



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Kern UPRR 31-5 (2)		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:		API # : 05-123-14745	Other Services
SEC 5 TWP 3N RGE 66W		---	
Permanent Datum	Ground Level	Elevation	4770'
Log Measured From	Kelly Bushing	11 FT	
Drilling Measured From	Kelly Bushing		K.B. 4781' D.F. 4780' G.L. 4770'

Date	10-Feb-2016		
Run Number	One		
Depth Driller	7896 FT		
Depth Logger	6435 FT		
Bottom Logged Interval	6420 FT		
Top Log Interval	Surface		
Open Hole Size	8.765"		
Type Fluid	Water		
Density / Viscosity	8.34 lbm/gal		
Max. Recorded Temp.	227°F		
Estimated Cement Top	50 FT		
Time Well Ready	ROA		
Time Logger on Bottom	7:43 AM		
Equipment Number	HD-0324		
Location	Fort Lupton, CO		
Recorded By	A. Olmsted		
Witnessed By	Bill Smith		

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	8 5/8	24	---	Surface	312 FT		
Intermediate #1	4 1/2	11.6	1-70	Surface	7420 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 reported at 11 FT
Log ran from 6400 FT to Surface
Recorded with 0 PSI surface induced pressure

Thank you for choosing FMC Technologies Surface Integrated Services.

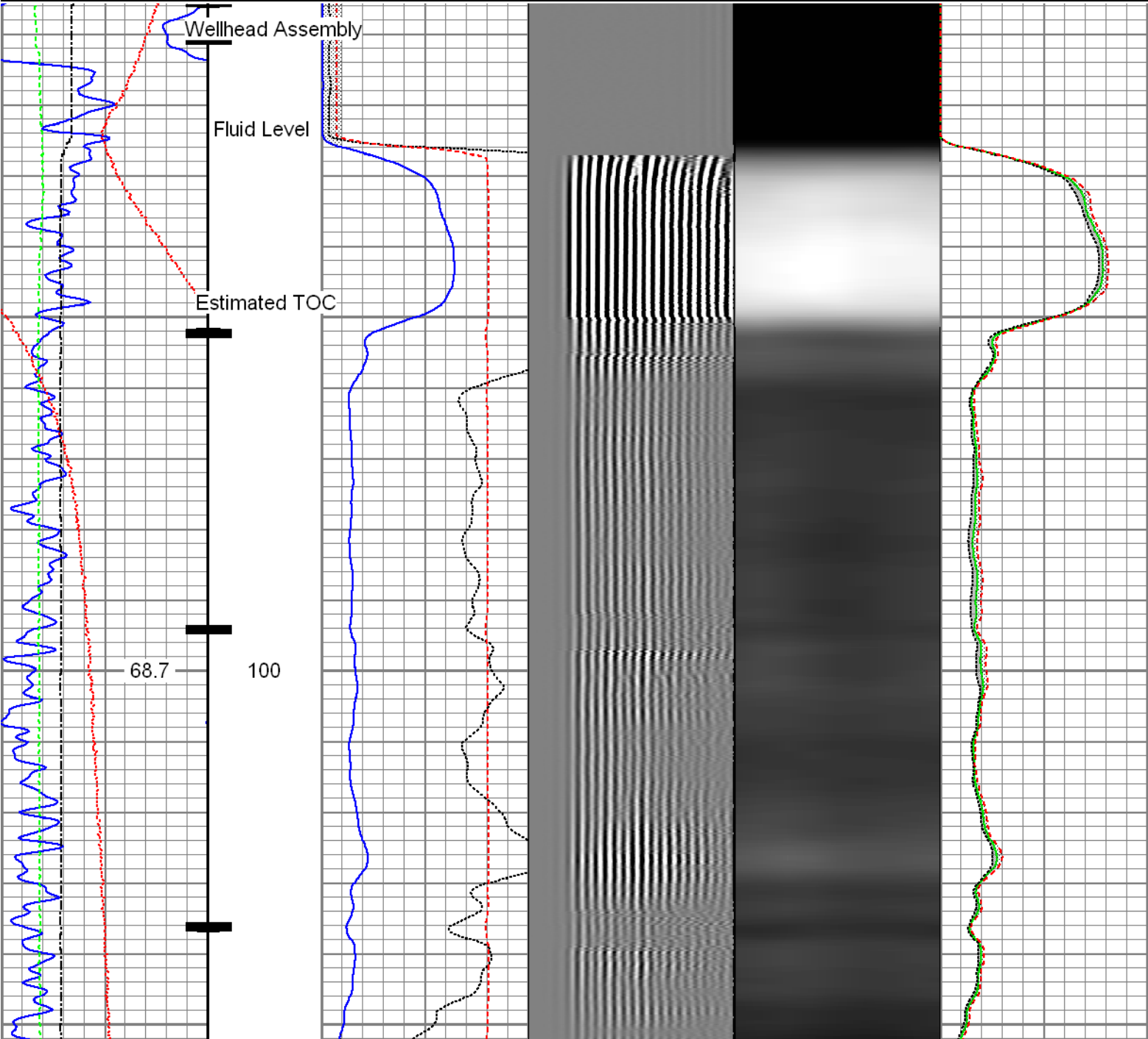


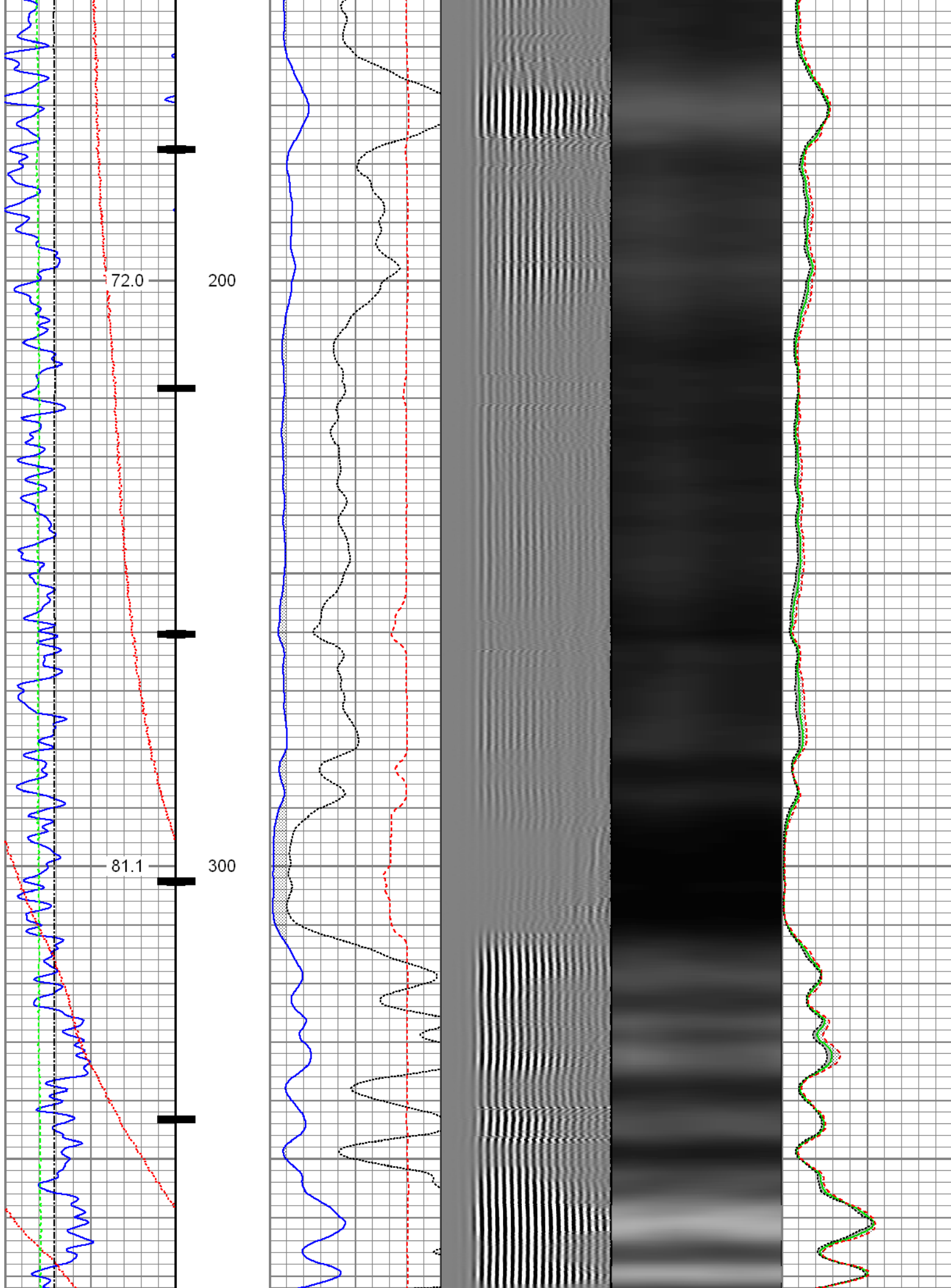
Main Pass

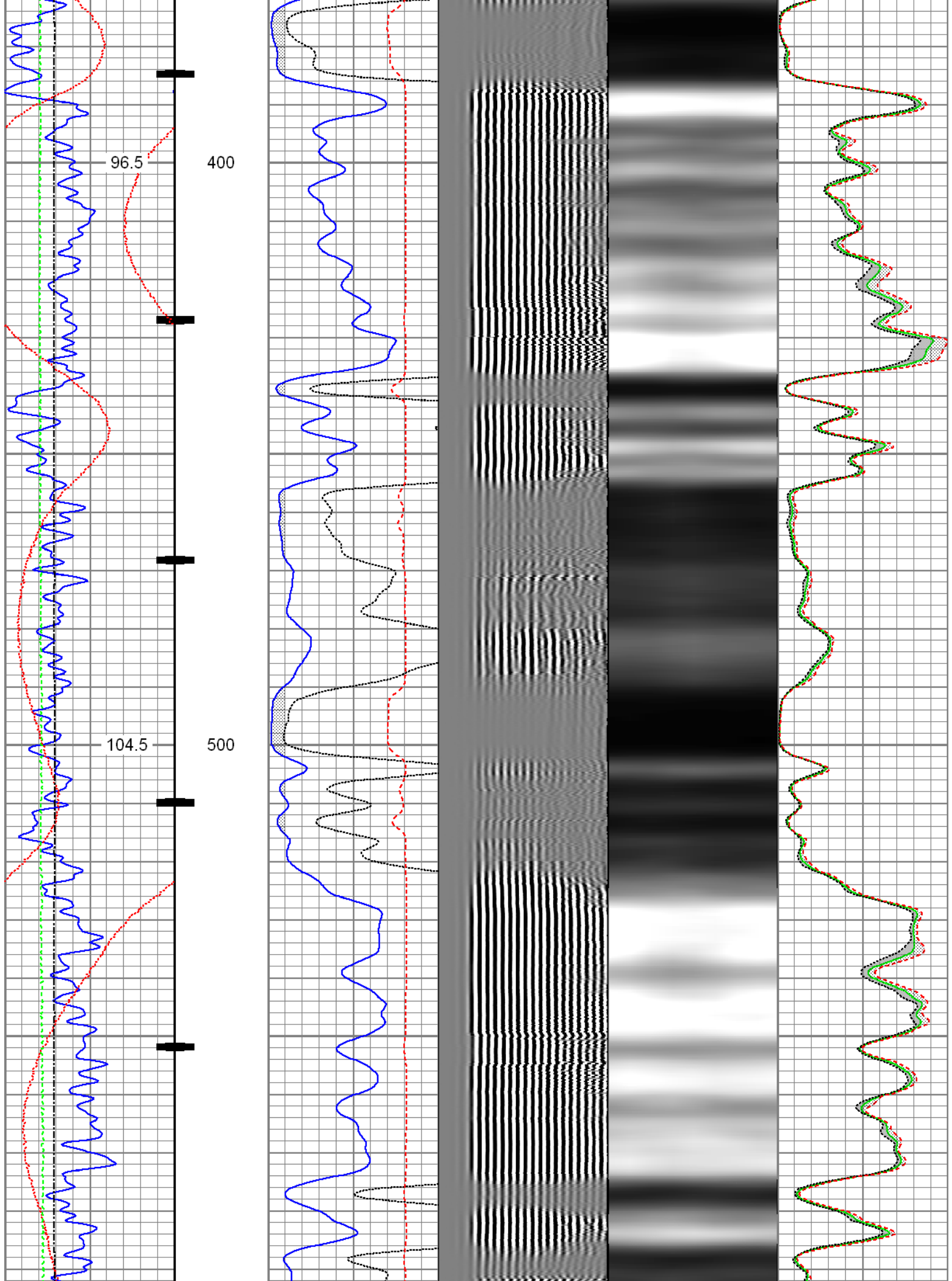
Recorded with 0 PSI Surface Induced Pressure

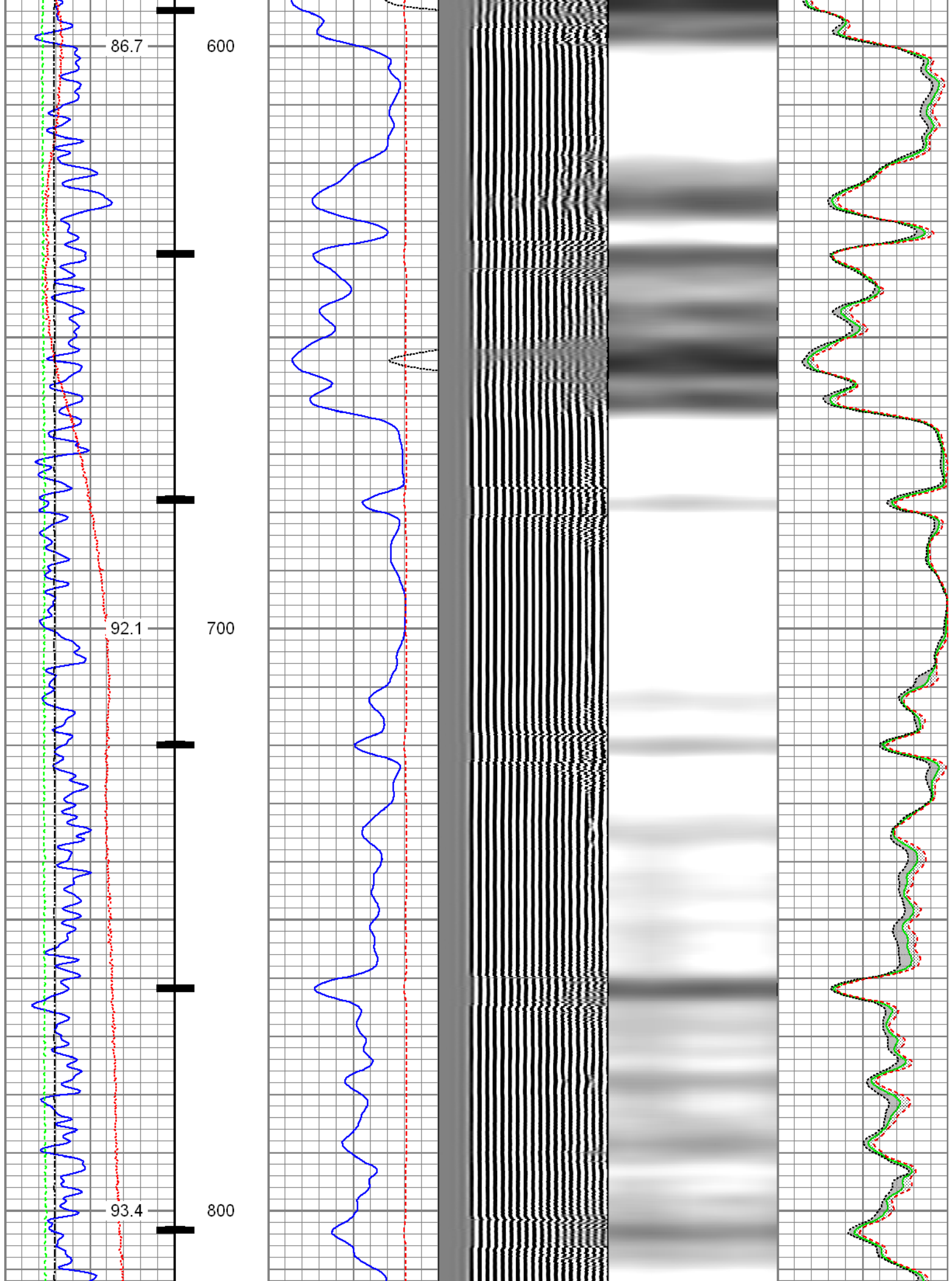
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Dataset Pathname: pass5.1
Presentation Format: radii
Dataset Creation: Wed Feb 10 09:08:49 2016 by Calc 7.0 B1
Charted by: Depth in Feet scaled 1:240

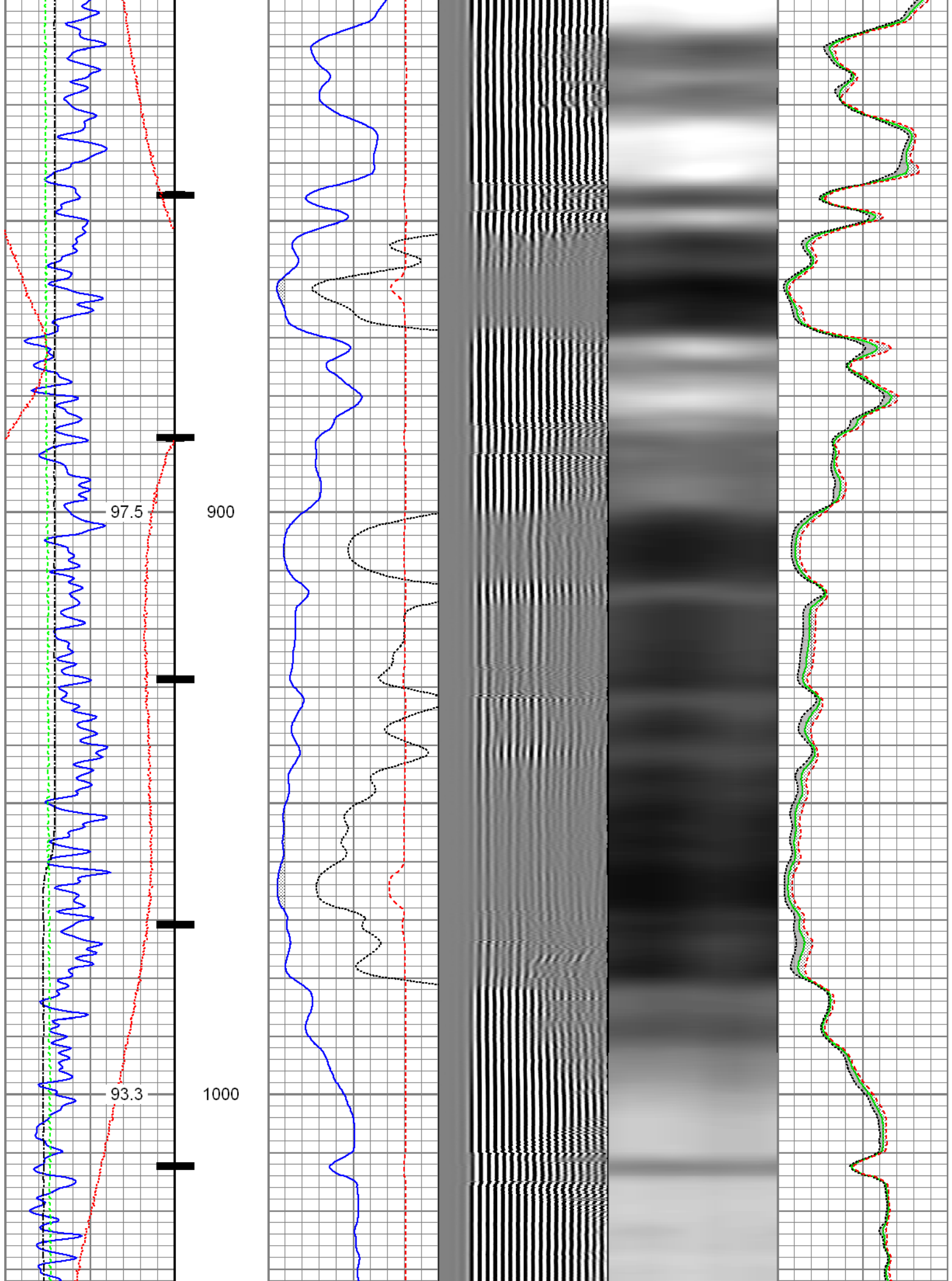
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
30 (GAPI) 130	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Temperature	0 (mV) 20			0 100
0 (degF) 20	3' Travel Time			Maximum Amplitude
Line Speed	650 (usec) 150			0 100
-150 (ft/min)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

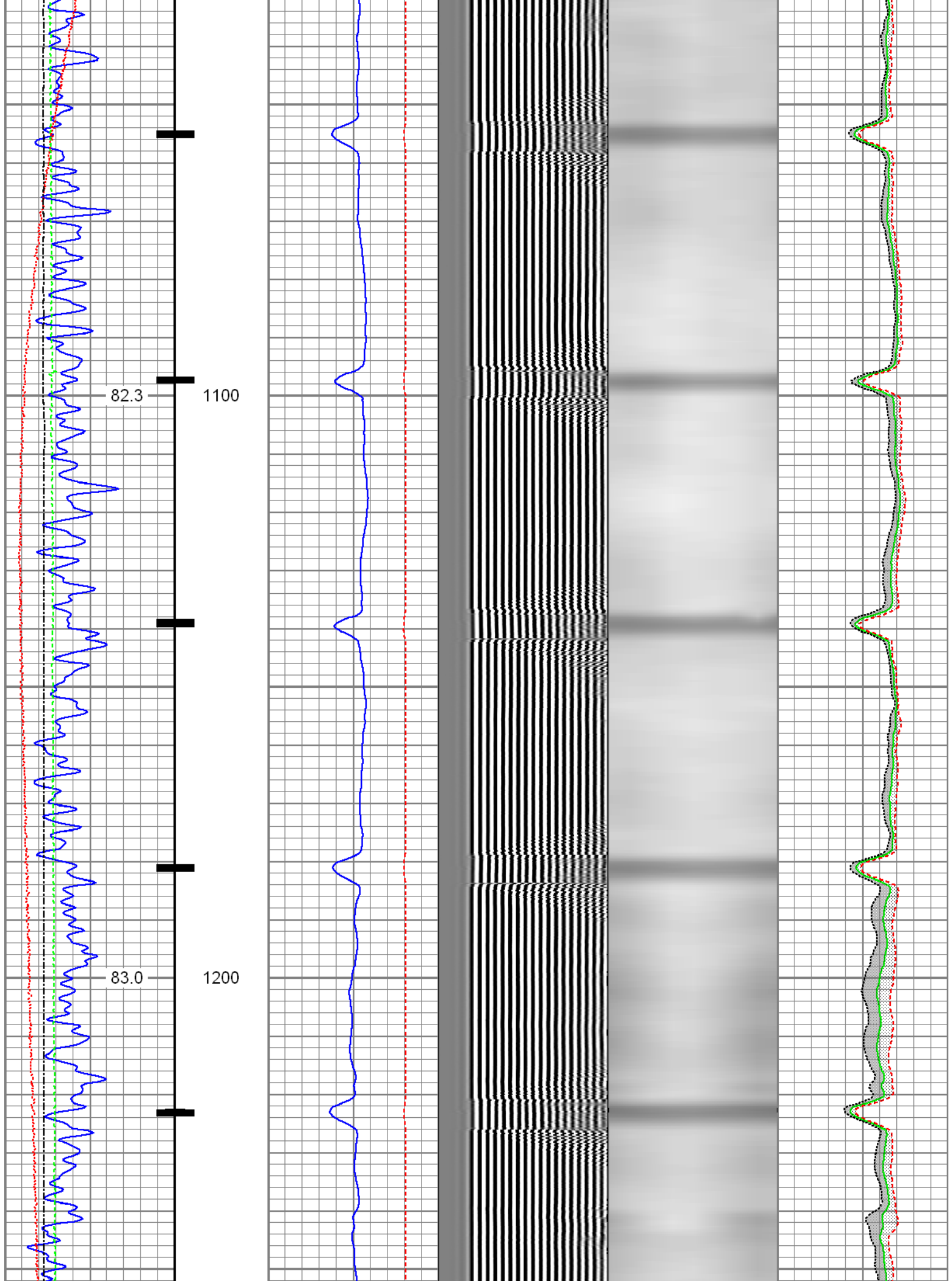


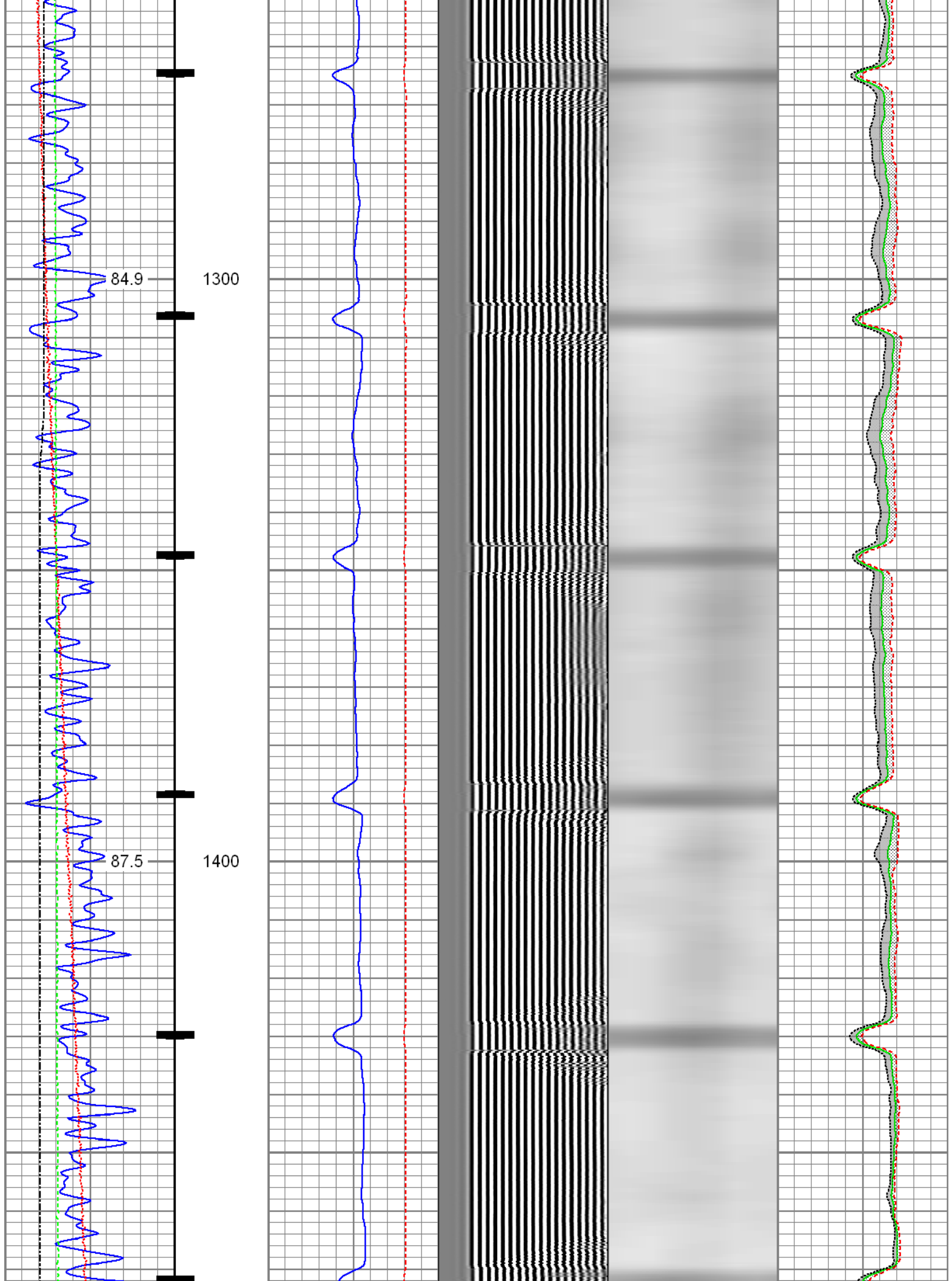


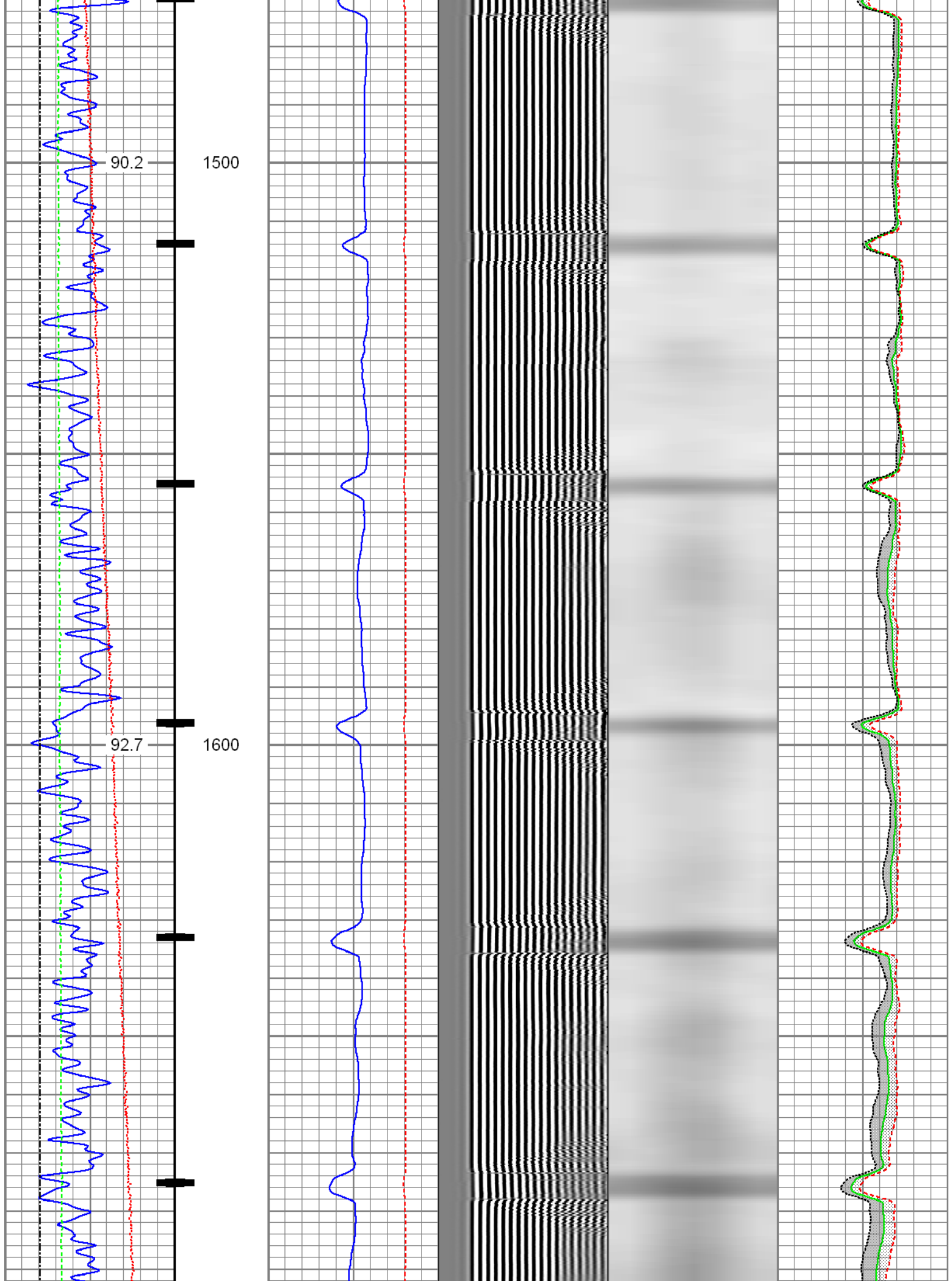


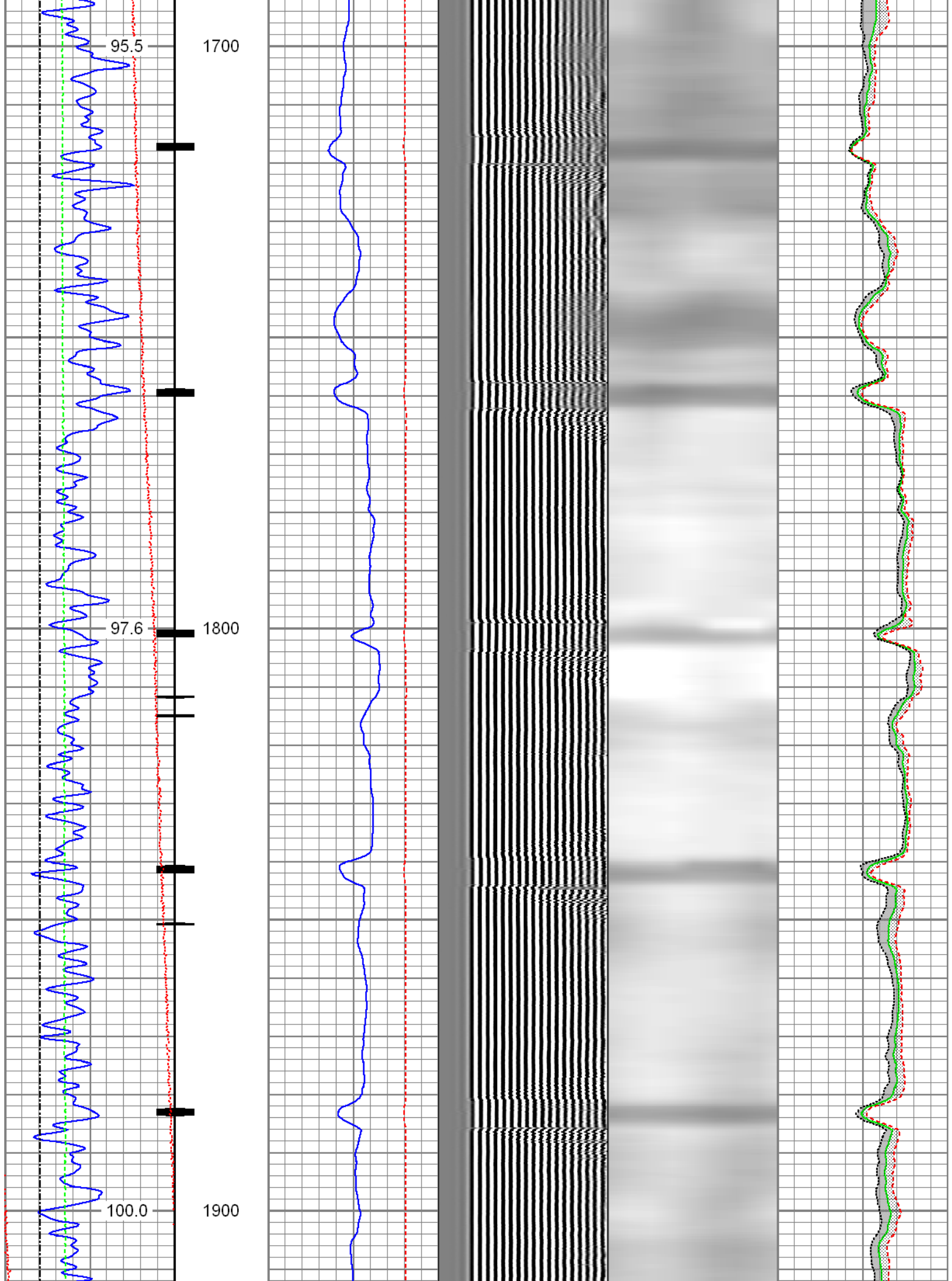


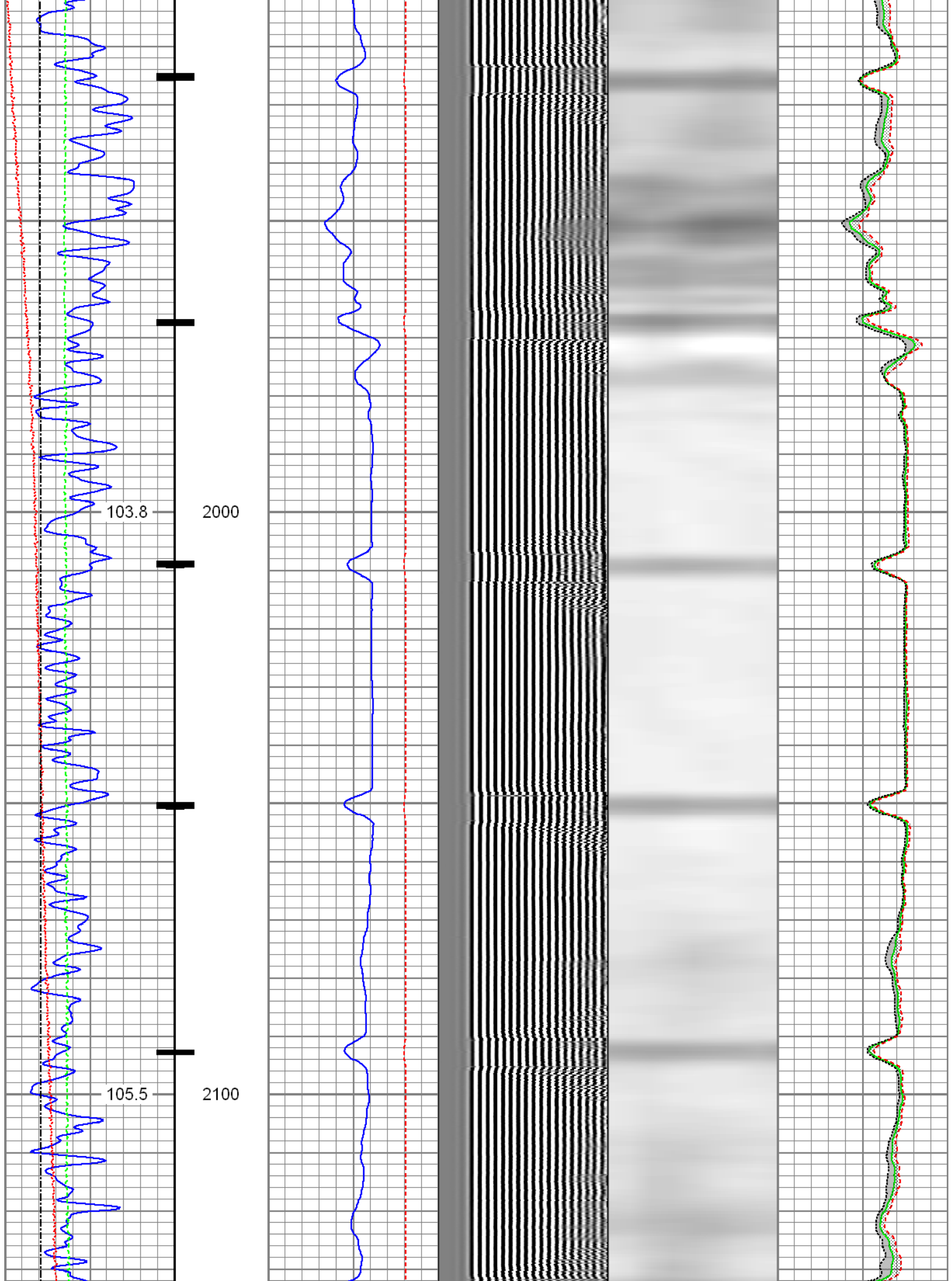


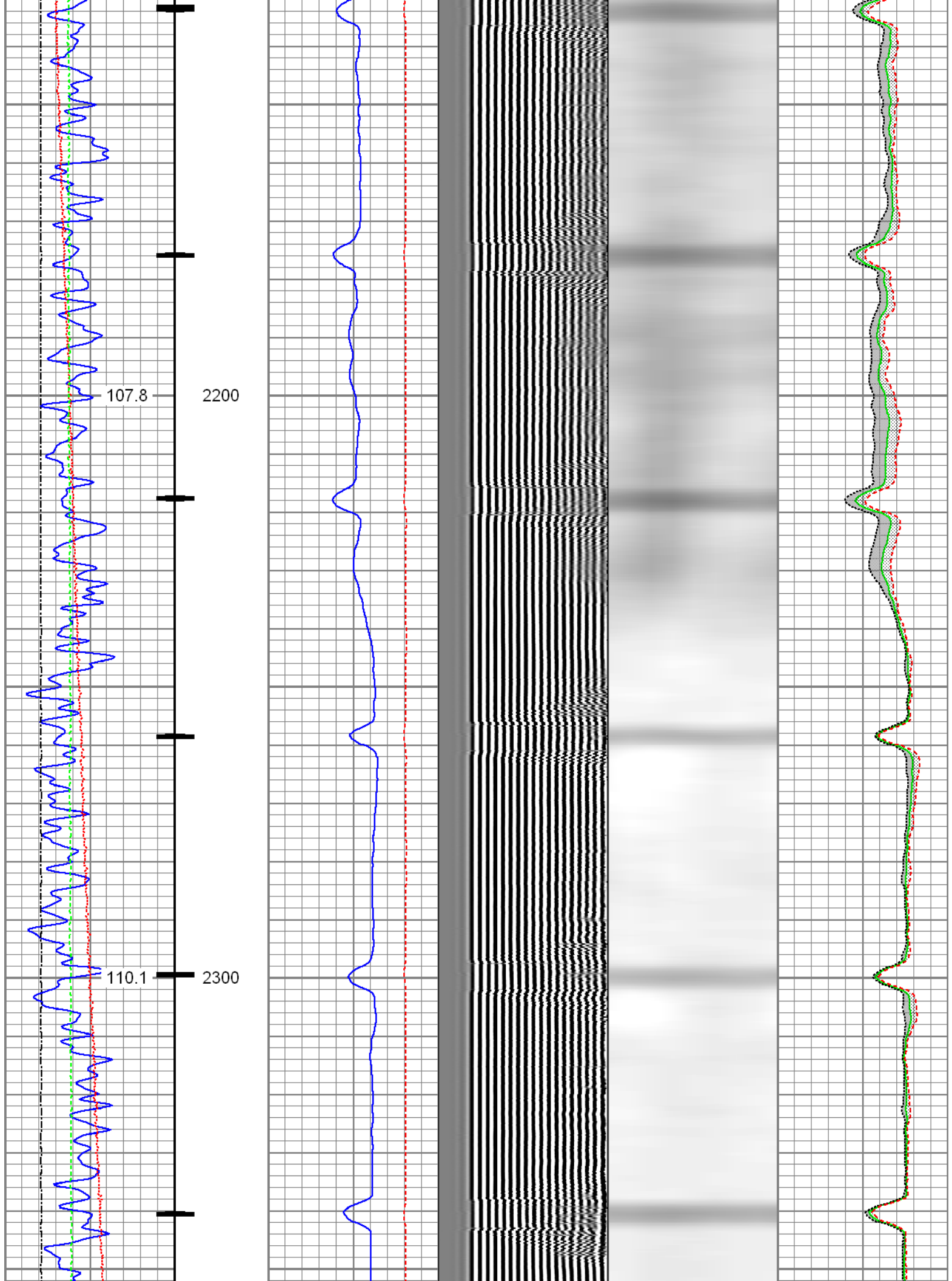


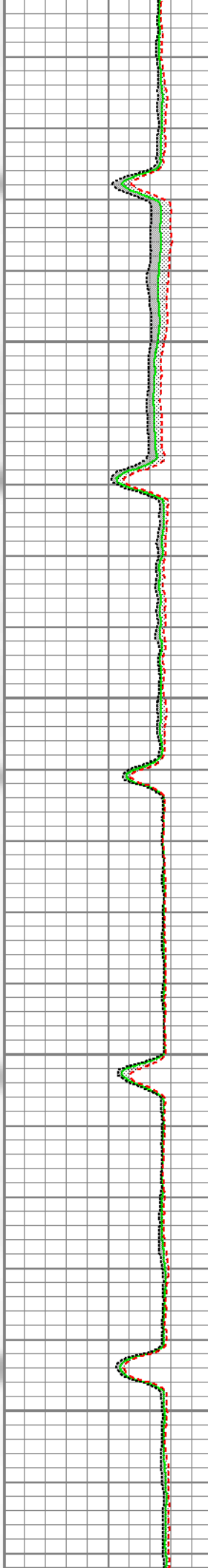
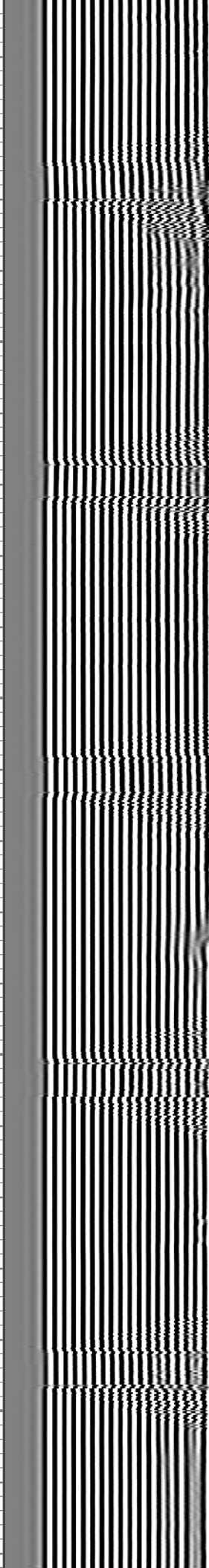
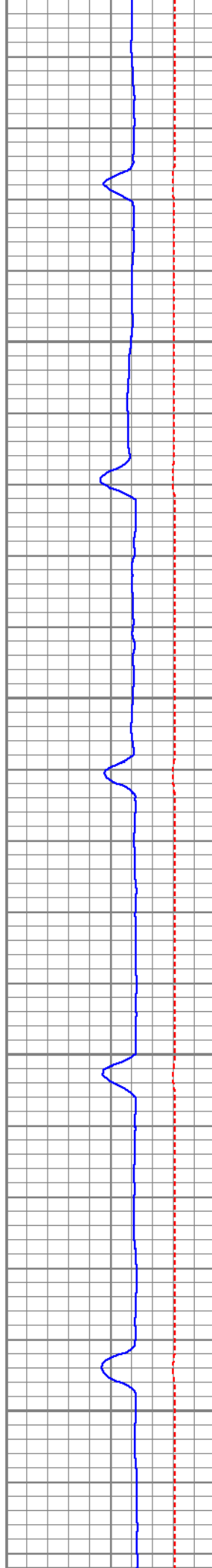
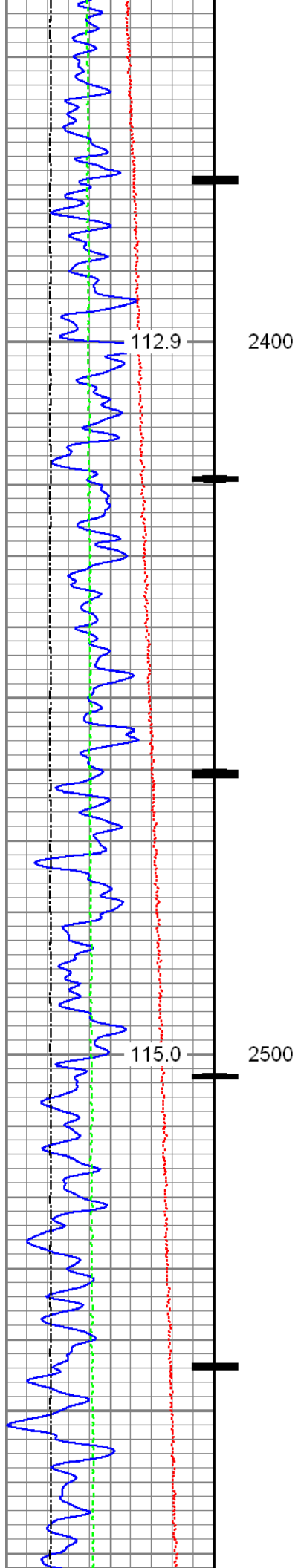


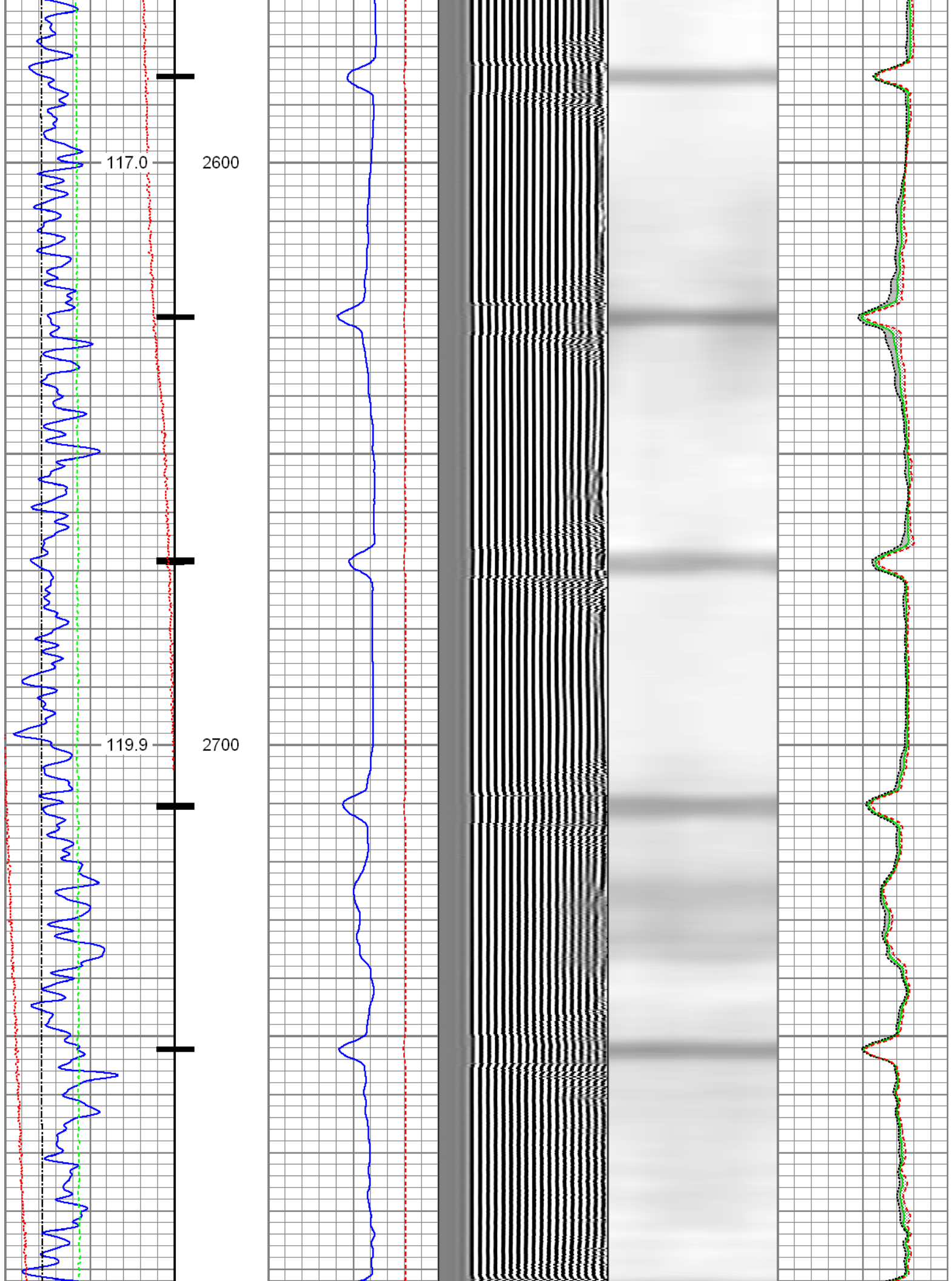


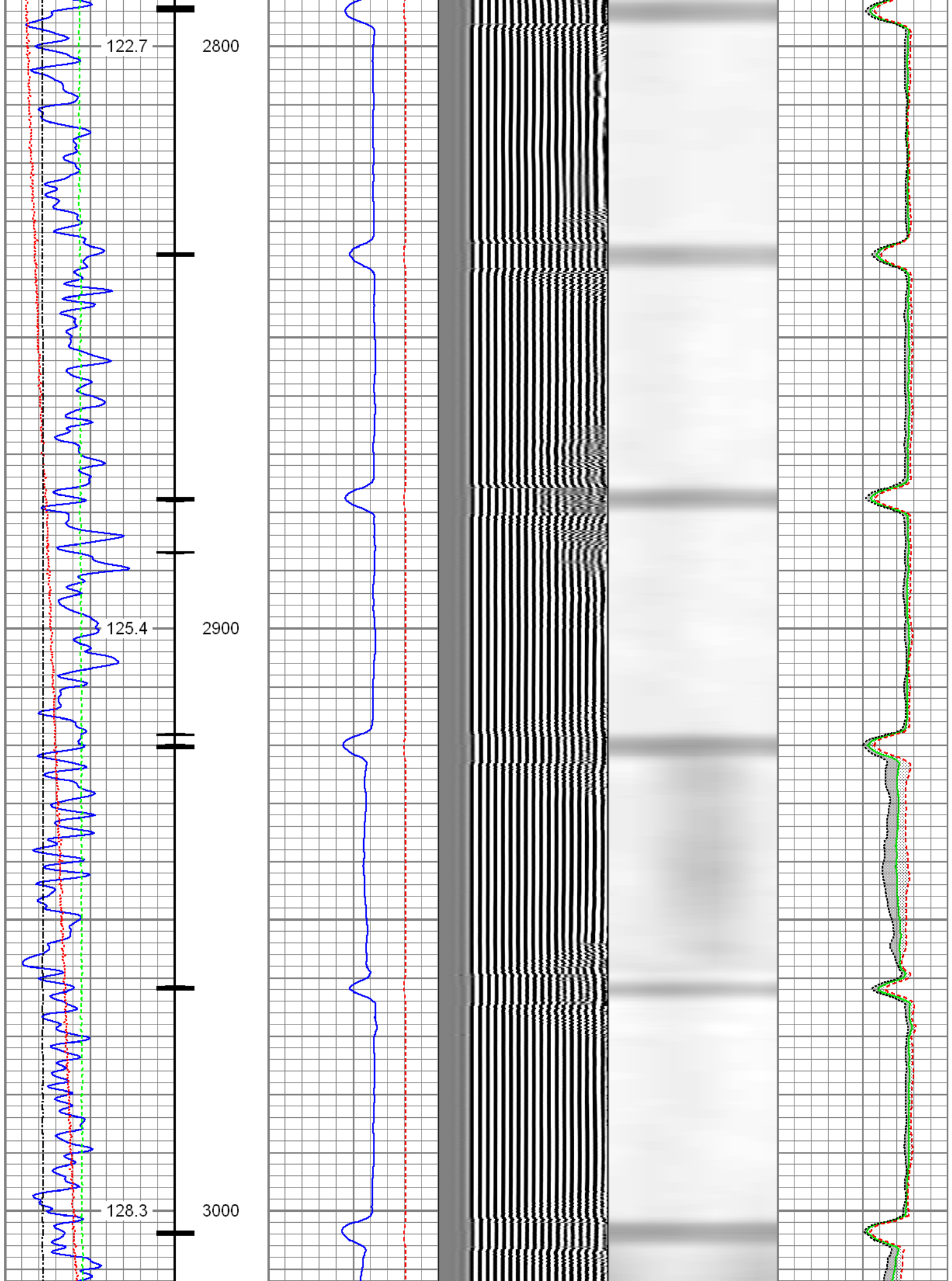


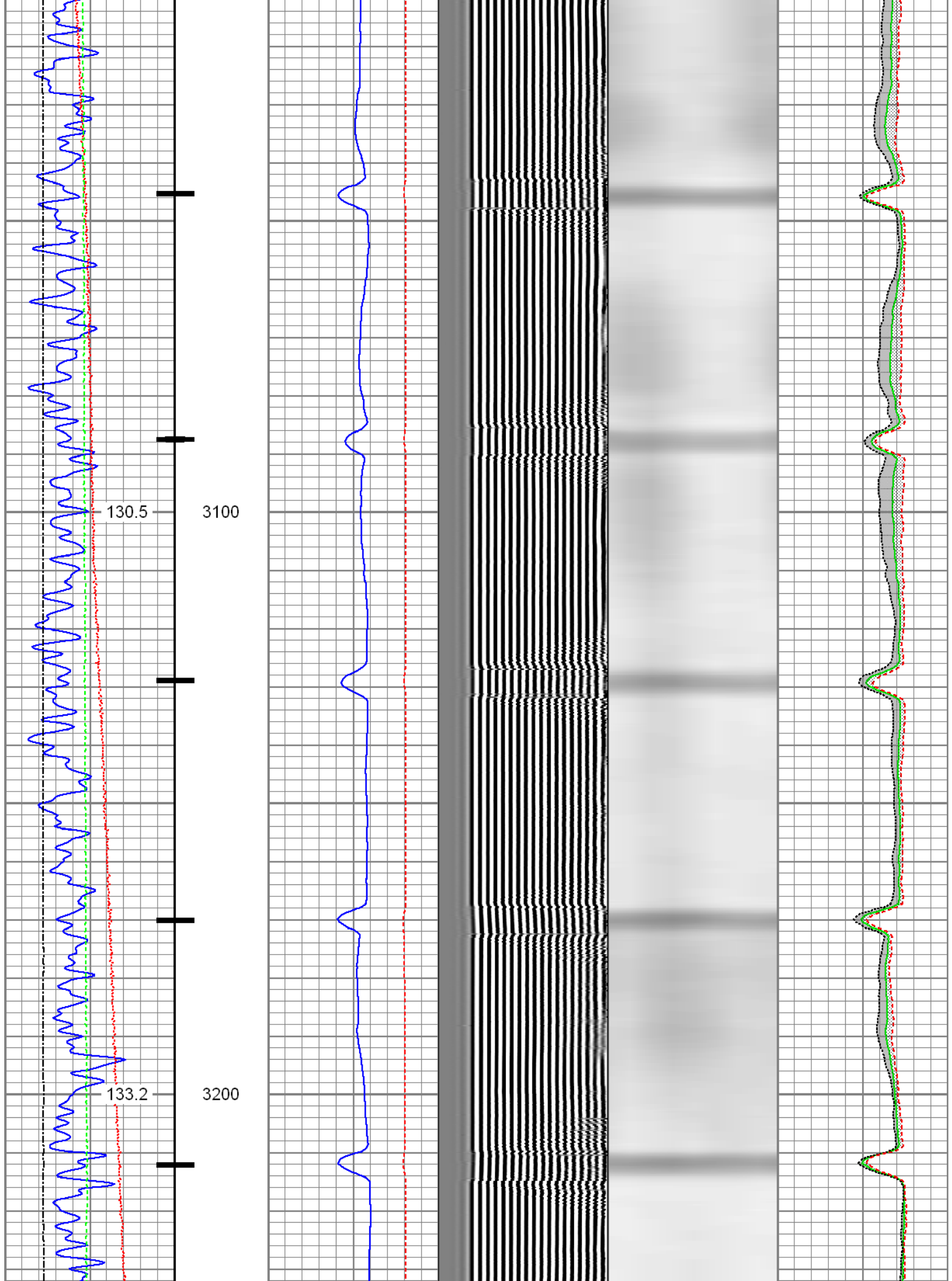


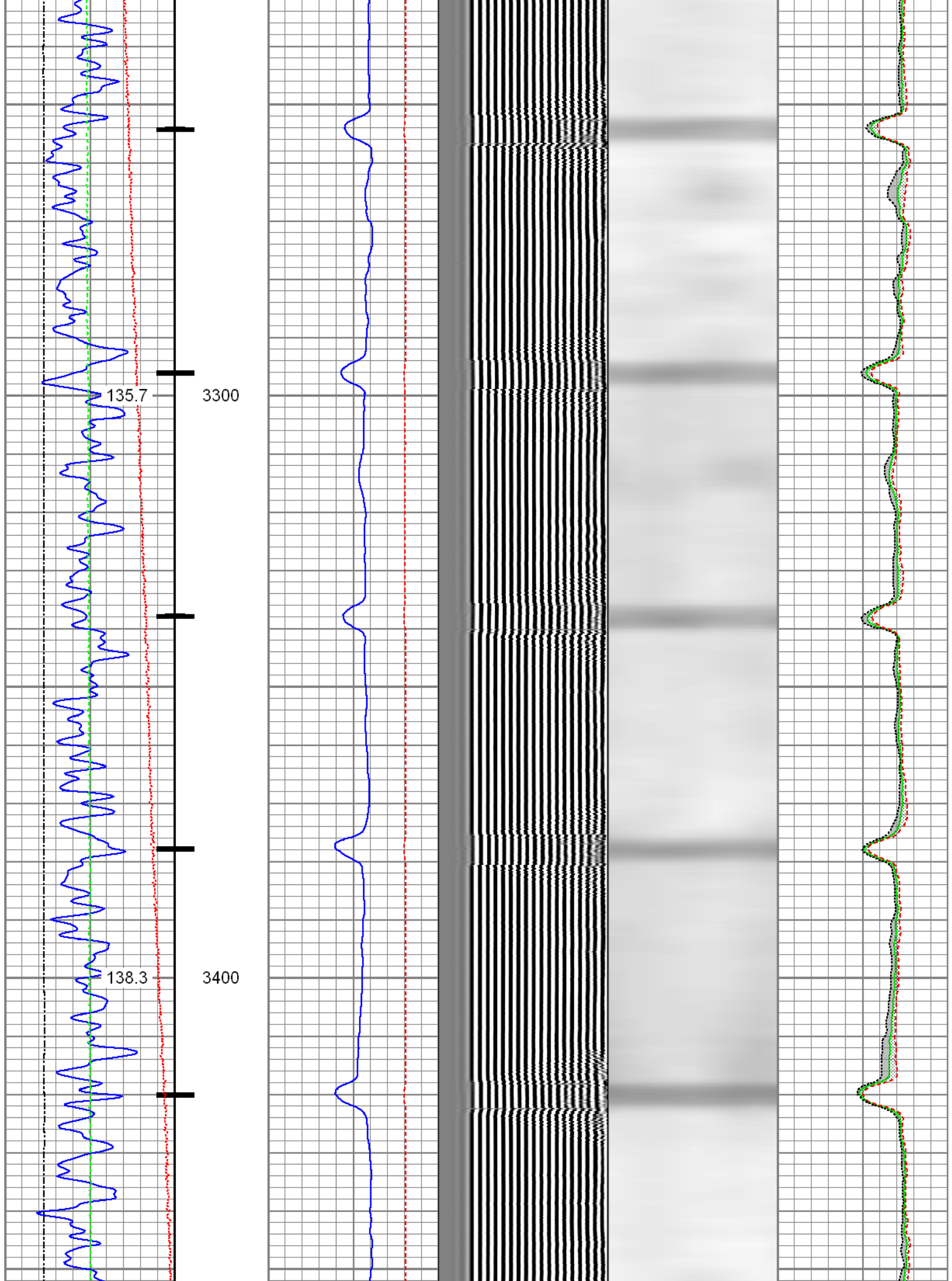


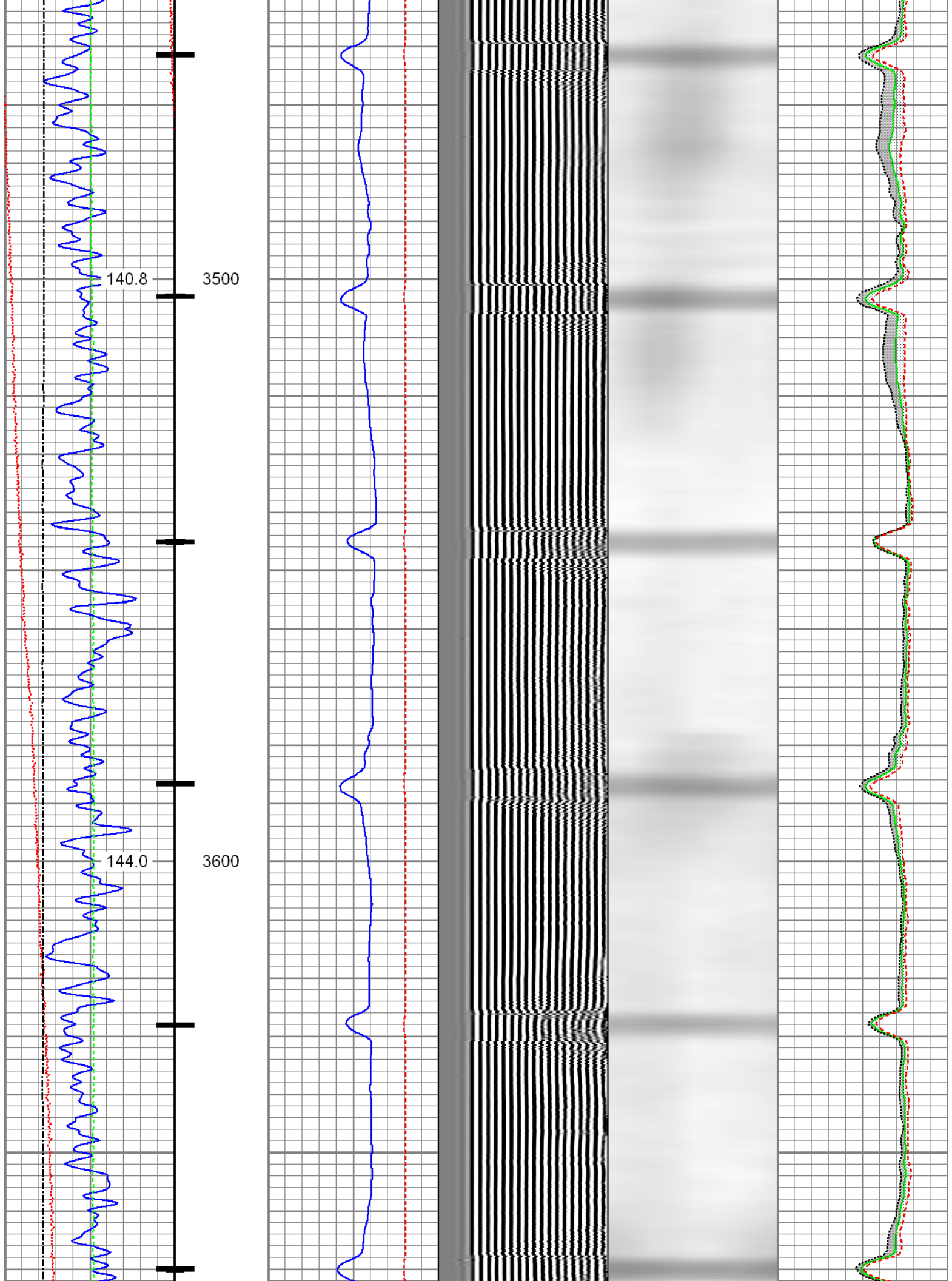


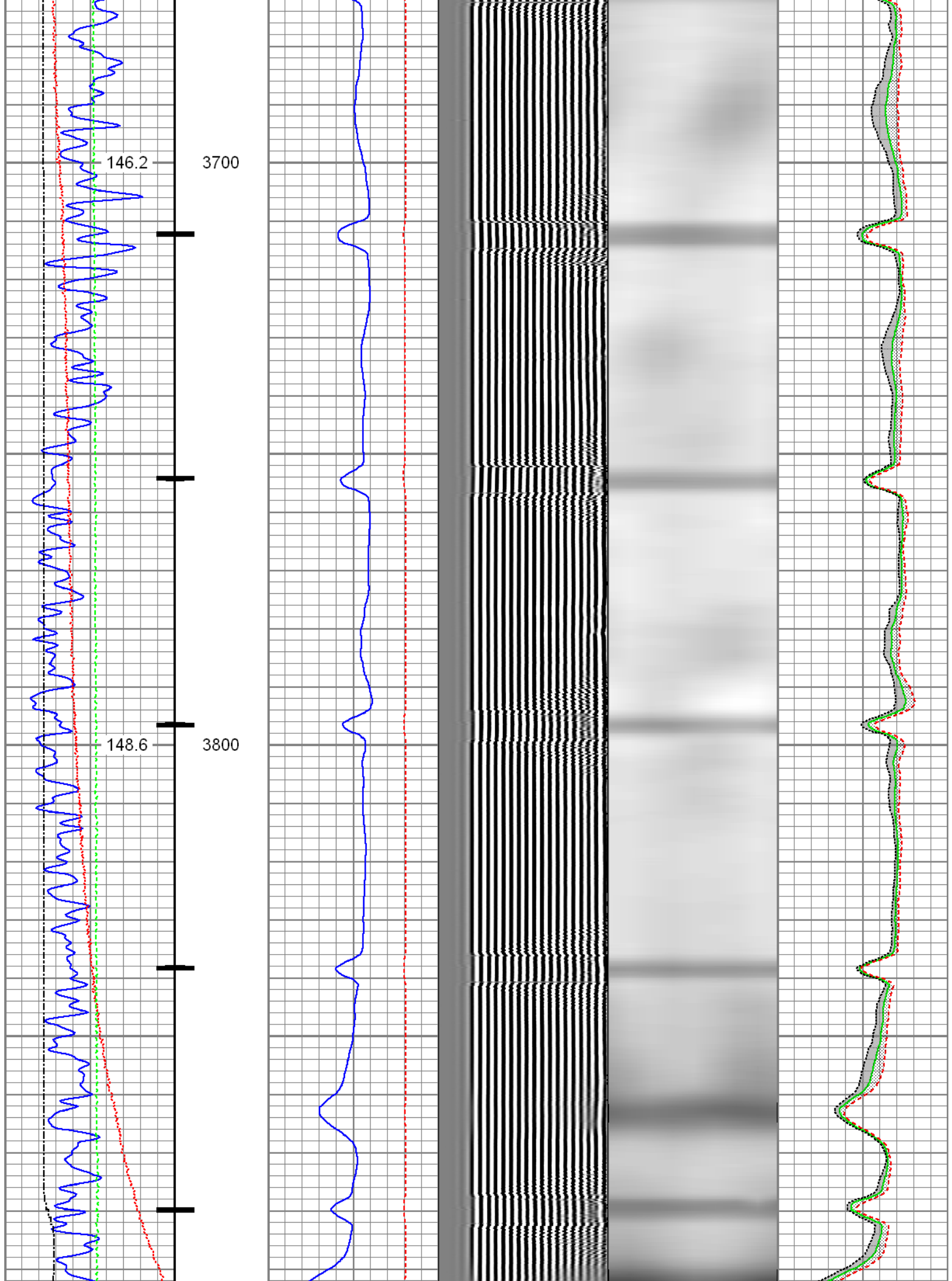


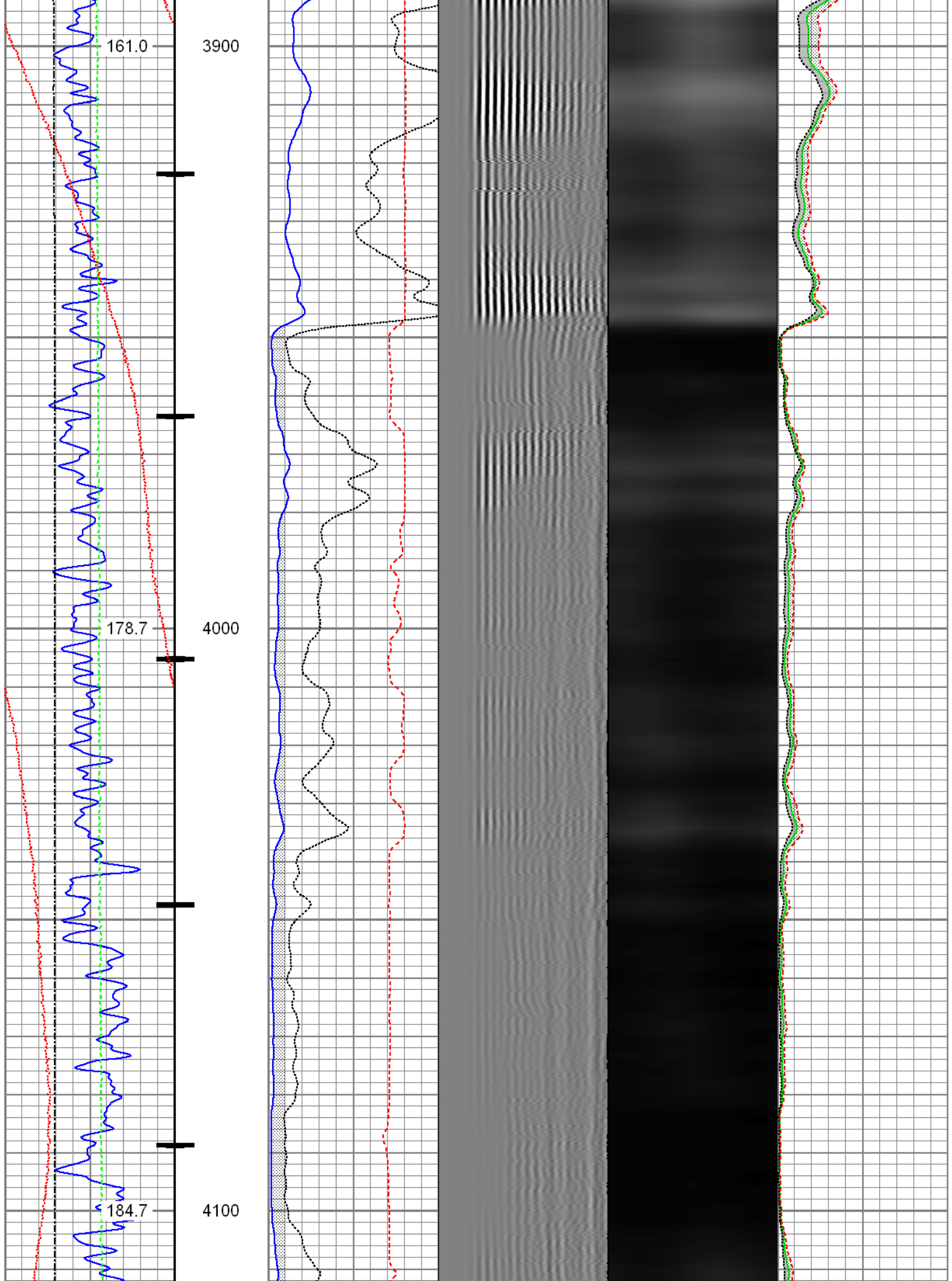


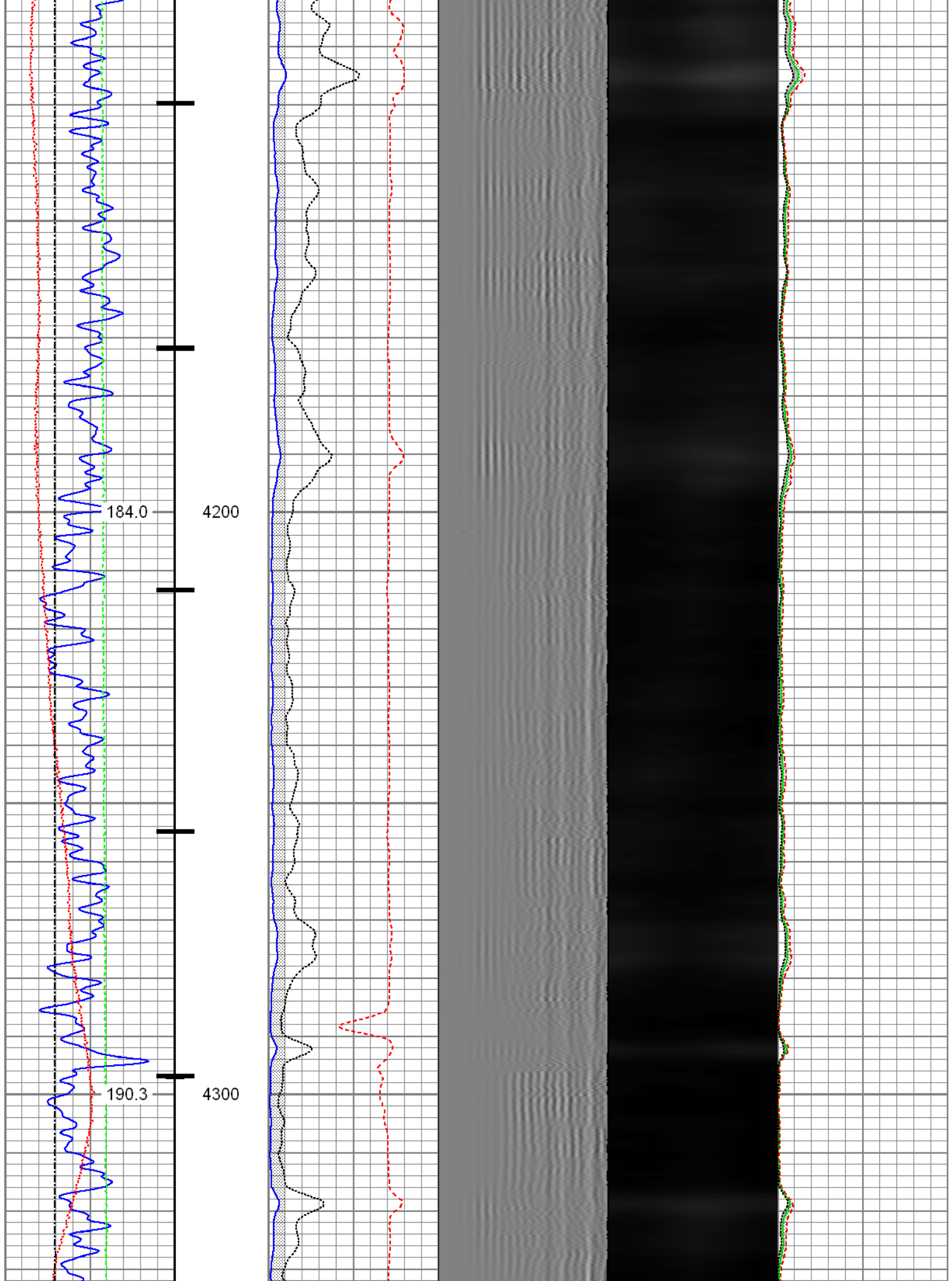


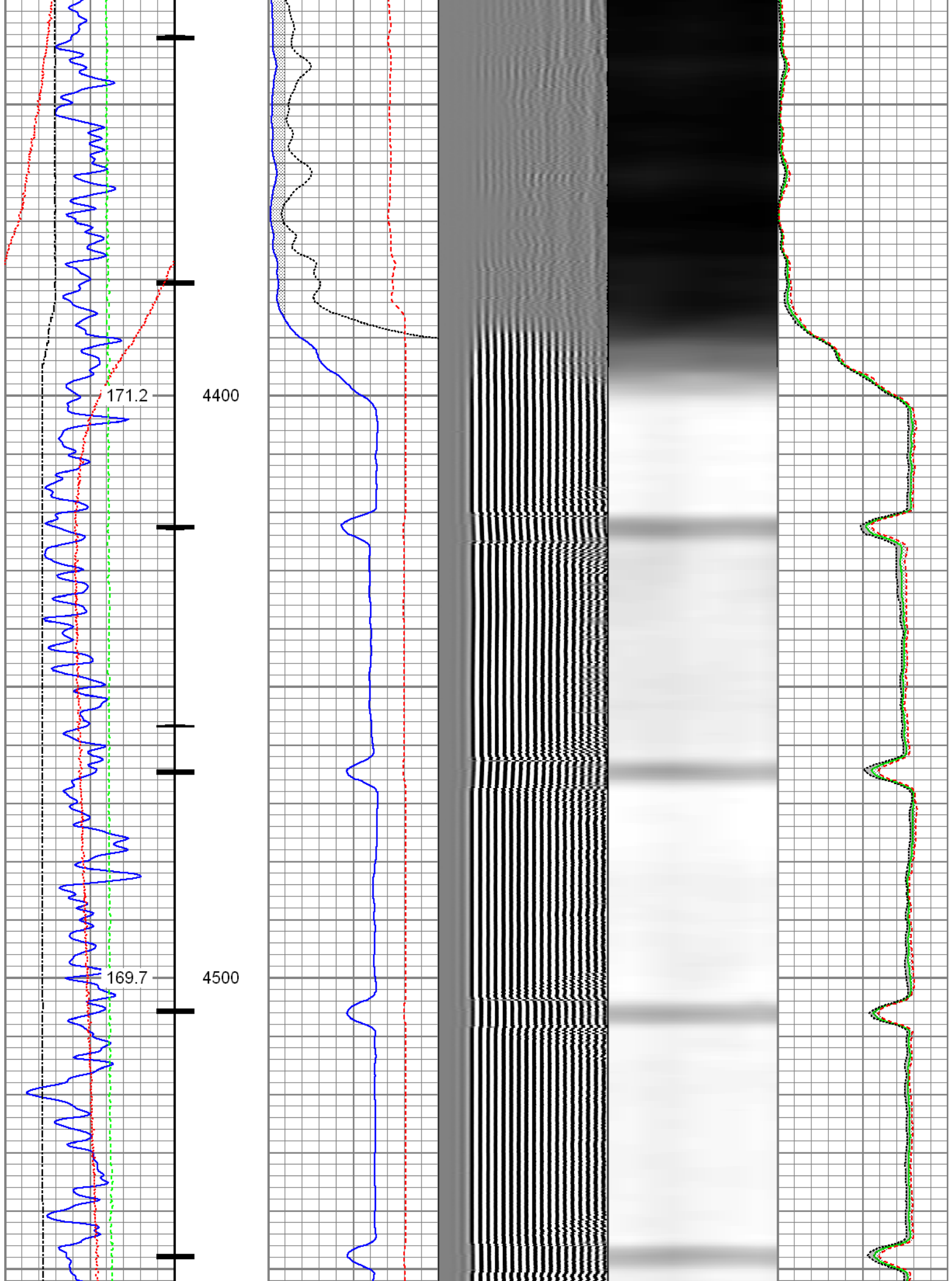


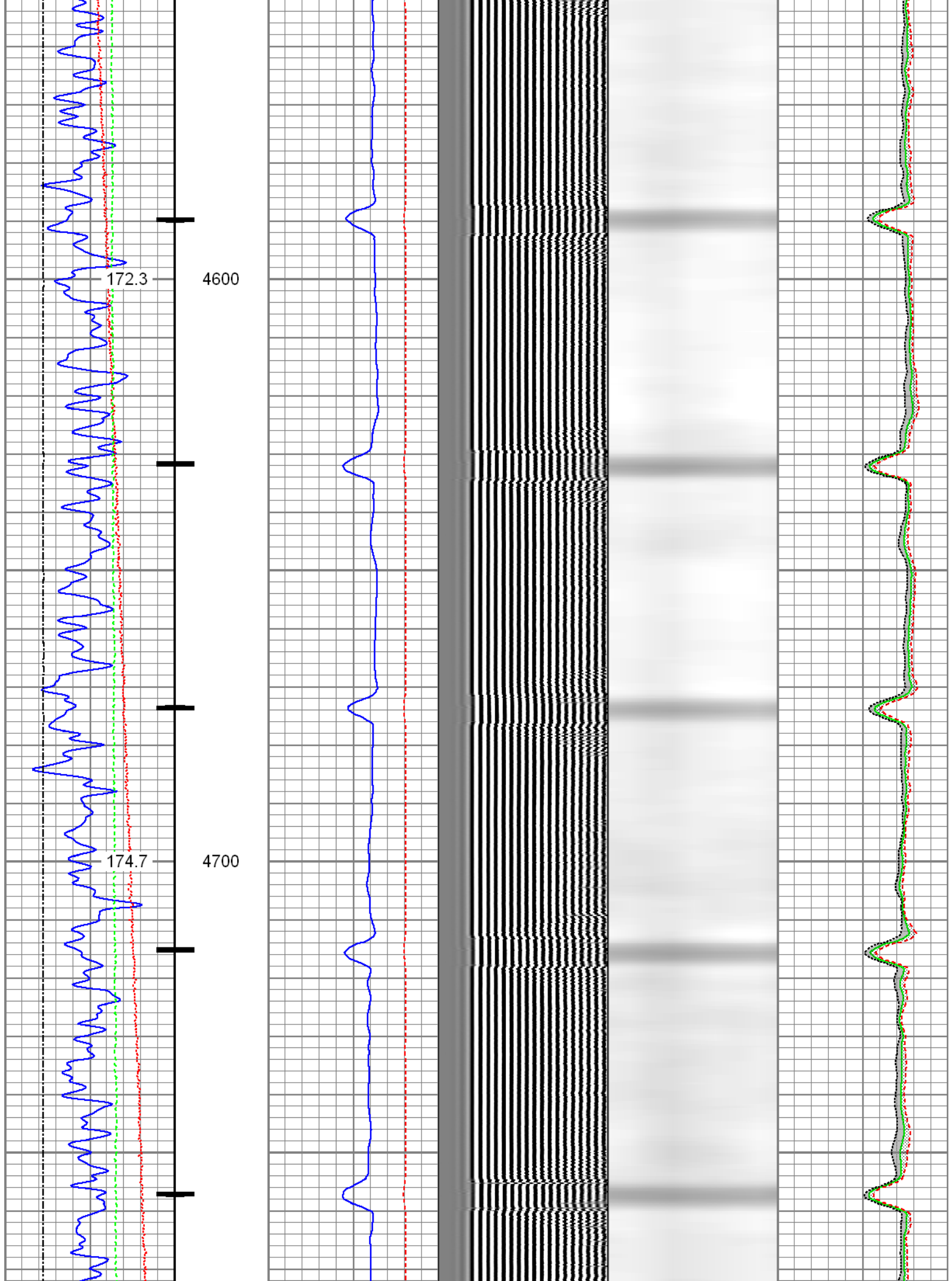


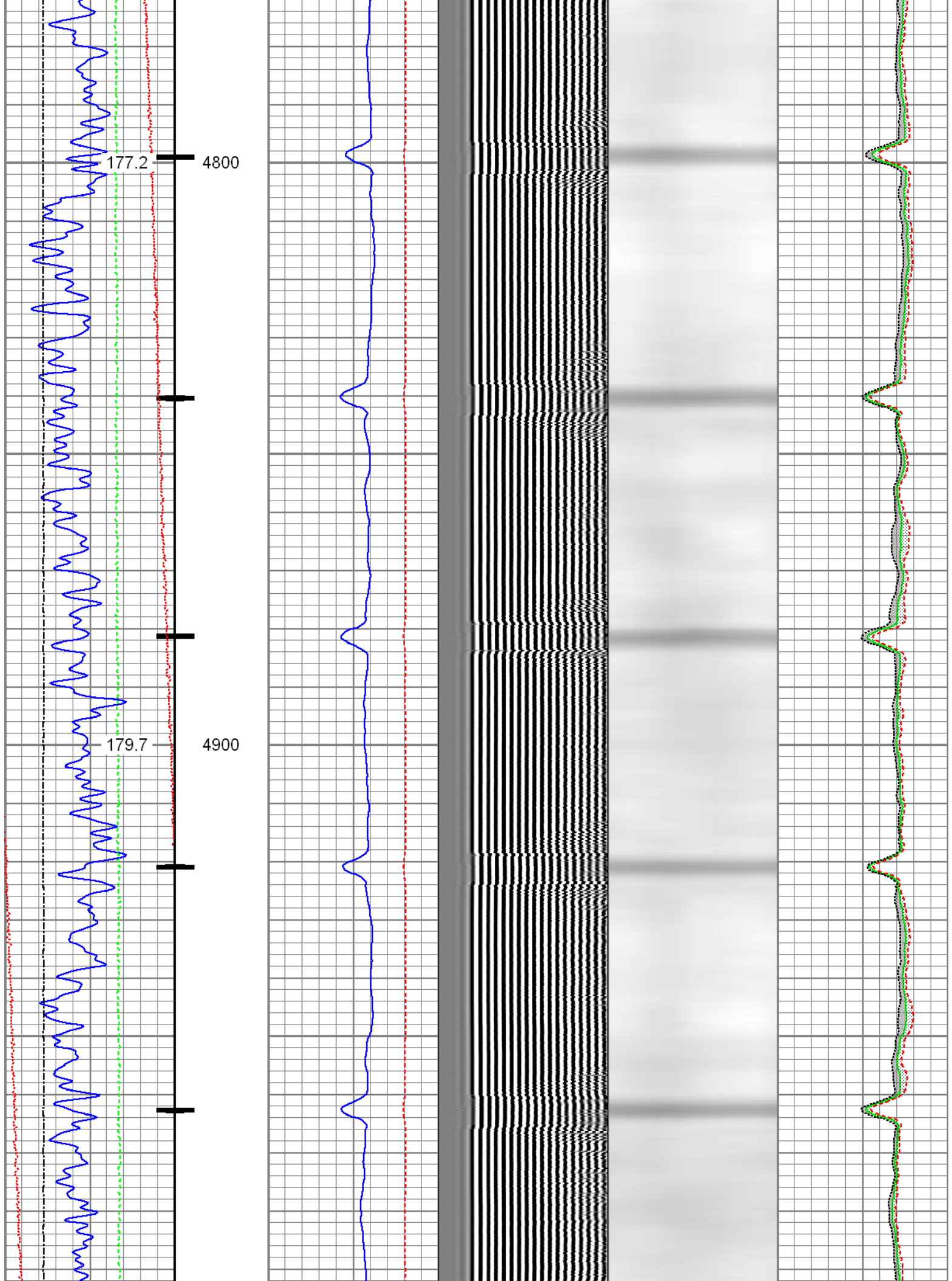


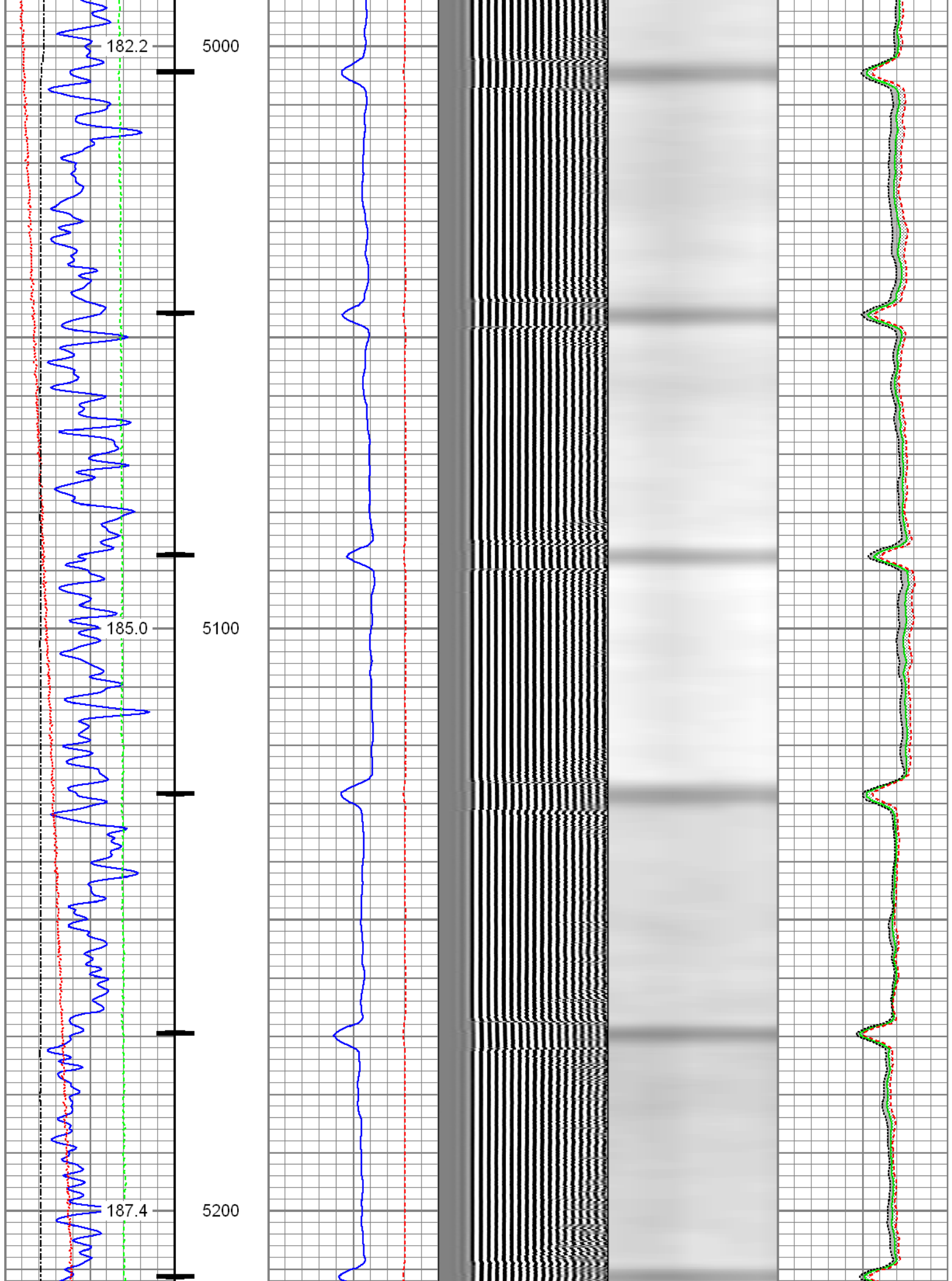


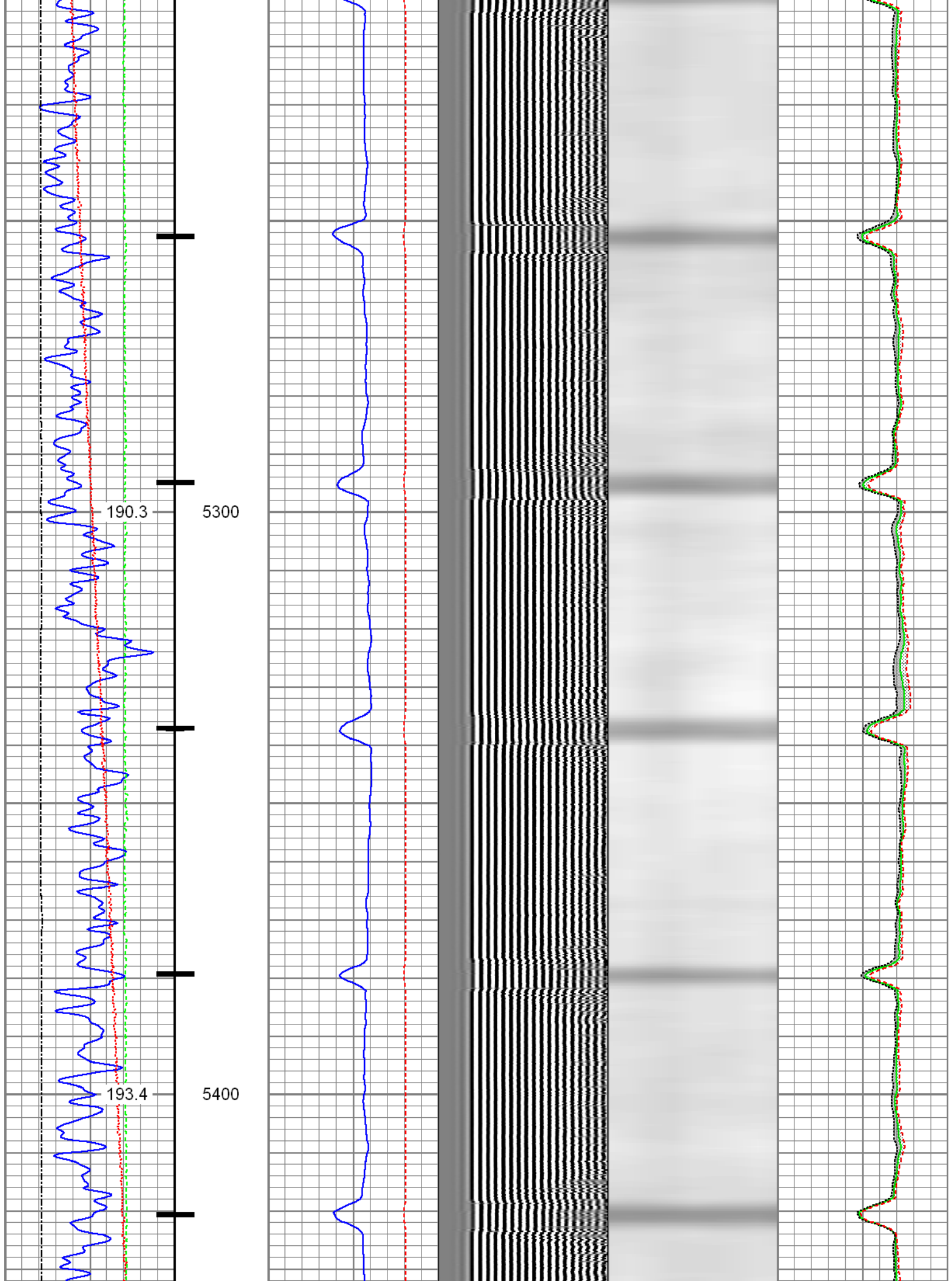


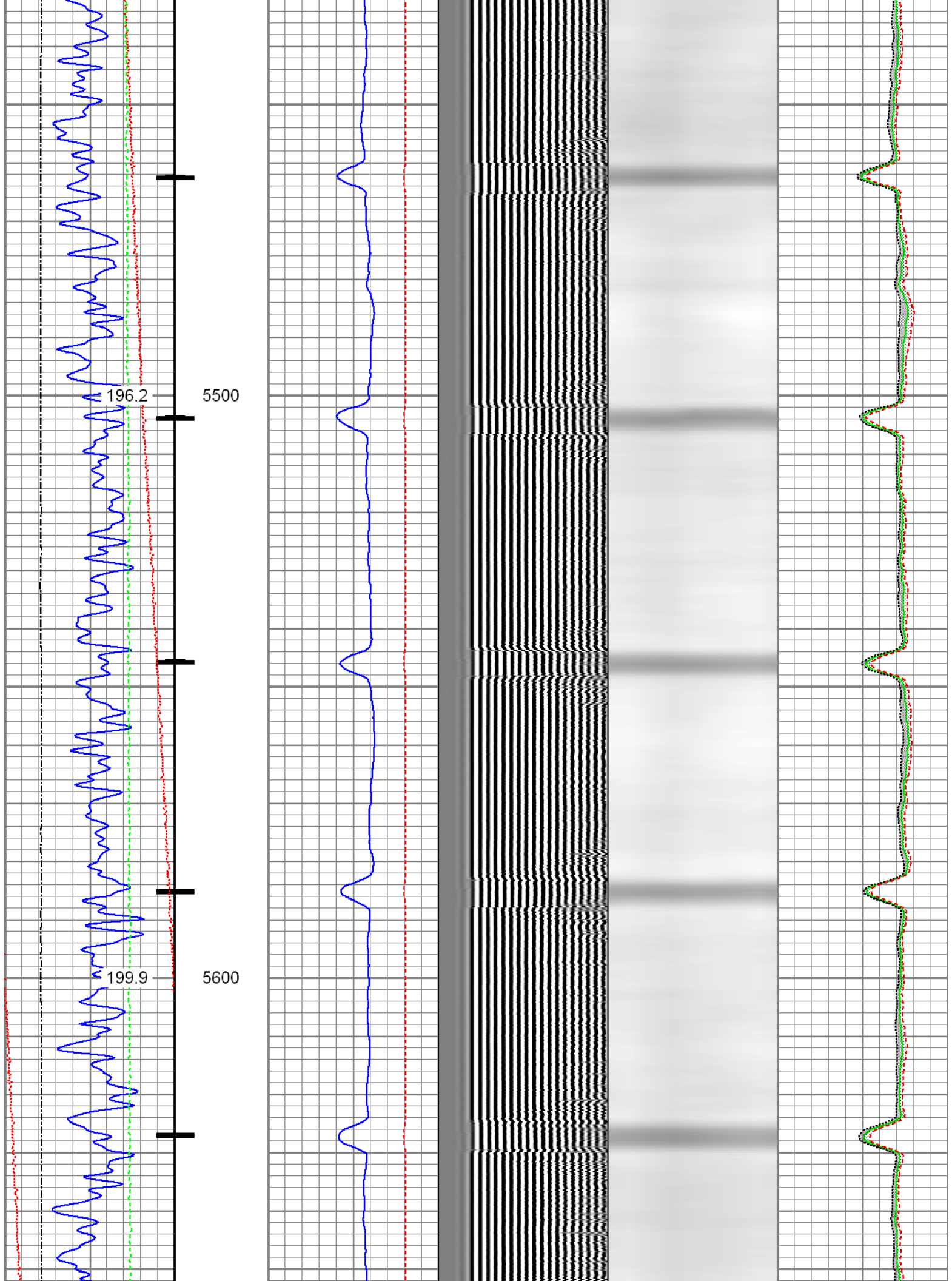


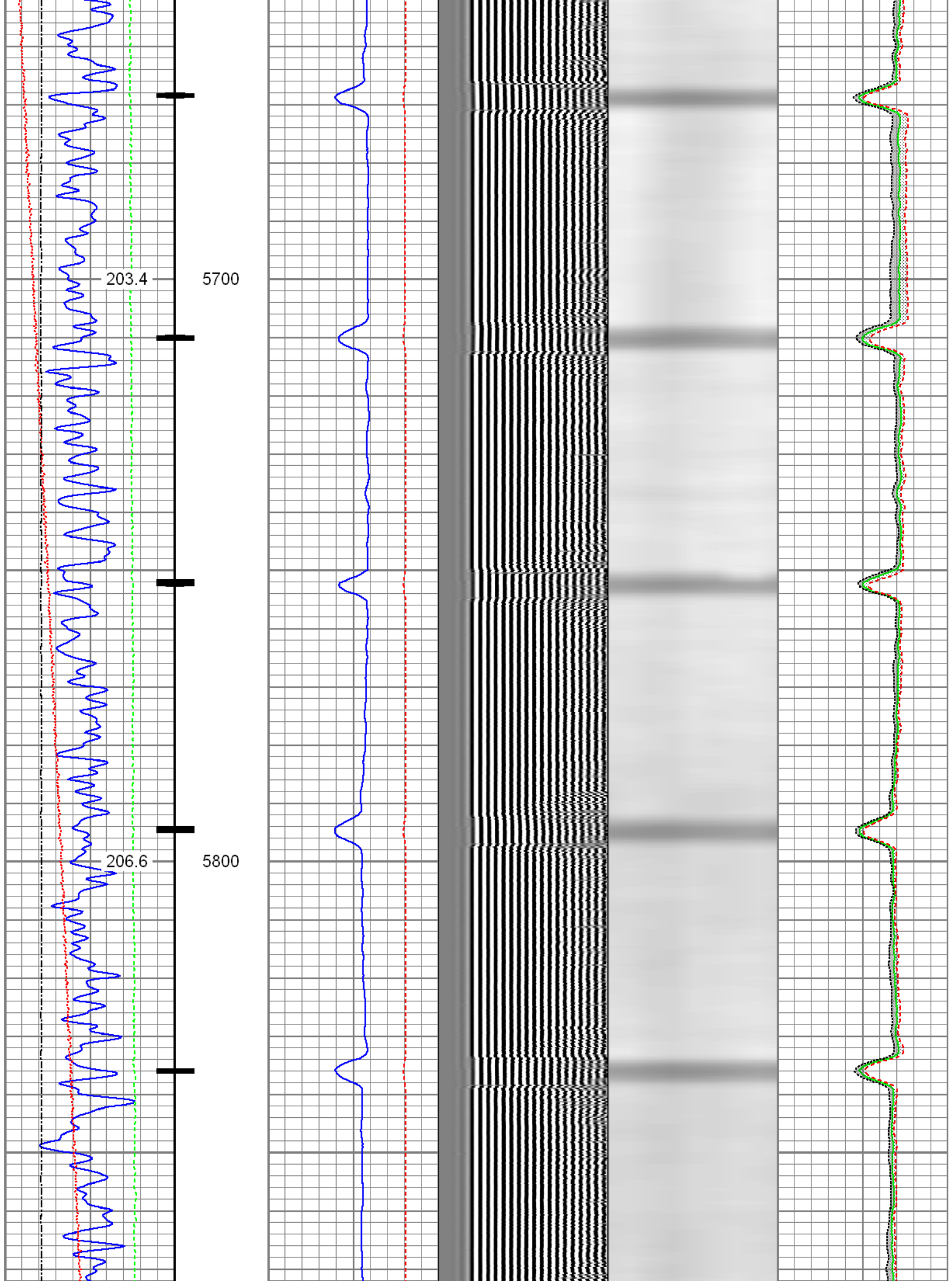


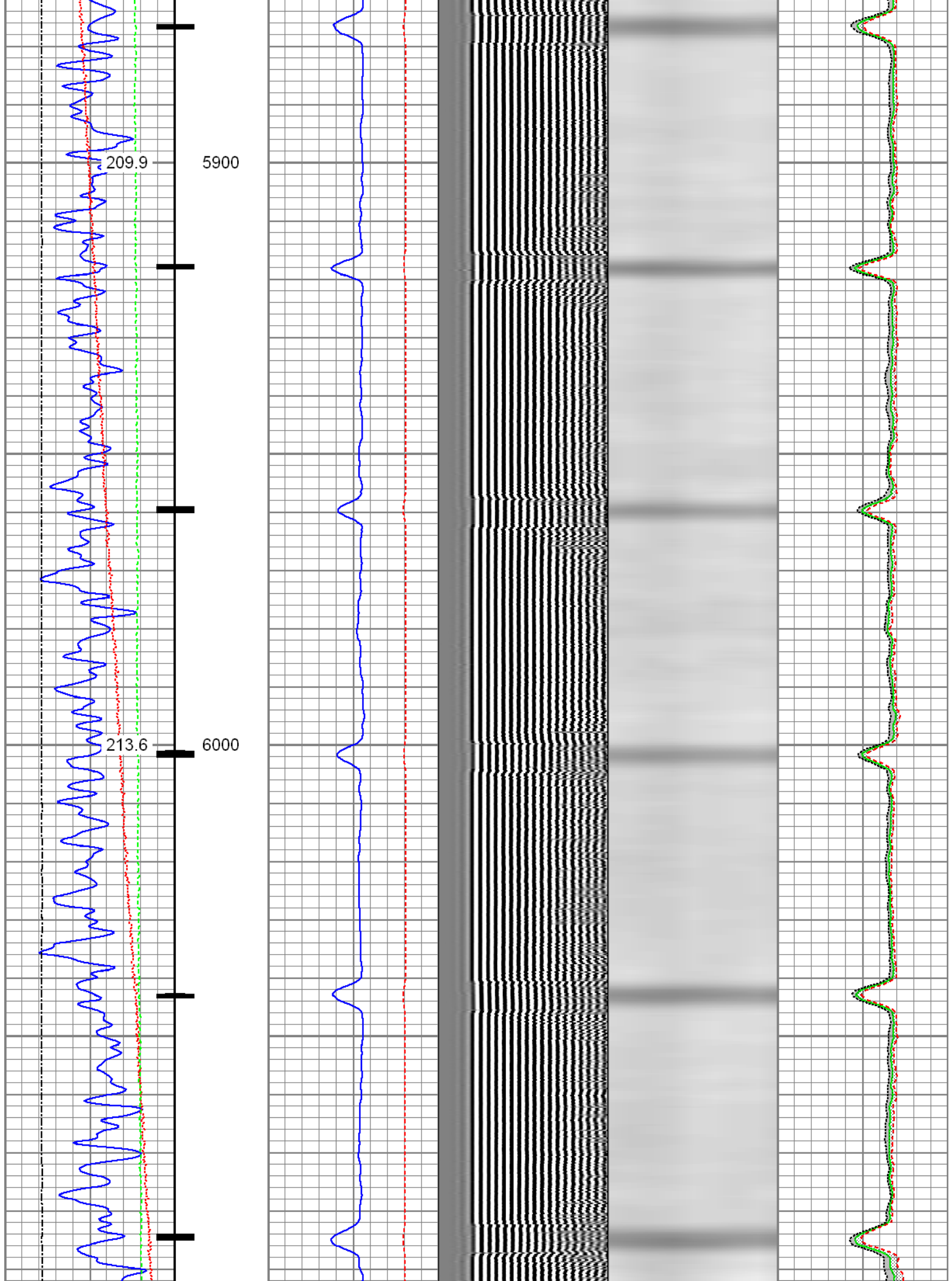


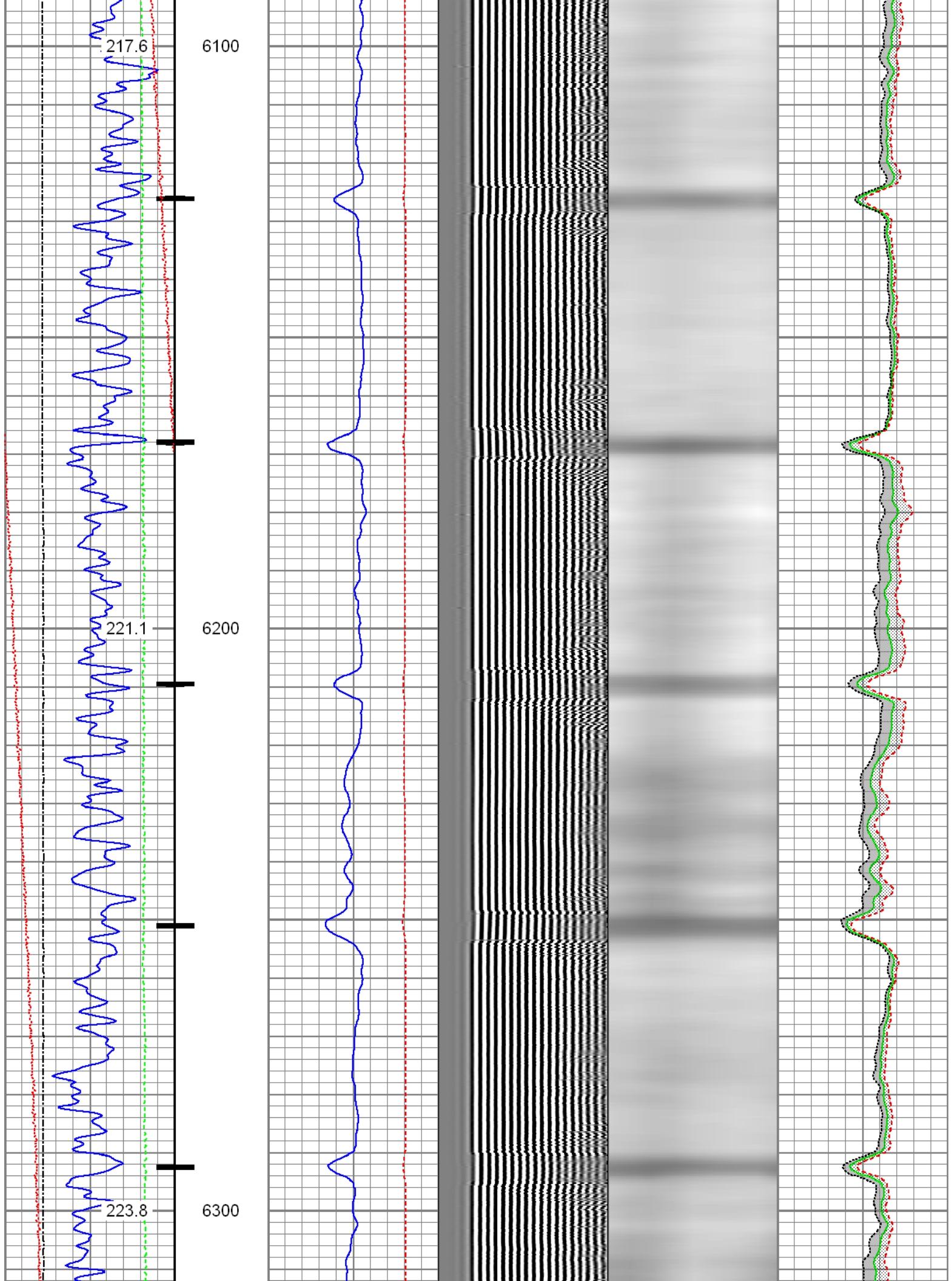


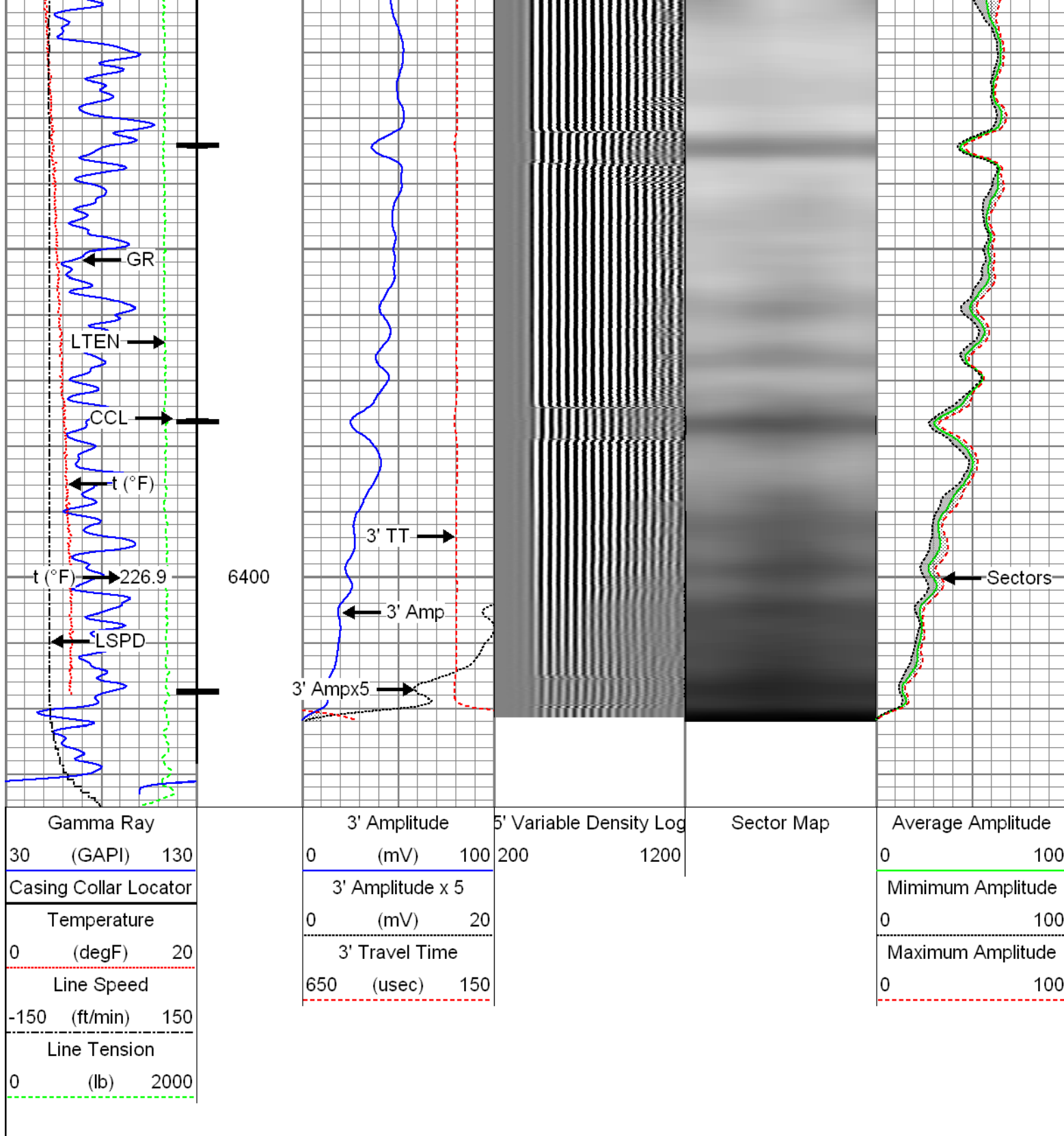










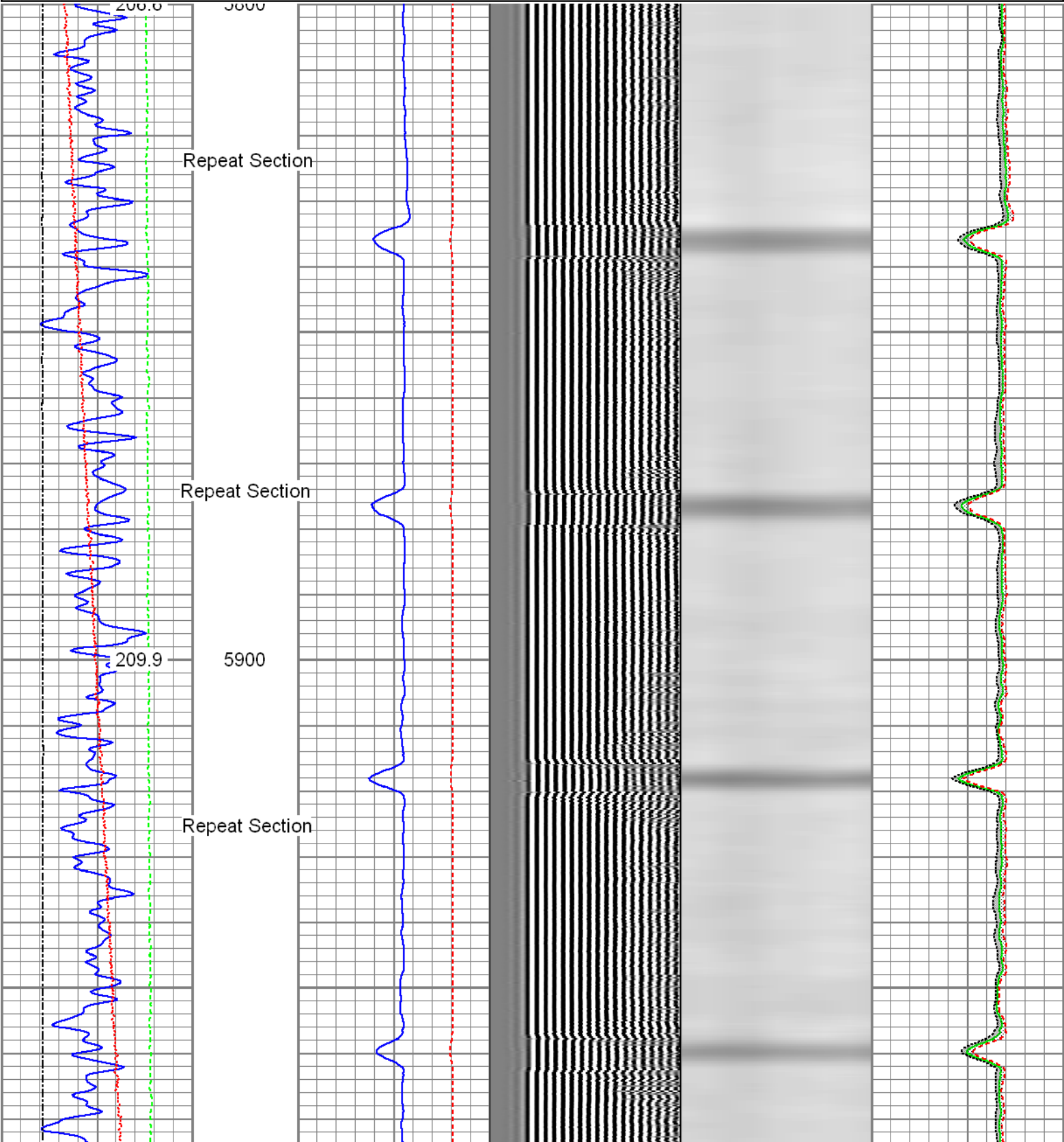


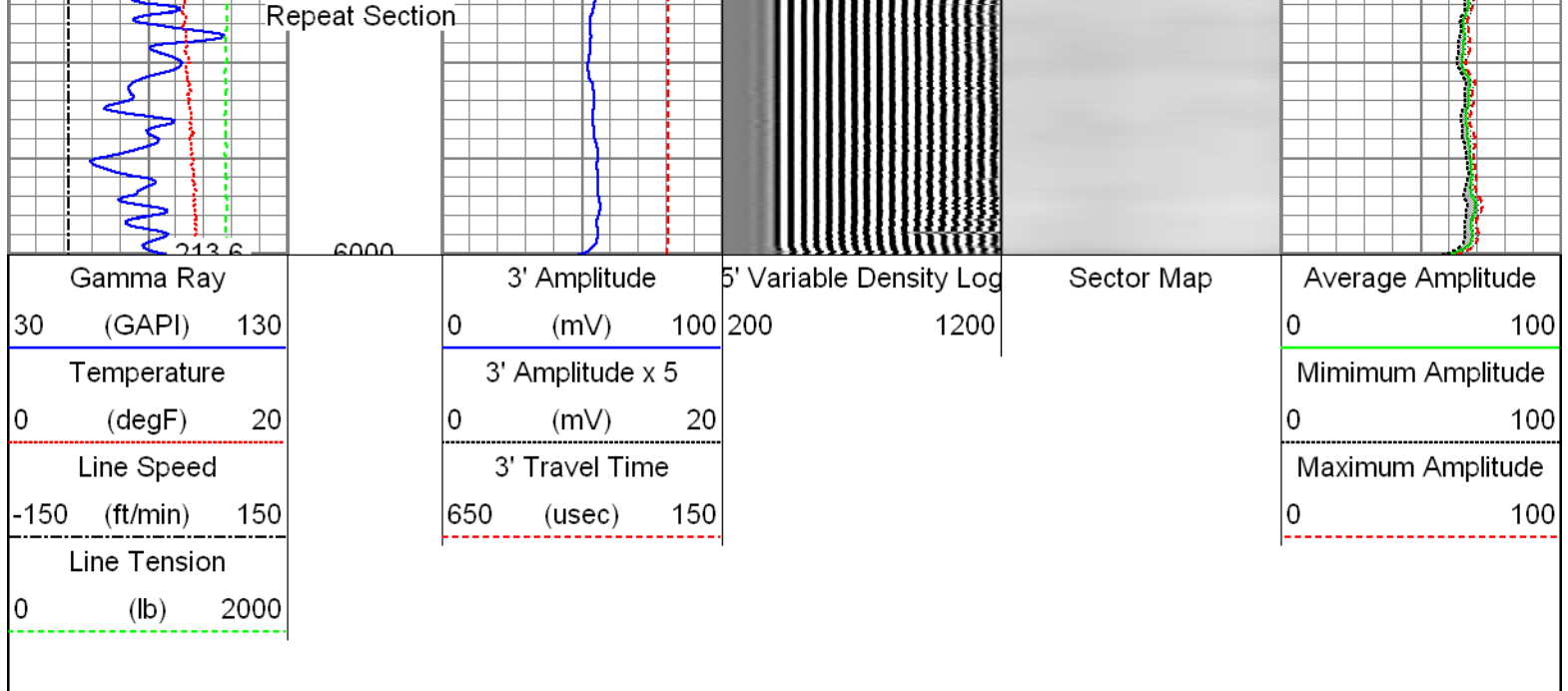
Repeat Pass

Recorded with 0 PSI Surface Induced Pressure

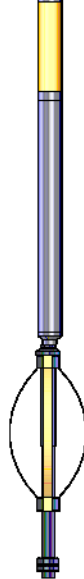
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Dataset Pathname: pass2.1
Presentation Format: radii
Dataset Creation: Wed Feb 10 09:11:42 2016 by Calc 7.0 B1
Charted by: Depth in Feet scaled 1:240

Gamma Ray			3' Amplitude			5' Variable Density Log		Sector Map		Average Amplitude	
30	(GAPI)	130	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" (FW1302-001) 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 DCCL	6.51 6.51		Probe_CCL_GR-2.75"Digital (FW1307-038) 4.54 Probe 2-3/4" Digital CCL / Gamma Ray Combined	2.75	55.00
GR	3.77		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	10.00
Dataset: 0512314745_Anadarko_Kern UPRR 31-5 (2)_02-10-16_RBL.db: field/well/run1/pass5.1 Total Length: 23.40 ft Total Weight: 194.00 lb O.D. 2.75 in					

Calibration Report	
Database File:	0512314745_Anadarko_Kern UPRR 31-5 (2)_02-10-16_RBL.db
Dataset Pathname:	pass5.1
Dataset Creation:	Wed Feb 10 09:08:49 2016 by Calc 7.0 B1

Gamma Ray Calibration Report		
Serial Number:	FW1307-038	
Tool Model:	2.75"Digital	
Performed:	Mon Dec 07 13:38:50 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:	FW1302-001	
Tool Model:	2-3/4"	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	0.000	ft

Master Calibration, performed Wed Feb 10 09:08:44 2016:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.722	0.800	81.196	112.386	0.050
CAL	0.007	0.768				
5'	0.007	0.604	0.800	81.196	134.853	-0.211
SUM						
S1	0.000	0.696	0.000	100.000	143.765	-0.054
S2	0.007	0.762	0.000	100.000	132.443	-0.884
S3	0.007	0.844	0.000	100.000	119.549	-0.893
S4	0.007	0.858	0.000	100.000	117.605	-0.864

S4	0.007	0.858	0.000	100.000	117.805	-0.884
S5	0.007	0.791	0.000	100.000	127.431	-0.854
S6	0.007	0.716	0.000	100.000	141.028	-1.005
S7	0.008	0.669	0.000	100.000	151.110	-1.141
S8	0.007	0.666	0.000	100.000	151.789	-1.074

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	0.007	0.768	1.000	0.000

Air Zero Calibration, performed Wed Feb 10 07:10:55 2016:

	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 Kerr-McGee Oil & Gas Onshore, L.P.
 Well Kern UPRR 31-5 (2)
 Field Wattenberg
 County Weld
 State Colorado