



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company				Kerr-McGee Oil & Gas Onshore, L.P.			
Well				Henrickson Federal 36C-18HZ			
Field				Wattenberg			
County				Weld			
State				Colorado			
Location:				API # : 05-123-37670			
SHL: 1885' FSL & 2078' FWL NE/SW				Other Services			
SEC 7 TWP 3N RGE 66W				Gauge Ring			
Permanent Datum		Ground Level		Elevation		Elevation	
Log Measured From		Kelly Bushing (16 FT)		K.B. 4810'		D.F. 4809'	
Drilling Measured From		Kelly Bushing		G.L. 4794'			
Date		15-OCT-2013					
Run Number		One					
Depth Driller		14,528 FT					
Depth Logger		6799 FT					
Bottom Logged Interval		6796 FT					
Top Log Interval		Surface					
Open Hole Size		8.750"					
Type Fluid		Water					
Density / Viscosity		8.34 lbm/gal					
Max. Recorded Temp.		246 F					
Estimated Cement Top		33 FT					
Time Well Ready		ROA					
Time Logger on Bottom		13:30					
Equipment Number		HD-0301					
Location		Fort Lupton, CO					
Recorded By		Greg Jackson					
Witnessed By		Rick Dunford					
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		26		P-110	
Intermediate #2							
Liner		4-1/2		11.6		HCP-110	
						6745 FT	
						14,513 FT	

<<< Fold Here >>>

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.

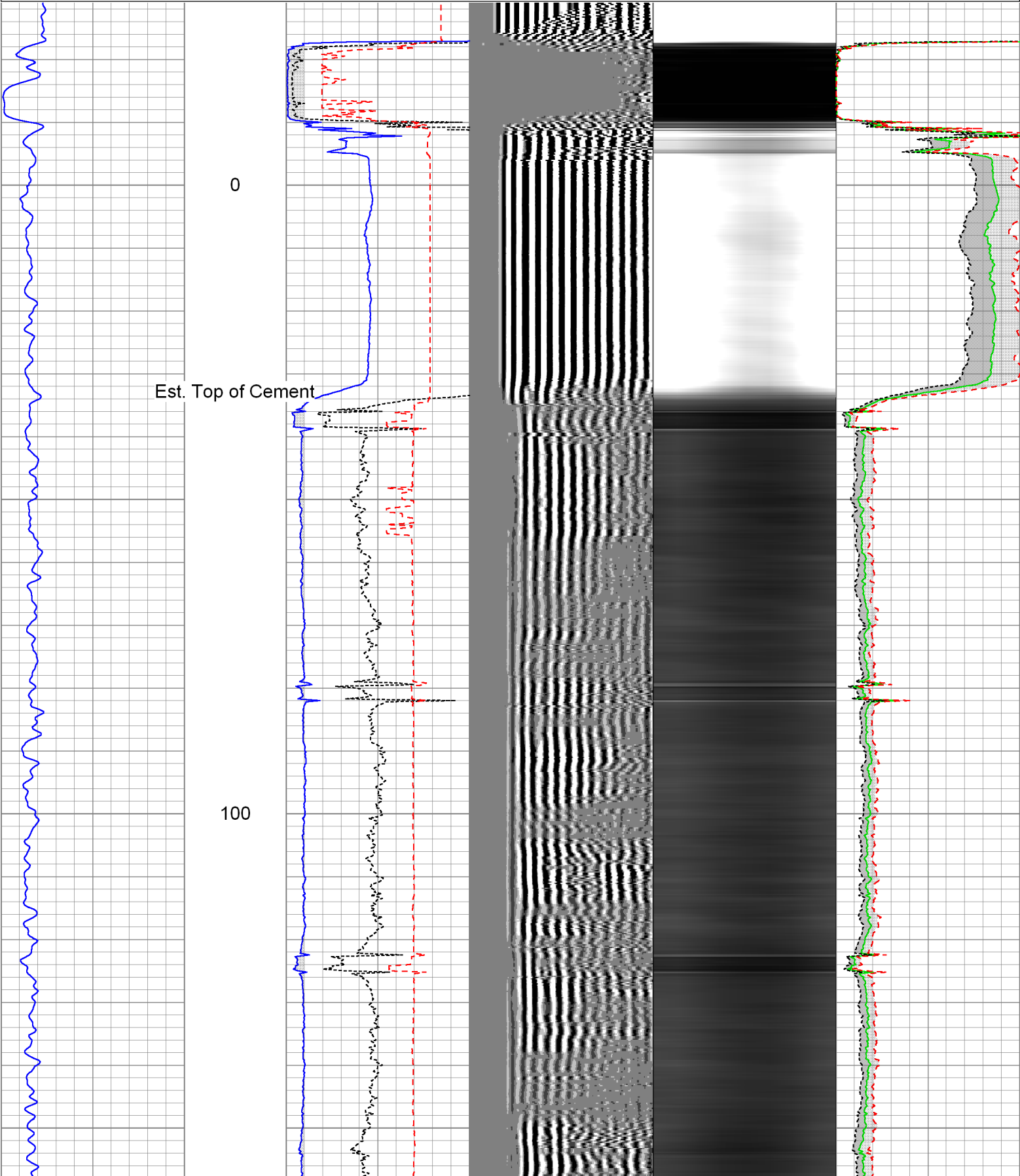
Comments

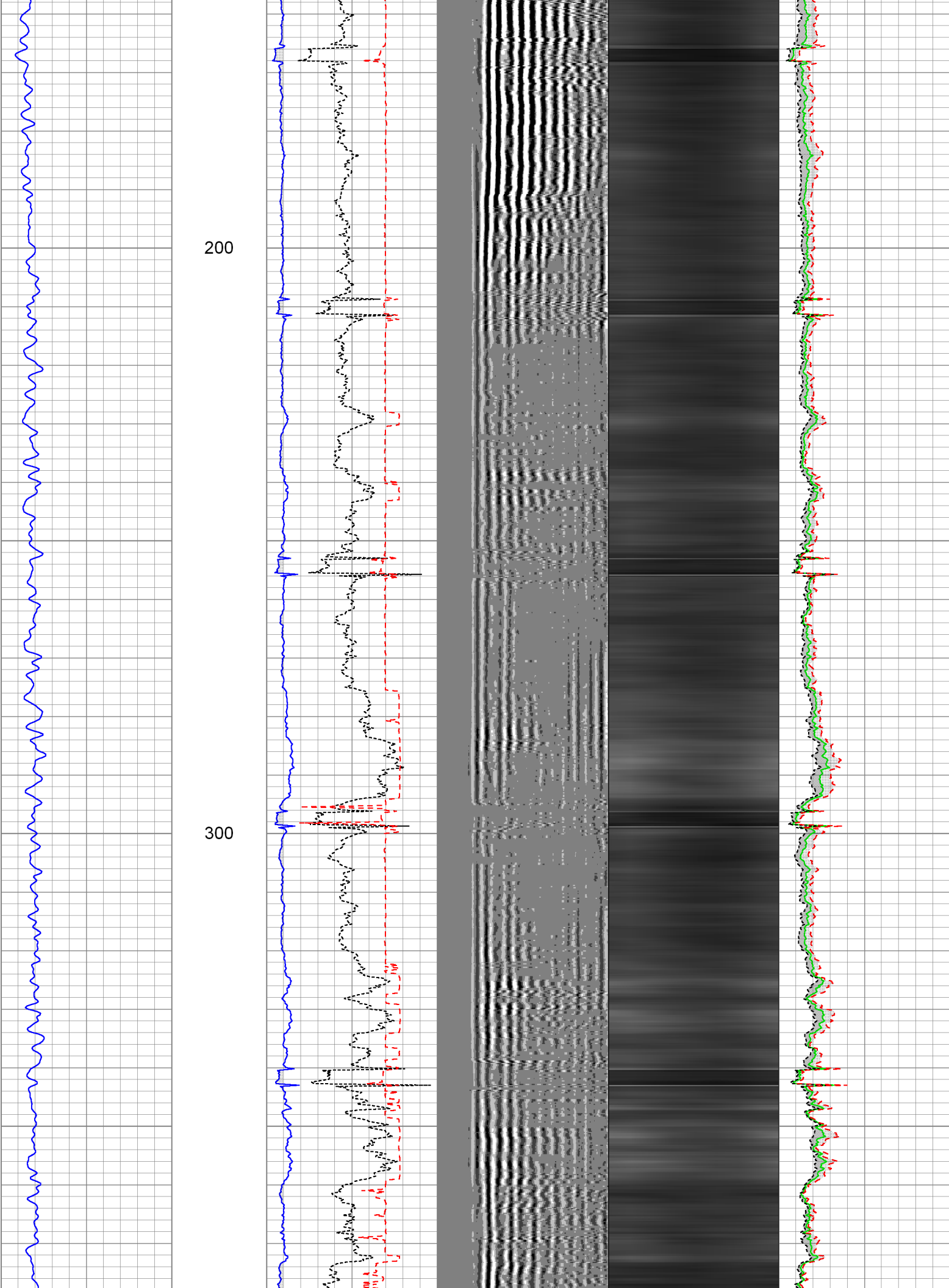
Radial Cement Bond Log - Casing Inspection Log is first recorded log in hole.
Adjusted -27' for liner top at 6745' with 16' KB
RCBL-CIL ran at 2200 PSI surface induced pressure.
Estimated Cement Top recorded at 33'

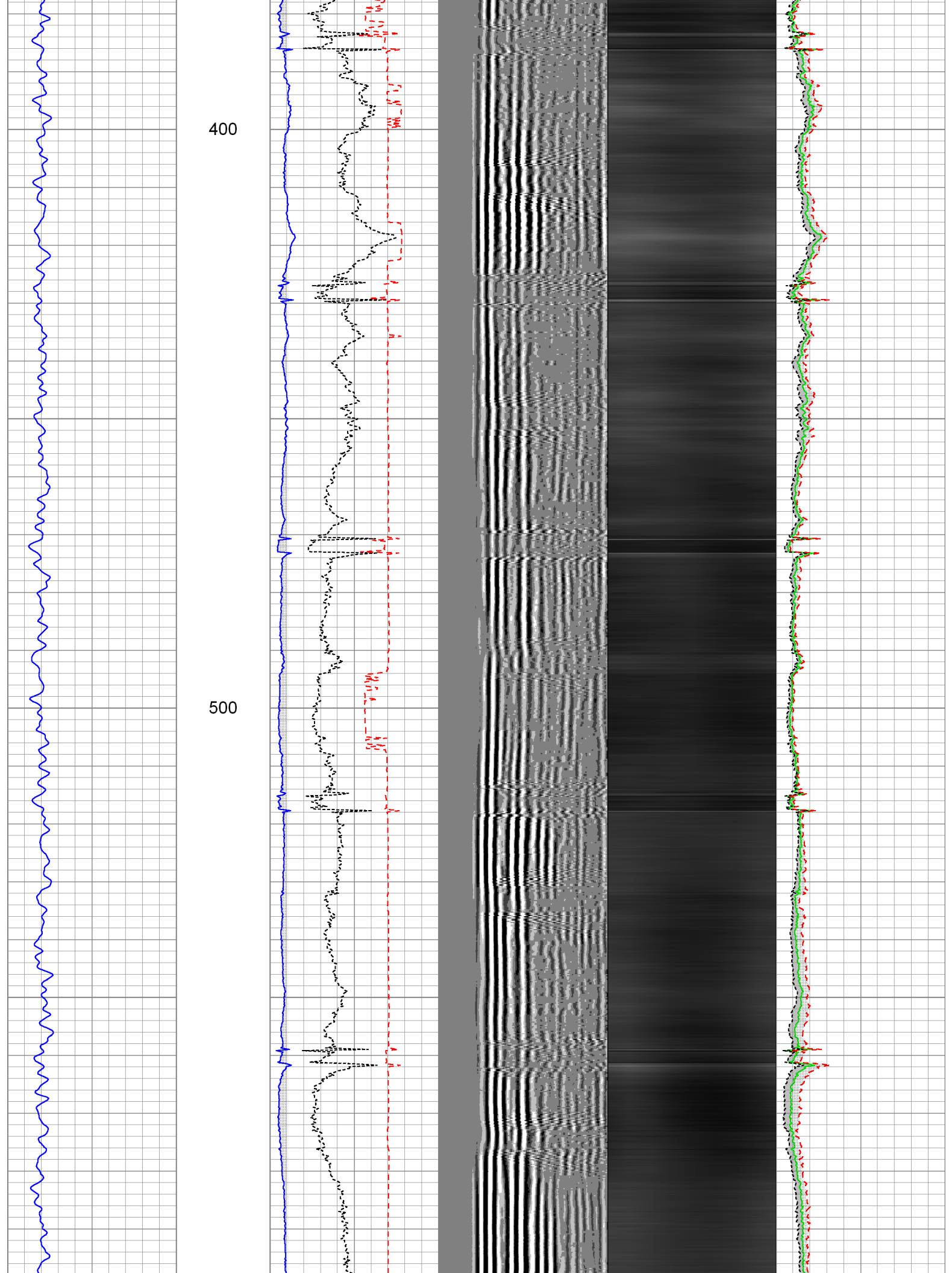
Thank you for choosing FMC Technologies Completion Services, Inc.

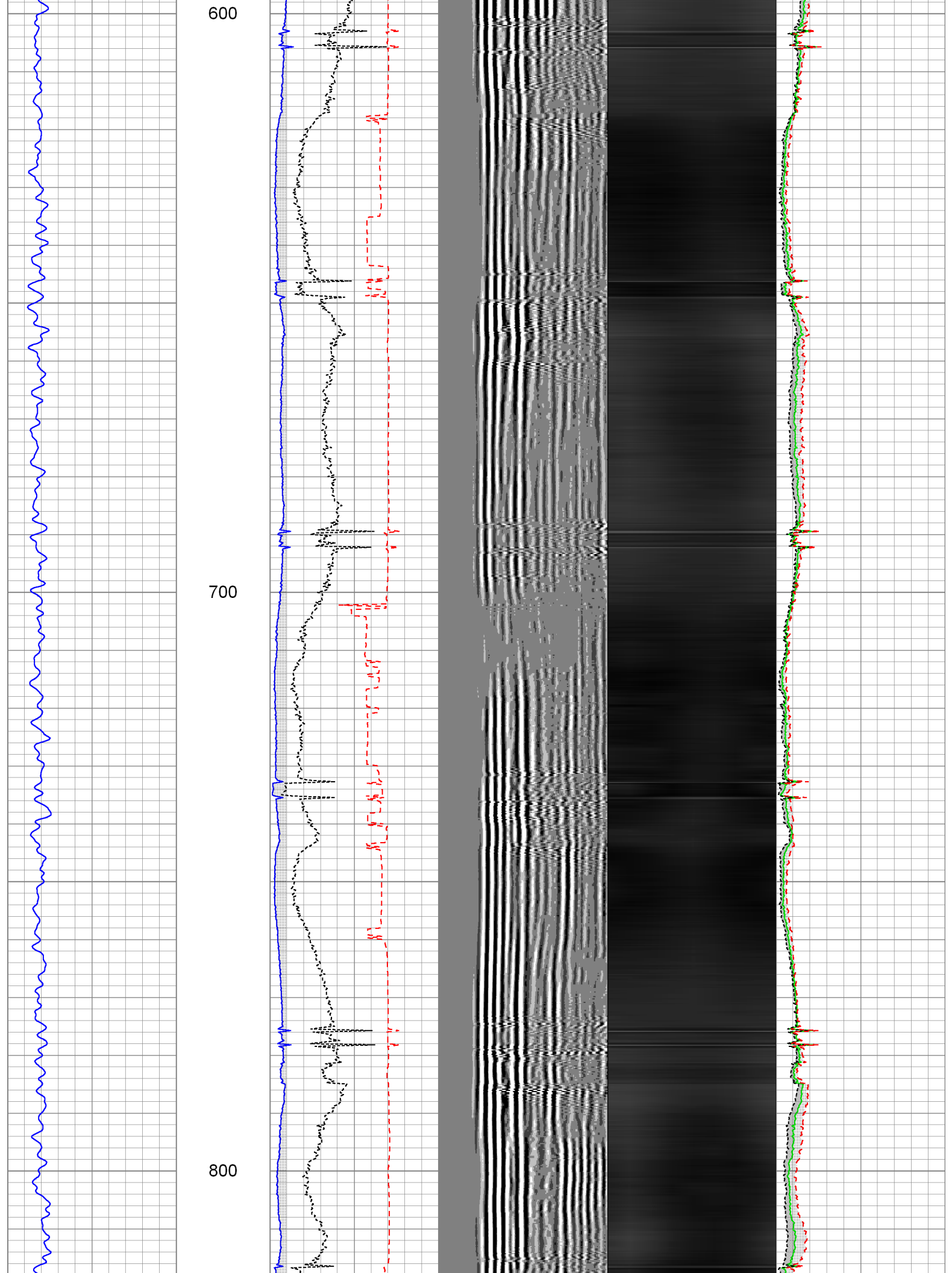
Database File: 05-123-37670_kmg_henrichson 36c-18hz_rbt_mit_10-15-13.db
Dataset Pathname: pass4.1
Presentation Format: rbt007
Dataset Creation: Tue Oct 15 16:34:47 2013 by Calc Sondex V7.03
Charted by: Depth in Feet scaled 1:240

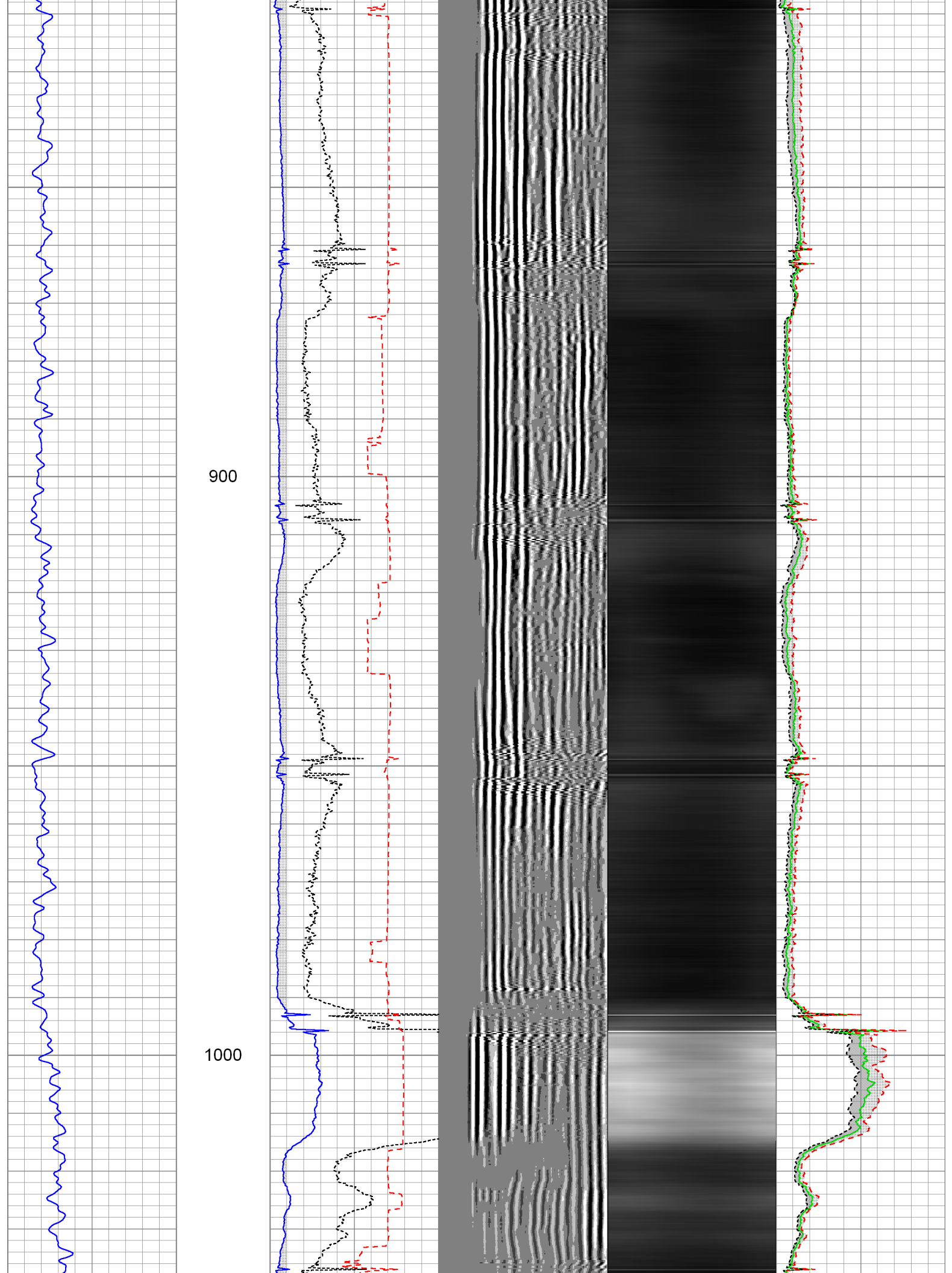
Gamma Ray		3' Amplitude		5' Variable Density Log		Sector Map		Average Amplitude	
0	(GAPI) 200	0	(mV) 100	200	1200			0	100
		3' Amplitude x 5						Minimum Amplitude	
		0	(mV) 20					0	100
		3' Travel Time						Maximum Amplitude	
		650	(usec) 150					0	100

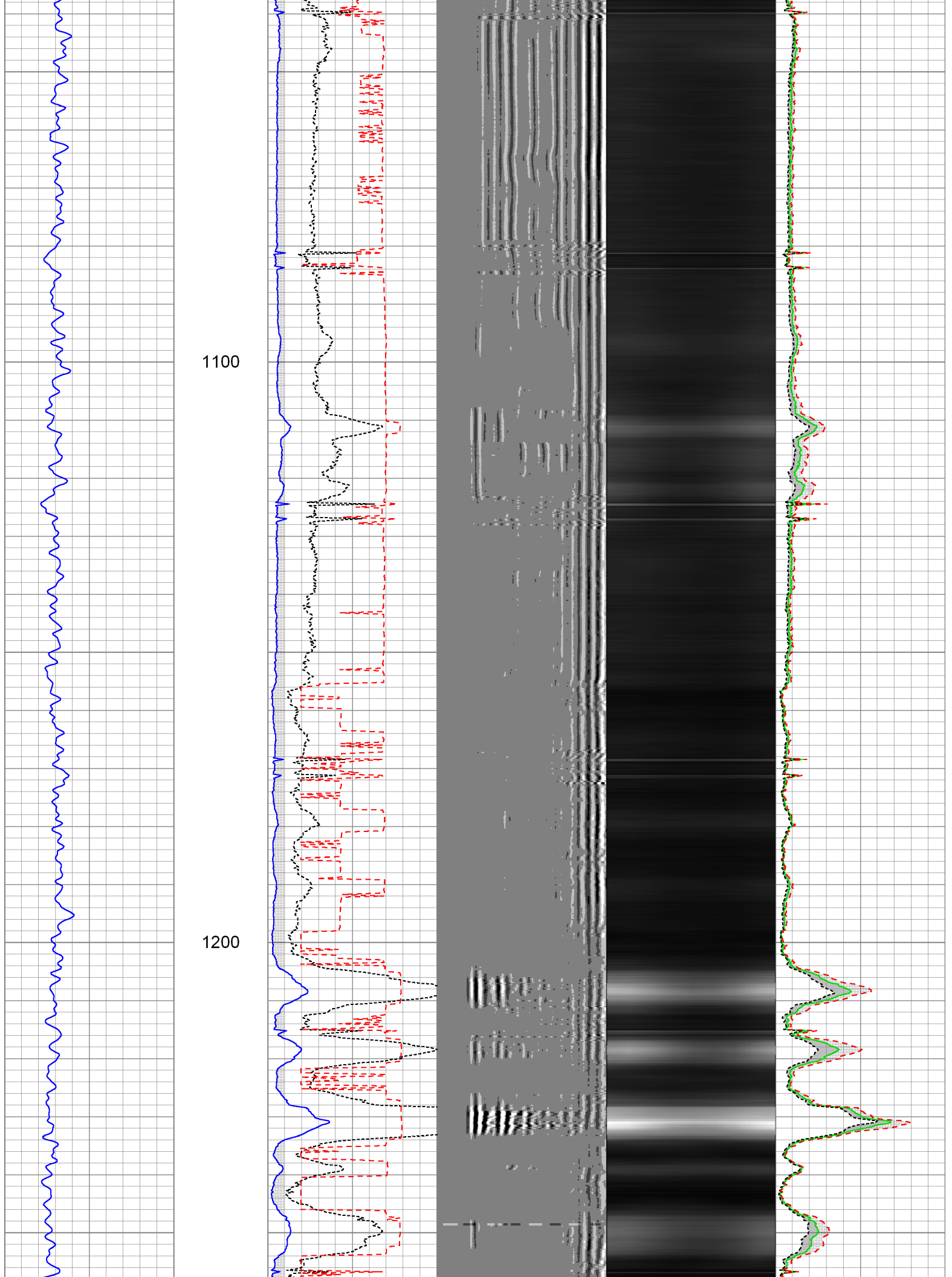






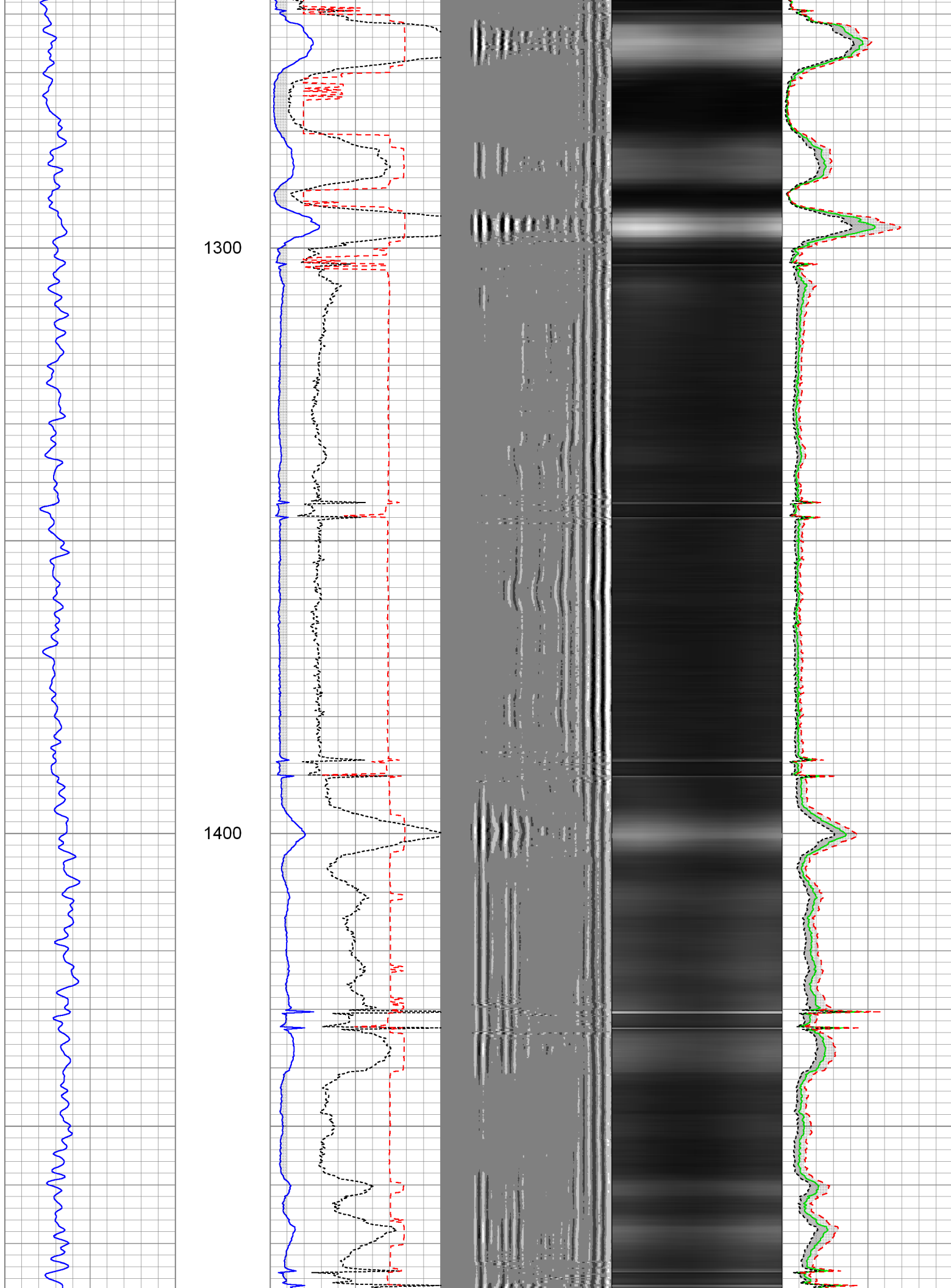


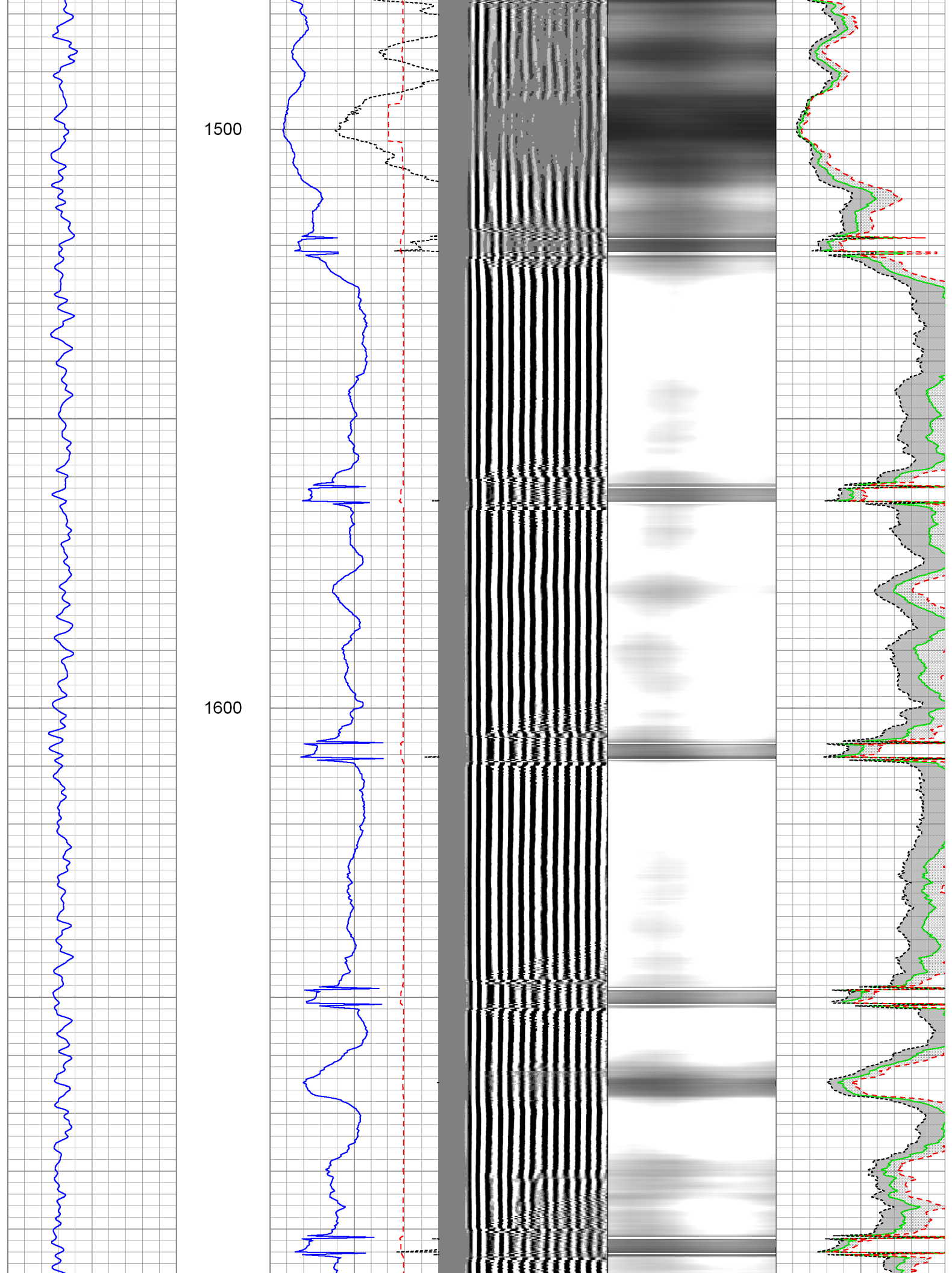




1300

1400

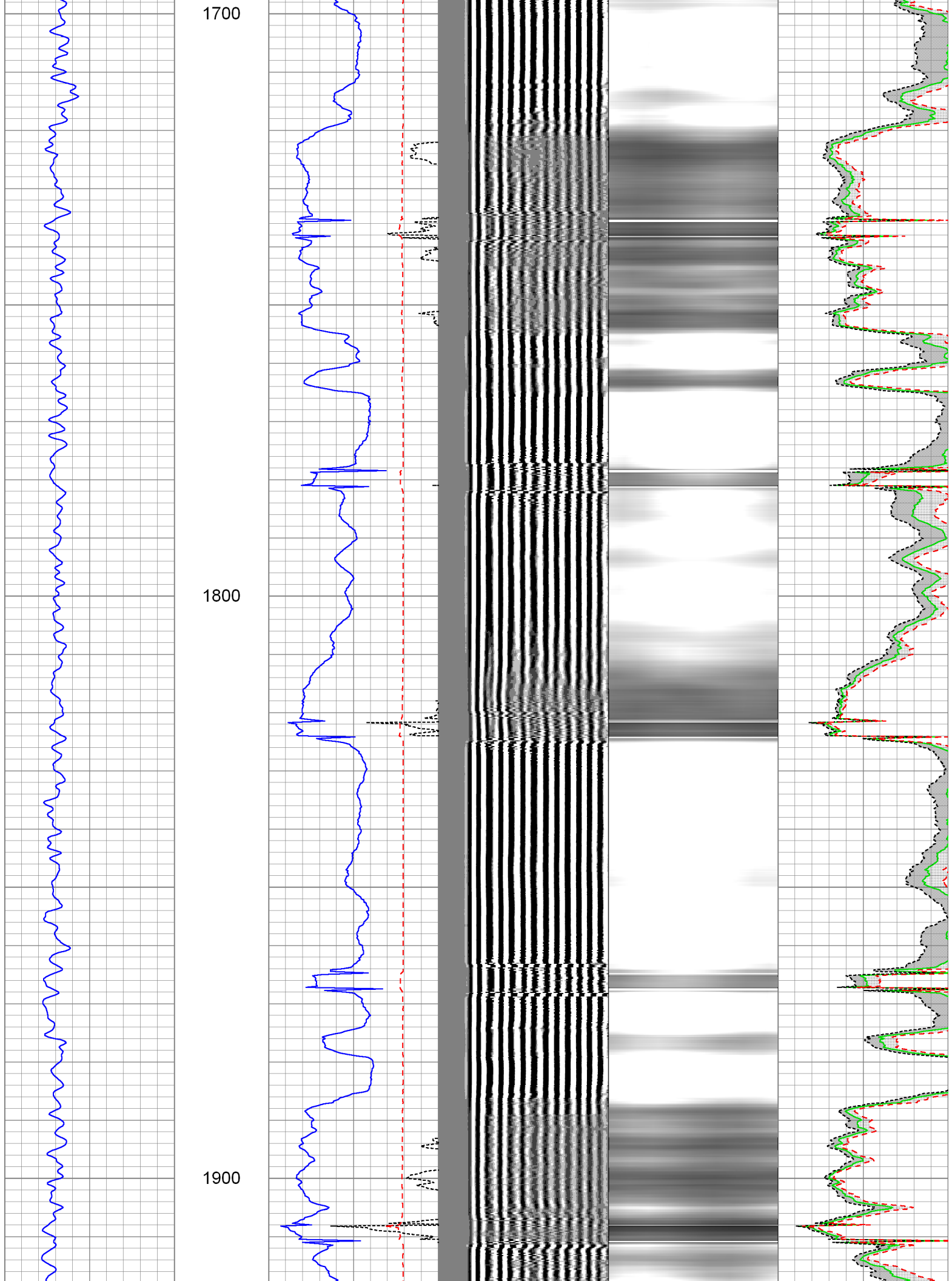




1700

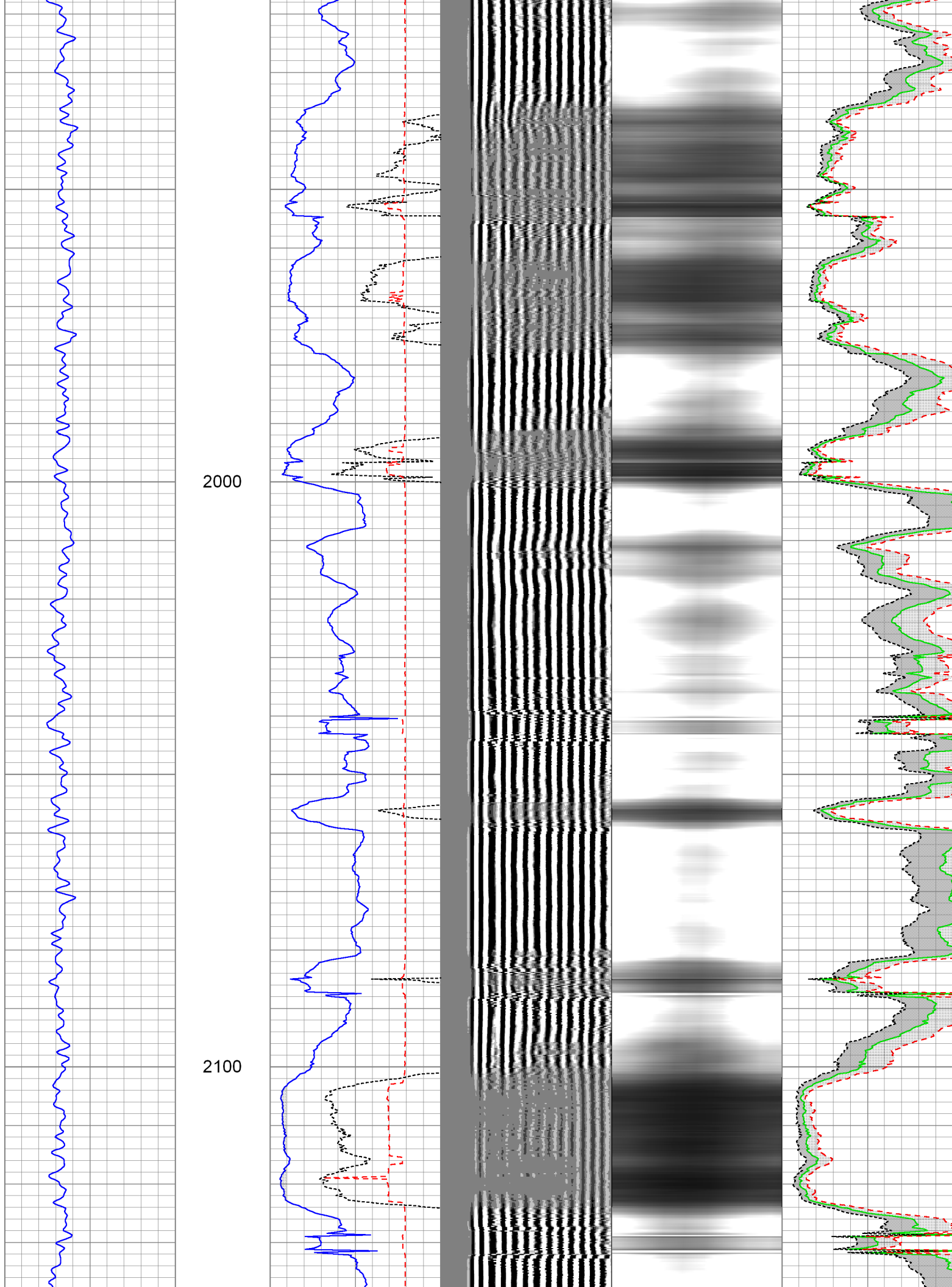
1800

1900



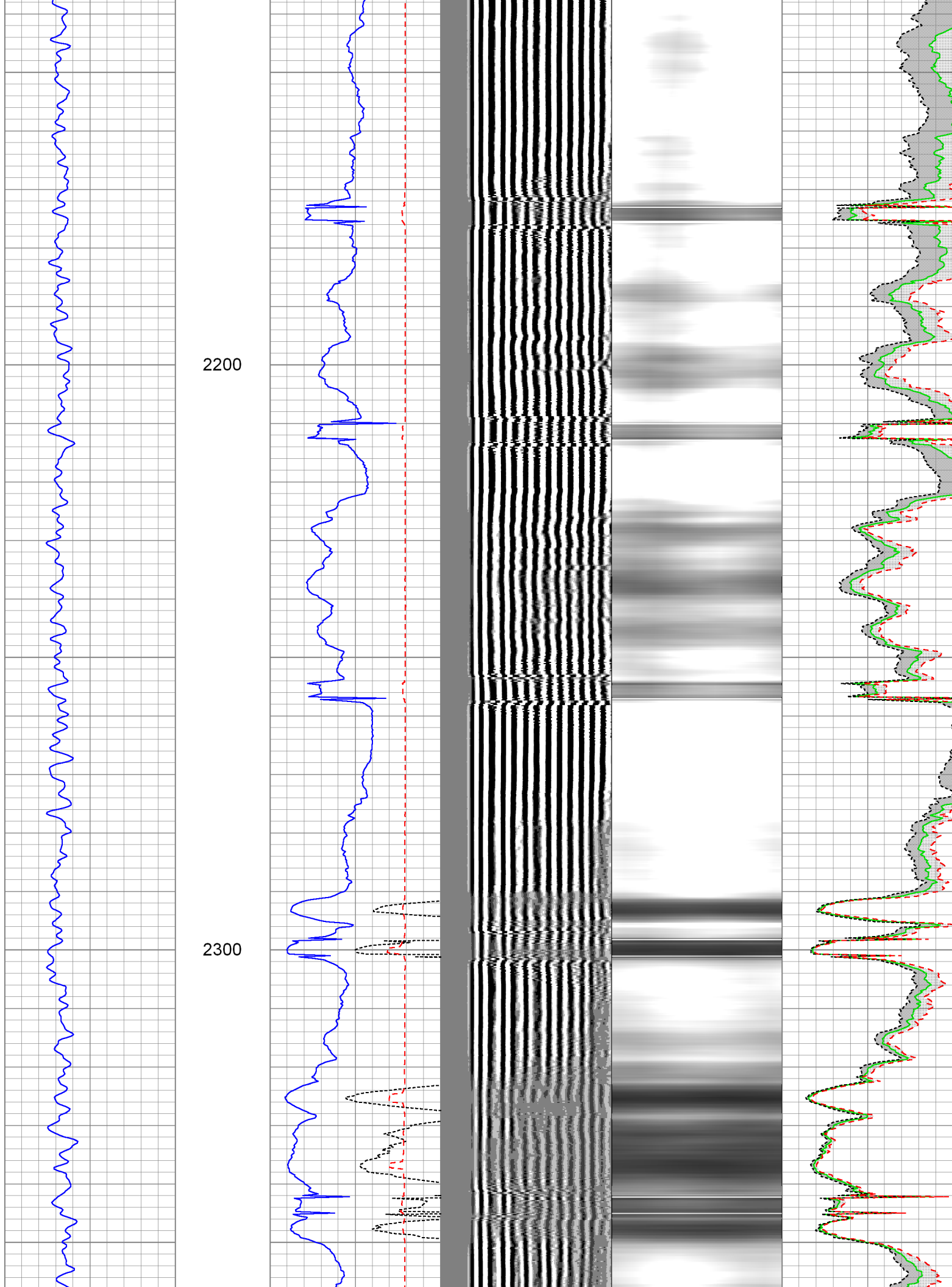
2000

2100



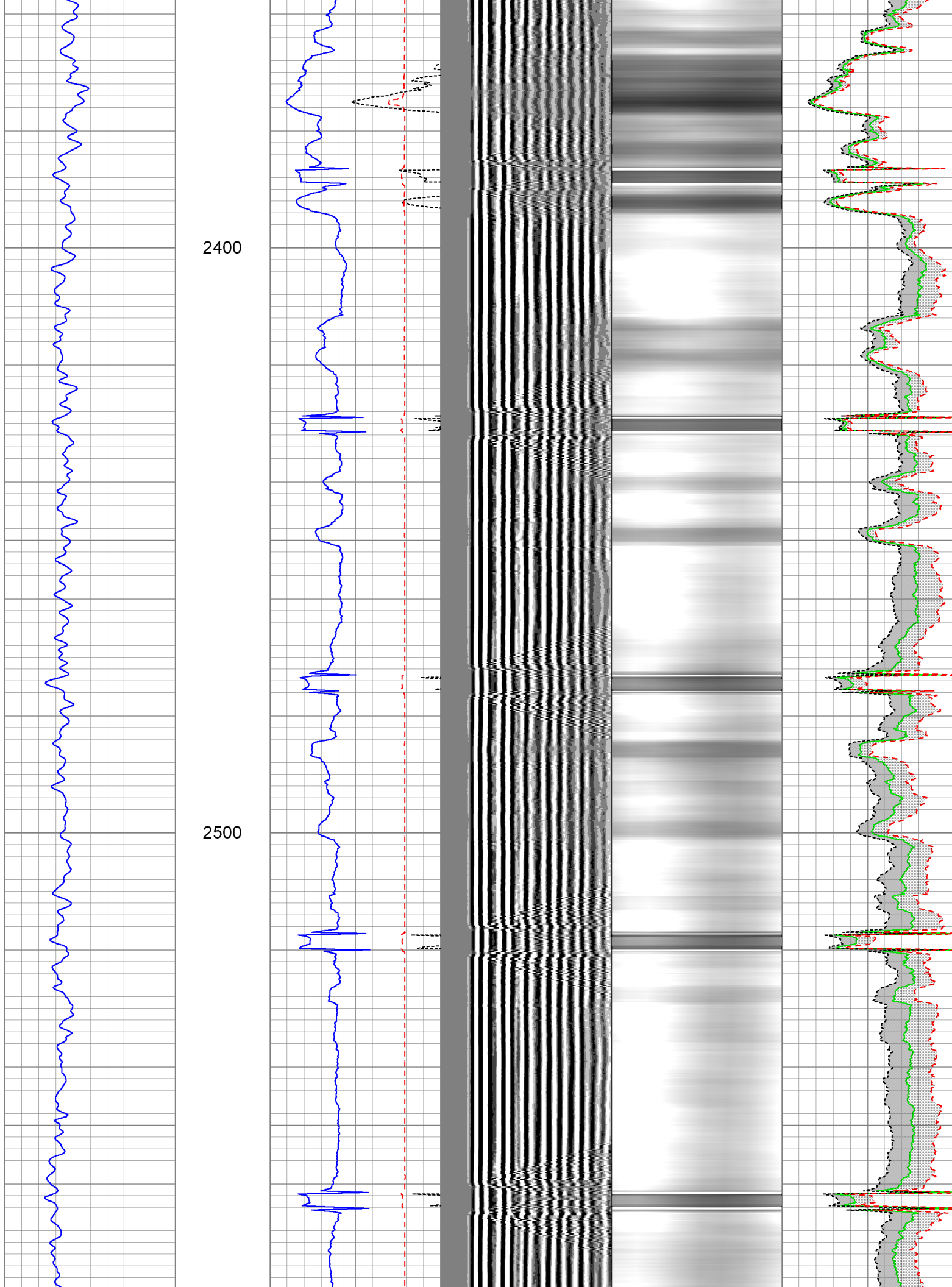
2200

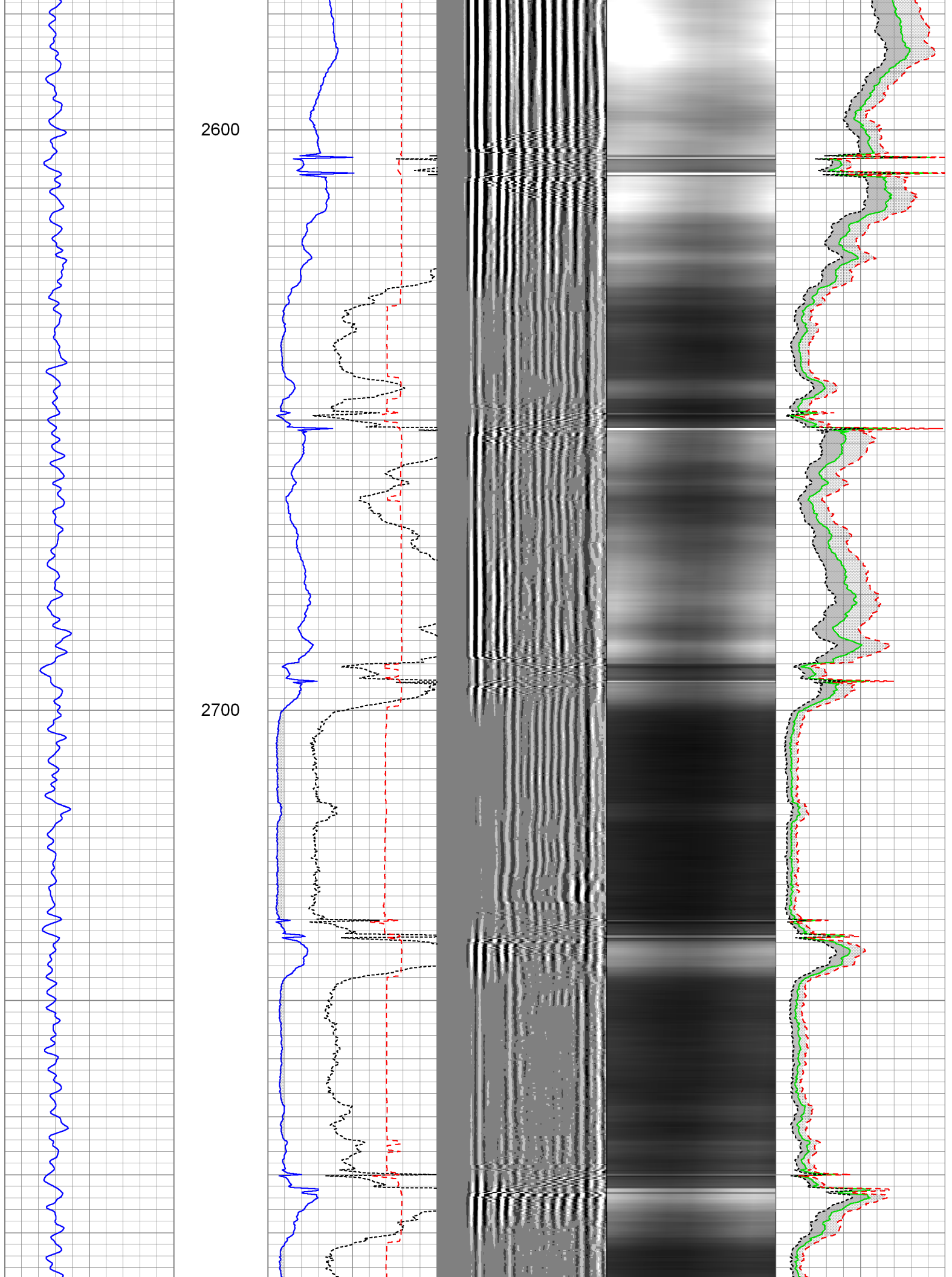
2300



2400

2500

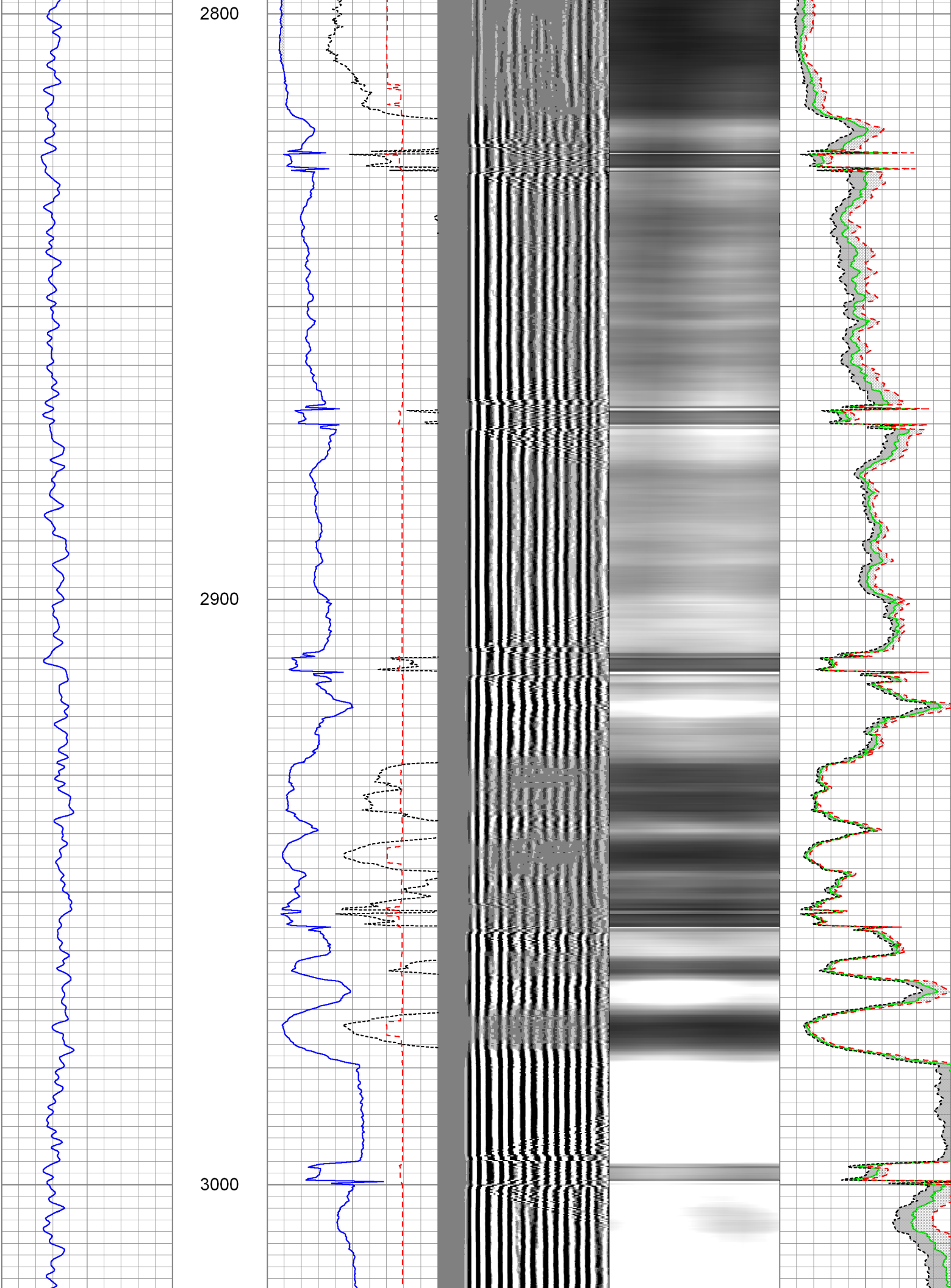




2800

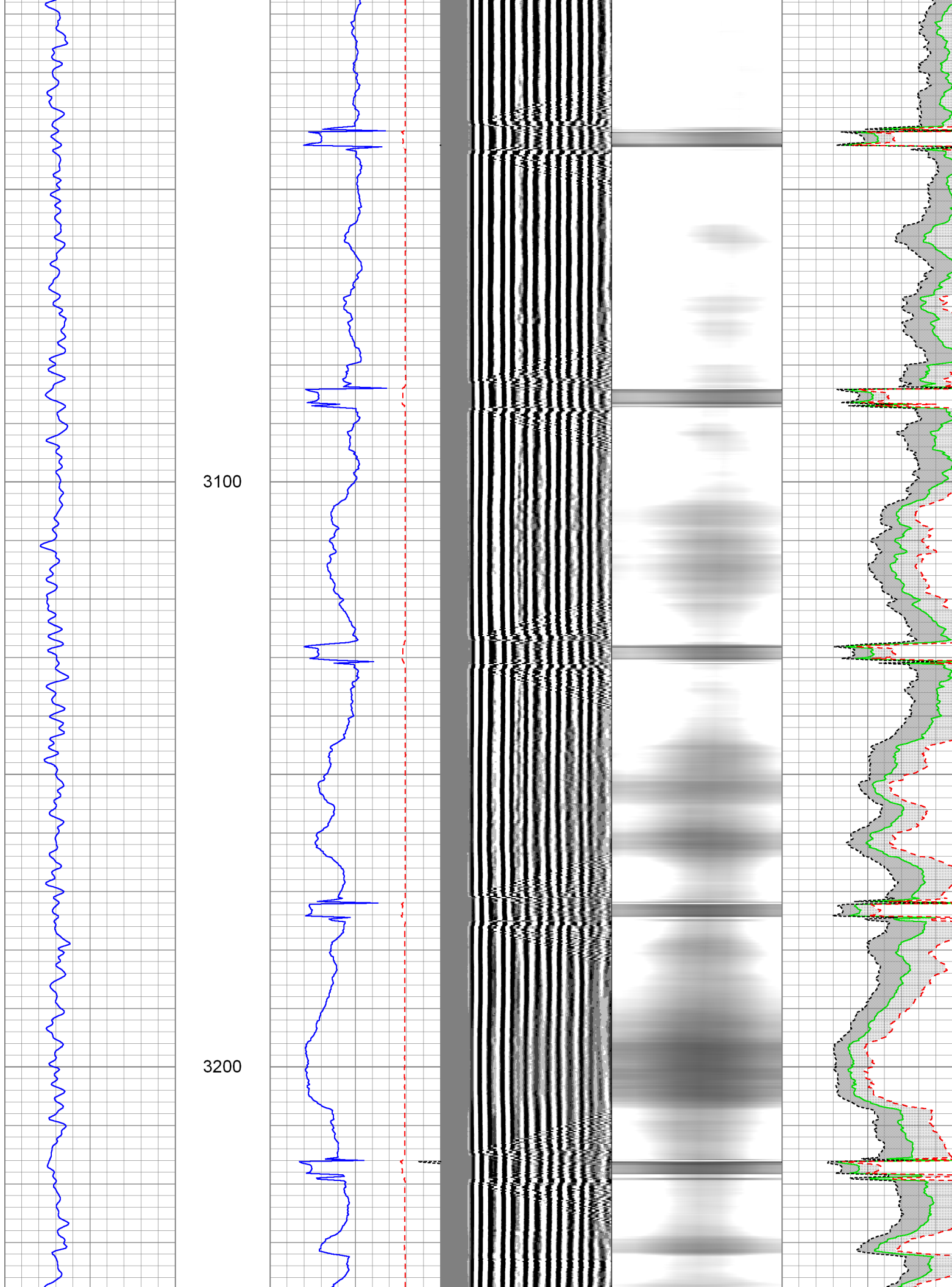
2900

3000



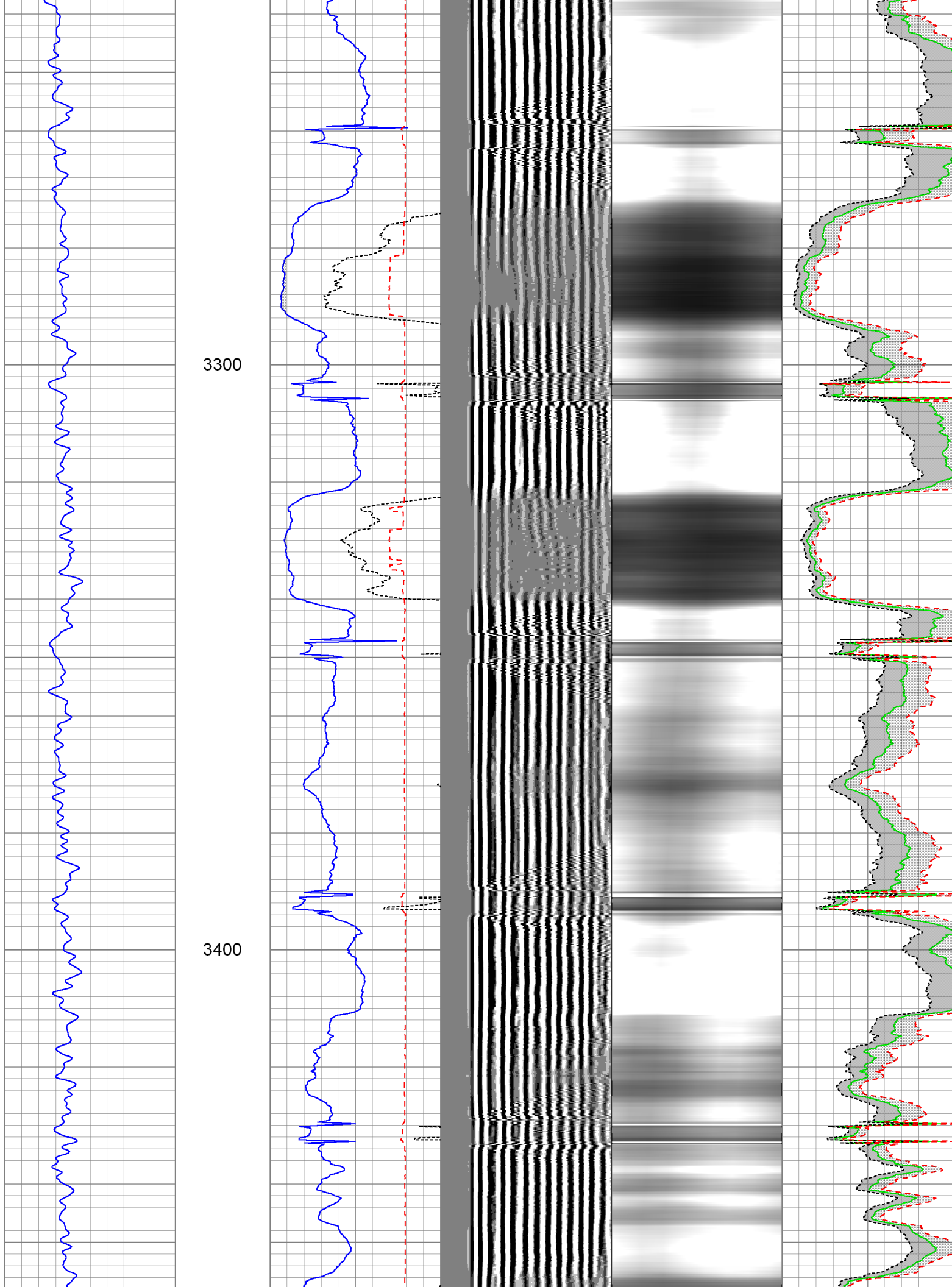
3100

3200



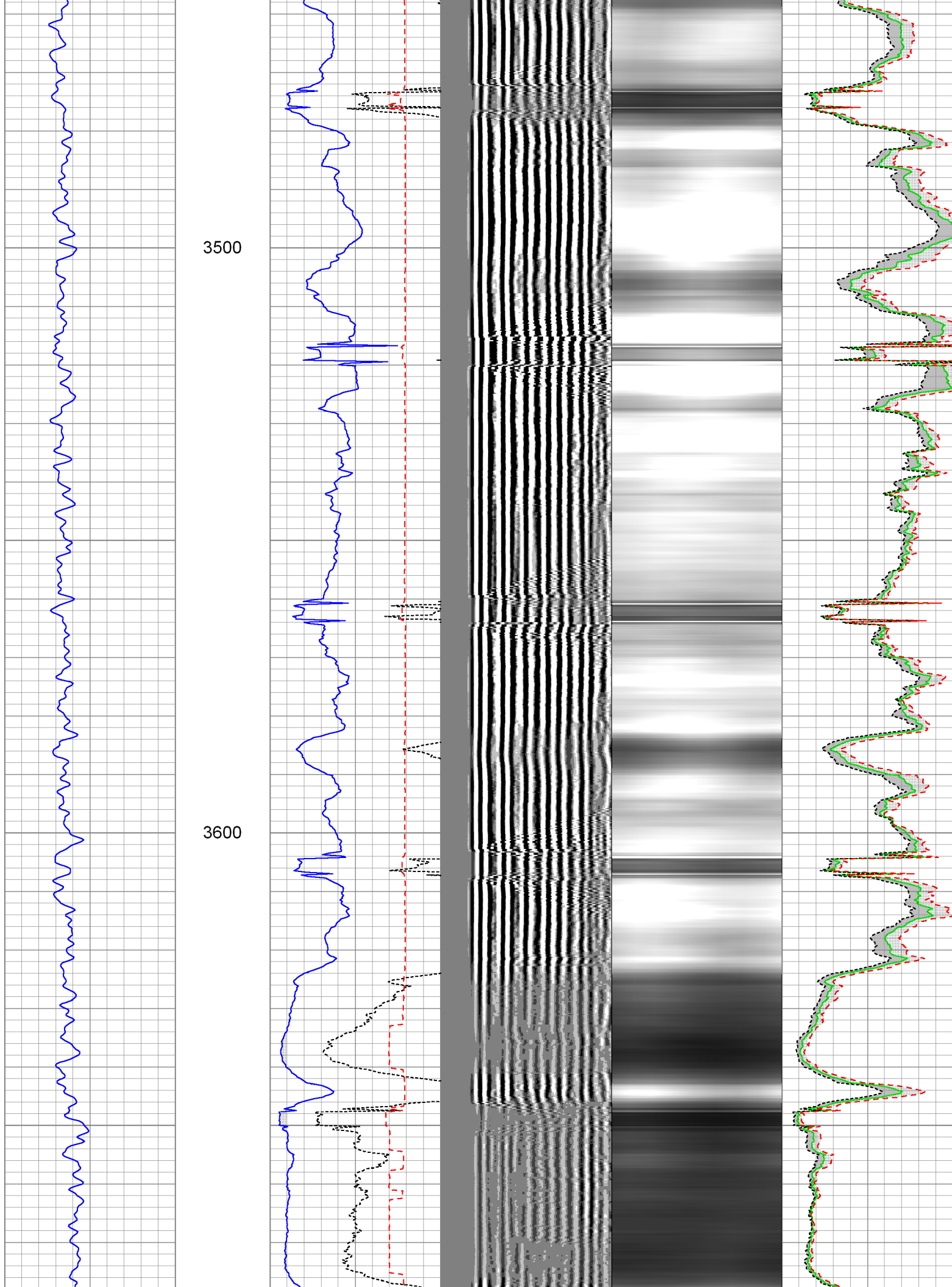
3300

3400



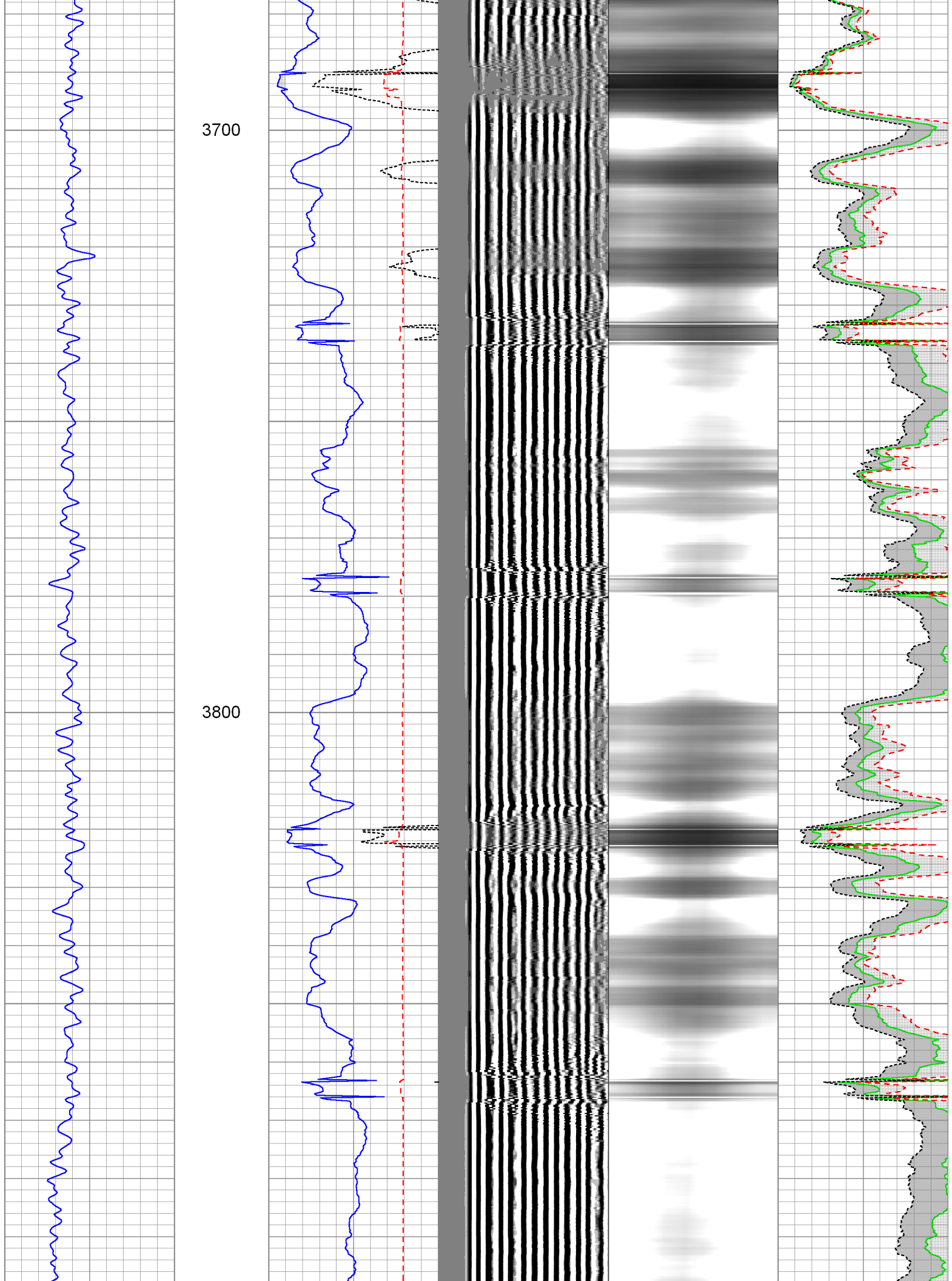
3500

3600



3700

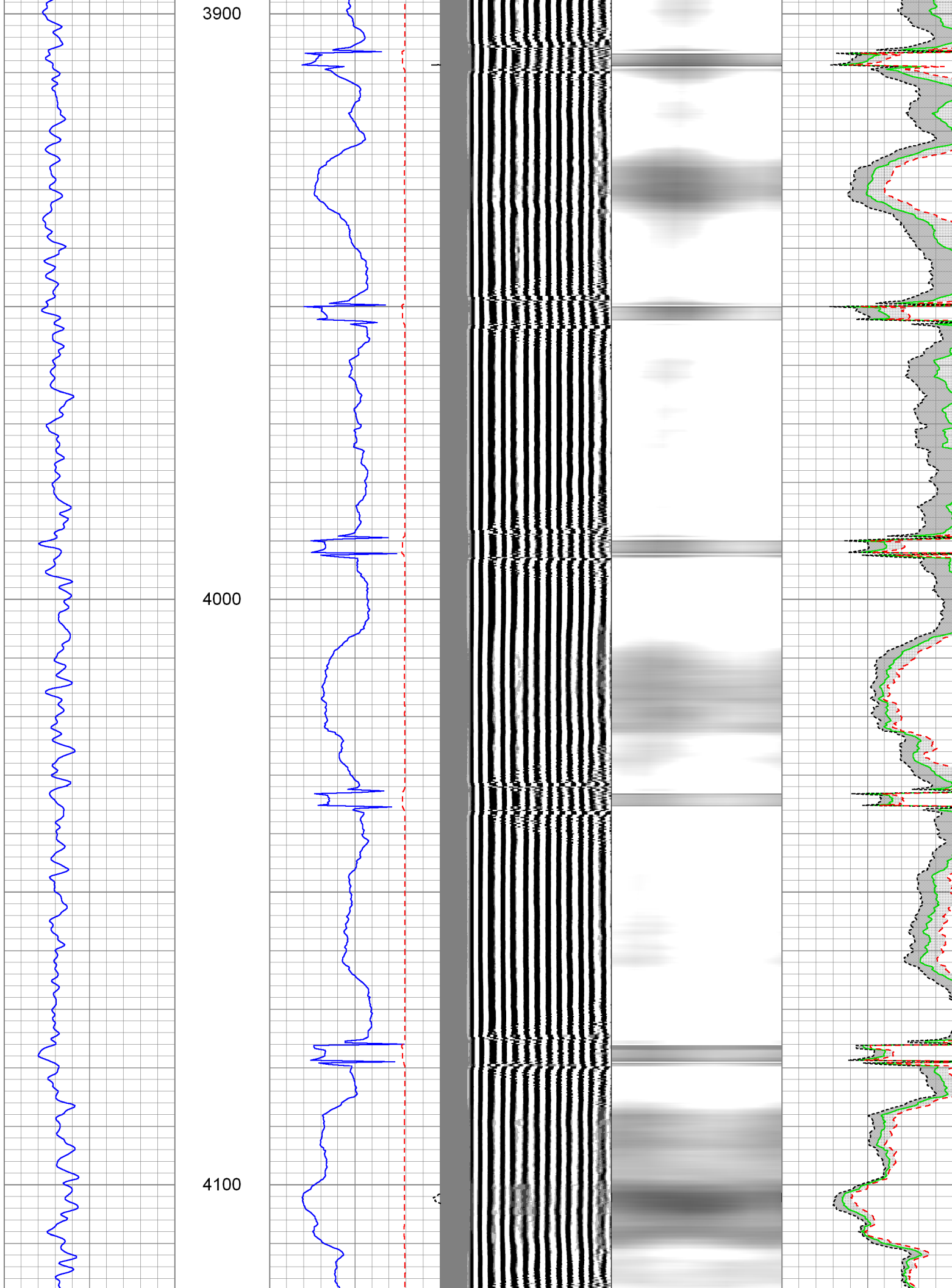
3800



3900

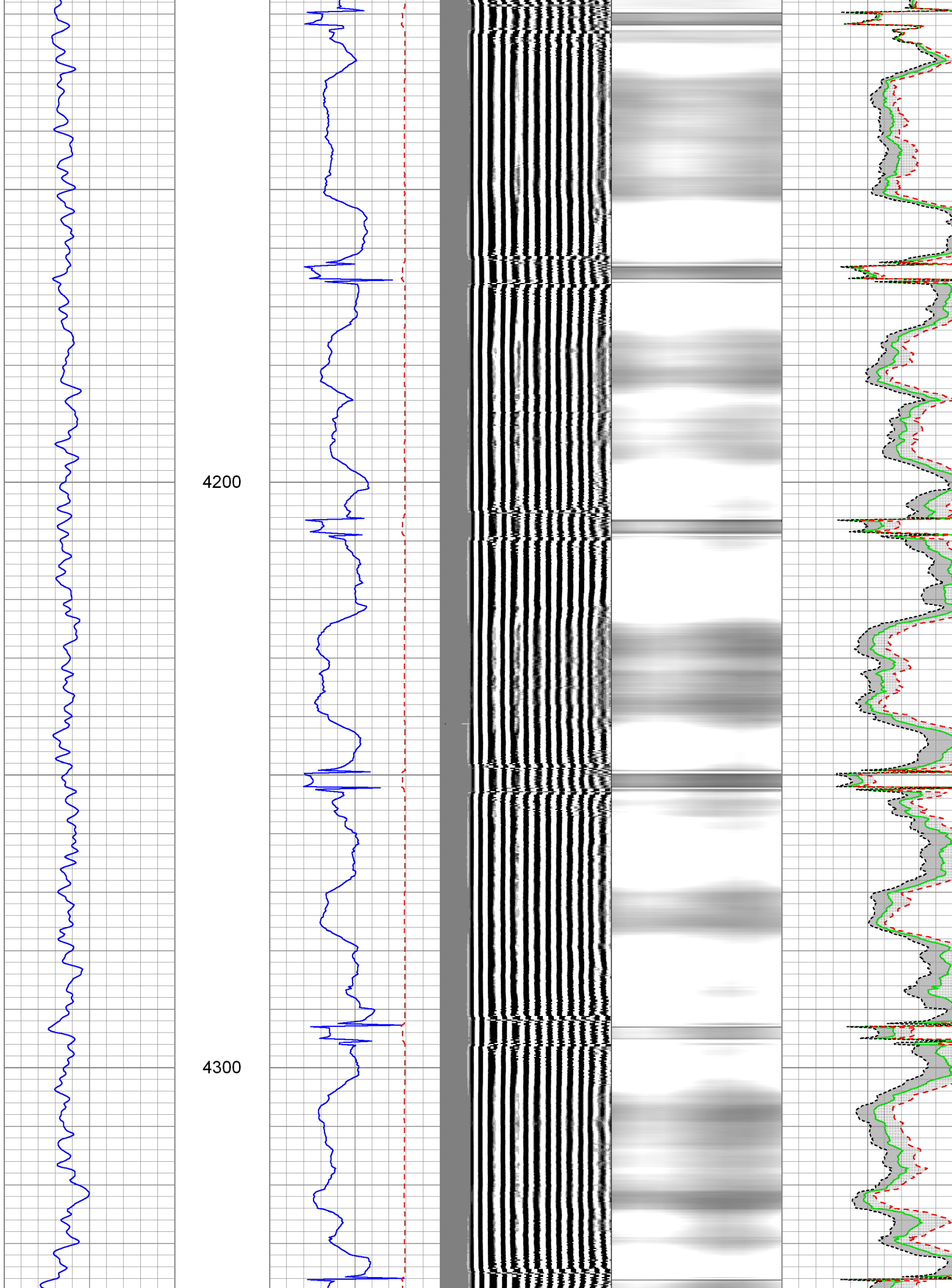
4000

4100



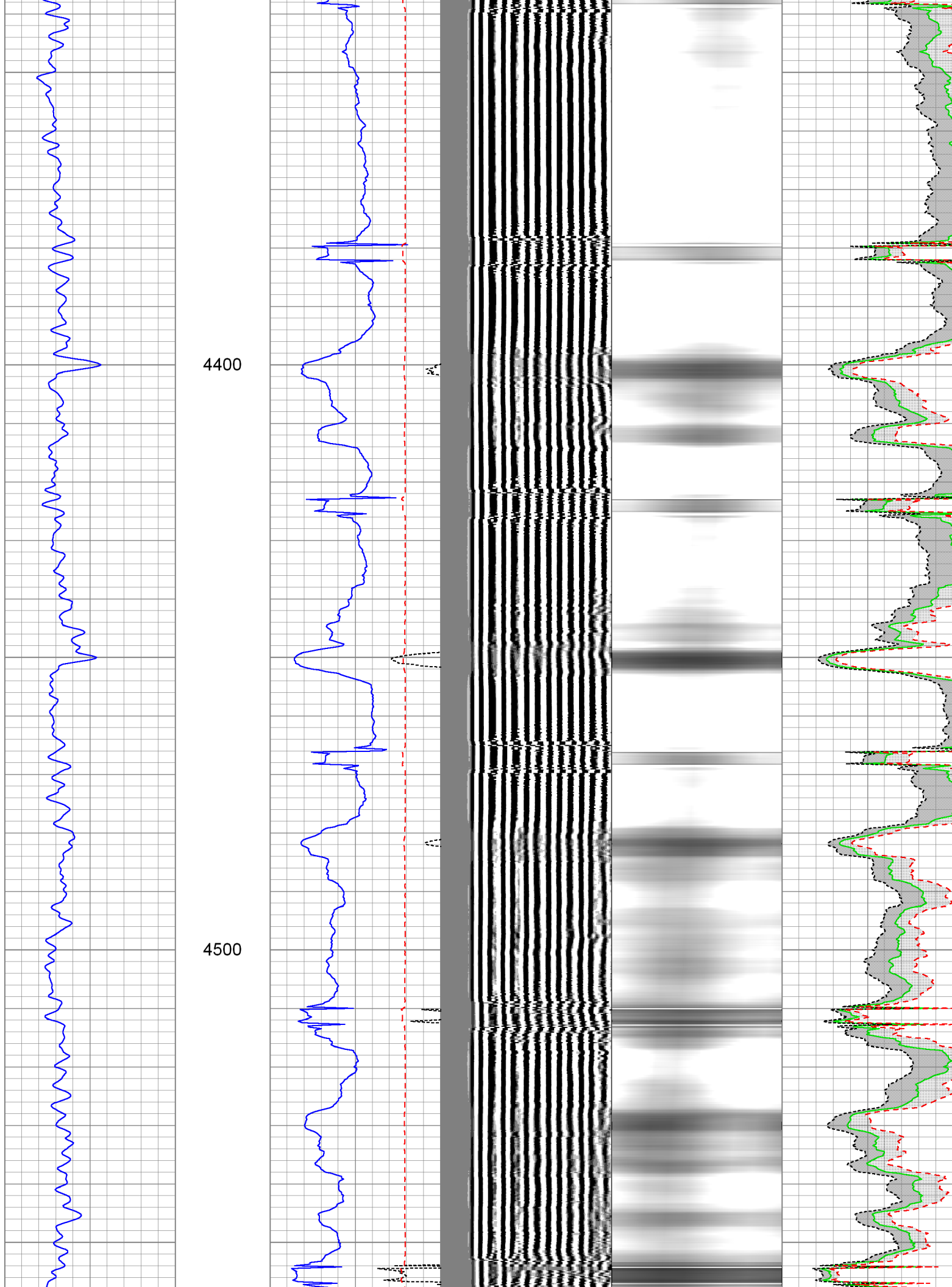
4200

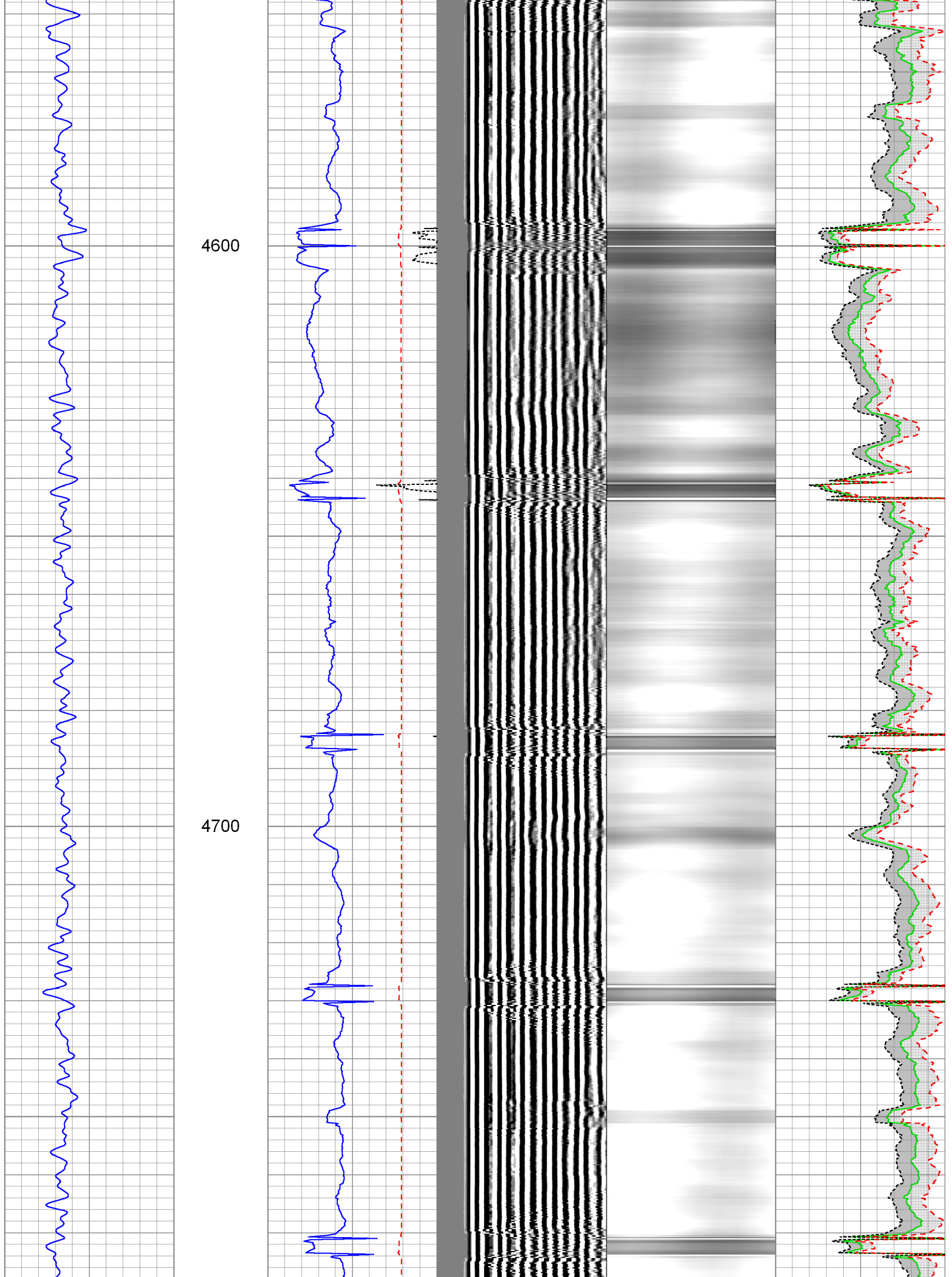
4300



4400

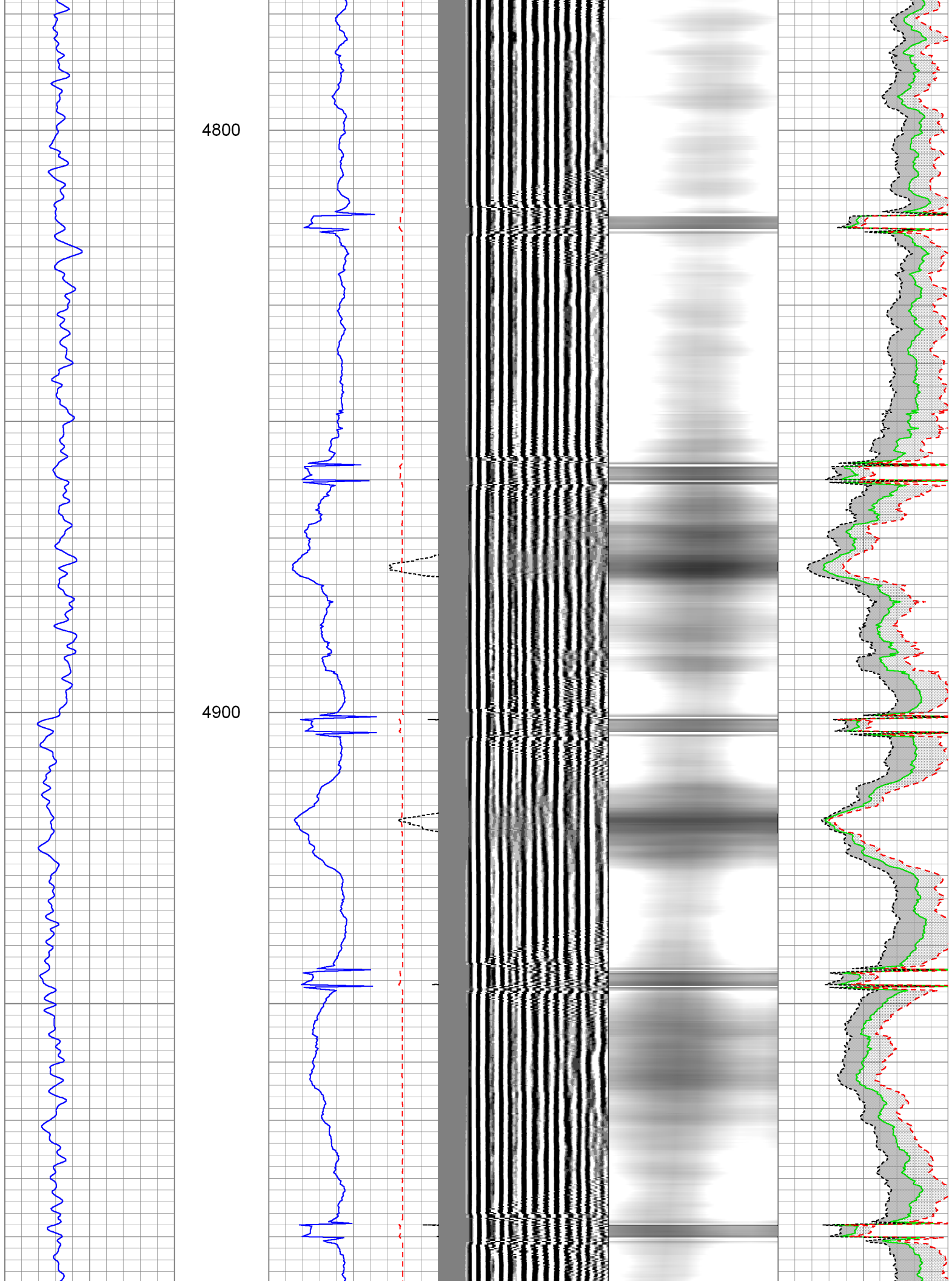
4500





4800

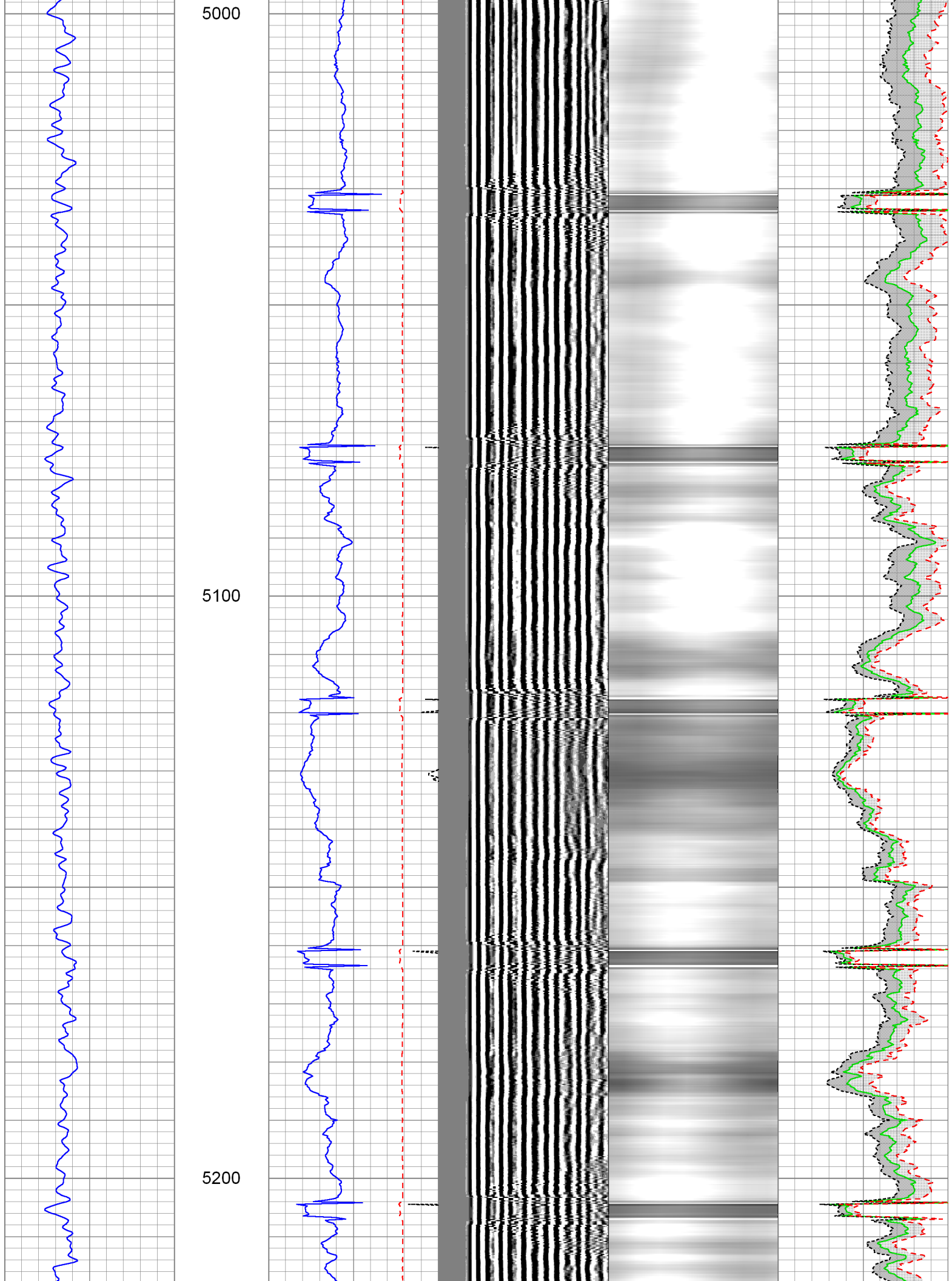
4900



5000

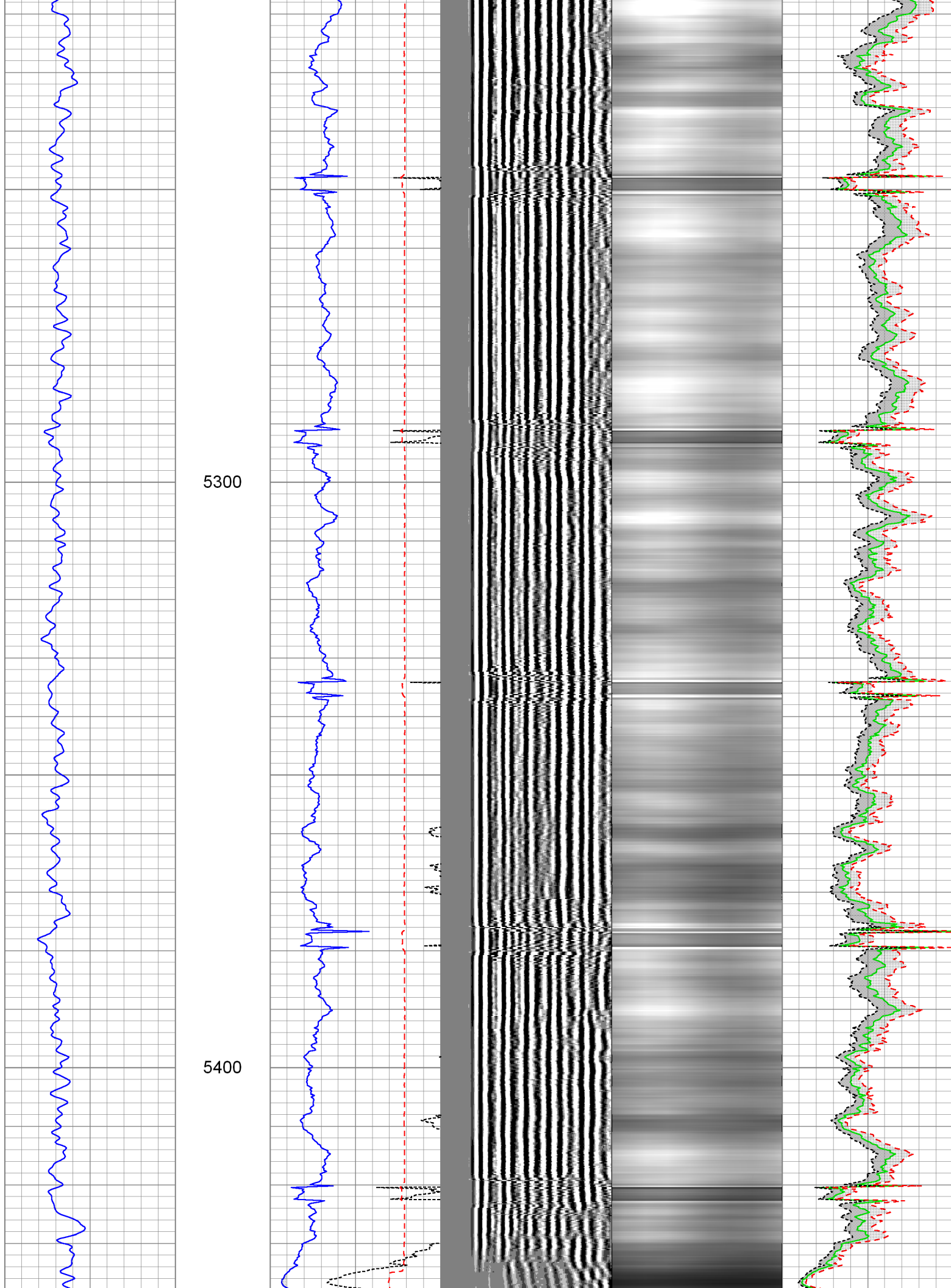
5100

5200



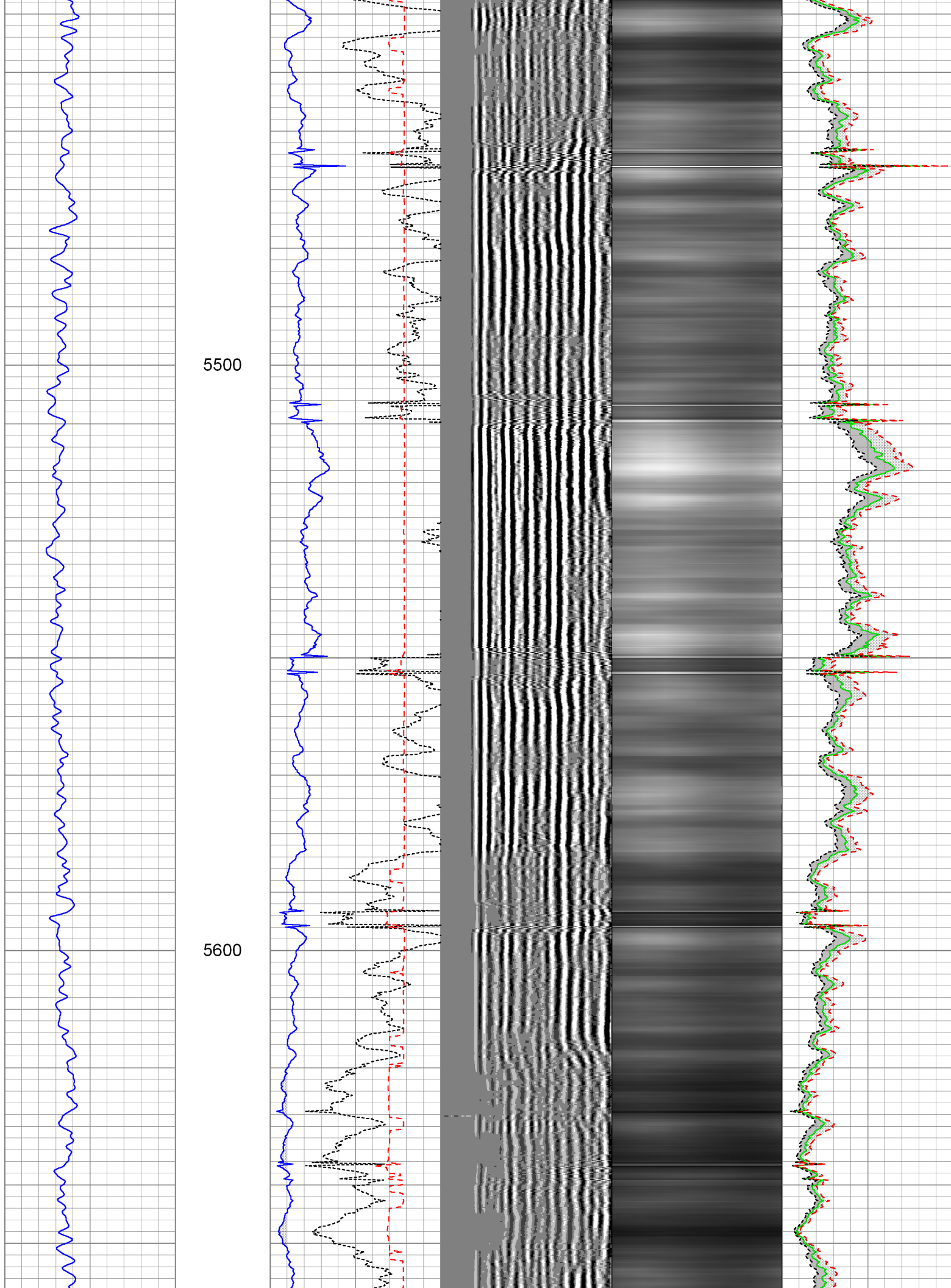
5300

5400



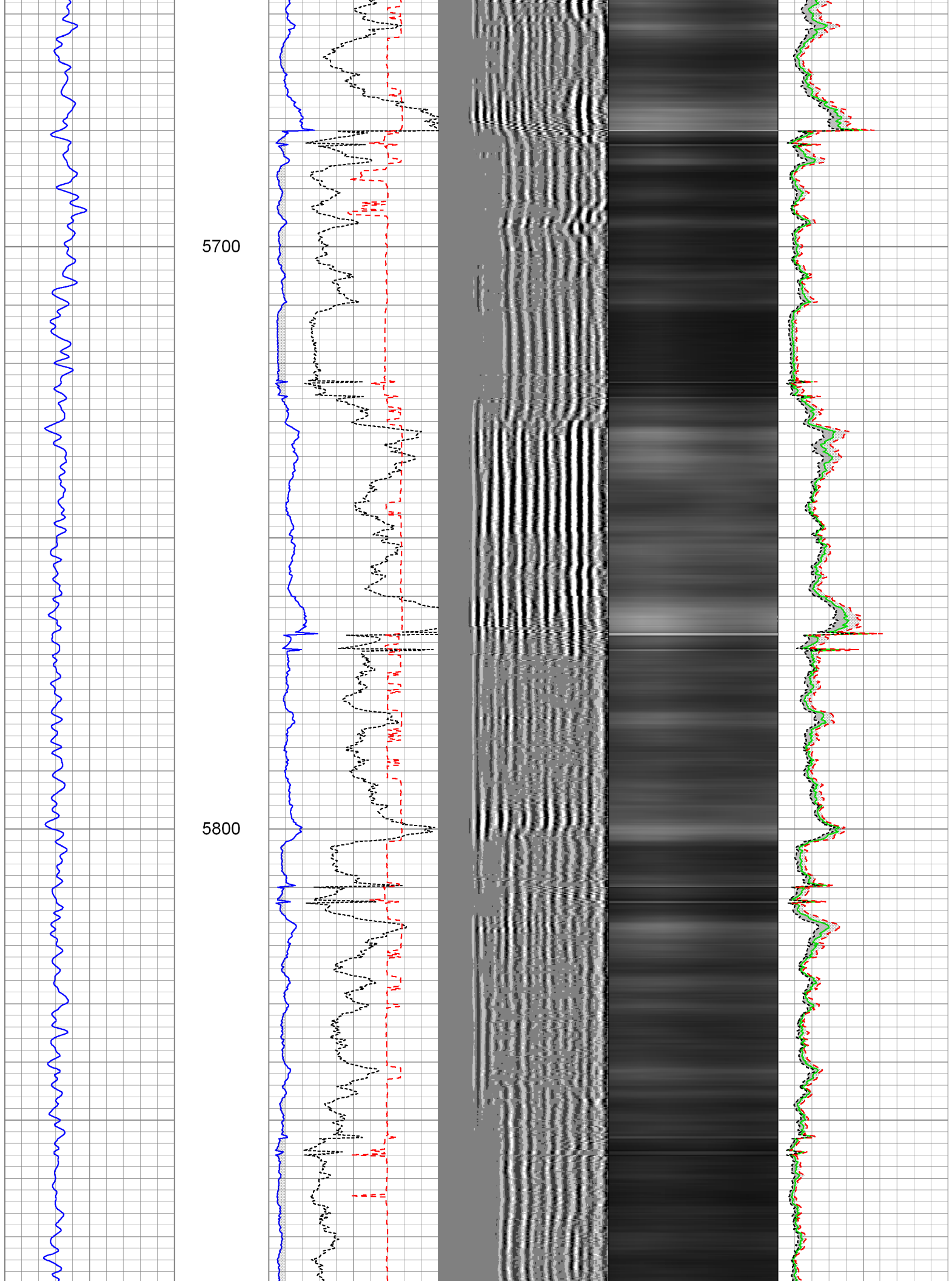
5500

5600



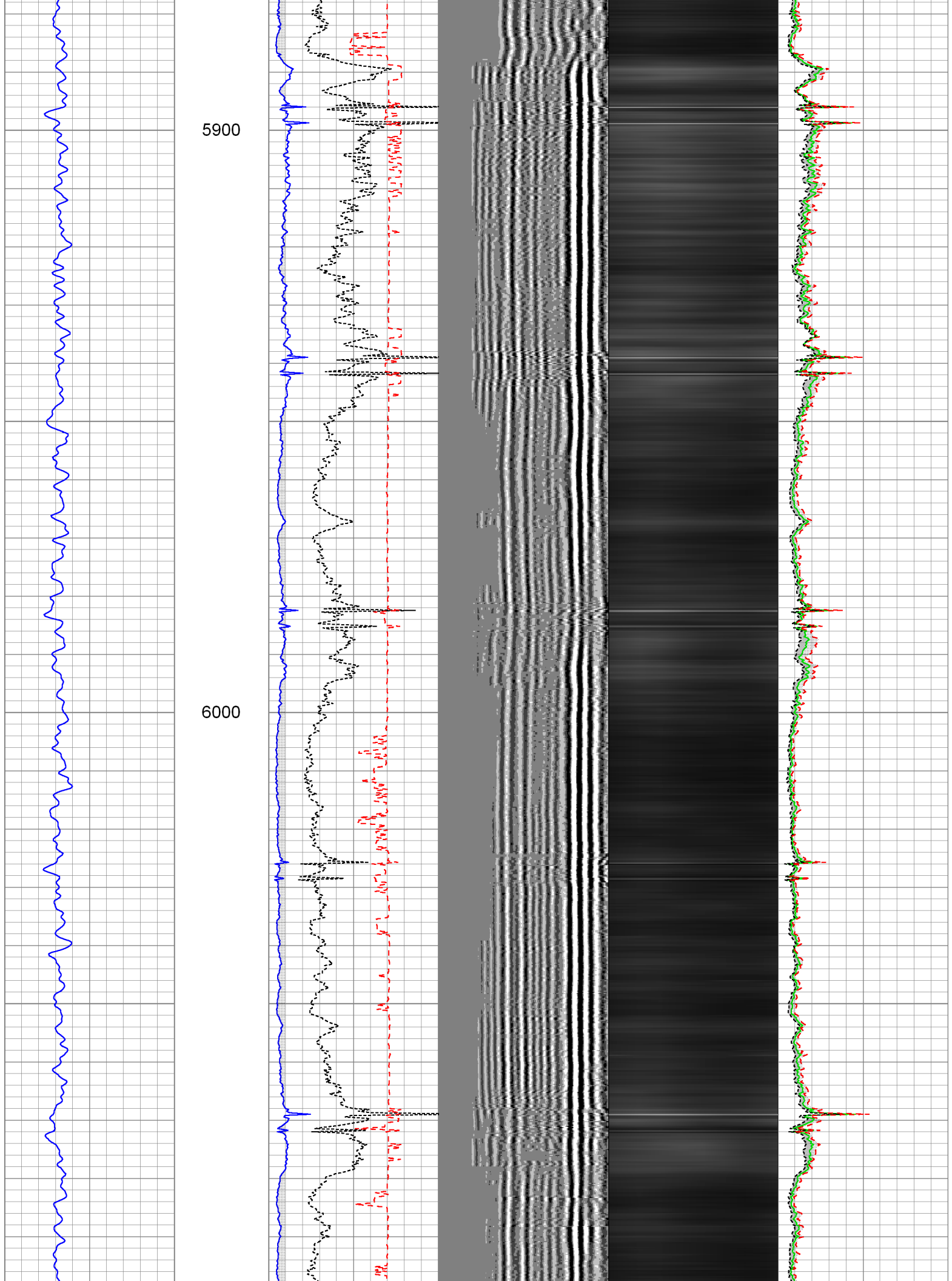
5700

5800



5900

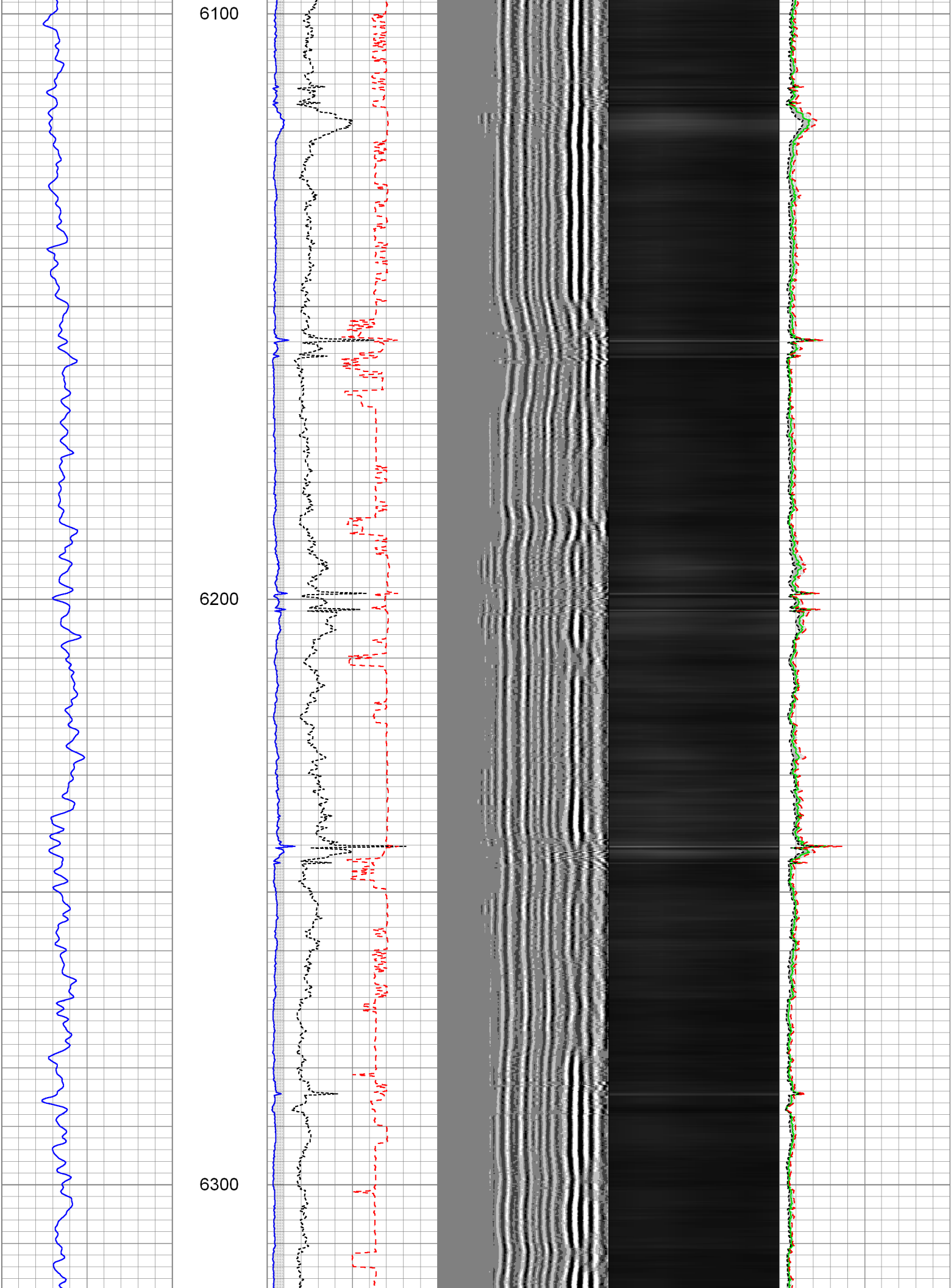
6000

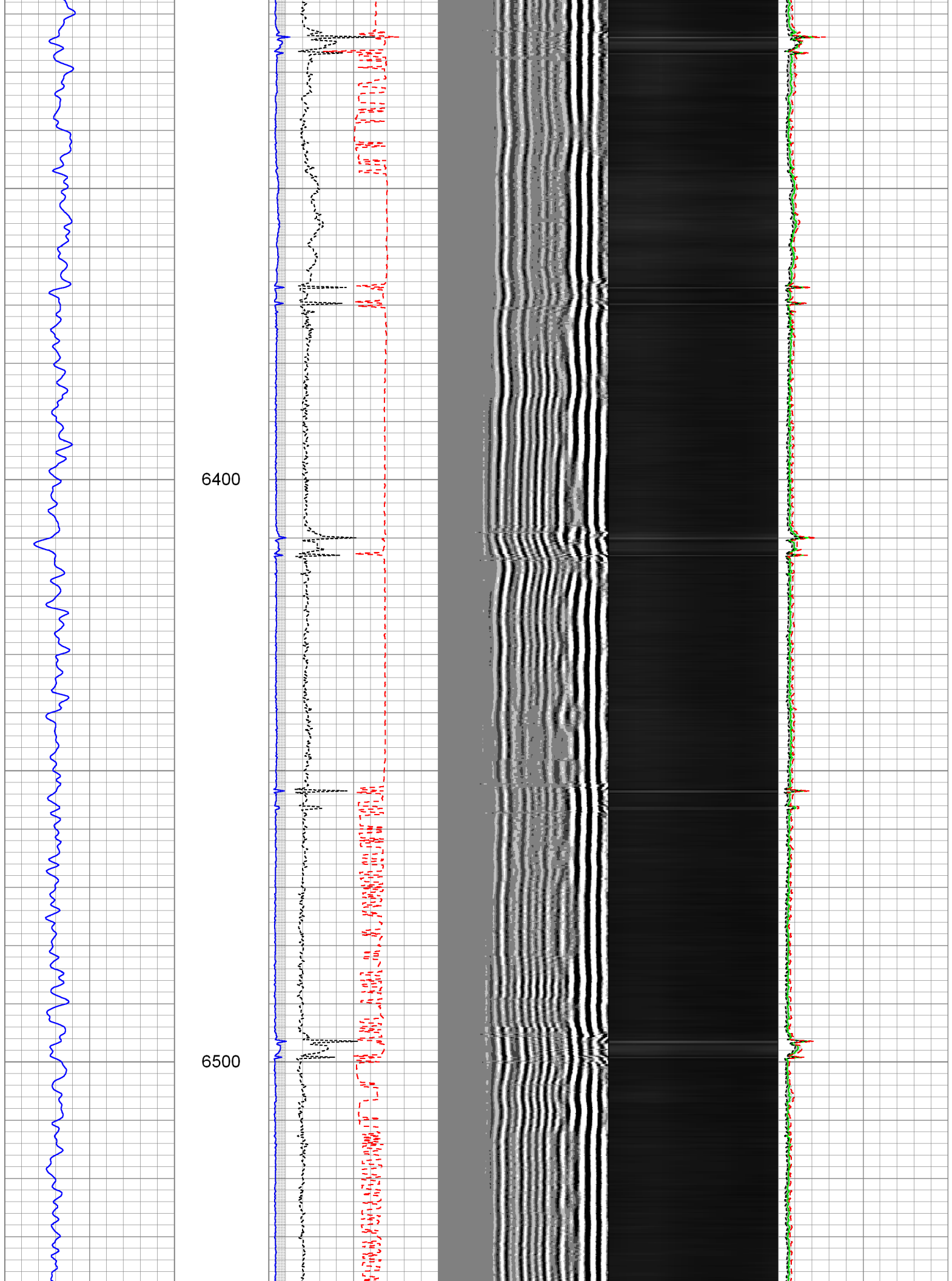


6100

6200

6300





6600

6700

CCL →

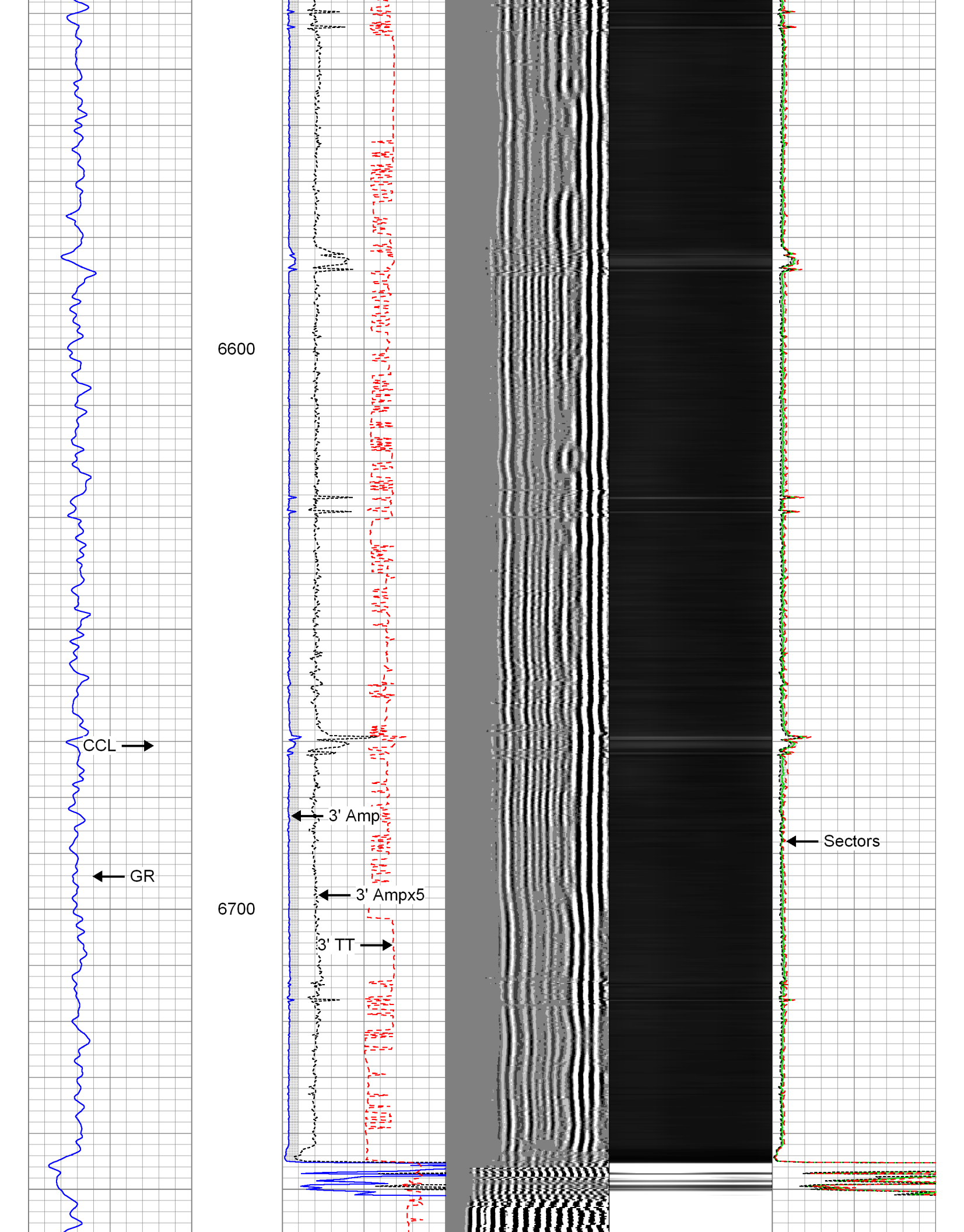
← GR

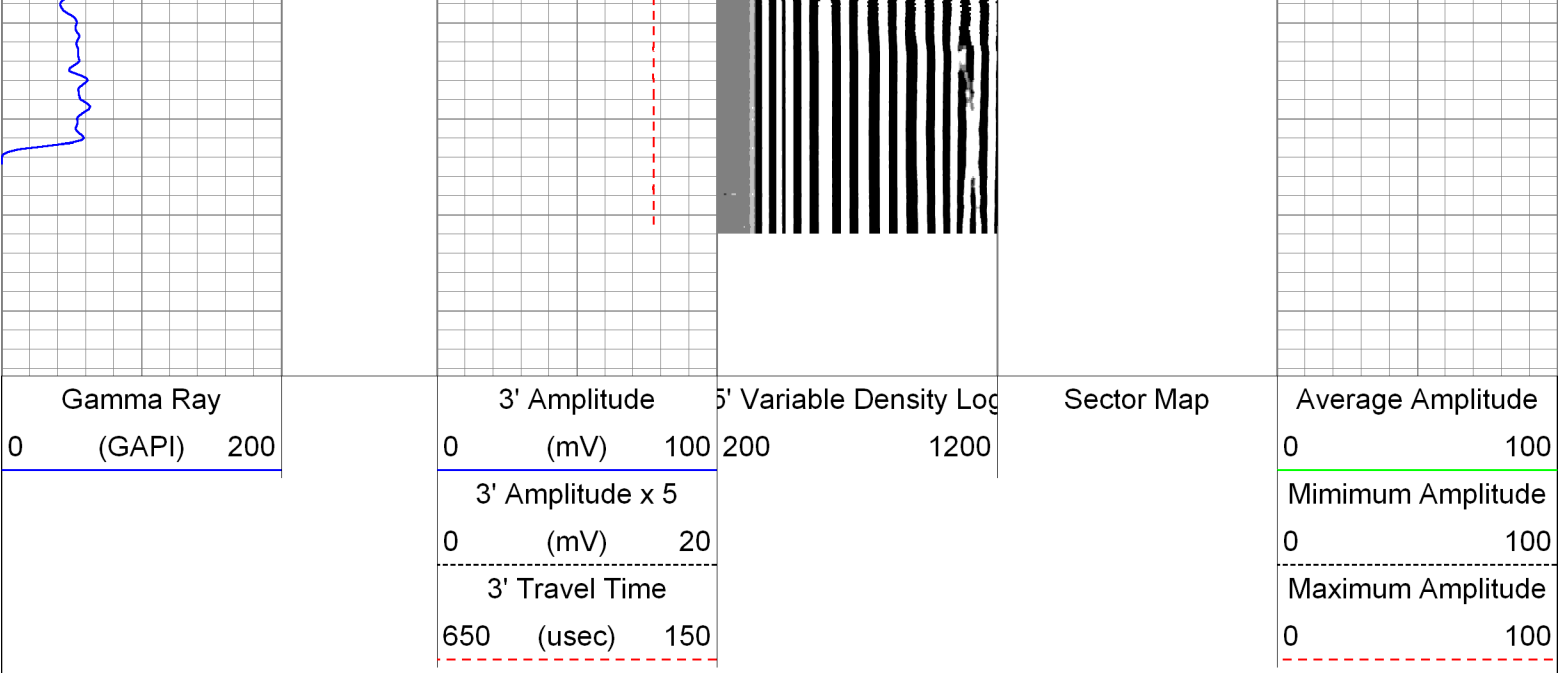
← 3' Amp


← 3' Ampx5

3' TT →

← Sectors







Repeat Pass

Database File: 05-123-37670_kmg_henrichson 36c-18hz_rbt_mit_10-15-13.db

Dataset Pathname: pass3.1

Presentation Format: rbt007

Dataset Creation: Tue Oct 15 16:42:08 2013 by Calc Sondex V7.03

Charted by: Depth in Feet scaled 1:240

Gamma Ray
0 (GAPI) 200

3' Amplitude
0 (mV) 100

5' Variable Density Log
200 1200

Sector Map

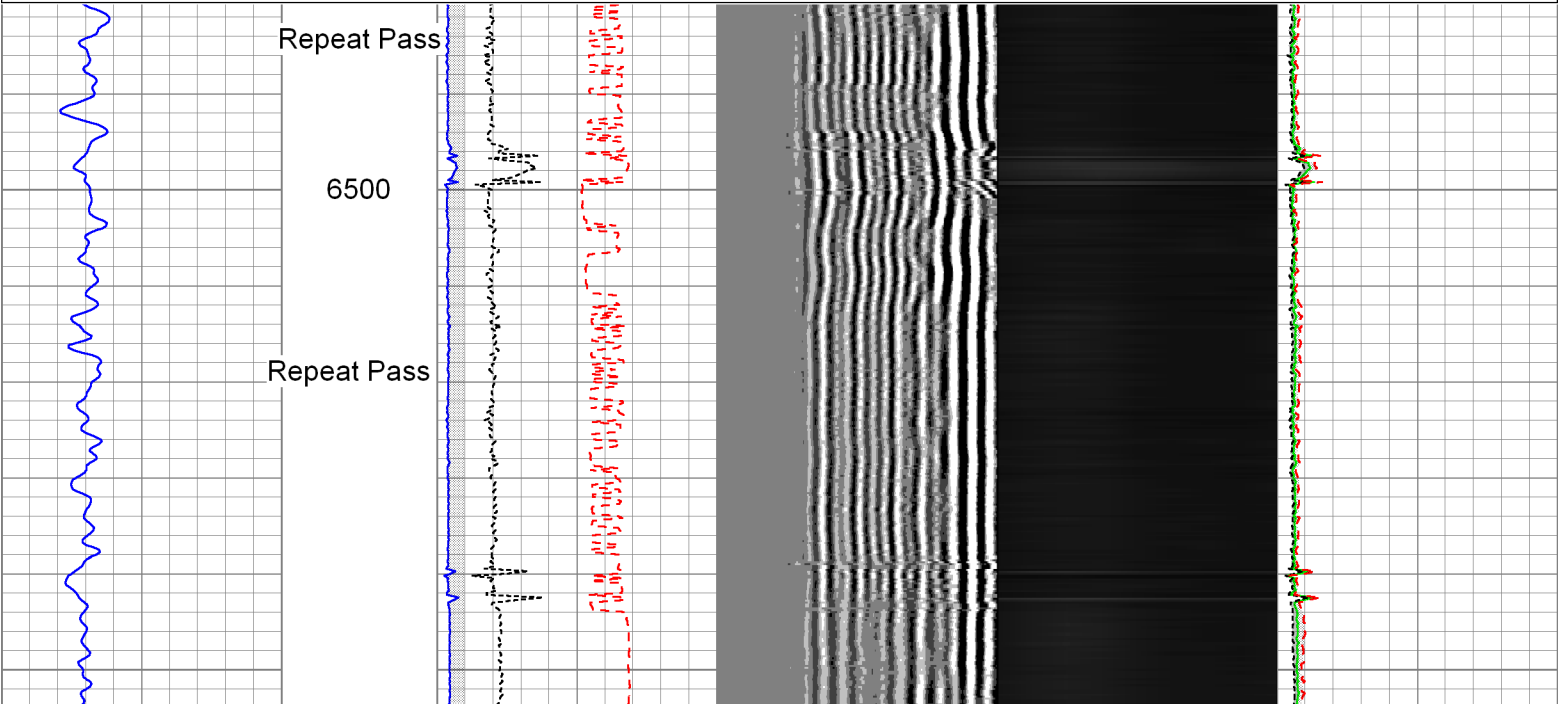
Average Amplitude
0 100

3' Amplitude x 5
0 (mV) 20

3' Travel Time
650 (usec) 150

Minimum Amplitude
0 100

Maximum Amplitude
0 100



Repeat Pass

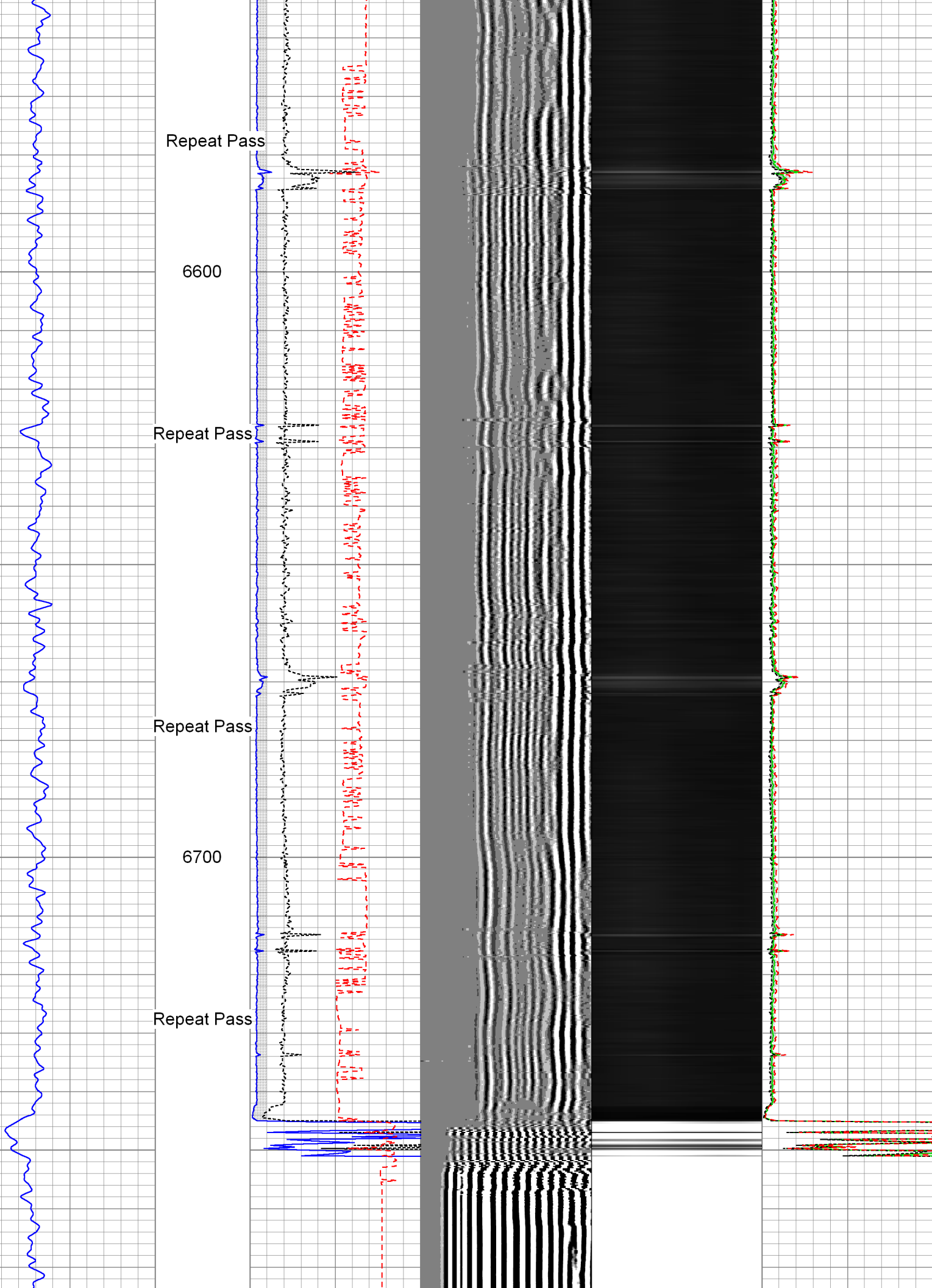
6600

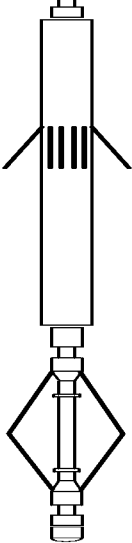
Repeat Pass

Repeat Pass

6700

Repeat Pass



MIT	5.41		MIT-027 (218949) 40 Multifinger Imaging Tool	4.54	2.75	61.10	
TSTAMP	0.00		PRC-057 (1102) 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00	
			BUL-006 (218707) Bullnose Terminator	0.22	1.69	1.20	
Dataset: 05-123-37670_kmg_henrichson 36c-18hz_rbt_mit_10-15-13.db: field/well/run1/pass4.1 Total Length: 27.97 ft Total Weight: 316.30 lb O.D. 3.13 in							

Calibration Report			
Database File:	05-123-37670_kmg_henrichson 36c-18hz_rbt_mit_10-15-13.db		
Dataset Pathname:	pass4.1		
Dataset Creation:	Tue Oct 15 16:34:47 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:		Tue Oct 15 12:04:10 2013			
Ring size:	4	5	6	7			
(in)							
	Sens	Sens	Sens				
Finger 01:	1488 260.0	1748 284.0	2032 273.0	2305			
Finger 02:	1478 262.0	1740 292.0	2032 276.0	2308			
Finger 03:	1452 259.0	1711 304.0	2015 290.0	2305			
Finger 04:	1437 260.0	1697 312.0	2009 292.0	2301			
Finger 05:	1450 255.0	1705 315.0	2020 291.0	2311			
Finger 06:	1434 246.0	1680 317.0	1997 287.0	2284			
Finger 07:	1478 234.0	1712 305.0	2017 275.0	2292			
Finger 08:	1444 242.0	1686 324.0	2010 293.0	2303			
Finger 09:	1493 228.0	1721 307.0	2028 276.0	2304			
Finger 10:	1468 232.0	1700 317.0	2017 279.0	2296			
Finger 11:	1461 231.0	1692 317.0	2009 285.0	2294			
Finger 12:	1448 229.0	1677 311.0	1988 281.0	2269			

Finger 12:	1448	229.0	1677	311.0	1988	281.0	2289
Finger 13:	1492	220.0	1712	296.0	2008	271.0	2279
Finger 14:	1415	237.0	1652	321.0	1973	293.0	2266
Finger 15:	1450	242.0	1692	315.0	2007	289.0	2296
Finger 16:	1426	246.0	1672	318.0	1990	297.0	2287
Finger 17:	1473	233.0	1706	290.0	1996	273.0	2269
Finger 18:	1472	243.0	1715	294.0	2009	285.0	2294
Finger 19:	1452	254.0	1706	296.0	2002	289.0	2291
Finger 20:	1492	250.0	1742	279.0	2021	275.0	2296
Finger 21:	1449	272.0	1721	292.0	2013	296.0	2309
Finger 22:	1455	262.0	1717	275.0	1992	285.0	2277
Finger 23:	1524	250.0	1774	250.0	2024	261.0	2285
Finger 24:	1458	284.0	1742	279.0	2021	296.0	2317
Finger 25:	1482	275.0	1757	261.0	2018	282.0	2300
Finger 26:	1427	298.0	1725	275.0	2000	299.0	2299
Finger 27:	1511	284.0	1795	255.0	2050	279.0	2329
Finger 28:	1499	276.0	1775	245.0	2020	270.0	2290
Finger 29:	1490	297.0	1787	259.0	2046	280.0	2326
Finger 30:	1230	309.0	1539	275.0	1814	312.0	2126
Finger 31:	1447	277.0	1724	239.0	1963	265.0	2228
Finger 32:	1469	310.0	1779	272.0	2051	294.0	2345
Finger 33:	1386	324.0	1710	292.0	2002	320.0	2322
Finger 34:	1535	280.0	1815	239.0	2054	255.0	2309
Finger 35:	1501	288.0	1789	259.0	2048	277.0	2325
Finger 36:	1502	288.0	1790	272.0	2062	281.0	2343
Finger 37:	1614	297.0	1911	282.0	2193	290.0	2483
Finger 38:	1366	264.0	1630	265.0	1895	272.0	2167
Finger 39:	1456	280.0	1736	287.0	2023	289.0	2312
Finger 40:	1497	266.0	1763	279.0	2042	274.0	2316

Segmented Cement Bond Log Calibration Report

Serial Number: 10013454in7
Tool Model: 004

Calibration Casing Diameter: 5.500 in
Calibration Depth: 33.435 ft

Master Calibration, performed Tue Oct 15 12:32:30 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.003	0.773	0.800	62.200	79.199	1.013
5FT	-0.005	0.785	0.800	62.200	77.764	1.180
S1	-0.003	0.874	0.000	100.000	114.059	0.290
S2	-0.004	0.796	0.000	100.000	124.979	0.499
S3	-0.004	0.702	0.000	100.000	141.652	0.519
S4	-0.005	0.659	0.000	100.000	150.445	0.821
S5	-0.003	0.675	0.000	100.000	147.283	0.512
S6	-0.003	0.740	0.000	100.000	134.571	0.371
S7	-0.002	0.826	0.000	100.000	120.643	0.299
S8	-0.004	0.887	0.000	100.000	112.263	0.452


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	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Henrickson Federal 36C-18HZ
	Field	Wattenberg
	County	Weld
	State	Colorado