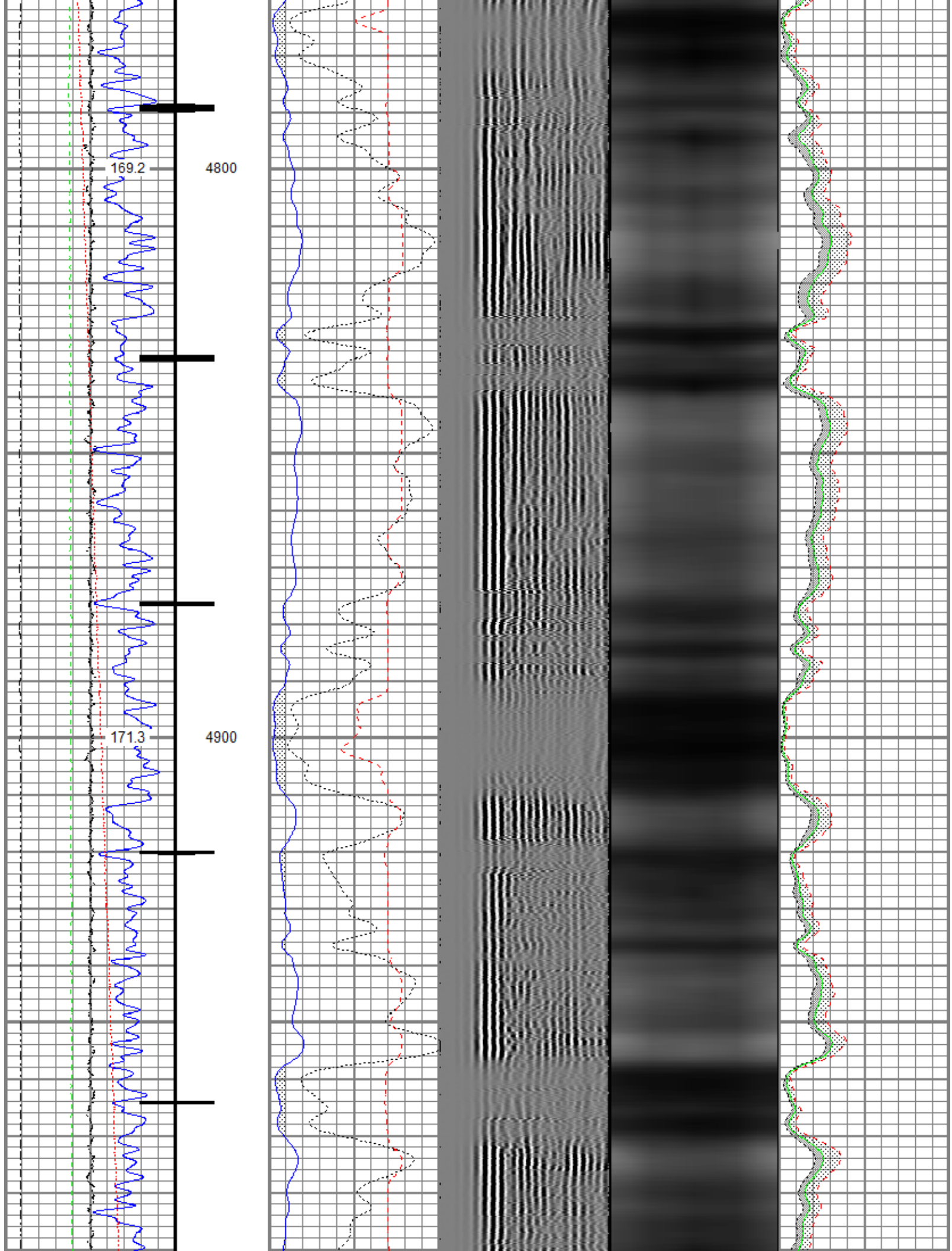


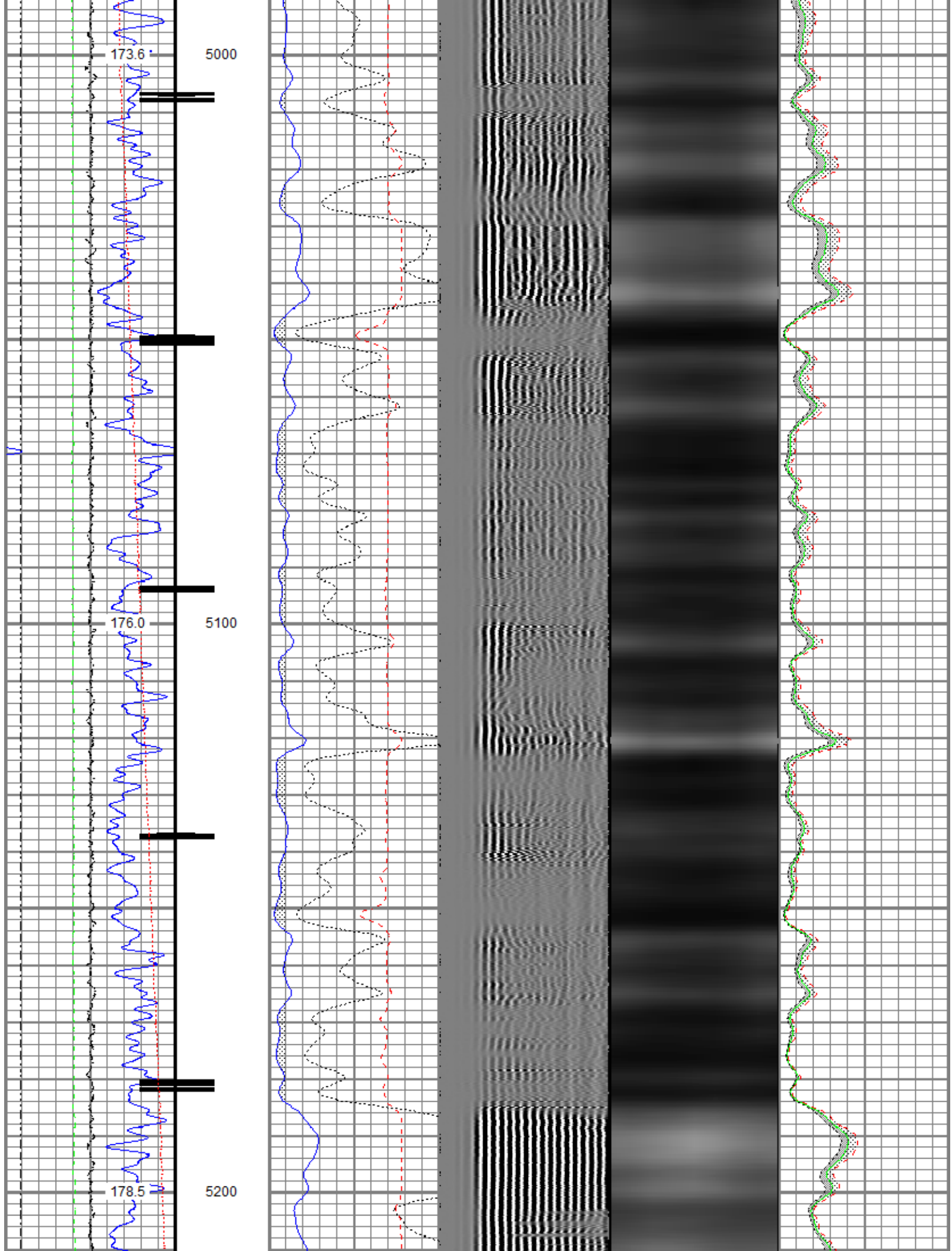


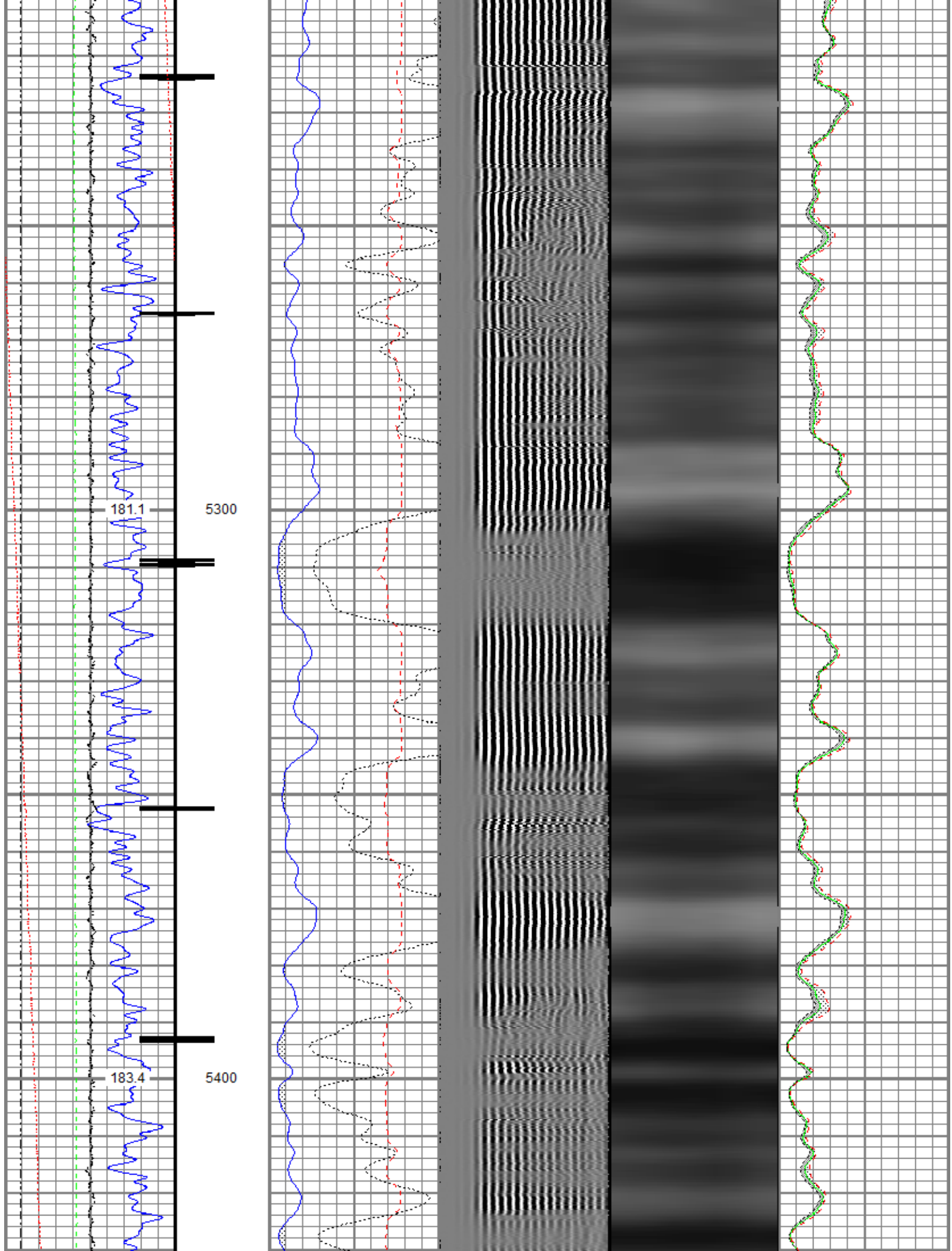


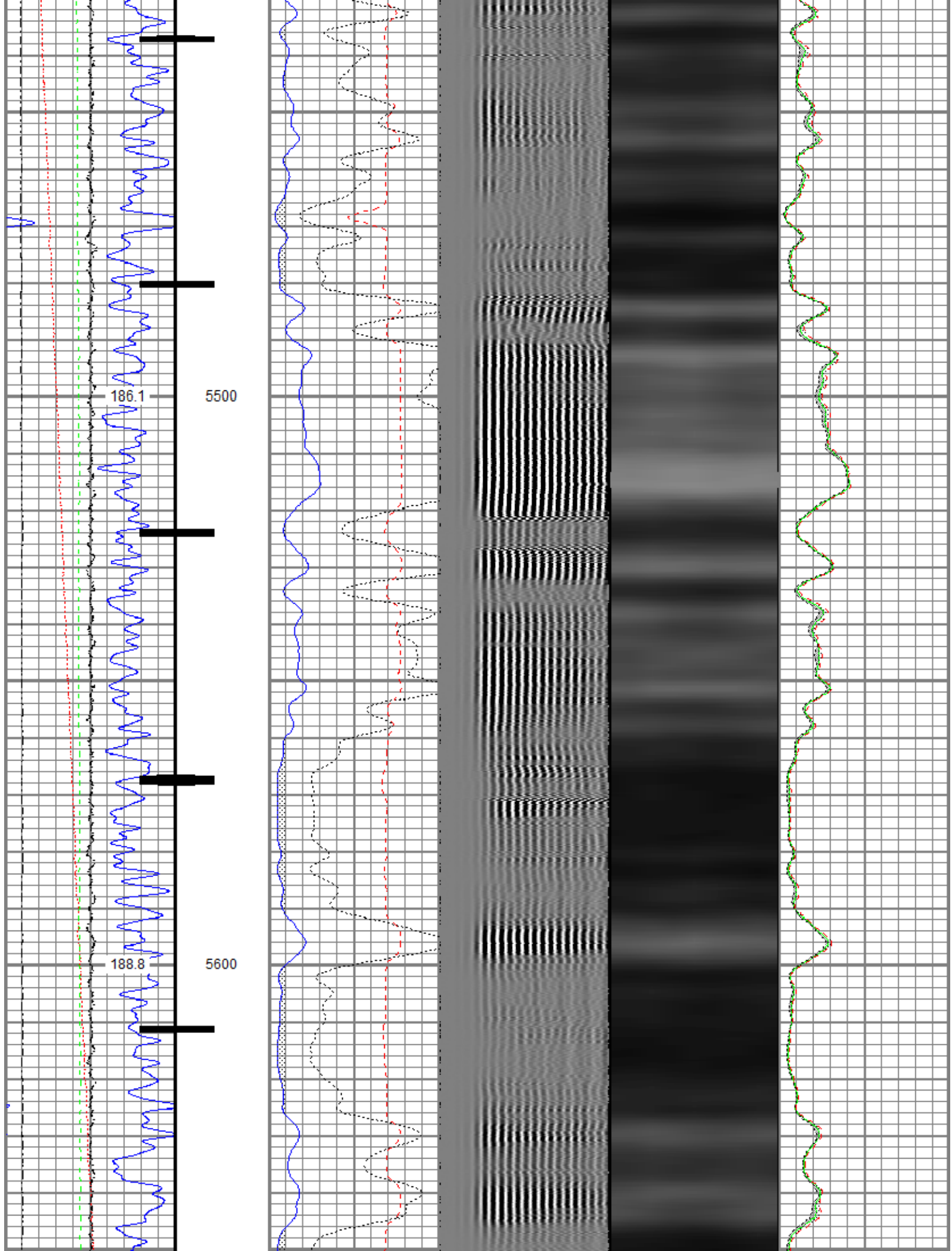


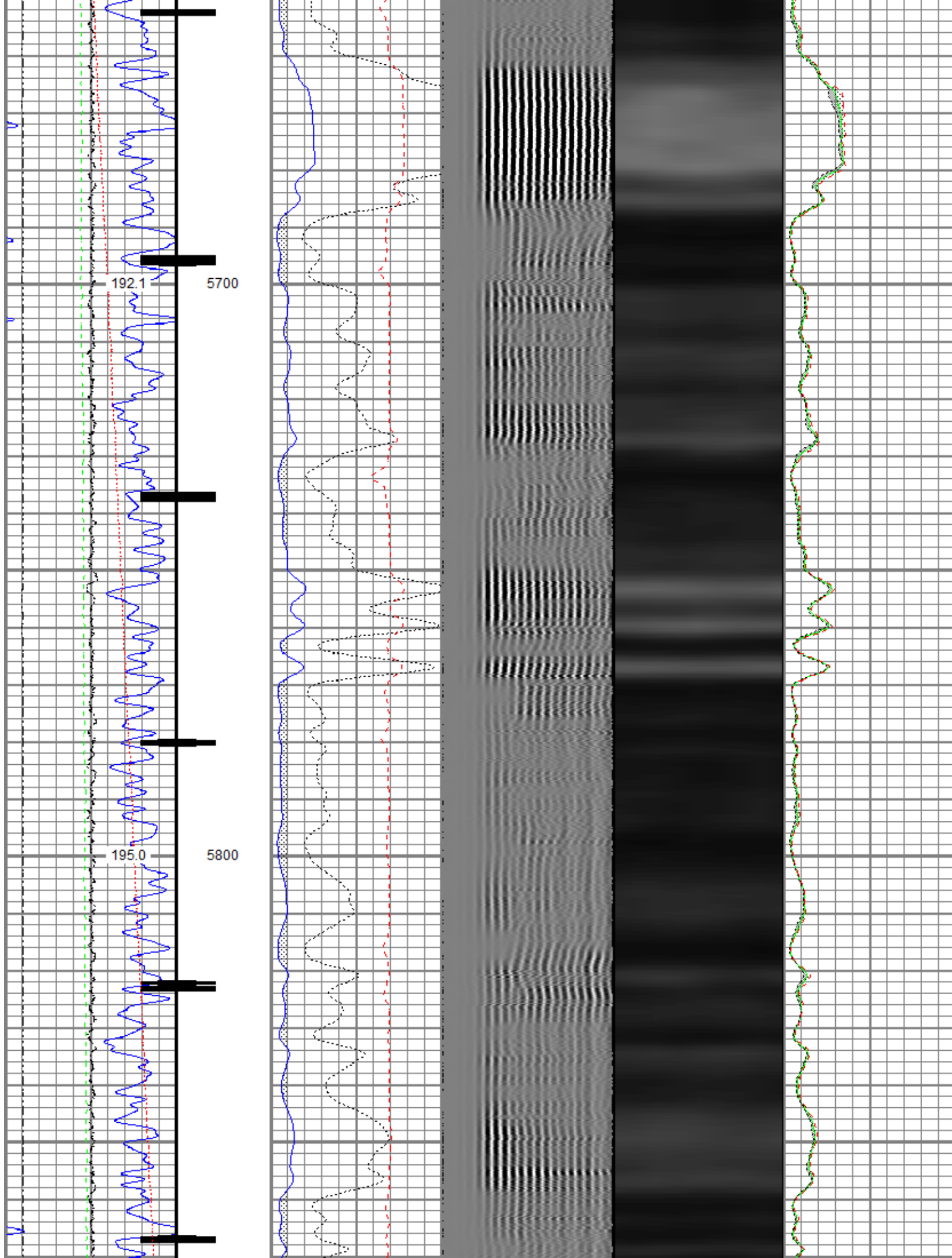


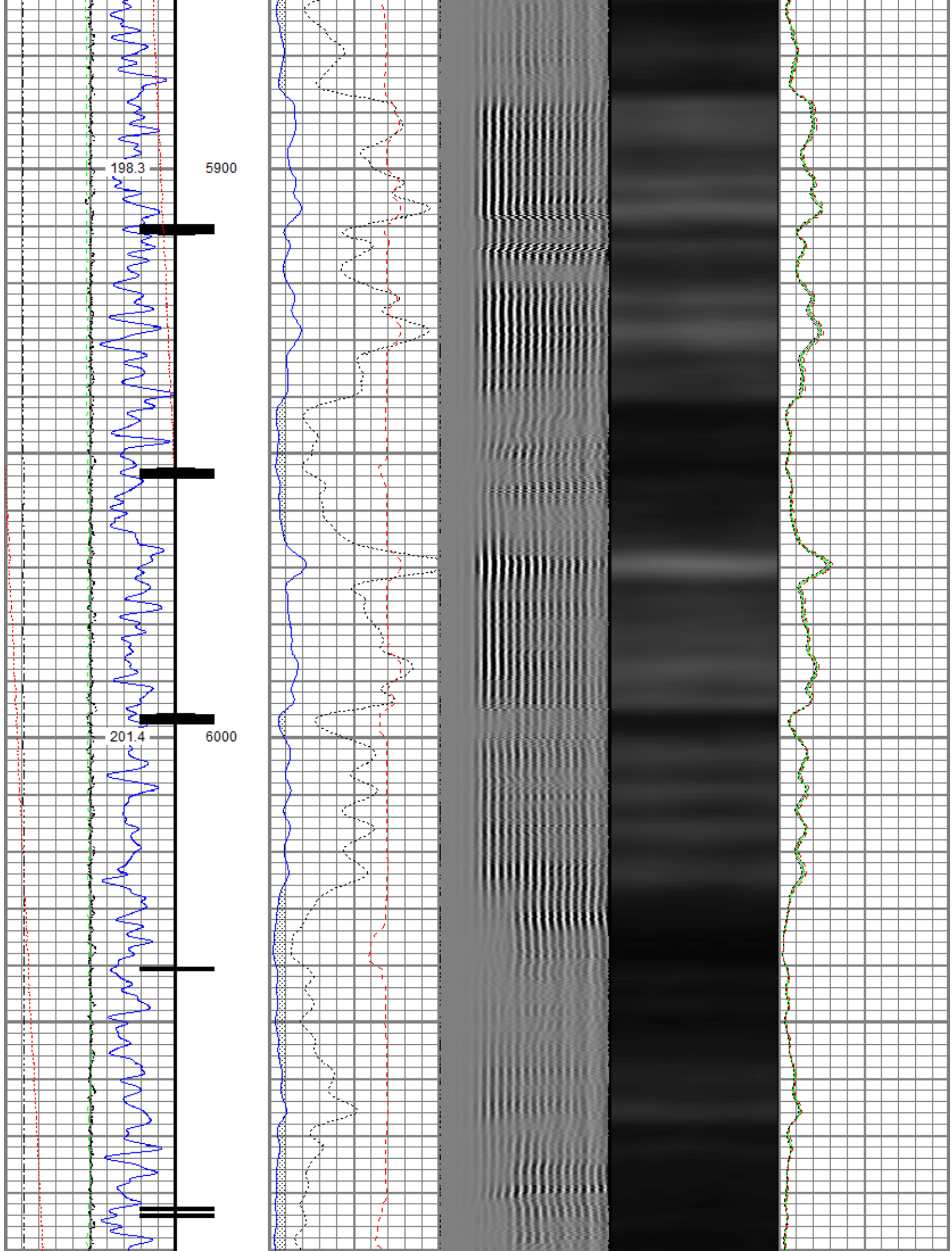


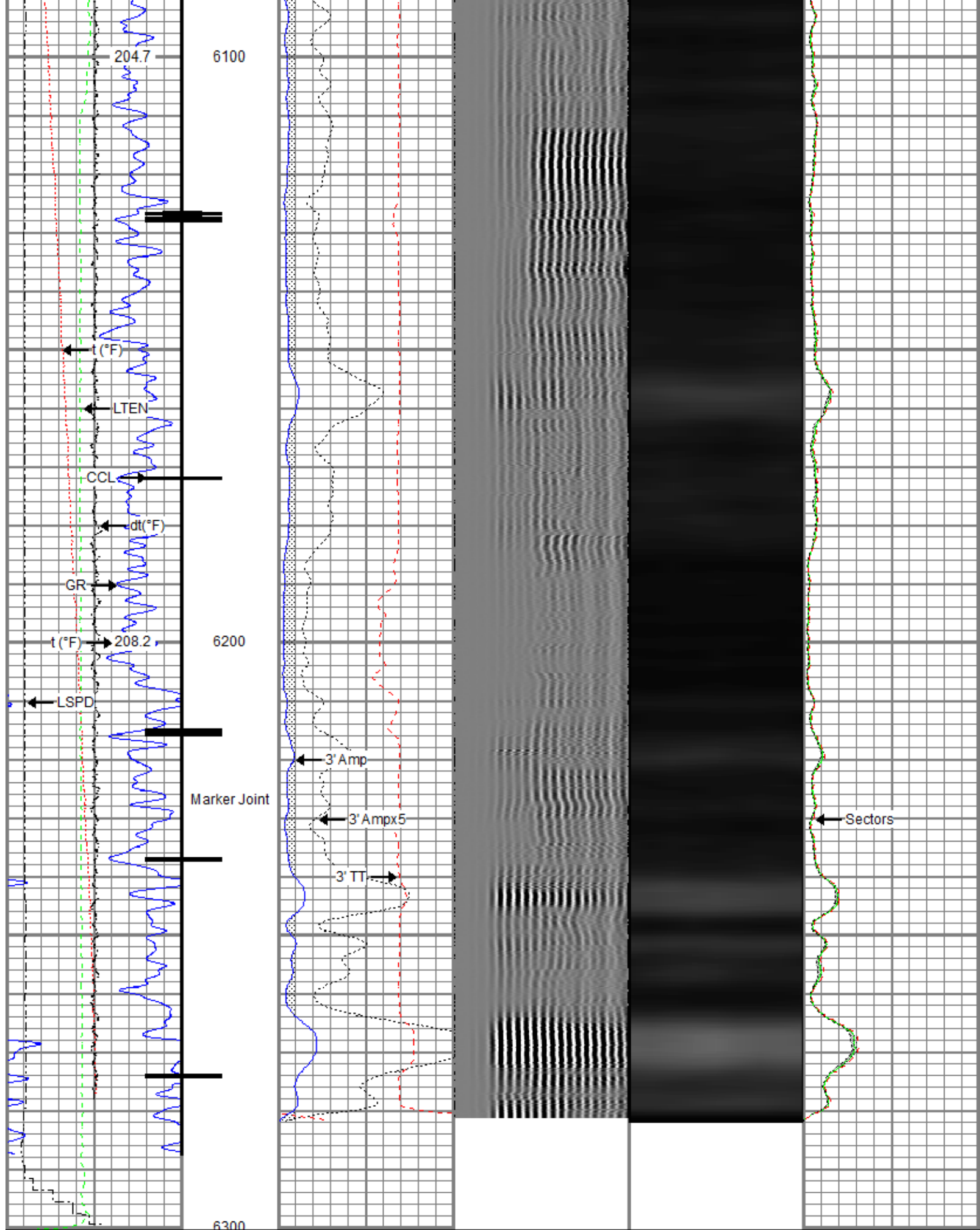












Gamma Ray (GAPI)	0 3' Amplitude (mV) 100 3' Amplitude x 5	5' Variable Density Log 200 1200	Sector Map	0 Average Amplitude 100 Minimum Amplitude
0 120	0 100			0 100

Casing Collar Locator	0	(mV)	20	0	100
0 Temperature (degF) 20	3' Travel Time			Maximum Amplitude	
Line Speed	650	(usec)	150	0	100
-150 (ft/min) 150					
0 Line Tension (lb) 2000					
Differential Temperature					
-2 (degF) 2					

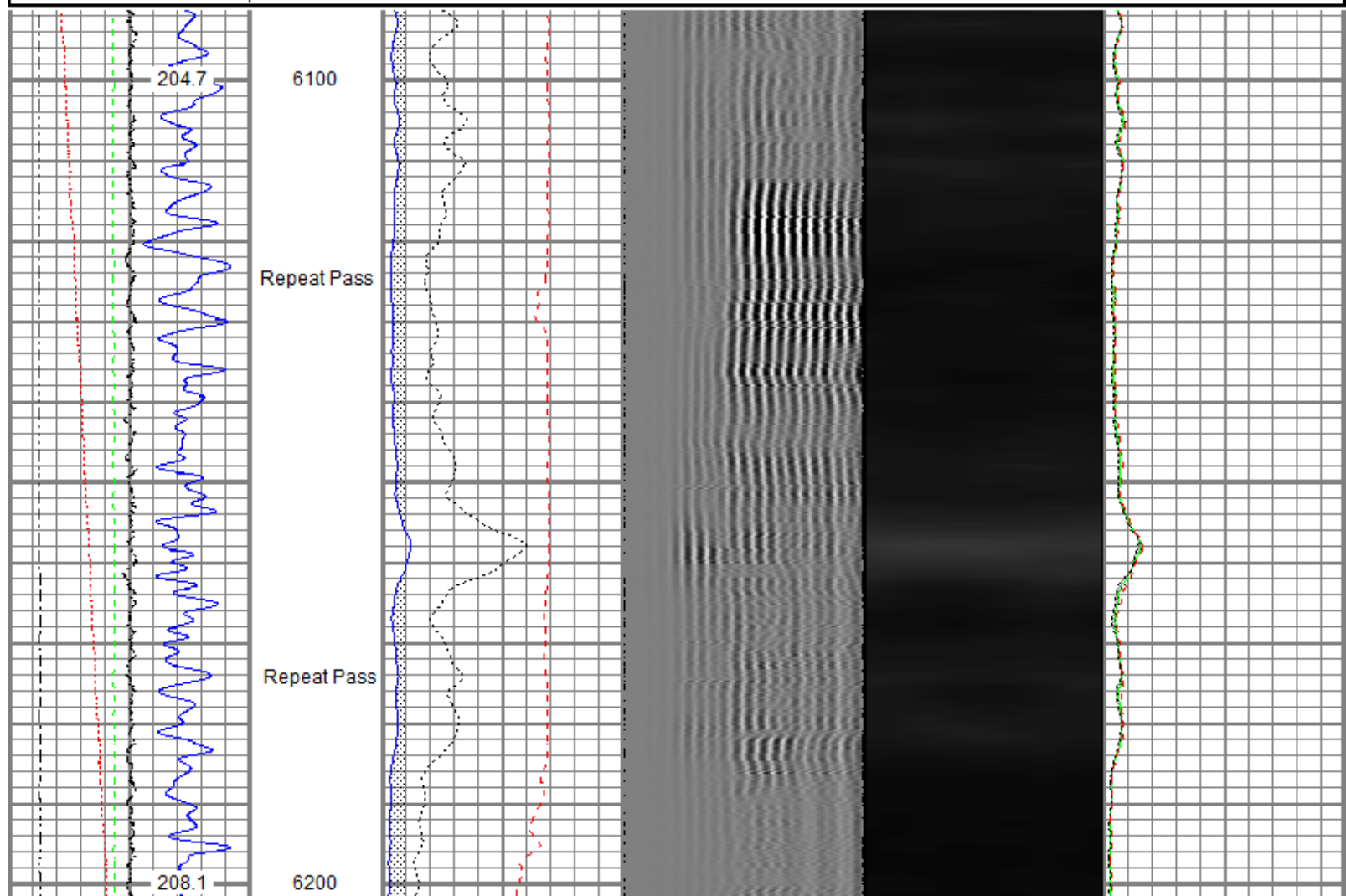


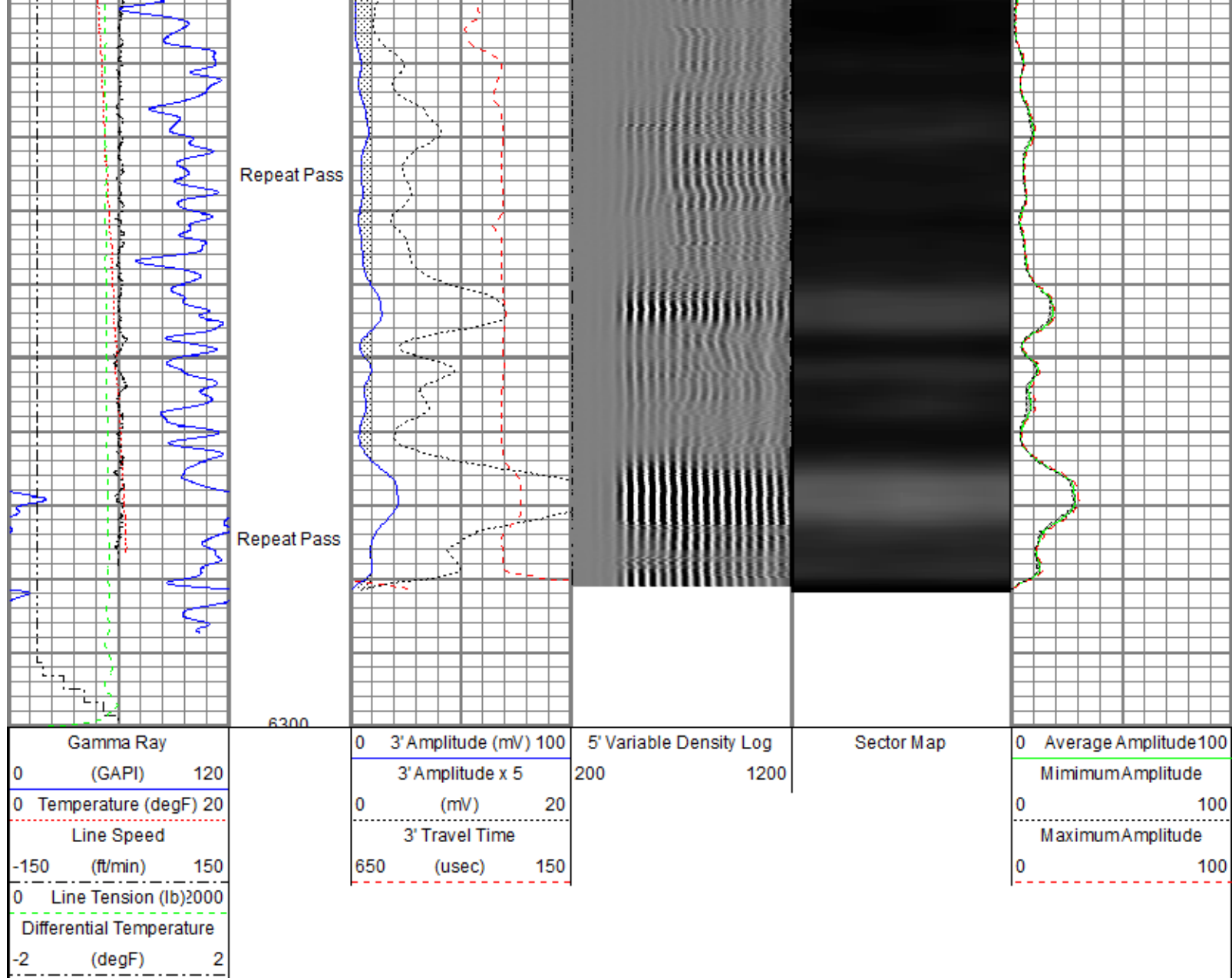
Repeat Pass

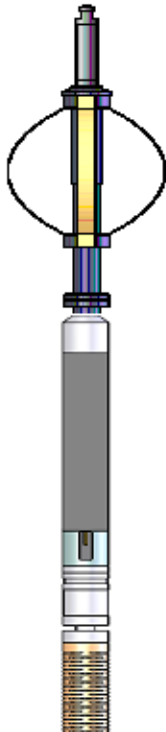
Recorded with 2800 PSI Surface Induced Pressure

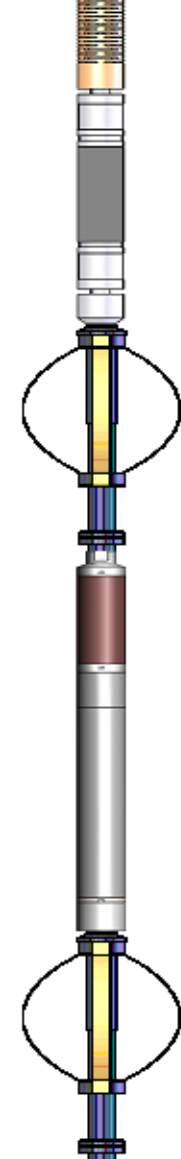
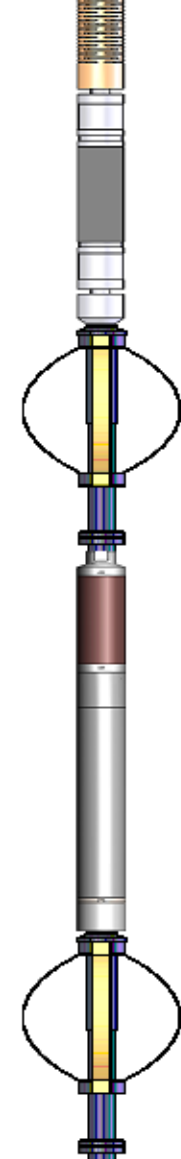
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Dataset Pathname Repeat1.2
Presentation Format ros_radrii
Dataset Creation Tue Aug 14 09:13:35 2018
Charted by Depth in Feet scaled 1:240

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





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	17.04		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
			Probe Radii-2750 RBT (FW1308-089) Probe 2-3/4" Radial Cement Bond Tool with Integral	9.39	2.75	105.00
WVFS8	14.81					

WVFS7	14.81		Temperature Sub					
WVFS6	14.81							
WVFS5	14.81							
WVFS4	14.81							
WVFS3	14.81							
WVFS2	14.81							
WVFS1	14.81							
WVFCAL	14.81							
WVF3FT	14.81							
WVF5FT	13.81							
HEADVOLT	10.56							
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00		
CCL\$2	6.80							
CCL\$1	6.80							
GR	5.46		Probe GR-CCL-2750 6PB (101001) 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		
Dataset: PROCESSED_0512346335_Anadarko_George 25-4HZ_RBL_08-13-18_2800 PSI.db: field/well/run1/Toolstring								
Total length: 23.86 ft								
Total weight: 223.60 lb								
O.D.: 2.75 in								

Calibration Report						
Database File	c:\programdata\warrior\data\0512346335_anadarko_george 25-4hz_rbl_08-13-18\processed_0512346335_anadarko_george 2					
Dataset Pathname	Main.1					
Dataset Creation	Mon Aug 13 16:10:14 2018					
Compensated Neutron Calibration Report						
Serial Number:		FW1308-020_A1483				
Tool Model:		2750 BL				
CALIBRATION		Wed Oct 11 09:42:11 2017				
Detector		Readings		Target		Normalization
Short Space		3241.60	cps	0.00	cps	1.0000
Long Space		452.04	cps	0.00	cps	1.0000
PRE-SURVEY VERIFICATION						
Detector		Readings		Measured		Target
1)	Short Space	cps		pu		pu
	Long Space	cps				
2)	Short Space	cps				

2)	Short Space Long Space	cps cps	pu pu
3)	Short Space Long Space	cps cps	pu pu
POST-SURVEY VERIFICATION			
	Detector	Readings	Measured Target
1)	Short Space Long Space	cps cps	pu pu
2)	Short Space Long Space	cps cps	pu pu
3)	Short Space Long Space	cps cps	pu pu

Gamma Ray Calibration Report			
Serial Number:	101001		
Tool Model:	2750 6PB		
Performed:	Sun Nov 12 11:25:32 2017		
Calibrator Value:	637.0	GAPI	
Background Reading:	100.6	cps	
Calibrator Reading:	981.1	cps	
Sensitivity:	0.7235	GAPI/cps	

Segmented Cement Bond Log Calibration Report			
Serial Number:	FW1308-089		
Tool Model:	2750 RBT		
Calibration Casing Diameter:	5.500	in	
Calibration Depth:	18.044	ft	


Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.002	0.644	0.800	71.921	110.872	0.539
CAL	0.728	0.729				
5'	-0.004	0.639	0.800	71.921	110.649	1.196
SUM						
S1	0.001	0.638	0.000	100.000	157.088	-0.210
S2	0.002	0.644	0.000	100.000	155.717	-0.305
S3	0.001	0.641	0.000	100.000	156.251	-0.177
S4	0.002	0.642	0.000	100.000	156.165	-0.330
S5	0.002	0.657	0.000	100.000	152.552	-0.258
S6	0.002	0.672	0.000	100.000	149.200	-0.288
S7	0.002	0.663	0.000	100.000	151.195	-0.244
S8	0.001	0.656	0.000	100.000	152.604	-0.158

Internal Reference Calibration, performed (Not Performed):						
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.728	0.729	1.000	0.000

Air Zero Calibration, performed Mon Aug 13 11:22:02 2018:						
	Raw (v)		Calibrated (v)		Results	

	Zero	Zero	Offset
3'	0.004	0.000	0.001
5'	0.008	0.000	-0.000
SUM			
S1	0.004	0.000	-0.000
S2	0.005	0.000	0.000
S3	0.004	0.000	-0.001
S4	0.004	0.000	0.000
S5	0.004	0.000	0.000
S6	0.004	0.000	0.000
S7	0.004	0.000	-0.000
S8	0.004	0.000	-0.001

Temperature Calibration Report			
Serial Number:	FW1308-089		
Tool Model:	2750 RBT		
Performed:	Sun Nov 12 13:49:09 2017		
	Reference	Reading	
Low Reference:	100.00 degF	106.47	degF
High Reference:	350.00 degF	395.10	degF
Gain:	0.87		
Offset:	7.78		
Delta Spacing	1		

	Company	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	George 25-4HZ
	Field	Wattenberg
	County	Weld
	State	Colorado