



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company				Whiting Oil & Gas Corporation			
Well				Razor 27K-3408B			
Field				Wildcat			
County				Weld			
State				Colorado			
Location:				API # : 05-123-37697			
Permanent Datum				SHL: 2321' FSL 2013' FWL			
Log Measured From				Lat/Long: 40.808594/-103.853478			
Drilling Measured From				SEC 27 TWP 10N RGE 58W			
Ground Level				Elevation 4749'			
Kelly Bushing 16.8 FT				K.B. 4765.8'			
Kelly Bushing				D.F. 4764'			
Elevation				G.L. 4749'			
Date				September 25, 2013			
Run Number				One			
Depth Driller				12390 FT			
Depth Logger				4785 FT			
Bottom Logged Interval				4785 FT			
Top Log Interval				Surface			
Open Hole Size				8.750"			
Type Fluid				Water			
Density / Viscosity				8.34 lbm/gal			
Max. Recorded Temp.				188 F			
Estimated Cement Top				1370 FT			
Time Well Ready				ROA			
Time Logger on Bottom				----			
Equipment Number				HD-0134			
Location				Fort Lupton, CO			
Recorded By				Ryan Harris			
Witnessed By				Bryan Olmstead			
Borehole Record				Tubing Record			
Run Number				Bit			
From				To			
Size				Weight			
From				To			
Casing Record				Size (in)			
Surface Casing				Wgt (lbs/Ft)			
Intermediate #1				Grade			
Intermediate #2				Top			
Liner				Bottom			
4-1/2"				11.6#			
L-80				4865 FT			
12390 FT							

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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

Radial Cement Bond Log is first recorded log in hole.
Log correlated to 16.8' KB @ ground level.
Run RCBL from just above RBP to surface.
RCBL logged with 1500 PSI surface induced pressure.
Estimated Top of Cement 1370'

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



Main Pass

Logged With 1500 PSI @ Surface

Database File:05-123-37697_whiting_razor 27k-3408b_rcbl_09-25-13.db

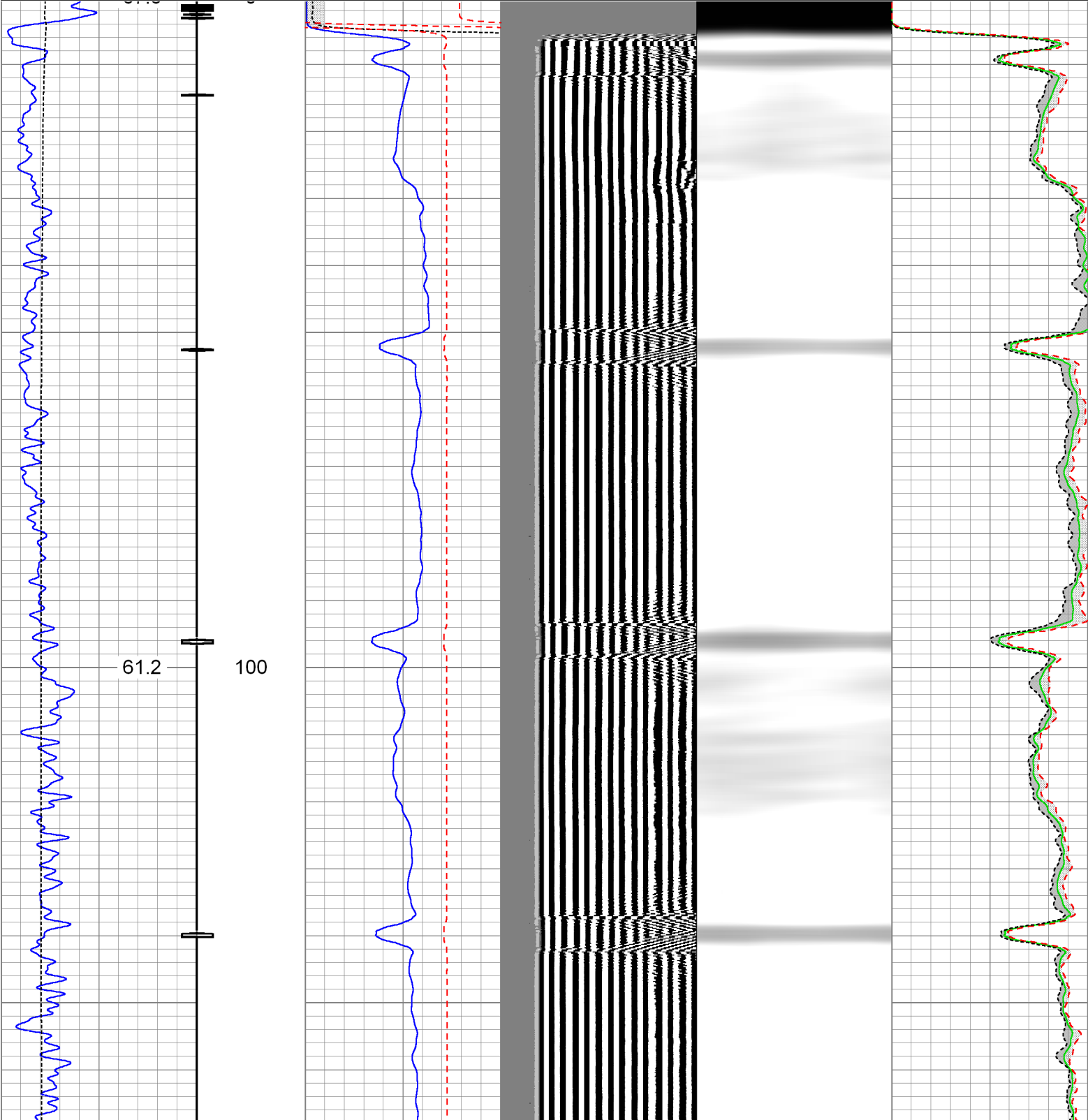
Dataset Pathname:main

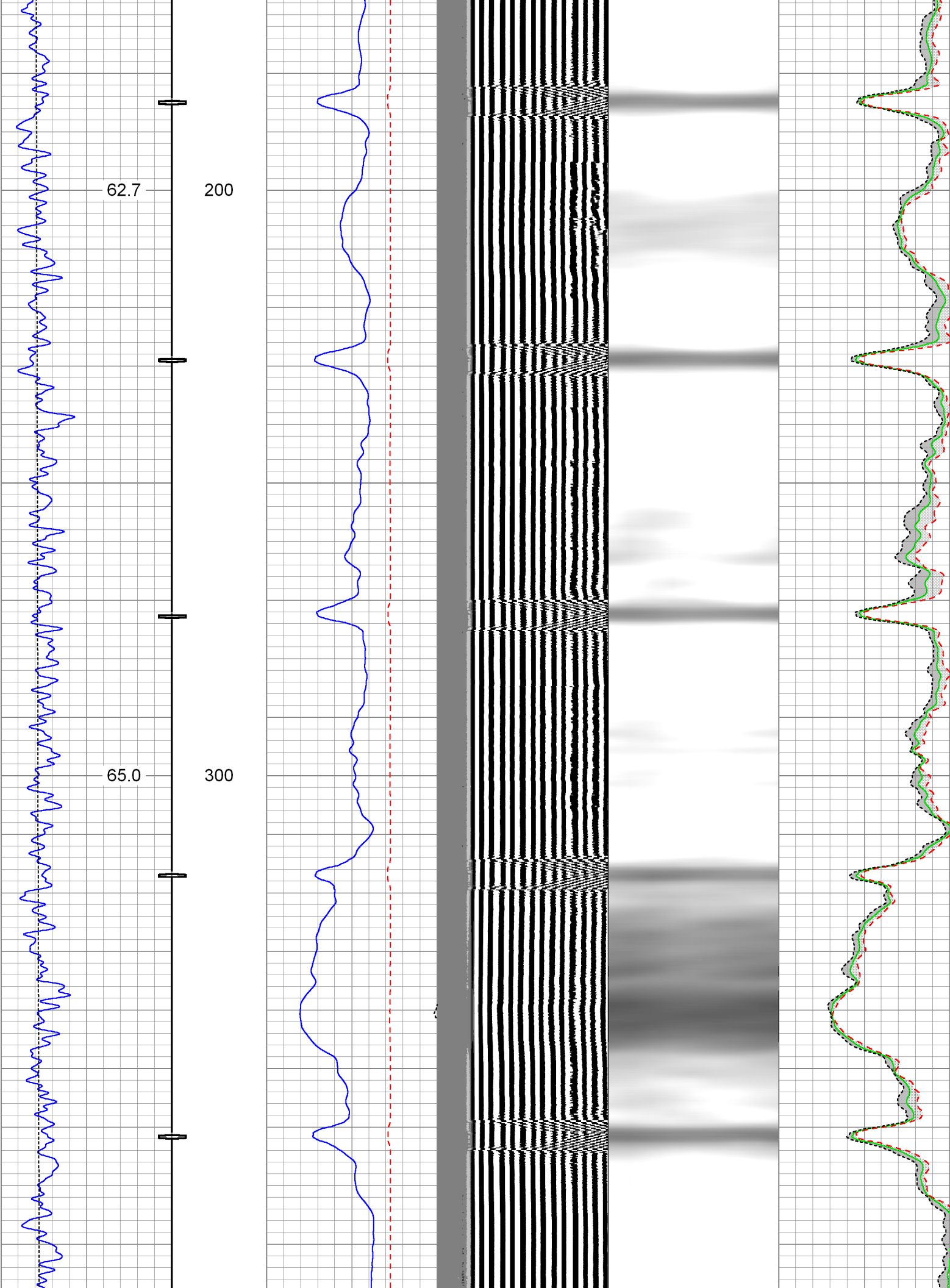
Presentation Format:rbt007

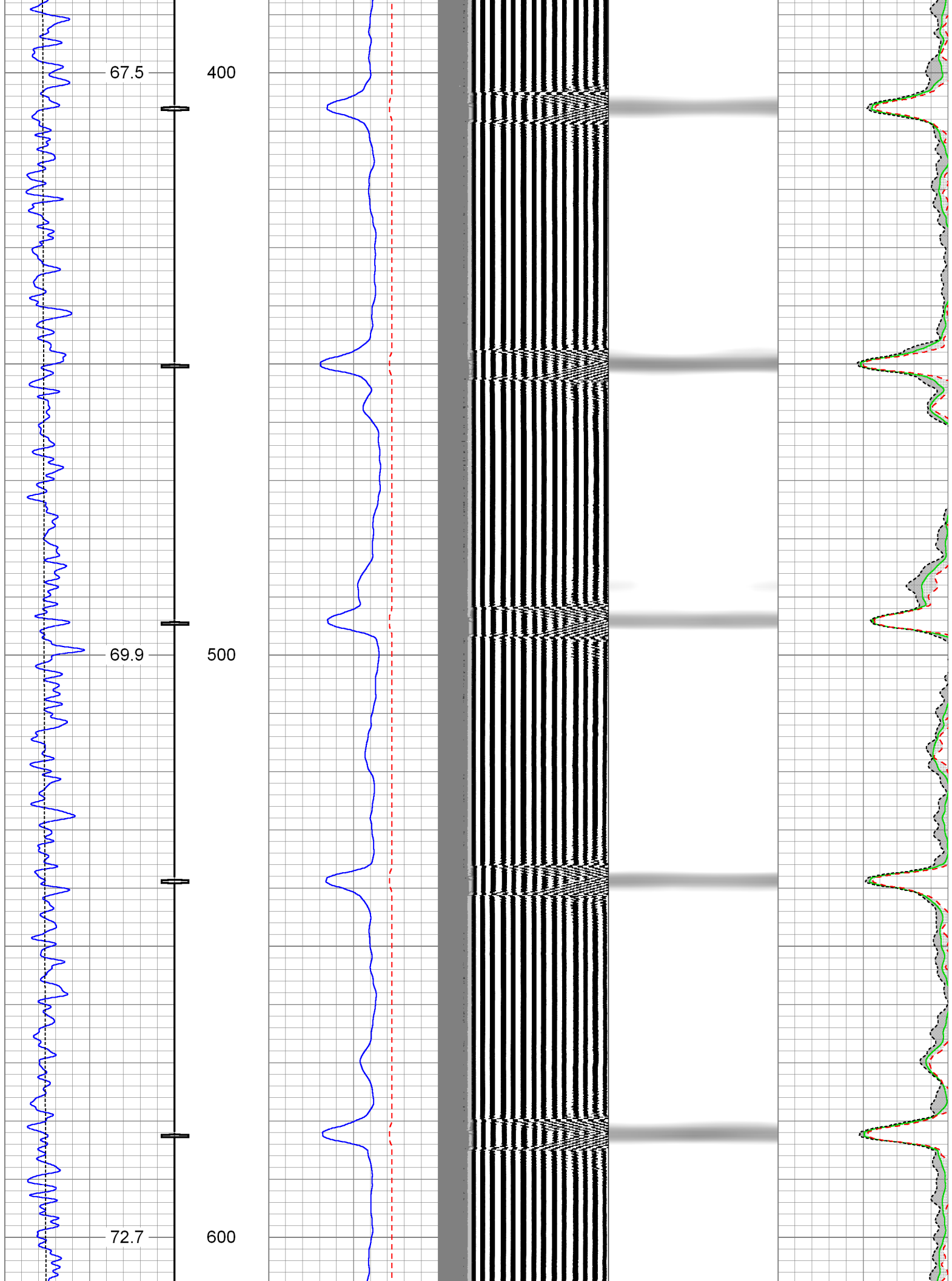
Dataset Creation:Wed Sep 25 13:26:01 2013 by Log SCH 111116

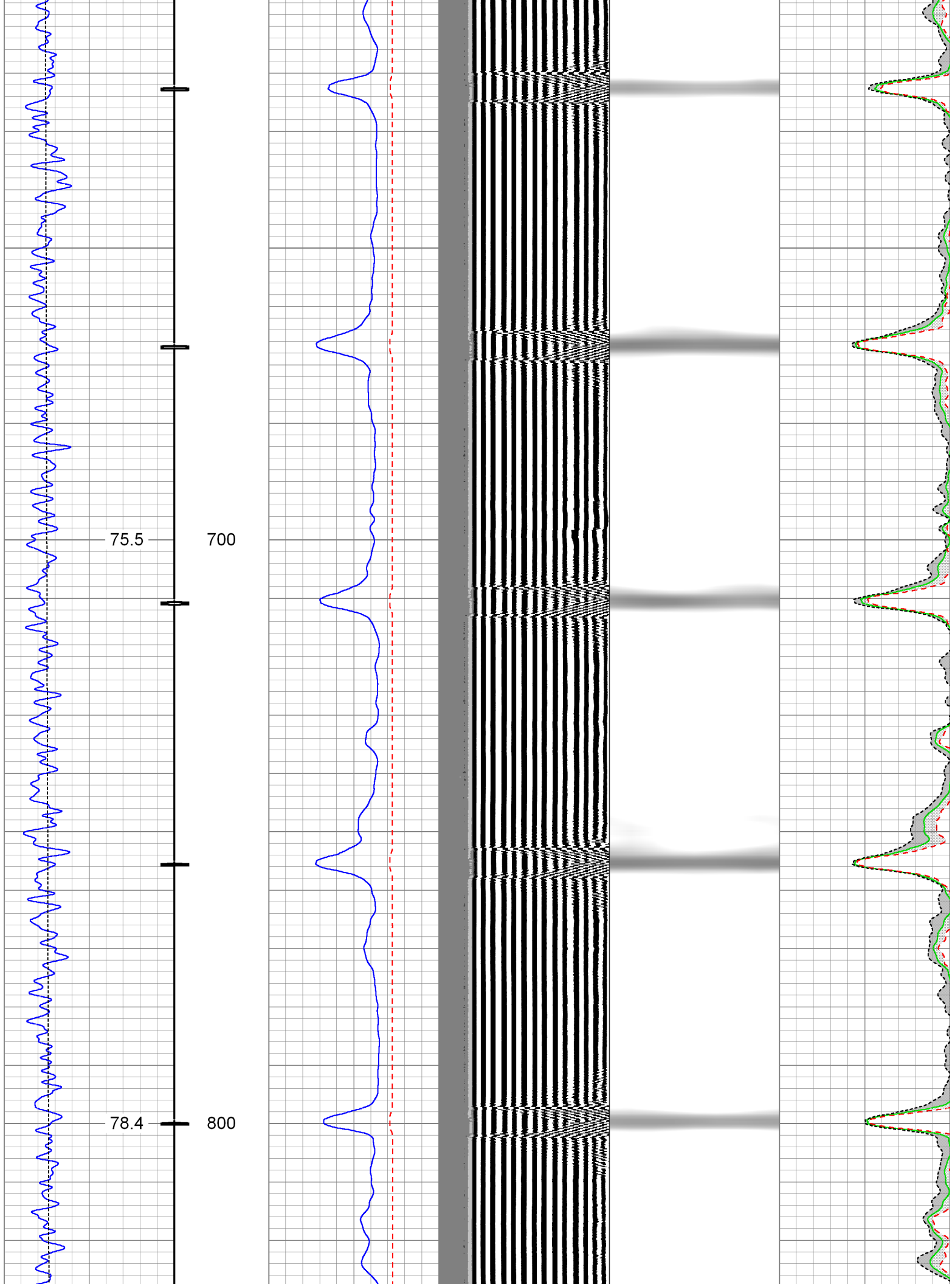
Charted by:Depth in Feet scaled 1:240

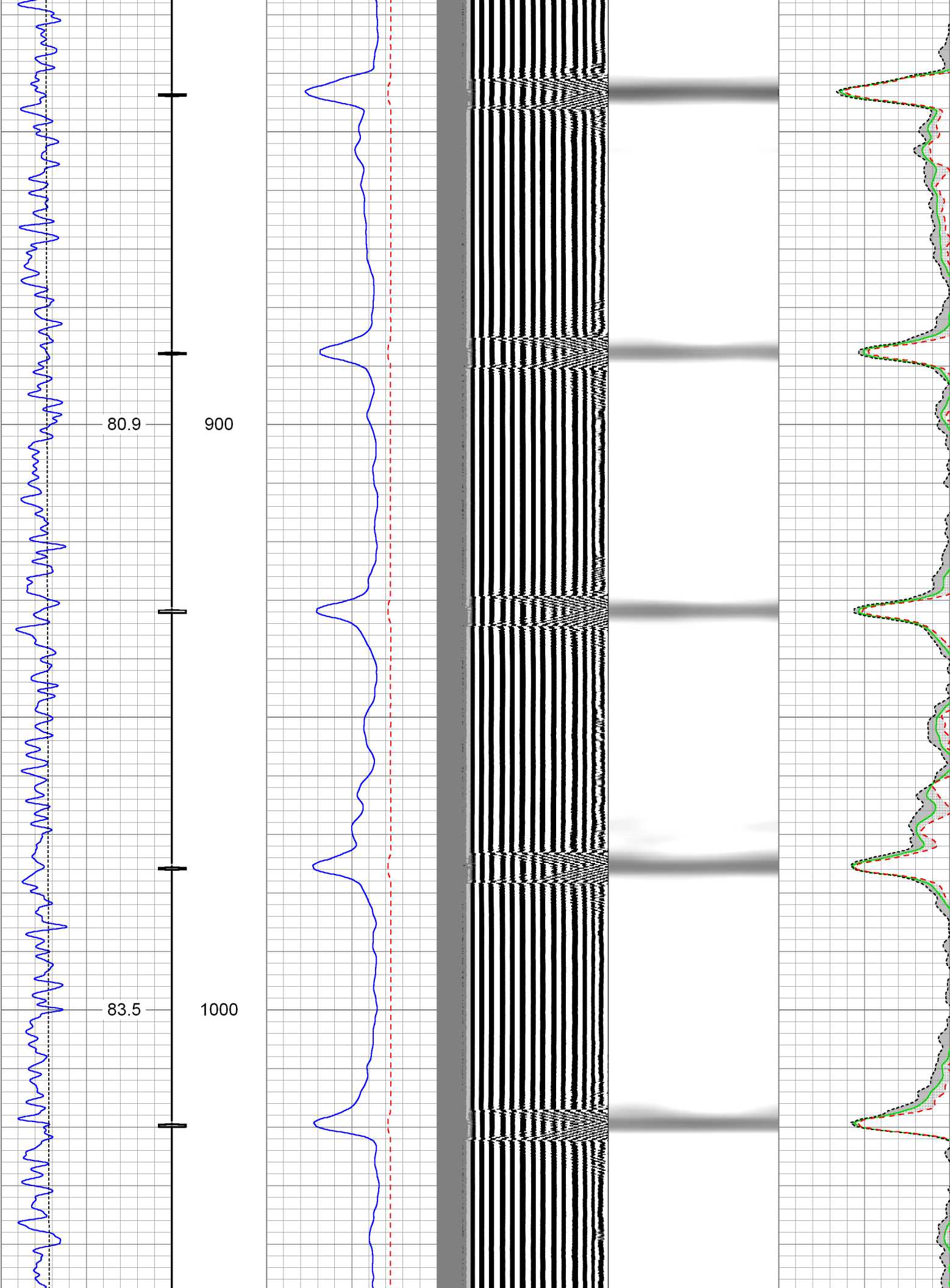
Gamma Ray	0 CCL 10	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 1200		0 100
Collar Locator		3' Amplitude x 5			Minimum Amplitude
0 TEMP (degF)300		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

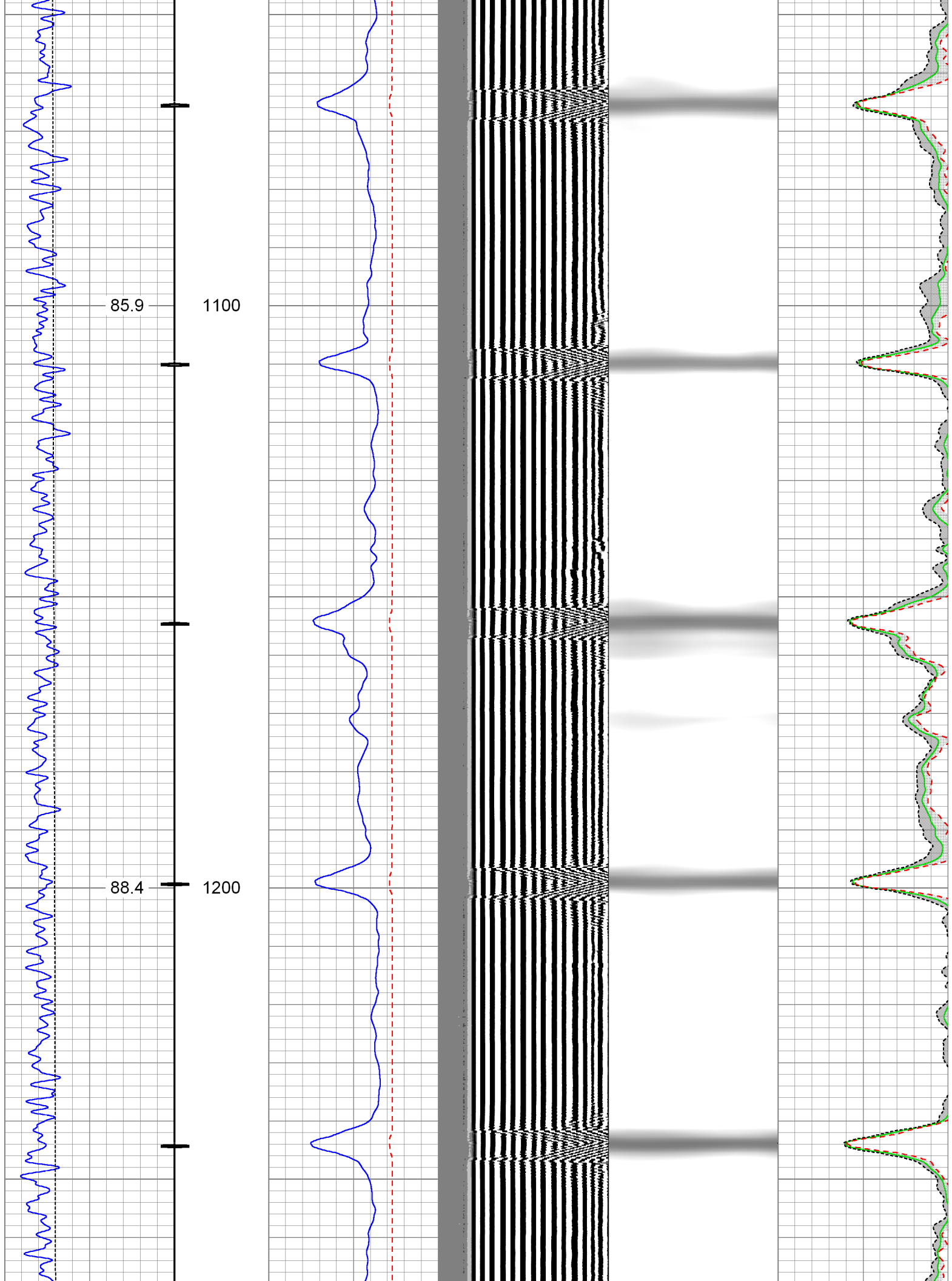


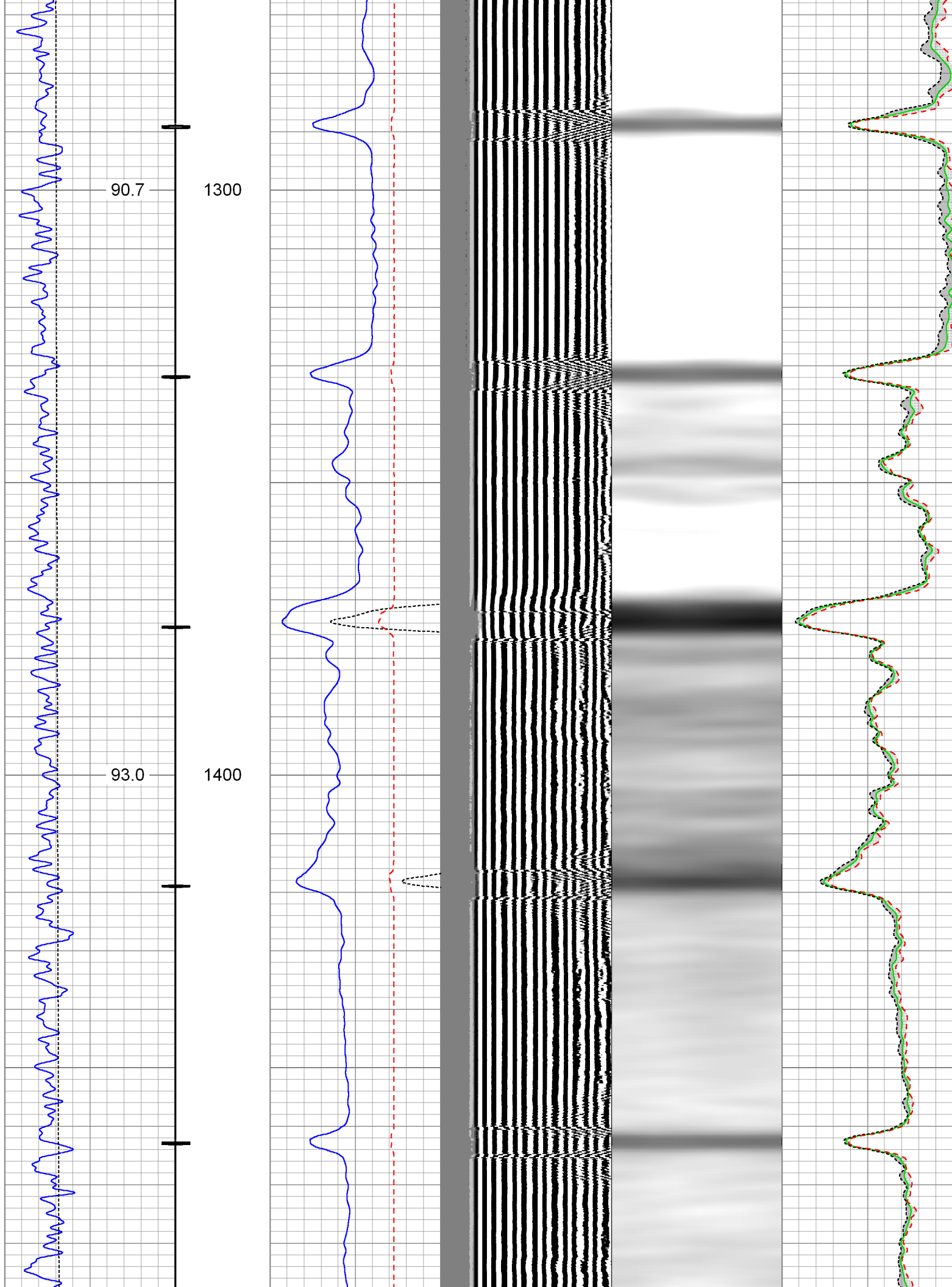


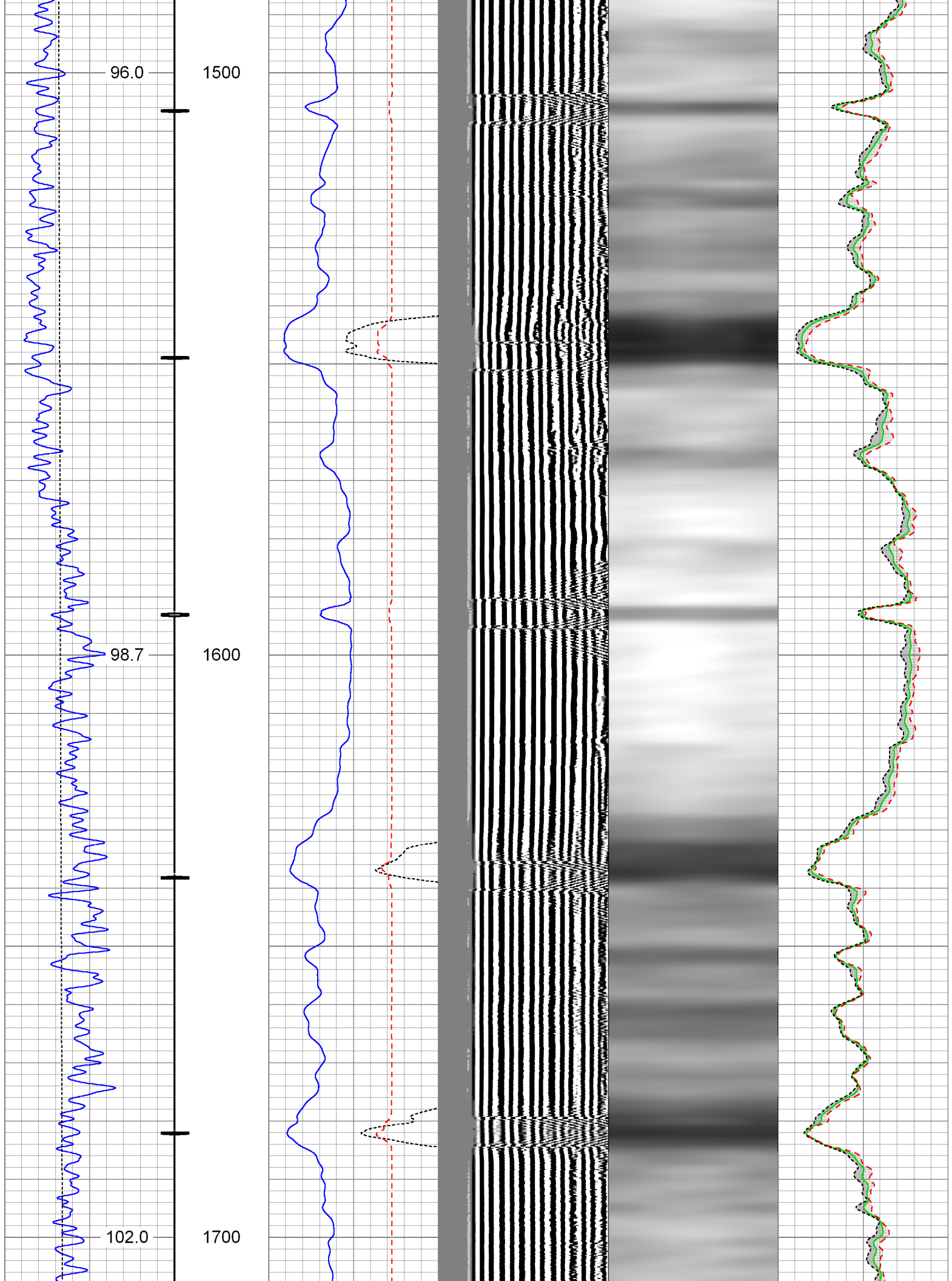


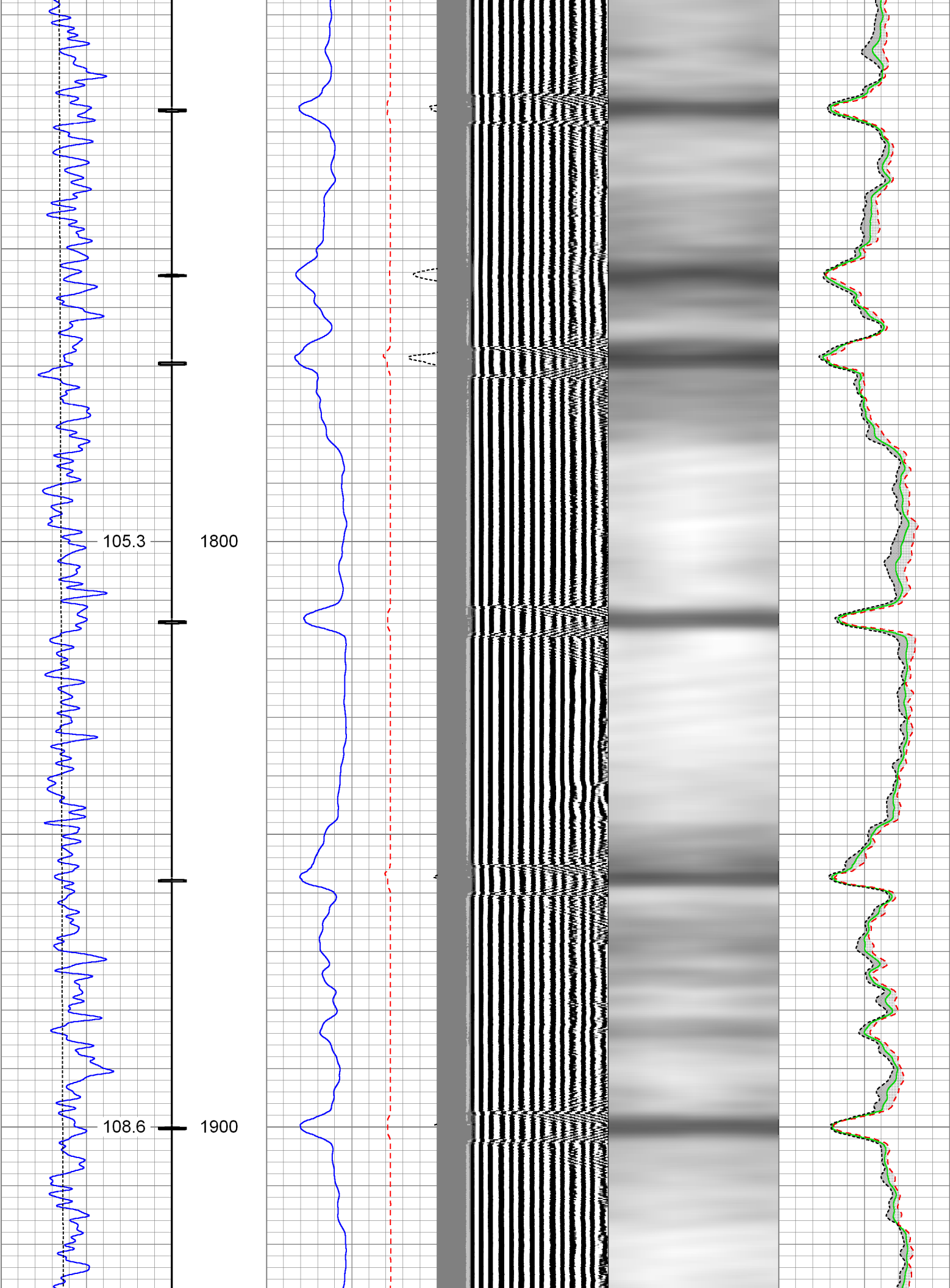


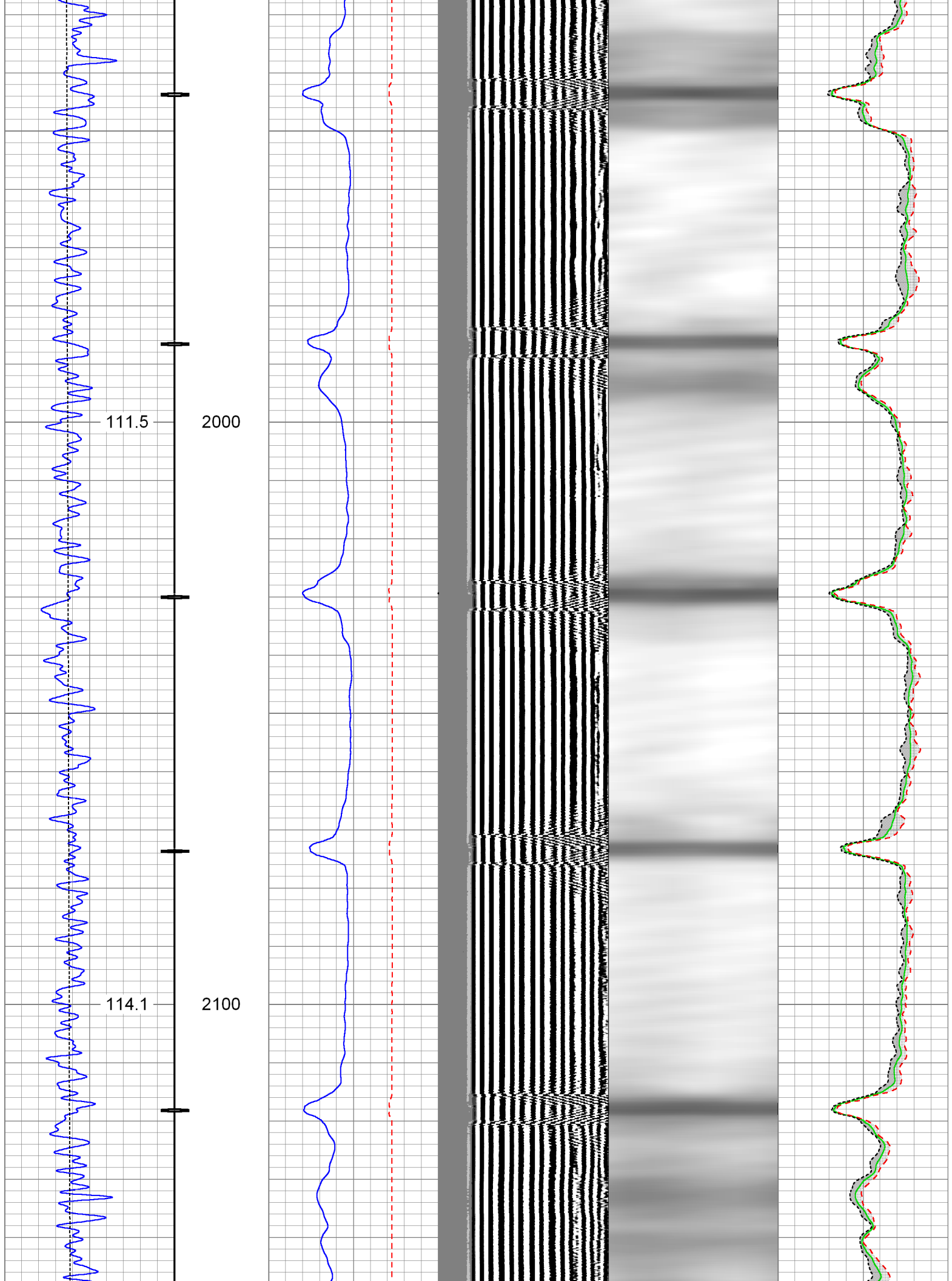


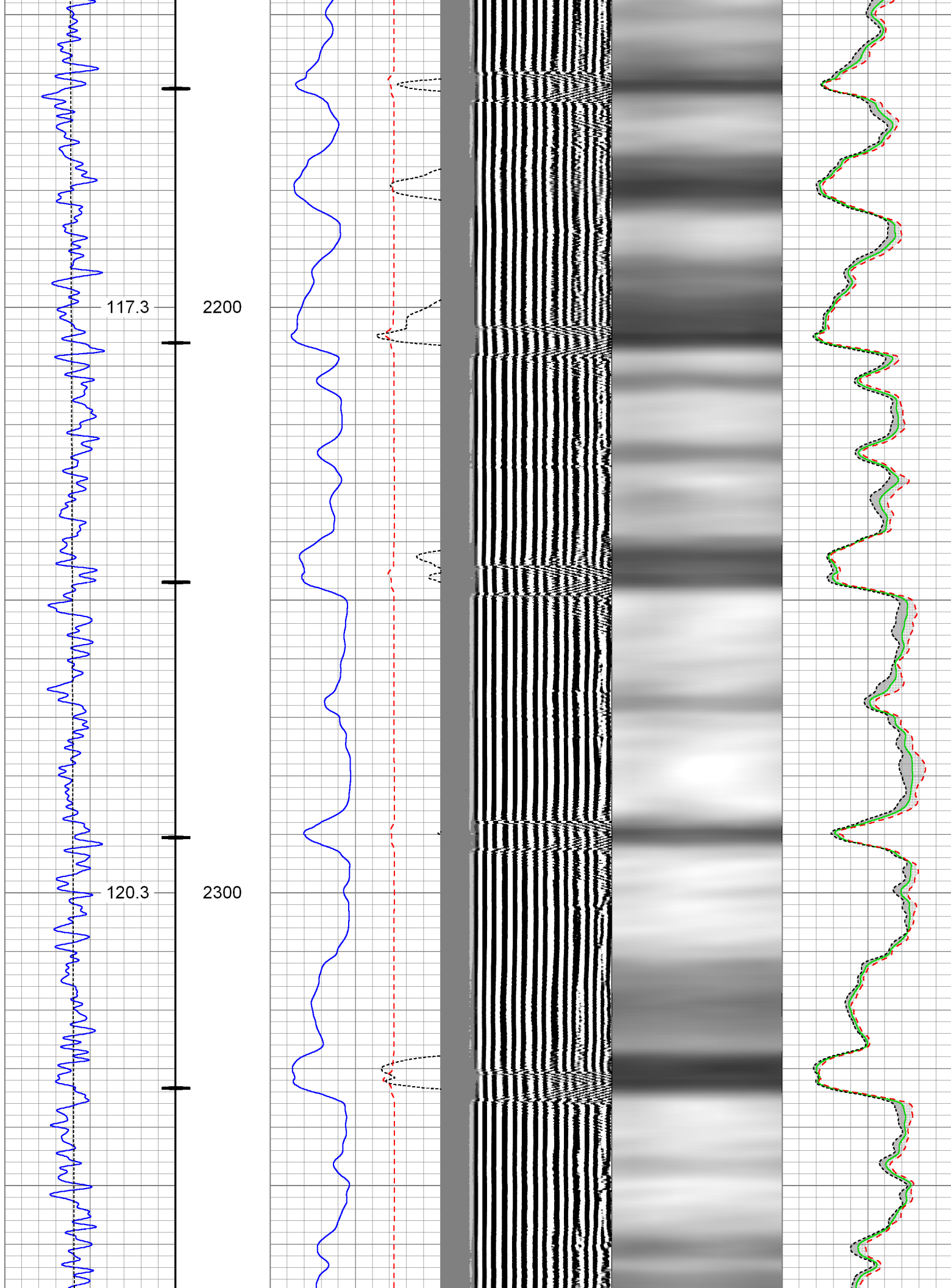


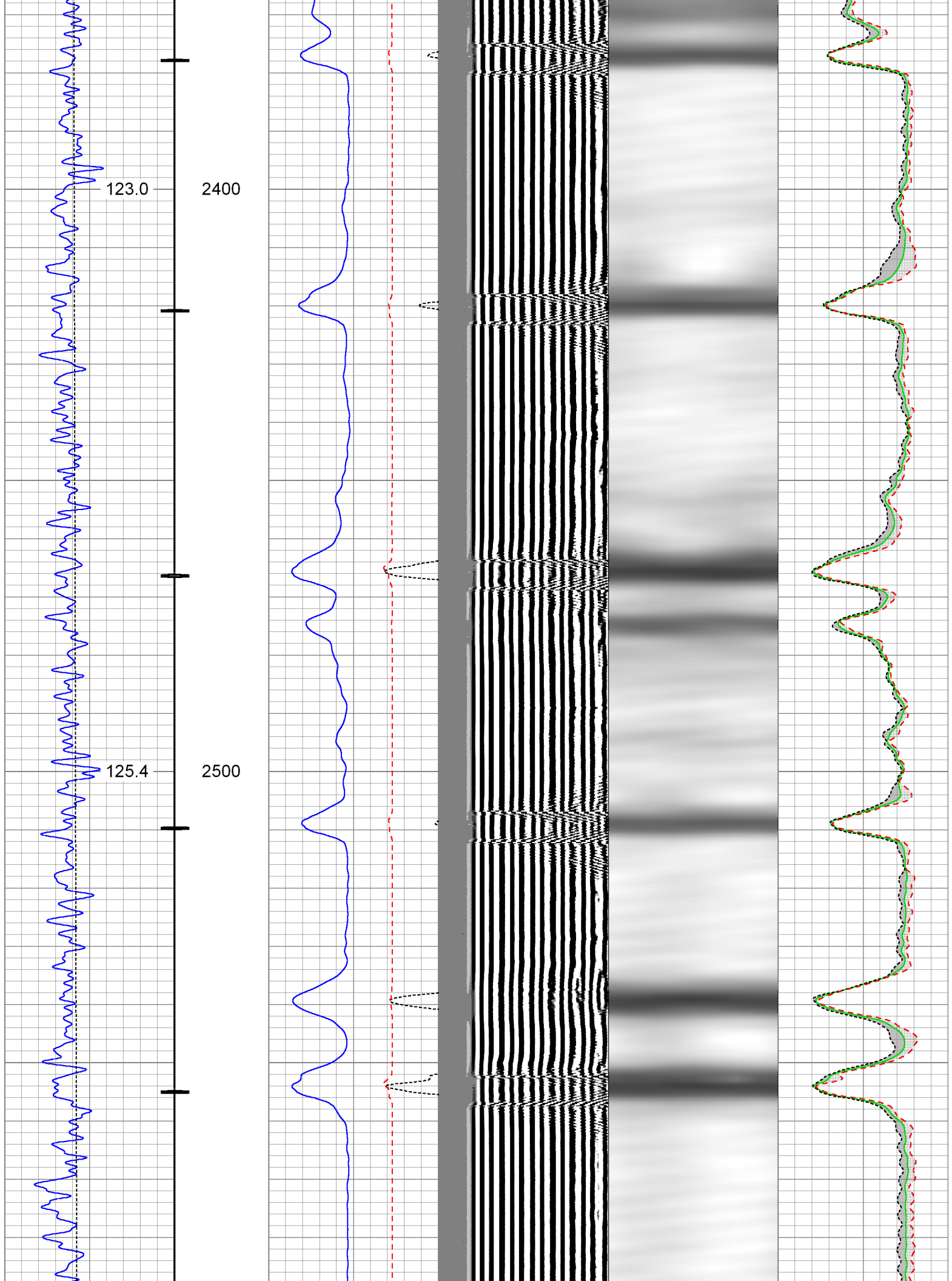


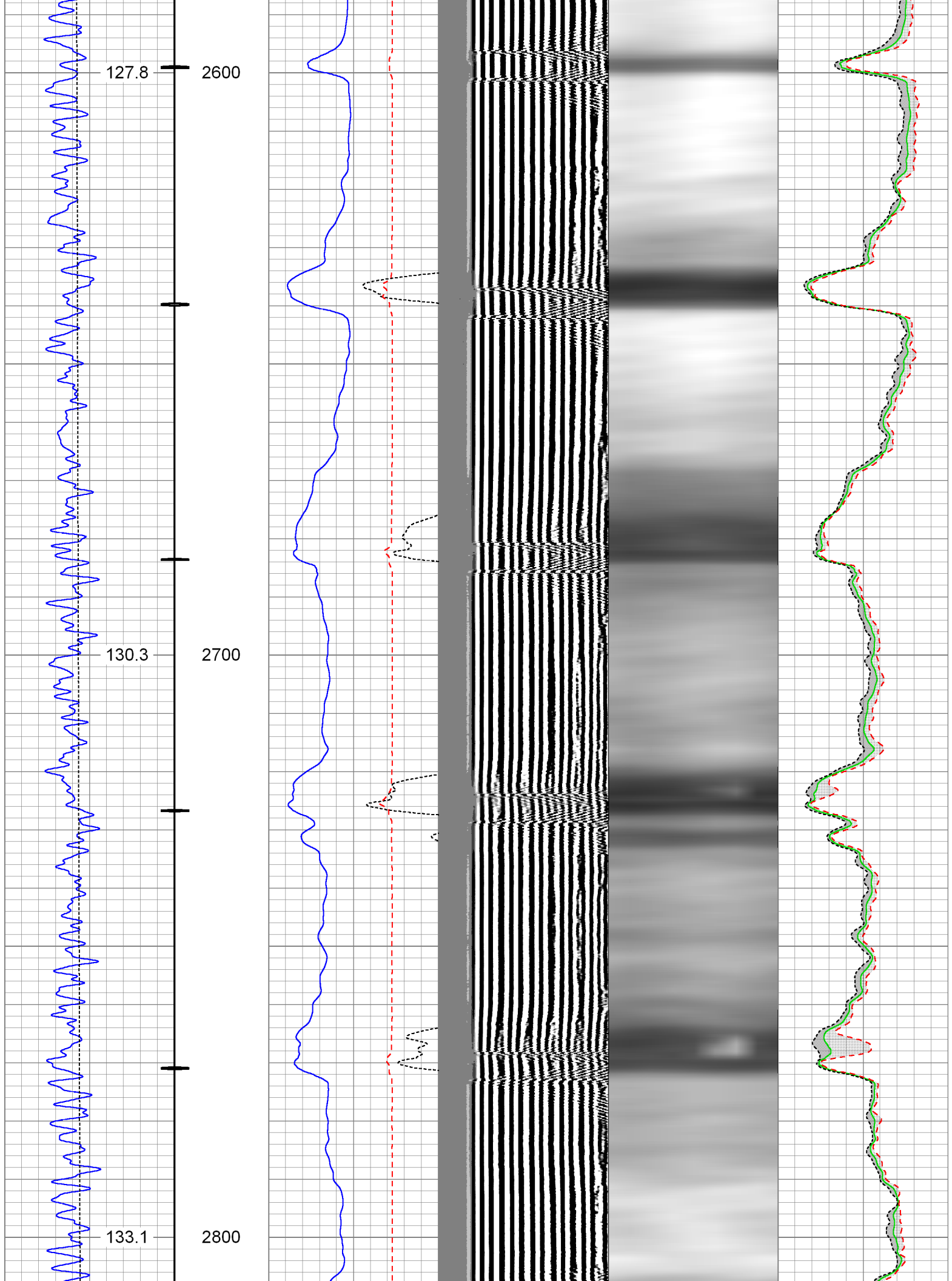


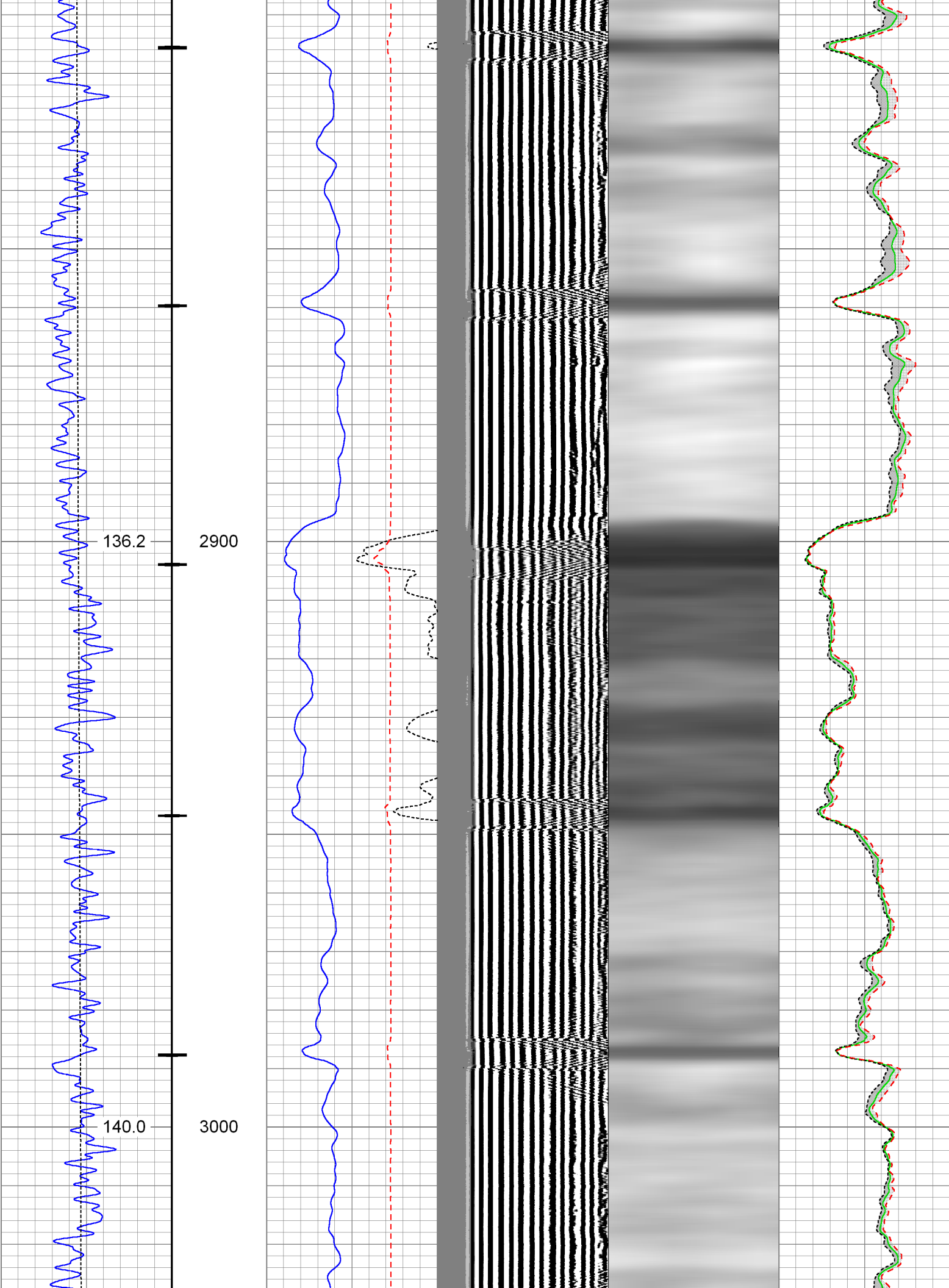


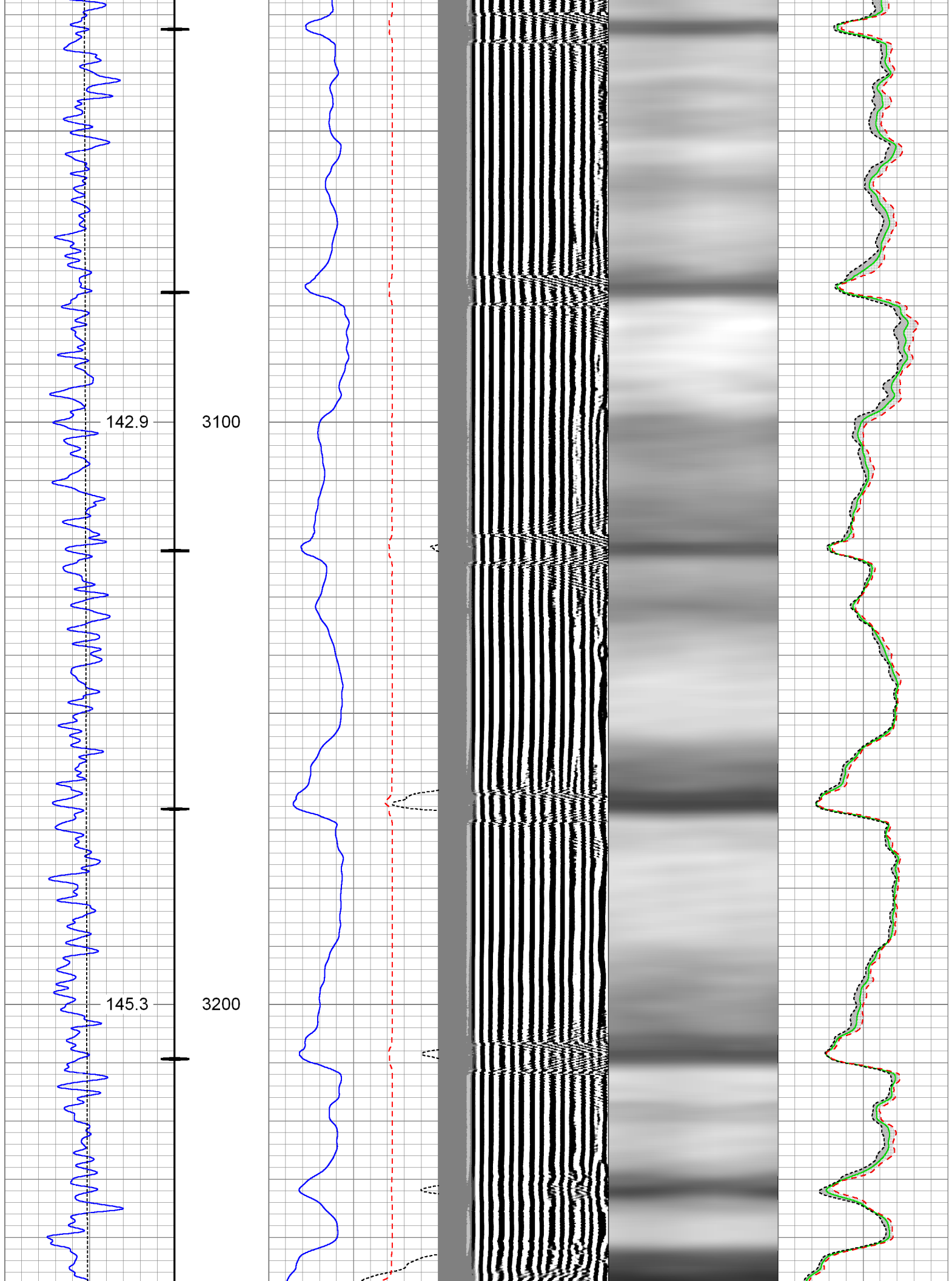


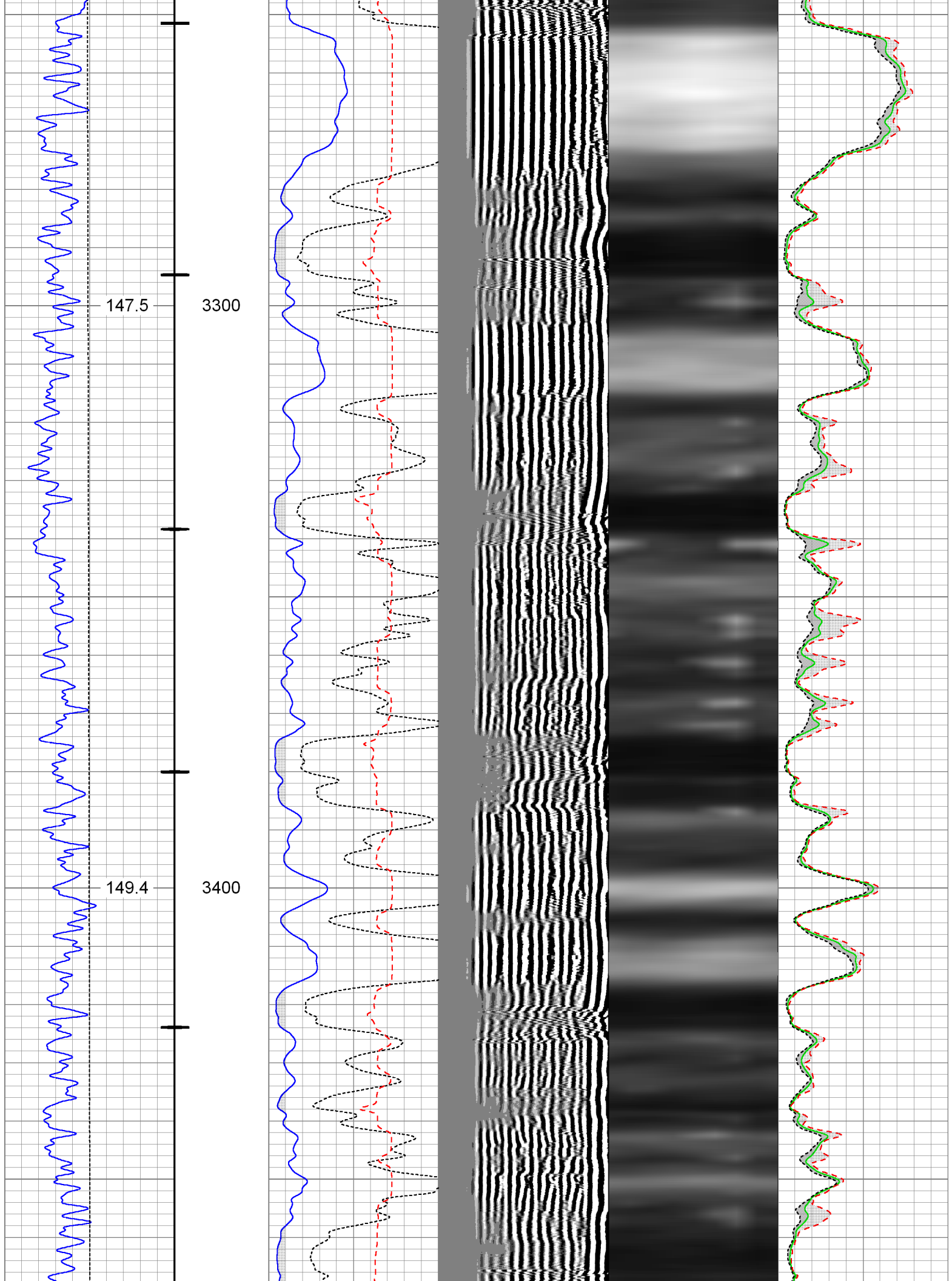


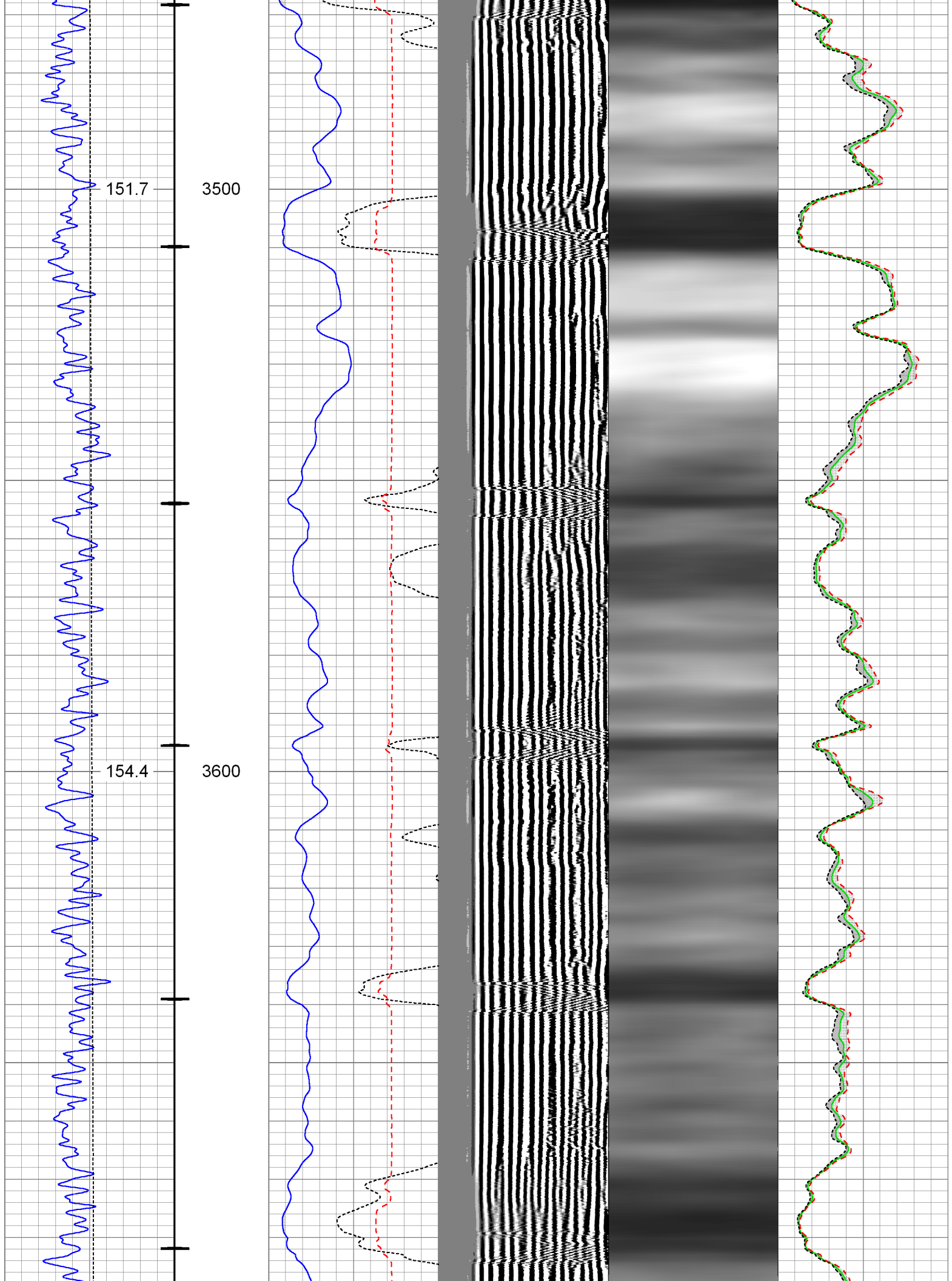


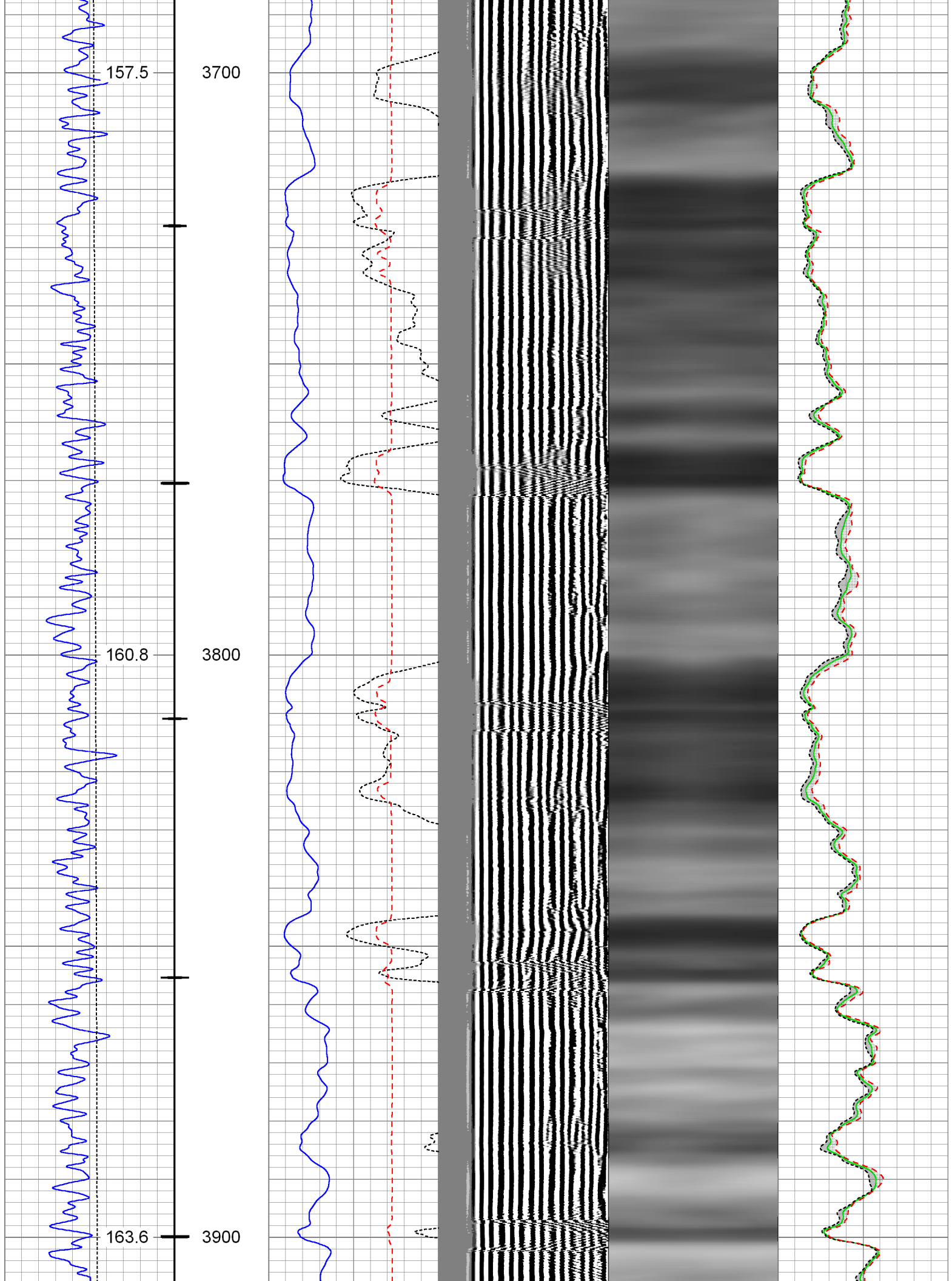


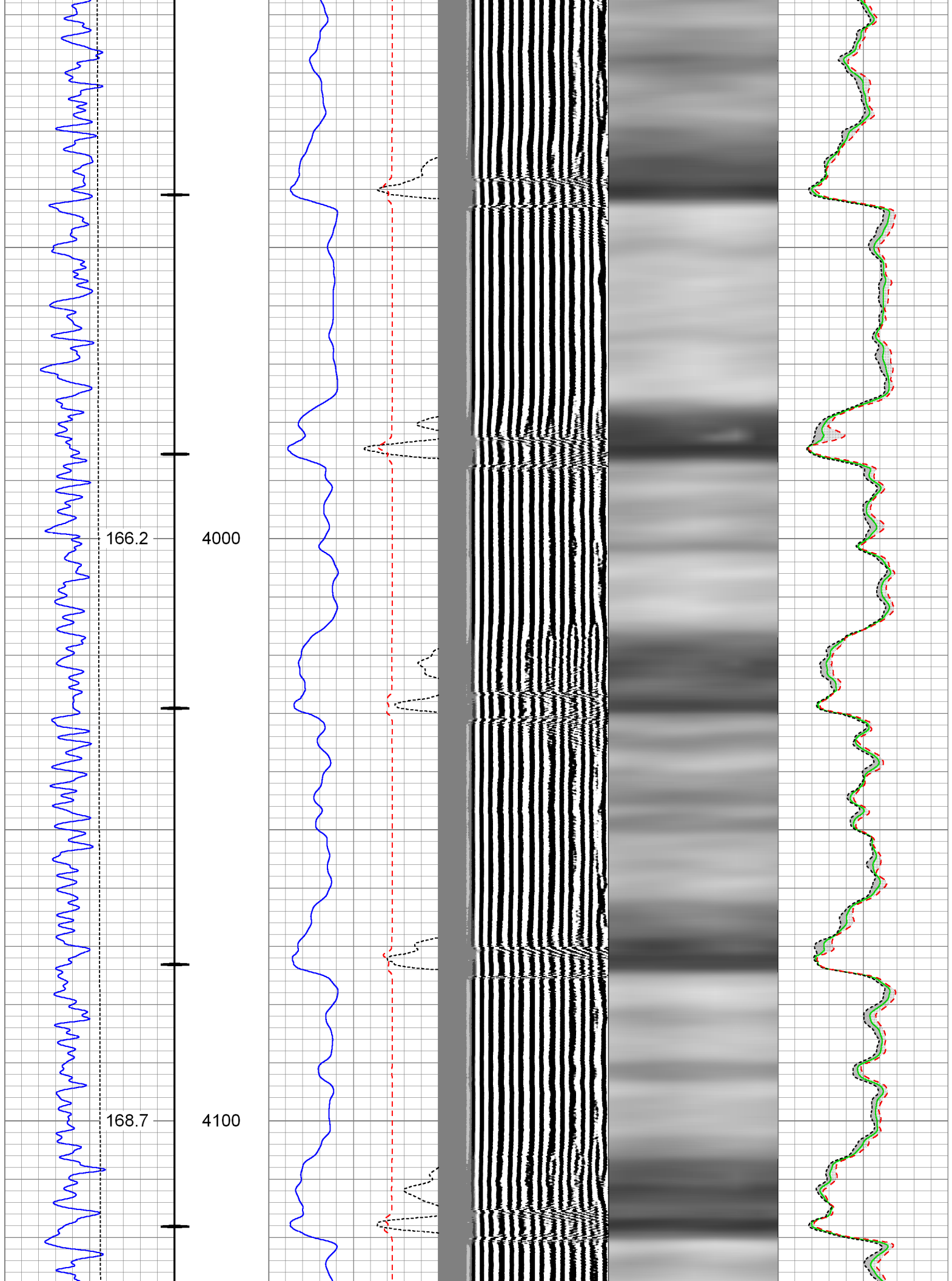


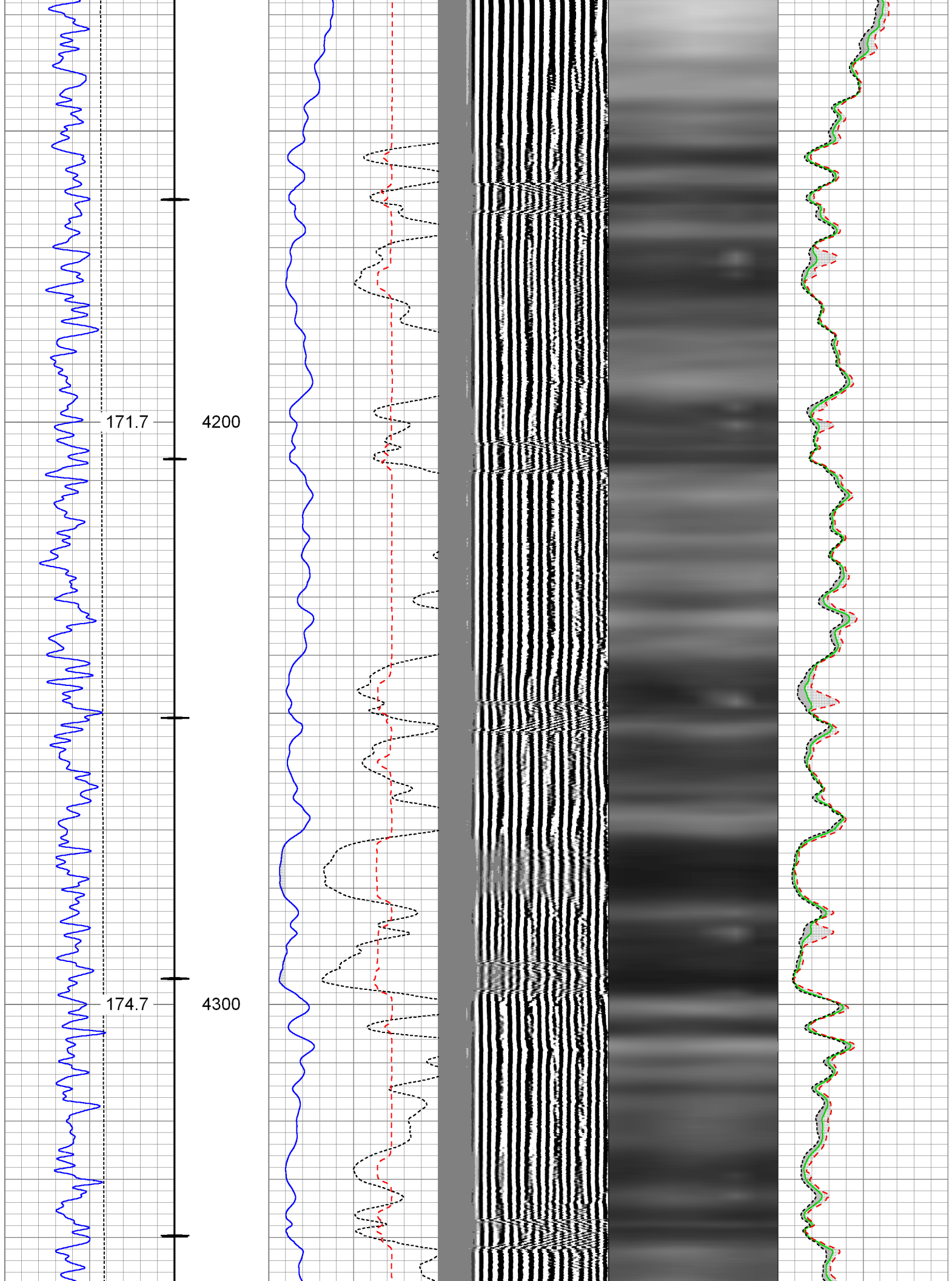


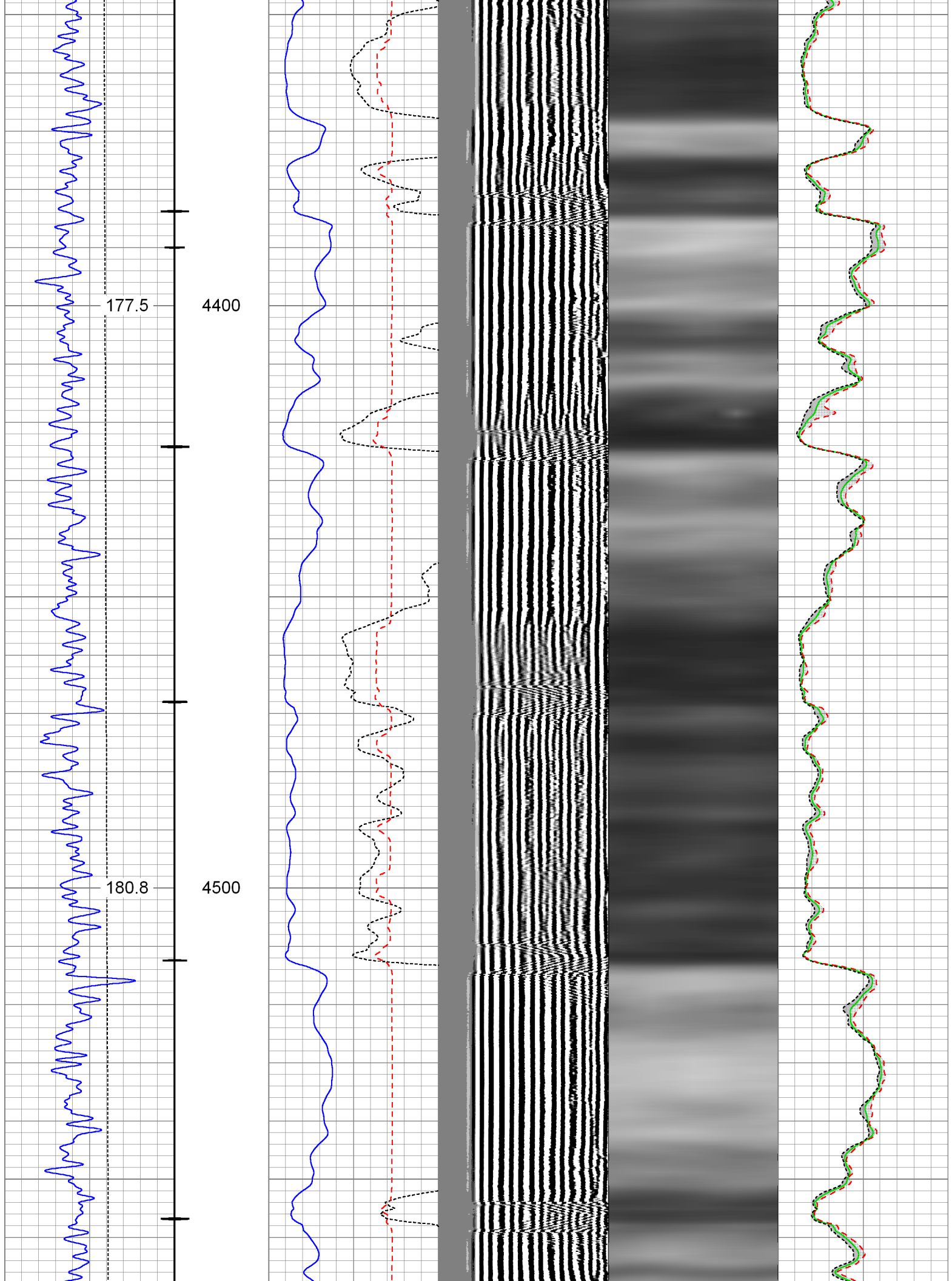


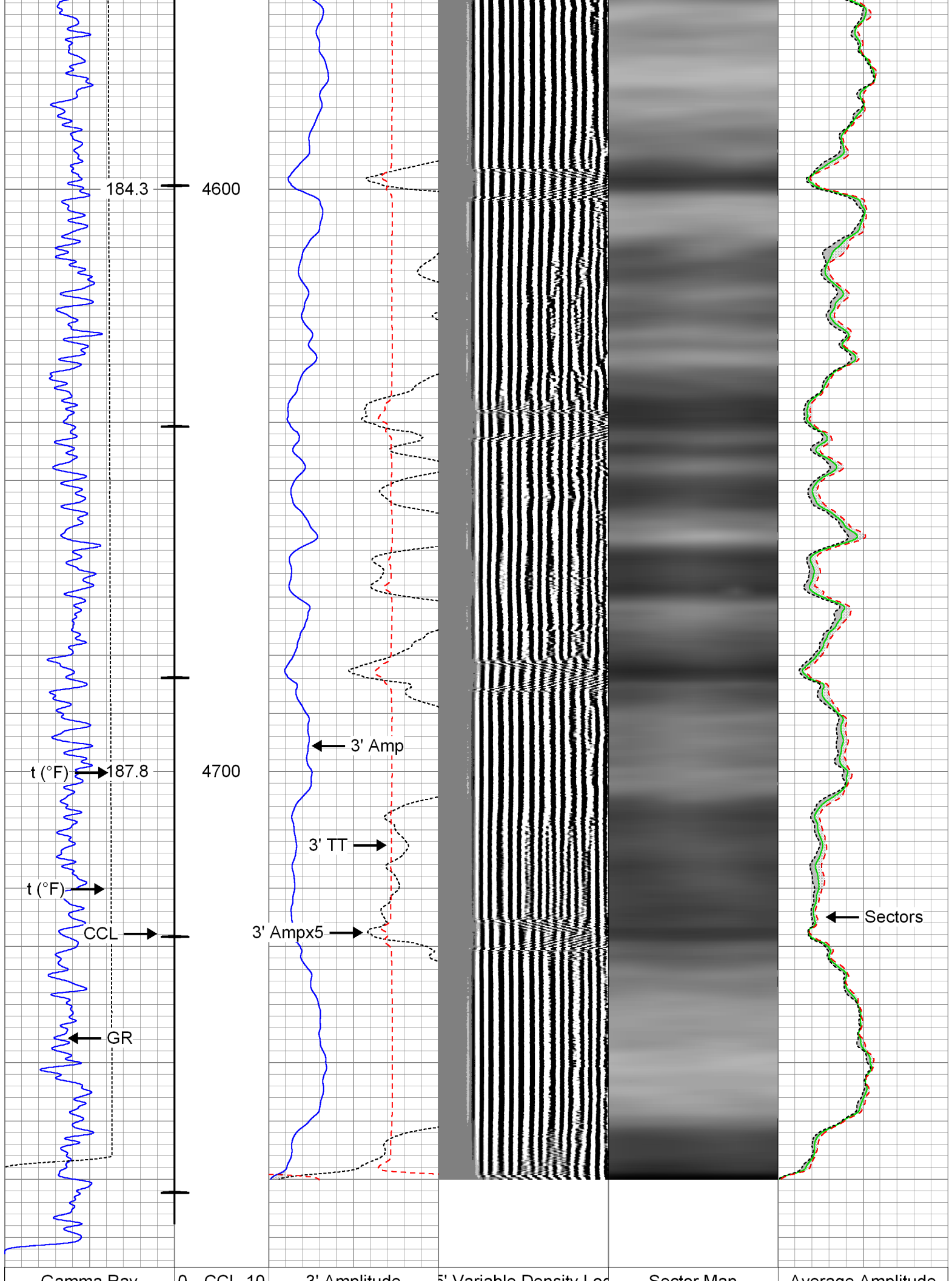












Gamma Ray	0 CCL 10	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 1200		0 100
Collar Locator		3' Amplitude x 5			Minimum Amplitude
0 TEMP (degF) 300		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

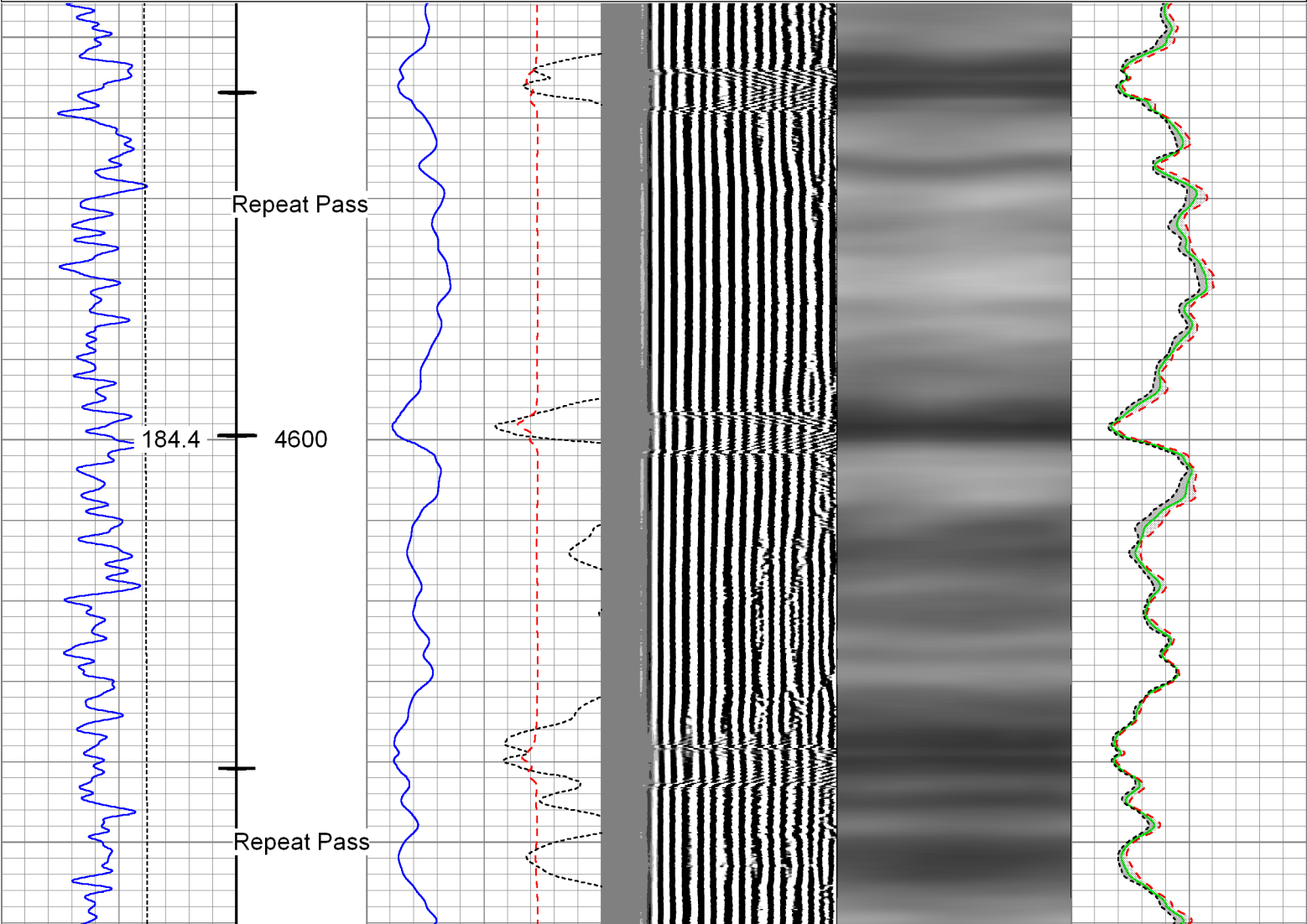


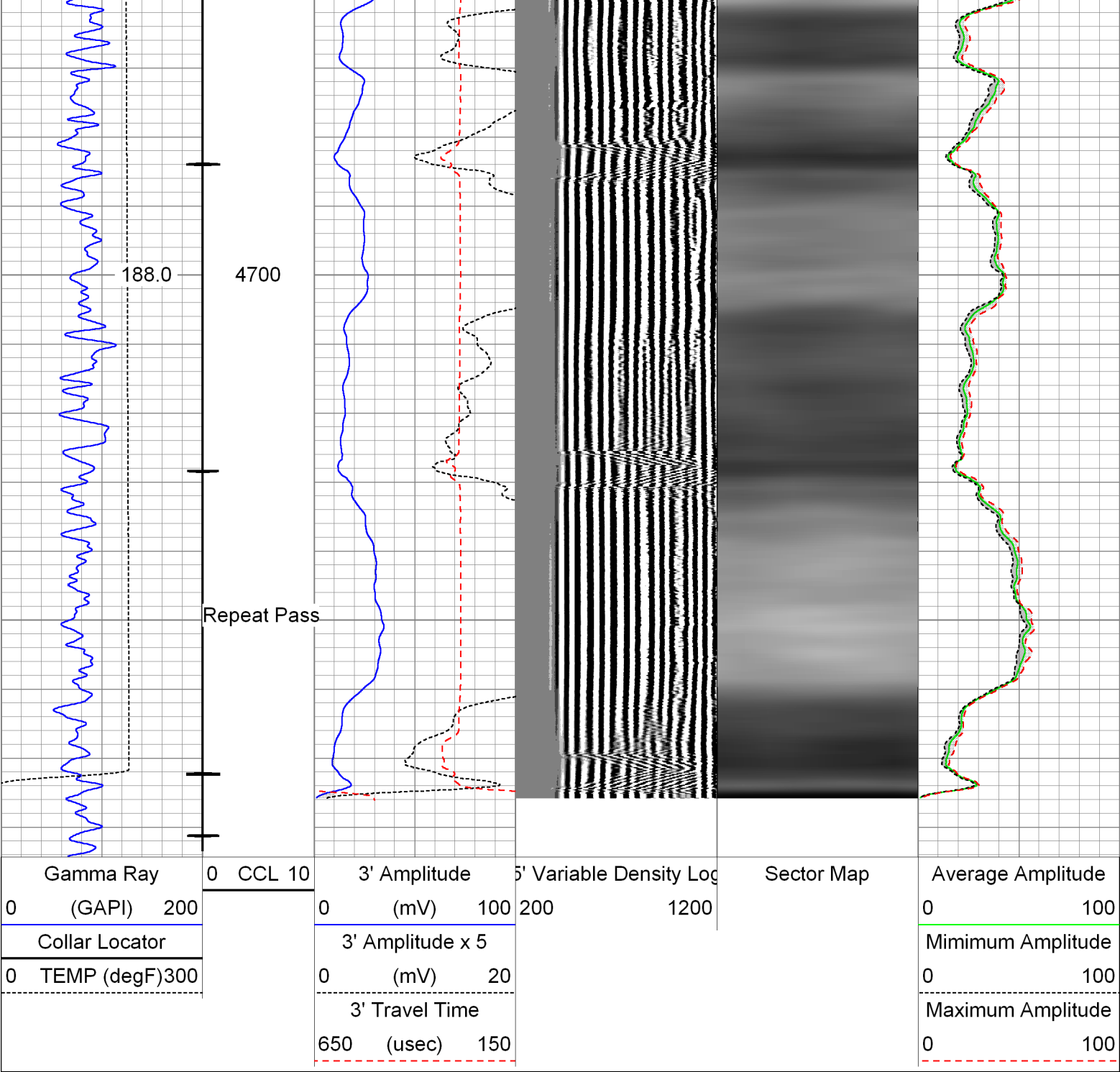
Repeat Pass

Logged with 1500 PSI @ Surface

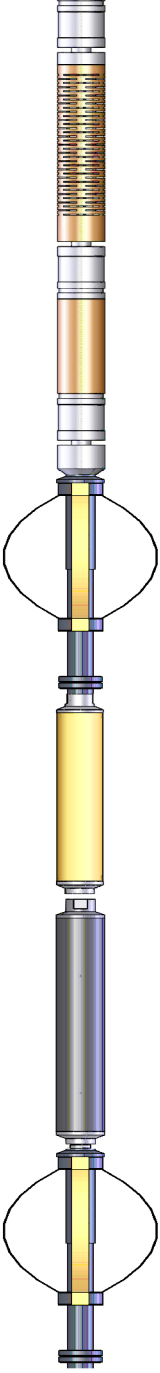
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Dataset Pathname: repeatpas
Presentation Format: rbt007
Dataset Creation: Wed Sep 25 13:14:37 2013 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

Gamma Ray	0 CCL 10	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 1200		0 100
Collar Locator		3' Amplitude x 5			Minimum Amplitude
0 TEMP (degF) 300		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
RHeadVolt	20.96		Titan_1_11_16	1.04	1.69	5.00
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Temp	18.09					

Temp	15.98					
WVF3FT	15.98		Probe_RADII-C-2-3/4" (FW1305-96in7") Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	9.21	2.75	100.00
WVFCAL	15.98					
WVFS1	15.98					
WVFS2	15.98					
WVFS3	15.98					
WVFS4	15.98					
WVFS5	15.98					
WVFS6	15.98					
WVFS7	15.98					
WVFS8	15.98					
WVF5FT	14.98		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
CCL	7.38		Probe_CCL-2.75"_SA_6MAG_CCL (FW1307-76)	2.66	2.75	50.00
GR	3.67		Probe_CCL_GR-2.75"_SA_Corrosion_GR 3.331307-72.75 Probe 2.75 Inch Stand Alone Corrosion GR			50.00
			Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Dataset: 05-123-37697_whiting_razor 27k-3408b_rcbl_09-25-13.db: field/well/run1/main Total Length: 24.88 ft Total Weight: 235.00 lb O.D. 2.75 in						

Calibration Report		
Database File:	05-123-37697_whiting_razor 27k-3408b_rcbl_09-25-13.db	
Dataset Pathname:	main	
Dataset Creation:	Wed Sep 25 13:26:01 2013 by Log SCH 111116	
Gamma Ray Calibration Report		
Serial Number:	FW1307-78	
Tool Model:	2.75" _SA_Corrosion_GR	
Performed:	Sun Sep 08 13:28:36 2013	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps

Sensitivity:

0.8000

GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1305-96in7"
Tool Model: 2-3/4"

Calibration Casing Diameter: 7.000 in
Calibration Depth: 488.382 ft

Master Calibration, performed Wed Sep 25 12:57:19 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.006	0.814	0.800	62.165	74.912	1.218
CAL	1.082	1.081				
5'	-0.004	0.863	0.800	62.165	70.754	1.101
SUM						
S1	-0.016	0.803	0.000	100.000	122.094	1.899
S2	-0.006	0.859	0.000	100.000	115.587	0.676
S3	-0.006	0.880	0.000	100.000	112.912	0.660
S4	-0.007	0.859	0.000	100.000	115.532	0.763
S5	-0.006	0.818	0.000	100.000	121.323	0.720
S6	-0.006	0.781	0.000	100.000	126.986	0.806
S7	-0.006	0.751	0.000	100.000	131.963	0.833
S8	-0.007	0.771	0.000	100.000	128.633	0.839

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	1.082	1.081	1.000	0.000

Air Zero Calibration, performed Wed Sep 25 12:50:25 2013:

	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 Whiting Oil & Gas Corporation
Well Razor 27K-3408B
Field Wildcat
County Weld

	State	Colorado
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