



## Radial Cement Bond Log

Company				Whiting Oil & Gas Corporation			
Well				Razor 11E-0202B			
Field				Wildcat			
County				Weld			
State				Colorado			
Location:				API # : 05-123-38531			
SHL: 2321' FNL 822' FEL Lat/Long: 40.854189/-103.839189 SEC 11 TWP 10N RGE 58W				Other Services RBP CIL			
Permanent Datum		Ground Level		Elevation		5001'	
Log Measured From		Kelly Bushing		17 FT		K.B. 5018' D.F. 5017' G.L. 5001'	
Drilling Measured From		Kelly Bushing					
Date				04-April-2014			
Run Number				One			
Depth Driller				12996 FT			
Depth Logger				5270 FT			
Bottom Logged Interval				5267 FT			
Top Log Interval				Surface			
Open Hole Size				8.750"			
Type Fluid				Water			
Density / Viscosity				8.34 lbm/gal			
Max. Recorded Temp.				181°F			
Estimated Cement Top				1047.5 FT			
Time Well Ready				ROA			
Time Logger on Bottom				---			
Equipment Number				HD-311			
Location				Fort Lupton, CO			
Recorded By				Wayne Wacker			
Witnessed By				Ed Martin			
Borehole Record				Tubing Record			
Run Number		Bit		From		To	
Casing Record		Size (in)		Wgt (lbs/Ft)		Grade	
Surface Casing		9-5/8"		36#		J-55	
Intermediate #1		7"		29#		HCL-80	
Intermediate #2							
Liner		4-1/2"		11.6#		HCL-80	
						5345 FT	
						12980 FT	

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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

Radial Cement Bond Log - Casing Inspection Log is first recorded log in hole.  
RCBL-CIL ran at 2000 PSI surface induced pressure.  
Estimated Cement Top recorded at 1047.5 '

Thank you for choosing FMC Technologies Completion Services, Inc.

Main Pass



Logged With 2000 PSI At Surface

Database File: whiting\_razor11e-0202b.db

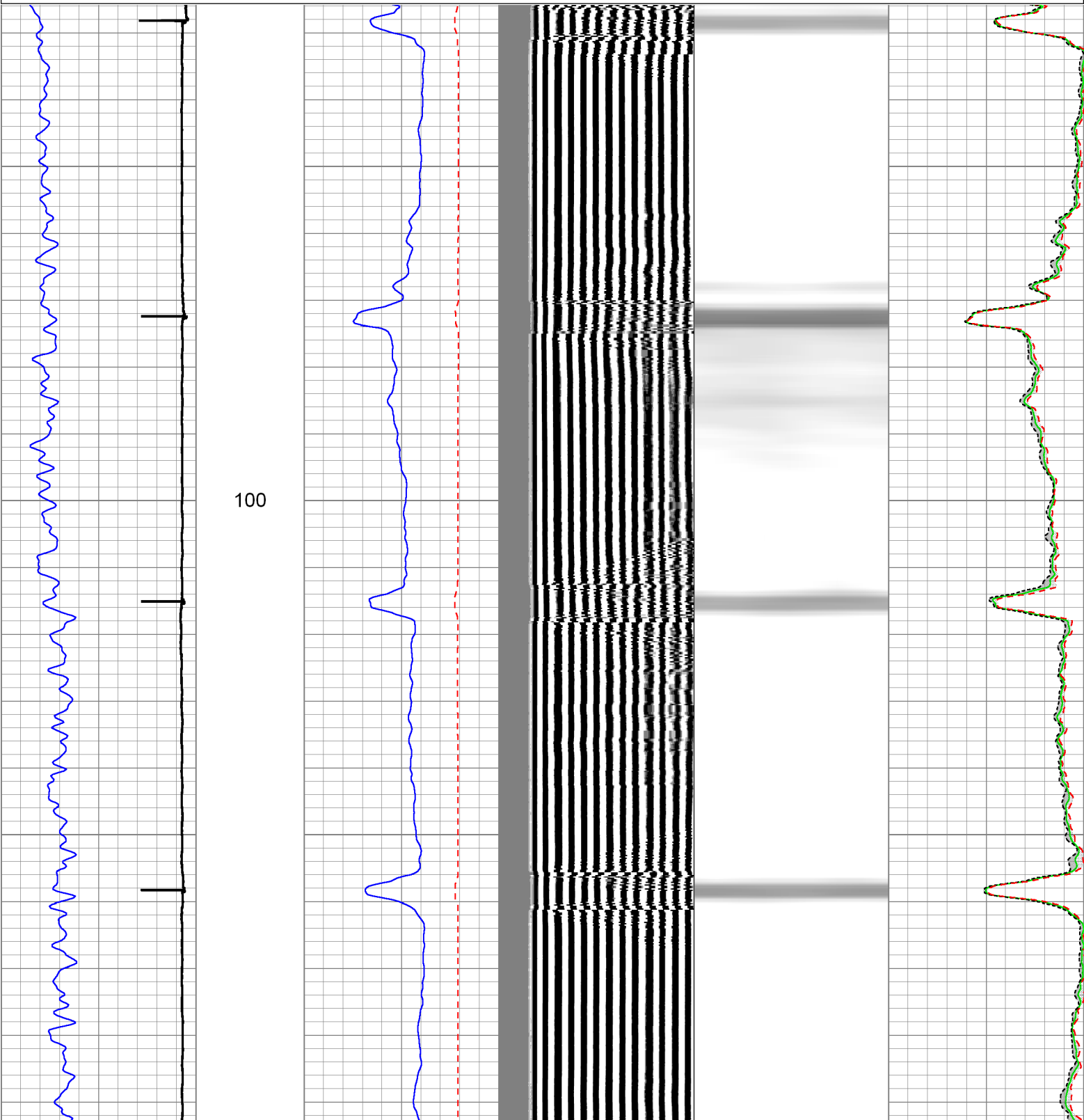
Dataset Pathname: main

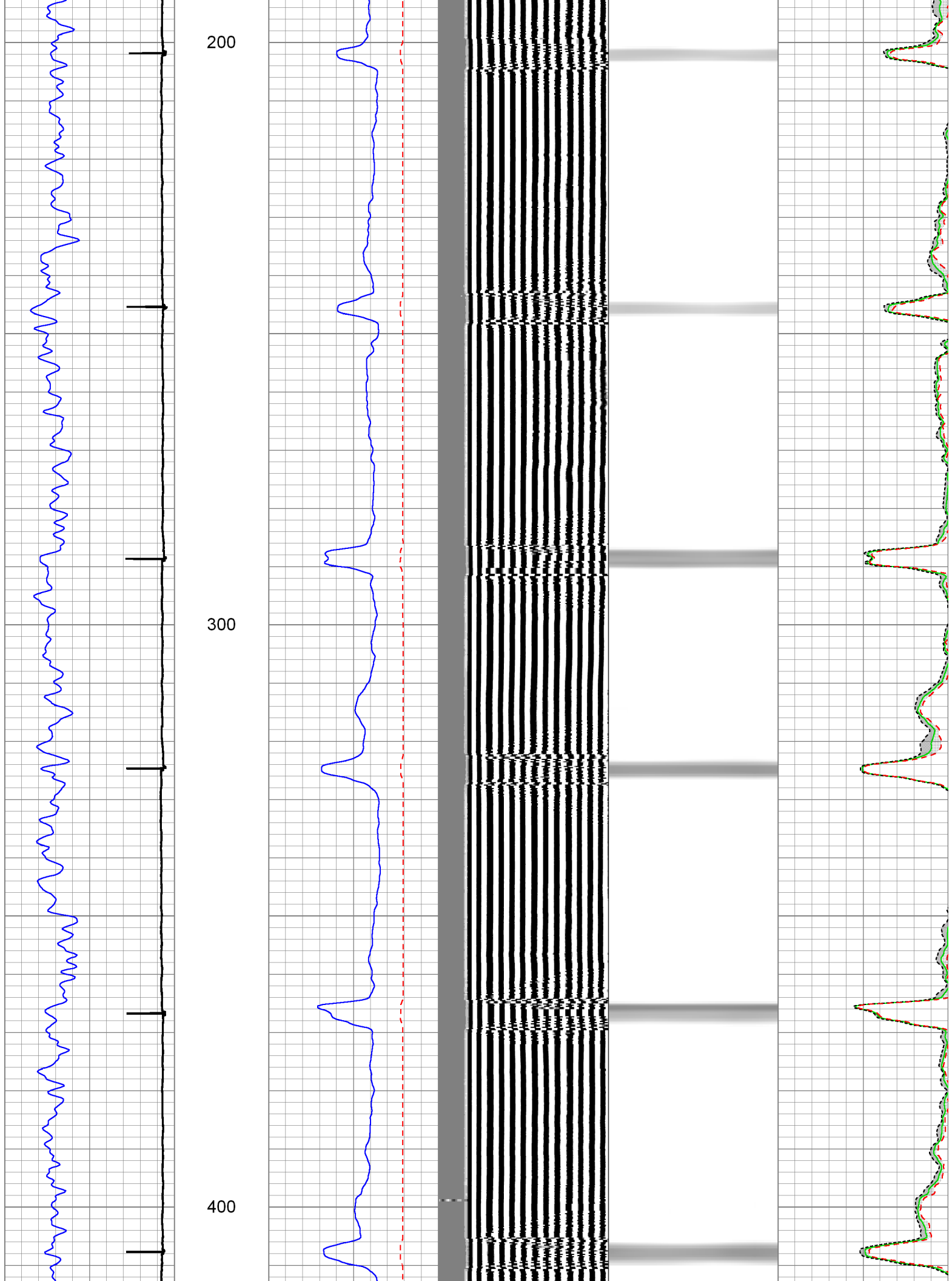
Presentation Format: rbt007

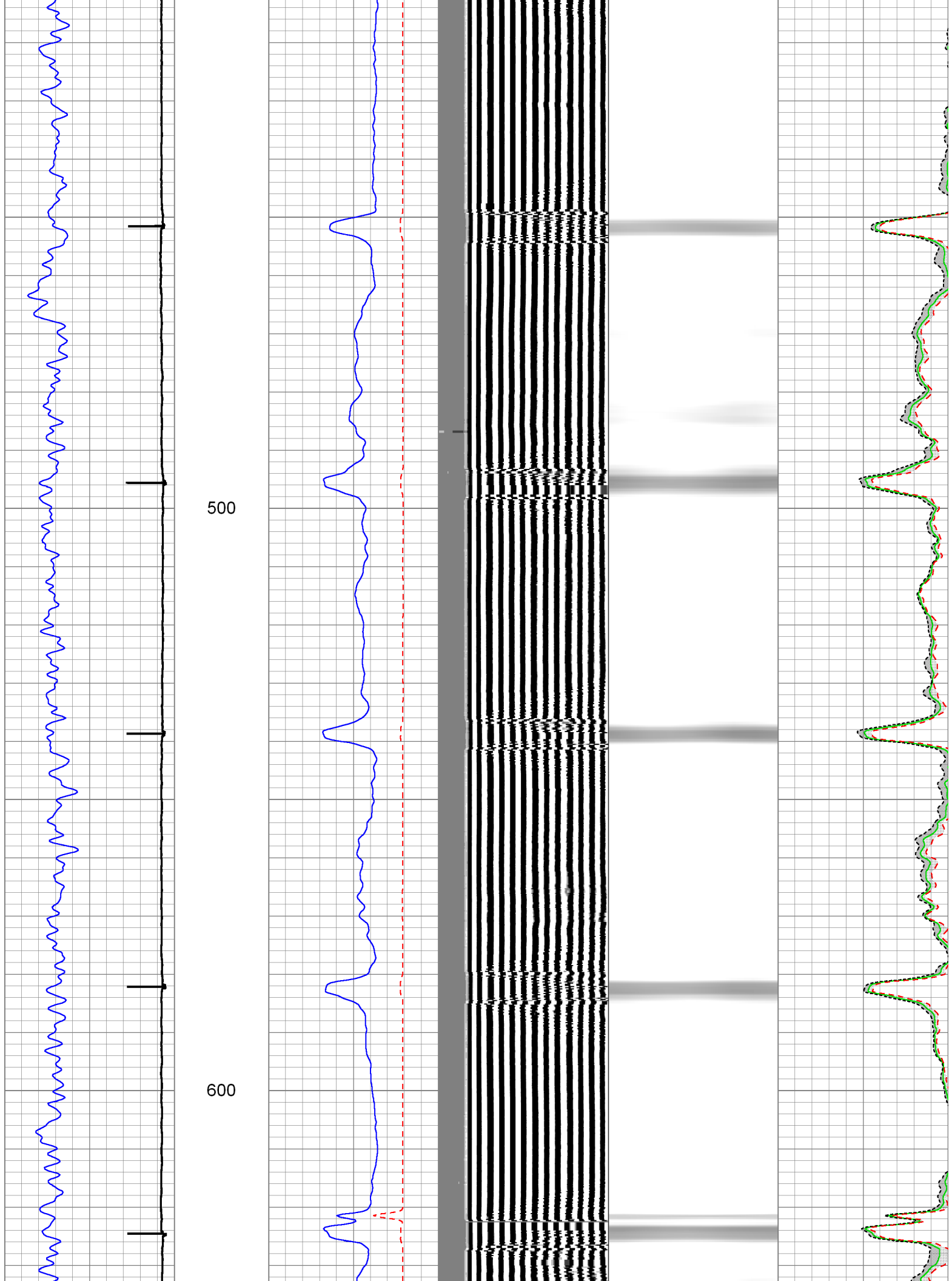
Dataset Creation: Sat Apr 05 07:38:10 2014 by Log Sondex V7.03

Charted by: Depth in Feet scaled 1:240

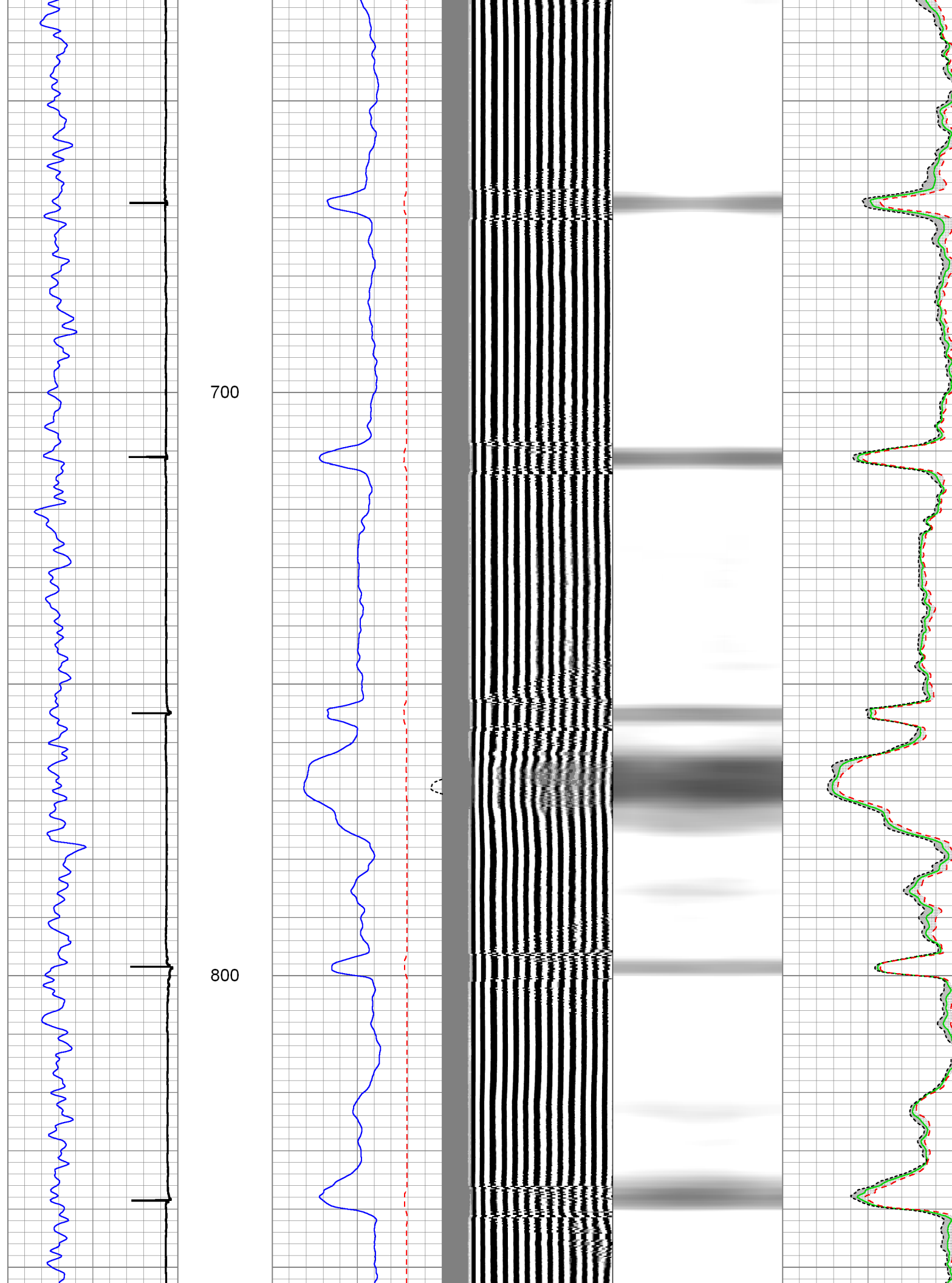
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Collar Locator		3' Amplitude x 5			Minimum Amplitude
		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

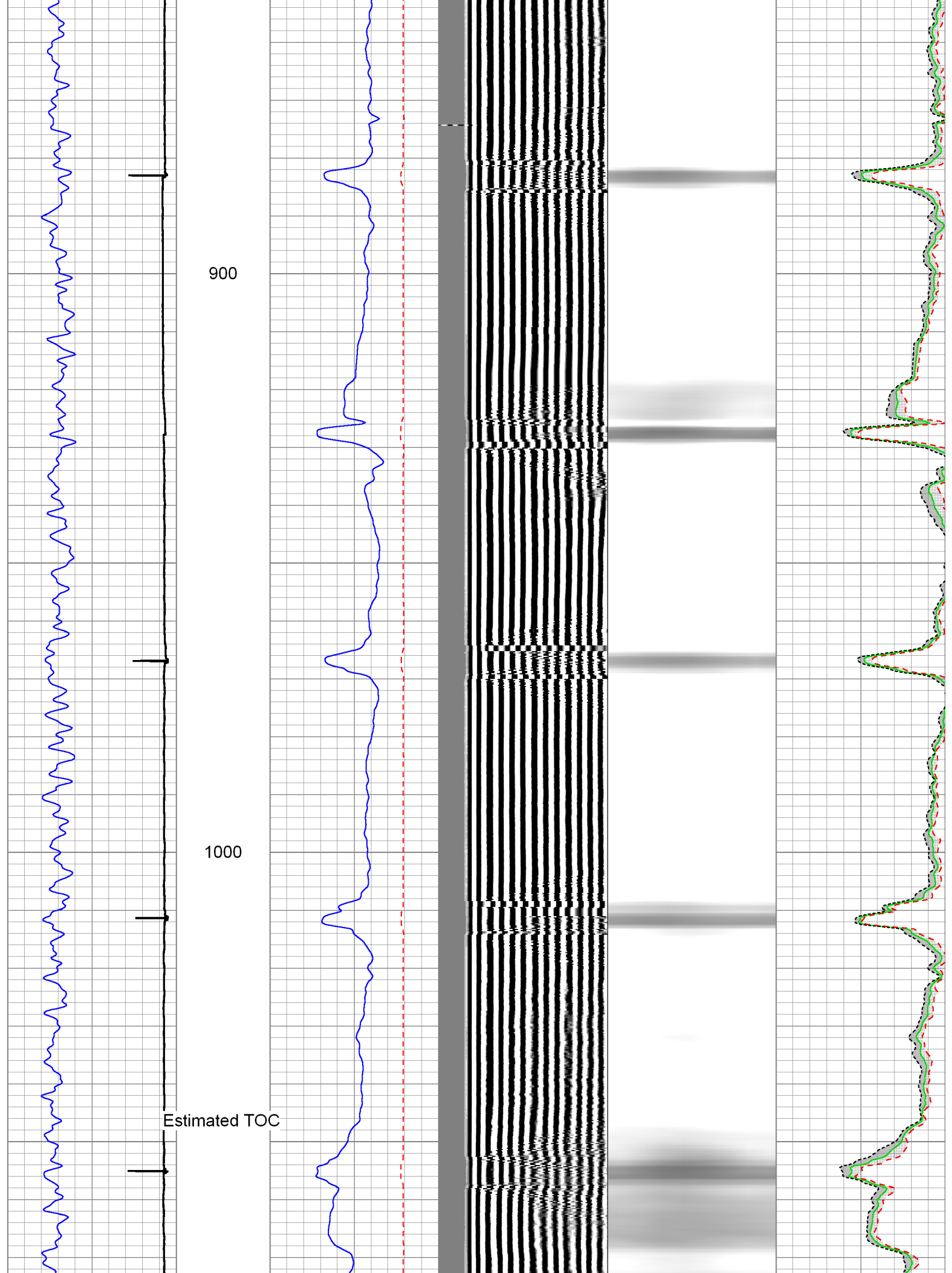


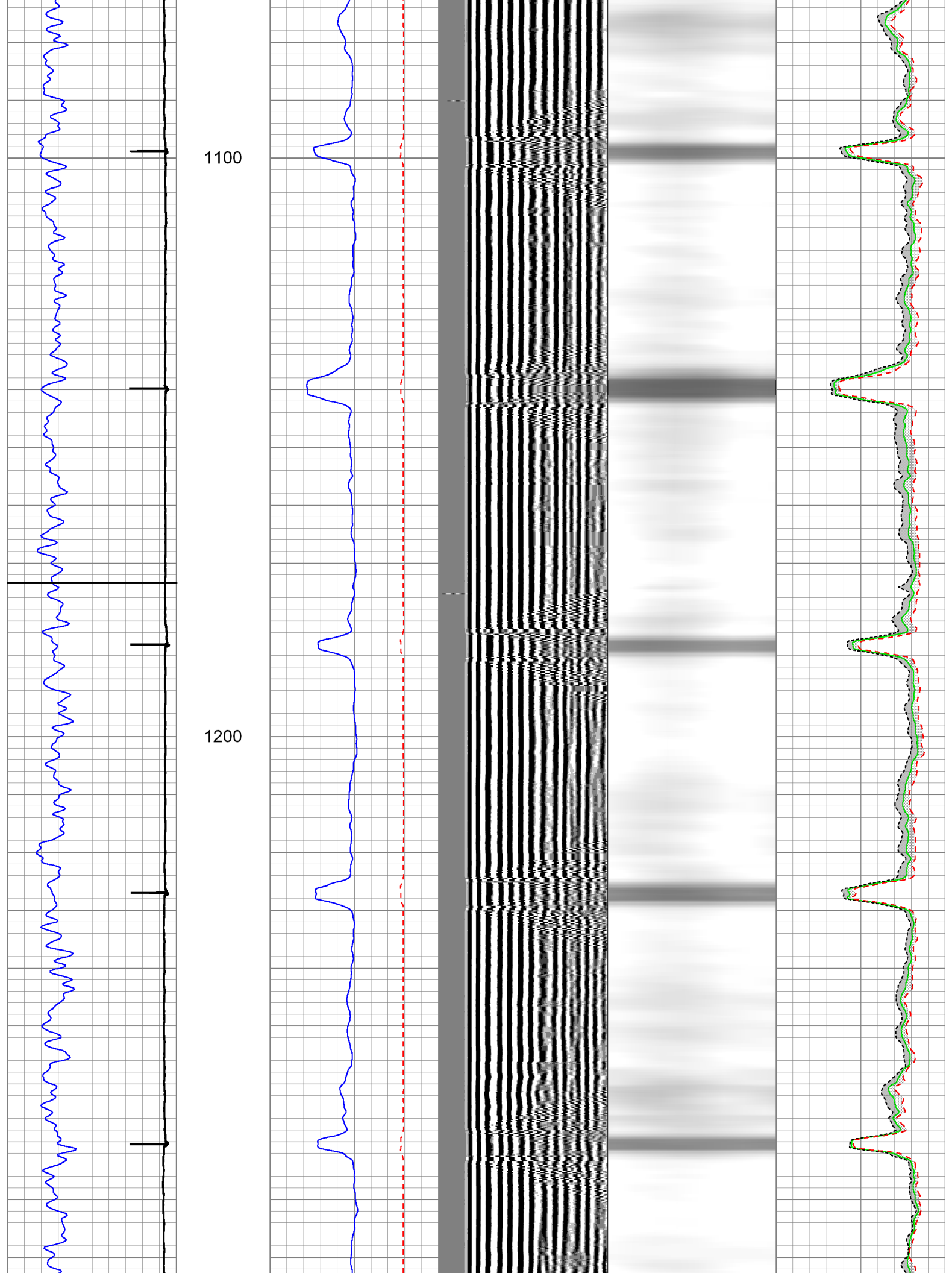








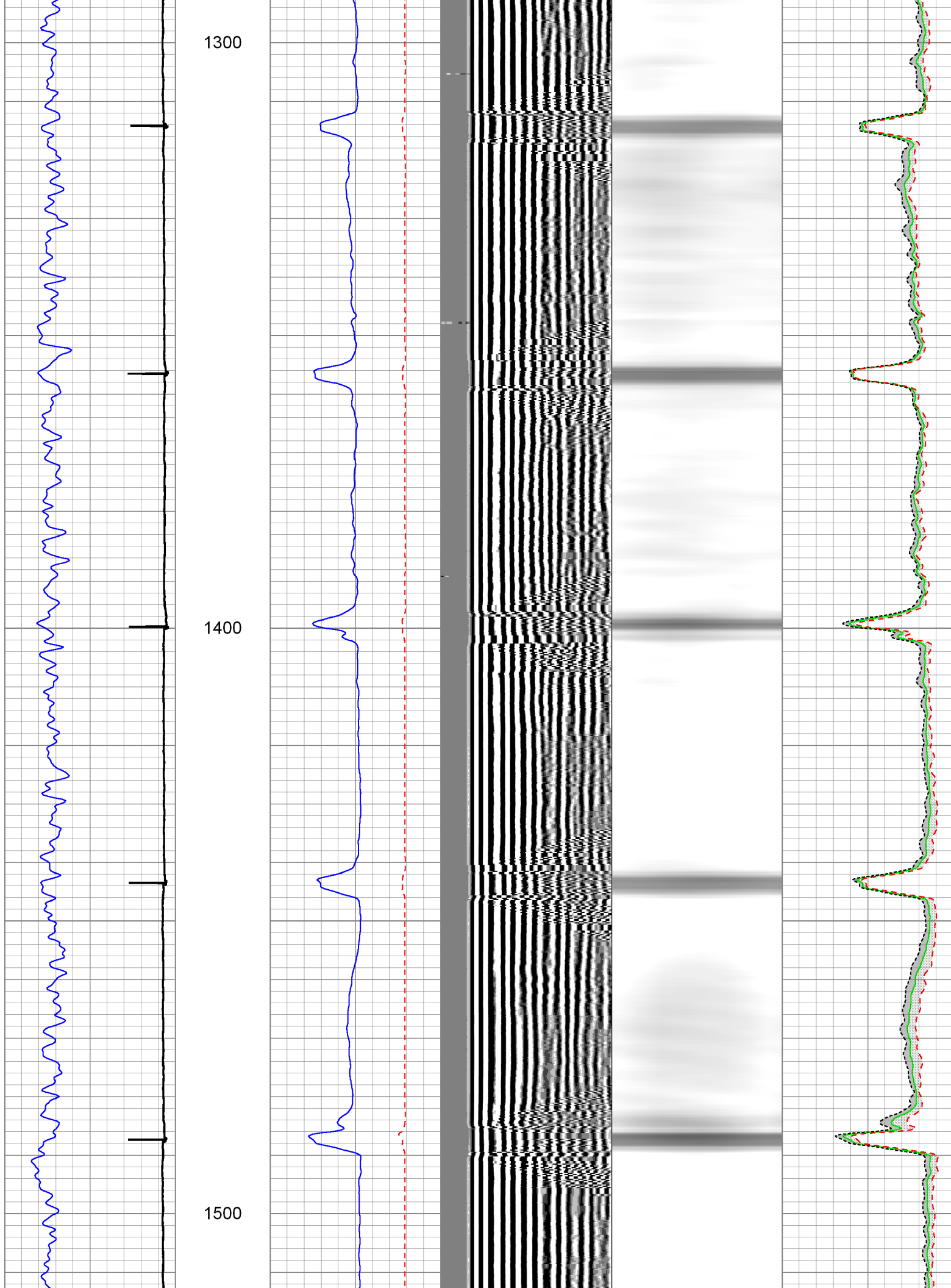


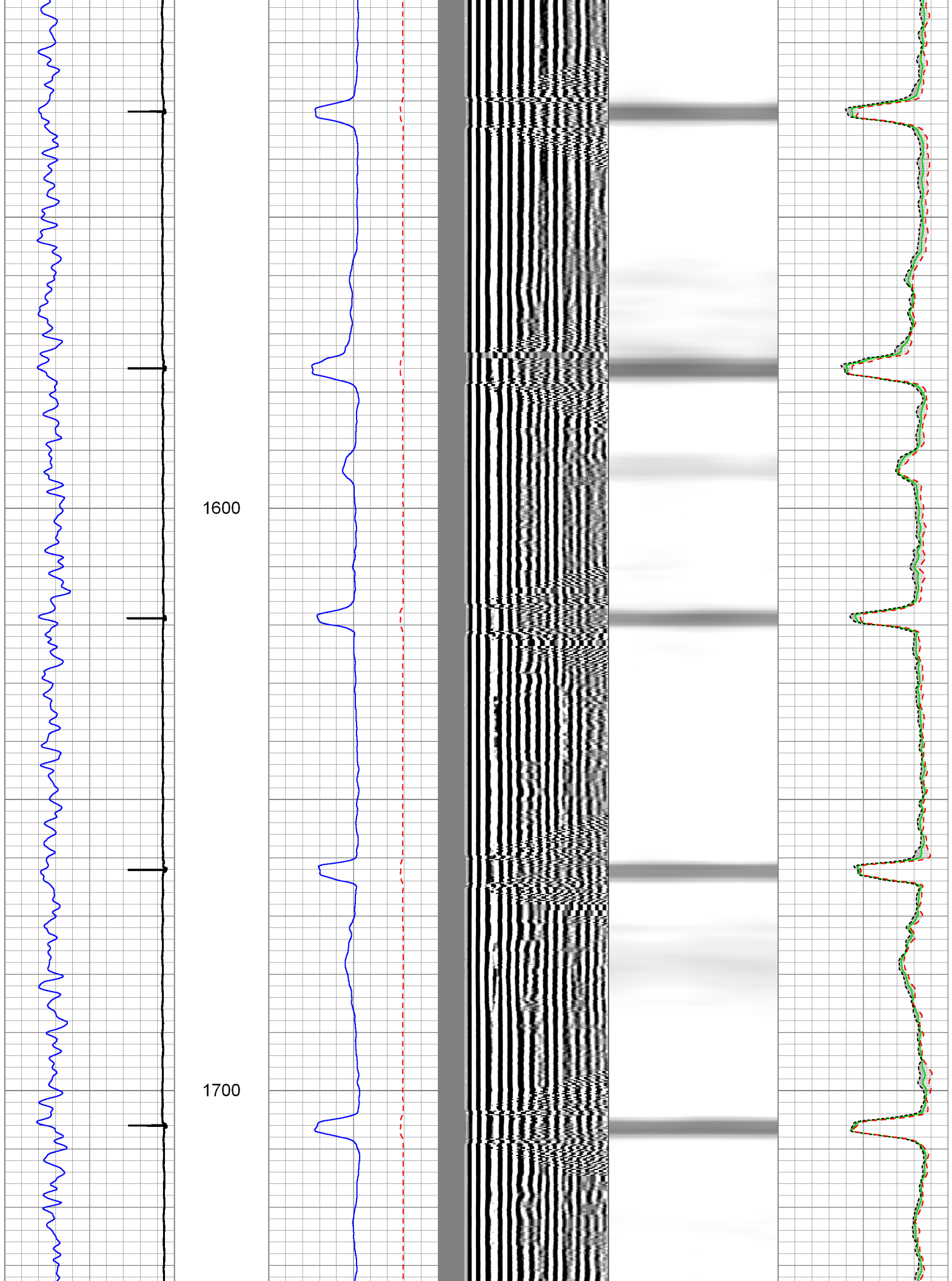


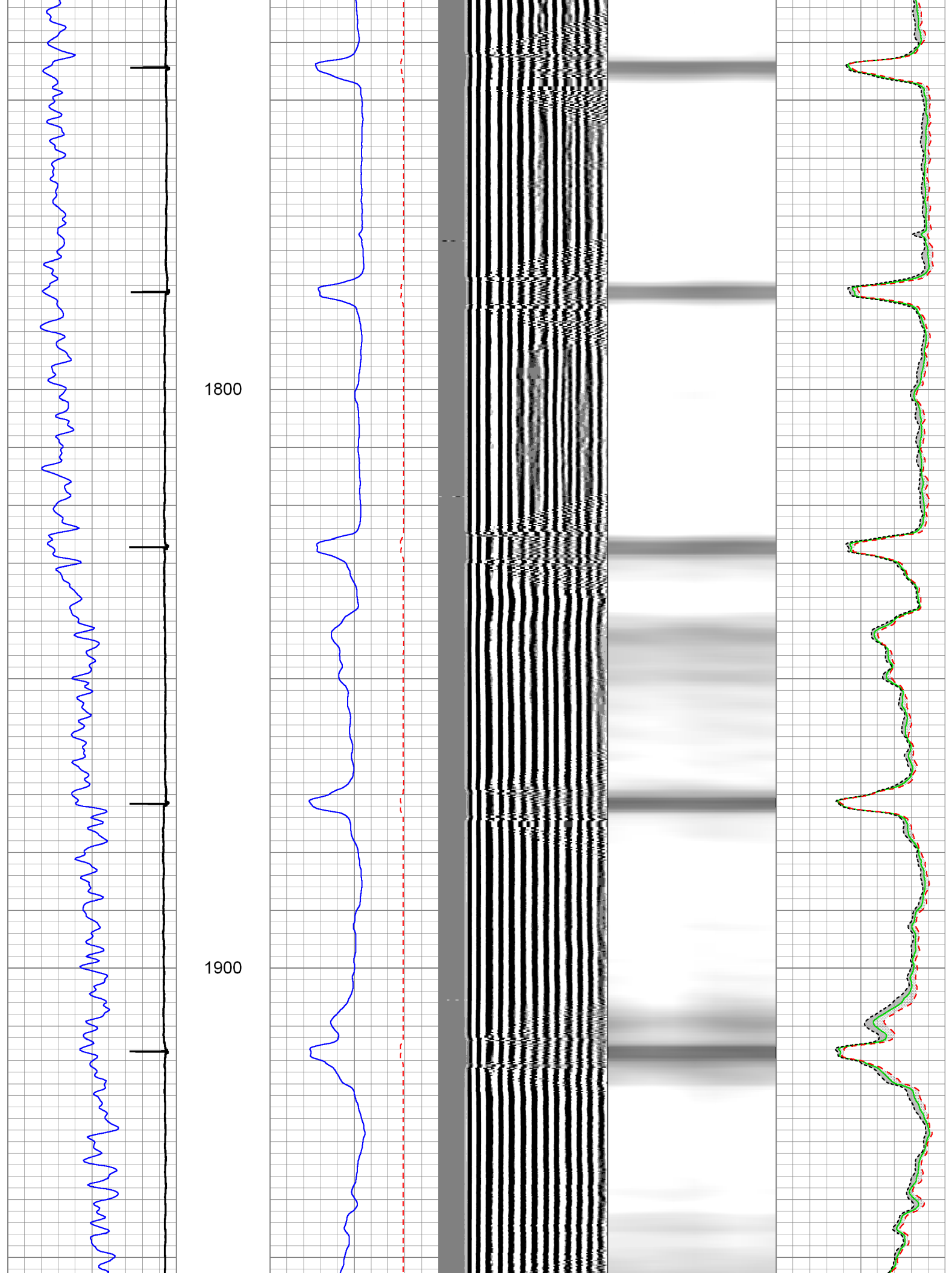
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1400

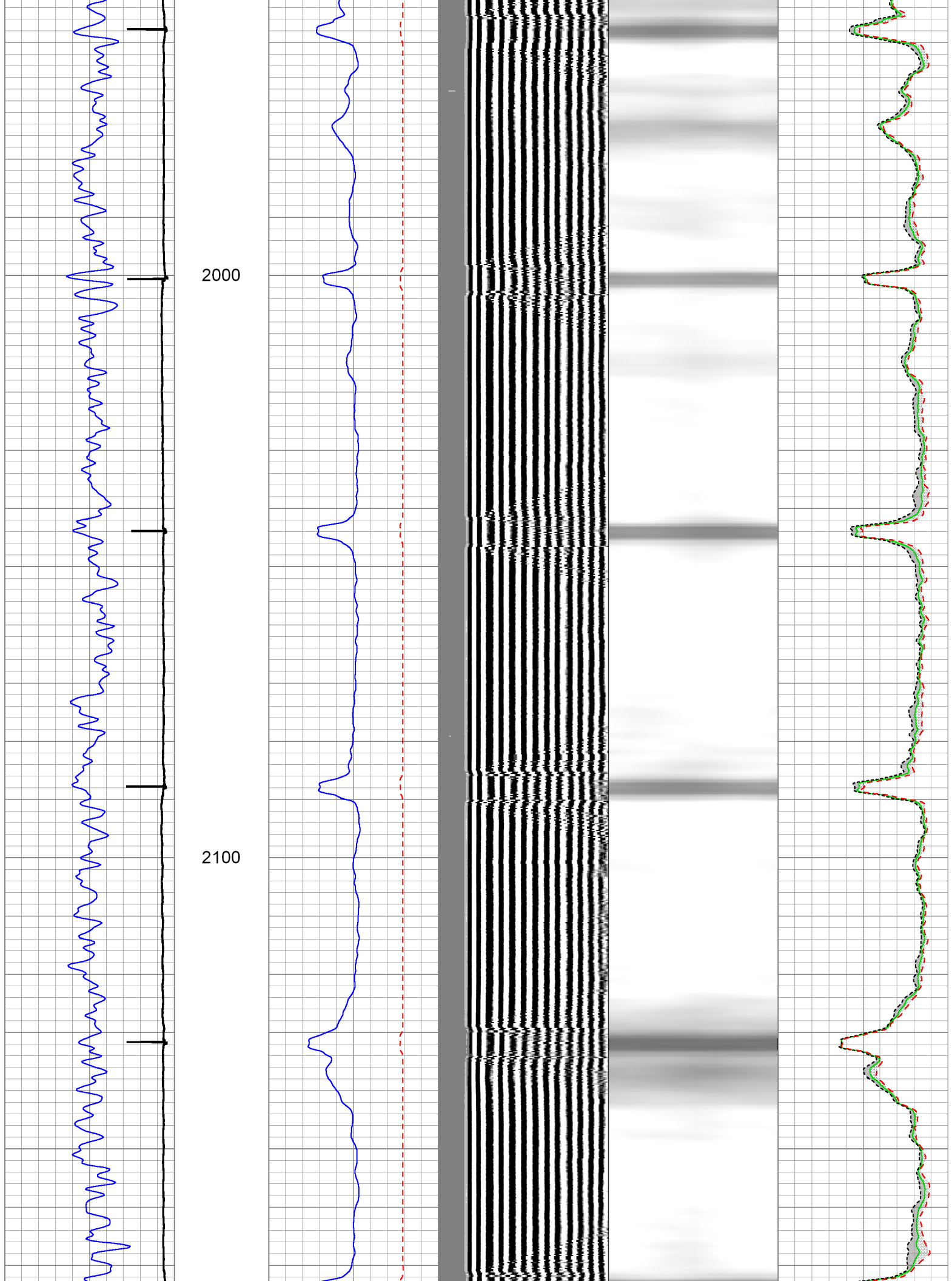
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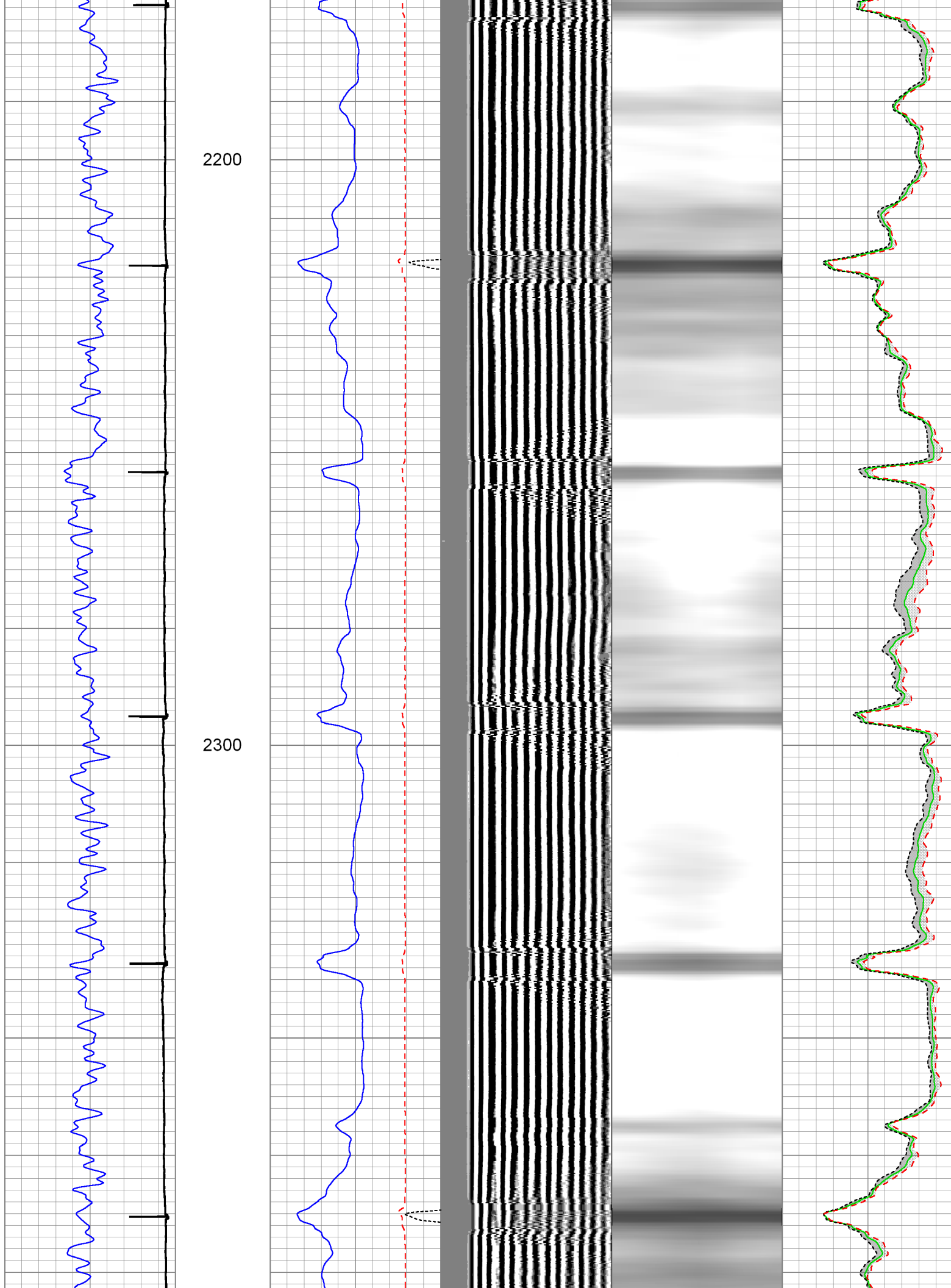








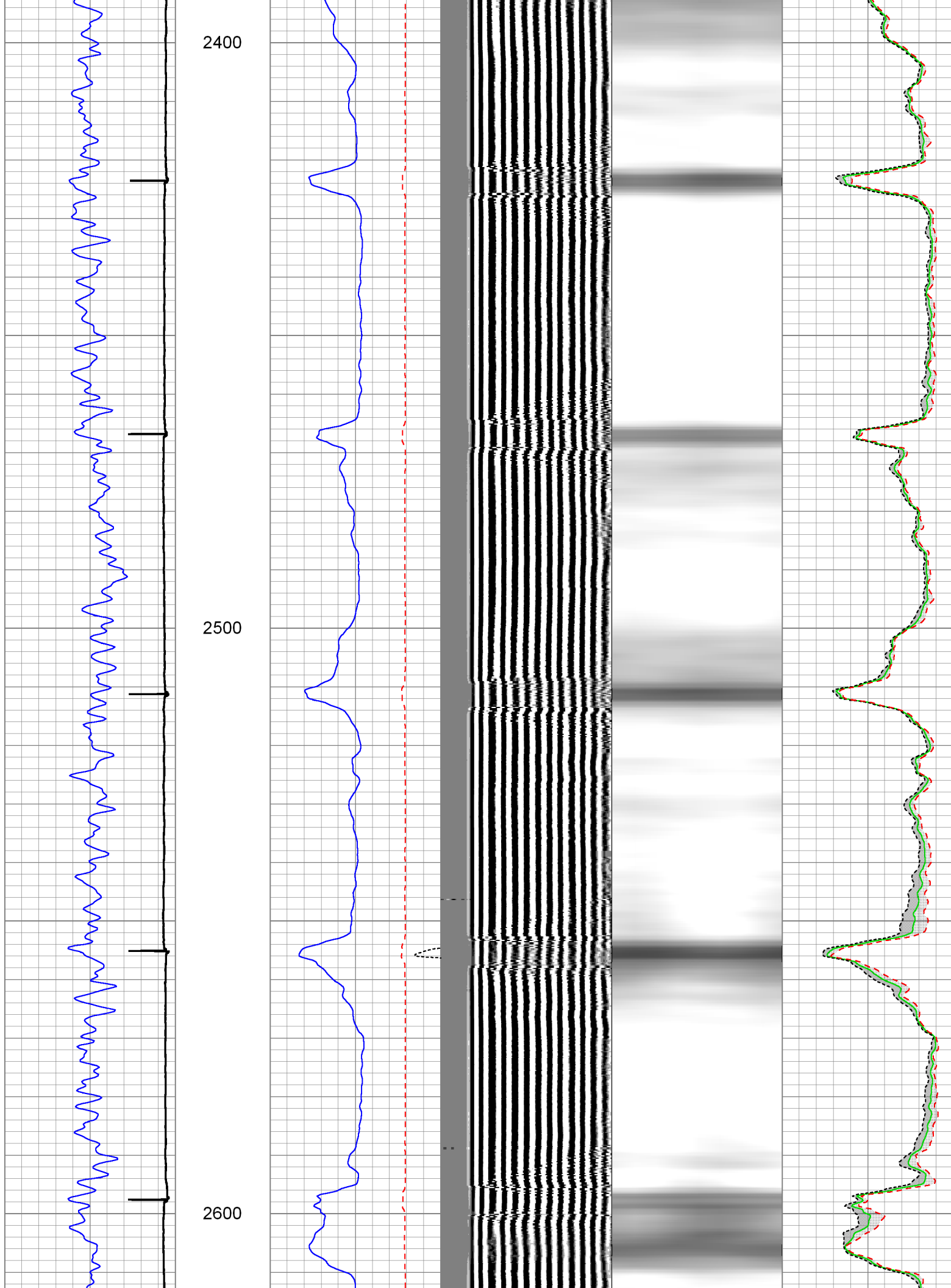


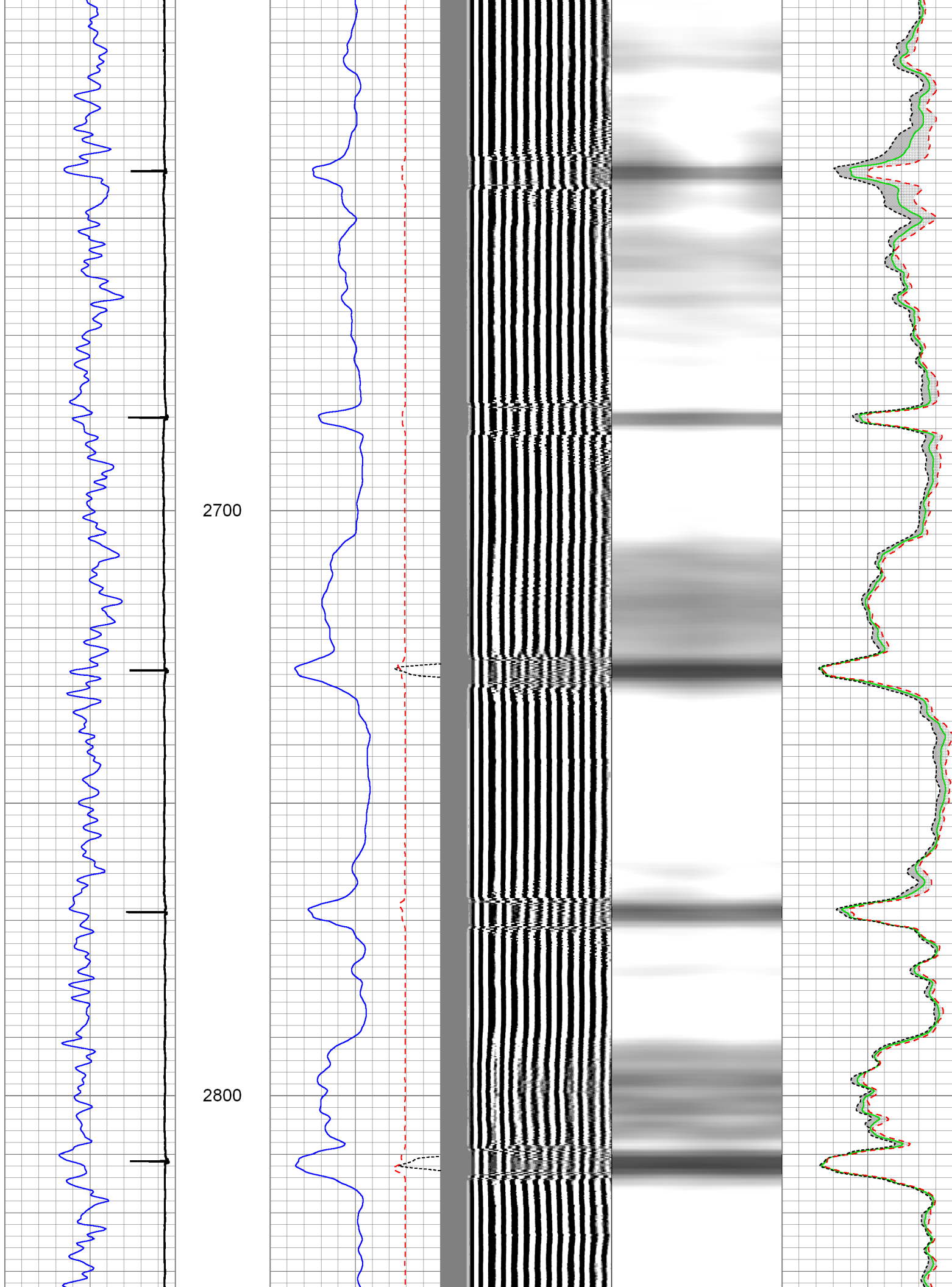


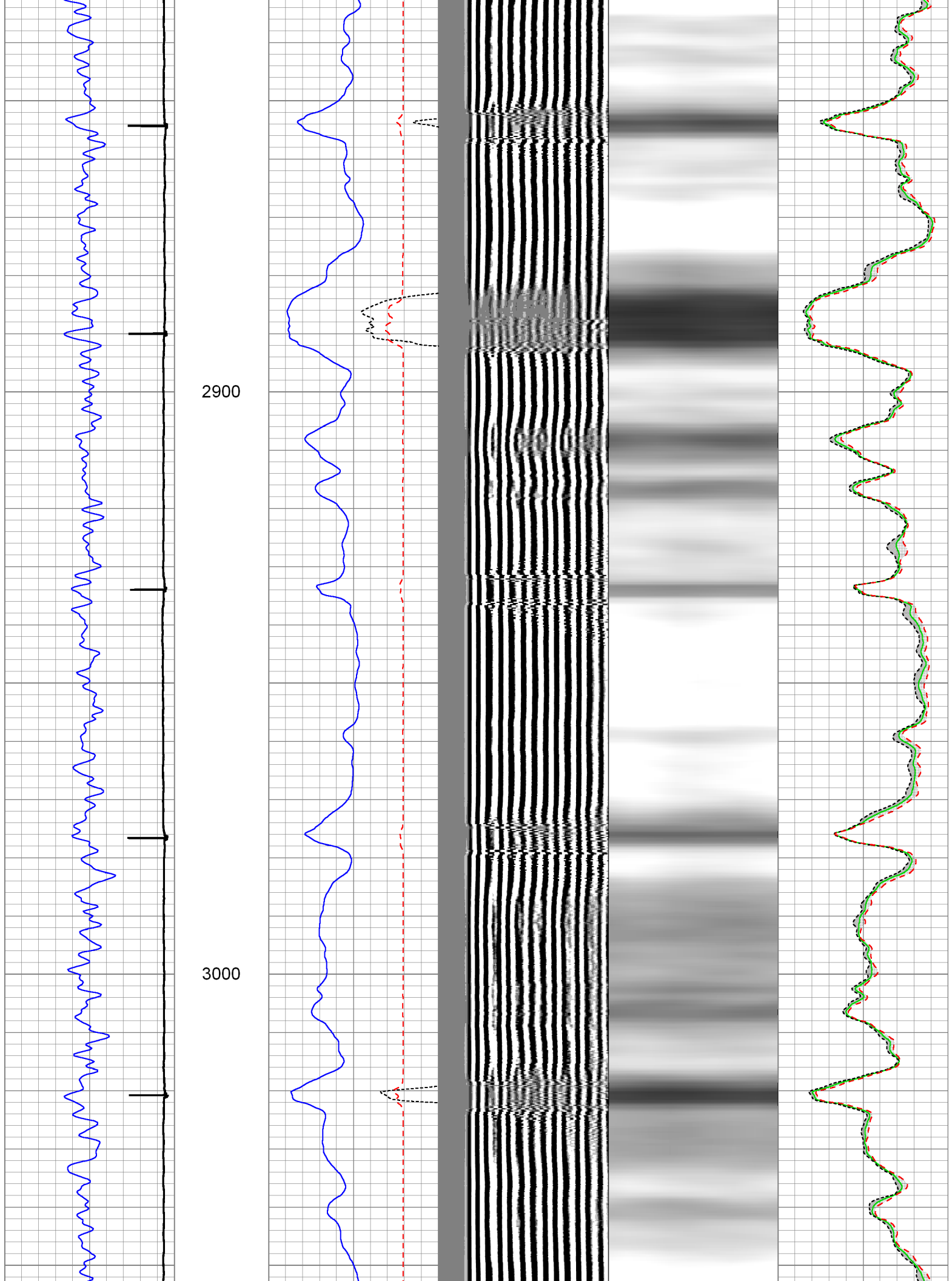
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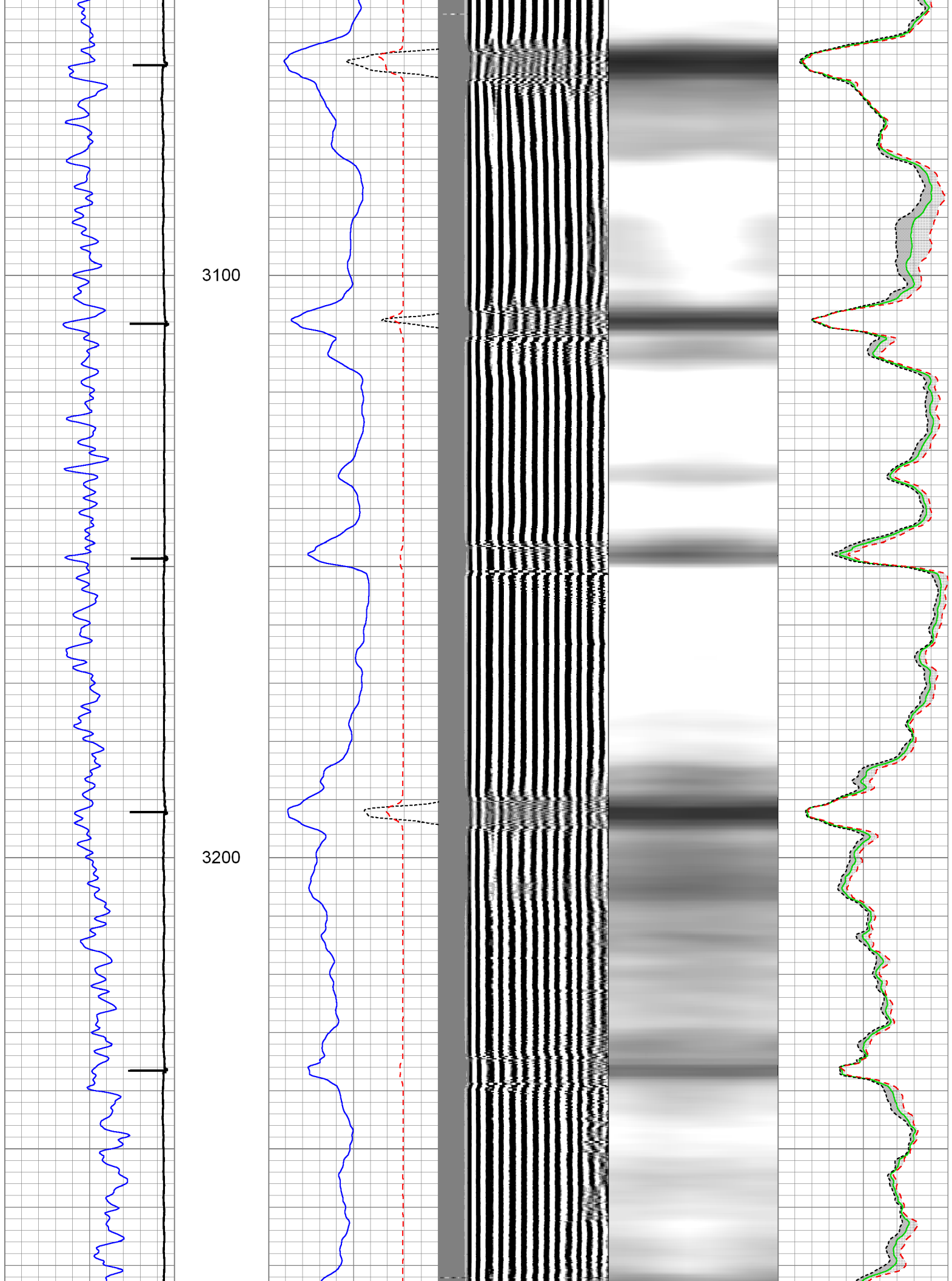
2500

2600





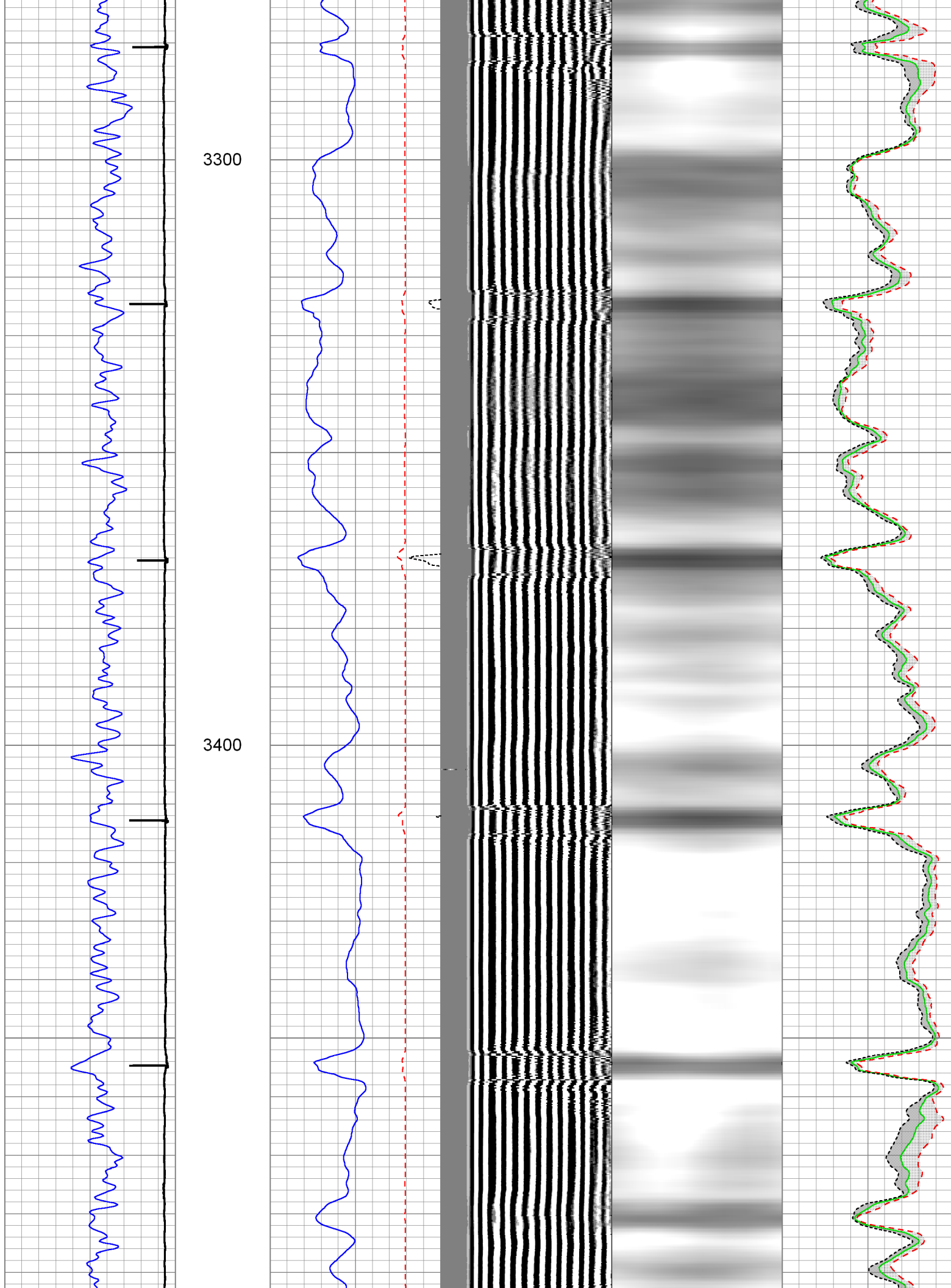






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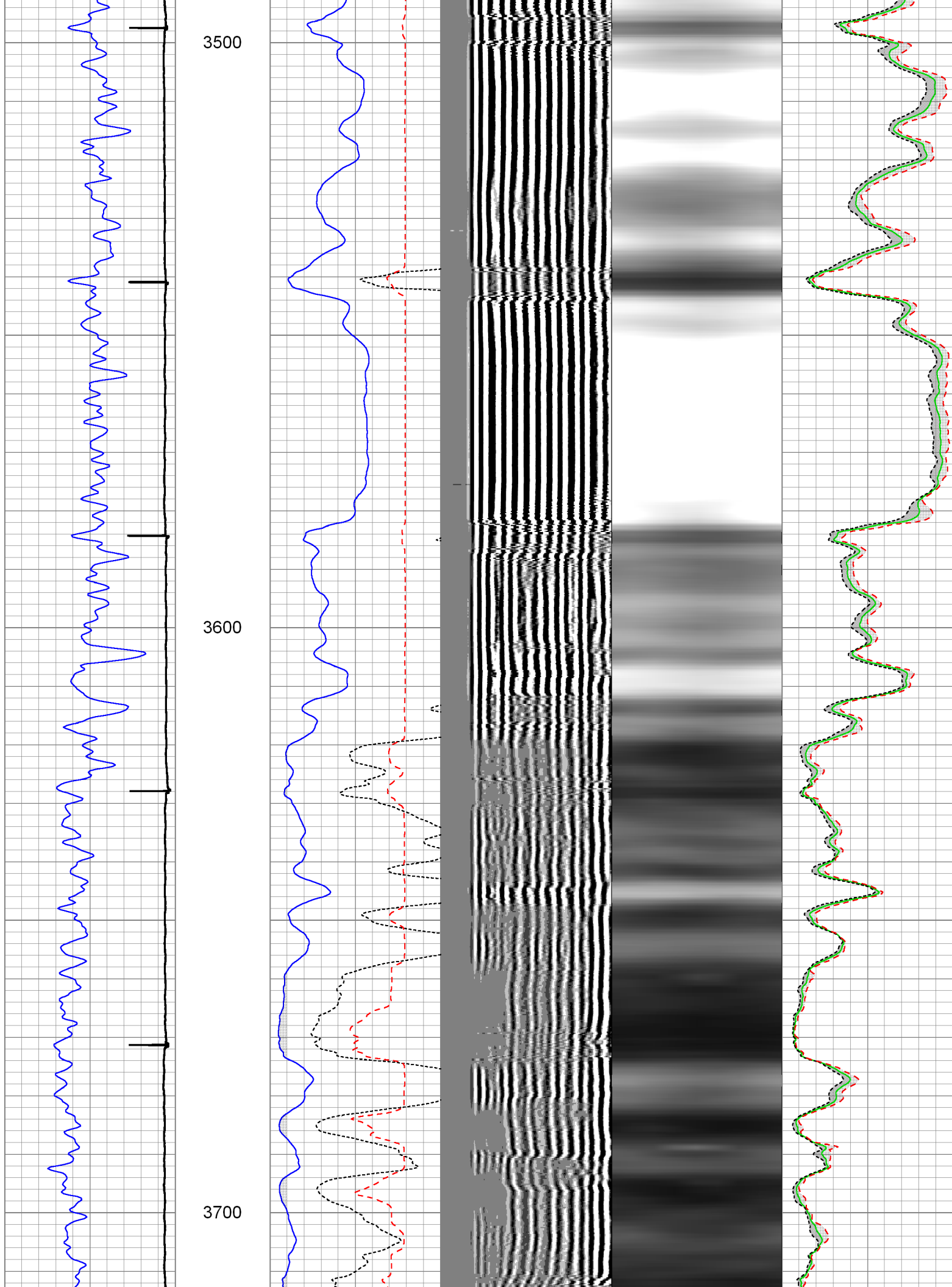
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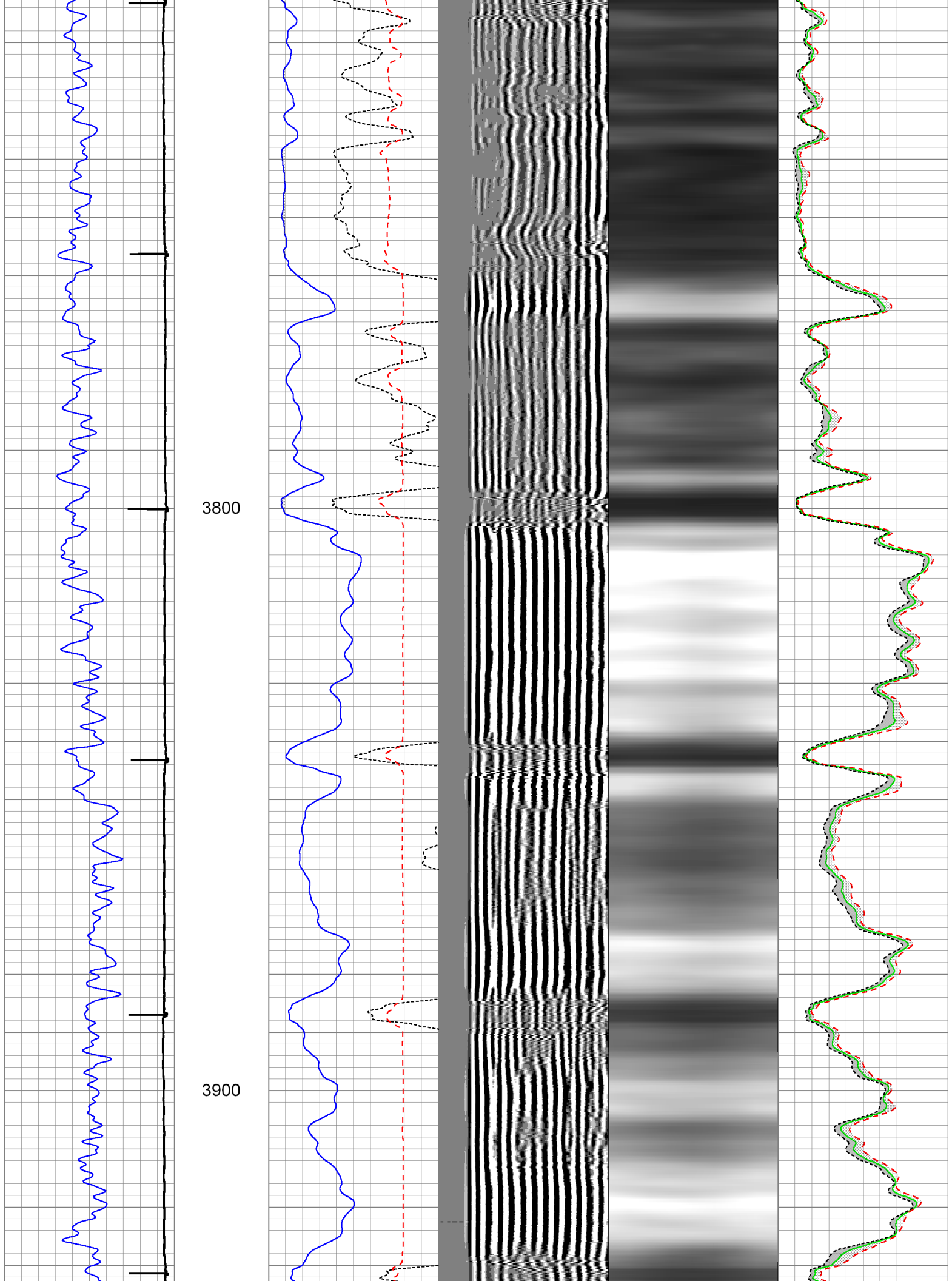
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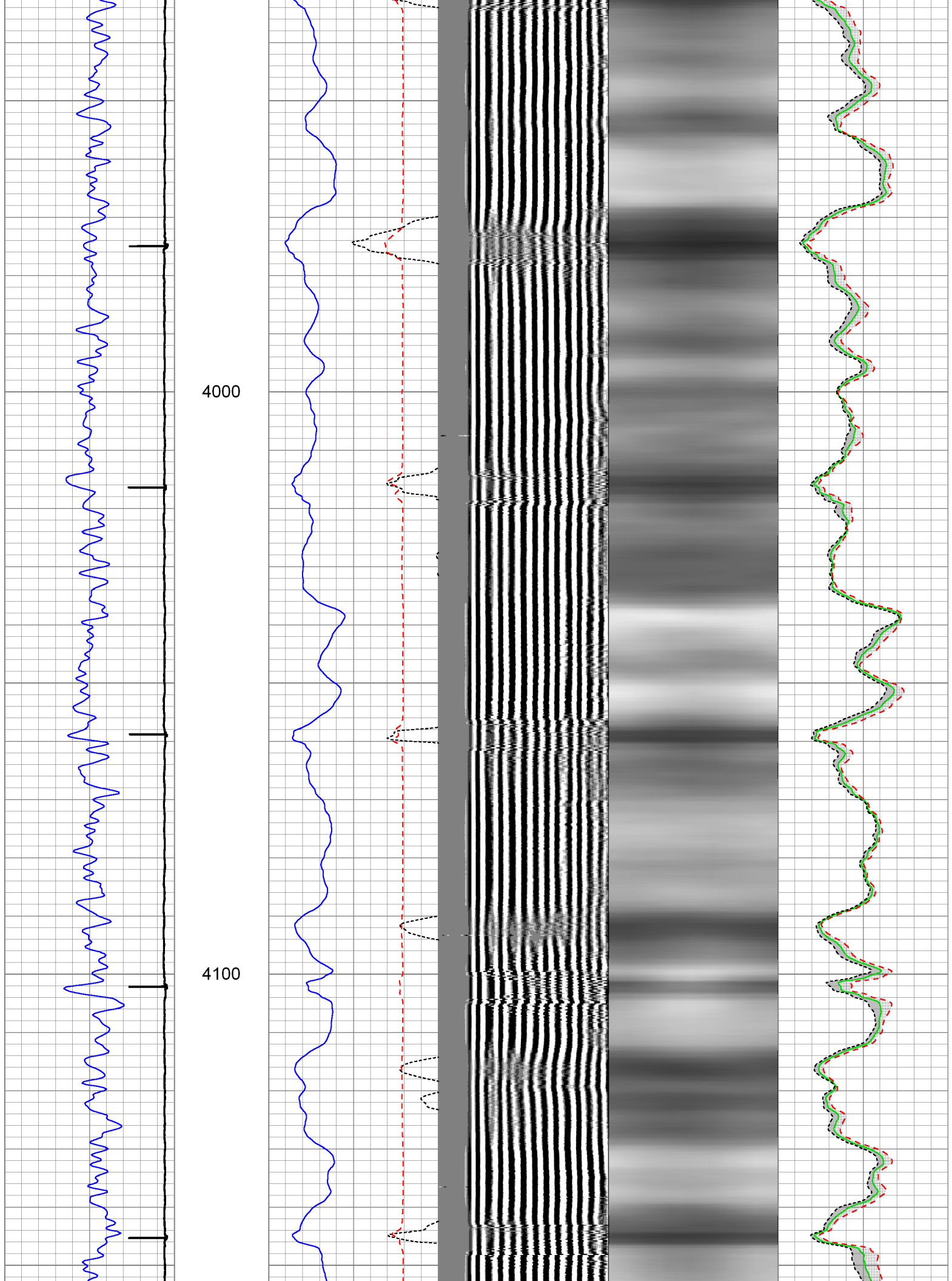
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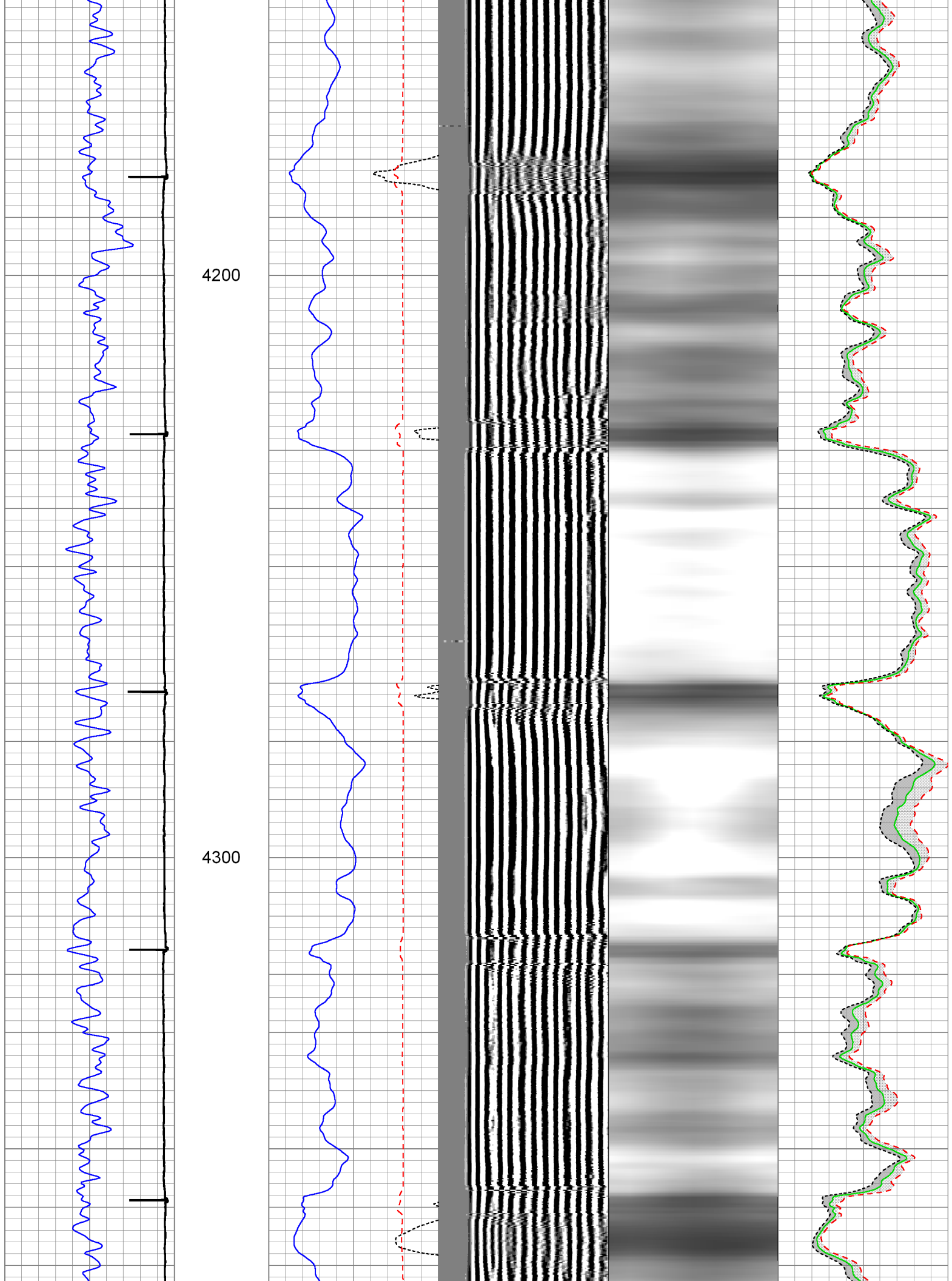
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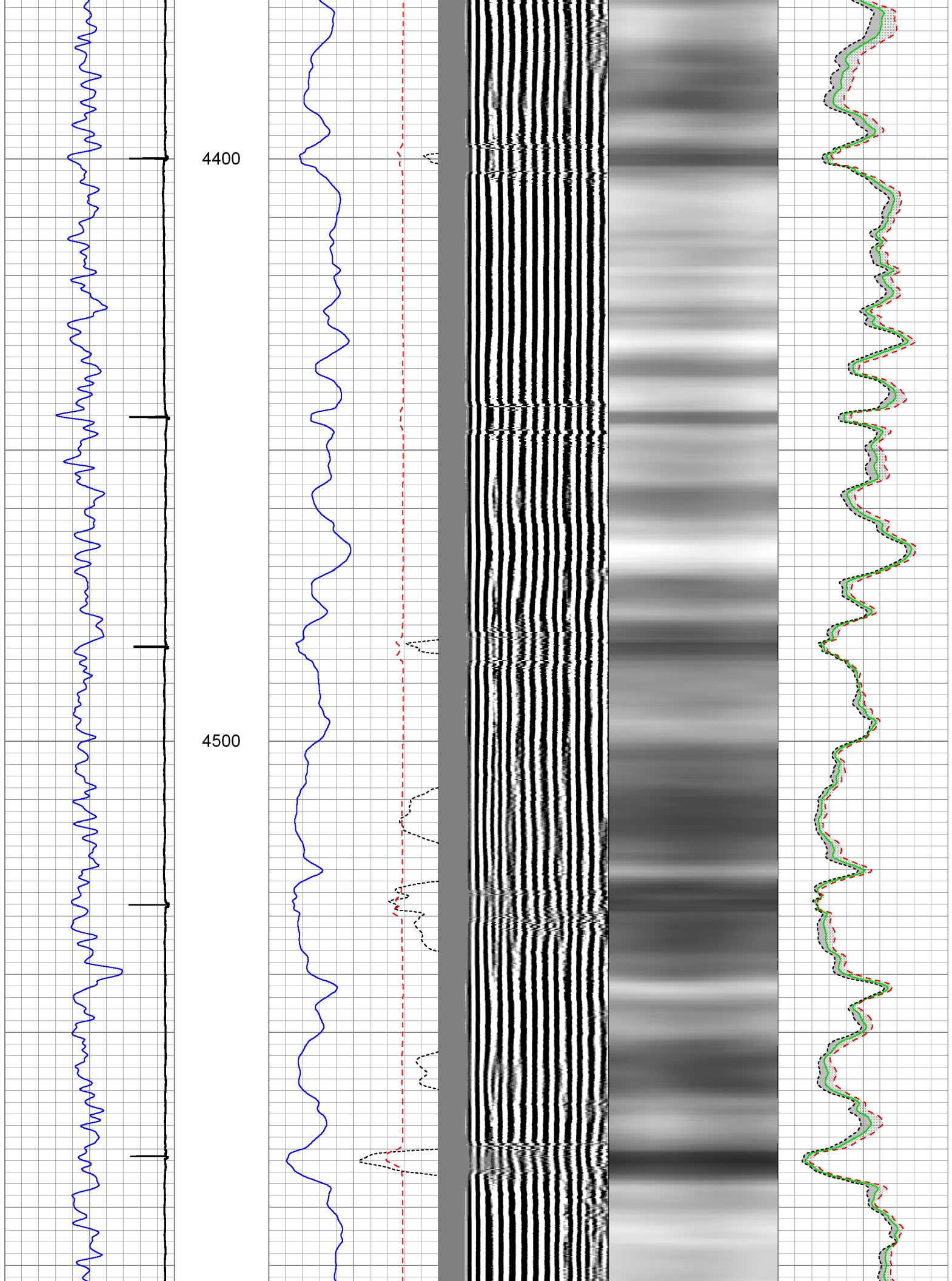








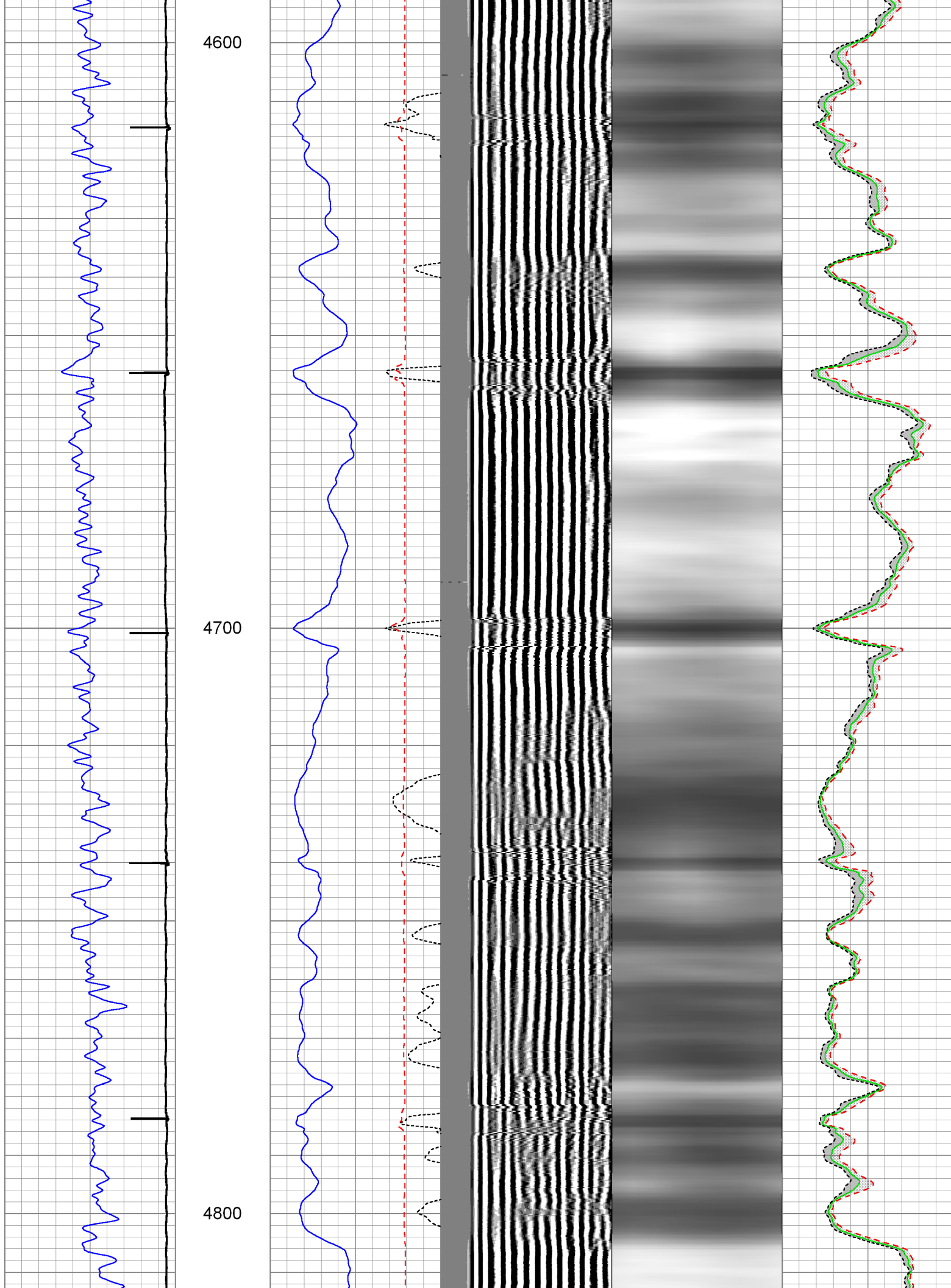




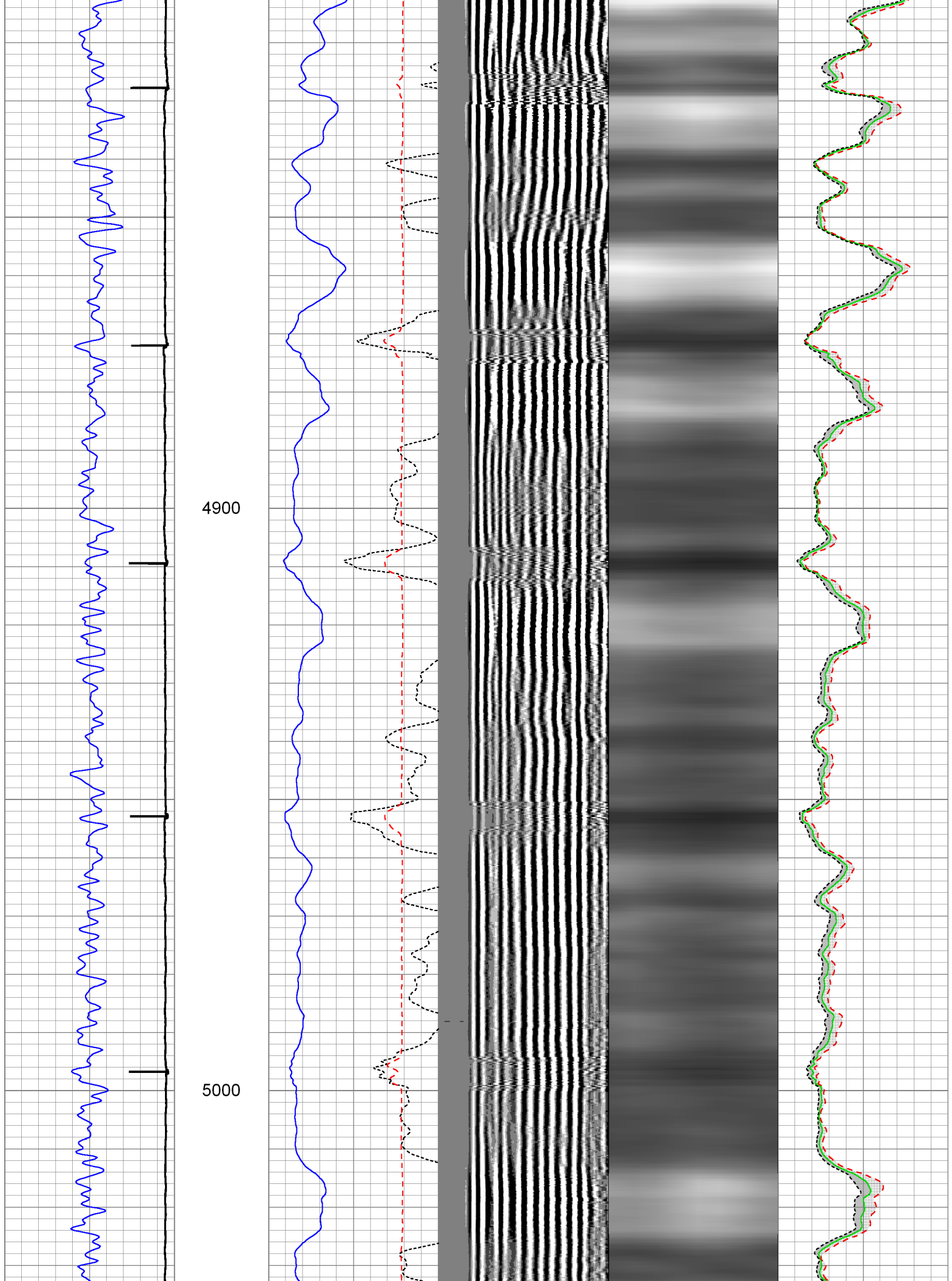
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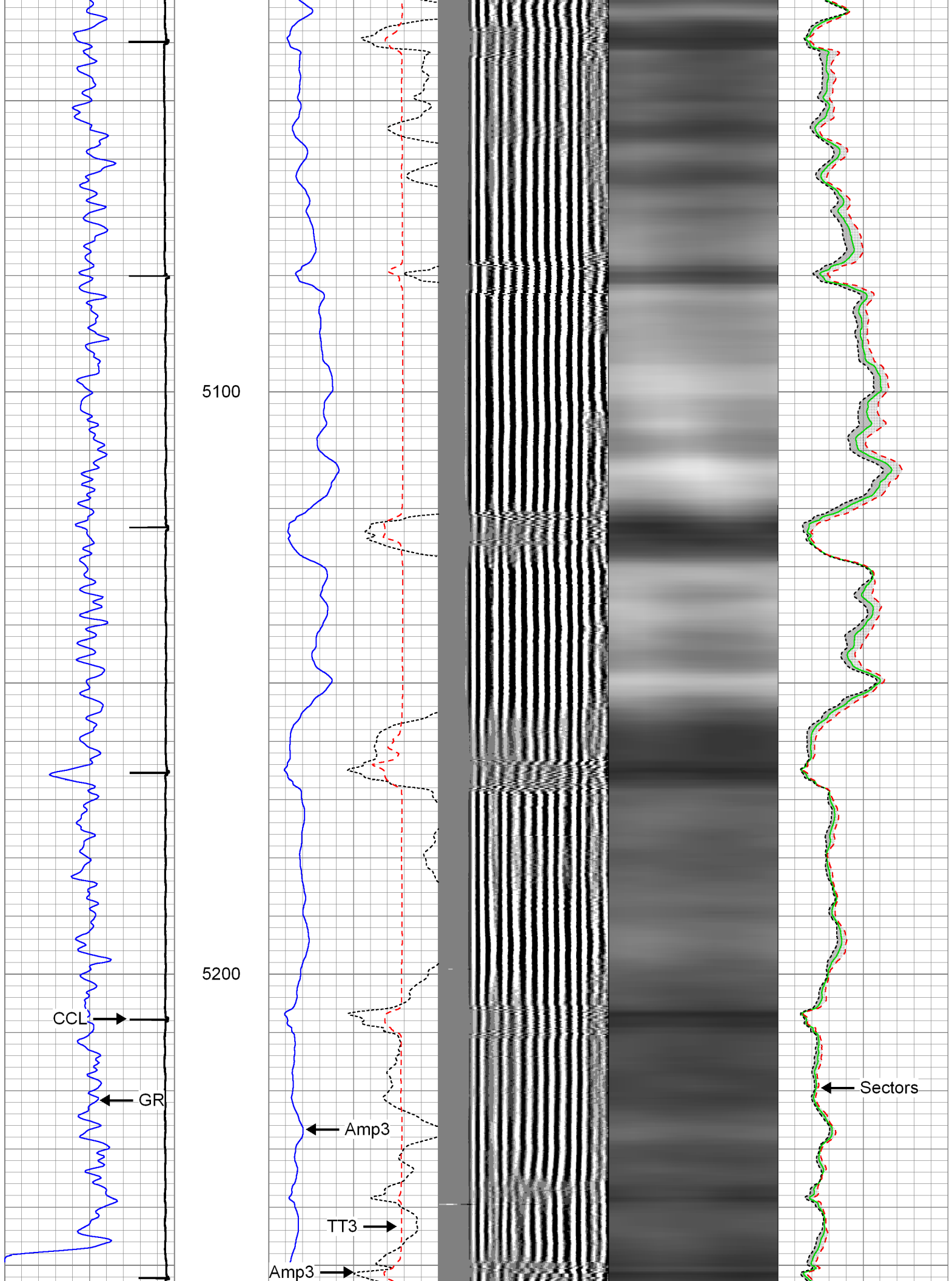
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4800

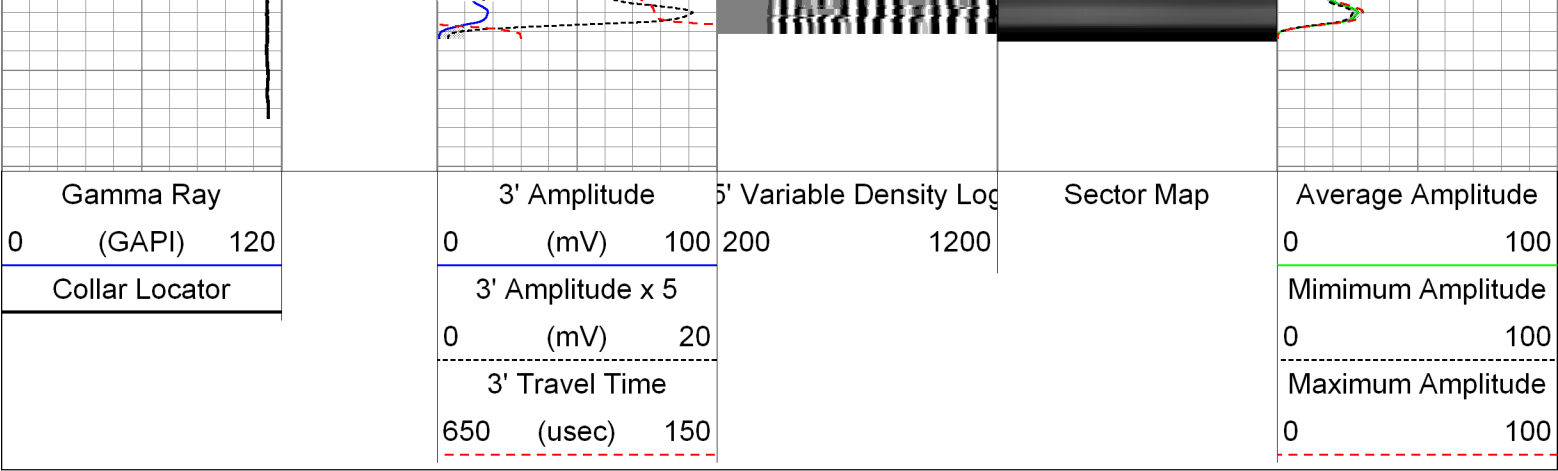








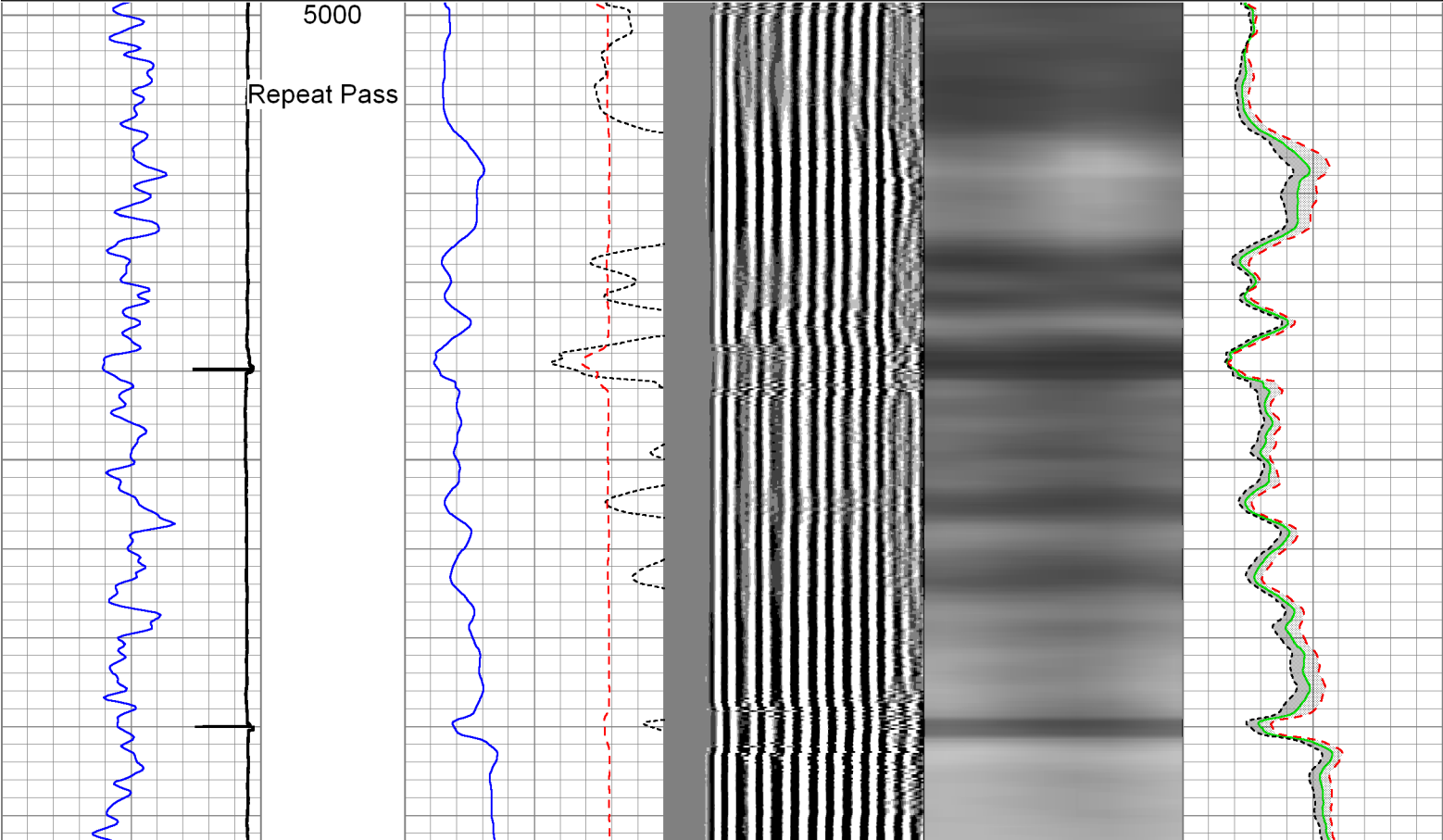
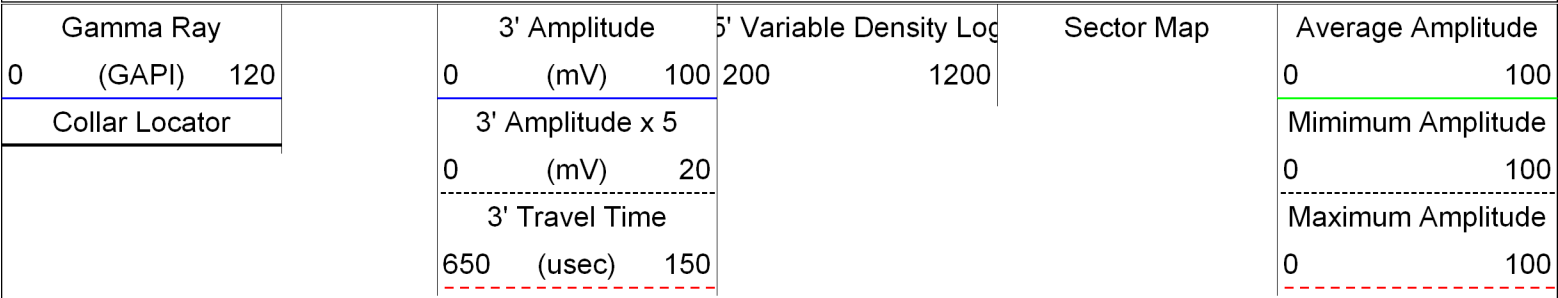


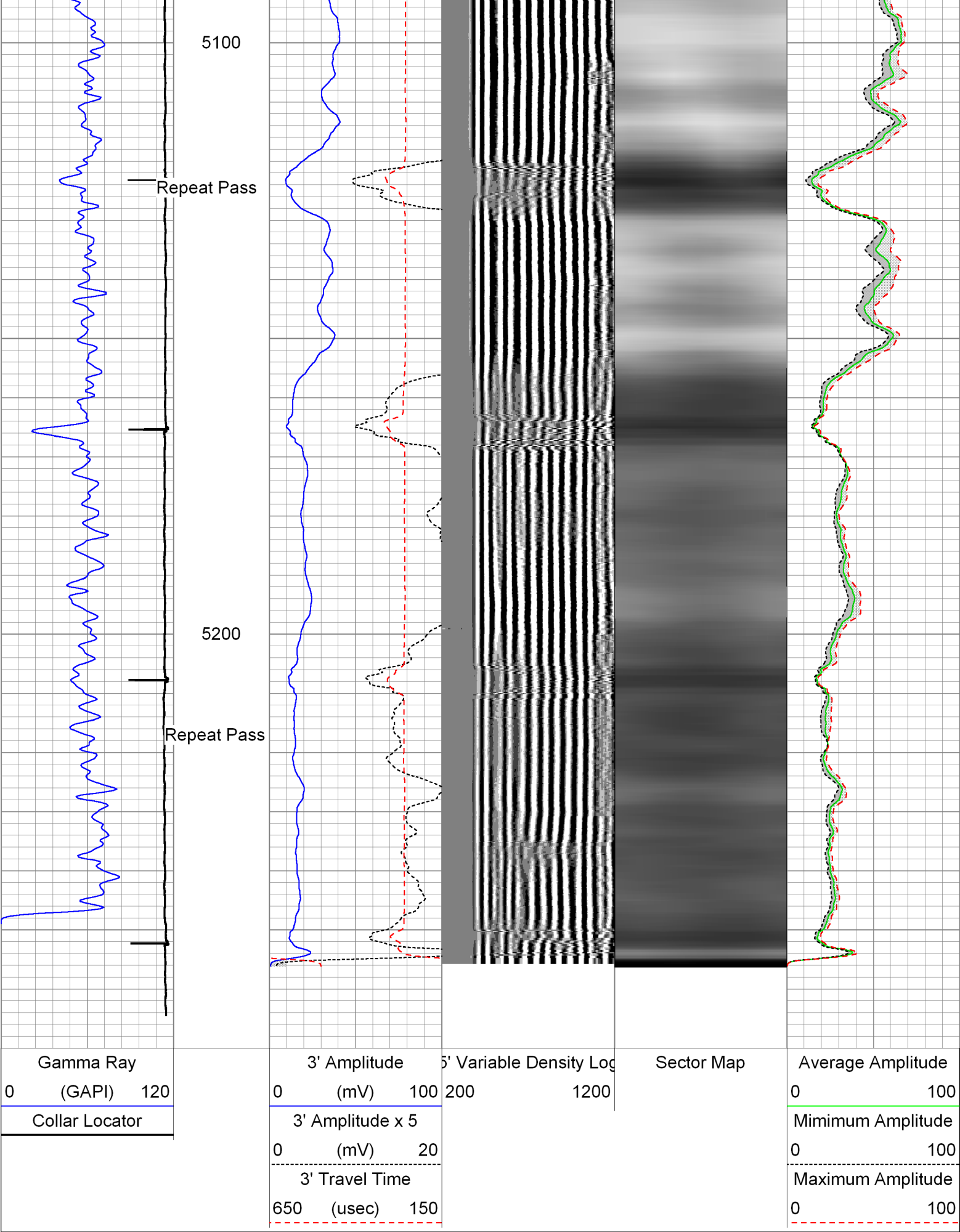


Repeat Pass

Logged With 2000 PSI At Surface

Database File: whiting\_razor11e-0202b.db  
Dataset Pathname: repeat  
Presentation Format: rbt007  
Dataset Creation: Sat Apr 05 07:26:29 2014 by Log Sondex V7.03  
Charted by: Depth in Feet scaled 1:240





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
						



# Calibration Report

Database File: whiting\_razor11e-0202b.db  
 Dataset Pathname: main  
 Dataset Creation: Sat Apr 05 07:38:10 2014 by Log Sondex V7.03

## Multi-finger Imaging Tool Calibration Report

Serial Number: 218949  
 Number of Fingers: 40  
 Tool Model: 027

## Inclinometer Calibration Report

Performed: Mon, Oct, 06 14:03:04 2008  
 Calibration Angle: 45

		Inc X	Inc Y
Vertical:		1996	1984
Finger 1 up:		1780	1738
Finger 31 up:		2235	1756
Finger 21 up:		2216	2228
Finger 11 up:		1736	2196
Sensitivity ratio:	1.0062		
X-axis angle:	131.534		
Deviation const.:	331.322		

## Finger Calibration Report

Performed: Sat Apr 05 06:59:54 2014

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1087	335.0	1422	415.0	1837	409.0	2246
Finger 02:	1045	340.0	1385	429.0	1814	428.0	2242
Finger 03:	1054	334.0	1388	414.0	1802	417.0	2219
Finger 04:	1022	342.0	1364	432.0	1796	440.0	2236
Finger 05:	1061	329.0	1390	400.0	1790	406.0	2196
Finger 06:	1061	341.0	1402	410.0	1812	422.0	2234
Finger 07:	1080	340.0	1420	397.0	1817	409.0	2226
Finger 08:	1048	345.0	1393	405.0	1798	426.0	2224
Finger 09:	1118	348.0	1466	385.0	1851	397.0	2248
Finger 10:	1092	347.0	1439	384.0	1823	401.0	2224
Finger 11:	1071	347.0	1418	380.0	1798	406.0	2204
Finger 12:	1157	347.0	1504	355.0	1859	369.0	2228
Finger 13:	1089	347.0	1436	368.0	1804	400.0	2204
Finger 14:	1079	364.0	1443	376.0	1819	414.0	2233
Finger 15:	1054	365.0	1419	374.0	1793	417.0	2210
Finger 16:	1089	360.0	1449	364.0	1813	402.0	2215
Finger 17:	1122	356.0	1478	349.0	1827	386.0	2213
Finger 18:	1144	356.0	1500	347.0	1847	386.0	2233
Finger 19:	1106	366.0	1472	357.0	1829	397.0	2226
Finger 20:	1017	366.0	1383	367.0	1750	415.0	2165
Finger 21:	1105	358.0	1463	354.0	1817	399.0	2216
Finger 22:	1076	365.0	1441	365.0	1806	406.0	2212
Finger 23:	1180	344.0	1524	342.0	1866	373.0	2239
Finger 24:	1080	370.0	1450	375.0	1825	411.0	2236
Finger 25:	1074	361.0	1435	378.0	1813	417.0	2230
Finger 26:	1101	360.0	1461	375.0	1836	400.0	2236
Finger 27:	1107	348.0	1455	372.0	1827	403.0	2230
Finger 28:	1061	359.0	1420	393.0	1813	416.0	2229
Finger 29:	1034	359.0	1393	407.0	1800	432.0	2232
Finger 30:	1024	353.0	1377	409.0	1786	431.0	2217
Finger 31:	1076	350.0	1426	398.0	1824	409.0	2233
Finger 32:	1019	347.0	1366	414.0	1780	429.0	2209
Finger 33:	1028	350.0	1378	419.0	1797	429.0	2226
Finger 34:	1020	347.0	1367	430.0	1797	437.0	2234
Finger 35:	1079	336.0	1415	406.0	1821	408.0	2229
Finger 36:	1014	341.0	1355	427.0	1782	435.0	2217

Finger 37:	1128	331.0	1459	402.0	1861	399.0	2260
Finger 38:	1081	330.0	1411	414.0	1825	413.0	2238
Finger 39:	1035	337.0	1372	427.0	1799	427.0	2226
Finger 40:	976	343.0	1319	447.0	1766	452.0	2218

## Segmented Cement Bond Log Calibration Report

Serial Number: 10012639in7  
Tool Model: 004

Calibration Casing Diameter: 7.000 in  
Calibration Depth: 16.765 ft

Master Calibration, performed Sat Apr 05 07:03:22 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.000	0.683	0.800	62.165	89.804	0.803
5FT	-0.005	0.734	0.800	62.165	83.129	1.185
S1	-0.001	0.689	0.000	100.000	145.017	0.138
S2	-0.001	0.649	0.000	100.000	153.815	0.188
S3	-0.001	0.637	0.000	100.000	156.677	0.164
S4	-0.002	0.651	0.000	100.000	152.999	0.357
S5	0.000	0.679	0.000	100.000	147.267	0.000
S6	-0.000	0.709	0.000	100.000	140.974	0.007
S7	-0.001	0.728	0.000	100.000	137.259	0.104
S8	-0.001	0.723	0.000	100.000	138.129	0.140

## Gamma Ray Calibration Report

Serial Number: 211727  
Tool Model: 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 Whiting Oil & Gas Corporation  
Well Razor 11E-0202B  
Field Wildcat  
County Weld  
State Colorado