



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Powers 14N-22HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:	Company	Kerr-McGee Oil & Gas Onshore, L.P.	
	Well	Powers 14N-22HZ	
	Field	Wattenberg	
	County	Weld	State
AP1 # : 05-123-41908	Other Services		
	Gauge Ring		
	Elevation		
	K.B. 4904'		
Permanent Datum	Ground Level	Elevation	4884'
	Log Measured From	Kelly Bushing	20 FT
Drilling Measured From	Kelly Bushing		
			G.L. 4884'

Date	08-DEC-2015		
Run Number	One		
Depth Driller	12739 FT		
Depth Logger	7404 FT		
Bottom Logged Interval	7399 FT		
Top Log Interval	Surface		
Open Hole Size	7.875"		
Type Fluid	Water		
Density / Viscosity	8.34 lbm/gal		
Max. Recorded Temp.	239°F		
Estimated Cement Top	Surface		
Time Well Ready	ROA		
Time Logger on Bottom	2:16 P.M.		
Equipment Number	HD-0325		
Location	Fort Lupton, CO		
Recorded By	J. Morrison		
Witnessed By	Mario Torres		

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	36	J55	Surface	1876 FT		
Intermediate #1							
Intermediate #2	5 1/2	17	HCP 110	Surface	12728 FT		
Liner							
Marker Joint					6437 FT-6459 FT		

<<< 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 Casing Tally reported Marker Joint at 6437 FT
Adjusted log +5 FT to correlate with Marker Joint
Gauge Ring ran to 7404 FT
Log ran from as deep as possible in heel to surface
Log ran with 2800 PSI Surface Induced Pressure

Thank you for choosing FMC Technologies Surface Integrated Services.



Main Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File: c:\warrior\data\0512341908_anadarko_powers 14n-22hz_12-08-15_rb\0512341908_anadarko_powe

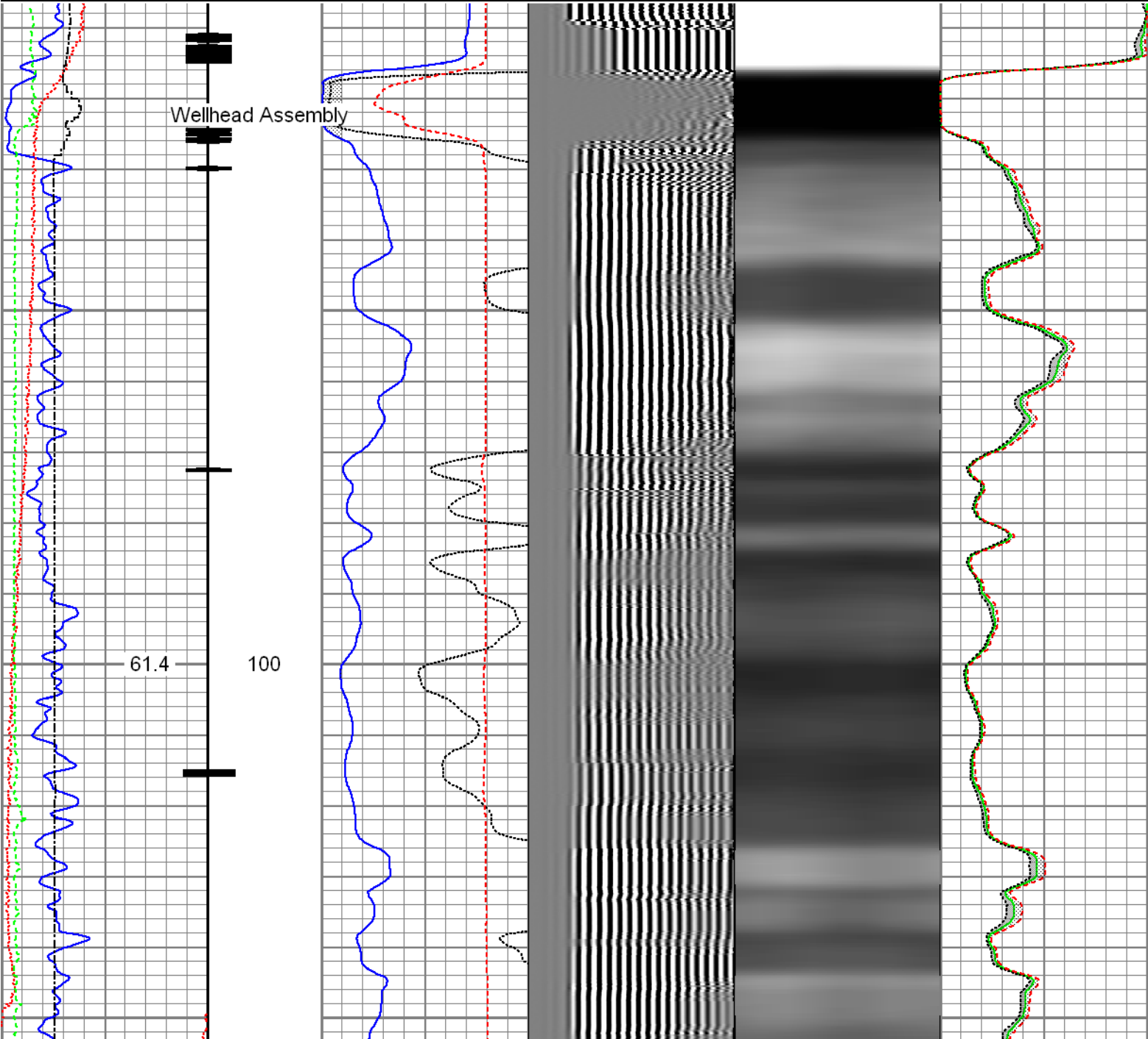
Dataset Pathname: main.1

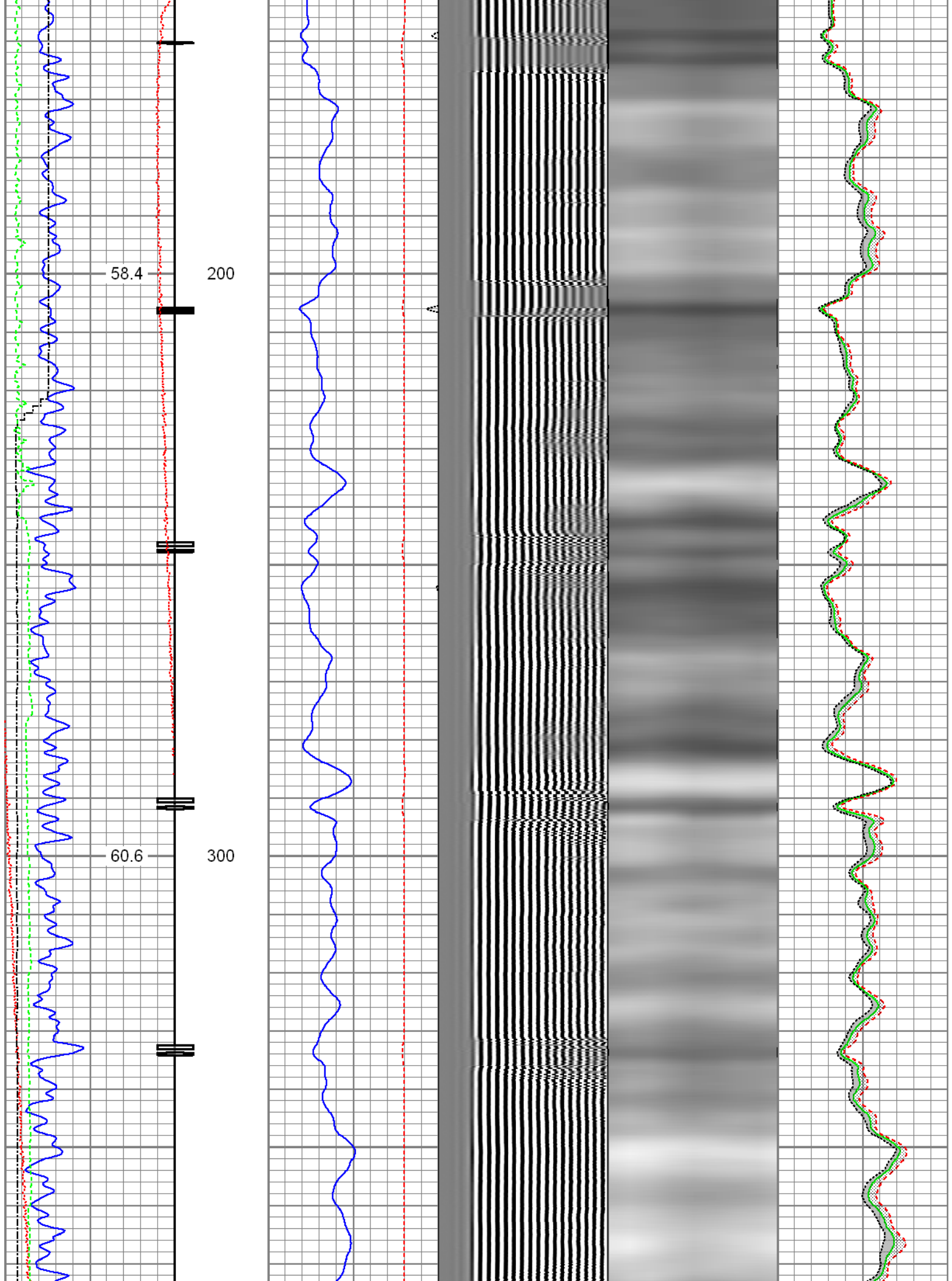
Presentation Format: radii

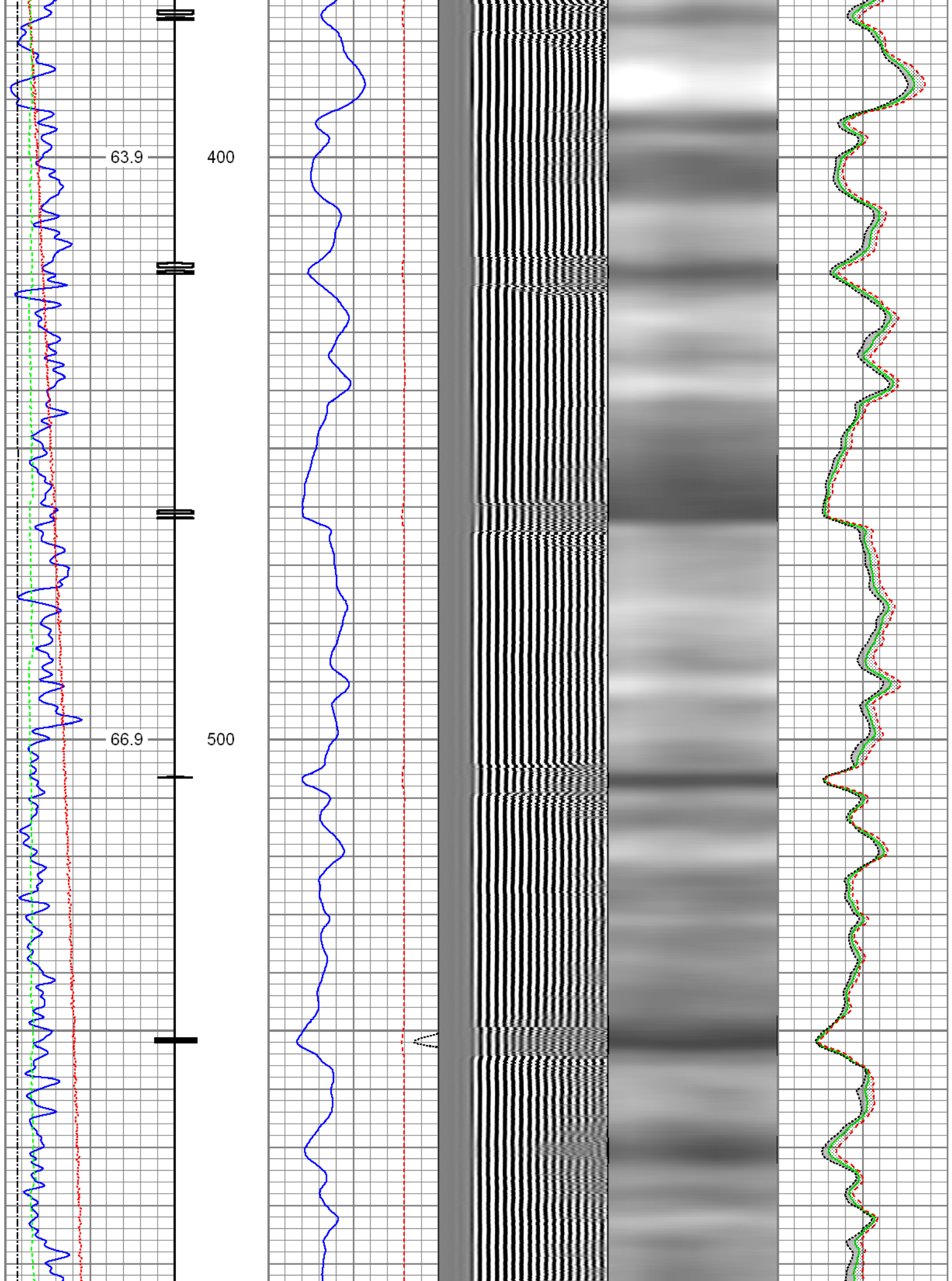
Dataset Creation: Wed Dec 09 14:56:17 2015 by Calc SCH 120430

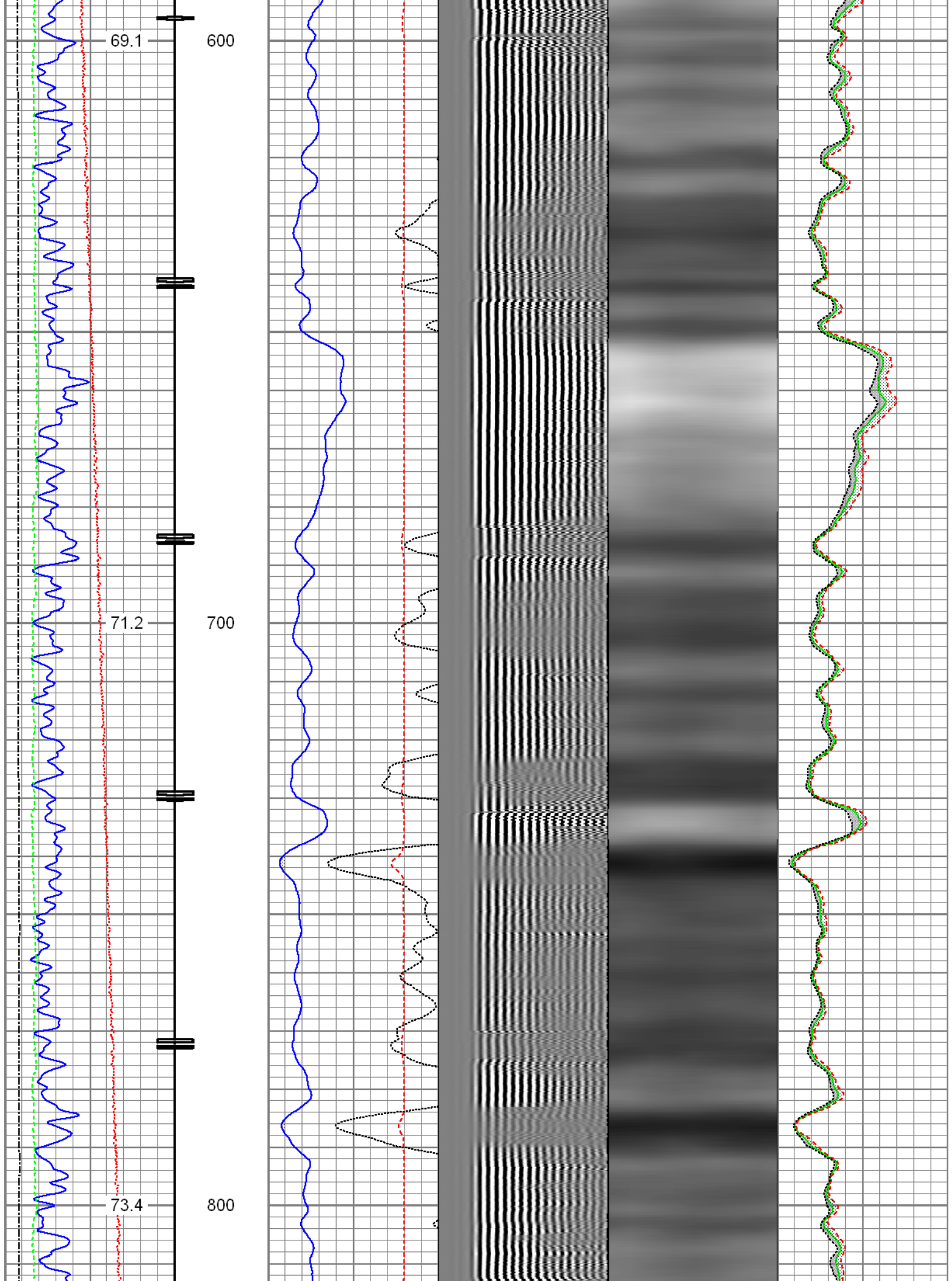
Charted by: Depth in Feet scaled 1:240

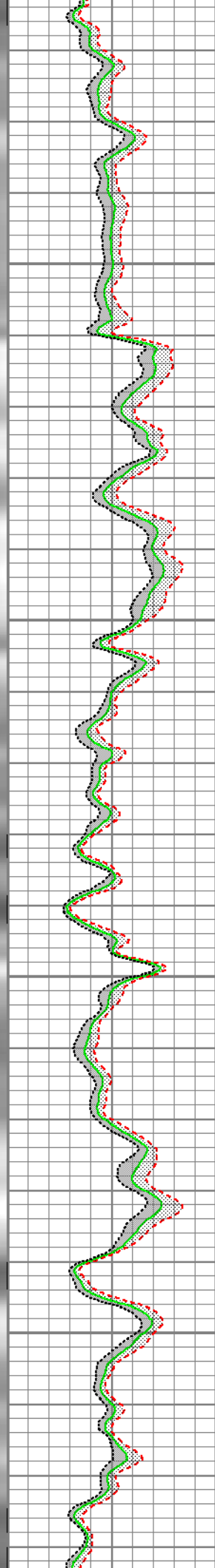
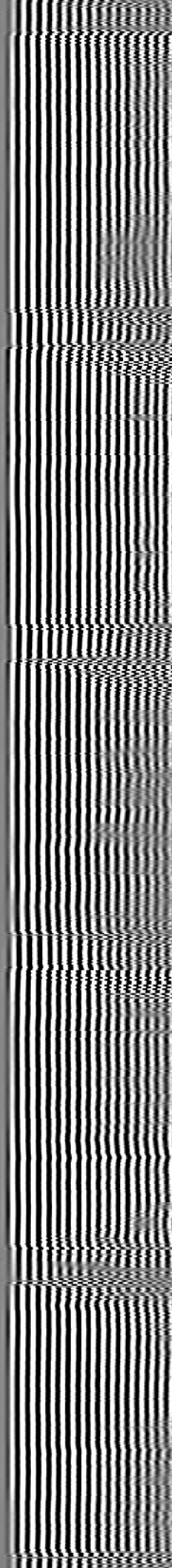
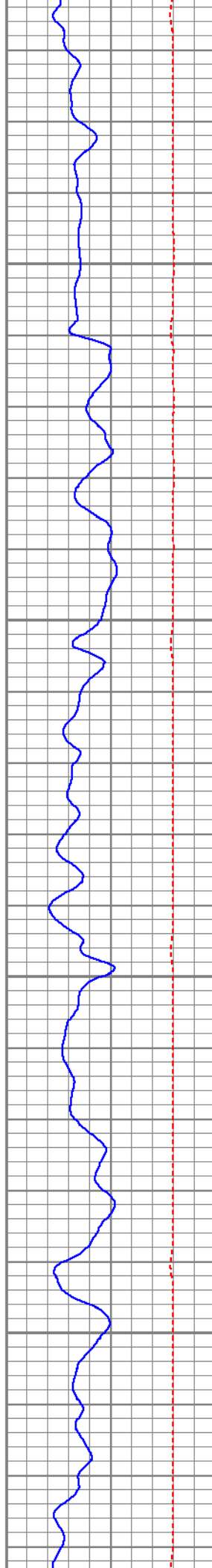
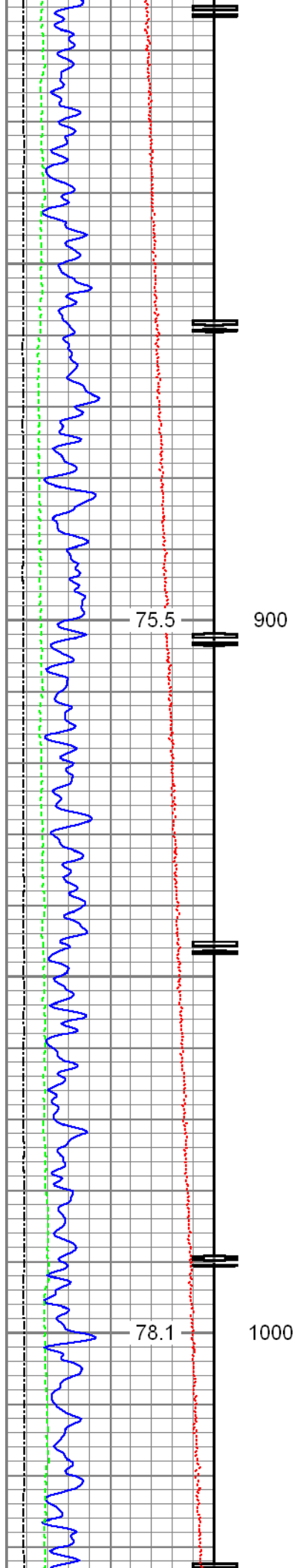
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 150	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

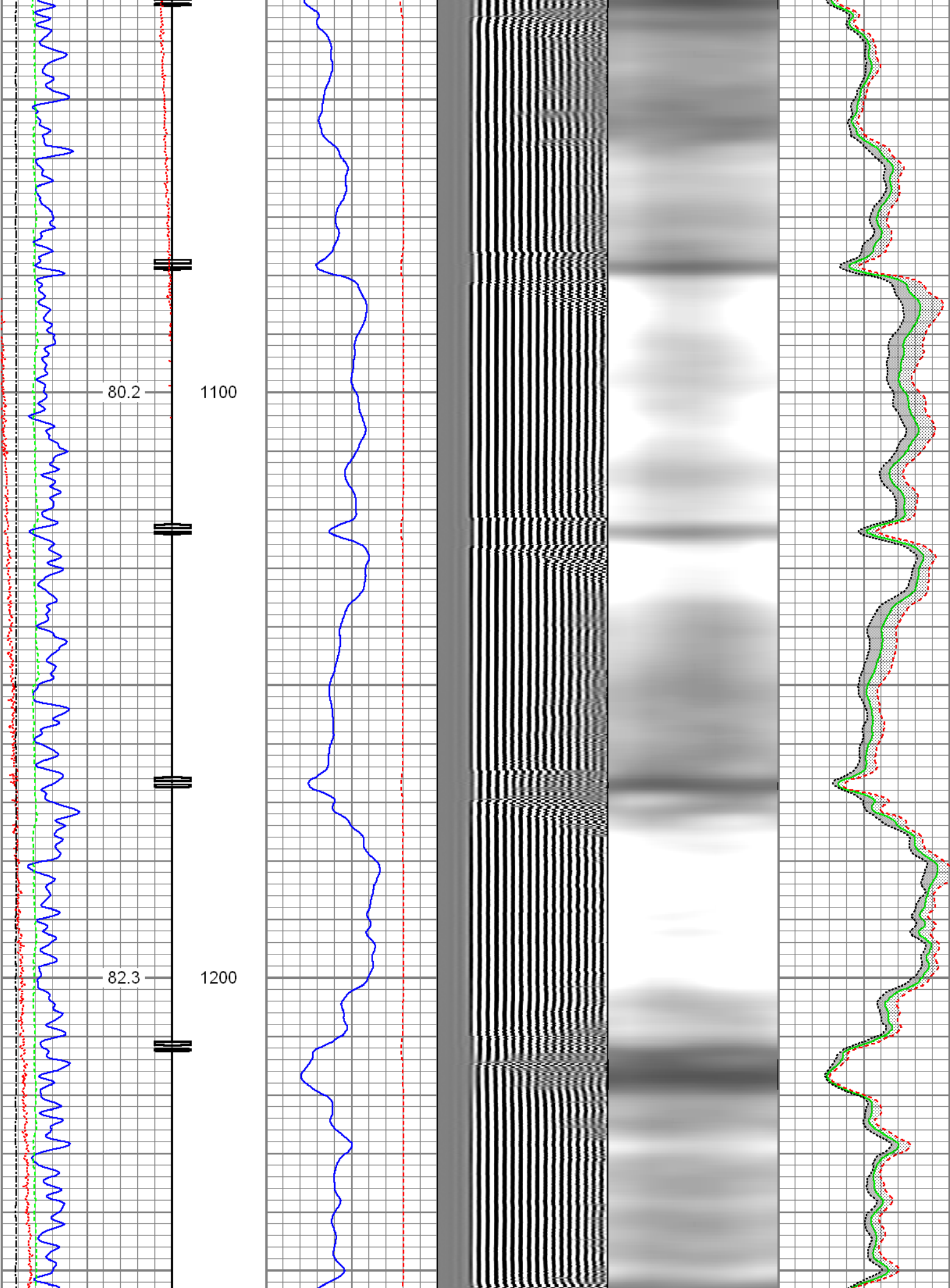


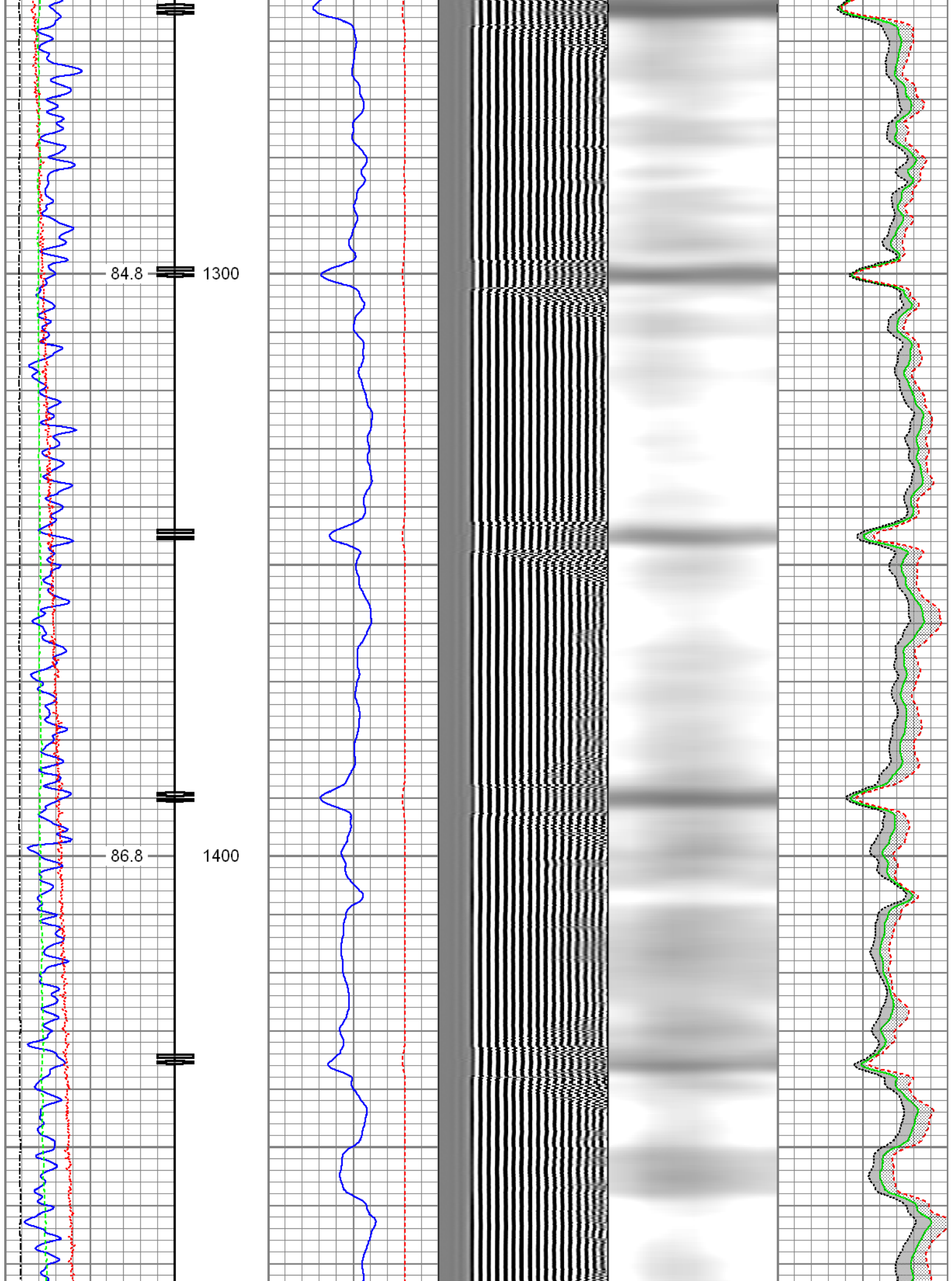


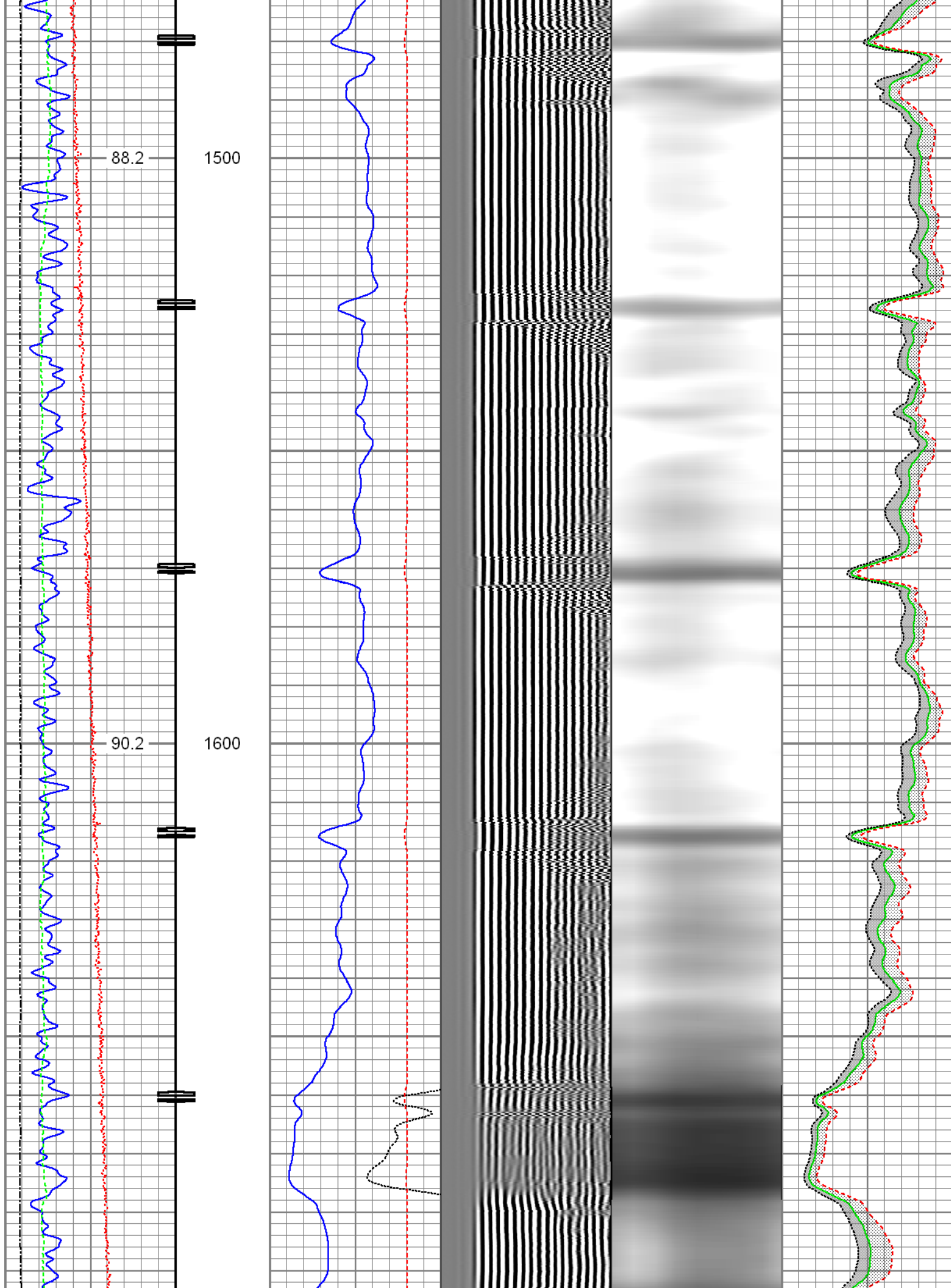


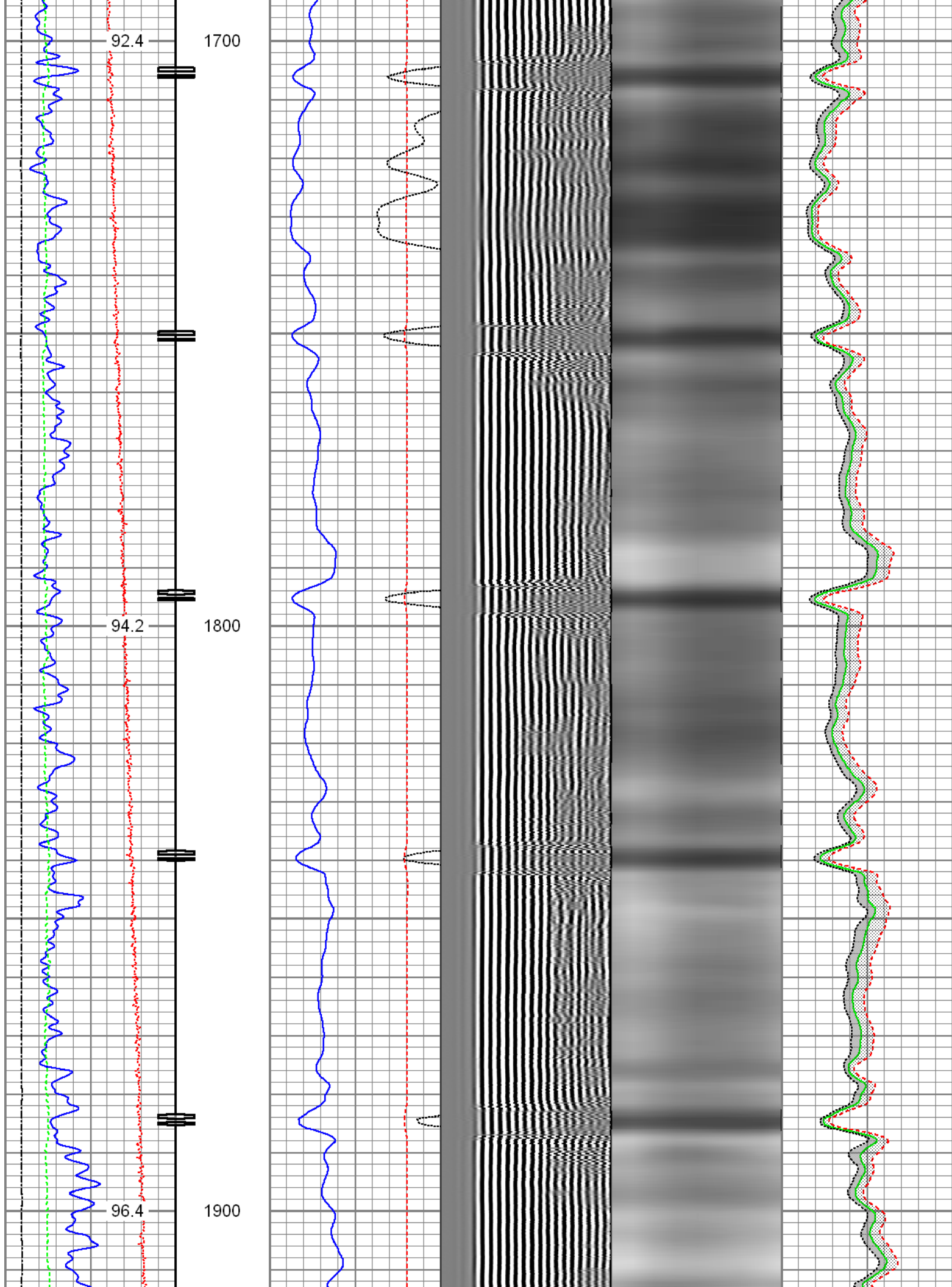


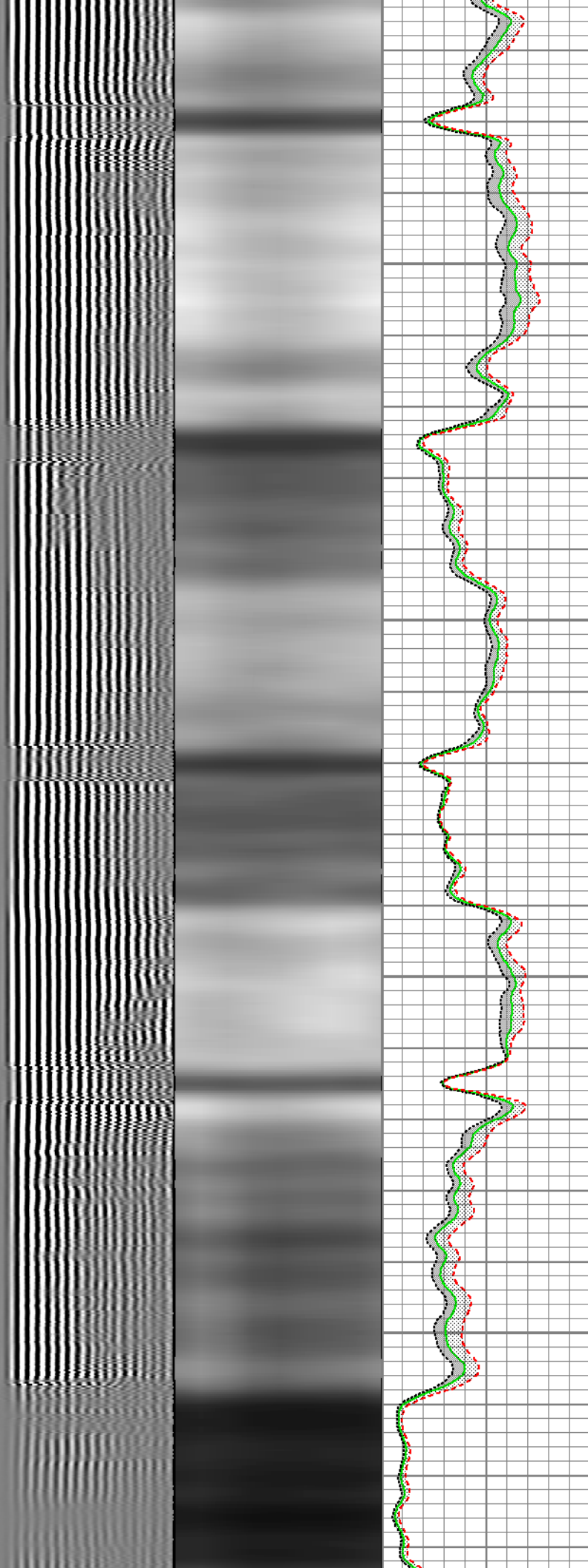
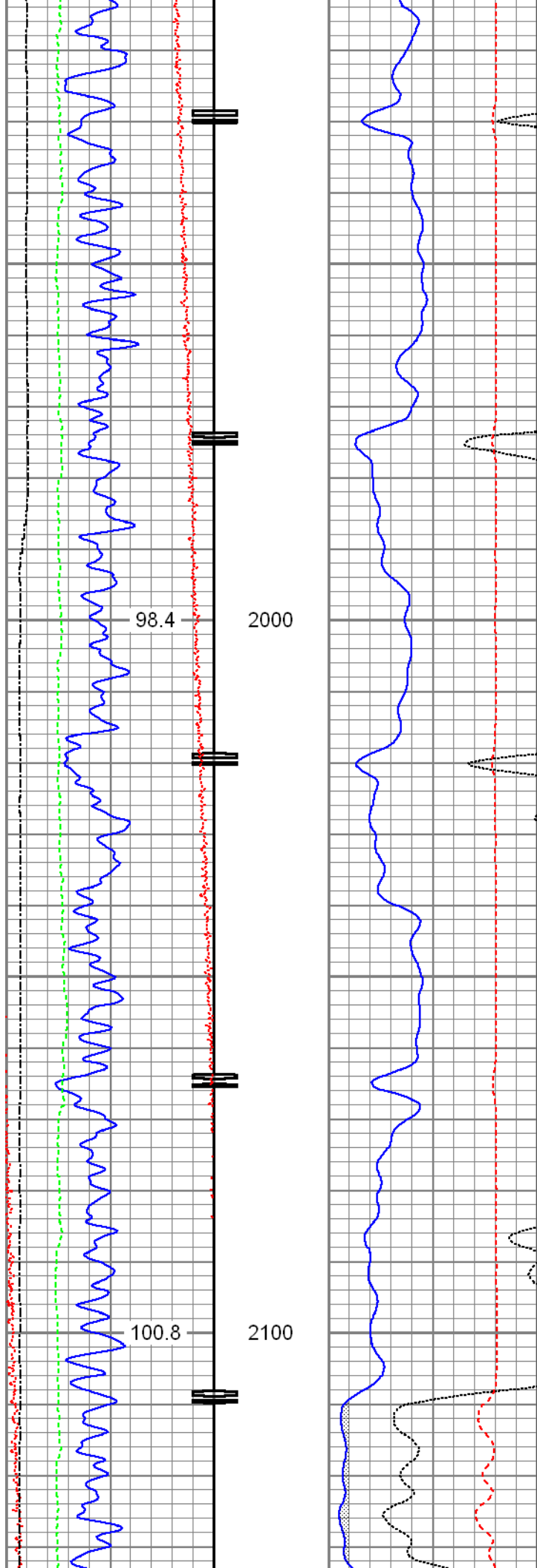


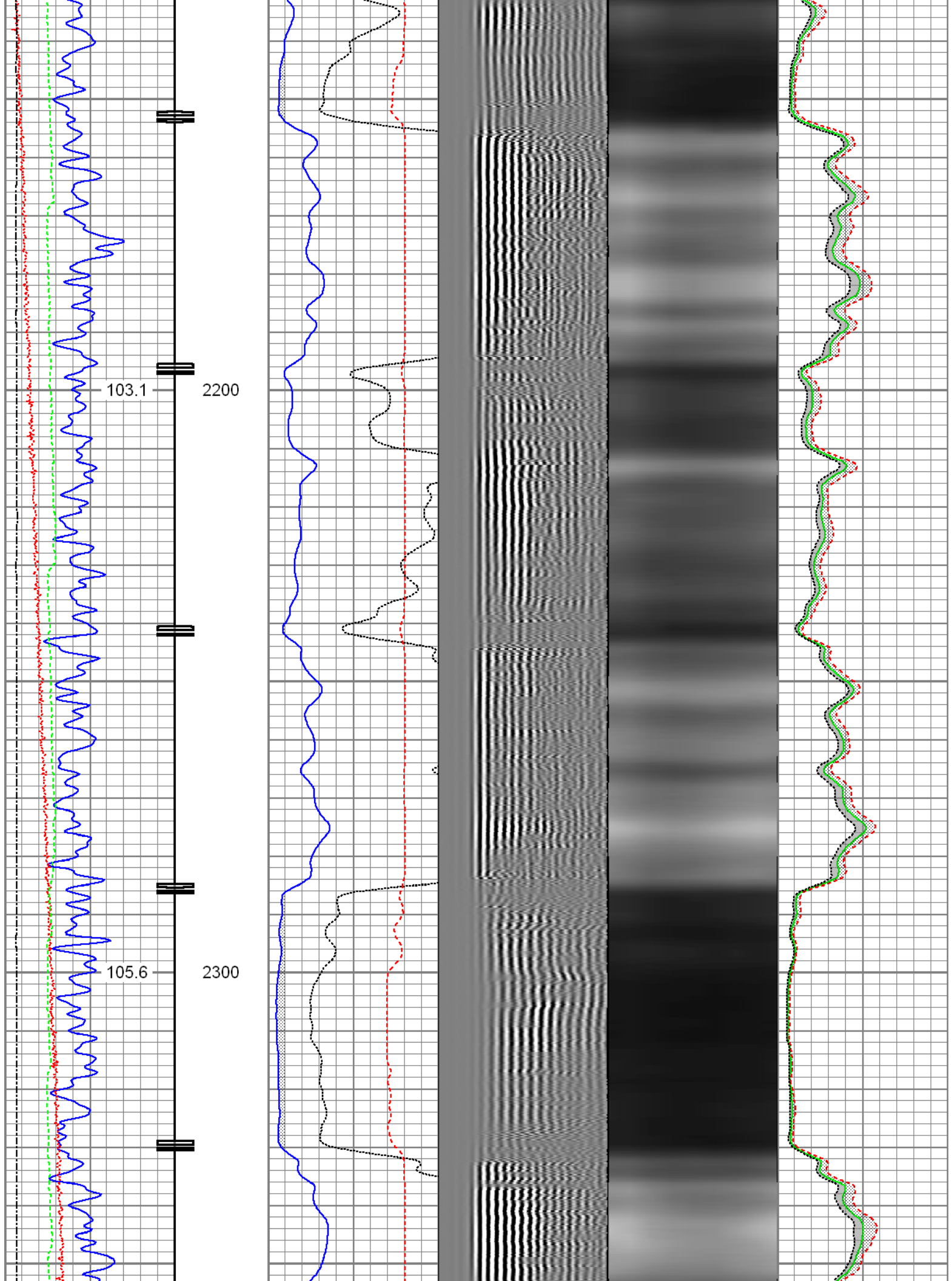


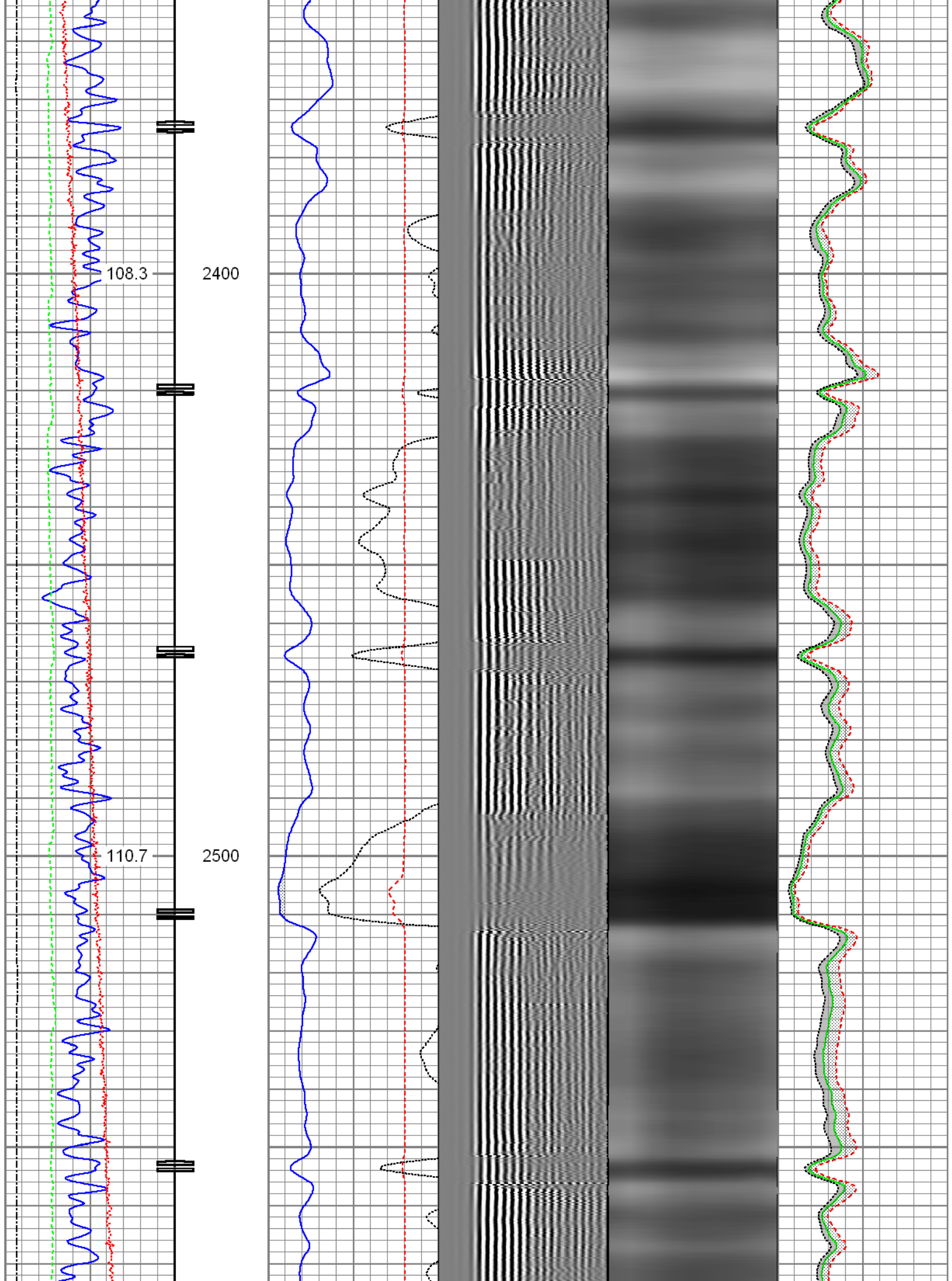


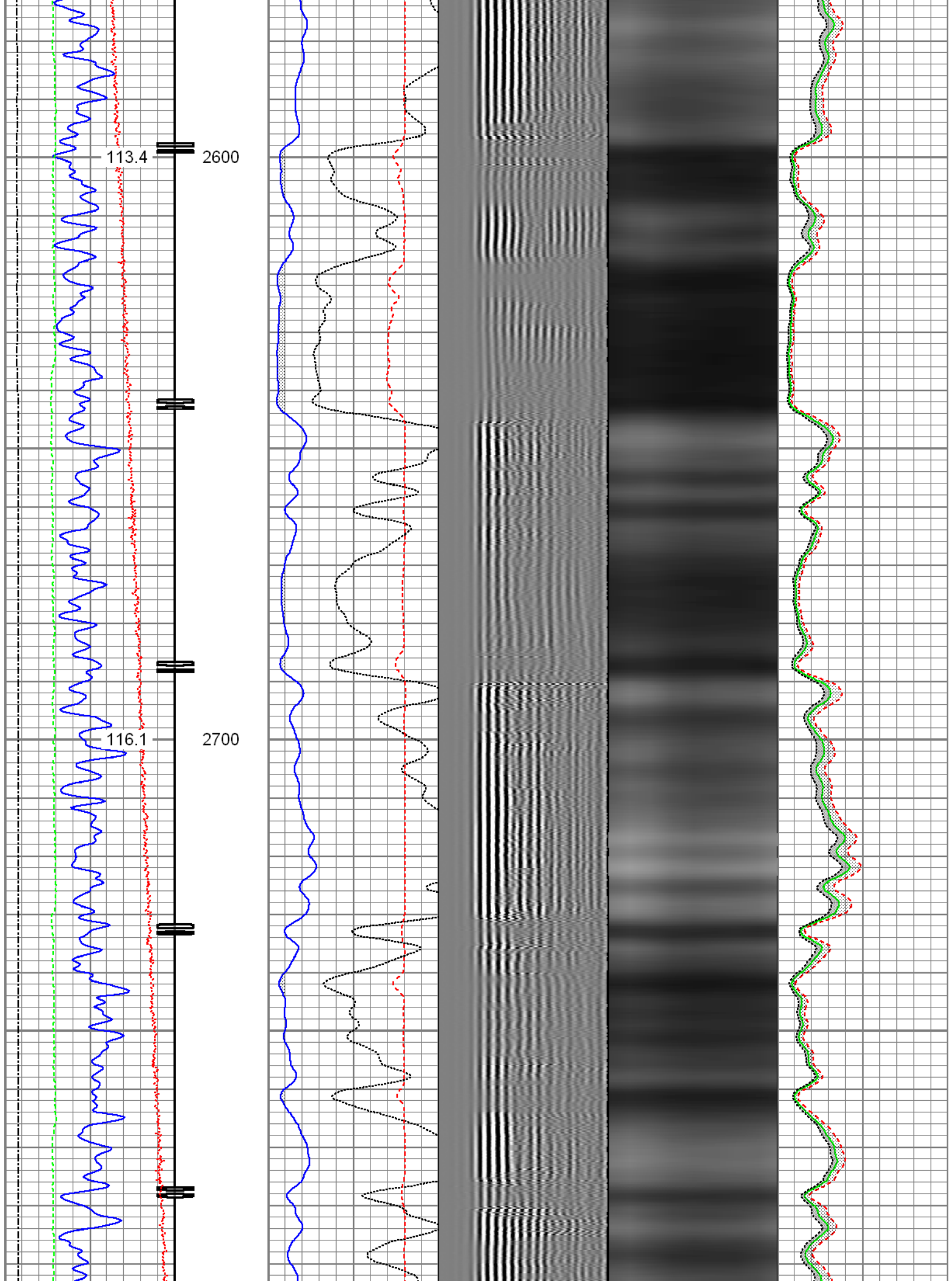


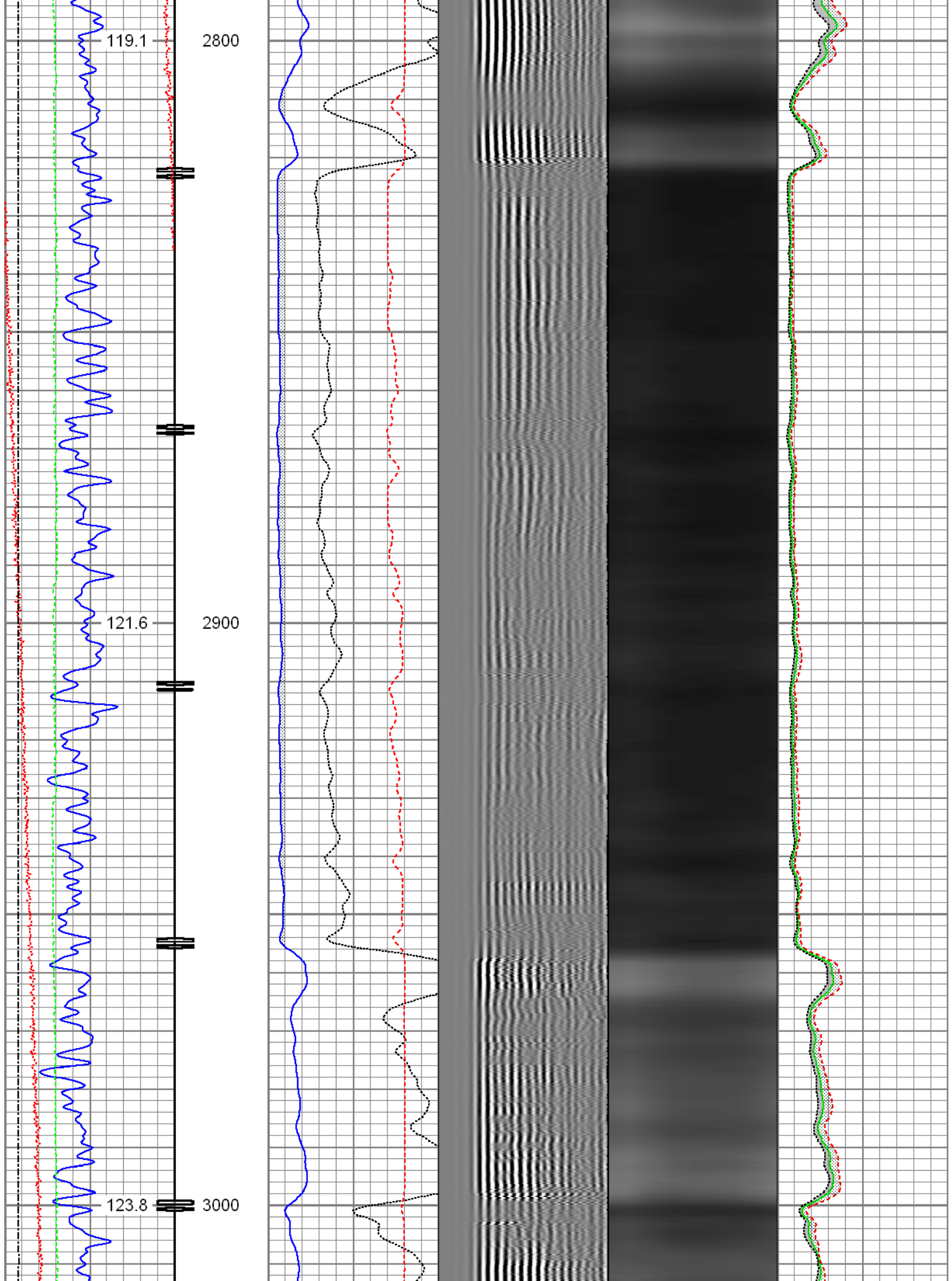


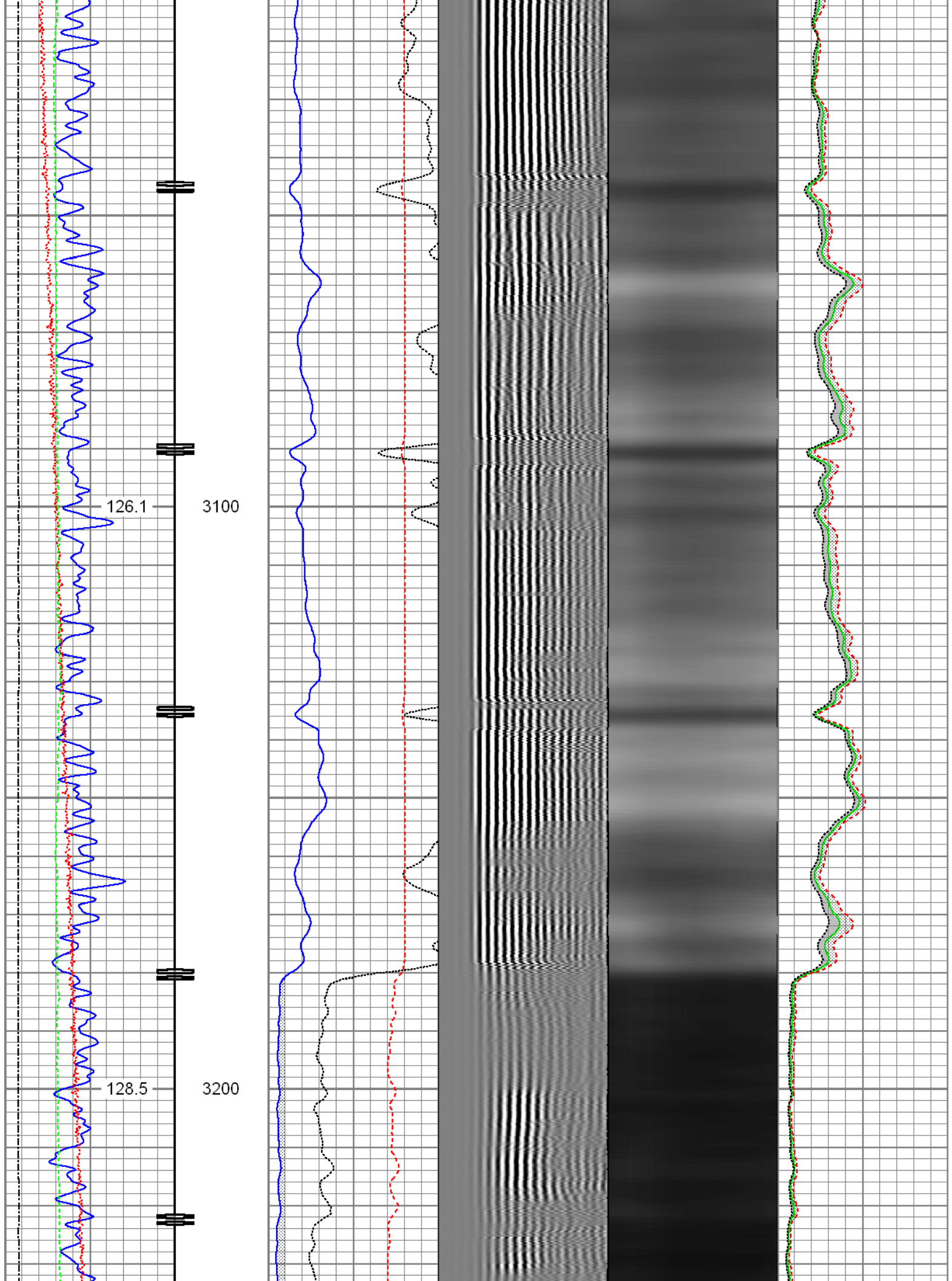


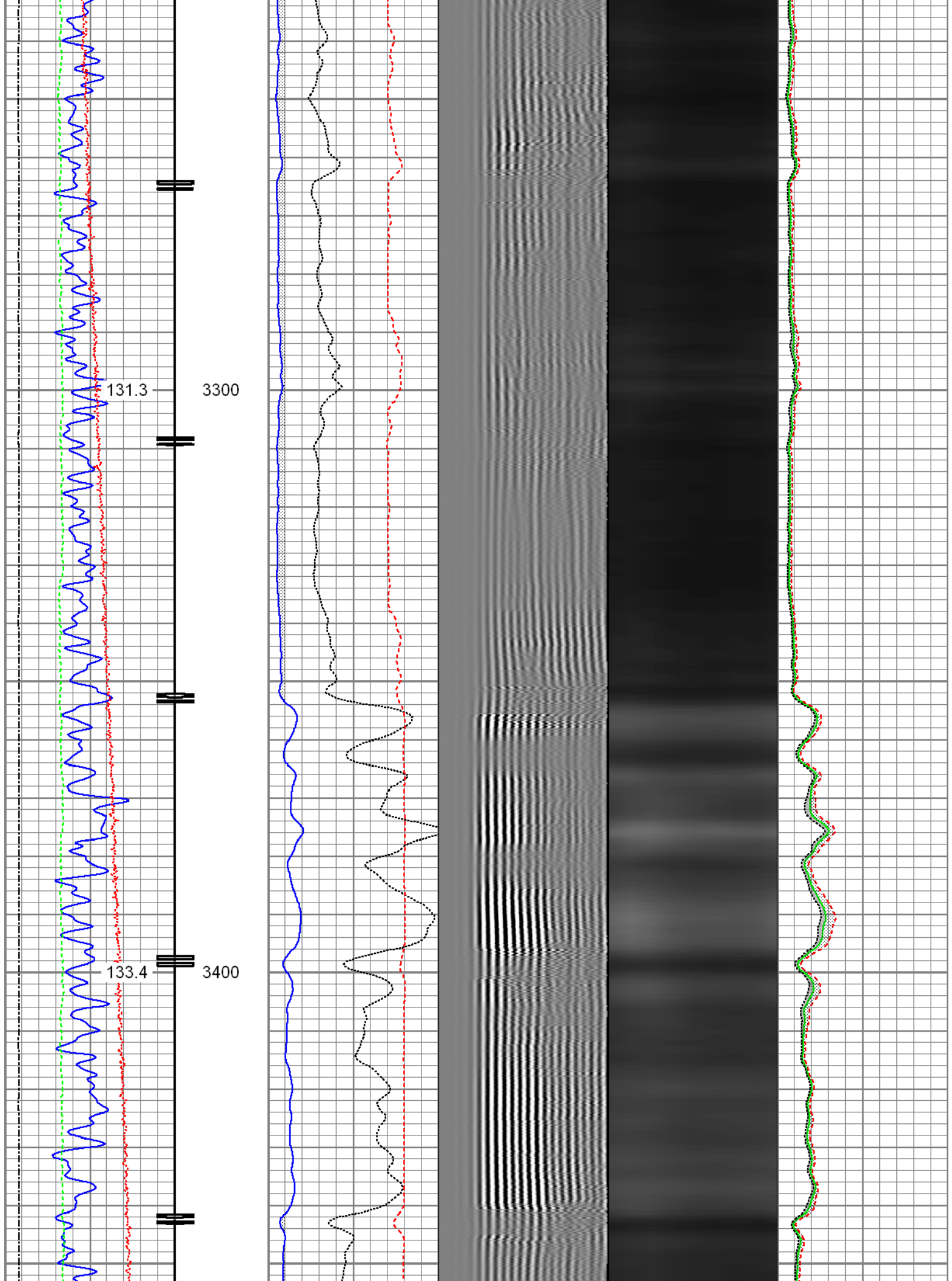


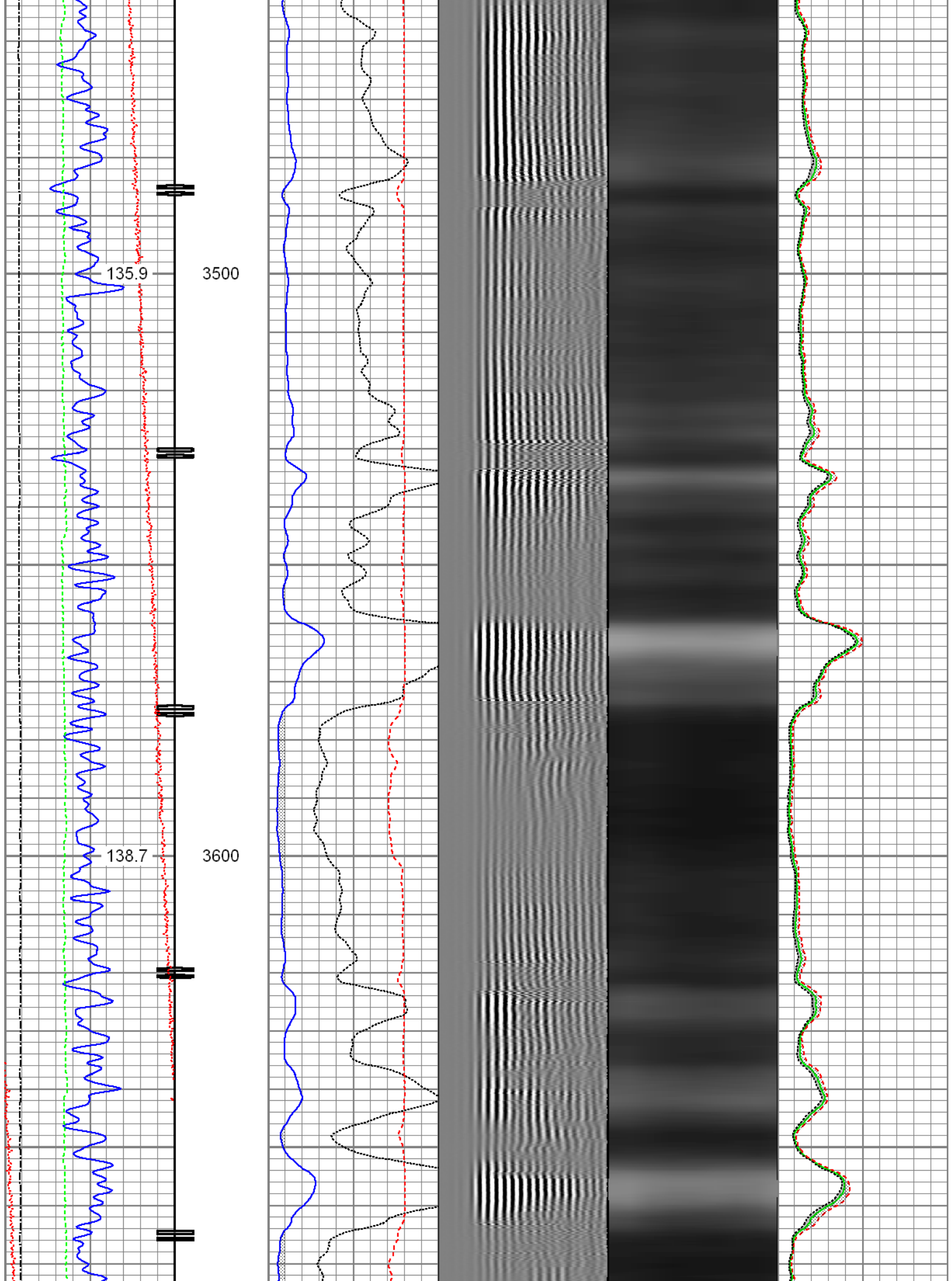


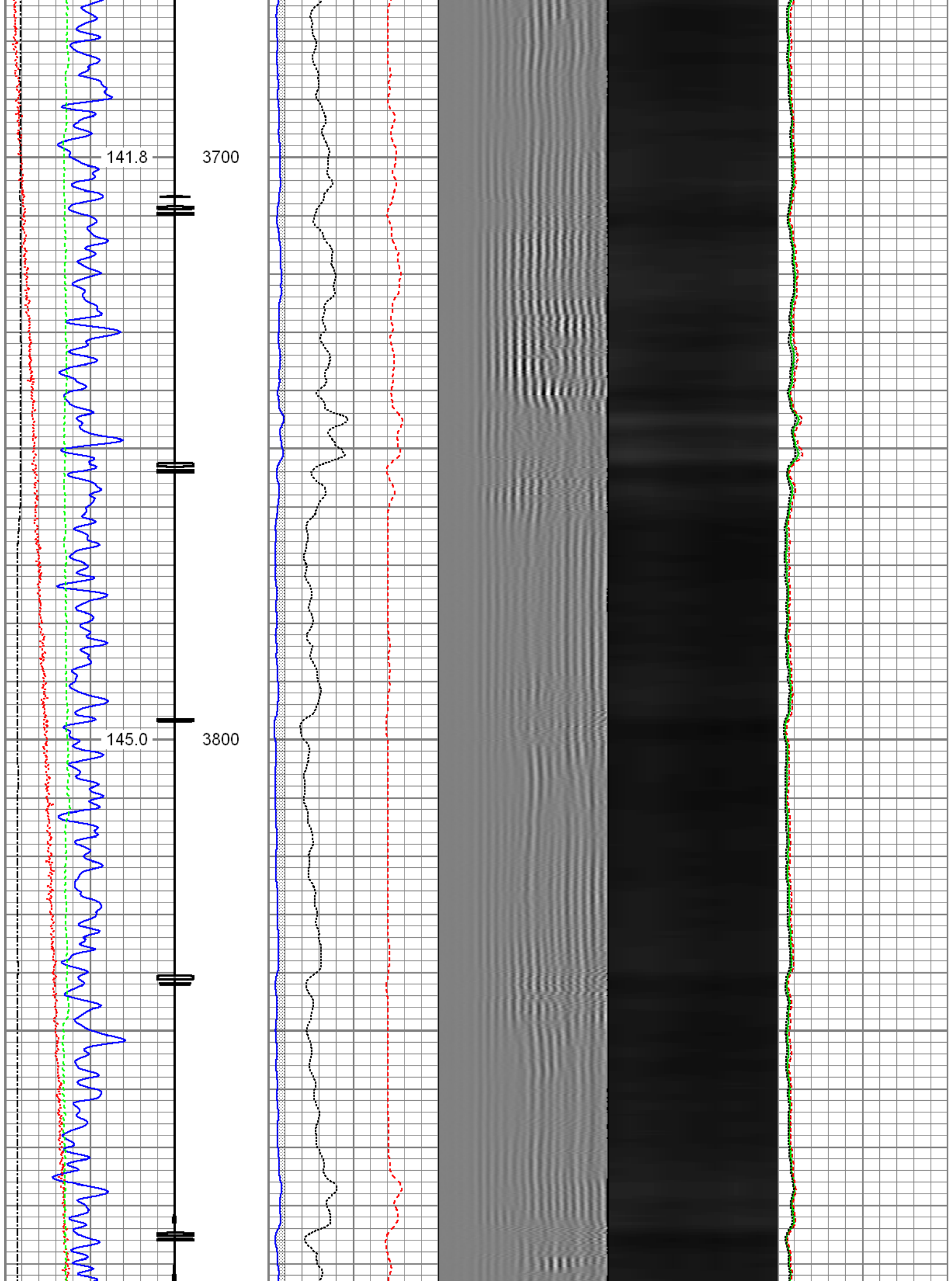


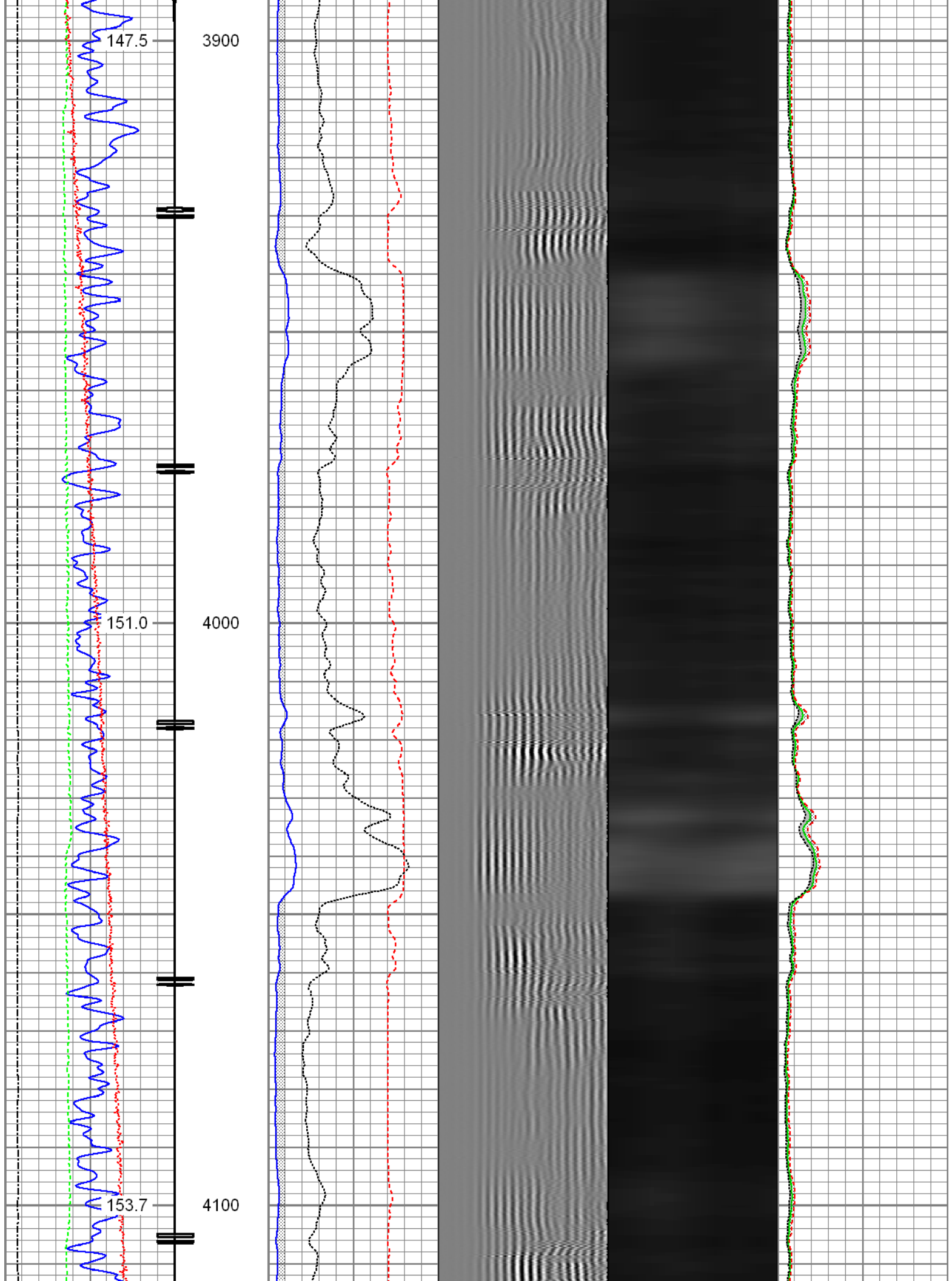


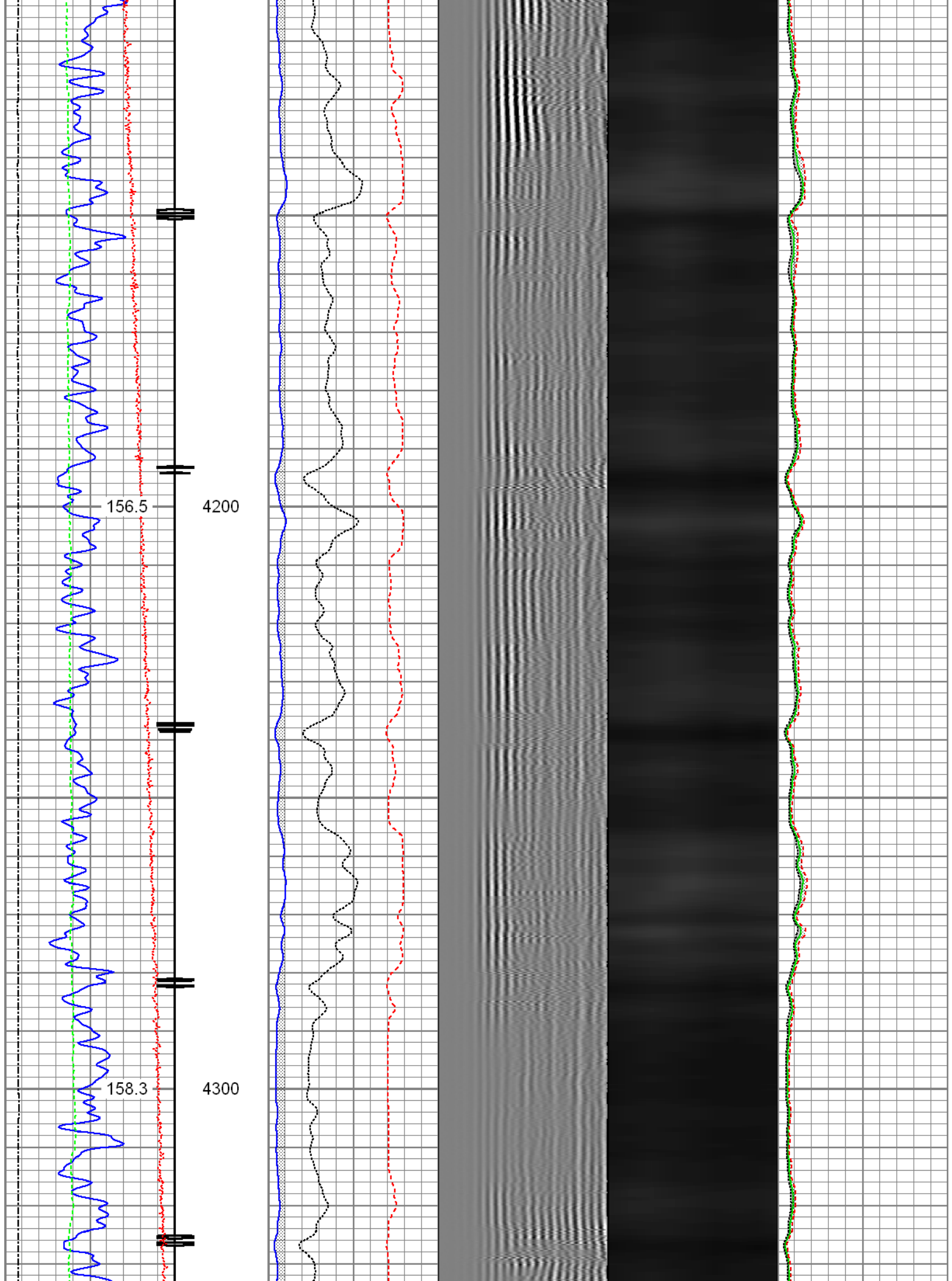


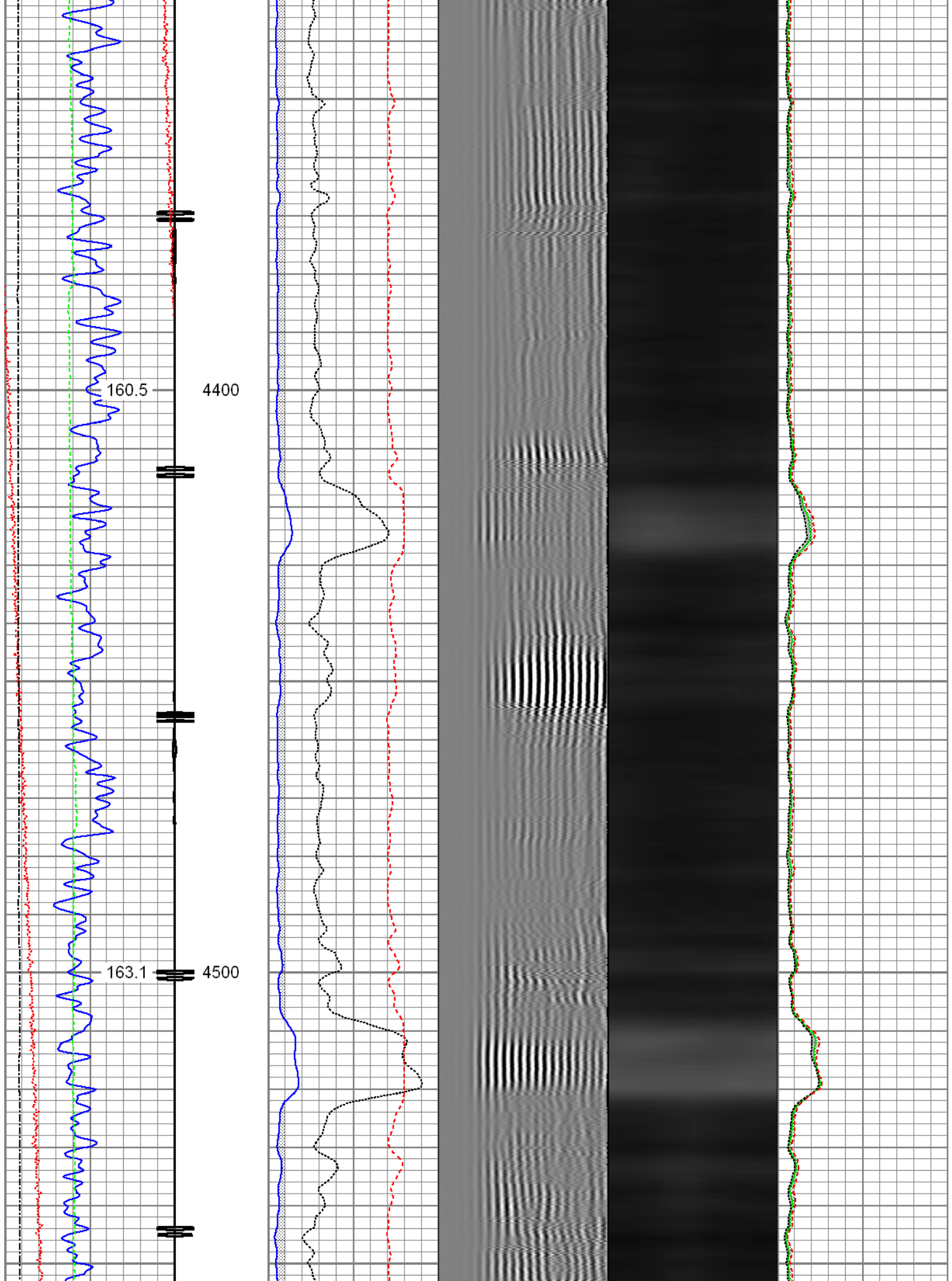


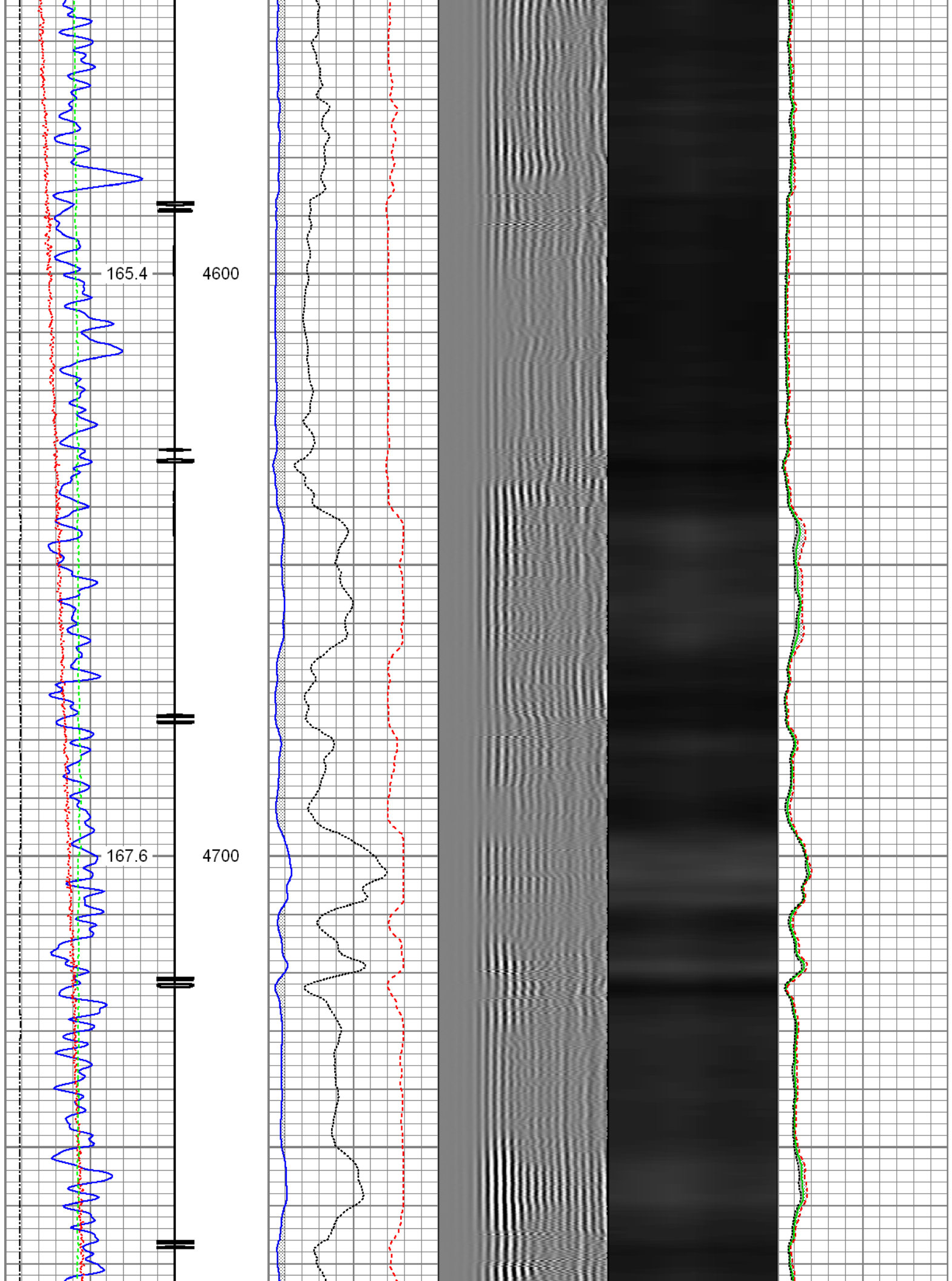


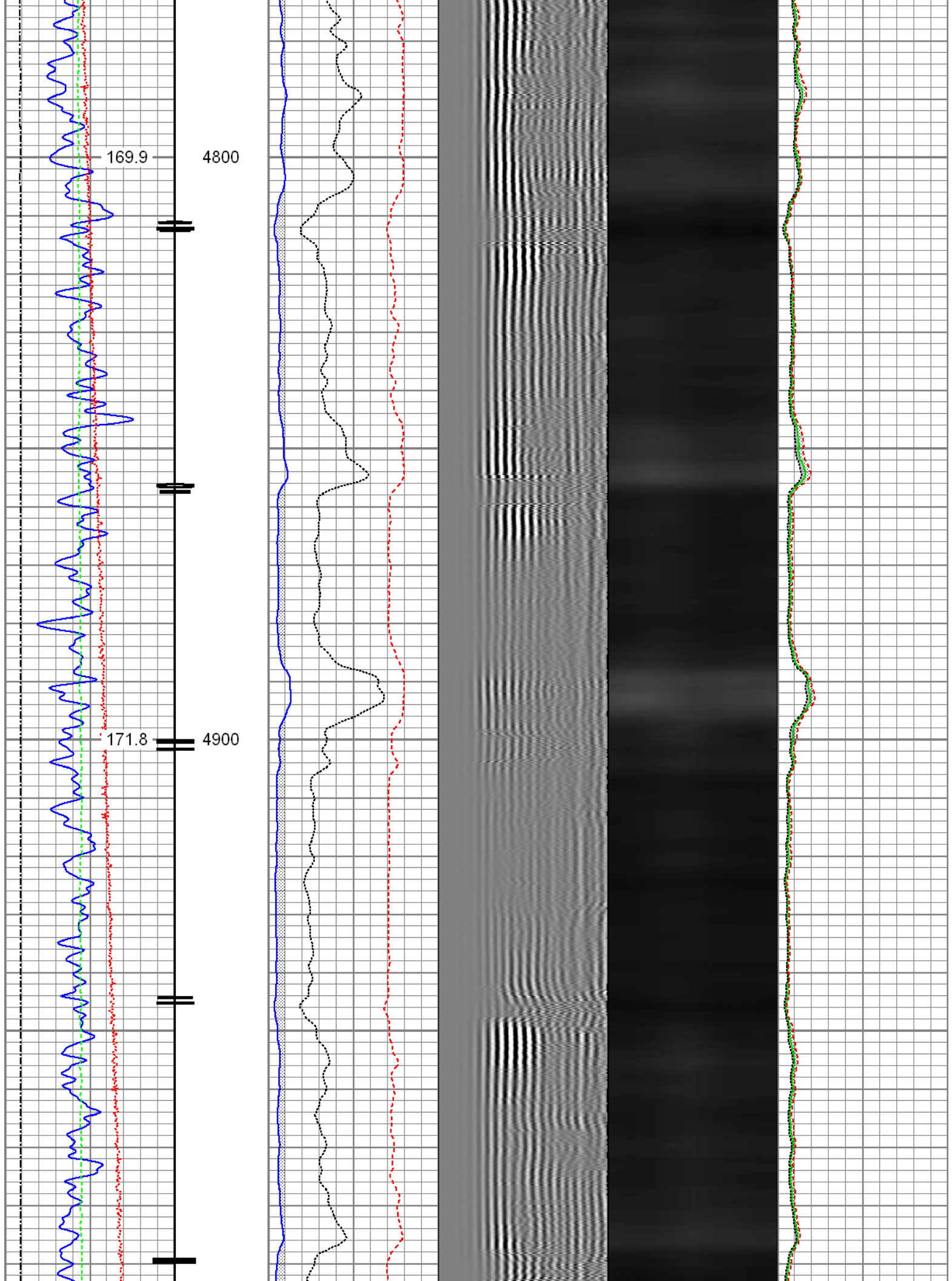


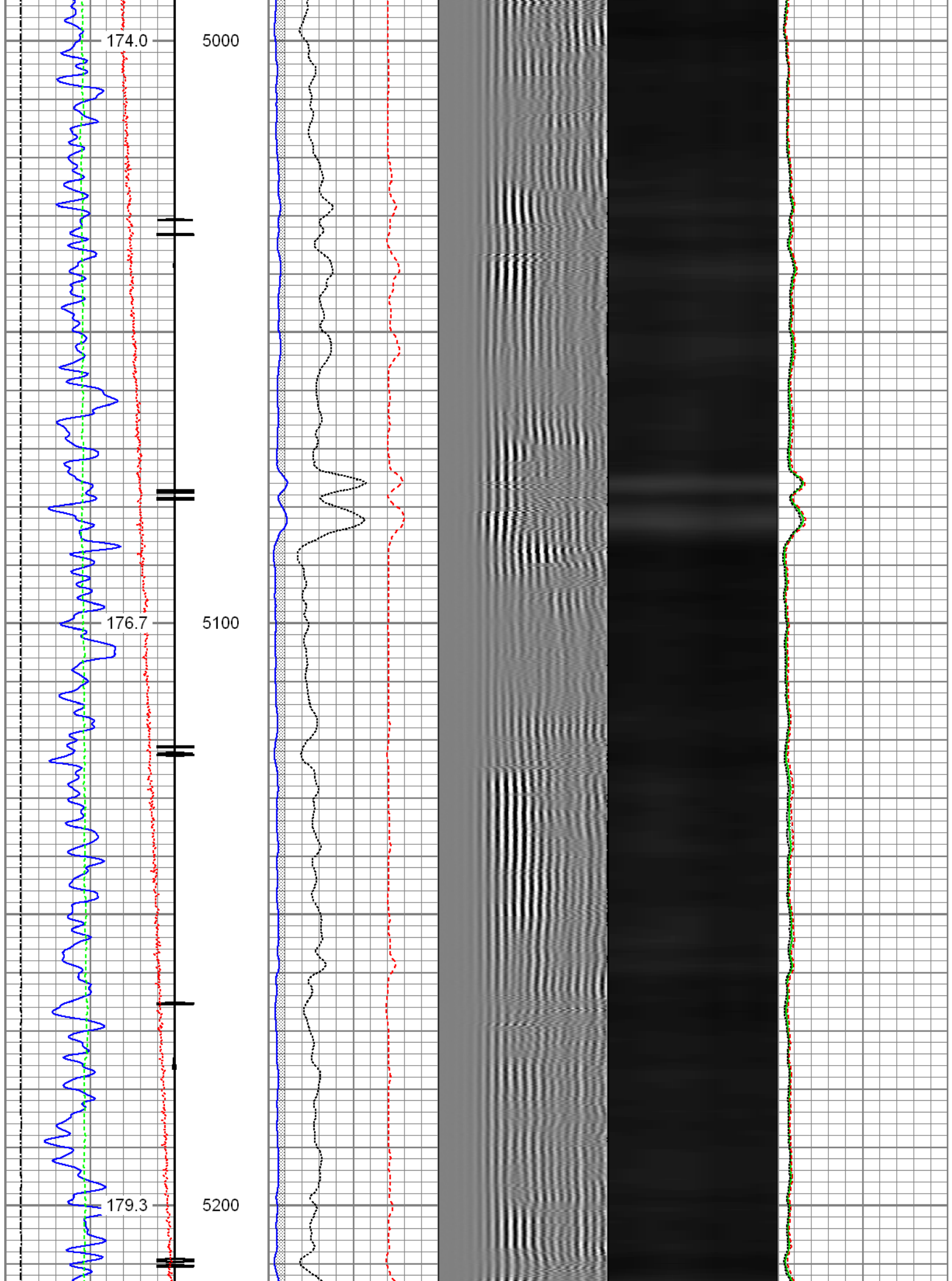


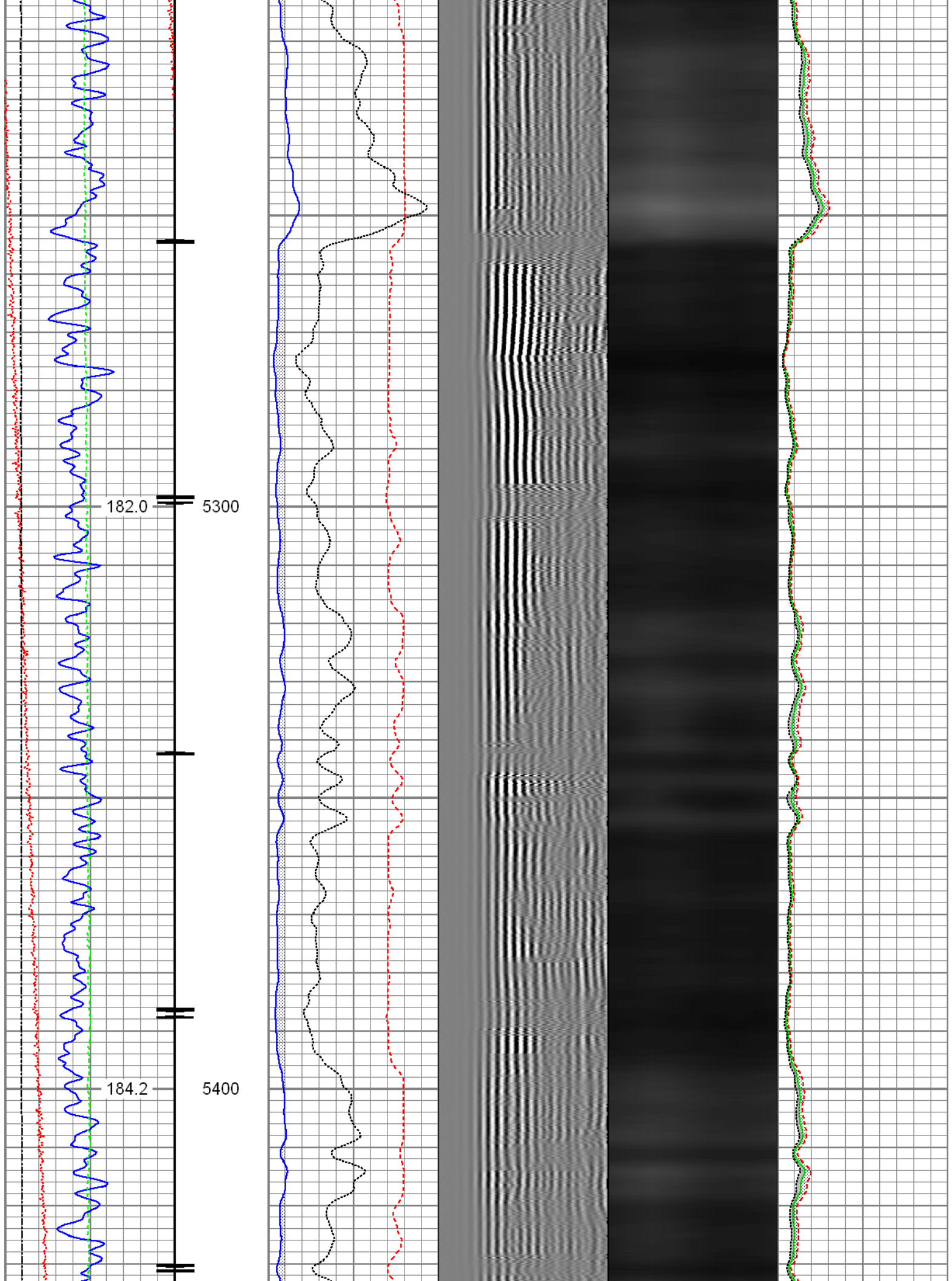


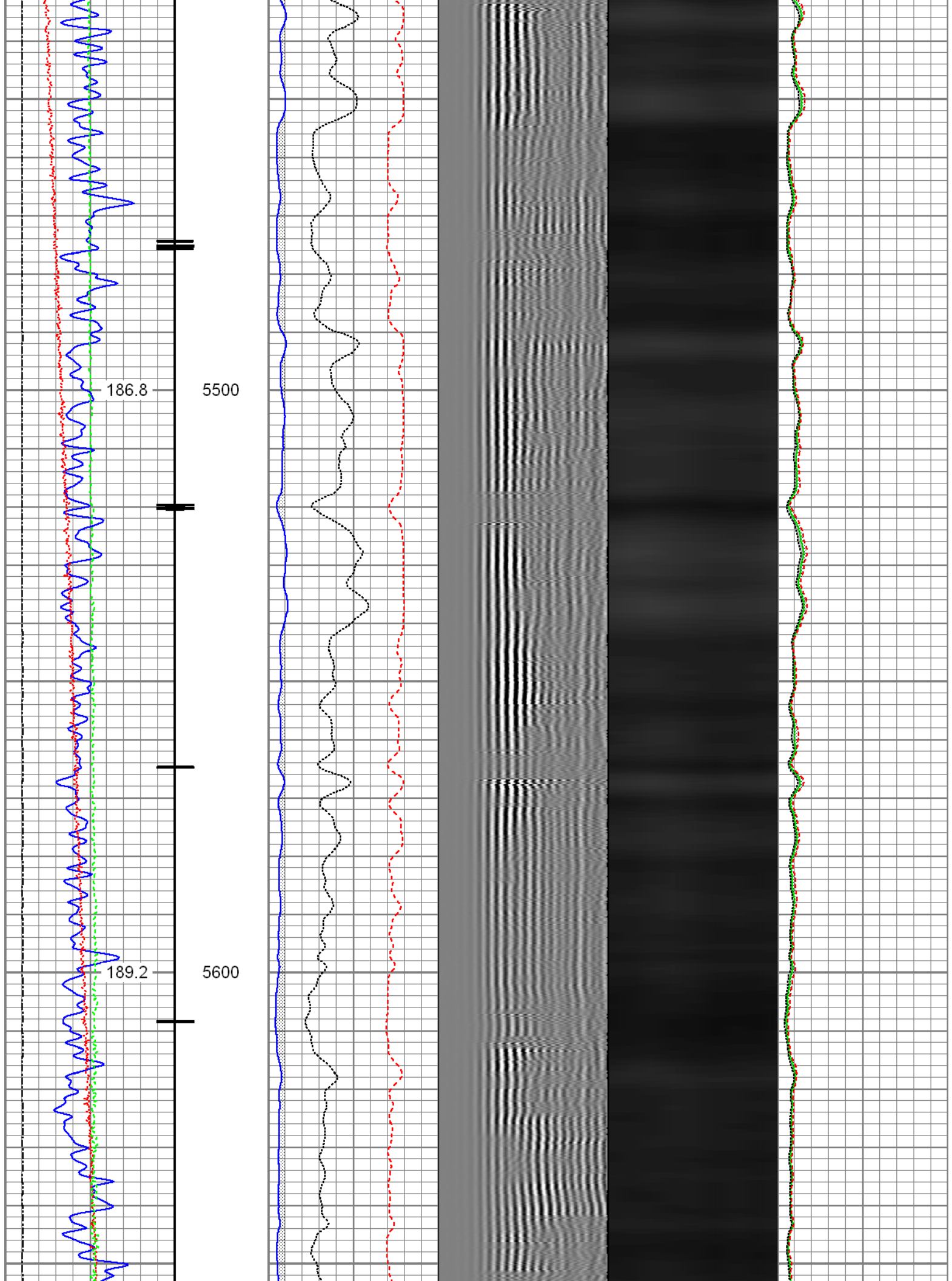


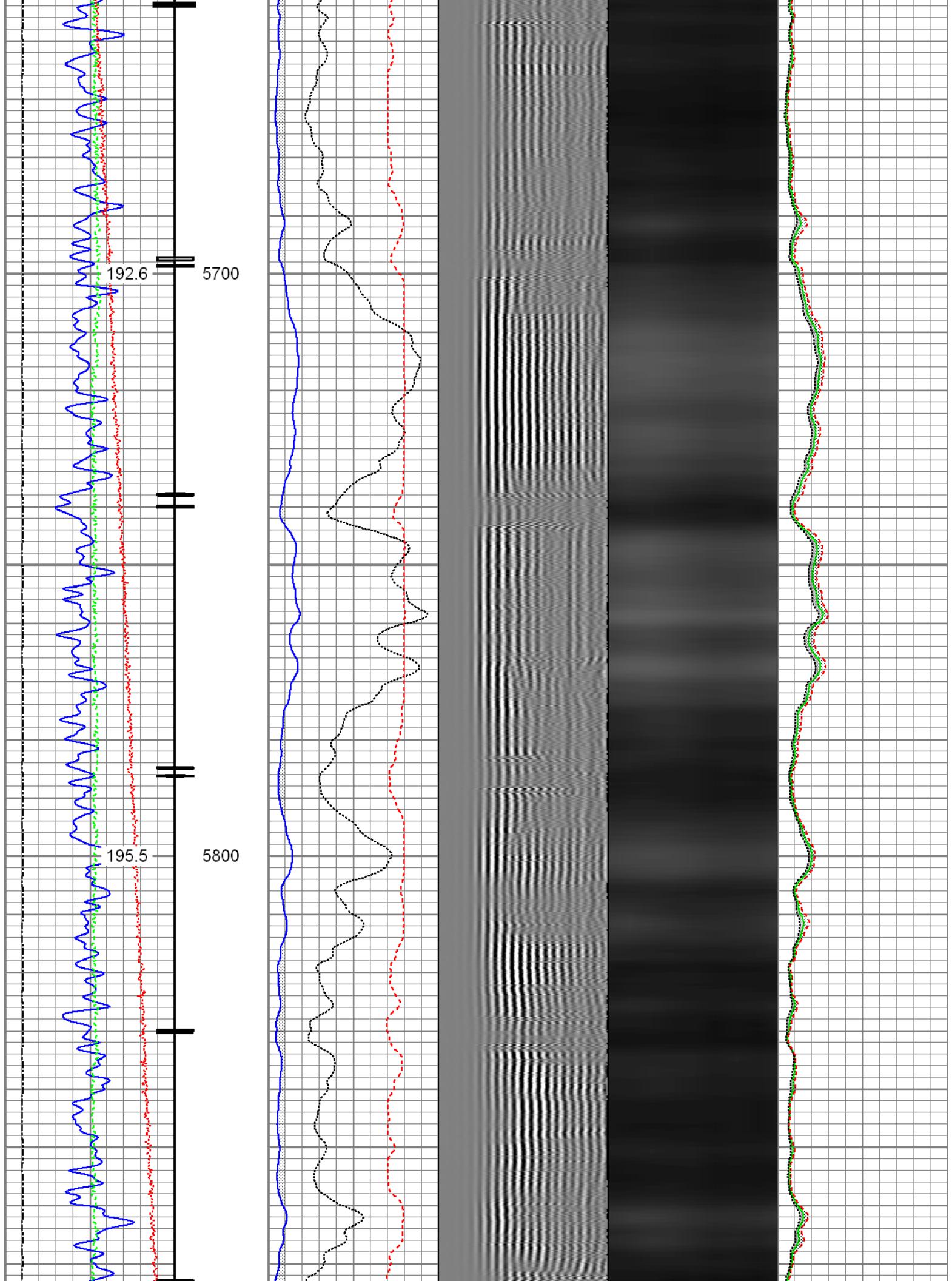


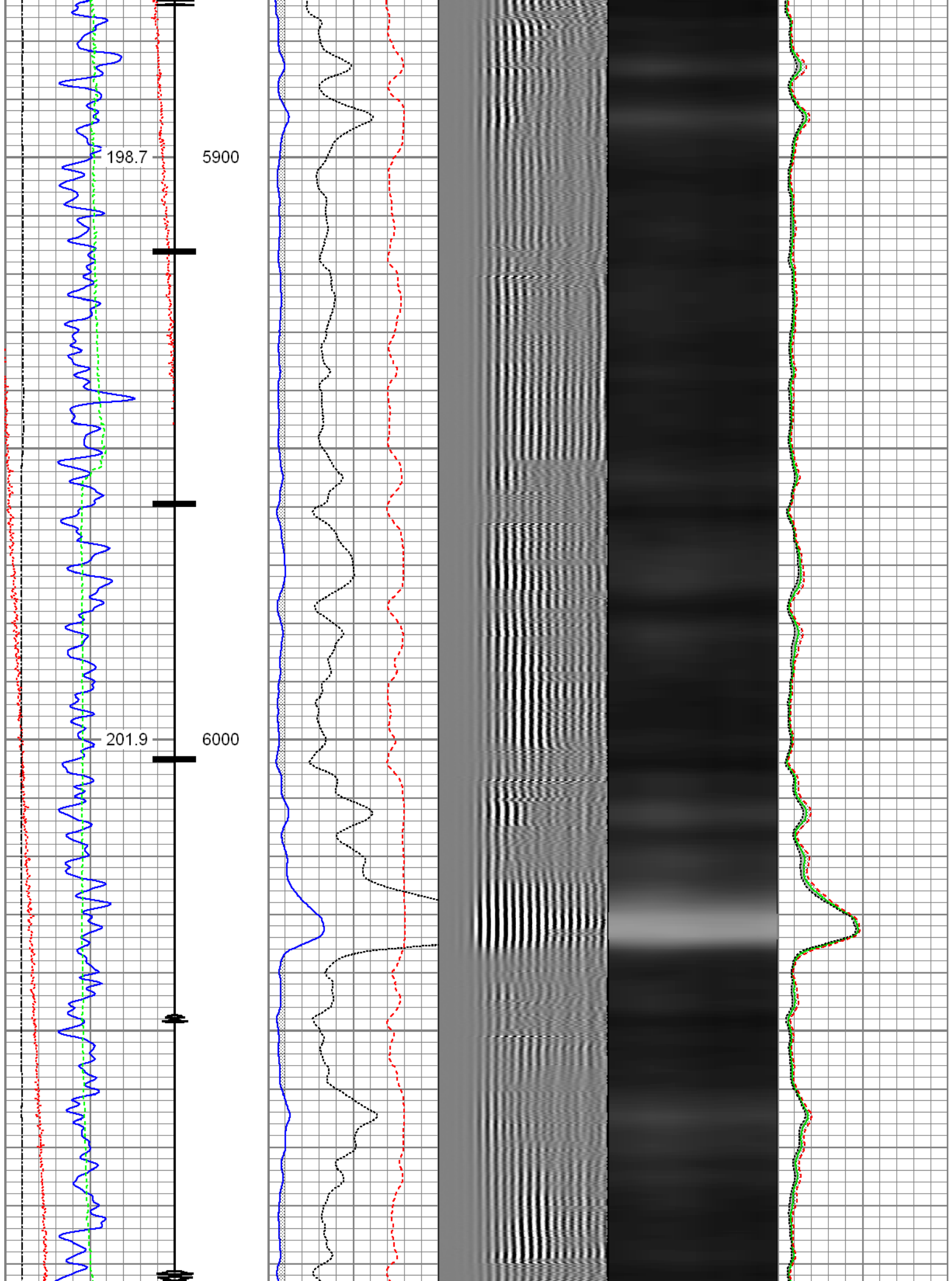


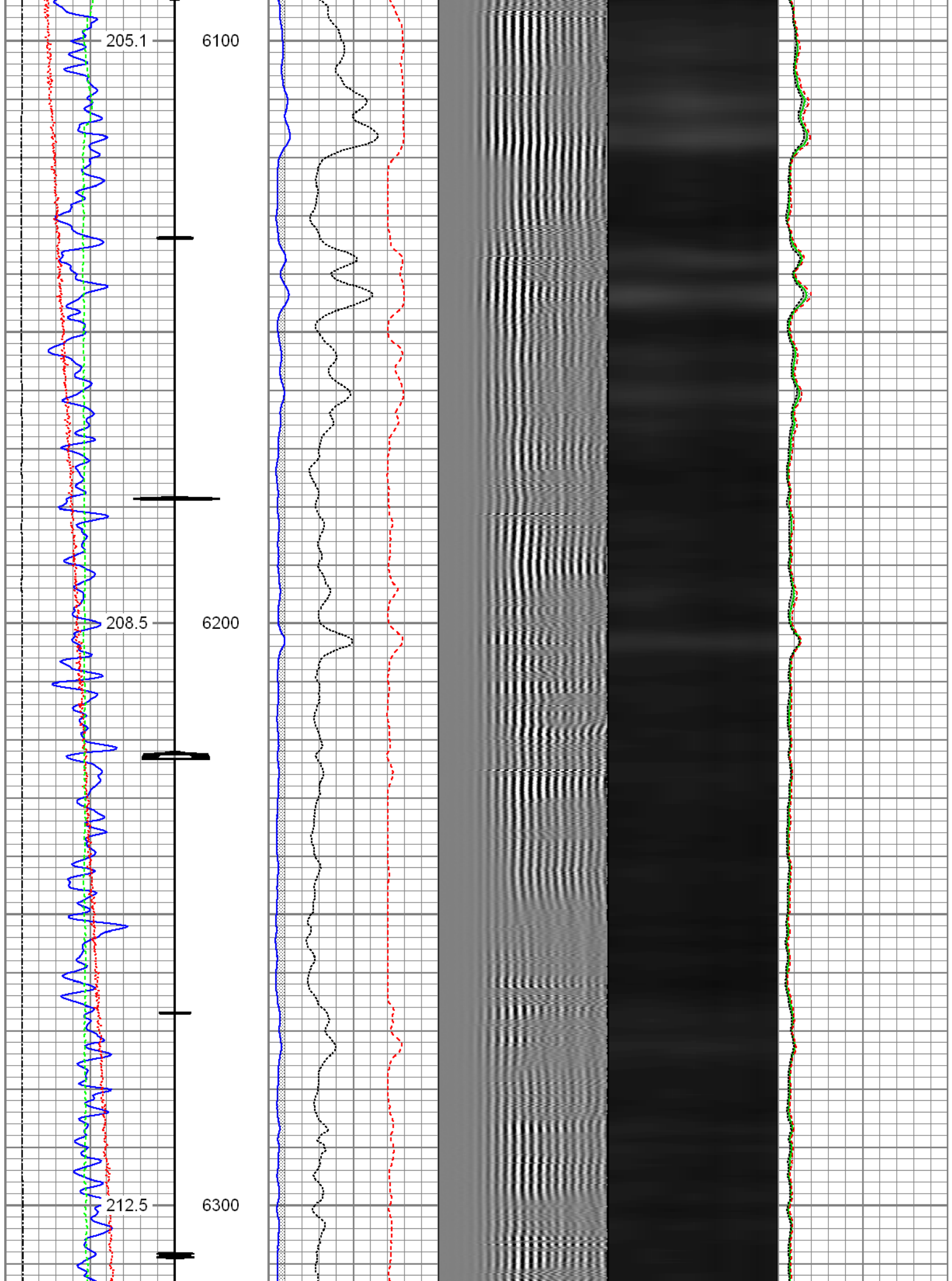


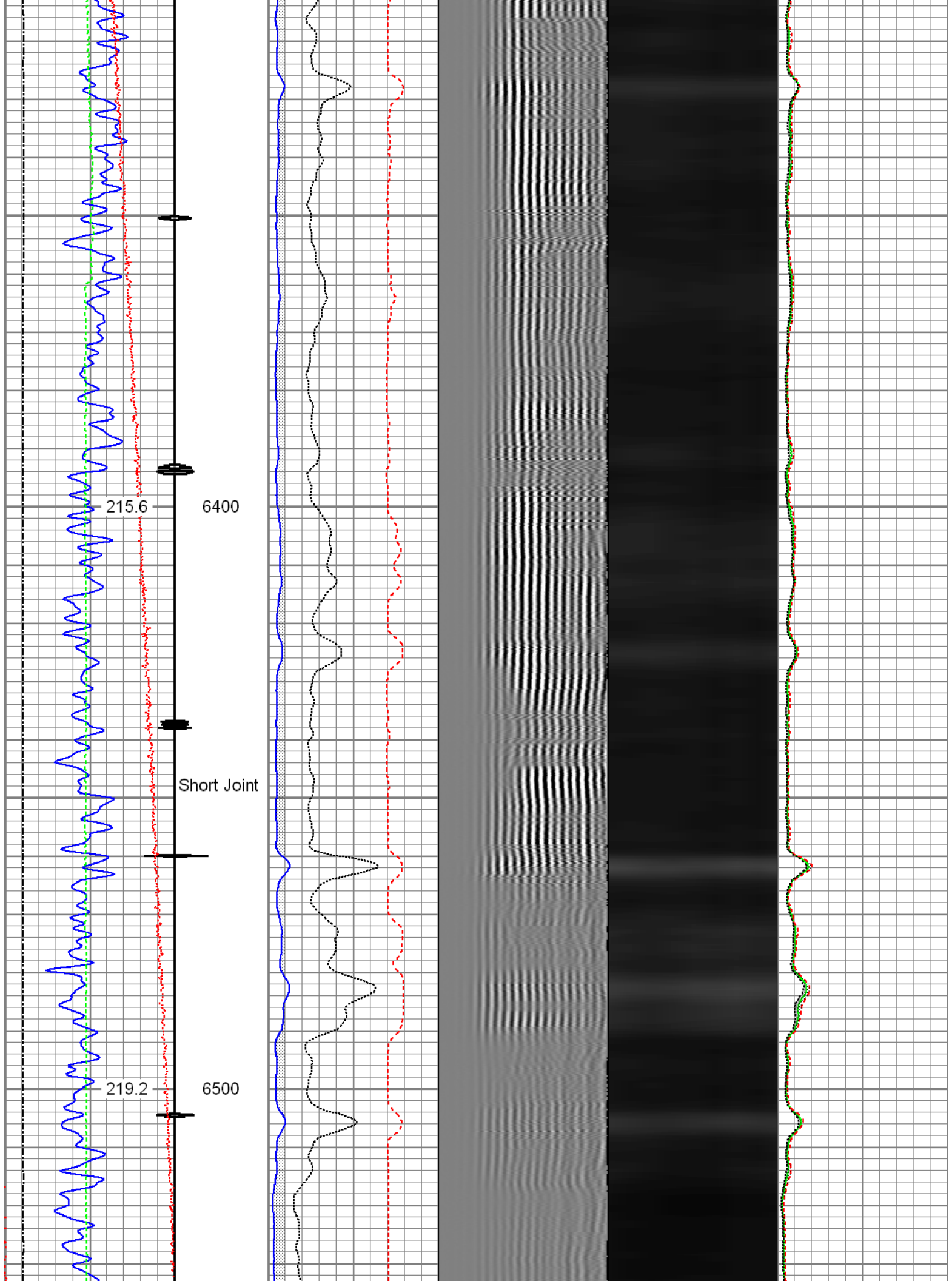


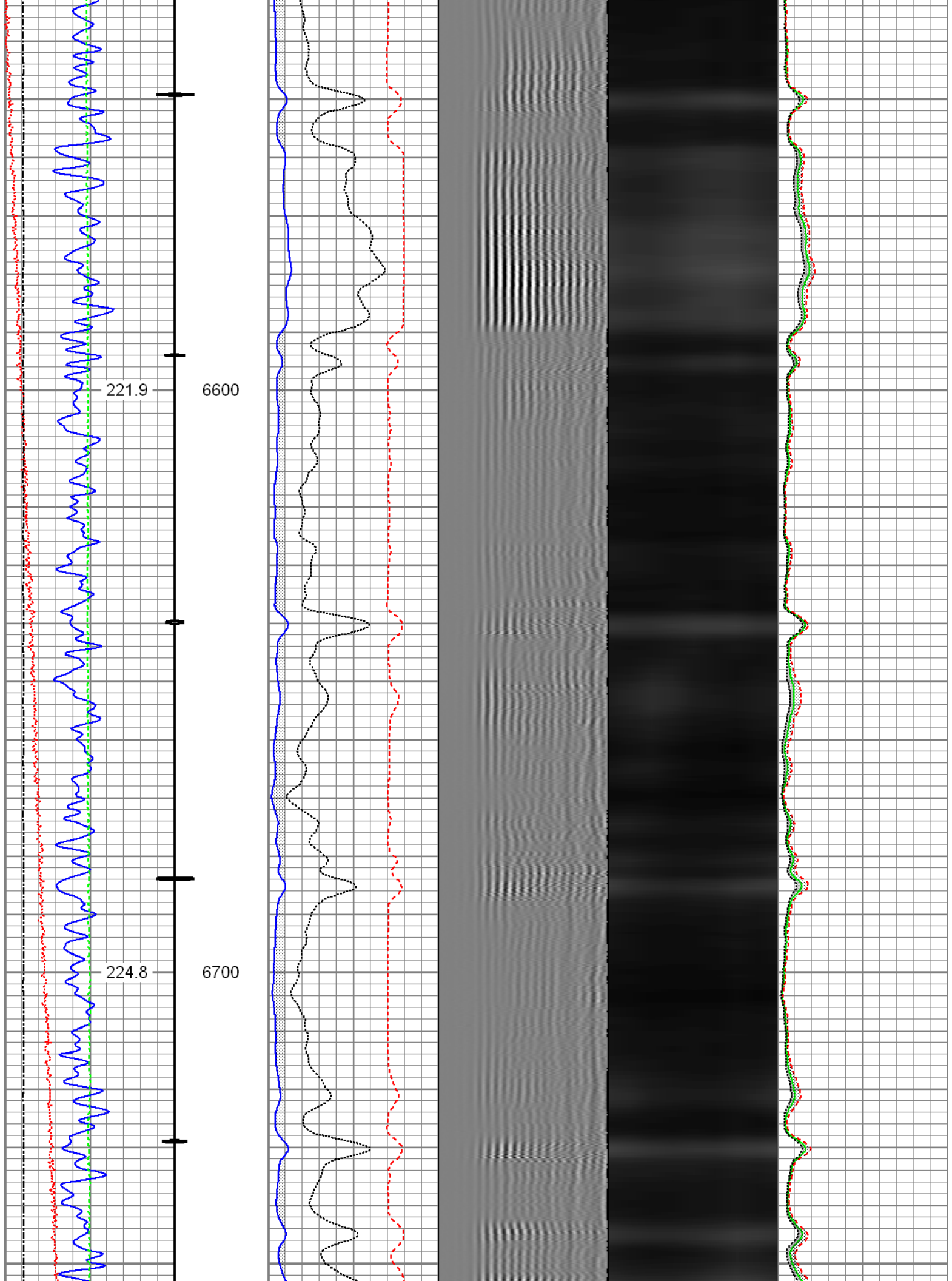


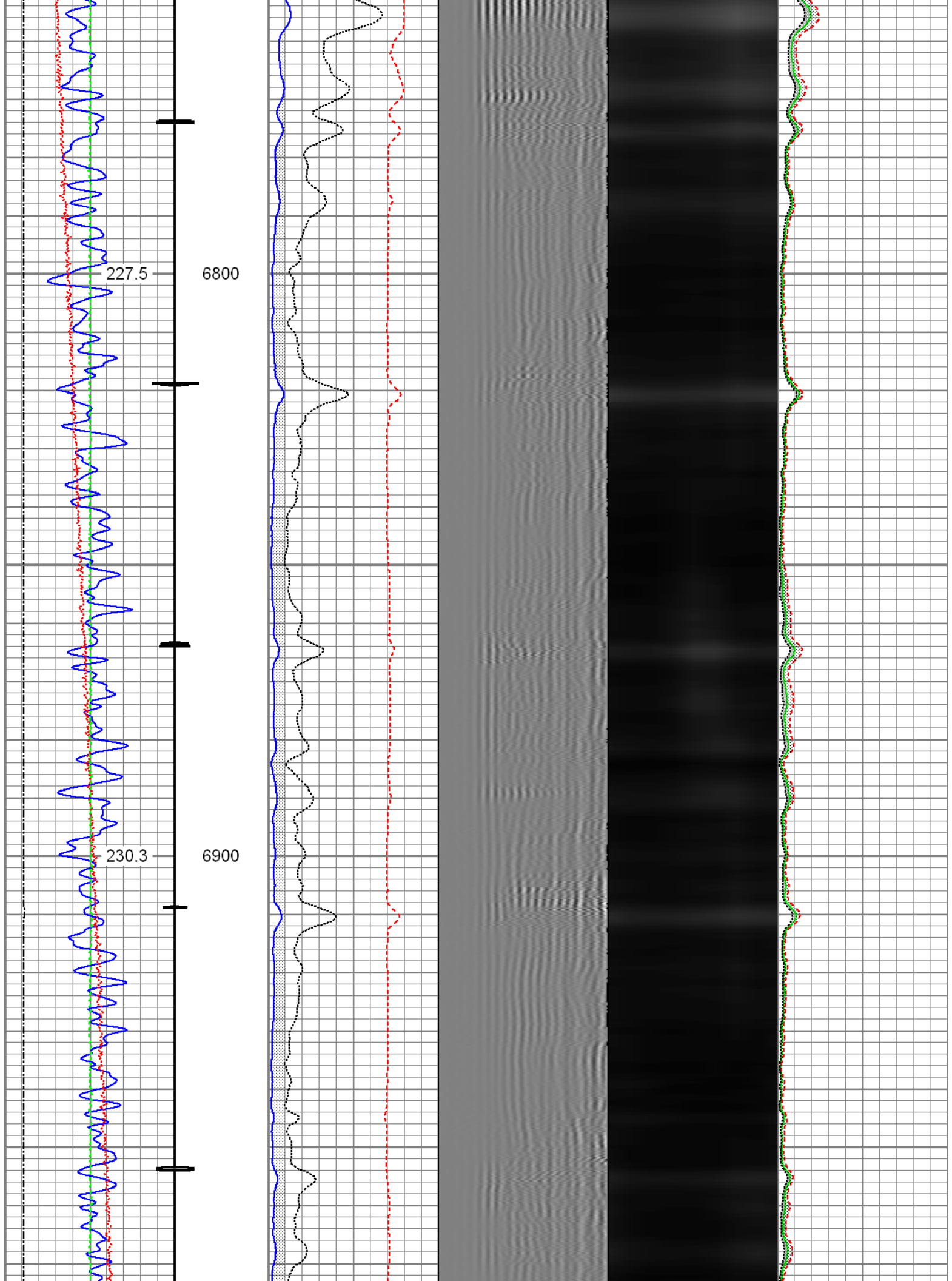


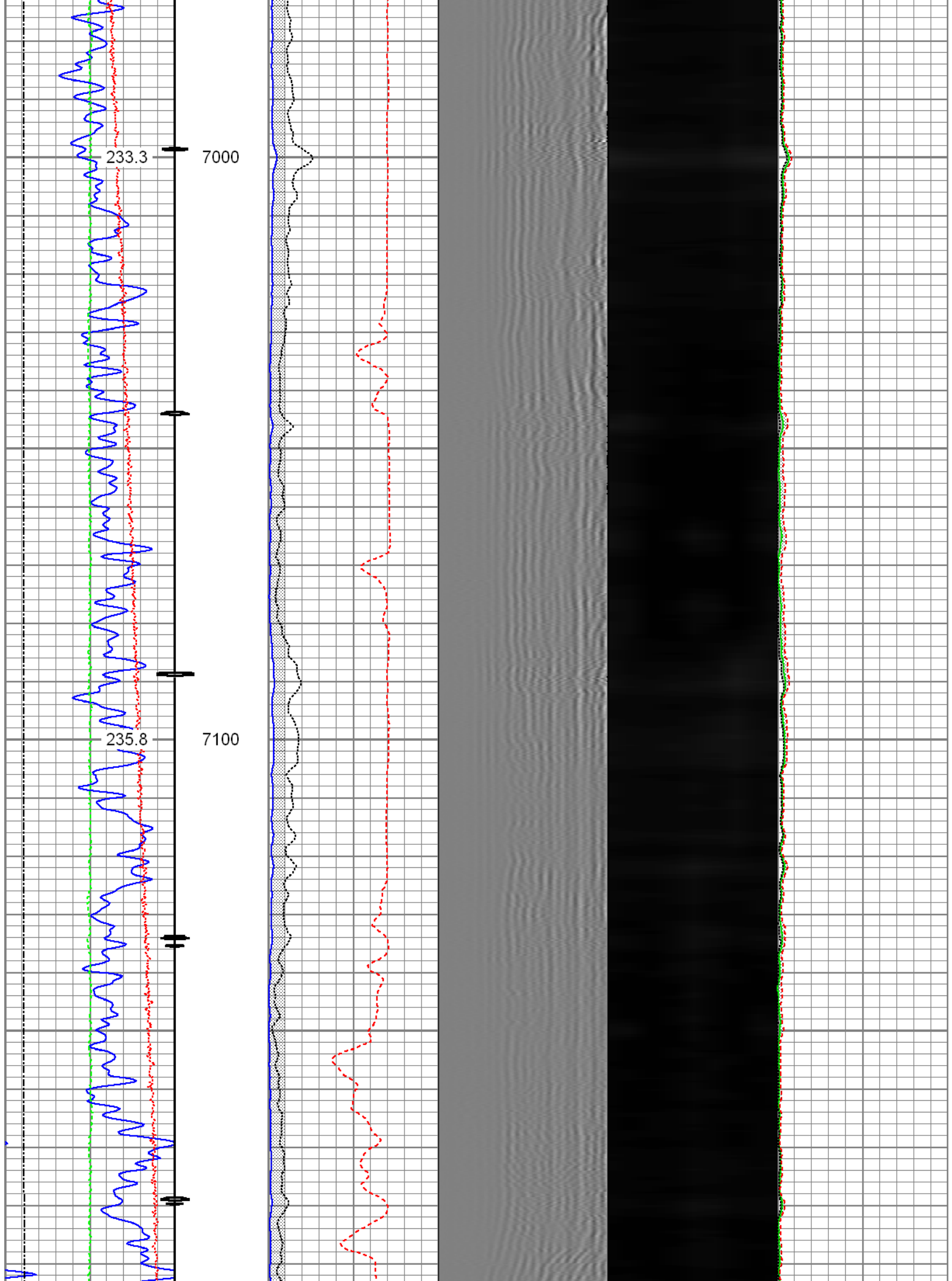


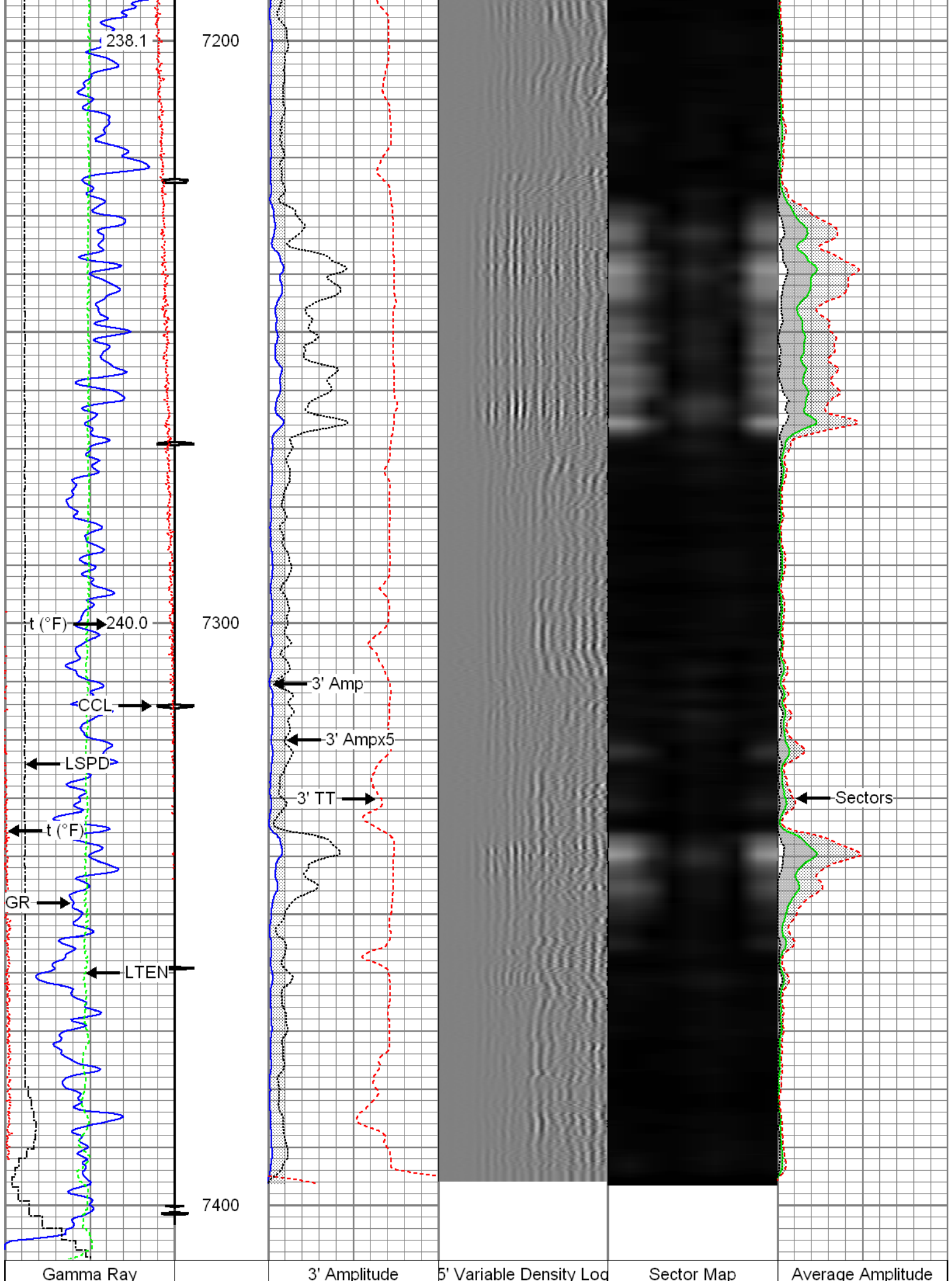










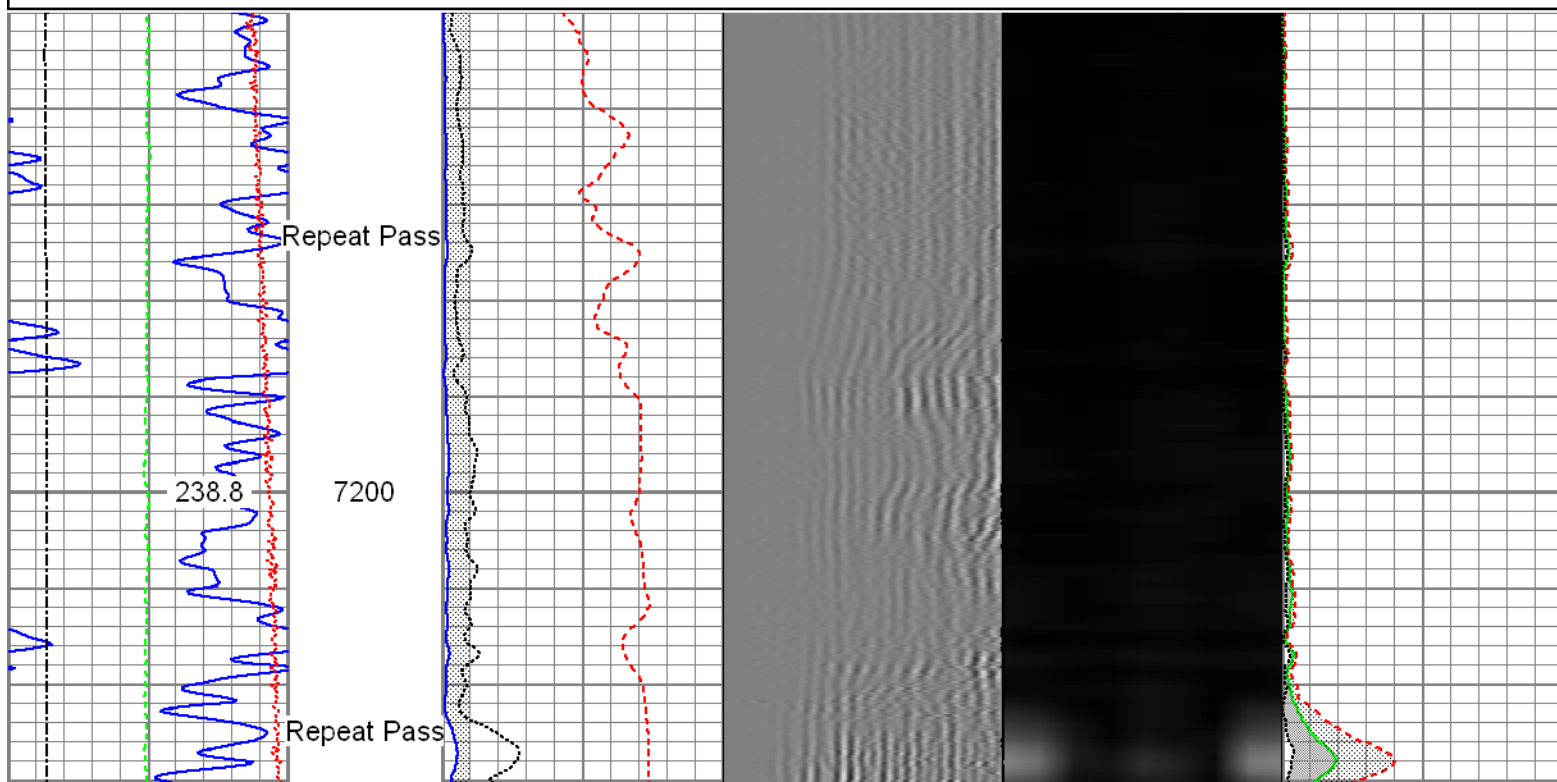


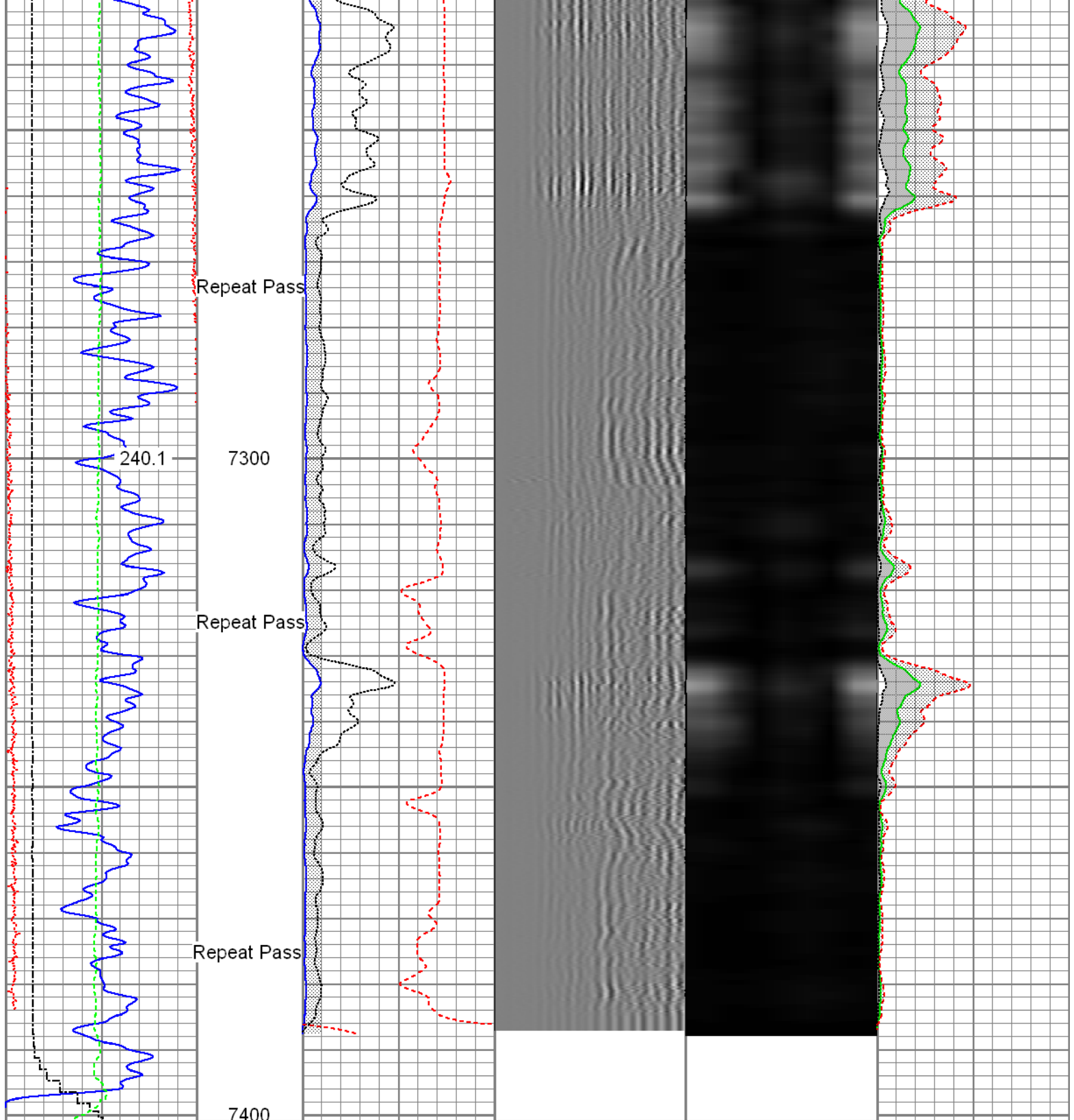
0 (GAPI) 150	0 (mV) 100	200	1200	0	100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude	
Temperature	0 (mV) 20			0	100
0 (degF) 20	3' Travel Time			Maximum Amplitude	
Line Speed	650 (usec) 150			0	100
-150 (ft/min) 150					
Line Tension					
0 (lb) 2000					

FMC Technologies	Repeat Pass
	Recorded with 2800 PSI Surface Induced Pressure

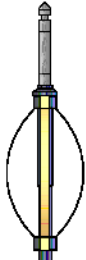

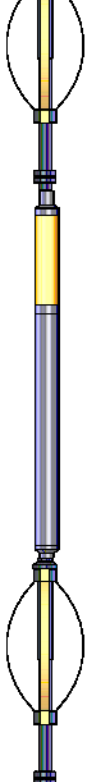
Database File: c:\warrior\data\0512341908_anadarko_powers 14n-22hz_12-08-15_rbl\0512341908_anadarko_powers
 Dataset Pathname: repeat
 Presentation Format: radii
 Dataset Creation: Tue Dec 08 14:07:18 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

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





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

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
HeadVolt	19.49		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Temp	16.72		Probe_RADII-C-2-3/4" (FW1305-098) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
WVF3FT	14.55					
WVFCAL	14.55					
WVFS1	14.55					
WVFS2	14.55					
WVFS3	14.55					
WVFS4	14.55					
WVFS5	14.55					
WVFS6	14.55					
WVFS7	14.55					
WVFS8	14.55					
WVF5FT	13.55					
CCL DCCL	6.51		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
	6.51					
GR	3.77		Probe_CCL_GR-2.75"Digital (FW1212-026) Probe 2-3/4" Digital CCL / Gamma Ray Combined	4.54	2.75	55.00
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00

Dataset: 0512341908_anadarko_powers 14n-22hz_12-08-15_rbl.db: field/well/run1/main.1

Total Length: 23.40 ft

Total Weight: 194.00 lb

O.D. 2.75 in

Calibration Report

Database File: c:\warrior\data\0512341908_anadarko_powers 14n-22hz_12-08-15_rb\0512341908_anadarko_powers
 Dataset Pathname: main.1
 Dataset Creation: Wed Dec 09 14:56:17 2015 by Calc SCH 120430

Gamma Ray Calibration Report

Serial Number: FW1212-026
 Tool Model: 2.75"Digital
 Performed: Wed Dec 02 08:59:40 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1305-098
 Tool Model: 2-3/4"

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 18.019 ft

Master Calibration, performed Wed Dec 09 14:56:14 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.549	0.800	71.921	131.132	-0.085
CAL	0.722	0.783				
5'	0.010	0.389	0.800	71.921	187.228	-0.996
SUM						
S1	0.005	0.523	0.000	100.000	193.096	-1.044
S2	0.007	0.540	0.000	100.000	187.741	-1.305
S3	0.007	0.563	0.000	100.000	179.721	-1.222
S4	0.007	0.575	0.000	100.000	176.103	-1.272
S5	0.008	0.578	0.000	100.000	175.173	-1.322
S6	0.008	0.556	0.000	100.000	182.607	-1.442
S7	0.008	0.536	0.000	100.000	189.397	-1.449
S8	0.007	0.525	0.000	100.000	193.068	-1.380

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.722	0.783	1.000	0.000

Air Zero Calibration, performed Tue Dec 08 10:07:31 2015:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	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	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Powers 14N-22HZ
	Field	Wattenberg
	County	Weld
	State	Colorado