



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.			Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Land 37N-32HZ			Well	Land 37N-32HZ		
Field	Wattenberg			Field	Wattenberg		
County	Weld			County	Weld		
State	Colorado			State	Colorado		
Location:				API # : 05-123-42301			
SEC 32 TWP 2N RGE 66W				Other Services			
Permanent Datum				Ground Level			
Log Measured From				Kelly Bushing			
Drilling Measured From				Kelly Bushing			
				Elevation 4913'			
				20 FT			
				K.B. 4933'			
				D.F. 4932'			
				G.L. 4913'			
				Gauge Ring			

Date	02-SEP-2016
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Run Number	Two
Depth Driller	12962 FT
Depth Logger	7568 FT
Bottom Logged Interval	7561 FT
Top Log Interval	Surface
Open Hole Size	7.875"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	238°F
Estimated Cement Top	520 FT
Time Well Ready	ROA
Time Logger on Bottom	13:05
Equipment Number	HD-0343
Location	Fort Lupton, CO
Recorded By	Sam Hopper
Witnessed By	Noe Pulido

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	JD BTC	Surface	1566 FT
Intermediate #1	5 1/2	17	LTC	Surface	12952 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 Top at 6747 FT
Adjusted log +2.5 FT to correlate with Marker Joint Top
Gauge Ring/Junk Basket ran to 7556 FT with no debris
Log ran from as deep as possible in heel to surface
Recorded 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!!

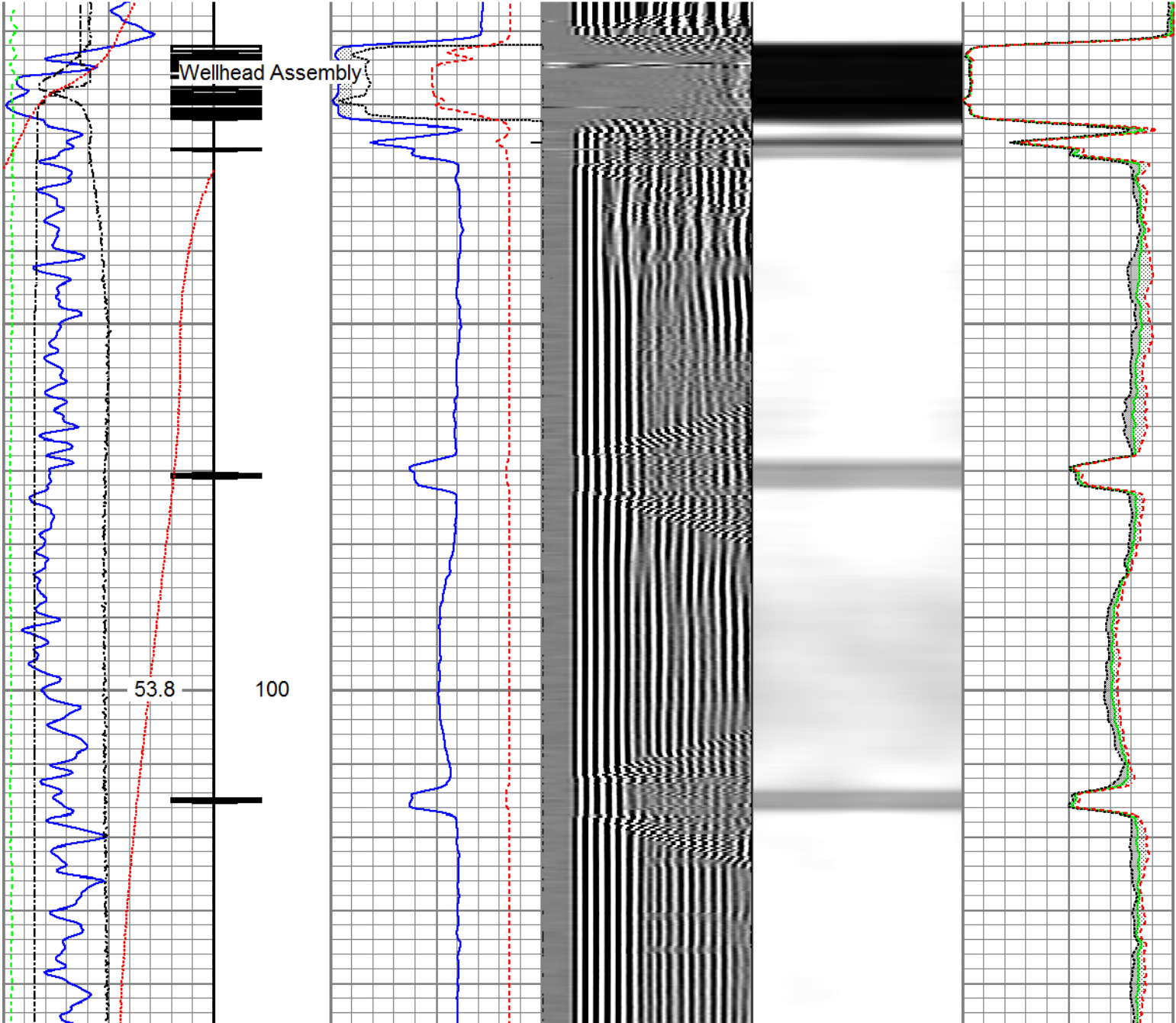


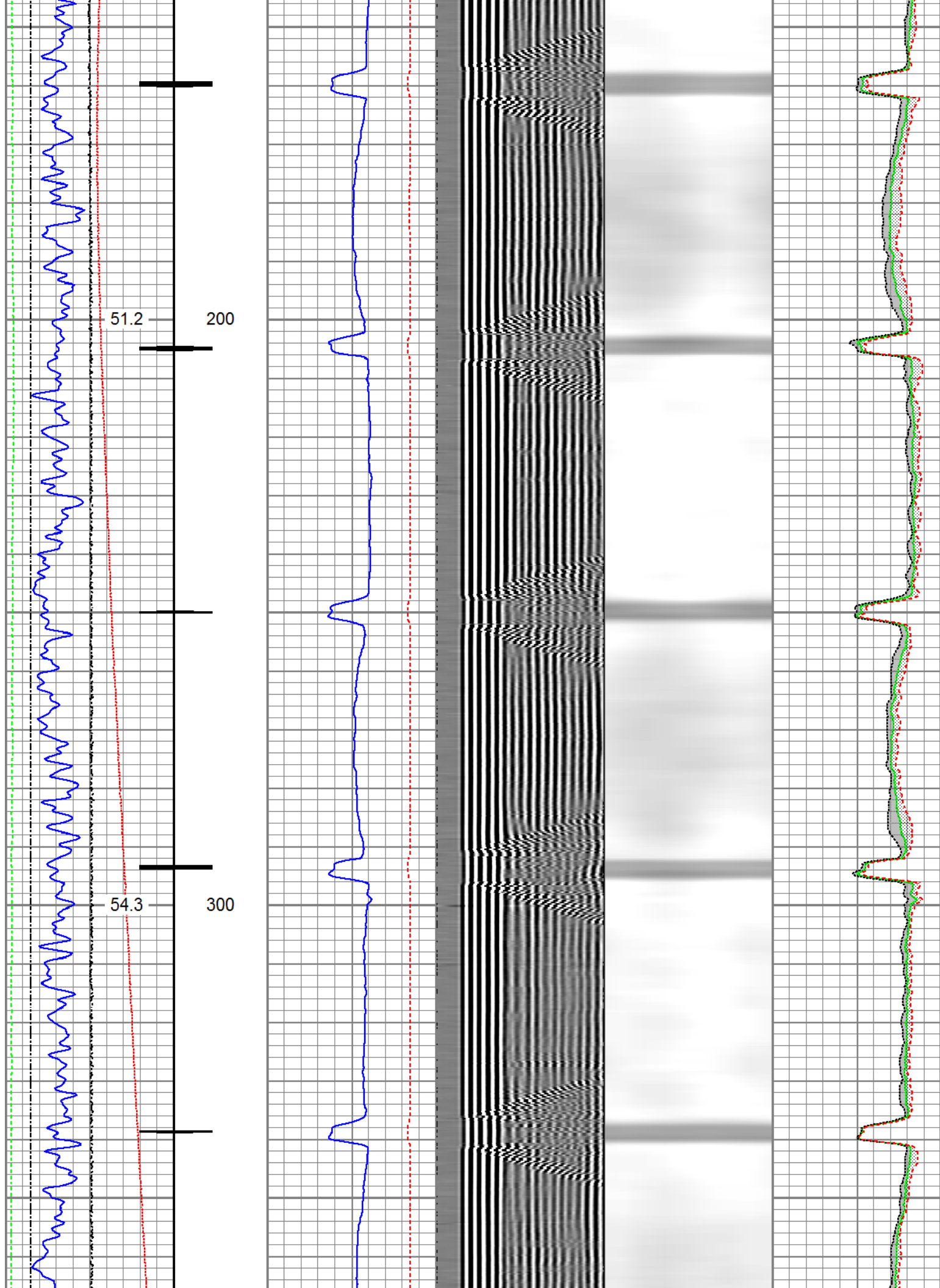
Main Pass

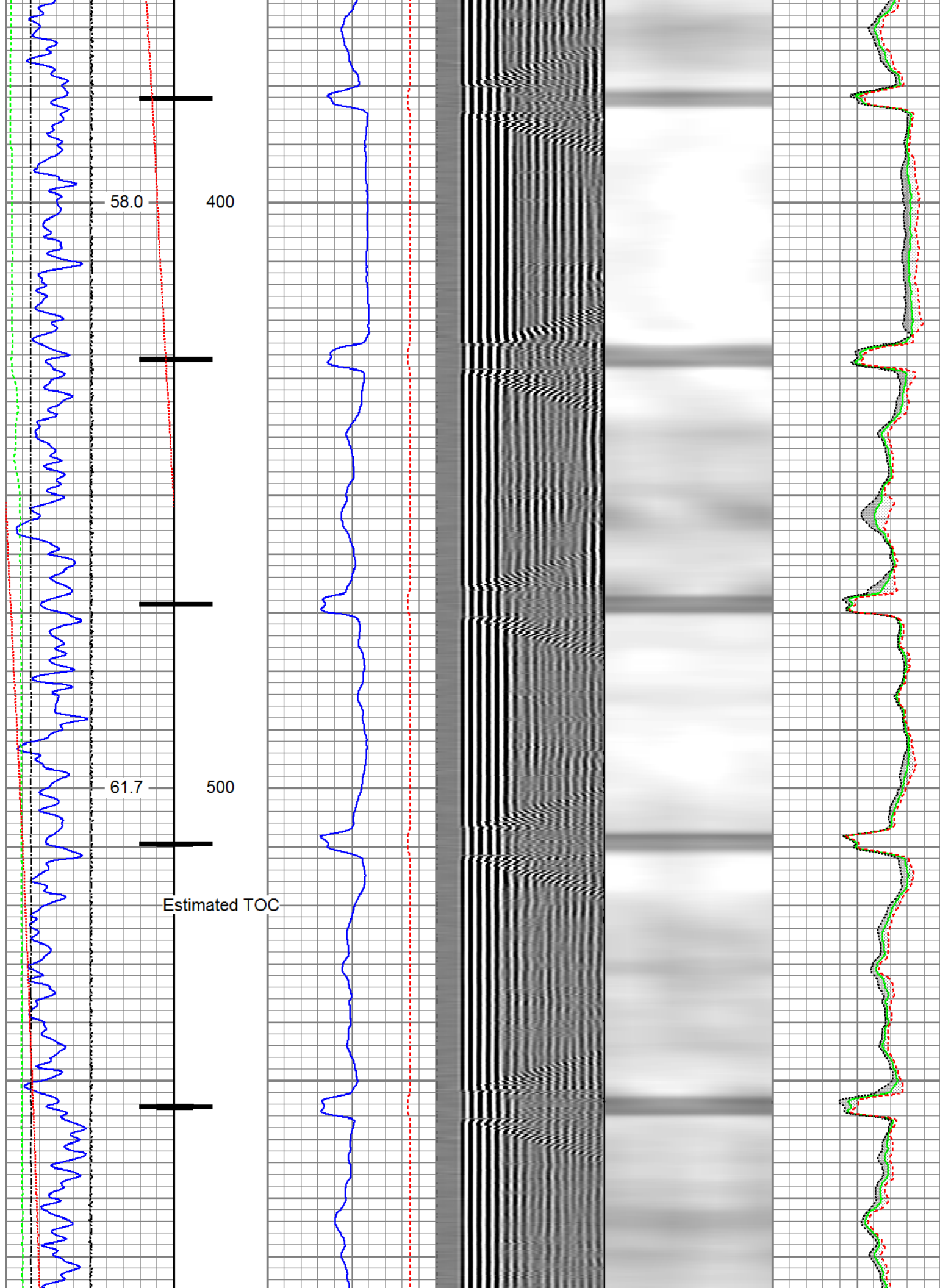
Recorded with 2800 PSI Surface Induced Pressure

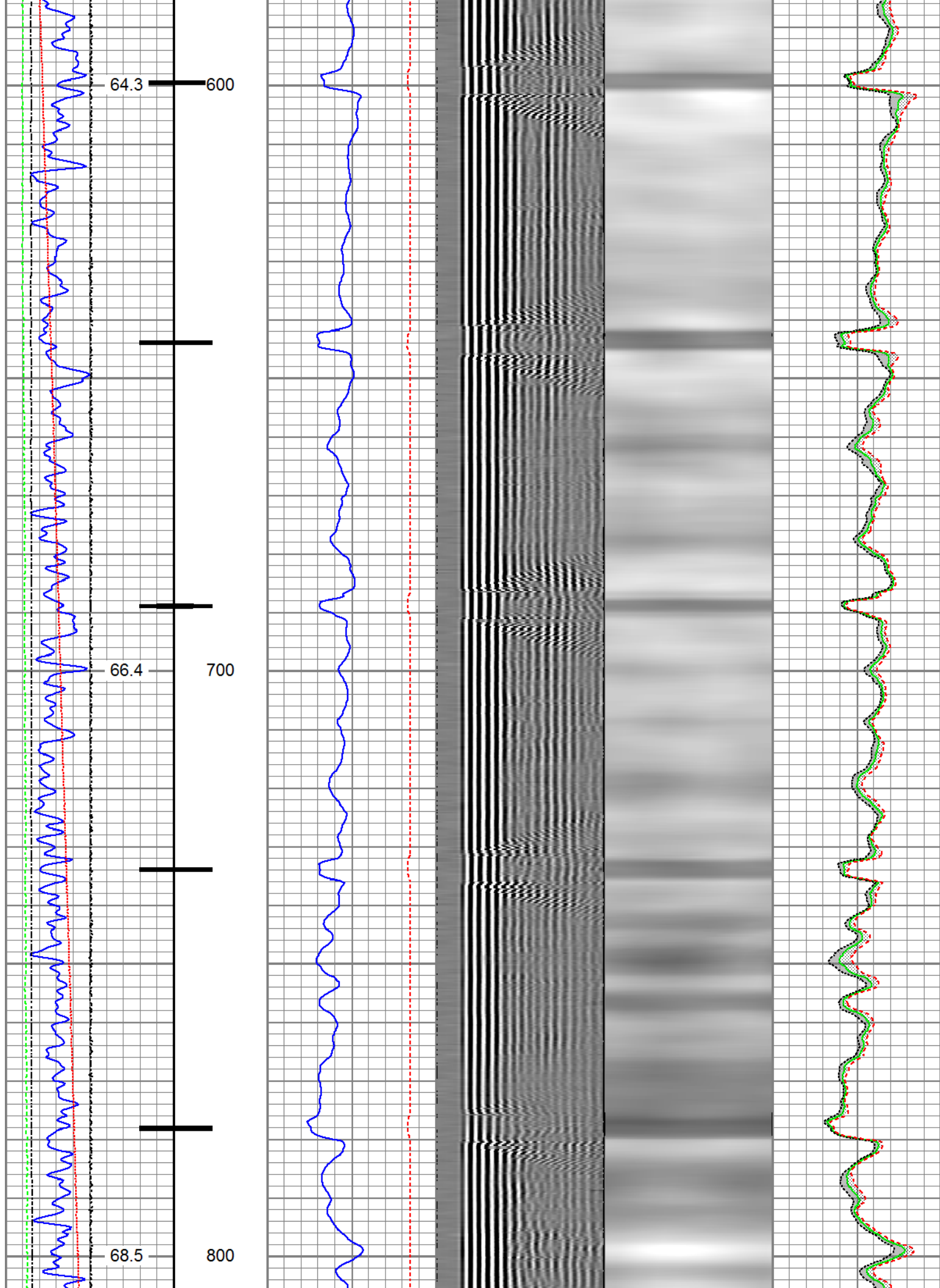
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Presentation Format	ros_rbt004_sx
Dataset Creation	Fri Sep 02 14:18:19 2016
Charted by	Depth in Feet scaled 1:240

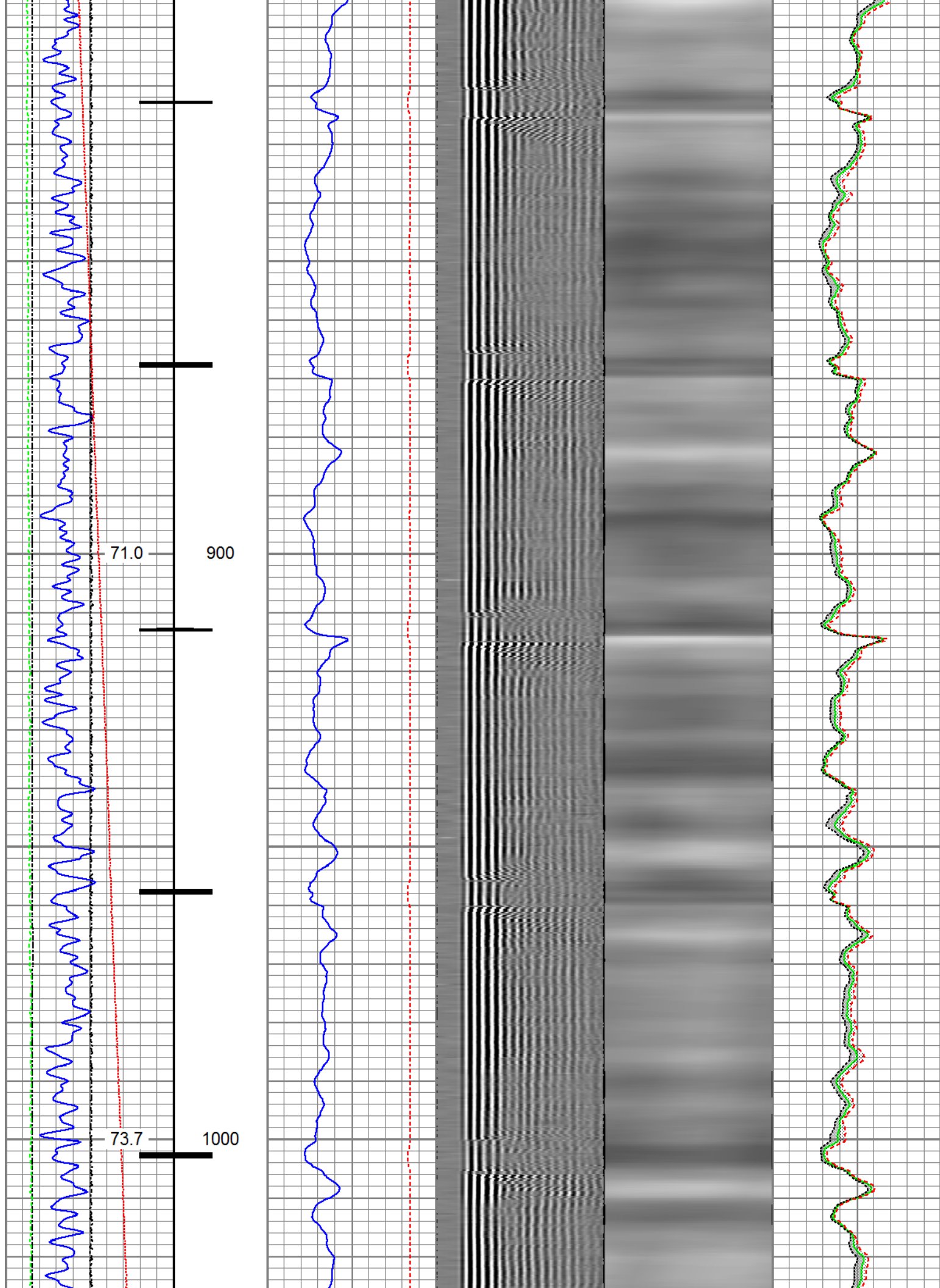
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Mimimum Amplitude
		0 (mV) 20			0 100
Line Speed		3' Travel Time			Maximum Amplitude
-150 (ft/min) 150		650 (usec) 150			0 100
Line Tension	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

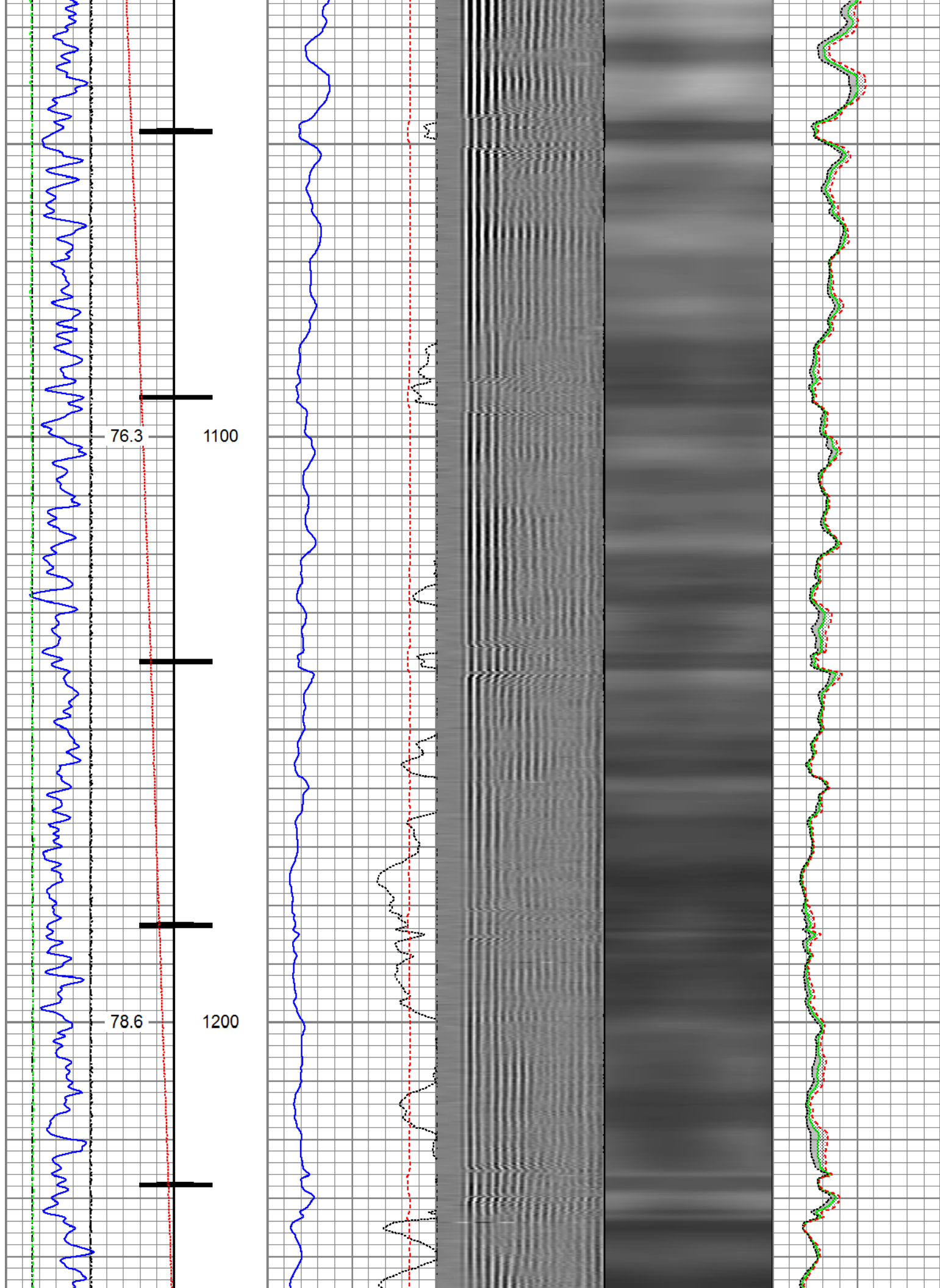


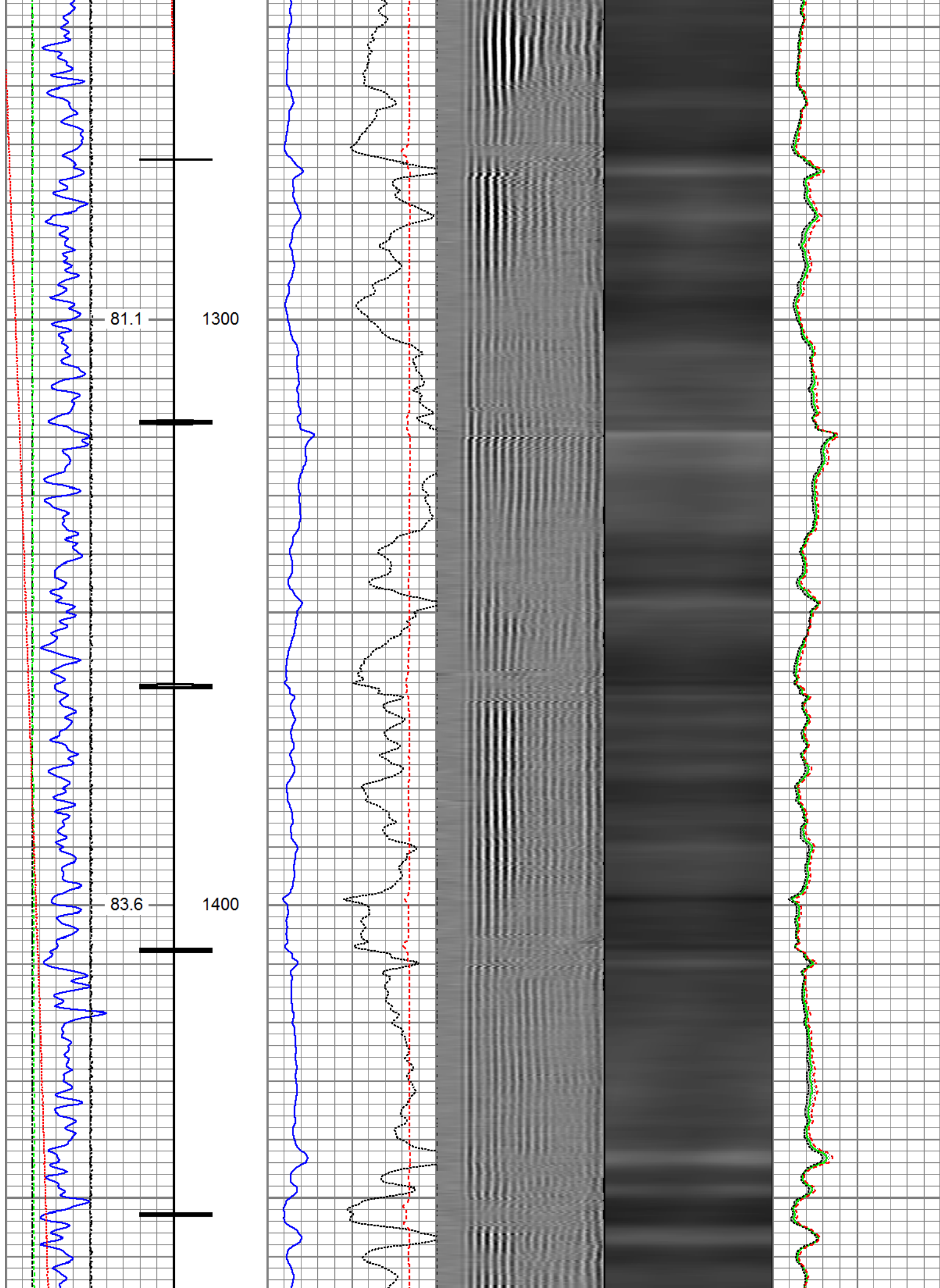


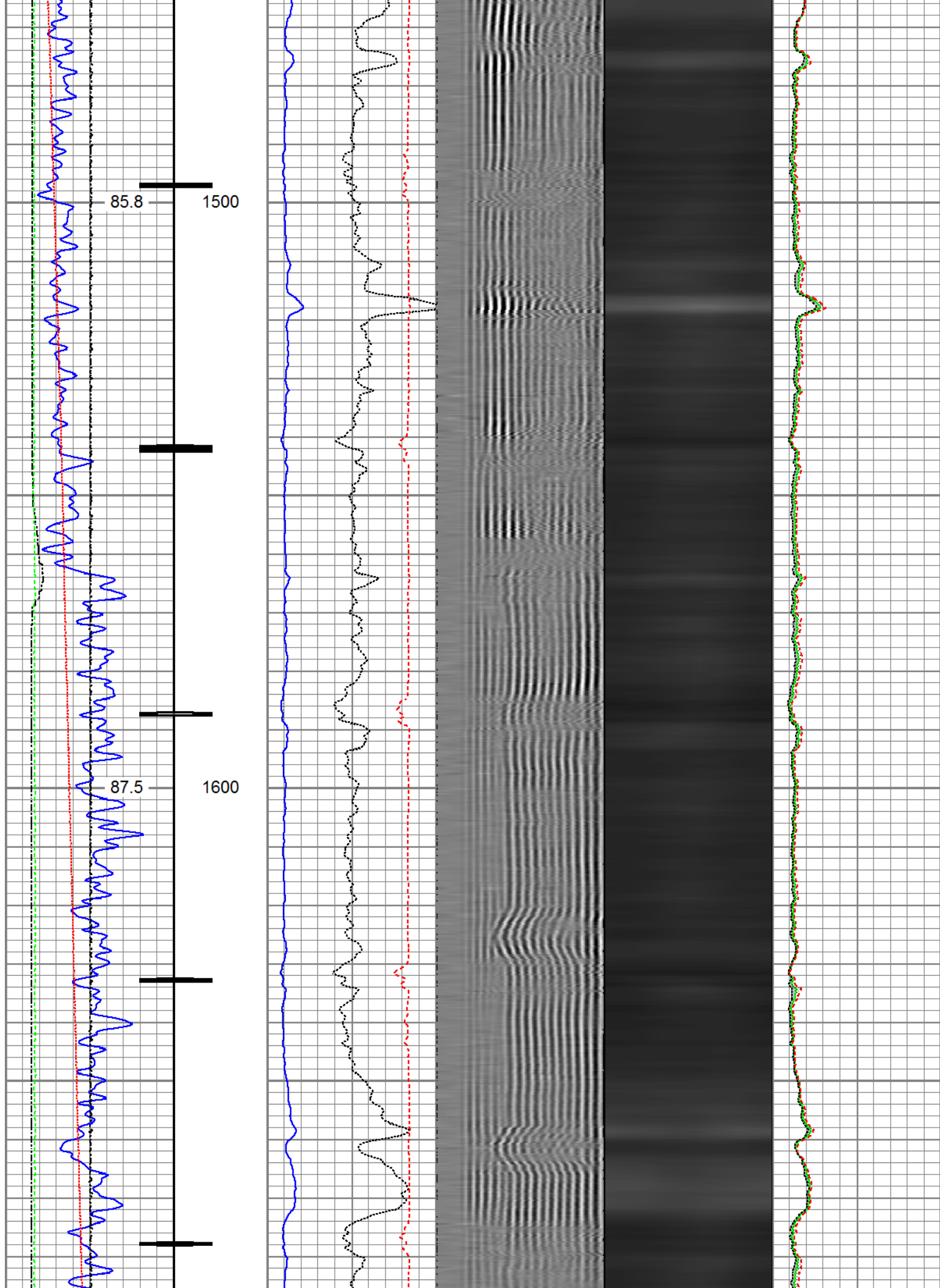


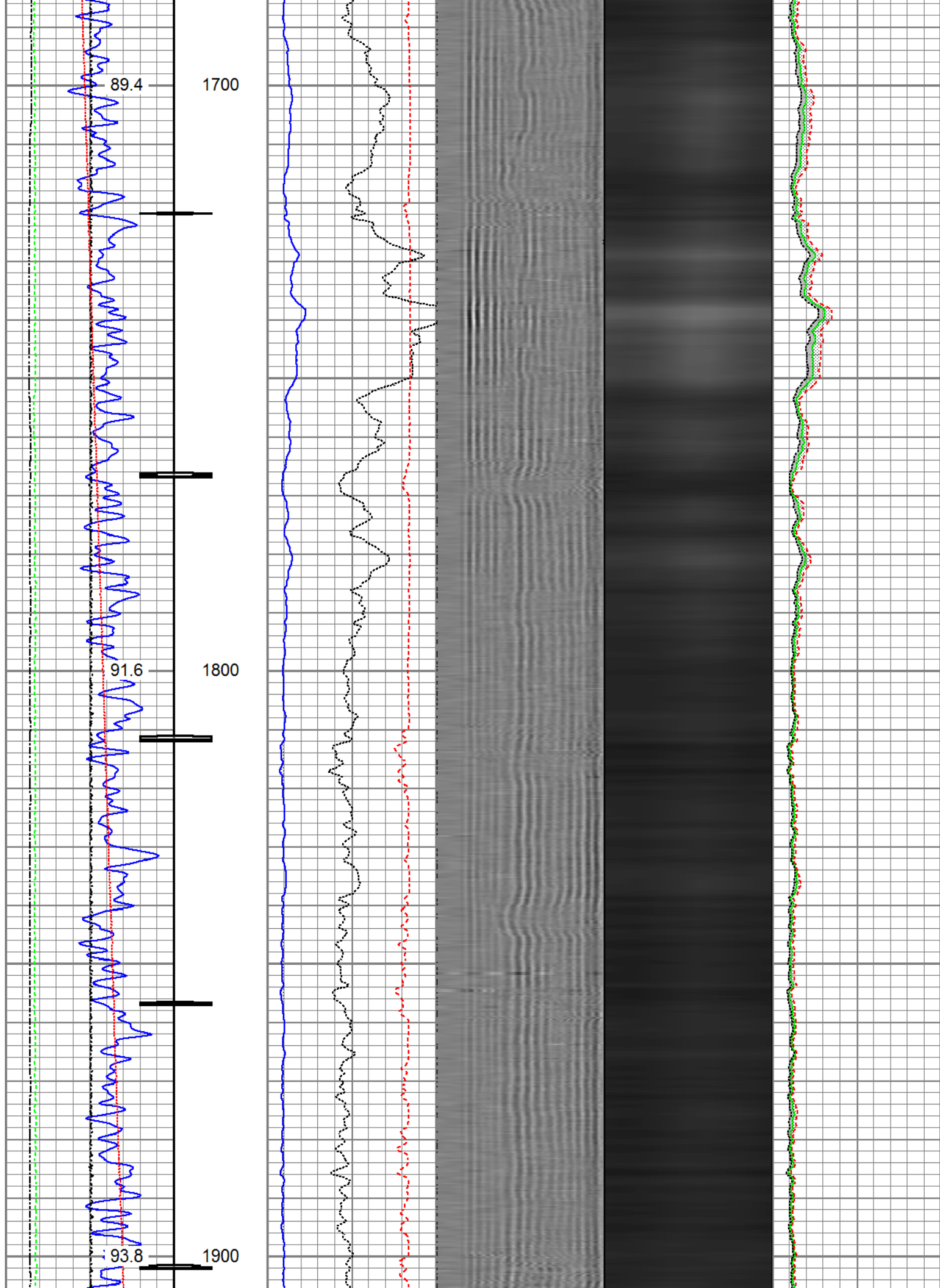


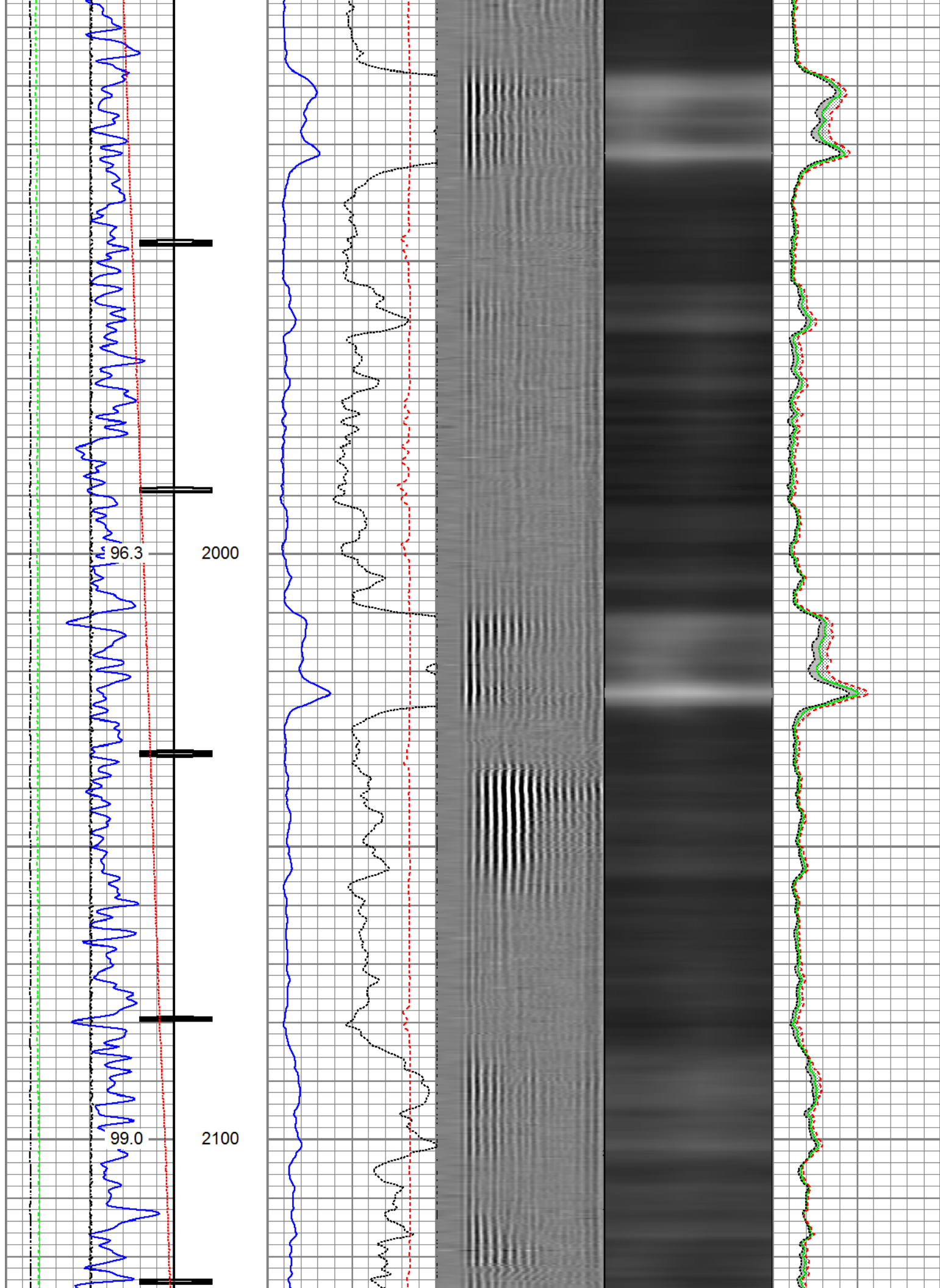


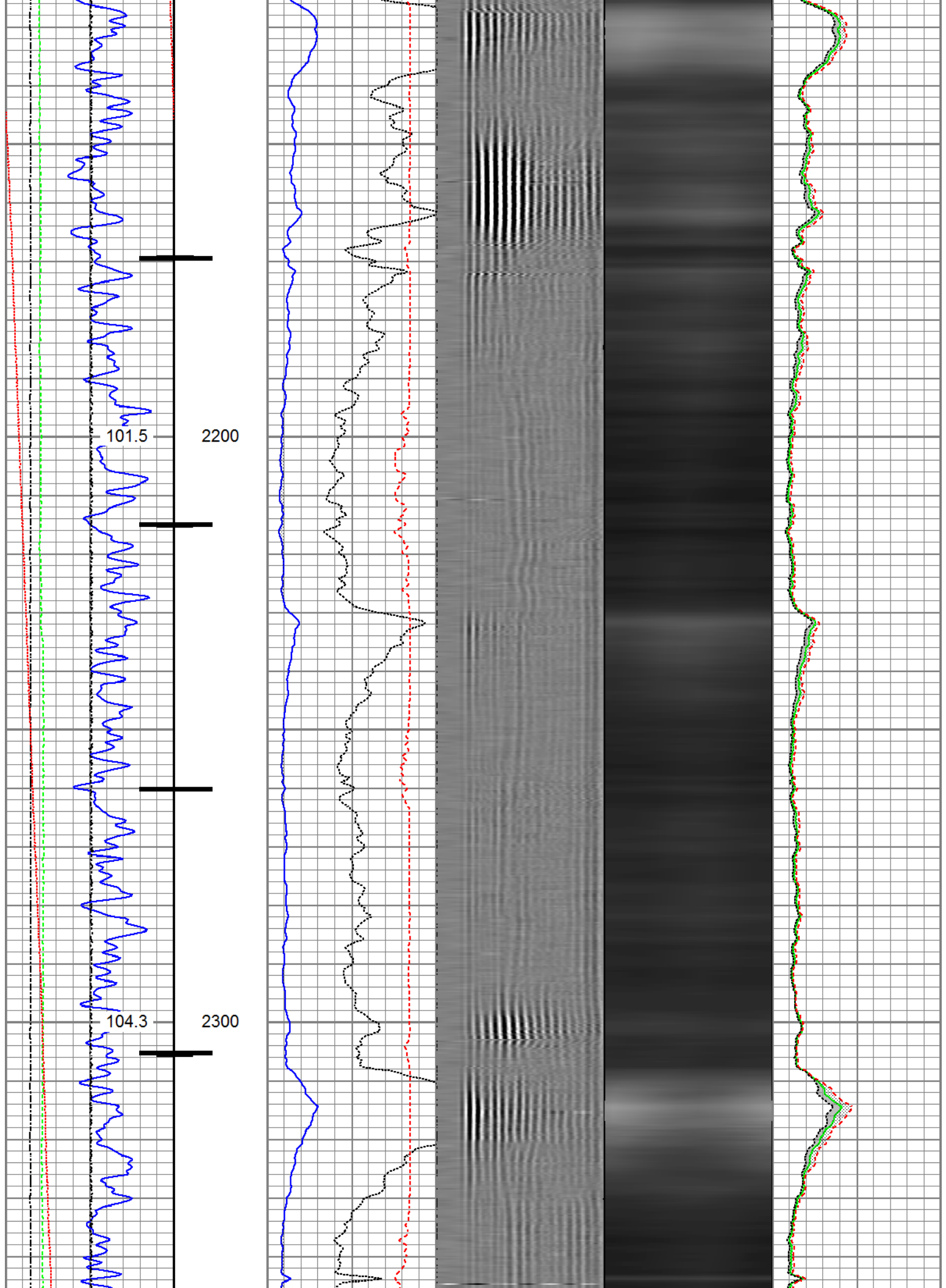


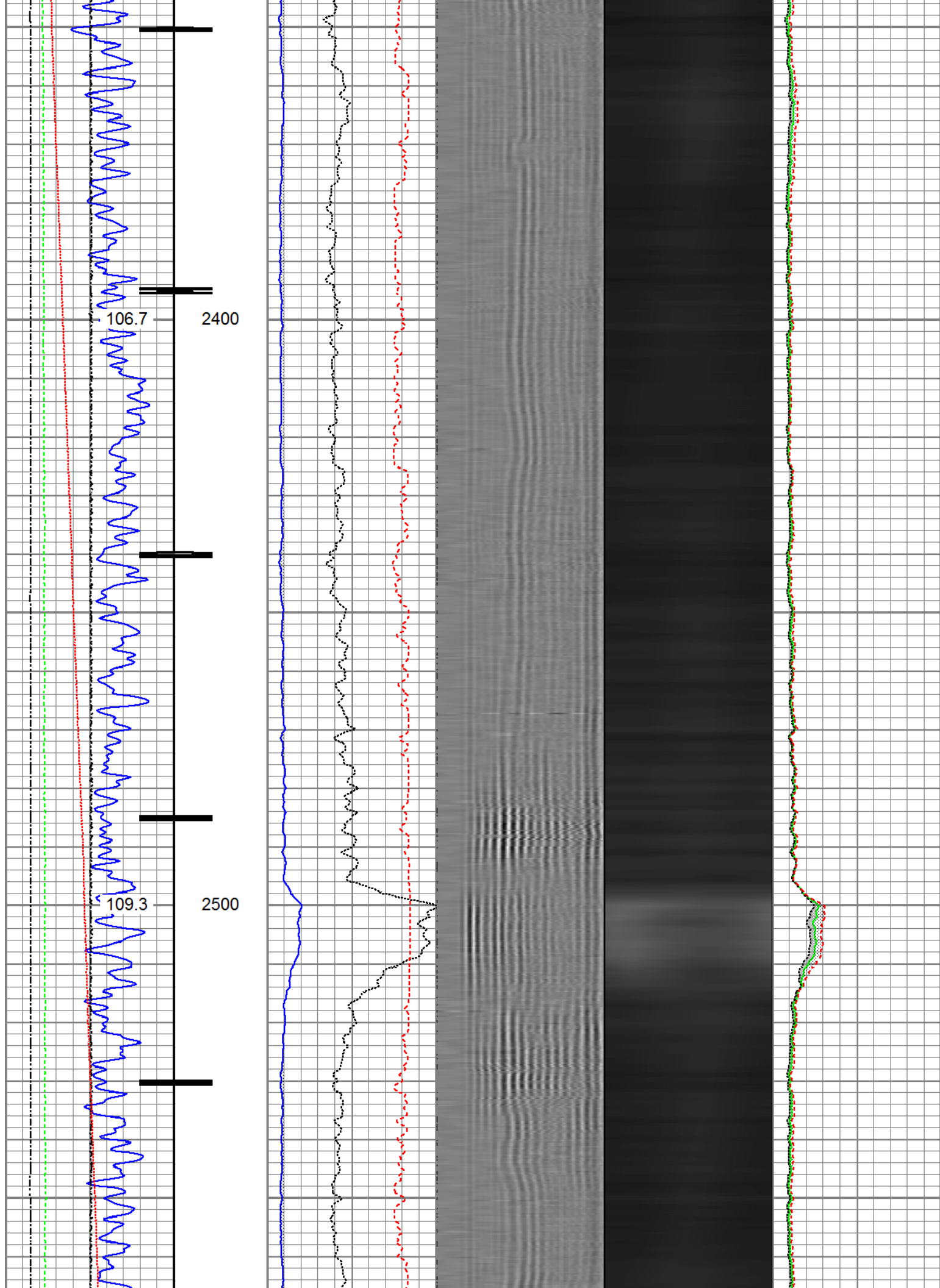


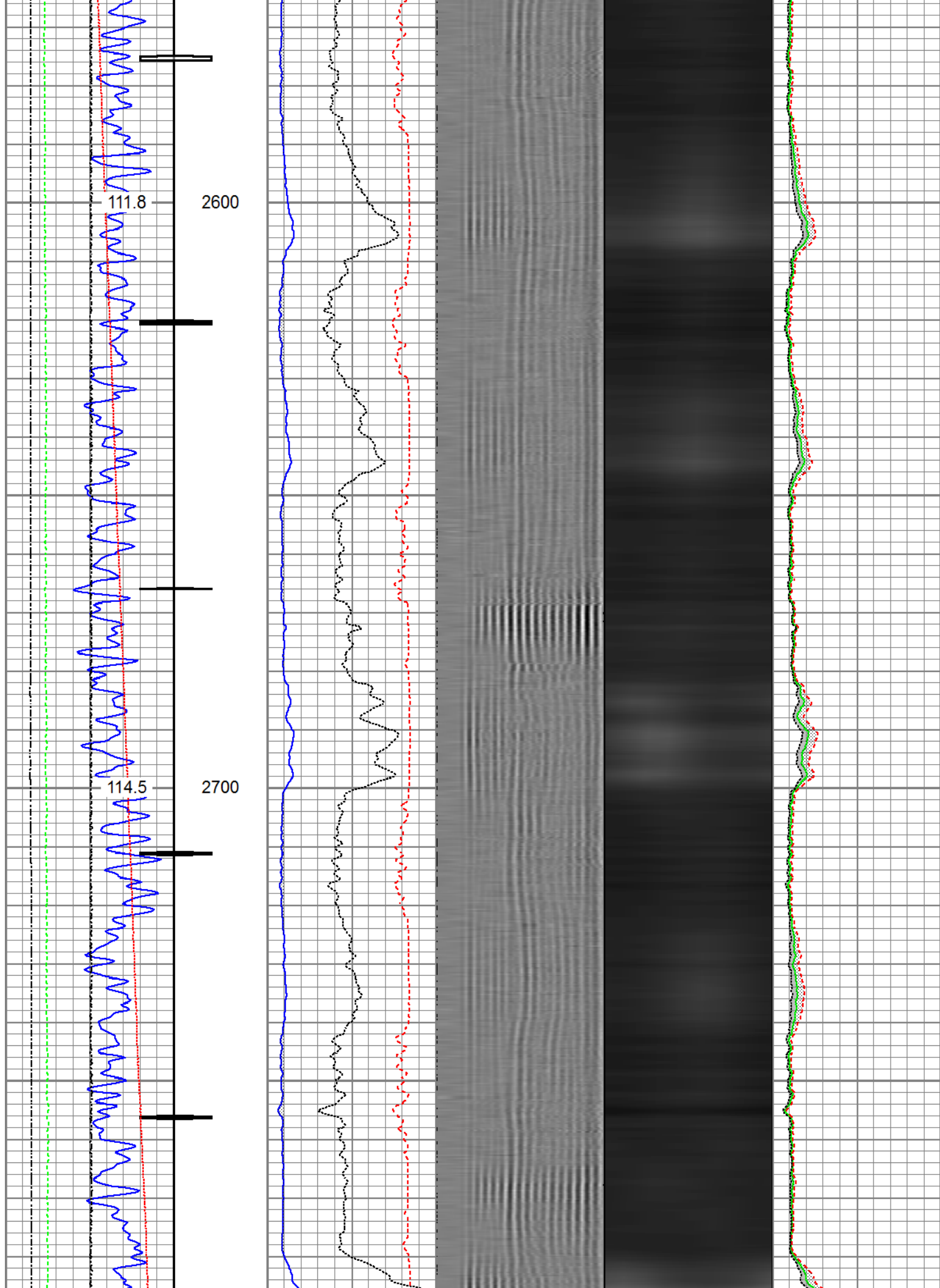


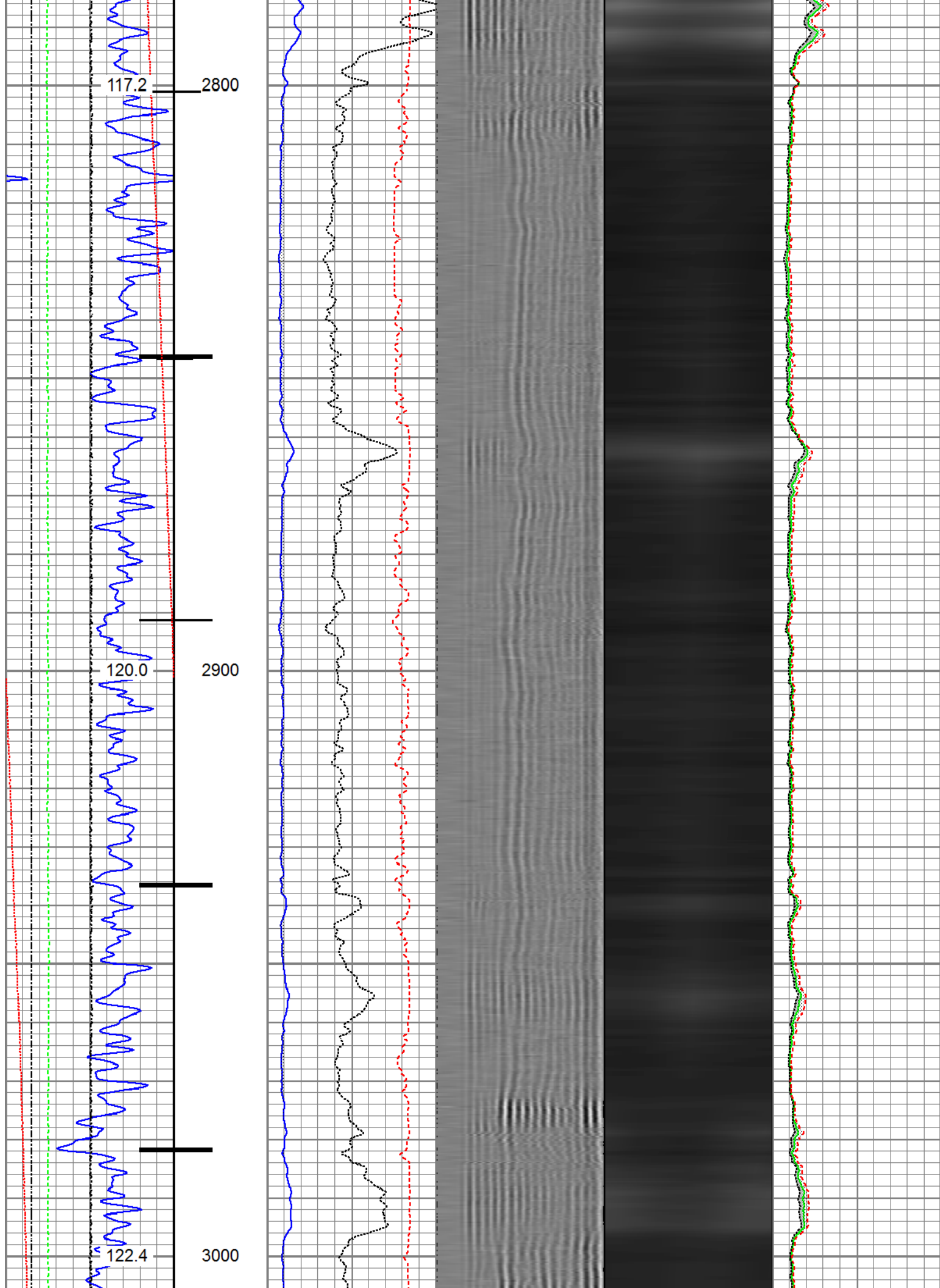


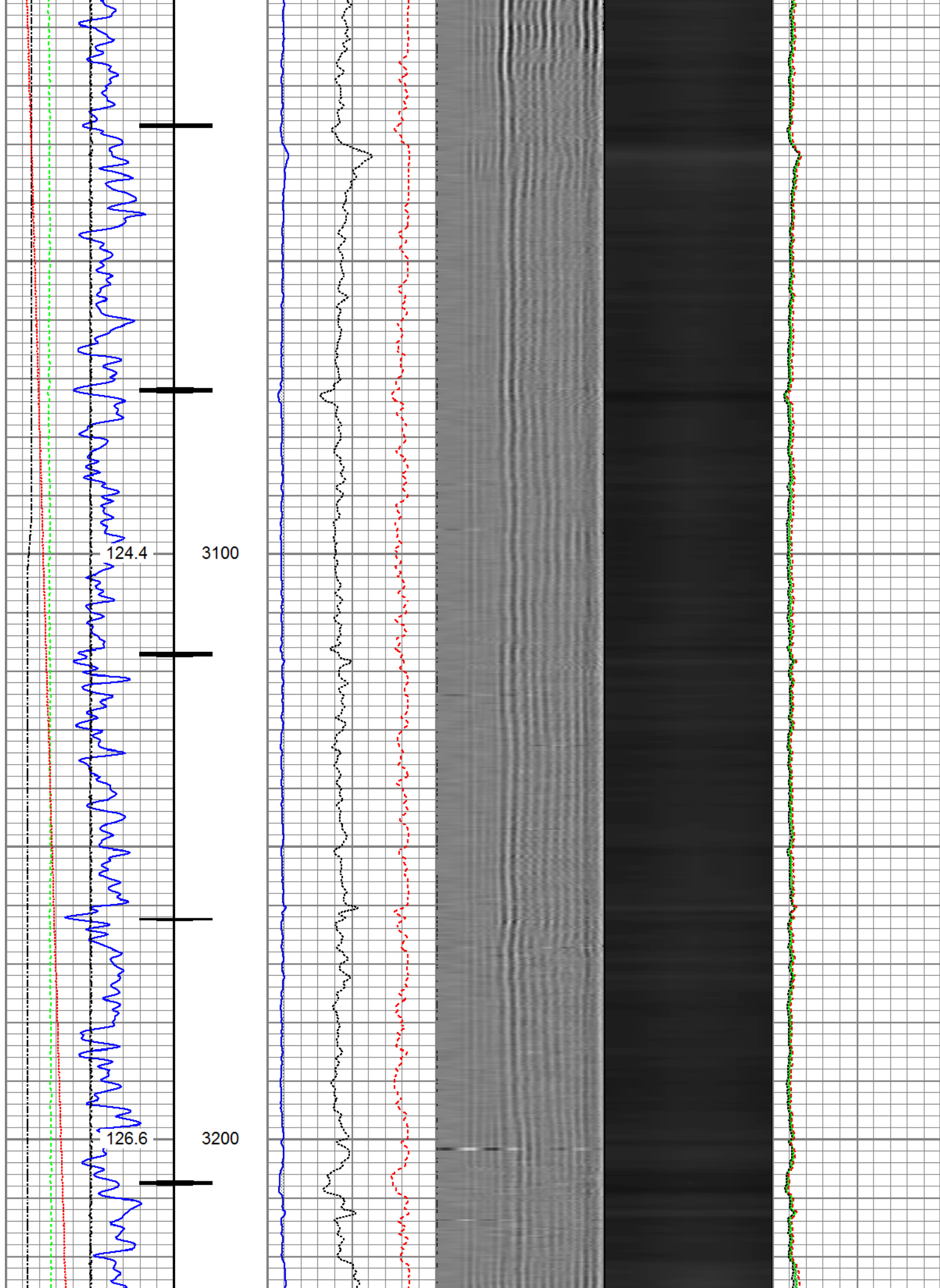


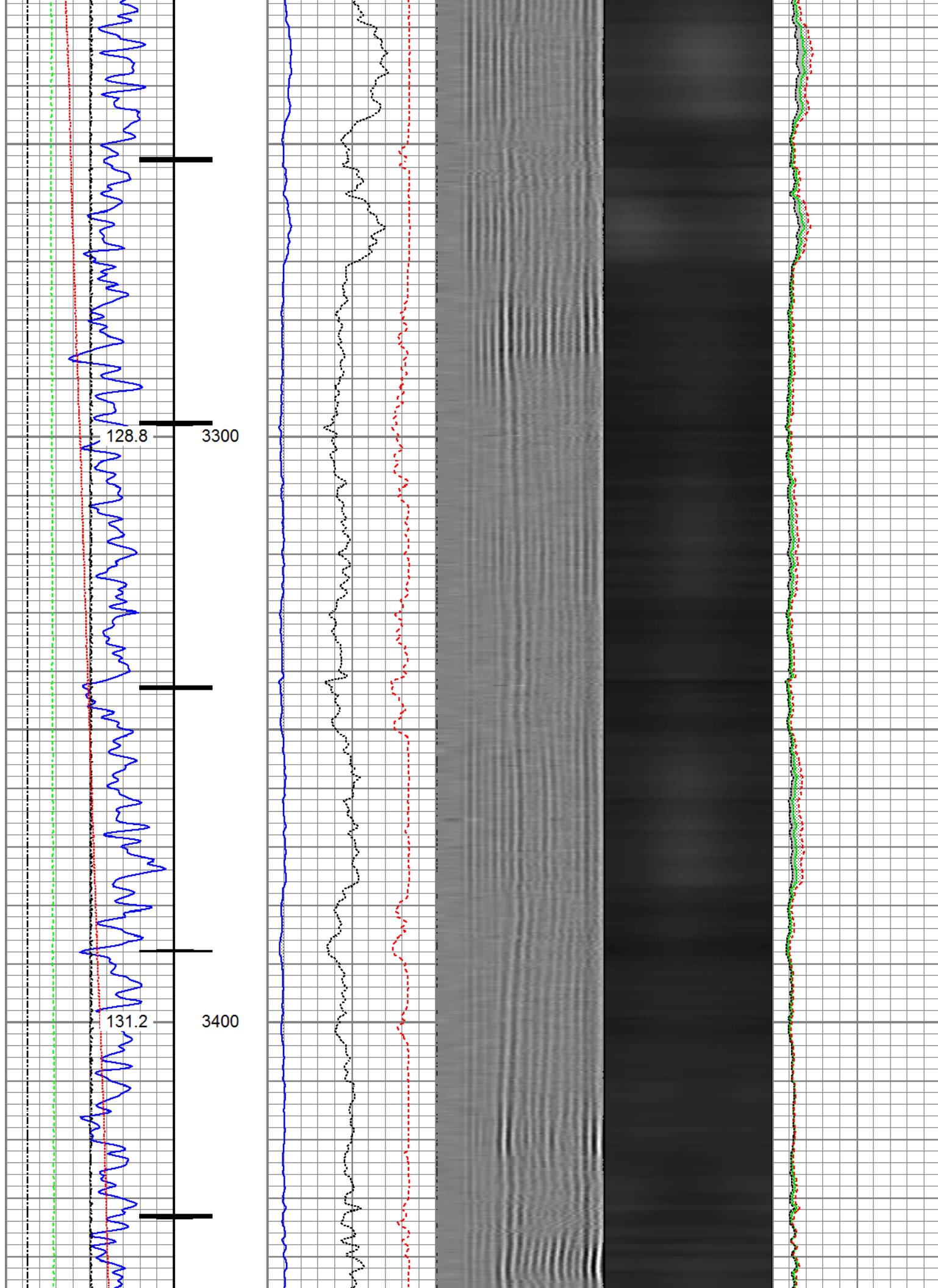


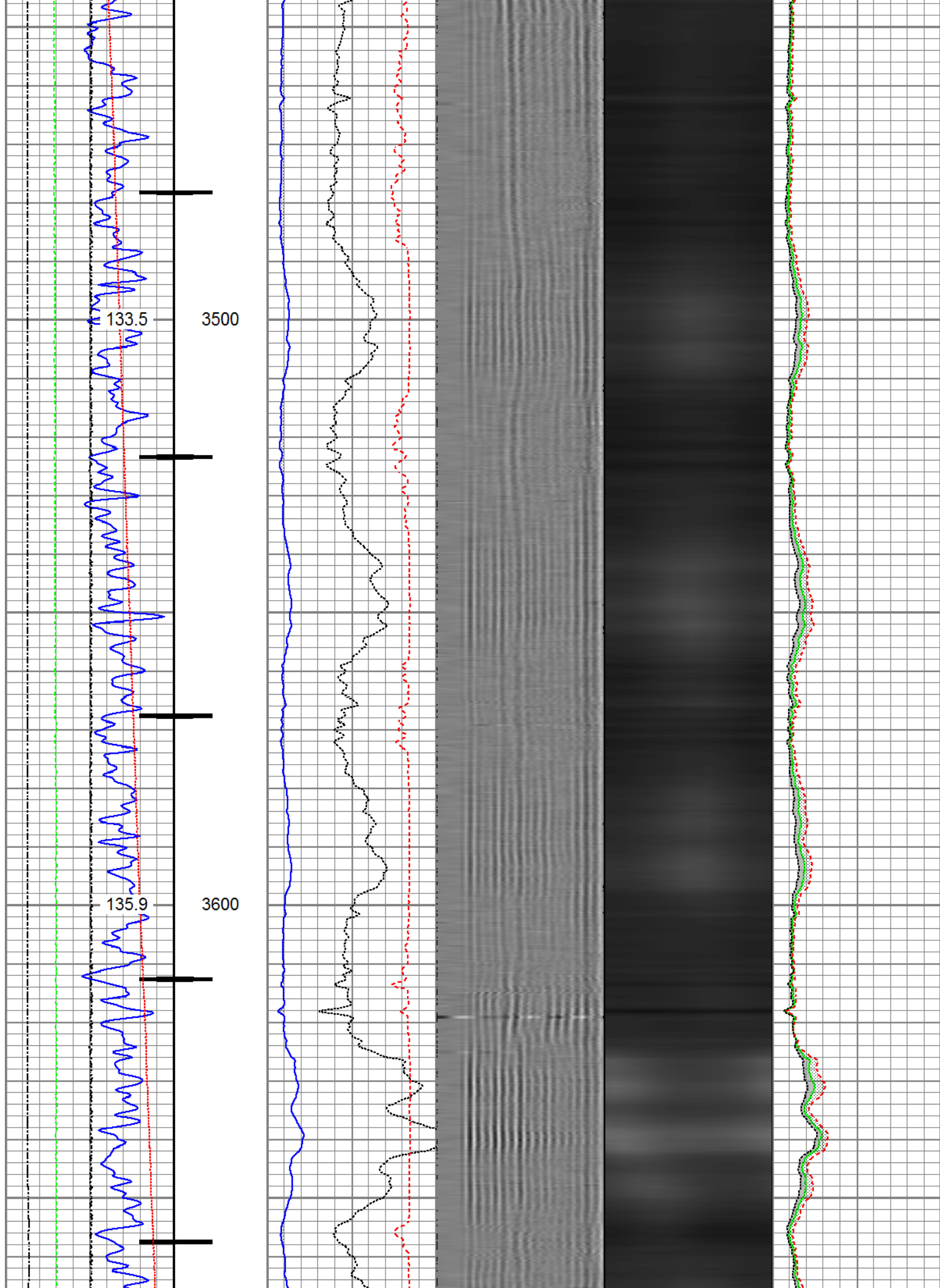


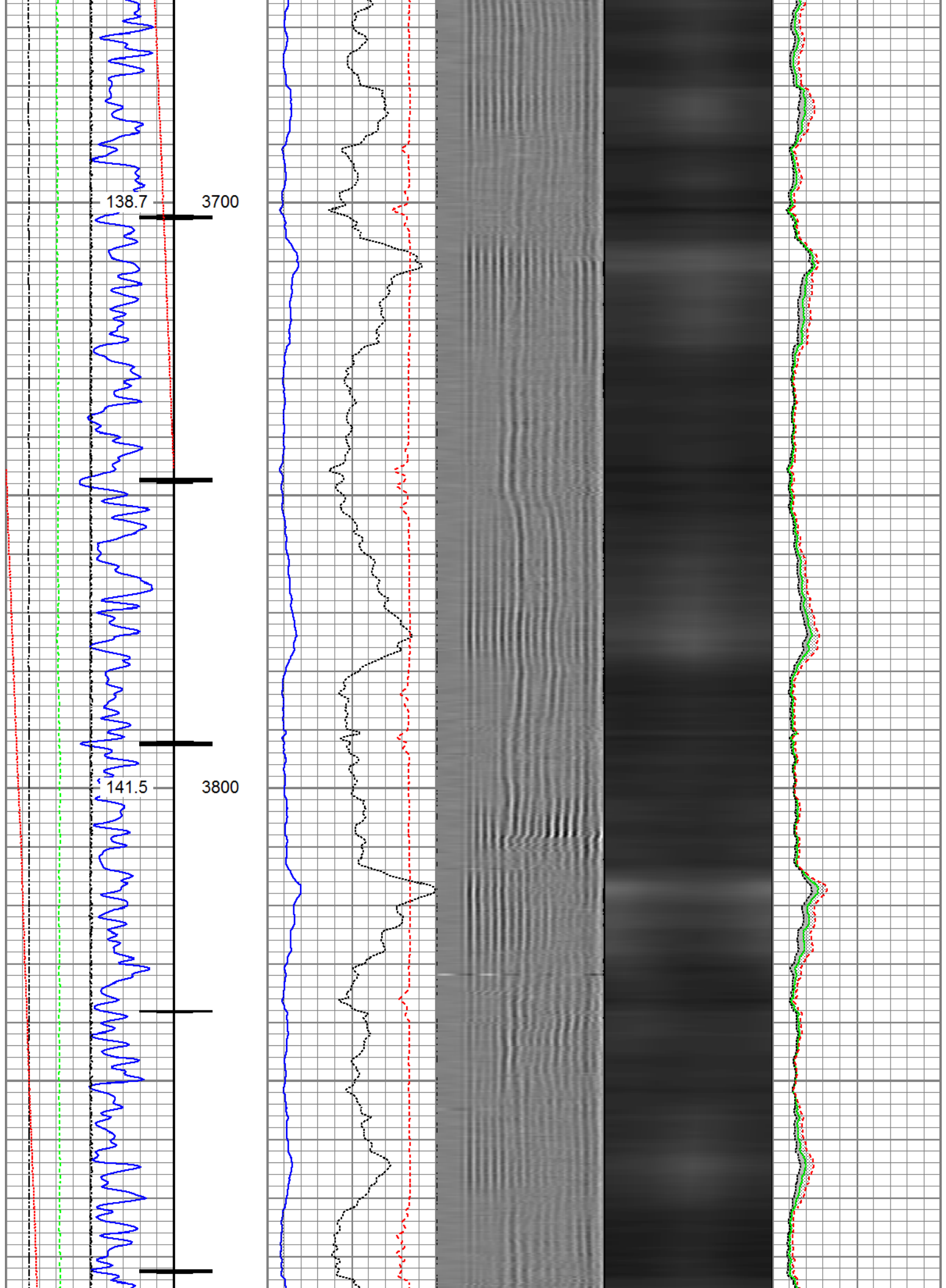


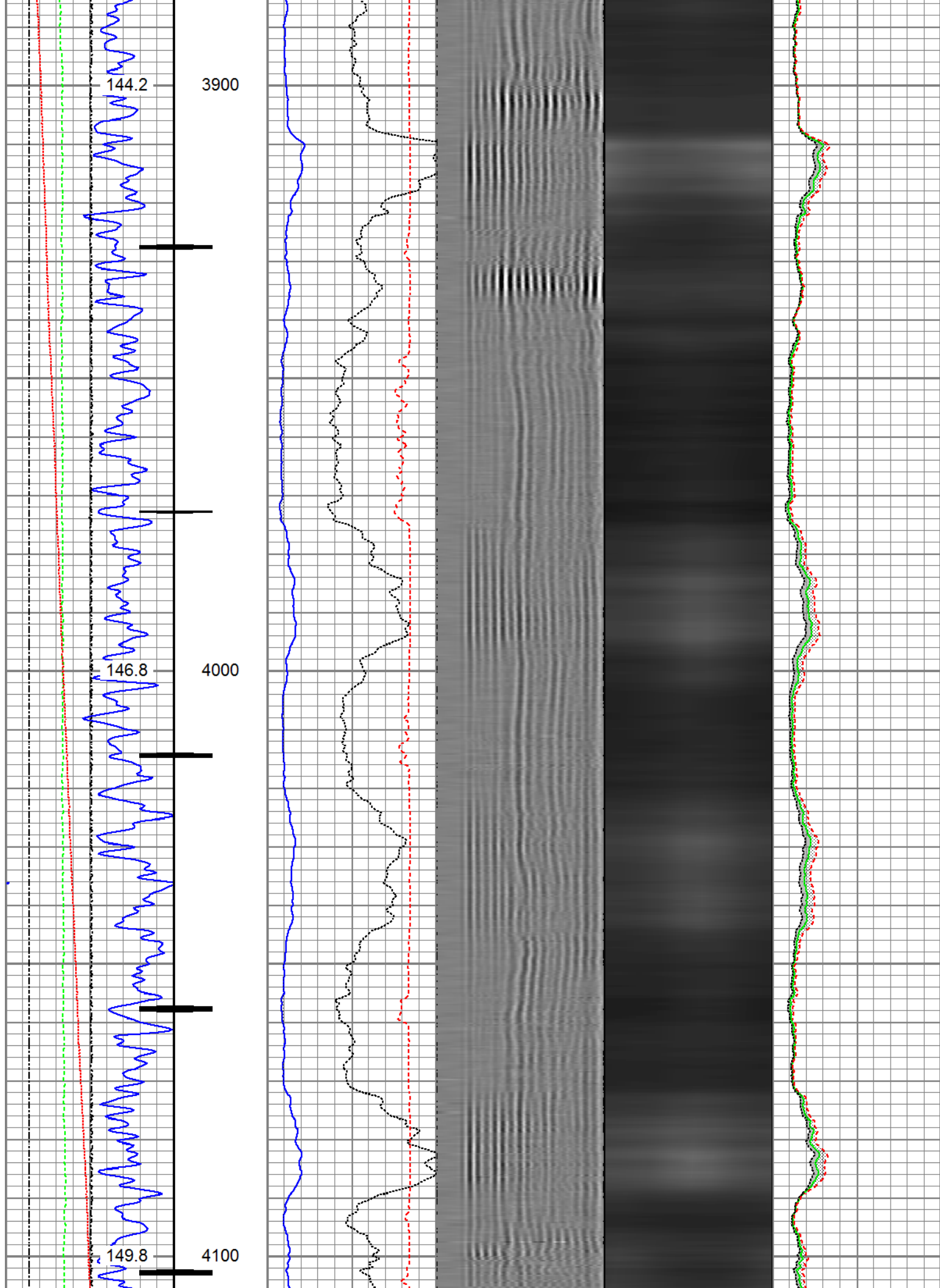


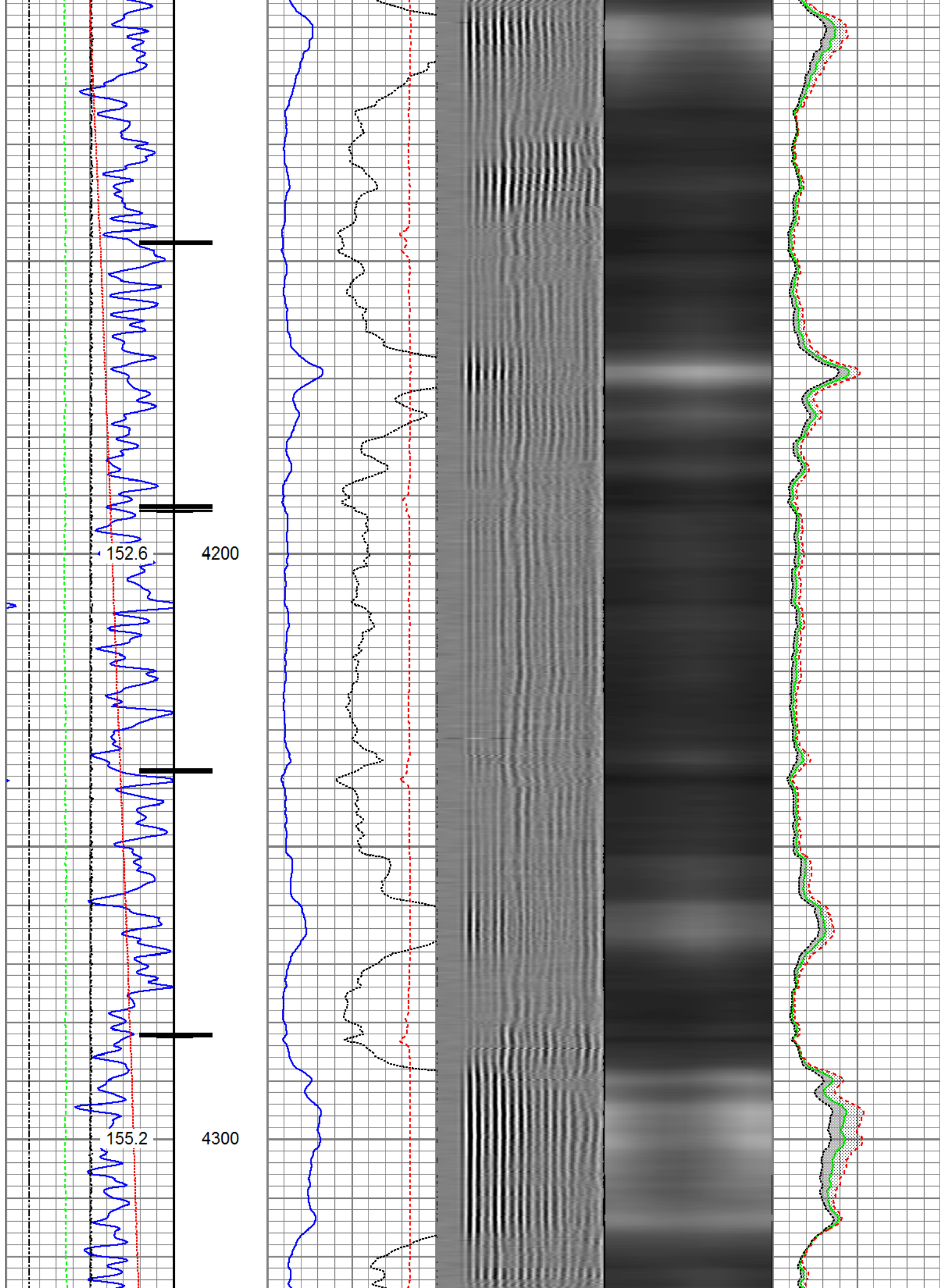


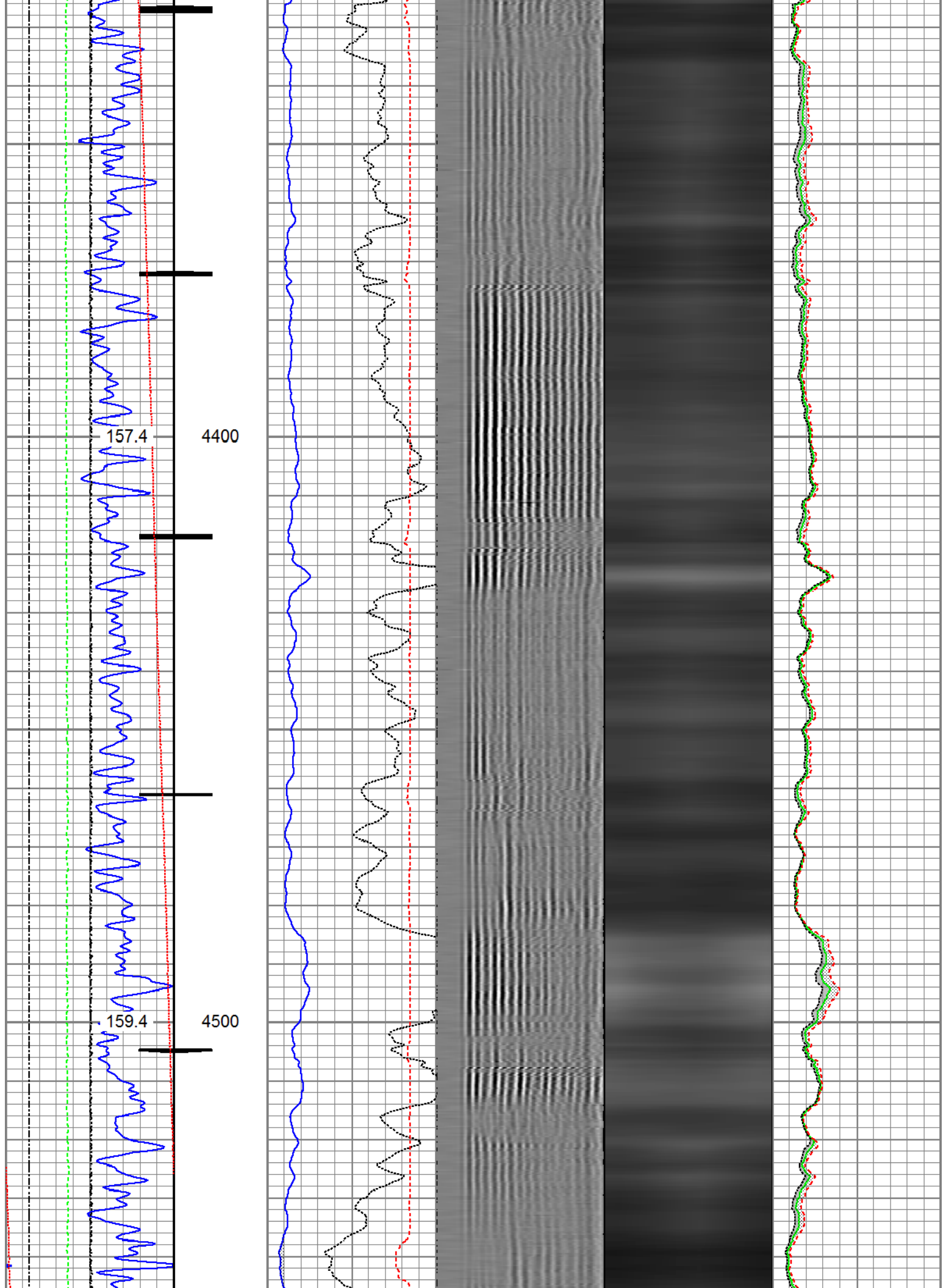


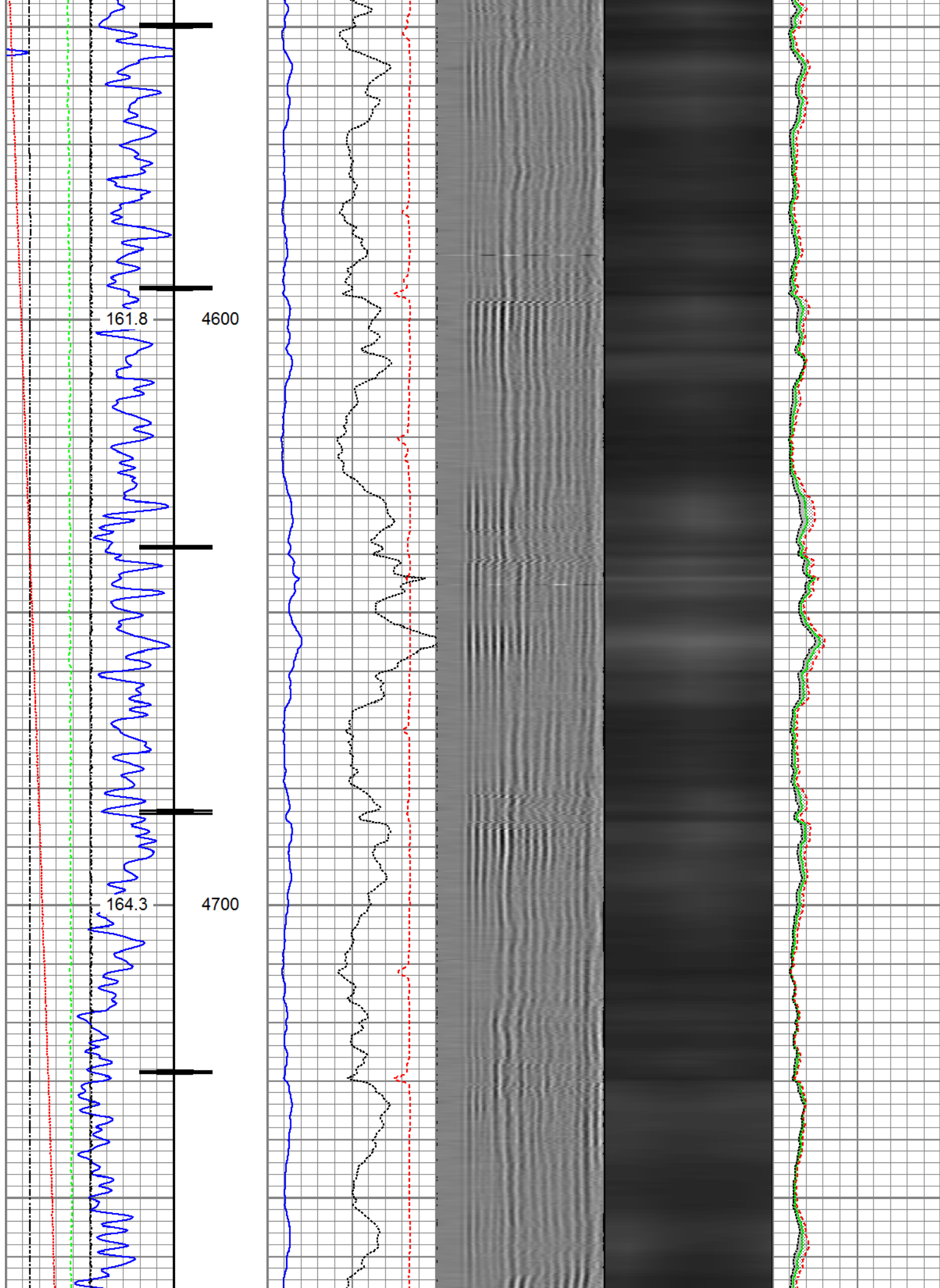


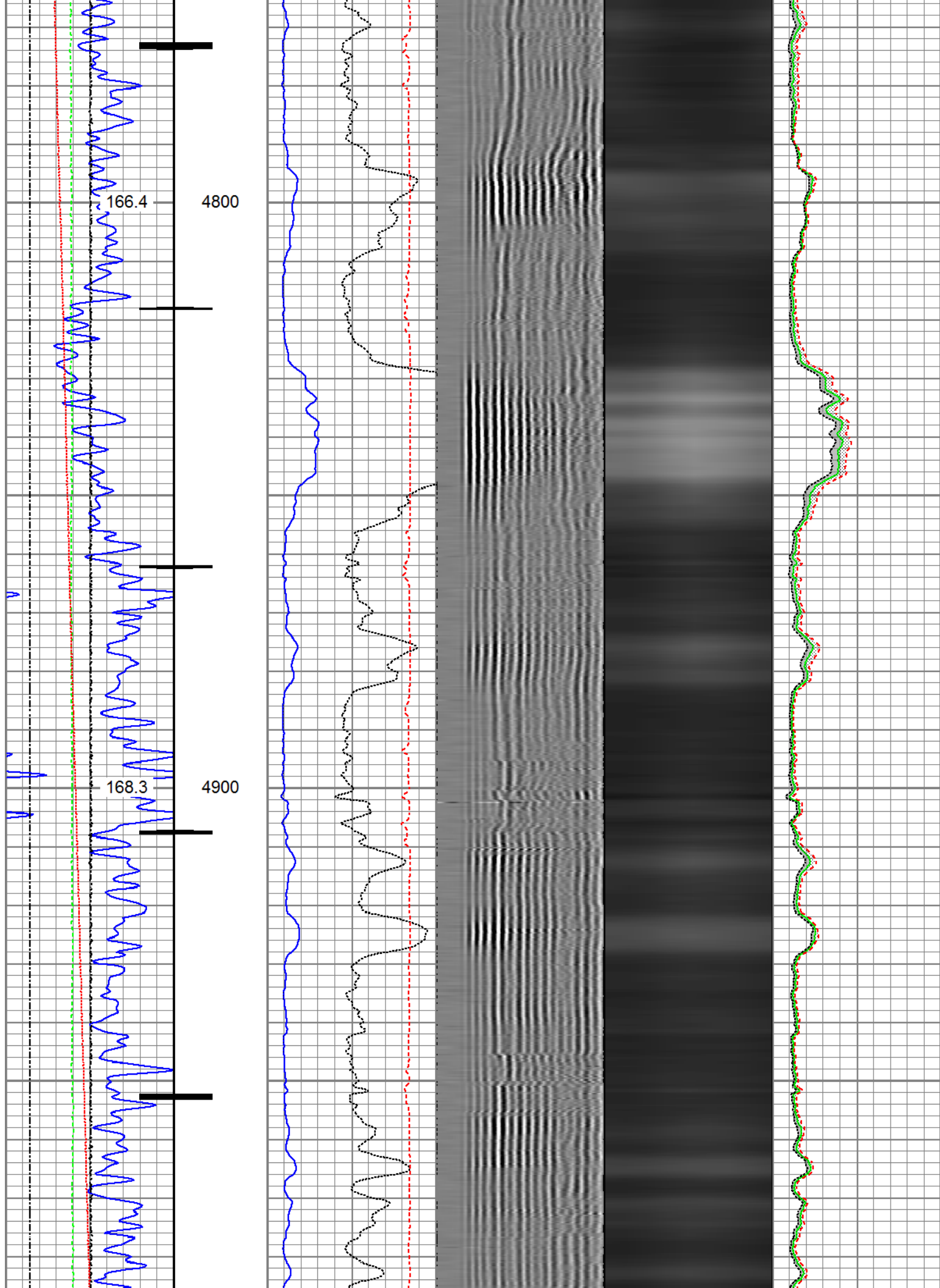


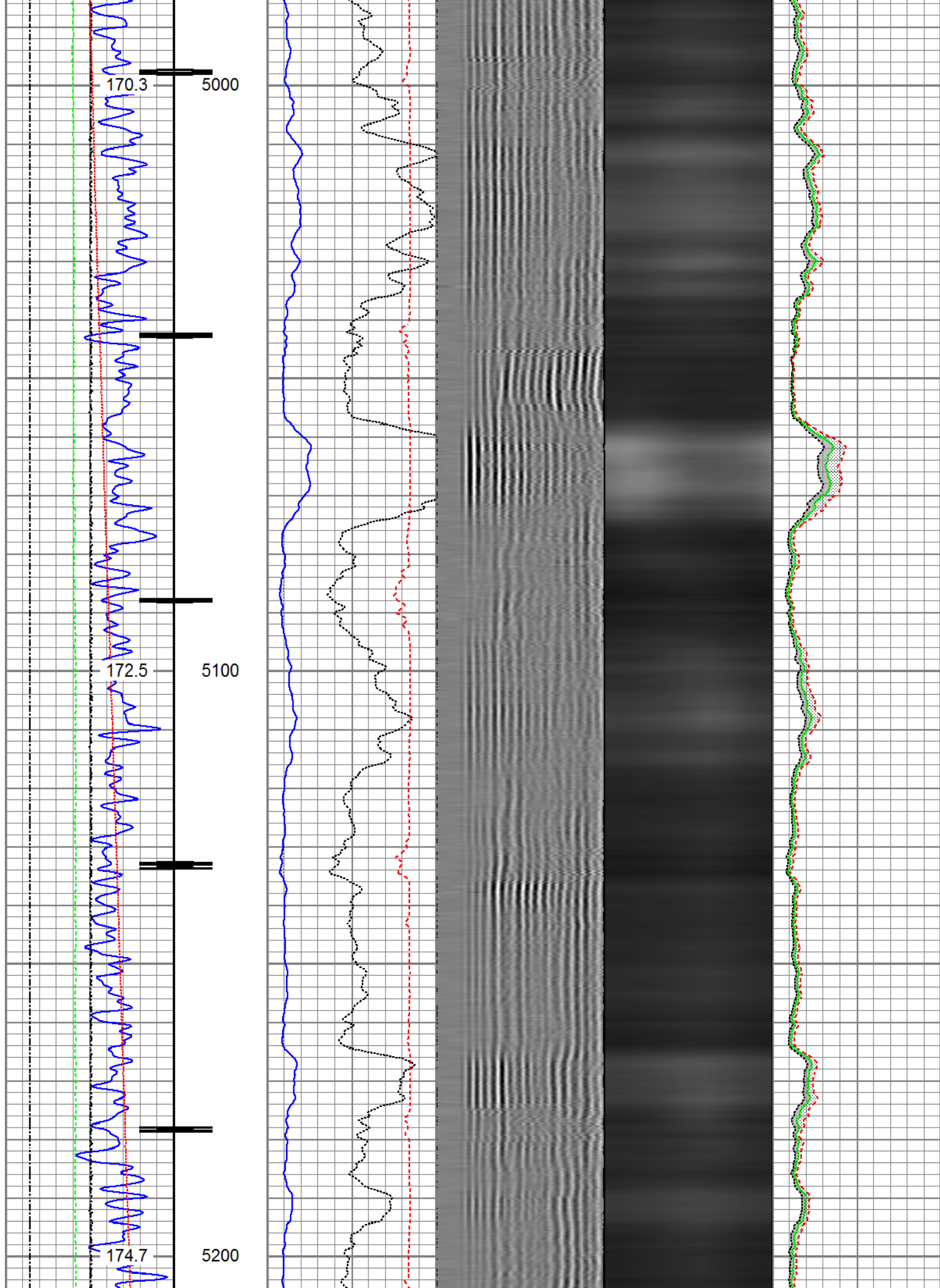


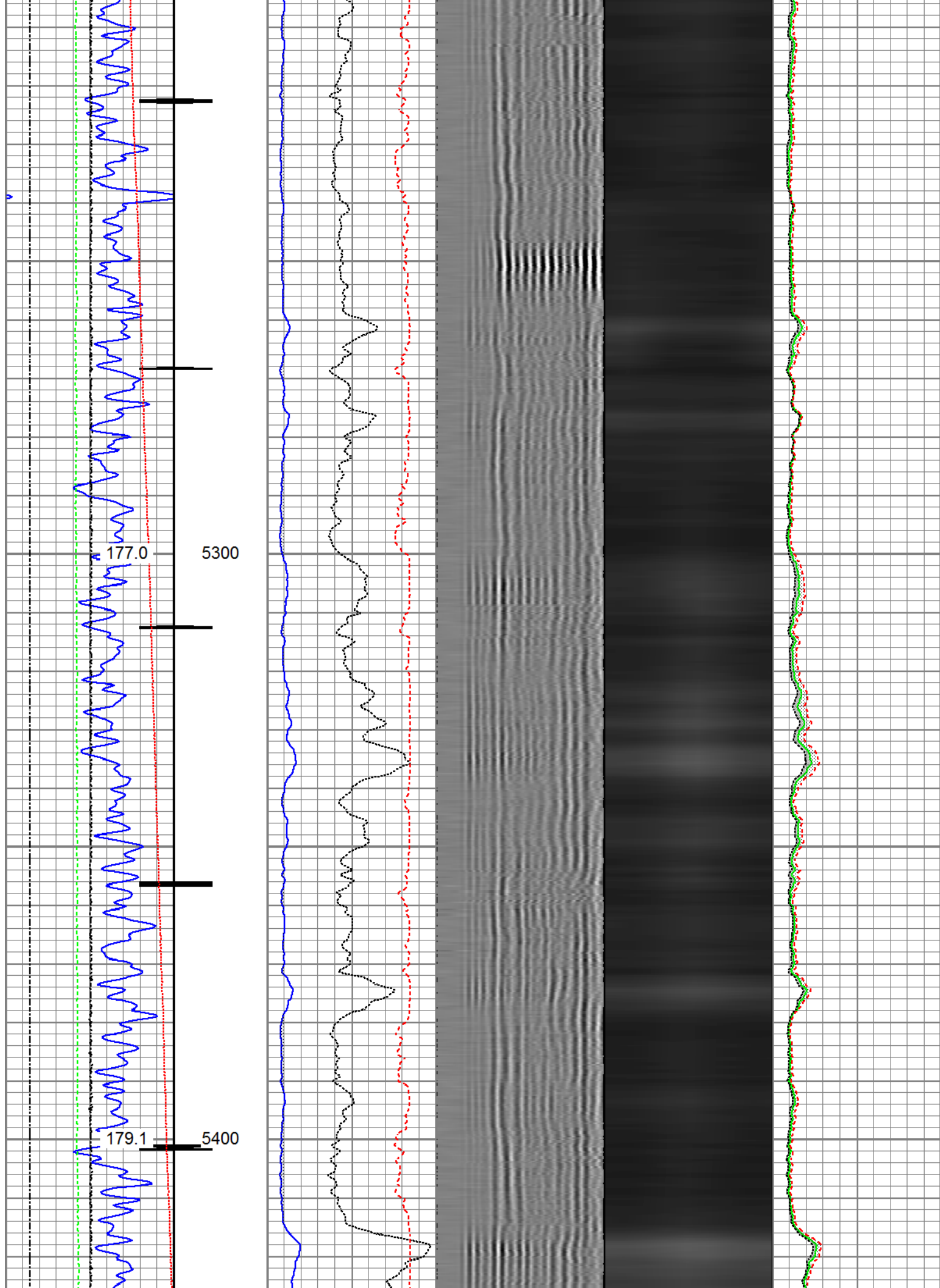


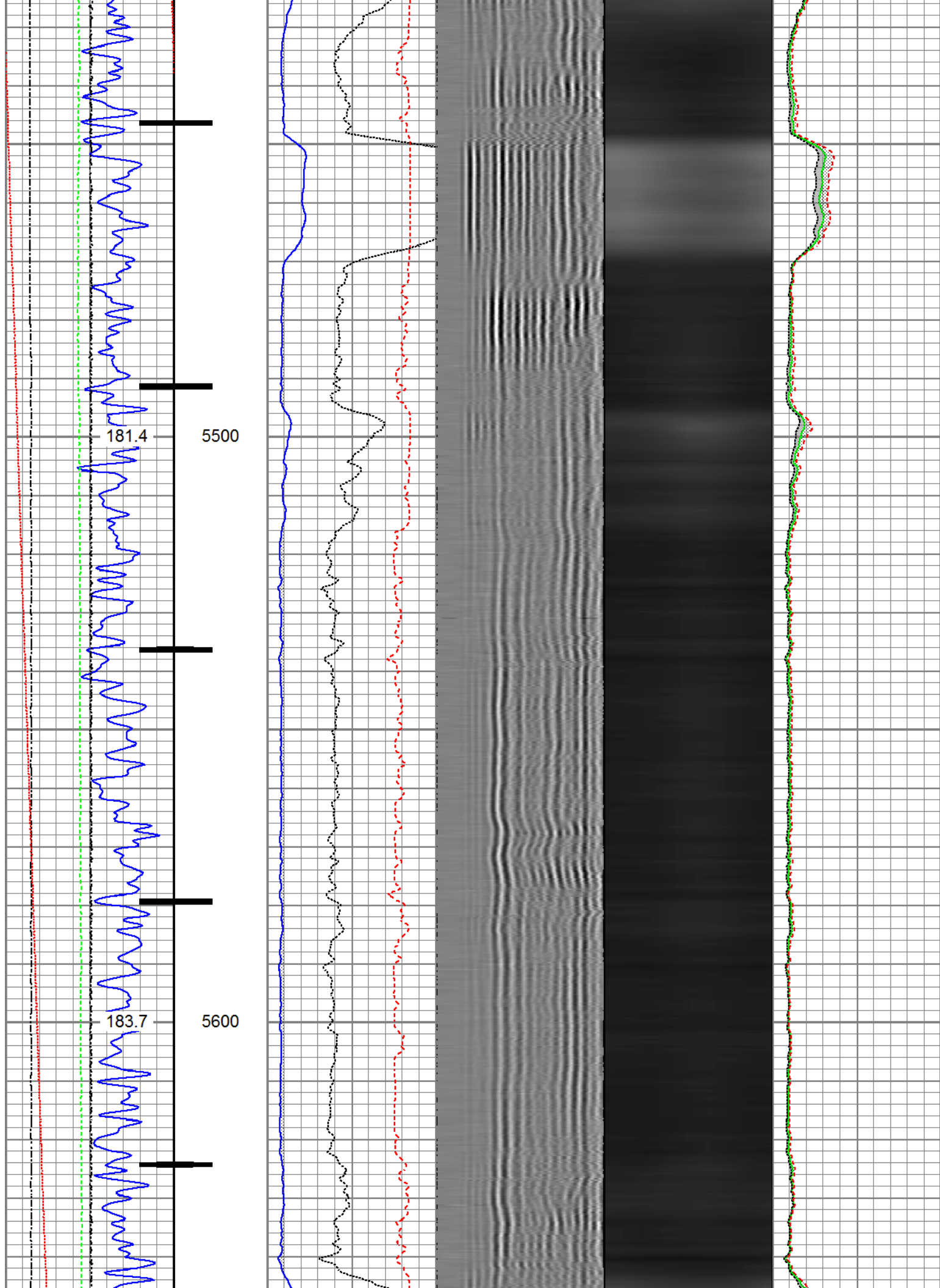


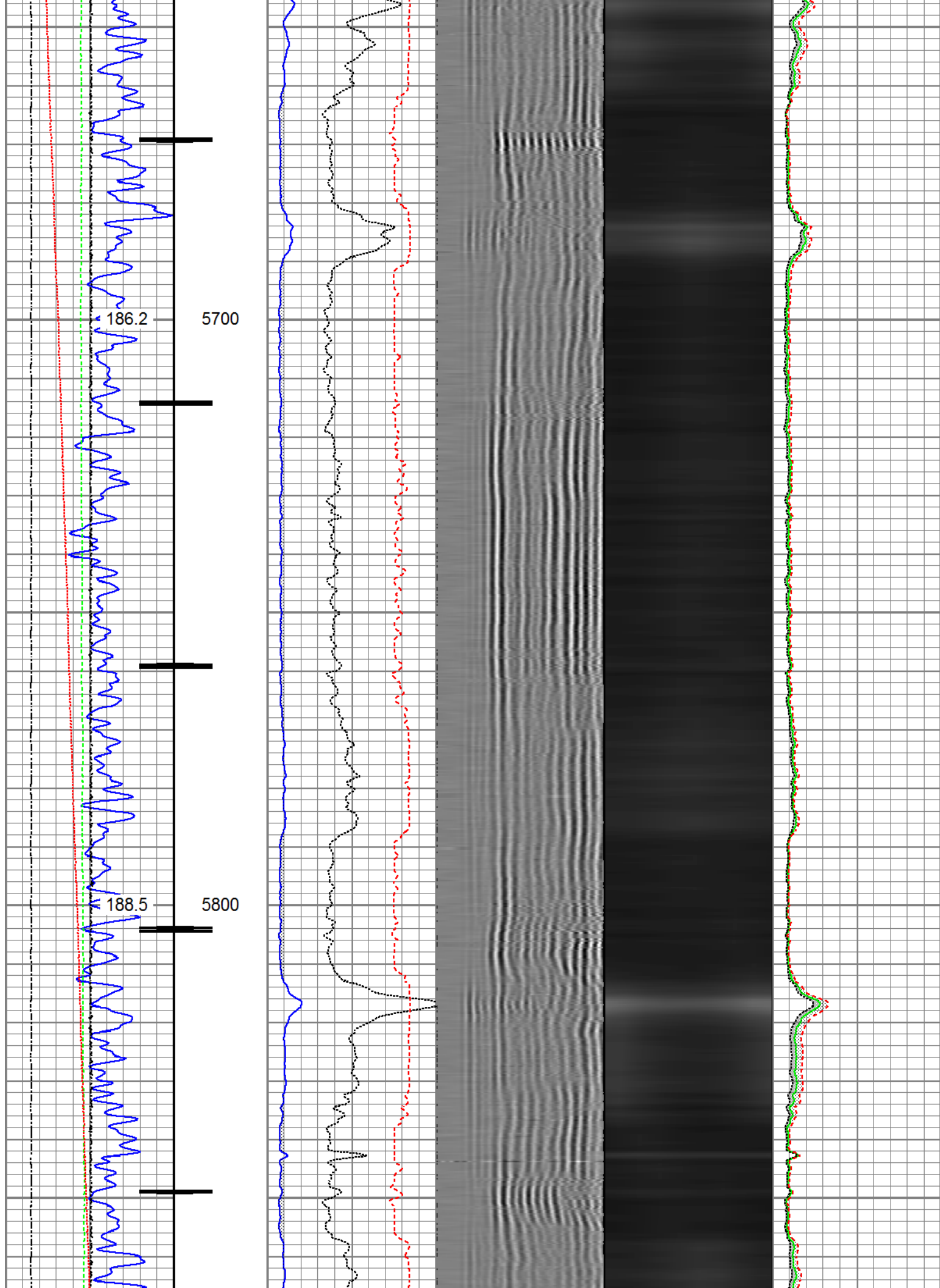


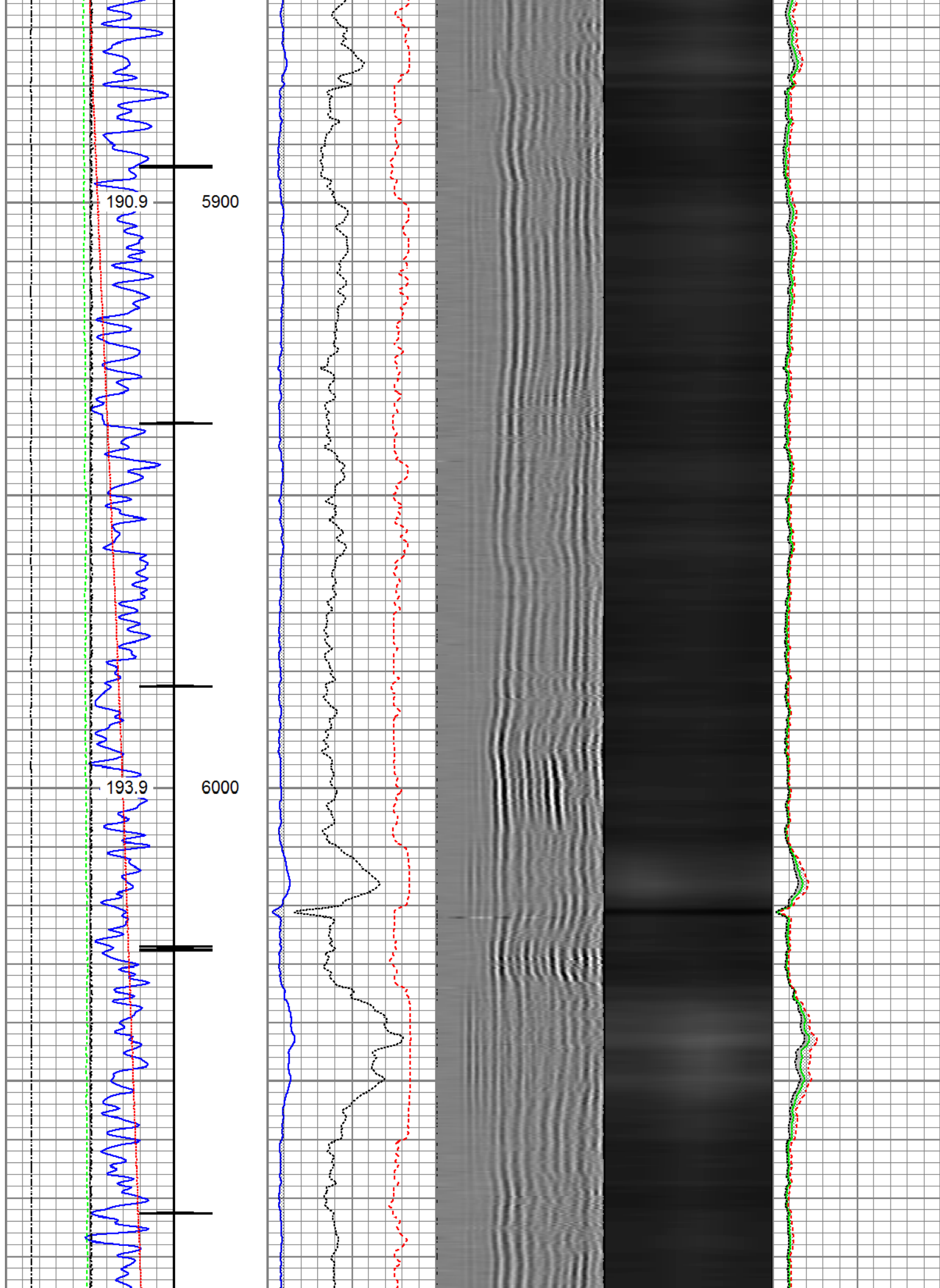


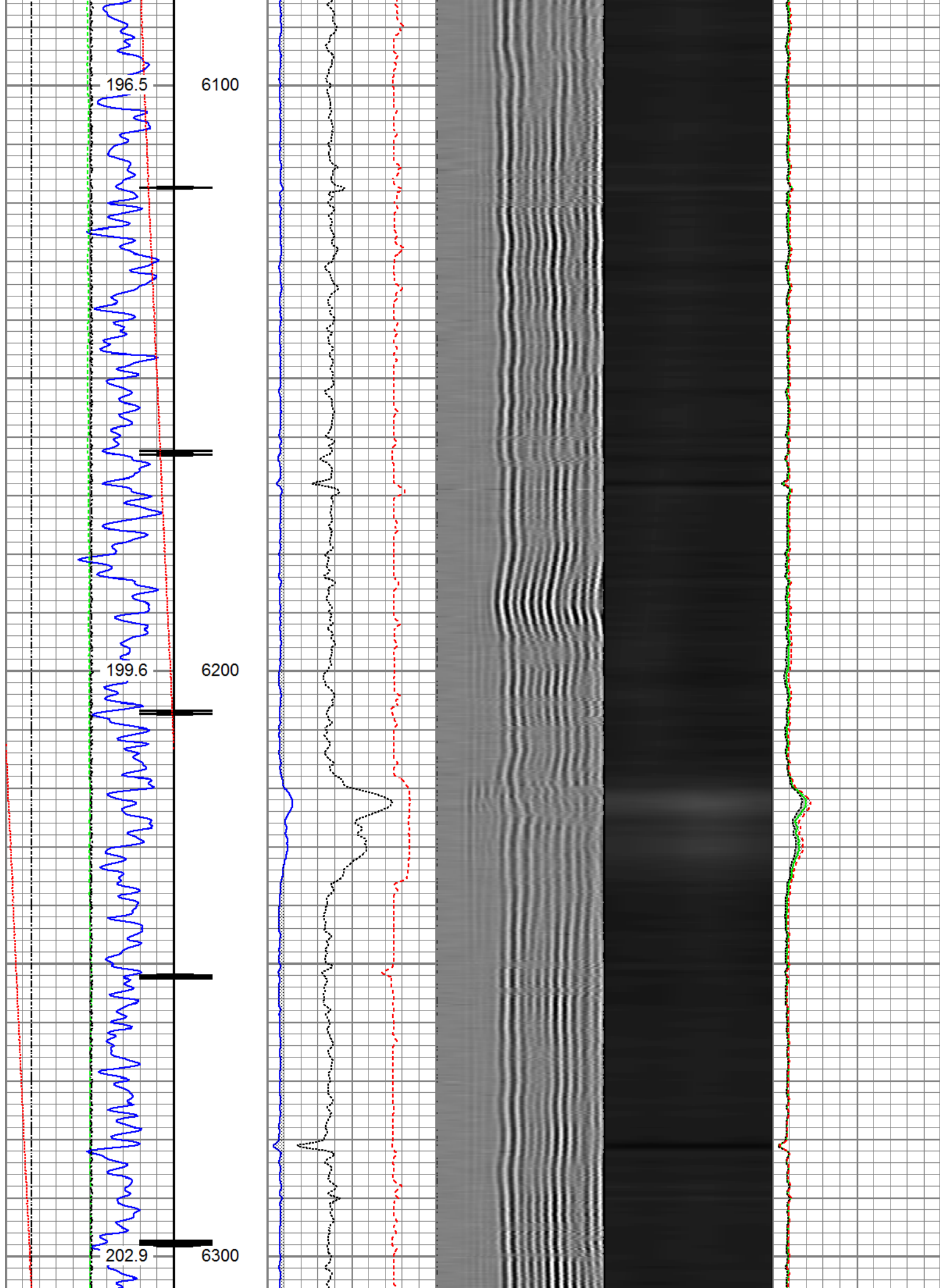


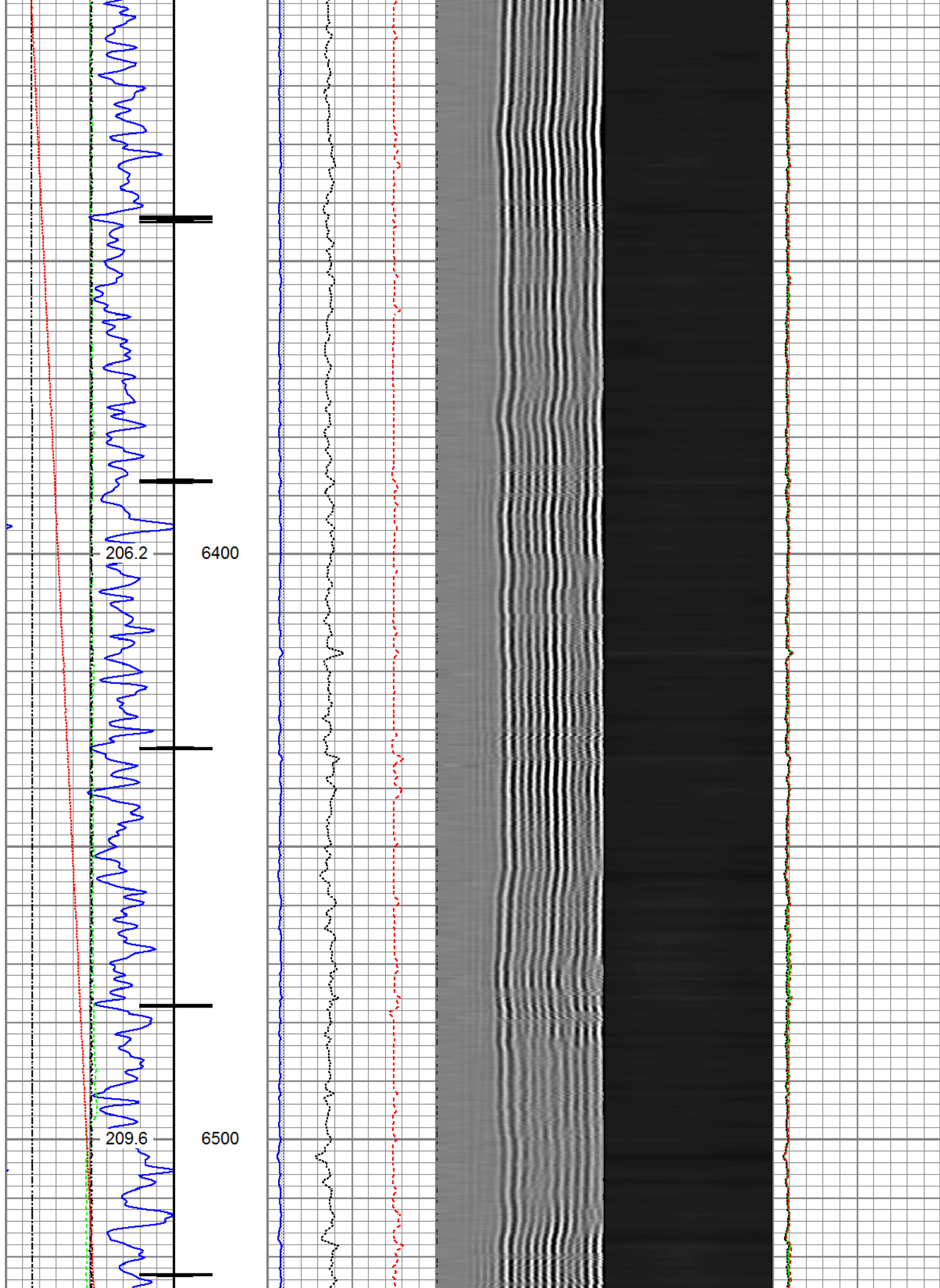


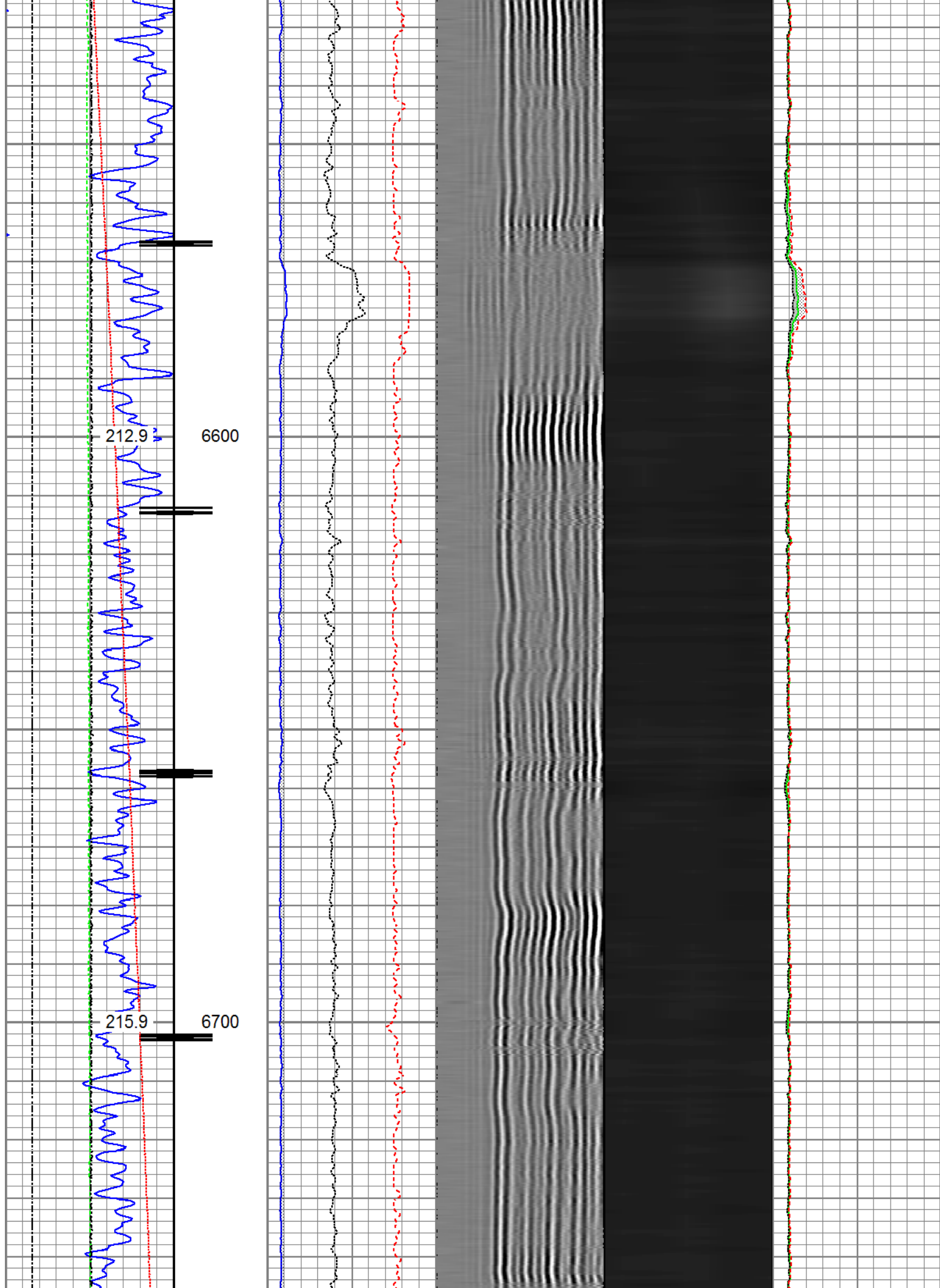


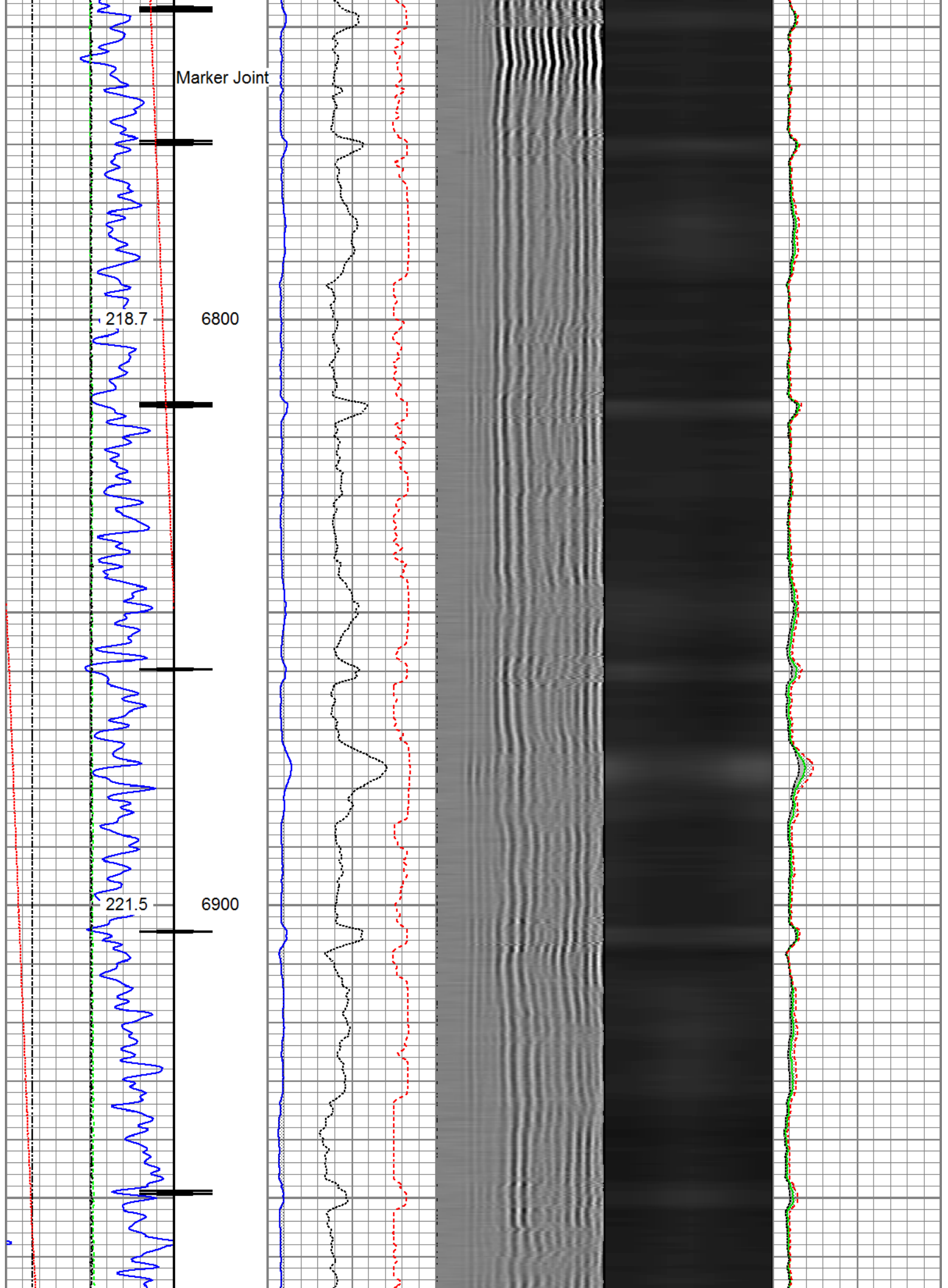


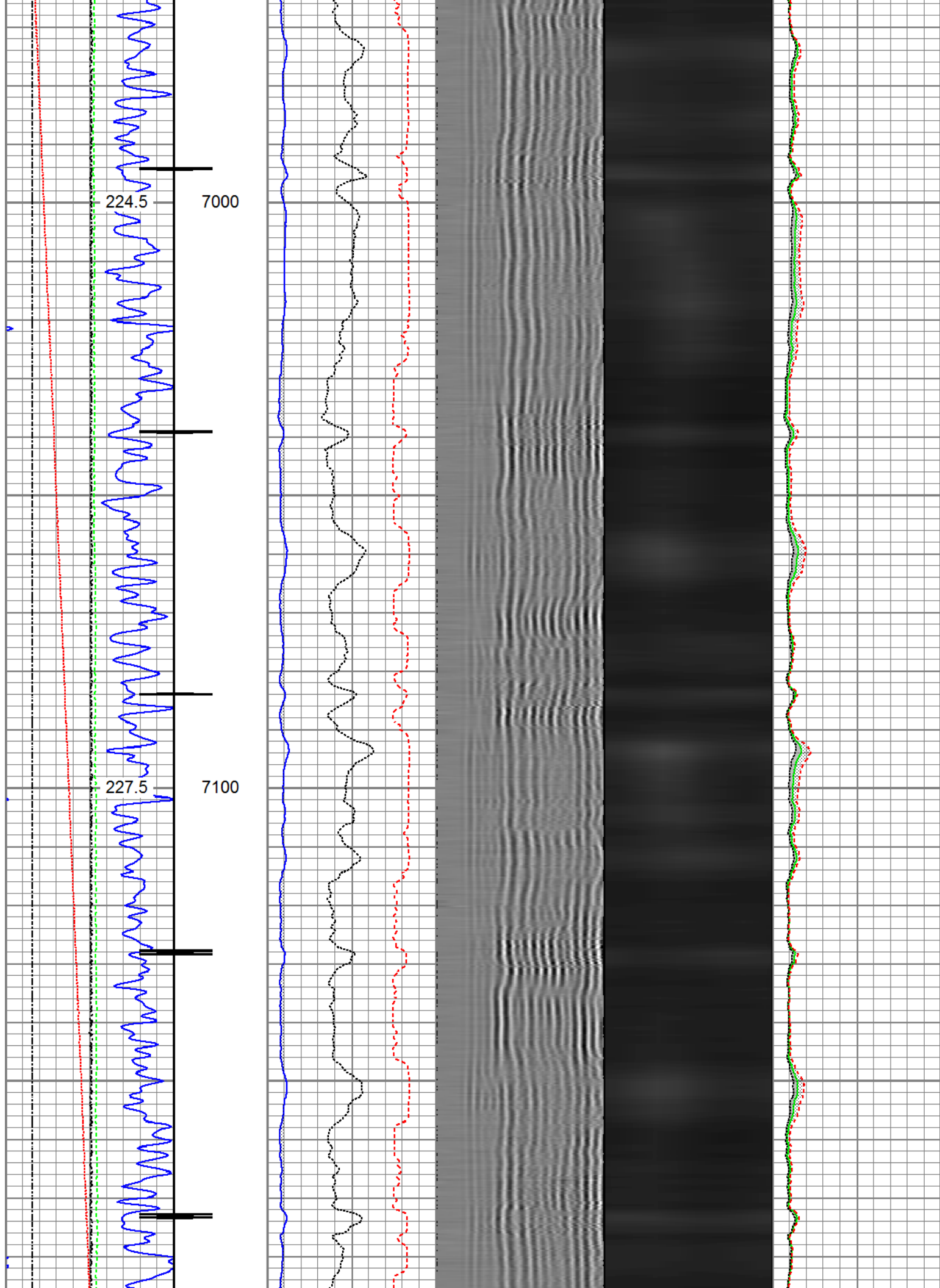


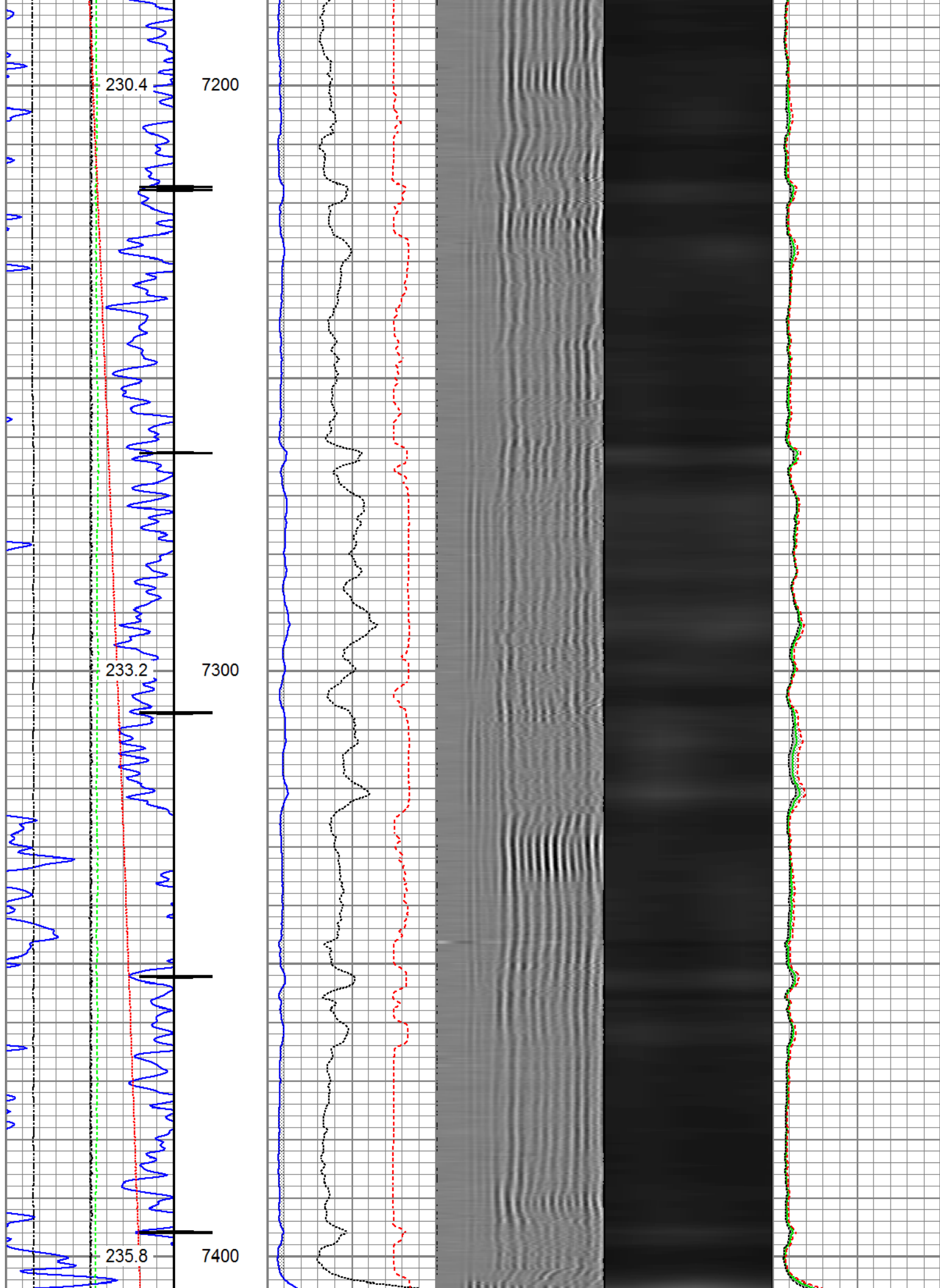


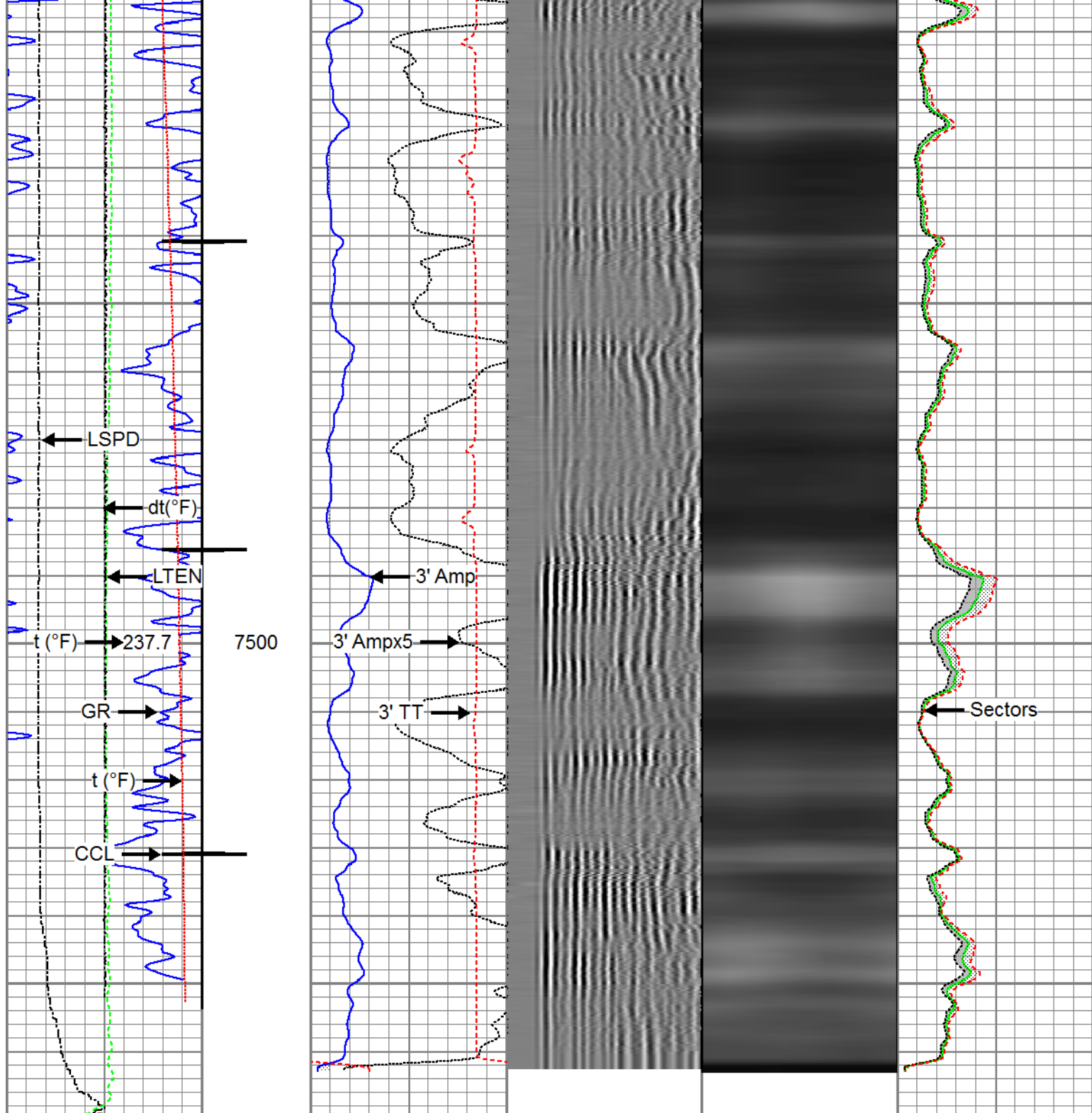












Gamma Ray 0 (GAPI) 120	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Casing Collar Locator	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Line Tension 0 (lb) 2000	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

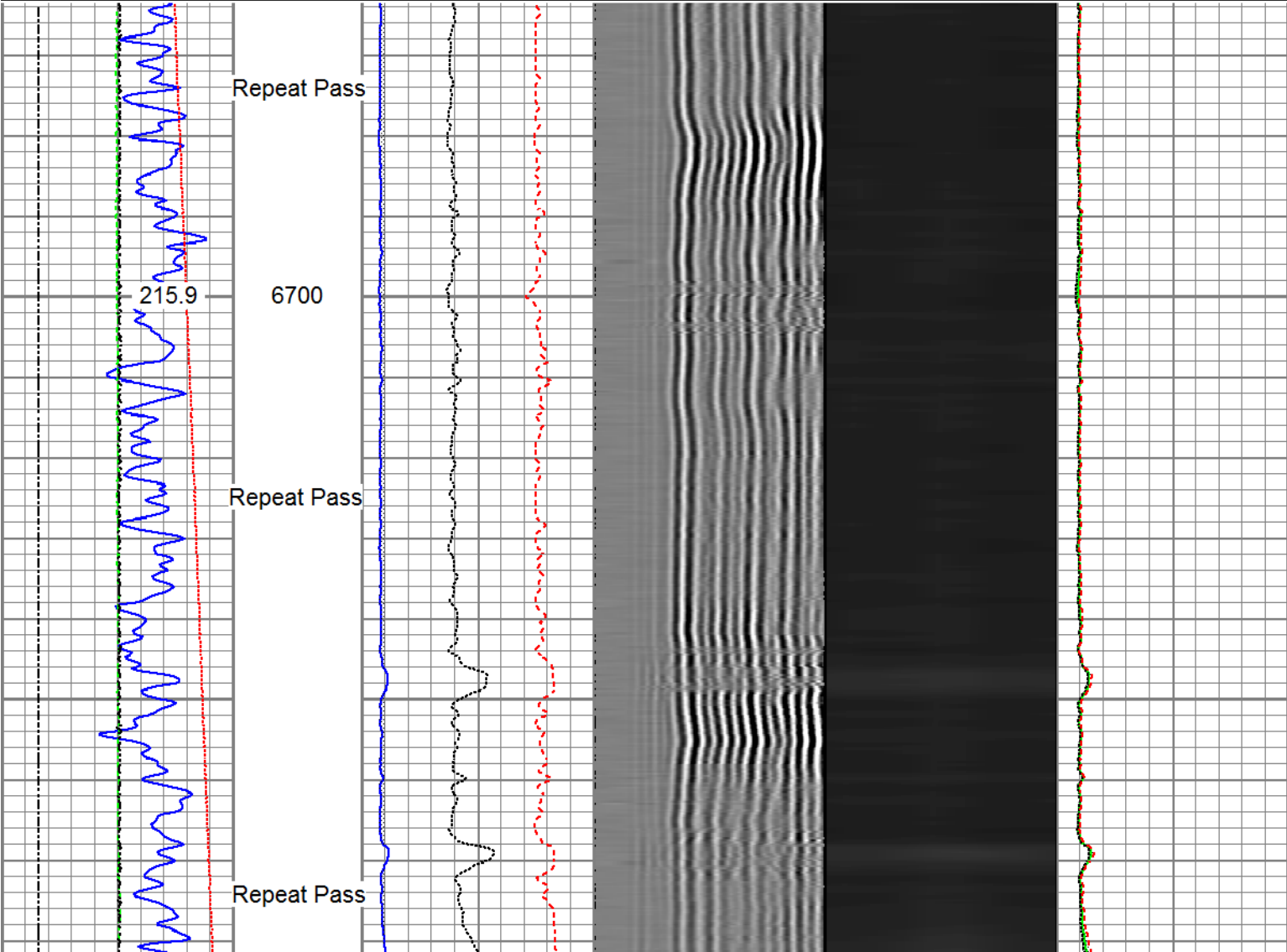


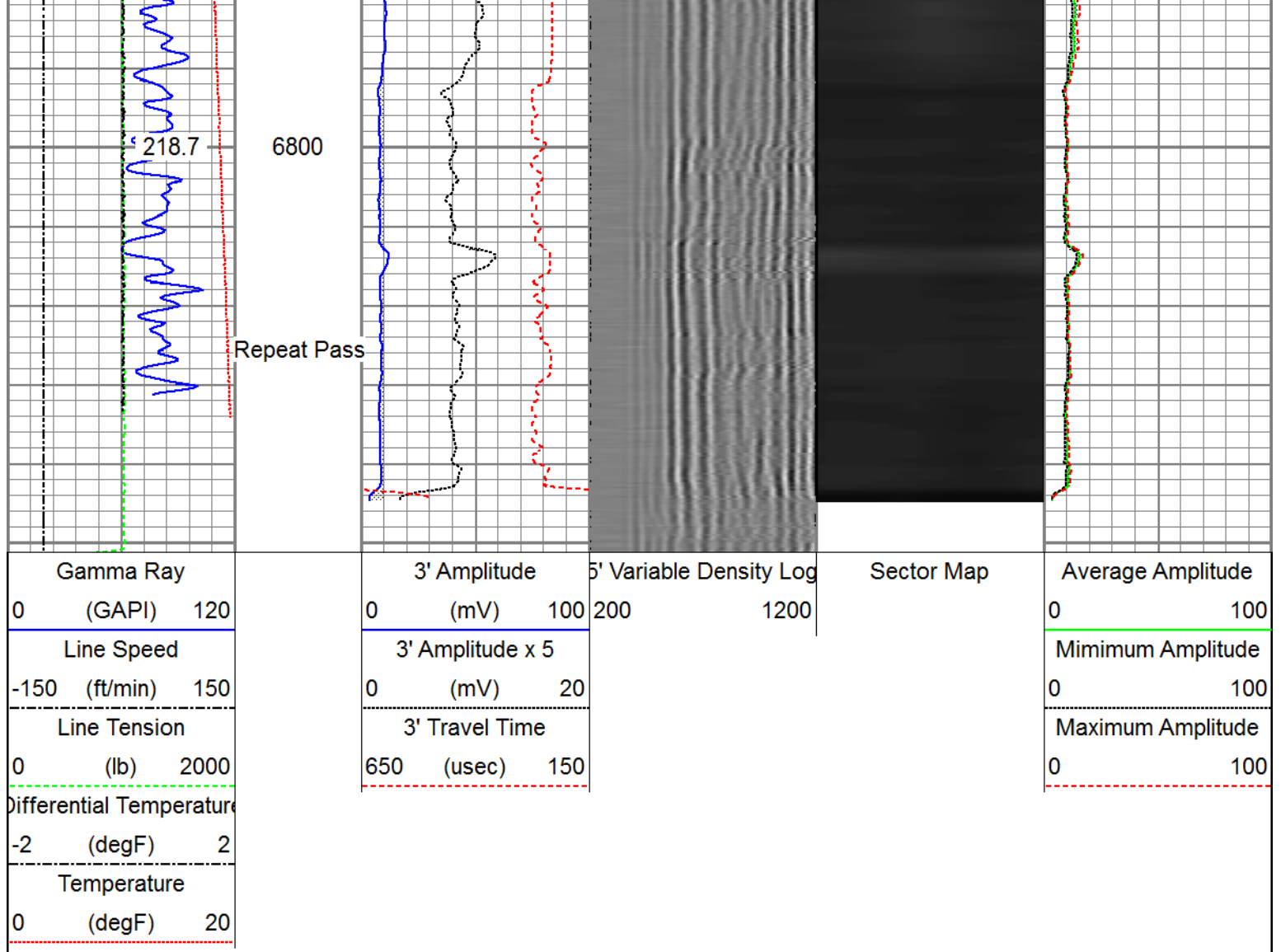
Repeat Pass

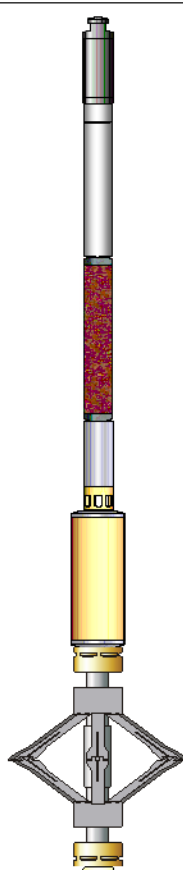
Recorded with 2800 PSI Surface Induced Pressure

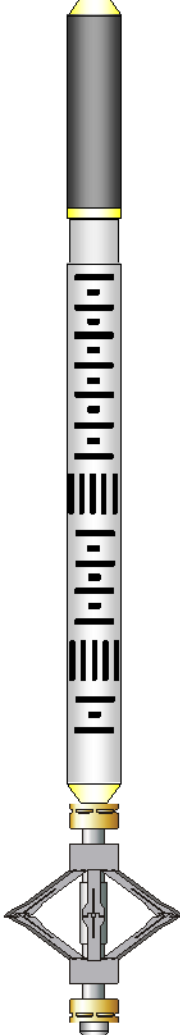
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Dataset Pathname pass2.1
Presentation Format ros_rbt004_sx
Dataset Creation Fri Sep 02 14:25:05 2016
Charted by Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
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	Length (ft)	O.D. (in)	Weight (lb)
GR	17.94		Titan_Electric_Cable_Heads-Titan_1-11/16" Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
			UW_AGS-UW_AGS_001 (10010522) 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 (211727) Production Gamma Ray	1.92	1.69	9.50
TEMP	16.54		UW_PRT-PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
CCL	15.30		UW_CCL-UW_CCL_028 (10024819) 3-1/8" Ultrawire Casing Collar Locator	1.61	3.13	36.00
			UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

CBLROT	7.90		UW_RBT-UW_RBT_004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
WVFS8	7.90					
WVFS7	7.90					
WVFS6	7.90					
WVFS5	7.90					
WVFS4	7.90					
WVFS3	7.90					
WVFS2	7.90					
WVFS1	7.90					
WVF3FT	7.90					
WVF5FT	6.90					
CBLTEMP	2.77					
HVOLTX	0.00		UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
ITEMPX	0.00					
TSTAMP	0.00		UW_BUL-UW_BUL_006 (031422) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: PROCESSED_0512342301_Anadarko_Land 37N-32HZ_09-02-16_RBL_W8.db: field/well/run1/pass4.1 Total length: 22.19 ft Total weight: 268.80 lb O.D.: 3.13 in						

Calibration Report						
Database File	C:\ProgramData\Warrior\Data\Anadarko_Land 37N-32HZ_02-SEP-2016_RBL\PROCESSED_051234					
Dataset Pathname	pass4.1					
Dataset Creation	Fri Sep 02 14:18:19 2016					
Segmented Cement Bond Log Calibration Report						
Serial Number:		10013454				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		5.500	in			
Calibration Depth:		42.914	ft			
Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.032	0.862	0.800	71.921	79.529	3.351
5FT	-0.079	0.863	0.800	71.921	75.493	6.766
S1	-0.034	0.844	0.000	100.000	113.957	3.826
S2	-0.035	0.875	0.000	100.000	109.960	3.825
S3	-0.035	0.890	0.000	100.000	108.111	3.788
S4	-0.038	0.886	0.000	100.000	108.288	4.062

S5	-0.033	0.865	0.000	100.000	111.358	3.694
S6	-0.029	0.854	0.000	100.000	113.176	3.321
S7	-0.029	0.836	0.000	100.000	115.565	3.349
S8	-0.032	0.839	0.000	100.000	114.825	3.650

Temperature Calibration Report

Serial Number:	10025097
Tool Model:	PRT_016
Performed:	Sun Oct 11 12:34:58 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
10	cps	degF

Gamma Ray Calibration Report

Serial Number:	211727
Tool Model:	UW_PGR_020
Performed:	(Not Performed)
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	Land 37N-32HZ
Field	Wattenberg
County	Weld
State	Colorado