



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company TEP Rocky Mountain LLC  
Well Clough NR 44-3  
Field Rulison  
County Garfield State Colorado

Location: API #: 05-045-23902

SEC 3 TWP 6S RGE 94W

PN

Other Services

Permanent Datum Ground Level Elevation 6719.1'  
Log Measured From Kelly Bushing 24 FT  
Drilling Measured From Kelly Bushing

K.B. 6743.1'  
D.F. 6742.1'  
G.L. 6719.1'

Date	18-DEC-2018			
Run Number	One			
Depth Driller	10623 FT			
Depth Logger	10410 FT			
Bottom Logged Interval	10396 FT			
Top Log Interval	Surface			
Open Hole Size	8.750"			
Type Fluid	Fresh Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	238°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	12.49			
Equipment Number	HD-0359			
Location	Grand Junction, CO			
Recorded By	A. Ellsworth			
Witnessed By	D. Welsh			
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	4 1/2	11.6	P-110	Surface
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 24 FT  
Marker Joint Logged from 6267 FT - 6288 FT  
Log ran with 0 PSI Surface Induced Pressure

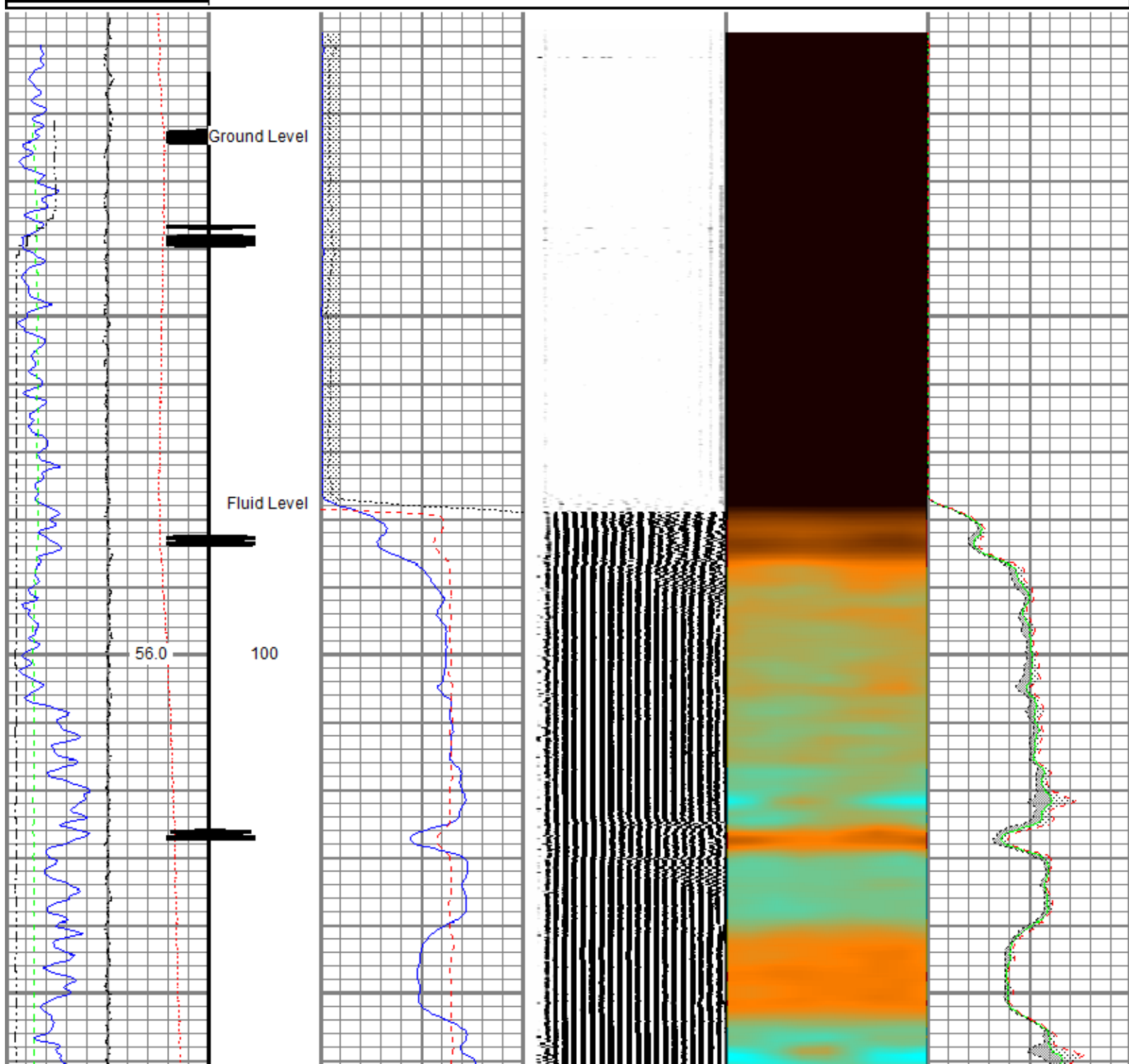
Thank you for choosing Reliance Oilfield Services, LLC!!

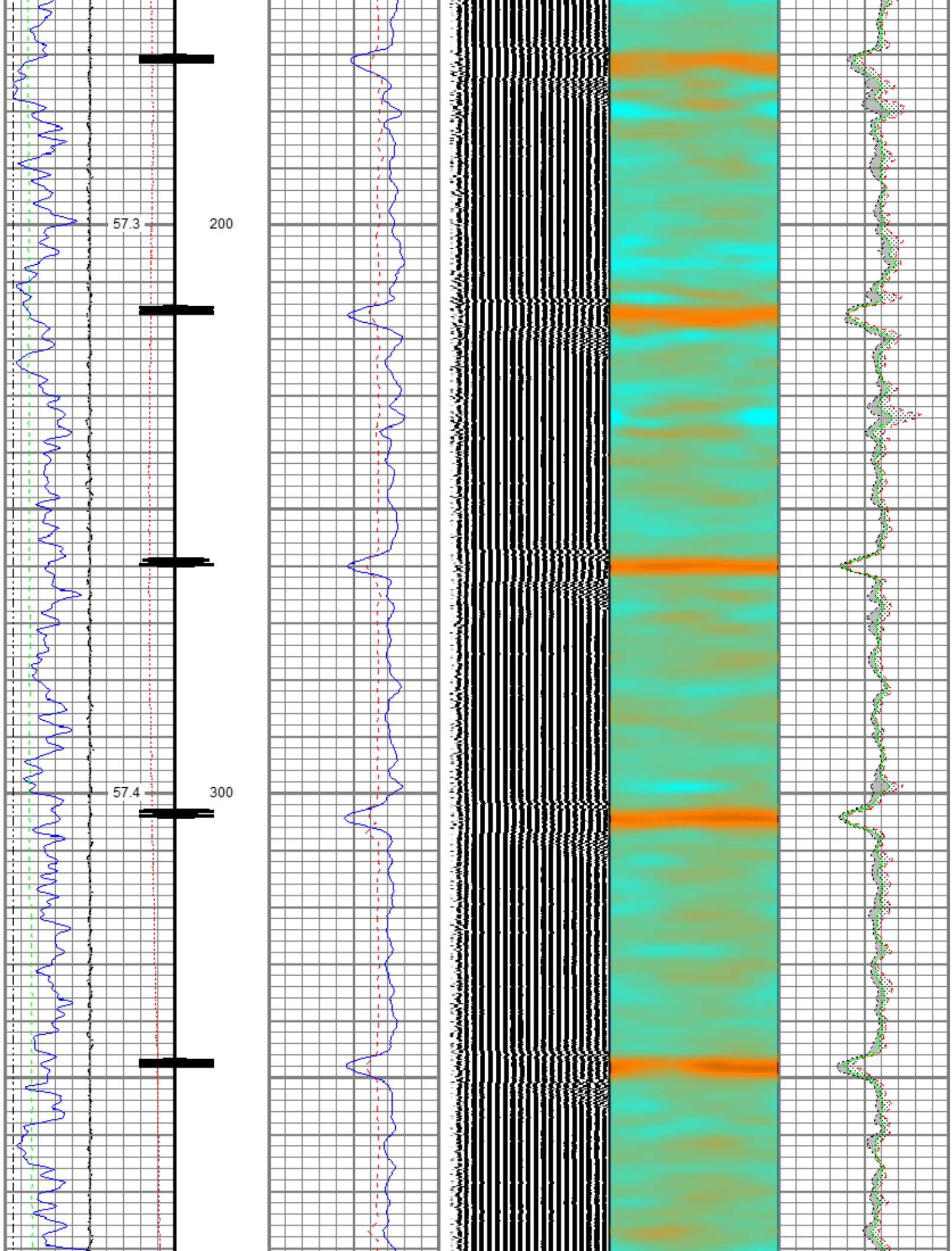
Main Pass

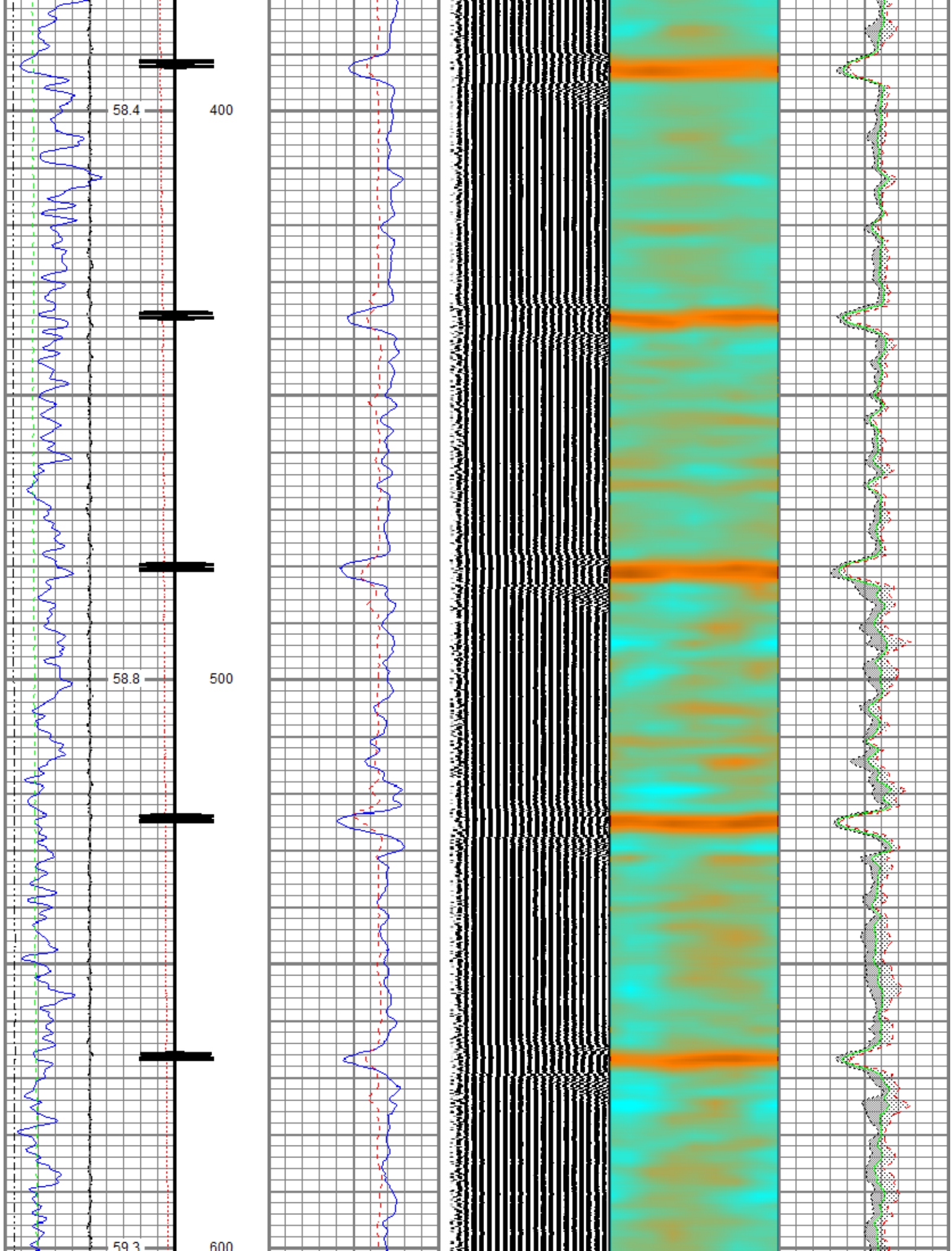


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 Dataset Pathname Main  
 Presentation Format ros\_rbt004\_t  
 Dataset Creation Wed Dec 19 00:26:55 2018  
 Charted by Depth in Feet scaled 1:240

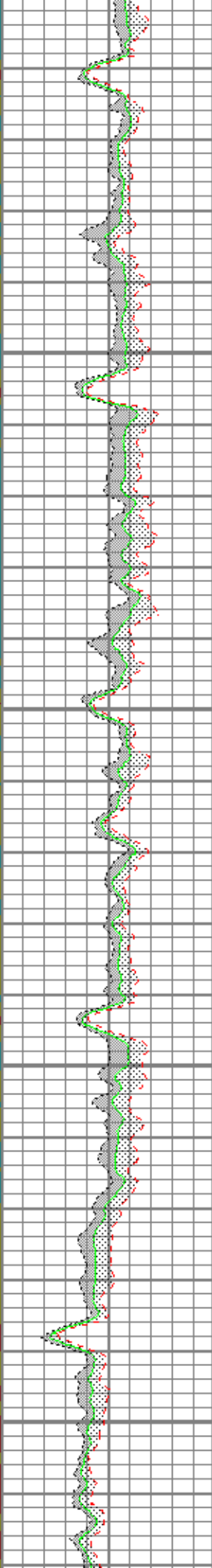
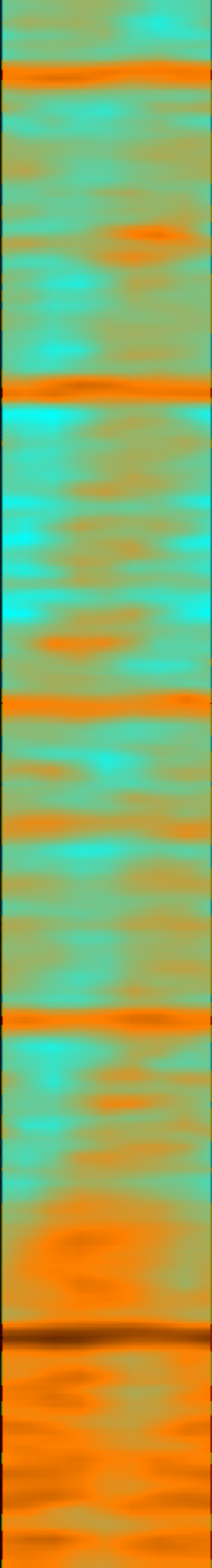
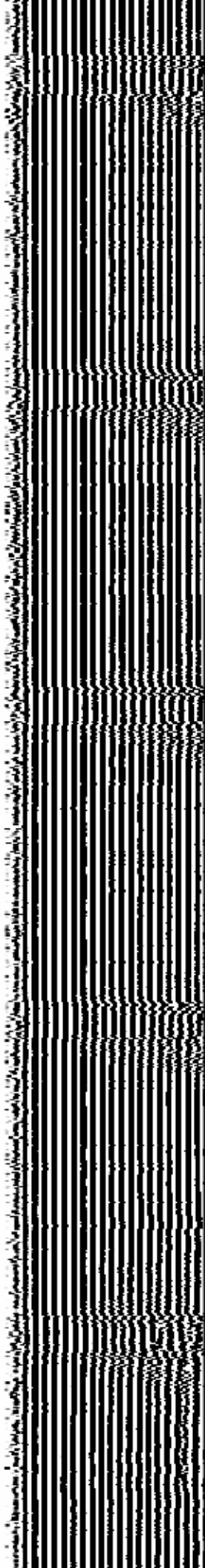
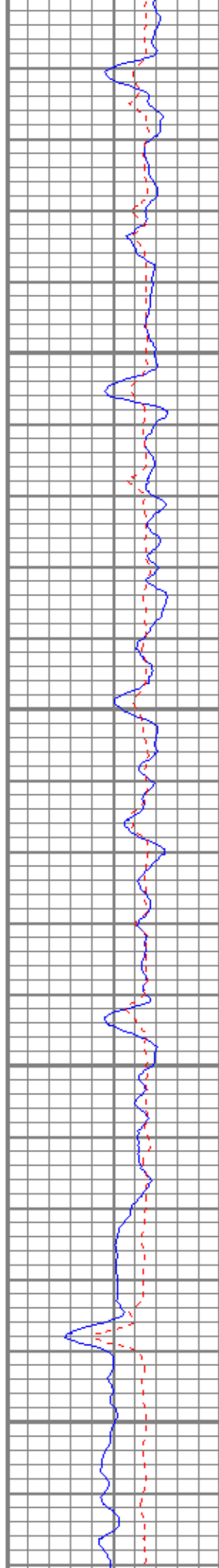
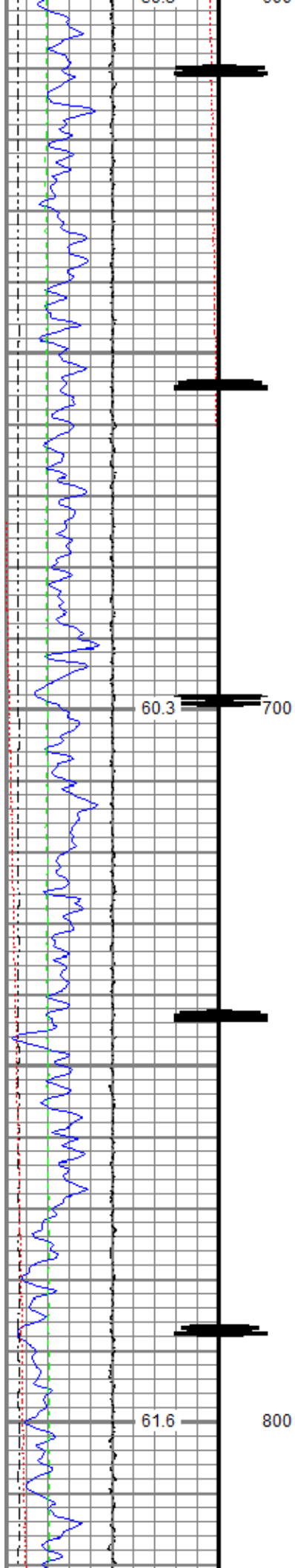
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 150
(GAPI) 200		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Line Speed	0	(mV) 20			0	150
(ft/min) 150		3' Travel Time				Maximum Amplitude
Line Tension (lb) 2000	0	(usec) 200			0	150
Differential Temperature						
(degF) 2	-2					
Temperature (degF) 20	0					
CCL 0	10					

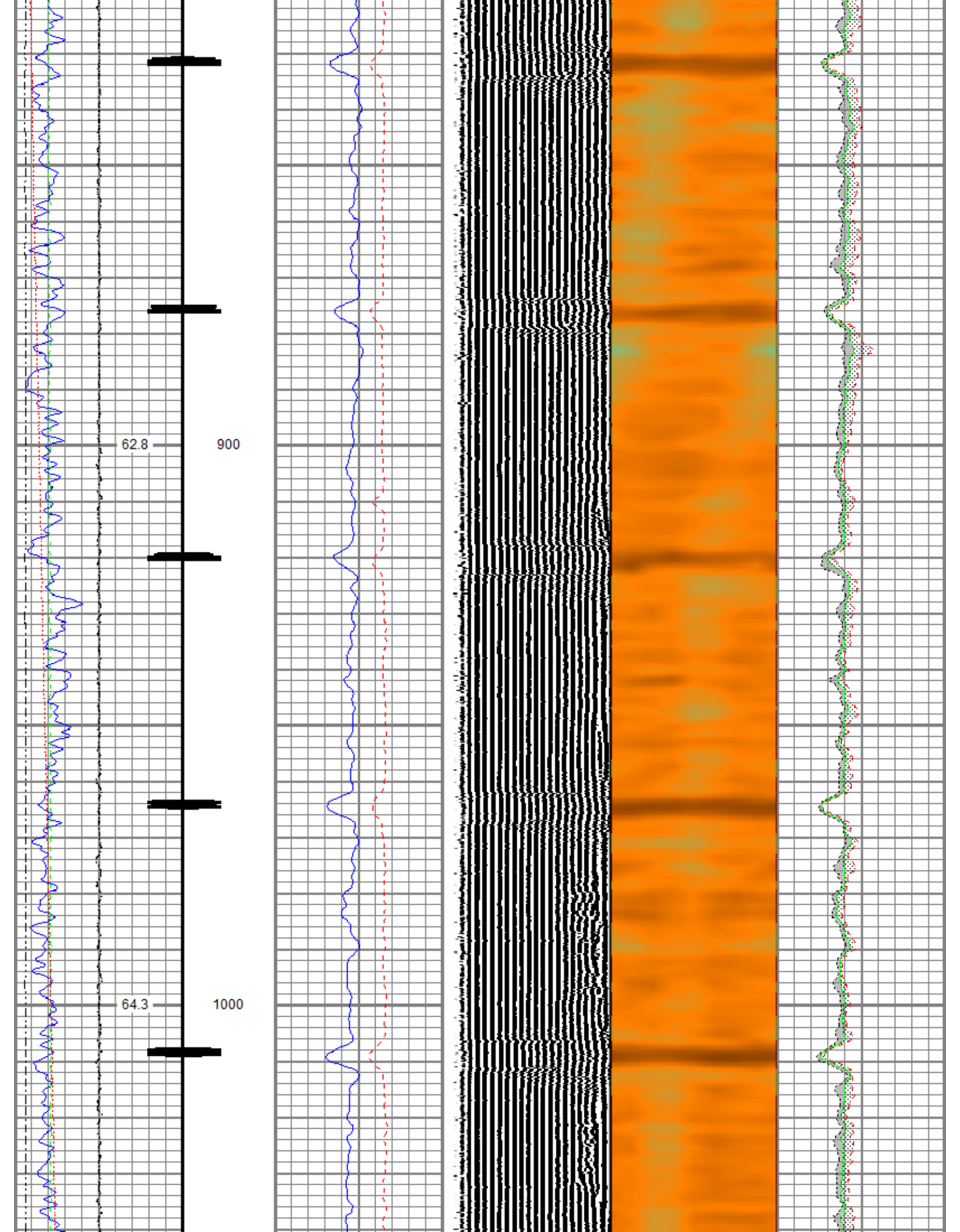


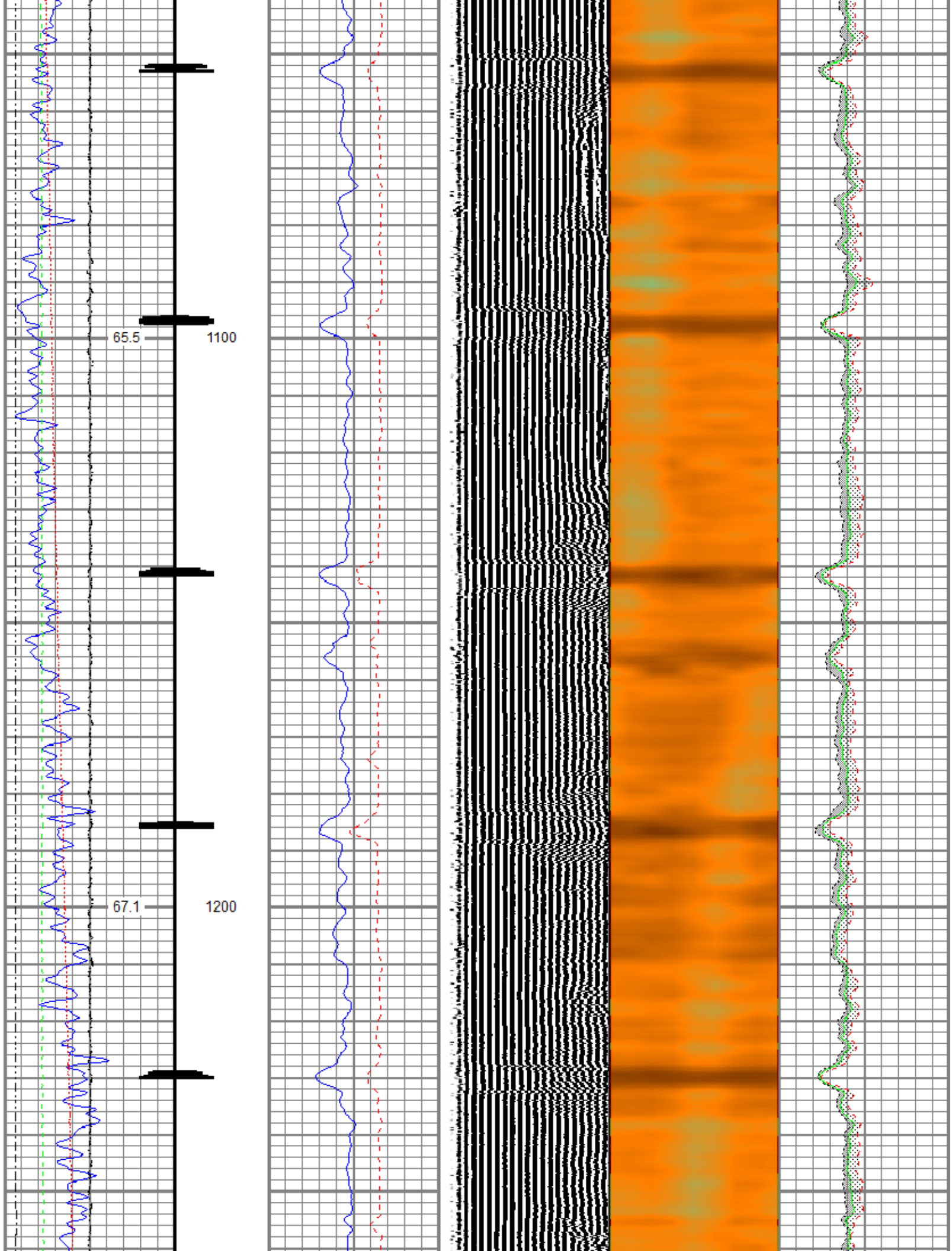




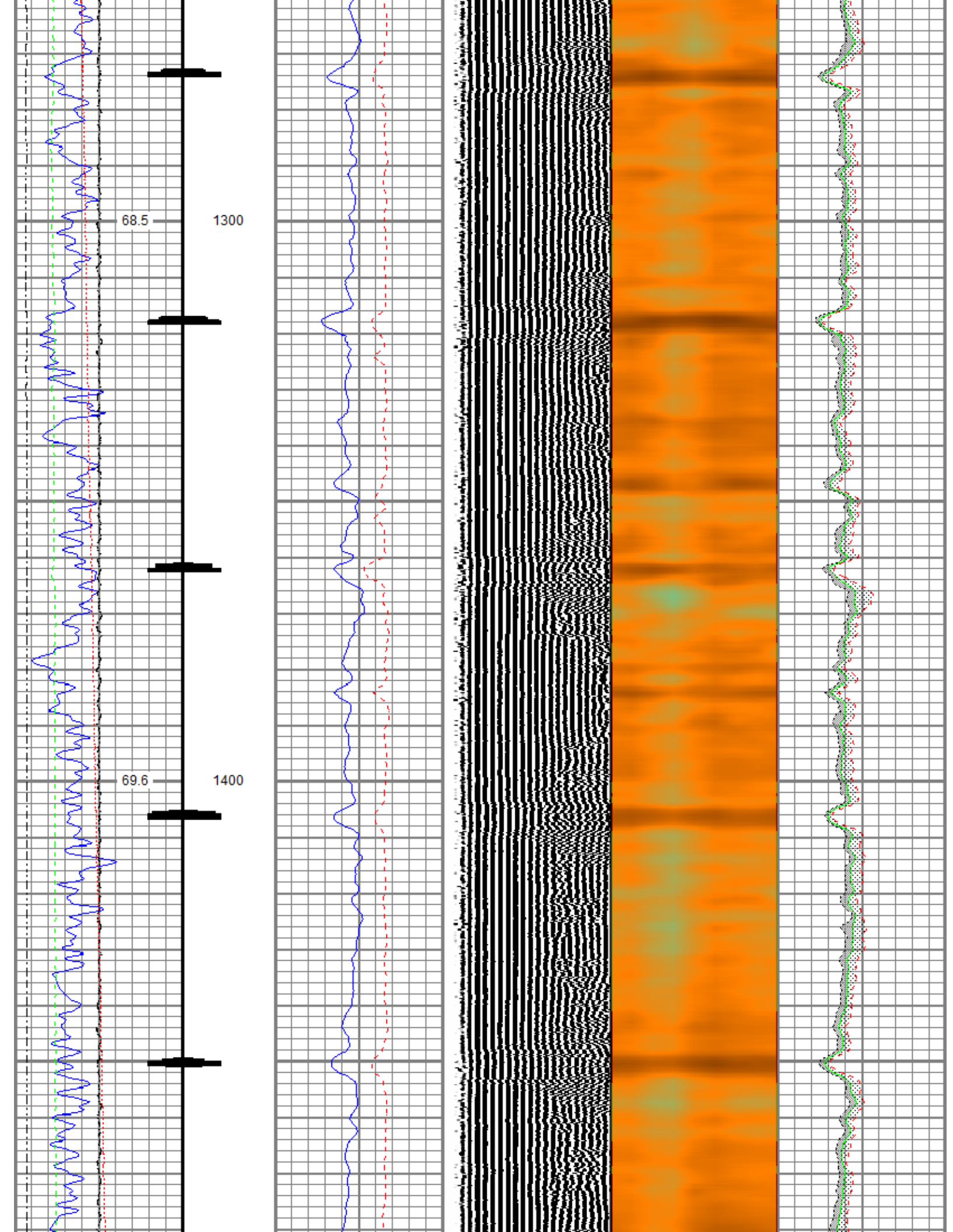




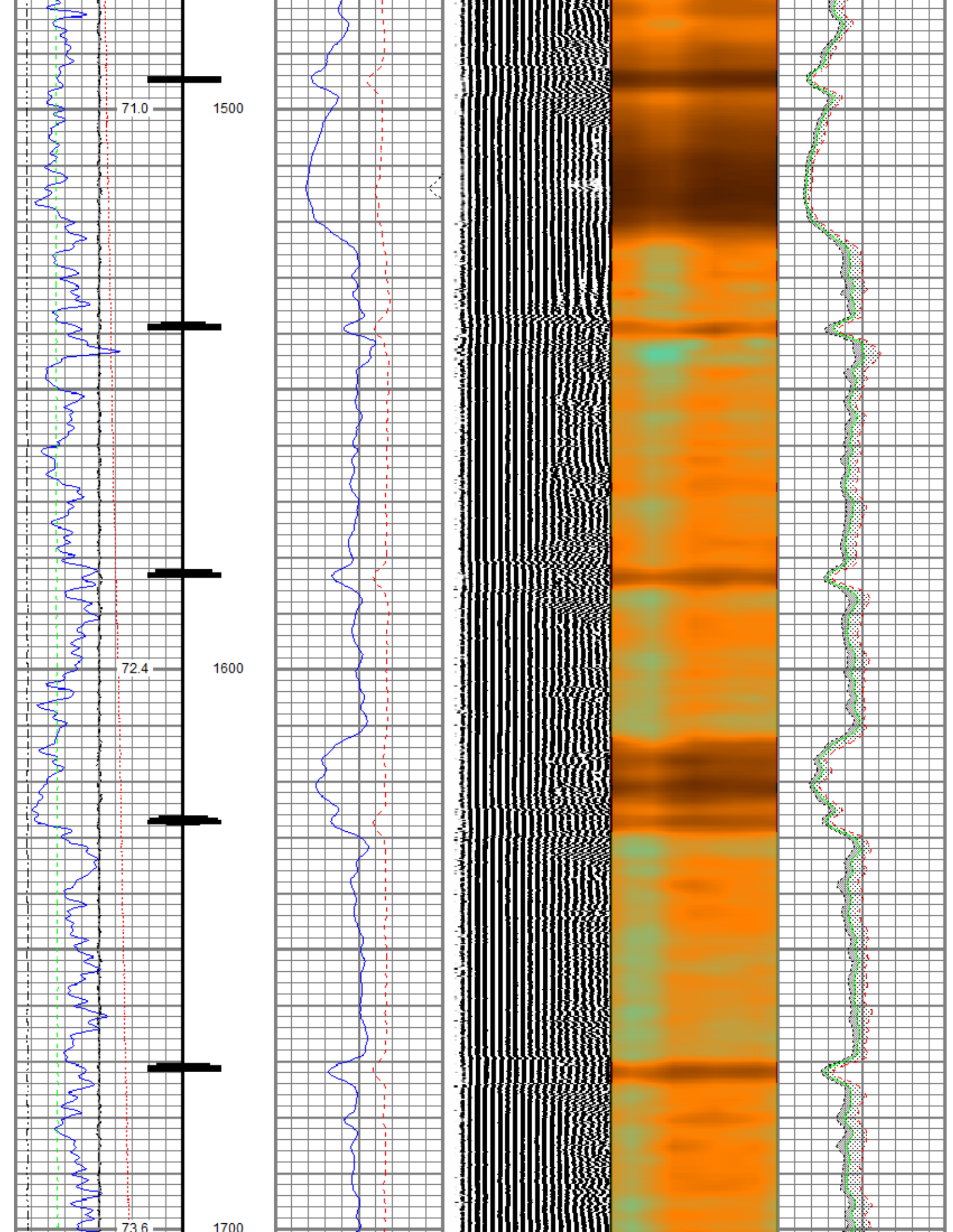


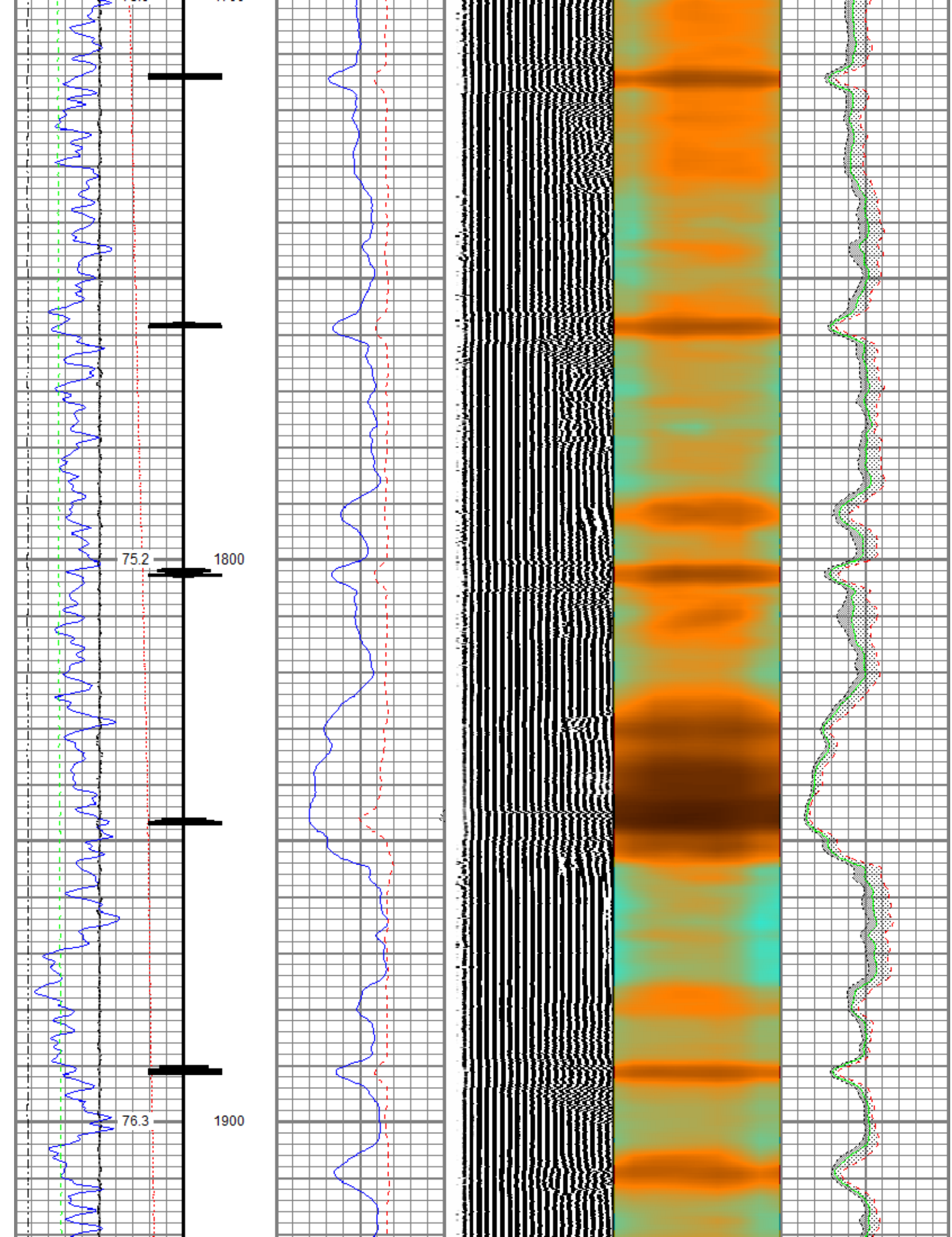


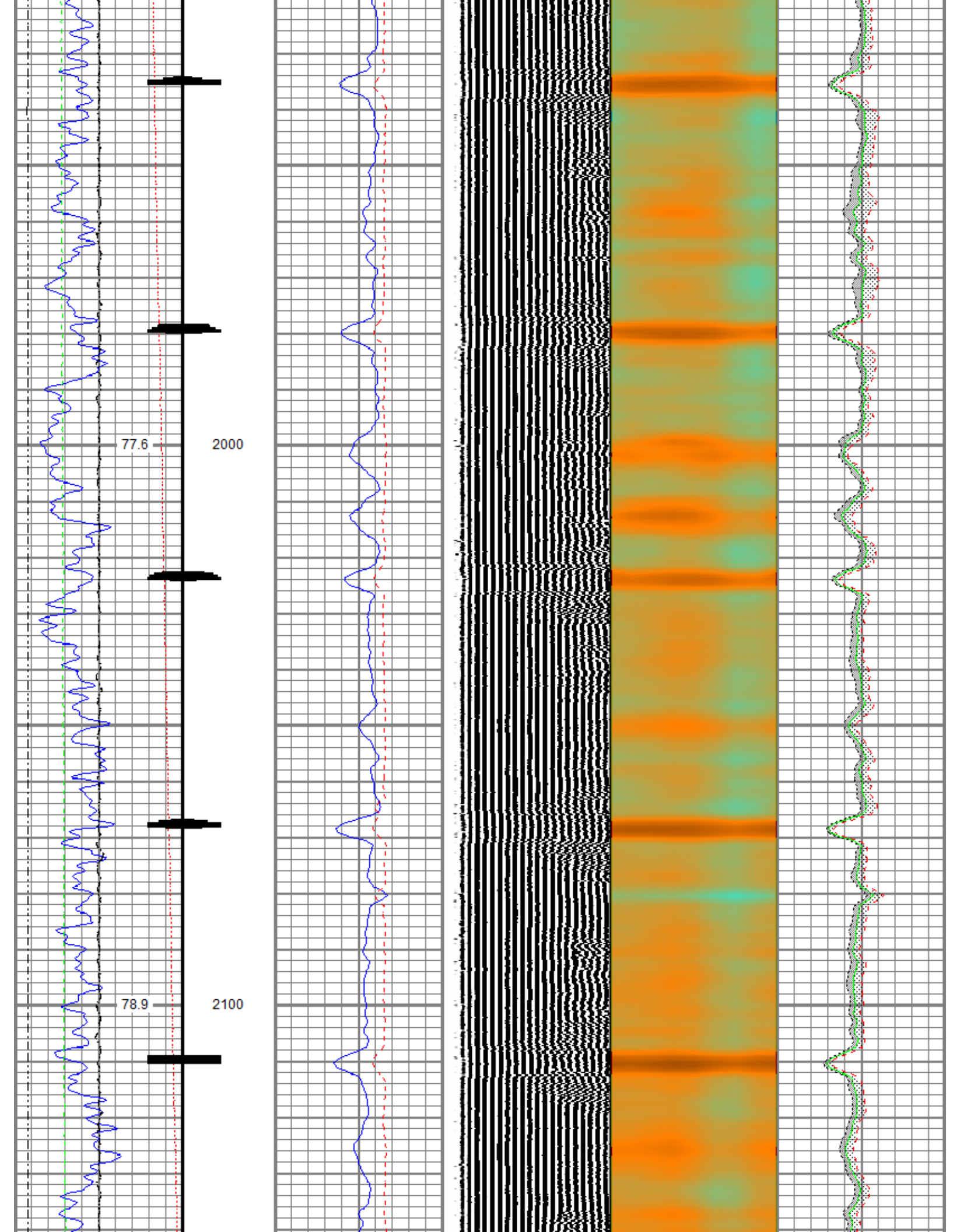




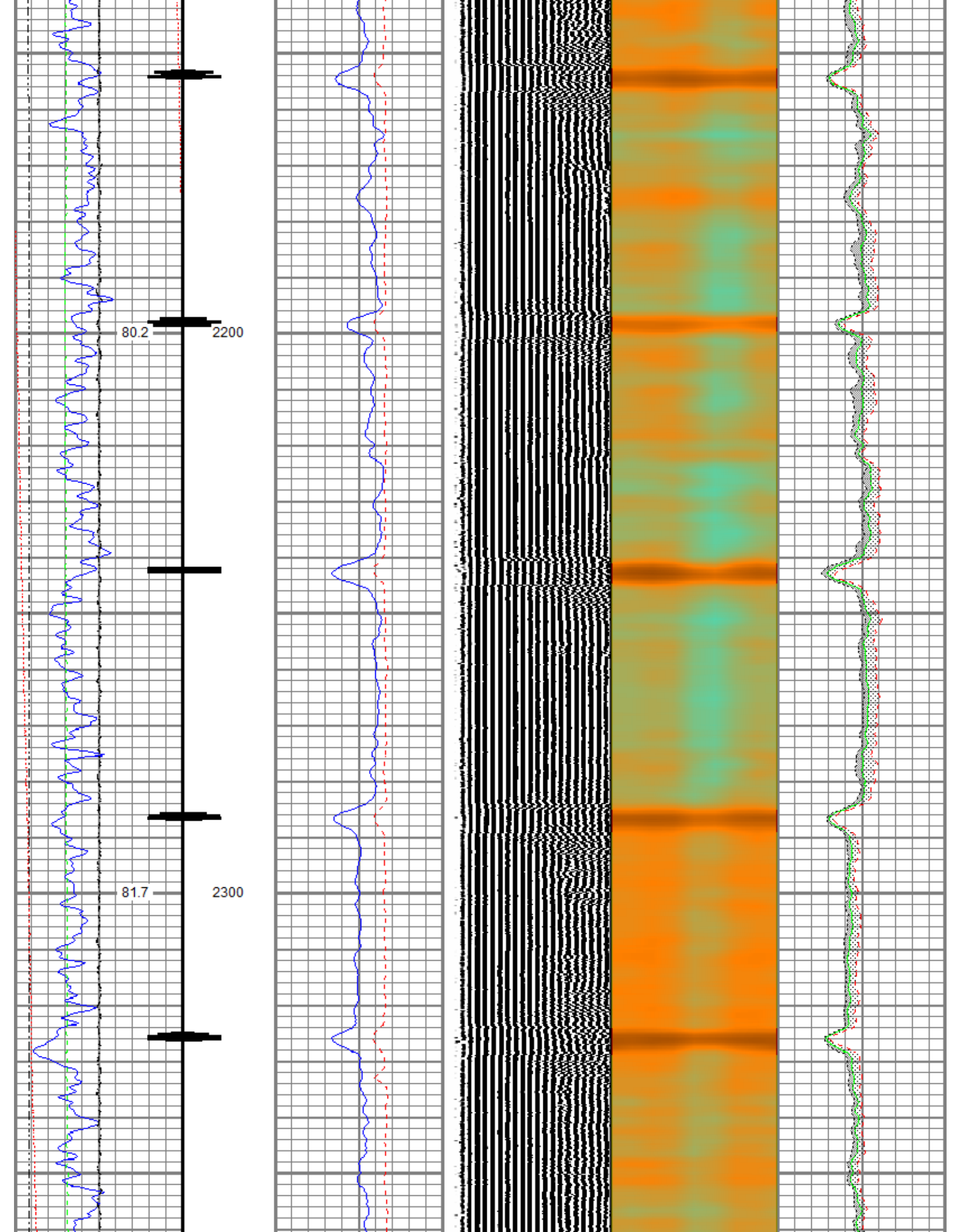




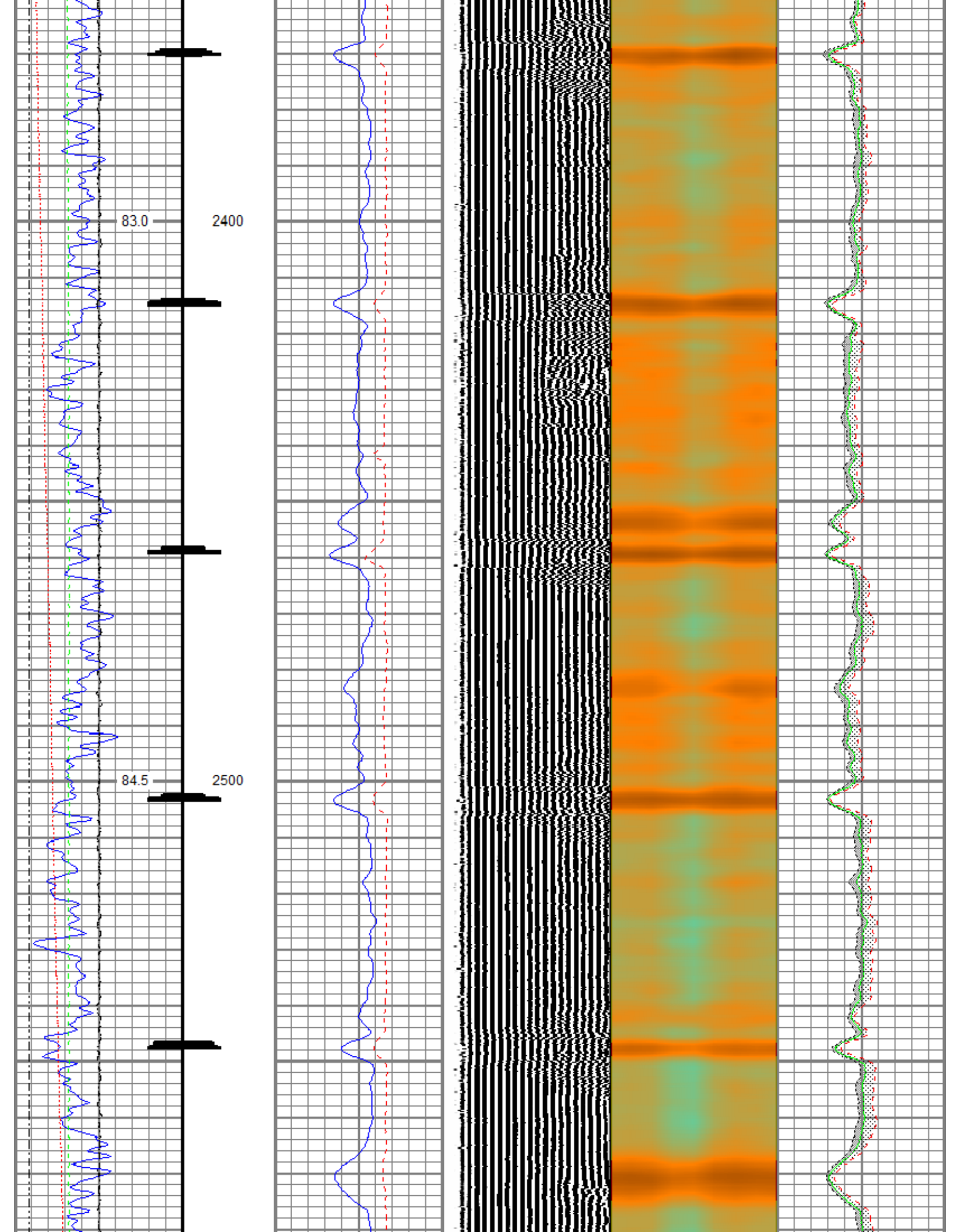


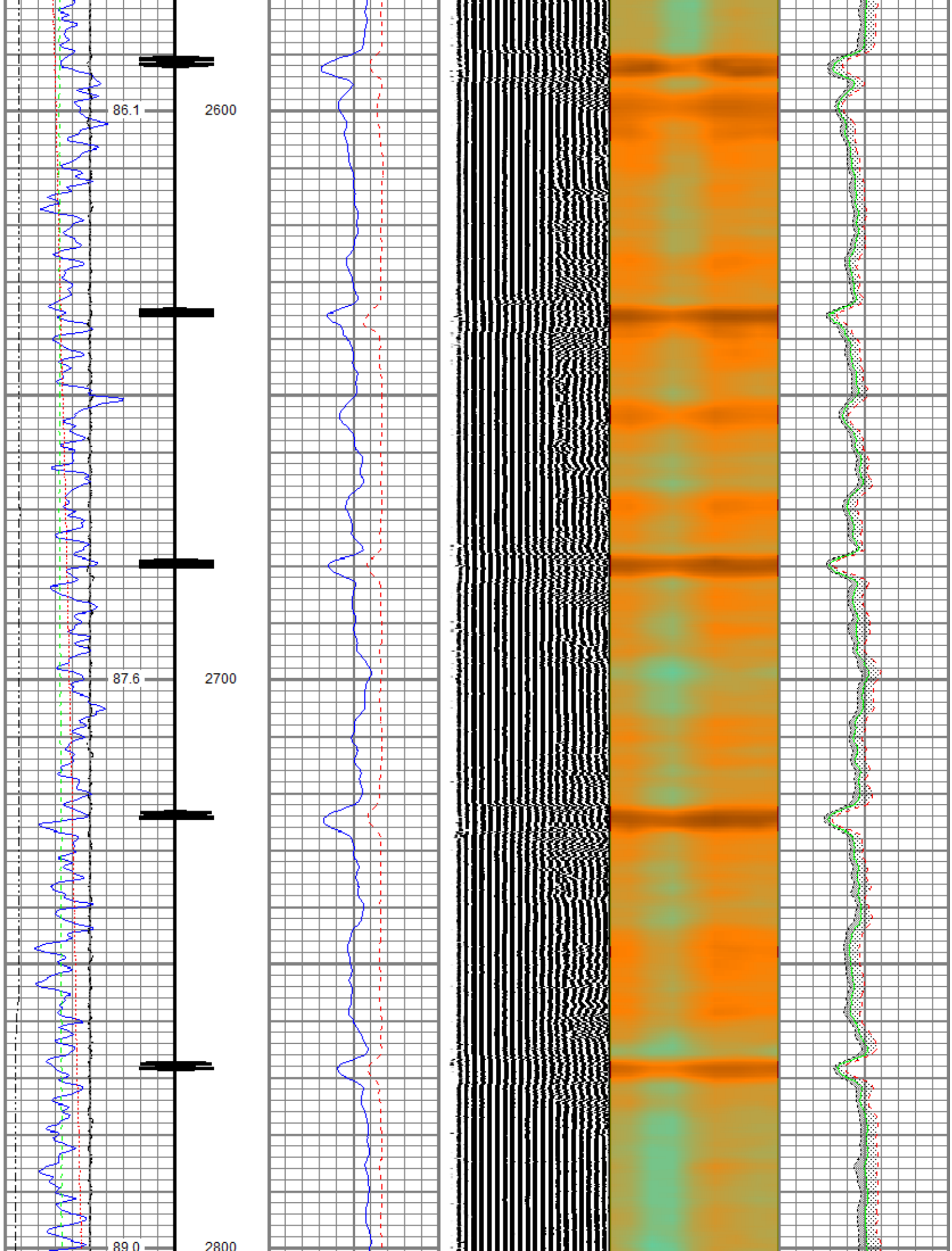


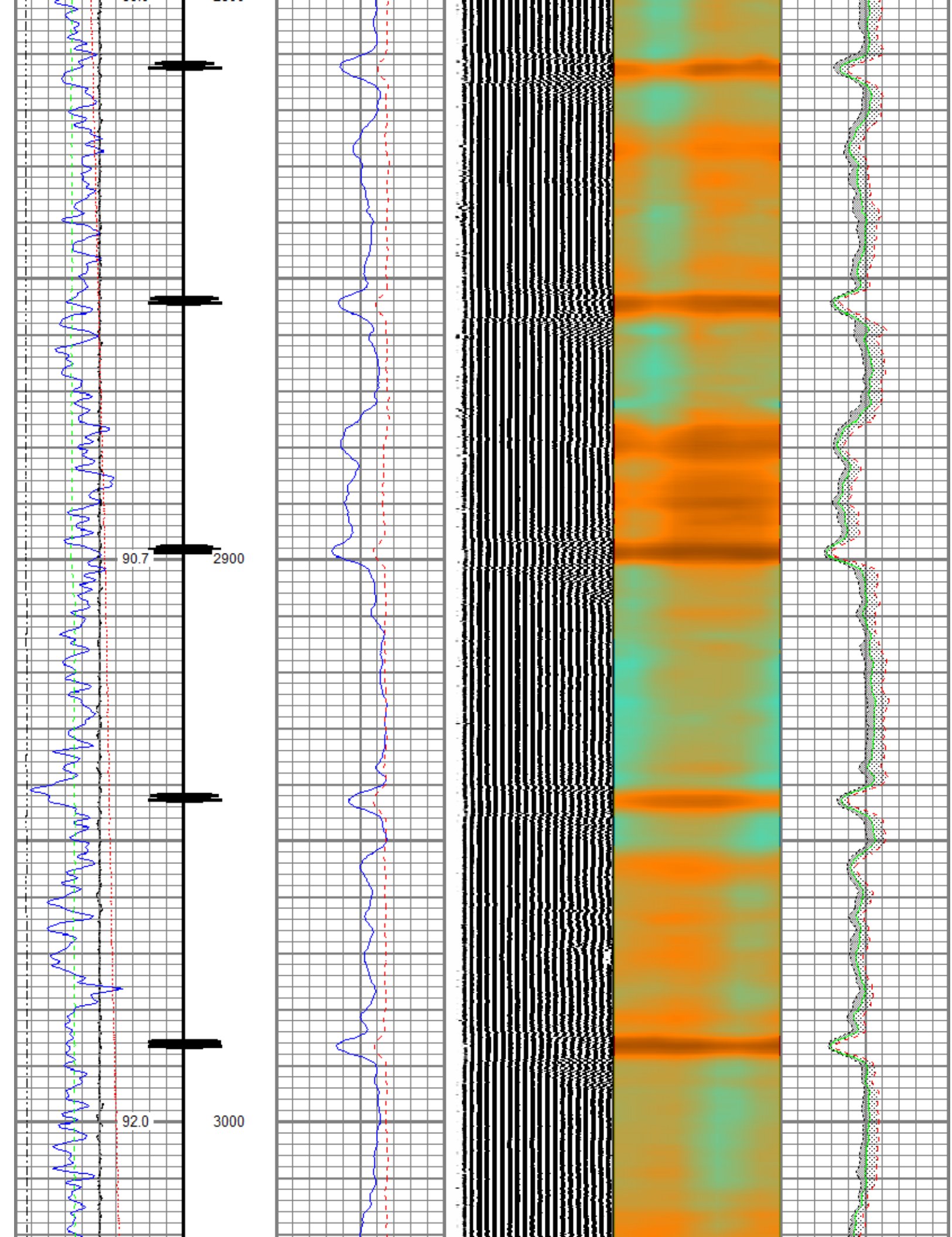


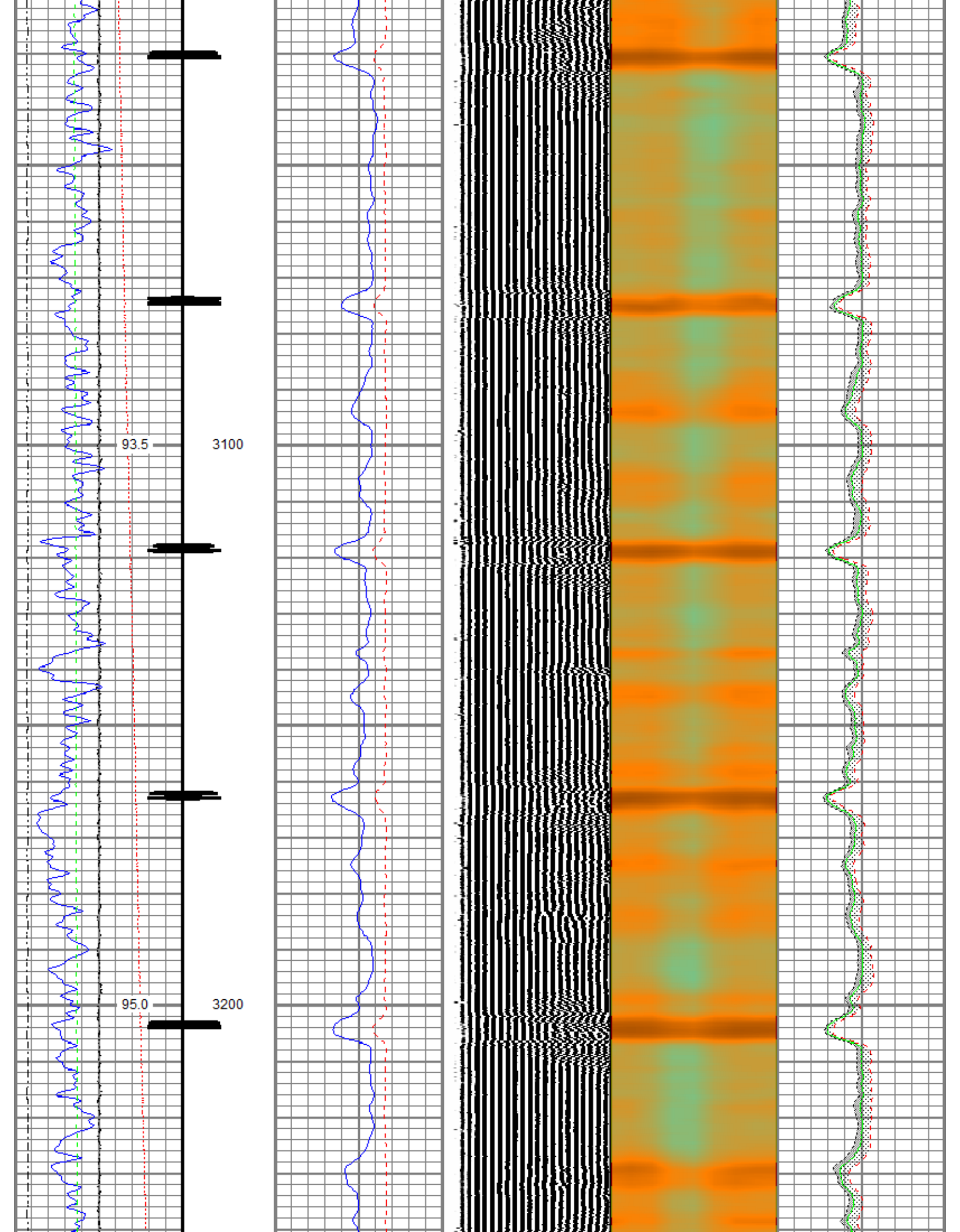




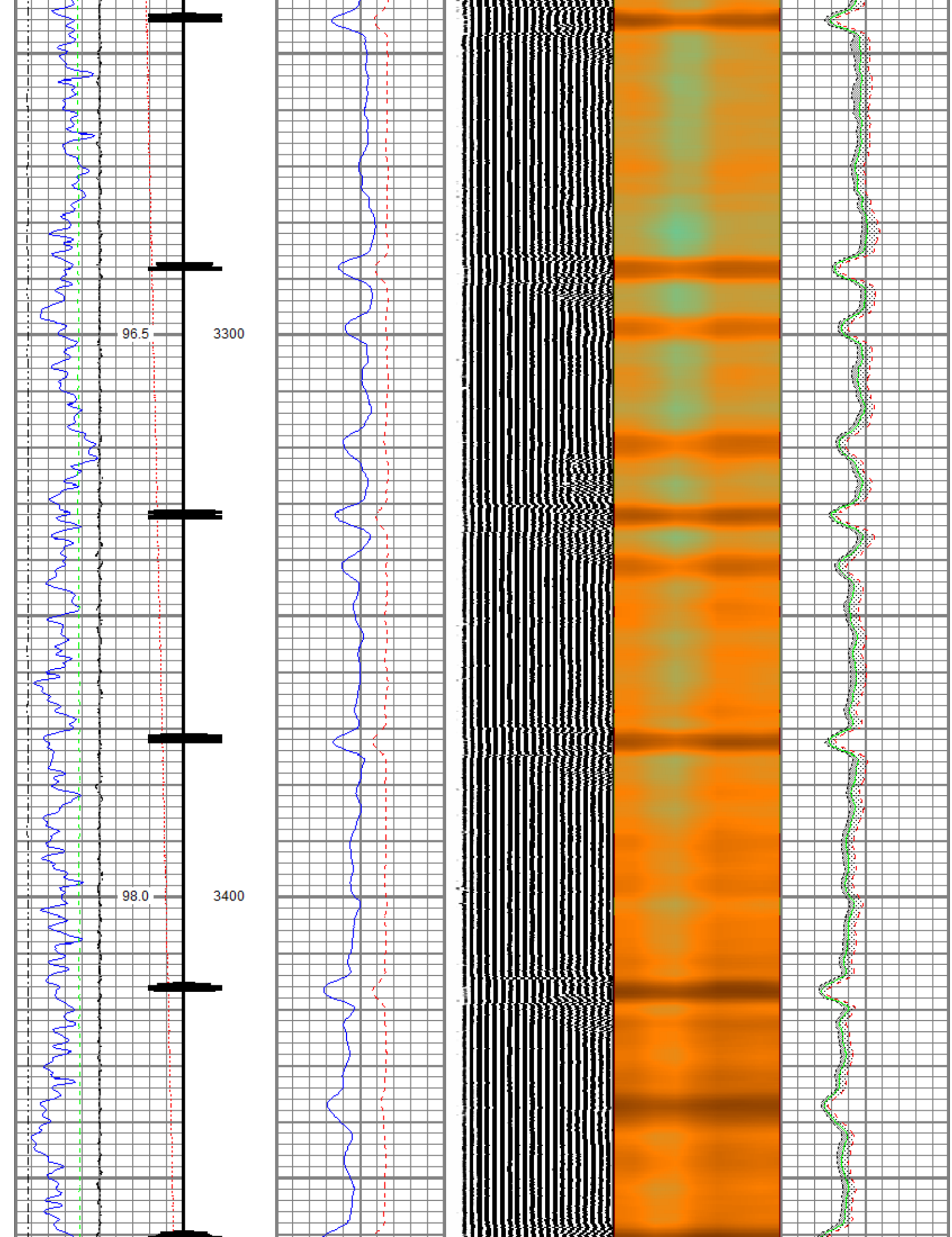


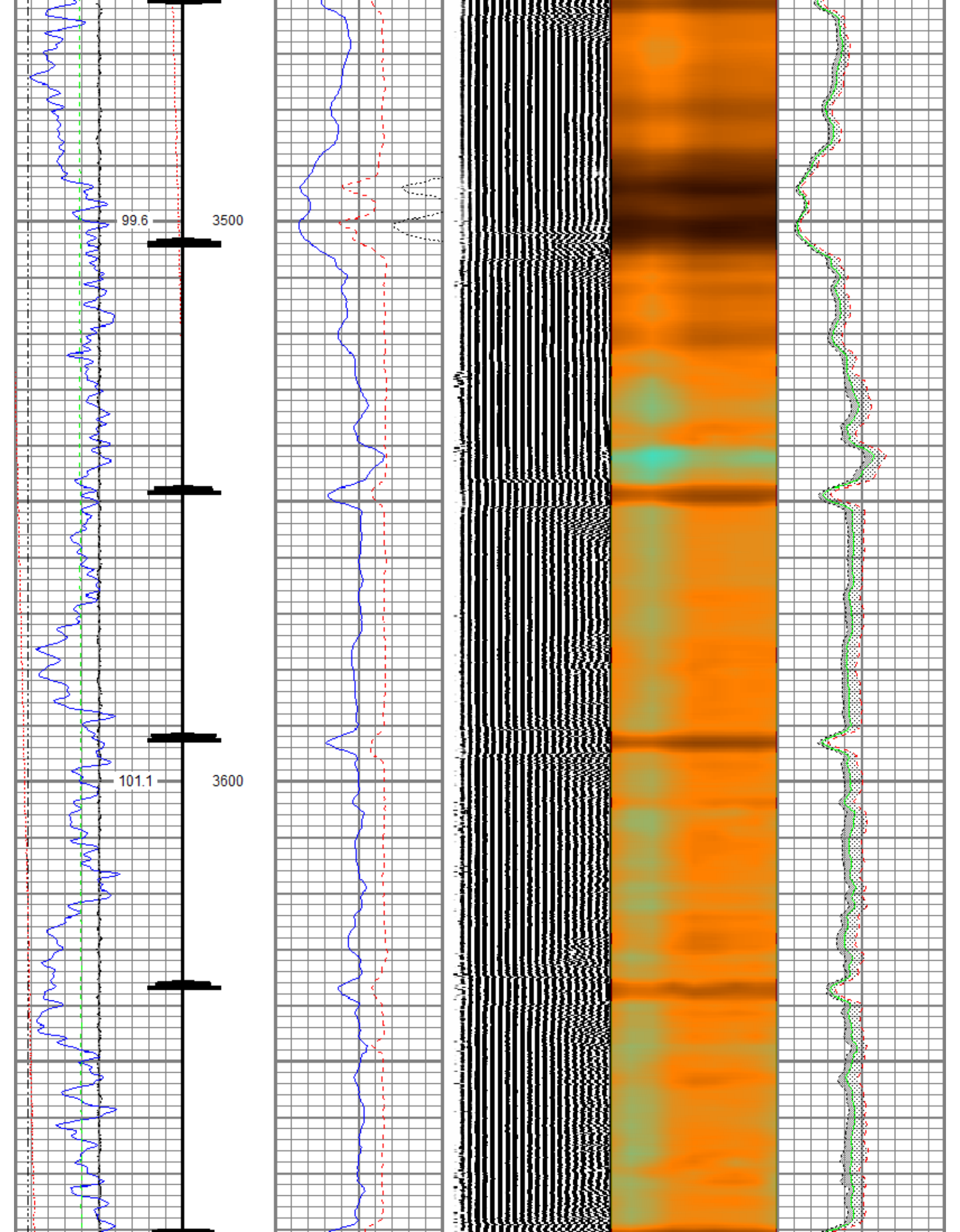


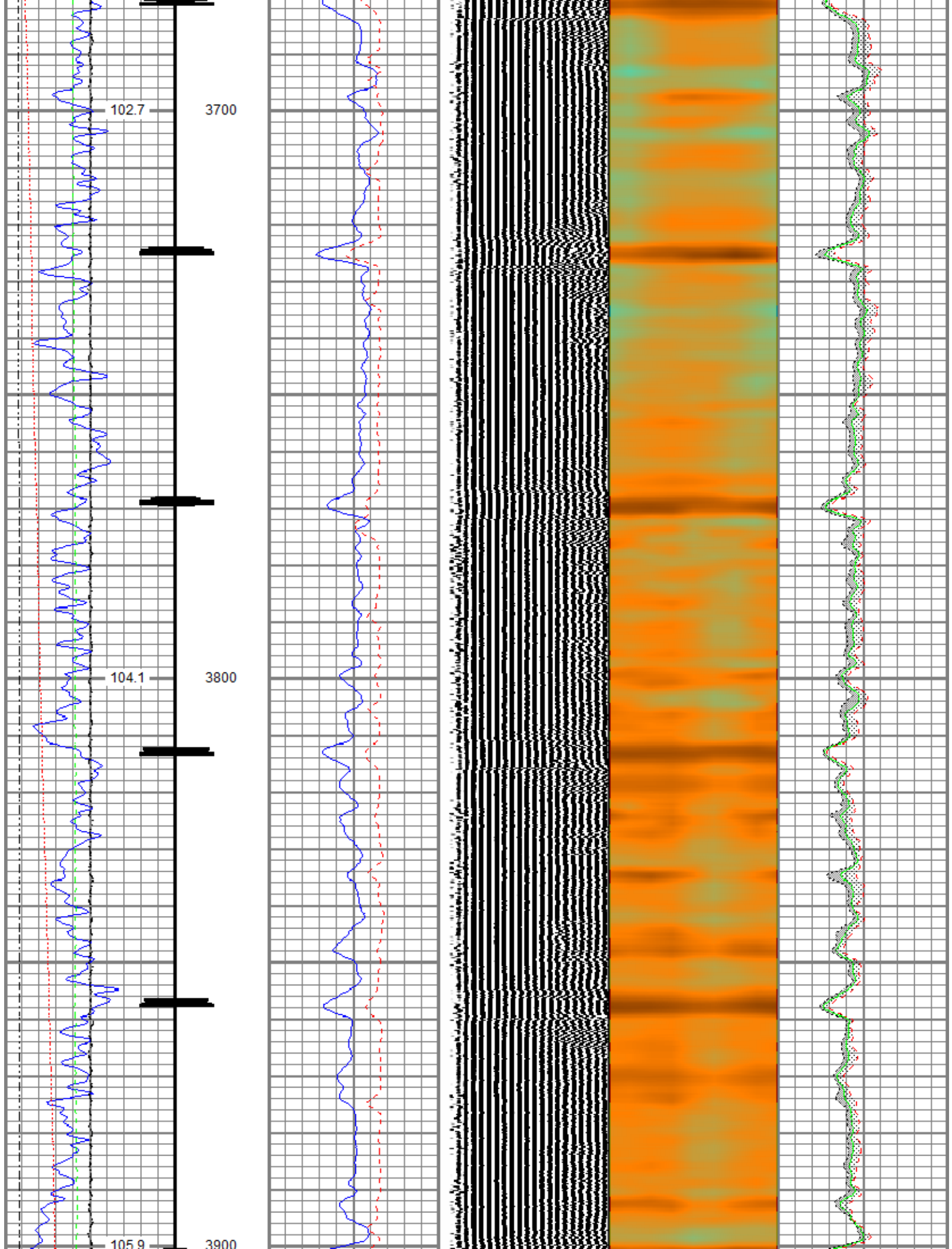




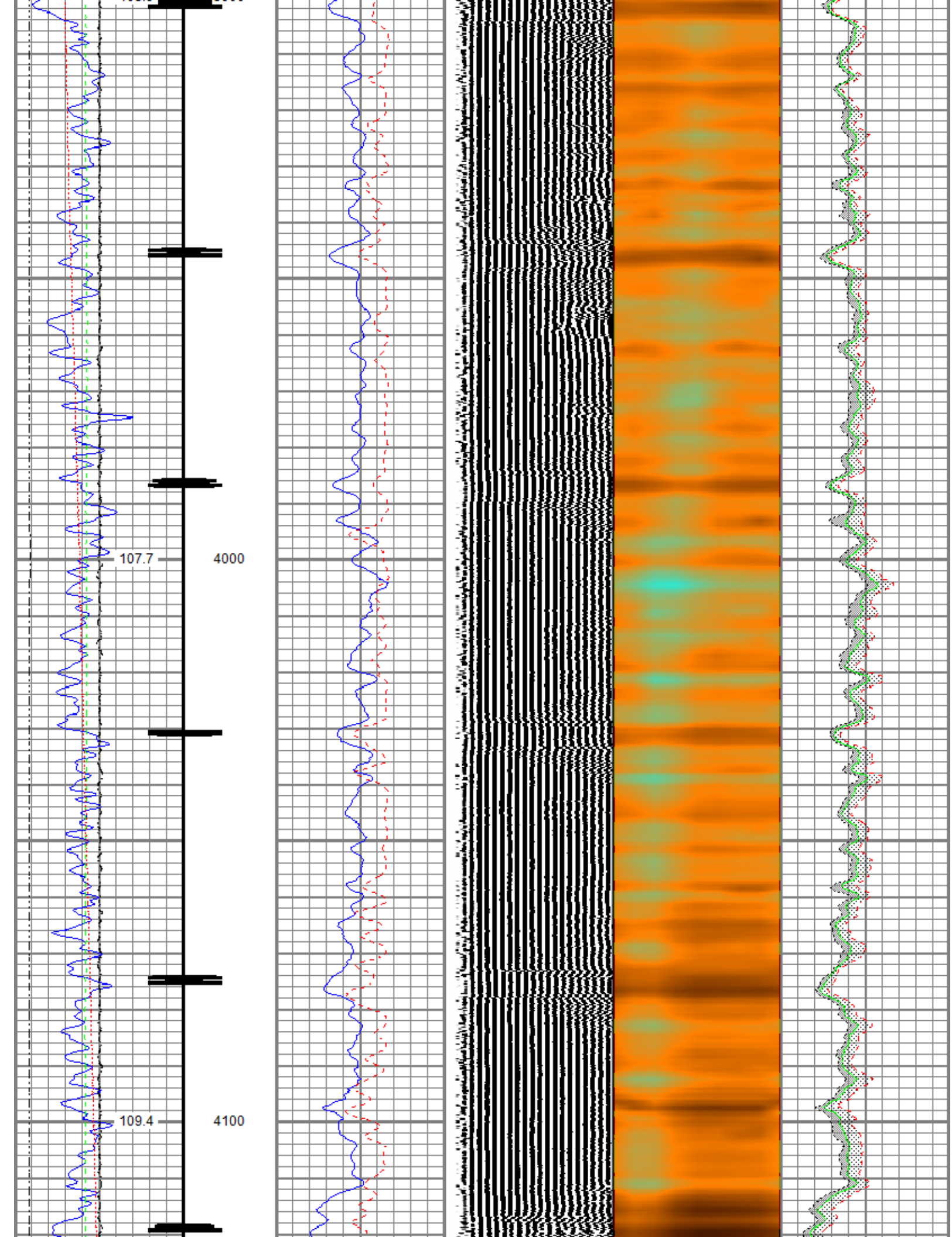






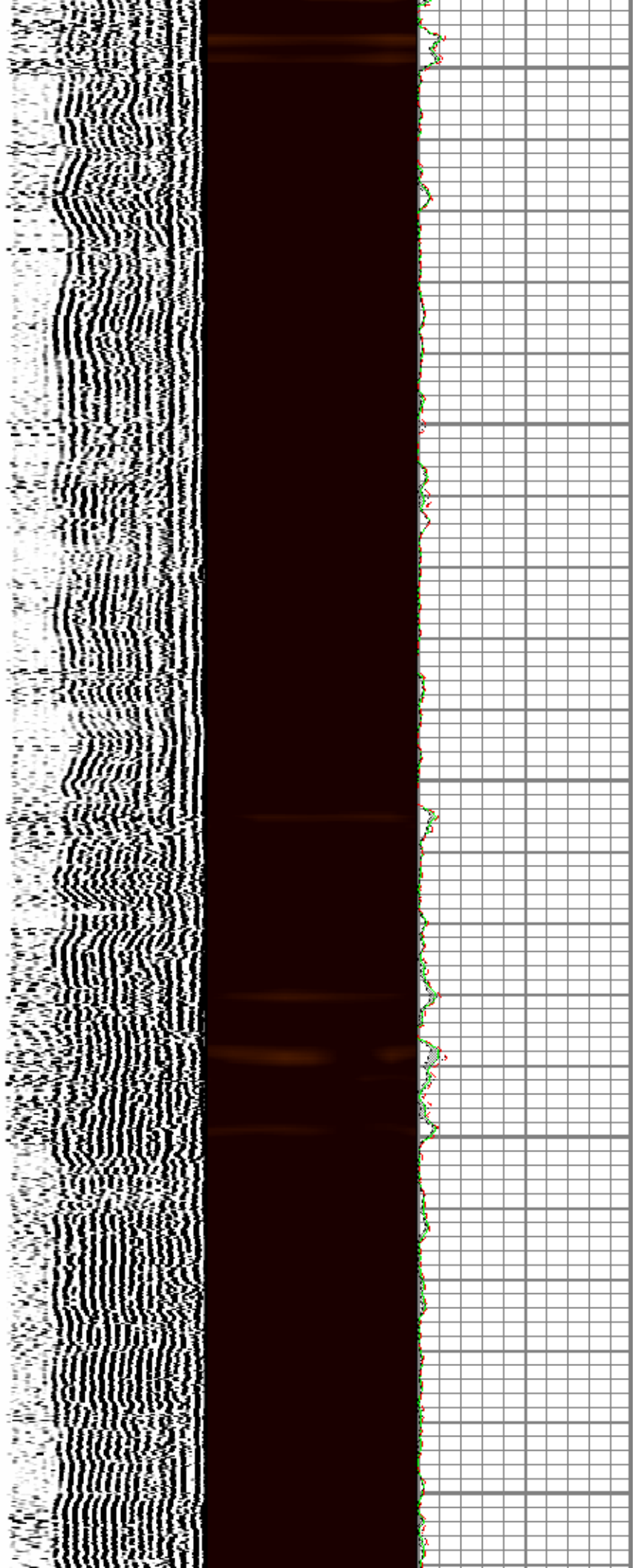
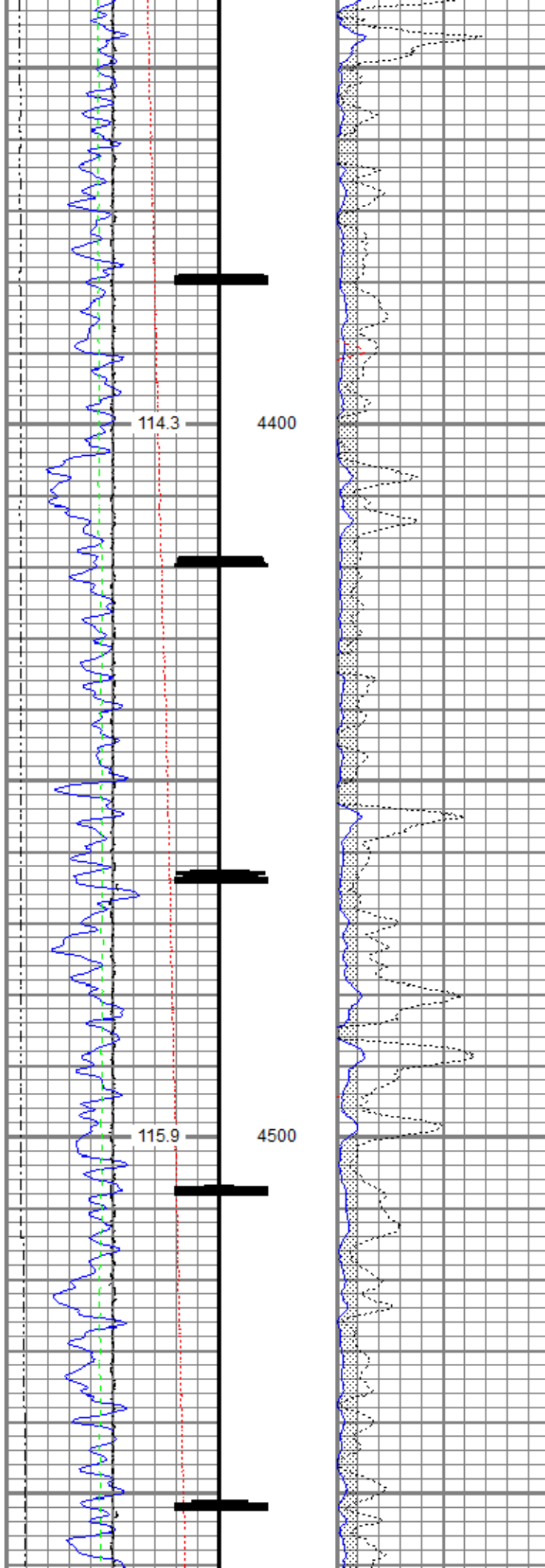


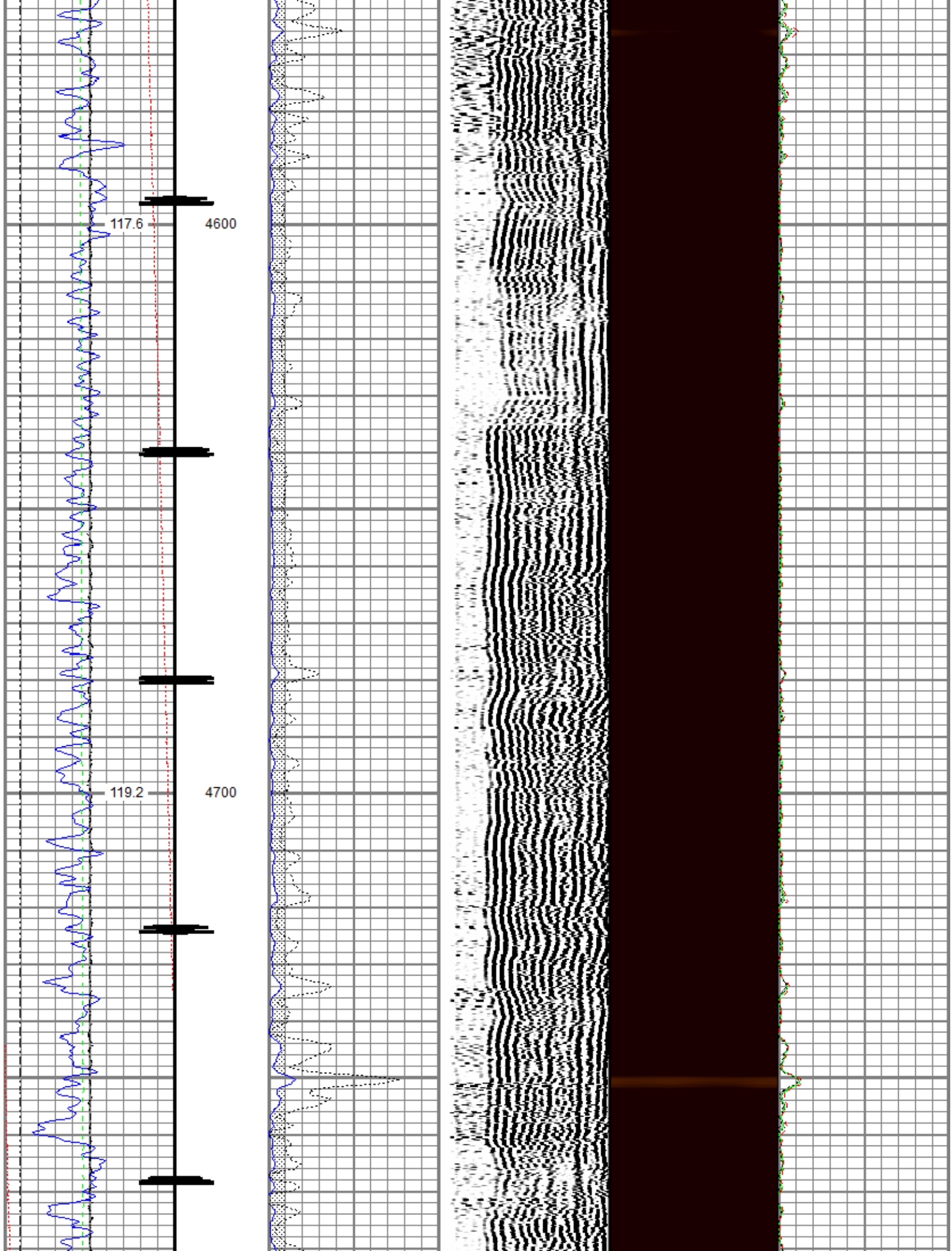




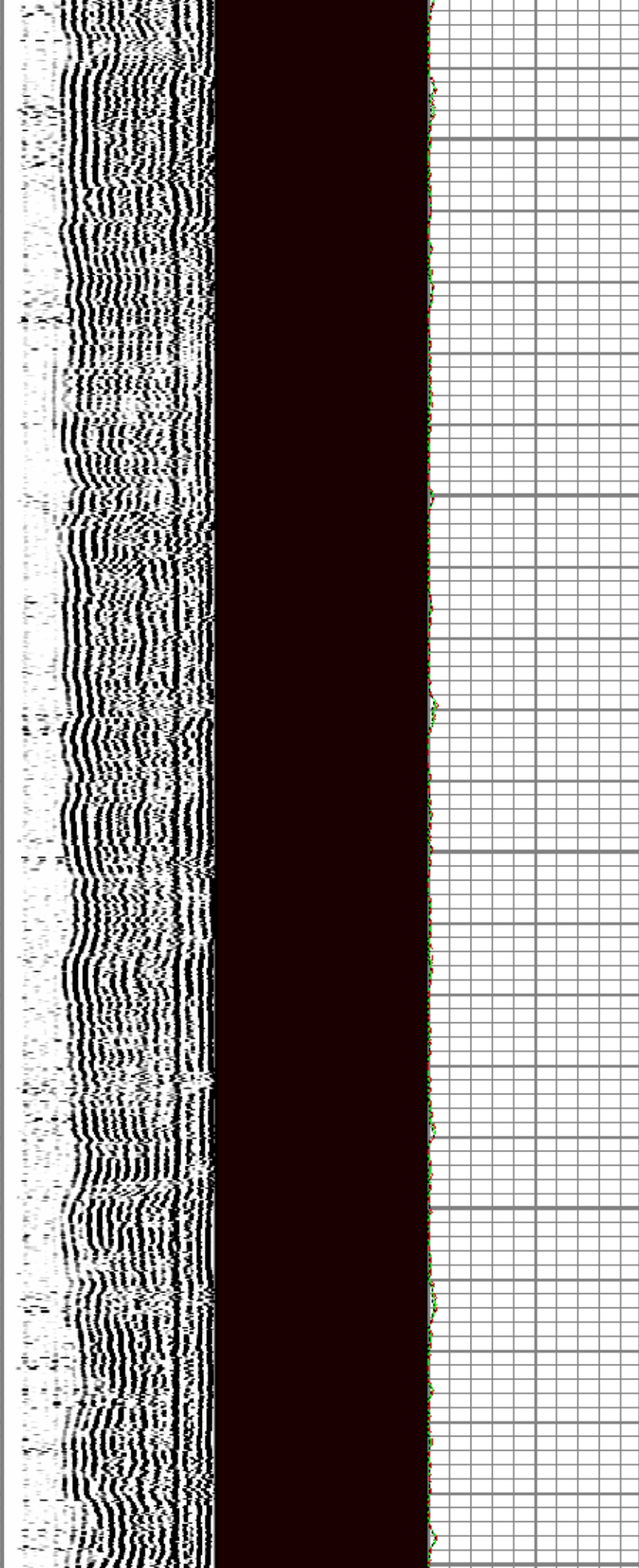
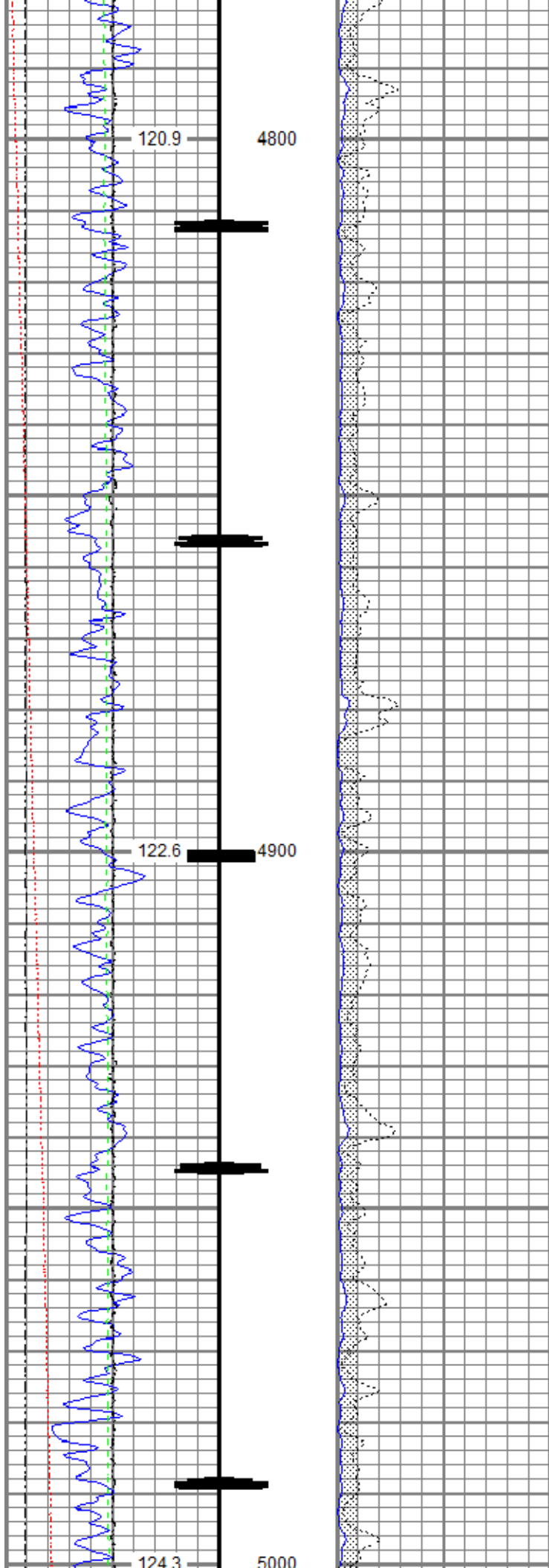




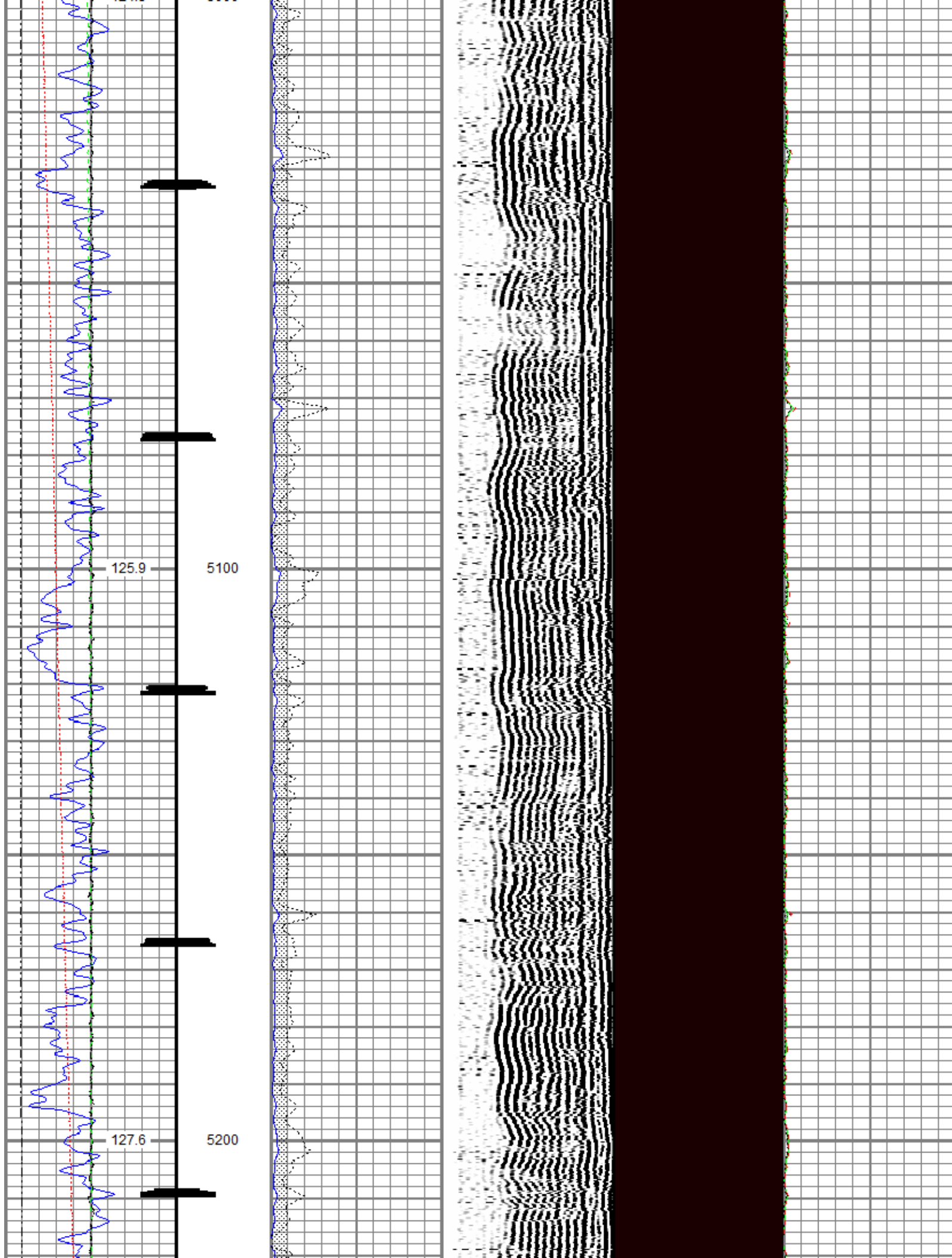


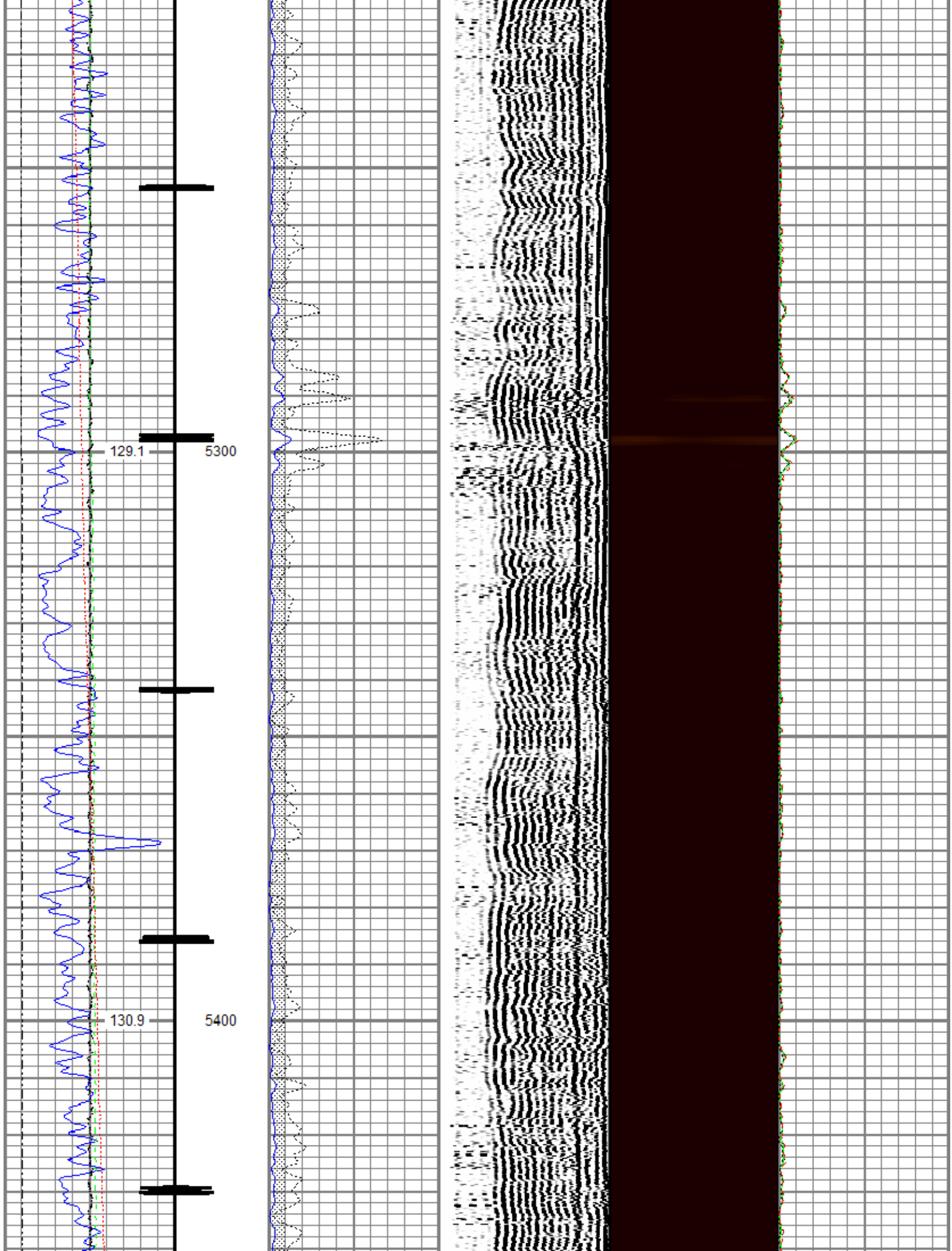


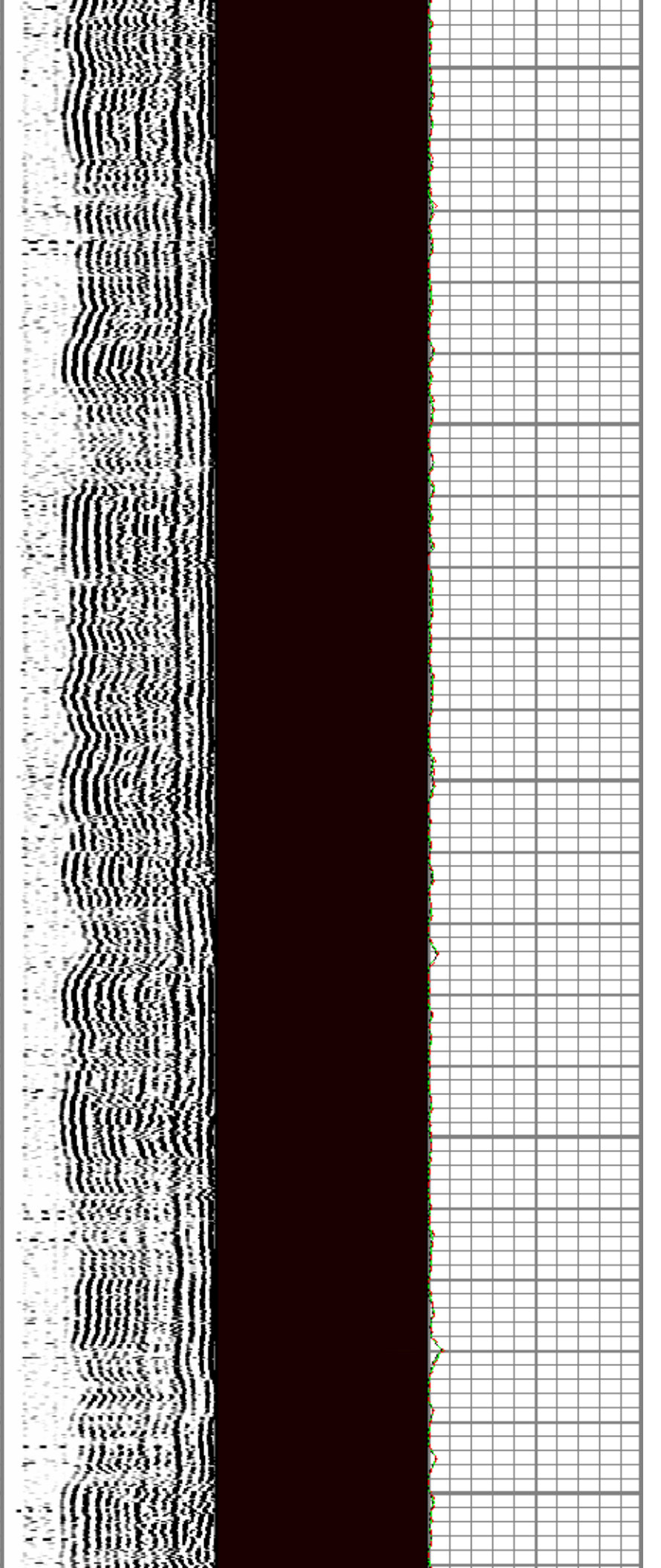
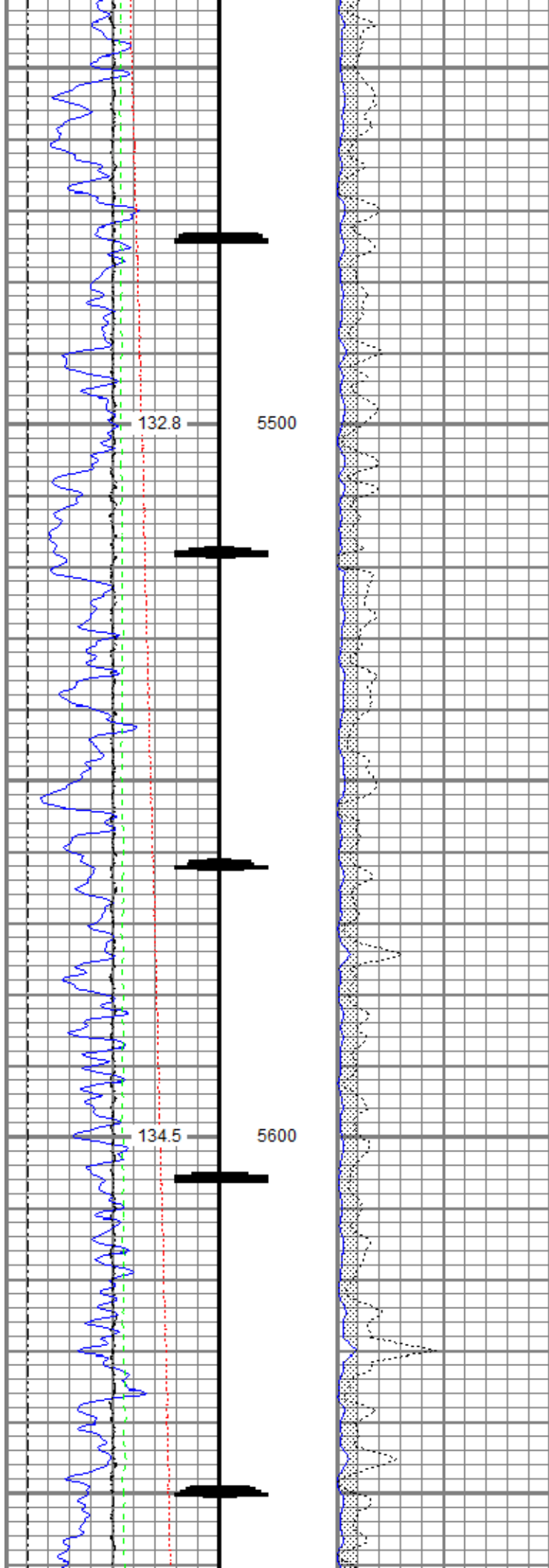




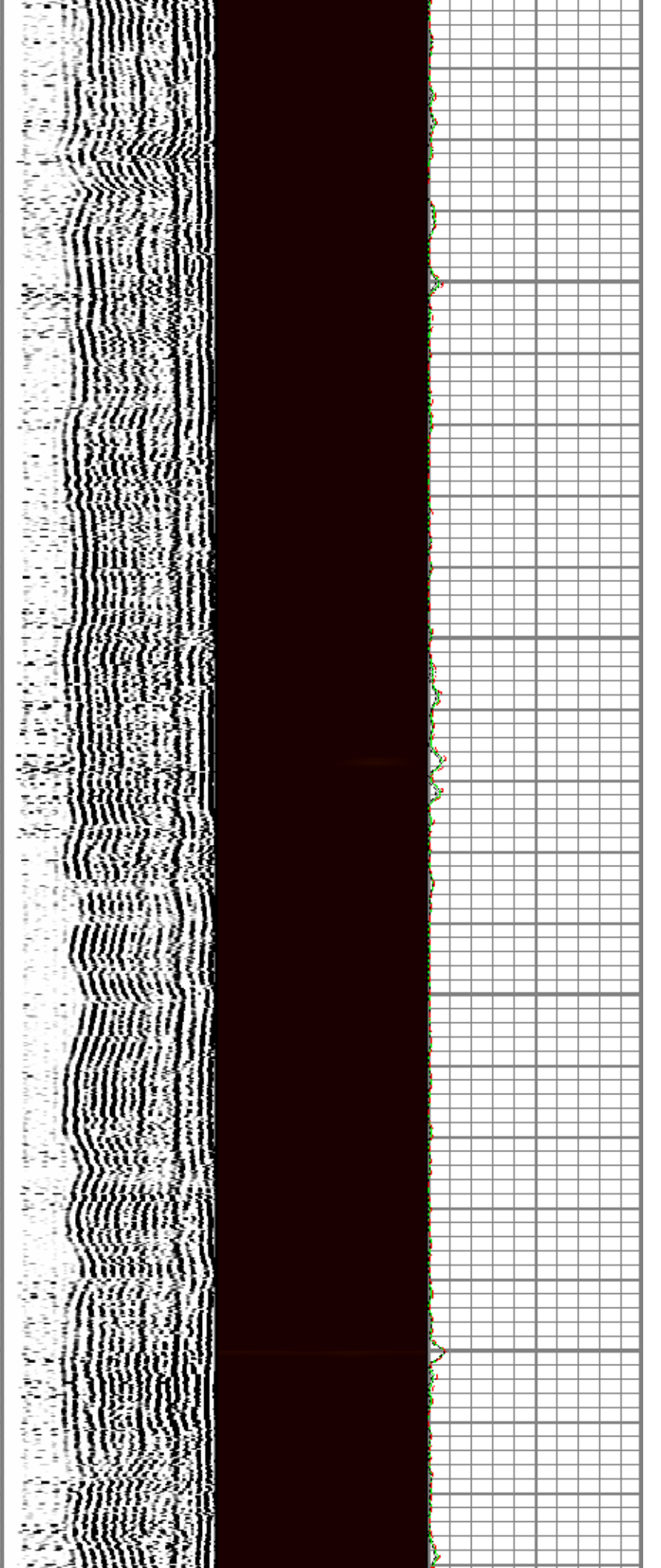
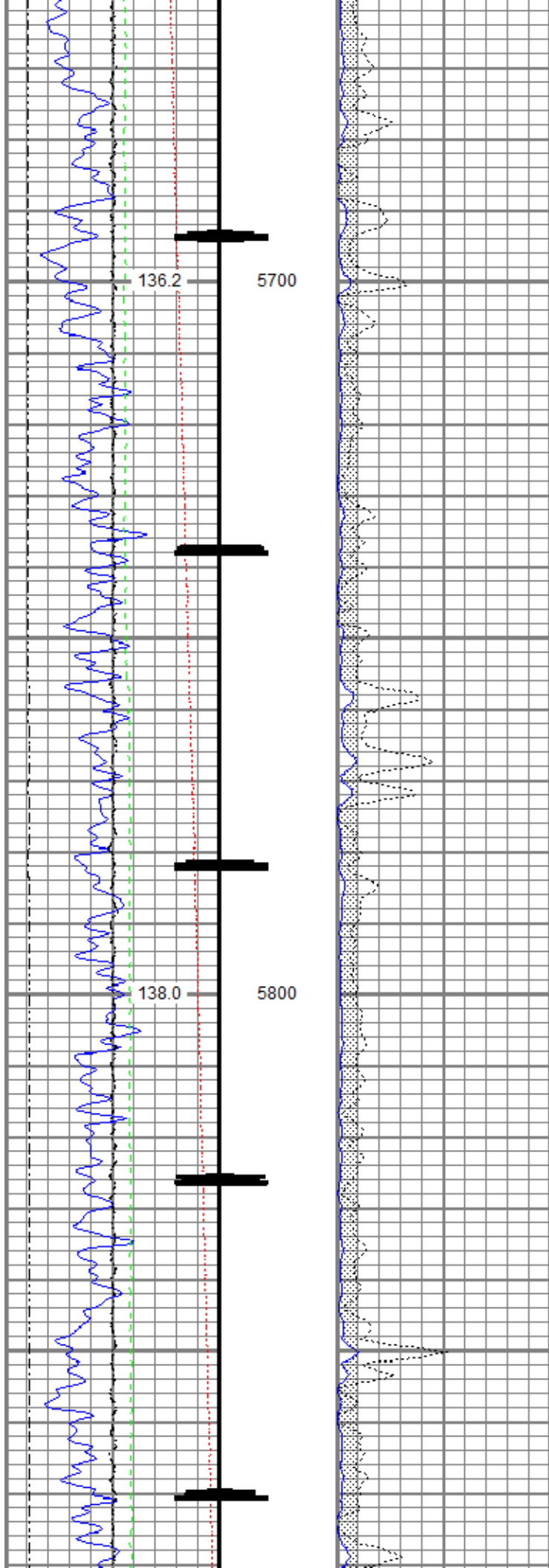


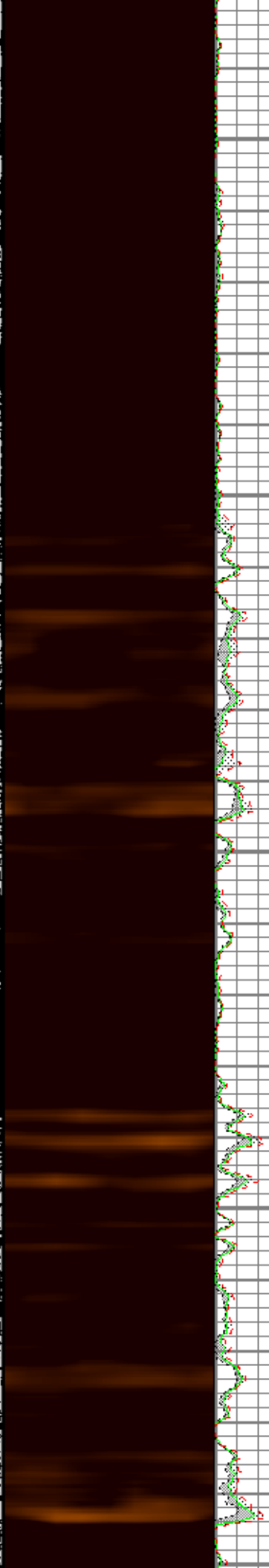
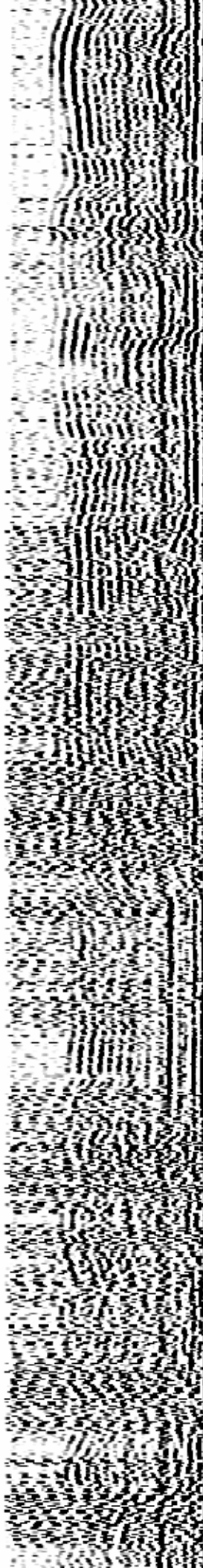
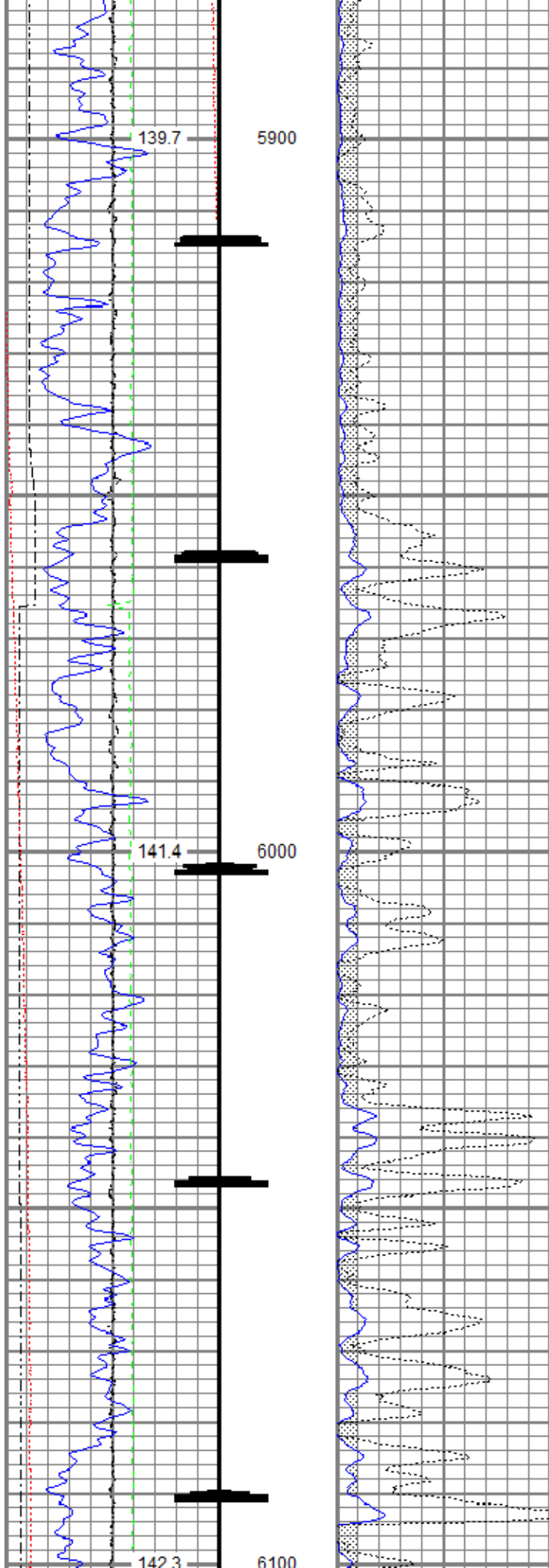


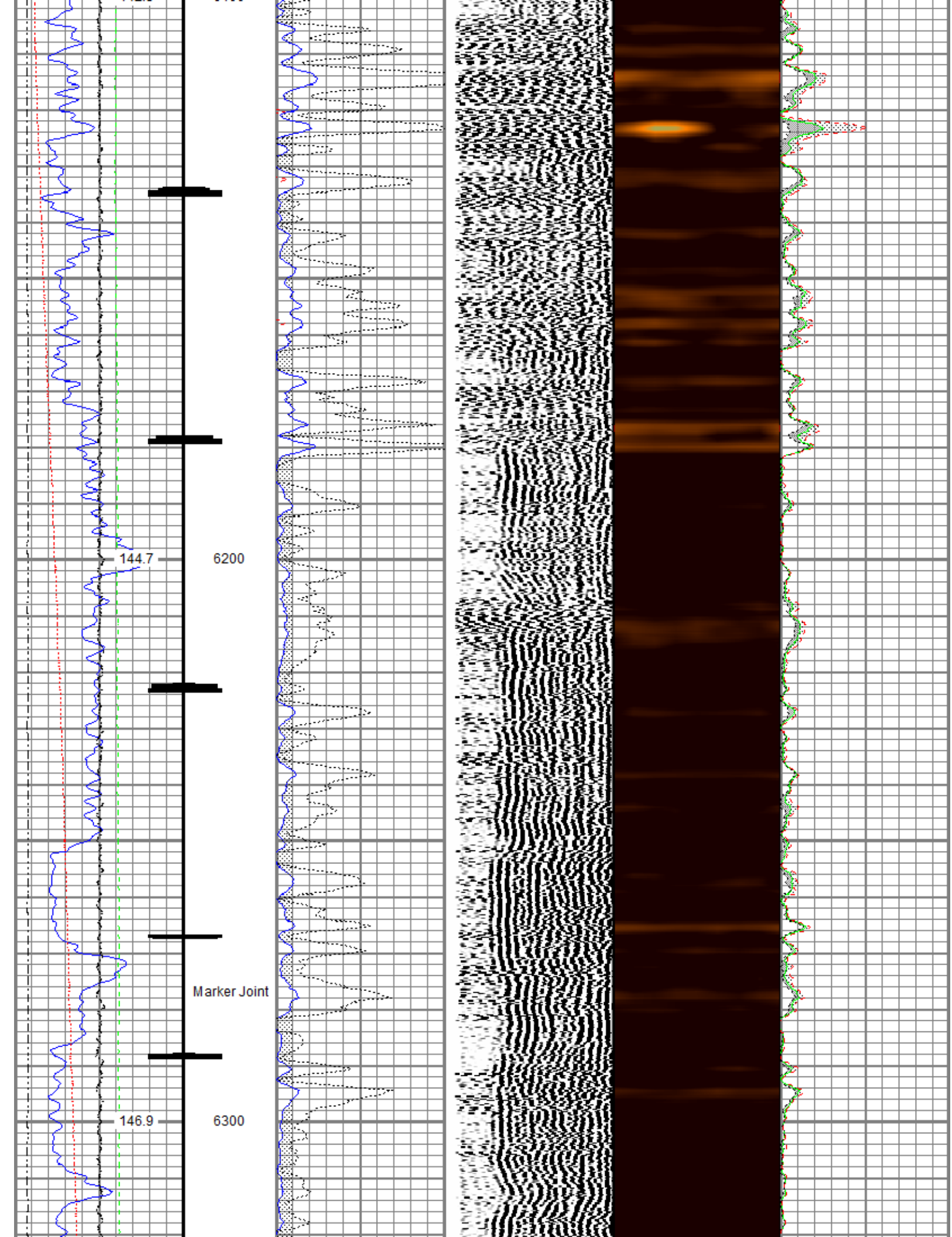




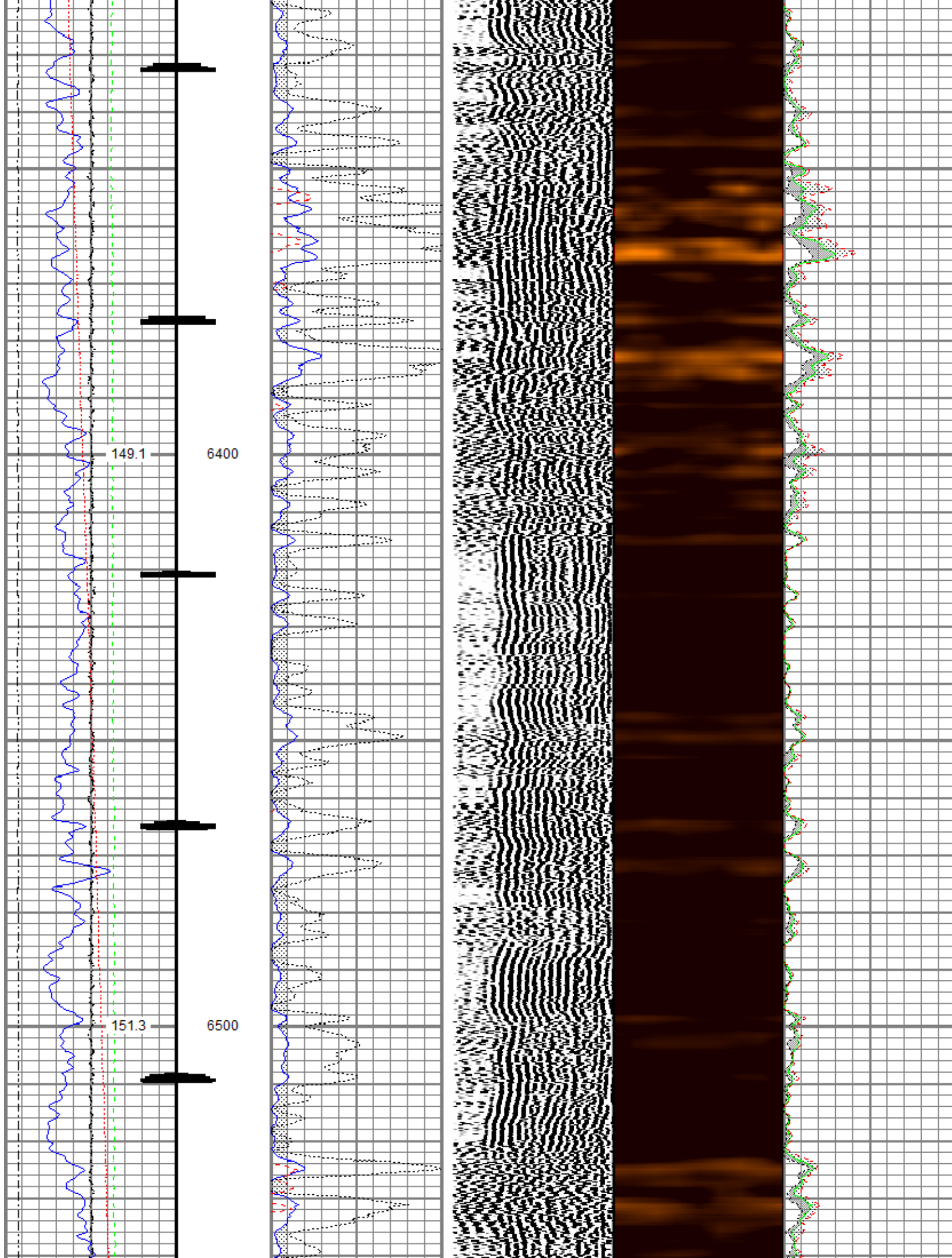


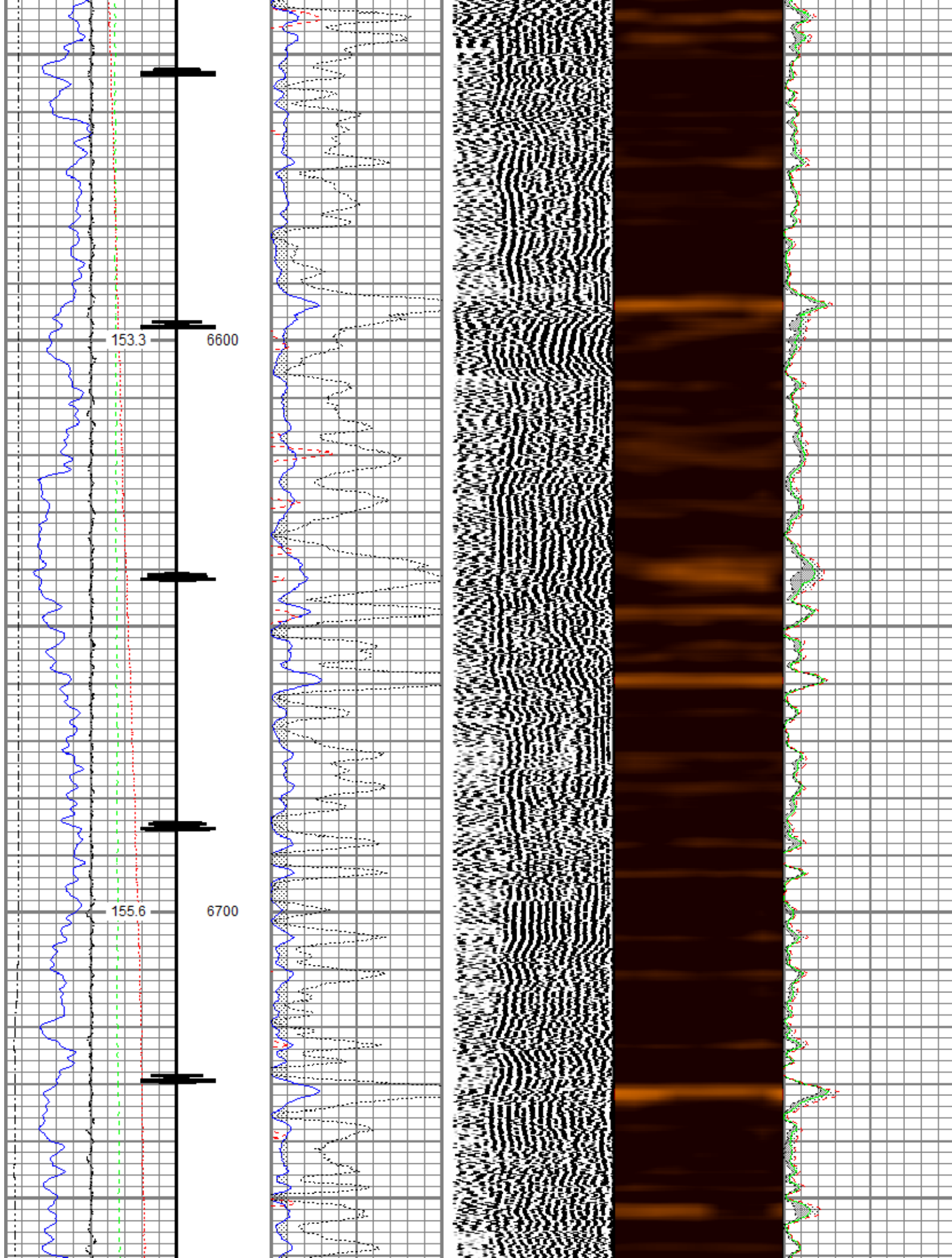




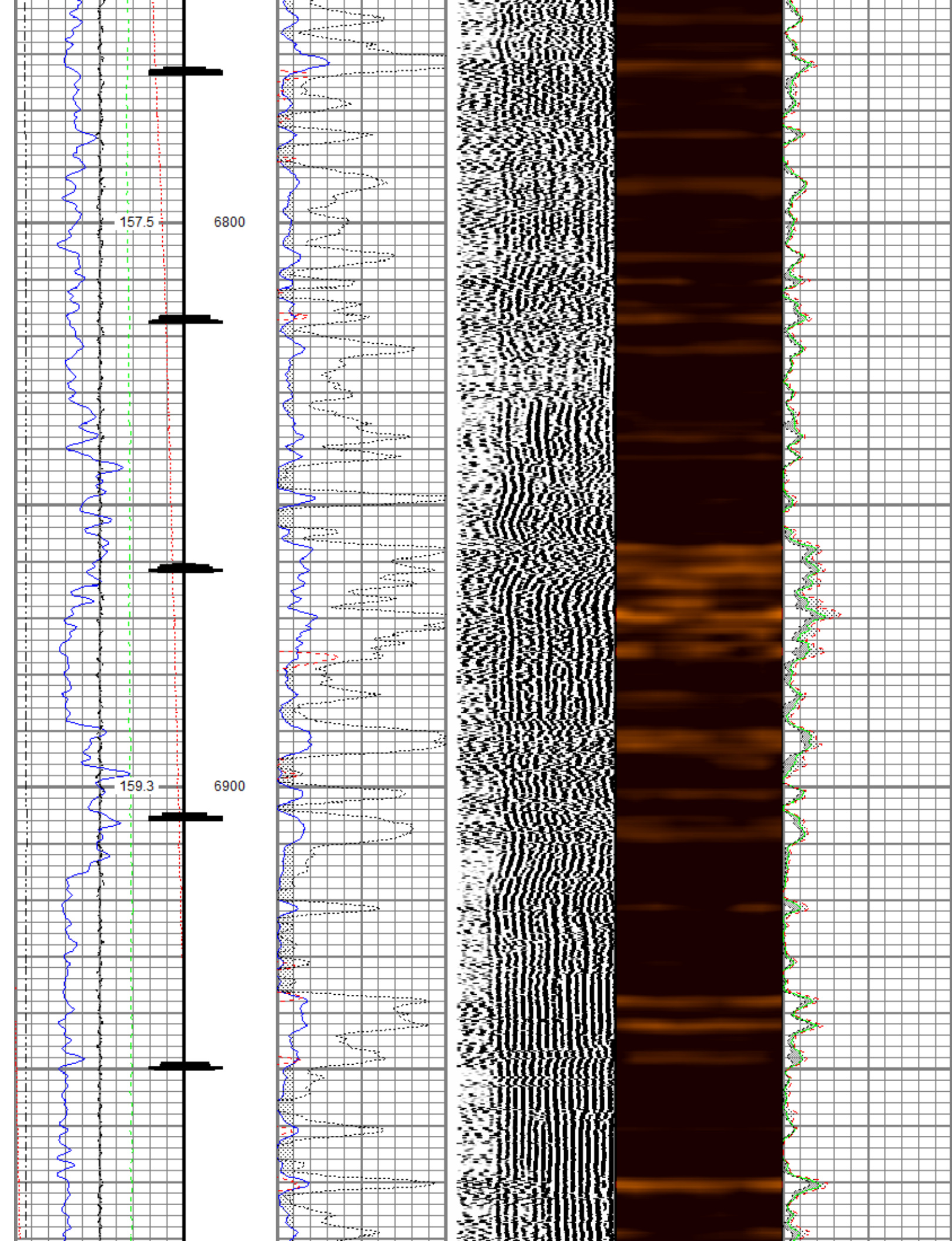




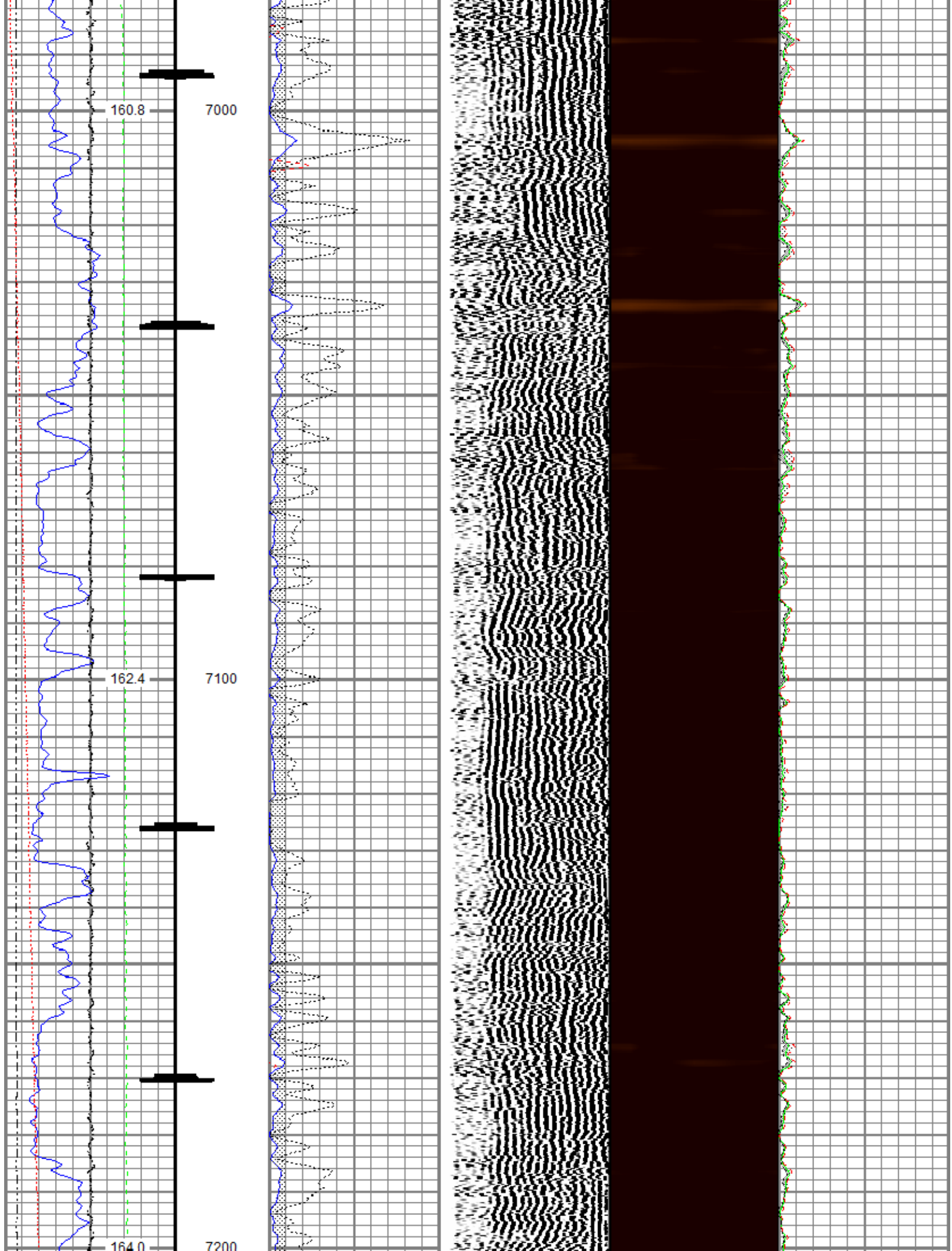


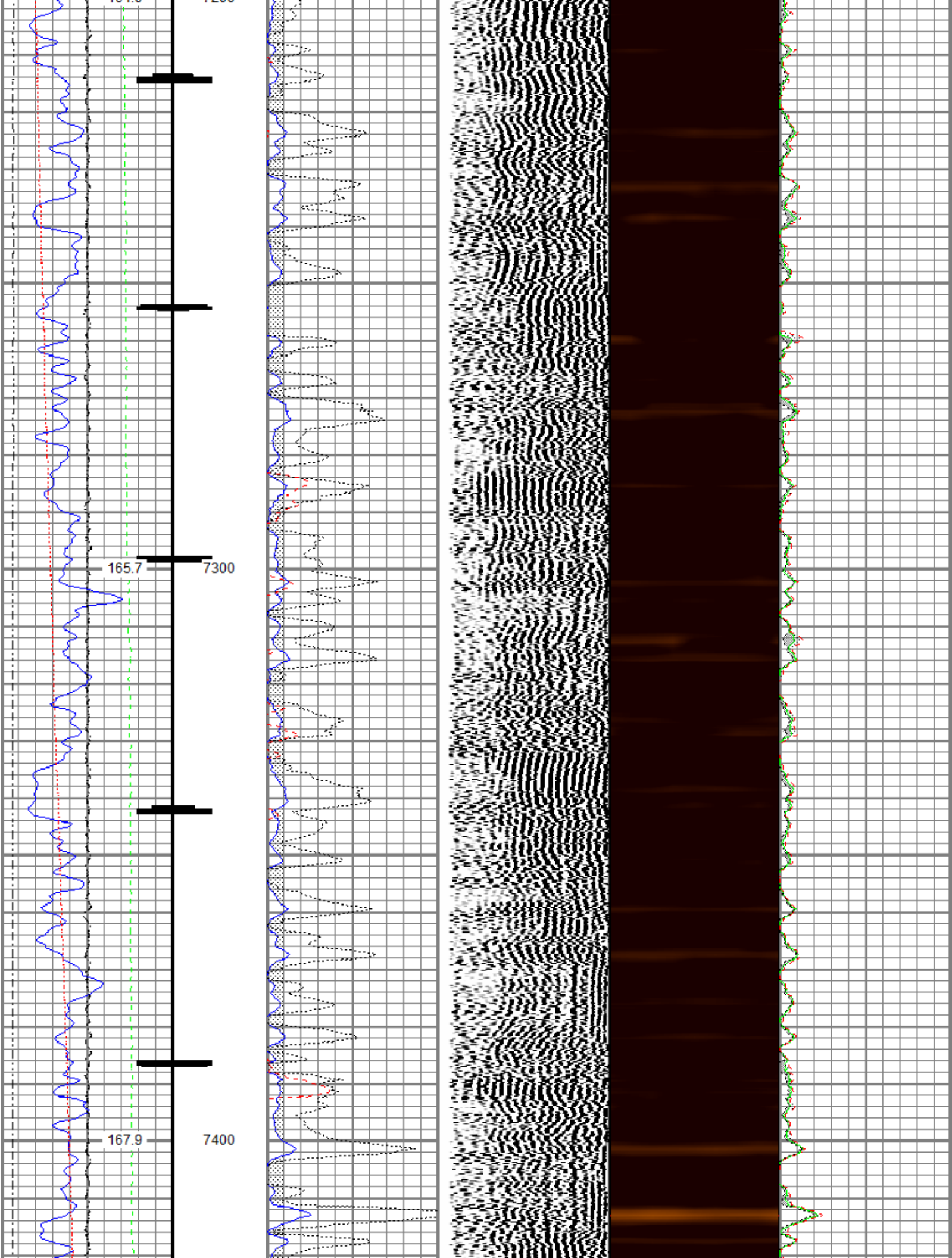




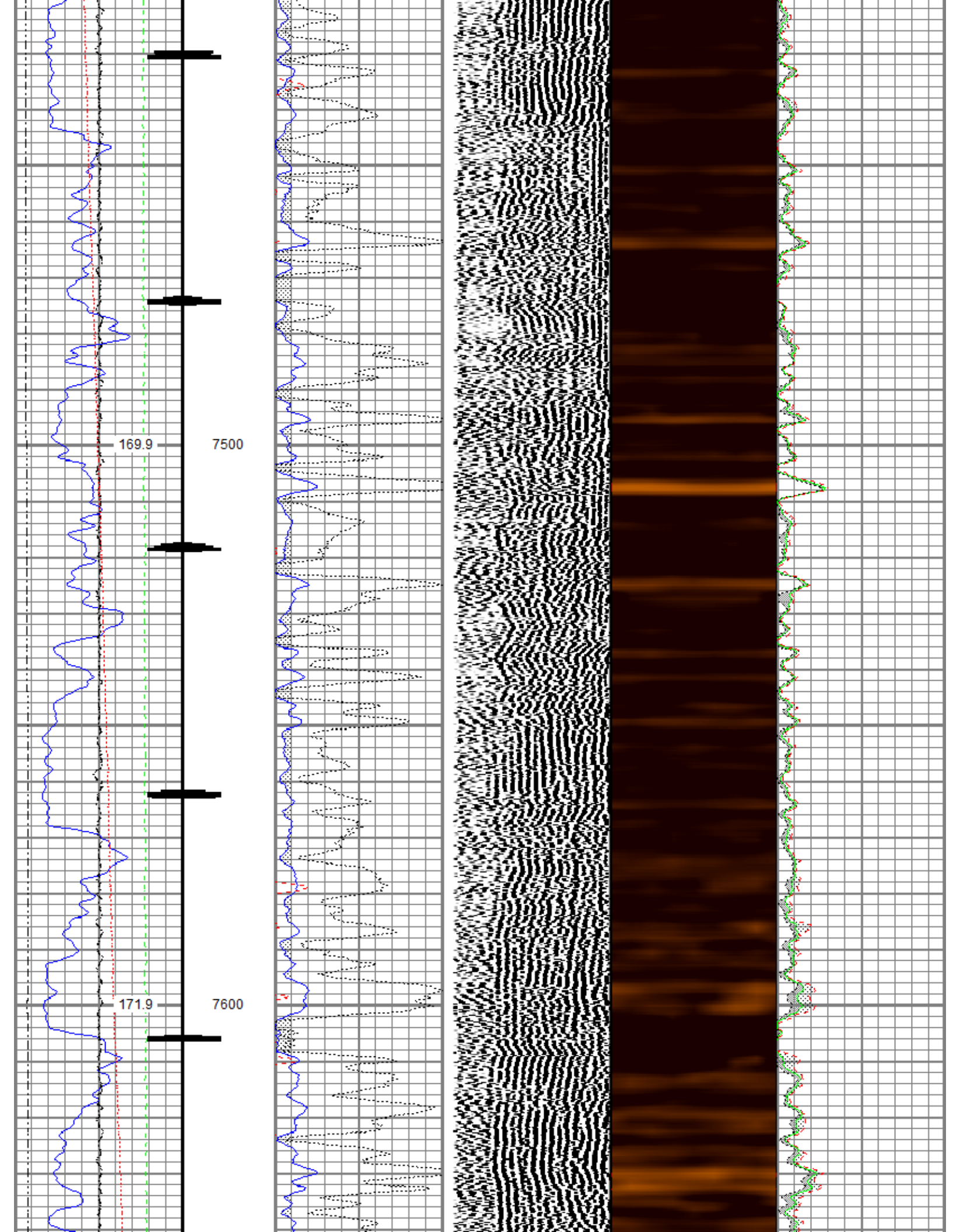




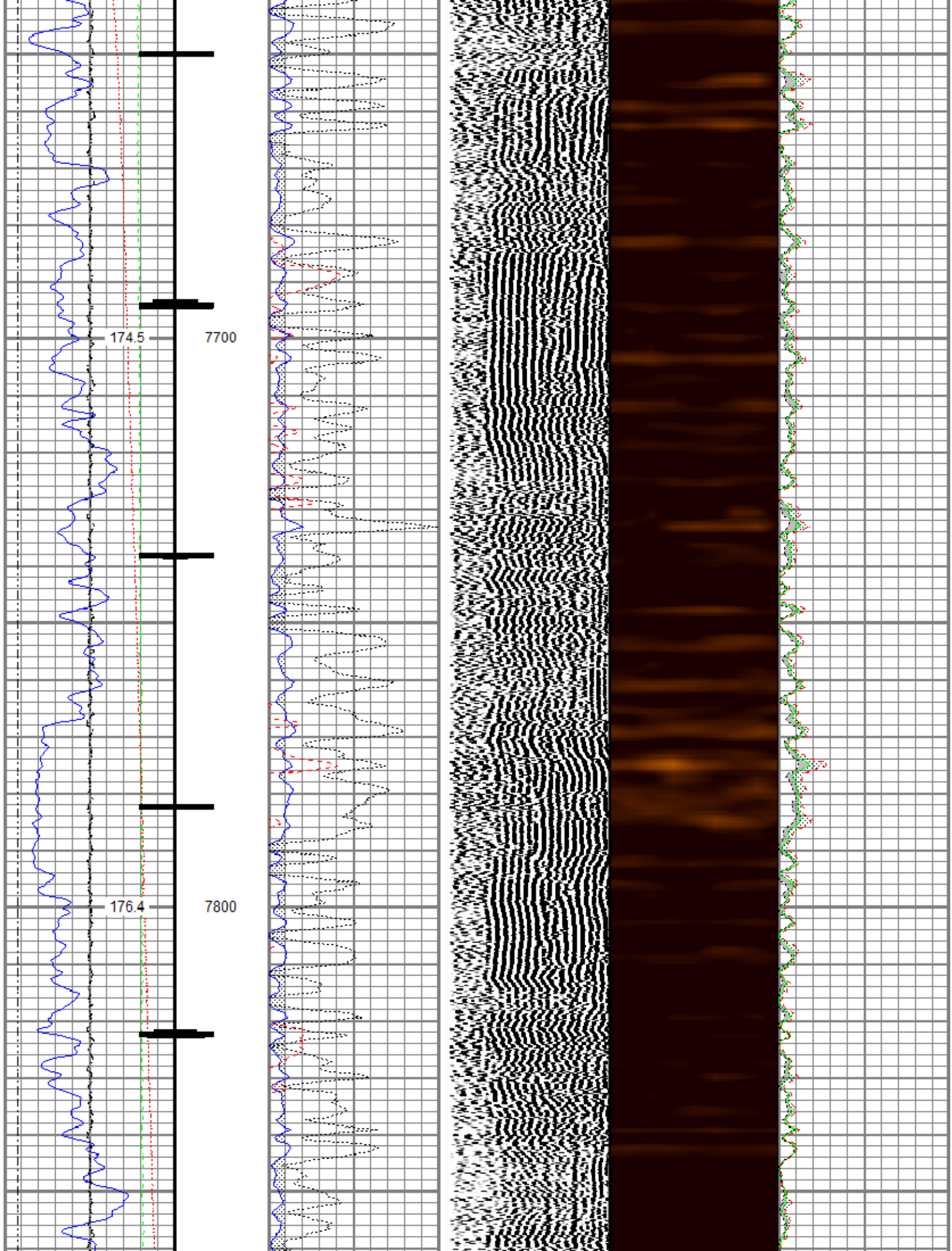


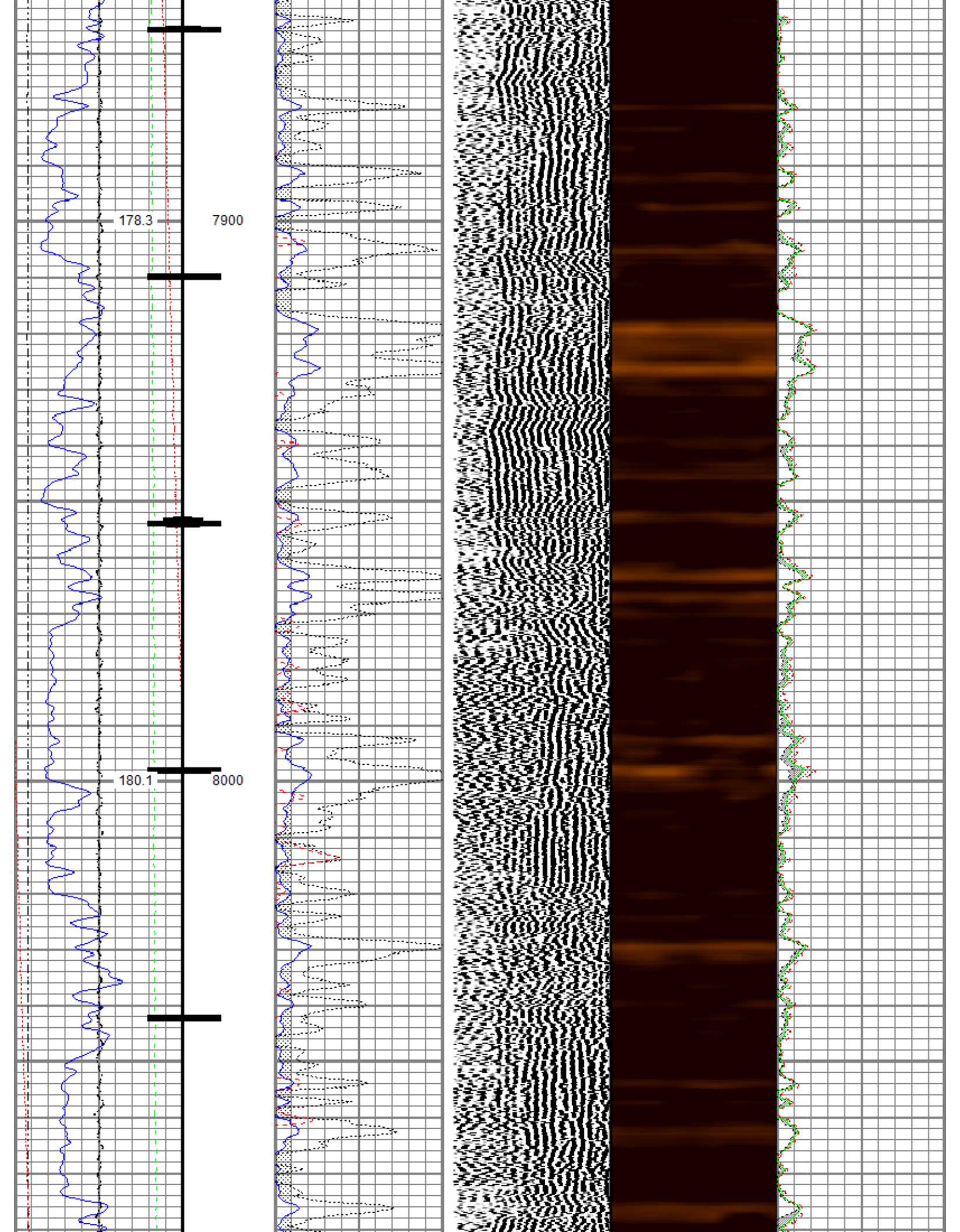




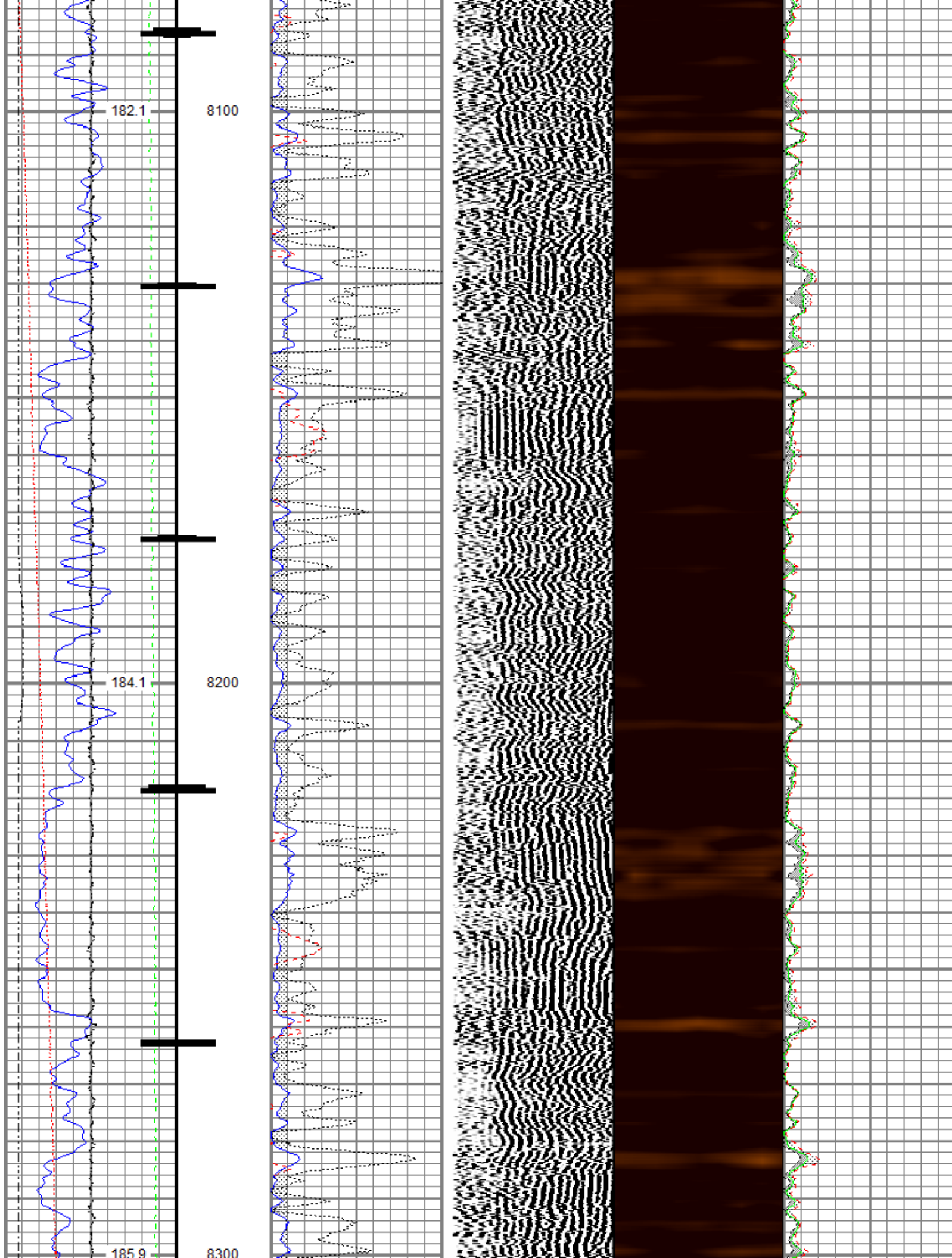




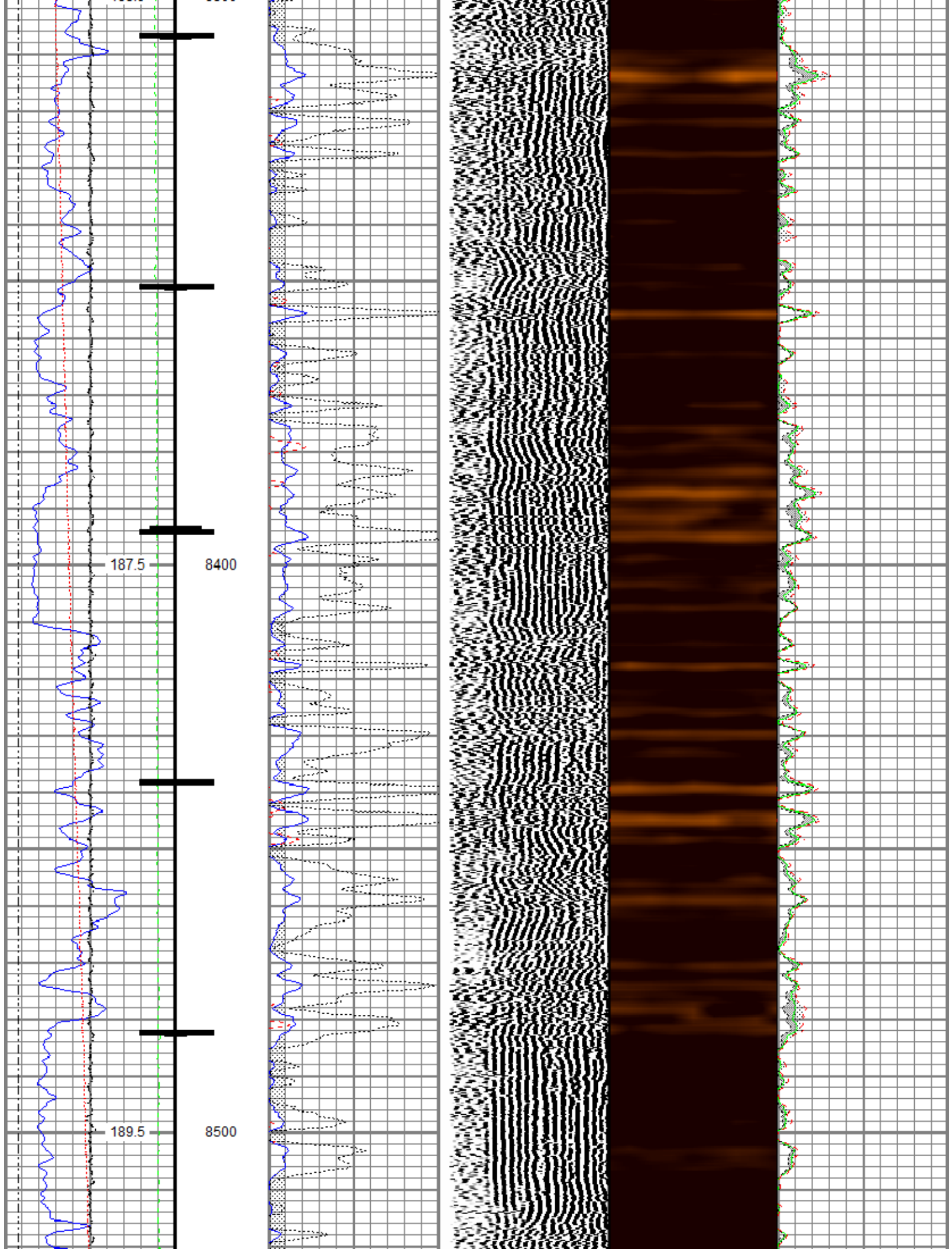


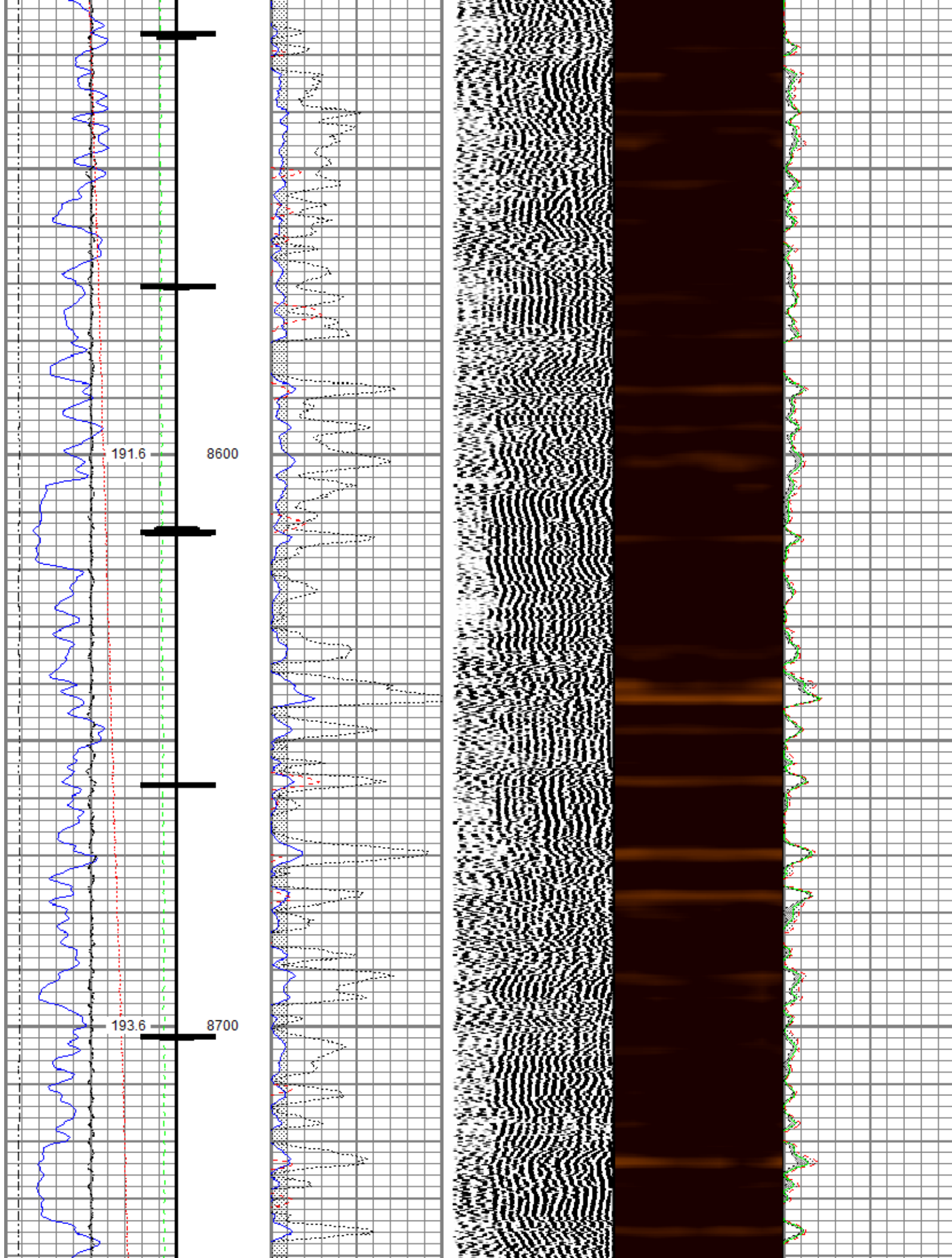




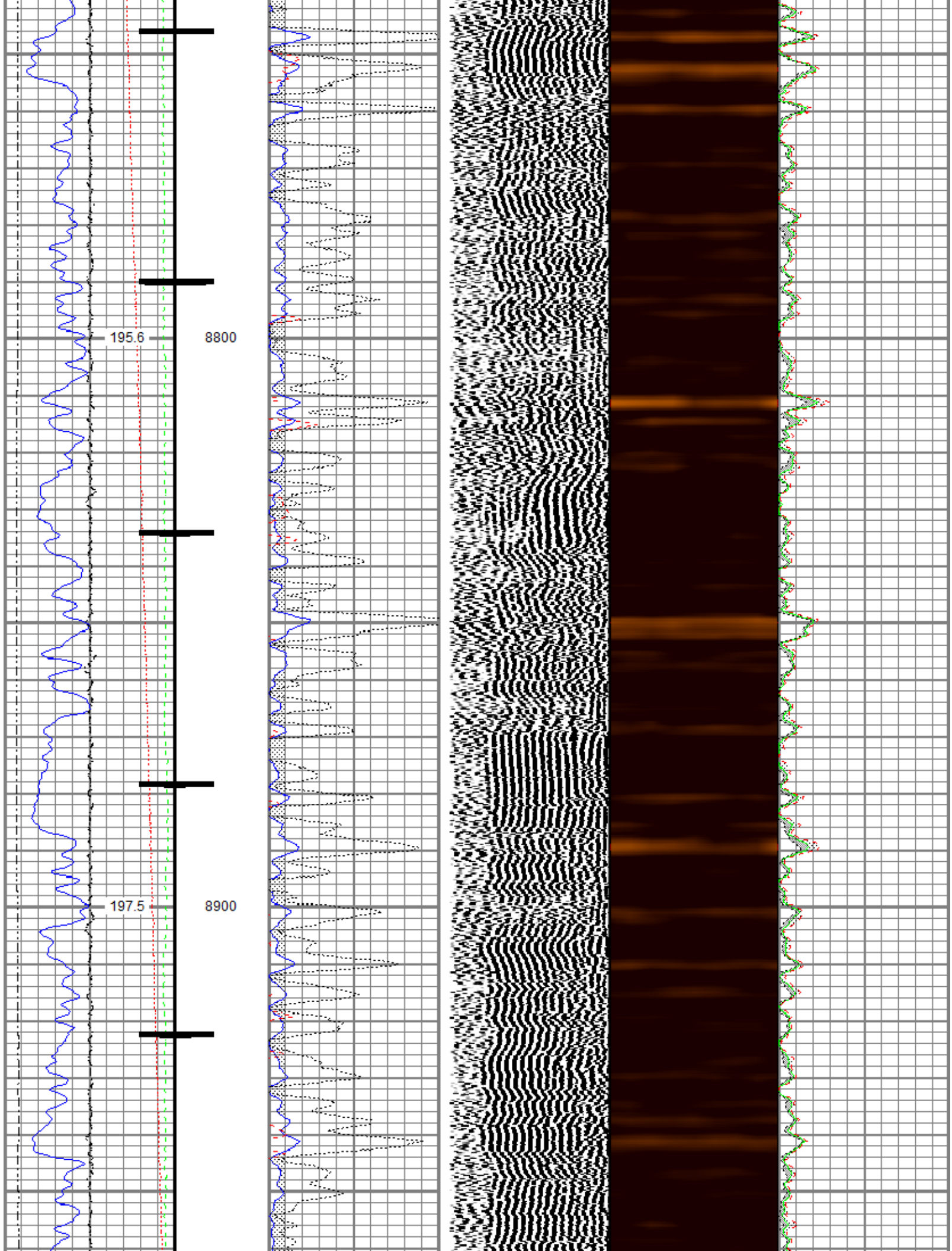




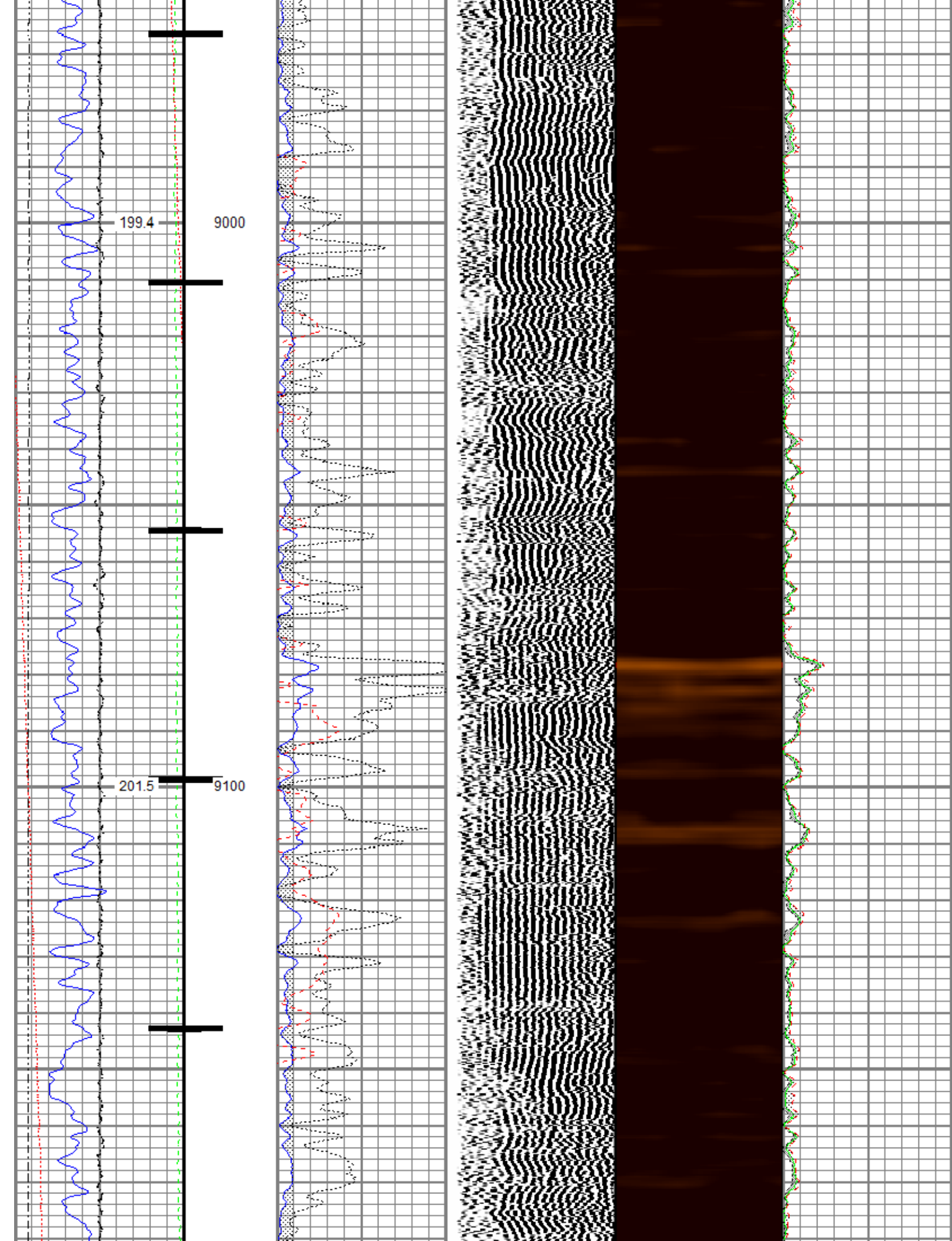


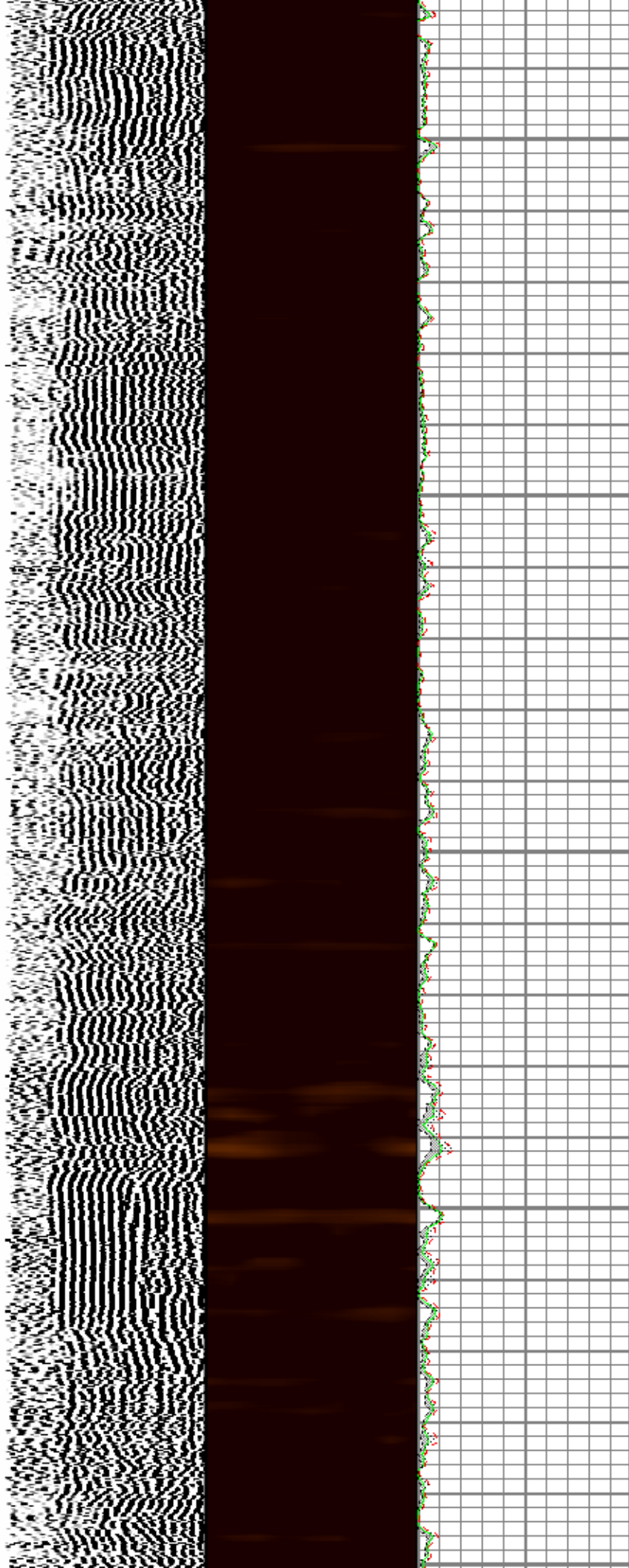
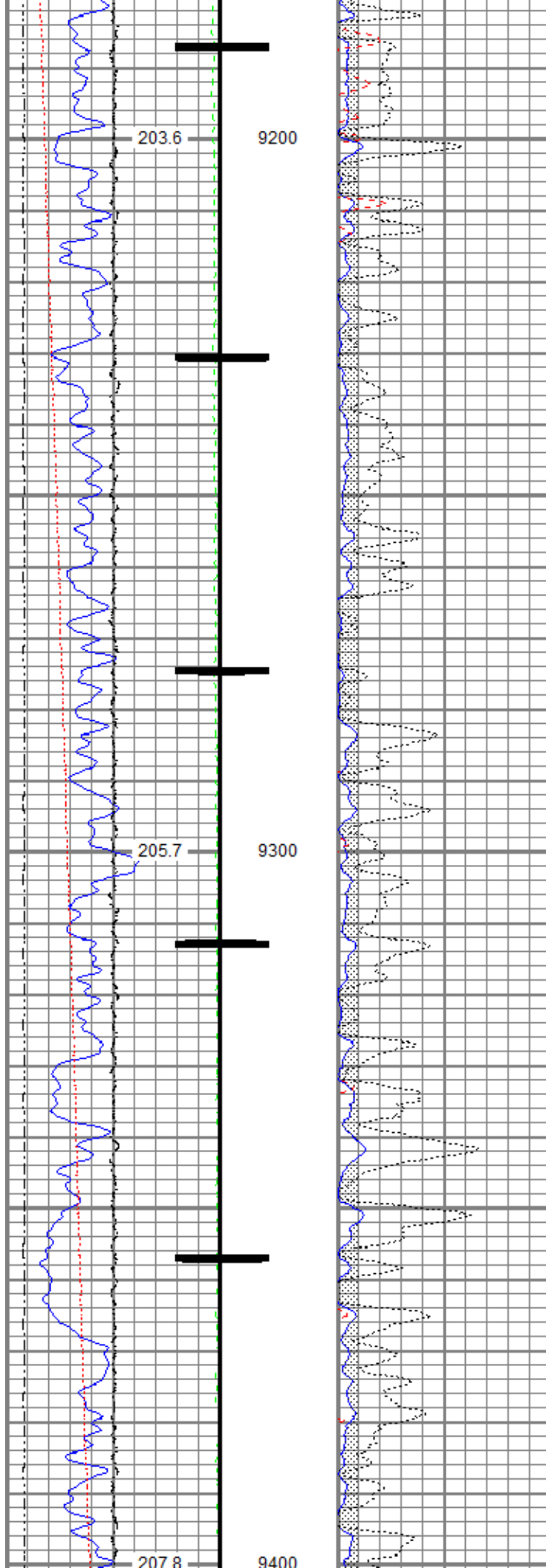


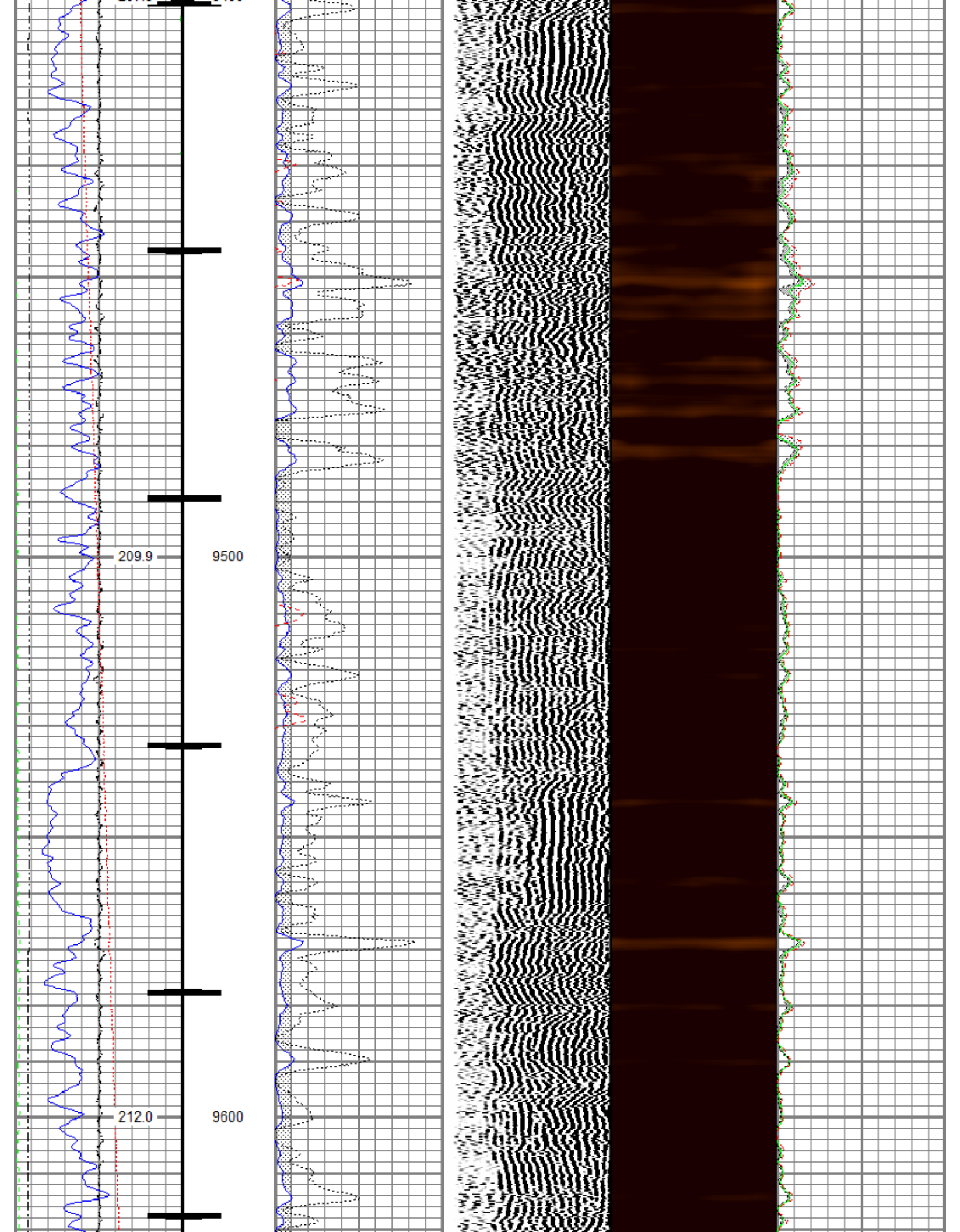




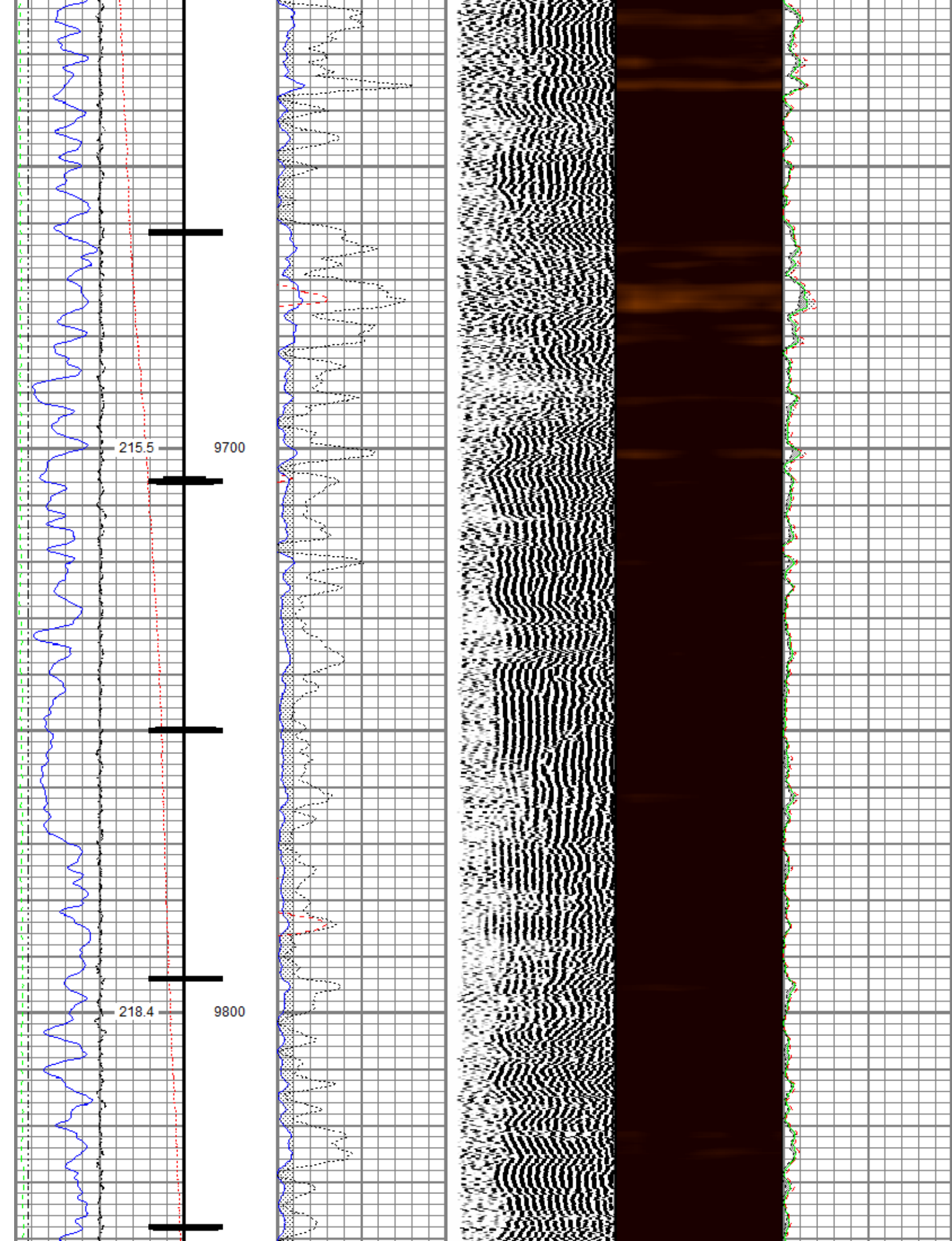


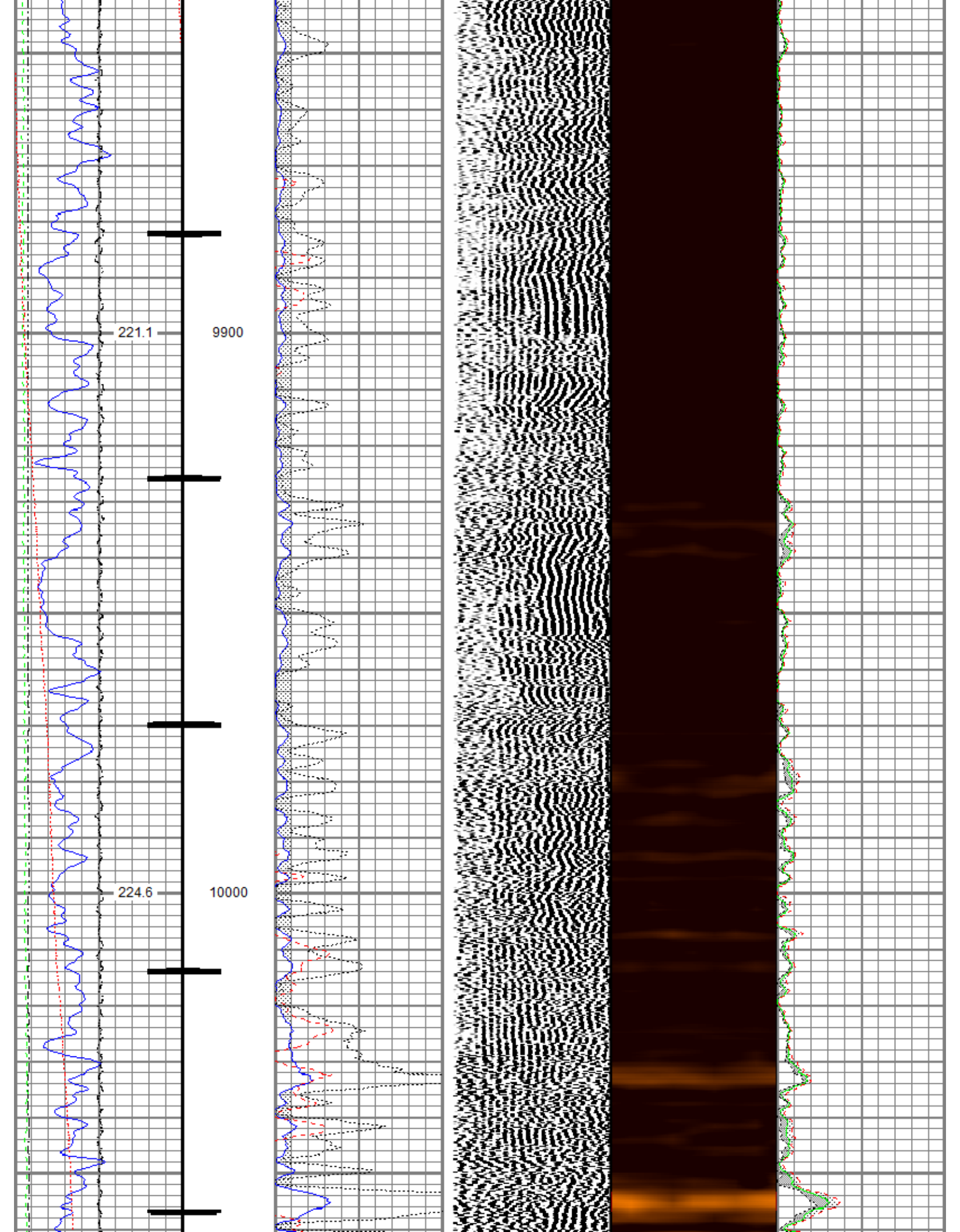




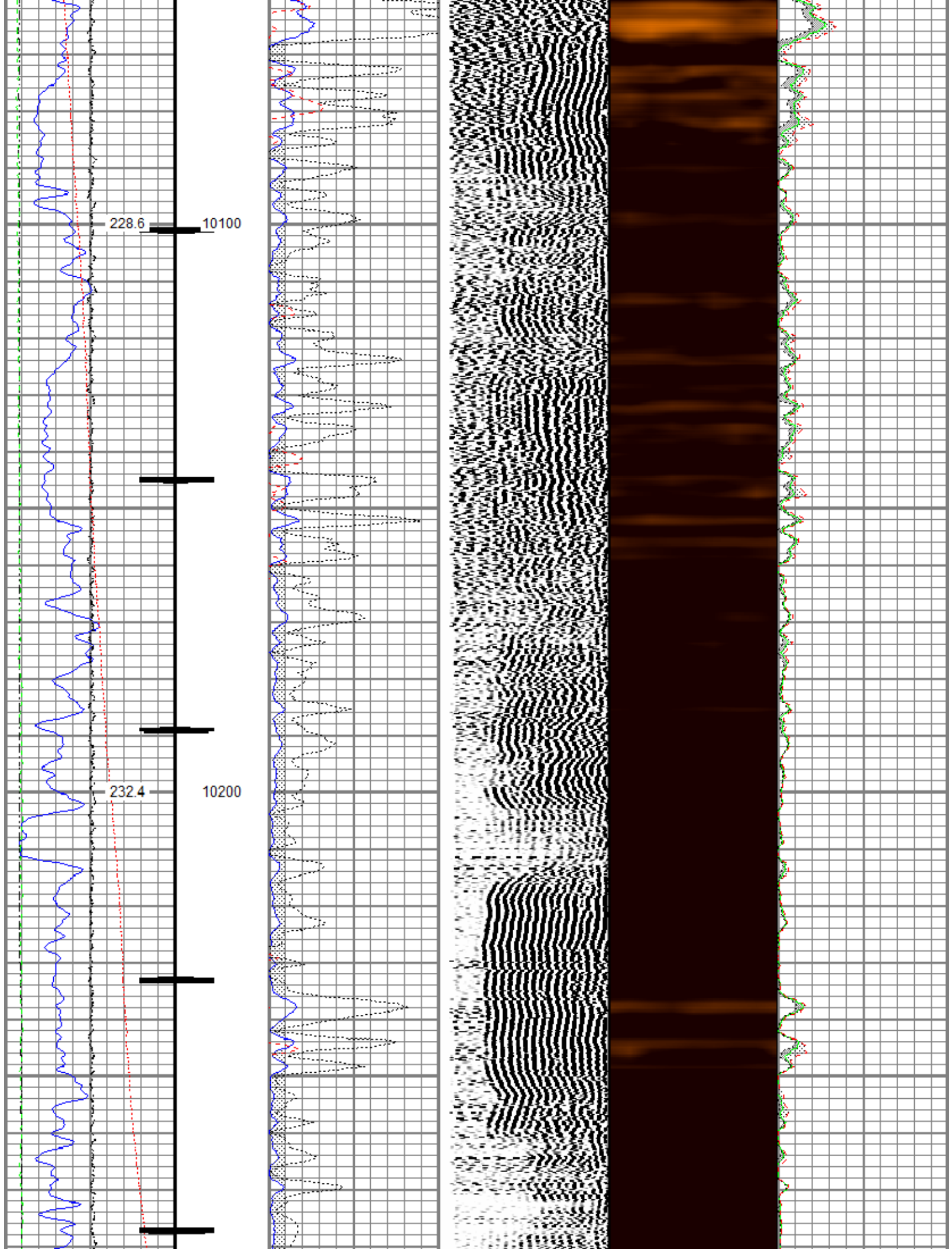




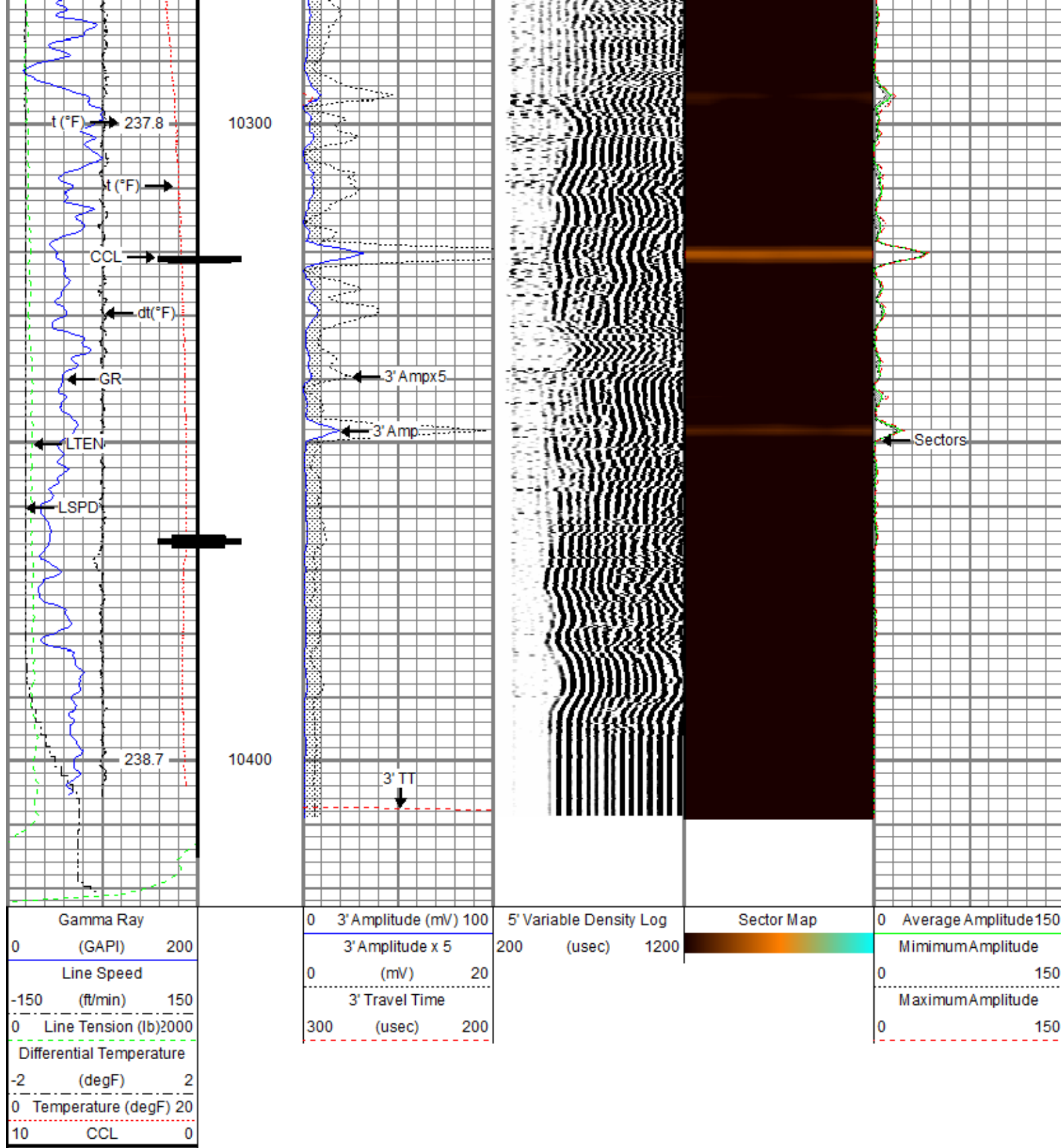










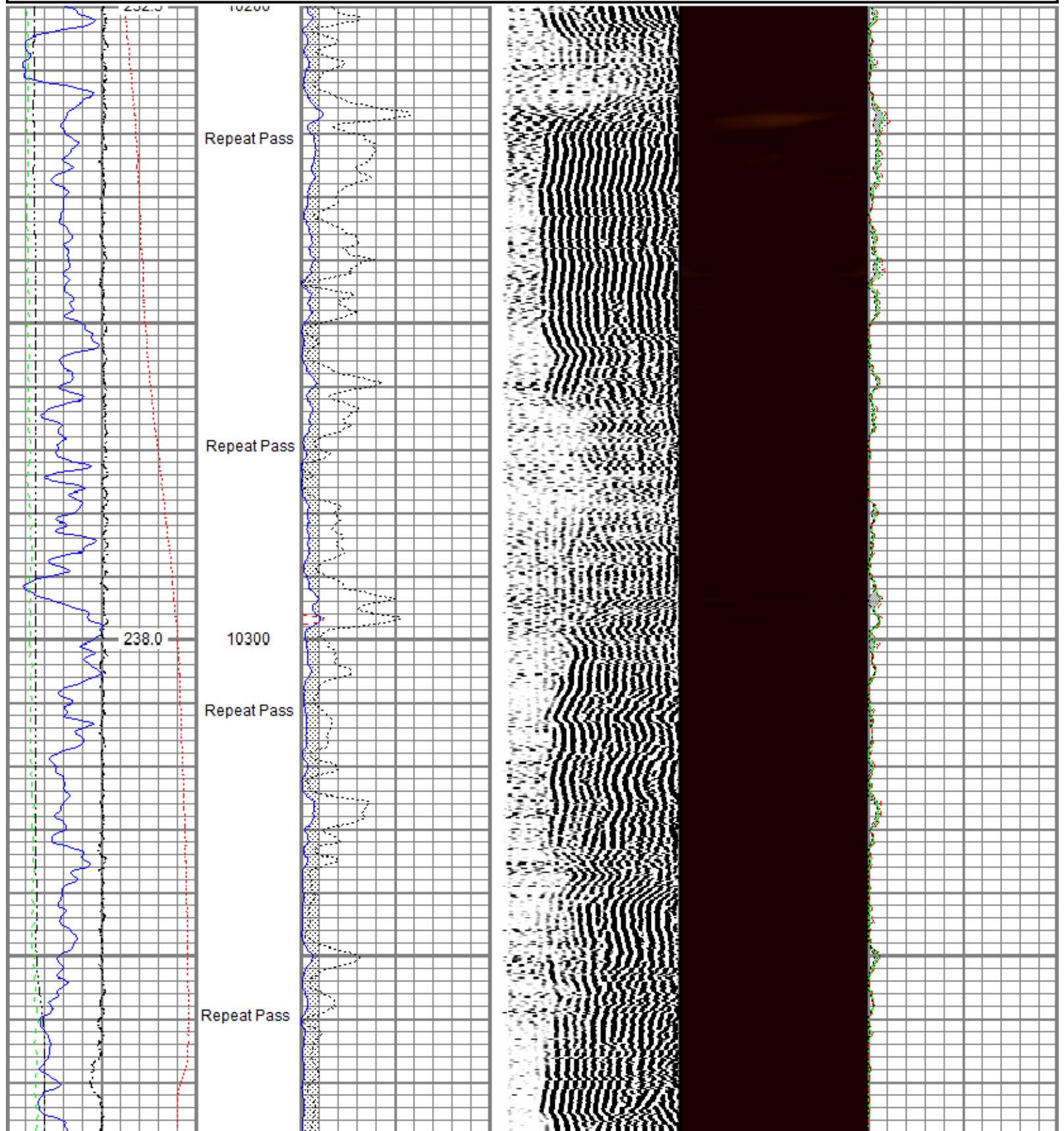


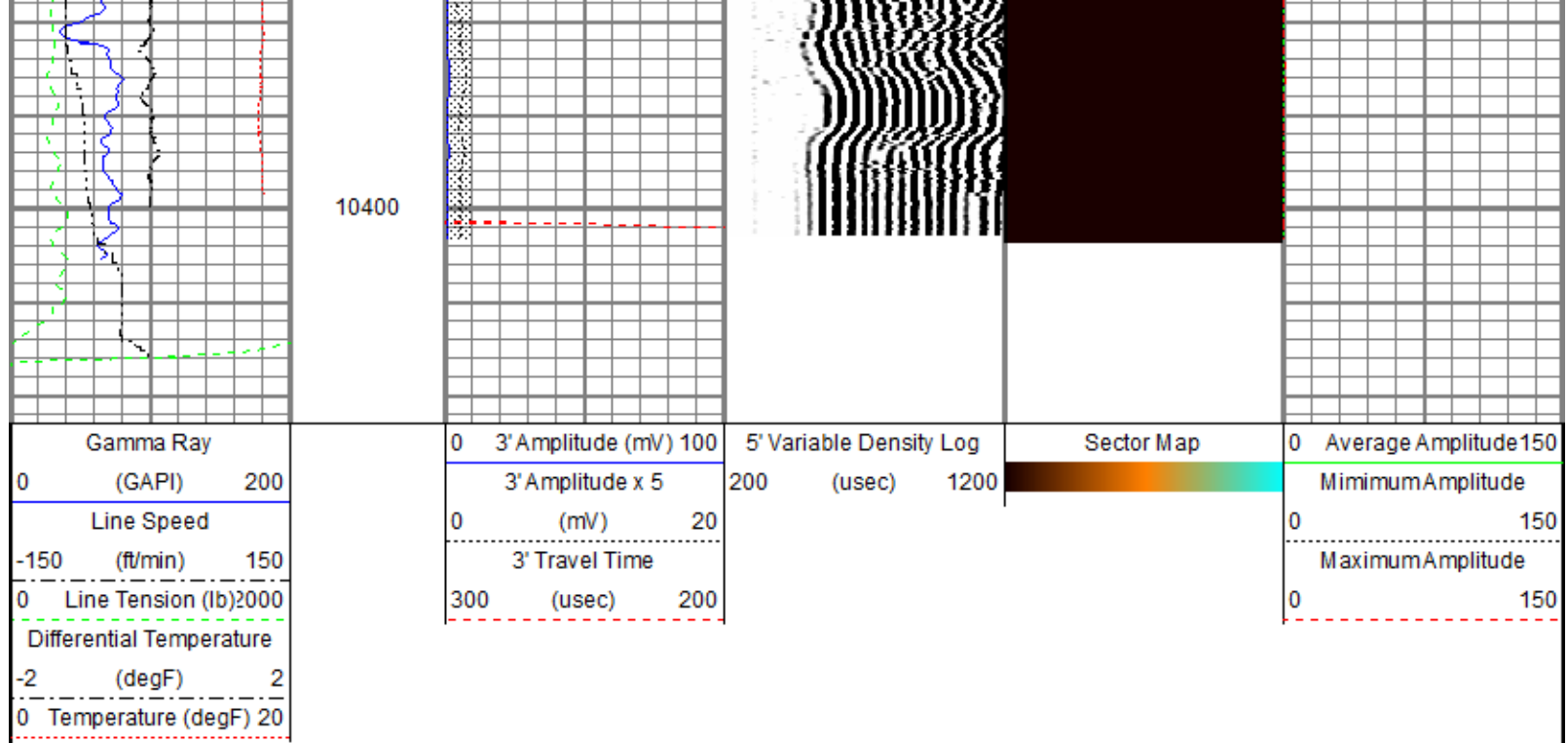
Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File clough nr 44-3\tep\_clough nr 44-3\_rbl\_12-18-18.db  
 Dataset Pathname Repeat  
 Presentation Format ros\_rbt004\_t  
 Dataset Creation Wed Dec 19 00:27:22 2018

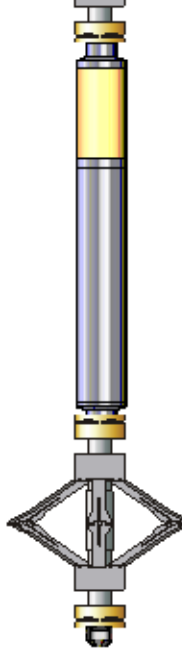
Gamma Ray			0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map	0	Average Amplitude	150
(GAPI)			200	3' Amplitude x 5		200	(usec)	1200	Minimum Amplitude	
Line Speed			0	(mV)		20			0	150
-150 (ft/min)			150	3' Travel Time				Maximum Amplitude		
Line Tension (lb)			2000	300 (usec)		200			0	150
Differential Temperature										
-2 (degF)			2							
Temperature (degF)			20							





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
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
TEMP	16.33					
WVFS8	14.10		Probe Radii-2750 RBT (101013) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS7	14.10					
WVFS6	14.10					
WVFS5	14.10					
WVFS4	14.10					
WVFS3	14.10					
WVFS2	14.10					
WVFS1	14.10					
WVFCAL	14.10					
WVF3FT	14.10					
WVF5FT	13.10					
HEADVOLT	9.85					
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00



CCL\$2	6.42		Probe GR-CCL-2750 GOB (FW1211-081) Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined	4.51	2.75	55.00
CCL\$1	6.42					
GR	5.18					
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
			GO BN-14375 GO 1-7/16" Bull Nose with Go Box Top	0.25	1.44	1.00
Dataset: TEP_Clough NR 44-3_RBL_12-18-18.db: field/well/run1/Main Total length: 22.82 ft Total weight: 260.60 lb O.D.: 2.75 in						

Calibration Report		
Database File	C:\ProgramData\Warrior\Data\Clough NR 44-3\TEP_Clough NR 44-3_RBL_12-18-18.db	
Dataset Pathname	Main	
Dataset Creation	Wed Dec 19 00:26:55 2018	
Gamma Ray Calibration Report		
Serial Number:	FW1211-081	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 12:22:44 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	112.4	cps
Calibrator Reading:	1008.7	cps
Sensitivity:	0.7107	GAPI/cps

Segmented Cement Bond Log Calibration Report		
Serial Number:	101013	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	32.238	ft

Master Calibration, performed Tue Dec 18 11:56:11 2018:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.004	0.803	0.800	81.196	99.630	1.218
CAL	-0.005	0.786				
5'	-0.002	0.773	0.800	81.196	103.670	1.037
SUM						
S1	-0.004	0.789	0.000	100.000	126.062	0.505
S2	-0.004	0.787	0.000	100.000	126.470	0.449
S3	-0.003	0.773	0.000	100.000	128.793	0.445
S4	-0.003	0.797	0.000	100.000	124.985	0.432
S5	-0.002	0.792	0.000	100.000	125.959	0.288
OC	-0.004	0.799	0.000	100.000	124.526	0.450

S6	-0.004	0.799	0.000	100.000	124.536	0.459
S7	-0.003	0.790	0.000	100.000	126.103	0.402
S8	-0.004	0.805	0.000	100.000	123.649	0.450

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.005	0.786	1.000	0.000

Air Zero Calibration, performed Tue Dec 18 11:56:32 2018:

	Raw (v)		Calibrated (v)	Results
	Zero		Zero	Offset
3'	-0.004		0.000	-0.000
5'	-0.002		0.000	-0.000
SUM				
S1	-0.004		0.000	-0.000
S2	-0.003		0.000	-0.000
S3	-0.003		0.000	-0.001
S4	-0.003		0.000	-0.000
S5	-0.003		0.000	0.000
S6	-0.004		0.000	0.000
S7	-0.004		0.000	0.001
S8	-0.004		0.000	0.000

#### Temperature Calibration Report

Serial Number: 101013  
Tool Model: 2750 RBT  
Performed: Sun Nov 12 13:21:13 2017

	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 TEP Rocky Mountain LLC  
Well Clough NR 44-3  
Field Rulison  
County Garfield  
State Colorado