



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Bat 4C-9HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:		API # : 05-123-41290	Other Services
SEC 9 TWP 1N RGE 65W		CNL	
Permanent Datum	Ground Level	Elevation	K.B. 4955' D.F. 4954' G.L. 4930'
Log Measured From	Kelly Bushing	25 FT	
Drilling Measured From	Kelly Bushing		

Date	04-AUG-2015		
Run Number	One		
Depth Driller	---		
Depth Logger	7935 FT		
Bottom Logged Interval	7930 FT		
Top Log Interval	Surface		
Open Hole Size	7.875"		
Type Fluid	Water		
Density / Viscosity	8.34 lbm/gal		
Max. Recorded Temp.	240°F		
Estimated Cement Top	Surface		
Time Well Ready	ROA		
Time Logger on Bottom	9:05		
Equipment Number	HD-0343		
Location	Fort Lupton, CO		
Recorded By	Zach Fisher		
Witnessed By	Josh Gustafson		

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 LTC	Surface	1603 FT		
Intermediate #1	5 1/2	17	HC-P110	Surface	12219 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
Recorded Marker Joint at 6754 FT
Log ran from 7935 FT to surface
Recorded with 2800 PSI surface induced pressure

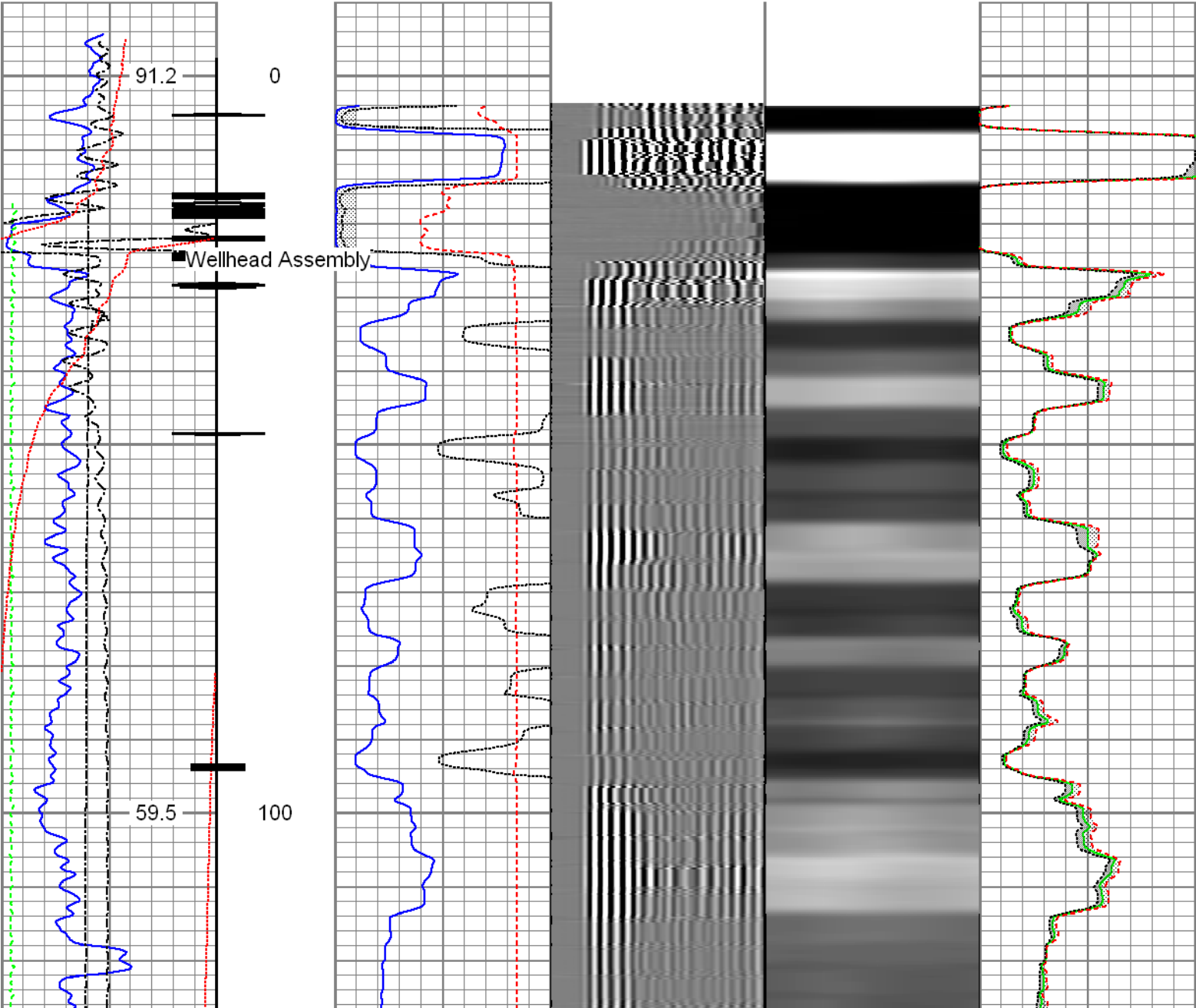
Thank you for choosing FMC Technologies Completion Services, Inc.!!

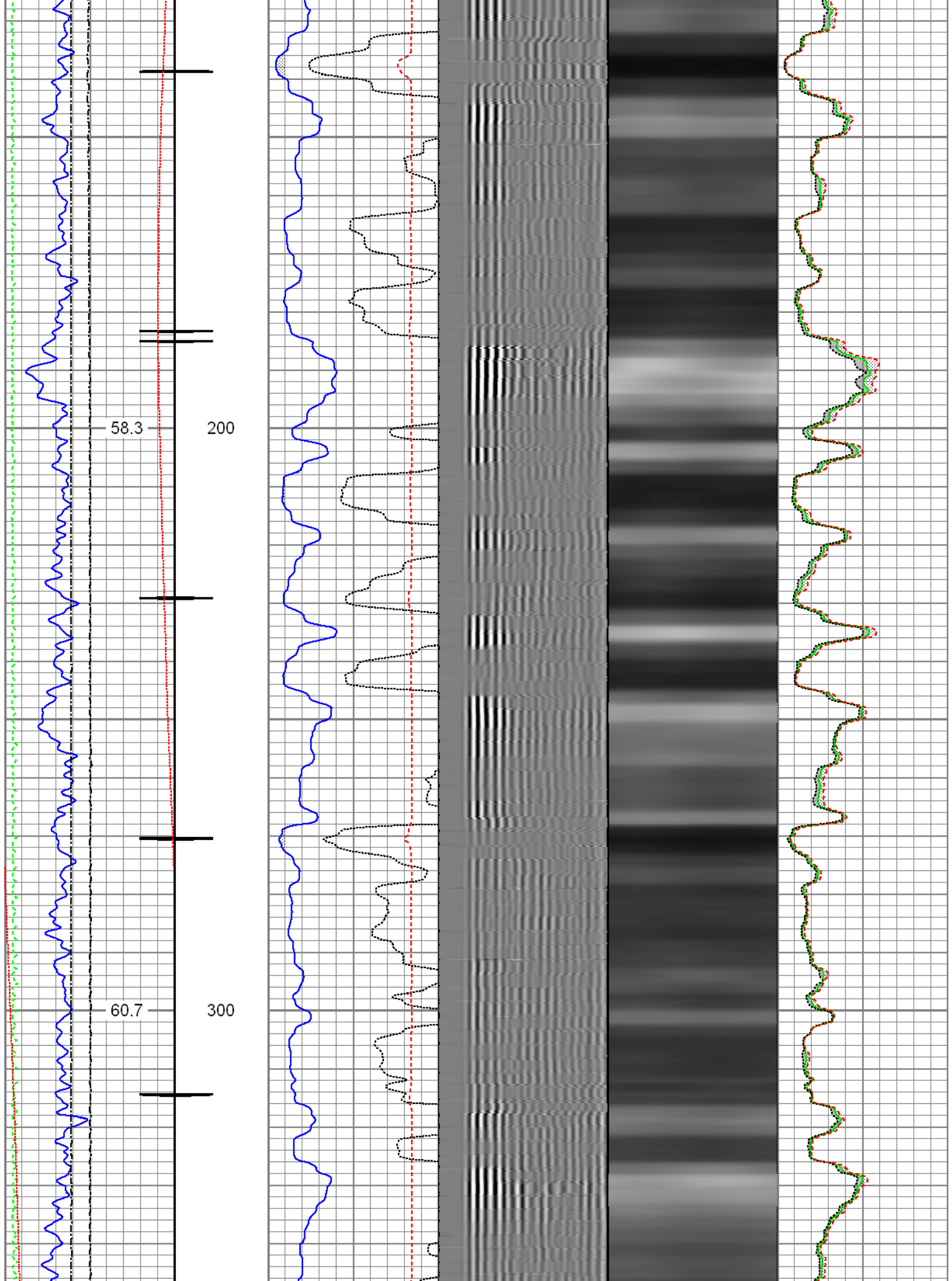


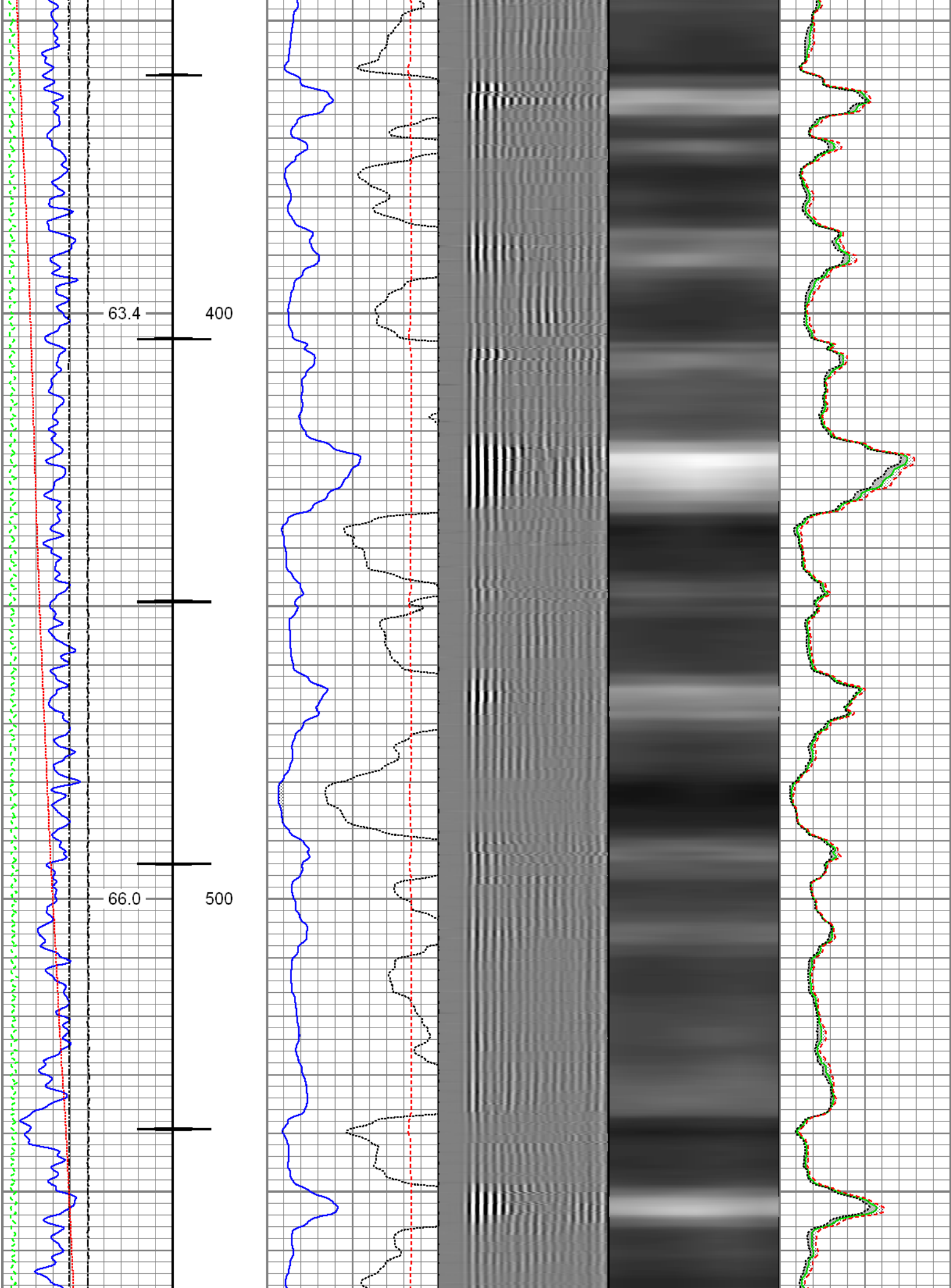
Main Pass

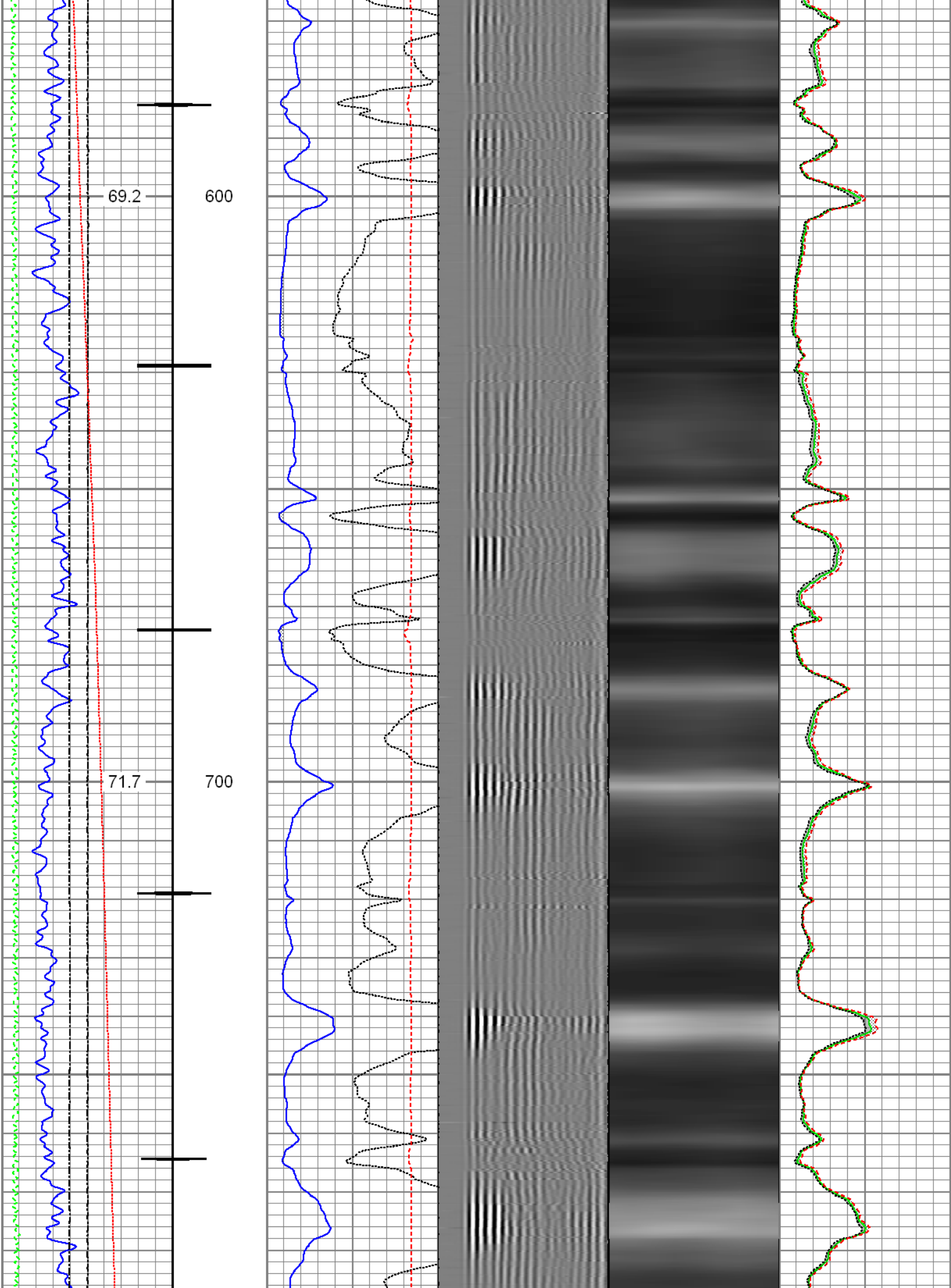
Recorded with 2800 PSI Surface Induced Pressure

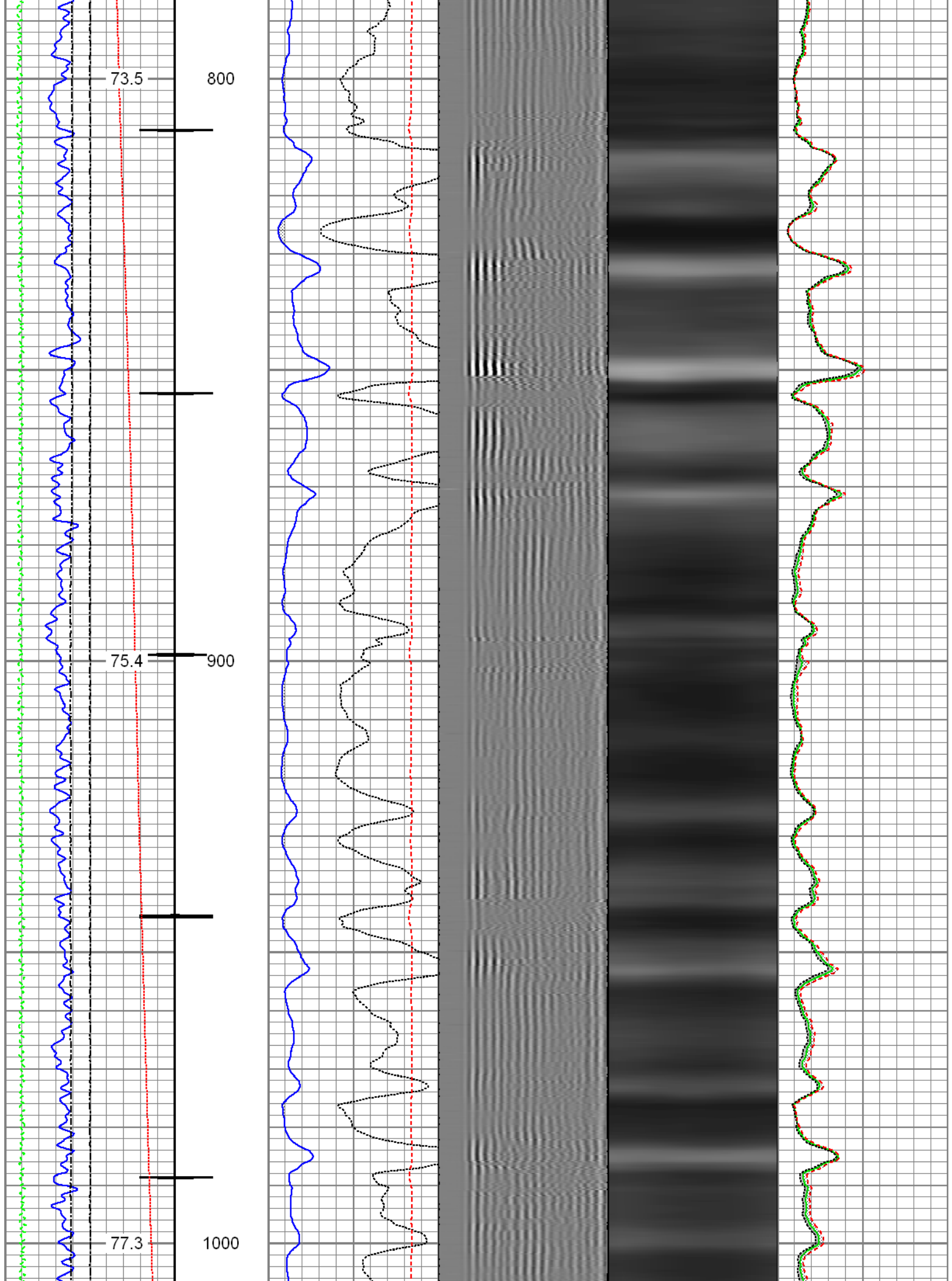
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000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

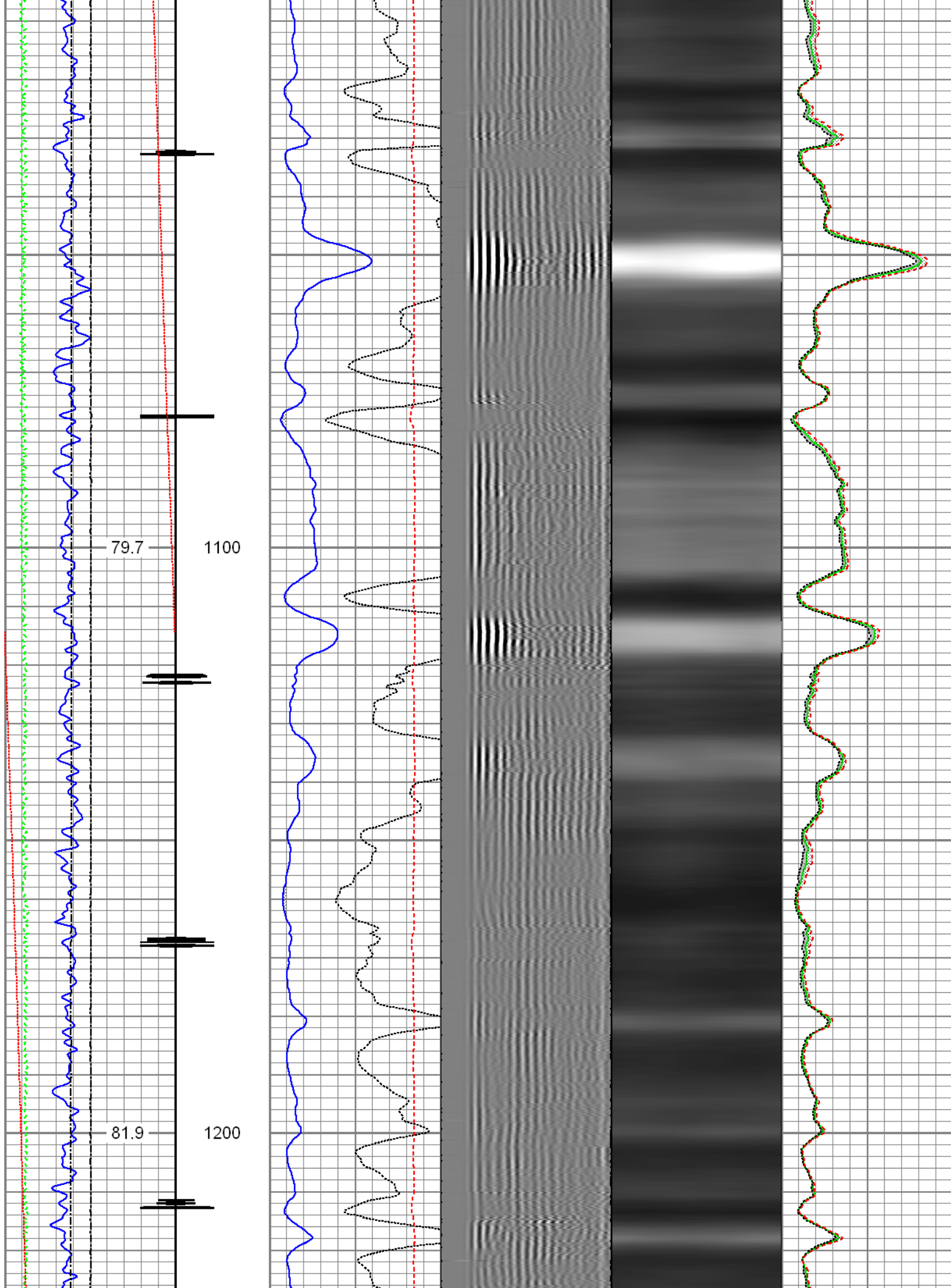


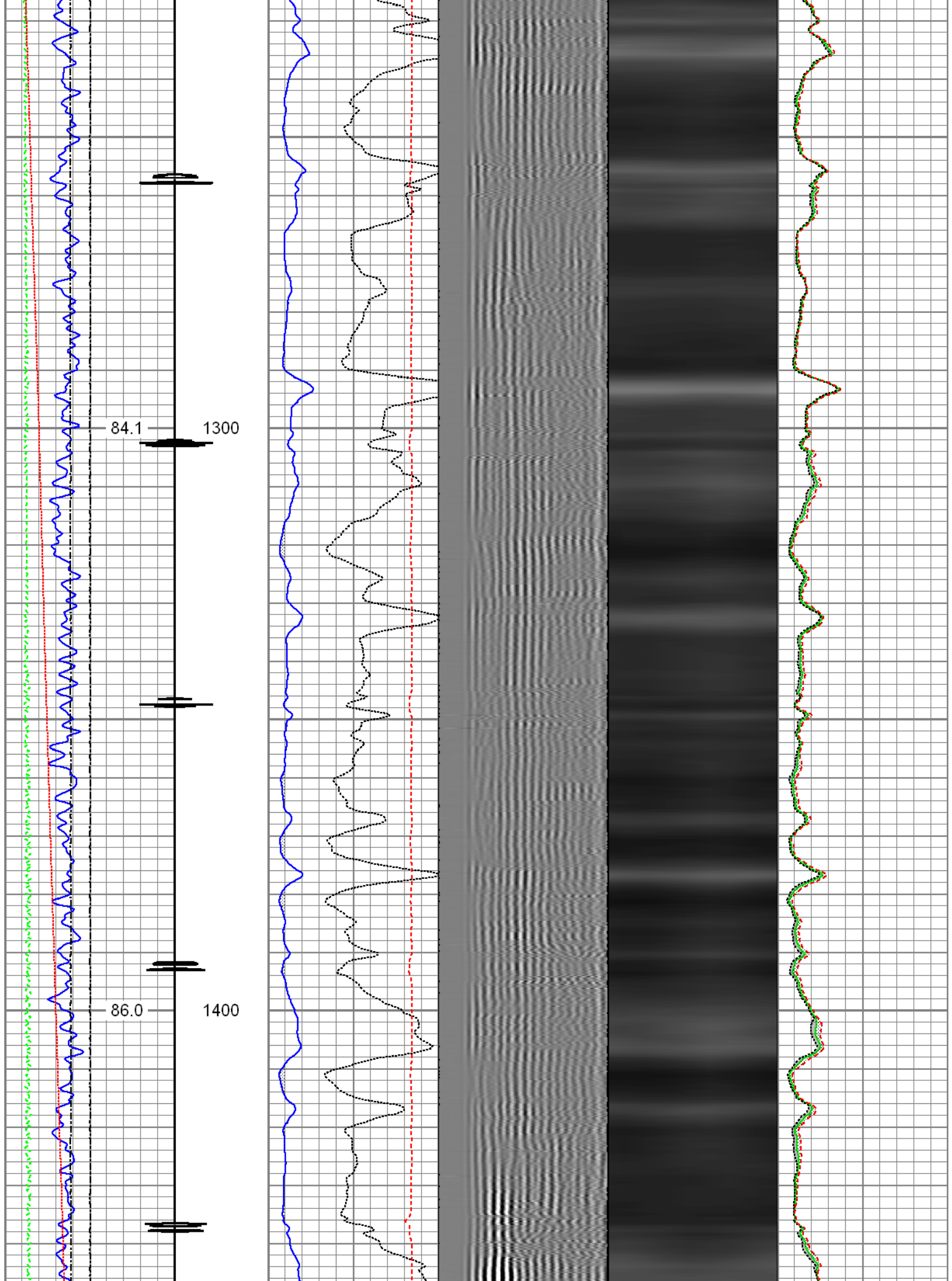


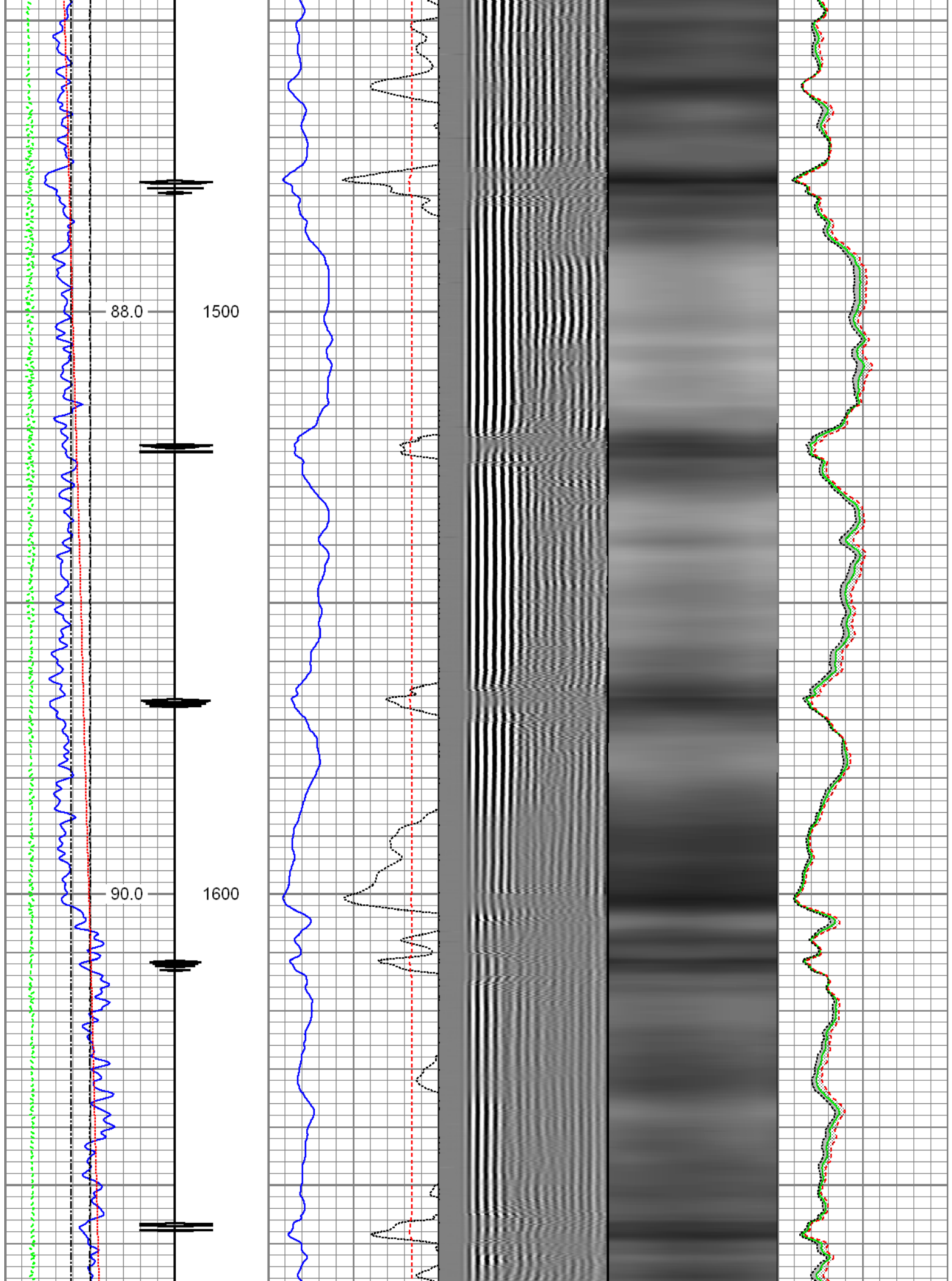


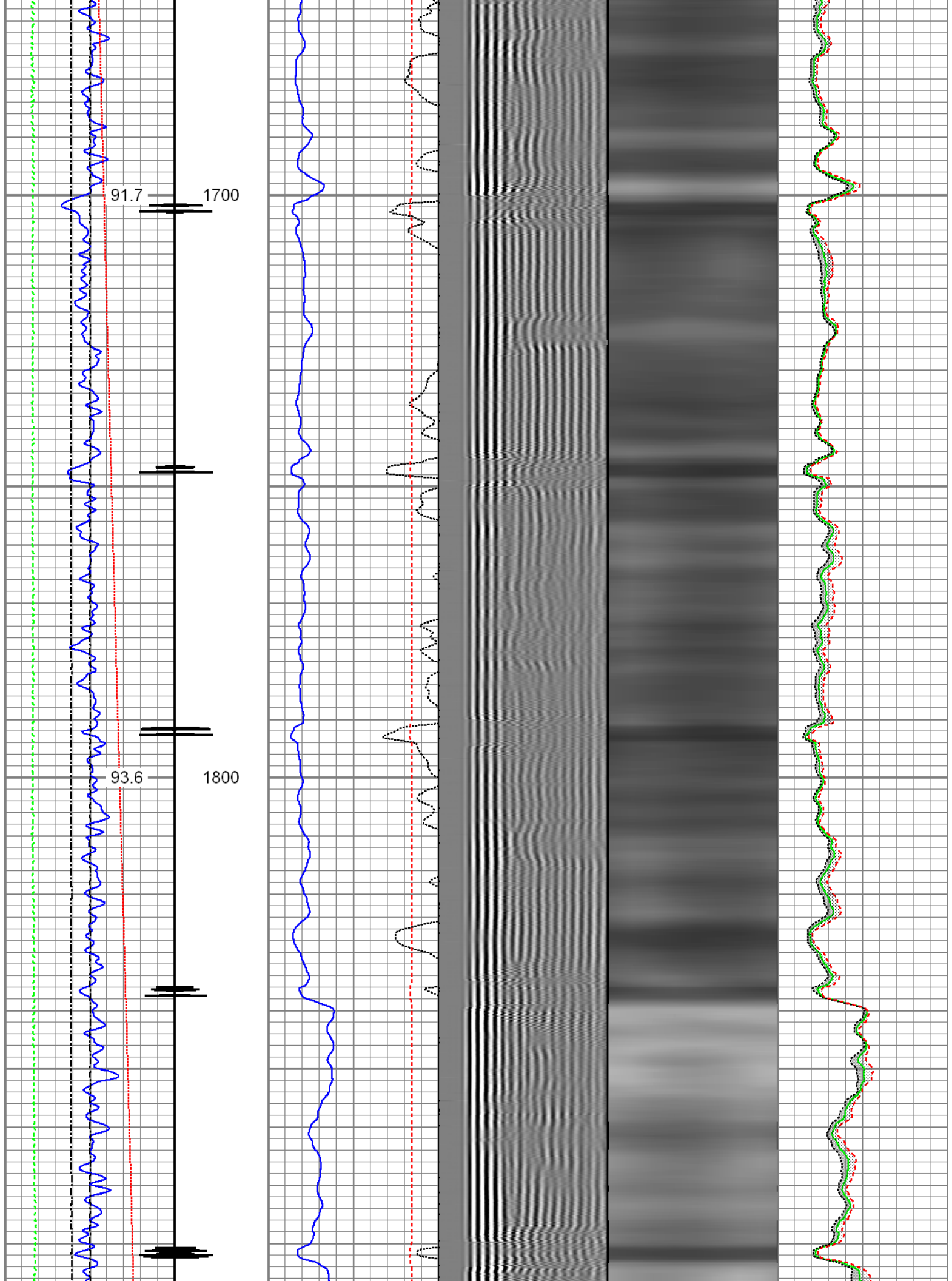


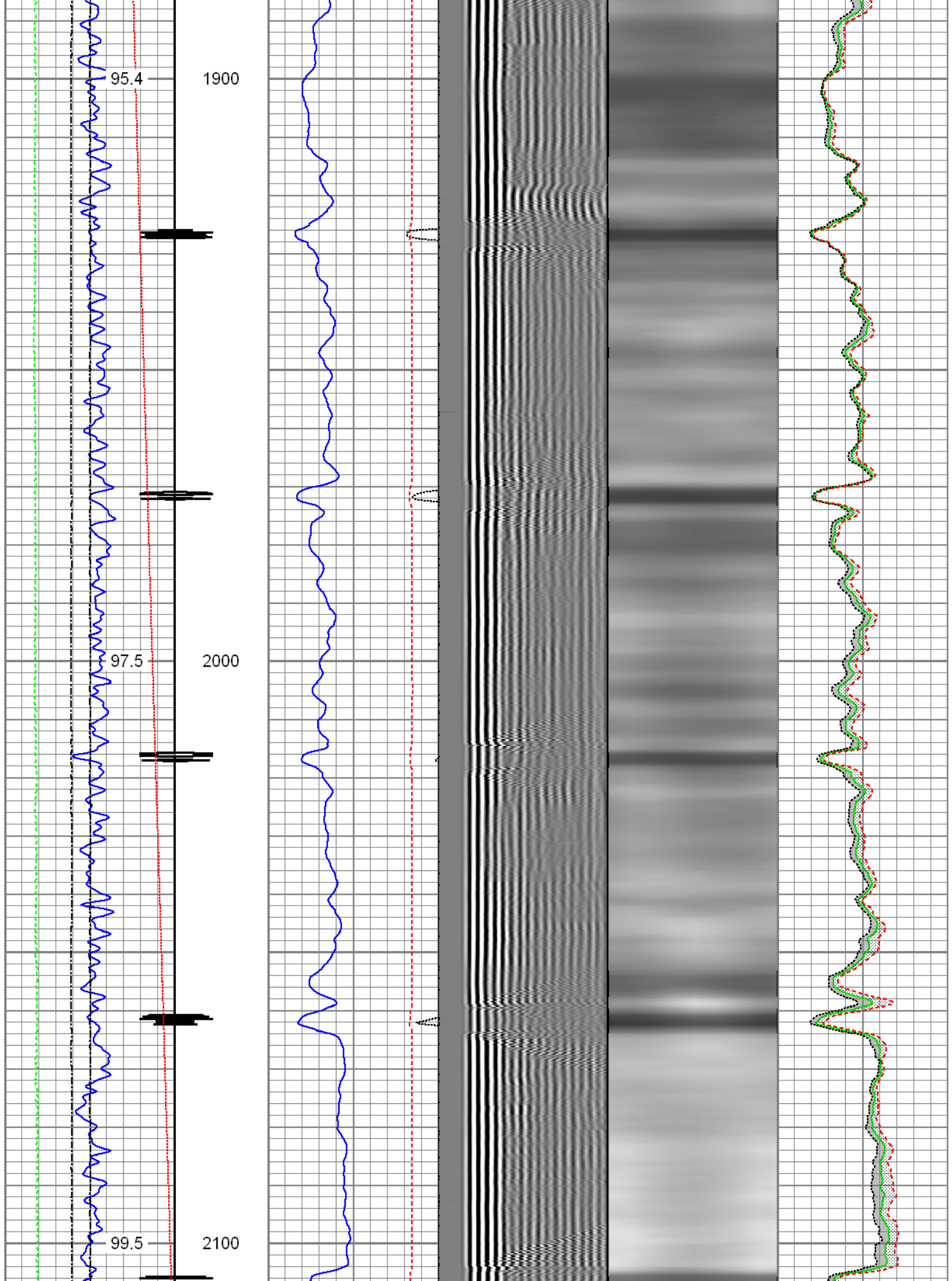


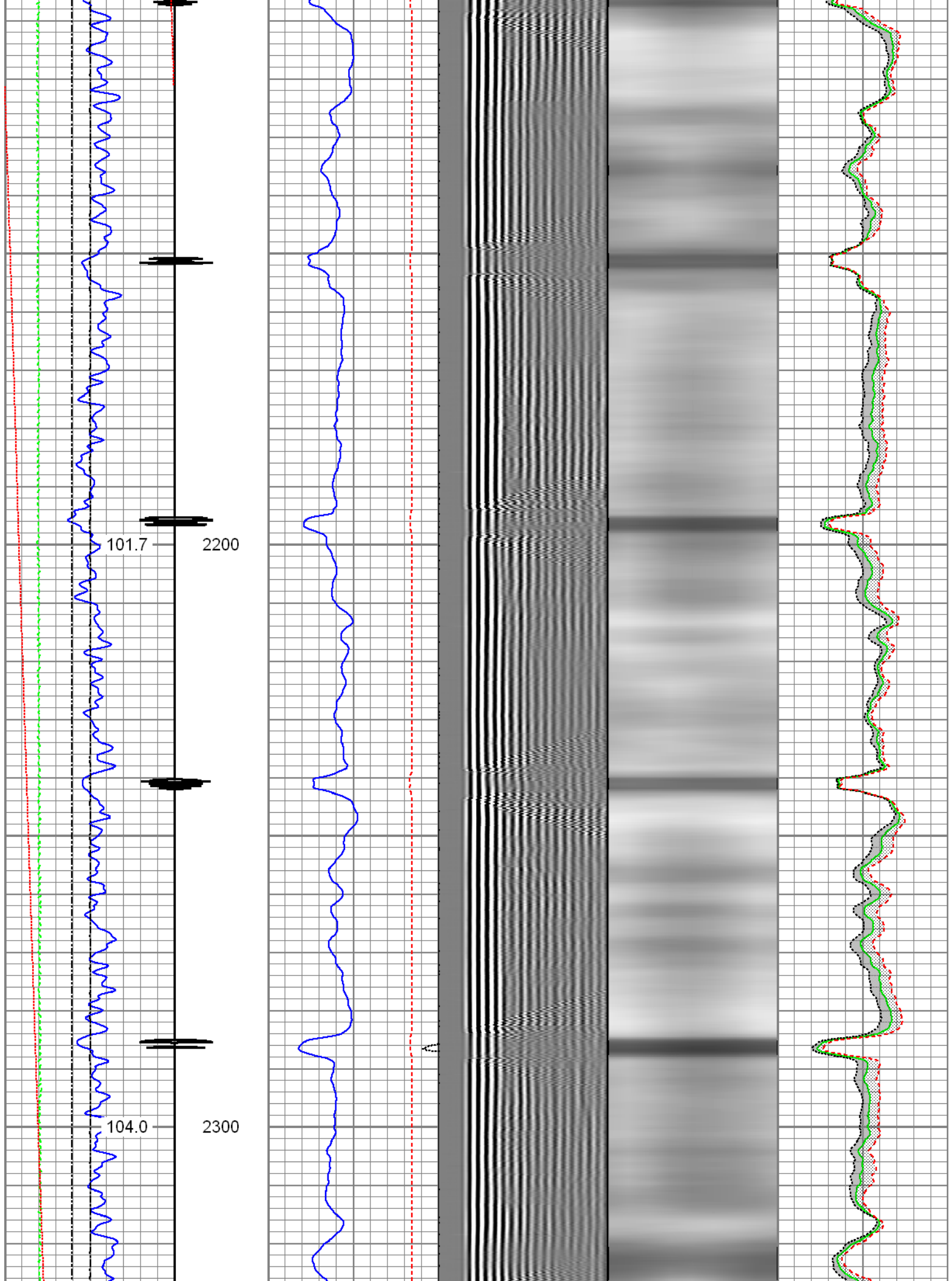


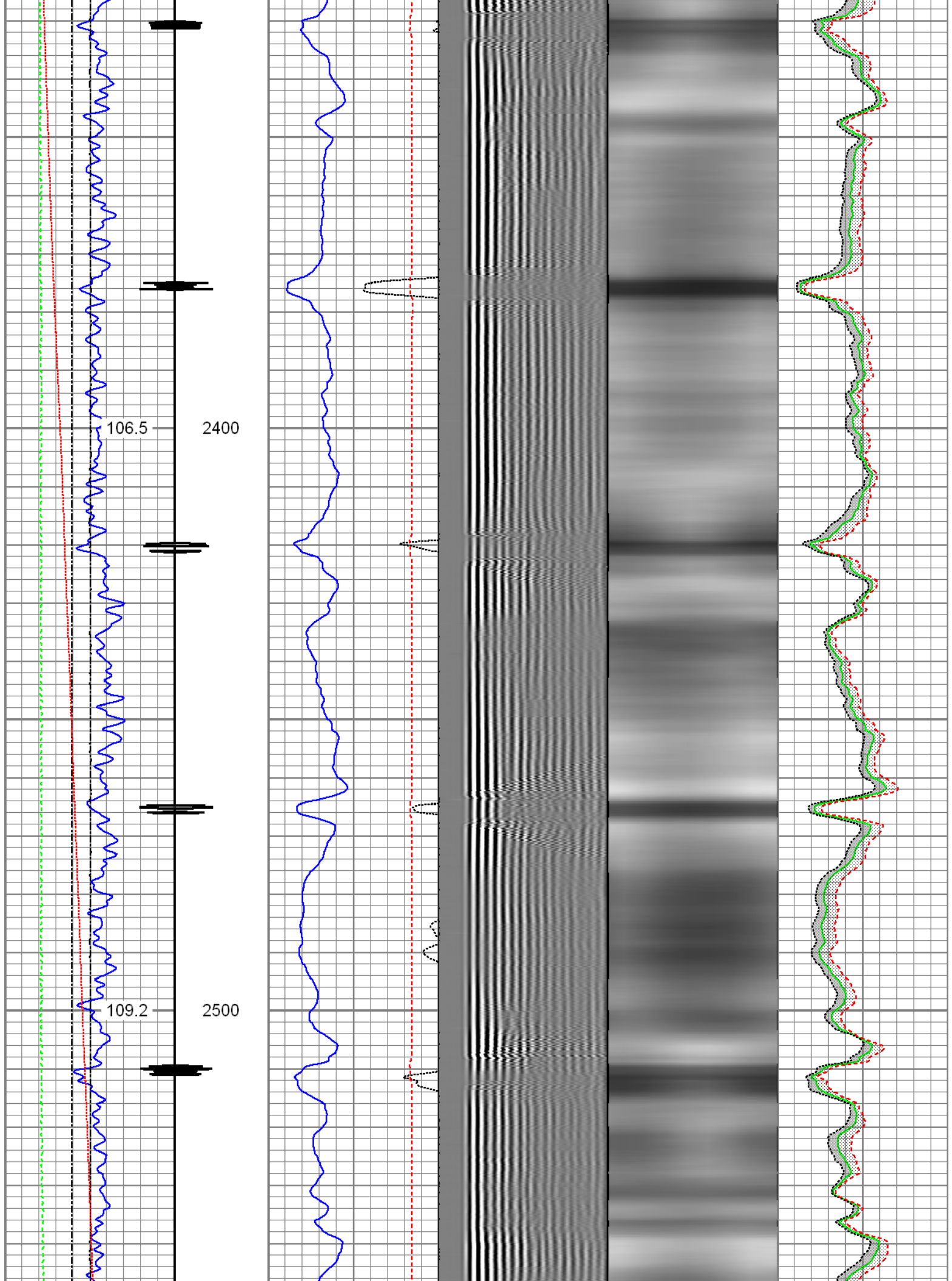


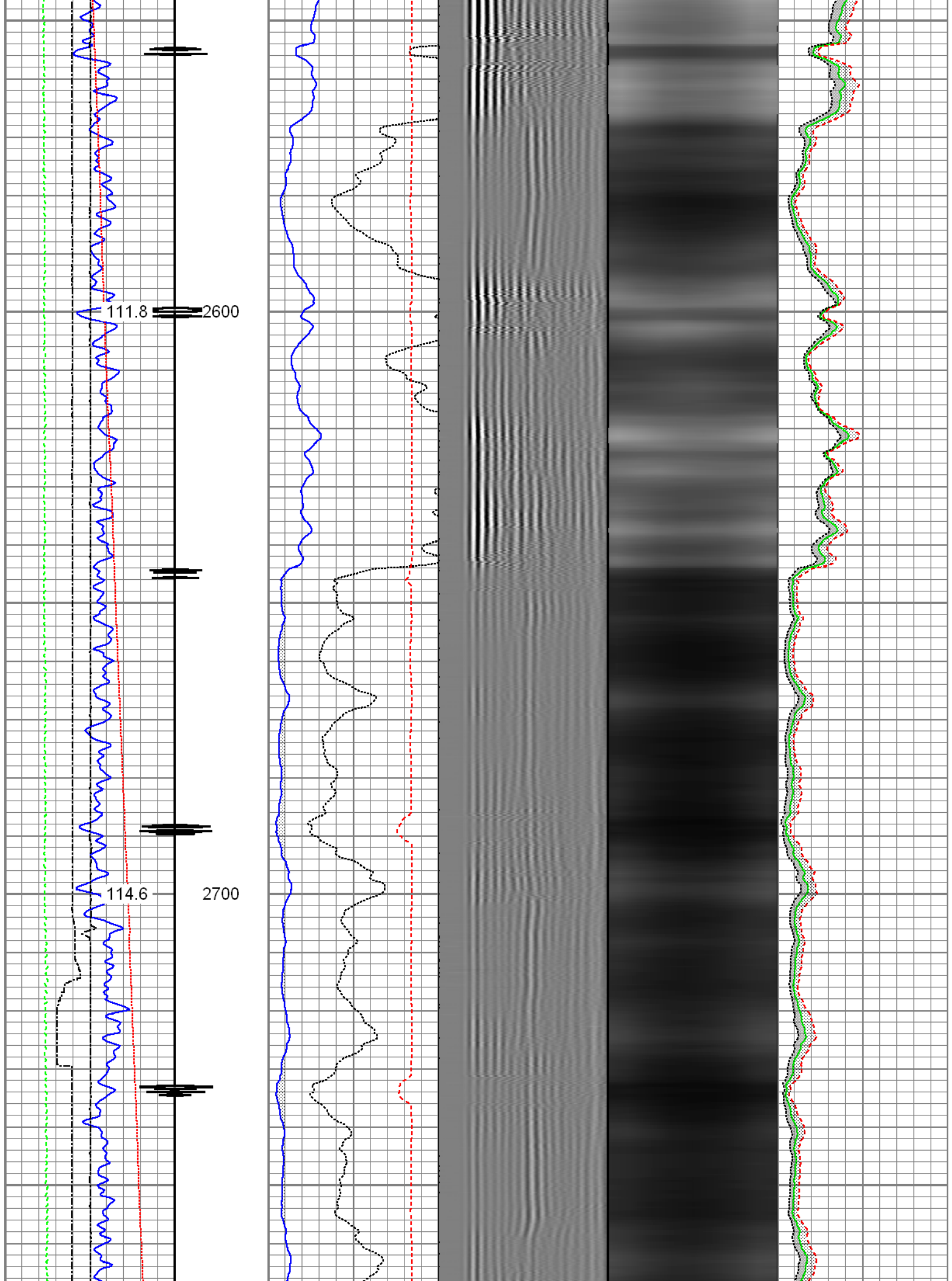


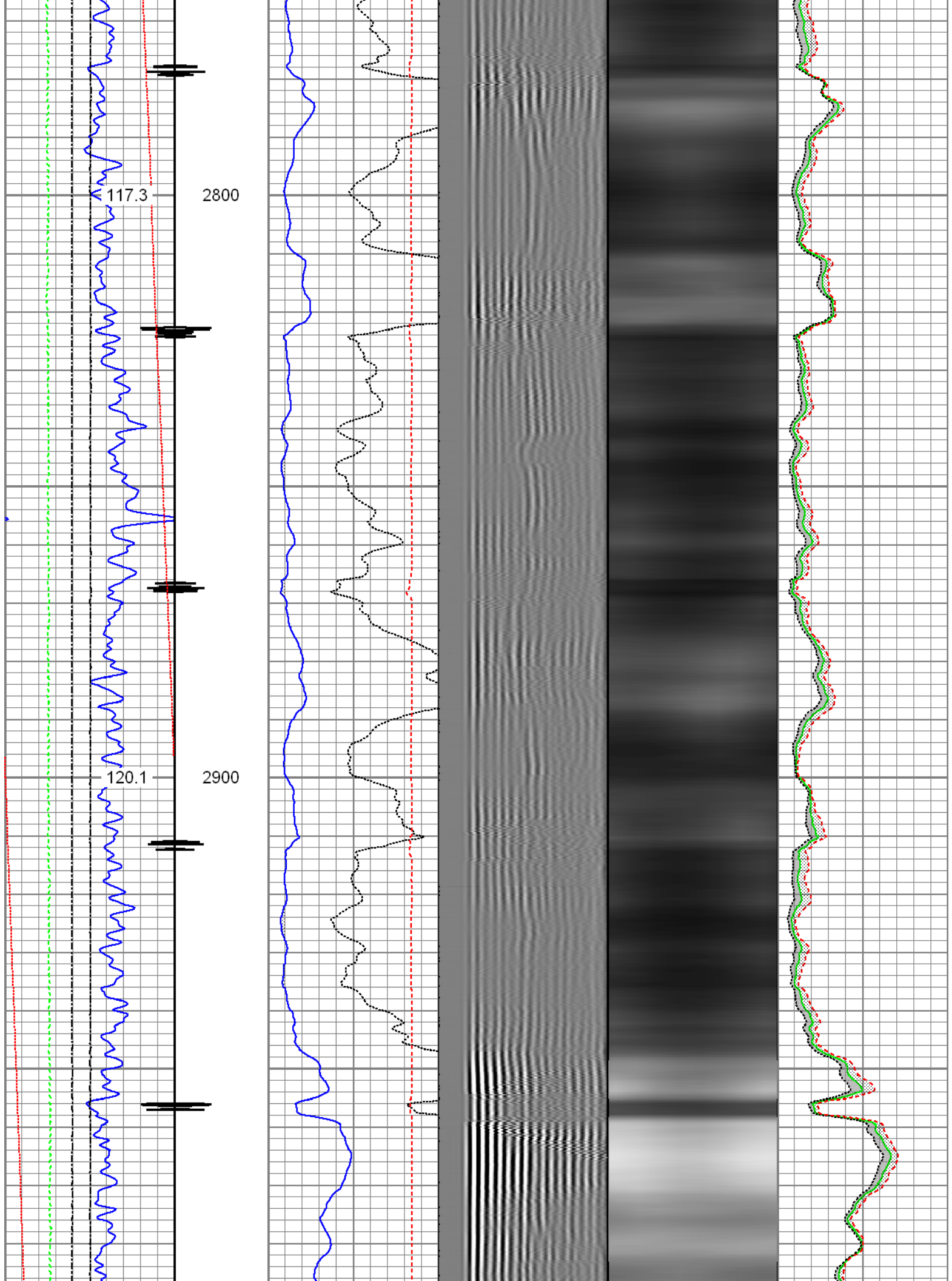


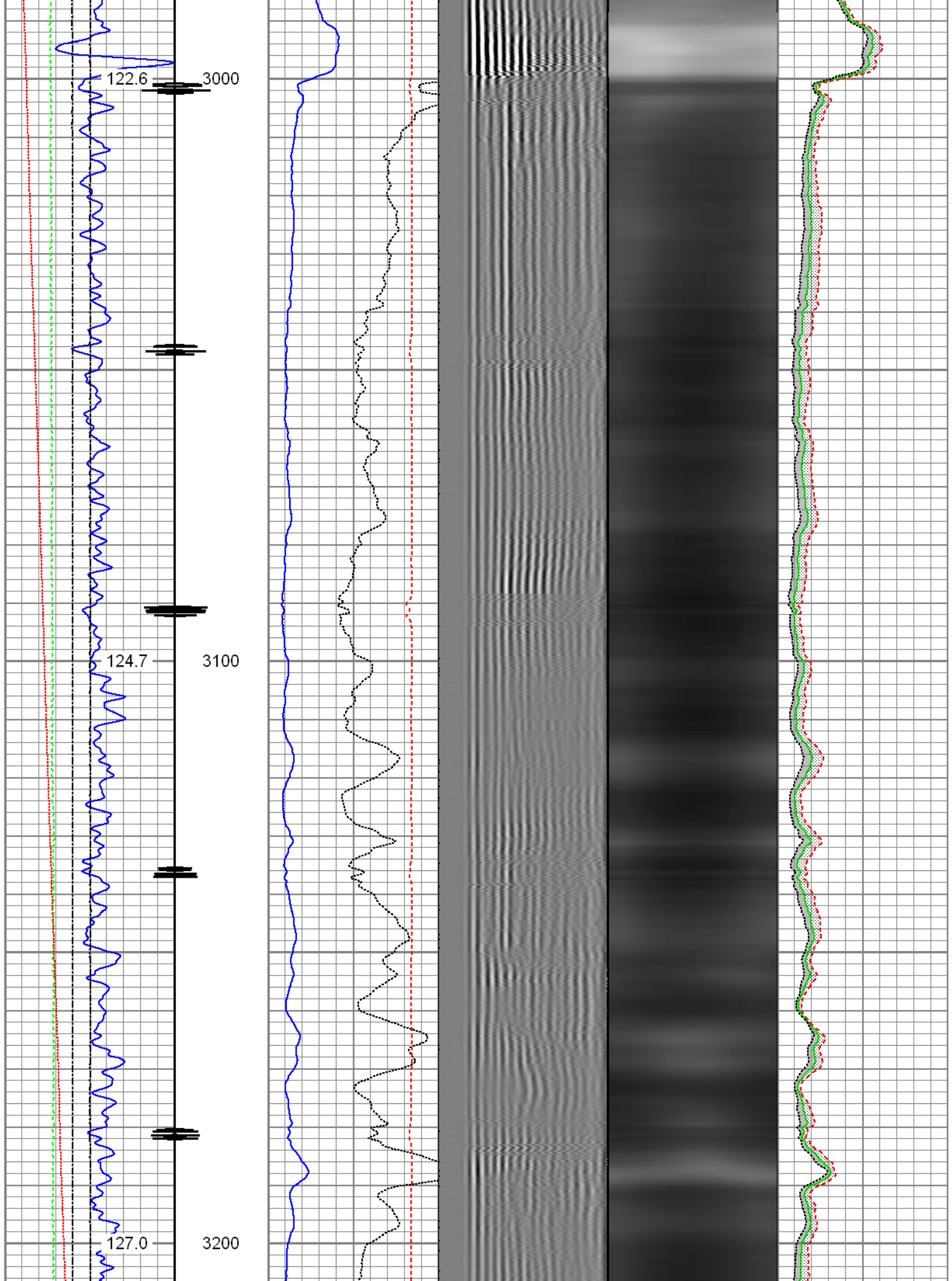


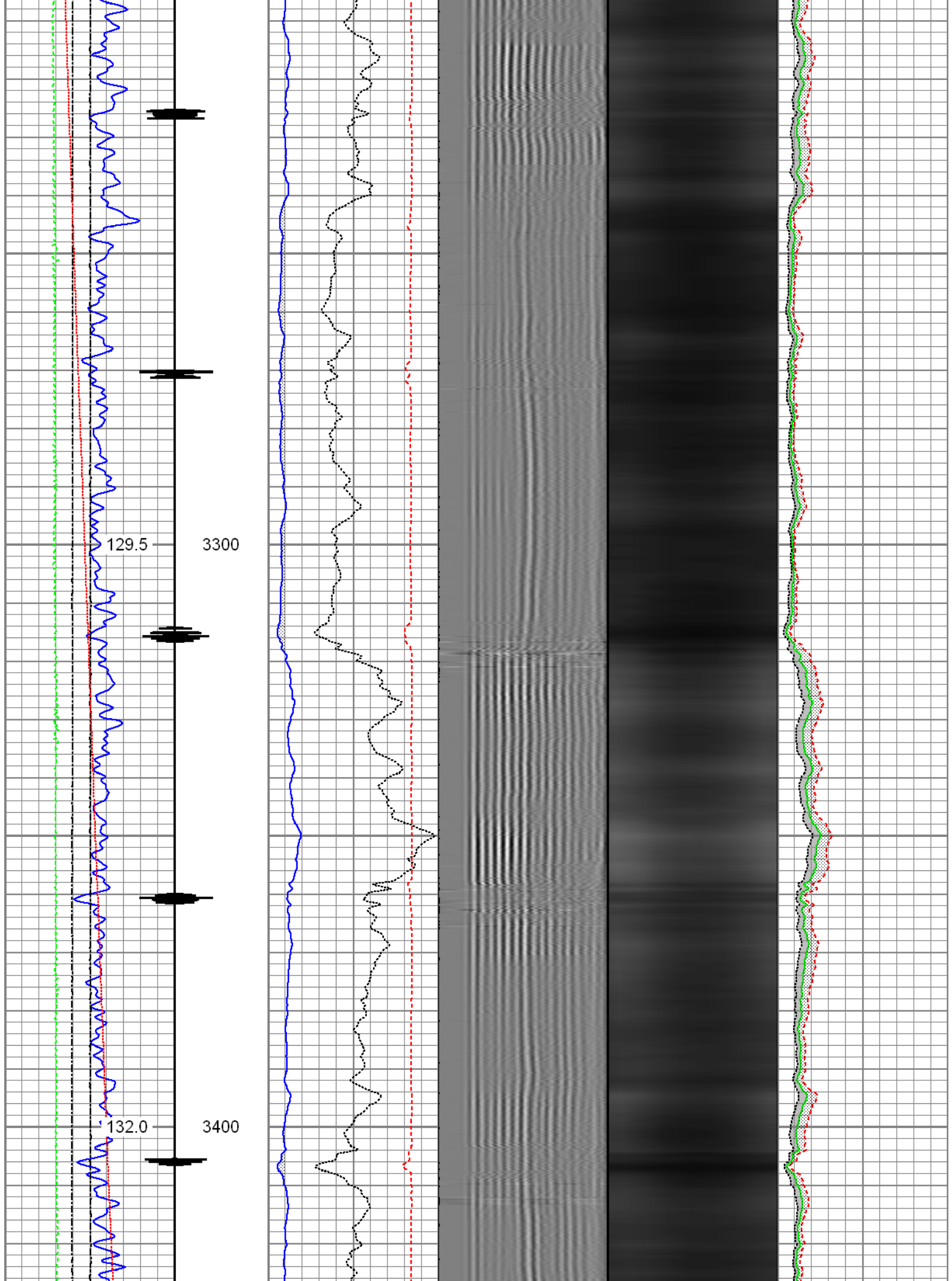


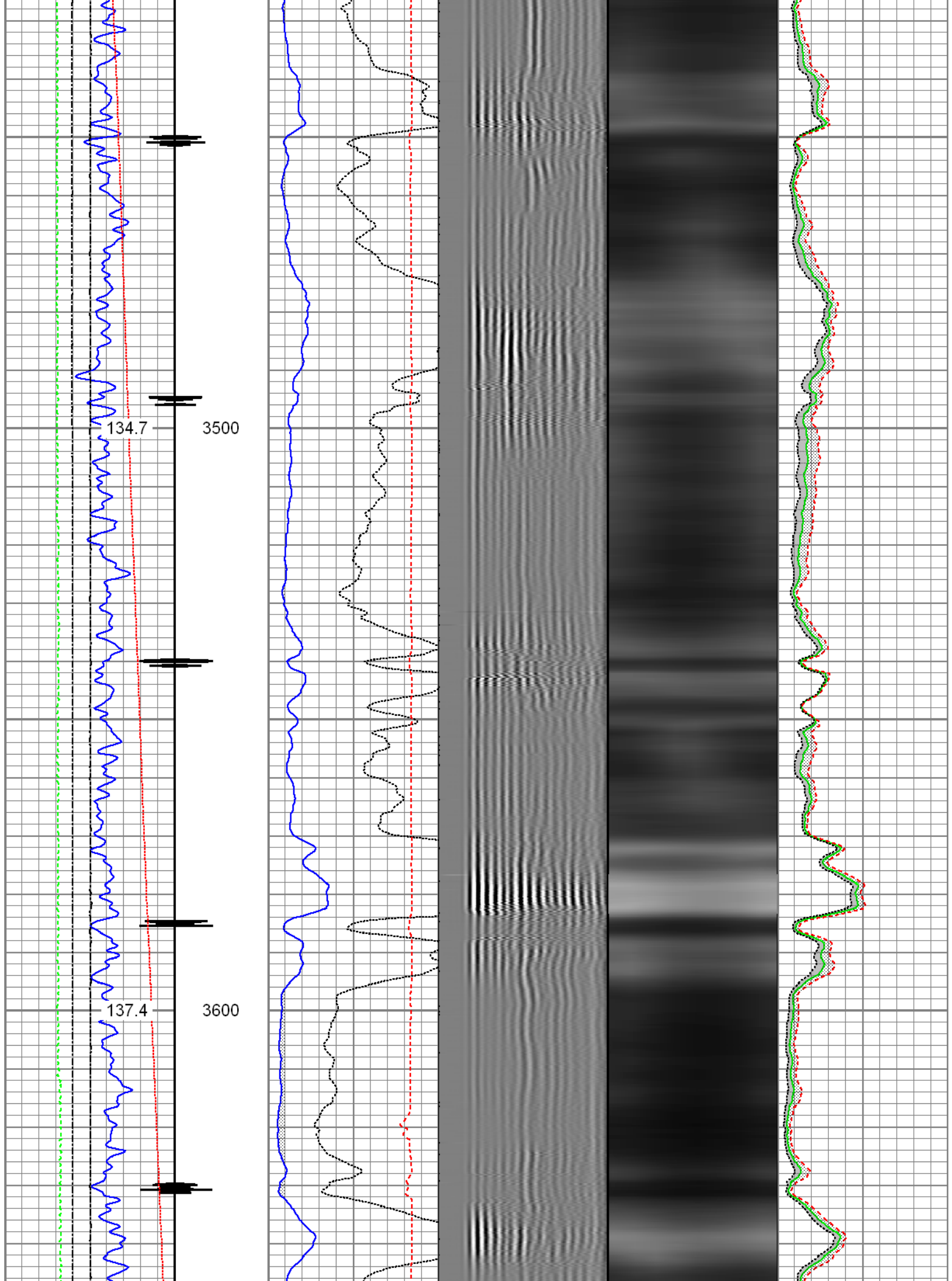


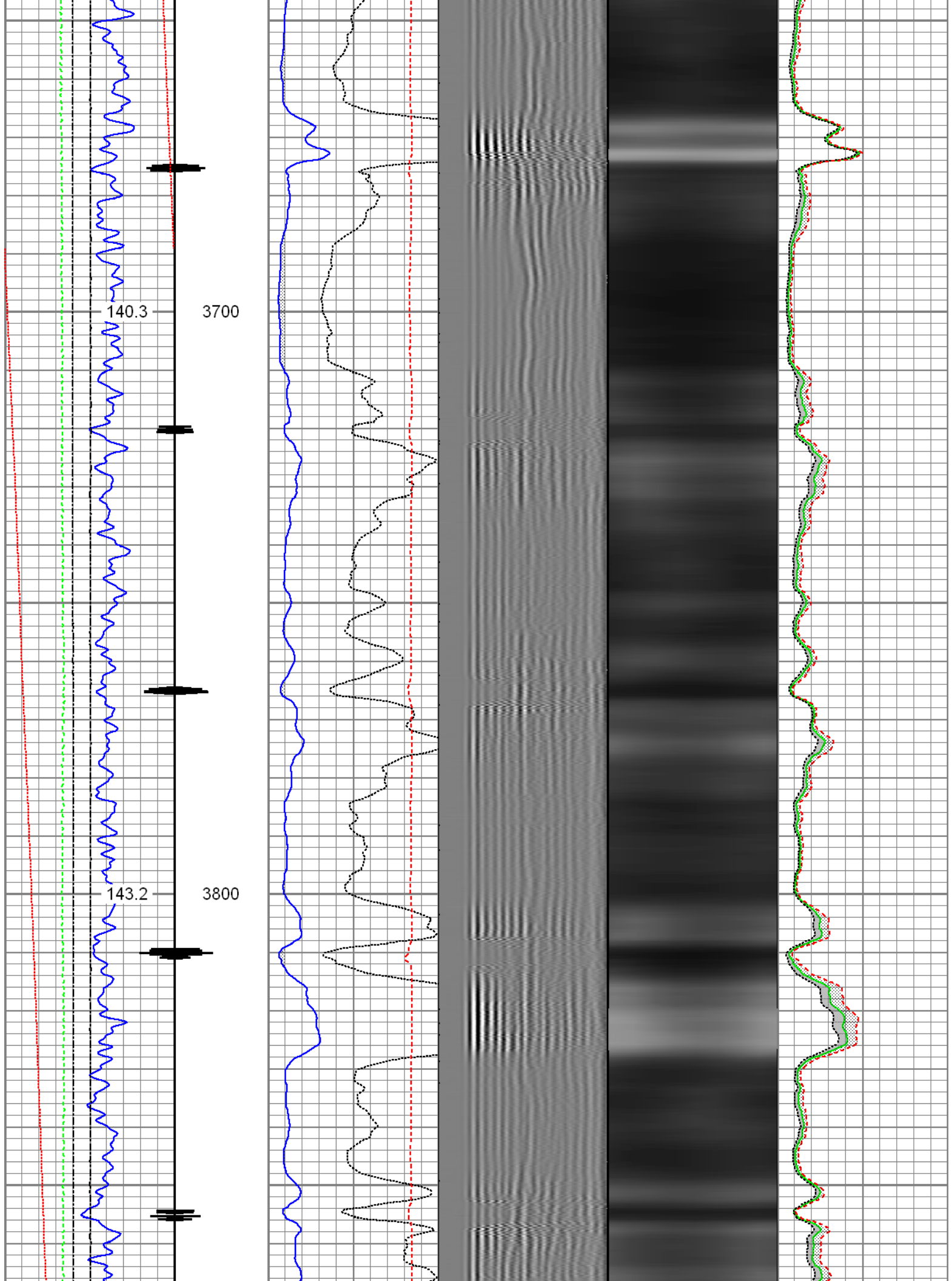


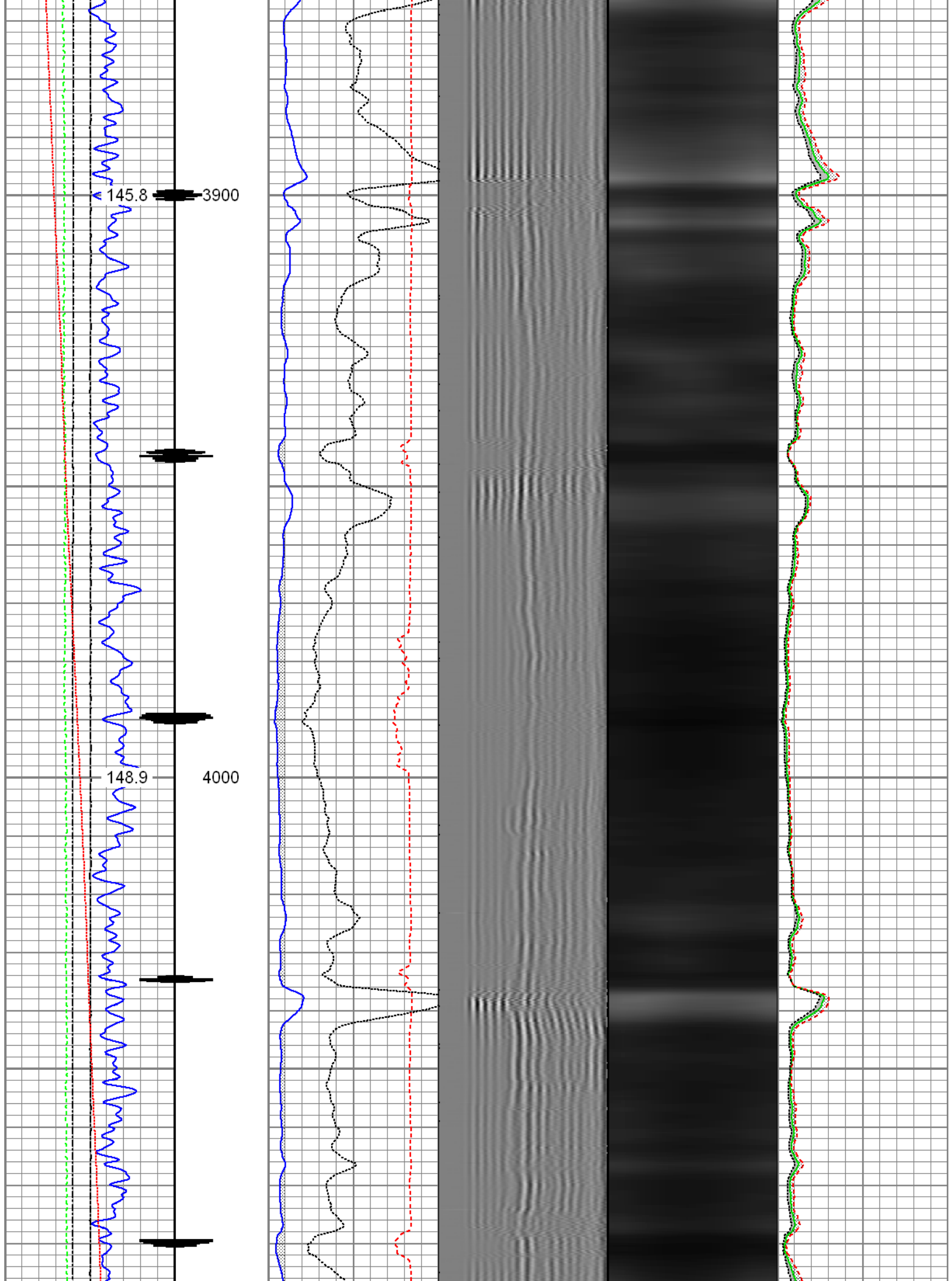


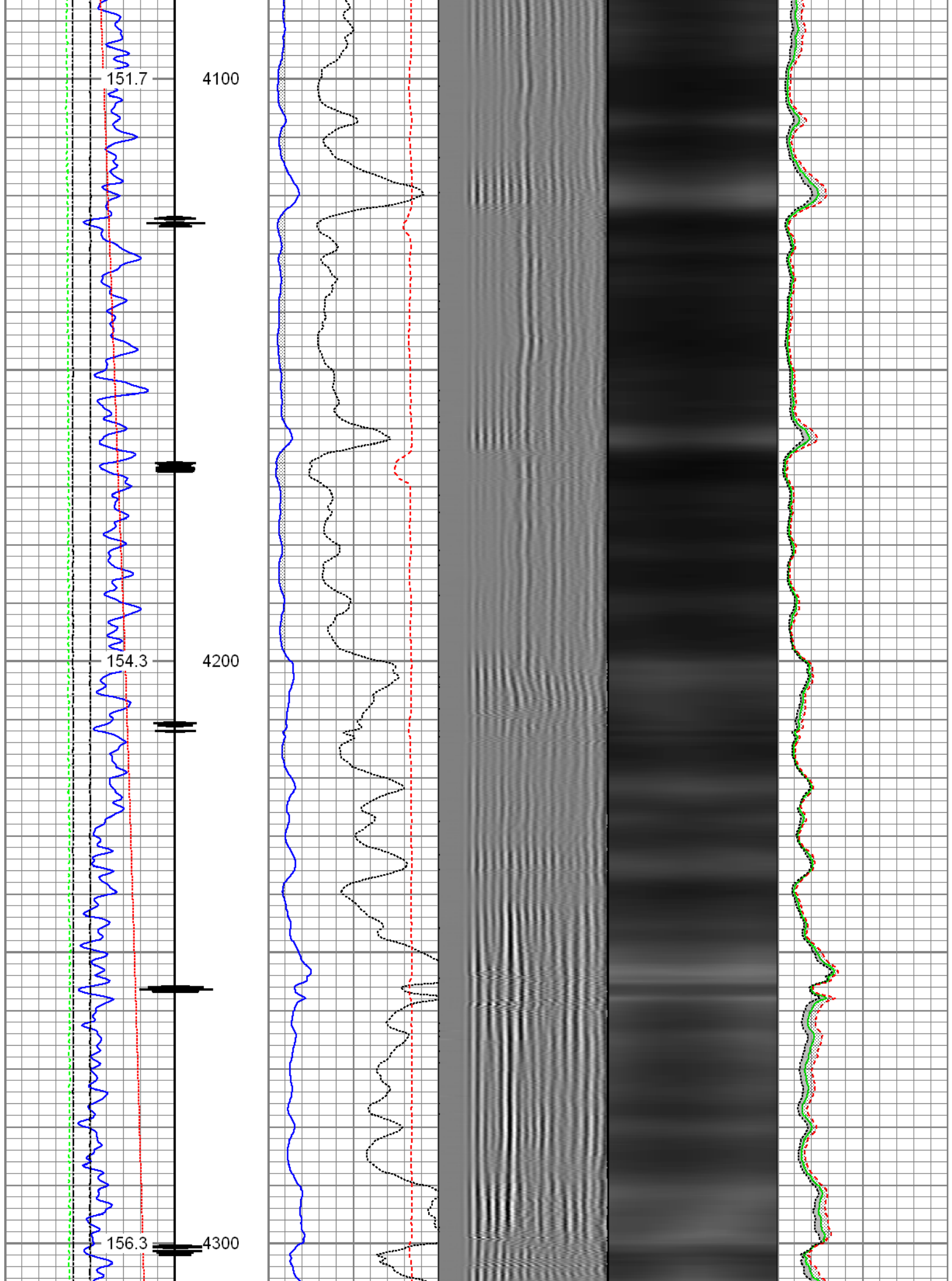


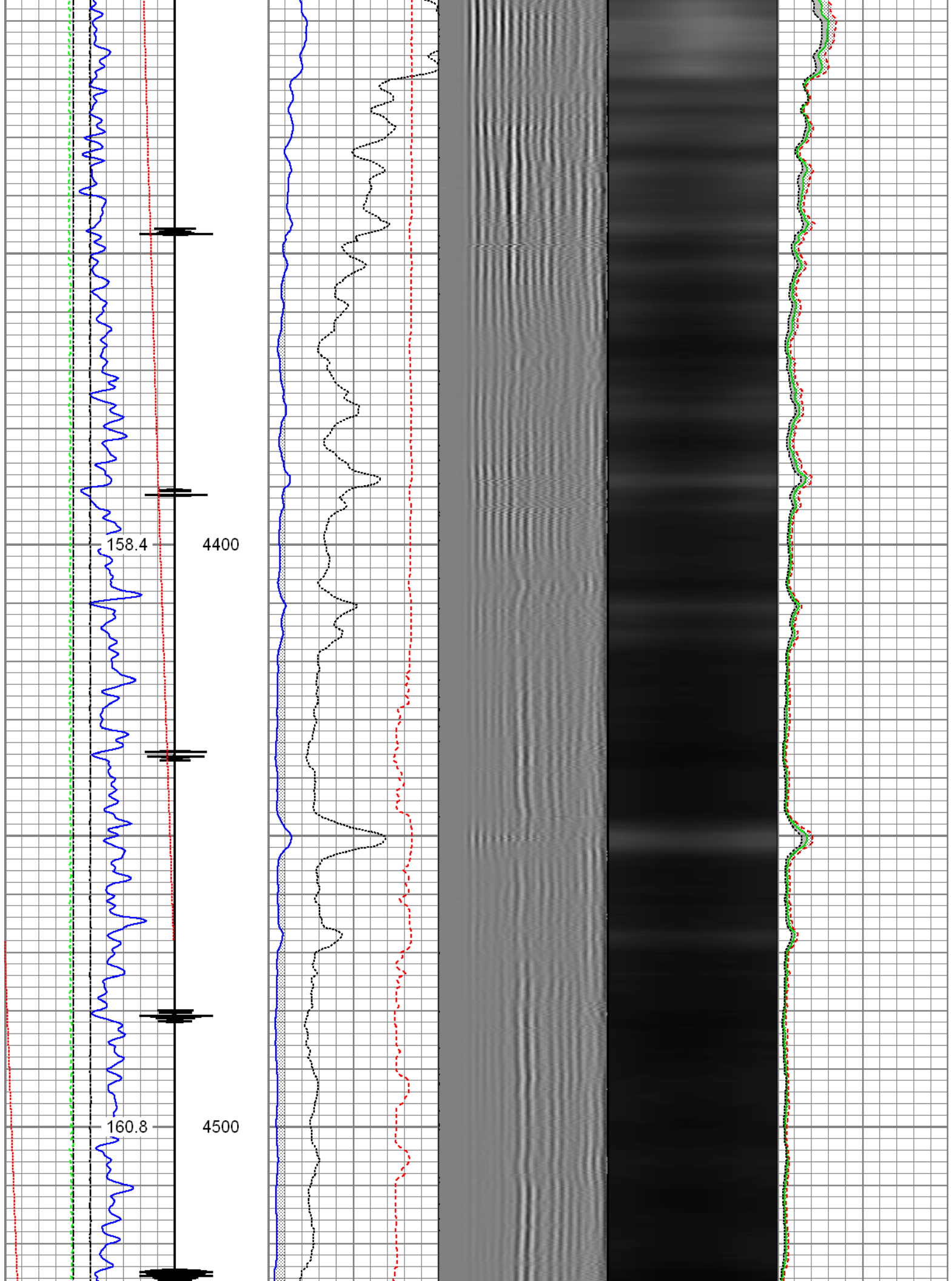


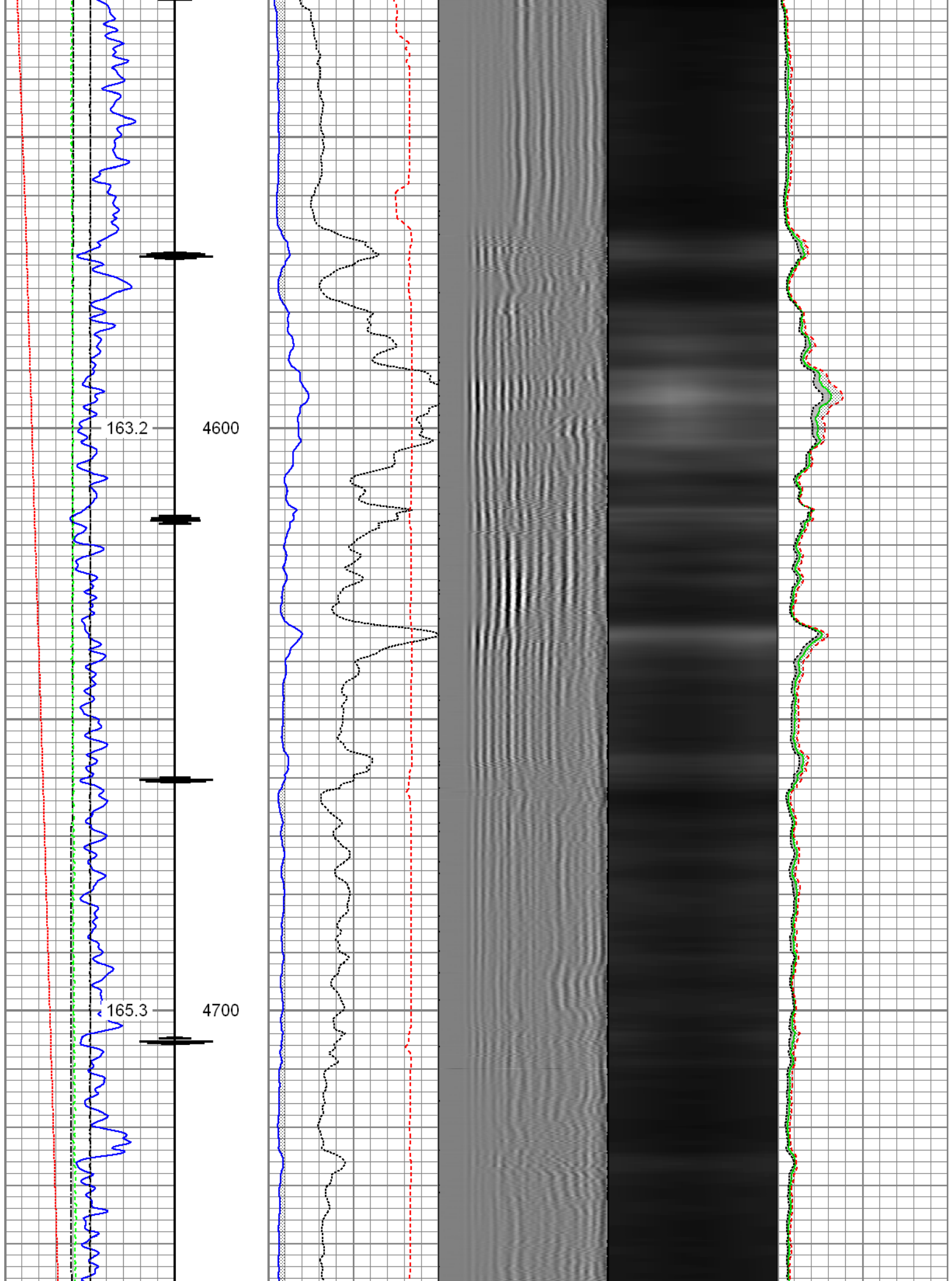


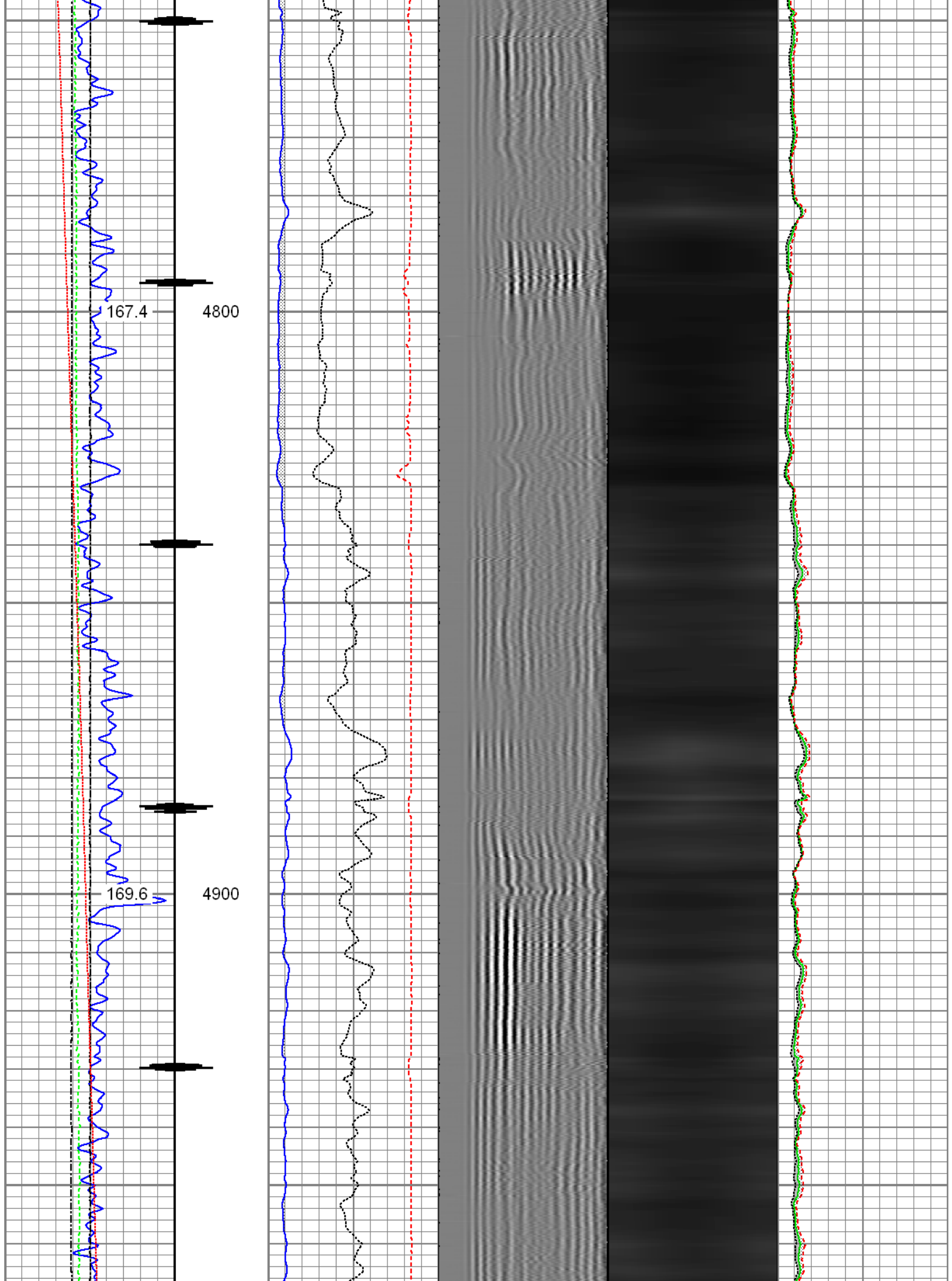


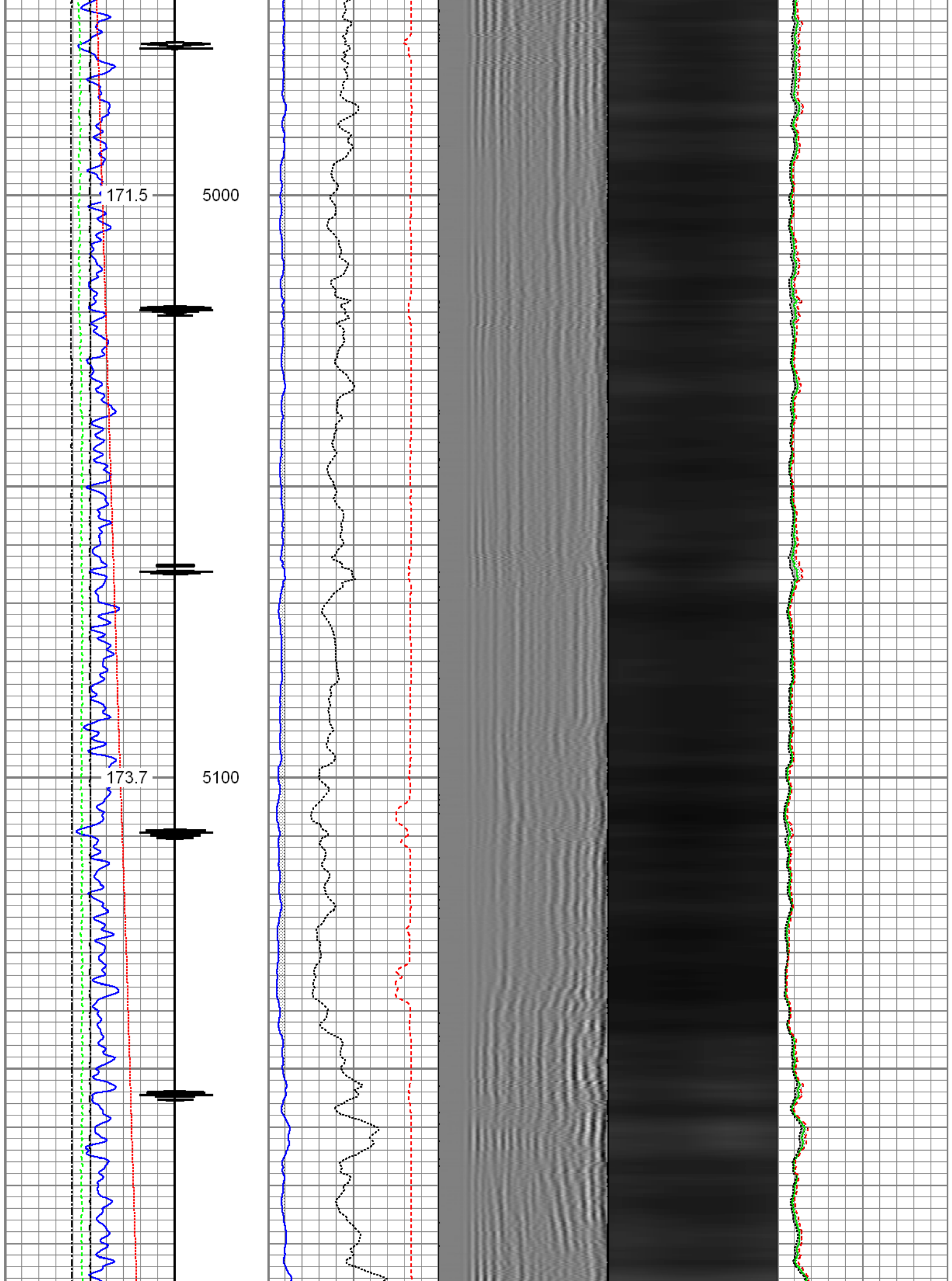


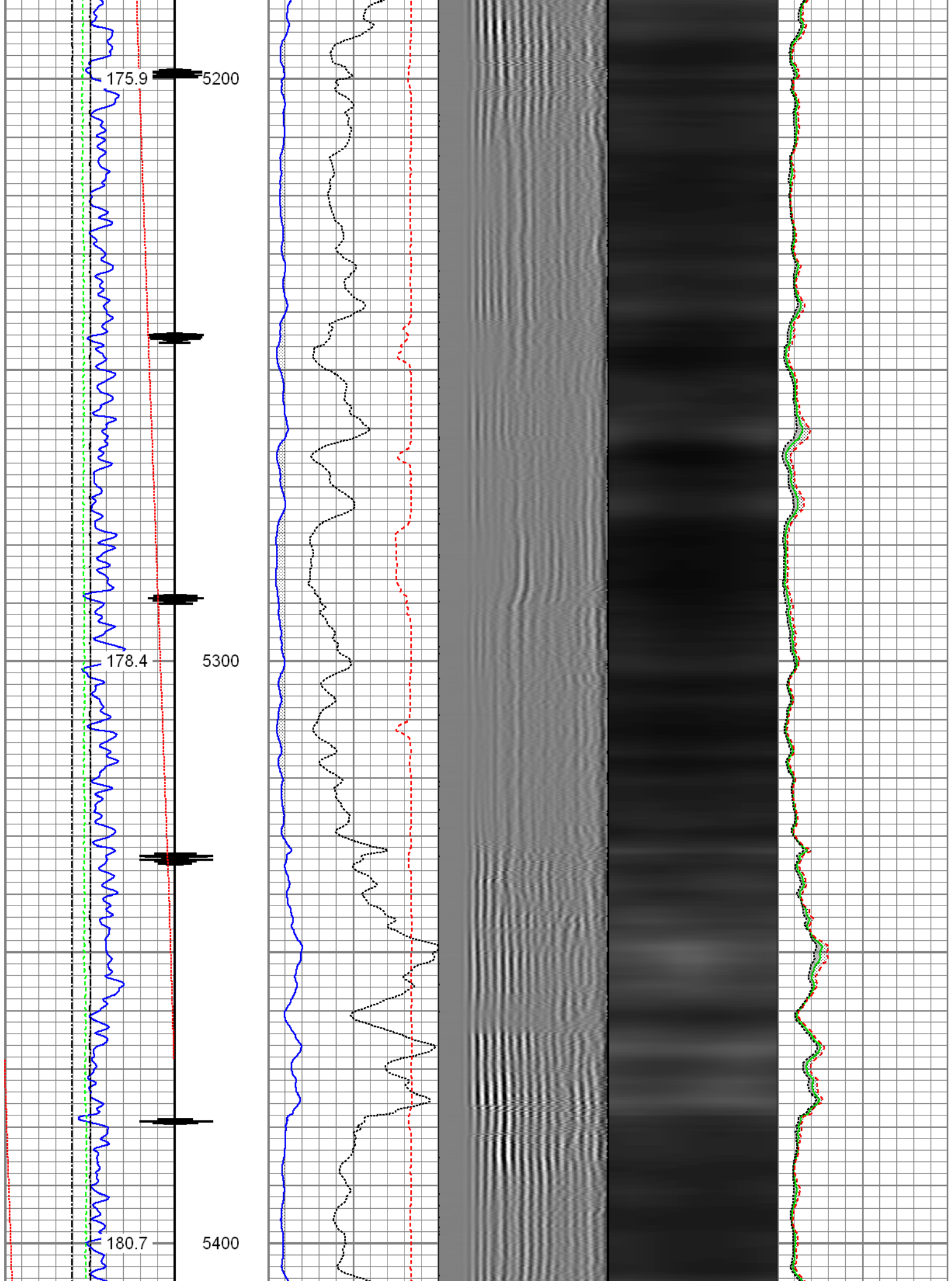


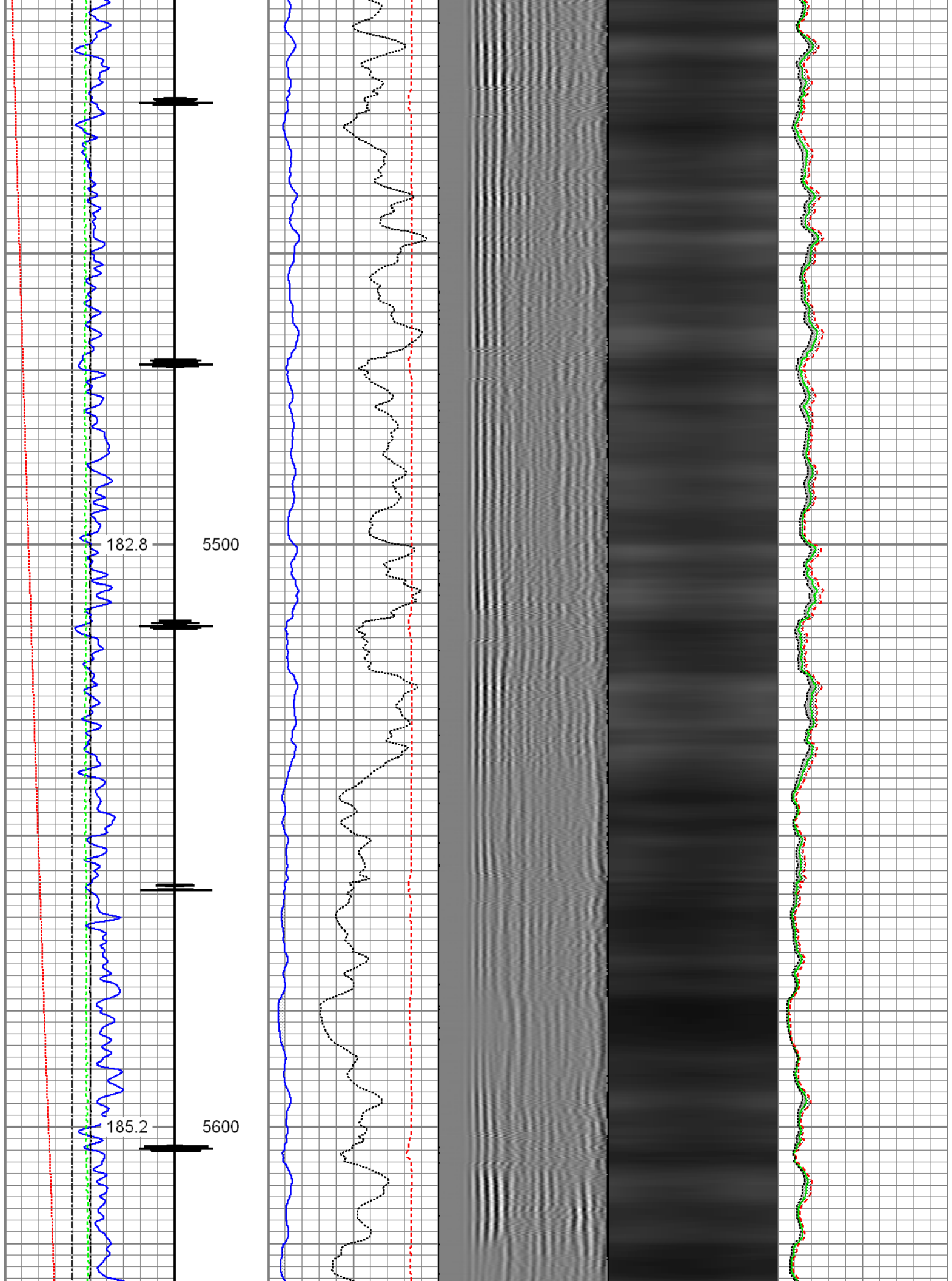


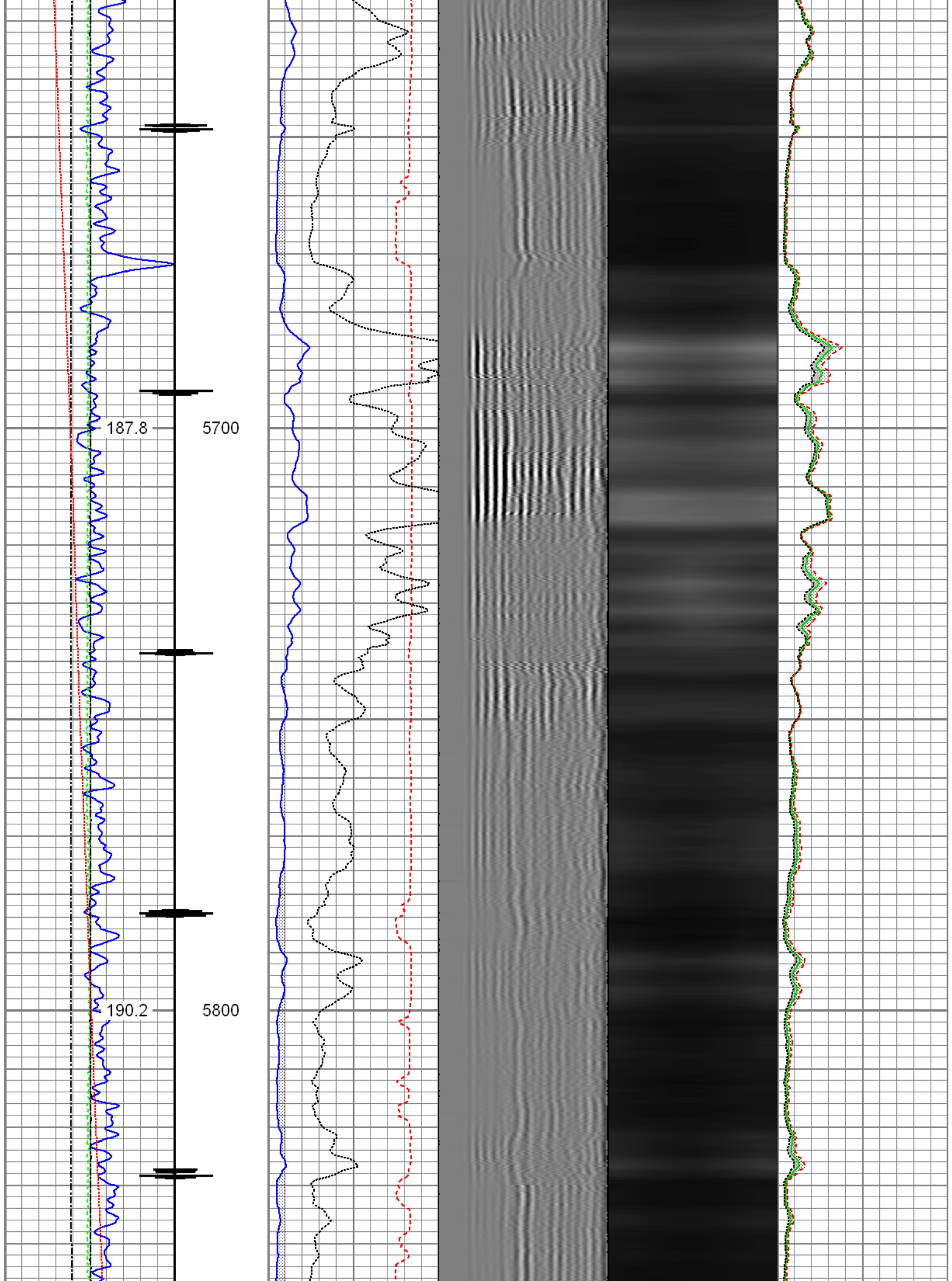


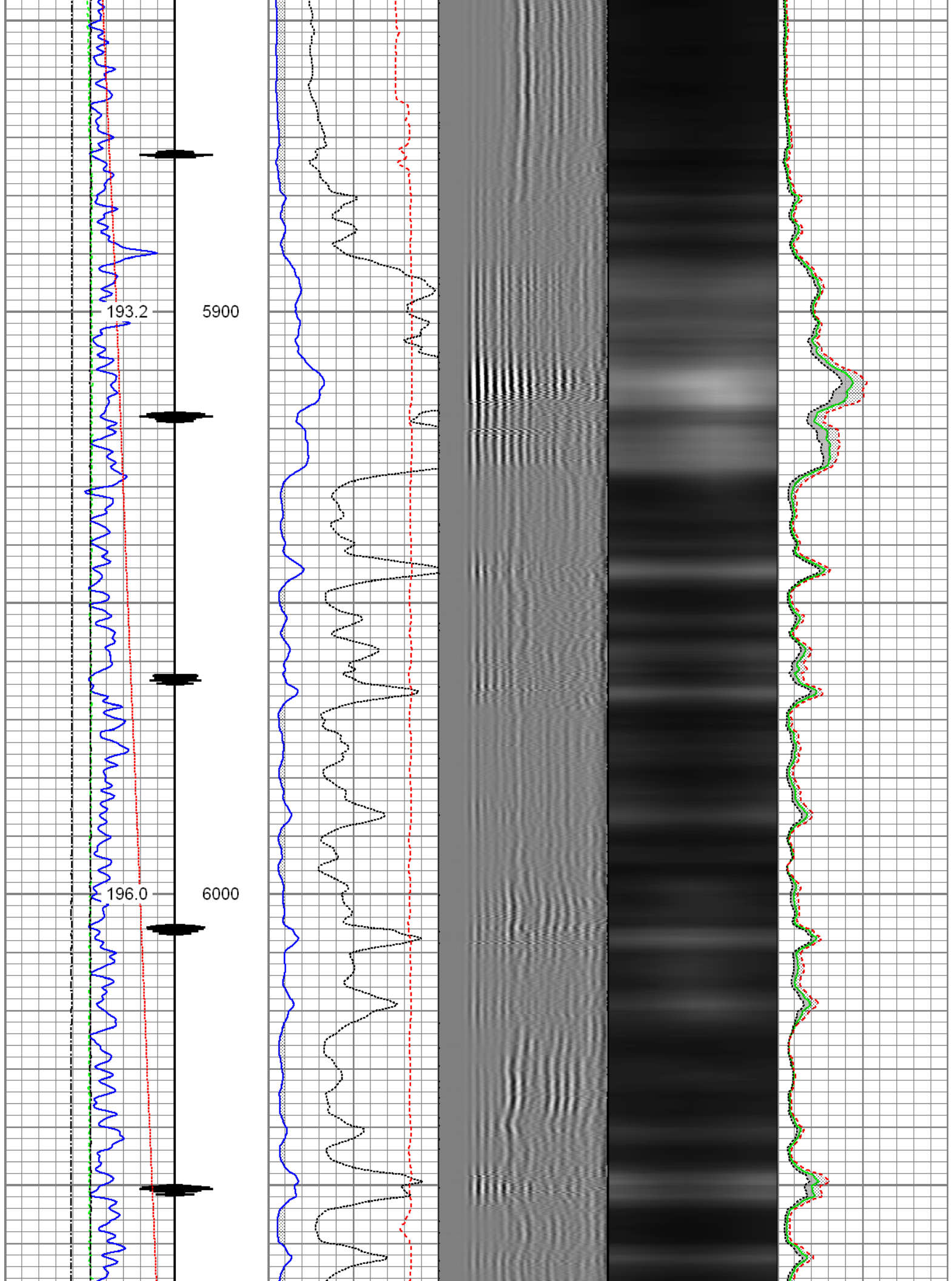


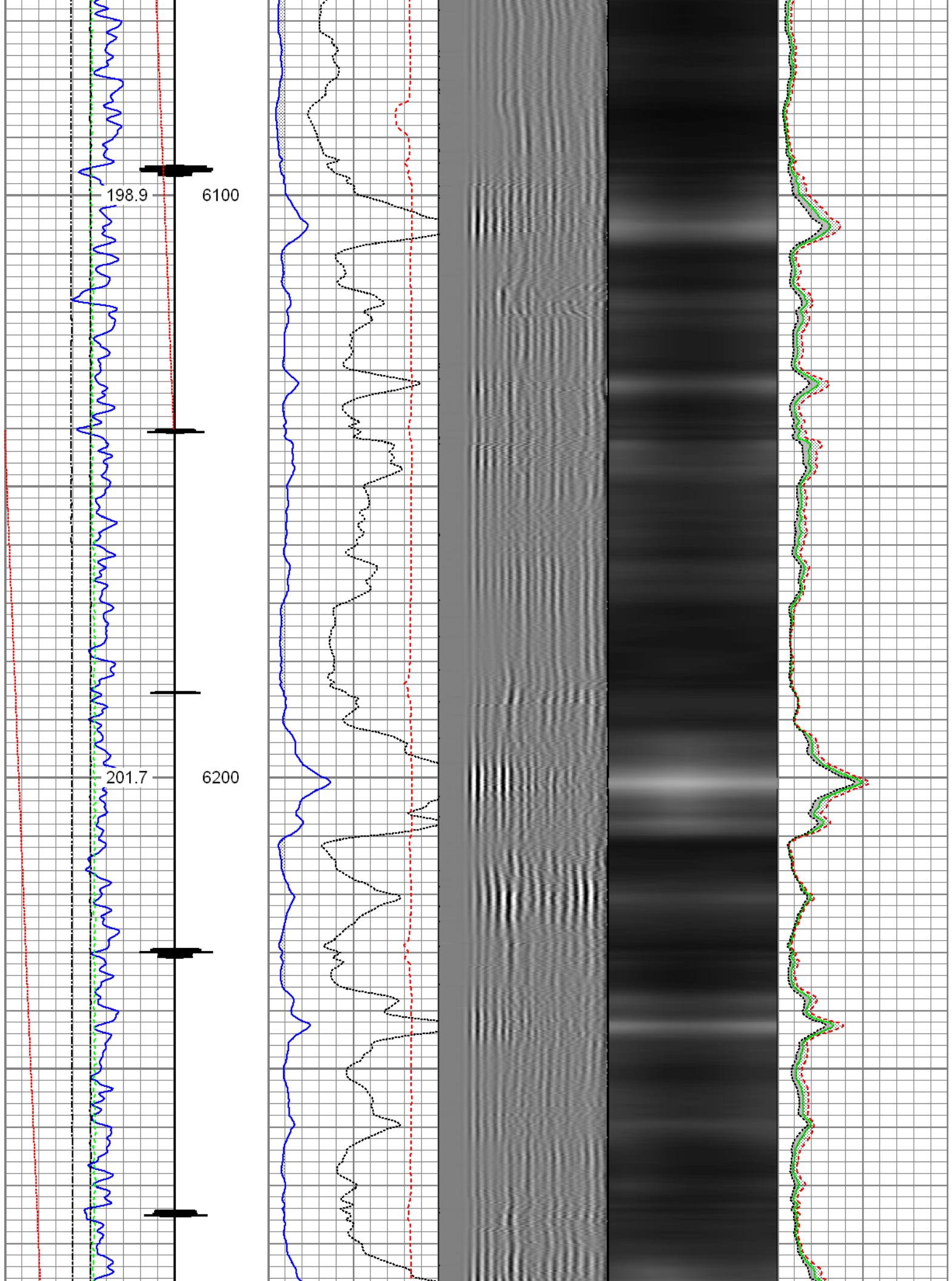


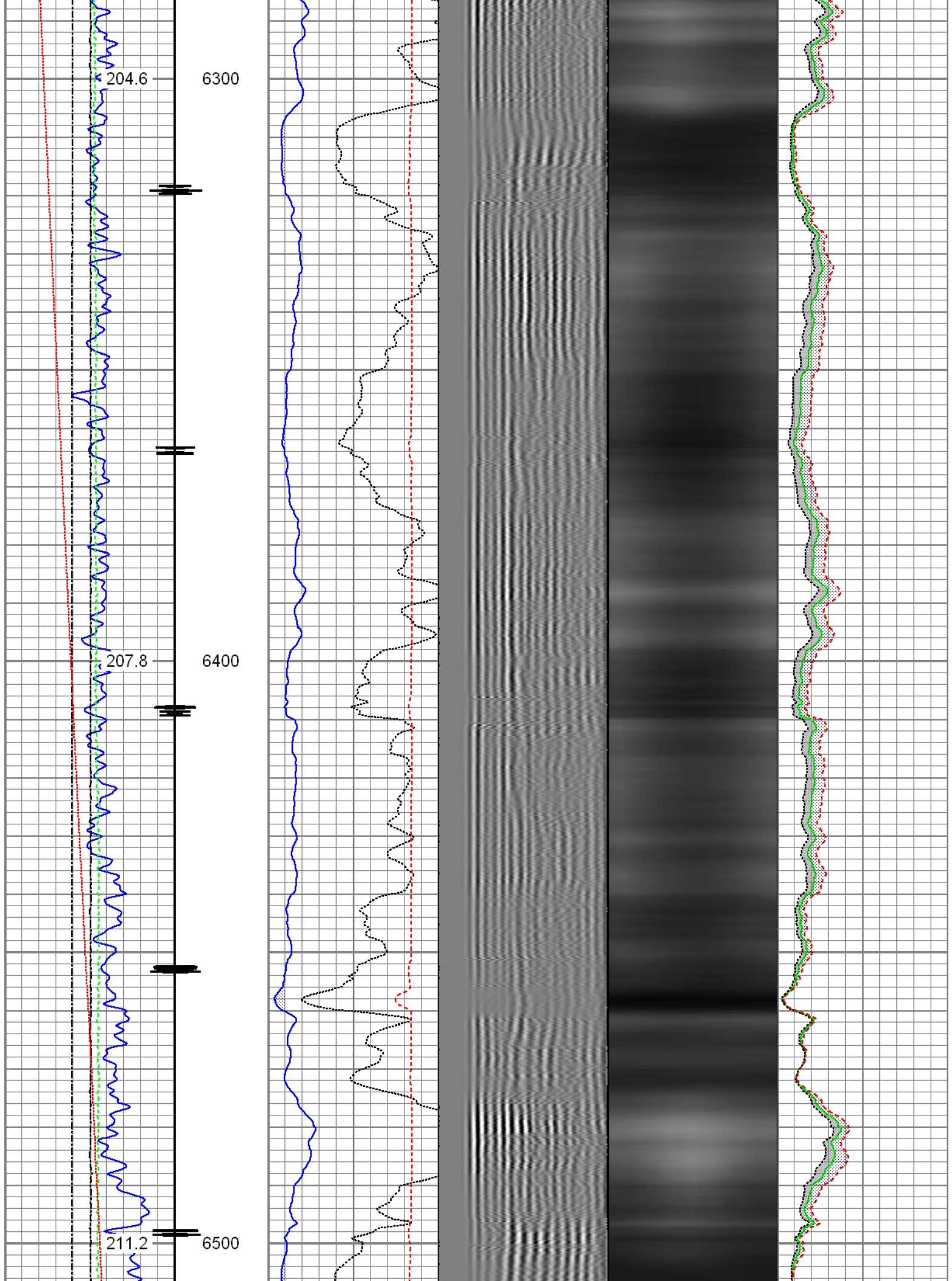


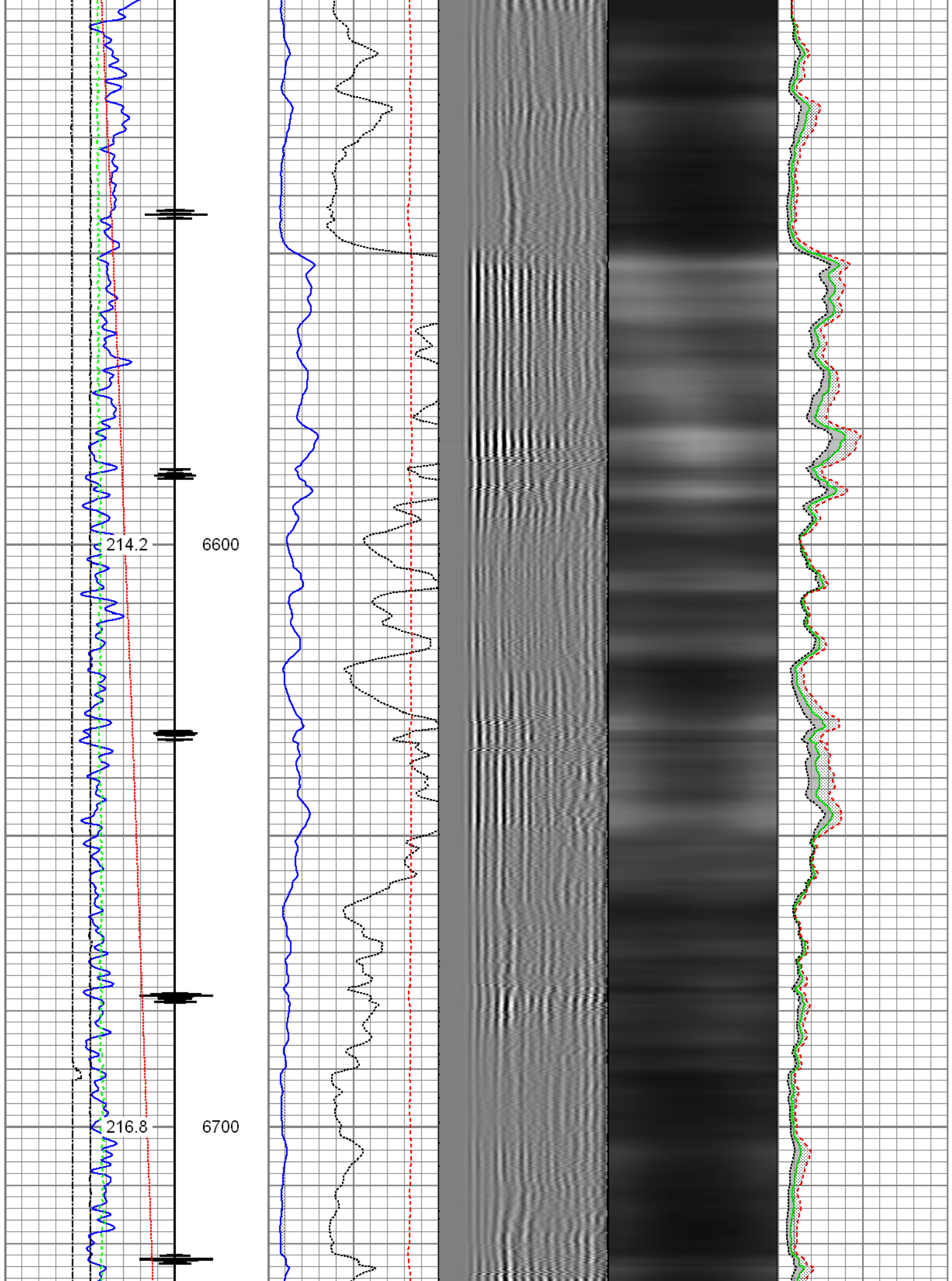


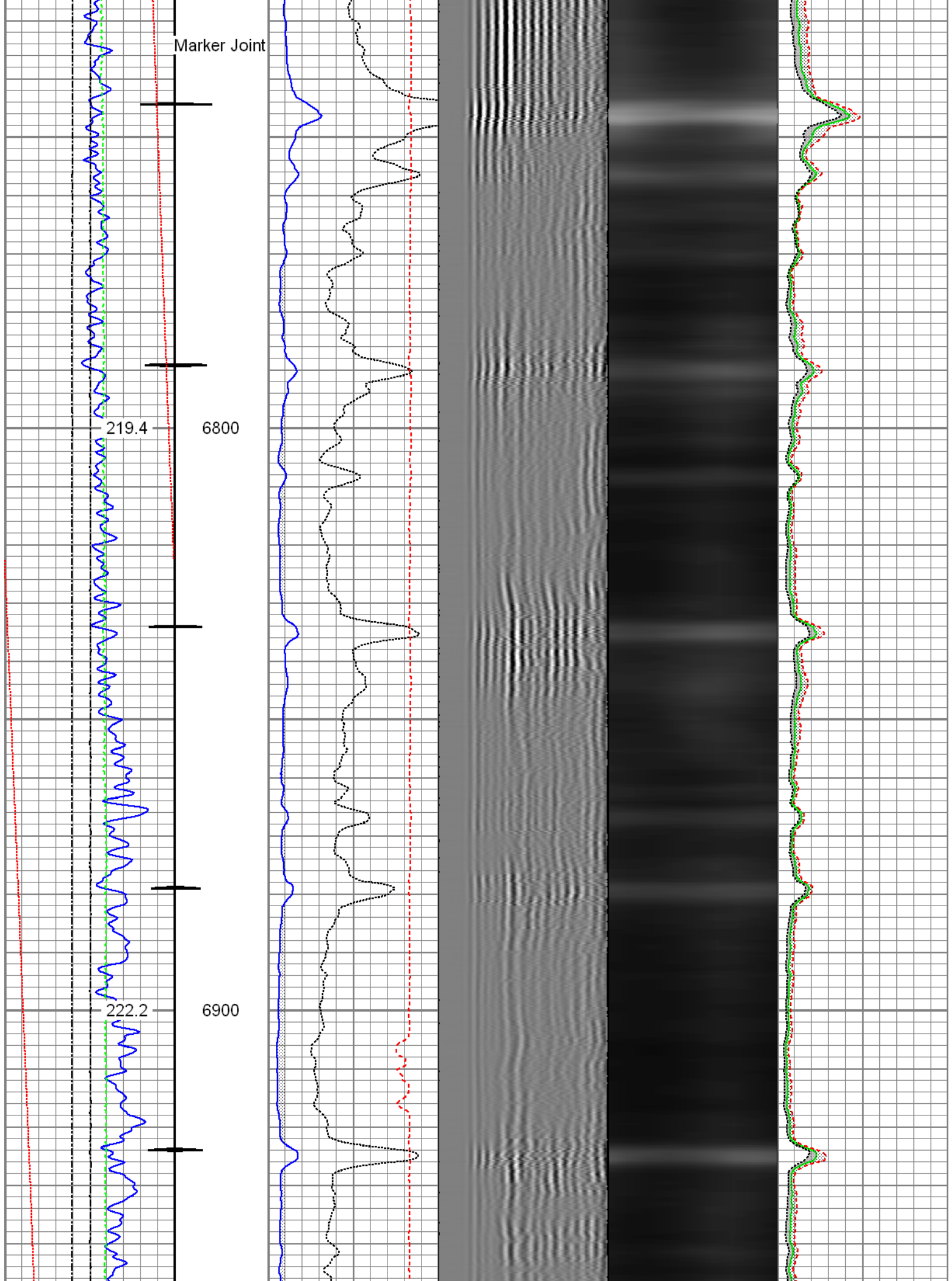


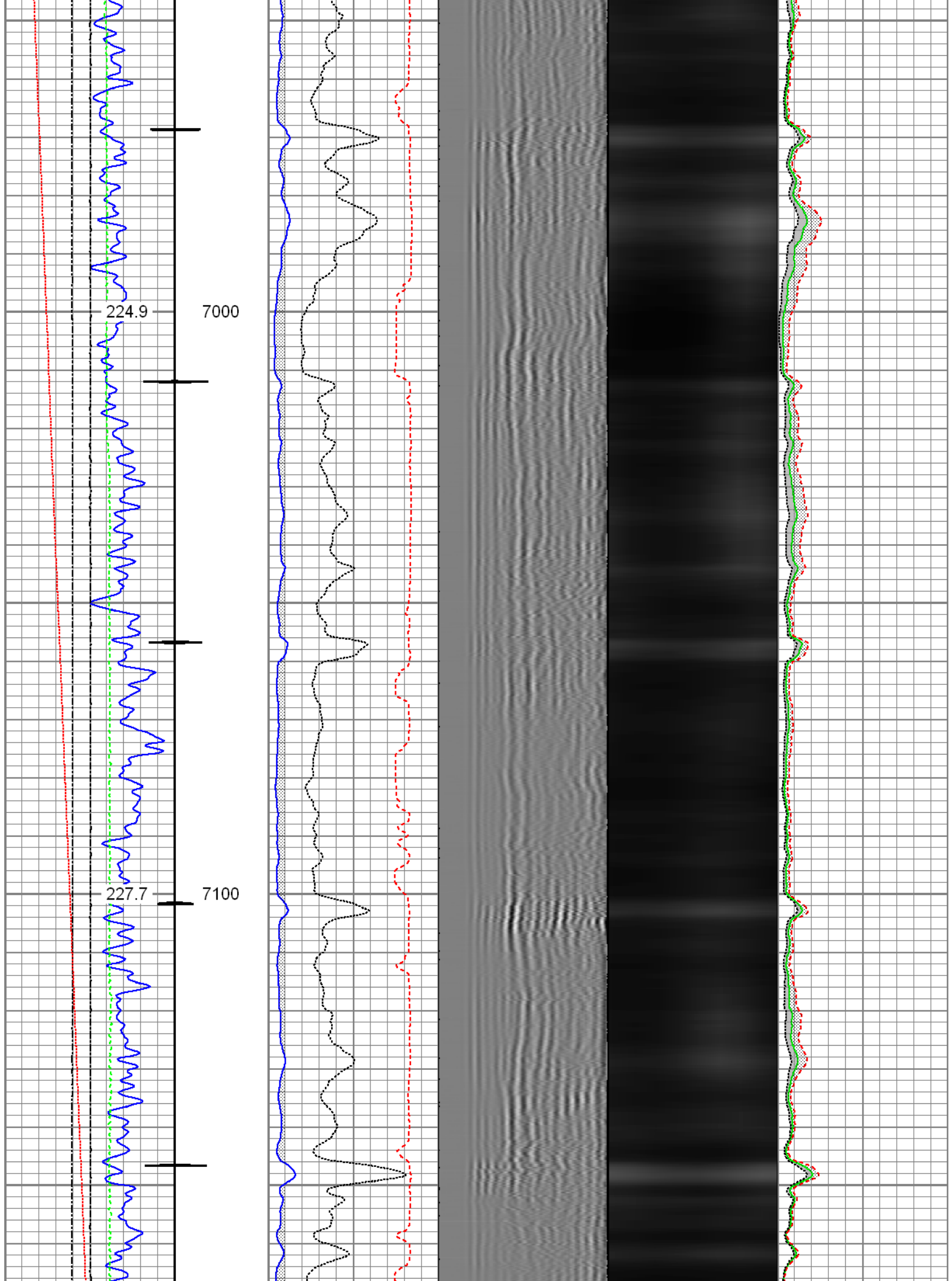


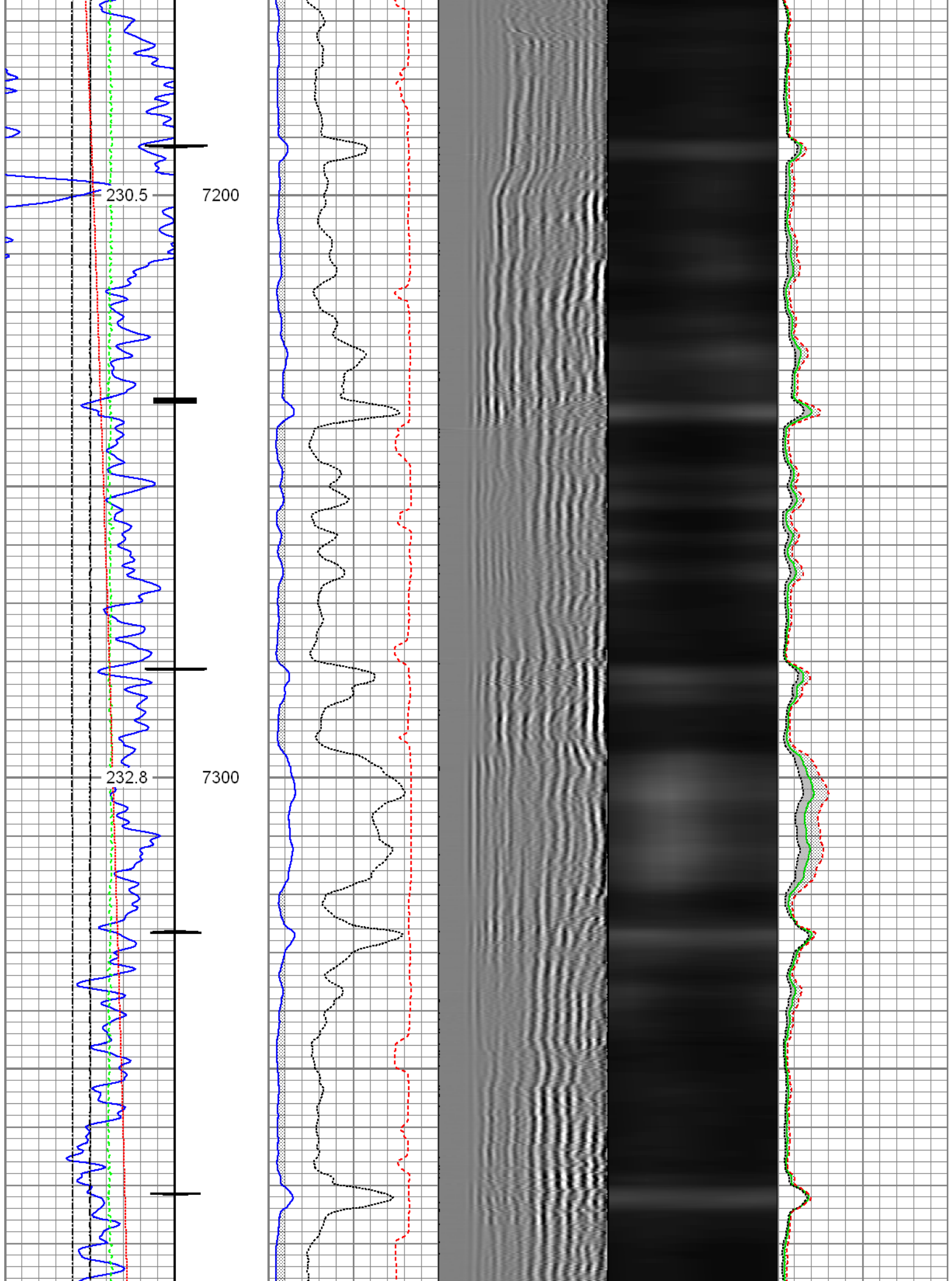


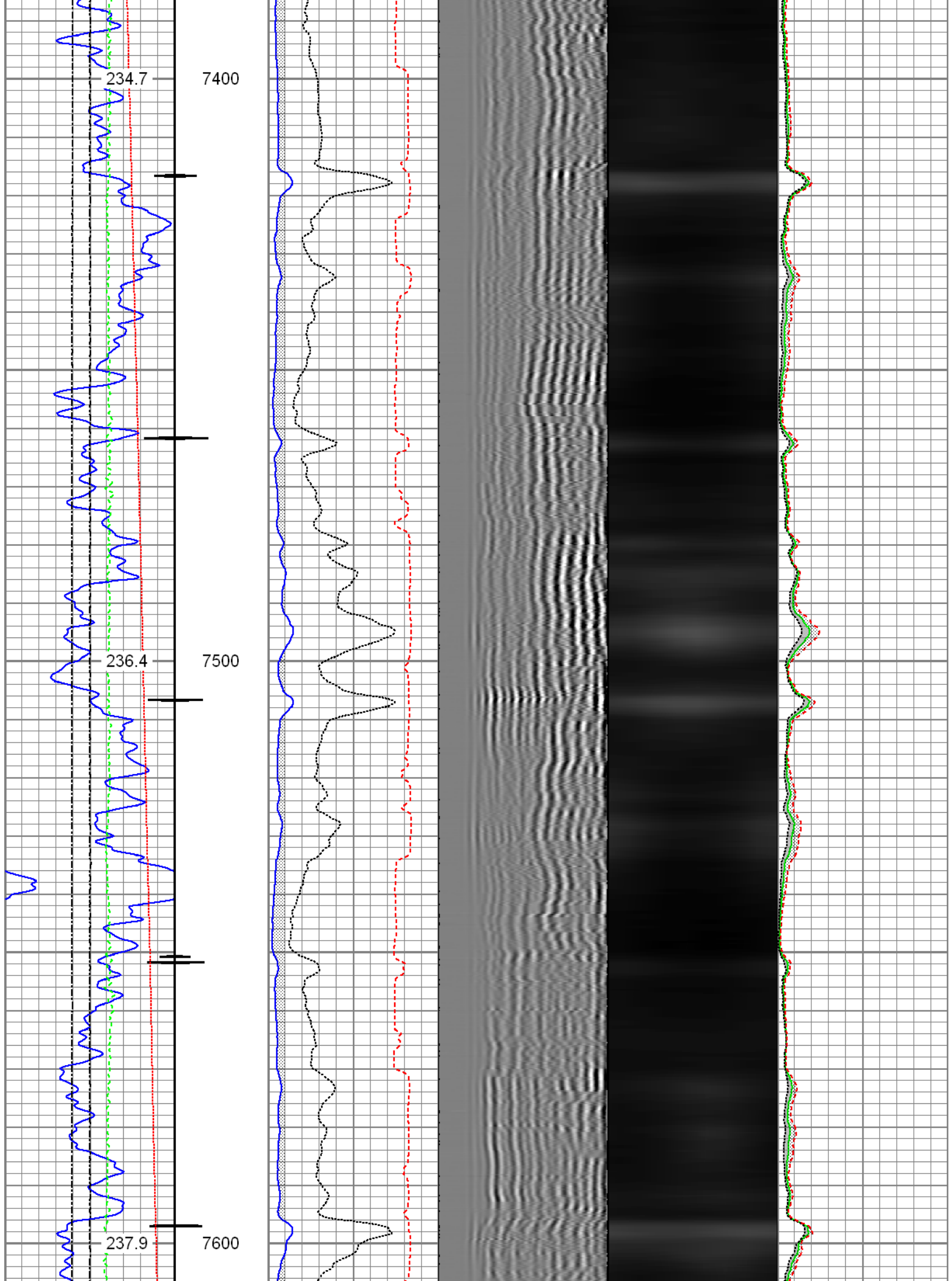


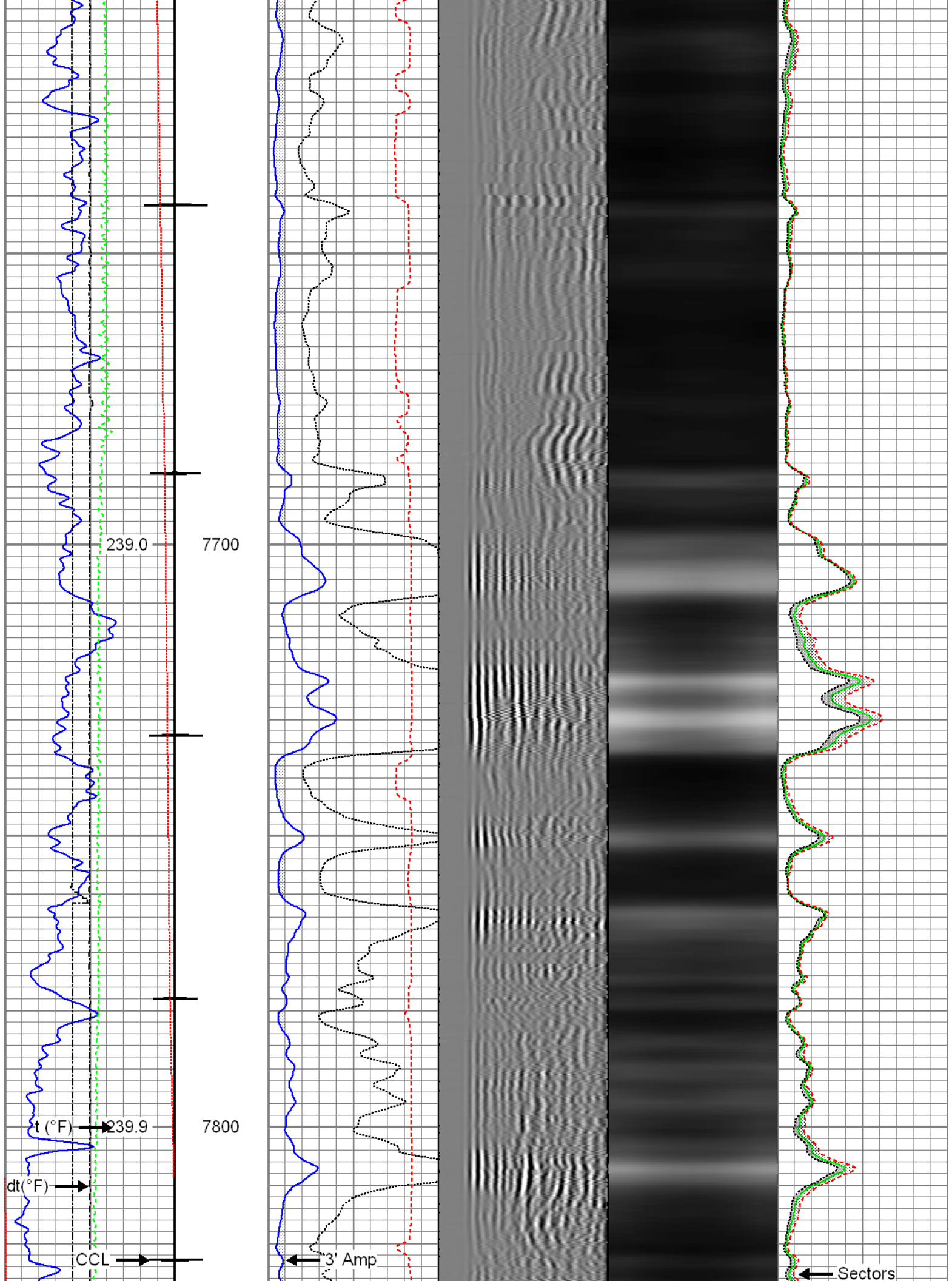


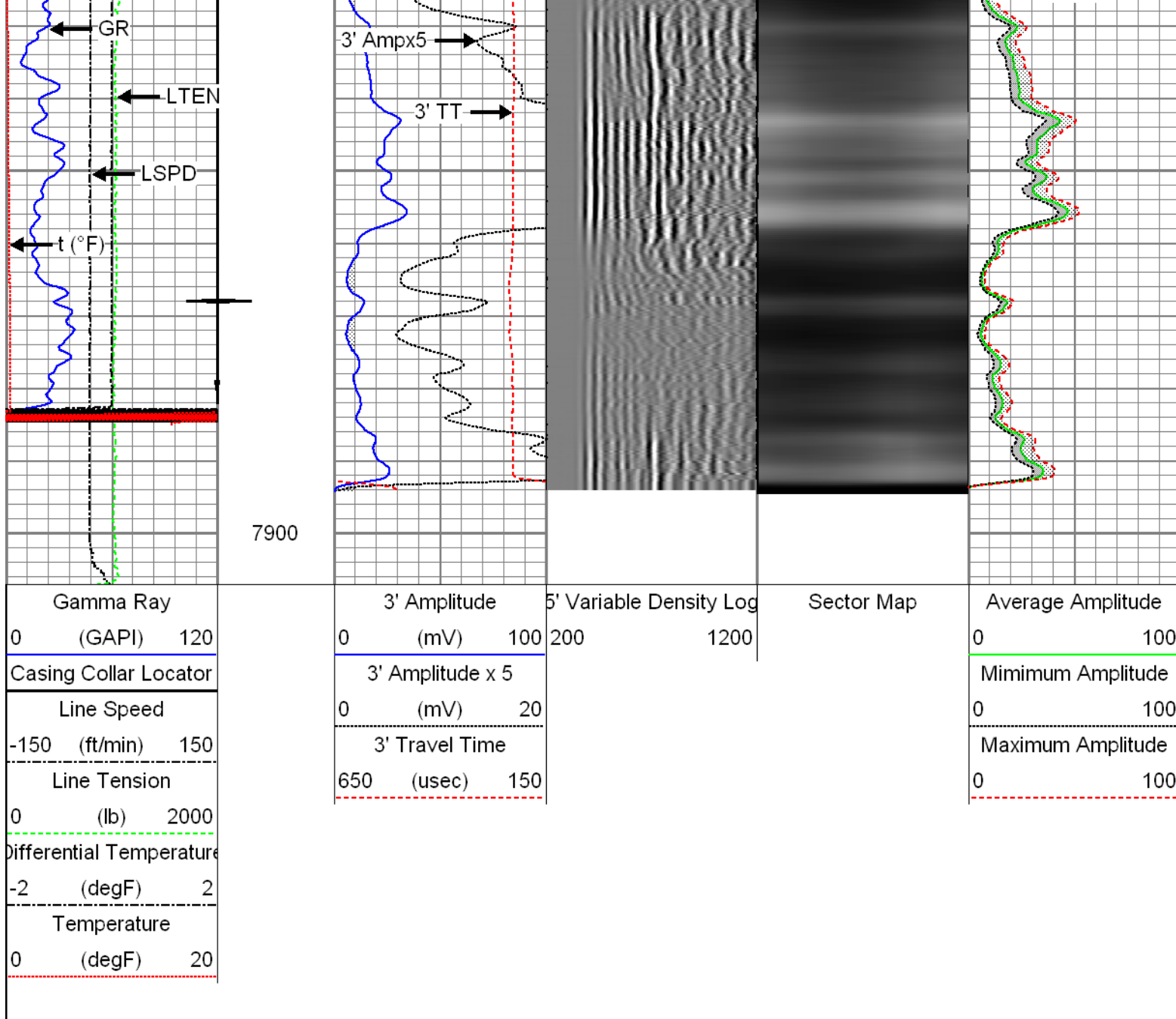






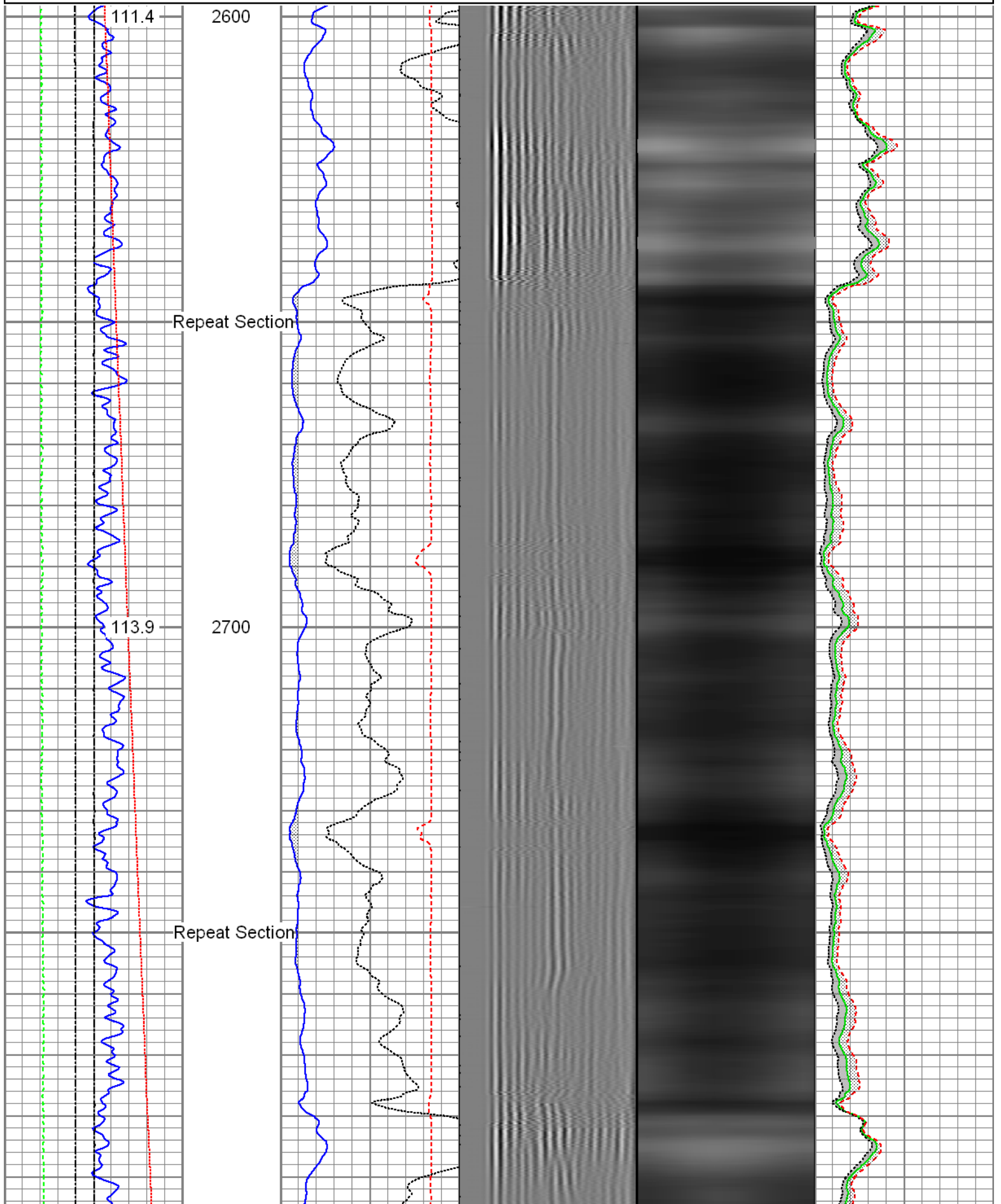


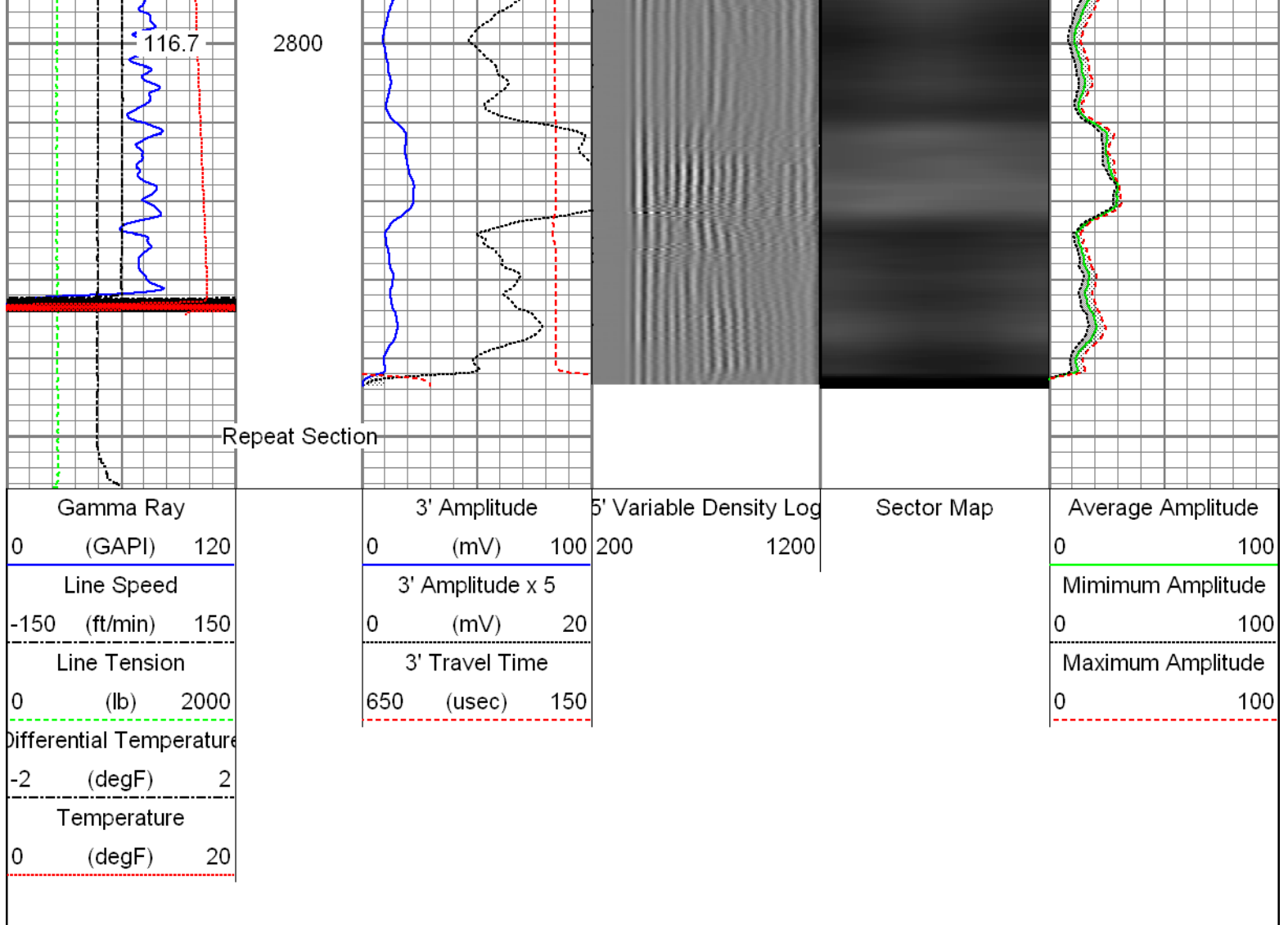


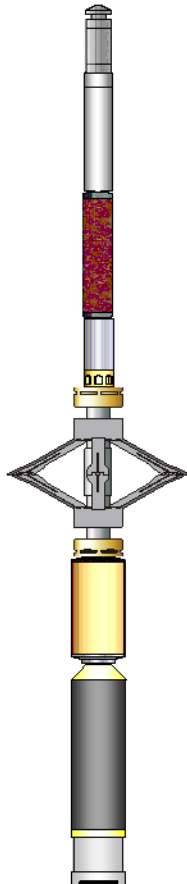


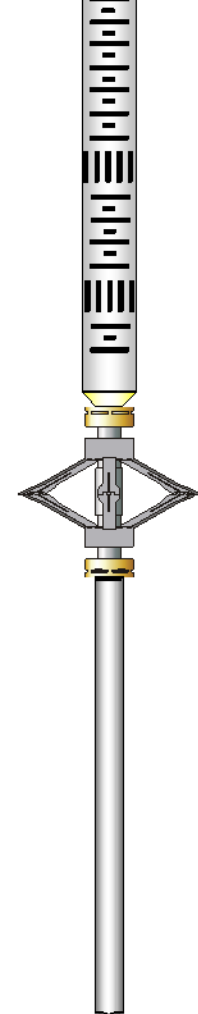
FMC Technologies		Repeat Pass			
		Recorded with 2800 PSI Surface Induced Pressure			
Database File: c:\warrior\data\anadarko_bat 4c-9hz\0512341290_anadarko_bat 4c-9hz_08-04-15_rbl_cnl.db Dataset Pathname: Repeat1 Presentation Format: rbt004 Dataset Creation: Tue Aug 04 08:34:36 2015 by Log 7.0 B1 Charted by: Depth in Feet scaled 1:240					
Gamma Ray 0 (GAPI) 120		3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Line Speed -150 (ft/min) 150		3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Line Tension 0 (lb) 2000		3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Differential Temperature					

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 (10010522) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10019072) Production Gamma Ray	1.93	1.69	9.50
TEMP	22.94		UW_PRT-UW_PRT_016 (10024052) Platinum Resistance Thermometer	1.04	1.69	5.20
CCL	19.14		UW_PRC #4 -DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			UW_CCL-UW_CCL_028 (10009470) Ultrawire 3-1/8" CCL	1.61	3.13	36.00

WVF3FT	14.29		UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	14.29					
WVFS2	14.29					
WVFS3	14.29					
WVFS4	14.29					
WVFS5	14.29					
WVFS6	14.29					
WVFS7	14.29					
WVFS8	14.29					
CBLTEMP	14.29	UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer		2.55	2.75	32.00
CBLROT	14.29					
WVF5FT	13.29					
		CNL-007 (1004) Compensated Neutron Logging Tool		6.61	1.69	30.00
CNLSC	1.53					
CNSSC	1.12					
TSTAMP	0.00					
Dataset: 0512341290_Anadarko_Bat 4C-9HZ_08-04-15_RBL_CNL.db: field/well/run1/Main1.1 Total Length: 28.58 ft Total Weight: 296.20 lb O.D. 3.13 in						

Calibration Report			
Database File:	C:\Warrior\Data\Anadarko_Bat 4C-9HZ\0512341290_Anadarko_Bat 4C-9HZ_08-04-15_RBL_CNL.db		
Dataset Pathname:	Main1.1		
Dataset Creation:	Tue Aug 04 14:17:46 2015 by Calc 7.0 B1		
Compensated Neutron Calibration Report			
Serial Number:	1004		
Tool Model:	007		
Master Calibration	Tue Jun 03 14:35:57 2014		
Detector	Readings		
Short Space	241.46	cps	
Long Space	300.95	cps	
Ratio	Measured	Reference	
CNRAT Gain K	0.8150	Sleeve: 1.0000	
	1.0158		
Before Survey			
Detector	Readings		
Short Space		cps	
Long Space		cps	

Ratio	Measured	Reference
After Survey		
Detector	Readings	
Short Space		cps
Long Space		cps
	Measured	Reference
Ratio		

Segmented Cement Bond Log Calibration Report		
Serial Number:	10022773	
Tool Model:	UW_RBT_004	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	124.356	ft

Master Calibration, performed Tue Aug 04 07:56:03 2015:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.003	0.795	0.800	71.921	89.777	0.514
5FT	0.000	0.584	0.800	71.921	121.717	0.800
S1	0.011	0.780	0.000	100.000	129.950	-1.424
S2	0.010	0.790	0.000	100.000	128.177	-1.252
S3	0.012	0.767	0.000	100.000	132.450	-1.639
S4	0.012	0.753	0.000	100.000	135.059	-1.657
S5	0.015	0.774	0.000	100.000	131.673	-1.919
S6	0.013	0.778	0.000	100.000	130.815	-1.713
S7	0.012	0.789	0.000	100.000	128.820	-1.590
S8	0.011	0.793	0.000	100.000	127.890	-1.407

Temperature Calibration Report					
Serial Number:		10024052			
Tool Model:		UW_PRT_016			
Performed:		Wed Feb 11 16:41:28 2015			
Point #	Reading		Reference		
1	12242.00	cps	68.00	degF	
2	18329.00	cps	104.00	degF	
3	29563.00	cps	176.00	degF	
4	41222.00	cps	248.00	degF	
5	52988.00	cps	320.00	degF	
6	58824.00	cps	356.00	degF	
7		cps		degF	
8		cps		degF	
9		cps		degF	
10		cps		degF	

Gamma Ray Calibration Report		
Serial Number:	10019072	
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	Bat 4C-9HZ
Field	Wattenberg
County	Weld
State	Colorado