



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Whiting Oil & Gas Corporation	
Well		Horsetail 07G-1809	
Field		Wildcat	
County		Weld	
State		Colorado	
Location:		API #: 05-123-42118	
Permanent Datum		SEC 7 TWP 10N RGE 57W	
Log Measured From		Ground Level	
Drilling Measured From		Kelly Bushing	
		Elevation 4892'	
		JB/GR	
		Elevation	
		K.B. 4913'	
		D.F. 4912'	
		G.L. 4892'	
Date		27-Apr-2016	
Run Number		Two	
Depth Driller		13893 FT	
Depth Logger		6007 FT	
Bottom Logged Interval		6003 FT	
Top Log Interval		Surface	
Open Hole Size		7.875"	
Type Fluid		Water	
Density / Viscosity		8.34 lbm/gal	
Max. Recorded Temp.		214°F	
Estimated Cement Top		Surface	
Time Well Ready		ROA	
Time Logger on Bottom		2:00 P.M.	
Equipment Number		HD-0361	
Location		Fort Lupton, CO	
Recorded By		J. Morrison	
Witnessed By		Brad Kothe	
Run Number		Borehole Record	
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	
		2012 FT	
		13893 FT	

<<< Fold Here >>>

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 5054-5076 FT
Adjusted 0 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 6100 FT with no debris
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.

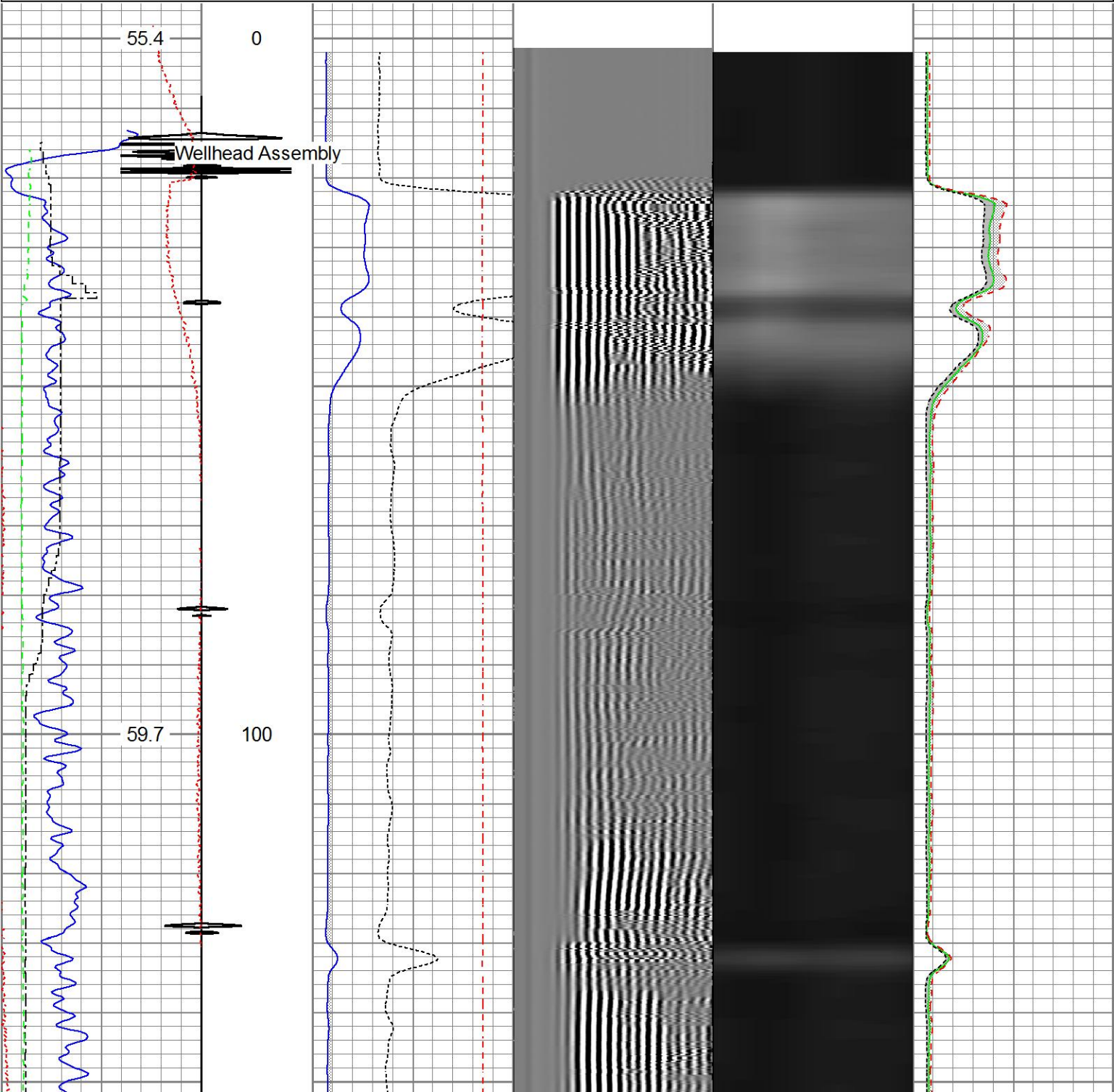


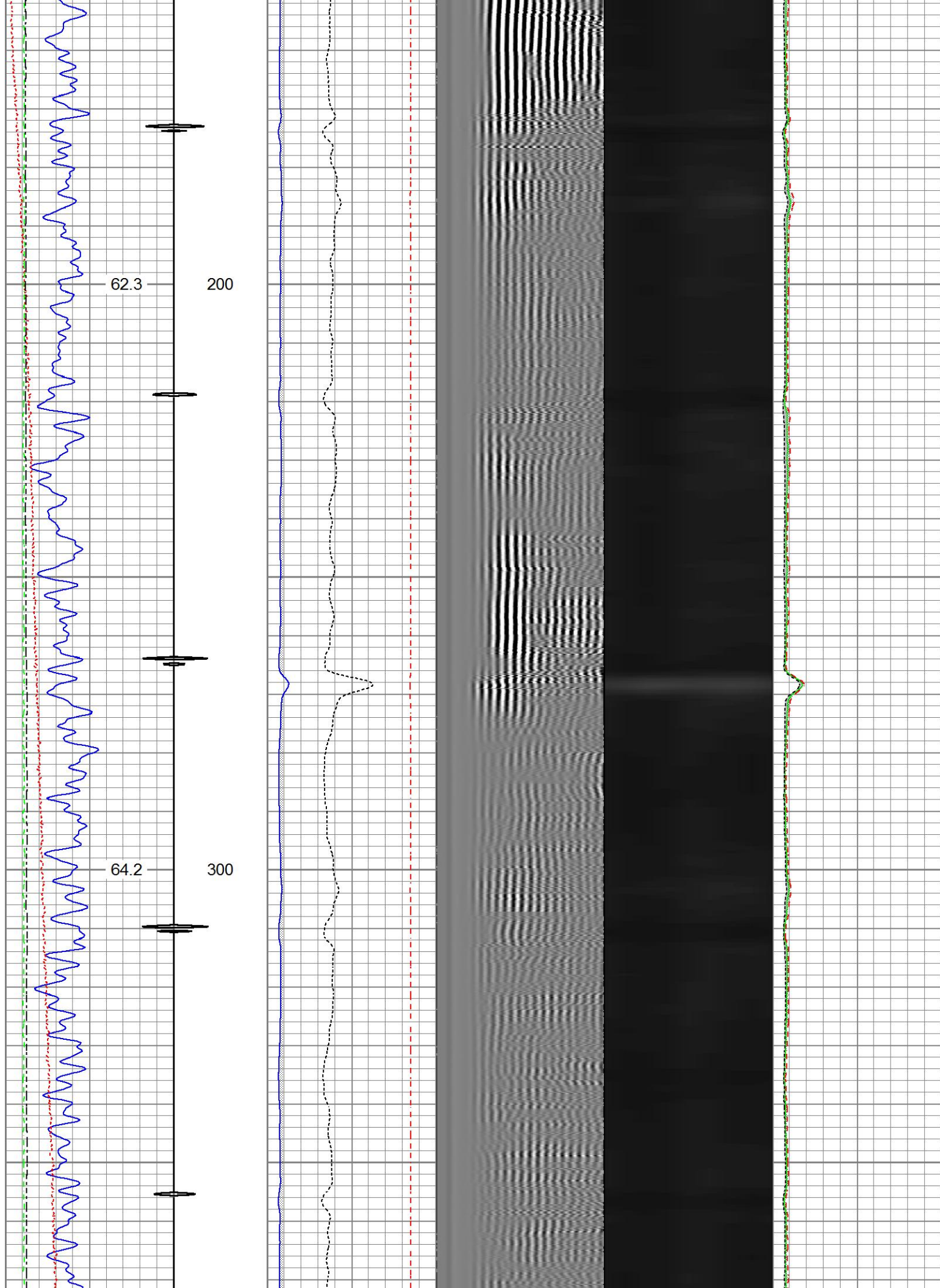
Main Pass

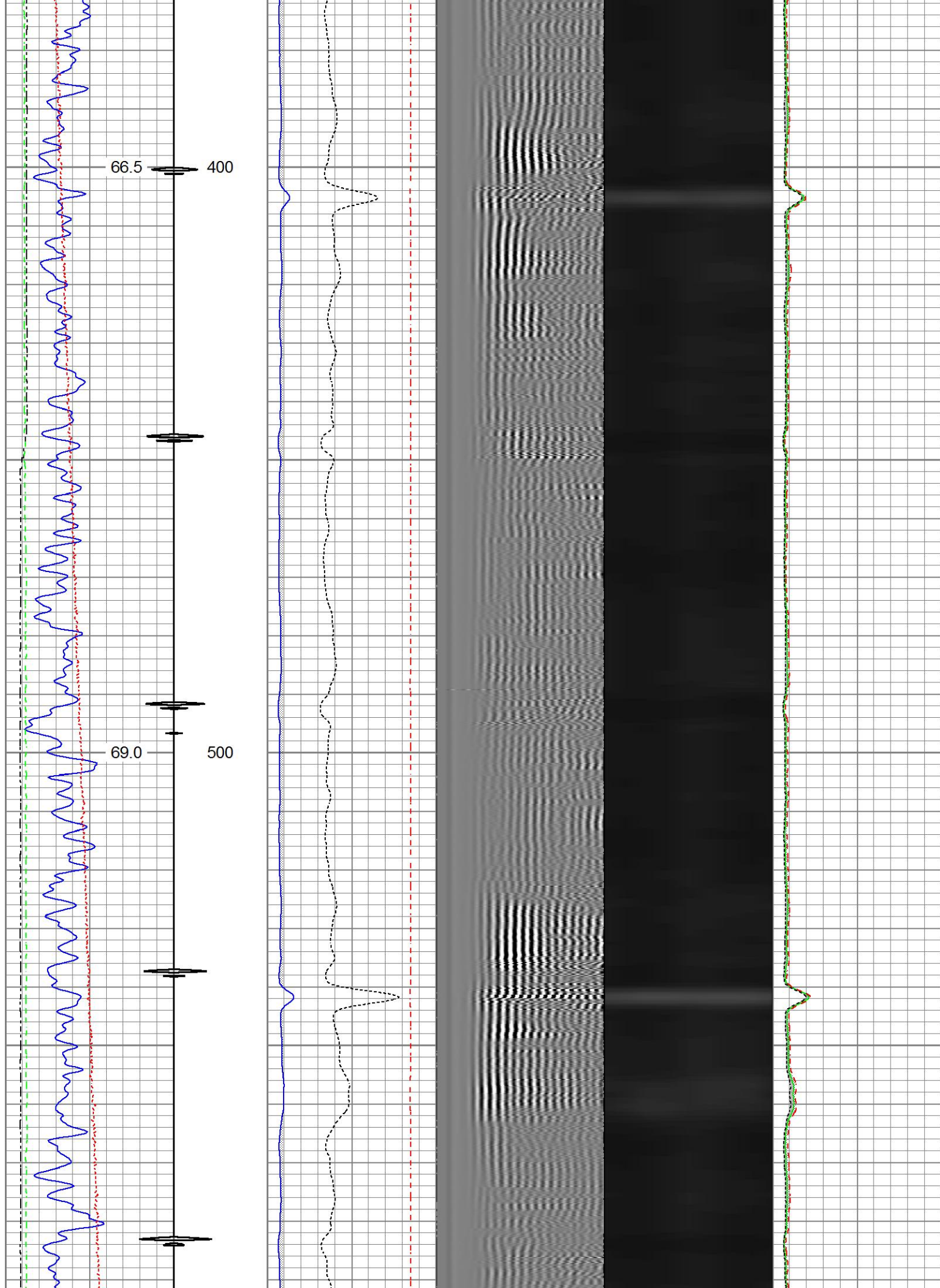
Recorded with 1500 PSI Surface Induced Pressure

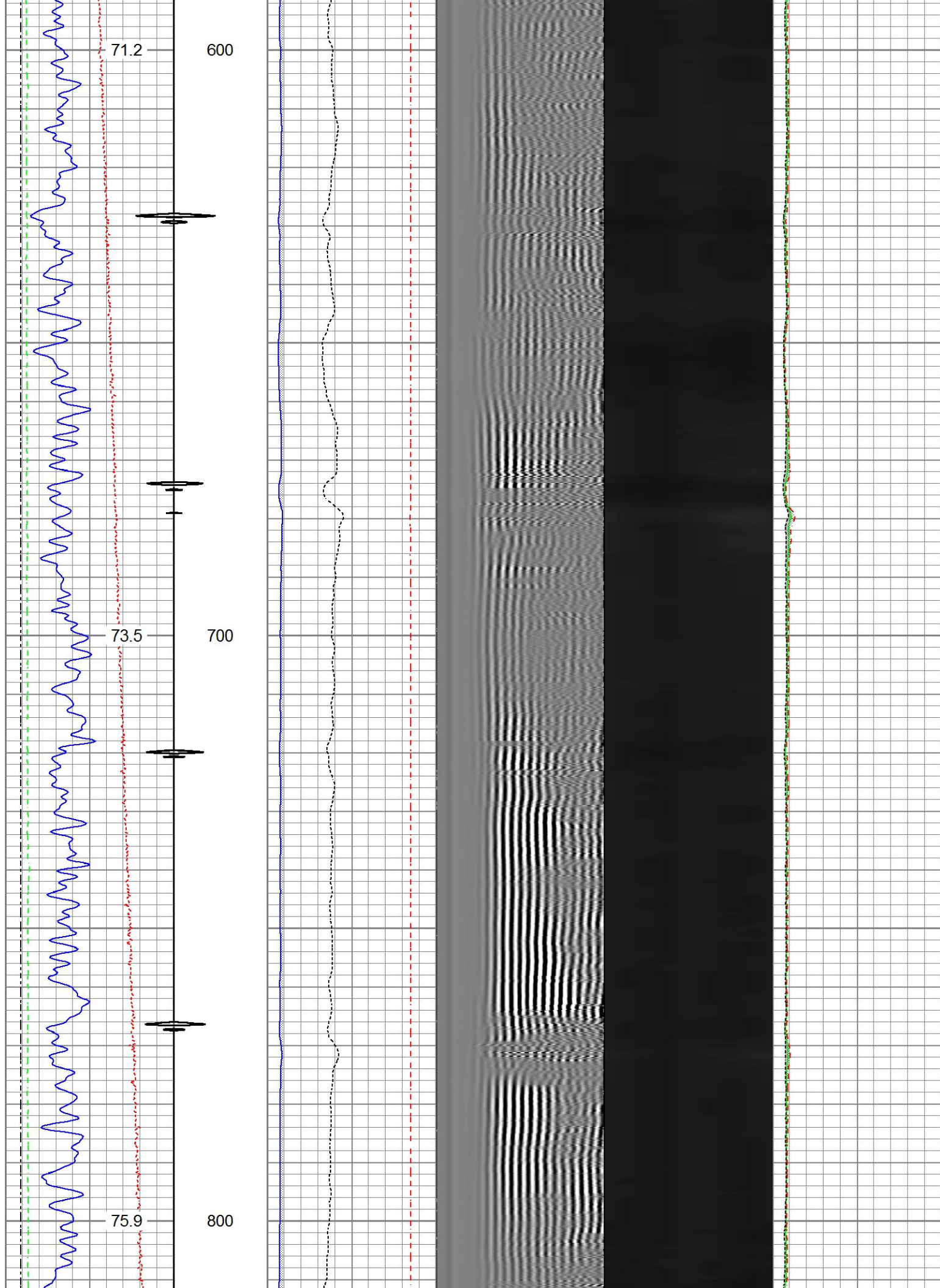
Database File	04-27-16_whiting_horsetail 07g-1809_rbl_w8.db
Dataset Pathname	Main
Presentation Format	fmc_radrii
Dataset Creation	Wed Apr 27 14:03:36 2016
Charted by	Depth in Feet scaled 1:240

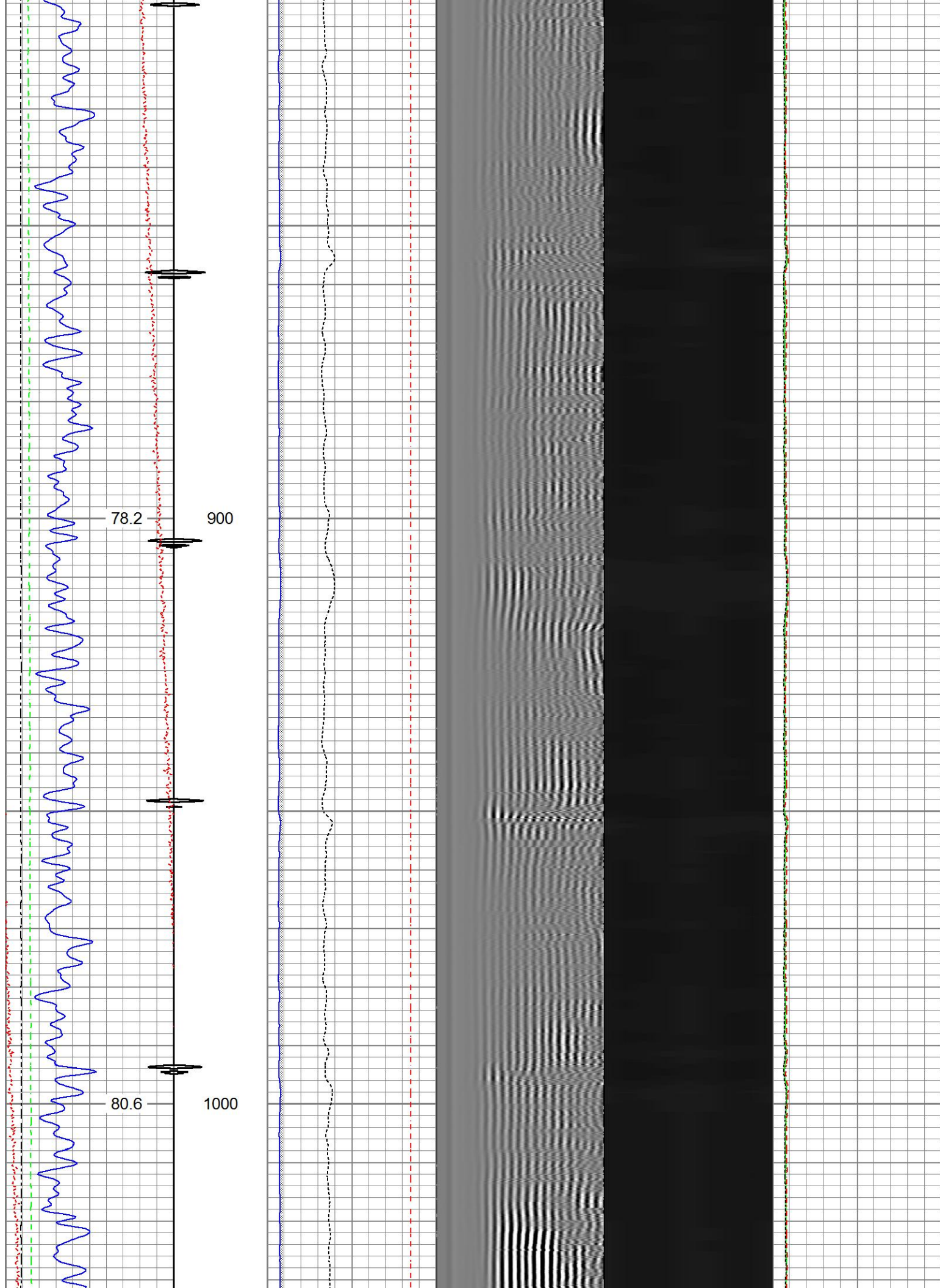
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Minimum Amplitude
Temperature		0 (mV) 20			0 100
0 (degF) 20		3' Travel Time			Maximum Amplitude
Line Speed		650 (usec) 150			0 100
-150 (ft/min)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

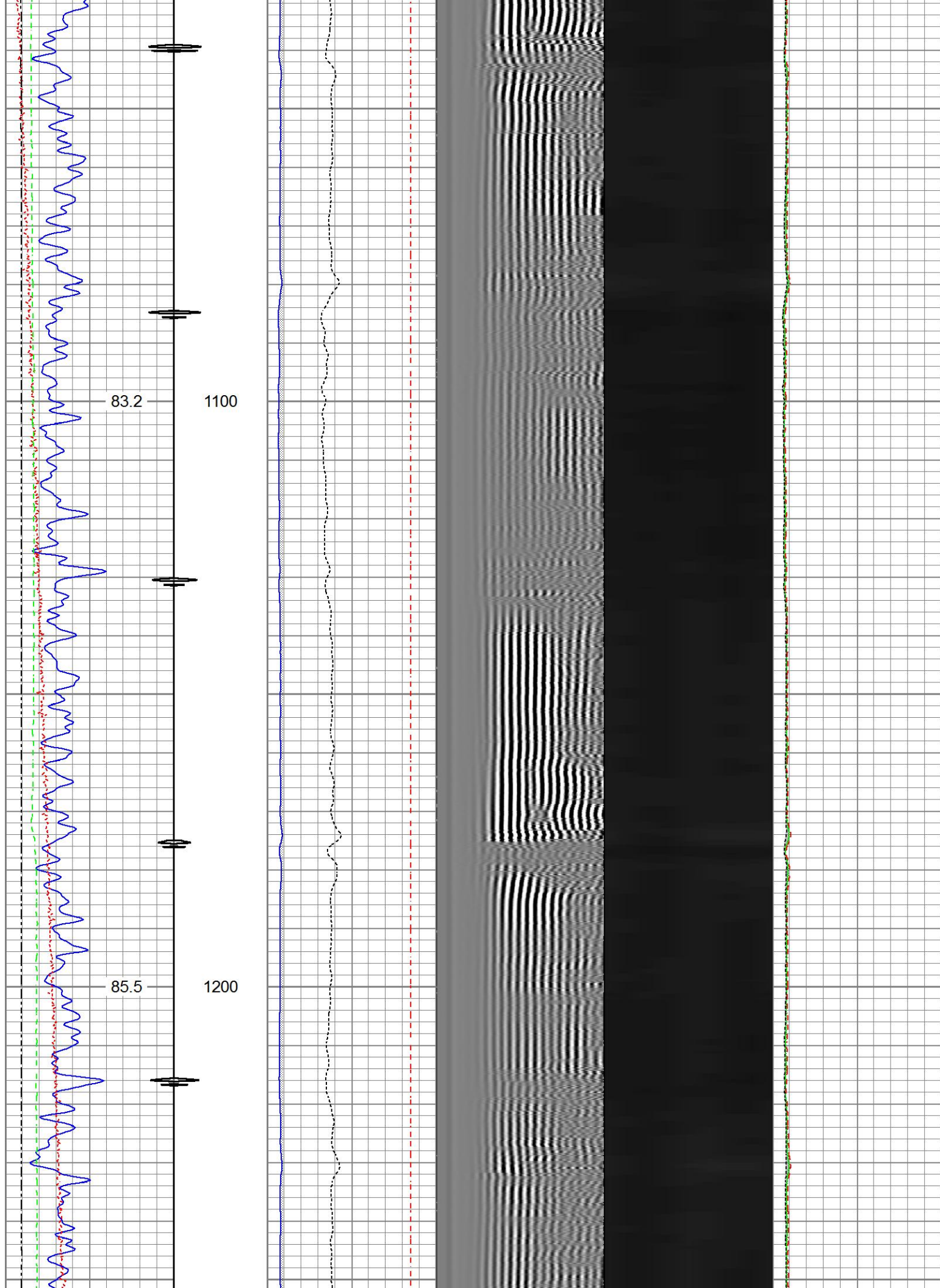


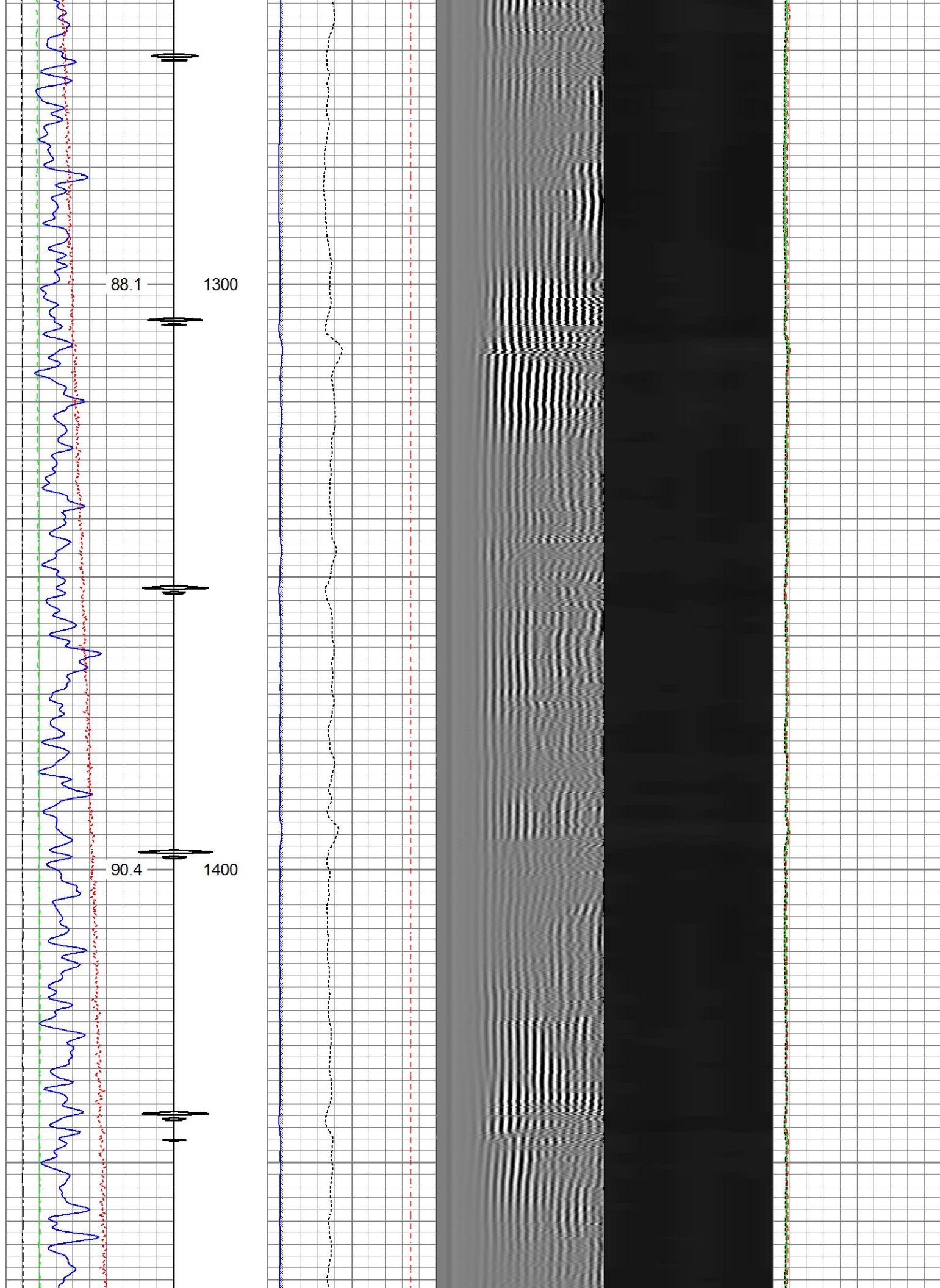


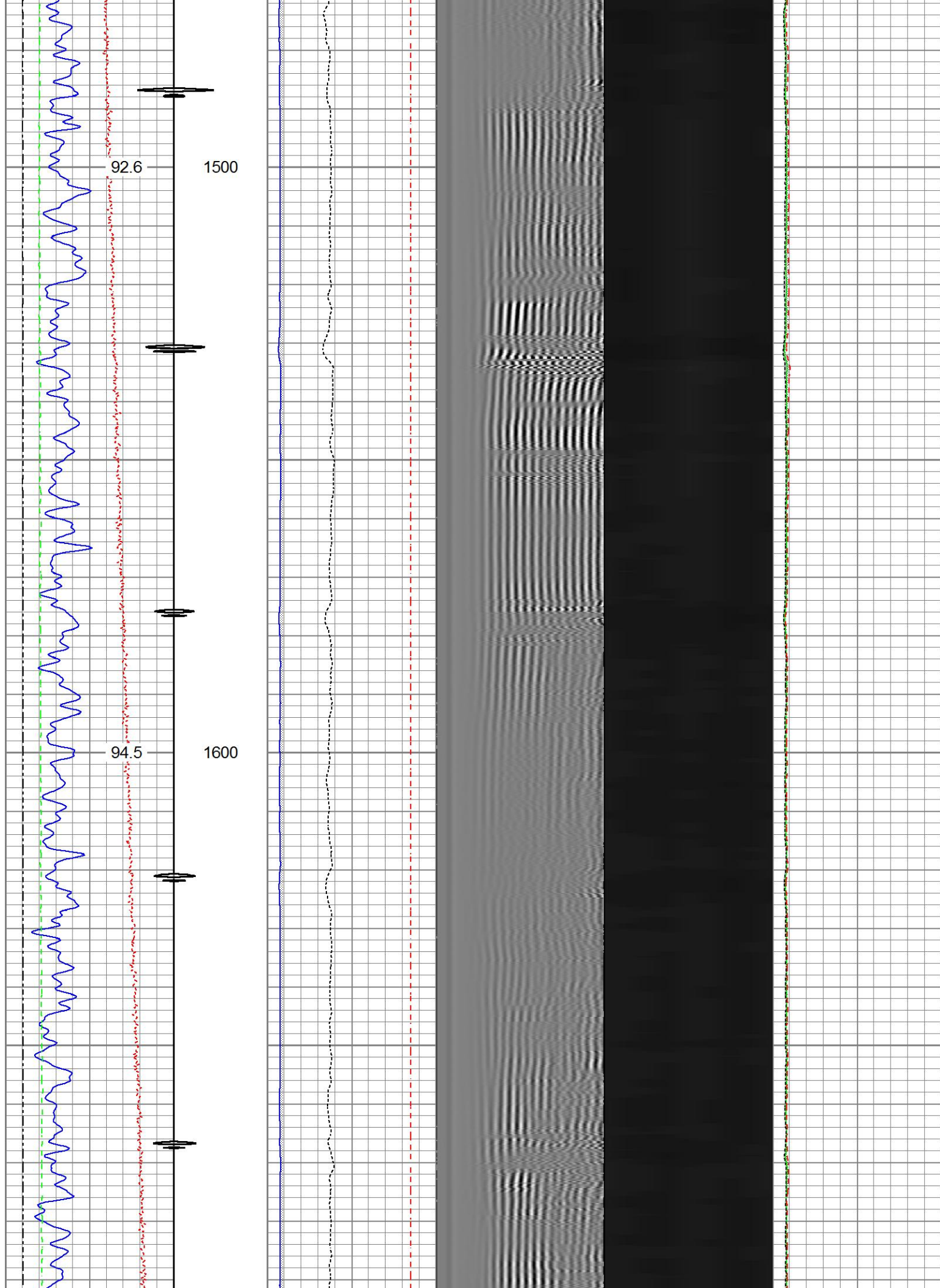


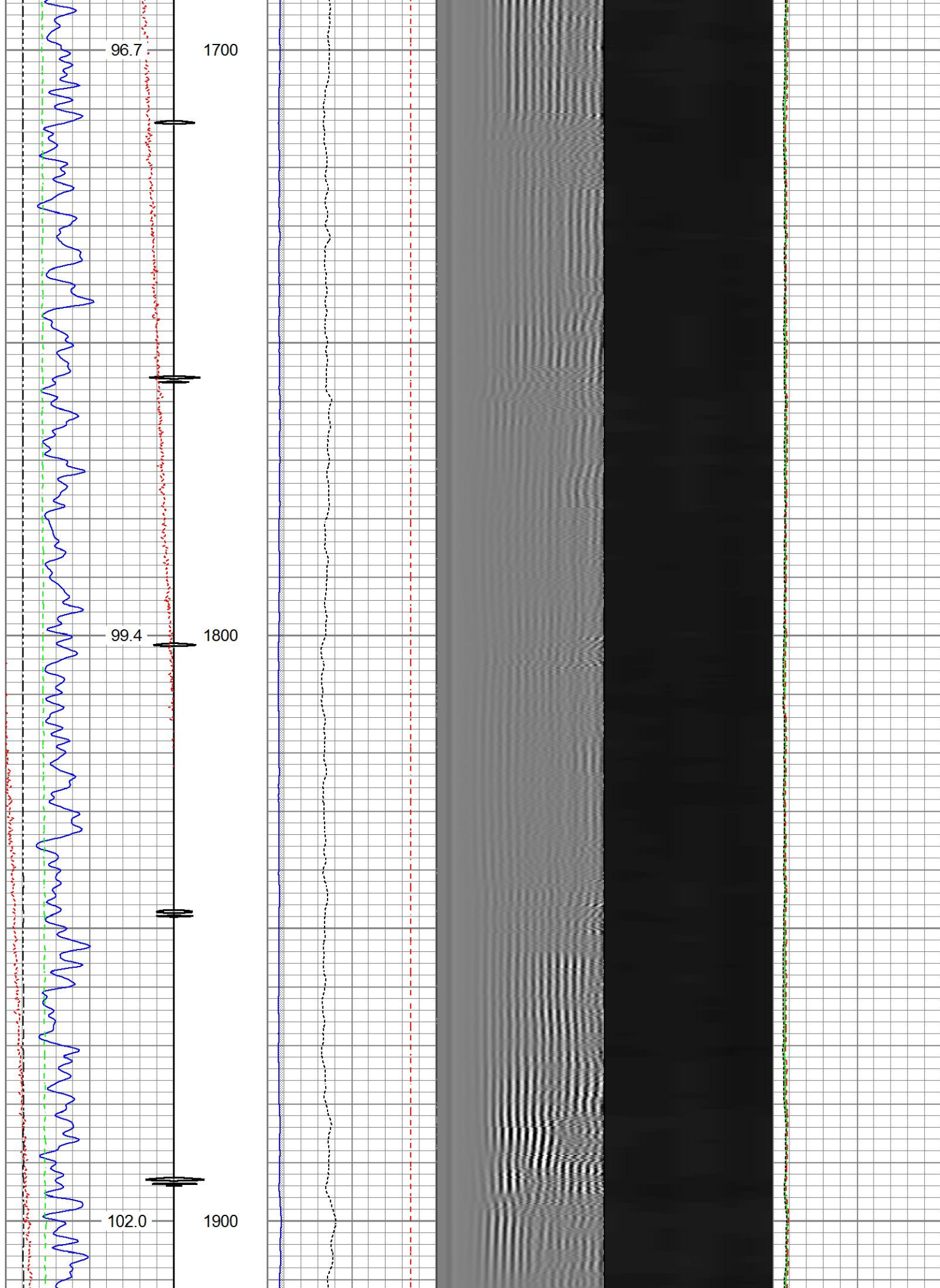


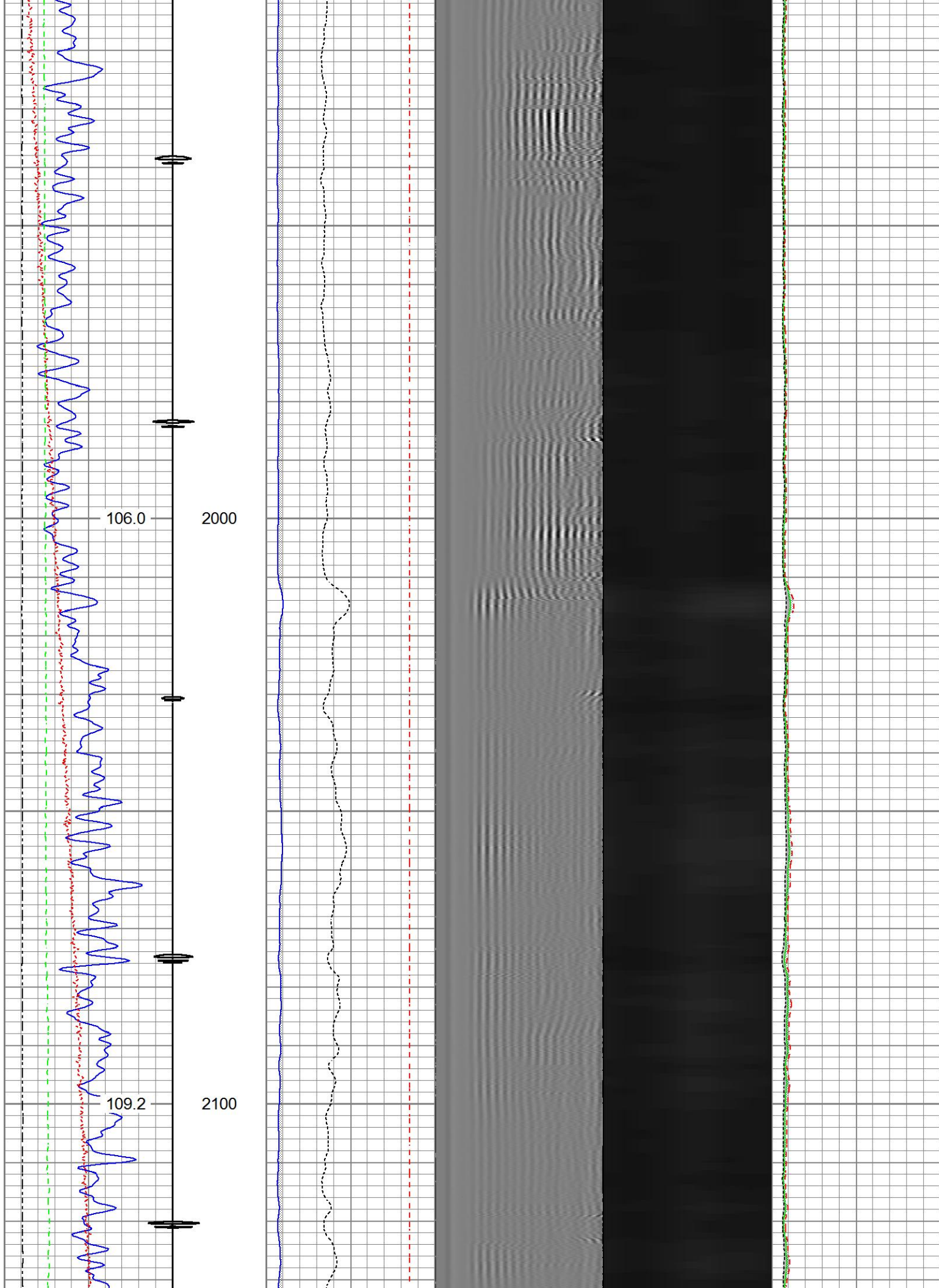


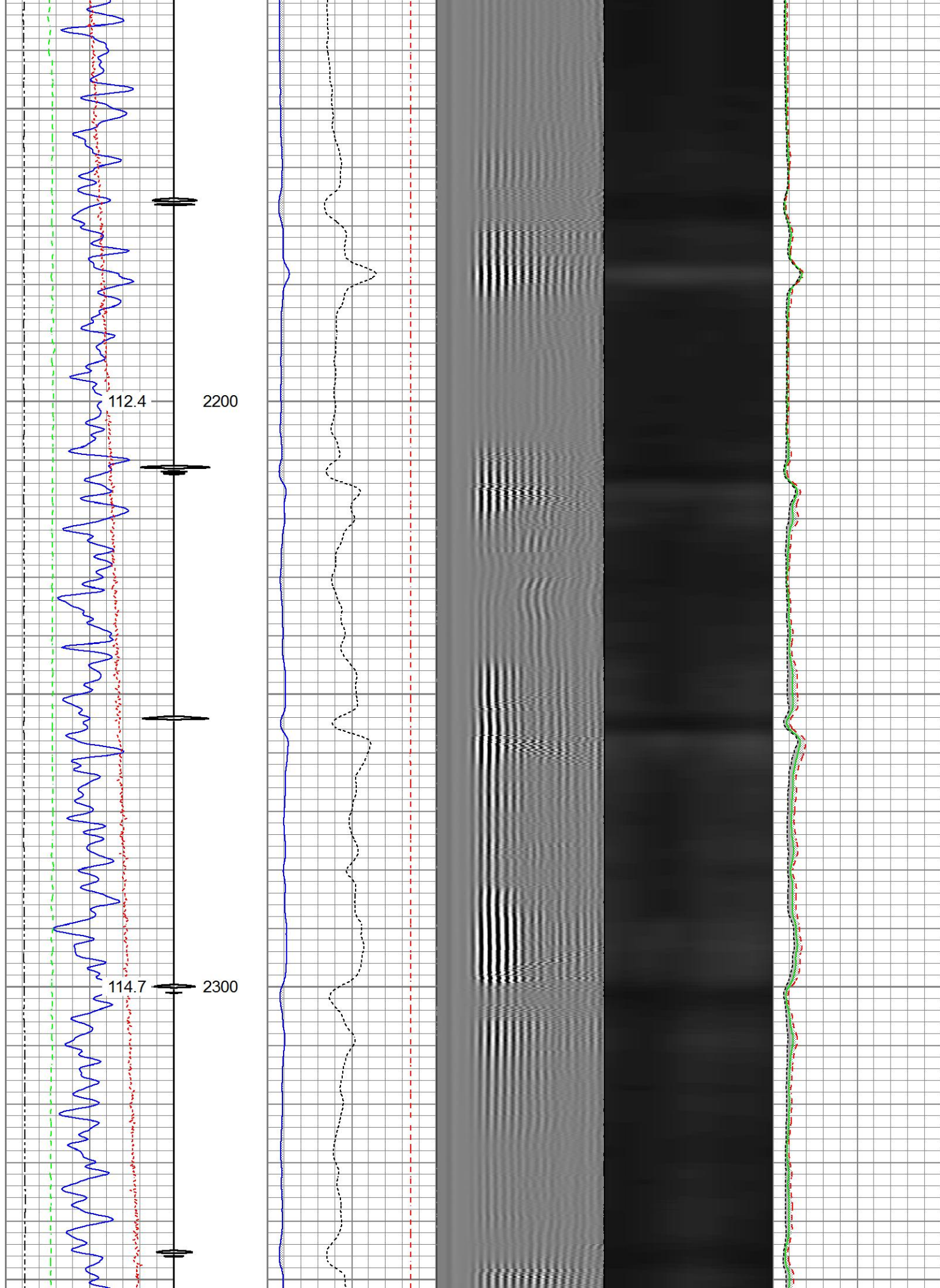


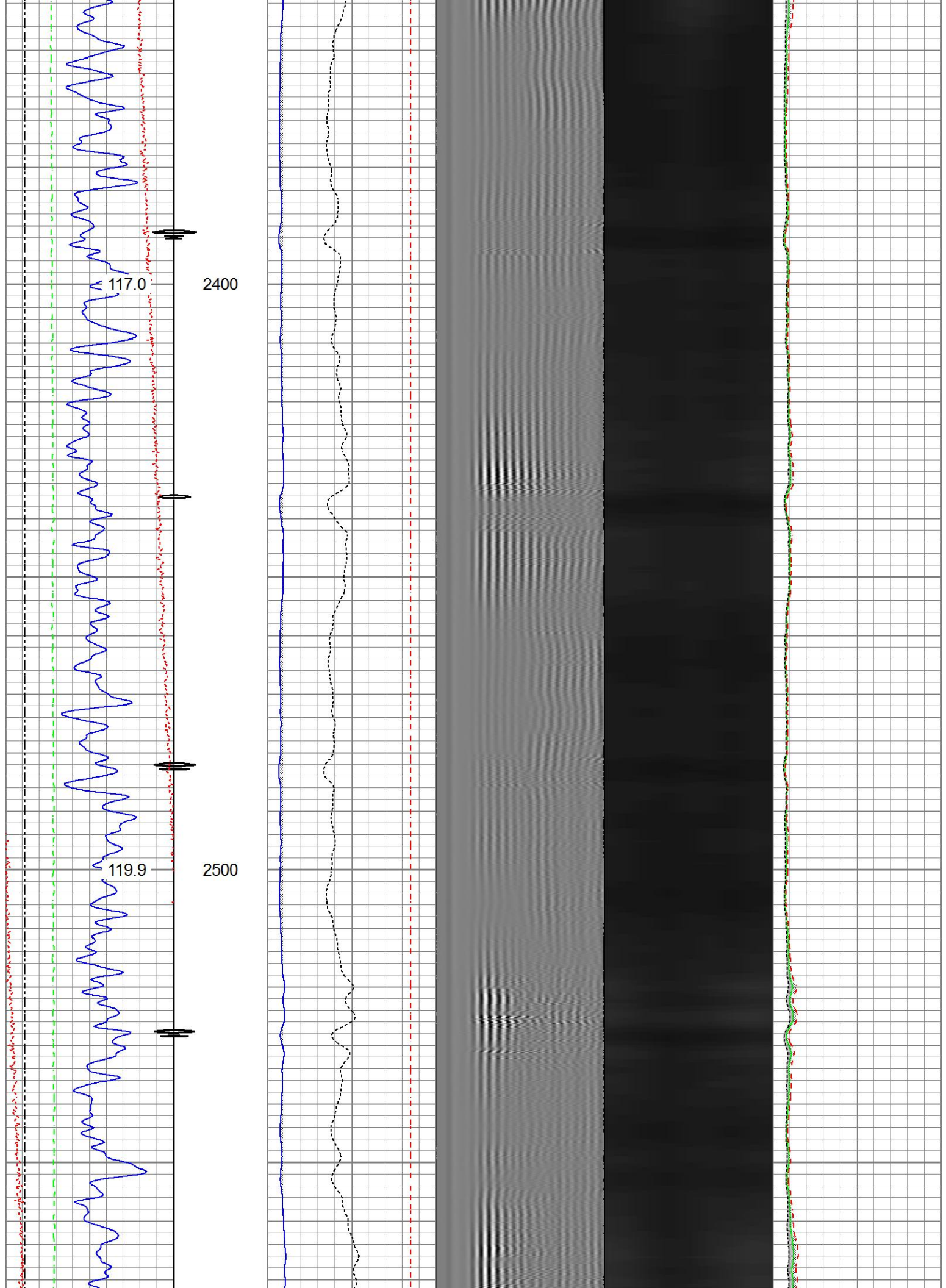


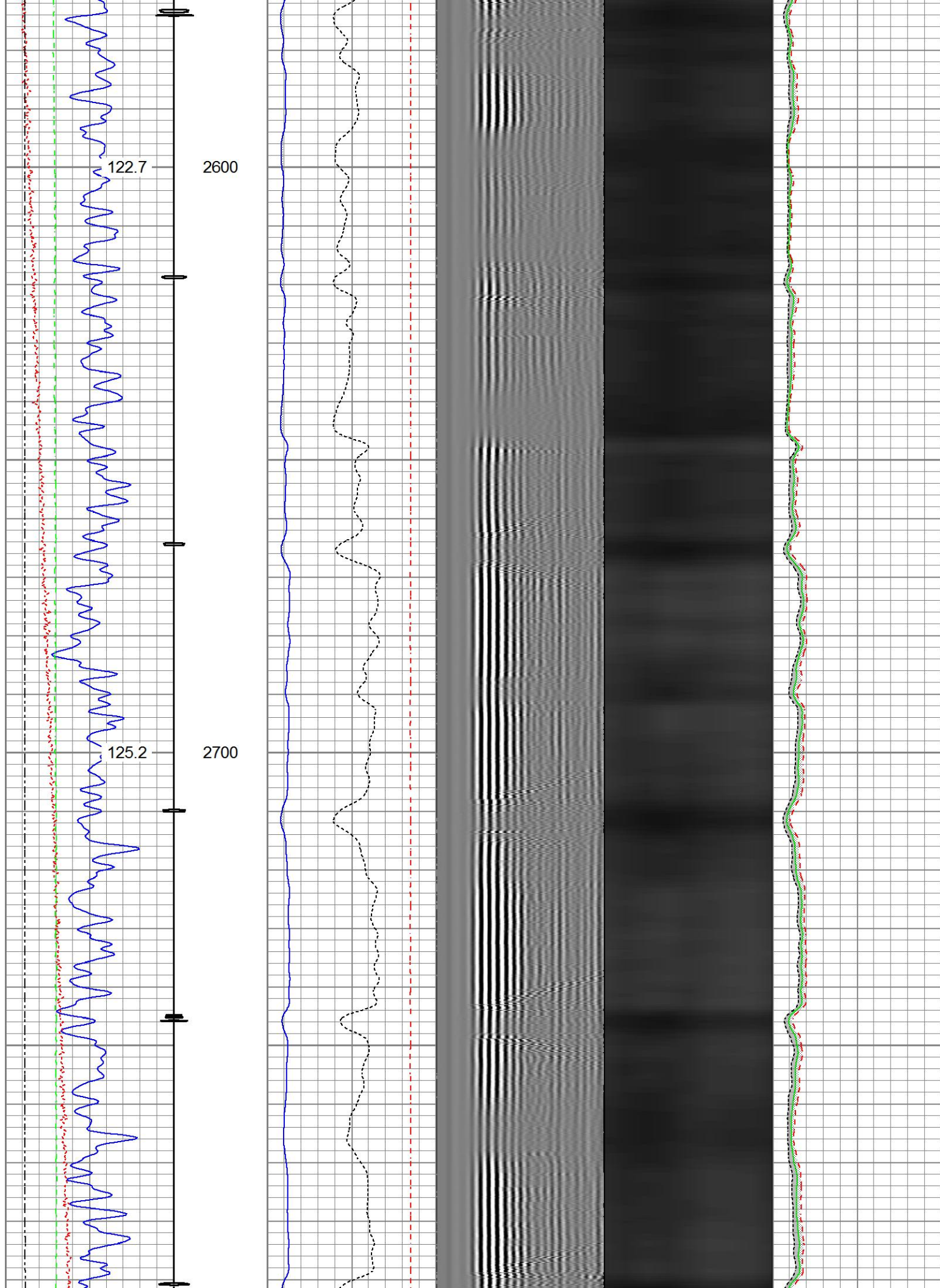


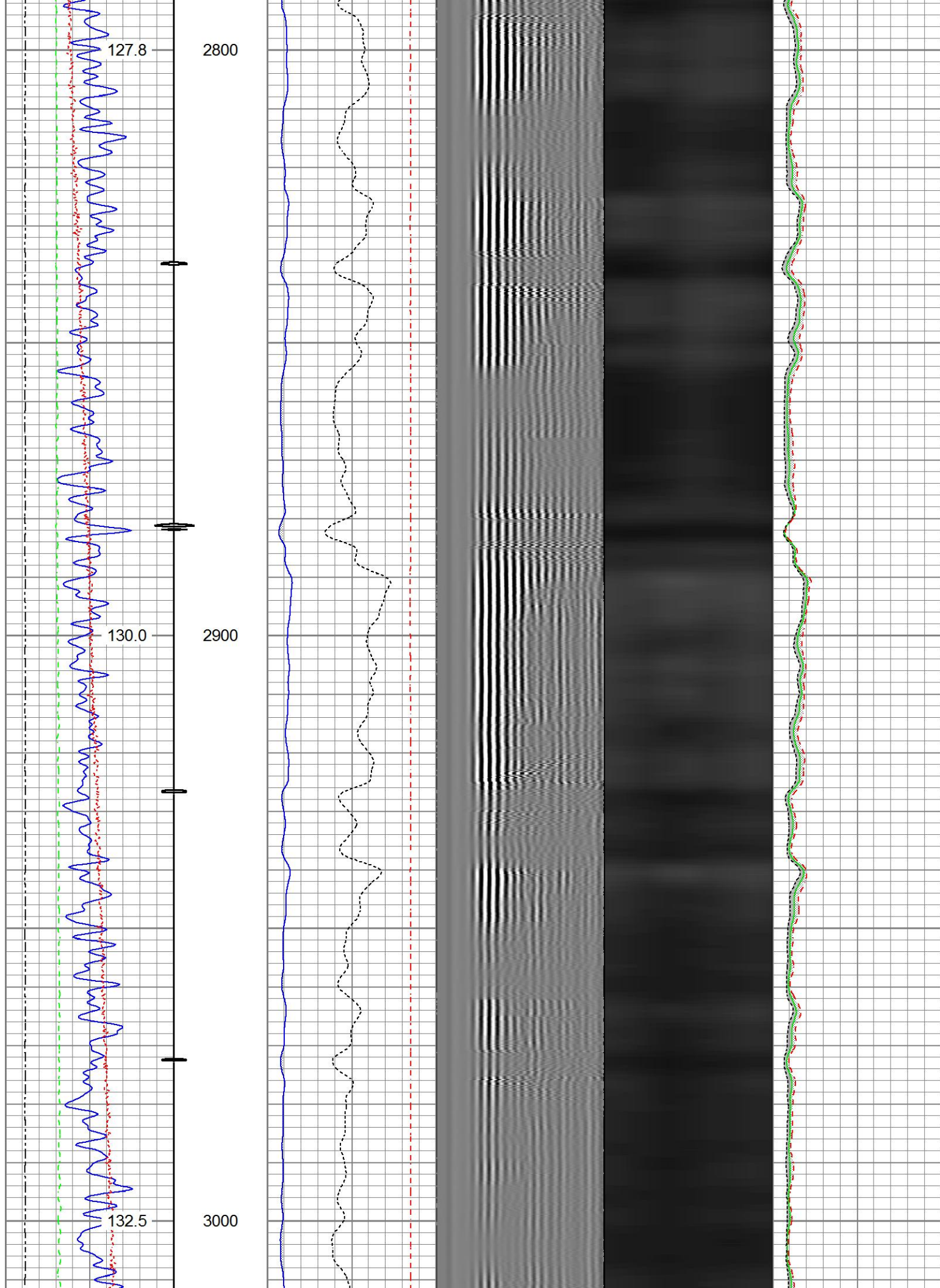


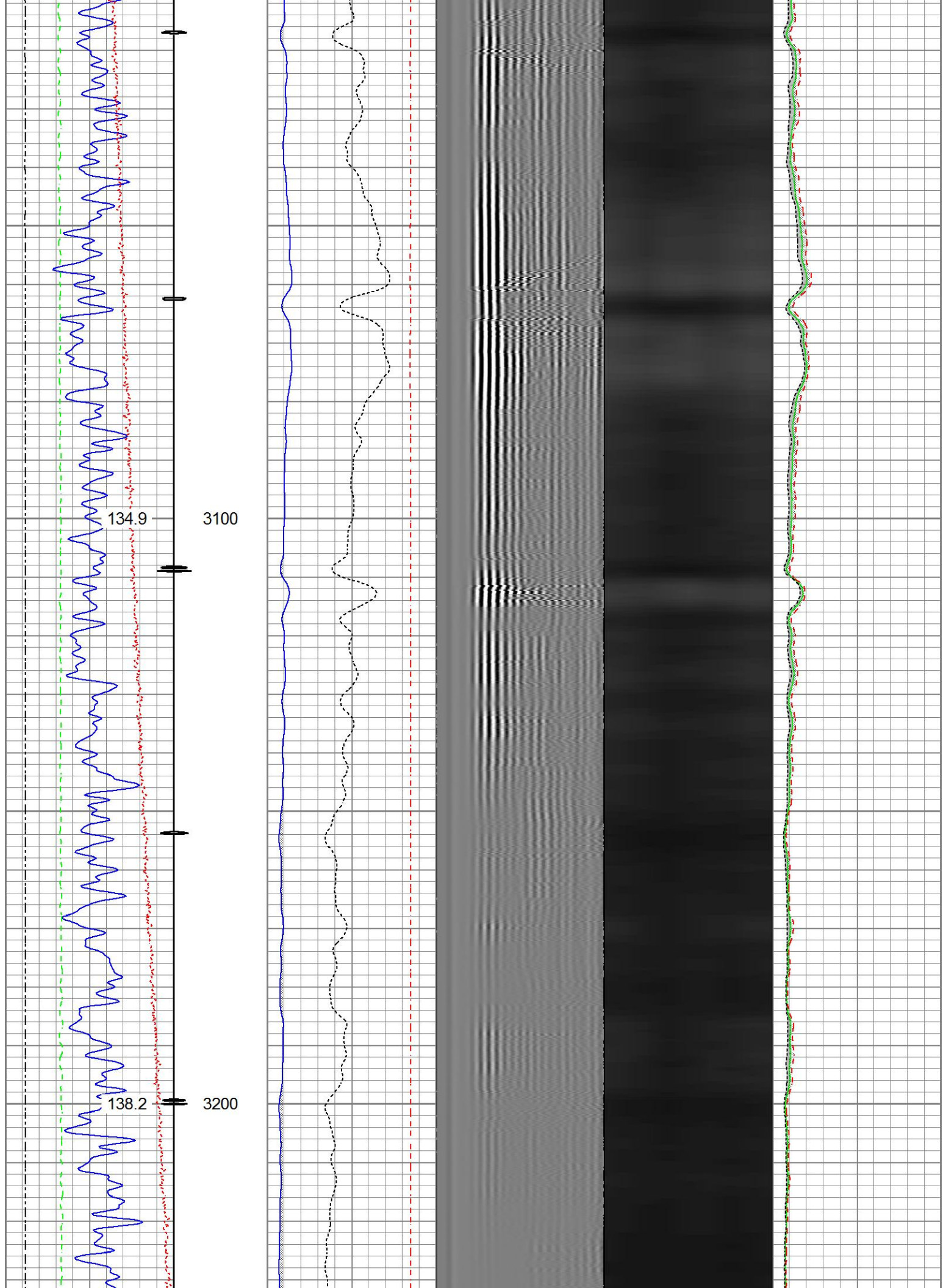


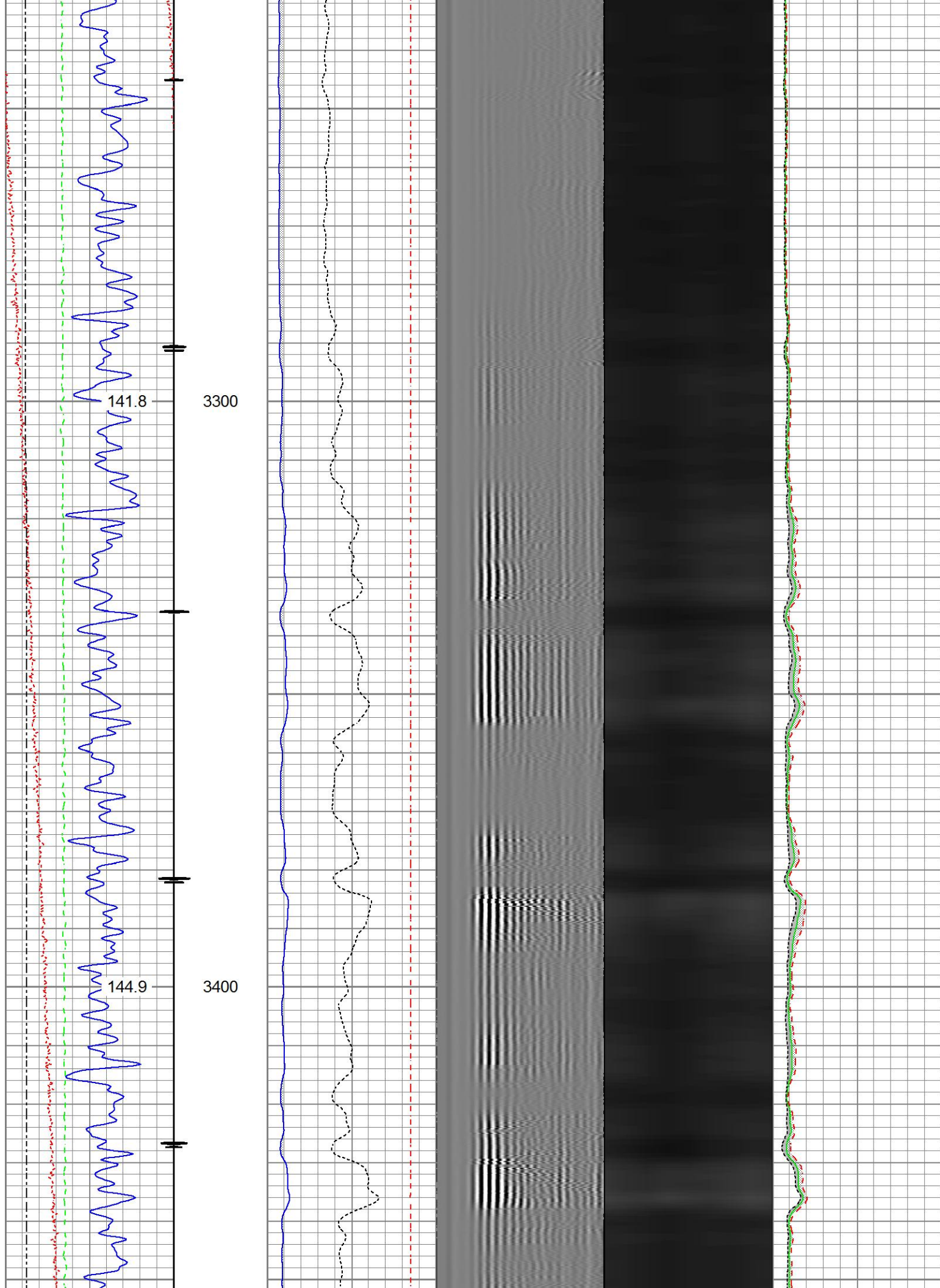


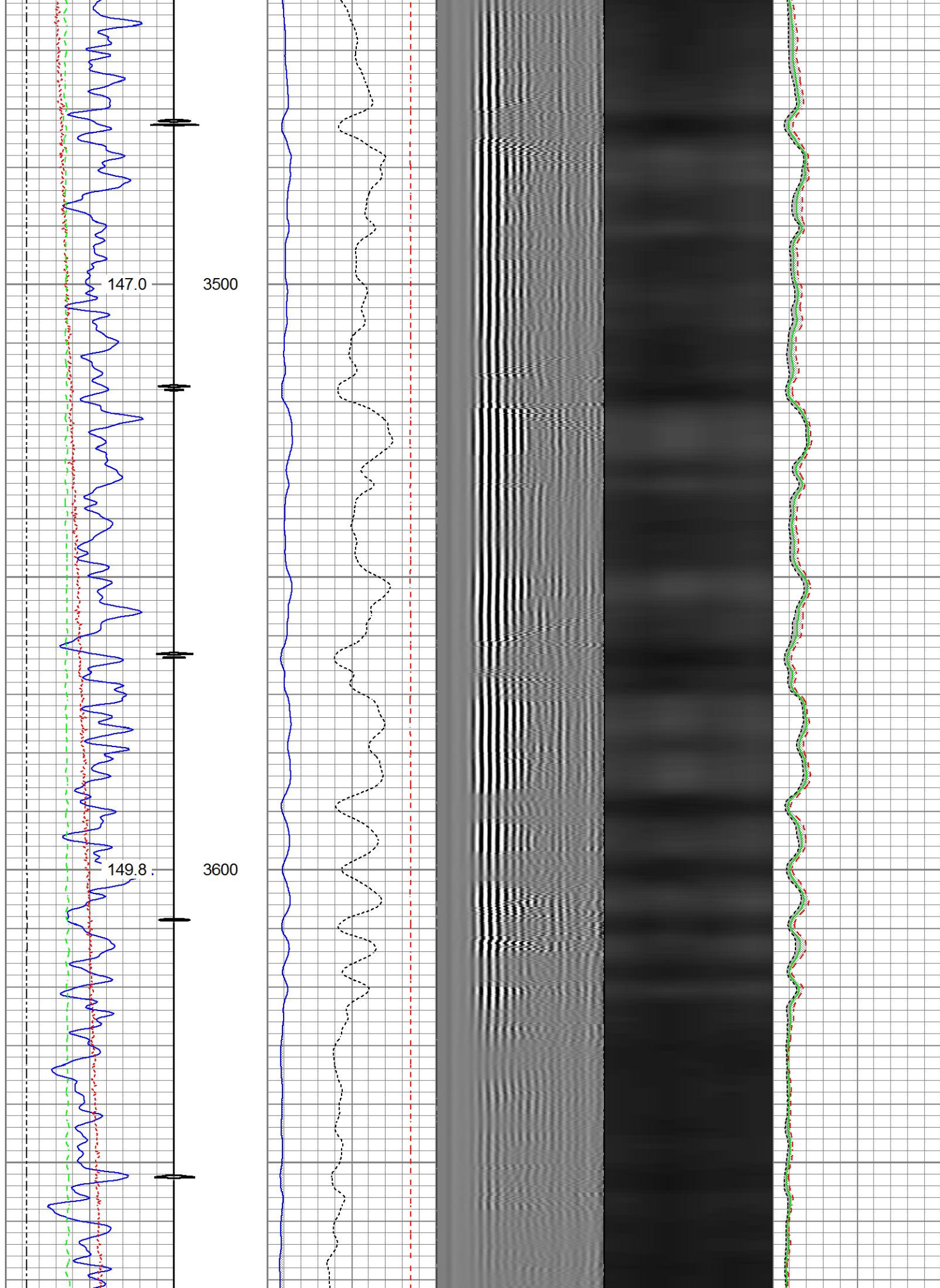


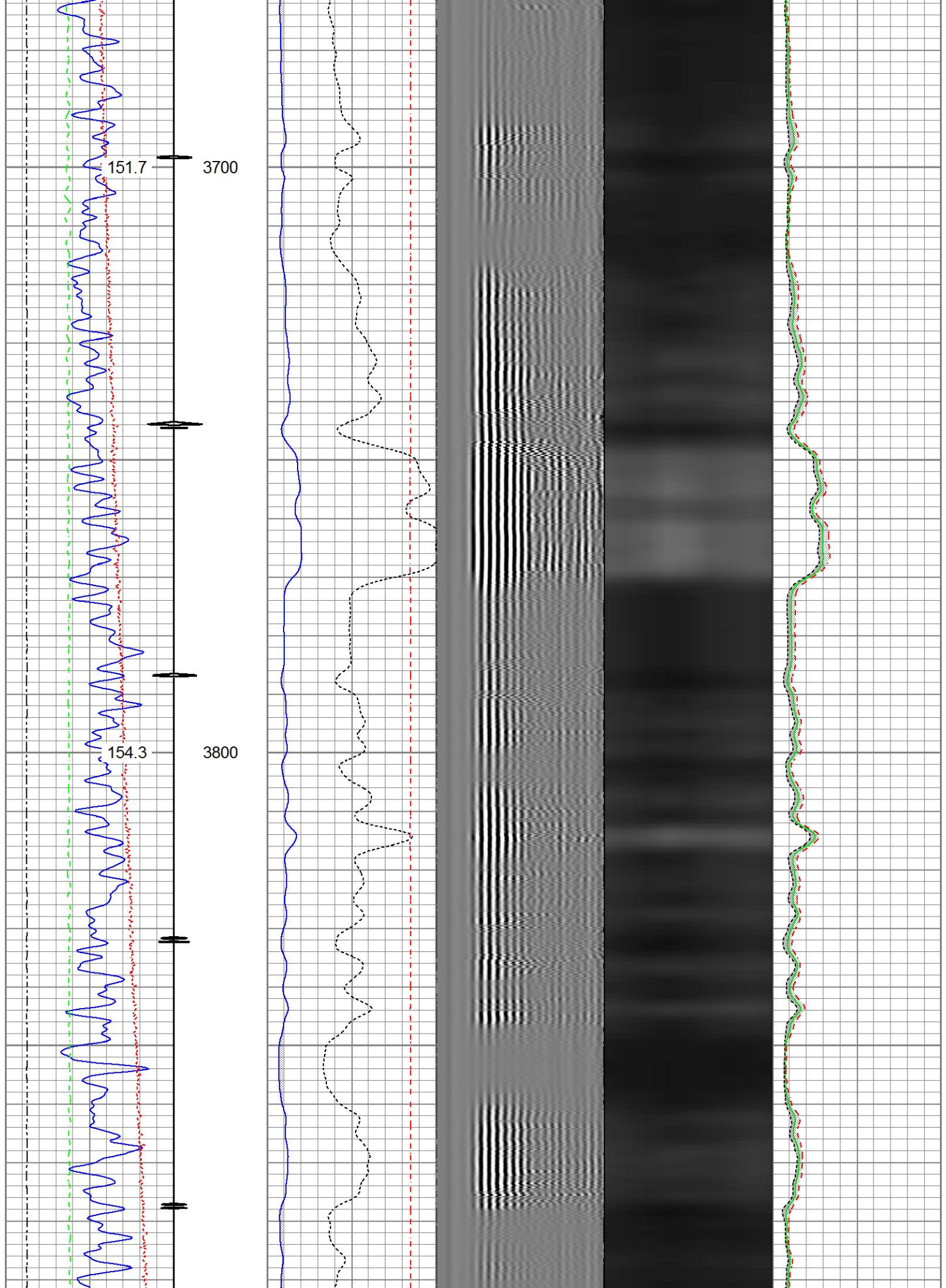


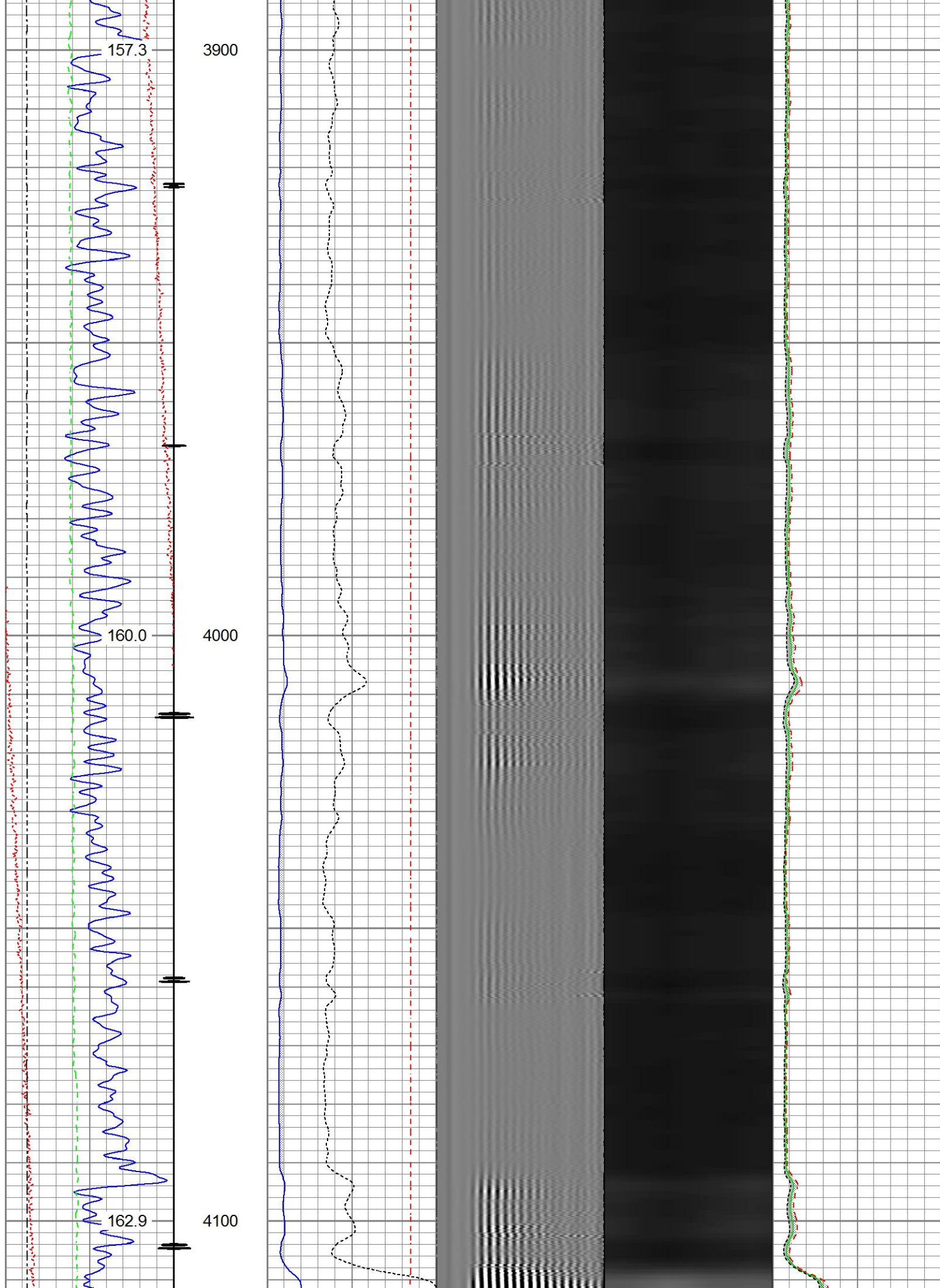


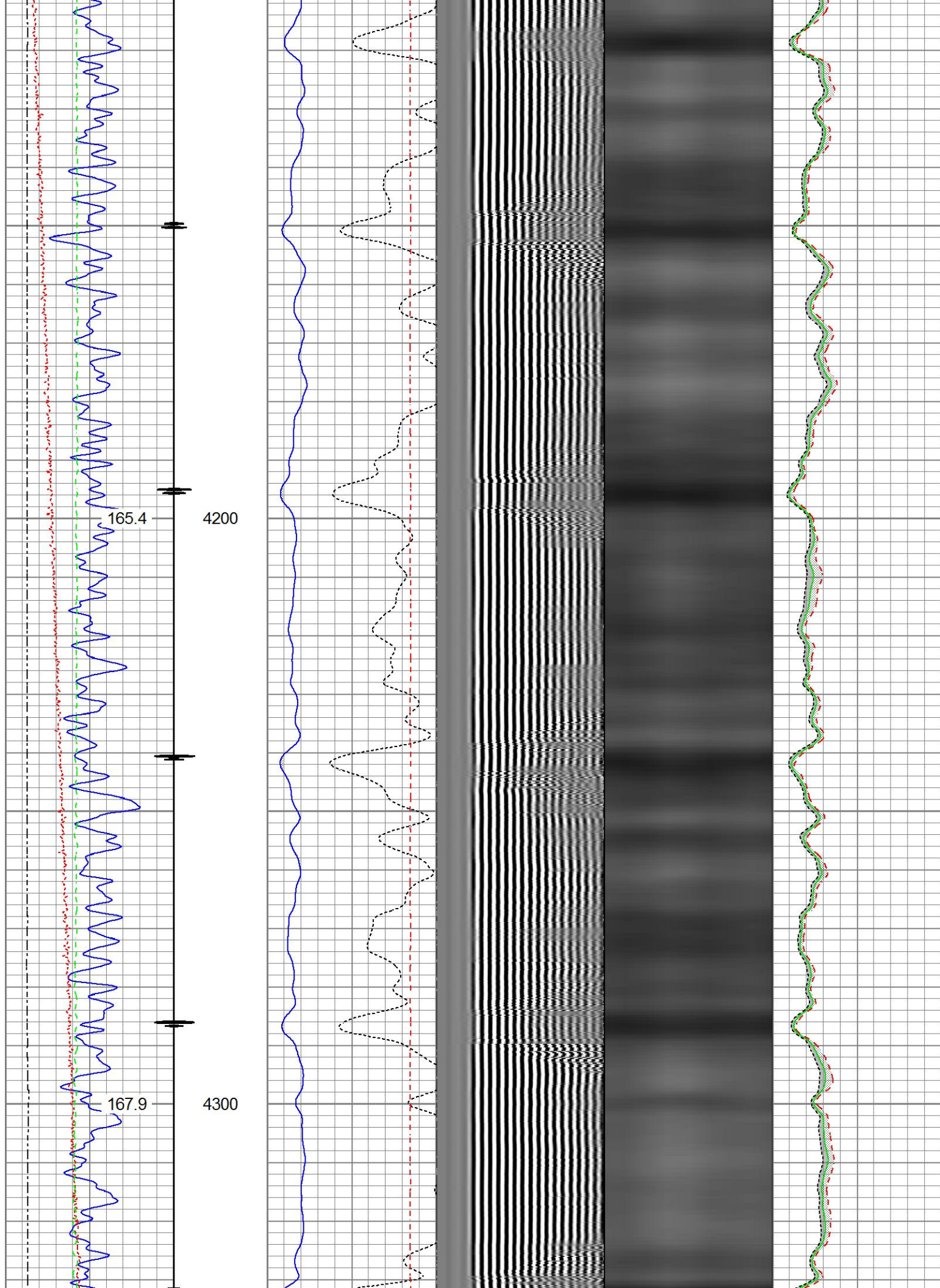


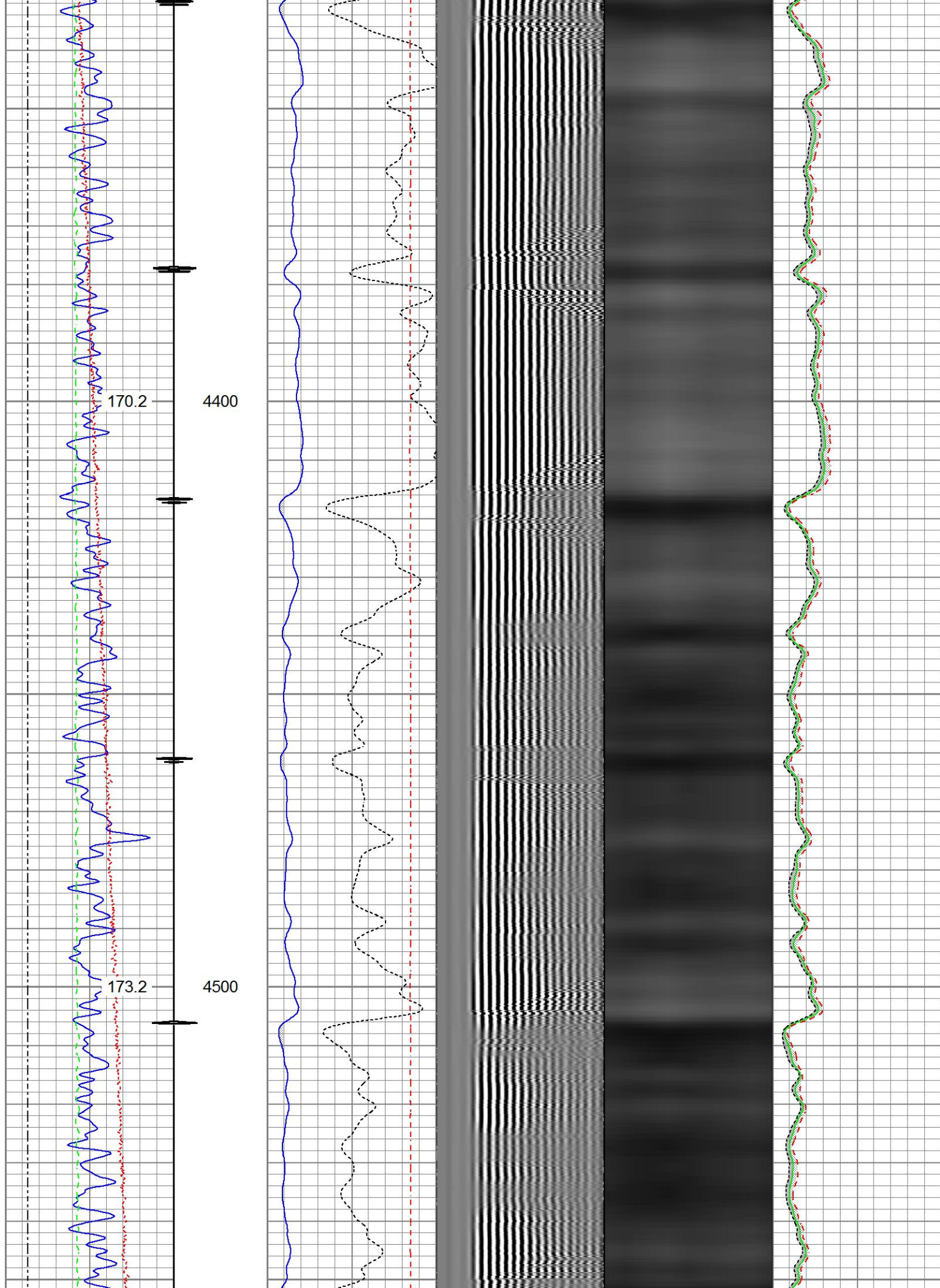


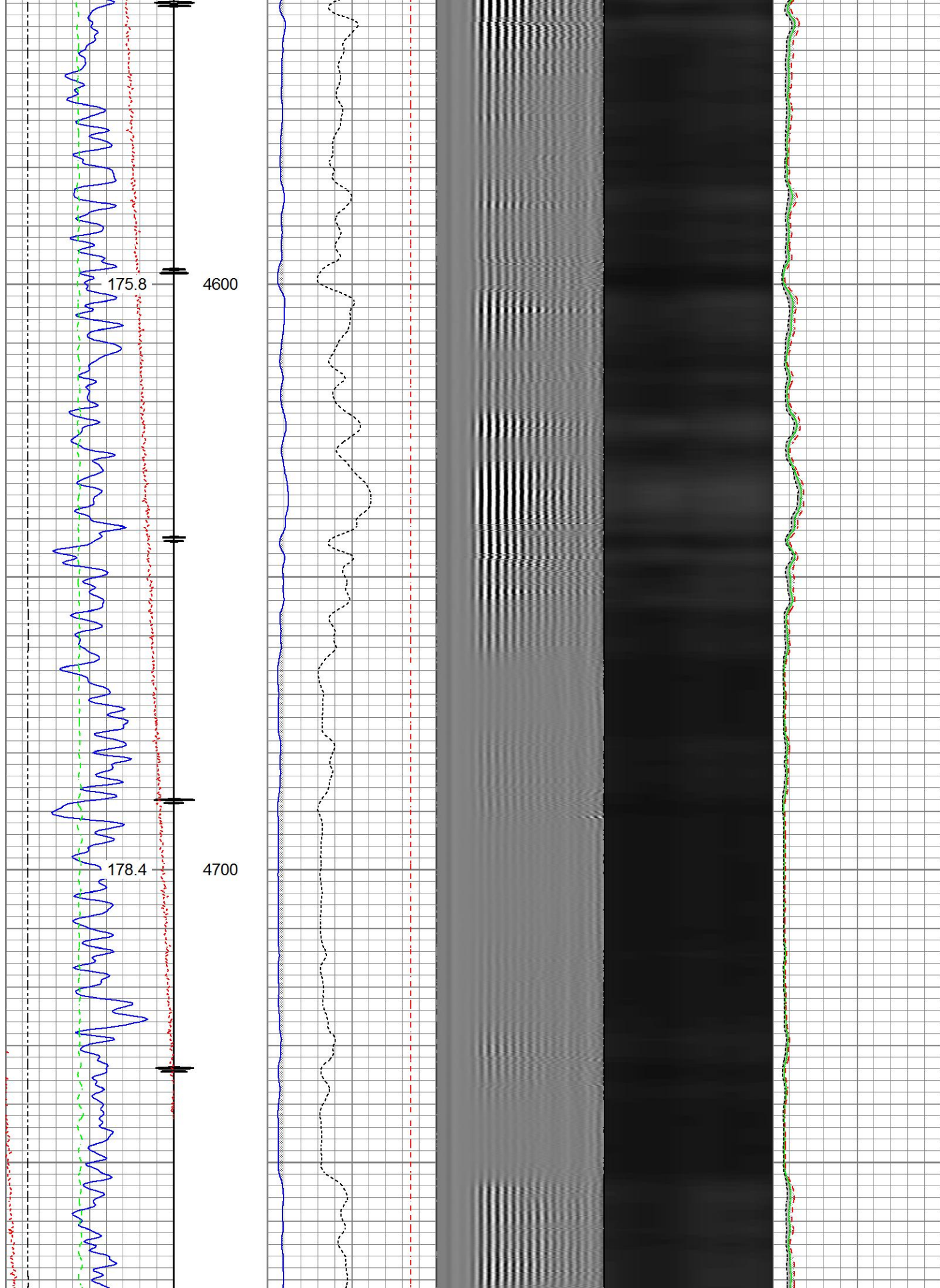


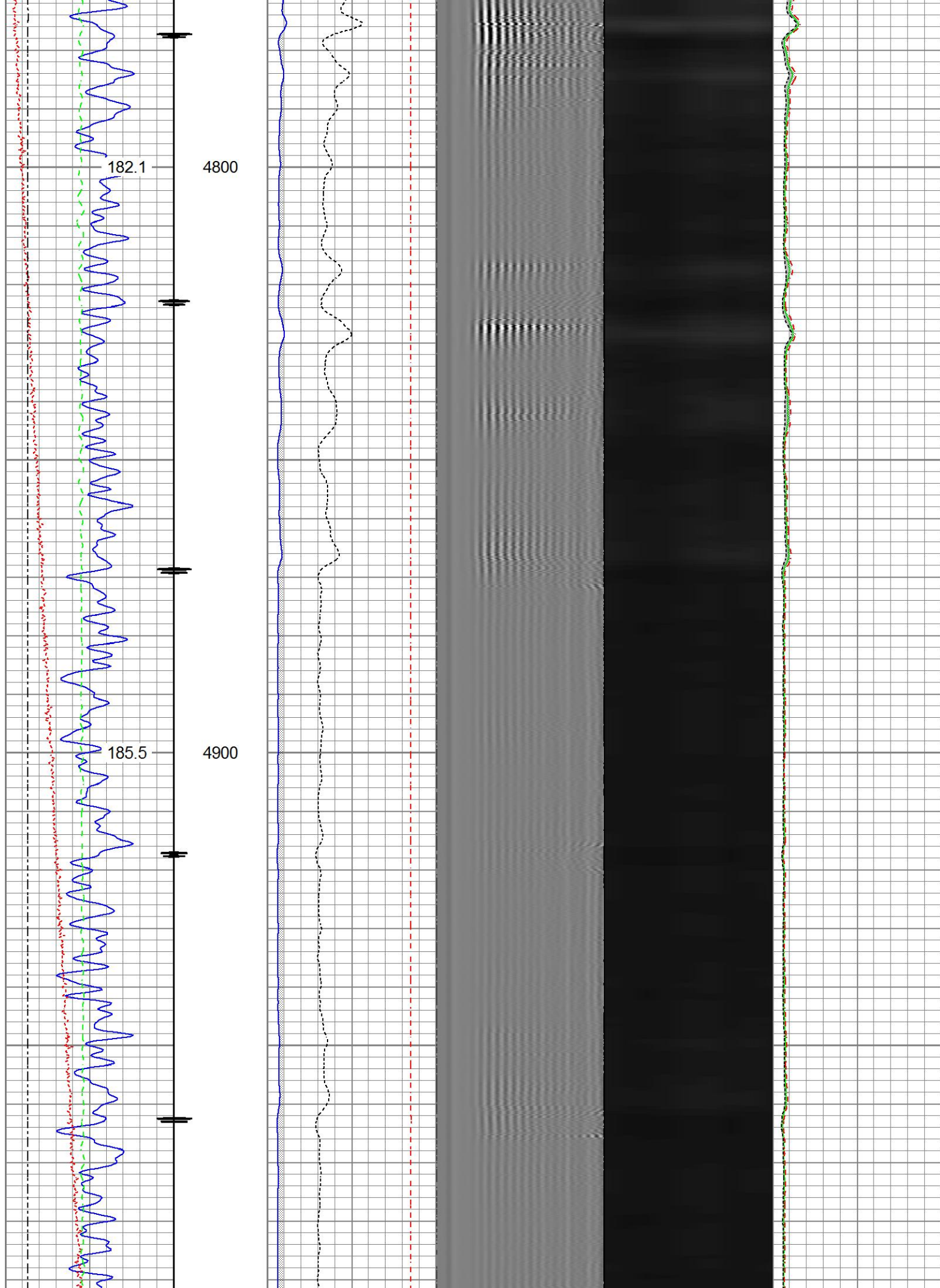


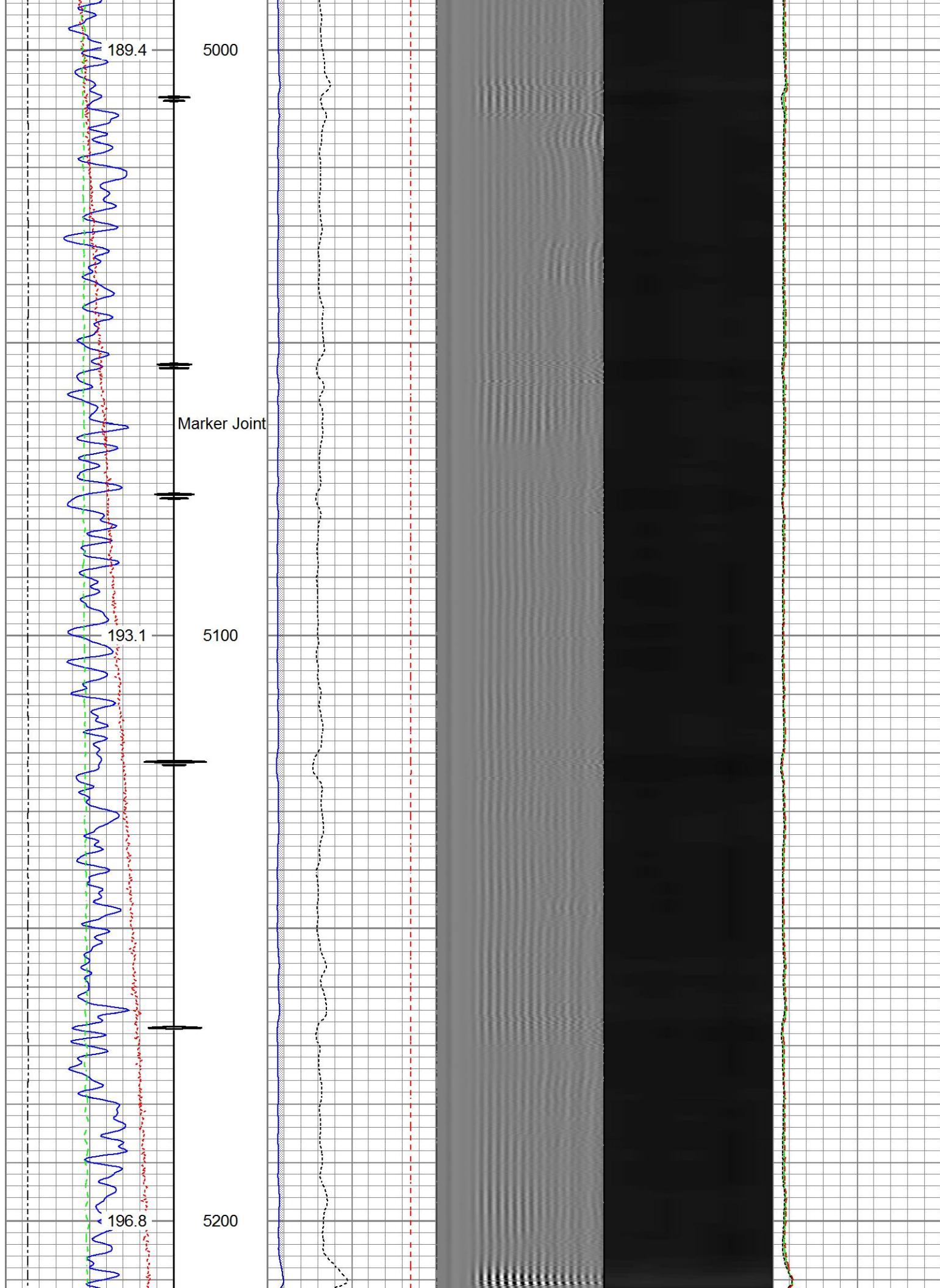


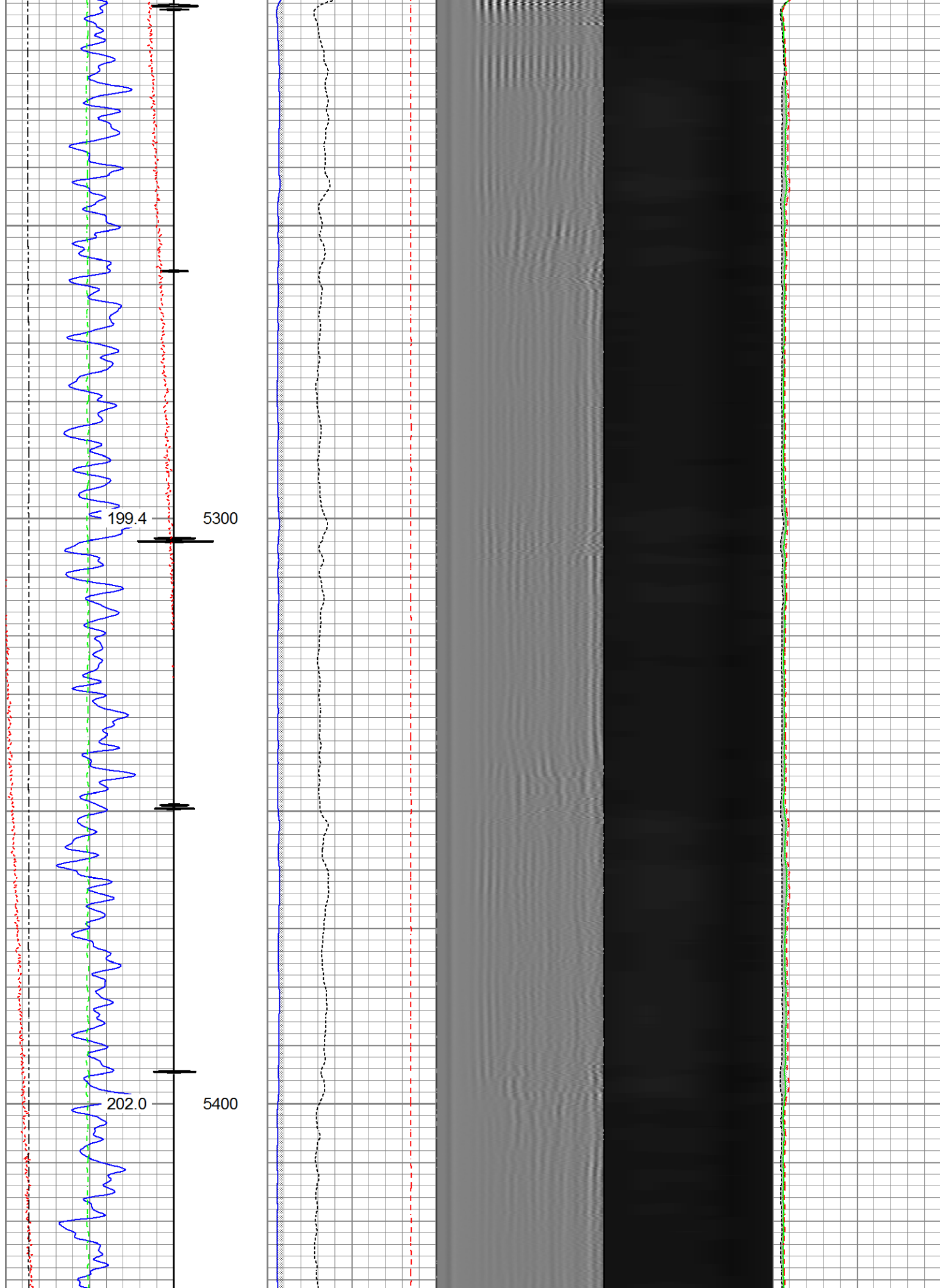


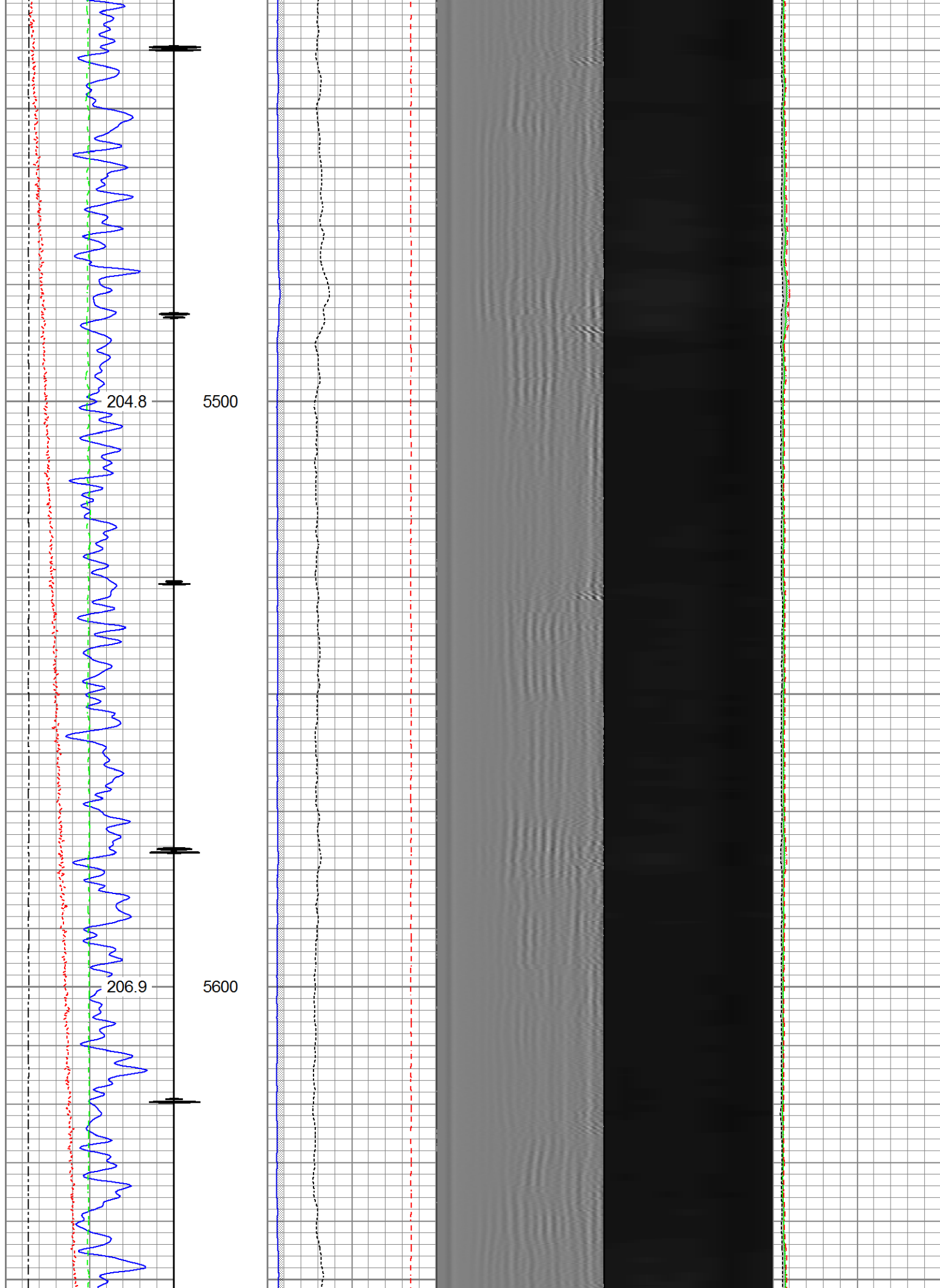


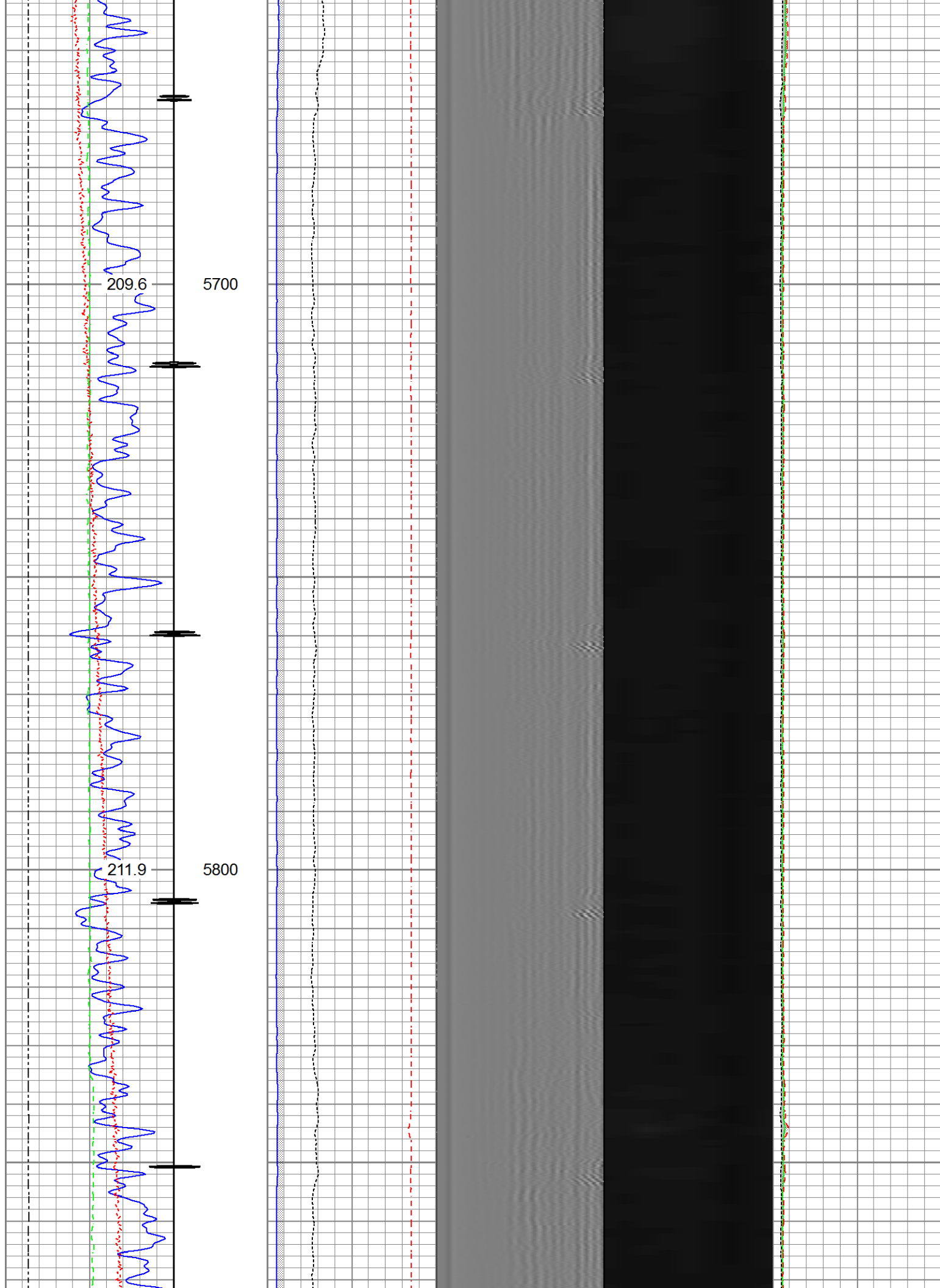


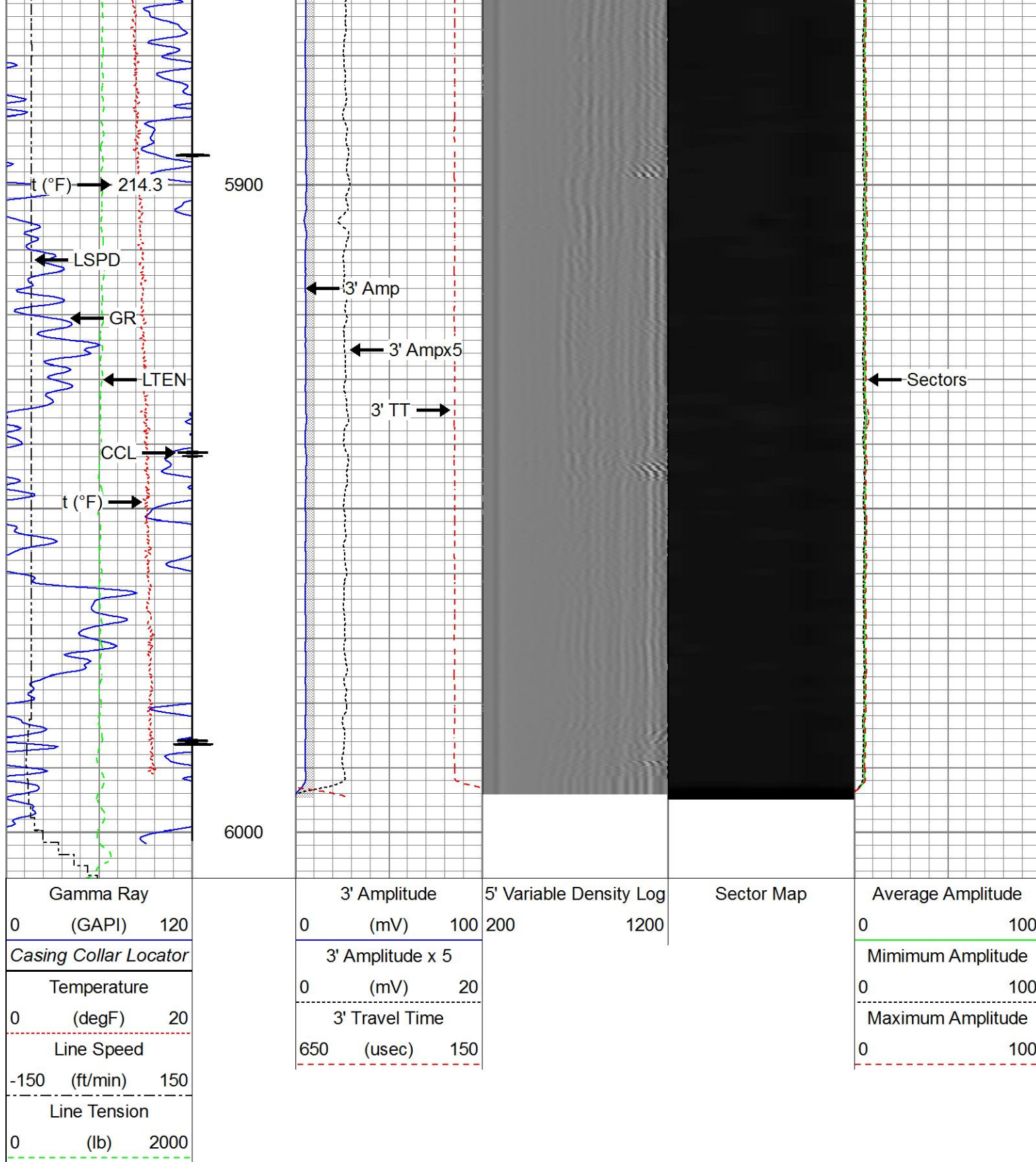










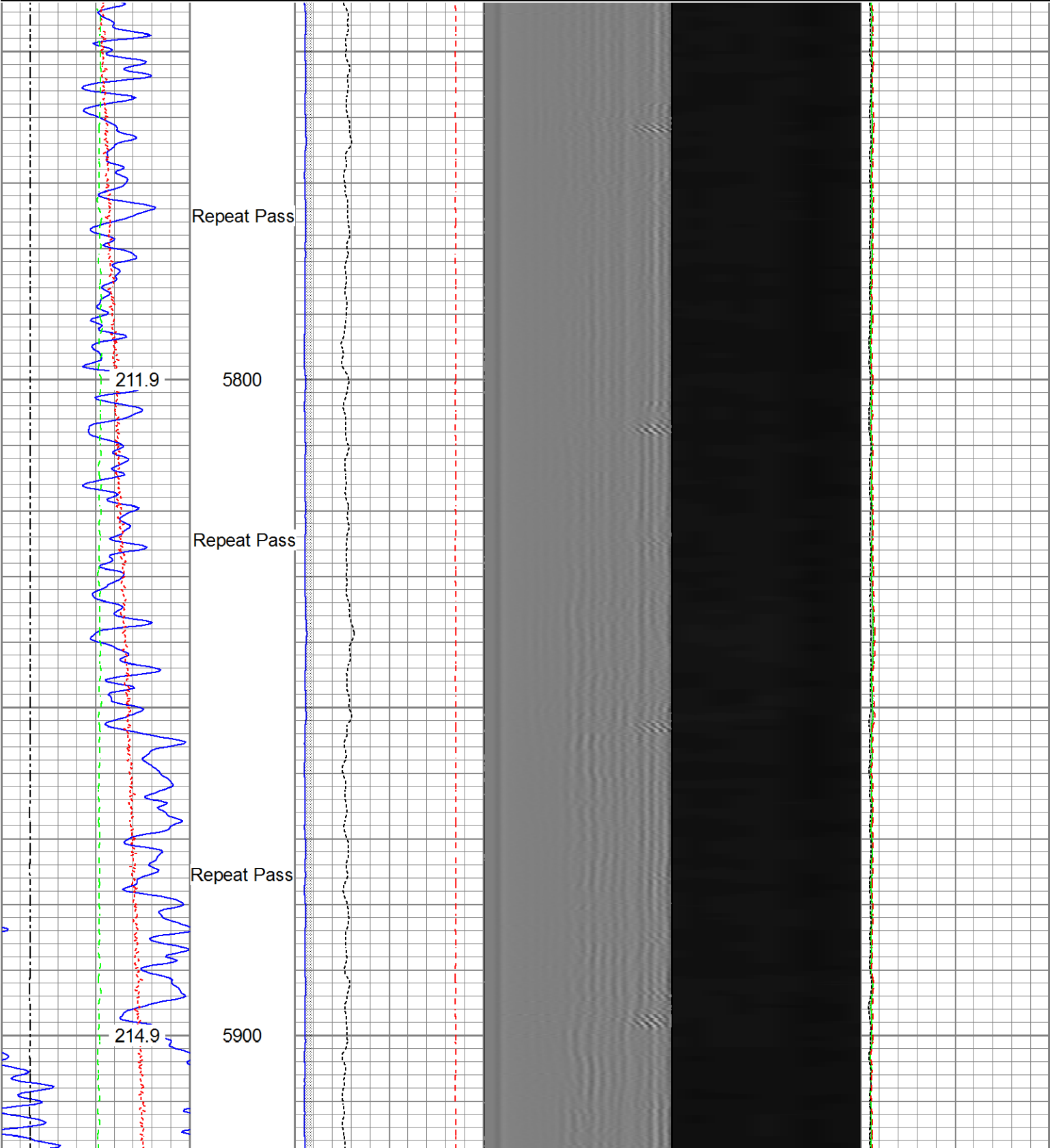


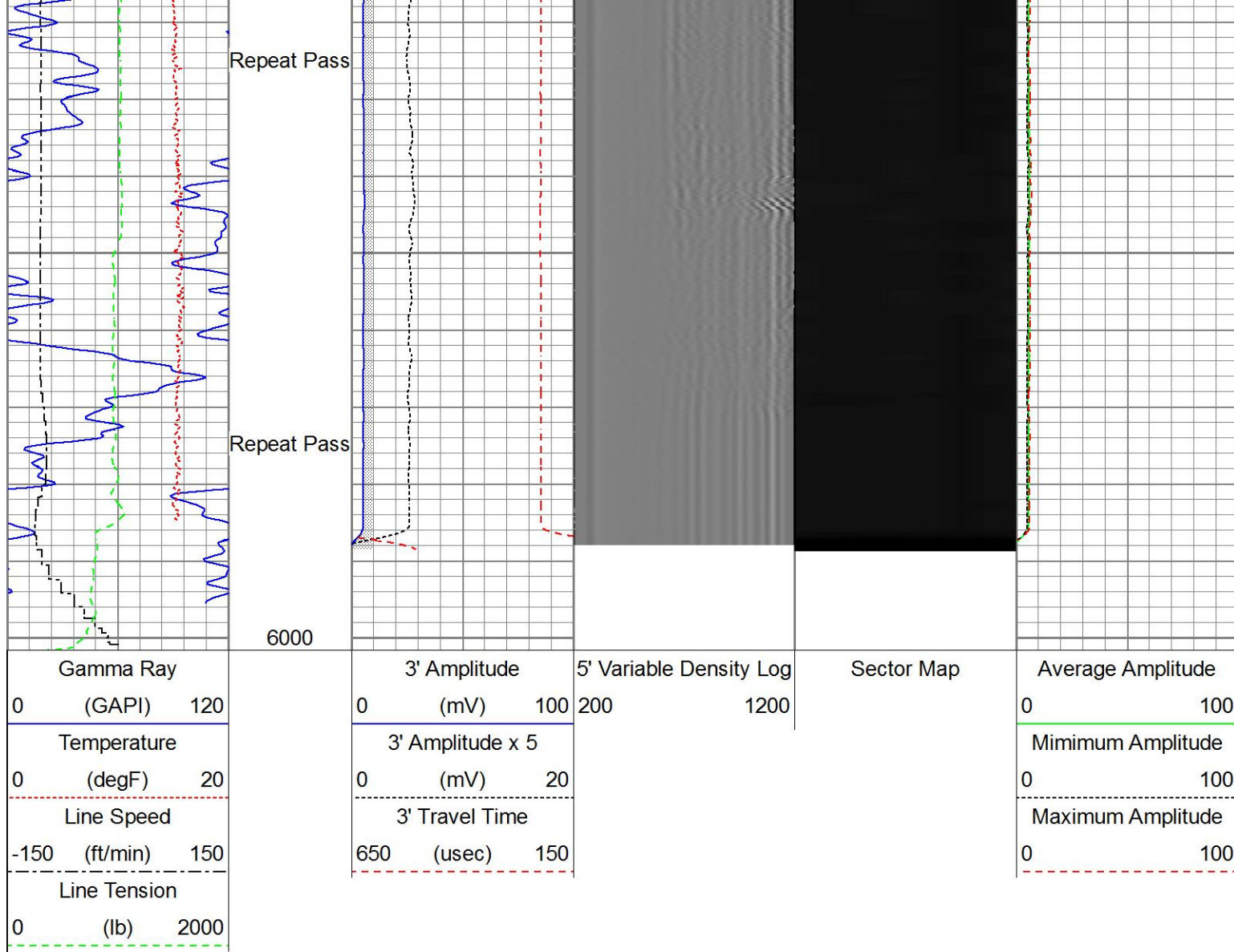
Repeat Pass

Recorded with 1500 PSI Surface Induced Pressure

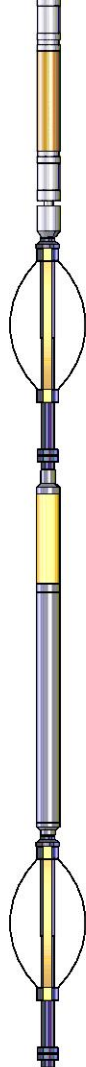
Database File 04-27-16_whiting_horsetail 07g-1809_rbl_w8.db
 Dataset Pathname Repeat
 Presentation Format fmc_radrii
 Dataset Creation Wed Apr 27 13:58:46 2016

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)
			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_EE2.88_275 Probe 2-3/4" Electric Inline Bowspring Centralizer		2.75	20.00
HeadVolt	19.51					
Temp	16.72					
WVFS8	14.55		Probe_RADII-C-P_RBT_2750 (FW1305-099.19 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe		2.75	105.00
WVFS7	14.55					
WVFS6	14.55					

WVFS5	14.55					
WVFS4	14.55					
WVFS3	14.55					
WVFS2	14.55					
WVFS1	14.55					
WVFCAL	14.55					
WVF3FT	14.55					
WVF5FT	13.55					
HEADVOLT	10.30					
						
			Probe_ELine_BowSpring_Centralizer-P Probe 2-3/4" Electric Inline Bowspring Centralizer	EE2.88.275	2.75	20.00
DCCL	6.51					
CCL	6.51					
			Probe_GR_CCL-P_CGR_2750_S (FW1214.543) Probe 2-3/4" Digital CCL / Gamma Ray Combined		2.75	55.00
GR	3.77					
			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-1809_rbl_w8.db: field/well/run1/Main 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-1809_rbl_w8.db
Dataset Pathname	Main
Dataset Creation	Wed Apr 27 14:03:36 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 Wed Apr 27 09:52:42 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.017	0.582	0.800	71.921	125.877	-1.364
CAL	0.389	0.610				
5'	-0.001	0.568	0.800	71.921	124.925	0.956
SUM						
S1	0.015	0.577	0.000	100.000	178.238	-2.759
S2	0.016	0.575	0.000	100.000	178.798	-2.896
S3	0.016	0.570	0.000	100.000	180.337	-2.860
S4	0.017	0.576	0.000	100.000	178.994	-3.046
S5	0.018	0.579	0.000	100.000	178.257	-3.151
S6	0.017	0.581	0.000	100.000	177.178	-2.978
S7	0.015	0.584	0.000	100.000	175.669	-2.642
S8	0.014	0.586	0.000	100.000	174.856	-2.519

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	
	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-1809
Field Wildcat
County Weld
State Colorado