



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company				Noble Energy Inc.			
Well				Roth A32-790			
Field				Wattenberg			
County				Weld			
State				Colorado			
Location:				API # : 05-123-51332			
SEC 30 TWP 6N RGE 64W				Other Services			
Permanent Datum				Ground Level			
Log Measured From				Kelly Bushing			
Drilling Measured From				Kelly Bushing			
Elevation				4698'			
Elevation				K.B. 4728'			
Elevation				D.F. ---			
Elevation				G.L. 4698'			
Date				19-NOV-2021			
Run Number				One			
Depth Driller				17153 FT			
Depth Logger				7293 FT			
Bottom Logged Interval				7279 FT			
Top Log Interval				Surface			
Open Hole Size				8.5"			
Type Fluid				Water			
Density / Viscosity				8.34 lb/gal			
Max. Recorded Temp.				241 °F			
Estimated Cement Top				See Log			
Time Well Ready				ROA			
Time Logger on Bottom				07:45			
Equipment Number				HD-0324			
Location				Platteville, CO			
Recorded By				C. Sinerros			
Witnessed By				A. Dockins			
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				Grade			
J 55				Top			
P110				Bottom			
30 FT				1951 FT			
30 FT				17142.2 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 6087 FT to 6107 FT
Adjusted -20 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

		Fishing Neck						
TEMP	14.16		SO BS CENT-2750-4500 Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer	1.33	3.25	10.00		
WVFS8	11.93		Probe Radii-2750 RBT (FW1305-096) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00		
WVFS7	11.93							
WVFS6	11.93							
WVFS5	11.93							
WVFS4	11.93							
WVFS3	11.93							
WVFS2	11.93							
WVFS1	11.93							
WVFCAL	11.93							
WVF3FT	11.93							
WVF5FT	10.93							
CCL\$2	6.80			SO BS CENT-2750-4500 Slip Over 2-3/4" I.D. for 4-1/2" O.D. Casing Bow Spring Centralizer	1.33	3.25	10.00	
CCL\$1	6.80							
GR	5.46							
				Probe GR-CCL-2750 6PB (FW1810-001) Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT	4.80	2.75	55.00	
				Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	
LOCTIM	0.00							
UTCTIM	0.00							
		Dataset: noble_roth a32-790_rbl_11-19-21.db: field/well/run1/main.1 Total length: 18.10 ft Total weight: 203.60 lb O.D.: 3.25 in						

		Calibration Report	
Database File	noble_roth a32-790_rbl_11-19-21.db		
Dataset Pathname	main.1		

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	0.530	0.800	71.921	134.183	0.796
CAL	0.676	0.678				
5'	0.000	0.497	0.800	71.921	143.008	0.797
SUM						
S1	0.000	0.518	0.000	100.000	192.955	-0.008
S2	0.000	0.506	0.000	100.000	197.626	-0.004
S3	0.000	0.521	0.000	100.000	191.907	-0.005
S4	0.000	0.536	0.000	100.000	186.408	-0.006
S5	0.000	0.565	0.000	100.000	176.911	-0.007
S6	0.000	0.567	0.000	100.000	176.385	-0.010
S7	0.000	0.557	0.000	100.000	179.591	-0.011
S8	0.000	0.541	0.000	100.000	184.764	-0.006

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	

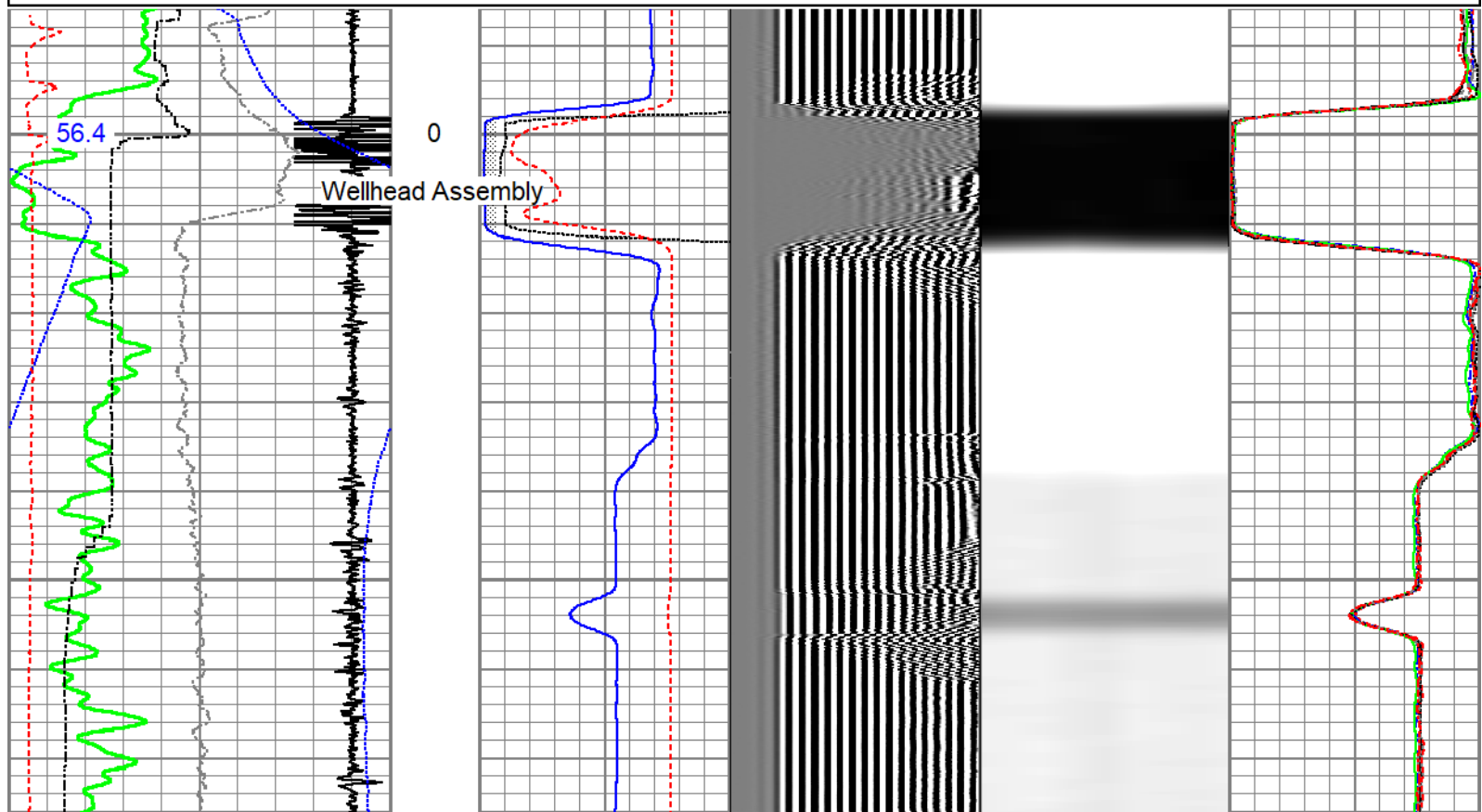


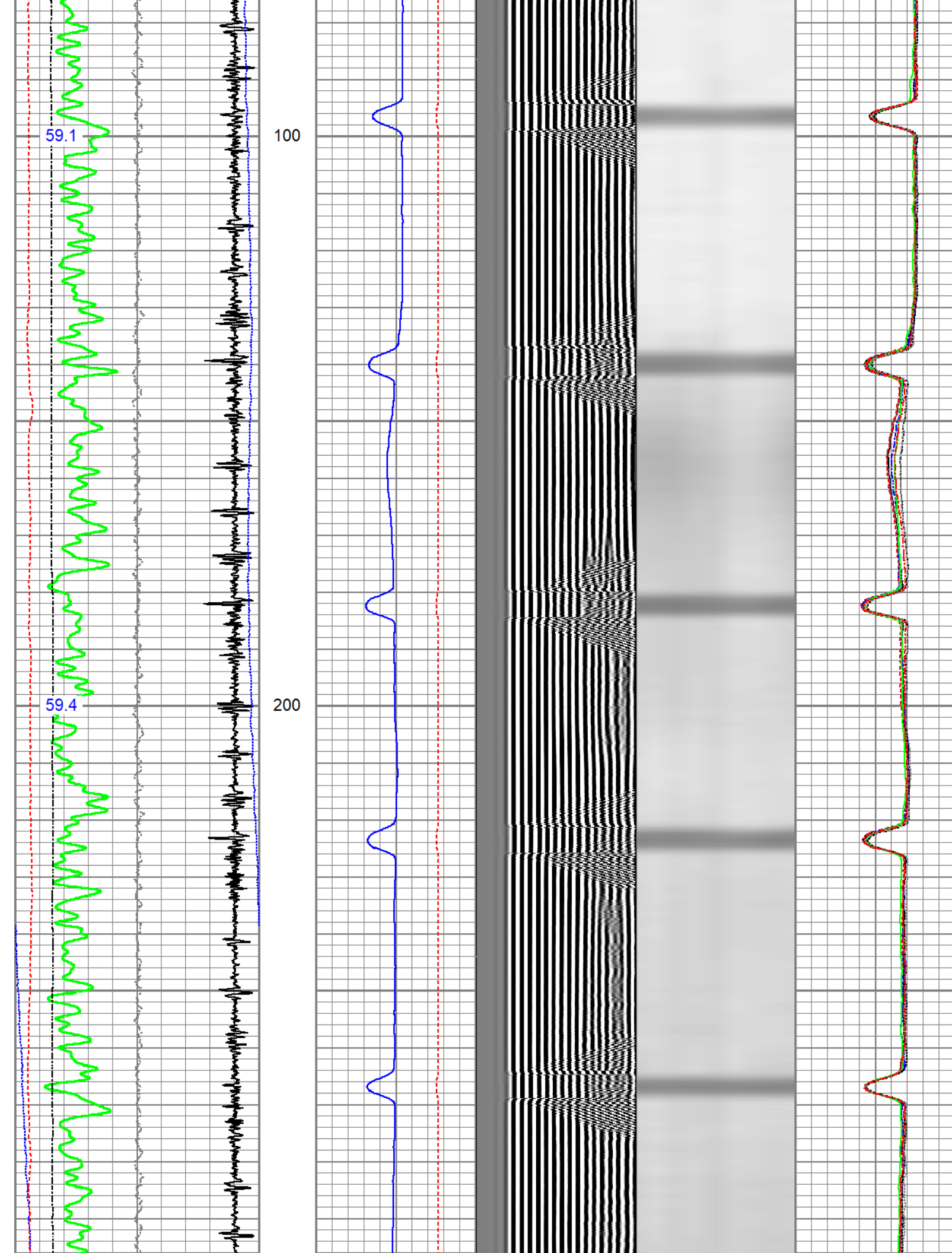
Main Pass

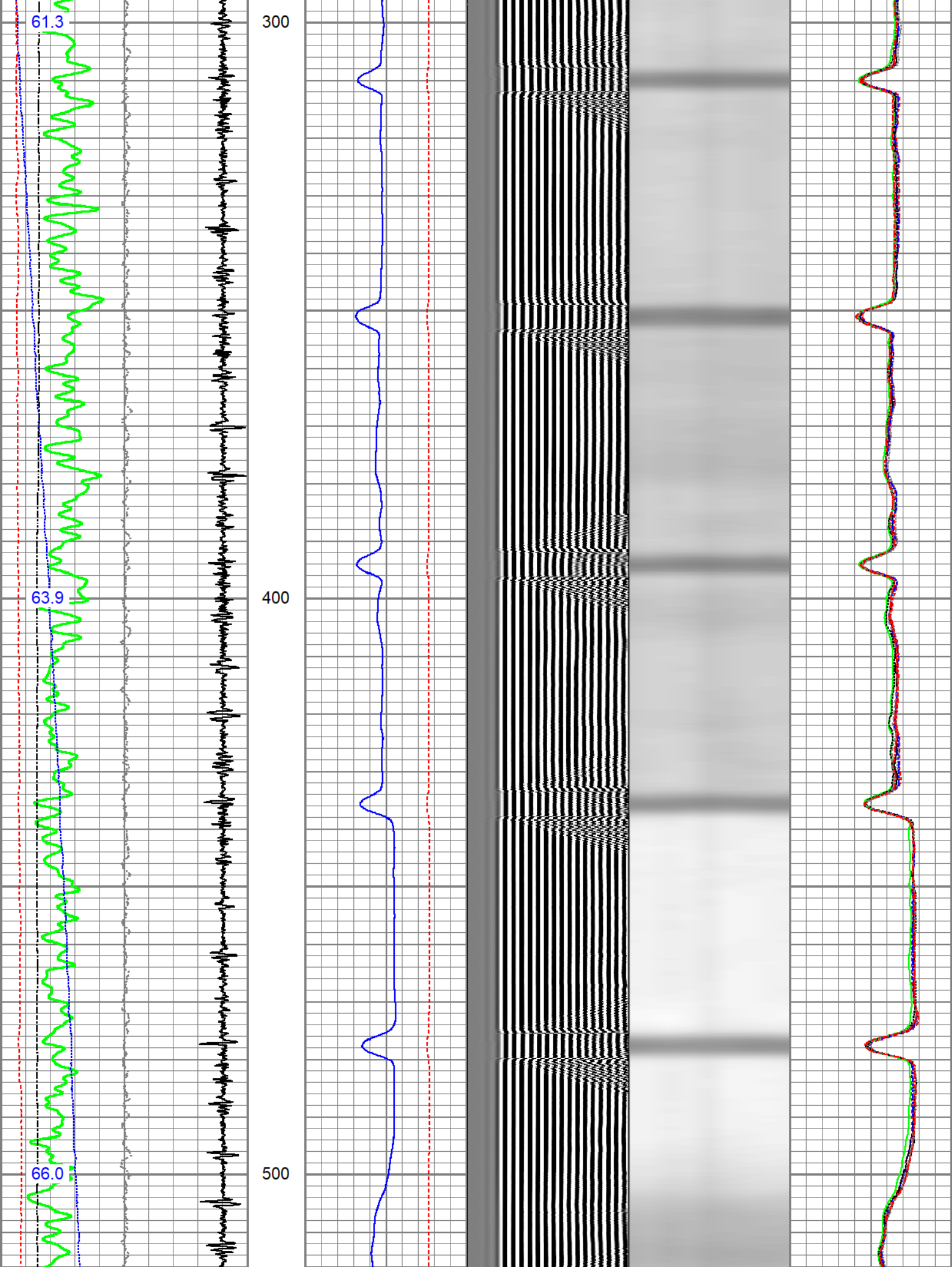
Recorded With 2500 PSI Surface Induced Pressure

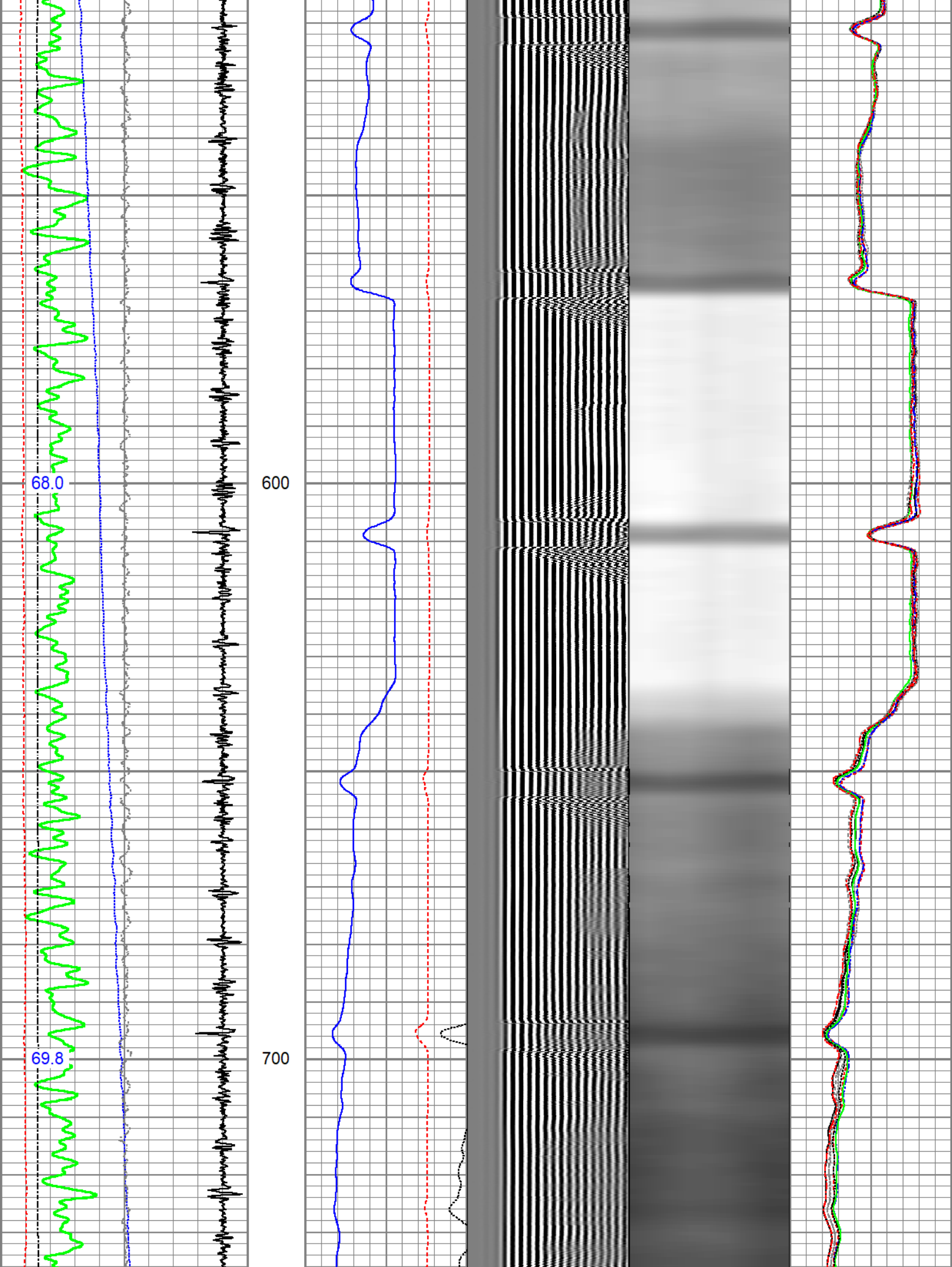
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Dataset Pathname	main.1
Presentation Format	edge_rbl_noble
Dataset Creation	Fri Nov 19 09:05:06 2021
Charted by	Depth in Feet scaled 1:240

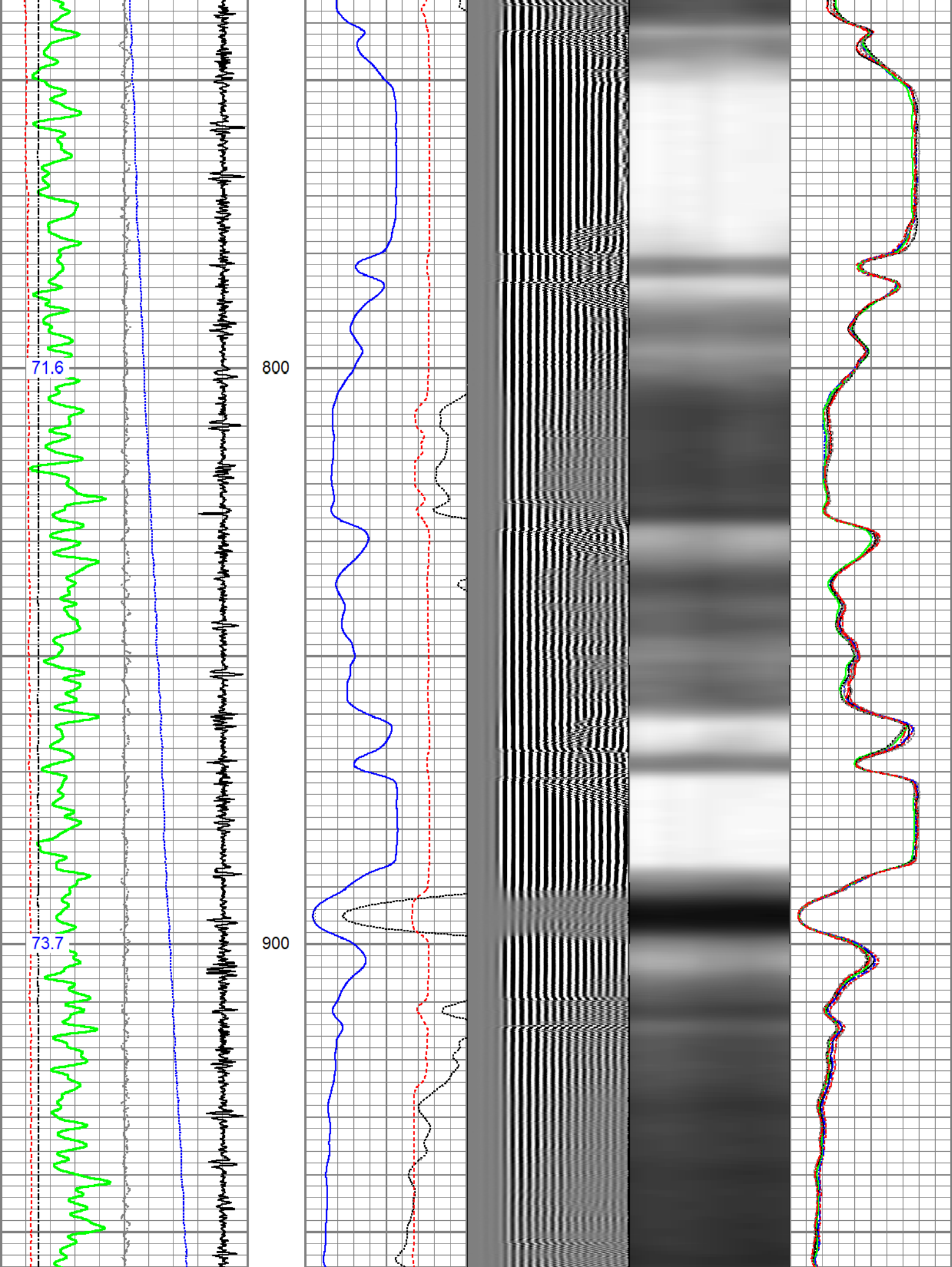
0	Gamma Ray (GAPI)	120	3' Amplitude	5' Variable Density	Sector Map	0	AMP S1	100
9	Casing Collar Locator	-1	0 (mV) 100	200 (usec) 1200		0	AMP S2	100
0	Temperature (degF)	20	3' Amplitude x 5			0	AMP S3	100
-150	Line Speed (ft/min)	150	0 (mV) 20			0	AMP S4	100
0	Line Tension (lb)	2000	3' Travel Time			0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

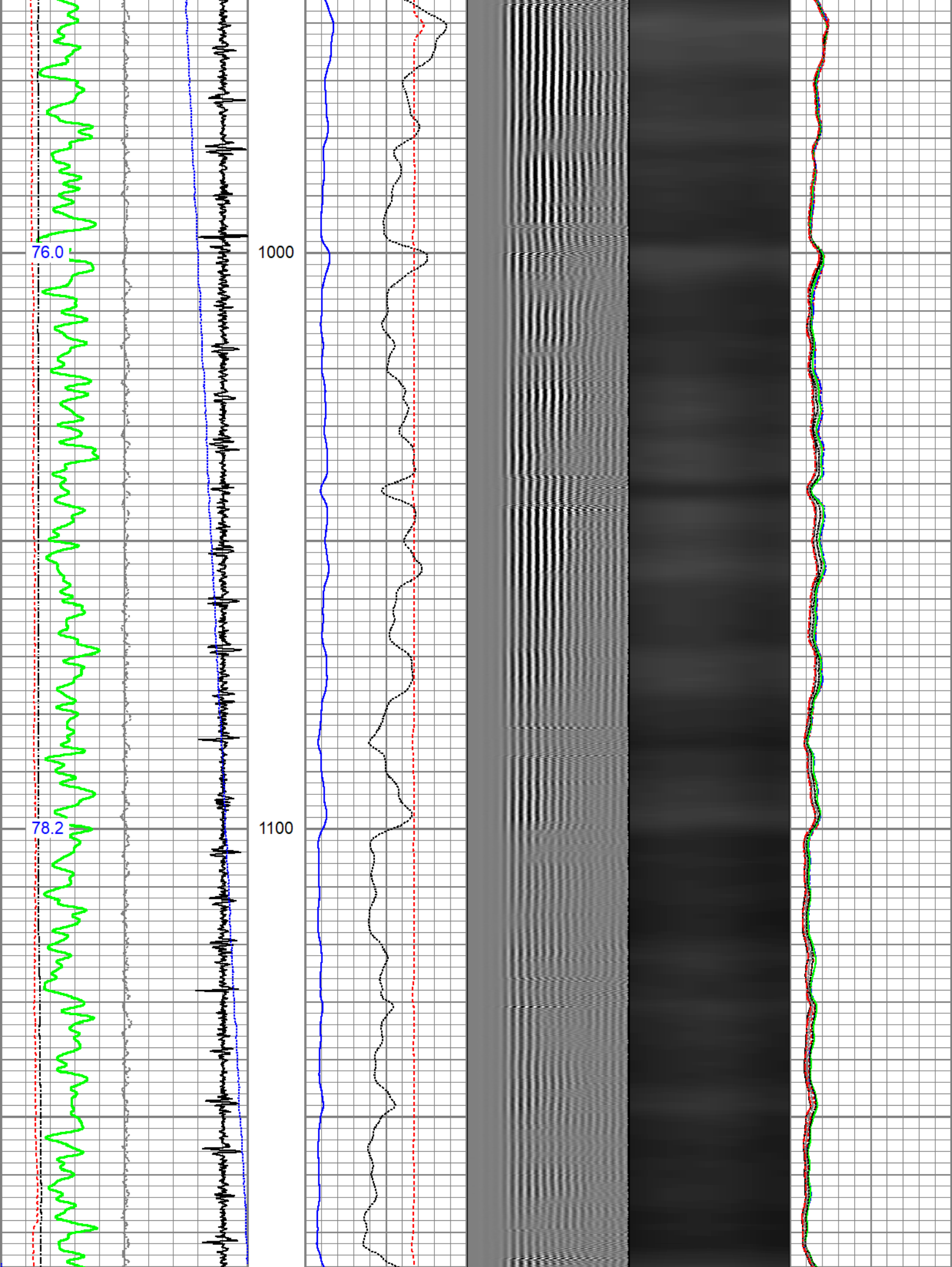


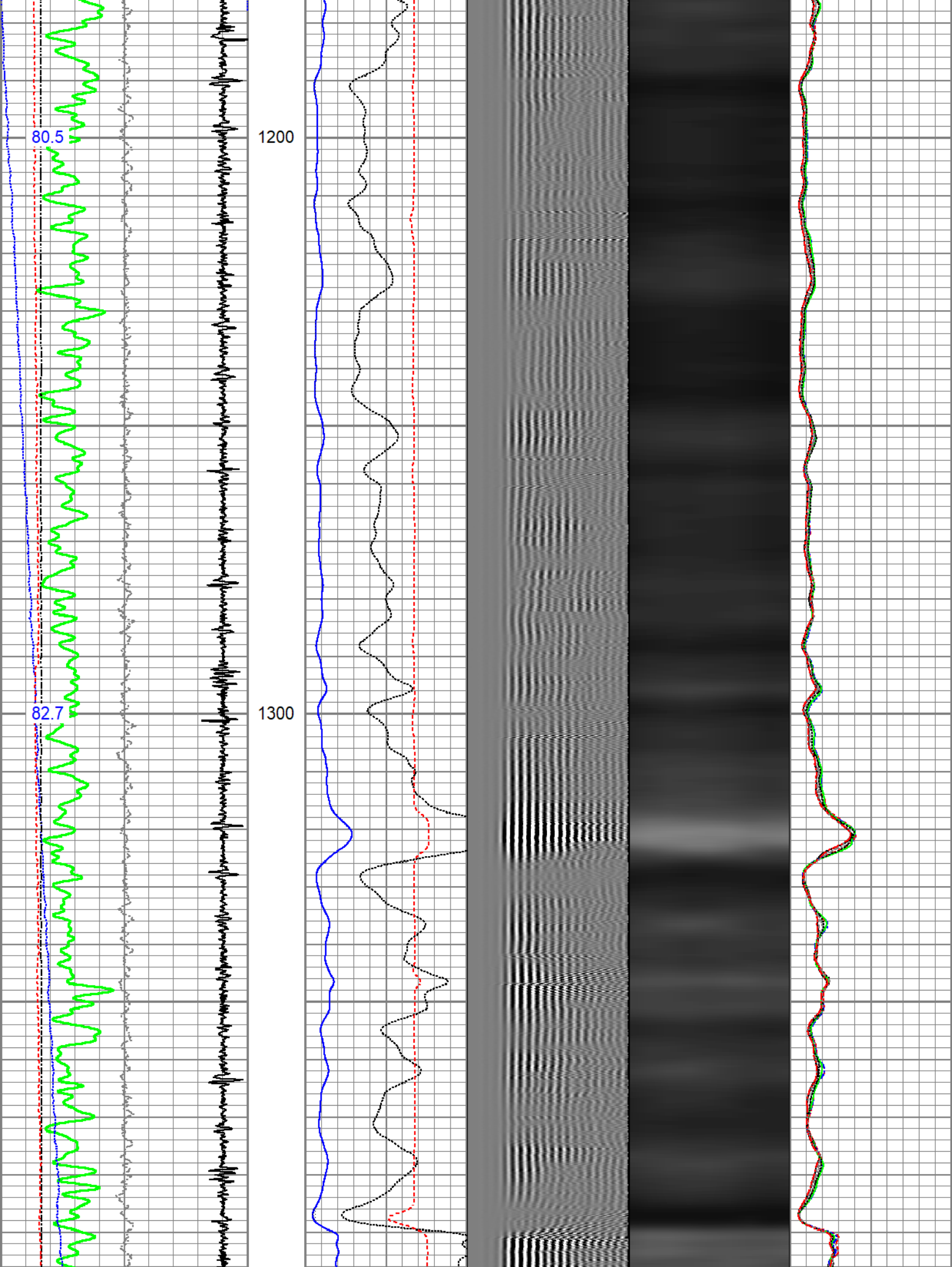


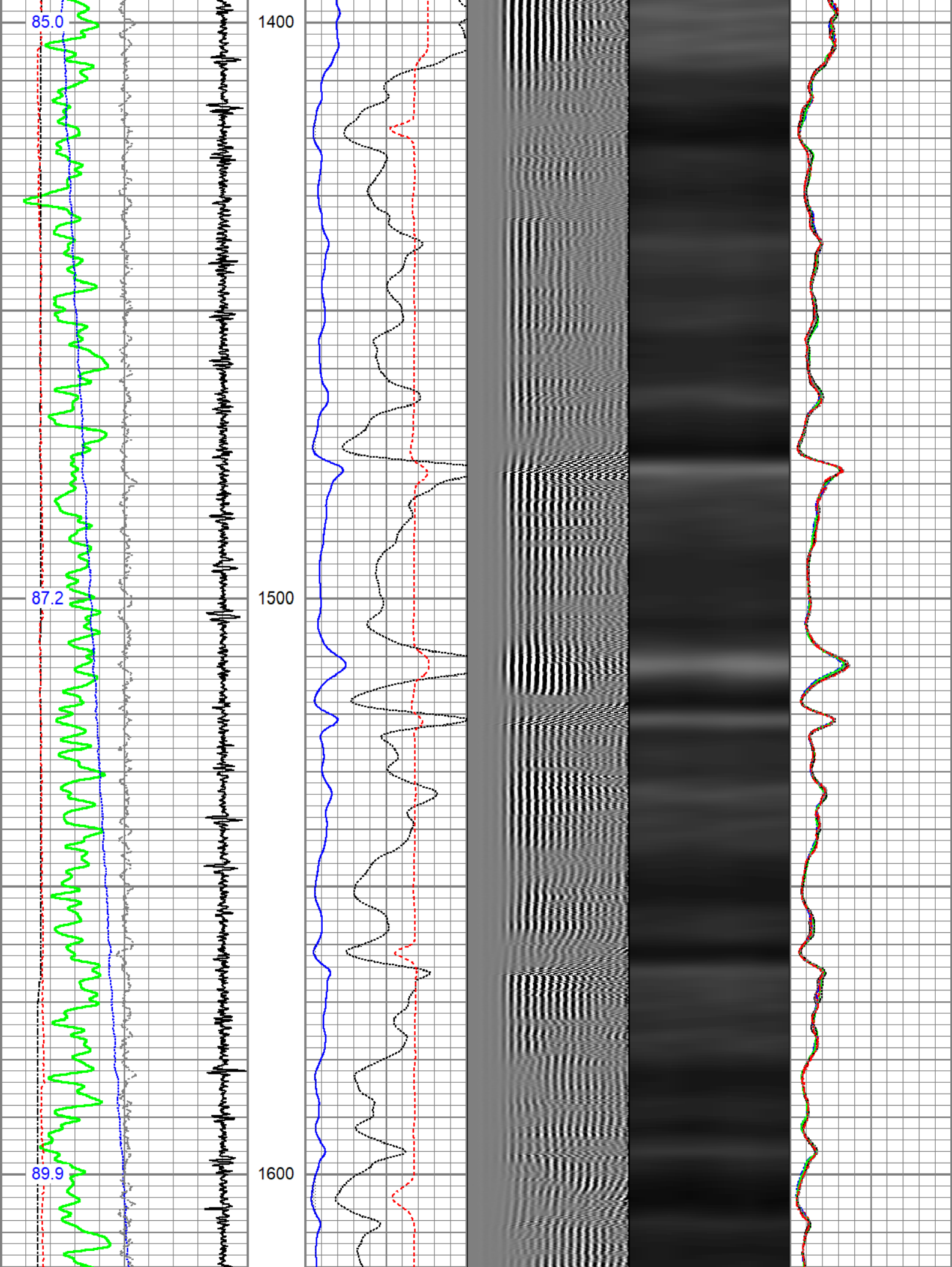


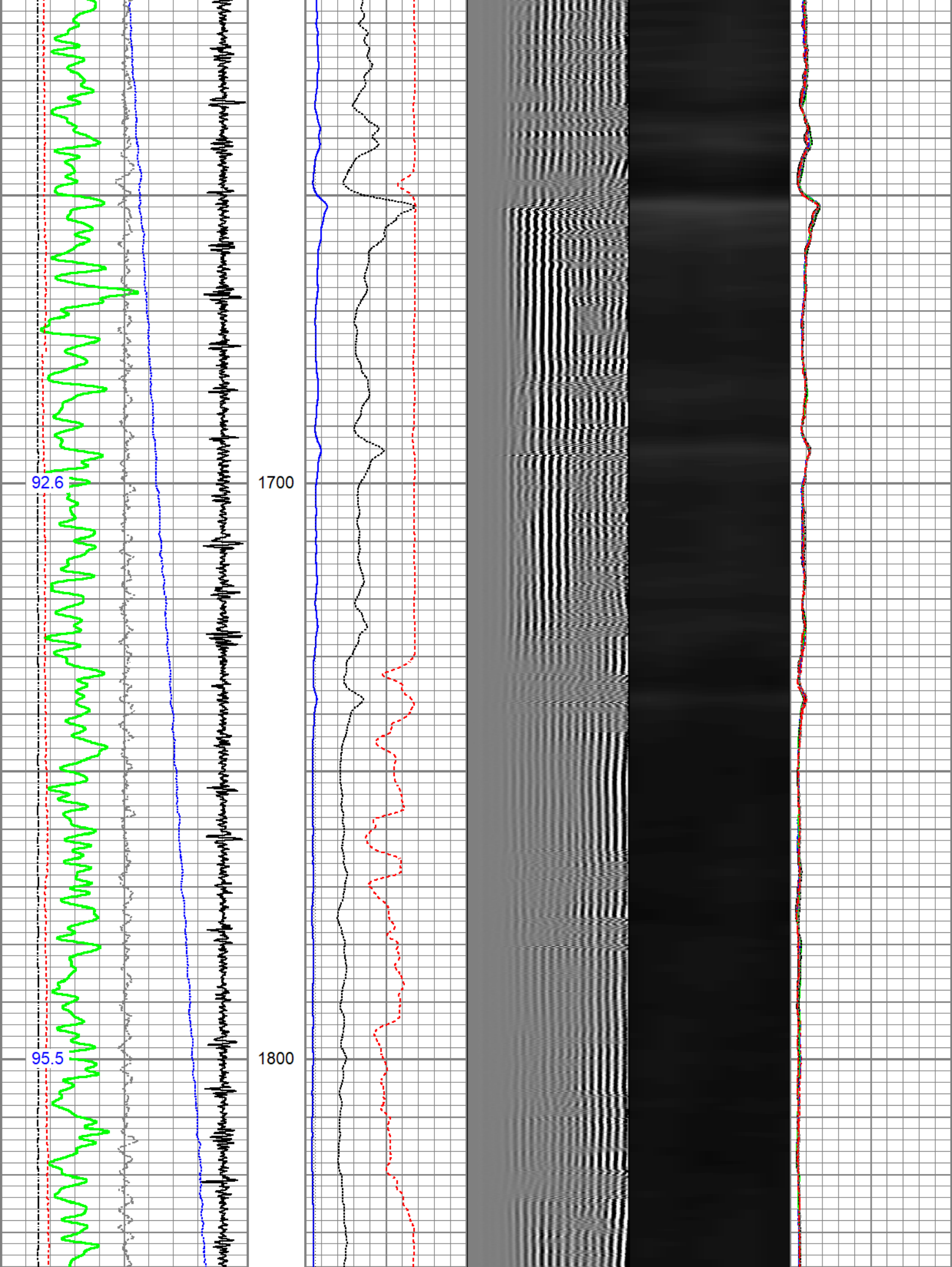


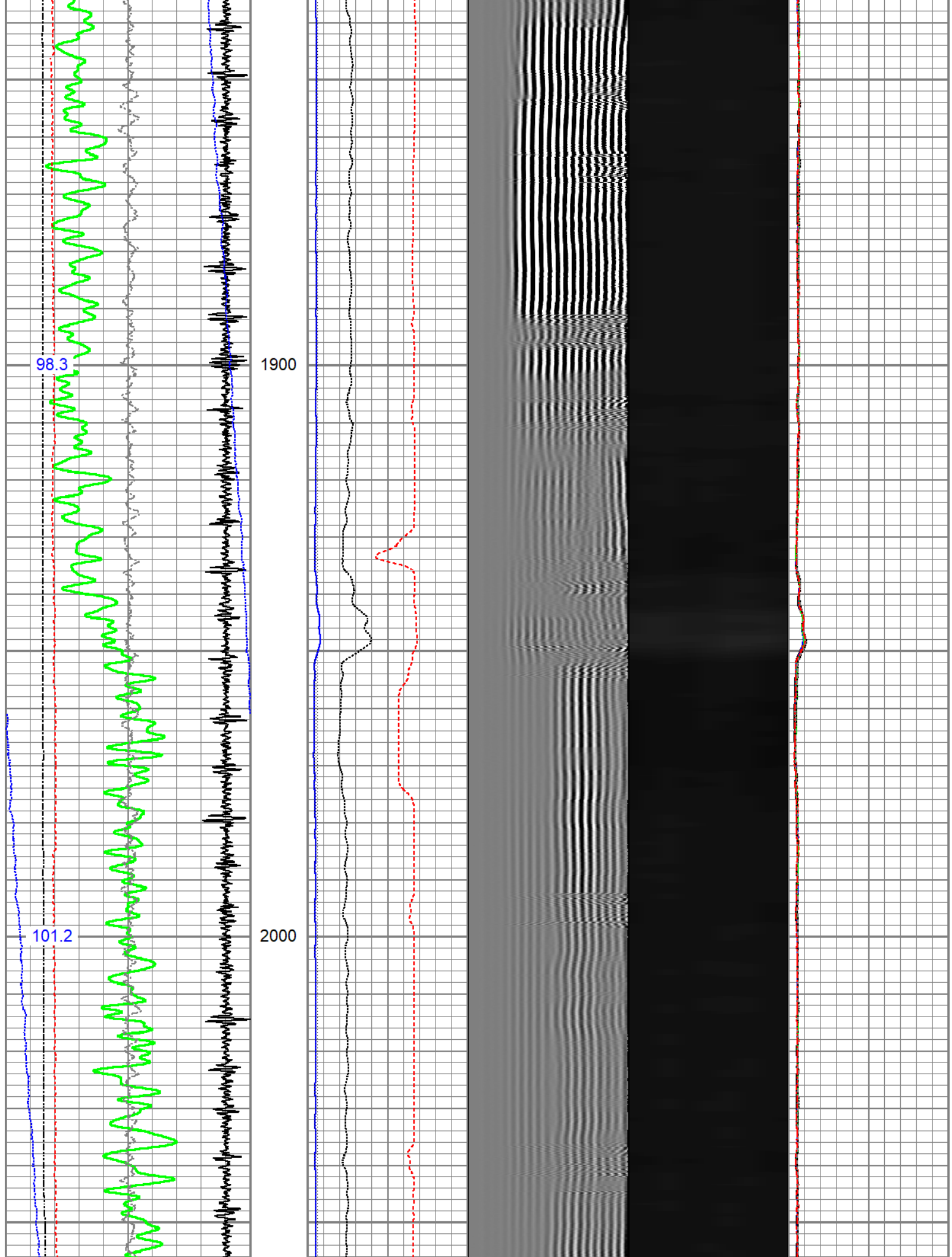


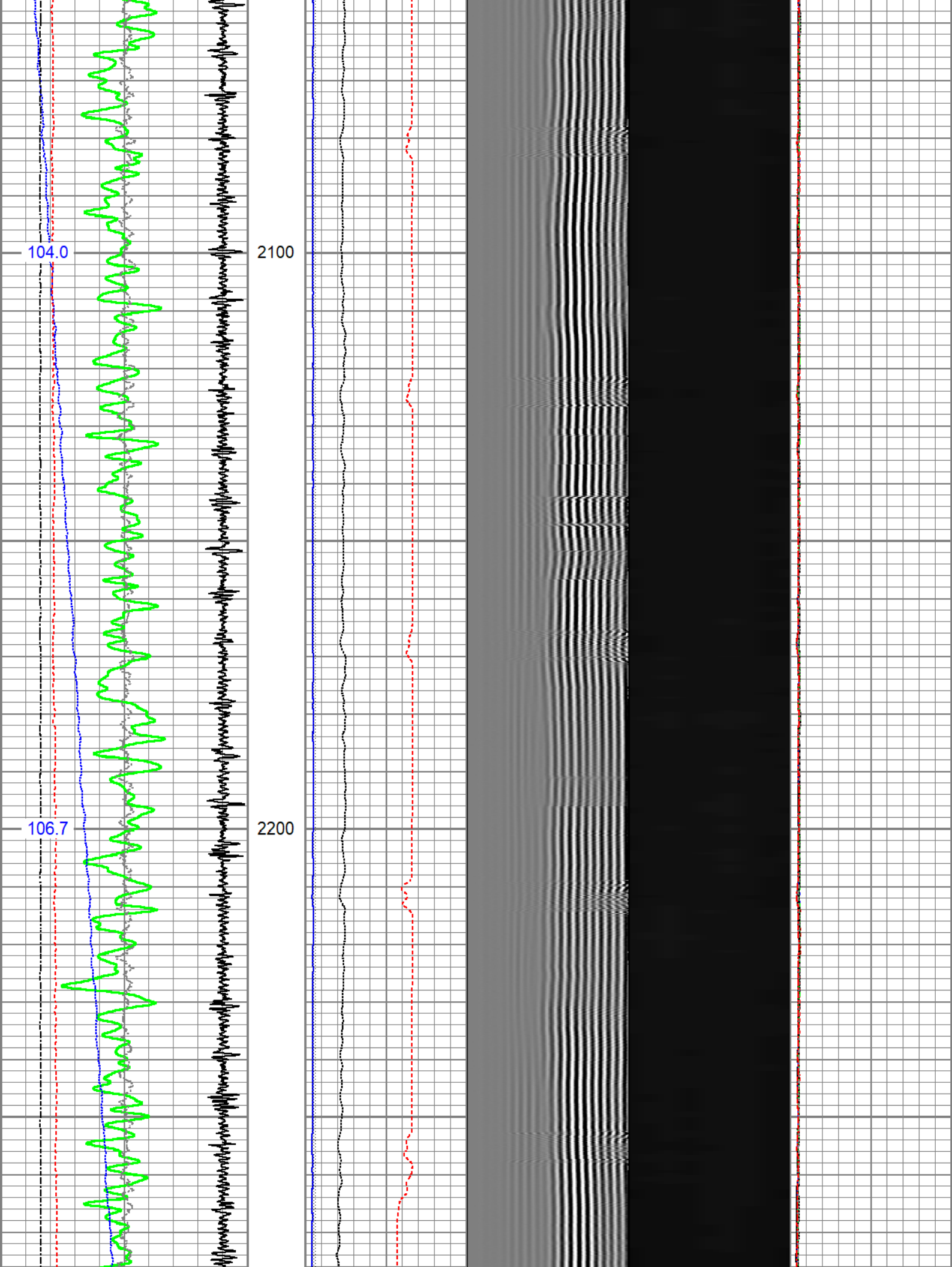


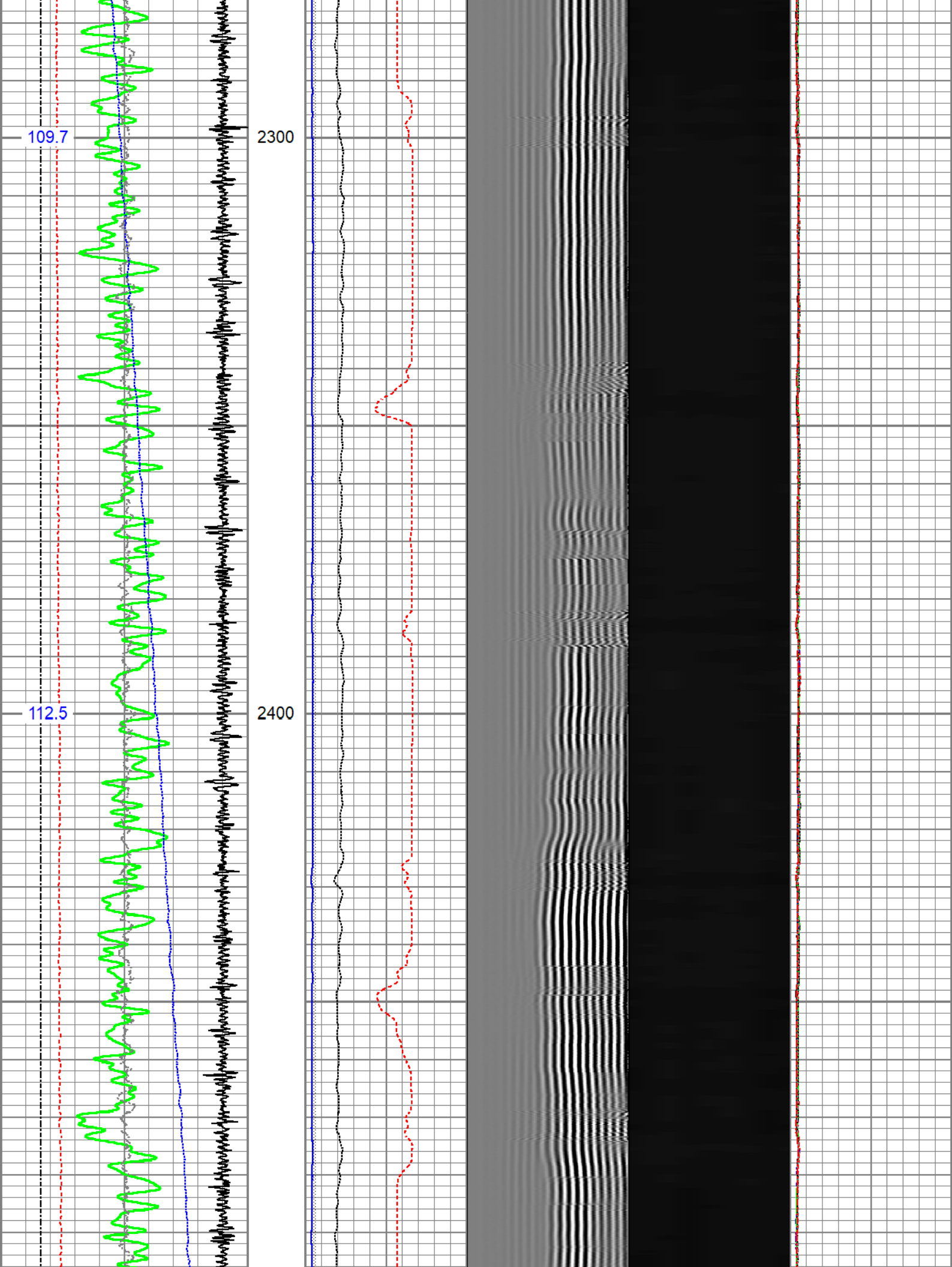


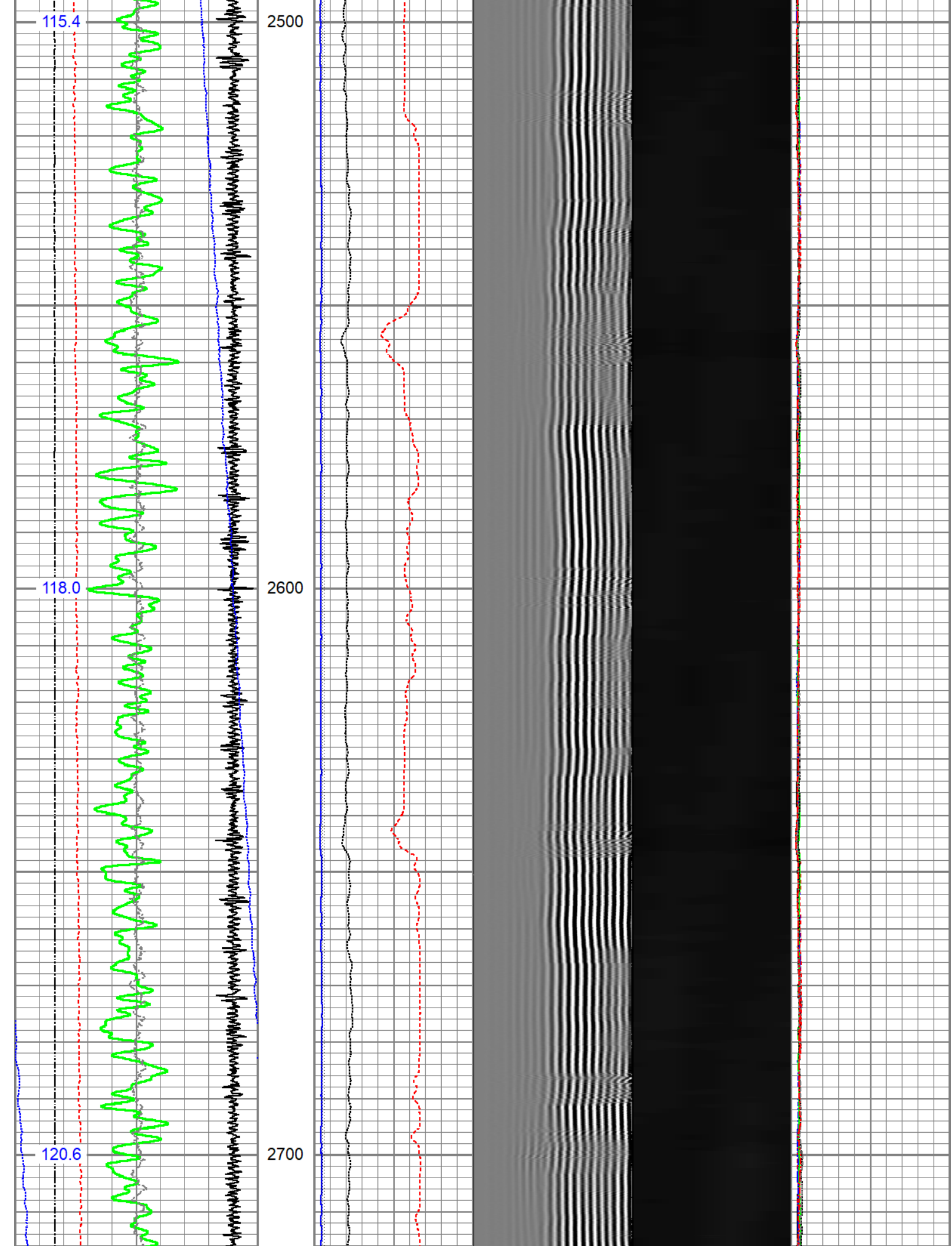


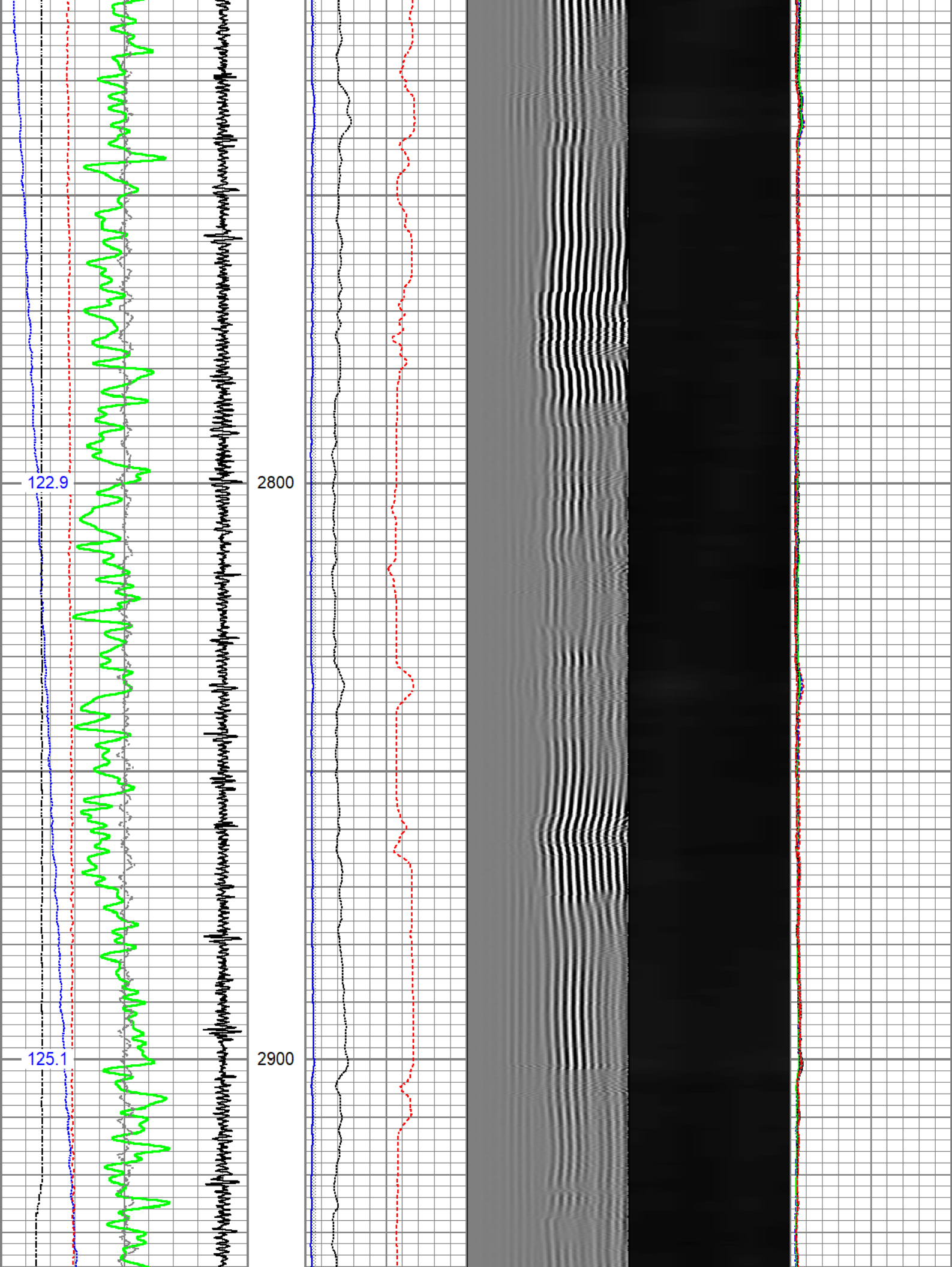


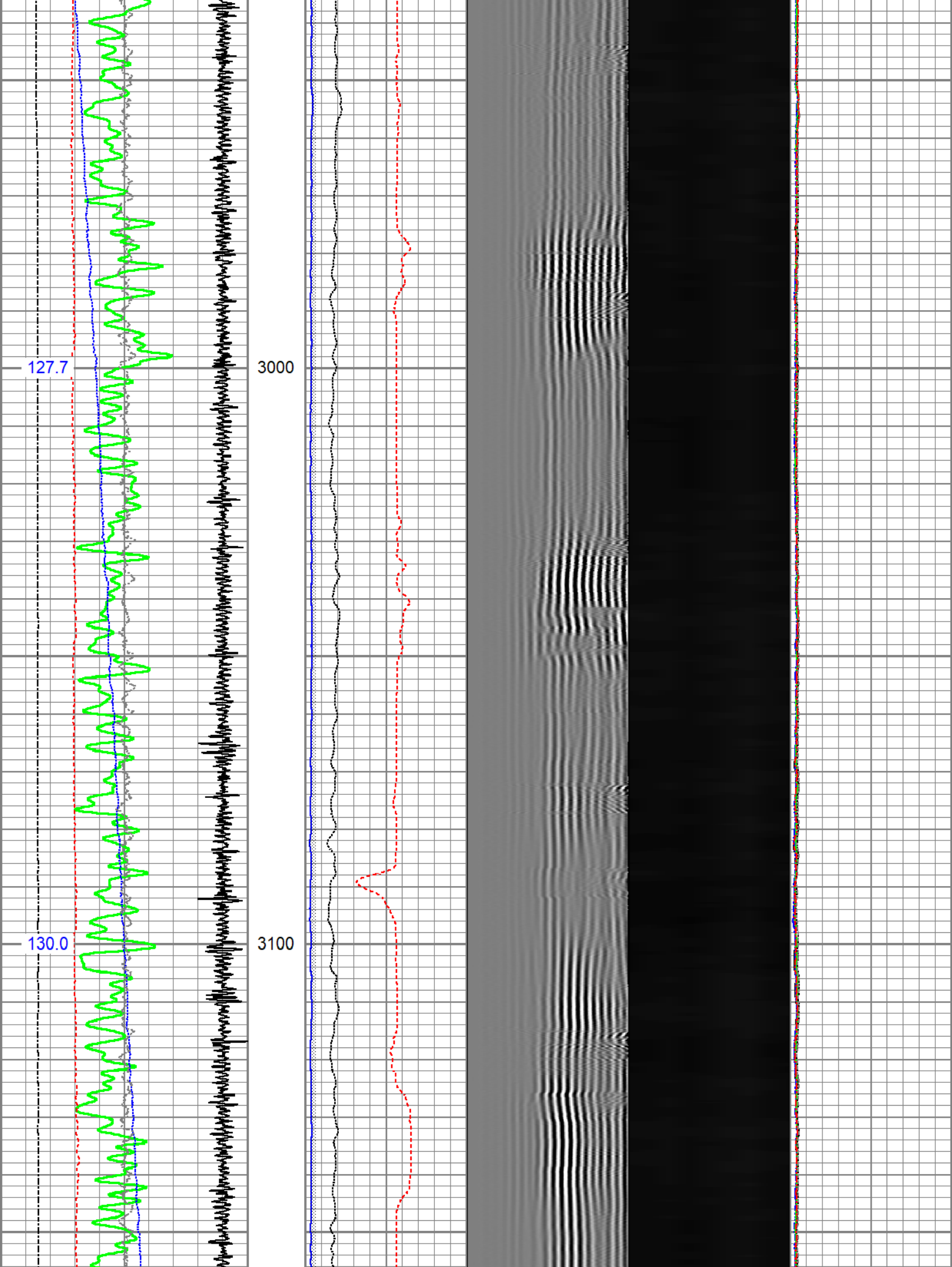


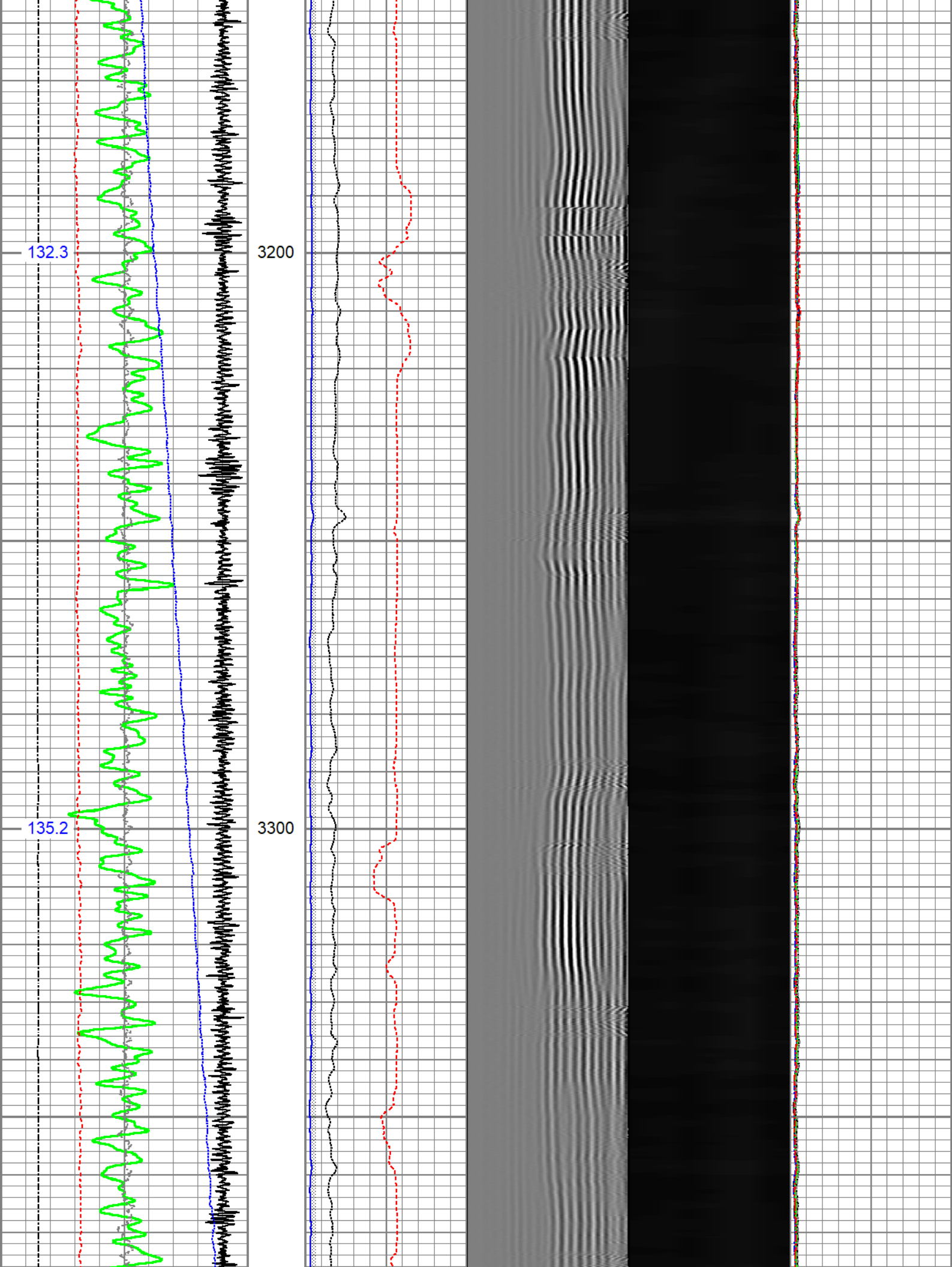


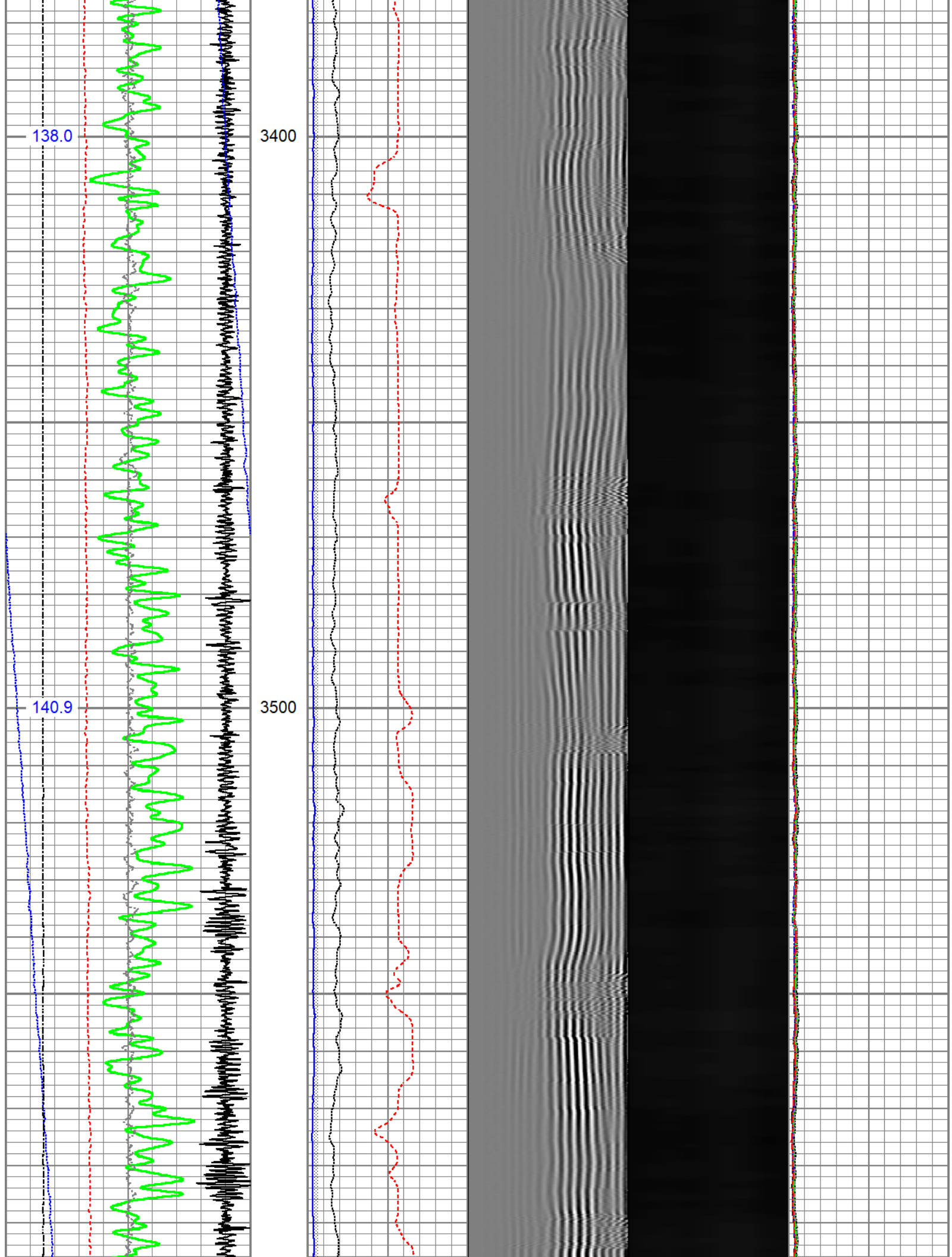


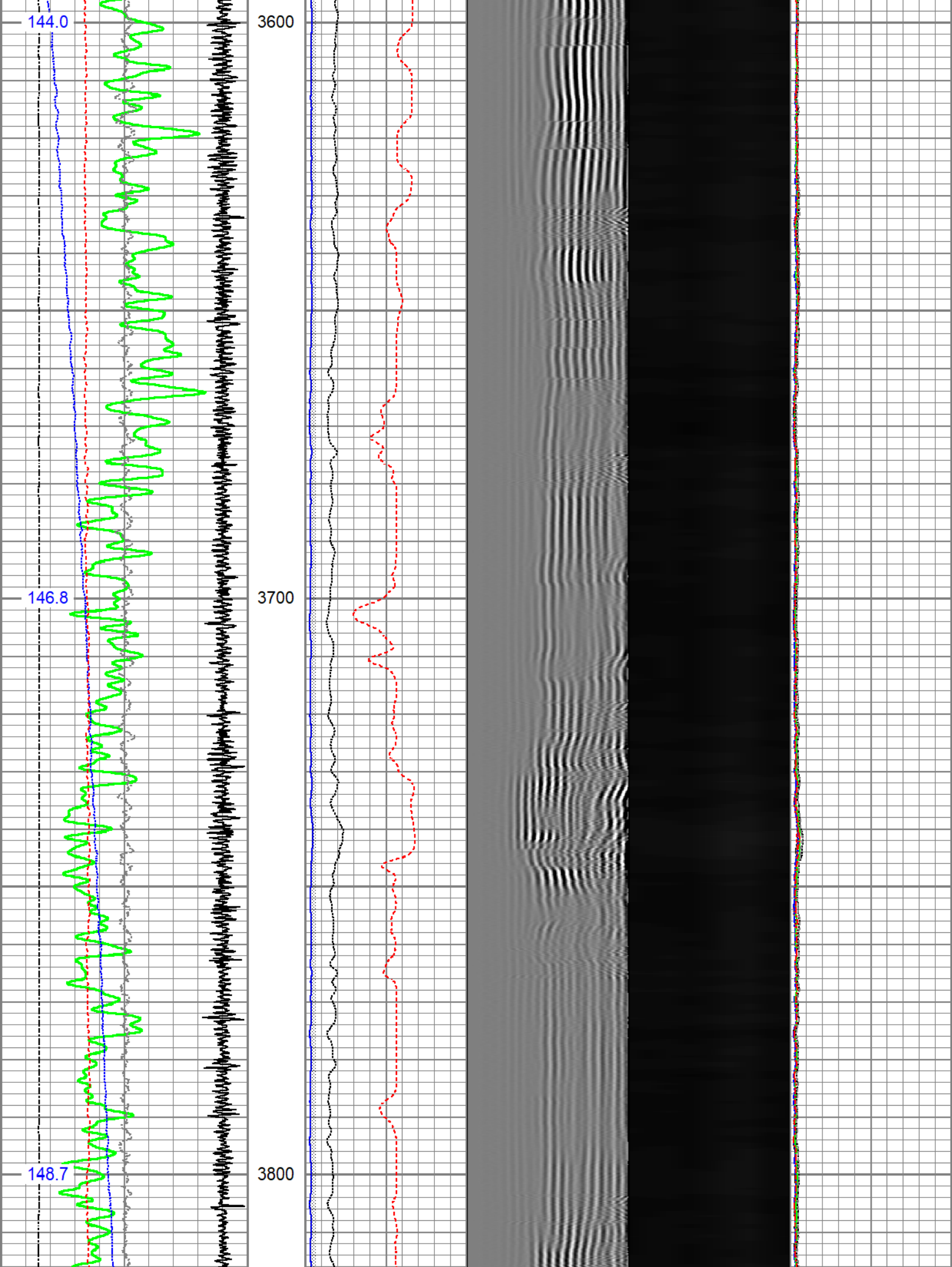


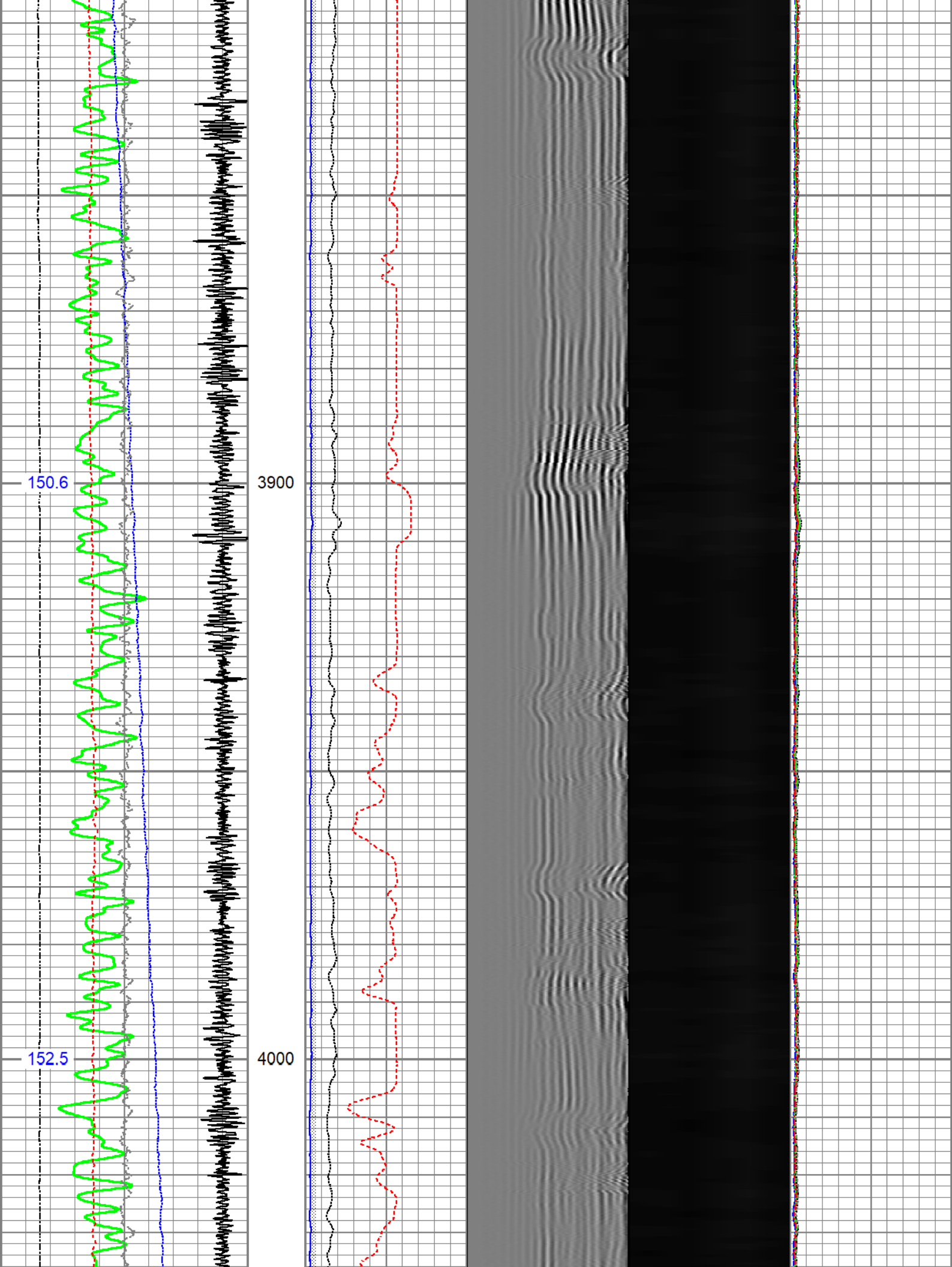


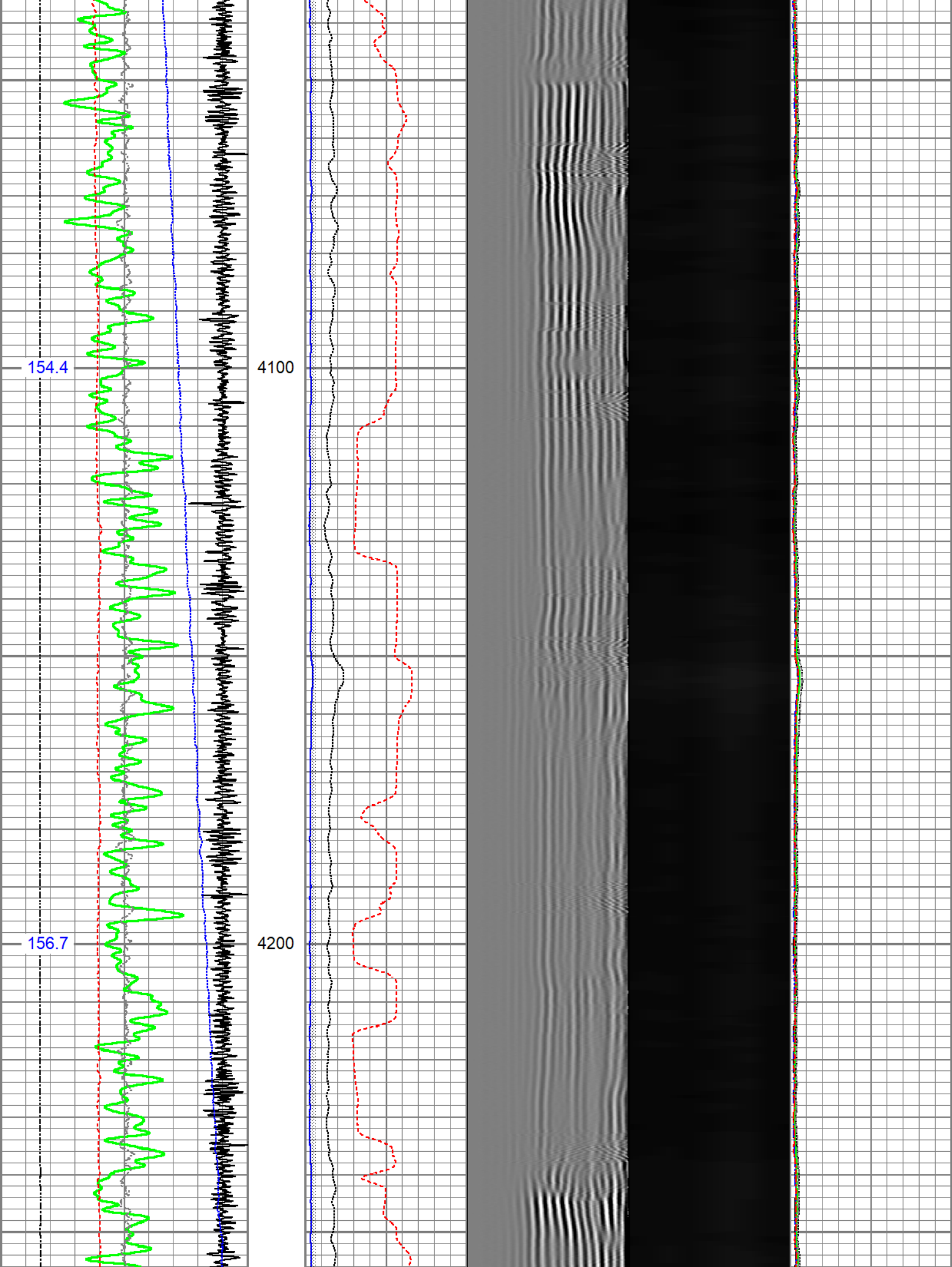


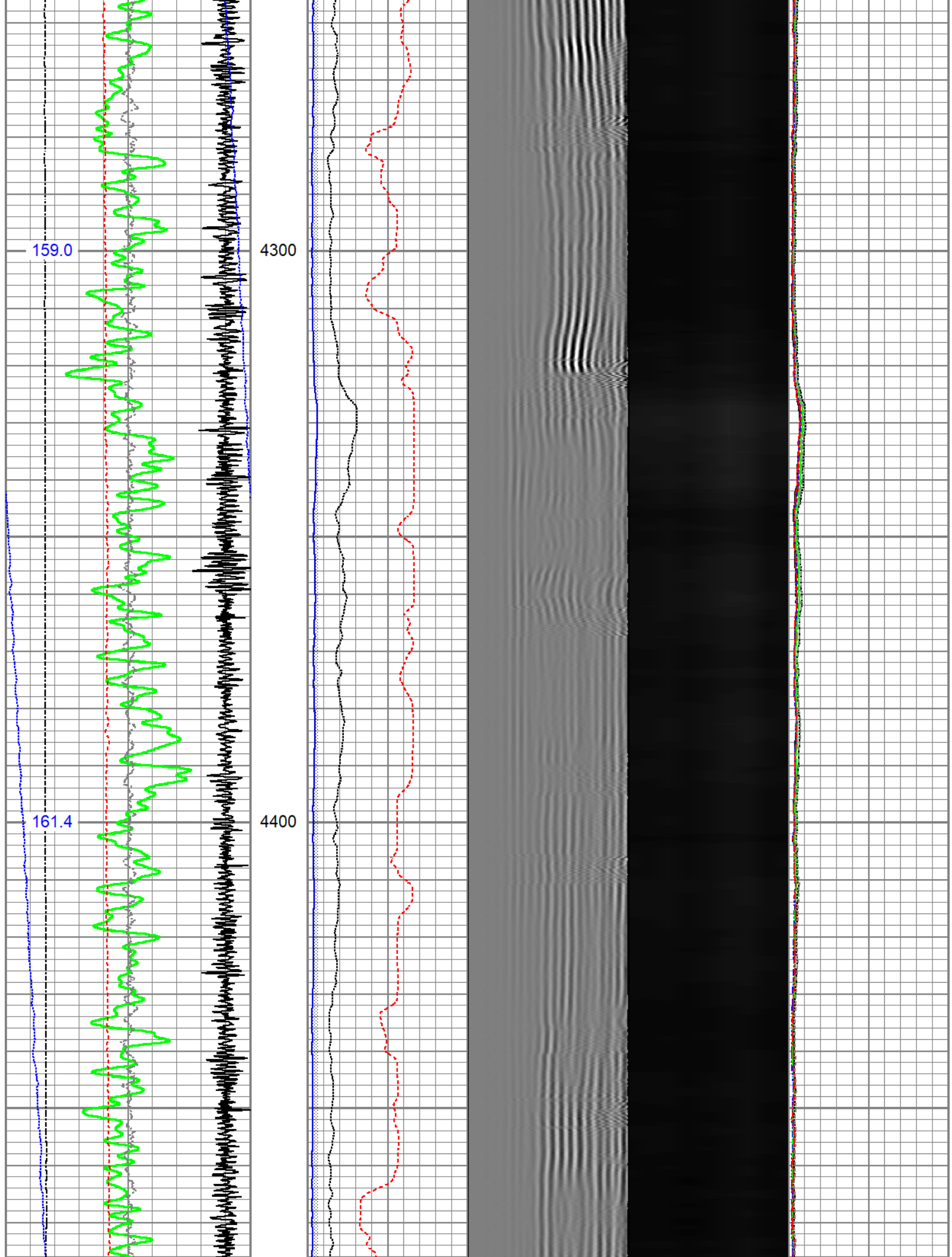


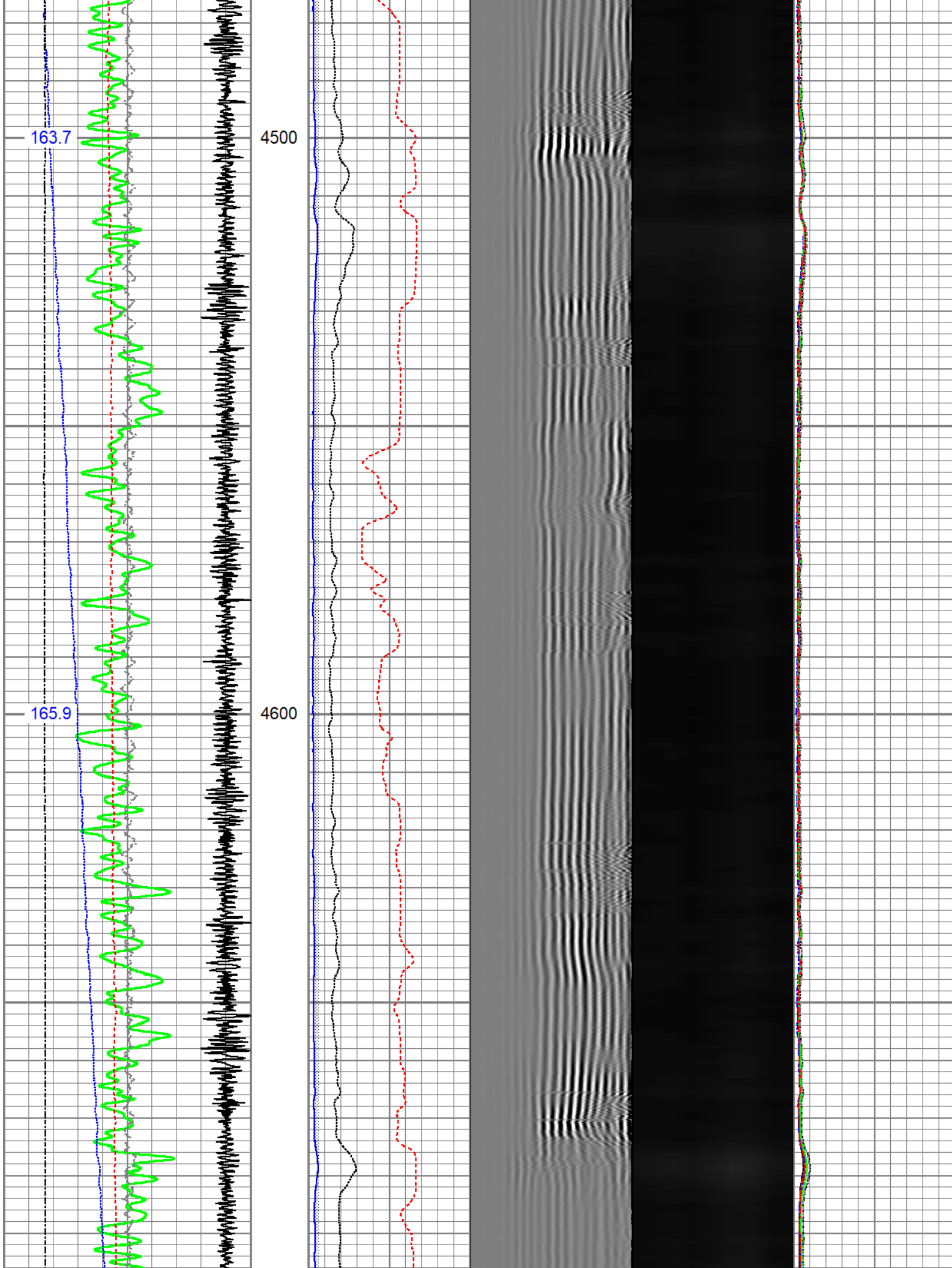


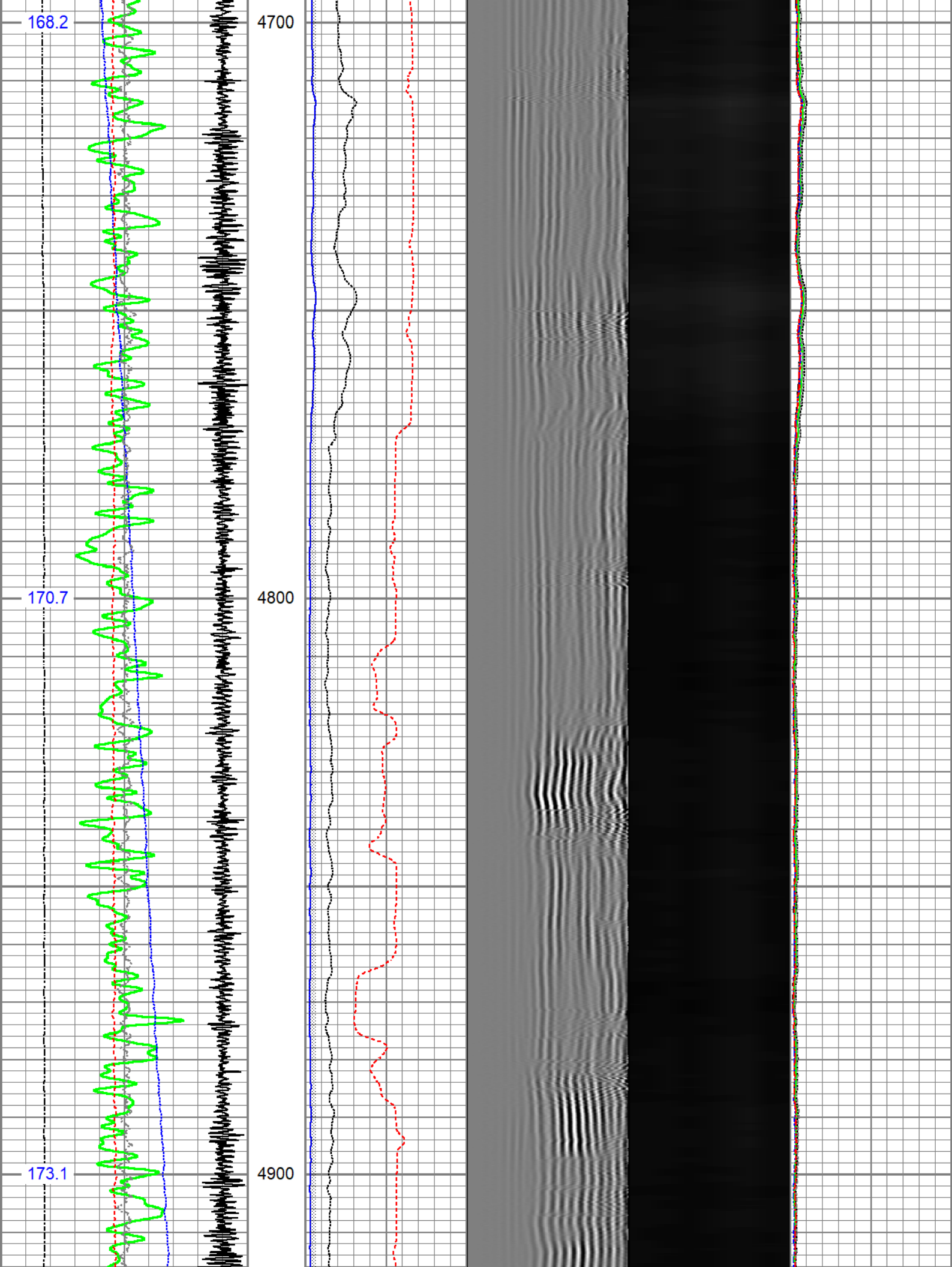


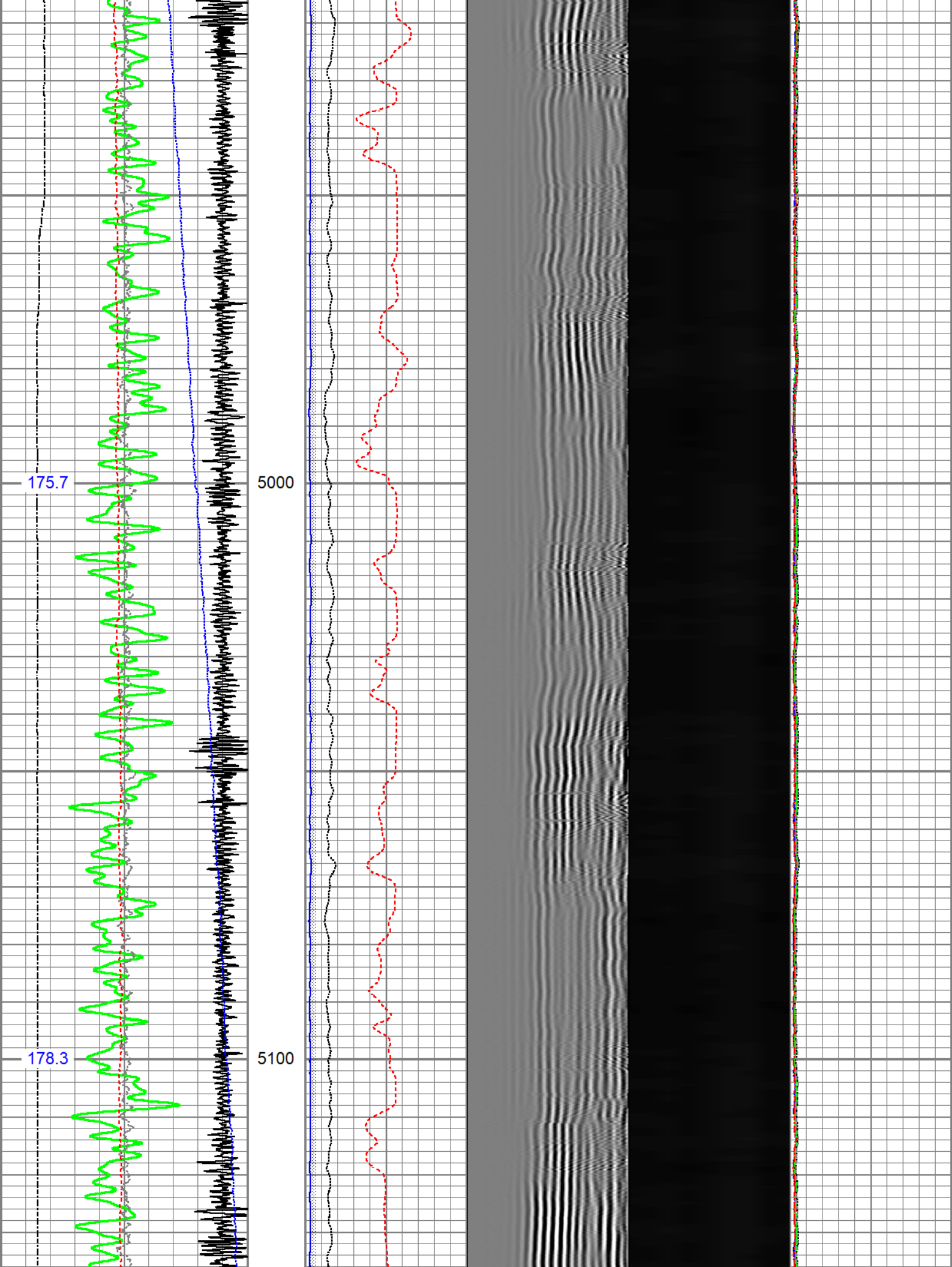


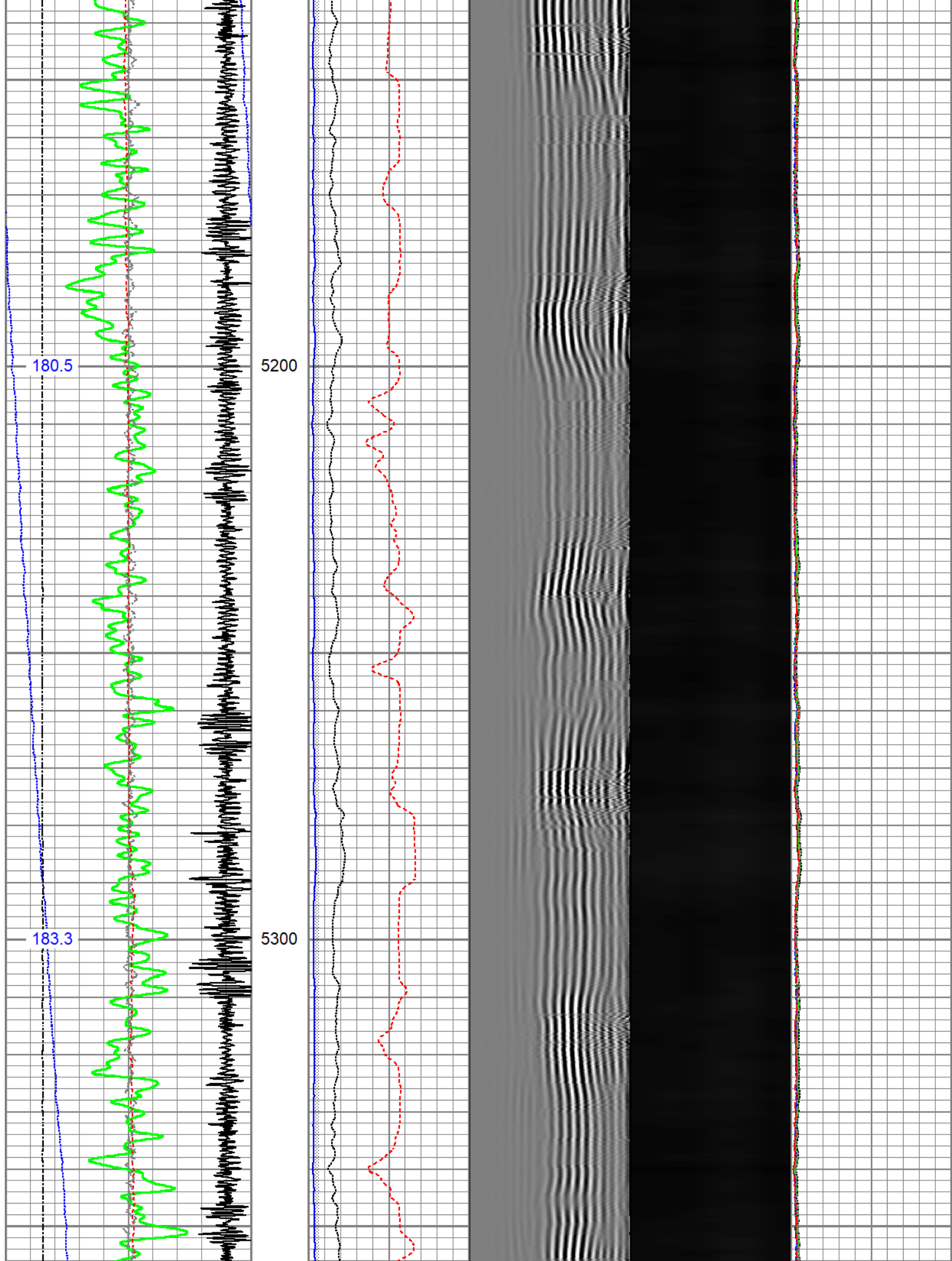


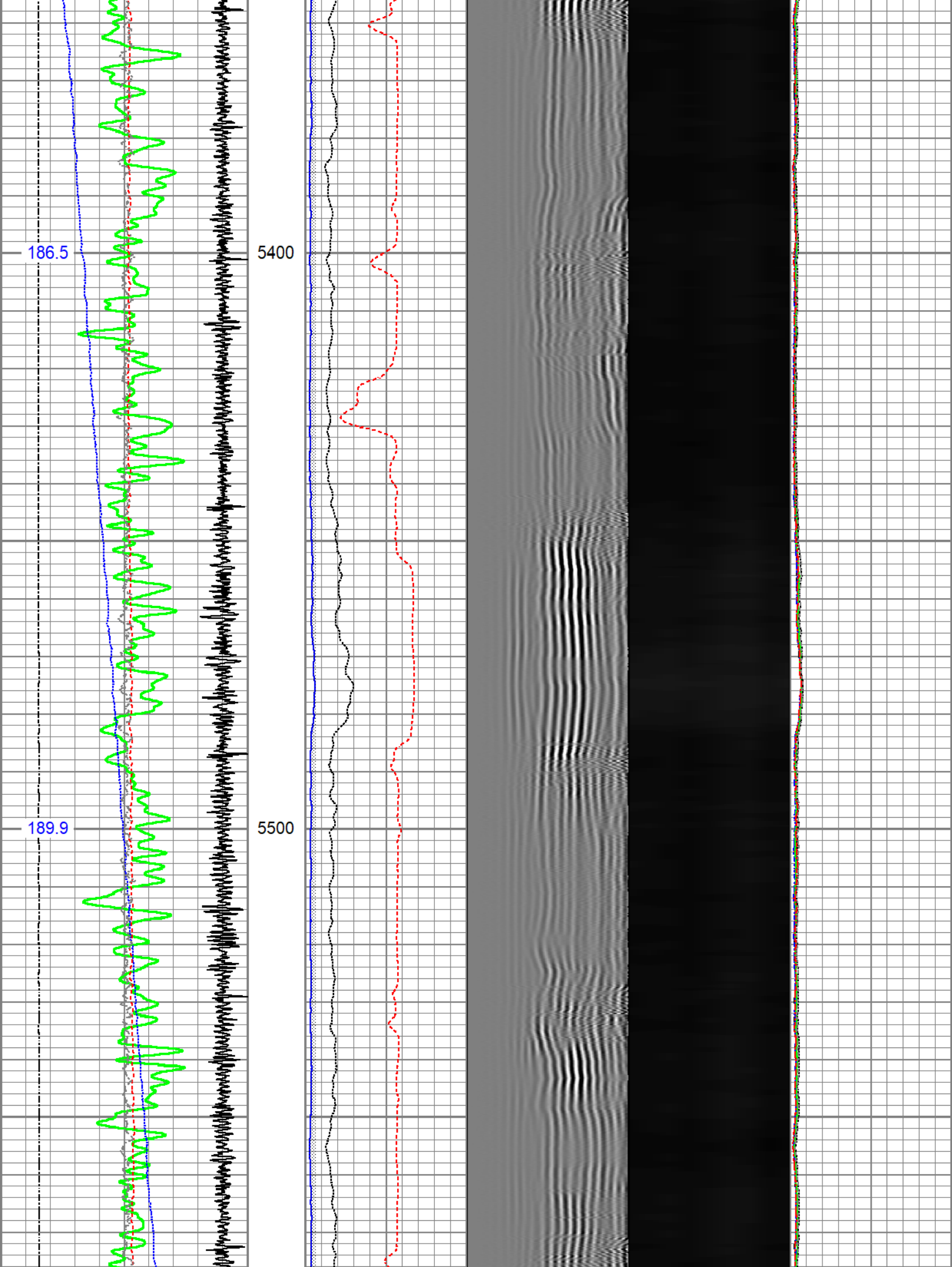


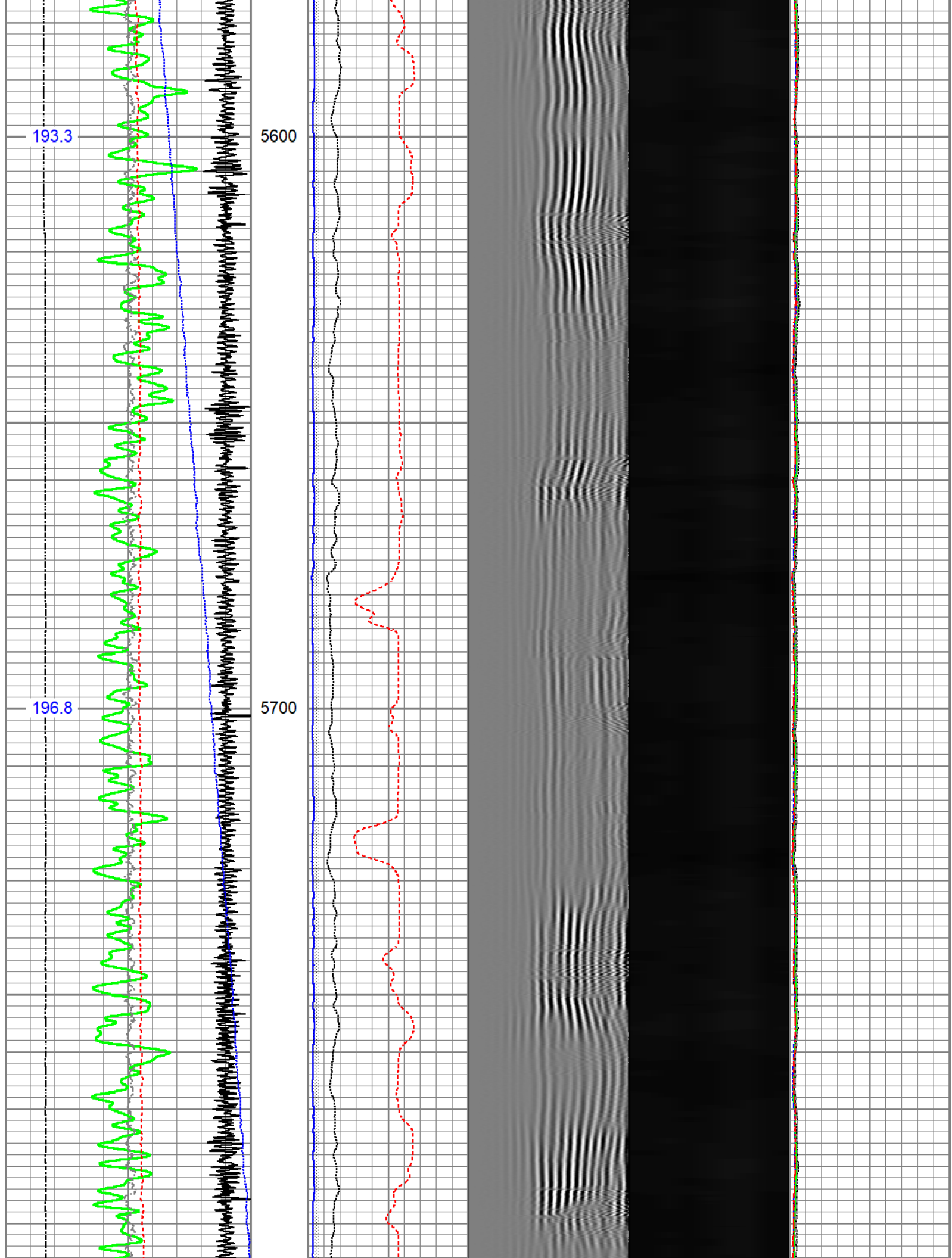


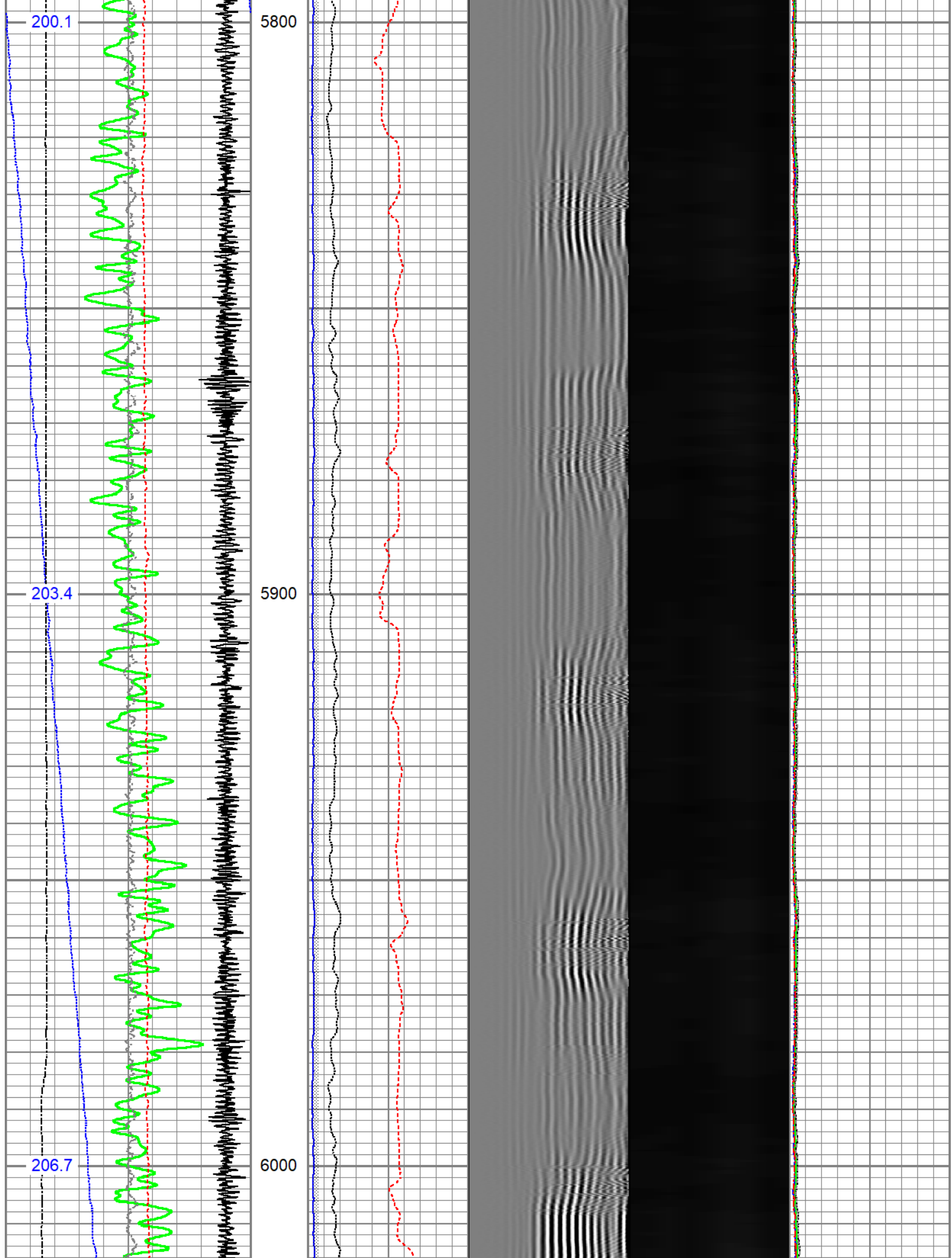


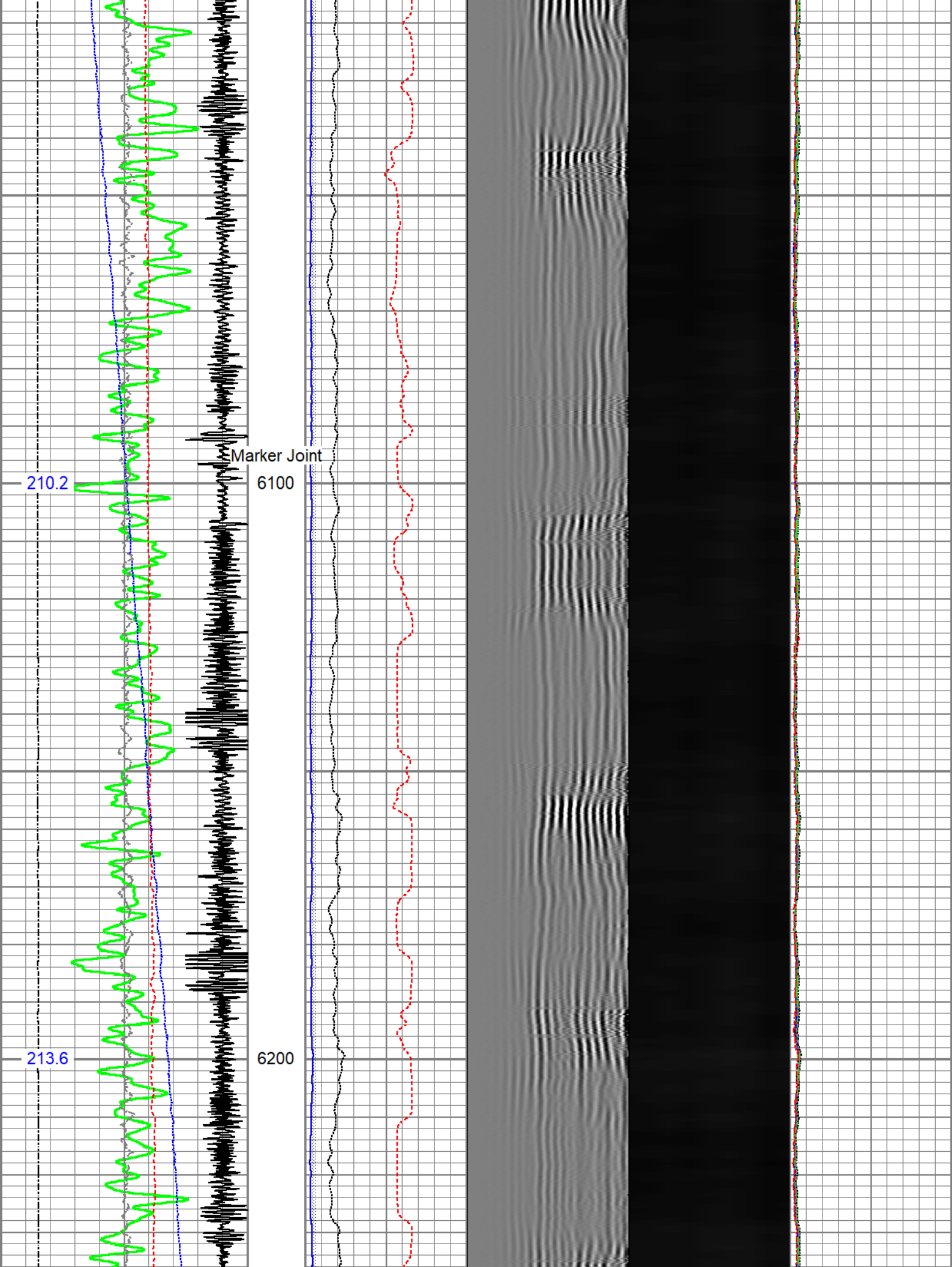


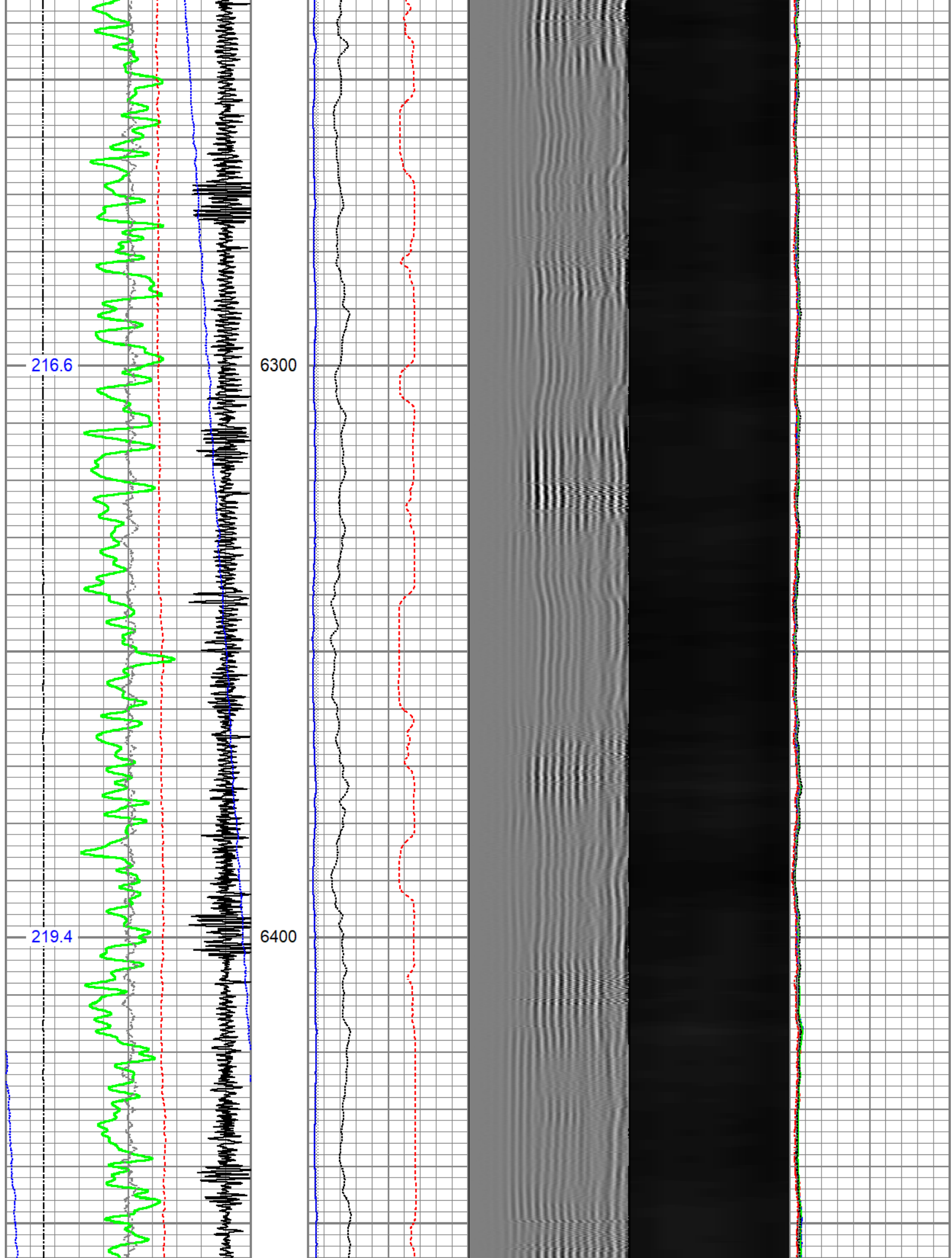


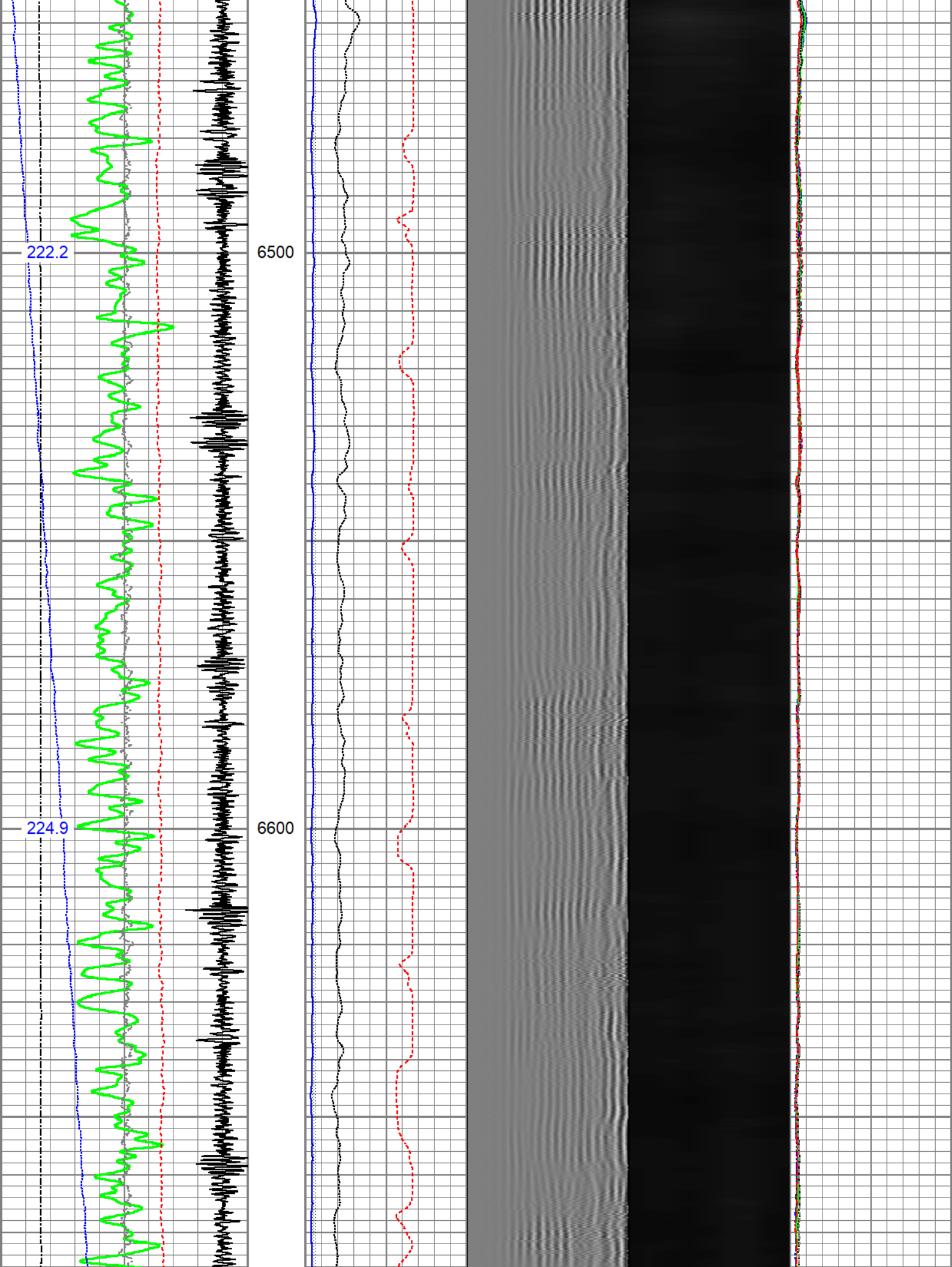


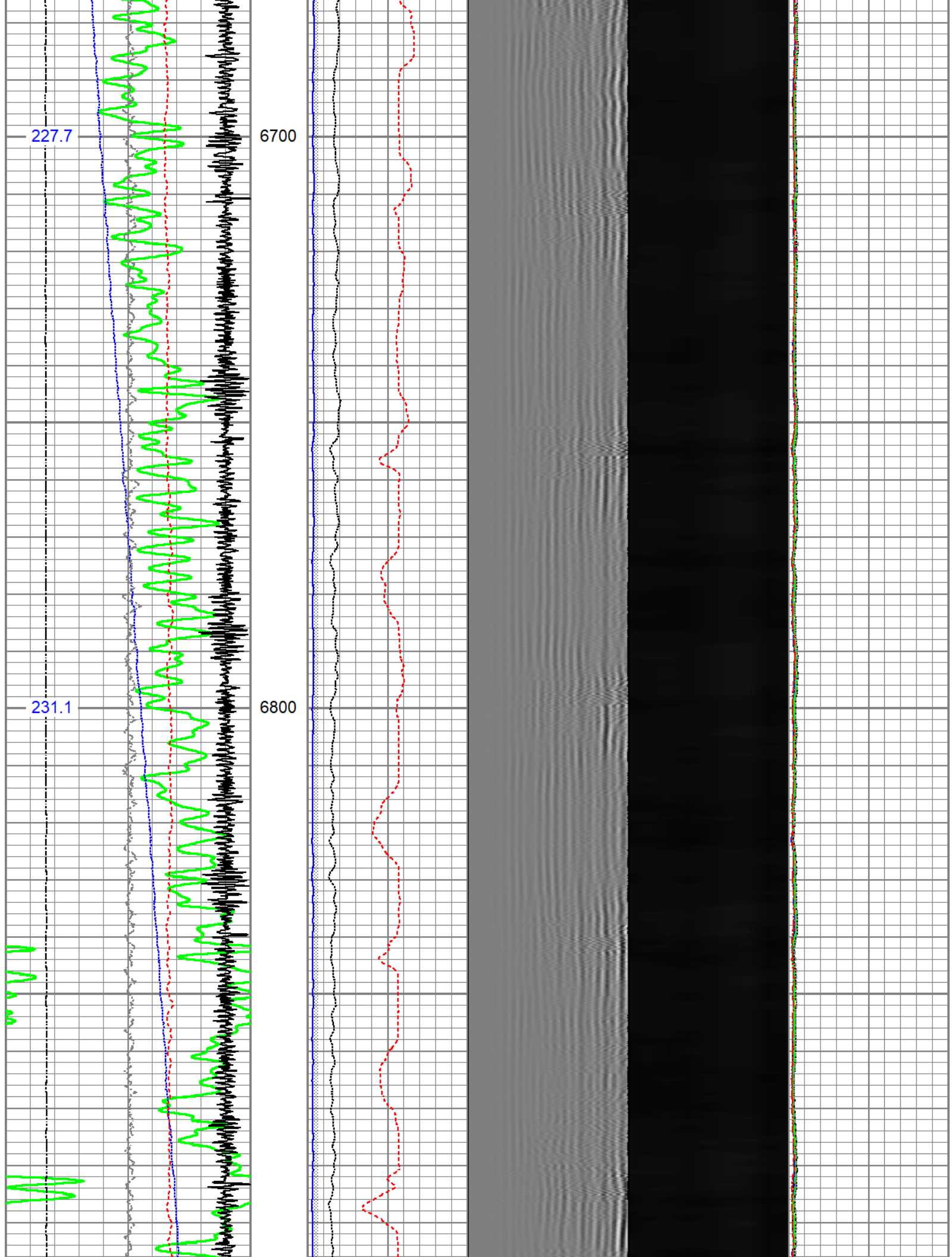


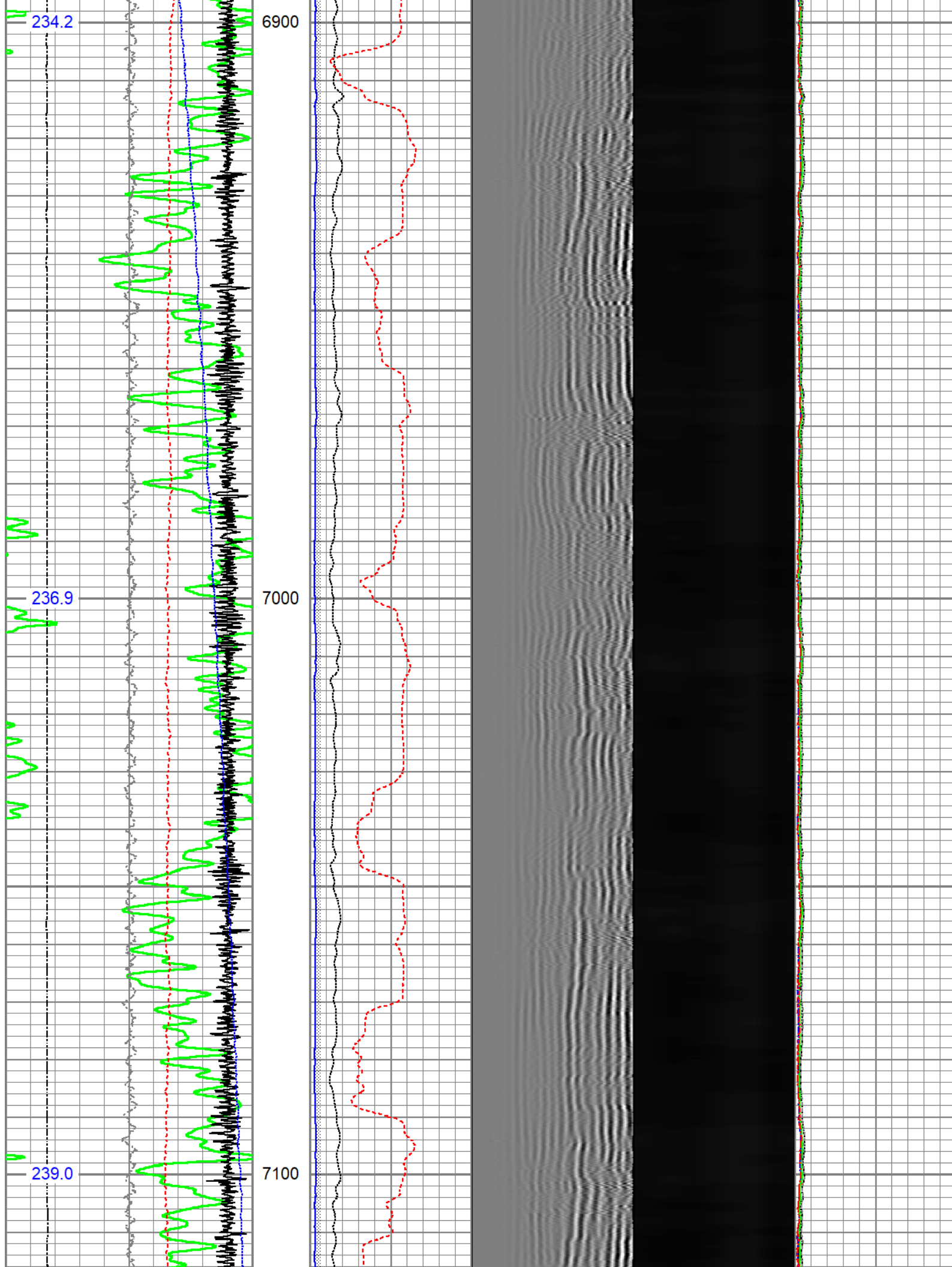


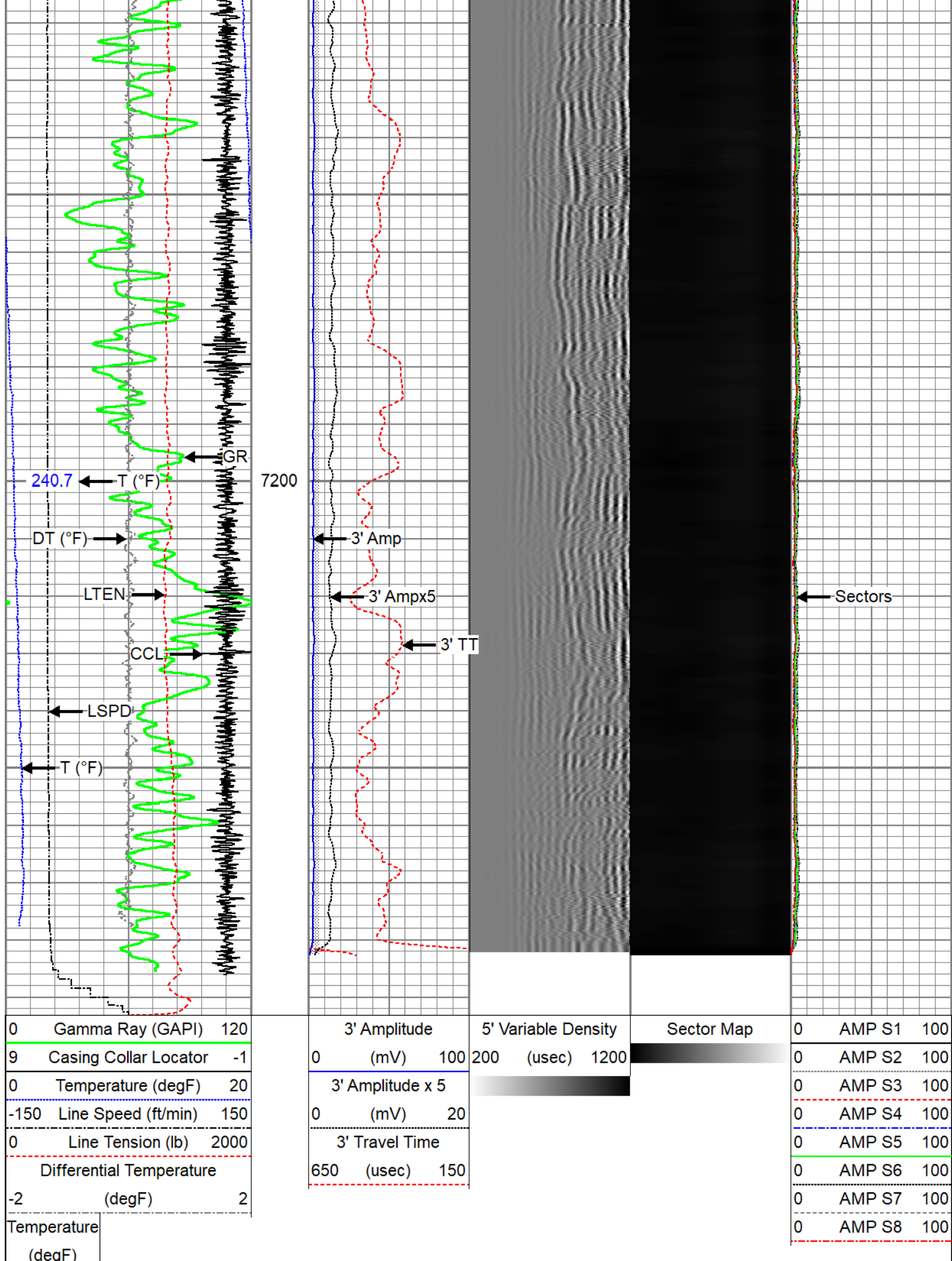












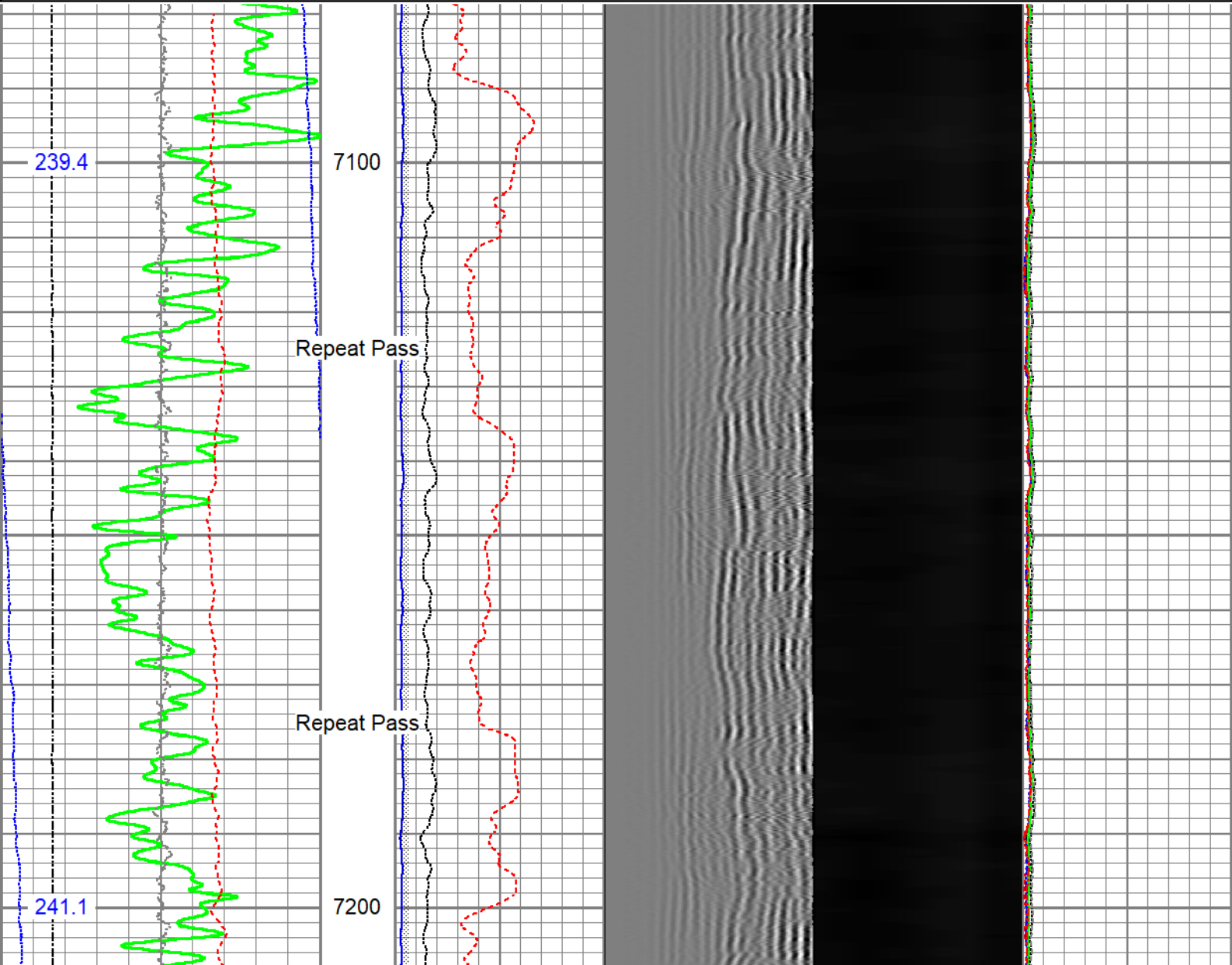


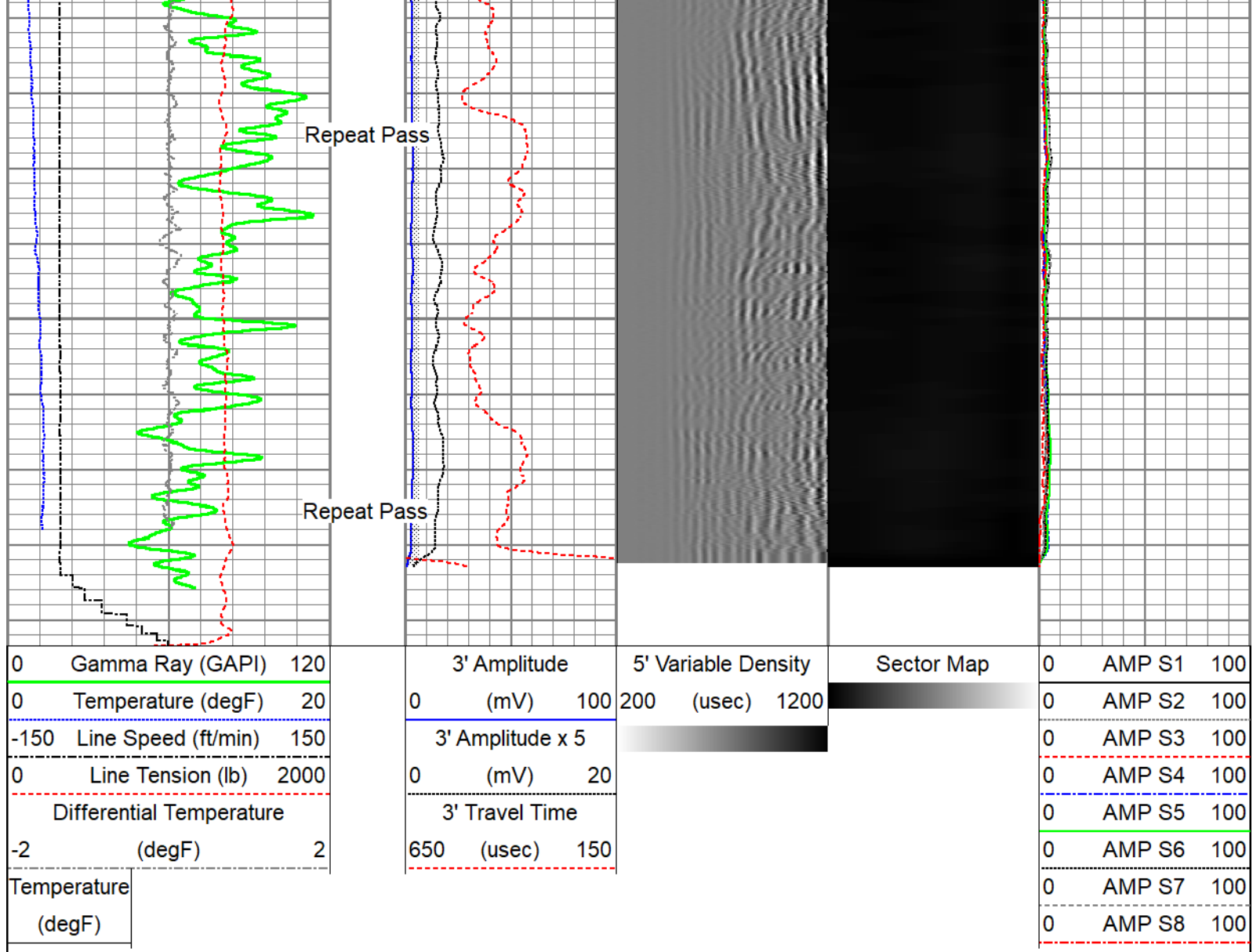
Repeat Pass

Recorded With 2500 PSI Surface Induced Pressure

Database File noble_roth a32-790_rbl_11-19-21.db
Dataset Pathname repeat
Presentation Format edge_rbl_noble
Dataset Creation Fri Nov 19 07:48:26 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)	200 (usec)		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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State Colorado