



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 Jelts 37N-19HZ				Well Jelts 37N-19HZ						
Field Wattenberg				Field Wattenberg						
County Weld				County Weld						
State Colorado				State Colorado						
Location:				API # : 05-123-36569		Other Services Gauge Ring CIL				
Permanent Datum				SHL: 275' FNL & 1828' FEL NWNE		Elevation				
Log Measured From				Lat / Long: 40.04313 / -104.93064		K.B. 5162' D.F. 5161' G.L. 5149'				
Drilling Measured From				SEC 19 TWP 1N RGE 67W		Kelly Bushing (13 FT)				
Ground Level				5149'		Kelly Bushing				
21-Aug-2013										
Run Number				Two						
Depth Driller				12122 FT						
Depth Logger				7070 FT						
Bottom Logged Interval				7065 FT						
Top Log Interval				Surface						
Open Hole Size				8.750"						
Type Fluid				Water						
Density / Viscosity				8.34 lbm/gal						
Max. Recorded Temp.				218 degF						
Estimated Cement Top				4256.0 FT						
Time Well Ready				10:00						
Time Logger on Bottom				11:30						
Equipment Number				HD-0119						
Location				Fort Lupton, CO.						
Recorded By				Sam Hopper						
Witnessed By				Fernando Ortega						
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	Surface	956 FT		
Intermediate #1				7"	26#	HCP-110	Surface	8045 FT		
Intermediate #2										
Liner				4-1/2"	11.6#	P-110	7001 FT	12099 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

This is first recorded log in hole.  
Depth reference to Casing Tally reported Top of Liner at 7001'.  
Adjusted -9' to TOL at 7001' from a 13' KB zero.  
RCBL ran at 2500 PSI surface induced pressure.  
Estimated Cement Top recorded at 4350'.

Thank you for choosing FMC Technologies Completion Services, Inc.



Main Pass

Recorded with 2500 PSI Surface Induced Pressure

Database File:anadarko\_jelts 37n-19hz\_rcbl\_cil\_21-aug-13\_w7.db

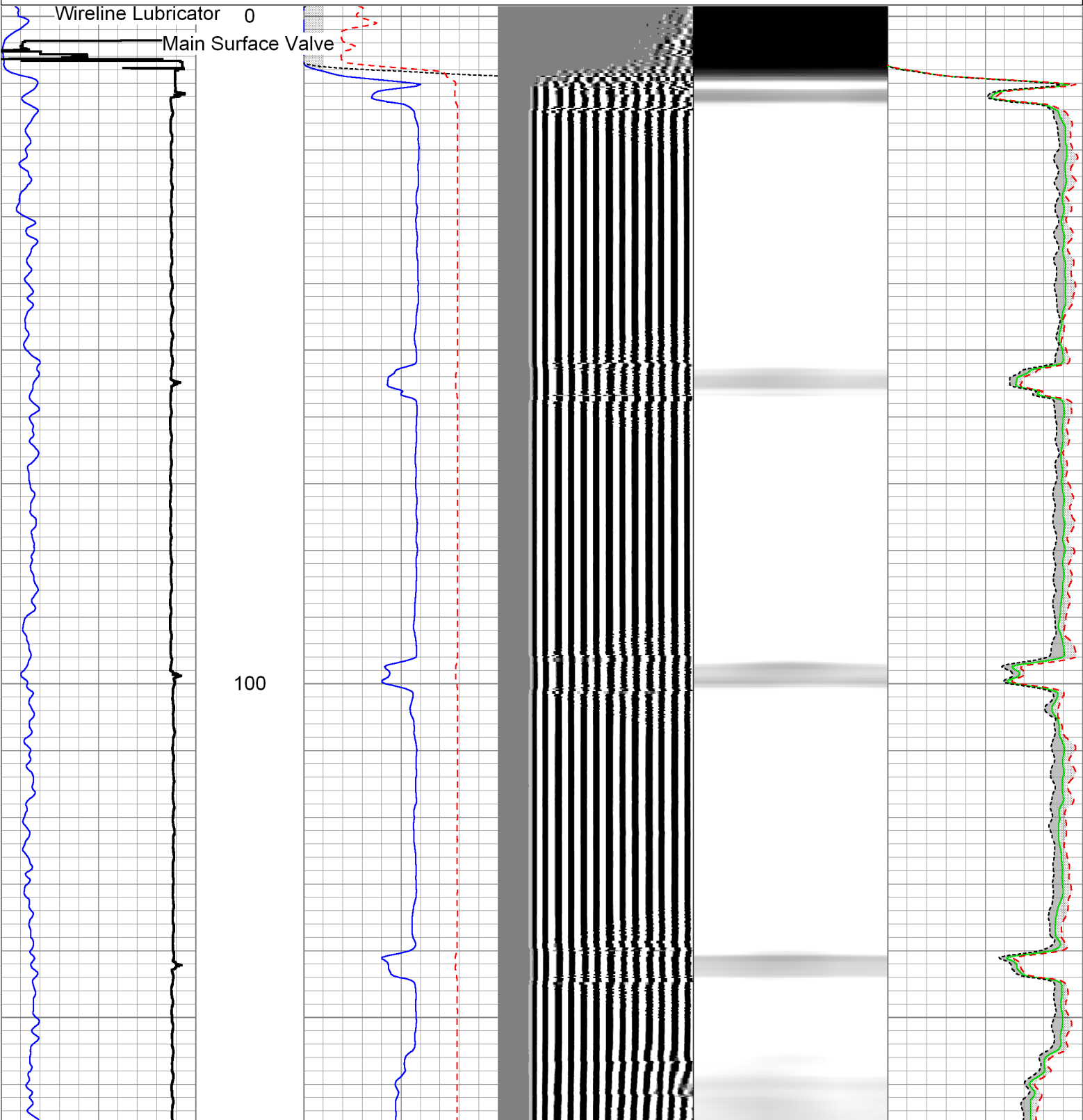
Dataset Pathname:main.1

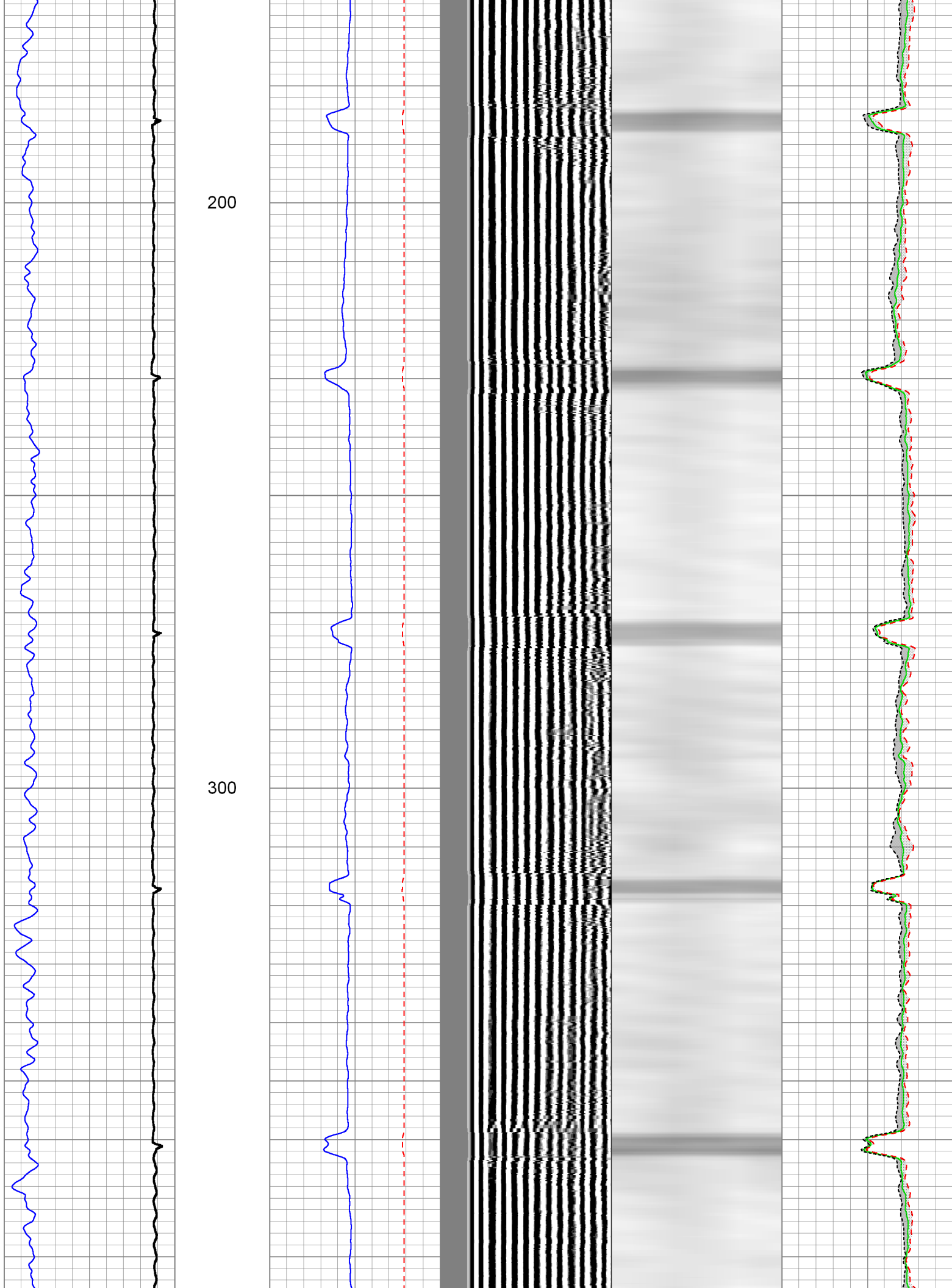
Presentation Format:rib

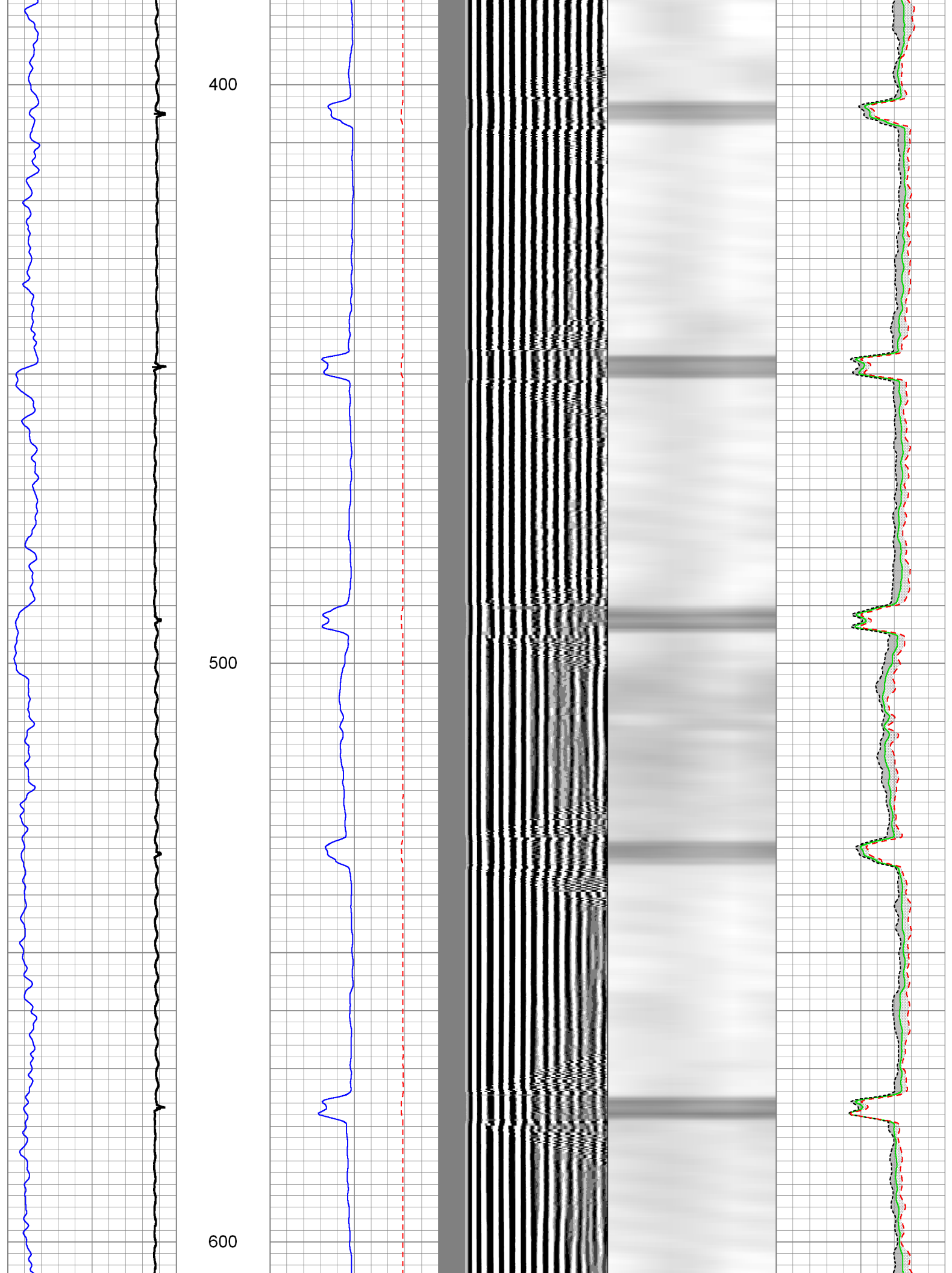
Dataset Creation:Wed Aug 21 21:05:06 2013 by Calc Sondex V7.03

Charted by:Depth in Feet scaled 1:240

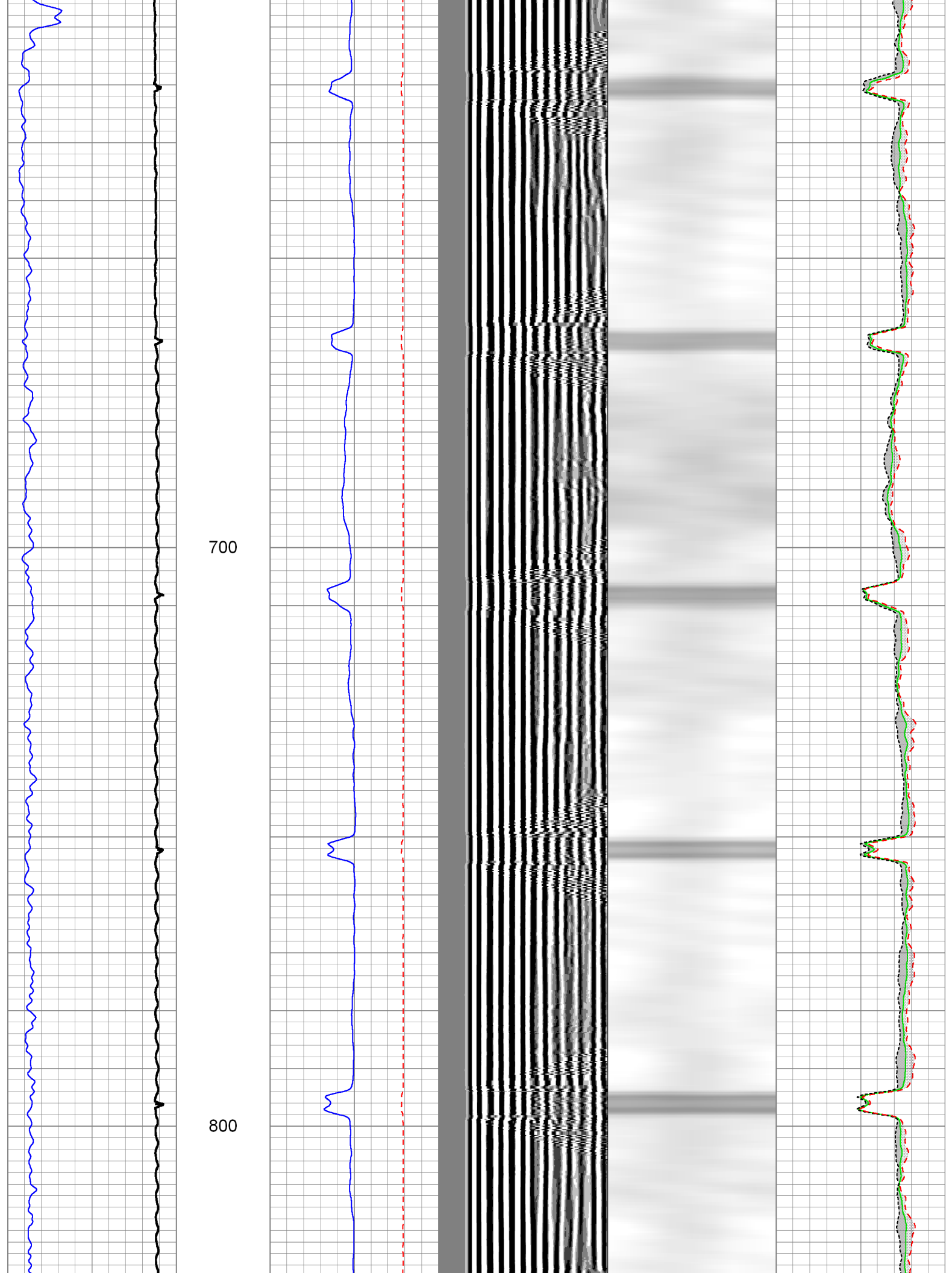
Gamma Ray		3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude	
0	(GAPI) 150	0	(mV) 100			0	100
Collar Locator		3' Amplitude x 5				Minimum Amplitude	
		0	(mV) 20			0	100
		3' Travel Time				Maximum Amplitude	
		650	(usec) 150			0	100

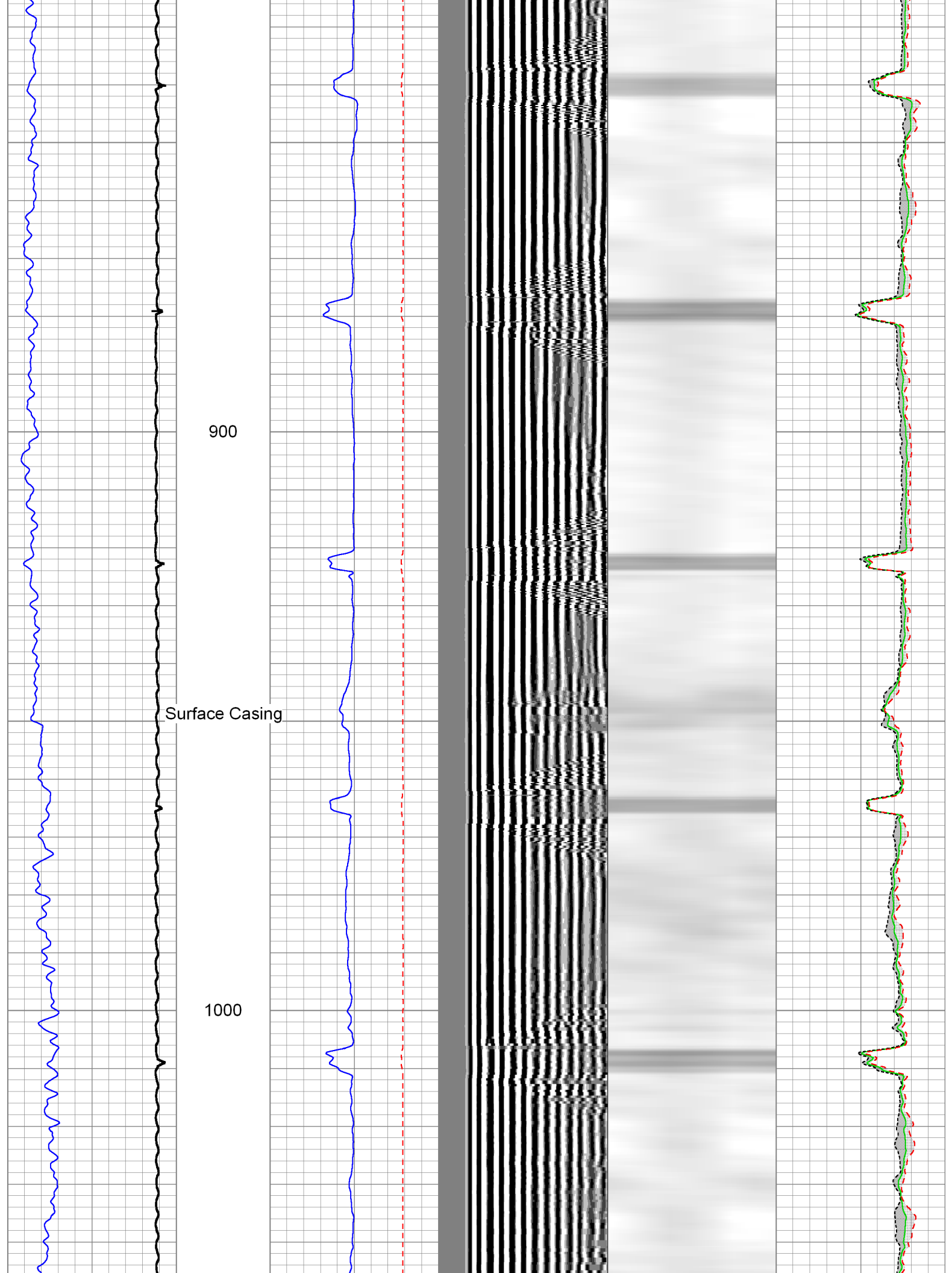






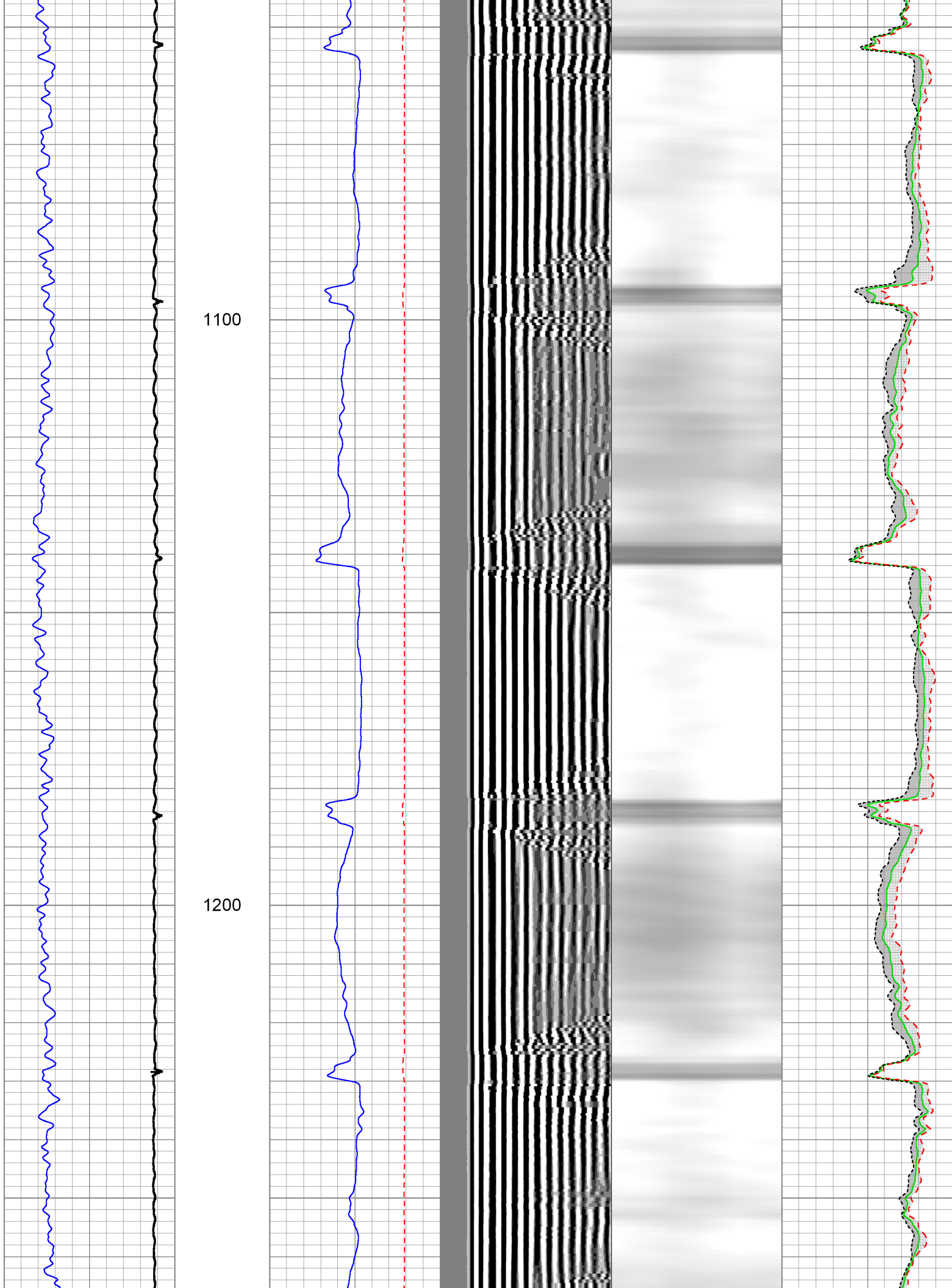


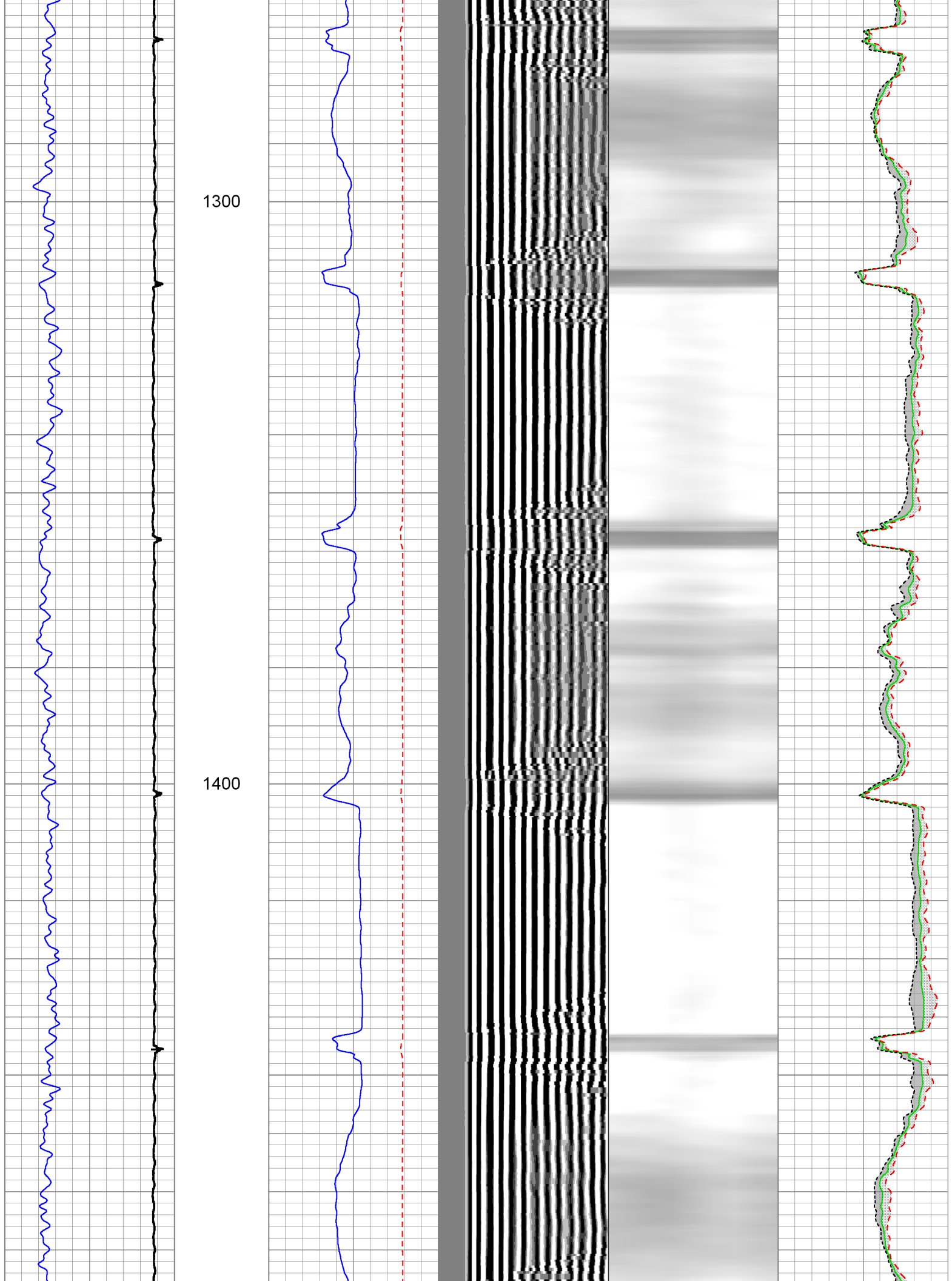




1100

1200

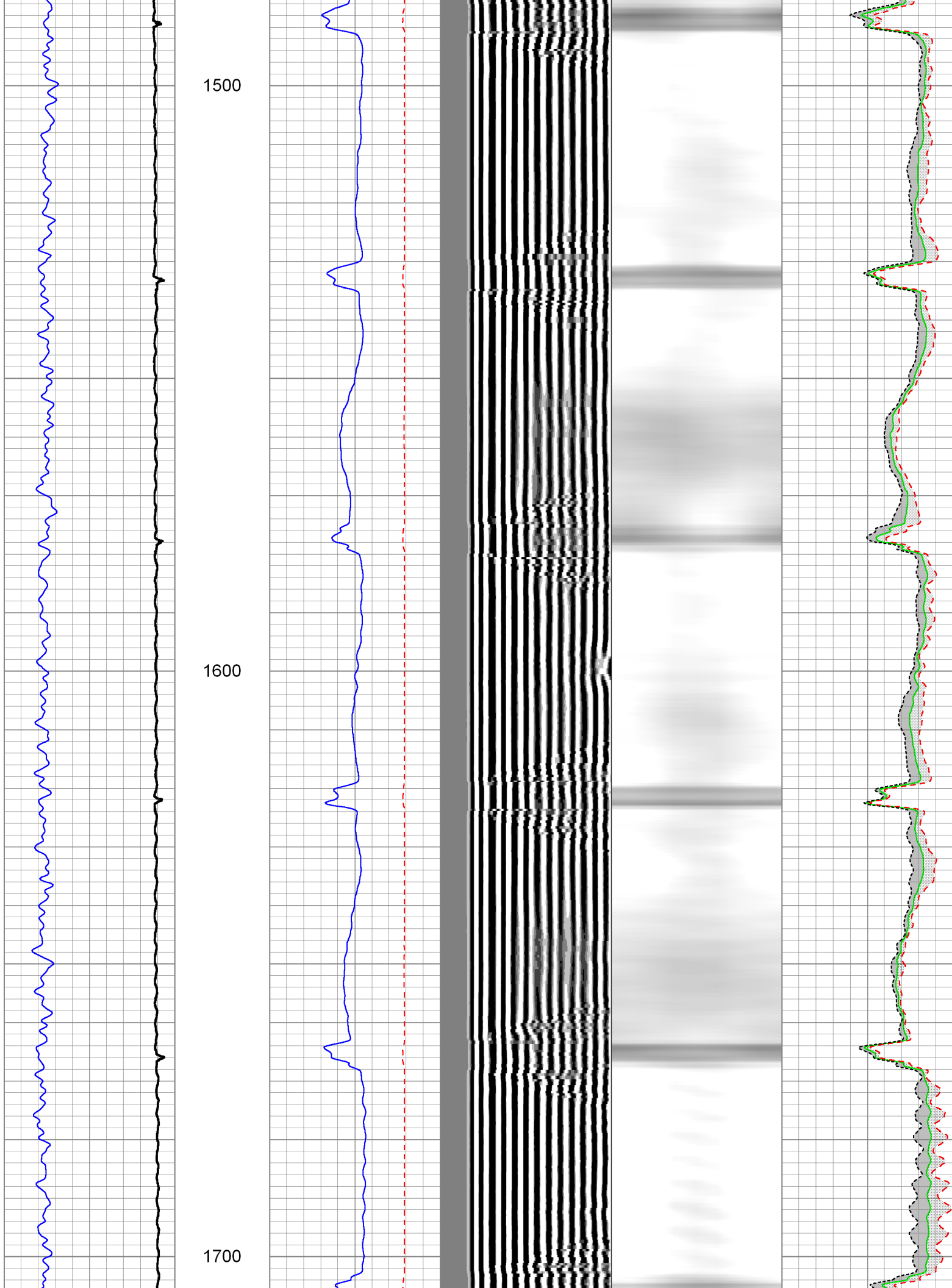


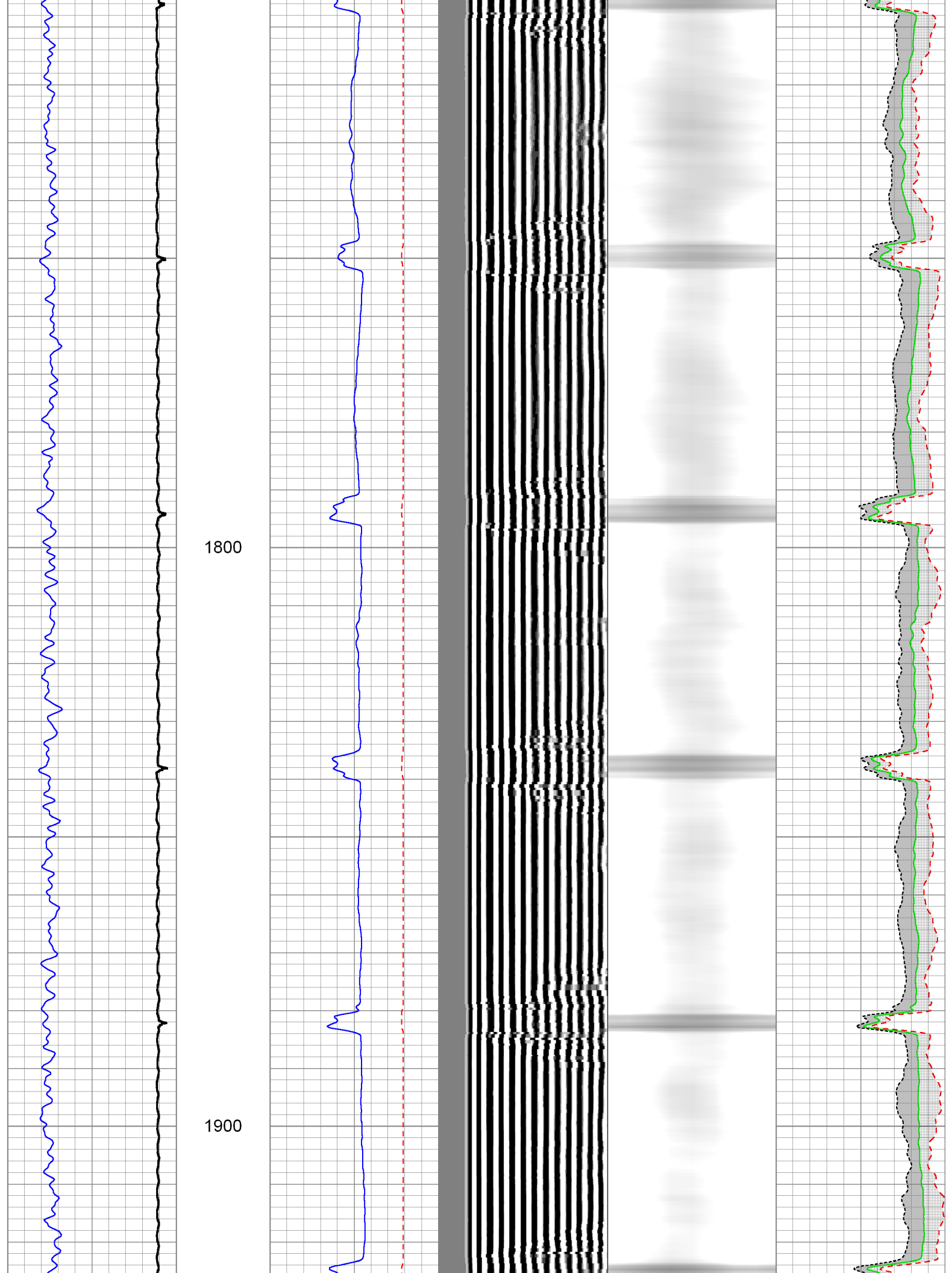


1500

1600

1700

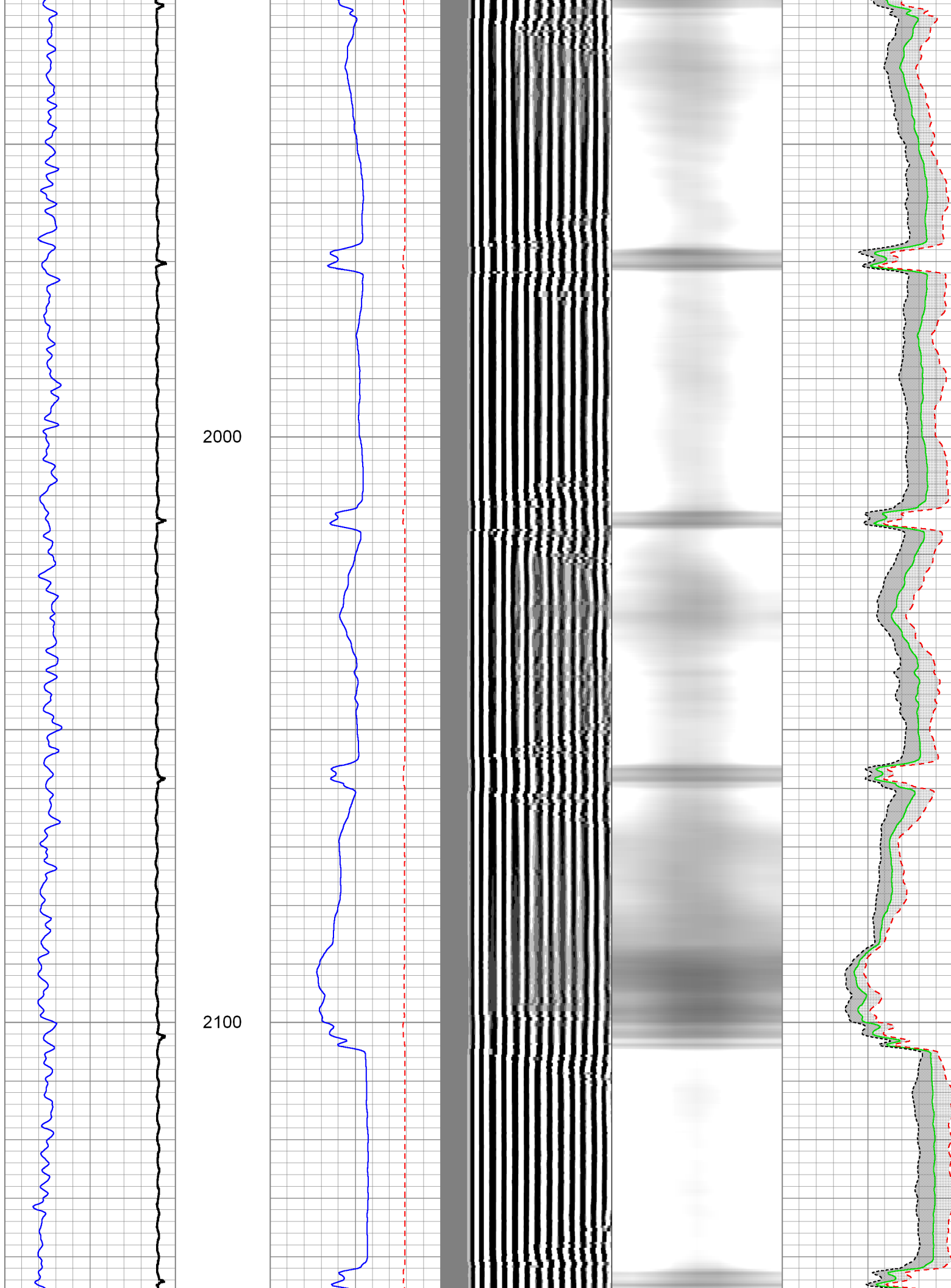






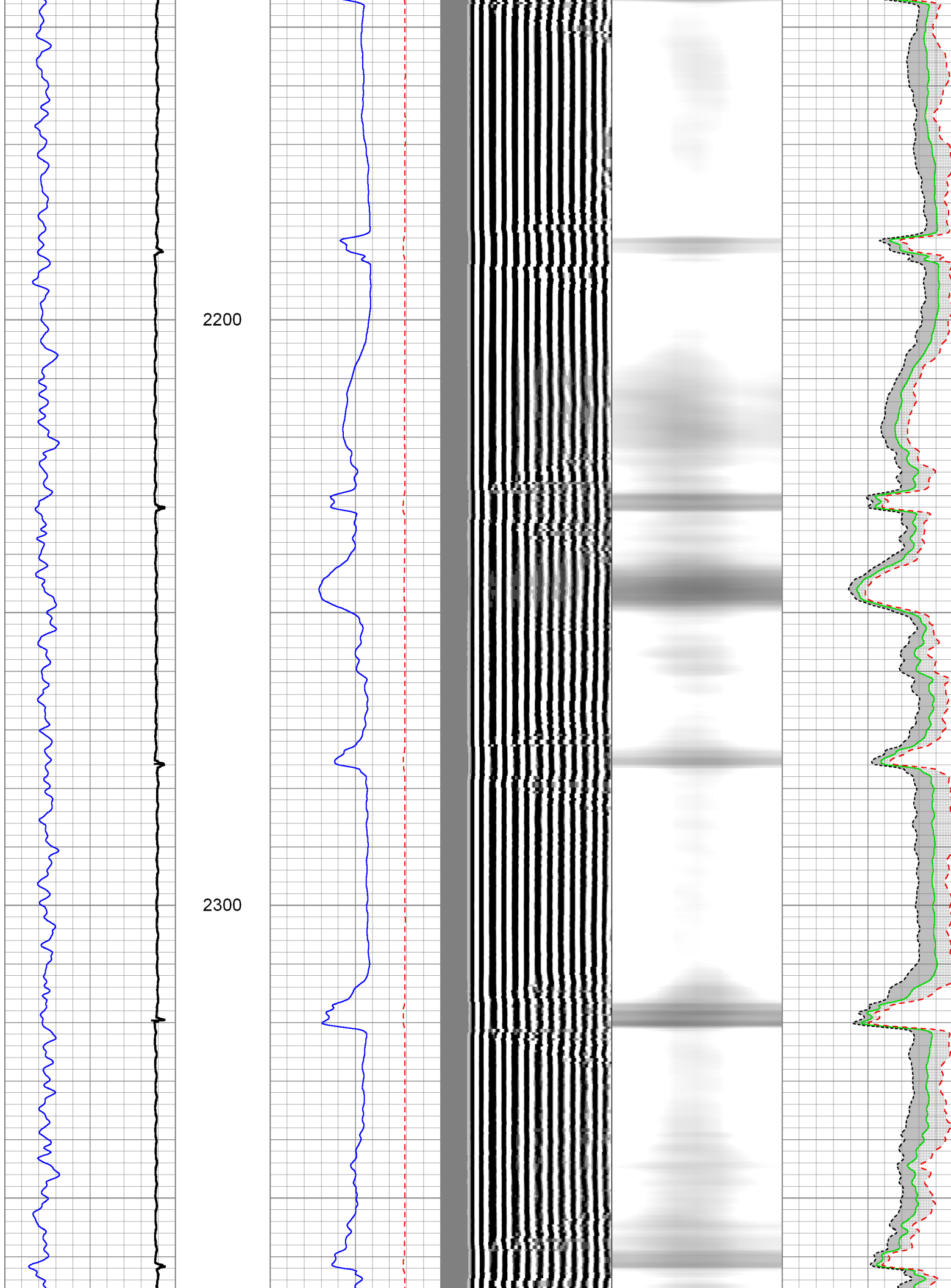
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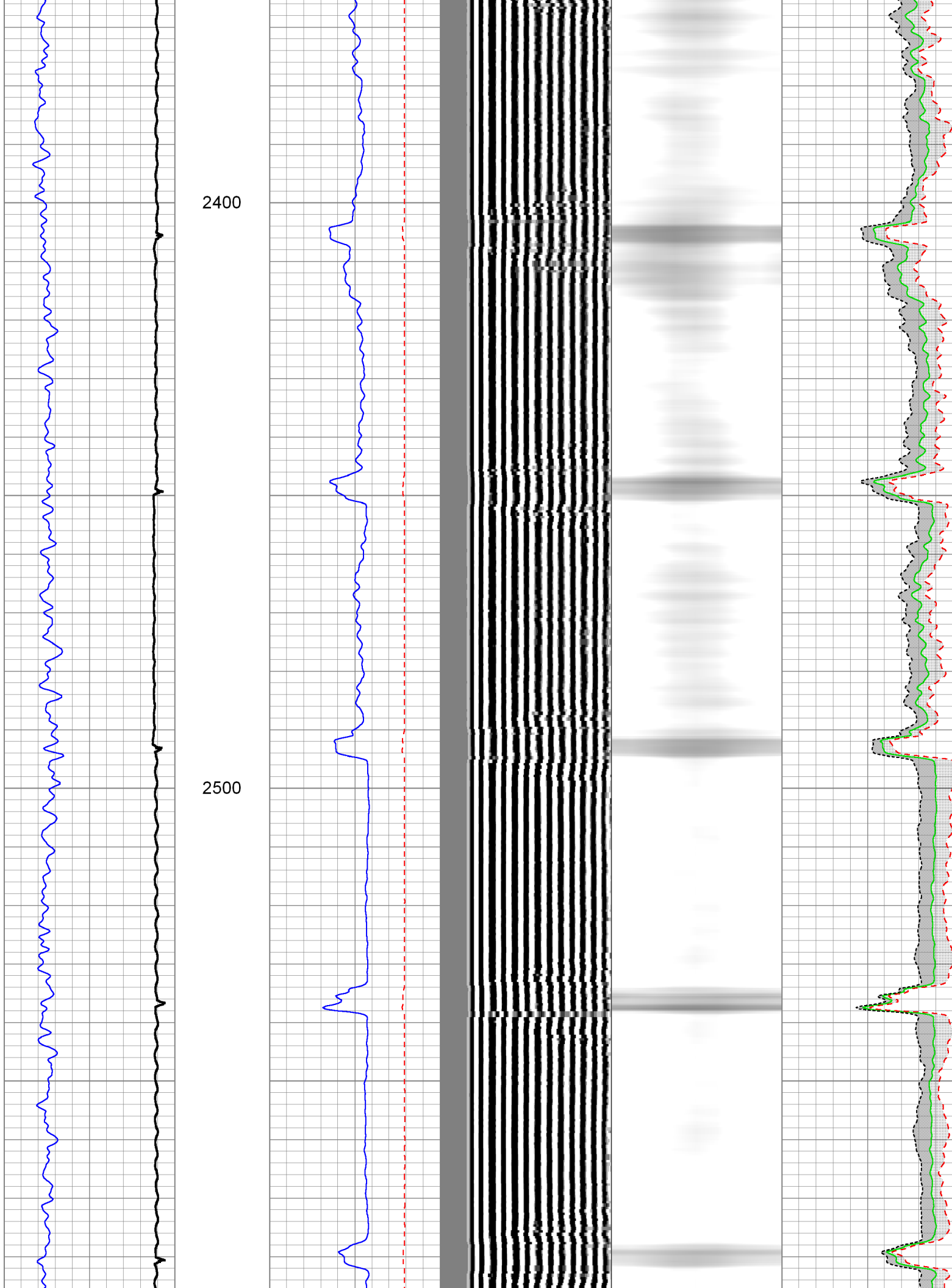
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2300



2400

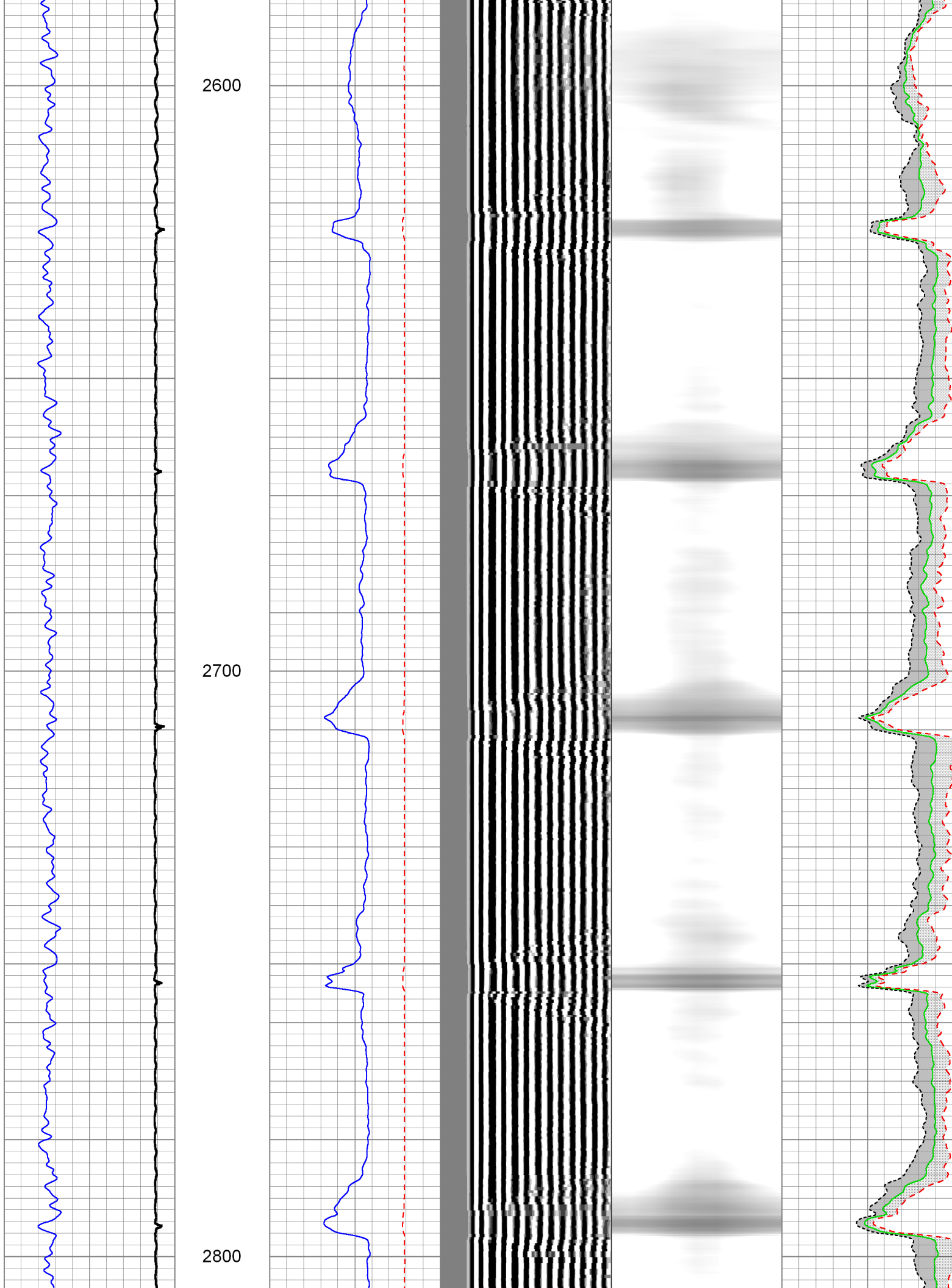
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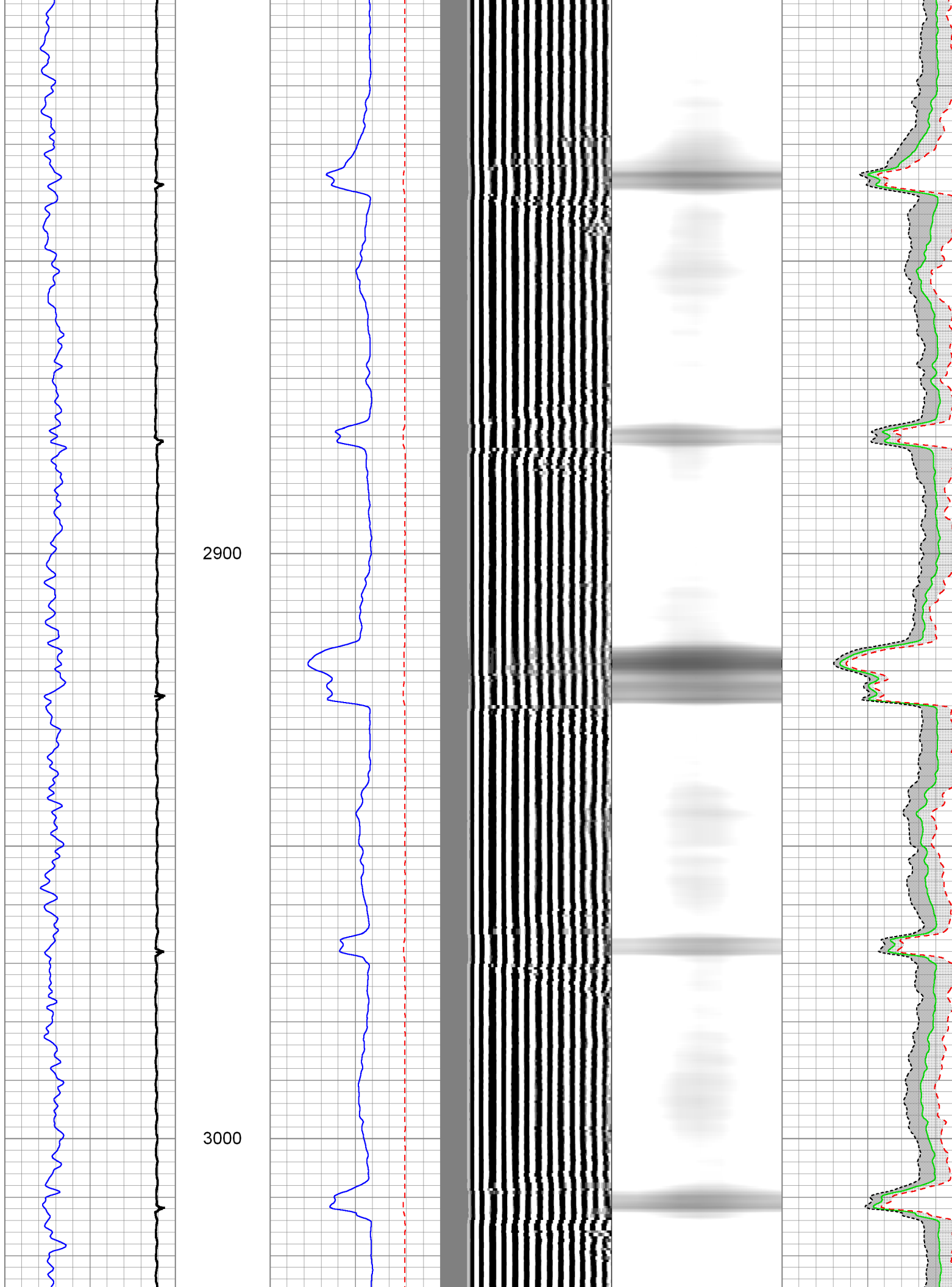
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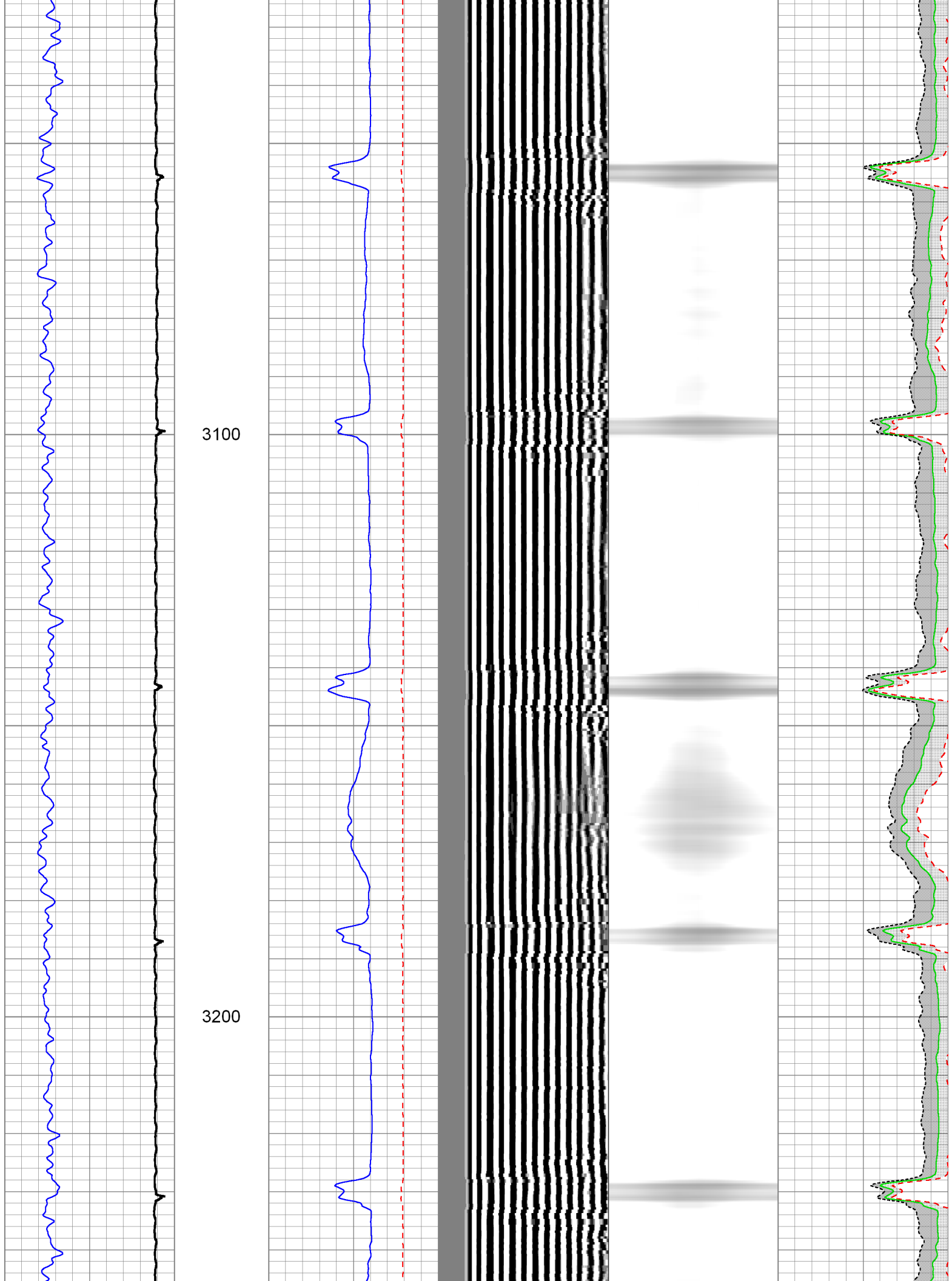
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2900

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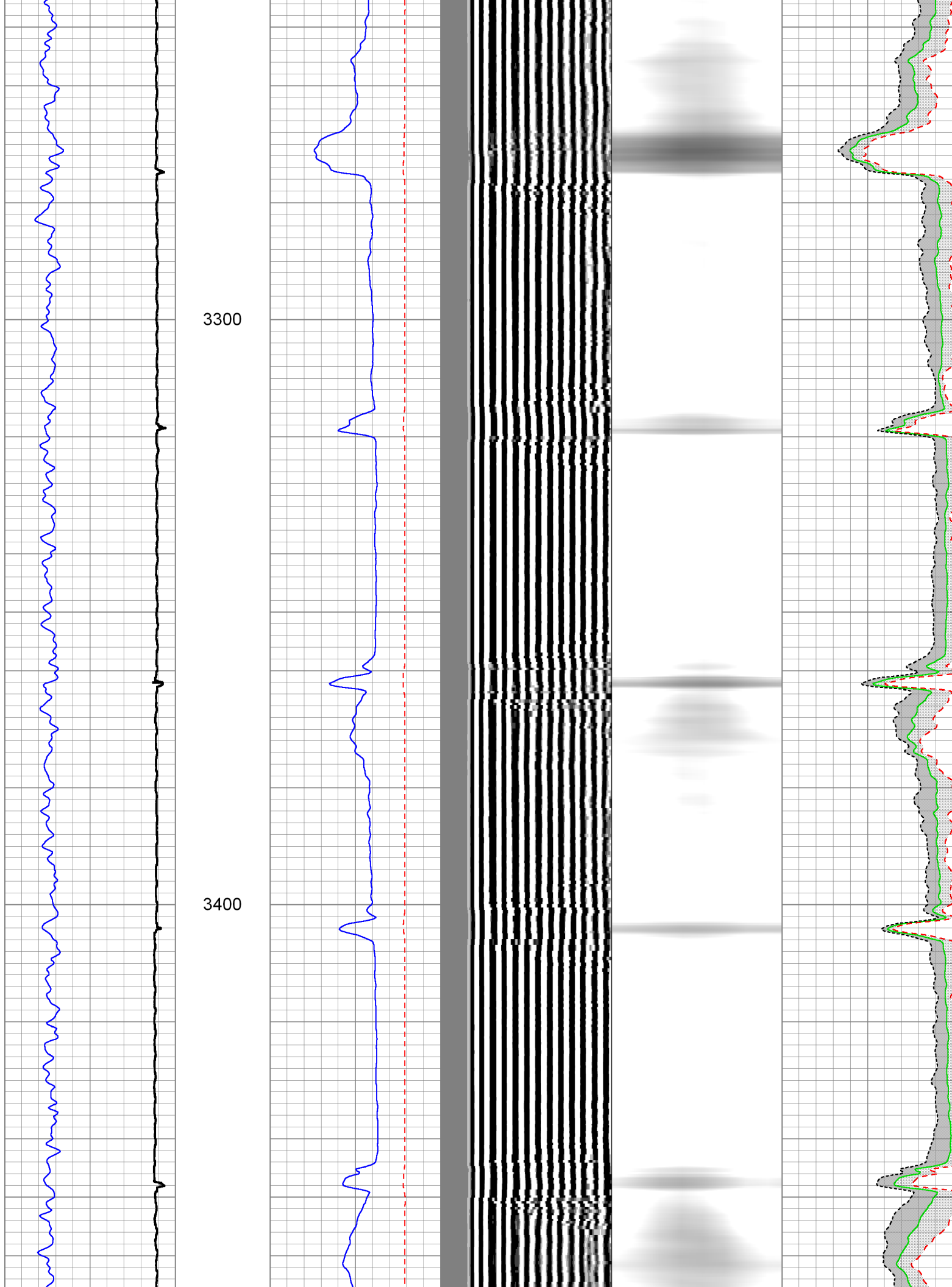






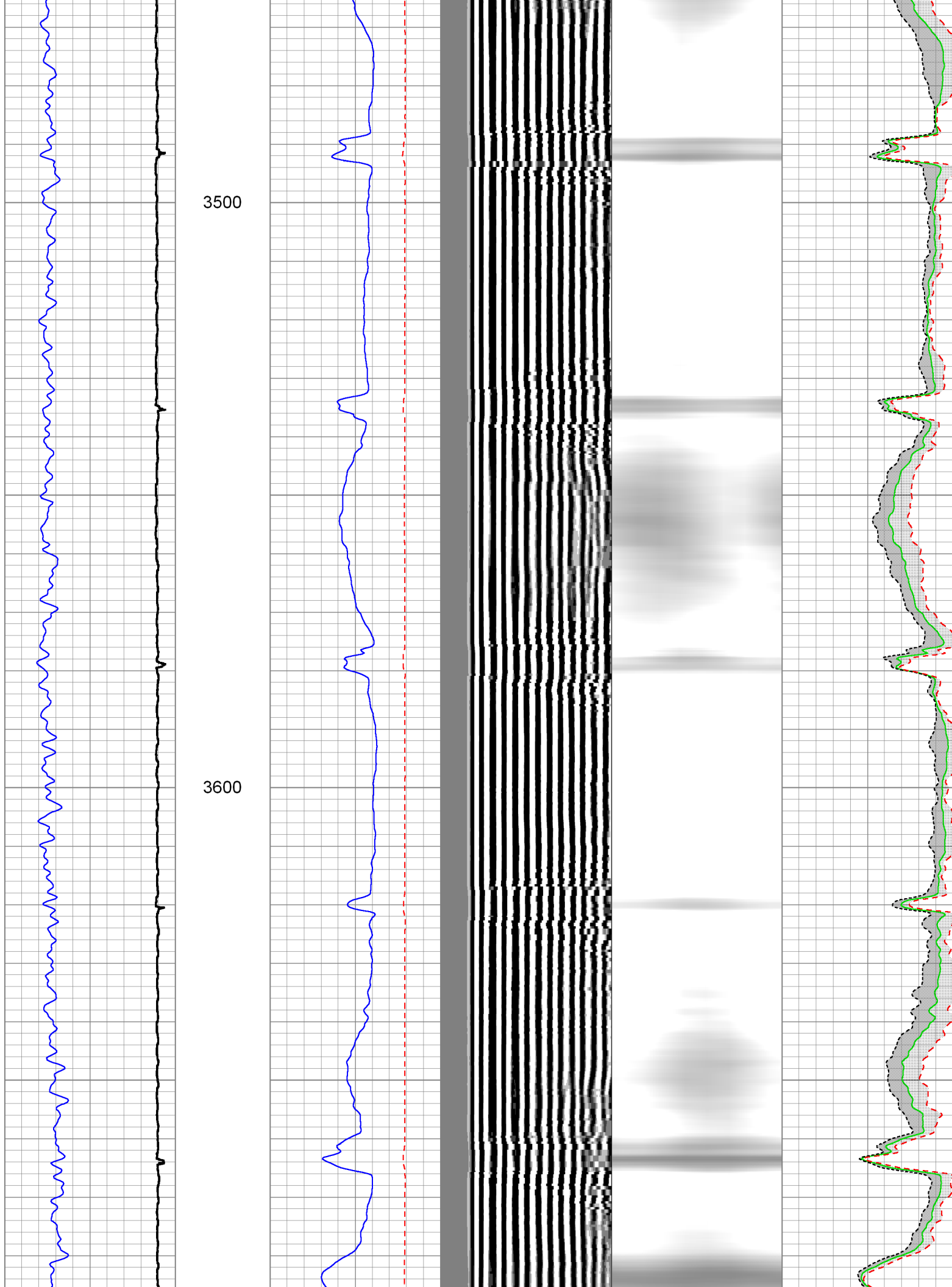
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3400



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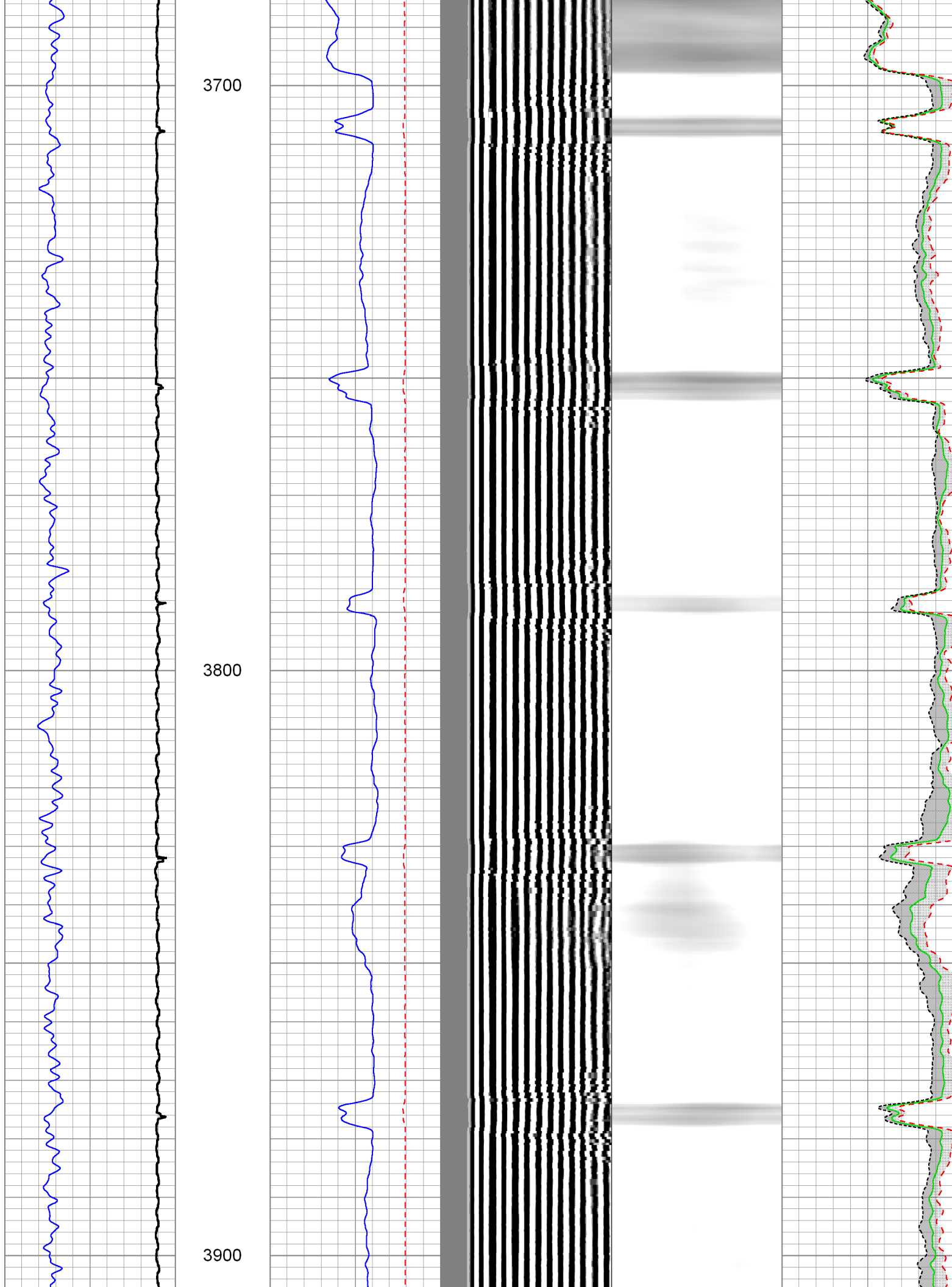
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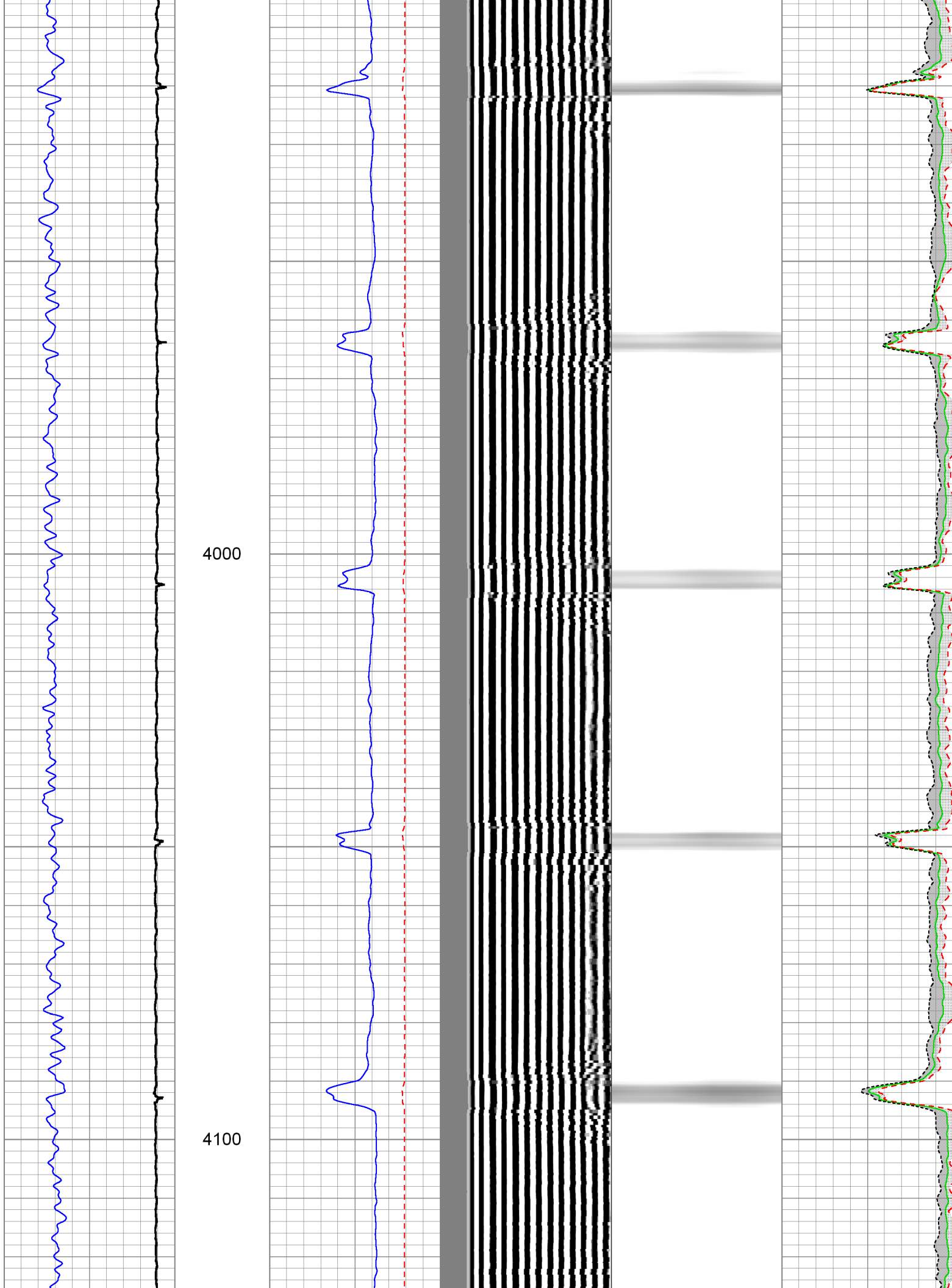


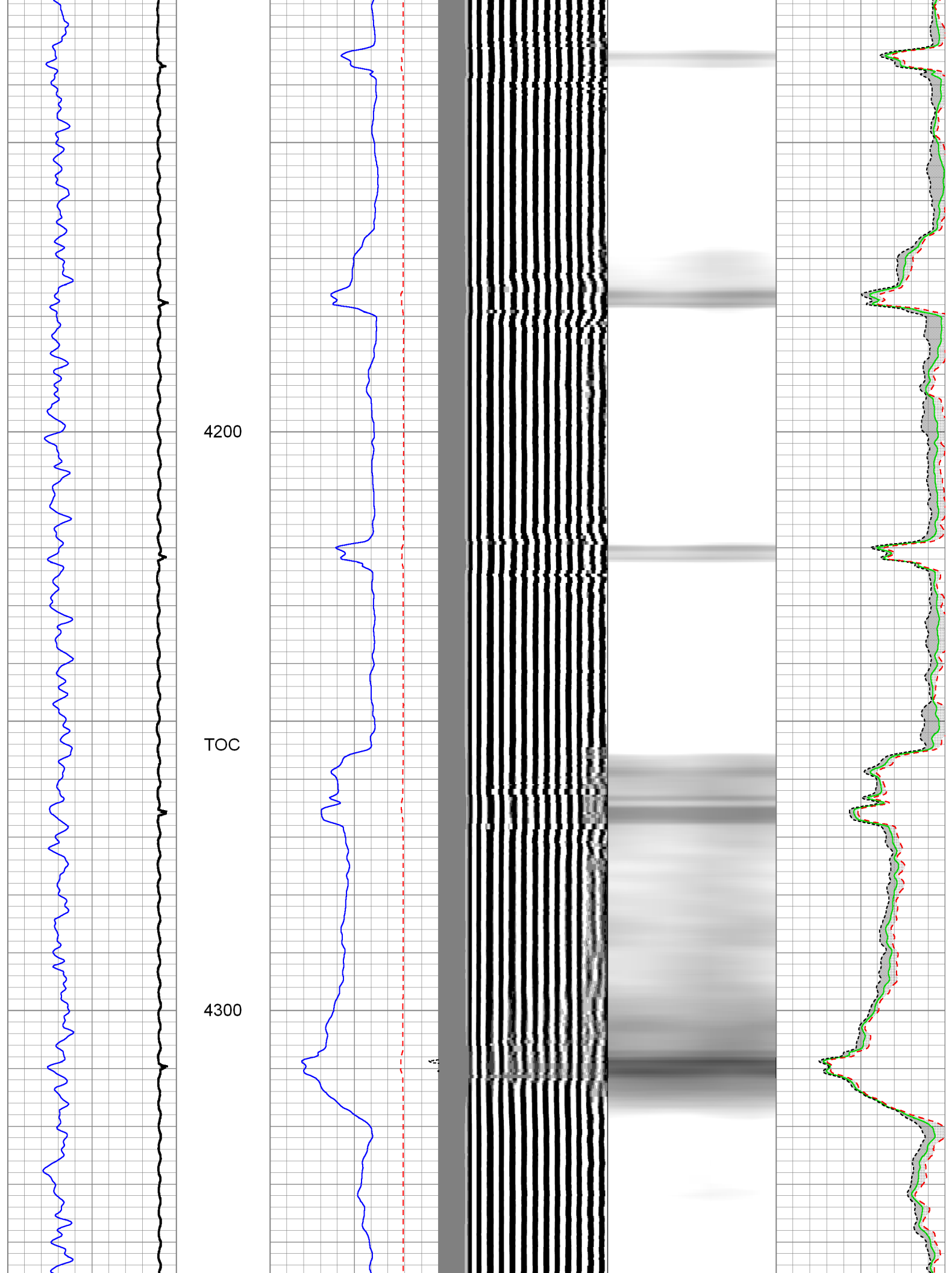
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3800

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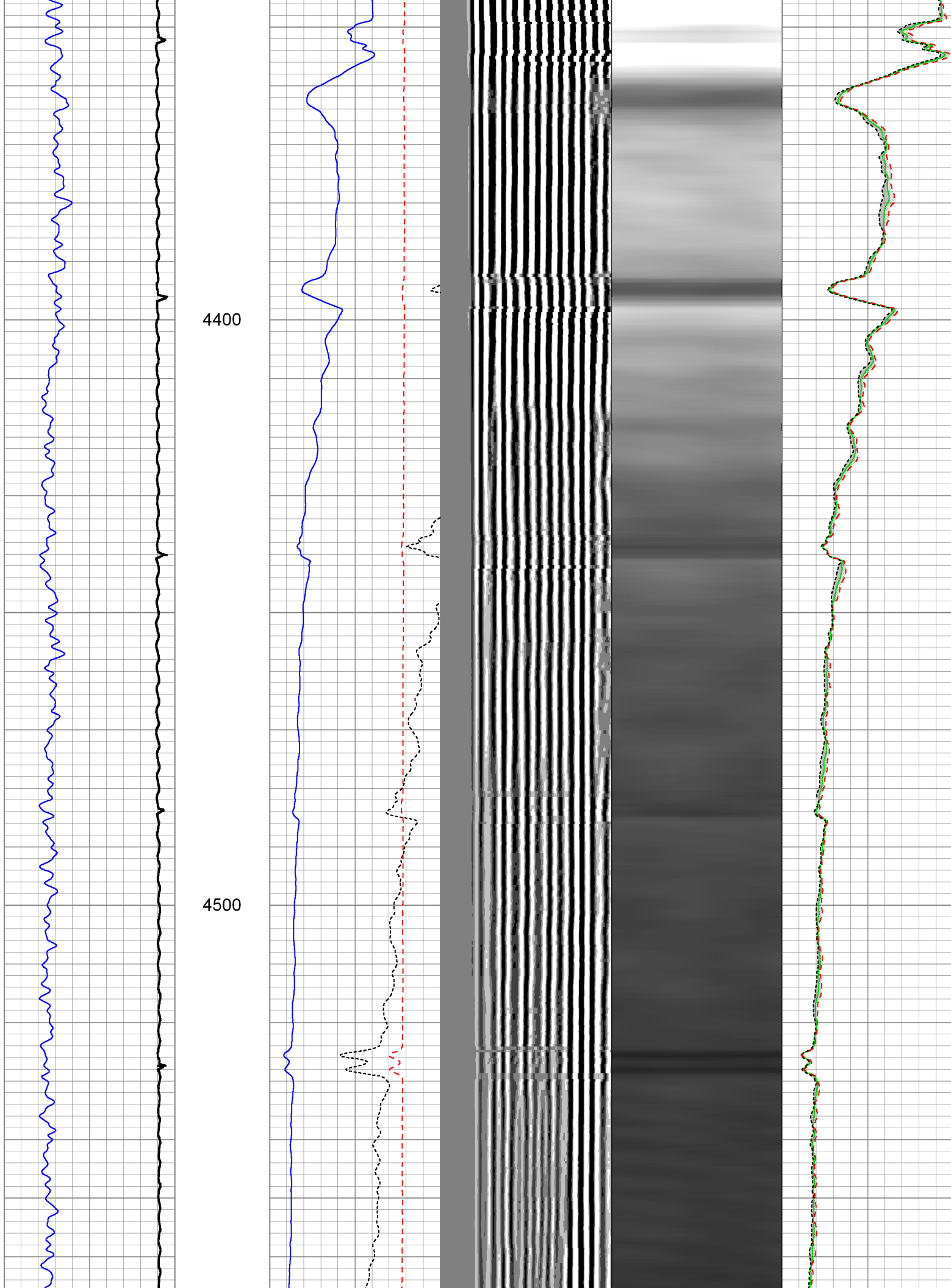






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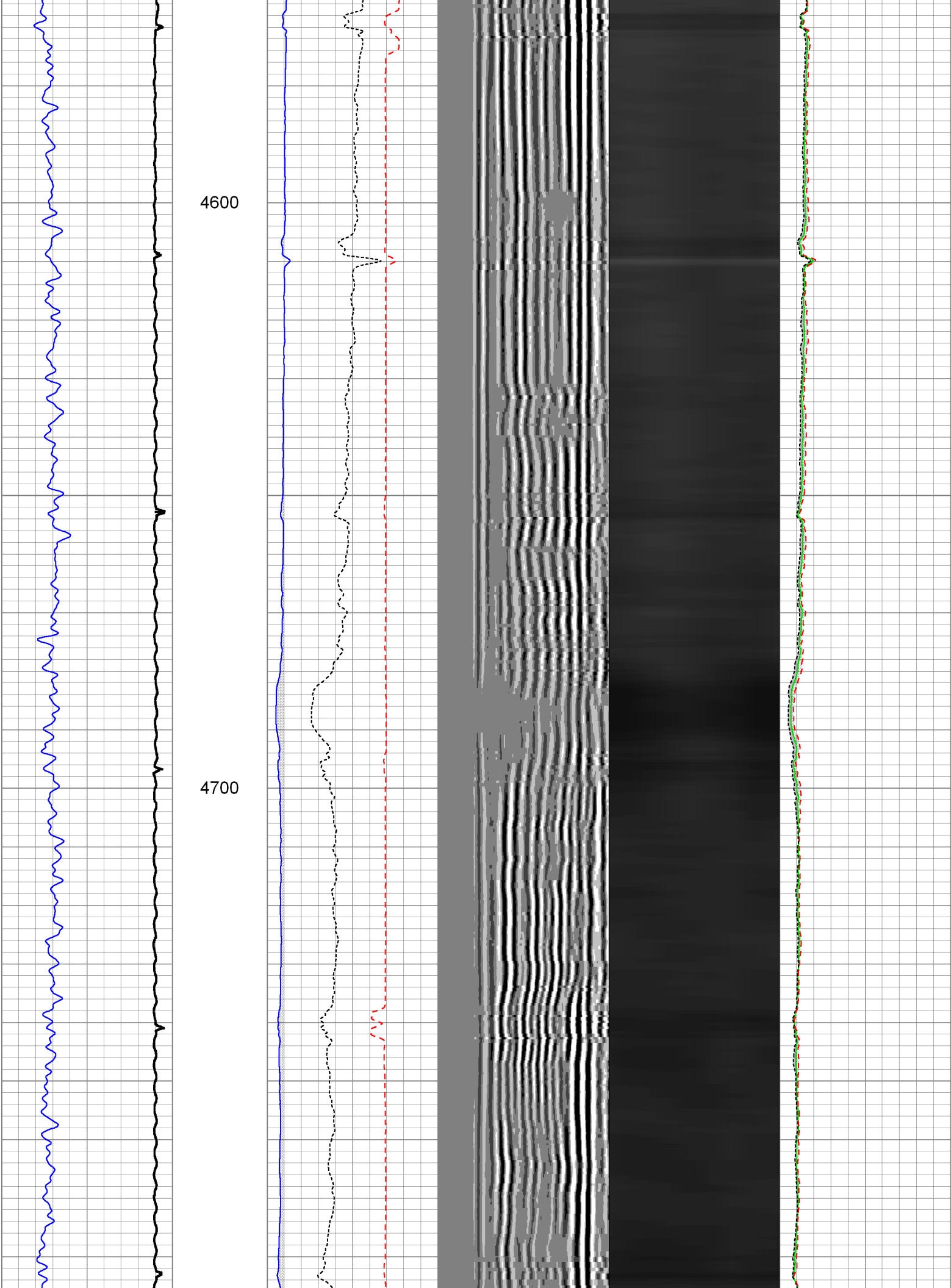
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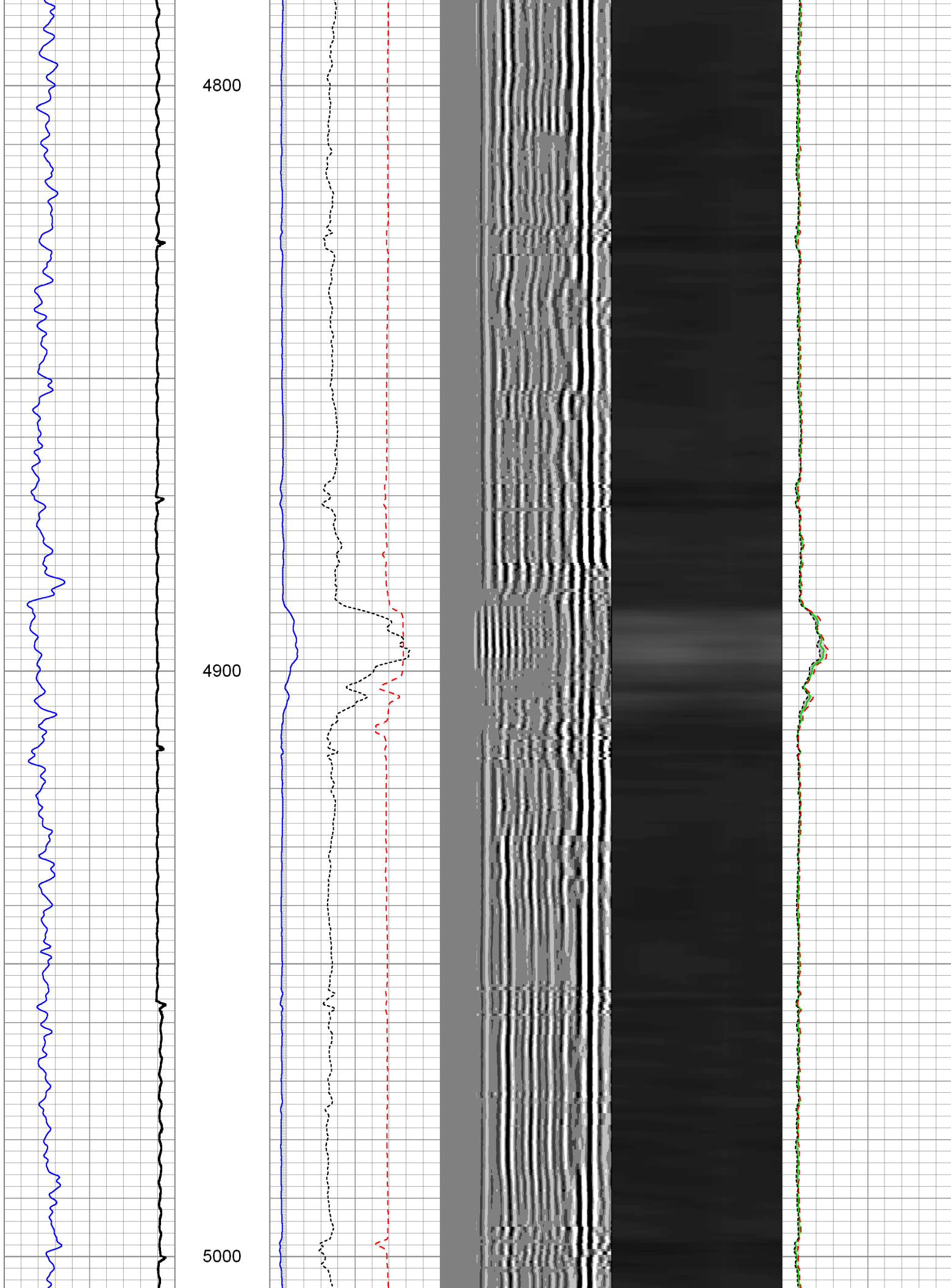
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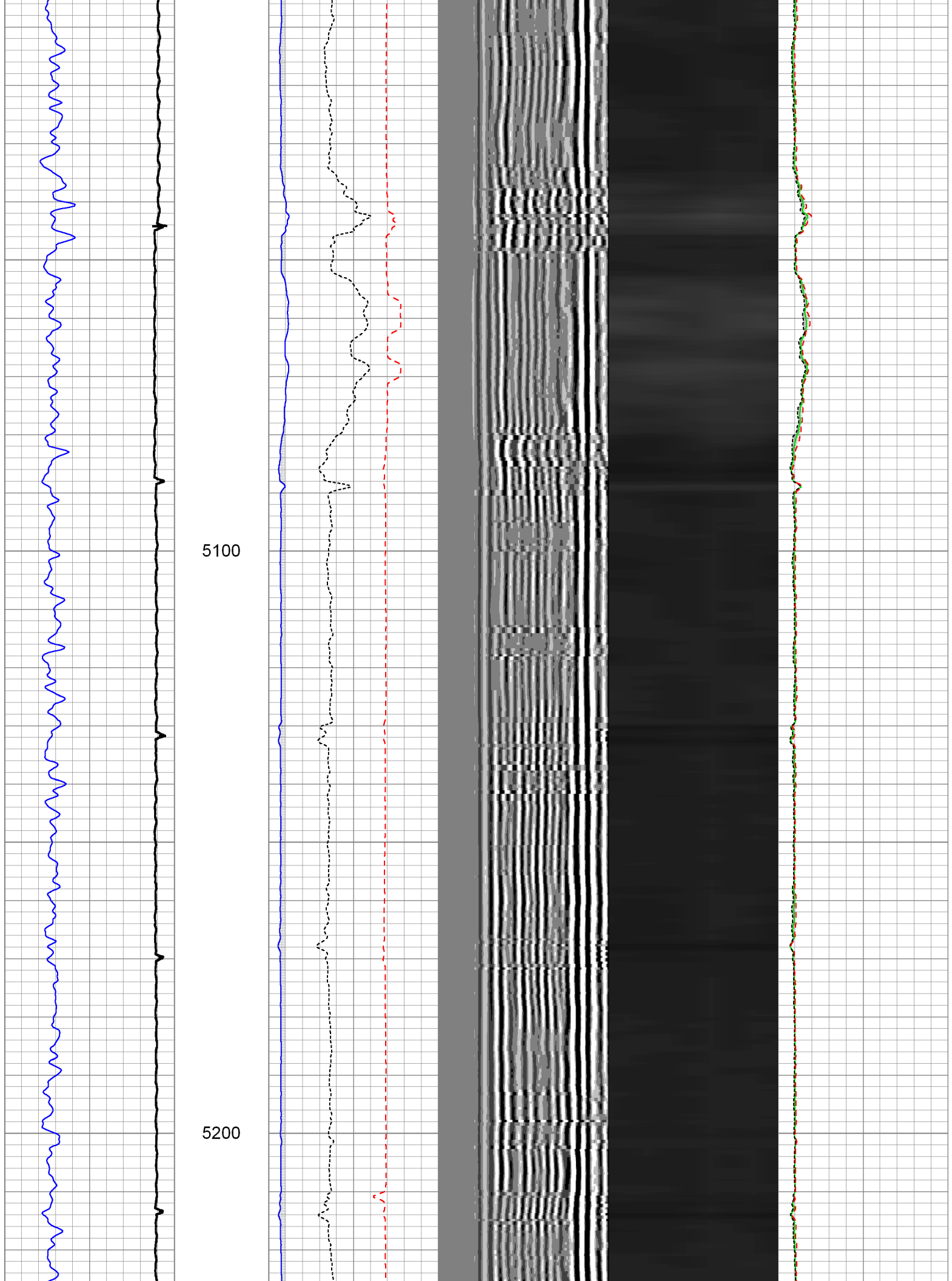


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4900

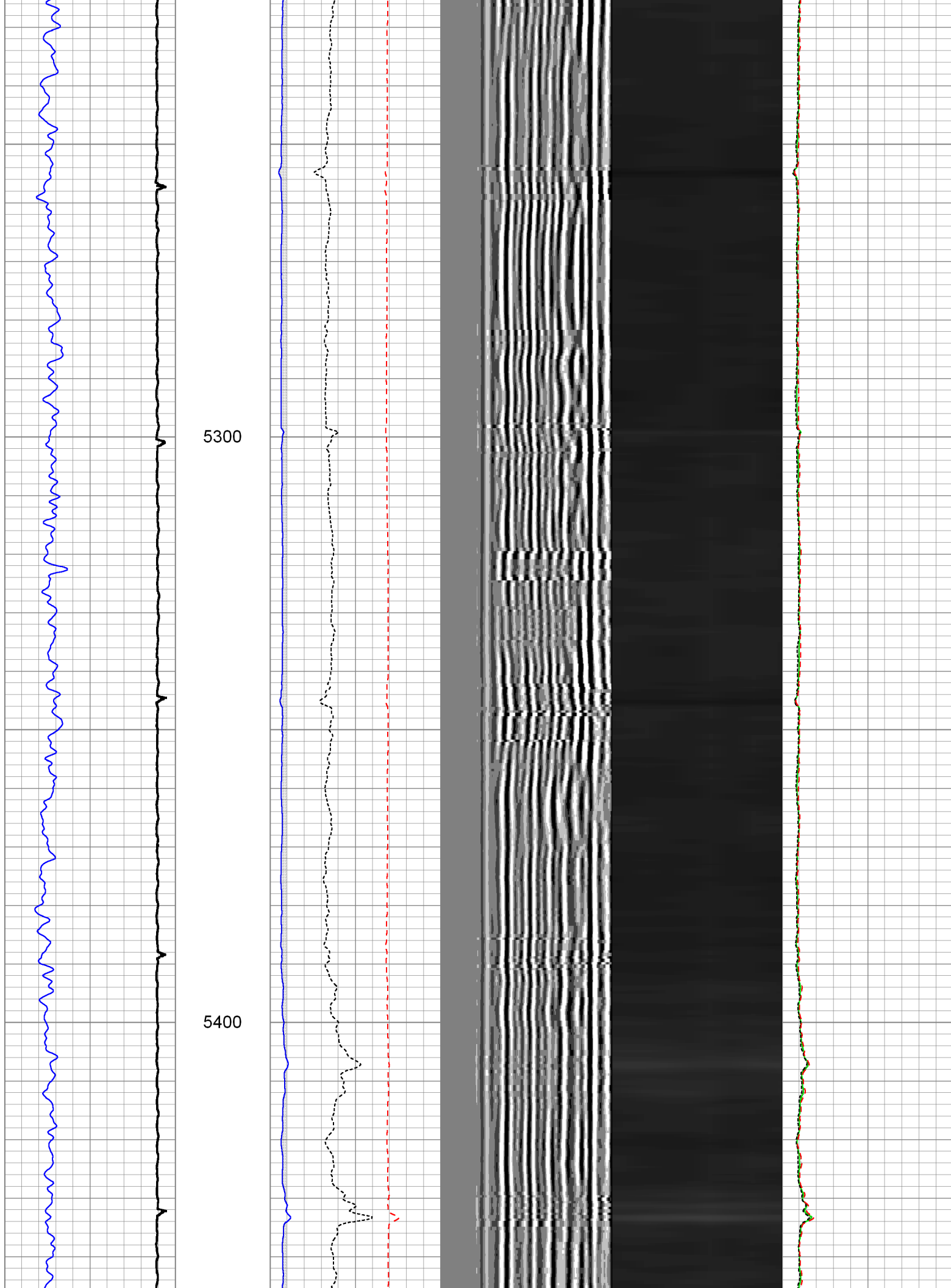
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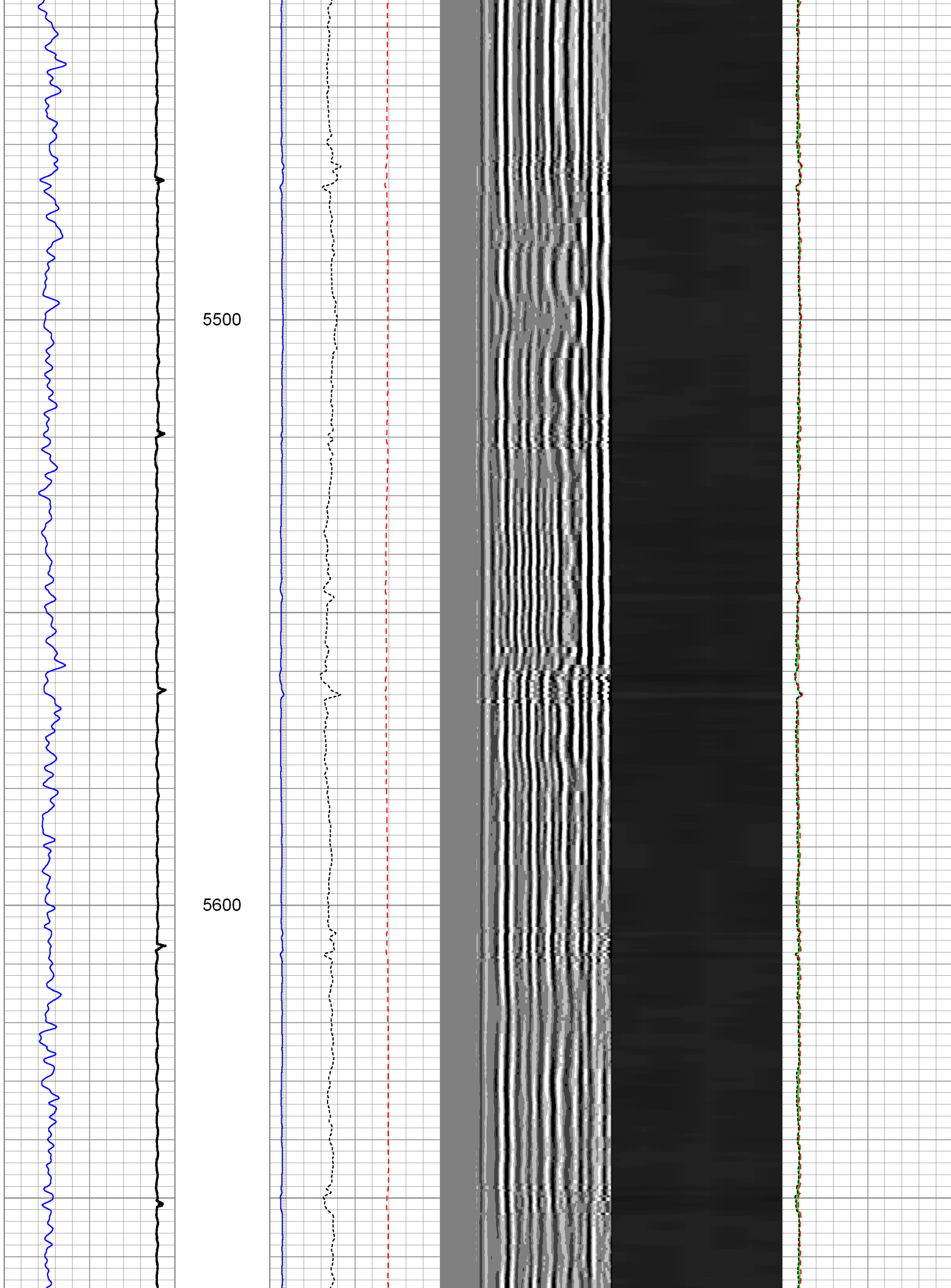
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5400



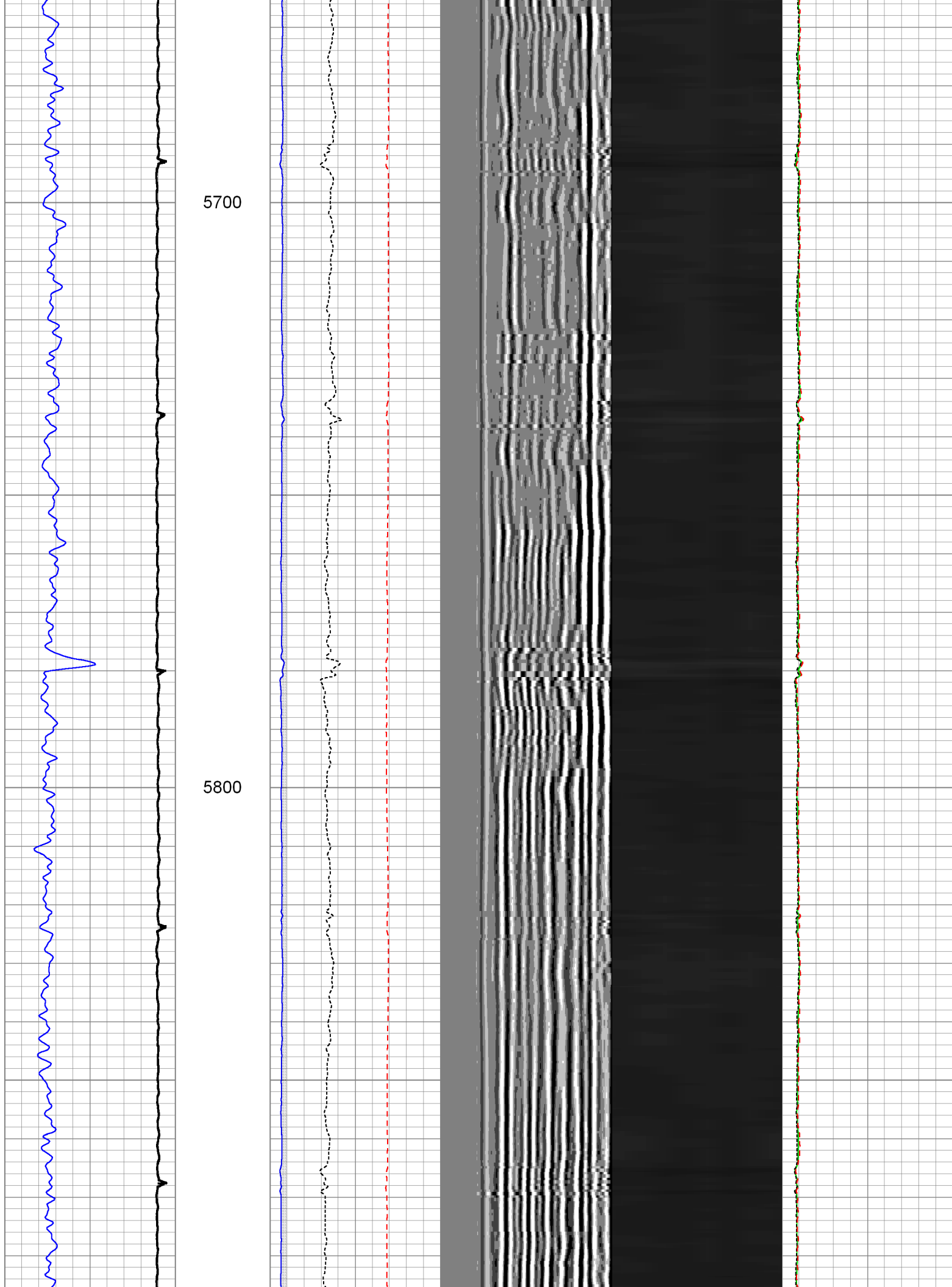
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5600



5700

5800

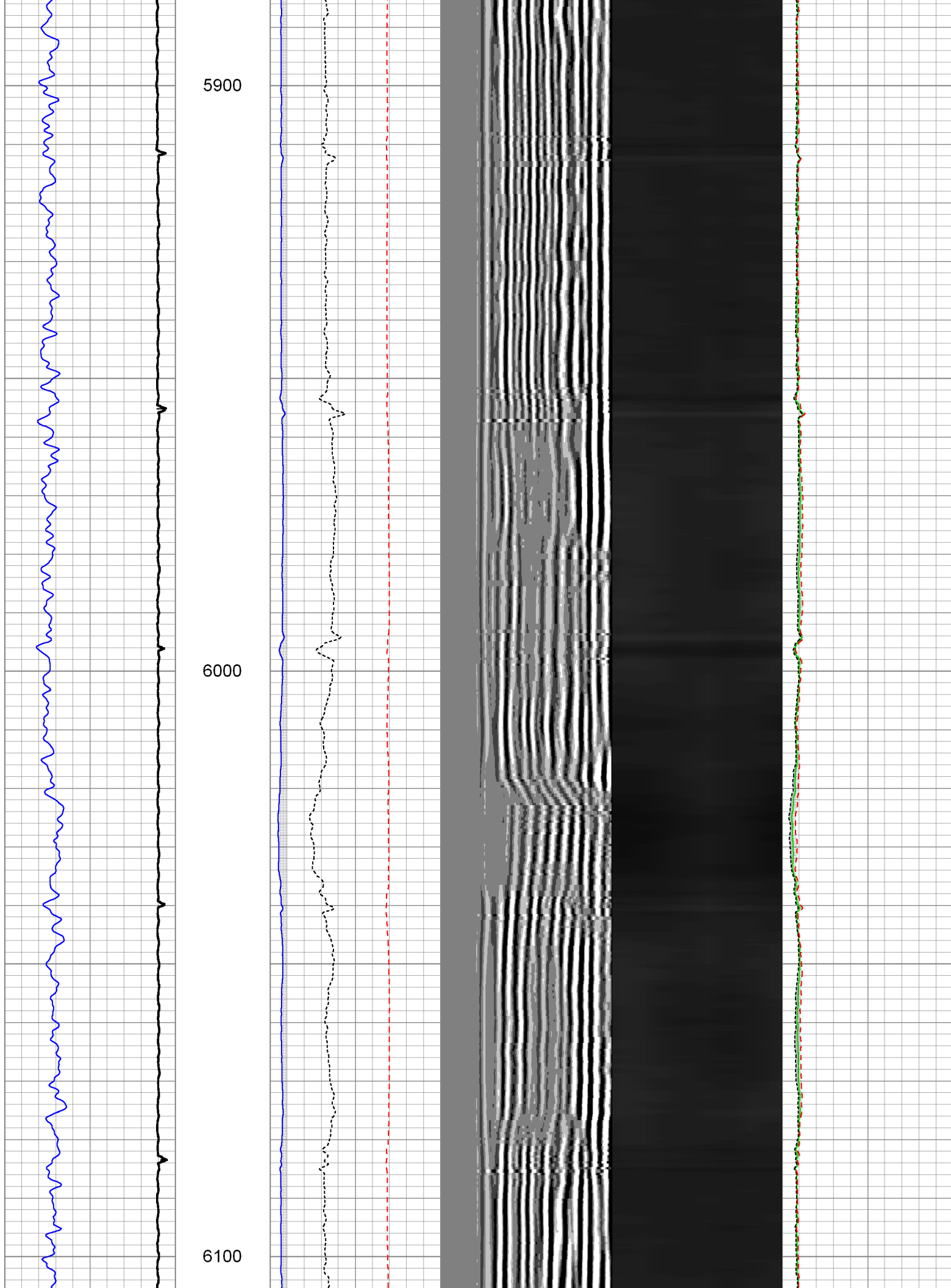




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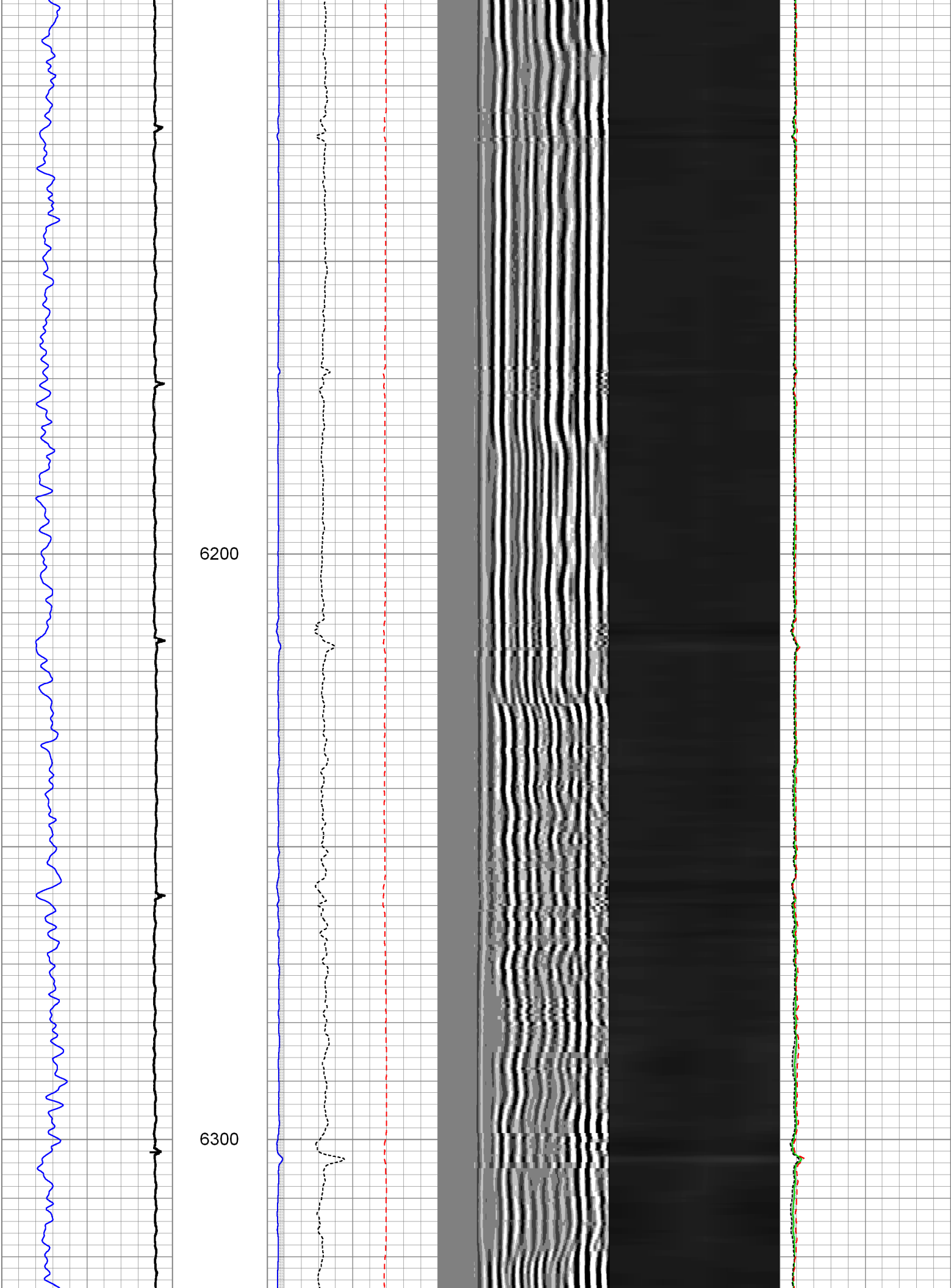
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6100



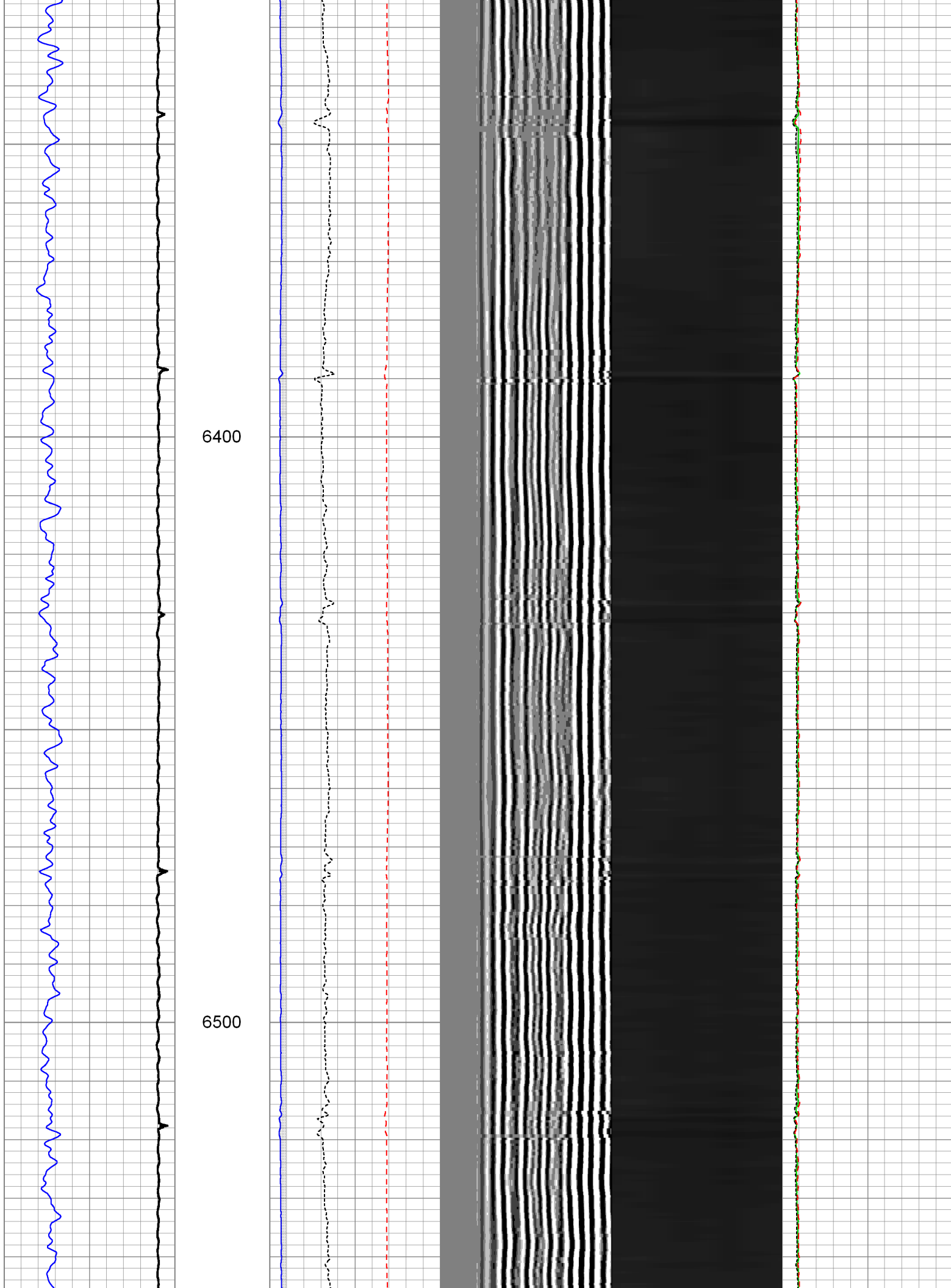
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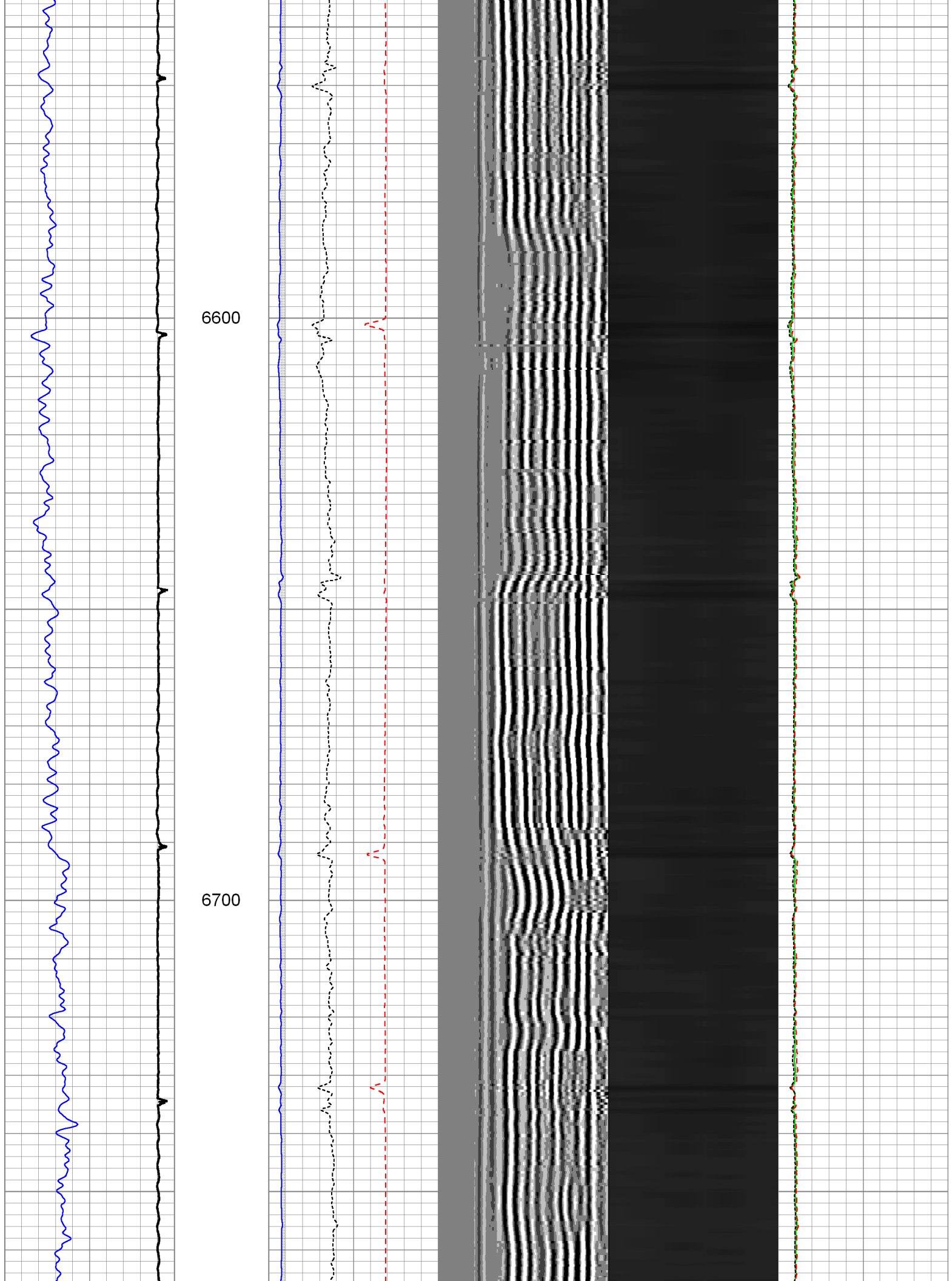
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6400

6500





6800

6900

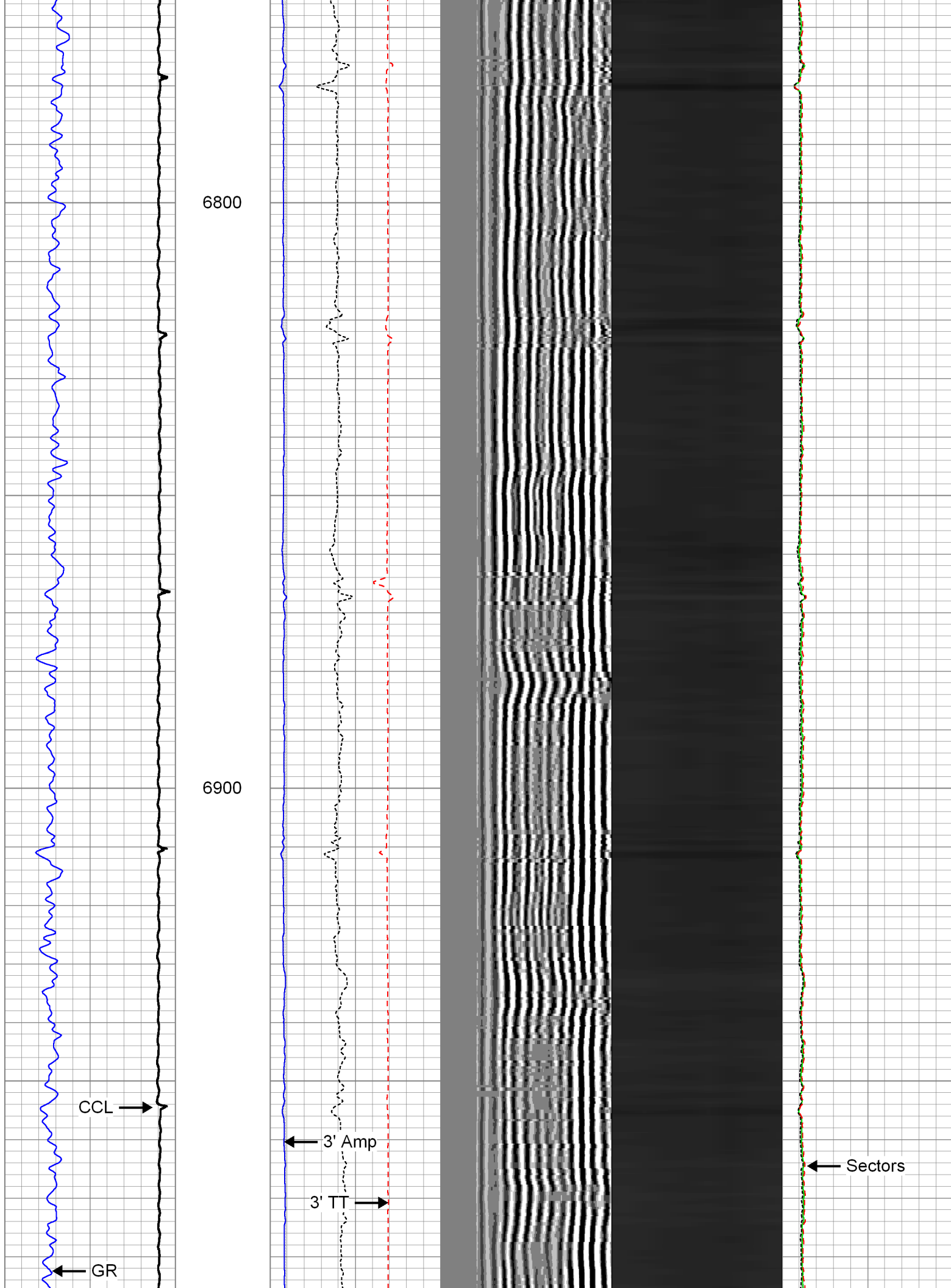
CCL →

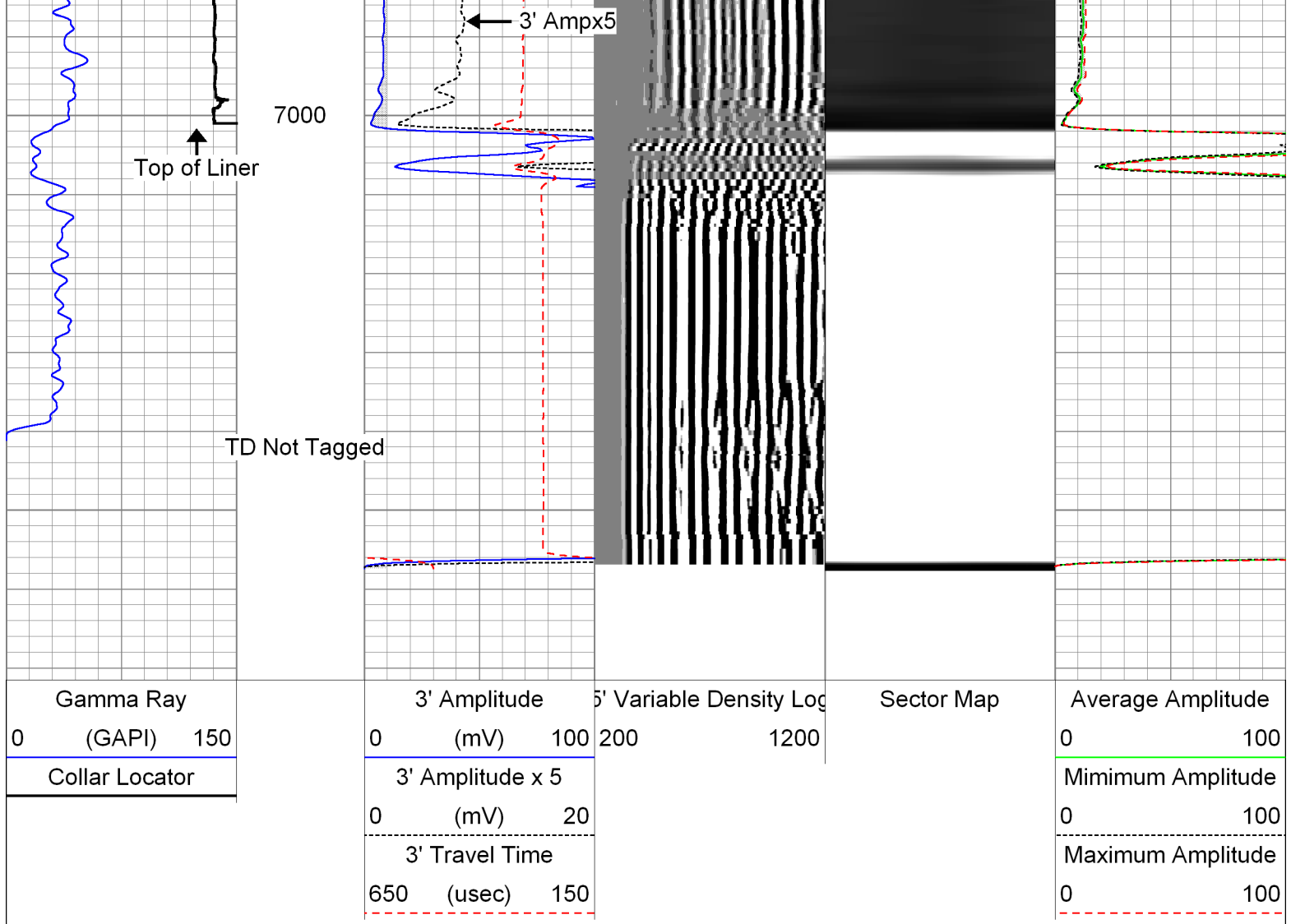
← GR

← 3' Amp

3' TT →

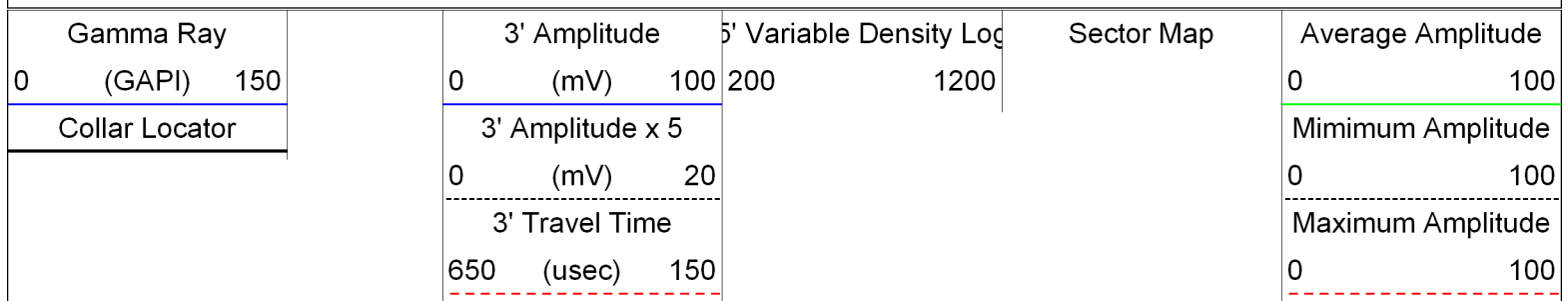
← Sectors

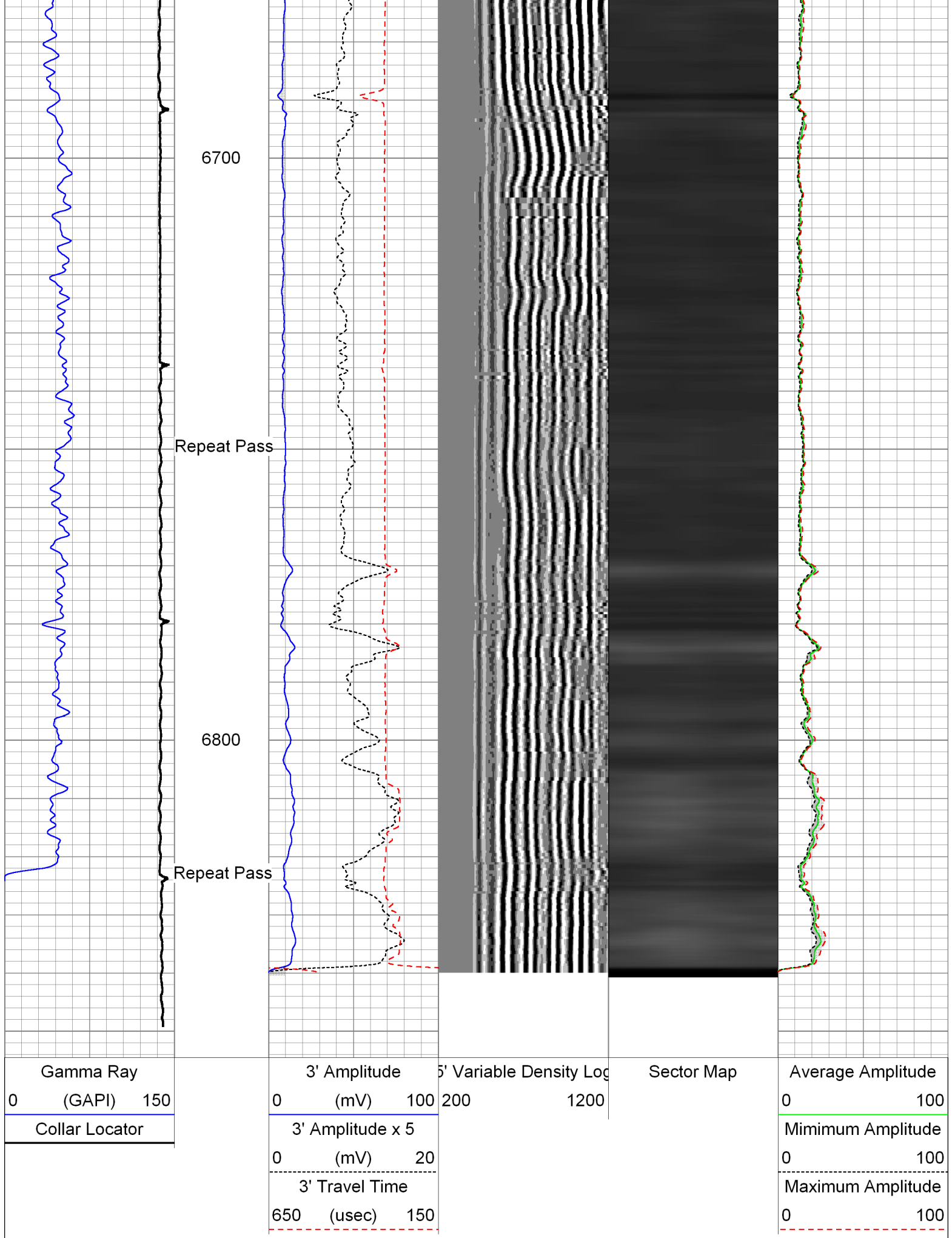




# Repeat Pass

Database File: anadarko\_jelts 37n-19hz\_rcbl\_cil\_21-aug-13\_w7.db  
 Dataset Pathname: repeat  
 Presentation Format: rib  
 Dataset Creation: Wed Aug 21 11:16:42 2013 by Log Sondex V7.03  
 Charted by: Depth in Feet scaled 1:240





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

Database File: anadarko\_jelts 37n-19hz\_rcbl\_cil\_21-aug-13\_w7.db  
 Dataset Pathname: main.1  
 Dataset Creation: Wed Aug 21 21:05:06 2013 by Calc 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: Wed Aug 21 09:53:09 2013

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1556	253.0	1809	277.0	2086	272.0	2358
Finger 02:	1544	266.0	1810	282.0	2092	278.0	2370
Finger 03:	1526	270.0	1796	289.0	2085	291.0	2376
Finger 04:	1502	282.0	1784	295.0	2079	299.0	2378
Finger 05:	1514	287.0	1801	294.0	2095	302.0	2397
Finger 06:	1490	288.0	1778	293.0	2071	301.0	2372
Finger 07:	1525	283.0	1808	281.0	2089	293.0	2382
Finger 08:	1490	302.0	1792	297.0	2089	312.0	2401
Finger 09:	1523	291.0	1814	282.0	2096	296.0	2392
Finger 10:	1495	304.0	1799	289.0	2088	300.0	2388
Finger 11:	1481	305.0	1786	288.0	2074	306.0	2380
Finger 12:	1459	306.0	1765	286.0	2051	304.0	2355
Finger 13:	1495	293.0	1788	274.0	2062	293.0	2355
Finger 14:	1416	314.0	1730	292.0	2022	316.0	2338
Finger 15:	1447	314.0	1761	288.0	2049	308.0	2357
Finger 16:	1415	314.0	1729	296.0	2025	316.0	2341
Finger 17:	1458	292.0	1750	274.0	2024	288.0	2312
Finger 18:	1452	293.0	1745	281.0	2026	299.0	2325
Finger 19:	1429	303.0	1732	282.0	2014	298.0	2312
Finger 20:	1470	286.0	1756	272.0	2028	285.0	2313
Finger 21:	1433	296.0	1729	285.0	2014	299.0	2313
Finger 22:	1439	275.0	1714	275.0	1989	287.0	2276
Finger 23:	1510	253.0	1763	254.0	2017	261.0	2278
Finger 24:	1449	275.0	1724	284.0	2008	289.0	2297
Finger 25:	1475	258.0	1733	270.0	2003	276.0	2279
Finger 26:	1427	270.0	1697	285.0	1982	288.0	2270
Finger 27:	1511	254.0	1765	269.0	2034	268.0	2302
Finger 28:	1506	238.0	1744	259.0	2003	258.0	2261
Finger 29:	1505	250.0	1755	274.0	2029	267.0	2296
Finger 30:	1256	253.0	1509	293.0	1802	294.0	2096
Finger 31:	1475	225.0	1700	257.0	1957	250.0	2207
Finger 32:	1505	252.0	1757	289.0	2046	279.0	2325
Finger 33:	1435	260.0	1695	308.0	2003	301.0	2304
Finger 34:	1579	226.0	1805	254.0	2059	242.0	2301
Finger 35:	1555	236.0	1791	272.0	2062	265.0	2328

Finger 33:	1555	236.0	1791	272.0	2083	283.0	2328
Finger 36:	1559	242.0	1801	282.0	2083	270.0	2353
Finger 37:	1678	253.0	1931	290.0	2221	281.0	2502
Finger 38:	1422	234.0	1656	272.0	1928	268.0	2196
Finger 39:	1520	257.0	1777	291.0	2068	282.0	2350
Finger 40:	1563	250.0	1813	277.0	2090	270.0	2360

Post Survey Calibration Check

Performed:

Wed Aug 21 17:56:40 2013

Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	3.980	-0.010	4.977	-0.011	5.976	-0.012	6.983	-0.008
Finger 02:	3.976	-0.012	4.968	-0.016	5.964	-0.018	6.969	-0.015
Finger 03:	3.978	-0.011	4.975	-0.013	5.972	-0.014	6.979	-0.011
Finger 04:	3.969	-0.015	4.977	-0.012	5.974	-0.013	6.984	-0.008
Finger 05:	3.973	-0.013	4.969	-0.016	5.971	-0.015	6.980	-0.010
Finger 06:	3.975	-0.013	4.971	-0.014	5.974	-0.013	6.980	-0.010
Finger 07:	3.980	-0.010	4.975	-0.013	5.976	-0.012	6.978	-0.011
Finger 08:	3.983	-0.008	4.971	-0.015	5.973	-0.013	6.975	-0.012
Finger 09:	3.987	-0.006	4.981	-0.010	5.975	-0.012	6.979	-0.010
Finger 10:	3.989	-0.005	4.974	-0.013	5.974	-0.013	6.977	-0.012
Finger 11:	3.983	-0.008	4.977	-0.011	5.980	-0.010	6.985	-0.007
Finger 12:	3.986	-0.007	4.969	-0.016	5.973	-0.013	6.977	-0.012
Finger 13:	3.998	-0.001	4.980	-0.010	5.979	-0.010	6.980	-0.010
Finger 14:	3.994	-0.003	4.977	-0.011	5.987	-0.006	6.986	-0.007
Finger 15:	3.980	-0.010	4.962	-0.019	5.976	-0.012	6.979	-0.011
Finger 16:	3.981	-0.010	4.974	-0.013	5.972	-0.014	6.978	-0.011
Finger 17:	3.985	-0.007	4.983	-0.008	5.974	-0.013	6.978	-0.011
Finger 18:	3.979	-0.010	4.981	-0.009	5.977	-0.012	6.980	-0.010
Finger 19:	3.987	-0.007	4.977	-0.012	5.978	-0.011	6.984	-0.008
Finger 20:	3.983	-0.008	4.978	-0.011	5.974	-0.013	6.971	-0.015
Finger 21:	3.977	-0.011	4.973	-0.013	5.973	-0.013	6.978	-0.011
Finger 22:	3.976	-0.012	4.975	-0.013	5.970	-0.015	6.976	-0.012
Finger 23:	3.976	-0.012	4.979	-0.010	5.970	-0.015	6.973	-0.013
Finger 24:	3.978	-0.011	4.977	-0.012	5.975	-0.012	6.979	-0.010
Finger 25:	3.978	-0.011	4.971	-0.015	5.968	-0.016	6.977	-0.012
Finger 26:	3.972	-0.014	4.970	-0.015	5.970	-0.015	6.981	-0.009
Finger 27:	3.986	-0.007	4.973	-0.014	5.974	-0.013	6.980	-0.010
Finger 28:	3.988	-0.006	4.978	-0.011	5.979	-0.011	6.979	-0.011
Finger 29:	3.985	-0.007	4.975	-0.012	5.977	-0.012	6.982	-0.009
Finger 30:	3.986	-0.007	4.969	-0.015	5.978	-0.011	6.986	-0.007
Finger 31:	3.981	-0.009	4.970	-0.015	5.972	-0.014	6.981	-0.009
Finger 32:	3.990	-0.005	4.973	-0.013	5.979	-0.010	6.977	-0.012
Finger 33:	3.982	-0.009	4.971	-0.014	5.974	-0.013	6.983	-0.008
Finger 34:	3.994	-0.003	4.983	-0.009	5.984	-0.008	6.986	-0.007
Finger 35:	3.979	-0.010	4.971	-0.014	5.977	-0.012	6.973	-0.014
Finger 36:	3.980	-0.010	4.977	-0.011	5.978	-0.011	6.974	-0.013
Finger 37:	3.985	-0.008	4.975	-0.012	5.977	-0.011	6.973	-0.013
Finger 38:	3.990	-0.005	4.984	-0.008	5.974	-0.013	6.976	-0.012
Finger 39:	3.989	-0.006	4.982	-0.009	5.974	-0.013	6.980	-0.010
Finger 40:	3.986	-0.007	4.977	-0.012	5.975	-0.012	6.983	-0.008
Average:	3.983	-0.009	4.975	-0.012	5.975	-0.012	6.979	-0.011

Segmented Cement Bond Log Calibration Report

Serial Number:	2639
Tool Model:	004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	881.032 ft

Master Calibration, performed Wed Aug 21 10:27:16 2013:

Depth (ft)

Calibrated (mm)

Results

	Raw (V)		Calibrated (mV)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.011	0.697	0.800	62.165	86.260	-0.165
5FT	0.010	0.754	0.800	62.165	74.213	-0.005
S1	0.011	0.598	0.000	100.000	129.093	-1.871
S2	0.008	0.551	0.000	100.000	144.090	-1.539
S3	0.010	0.528	0.000	100.000	152.218	-1.895
S4	0.009	0.534	0.000	100.000	151.289	-1.649
S5	0.010	0.565	0.000	100.000	142.359	-1.823
S6	0.010	0.602	0.000	100.000	129.353	-1.658
S7	0.010	0.635	0.000	100.000	119.236	-1.617
S8	0.008	0.635	0.000	100.000	118.870	-1.246

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	Jelts 37N-19HZ
	Field	Wattenberg
	County	Weld
	State	Colorado