



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company				Whiting Oil & Gas Corporation			
Well				Razor 21A-2814B			
Field				Wildcat			
County				Weld			
State				Colorado			
Location:				API # : 05-123-37845			
SHL: 405' FNL 661' FEL Lat/Long: 40.830067/-103.863442 SEC 21 TWP 10N RGE 58W				Other Services Gauge run Plug			
Permanent Datum		Ground level		Elevation		4832'	
Log Measured From		Kelly Bushing		17 FT		K.B. 4849' D.F. 4848' G.L. 4832'	
Drilling Measured From		Kelly Bushing					
Date				07-Nov-2013			
Run Number				Three			
Depth Driller				12721 FT			
Depth Logger				5150 FT			
Bottom Logged Interval				5148 FT			
Top Log Interval				50			
Open Hole Size				9.625			
Type Fluid				Water			
Density / Viscosity				---			
Max. Recorded Temp.				203			
Estimated Cement Top				Surface			
Time Well Ready				ROA			
Time Logger on Bottom				10:00 AM			
Equipment Number				HD 134			
Location				Ft. Lupton, CO			
Recorded By				Wayne Wacker			
Witnessed By				Gary Chandler			
Borehole Record				Tubing Record			
Run Number		Bit		From		To	
Casing Record		Size (in)		Wgt (lbs/Ft)		Grade	
Surface Casing		9 5/8		36		J-55	
Intermediate #1		7"		29		HCL-80	
Intermediate #2							
Liner		4.5"		11.6		SeAH-90	
						5176 FT	
						12706 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 the primary log  
RCBL is correlated to casing tally liner top  
Ran RCBL from just above Liner Top to surface  
RCBL ran under 1500 surface induced pressure  
Estimated top of cement is surface

Thank you for choosing FMC Technologies Completion Services, Inc.

Main Pass



Logged with 1500 PSI induced at surface

Database File:processed\_11-07-13\_whiting\_razor 21a-2814b\_rbl.db

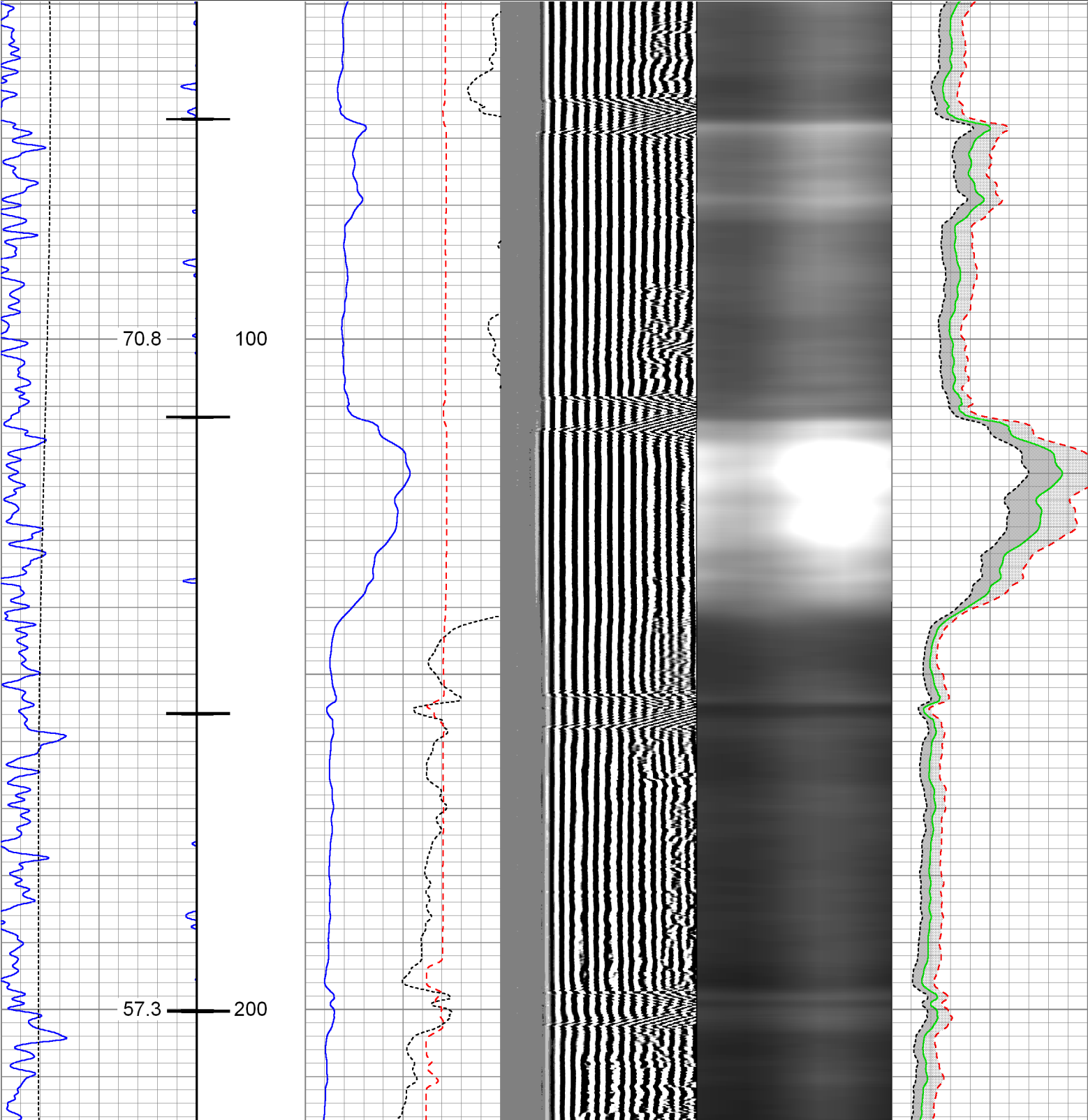
Dataset Pathname:pass18

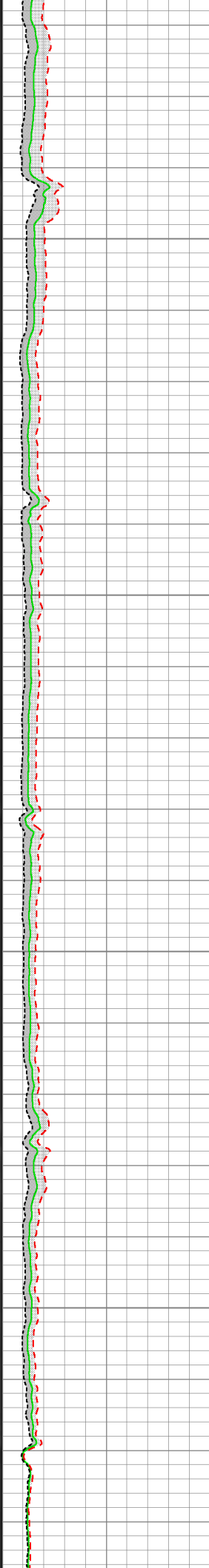
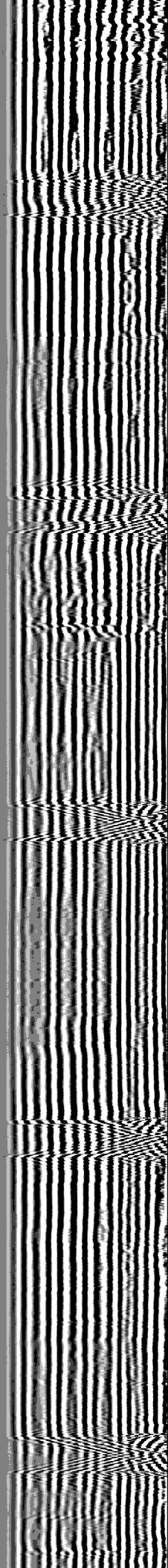
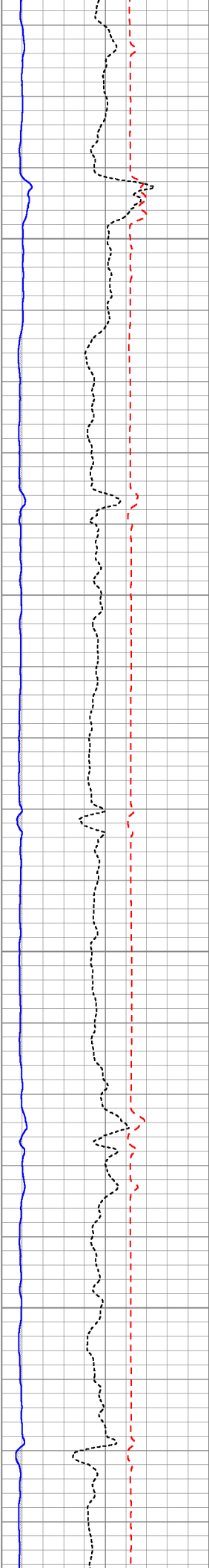
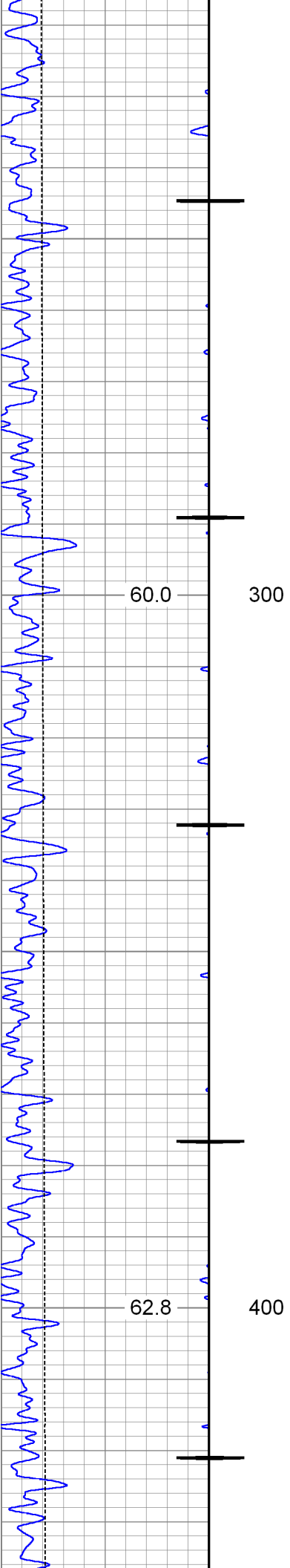
Presentation Format:rbt007

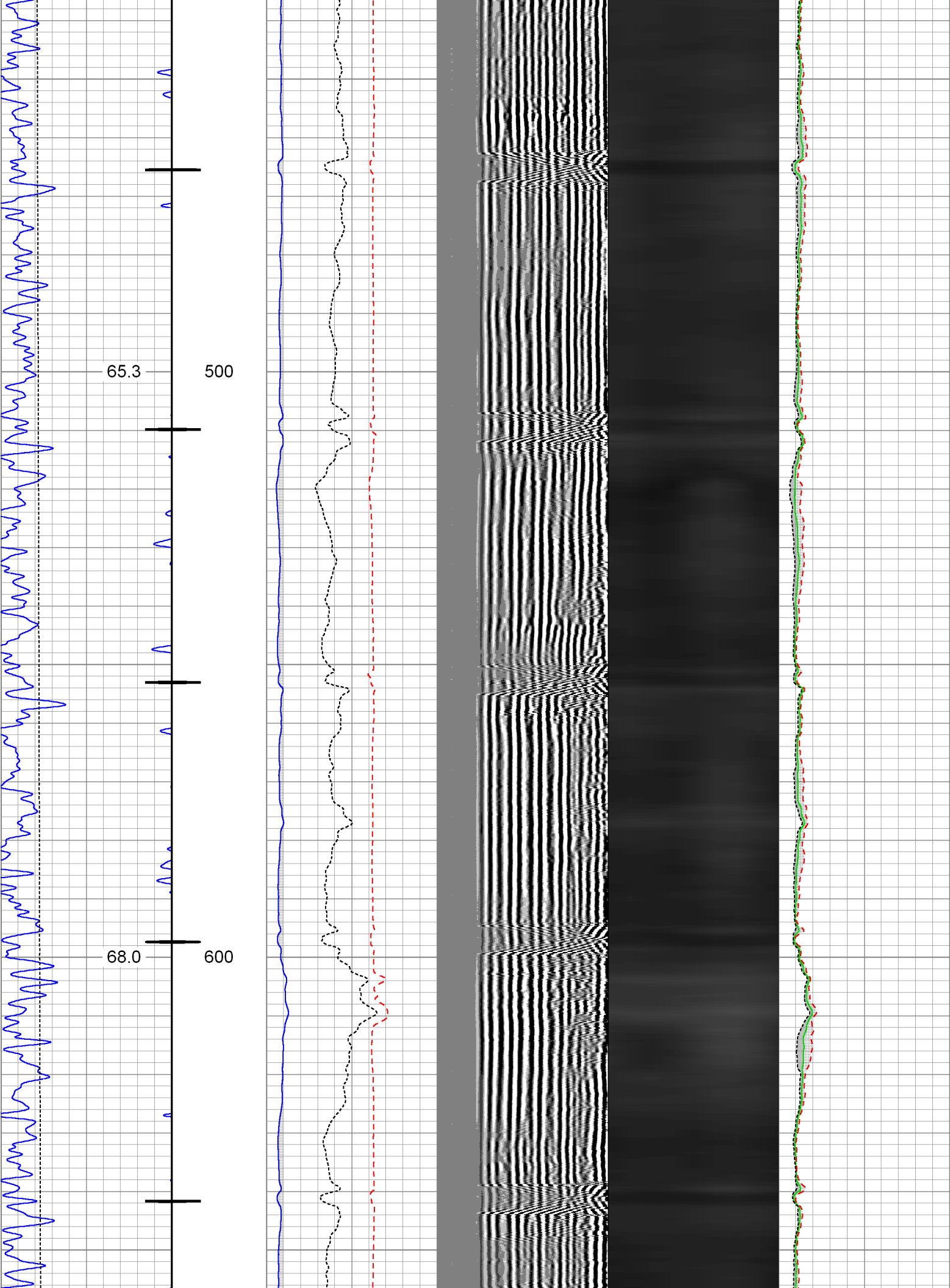
Dataset Creation:Thu Nov 07 10:10:35 2013 by Log SCH 111116

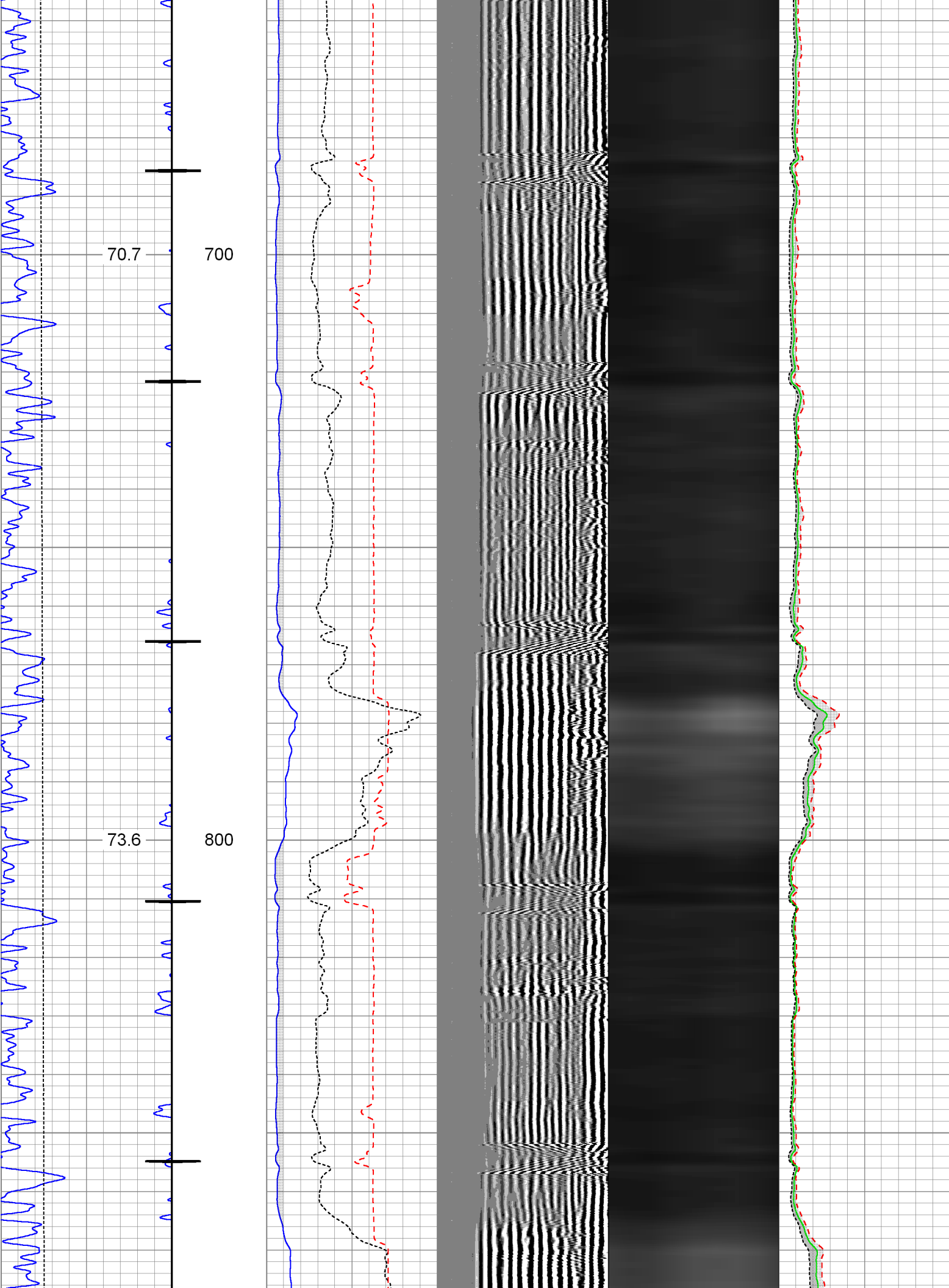
Charted by:Depth in Feet scaled 1:240

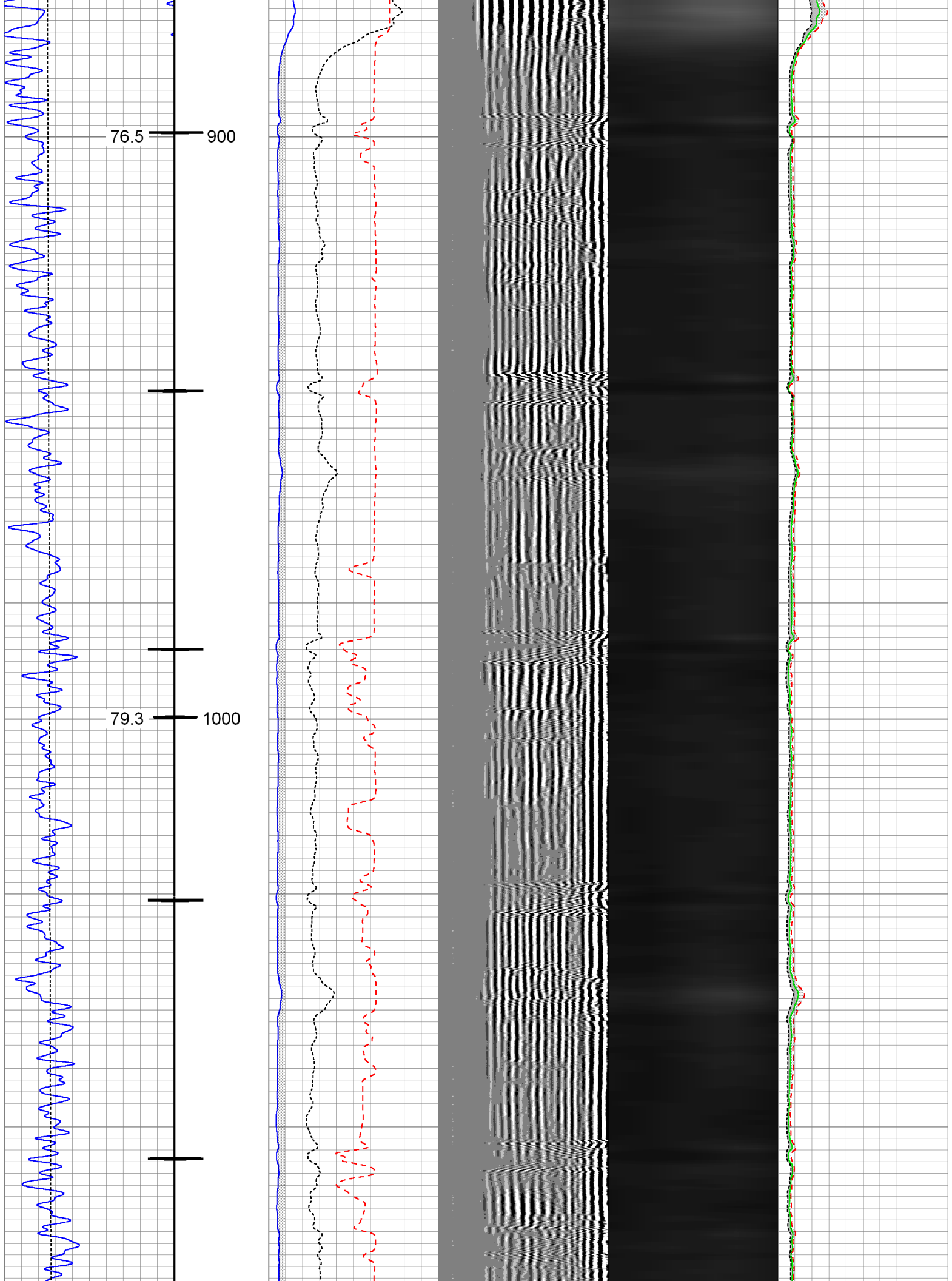
Gamma Ray			3' Amplitude			5' Variable Density Log	Sector Map	Average Amplitude	
0	(GAPI)	200	0	(mV)	100			0	100
Collar Locator			3' Amplitude x 5					Minimum Amplitude	
0	TEMP (degF)	300	0	(mV)	20			0	100
			3' Travel Time					Maximum Amplitude	
			650	(usec)	150			0	100

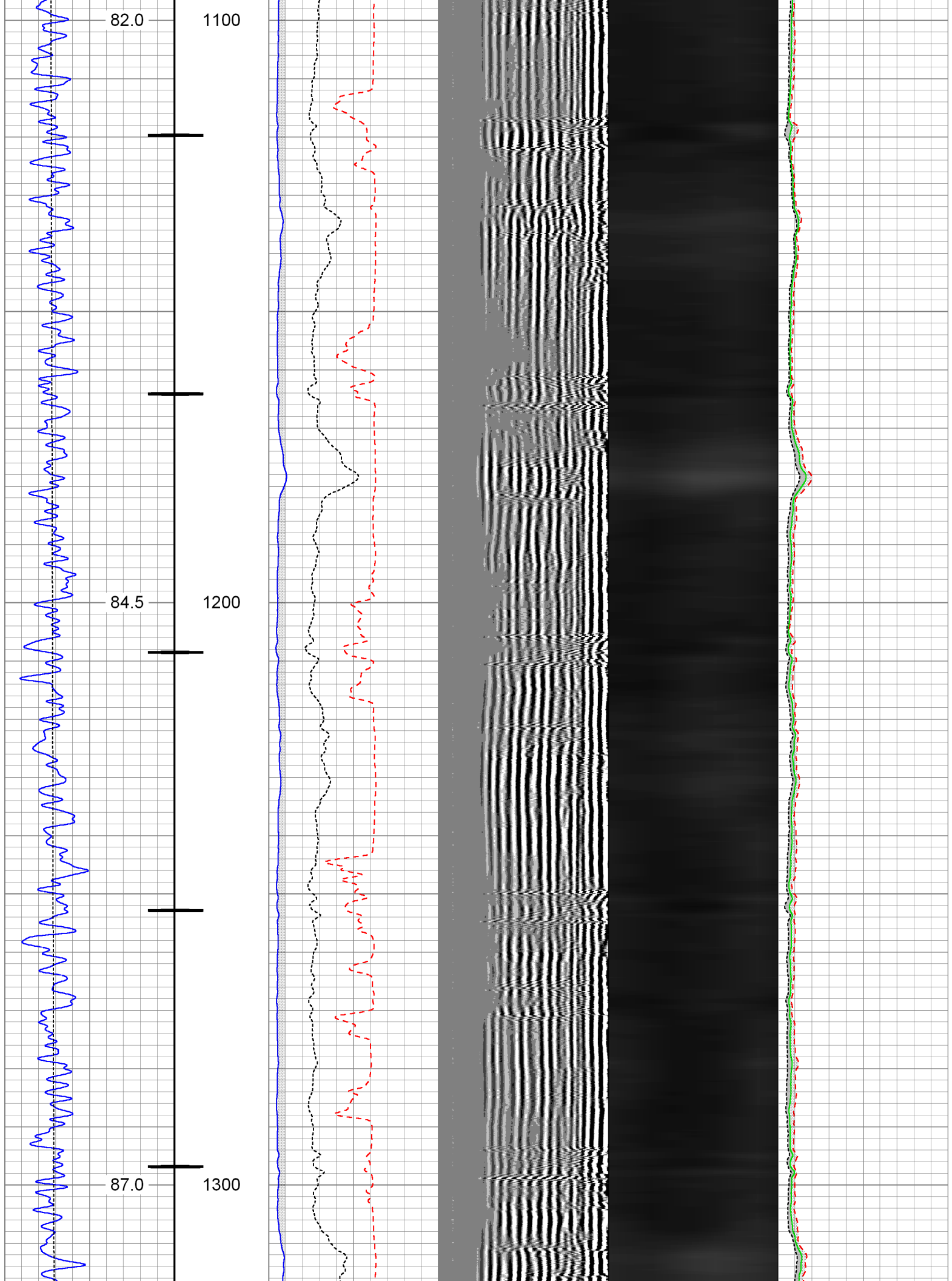


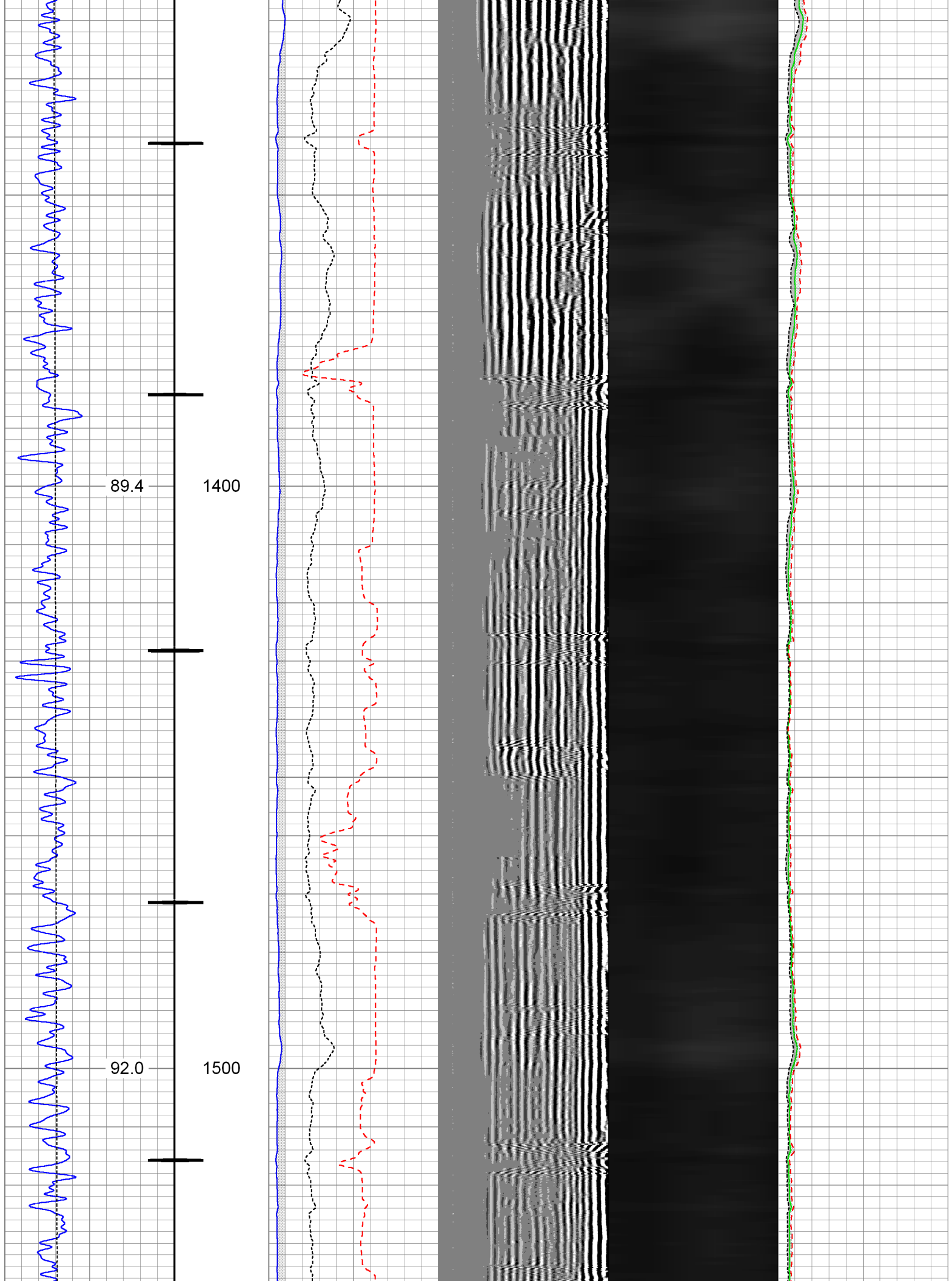


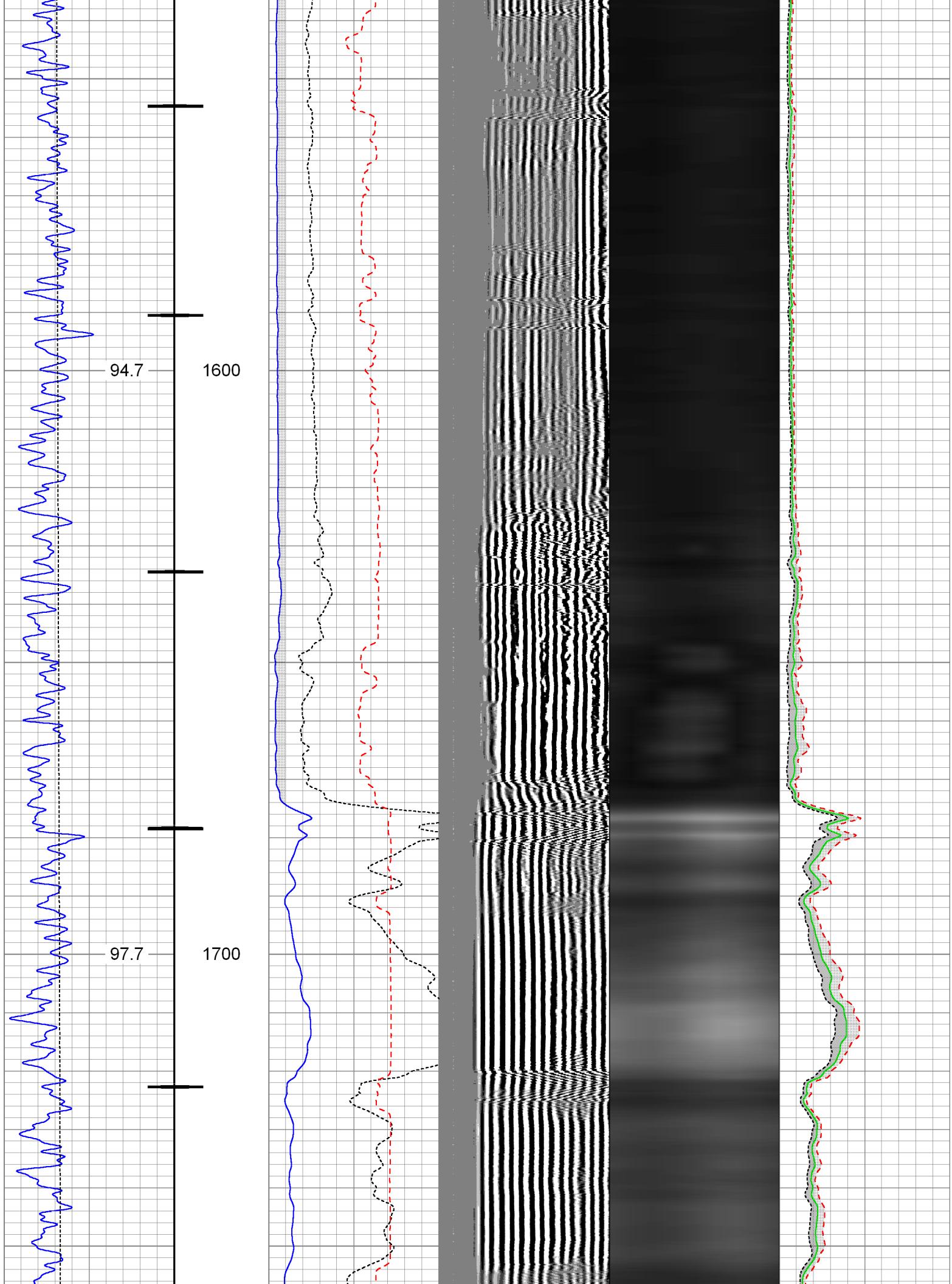


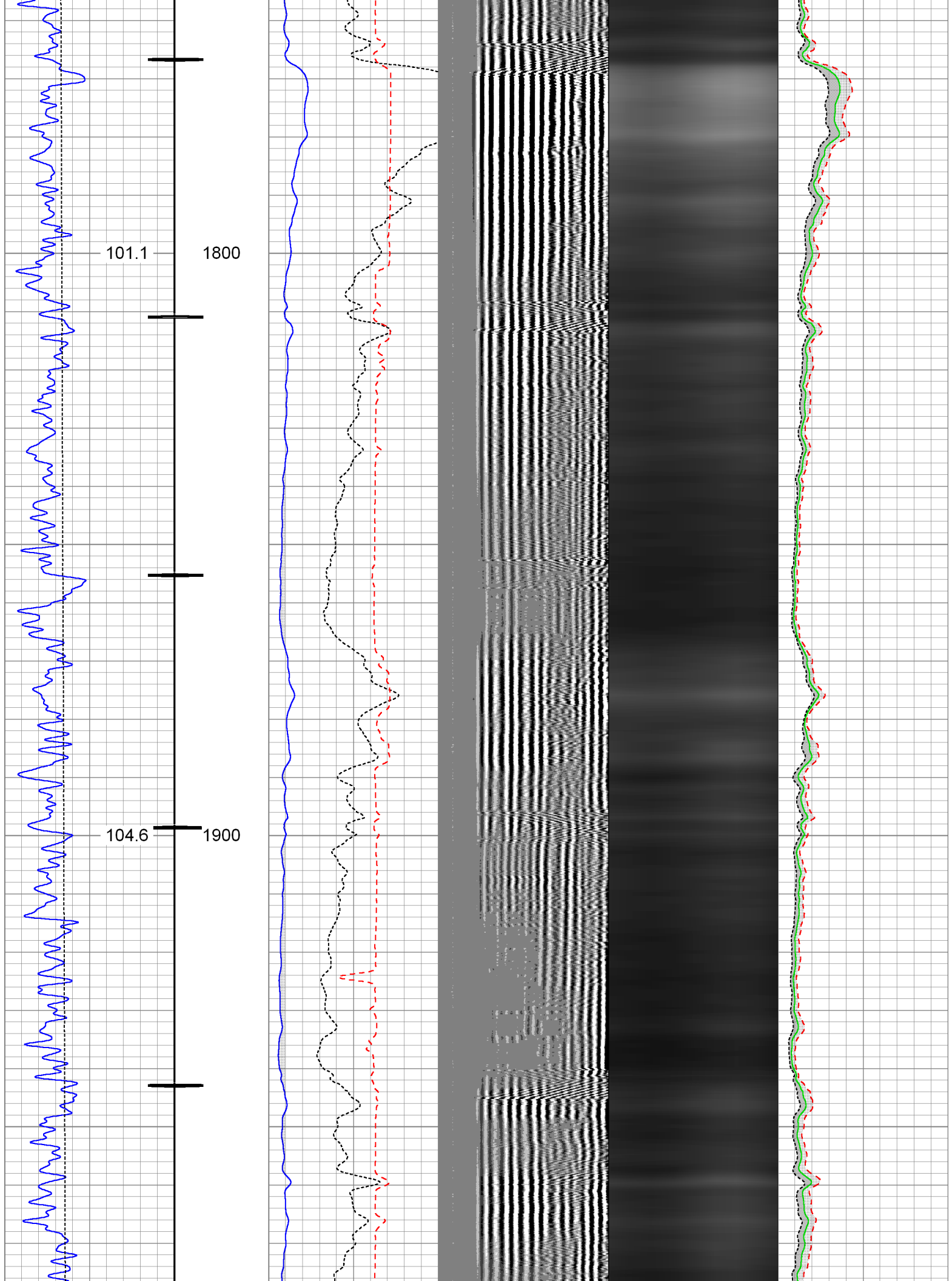


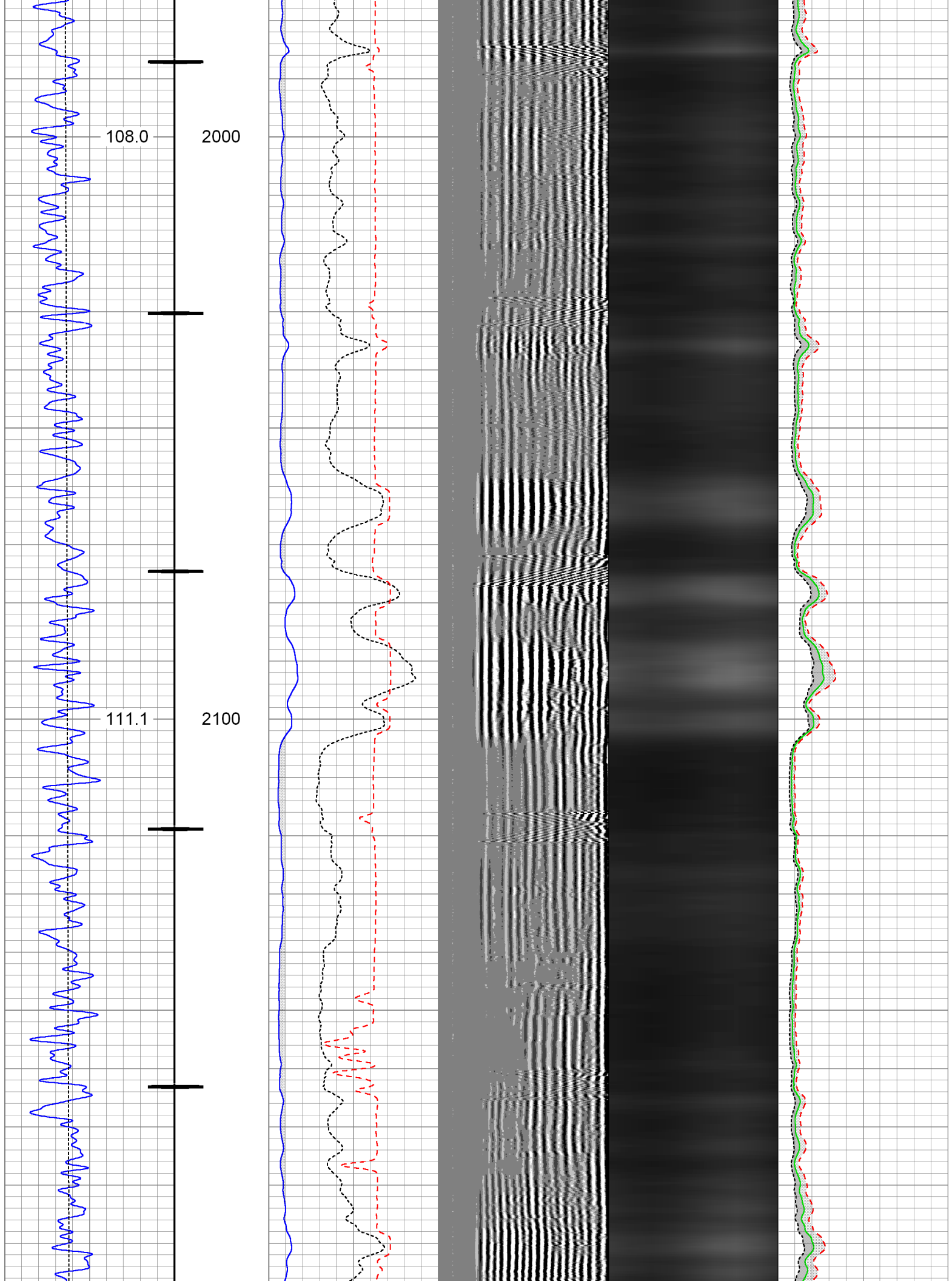


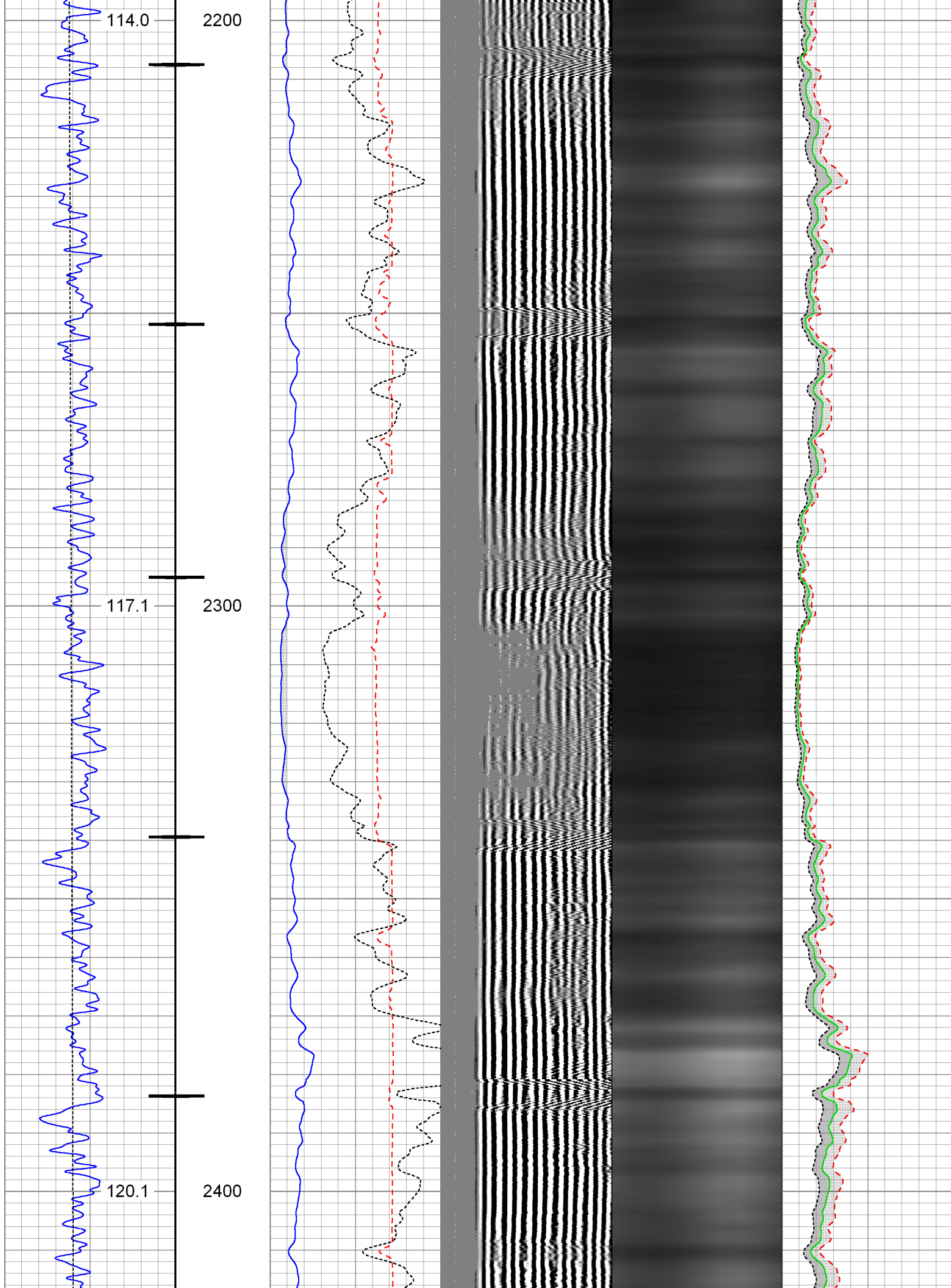


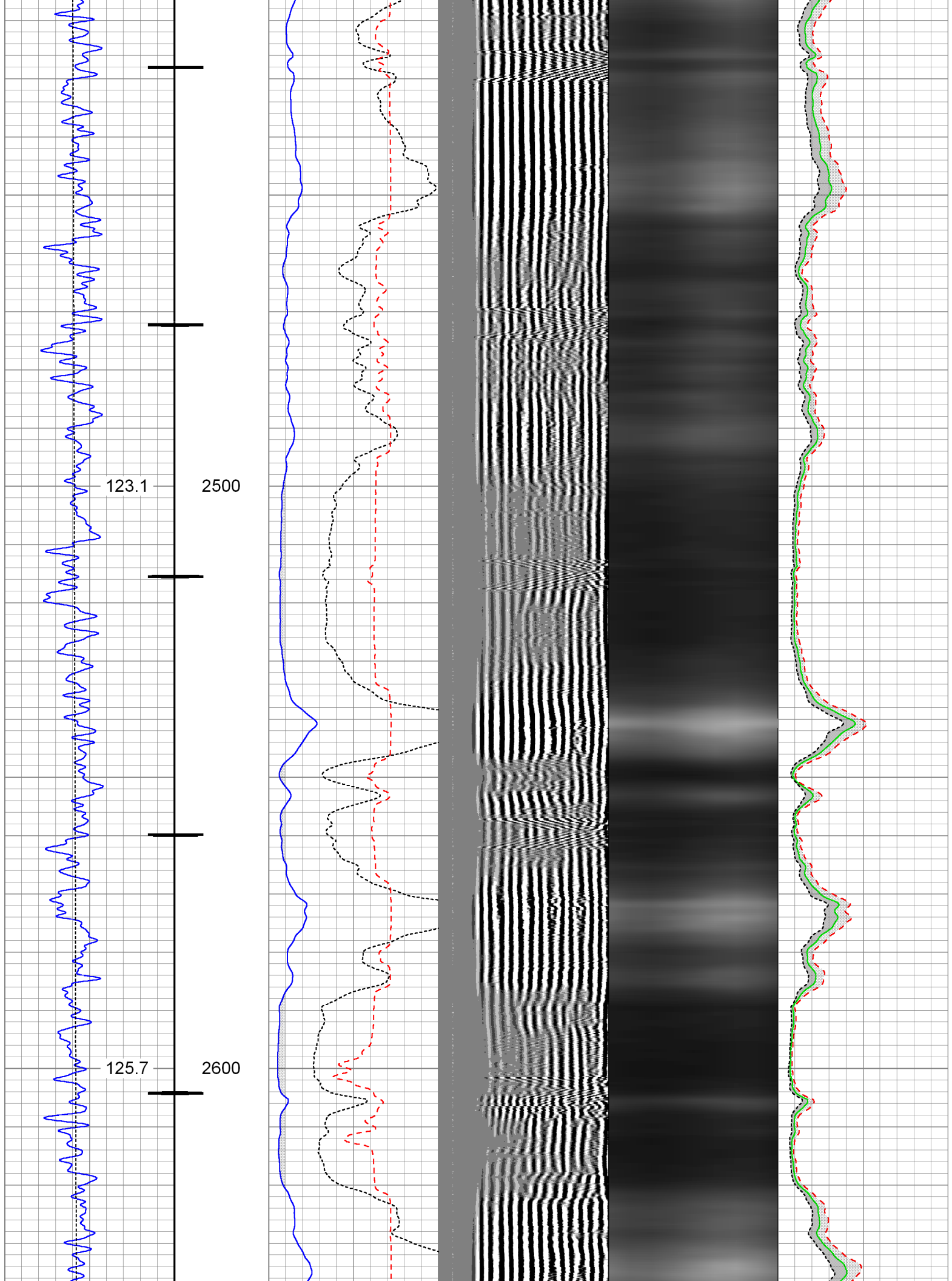


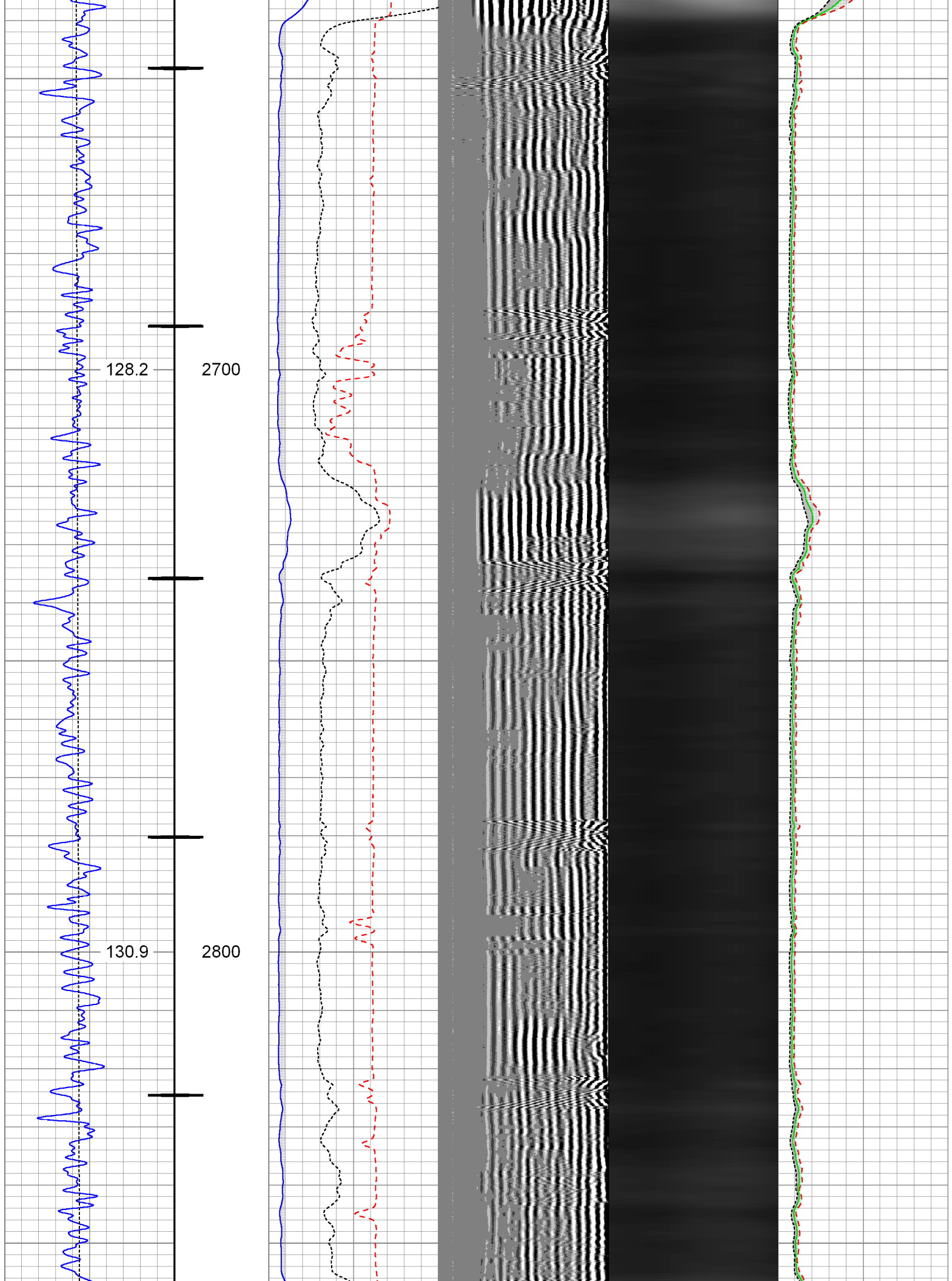


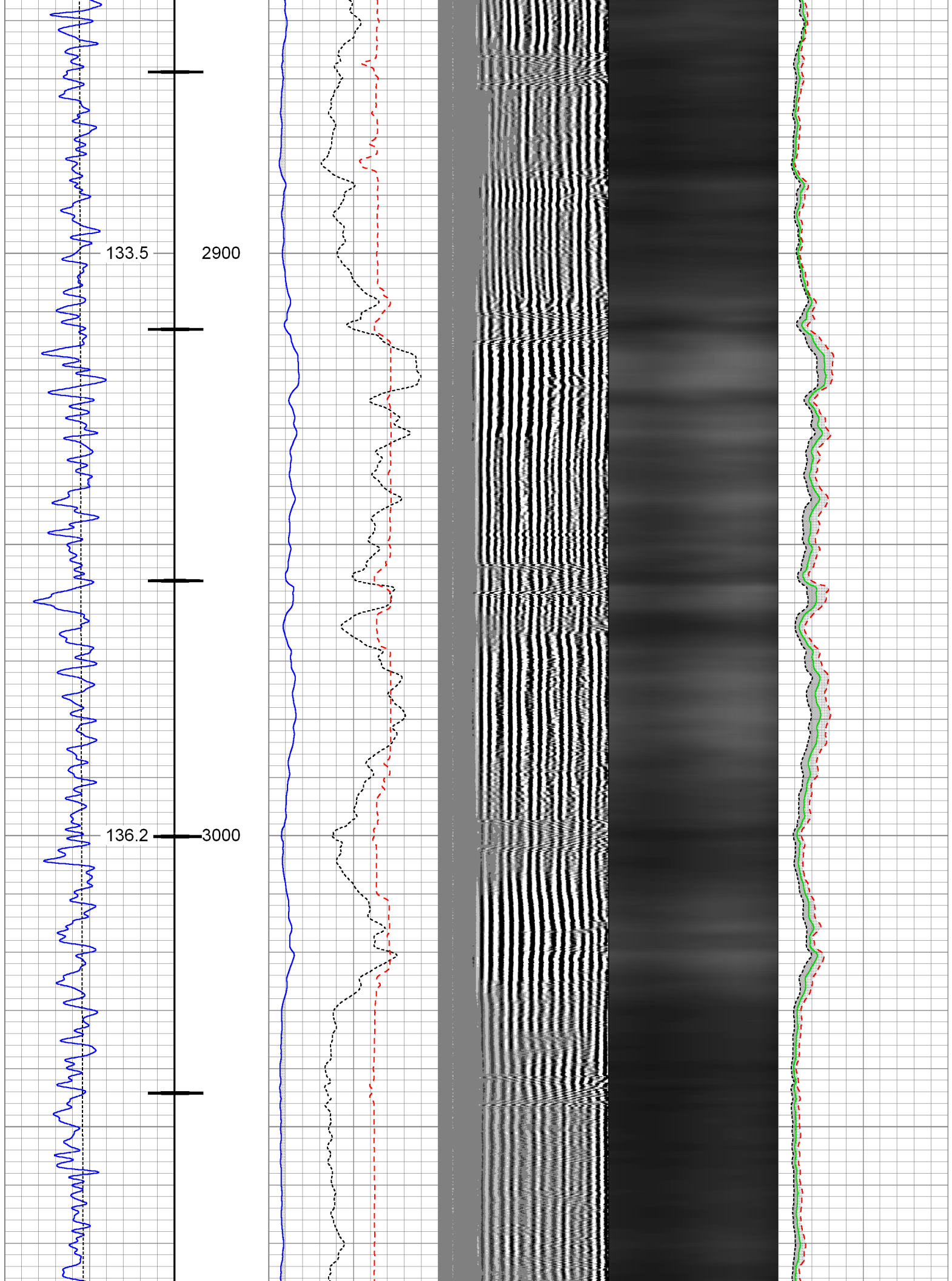


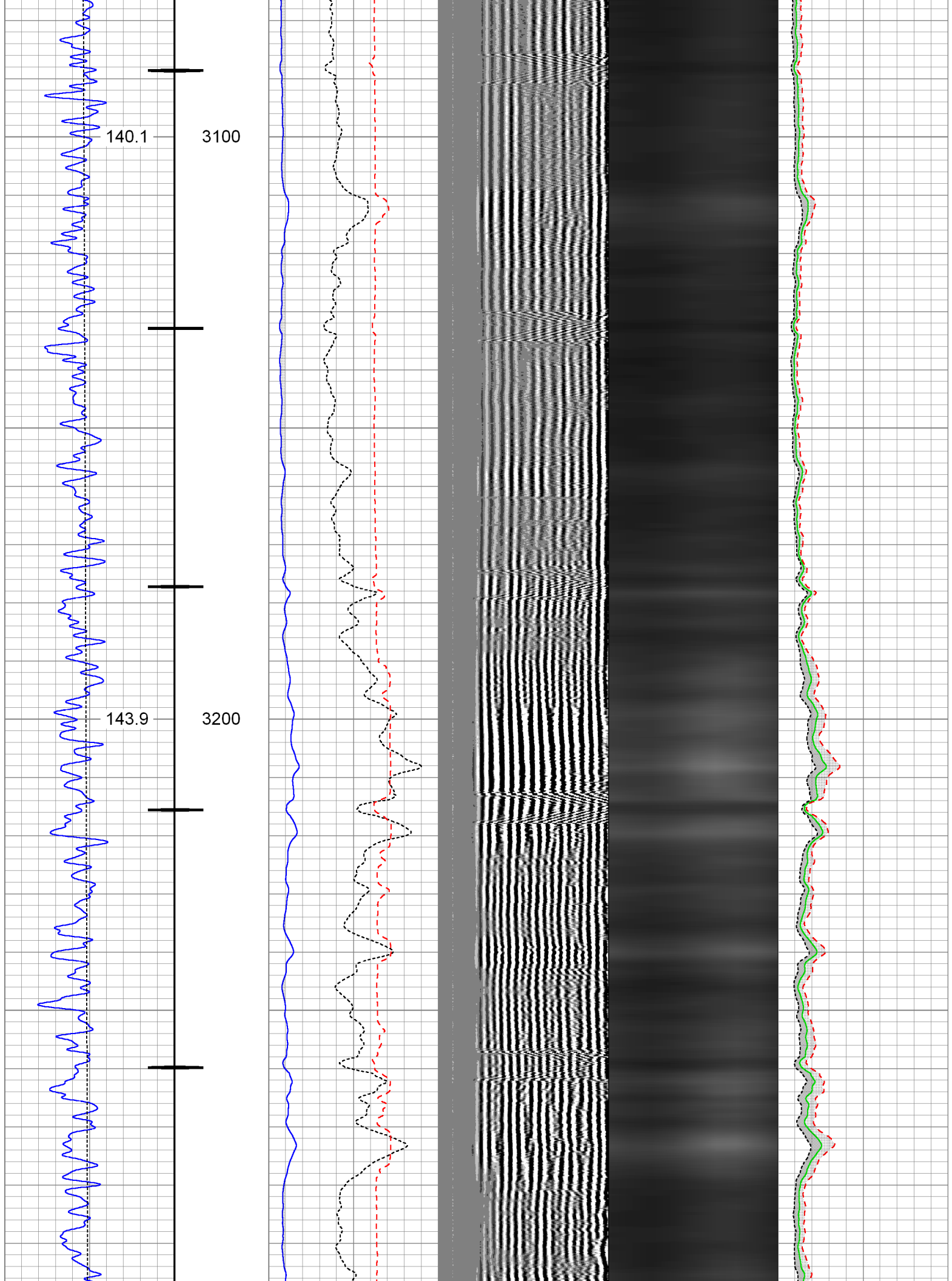


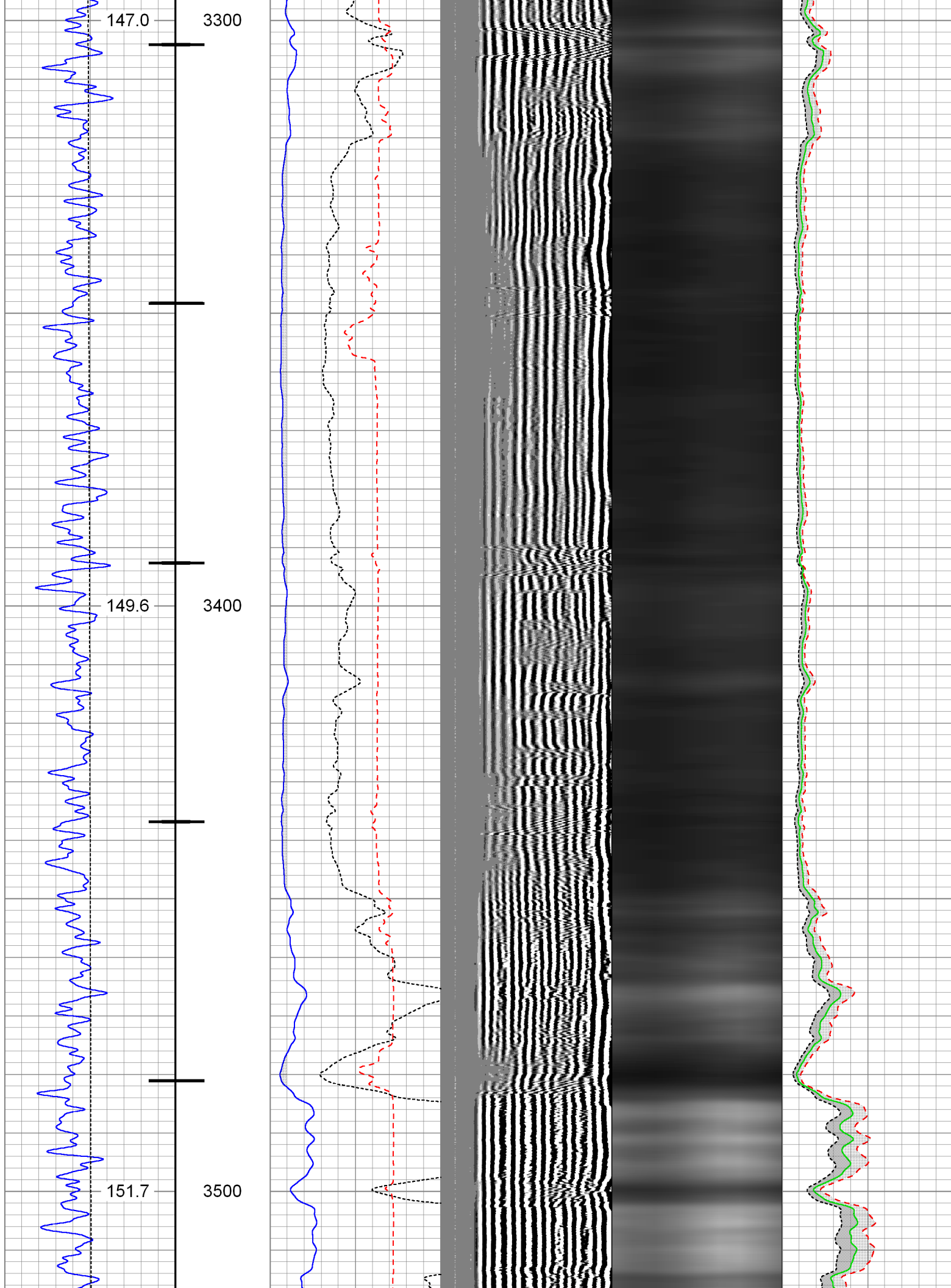


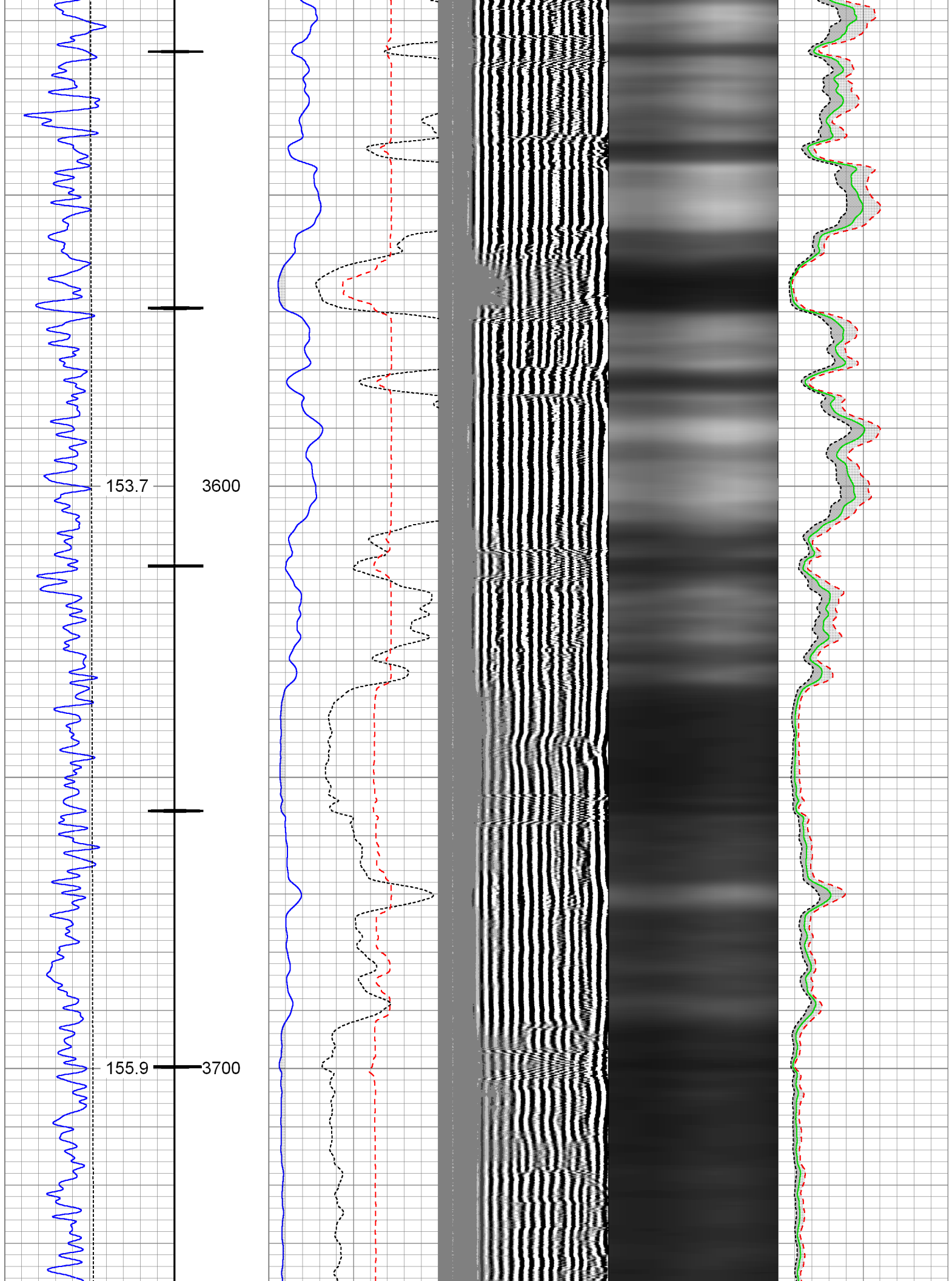


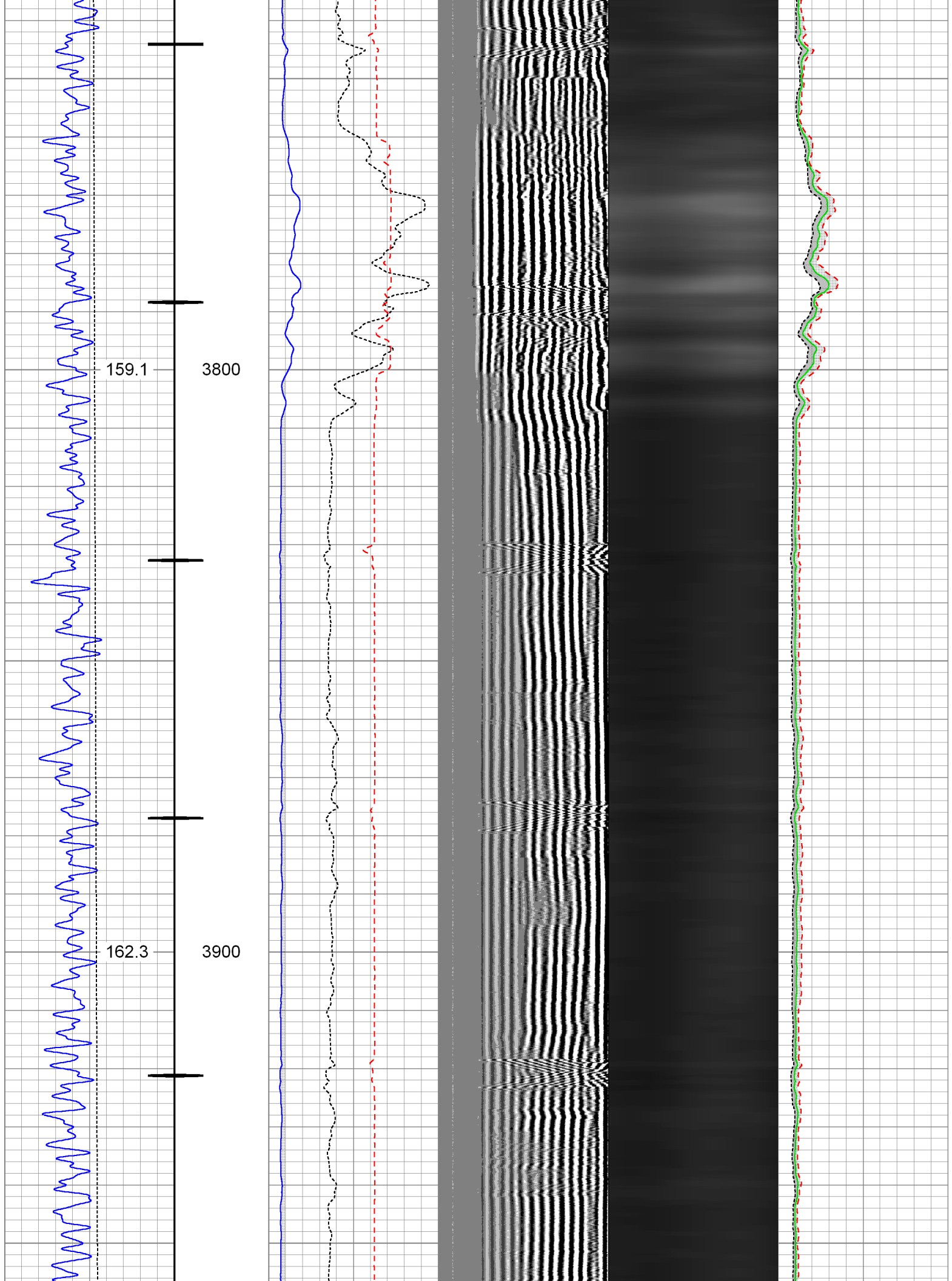


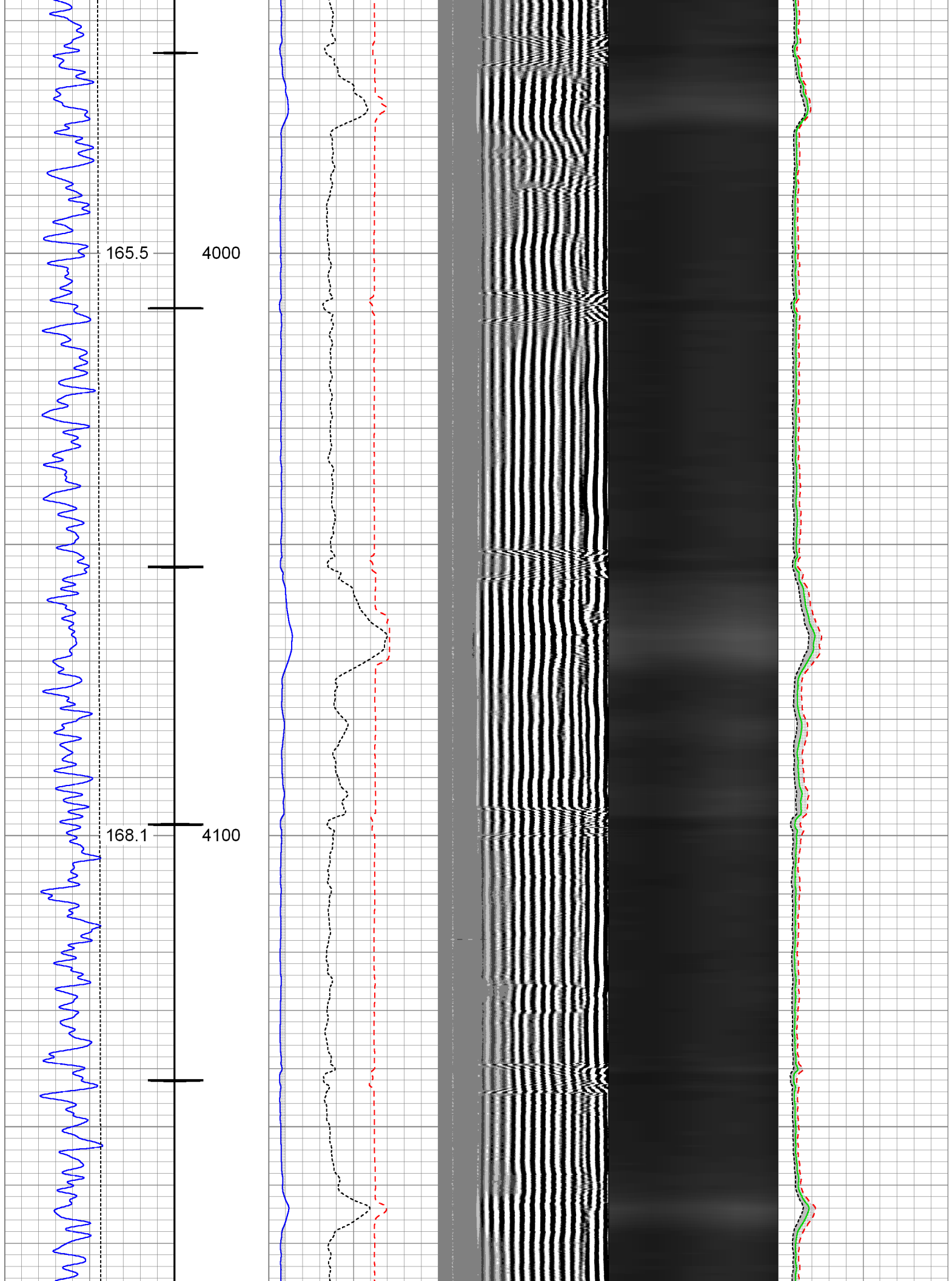


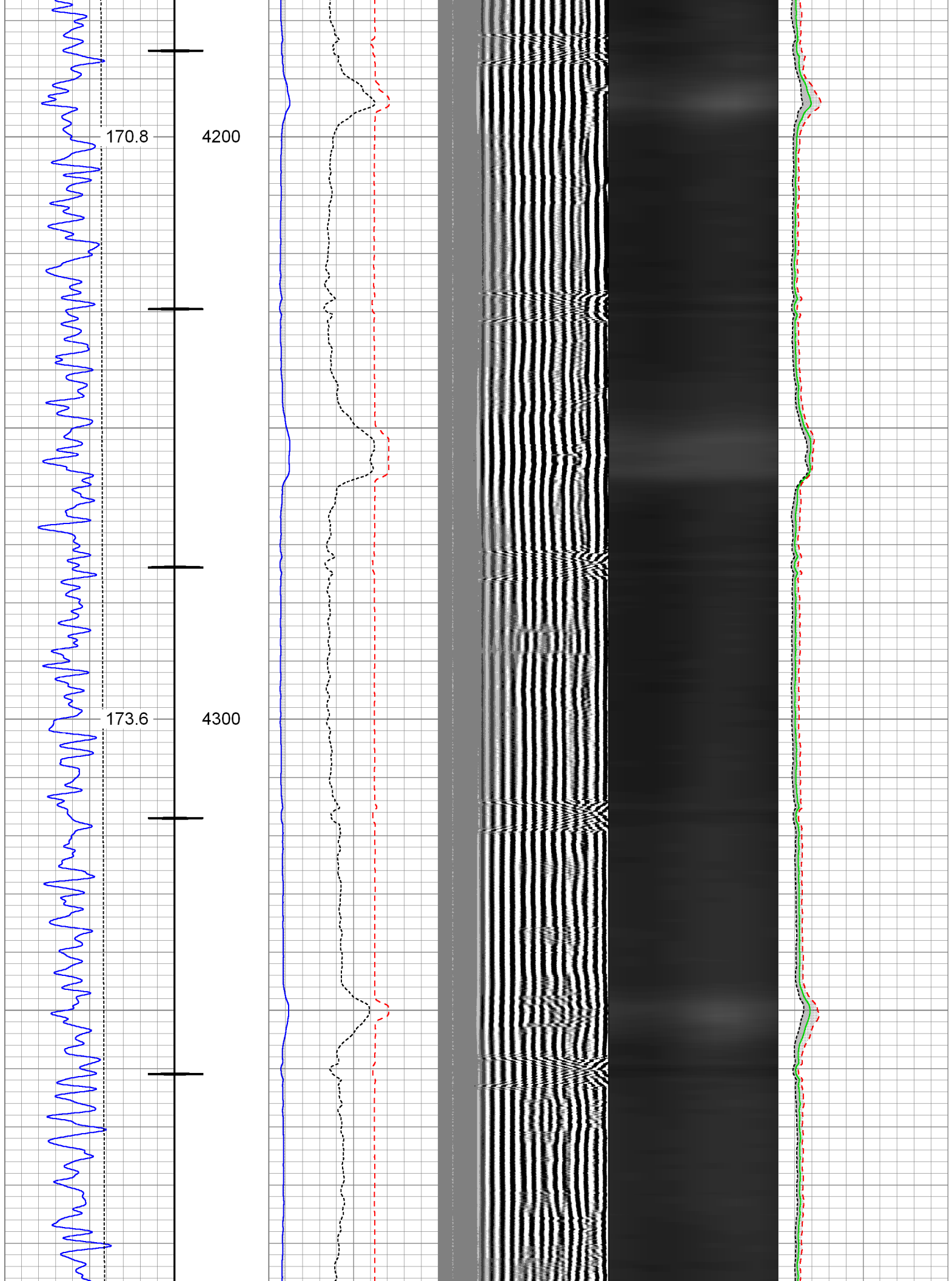


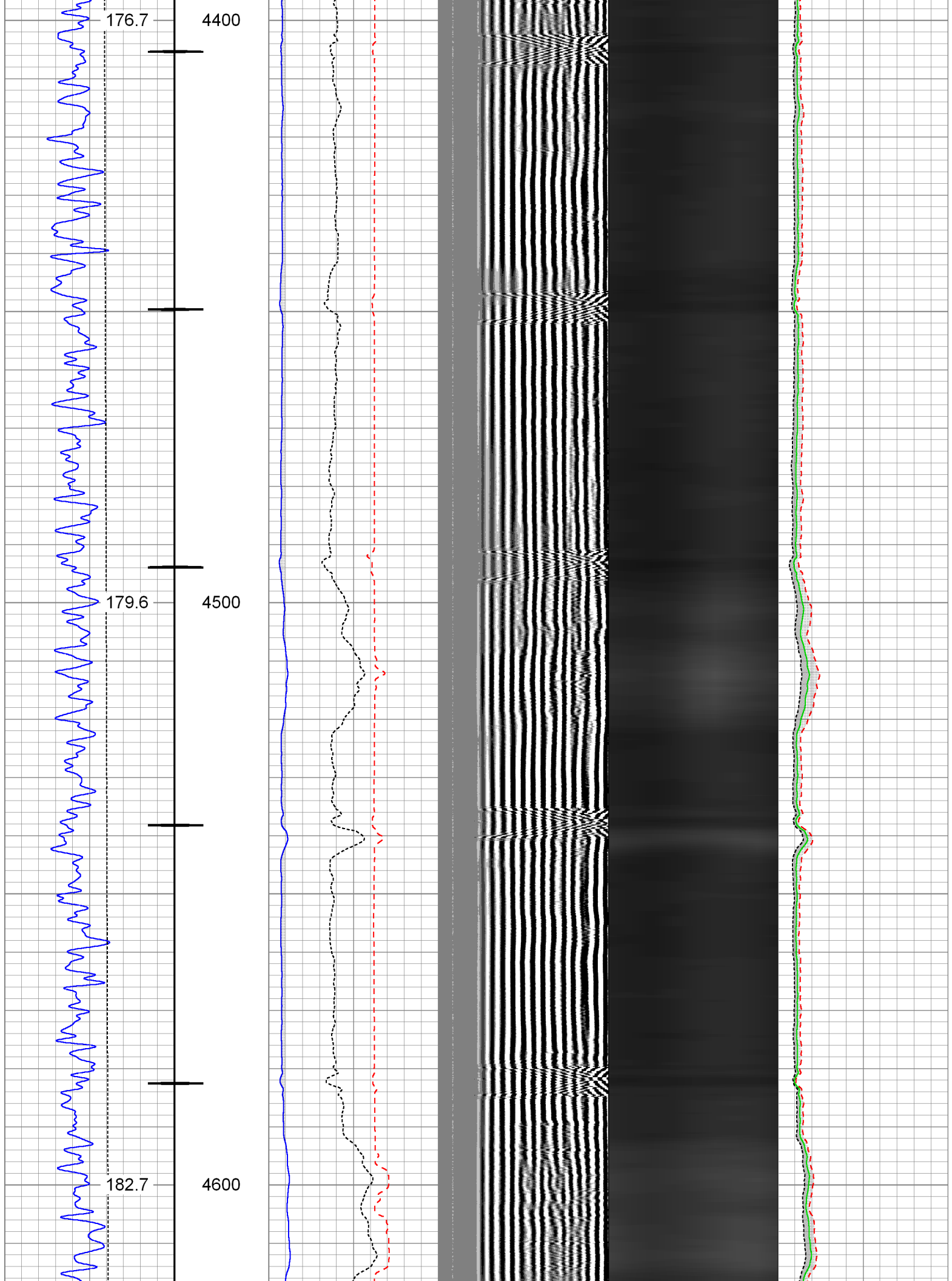


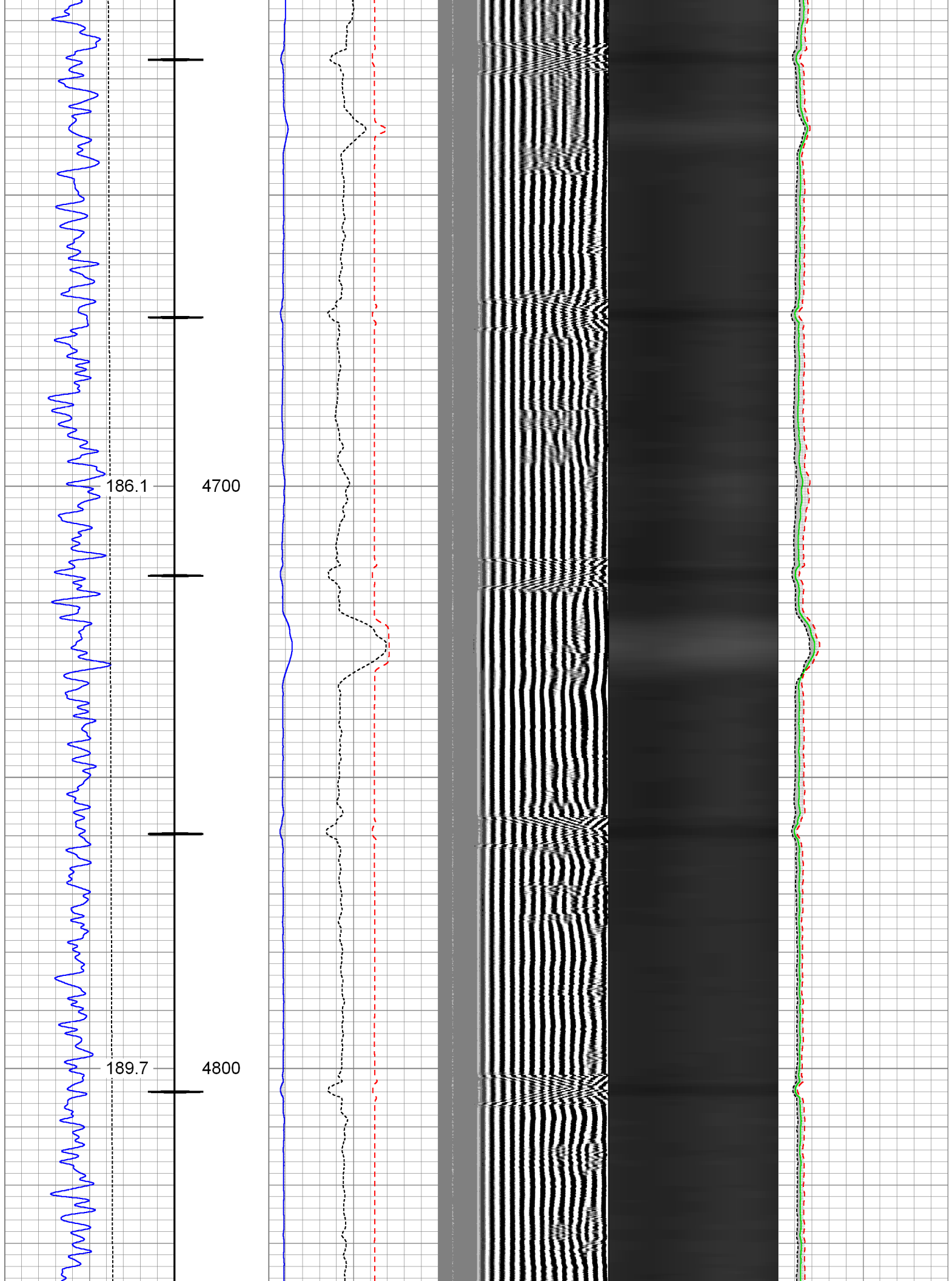


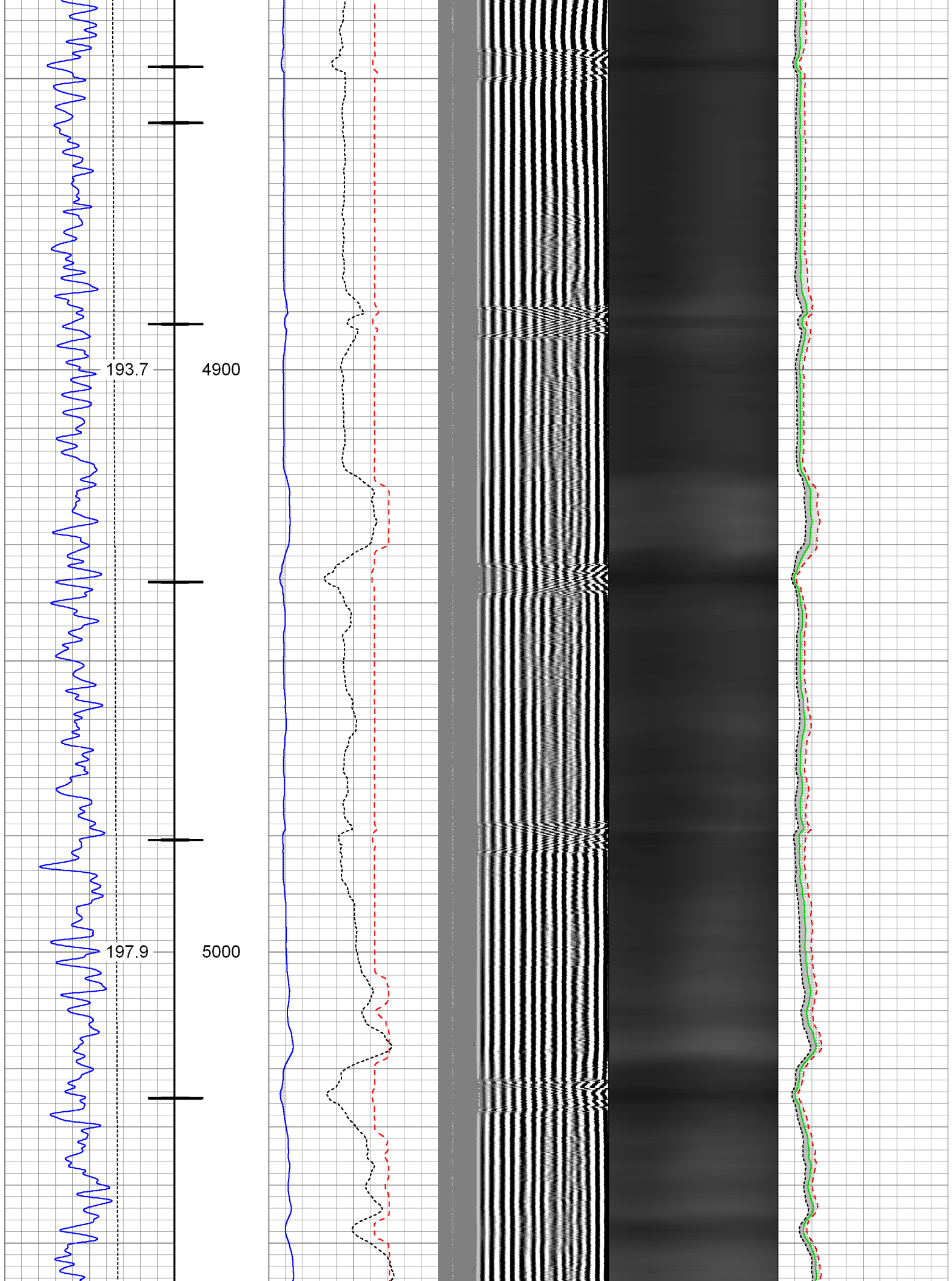


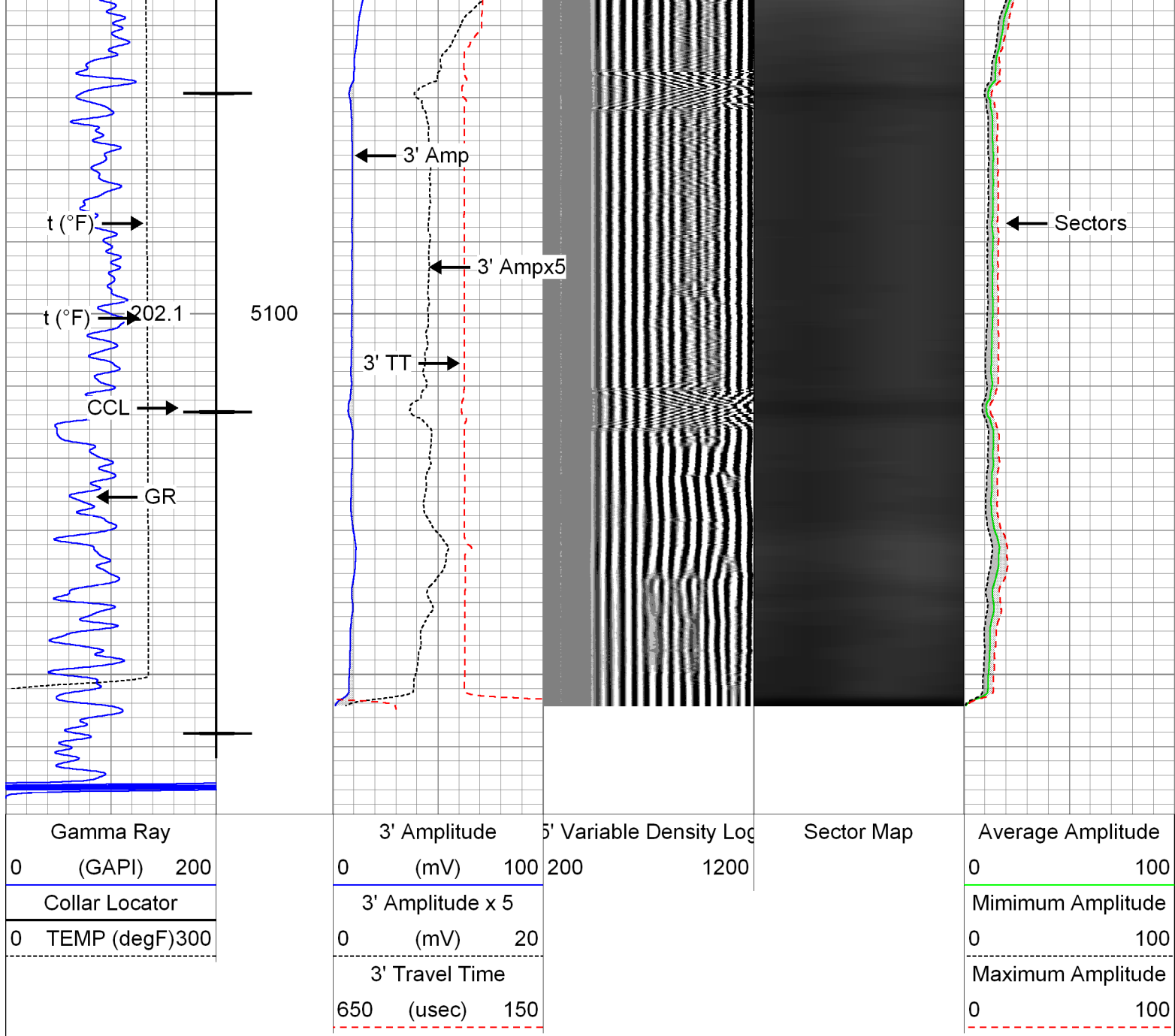






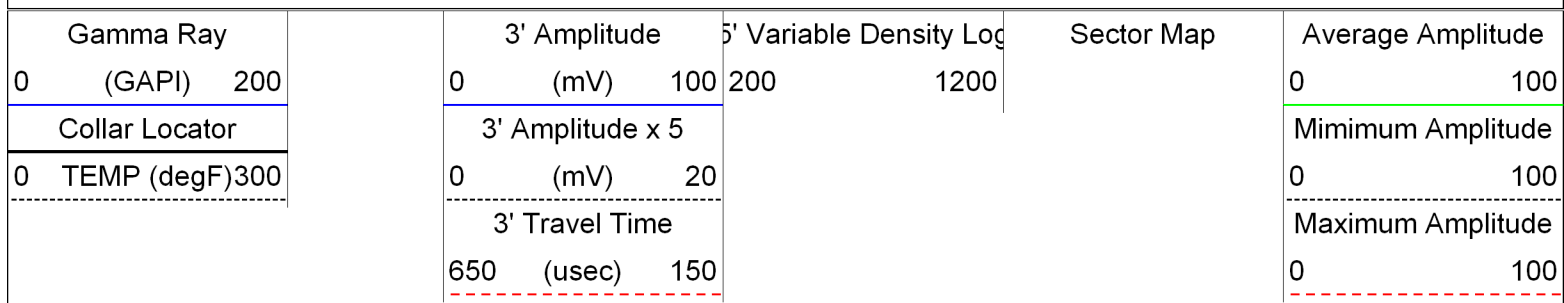


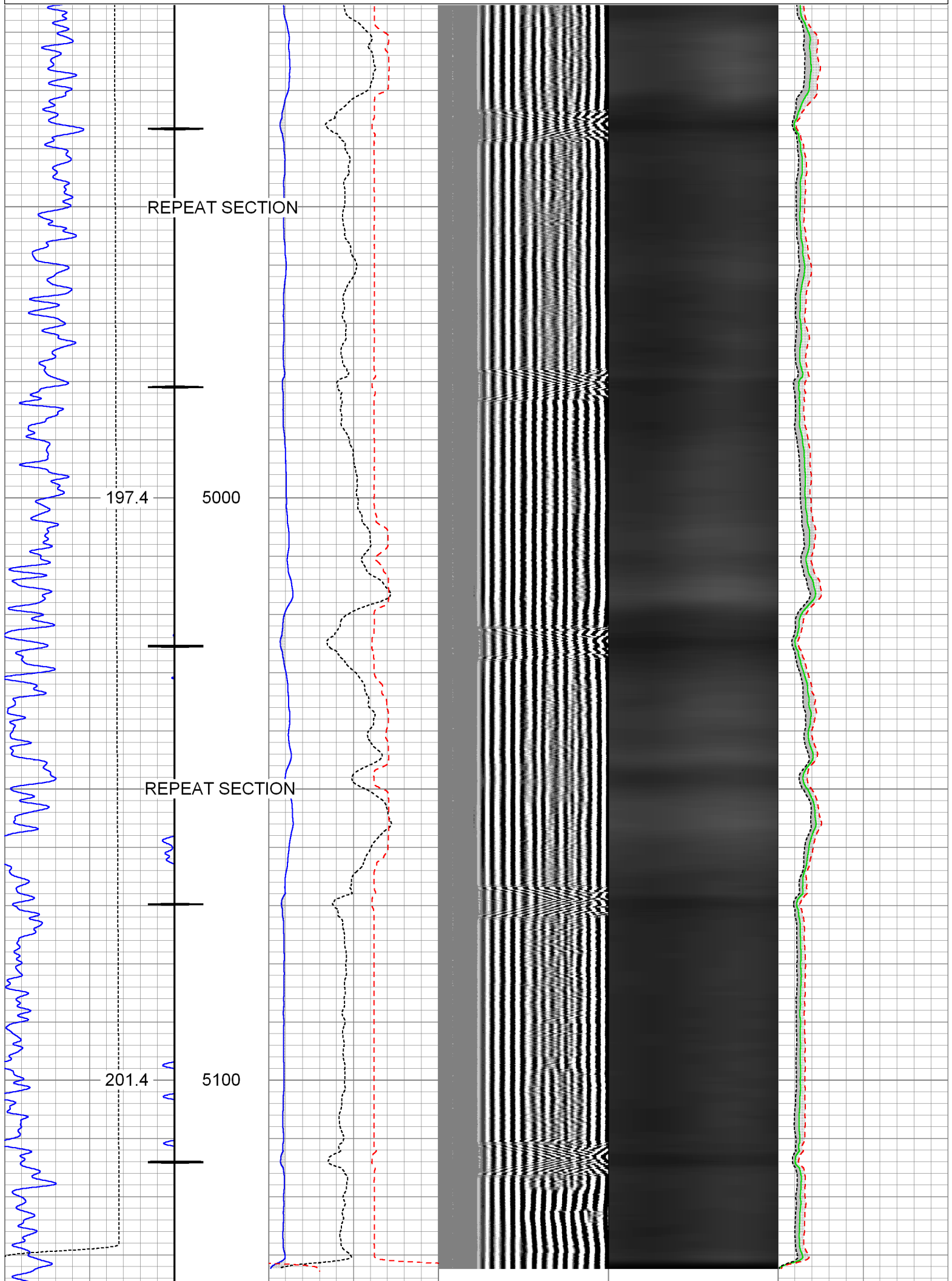


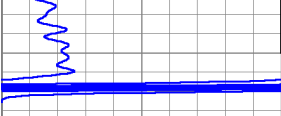
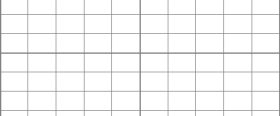
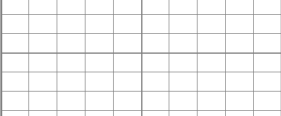


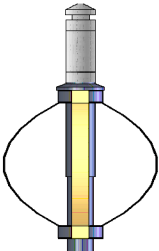
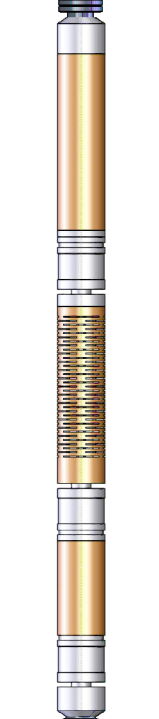
# Repeat Pass

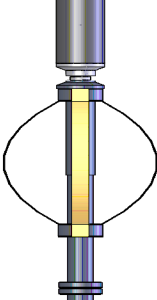
Database File: processed\_11-07-13\_whiting\_razor 21a-2814b\_rbl.db  
 Dataset Pathname: pass16  
 Presentation Format: rbt007  
 Dataset Creation: Thu Nov 07 09:59:19 2013 by Log SCH 111116  
 Charted by: Depth in Feet scaled 1:240





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

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					
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
			Probe_CCL_GR-2.75"_SA_Corrosion_GR Probe 2.75 Inch Stand Alone Corrosion GR	3.331307-72.75		50.00

GR	3.67		Probe_IL_BS_Cent Probe 2-3/4" Inline Electrical Inline Bowspring Centralizer	2.88	2.75	10.00
Dataset: PROCESSED_11-07-13_Whiting_Razor 21A-2814B_RBL.db: field/well/run1/pass18 Total Length: 24.88 ft Total Weight: 235.00 lb O.D. 2.75 in						

Calibration Report						
Database File:	PROCESSED_11-07-13_Whiting_Razor 21A-2814B_RBL.db					
Dataset Pathname:	pass16					
Dataset Creation:	Thu Nov 07 09:59:19 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 21A-2814B
	Field	Wildcat
	County	Weld
	State	Colorado