



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.				
Well	Sunflower 7C-17HZ				
Field	Wattenberg				
County	Weld				
State	Colorado				
Company	Kerr-McGee Oil & Gas Onshore, L.P.				
Well	Sunflower 7C-17HZ				
Field	Wattenberg				
County	Weld	State	Colorado		
Location:	API # : 05-123-42071		Other Services JB/GR CNL		
SEC 8		TWP 2N	RGE 65W		
Permanent Datum	Ground Level	Elevation	4901'	Elevation	
Log Measured From	Kelly Bushing	20FT		K.B. 4921' D.F. 4920' G.L. 4901'	
Drilling Measured From	Kelly Bushing				

Date	11-Jan-2016
Run Number	One
Depth Driller	12770 FT
Depth Logger	7300 FT
Bottom Logged Interval	7292 FT
Top Log Interval	Surface
Open Hole Size	7.875"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	249°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	11:14 A.M.
Equipment Number	HD-0325
Location	Fort Lupton, CO
Recorded By	J. Morrison
Witnessed By	Mario Torres

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	J55	Surface	1854 FT		
Intermediate #1							
Intermediate #2							
Liner	5 1/2	17	HCP-110	Surface	12757 FT		
Marker Joint							

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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 6612 FT  
Adjusted log 6 FT to correlate with Marker Joint  
Marker Joint at 6612 FT - 6634 FT  
Log ran from 7300 FT to surface  
Log ran with 2800 PSI surface induced pressure  
Logging tools were clean and free of any debris upon completions of operations

Thank you for choosing FMC Technologies Surface Integrated Services.

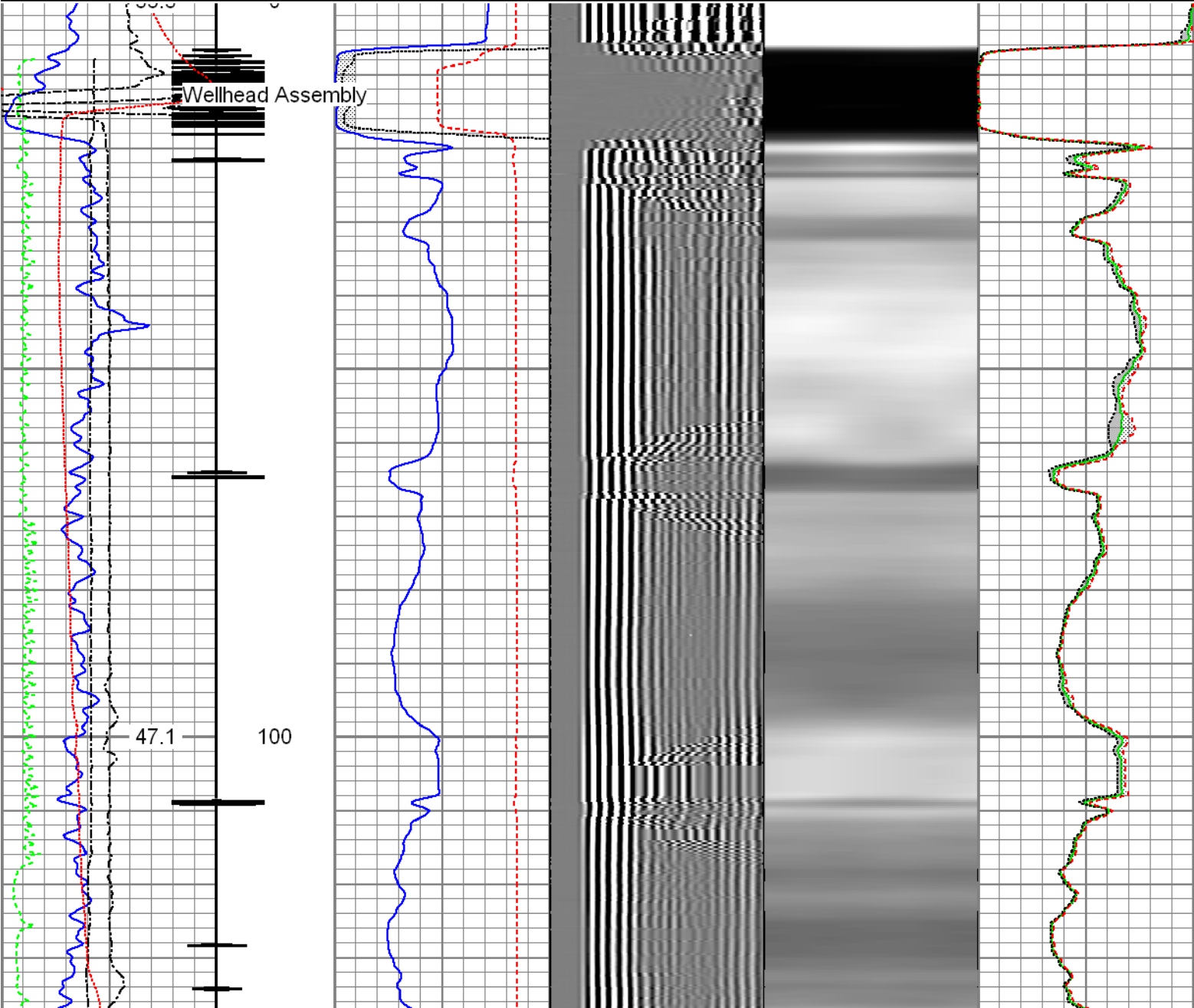


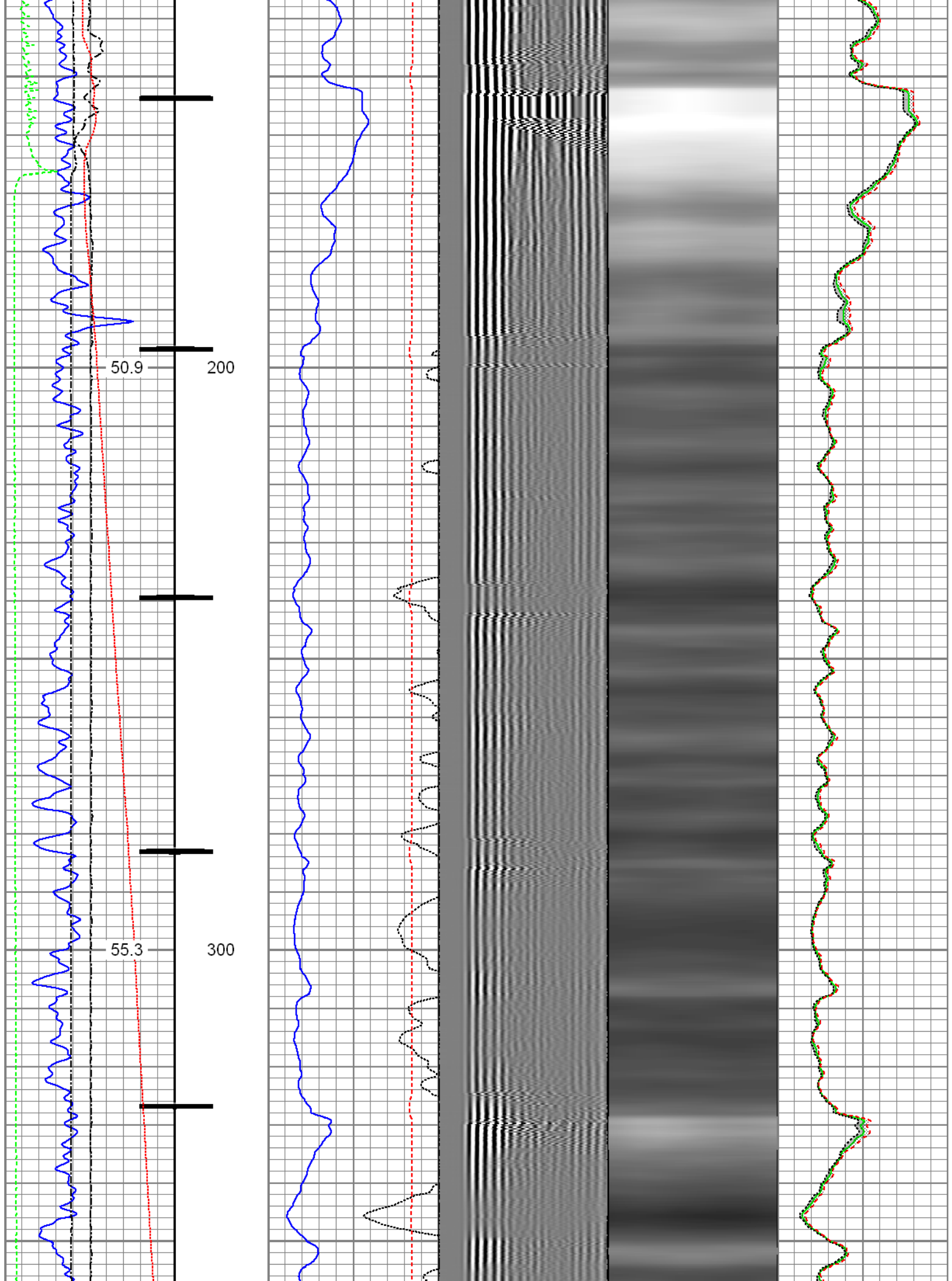
Main Pass

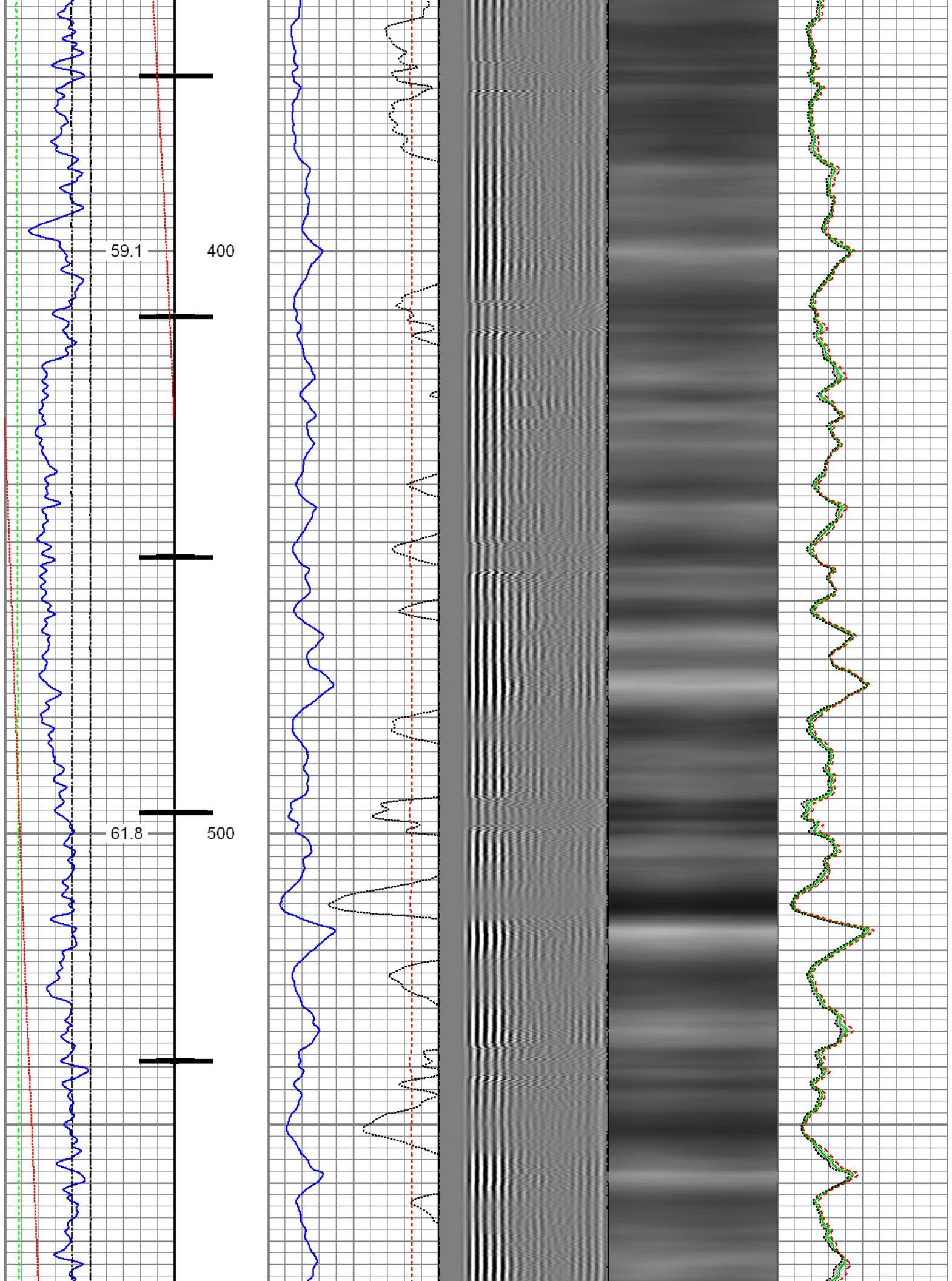
Recorded with 2800 PSI Surface Induced Pressure

Database File: 0512342071\_anadarko\_sunflower 7c-17hz\_01-11-16\_rbl.db  
Dataset Pathname: main.1  
Presentation Format: rbt004  
Dataset Creation: Tue Jan 12 15:19:44 2016 by Calc SCH 120430  
Charted by: Depth in Feet scaled 1:240

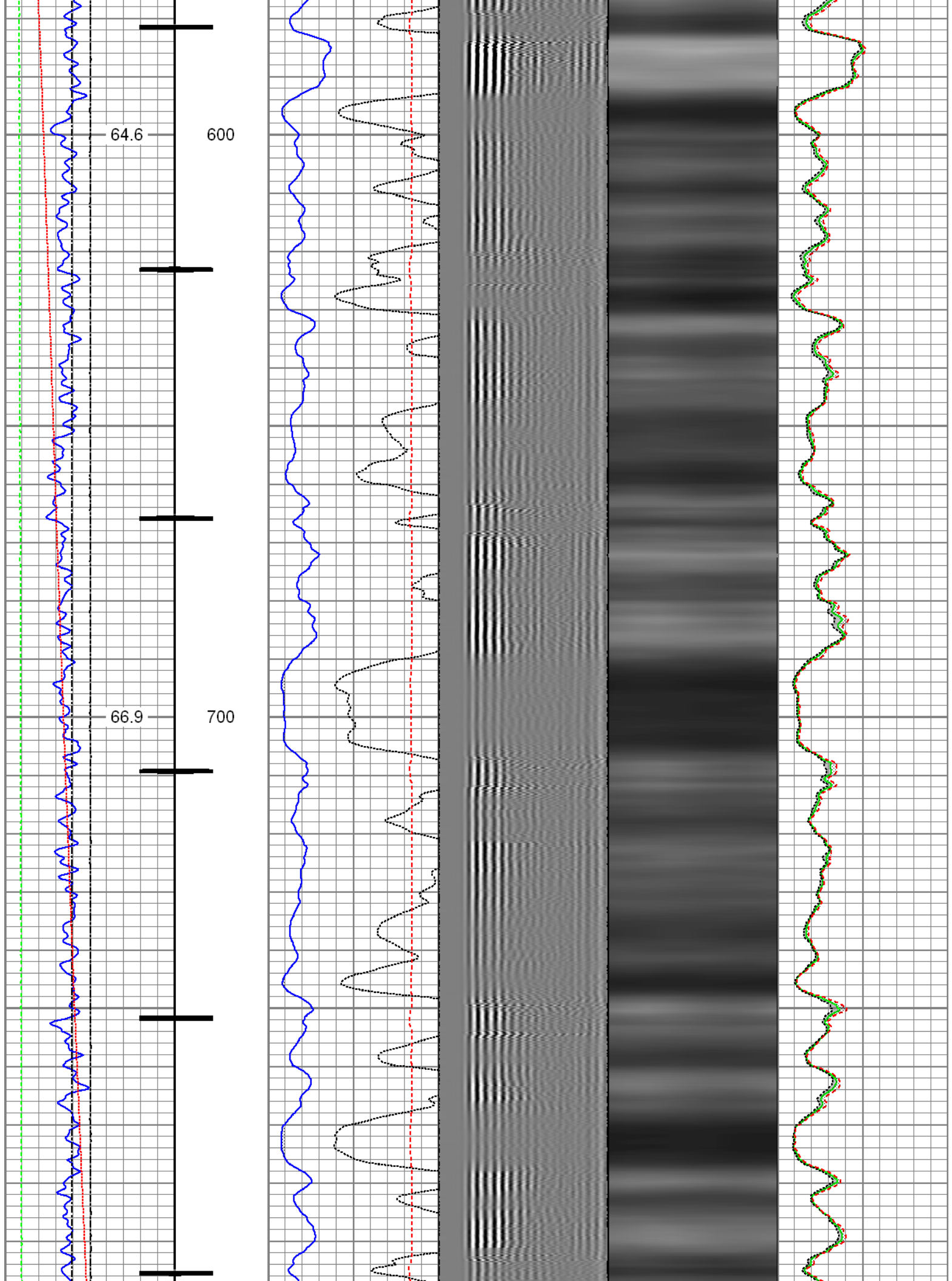
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				

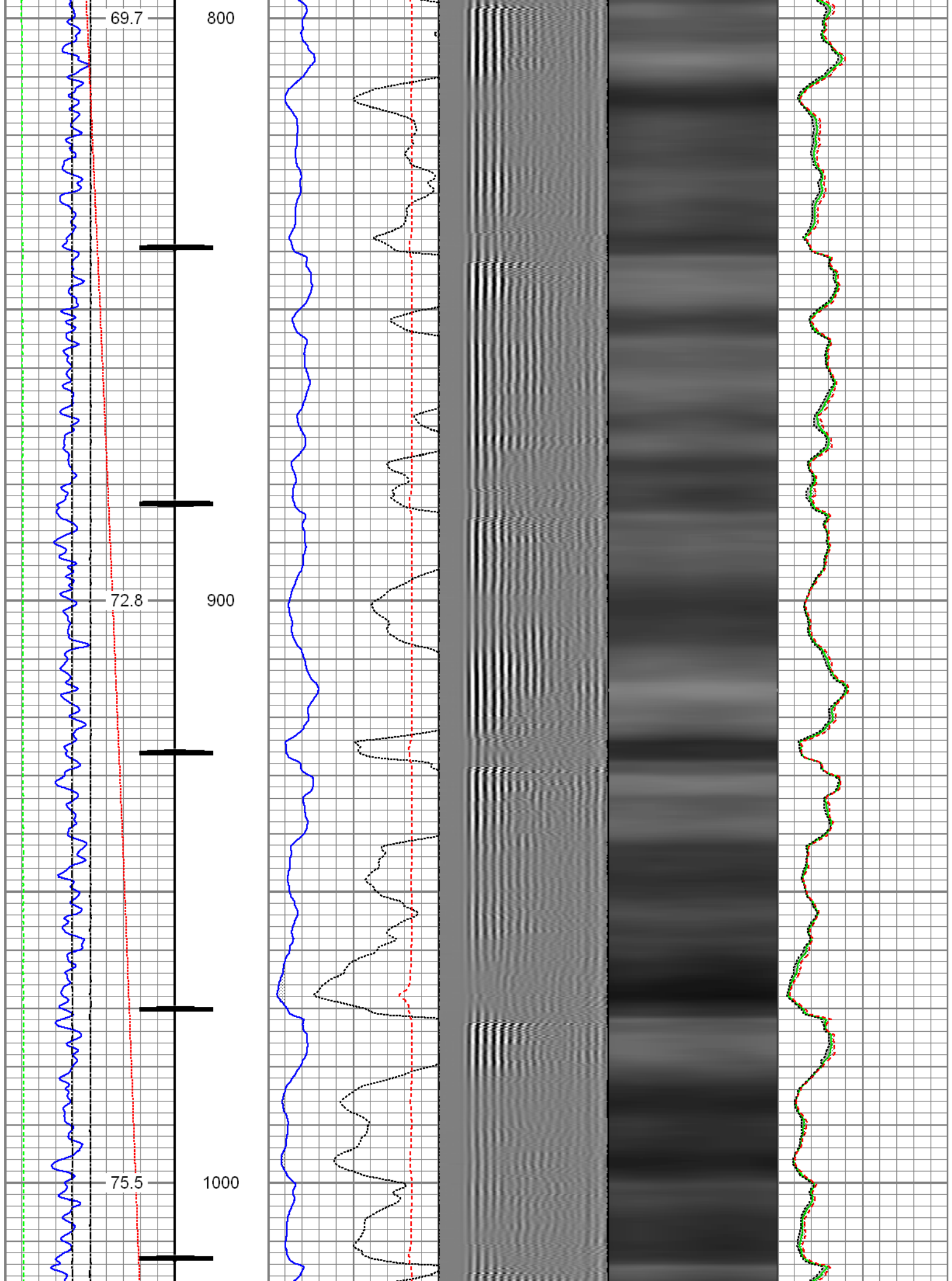


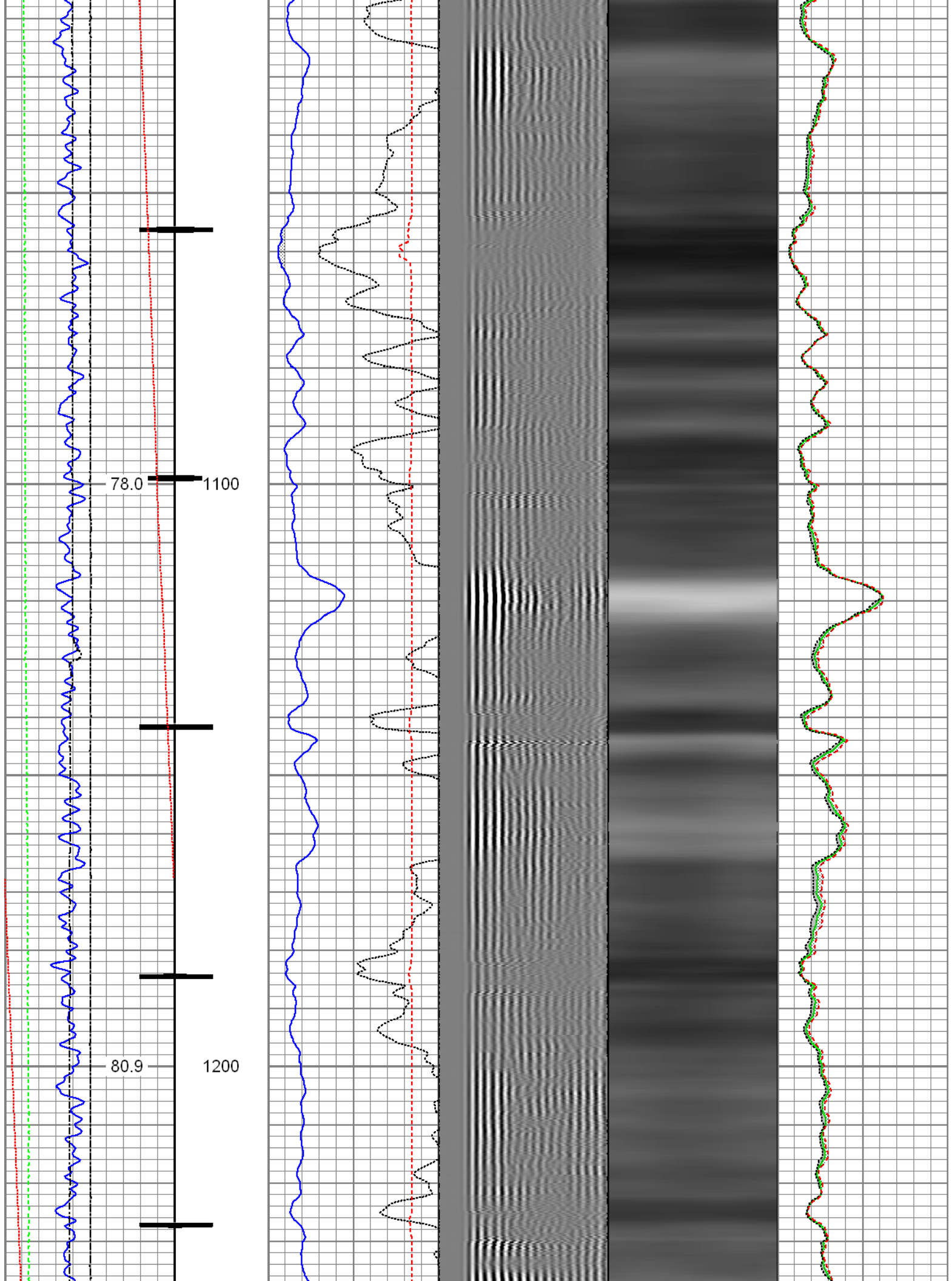


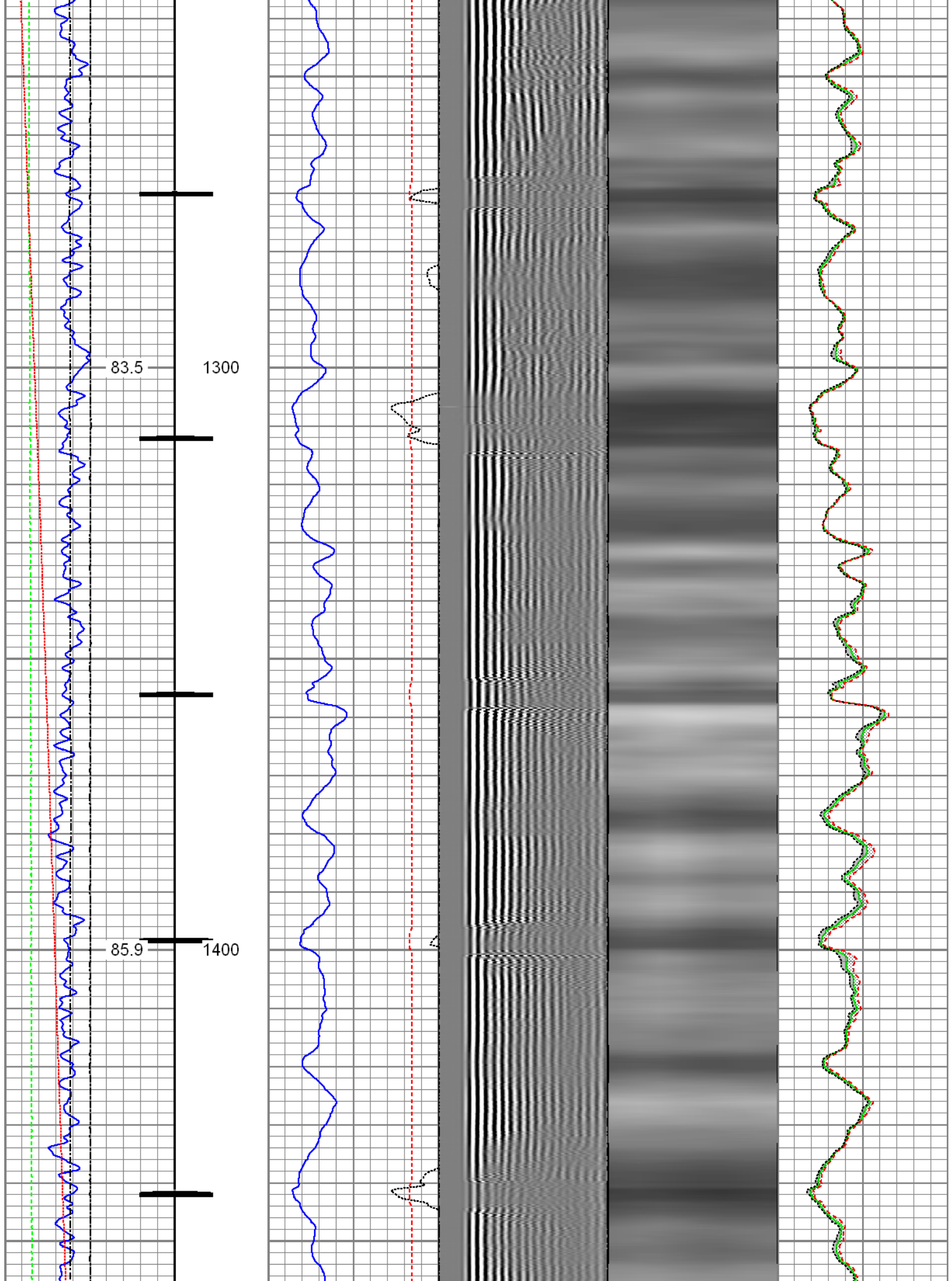




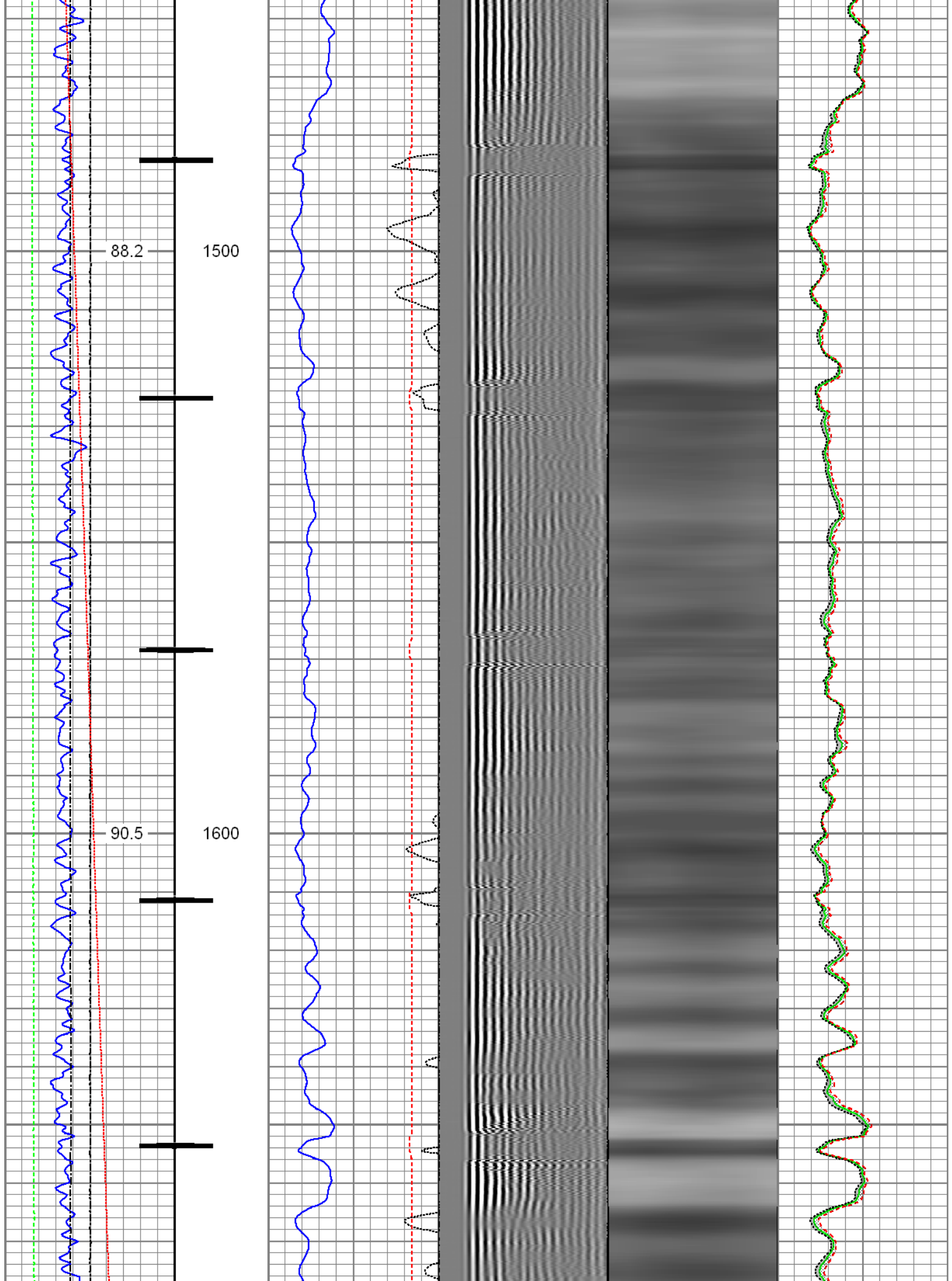


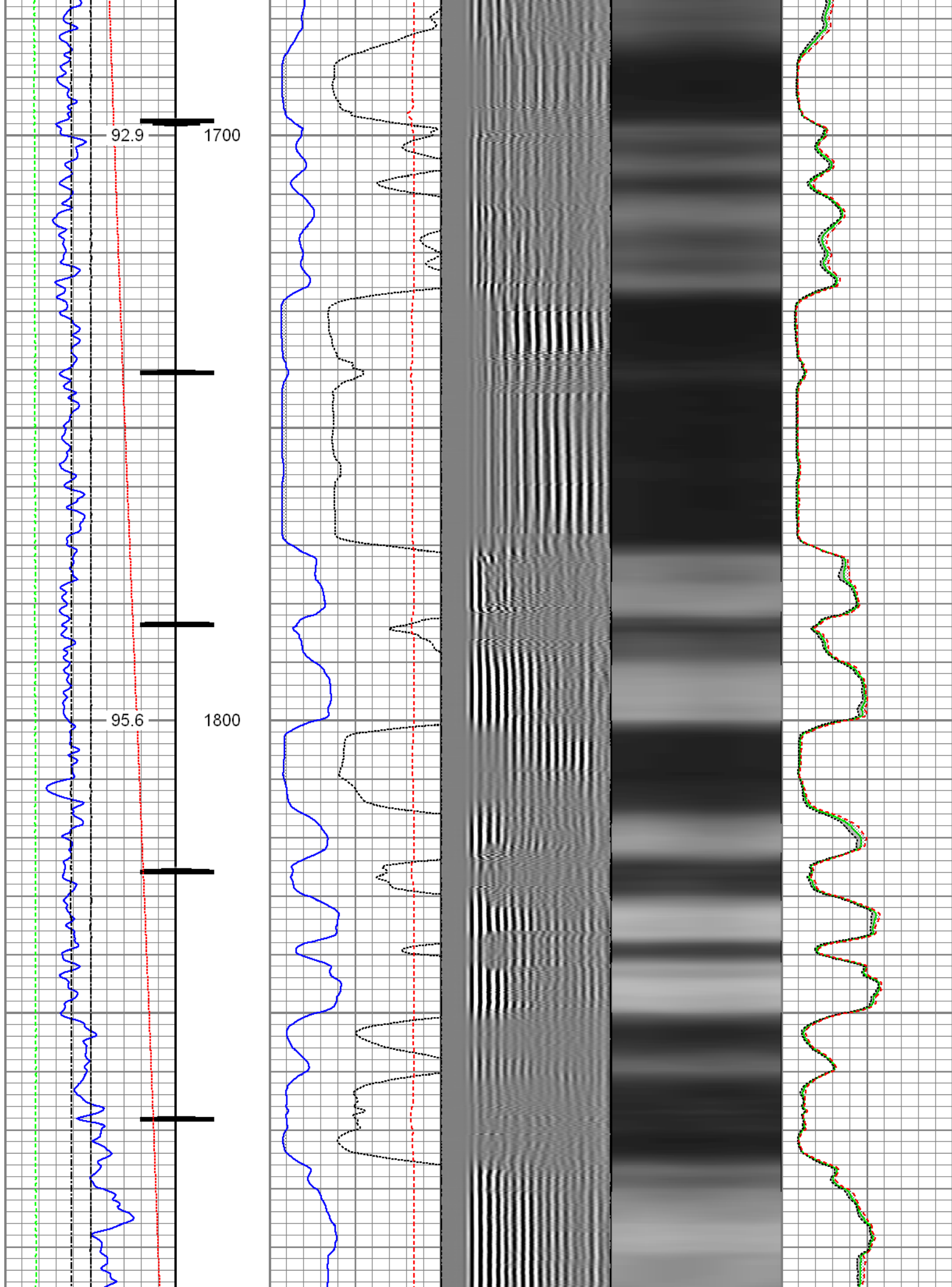


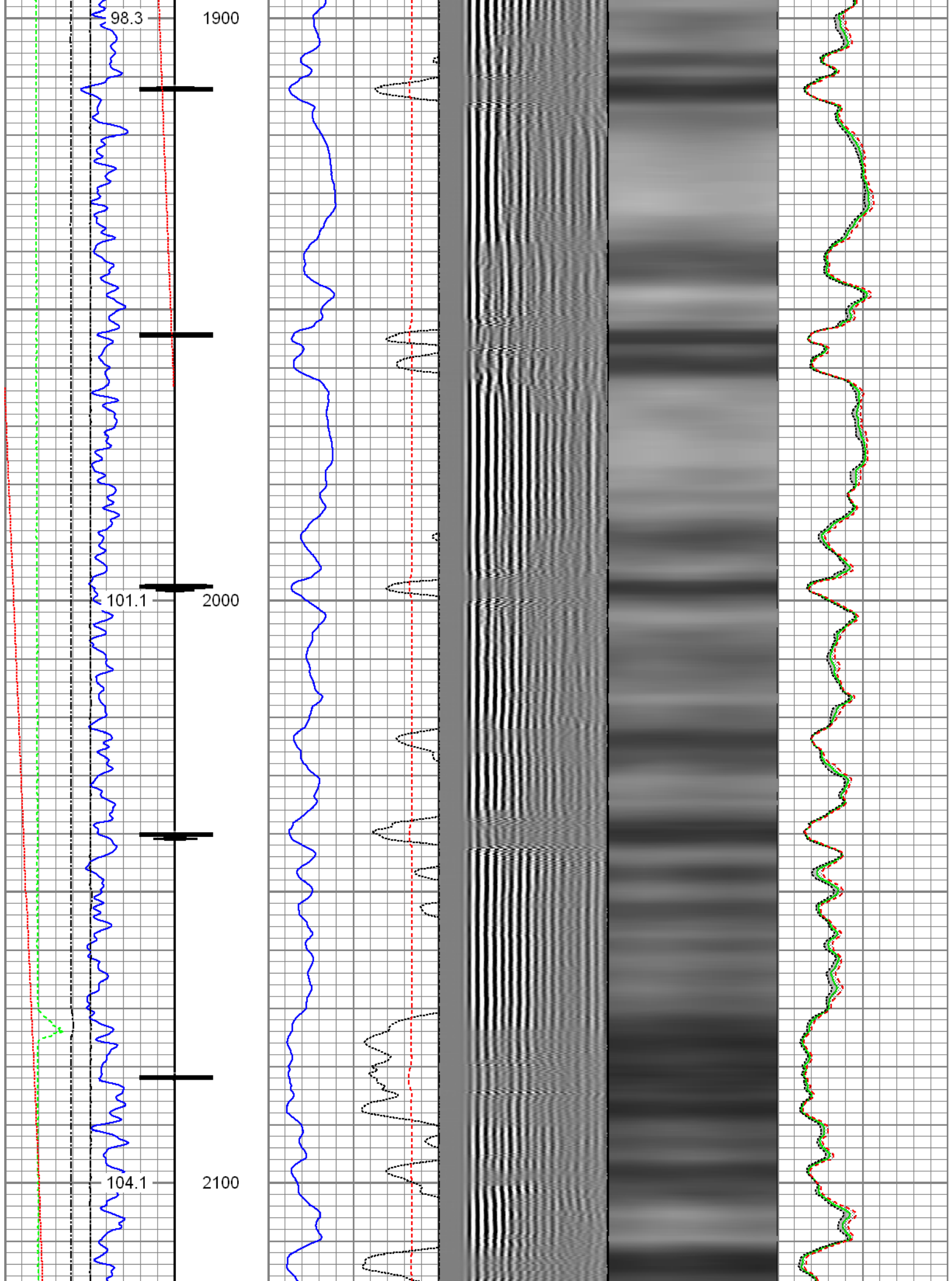


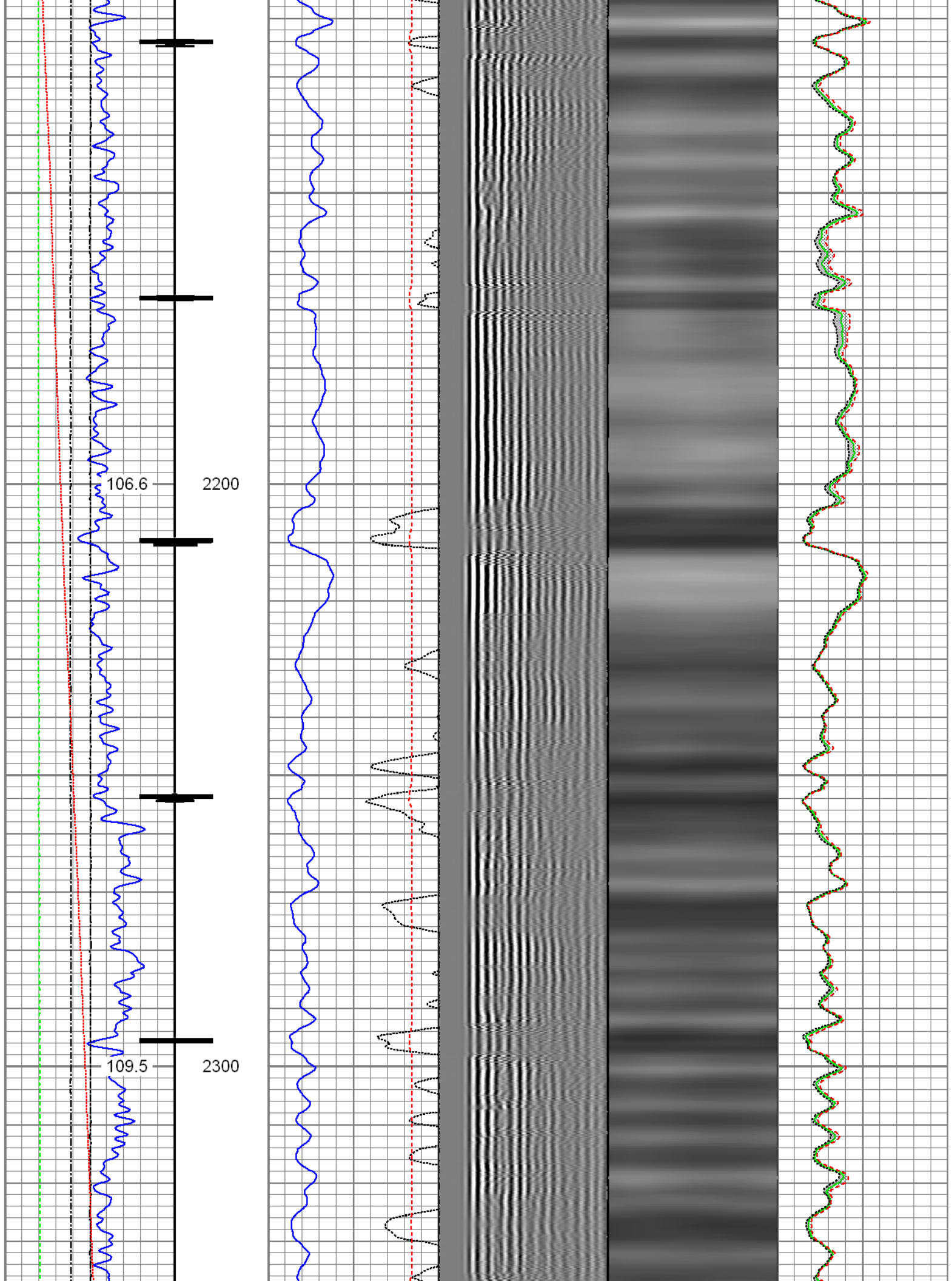




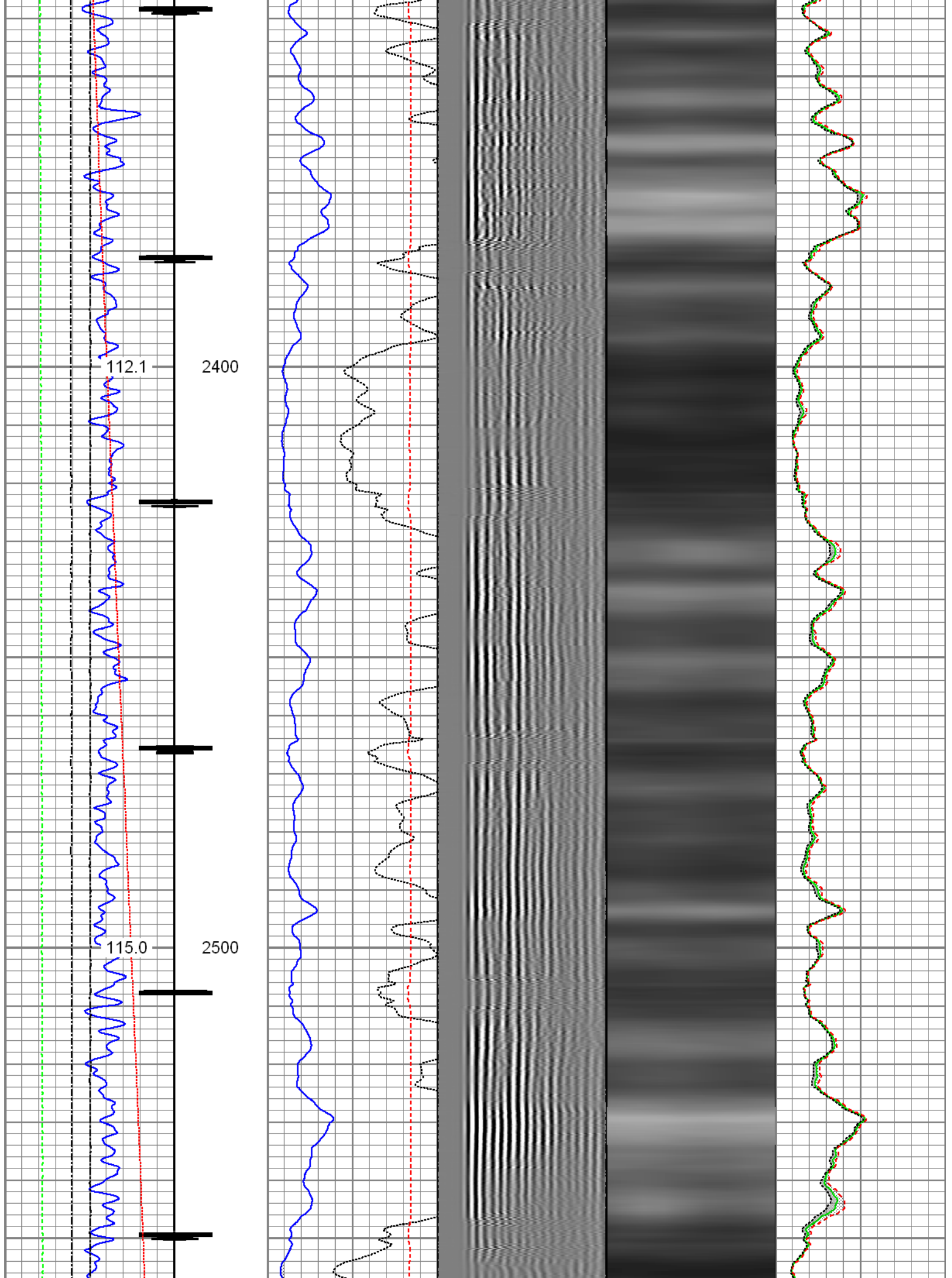


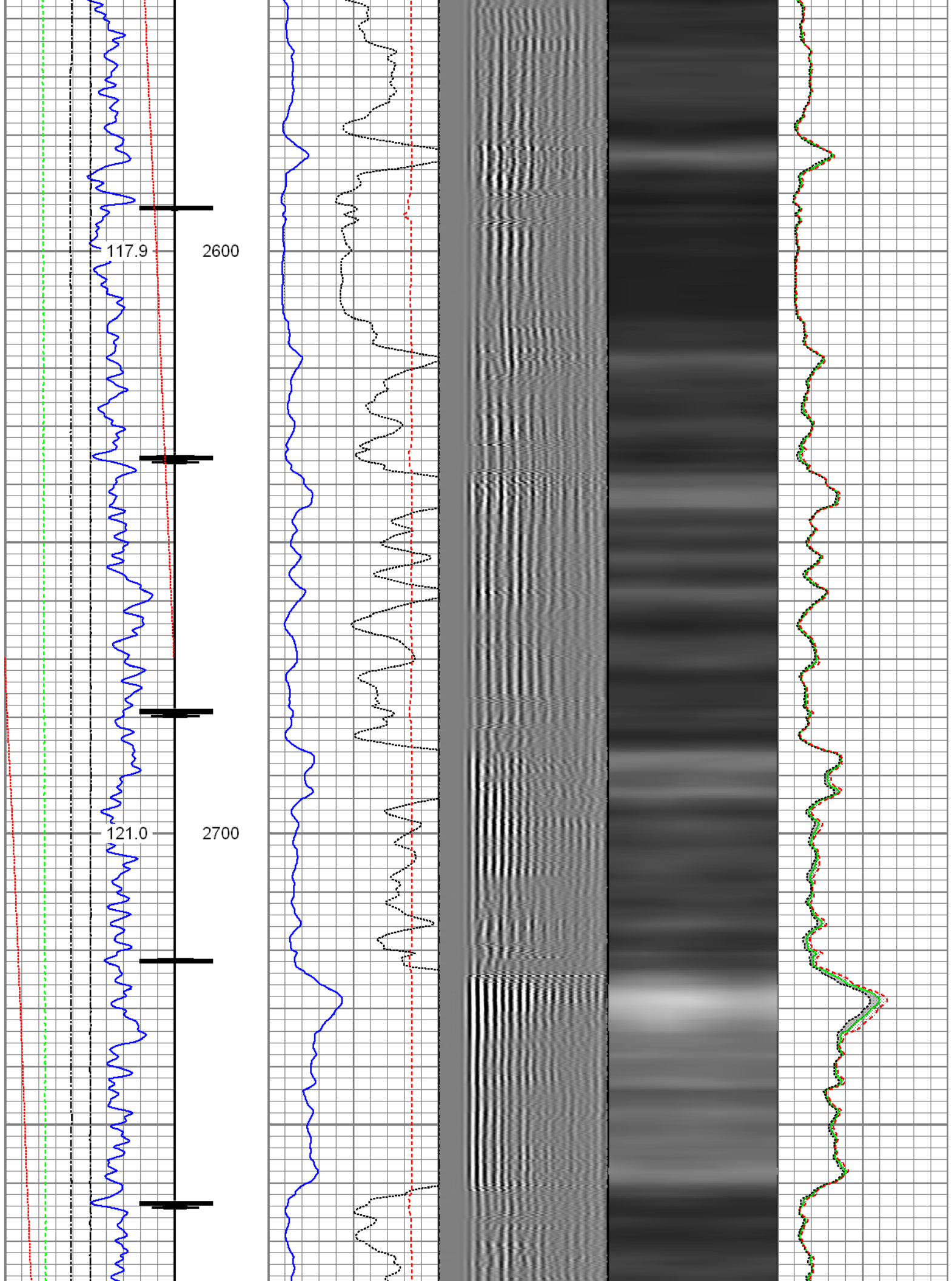


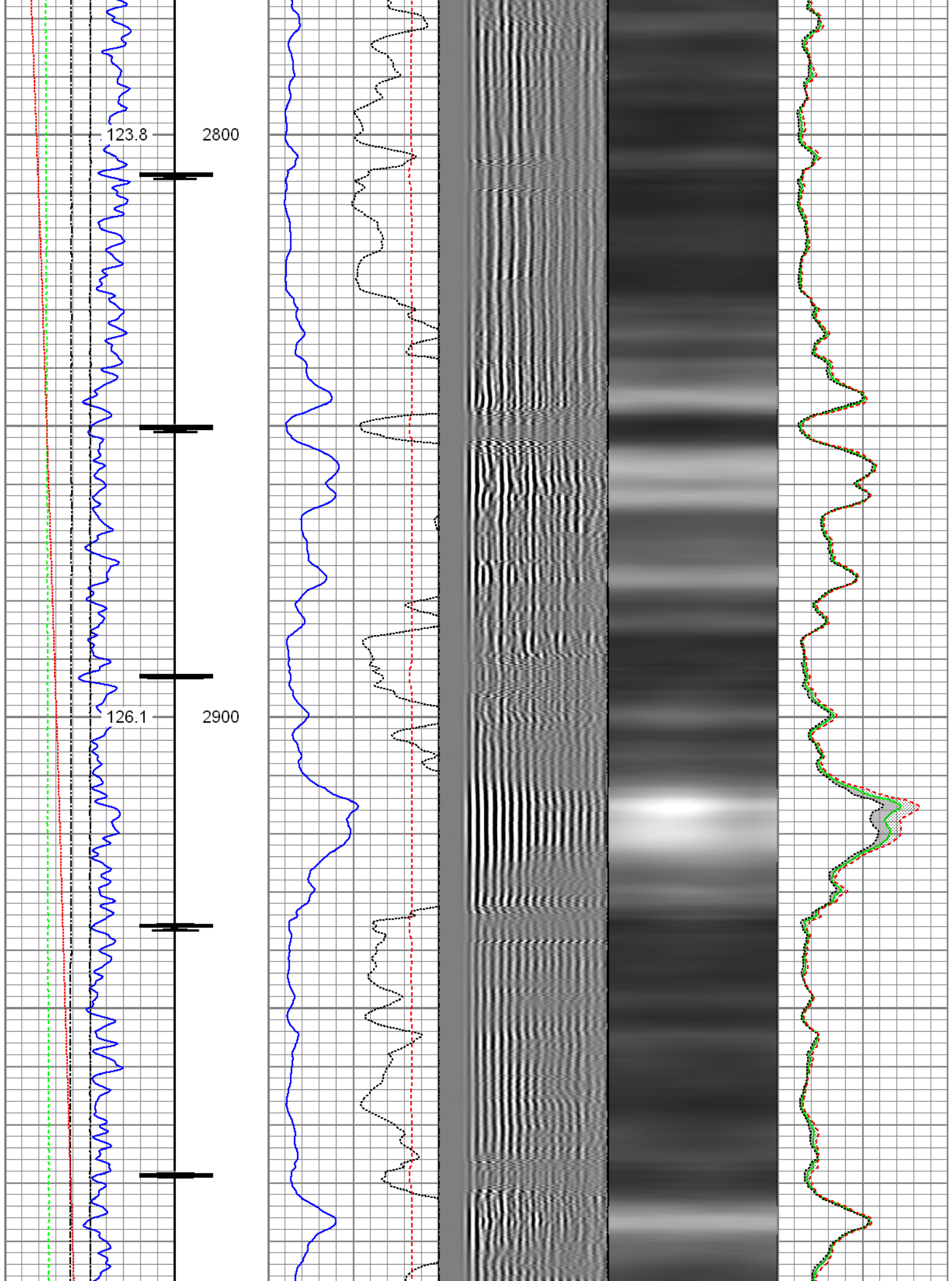


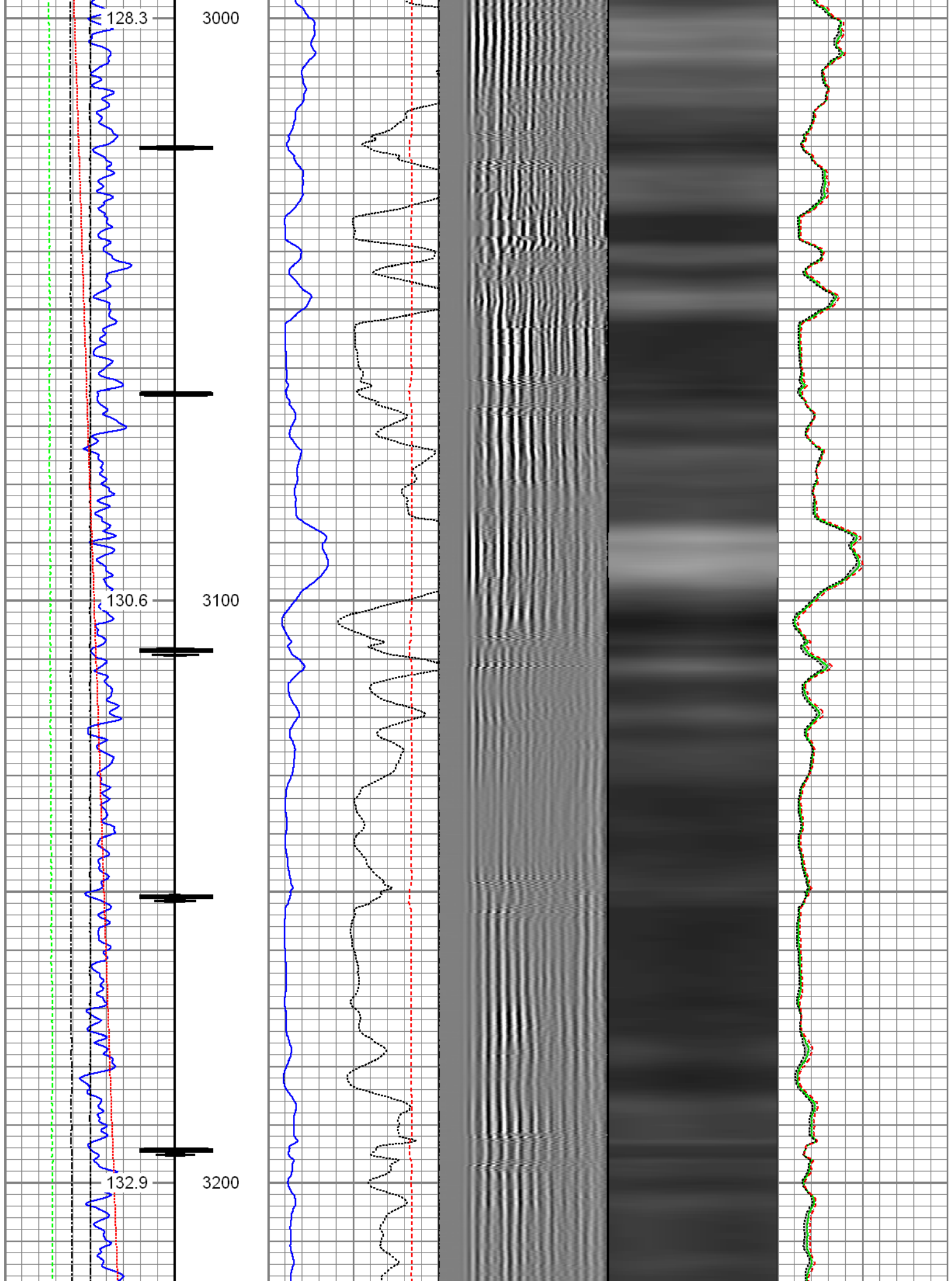




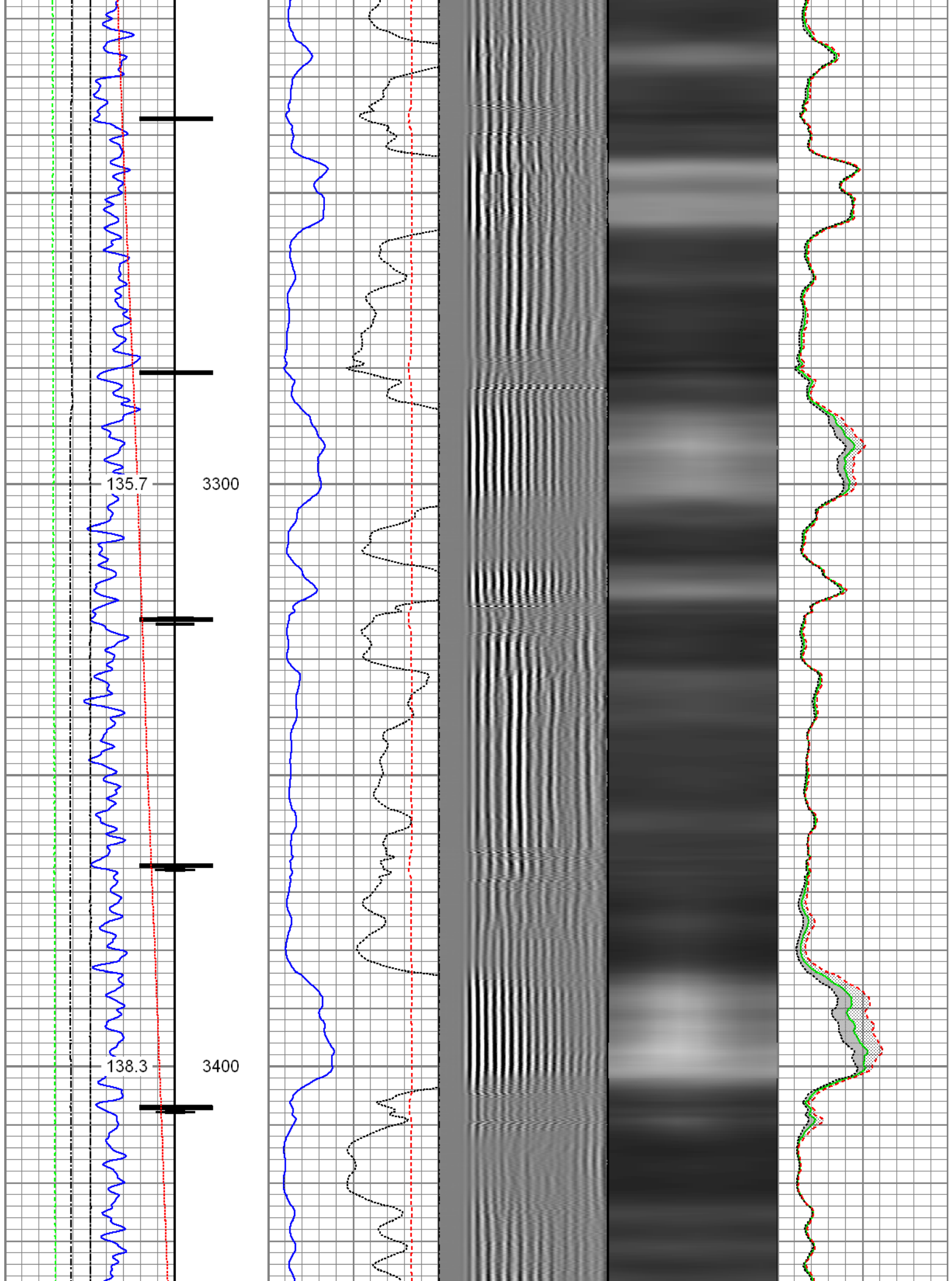


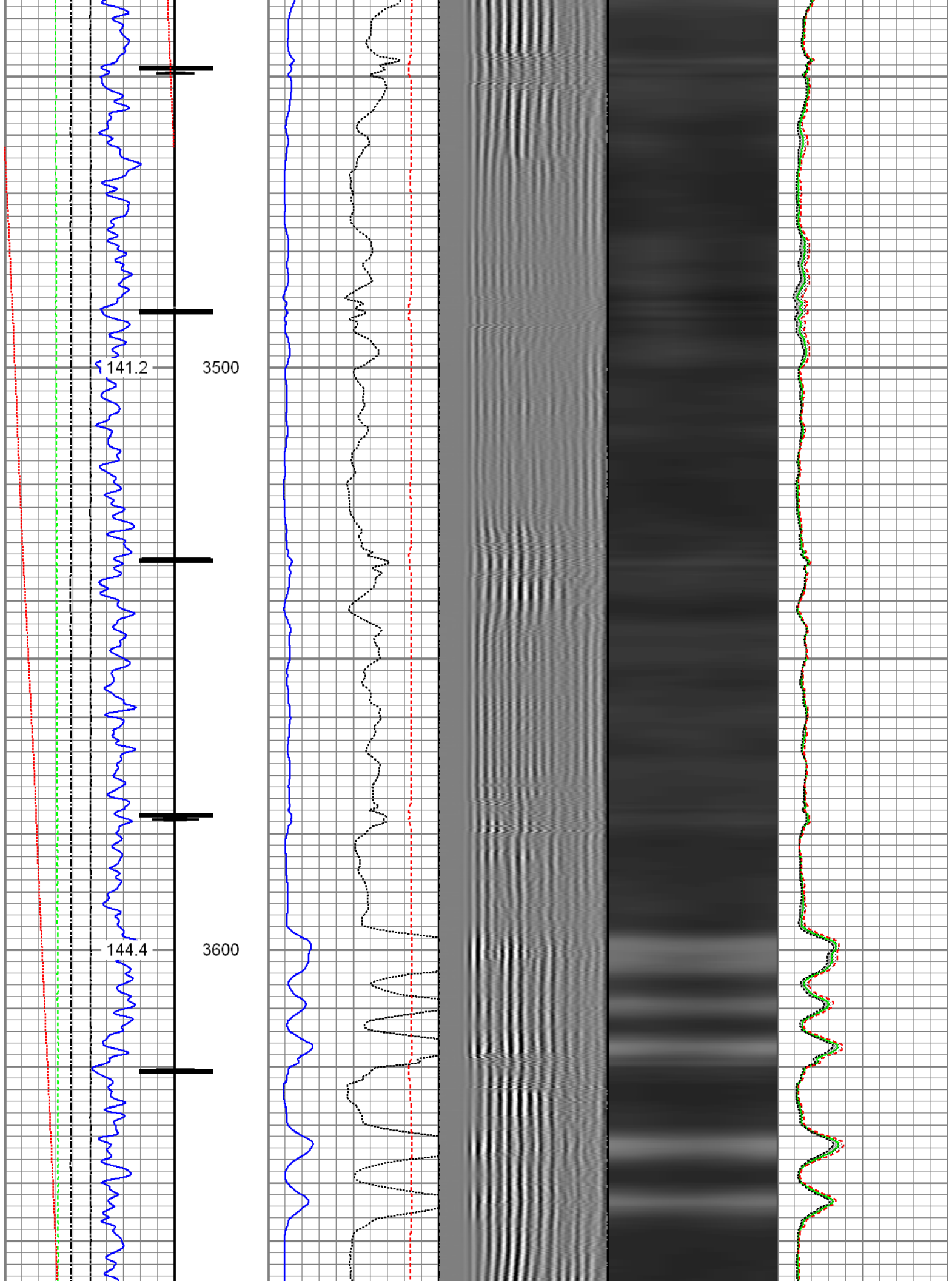


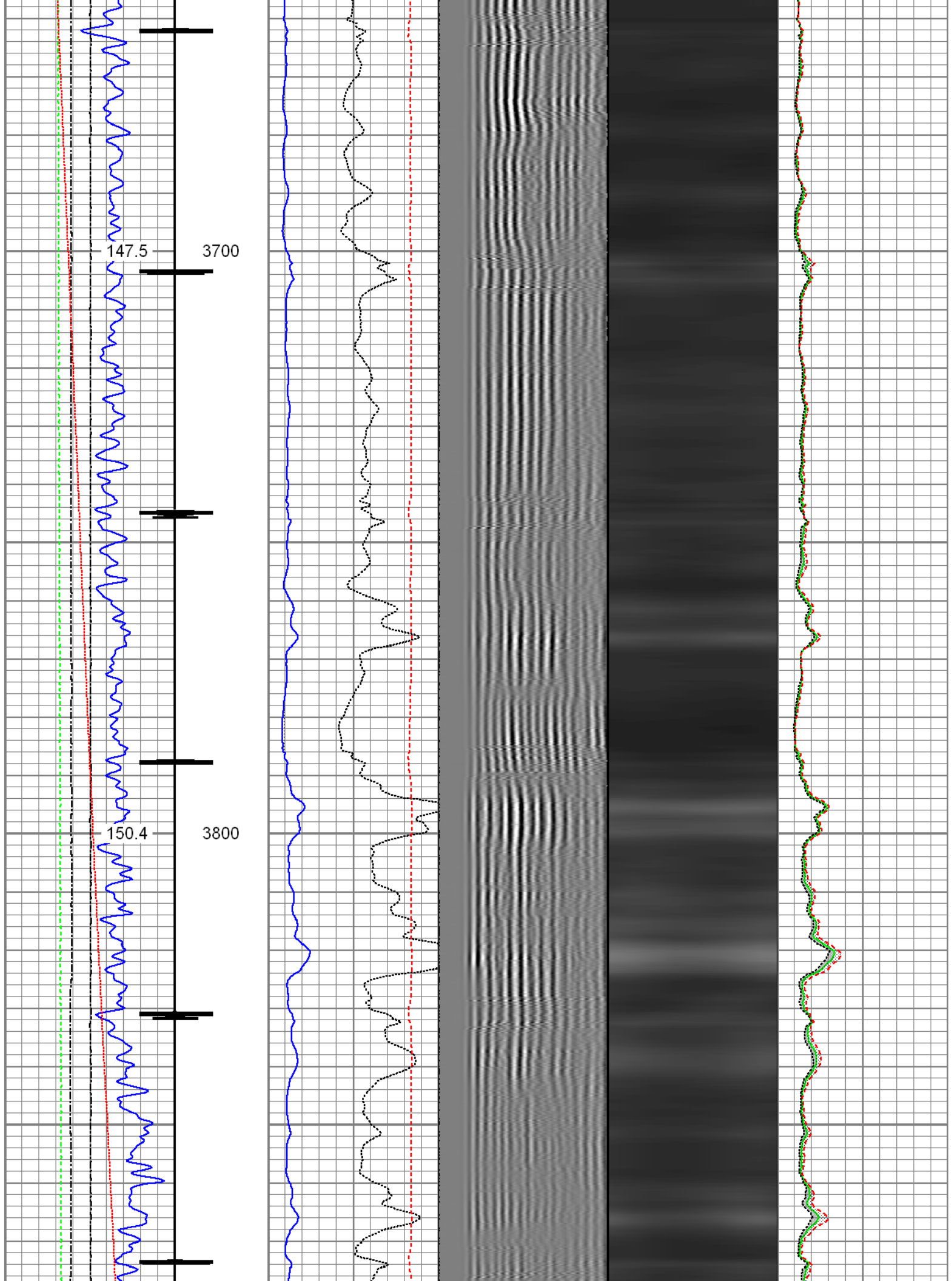


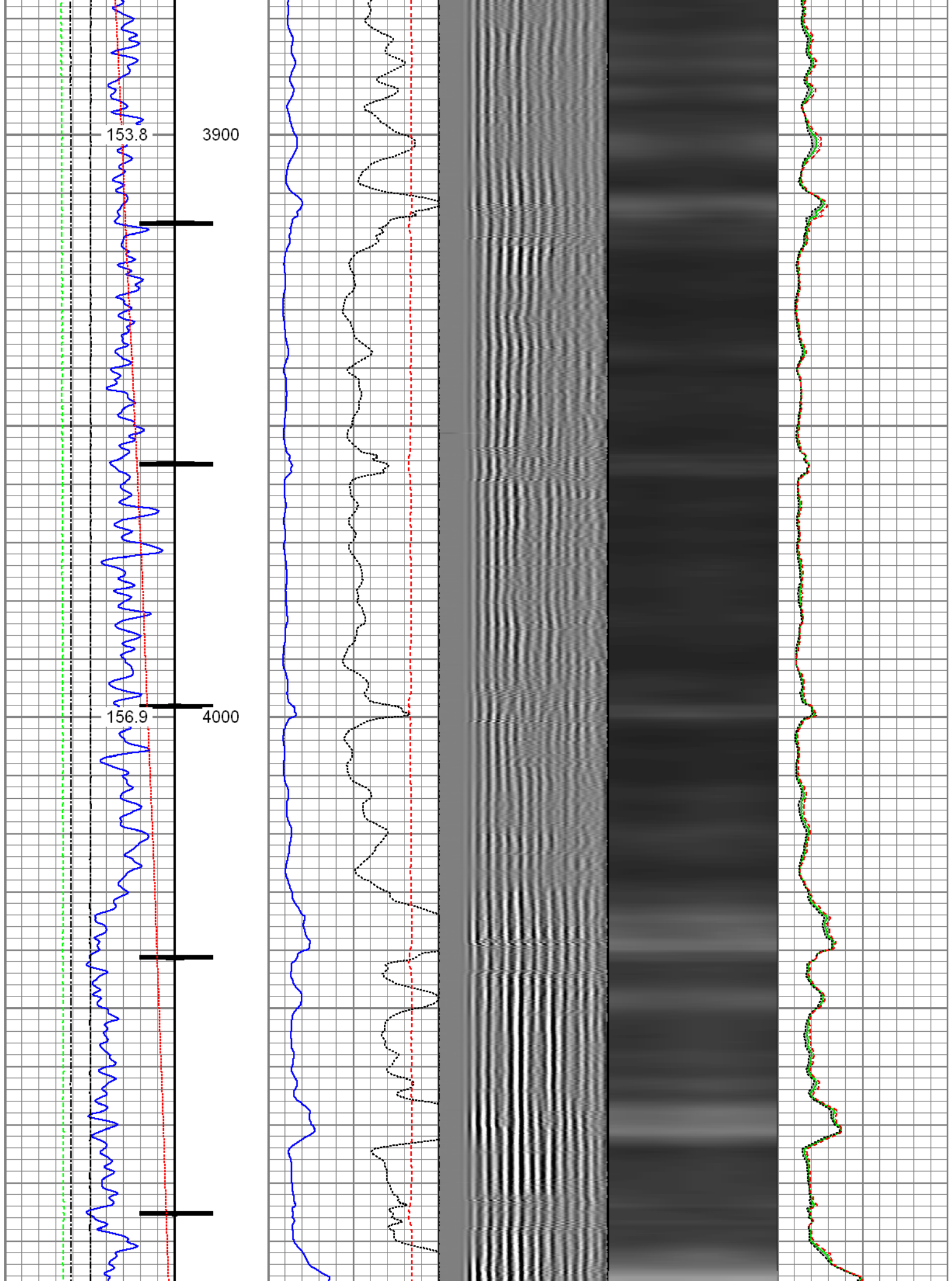




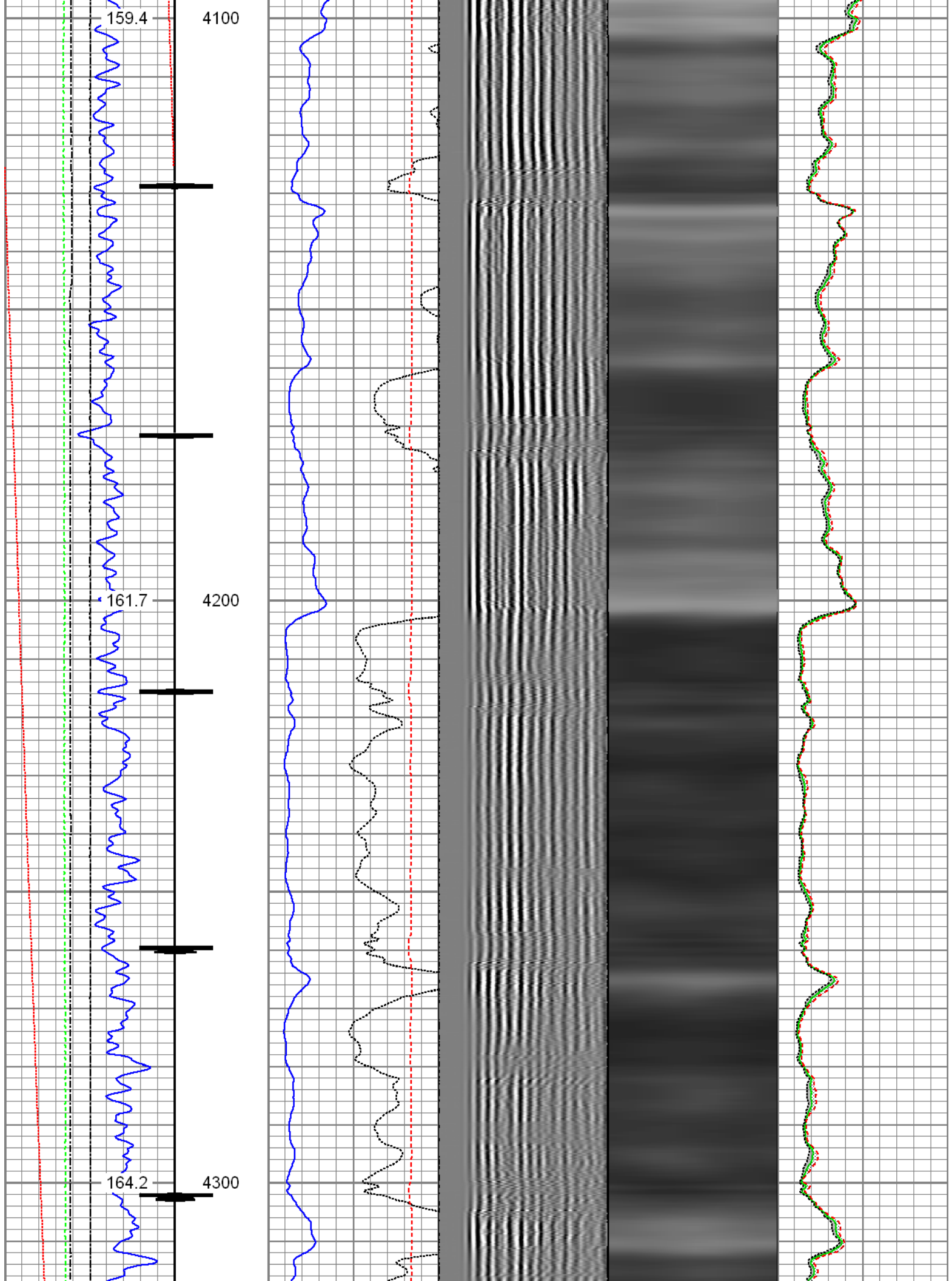


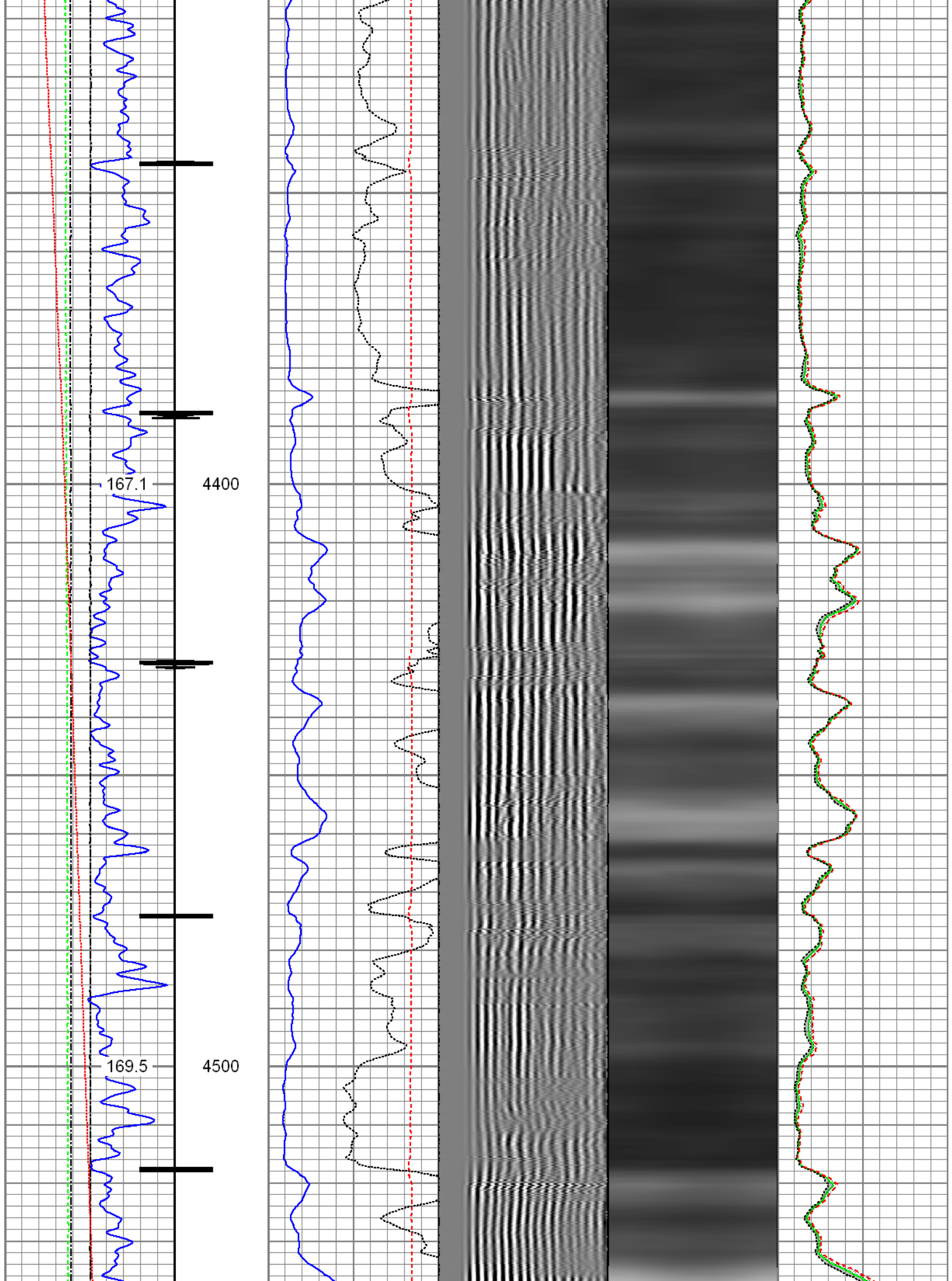


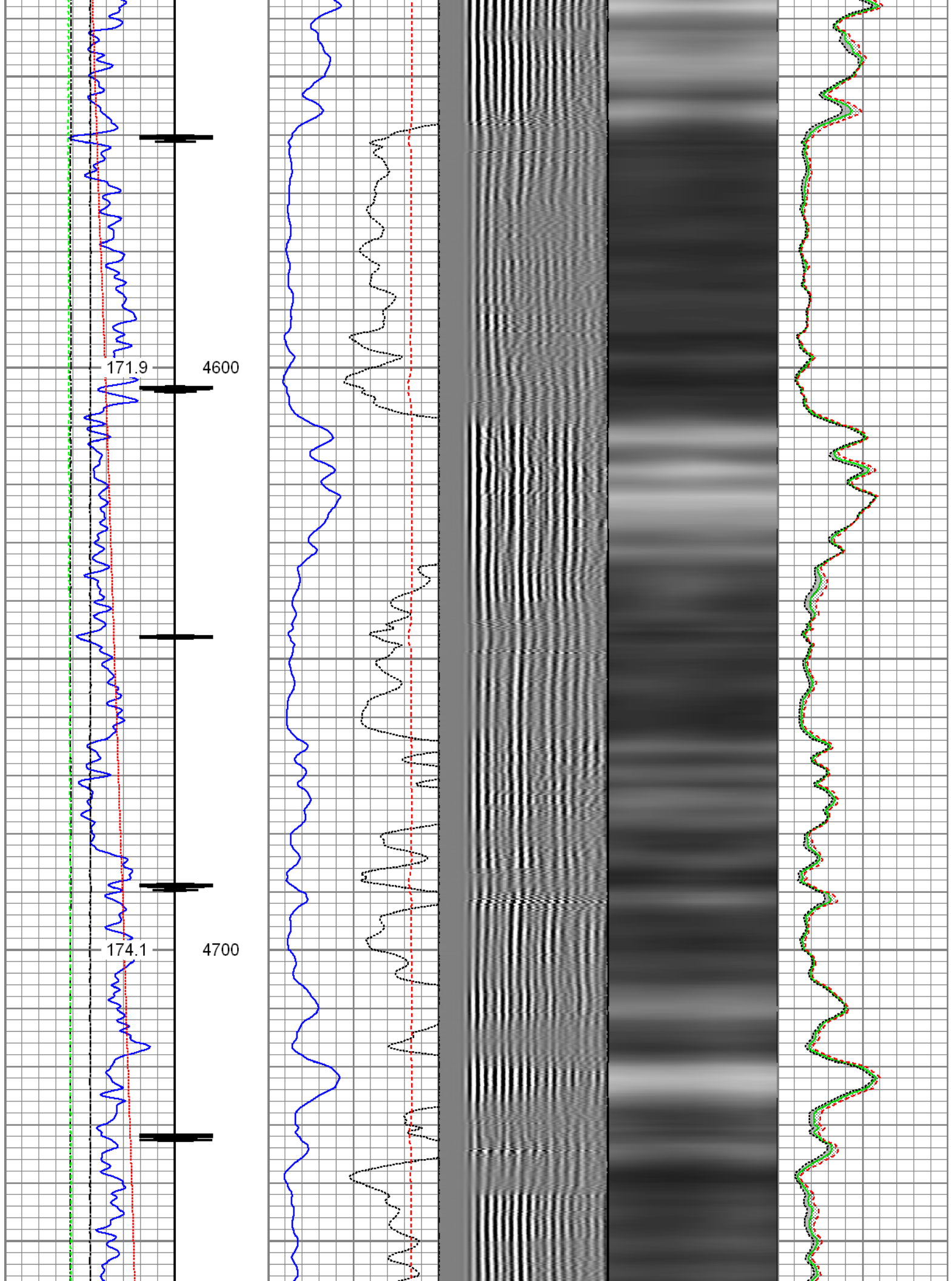


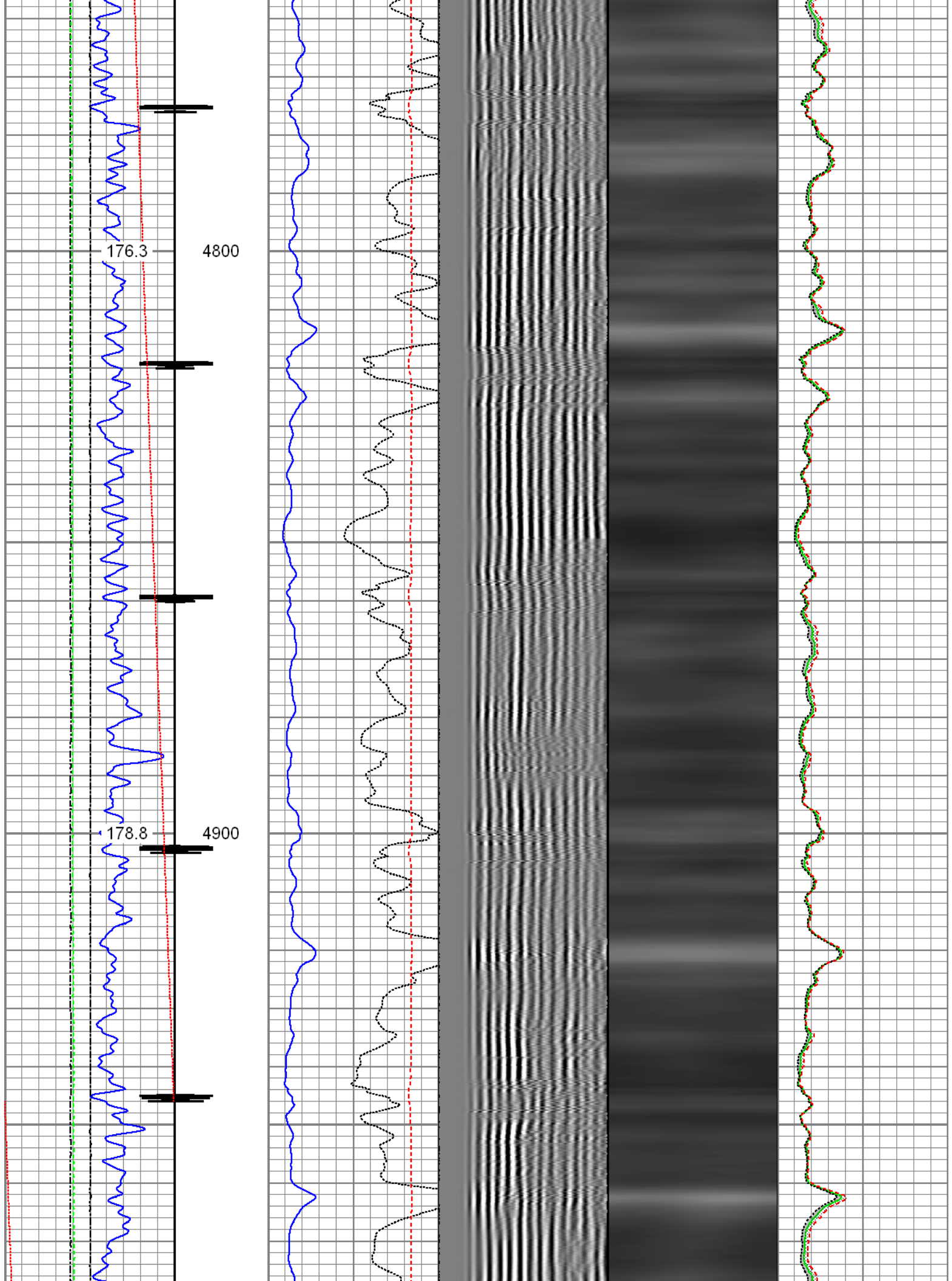




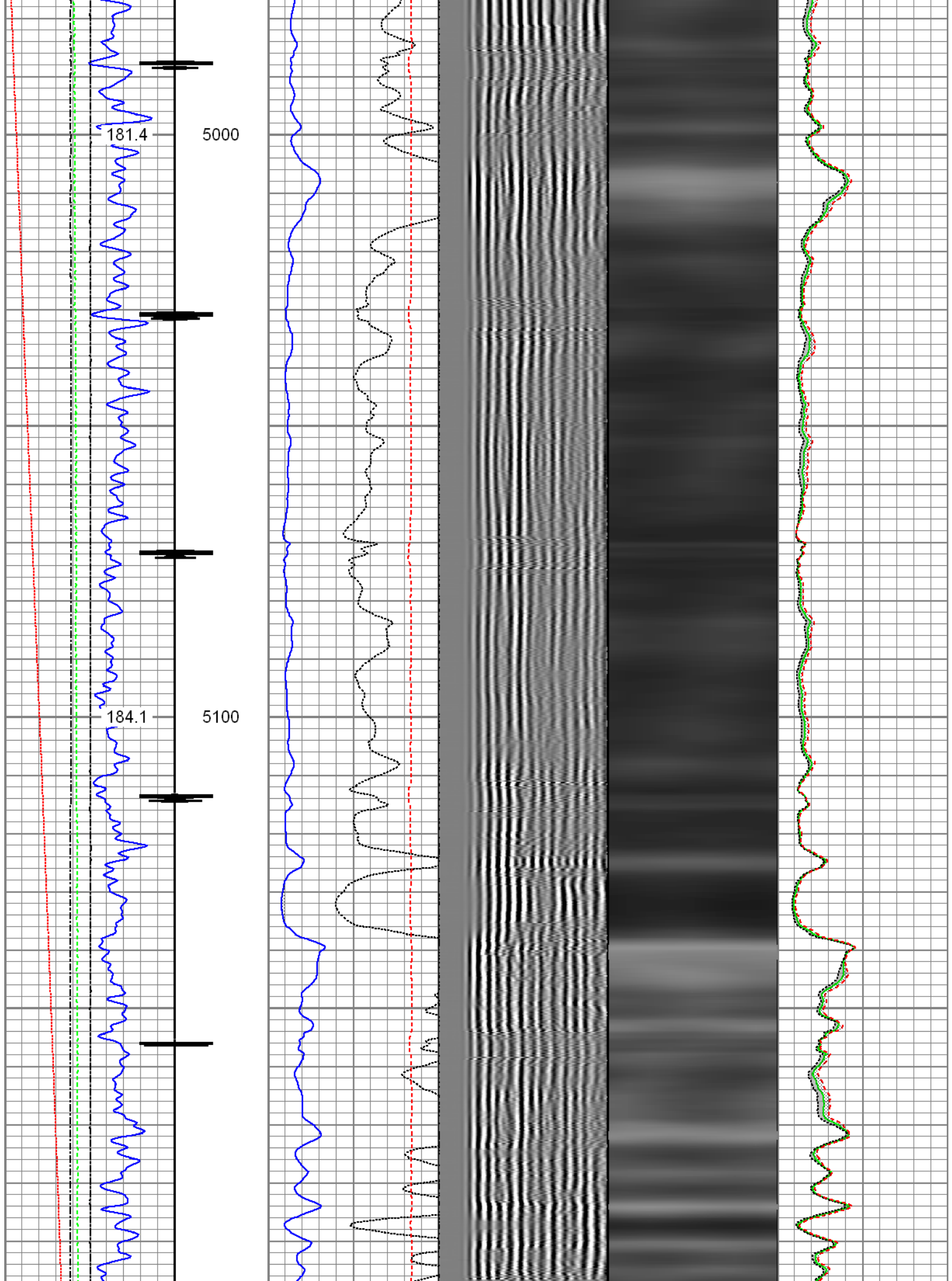


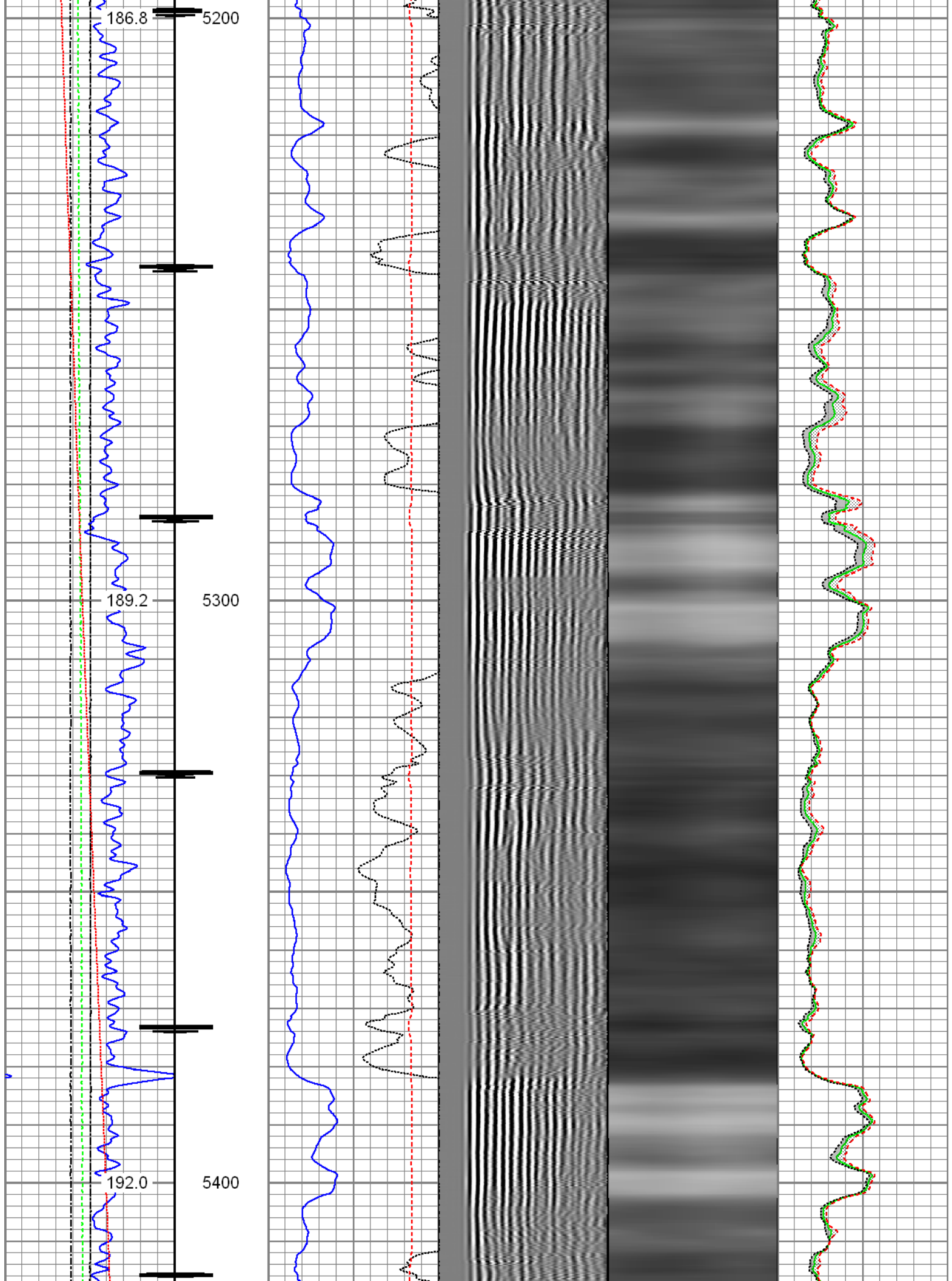


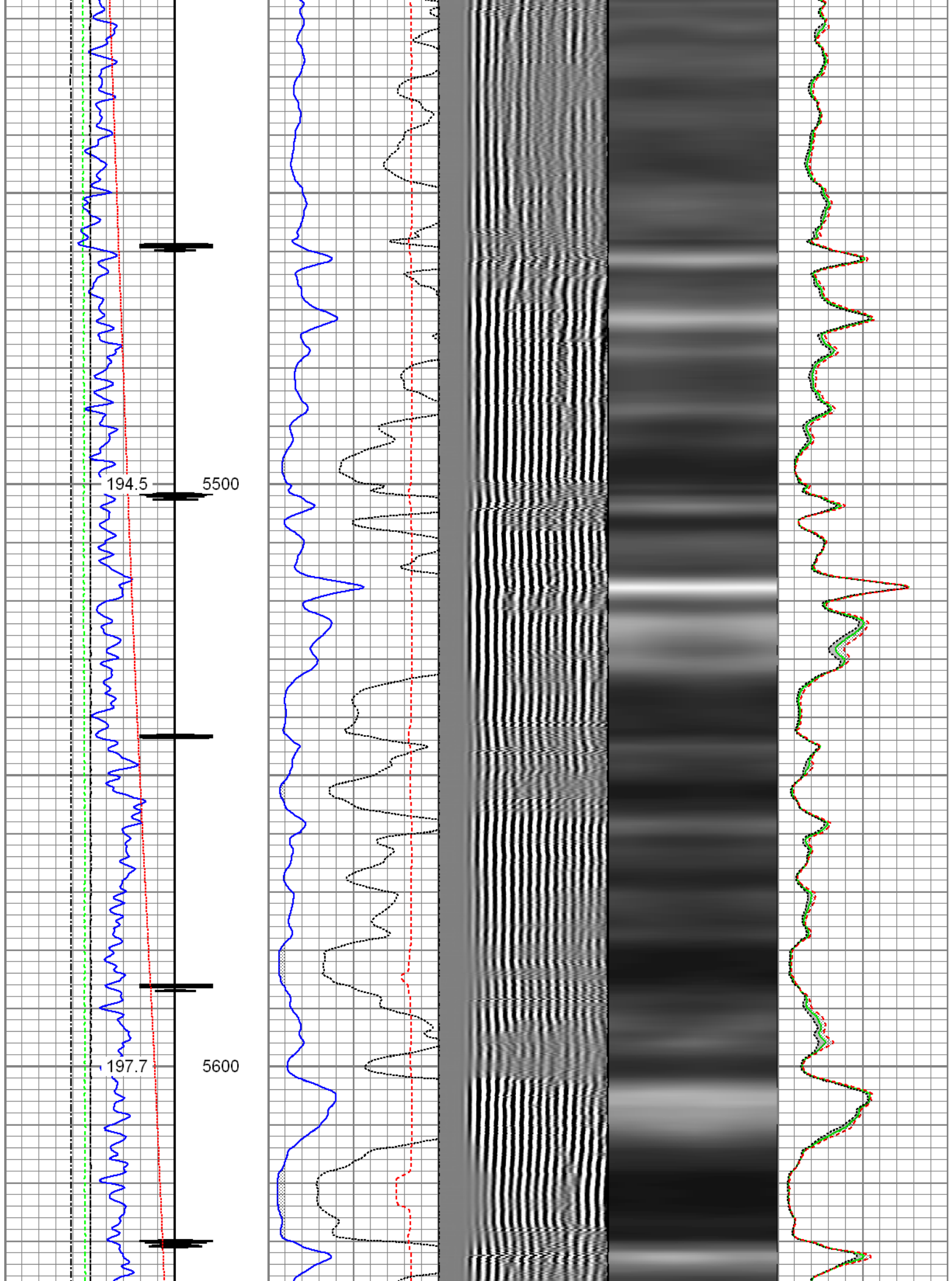




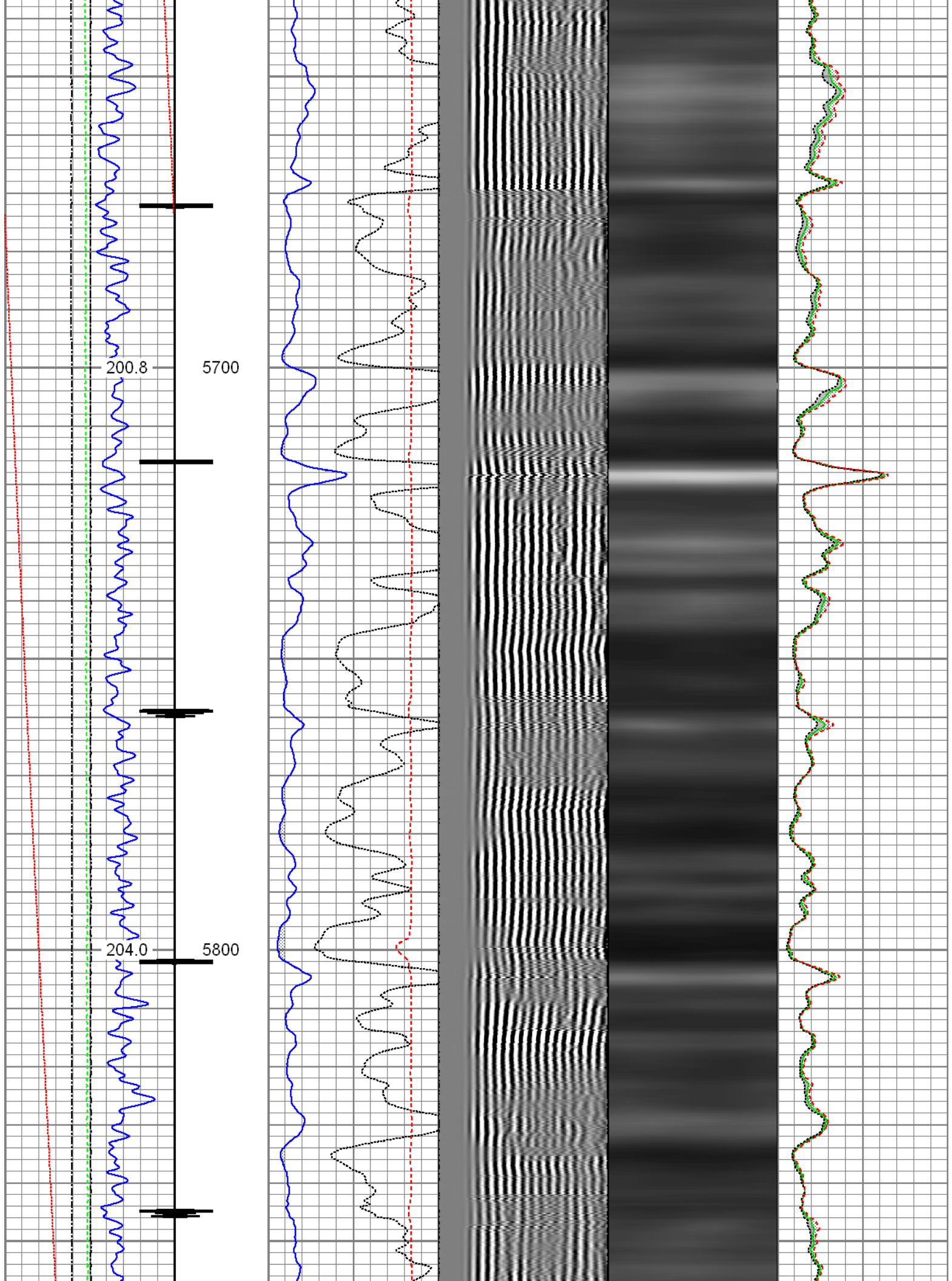




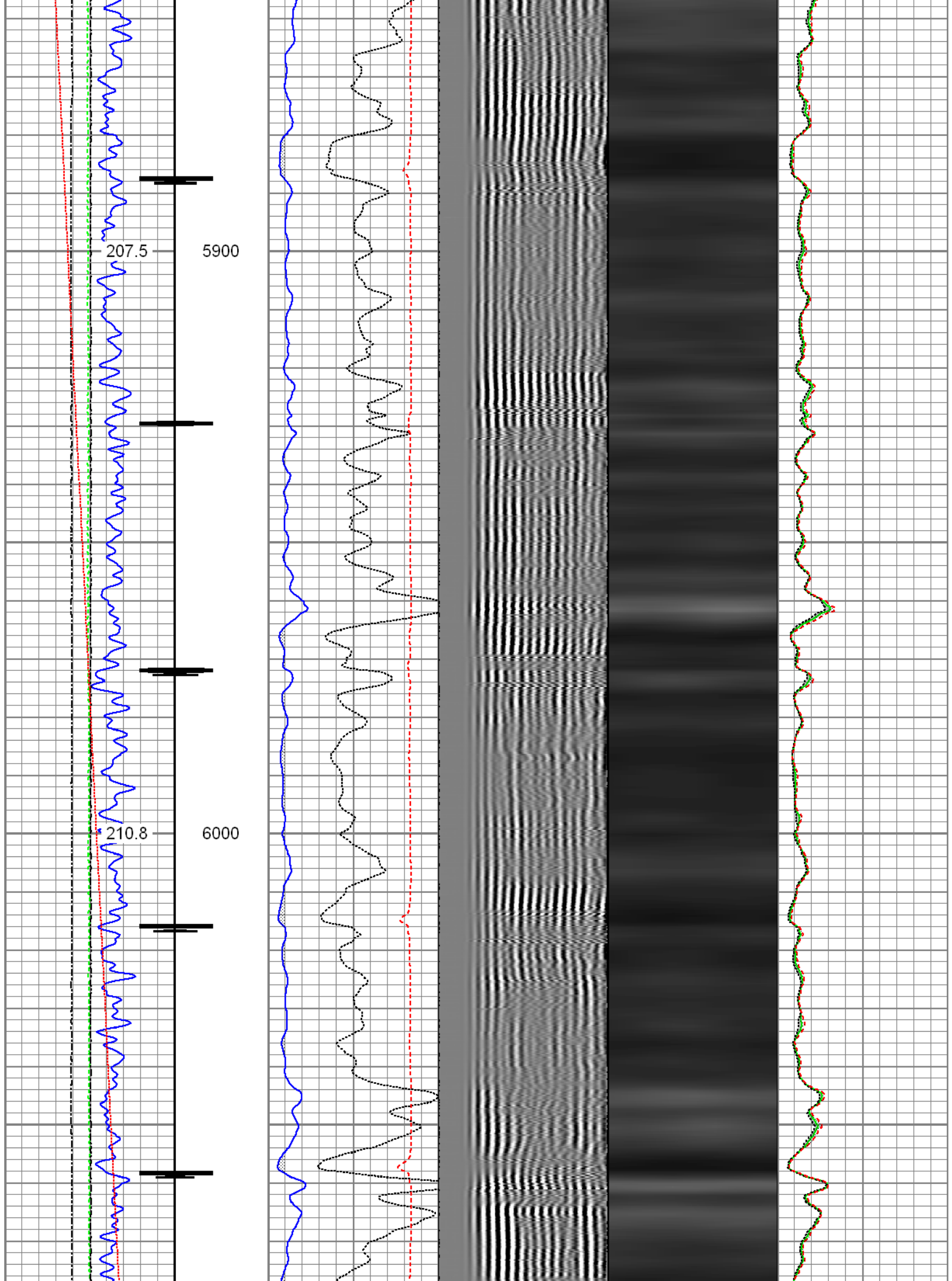


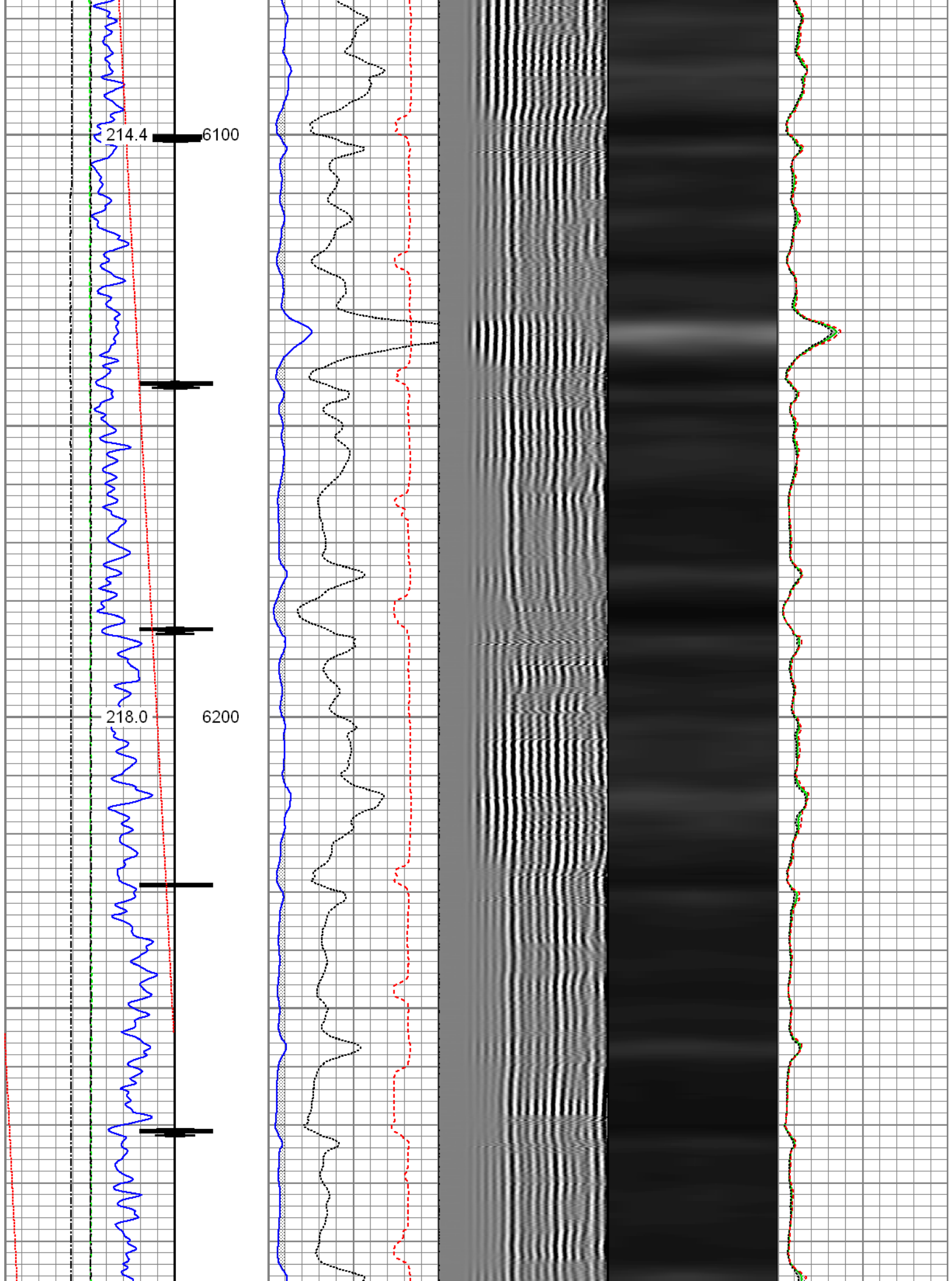


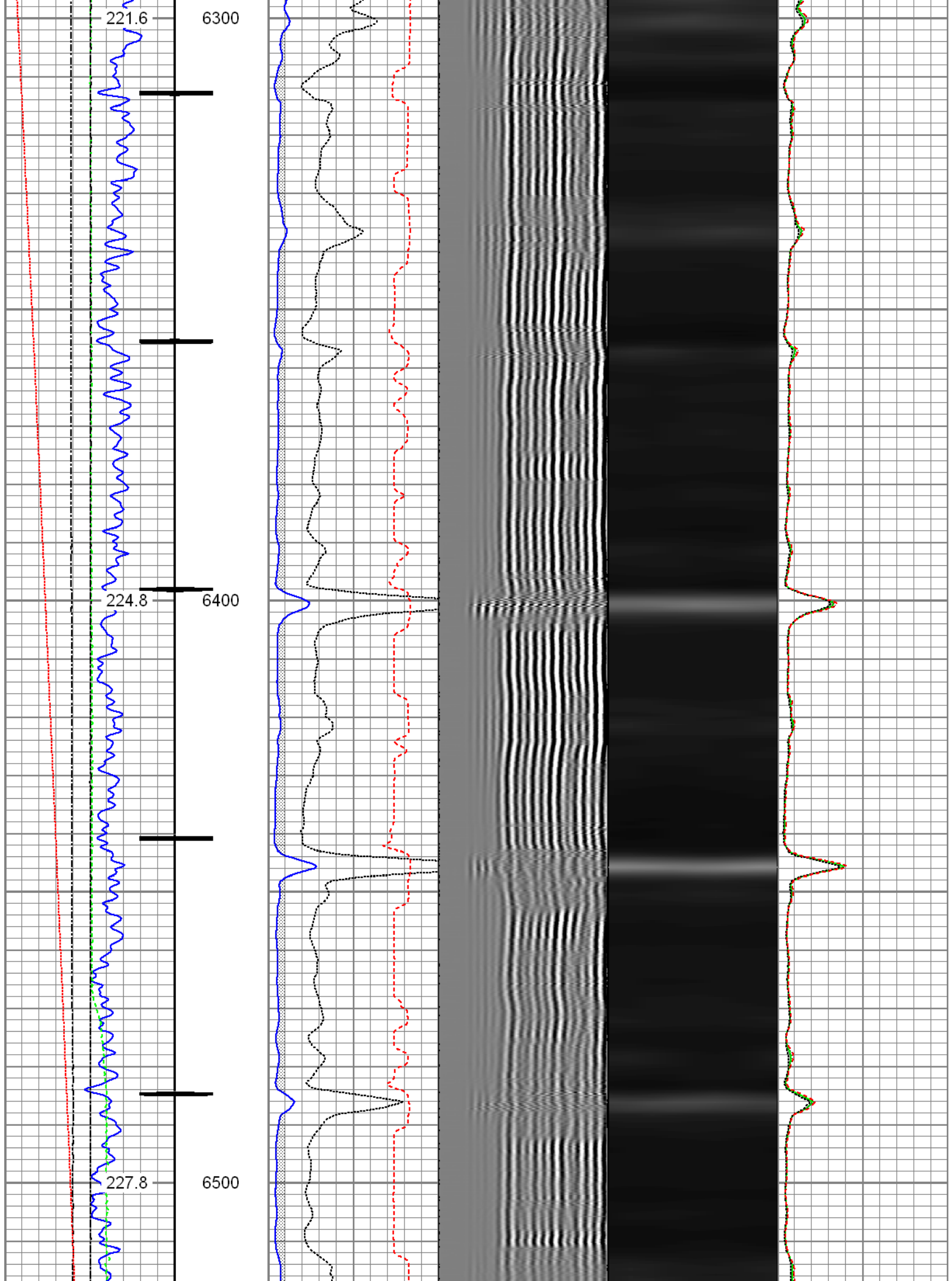


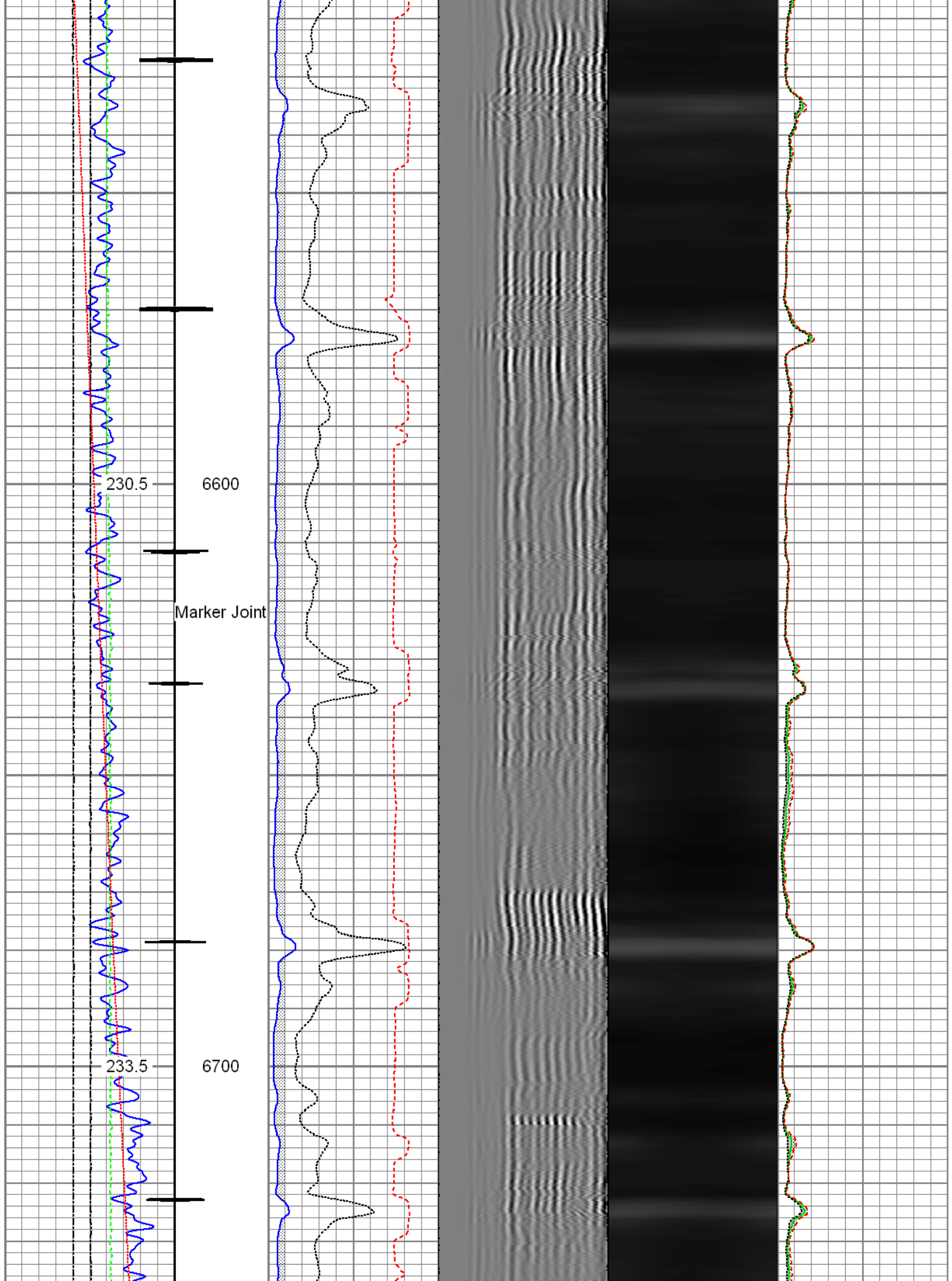




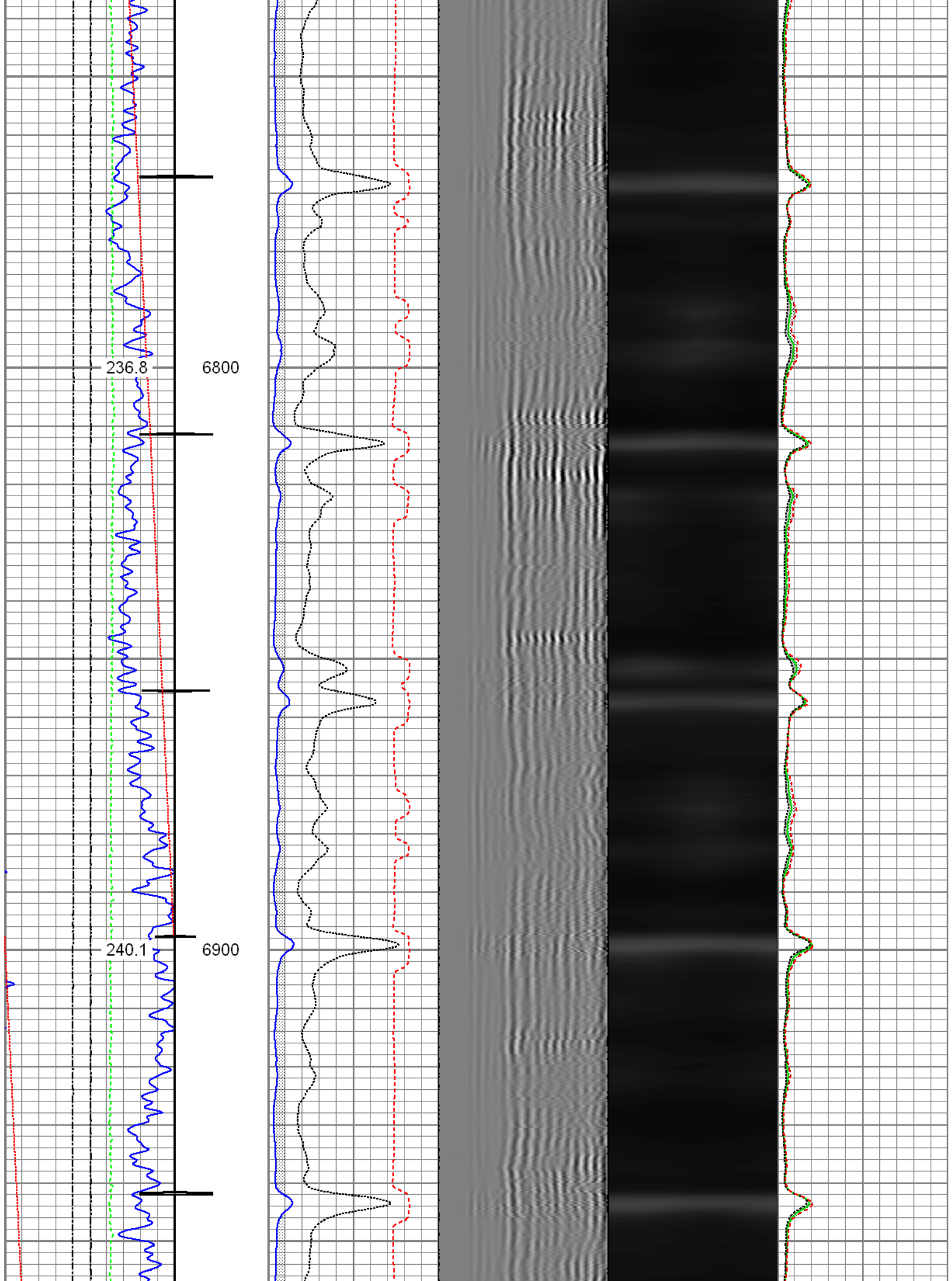


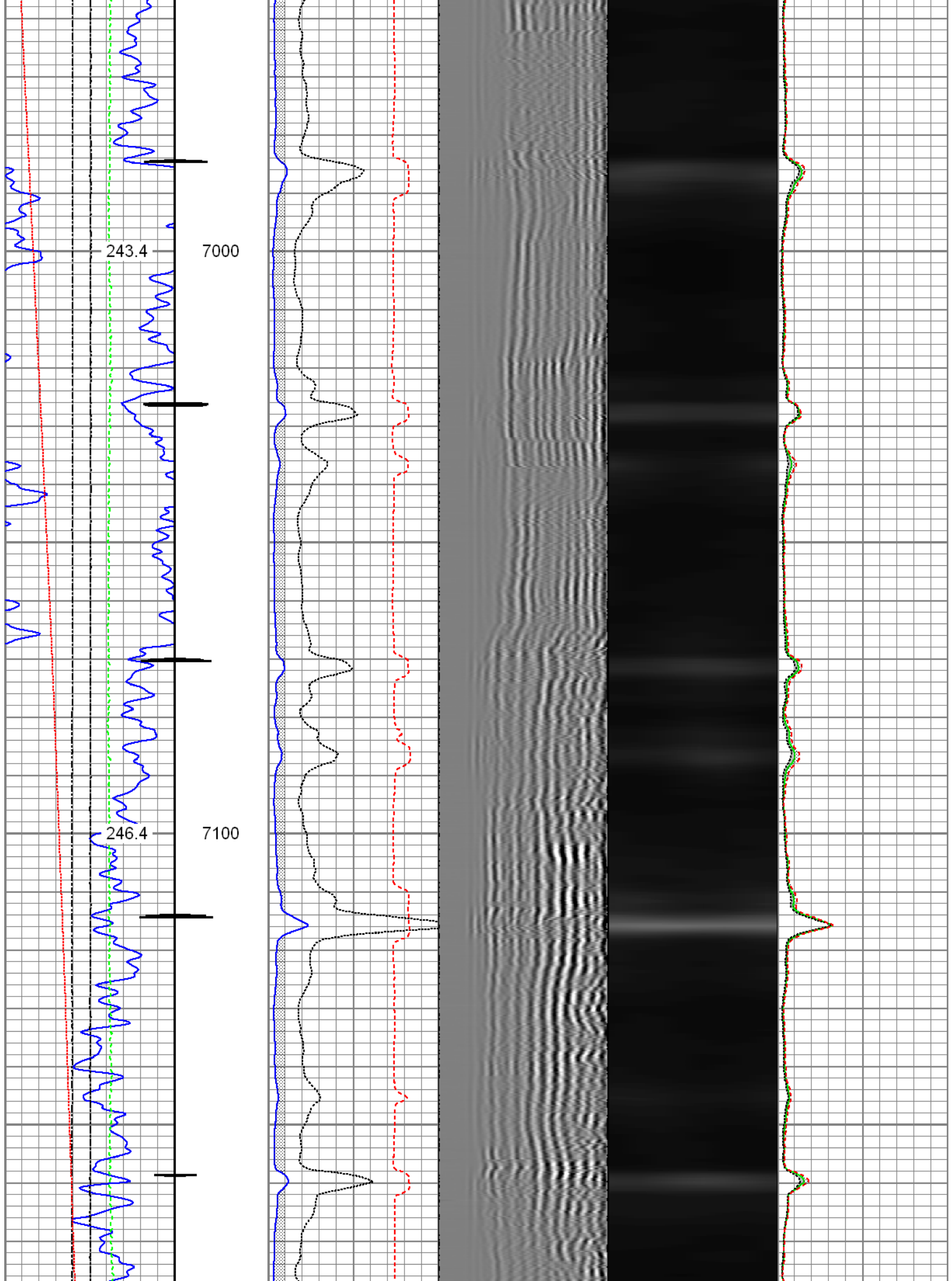


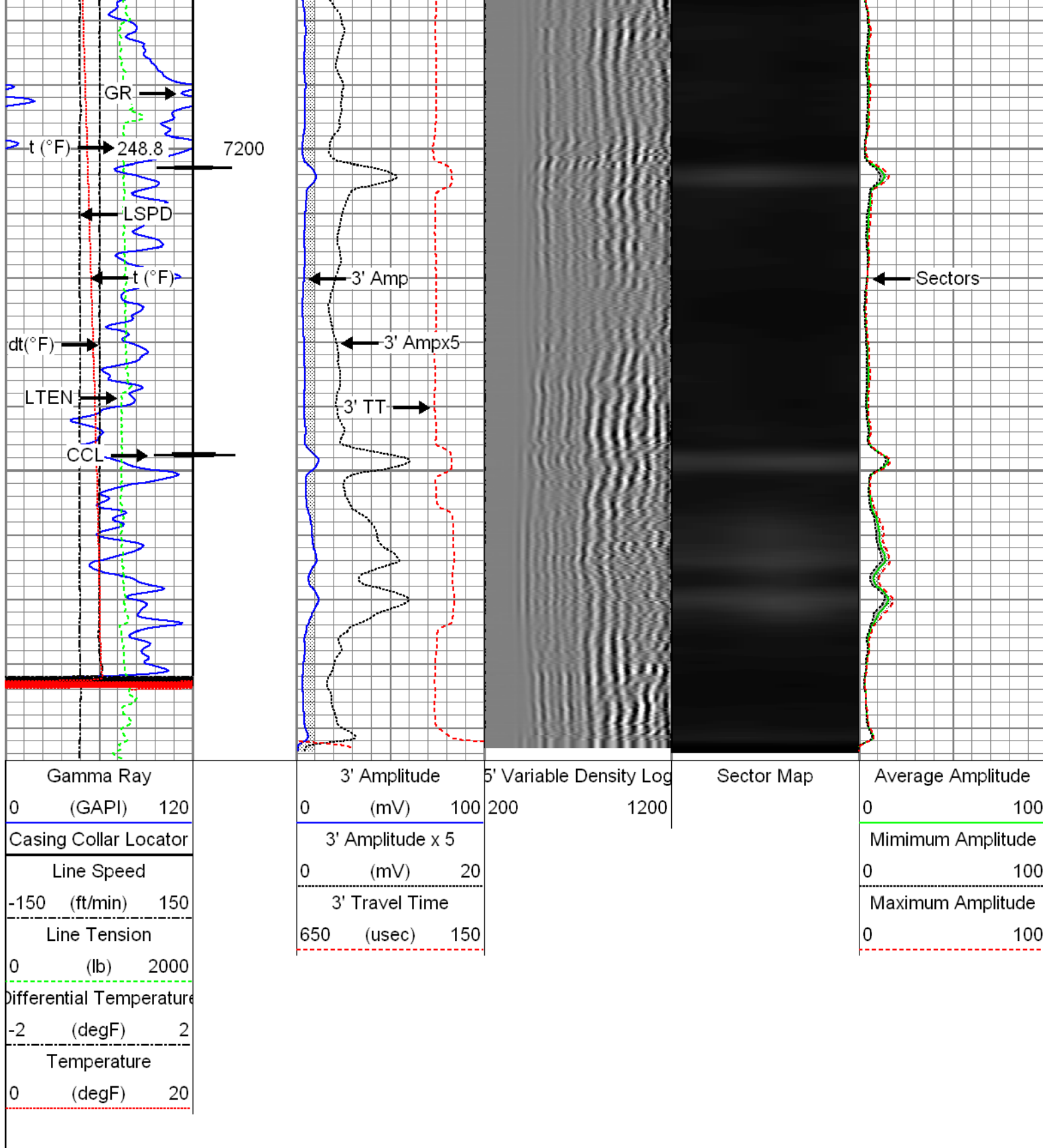










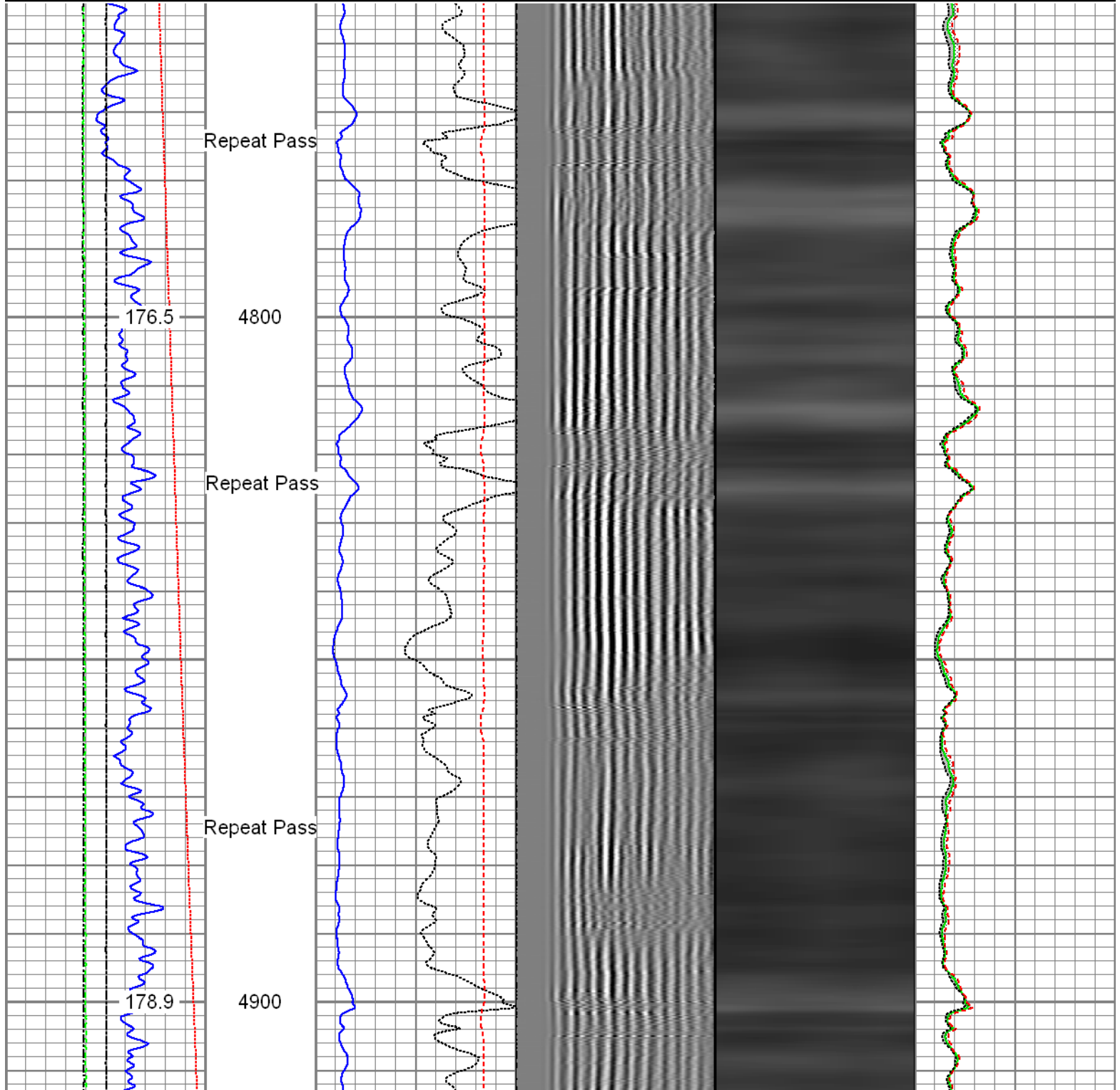


Repeat Pass

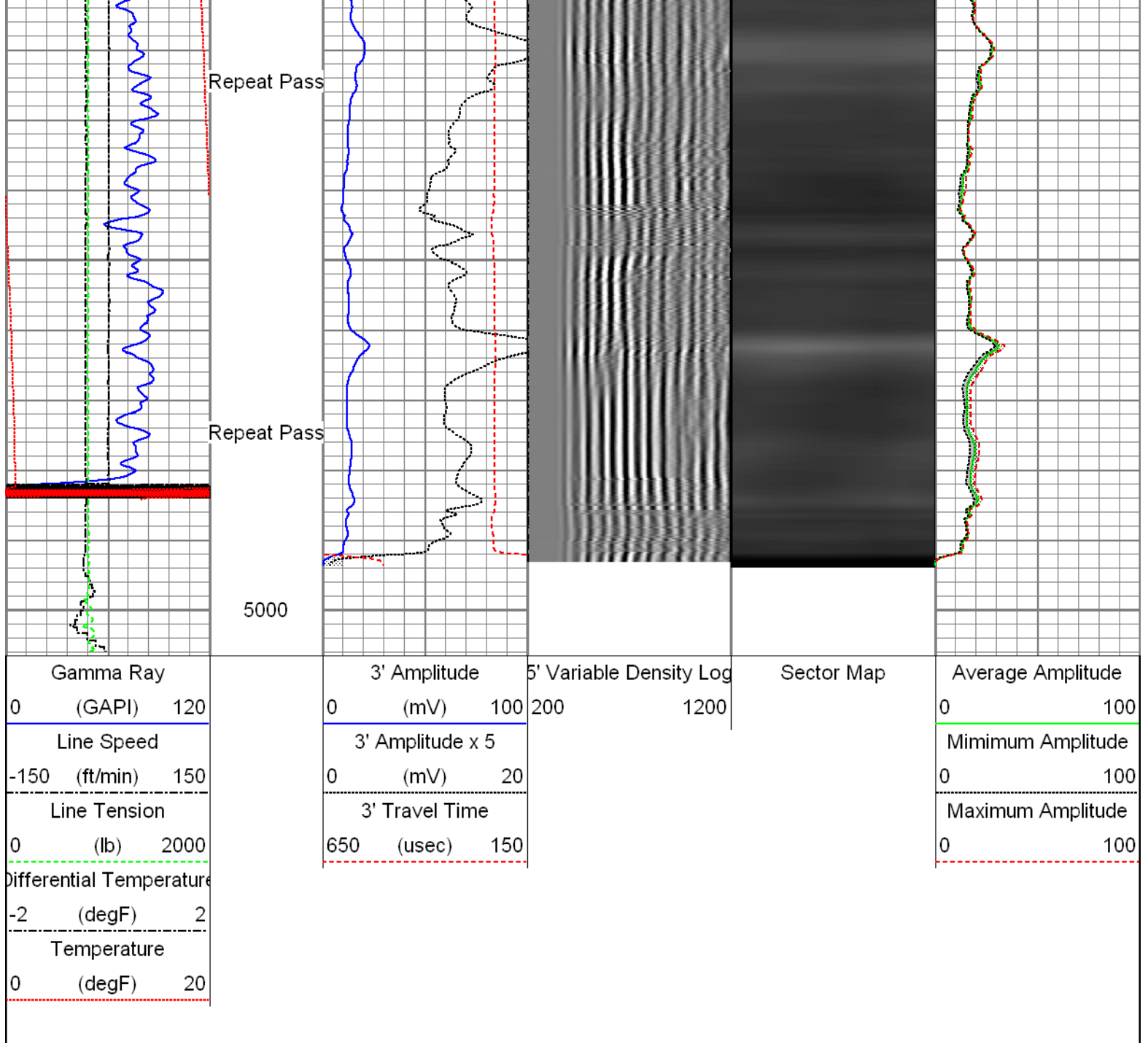
Recorded with 2800 PSI Surface Induced Pressure


Database File: 0512342071\_anadarko\_sunflower 7c-17hz\_01-11-16\_rbl.db  
 Dataset Pathname: repeat  
 Presentation Format: rbt004  
 Dataset Creation: Mon Jan 11 10:41:48 2016 by Log 7.0 B1

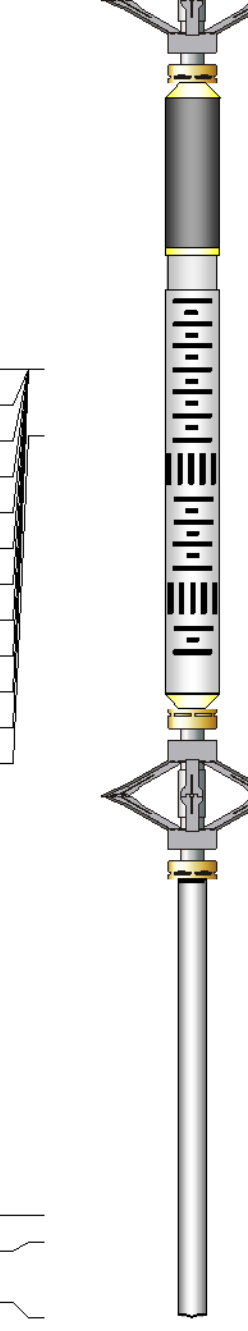
Charted by:		Depth in Feet scaled 1:240							
Gamma Ray		3' Amplitude		5' Variable Density Log		Sector Map			
0	(GAPI) 120	0	(mV) 100	200	1200	Average Amplitude			
Line Speed		3' Amplitude x 5				Minimum Amplitude			
-150	(ft/min) 150	0	(mV) 20			0	100		
Line Tension		3' Travel Time				Maximum Amplitude			
0	(lb) 2000	650	(usec) 150			0	100		
Differential Temperature									
-2	(degF) 2								
Temperature									
0	(degF) 20								







Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	24.33		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (10024655) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10013899) Production Gamma Ray	1.93	1.69	9.50
TEMP	22.94		UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
CCL	21.69		UW_CCL-UW_CCL_028 (10009470) Ultrawire 3-1/8" CCL	1.61	3.13	36.00
			UW_PRC-DSSRAC (080)	2.55	2.75	32.00

			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVF3FT	14.29					
WVFS1	14.29		UW_RBT-UW_RBT_004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS2	14.29					
WVFS3	14.29					
WVFS4	14.29					
WVFS5	14.29					
WVFS6	14.29					
WVFS7	14.29					
WVFS8	14.29					
CBLTEMP	14.29					
CBLROT	14.29					
WVF5FT	13.29		UW_PRC-DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			CNL-007 (1005) Compensated Neutron Logging Tool	6.61	1.69	30.00
CNLSC	1.53					
CNSSC	1.12					
TSTAMP	0.00					
Dataset: 0512342071_anadarko_sunflower 7c-17hz_01-11-16_rbl.db: field/well/run1/main.1 Total Length: 28.58 ft Total Weight: 296.20 lb O.D. 3.13 in						

Calibration Report			
Database File:	0512342071_anadarko_sunflower 7c-17hz_01-11-16_rbl.db		
Dataset Pathname:	main.1		
Dataset Creation:	Tue Jan 12 15:19:44 2016 by Calc SCH 120430		
Compensated Neutron Calibration Report			
Serial Number:	1005		
Tool Model:	007		
Master Calibration	Tue Jun 03 09:29:29 2014		
Detector	Readings		
Short Space	240.87	cps	
Long Space	303.55	cps	
	Measured	Reference	

Ratio	Measured	Reference
CNRAT Gain K	0.8150	Sleeve: 1.0000
	1.0271	
Before Survey		
Detector	Readings	
Short Space		cps
Long Space		cps
Ratio	Measured	Reference
After Survey		
Detector	Readings	
Short Space		cps
Long Space		cps
Ratio	Measured	Reference

Segmented Cement Bond Log Calibration Report

Serial Number:	10013454
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	5.500 in
Calibration Depth:	313.767 ft

Master Calibration, performed Tue Jan 12 15:19:41 2016:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.001	0.851	0.800	71.921	83.431	0.921
5FT	-0.004	0.853	0.800	71.921	83.019	1.099
S1	-0.001	0.840	0.000	100.000	118.928	0.137
S2	-0.002	0.854	0.000	100.000	116.723	0.282
S3	-0.002	0.860	0.000	100.000	116.065	0.228
S4	-0.002	0.872	0.000	100.000	114.370	0.283
S5	-0.002	0.869	0.000	100.000	114.811	0.182
S6	-0.003	0.862	0.000	100.000	115.601	0.313
S7	-0.002	0.841	0.000	100.000	118.596	0.227
S8	-0.002	0.836	0.000	100.000	119.432	0.207

Temperature Calibration Report

Serial Number:	10025097	
Tool Model:	UW_PRT_016	
Performed:	Wed Feb 11 13:44:44 2015	
Point #	Reading	Reference
1	13053.00 cps	68.00 degF
2	18014.00 cps	104.00 degF
3	29668.00 cps	176.00 degF
4	41181.00 cps	248.00 degF
5	52983.00 cps	320.00 degF
6	58931.00 cps	356.00 degF
7	cps	degF
8	cps	degF
9	cps	degF

9  
10

cps  
cps

degF  
degF

Gamma Ray Calibration Report

Serial Number:	10013899	
Tool Model:	UW_PGR_020	
Performed:	Sun Jun 13 13:33:21 1993	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Sunflower 7C-17HZ
Field	Wattenberg
County	Weld
State	Colorado