



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Noble Energy Inc.	
Well		Roth A32-779	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-51328	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
SEC 30		TWP 6N	
RGE 64W		Elevation 4698'	
Other Services		---	
Elevation		K.B. 4728 FT	
D.F. ---		G.L. 4698 FT	
Date		18-NOV-2021	
Run Number		ONE	
Depth Driller		17172 FT	
Depth Logger		7326 FT	
Bottom Logged Interval		7312 FT	
Top Log Interval		Surface	
Open Hole Size		8.5"	
Type Fluid		Water	
Density / Viscosity		8.34 lb/gal	
Max. Recorded Temp.		239 °F	
Estimated Cement Top		SEE LOG	
Time Well Ready		ROA	
Time Logger on Bottom		14:25	
Equipment Number		HD-0324	
Location		Plateville, CO	
Recorded By		C. Sinerros	
Witnessed By		M. Pratt	
Borehole Record		Tubing Record	
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		17	
Liner		P110	
Top		Bottom	
30 FT		1926.3 FT	
30 FT		17161 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 Casing Tally reported Marker Joint at 6077.4 FT to 6087.4 FT
Adjusted -19 FT to correlate with Marker Joint
Log ran with 2500 PSI Surface Induced Pressure
Logging tools were clean and free of any debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	3.60

[illegible]

Gamma Ray Calibration Report

Serial Number:	FW1810-001	
Tool Model:	2750 6PB	
Performed:	Mon Oct 19 14:19:51 2020	
Calibrator Value:	637.0	GAPI
Background Reading:	100.1	cps
Calibrator Reading:	1264.5	cps
Sensitivity:	0.5471	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1305-096	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	248.626	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.511	0.800	71.921	139.251	0.796
CAL	0.676	0.678				
5'	0.000	0.482	0.800	71.921	147.650	0.797
SUM						
S1	0.000	0.500	0.000	100.000	200.096	-0.006
S2	0.000	0.500	0.000	100.000	199.937	-0.005
S3	0.000	0.522	0.000	100.000	191.679	-0.005
S4	0.000	0.525	0.000	100.000	190.343	-0.003
S5	0.000	0.554	0.000	100.000	180.577	-0.007
S6	0.000	0.569	0.000	100.000	175.764	-0.010
S7	0.000	0.563	0.000	100.000	177.490	-0.009
S8	0.000	0.528	0.000	100.000	189.516	-0.003

Air Zero Calibration, performed Thu Nov 18 08:59:52 2021:

	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

Temperature Calibration Report

Serial Number:	FW1305-096
Tool Model:	2750 RBT

Tool Model: 2750 RBL
Performed: Mon Oct 19 14:19:51 2020

	Reference	Reading
Low Reference:	100.00 degF	109.43 degF
High Reference:	350.00 degF	405.87 degF
Gain:	0.84	
Offset:	7.72	
Delta Spacing	1	

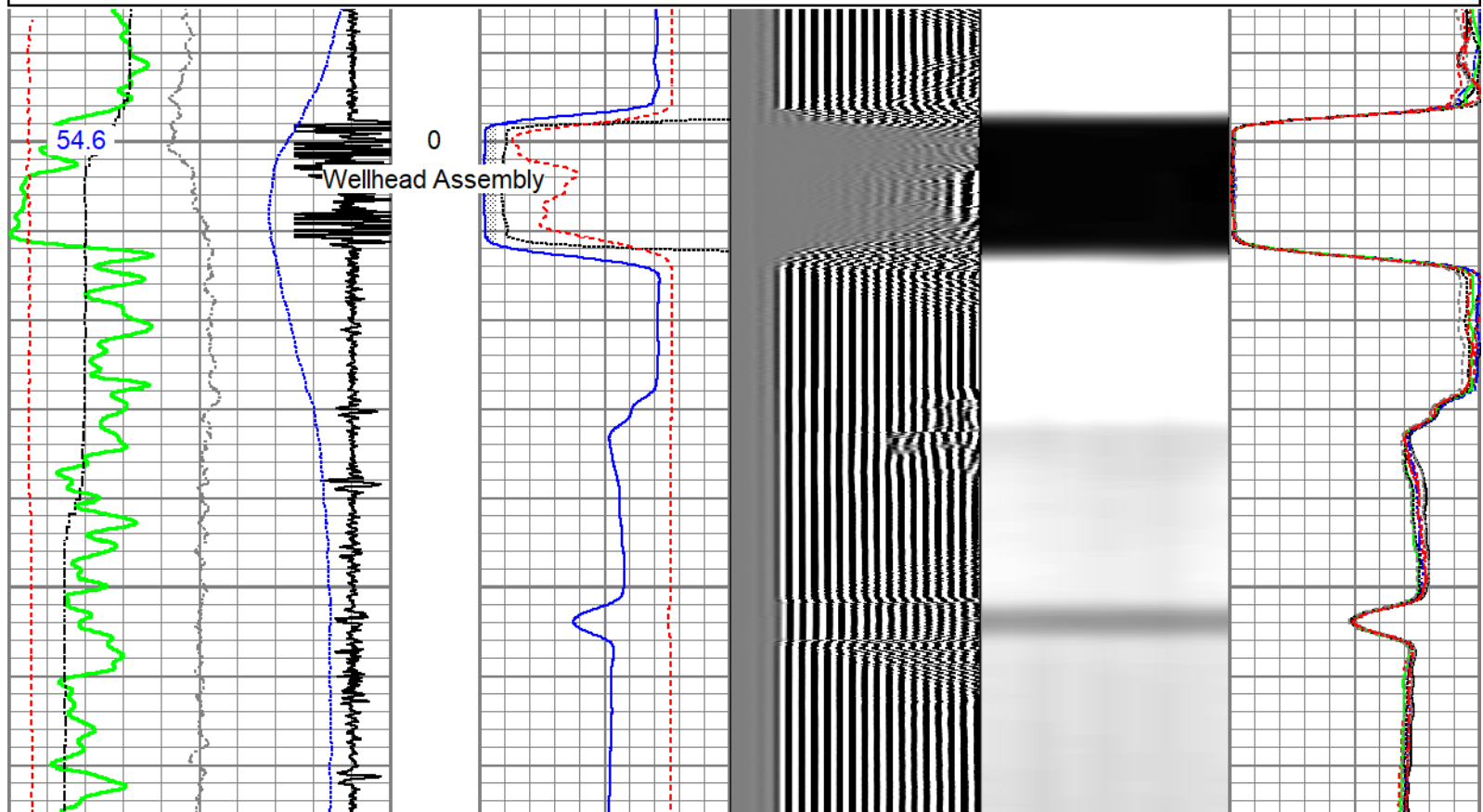


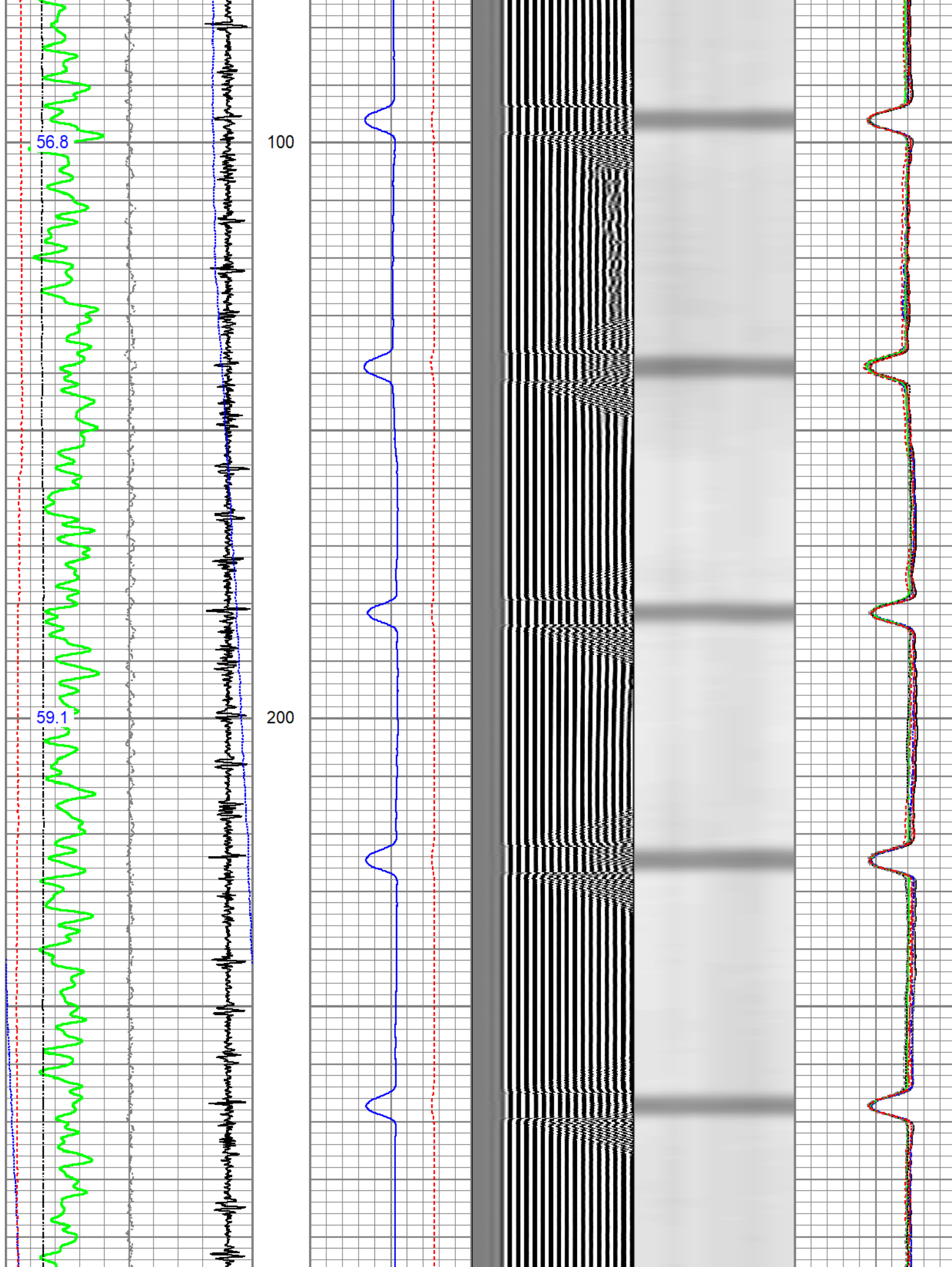
Main Pass

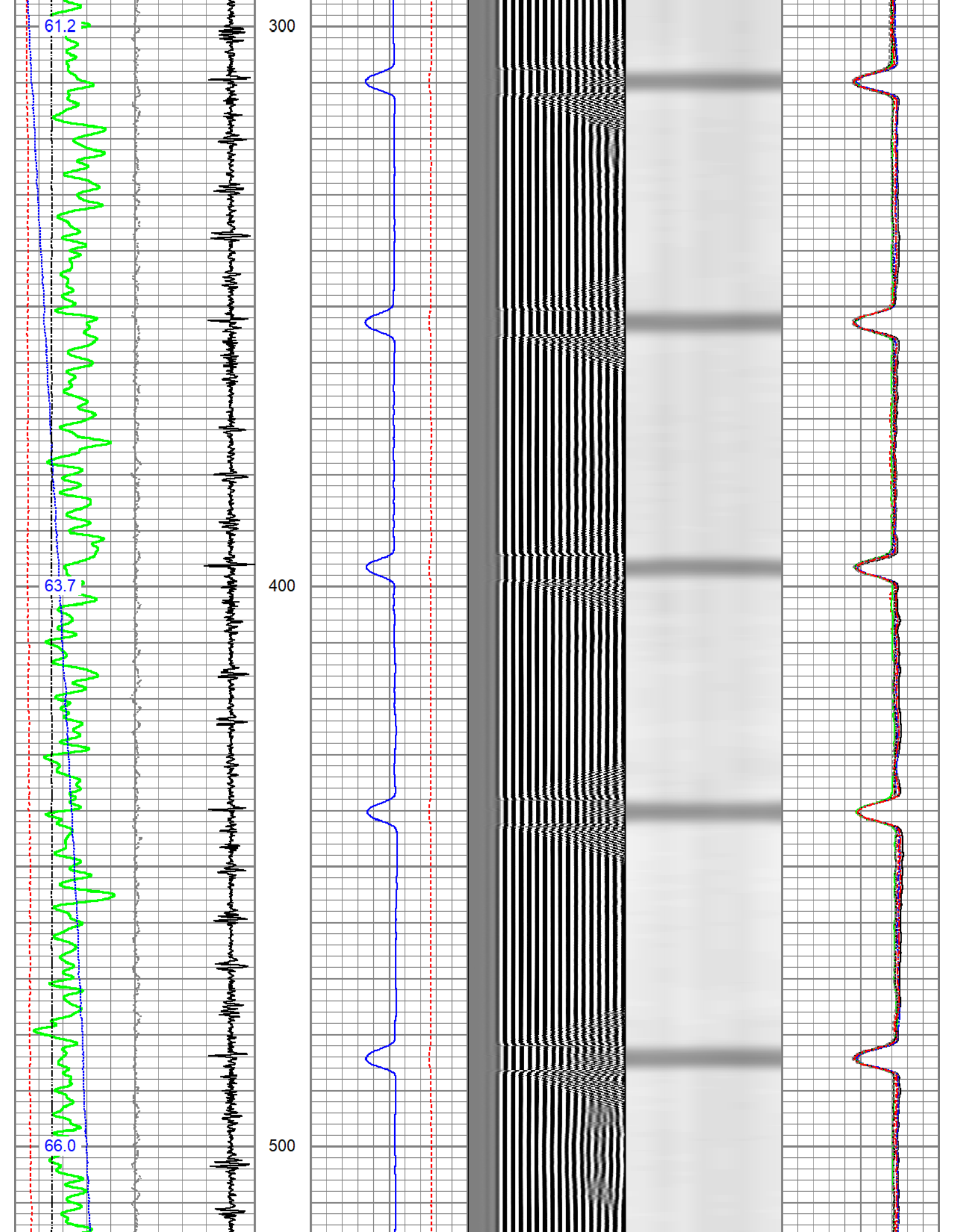
Recorded With 2500 PSI Surface Induced Pressure

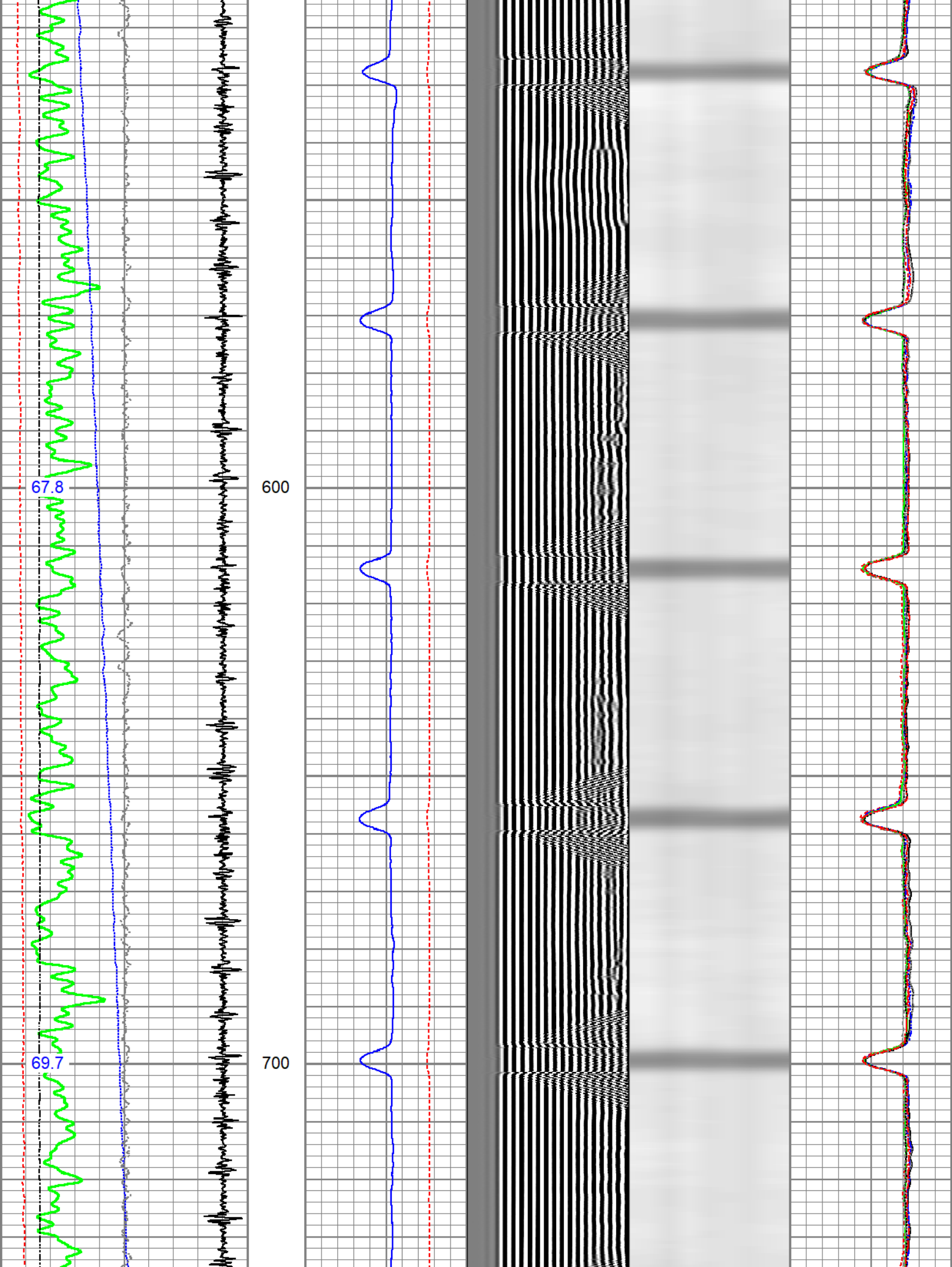
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Charted by	Depth in Feet scaled 1:240

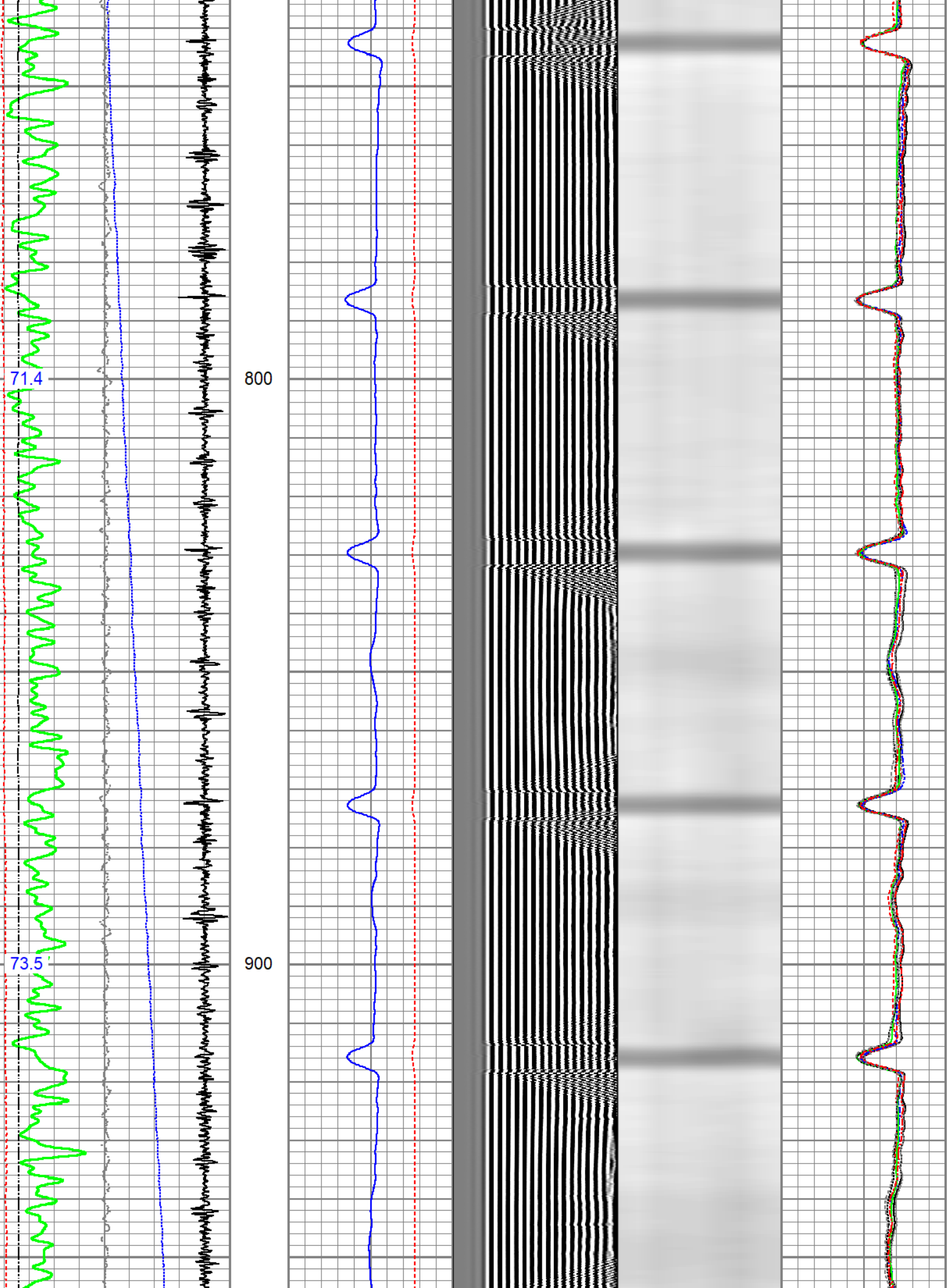
0	Gamma Ray (GAPI)	120	3' Amplitude	5' Variable Density	Sector Map	0	AMP S1	100
9	Casing Collar Locator	-1	0 (mV) 100	200 (usec) 1200		0	AMP S2	100
0	Temperature (degF)	20	3' Amplitude x 5			0	AMP S3	100
-150	Line Speed (ft/min)	150	0 (mV) 20			0	AMP S4	100
0	Line Tension (lb)	2000	3' Travel Time			0	AMP S5	100
	Differential Temperature		650 (usec) 150			0	AMP S6	100
-2	(degF)	2				0	AMP S7	100
Temperature						0	AMP S8	100
(degF)								

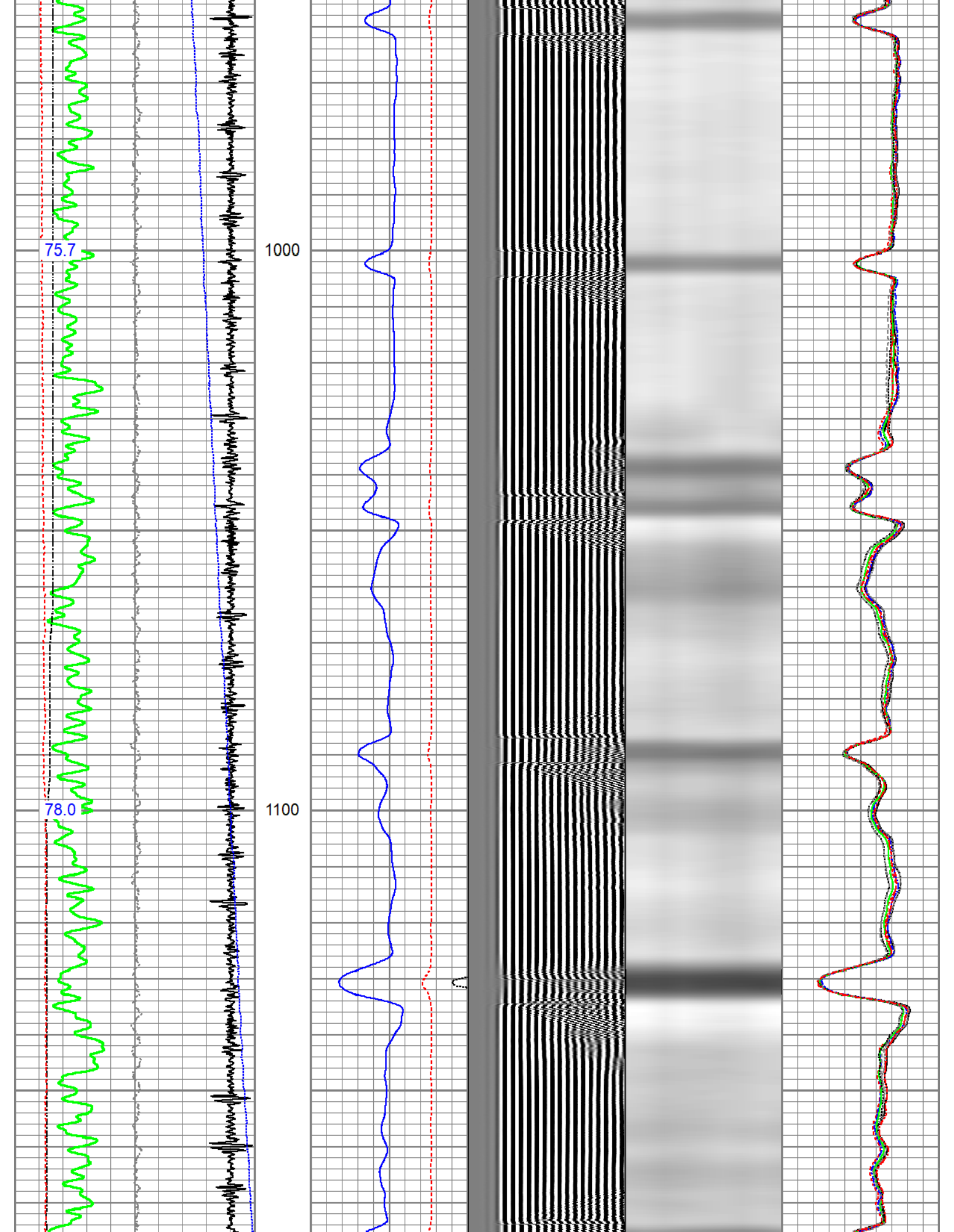


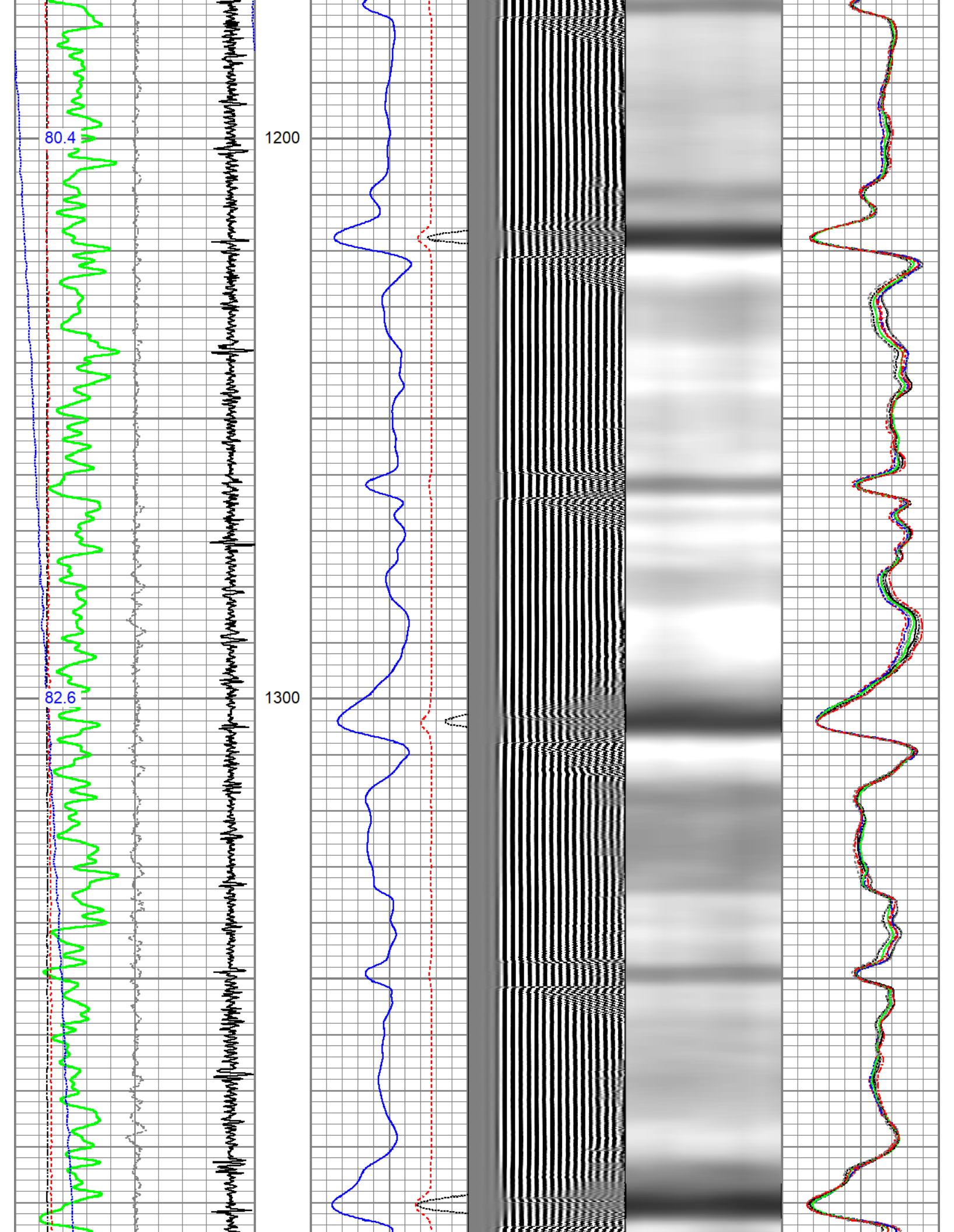


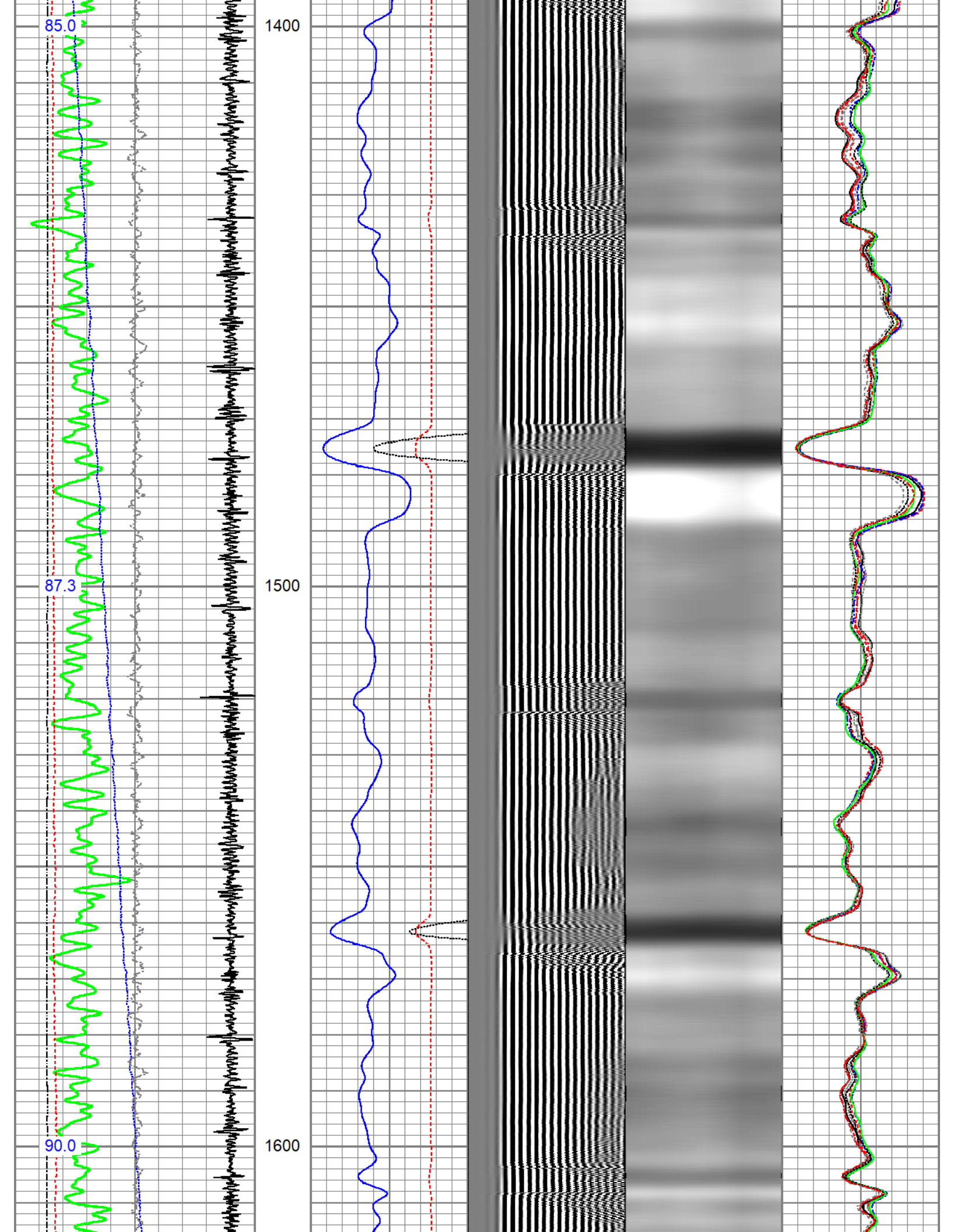


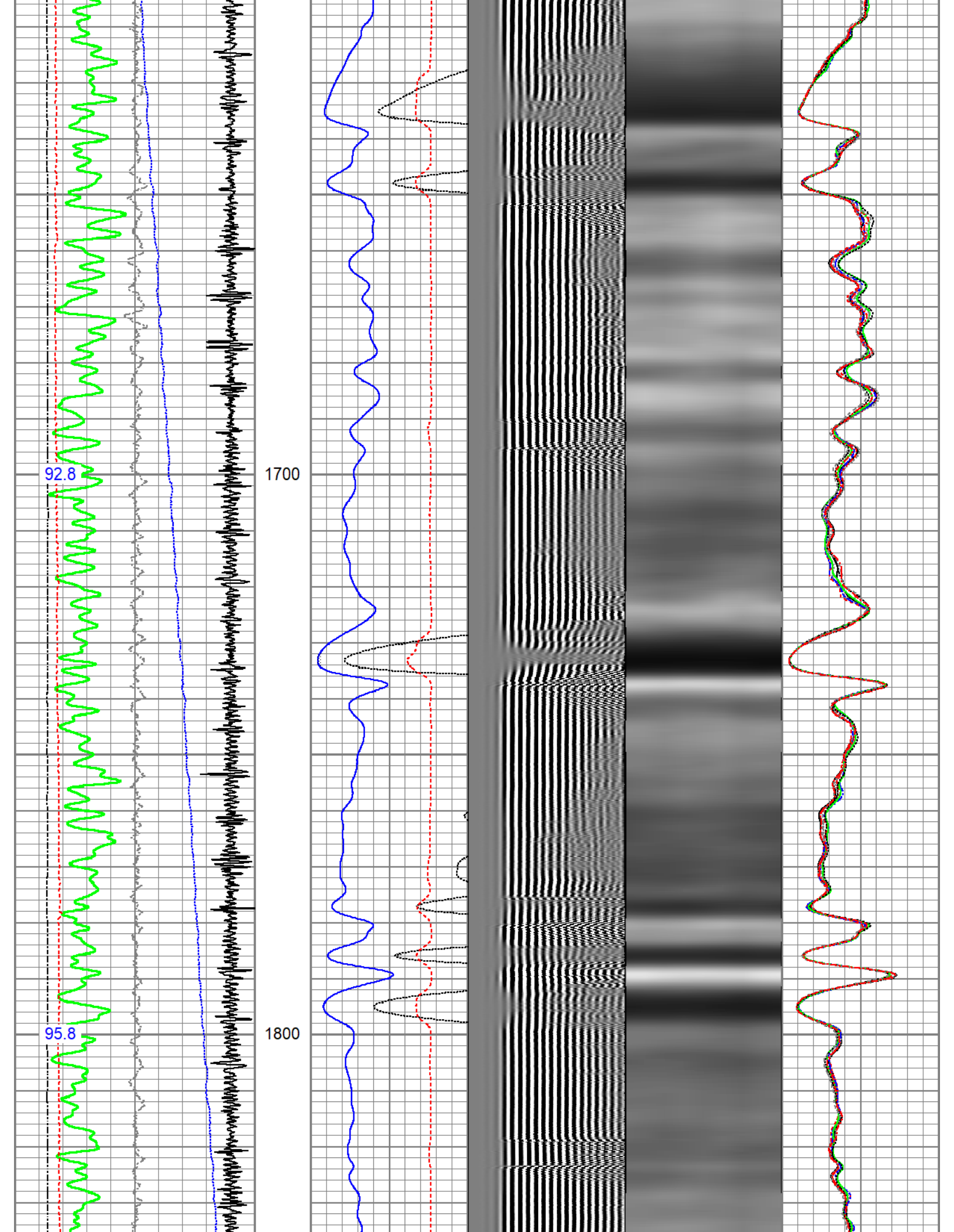


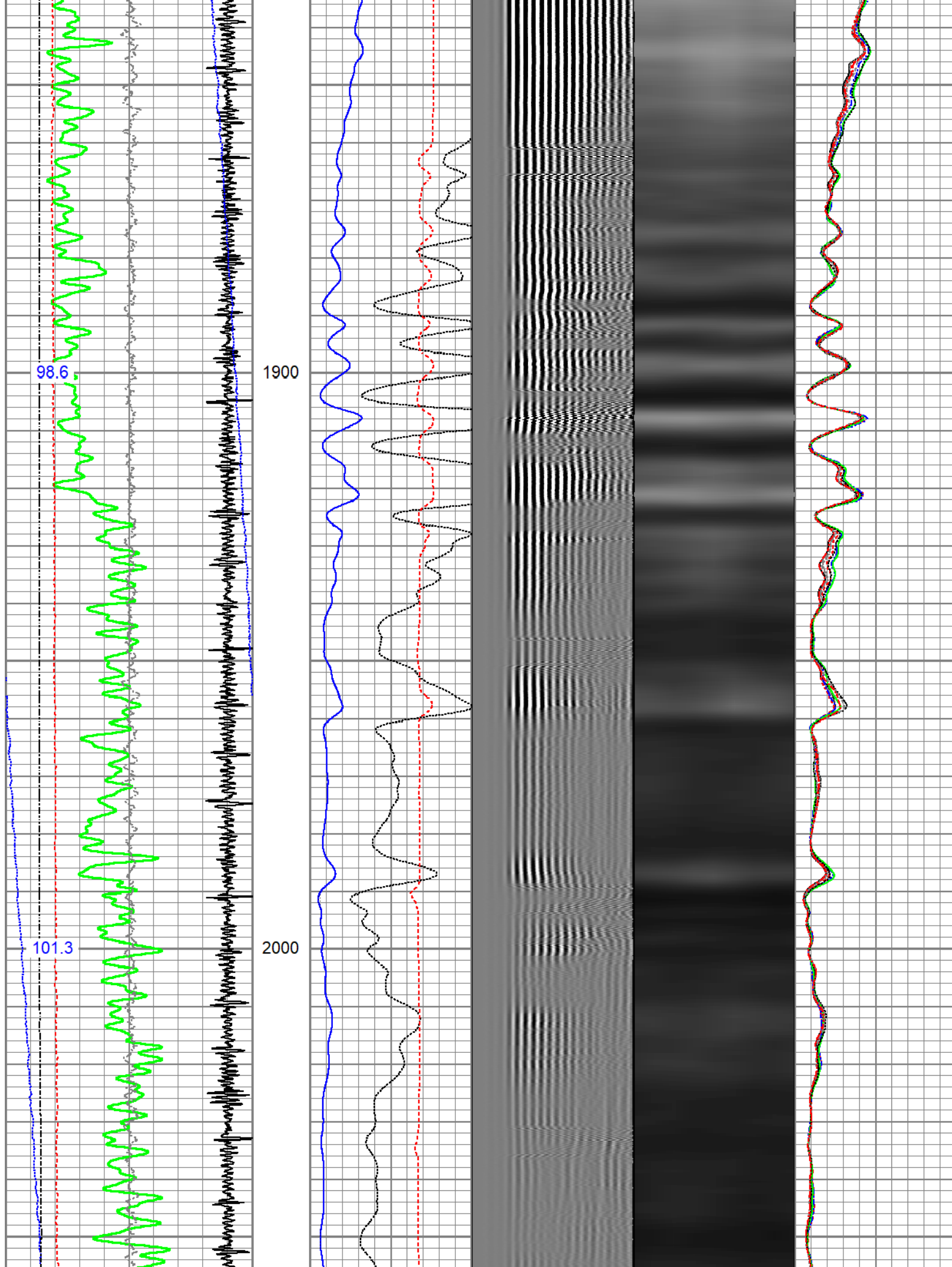


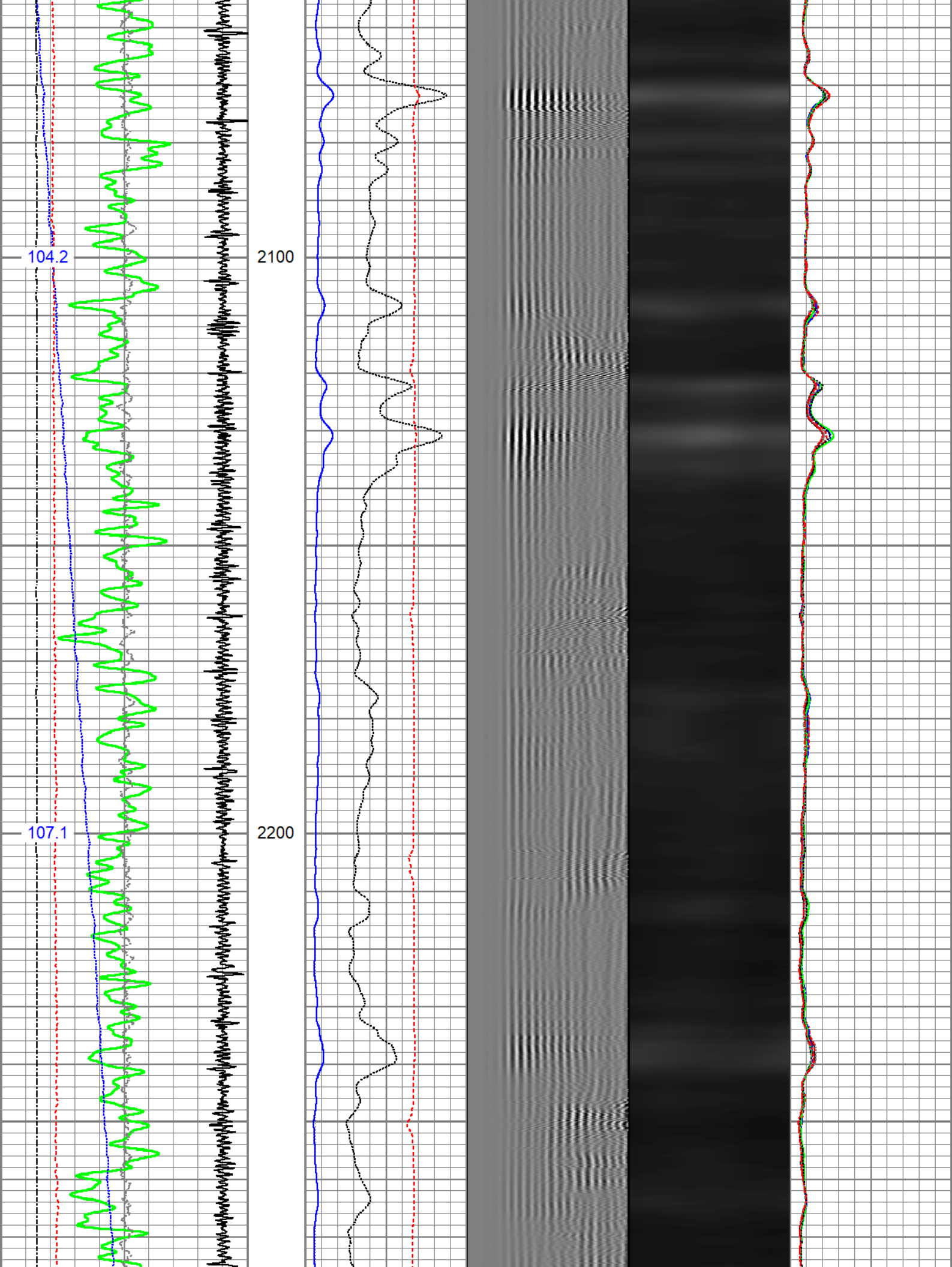


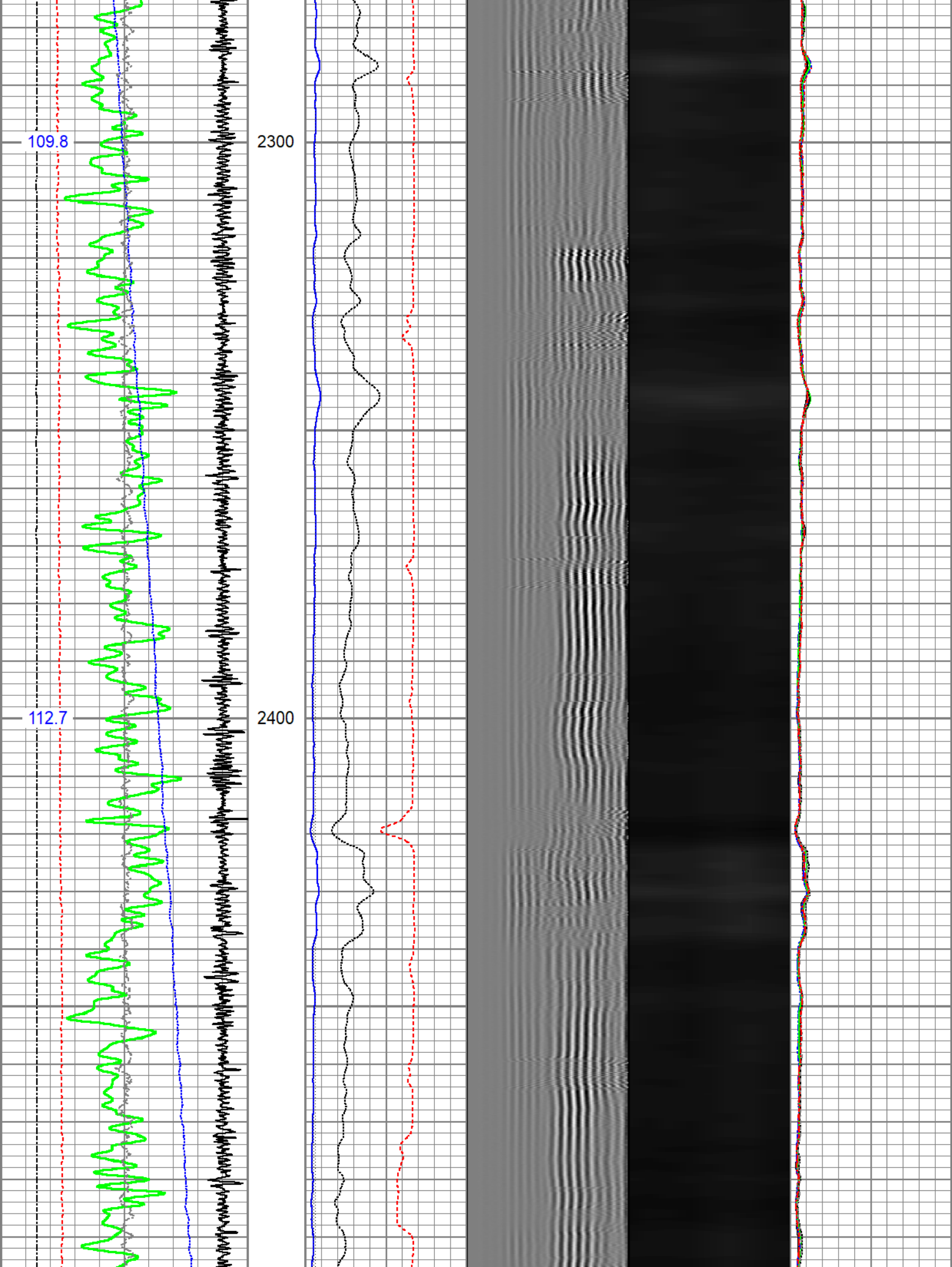


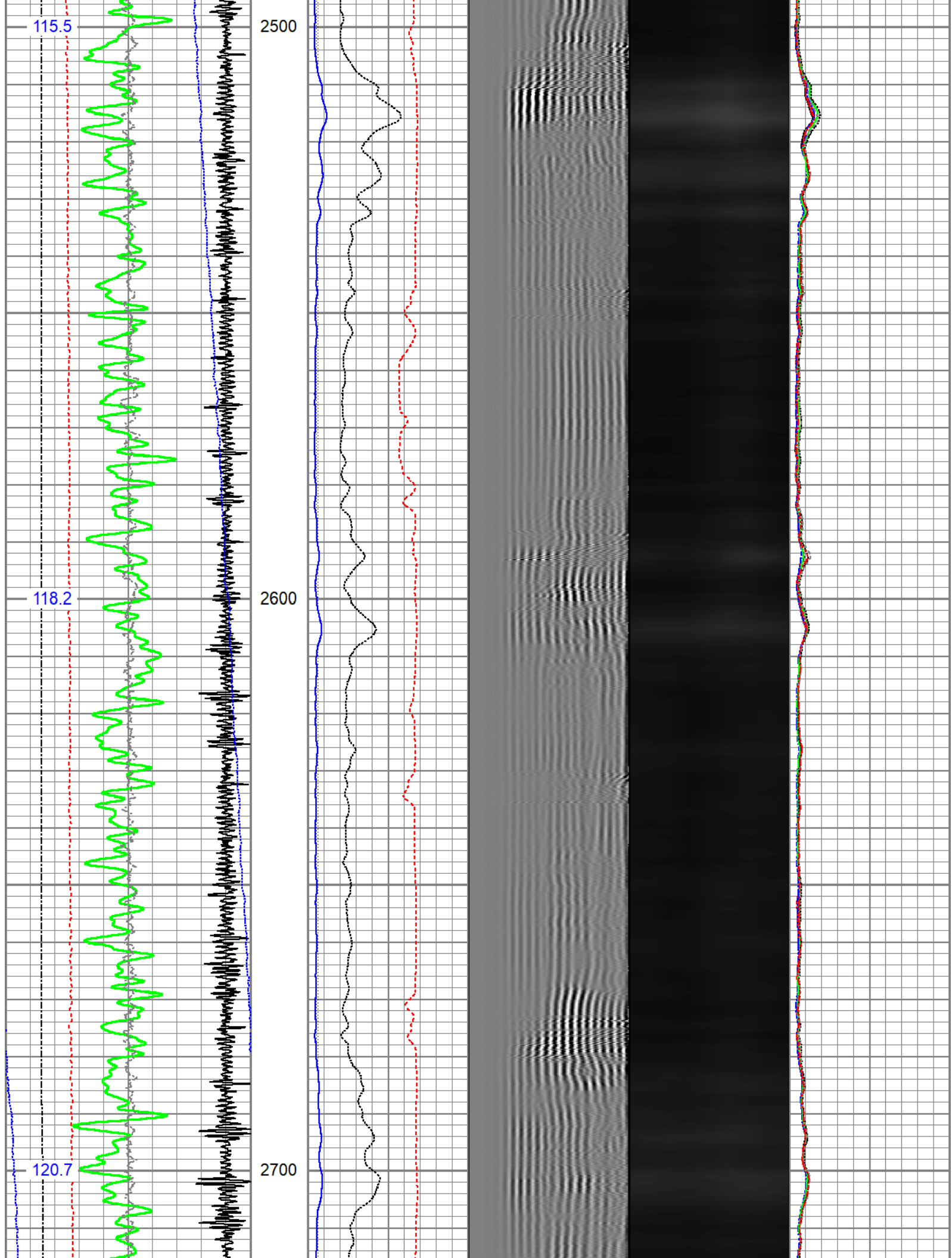


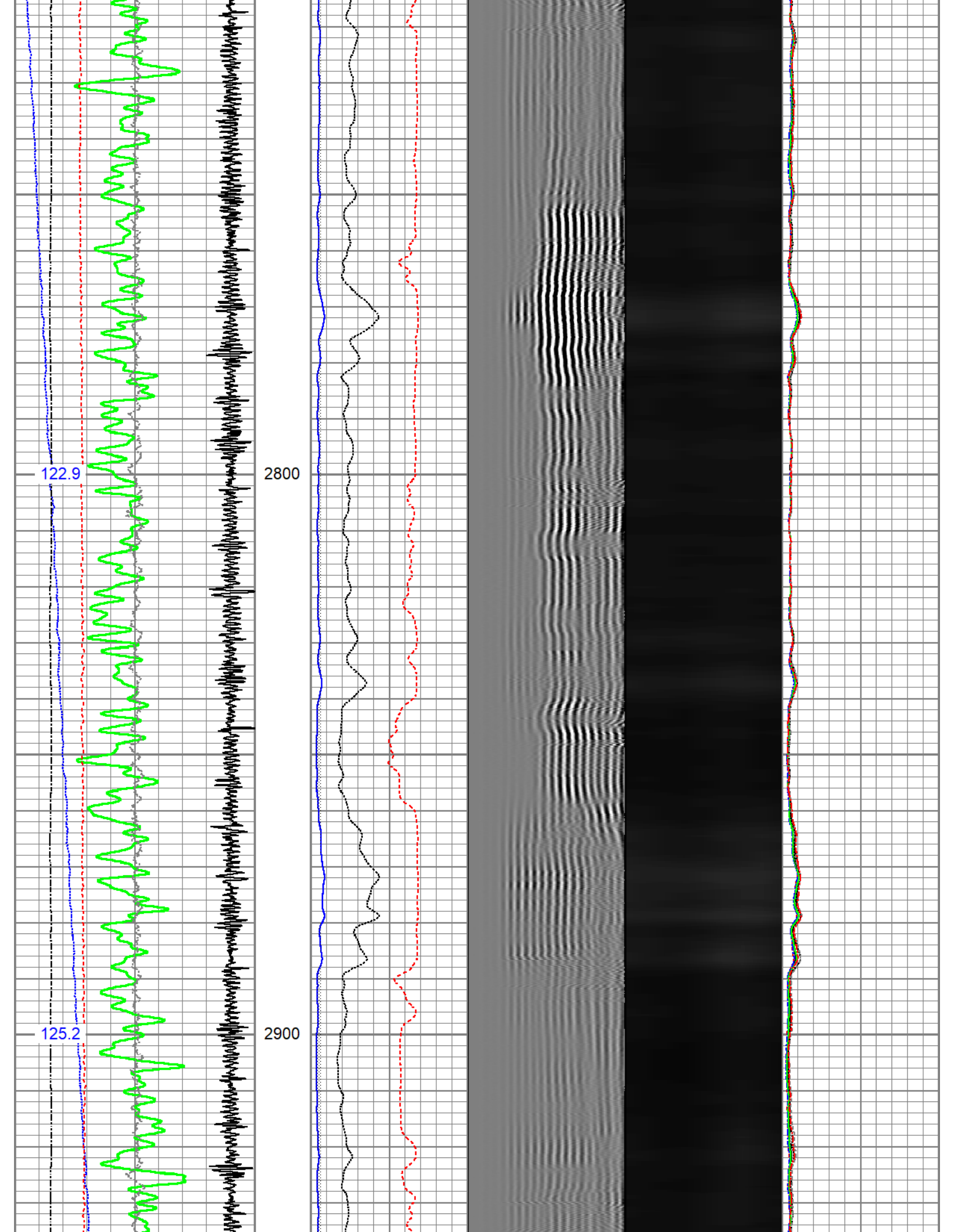


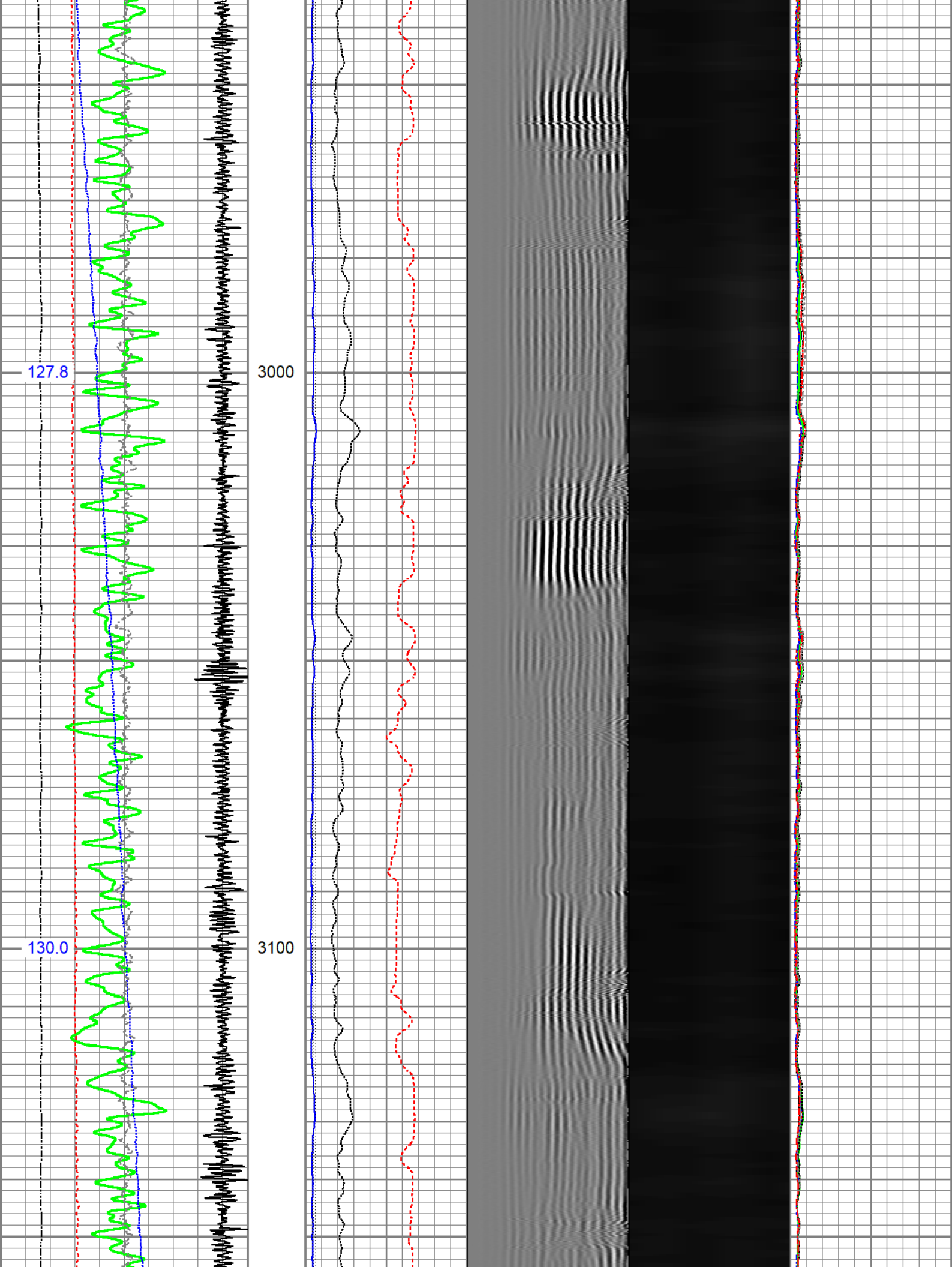


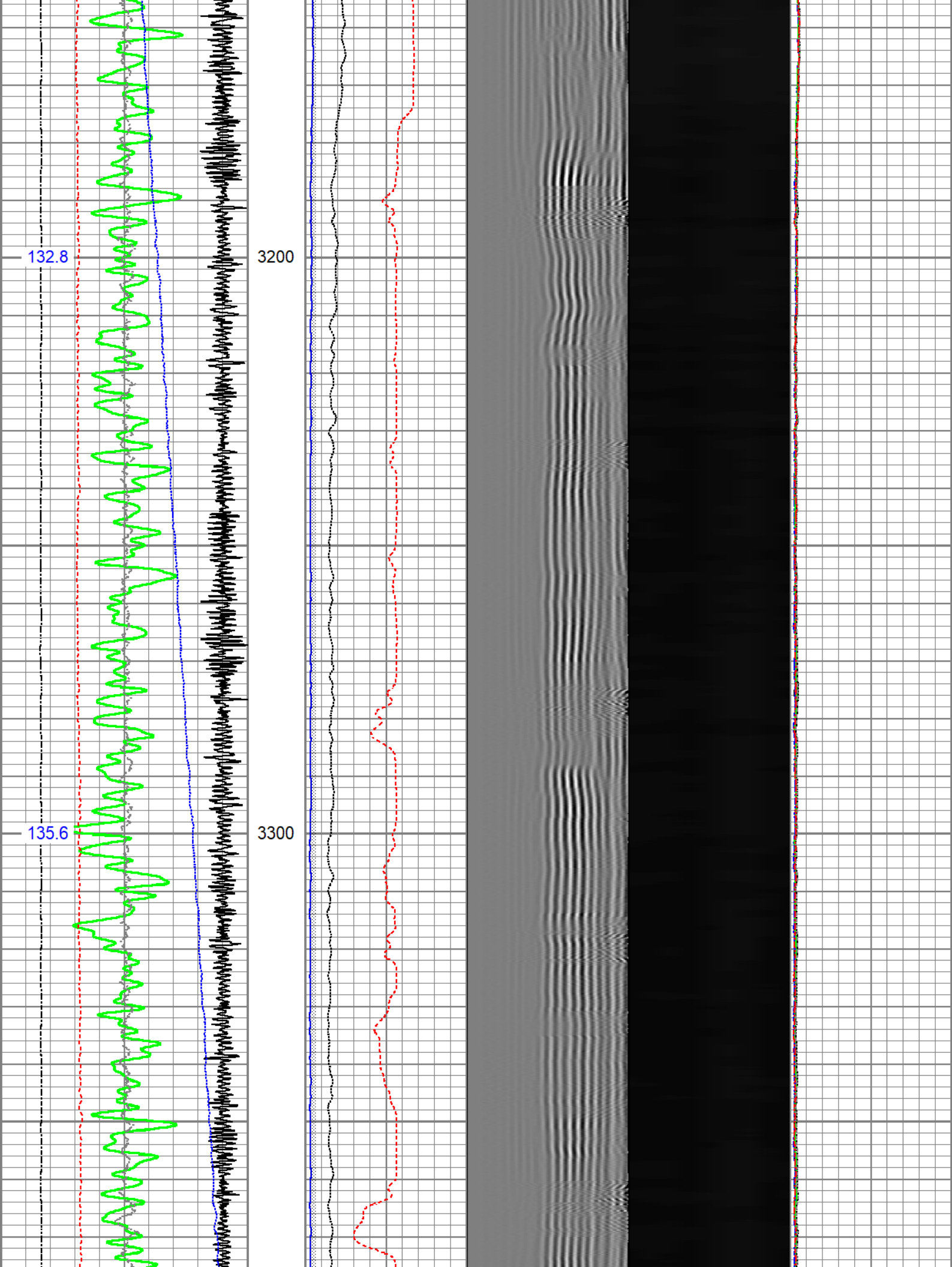


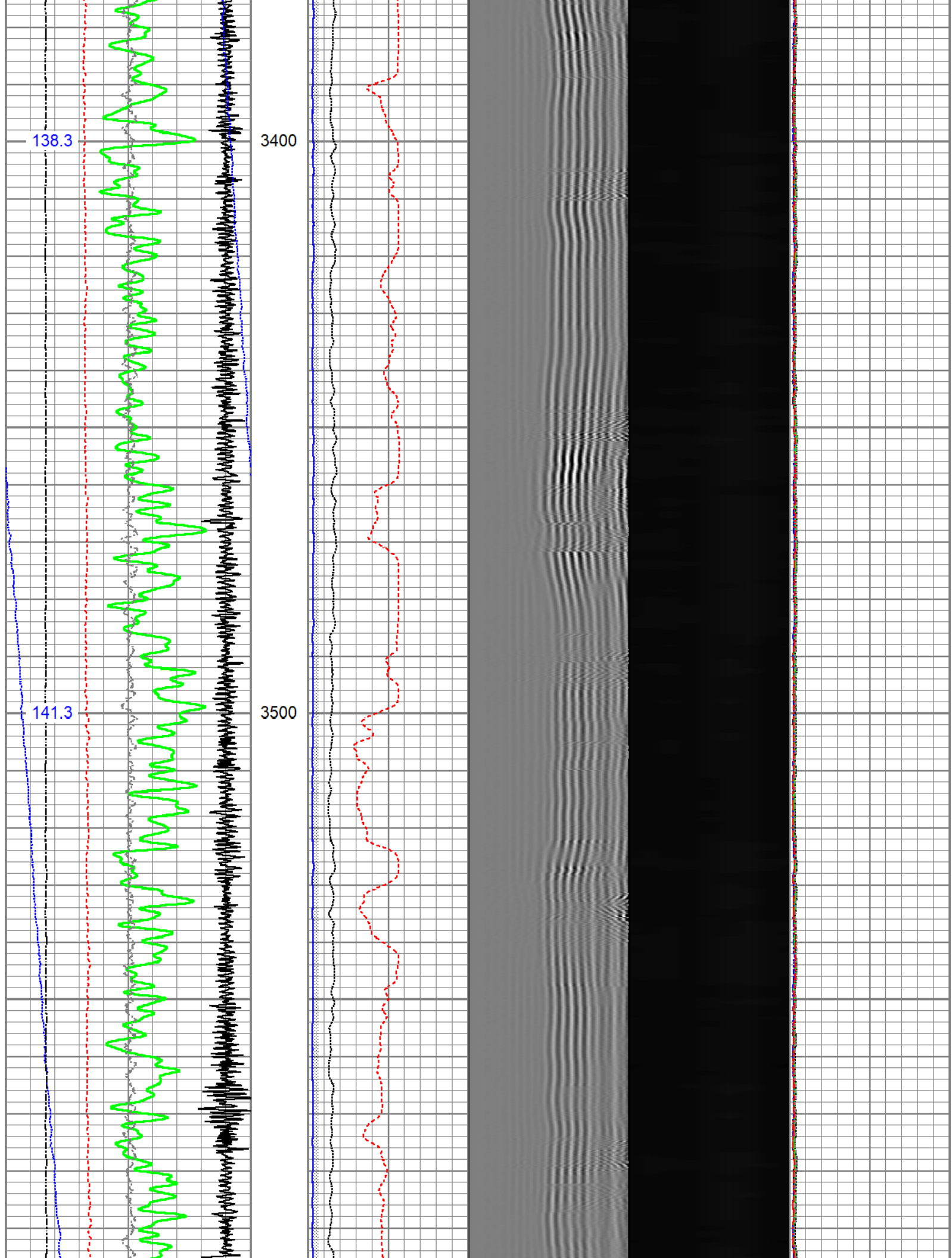


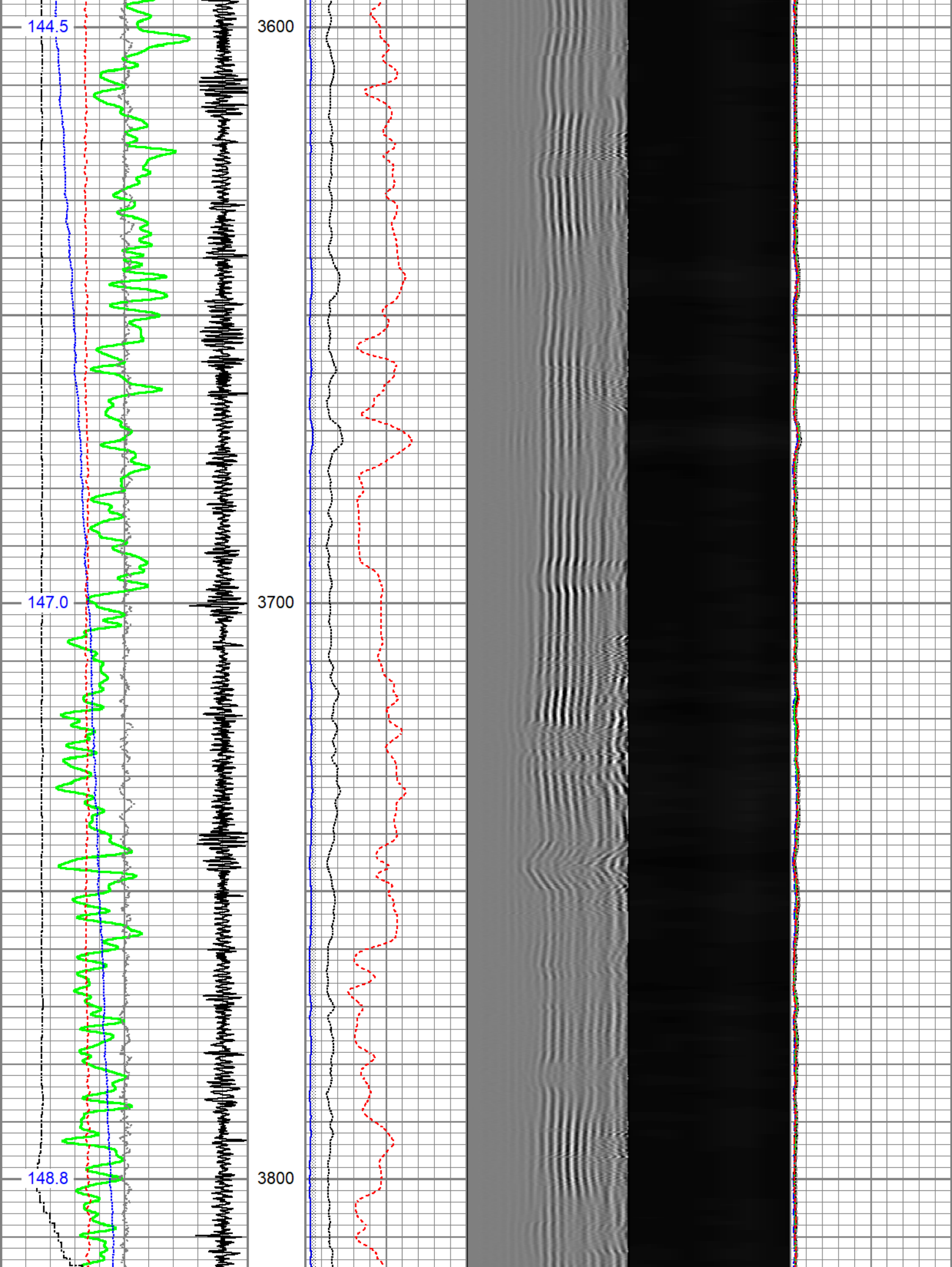


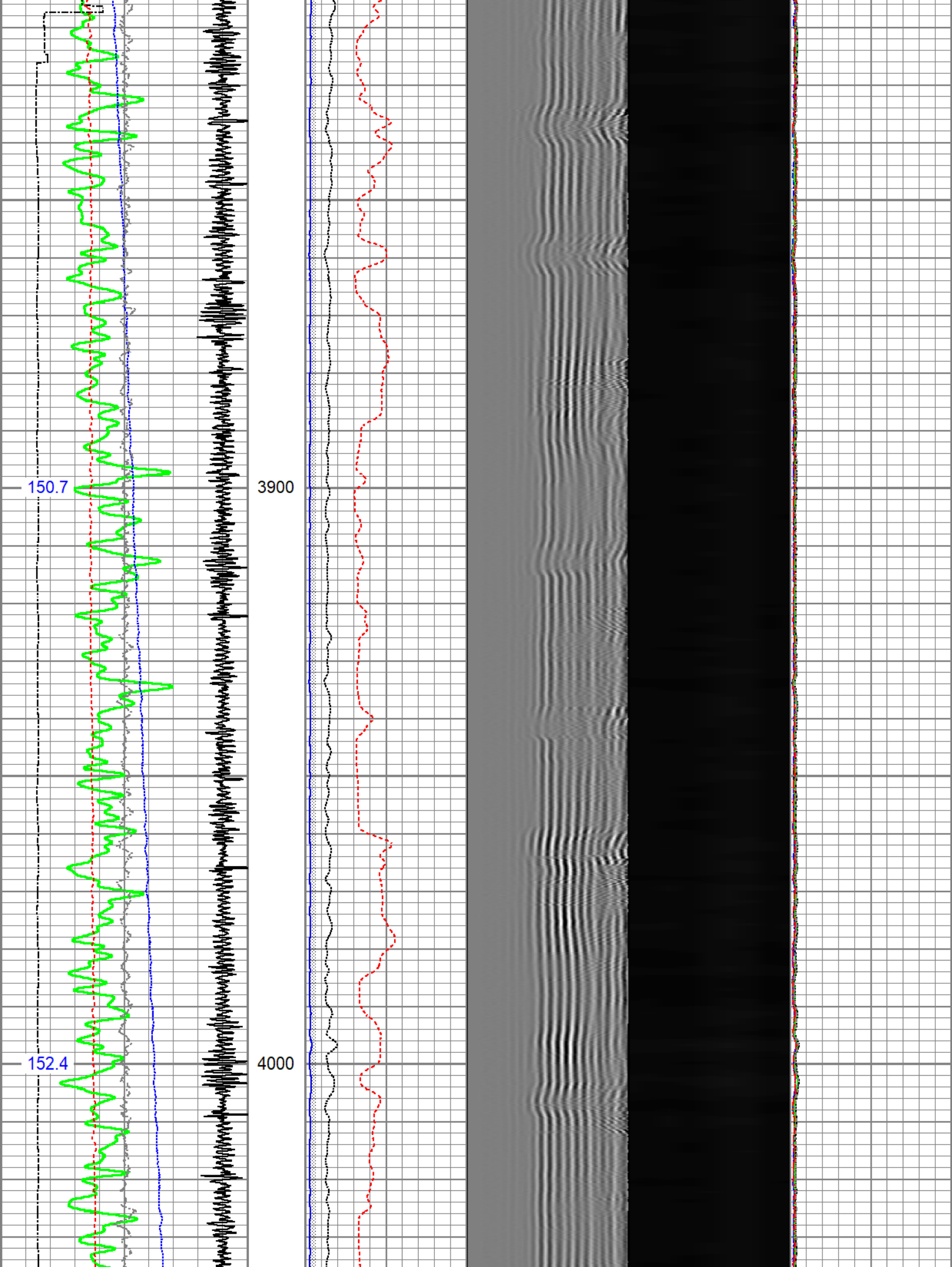


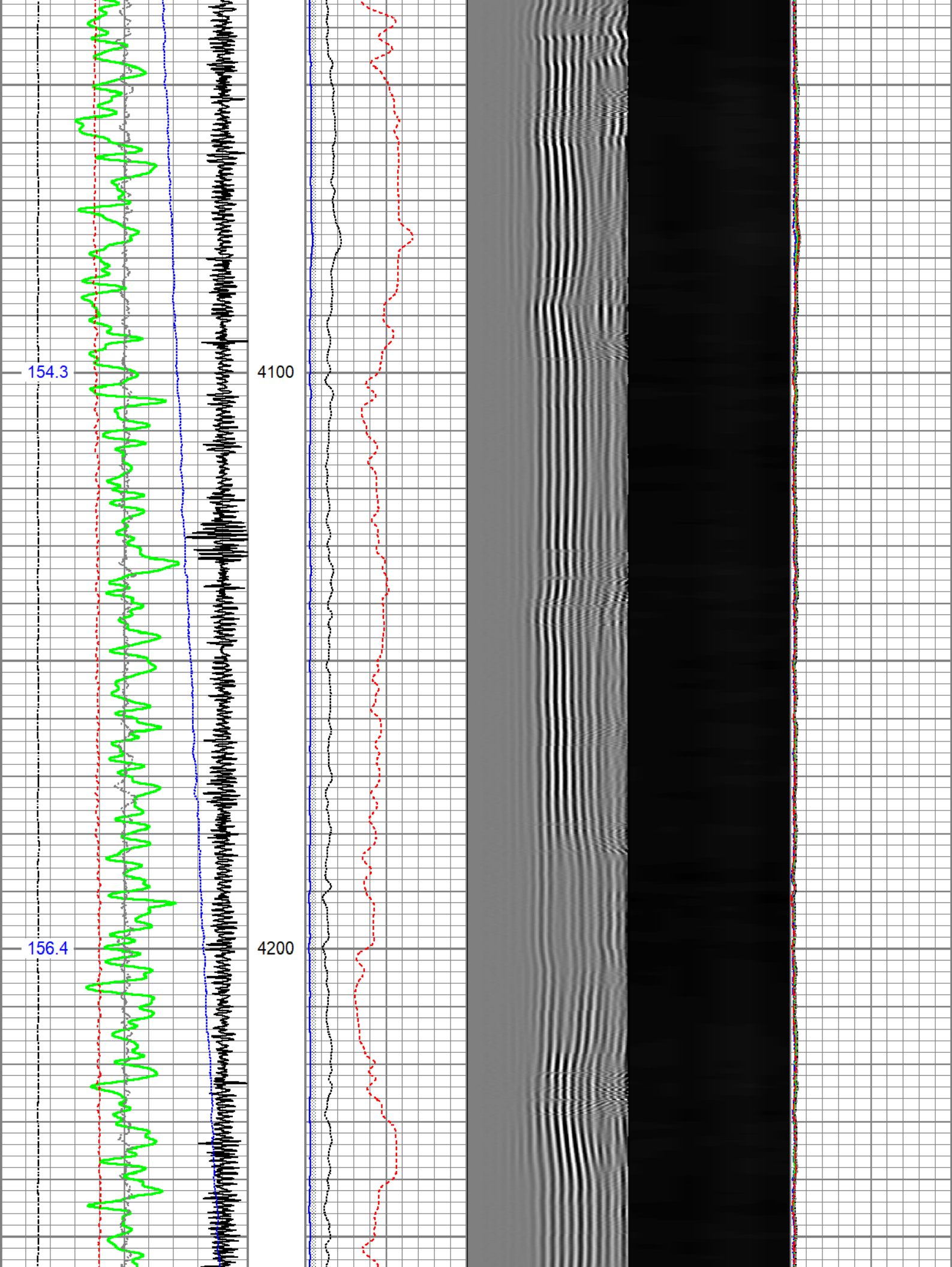


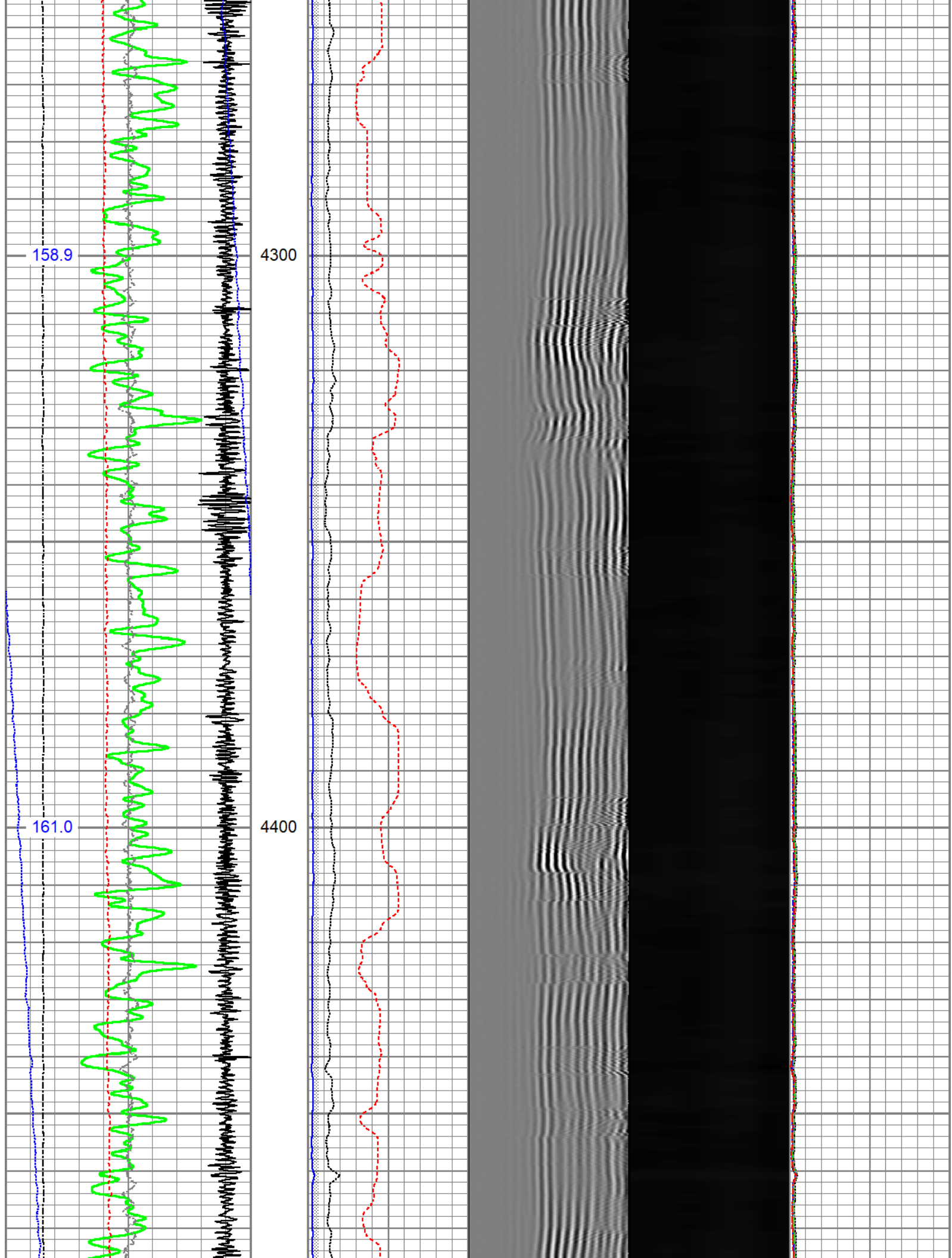


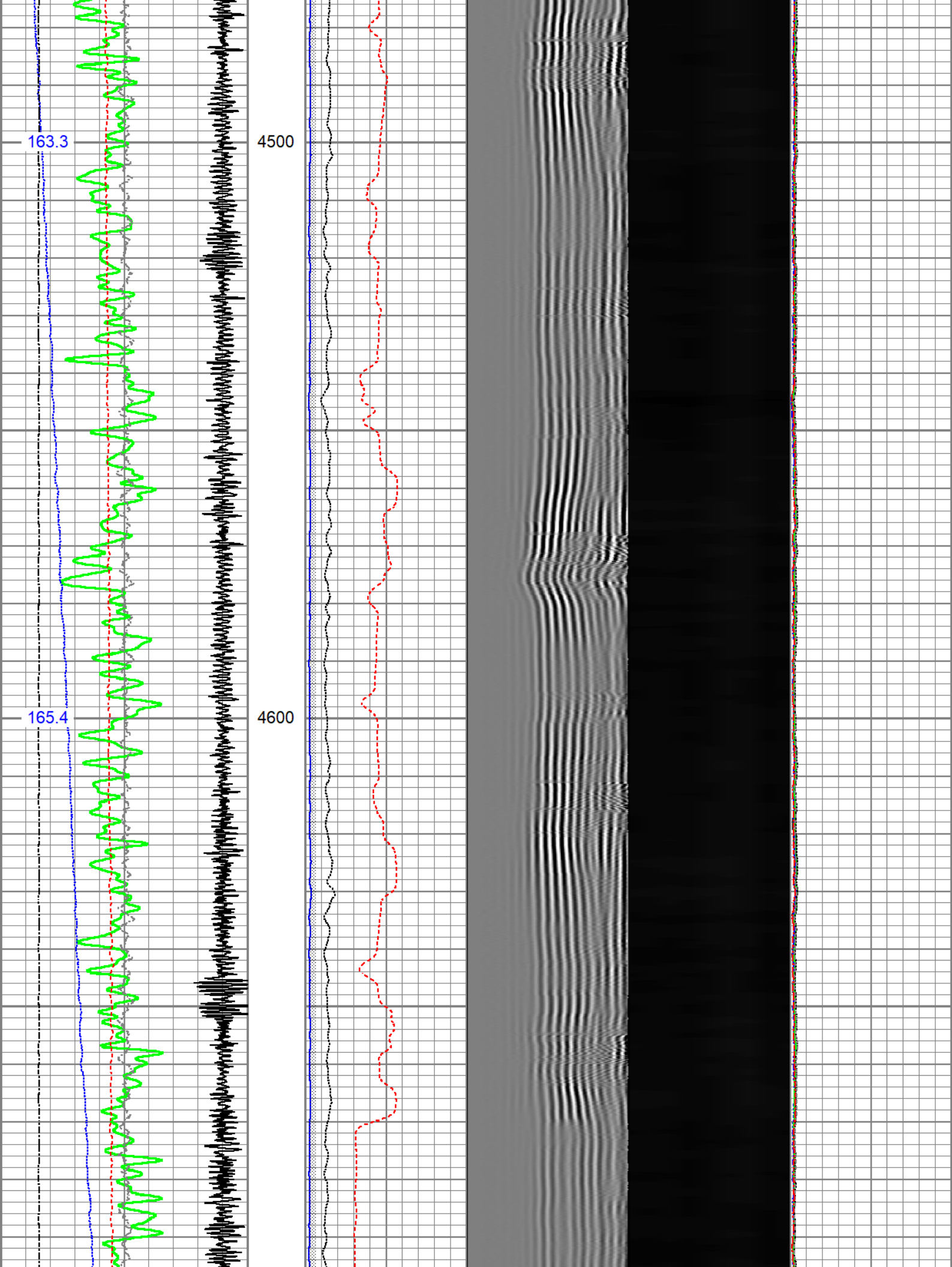












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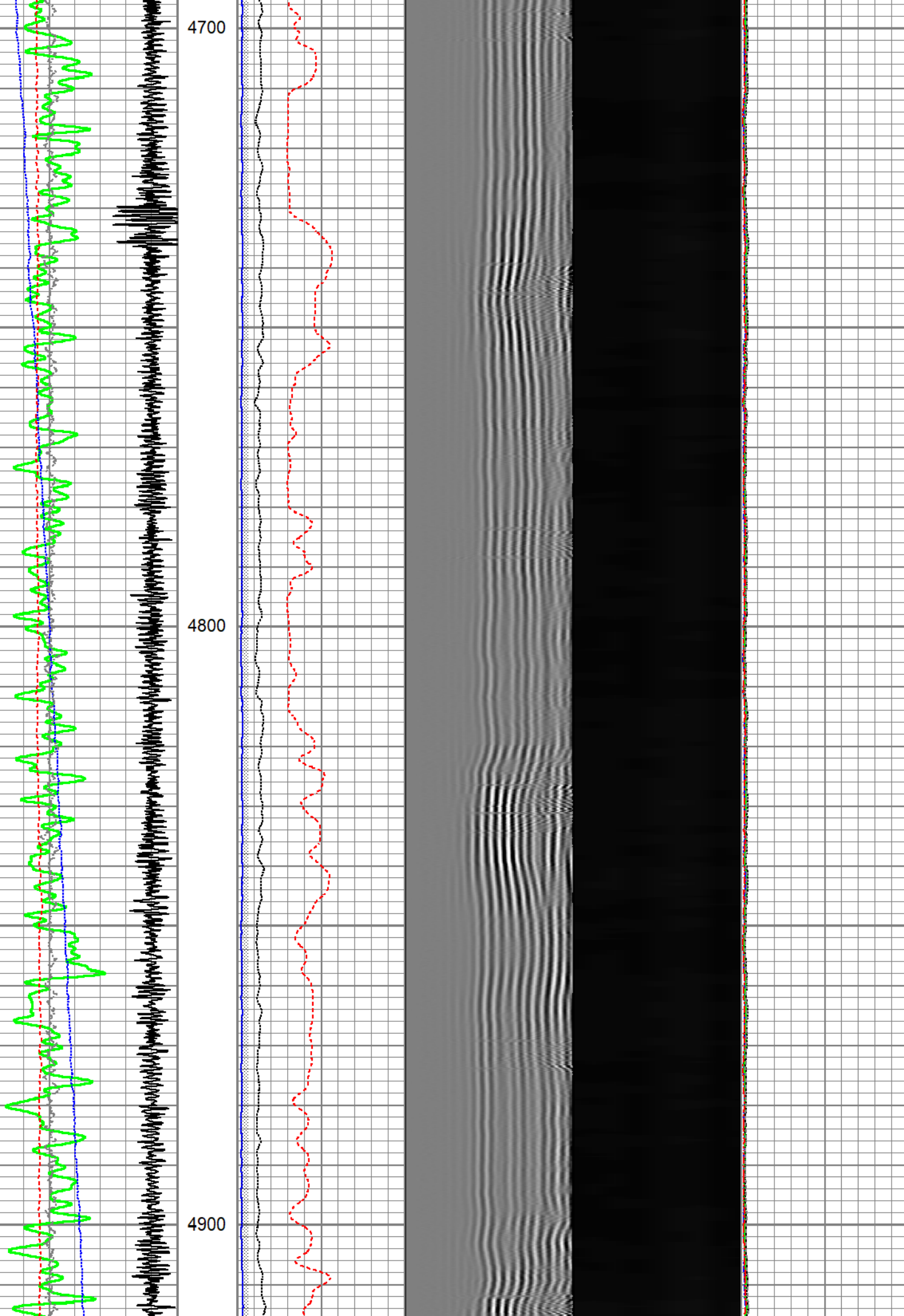
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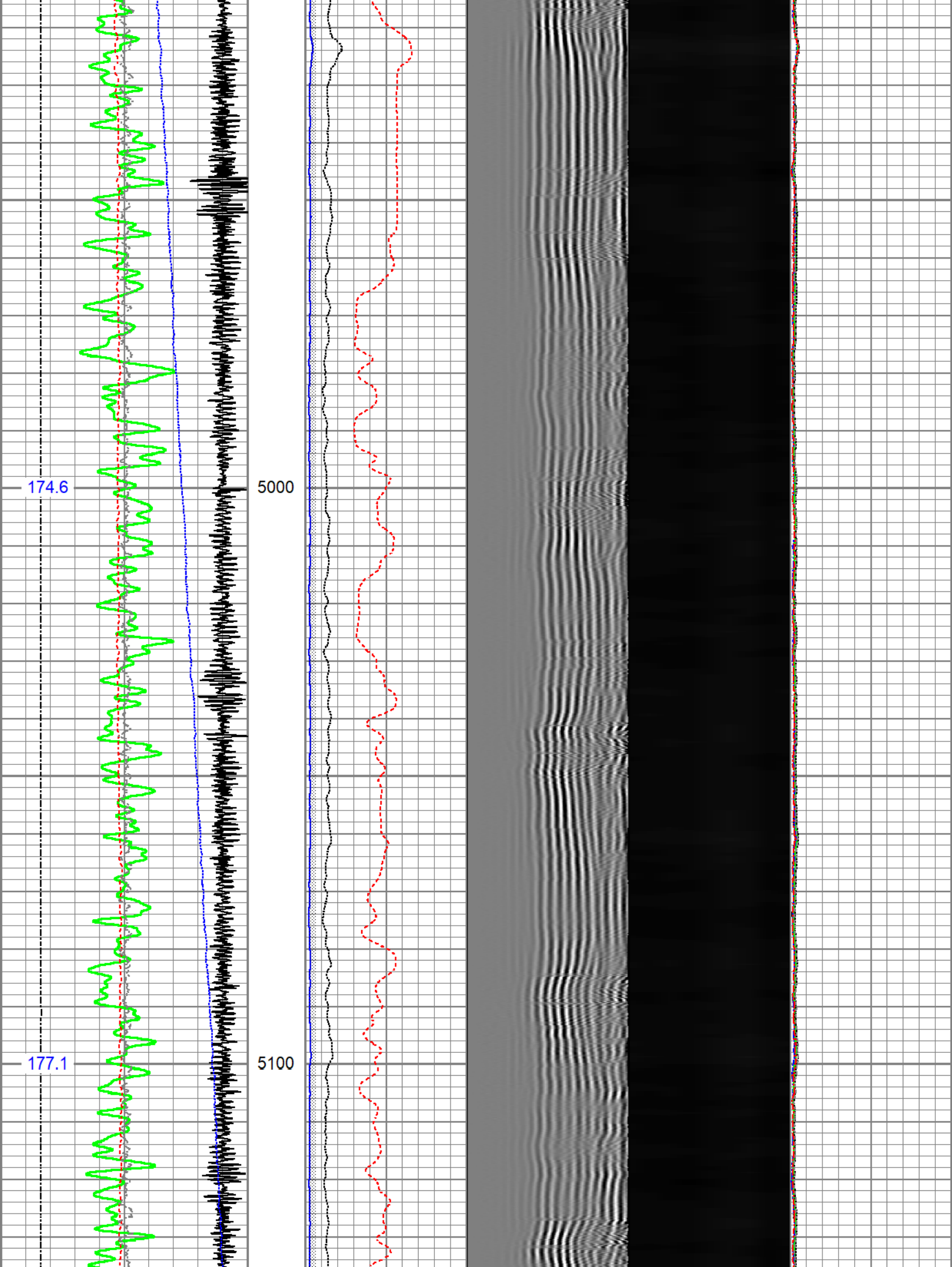
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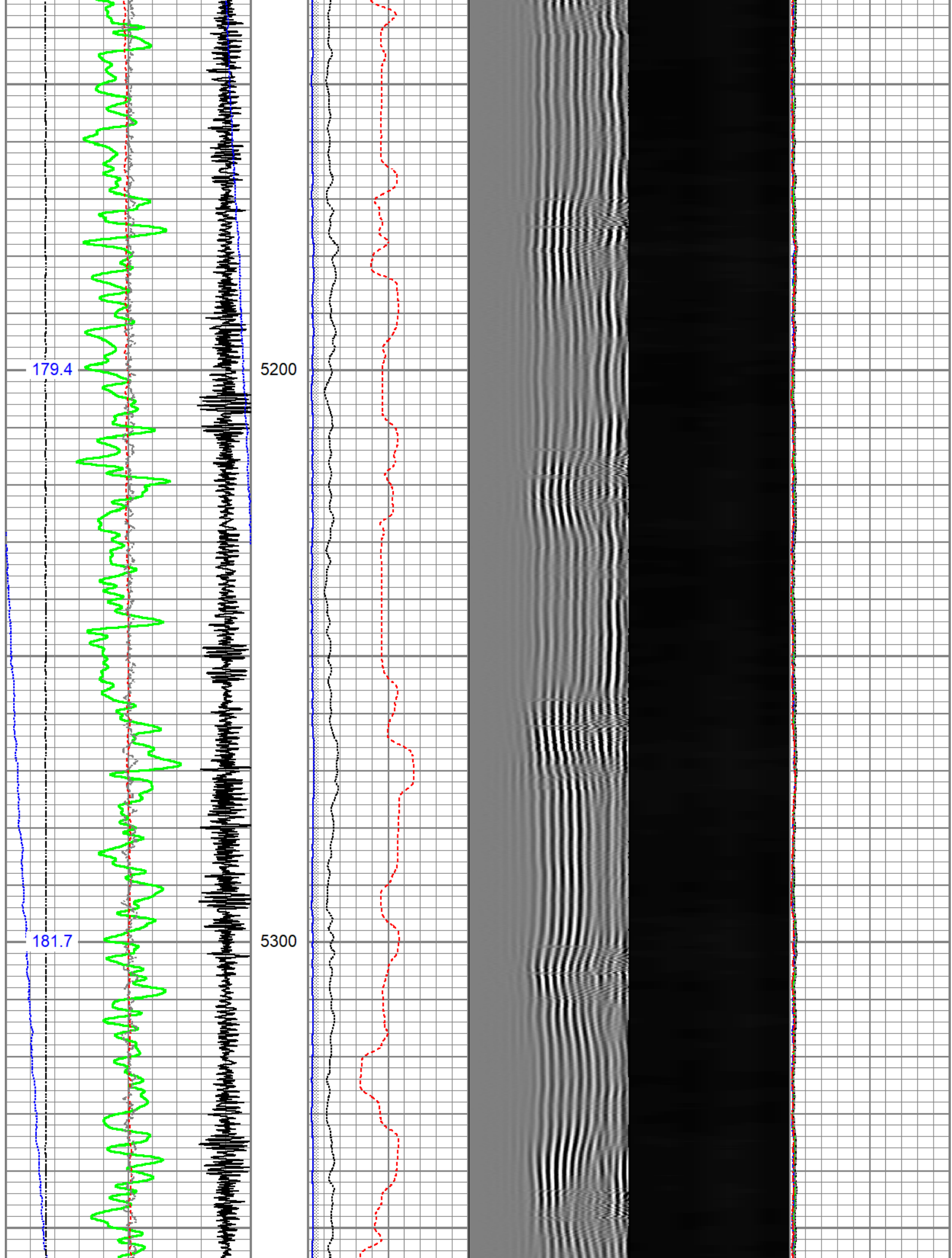
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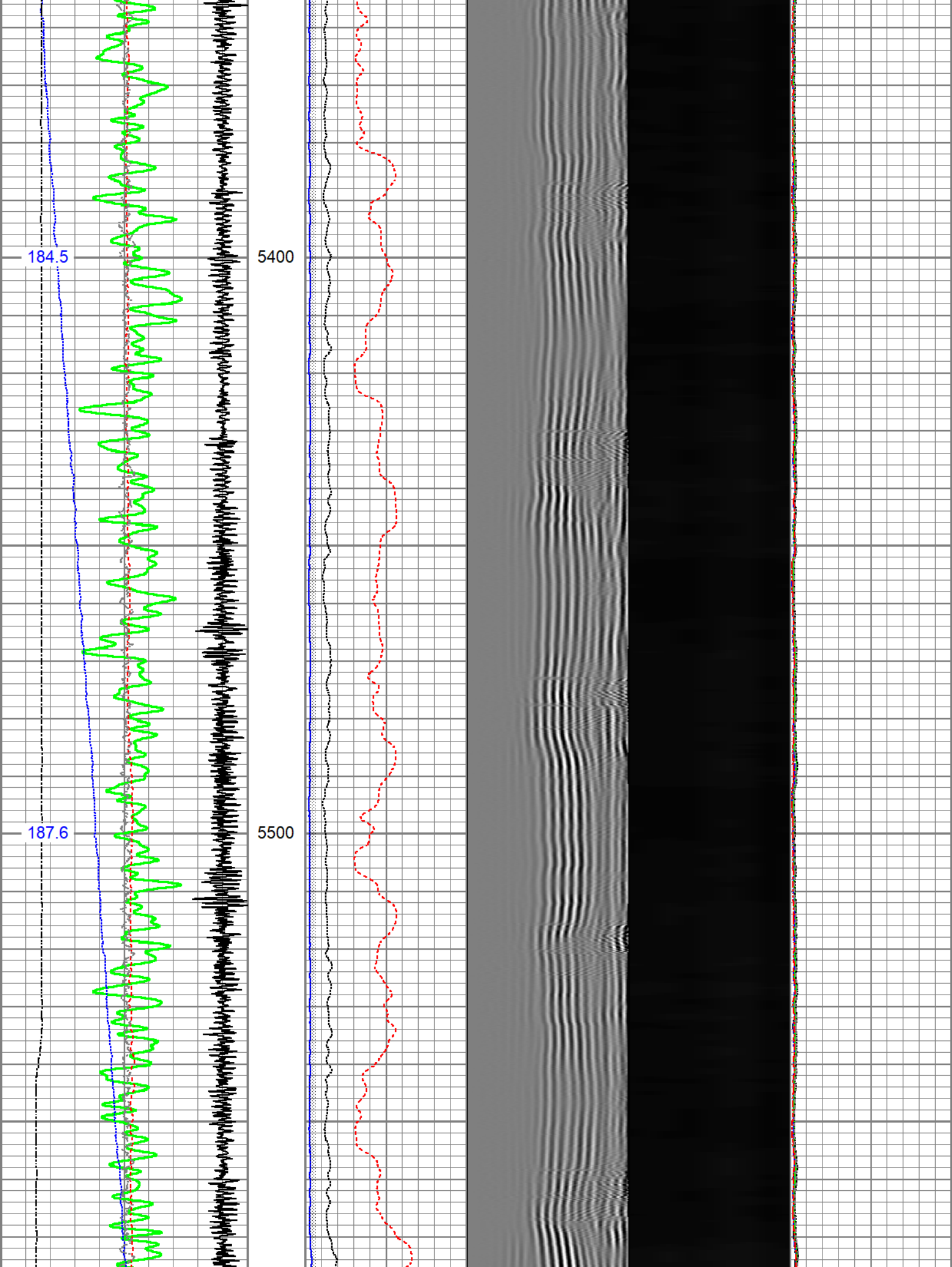
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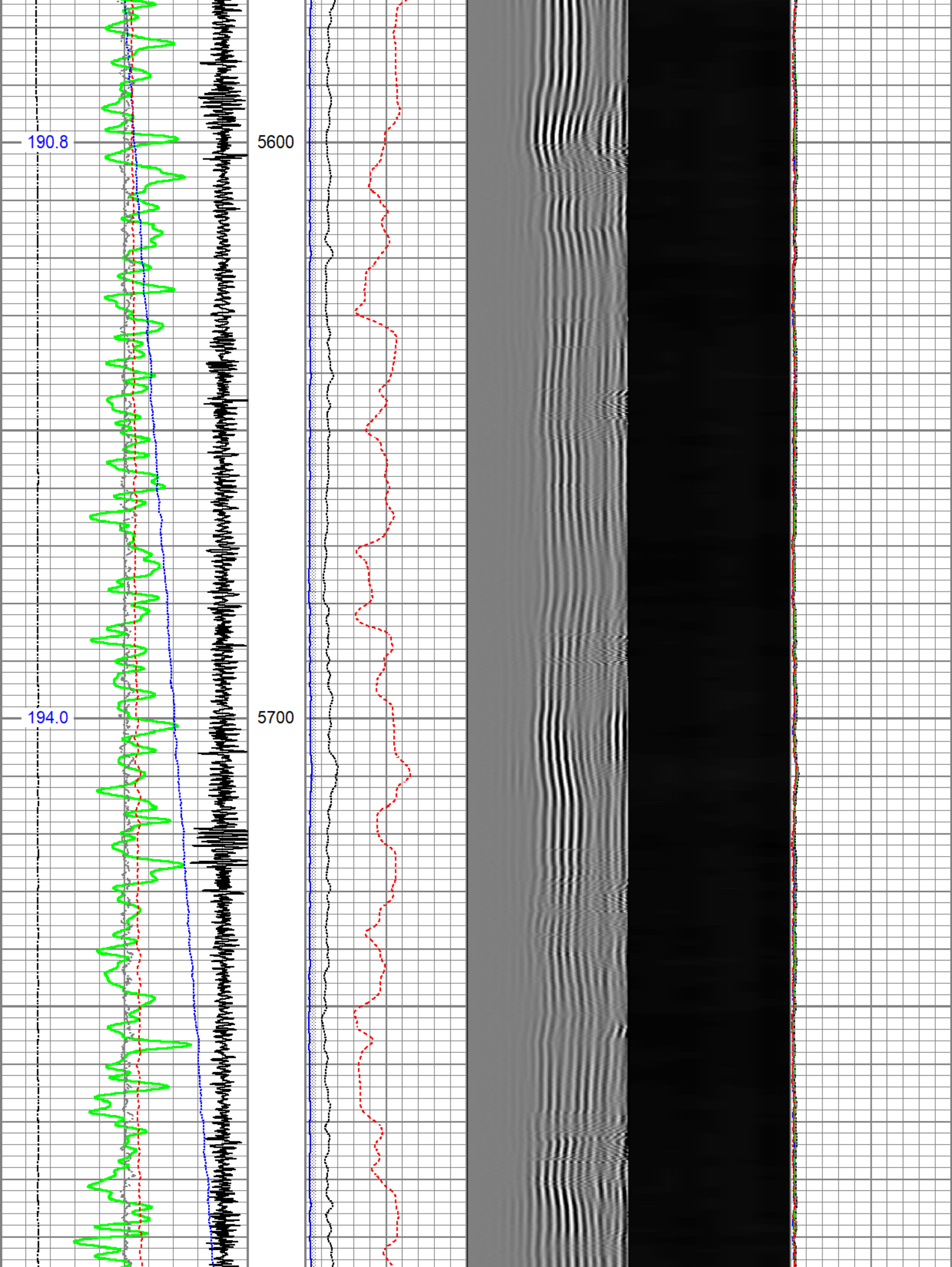
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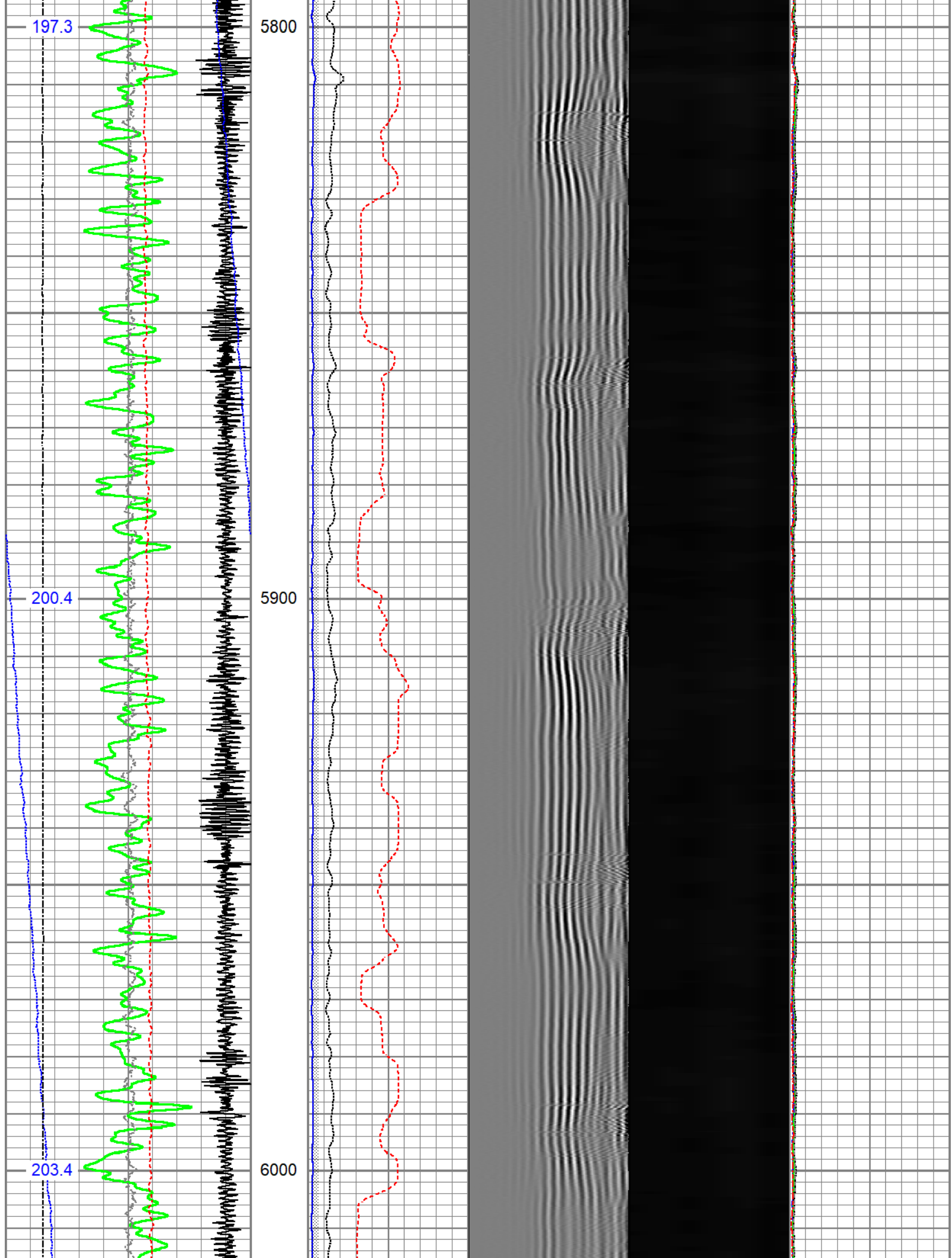


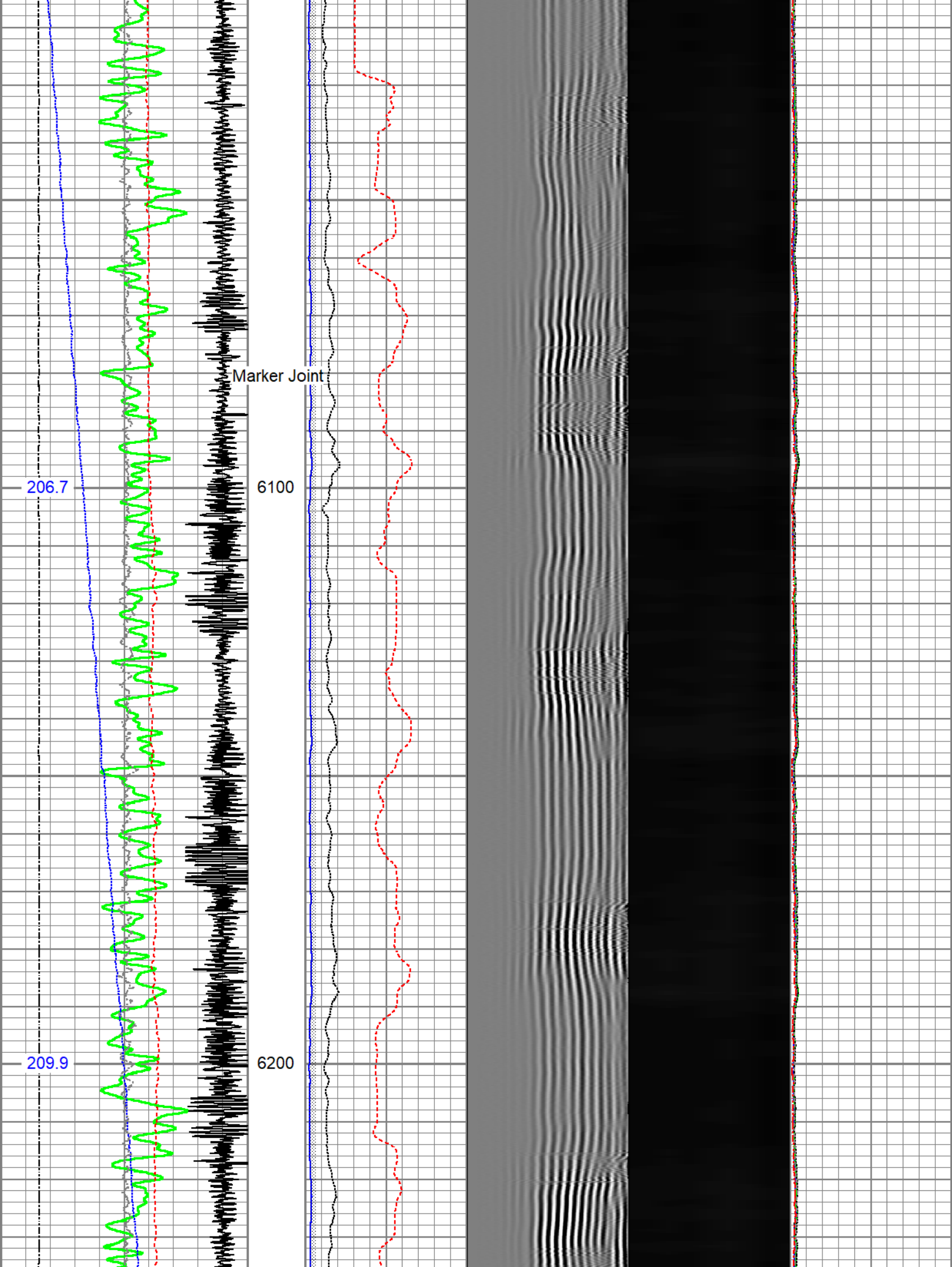


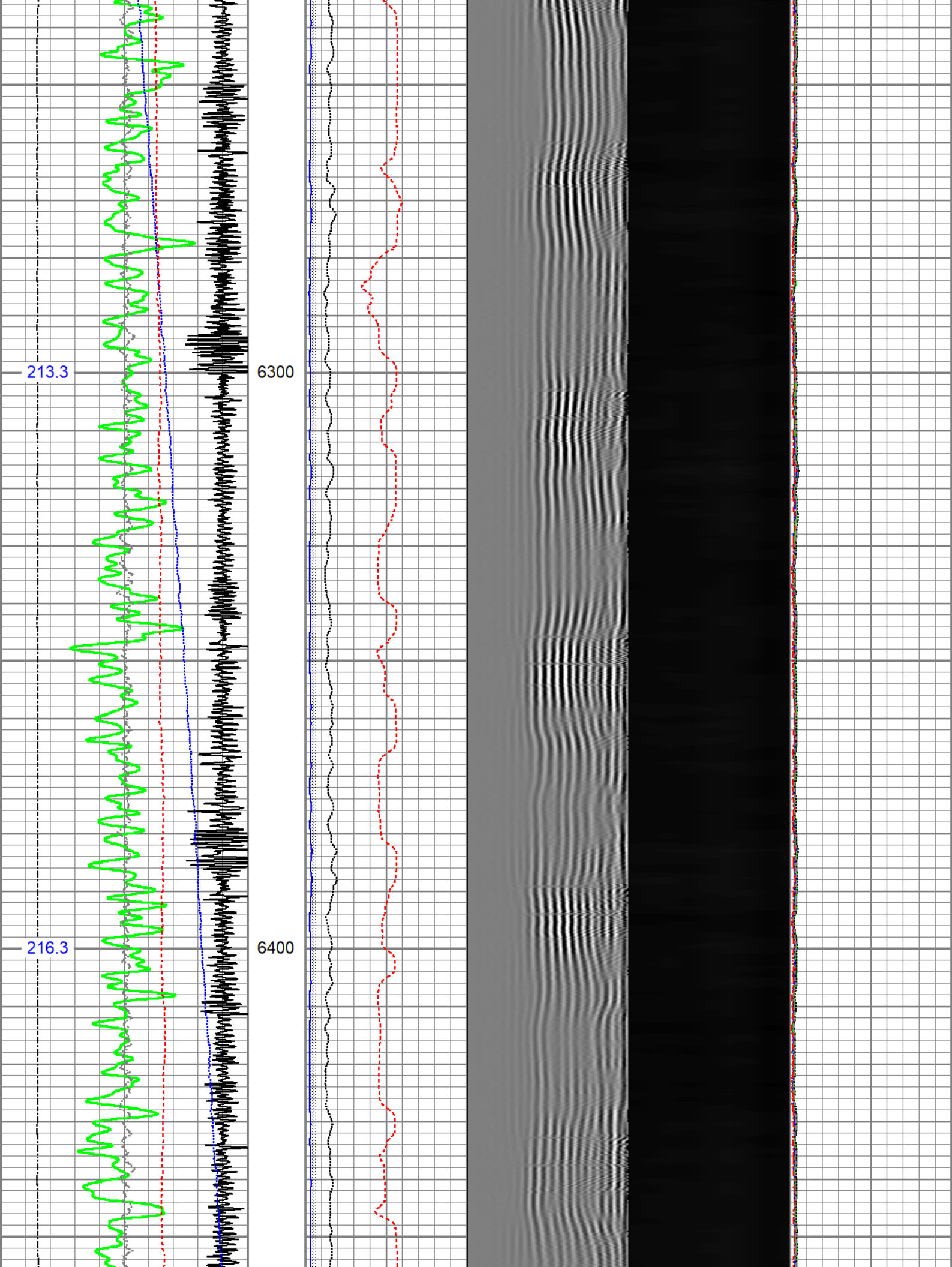


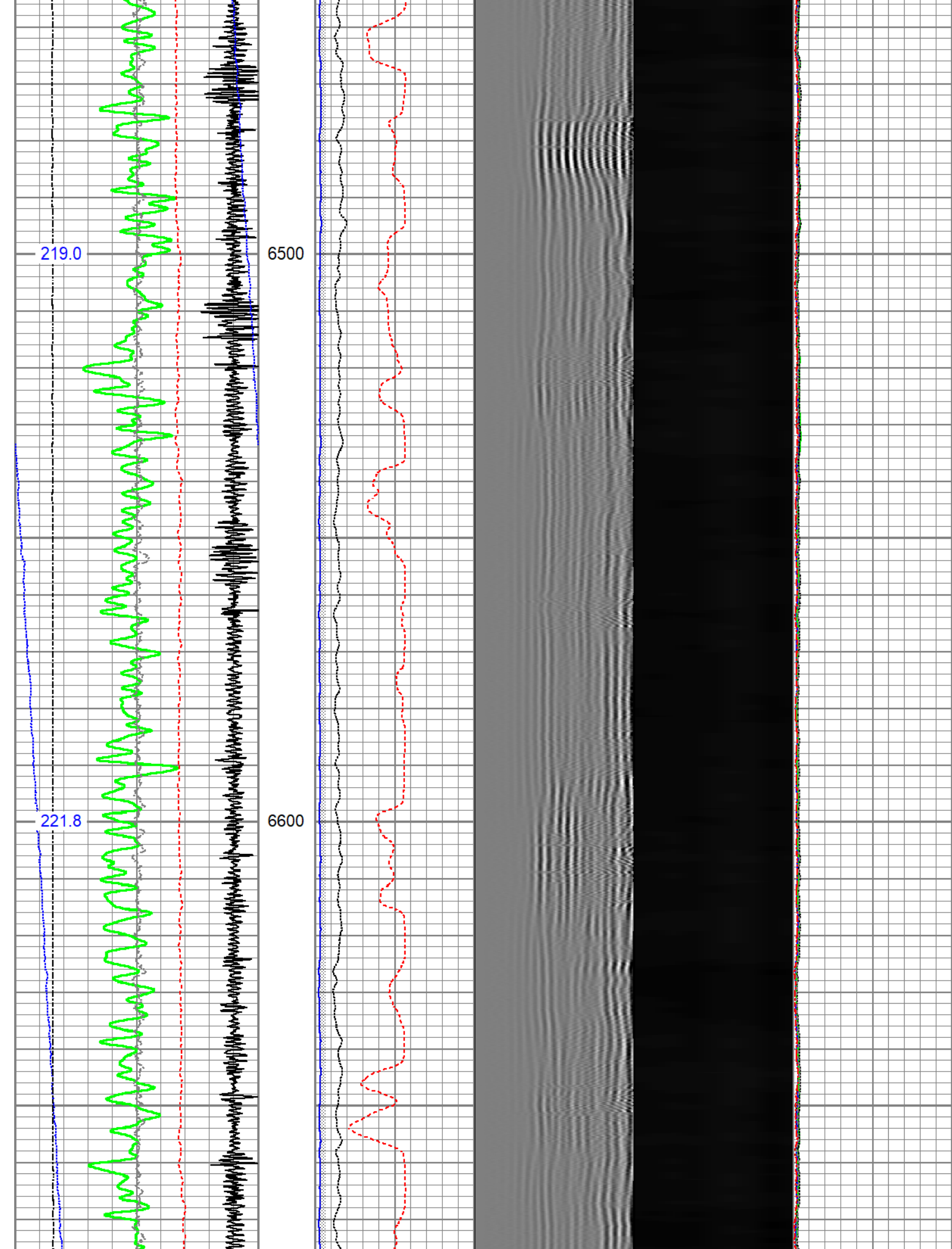


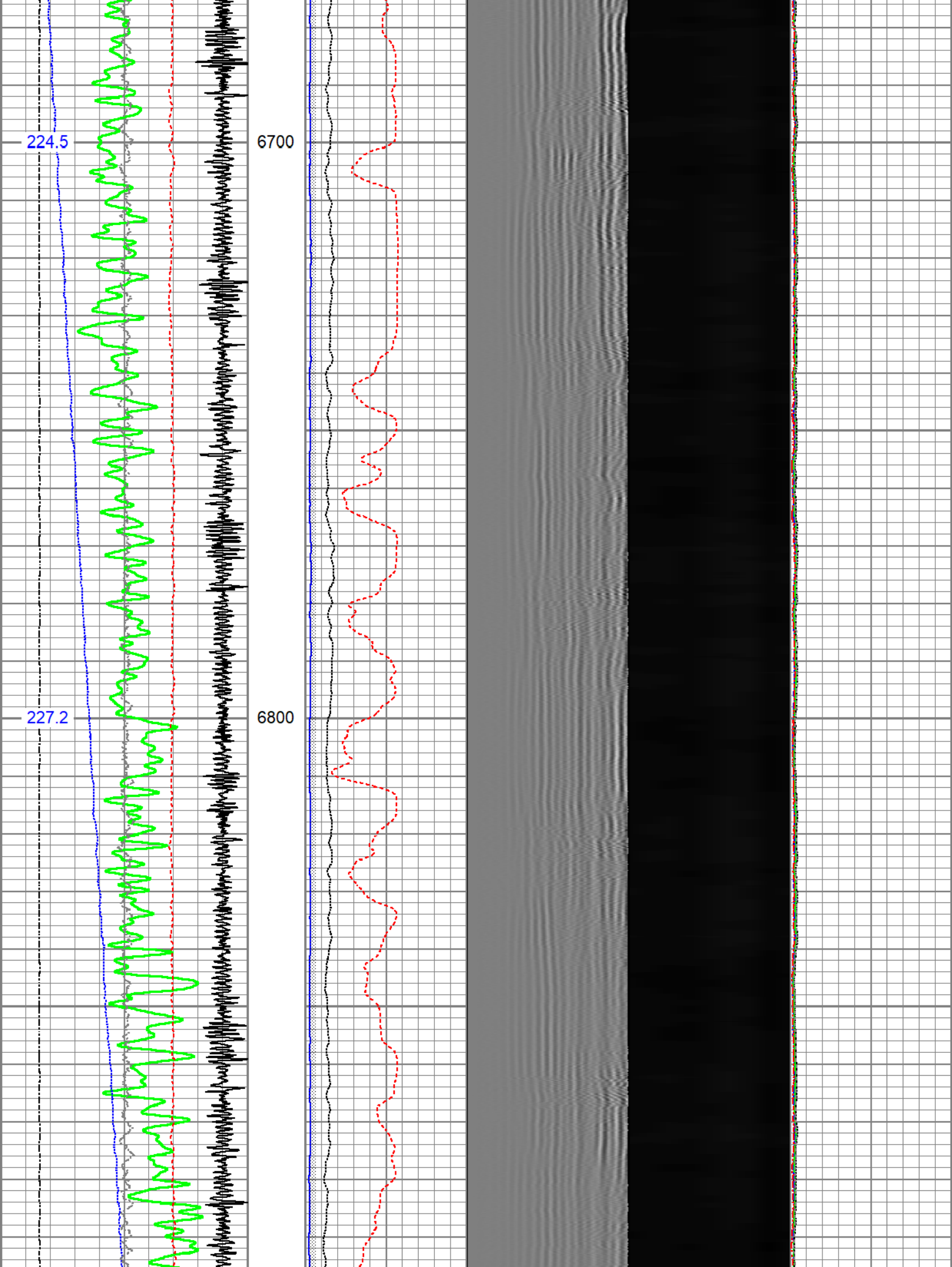


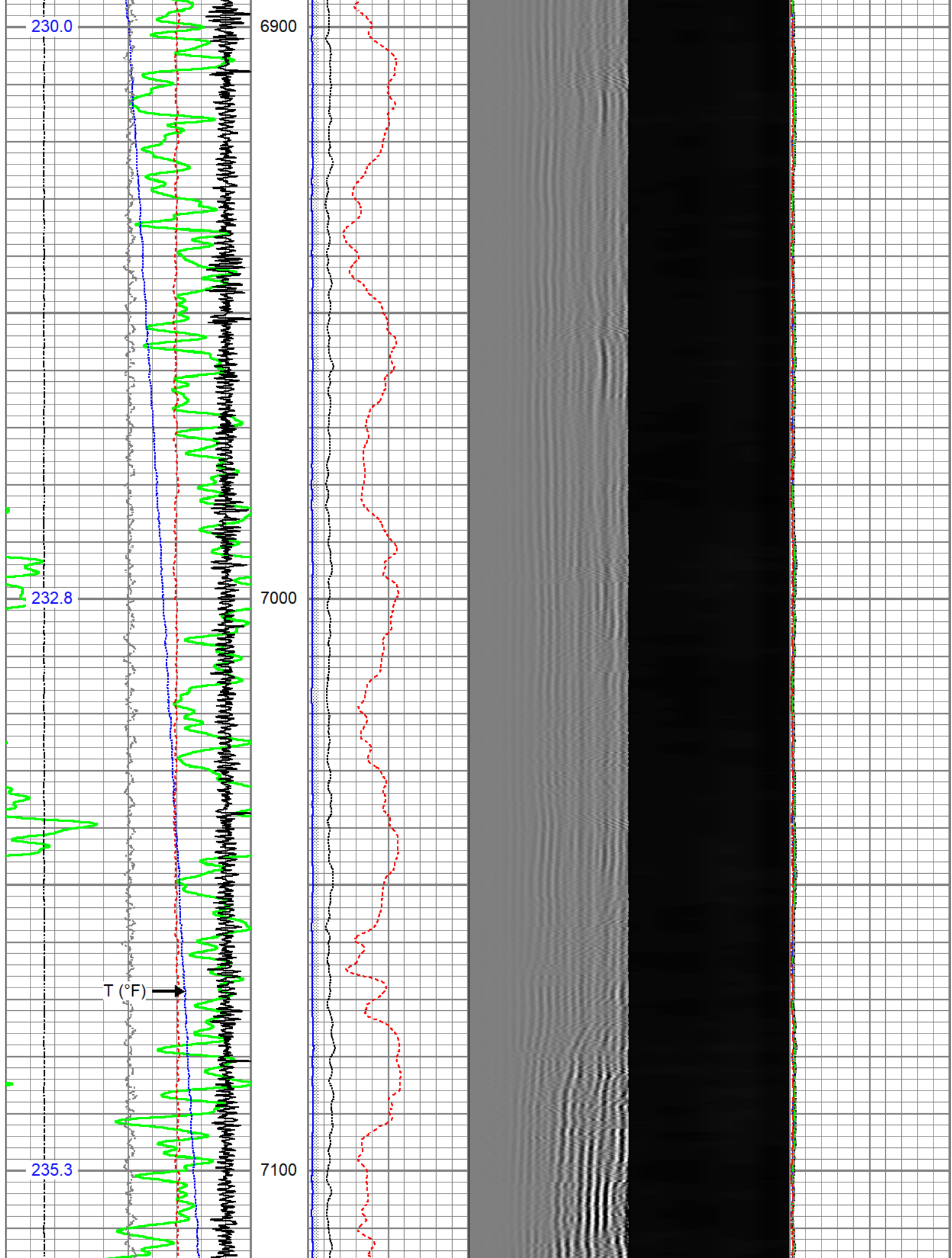


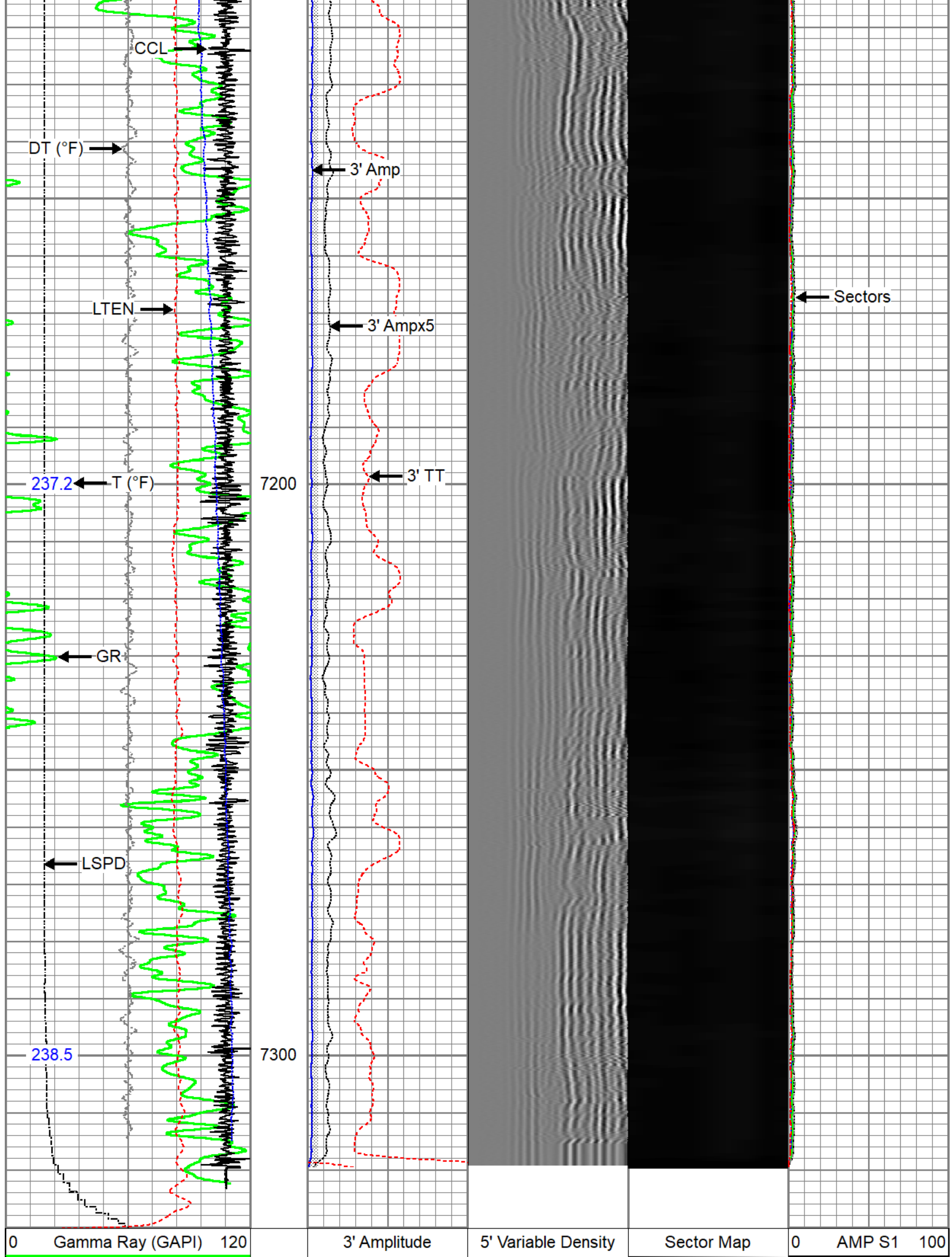







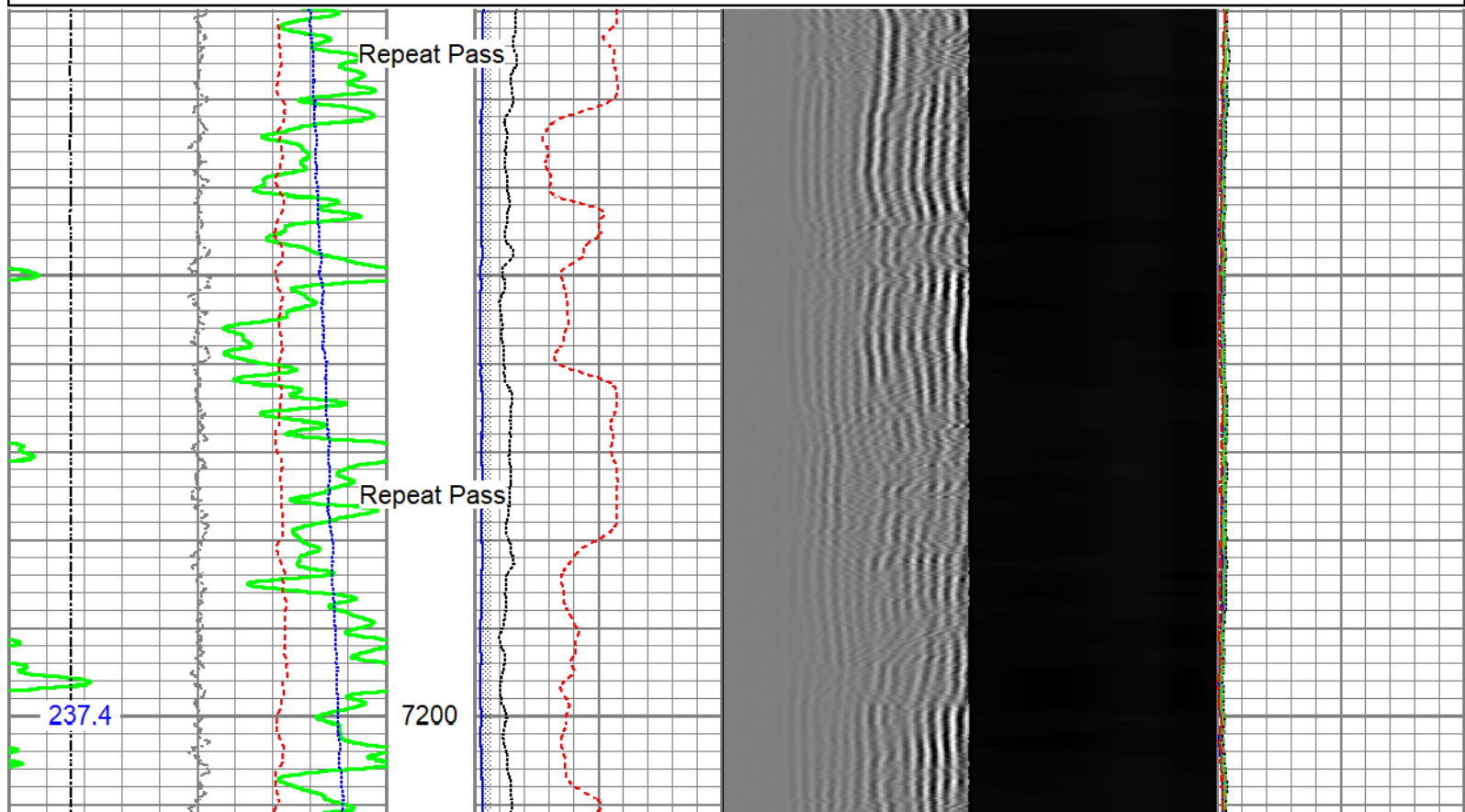


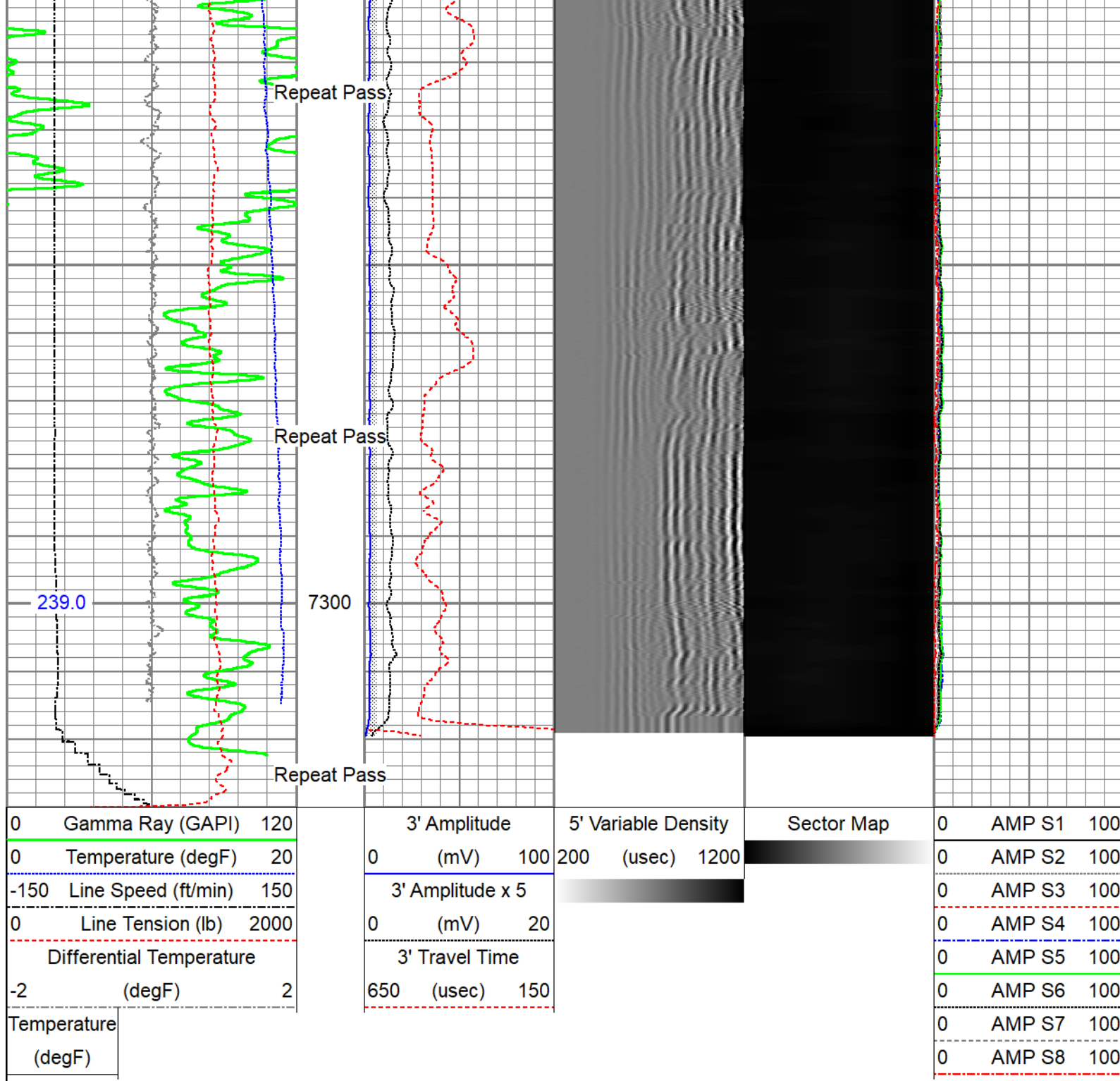




9	Casing Collar Locator	-1	0	(mV)	100	200	(usec)	1200	0	AMP S2	100
0	Temperature (degF)	20	3' Amplitude x 5						0	AMP S3	100
-150	Line Speed (ft/min)	150	0	(mV)	20				0	AMP S4	100
0	Line Tension (lb)	2000	3' Travel Time						0	AMP S5	100
	Differential Temperature		650	(usec)	150				0	AMP S6	100
-2	(degF)	2							0	AMP S7	100
Temperature									0	AMP S8	100
(degF)											

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Presentation Format		edge_rbl_noble									
Dataset Creation		Fri Nov 19 11:11:18 2021									
Charted by		Depth in Feet scaled 1:240									
0	Gamma Ray (GAPI)	120	3' Amplitude	5' Variable Density	Sector Map	0	AMP S1	100			
0	Temperature (degF)	20	0	(mV)	100	200	(usec)	1200	0	AMP S2	100
-150	Line Speed (ft/min)	150	3' Amplitude x 5						0	AMP S3	100
0	Line Tension (lb)	2000	0	(mV)	20				0	AMP S4	100
	Differential Temperature		3' Travel Time						0	AMP S5	100
-2	(degF)	2	650	(usec)	150				0	AMP S6	100
Temperature									0	AMP S7	100
(degF)									0	AMP S8	100





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