



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company				Kerr-McGee Oil & Gas Onshore, L.P.				
Well				Kerbs 32N-13HZ				
Field				Wattenberg				
County				Weld				
State				Colorado				
Location:				API # : 05-123-38183				
SHL: 1921' FNL 283' FEL Lat/Long: 40.22843/-104.942757				Other Services Gauge Run CIL				
SEC 13 TWP 3N RGE 68W				Elevation				
Permanent Datum		Ground Level		Elevation		4,874'		
Log Measured From		Kelly Bushing		25 FT		K.B. 4899' D.F. 4898' G.L. 4874'		
Drilling Measured From		Kelly Bushing						
Date				12-APR-2014				
Run Number				Two				
Depth Driller				11,732 FT				
Depth Logger				7,188 FT				
Bottom Logged Interval				7,185 FT				
Top Log Interval				Surface				
Open Hole Size				9.625"				
Type Fluid				Water				
Density / Viscosity				8.34 LB/GAL				
Max. Recorded Temp.				205°F				
Estimated Cement Top				Surface				
Time Well Ready				ROA				
Time Logger on Bottom				14:00				
Equipment Number				HD 324				
Location				Fort Lupton, CO				
Recorded By				J. Raby				
Witnessed By				Edgar Chavez				
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	1,083 FT		
Intermediate #1		7	26	P-110 LTC DQX	Surface	7,451 FT		
Intermediate #2								
Liner		4 1/2	11.6	P-110 LTC DQX	6,474 FT	11,717 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 - Caliper Log is the first recorded log in hole.
Depth reference to Casing Tally reported Liner Top at 6,474'.
RCBL-CIL ran with 2200 PSI surface induced pressure.
Estimated Top of Cement @ Surface

Thank you for choosing FMC Technologies Completion Services, Inc.



7.0" Main Pass

Recorded with 2200 PSI Surface Induced Pressure

Database File: 0512338183_anadarko_kerbs 32n-13hz_04-12-14_mit_rbl.db

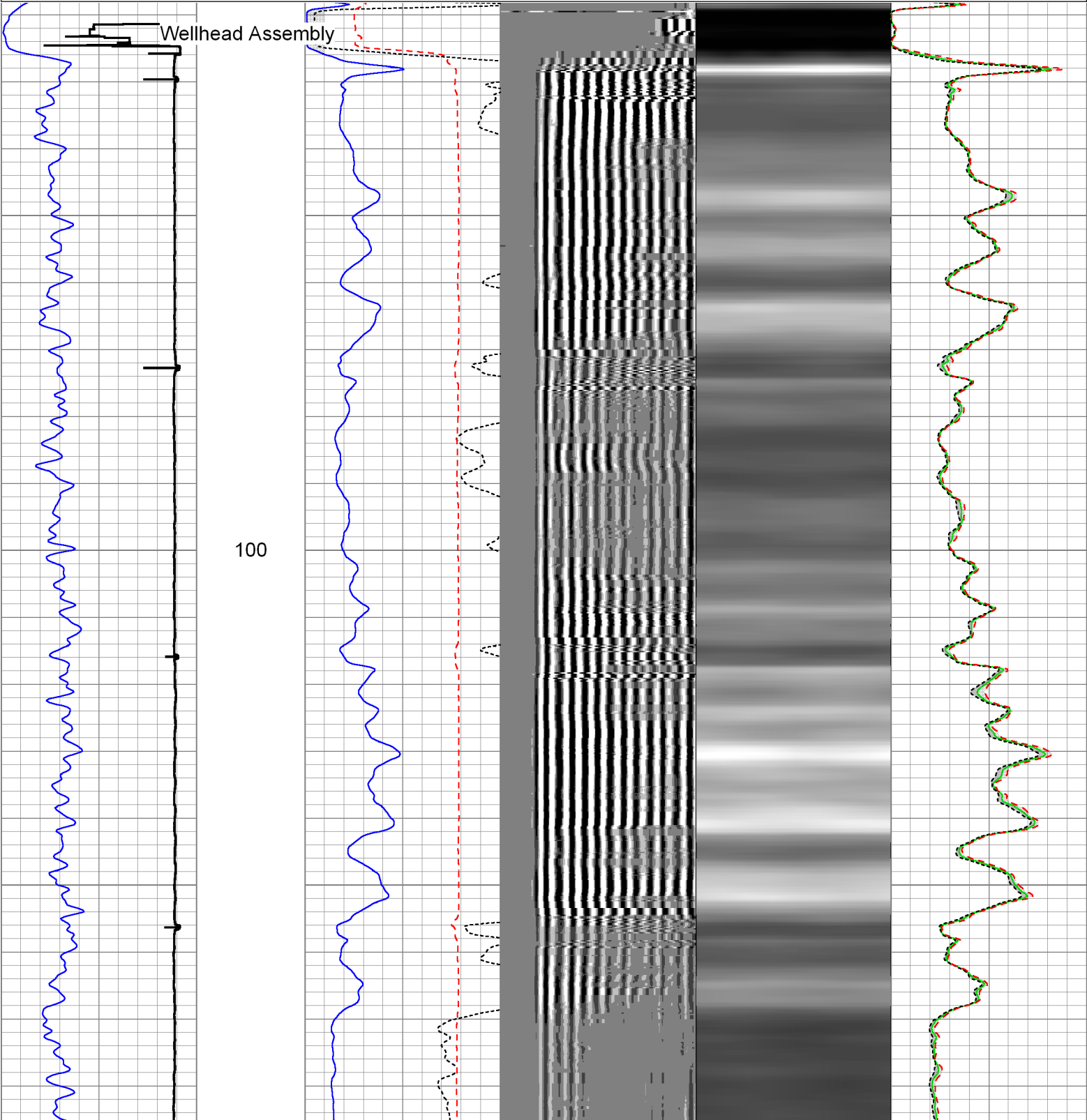
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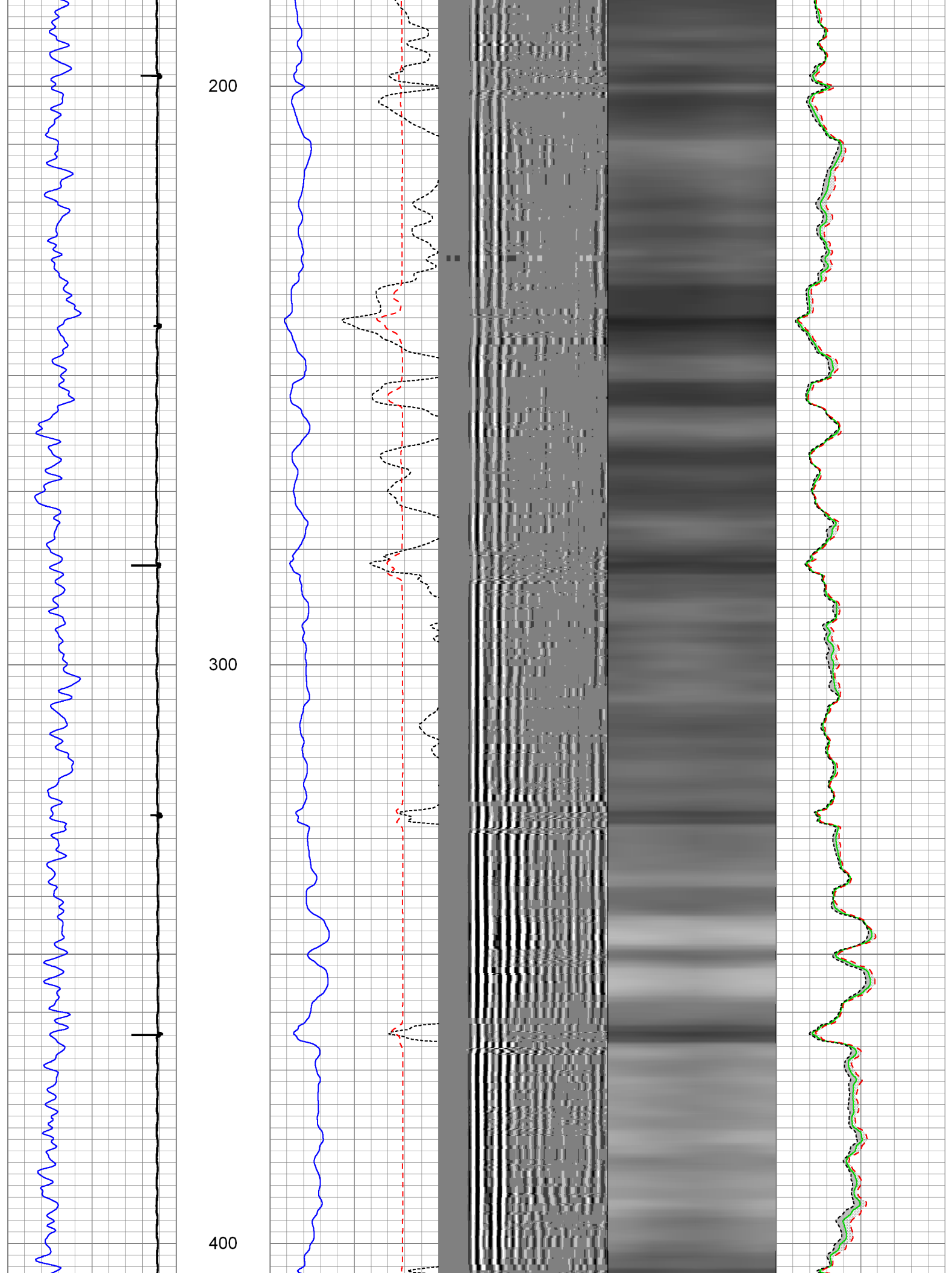
Presentation Format: rbt007

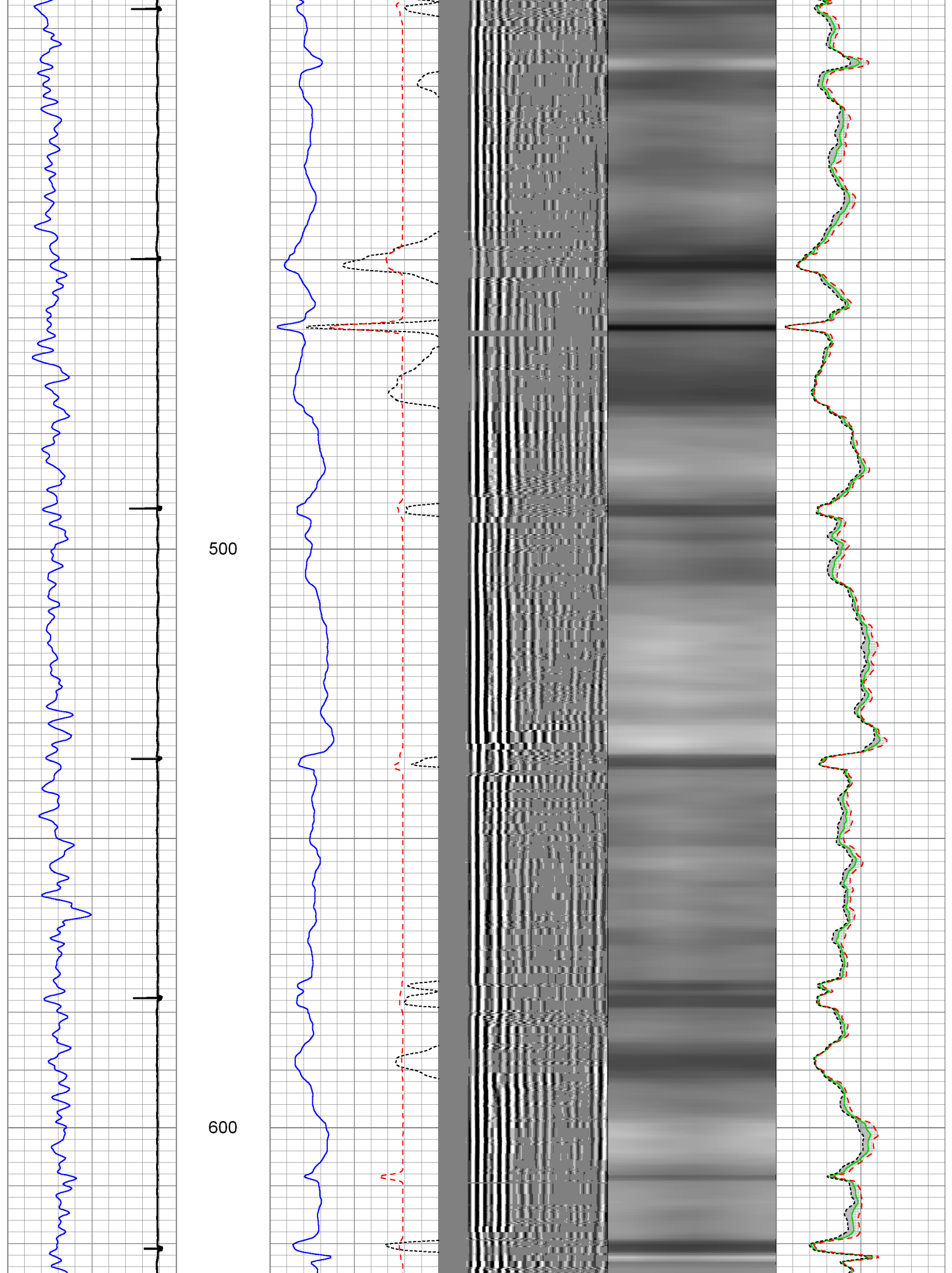
Dataset Creation: Sat Apr 12 14:36:36 2014 by Log Sondex V7.03

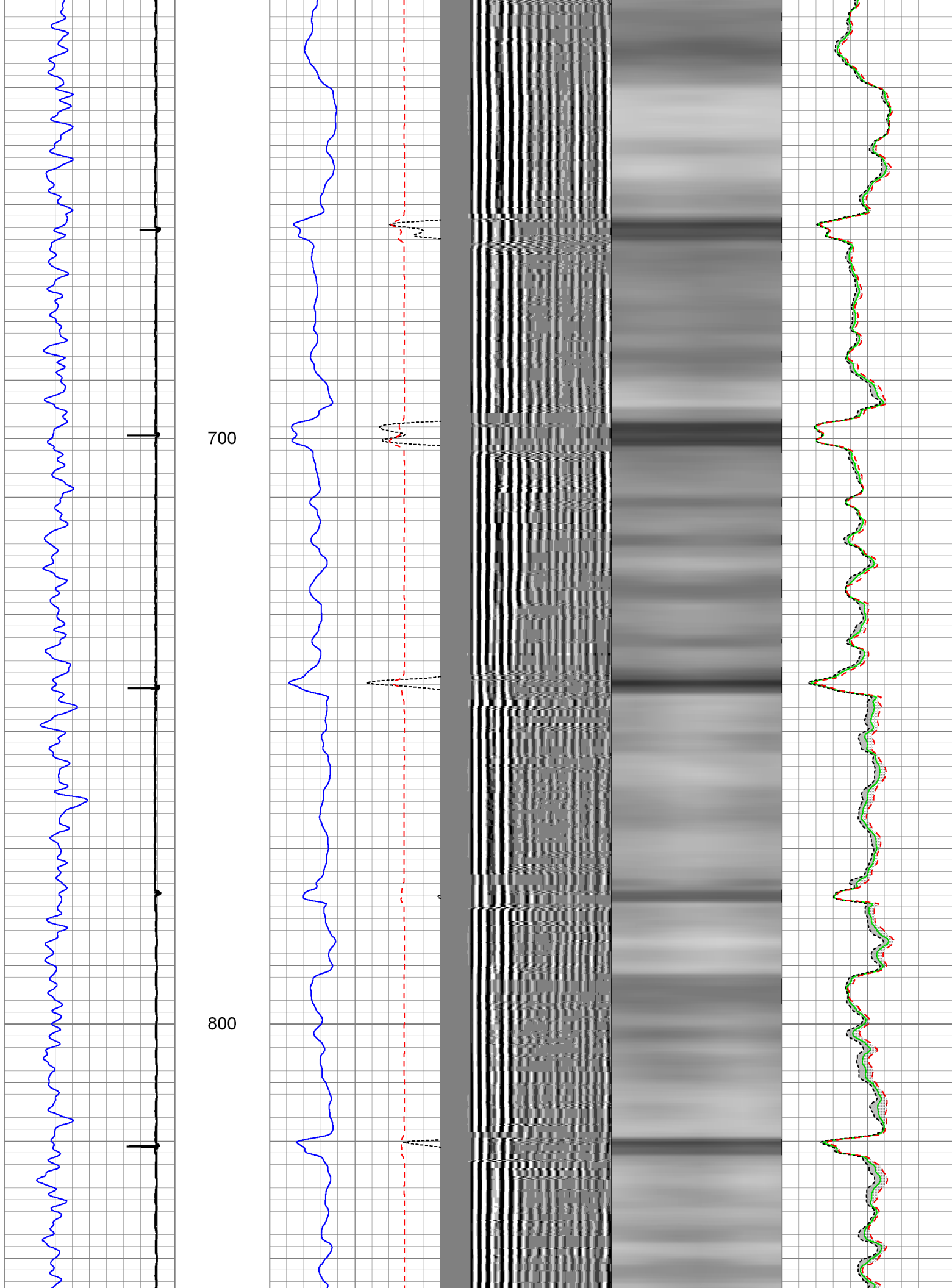
Charted by: Depth in Feet scaled 1:240

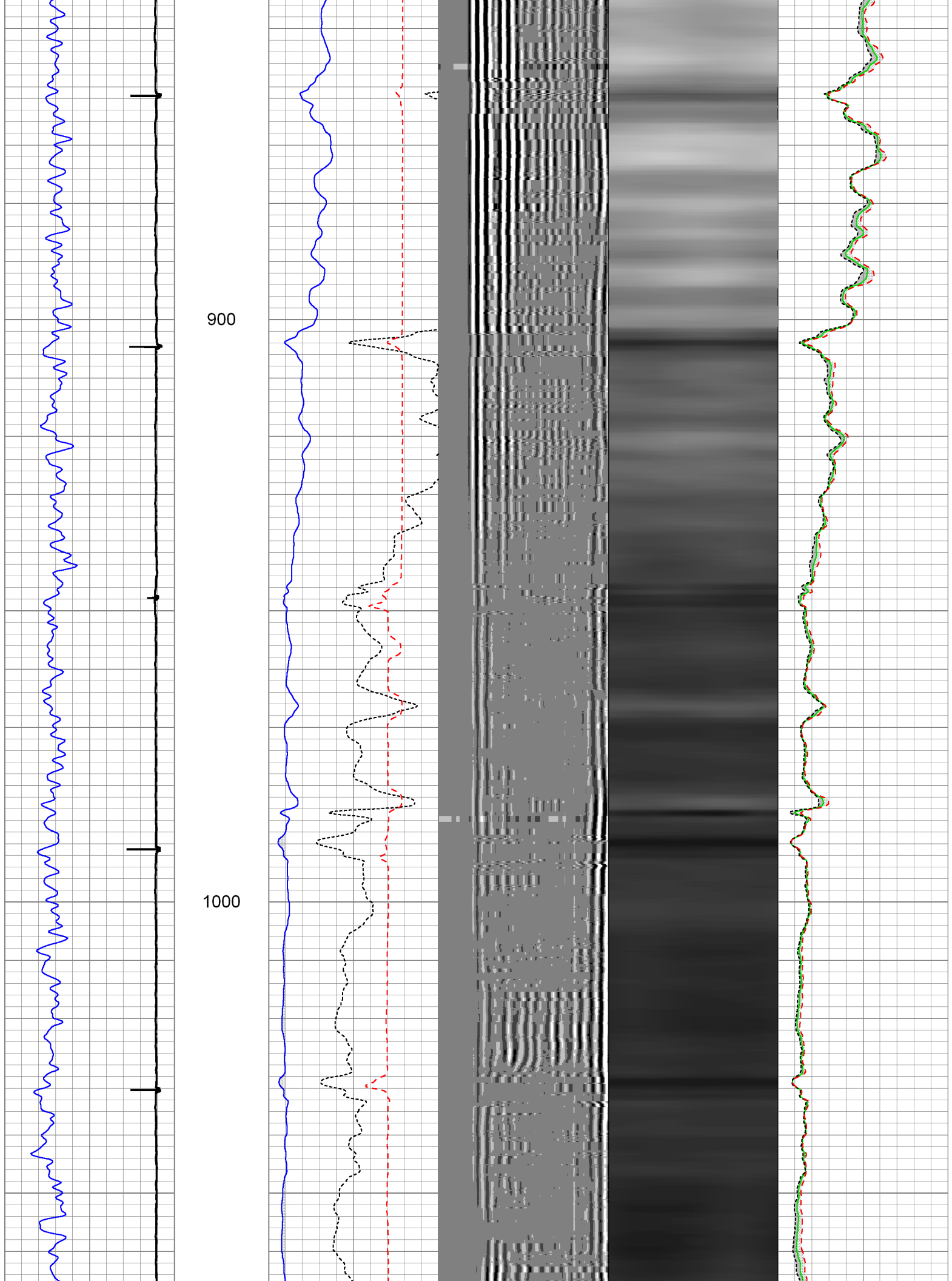
Gamma Ray			3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude		
0	(GAPI)	120	0	(mV)			100	0	100
Collar Locator			3' Amplitude x 5				Minimum Amplitude		
			0	(mV)			20	0	100
			3' Travel Time				Maximum Amplitude		
			650	(usec)			150	0	100

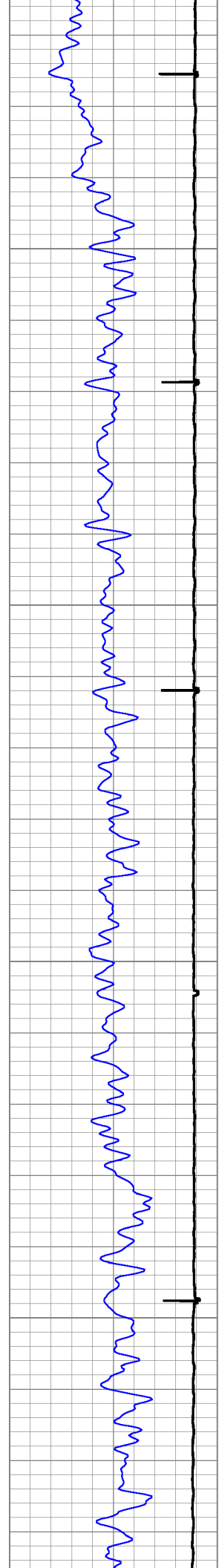






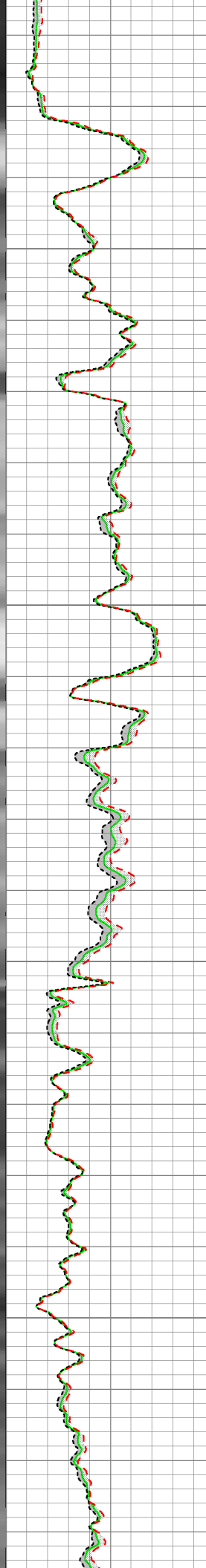
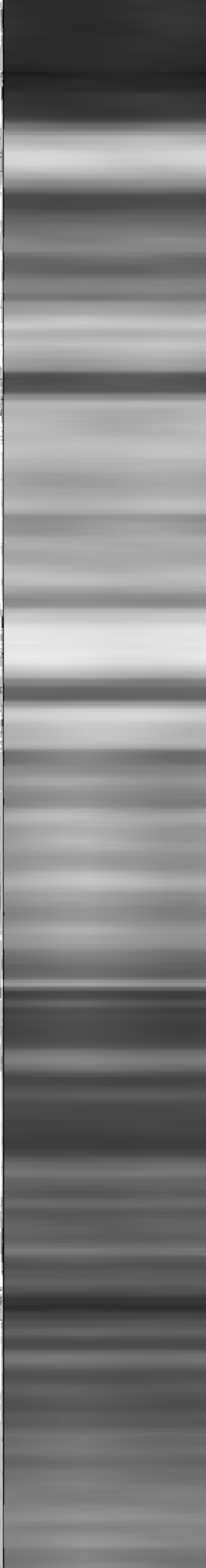
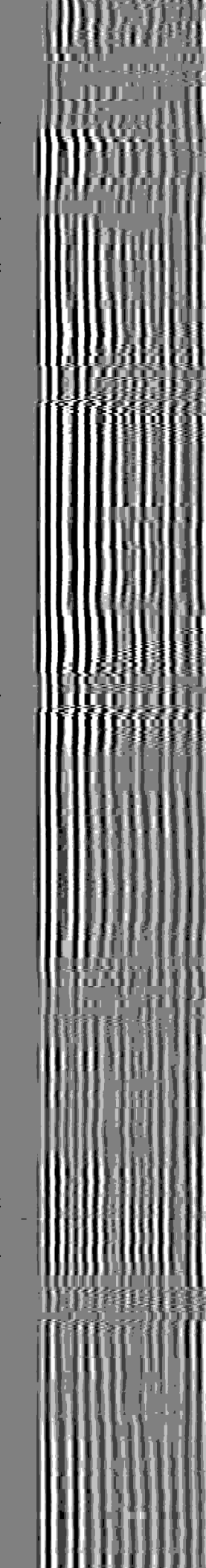
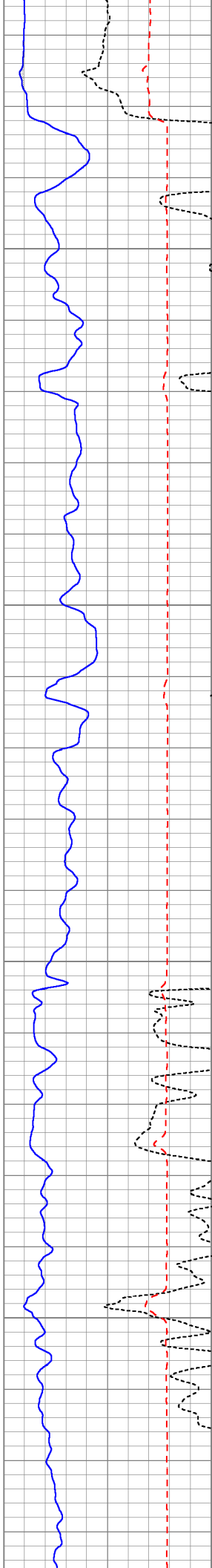






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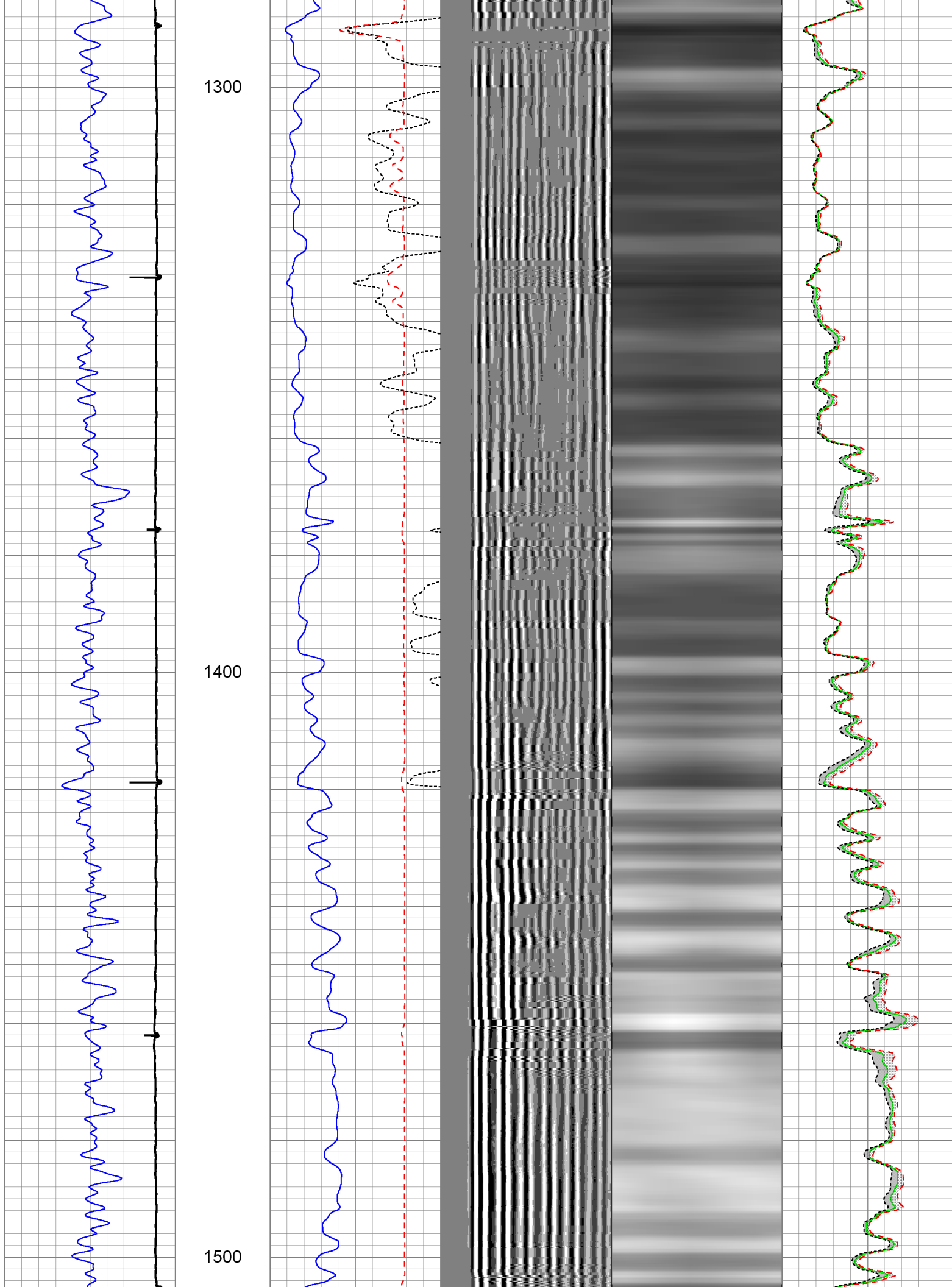
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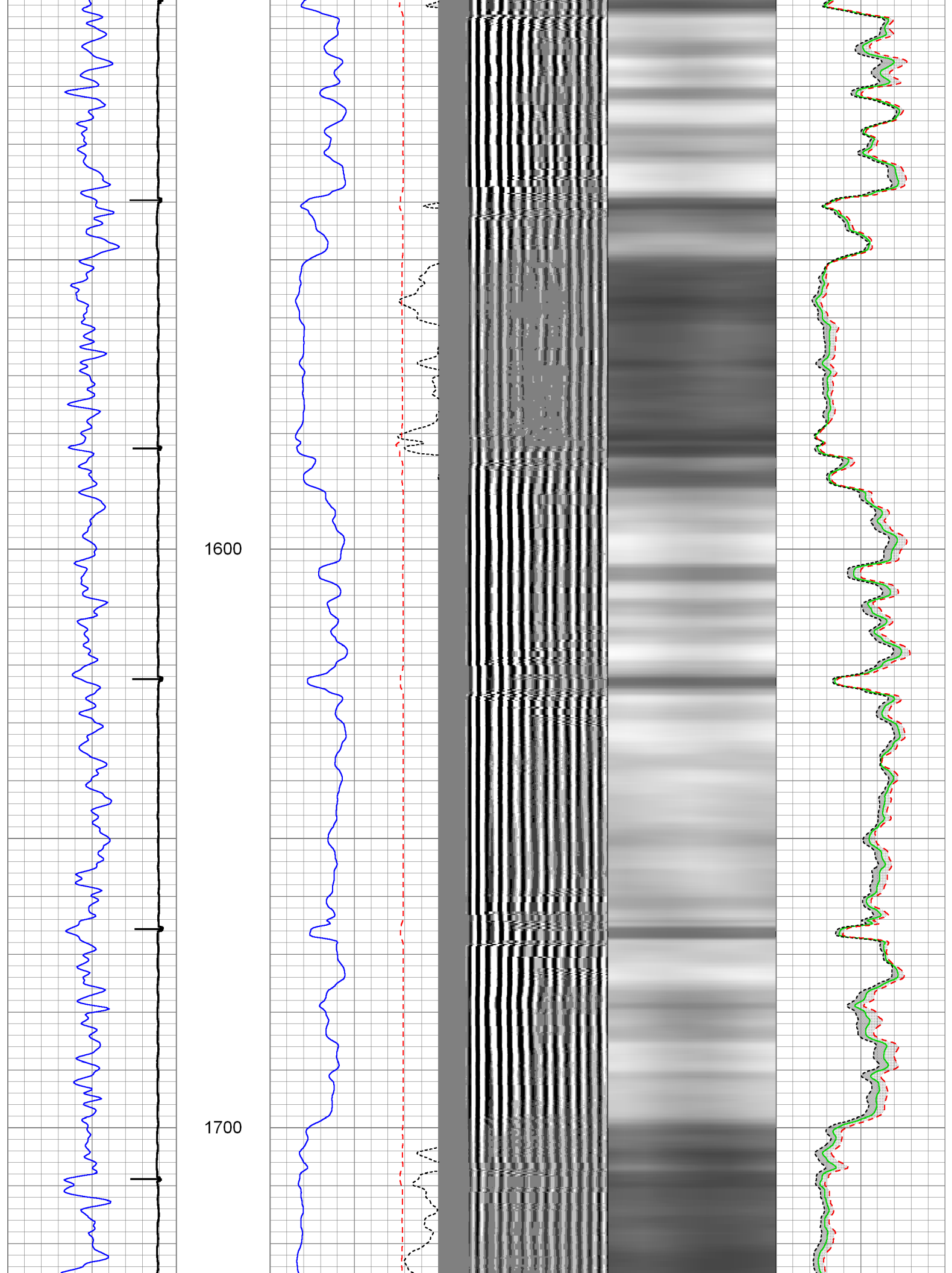


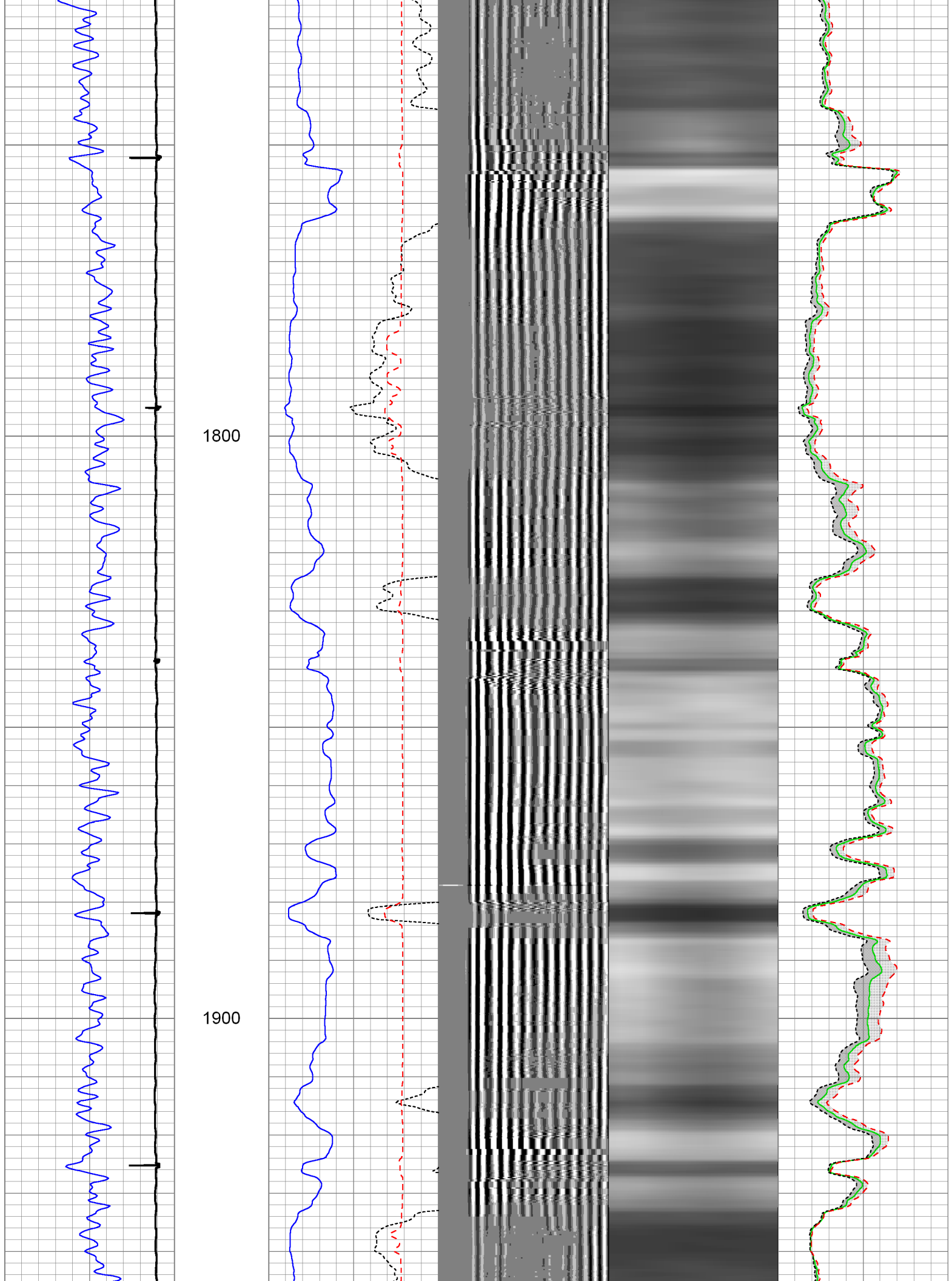
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1400

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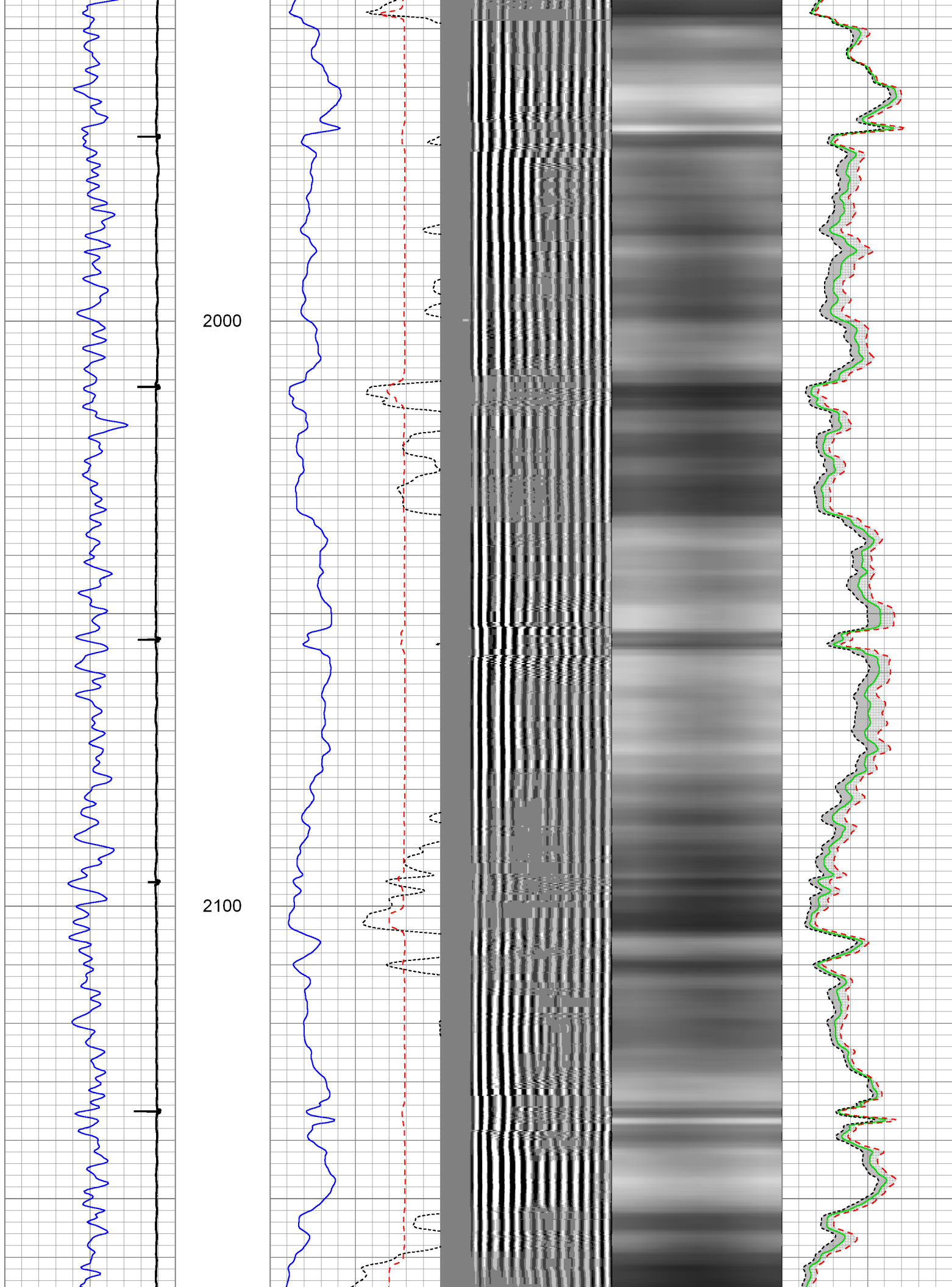






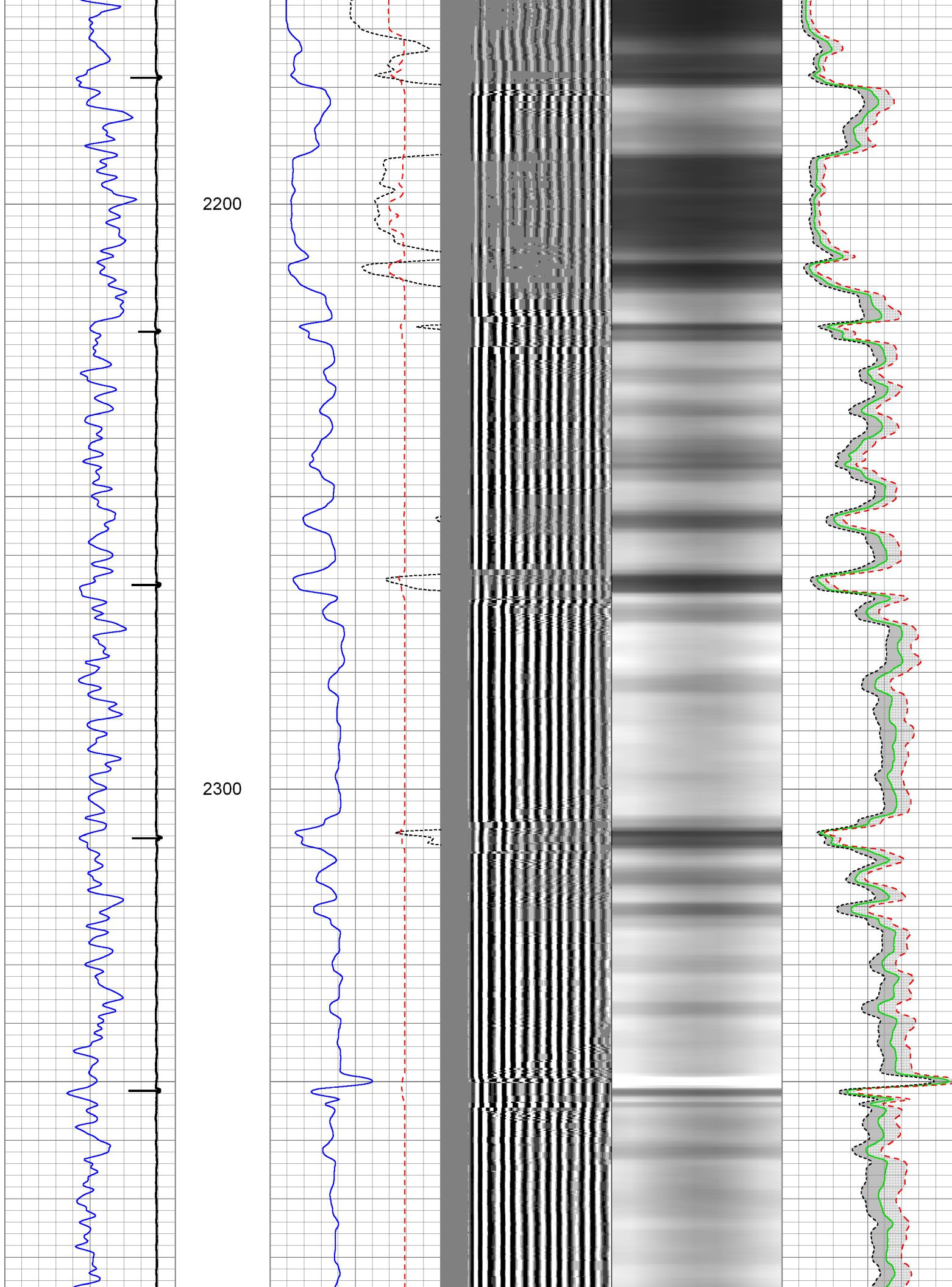
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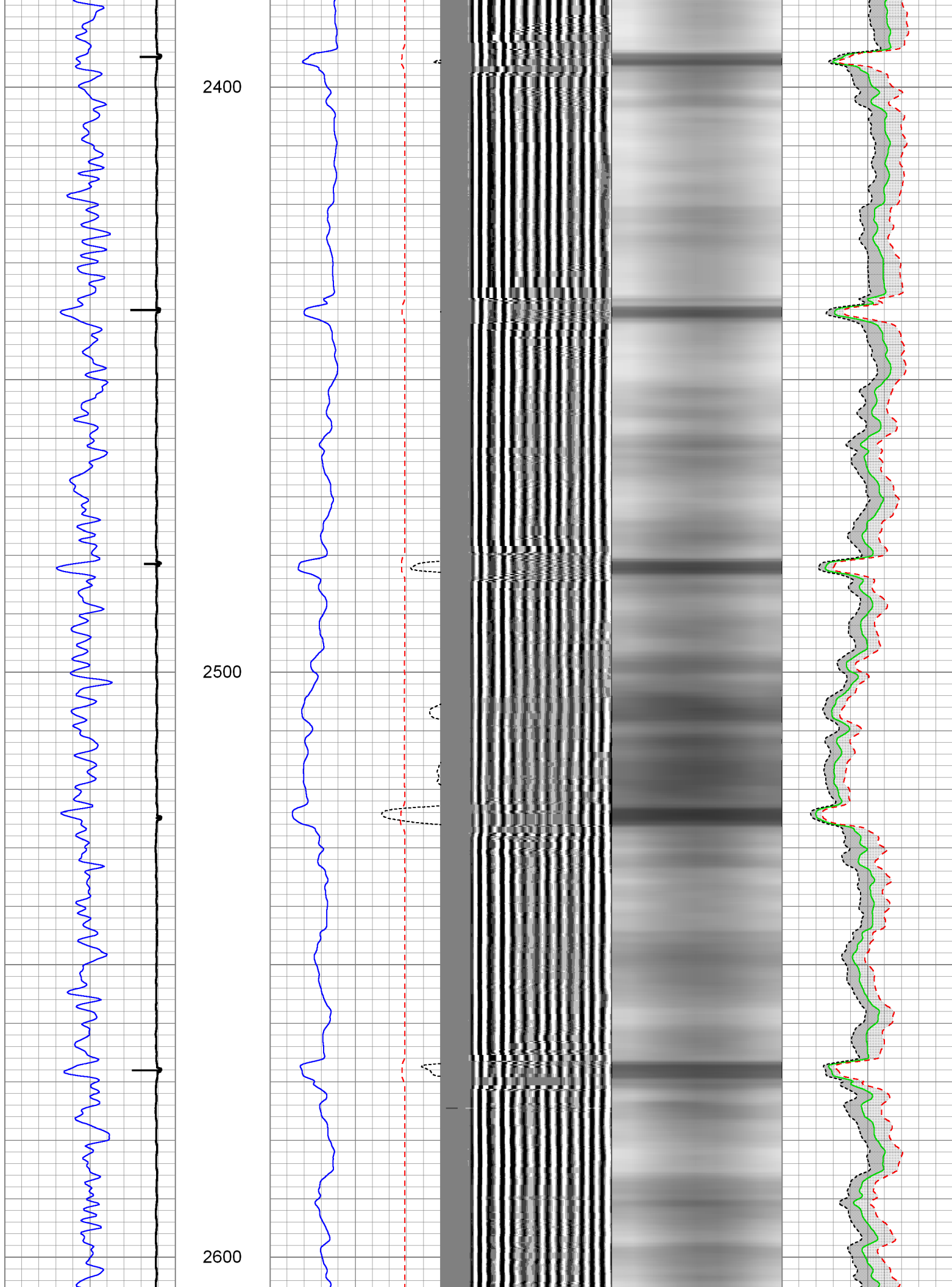
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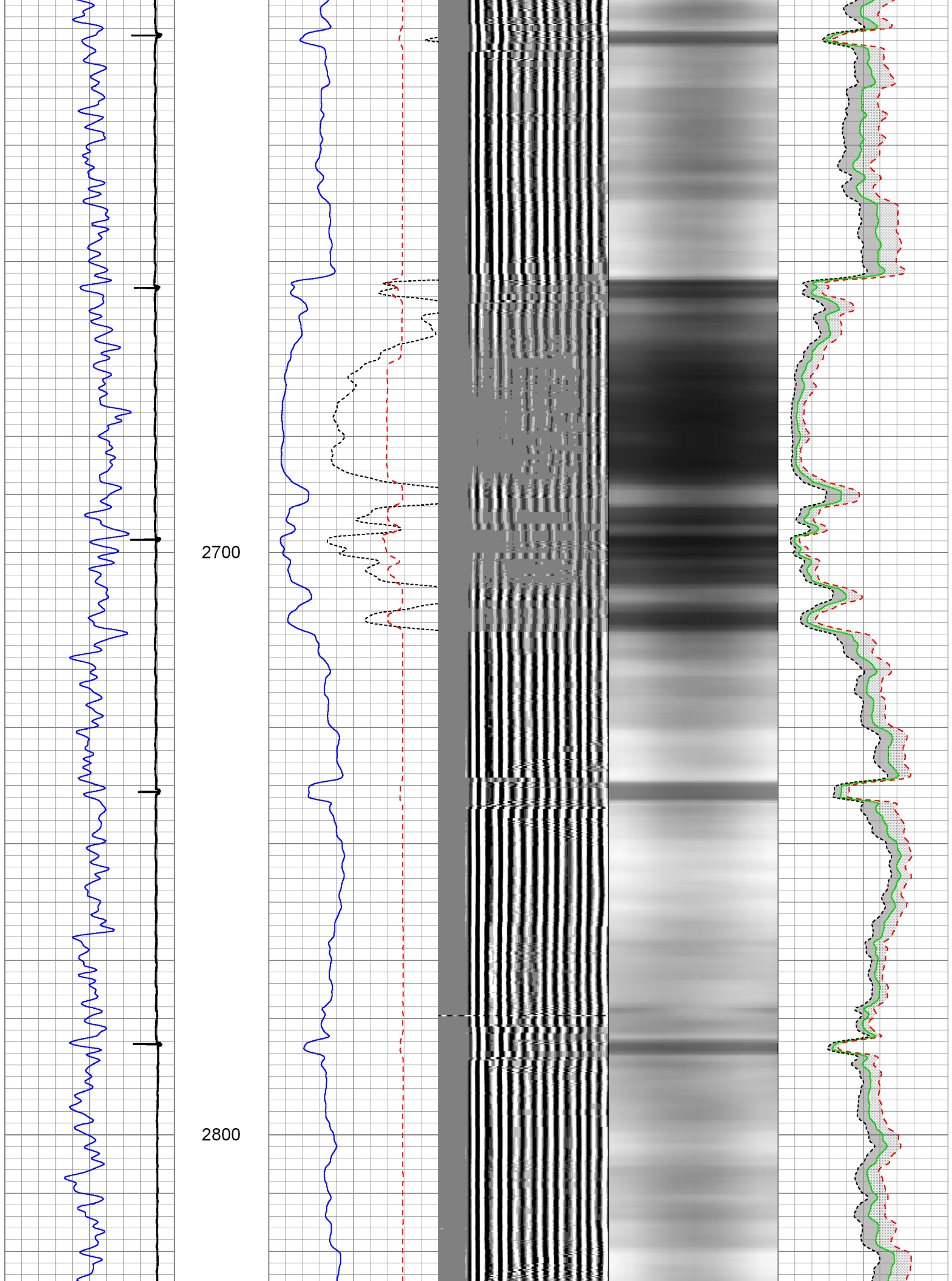
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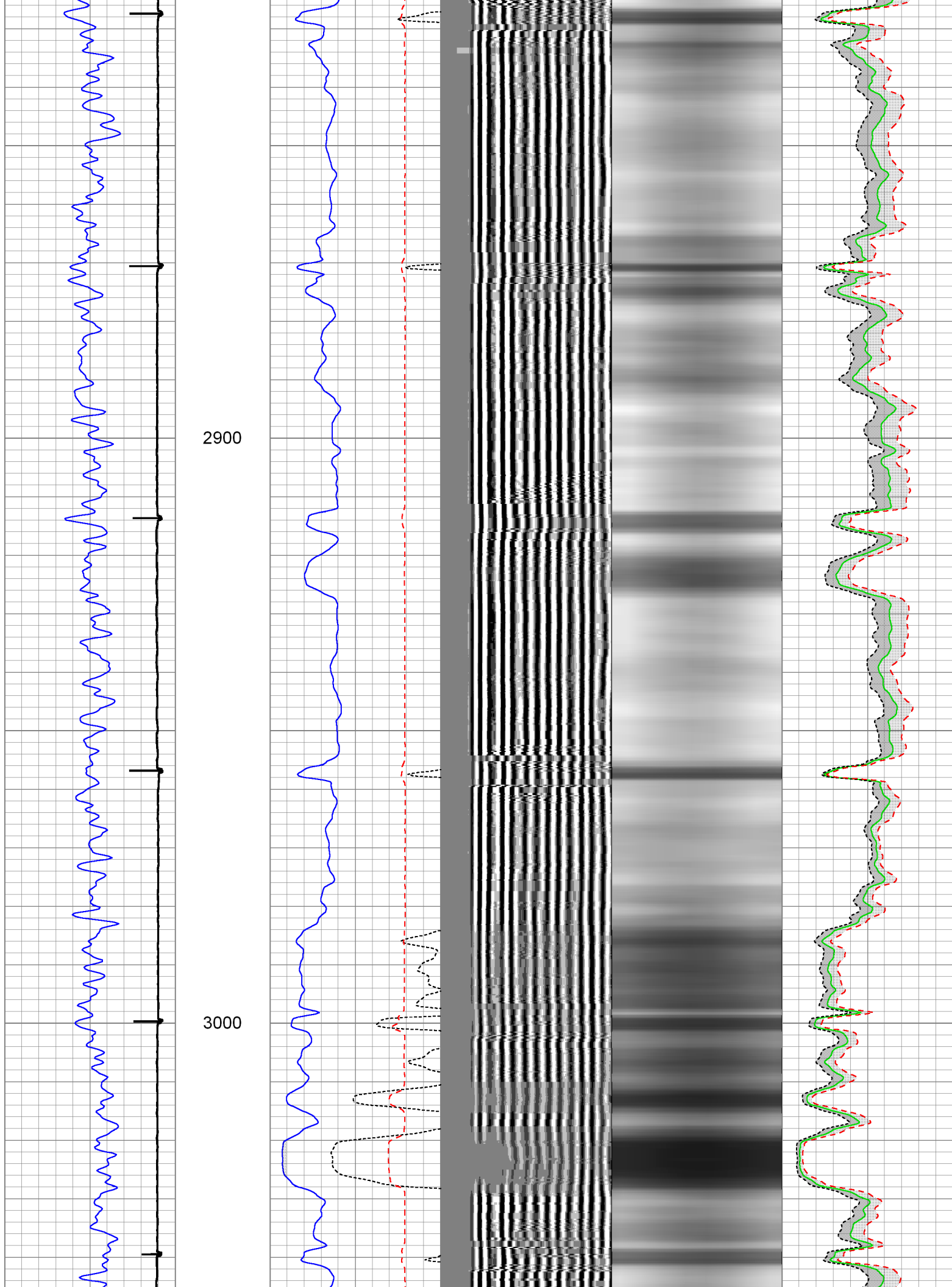
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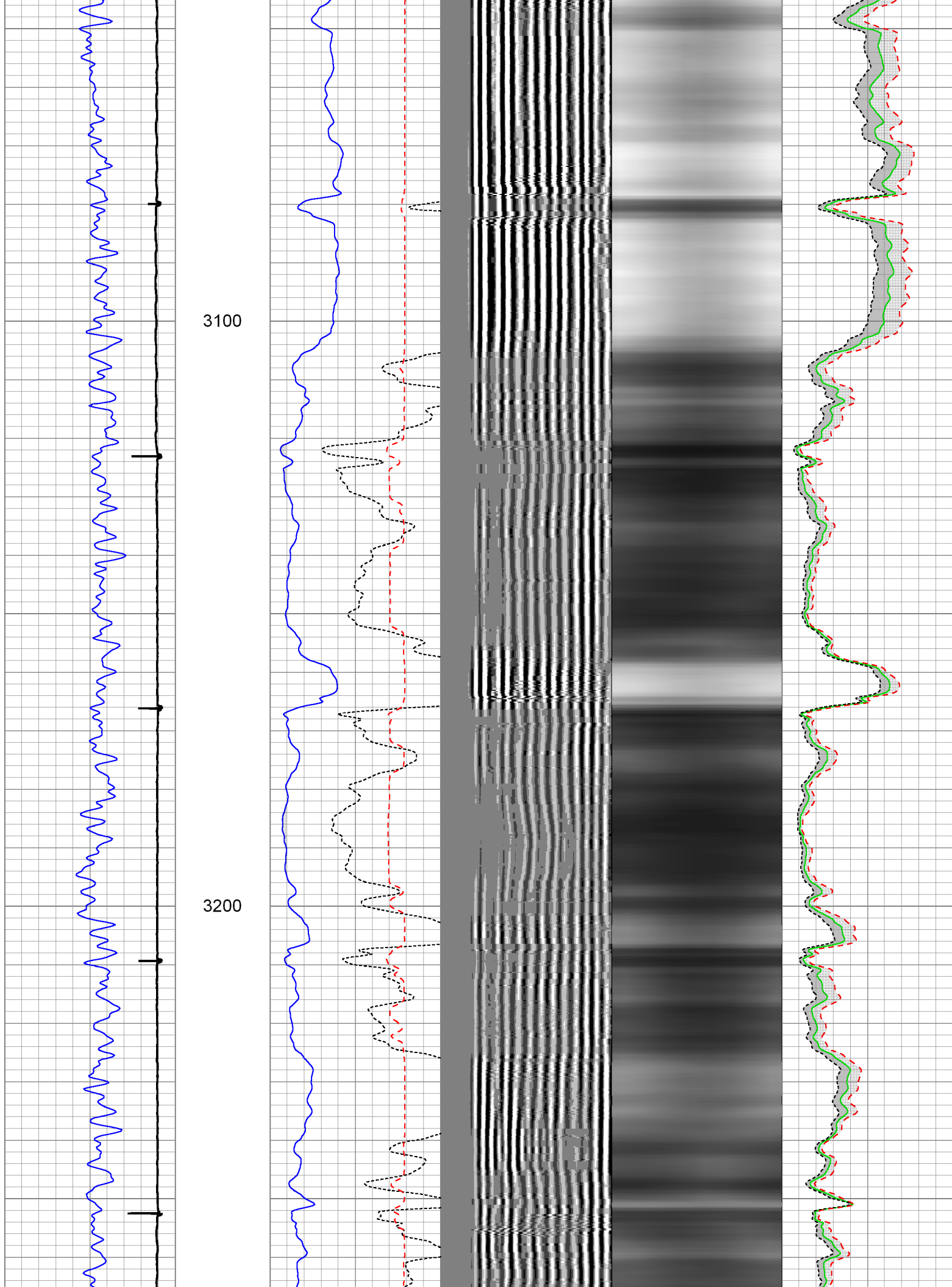
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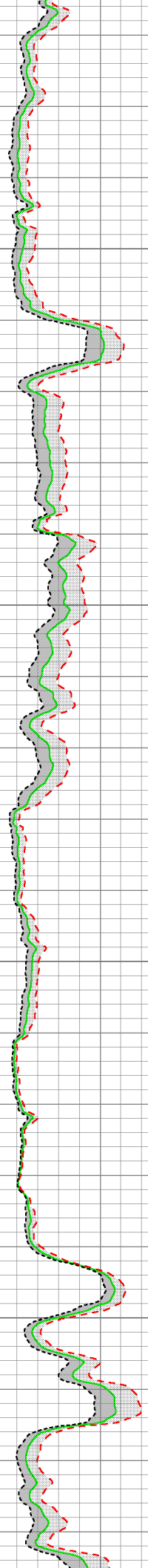
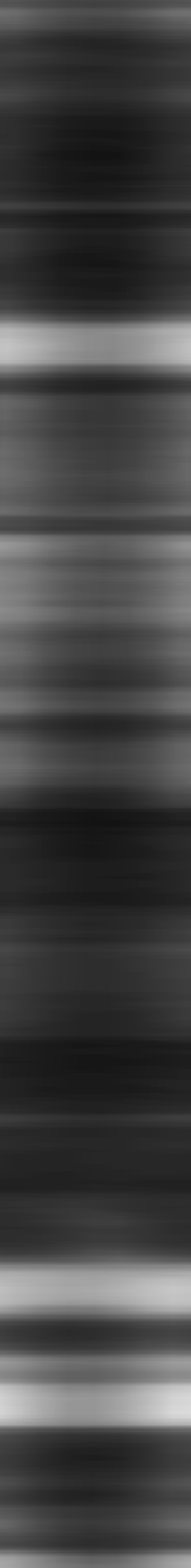
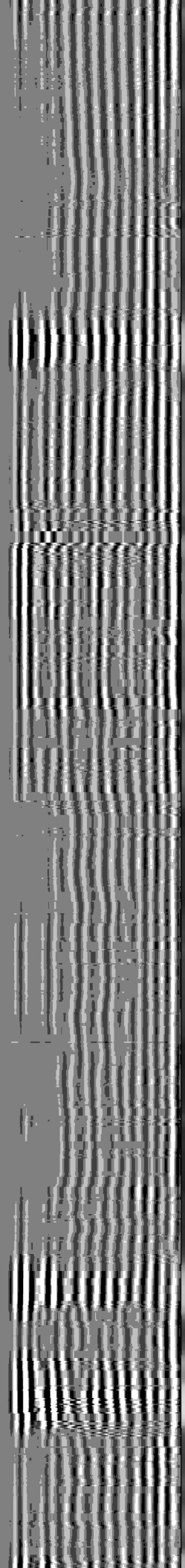
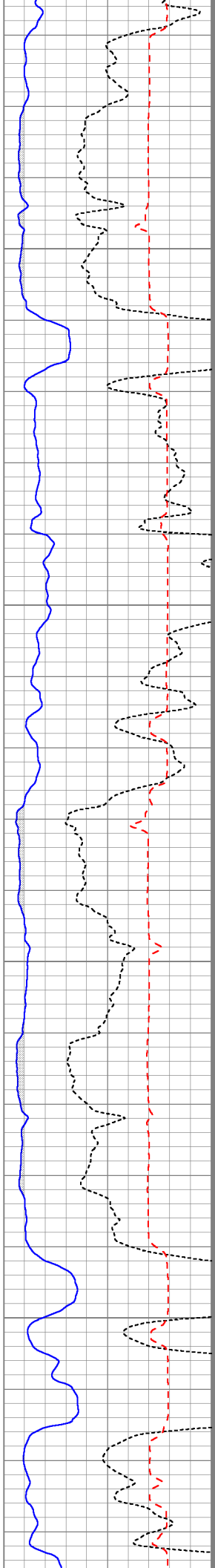
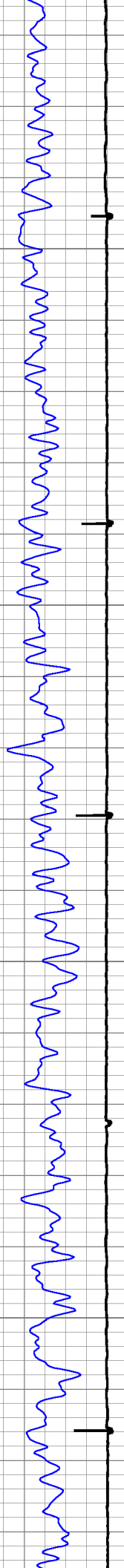
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3300

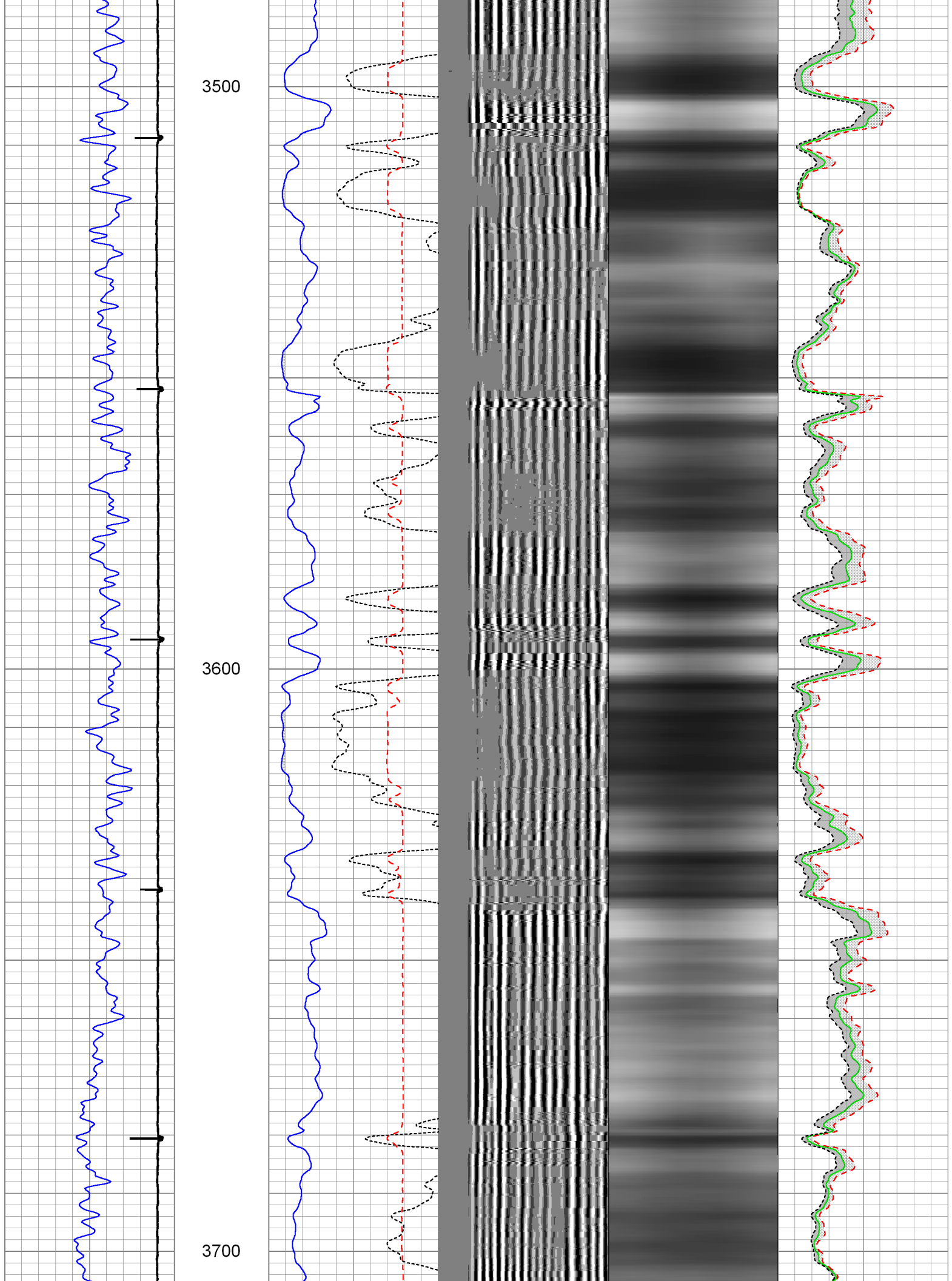
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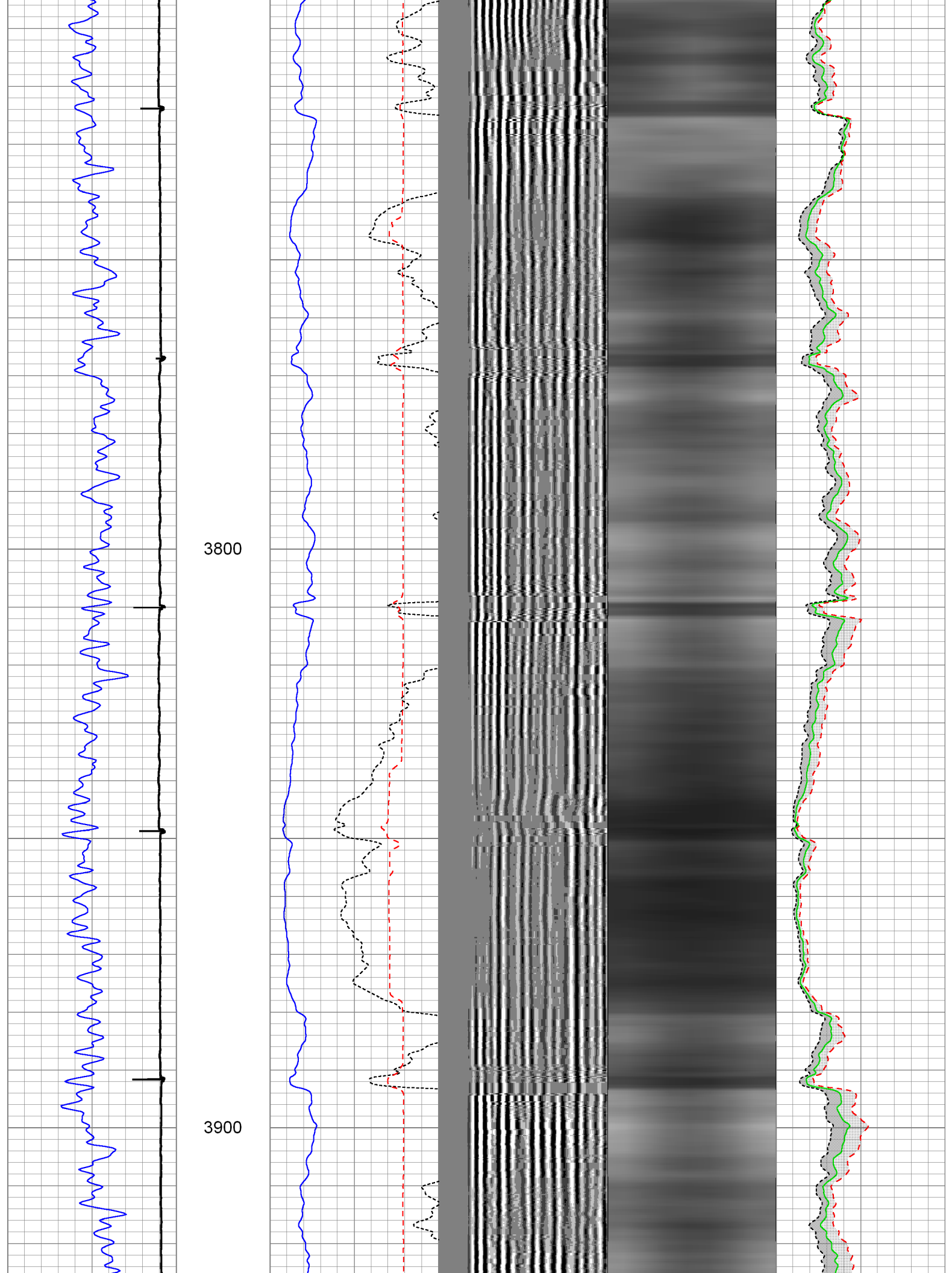


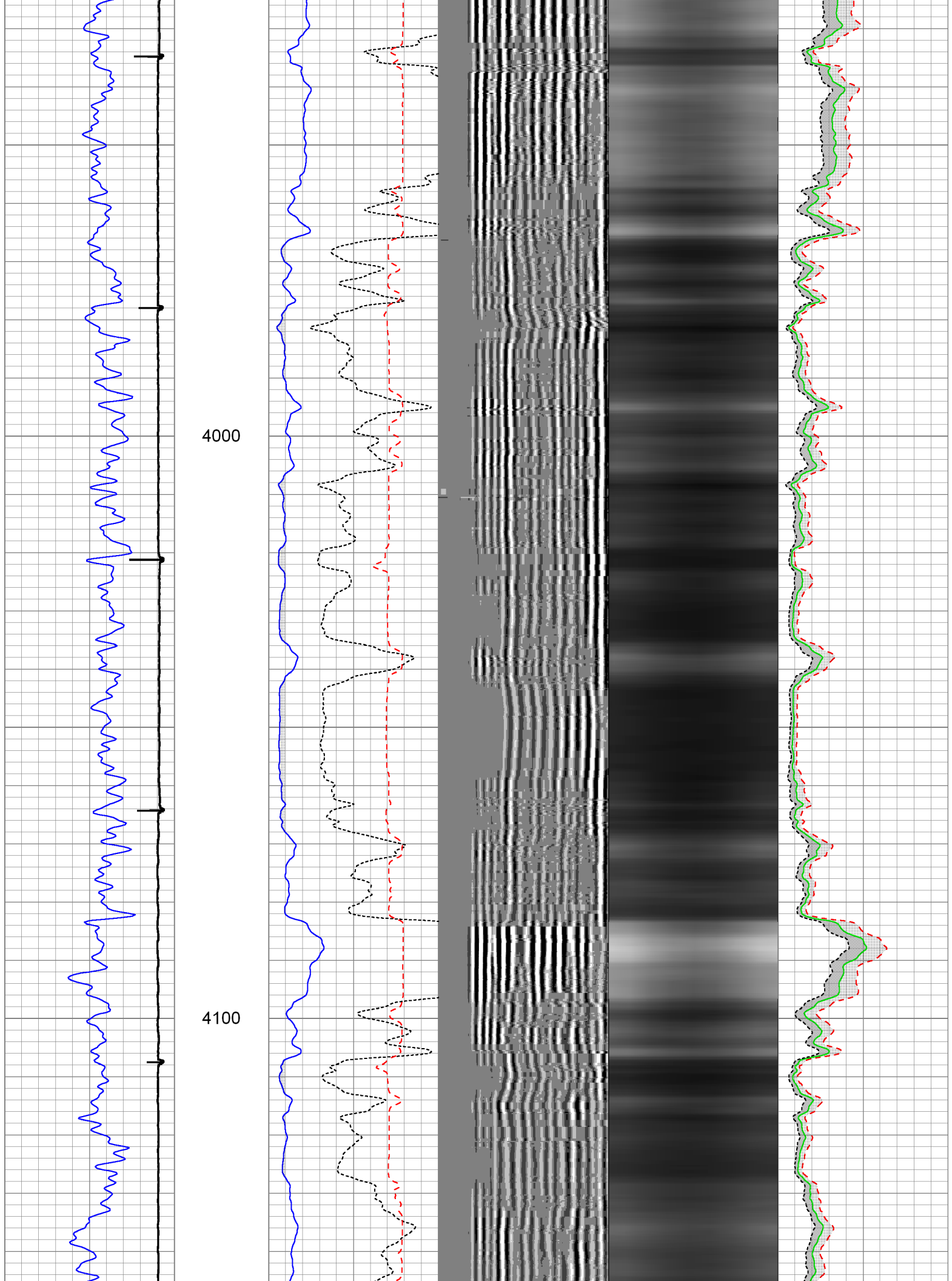
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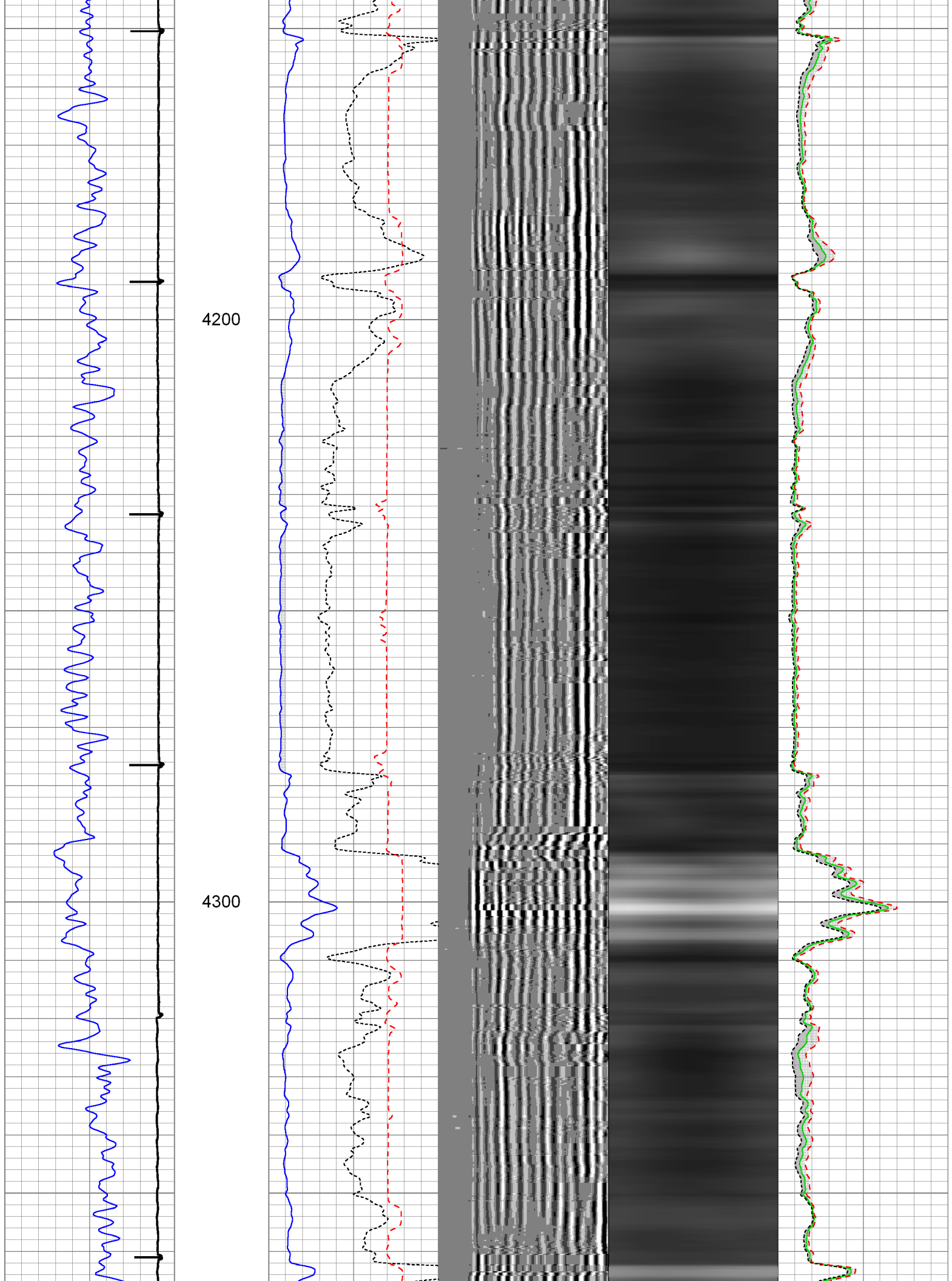
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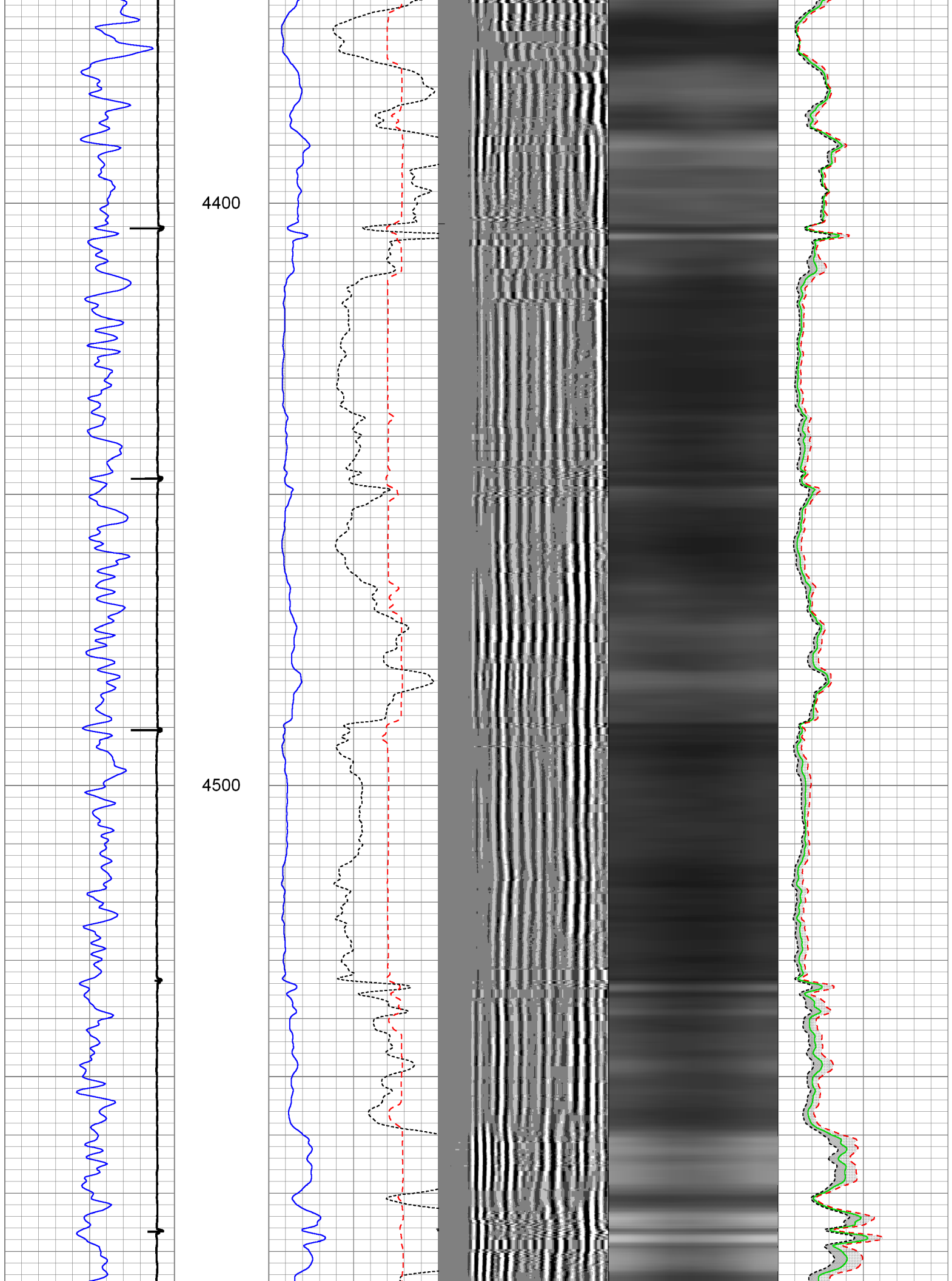
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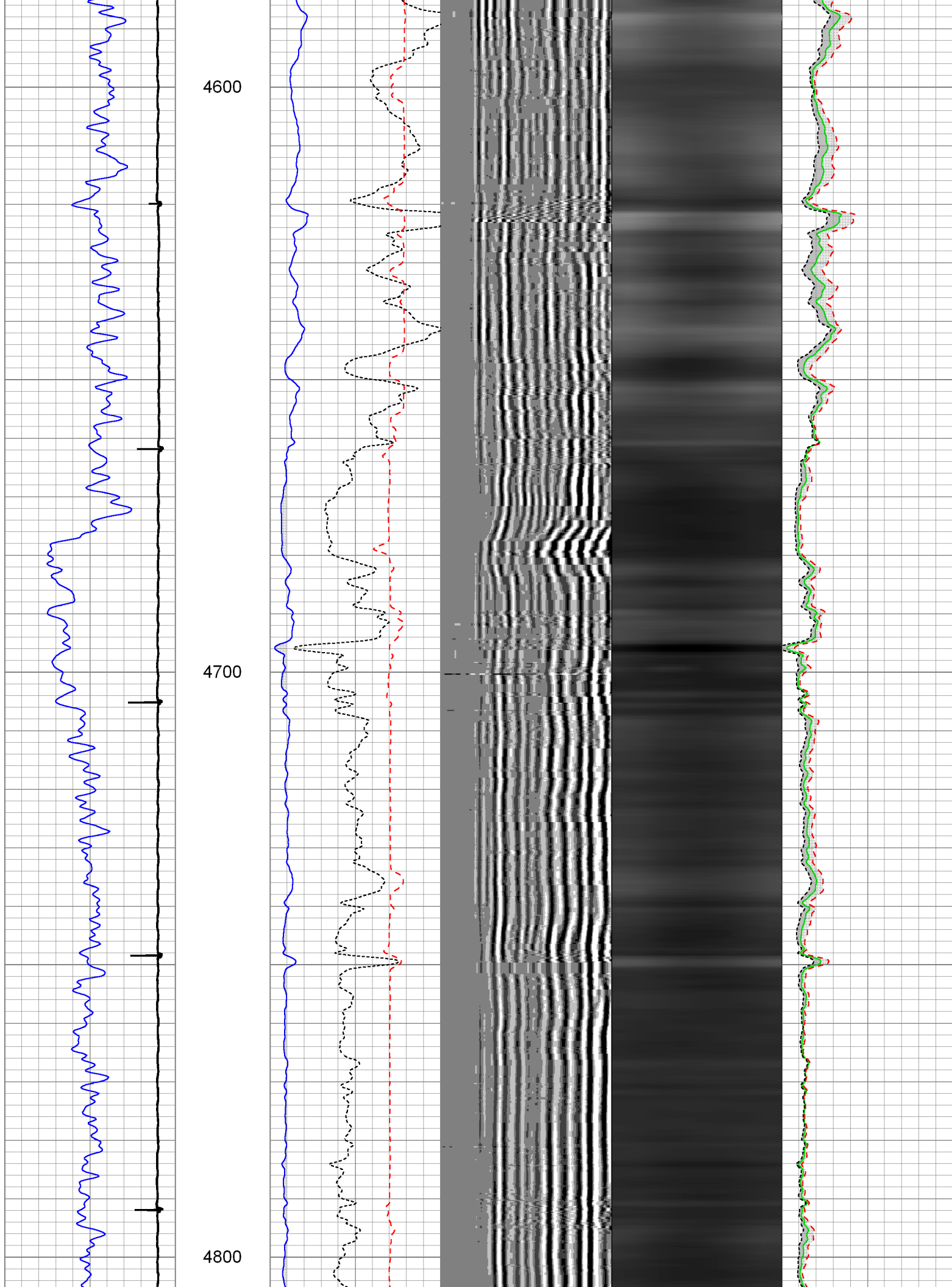


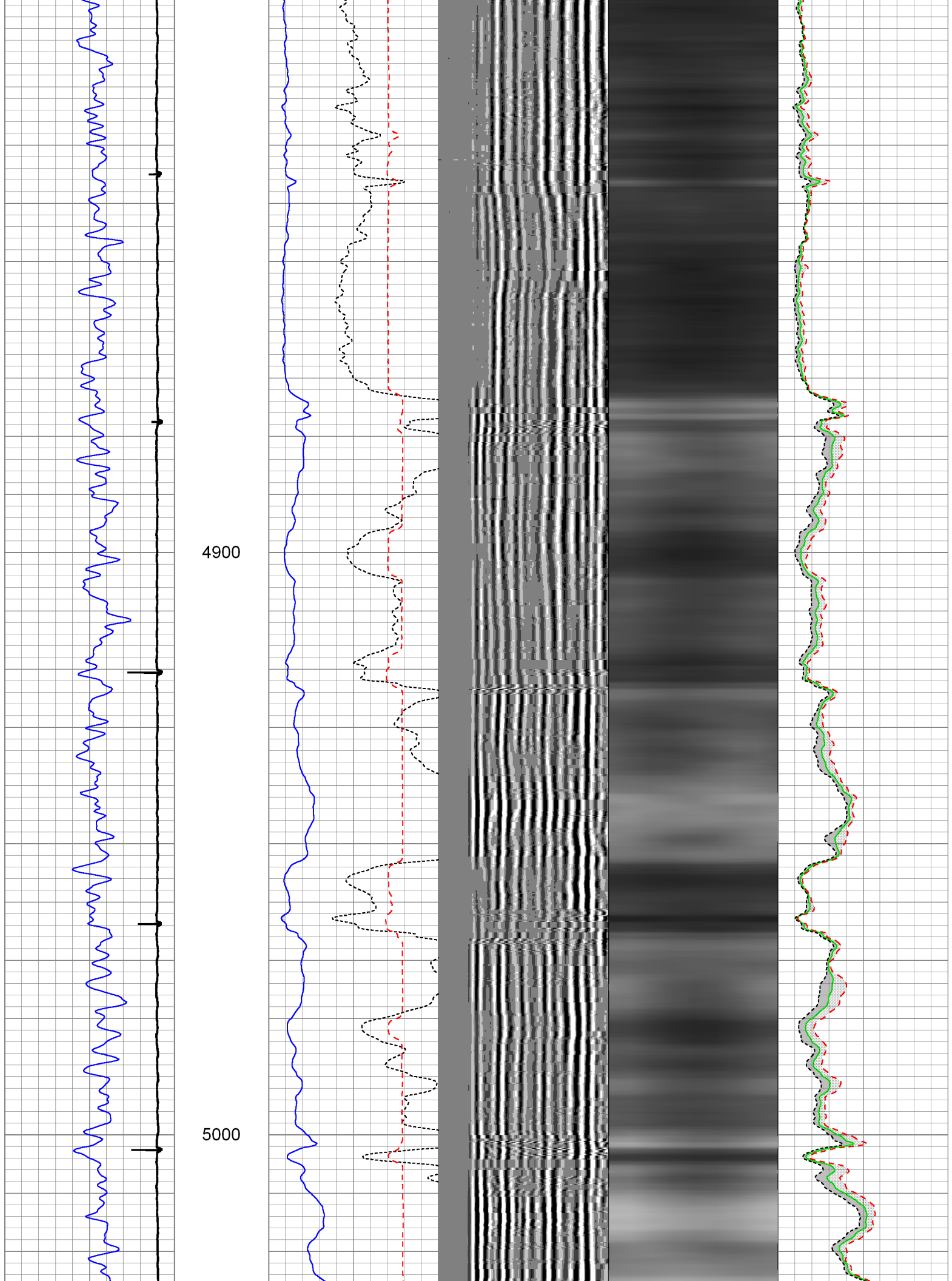


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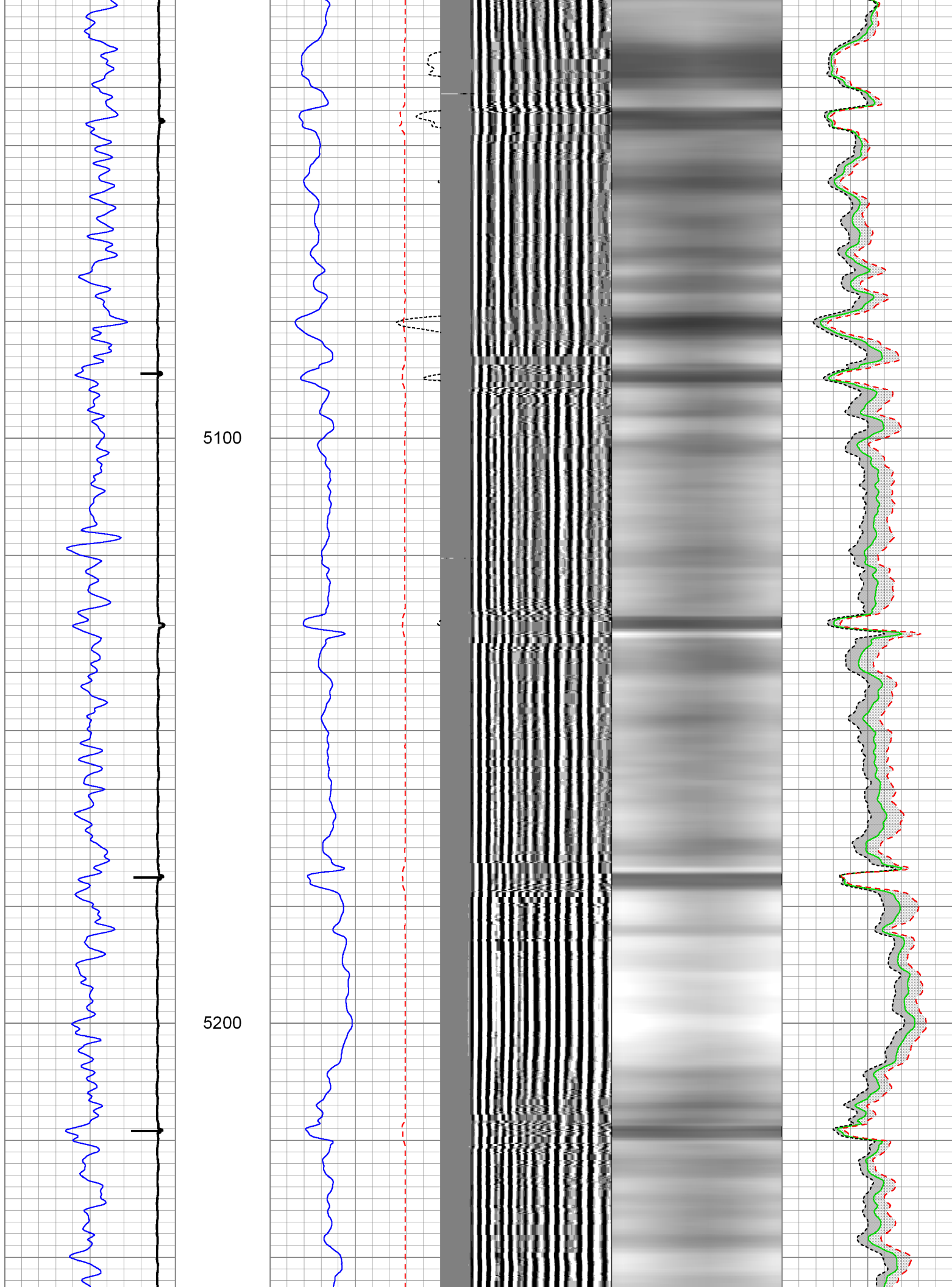
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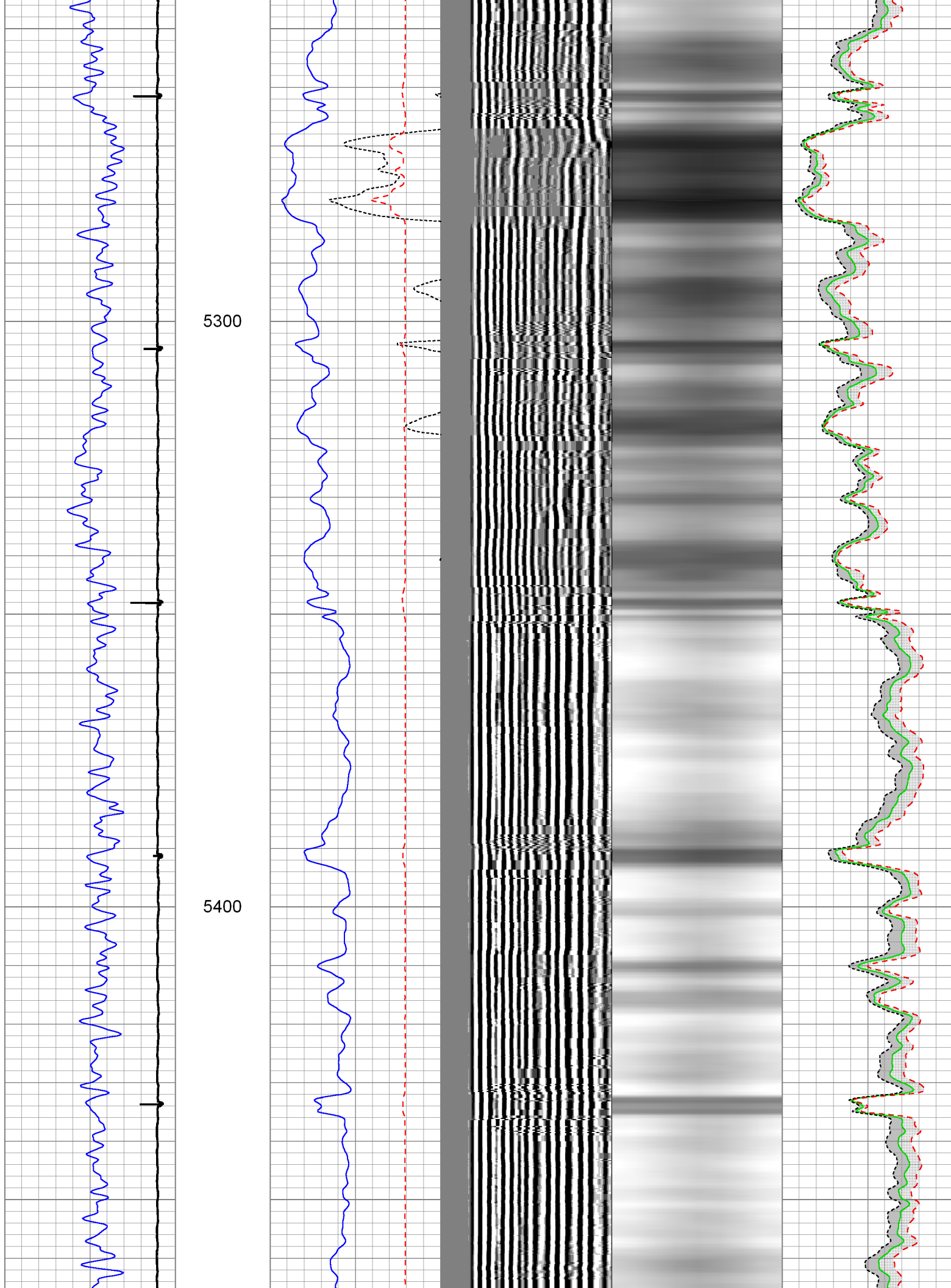
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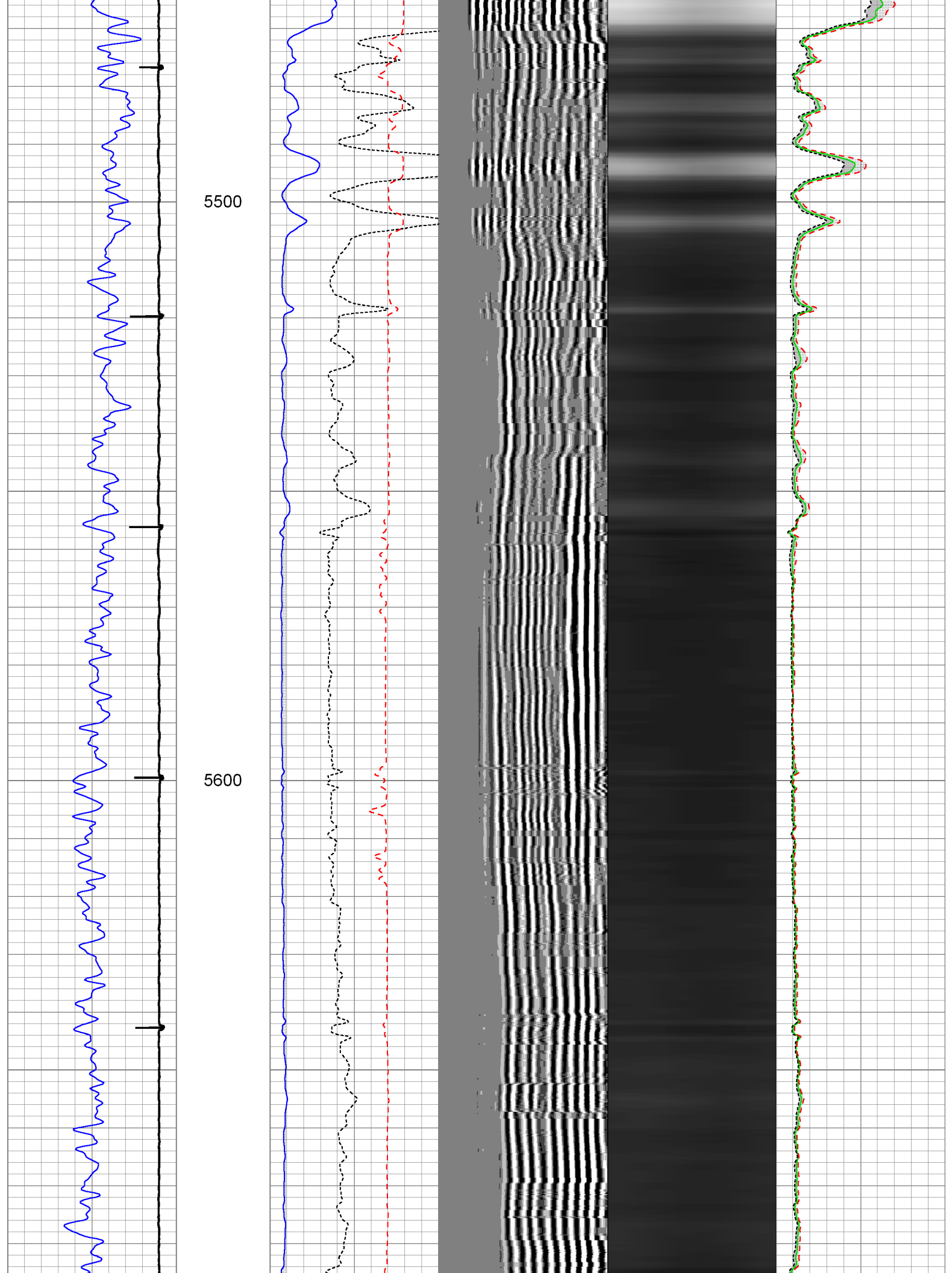
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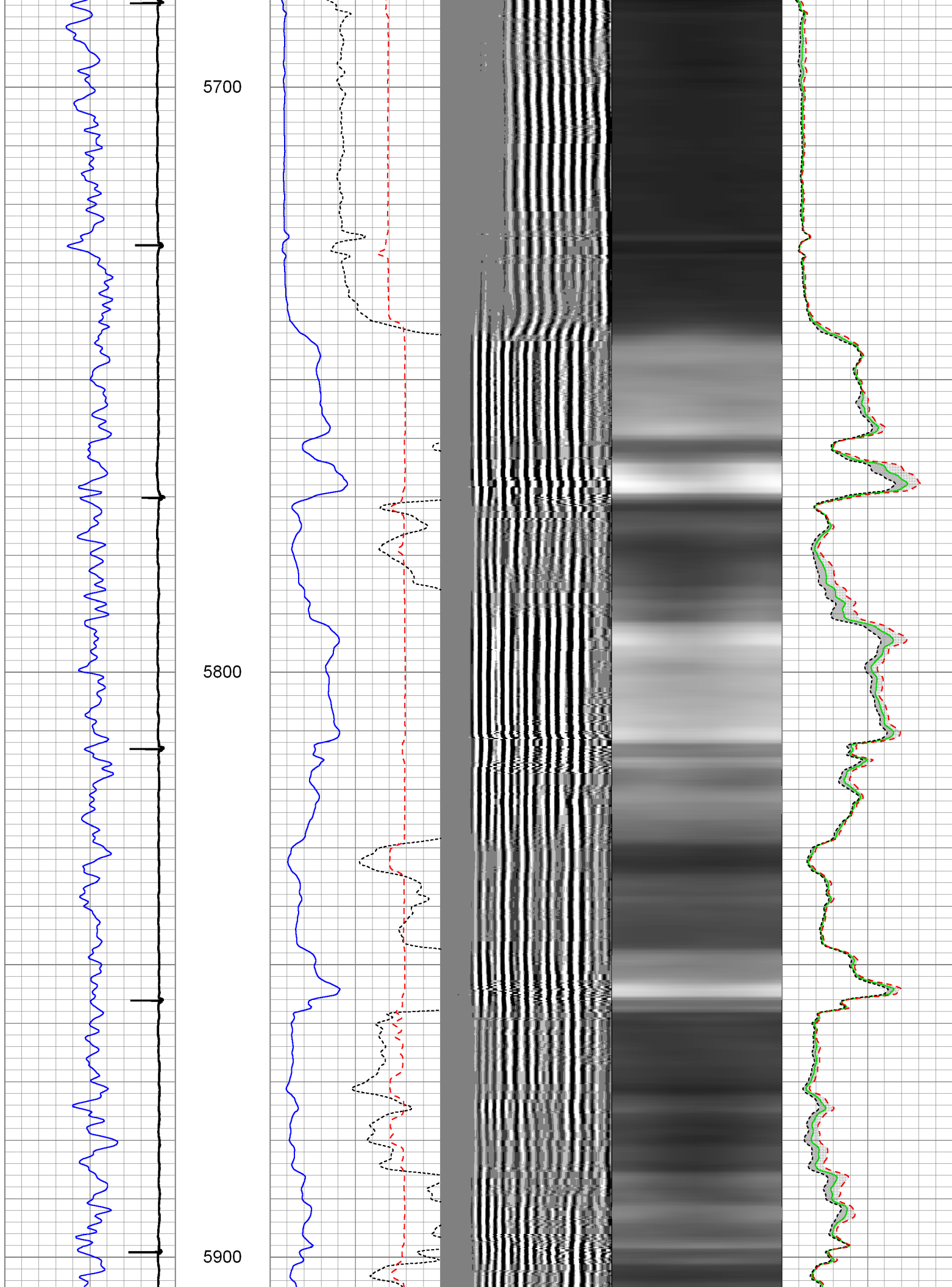


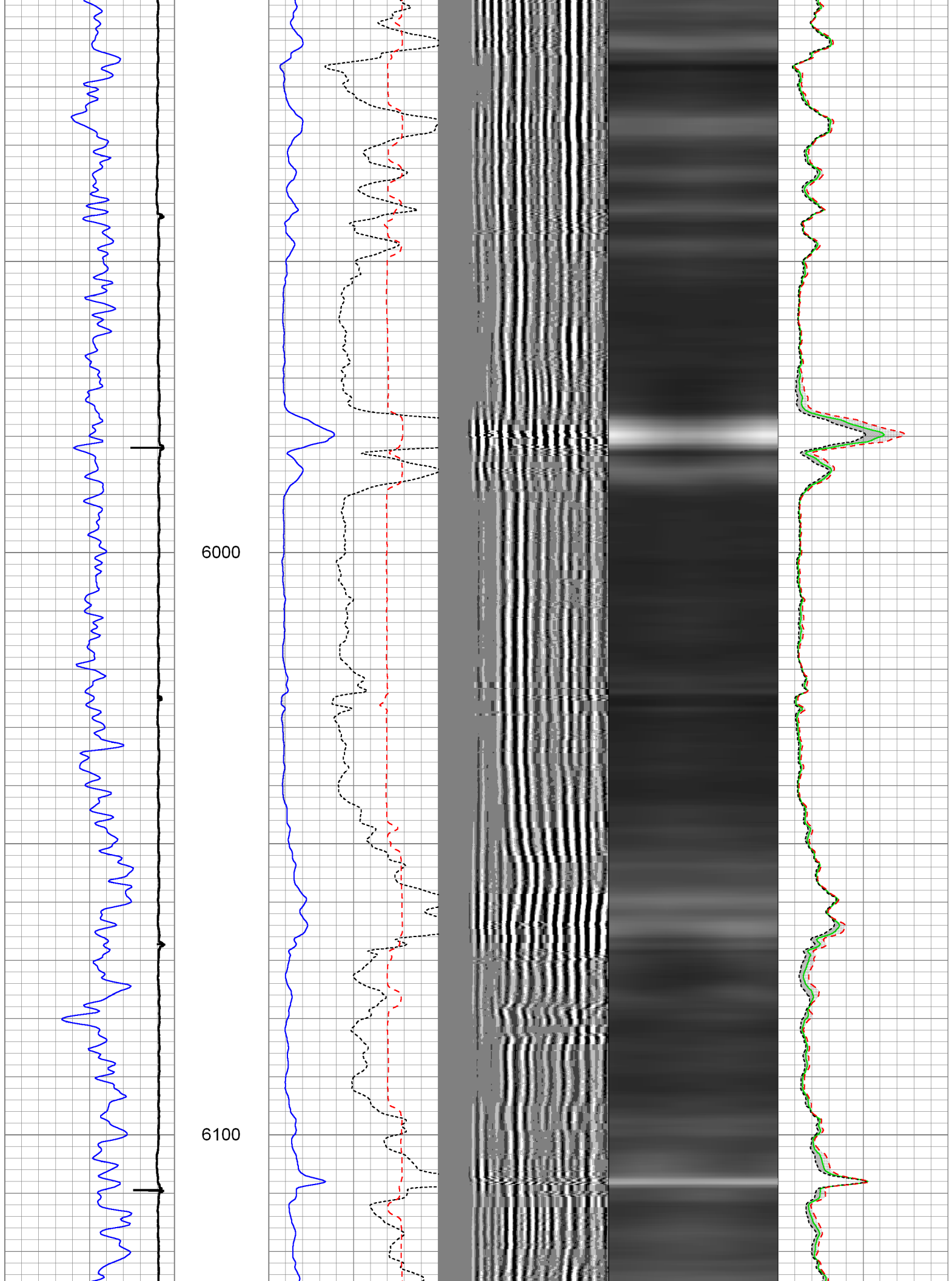


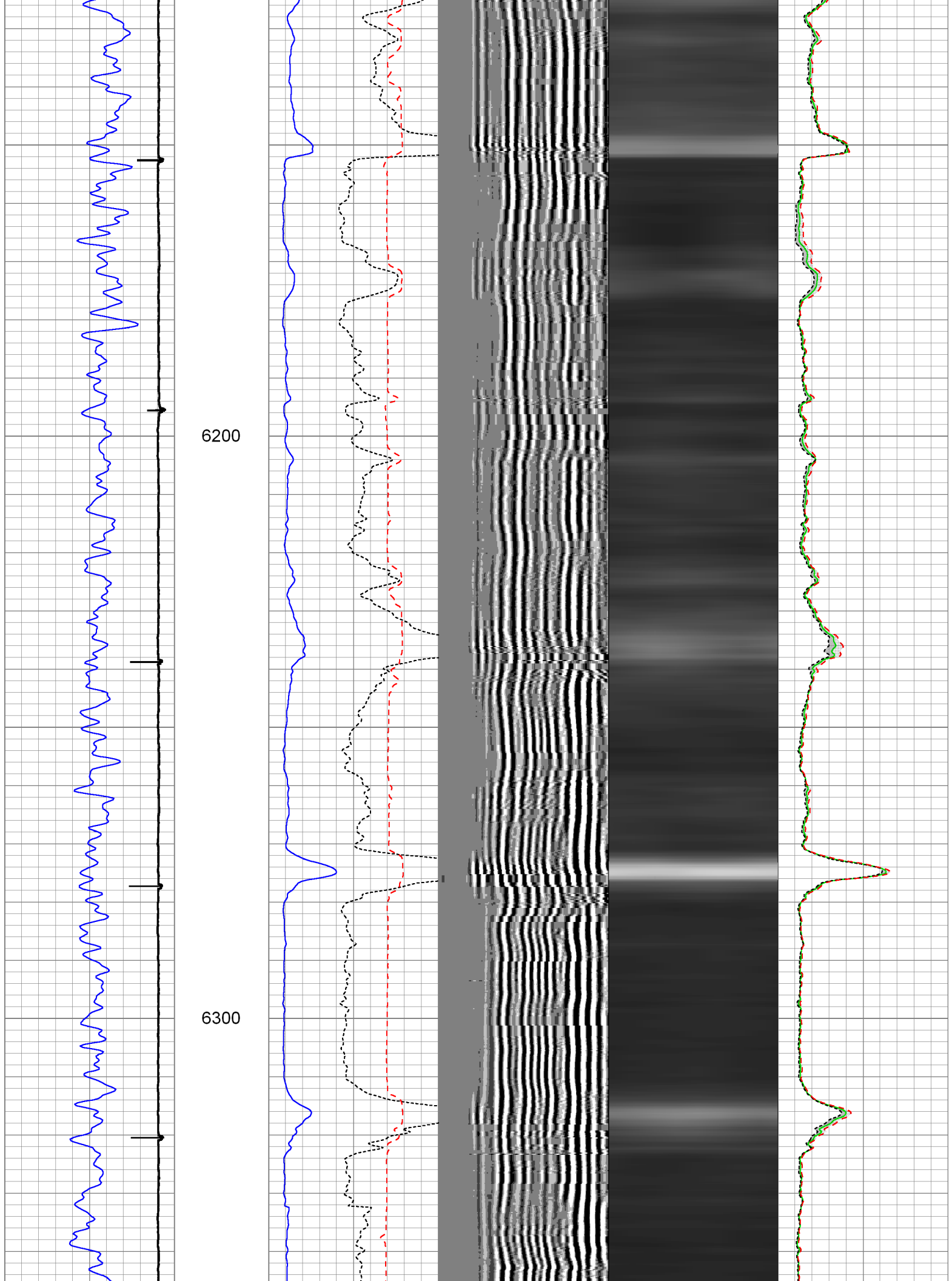
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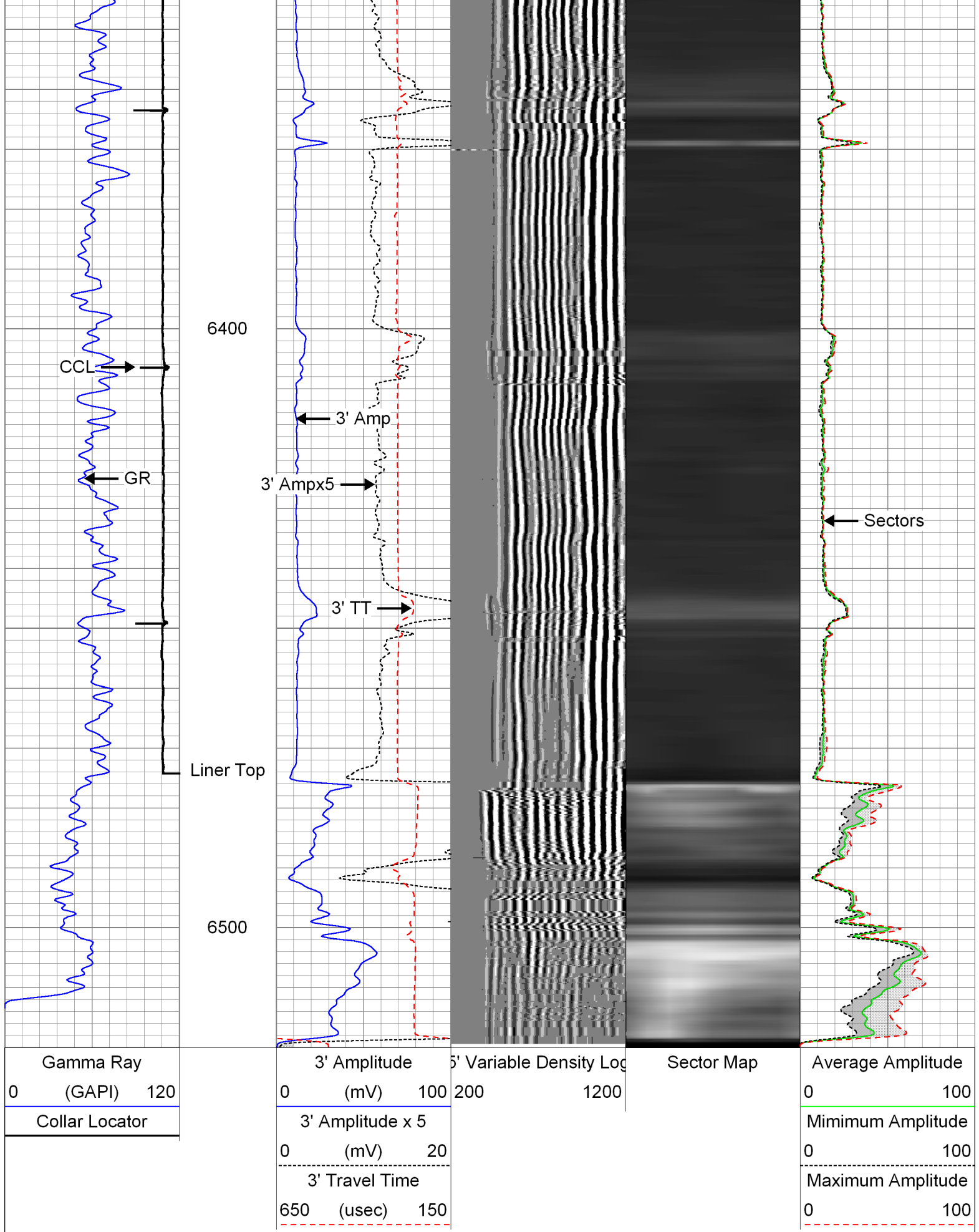
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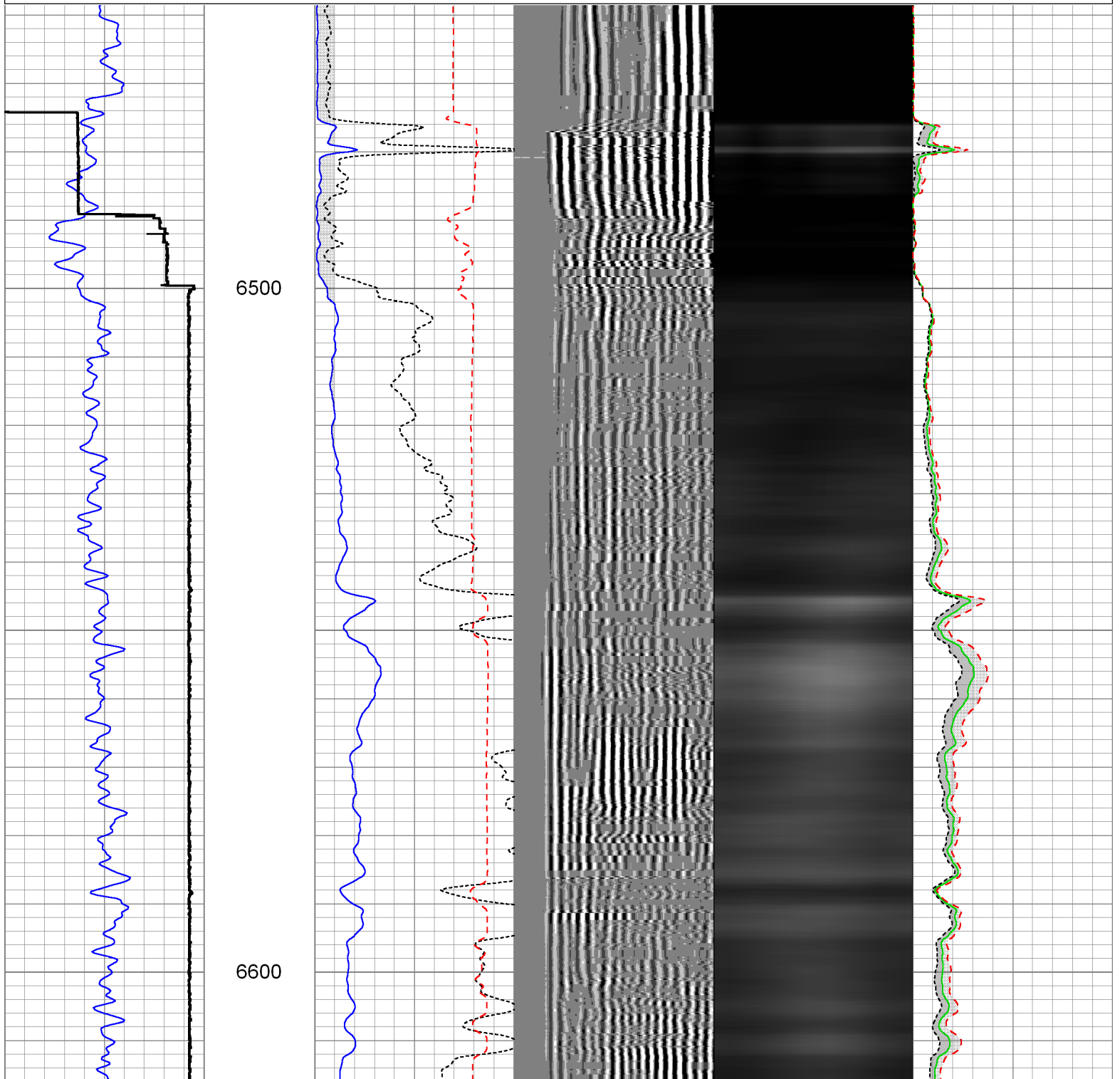


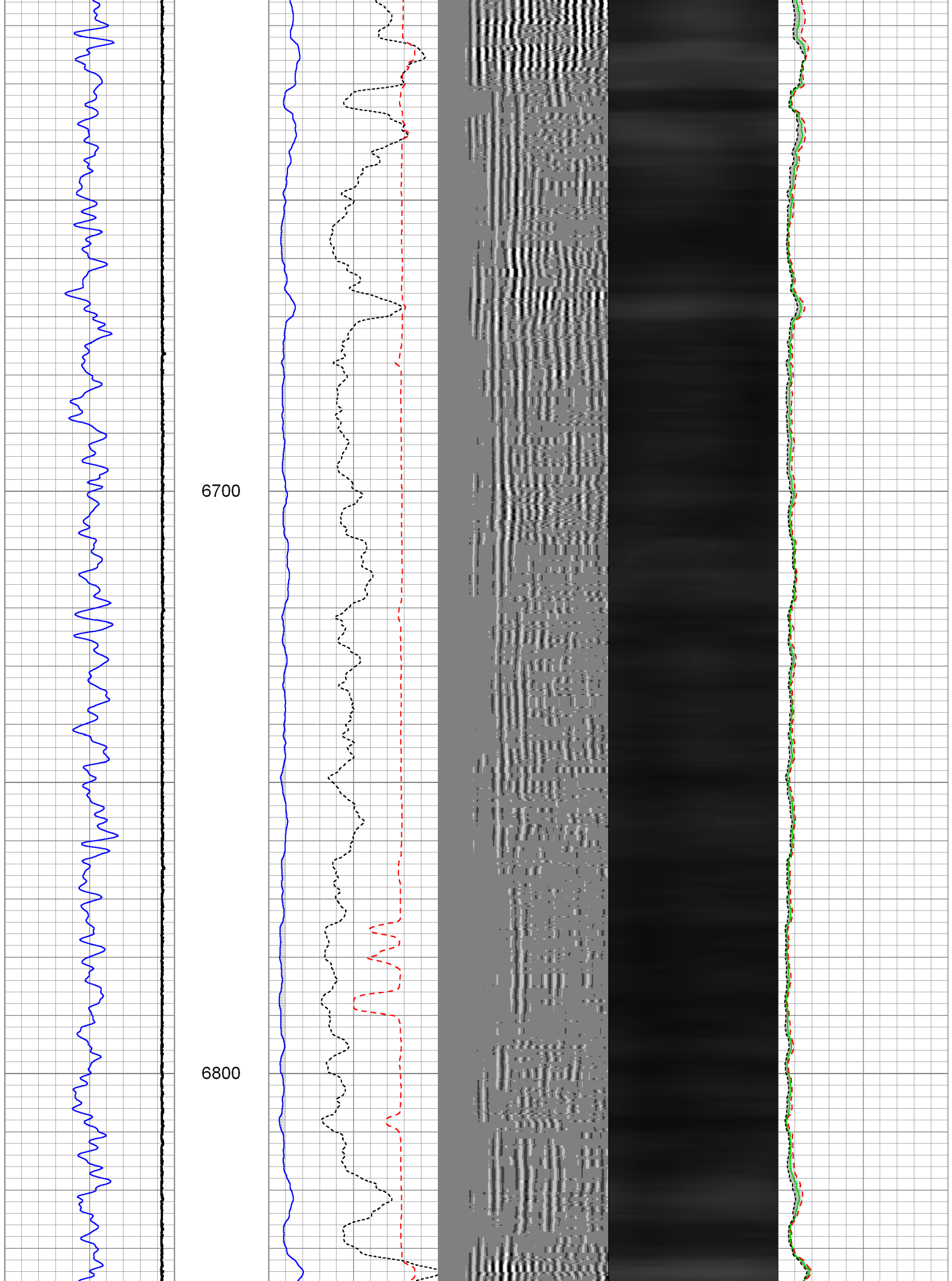




Database File: 0512338183_anadarko_kerbs 32n-13hz_04-12-14_mit_rbl.db
 Dataset Pathname: pass7
 Presentation Format: rbt007
 Dataset Creation: Sat Apr 12 14:13:21 2014 by Log Sondex V7.03
 Charted by: Depth in Feet scaled 1:240

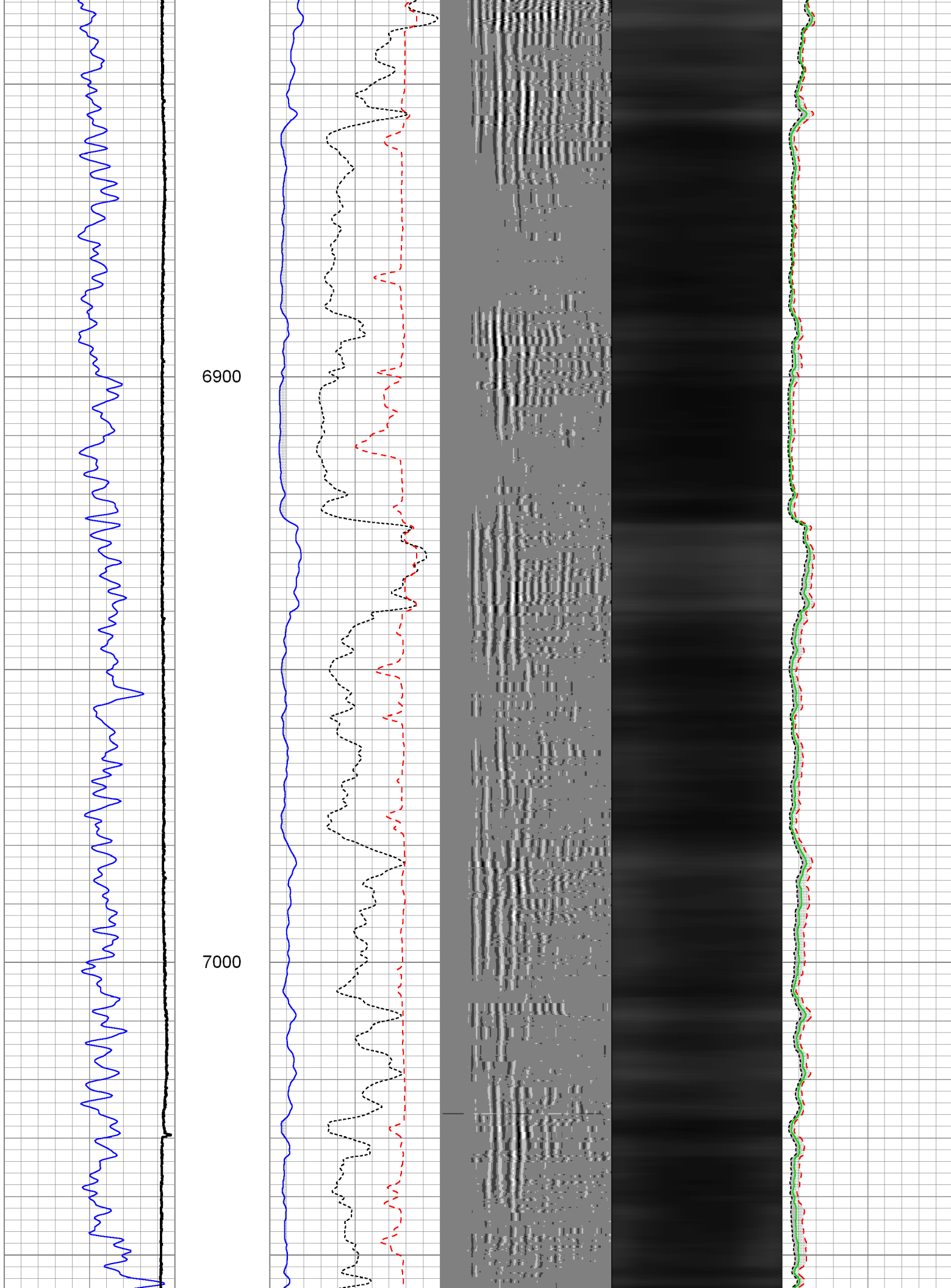
Gamma Ray		3' Amplitude		5' Variable Density Log		Sector Map		Average Amplitude	
0	(GAPI) 120	0	(mV) 100	200	1200			0	100
Collar Locator		3' Amplitude x 5						Minimum Amplitude	
		0	(mV) 20					0	100
		3' Travel Time						Maximum Amplitude	
		650	(usec) 150					0	100

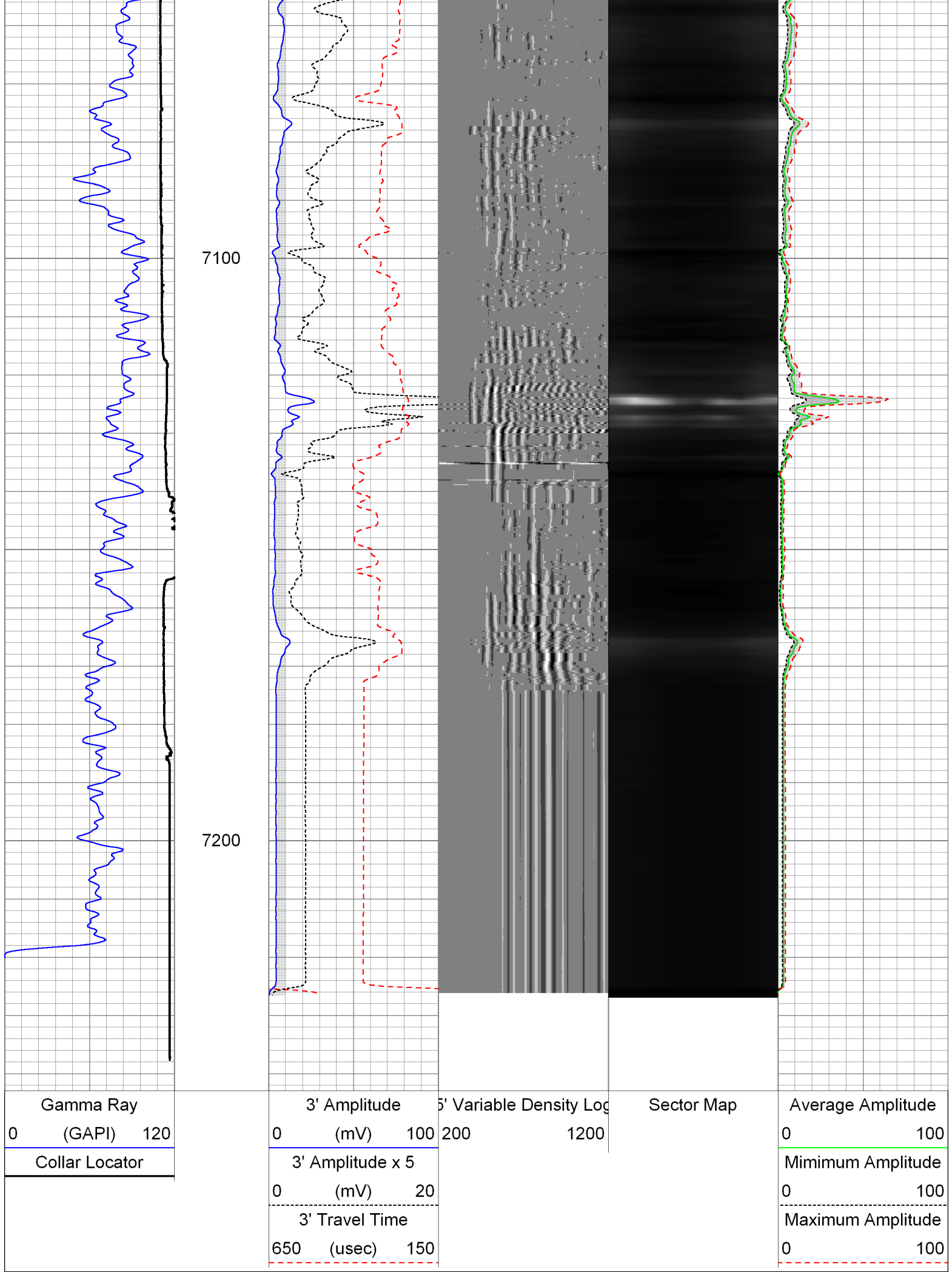




6900

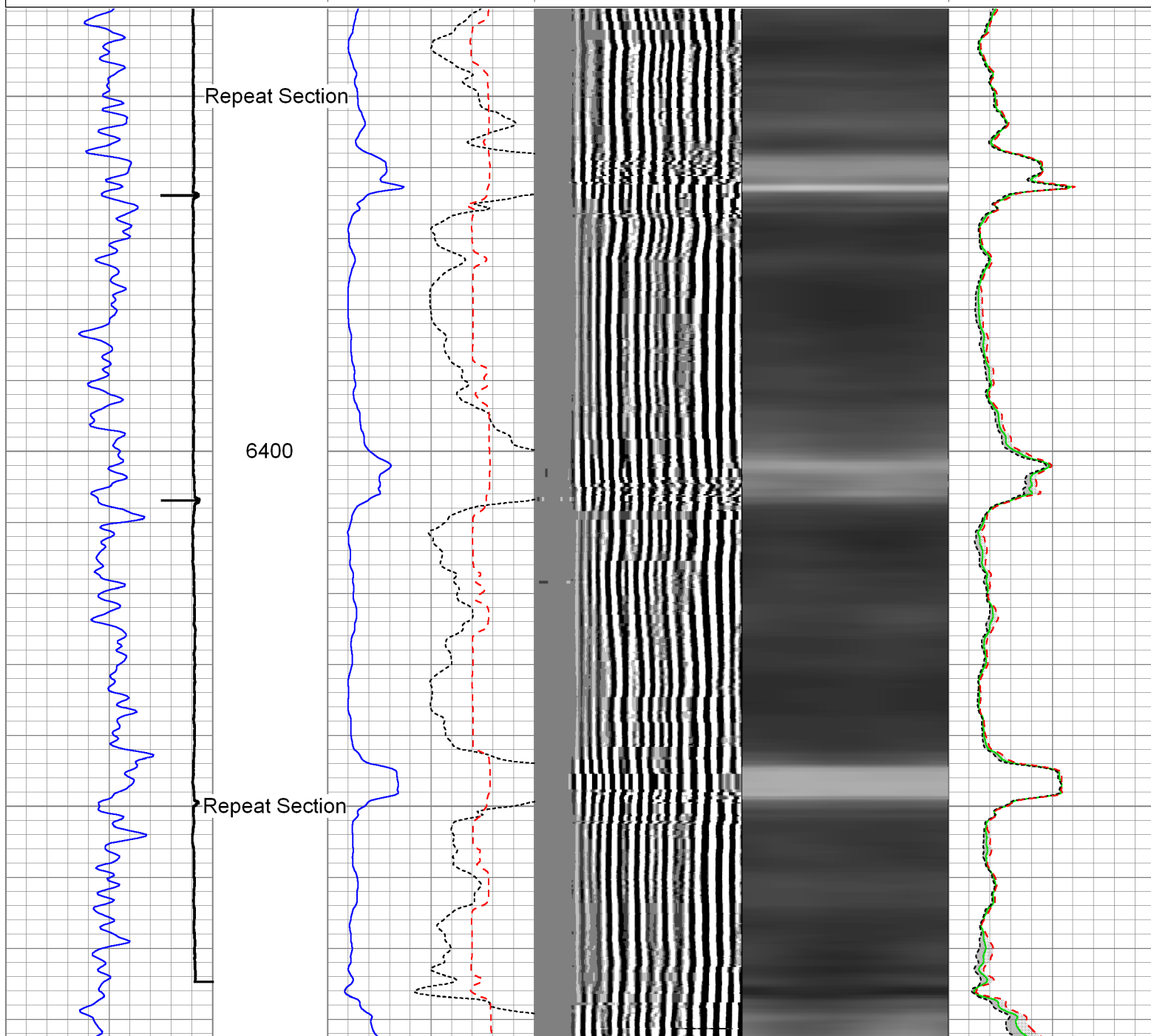
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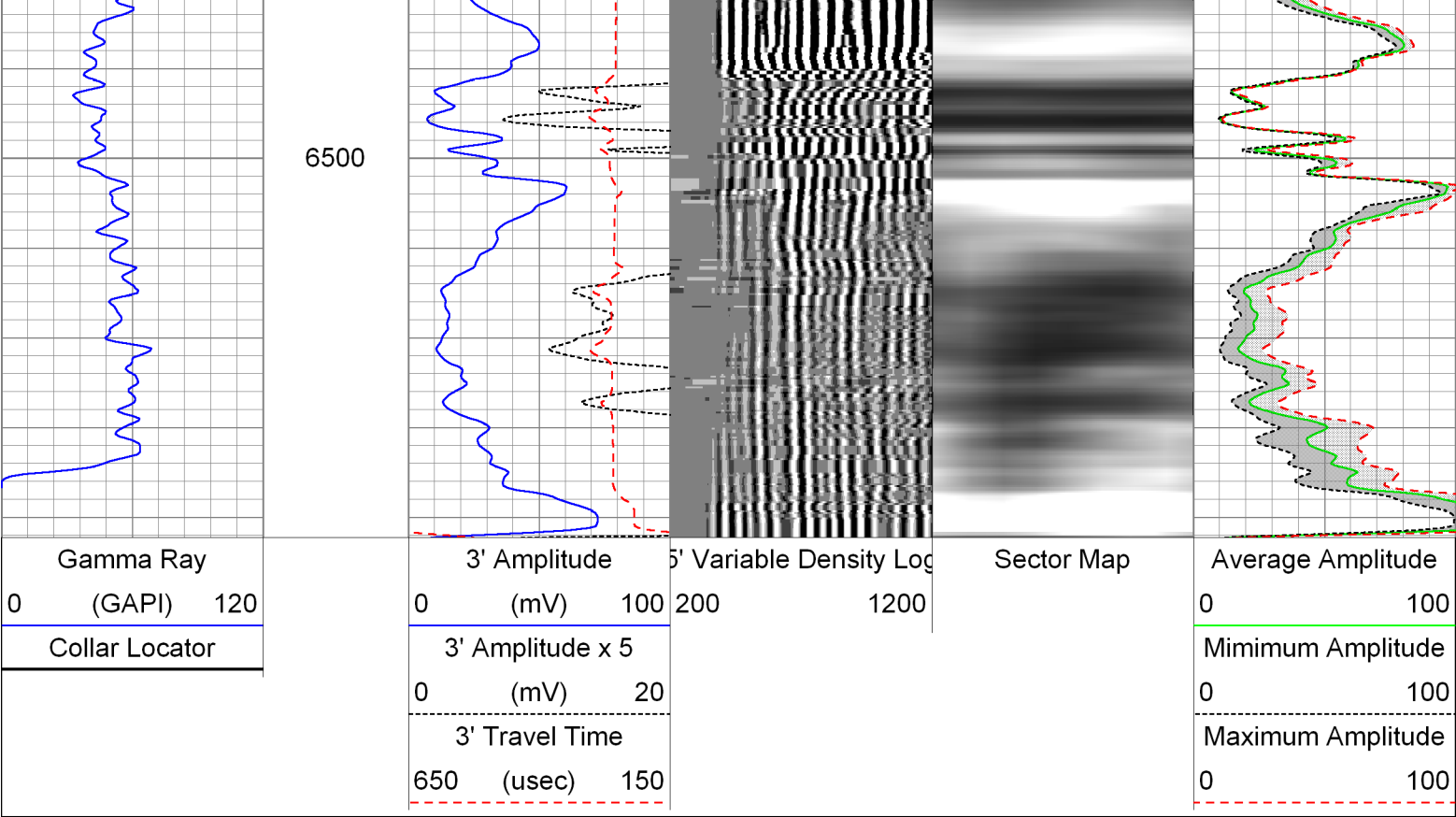




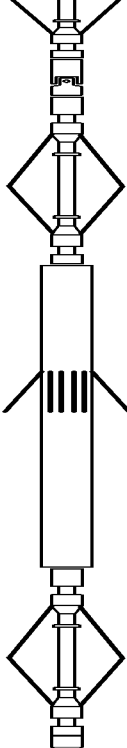
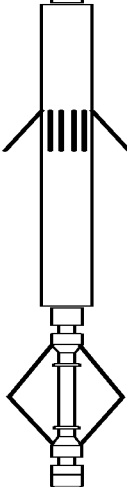
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 Dataset Pathname: pass3
 Presentation Format: rbt007
 Dataset Creation: Sat Apr 12 13:55:37 2014 by Log Sondex V7.03
 Charted by: Depth in Feet scaled 1:240

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





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	24.27		CHD-AES (000001) Cable Head	1.04	1.69	2.00
			XTU-001 (000001) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (000001) Production Gamma Ray	1.93	1.69	9.50
			PRC-001 (000001) Production Roller Centraliser (3 Arm)	1.92	1.69	7.00
WVF3FT	17.51		RBT-004 (10013454 7in) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	17.51					
WVFS2	17.51					
WVFS3	17.51					
WVFS4	17.51					
WVFS5	17.51					
WVFS6	17.51					
WVFS7	17.51					
WVFS8	17.51					
CBLTEMP	17.51					
CBLROT	17.51					
WVF5FT	16.51		PRC-017 (000002)	2.01	1.69	7.00

MIT	5.08		Production Roller Centraliser (3 Arm)			
			PKJ-013 (000001) Production Knuckle Joint	0.57	1.69	3.50
			PRC-034 (000007 4 arm spring activated P2.52 Production Roller Centraliser (4 Arm)		3.00	13.00
			MIT-027 (211111) Multifinger Imaging Tool (UW 40F)	4.54	2.75	61.10
TSTAMP	0.00		PRC-034 (000006) Production Roller Centraliser (4 Arm)	2.52	3.00	13.00
			BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
<div>Dataset: 0512338183_anadarko_kerbs 32n-13hz_04-12-14_mit_rbl.db: field/well/run1/pass8</div> <div>Total Length: 28.32 ft</div> <div>Total Weight: 263.80 lb</div> <div>O.D. 3.13 in</div>						

Calibration Report							
Database File:		0512338183_anadarko_kerbs 32n-13hz_04-12-14_mit_rbl.db					
Dataset Pathname:		pass8					
Dataset Creation:		Sat Apr 12 14:36:36 2014 by Log Sondex V7.03					
Multi-finger Imaging Tool Calibration Report							
Serial Number:		211111					
Number of Fingers:		40					
Tool Model:		027					
Inclinometer Calibration Report							
Performed:		Wed Nov 30 15:23:46 2005					
Calibration Angle:		45					
		Inc X		Inc Y			
Vertical:		1934		1950			
Finger 1 up:		1958		2277			
Finger 31 up:		1593		1959			
Finger 21 up:		1908		1606			
Finger 11 up:		2263		1911			
Sensitivity ratio:		0.998734					
X-axis angle:		274.18					
Deviation const.:		335.932					
Finger Calibration Report							
Performed:		Sat Apr 12 12:44:49 2014					
Ring size:	4	5	6	7			
(in)							
	Sens	Sens	Sens				
Finger 01:	951 358.0	1309 439.0	1748 498.0	2246			
Finger 02:	975 360.0	1335 434.0	1769 500.0	2269			
Finger 03:	973 356.0	1329 426.0	1755 492.0	2247			
Finger 04:	955 365.0	1320 428.0	1748 499.0	2247			
Finger 05:	977 367.0	1344 419.0	1763 483.0	2246			

Finger 06:	953	376.0	1329	418.0	1747	491.0	2238
Finger 07:	1094	340.0	1434	374.0	1808	440.0	2248
Finger 08:	1024	372.0	1396	407.0	1803	473.0	2276
Finger 09:	994	377.0	1371	405.0	1776	463.0	2239
Finger 10:	995	384.0	1379	400.0	1779	455.0	2234
Finger 11:	991	383.0	1374	394.0	1768	437.0	2205
Finger 12:	1200	346.0	1546	340.0	1886	367.0	2253
Finger 13:	1108	372.0	1480	367.0	1847	405.0	2252
Finger 14:	1203	352.0	1555	341.0	1896	358.0	2254
Finger 15:	1054	394.0	1448	390.0	1838	417.0	2255
Finger 16:	1162	379.0	1541	368.0	1909	373.0	2282
Finger 17:	1074	385.0	1459	381.0	1840	389.0	2229
Finger 18:	1056	392.0	1448	386.0	1834	386.0	2220
Finger 19:	1075	388.0	1463	388.0	1851	387.0	2238
Finger 20:	1156	375.0	1531	364.0	1895	358.0	2253
Finger 21:	1138	385.0	1523	384.0	1907	375.0	2282
Finger 22:	1146	377.0	1523	383.0	1906	366.0	2272
Finger 23:	1112	367.0	1479	394.0	1873	392.0	2265
Finger 24:	1284	339.0	1623	347.0	1970	334.0	2304
Finger 25:	1233	351.0	1584	372.0	1956	372.0	2328
Finger 26:	1254	335.0	1589	351.0	1940	330.0	2270
Finger 27:	1231	337.0	1568	367.0	1935	342.0	2277
Finger 28:	1277	334.0	1611	368.0	1979	331.0	2310
Finger 29:	1246	325.0	1571	365.0	1936	343.0	2279
Finger 30:	1250	320.0	1570	373.0	1943	350.0	2293
Finger 31:	1244	331.0	1575	386.0	1961	358.0	2319
Finger 32:	1227	316.0	1543	375.0	1918	349.0	2267
Finger 33:	1058	345.0	1403	429.0	1832	437.0	2269
Finger 34:	1080	337.0	1417	414.0	1831	434.0	2265
Finger 35:	1162	322.0	1484	386.0	1870	402.0	2272
Finger 36:	1116	326.0	1442	396.0	1838	415.0	2253
Finger 37:	1030	350.0	1380	427.0	1807	458.0	2265
Finger 38:	1009	343.0	1352	416.0	1768	454.0	2222
Finger 39:	980	359.0	1339	442.0	1781	486.0	2267
Finger 40:	953	355.0	1308	430.0	1738	488.0	2226

Segmented Cement Bond Log Calibration Report

Serial Number:	10013454 7in
Tool Model:	004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	167.051 ft

Master Calibration, performed Sat Apr 12 14:40:40 2014:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.003	0.659	0.800	62.165	93.507	0.529
5FT	-0.001	0.701	0.800	62.165	87.359	0.884
S1	0.003	0.666	0.000	100.000	150.738	-0.466
S2	0.002	0.665	0.000	100.000	150.799	-0.230
S3	0.003	0.657	0.000	100.000	152.893	-0.442
S4	0.002	0.650	0.000	100.000	154.223	-0.297
S5	0.003	0.654	0.000	100.000	153.578	-0.444
S6	0.002	0.656	0.000	100.000	152.828	-0.295
S7	0.003	0.655	0.000	100.000	153.334	-0.444
S8	0.003	0.664	0.000	100.000	151.130	-0.397

Gamma Ray Calibration Report

Serial Number:	000001
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	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Kerbs 32N-13HZ
Field	Wattenberg
County	Weld
State	Colorado