



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Wilson Ranch 5N-27HZ
Field Wattenberg
County Weld
State Colorado

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Location: API #: 05-123-41298
SEC 26 TWP 4N RGE 68W
Permanent Datum Ground Level Elevation 4992'
Log Measured From Kelly Bushing 20 FT
Drilling Measured From Kelly Bushing
Other Services
Gauge Ring
Elevation
K.B. 5012'
D.F. 5011'
G.L. 4992'

Run Number	Two						
Depth Driller	16585 FT						
Depth Logger	7304 FT						
Bottom Logged Interval	7299 FT						
Top Log Interval	Surface						
Open Hole Size	7.875"						
Type Fluid	Water						
Density / Viscosity	8.34 lb/gal						
Max. Recorded Temp.	223°F						
Estimated Cement Top	Surface						
Time Well Ready	ROA						
Time Logger on Bottom	07:24 AM						
Equipment Number	HD-0311						
Location	Fort Lupton, CO						
Recorded By	Jason Morrison						
Witnessed By	Brian Jolly						
Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size (in)	Weight (lb/ft)	From	To
Casing Record	Size (in)	Wgt (lb/ft)	Grade	Top	Bottom		
Surface Casing	9 5/8	36	J55 BTC	Surface	1847 FT		
Intermediate #1	5 1/2	17	HCP-110	Surface	16574 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 6405 FT
Adjusted -1 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7401 FT with no debris found
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!!

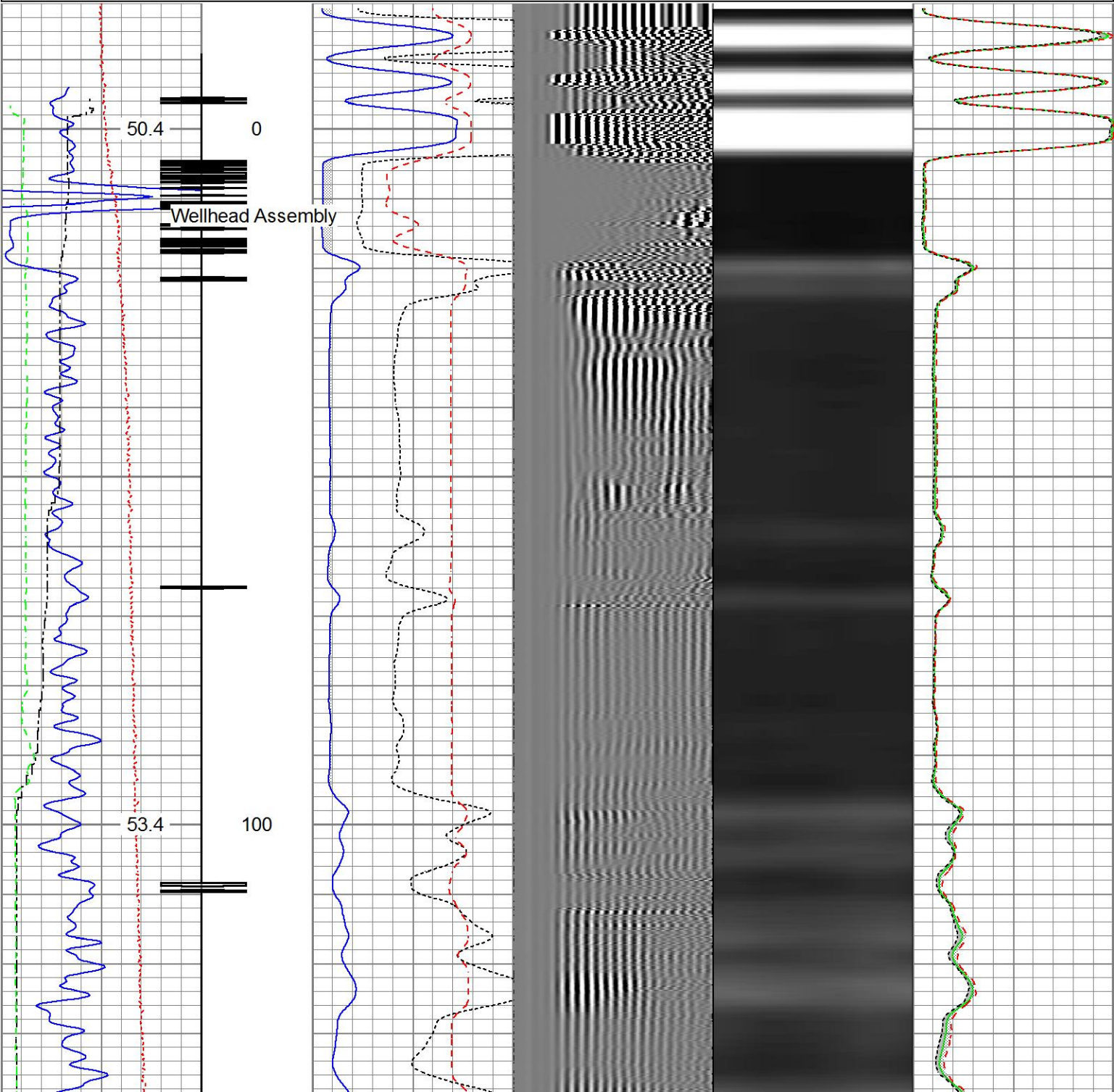


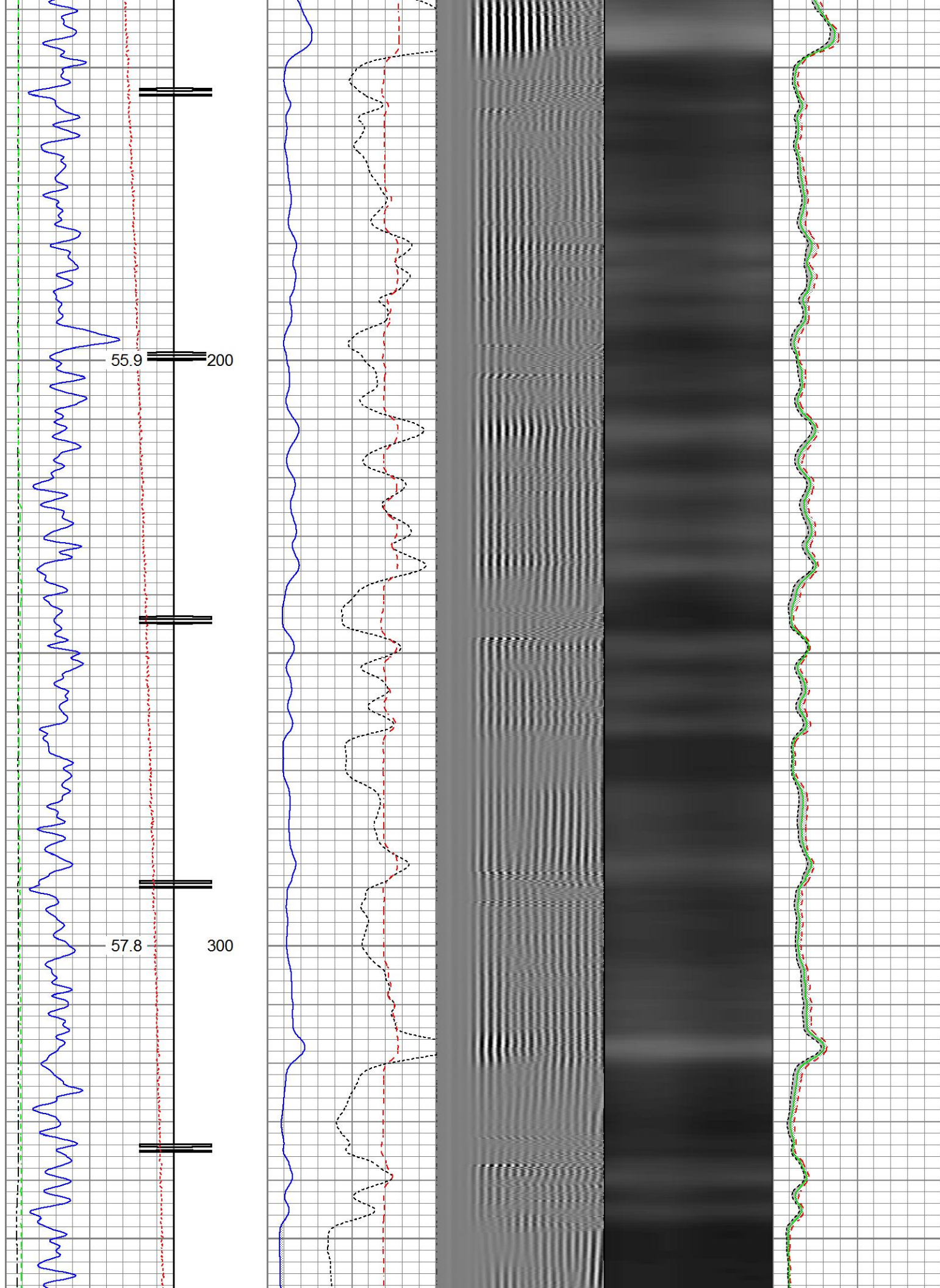
Main Pass

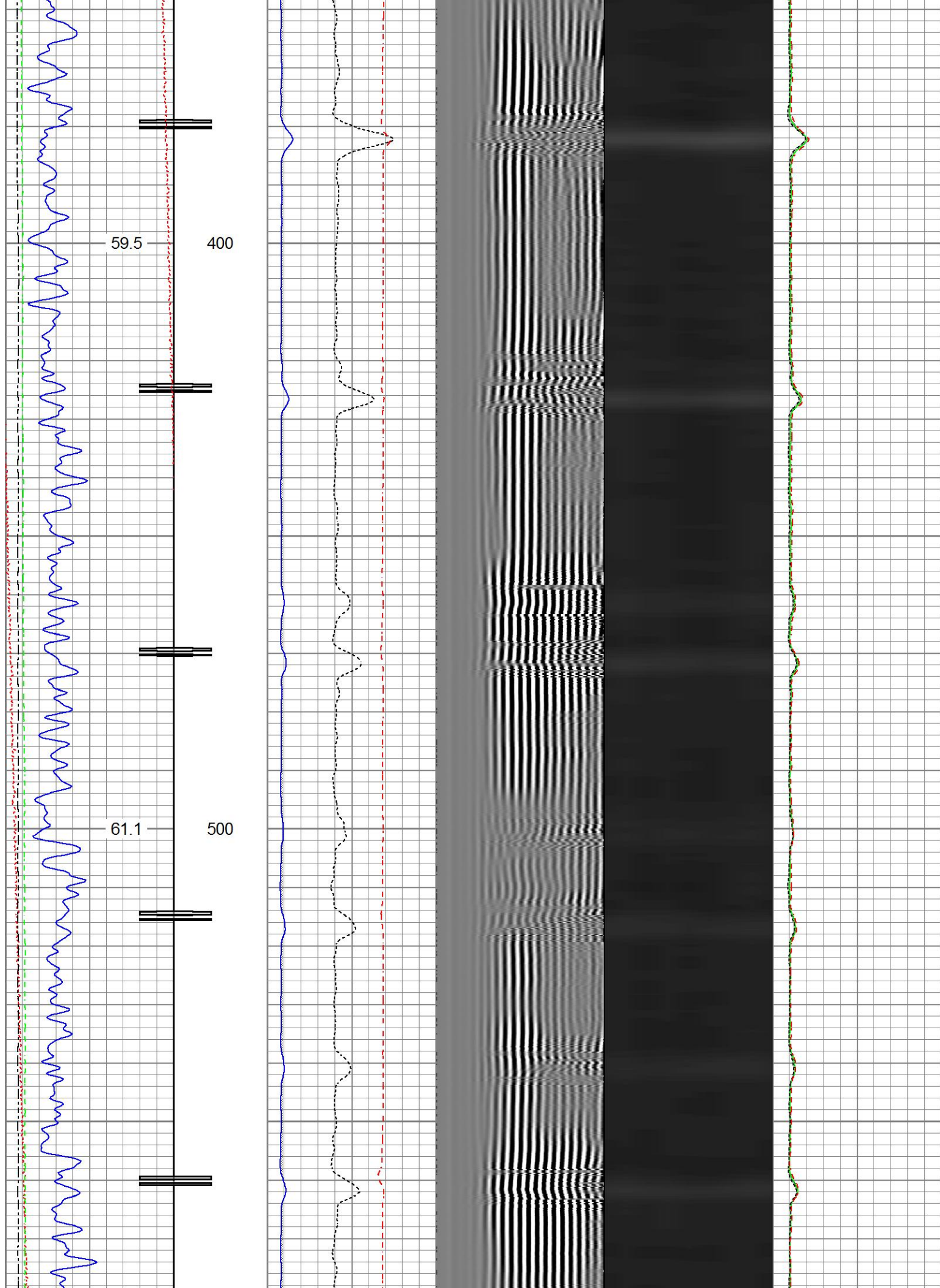
Recorded with 2800 PSI Surface Induced Pressure

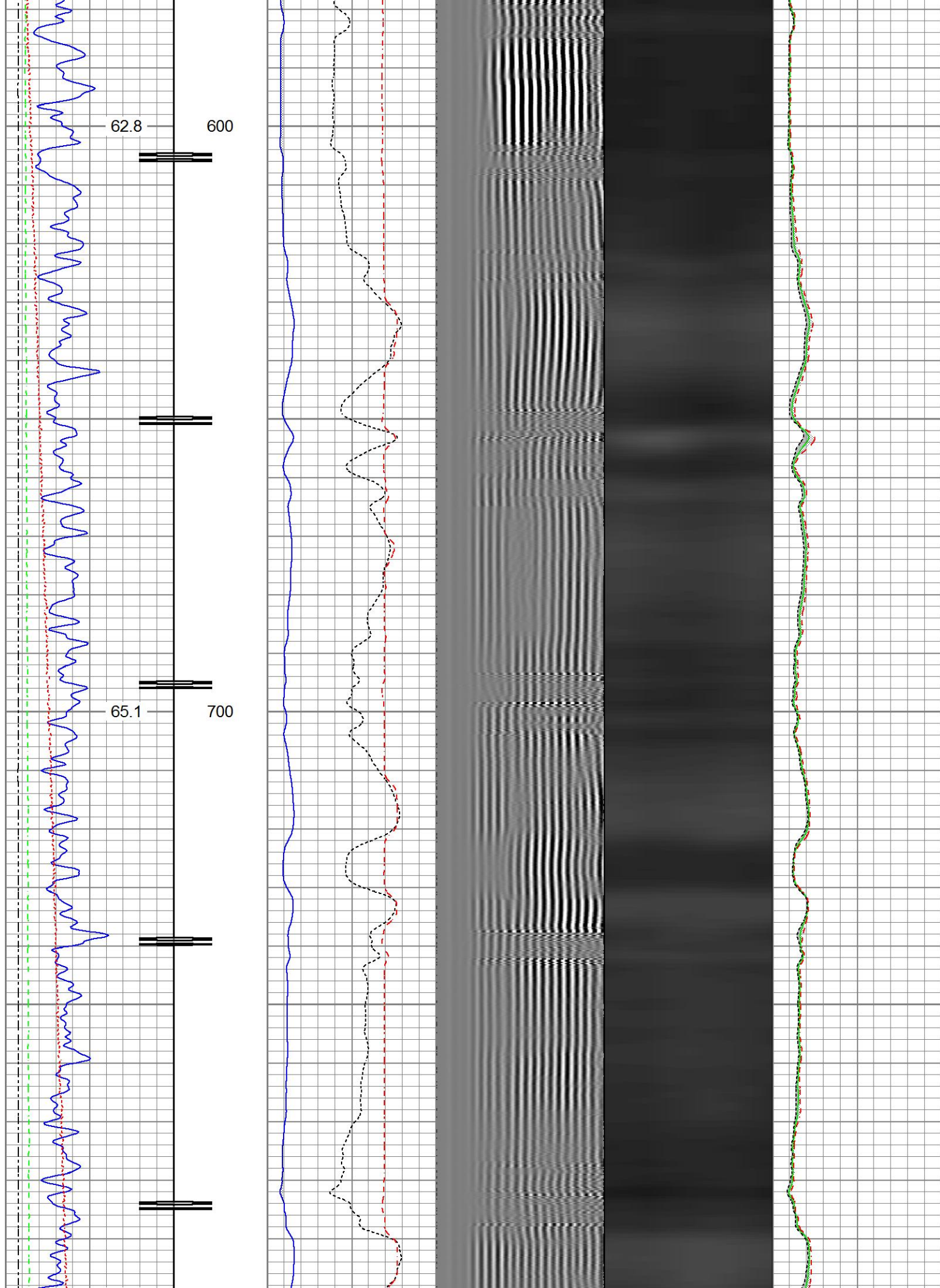
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Presentation Format	ros_radri
Dataset Creation	Wed Feb 15 08:39:50 2017
Charted by	Depth in Feet scaled 1:240

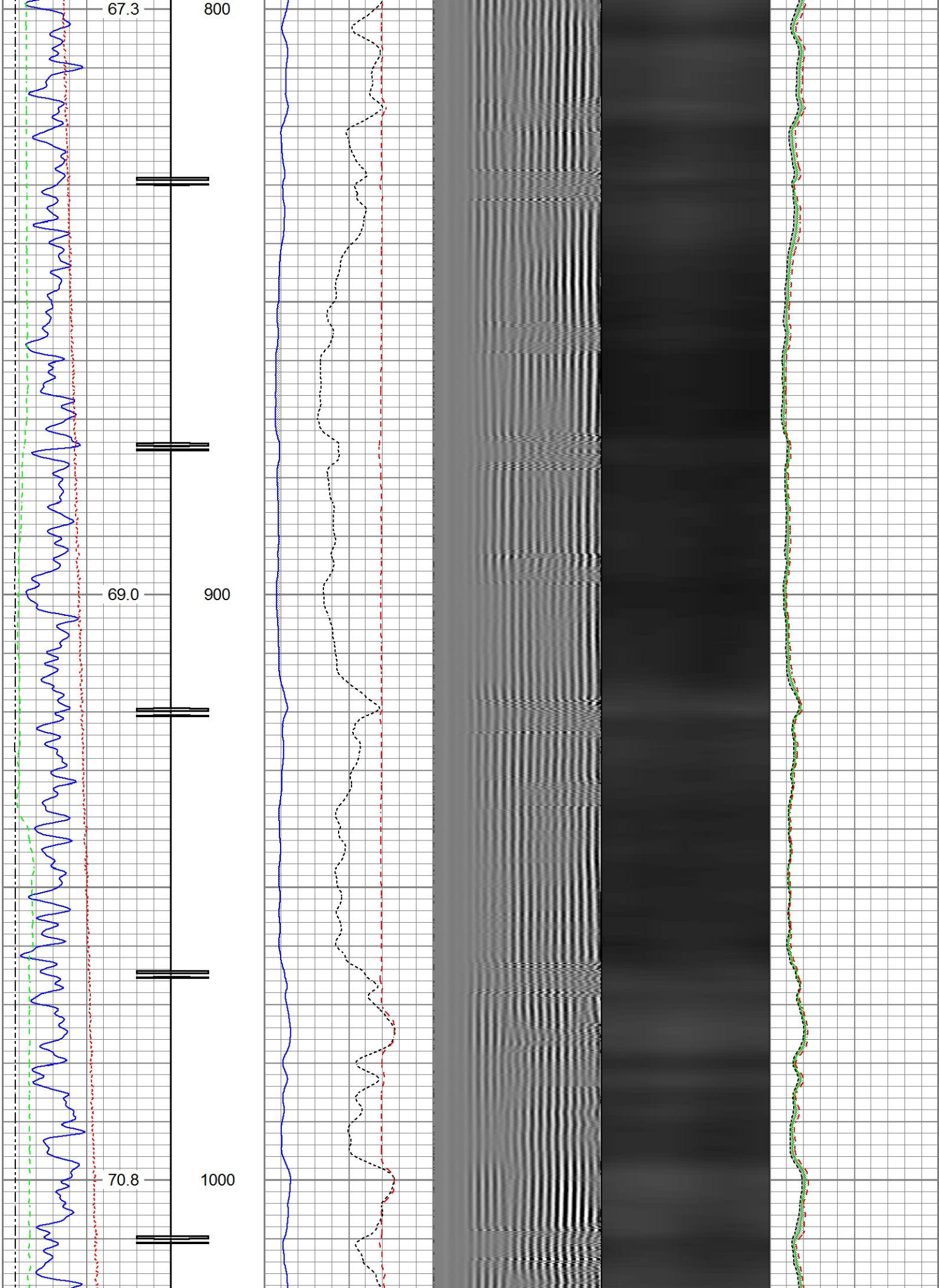
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Minimum Amplitude
Temperature		0 (mV) 20			0 100
0 (degF) 20		3' Travel Time			Maximum Amplitude
Line Speed		650 (usec) 150			0 100
-150 (ft/min)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

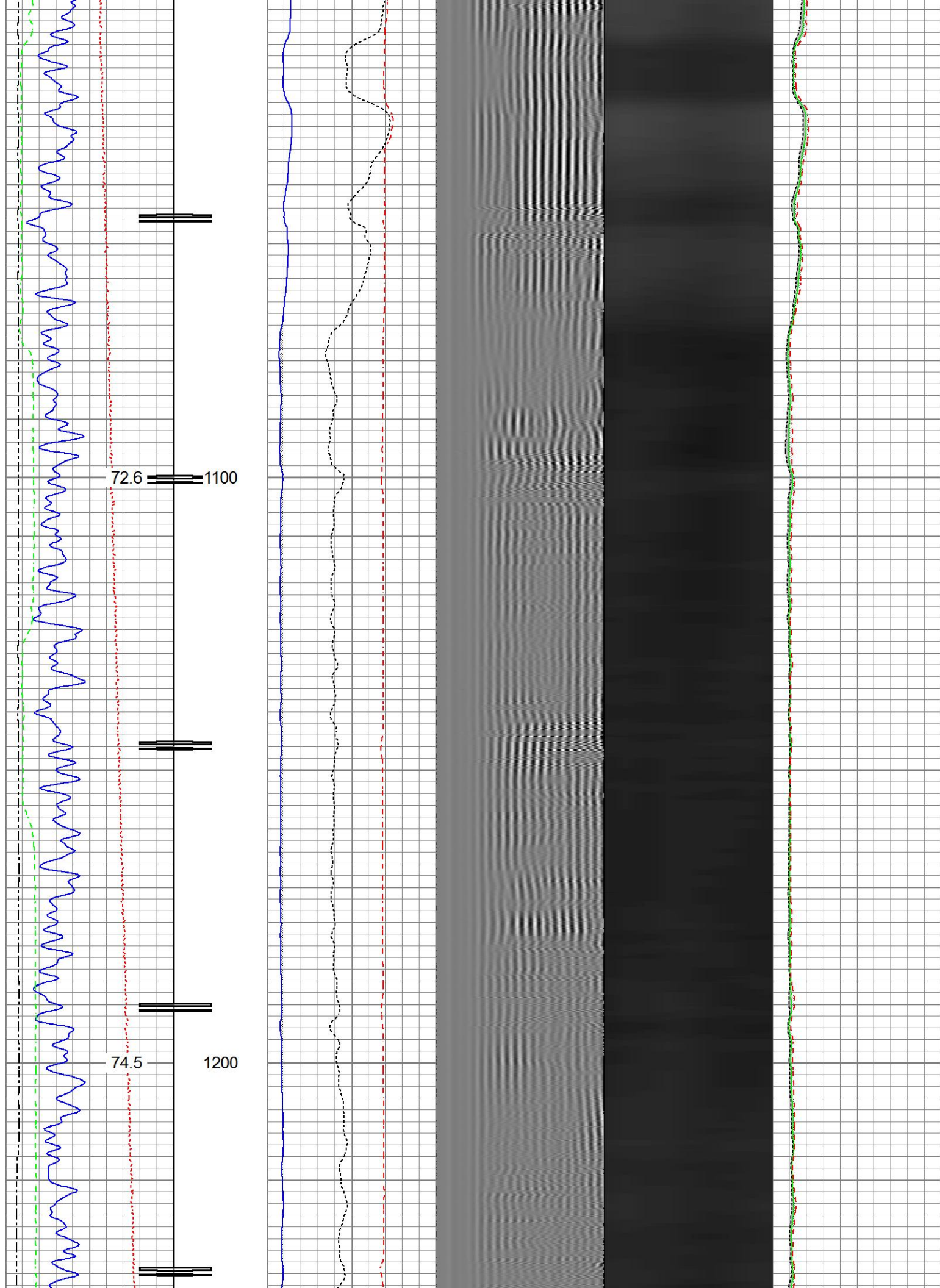


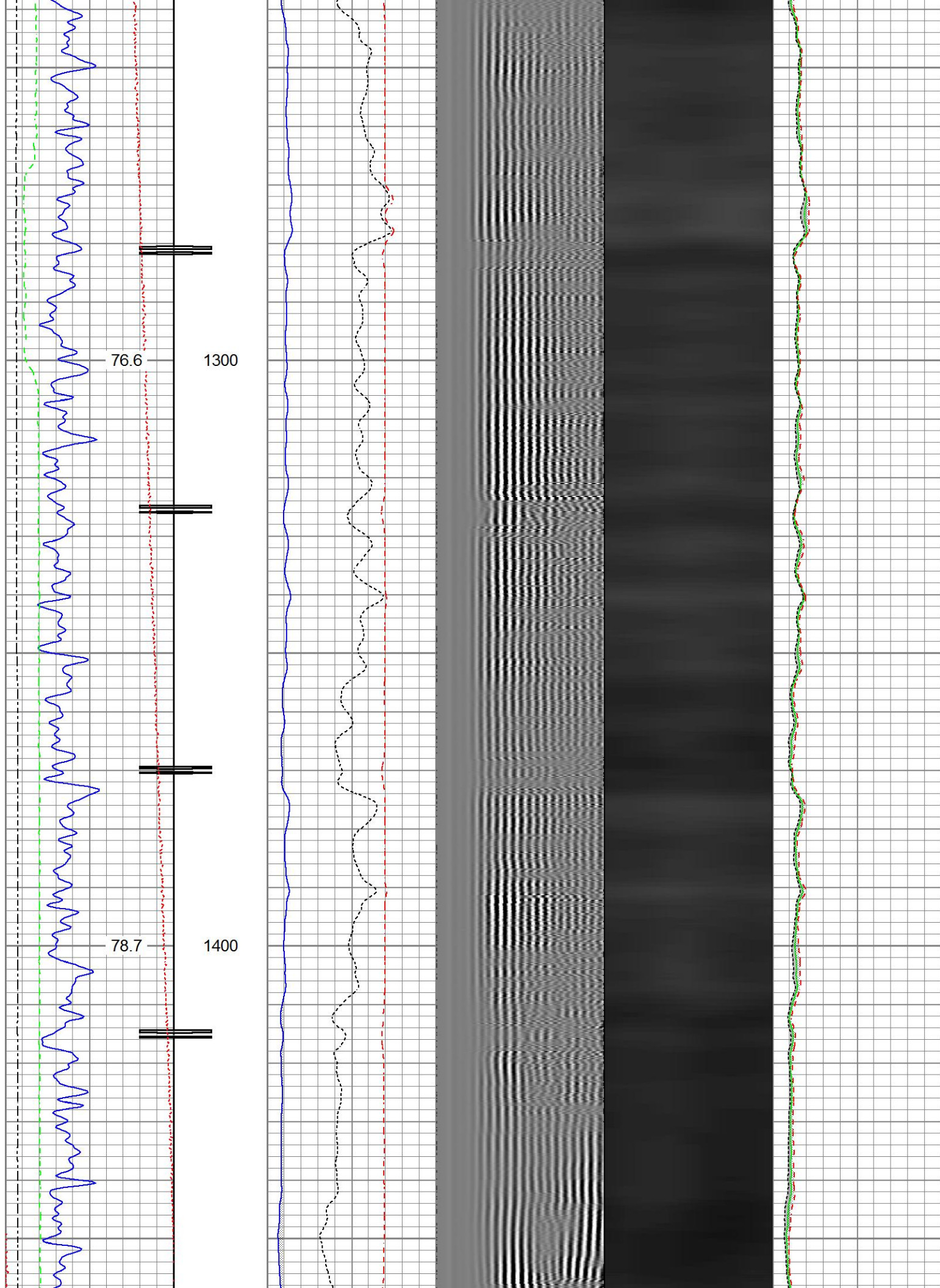


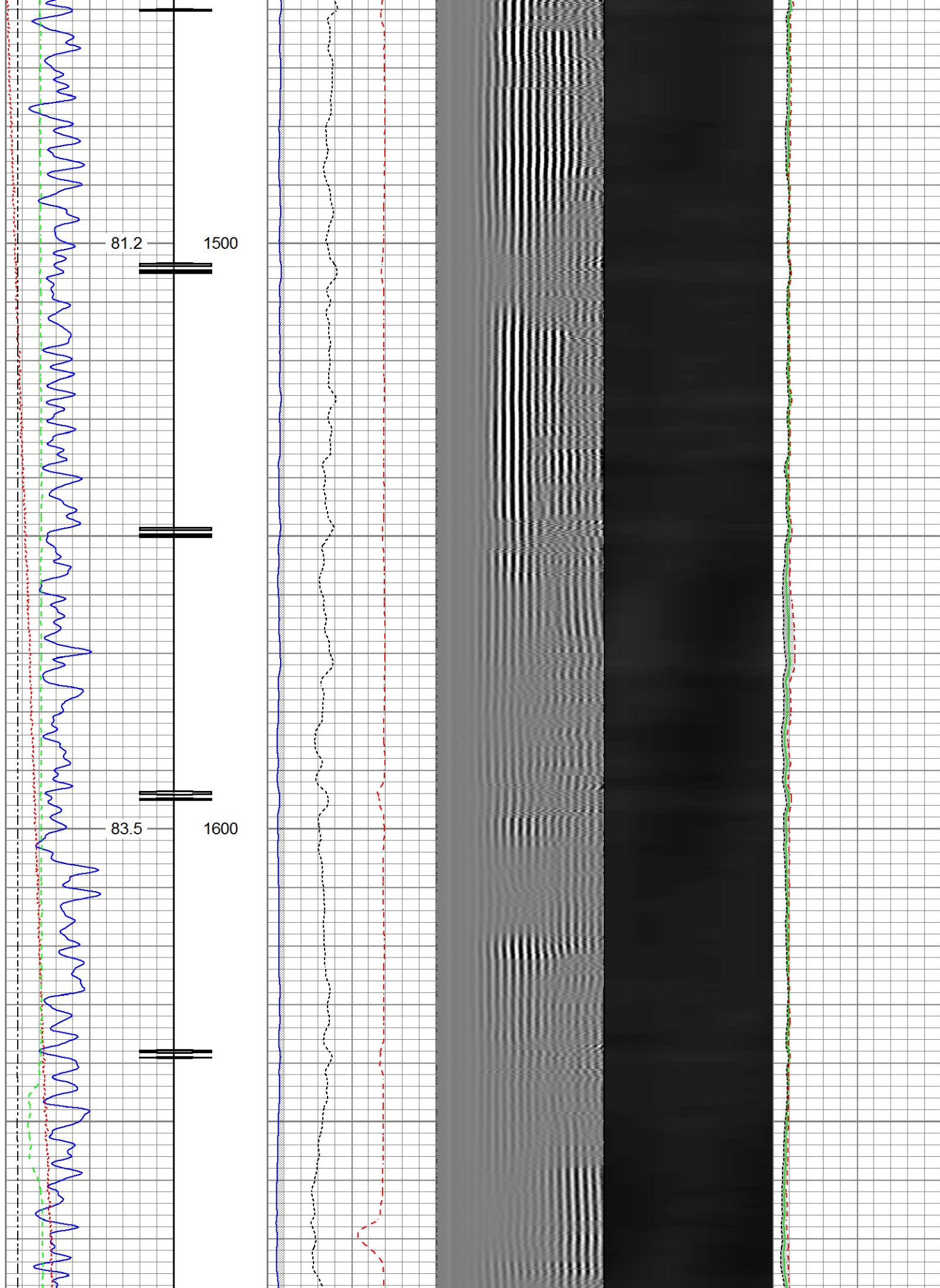


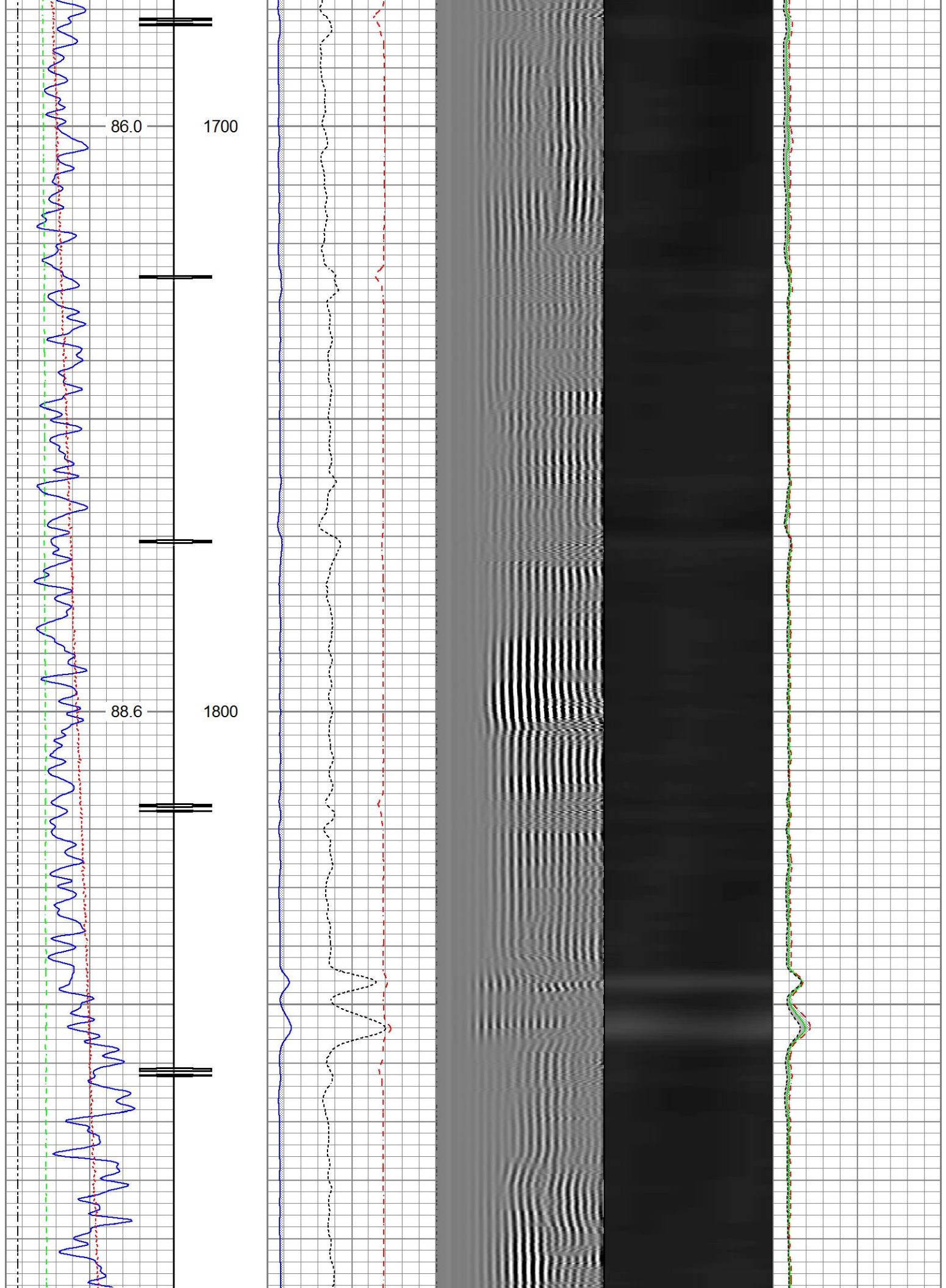


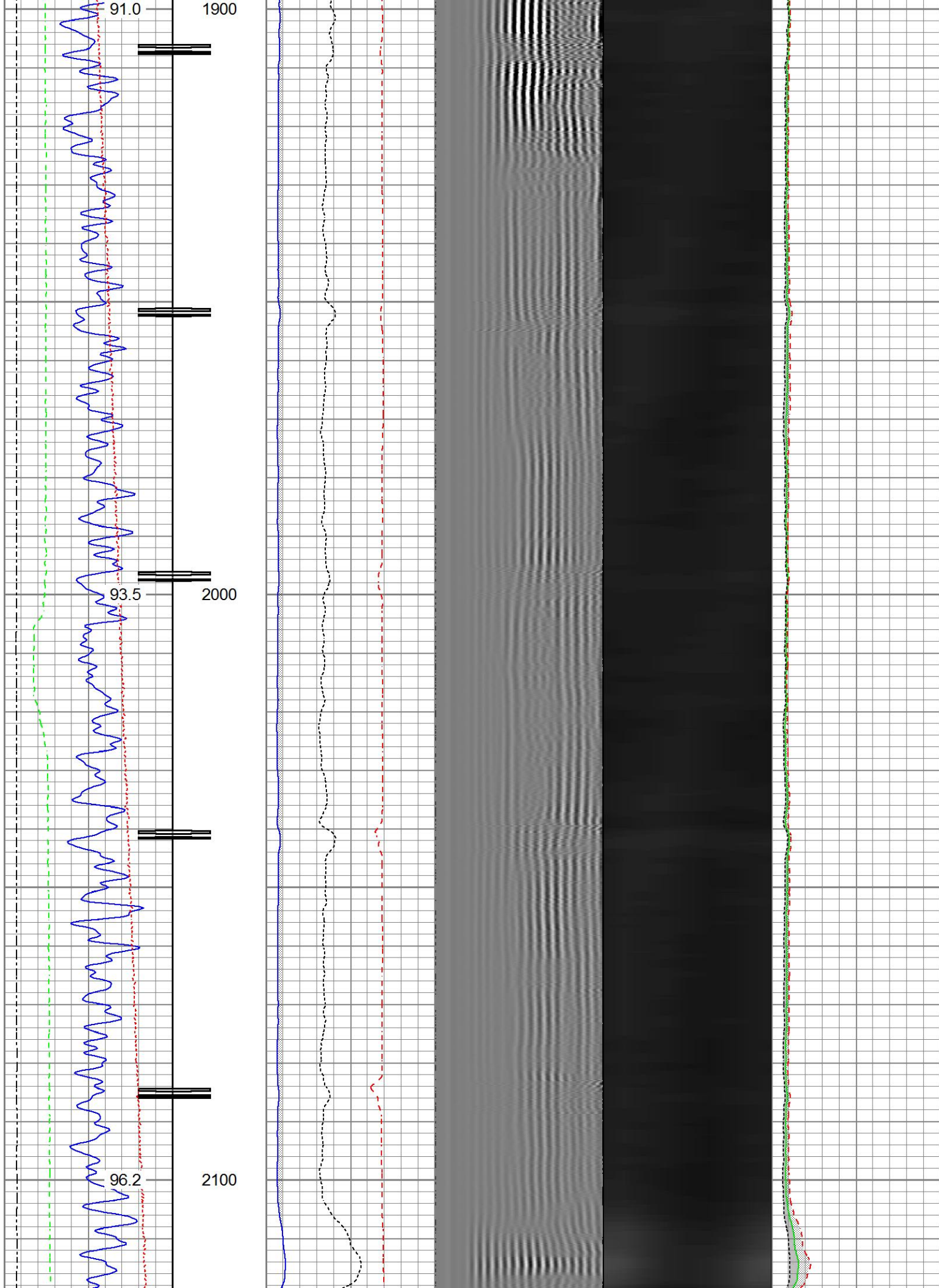


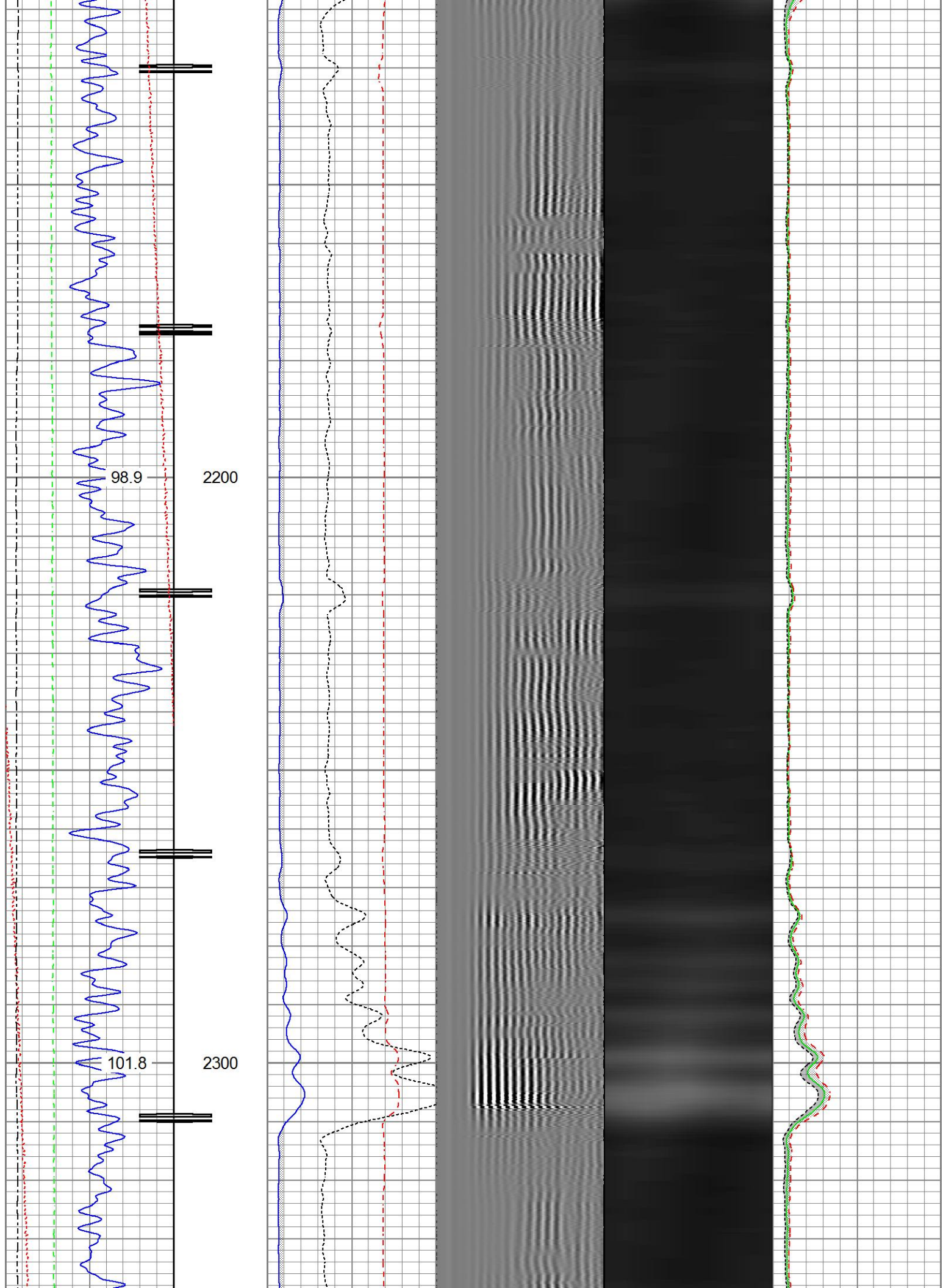


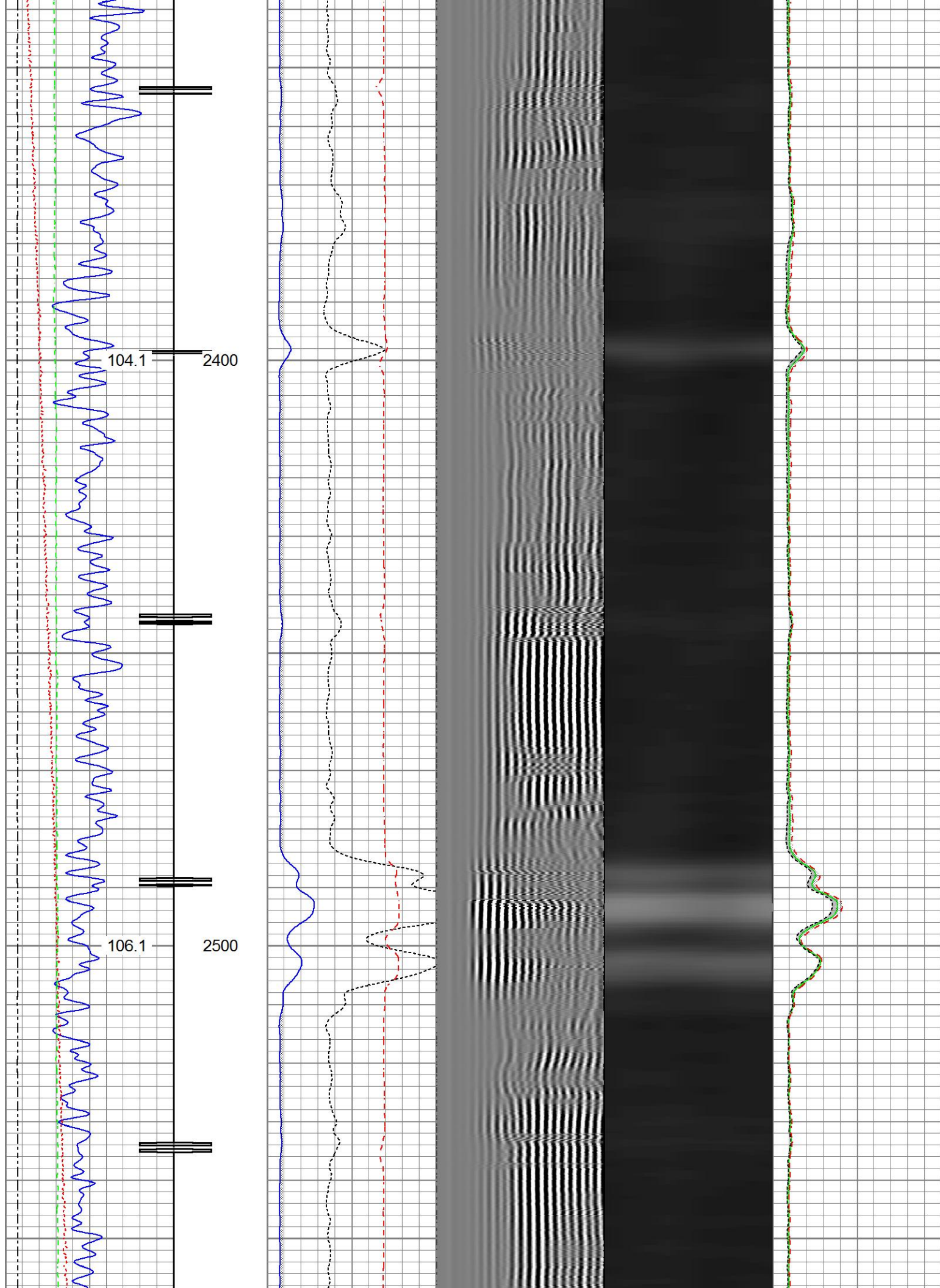


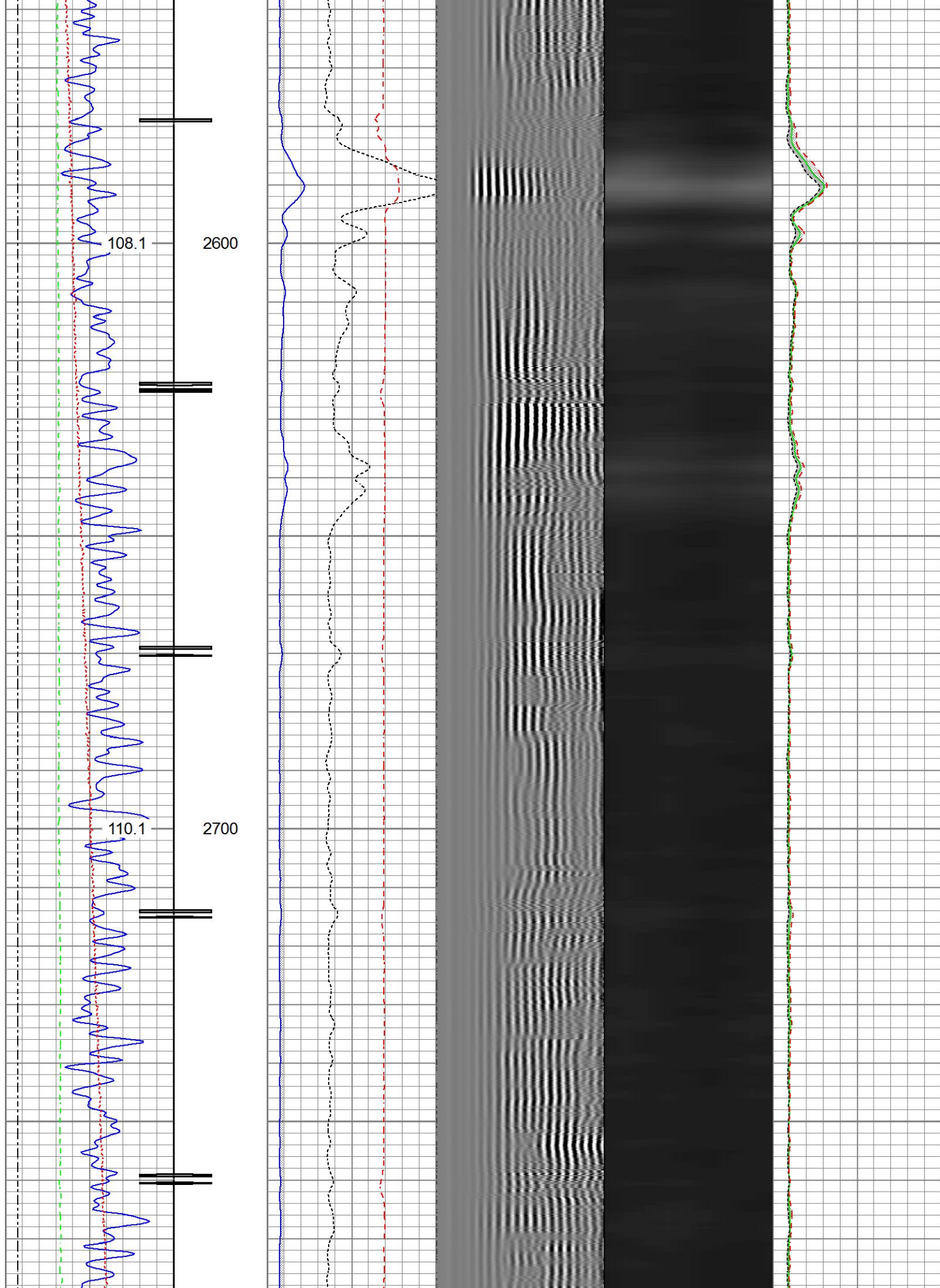


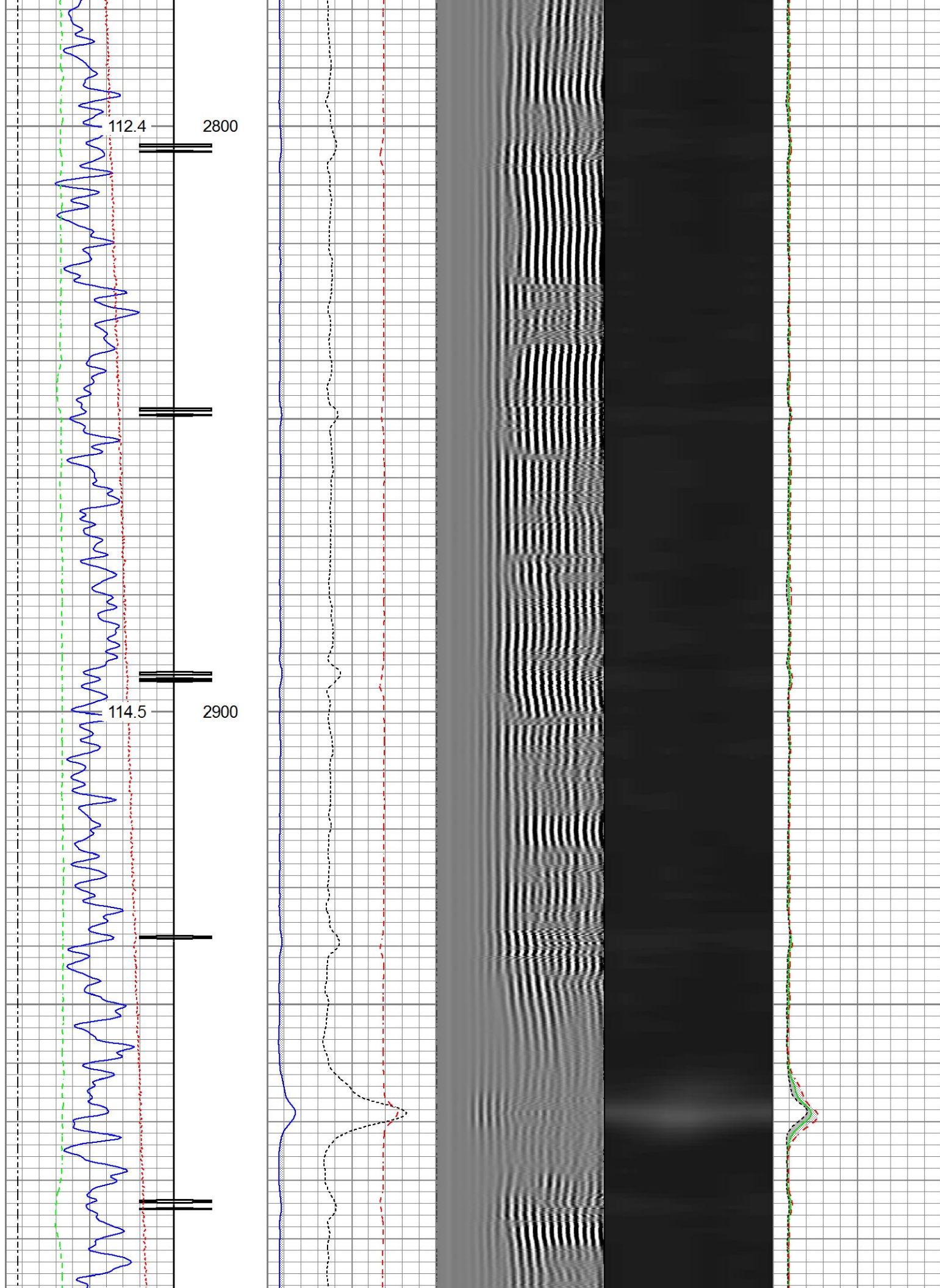


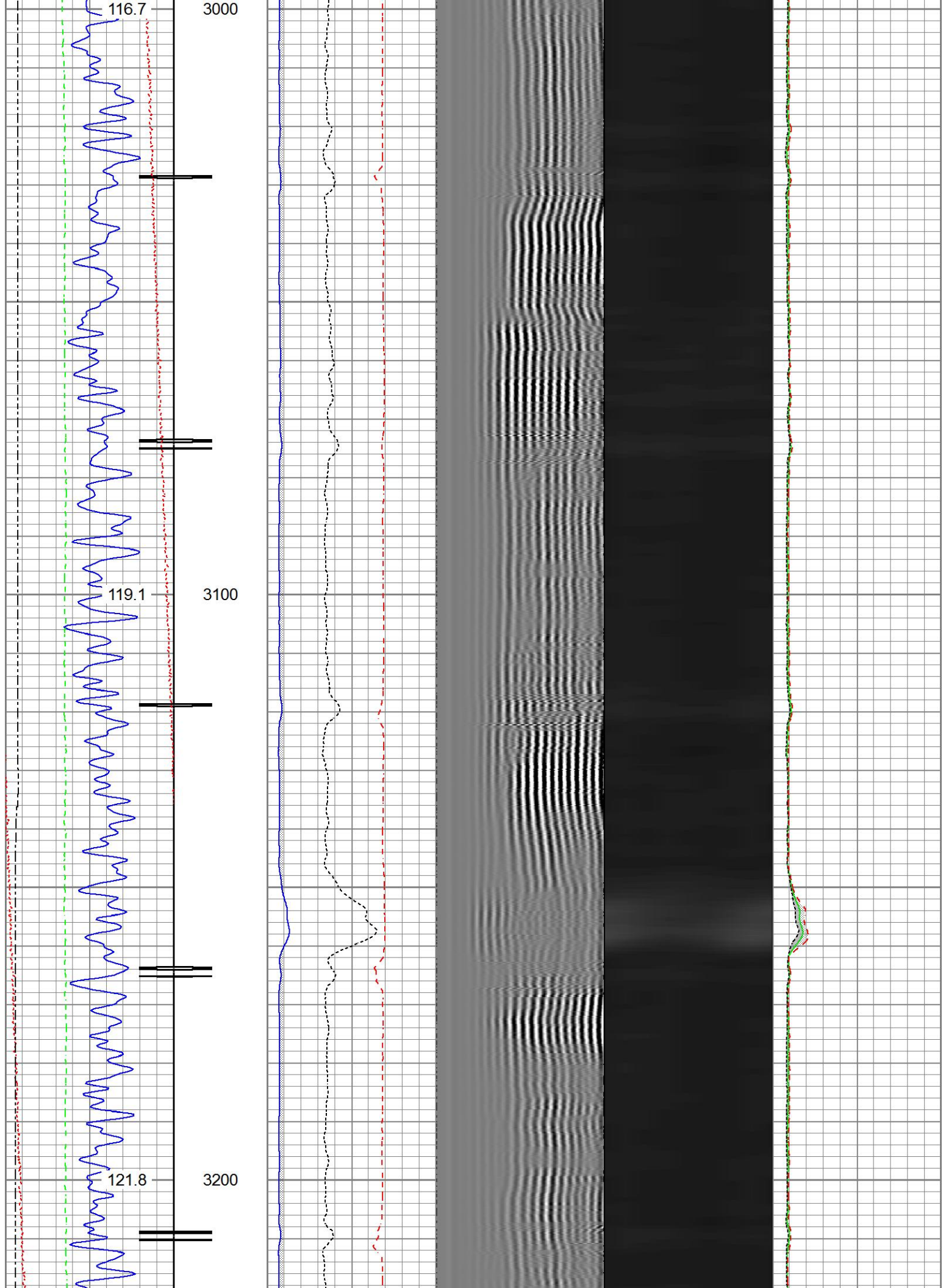


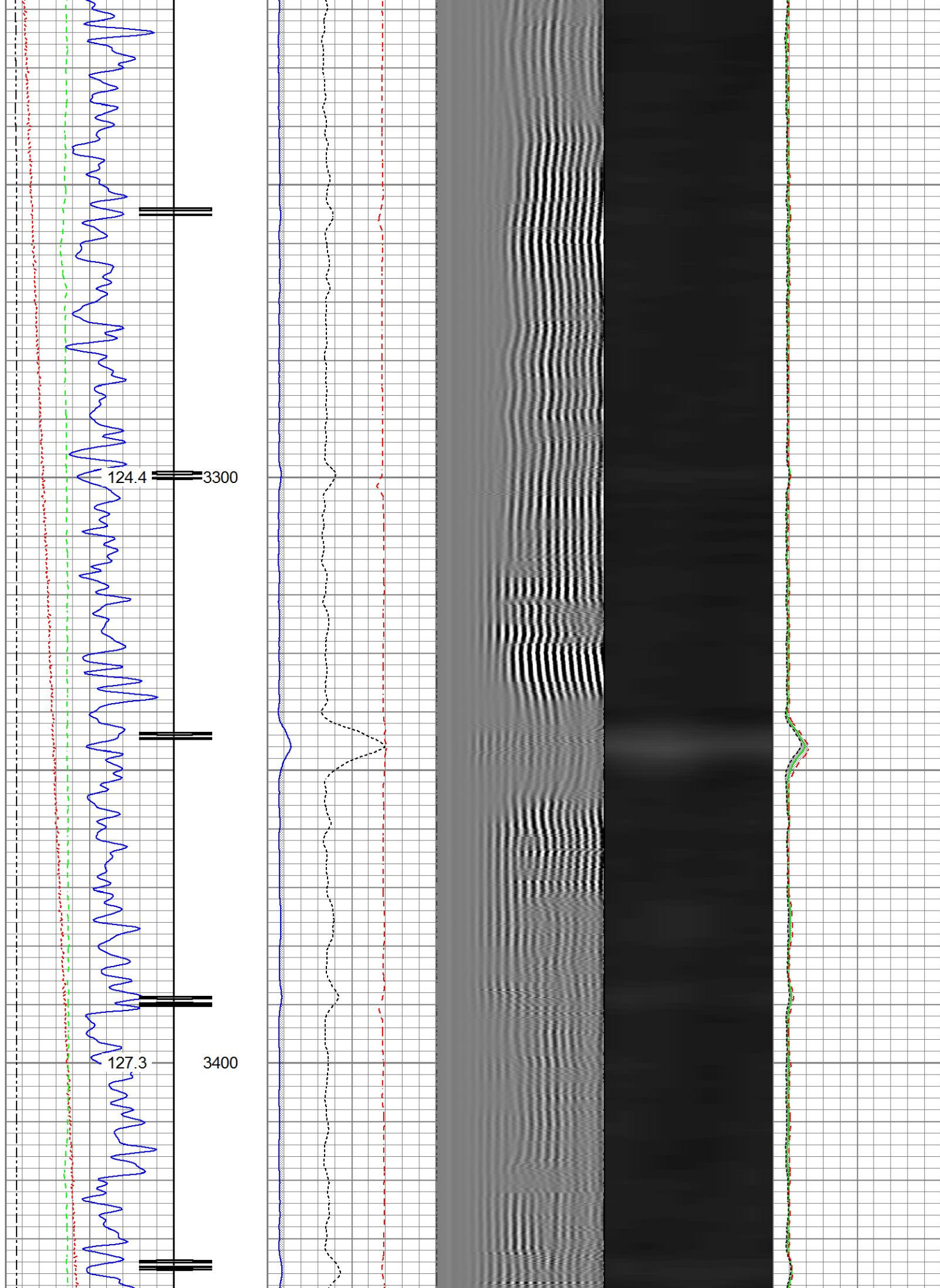


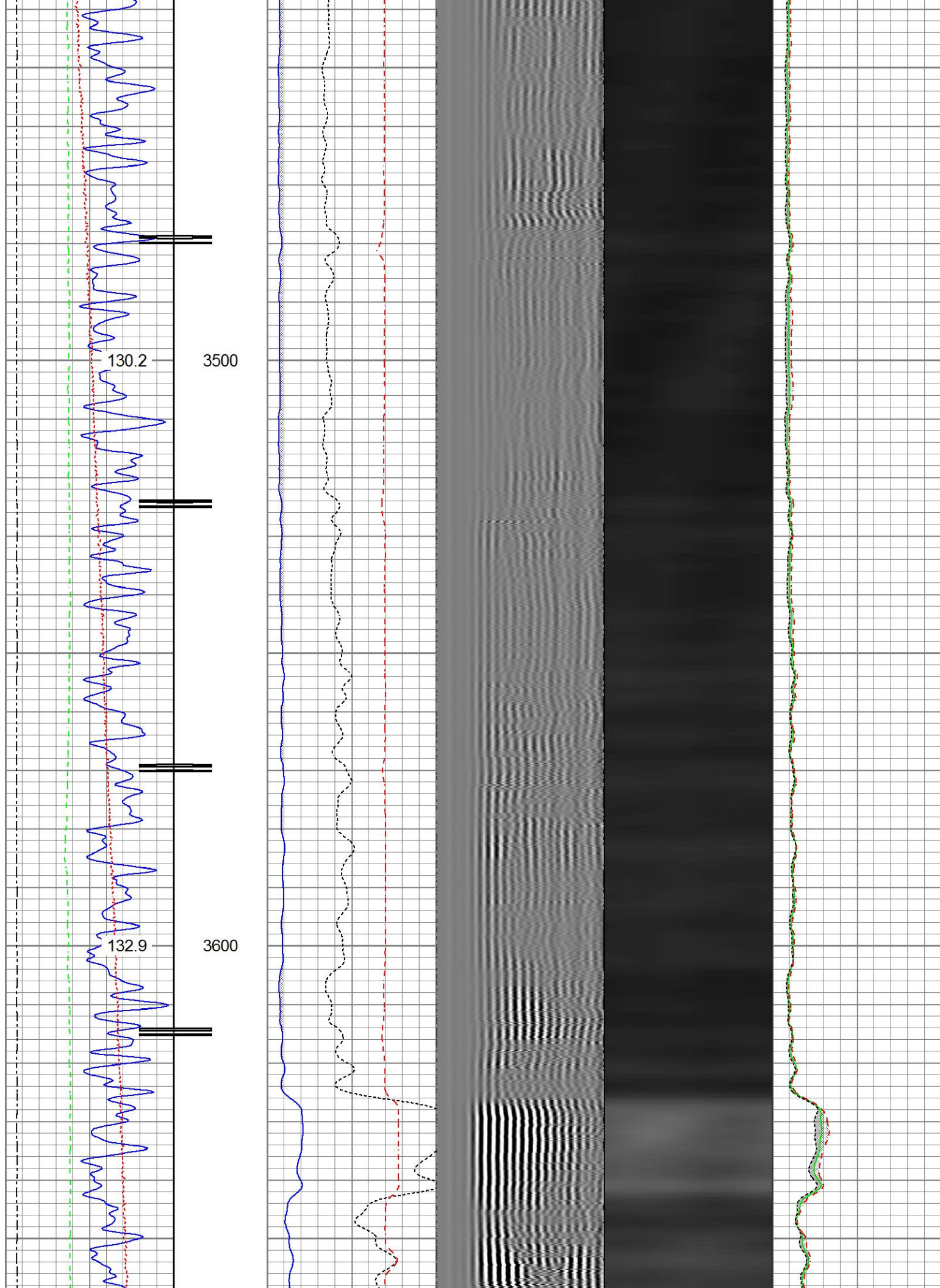


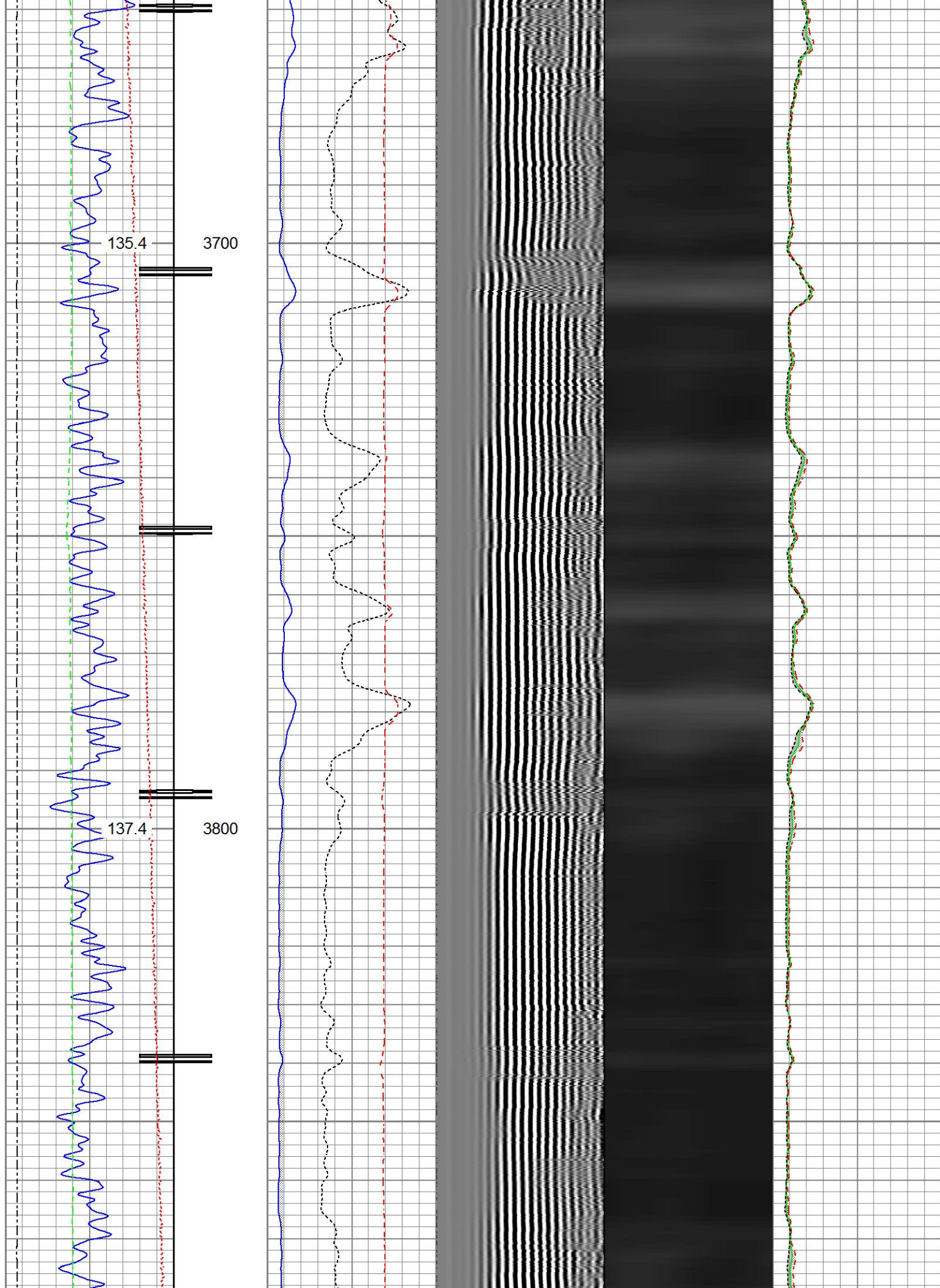


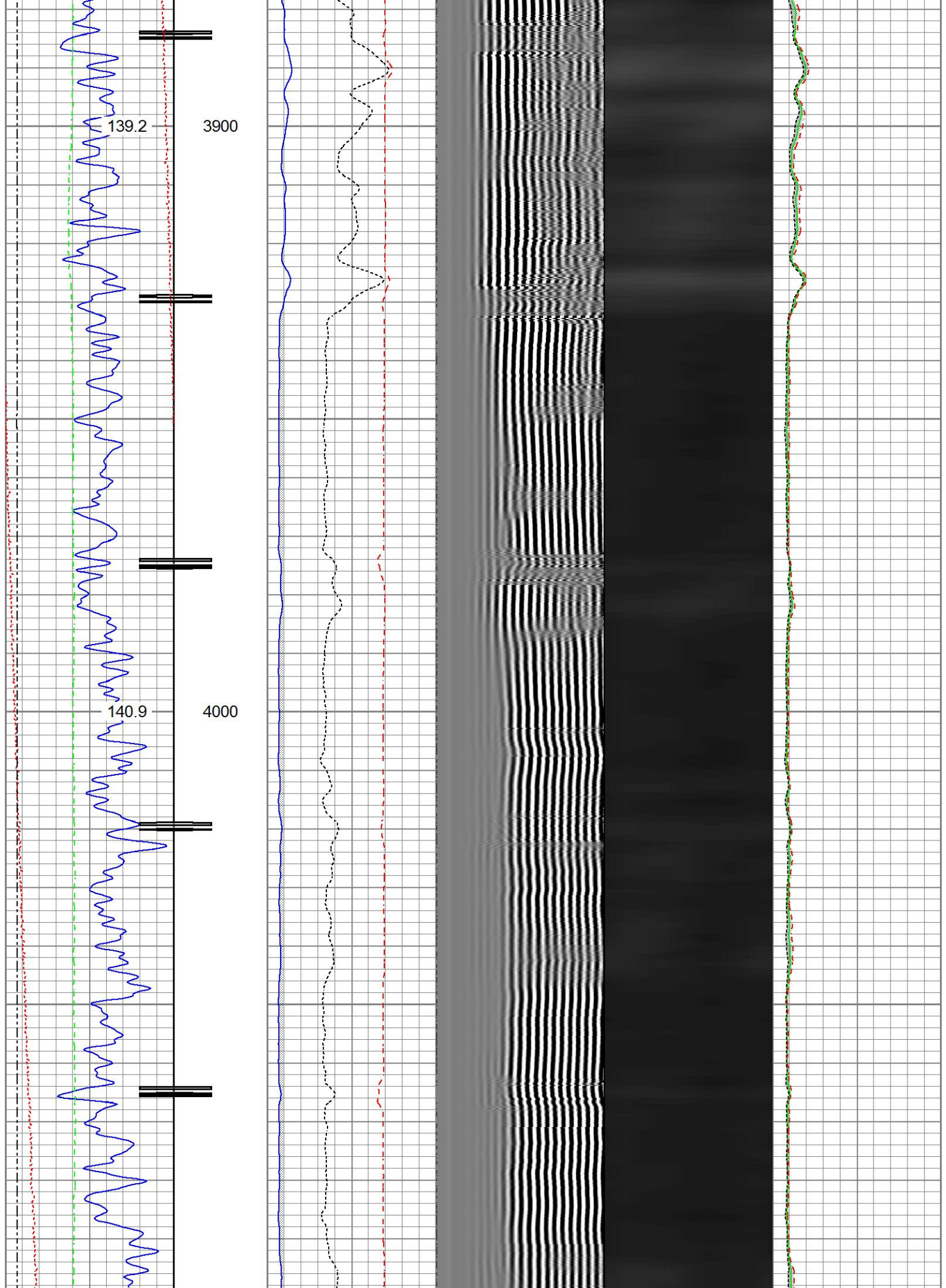


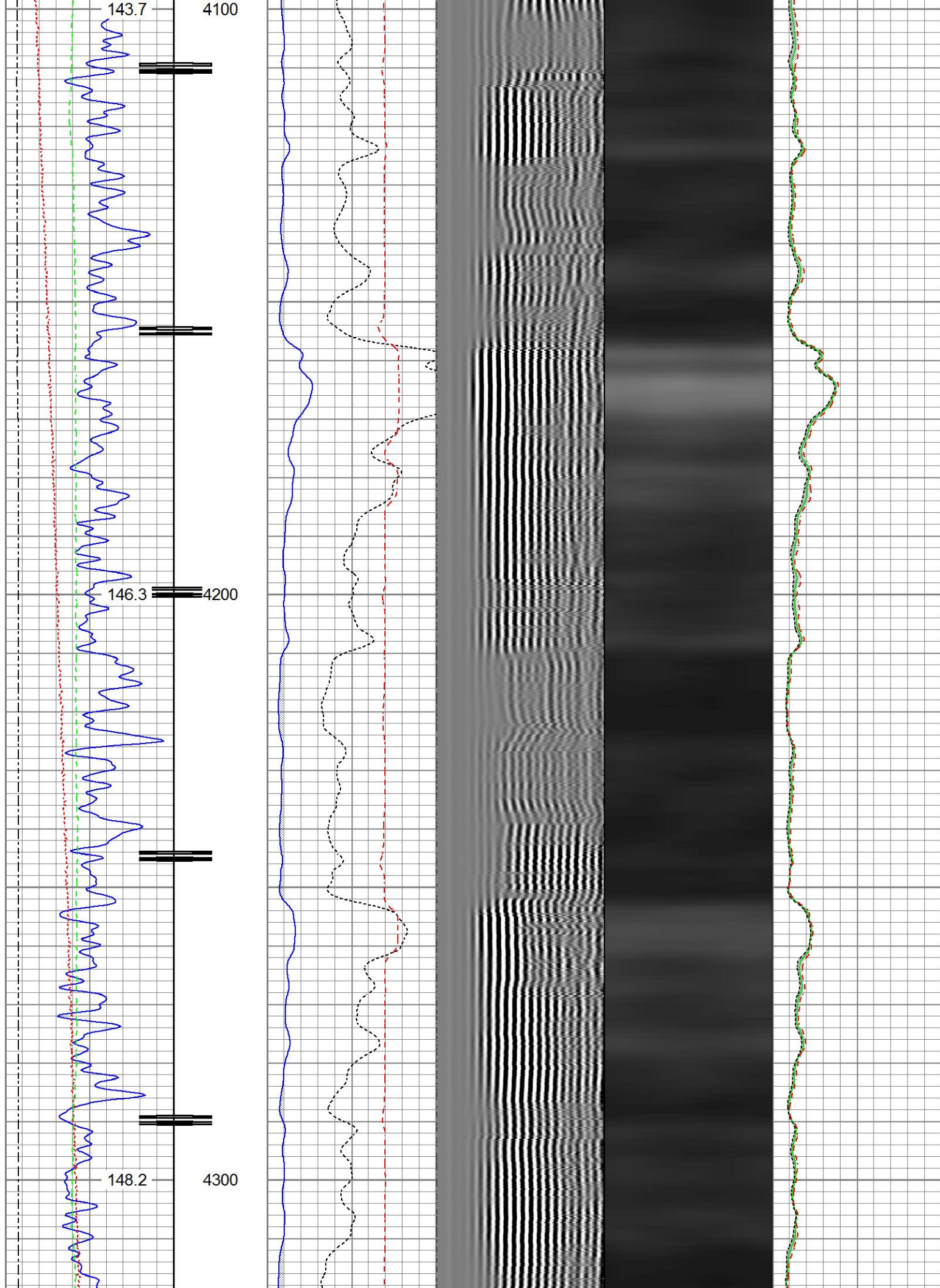


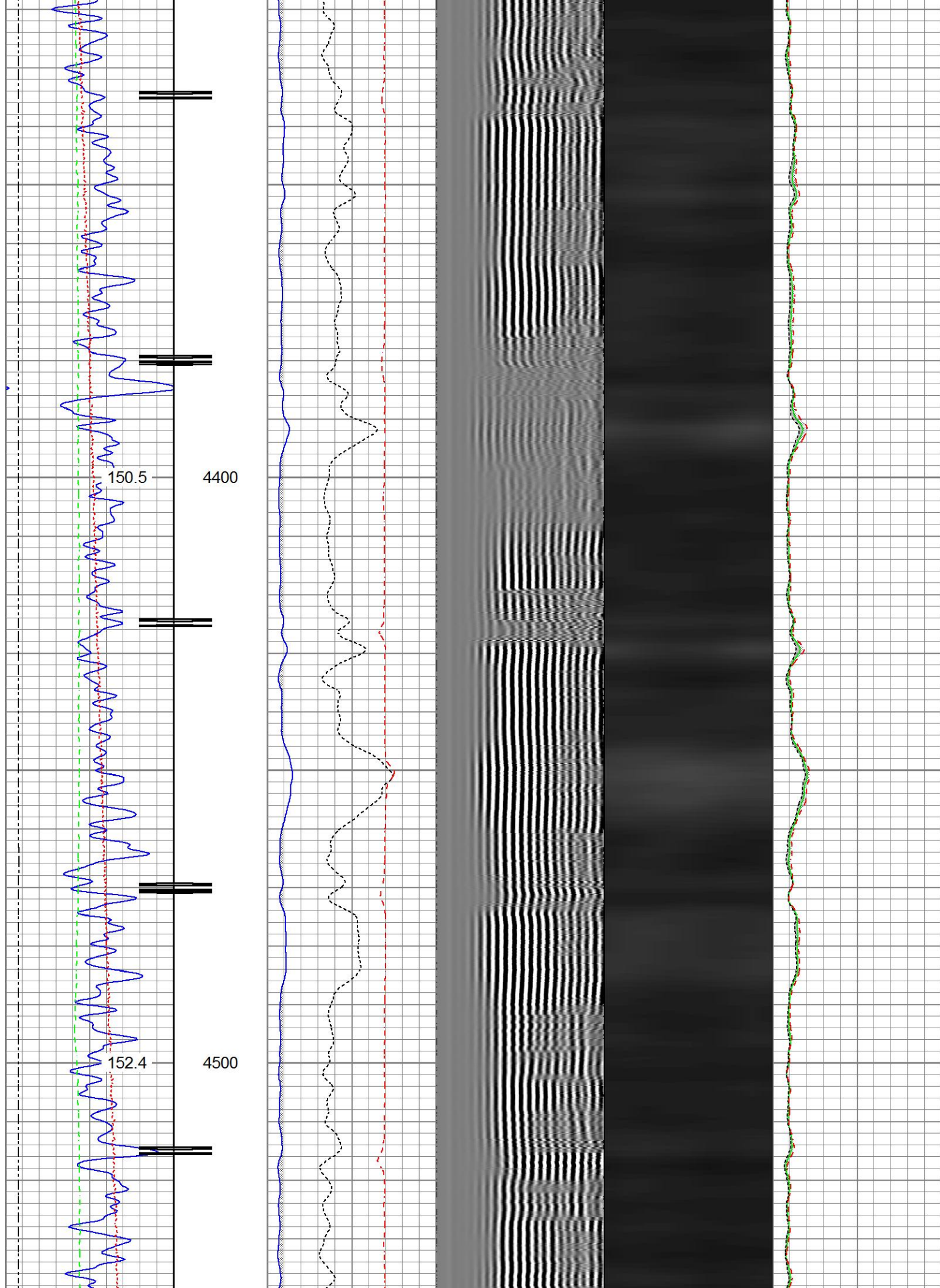


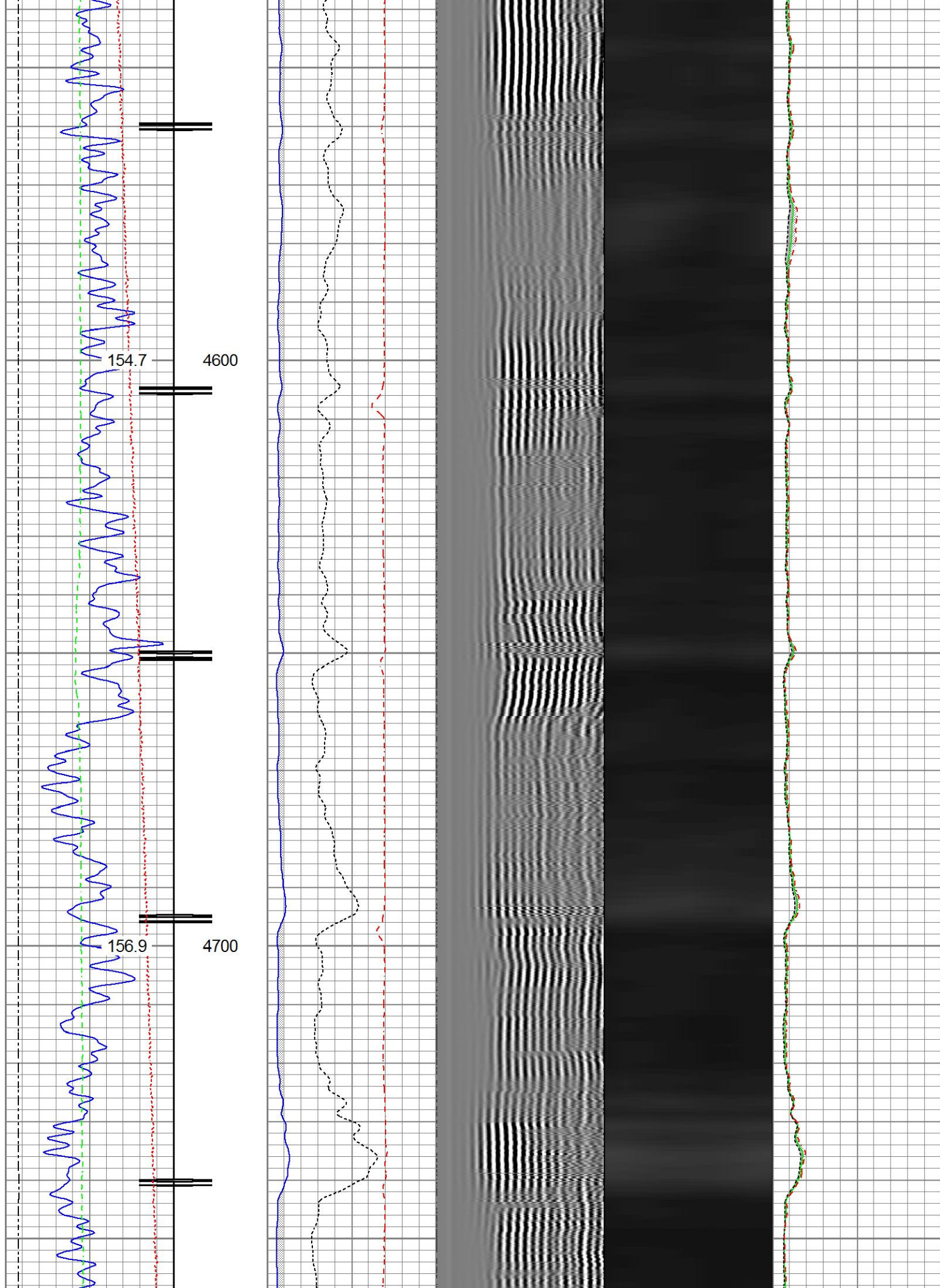


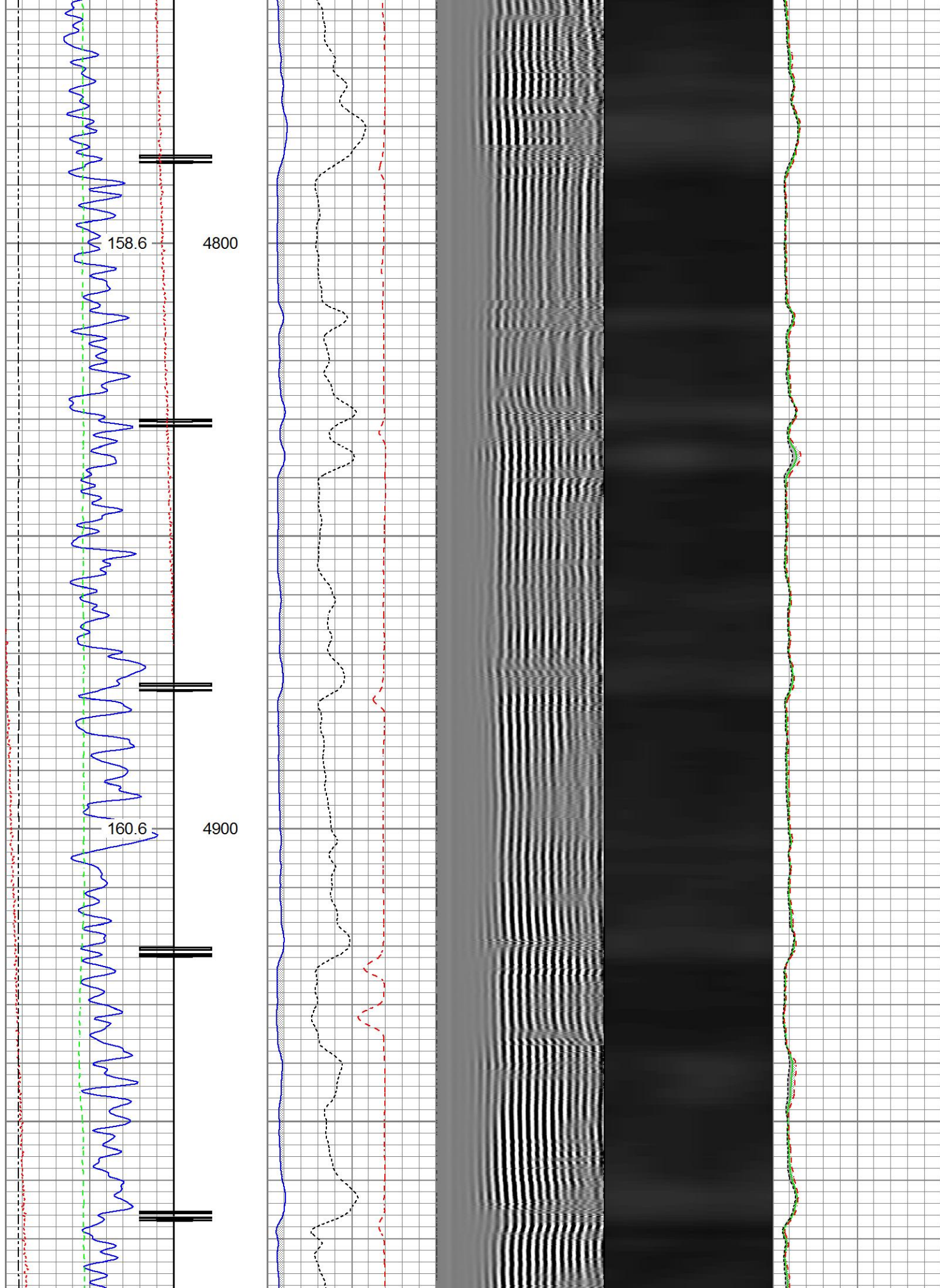


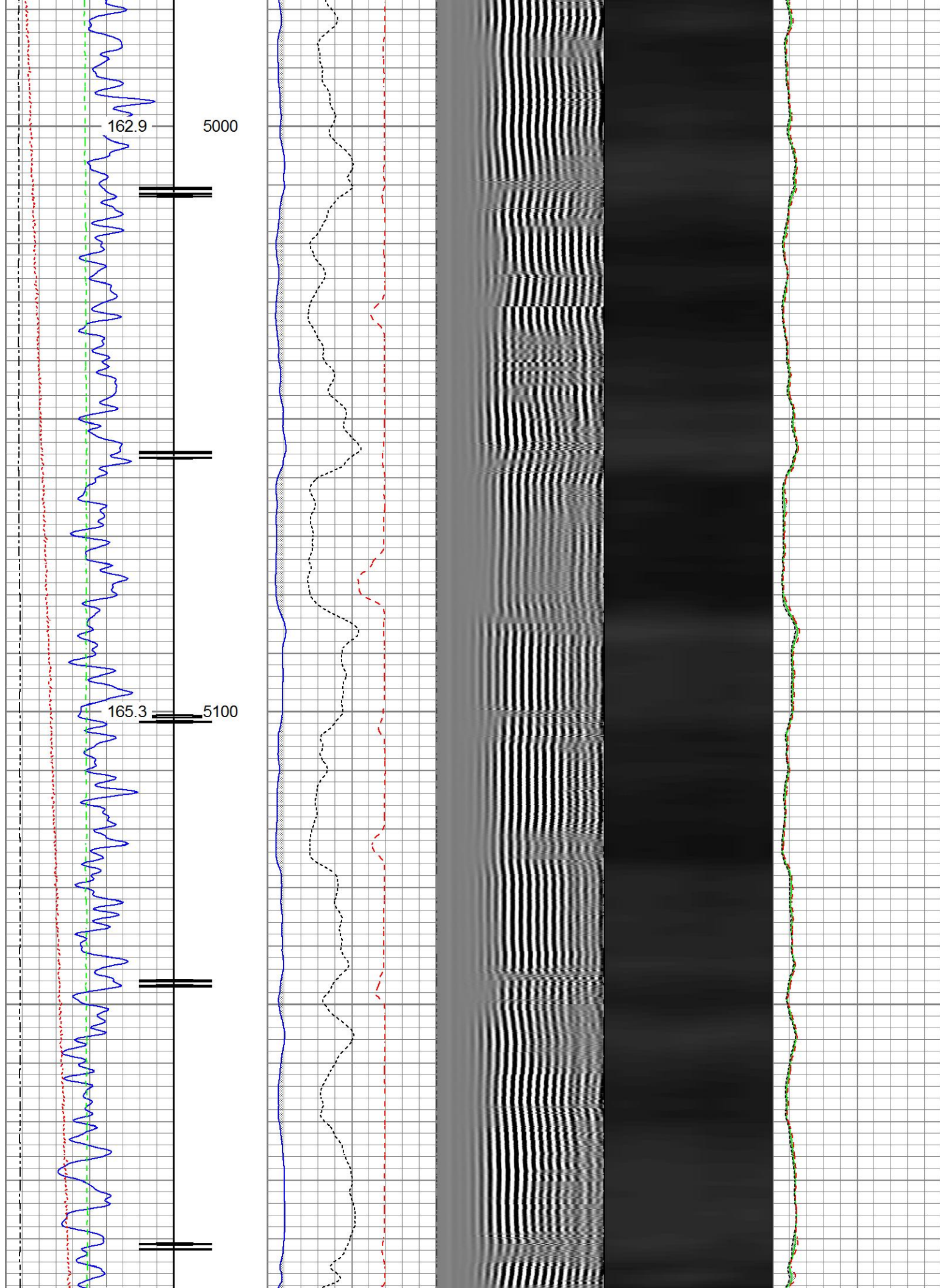


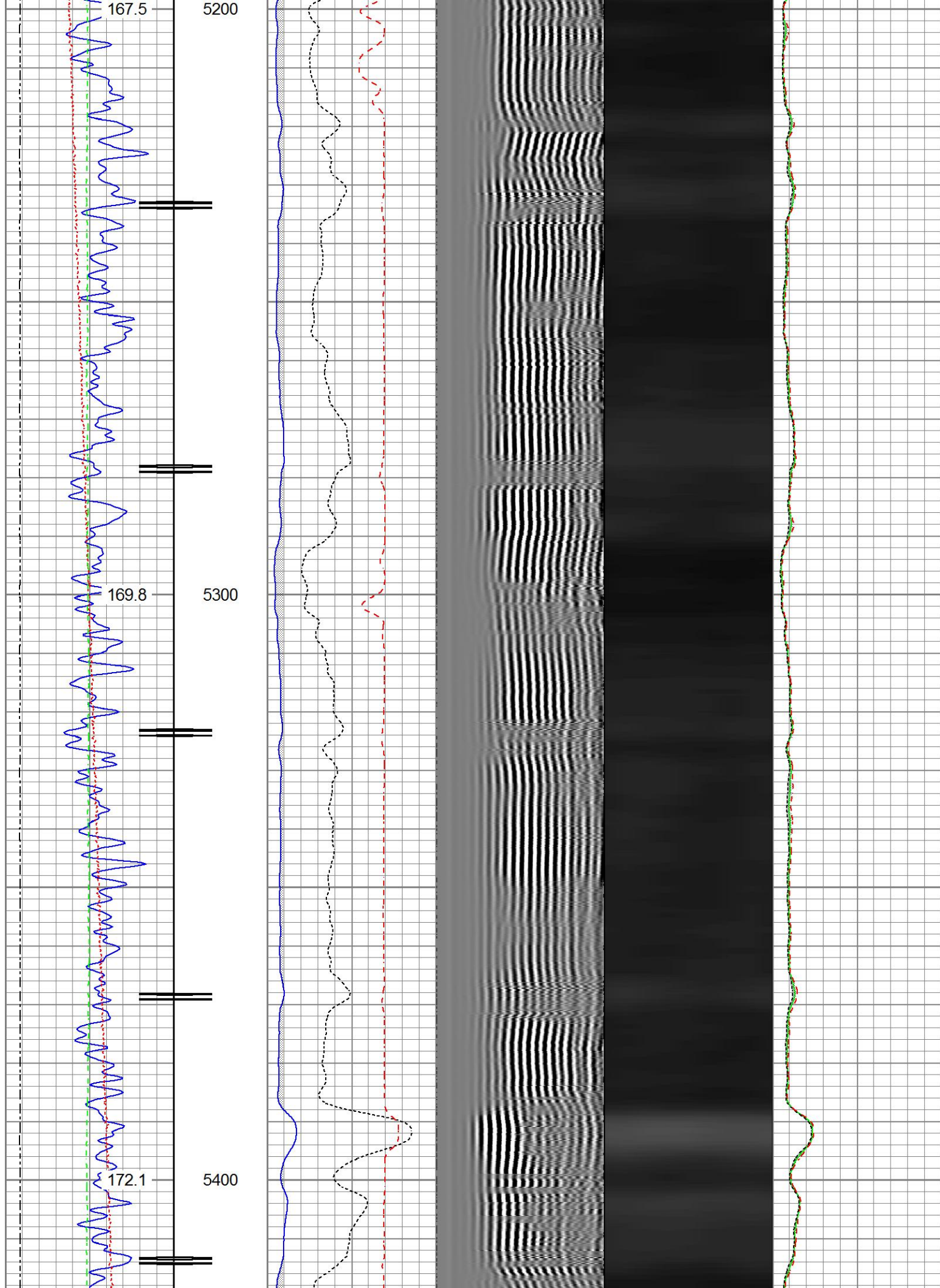


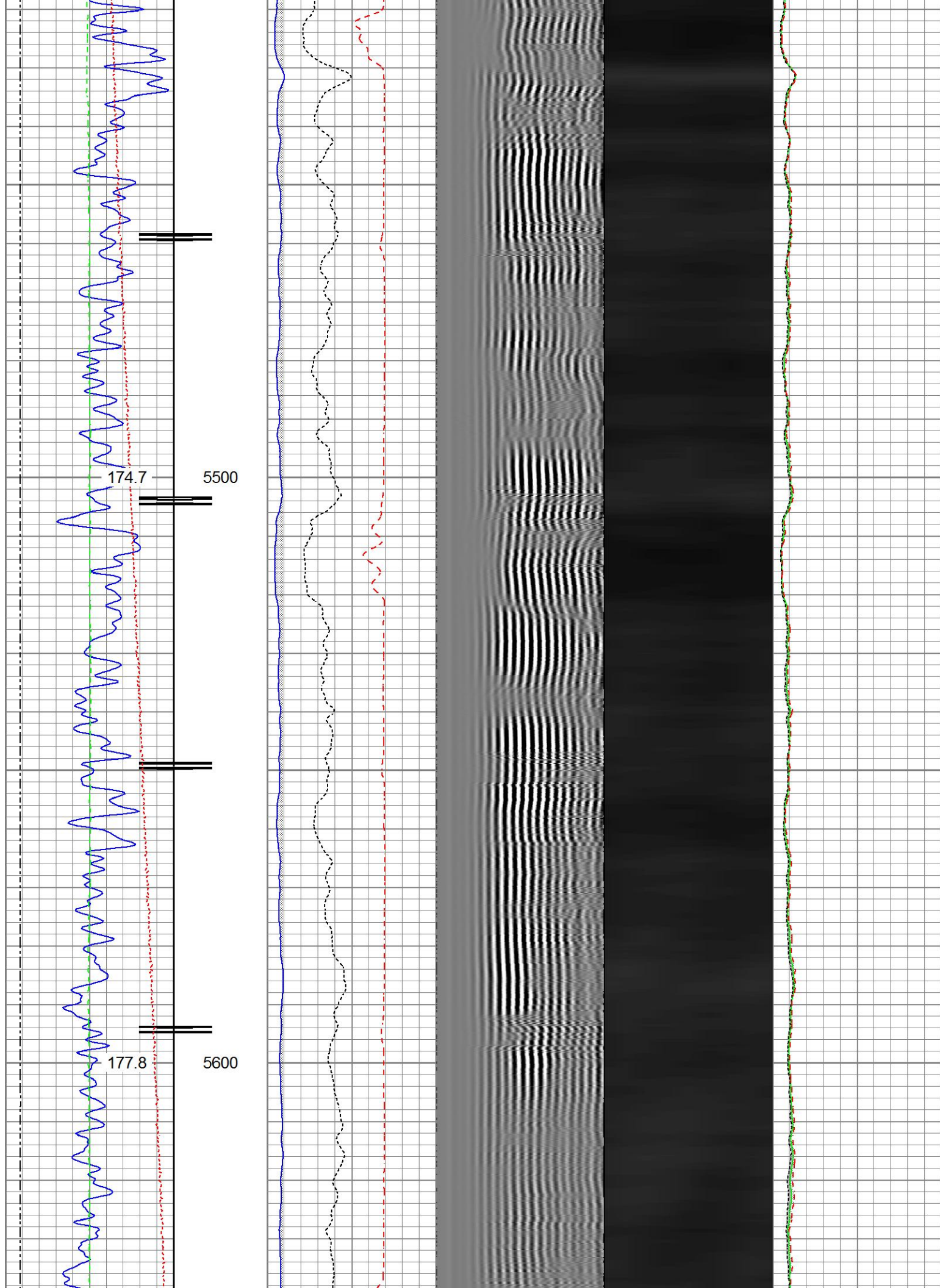


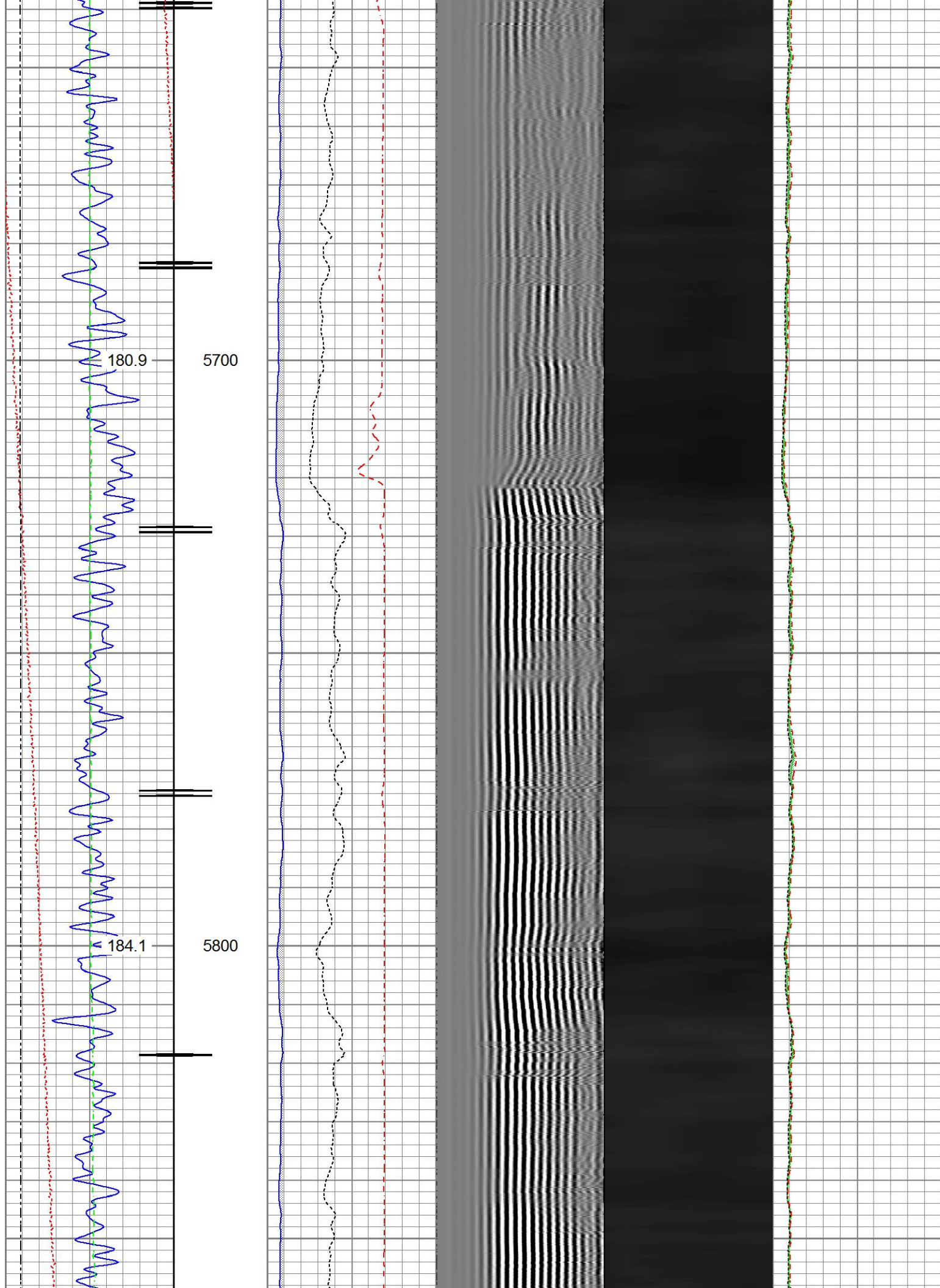


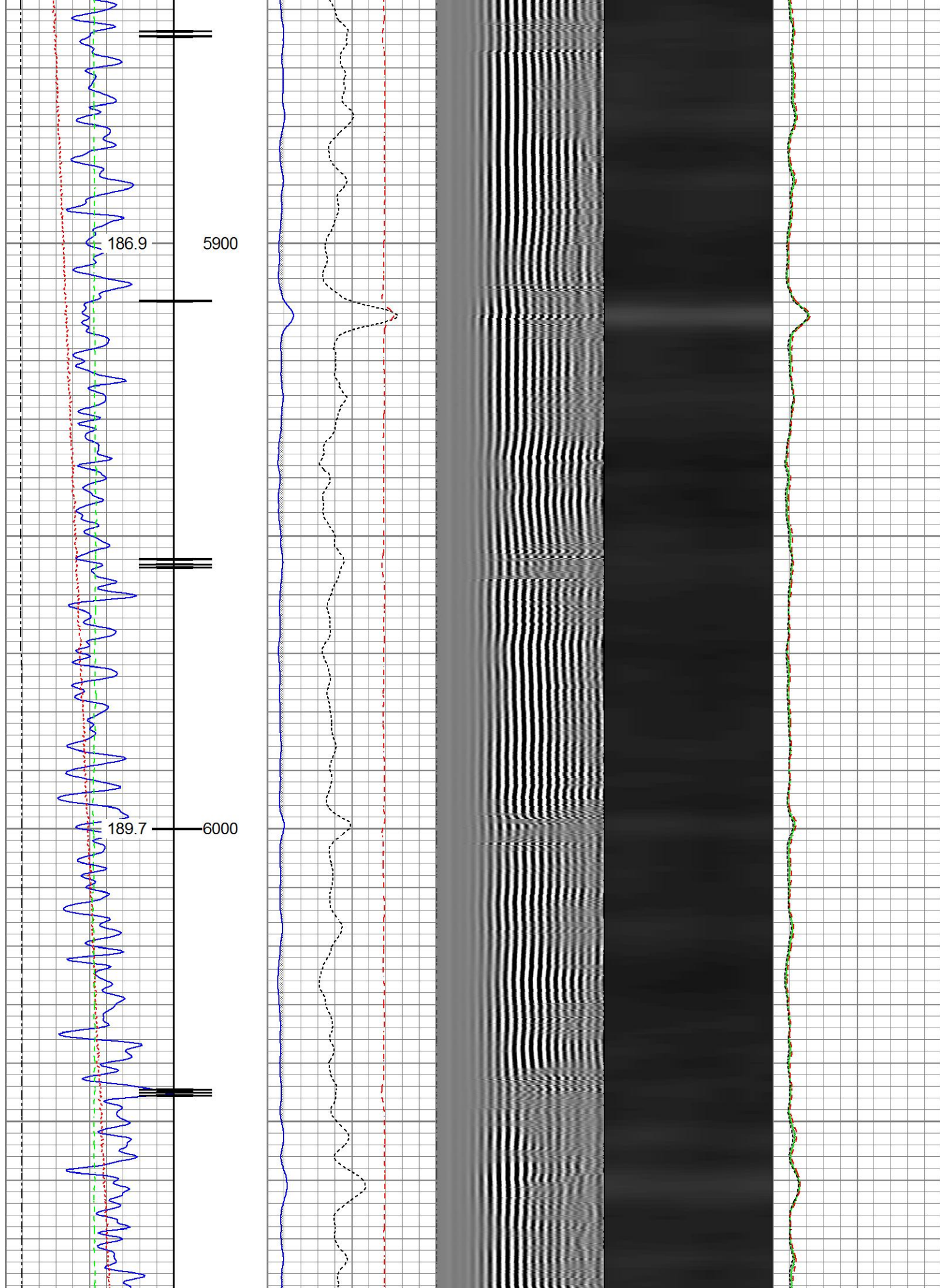


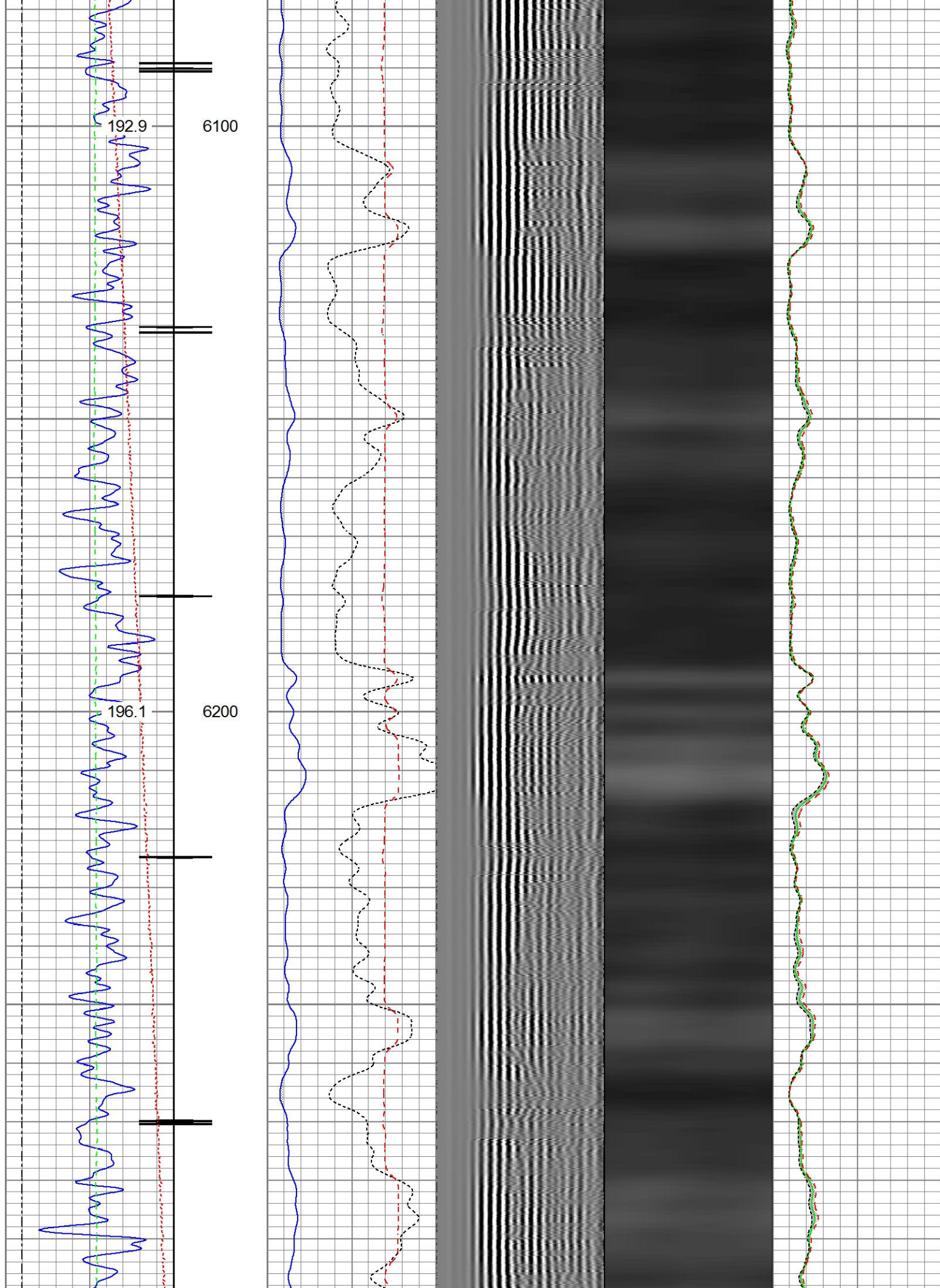


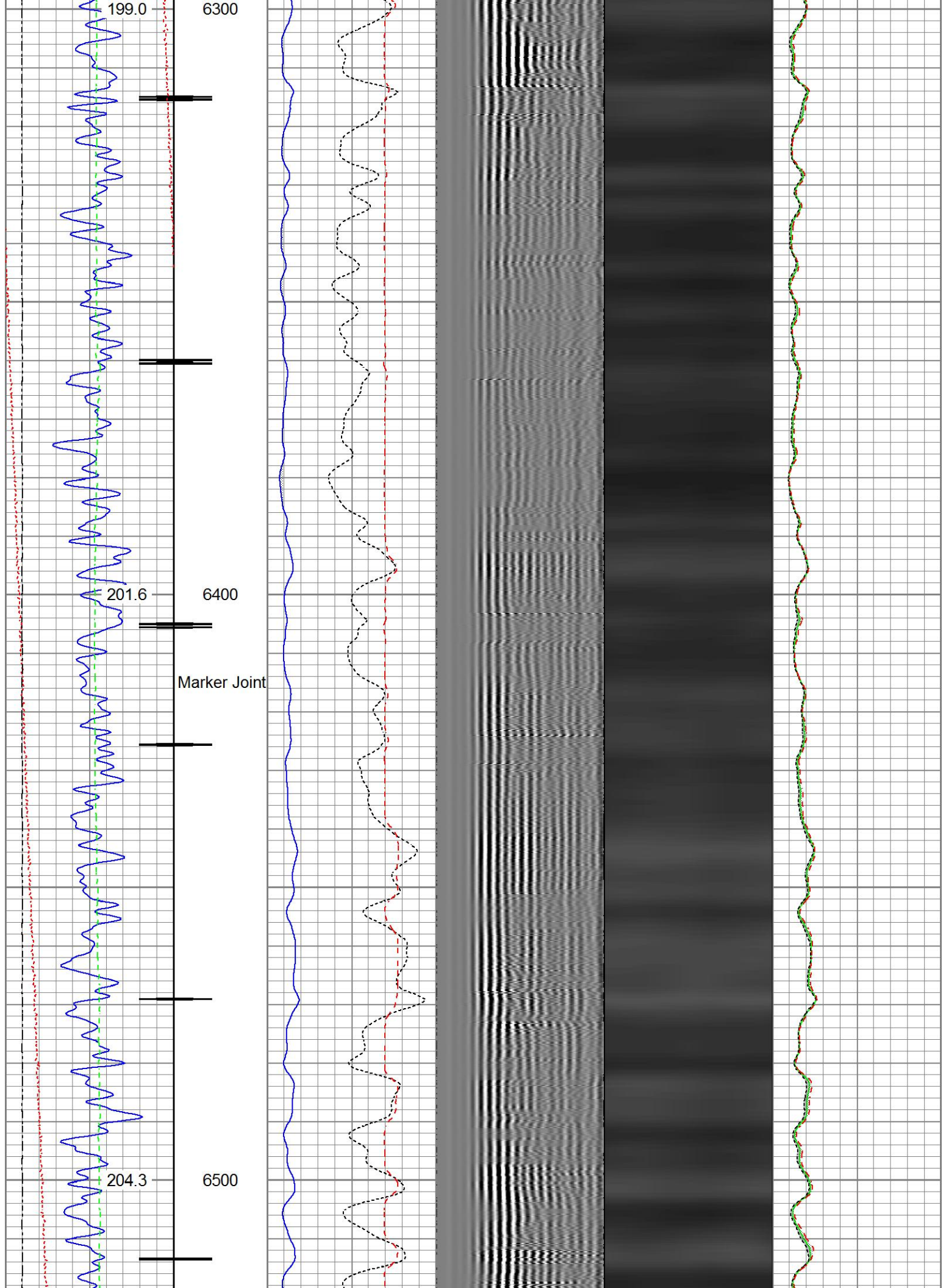


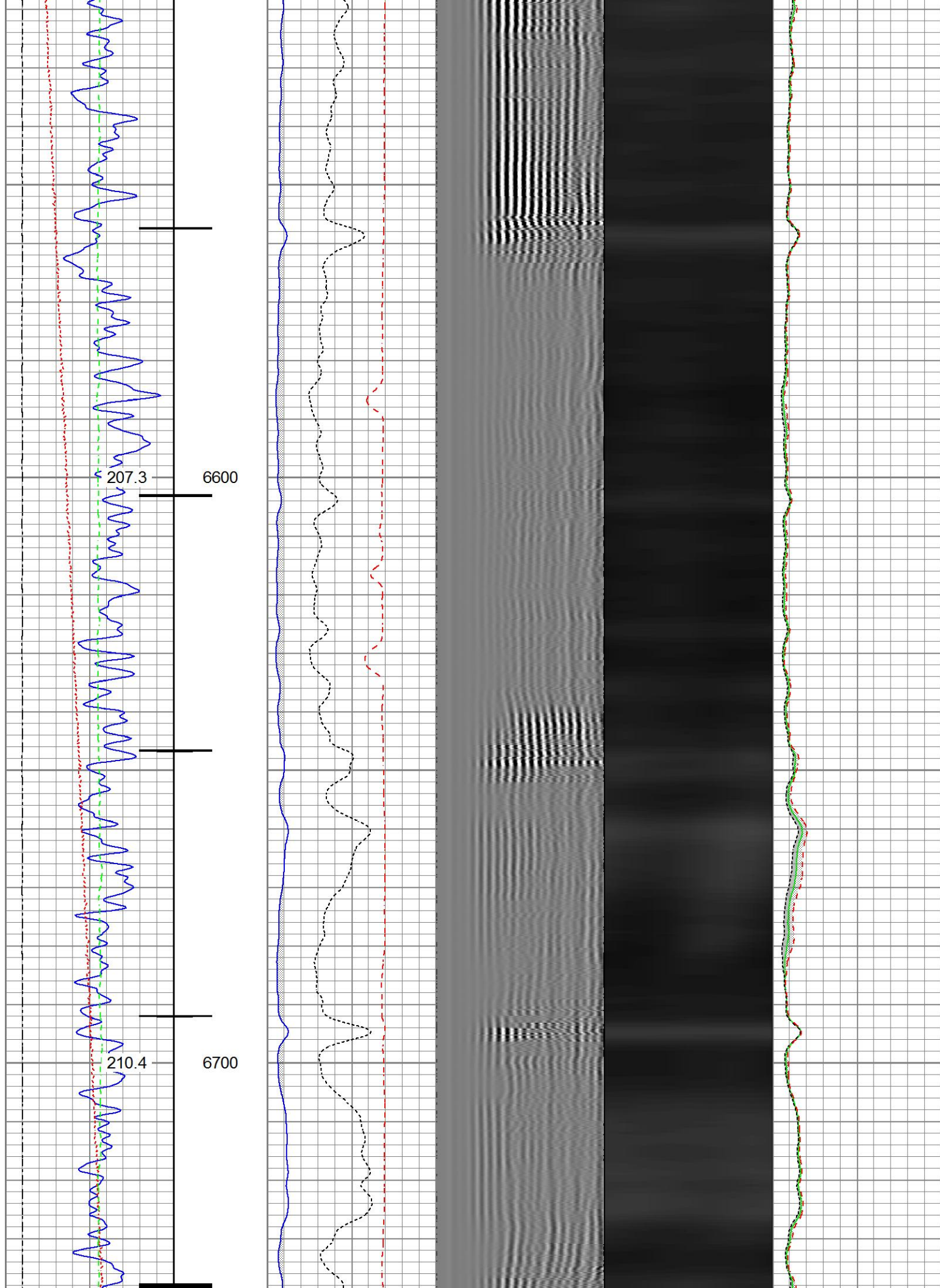


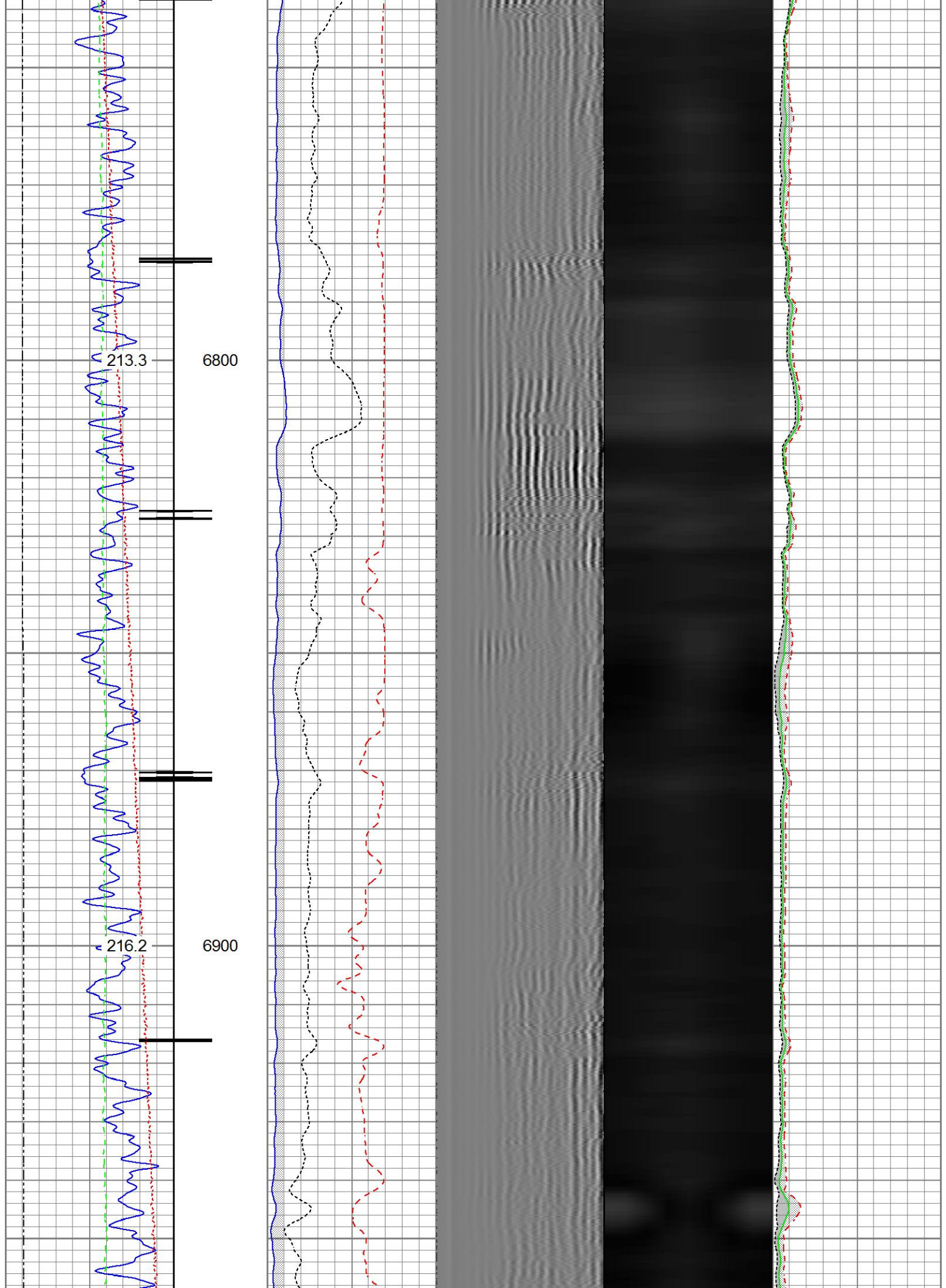


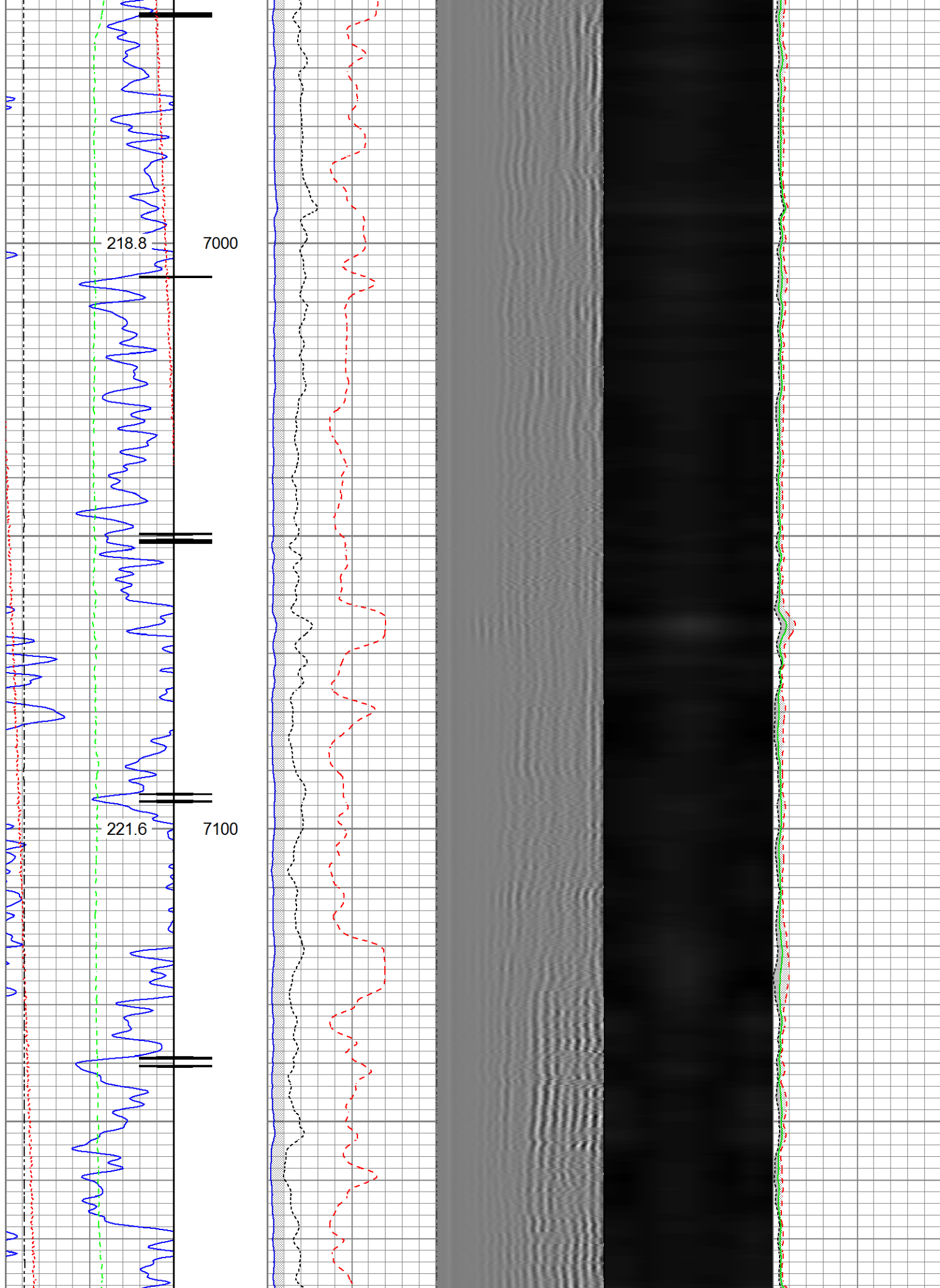


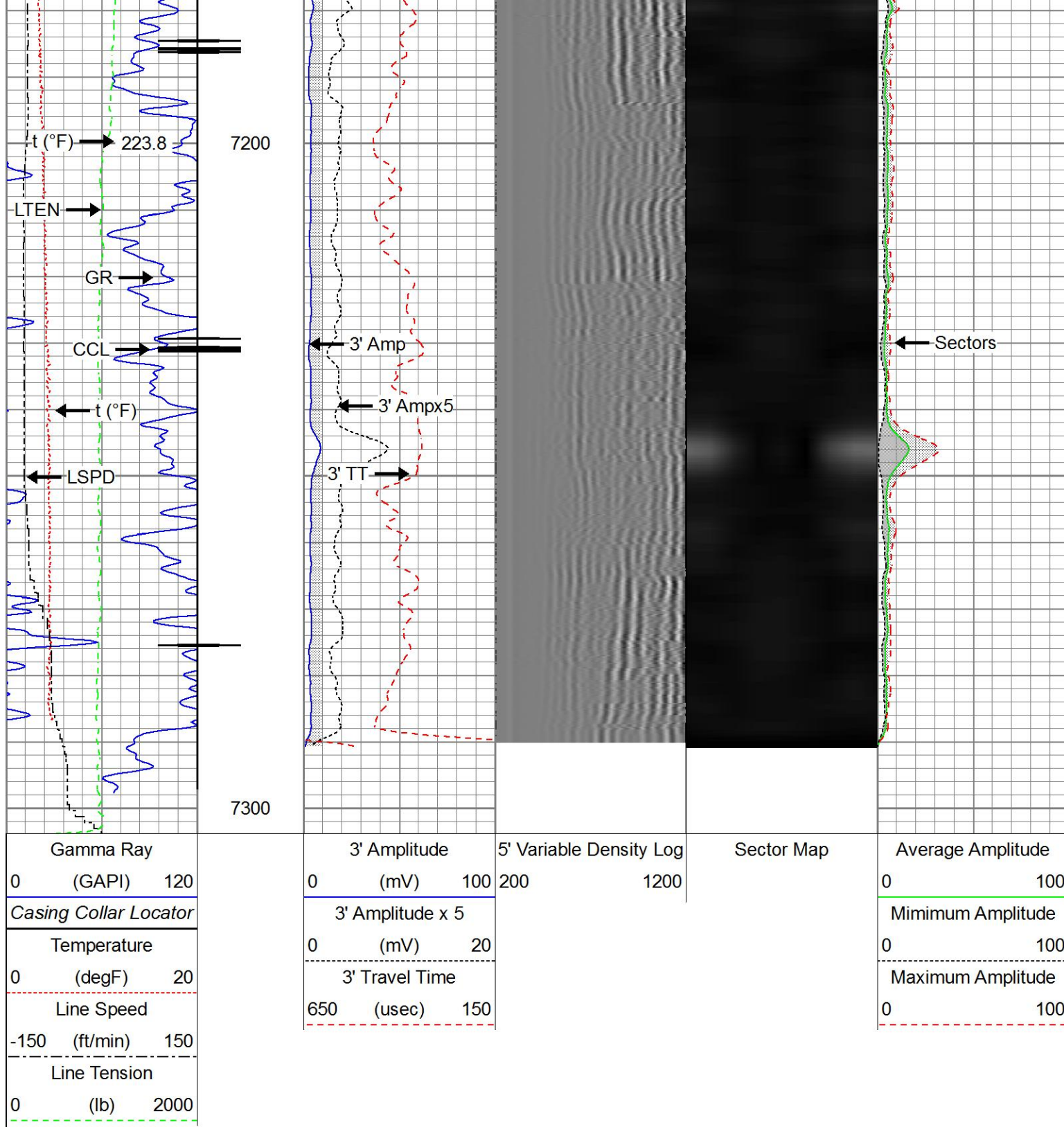








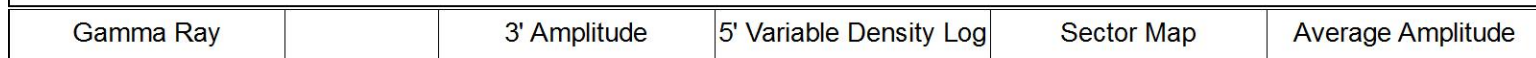




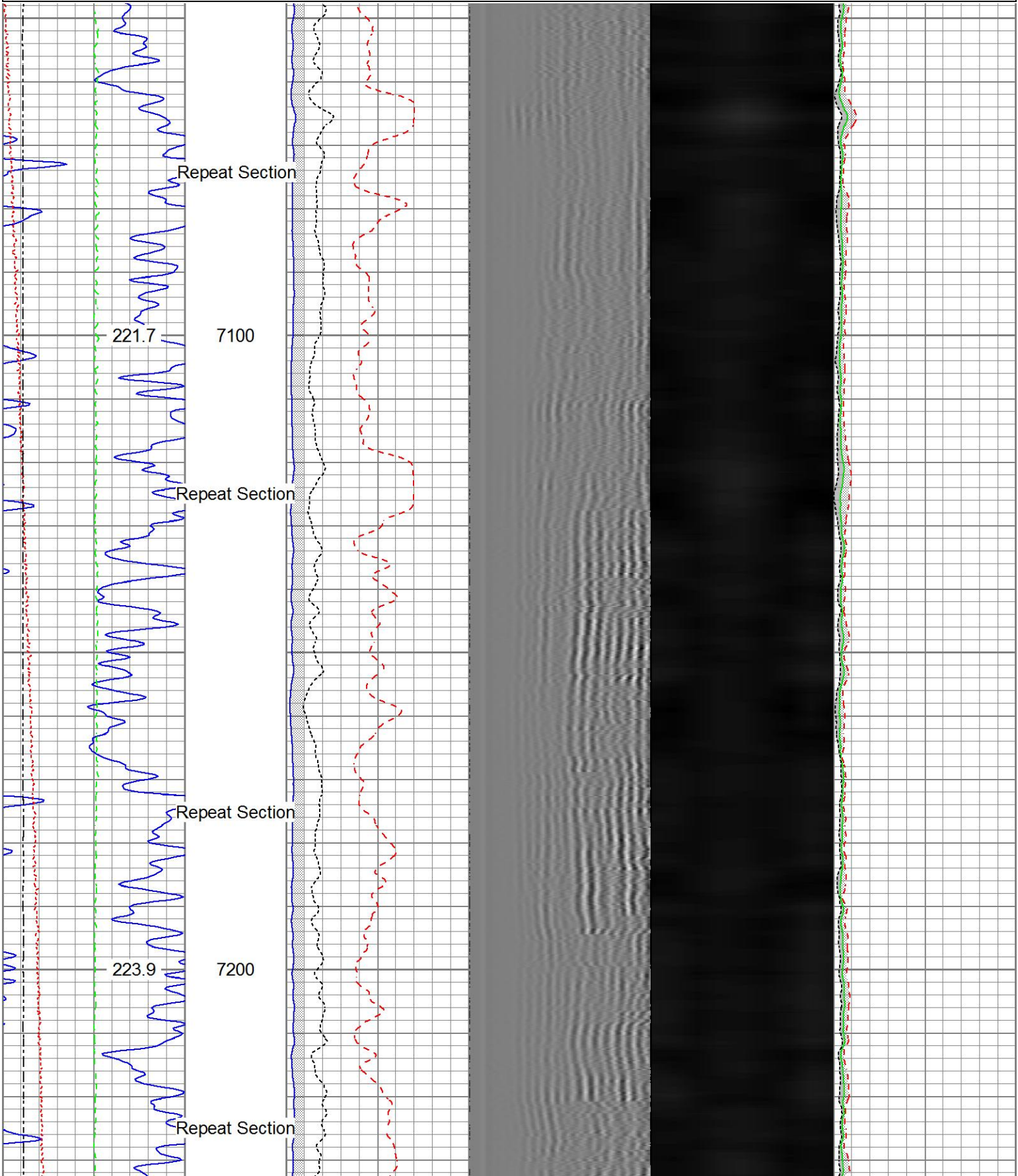
Repeat Pass

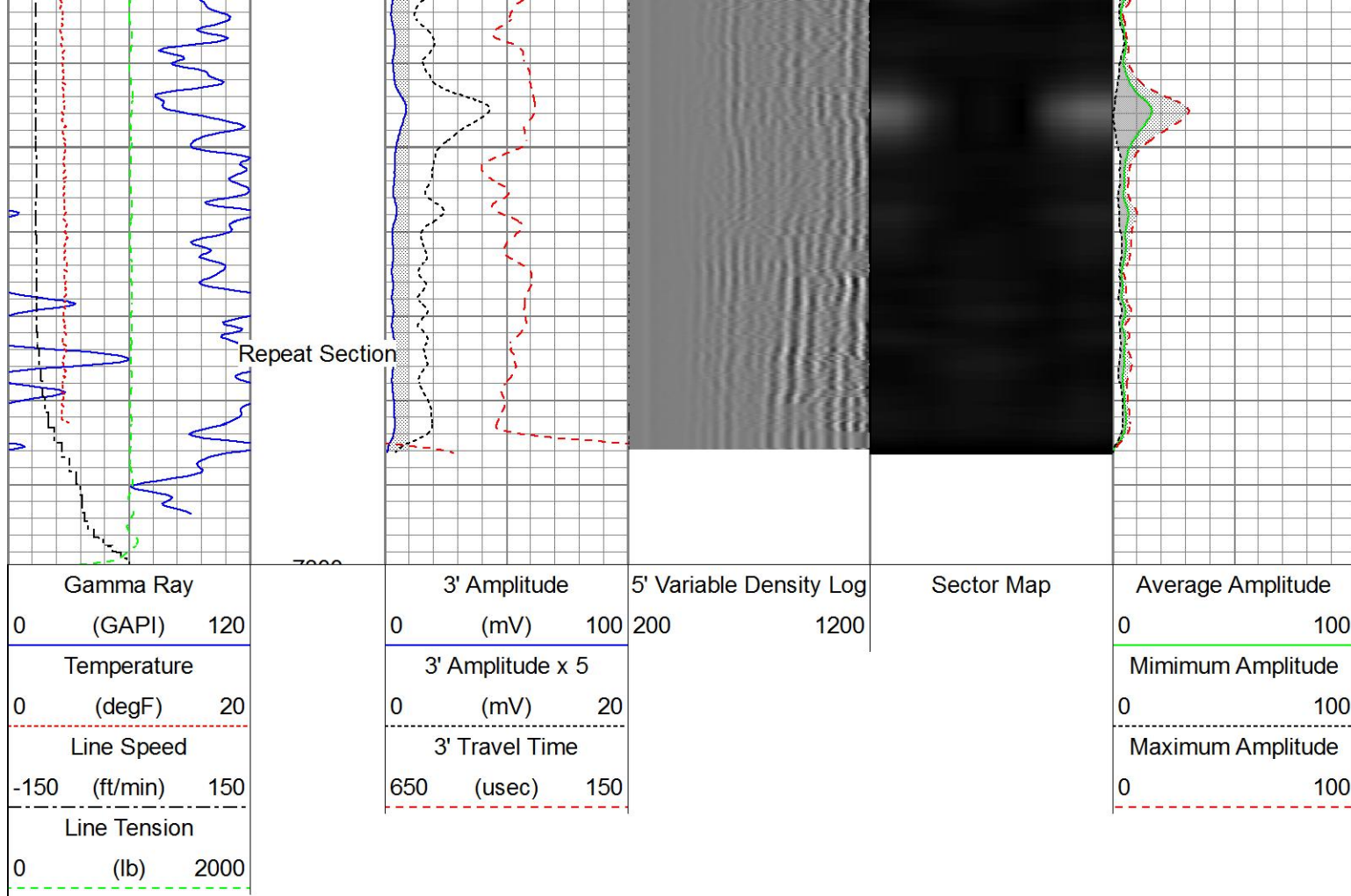
Recorded With 2800 PSI Surface Induced Pressure

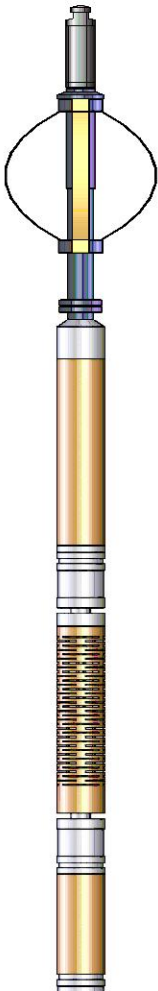
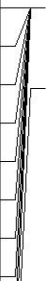
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 Presentation Format: ros_radrii
 Dataset Creation: Thu Feb 16 09:07:56 2017
 Charted by: Depth in Feet scaled 1:240

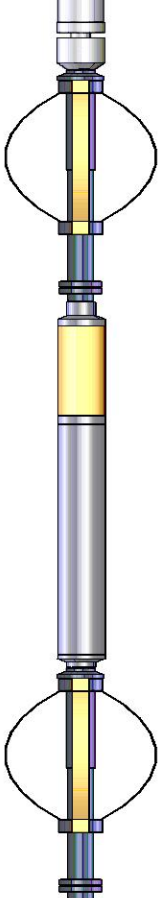

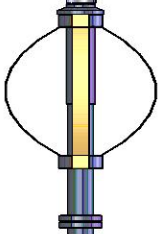


0	(GAPI)	120	0	(mV)	100	200	1200	0	100	
Temperature			3' Amplitude x 5			Minimum Amplitude				
0	(degF)	20	0	(mV)	20	0				100
Line Speed			3' Travel Time			Maximum Amplitude				
-150	(ft/min)	150	650	(usec)	150	0				100
Line Tension										
0	(lb)	2000								





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
Temp	16.72		Titan_Electric_Cable_Heads-Titan_1-11/161.03 Electric Cable Head with 1" Fishing Neck	1.69	1.69	5.40
			Probe_ELine_BowSpring_Centralizer-P_EE2.88.275 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.75	2.75	20.00
			Probe_RADII-C-P_RBT_2750 (FW1302-009.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	009.19	2.75	105.00
WVFS8	14.55					
WVFS7	14.55					
WVFS6	14.55					
WVFS5	14.55					
WVFS4	14.55					
WVFS3	14.55					
WVFS2	14.55					
WVFS1	14.55					

WVFCAL	14.55		Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88,275	2.75	20.00
WVF3FT	14.55					
WVF5FT	13.55					
HeadVolt	10.30					
DCCL	6.51		Probe_GR_CCL-P_CGR_2750_S (FW1214.541) Probe 2-3/4" Digital CCL / Gamma Ray Combined	214.541)	2.75	55.00
CCL	6.51					
GR	3.77		Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88,275	2.75	20.00
Dataset: 0512341298_Anadarko_Wilson Ranch_5N-27HZ_02-15-2017_RBL.db: field/well/run1/Main.1 Total length: 23.40 ft Total weight: 225.40 lb O.D.: 2.75 in						

Calibration Report						
Database File	D:\Warrior\Data\Anadarko_Wilson Ranch_5N-27HZ\0512341298_Anadarko_Wilson Ranch_5N-27HZ_02-15-2017_RBL.db: field/well/run1/Main.1					
Dataset Pathname	Main.1					
Dataset Creation	Wed Feb 15 08:39:50 2017					
Gamma Ray Calibration Report						
Serial Number:	FW1211-081					
Tool Model:	P_CGR_2750_S					
Performed:	Sat Feb 06 11:31:52 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:	FW1302-002					
Tool Model:	P_RBT_2750					
Calibration Casing Diameter:	5.500	in				
Calibration Depth:	11.459	ft				
Master Calibration, performed (Derived):						
Raw (v)		Calibrated (mv)		Results		
Zero	Cal	Zero	Cal	Gain	Offset	

	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.682	0.800	71.921	104.409	0.735
CAL	0.004	0.774				
5'	0.000	0.580	0.800	71.921	122.658	0.763
SUM						
S1	0.001	0.652	0.000	100.000	153.567	-0.108
S2	0.000	0.633	0.000	100.000	158.159	-0.050
S3	0.001	0.635	0.000	100.000	157.755	-0.100
S4	0.001	0.658	0.000	100.000	152.251	-0.132
S5	0.001	0.700	0.000	100.000	142.896	-0.080
S6	0.000	0.737	0.000	100.000	135.859	-0.063
S7	0.000	0.725	0.000	100.000	137.983	-0.052
S8	0.000	0.697	0.000	100.000	143.483	-0.045

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	0.774	1.000	0.000

Air Zero Calibration, performed Wed Feb 15 06:52:05 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.004		0.000		0.000	
5'	0.004		0.000		-0.000	
SUM						
S1	0.004		0.000		0.000	
S2	0.004		0.000		-0.000	
S3	0.004		0.000		0.000	
S4	0.004		0.000		0.000	
S5	0.004		0.000		-0.000	
S6	0.004		0.000		-0.000	
S7	0.004		0.000		-0.000	
S8	0.004		0.000		-0.000	



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