



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.				
Well	Whiston 39C-33HZ				
Field	Wattenberg				
County	Weld				
State	Colorado				
Location:		API # : 05-123-44029			Other Services
SEC 4		TWP 2N	RGE 67W	Gauge Ring	
Permanent Datum	Ground Level	Elevation		Elevation	
Log Measured From	Kelly Bushing	20 FT		K.B. 4925'	
Drilling Measured From	Kelly Bushing			D.F. ---	
				G.L. 4905'	

Date	17-MAY-2017						
Run Number	Two						
Depth Driller	13625 FT						
Depth Logger	7811 FT						
Bottom Logged Interval	7807 FT						
Top Log Interval	Surface						
Open Hole Size	7.88"						
Type Fluid	Water						
Density / Viscosity	8.34 lb/gal						
Max. Recorded Temp.	232°F						
Estimated Cement Top	See Log						
Time Well Ready	ROA						
Time Logger on Bottom	13:45						
Equipment Number	HD-0343						
Location	Fort Lupton, CO						
Recorded By	J. Fresquez						
Witnessed By	B. Jolly						
Borehole Record						Tubing Record	
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size (in)	Wgt (lbs/Ft)		Grade	Top	Bottom	
Surface Casing	9 5/8	36		J-55	Surface	1865 FT	
Intermediate #1	5 1/2	17		HC P110	Surface	13615 FT	
Intermediate #2							
Liner							

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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 6995 FT
Adjusted -7 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7867 FT with no debris
Log ran from as deep as possible in heel to surface
Log ran with 2800 PSI surface induced pressure
Logging tools were clean and free of any debris upon completion of operations

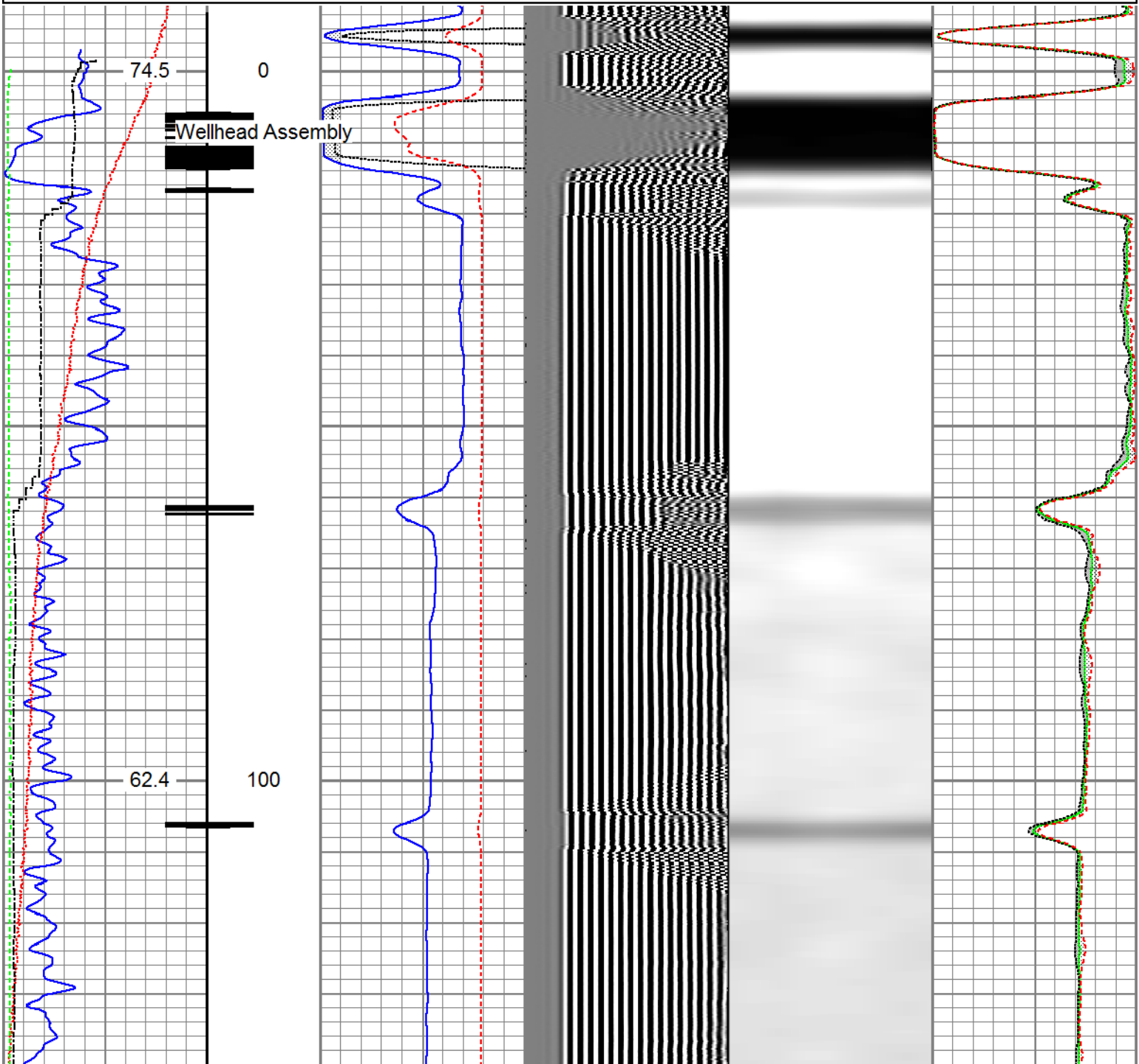
Thank you for choosing Reliance Oilfield Services, LLC!!

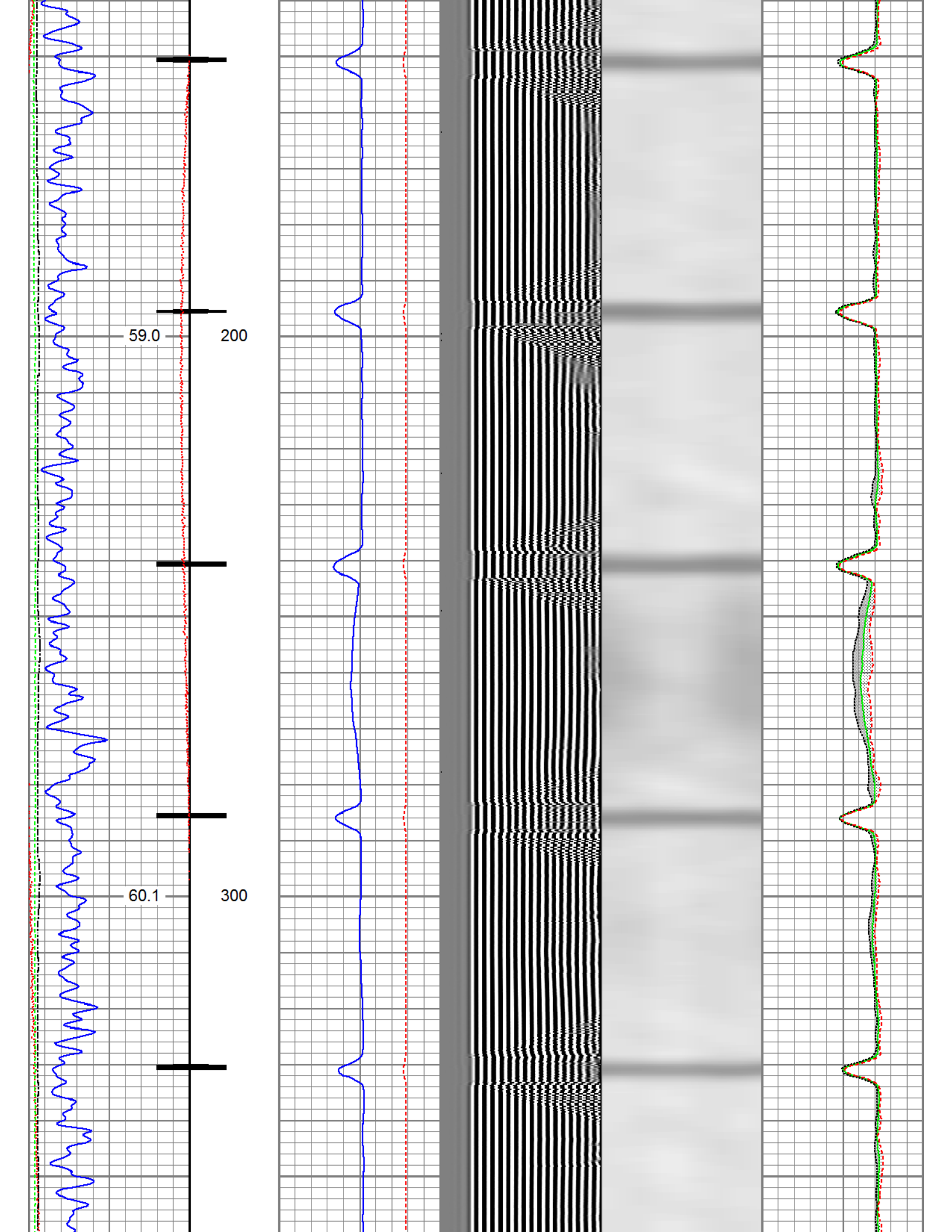


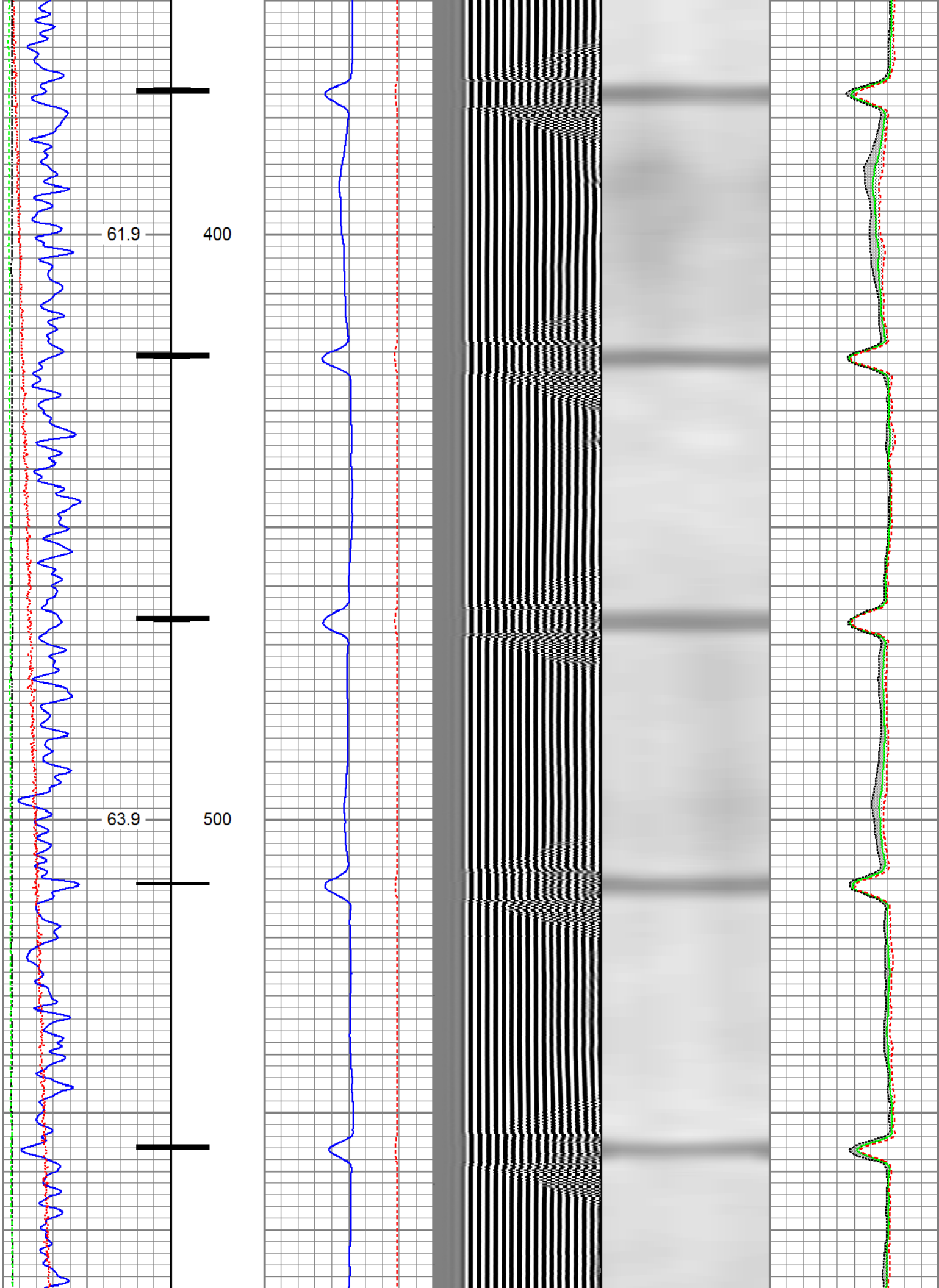
Main Pass

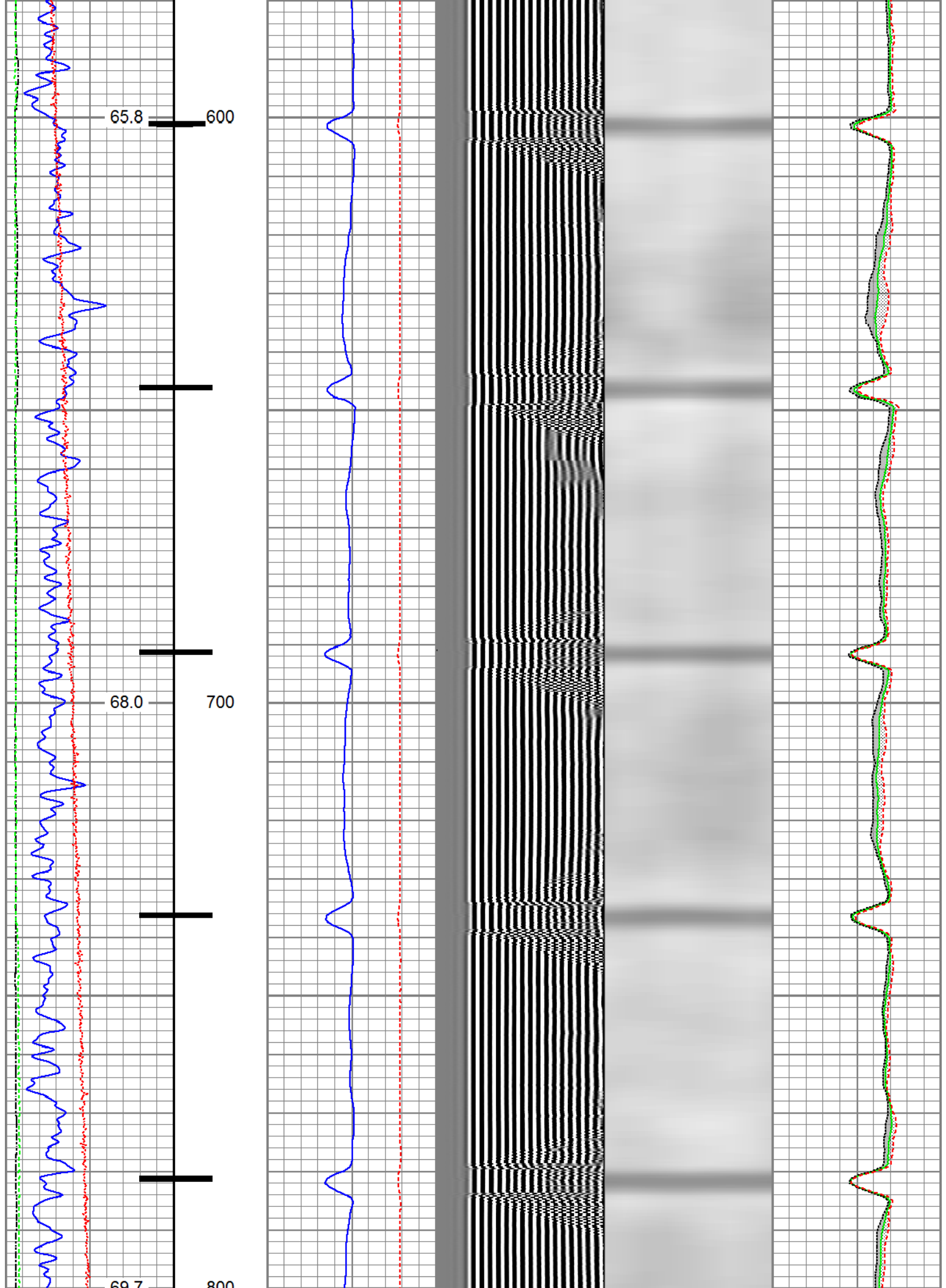
Recorded With 2800 PSI Surface Induced Pressure

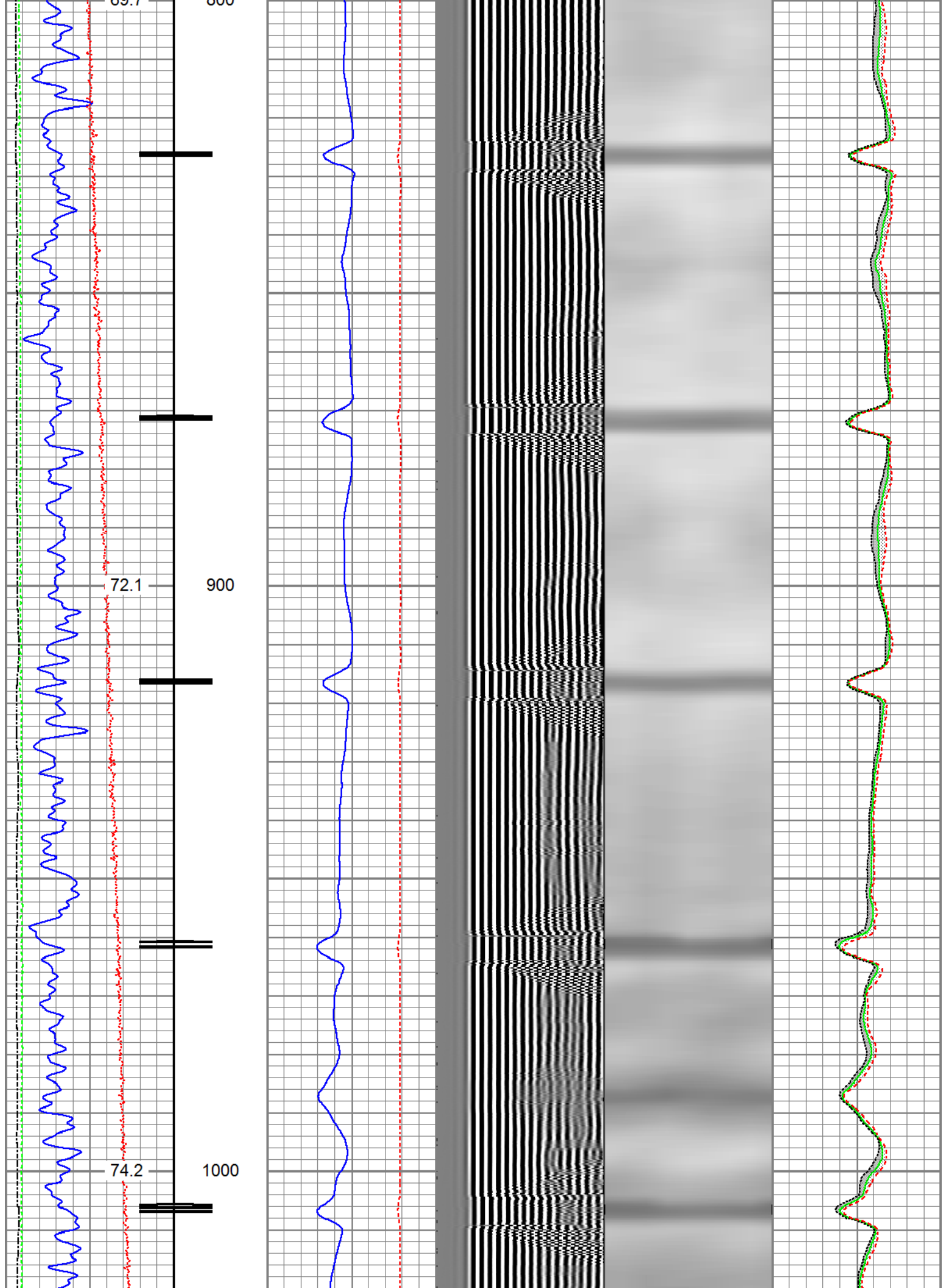
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
	0 (mV) 20			0 100
Temperature	3' Travel Time			Maximum Amplitude
0 (degF) 20	650 (usec) 150			0 100
Line Speed				
-150 (ft/min)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

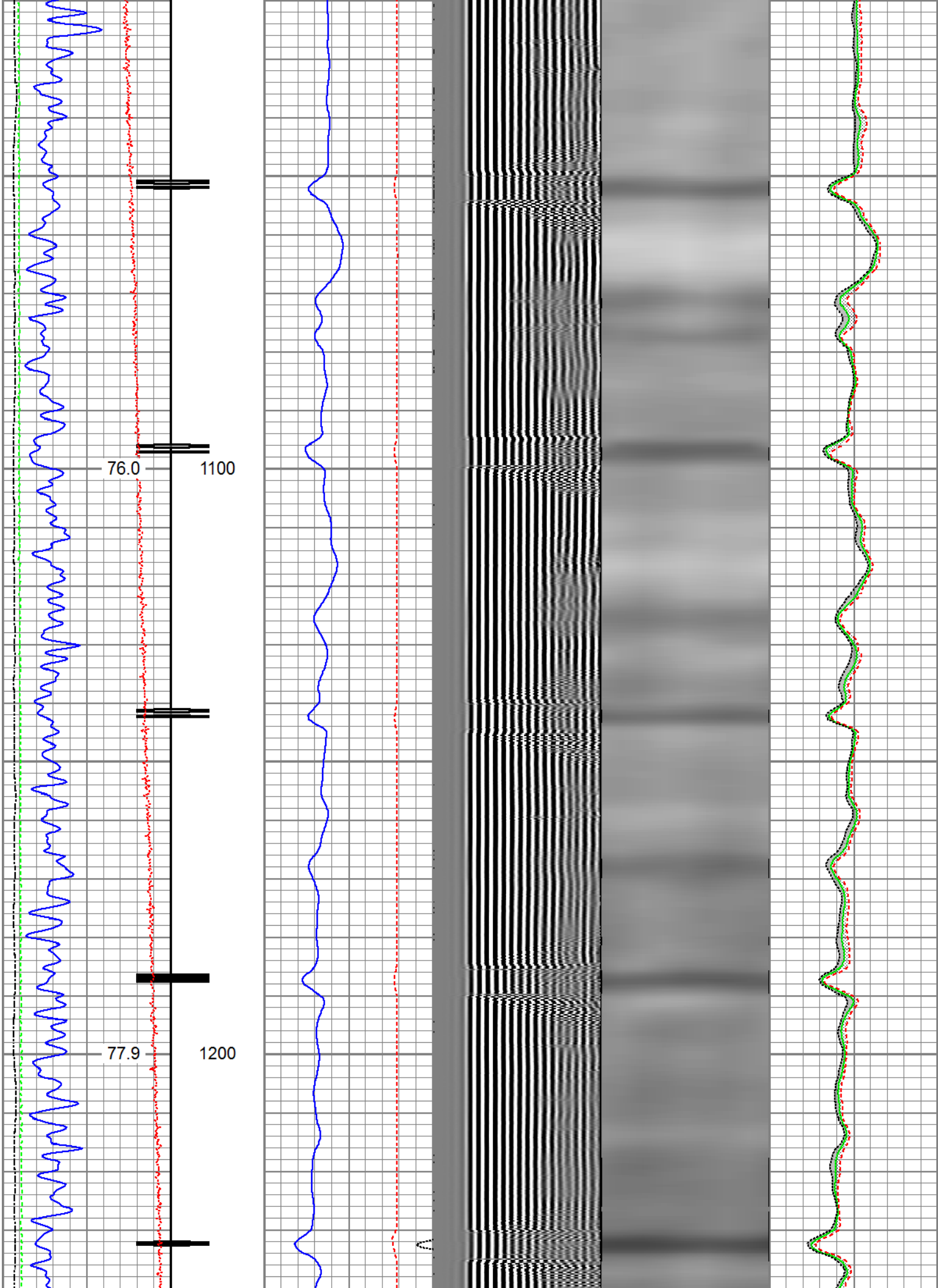


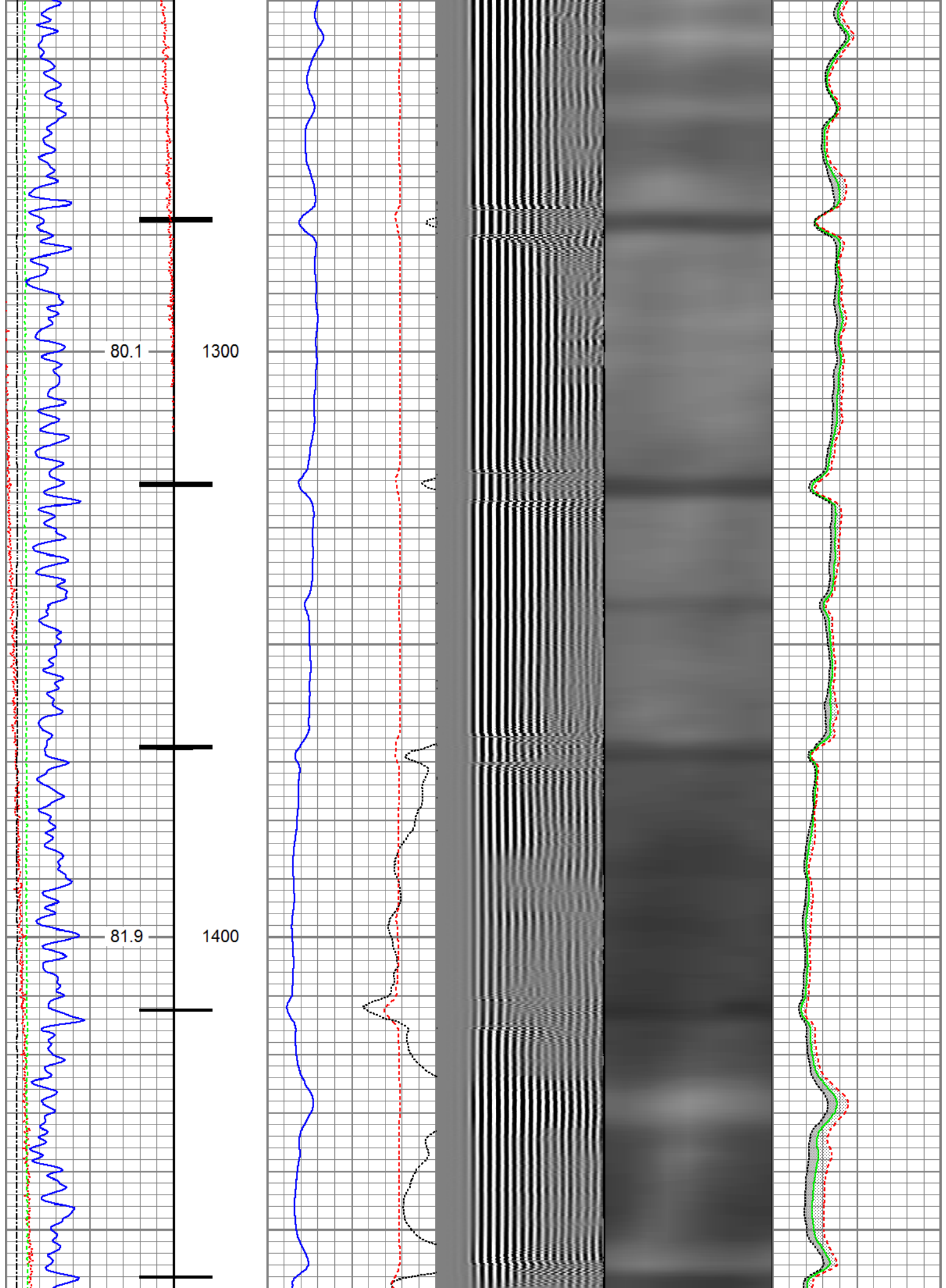


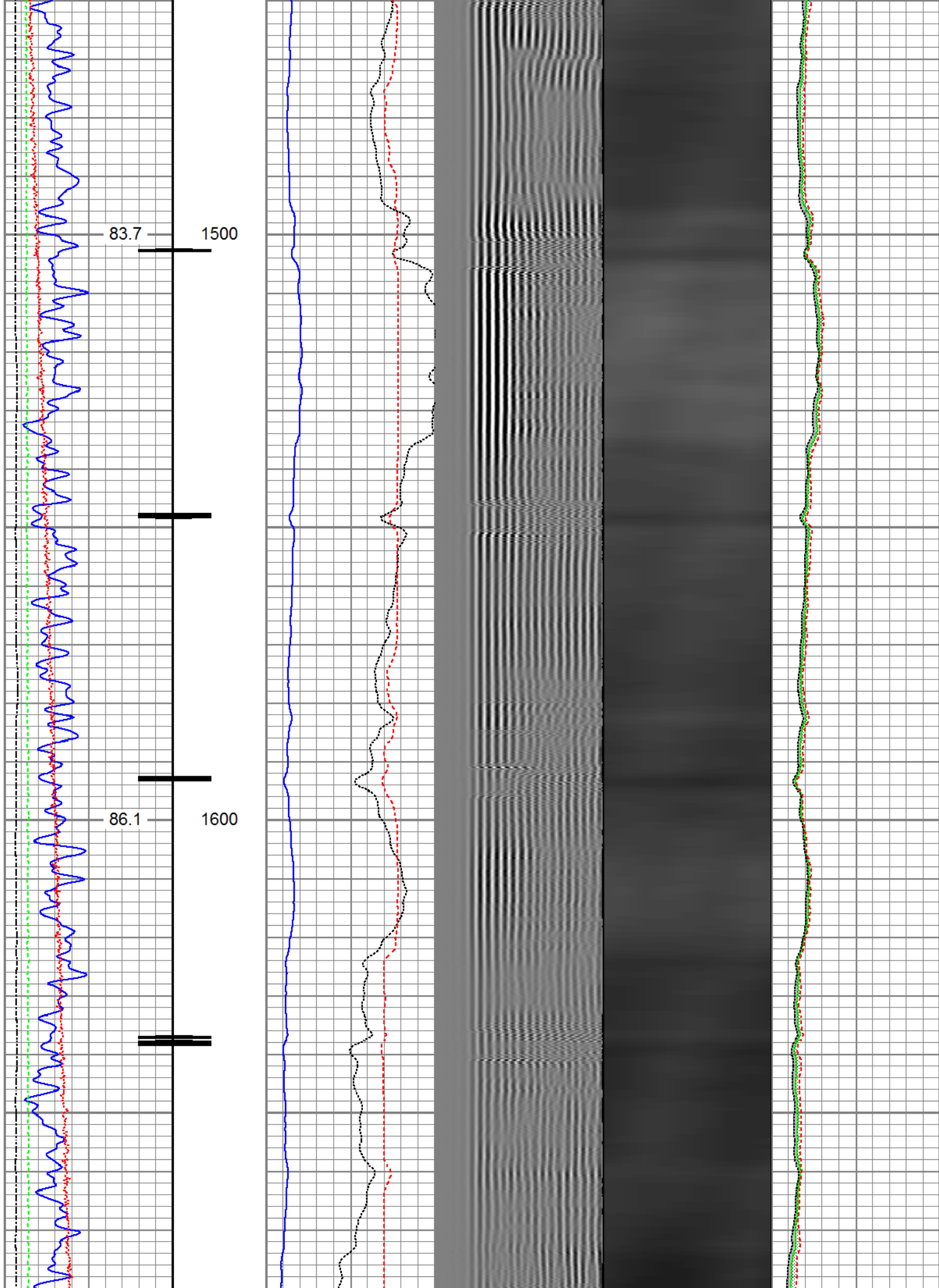


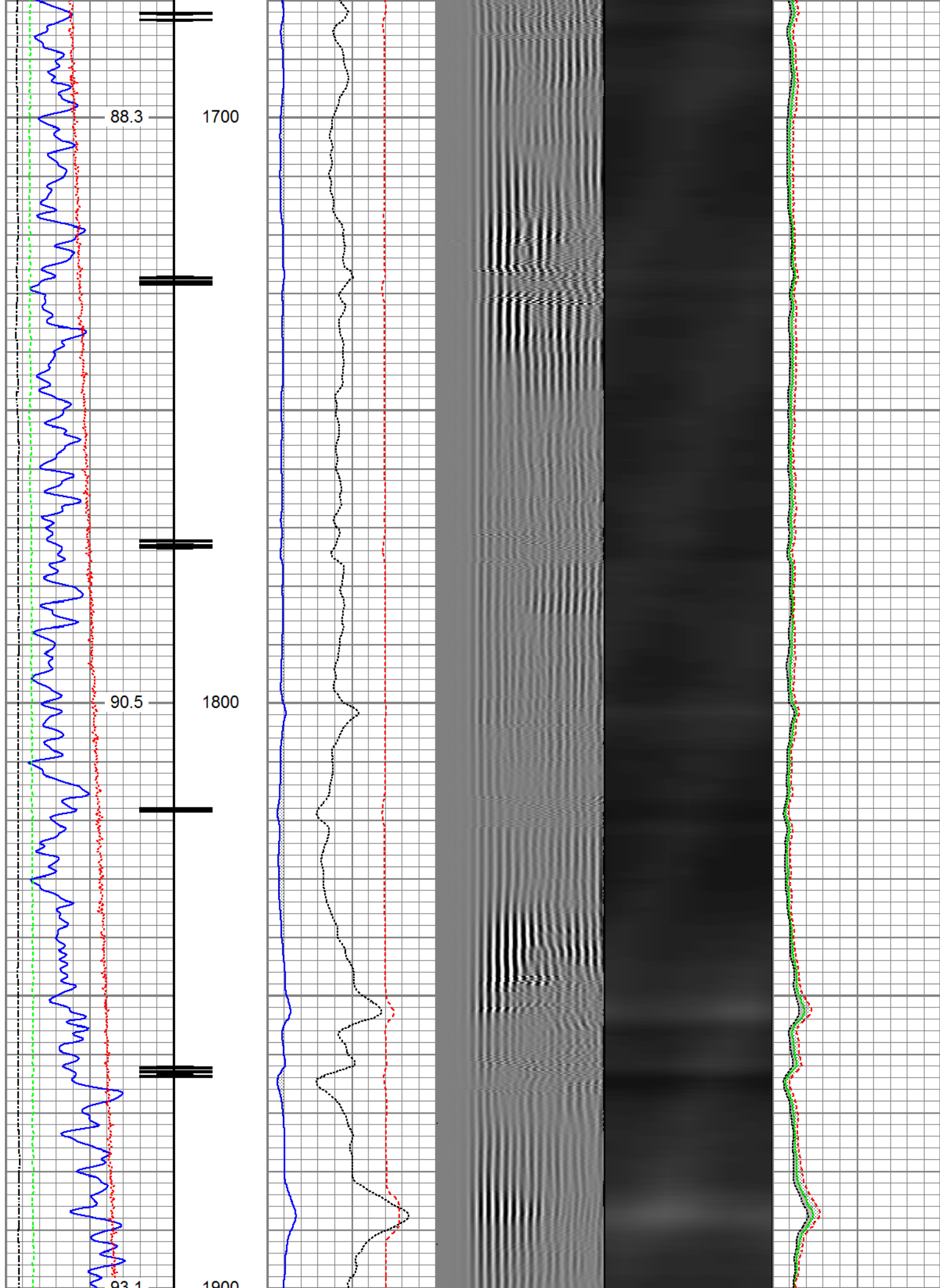


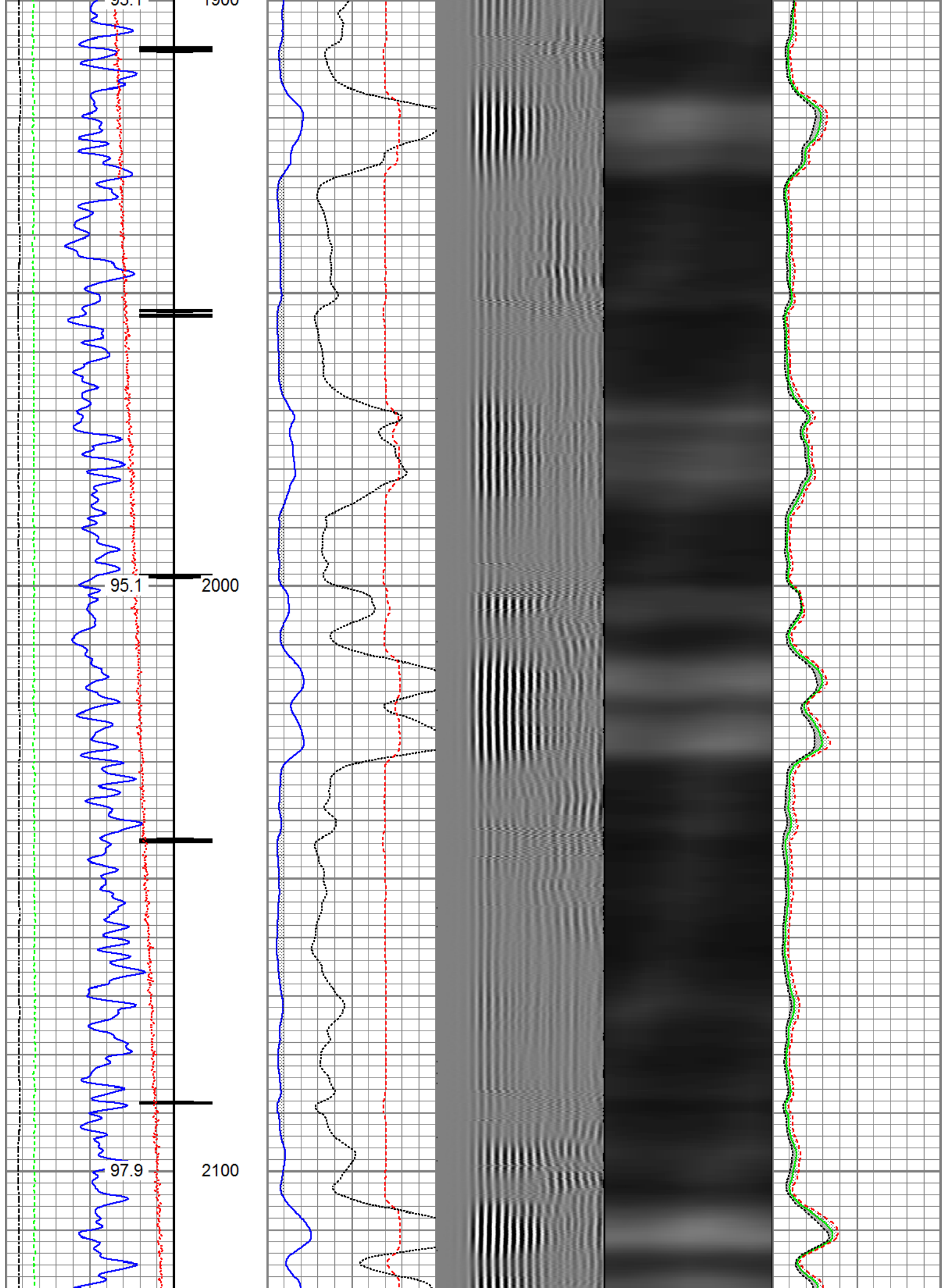


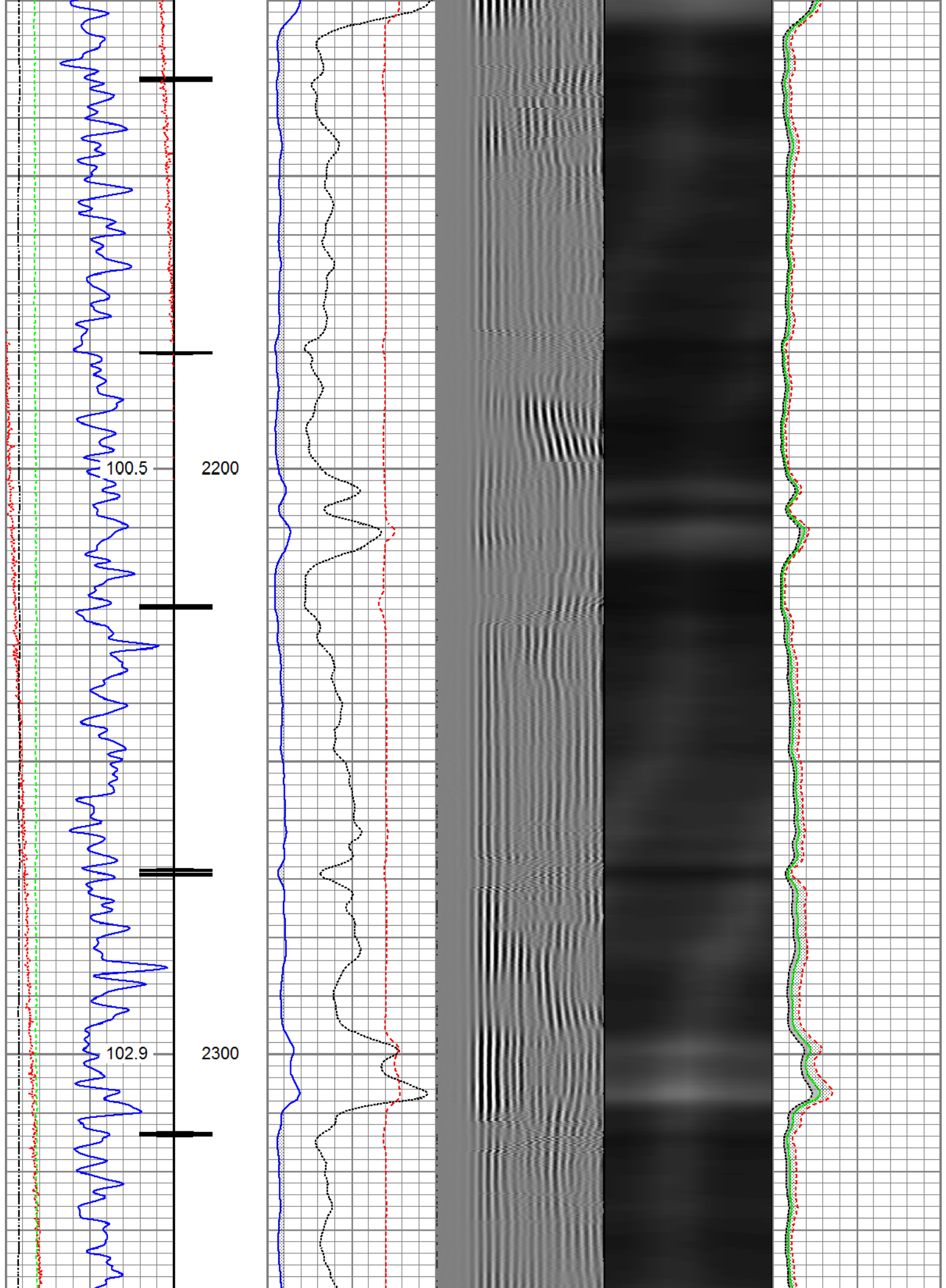


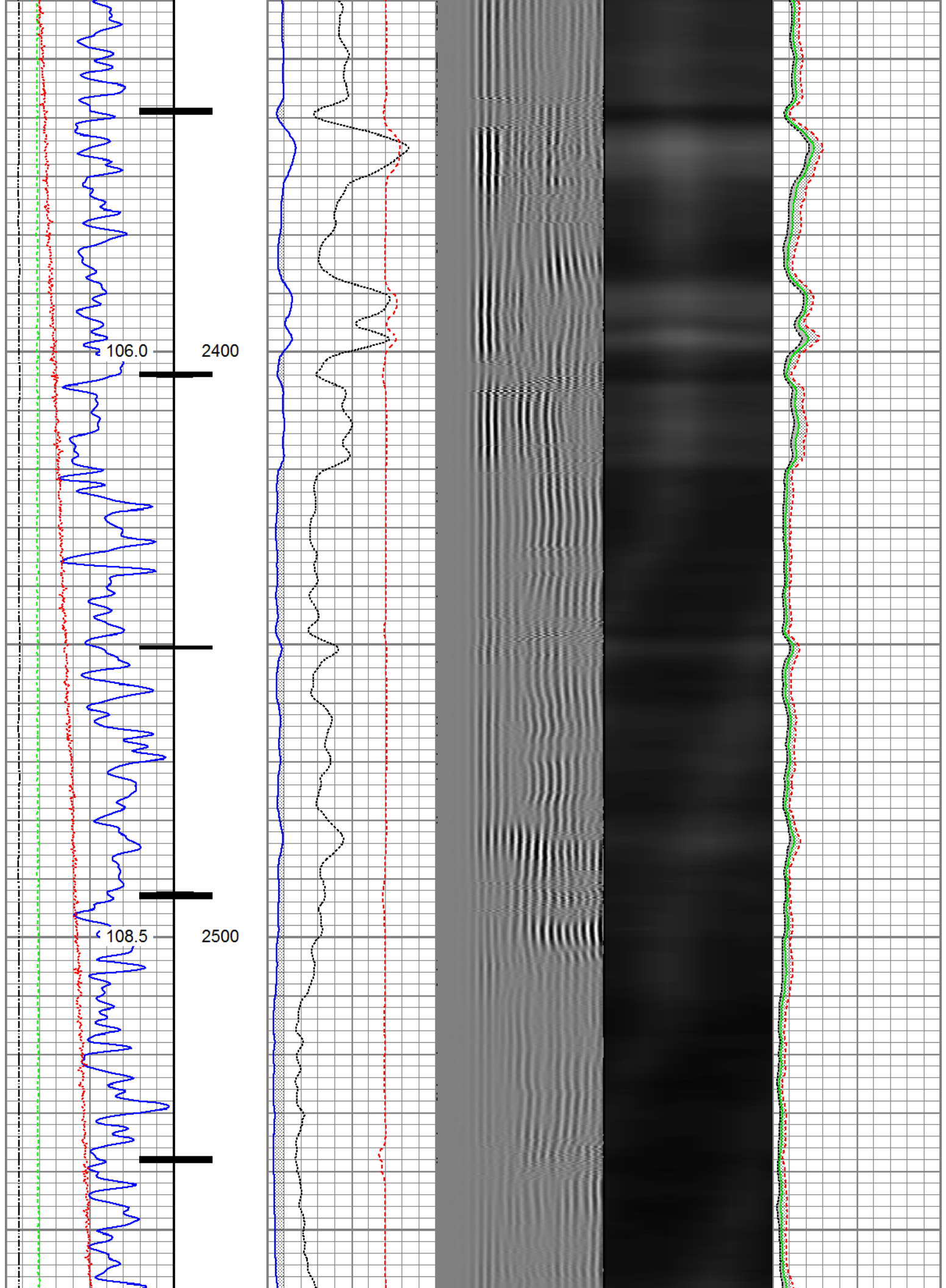


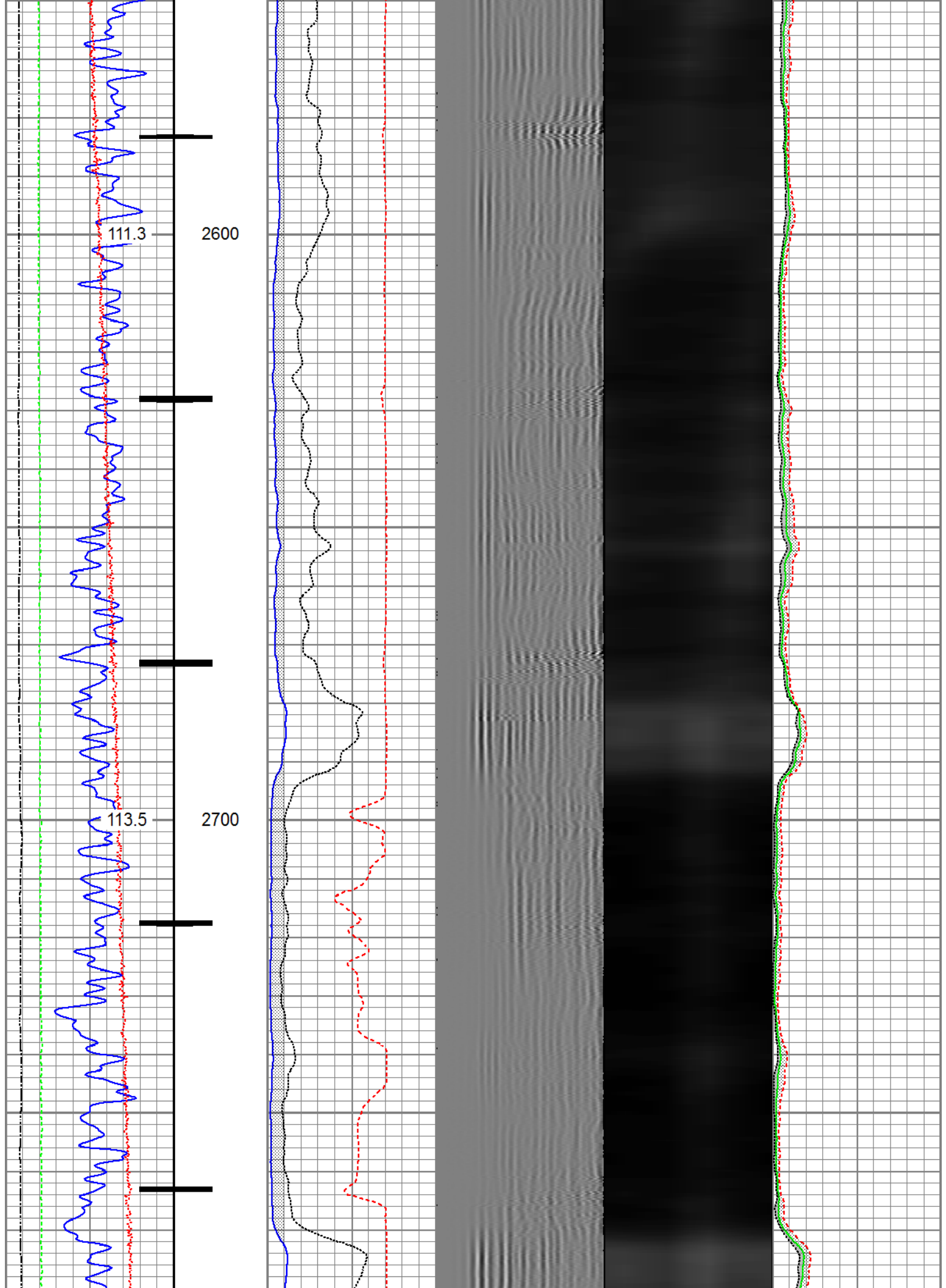


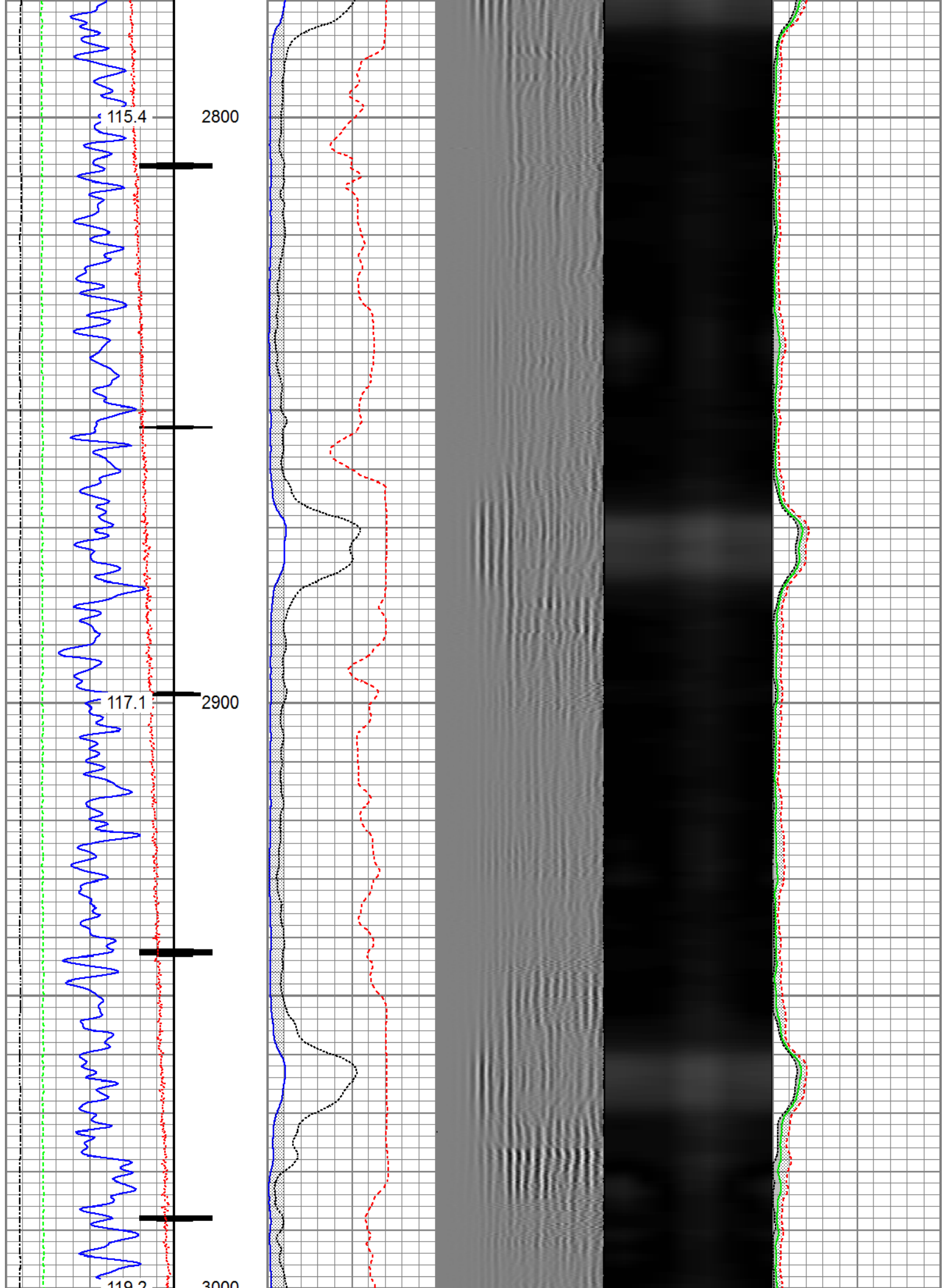


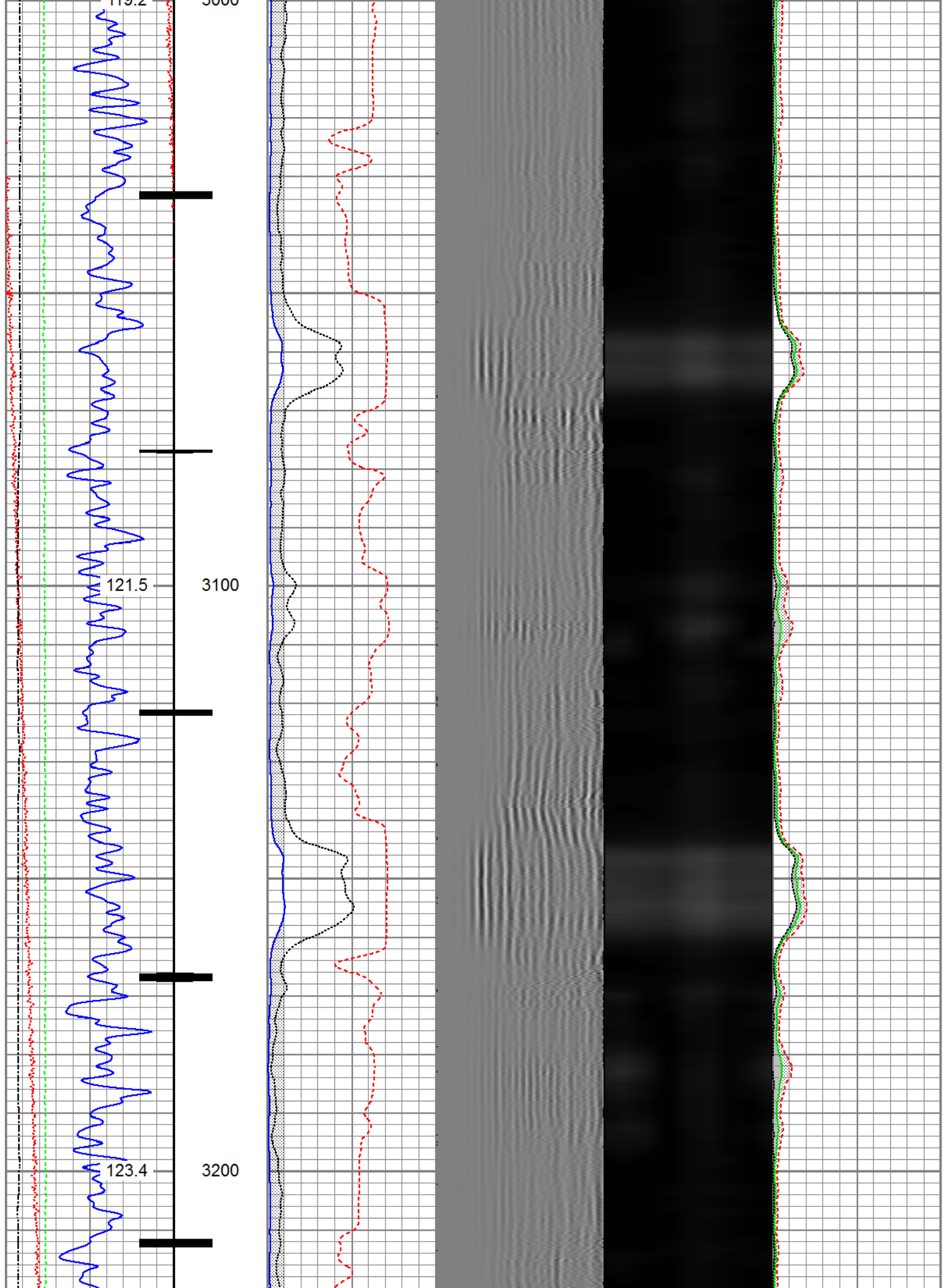


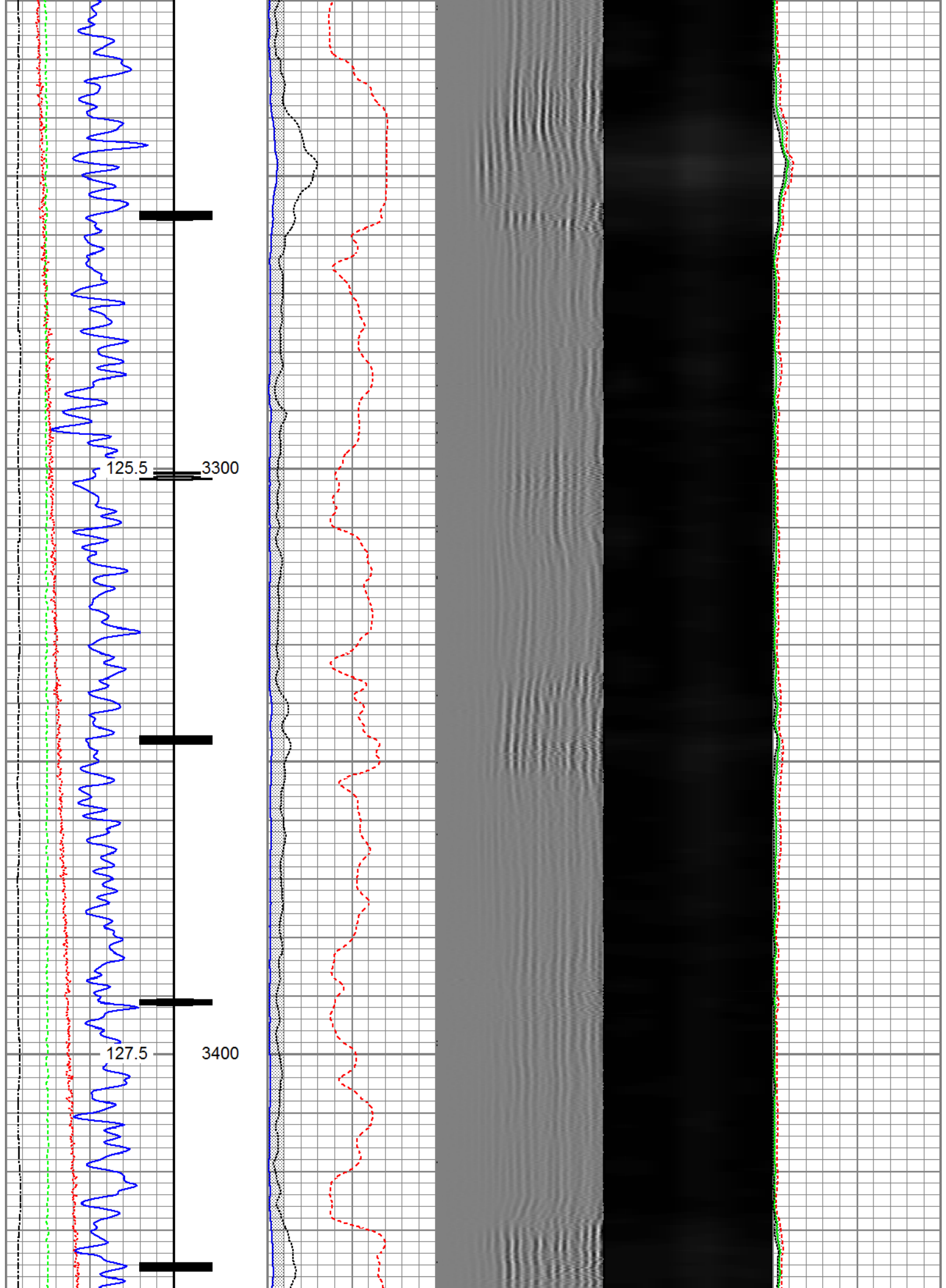


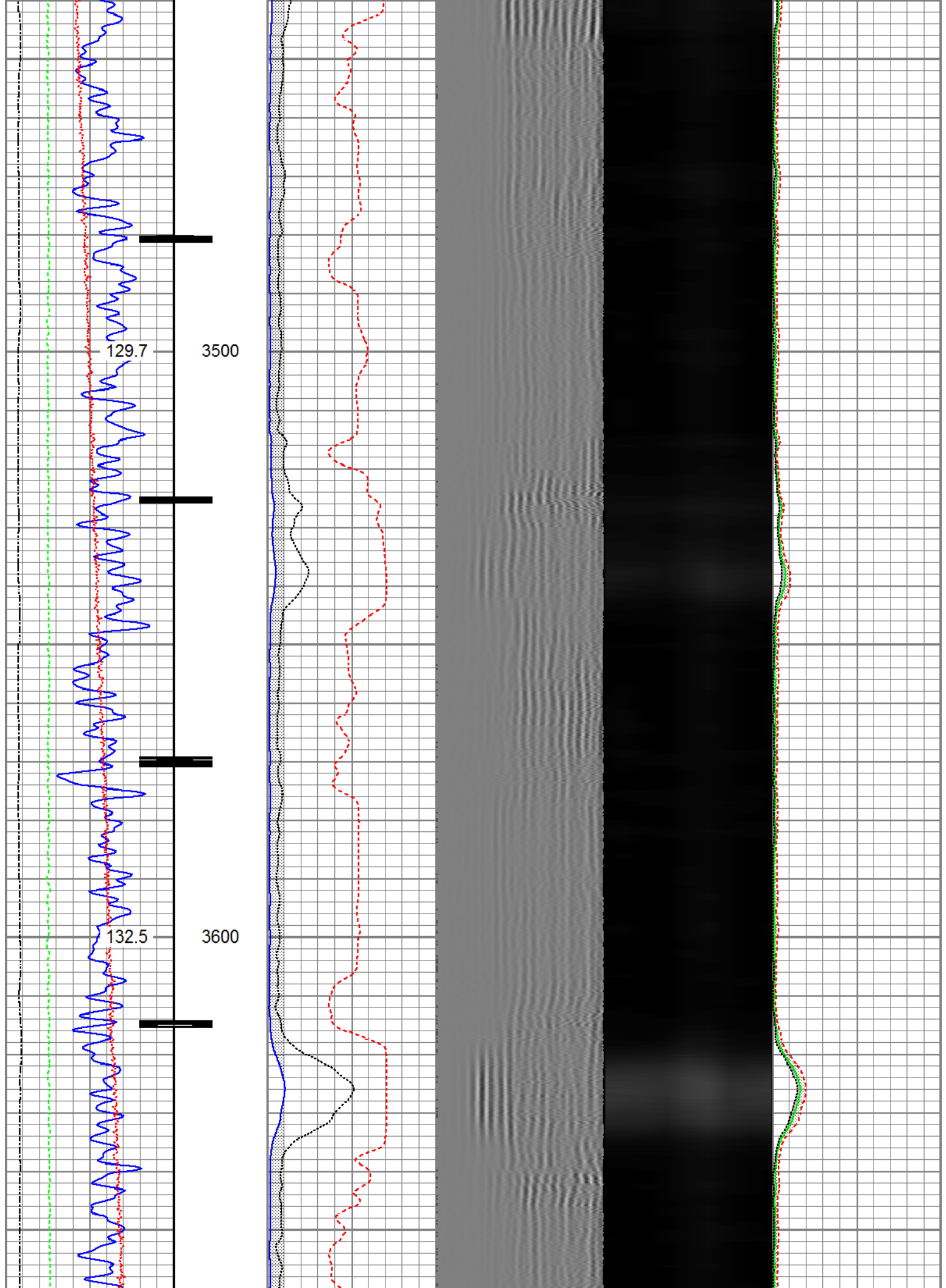


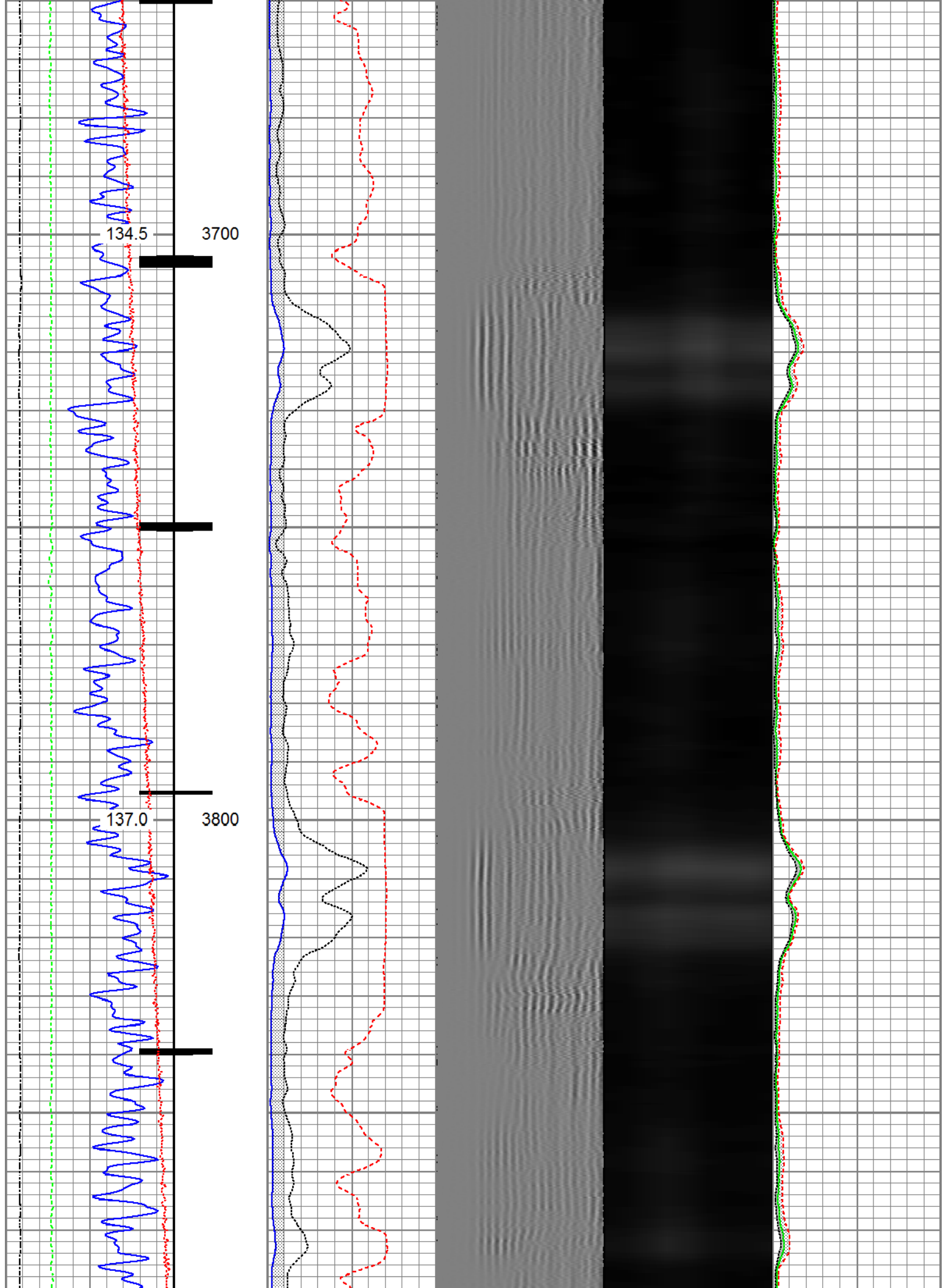


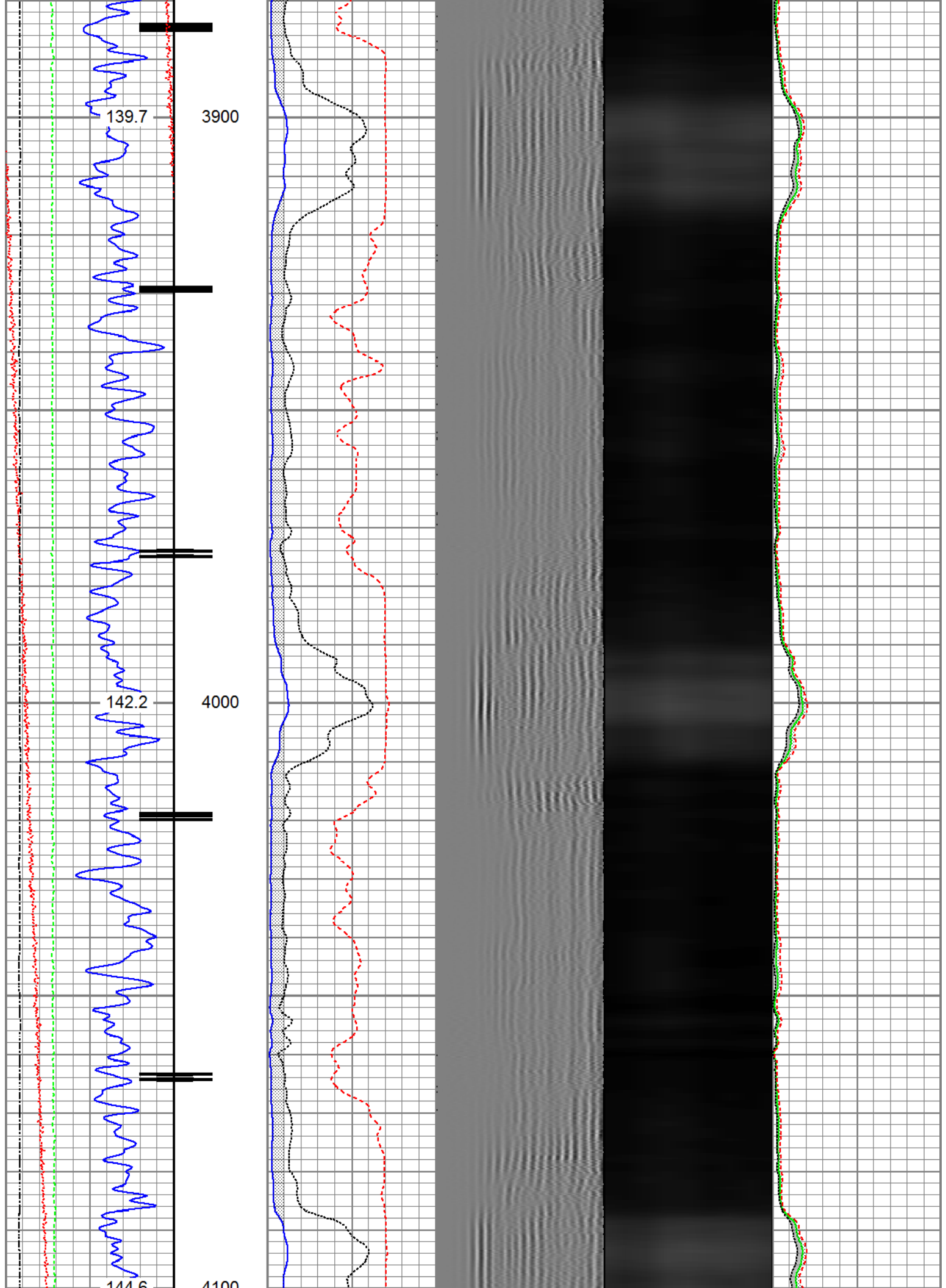


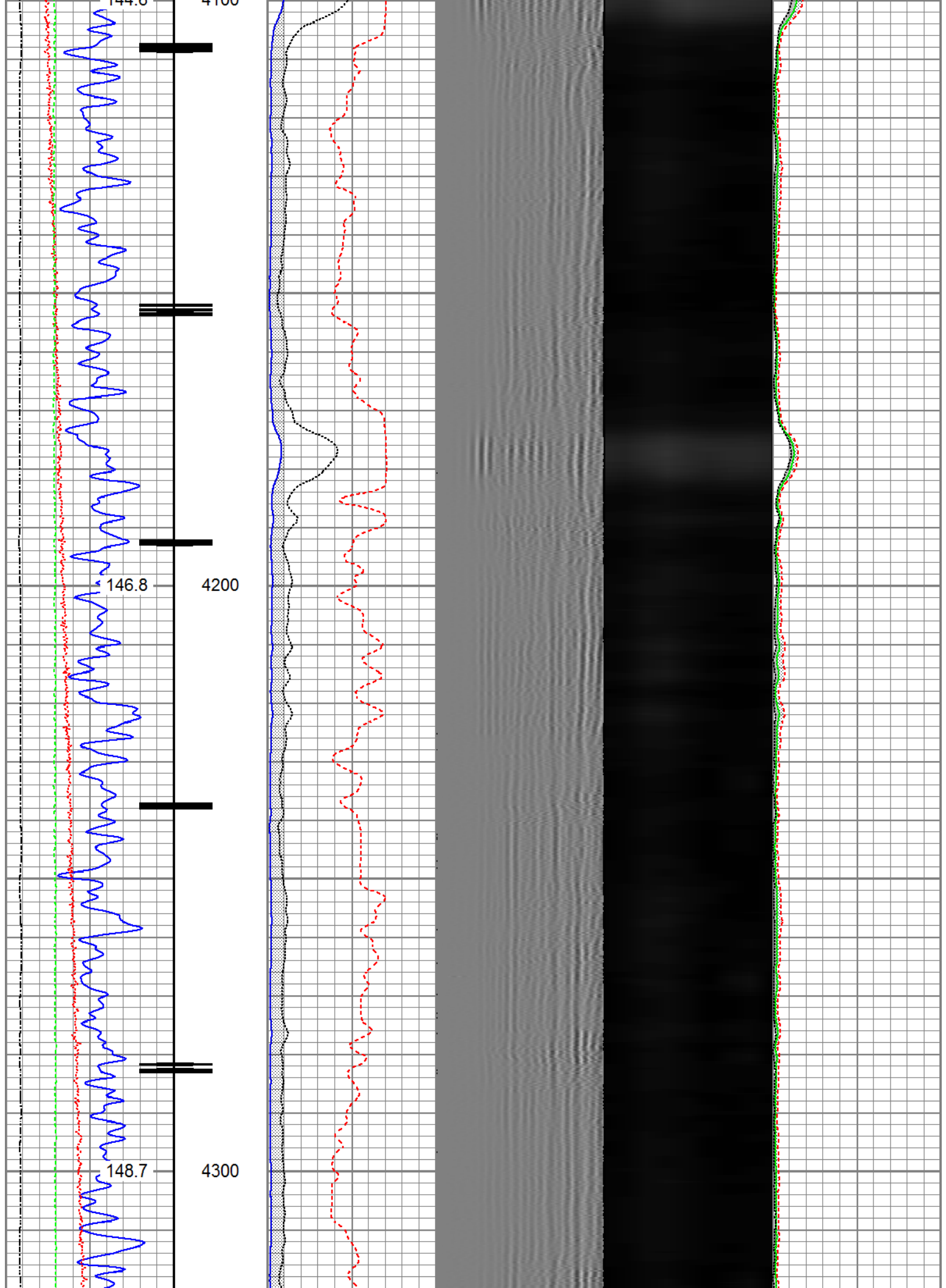


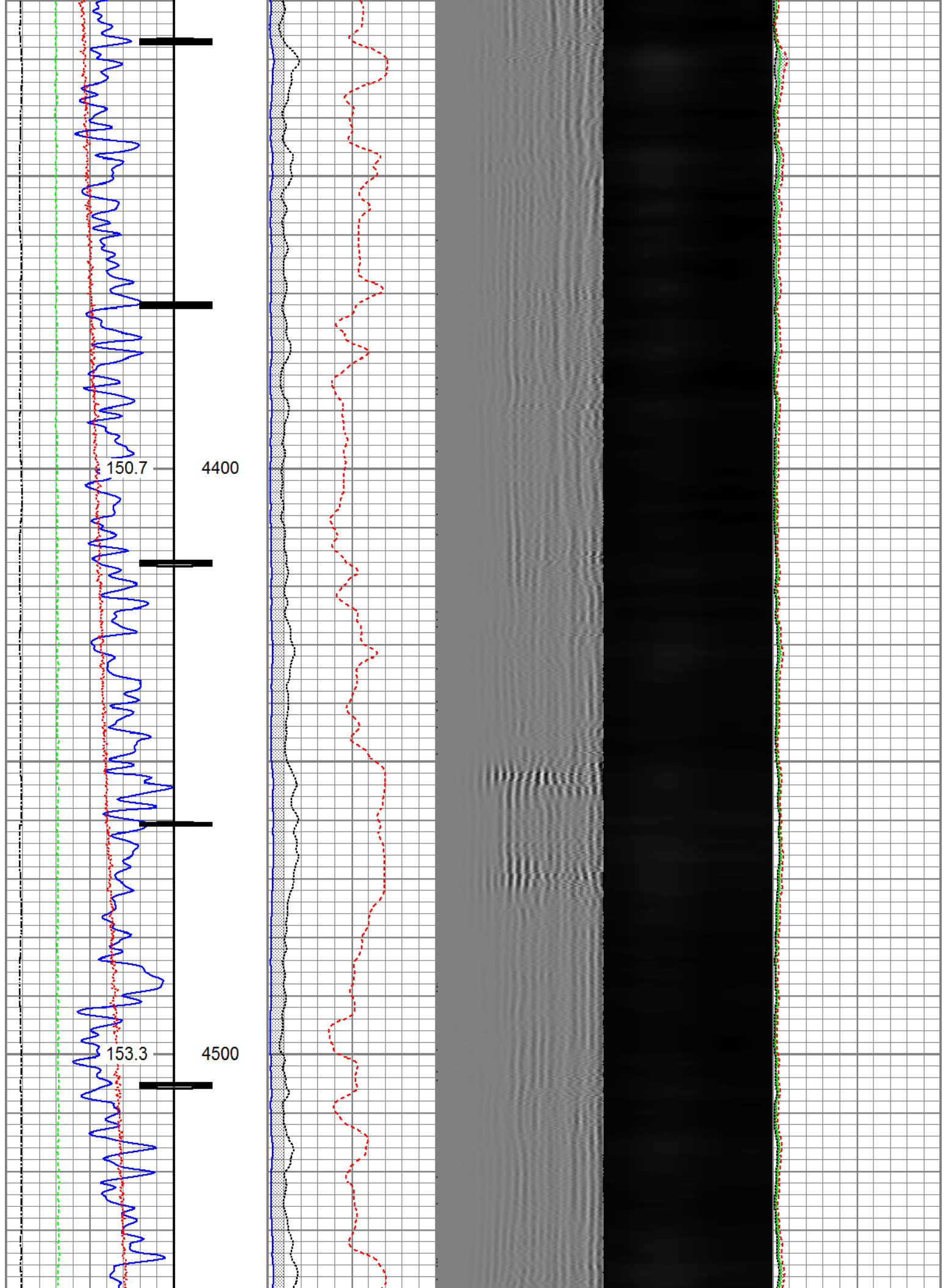


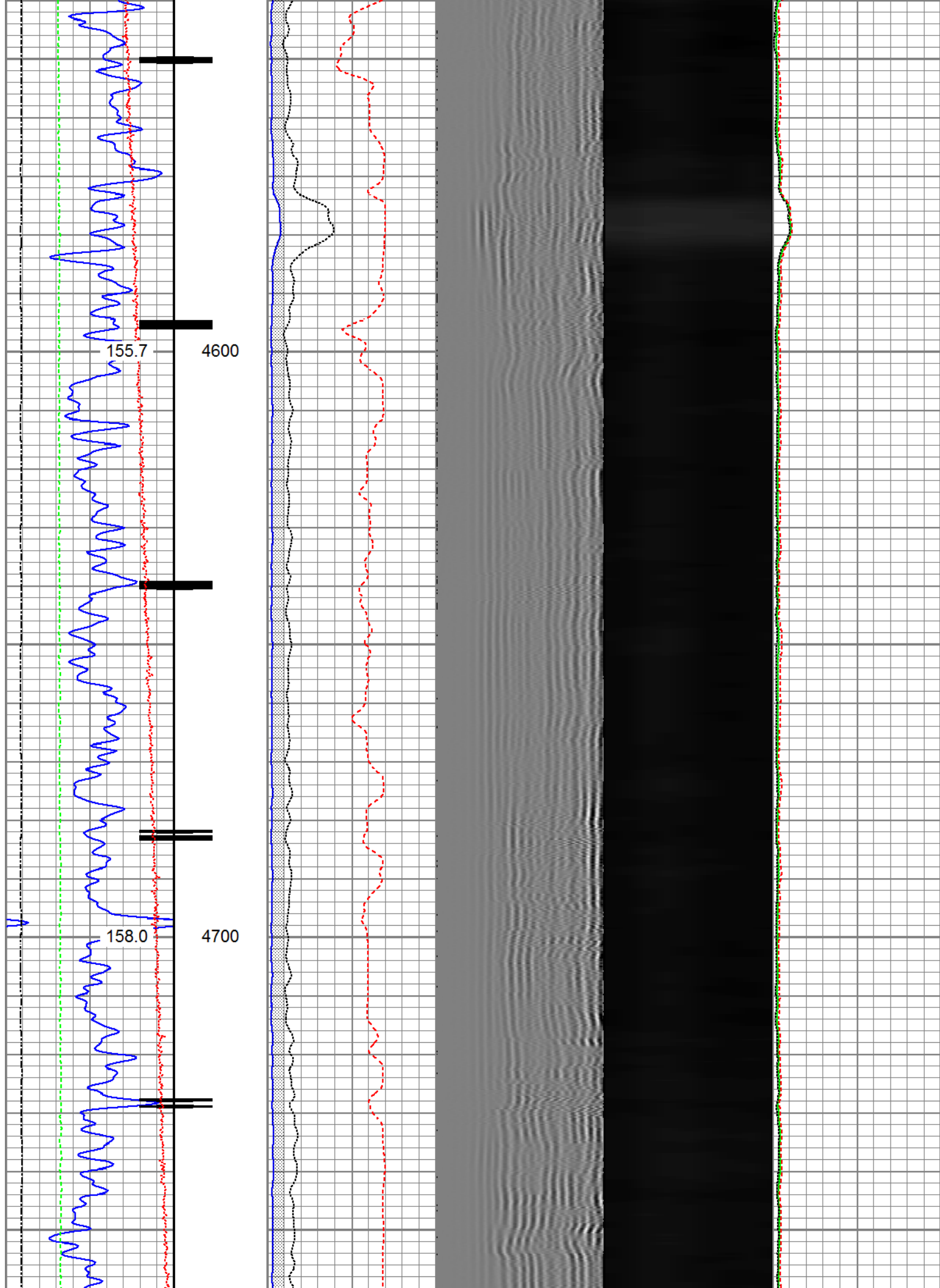


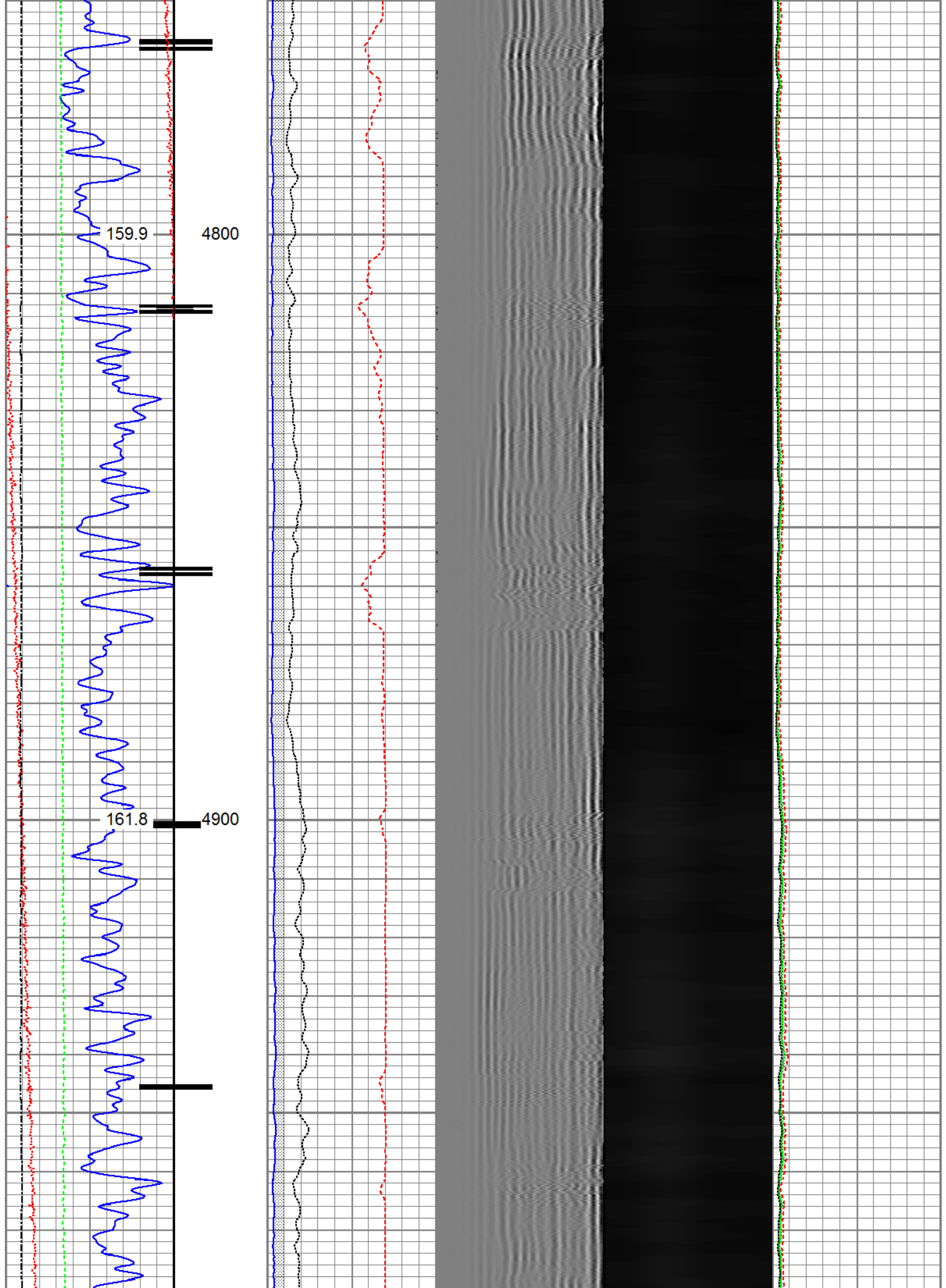


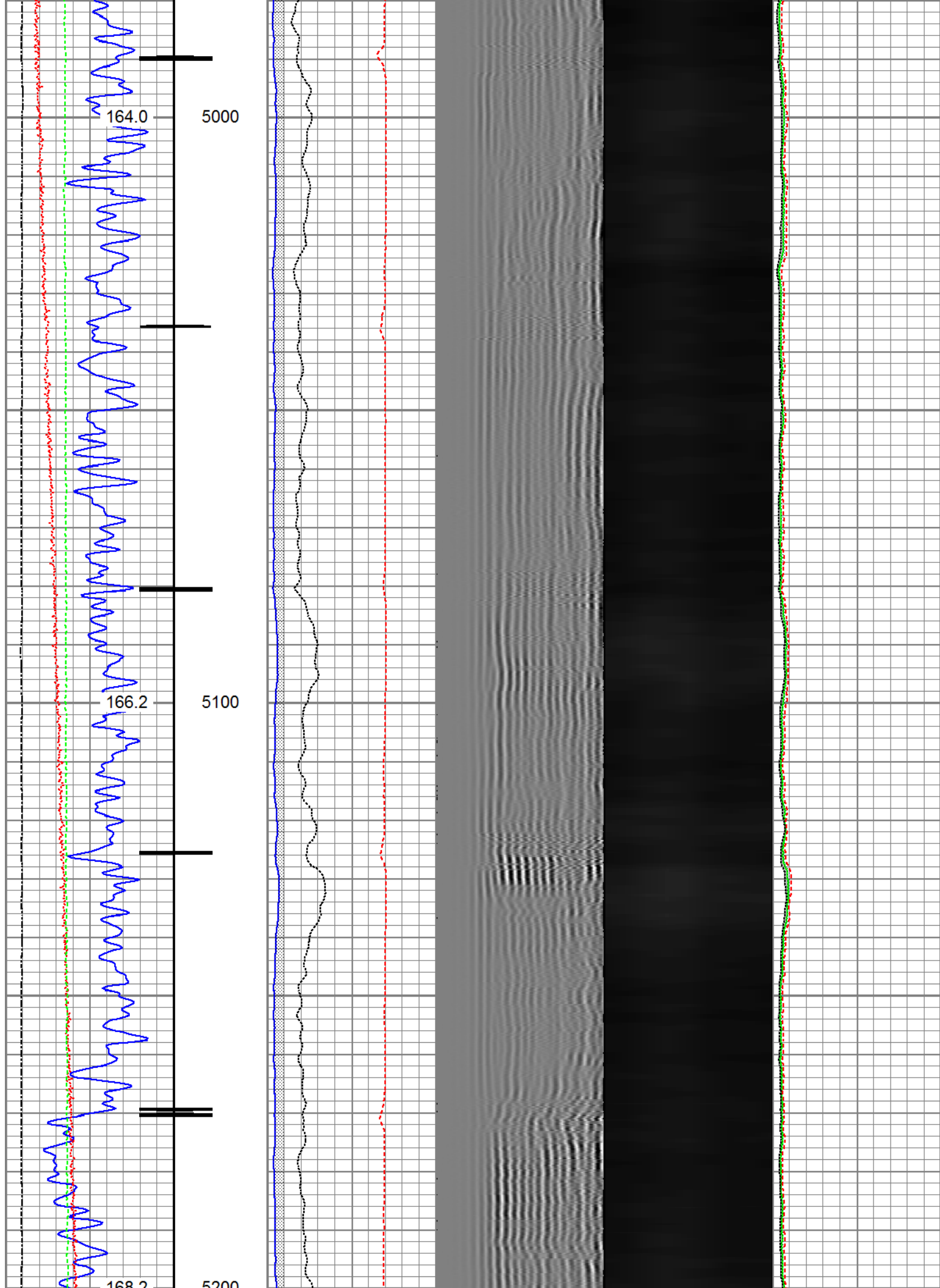


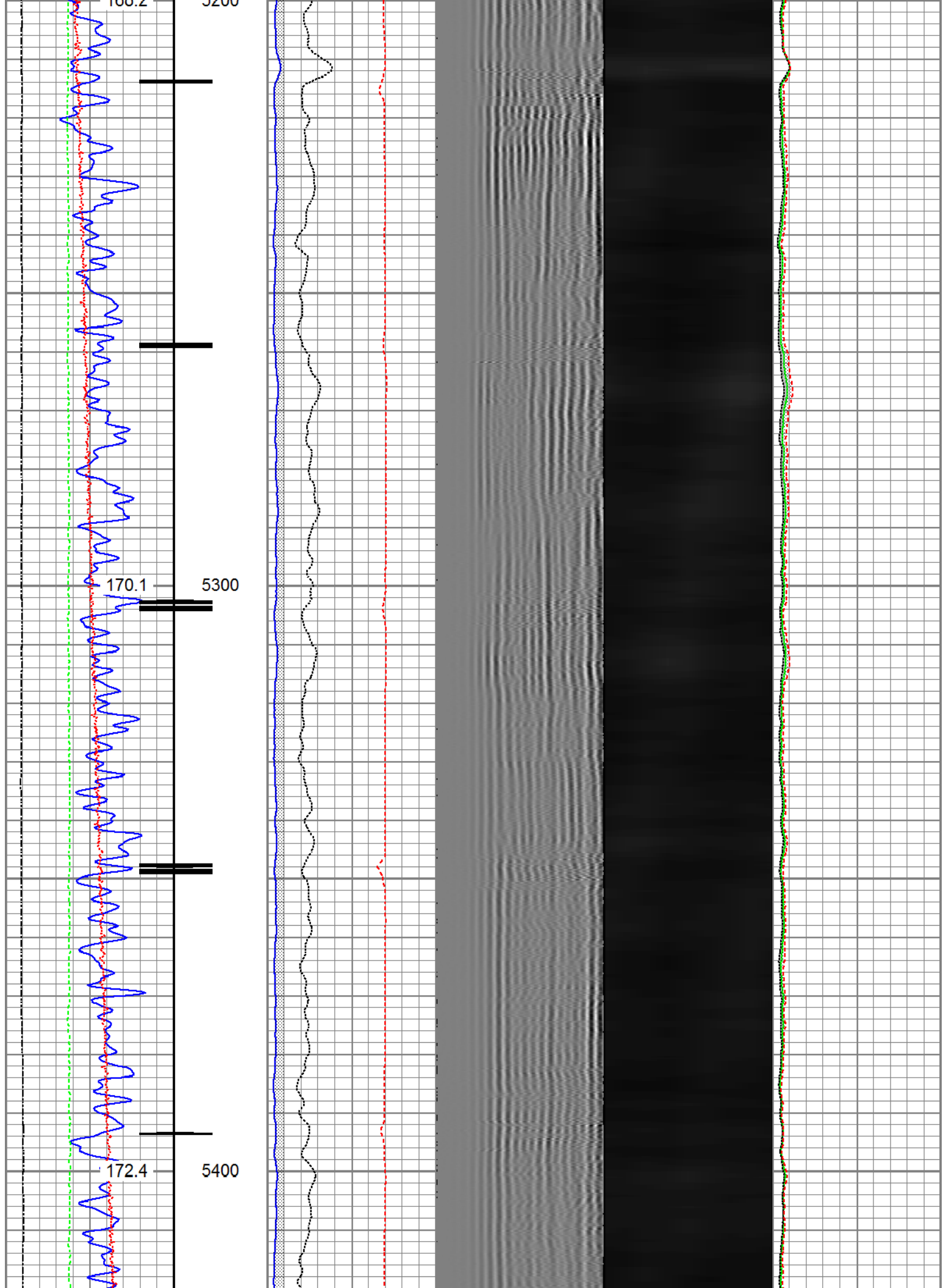


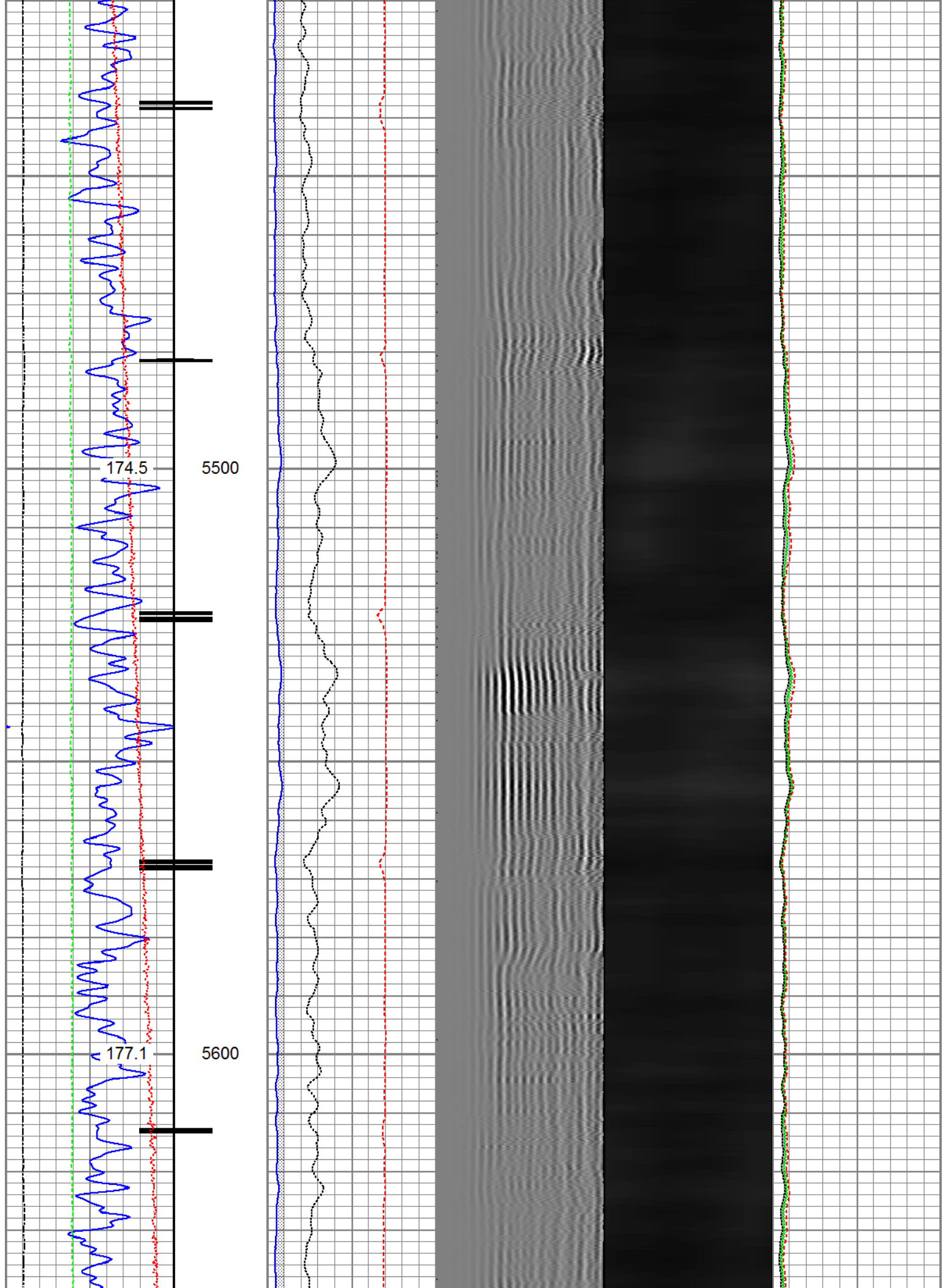


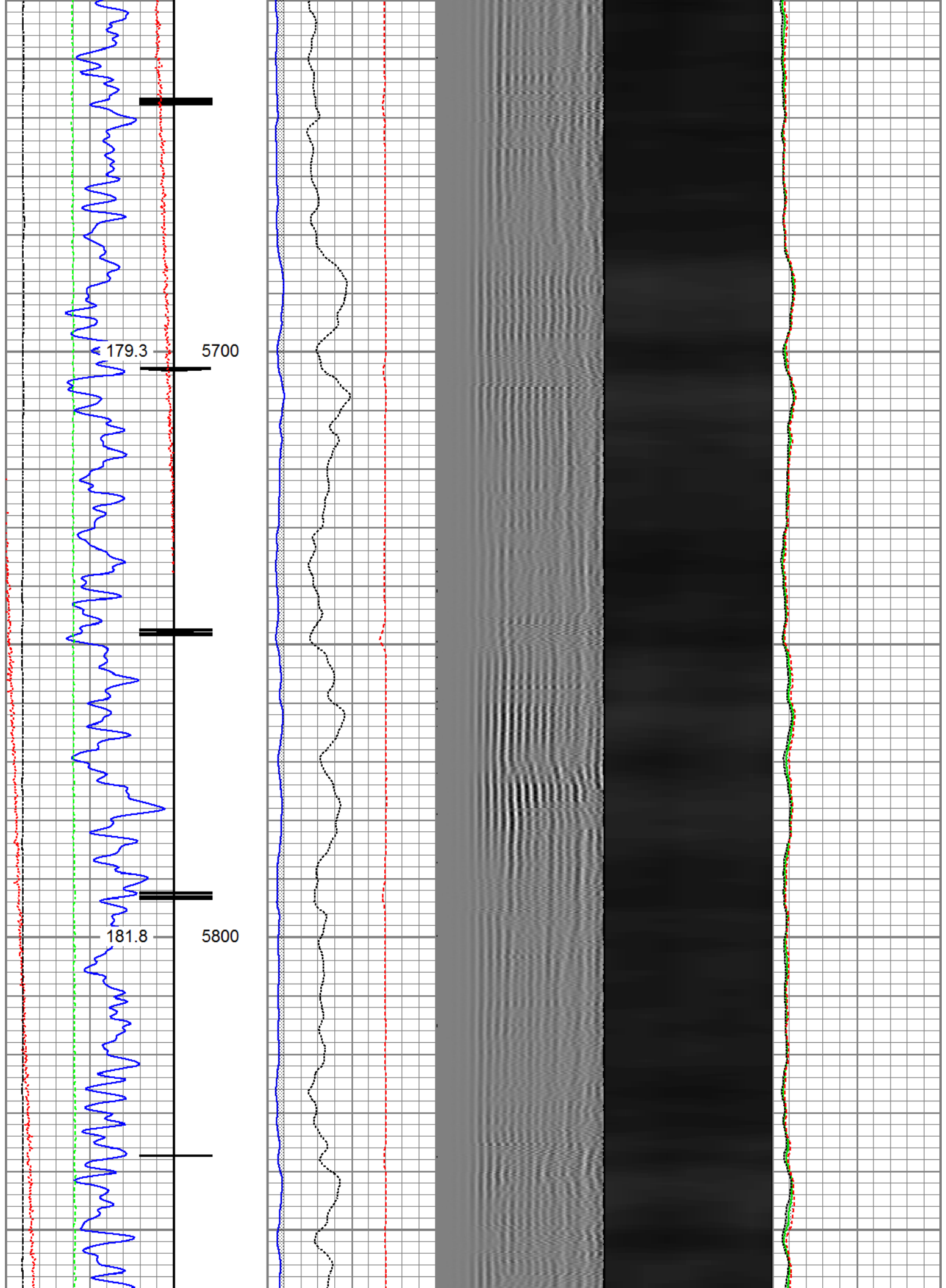


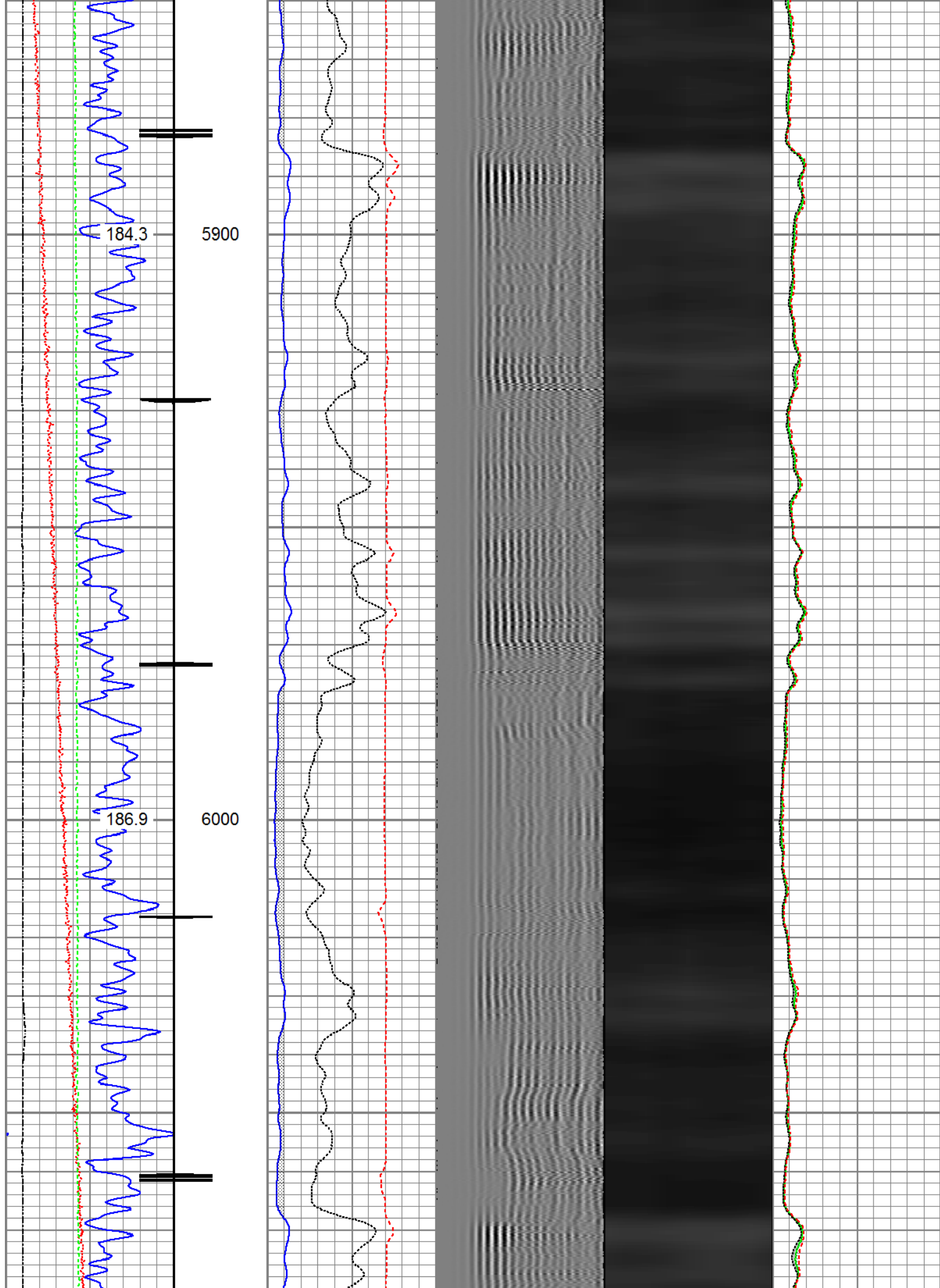


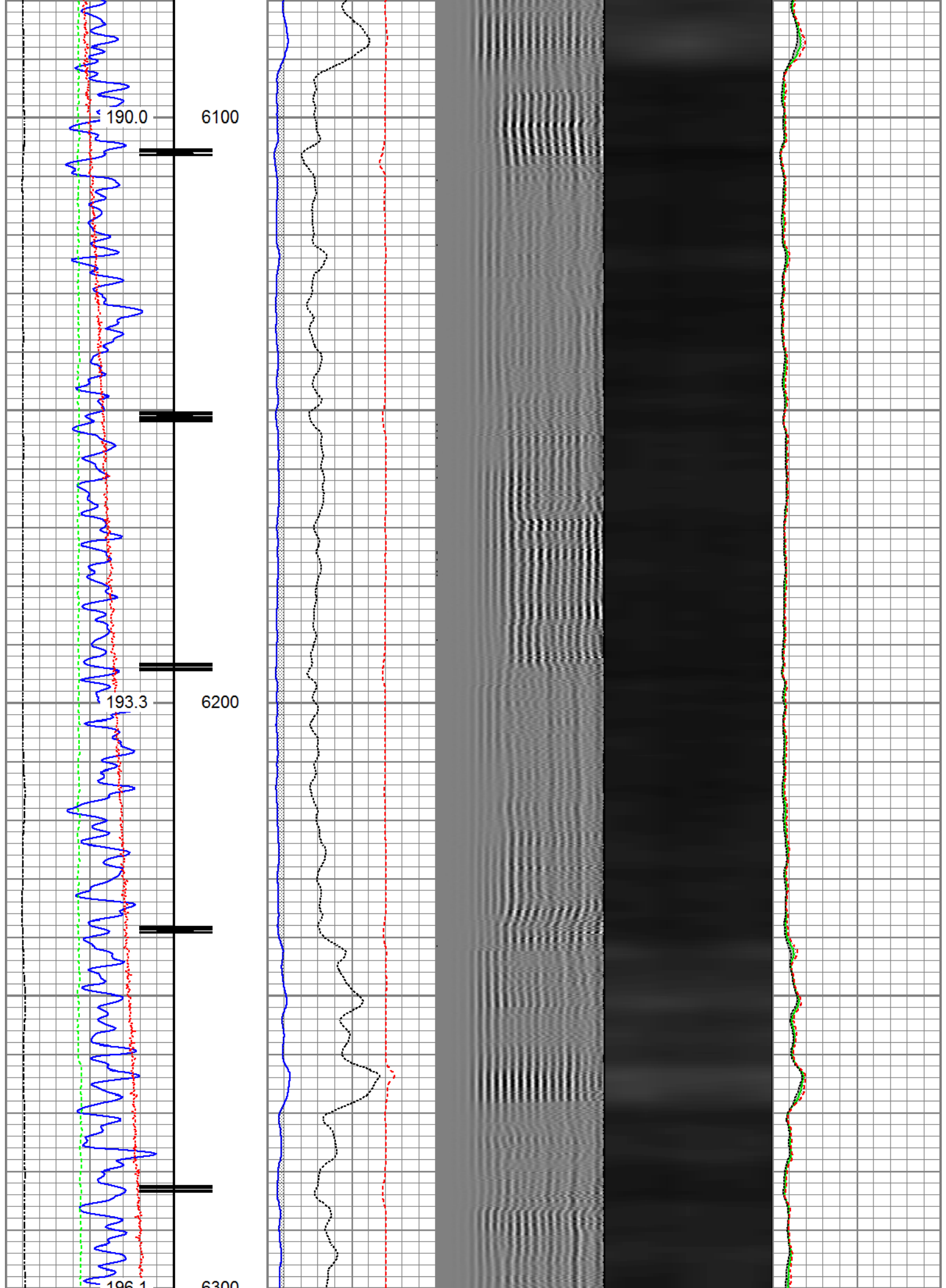


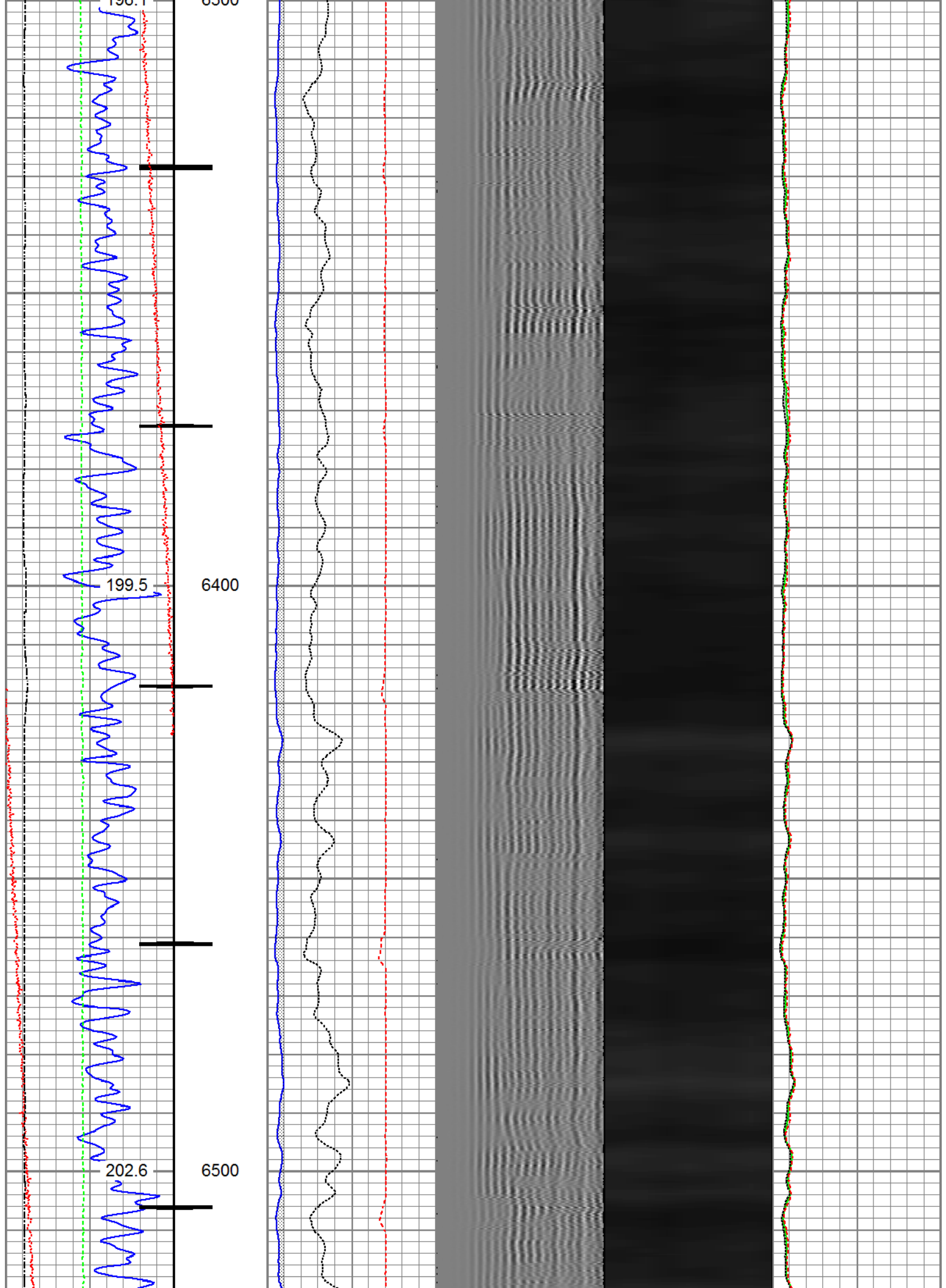


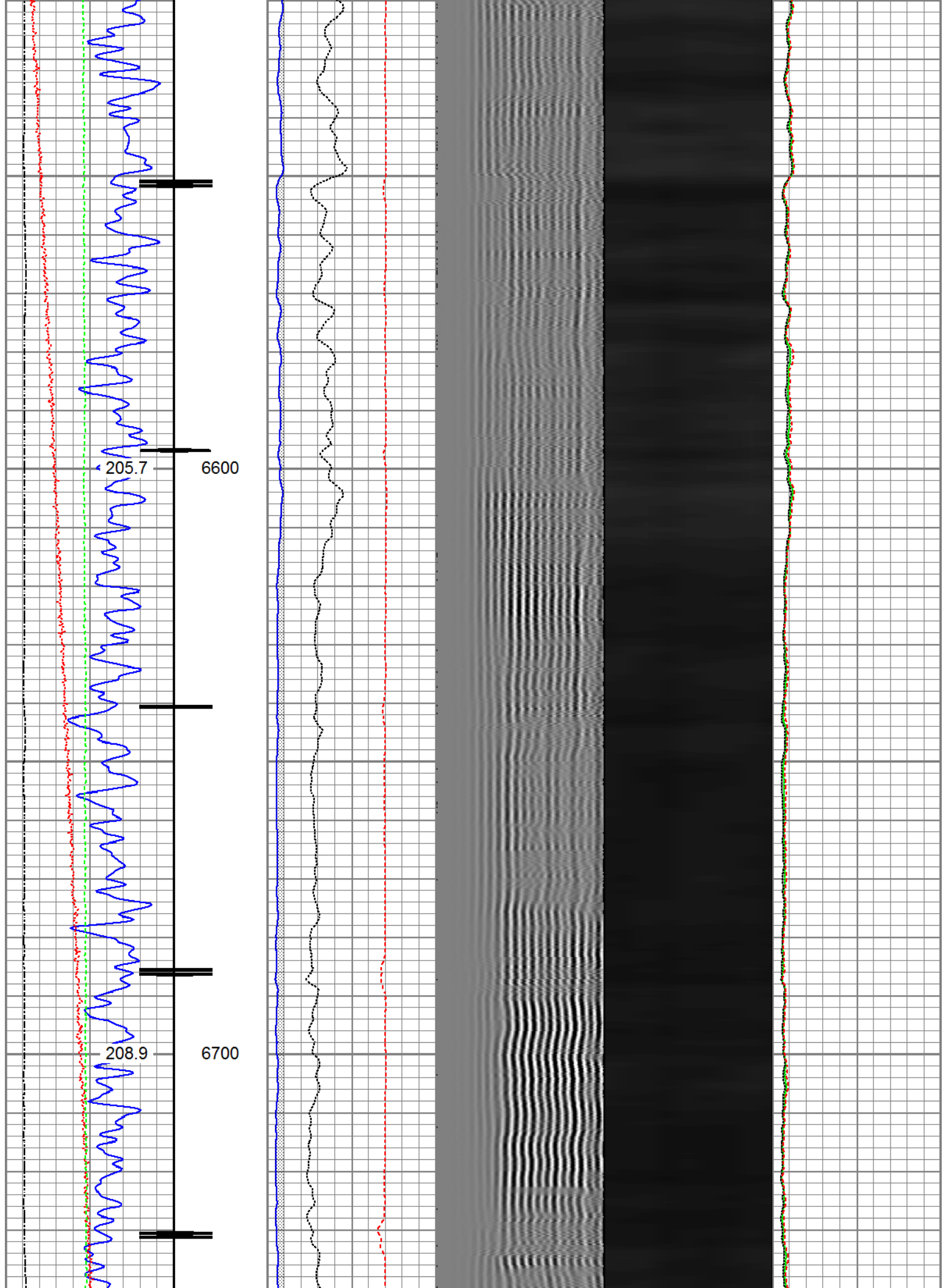


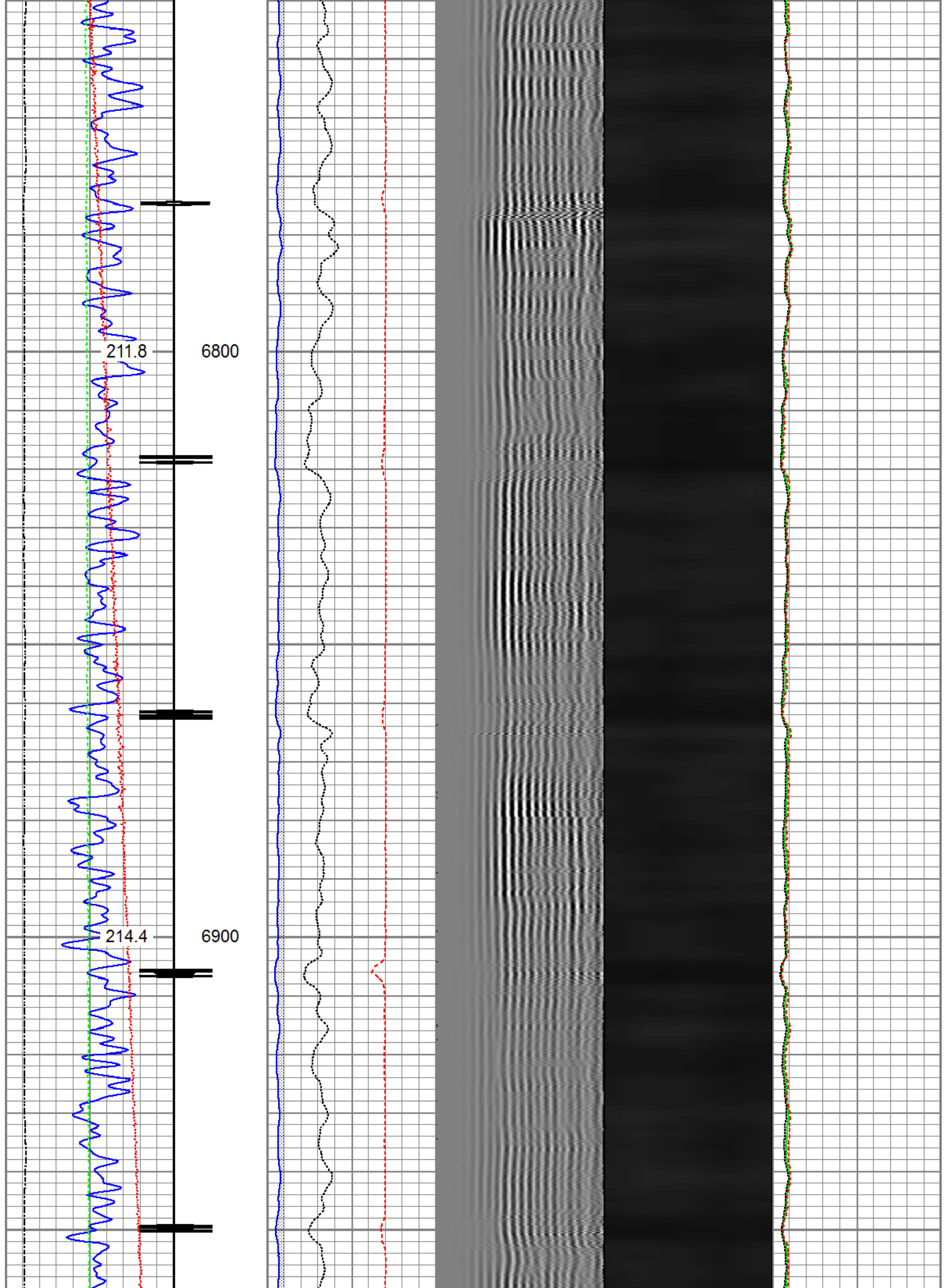


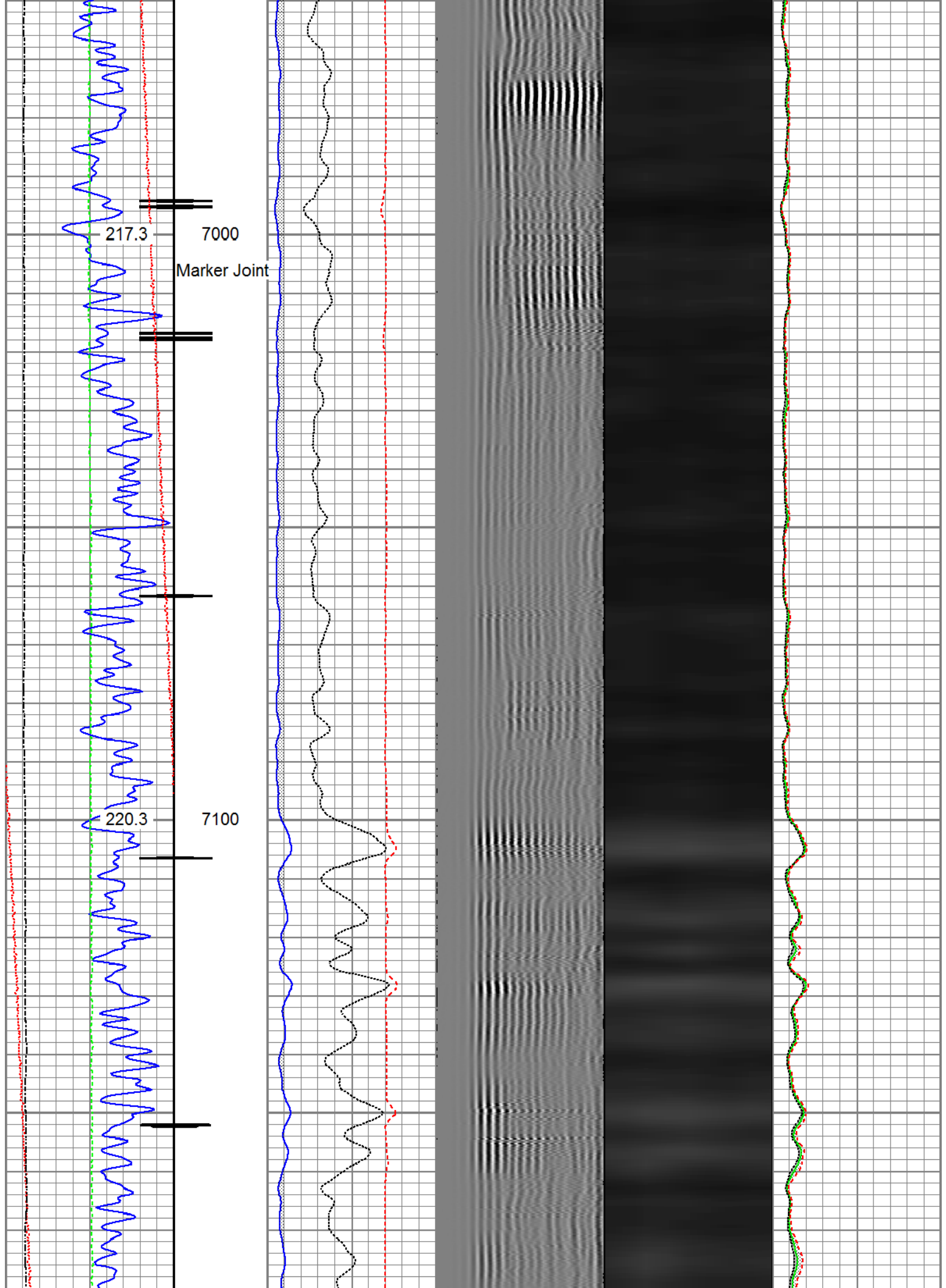


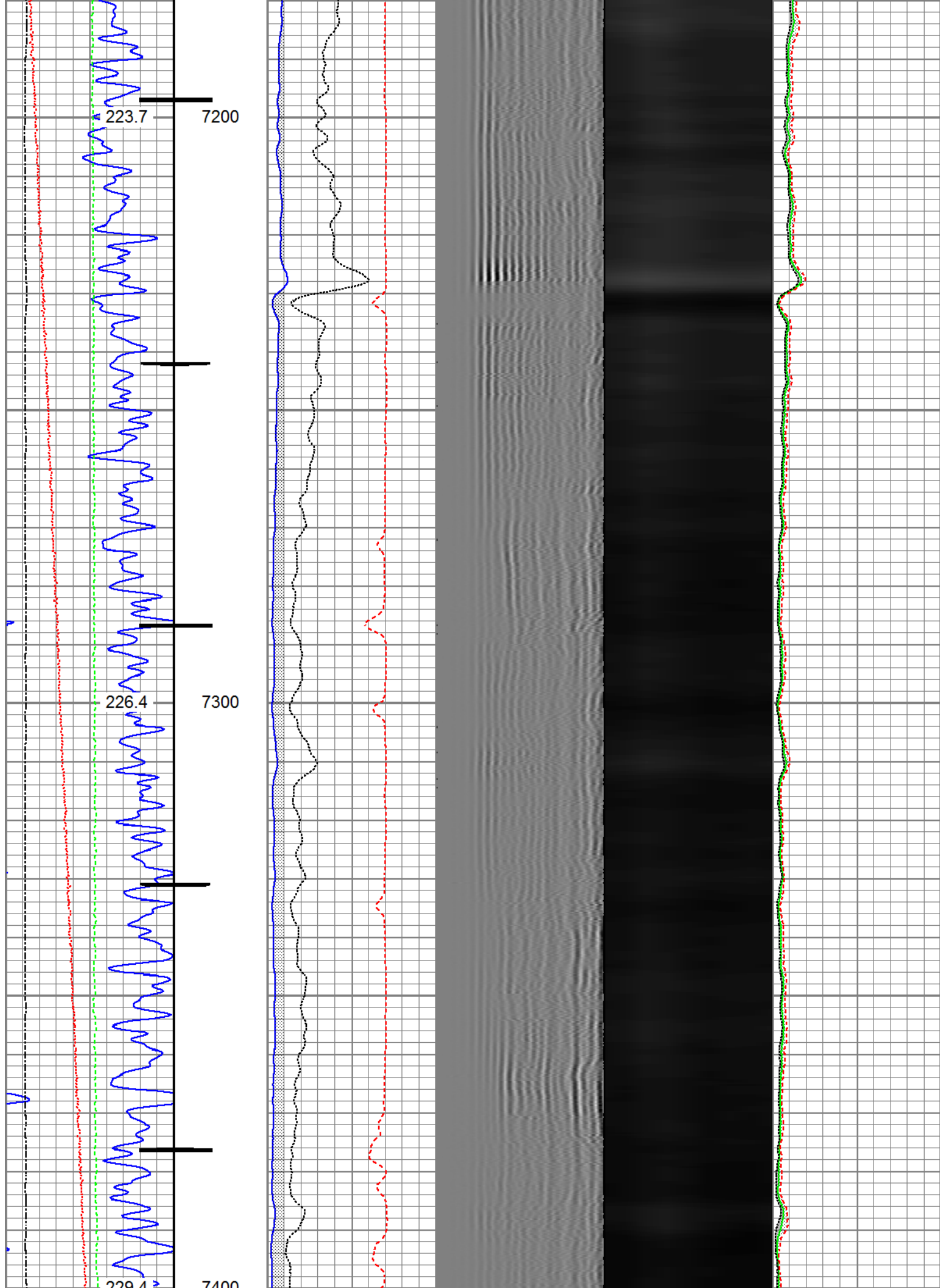


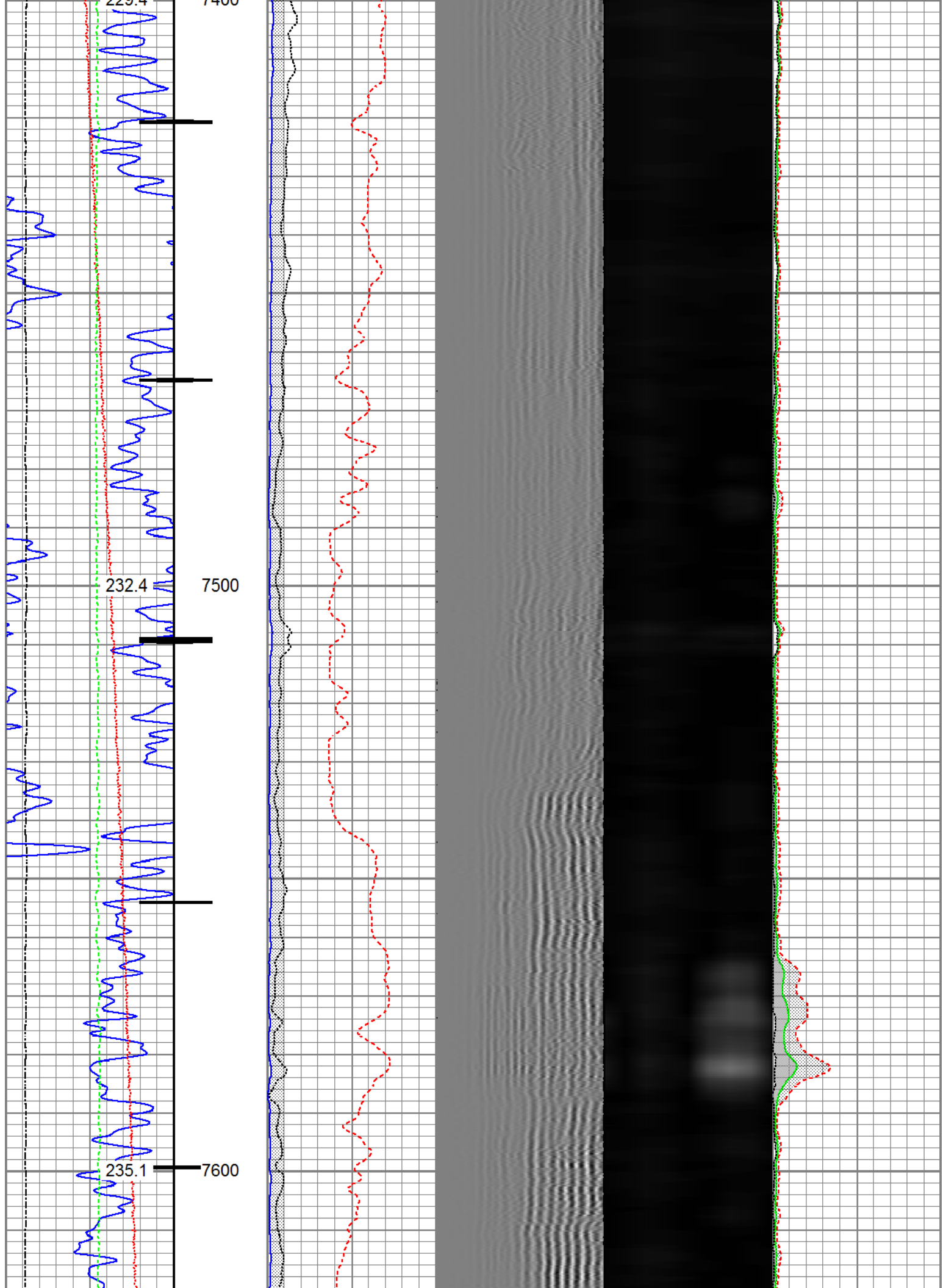


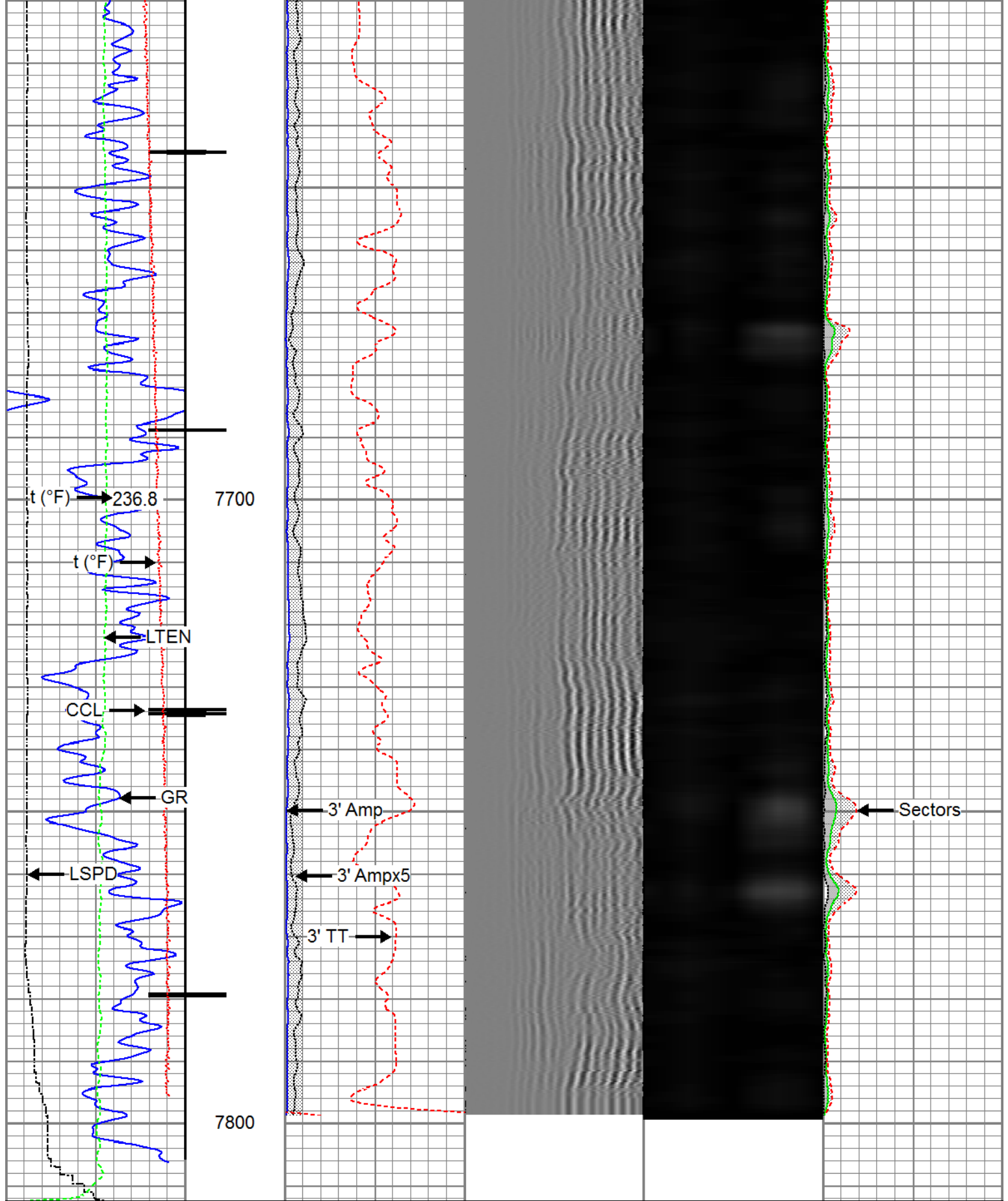












Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude (mV)
0 120	0 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5 (mV)			Minimum Amplitude (mV)
	0 20			0 100
Temperature (degF)	3' Travel Time (μsec)			Maximum Amplitude (mV)
0 20	650 150			0 100

(deg.)	20
Line Speed	
-150 (ft/min)	150
Line Tension	
0 (lb)	2000

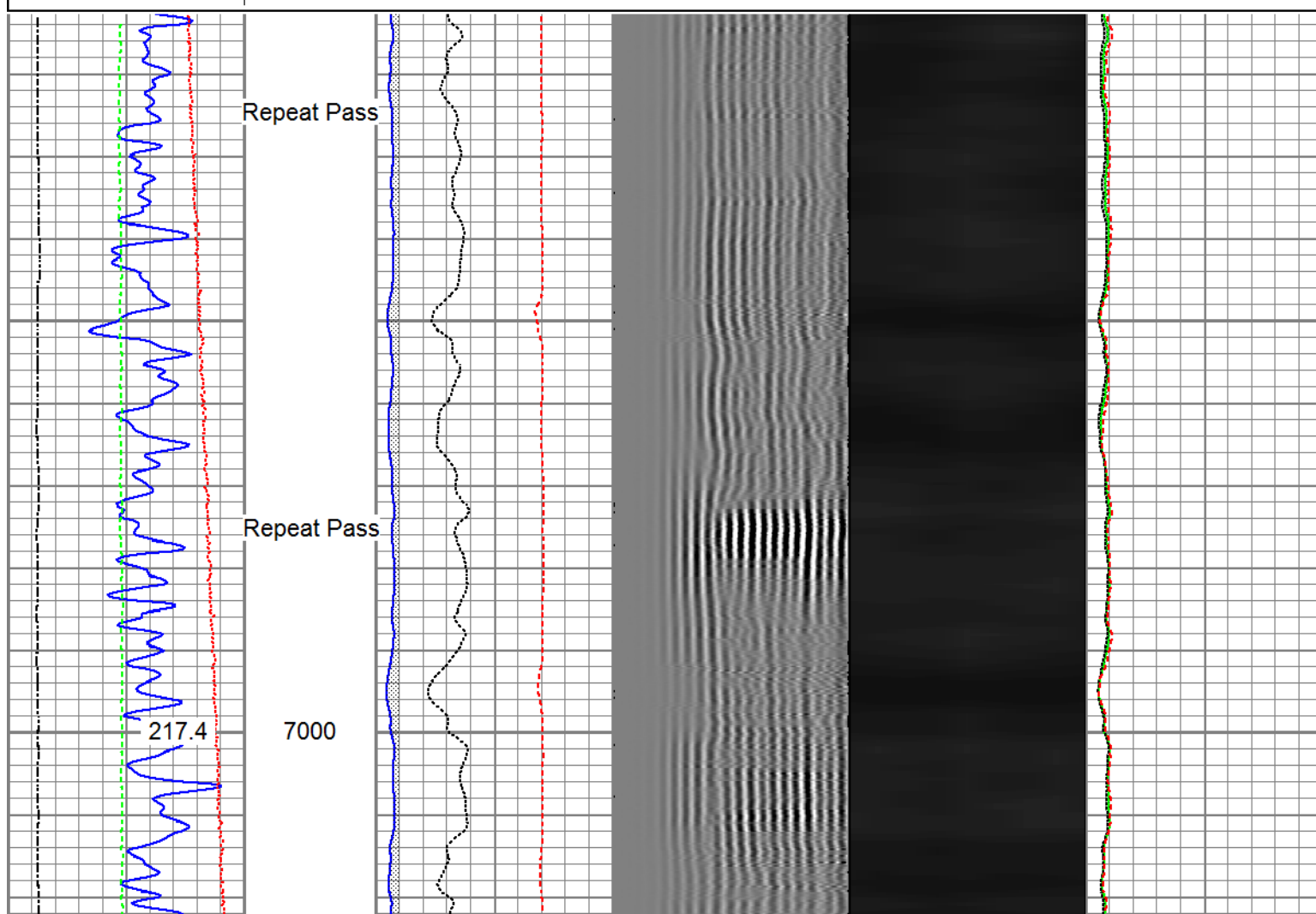


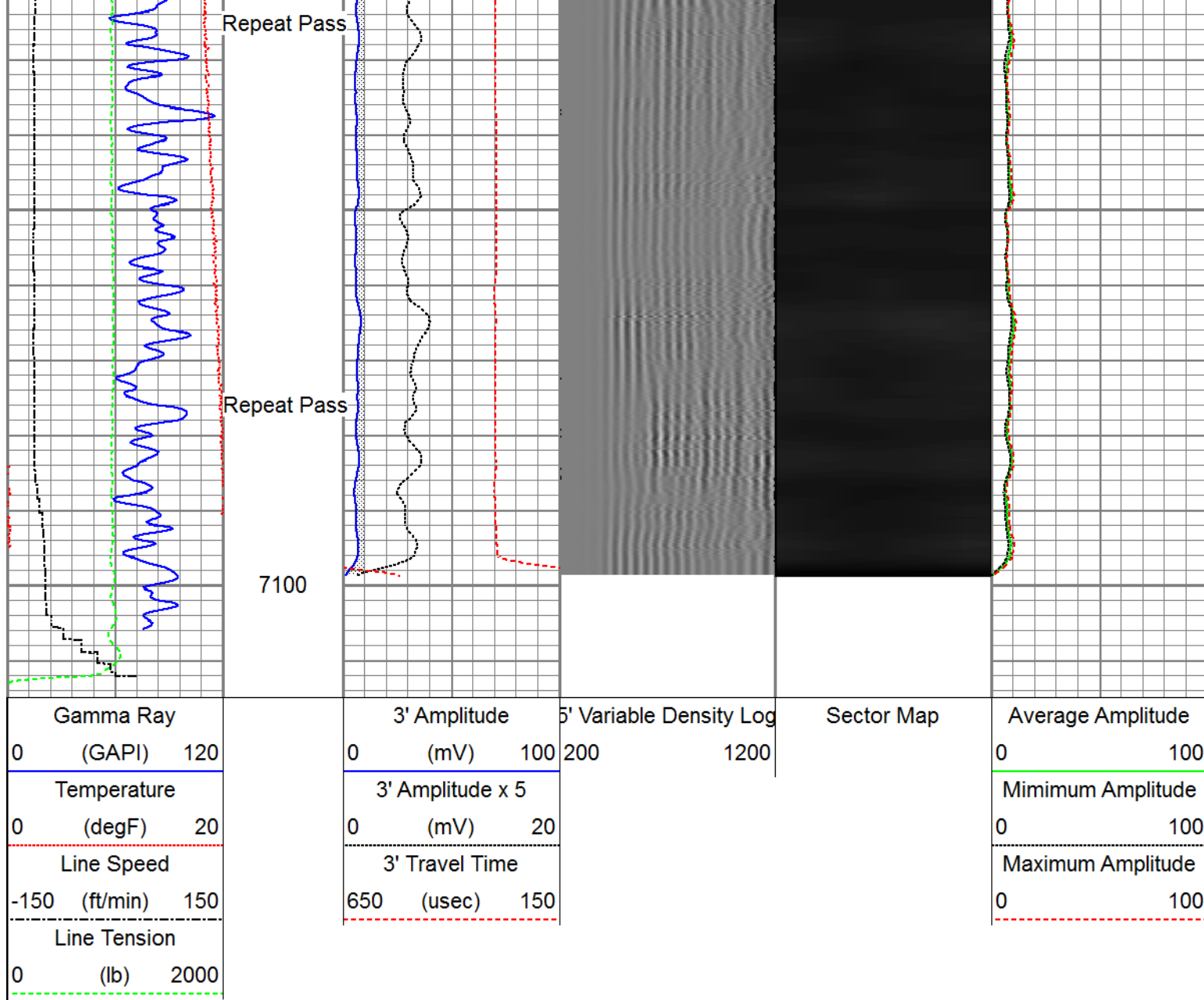
Repeat Pass


Recorded With 2800 PSI Surface Induced Pressure

Database File anadarko_whiston 39c-33hz_17-may-2017_rbl\processed_0512344029_anadarko_whiston 39c-33hz
Dataset Pathname pass2
Presentation Format ros_radrii
Dataset Creation Wed May 17 13:37:50 2017
Charted by Depth in Feet scaled 1:240

Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Temperature		3' Amplitude x 5			Minimum Amplitude
0 (degF) 20		0 (mV) 20			0 100
Line Speed		3' 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)
HeadVolt	19.54		Titan_Electric_Cable_Heads-Titan_1-11/16" 1.03 Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
			Probe_ELine_BowSpring_Centralizer-P_EB2.8875 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.8875	2.75	20.00
			Probe_RADII-C-P_RBT_2750 (FW1302-0029.19 Probe 2-3/4" Sector Cement Bond Tool with	29.19	2.75	105.00
Temp	16.75					
WVFS8	14.58					

WVFS7	14.58		Temperature Probe				
WVFS6	14.58						
WVFS5	14.58						
WVFS4	14.58						
WVFS3	14.58						
WVFS2	14.58						
WVFS1	14.58						
WVFCAL	14.58						
WVF3FT	14.58						
WVF5FT	13.58						
HEADVOLT	10.33						
			Probe_ELine_BowSpring_Centralizer-P_EB	2.8875	2.75	20.00	
			Probe 2-3/4" Electric Inline Bowspring Centralizer				
DCCL	6.51						
CCL	6.51						
			Probe_GR_CCL-P_CGR_2750_S (FW1212)	124.57	2.75	55.00	
			Probe 2-3/4" Digital CCL / Gamma Ray Combined				
GR	3.77						
			Probe_ELine_BowSpring_Centralizer-P_EB	2.8875	2.75	20.00	
			Probe 2-3/4" Electric Inline Bowspring Centralizer				
Dataset:		PROCESSED_0512344029_Anadarko_Whiston 39C-33HZ_05-17-17_RBL.db: field/well/run1/pass4					
Total length:		23.43 ft					
Total weight:		225.40 lb					
O.D.:		2.75 in					

Calibration Report		
Database File	C:\ProgramData\Warrior\Data\Anadarko_Whiston 39C-33HZ_17-MAY-2017_RBL\PROCESSED_051	
Dataset Pathname	pass4	
Dataset Creation	Wed May 17 13:44:05 2017	
Gamma Ray Calibration Report		
Serial Number:	FW1212-026	
Tool Model:	P_CGR_2750_S	
Performed:	Mon Aug 15 10:19:05 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6000	GAPI/cps
Segmented Cement Bond Log Calibration Report		
Serial Number:	FW1302-002	
Tool Model:	P_RBT_2750	

Calibration Casing Diameter:	5.500	in
Calibration Depth:	45.102	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.754	0.800	71.921	94.291	0.793
CAL	0.002	0.821				
5'	-0.002	0.640	0.800	71.921	110.692	1.033
SUM						
S1	-0.005	0.760	0.000	100.000	130.599	0.706
S2	-0.002	0.754	0.000	100.000	132.220	0.256
S3	-0.001	0.758	0.000	100.000	131.756	0.142
S4	-0.000	0.746	0.000	100.000	133.959	0.019
S5	0.000	0.751	0.000	100.000	133.212	-0.012
S6	-0.001	0.761	0.000	100.000	131.243	0.129
S7	-0.001	0.764	0.000	100.000	130.565	0.192
S8	-0.003	0.772	0.000	100.000	128.983	0.410

Internal Reference Calibration, performed Wed Aug 03 10:40:08 2016:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.002	0.821	1.000	0.000

Air Zero Calibration, performed Sat May 13 09:53:02 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.001		0.000		0.000	
5'	0.001		0.000		-0.000	
SUM						
S1	0.001		0.000		-0.001	
S2	0.000		0.000		0.000	
S3	0.001		0.000		0.001	
S4	0.002		0.000		-0.000	
S5	0.001		0.000		-0.000	
S6	0.001		0.000		-0.000	
S7	0.001		0.000		0.000	
S8	0.001		0.000		0.000	



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Whiston 39C-33HZ
Field	Wattenberg
County	Weld
State	Colorado