



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Whiting Oil & Gas Corporation	
Well		Horsetail 07G-0609	
Field		Wildcat	
County		Weld	
State		Colorado	
Location:		API # : 05-123-42111	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
SEC 7		TWP 10N RGE 57W	
Elevation		4892'	
JB/GR		Other Services	
Run Number		27-Apr-2016	
Depth Driller		Two	
Depth Logger		12745 FT	
Bottom Logged Interval		6128 FT	
Top Log Interval		6124 FT	
Open Hole Size		Surface	
Type Fluid		7.875"	
Density / Viscosity		Water	
Max. Recorded Temp.		8.34 lbm/gal	
Estimated Cement Top		217°F	
Time Well Ready		80 FT	
Time Logger on Bottom		ROA	
Equipment Number		4:00 P.M.	
Location		HD-0361	
Recorded By		Fort Lupton, CO	
Witnessed By		J. Morrison	
Borehole Record		Brad Kothe	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing		9 5/8	
Intermediate #1		5 1/2	
Intermediate #2		20	
Liner		Grade	
		J-55	
		110-HCP	
		Top	
		Surface	
		Bottom	
		2024 FT	
		12745 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

Log ran as per customer request
Depth referenced to Marker Joint at 5131-5153 FT
Adjusted 0 FT to correlate with Marker Joint
Log ran from as deep as possible in heel to surface
Recorded with 1500 PSI surface induced pressure
Logging tools were clean and free of any debris upon completion of operations

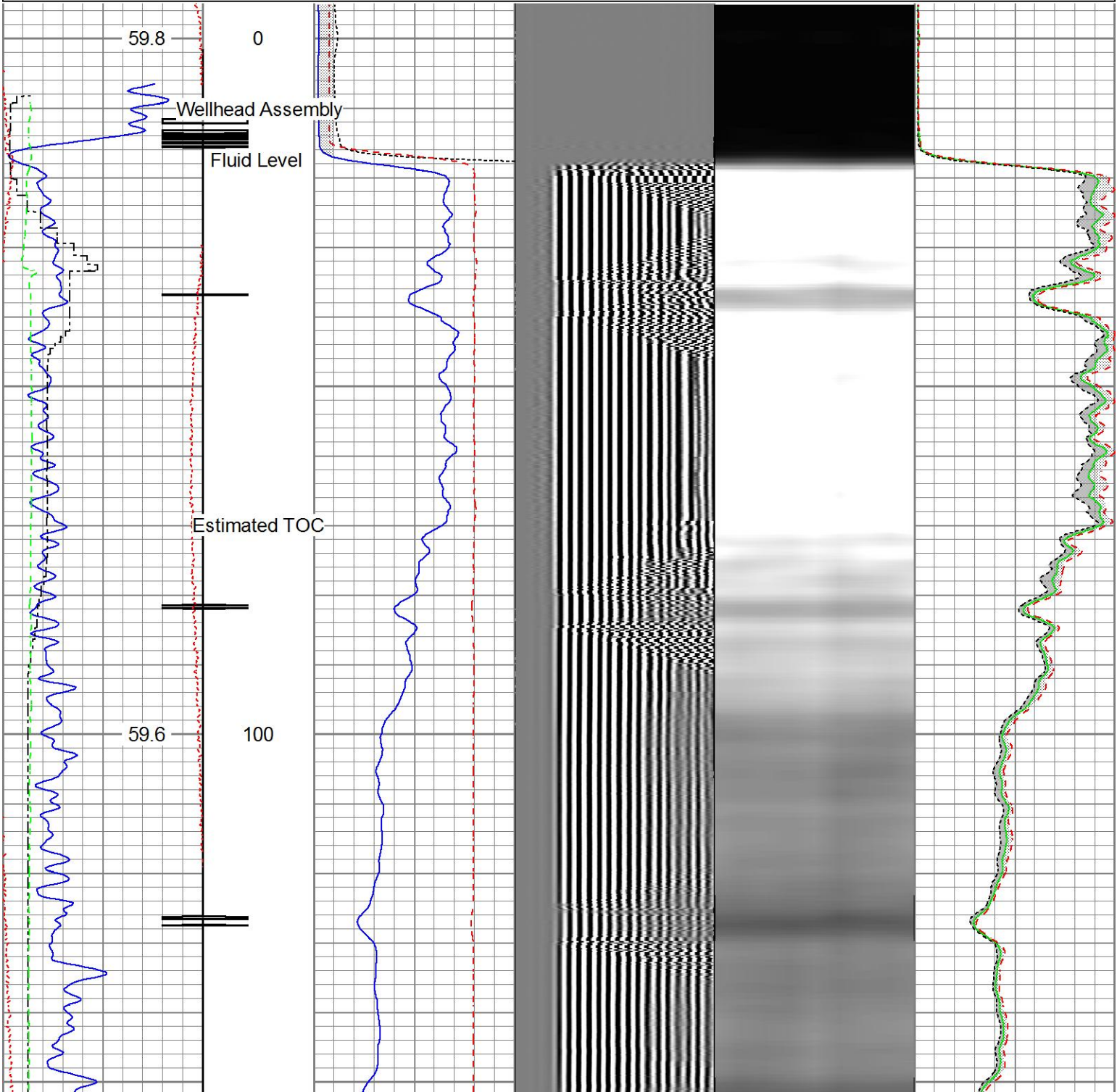
Thank you for choosing FMC Technologies Surface Integrated Services.

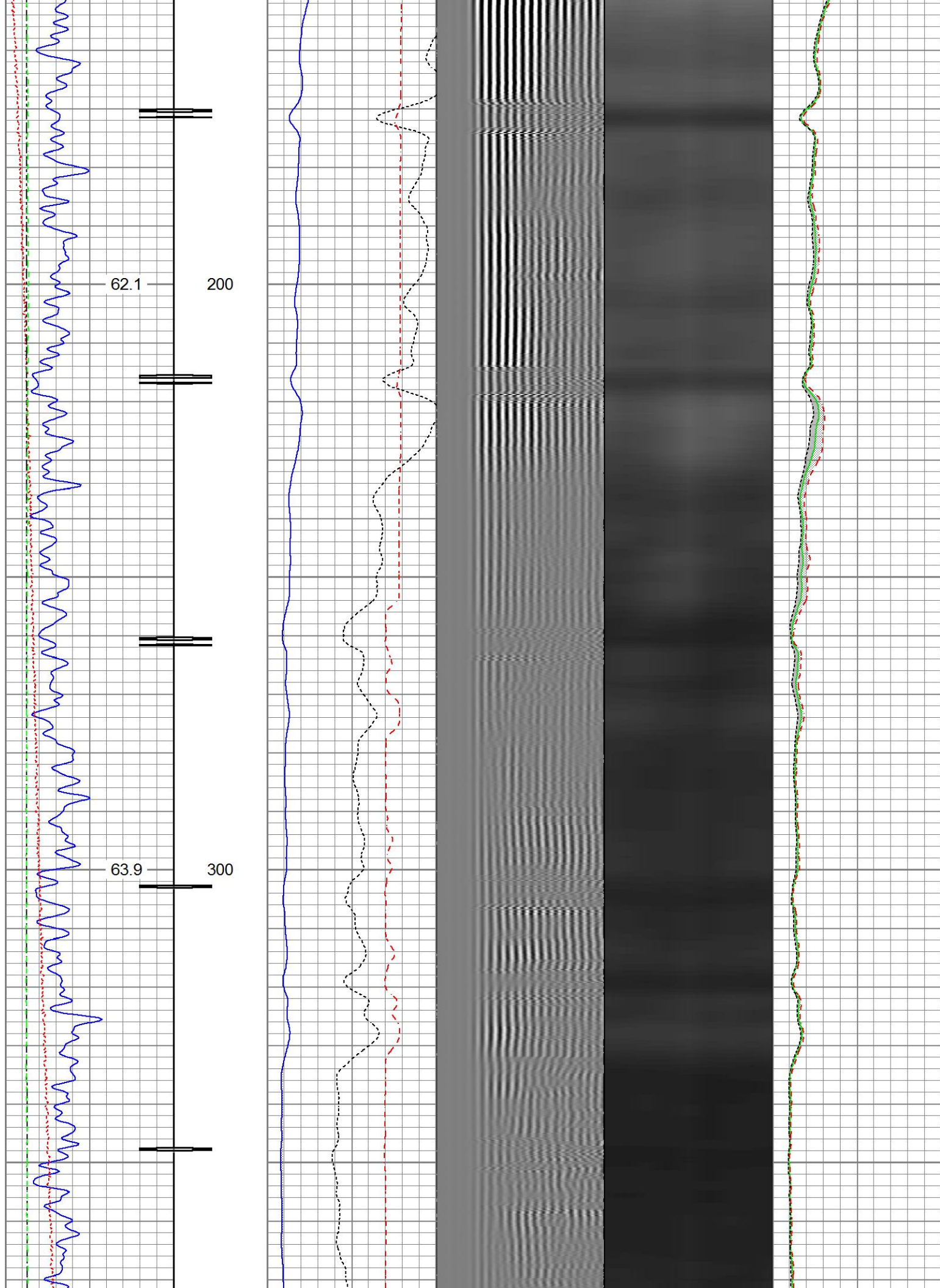


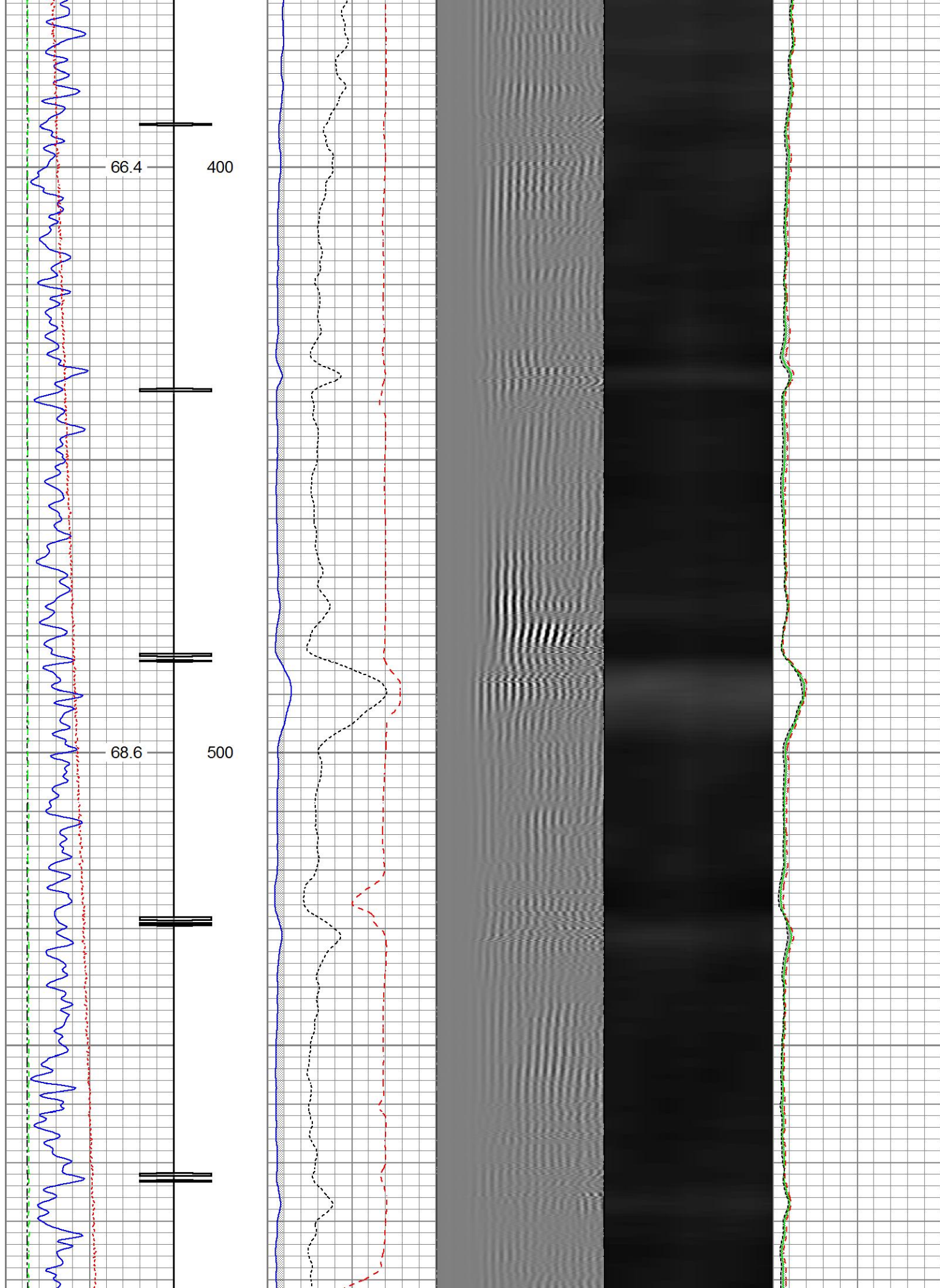
Main Pass

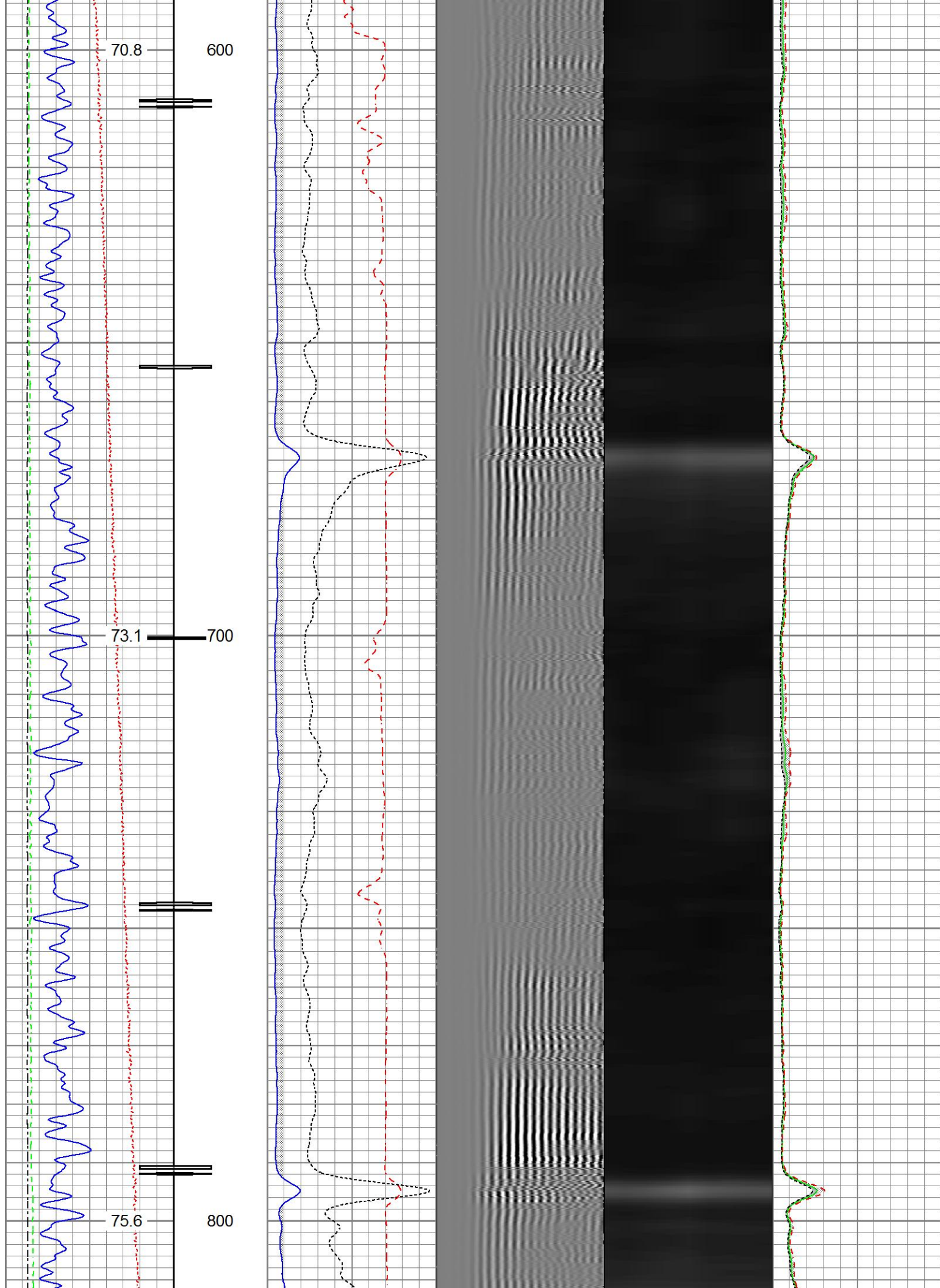
Recorded With 1500 PSI Surface Induced Pressure

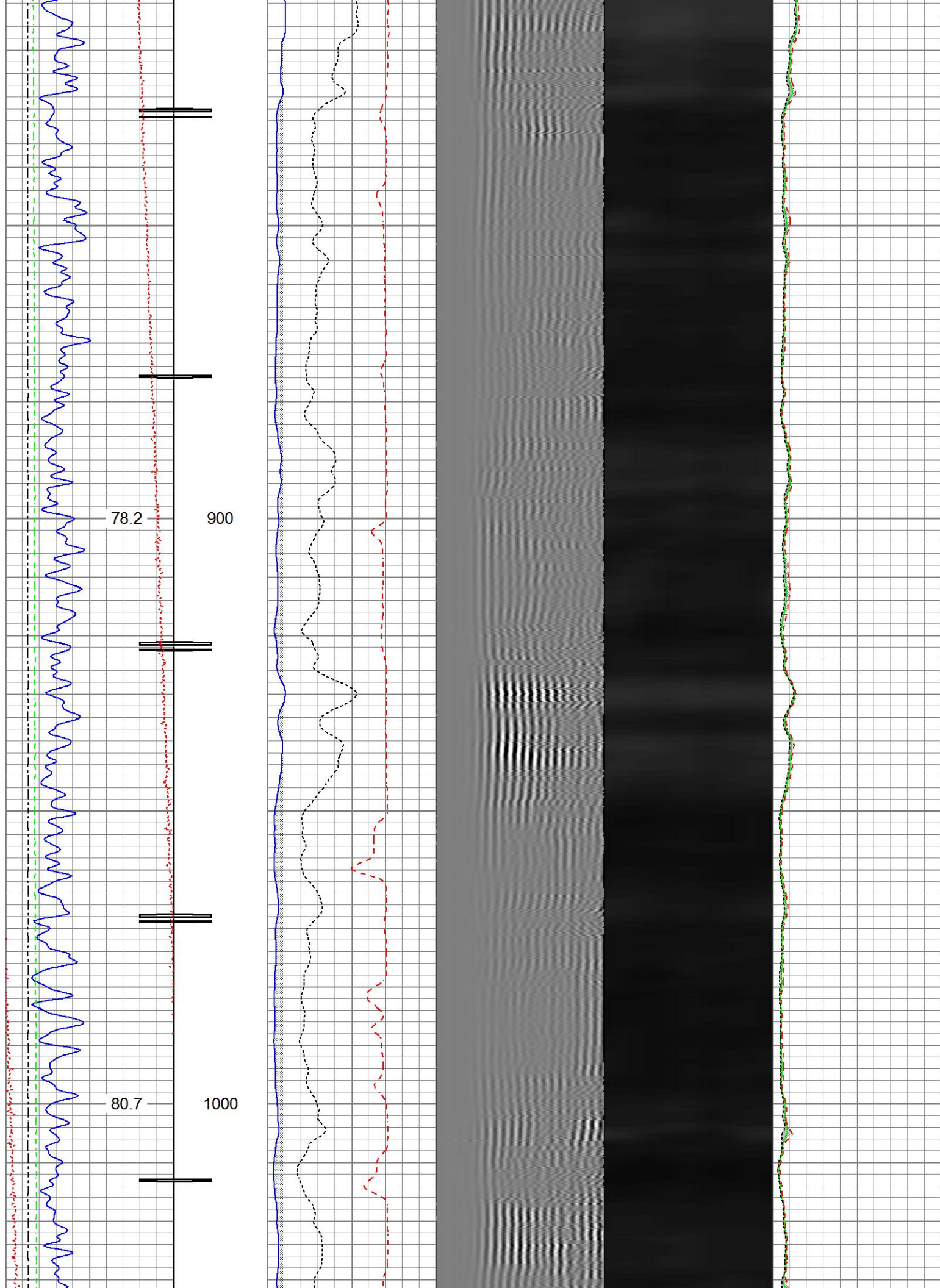
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Minimum Amplitude
Temperature		0 (mV) 20			0 100
0 (degF) 20		3' Travel Time			Maximum Amplitude
Line Speed		650 (usec) 150			0 100
-150 (ft/min)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

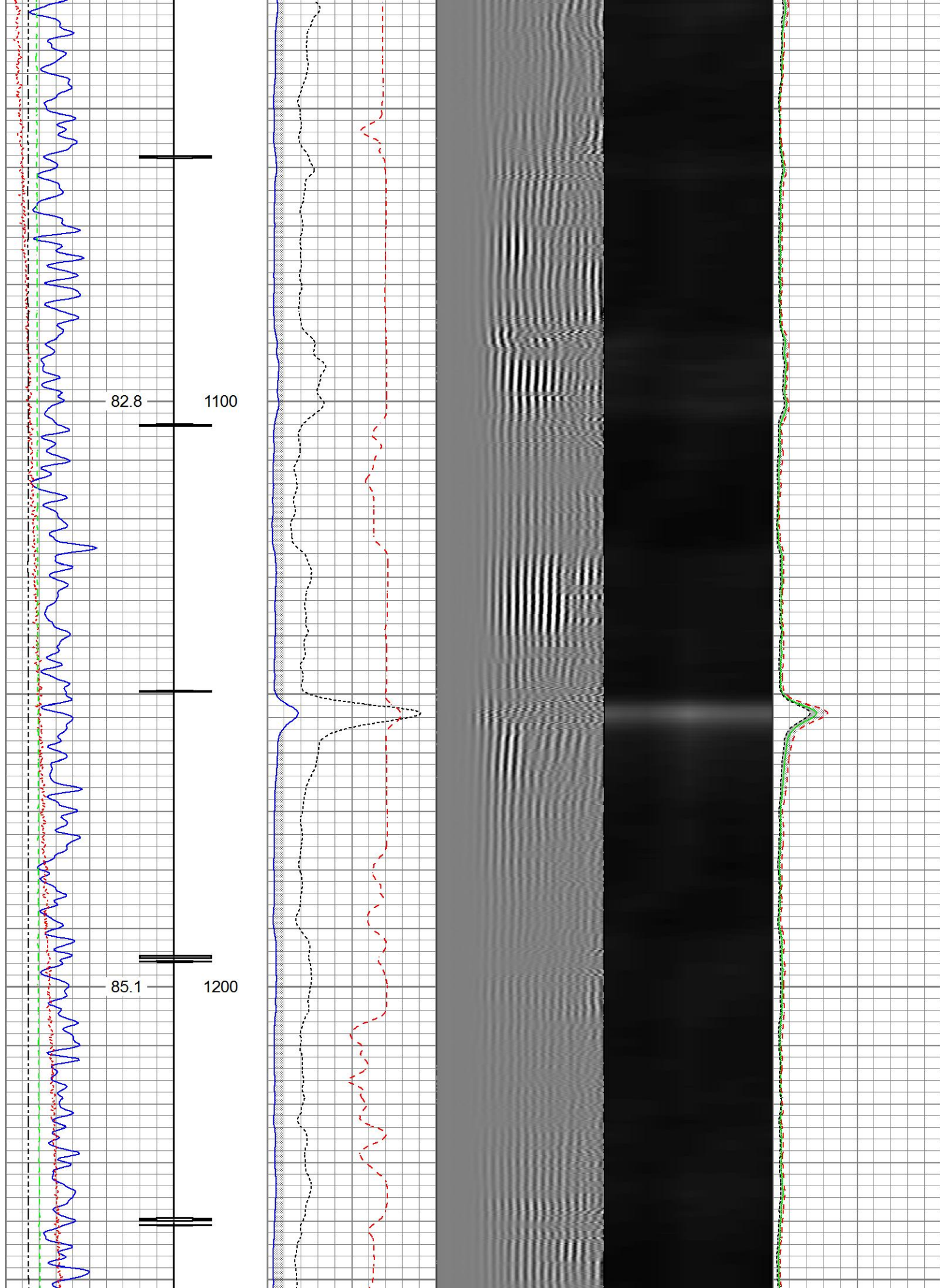


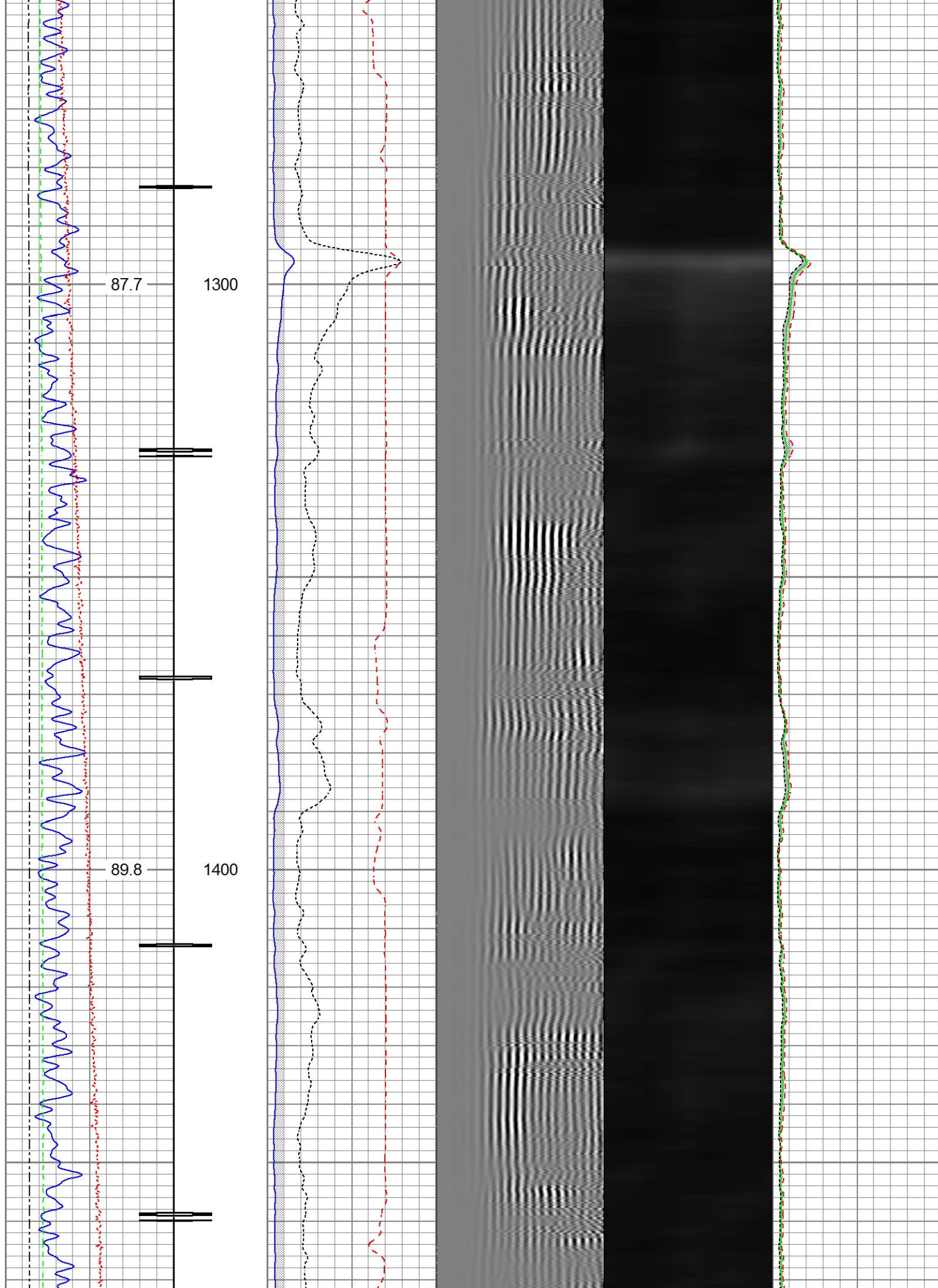


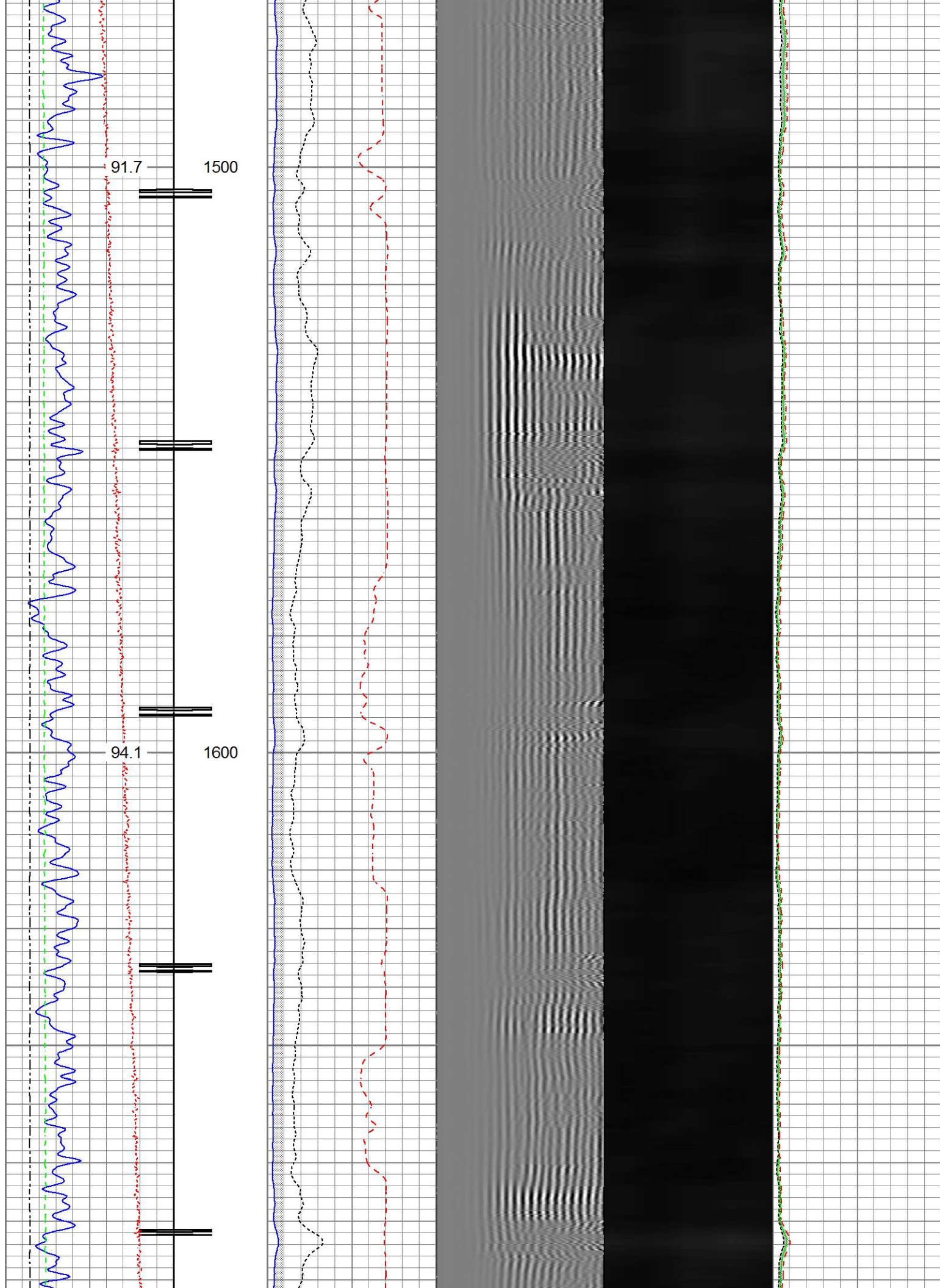


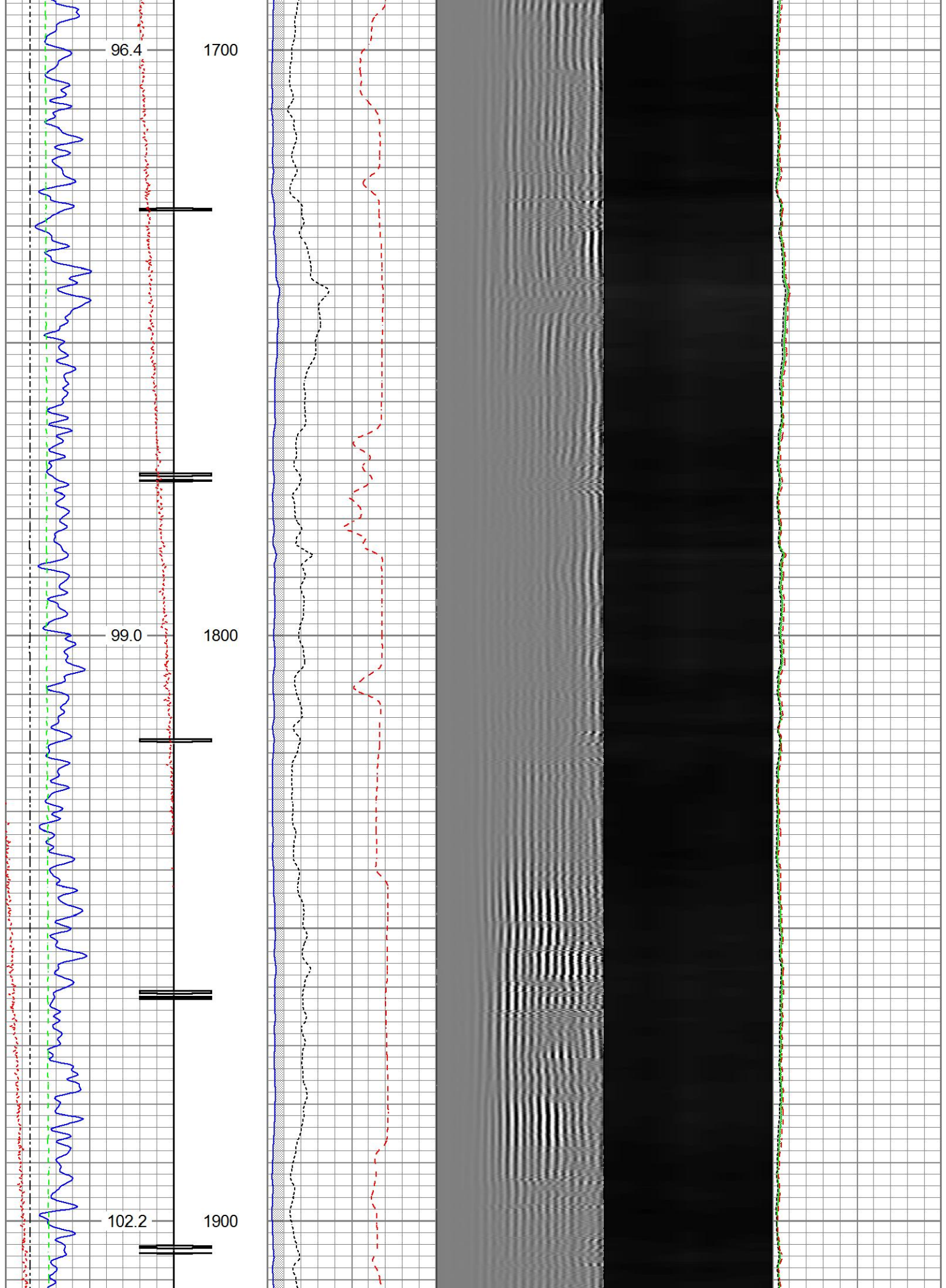


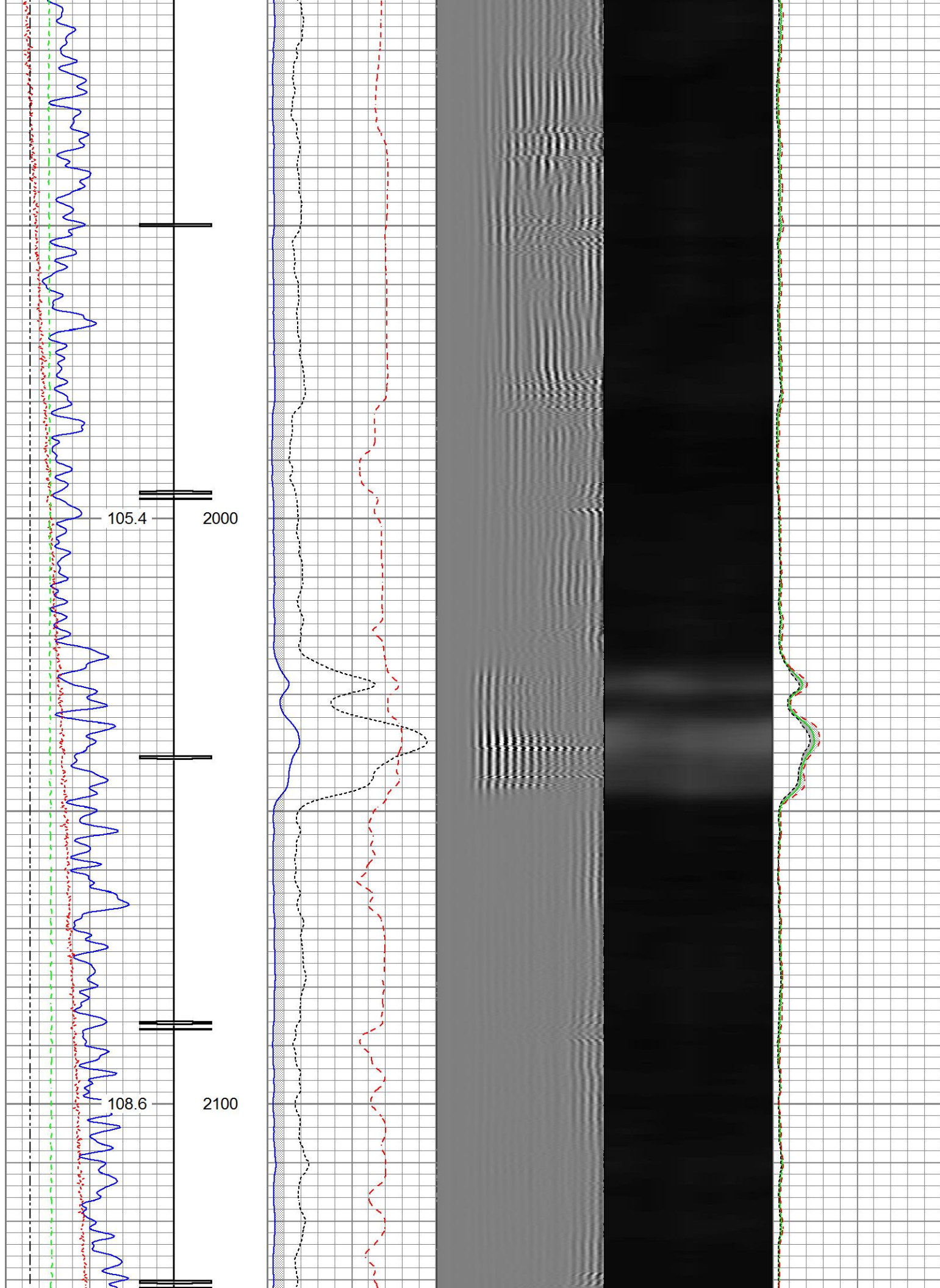


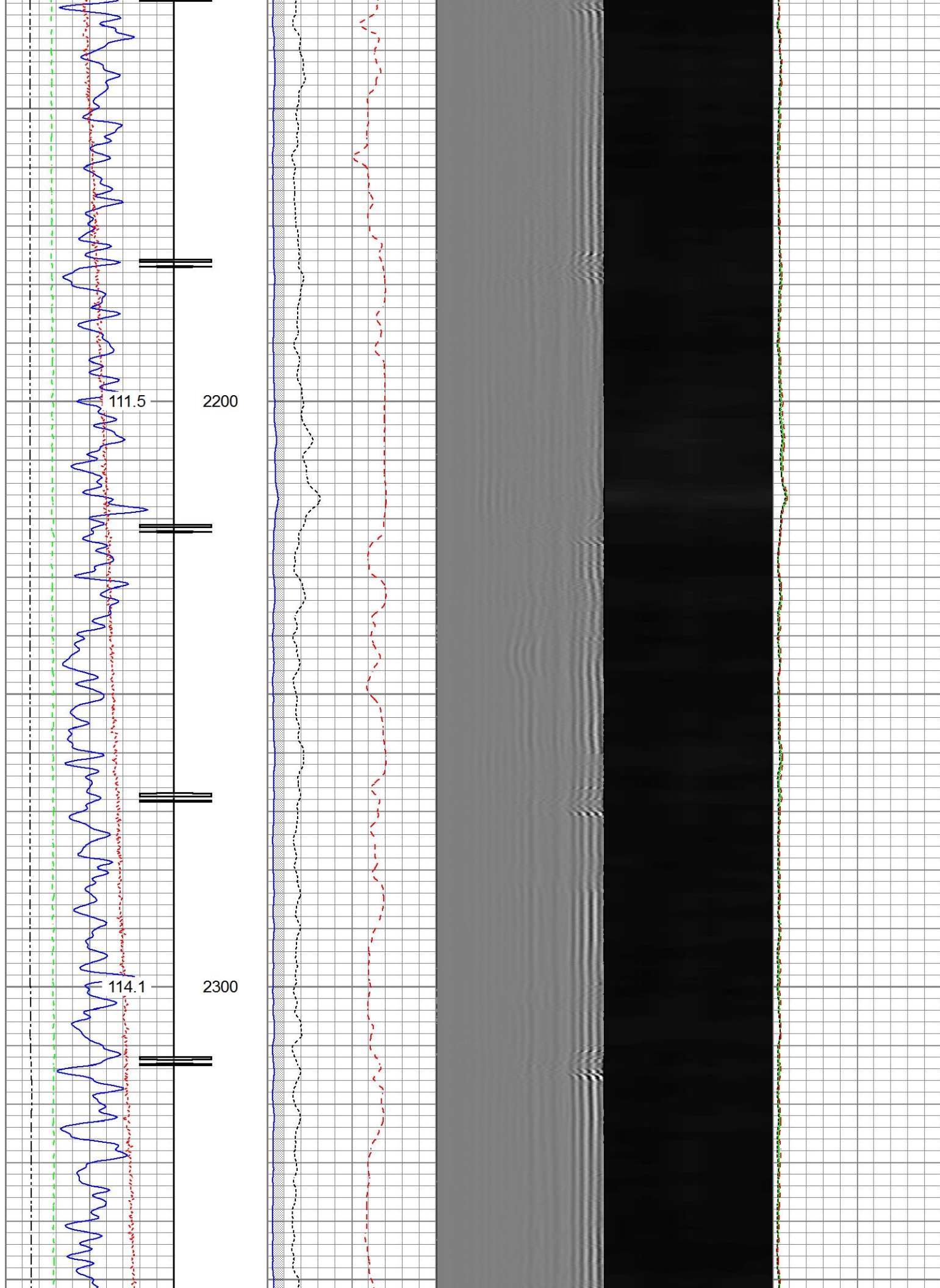


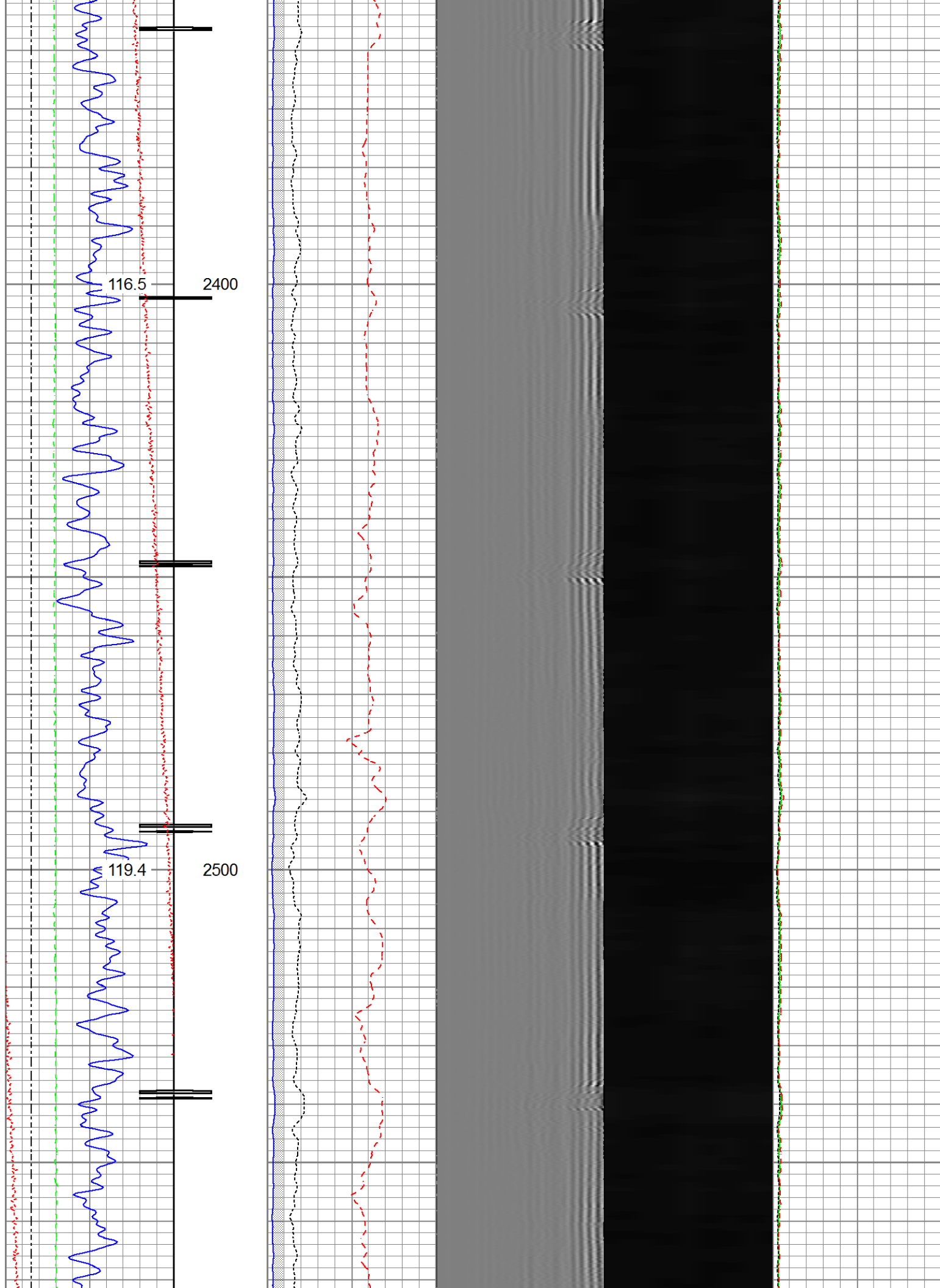


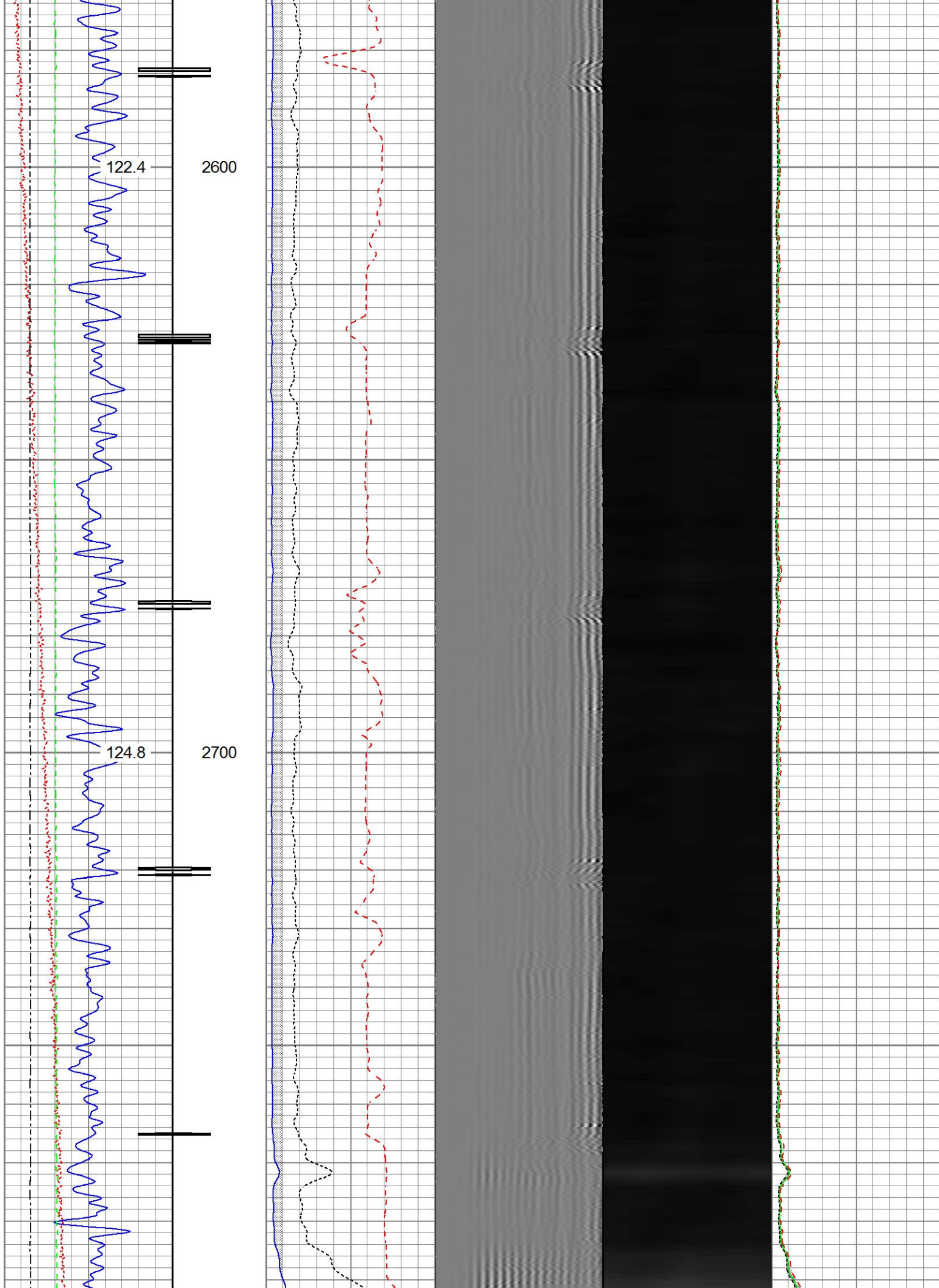


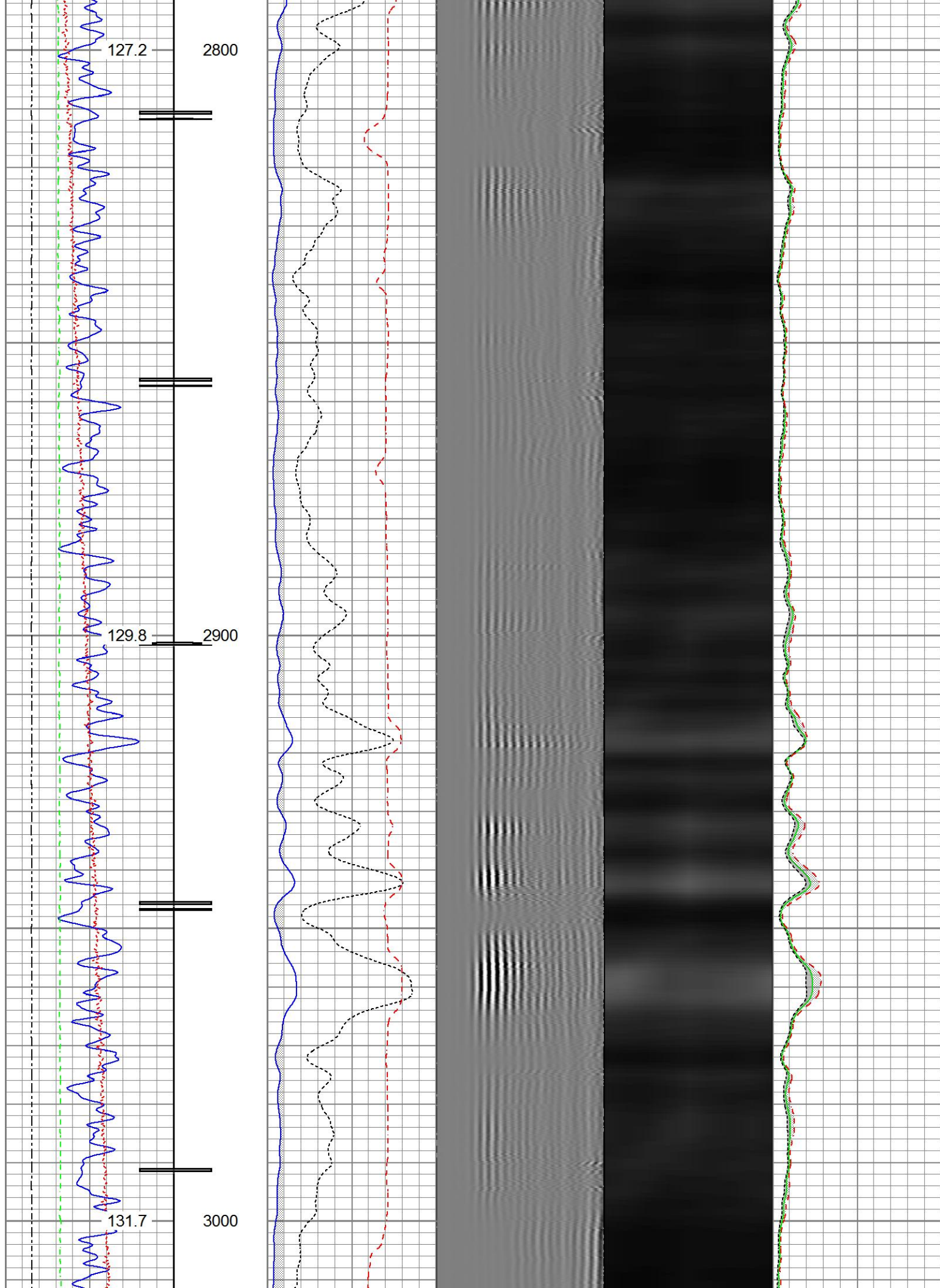


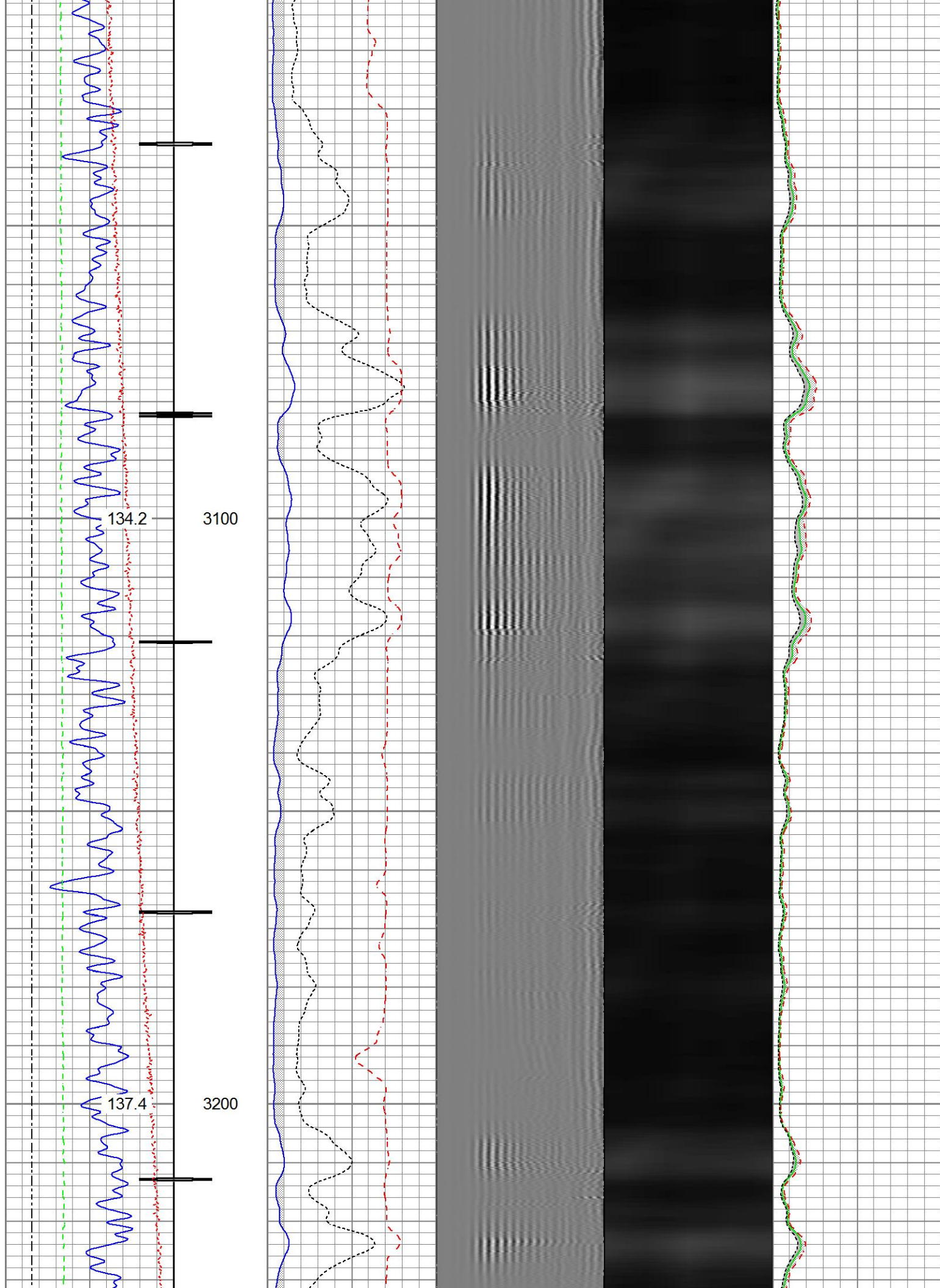


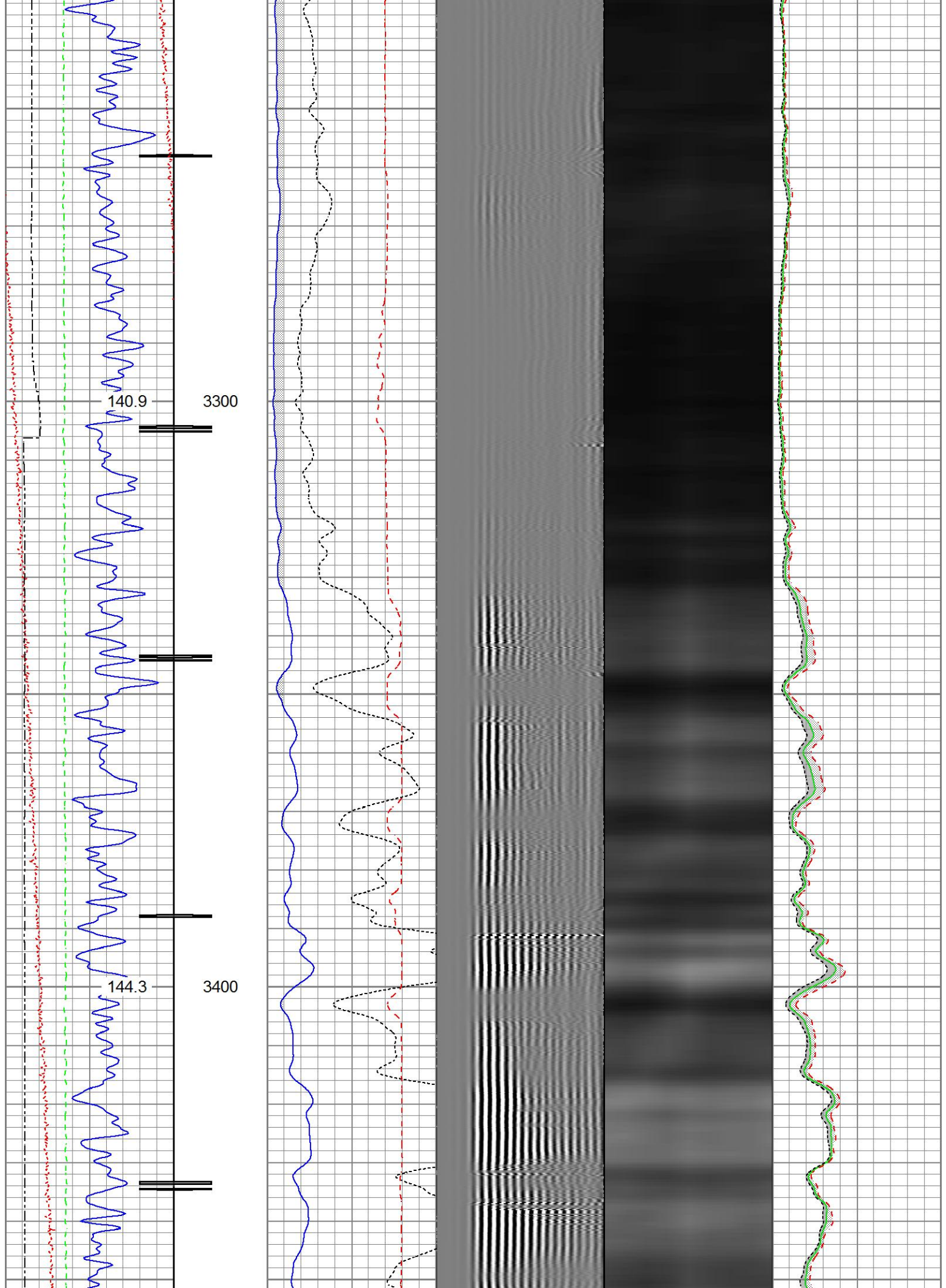


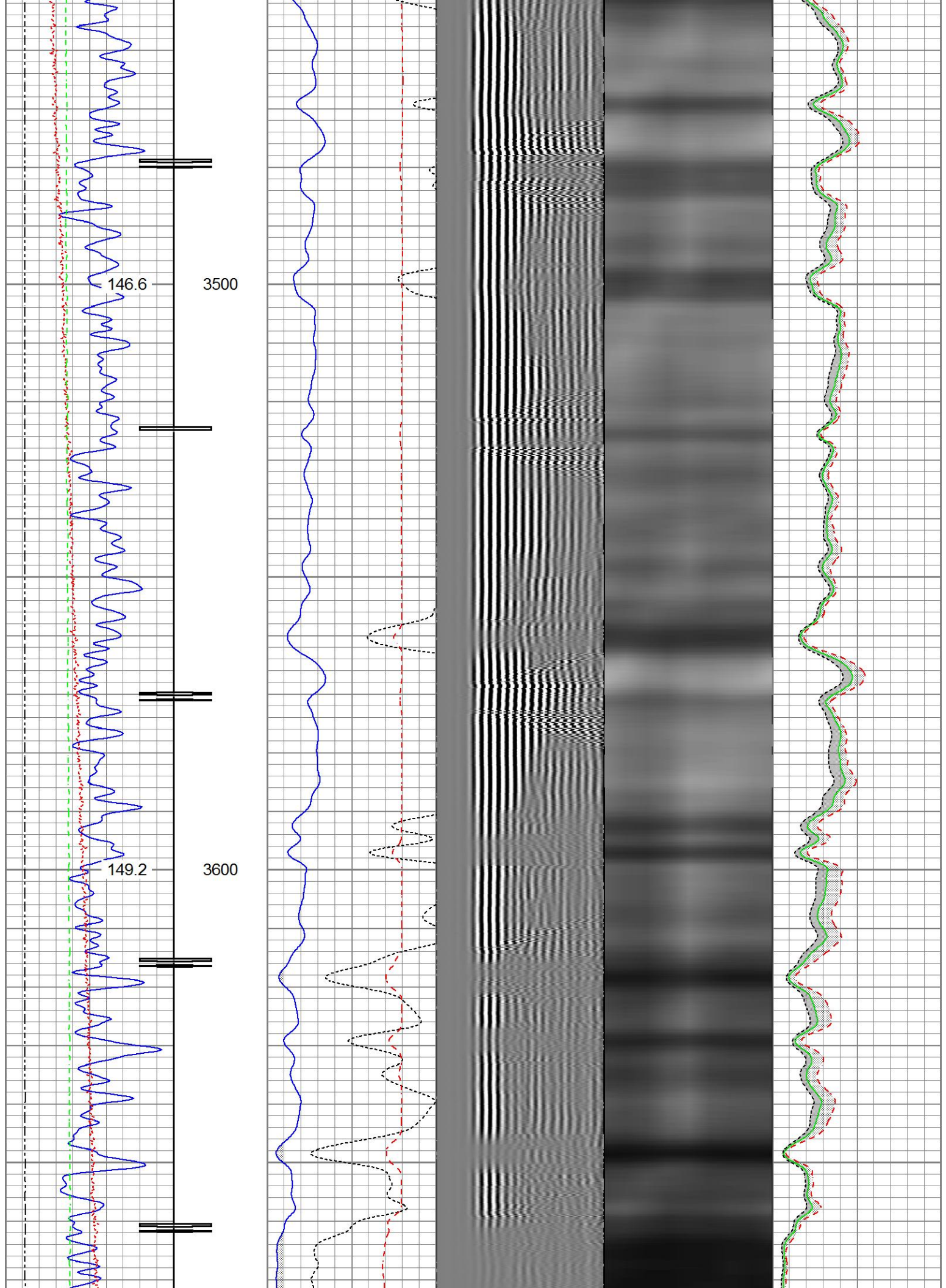


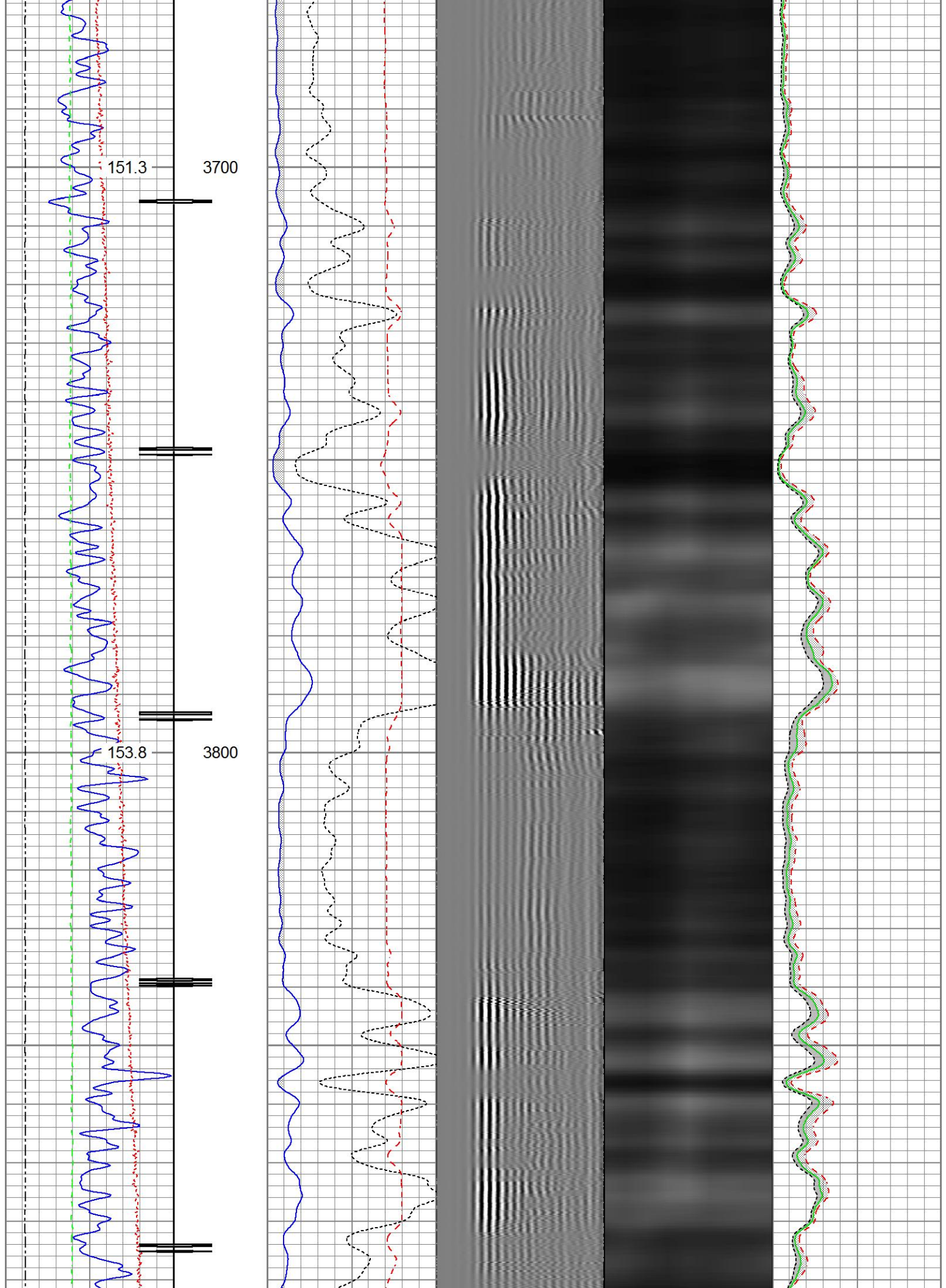


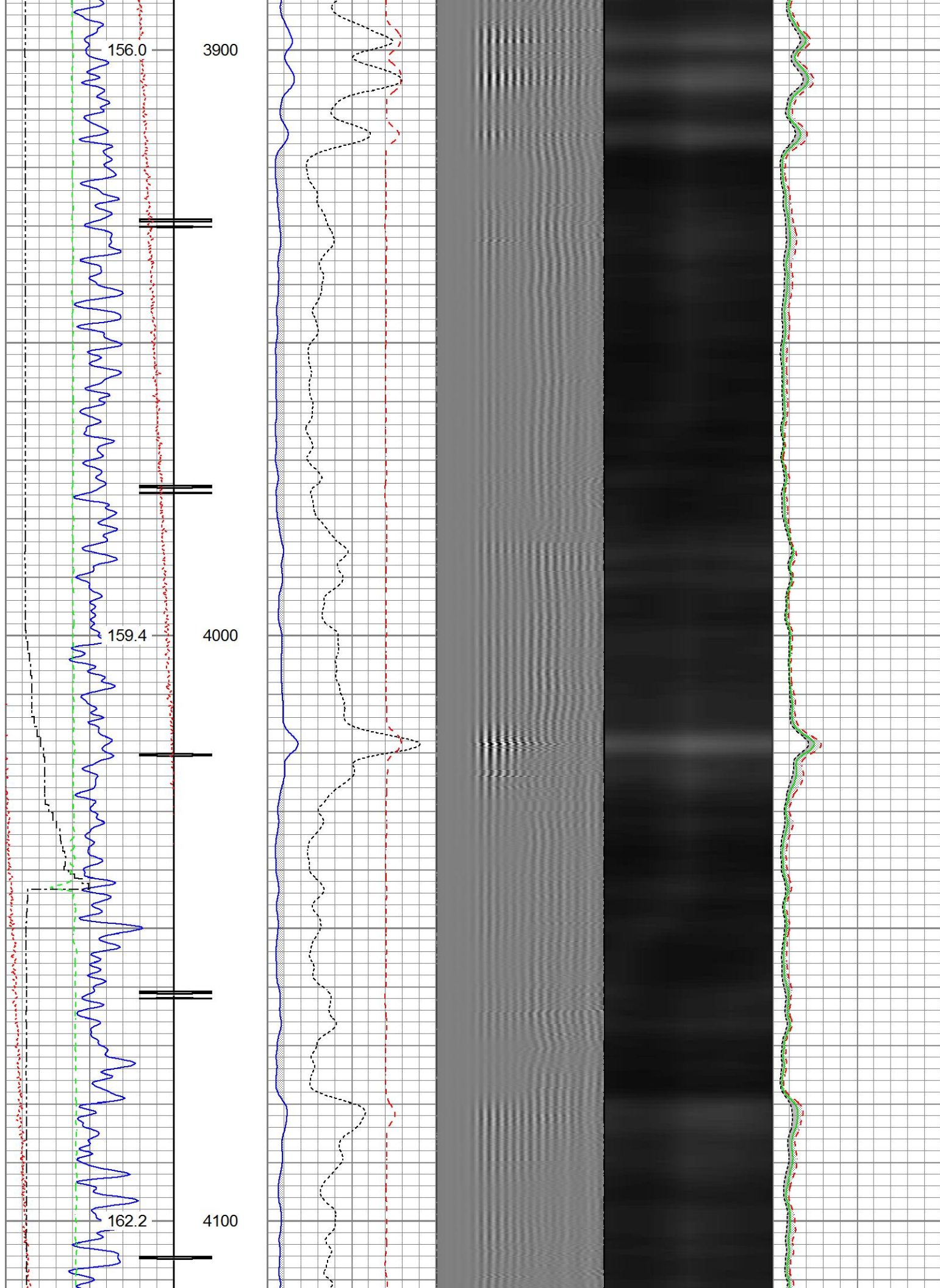


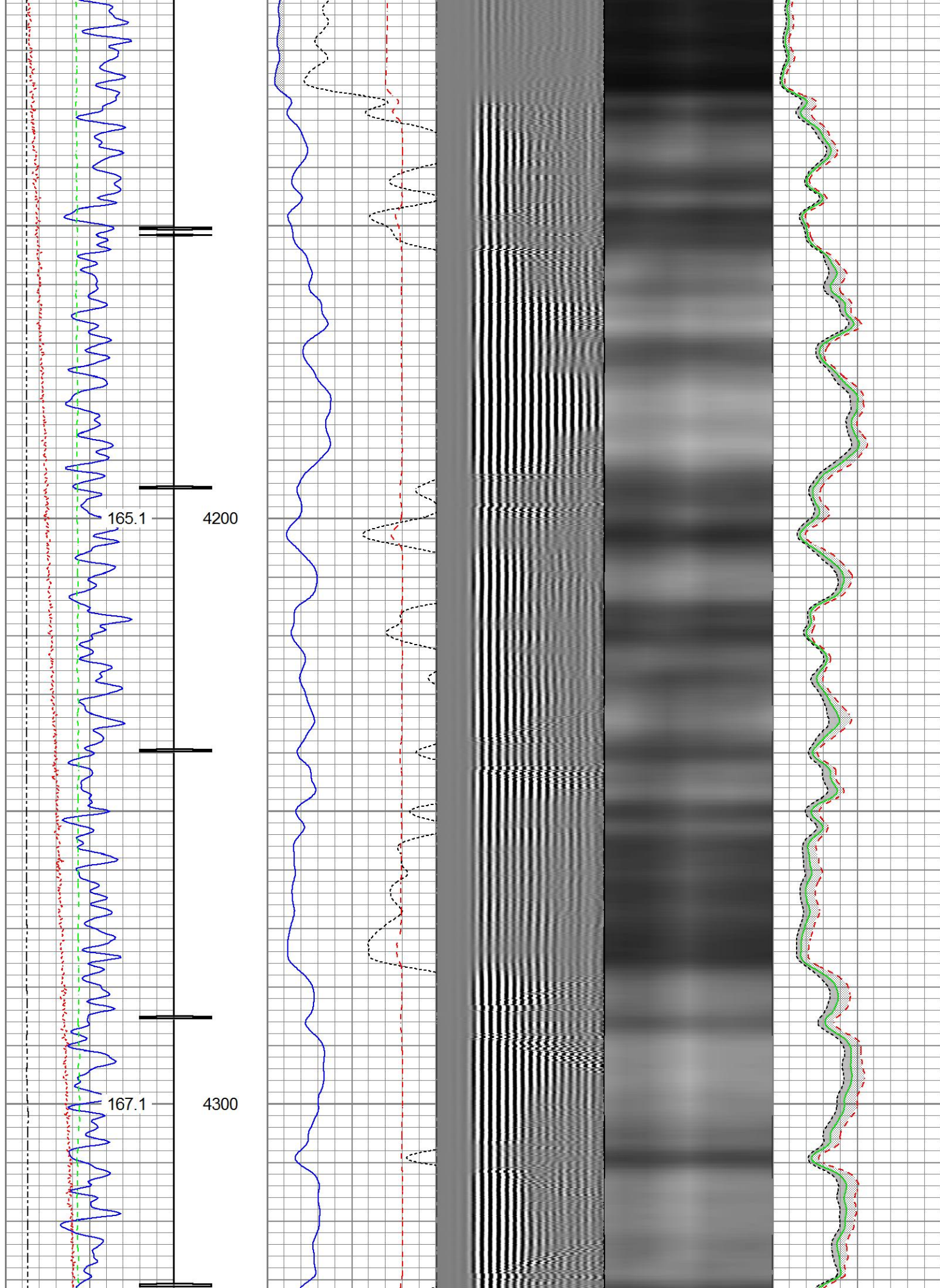


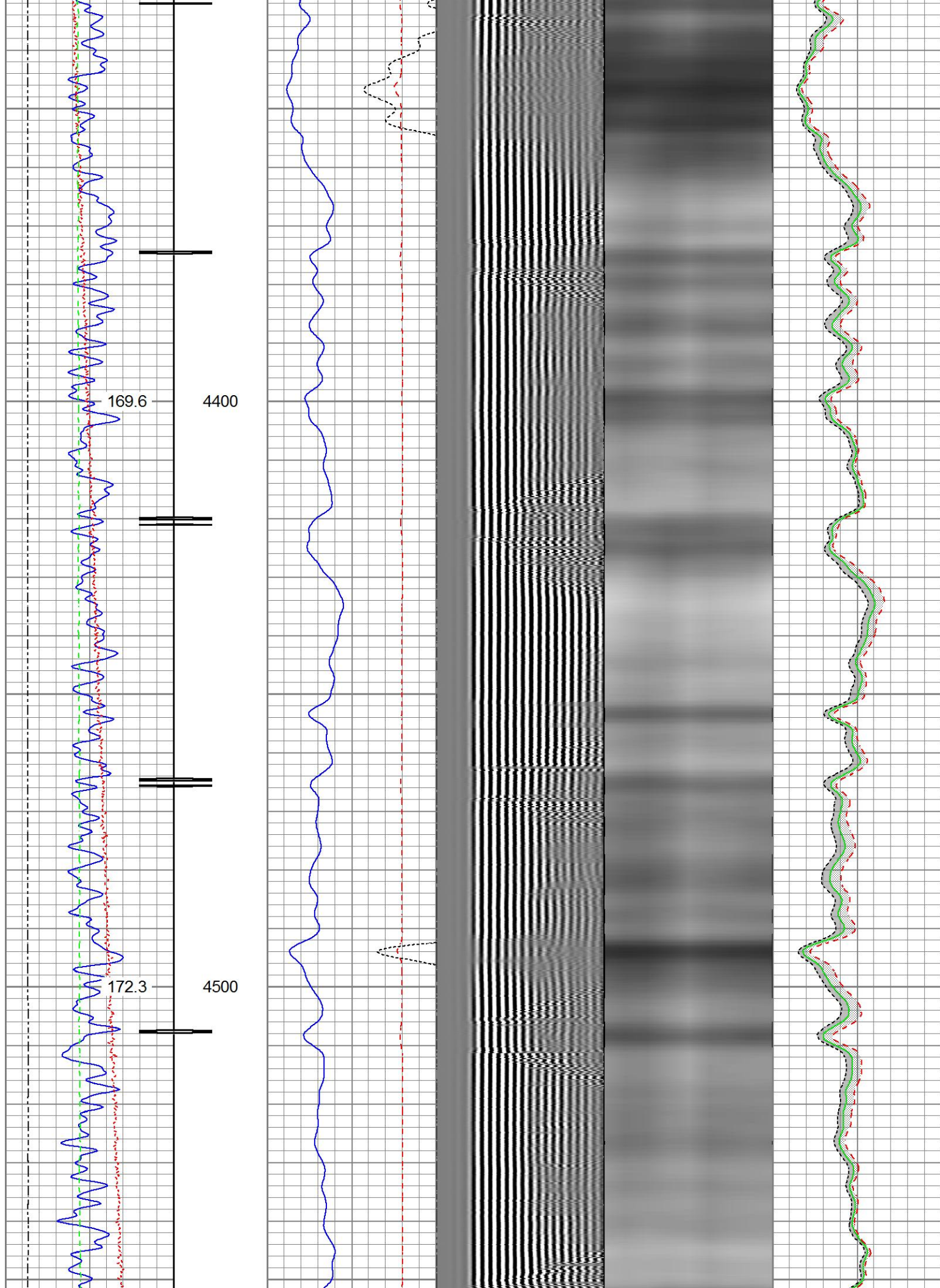


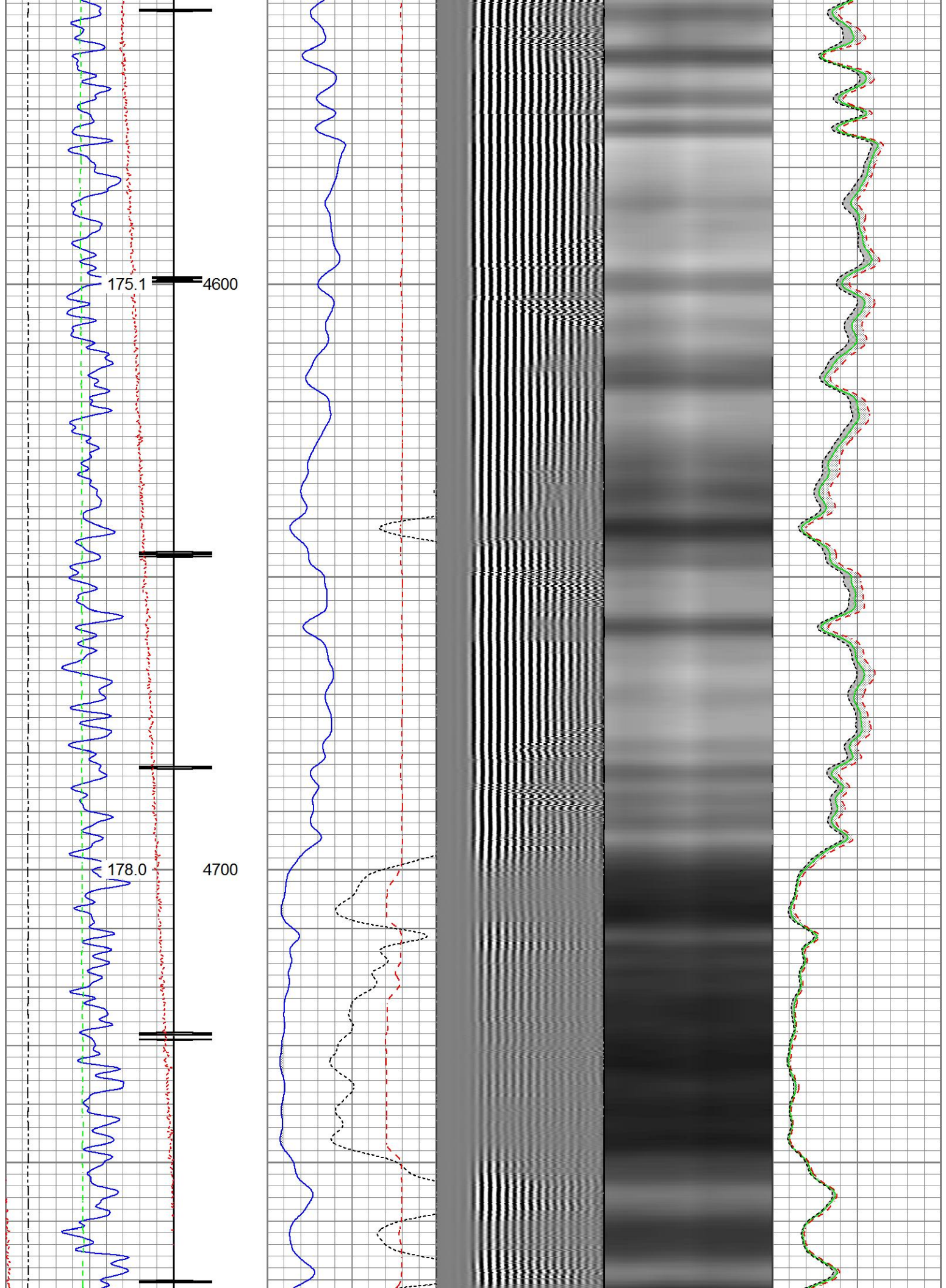


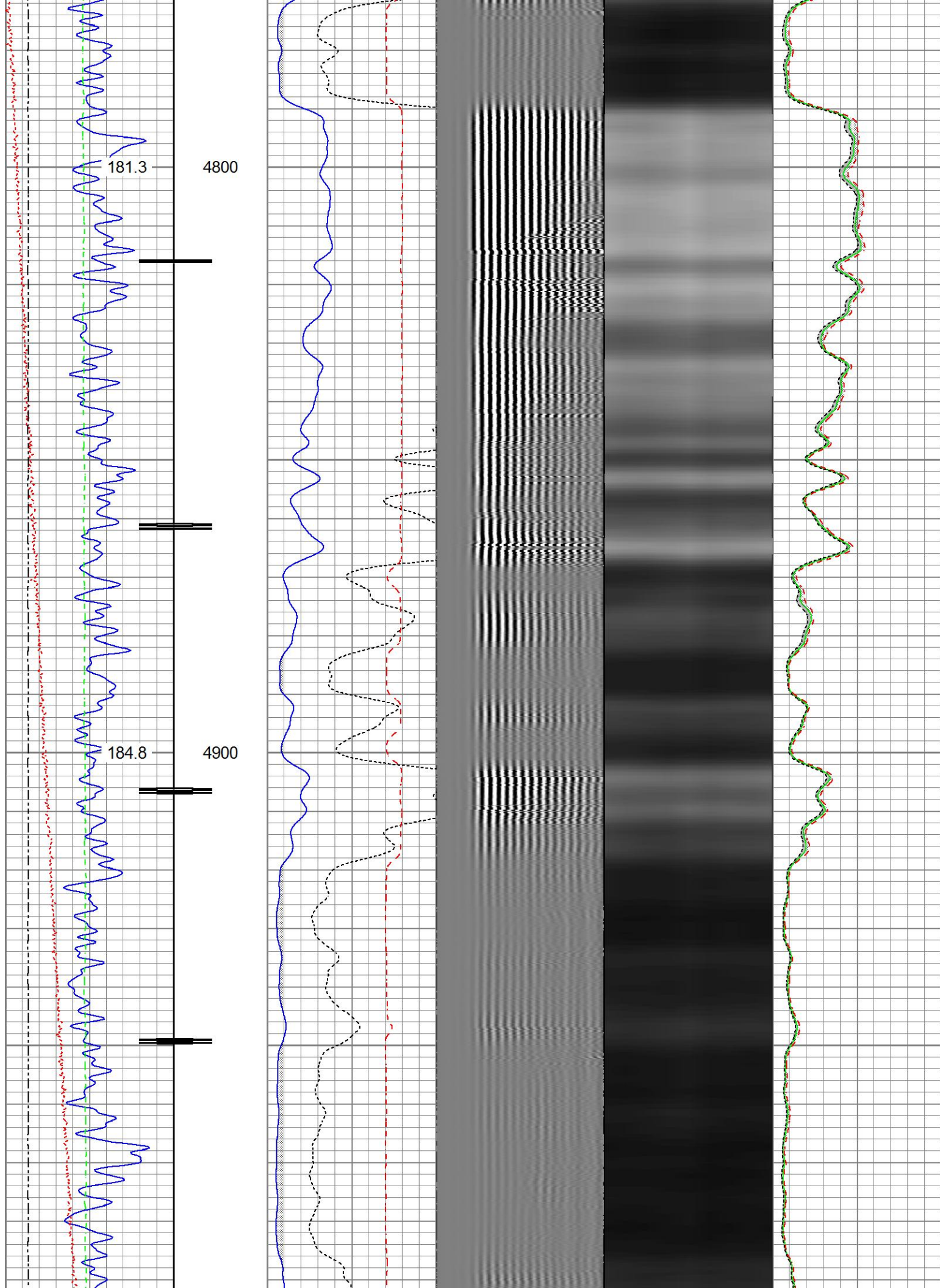


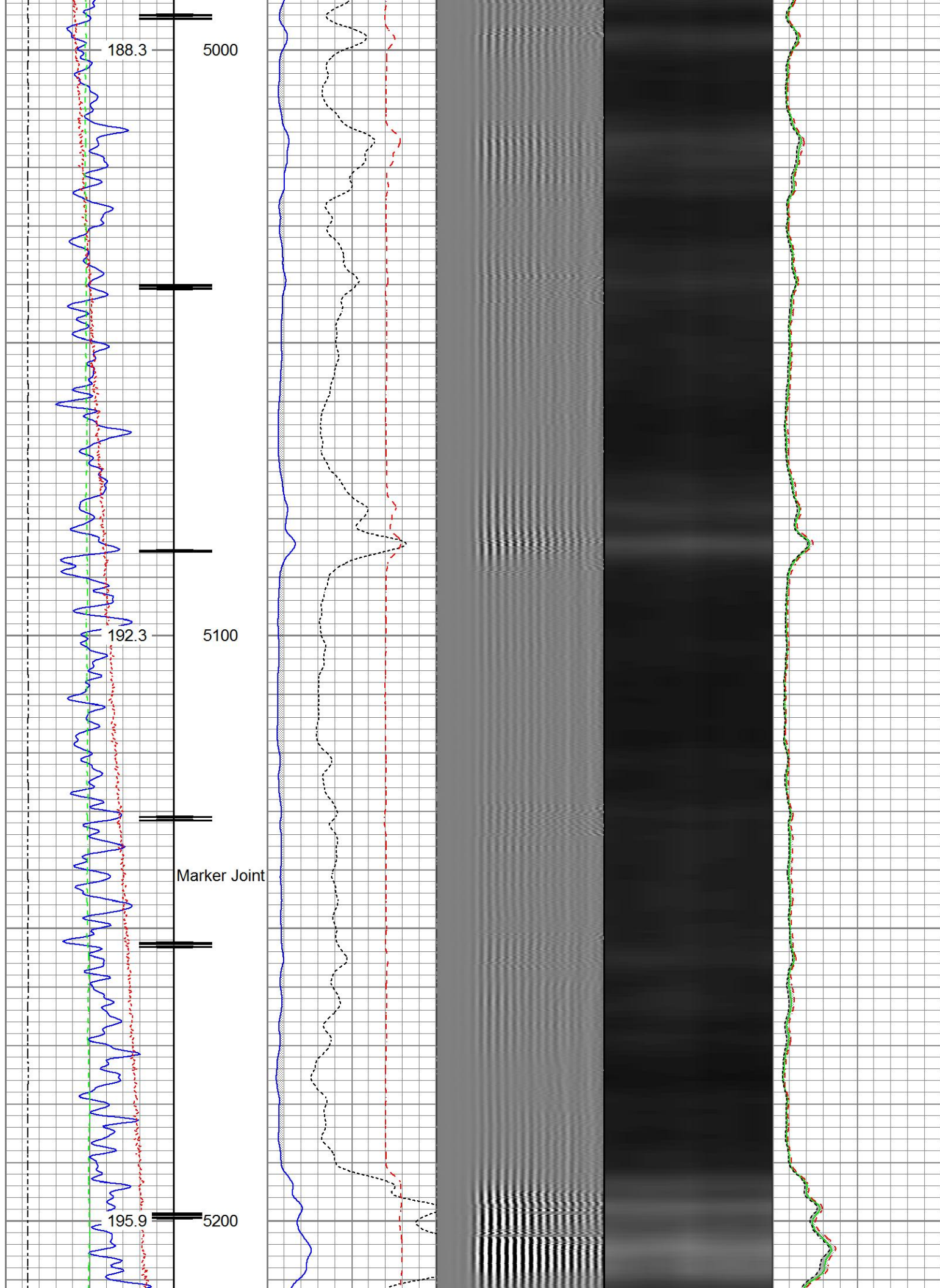


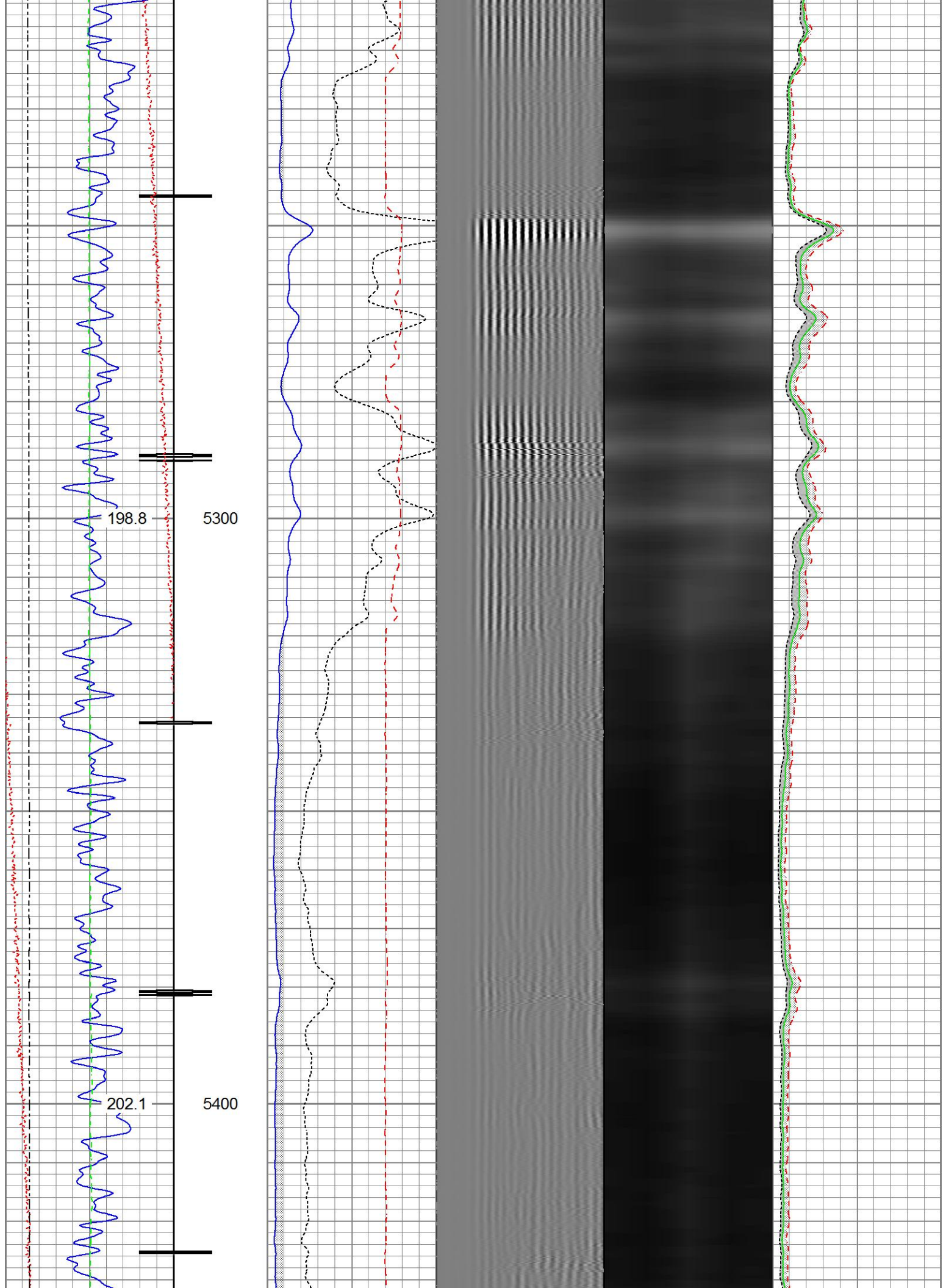


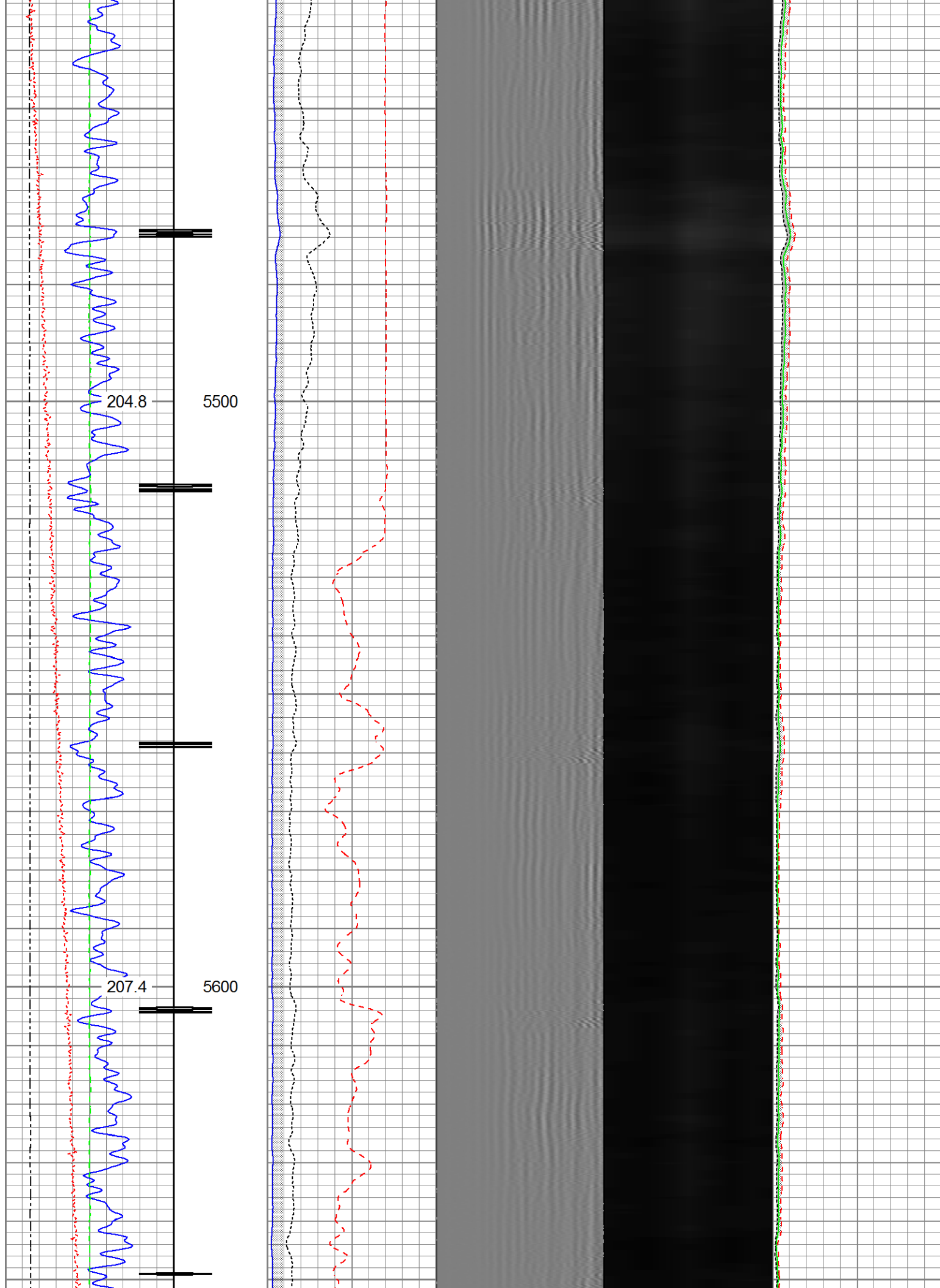


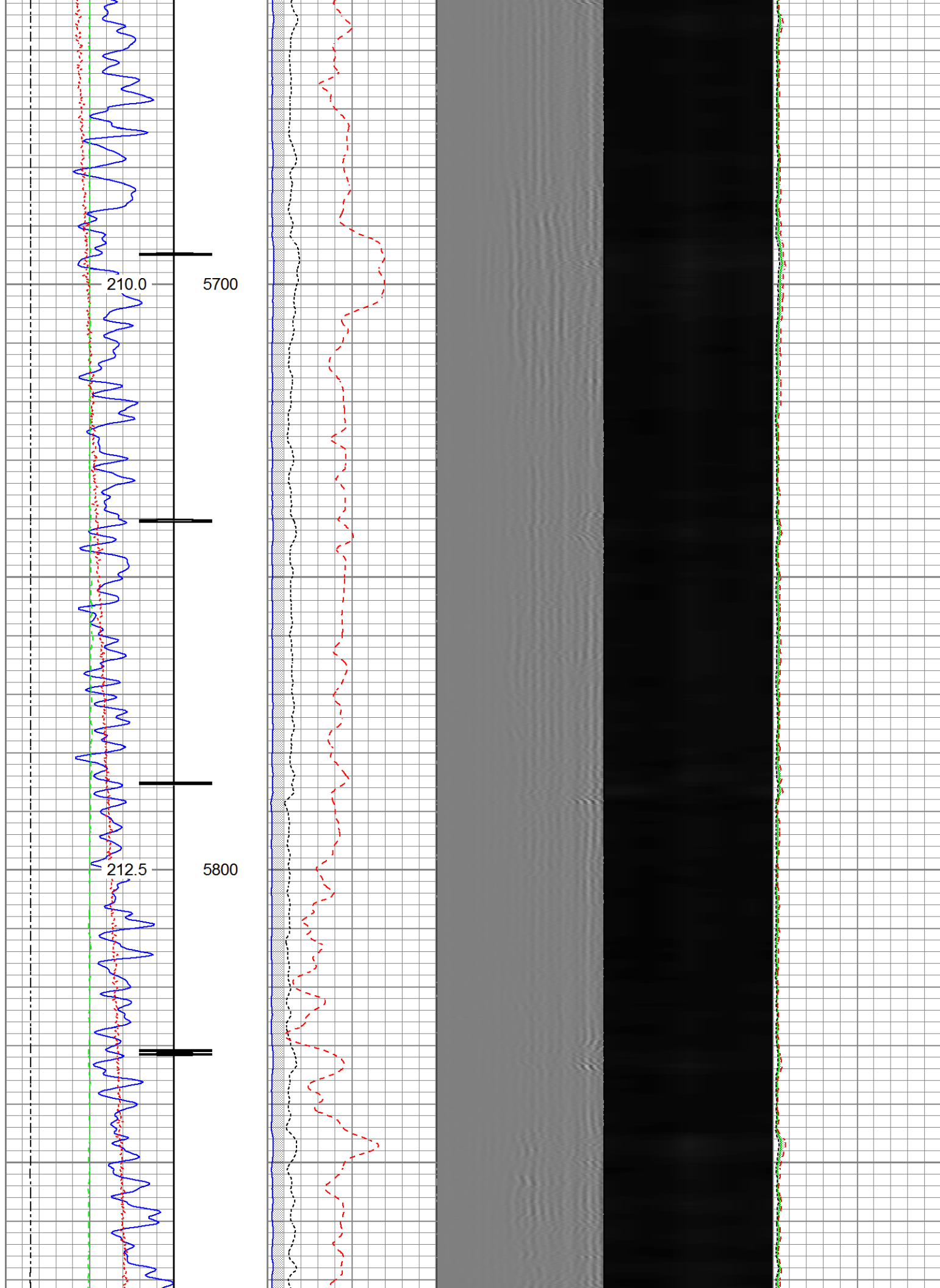


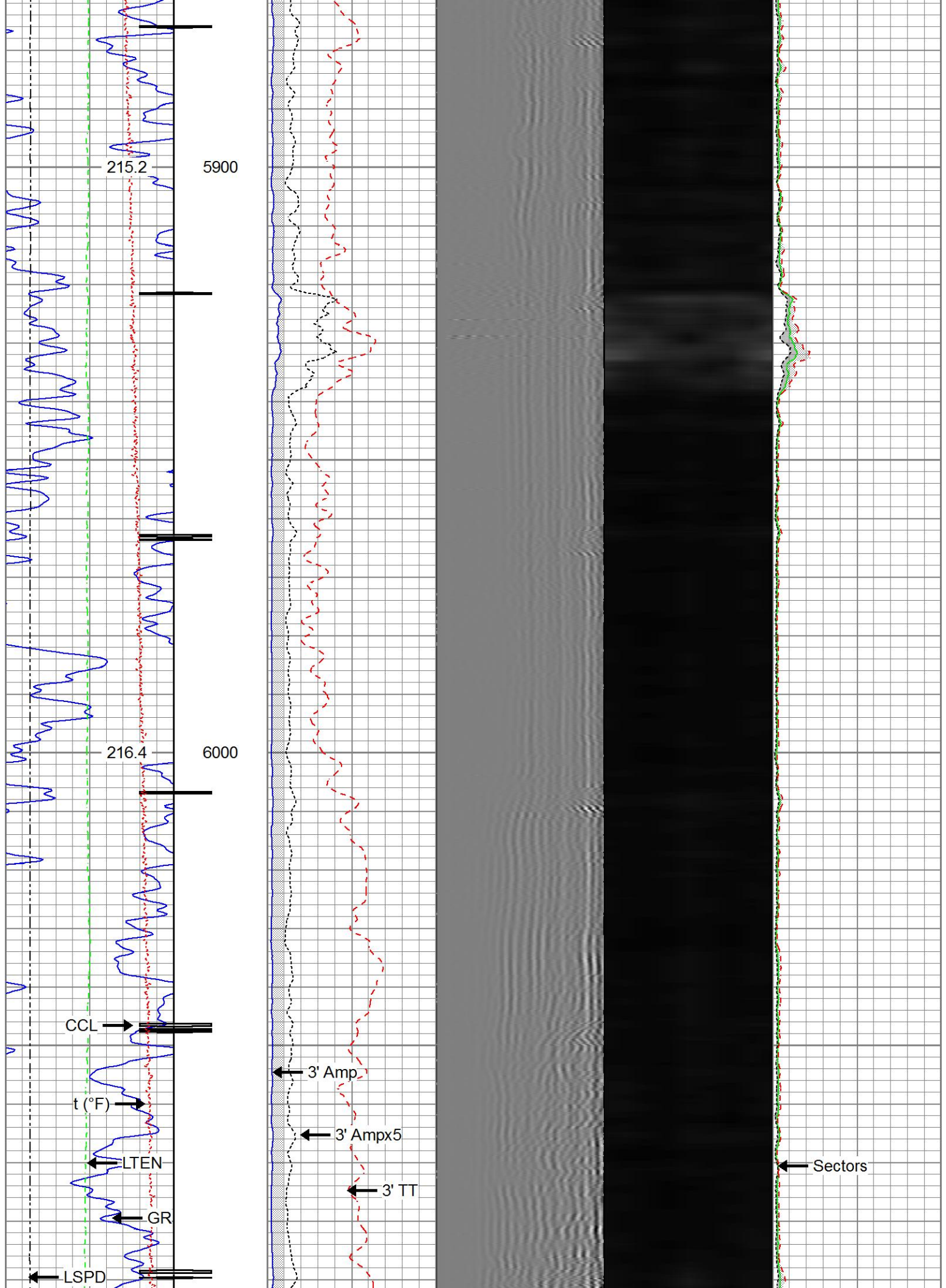


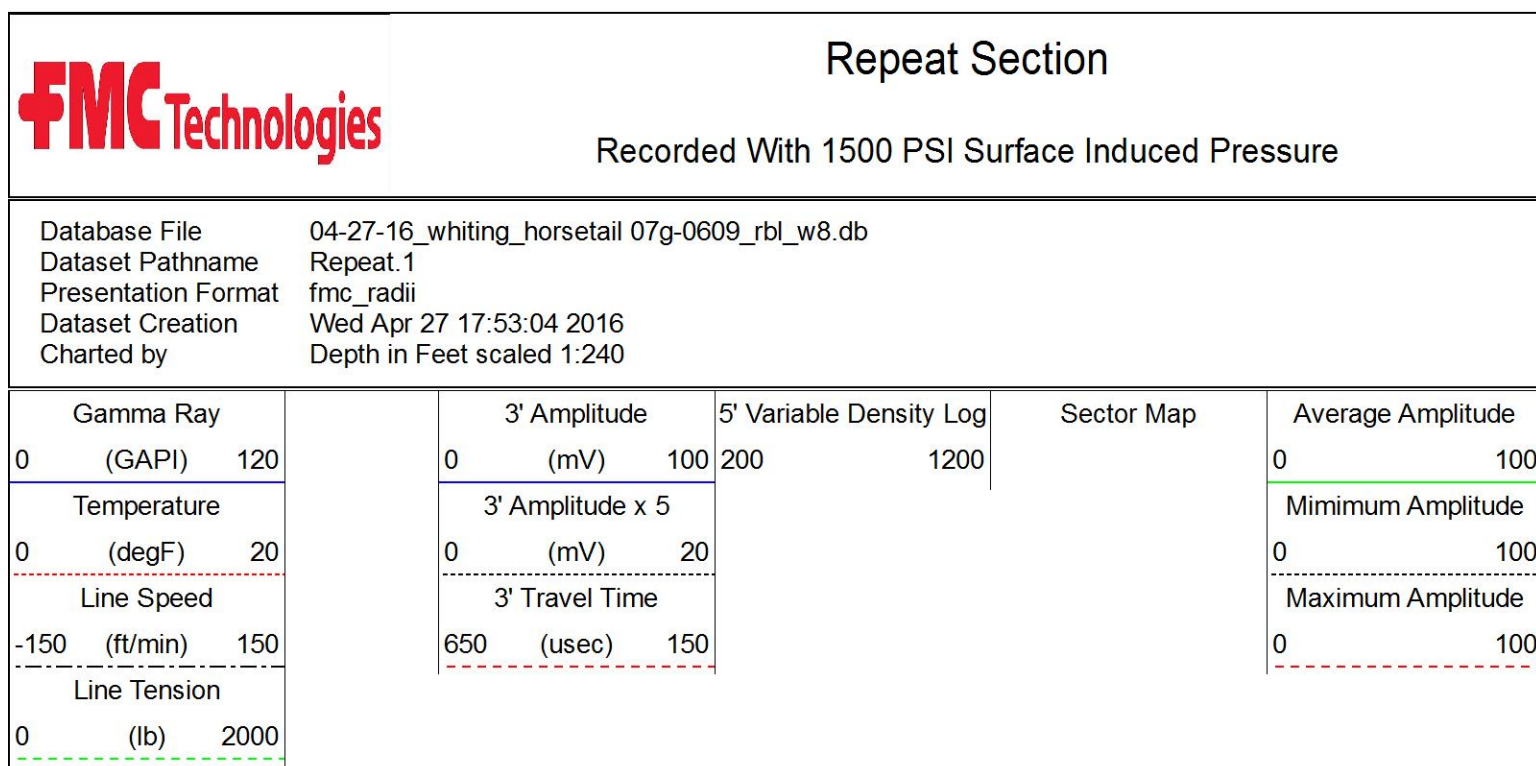
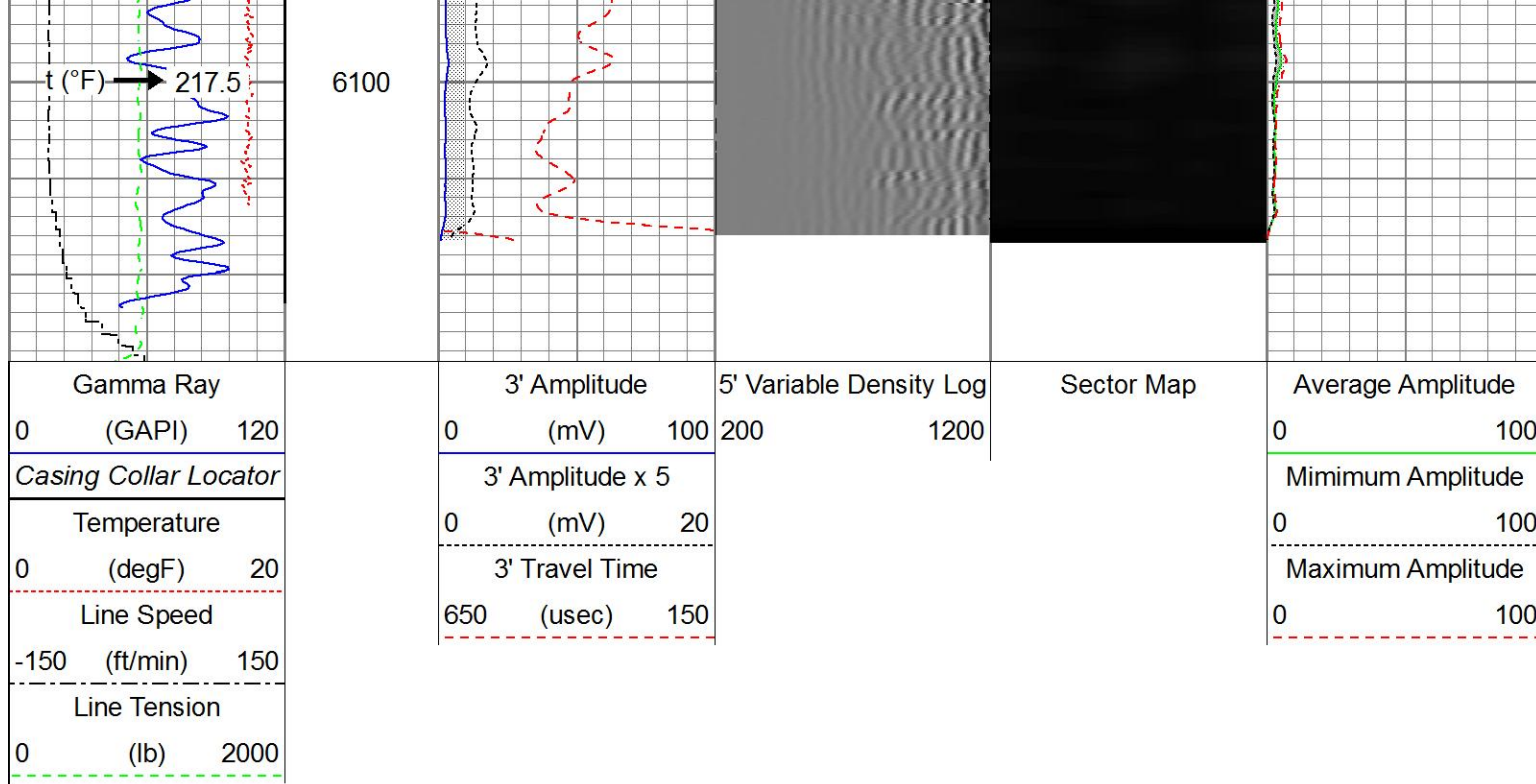


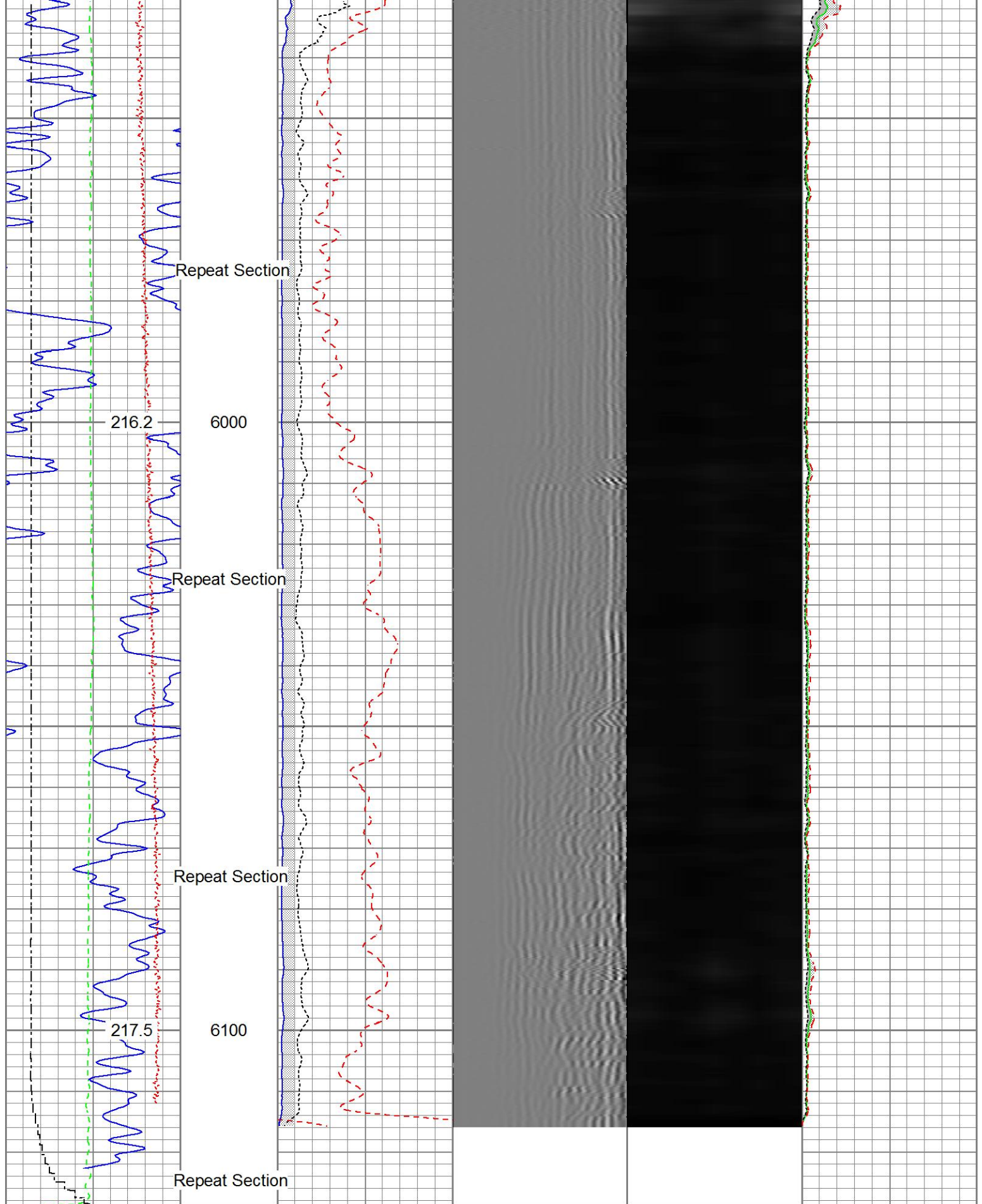












Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Temperature (degF)	3' Amplitude x 5 (mV)			Minimum Amplitude
0 20	0 20			0 100
Line Speed	3' Travel Time			Maximum Amplitude

Line Speed			Travel Time			Maximum Amplitude		
-150	(ft/min)	150	650	(usec)	150	0		100
Line Tension								
0	(lb)	2000						

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
Temp	16.72		Titan_Electric_Cable_Heads-Titan_1-11/161.03 Electric Cable Head with 1" Fishing Neck		1.69	5.40
			Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88.275	2.75	20.00
			Probe_RADII-C-P_RBT_2750 (FW1305-099.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe		2.75	105.00
	14.55					
	14.55					
	14.55					
	14.55					
	14.55					
	14.55					
	14.55					
	14.55					
	14.55					
	14.55					
	13.55					
HeadVolt	10.30					
DCCL CCL	6.51		Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88.275	2.75	20.00
	6.51					
GR	3.77		Probe_GR_CCL-P_CGR_2750_S (FW1214.543) Probe 2-3/4" Digital CCL / Gamma Ray Combined		2.75	55.00
			Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88.275	2.75	20.00

Dataset:	04-27-16_Whiting_Horsetail 07G-0609_RBL_W8.db: field/well/run1/Main.2
Total length:	23.40 ft
Total weight:	225.40 lb
O.D.:	2.75 in

Calibration Report

Database File	04-27-16_Whiting_Horsetail 07G-0609_RBL_W8.db
Dataset Pathname	Main.2
Dataset Creation	Wed Apr 27 17:50:13 2016

Gamma Ray Calibration Report

Serial Number:	FW1212-026		
Tool Model:	P_CGR_2750_S		
Performed:	Sat Feb 06 11:32:54 2016		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.6	cps	
Sensitivity:	0.6061	GAPI/cps	

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1305-098		
Tool Model:	P_RBT_2750		
Calibration Casing Diameter:	5.500	in	
Calibration Depth:	-7.273	ft	

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.361	0.800	71.921	196.913	0.766
CAL	0.389	0.610				
5'	0.000	0.330	0.800	71.921	215.852	0.762
SUM						
S1	0.000	0.344	0.000	100.000	290.791	-0.051
S2	0.000	0.387	0.000	100.000	258.339	-0.039
S3	0.000	0.426	0.000	100.000	234.947	-0.041
S4	0.000	0.426	0.000	100.000	234.811	-0.041
S5	0.000	0.387	0.000	100.000	258.655	-0.045
S6	0.000	0.380	0.000	100.000	263.115	-0.046
S7	0.000	0.358	0.000	100.000	279.707	-0.063
S8	0.000	0.348	0.000	100.000	287.398	-0.057

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.389	0.610	1.000	0.000

Air Zero Calibration, performed Wed Apr 27 09:52:20 2016:

	Raw (v)	Calibrated (v)	Results
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	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	Horsetail 07G-0609
	Field	Wildcat
	County	Weld
	State	Colorado