



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company TEP Rocky Mountain LLC  
Well Youberg SR 421-12  
Field Rulison  
County Garfield  
State Colorado

Company TEP Rocky Mountain LLC  
Well Youberg SR 421-12  
Field Rulison  
County Garfield  
State Colorado

Location: API #: 05-045-23289

1875' FNL & 2129' FEL

SEC 12 TWP 7S RGE 94W

Permanent Datum Ground Level Elevation 7254'  
Log Measured From Kelly Bushing 24 FT  
Drilling Measured From Kelly Bushing

Elevation  
K.B. 7278'  
D.F. 7277'  
G.L. 7254'

Date 05-JUL-2017

Run Number	One		
Depth Driller	9603 FT		
Depth Logger	9516 FT		
Bottom Logged Interval	9516 FT		
Top Log Interval	Surface		
Open Hole Size	8.75"		
Type Fluid	Fresh Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	241°F		
Estimated Cement Top	See Log		
Time Well Ready	09:00		
Time Logger on Bottom	12:30		
Equipment Number	HDO359		
Location	Grand Junction		
Recorded By	Michael Kochevar		
Witnessed By	---		

Borehole Record				Tubing Record			
Bit	From	To	Size	Weight	From	To	

Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom
Surface Casing	9 5/8	32.3	H-40	Surface	1100 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9603 FT
Intermediate #2					
Liner					

<<< Fold Here >>>

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  
Ground Level 1 FT below cut pipe  
Marker joint logged at 6287 FT- 6309 FT  
Log ran from 9516 FT to surface  
Recorded with 0 PSI surface induced pressure

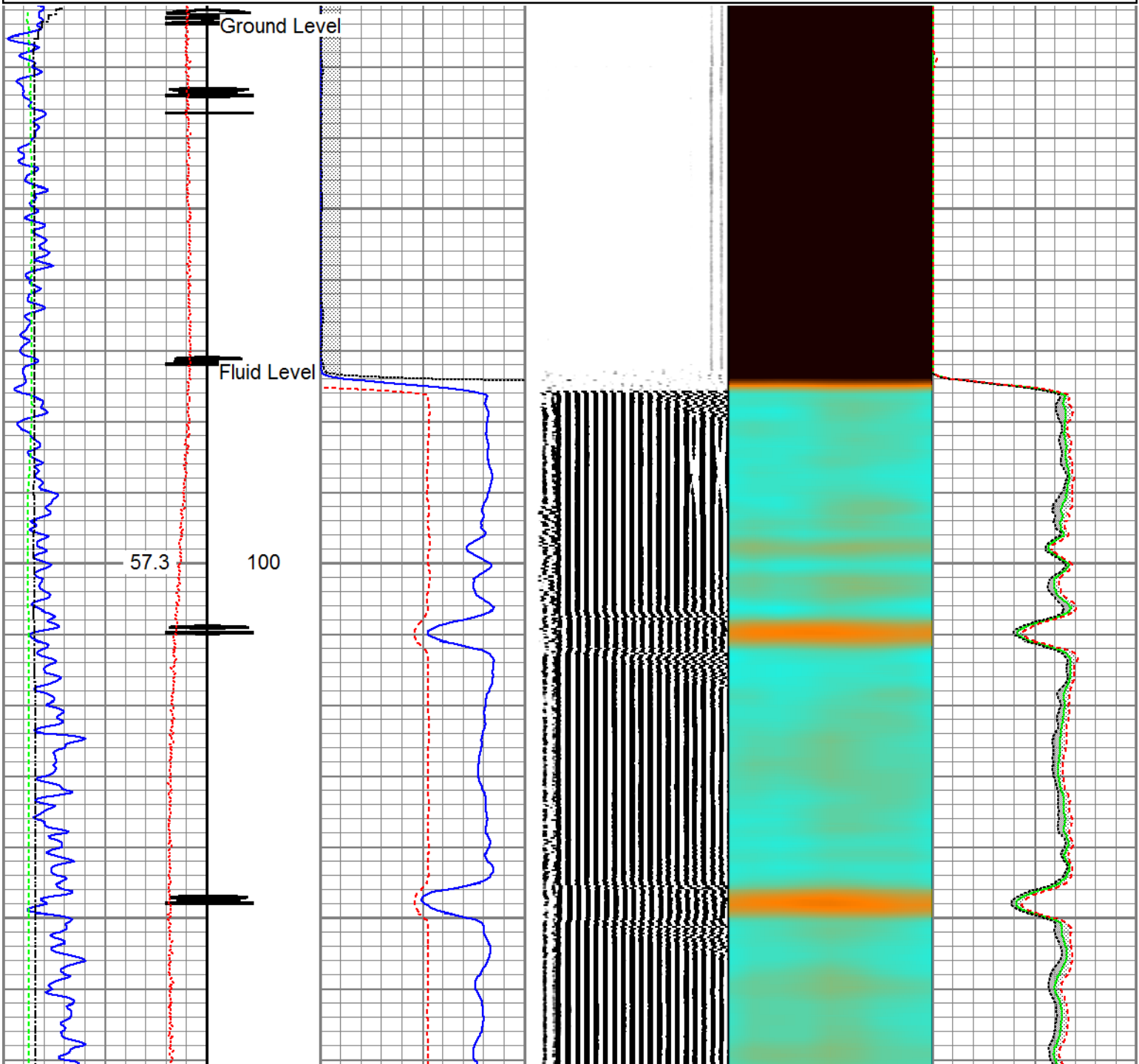
Thank you for choosing Reliance Oilfield Services, LLC!!

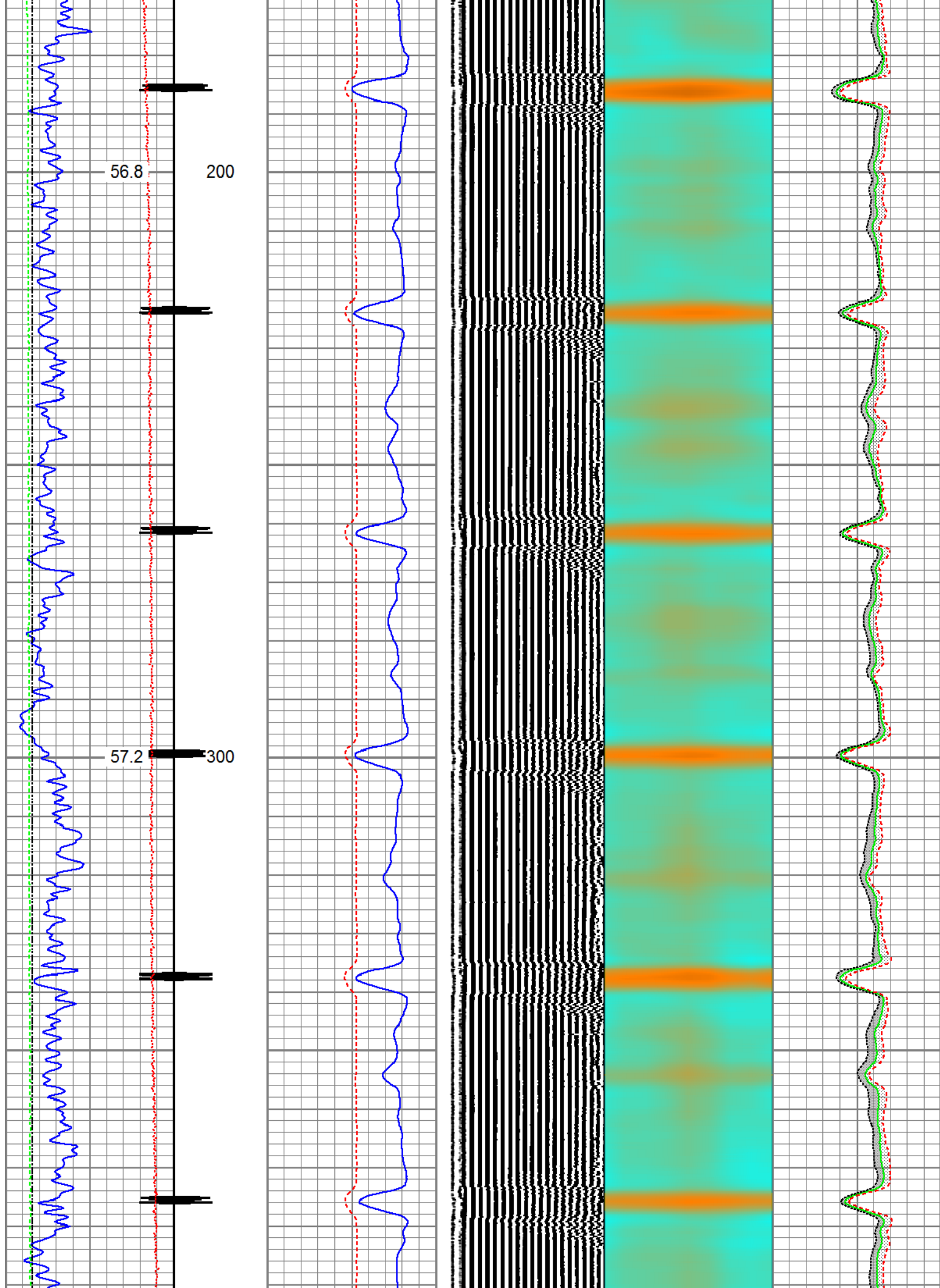


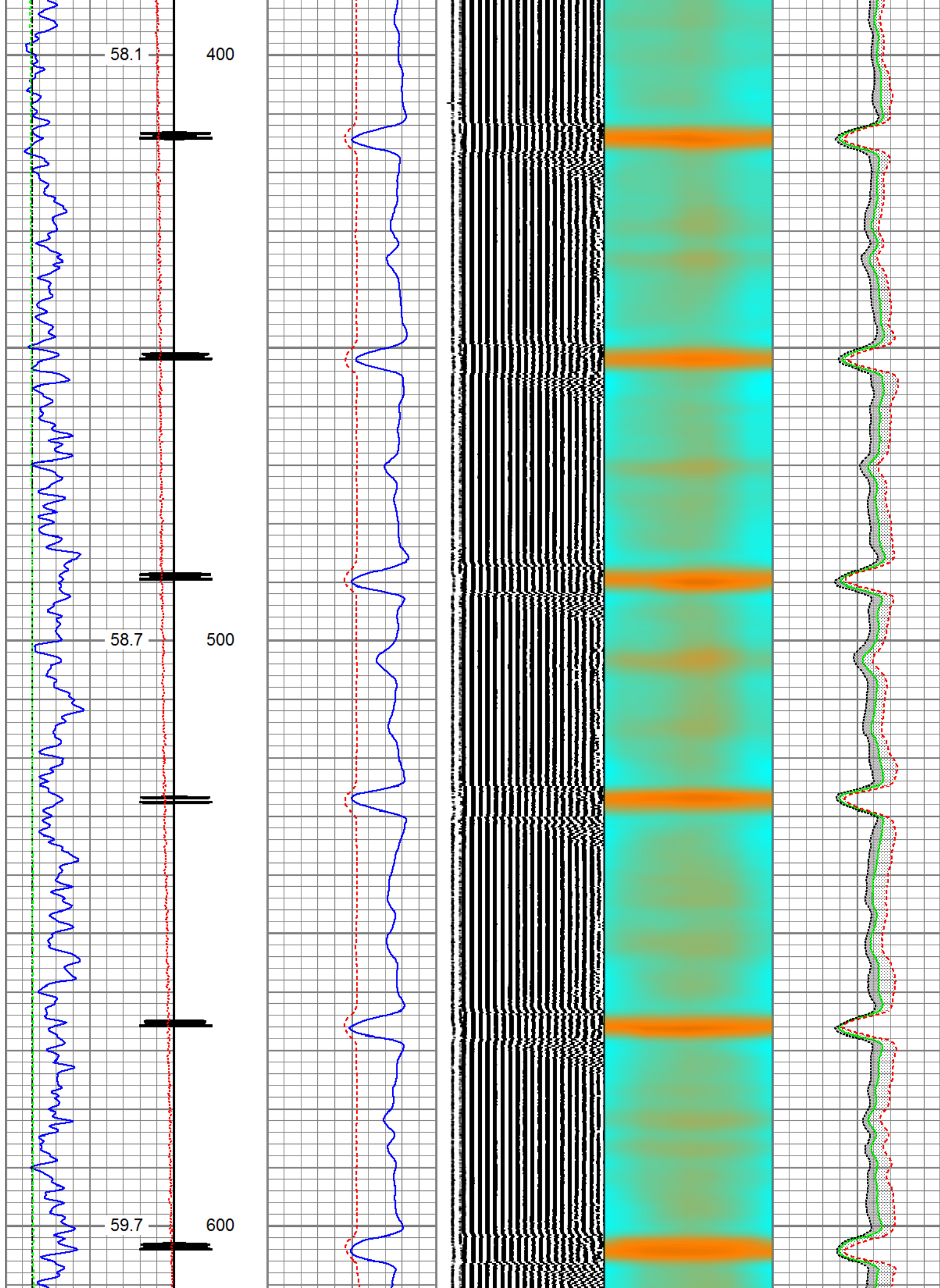
Main Pass

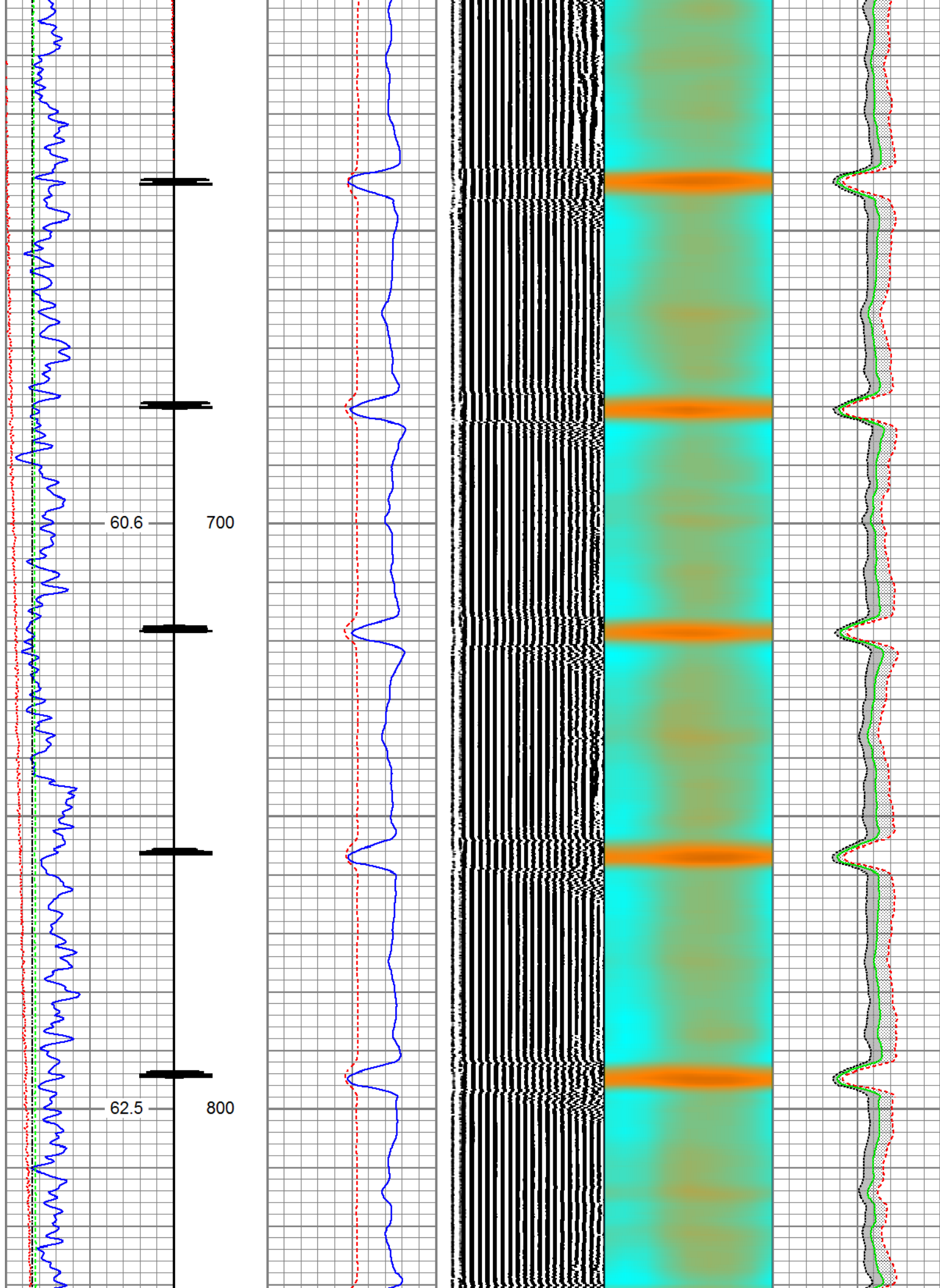
Recorded with 0 PSI surface induced pressure

Gamma Ray 0 (GAPI) 200	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map 10 110	Average Amplitude 0 150
Casing Collar Locator	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 150
Line Speed -150 (ft/min) 150	3' Travel Time 300 (usec) 200			Maximum Amplitude 0 150
Line Tension 0 (lb) 2000				
Temperature 0 (degF) 20				

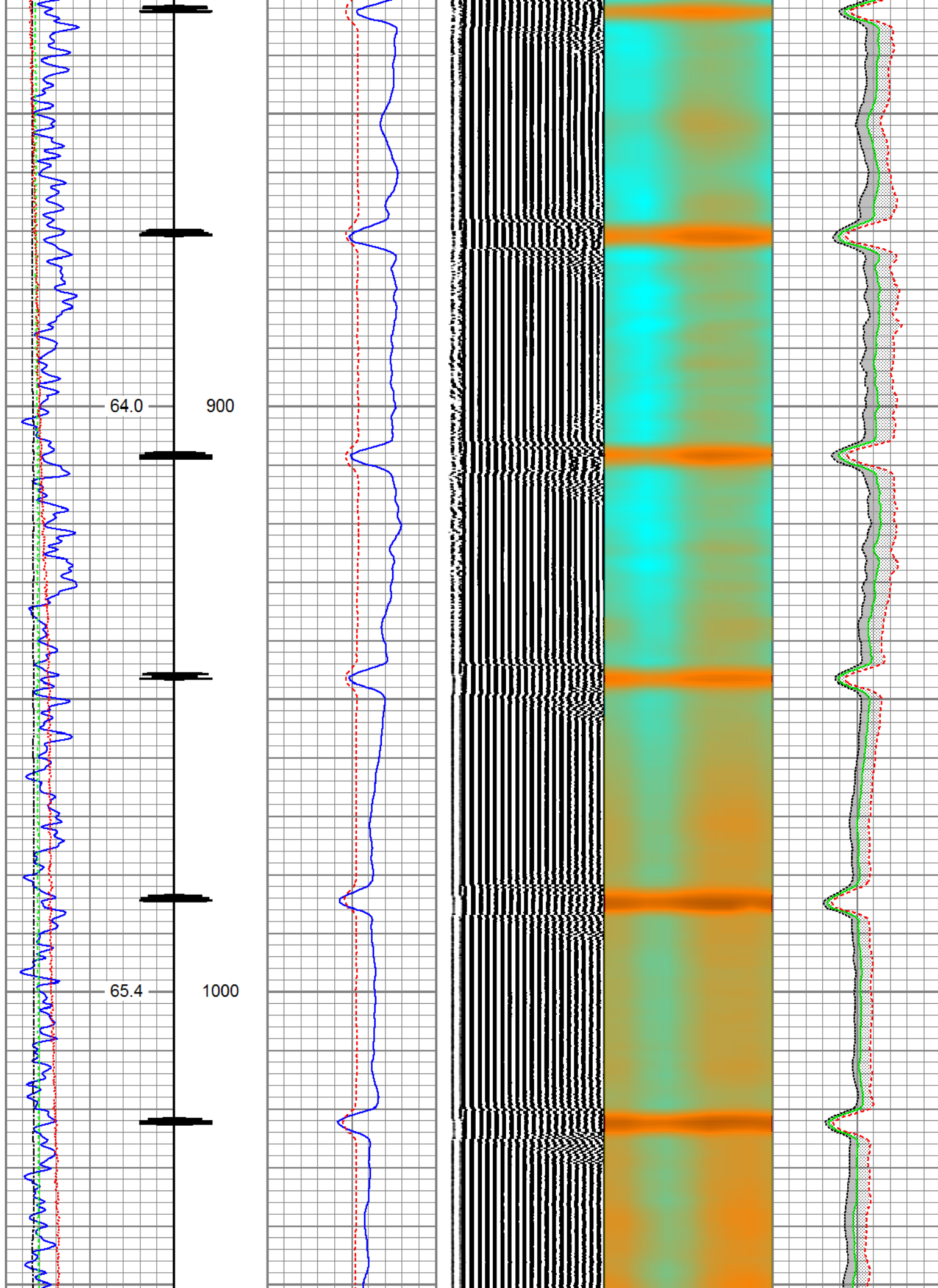


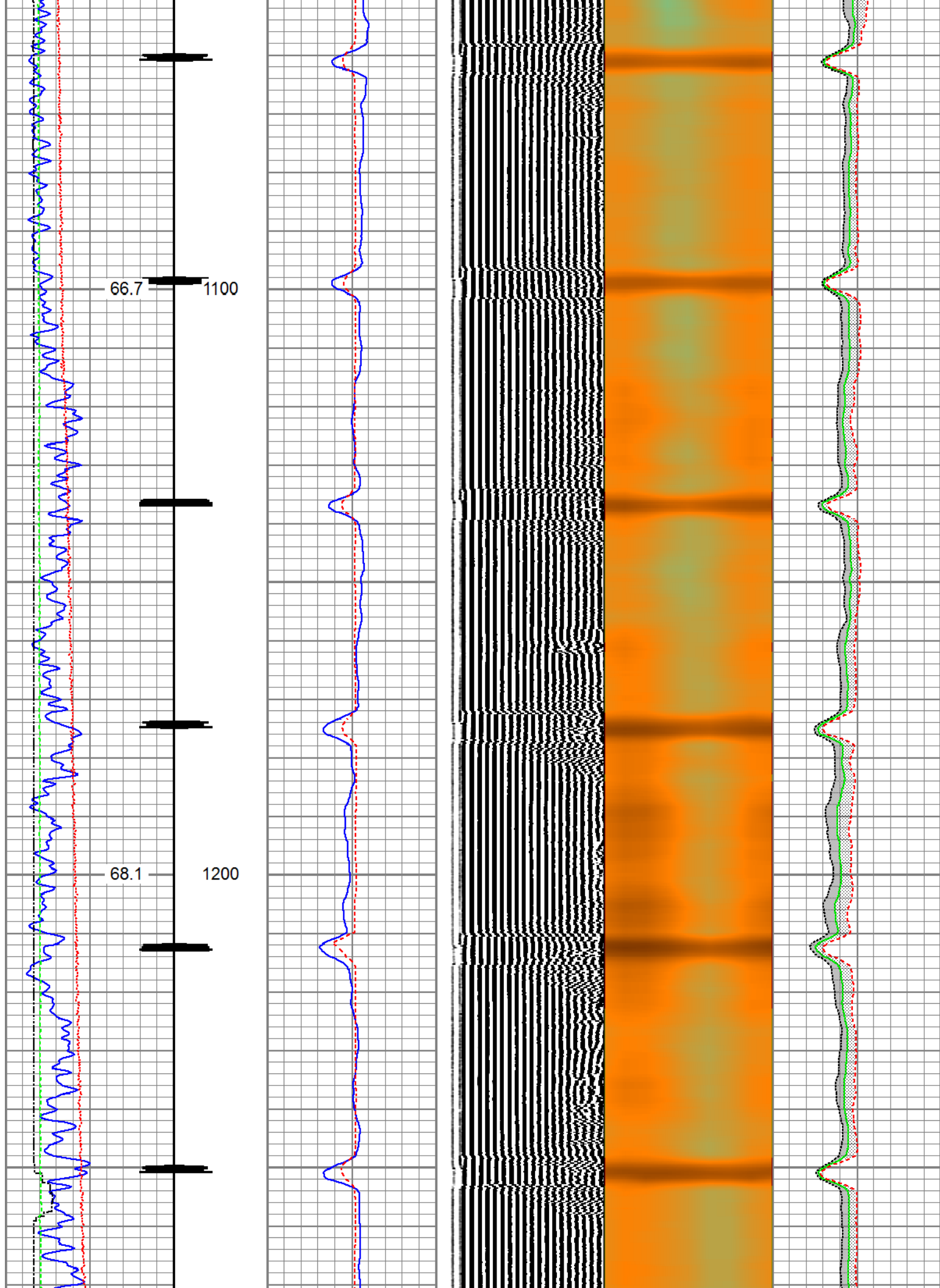


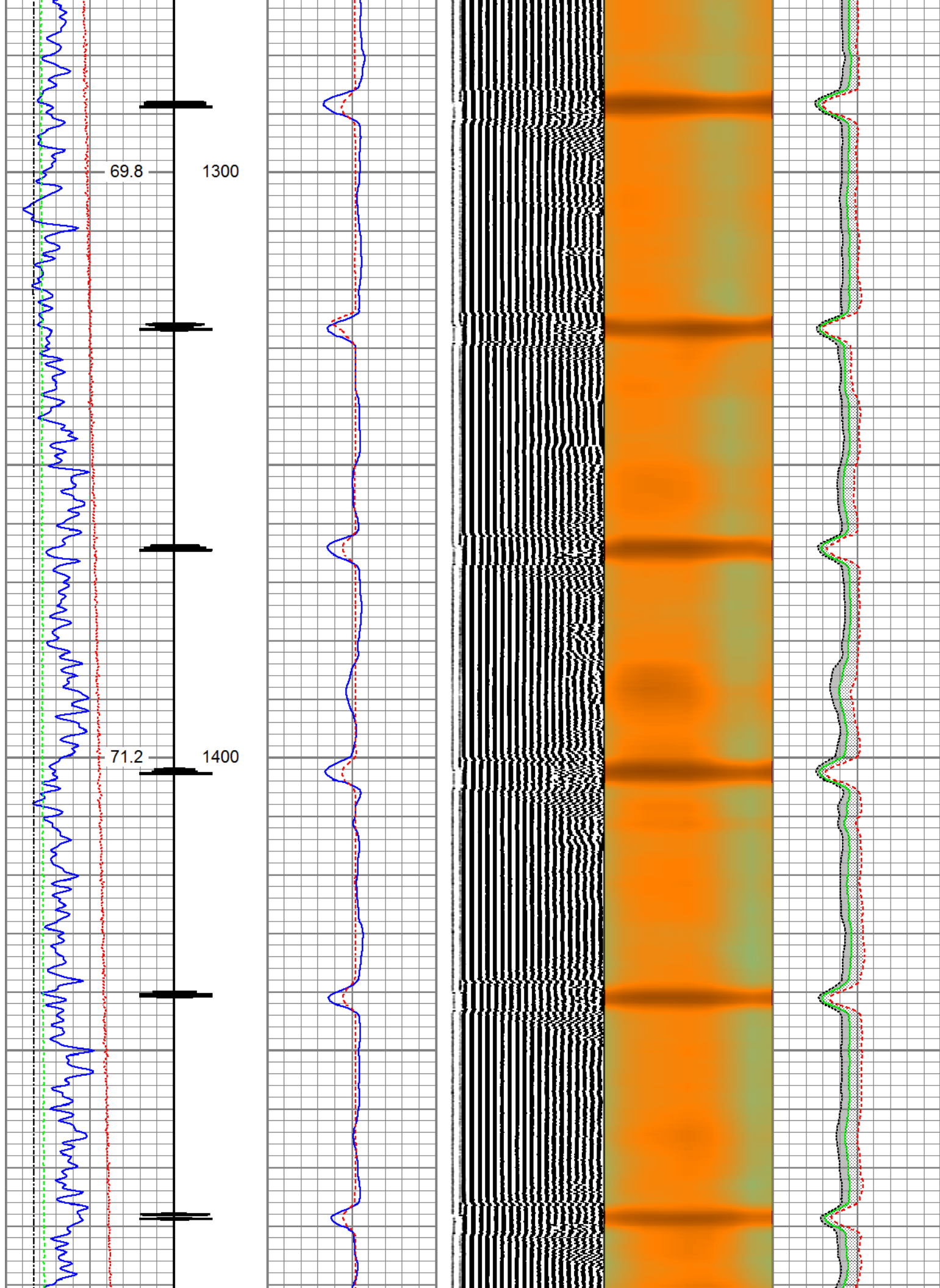




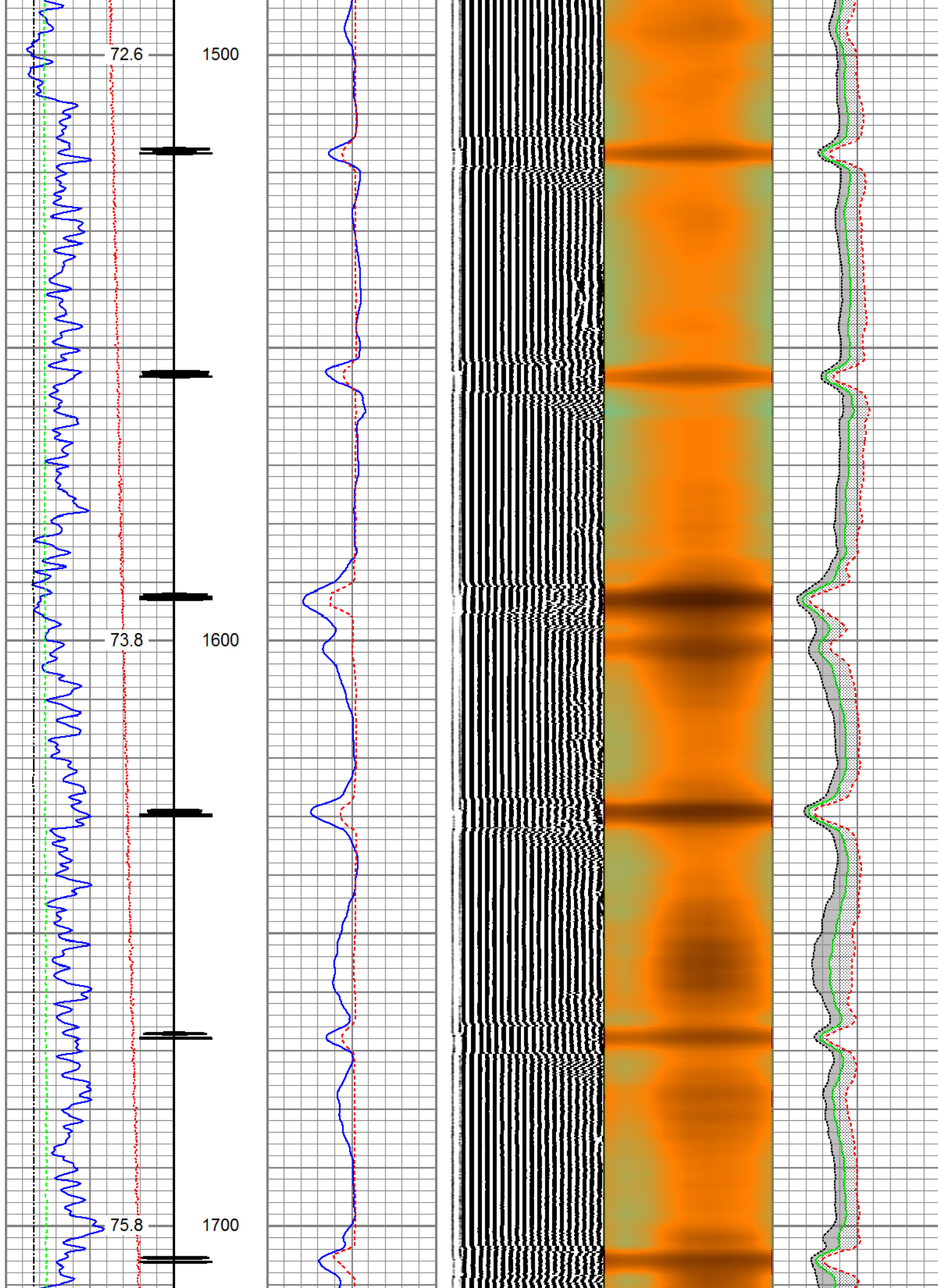


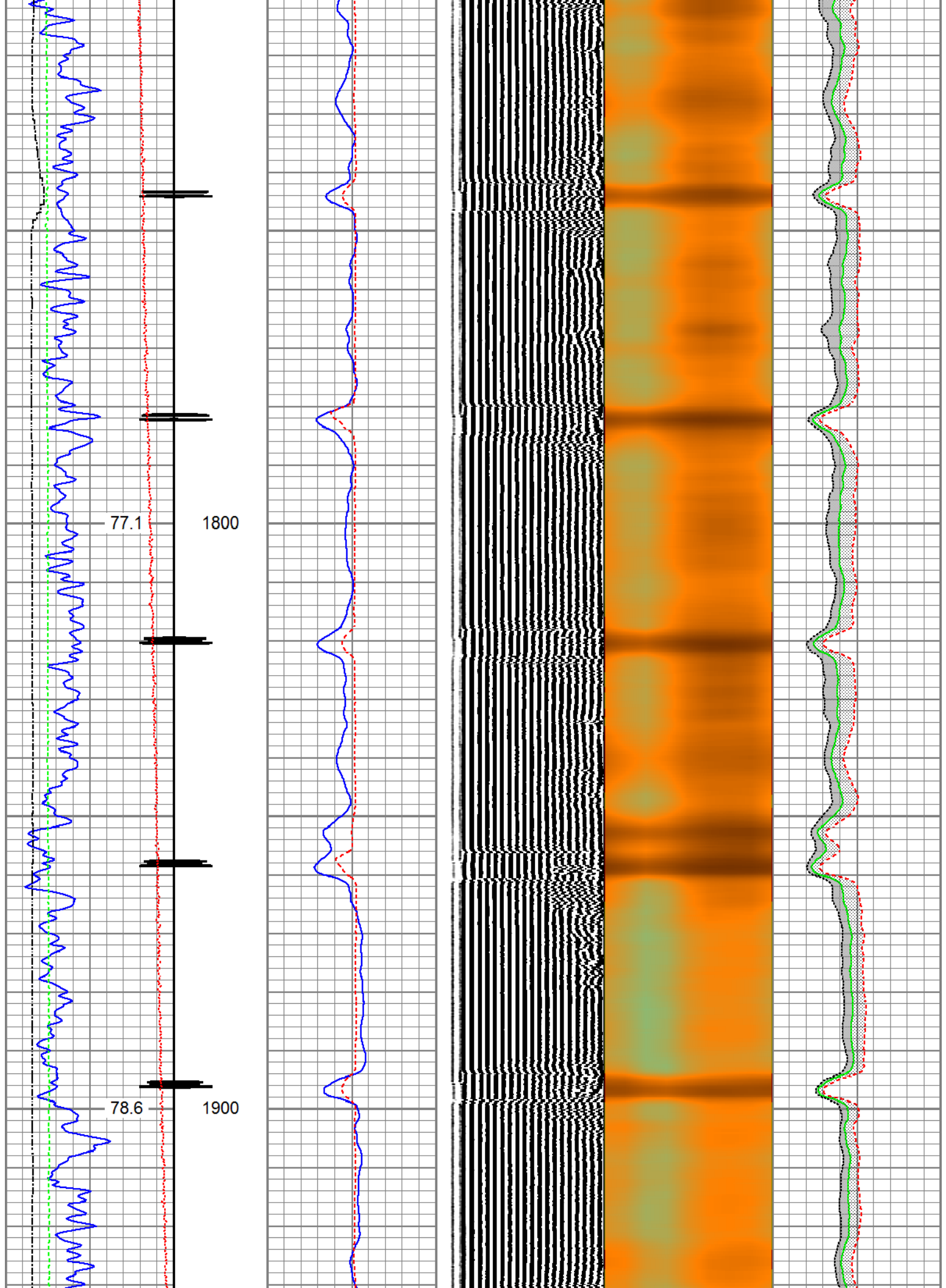


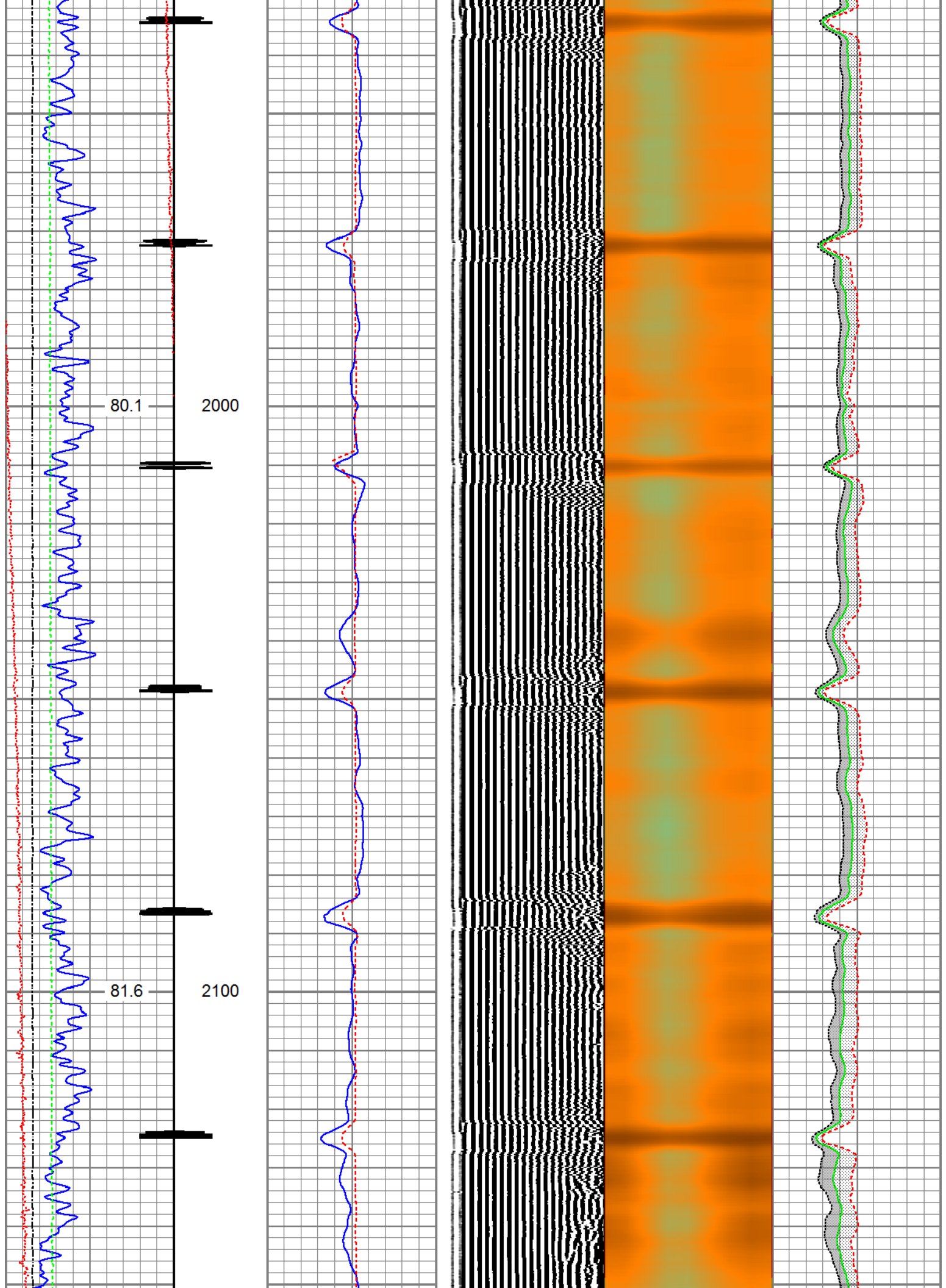


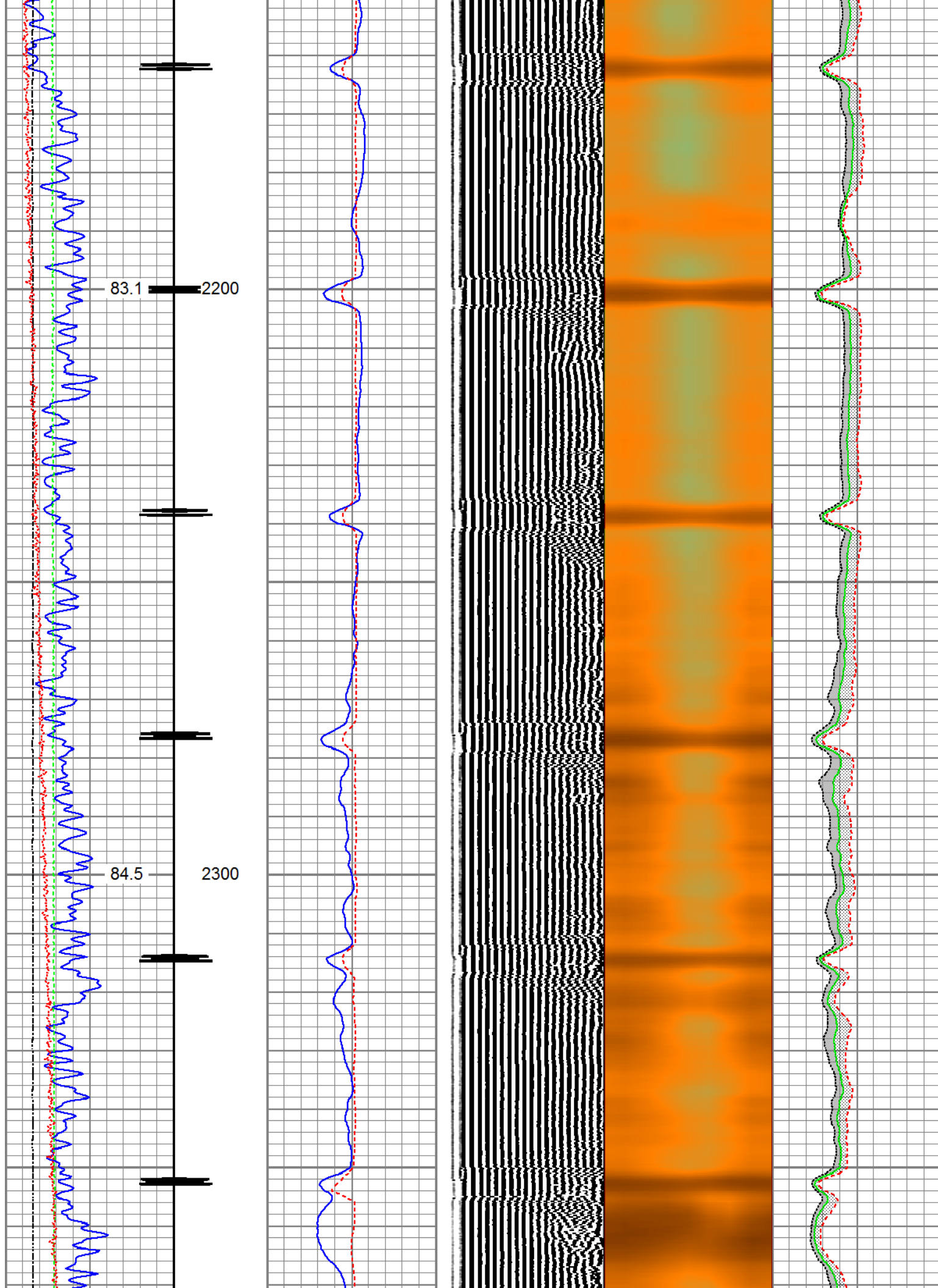




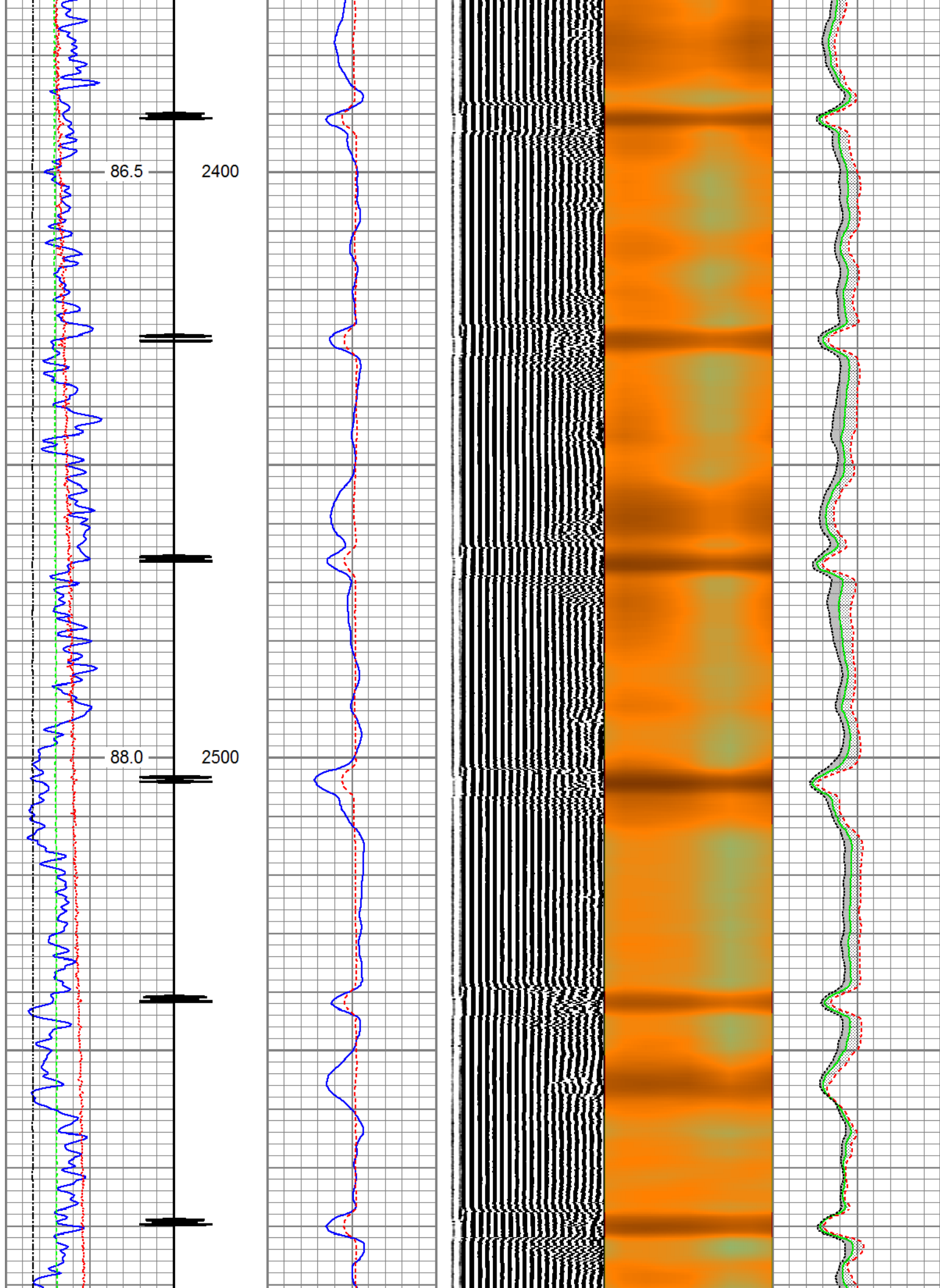




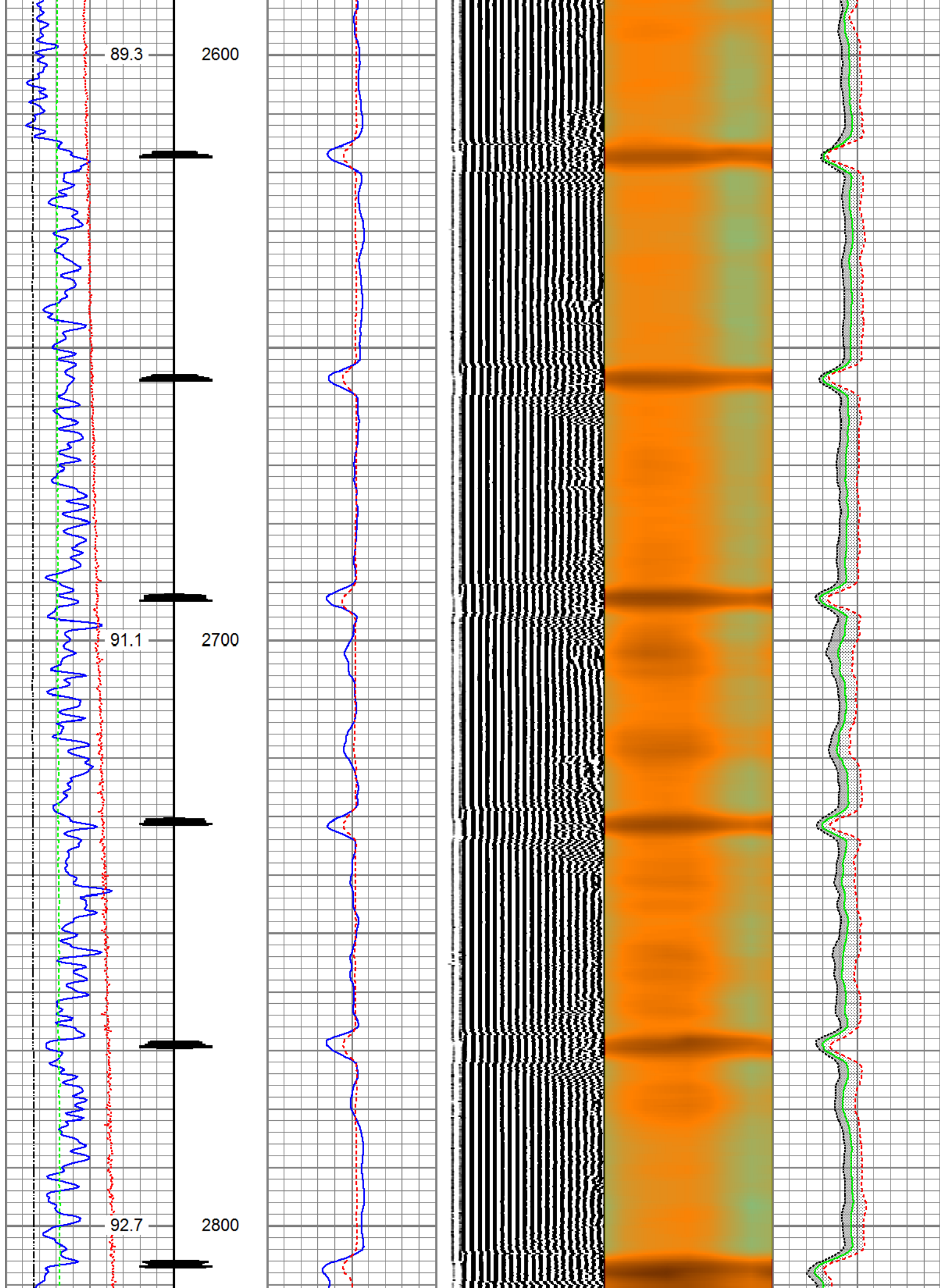


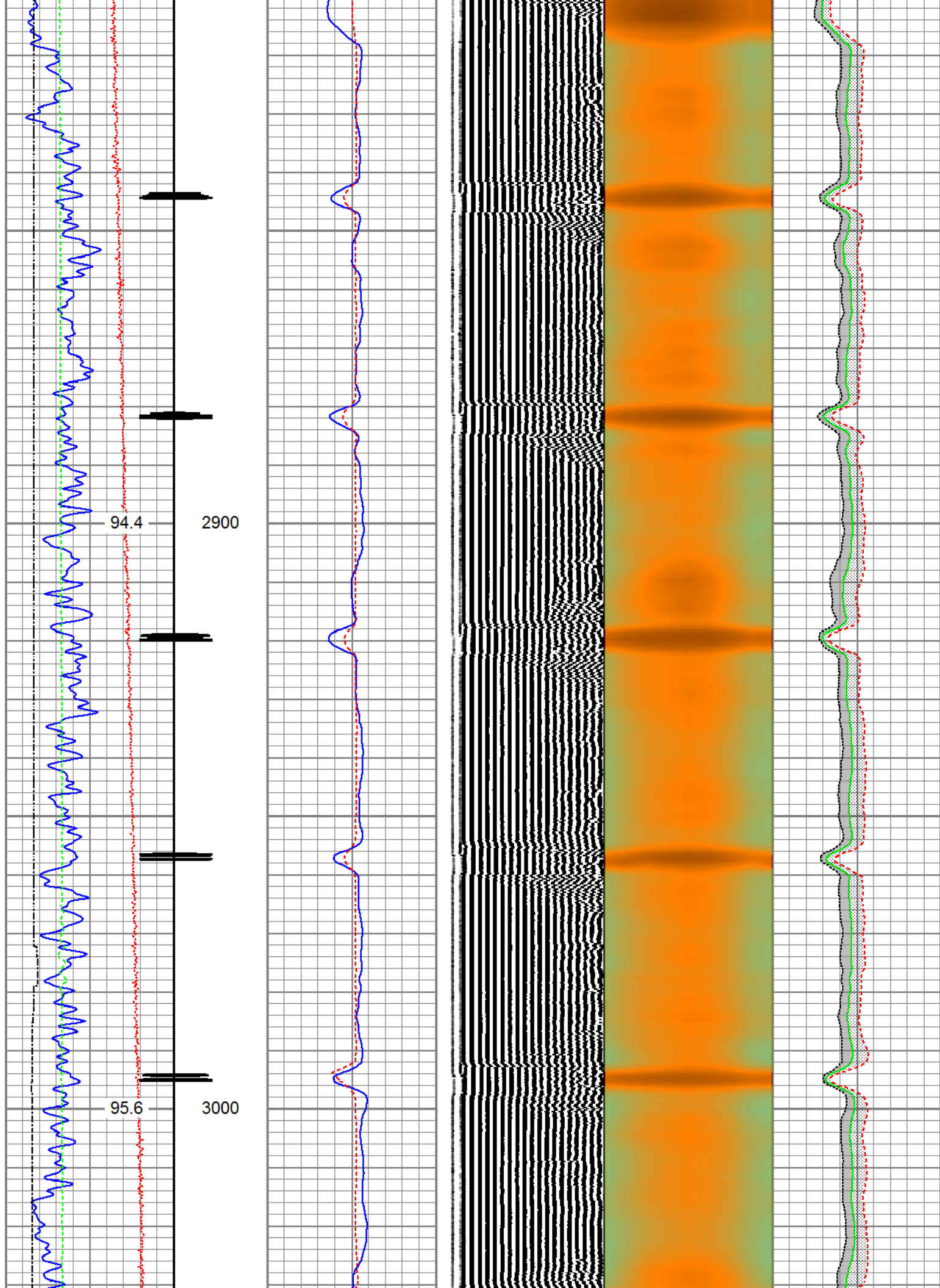


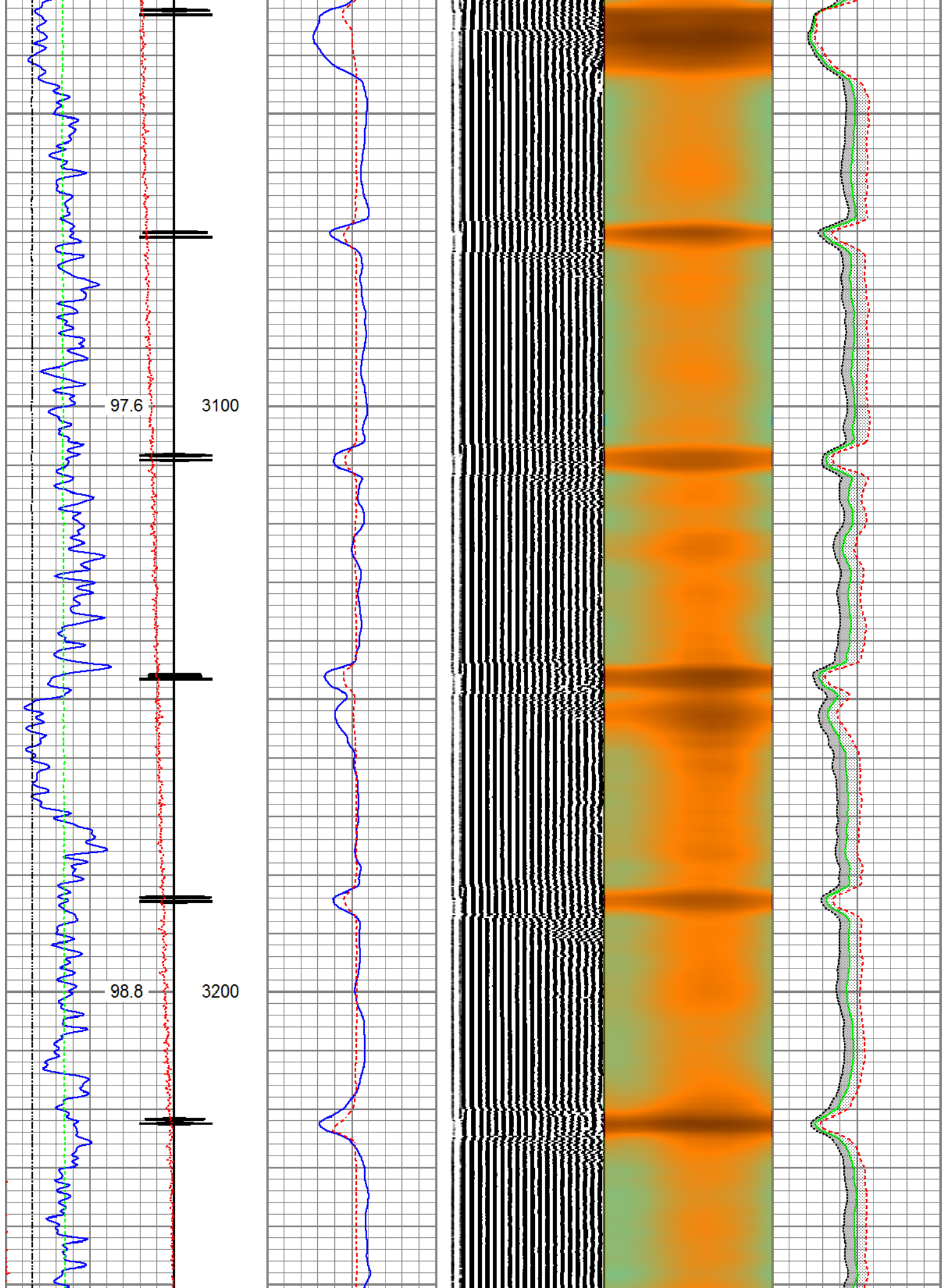


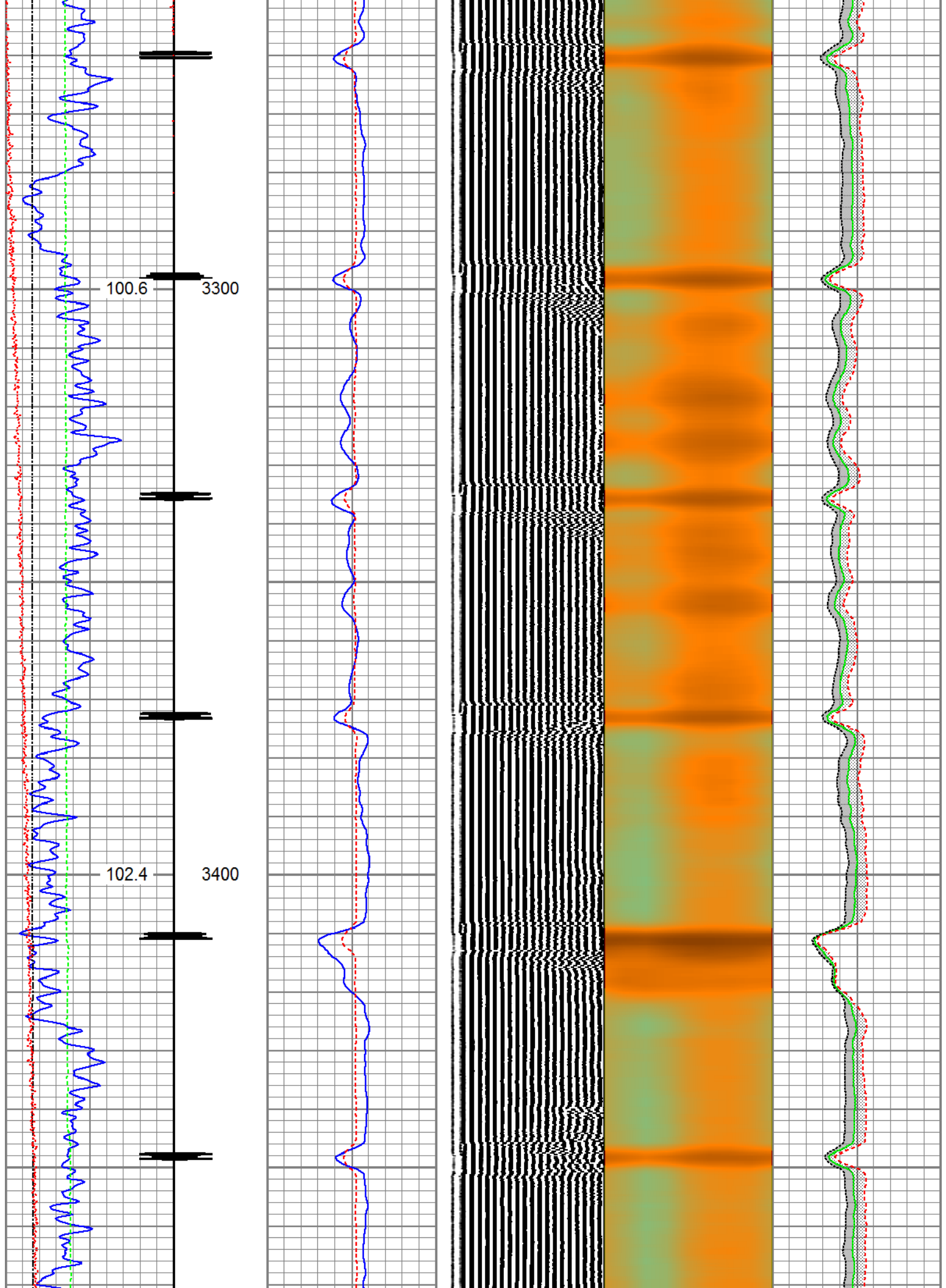




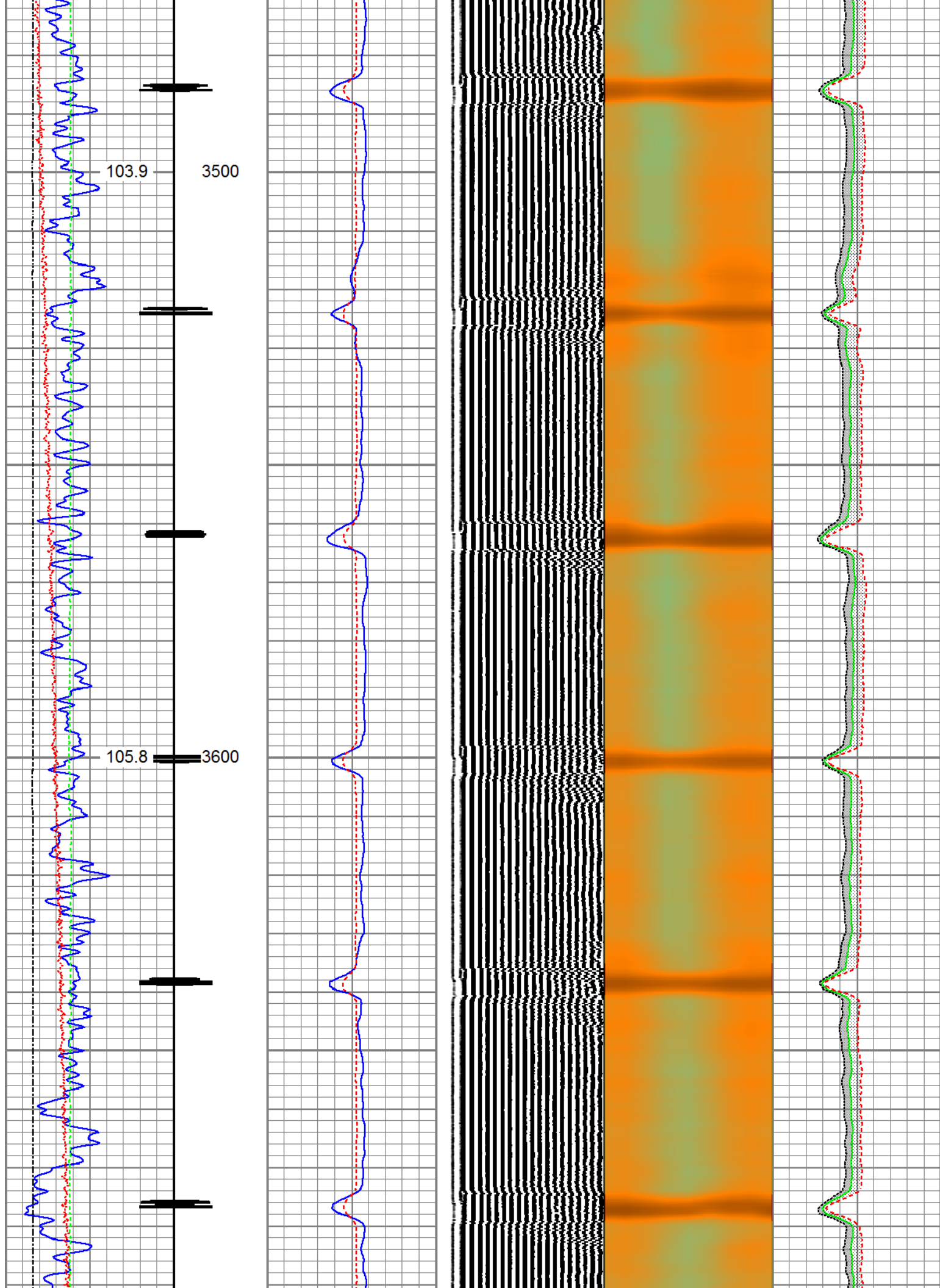




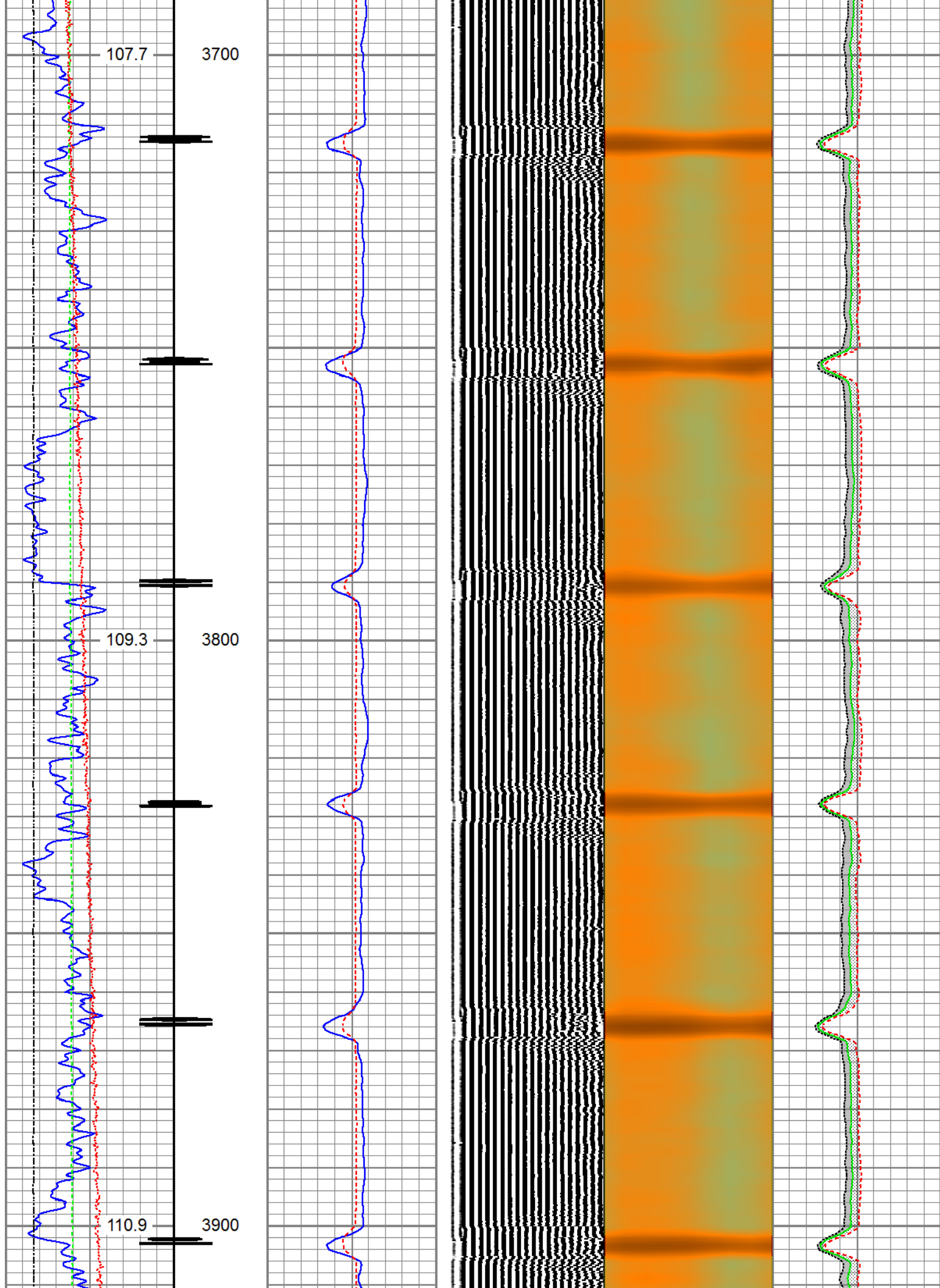


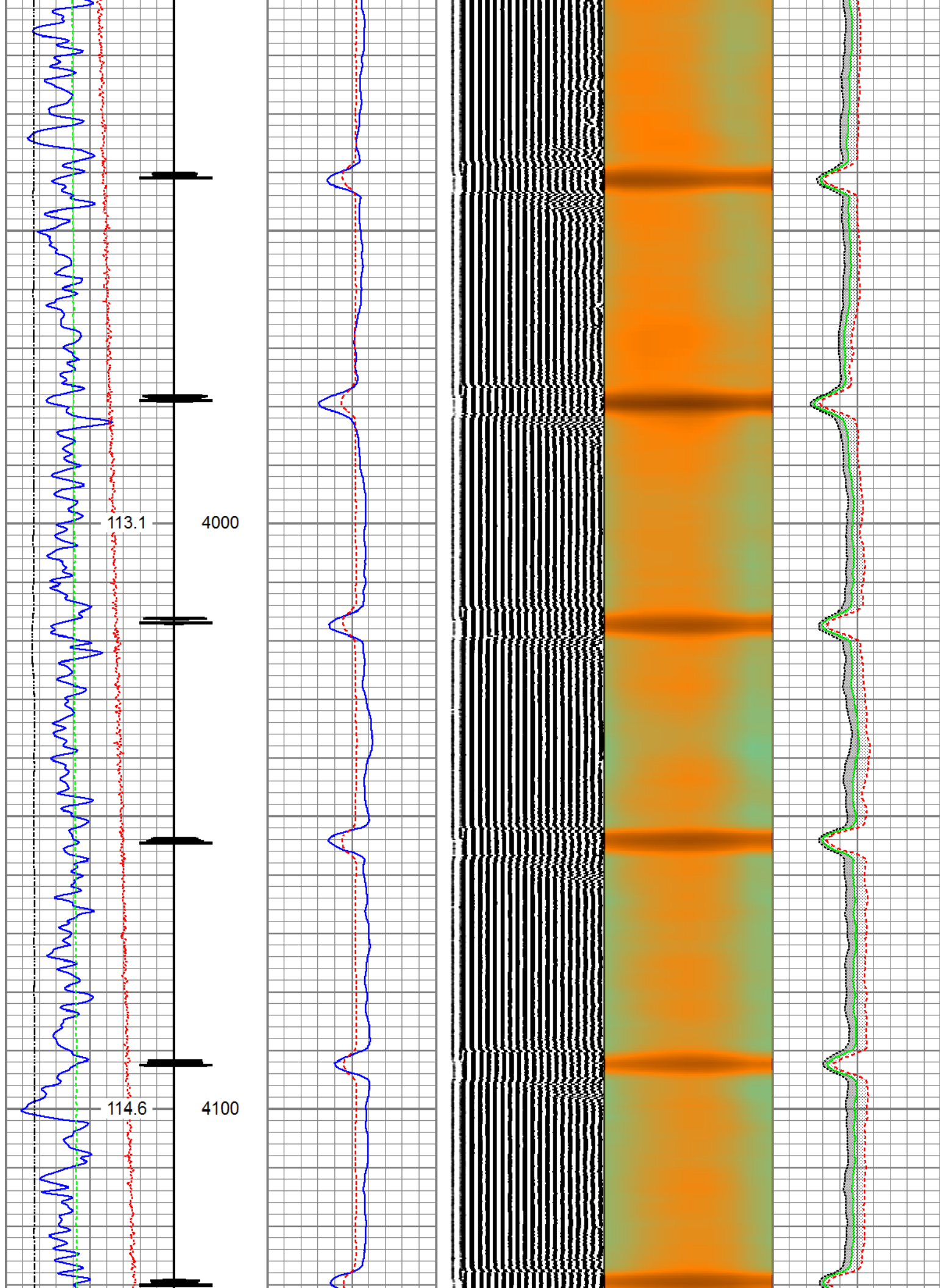


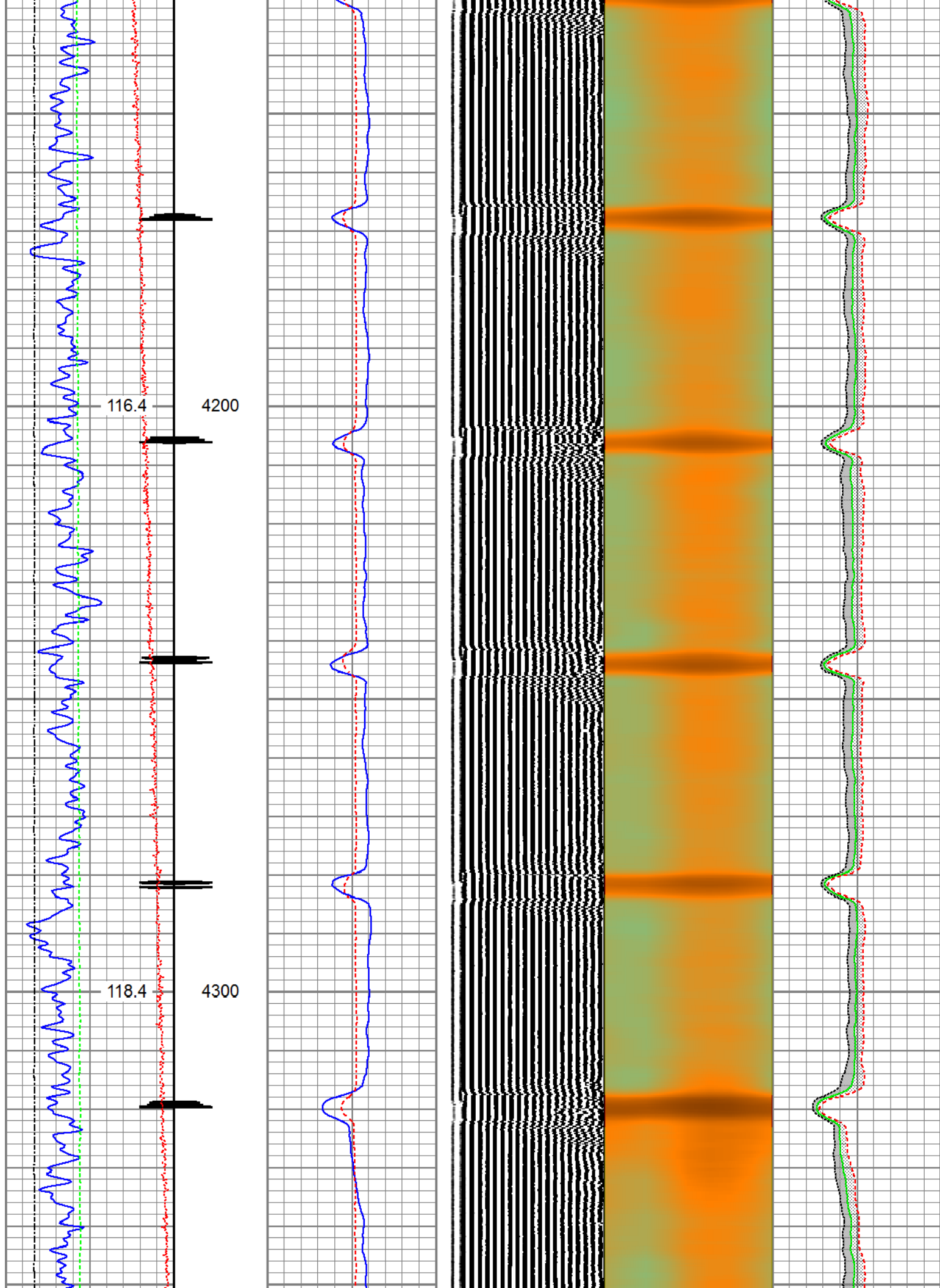


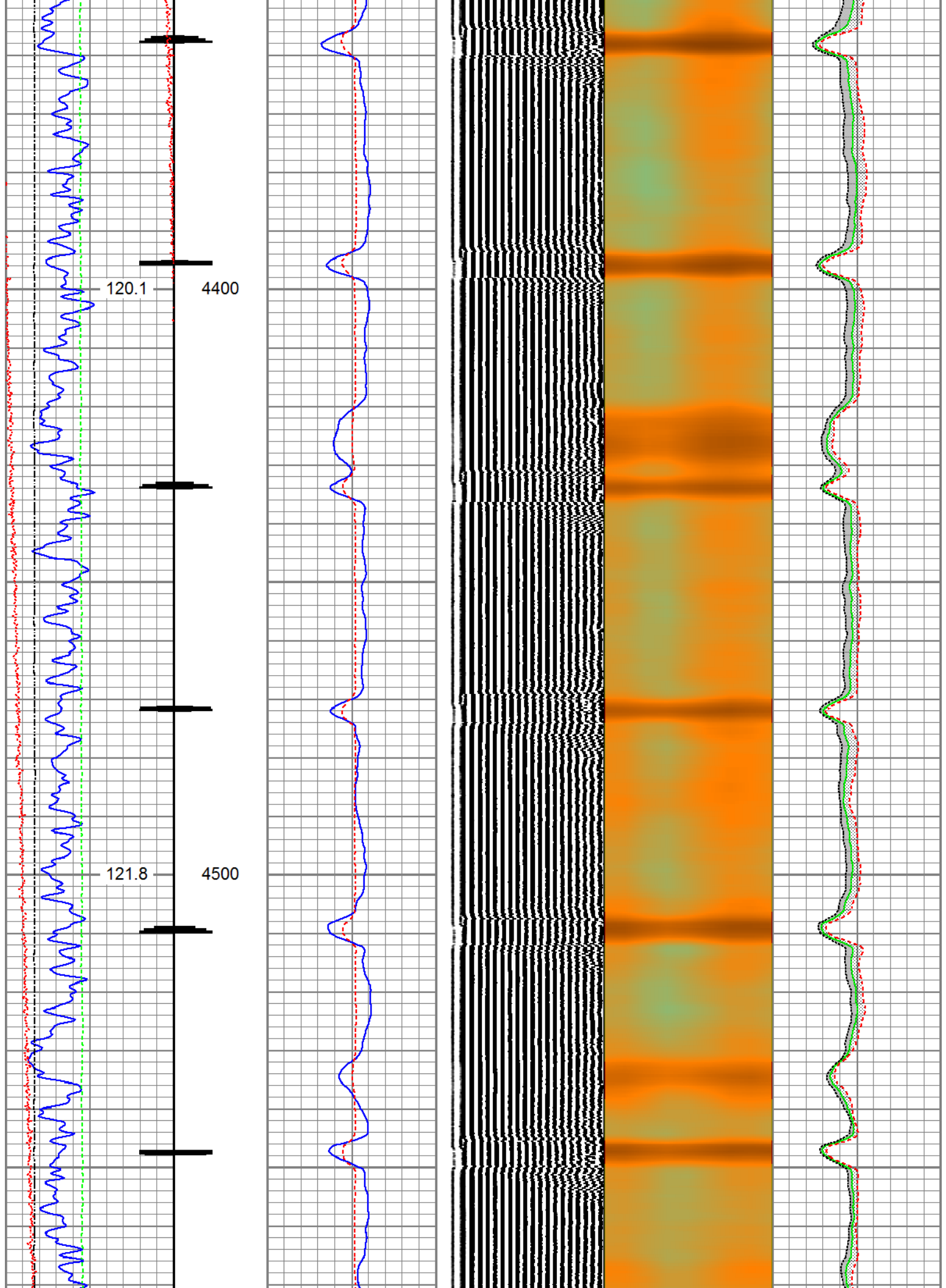


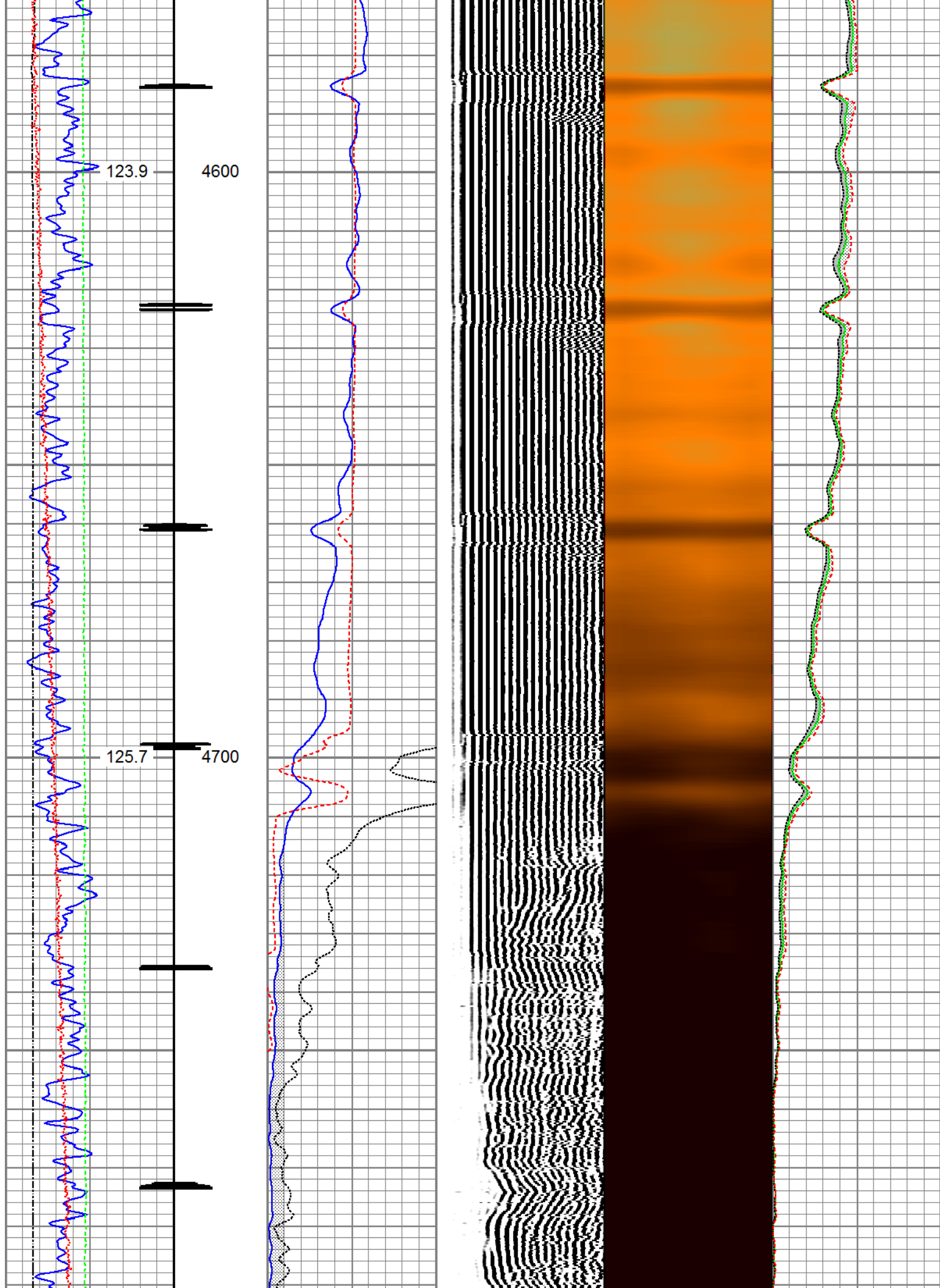




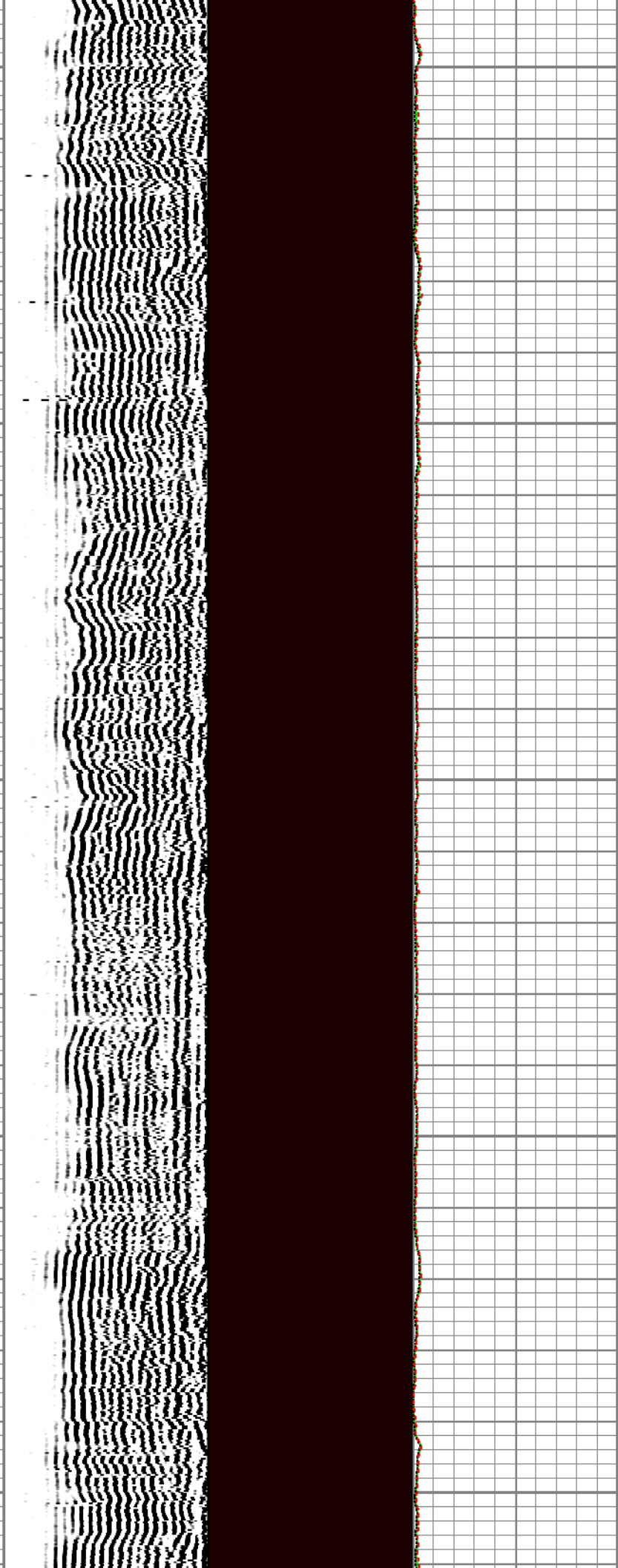
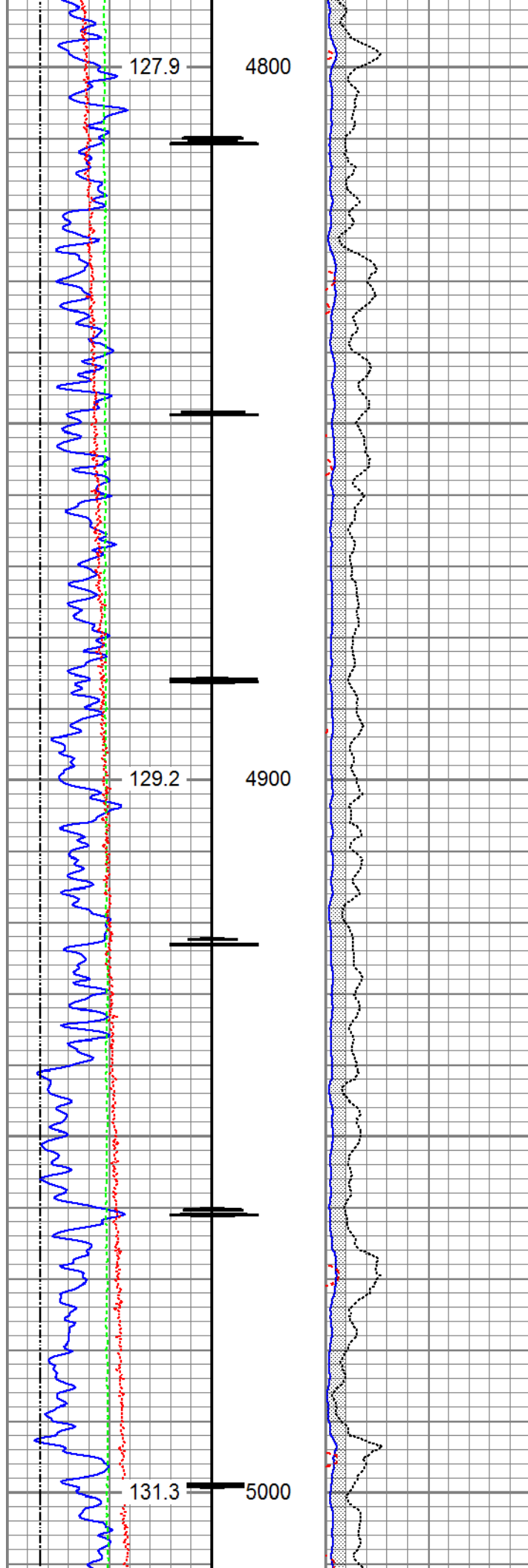


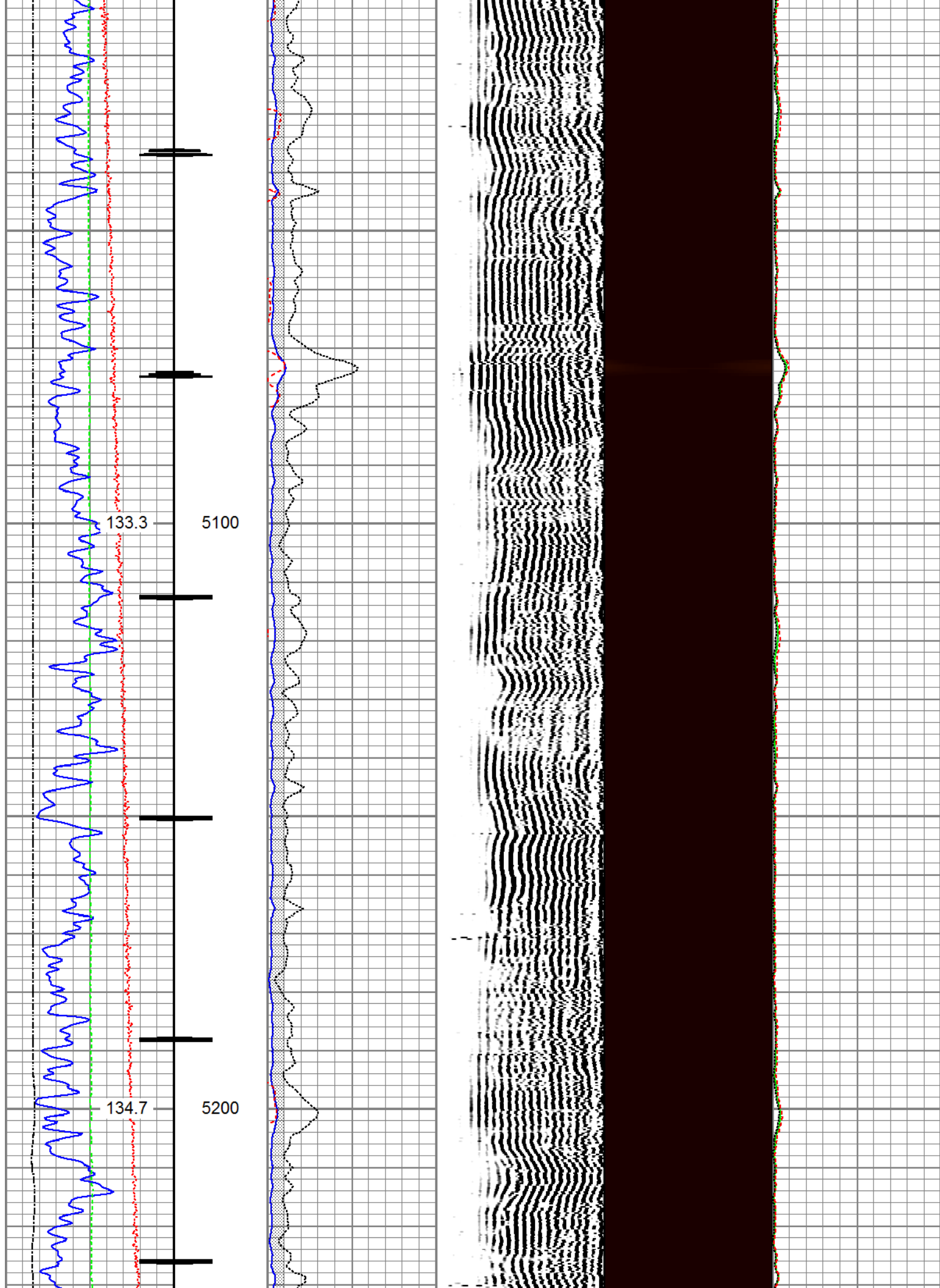


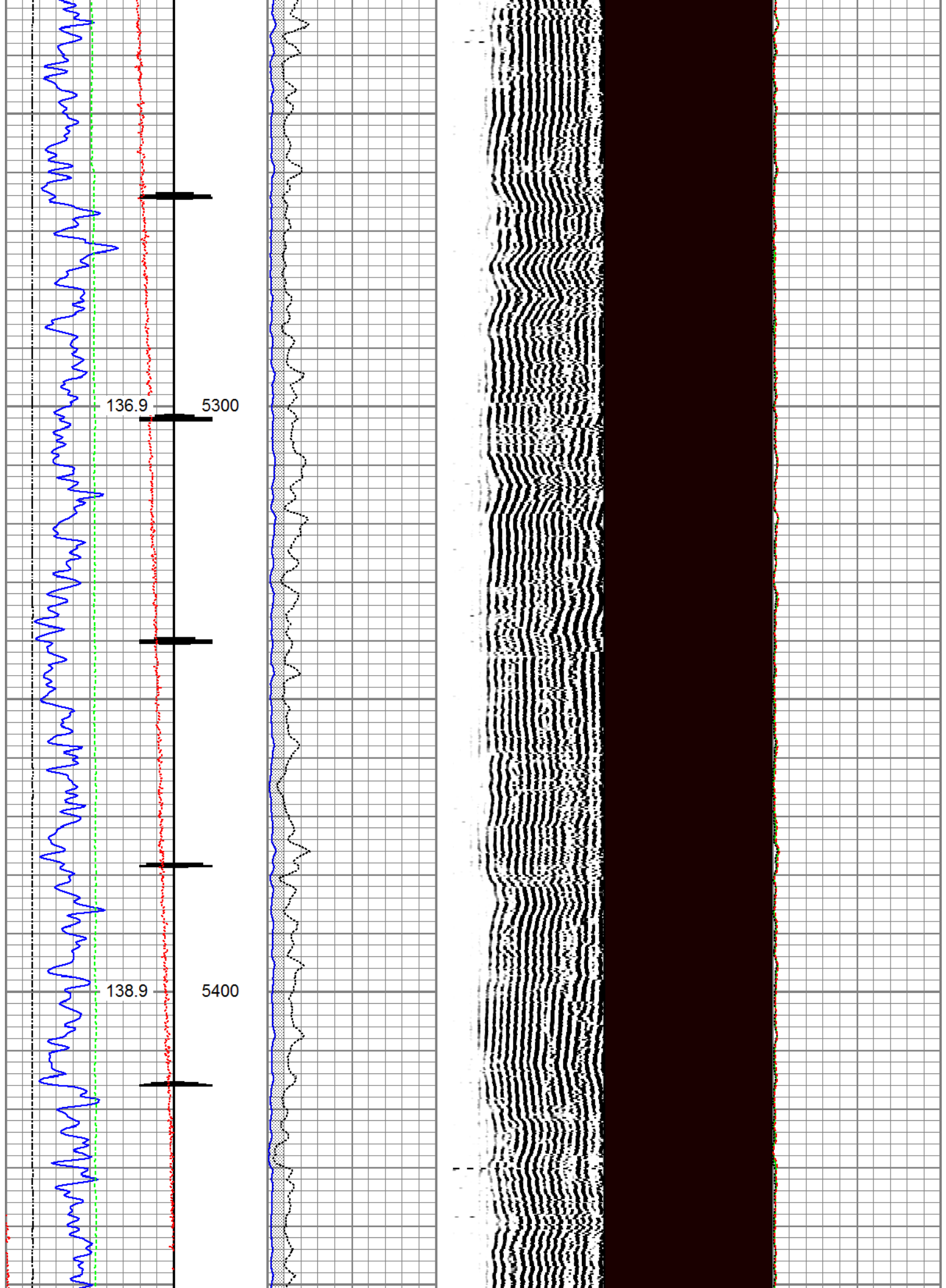


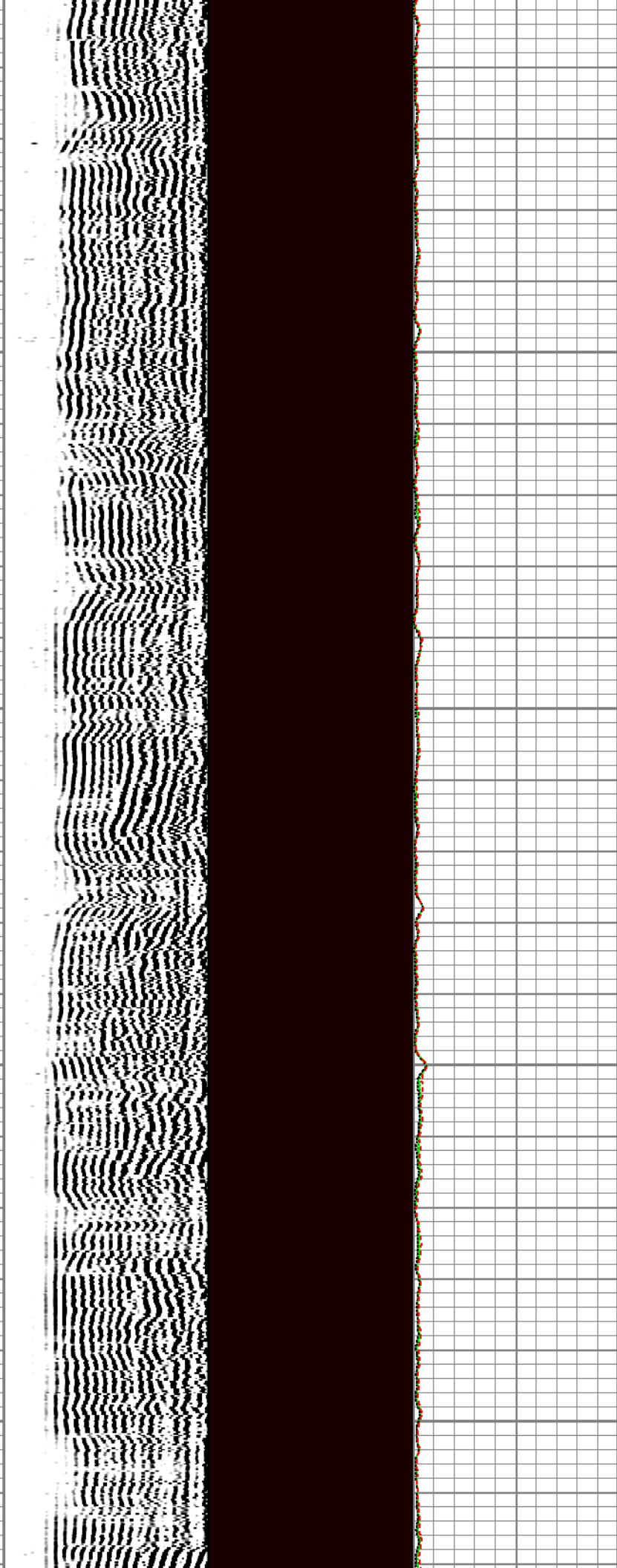
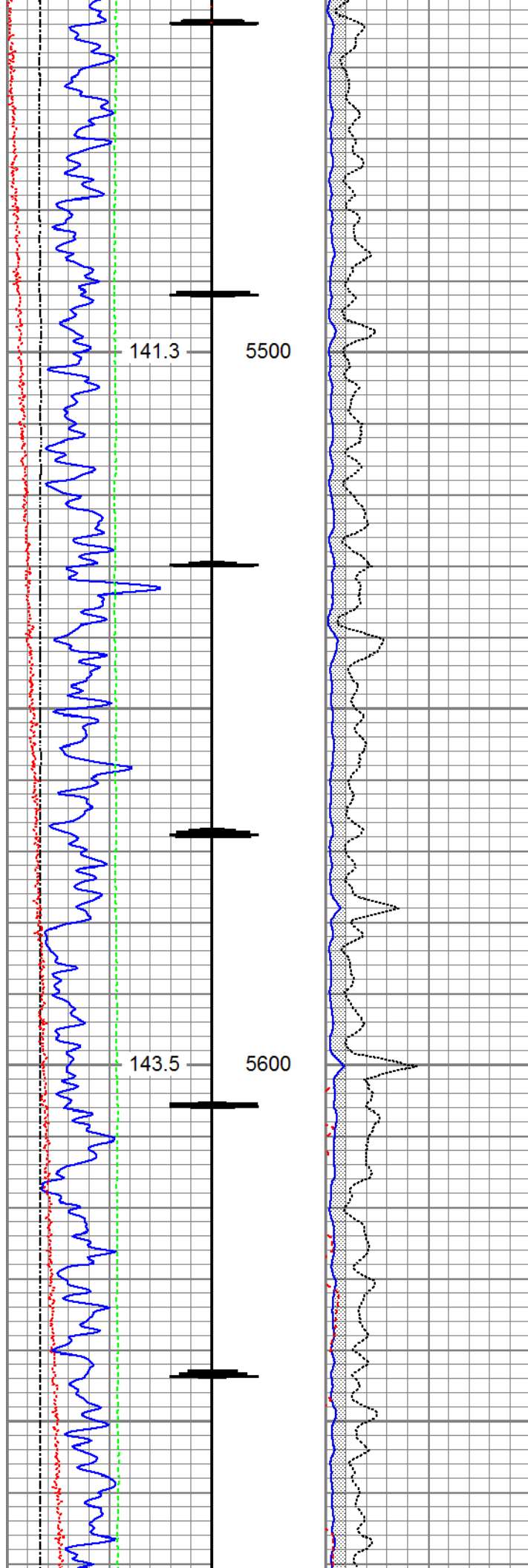




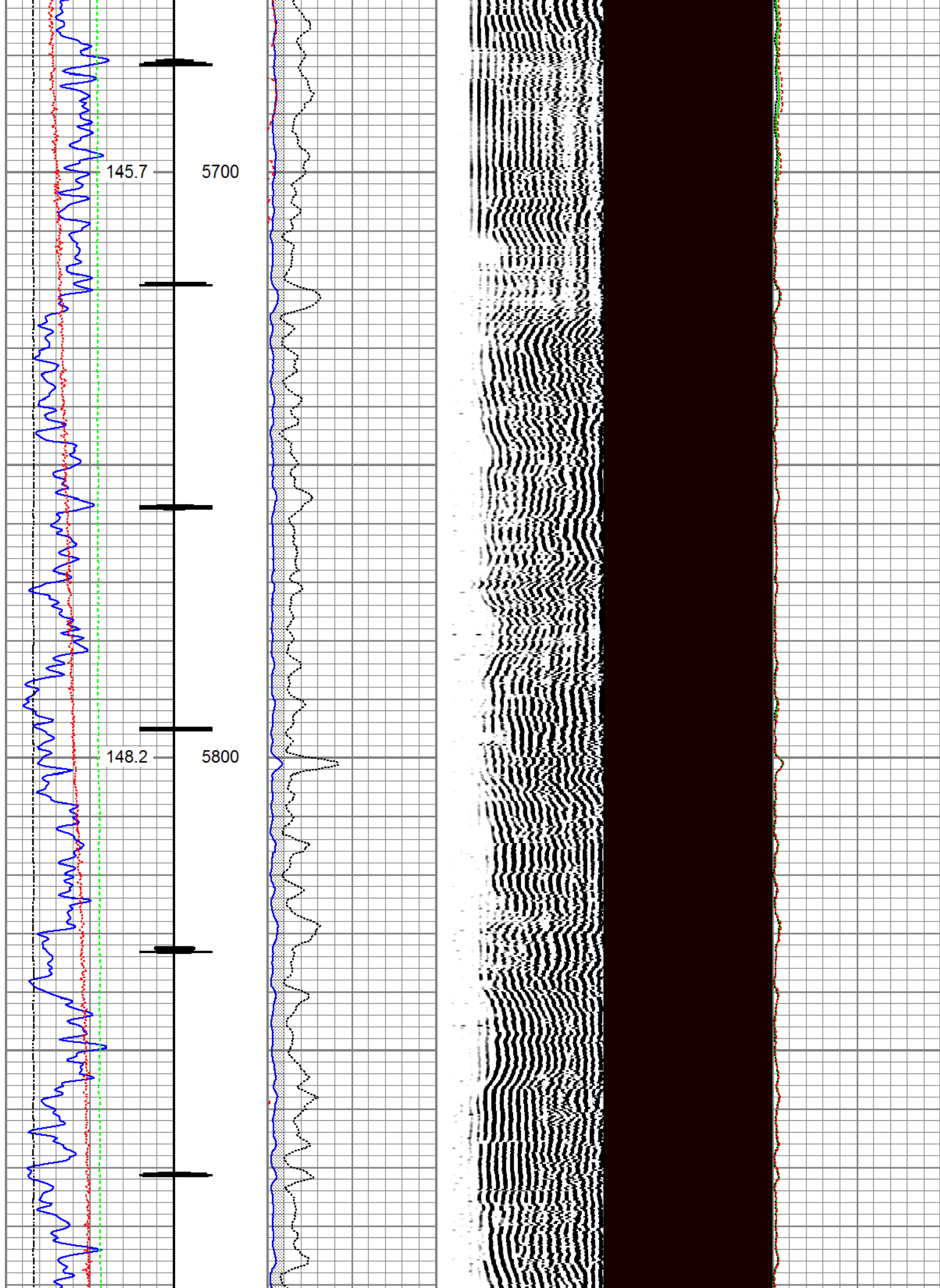




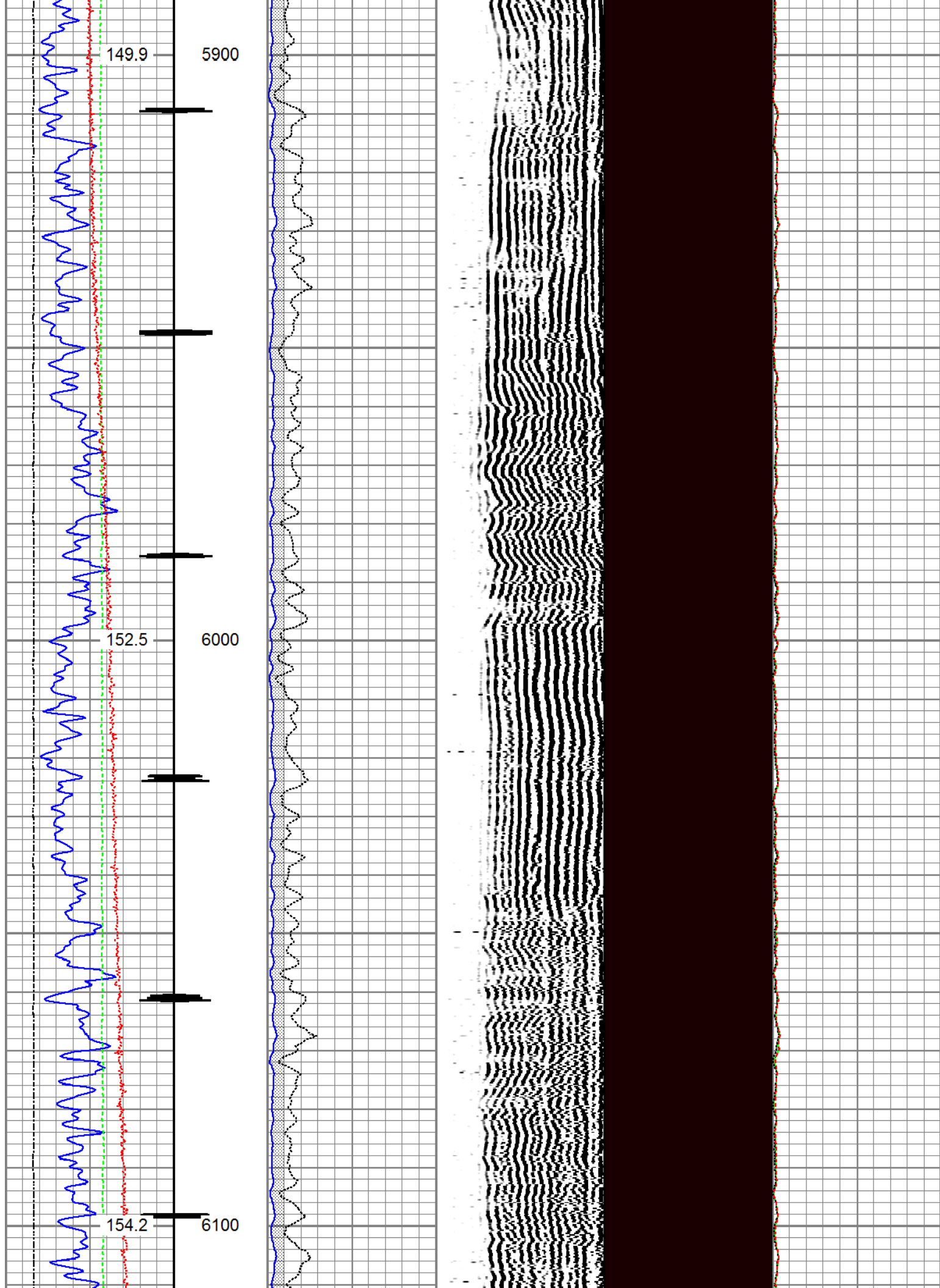


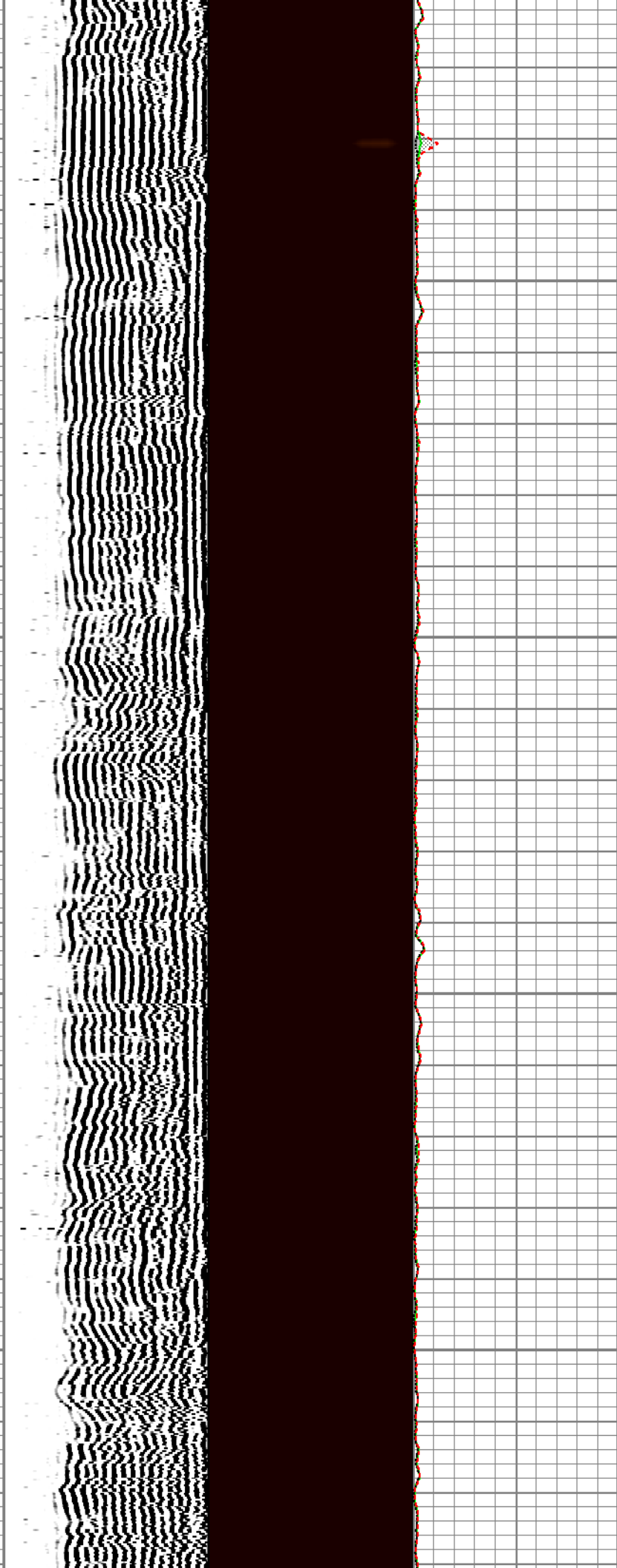
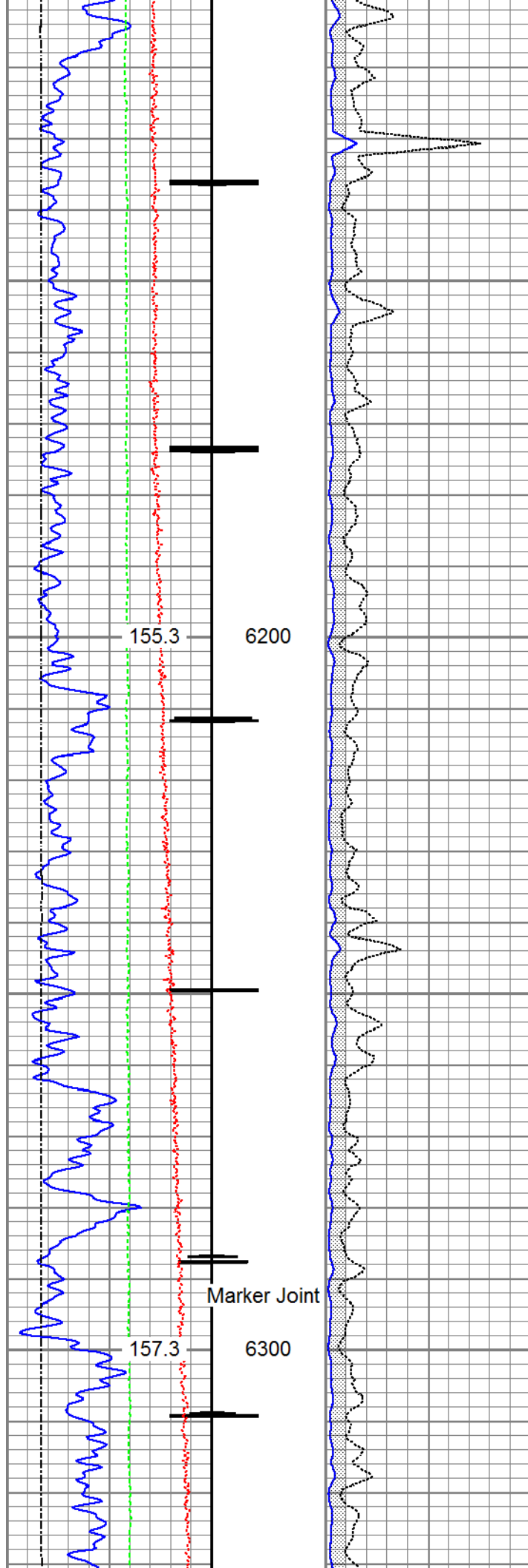


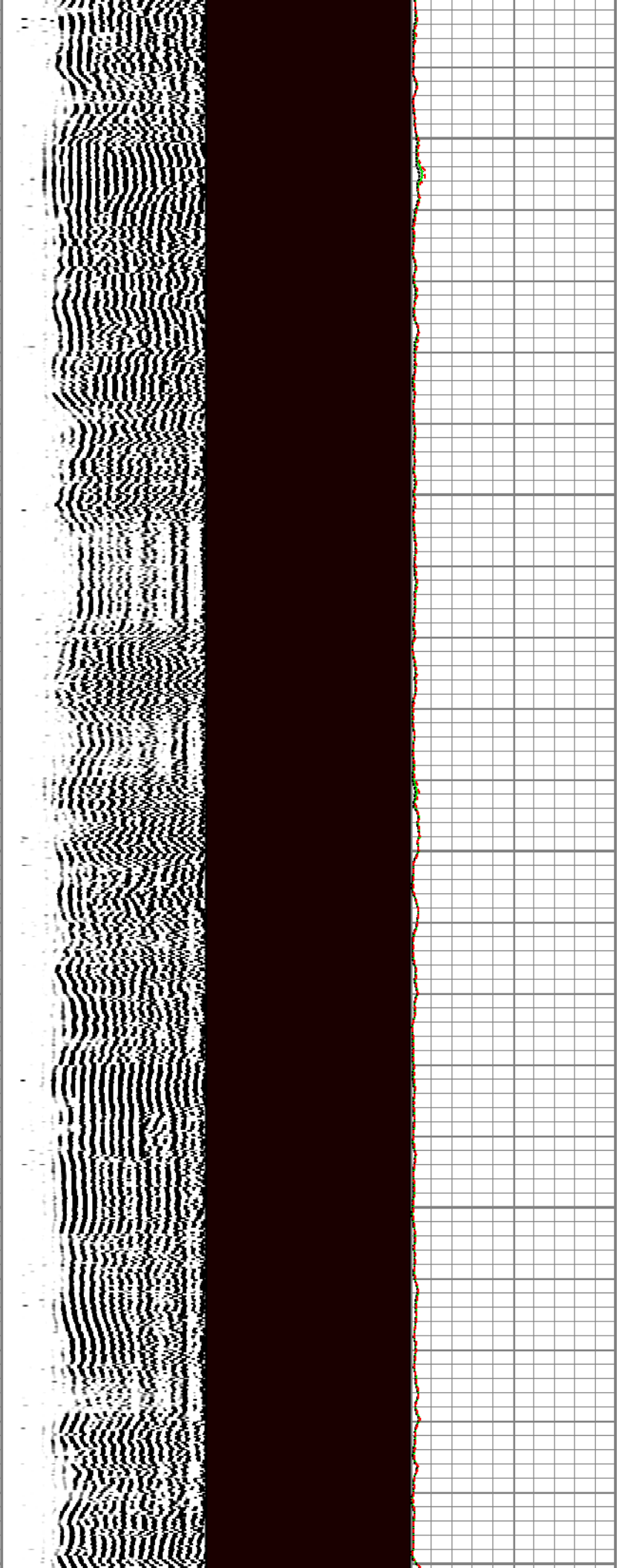
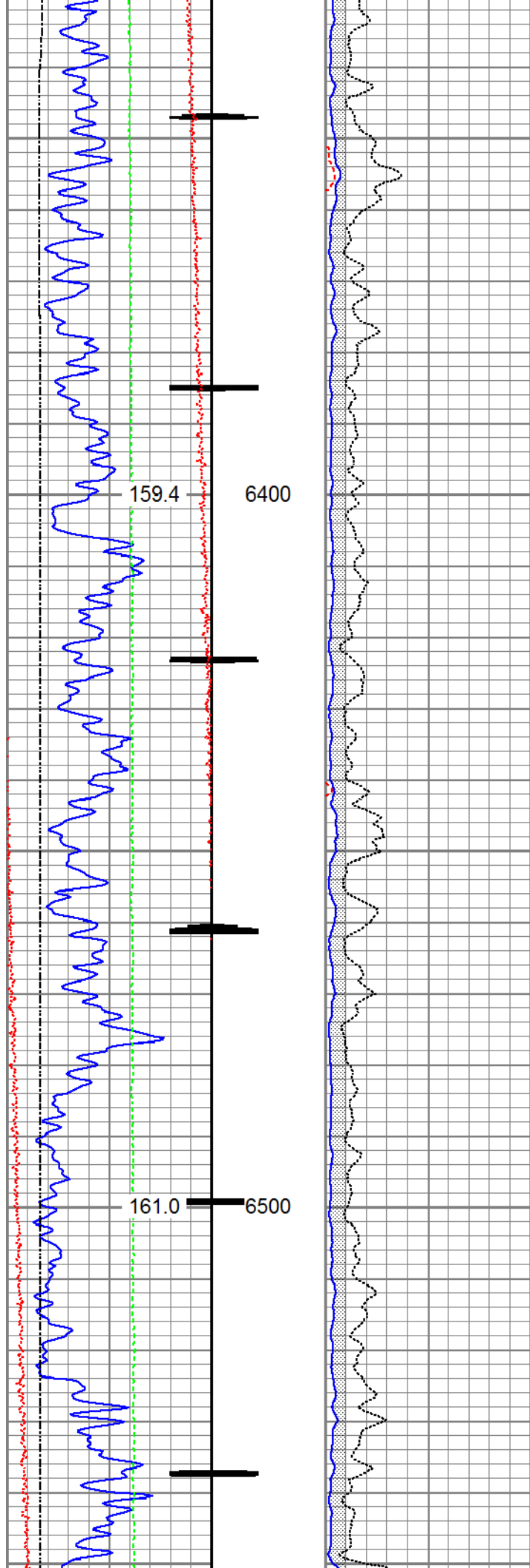


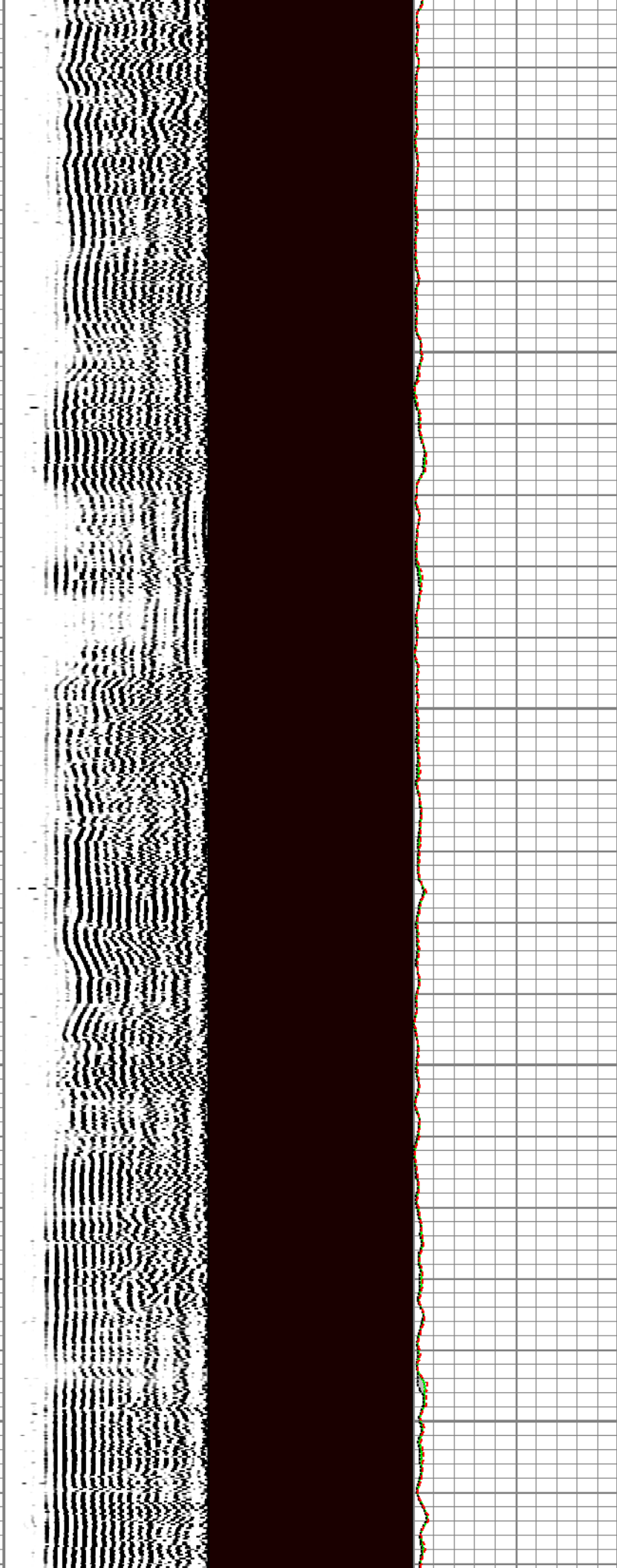
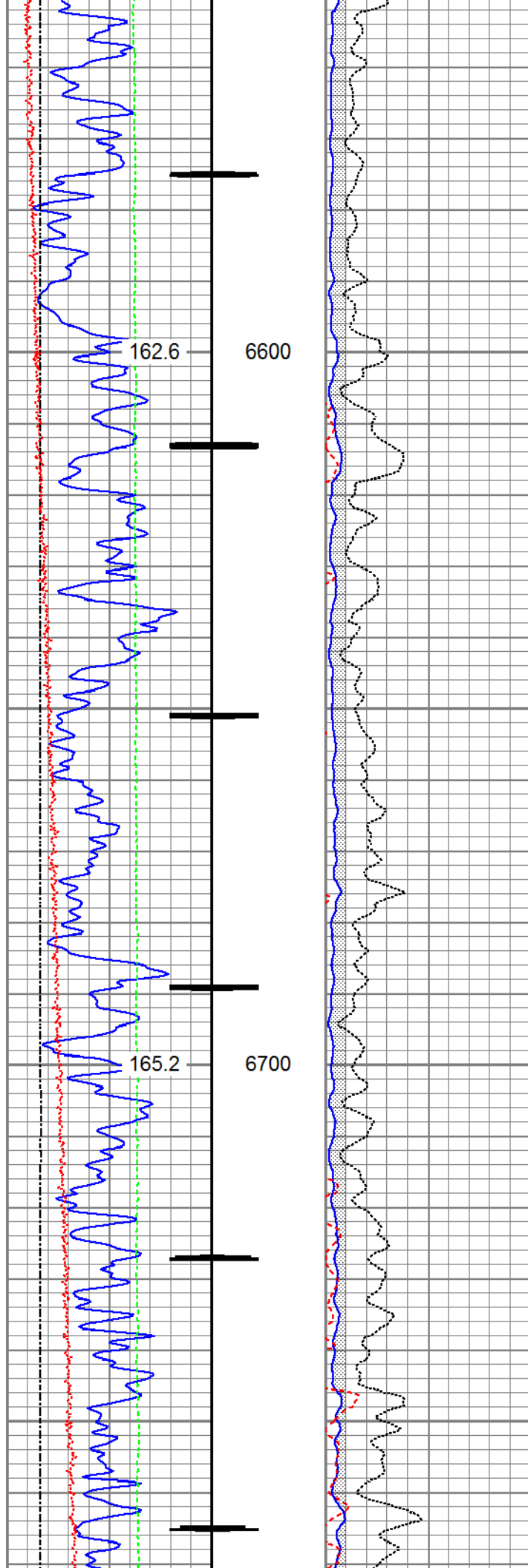




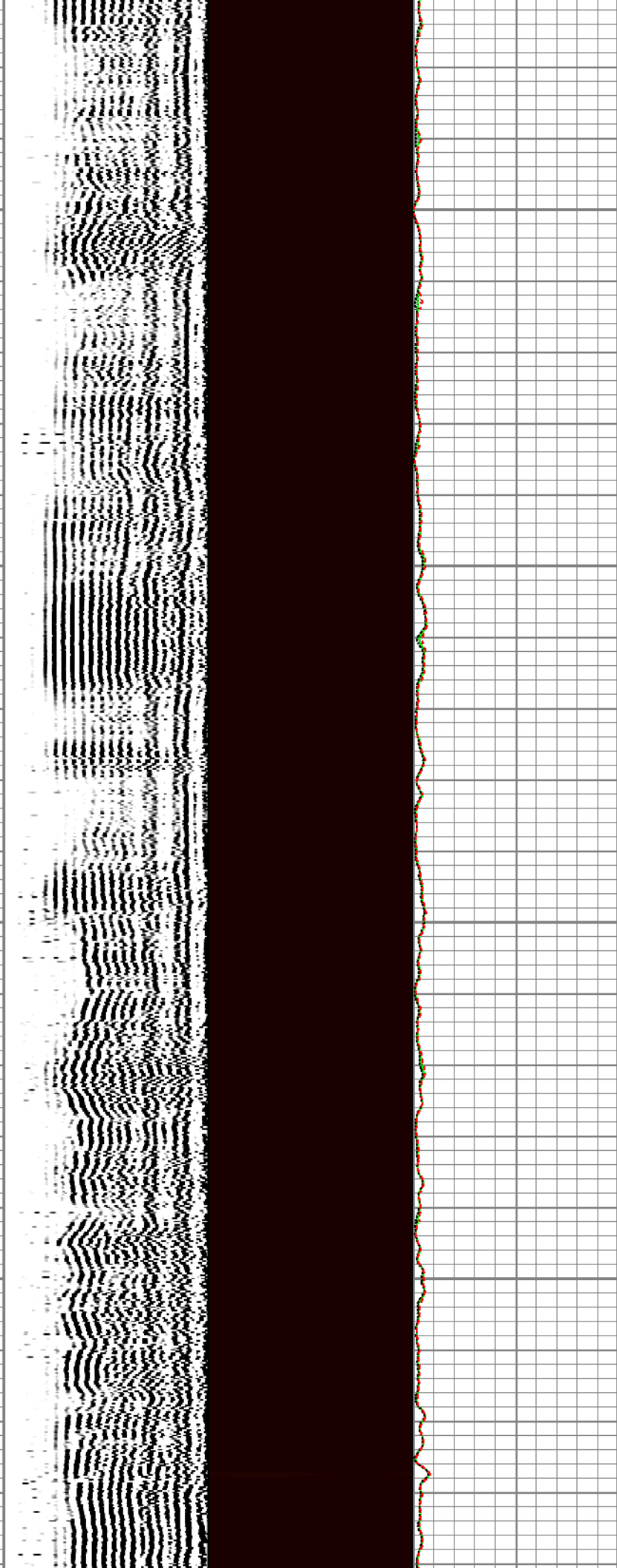
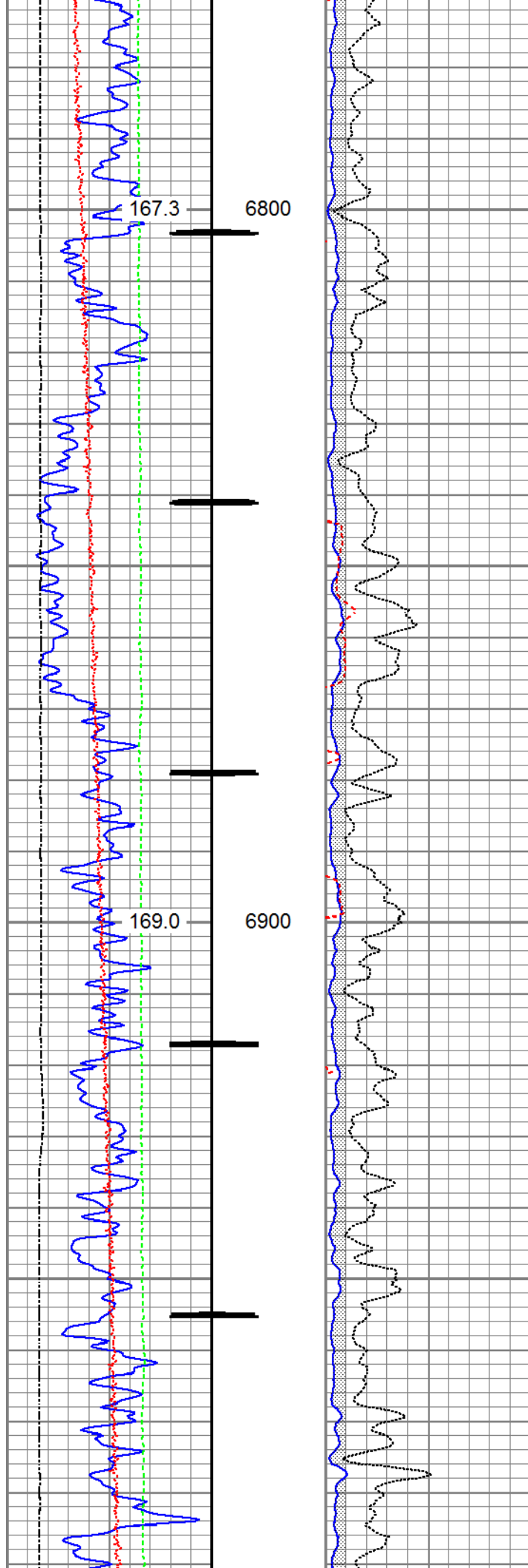


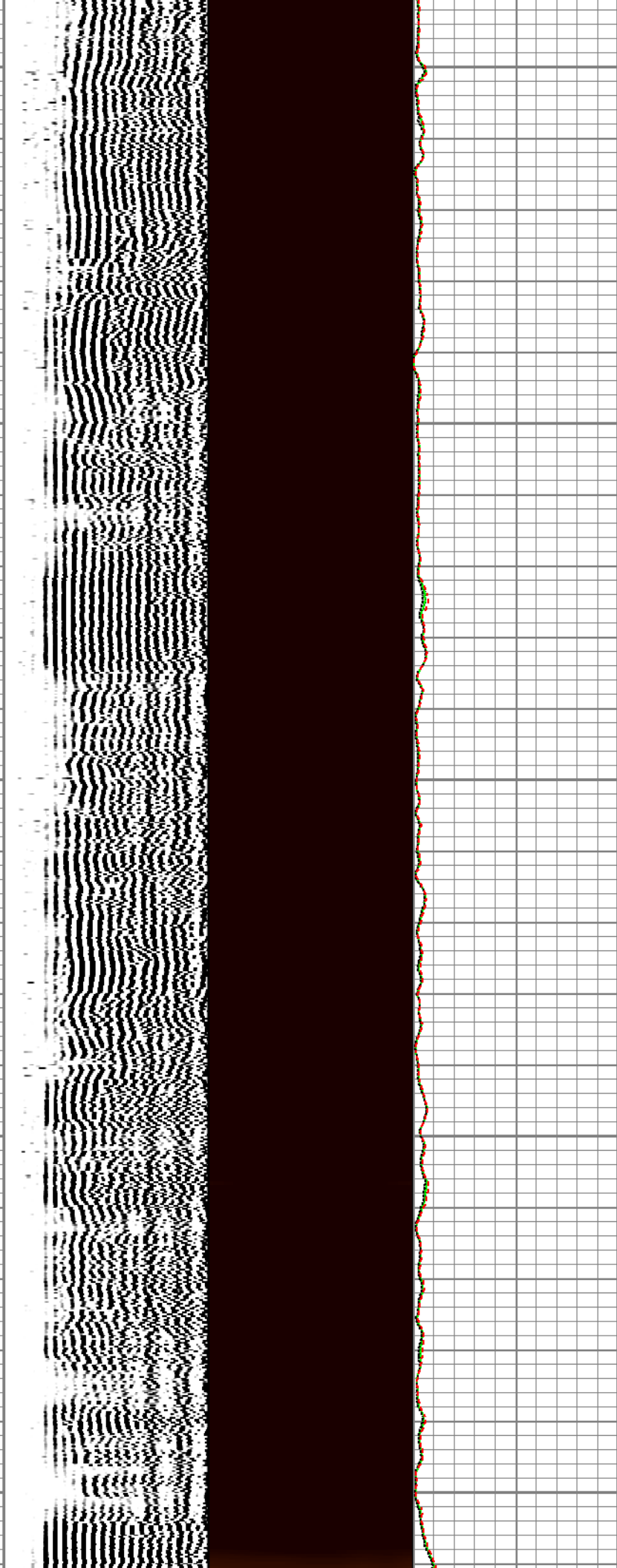
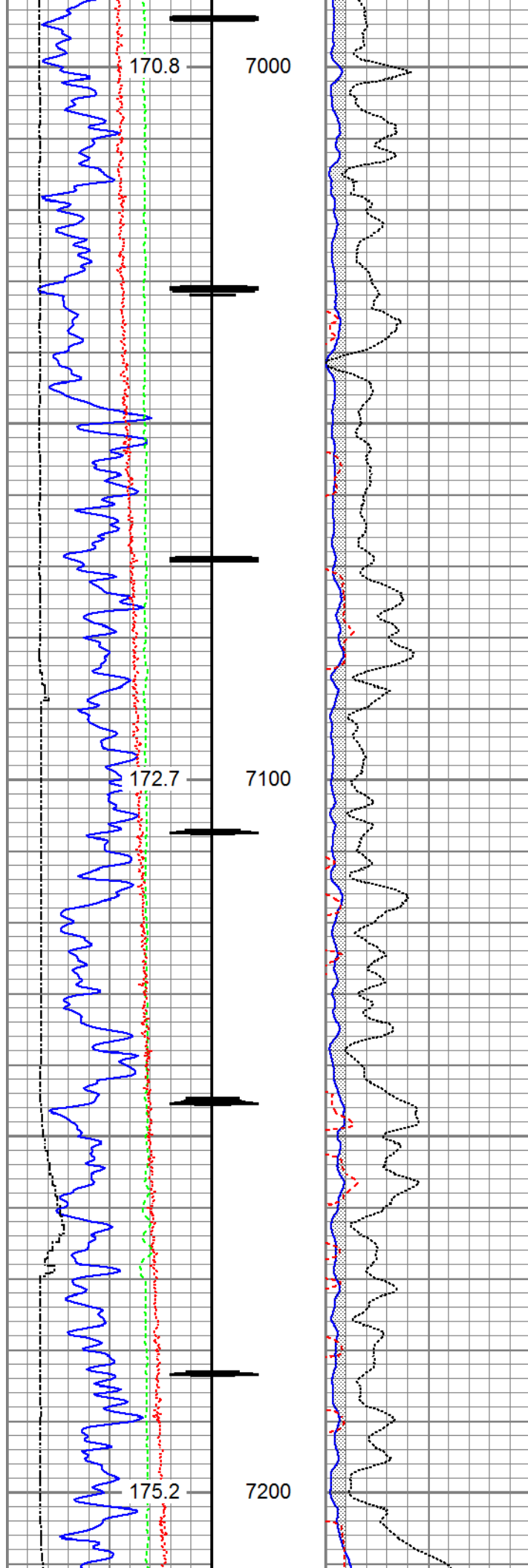


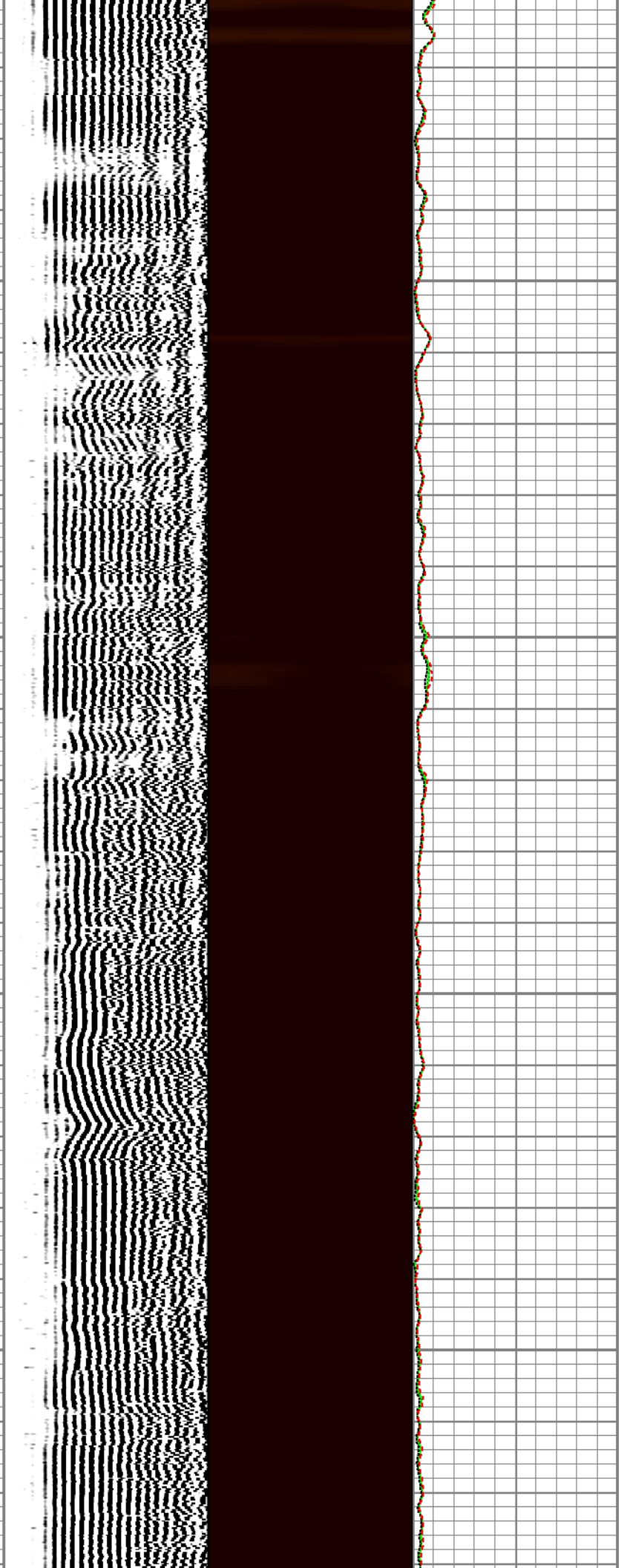
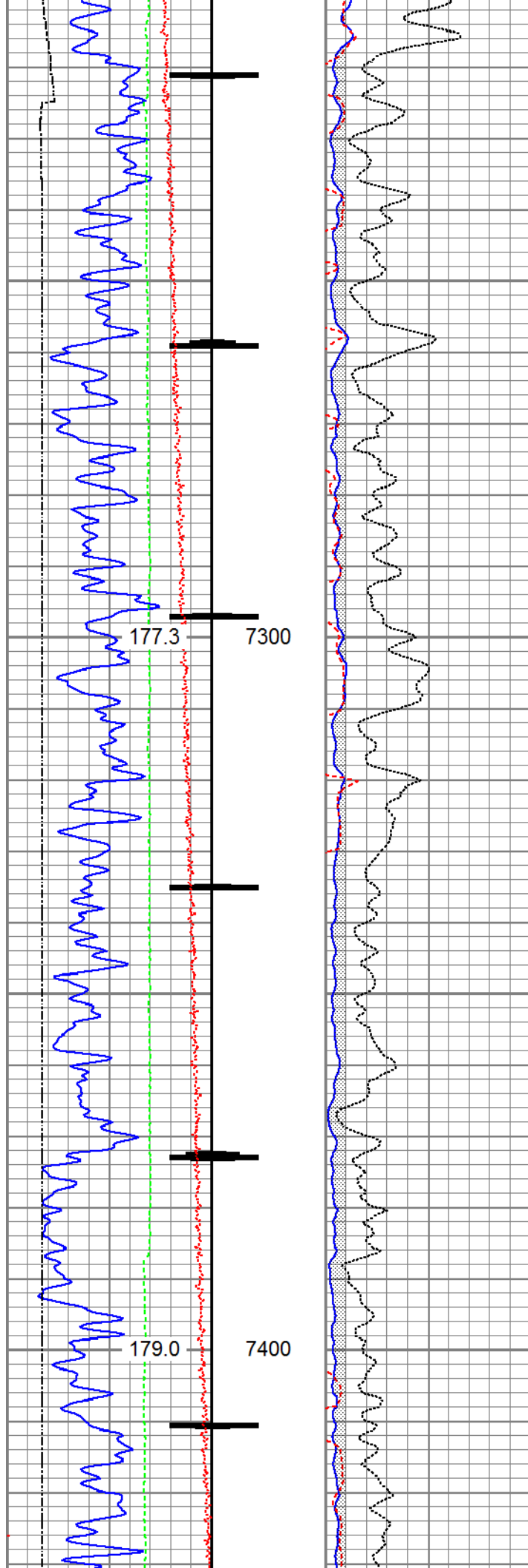


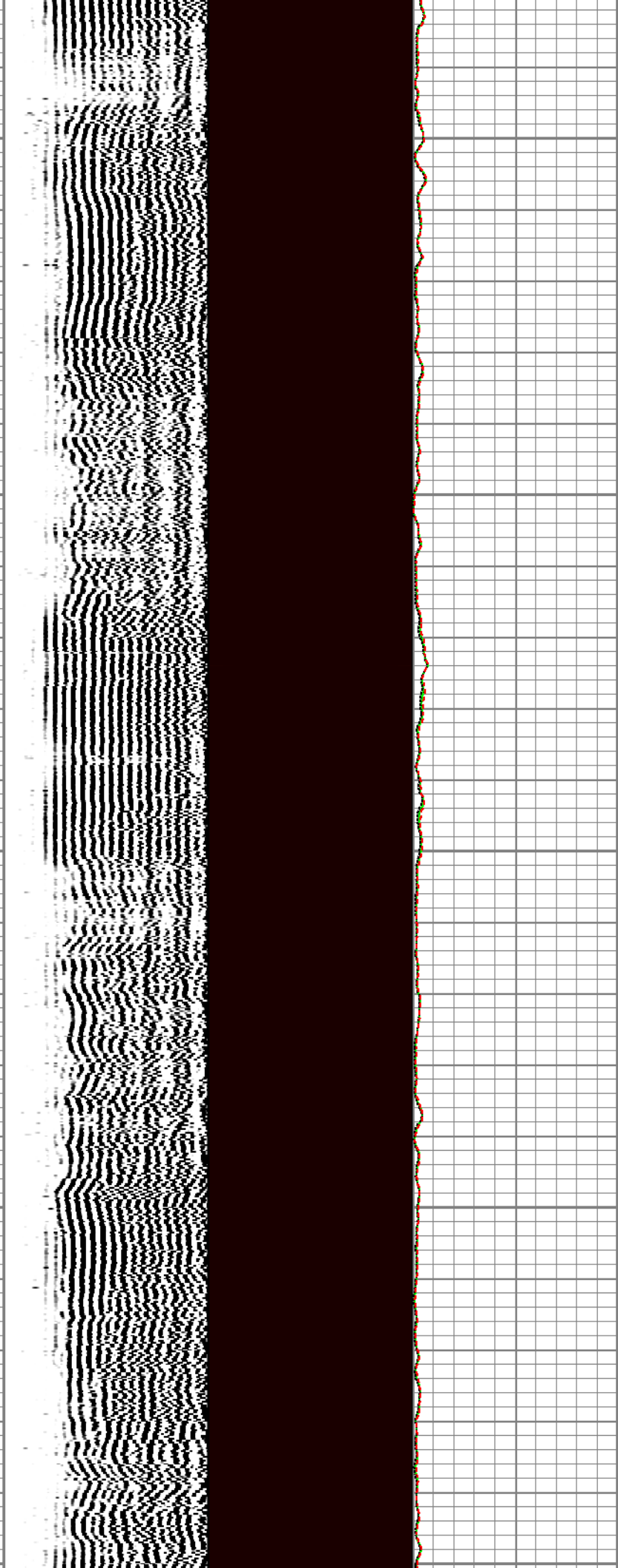
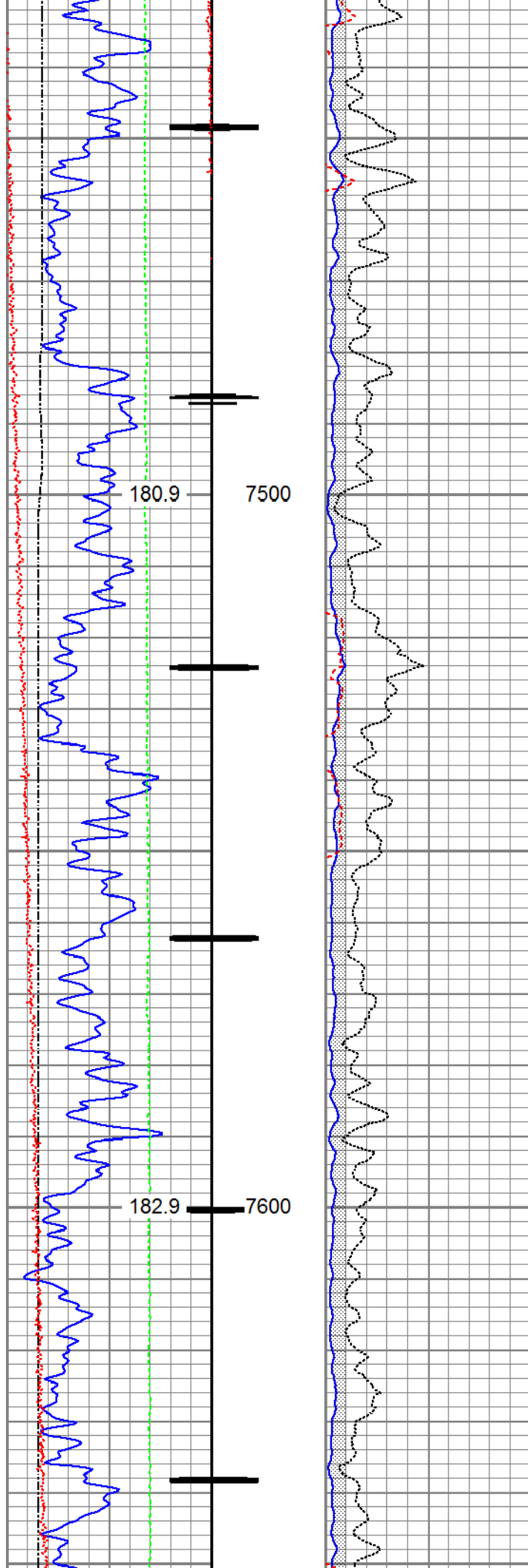




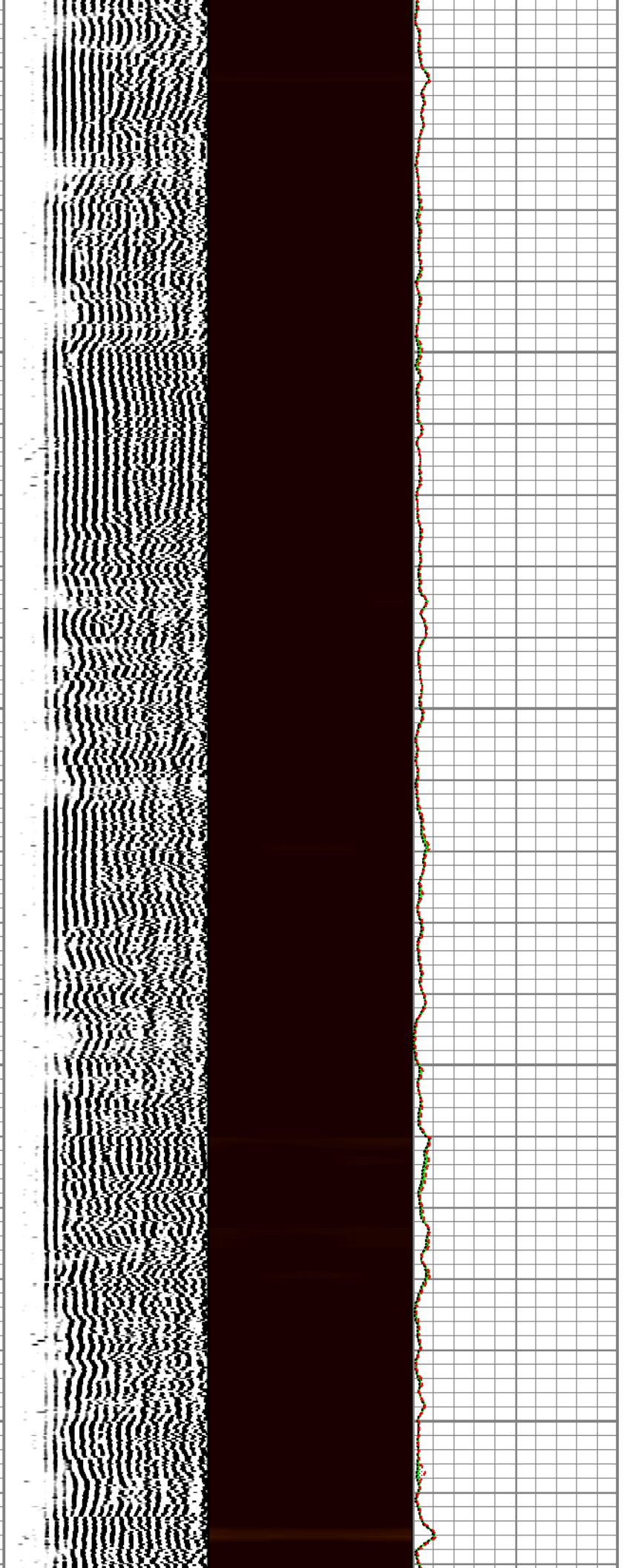
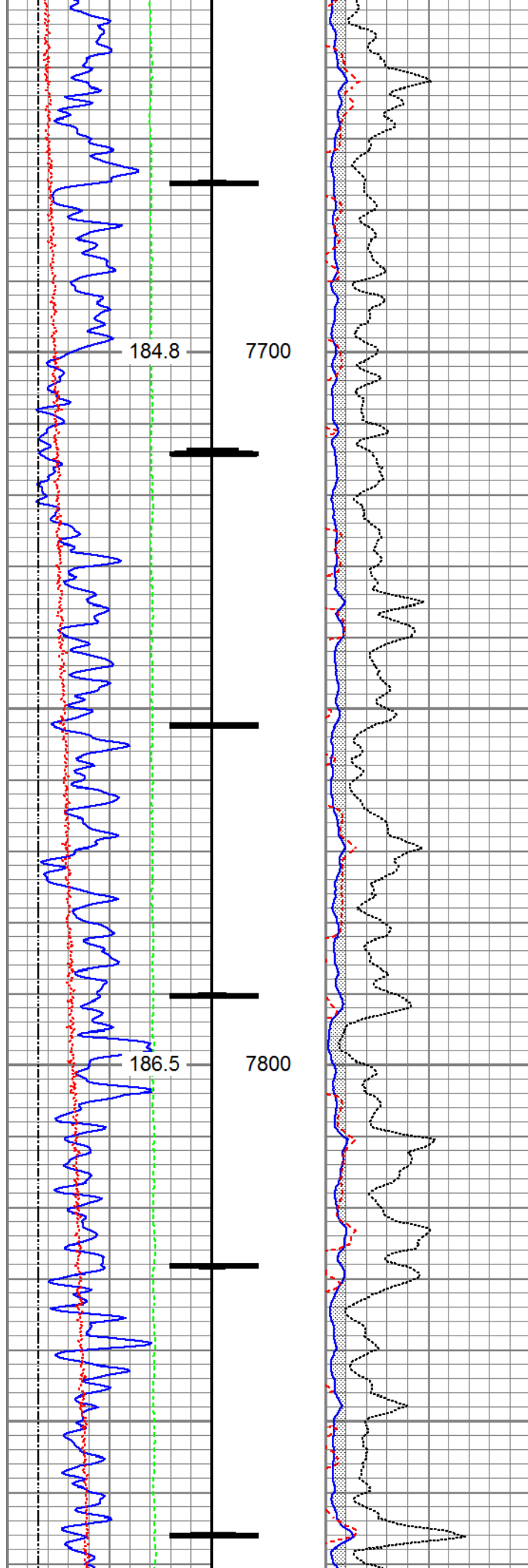


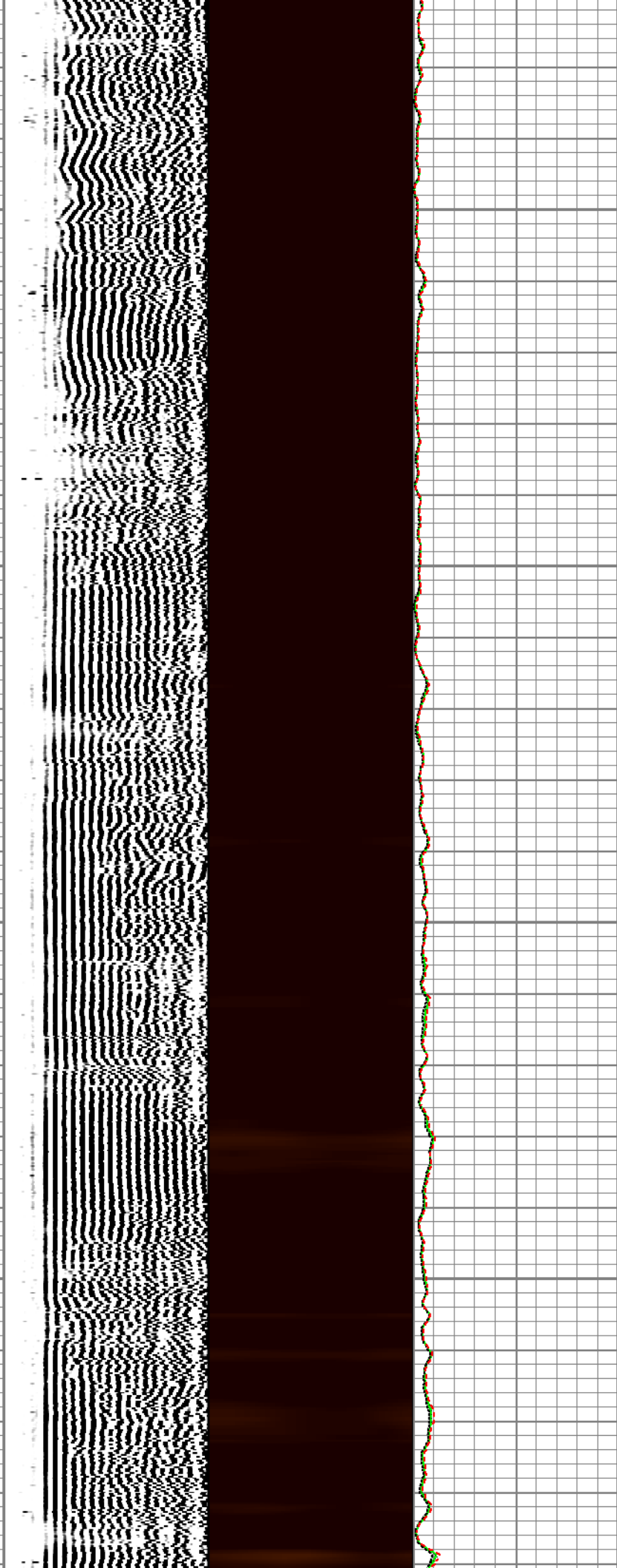
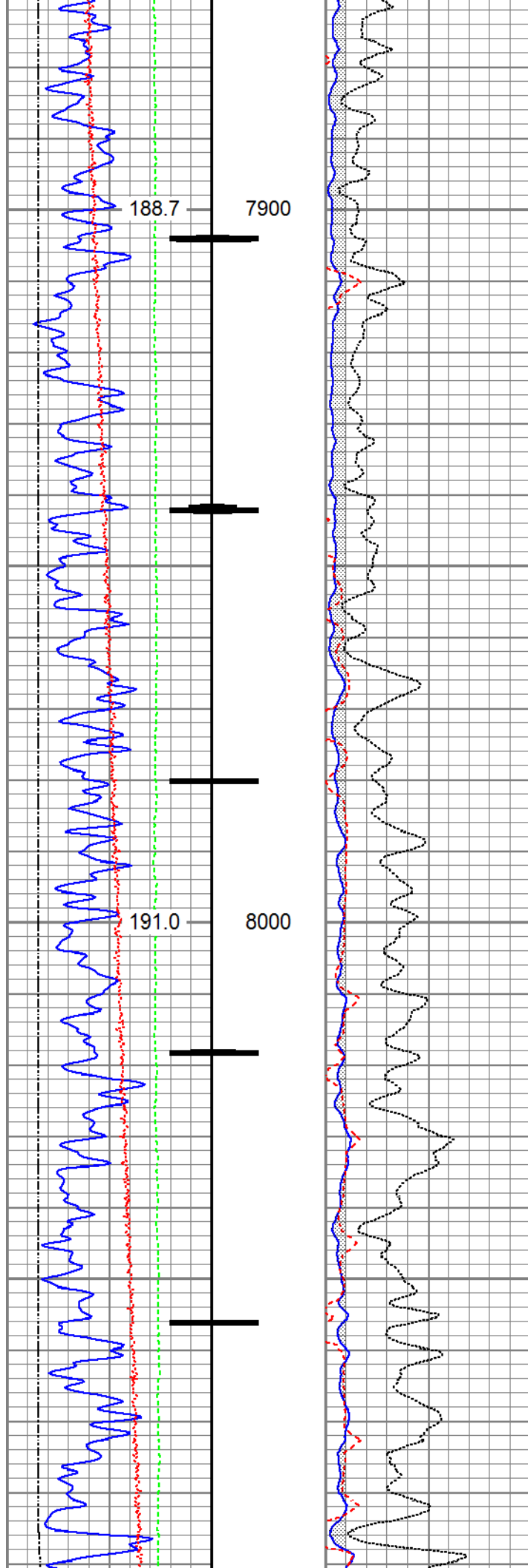


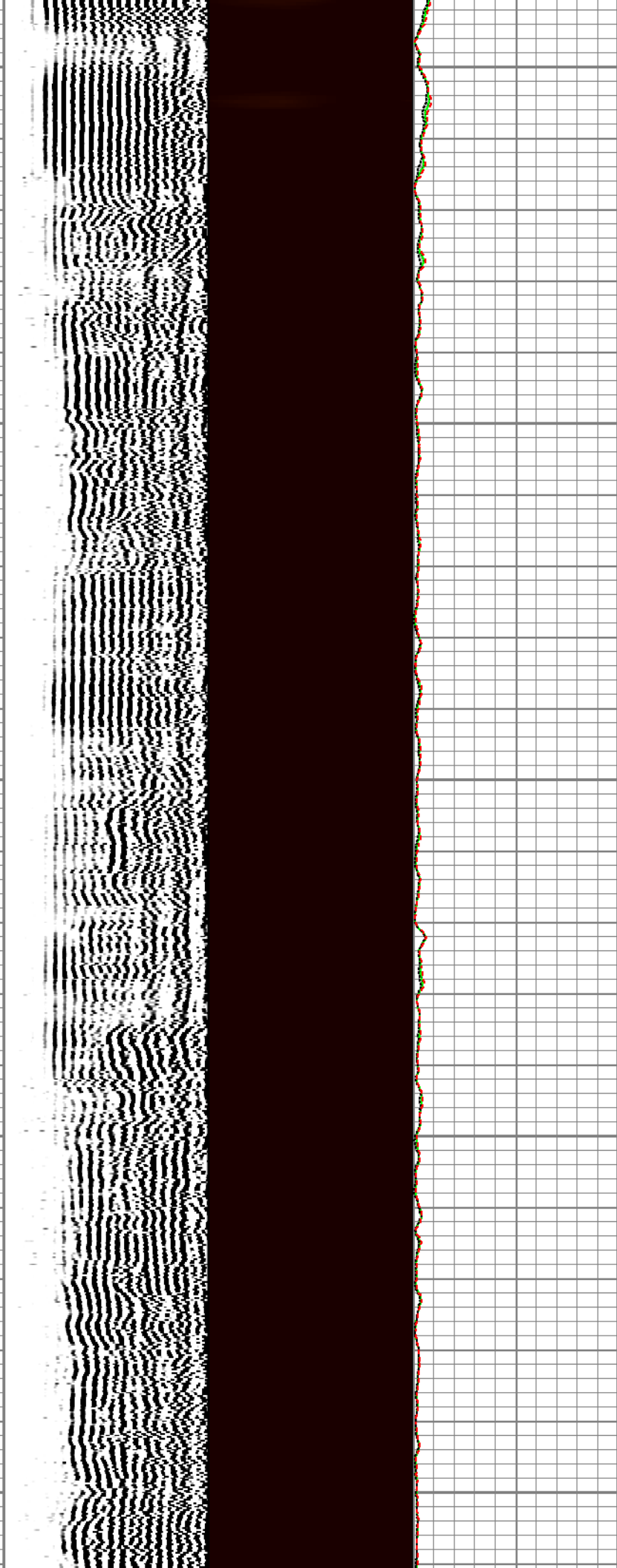
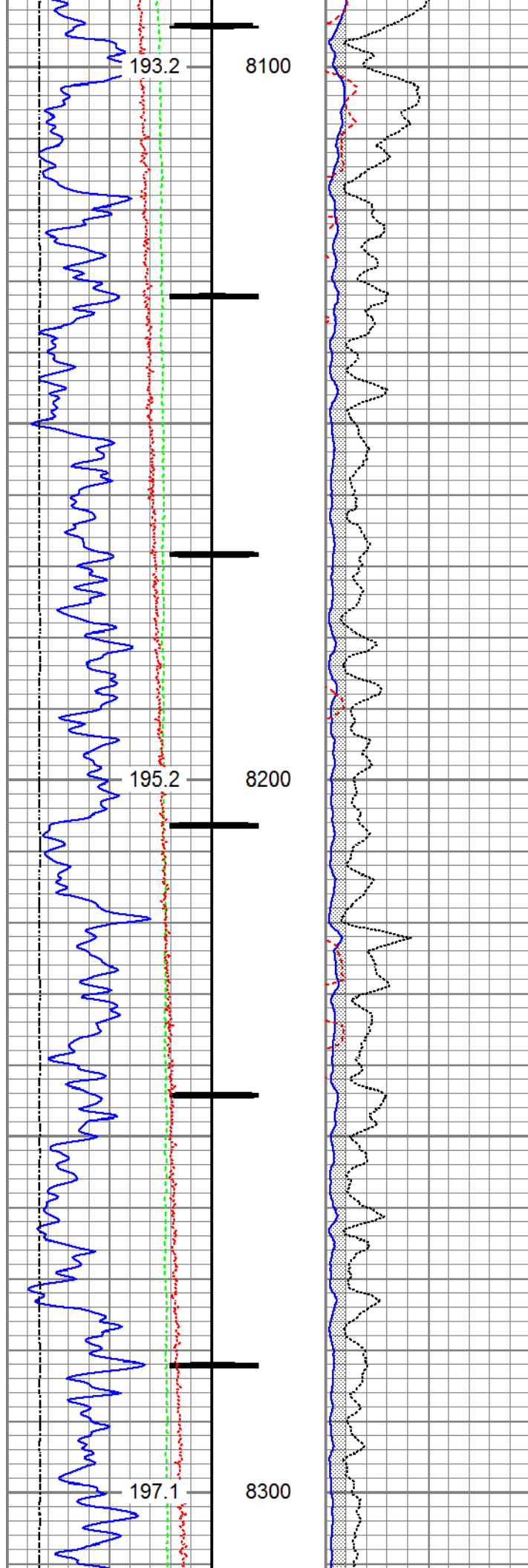


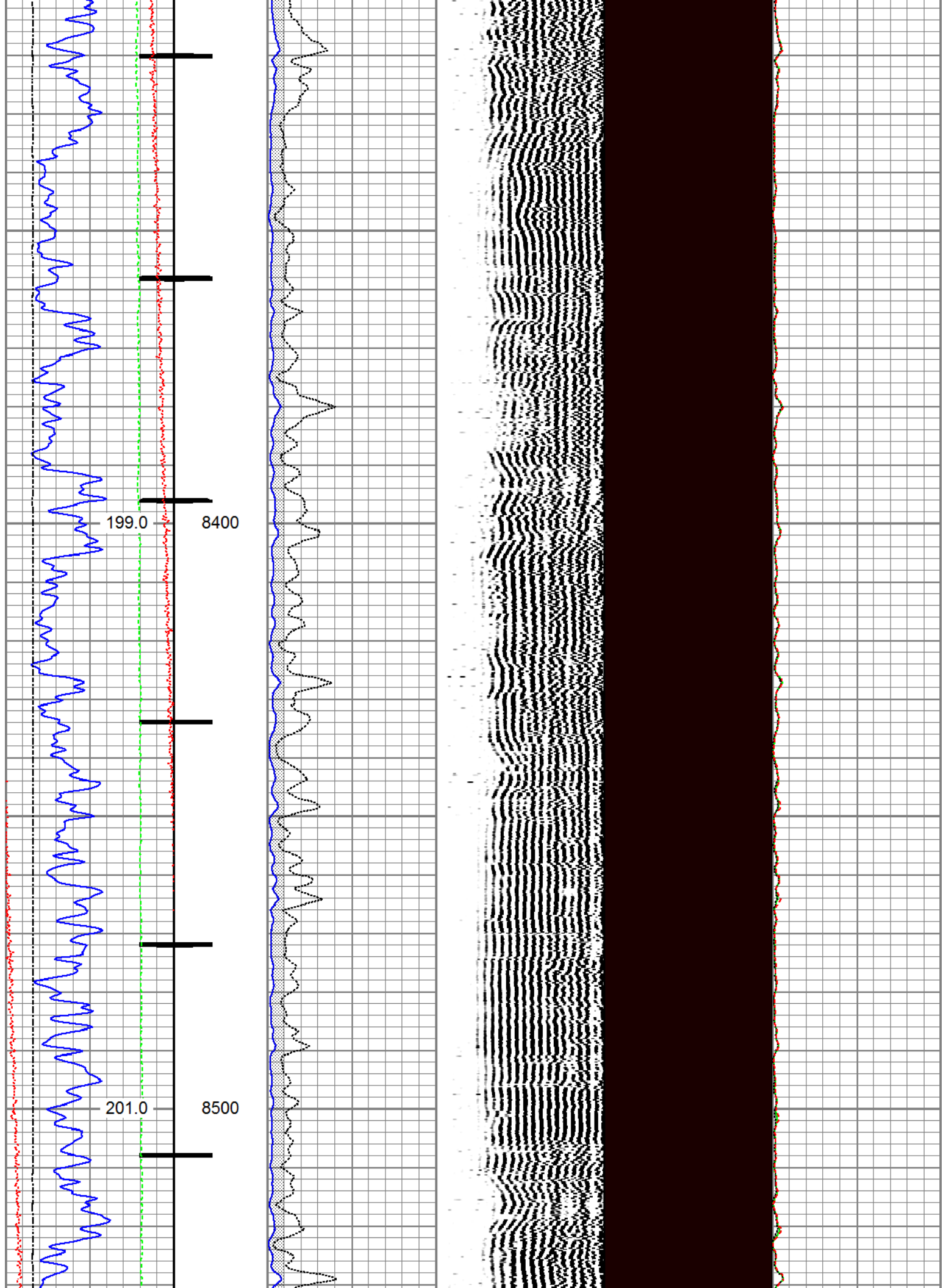




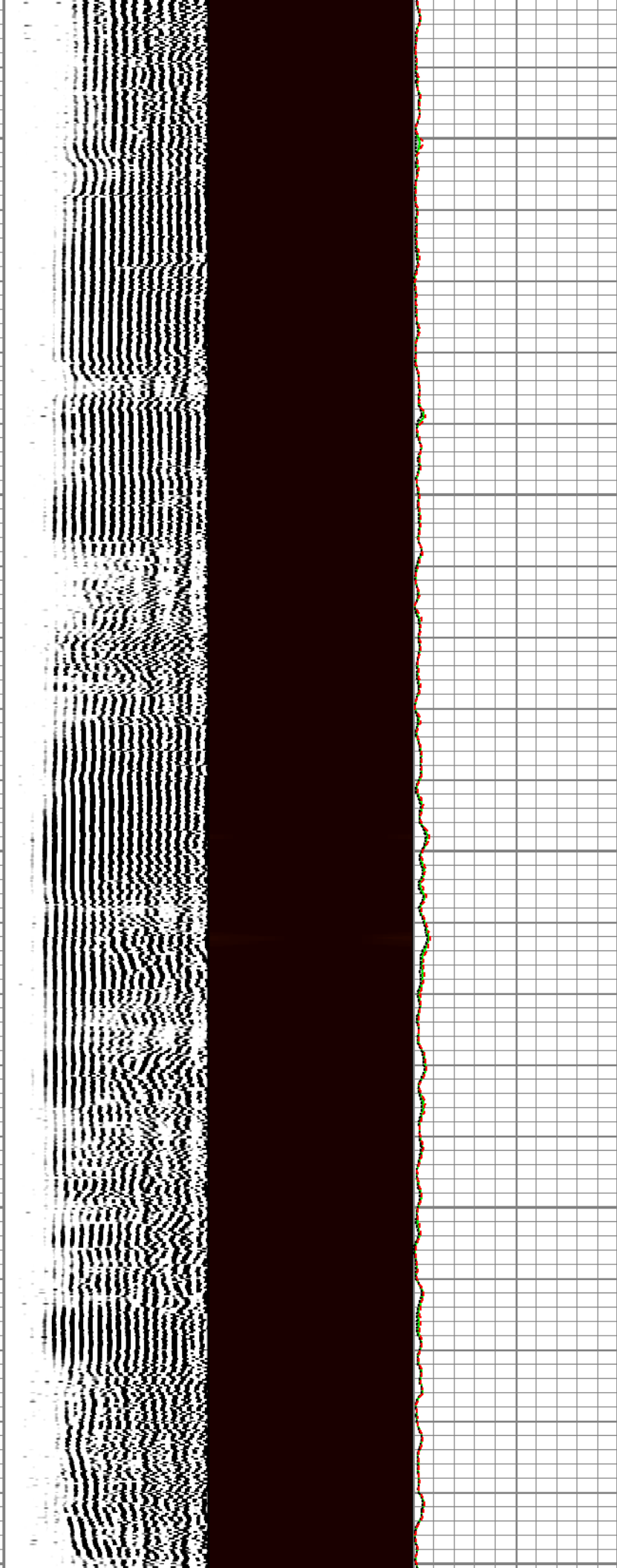
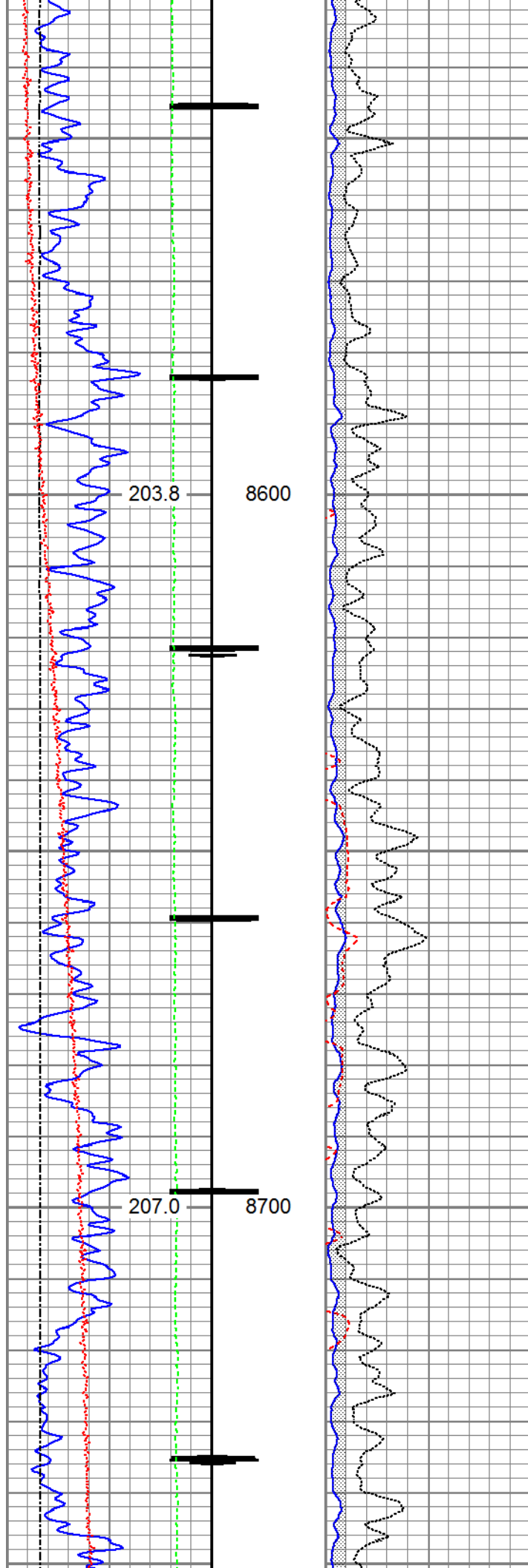


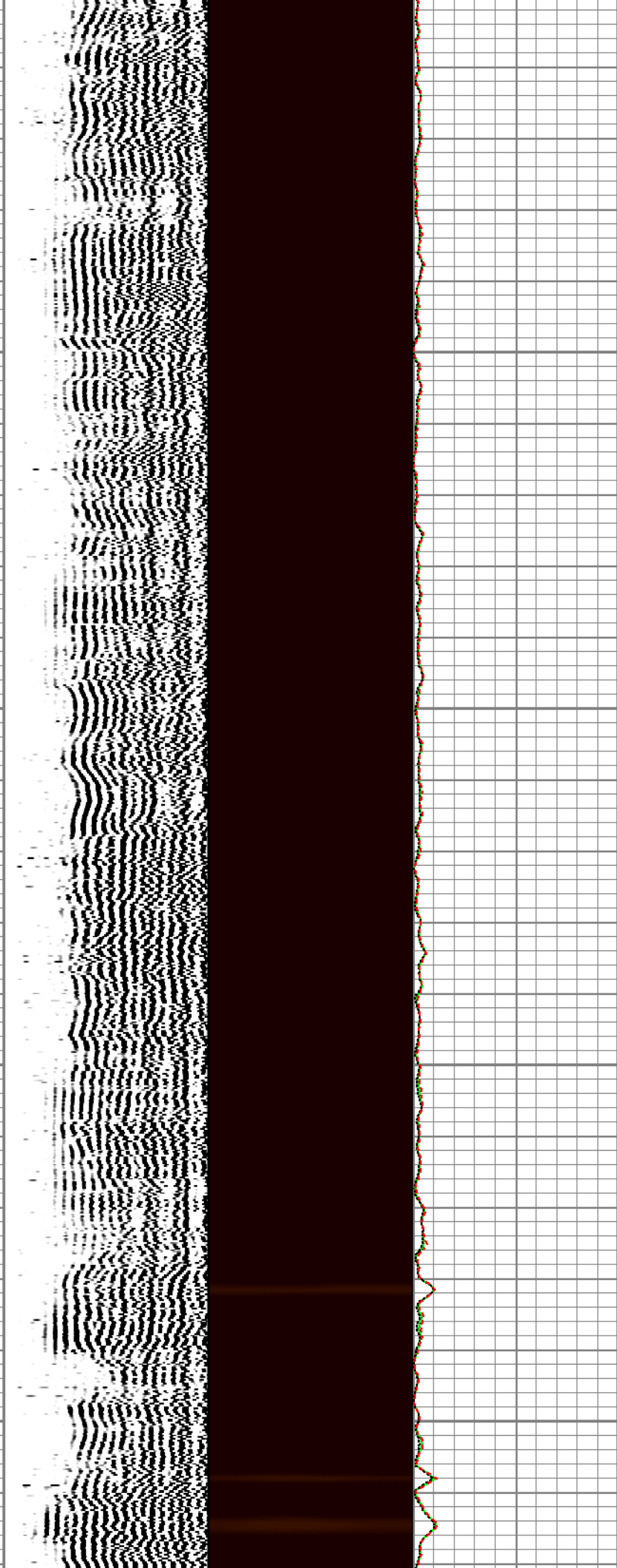
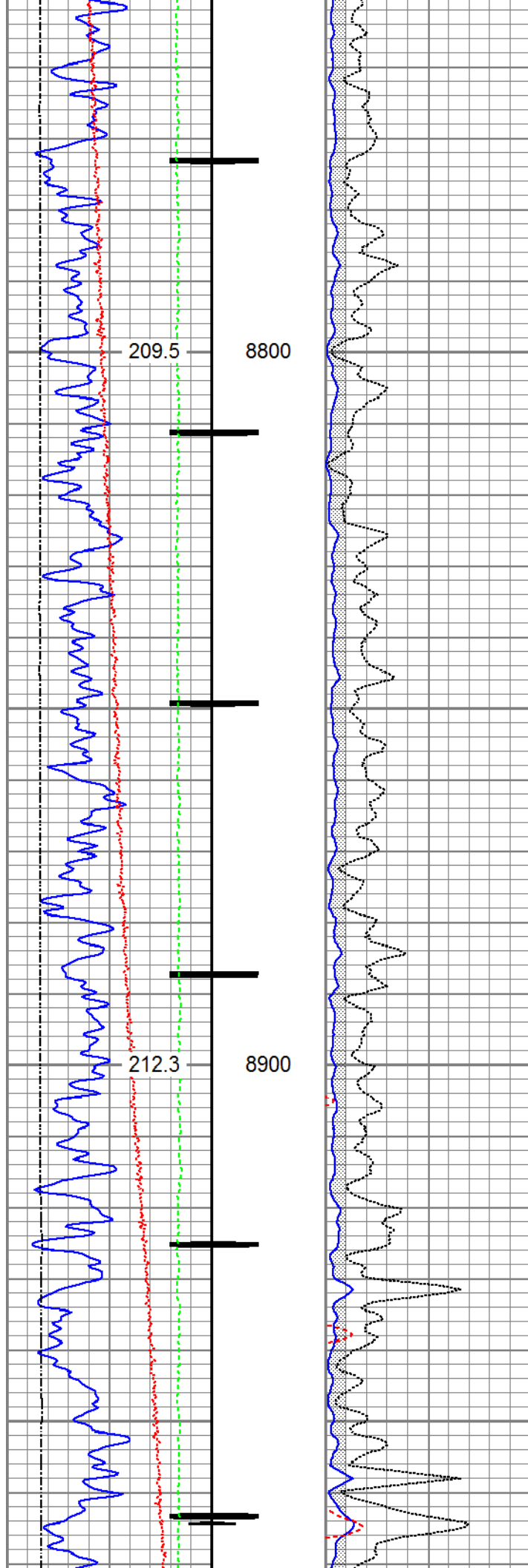


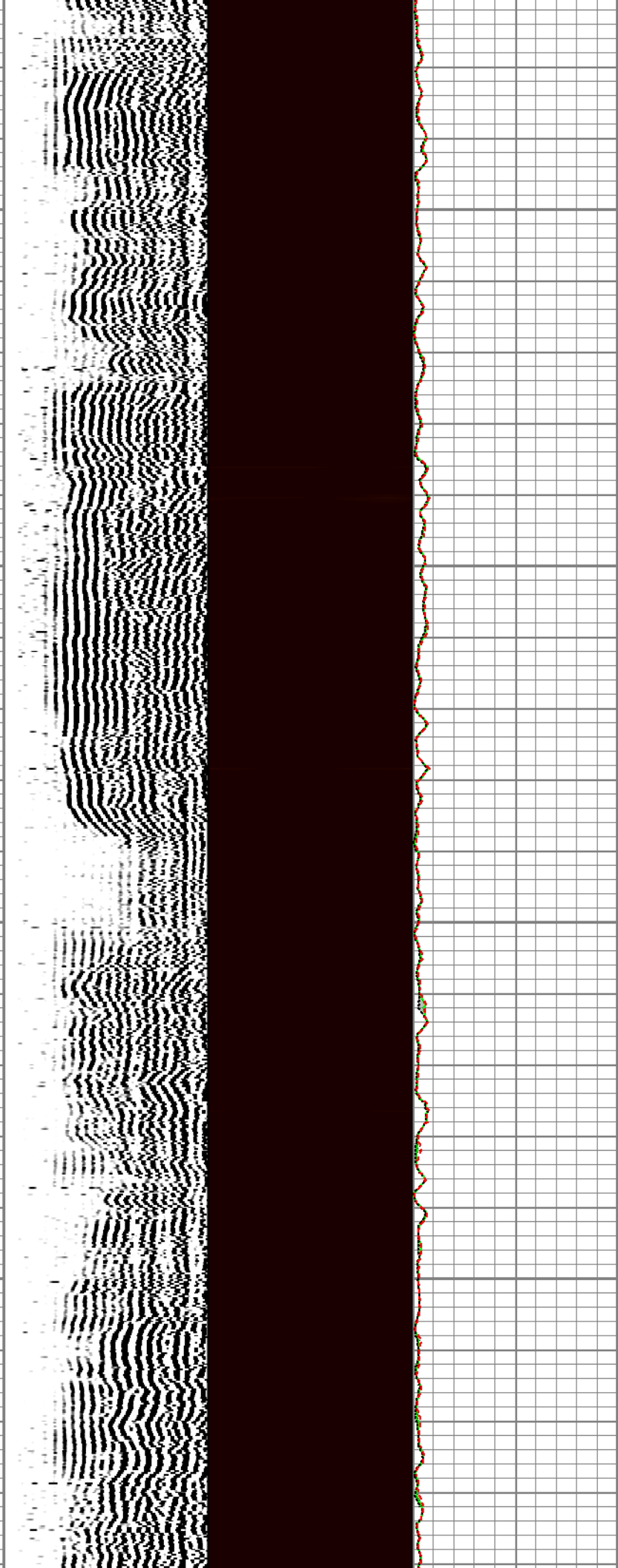
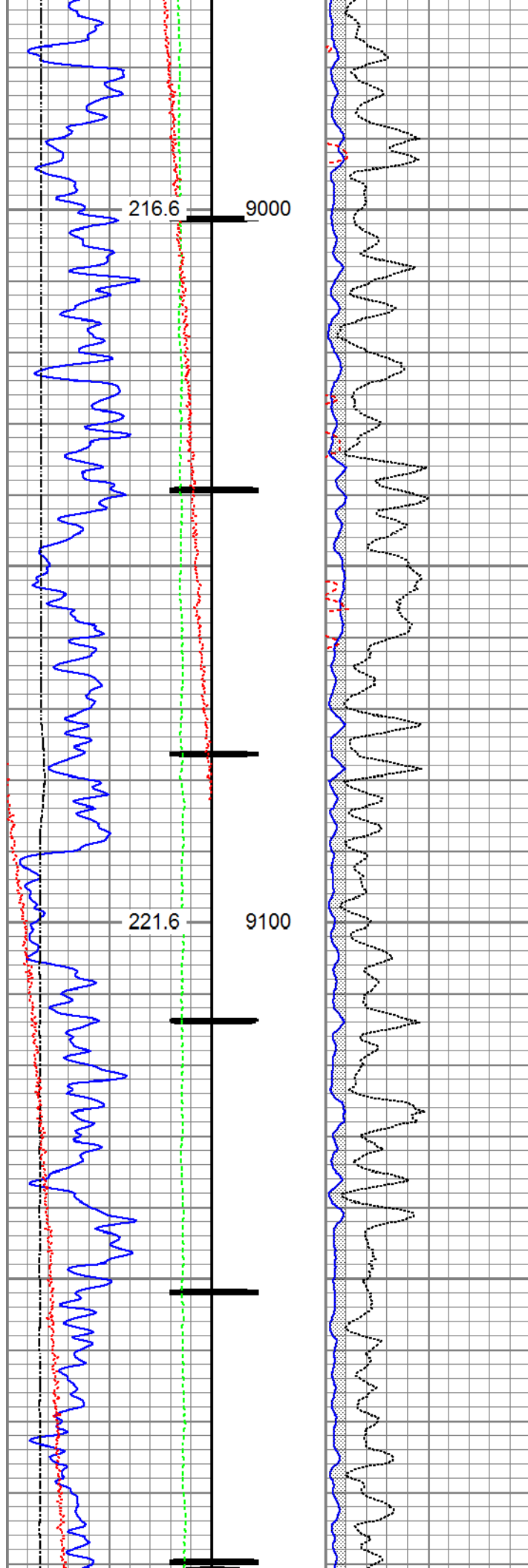


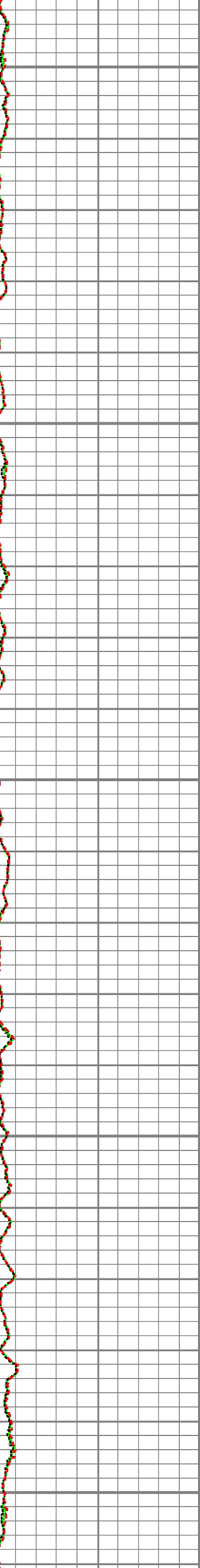
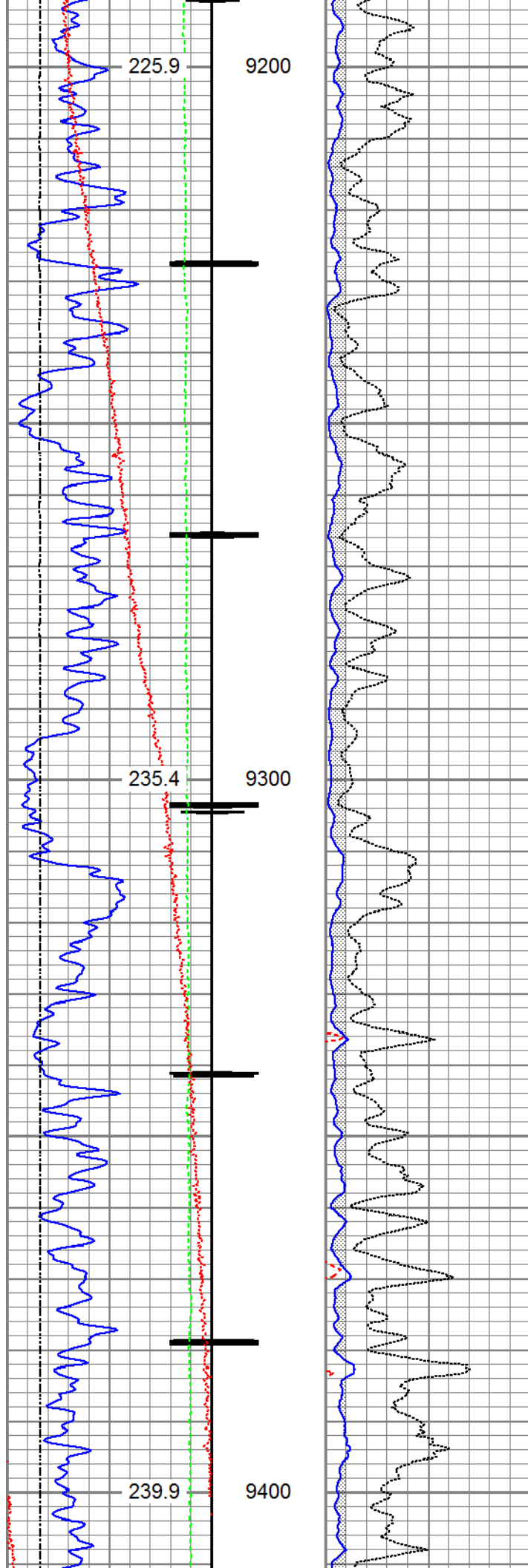




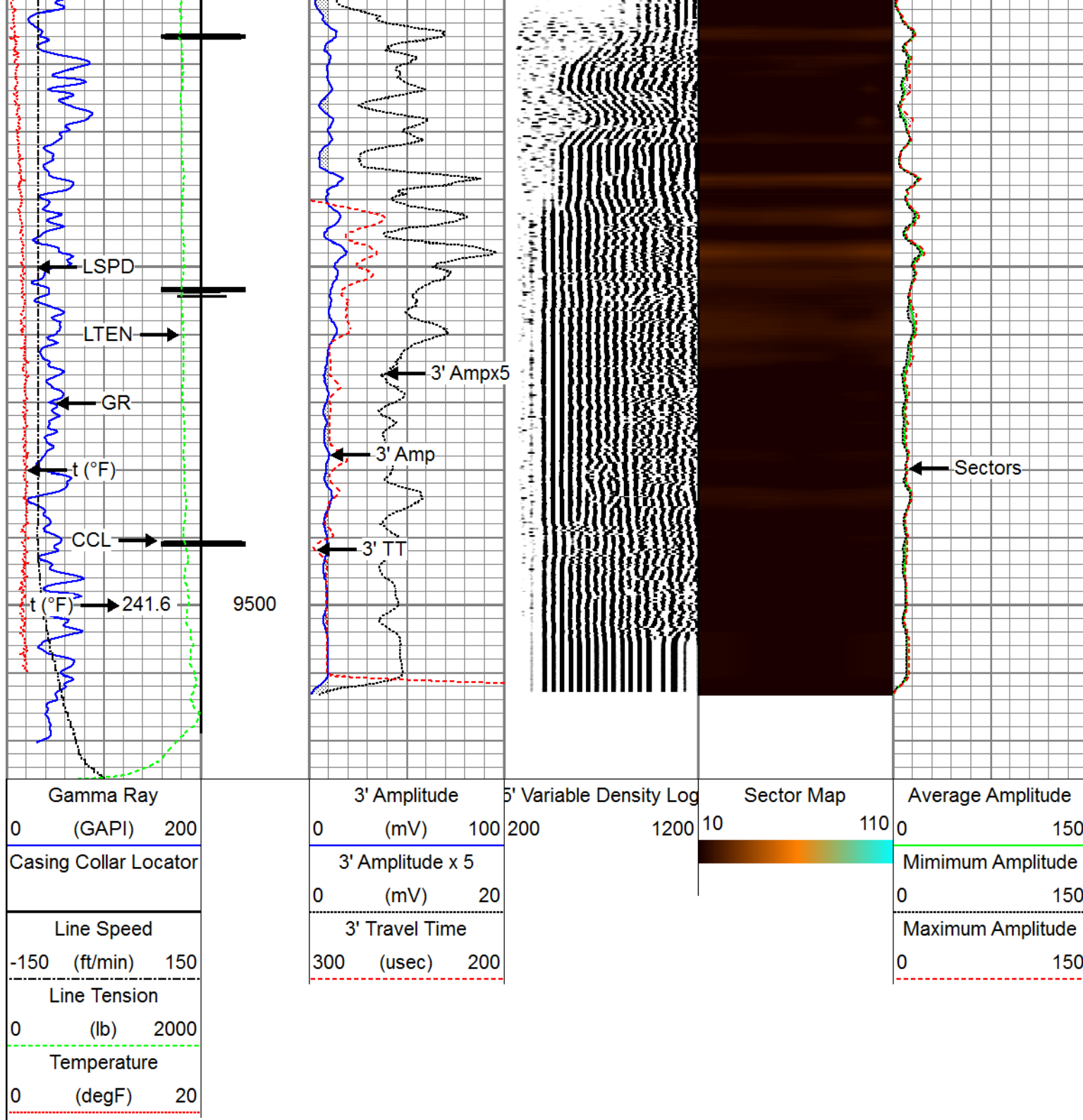








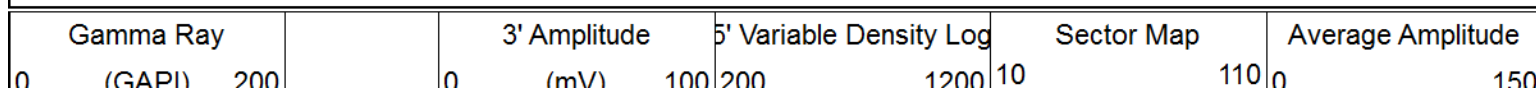




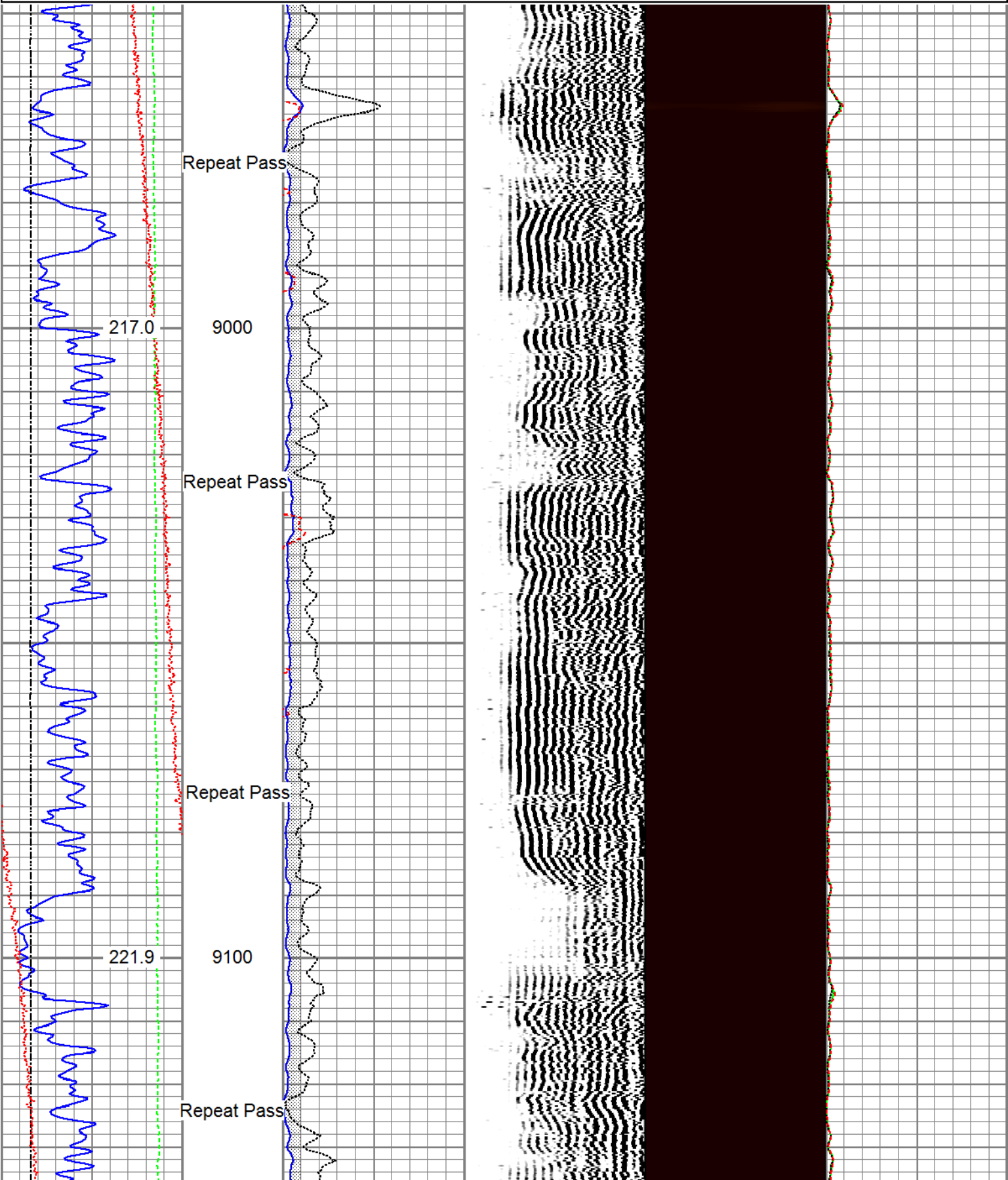
## Repeat Pass

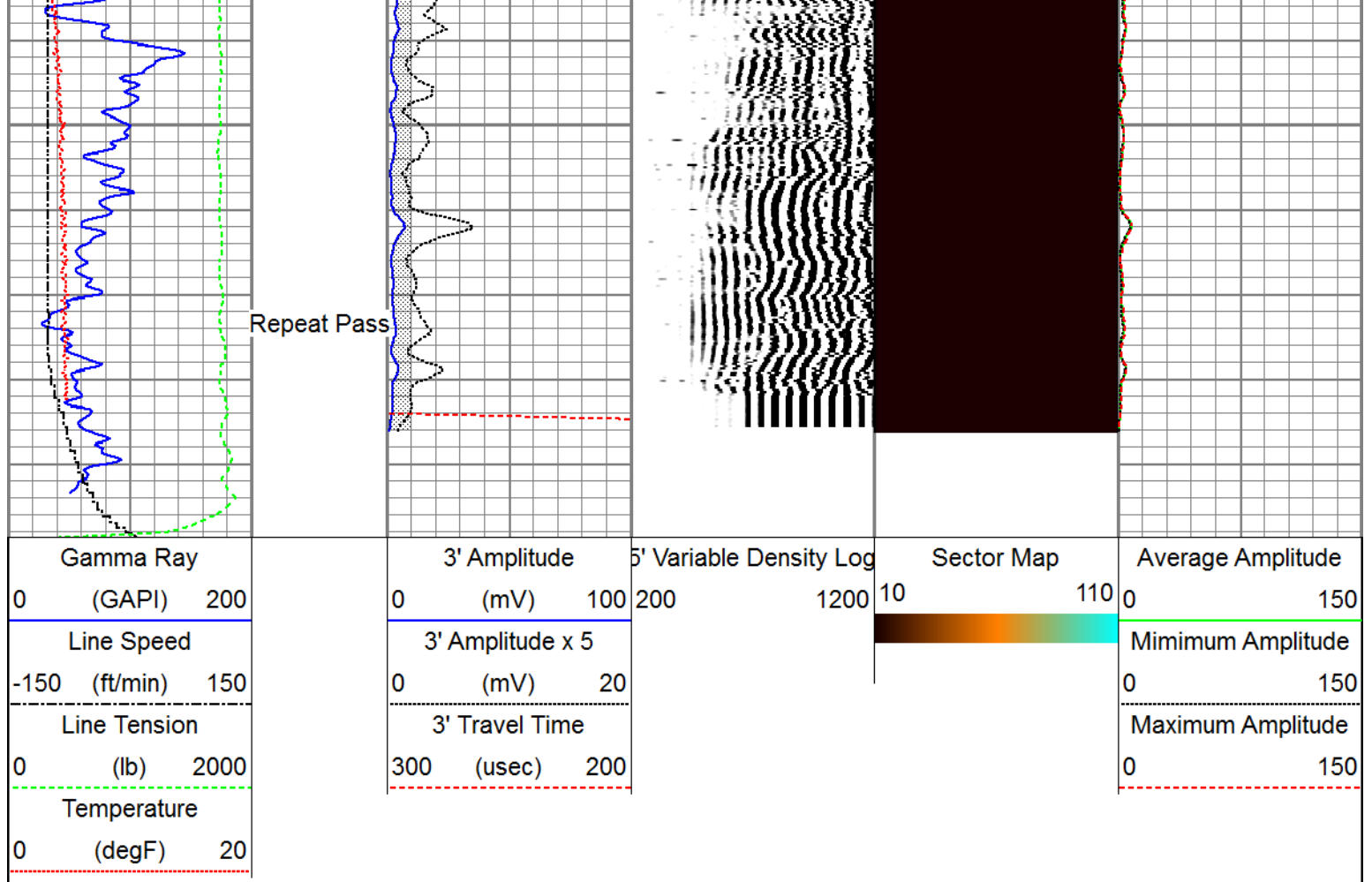
Recorded with 0 PSI surface induced pressure

Database File tep\_youberg sr 421-12\_rbl\_07-05-17\processed\_tep\_youberg sr 421-12\_rbl\_07-05-17.db  
 Dataset Pathname pass3  
 Presentation Format ros\_rbt004\_tep  
 Dataset Creation Wed Jul 05 12:24:52 2017  
 Charted by Depth in Feet scaled 1:240



Line Speed			3' Amplitude x 5			Minimum Amplitude		
-150	(ft/min)	150	0	(mV)	20	0		150
Line Tension			3' Travel Time			Maximum Amplitude		
0	(lb)	2000	300	(usec)	200	0		150
Temperature								
0	(degF)	20						





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
HeadVolt	18.84		Titan_Electric_Cable_Heads-Titan_1-11/16" Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
			DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
Temp	16.05		Probe_RADII-C-P_RBT_2750 (FW1305-09) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
WVFS8	13.88					
WVFS7	13.88					
WVFS6	13.88					
WVFS5	13.88					
WVFS4	13.88					
WVFS3	13.88					
WVFS2	13.88					
WVFS1	13.88					
WVECAI	13.88					

Tool Joint	Length (ft)	Weight (lb)	O.D. (in)	Tool Joint	Length (ft)	Weight (lb)	O.D. (in)
WVF3FT	13.88						
WVF5FT	12.88						
HEADVOLT	9.63						
				DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
DCCL	6.18						
CCL	6.18			Probe_GR_CCL-P_CGR_2750_S (FW12114.54) Probe 2-3/4" Digital CCL / Gamma Ray Combined	2.75	55.00	
GR	3.44						
				DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

Dataset:	PROCESSED_TEP_Youberg SR 421-12_RBL_07-05-17.db: field/well/run1/pass4
Total length:	22.40 ft
Total weight:	261.40 lb
O.D.:	2.75 in

<div> <div>Calibration Report</div> <div> <div>Database File</div> <div>C:\ProgramData\Warrior\Data\TEP_Youberg SR 421-12_RBL_07-05-17\PROCESSED_TEP_Yoube</div> </div> <div> <div>Dataset Pathname</div> <div>pass4</div> </div> <div> <div>Dataset Creation</div> <div>Wed Jul 05 12:32:00 2017</div> </div> </div>		
Gamma Ray Calibration Report		
Serial Number:	FW1211-081	
Tool Model:	P_CGR_2750_S	
Performed:	Sat Feb 06 11:31:52 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6061	GAPI/cps
Segmented Cement Bond Log Calibration Report		
Serial Number:	FW1305-098	
Tool Model:	P_RBT_2750	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	414.026	ft
Master Calibration, performed Wed Jul 05 11:18:49 2017:		
Raw (v)	Calibrated (mv)	Results



	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.654	0.800	81.196	122.853	0.800
CAL	0.000	0.640				
5'	0.000	0.475	0.800	81.196	169.346	0.800
SUM						
S1	0.000	0.652	0.000	100.000	153.313	0.000
S2	0.000	0.679	0.000	100.000	147.301	0.000
S3	0.000	0.685	0.000	100.000	145.924	0.000
S4	0.000	0.701	0.000	100.000	142.700	0.000
S5	0.000	0.723	0.000	100.000	138.378	0.000
S6	0.000	0.710	0.000	100.000	140.930	0.000
S7	0.000	0.684	0.000	100.000	146.103	0.000
S8	0.000	0.657	0.000	100.000	152.254	0.000

Internal Reference Calibration, performed Fri May 05 10:29:14 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.000	0.640	1.000	0.000

Air Zero Calibration, performed Wed Jul 05 11:19:18 2017:

	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	



Company TEP Rocky Mountain LLC  
 Well Youberg SR 421-12  
 Field Rulison  
 County Garfield  
 State Colorado