



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Whiting Oil and Gas Corporation				Company Whiting Oil and Gas Corporation			
Well Razor 11F - 0205A				Well Razor 11F - 0205A			
Field Wildcat				Field Wildcat			
County Weld				County Weld			
State Colorado				State Colorado			
Location:				API # : 05-123-38701			
SEC 11 TWP 10N RGE 58W				Other Services Gauge Ring Set RBP RBL			
Permanent Datum		Ground Level		Elevation		Elevation	
Log Measured From		Kelly Bushing		21 FT		K.B. 5014' D.F. --- G.L. 4993'	
Drilling Measured From		Kelly Bushing					
Date				11-Mar-2015			
Run Number				Three			
Depth Driller				13657 FT			
Depth Logger				5501 FT			
Bottom Logged Interval				5496 FT			
Top Log Interval				Surface			
Open Hole Size				8.765"			
Type Fluid				Water			
Density / Viscosity				8.34 lbm/gal			
Max. Recorded Temp.				190°F			
Estimated Cement Top				38 FT			
Time Well Ready				ROA			
Time Logger on Bottom				09:31			
Equipment Number				HD-0324			
Location				Fort Lupton, CO			
Recorded By				J. Houlin			
Witnessed By				Gary Chandler			
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		P-110	
						5469 FT	
						13657 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

Log ran as per customer request.  
Depth referenced to Casing Tally reported liner top at 5469 FT.  
Adjusted log -17 FT from KB zero to correlate with liner top.  
Gauge Ring (3.75") ran to 5682 FT  
RBP Set @ 5540 FT  
Log ran from just below liner top to surface.  
Log ran with 1500 PSI surface induced pressure.

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

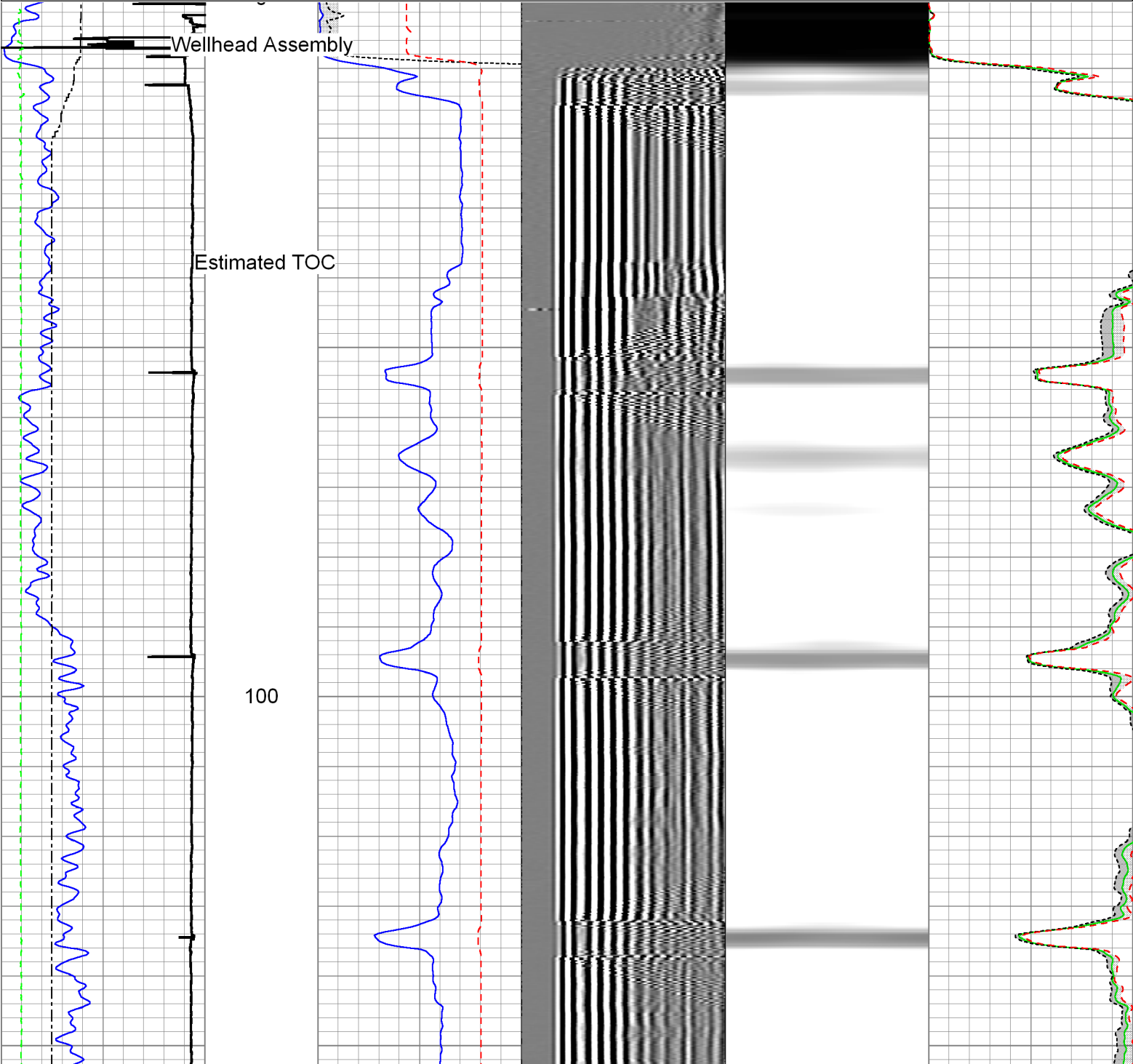


7" Main Pass

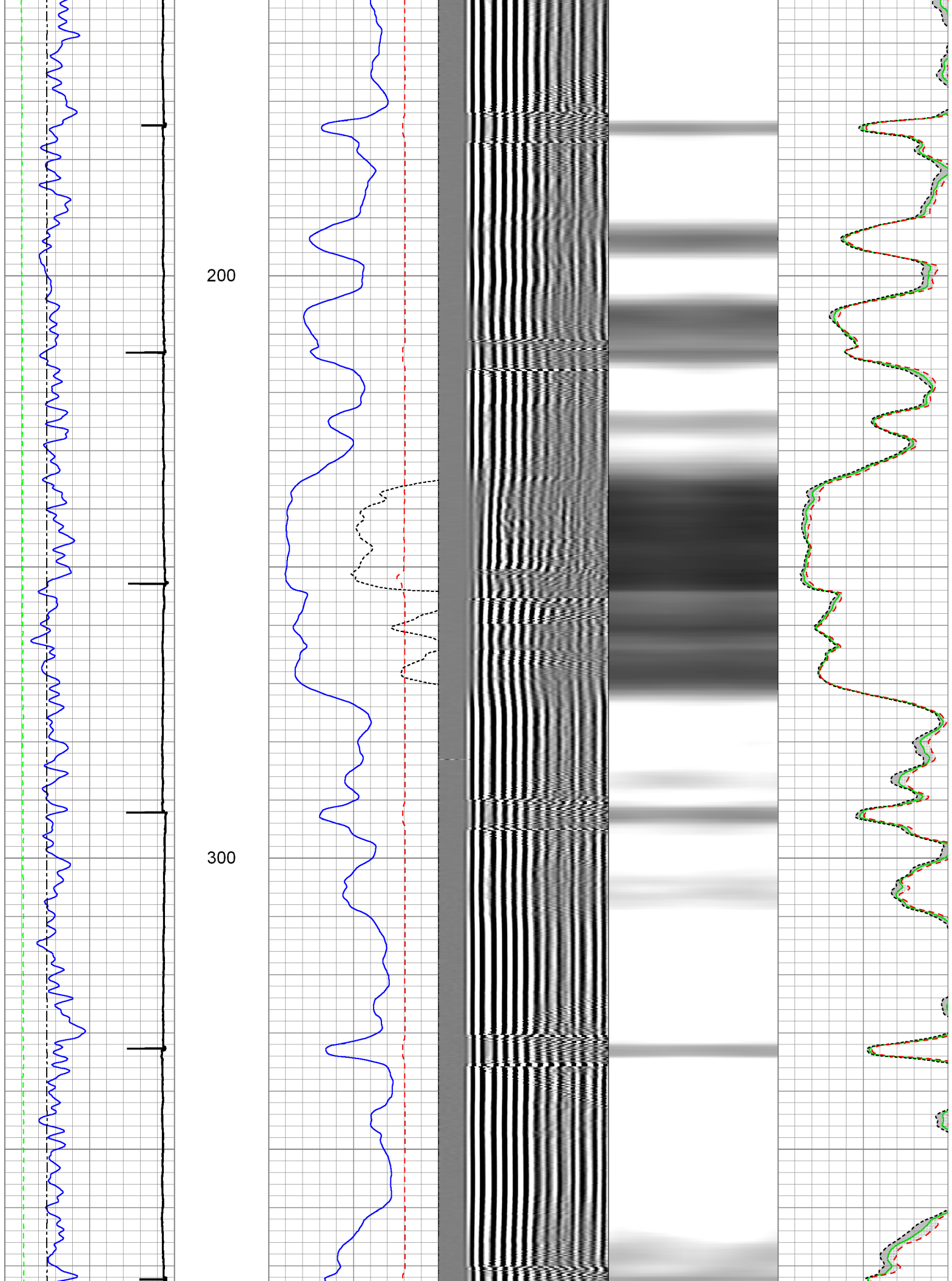
Logged with 1500 PSI Surface Induced Pressure

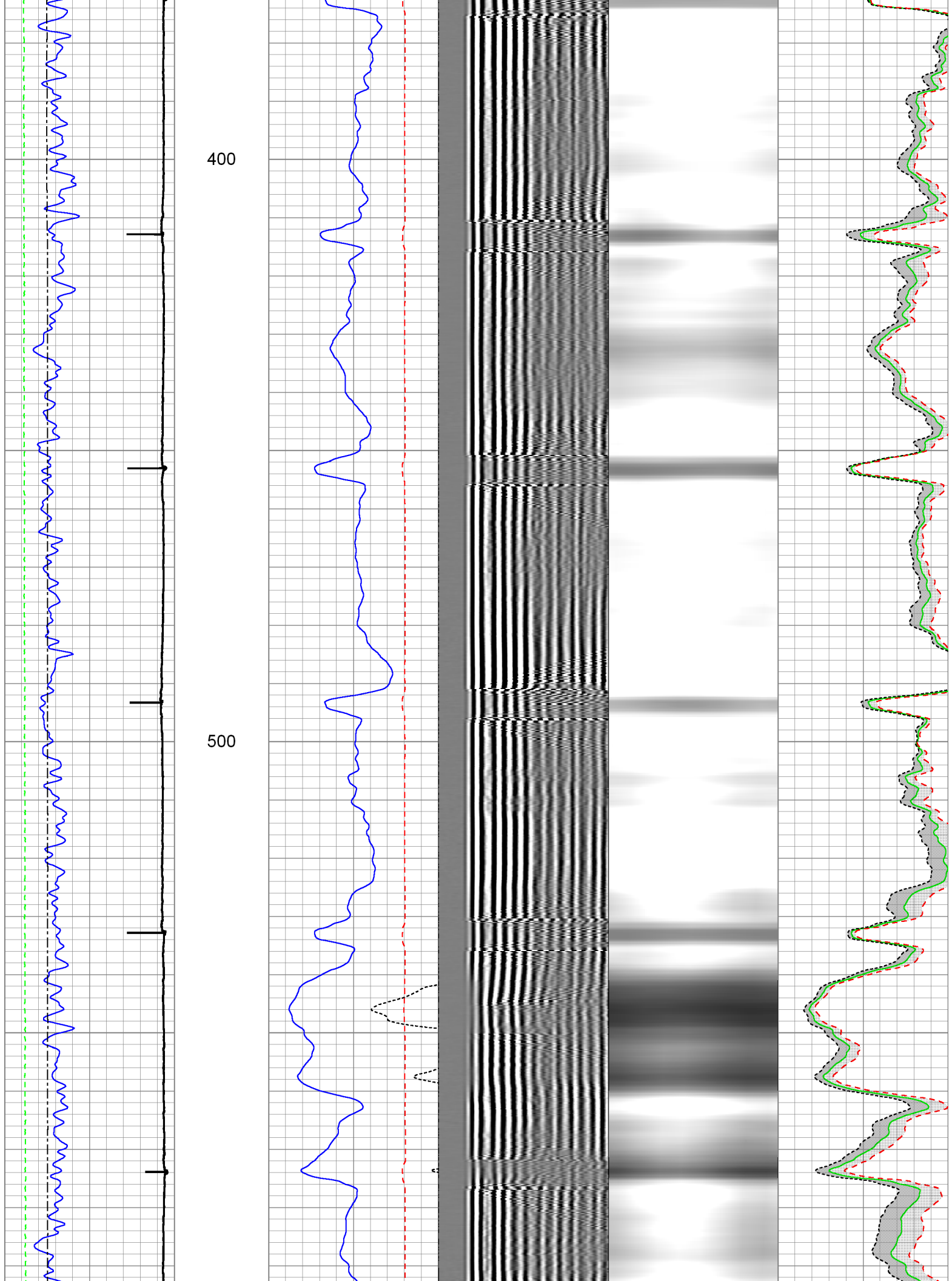
Database File: 03-11-15\_whiting\_razor 11f-0205a\_mit\_rbl.db  
Dataset Pathname: pass8  
Presentation Format: rbt4\_mit  
Dataset Creation: Wed Mar 11 11:13:14 2015 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

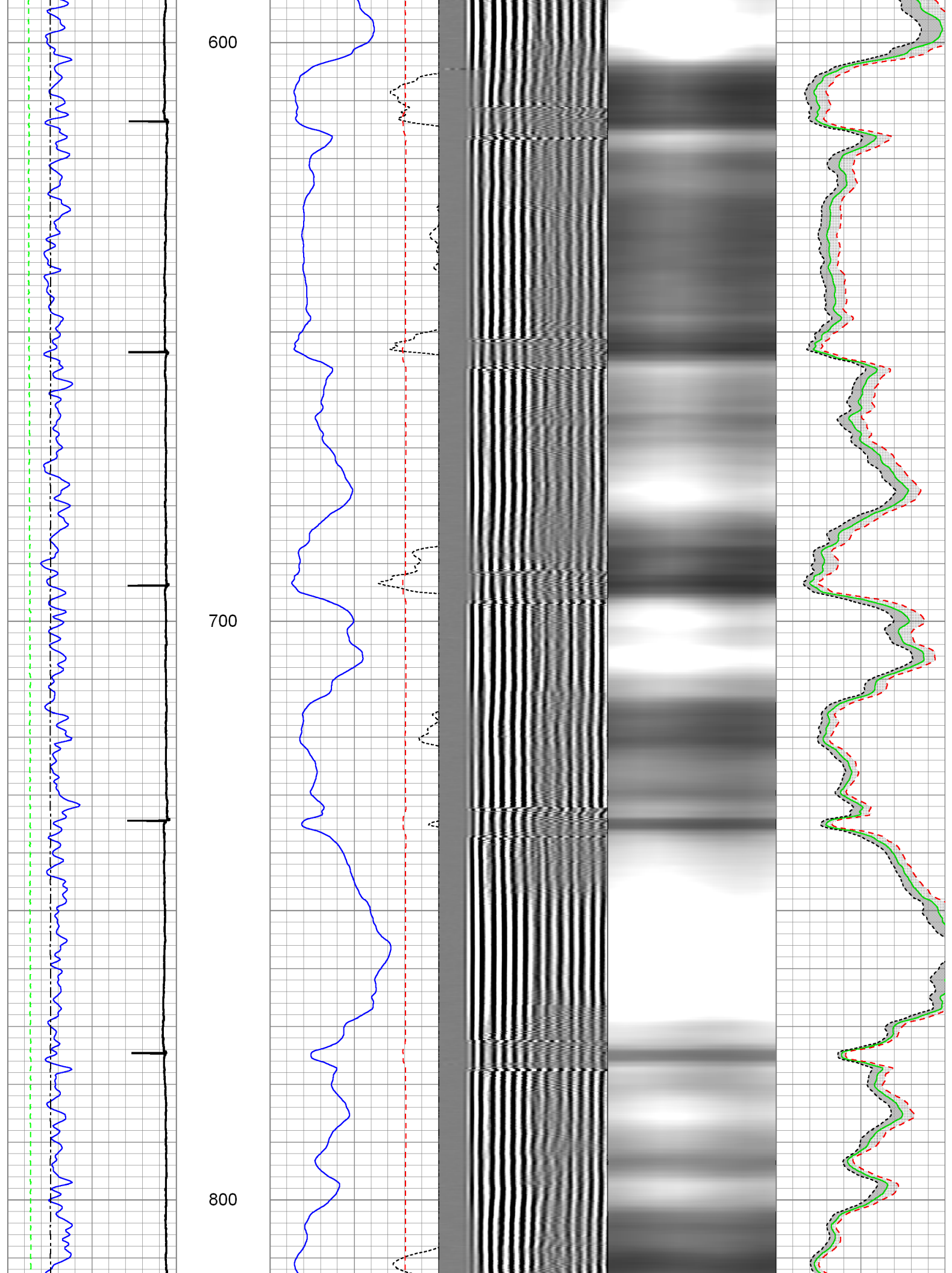
Gamma Ray		3' Amplitude		5' Variable Density Log		Sector Map		Average Amplitude	
0	(GAPI) 120	0	(mV) 100	200	1200			0	100
Casing Collar Locator		3' Amplitude x 5						Minimum Amplitude	
		0	(mV) 20					0	100
Line Speed		3' Travel Time						Maximum Amplitude	
-100	(ft/min) 100	650 (usec) 150						0	100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

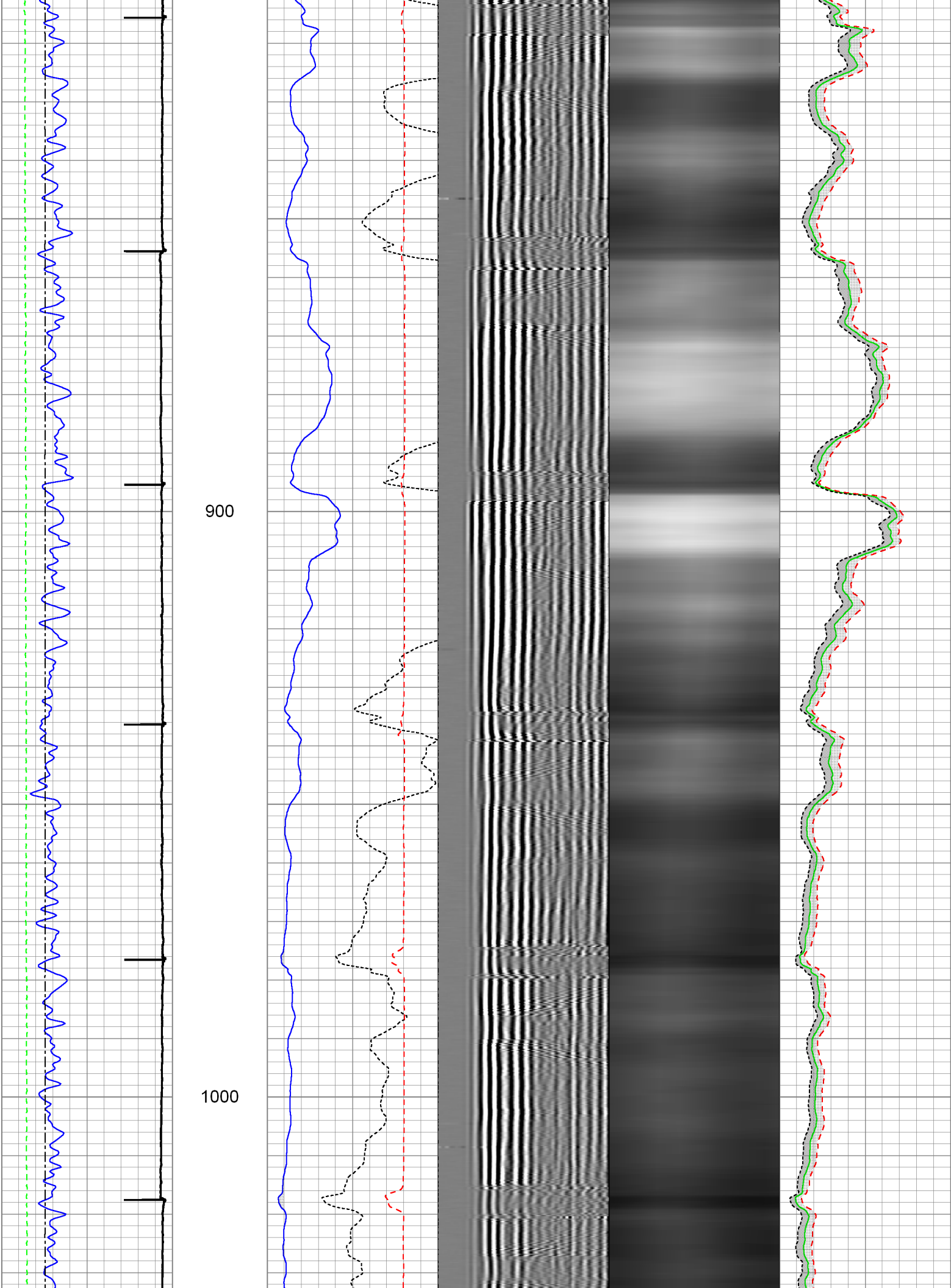




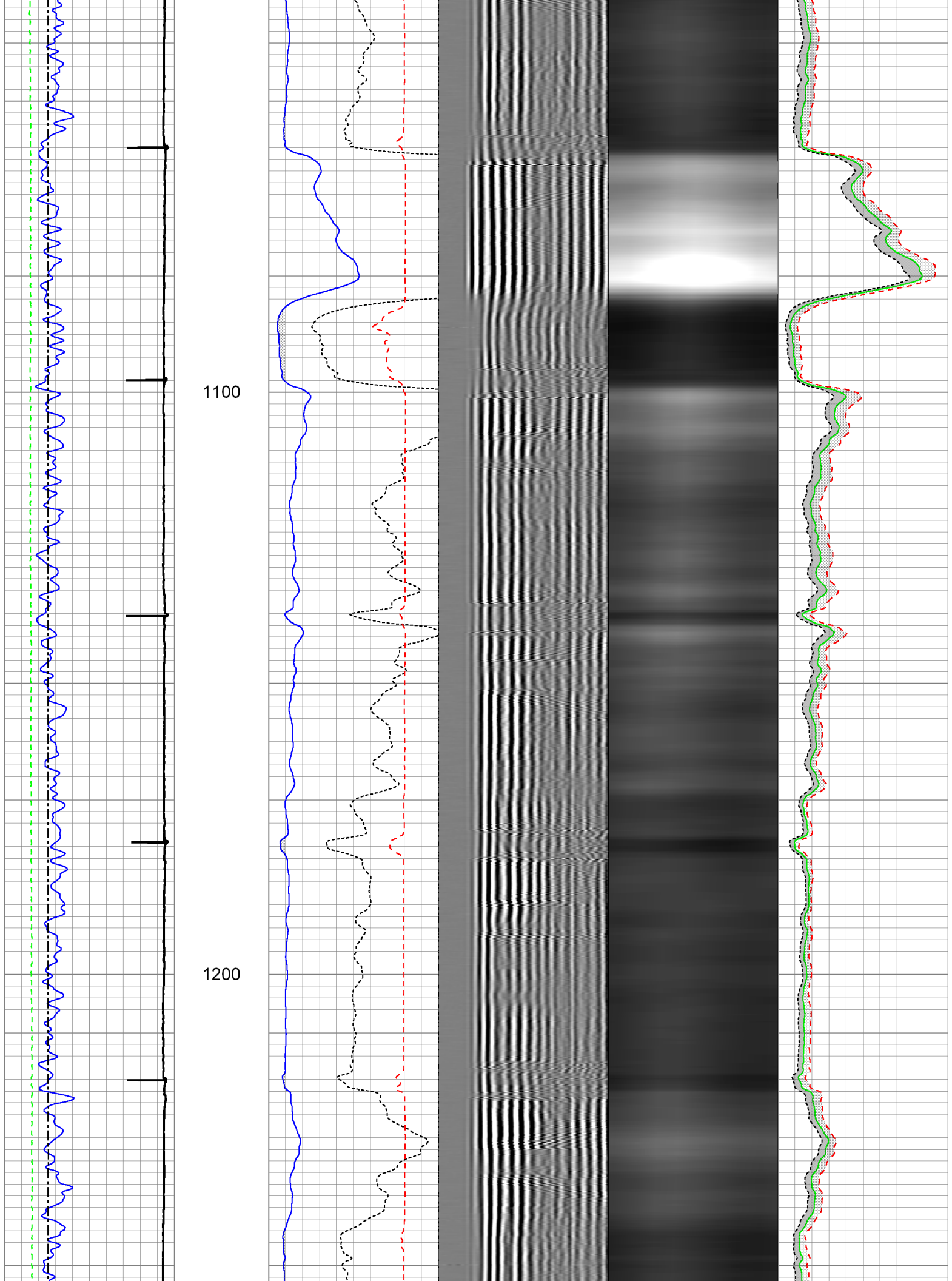




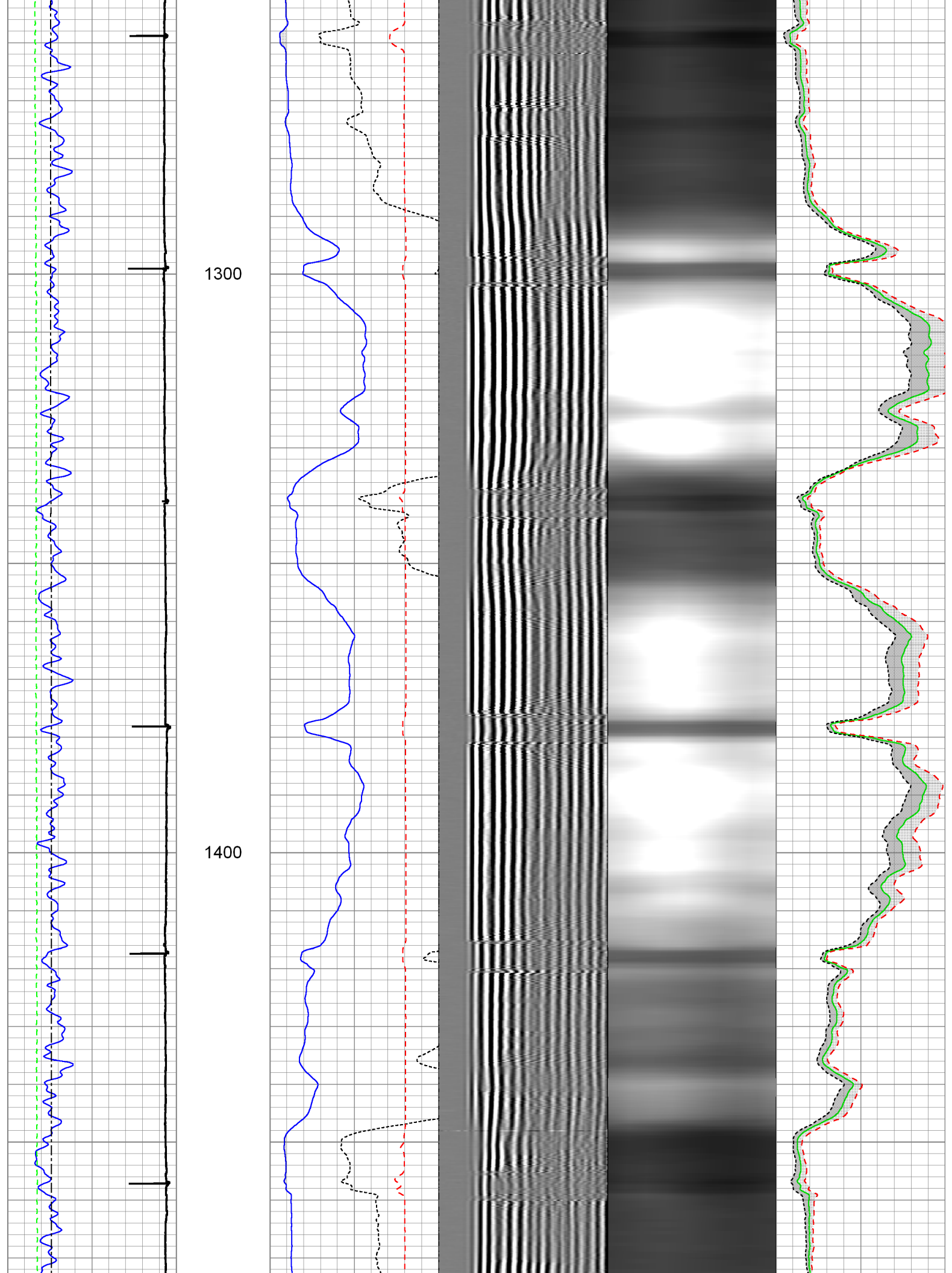


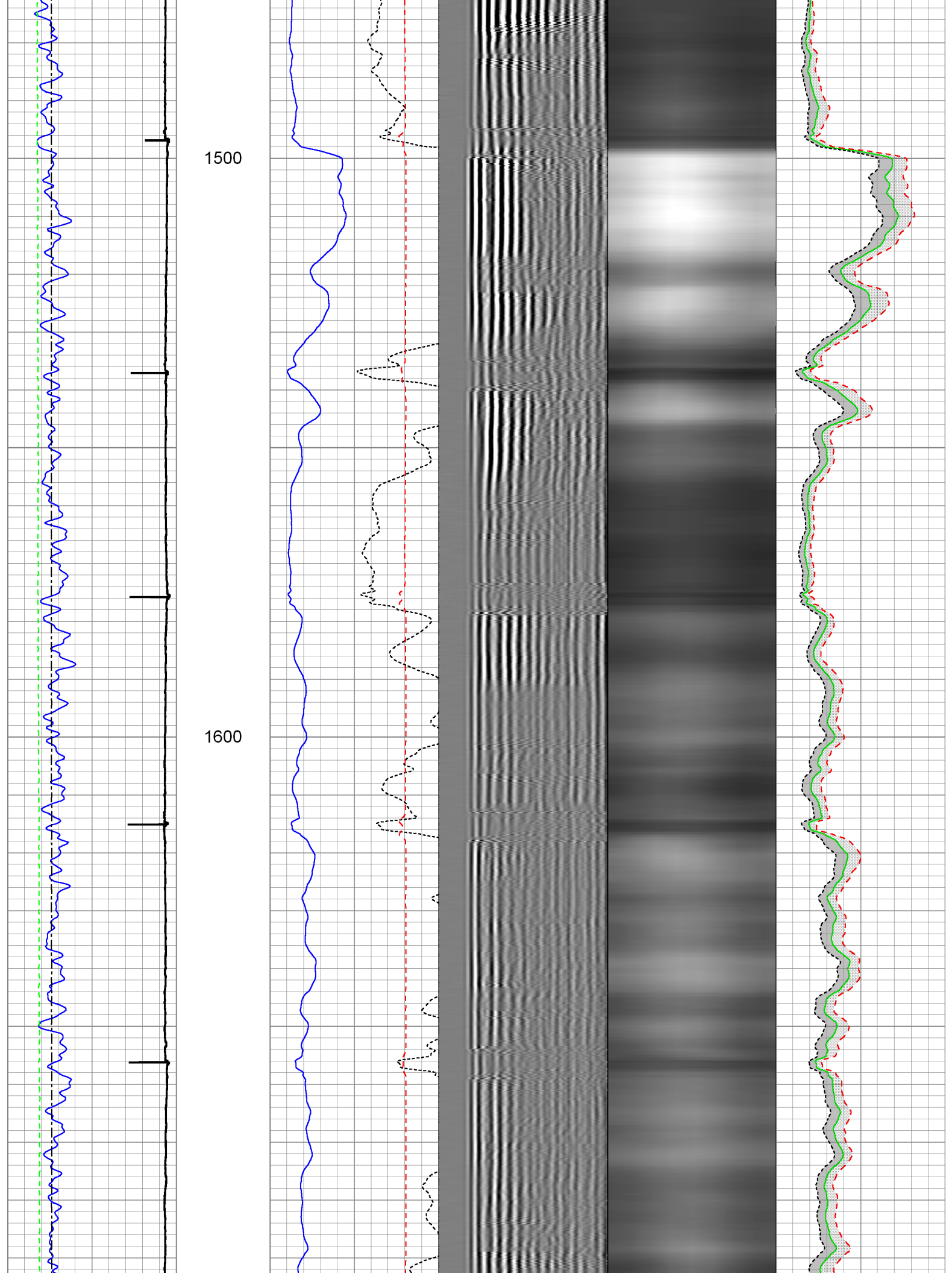


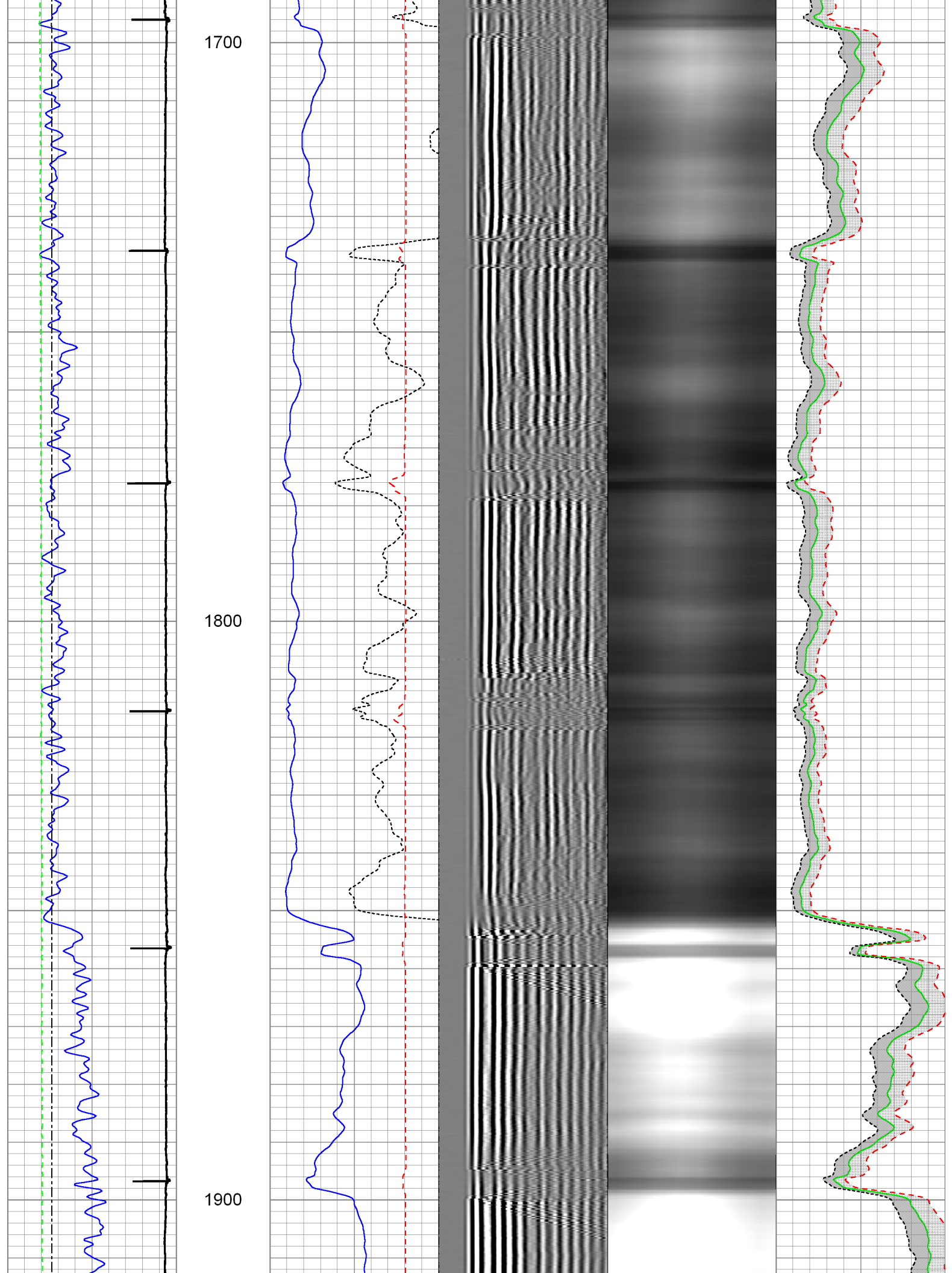






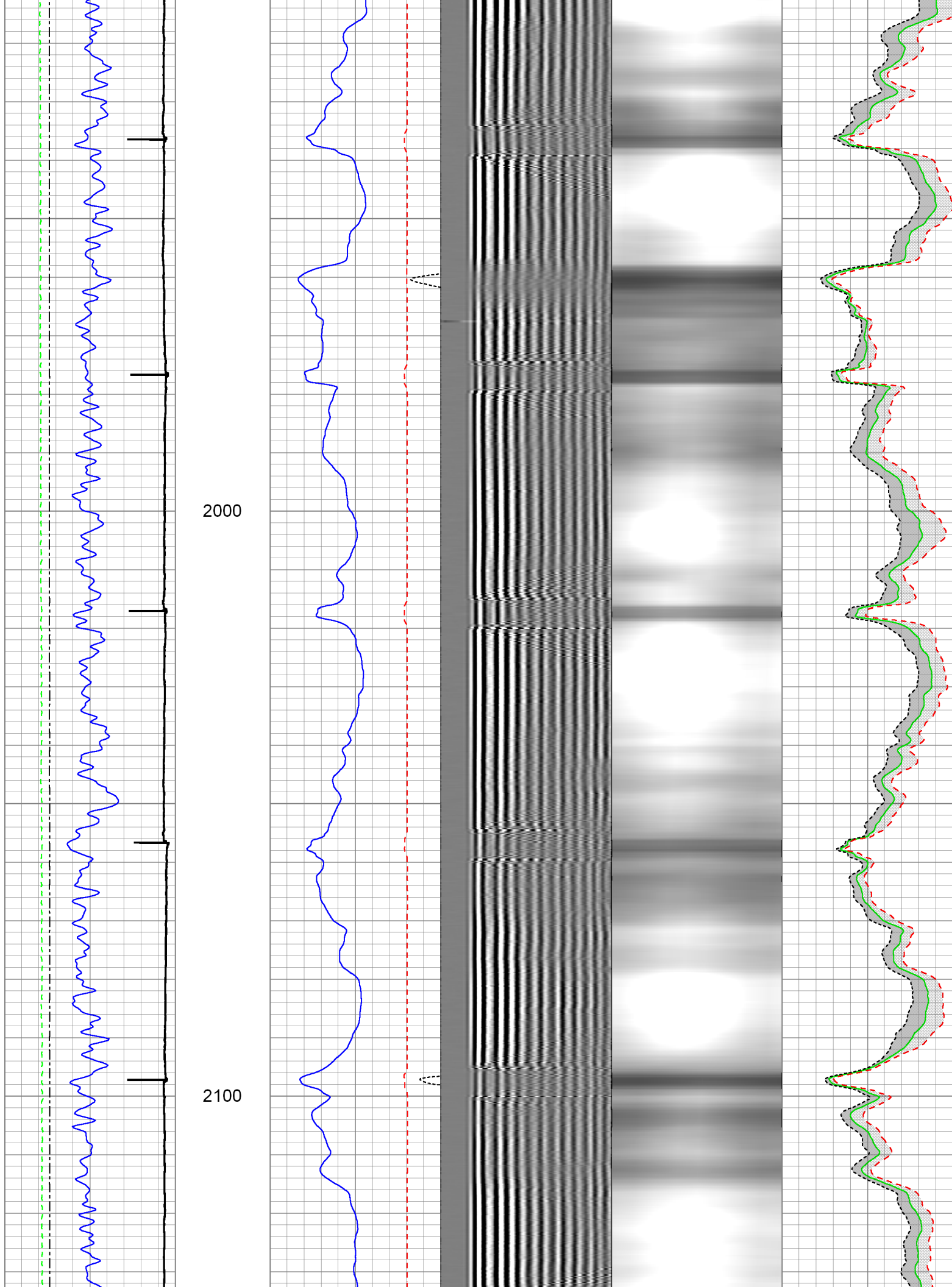






2000

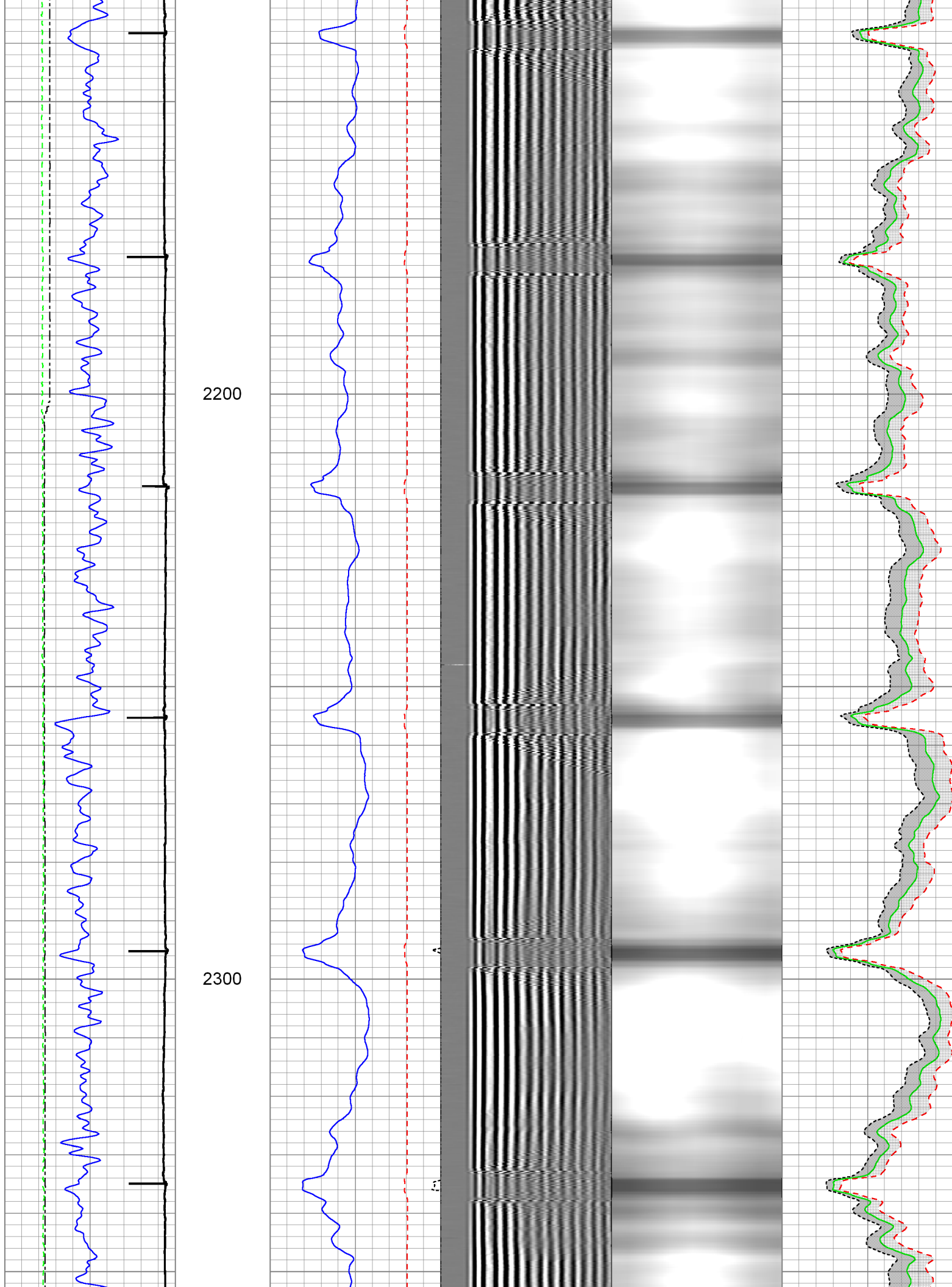
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2200

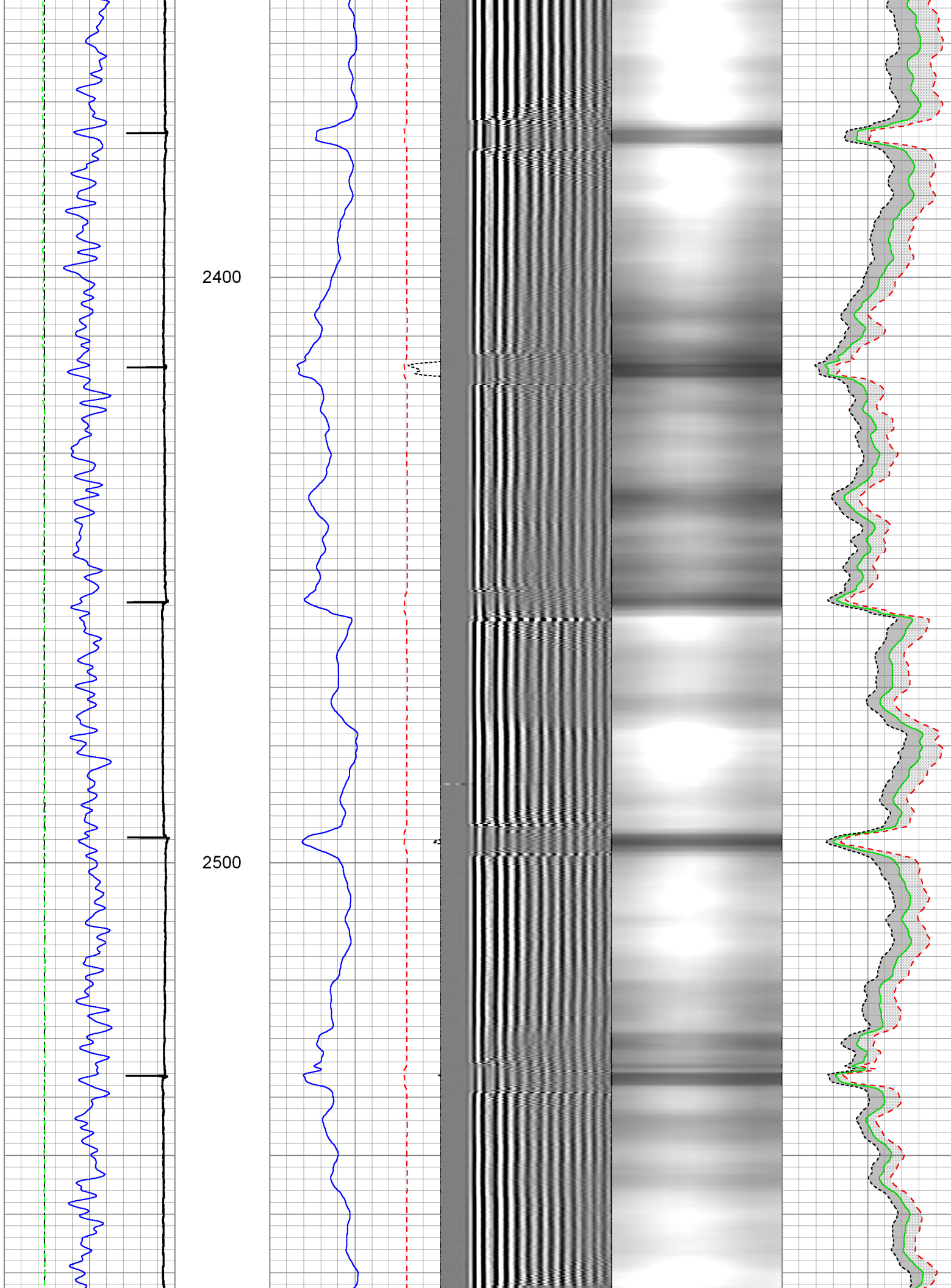
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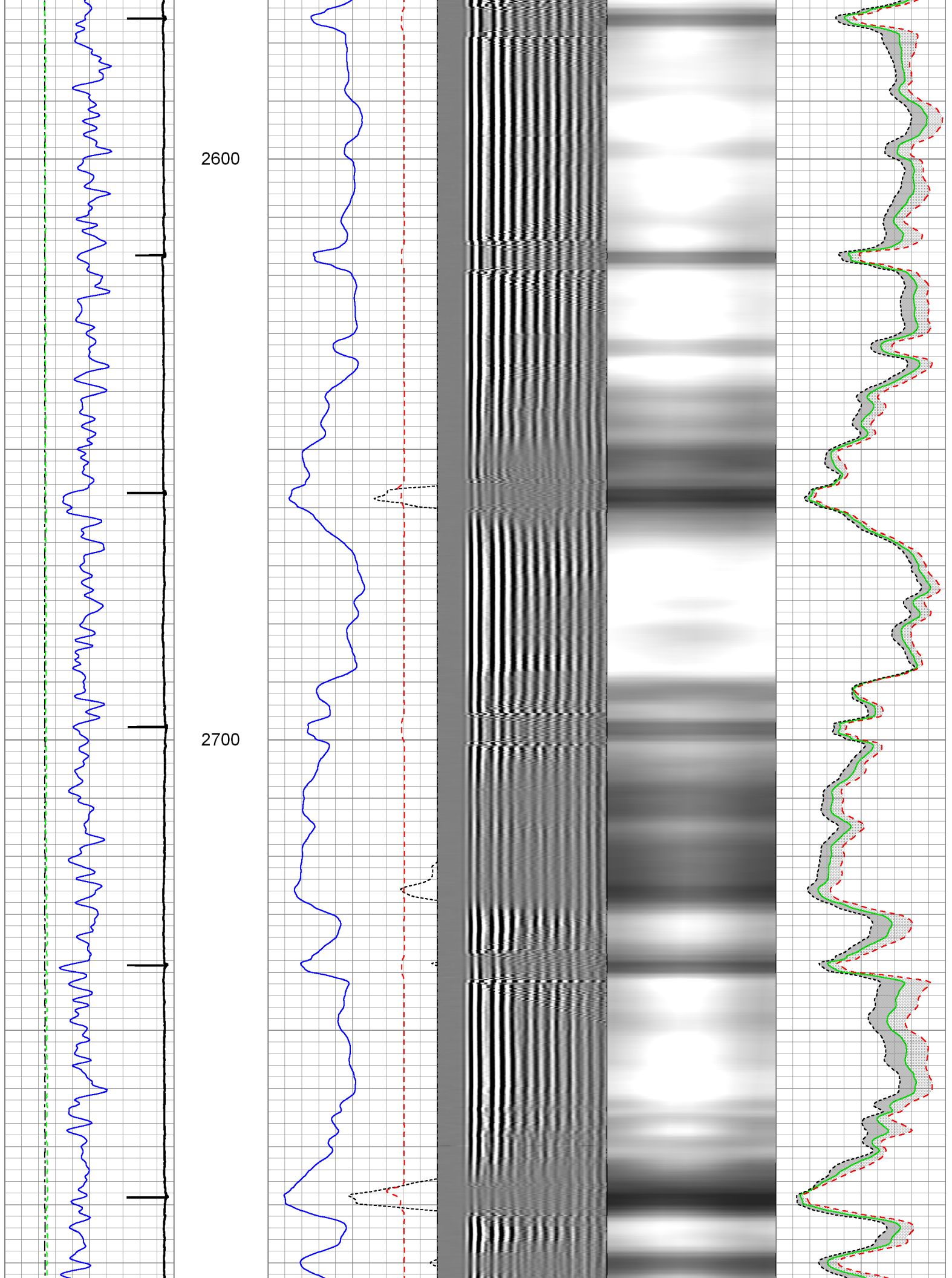




2400

2500

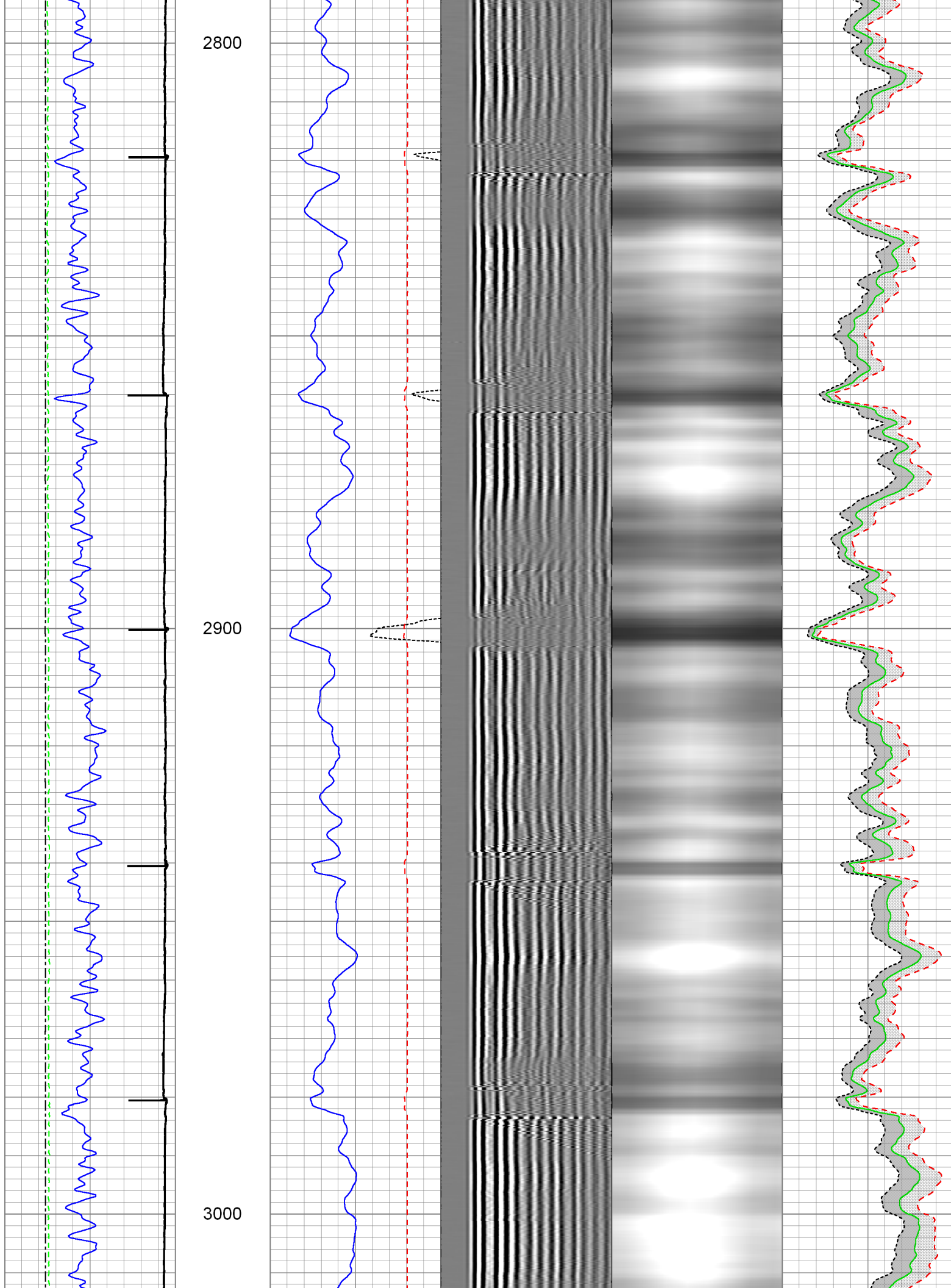




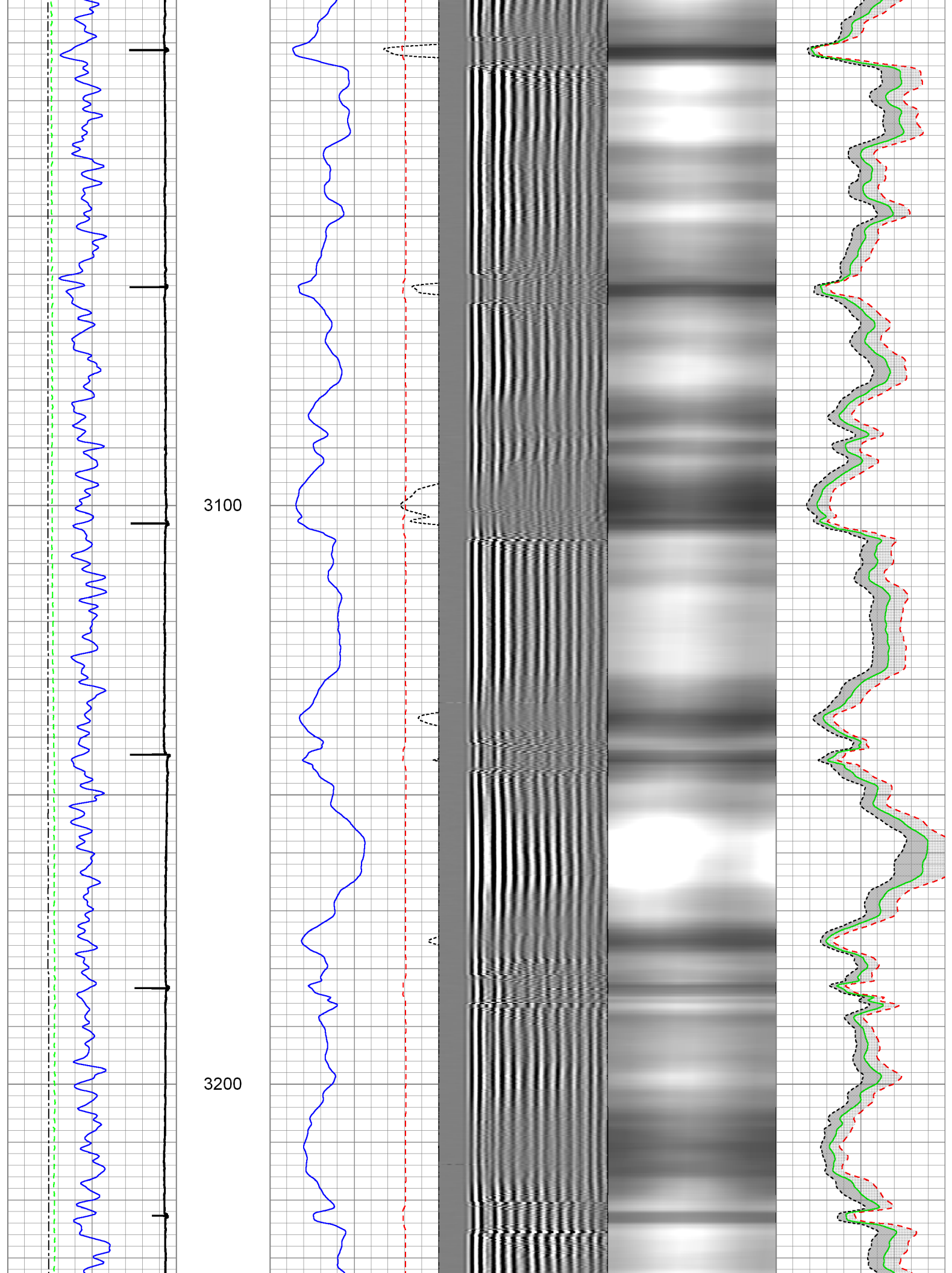
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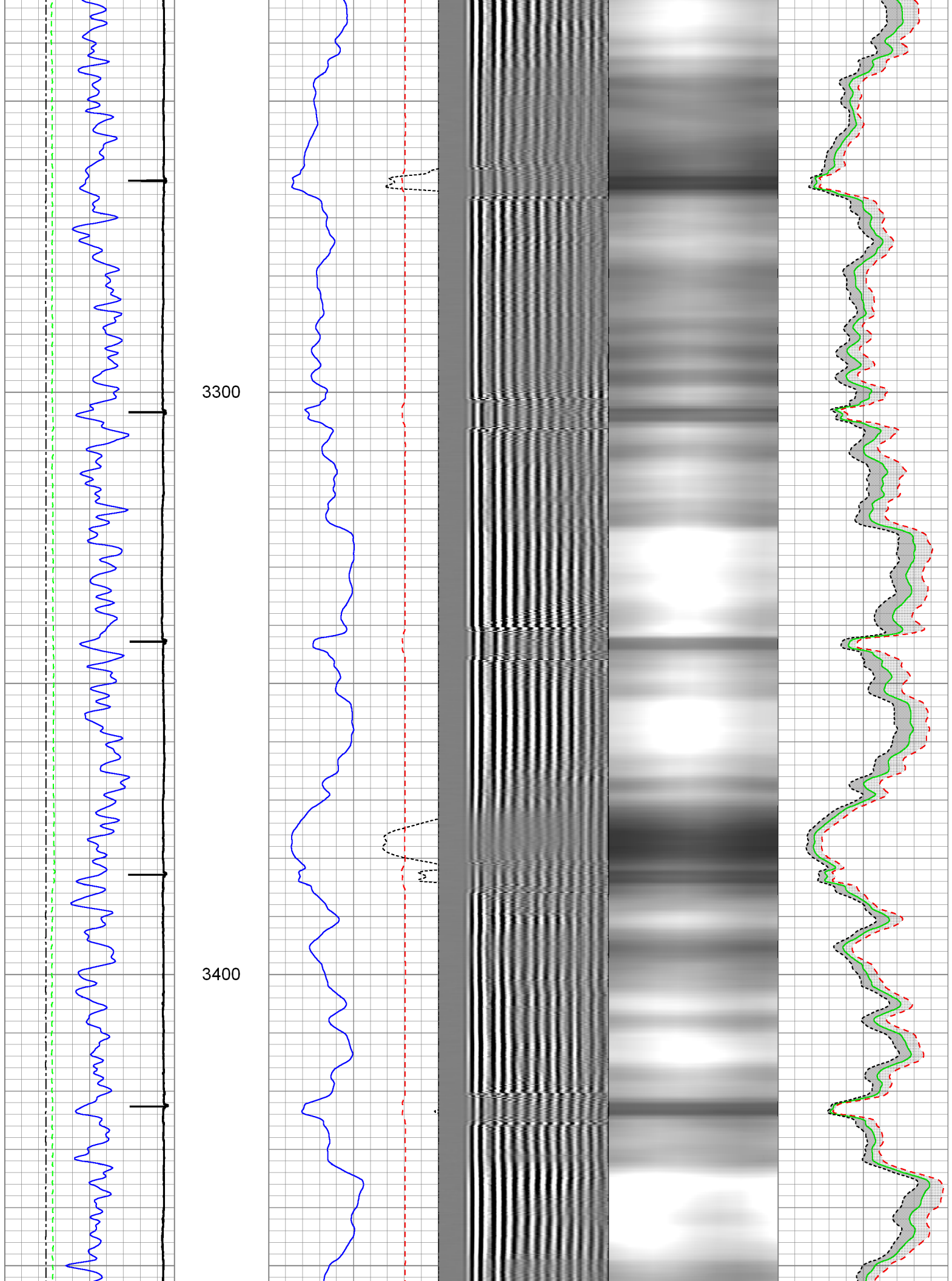
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3000

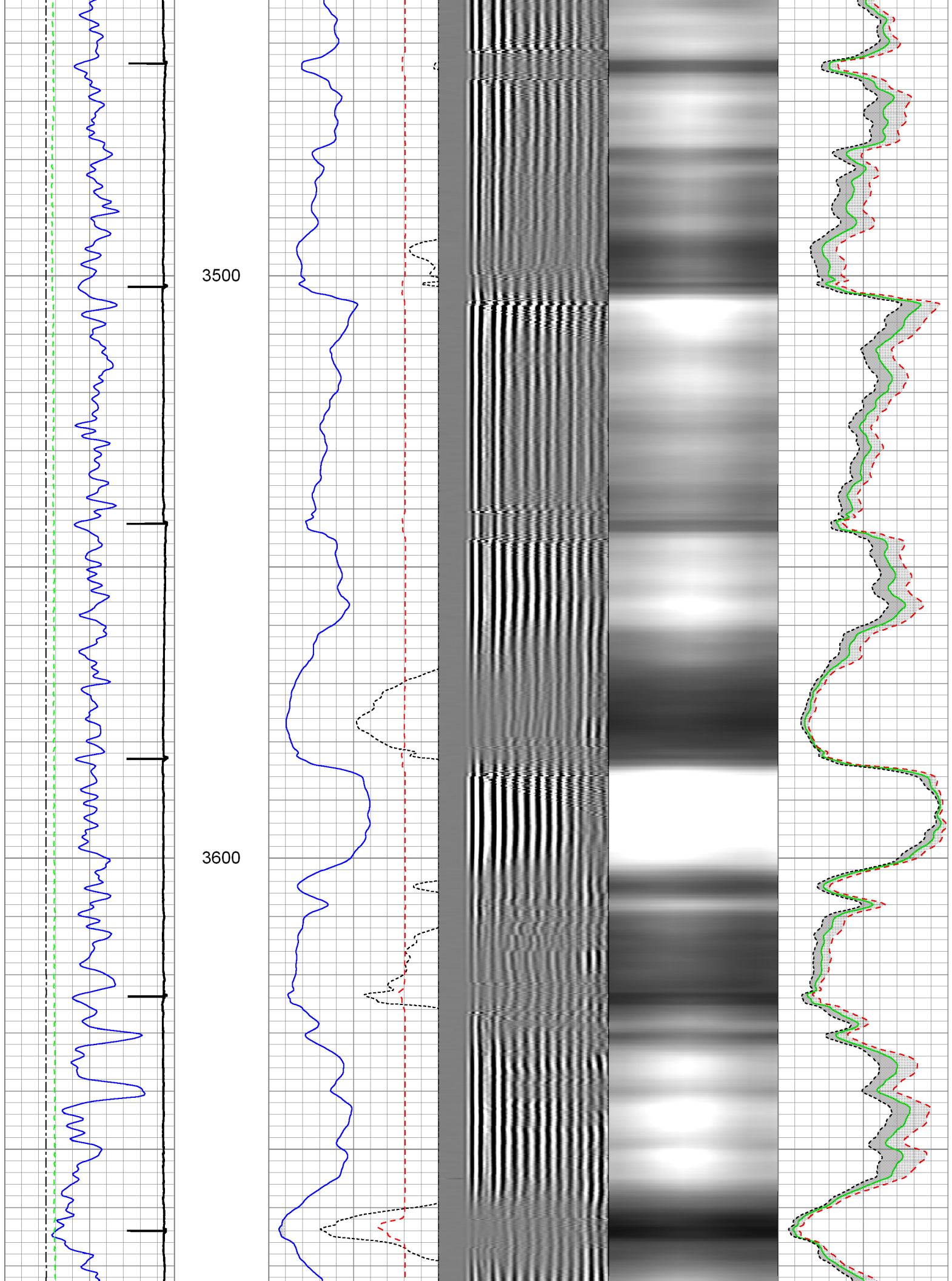


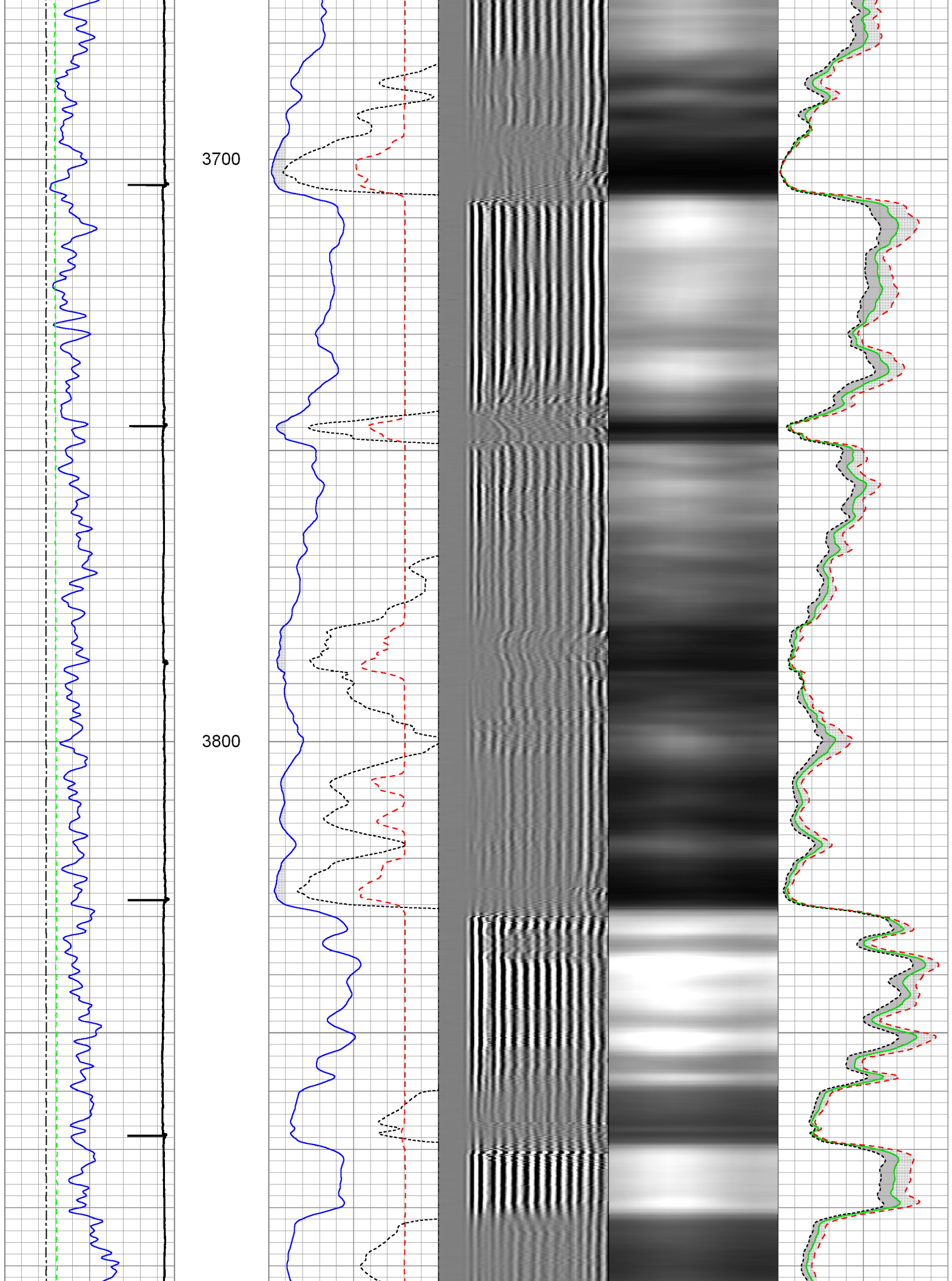








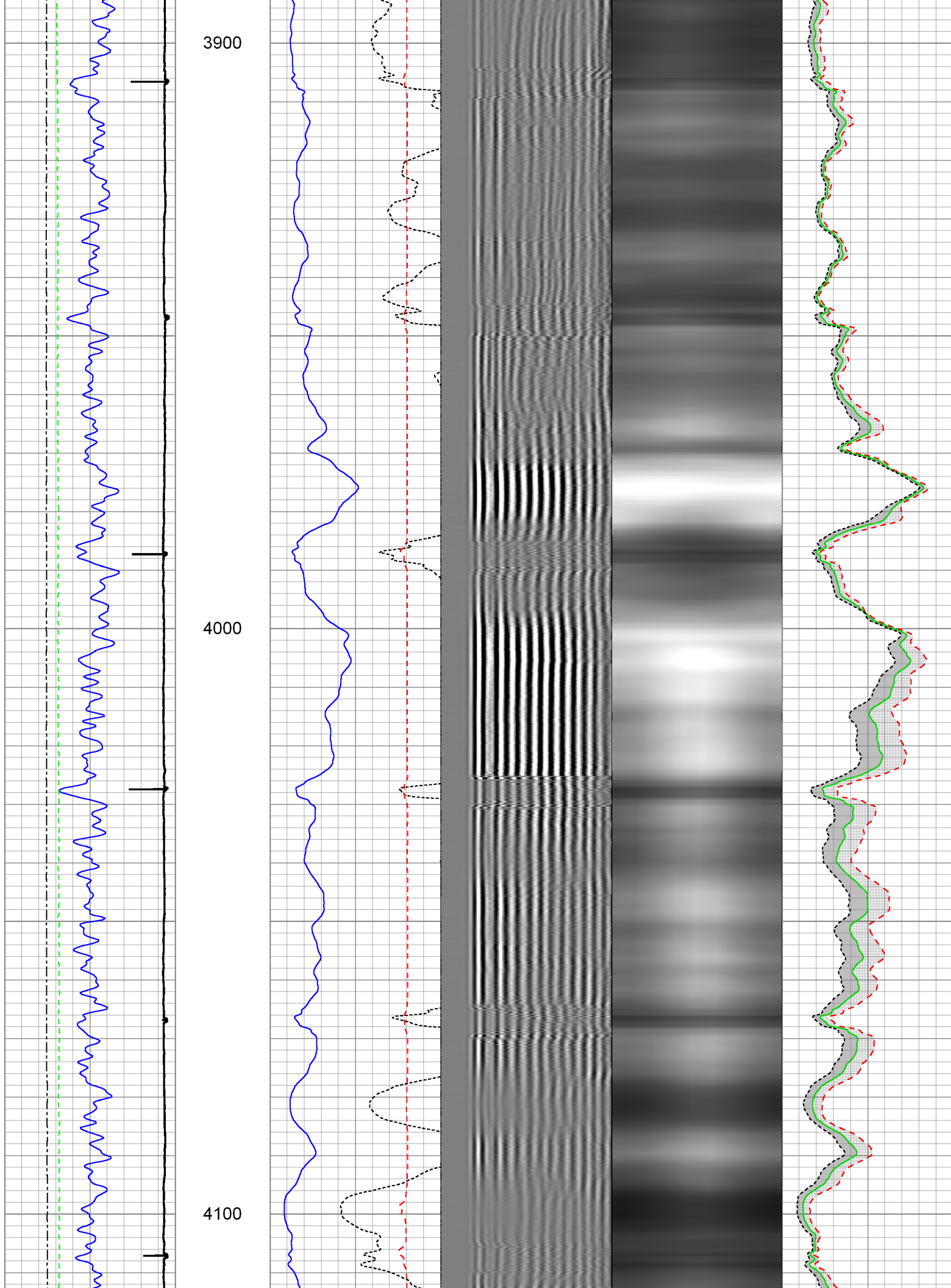


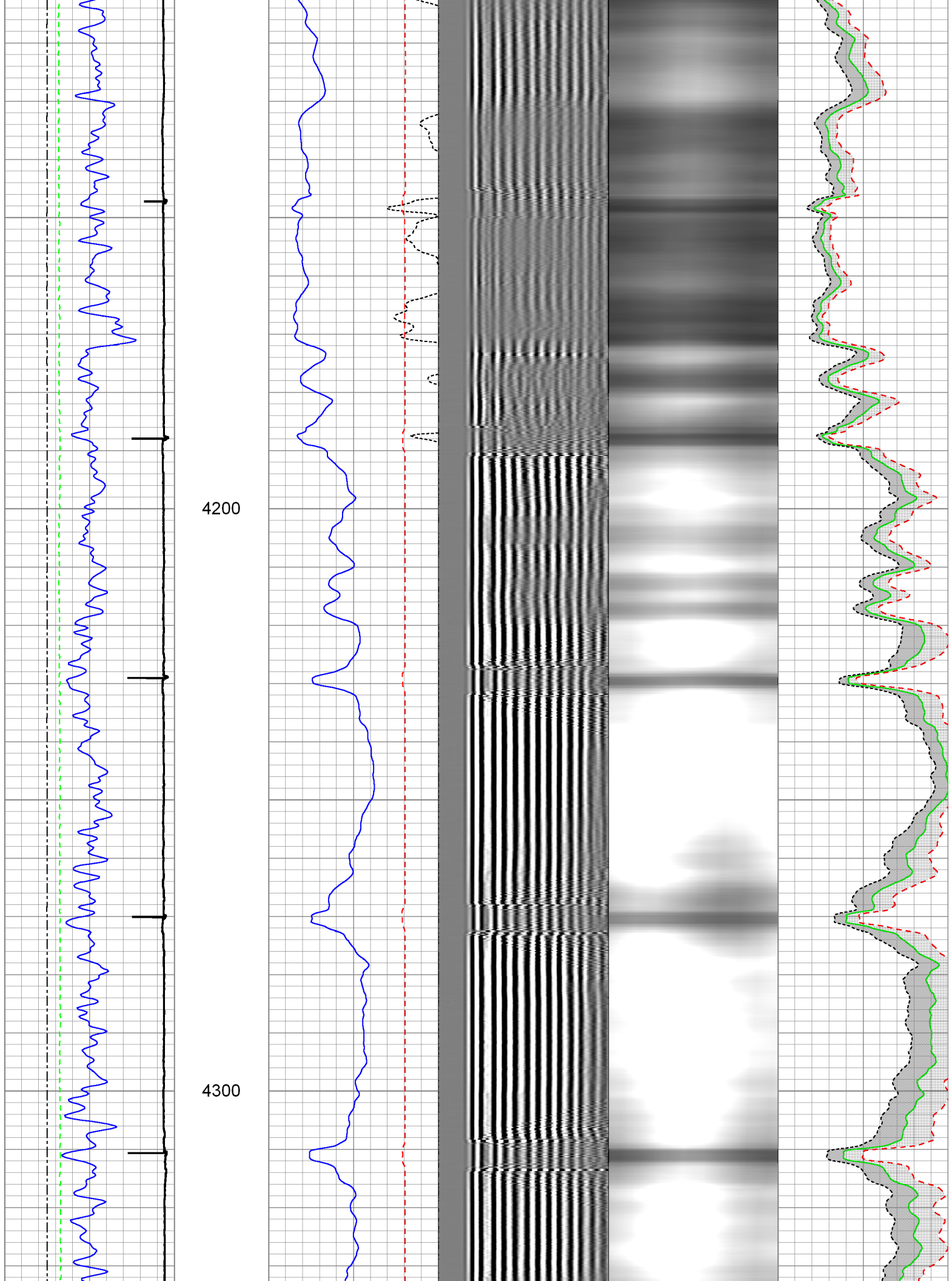


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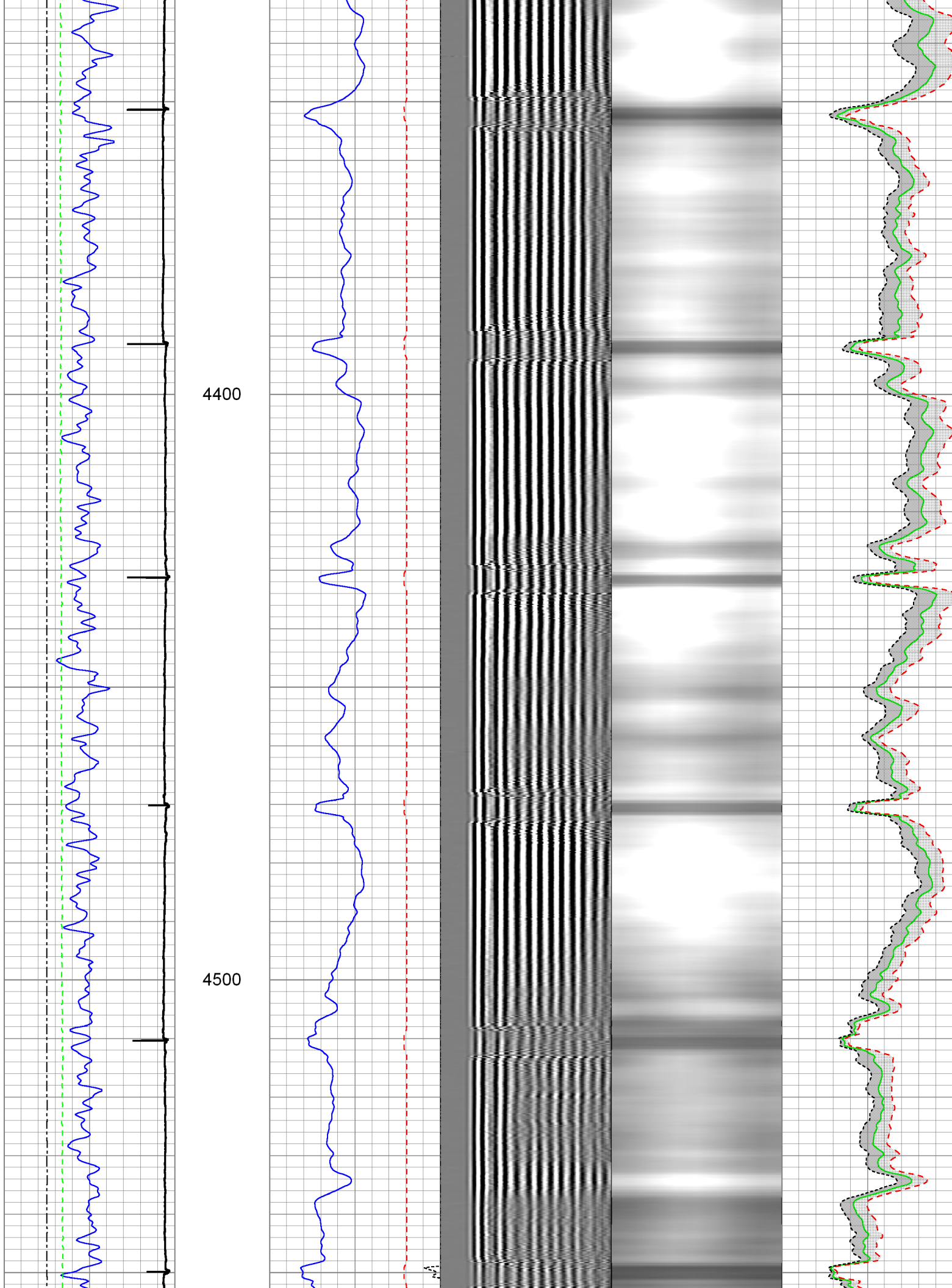
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4100





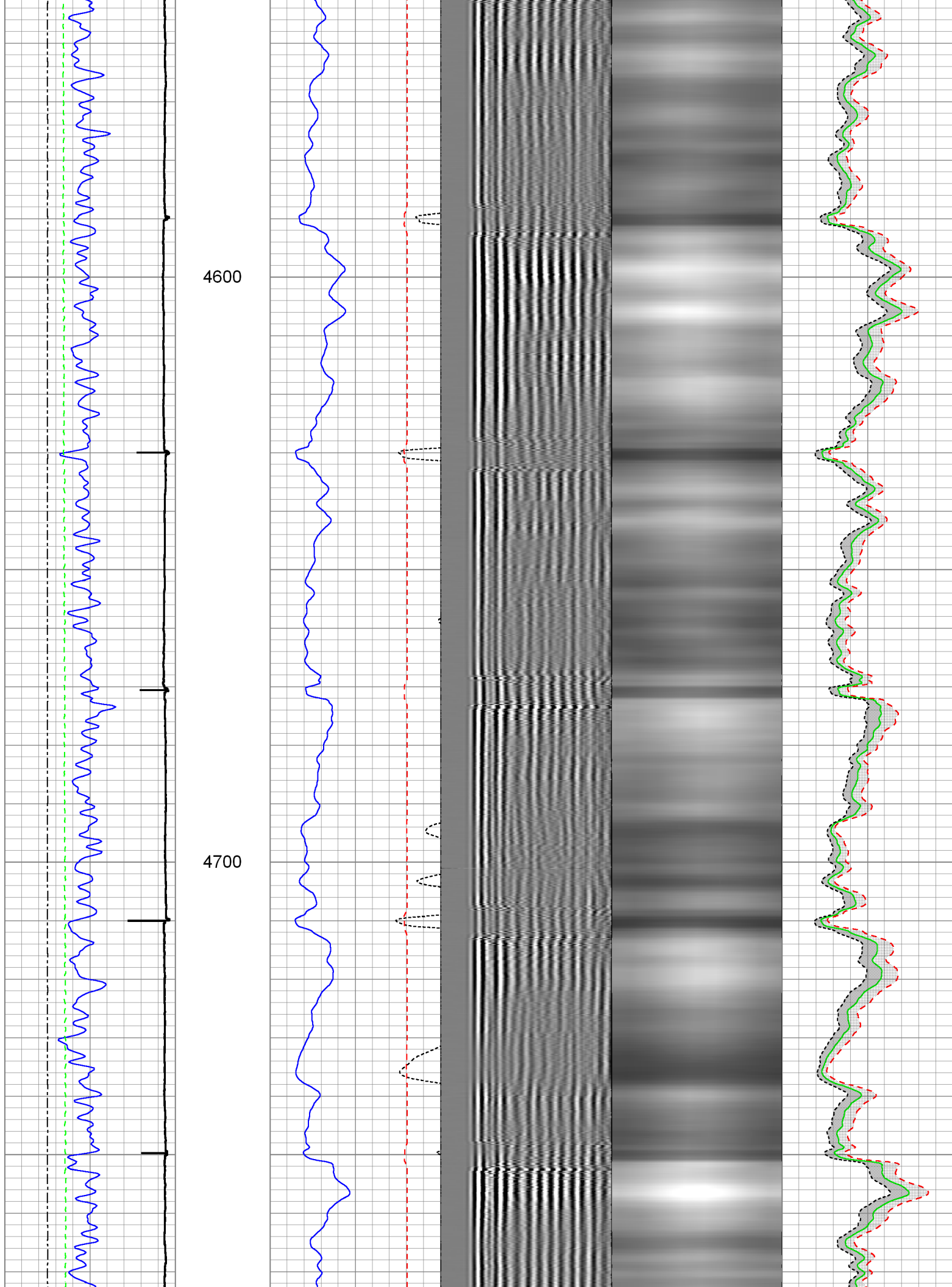






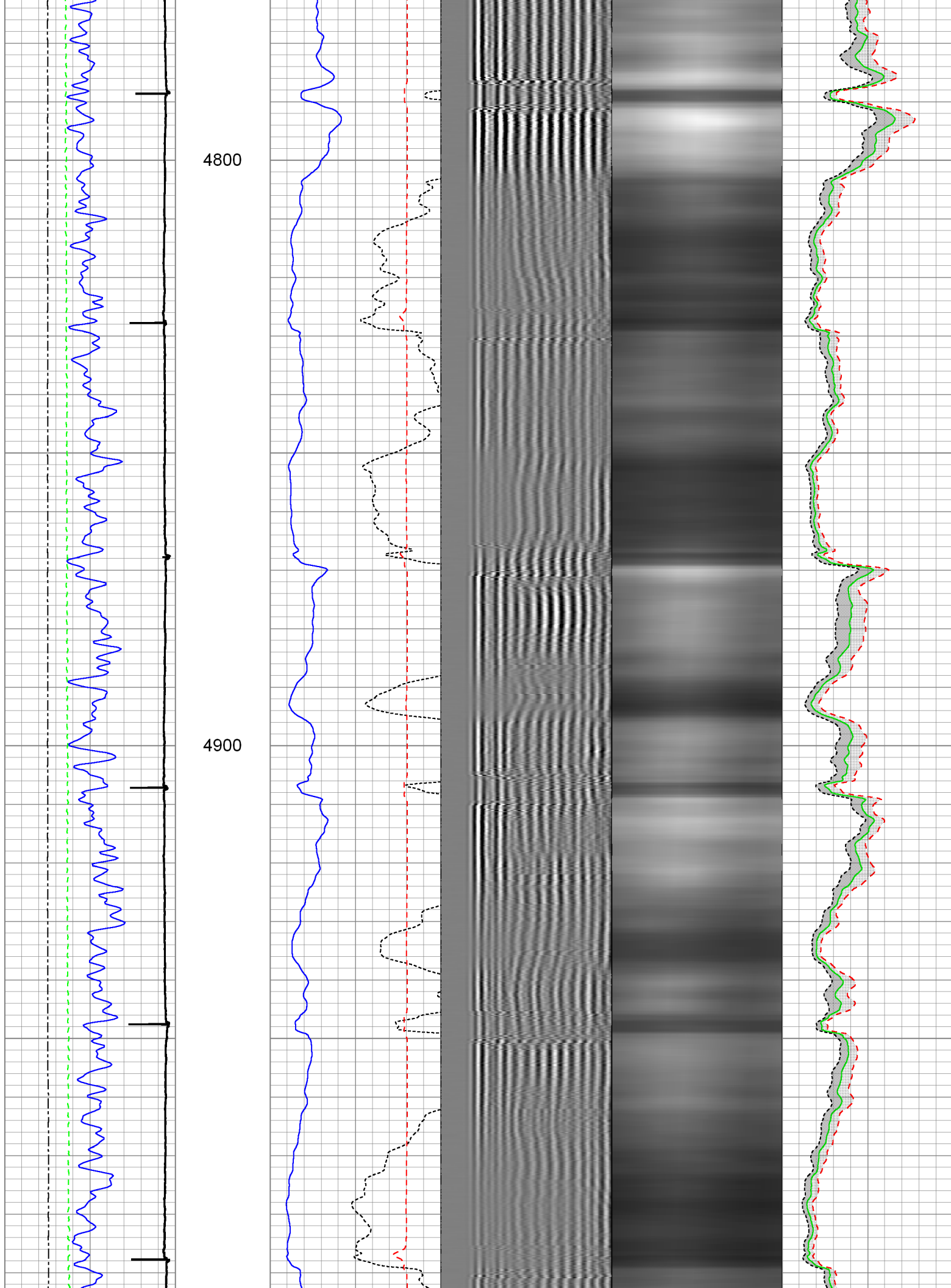
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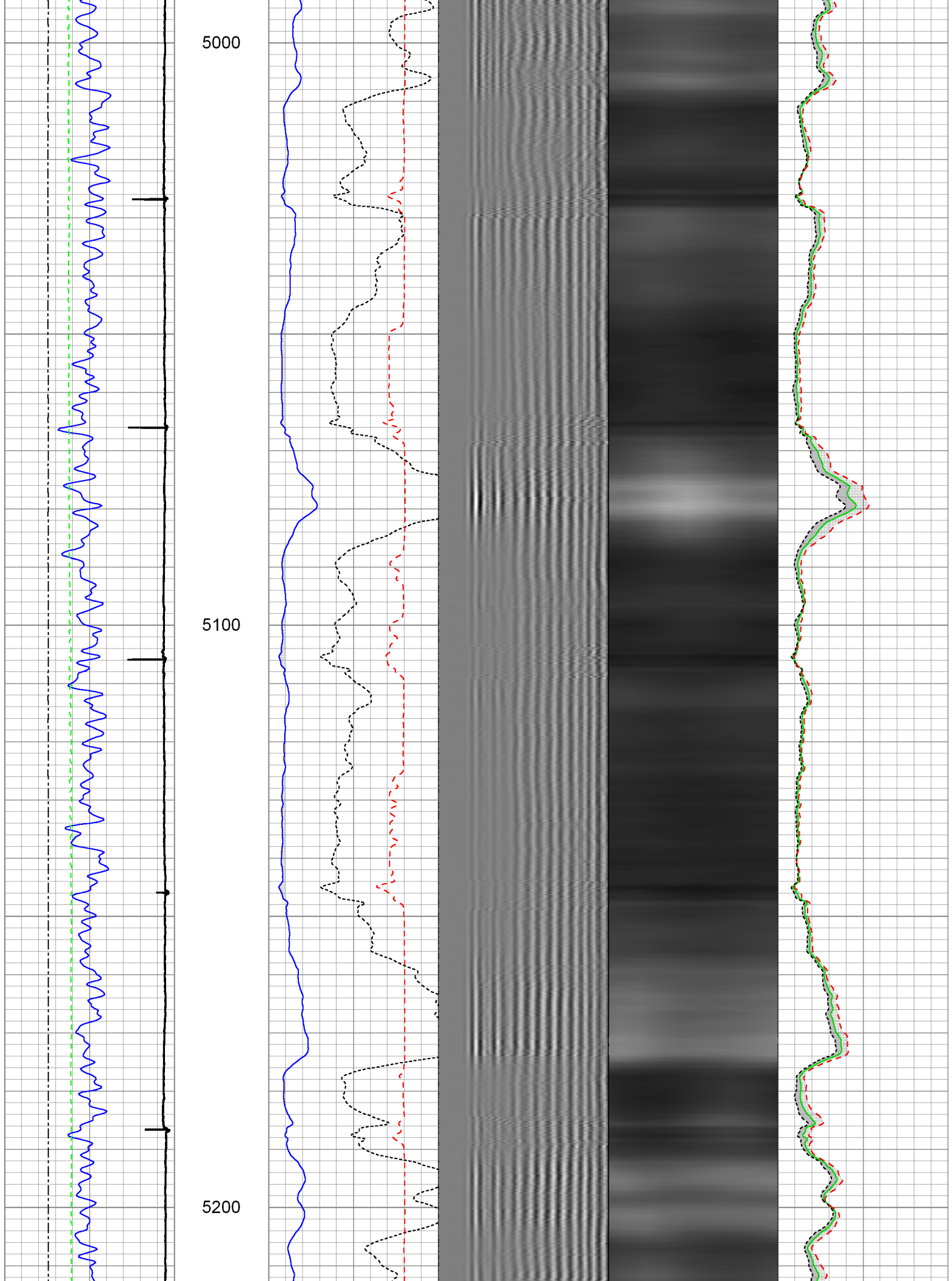
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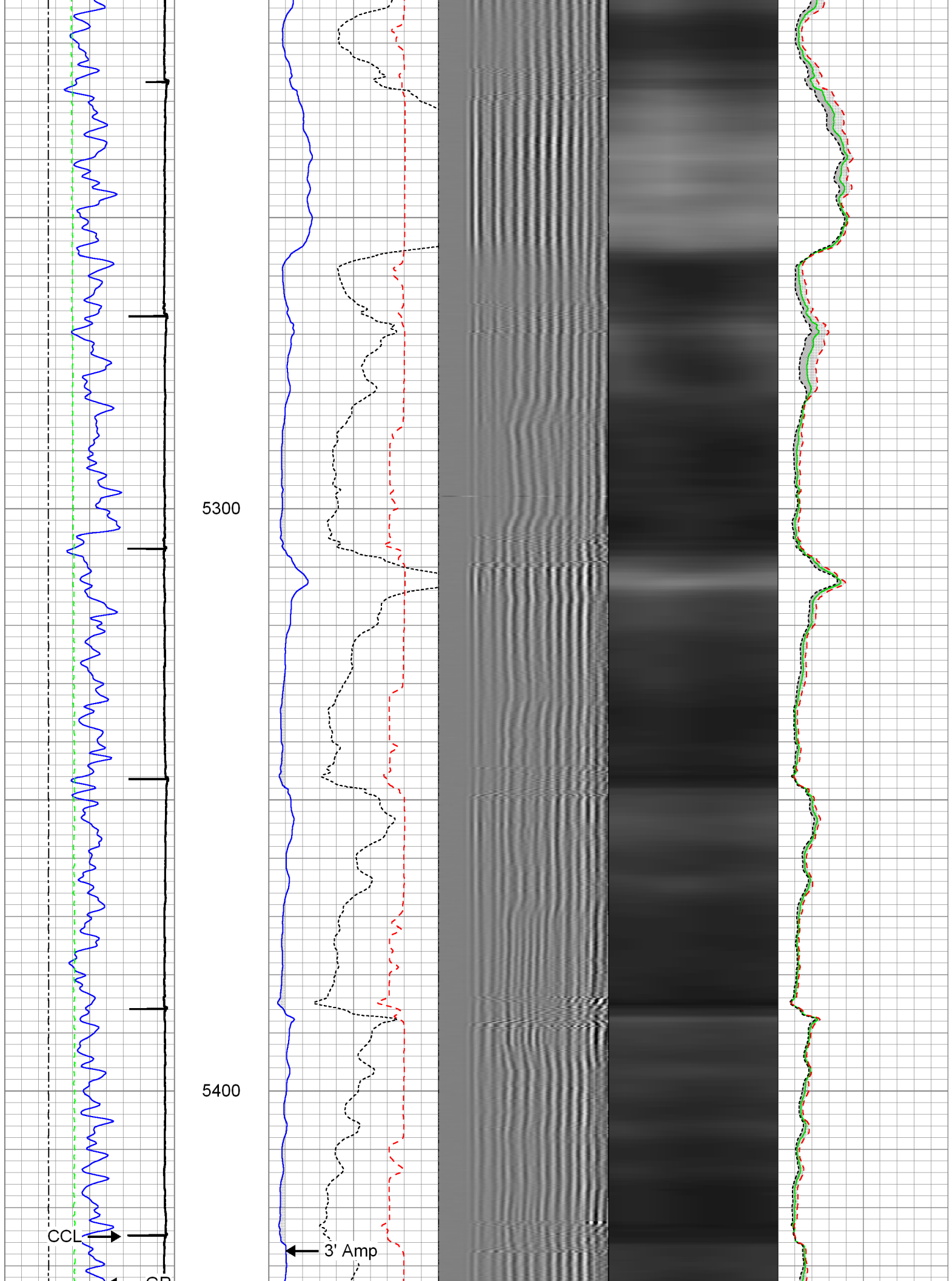


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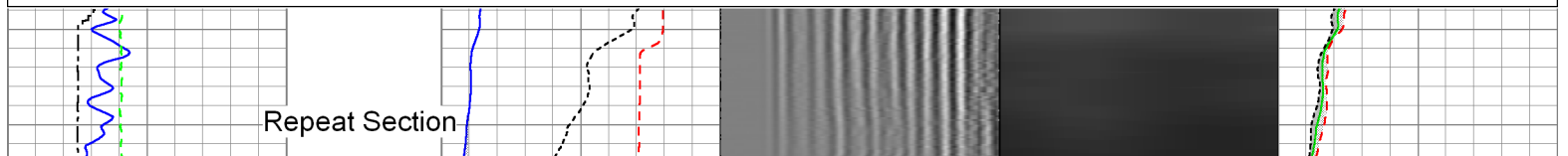
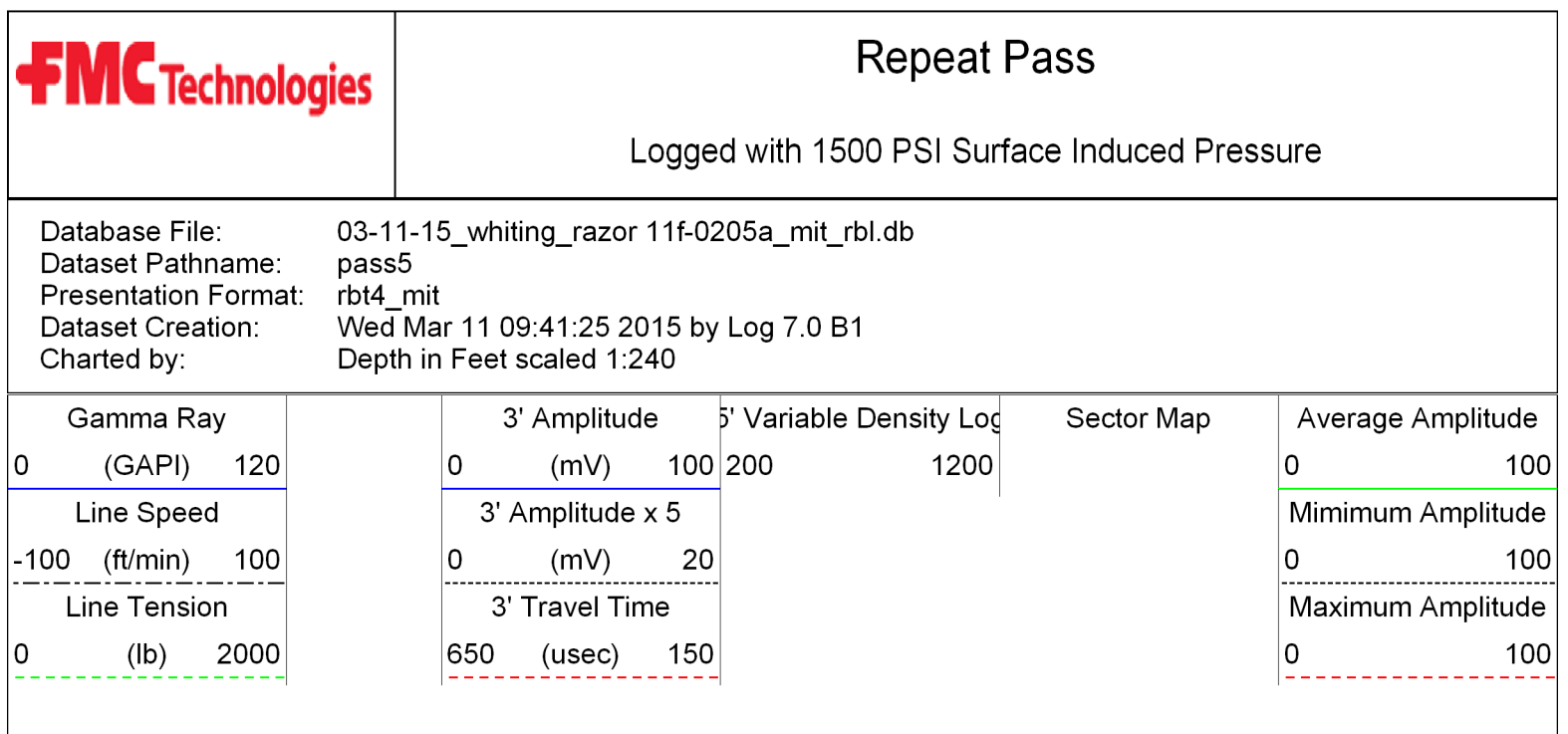
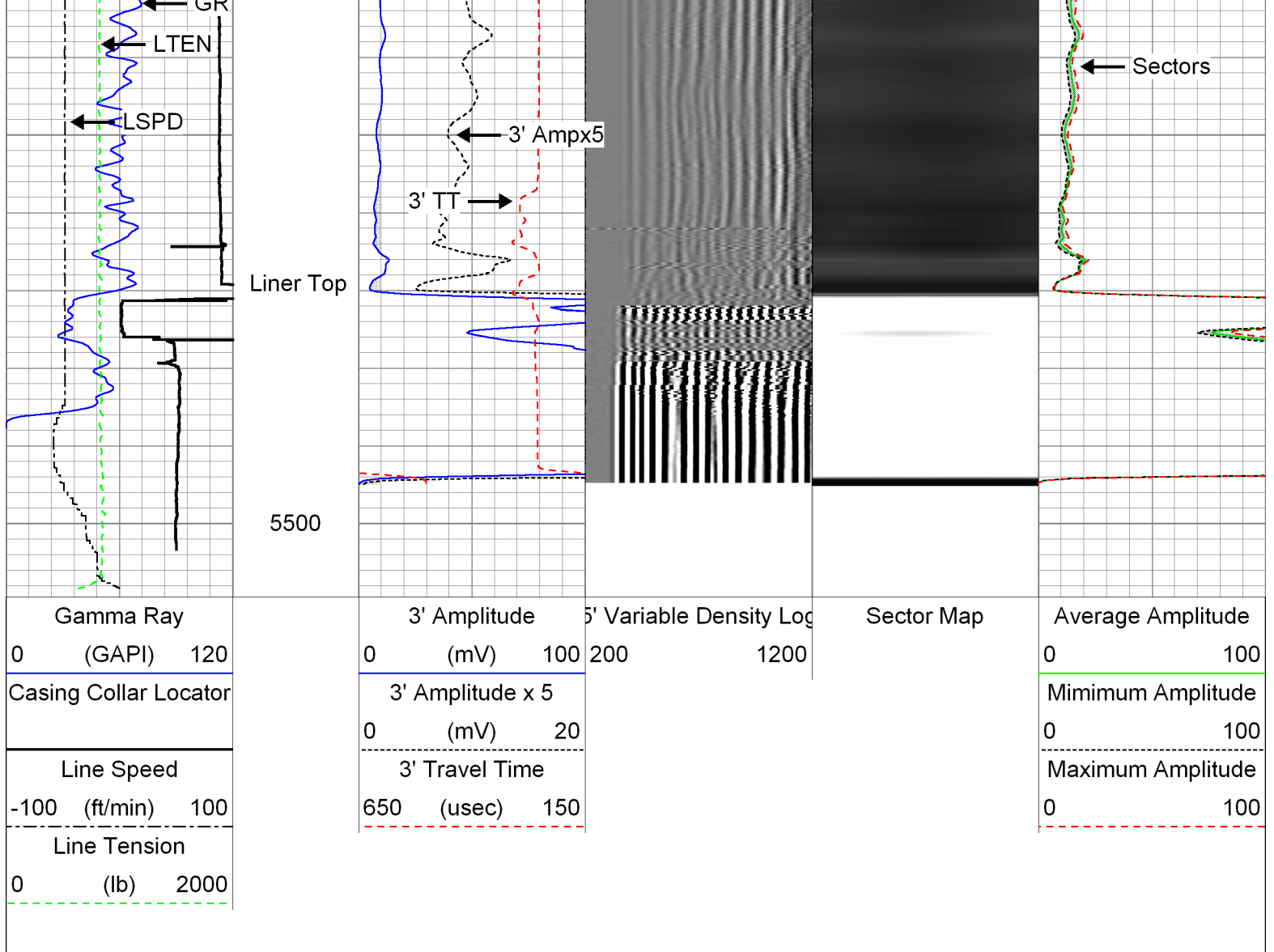
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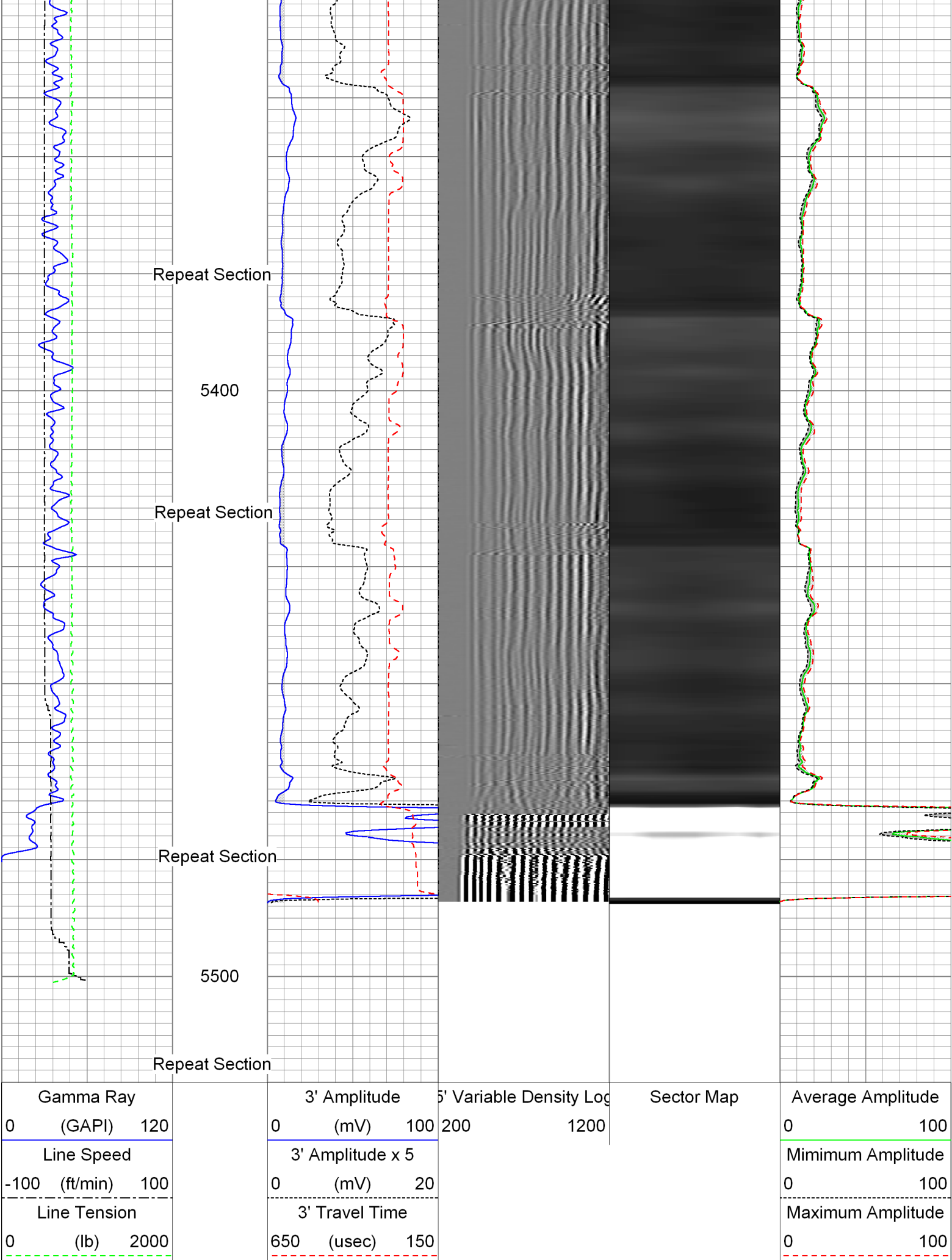


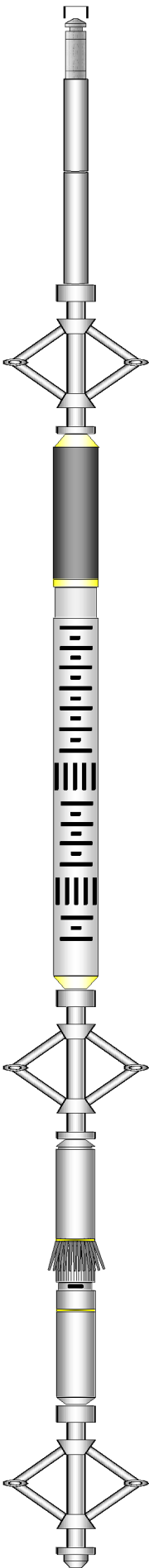
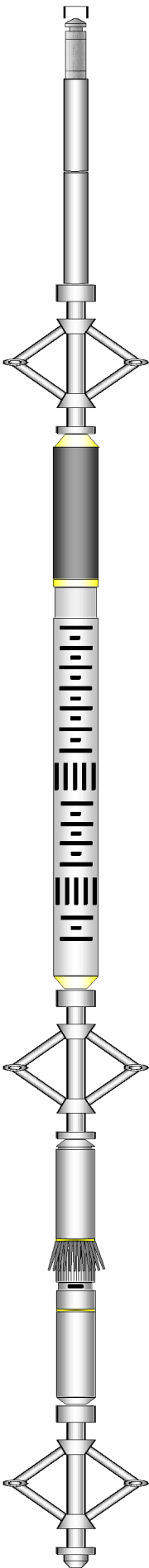
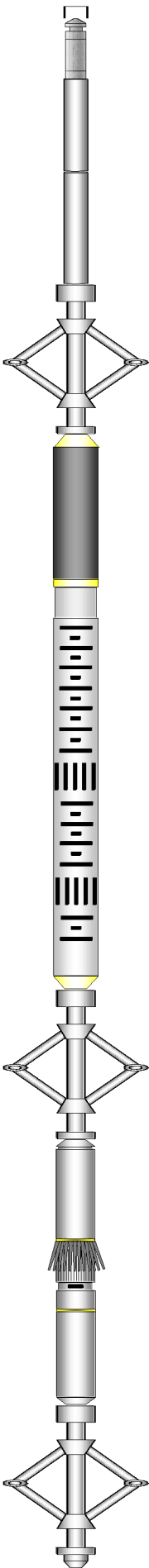
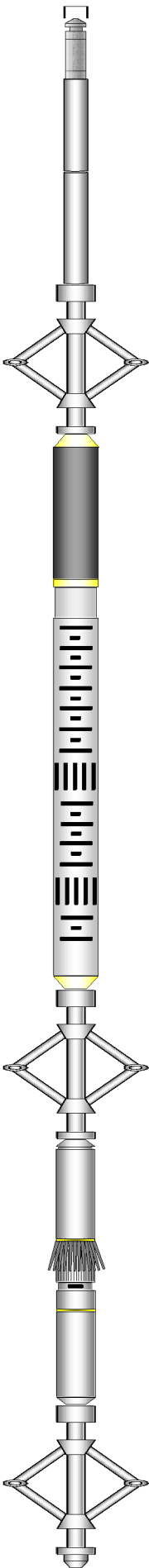










Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.37		UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_XTU-UW_XTU_002 (10010519) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (211727) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC #4 -DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVFS3FT	14.99		UW_RBT-UW_RBT_004 (1066) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	14.99					
WVFS2	14.99					
WVFS3	14.99					
WVFS4	14.99					
WVFS5	14.99					
WVFS6	14.99					
WVFS7	14.99					
WVFS8	14.99					
CBLTEMP	14.99					
CBLROT	14.99					
WVFS5FT	13.99					
MIT	4.97		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #3 -DSSRAC (083) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
TSTAMP	0.00		UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20

Total Weight: 319.50 lb  
O.D. 3.13 in

### Calibration Report

Database File: 03-11-15\_whiting\_razor 11f-0205a\_mit\_rbl.db  
Dataset Pathname: pass8  
Dataset Creation: Wed Mar 11 11:13:14 2015 by Log 7.0 B1

### Multi-finger Imaging Tool Calibration Report

Serial Number: 10014703  
Number of Fingers: 40  
Tool Model: UW\_MIT40\_042

### Inclinometer Calibration Report

Performed: Fri Sep 20 11:47:48 2013  
Calibration Angle: 45

	Inc X	Inc Y
Vertical:	1963	1960
Finger 1 up:	1748	1727
Finger 31 up:	2195	1742
Finger 21 up:	2178	2188
Finger 11 up:	1727	2173
Sensitivity ratio:	1.00706	
X-axis angle:	132.825	
Deviation const.:	317.775	

### Finger Calibration Report

Performed: Wed Mar 11 09:55:08 2015

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1102	380.0	1482	386.0	1868	393.0	2261
Finger 02:	1057	387.0	1444	401.0	1845	415.0	2260
Finger 03:	1056	375.0	1431	387.0	1818	407.0	2225
Finger 04:	1030	387.0	1417	409.0	1826	429.0	2255
Finger 05:	1037	365.0	1402	380.0	1782	397.0	2179
Finger 06:	1047	381.0	1428	393.0	1821	413.0	2234
Finger 07:	1052	375.0	1427	383.0	1810	405.0	2215
Finger 08:	1017	376.0	1393	396.0	1789	422.0	2211
Finger 09:	1092	382.0	1474	383.0	1857	395.0	2252
Finger 10:	1079	381.0	1460	388.0	1848	407.0	2255
Finger 11:	1019	376.0	1395	388.0	1783	414.0	2197
Finger 12:	1122	373.0	1495	366.0	1861	380.0	2241
Finger 13:	1065	370.0	1435	384.0	1819	414.0	2233
Finger 14:	1029	385.0	1414	399.0	1813	428.0	2241
Finger 15:	997	382.0	1379	400.0	1779	434.0	2213
Finger 16:	1029	377.0	1406	390.0	1796	424.0	2220
Finger 17:	1073	372.0	1445	378.0	1823	404.0	2227
Finger 18:	1112	376.0	1488	383.0	1871	410.0	2281
Finger 19:	1055	383.0	1438	392.0	1830	420.0	2250
Finger 20:	982	378.0	1360	402.0	1762	433.0	2195
Finger 21:	1041	370.0	1411	387.0	1798	416.0	2214
Finger 22:	1030	376.0	1406	392.0	1798	423.0	2221
Finger 23:	1083	380.0	1463	395.0	1858	421.0	2279
Finger 24:	1050	349.0	1399	366.0	1765	393.0	2158
Finger 25:	1069	387.0	1456	404.0	1860	423.0	2283
Finger 26:	1018	370.0	1388	391.0	1779	420.0	2199
Finger 27:	1189	397.0	1586	404.0	1990	416.0	2406
Finger 28:	1064	367.0	1431	386.0	1817	416.0	2233
Finger 29:	1012	376.0	1388	401.0	1789	425.0	2214
Finger 30:	985	372.0	1357	403.0	1760	431.0	2191
Finger 31:	1209	404.0	1613	414.0	2027	424.0	2451
Finger 32:	1003	373.0	1376	391.0	1767	408.0	2175



Finger 33:	1187	416.0	1603	428.0	2031	437.0	2468
Finger 34:	978	373.0	1351	396.0	1747	417.0	2164
Finger 35:	1131	399.0	1530	417.0	1947	426.0	2373
Finger 36:	1031	360.0	1391	376.0	1767	394.0	2161
Finger 37:	1084	384.0	1468	405.0	1873	413.0	2286
Finger 38:	1093	374.0	1467	385.0	1852	399.0	2251
Finger 39:	1076	360.0	1436	371.0	1807	387.0	2194
Finger 40:	1001	391.0	1392	416.0	1808	436.0	2244

### Segmented Cement Bond Log Calibration Report

Serial Number:	1066
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	390.541 ft

Master Calibration, performed Wed Mar 11 10:11:49 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.004	0.675	0.800	62.165	91.507	0.414
5FT	-0.001	0.631	0.800	62.165	97.088	0.942
S1	0.004	0.641	0.000	100.000	156.935	-0.580
S2	0.004	0.669	0.000	100.000	150.575	-0.669
S3	0.004	0.686	0.000	100.000	146.587	-0.542
S4	0.004	0.699	0.000	100.000	143.869	-0.548
S5	0.004	0.691	0.000	100.000	145.408	-0.532
S6	0.004	0.684	0.000	100.000	147.011	-0.538
S7	0.004	0.675	0.000	100.000	148.854	-0.545
S8	0.004	0.651	0.000	100.000	154.520	-0.587

### Gamma Ray Calibration Report

Serial Number:	211727
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	Whiting Oil and Gas Corporation
Well	Razor 11F - 0205A
Field	Wildcat
County	Weld
State	Colorado