



**Radial Cement Bond
Gamma Ray
Casing Collar Log**

Company	Kerr-McGee Oil & Gas OnShore L.P.	
Well	State of Colorado AF 1	
Field	Spindle	
County	Weld	
State	Colorado	
Company	Kerr-McGee Oil & Gas OnShore L.P.	
Well	State of Colorado AF 1	
Field	Spindle	
County	Weld	
State	Colorado	
Location:	API #: 05-123-09407	Other Services
Permanent Datum	SEC 36 TWP 2N RGE 67W	---
Log Measured From	Ground Level Kelly Bushing	Elevation 4898'
Drilling Measured From	Kelly Bushing	11 FT
		K.B. 4909' D.F. 4908' G.L. 4898'

Date	01-Feb-2016	
Run Number	One	
Depth Driller	8089 FT	
Depth Logger	4780 FT	
Bottom Logged Interval	4775 FT	
Top Log Interval	Surface	
Open Hole Size	7.875"	
Type Fluid	Water	
Density / Viscosity	8.34 lbm/gal	
Max. Recorded Temp.	162°F	
Estimated Cement Top	146 FT	
Time Well Ready	ROA	
Time Logger on Bottom	1000	
Equipment Number	HD-0361	
Location	Fort Lupton, CO	
Recorded By	Chad Bryan	
Witnessed By	Dave Donoho	

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	24	K-55	11	275 FT
Intermediate #1	4 1/2	10.5	K-55	11	4773 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 Casing Tally reported Kelly Bushing at 11 FT
 Adjusted log 0 FT to correlate with Kelly Bushing
 Recorded with 0 PSI surface induced pressure
 Logging tools clean and free of debris upon completion of operations
 Thank you for choosing FMC Technologies Surface Integrated Services.

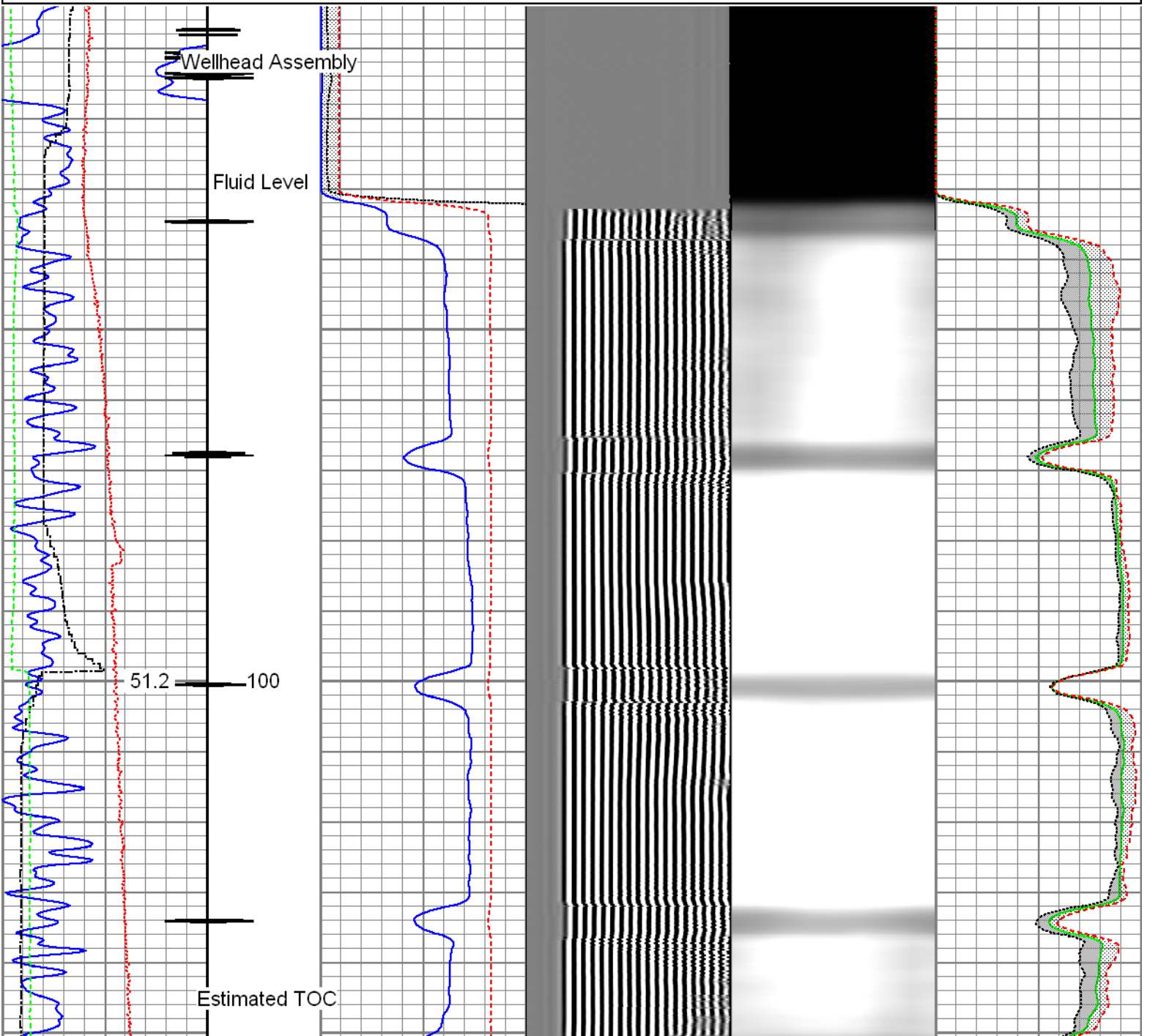


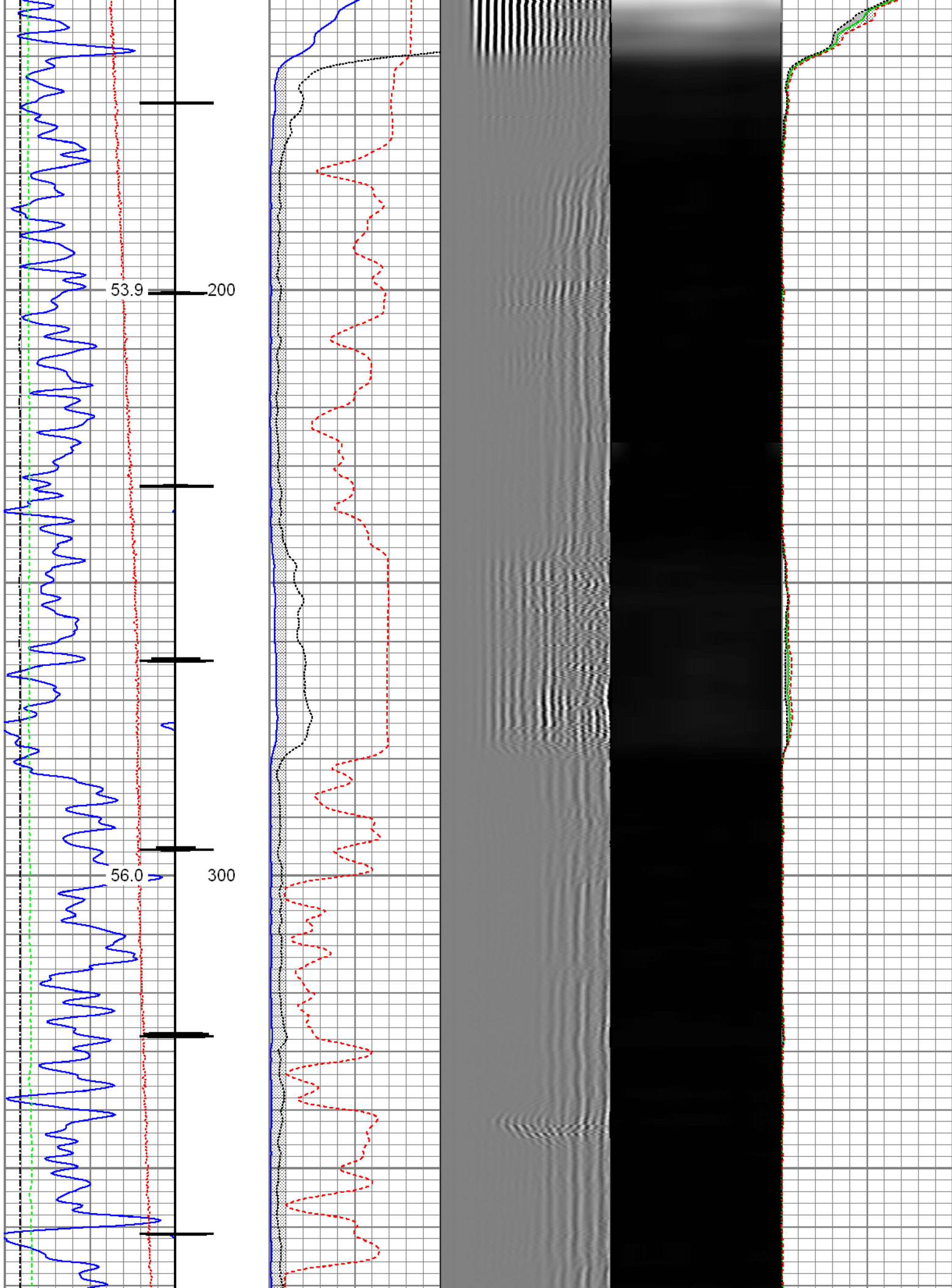
Main Pass

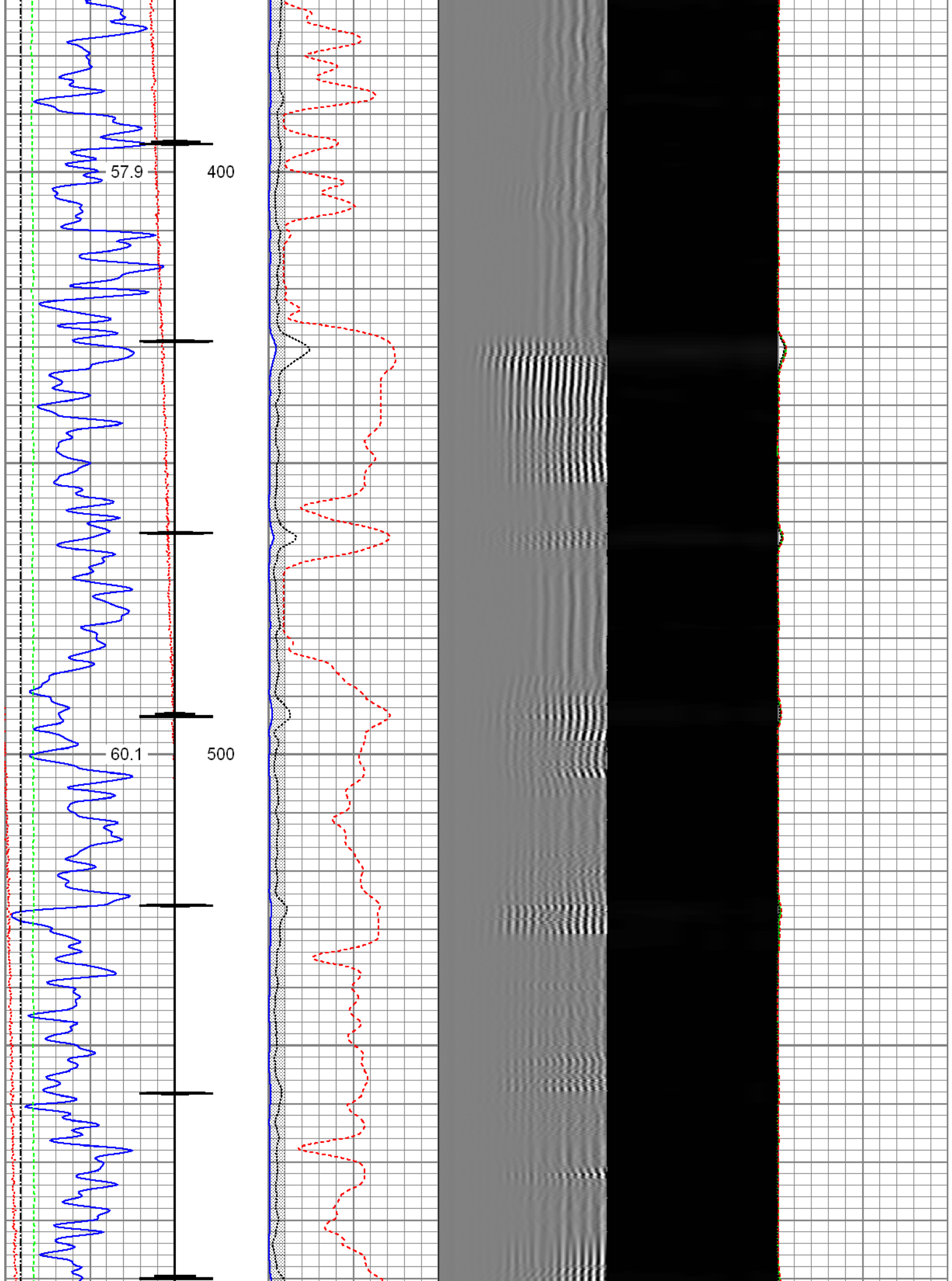
Recorded with 0 PSI Surface Induced Pressure

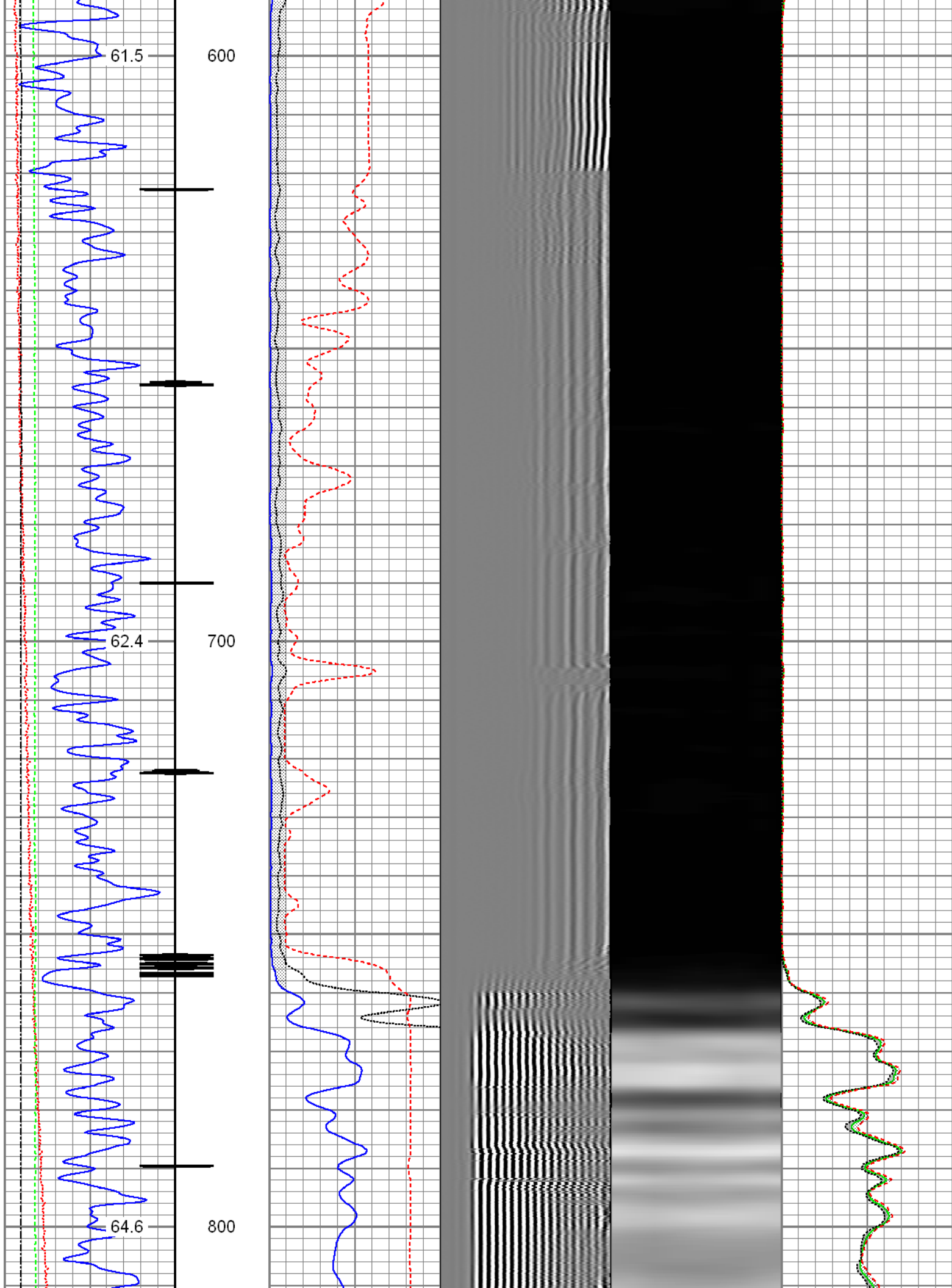
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 Dataset Pathname: main.2
 Presentation Format: radi_ver
 Dataset Creation: Mon Feb 01 11:36:39 2016 by Calc 7.0 B1
 Charted by: Depth in Feet scaled 1:240

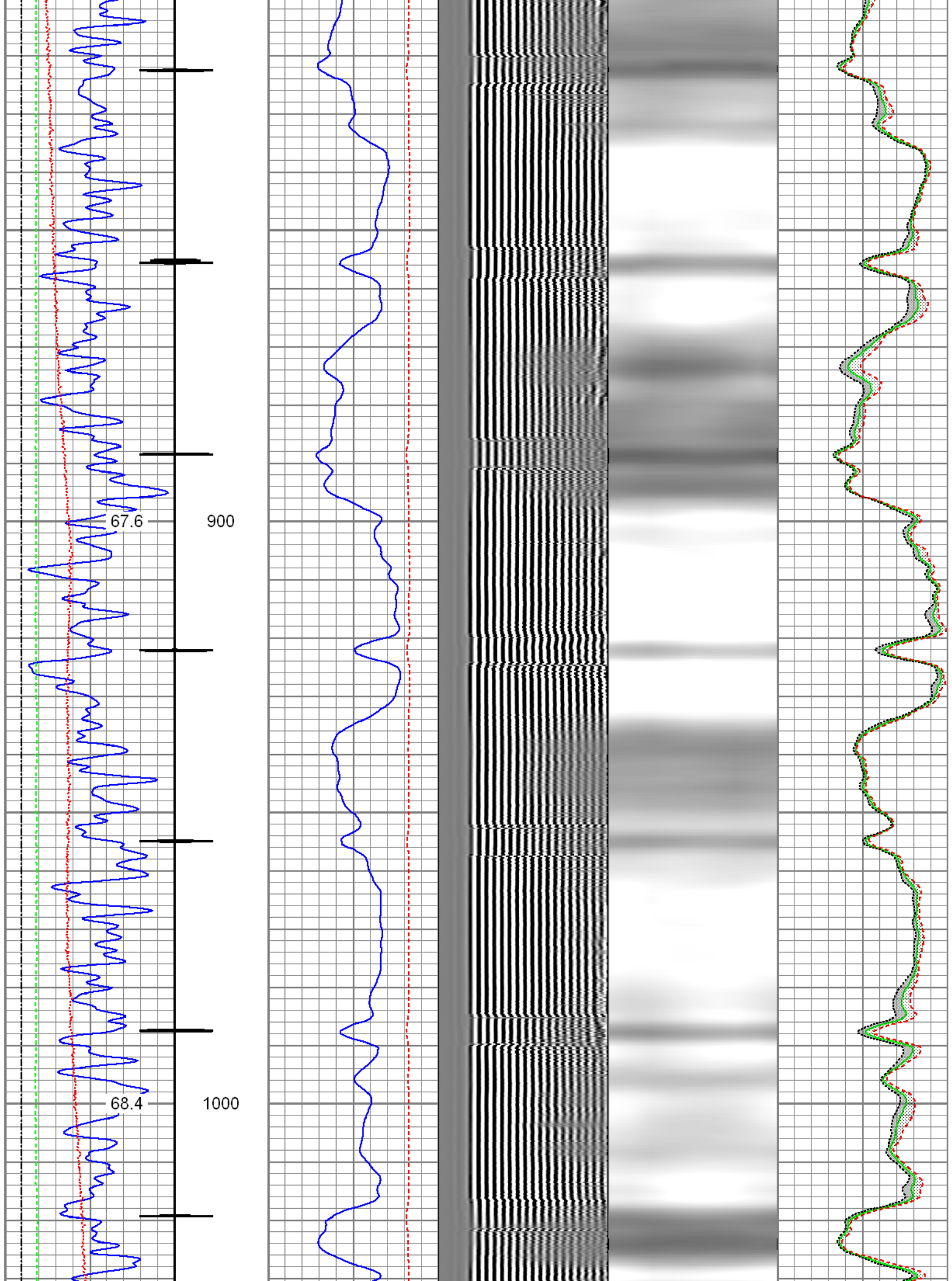
Gamma Ray 30 (GAPI) 130	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Temperature 0 (degF) 20	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Line Tension 0 (lb) 2000				
Casing Collar Locator				

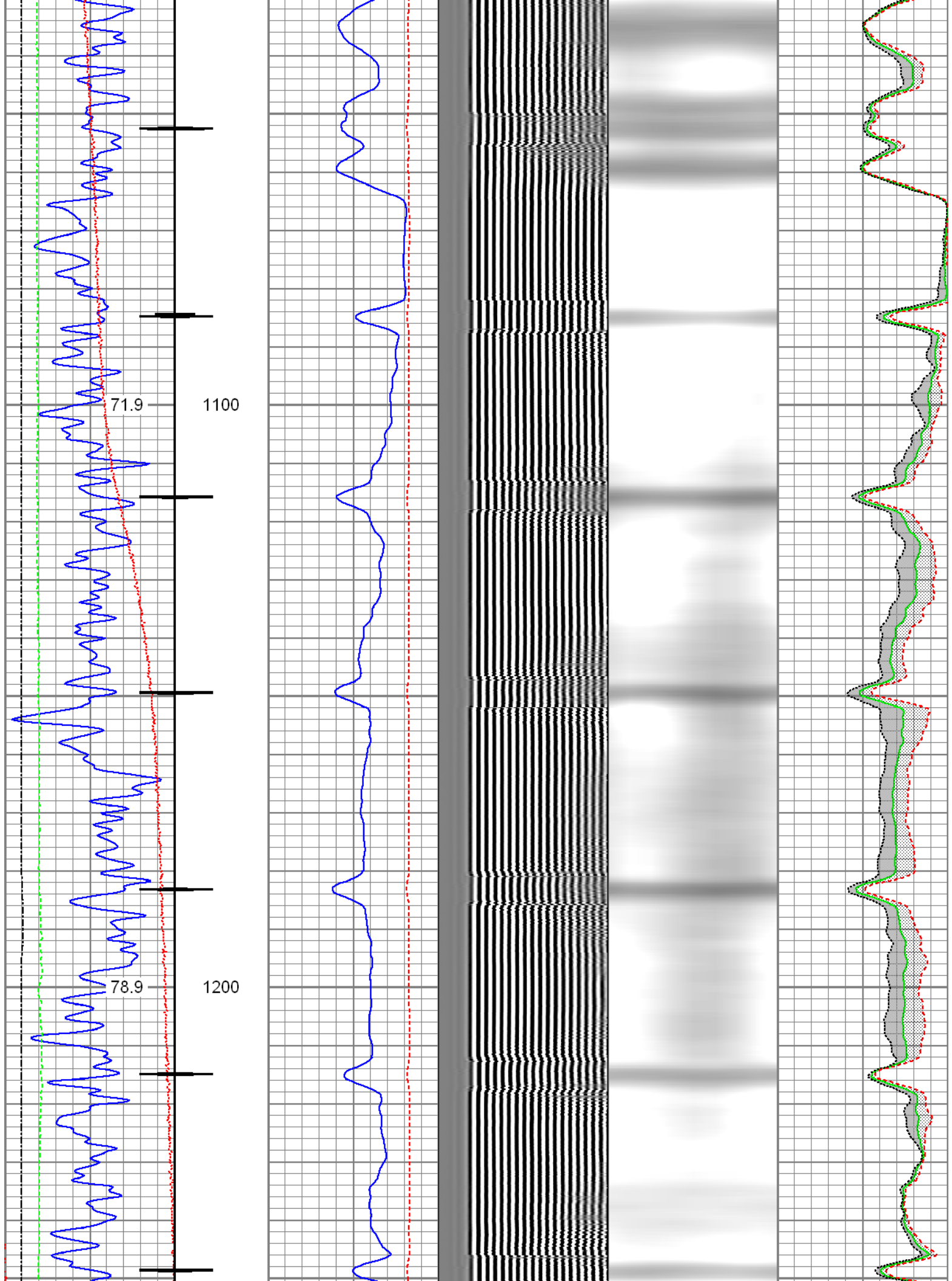


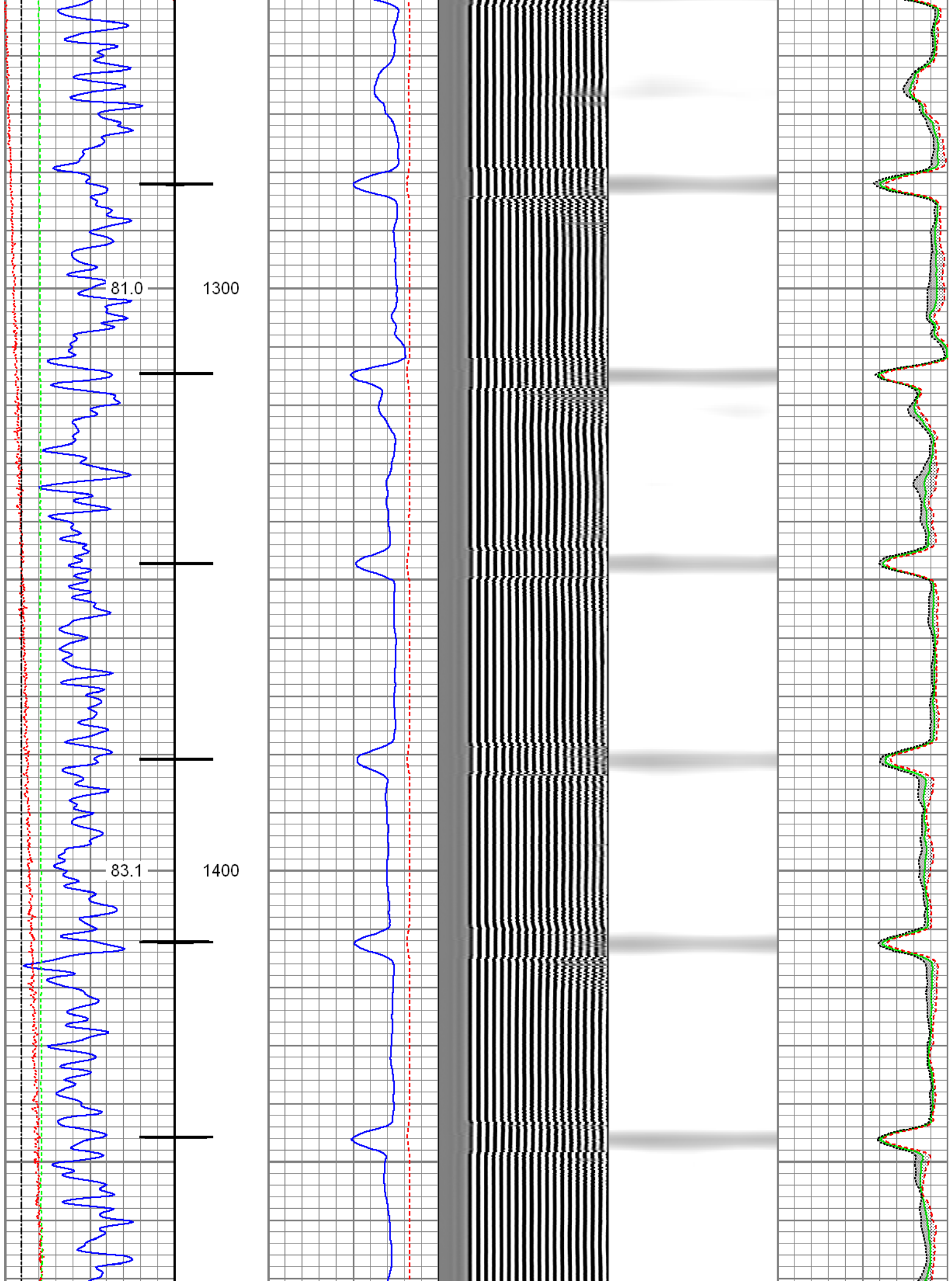


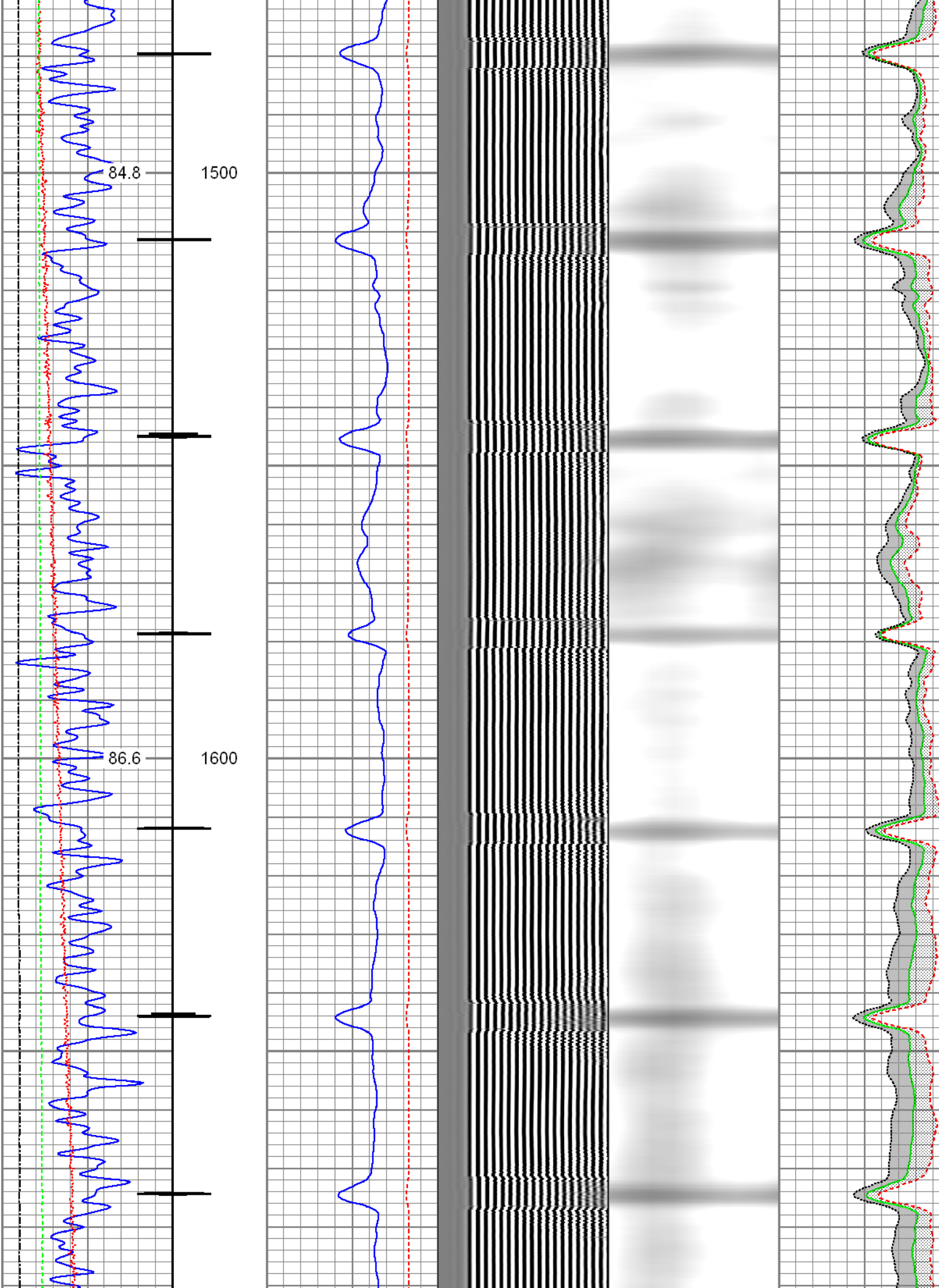


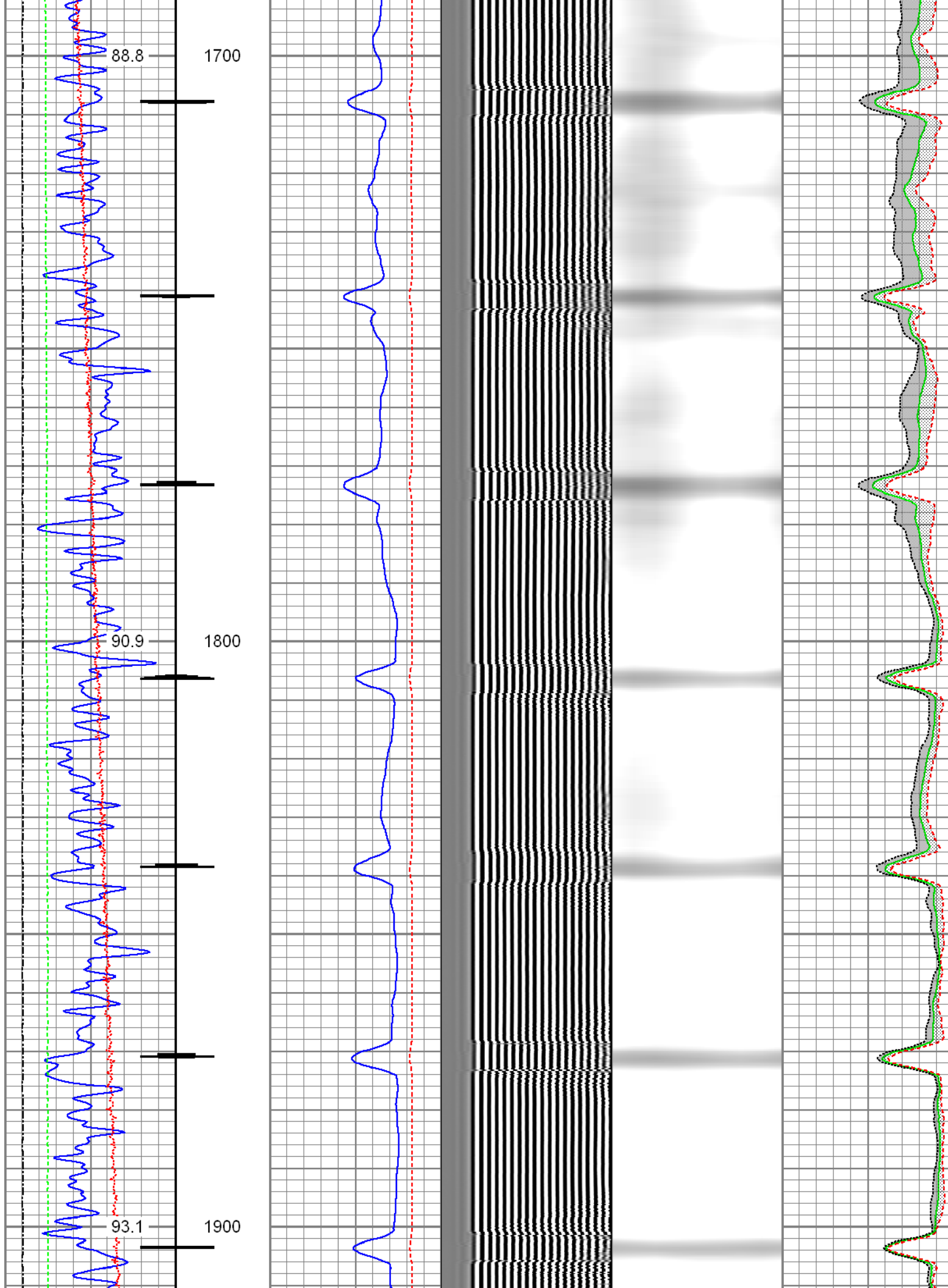


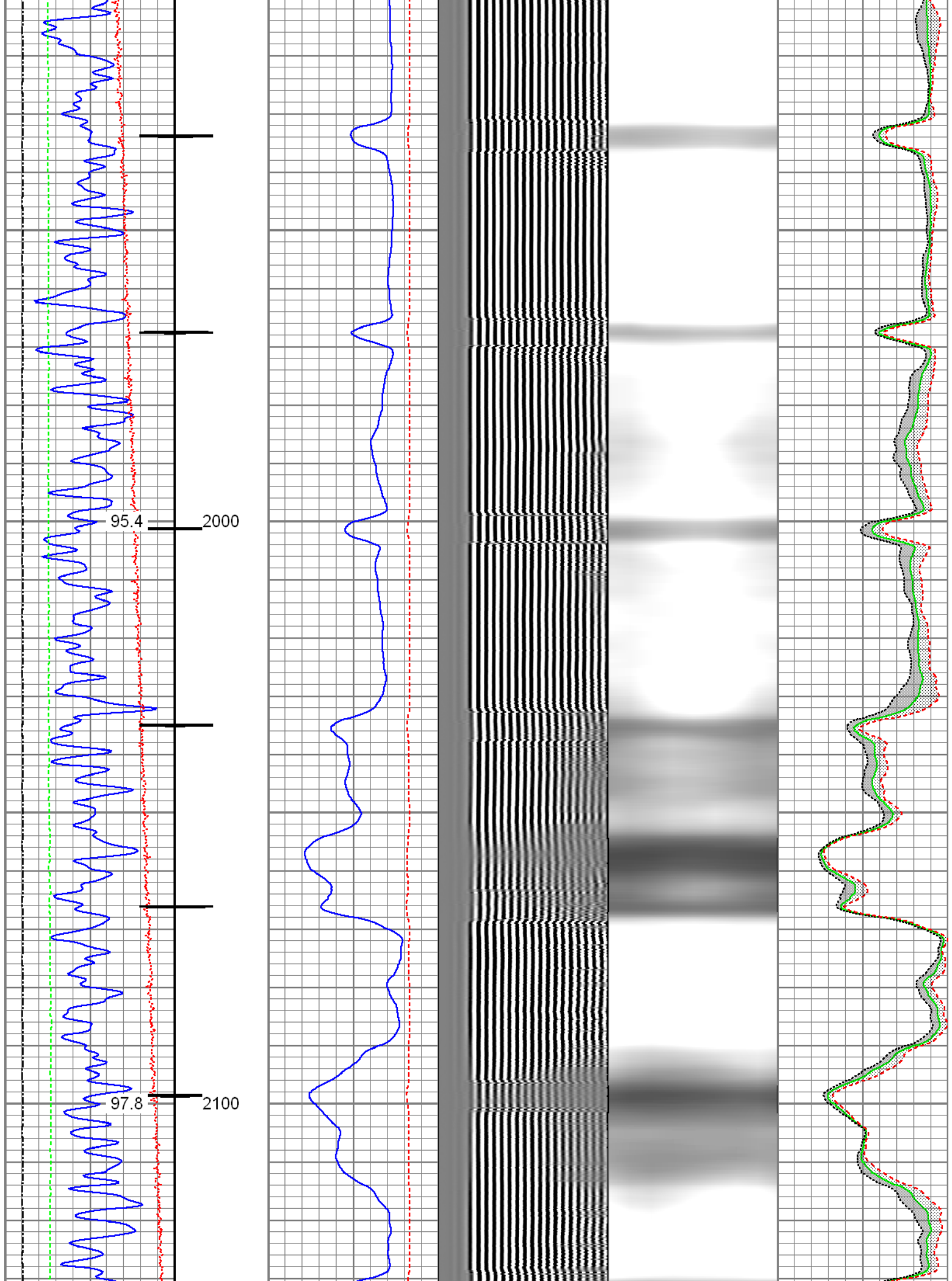


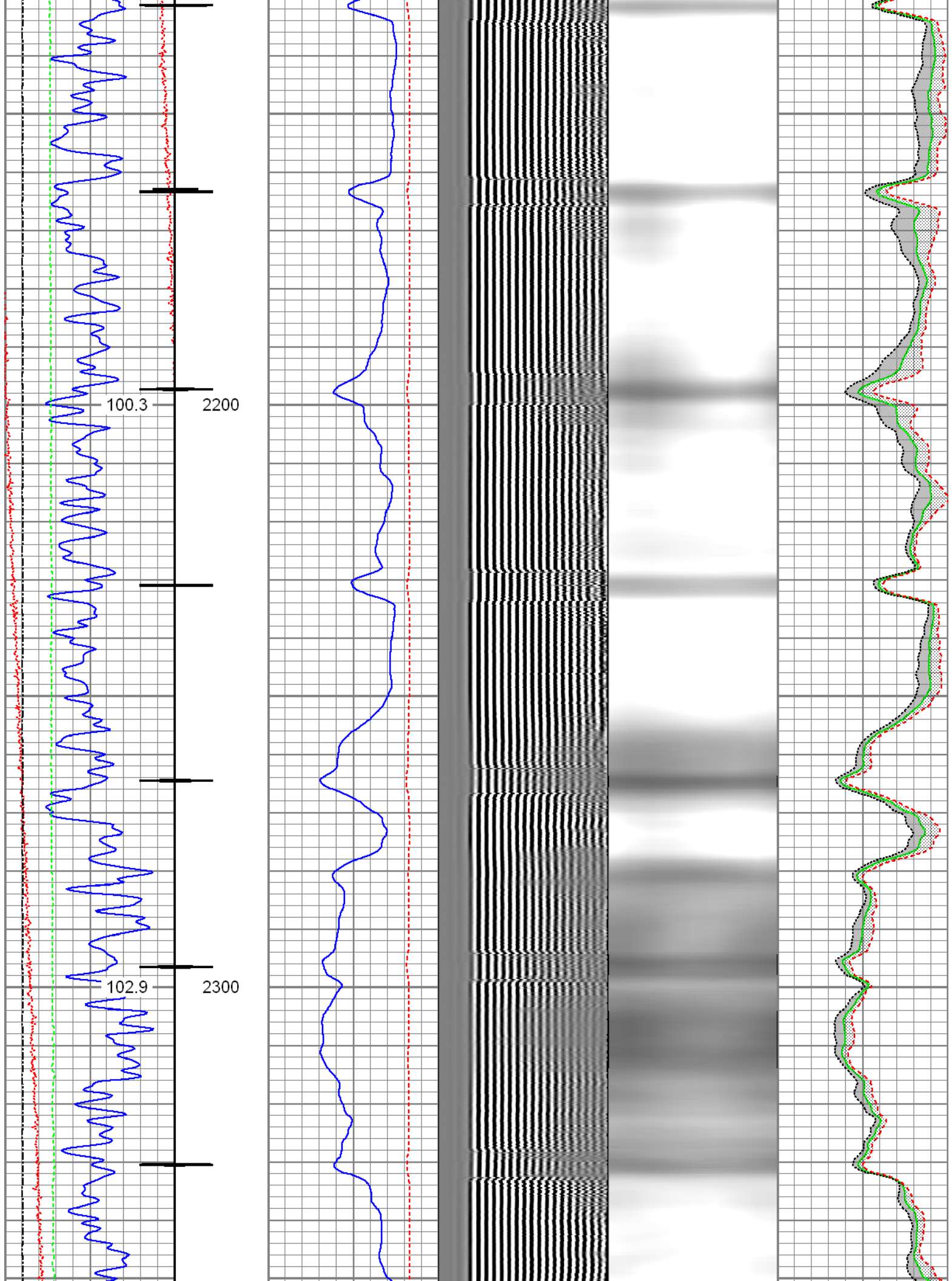


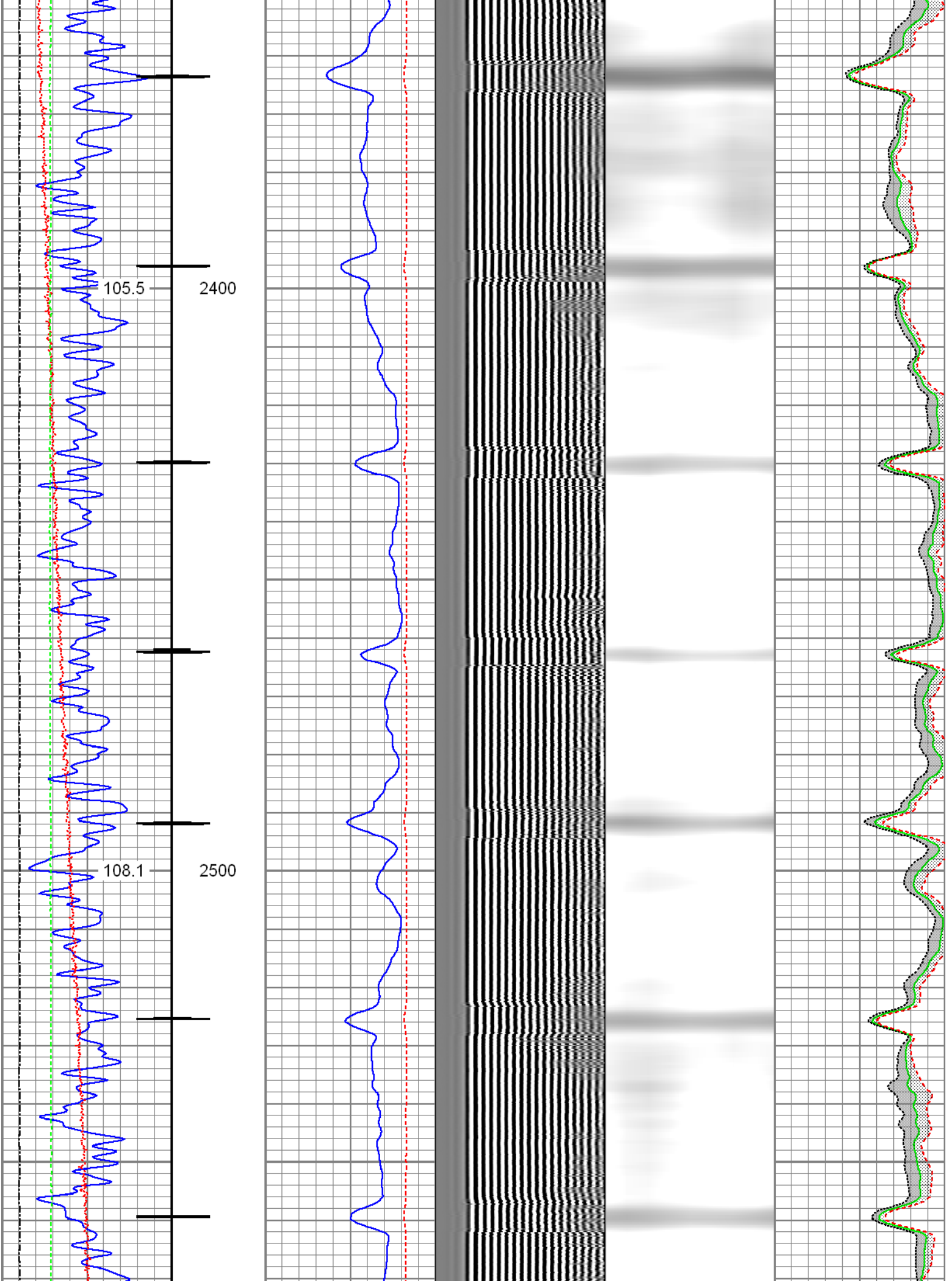


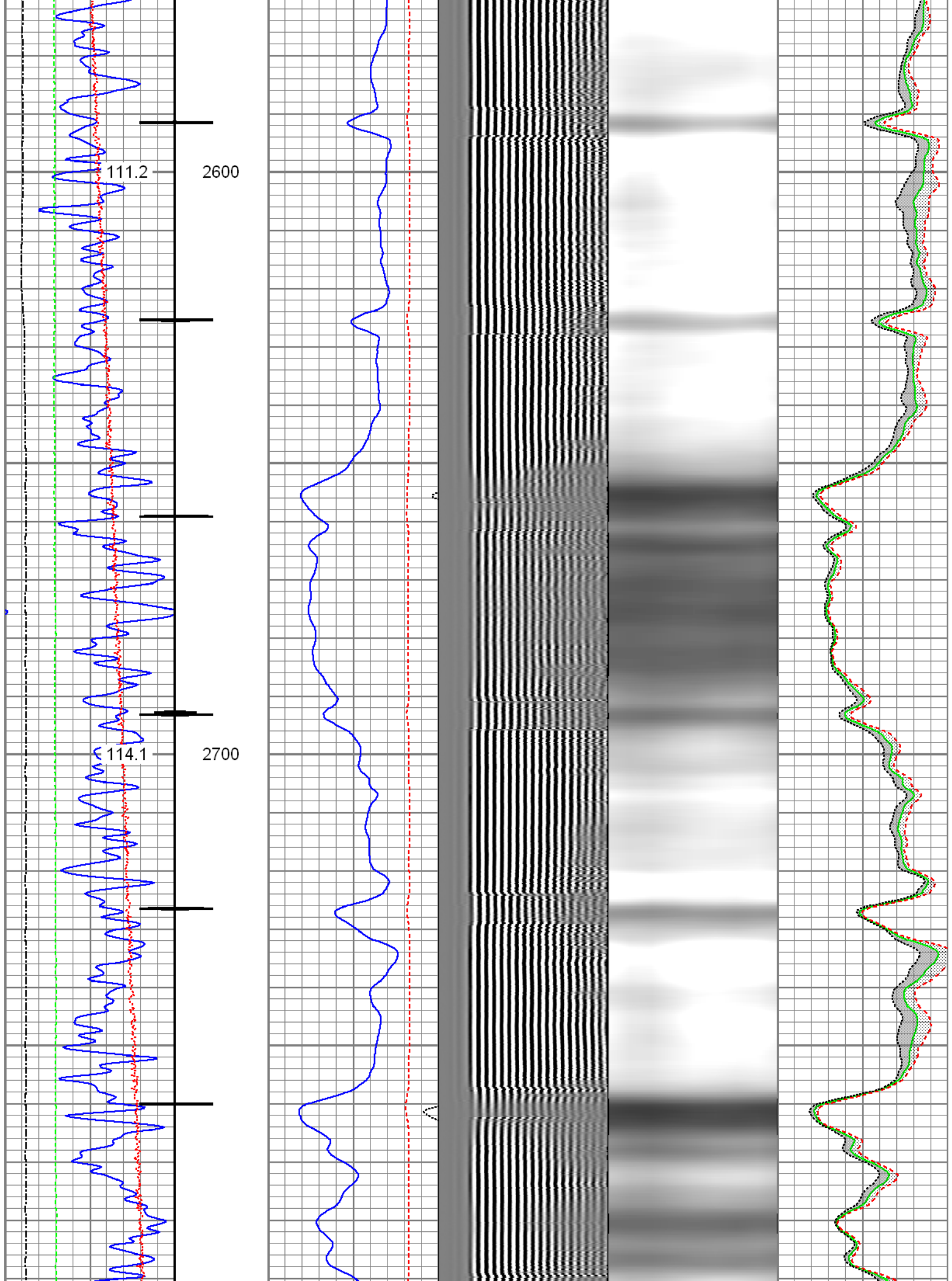


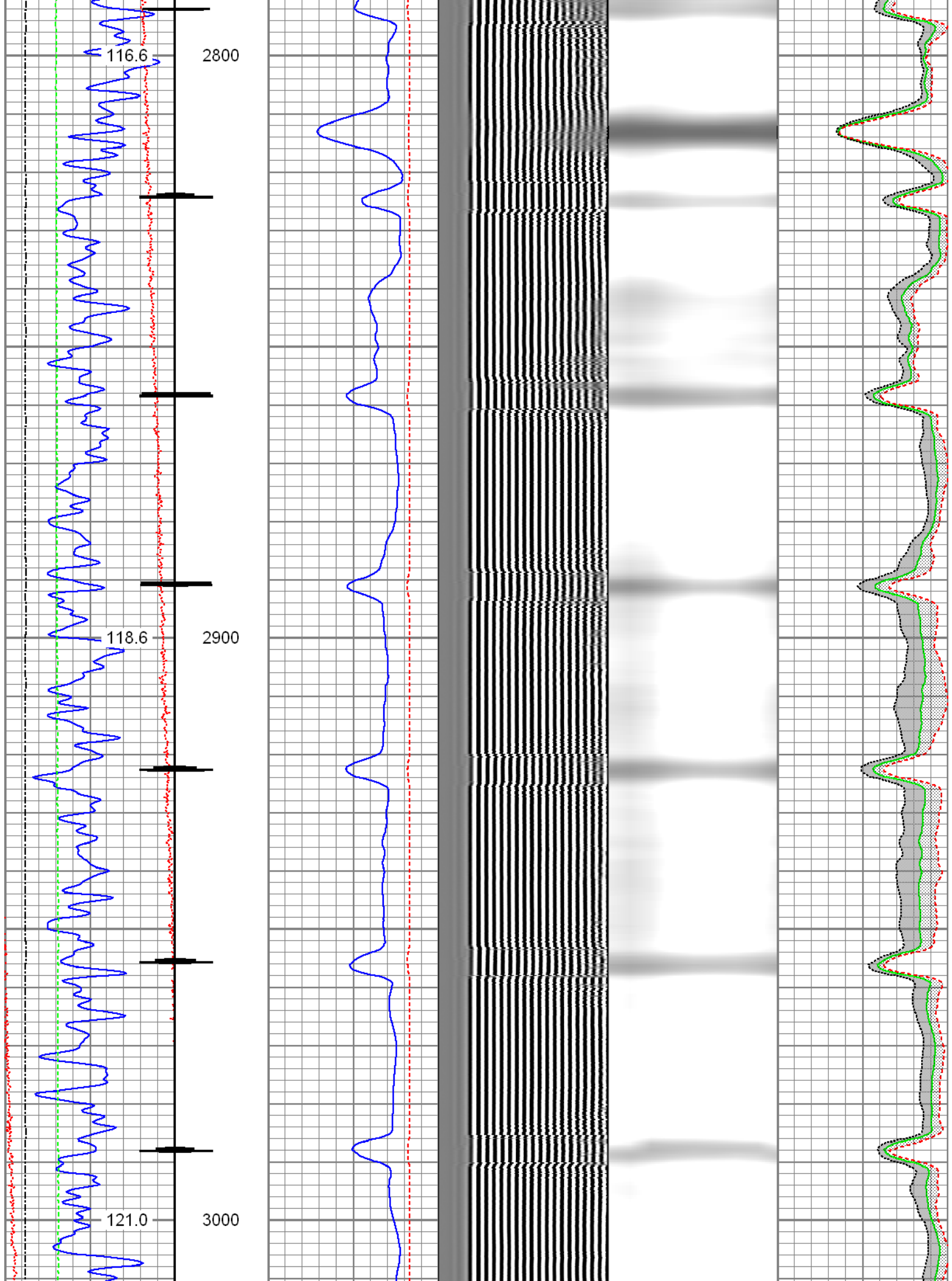


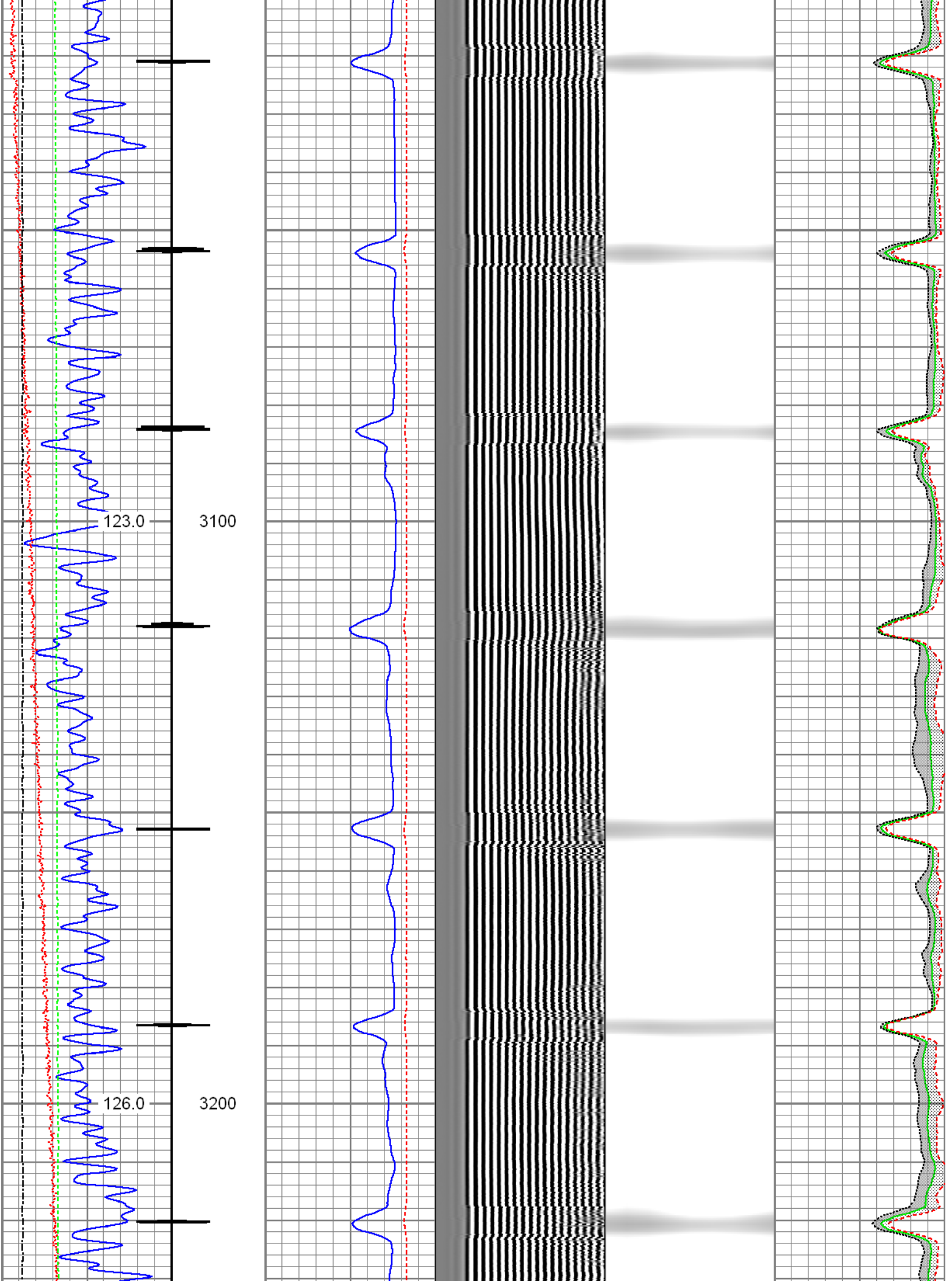


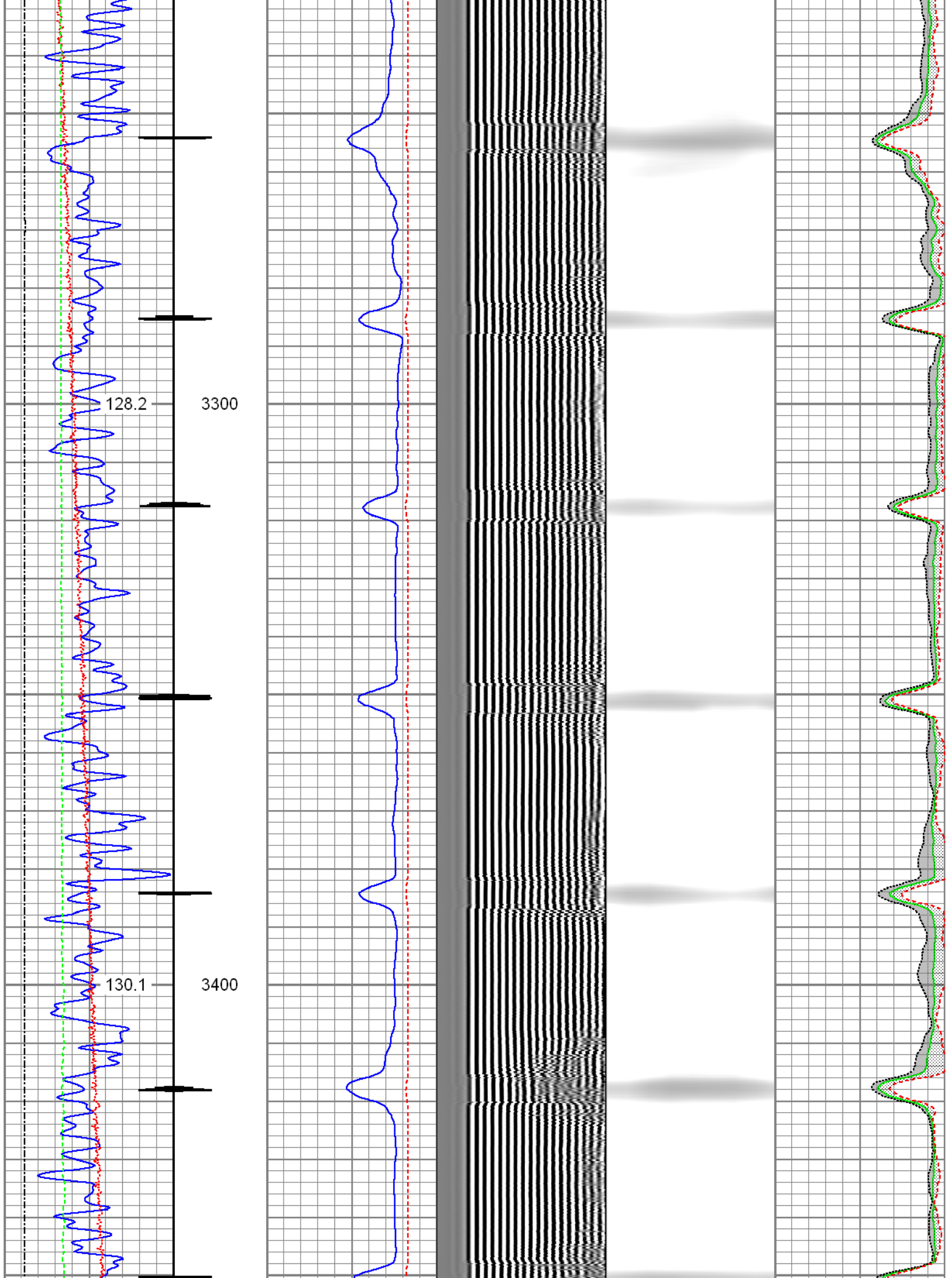


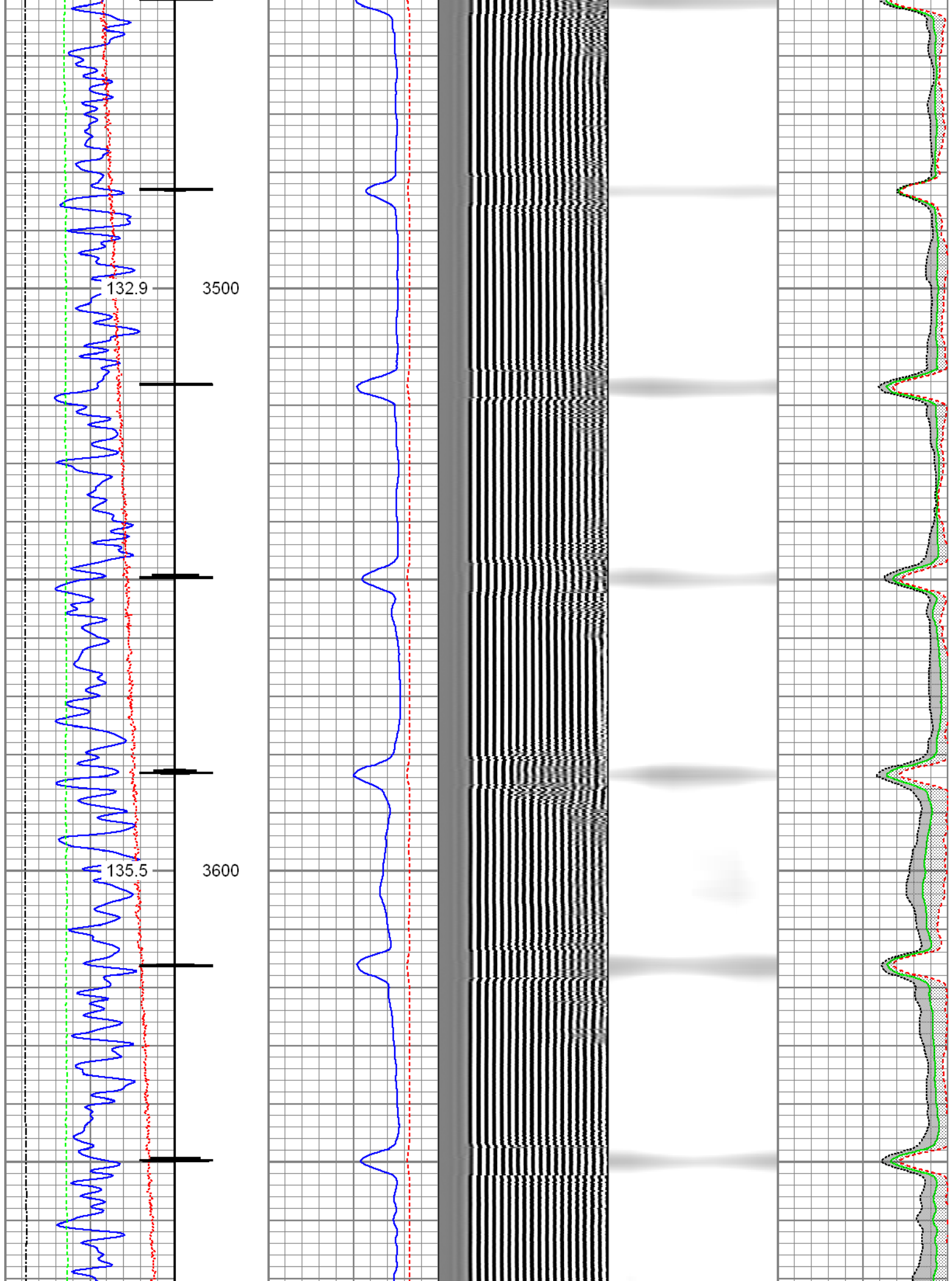


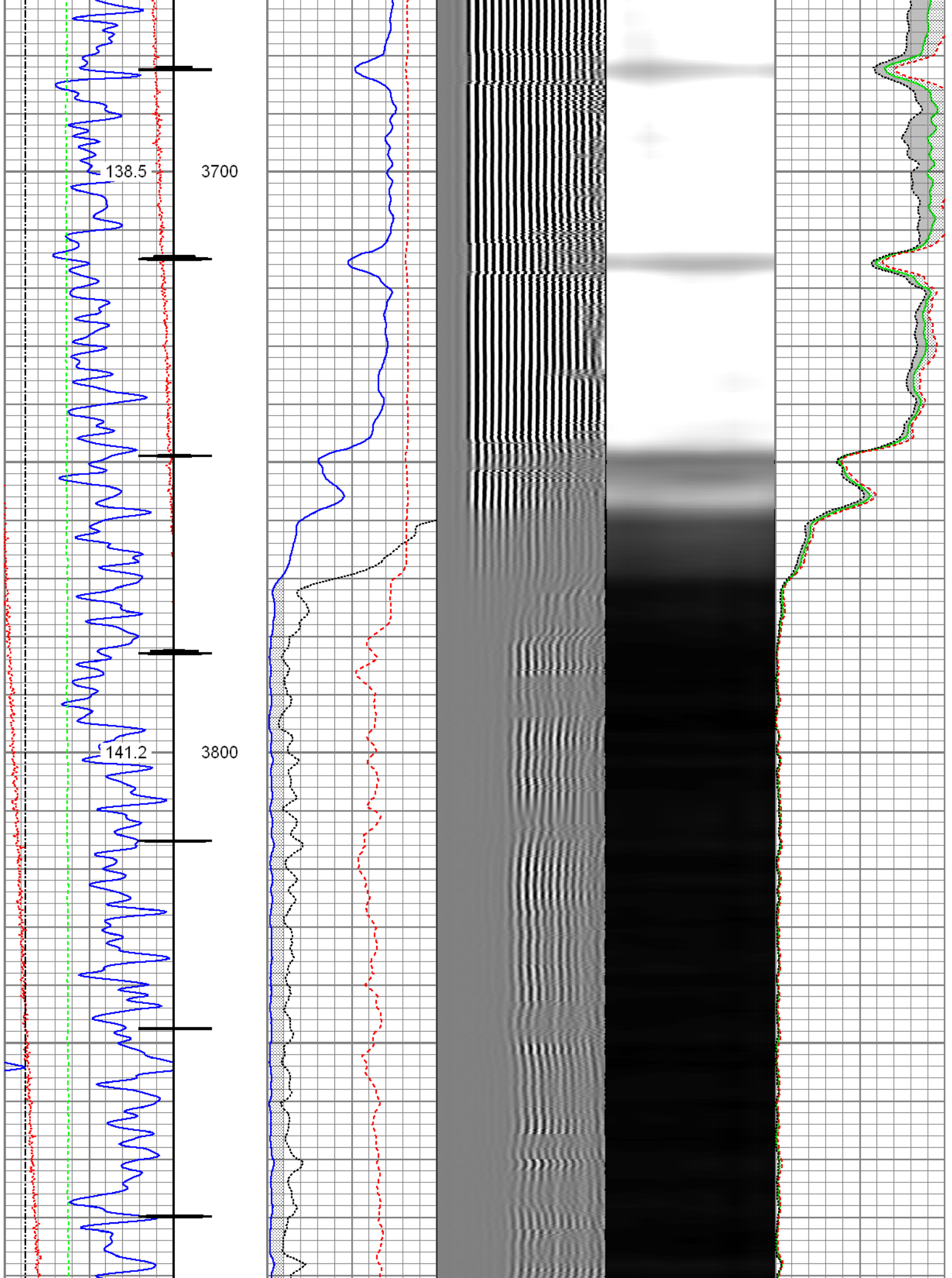


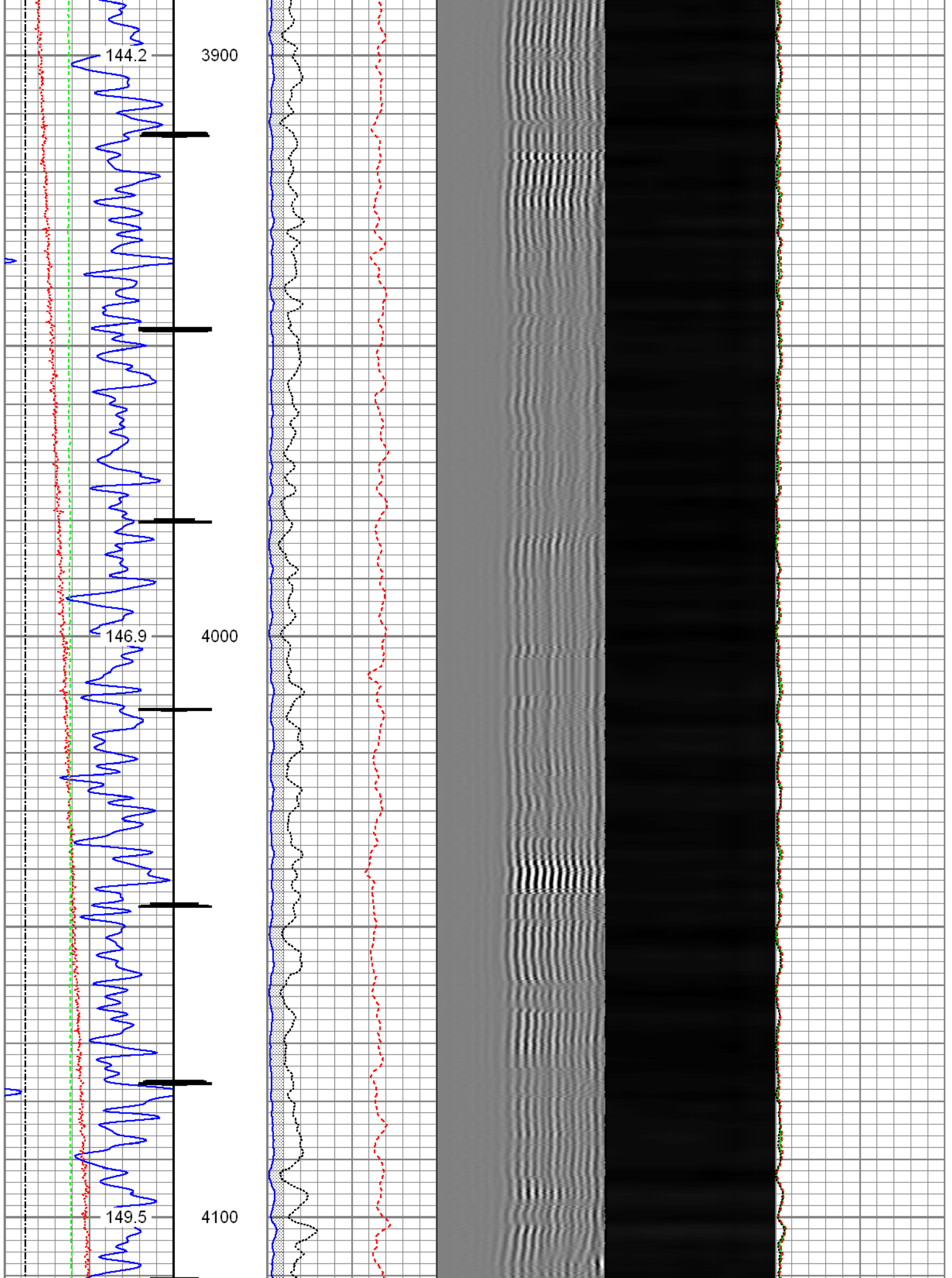


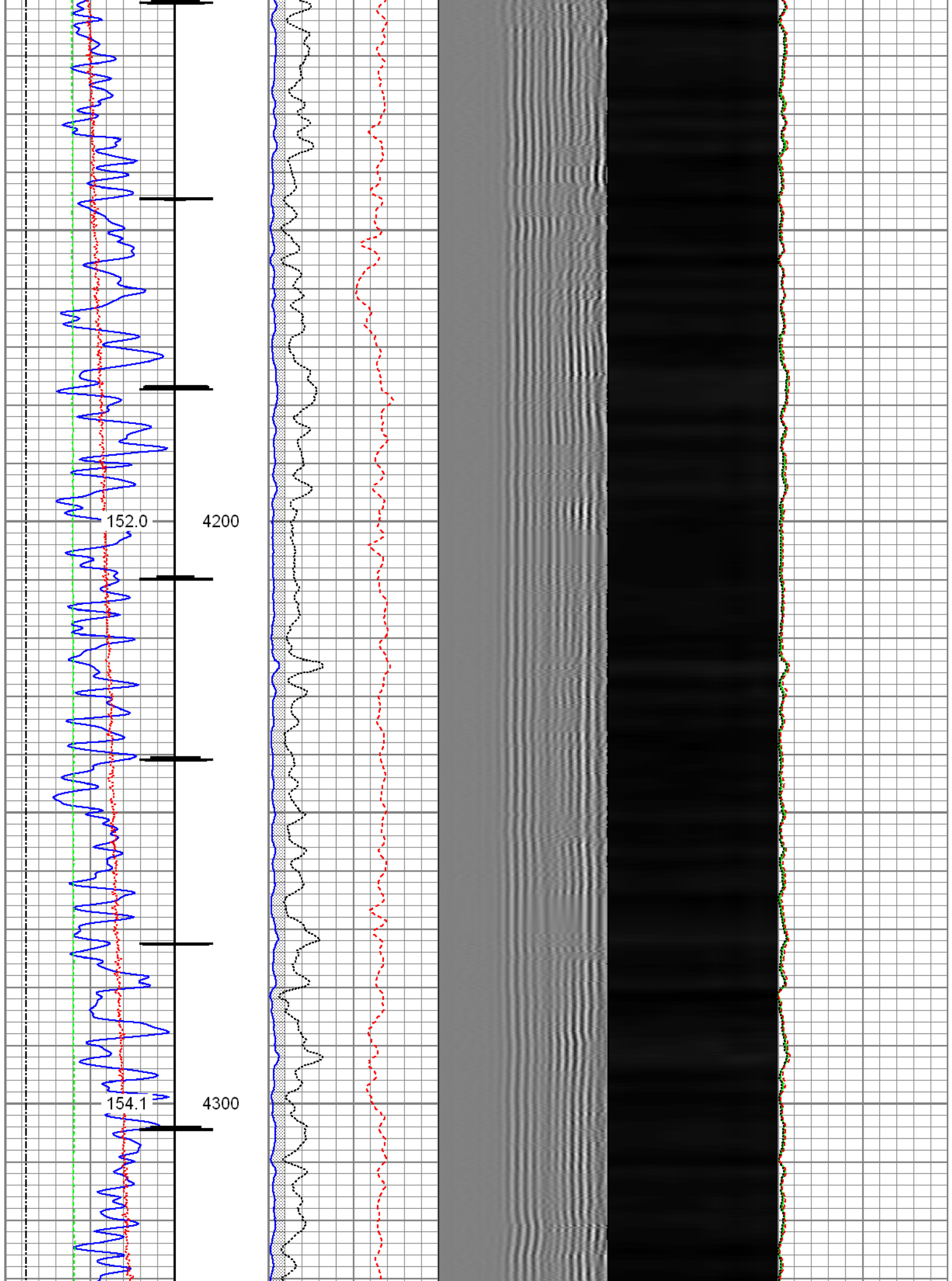


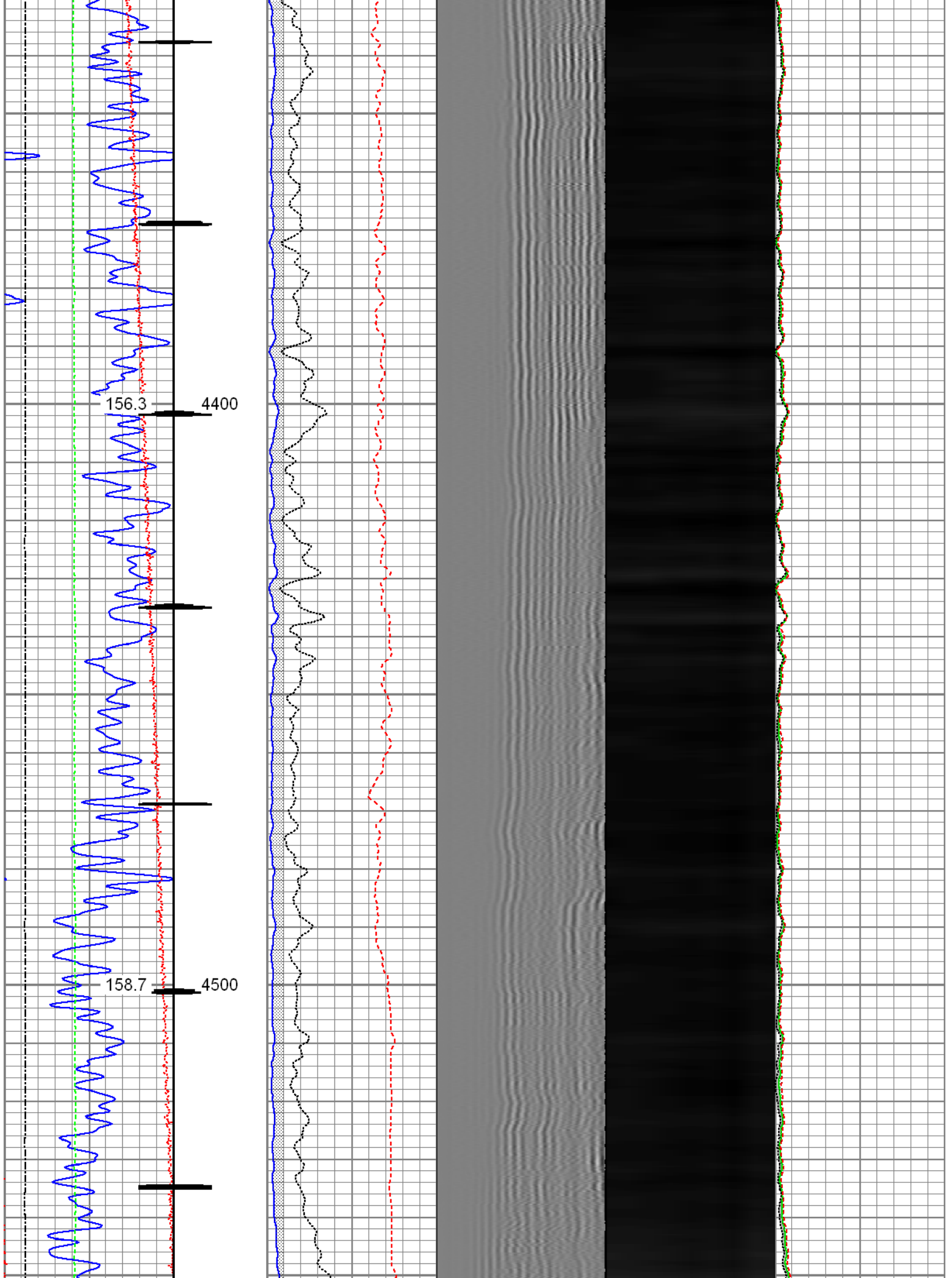


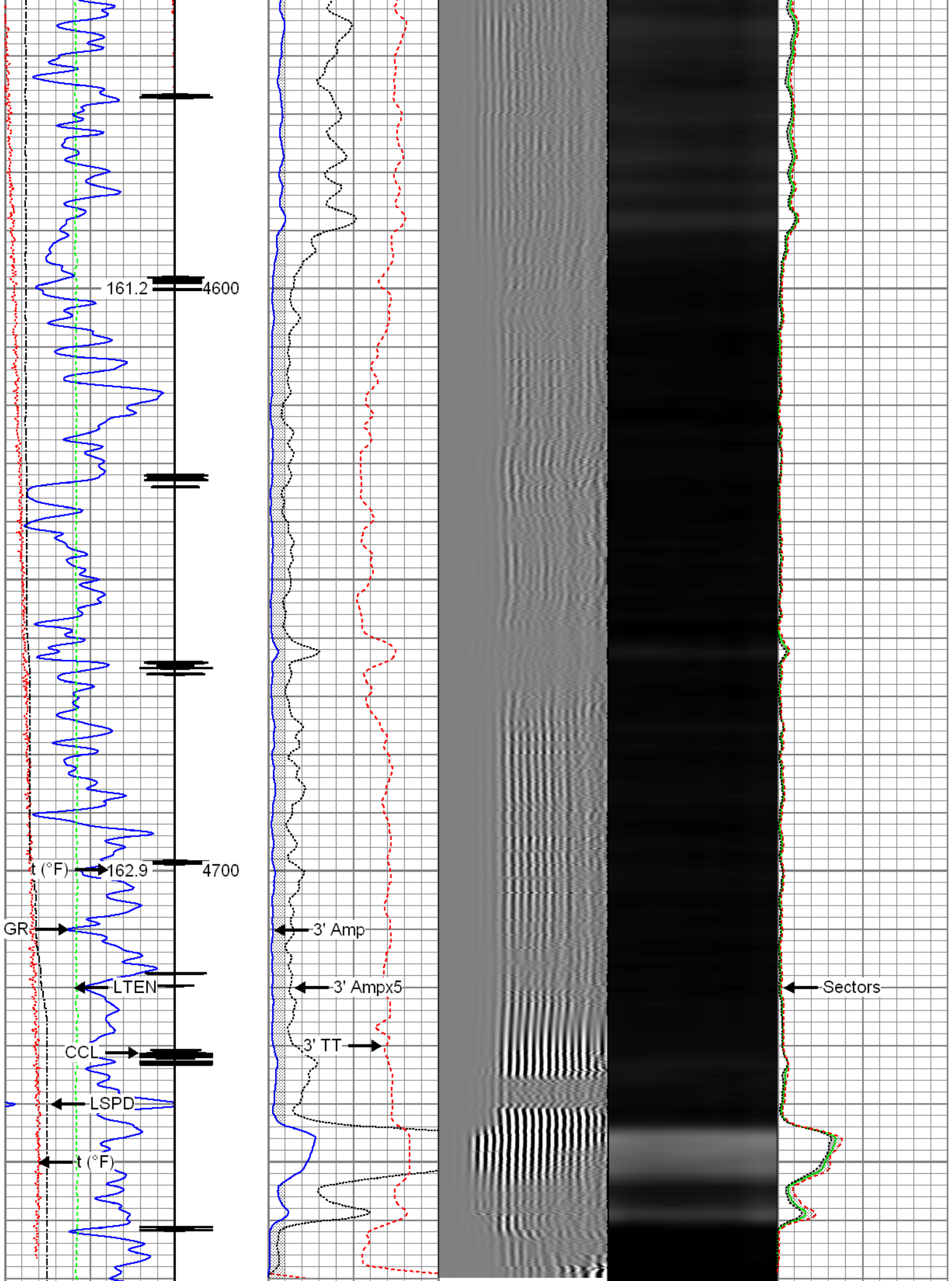


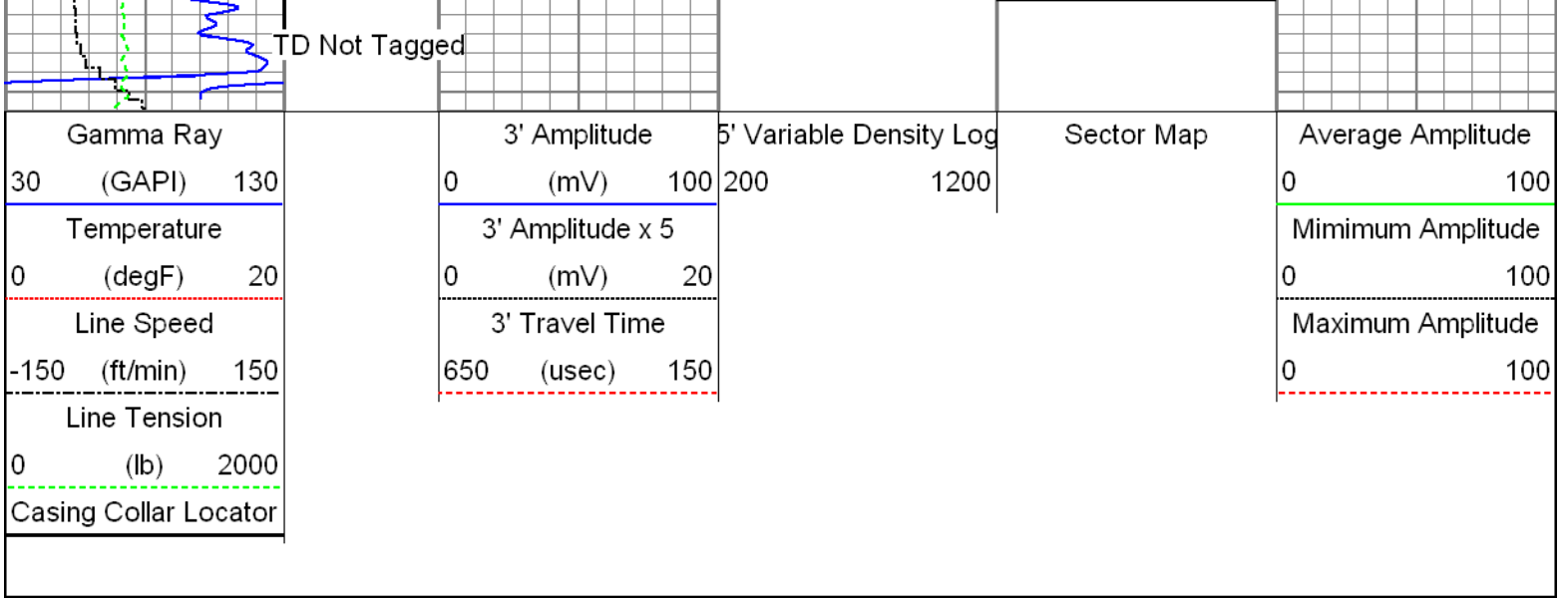








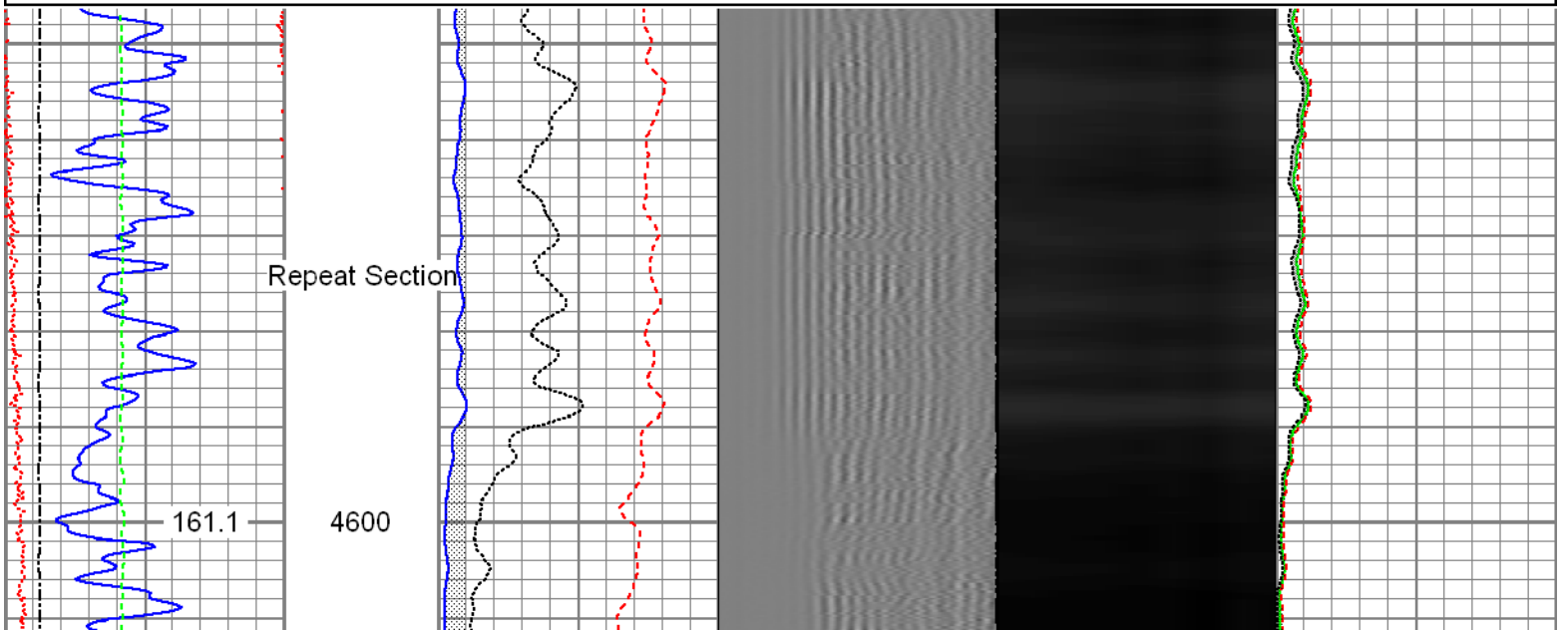
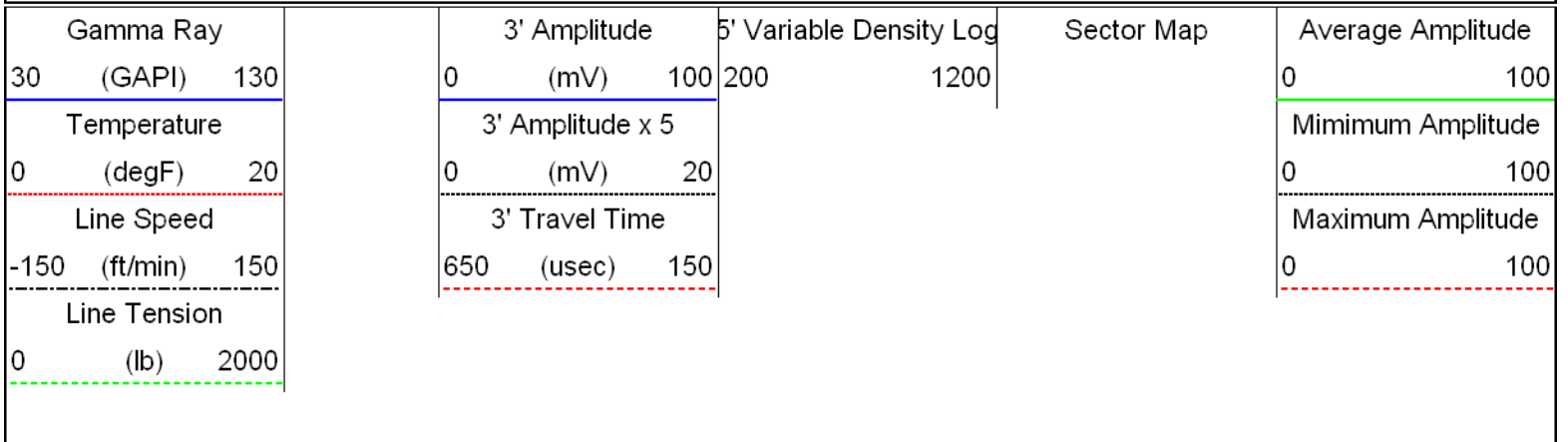


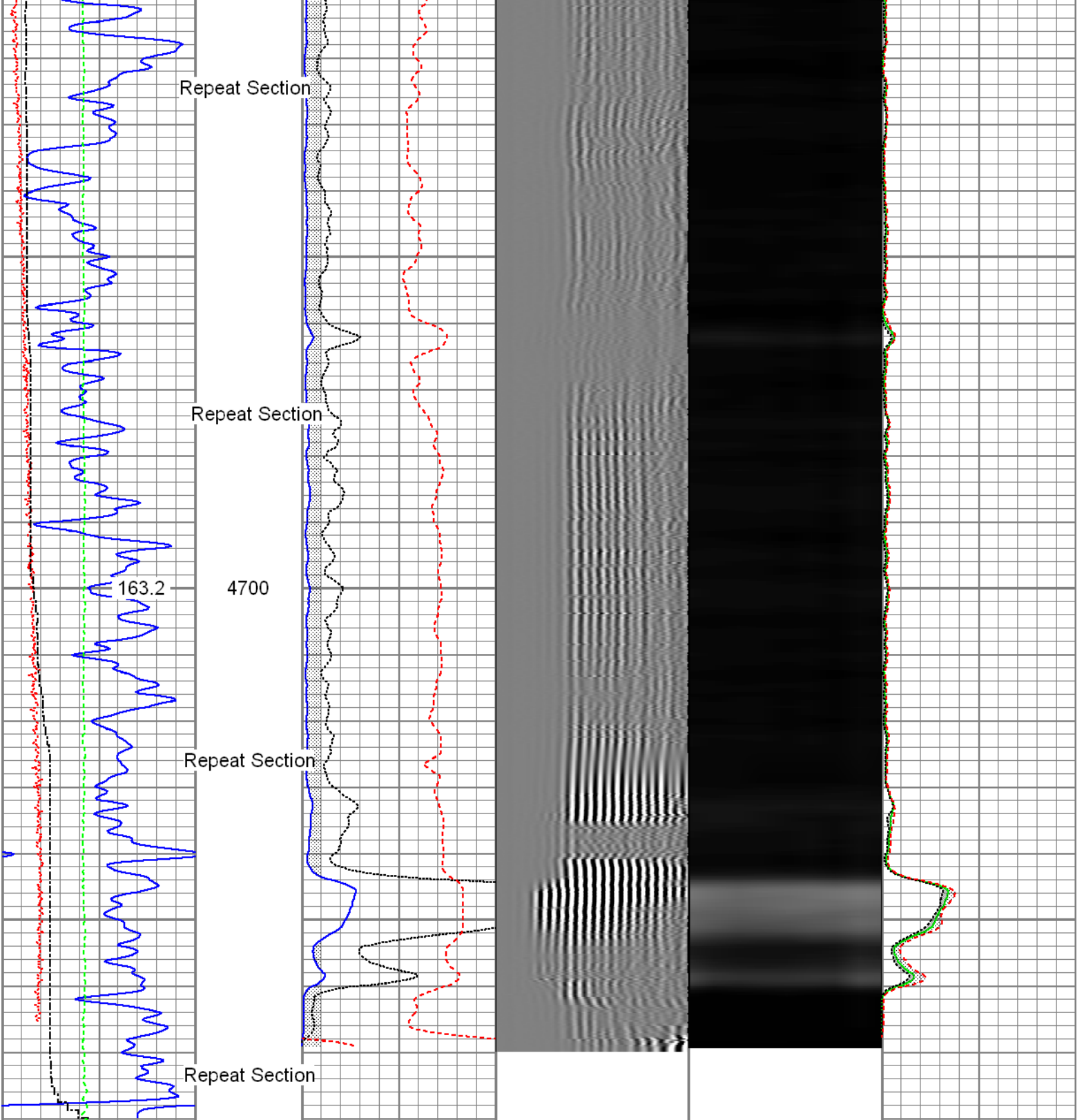


Repeat Pass

Recorded with 0 PSI Surface Induced Pressure

Database File: c:\warrior\data\0512309407_anadarko_state of colorado af 1_02-02-16_rb\0512309407_anadarko_s
 Dataset Pathname: repeat.2
 Presentation Format: radi_ver
 Dataset Creation: Mon Feb 01 11:38:04 2016 by Calc 7.0 B1
 Charted by: Depth in Feet scaled 1:240





Gamma Ray 30 (GAPI) 130	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Temperature 0 (degF) 20	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Line Tension 0 (lb) 2000				

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)	
			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	
HeadVolt	18.06						
Temp	15.29						
WV3FT	13.12			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
WVFCAL	13.12						
WVFS1	13.12						
WVFS2	13.12						
WVFS3	13.12						
WVFS4	13.12						
WVFS5	13.12						
WVFS6	13.12						
WVFS7	13.12						
WVFS8	13.12						
WV5FT	12.12						
CCL	7.38		CCL_LOG-Probe_SA_CCL (FW1307-076) Probe 2-3/4" Digital Six Magnet Logging CCL	2.66	2.75	35.00	
DCCL	7.38						
			GR-Probe_SA_GR (FW1307-078) Probe 2-3/4" Scintillating Gamma Ray	3.33	2.75	55.00	
GR	2.88						
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00	

Dataset: 0512309407_Anadarko_State Of Colorado AF 1_02-02-16_RBL.db: field/well/run1/main.2
 Total Length: 21.97 ft
 Total Weight: 219.00 lb
 O.D.: 2.75 in

Calibration Report

Database File: C:\Warrior\Data\0512309407_Anadarko_State Of Colorado AF 1_02-02-16_RBL\0512309407_Anadarko
 Dataset Pathname: main.2
 Dataset Creation: Mon Feb 01 11:36:39 2016 by Calc 7.0 B1

Gamma Ray Calibration Report

Serial Number: FW1307-078
 Tool Model: Probe_SA_GR
 Performed: Wed Dec 02 09:26:20 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6300 GAPI/cps

Segmented Cement Bond Log Calibration Report

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

Calibration Casing Diameter: 4.500 in
 Calibration Depth: -0.002 ft

Master Calibration, performed Mon Feb 01 11:36:03 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.497	0.800	81.196	164.199	-0.343
CAL	0.006	0.707				
5'	0.010	0.392	0.800	81.196	210.732	-1.368
SUM						
S1	0.008	0.521	0.000	100.000	194.754	-1.533
S2	0.008	0.534	0.000	100.000	190.097	-1.546
S3	0.007	0.529	0.000	100.000	191.539	-1.387
S4	0.007	0.513	0.000	100.000	197.816	-1.402
S5	0.006	0.495	0.000	100.000	204.706	-1.324
S6	0.007	0.484	0.000	100.000	209.744	-1.518
S7	0.007	0.481	0.000	100.000	211.112	-1.485
S8	0.008	0.497	0.000	100.000	204.434	-1.597

Internal Reference Calibration, performed Wed Dec 30 13:01:11 2015:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.006	0.707	1.000	0.000

Air Zero Calibration, performed Mon Feb 01 09:46:36 2016:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.006		0.000			0.000
5'	0.006		0.000			0.000

SUM	0.006	0.000	0.000
S1	0.006	0.000	0.000
S2	0.006	0.000	-0.000
S3	0.006	0.000	-0.000
S4	0.006	0.000	0.000
S5	0.006	0.000	-0.000
S6	0.006	0.000	-0.000
S7	0.006	0.000	0.000
S8	0.006	0.000	0.000



Company	Kerr-McGee Oil & Gas OnShore L.P.
Well	State of Colorado AF 1
Field	Spindle
County	Weld
State	Colorado