



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company TEP Rocky Mountain LLC
Well Youberg SR 31-12
Field Rulison
County Garfield
State Colorado

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Field Rulison
County Garfield
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Location: API #: 05-045-23303

1873' FNL & 2119' 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	9640 FT
Depth Logger	9488 FT
Bottom Logged Interval	9474 FT
Top Log Interval	Surface
Open Hole Size	8.75"
Type Fluid	Fresh Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	239° F
Estimated Cement Top	See Log
Time Well Ready	14:00
Time Logger on Bottom	15:00
Equipment Number	HDO359
Location	Grand Junction
Recorded By	Michael Kochevar
Witnessed By	Dustin Welsh

Borehole Record		Tubing Record					
Run Number	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	9640 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 24 FT
Ground Level 1 FT below cut pipe
Marker joint logged at 6056 FT - 6078 FT
Log ran from 9474 FT to surface
Recorded with 0 PSI surface induced pressure

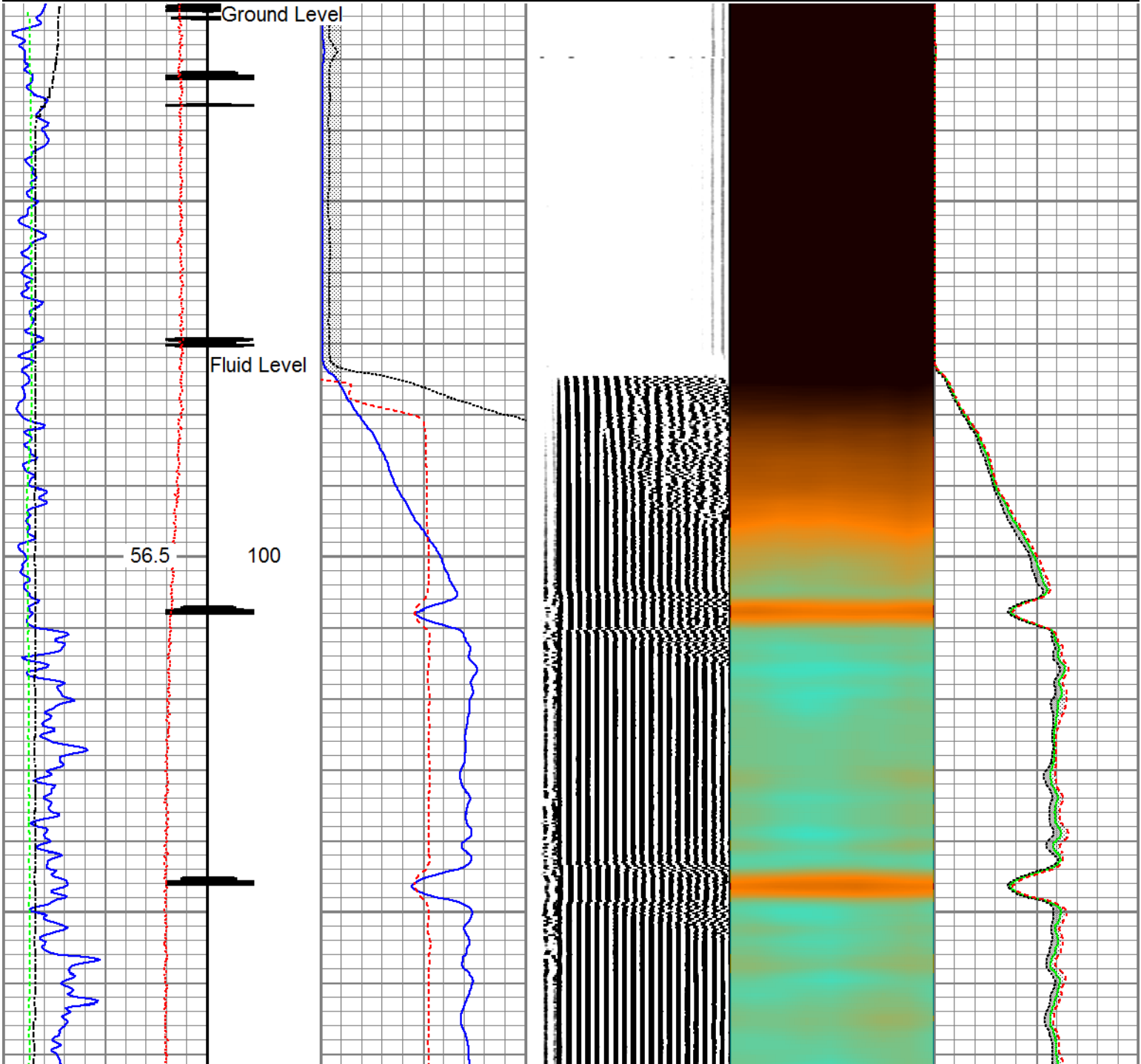
Thank you for choosing Reliance Oilfield Services LLC!

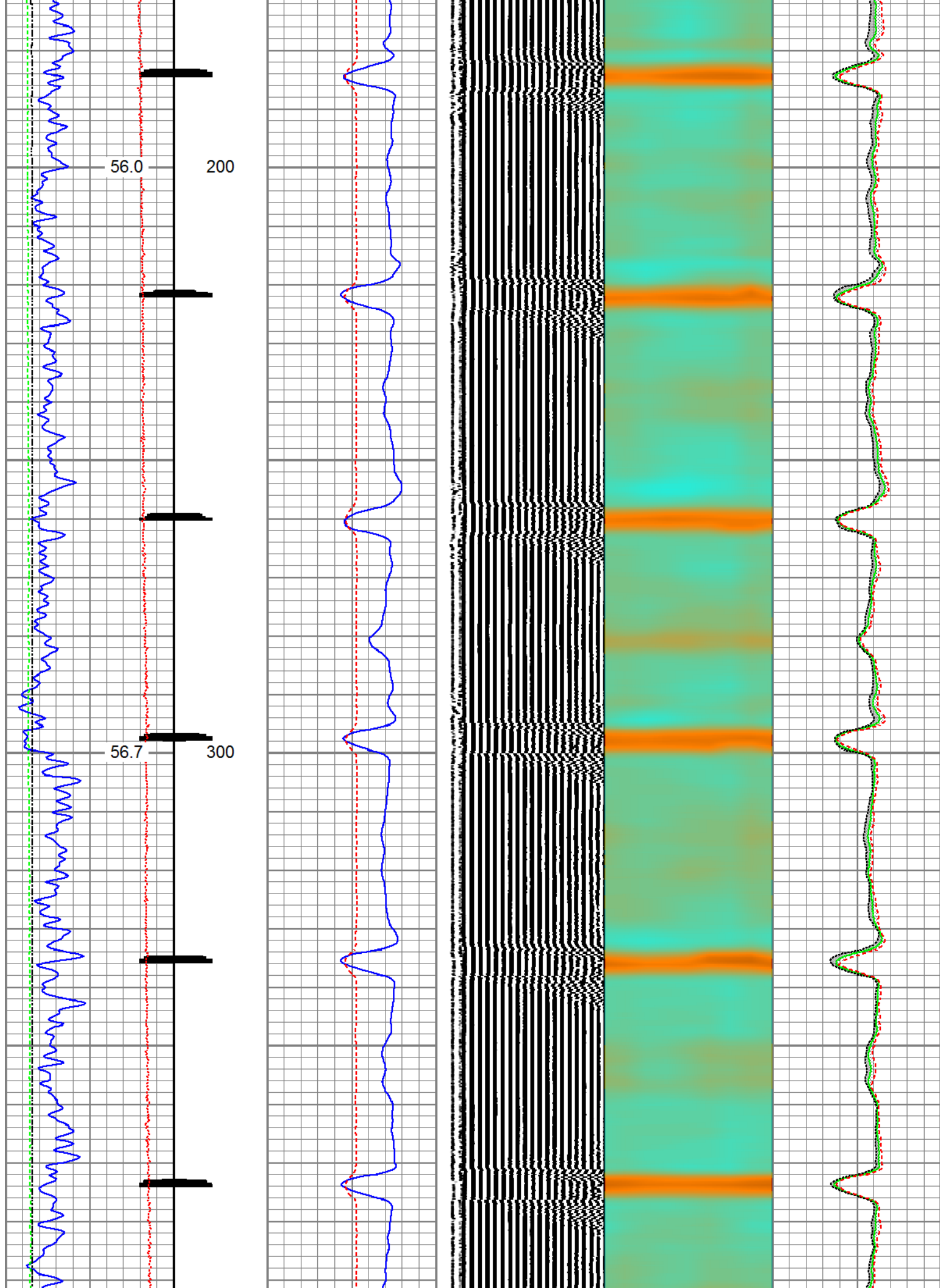


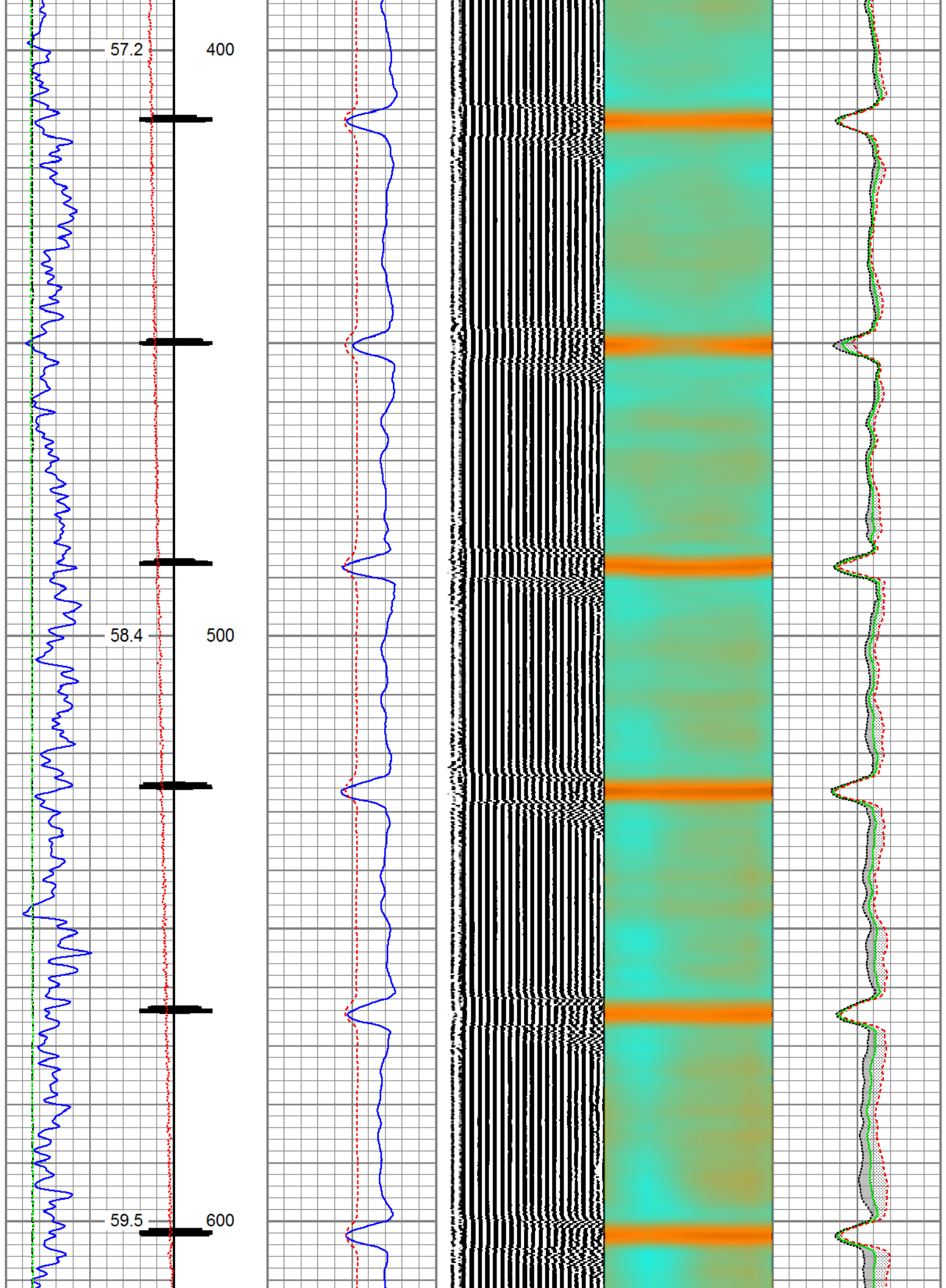
Main Pass

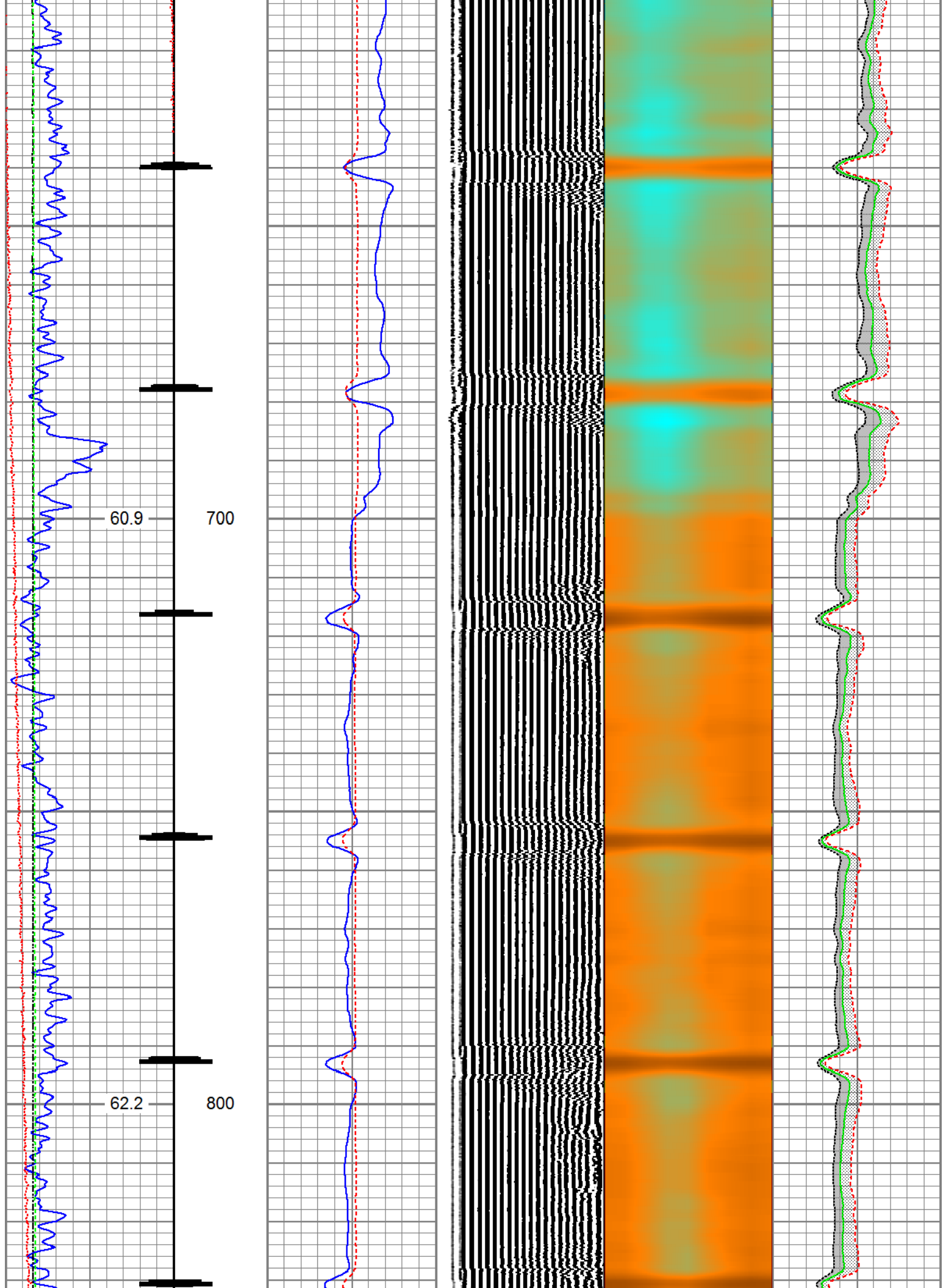
Recorded with 0 PSI Surface Induced Pressure

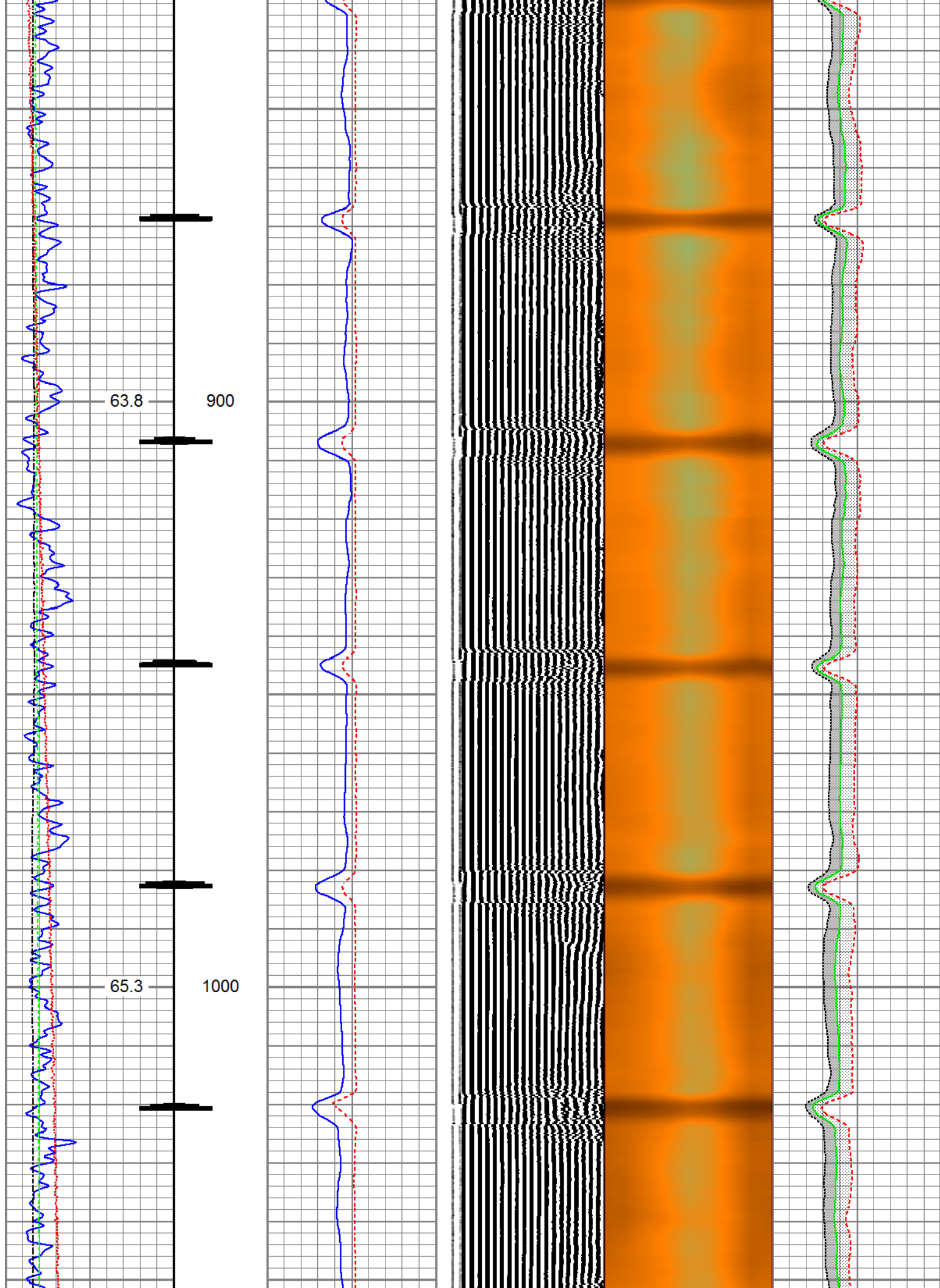
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 150
Line Speed	3' Travel Time			Maximum Amplitude
-150 (ft/min) 150	300 (usec) 200			0 150
Line Tension	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

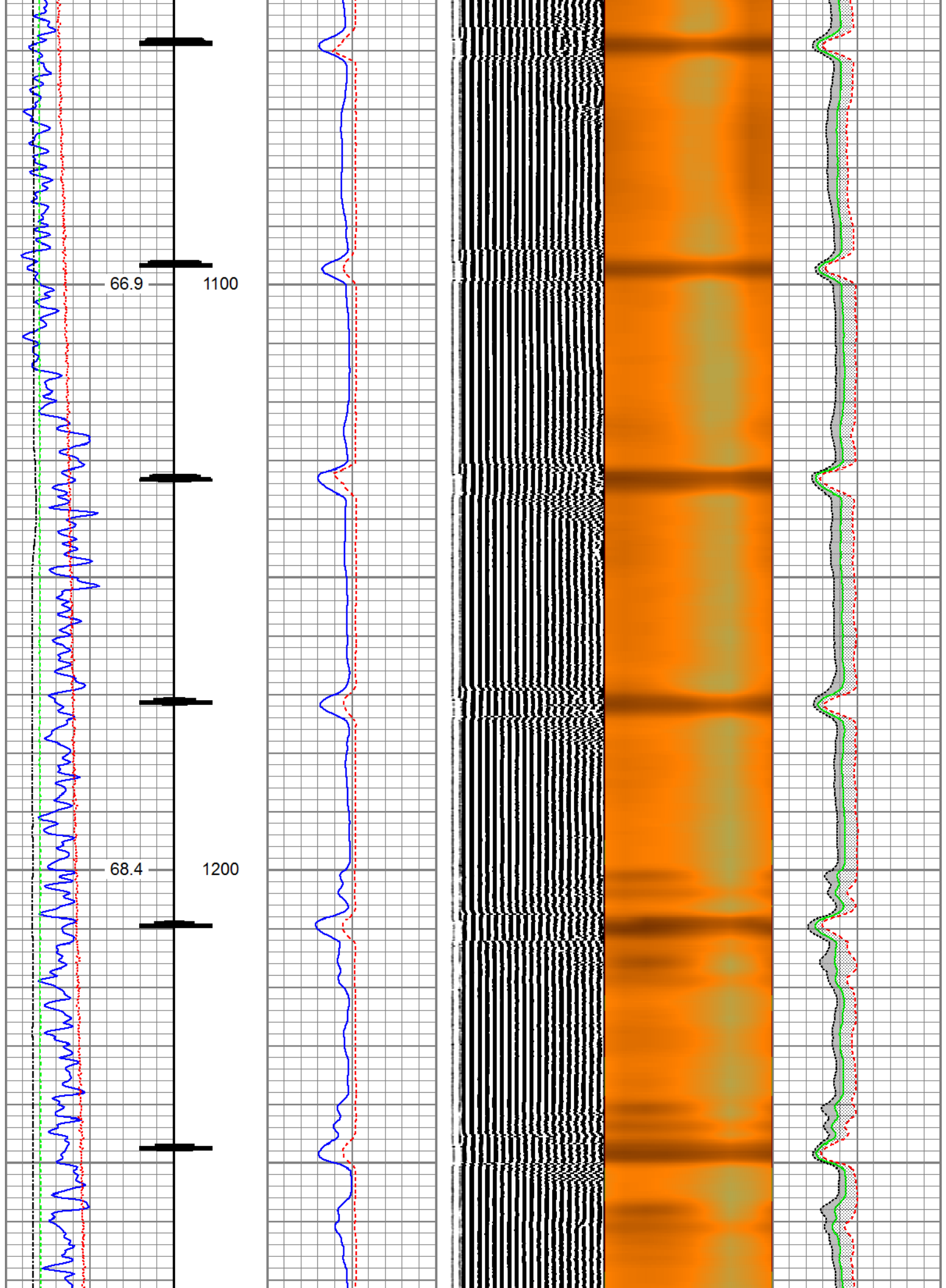


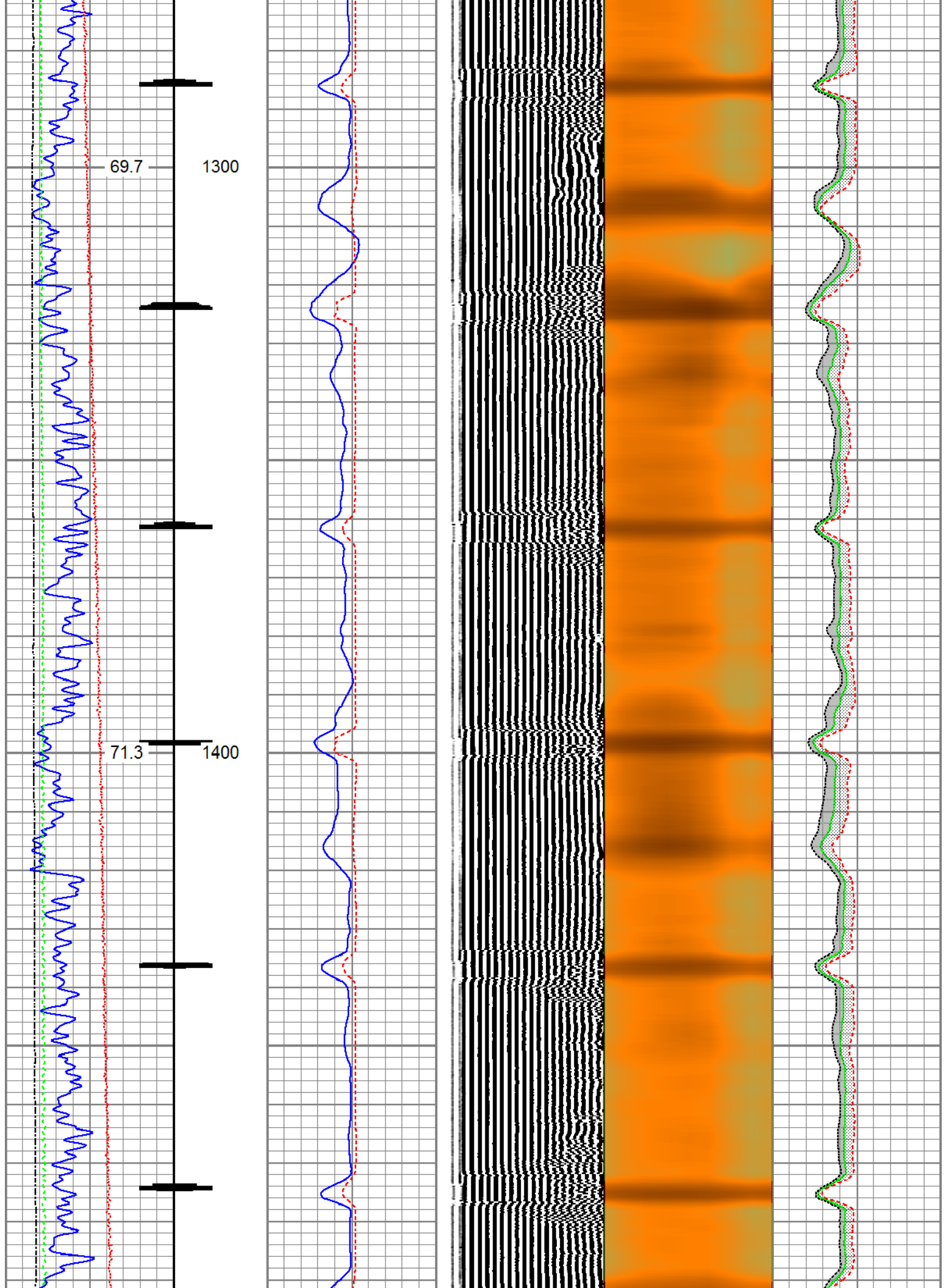


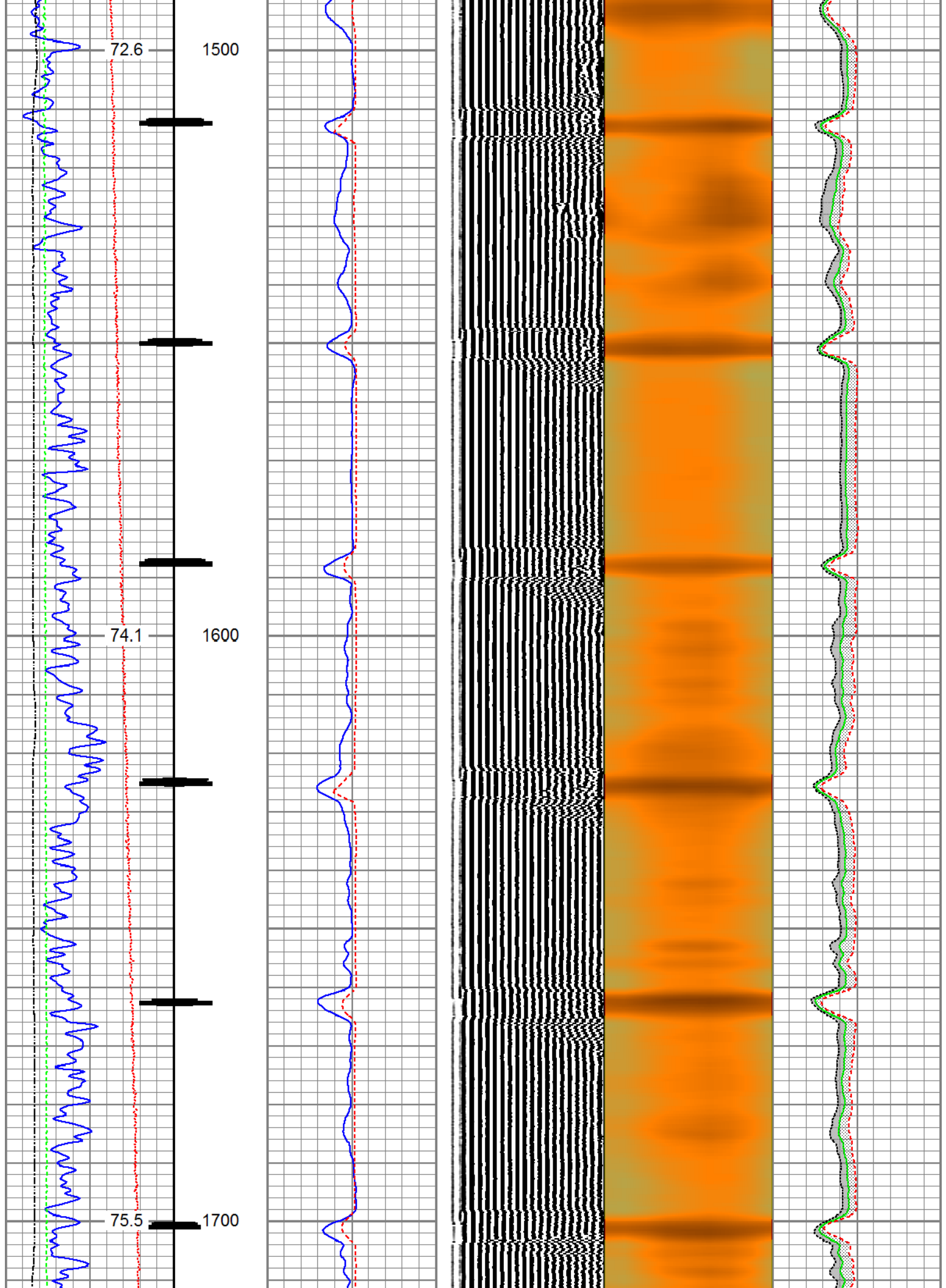


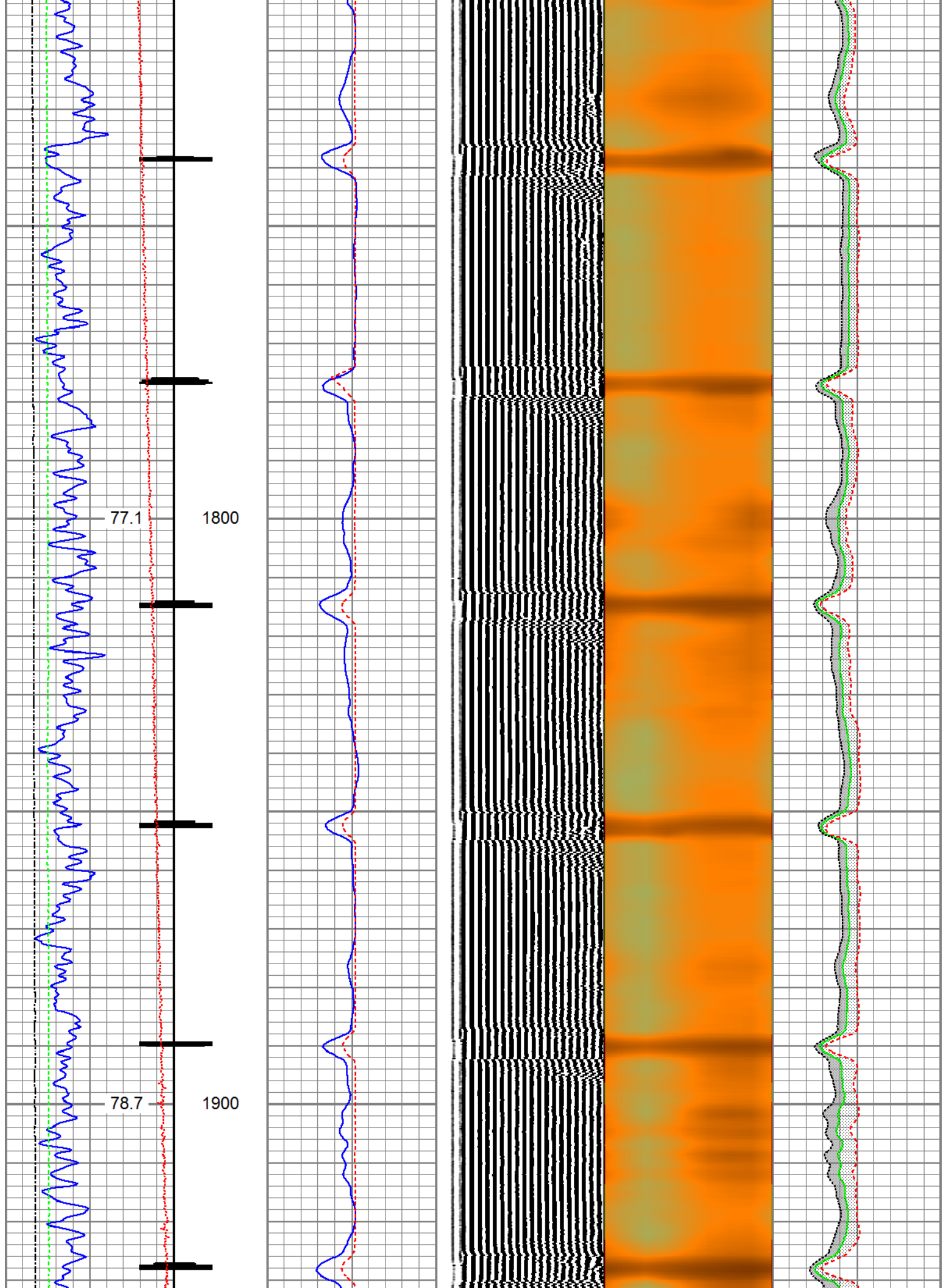


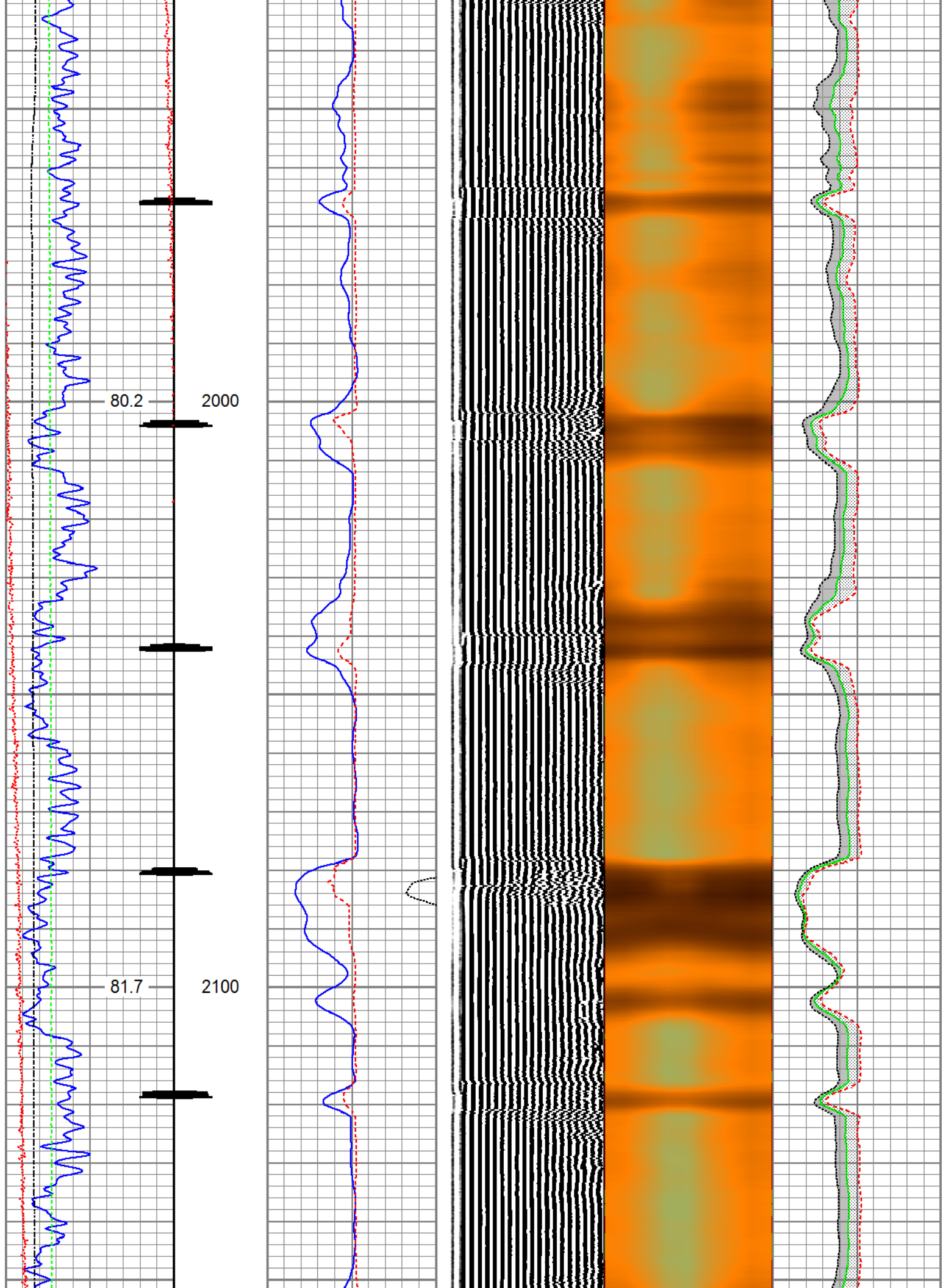


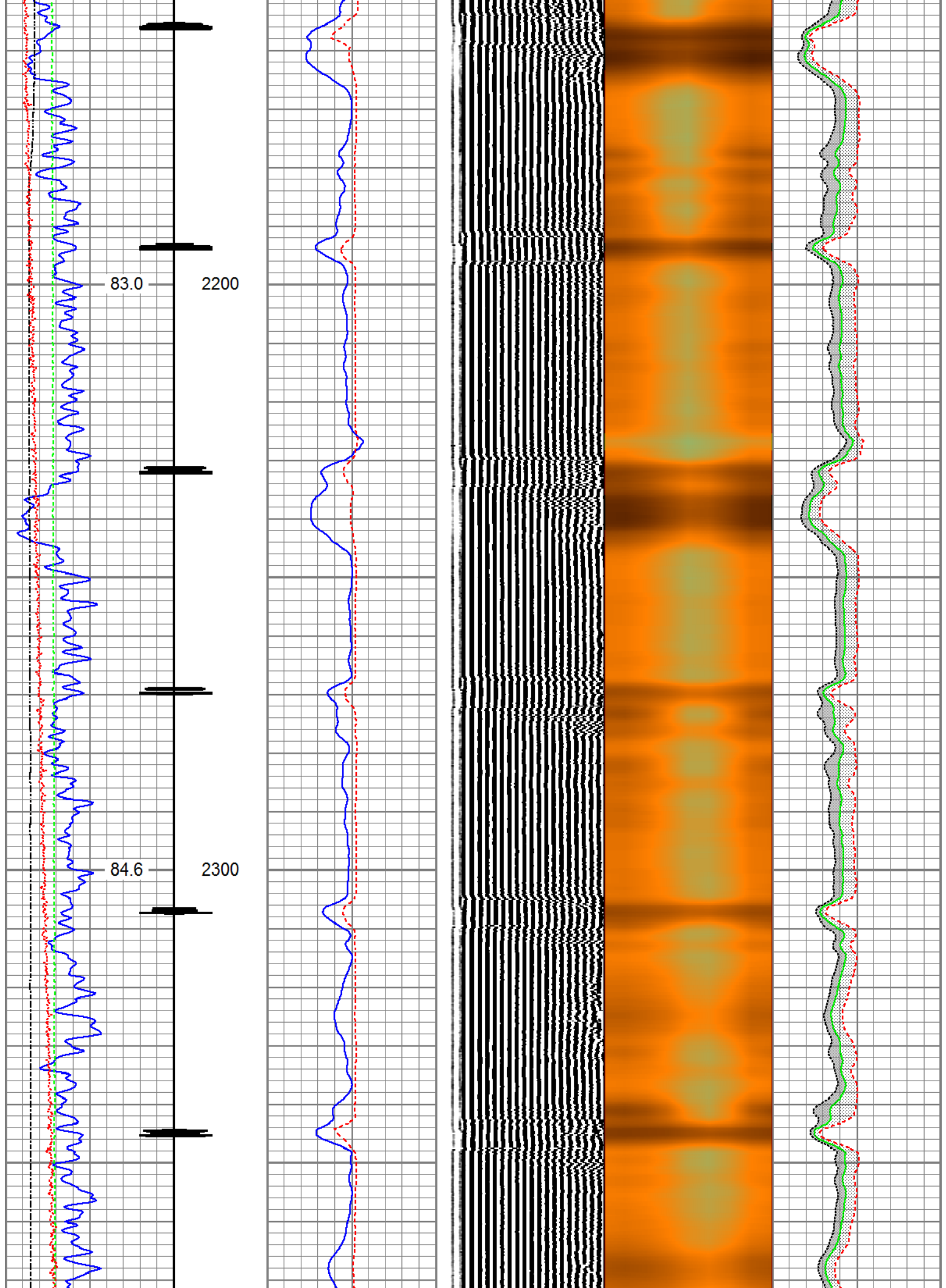


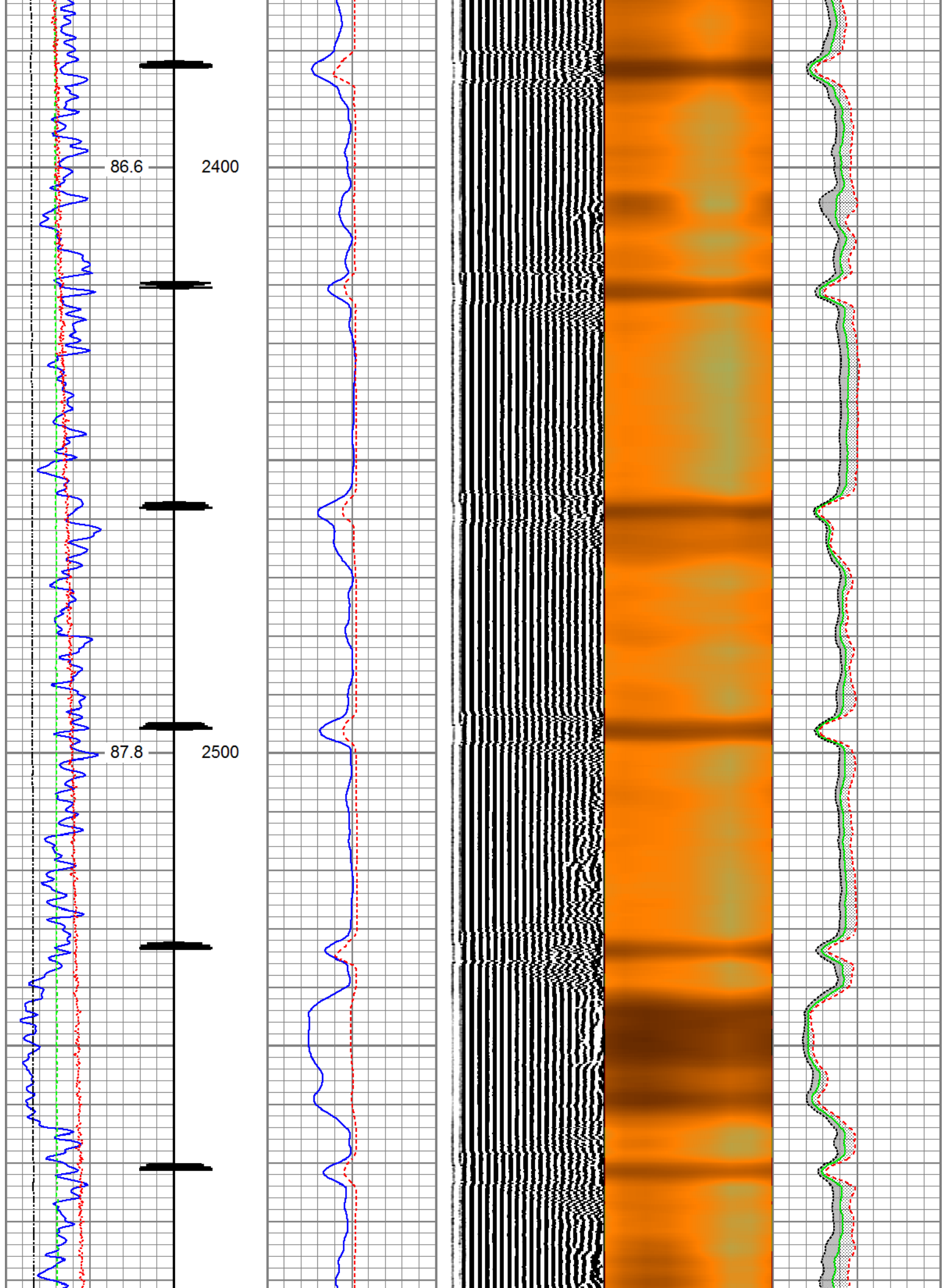


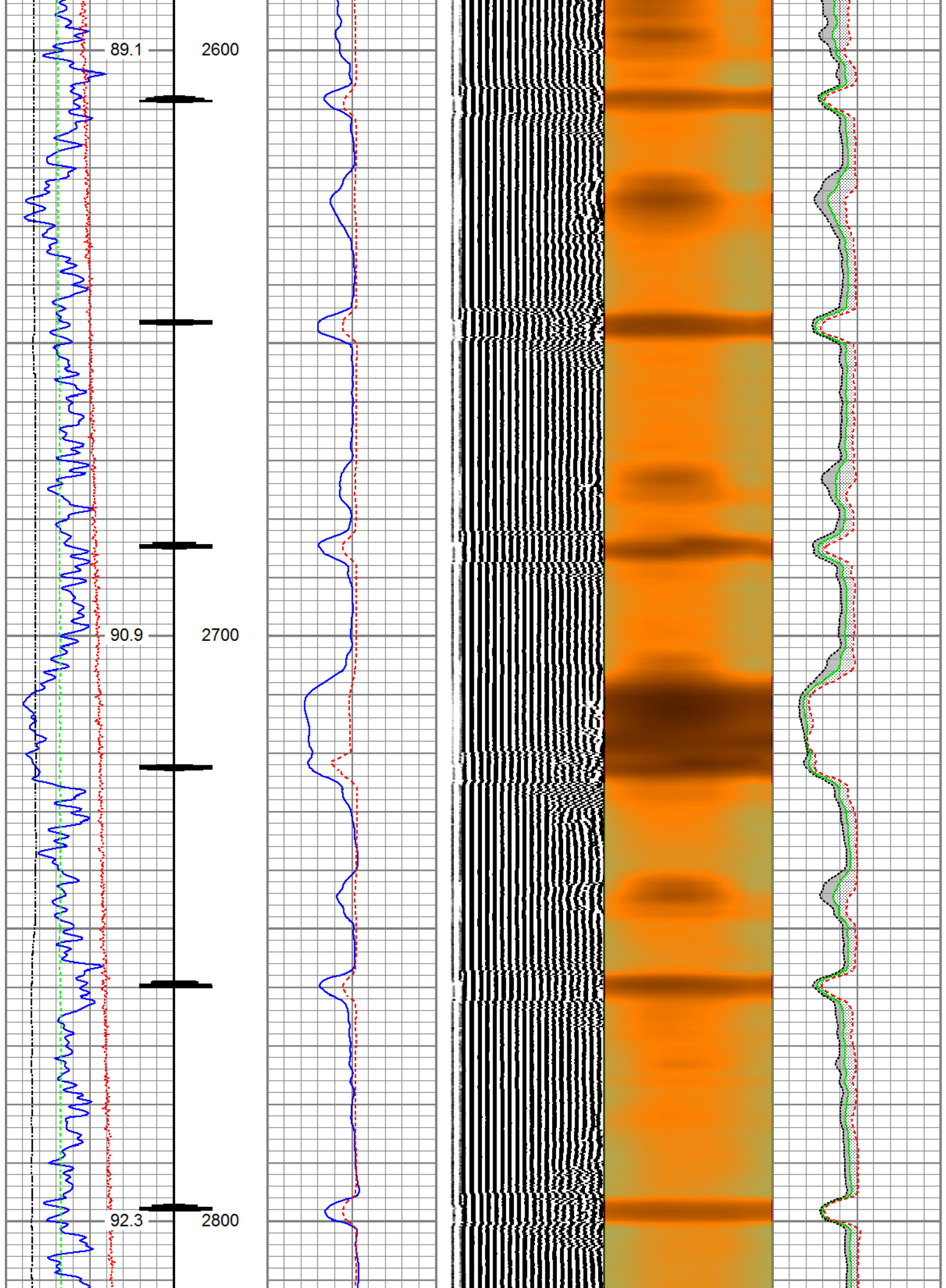


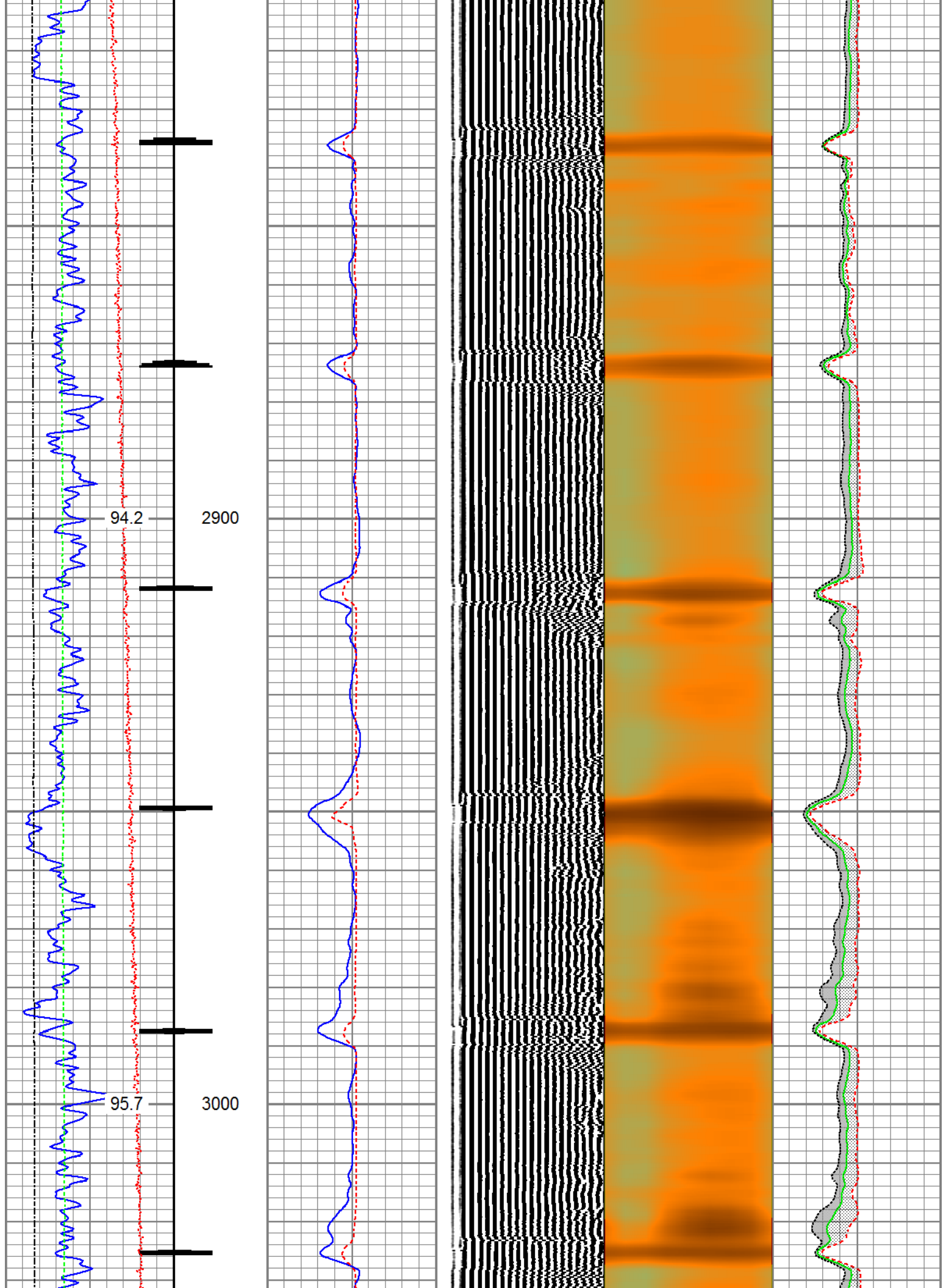


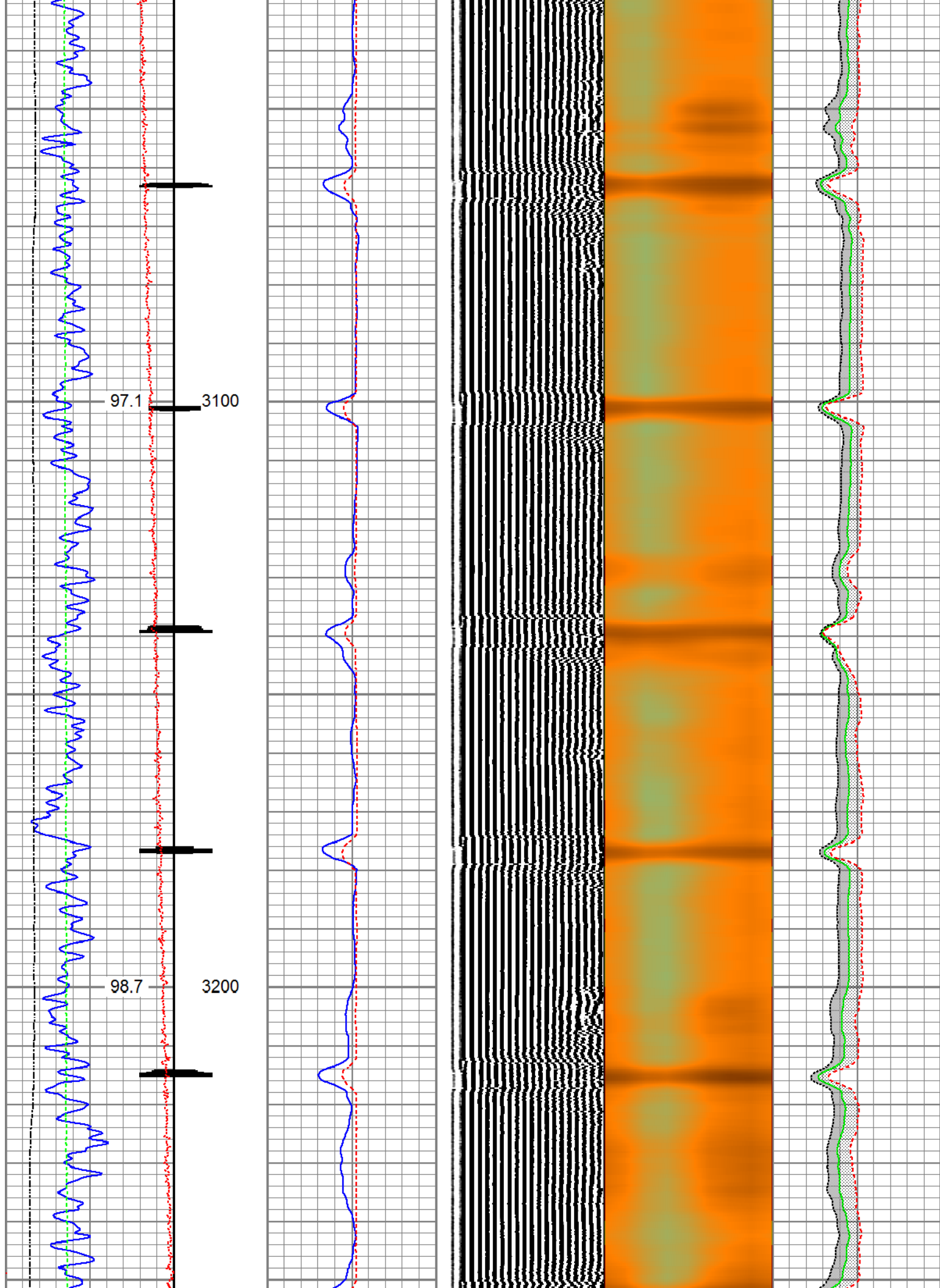


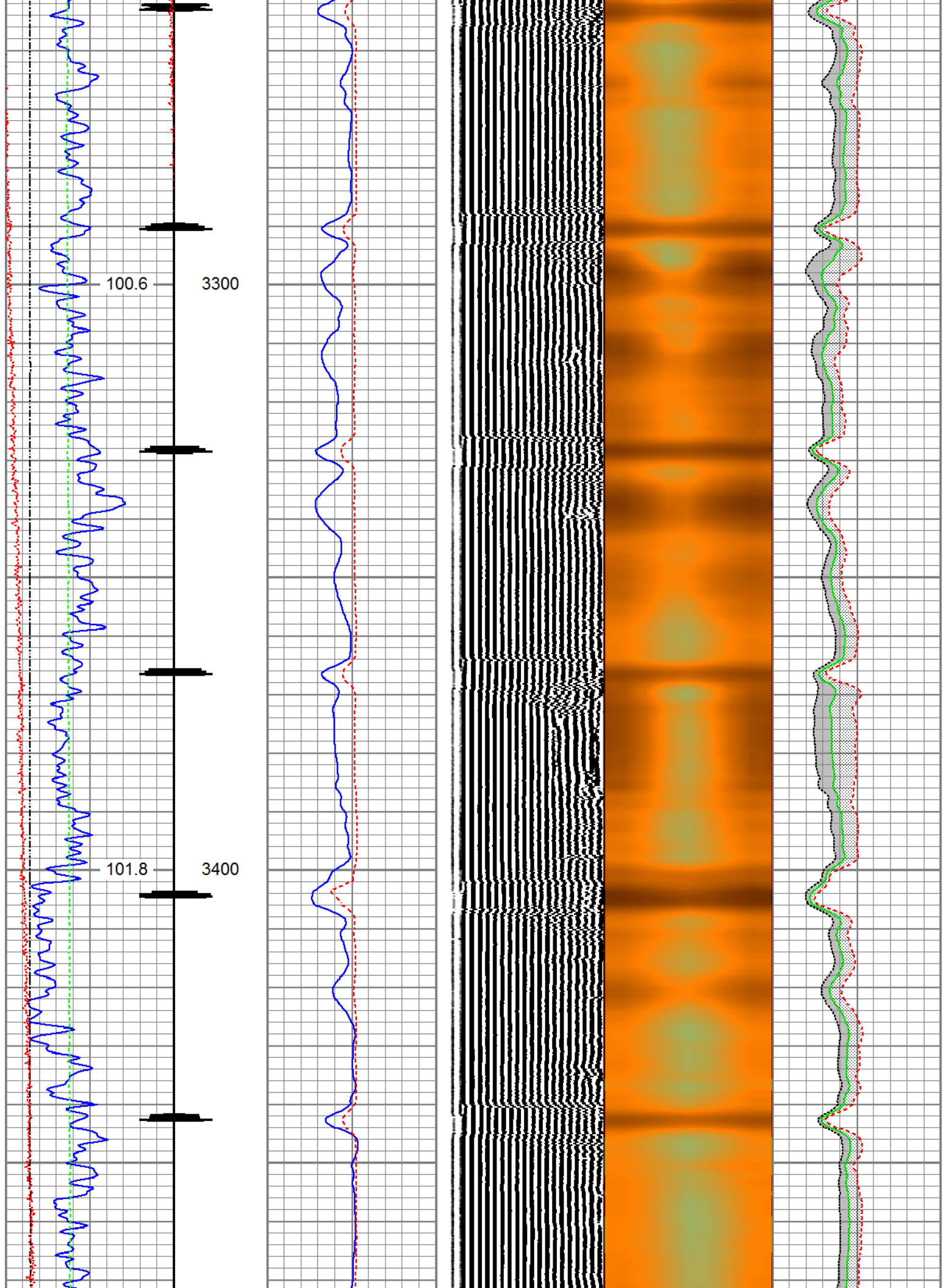


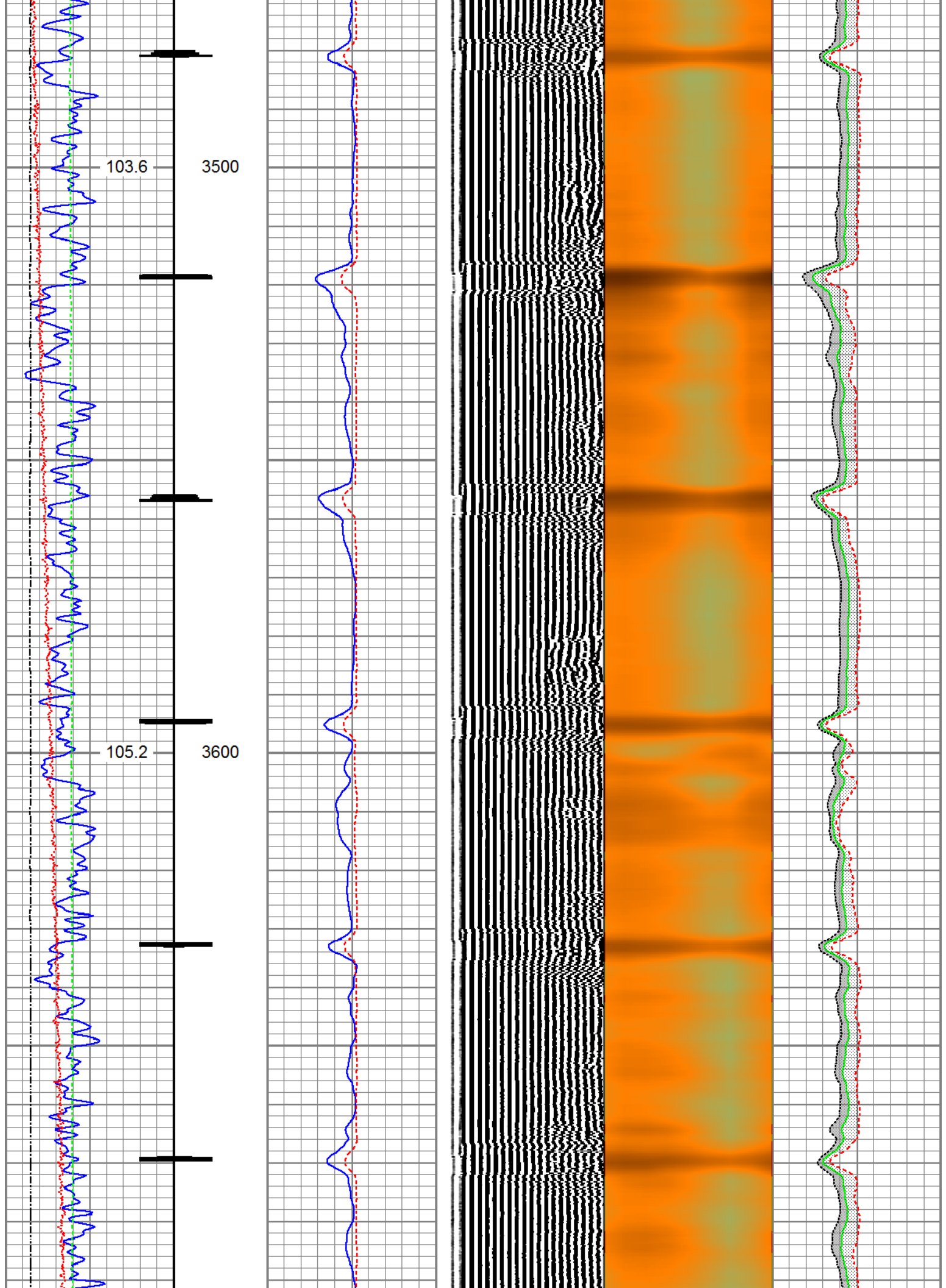


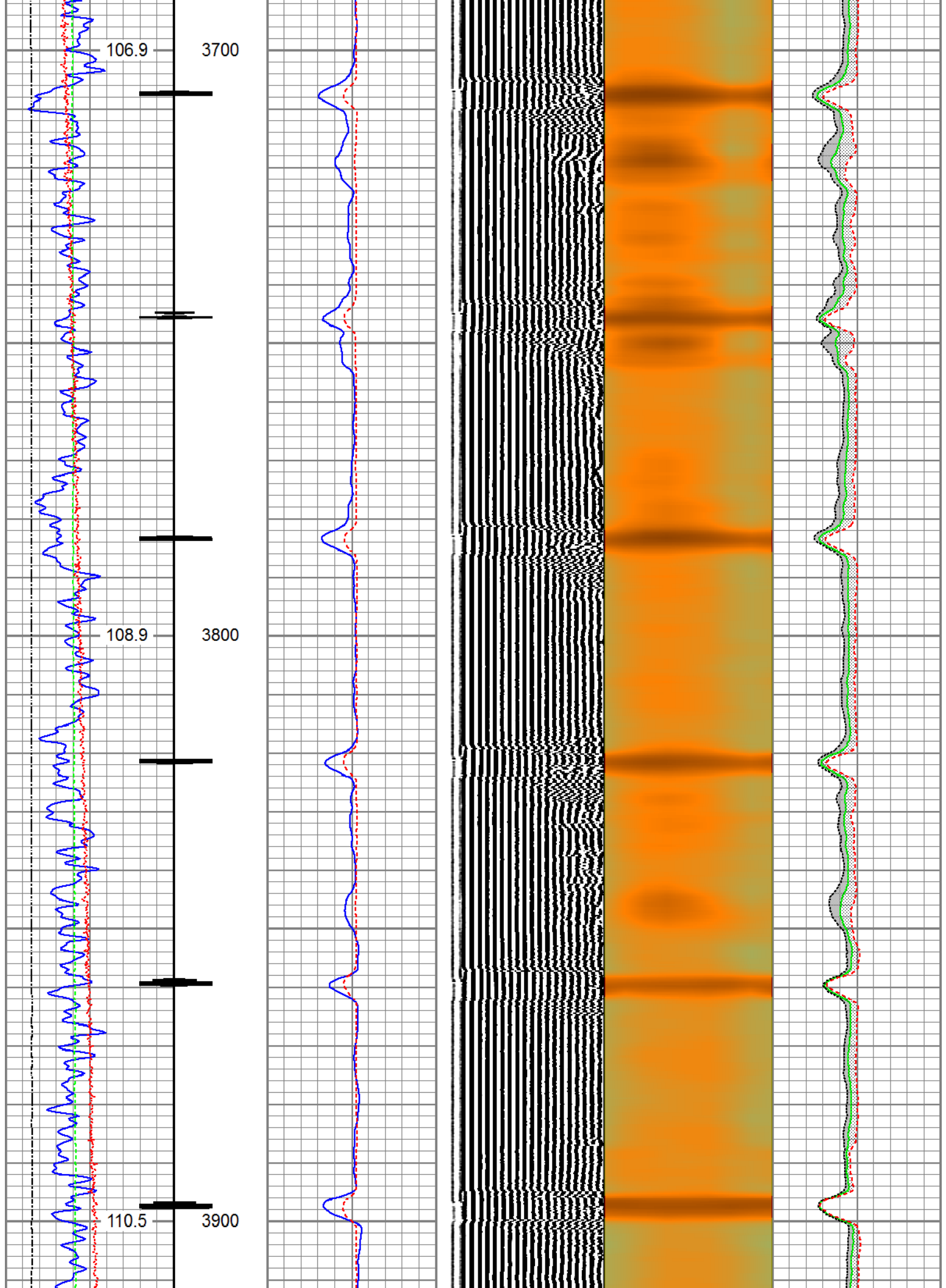


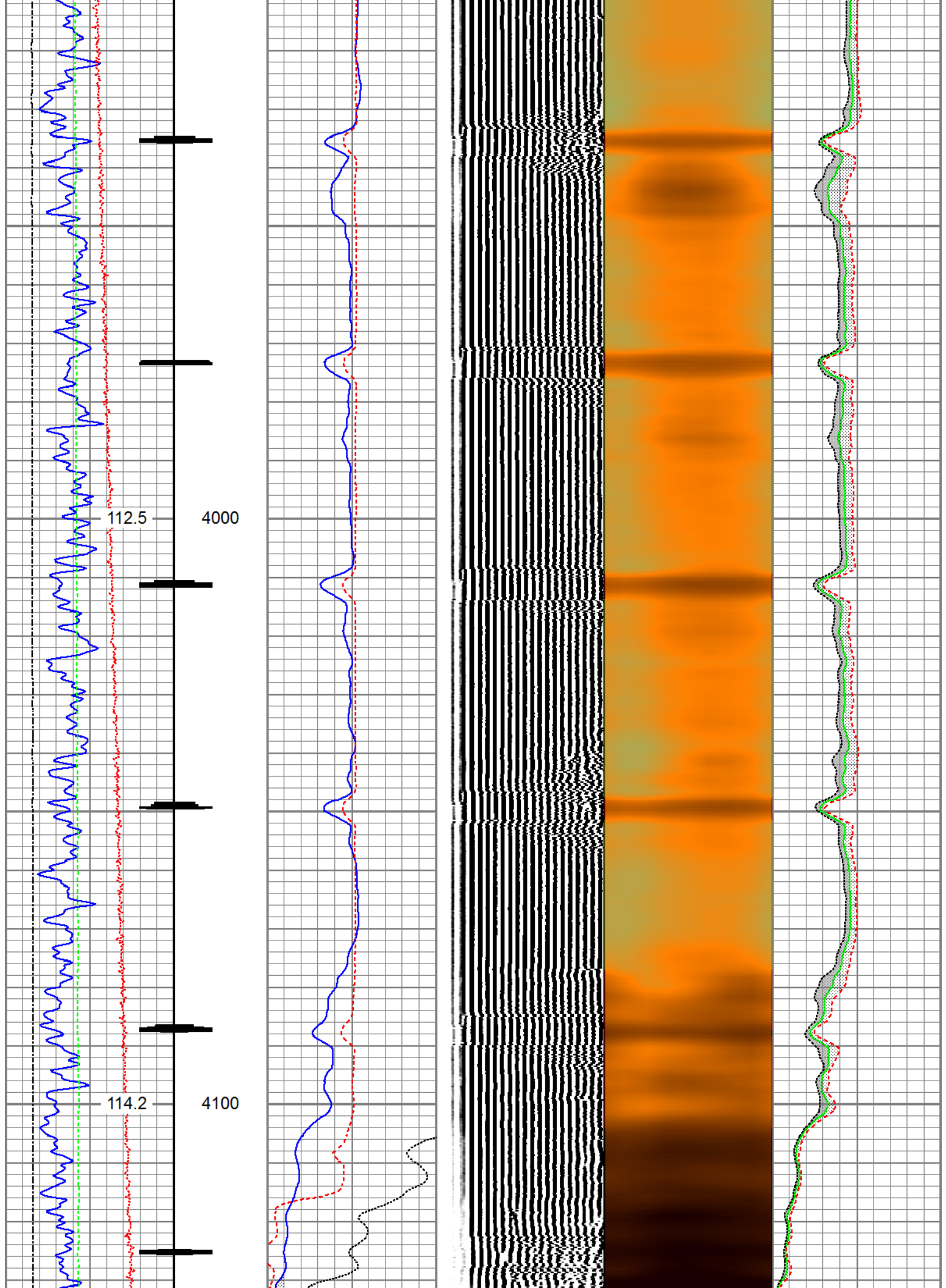


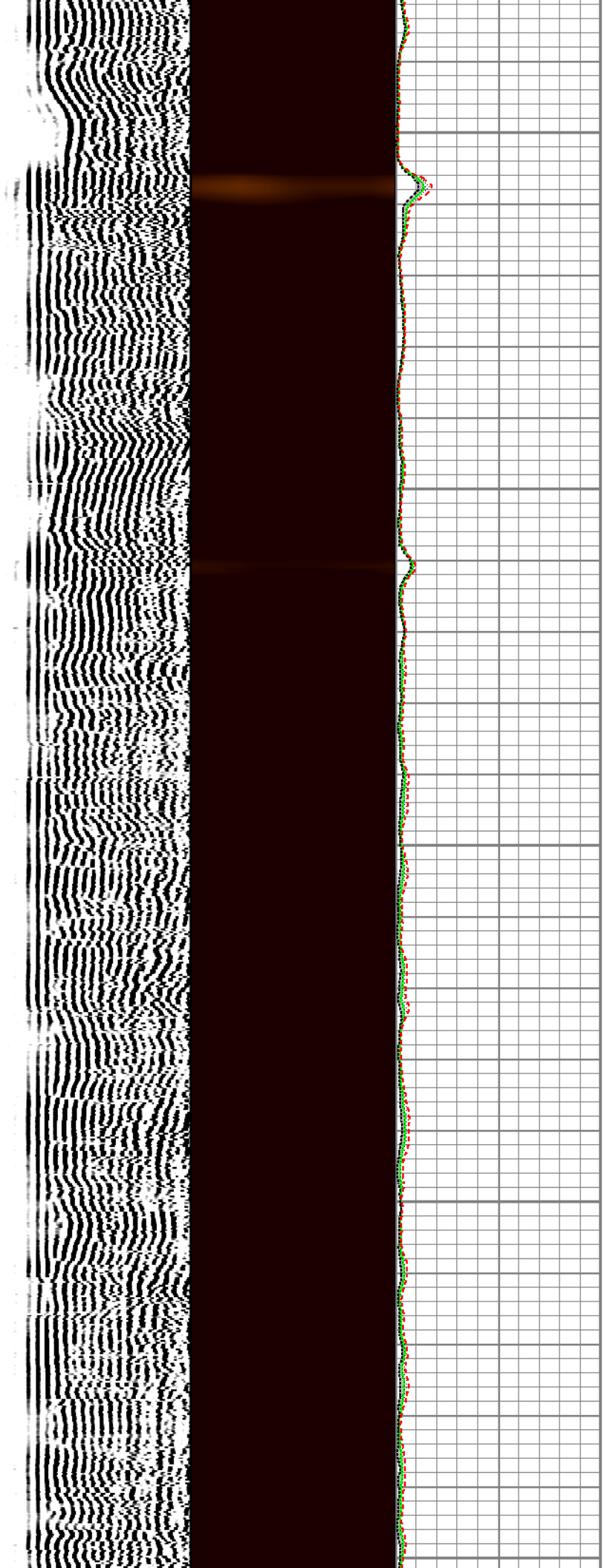
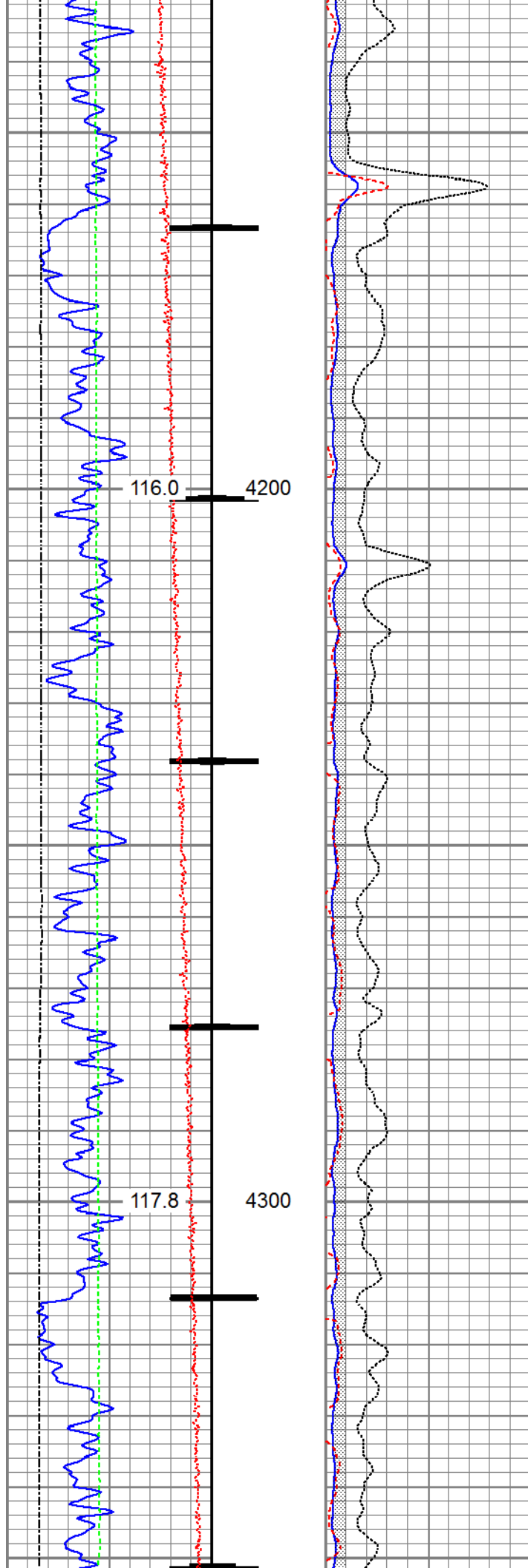


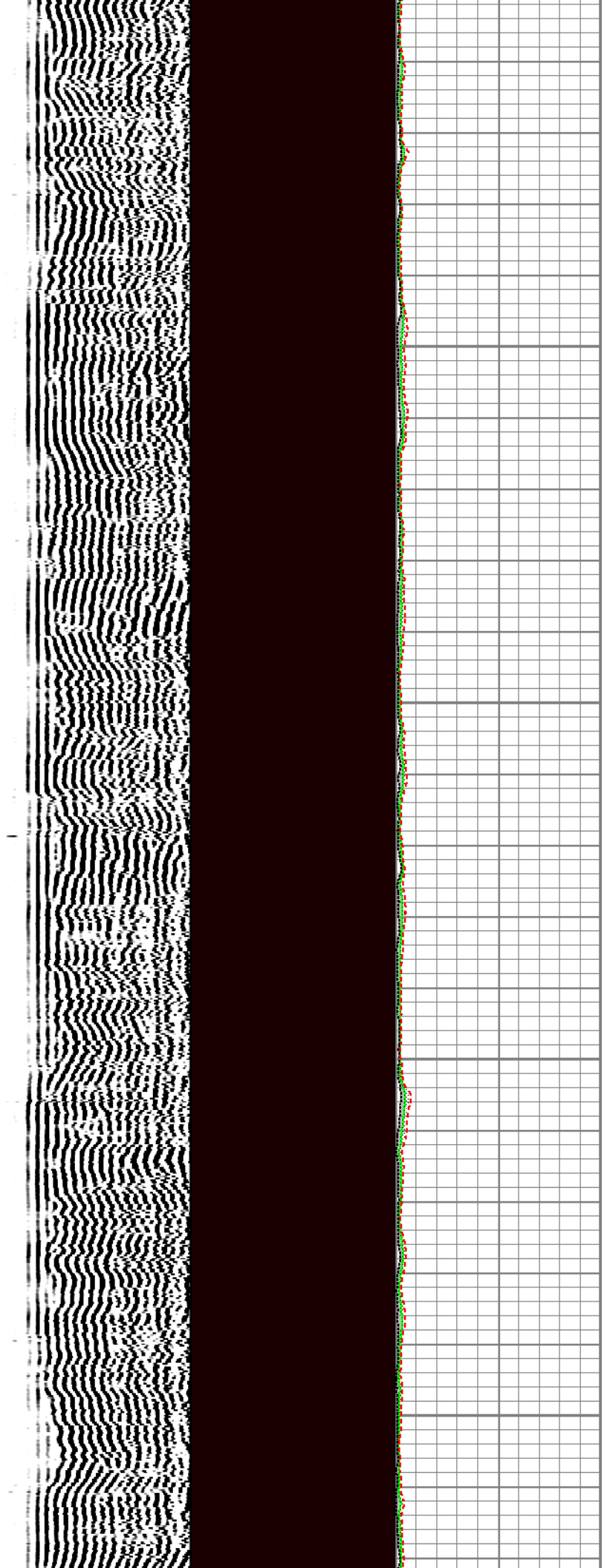
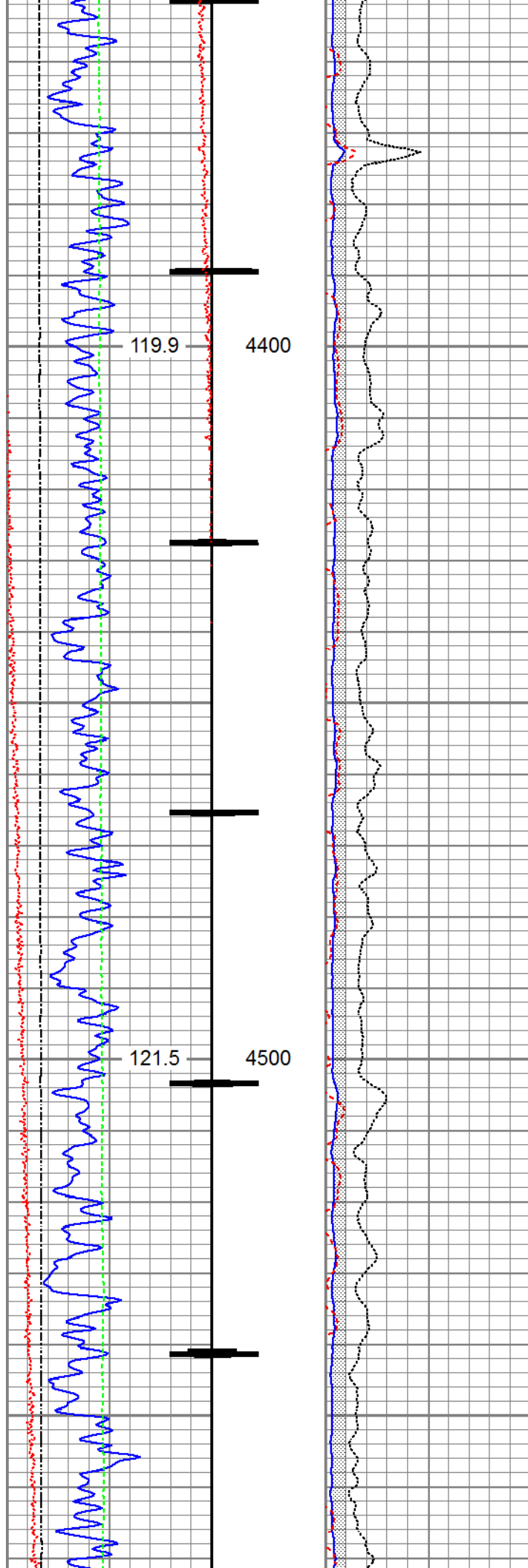


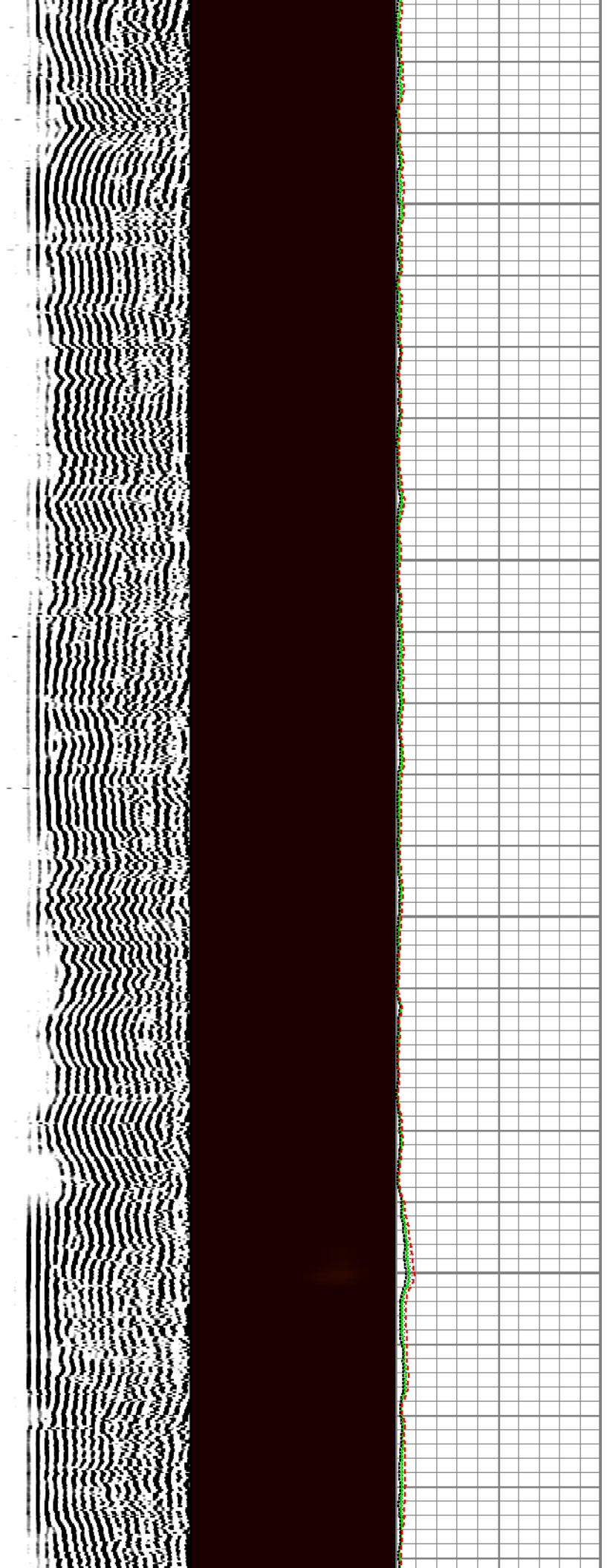
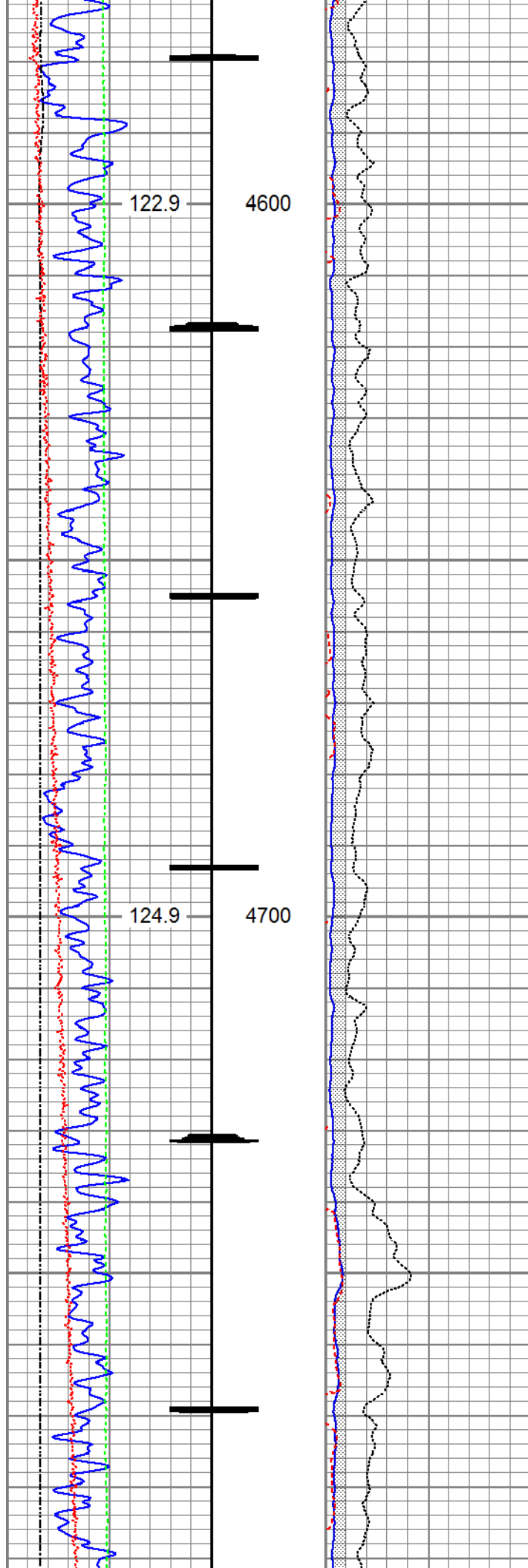


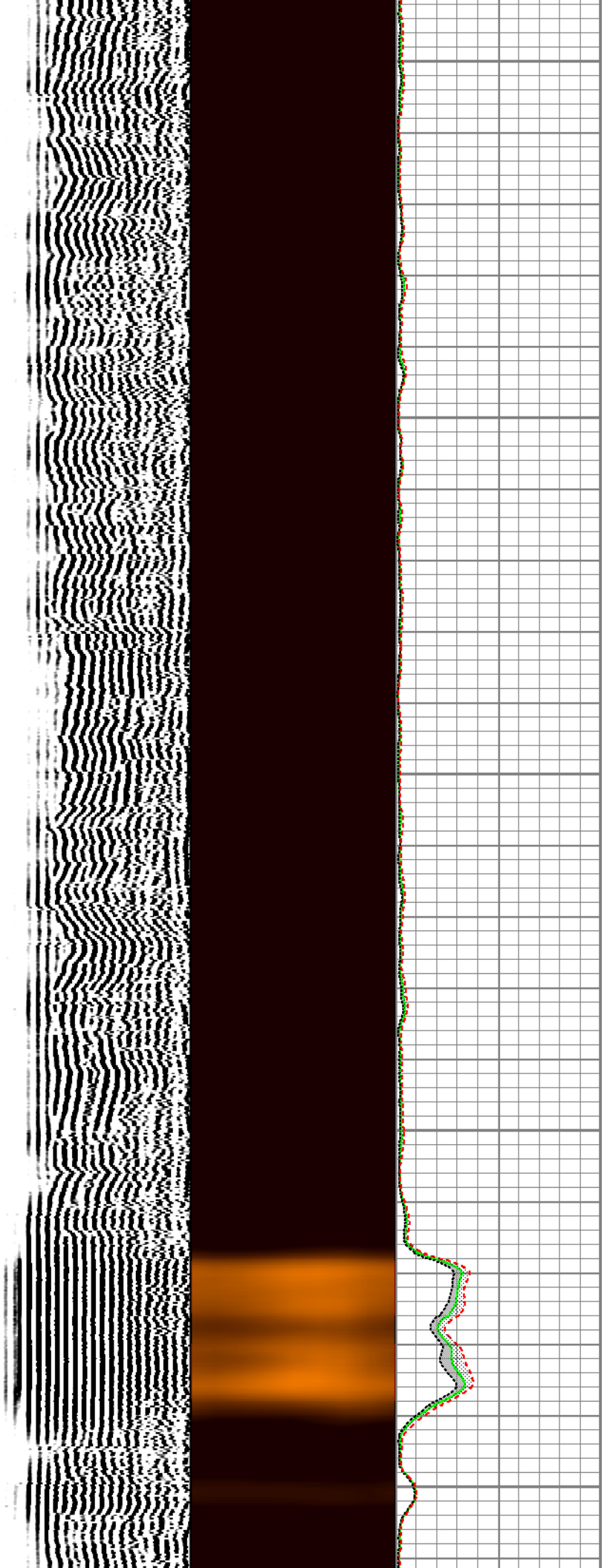
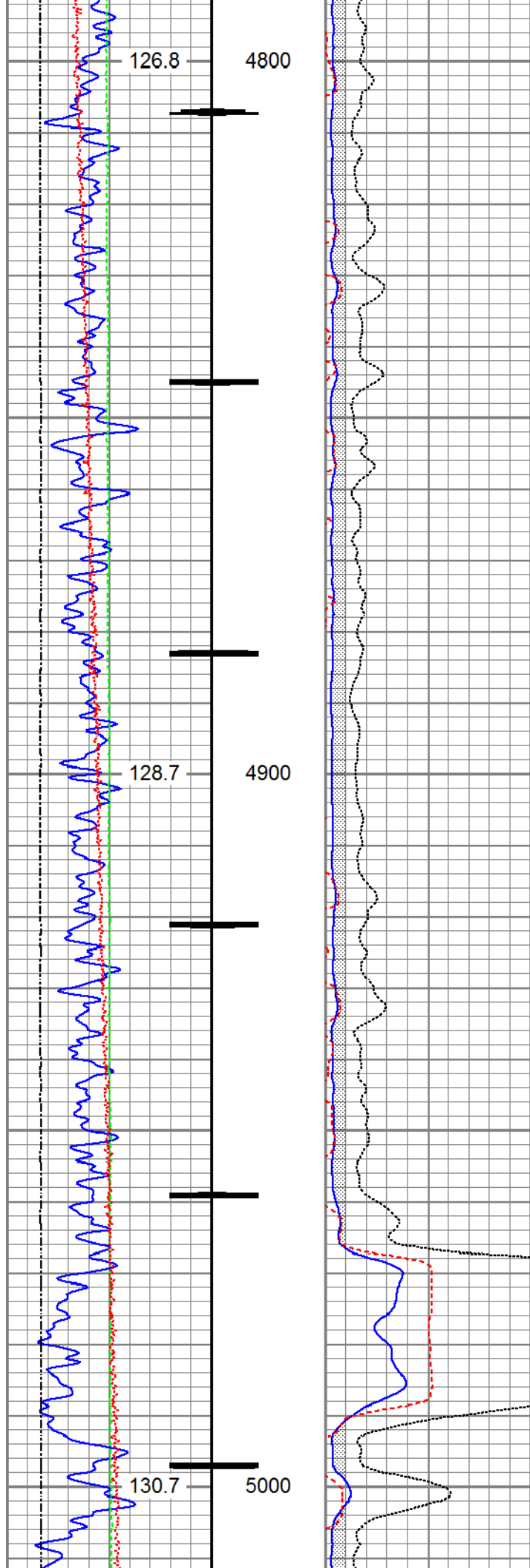


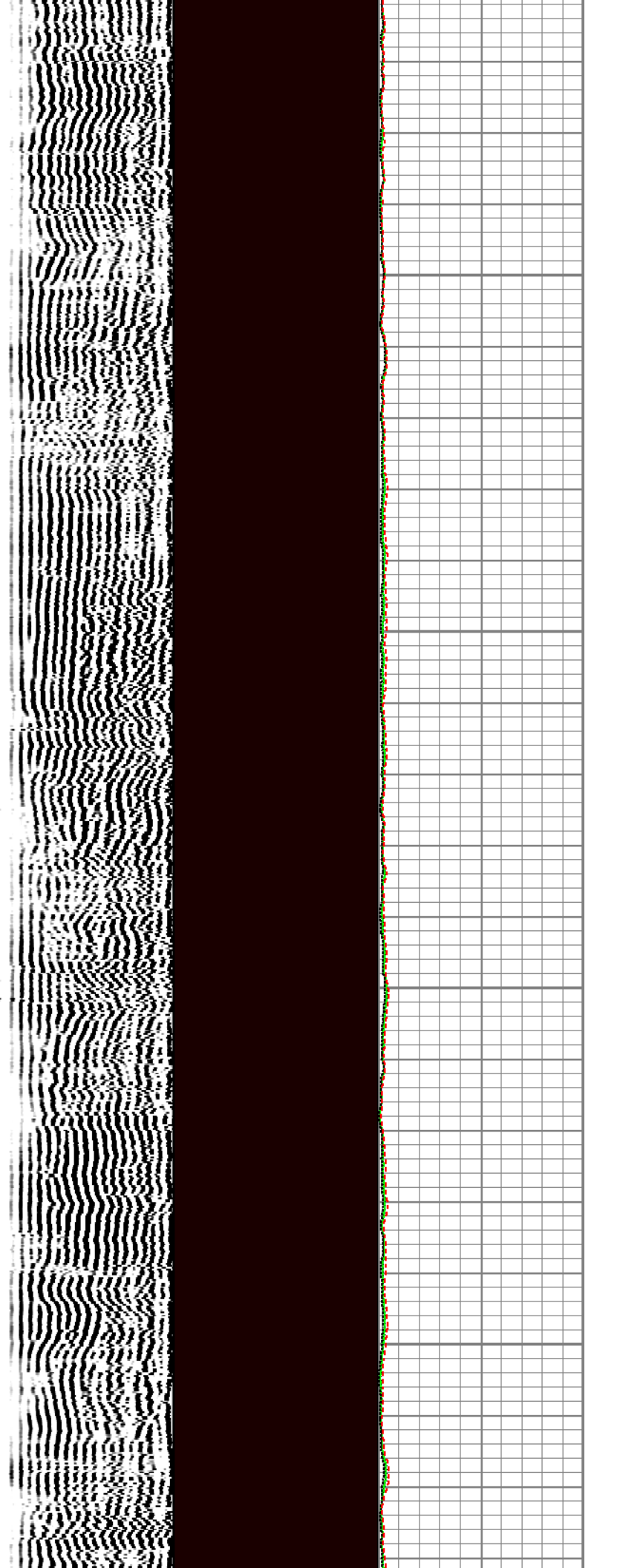
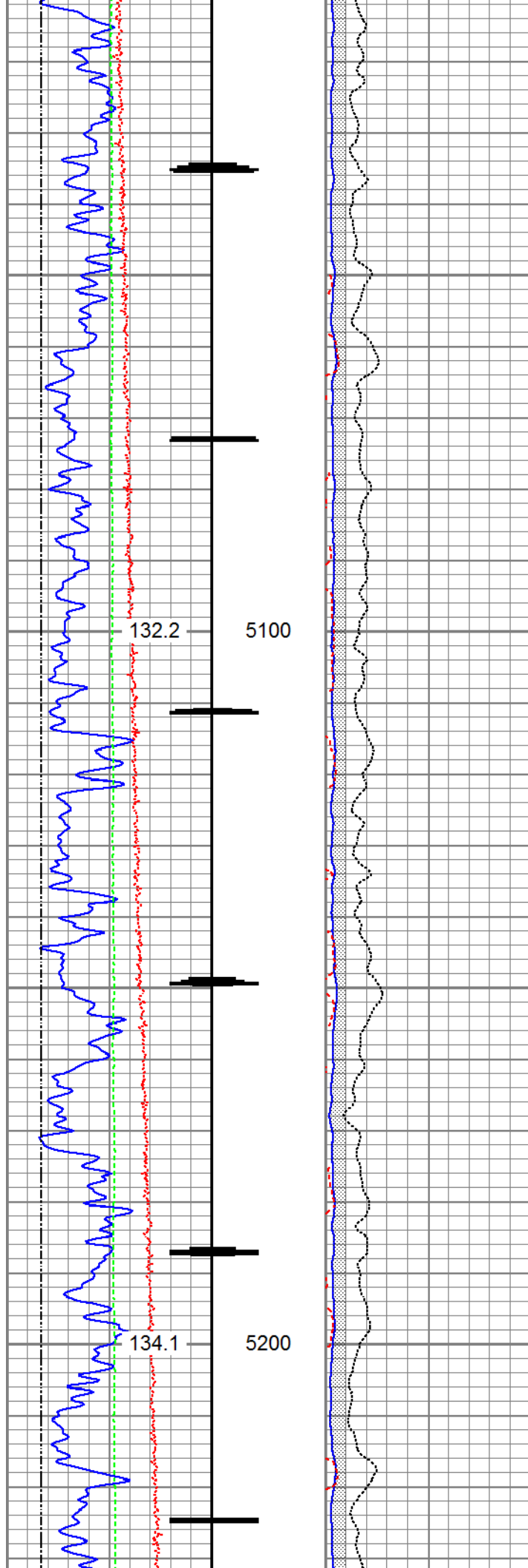


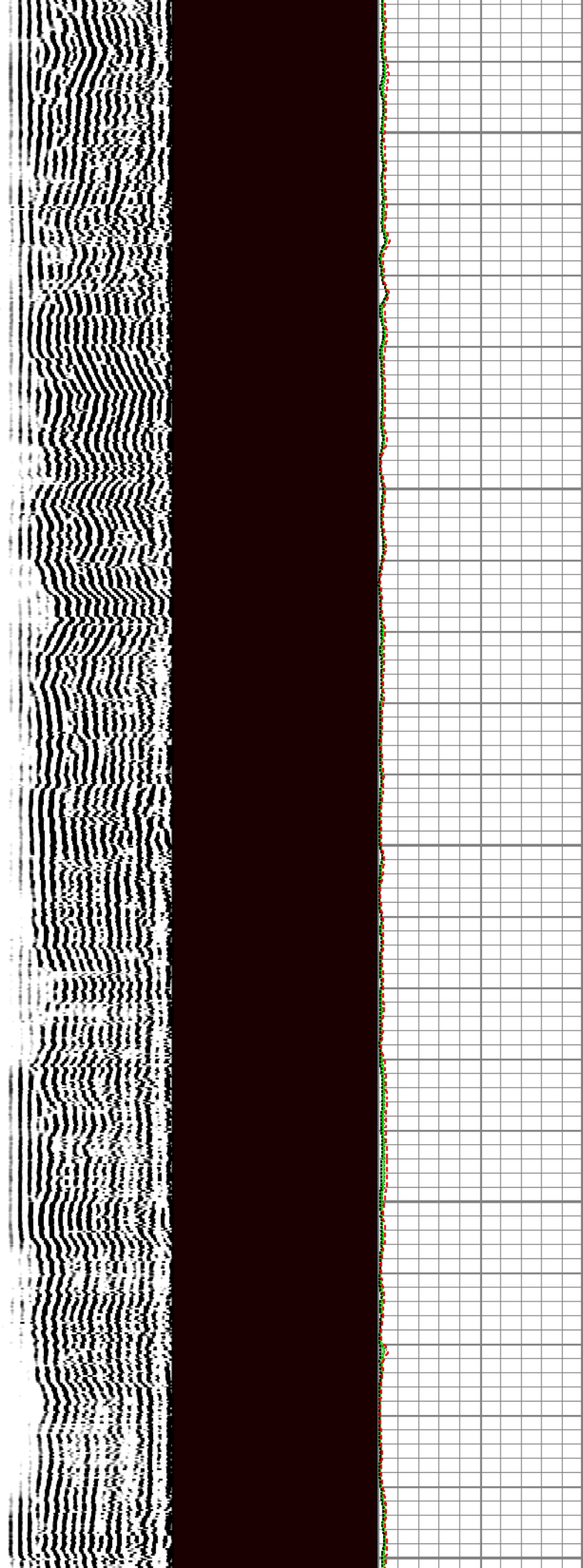
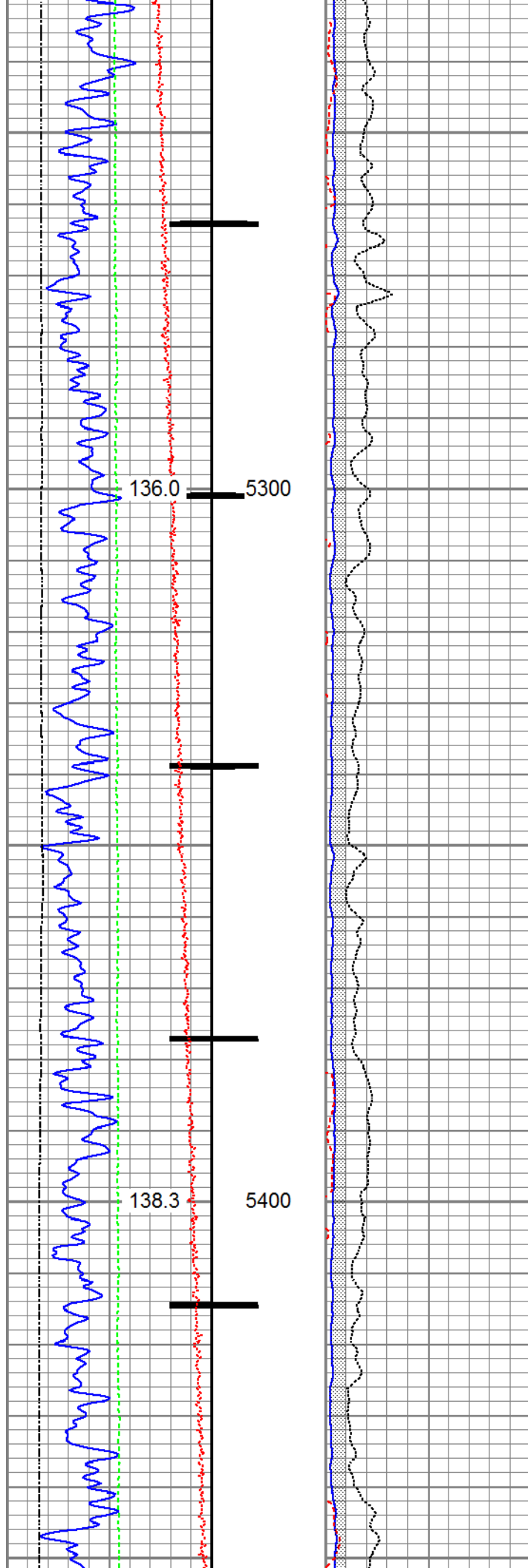


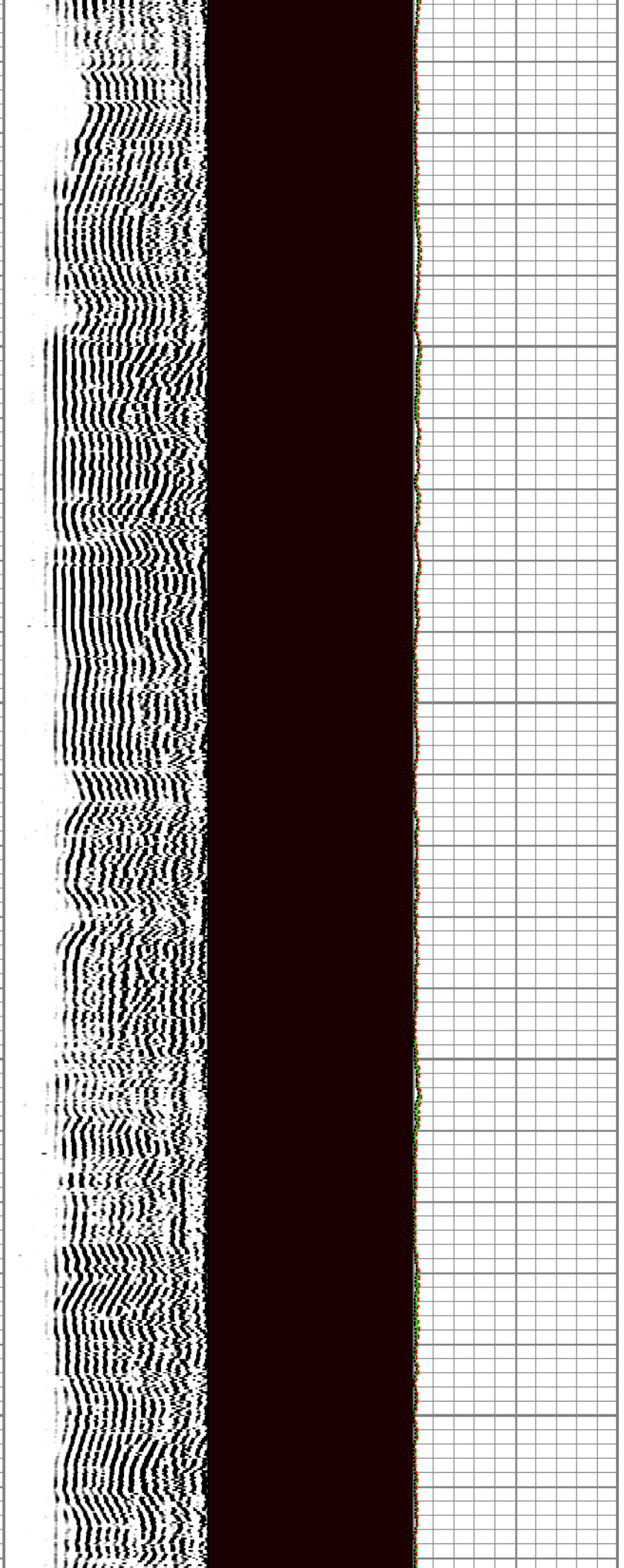
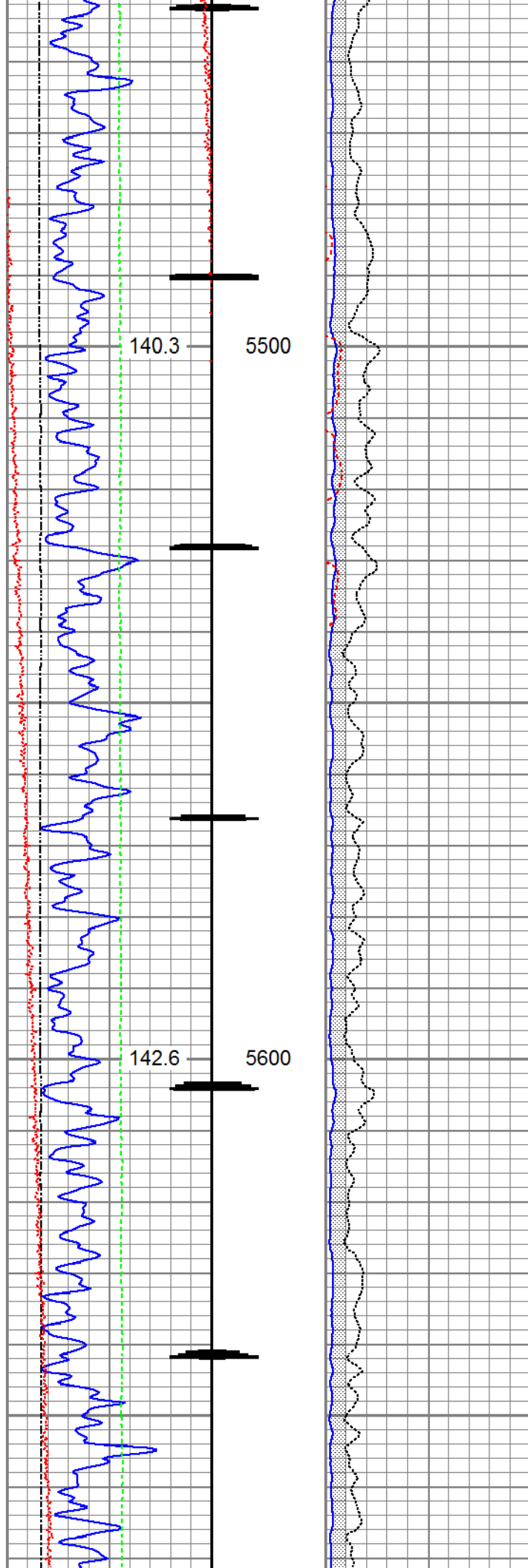


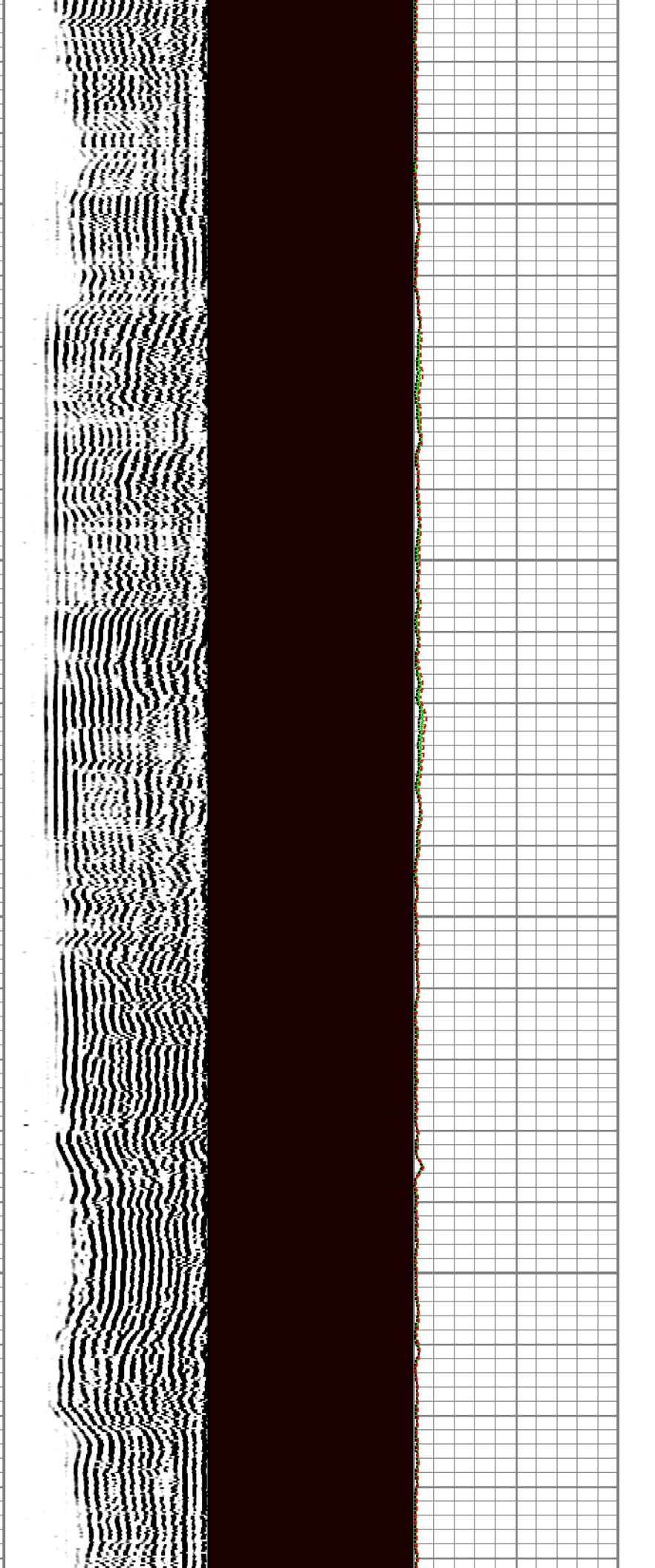
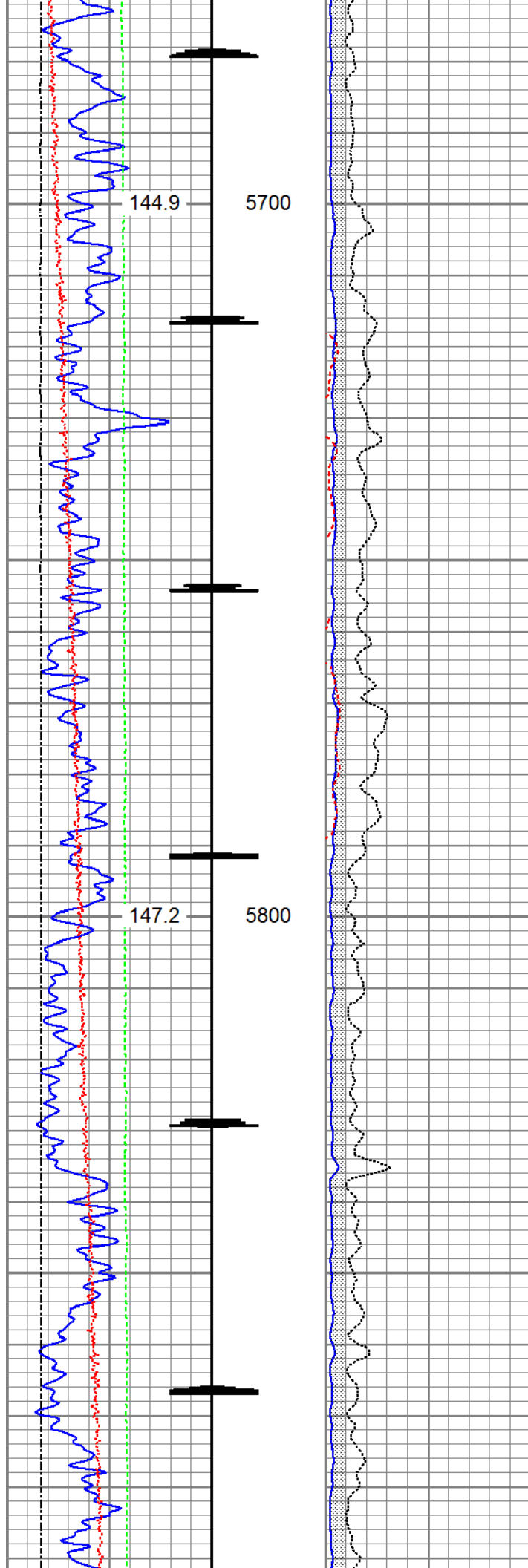


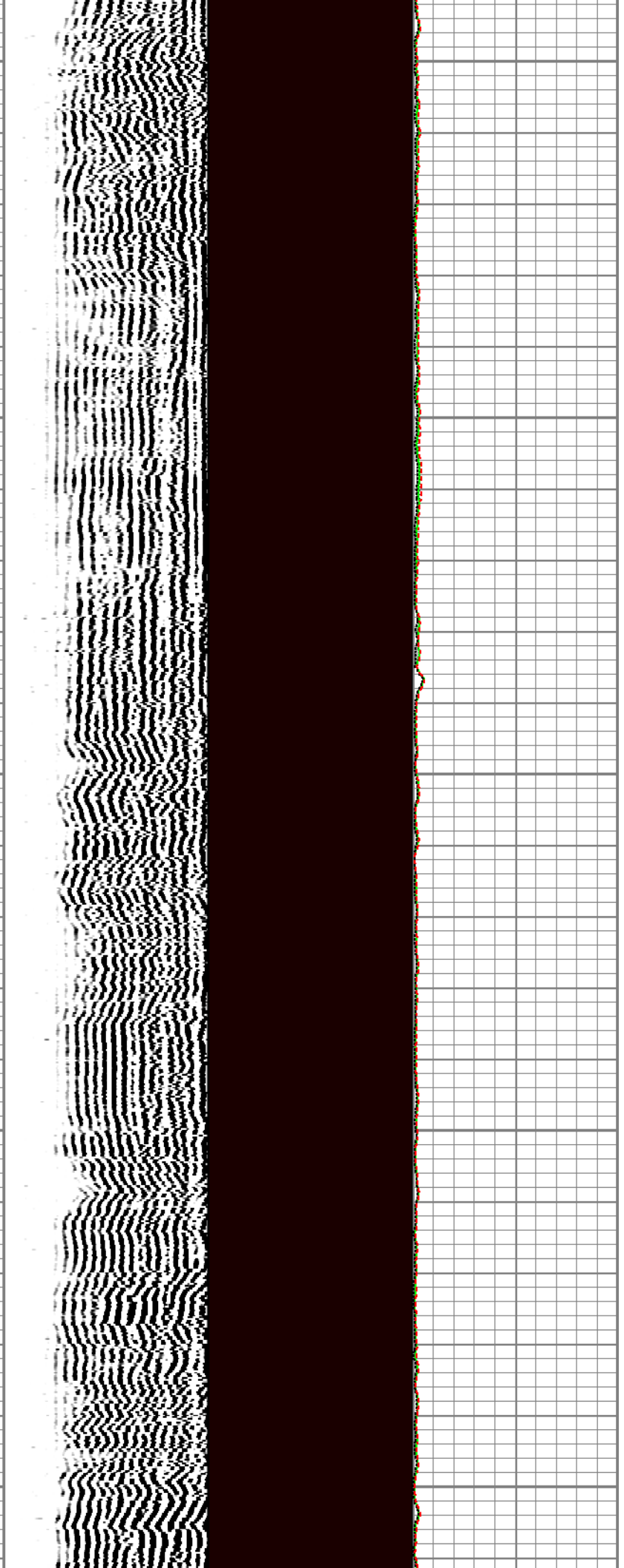
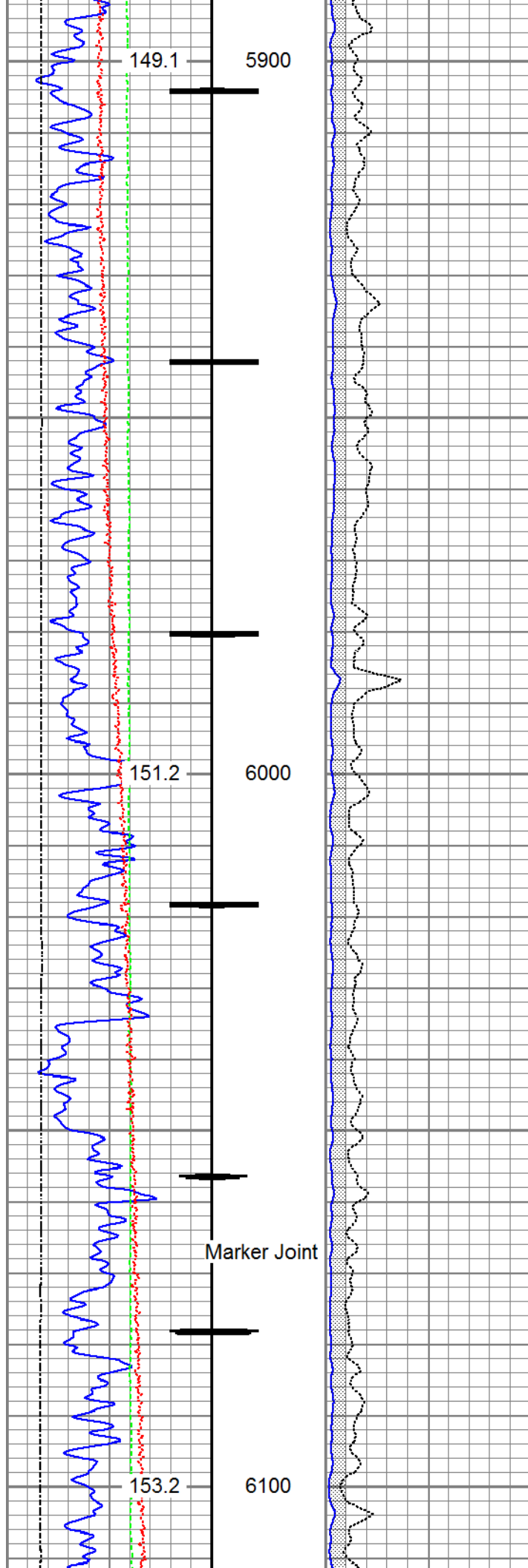


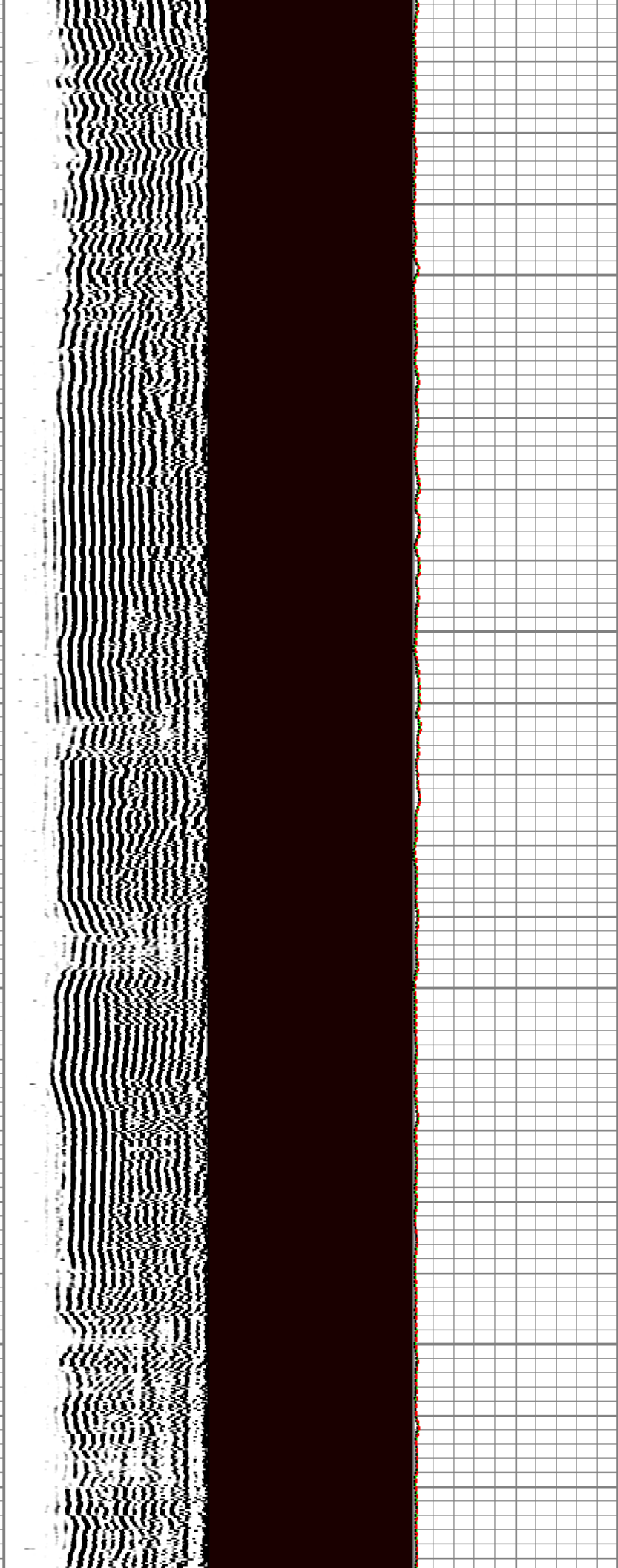
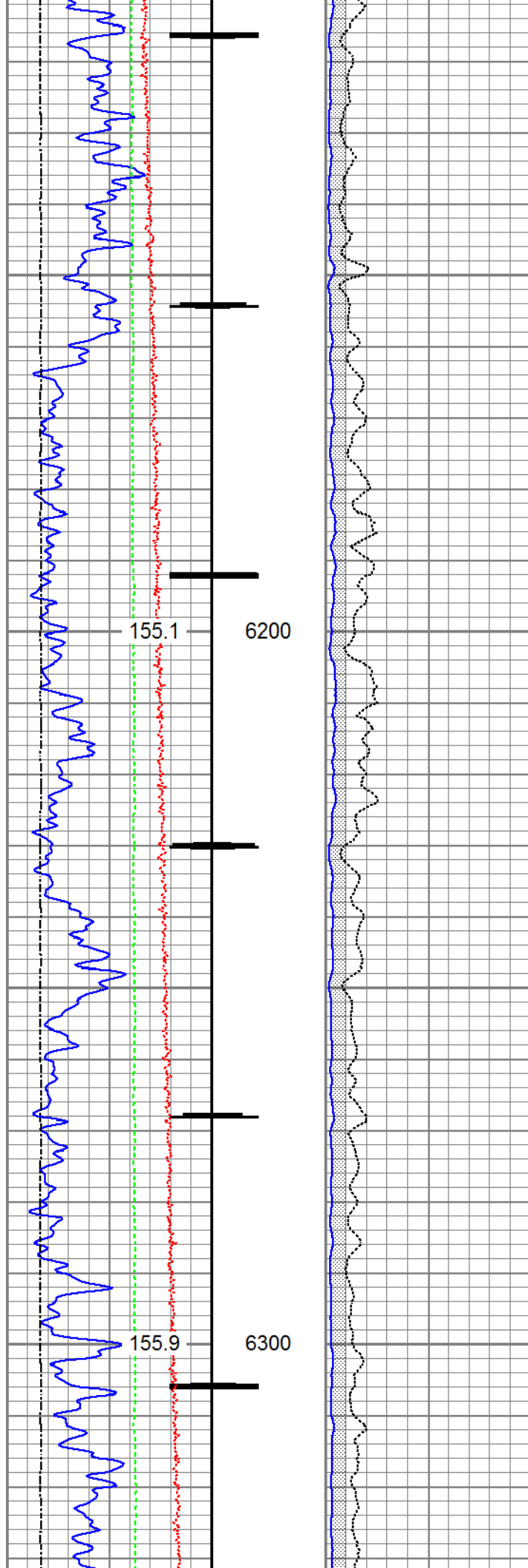


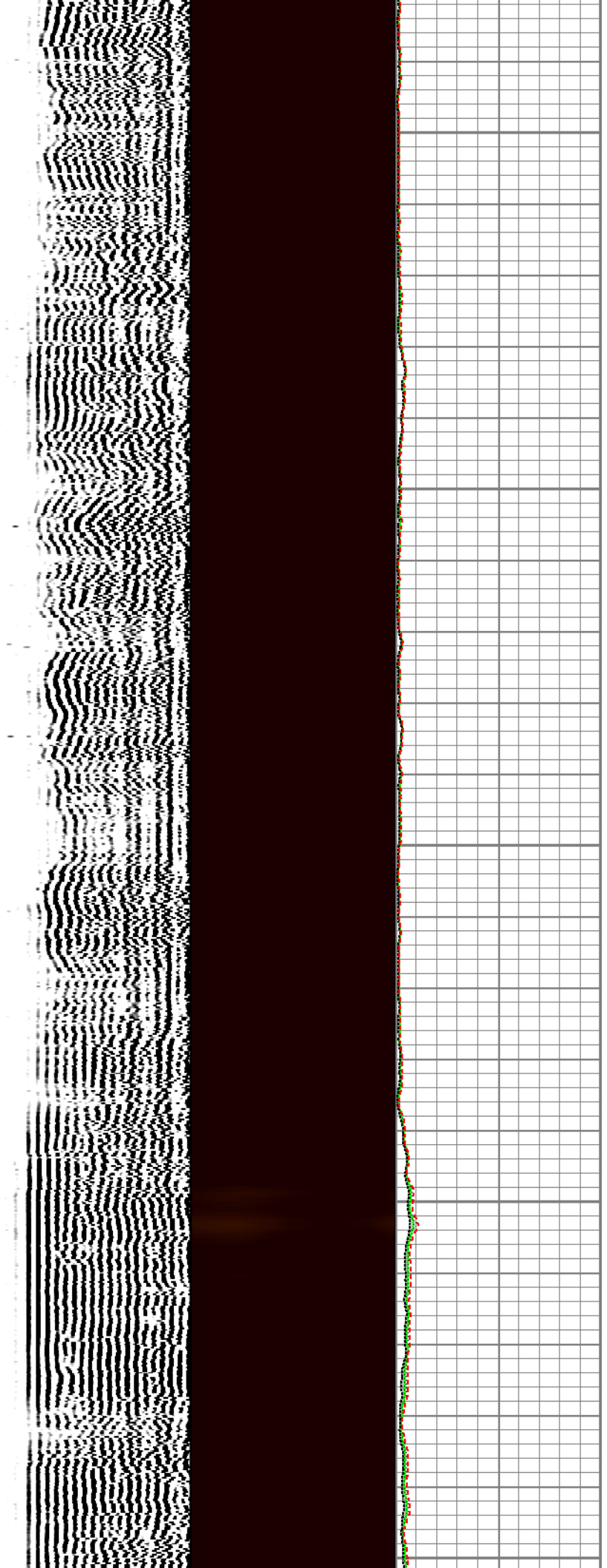
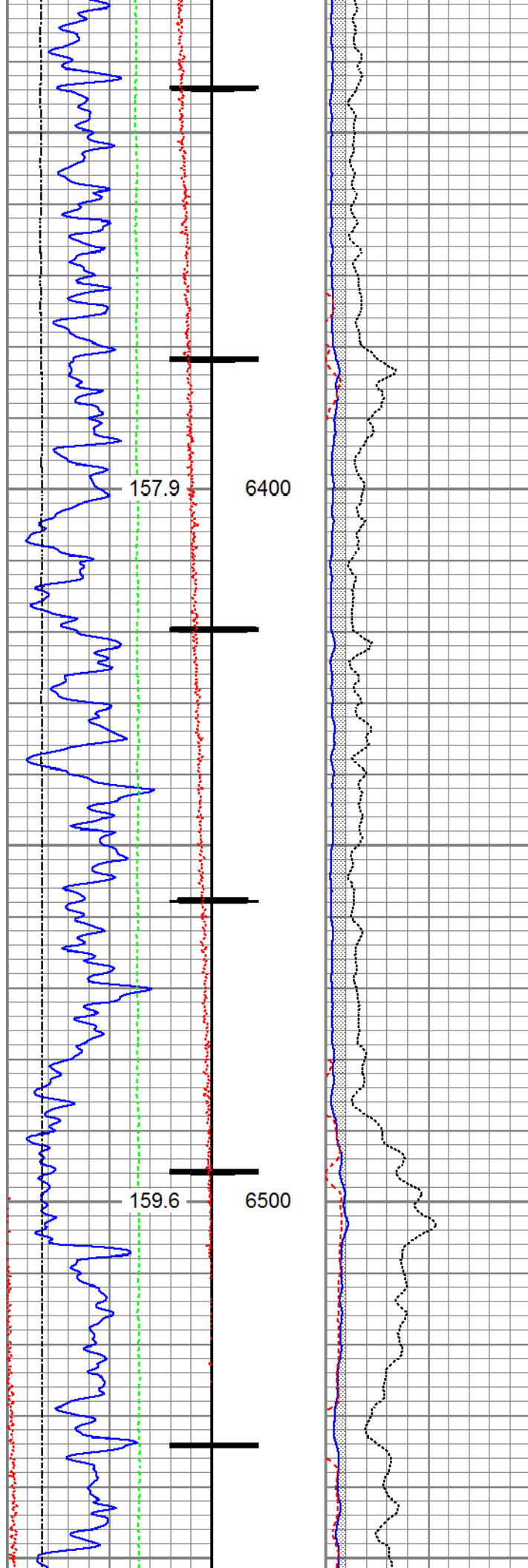


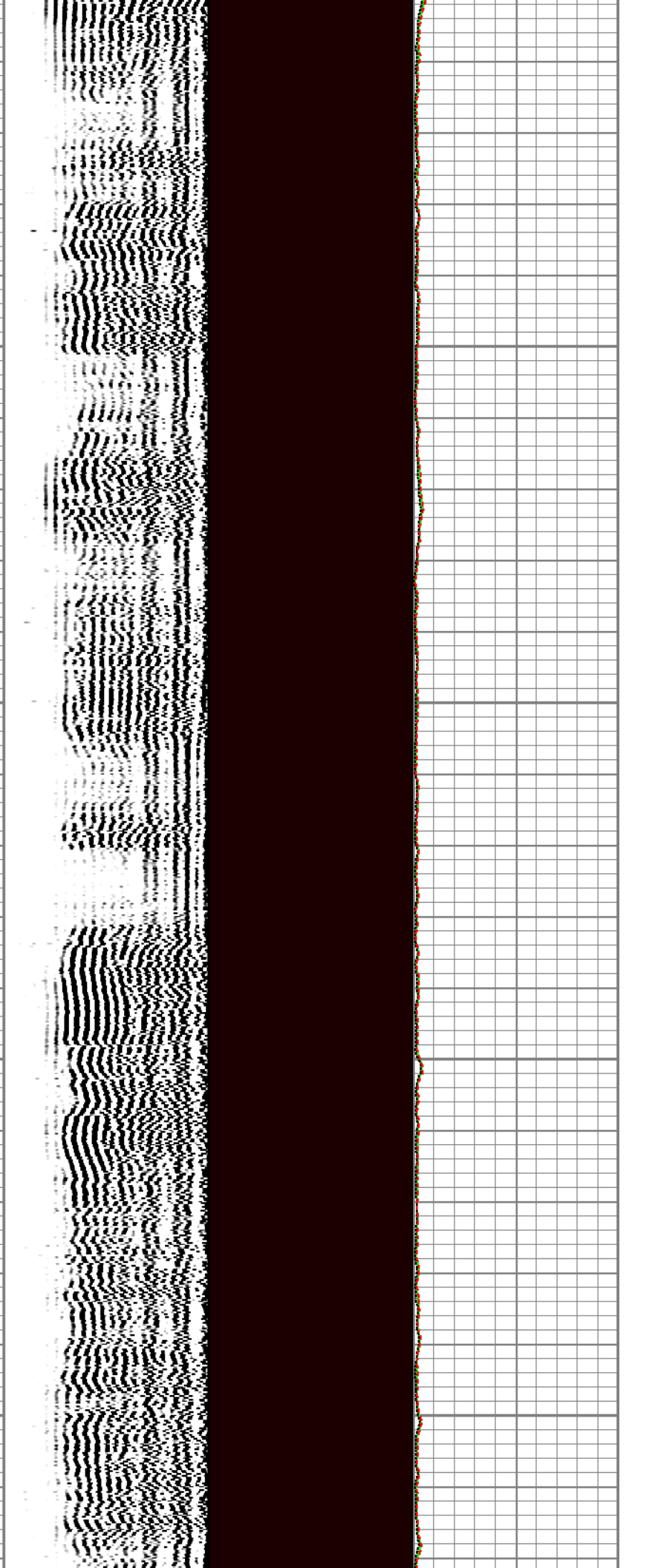
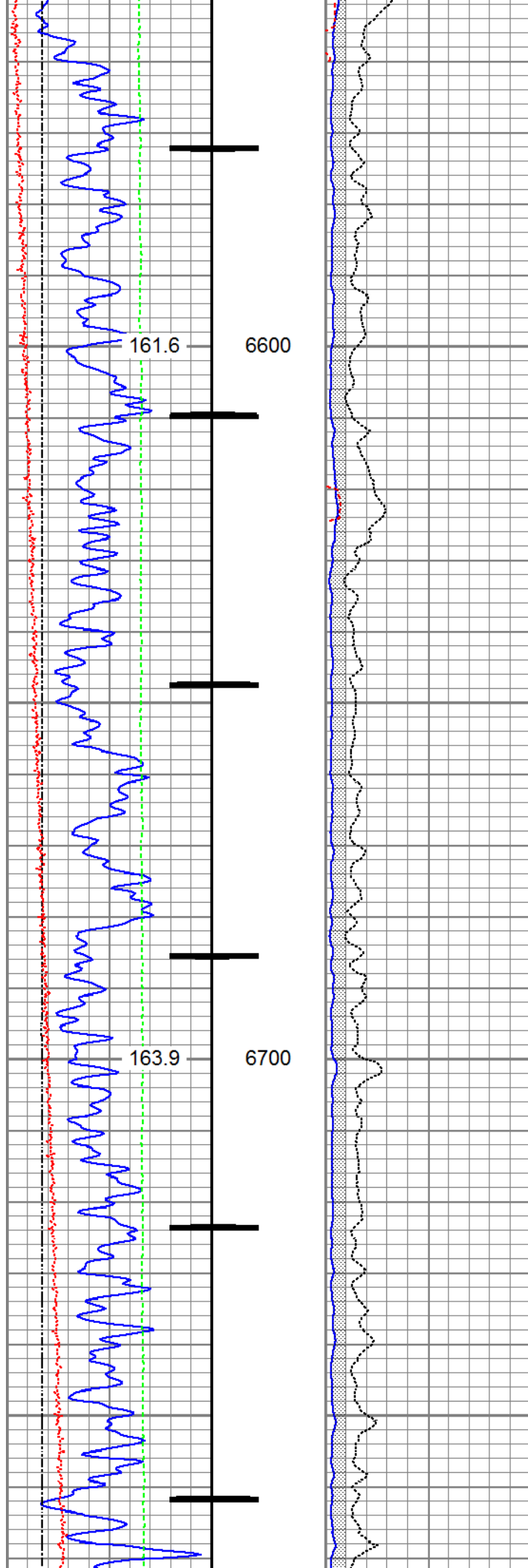


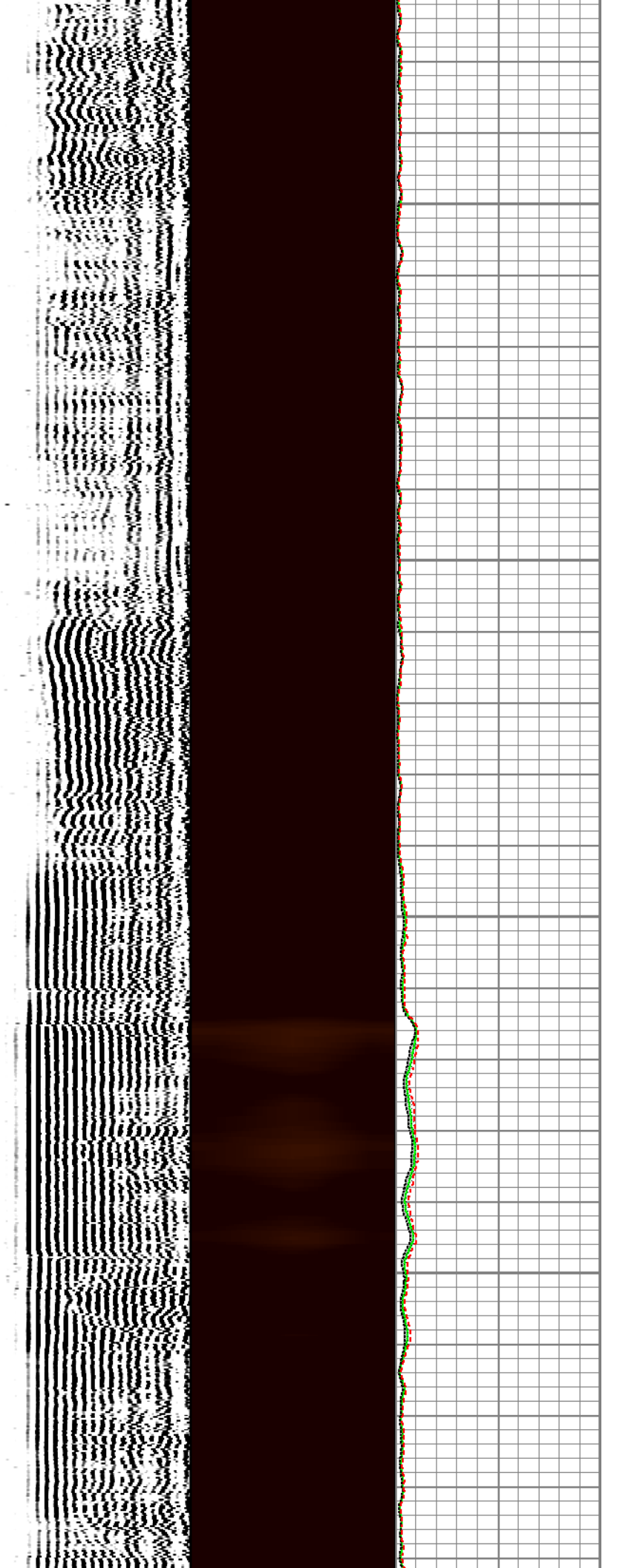
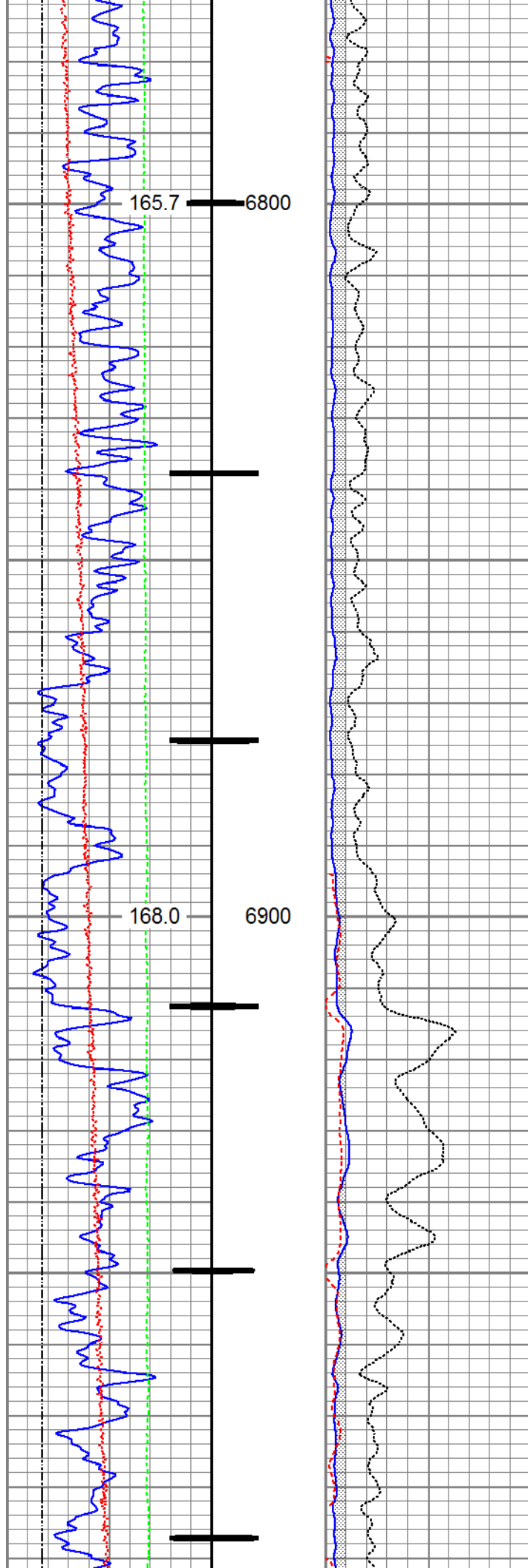


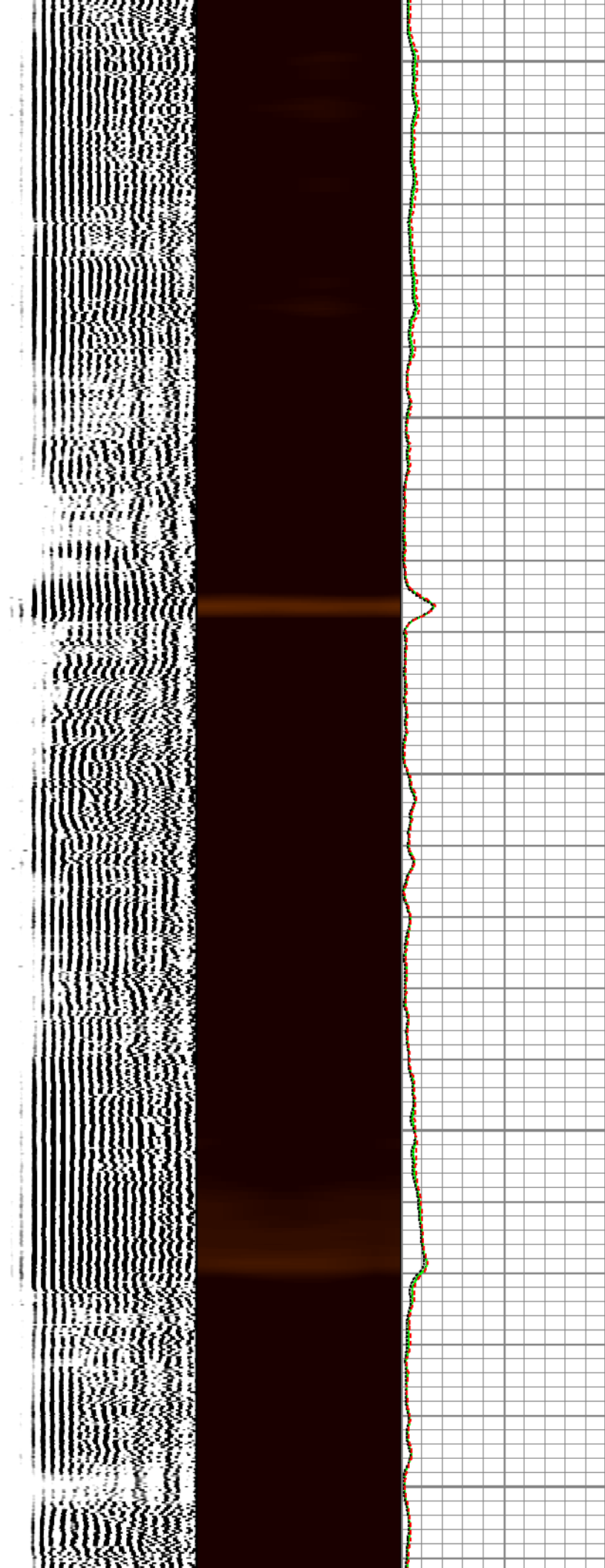
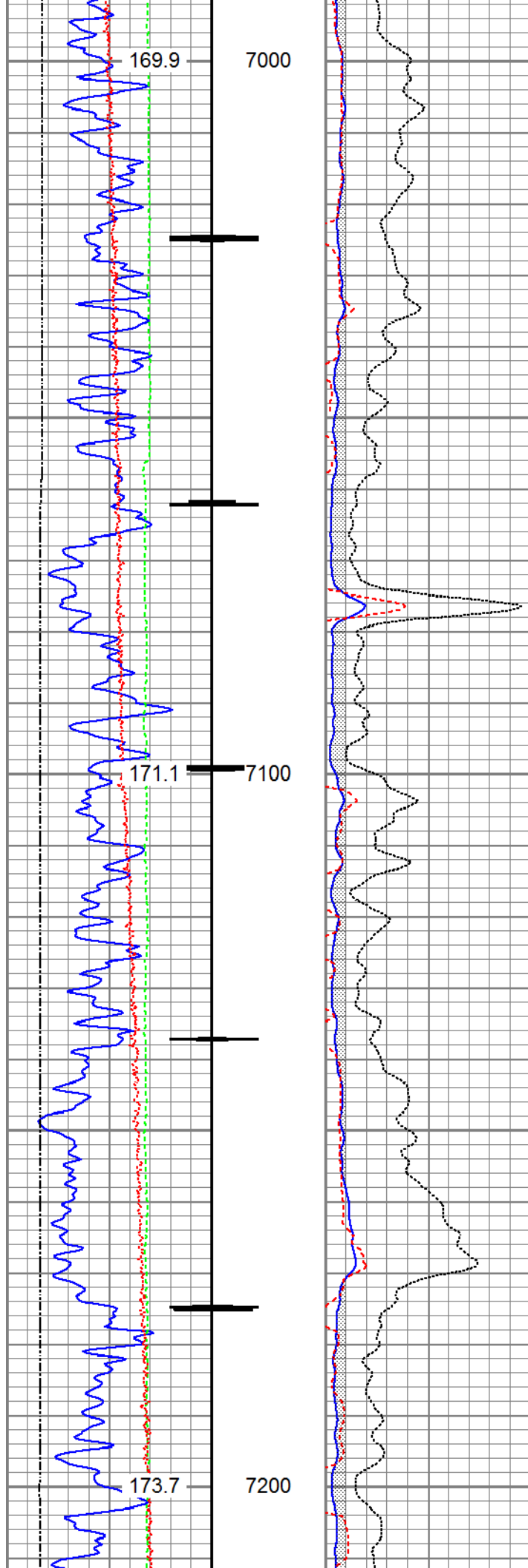


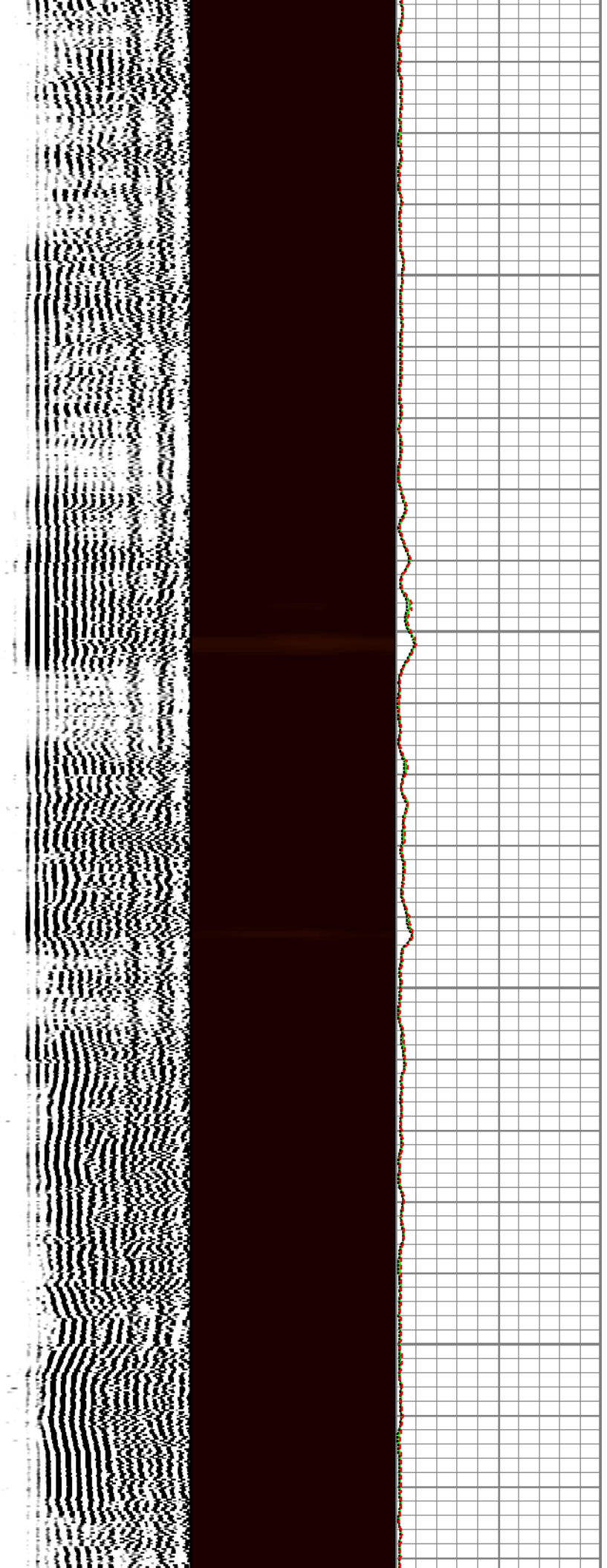
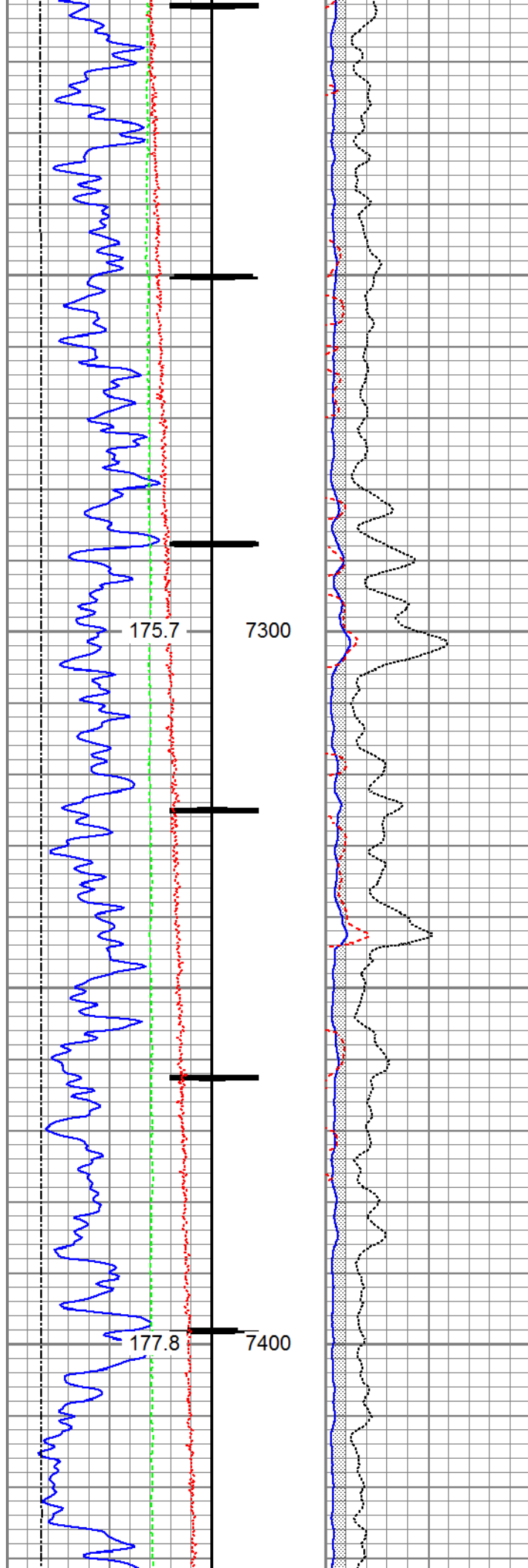


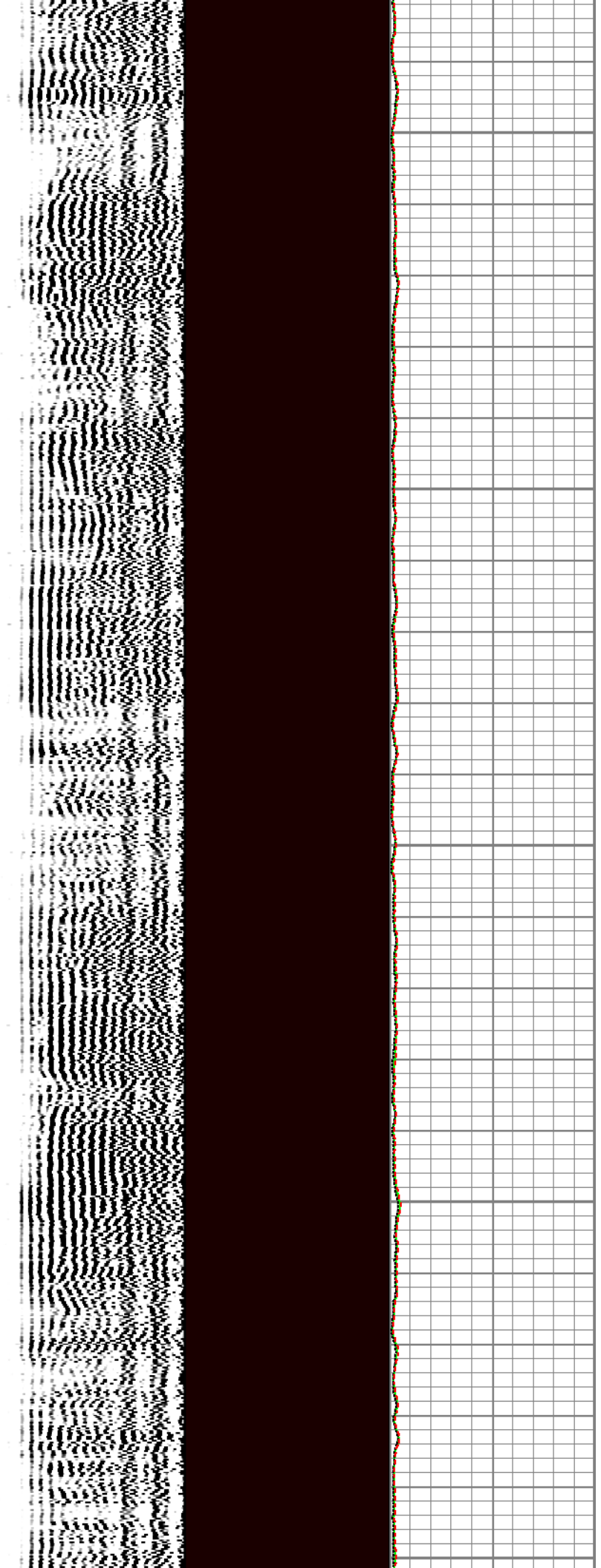
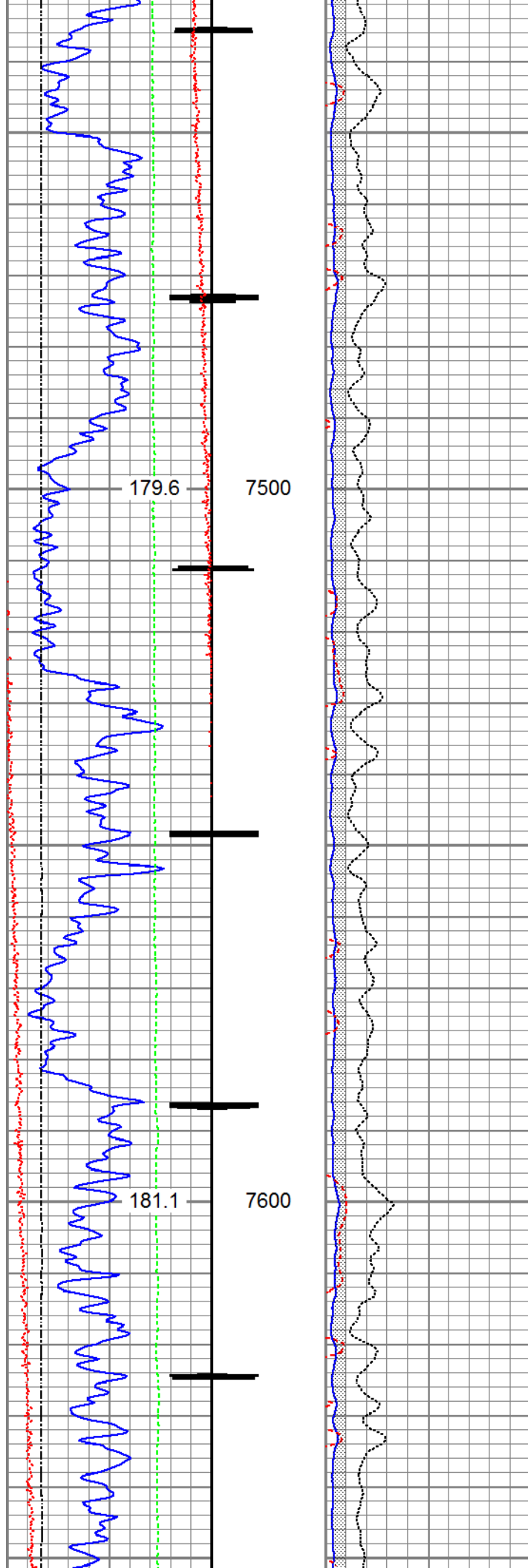


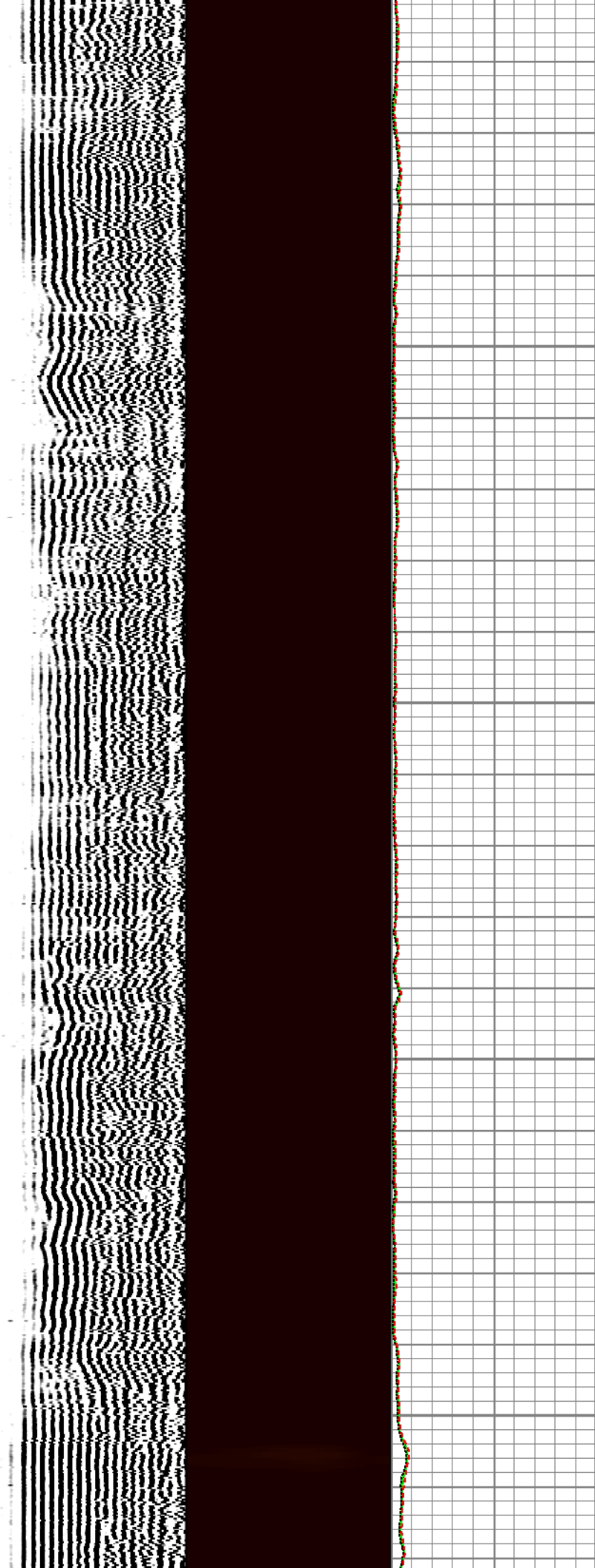
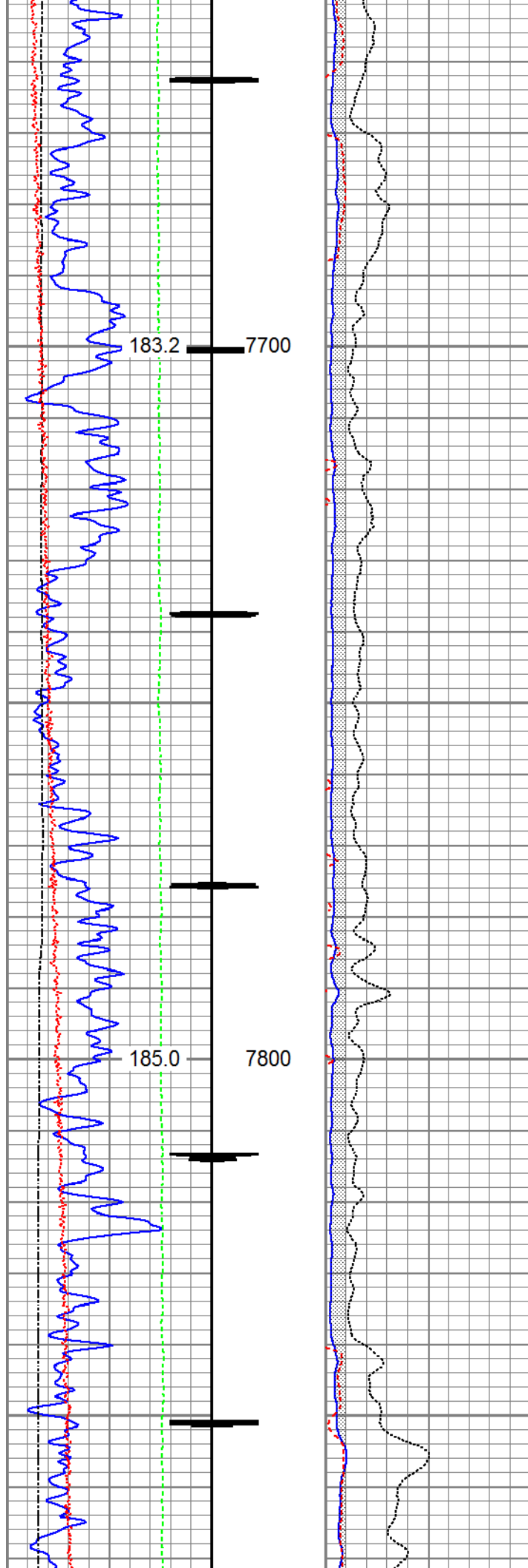


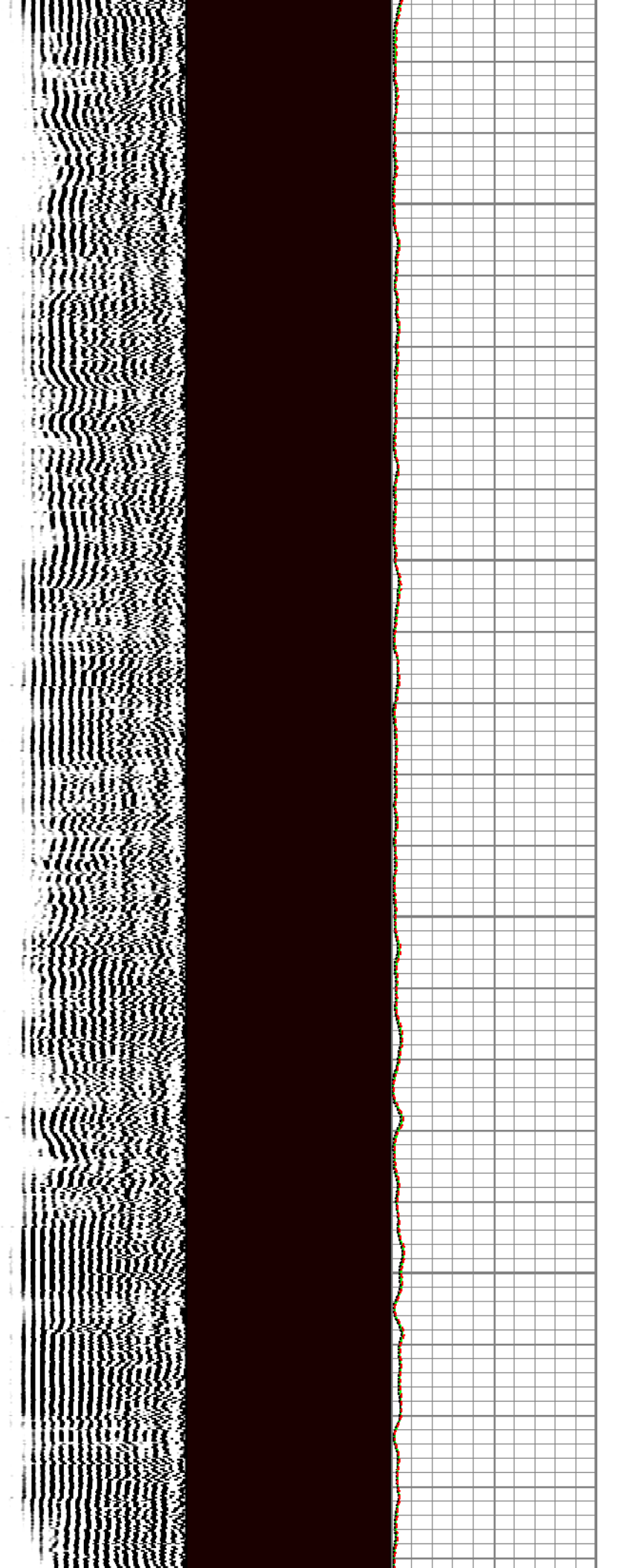
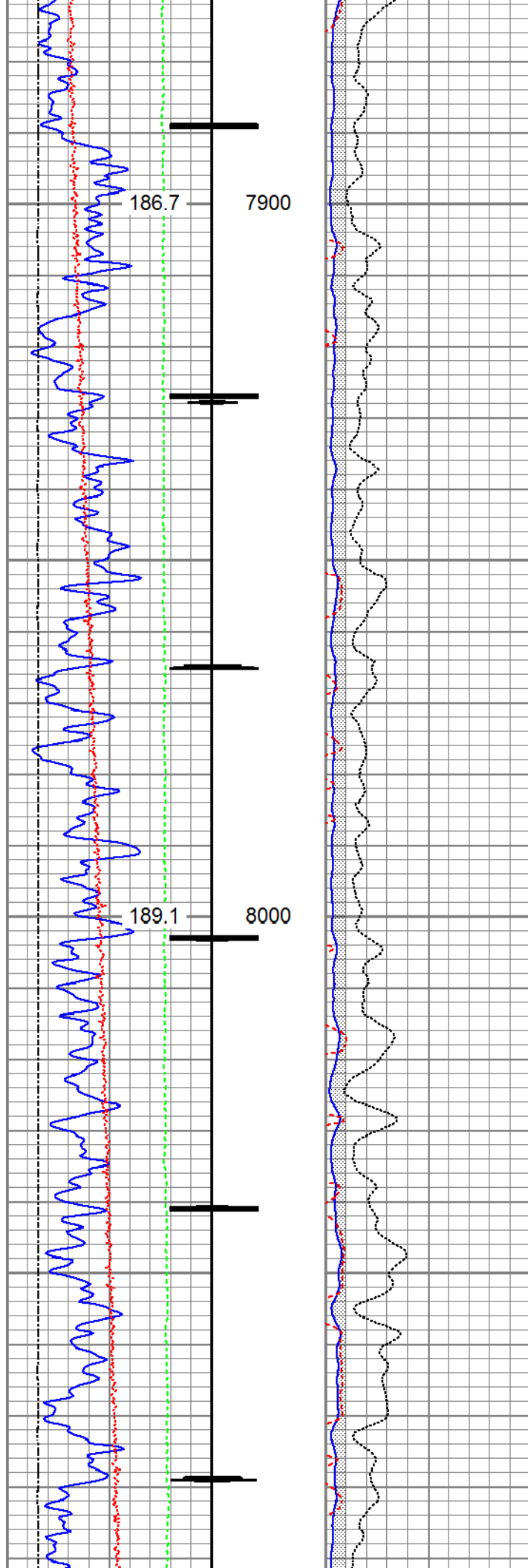


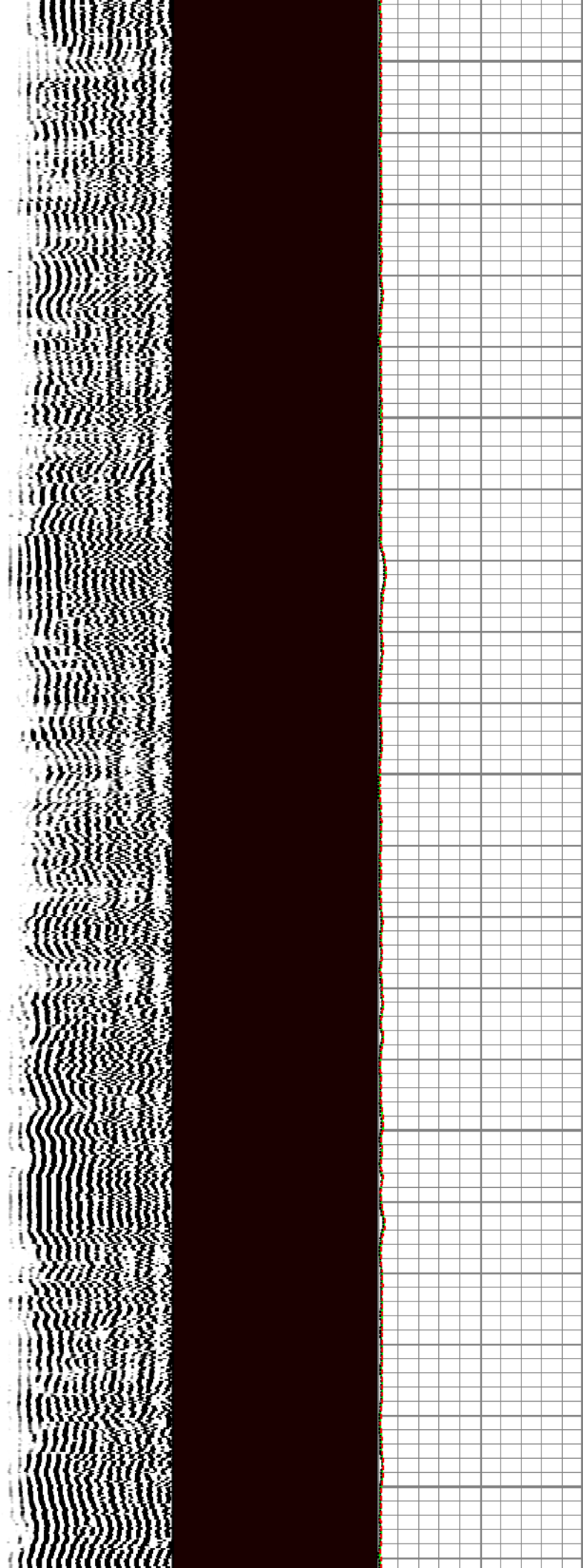
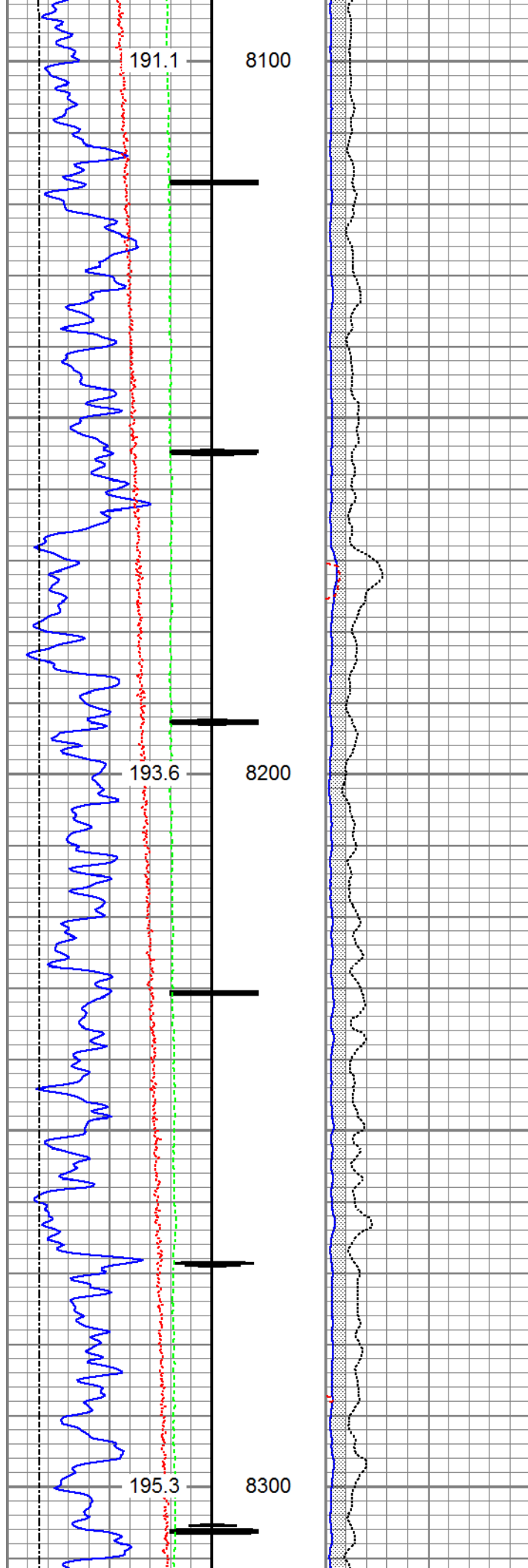


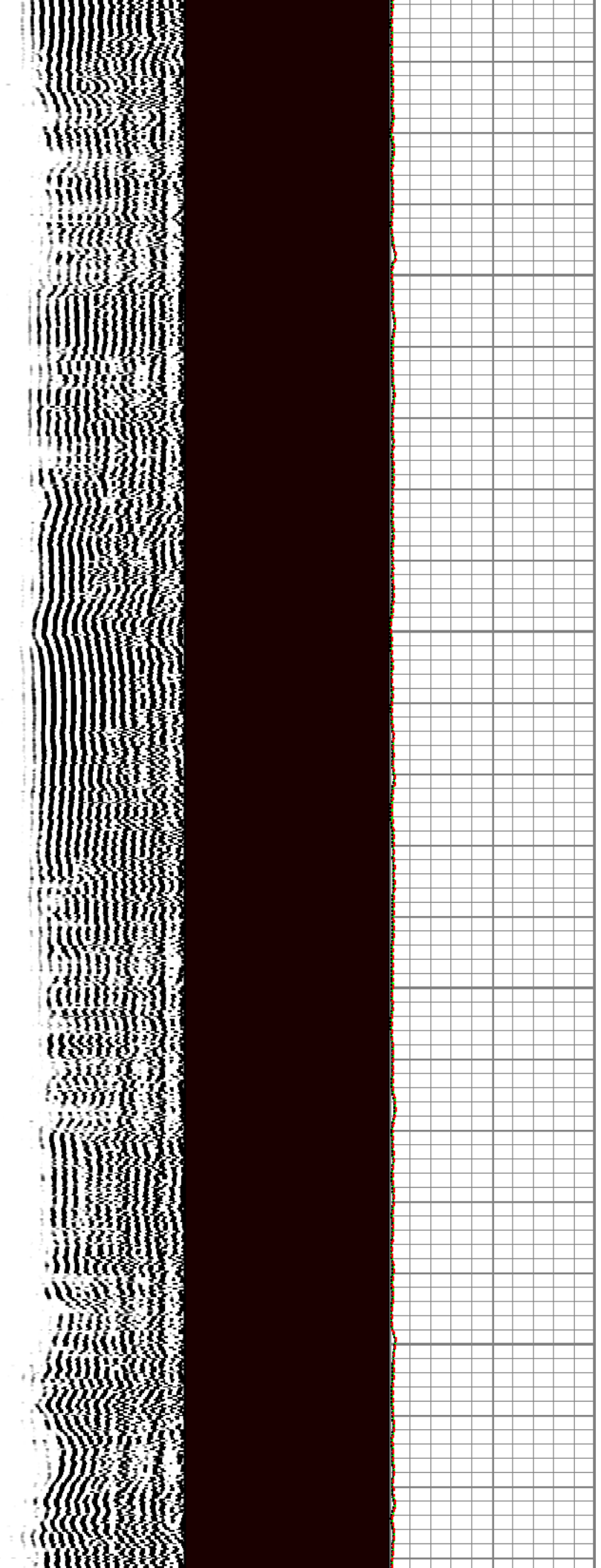
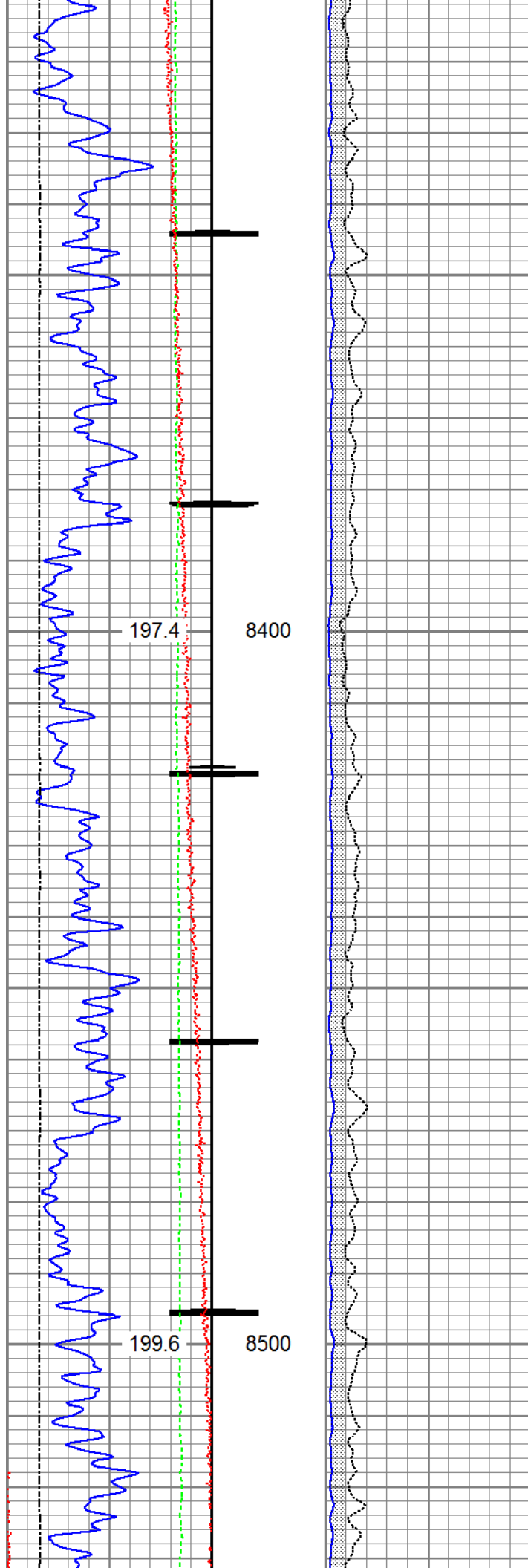


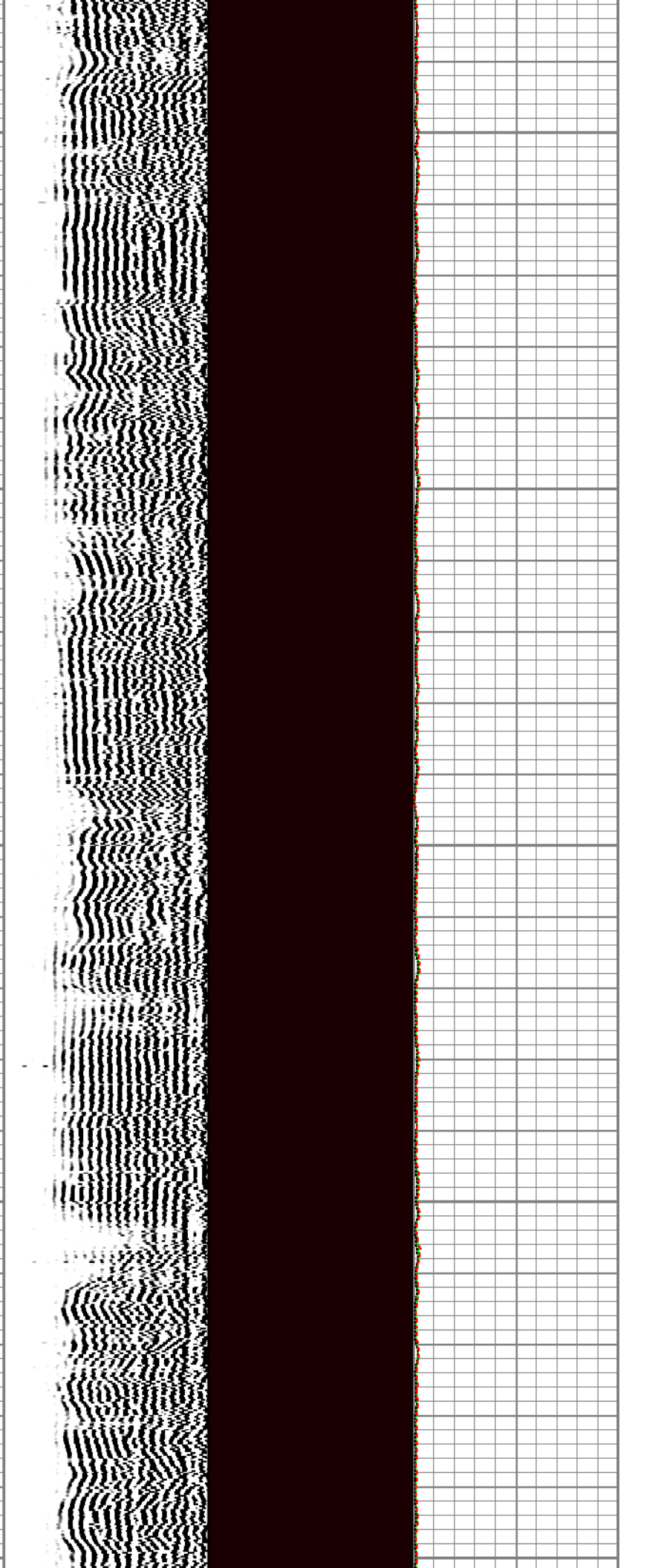
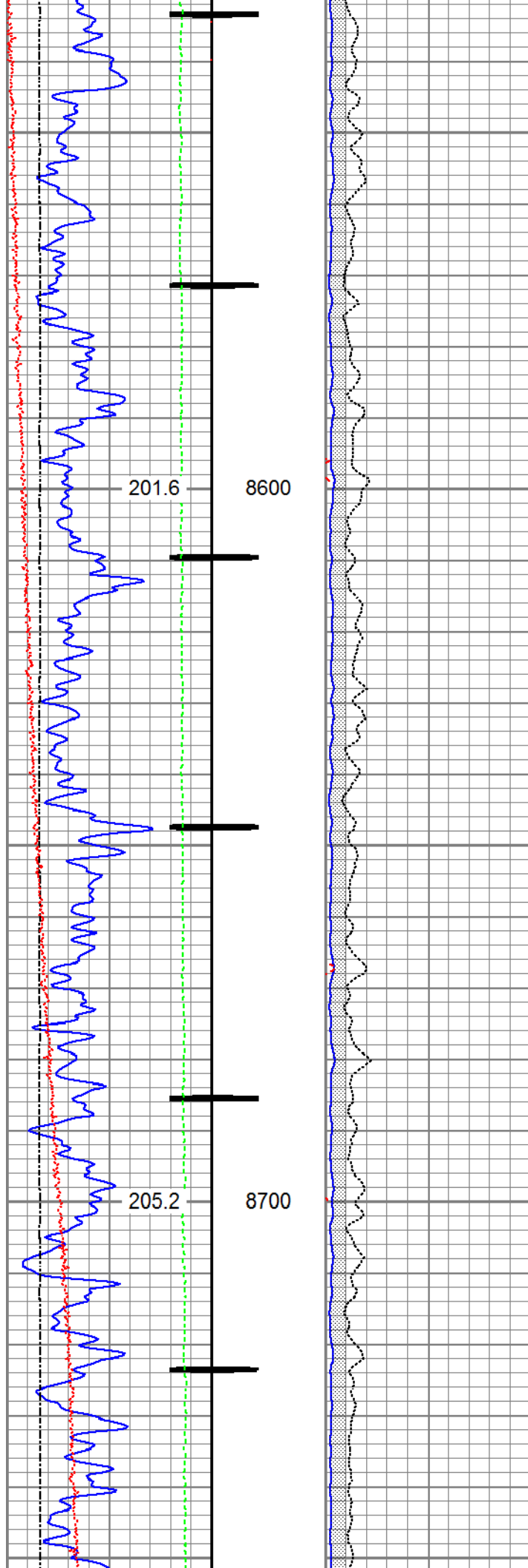


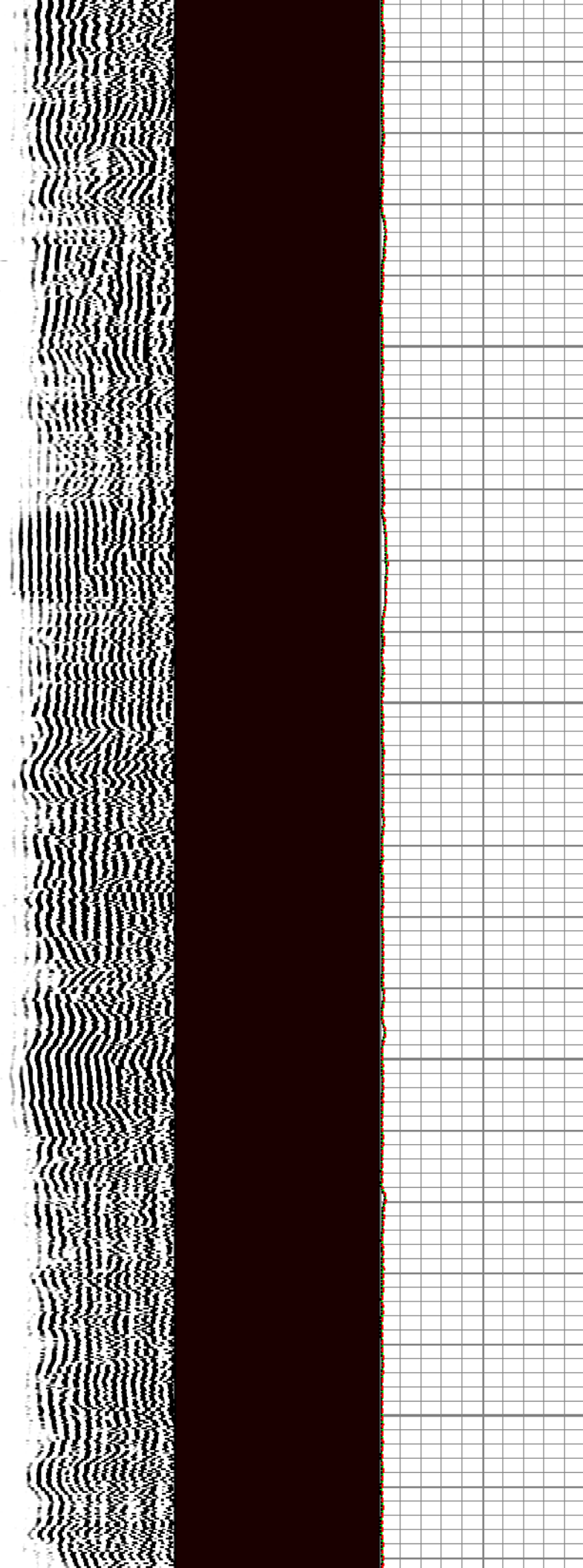
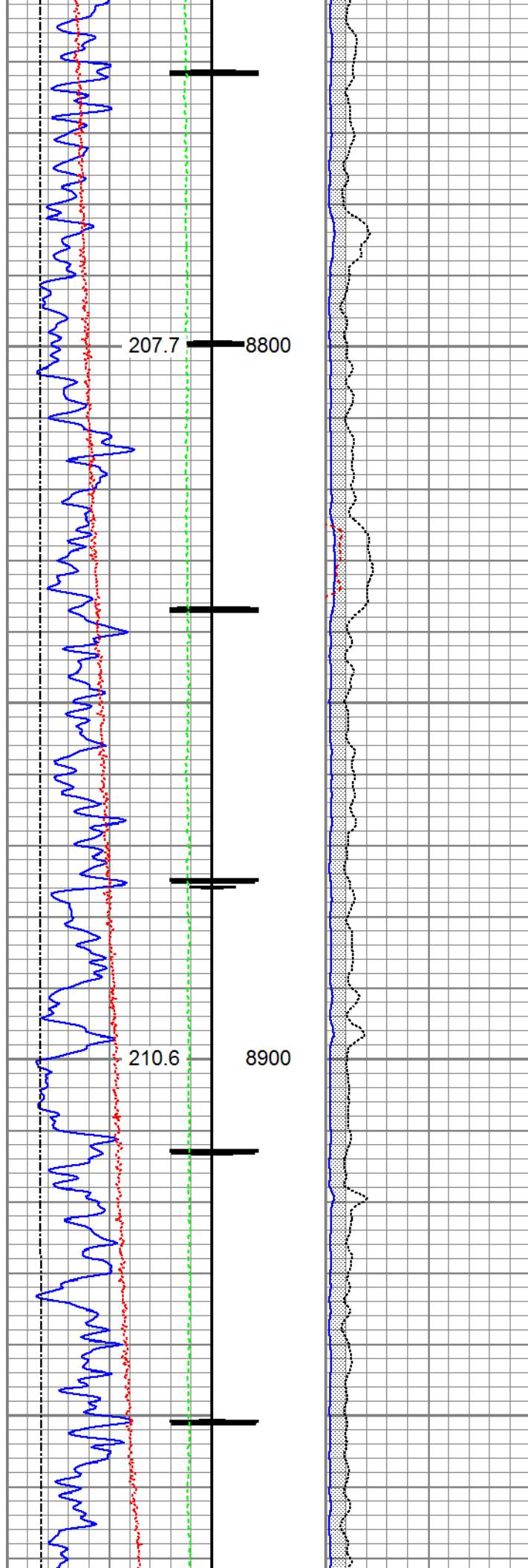


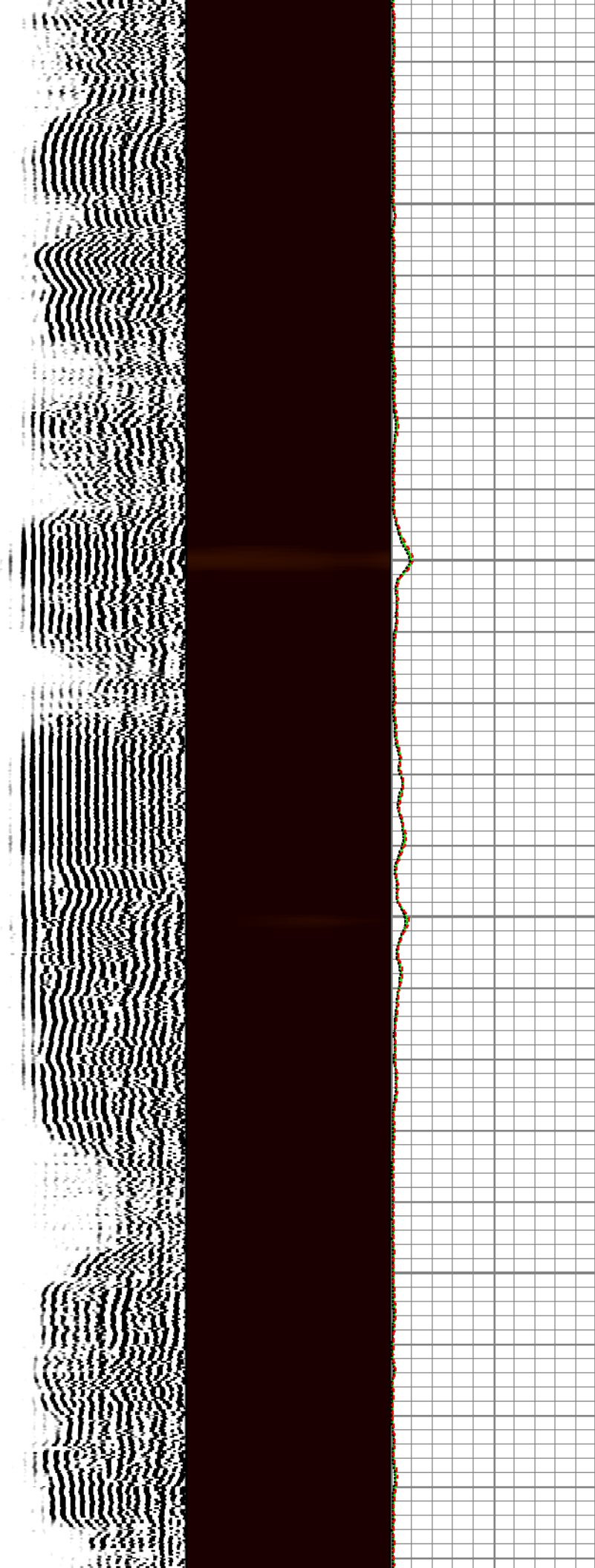
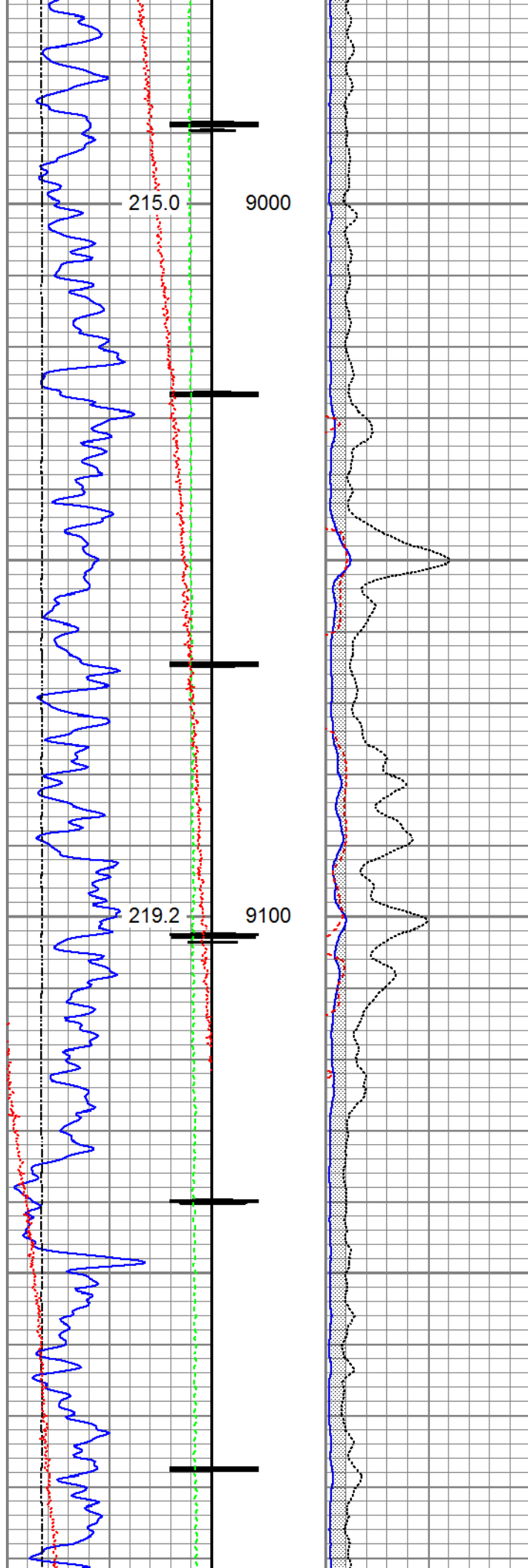


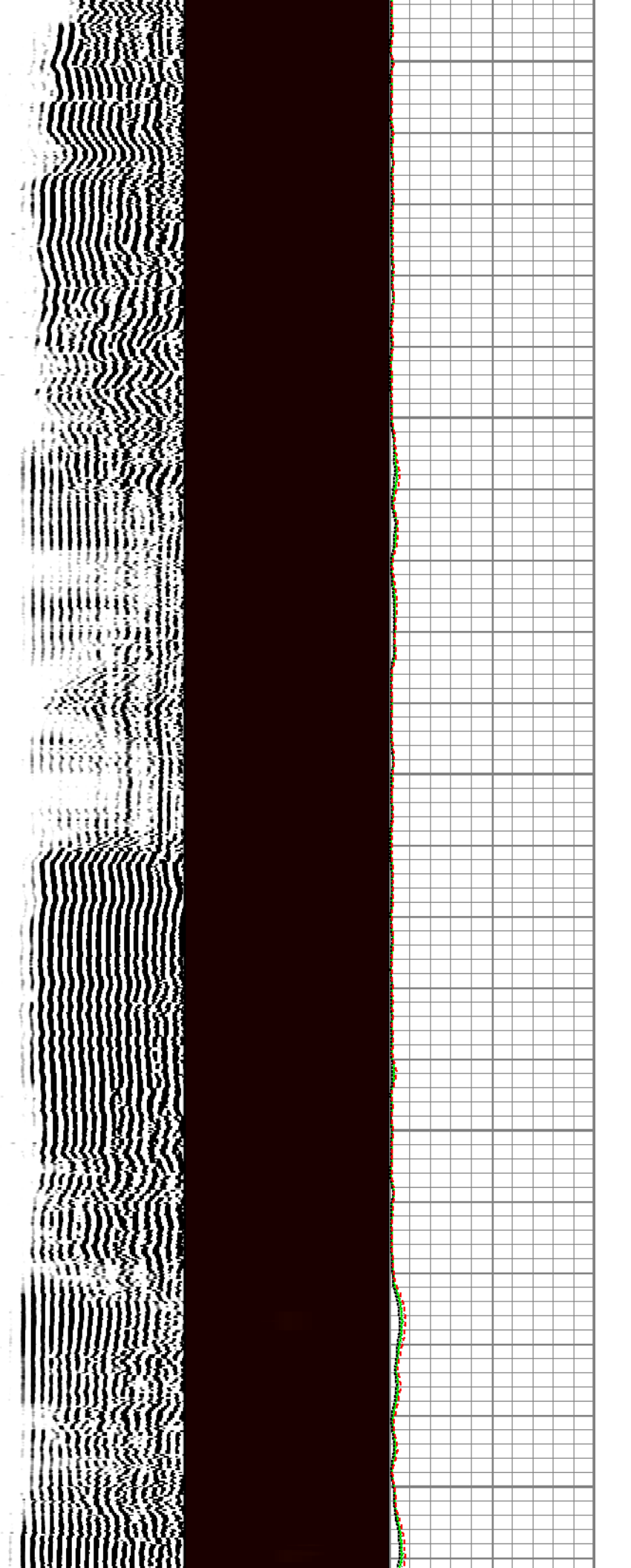
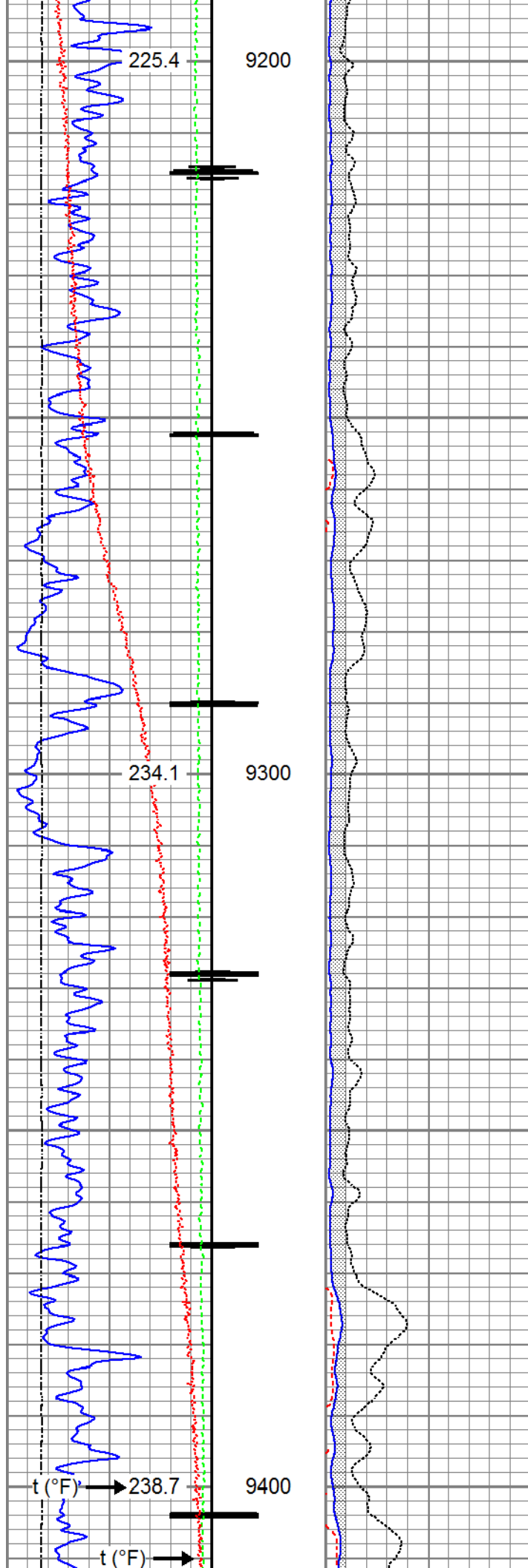


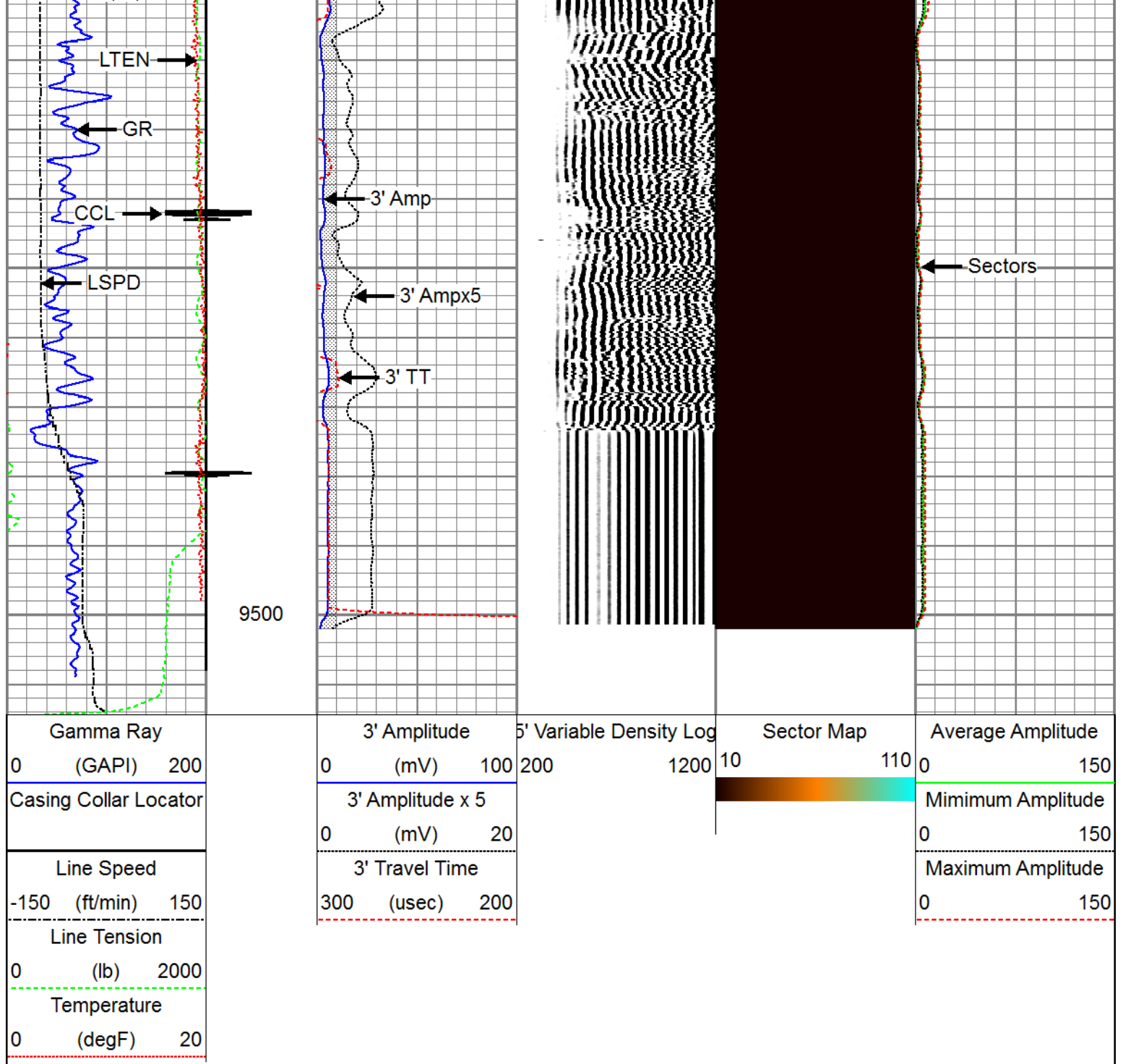








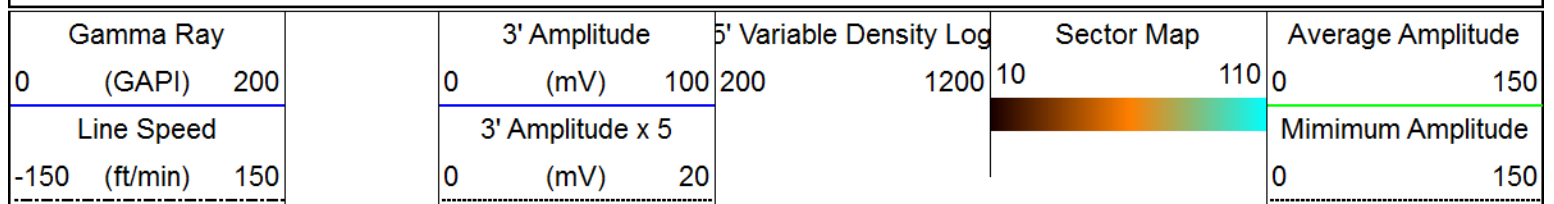




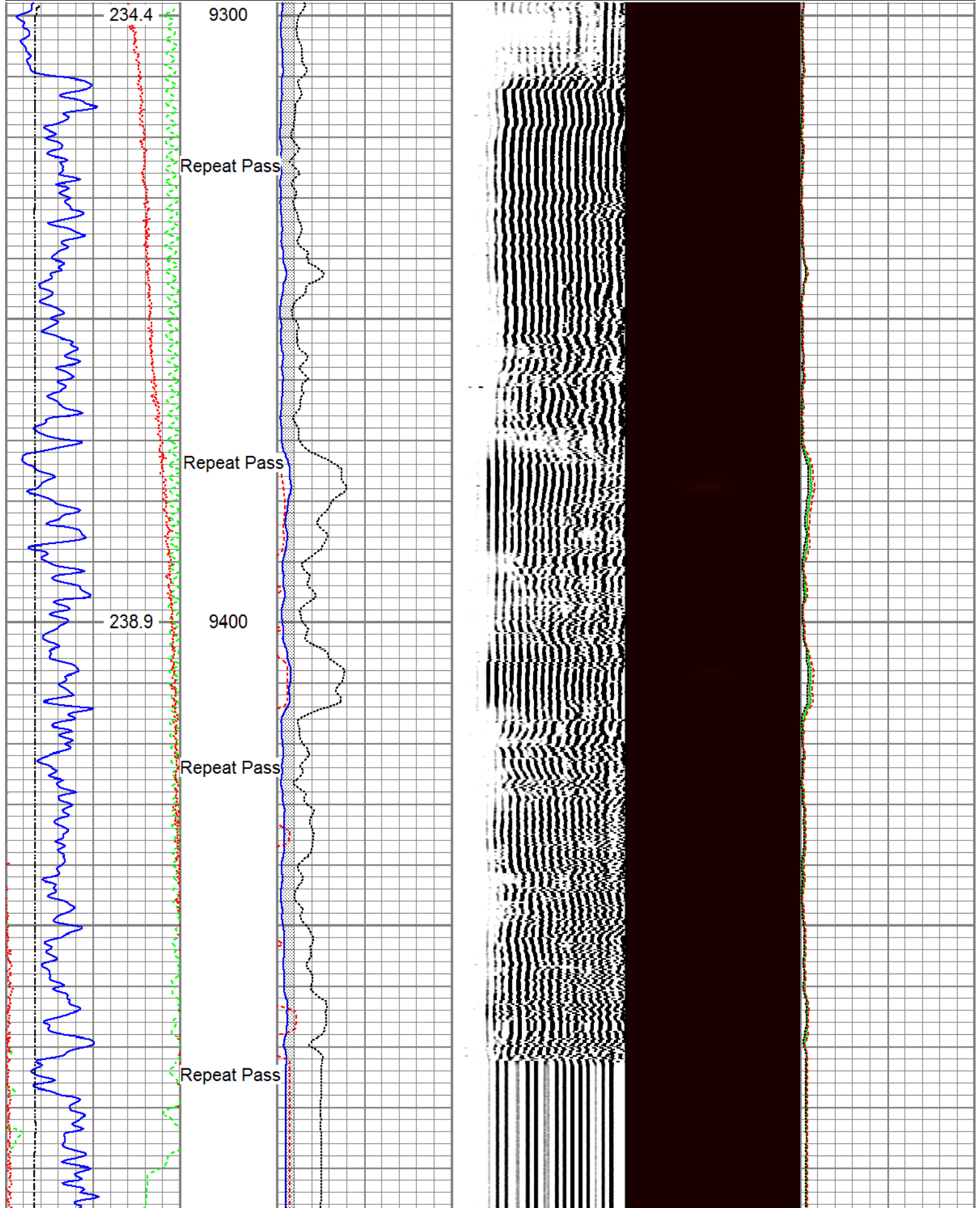
Repeat Pass

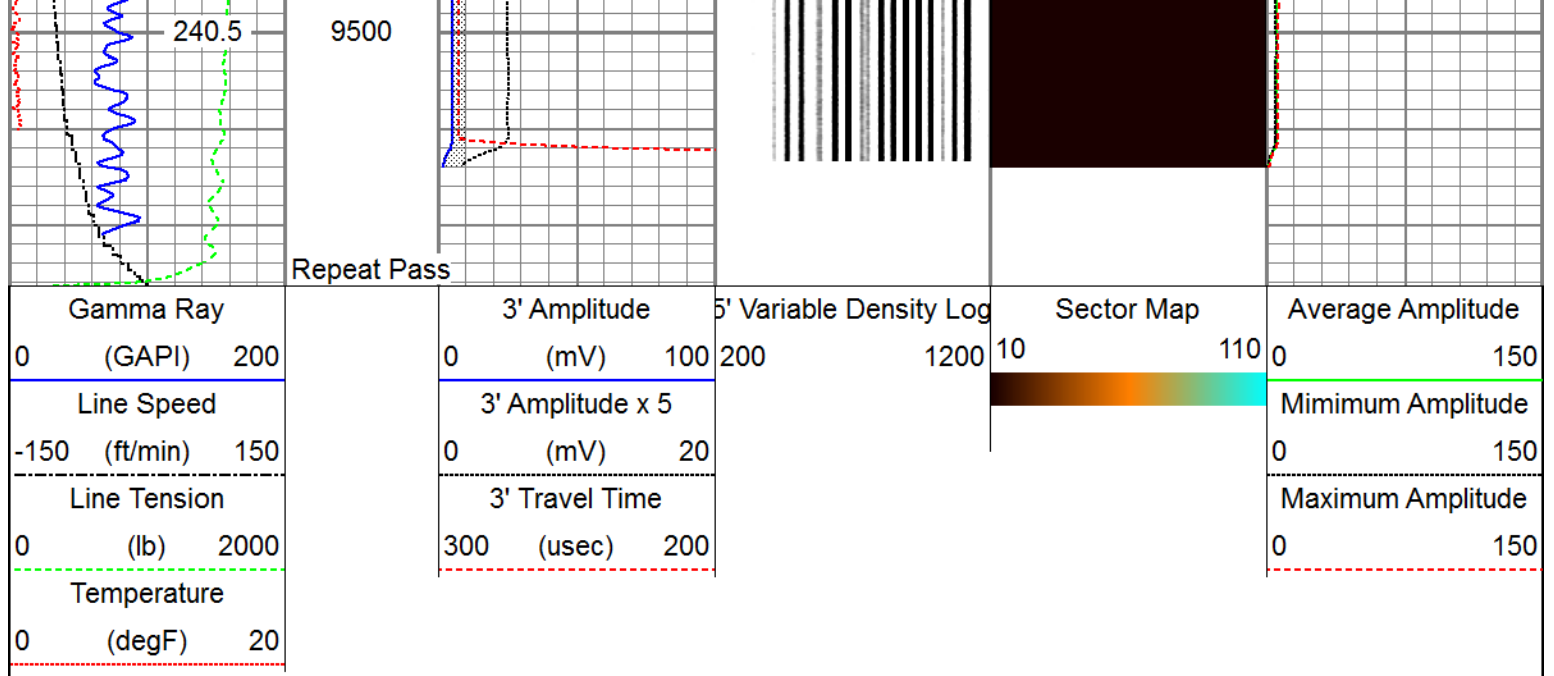
Recorded with 0 PSI Surface Induced Pressure

Database File tep_youberg sr 31-12_rbl_07-05-17\processed_tep_youberg sr 31-12_rbl_07-05-17.db
 Dataset Pathname pass2
 Presentation Format ros_rbt004_tep
 Dataset Creation Wed Jul 05 14:59:20 2017
 Charted by Depth in Feet scaled 1:240

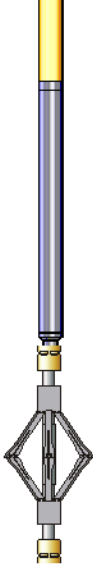


Line Tension			3' Travel Time			Maximum Amplitude		
0	(lb)	2000	300	(usec)	200	0		150
Temperature								
0	(degF)	20						





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					
WVFS8	13.88		Probe_RADII-C-P_RBT_2750 (FW1305-09) 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
WVFS7	13.88					
WVFS6	13.88					
WVFS5	13.88					
WVFS4	13.88					
WVFS3	13.88					
WVFS2	13.88					
WVFS1	13.88					
WVFCAL	13.88					
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 (FW1211-4.54) 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 31-12_RBL_07-05-17.db: field/well/run1/pass4 Total length: 22.40 ft Total weight: 261.40 lb O.D.: 2.75 in						

Calibration Report	
Database File	C:\ProgramData\Warrior\Data\TEP_Youberg SR 31-12_RBL_07-05-17\PROCESSED_TEP_Youberg
Dataset Pathname	pass4
Dataset Creation	Wed Jul 05 15:04:41 2017

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:	24.030	ft

Master Calibration, performed Wed Jul 05 14:16:12 2017:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.006	0.725	0.800	81.196	110.026	1.447
CAL	-0.006	0.741				
5'	-0.003	0.669	0.800	81.196	119.612	1.123
SUM						
S1	-0.009	0.727	0.000	100.000	135.944	1.225
S2	-0.006	0.725	0.000	100.000	136.834	0.755
S3	-0.006	0.718	0.000	100.000	138.227	0.780
S4	-0.004	0.723	0.000	100.000	137.618	0.501

S5	-0.003	0.723	0.000	100.000	137.734	0.407
S6	-0.005	0.724	0.000	100.000	137.134	0.740
S7	-0.002	0.715	0.000	100.000	139.481	0.271
S8	-0.002	0.722	0.000	100.000	138.248	0.250

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	-0.006	0.741	1.000	0.000

Air Zero Calibration, performed Wed Jul 05 14:16:55 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	-0.006		0.000		0.000	
5'	-0.003		0.000		-0.000	
SUM						
S1	-0.009		0.000		-0.000	
S2	-0.006		0.000		0.000	
S3	-0.006		0.000		0.000	
S4	-0.004		0.000		0.000	
S5	-0.003		0.000		0.000	
S6	-0.006		0.000		0.000	
S7	-0.002		0.000		0.000	
S8	-0.002		0.000		0.000	



Company TEP Rocky Mountain LLC
Well Youberg SR 31-12
Field Rulison
County Garfield
State Colorado