



**Radial Cement Bond  
Gamma Ray  
Casing Collar Log**

**Company** Kerr-McGee Oil & Gas Onshore, L.P.  
**Well** Sarchet 21-7HZ  
**Field** Wattenberg  
**County** Weld **State** Colorado

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**Location:** SEC 21 TWP 3N RGE 66W  
 API #: 05-123-50075  
 Other Services Gauge Ring RBP  
 Elevation 4983'  
 Permanent Datum Ground Level Elevation 4983'  
 Log Measured From Kelly Bushing 21 FT  
 Drilling Measured From Kelly Bushing

Date	09-OCT-2019						
Run Number	Three						
Depth Driller	18421 FT						
Depth Logger	6872 FT						
Bottom Logged Interval	6857 FT						
Top Log Interval	Surface						
Open Hole Size	7.875"						
Type Fluid	Water						
Density / Viscosity	8.34 lb/gal						
Max. Recorded Temp.	222°F						
E. estimated Cement Top	See Log						
Time Well Ready	ROA						
Time Logger on Bottom	14.24						
E. equipment Number	HD-0324						
Location	Platteville, CO						
Recorded By	Matt Steinman						
Witnessed By	John McCarthy						
<b>Borehole Record</b>							
Run Number	Bit	From	To	Size	Weight	From	To
<b>Tubing Record</b>							
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom		
Surface Casing	9.5/8	36	J-55	Surface	1909 FT		
Intermediate #1	5.1/2	17	HCP110	Surface	18399 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 6823 FT**  
**Adjusted +20.5 FT to correlate with Marker Joint**  
**Gauge Ring/Junk Basket ran to 8000 FT**  
**Retrievable Bridge Plug set at 6897 FT**  
**Log ran with 0 PSI Surface Induced Pressure**  
**Logging tools were clean and free of debris upon completion of operations**  
  
**Thank you for choosing Reliance Oilfield Services, LLC!!**

**Main Pass**

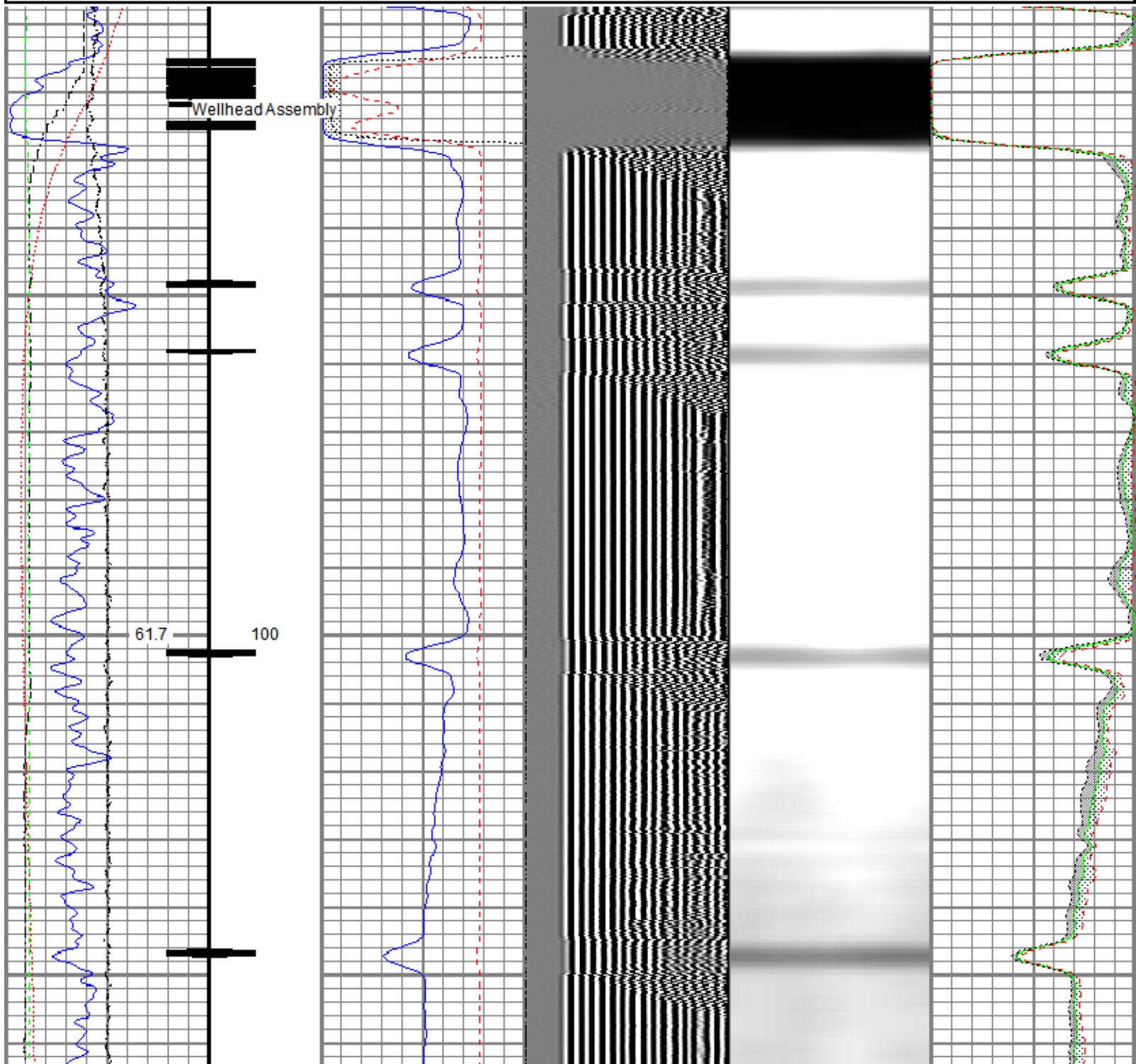


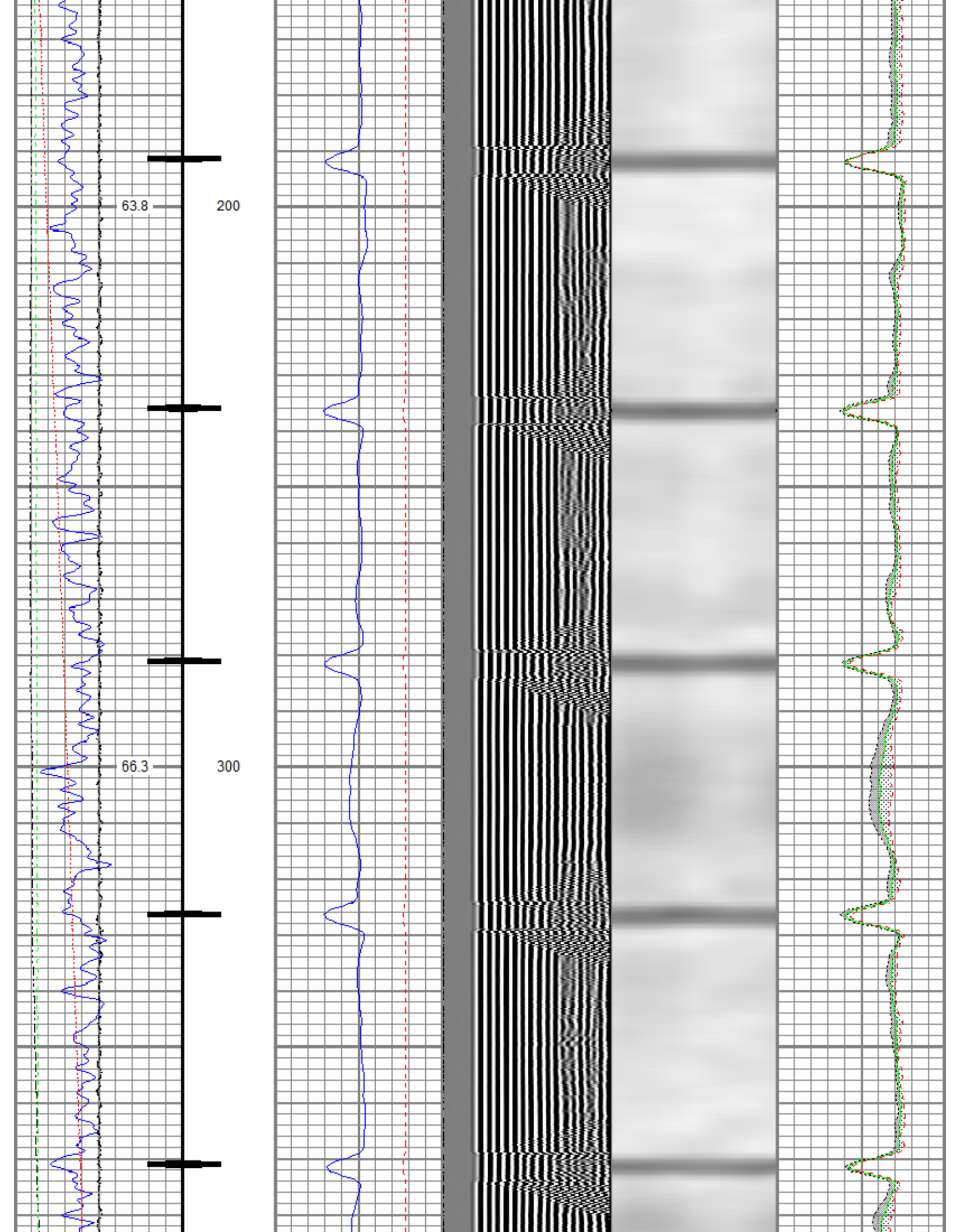
Recorded With 0 PSI Surface Induced Pressure

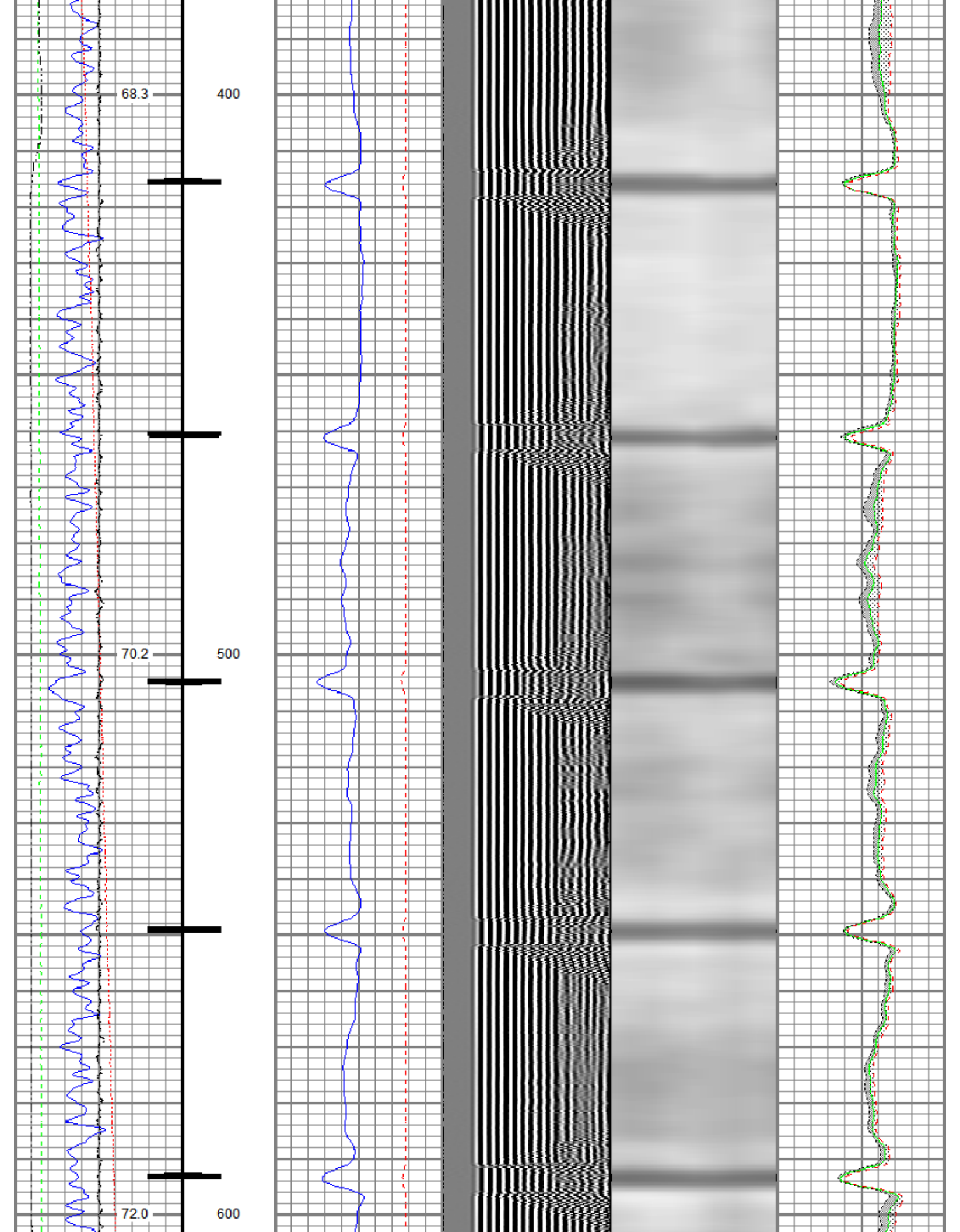
# Recorded with 0 PSI Surface Induced Pressure

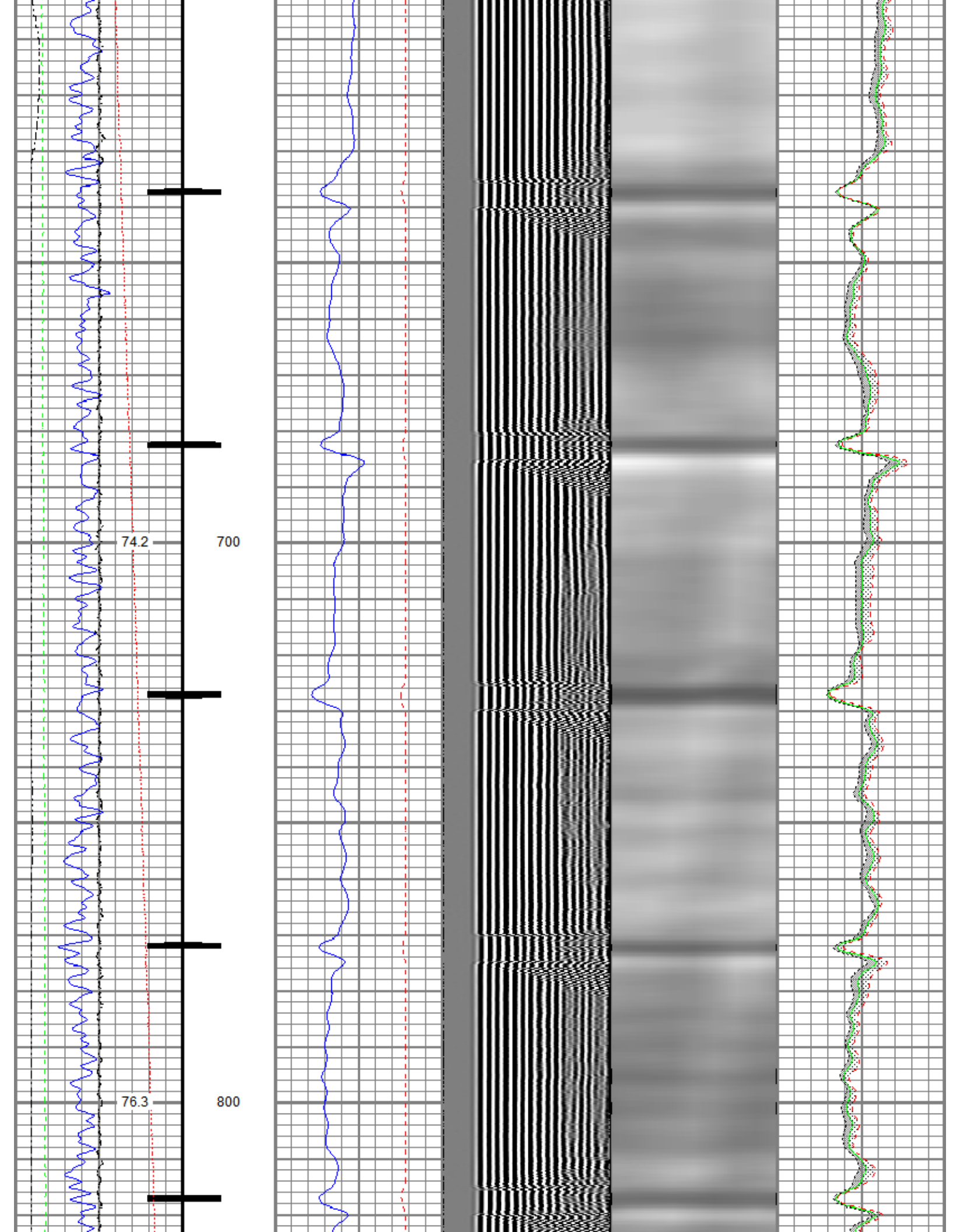
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 Dataset Pathname    0\_psi/main.8  
 Presentation Format    ros\_radri  
 Dataset Creation      Thu Oct 10 16:31:26 2019  
 Charted by            Depth in Feet scaled 1:240

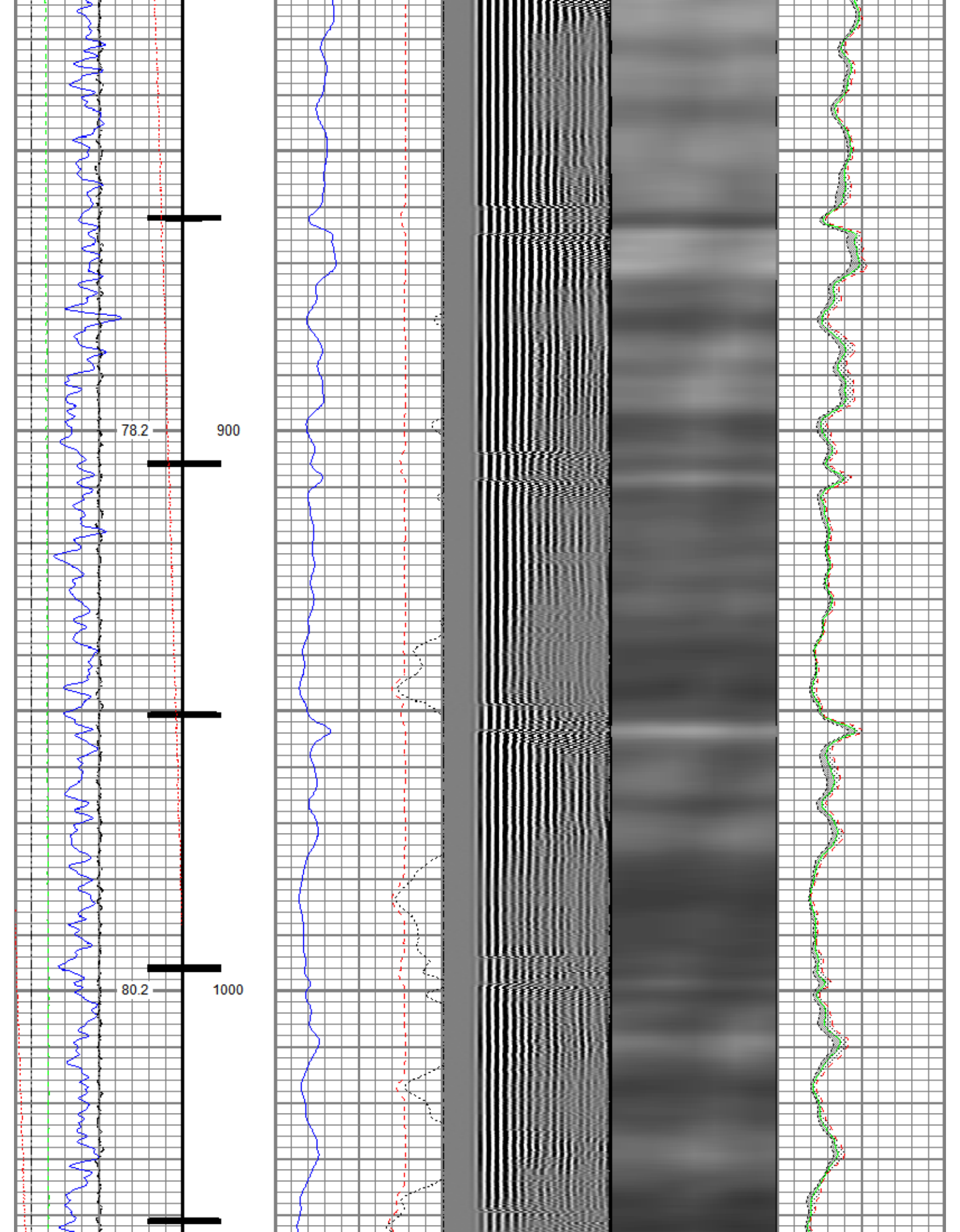
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Casing Collar Locator	0	(mV) 20			0	100
Temperature (degF) 20		3' Travel Time				Maximum Amplitude
Line Speed	650	(usec) 150			0	100
-150 (ft/min)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

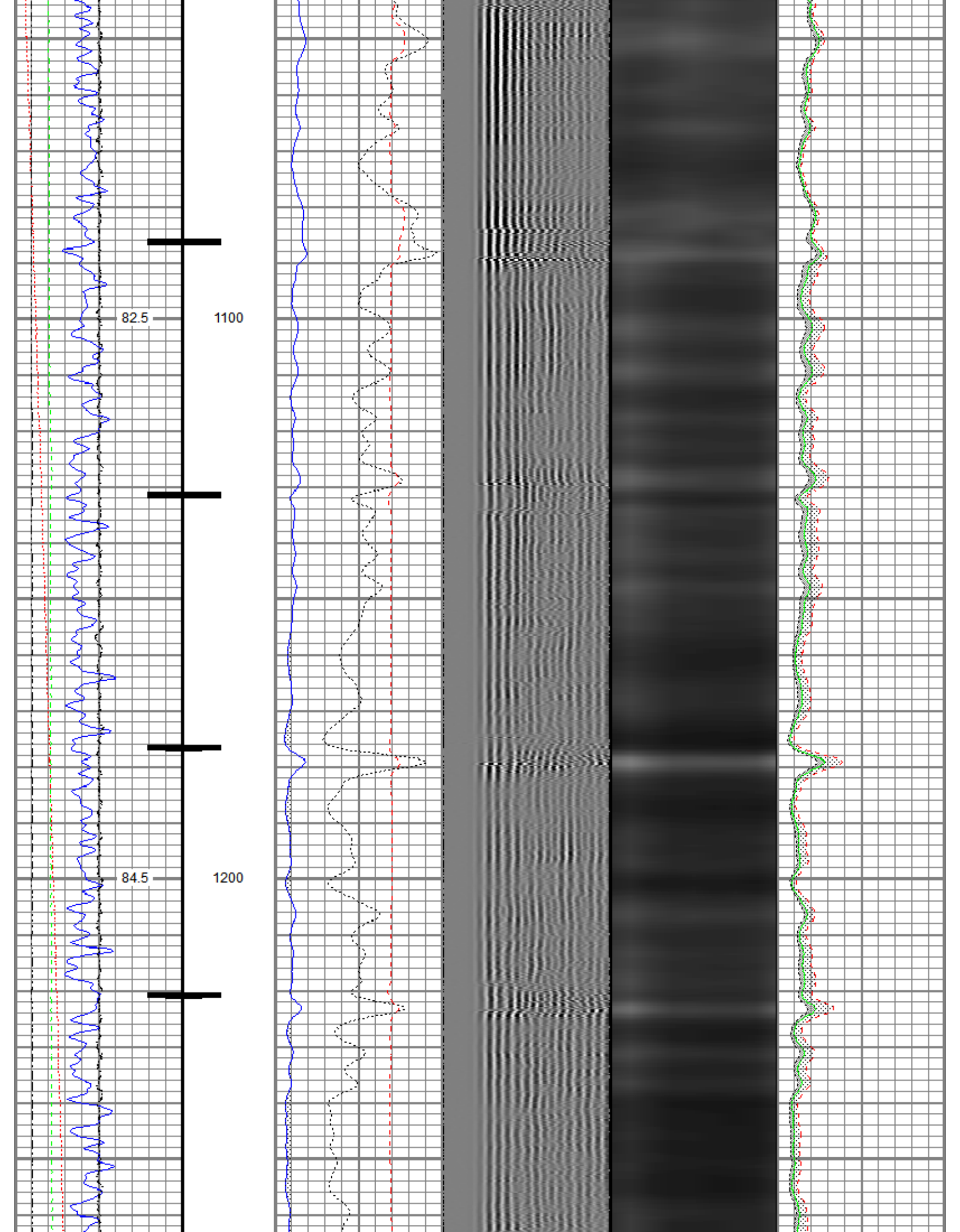










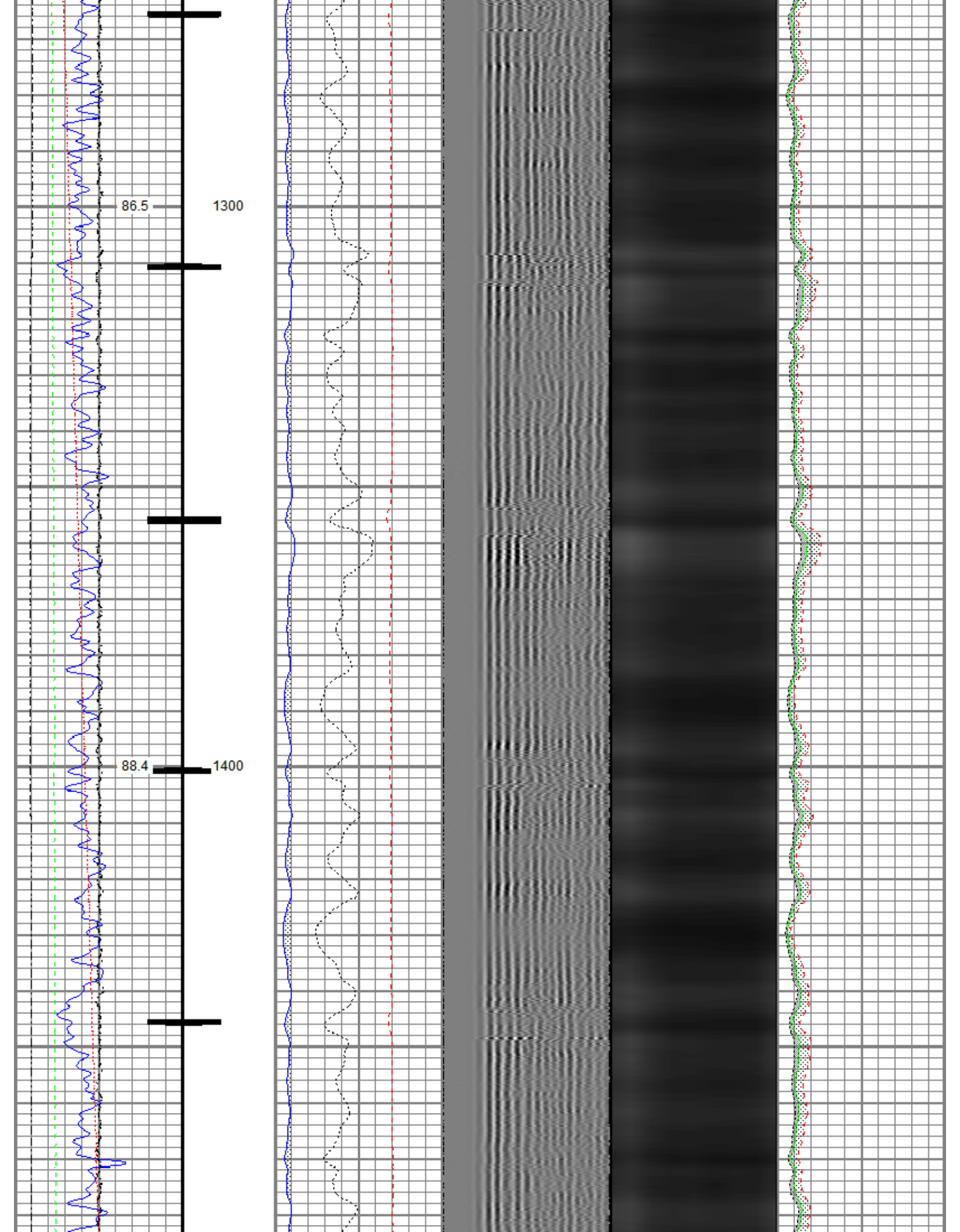


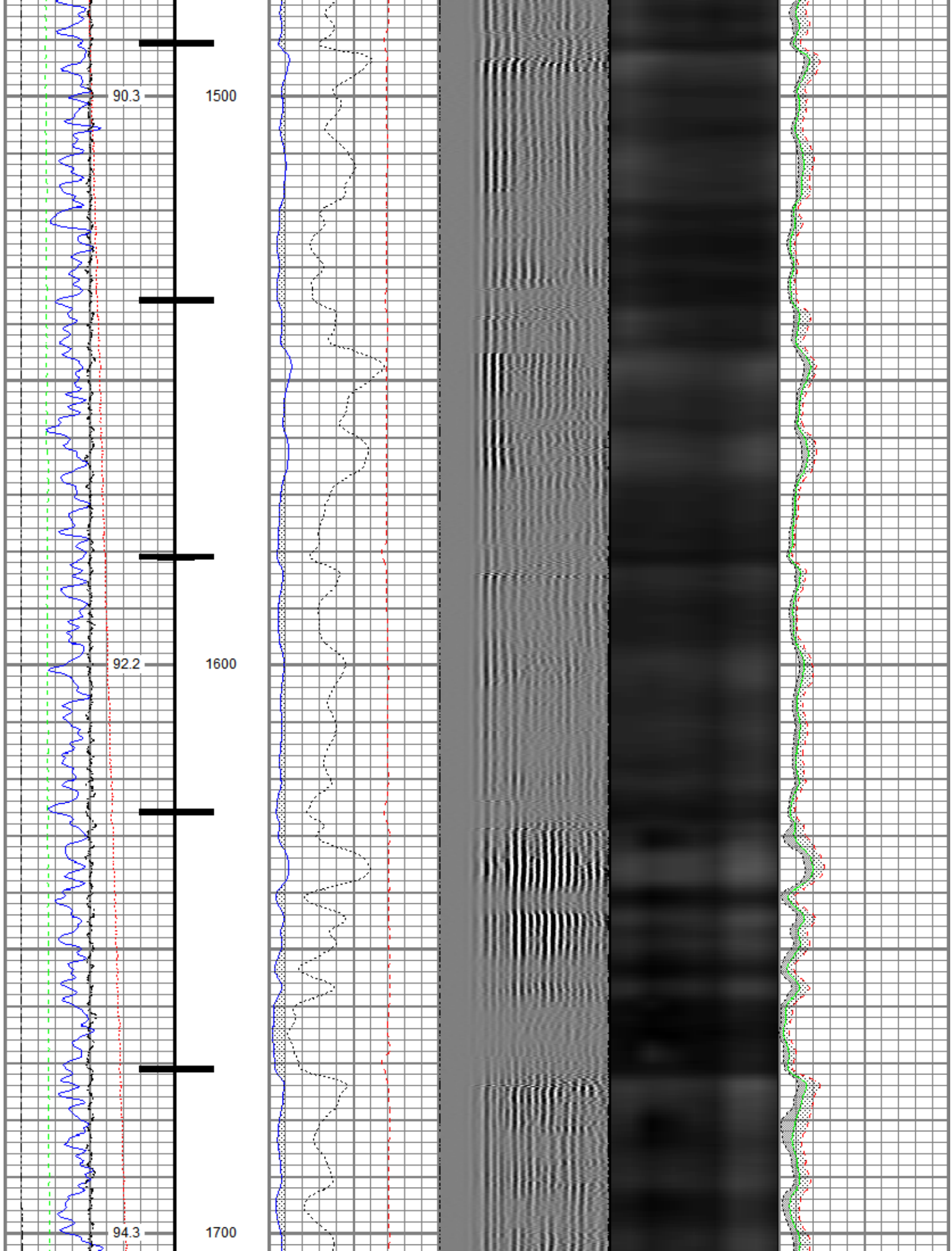
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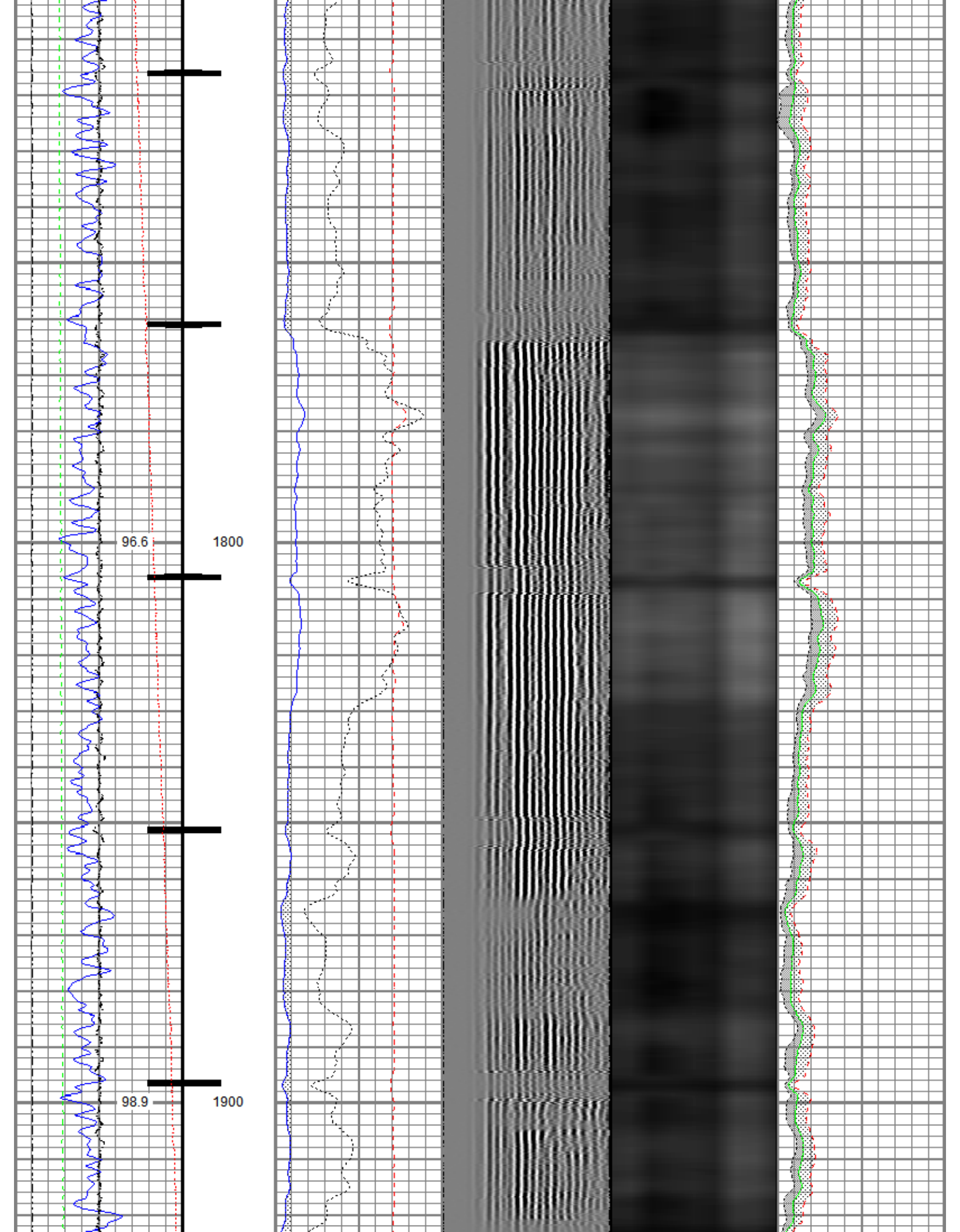
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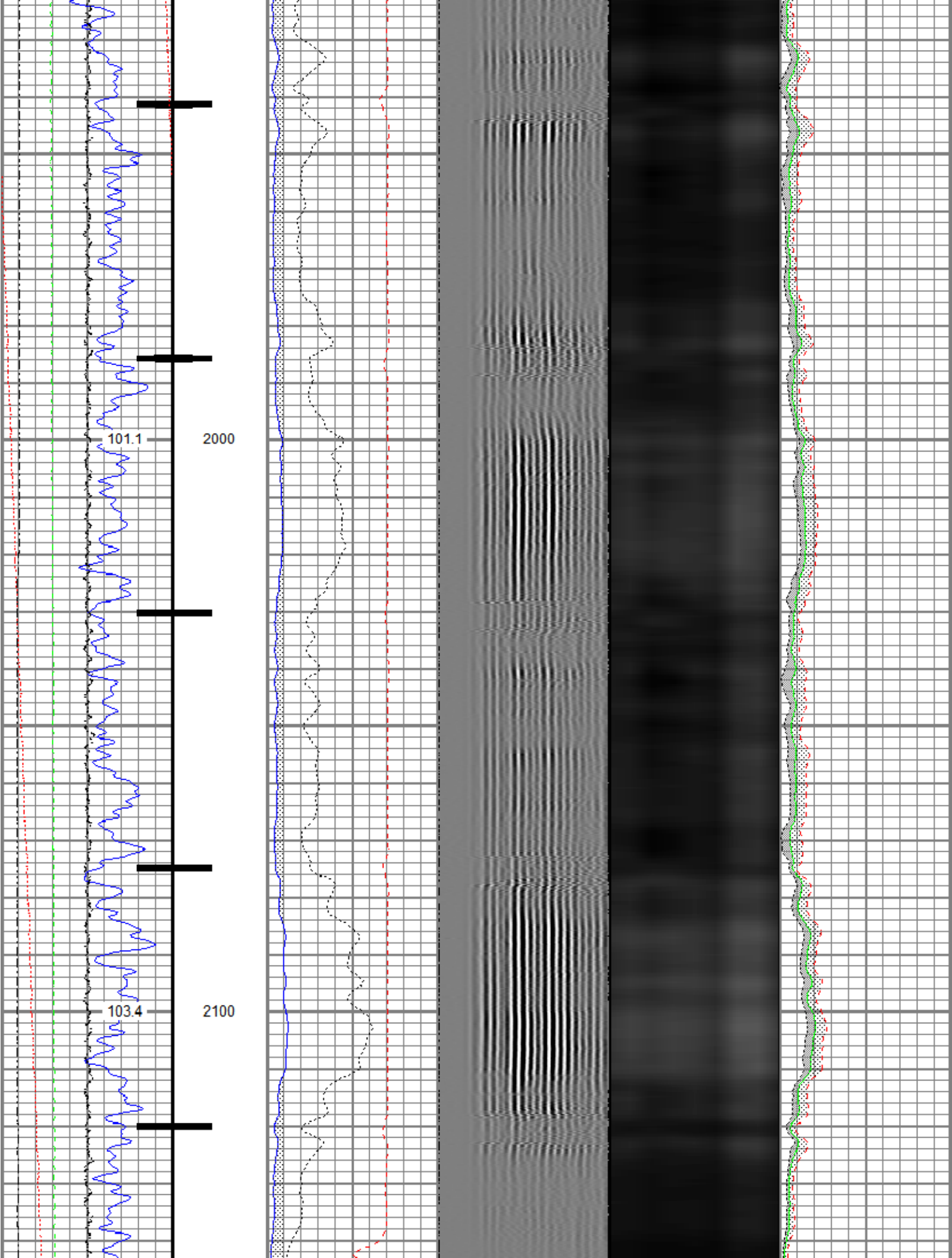
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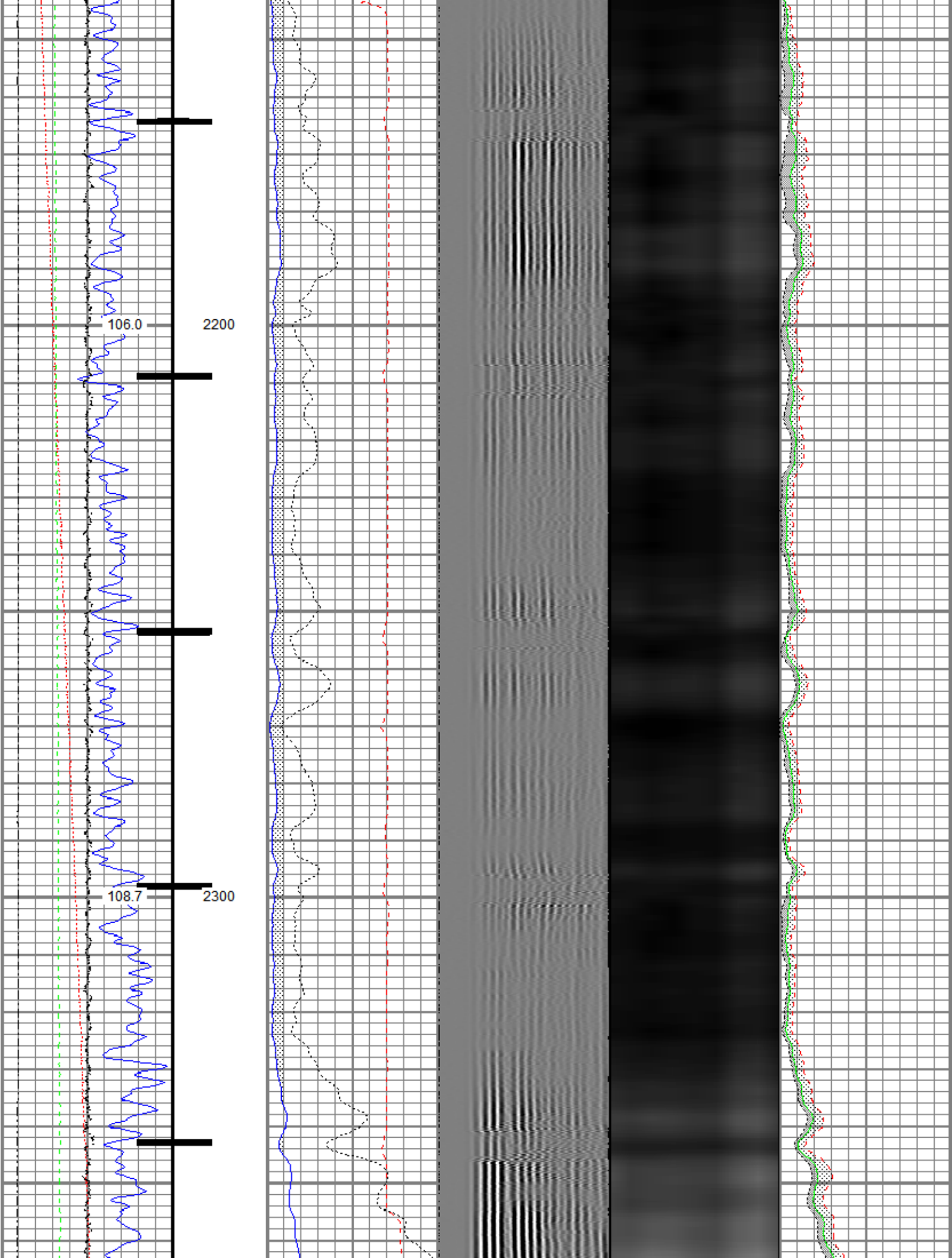
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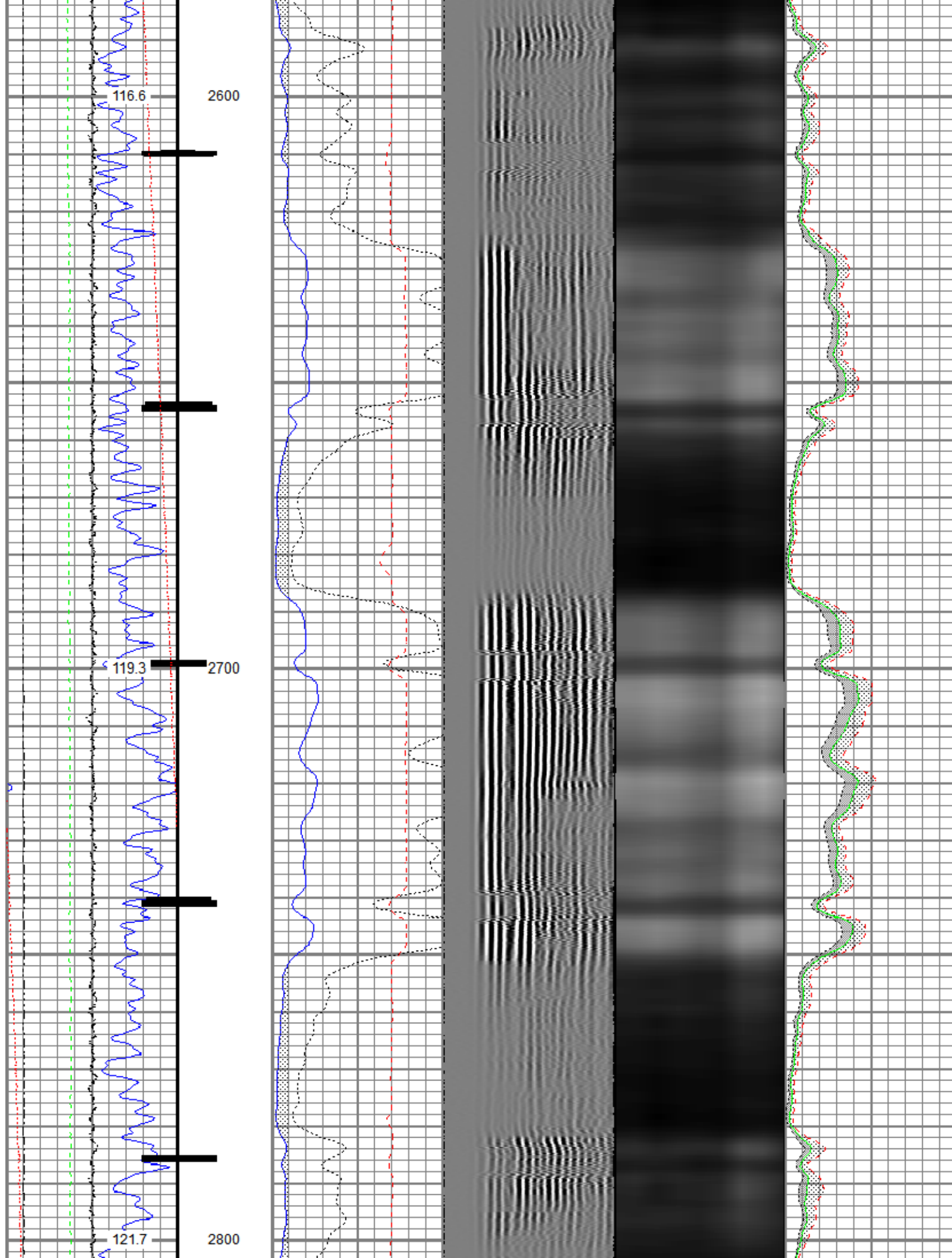


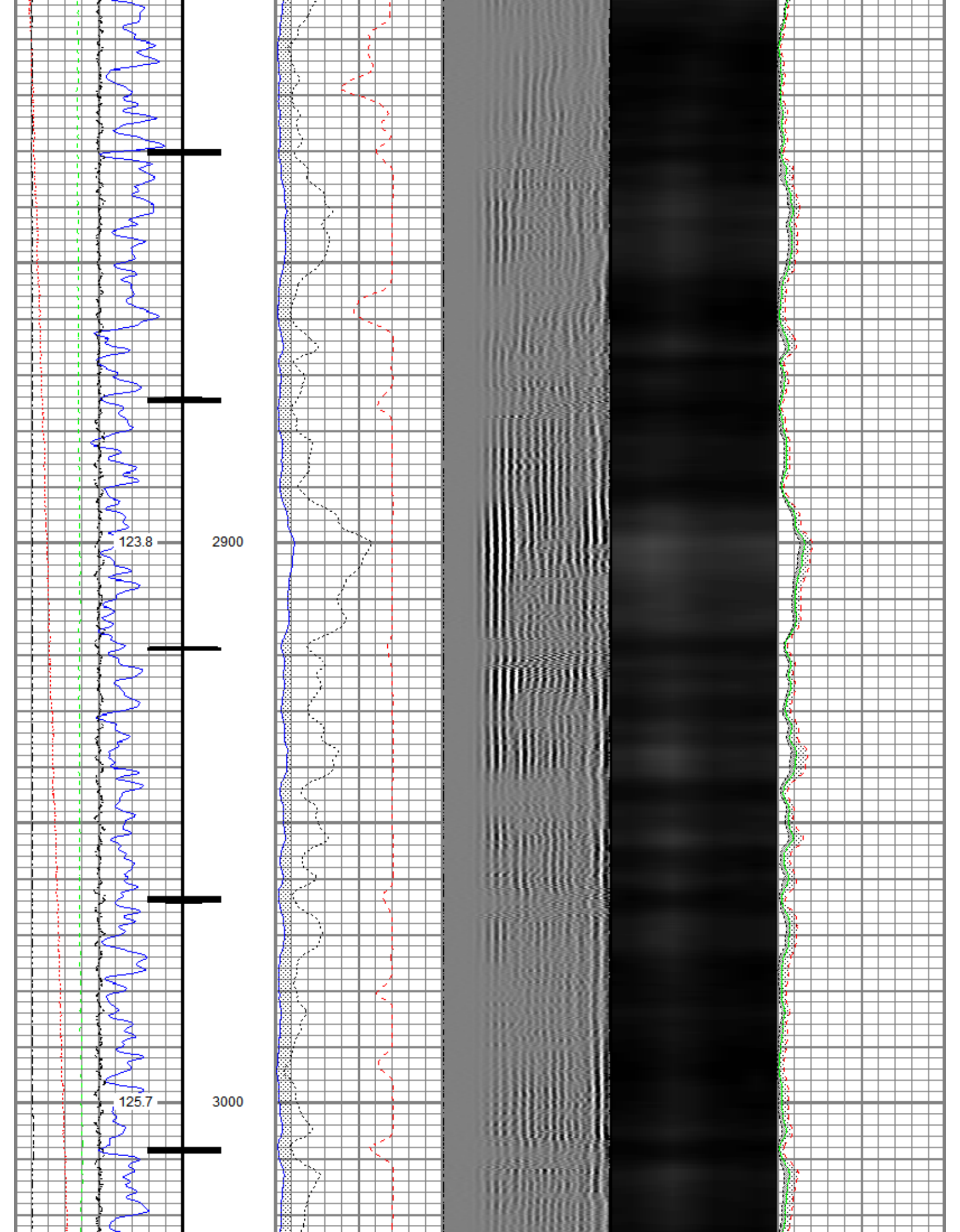


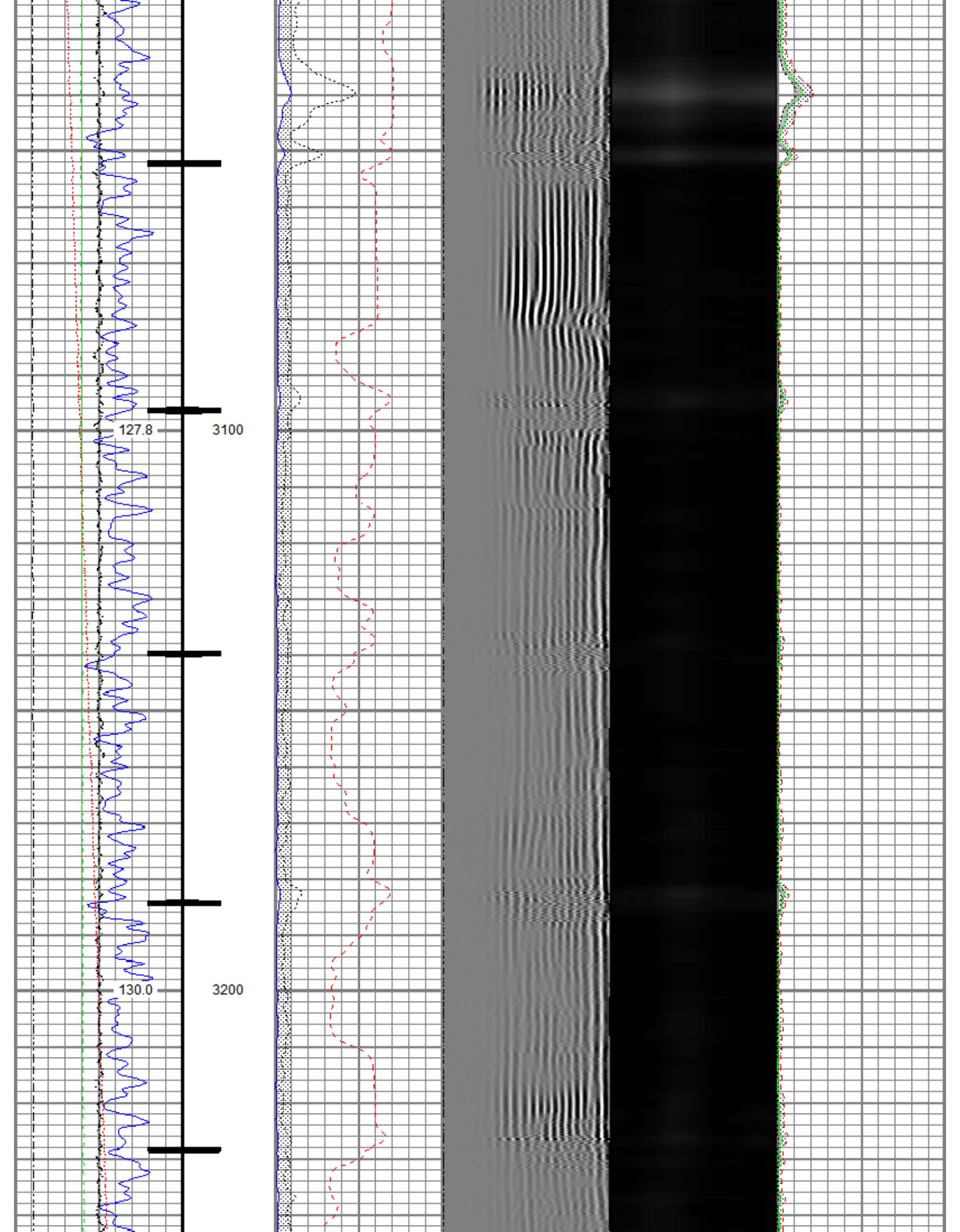


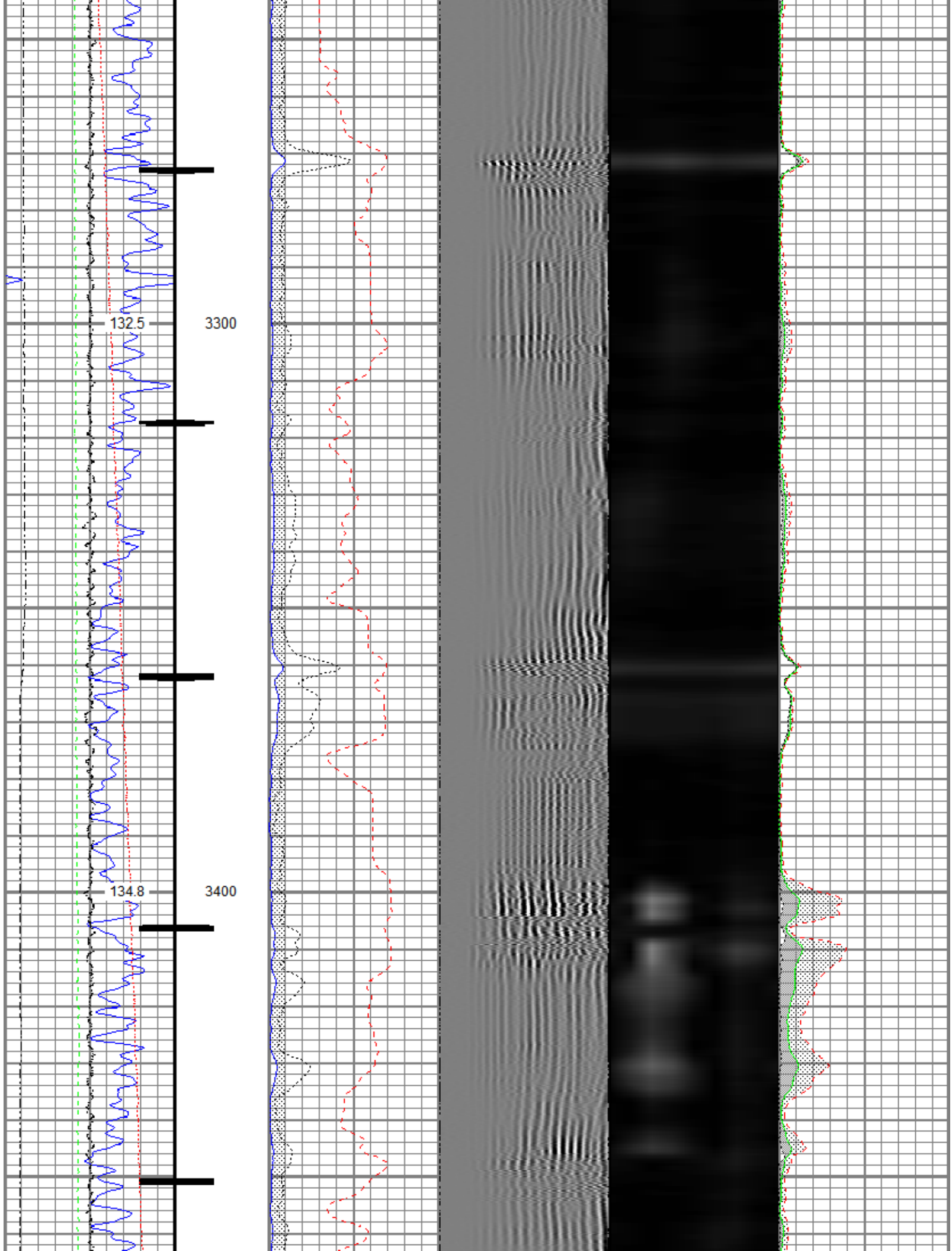


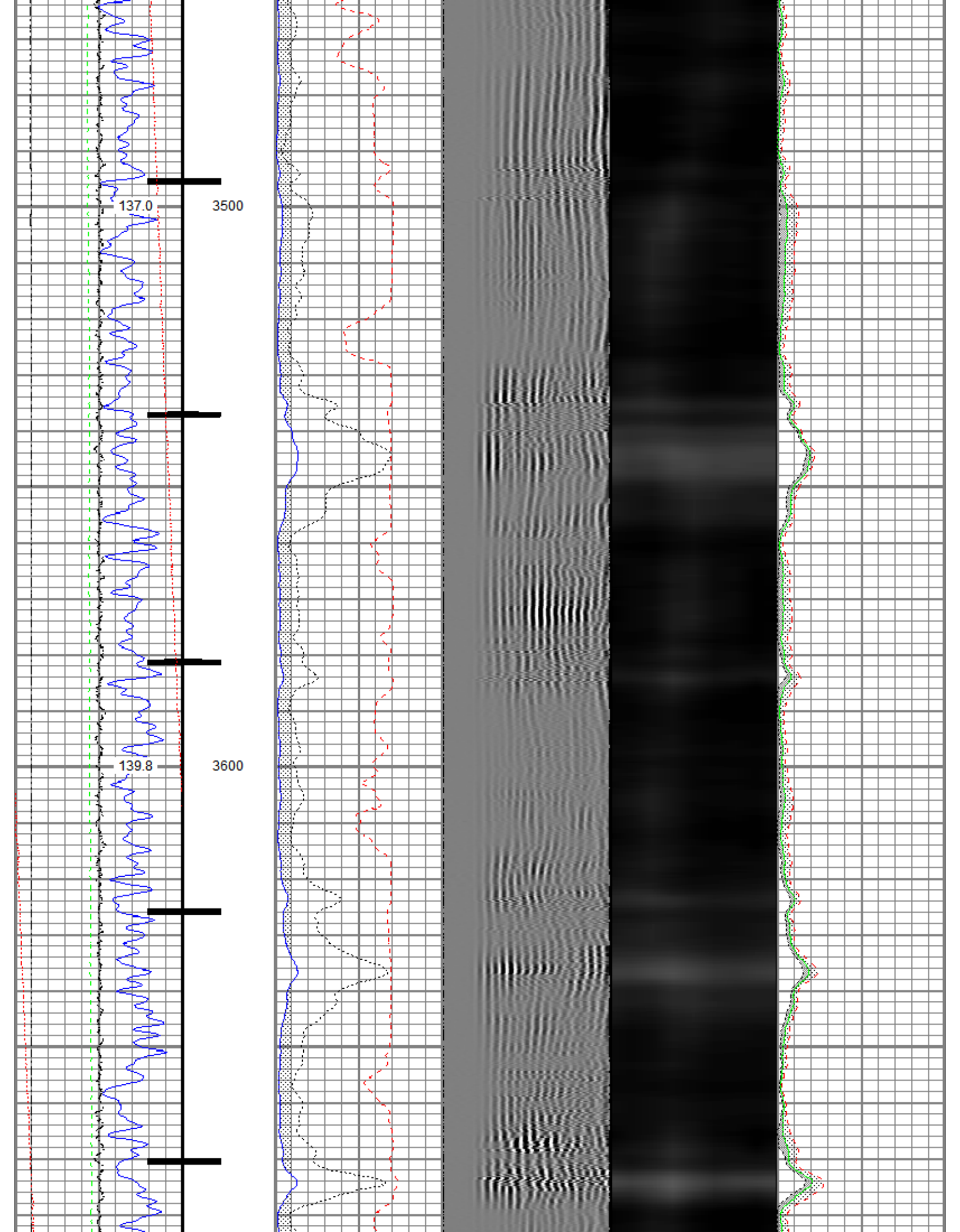












142.7

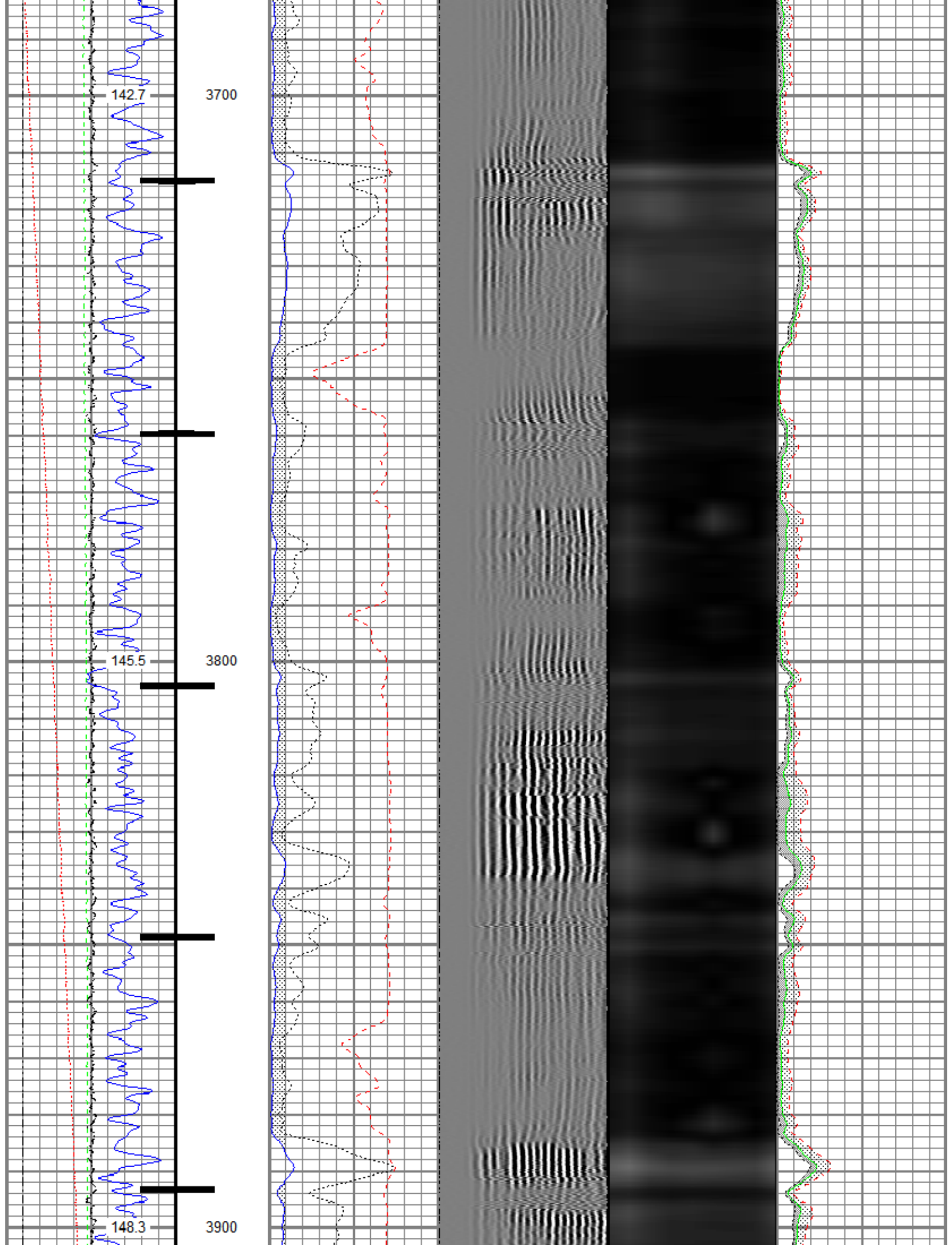
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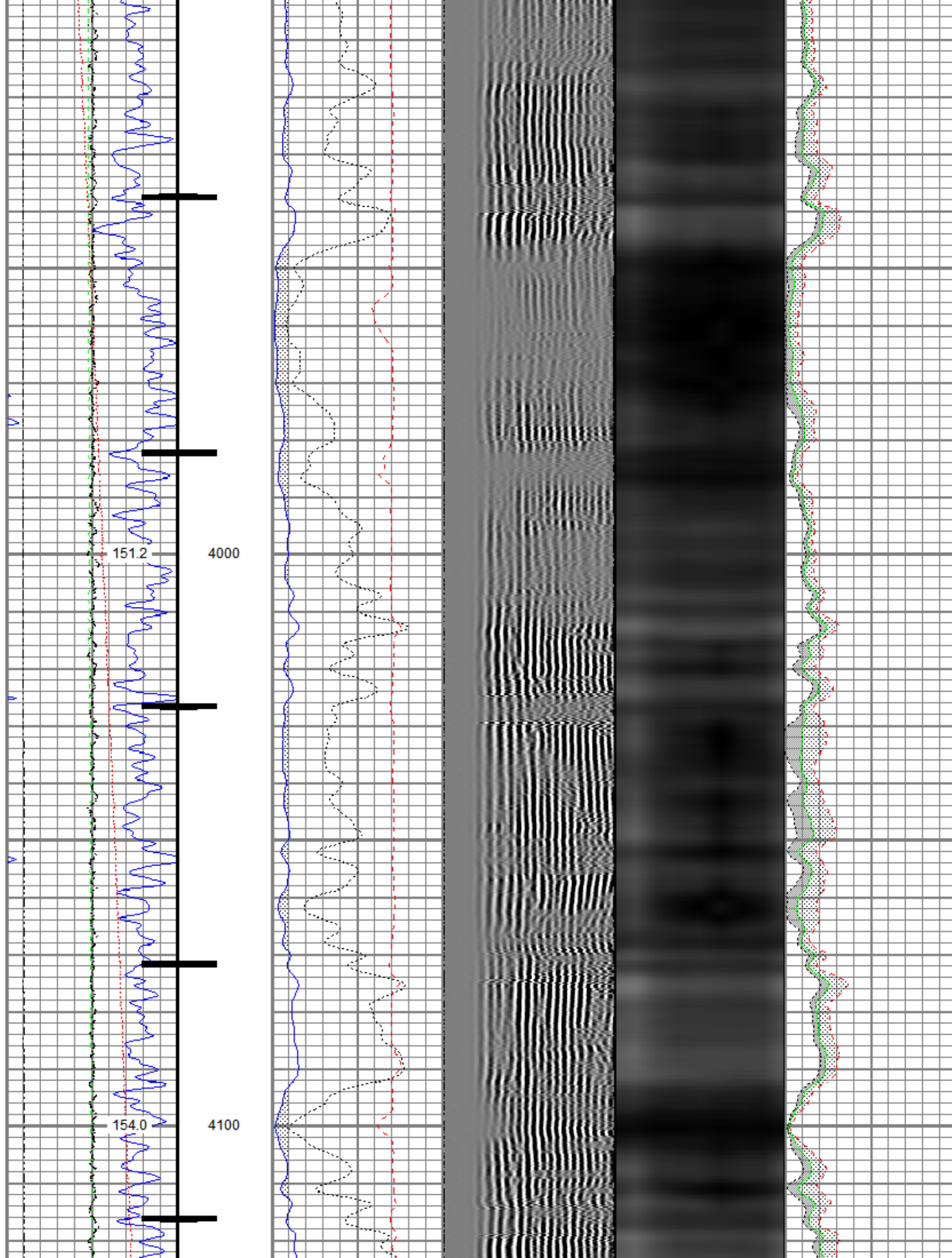
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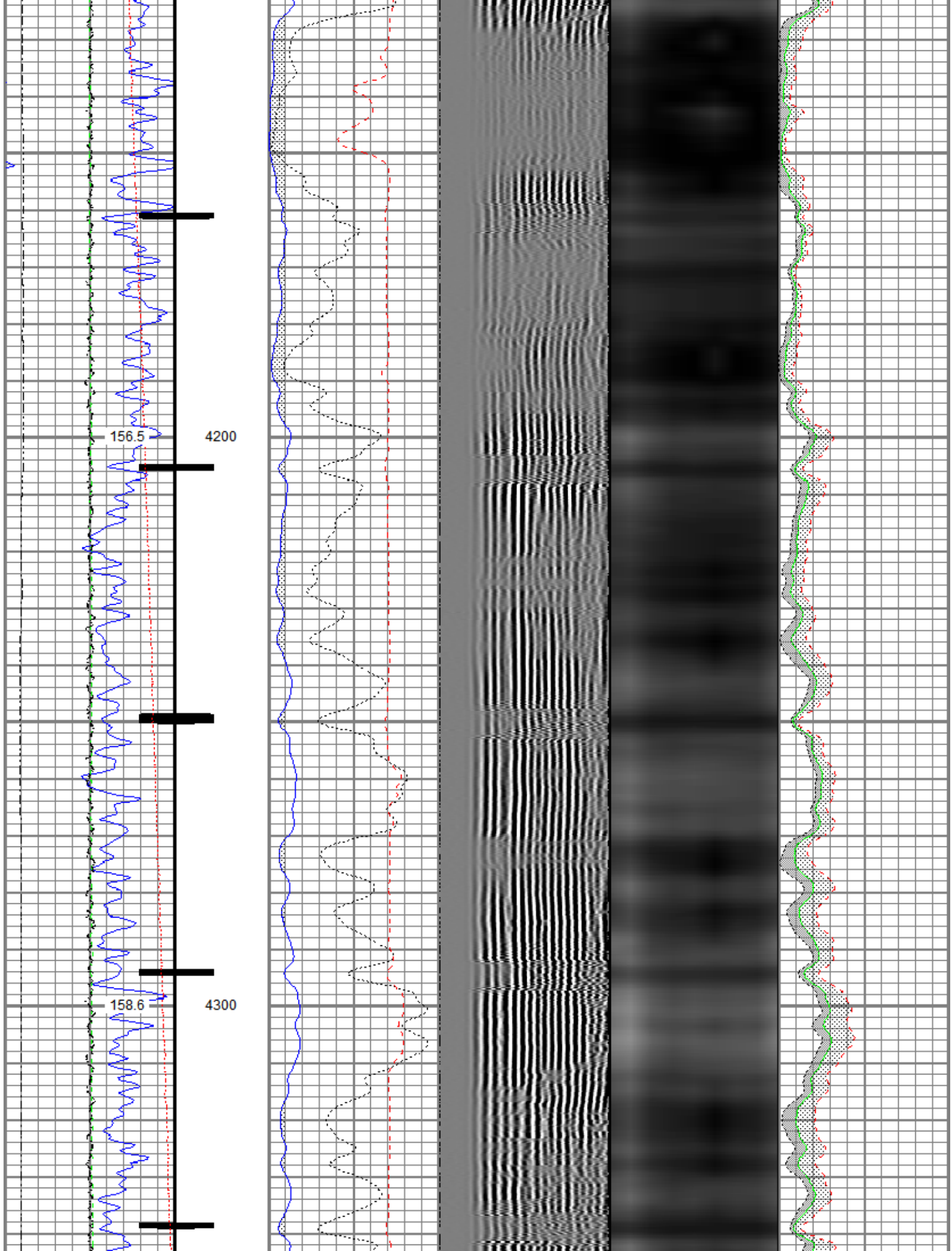
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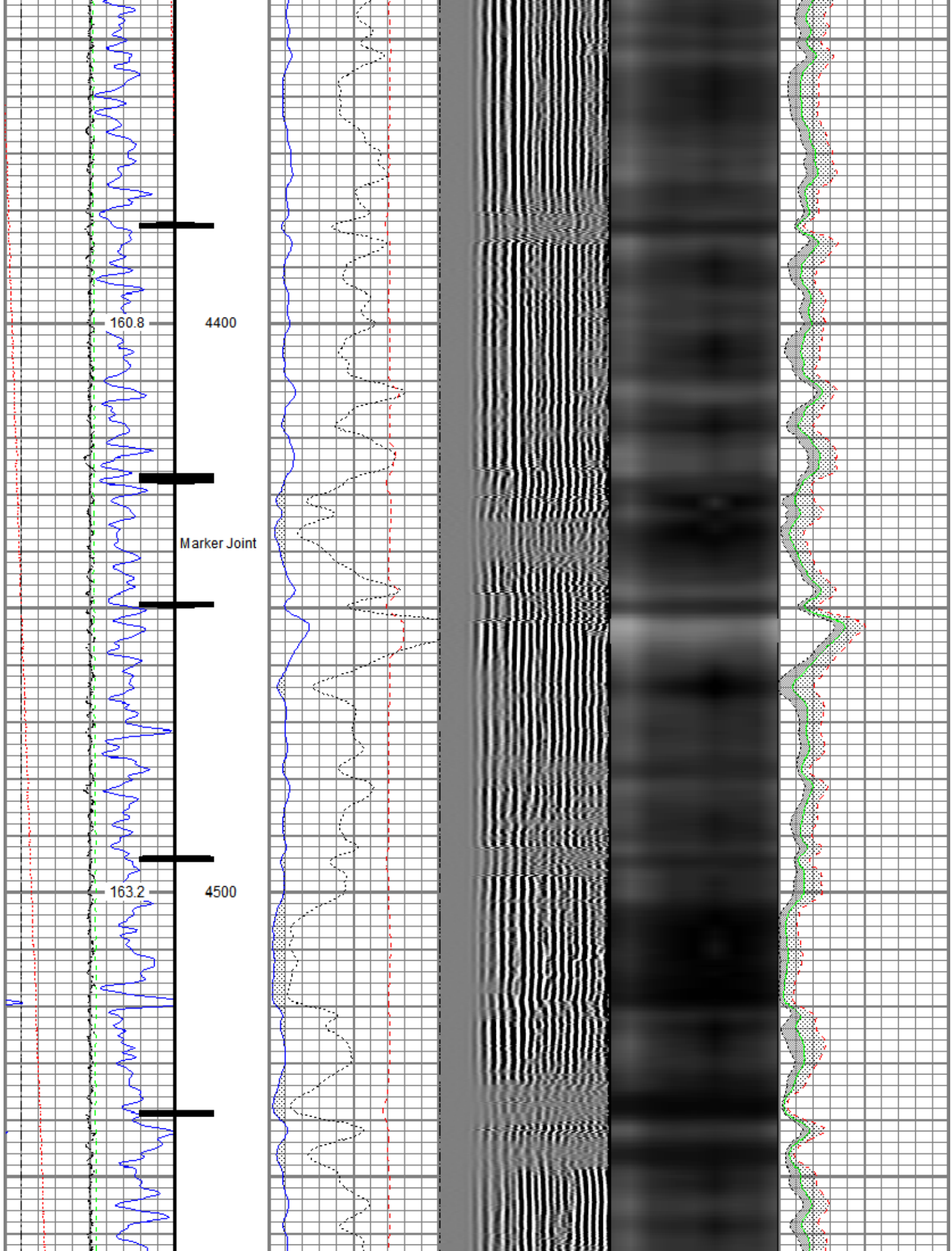
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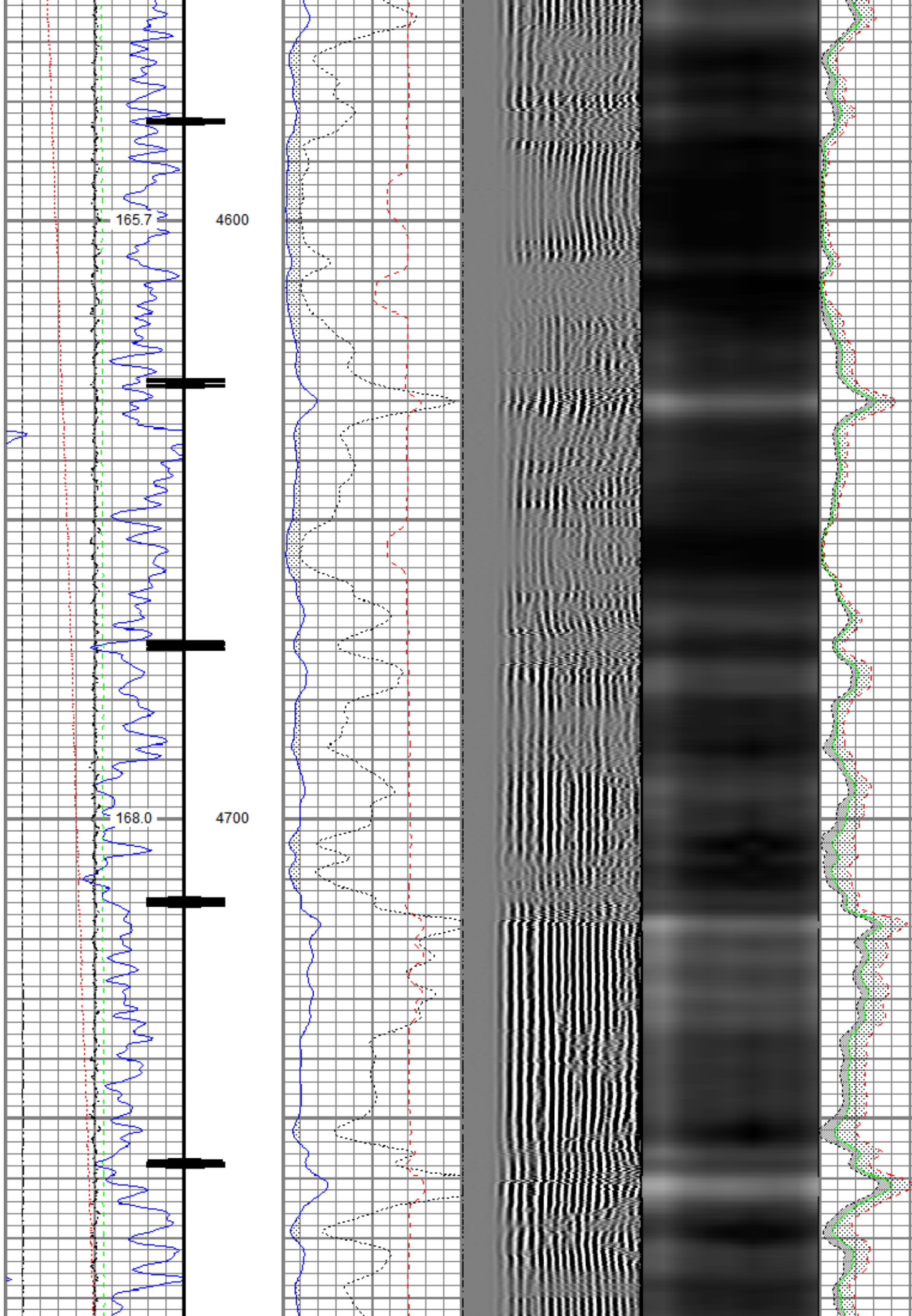
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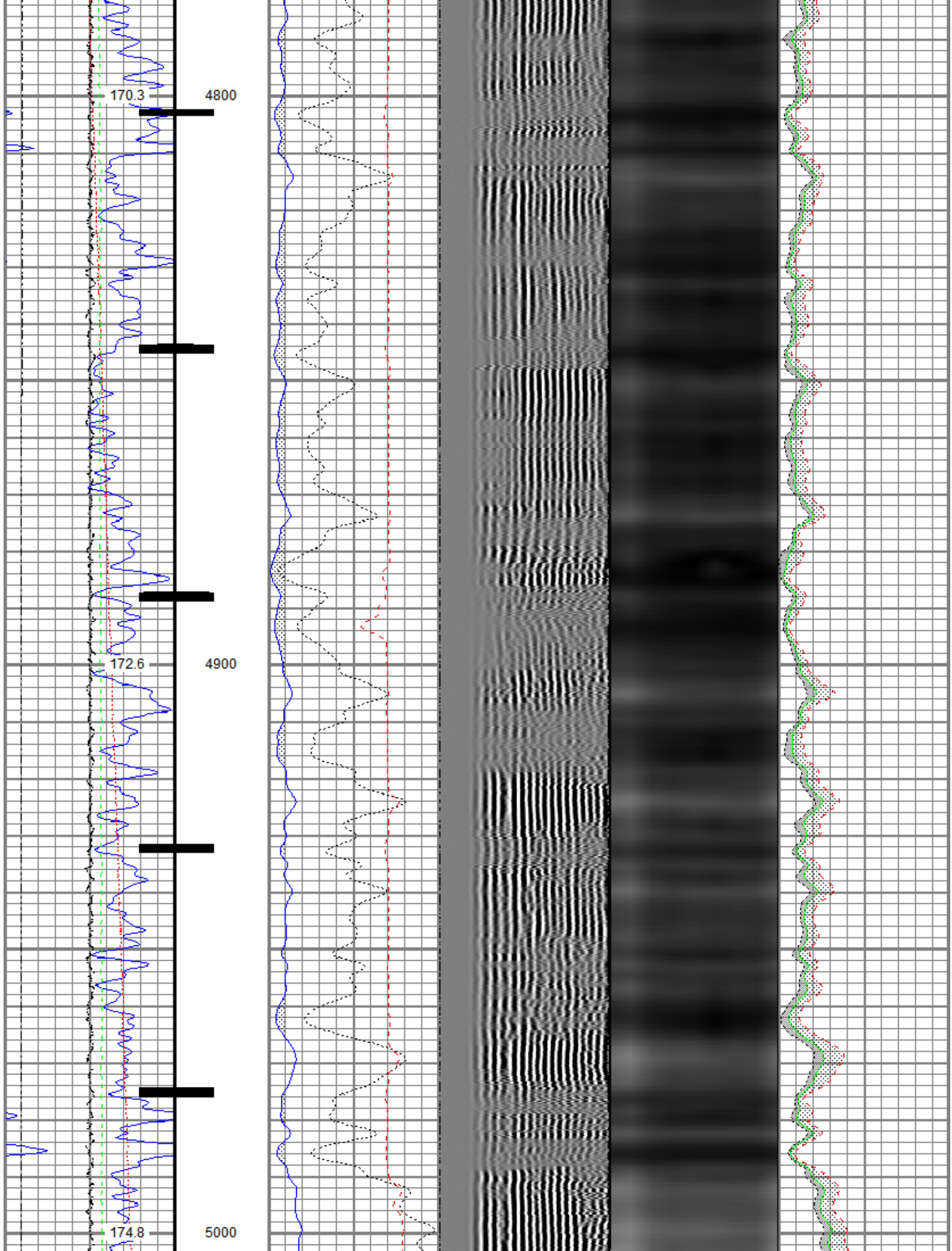


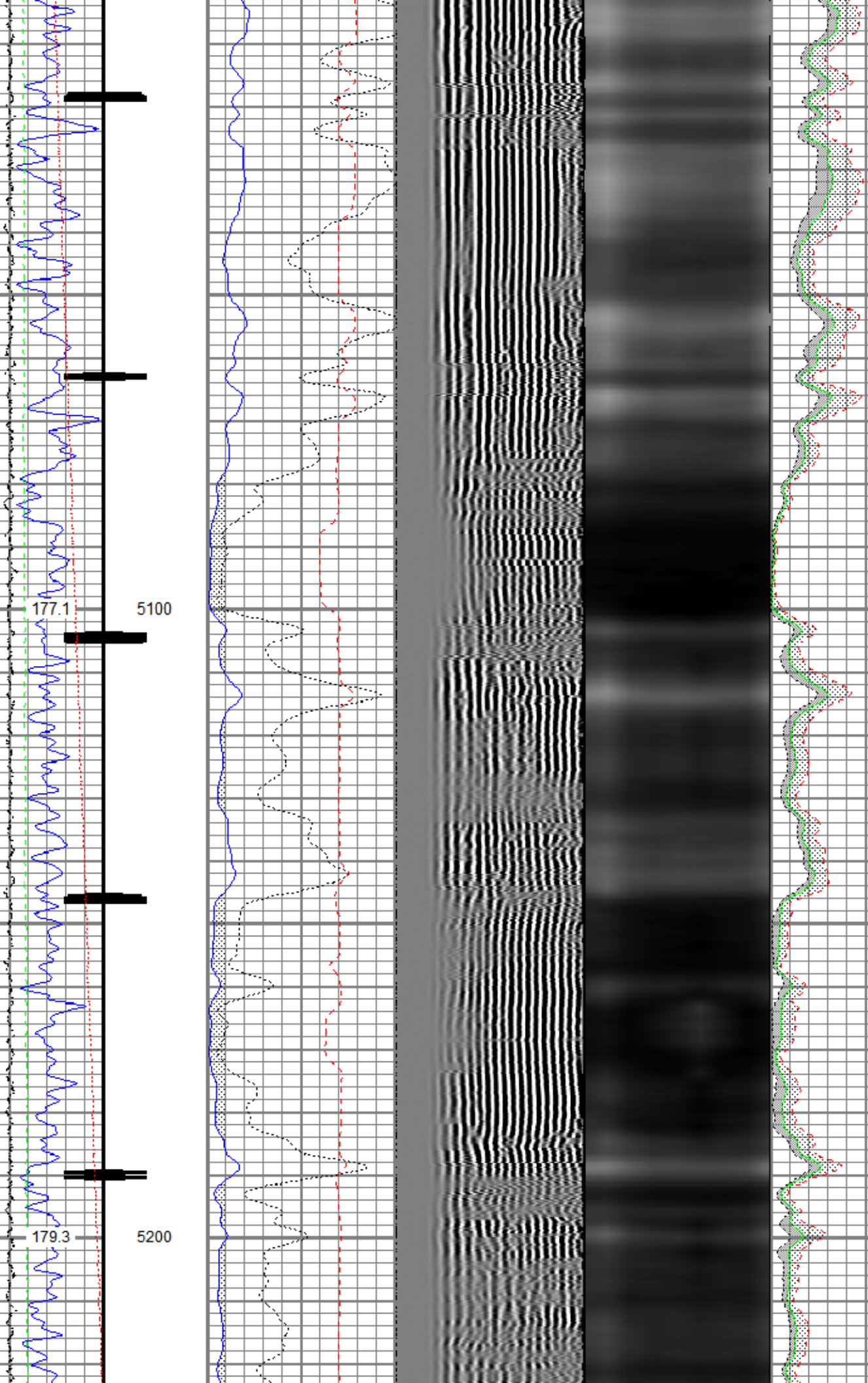


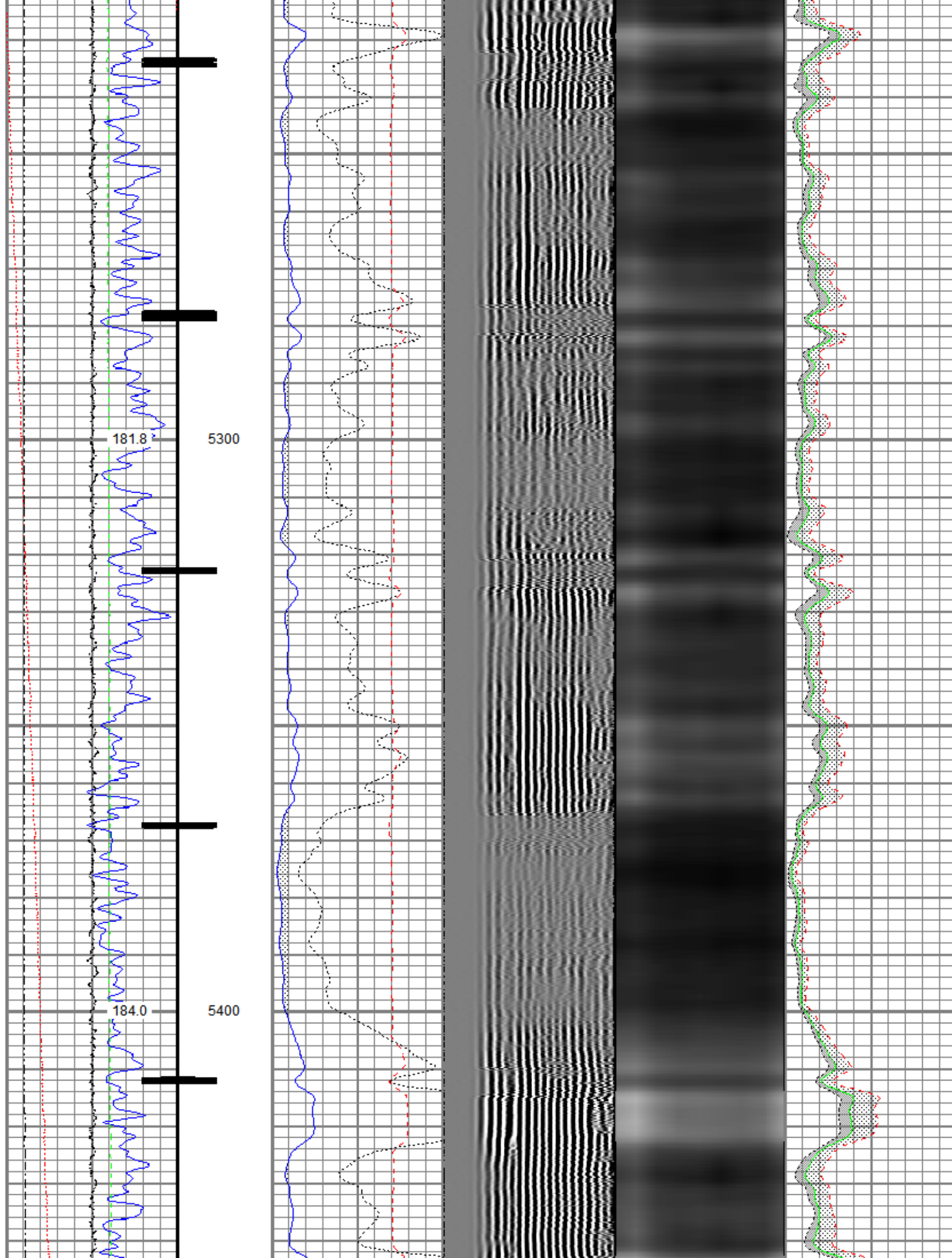


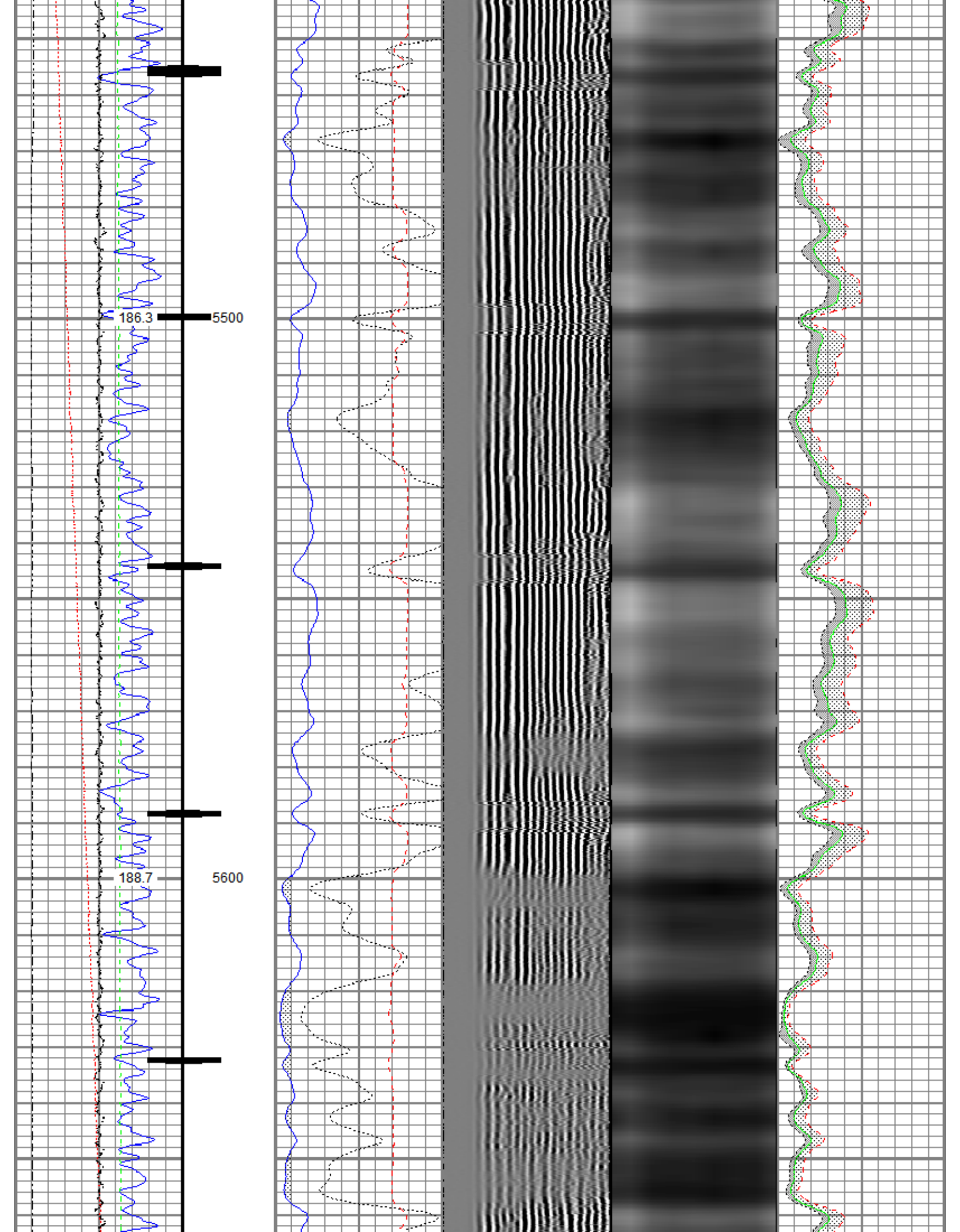


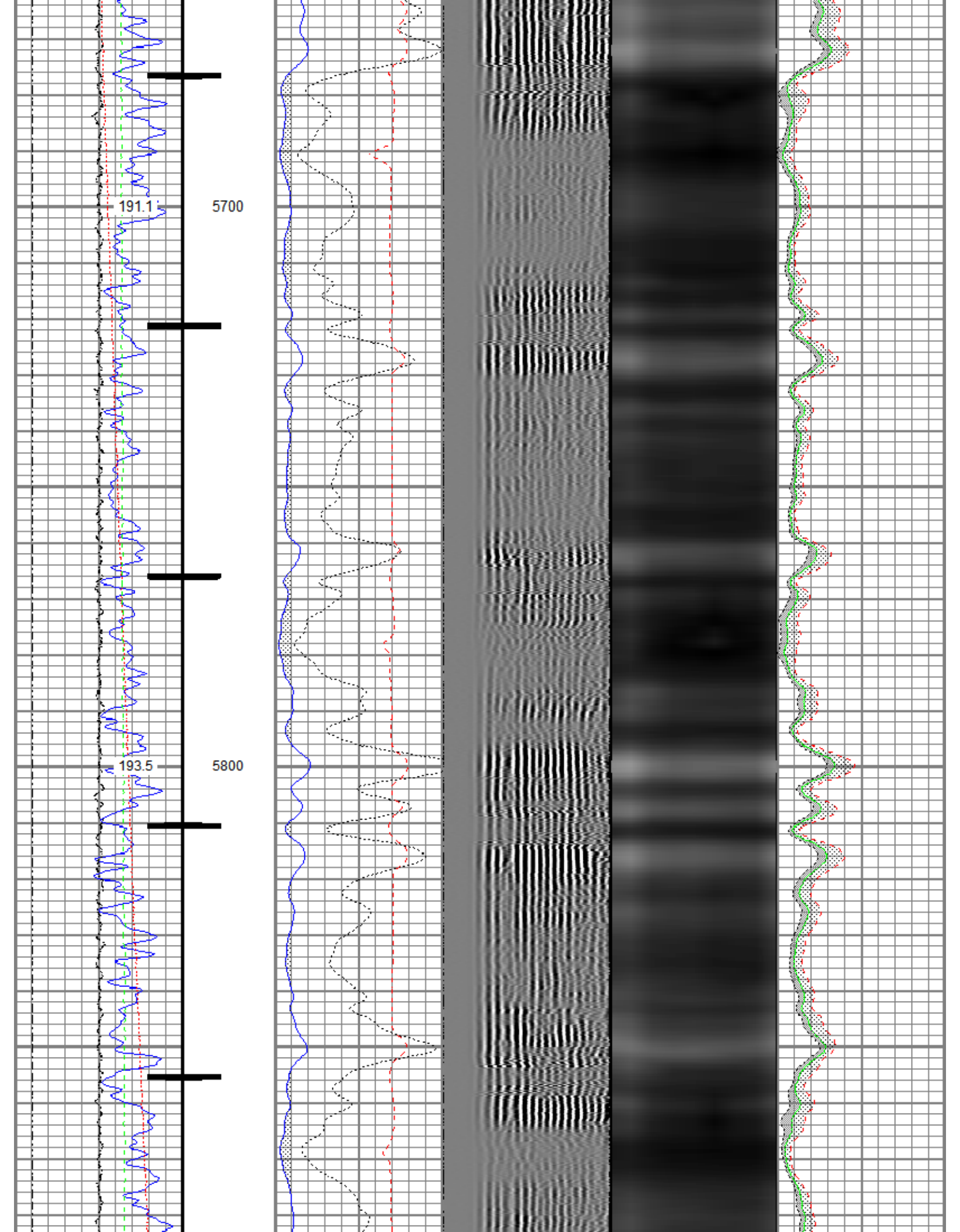


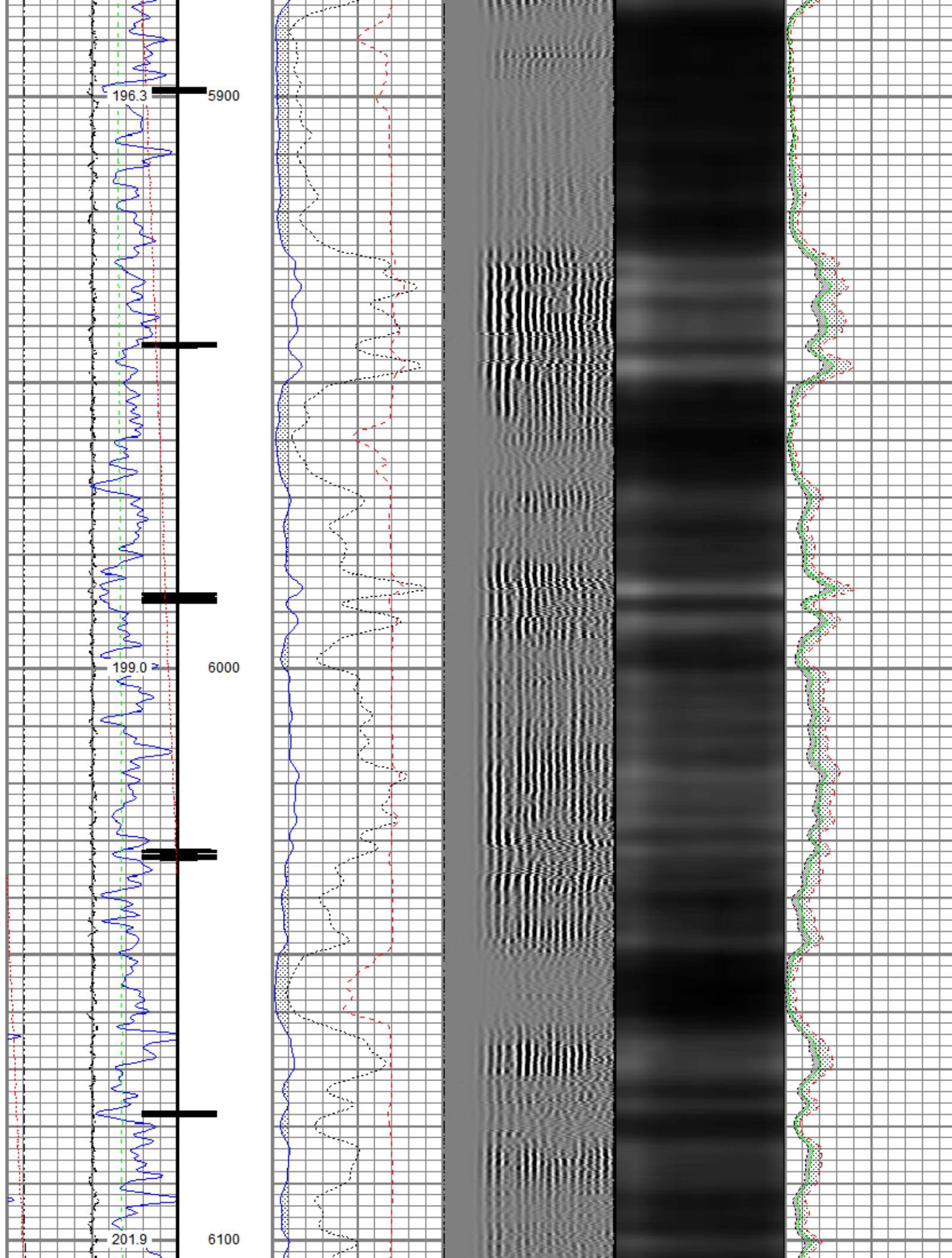


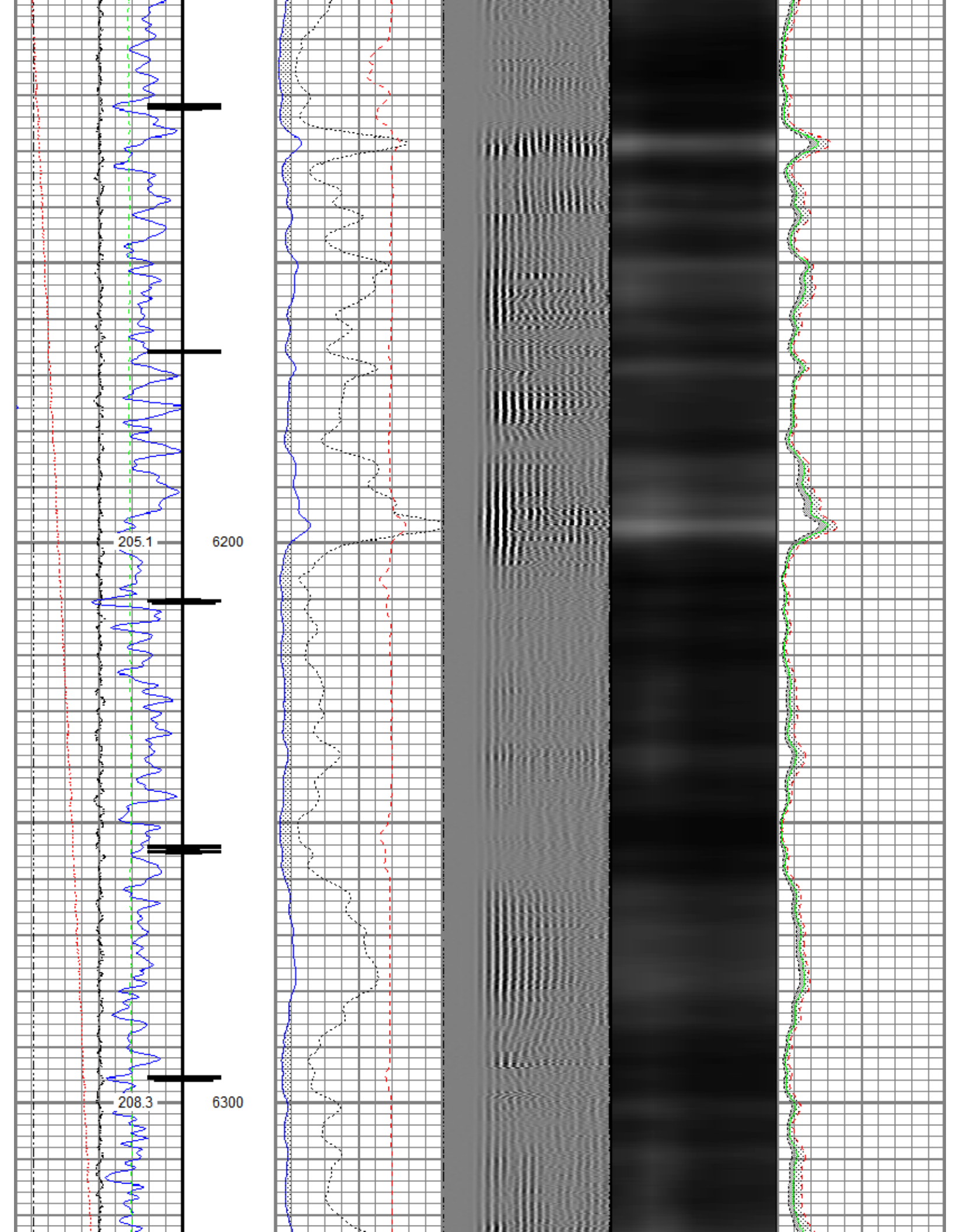


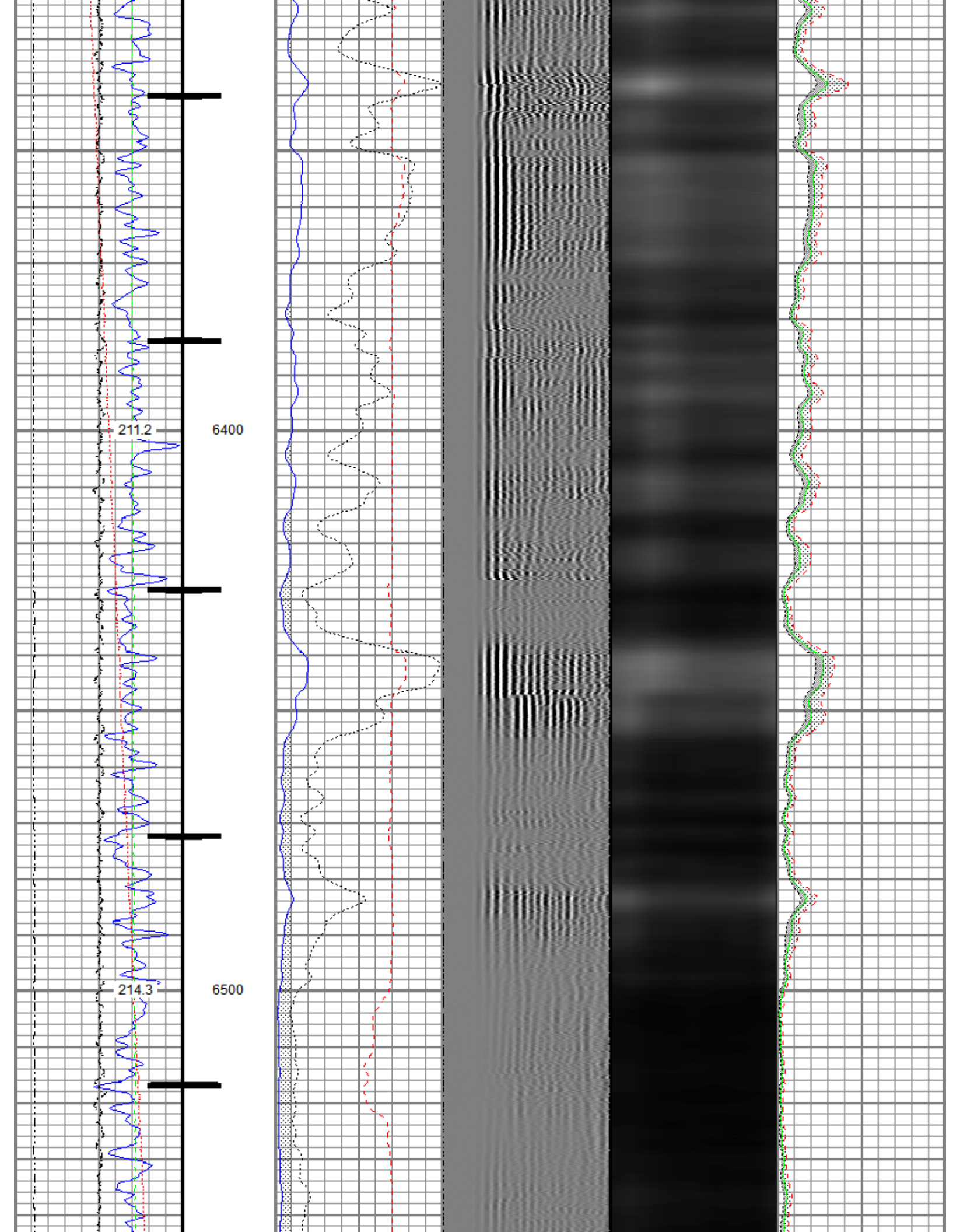


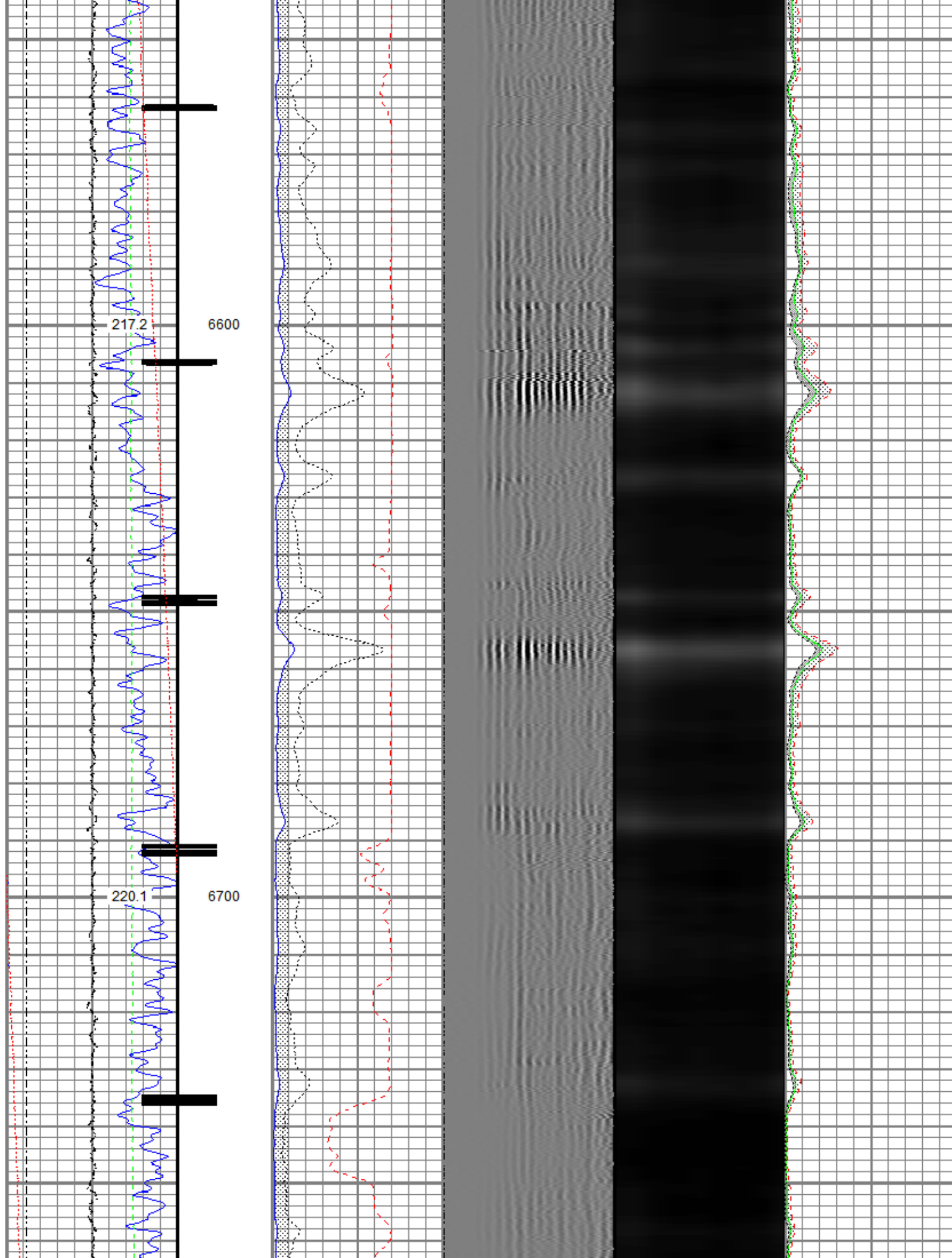


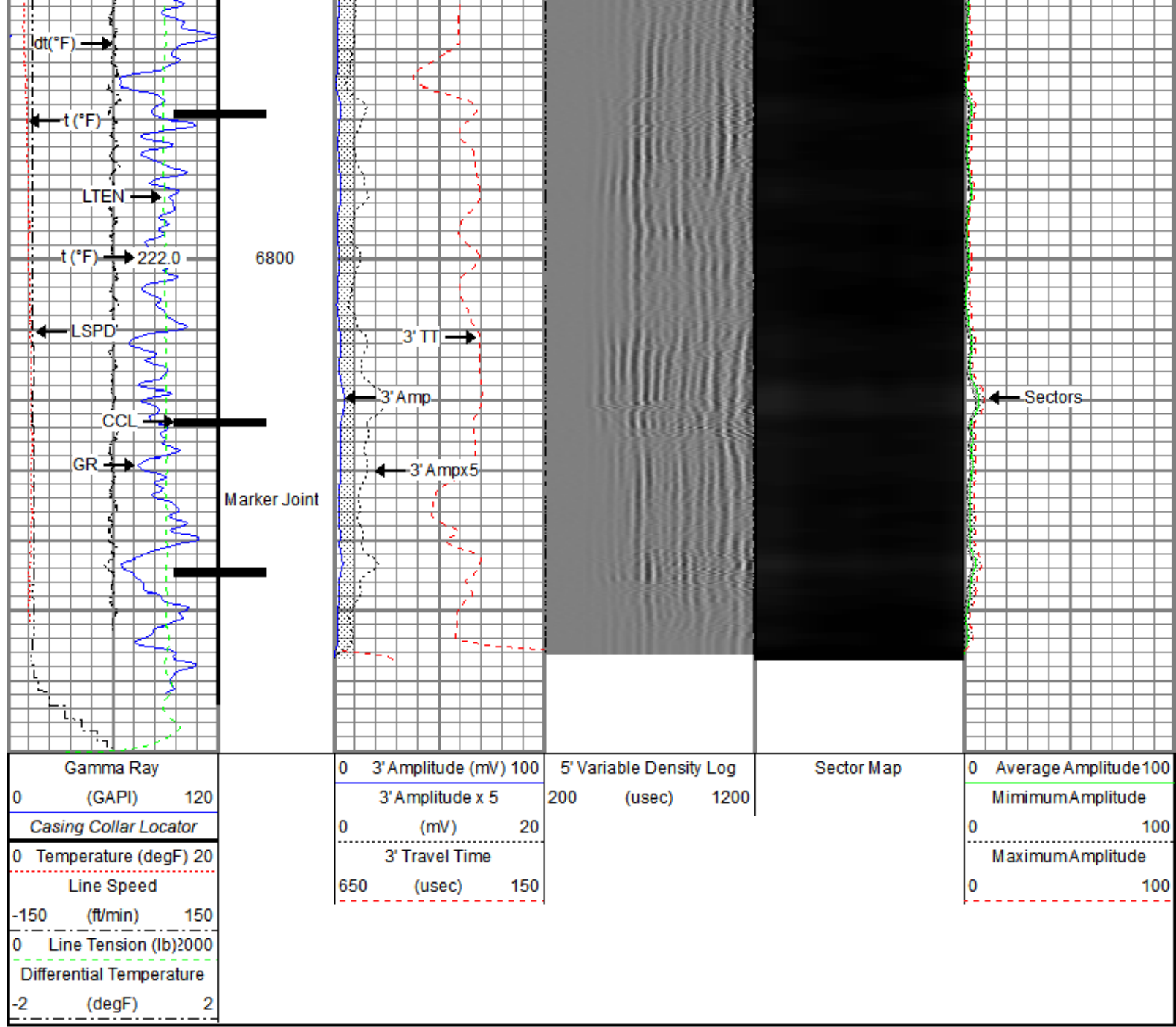








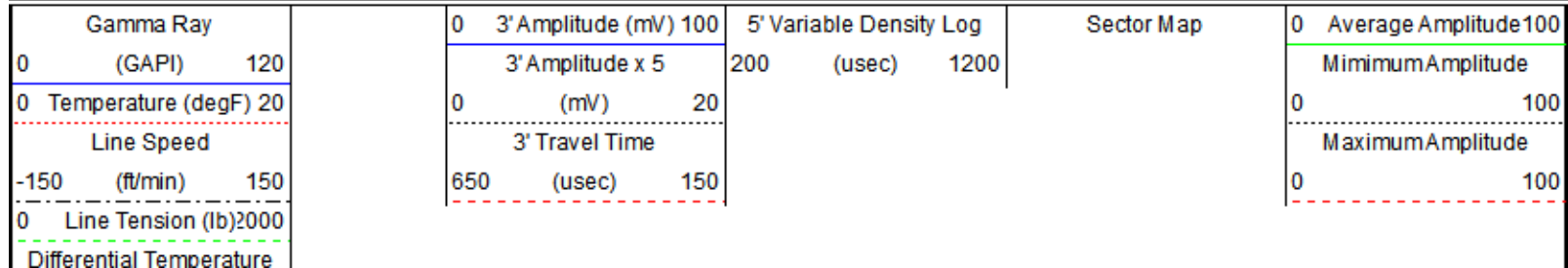


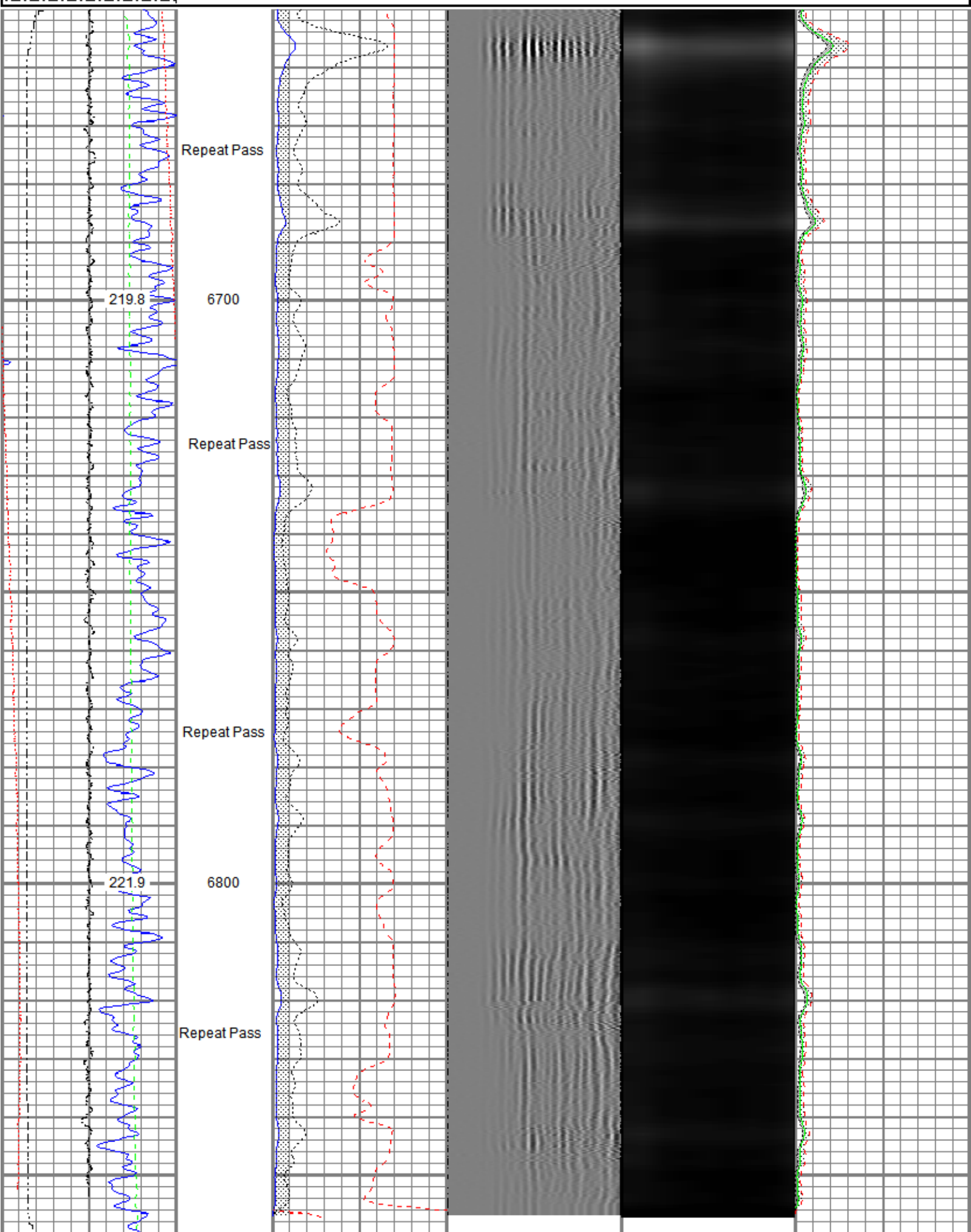


## Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

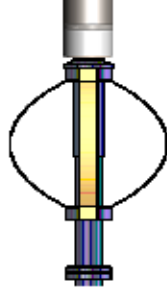
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 Dataset Pathname: 0\_psi/repeat.2  
 Presentation Format: ros\_radrii  
 Dataset Creation: Thu Oct 10 17:51:17 2019  
 Charted by: Depth in Feet scaled 1:240





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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
ErrCt	23.86		Titan CHD-16875 GO Titan 1-11/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40	
RBT_HV	19.95		Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	
TEMP	17.04						
RBT_ACCZ	14.81			Probe Radii ACC-2750 RBTa (FW1302-001) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub and Accelerometer	9.39	2.75	105.00
RBT_ACCY	14.81						
RBT_ACCX	14.81						
WVFS8	14.81						
WVFS7	14.81						
WVFS6	14.81						
WVFS5	14.81						
WVFS4	14.81						
WVFS3	14.81						
WVFS2	14.81						
WVFS1	14.81						
WVFCAL	14.81			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00
WVF3FT	14.81						
WVF5FT	13.81						
CCL\$2	6.80						
CCL\$1	6.80						
GR	5.46			Probe GR-CCL-2750 6PB (101001) Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT	4.80	2.75	55.00



Probe CENT-2750  
 Probe 2-3/4" Electric Inline Bowspring Centralizer

2.88

2.75

20.00

Dataset: processed\_0512350075\_oxy\_sarchet 21-7hz\_rbl\_10-09-19.db: field/well/0\_psi/main.8  
 Total length: 23.86 ft  
 Total weight: 225.40 lb  
 O.D.: 2.75 in

Calibration Report

Database File c:\programdata\warrior\data\oxy\0512350075\_oxy\_sarchet 21-7hz\_rbl\_10-09-19\processed\_0512350075\_oxy\_sarchet 21-7hz\_r  
 Dataset Pathname 0\_psi/main.8  
 Dataset Creation Thu Oct 10 16:31:26 2019

Gamma Ray Calibration Report

Serial Number: 101001  
 Tool Model: 2750 6PB  
 Performed: Mon Oct 01 11:32:32 2018  
 Calibrator Value: 637.0 GAPI  
 Background Reading: 100.6 cps  
 Calibrator Reading: 981.1 cps  
 Sensitivity: 0.7235 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1302-001  
 Tool Model: 2750 RBTa  
 Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 0.000 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	0.606	0.800	71.921	118.670	-0.037
CAL	0.606	0.608				
5'	0.008	0.528	0.800	71.921	136.687	-0.296
SUM						
S1	0.006	0.583	0.000	100.000	173.312	-1.088
S2	0.008	0.552	0.000	100.000	183.770	-1.447
S3	0.008	0.537	0.000	100.000	189.138	-1.536
S4	0.007	0.568	0.000	100.000	178.372	-1.262
S5	0.007	0.634	0.000	100.000	159.466	-1.104
S6	0.009	0.700	0.000	100.000	144.761	-1.277
S7	0.007	0.691	0.000	100.000	146.211	-1.024
S8	0.008	0.639	0.000	100.000	158.697	-1.332

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.606	0.608	1.000	0.000

	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

Inclinometer Calibration Report

Performed:	Mon Sep 23 13:33:21 2019				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-900.00	892.00	-1.00	1.00	gee
Y Accelerometer	-922.00	893.00	-1.00	1.00	gee
Z Accelerometer	7.38	894.40	0.00	1.00	gee

Temperature Calibration Report

Serial Number:	FW1302-001		
Tool Model:	2750 RBTa		
Performed:	Mon Sep 23 13:36:53 2019		
	Reference	Reading	
Low Reference:	100.00 degF	107.47	degF
High Reference:	350.00 degF	404.08	degF
Gain:	0.84		
Offset:	9.42		
Delta Spacing	1		



**Company** Kerr-McGee Oil & Gas Onshore, L.P.  
**Well** Sarchet 21-7HZ  
**Field** Wattenberg  
**County** Weld  
**State** Colorado