



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Fehr 37C-32HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:		API # : 05-123-41483	Other Services
SEC 32 TWP 2N RGE 66W			JB/GR
Permanent Datum	Ground Level	Elevation	4924'
Log Measured From	Kelly Bushing	20 FT	
Drilling Measured From	Kelly Bushing		K.B. 4944' D.F. --- G.L. 4924'

Date	29-SEP-2015
Run Number	Two
Depth Driller	13015 FT
Depth Logger	7760 FT
Bottom Logged Interval	7759 FT
Top Log Interval	Surface
Open Hole Size	7.875
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	237.4° F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	4:40 PM
Equipment Number	HD-0311
Location	Ft. Lupton, CO
Recorded By	R. Cameron
Witnessed By	Van Franke

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 LT&C	Surface	1878 FT		
Intermediate #1							
Intermediate #2	5 1/2	17	HCP-110 LTC	Surface	13015 FT		
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 Marker Joint at 6889 FT
Adjusted log 23 FT to correlate with Marker Joint
Log ran from as deep as possible in heel to Surface
Recorded with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

Thank you for choosing FMC Technologies Completion Services, Inc.!!

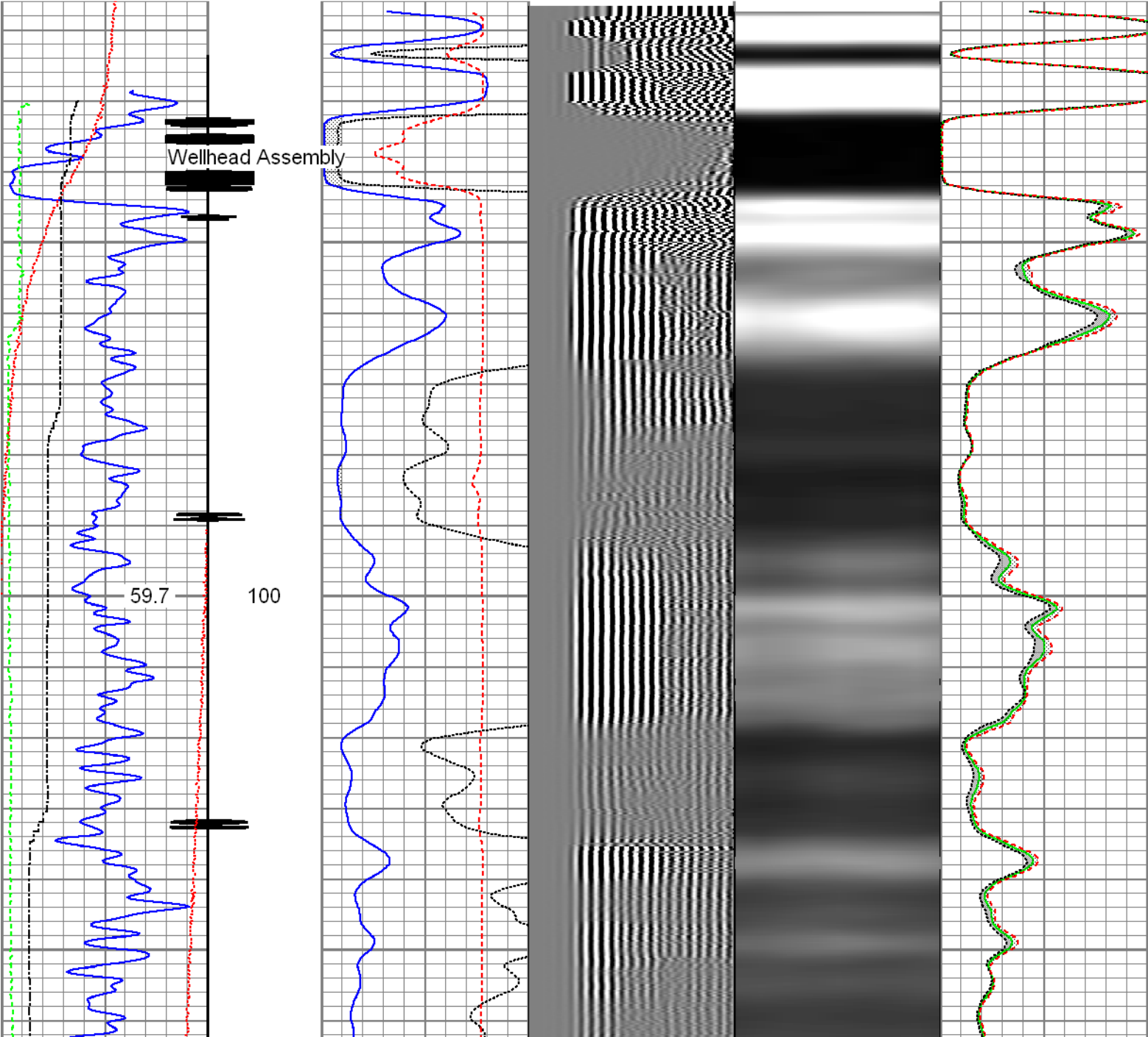


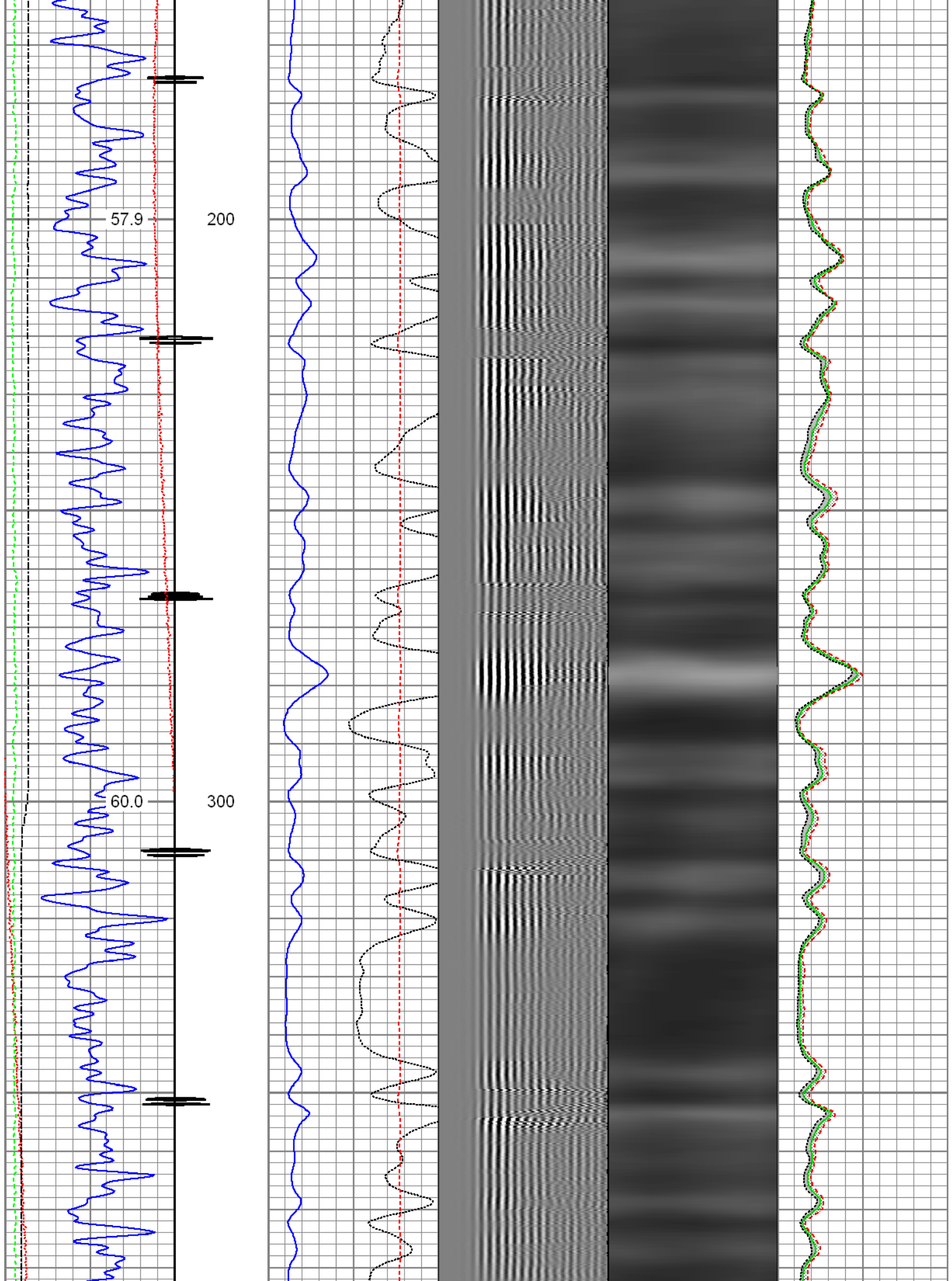
Main Pass

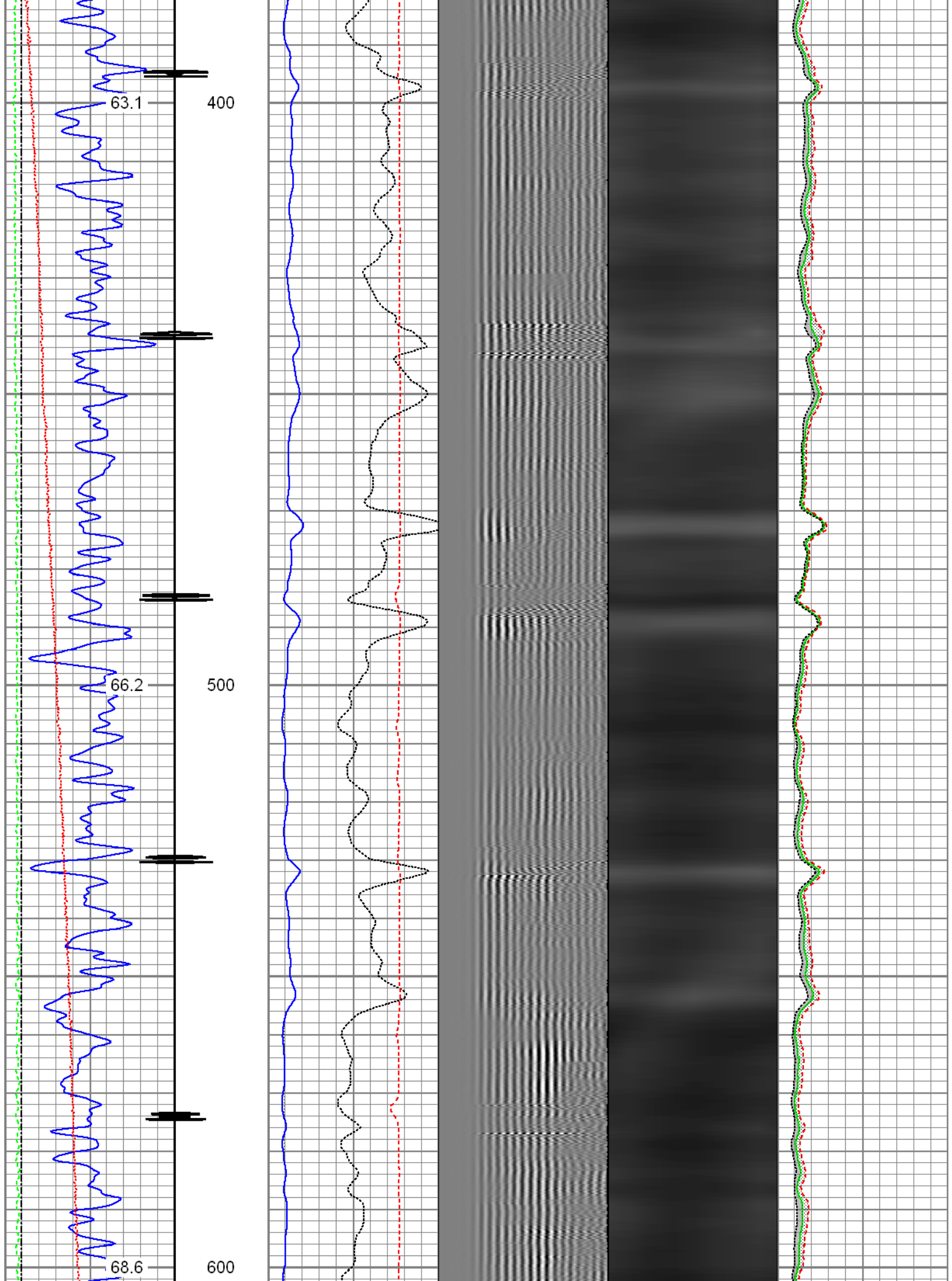
Recorded with 2800 PSI Surface Induced Pressure

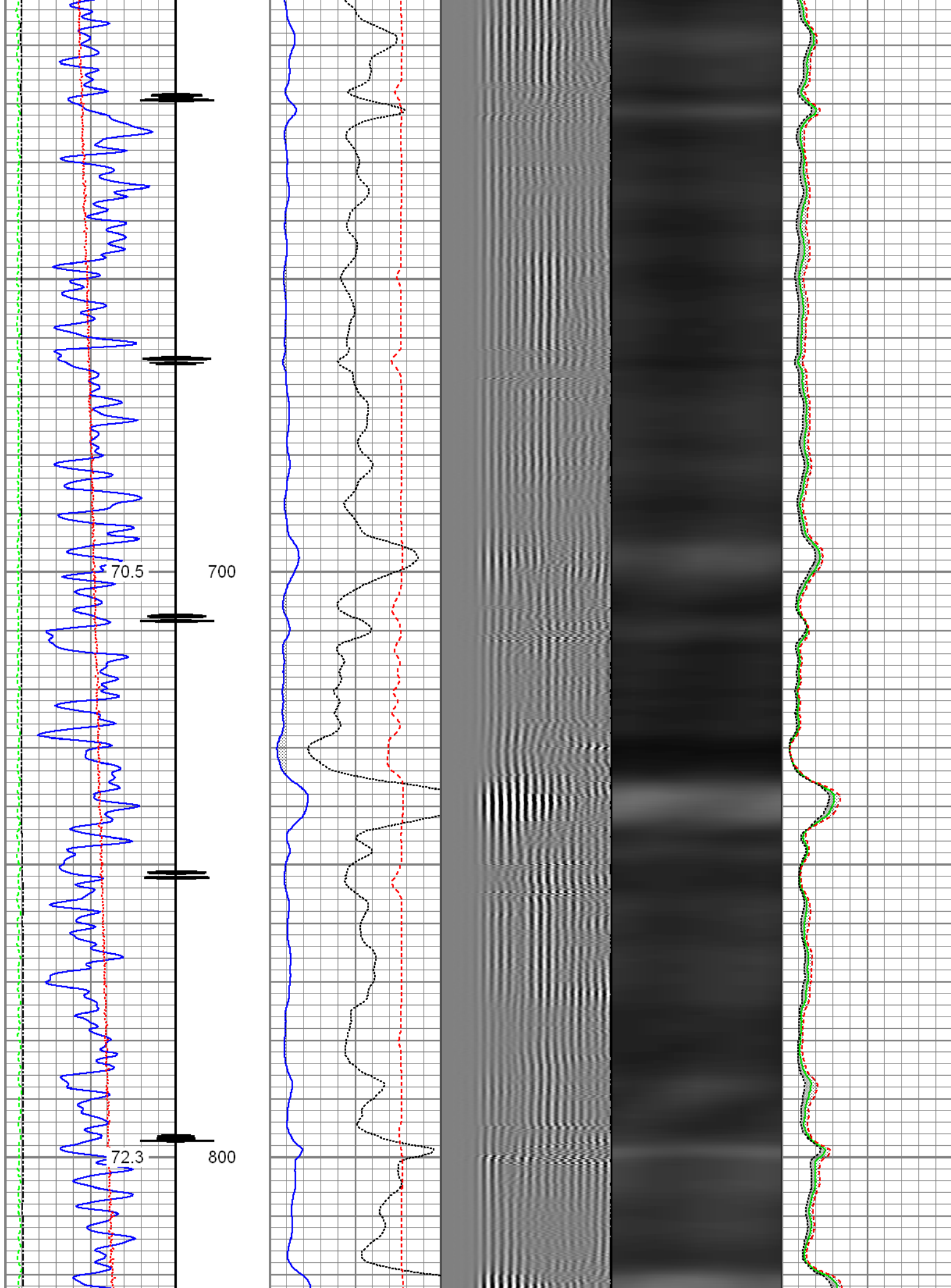
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Dataset Pathname: pass5.1
Presentation Format: radii
Dataset Creation: Tue Sep 29 17:55:44 2015 by Calc 7.0 B1
Charted by: Depth in Feet scaled 1:240

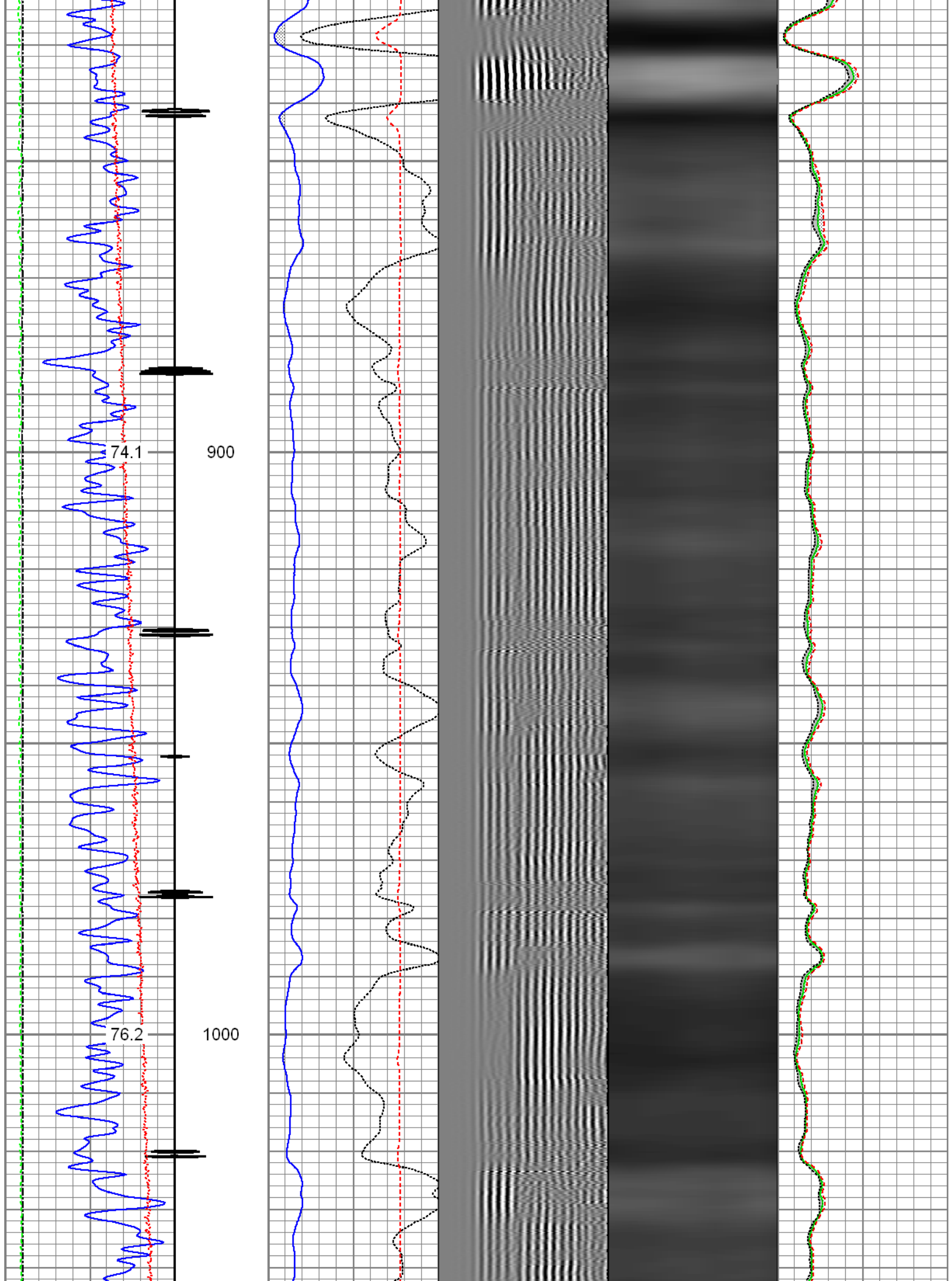
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min) 150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

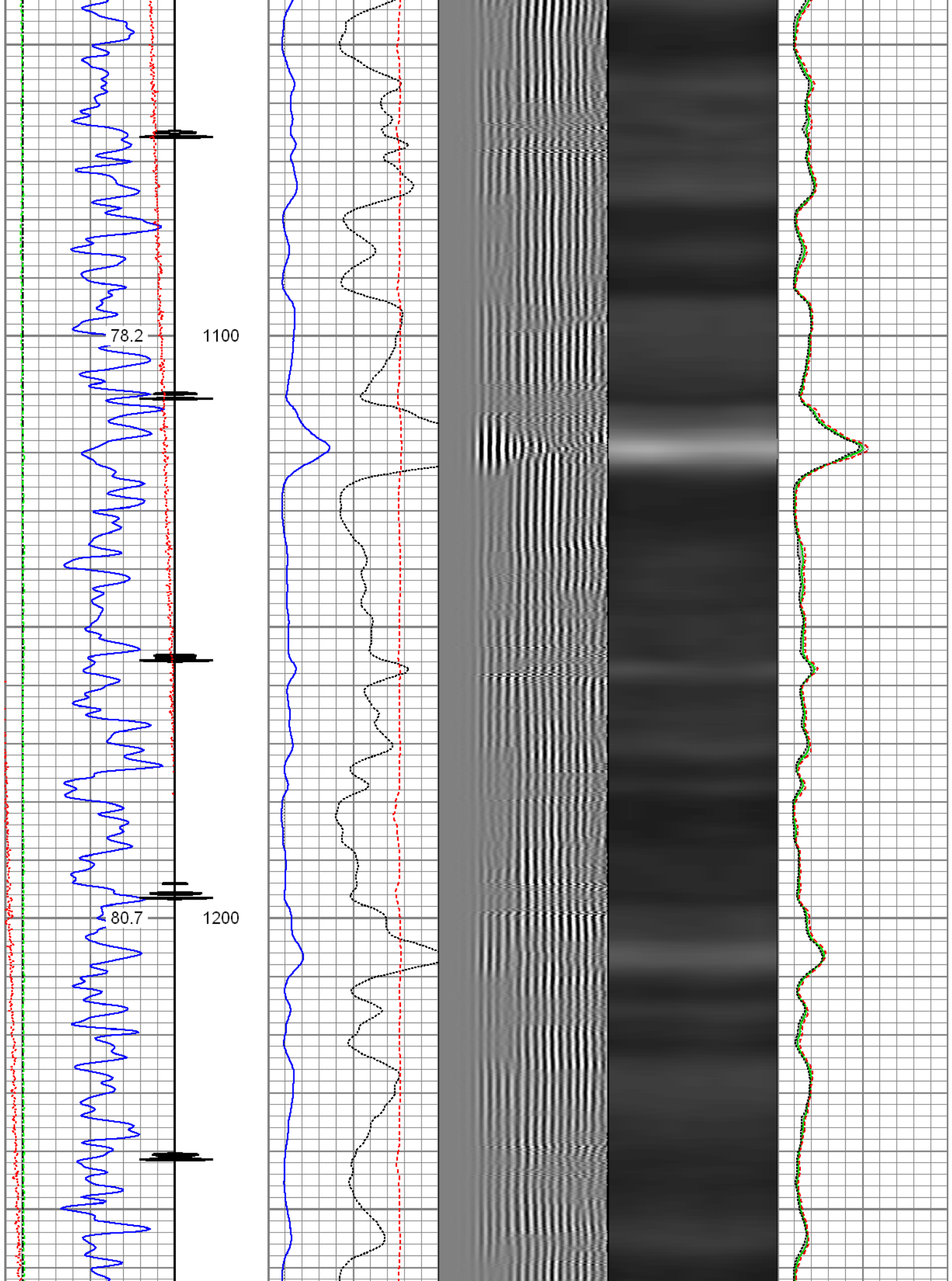


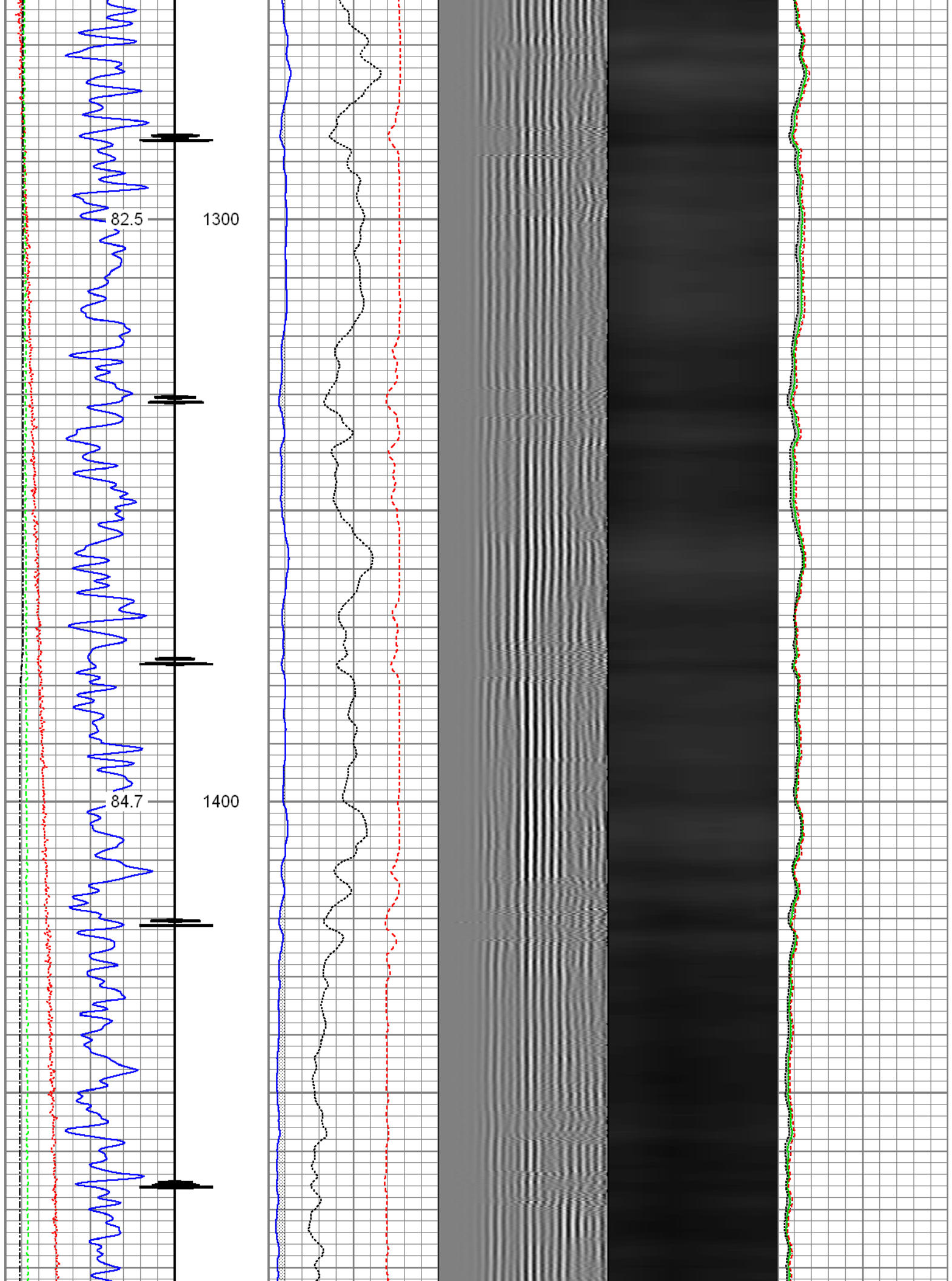


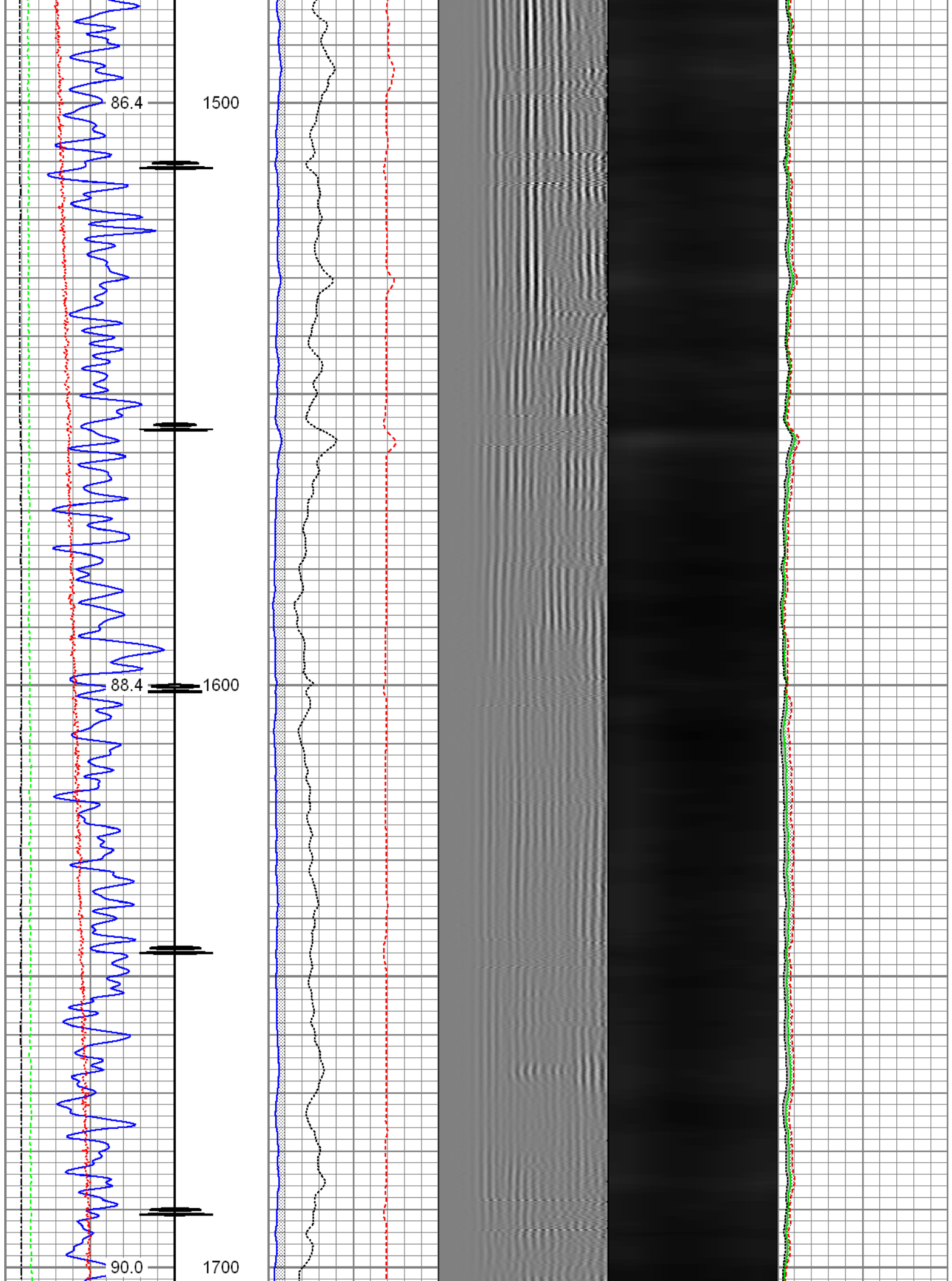


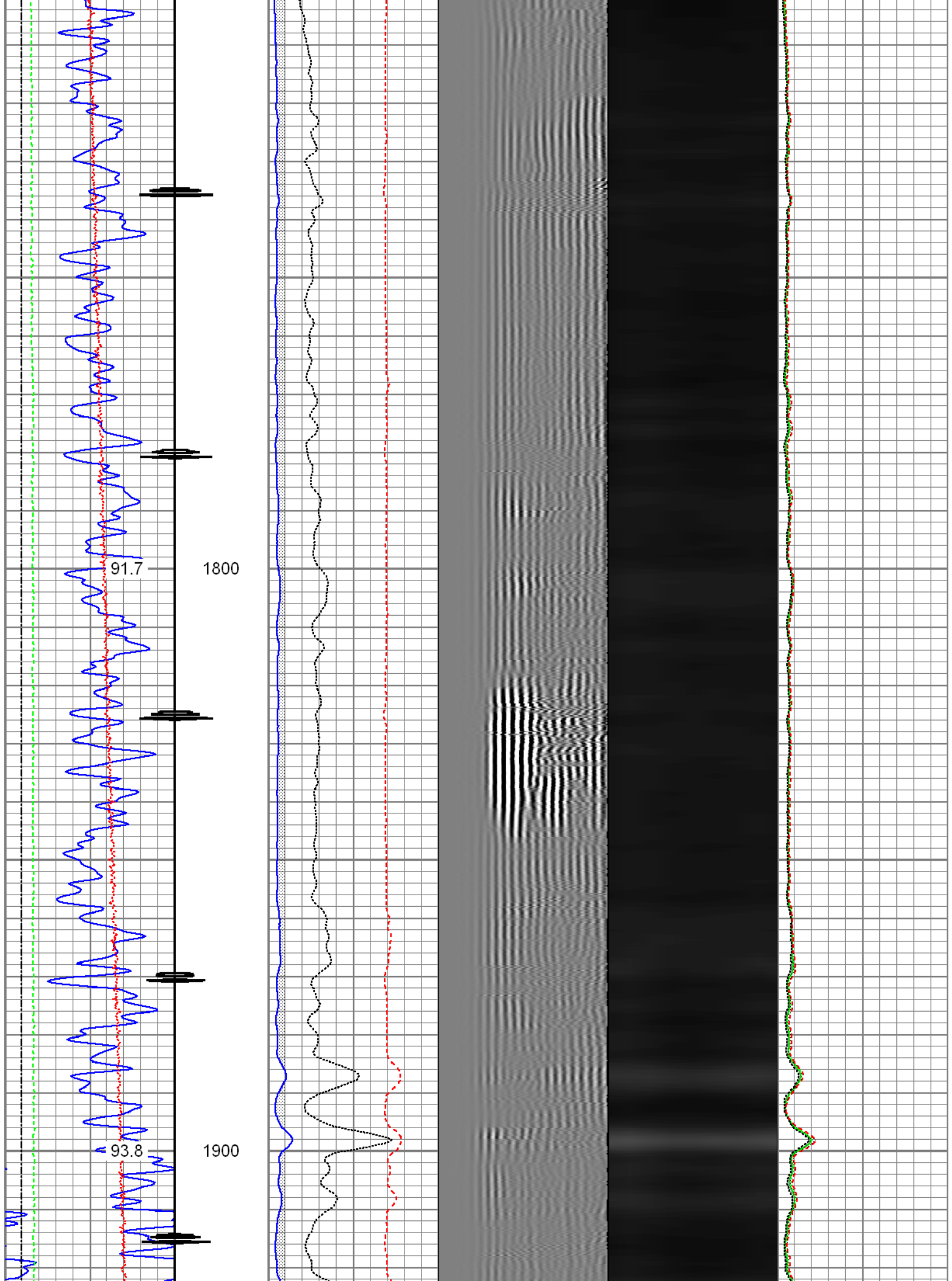


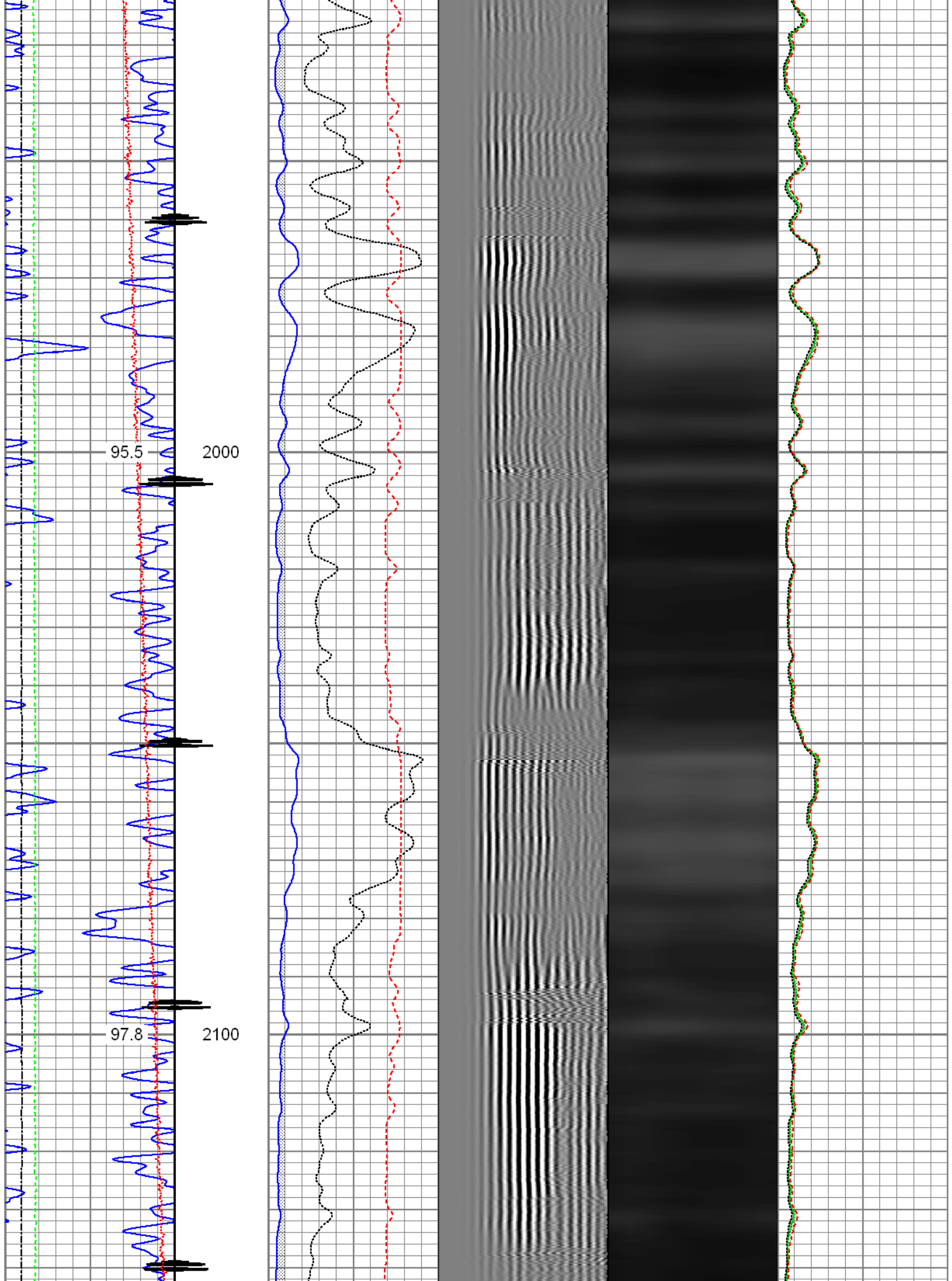


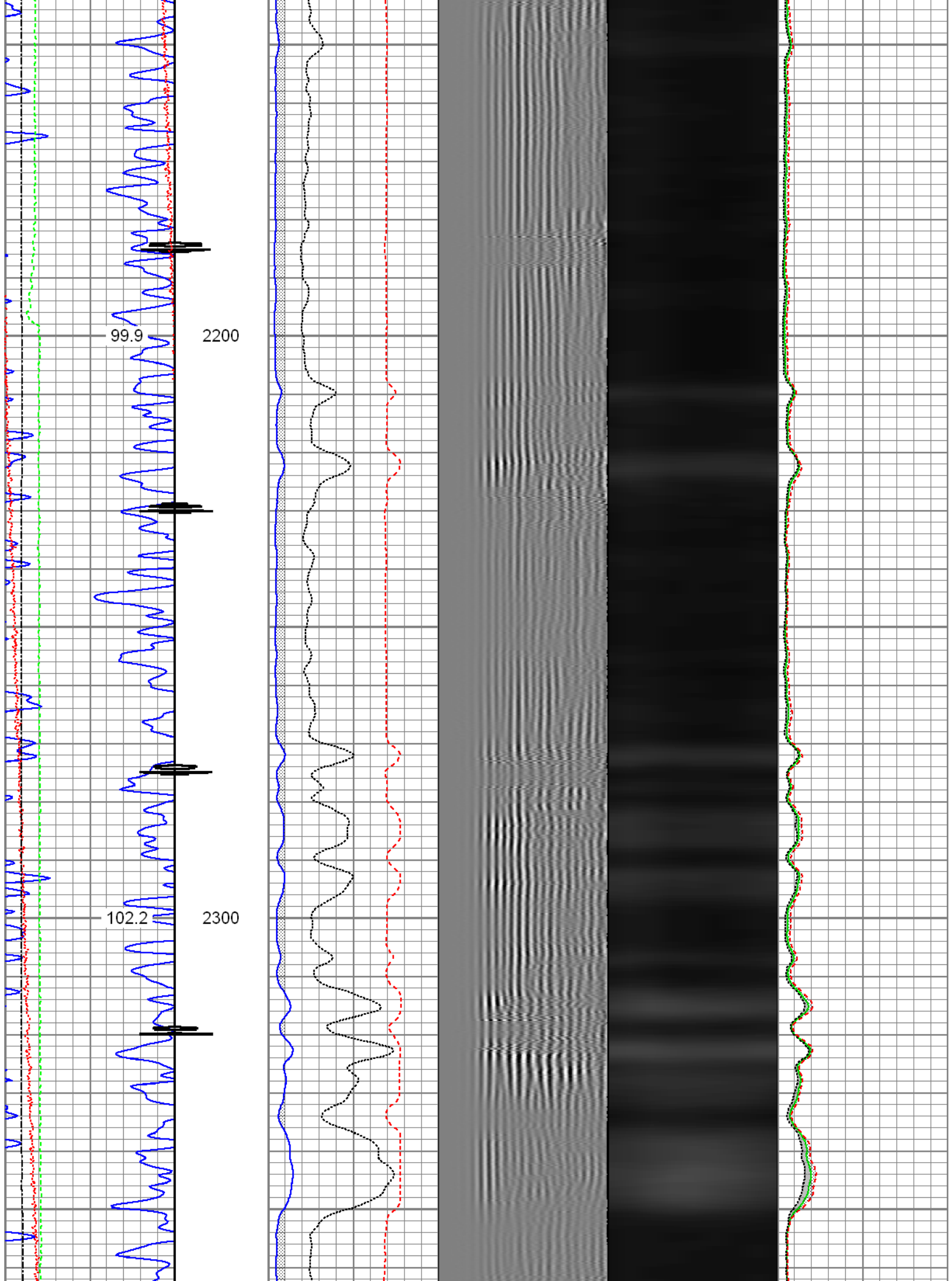


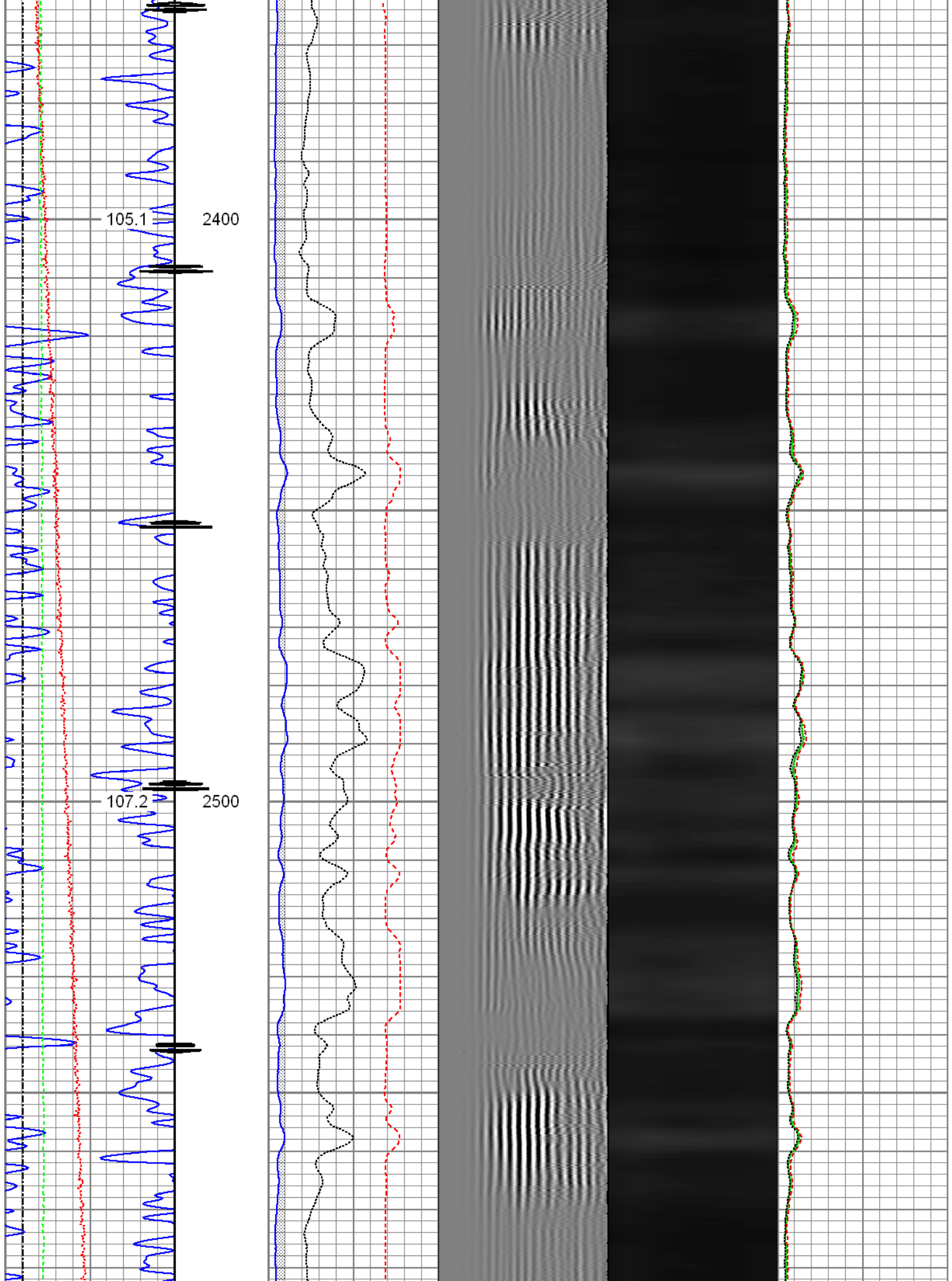


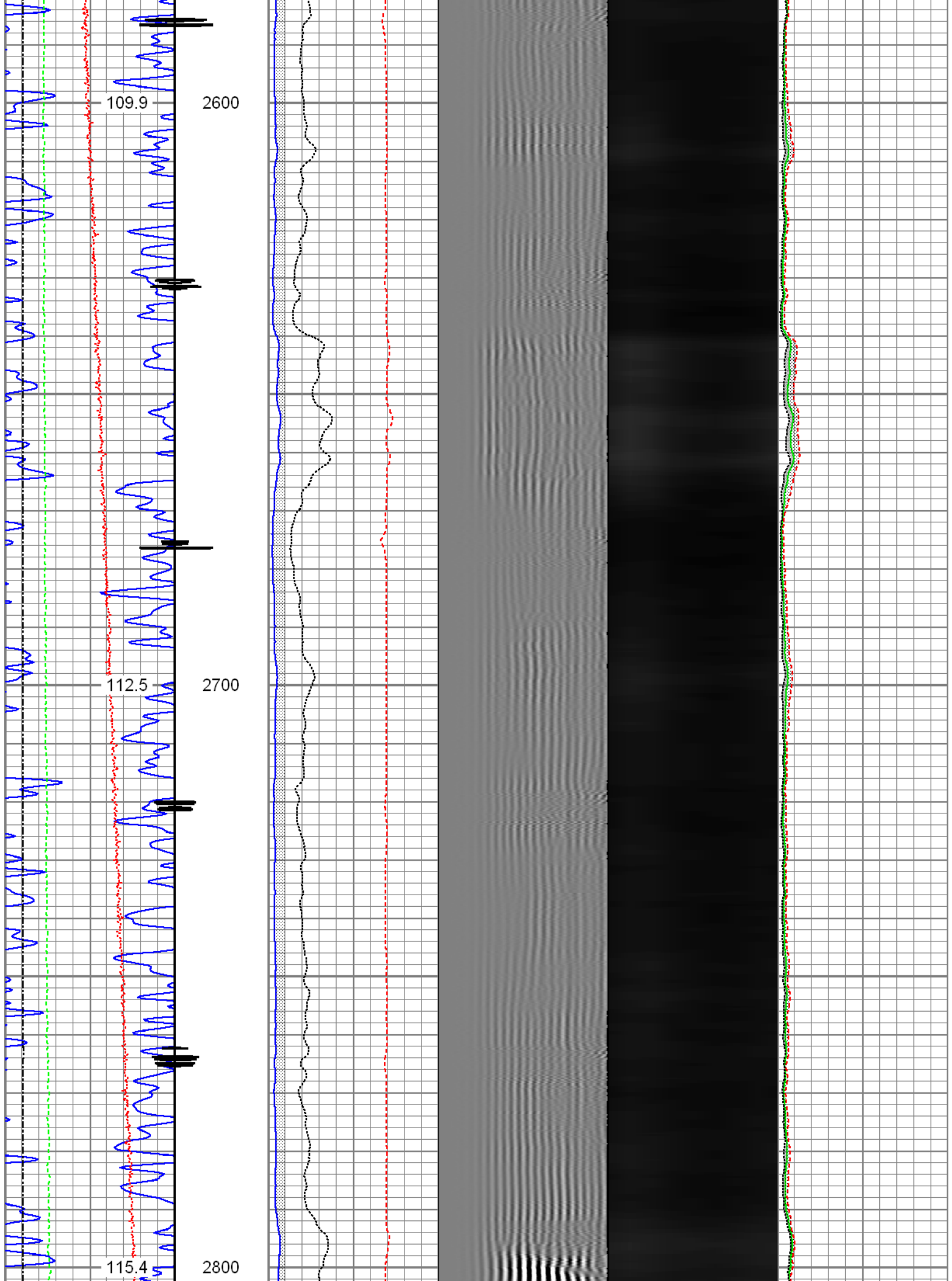


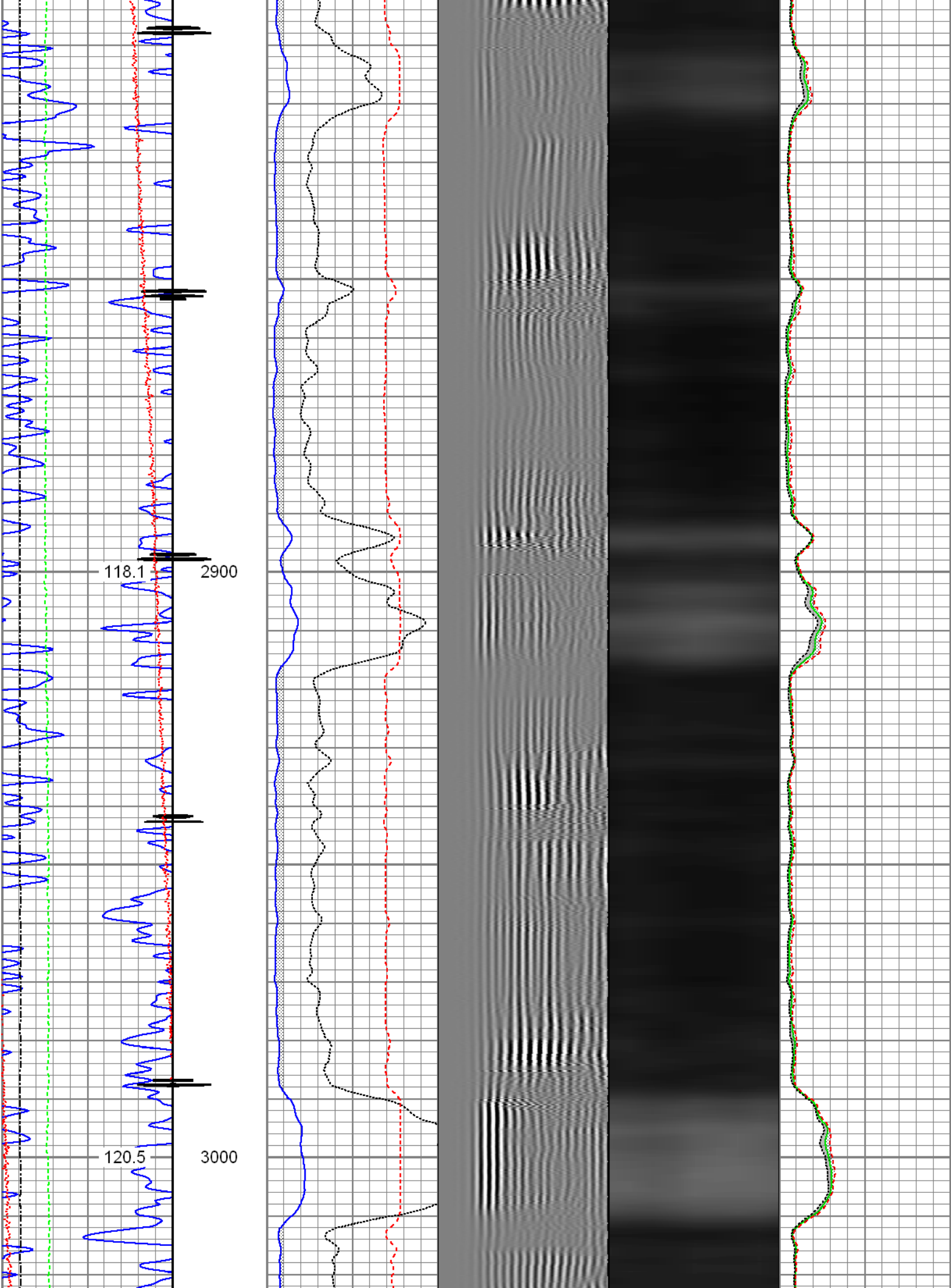


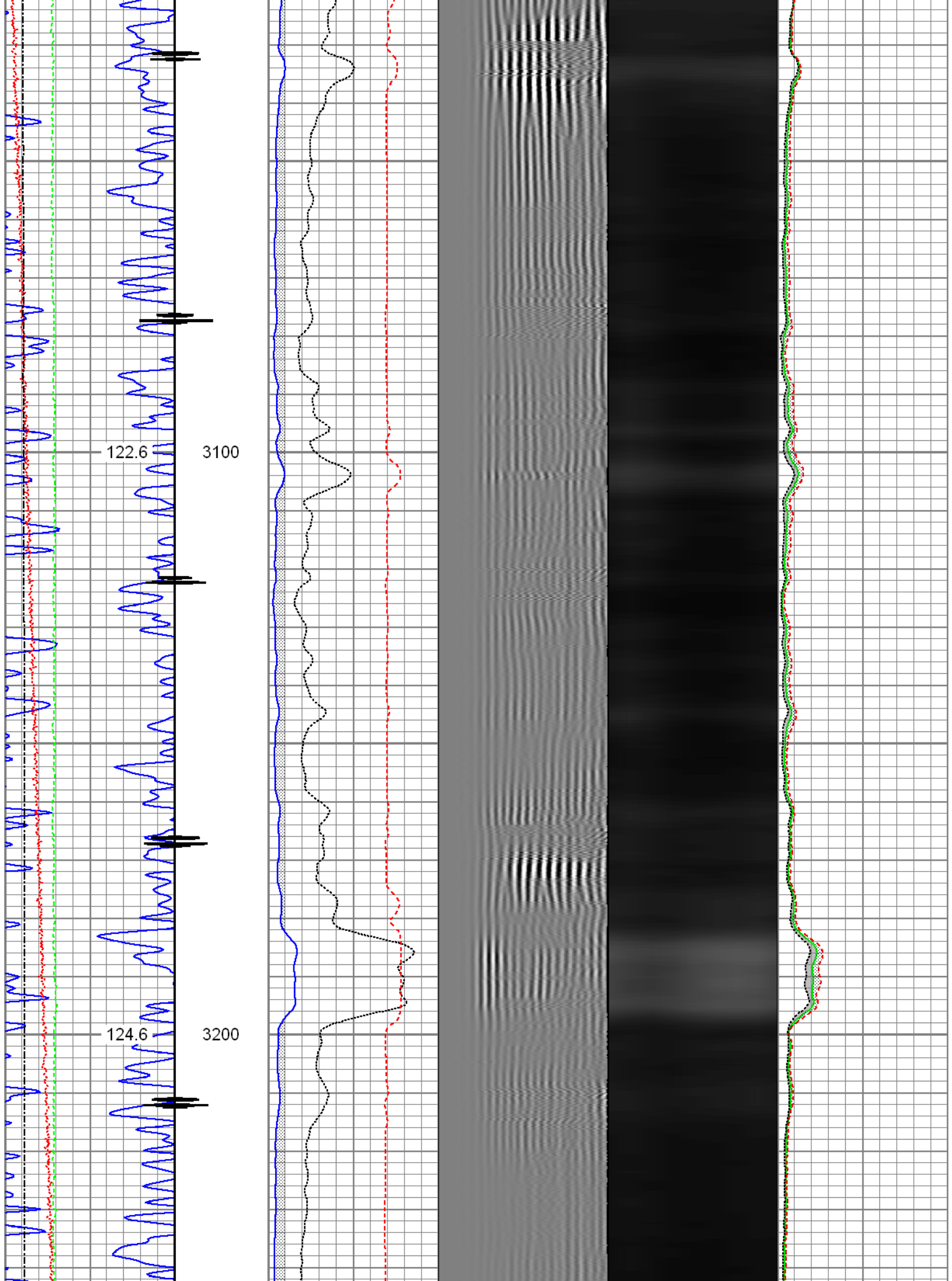


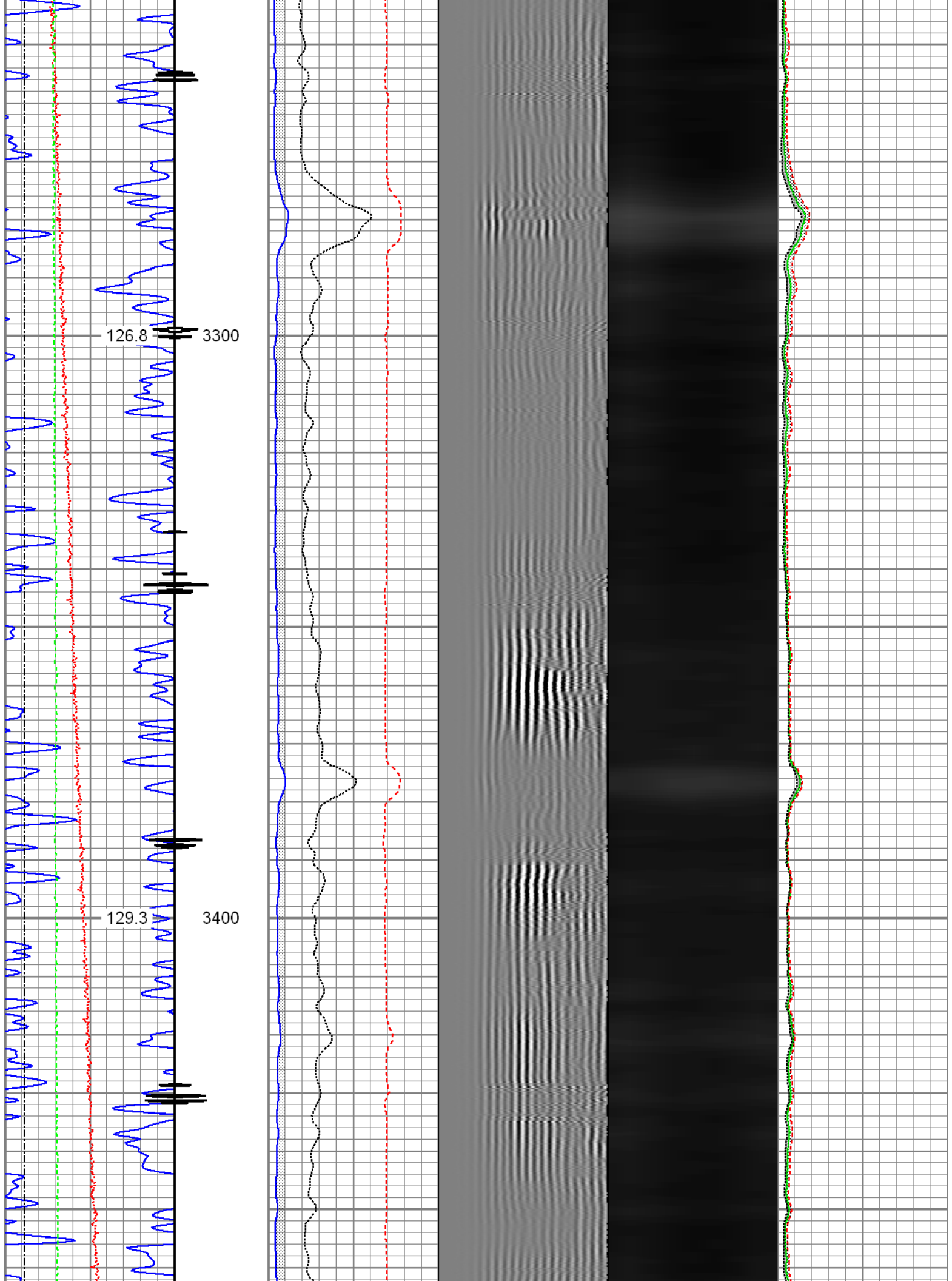


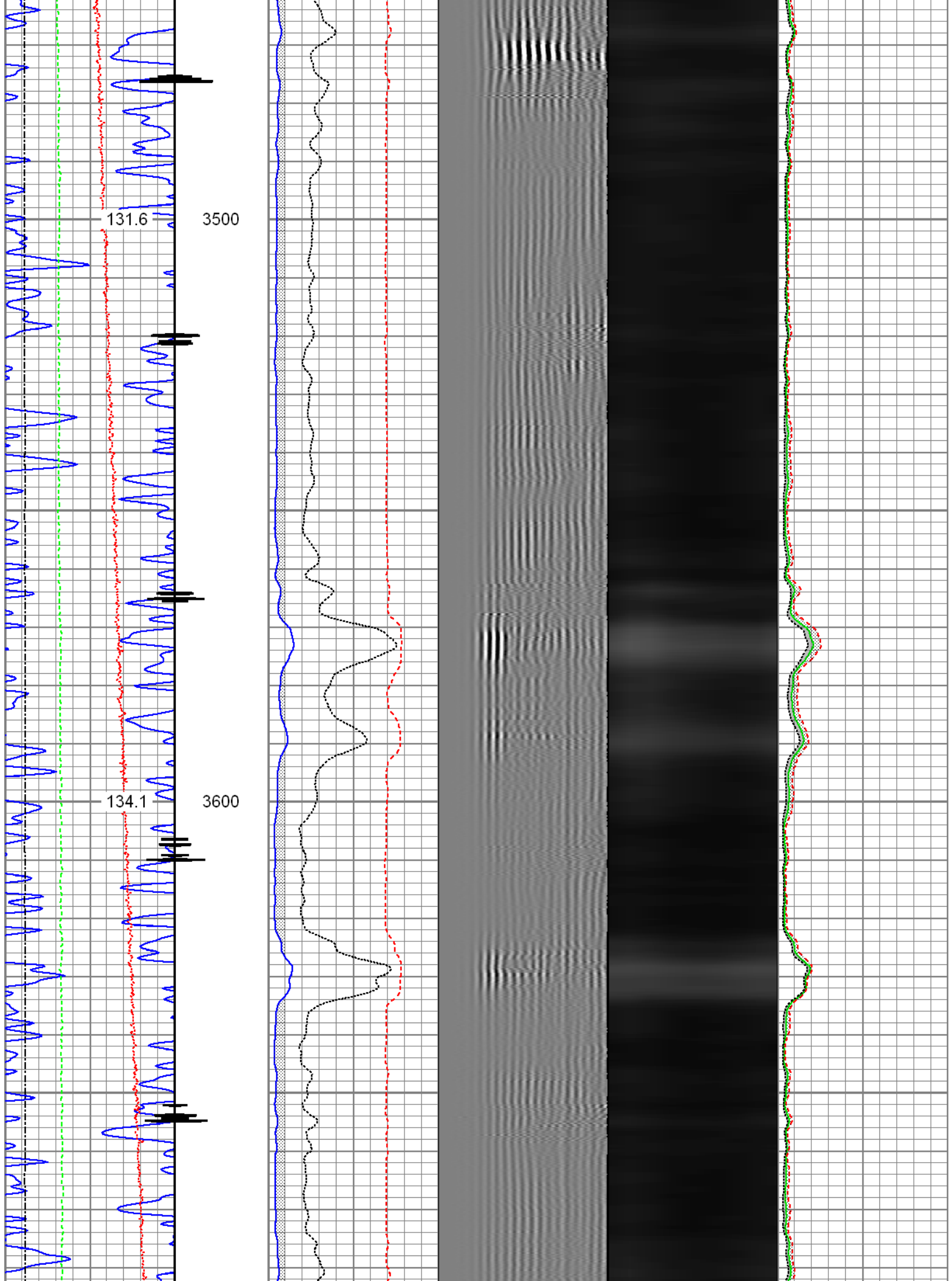


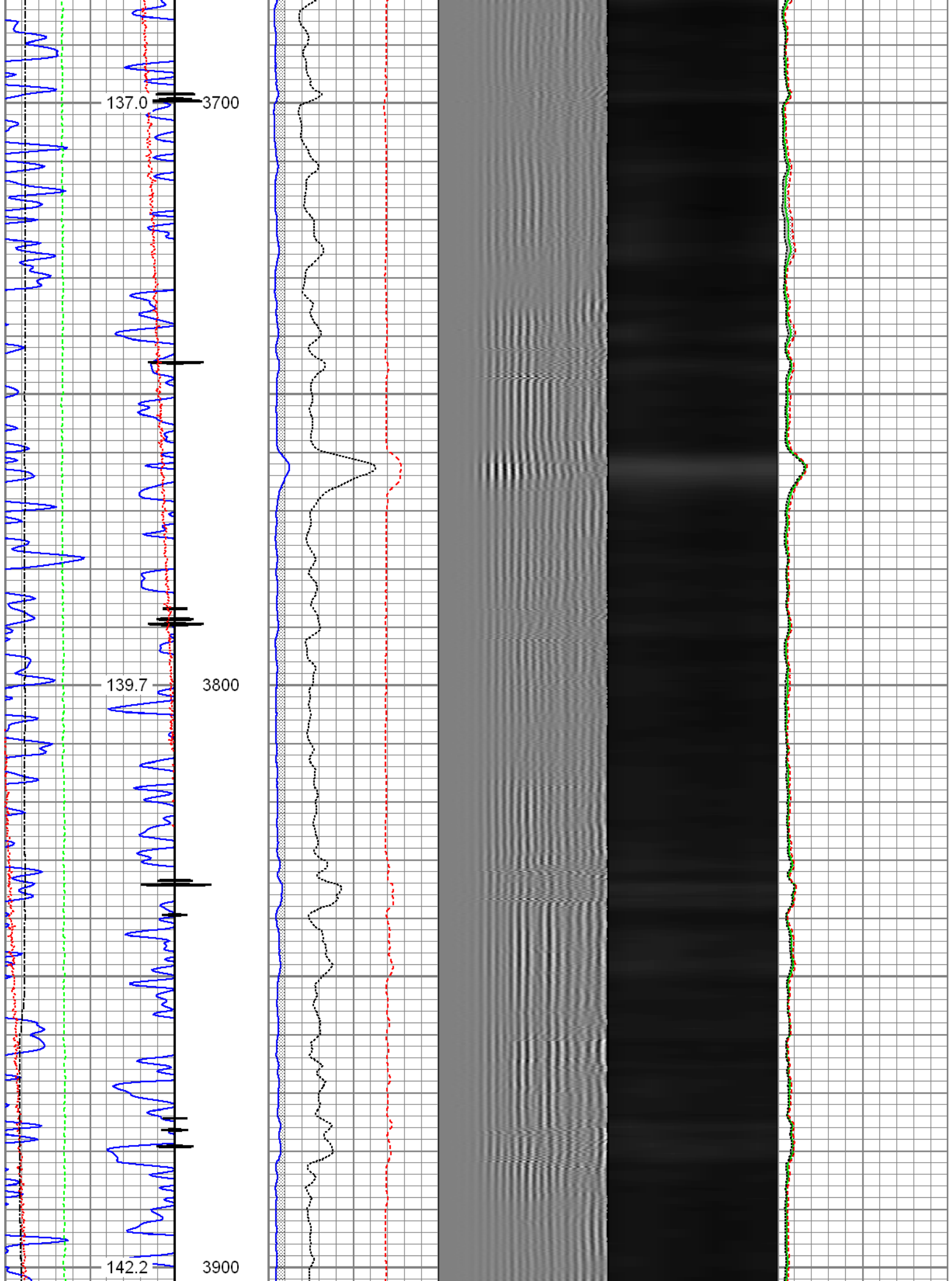


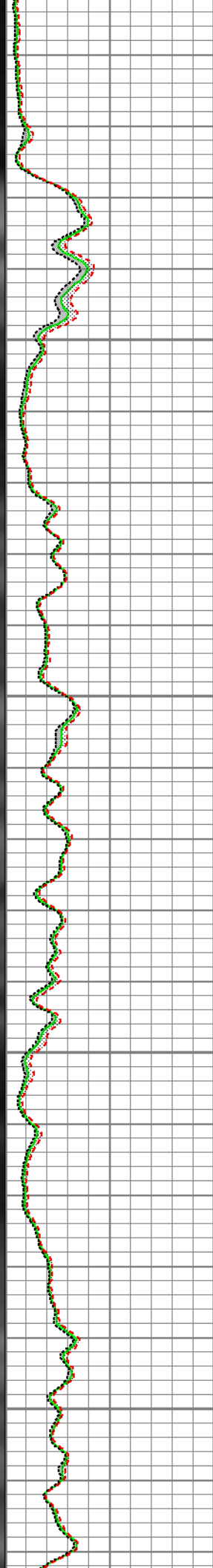
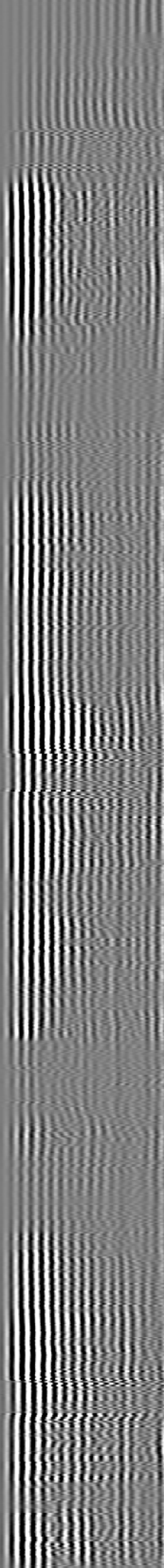
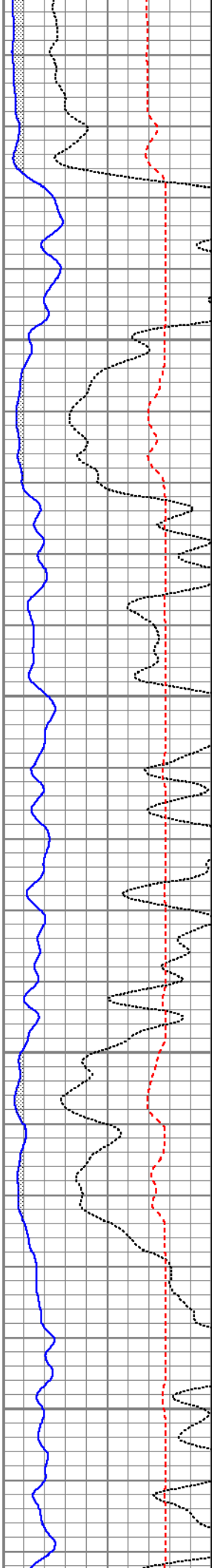
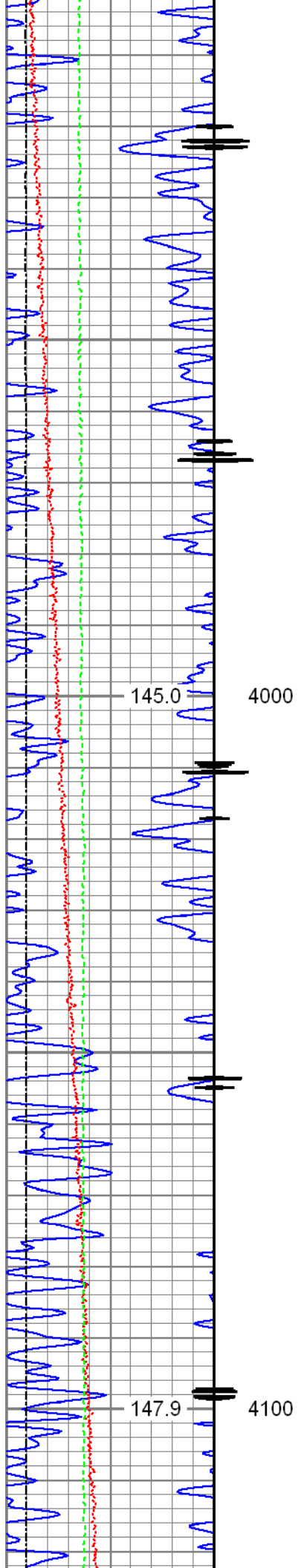


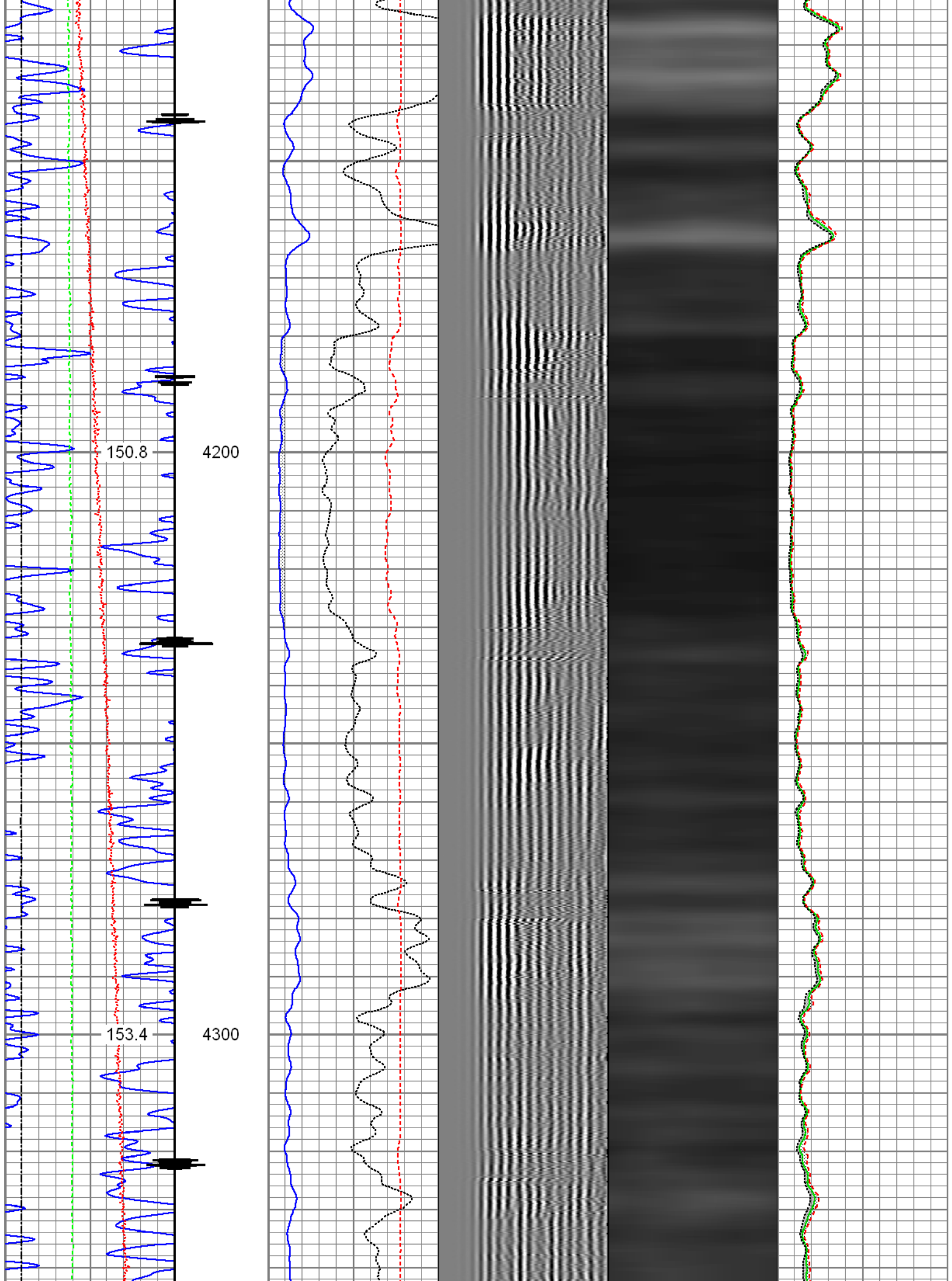


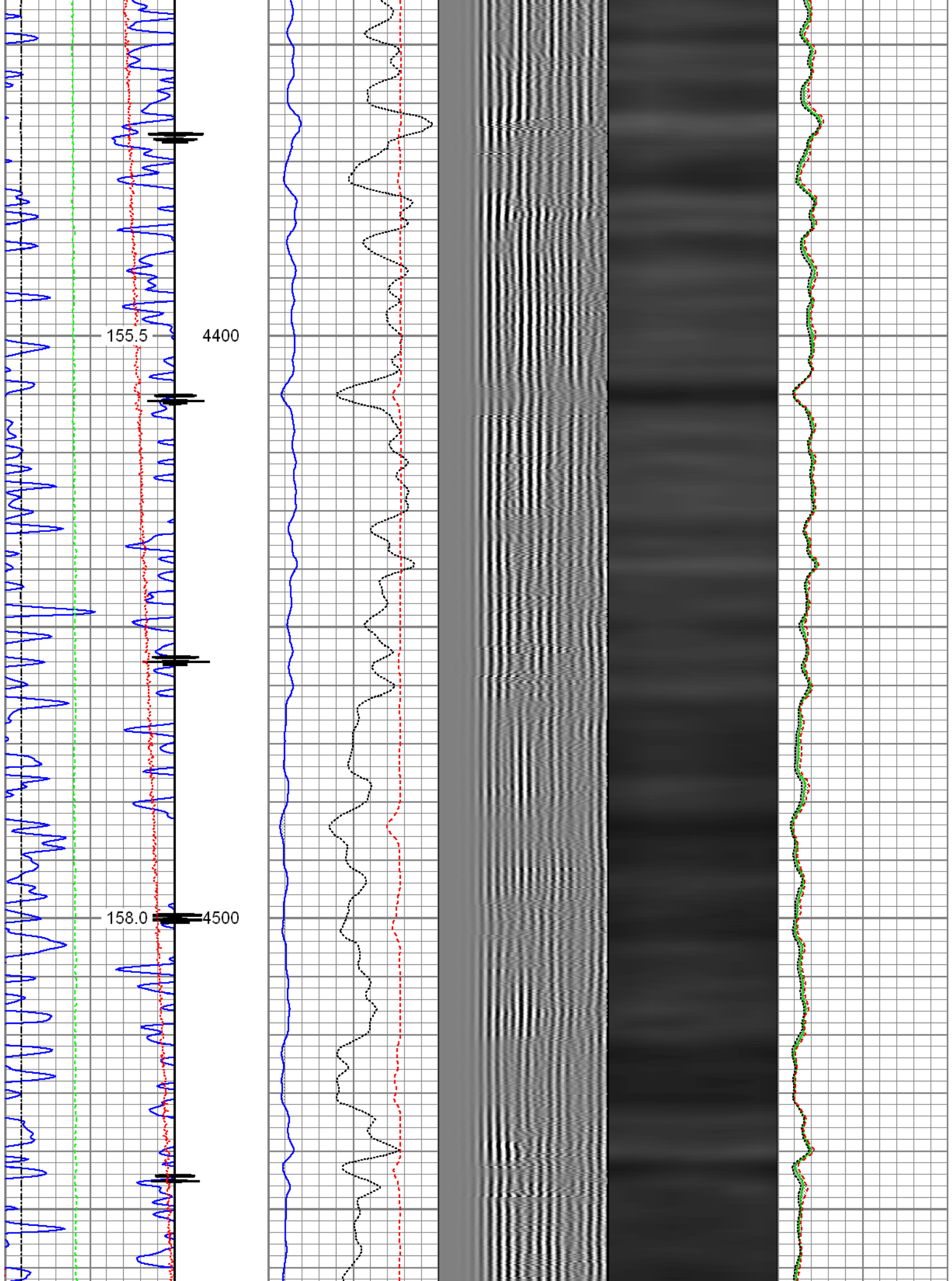


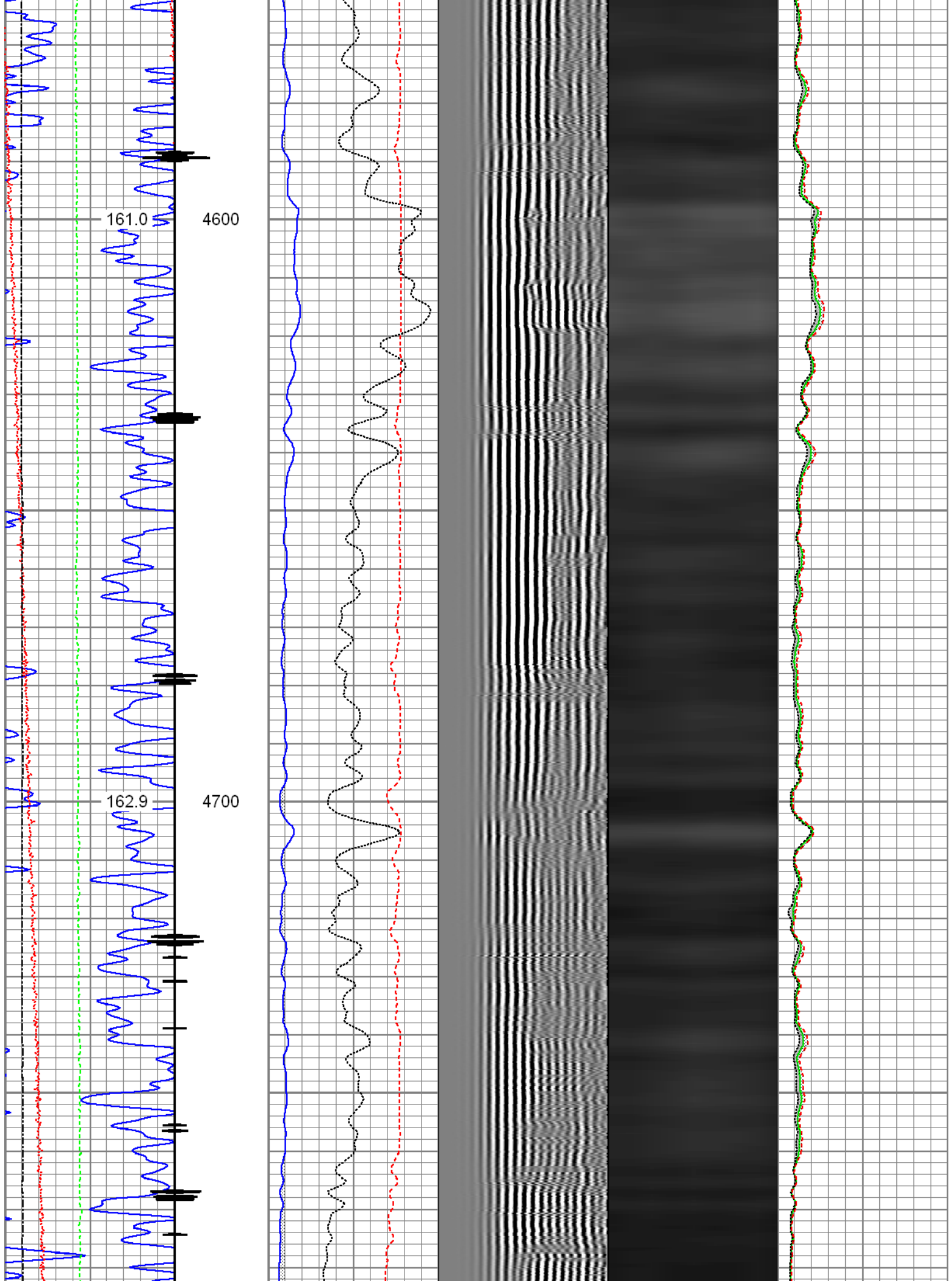


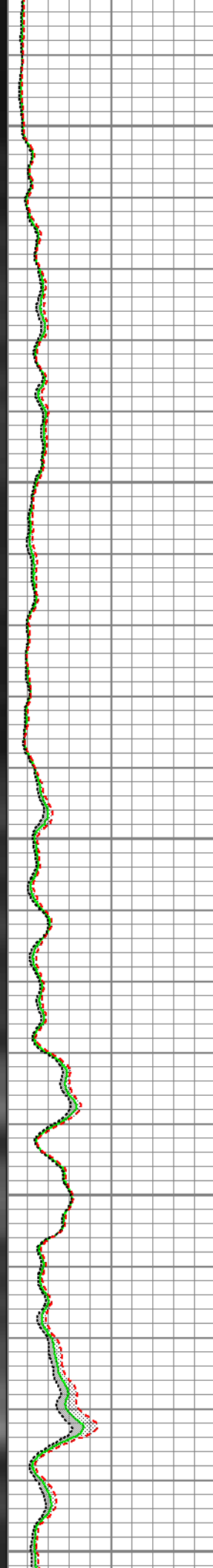
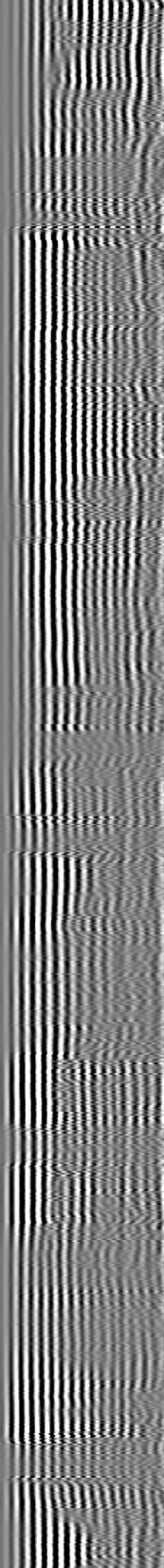
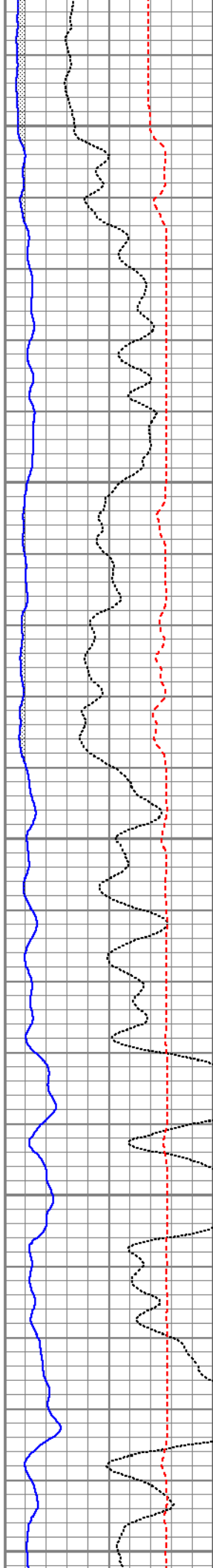
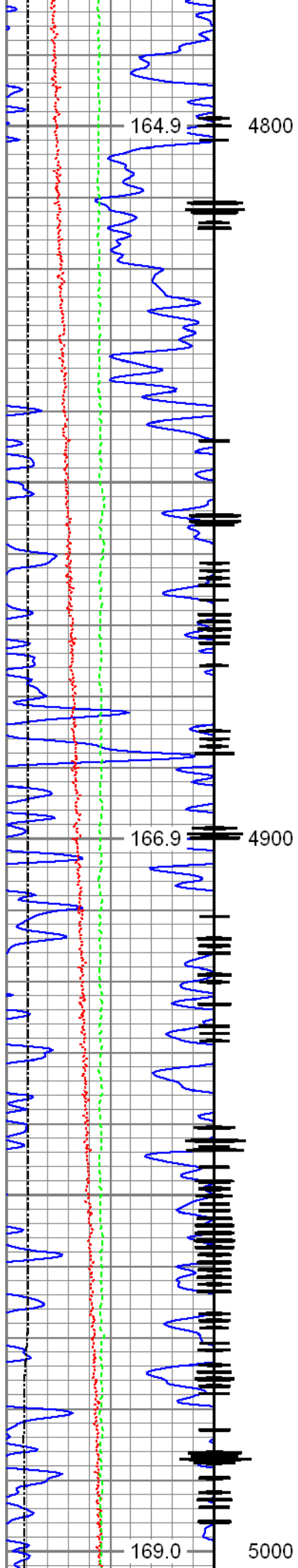


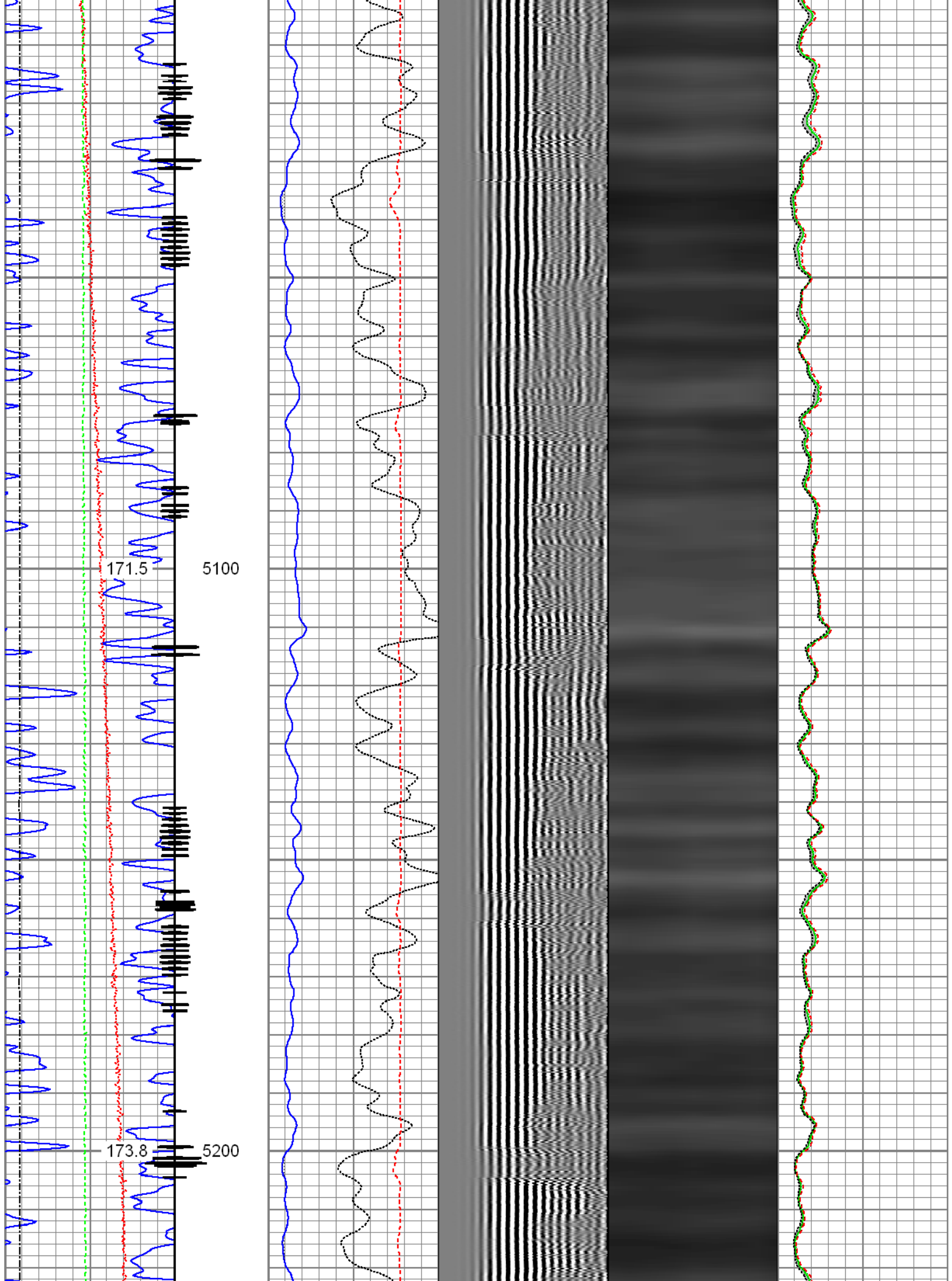


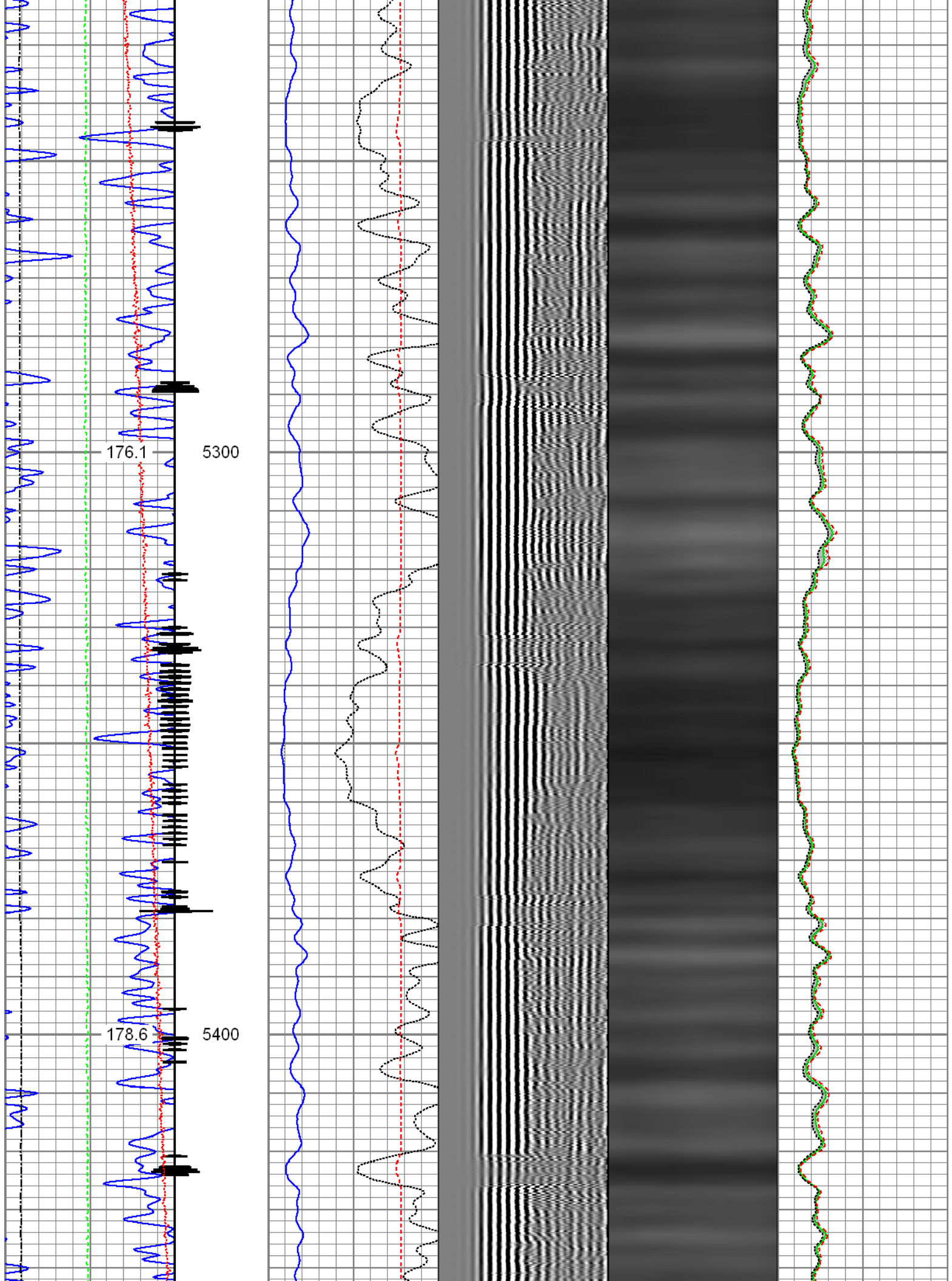


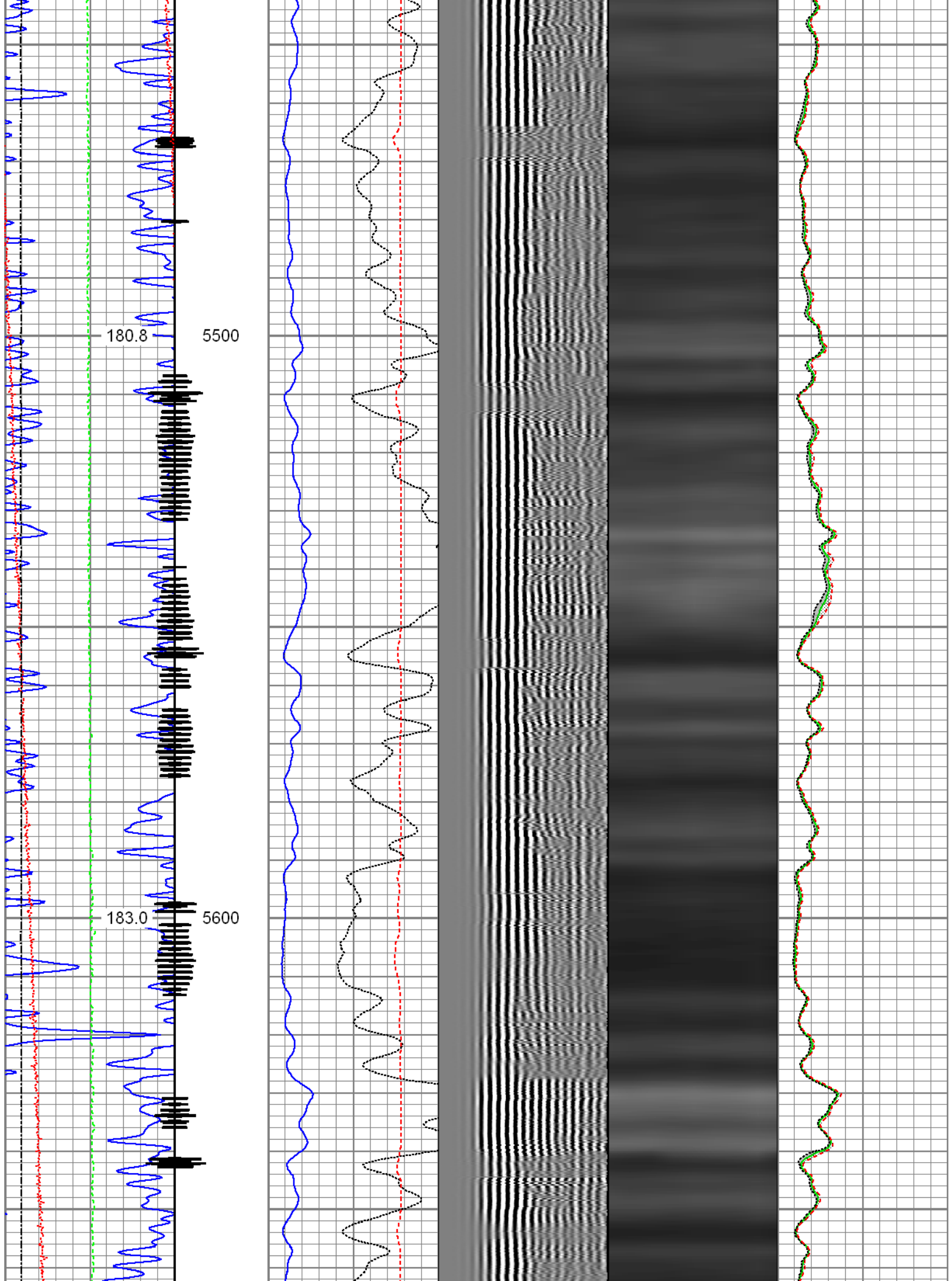


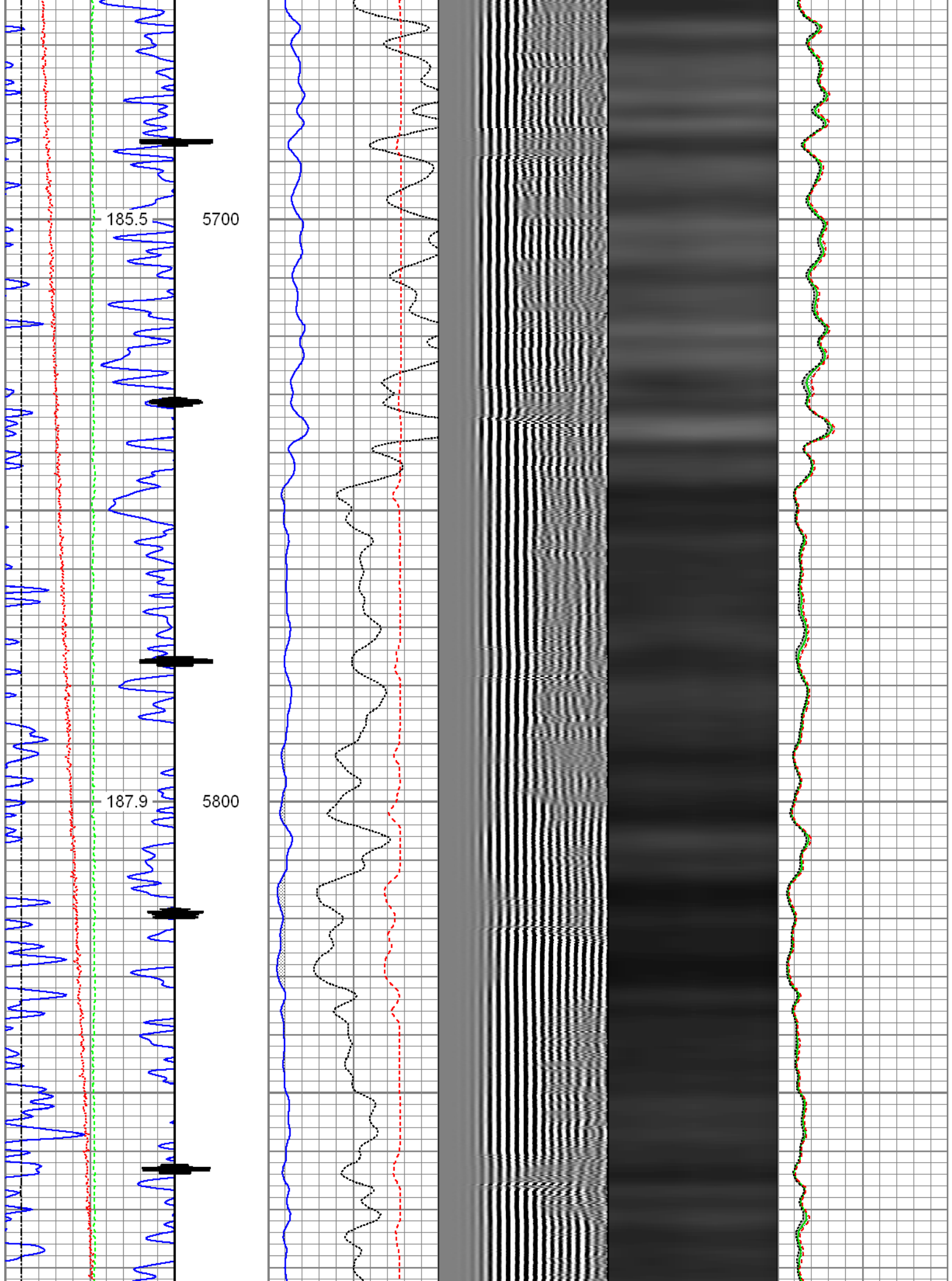


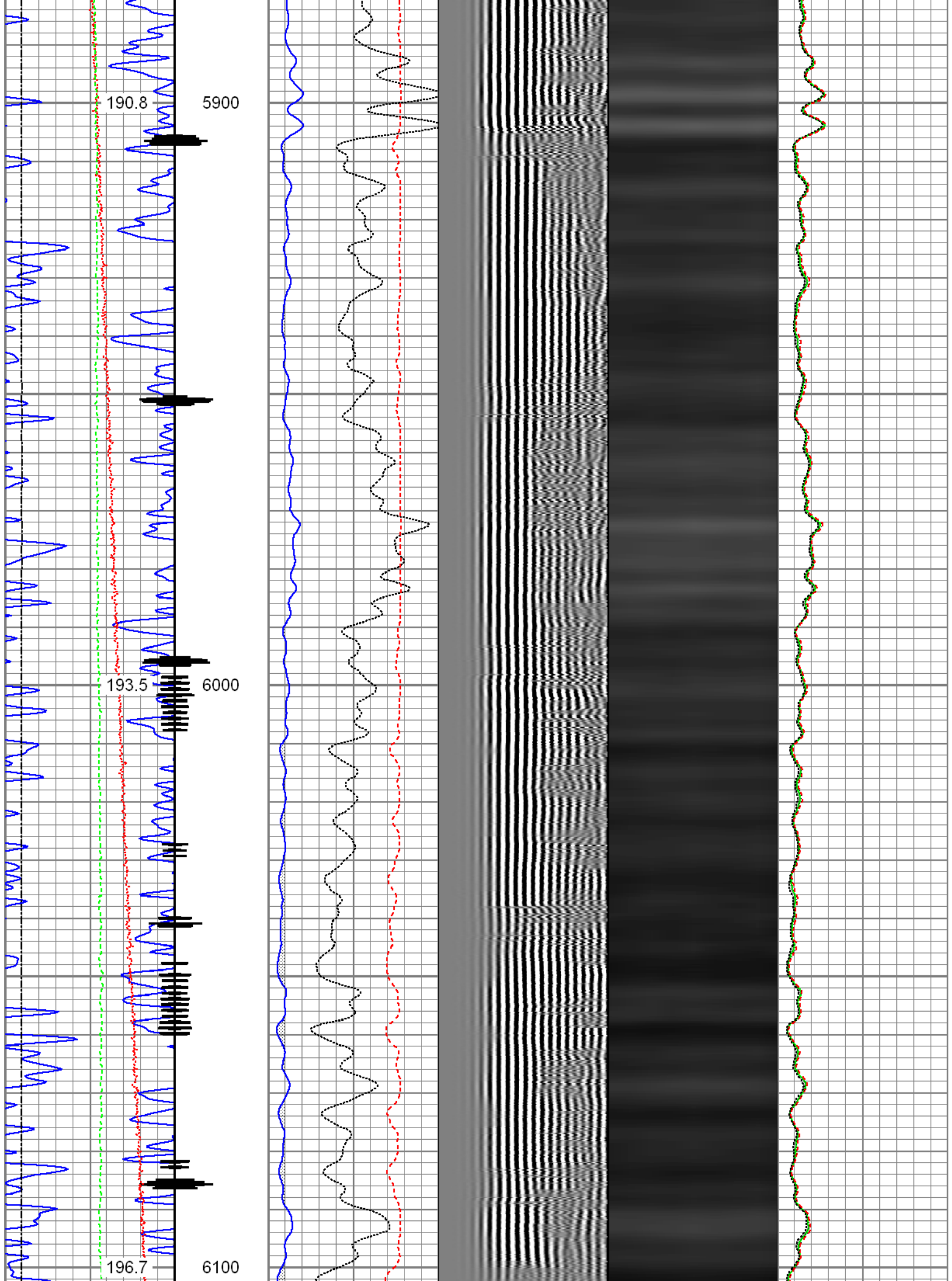


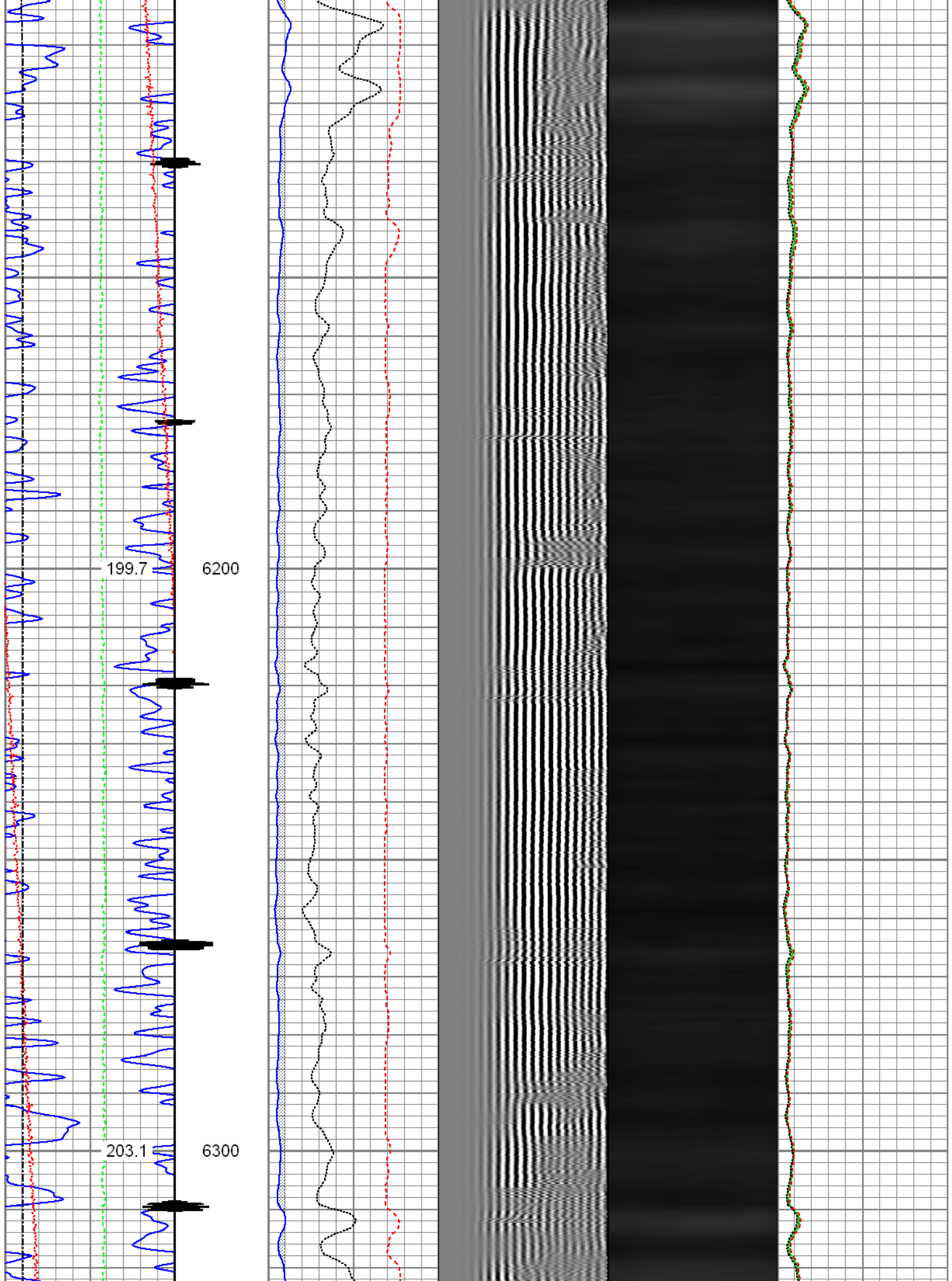


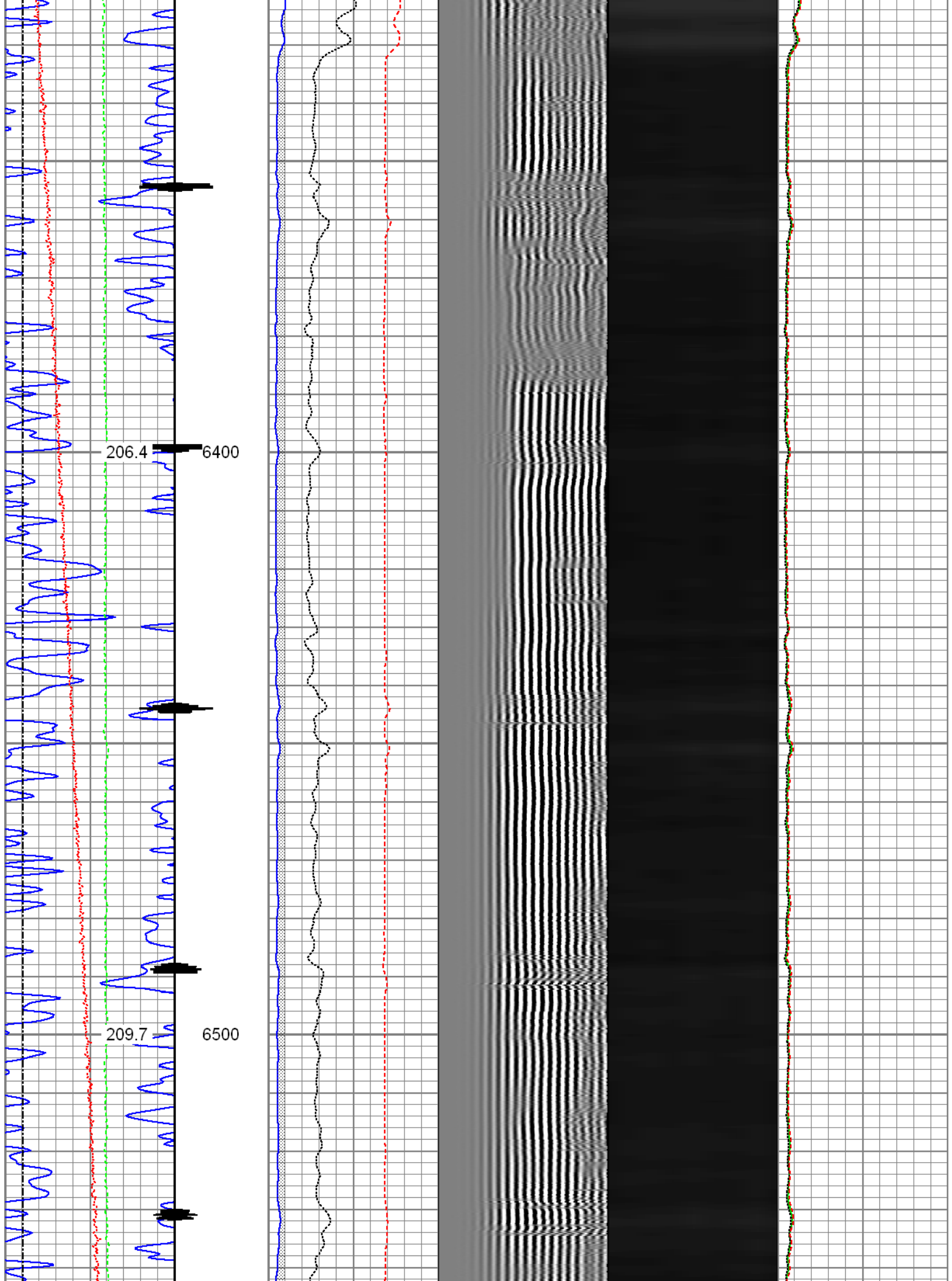


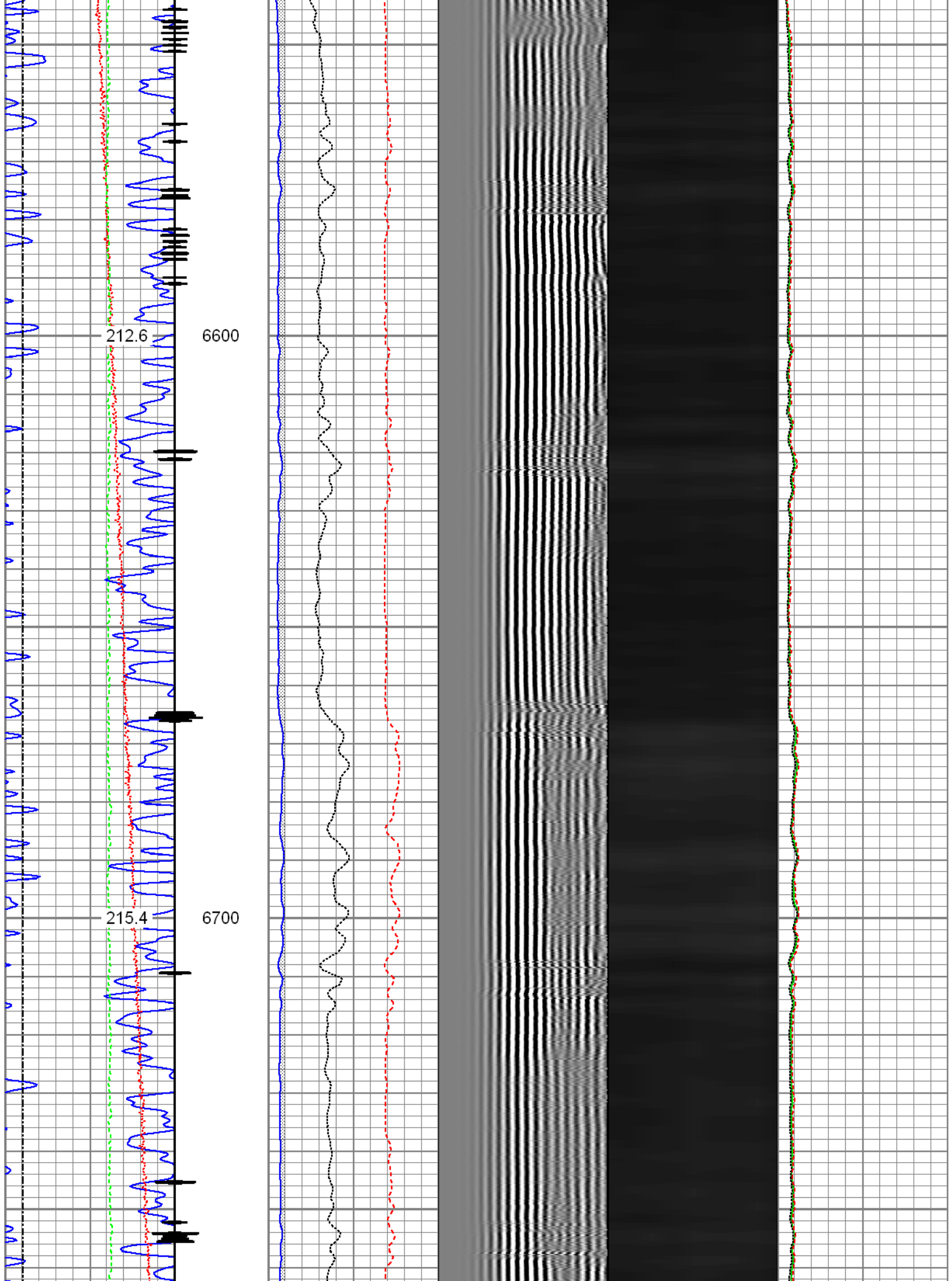


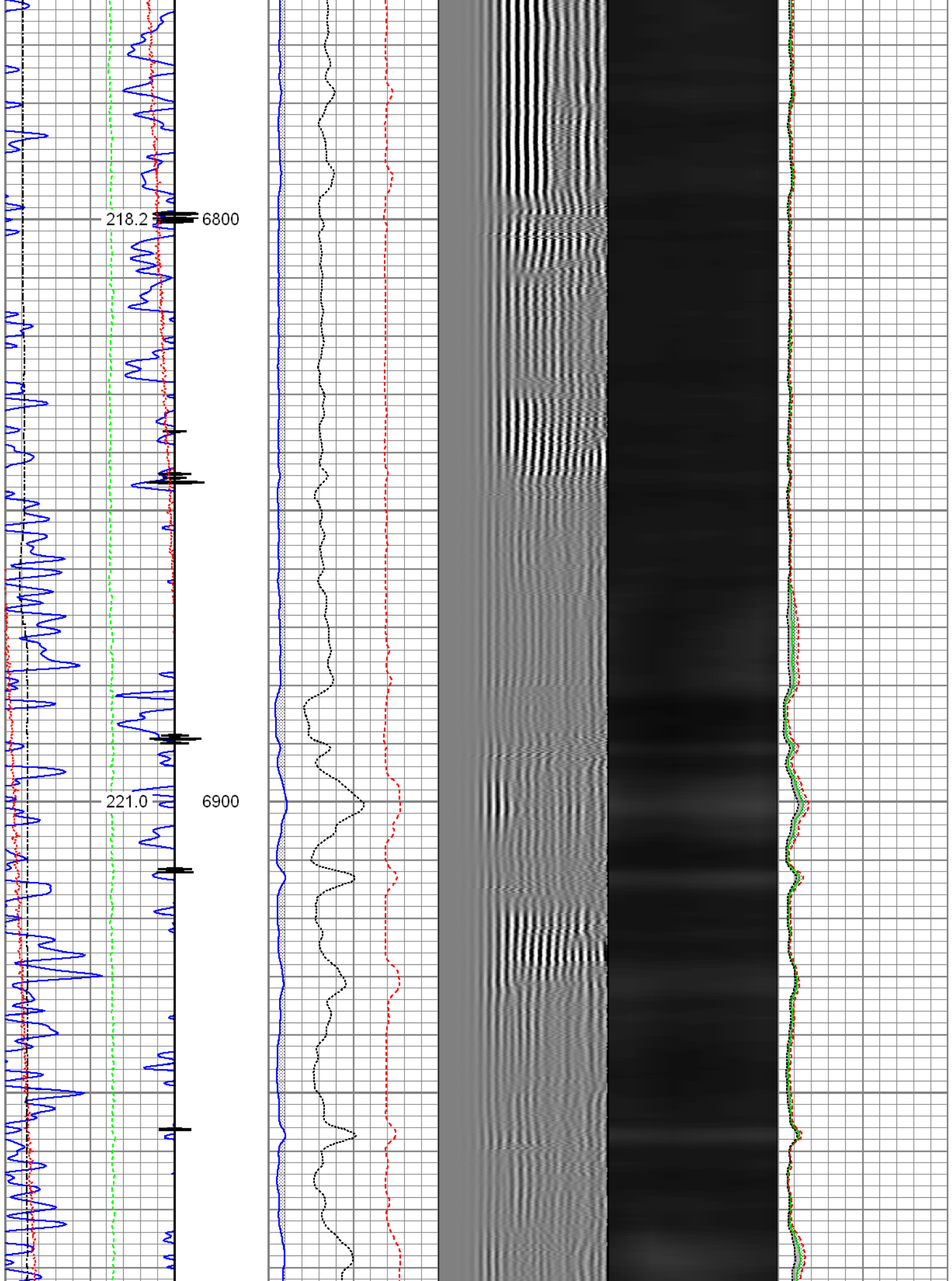


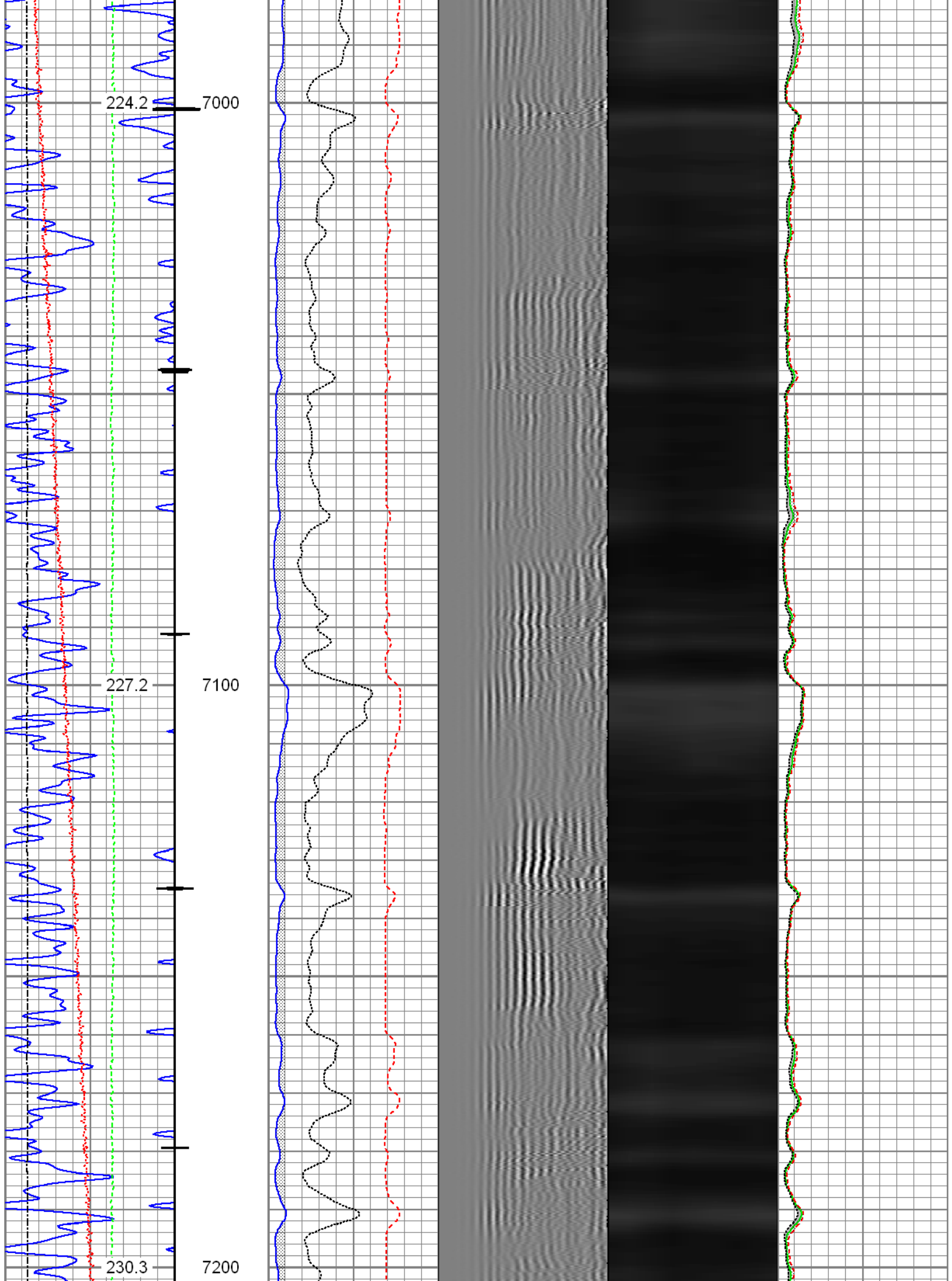


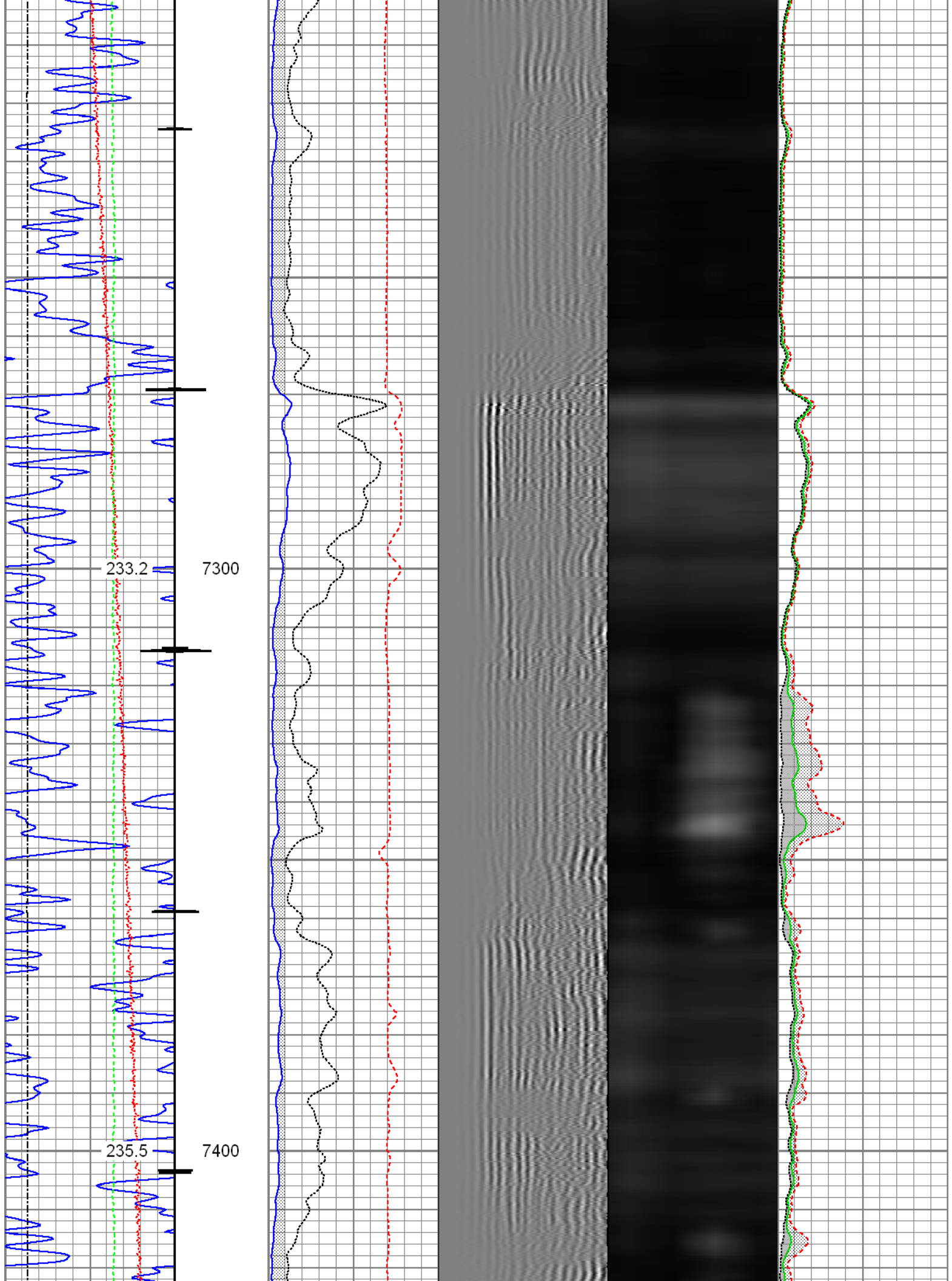


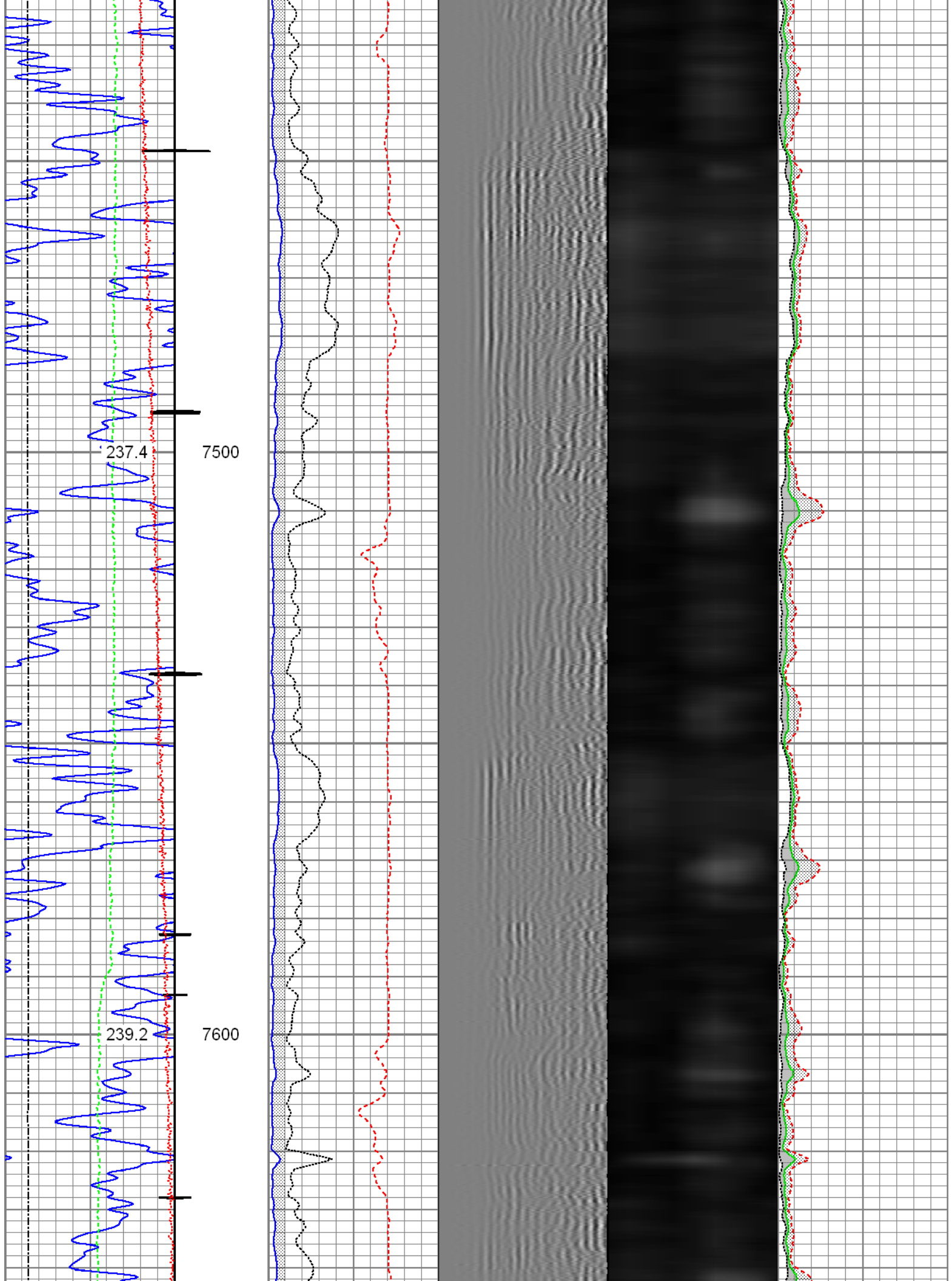


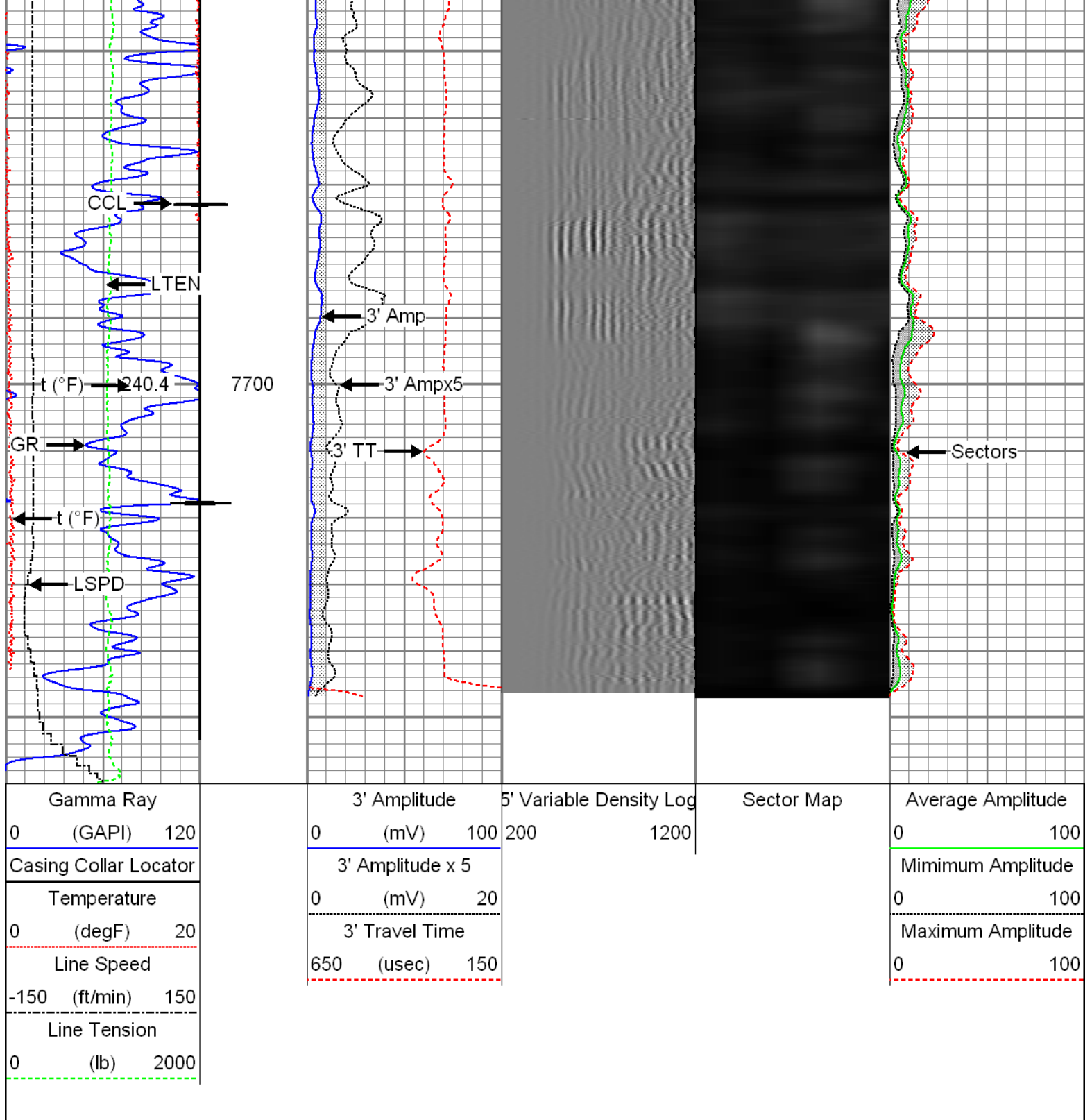








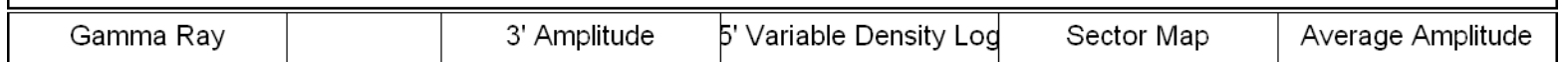




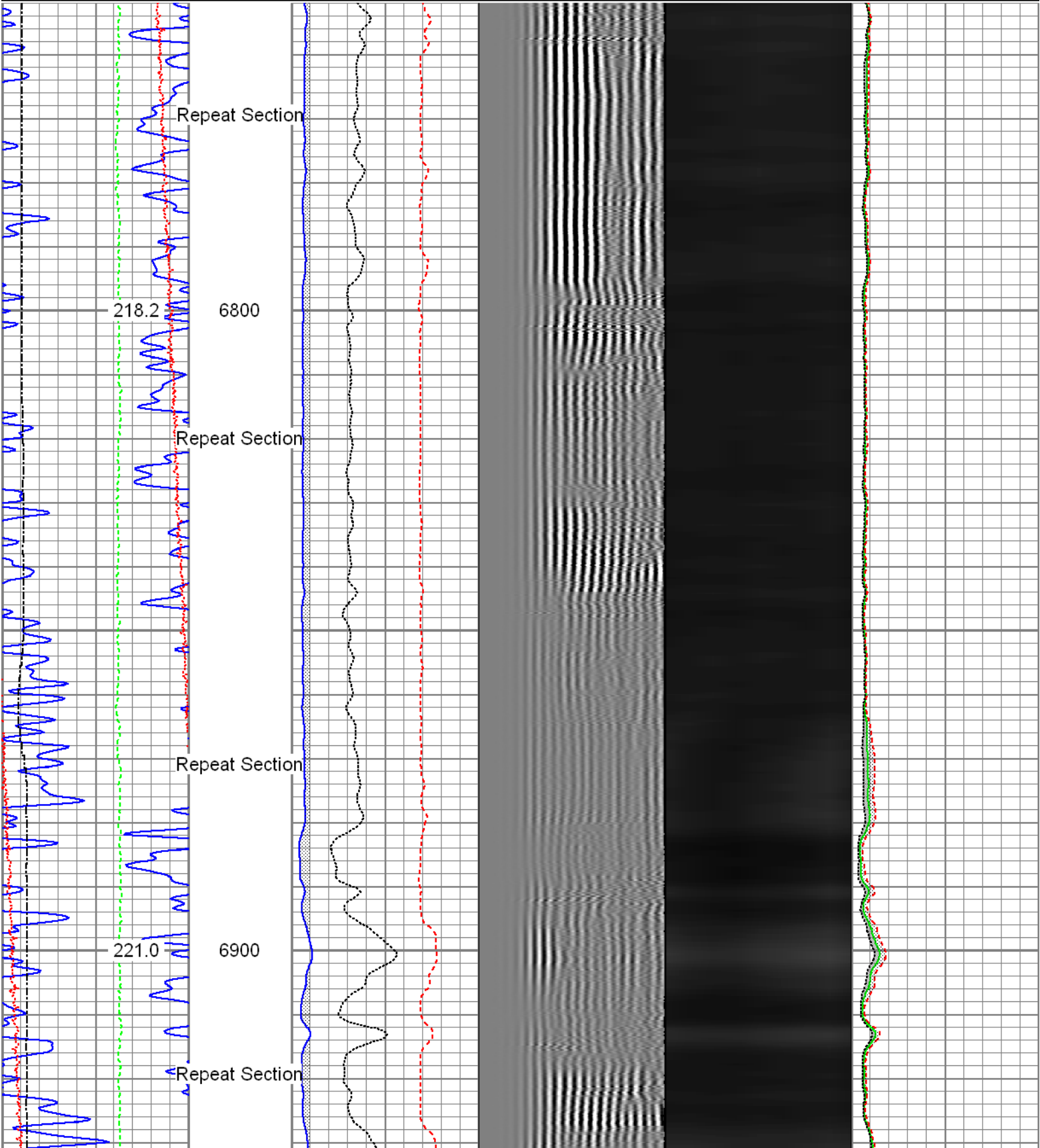
Repeat Pass

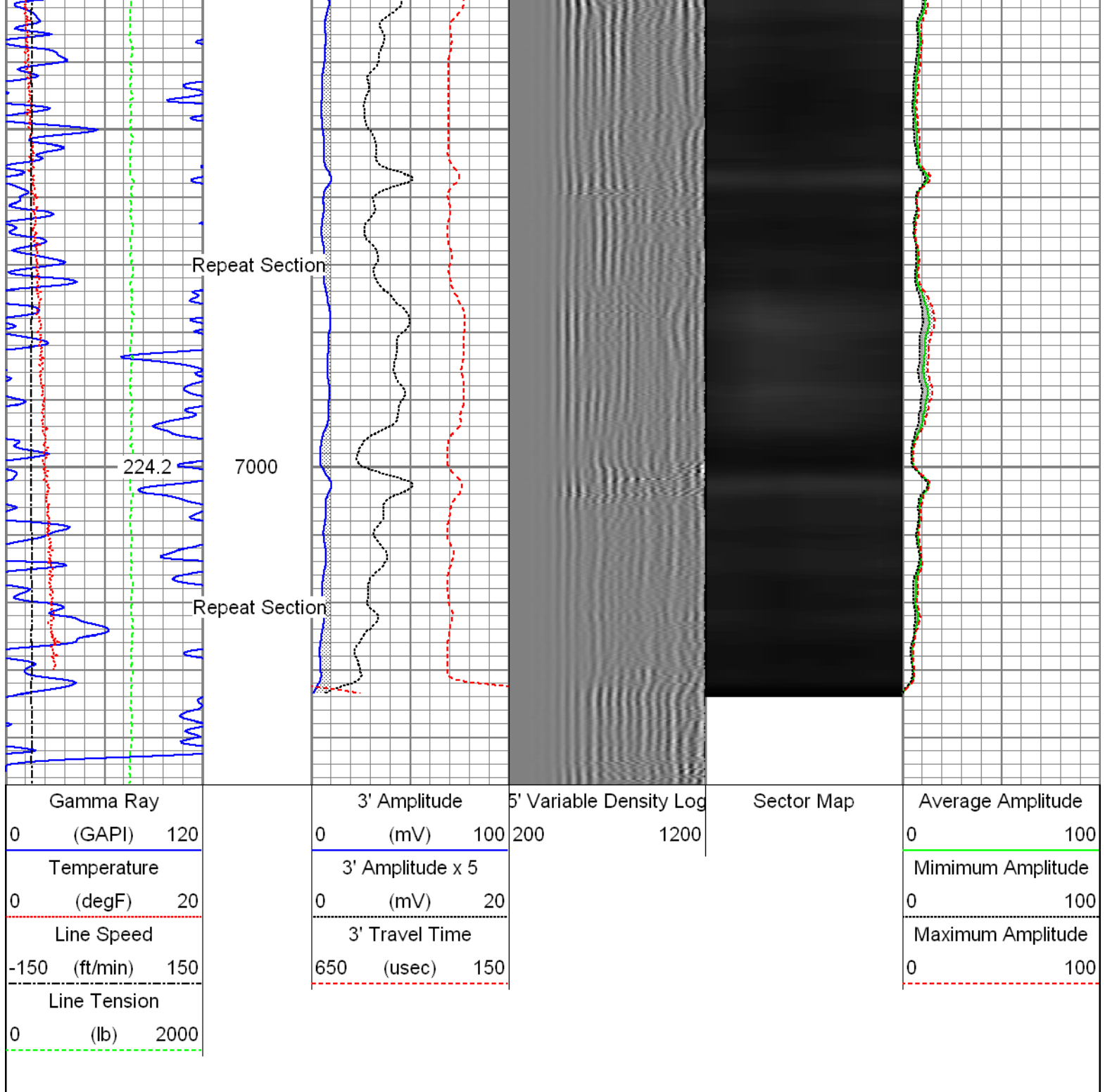
Recorded with 2800 PSI Surface Induced Pressure

Database File: c:\warrior\data\0512341483_anadarko_fehrn 37c-32hz_09-29-15_rbl\0512341483_anadarko_fehrn 37
 Dataset Pathname: pass3.1
 Presentation Format: radii
 Dataset Creation: Tue Sep 29 18:01:59 2015 by Calc 7.0 B1
 Charted by: Depth in Feet scaled 1:240

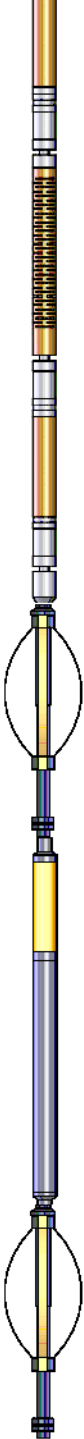


0	(GAPI)	120	0	(mV)	100	200	1200	0	100	
Temperature			3' Amplitude x 5			Minimum Amplitude				
0	(degF)	20	0	(mV)	20	0				100
Line Speed			3' Travel Time			Maximum Amplitude				
-150	(ft/min)	150	650	(usec)	150	0				100
Line Tension										
0	(lb)	2000								





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					
WVF3FT	14.55		Probe_RADII-C-2-3/4" (FW1302-002) Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.19	2.75	105.00
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					
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
CCL	6.51					
DCCL	6.51					
			Probe_CCL_GR-2.75"Digital (FW1307-038) Probe 2-3/4" Digital CCL / Gamma Ray Combined	4.54	2.75	55.00
GR	3.77					
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Dataset: 0512341483_Anadarko_Fehr 37C-32HZ_09-29-15_RBL.db: field/well/run1/pass3.1 Total Length: 23.40 ft Total Weight: 194.00 lb O.D. 2.75 in						

Calibration Report		
Database File:	C:\Warrior\Data\0512341483_Anadarko_Fehr 37C-32HZ_09-29-15_RBL\0512341483_Anadarko_Feh	
Dataset Pathname:	pass3.1	
Dataset Creation:	Tue Sep 29 18:01:59 2015 by Calc 7.0 B1	
Gamma Ray Calibration Report		
Serial Number:	FW1307-038	
Tool Model:	2.75"Digital	
Performed:	Thu Jan 29 11:02:34 2015	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps

Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1302-002
Tool Model:	2-3/4"
Calibration Casing Diameter:	5.500 in
Calibration Depth:	41.275 ft

Master Calibration, performed Tue Sep 29 17:55:12 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.594	1.000	71.921	119.489	0.961
CAL	0.004	0.737				
5'	0.000	0.396	1.000	71.921	179.305	0.936
SUM						
S1	0.000	0.620	0.000	100.000	161.461	-0.029
S2	0.001	0.665	0.000	100.000	150.526	-0.082
S3	0.000	0.656	0.000	100.000	152.528	-0.036
S4	0.000	0.619	0.000	100.000	161.604	-0.062
S5	0.001	0.589	0.000	100.000	170.254	-0.199
S6	0.001	0.576	0.000	100.000	173.965	-0.254
S7	0.001	0.569	0.000	100.000	176.126	-0.193
S8	0.000	0.587	0.000	100.000	170.594	-0.057

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	0.004	0.737	1.000	0.000

Air Zero Calibration, performed Tue Sep 29 16:10:14 2015:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.004	0.000	0.000
5'	0.004	0.000	0.000
SUM			
S1	0.004	0.000	-0.000
S2	0.004	0.000	0.000
S3	0.004	0.000	-0.000
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	0.000

