



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Kerr McGee Oil & Gas Onshore LP	
Well		Turkey Springs 1G-15HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API #: 05-123-36699	
SEC 22		TWP 2N	
RGE 66W		Other Services	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		5091'	
K.B. 5116'		D.F. 5115'	
G.L. 5091'		MIT	
Date		20-November-2014	
Run Number		One	
Depth Driller		12,950 FT	
Depth Logger		7374 FT	
Bottom Logged Interval		7339 FT	
Top Log Interval		Surface	
Open Hole Size		9.625"	
Type Fluid		Water	
Density / Viscosity		8.34 lbm/gl	
Max. Recorded Temp.		232°F	
Estimated Cement Top		Surface	
Time Well Ready		R.O.A.	
Time Logger on Bottom		11:00 AM	
Equipment Number		HD-0119	
Location		Ft. Lupton, CO	
Recorded By		B. Kalkwarf	
Witnessed By		Rick Dunford	
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		9.625	
J-55		1589 FT	
Intermediate #1		7	
HCP-110		8,170 FT	
Intermediate #2		4.5	
HCP-110 DOX		7069 FT	
Liner		4.5	
HCP-110 DOX		12,890 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

Log ran as per customer request.
Depth reference to Casing Tally reported Liner Top at 7069 FT.
Adjusted (-3.5) FT to correlate to liner top.
Gauge Ring/Junk Basket ran to 7382 FT.
Log ran with 2800 PSI surface induced pressure.
Logging tools were clean and free of any debris upon completion of operations.

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



7" Main Pass

Recorded At 2800 PSI Surface Induced Pressure

Database File:0512336699_anadarko_turkey springs 1g-15hz_11-20-14_mit_rbl.db

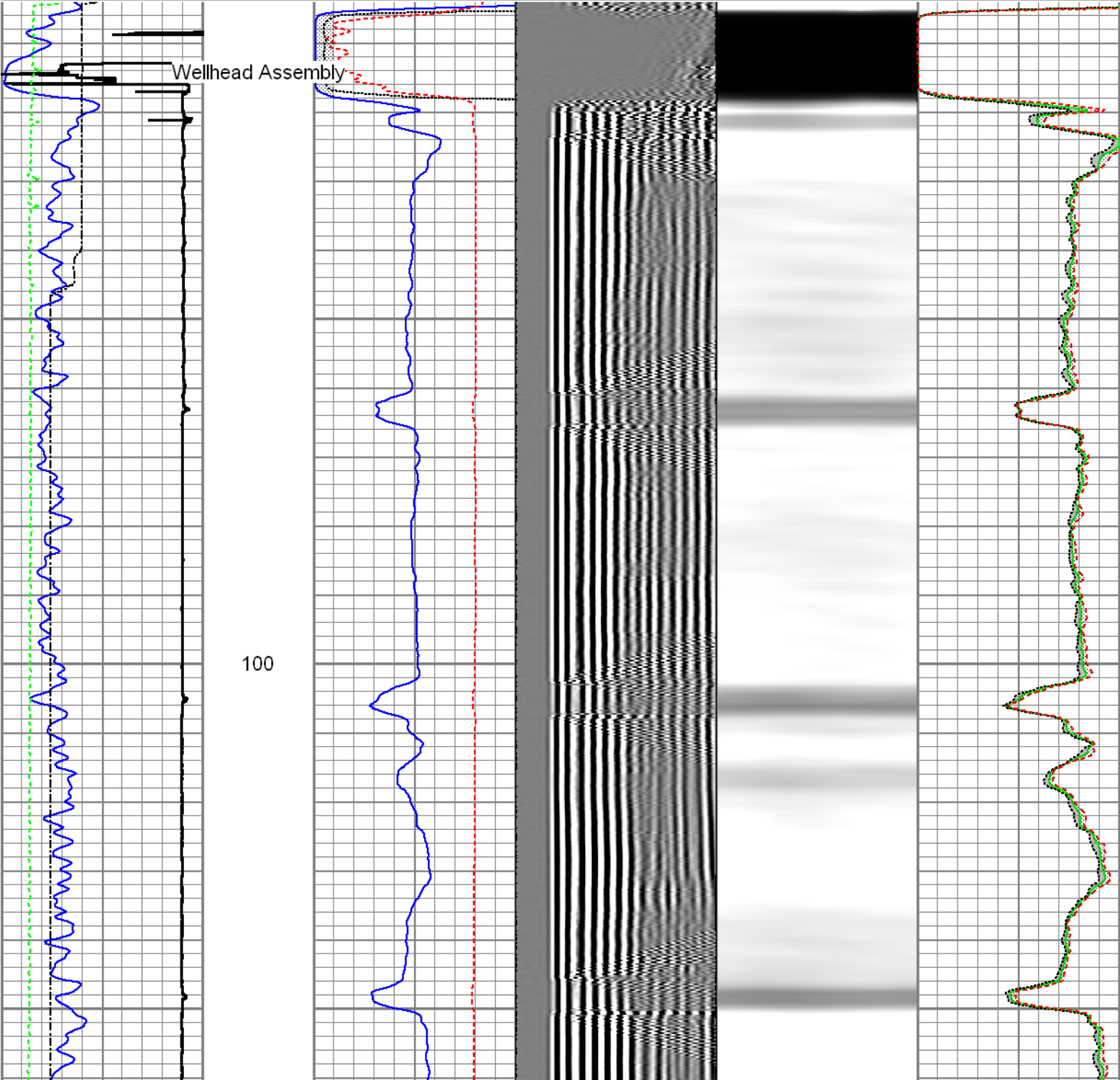
Dataset Pathname:pass16

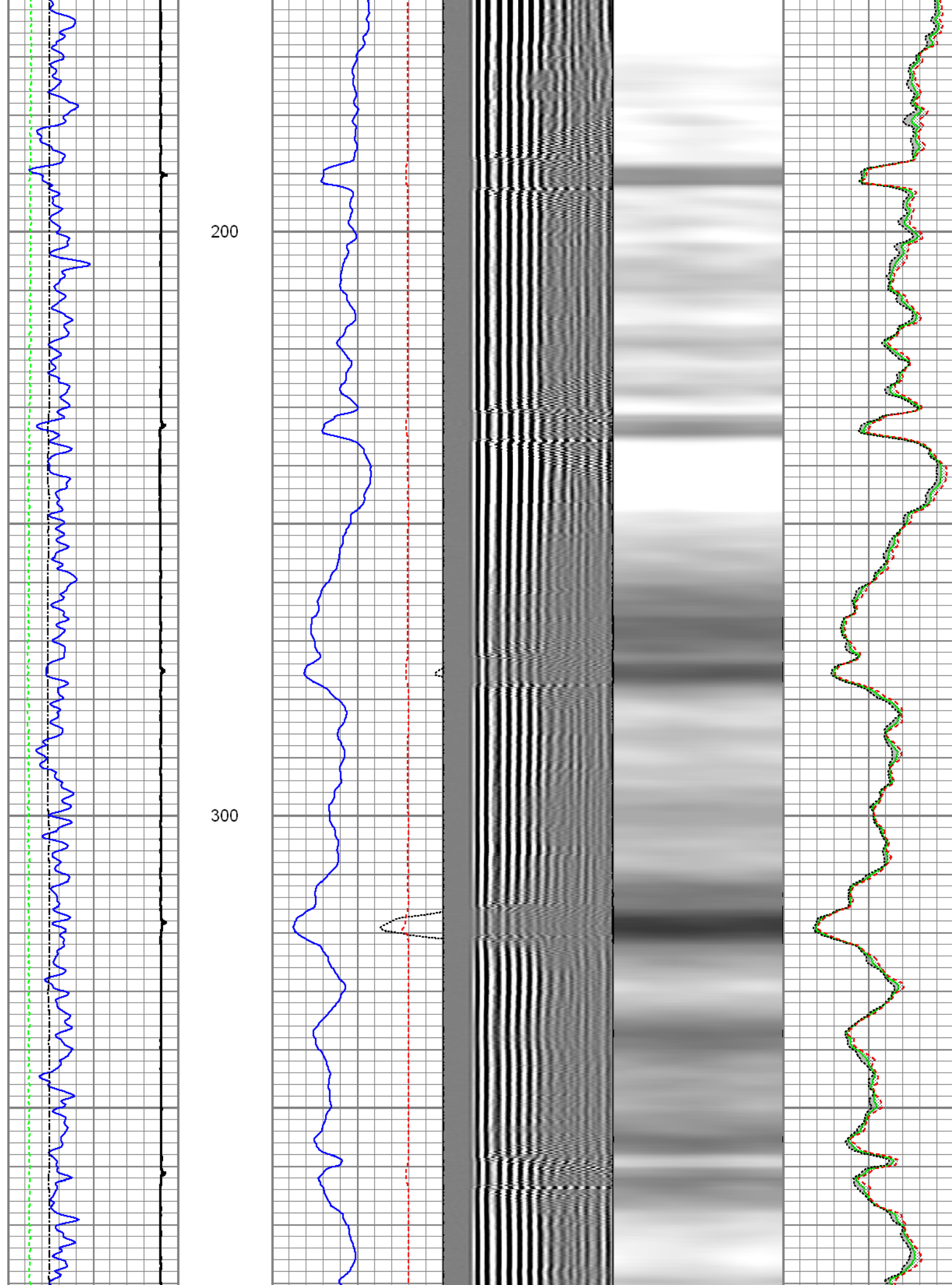
Presentation Format:rbt4_mit

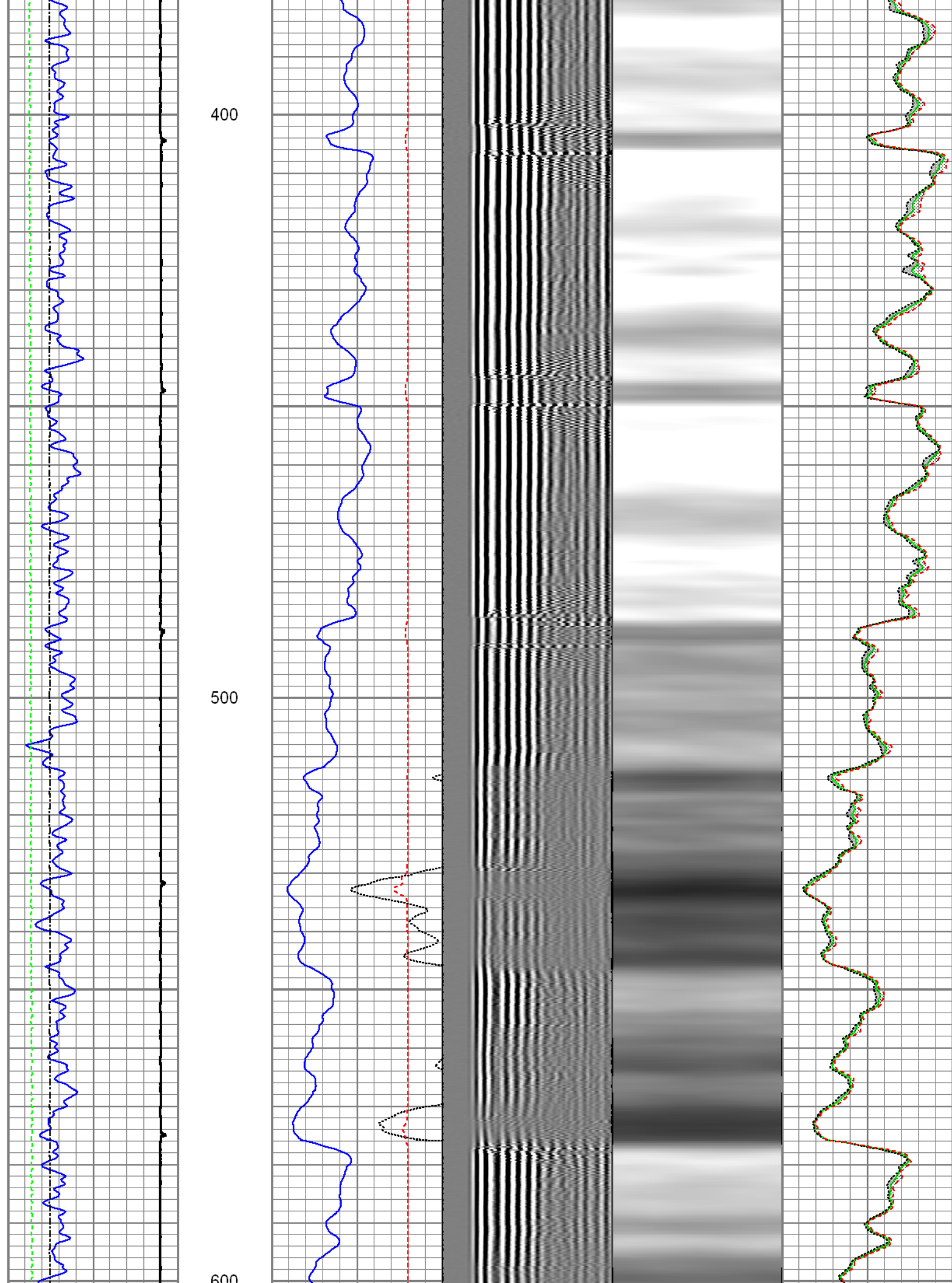
Dataset Creation:Thu Nov 20 13:12:41 2014 by Log 7.0 B1

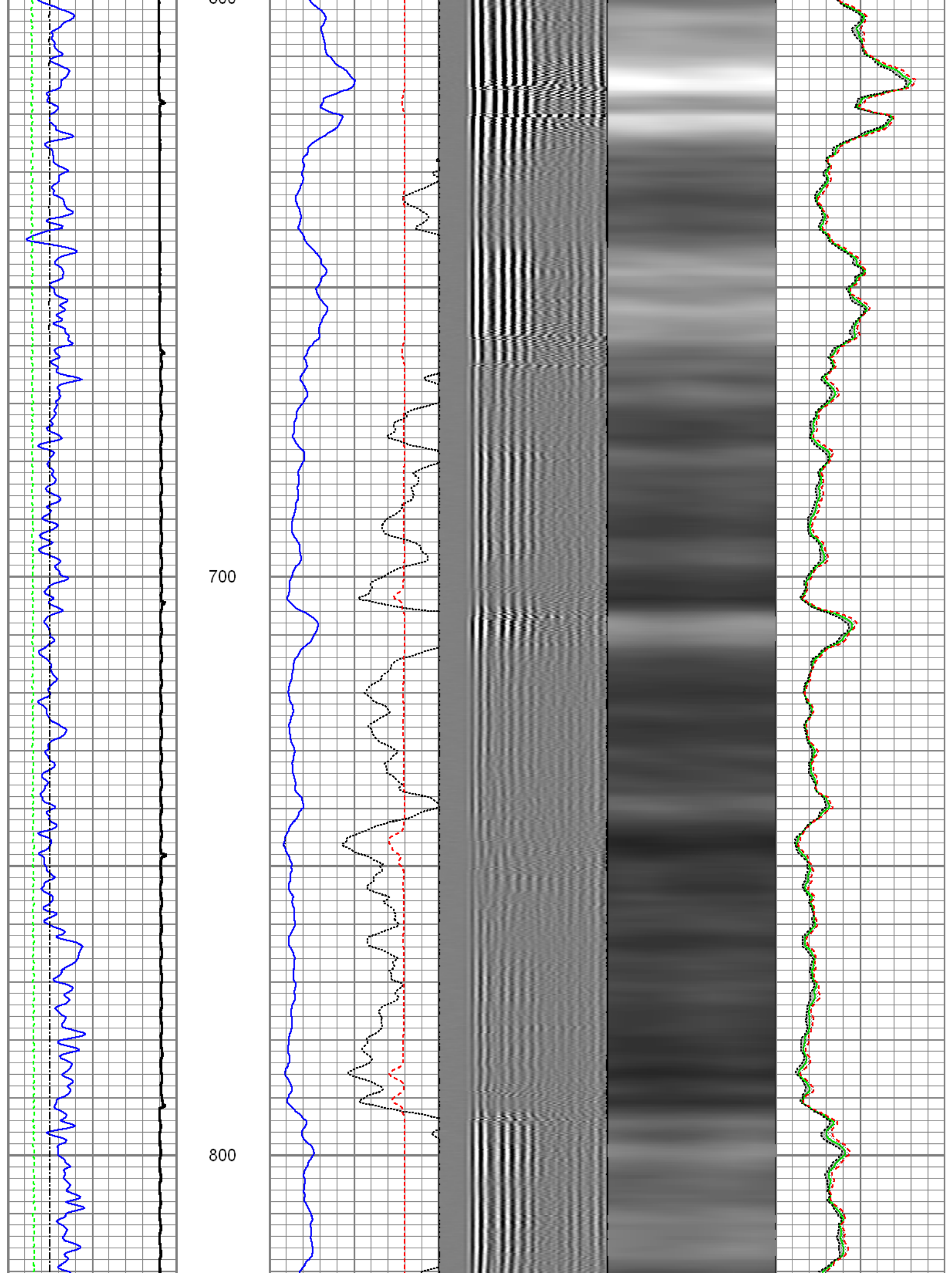
Charted by:Depth in Feet scaled 1:240

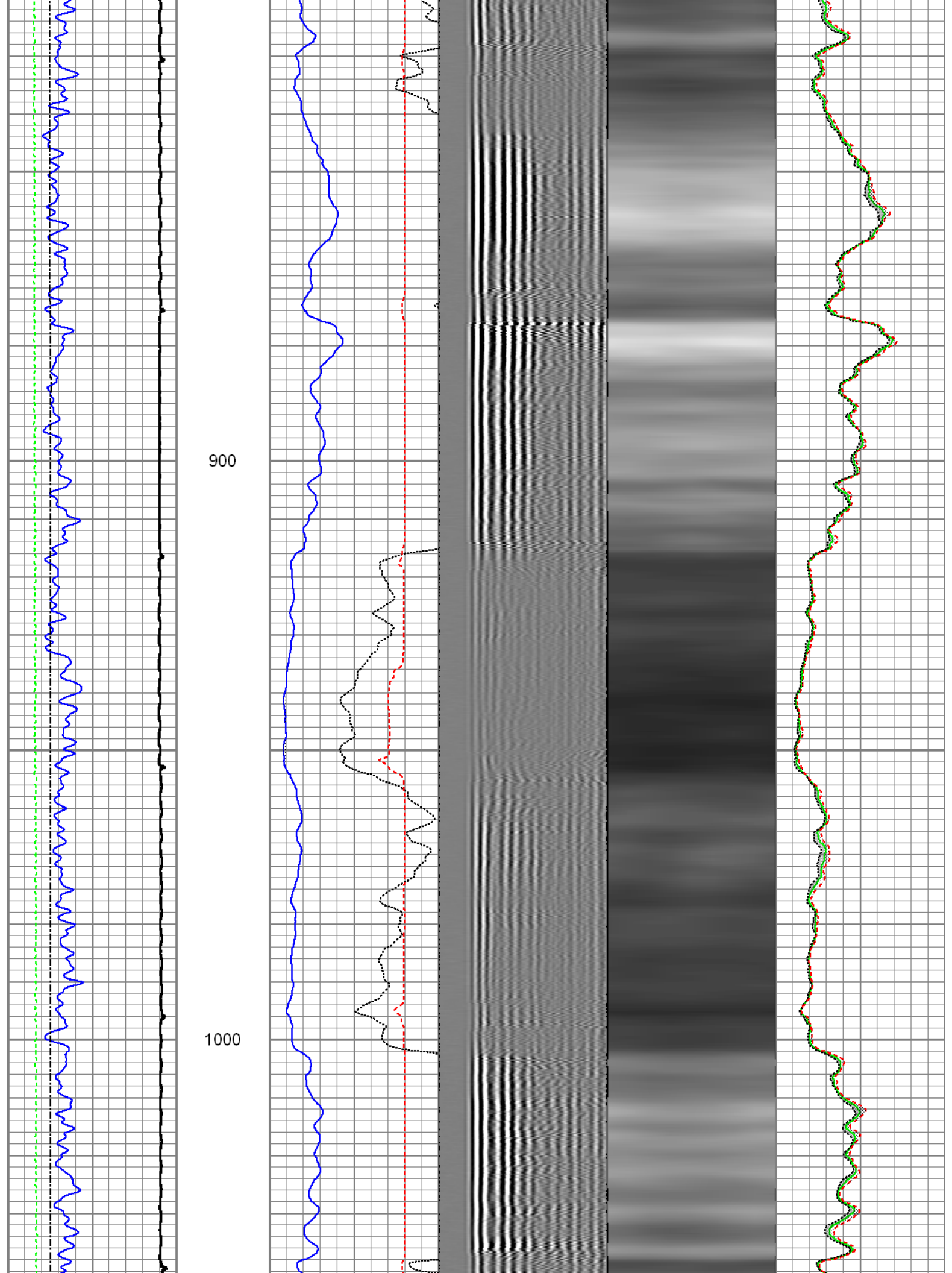
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				

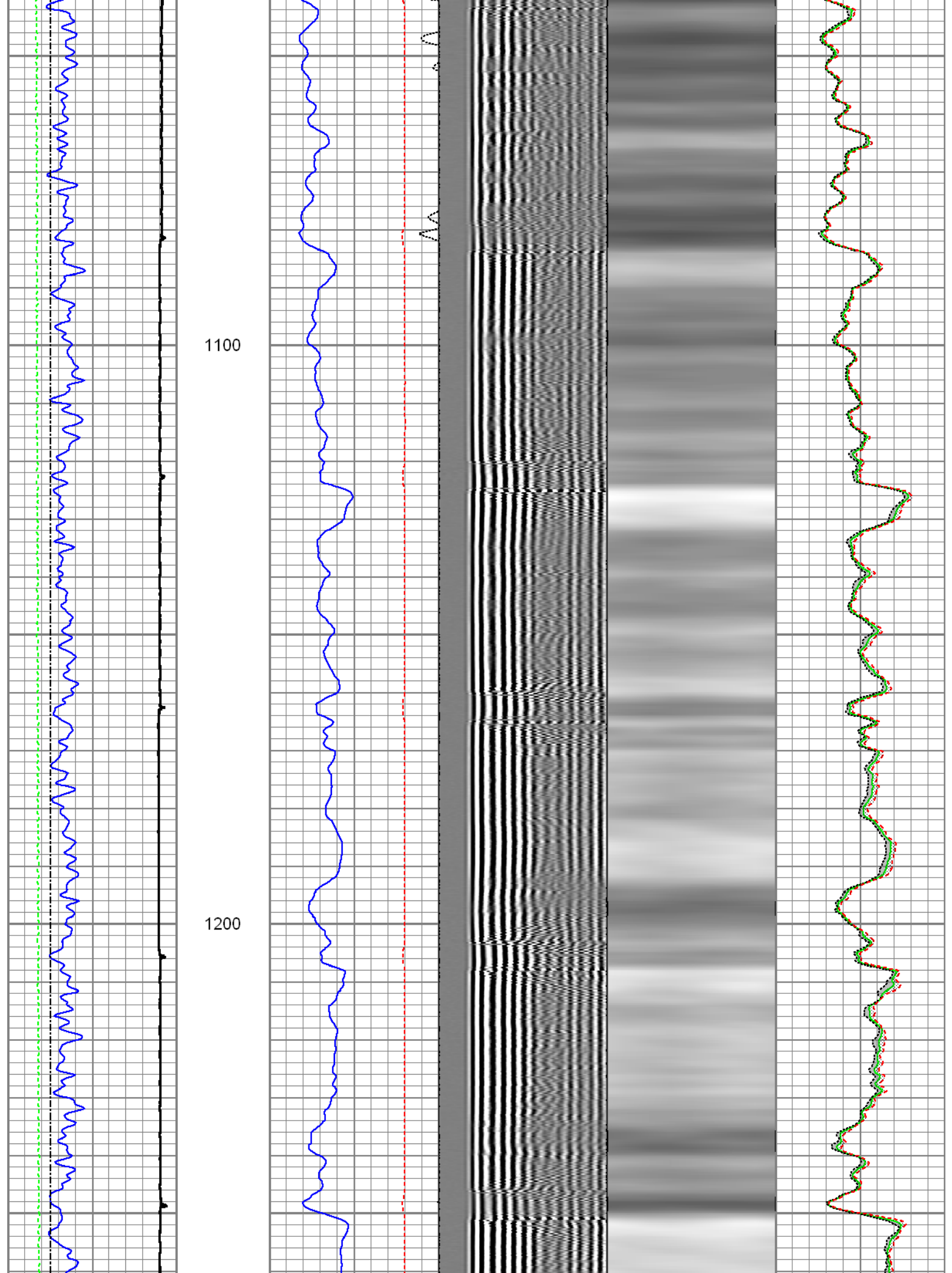


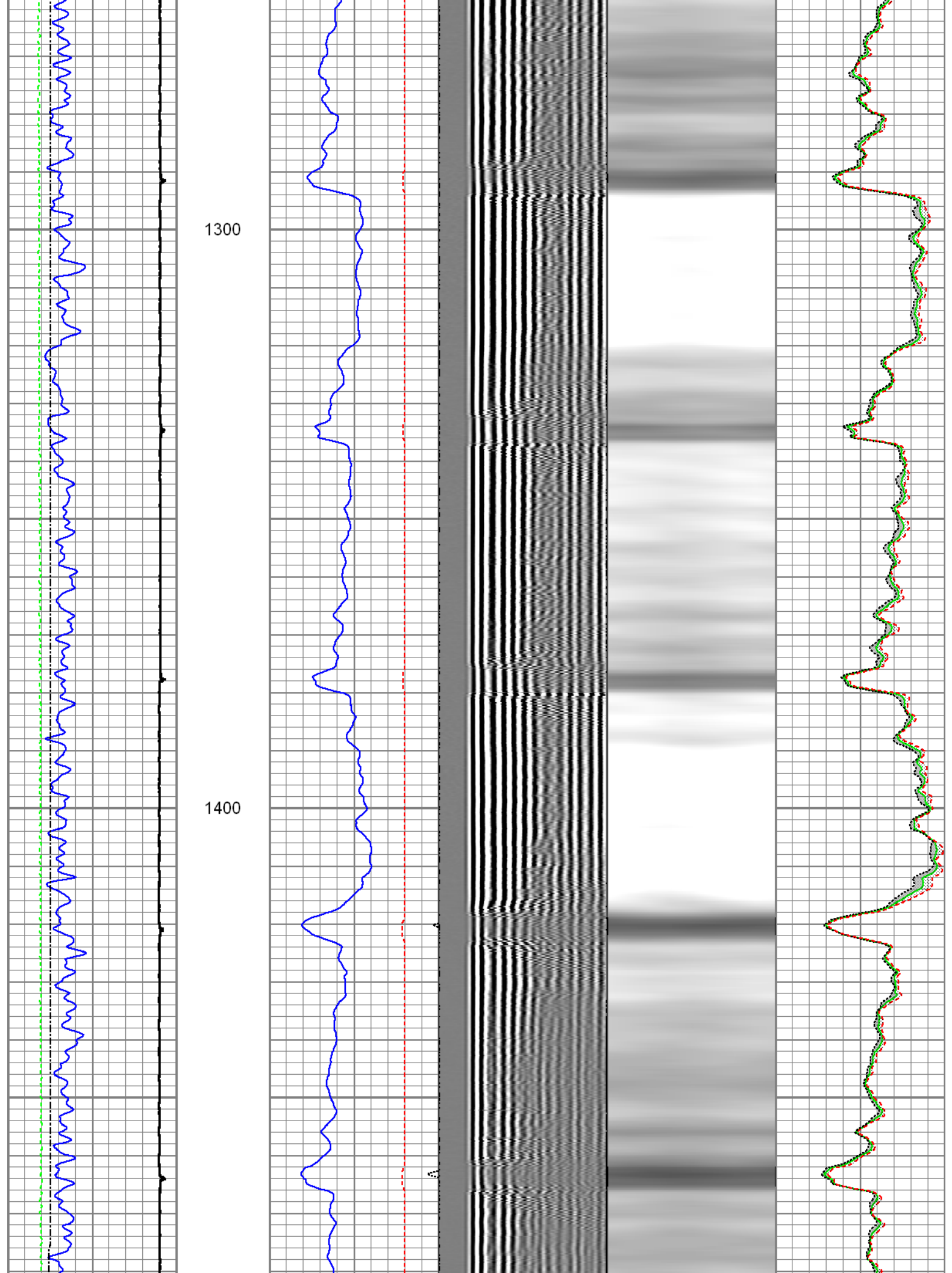


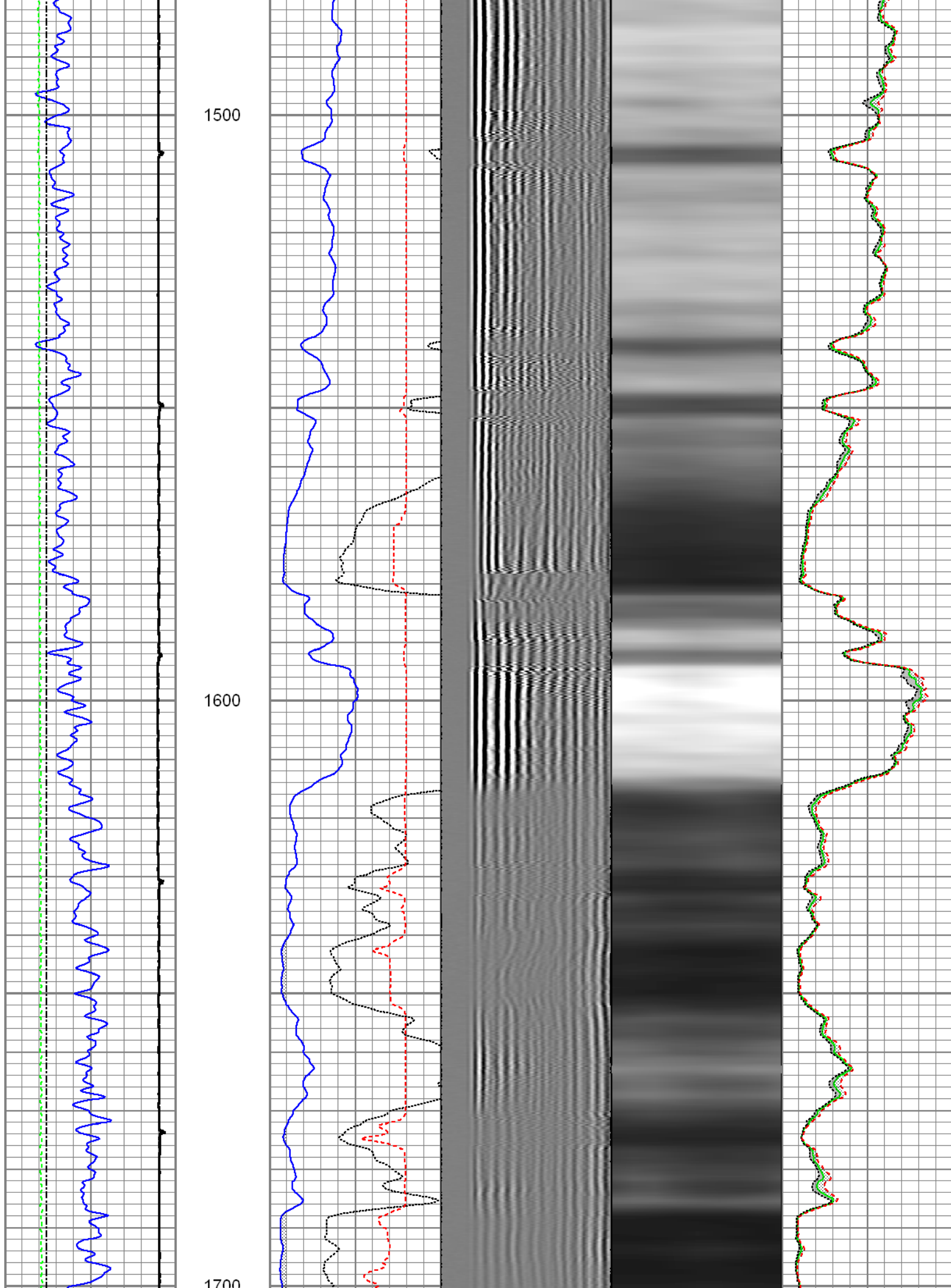


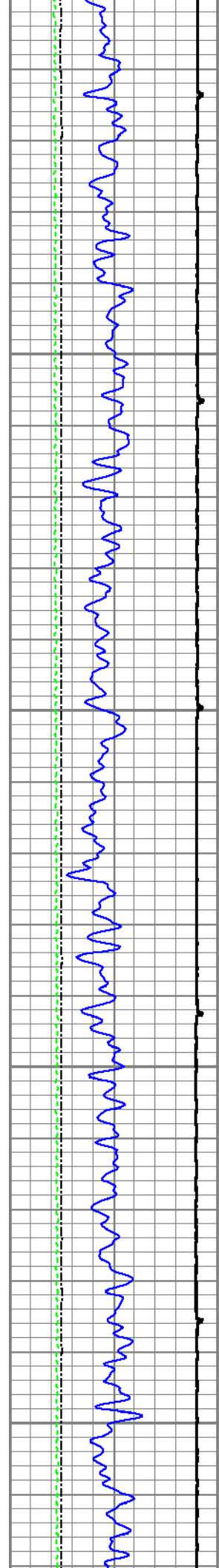








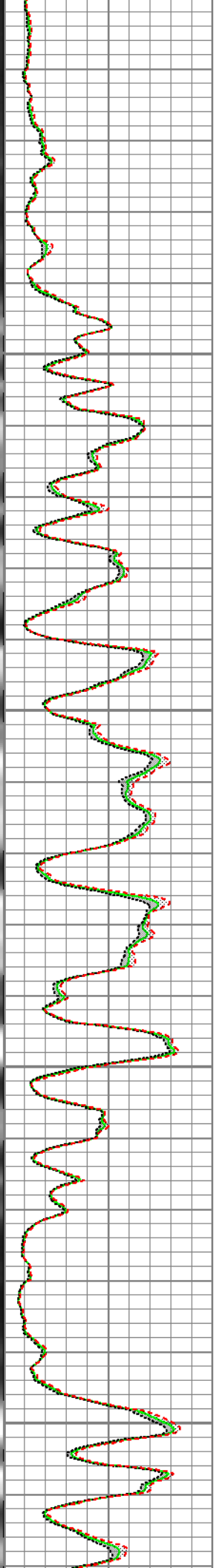
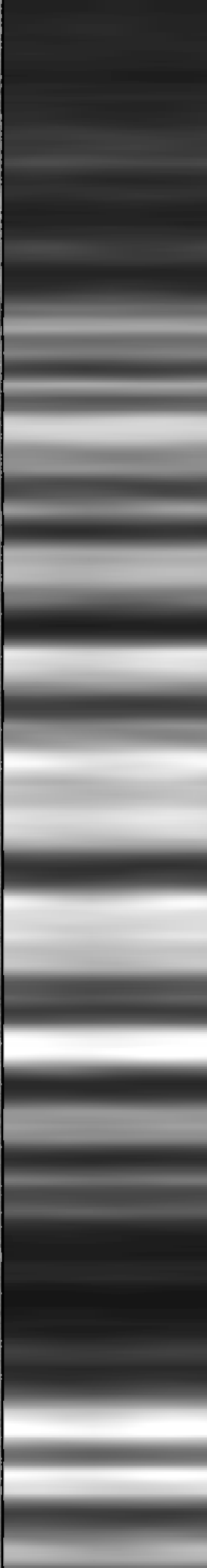
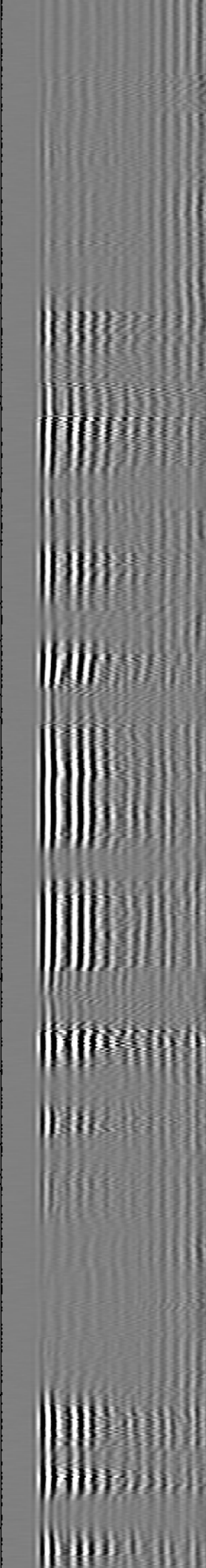
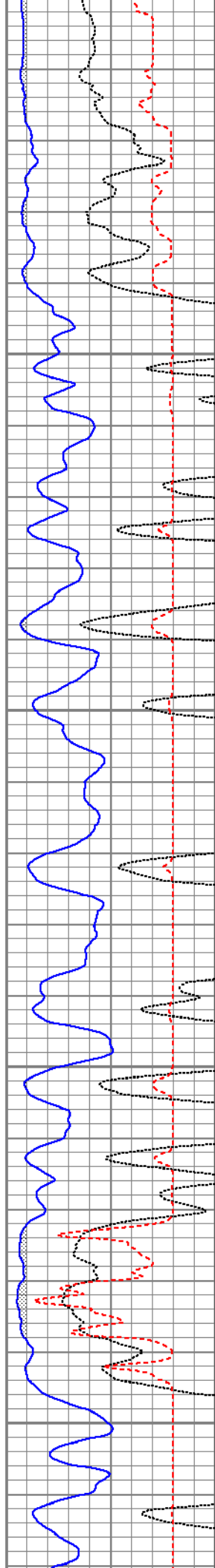


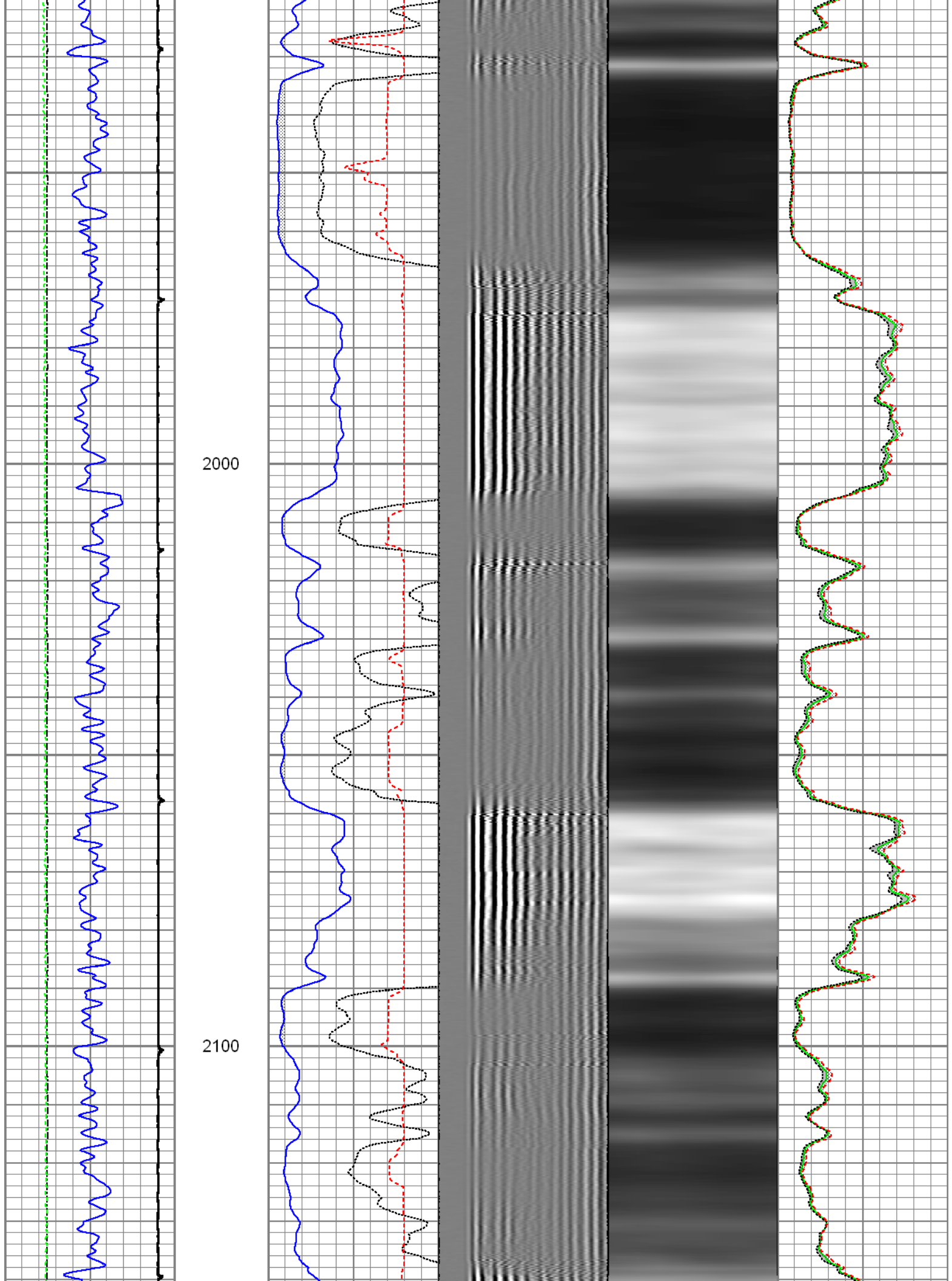


1700

1800

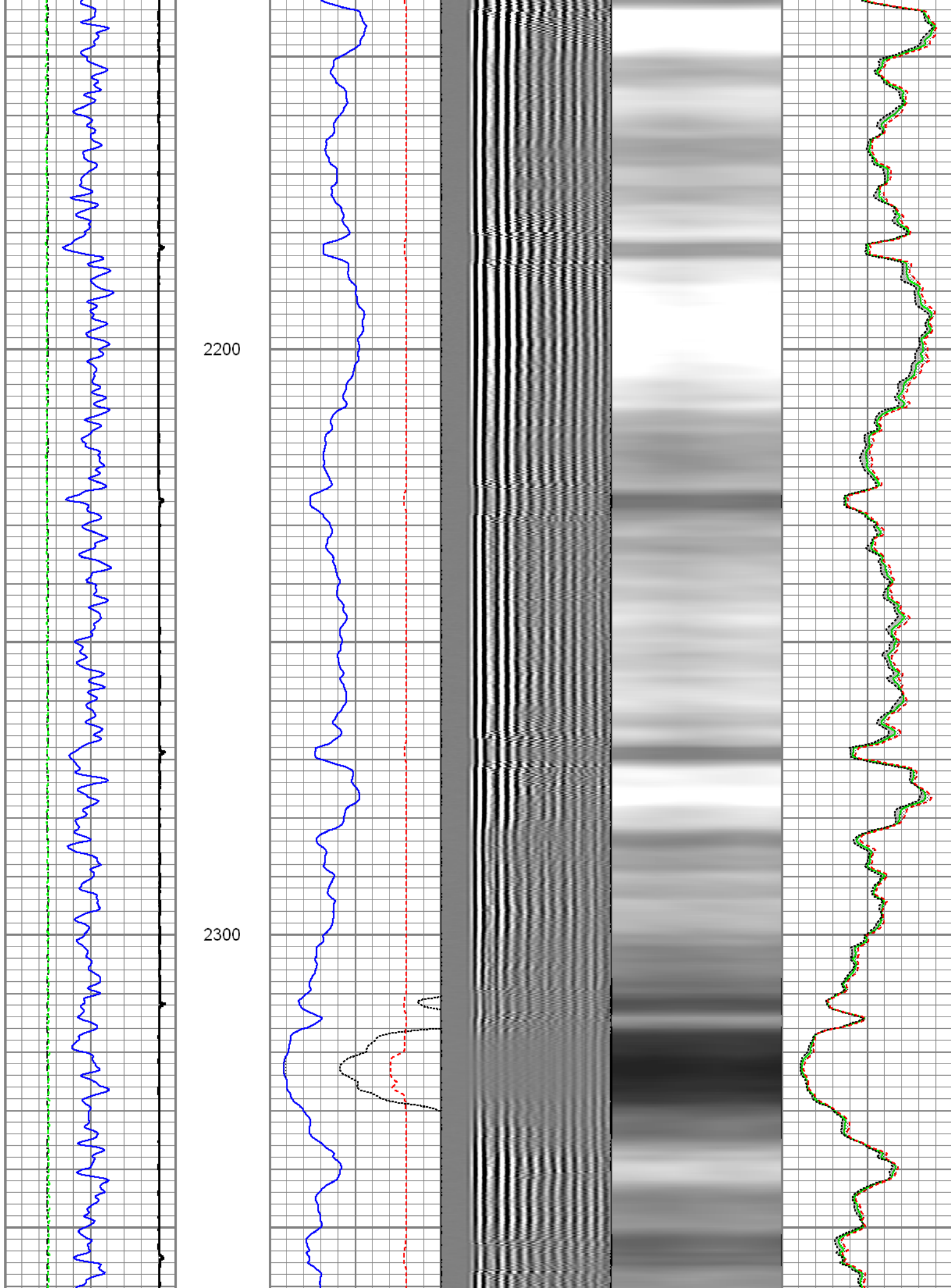
1900





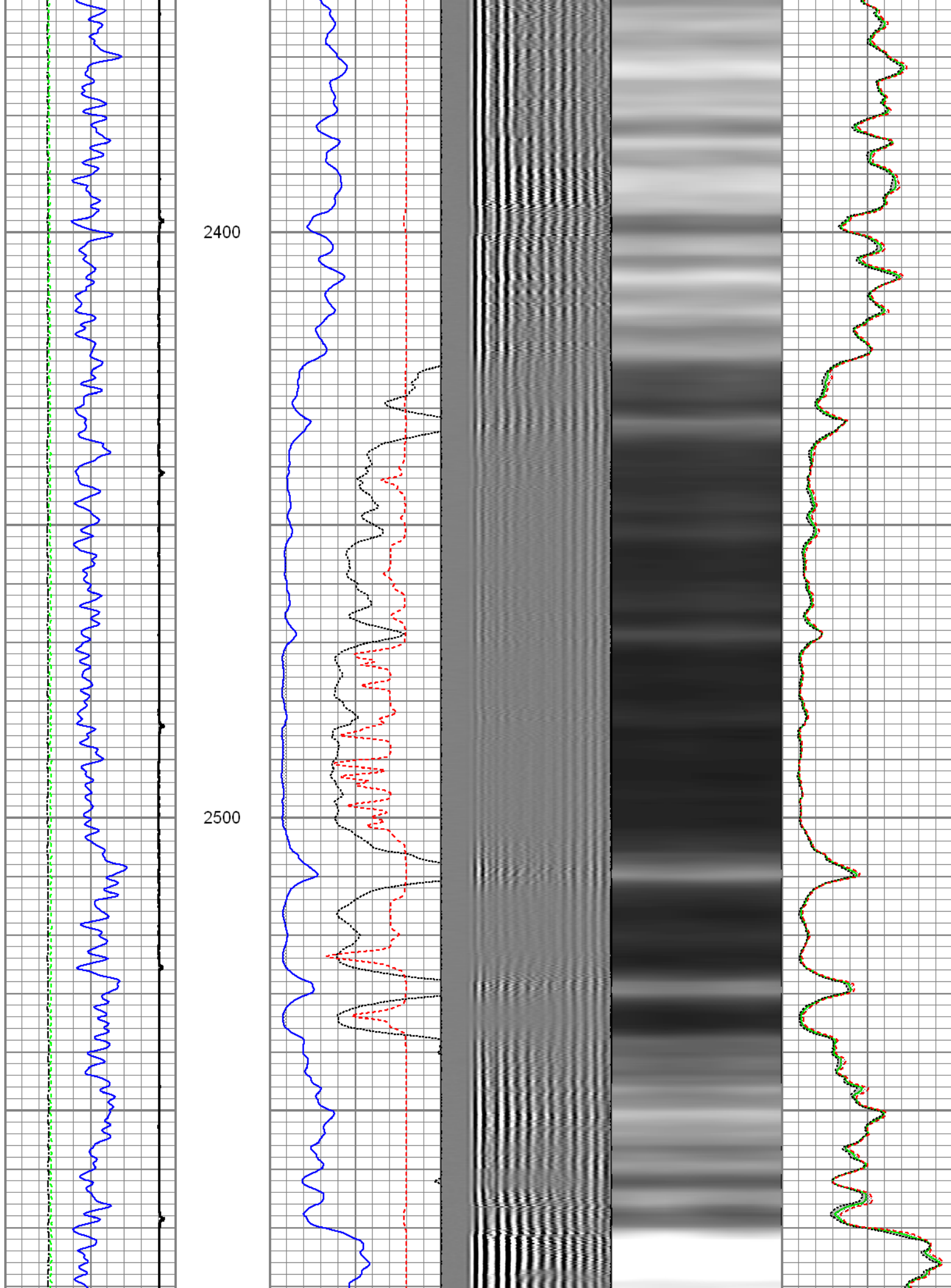
2200

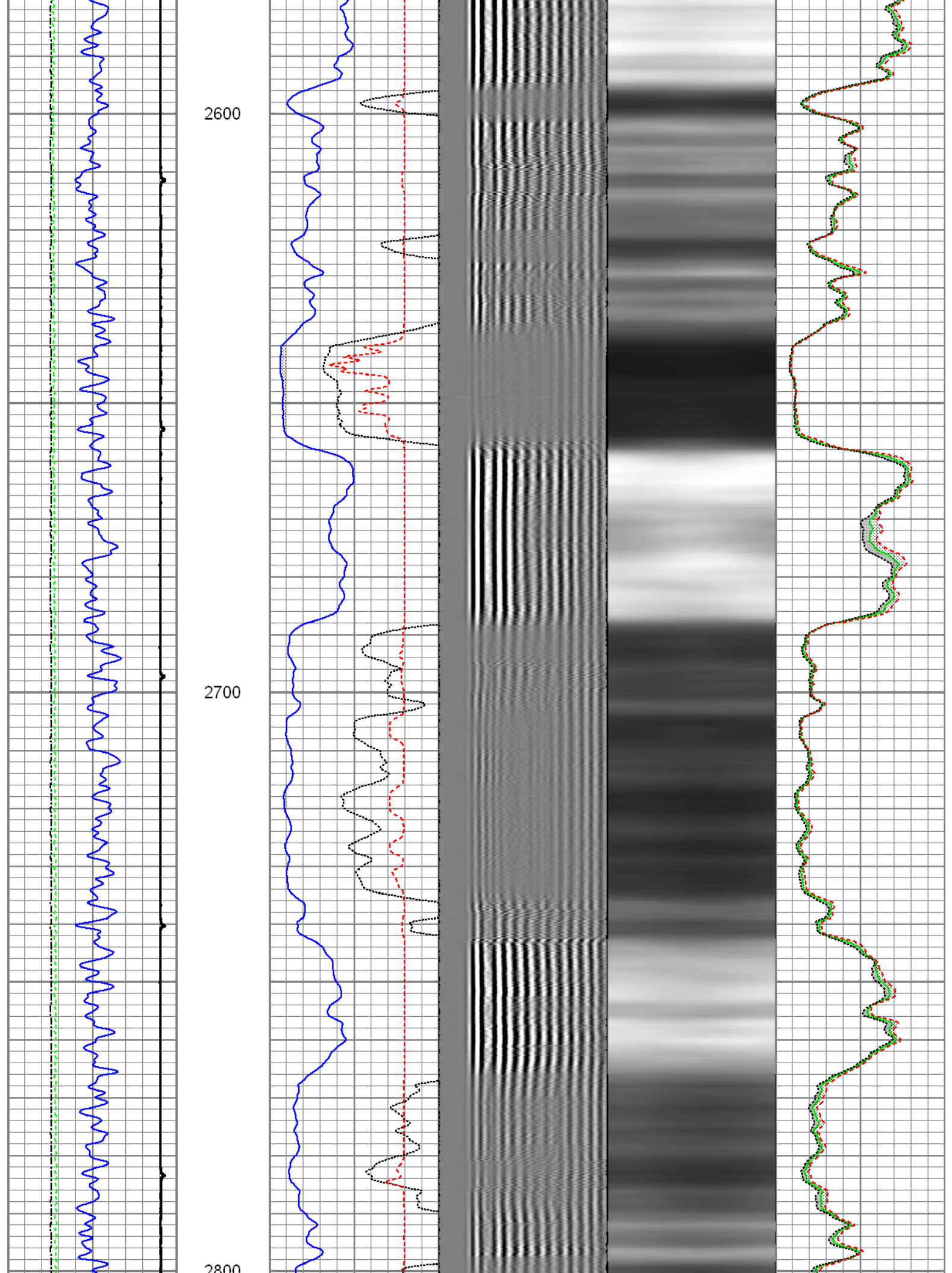
2300



2400

2500

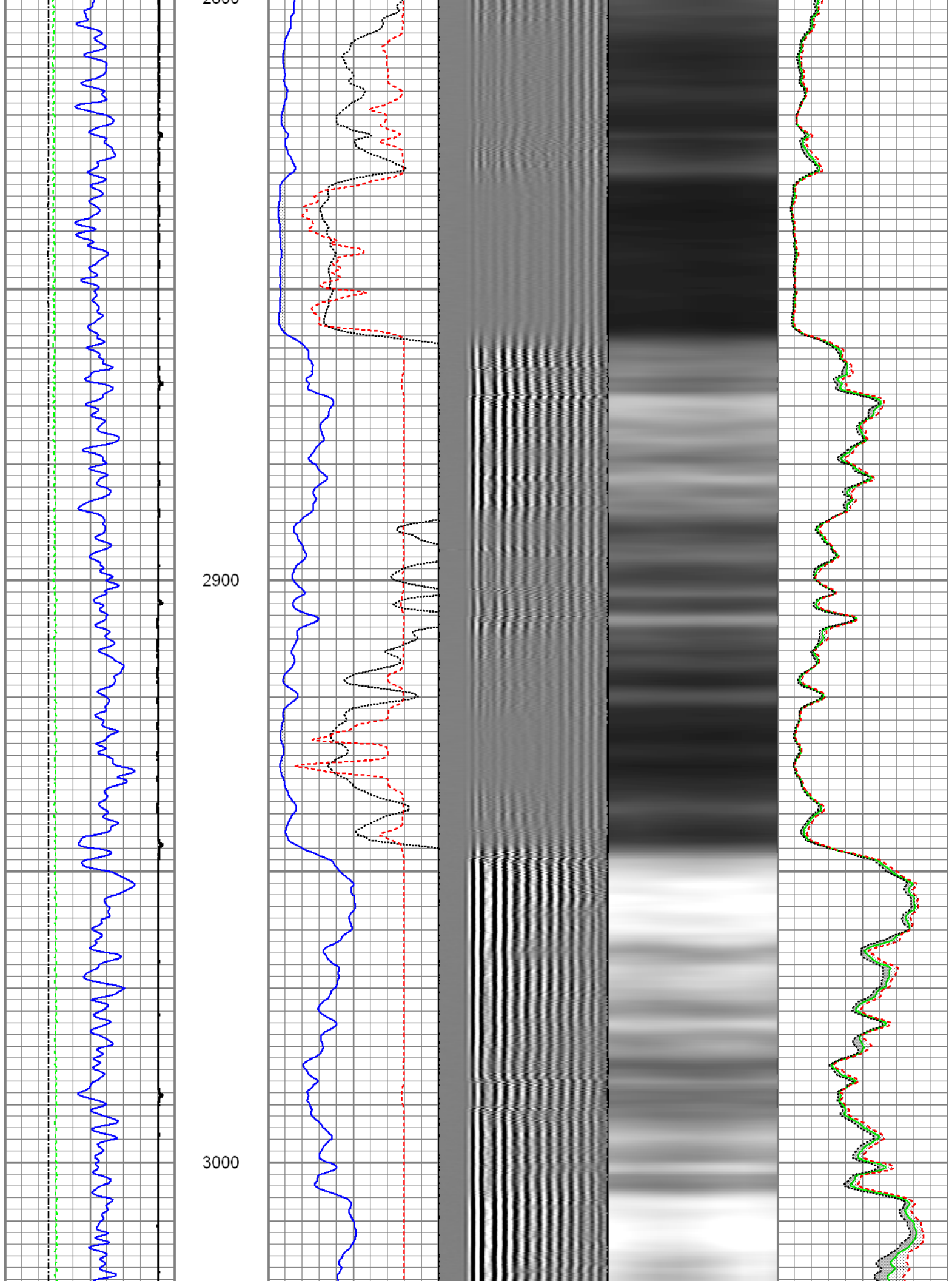


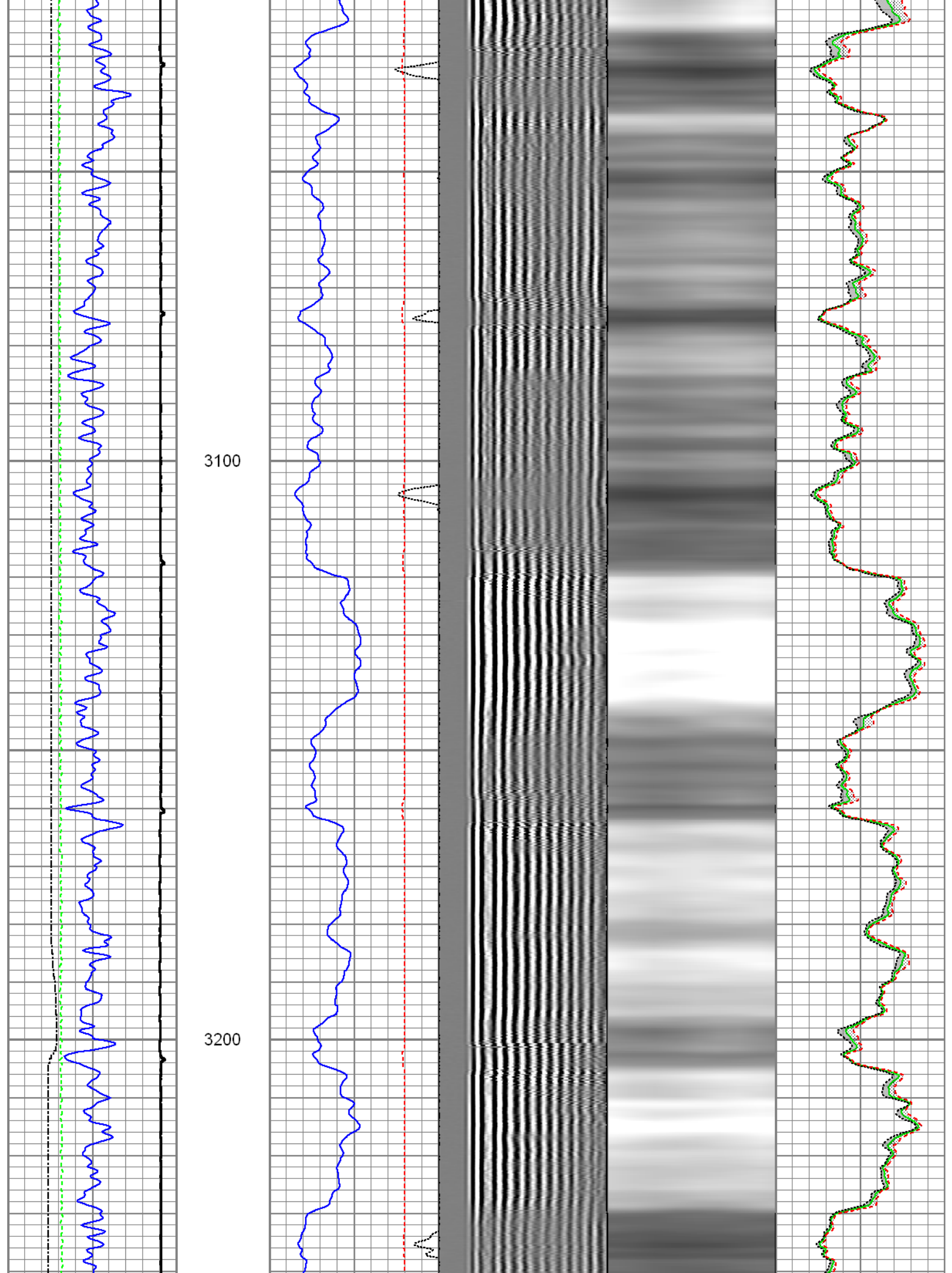


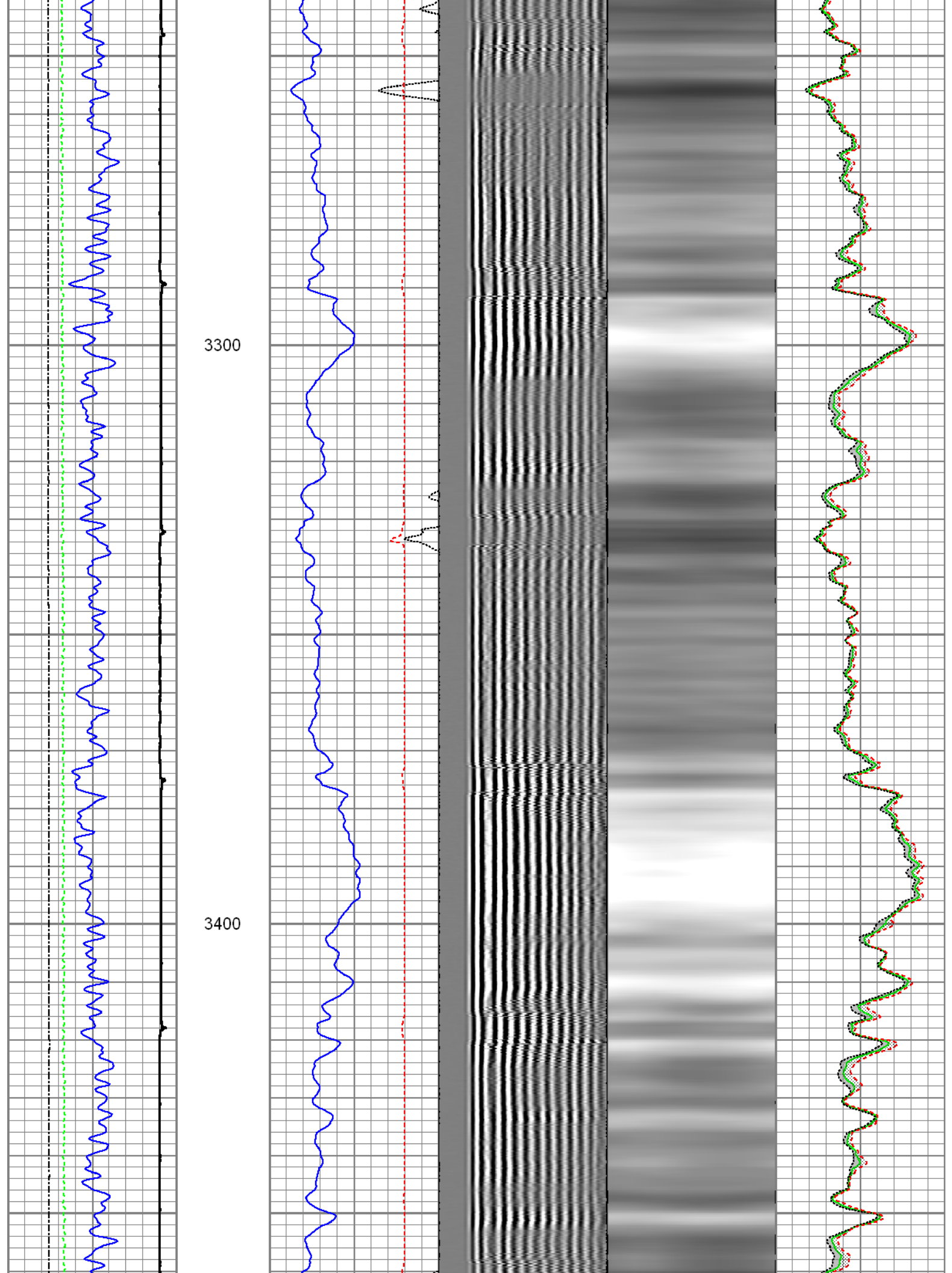
2800

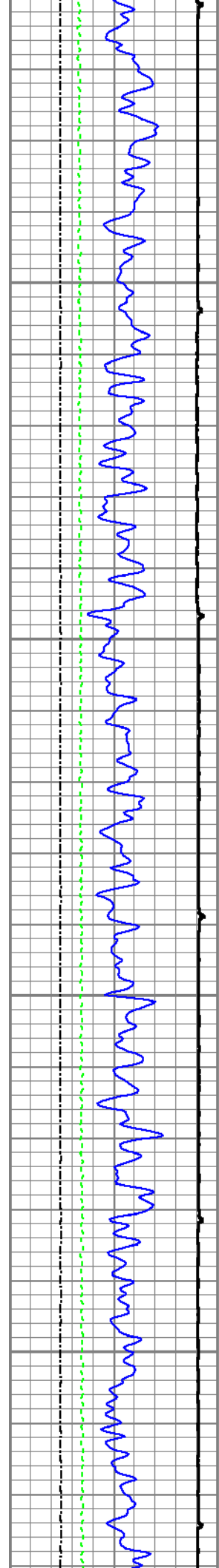
2900

3000



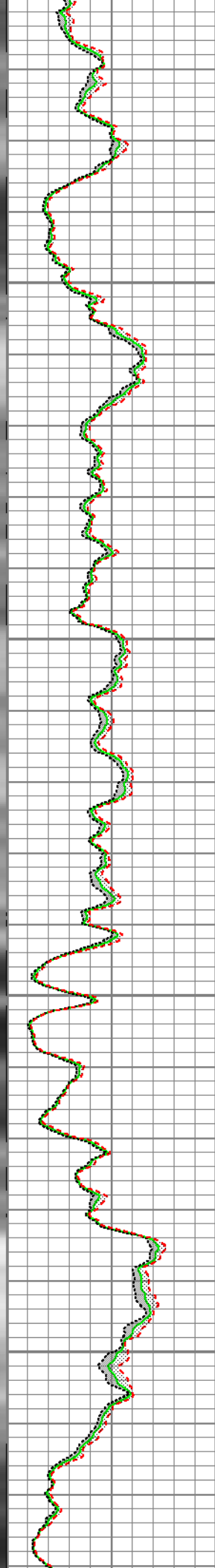
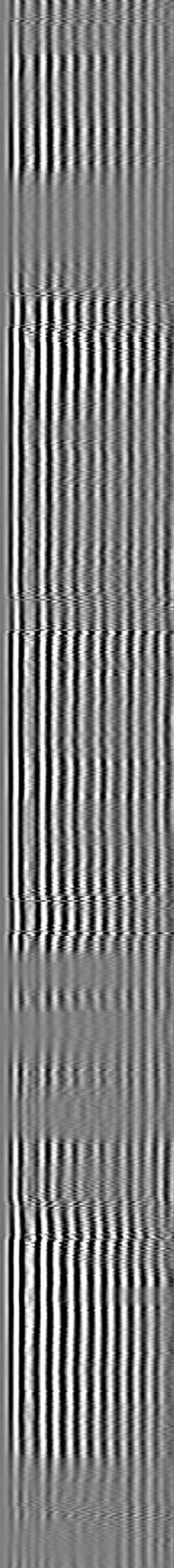
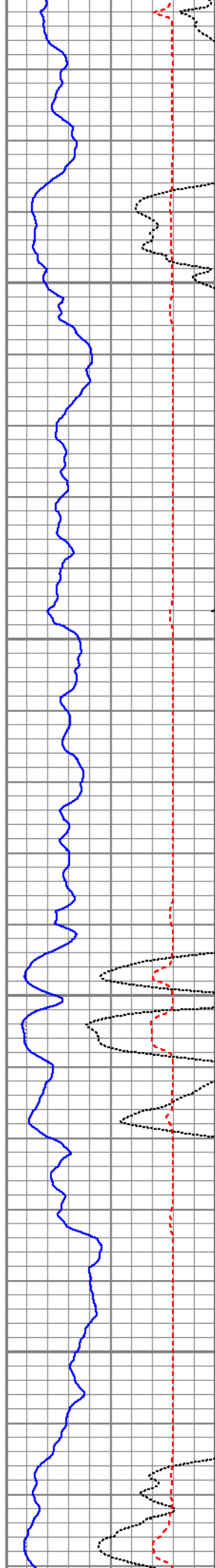


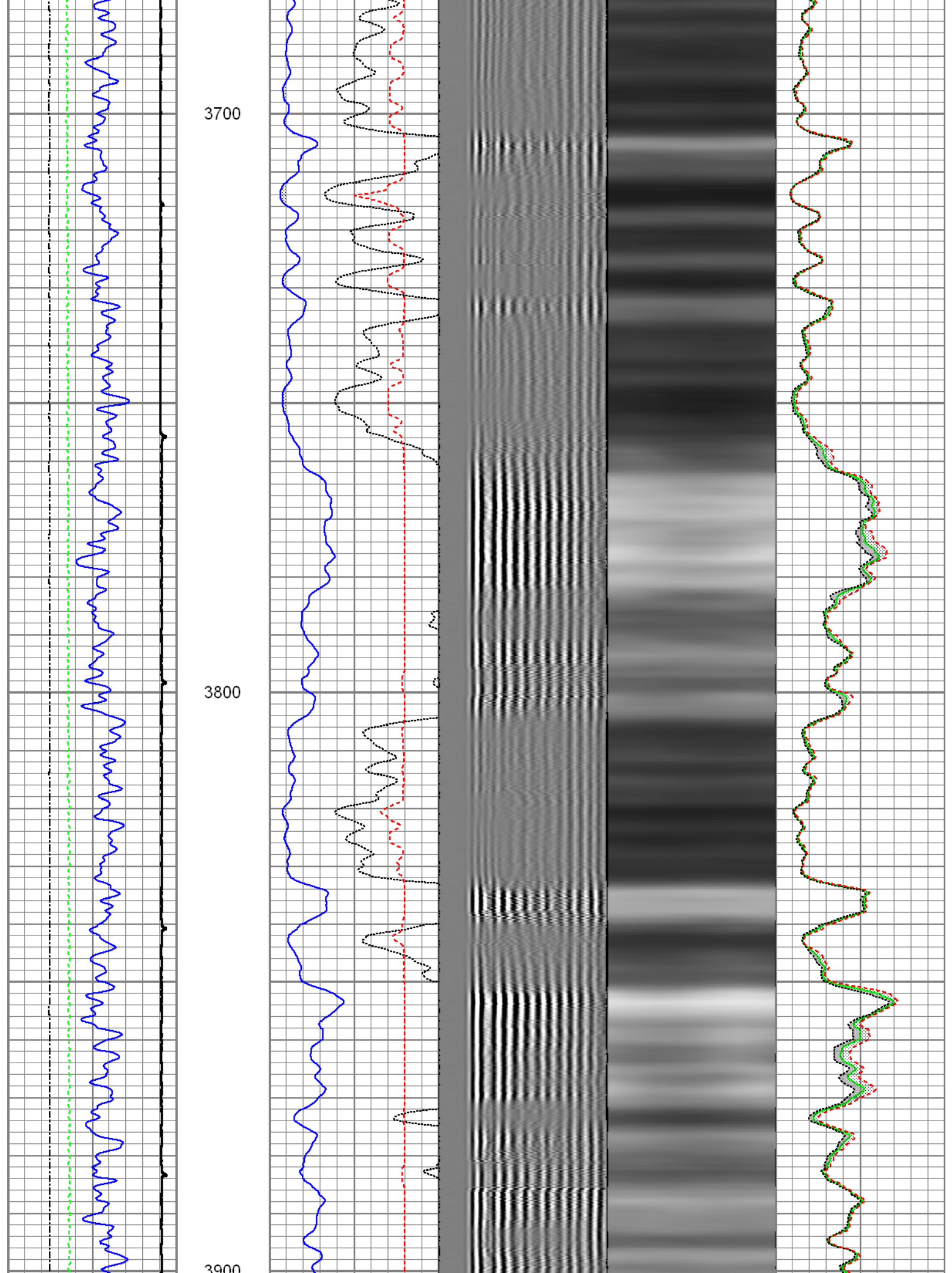


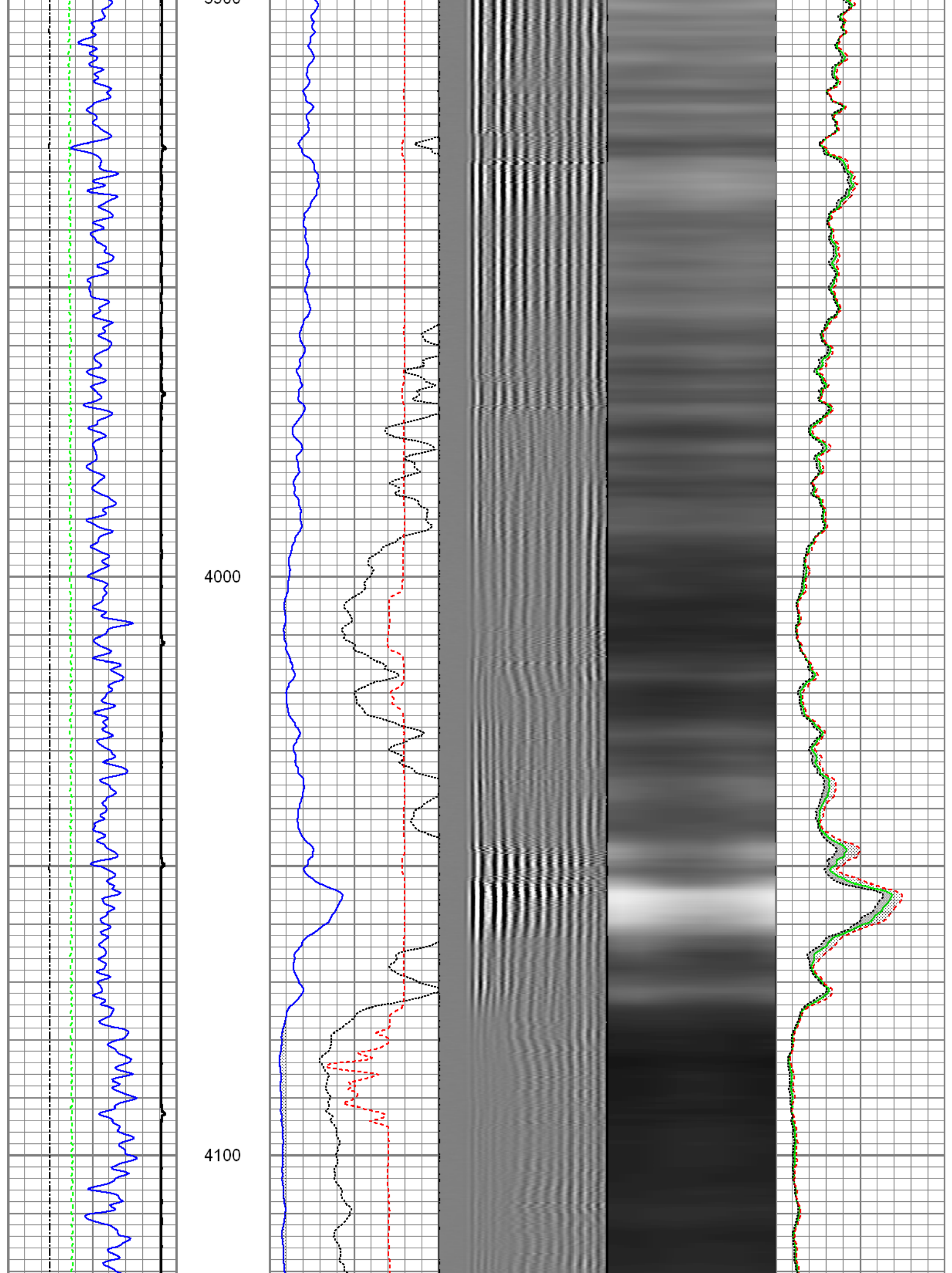


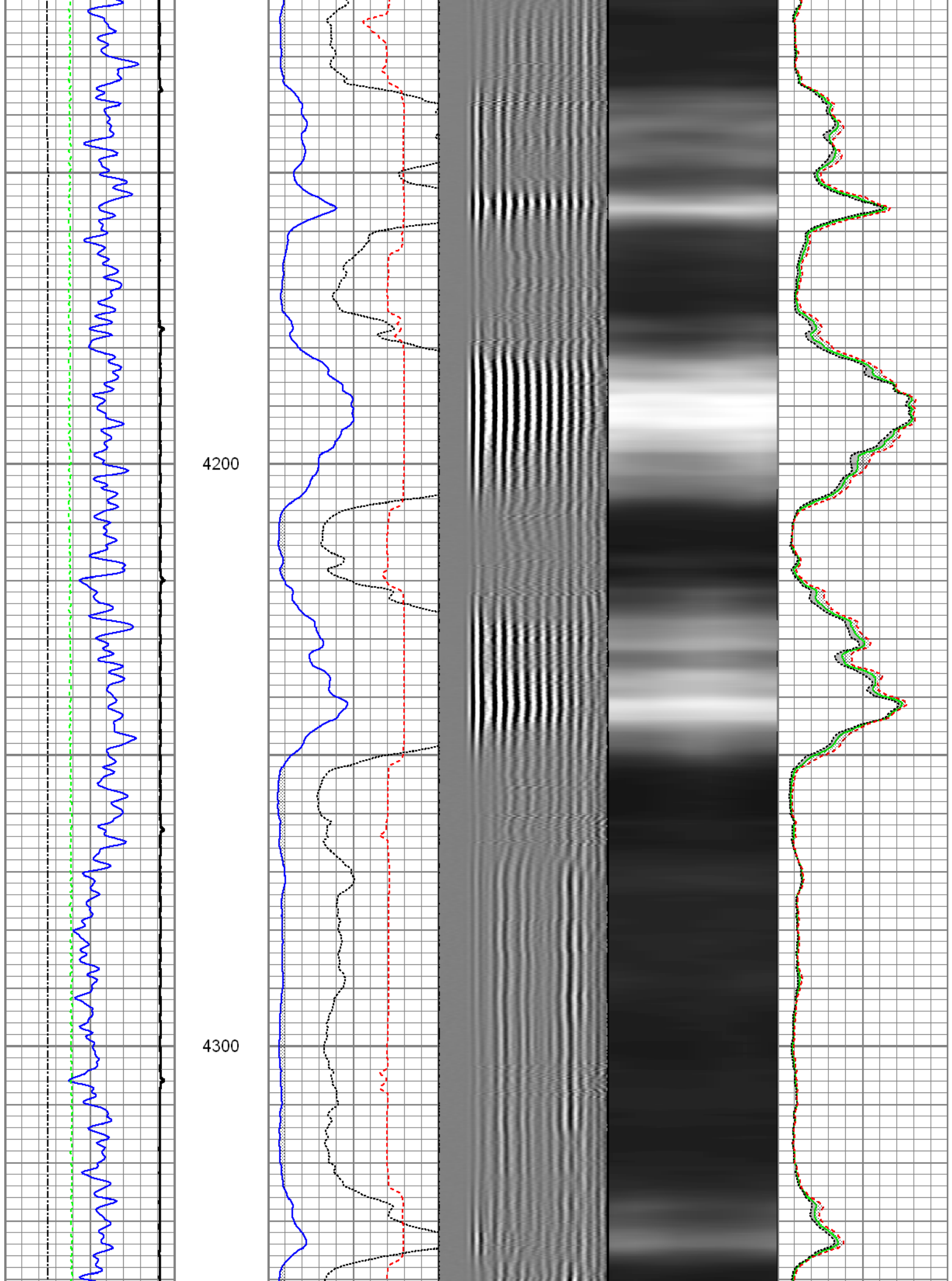
3500

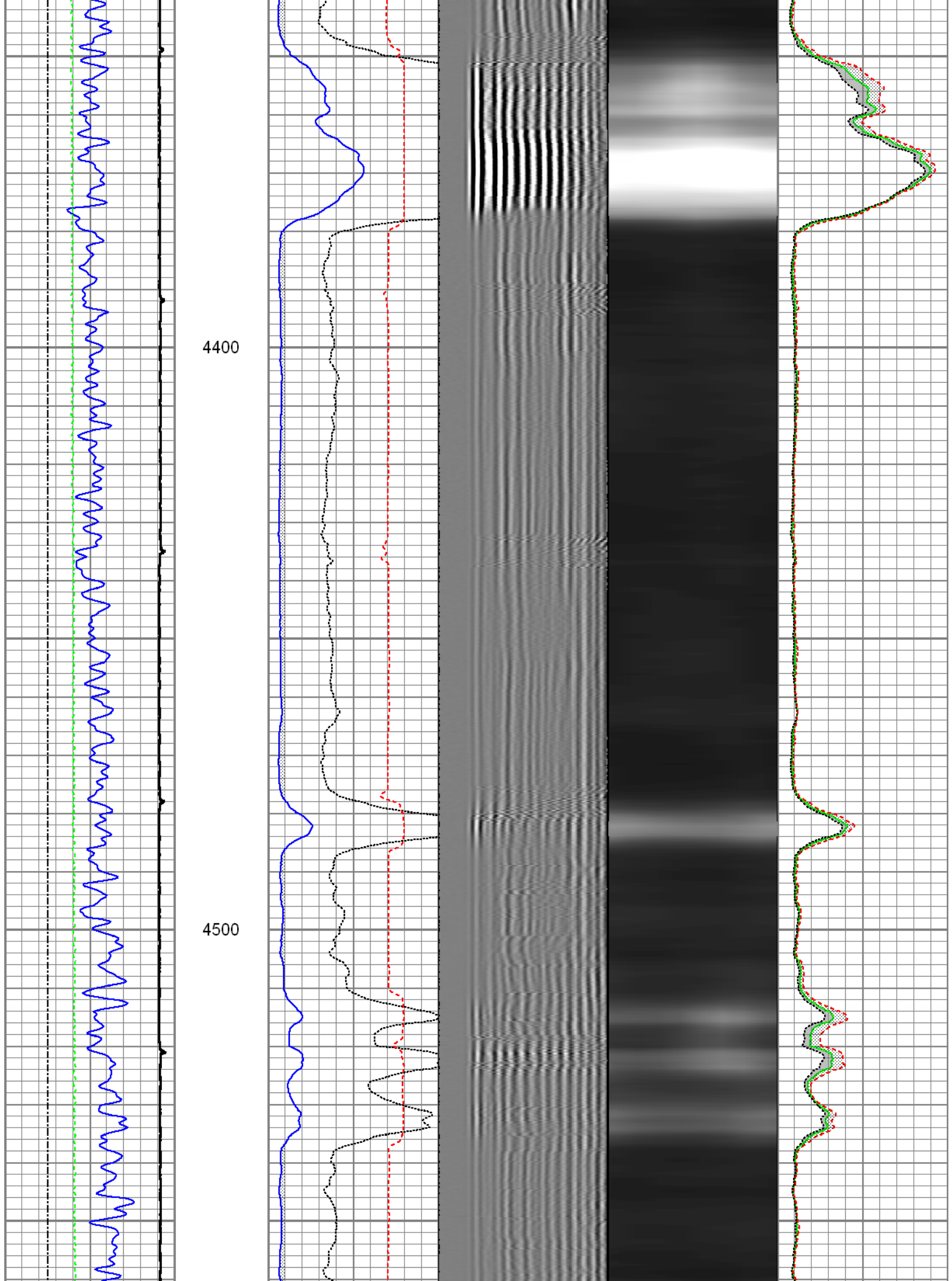
3600

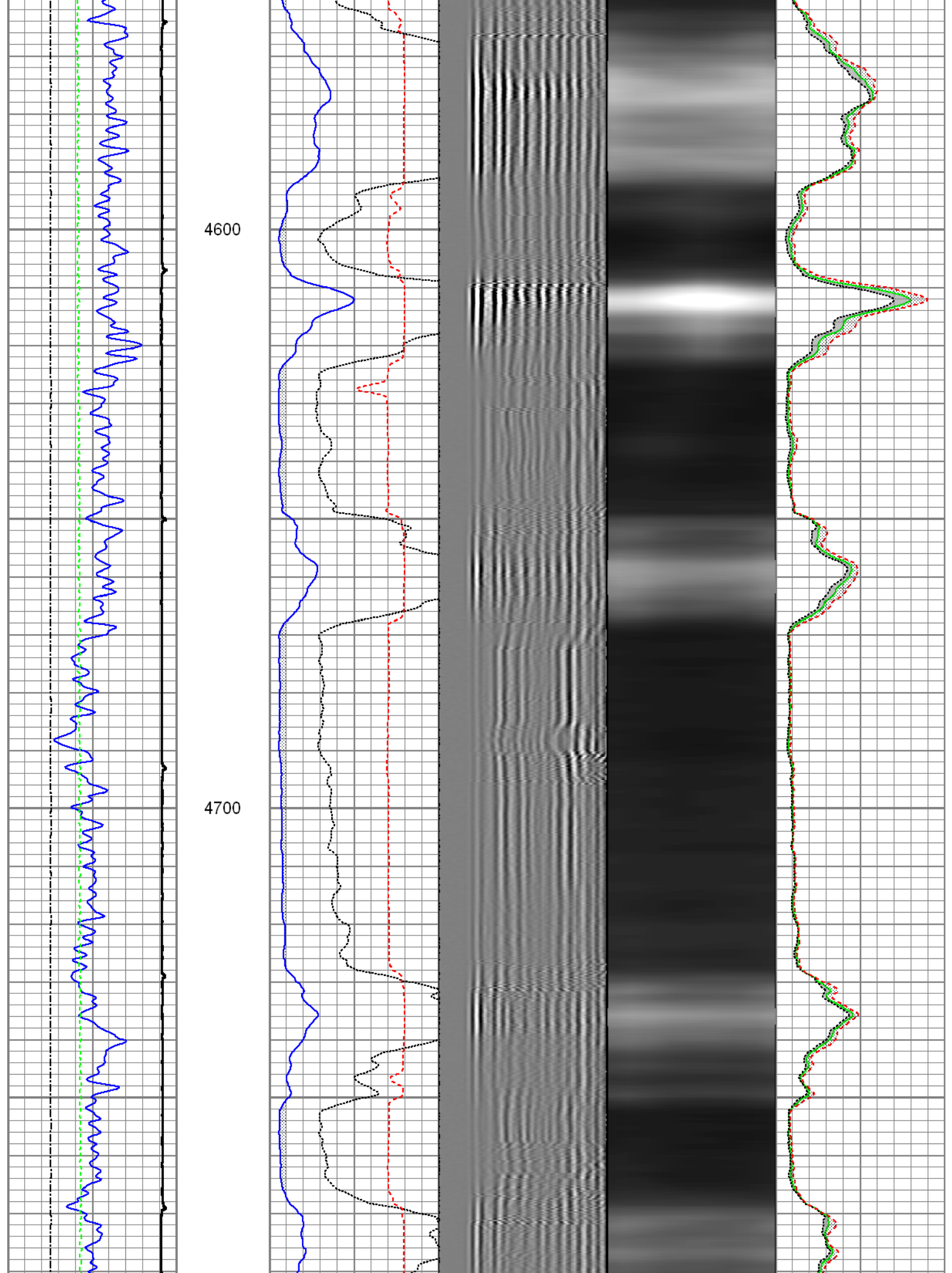


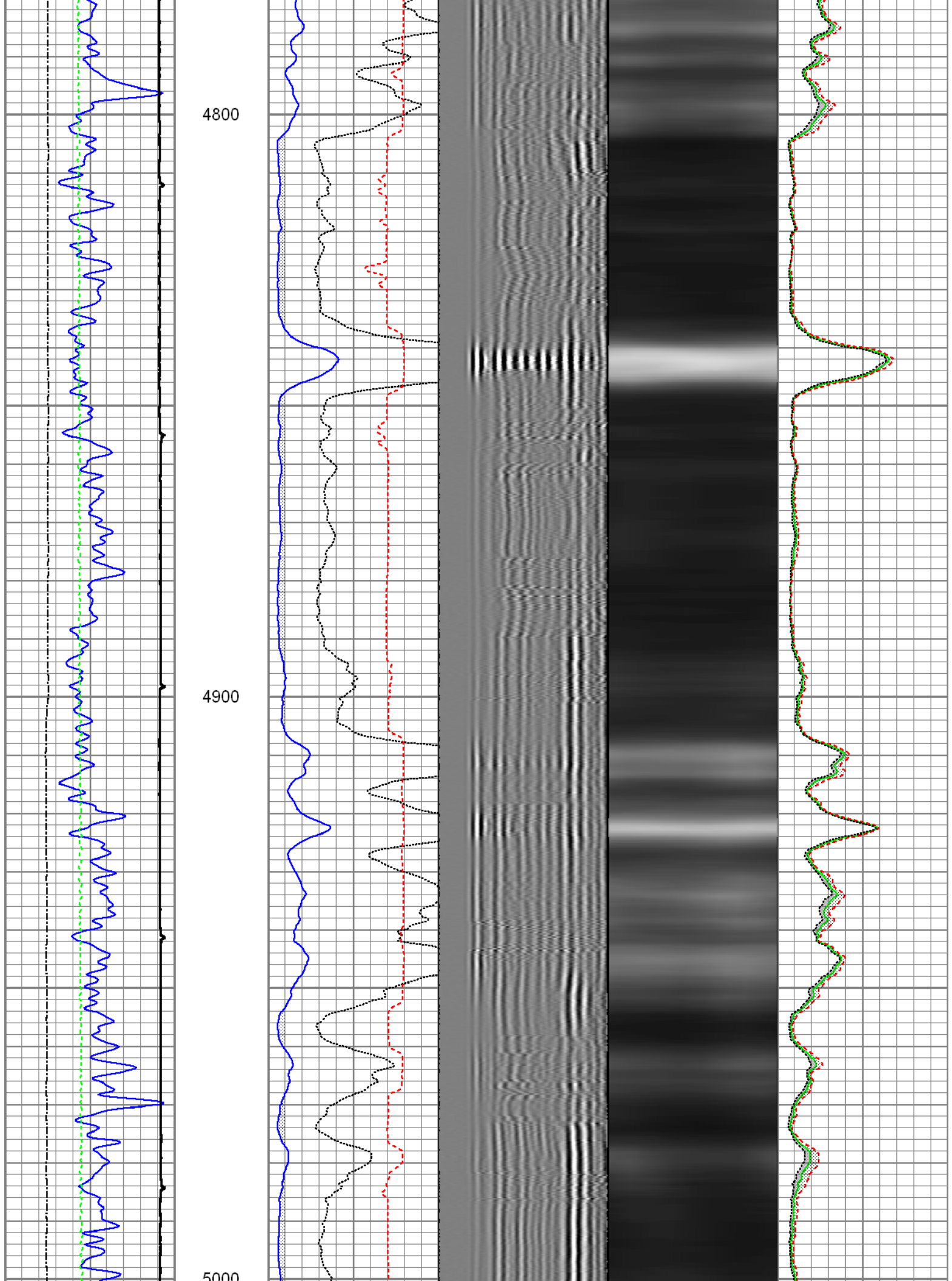








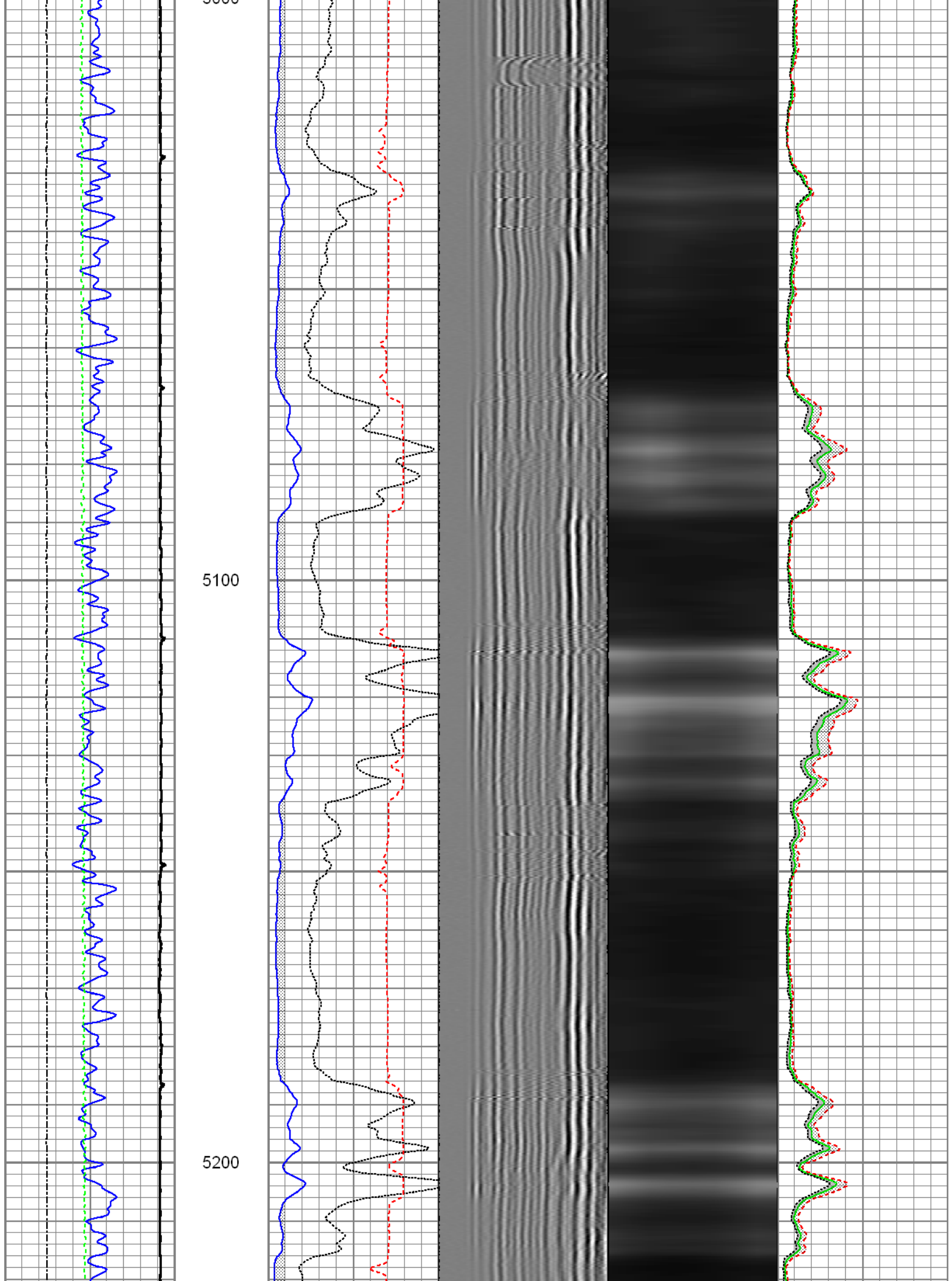


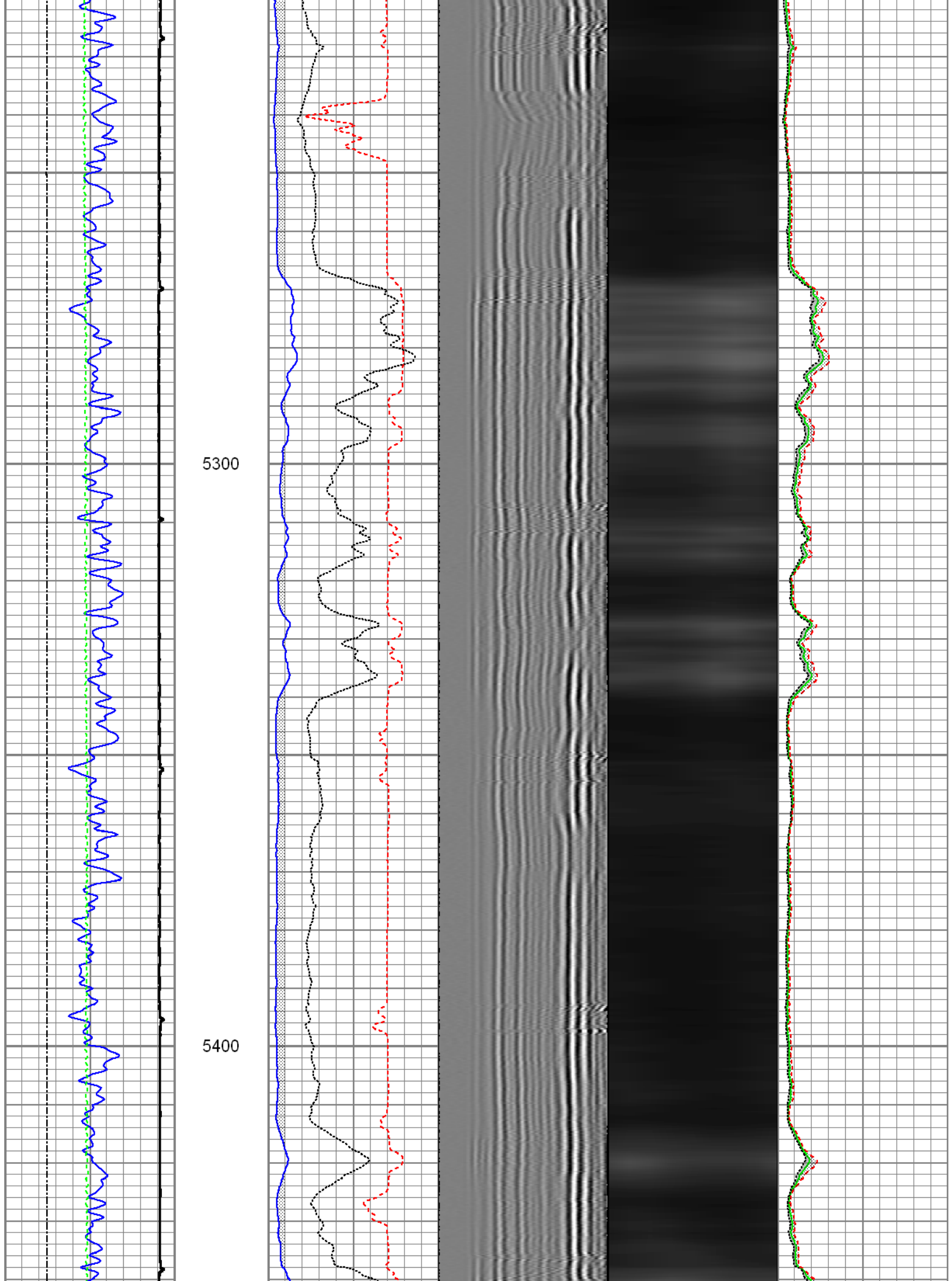


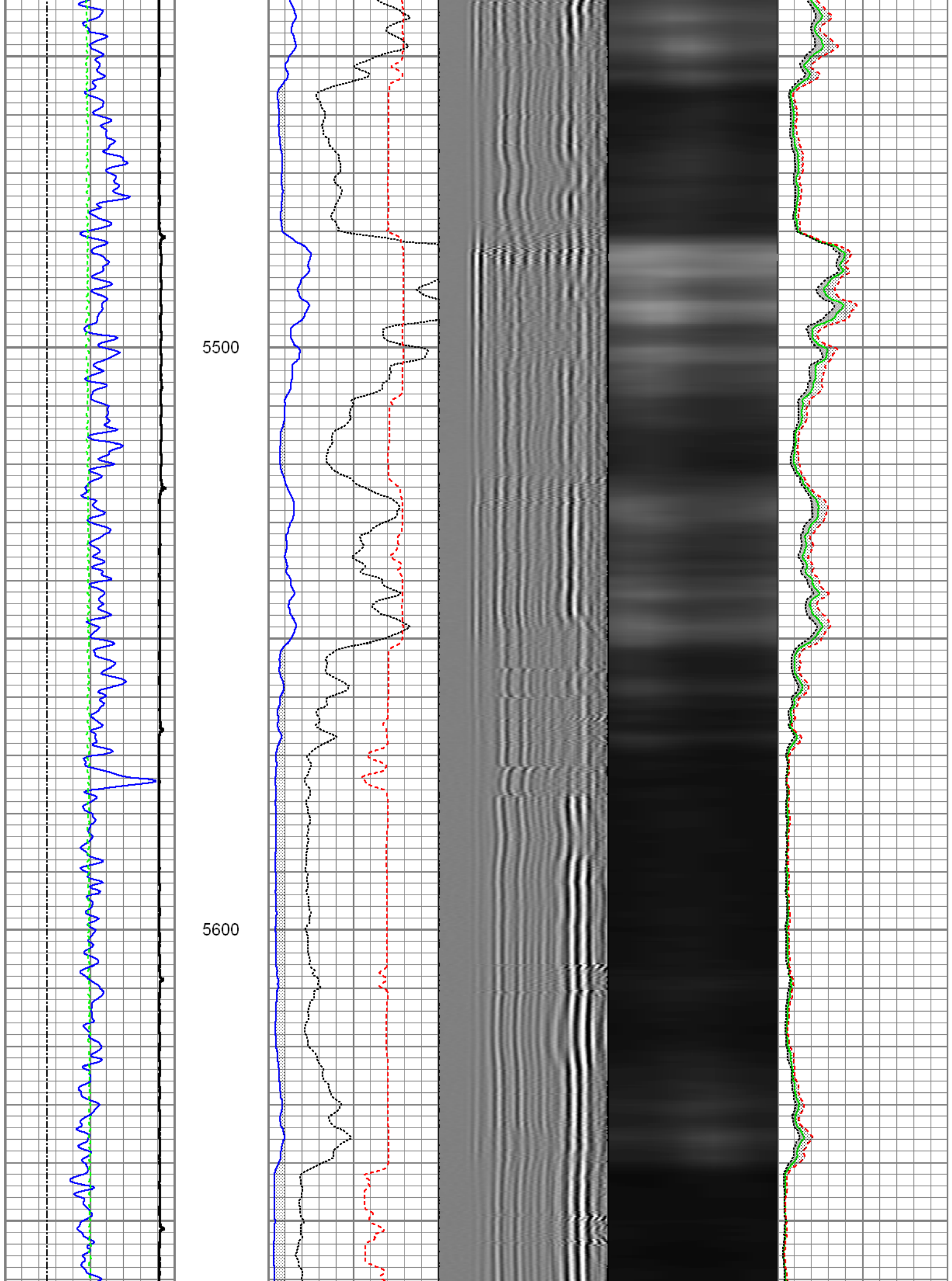
5000

5100

5200

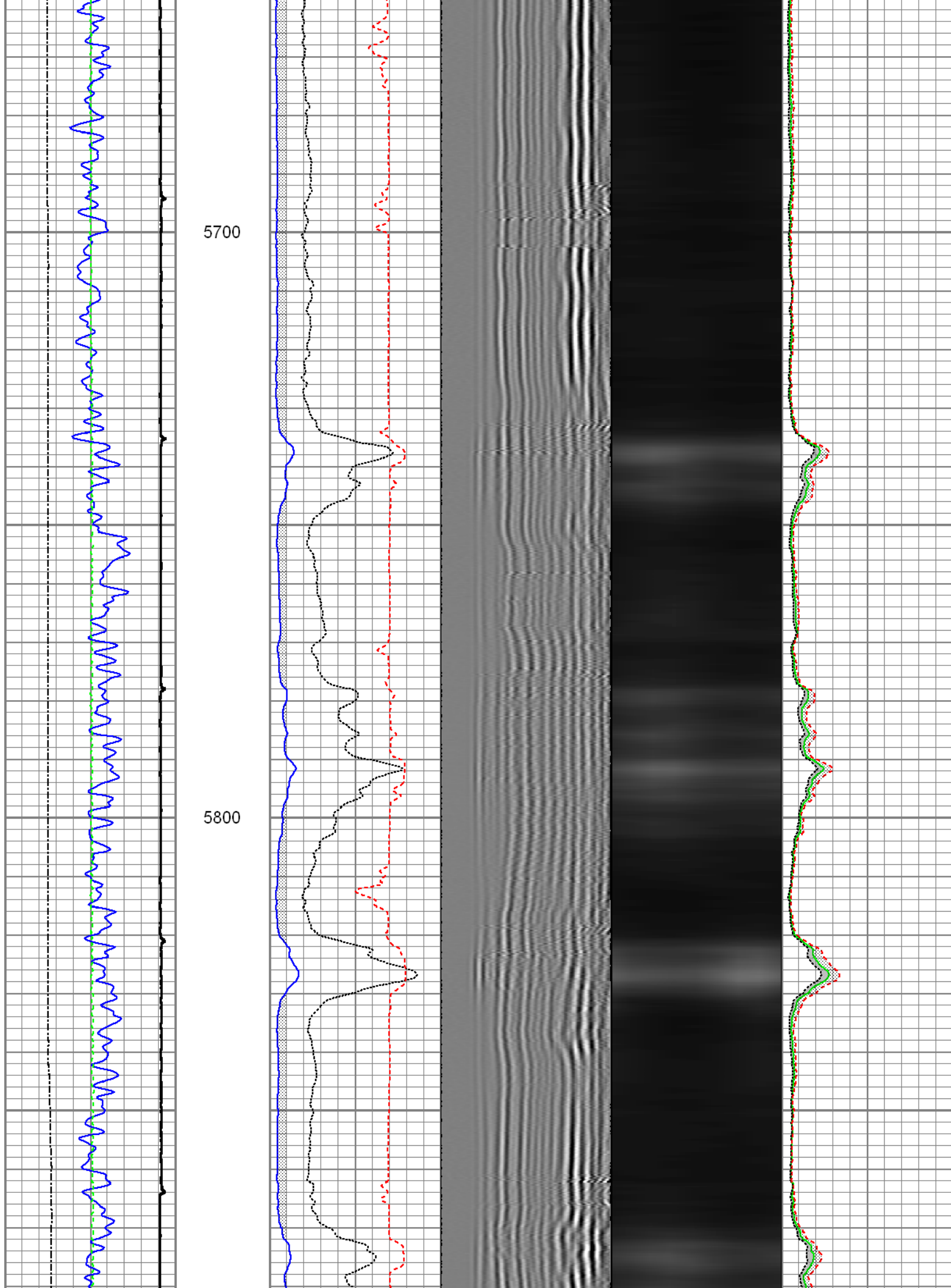


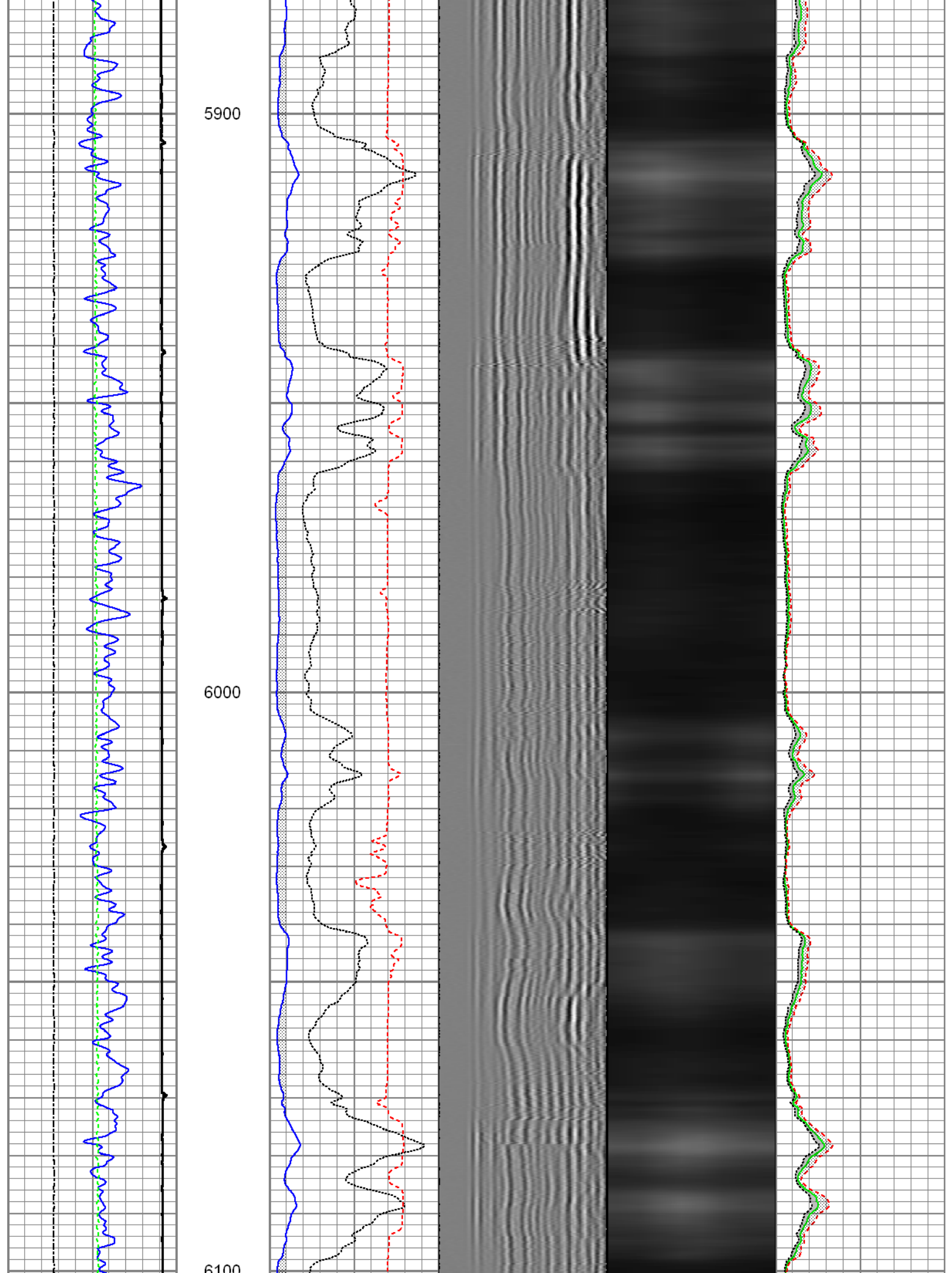




5700

5800

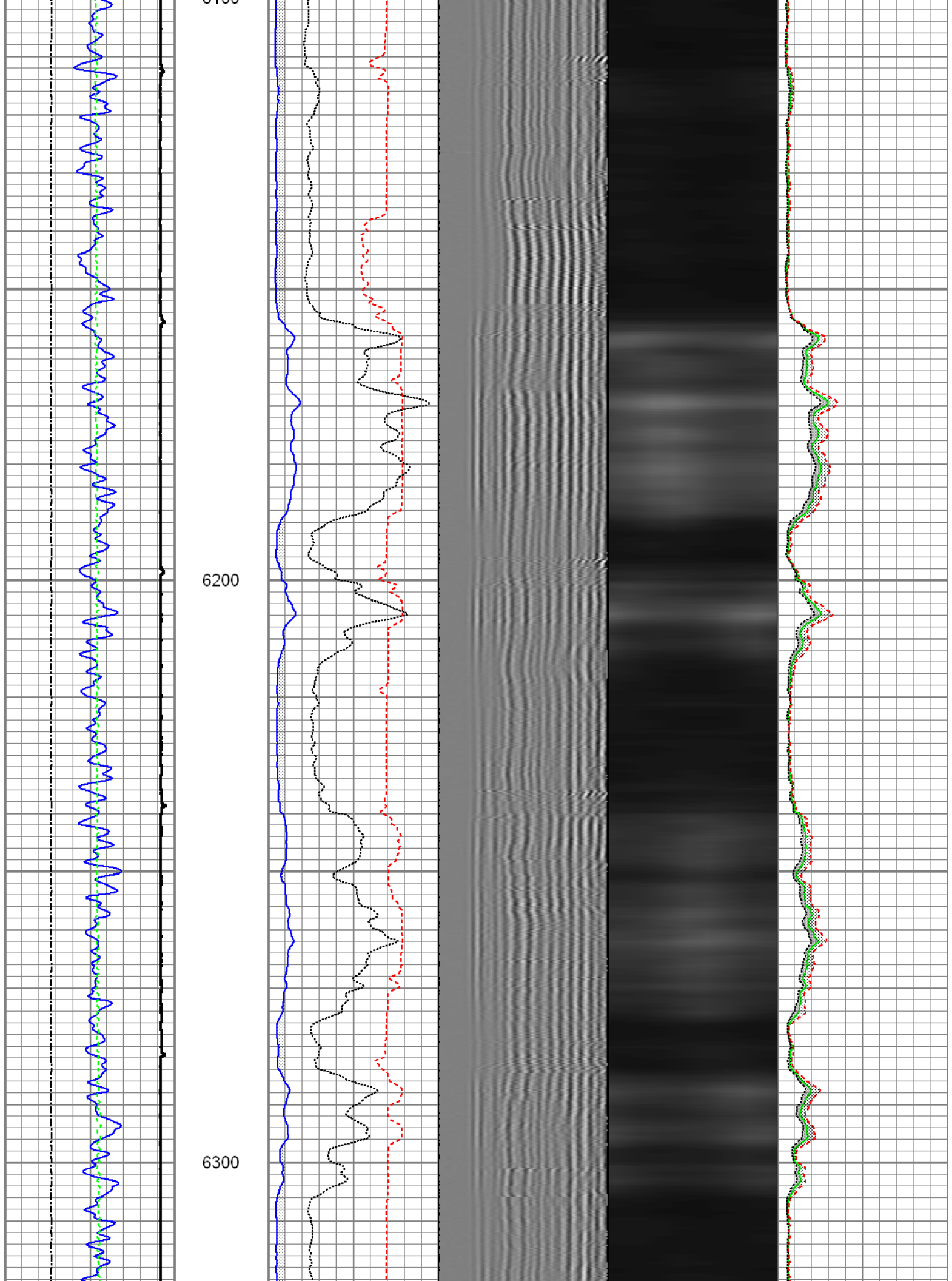


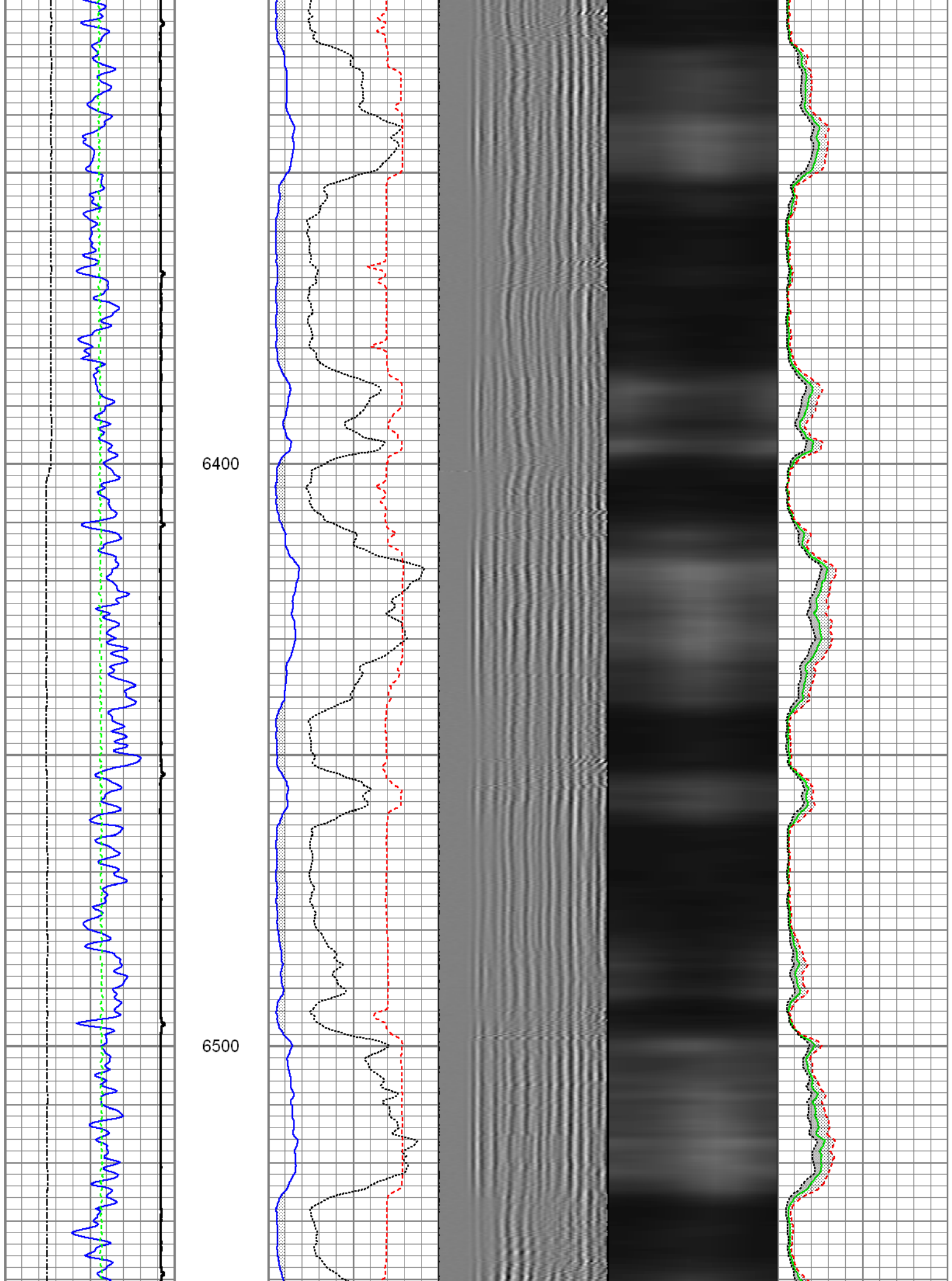


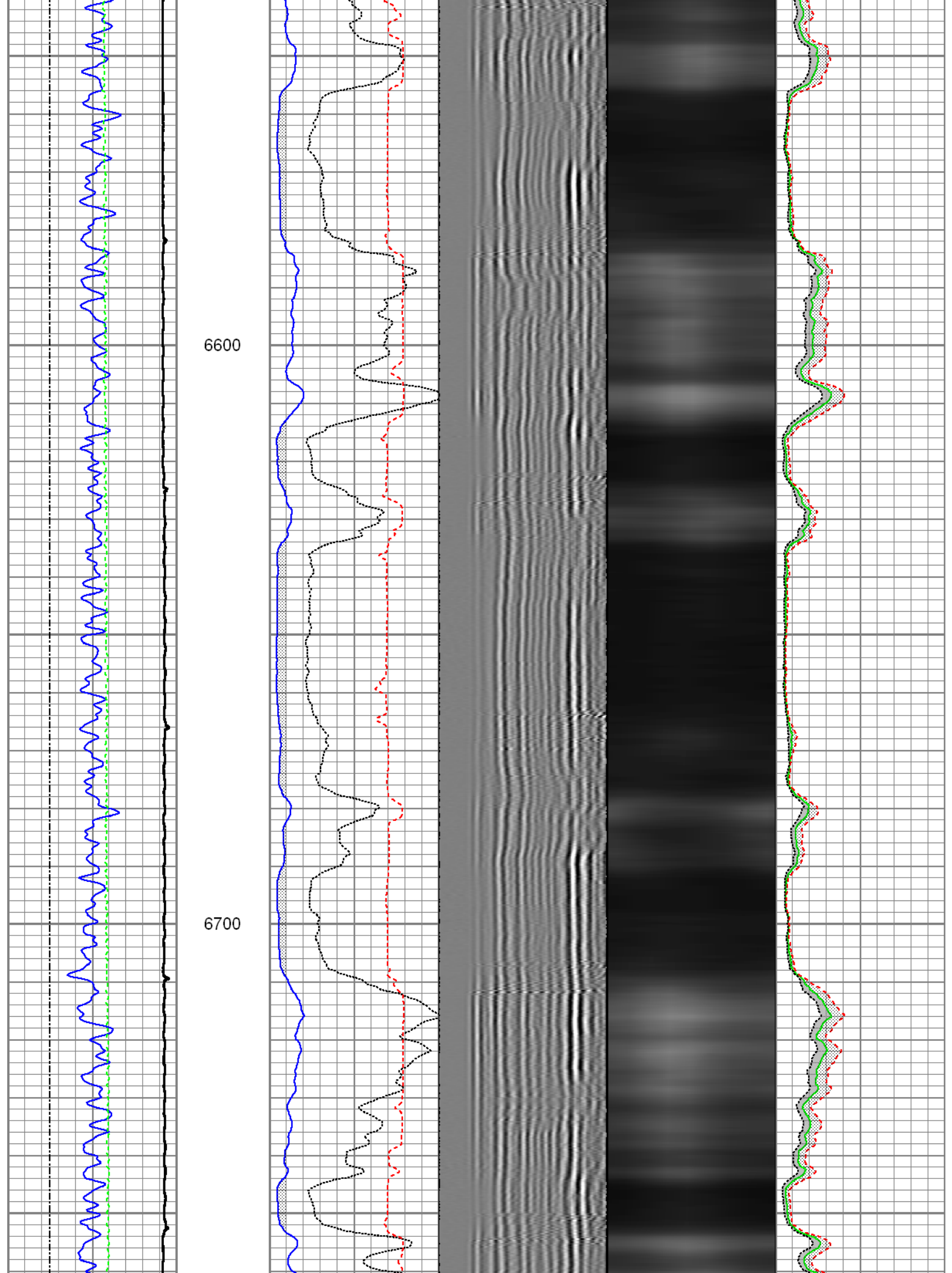
6100

6200

6300

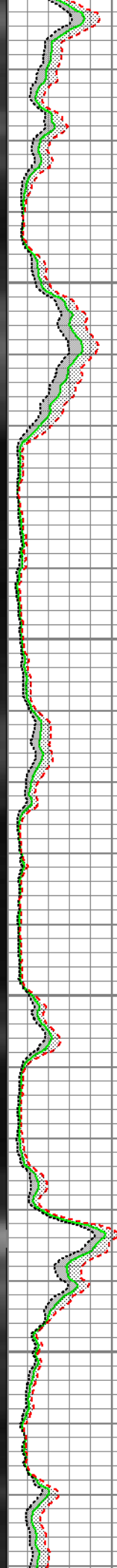
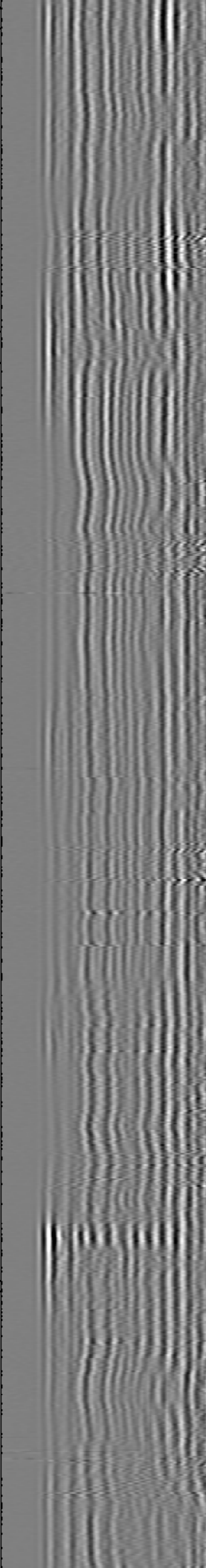
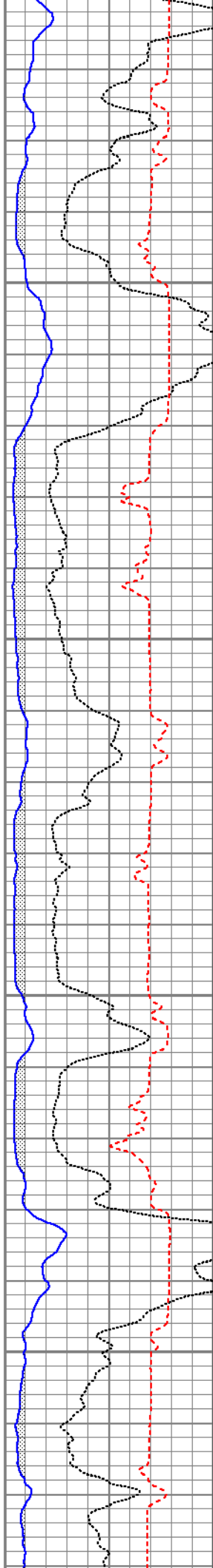
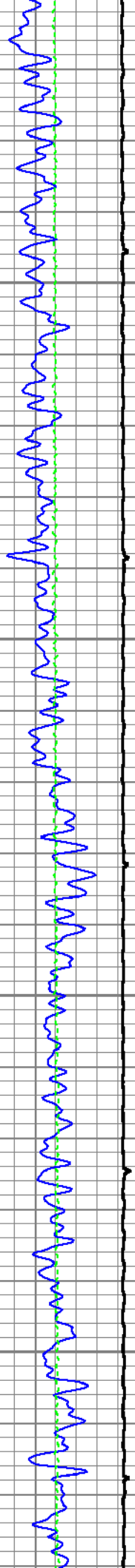


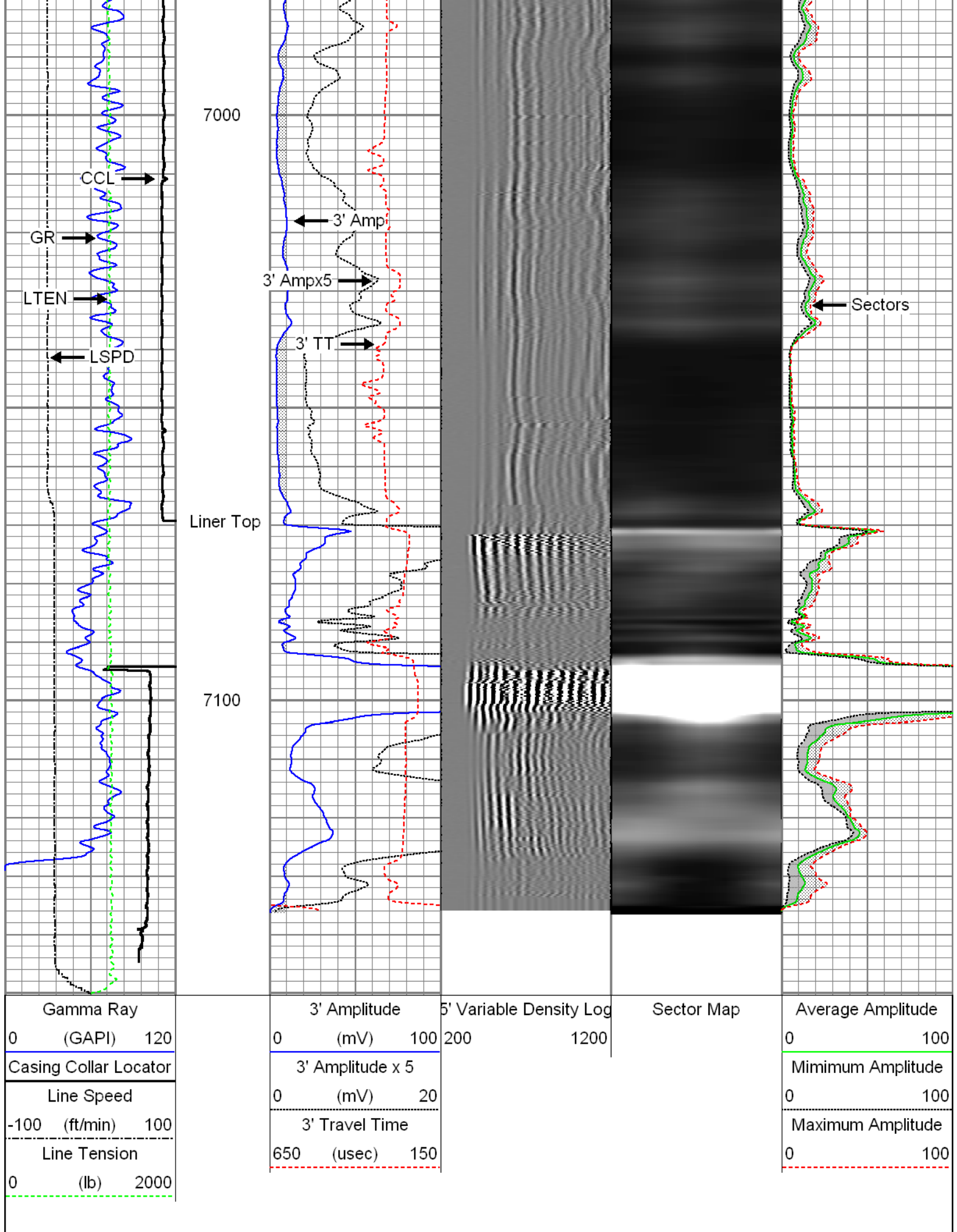




6800

6900

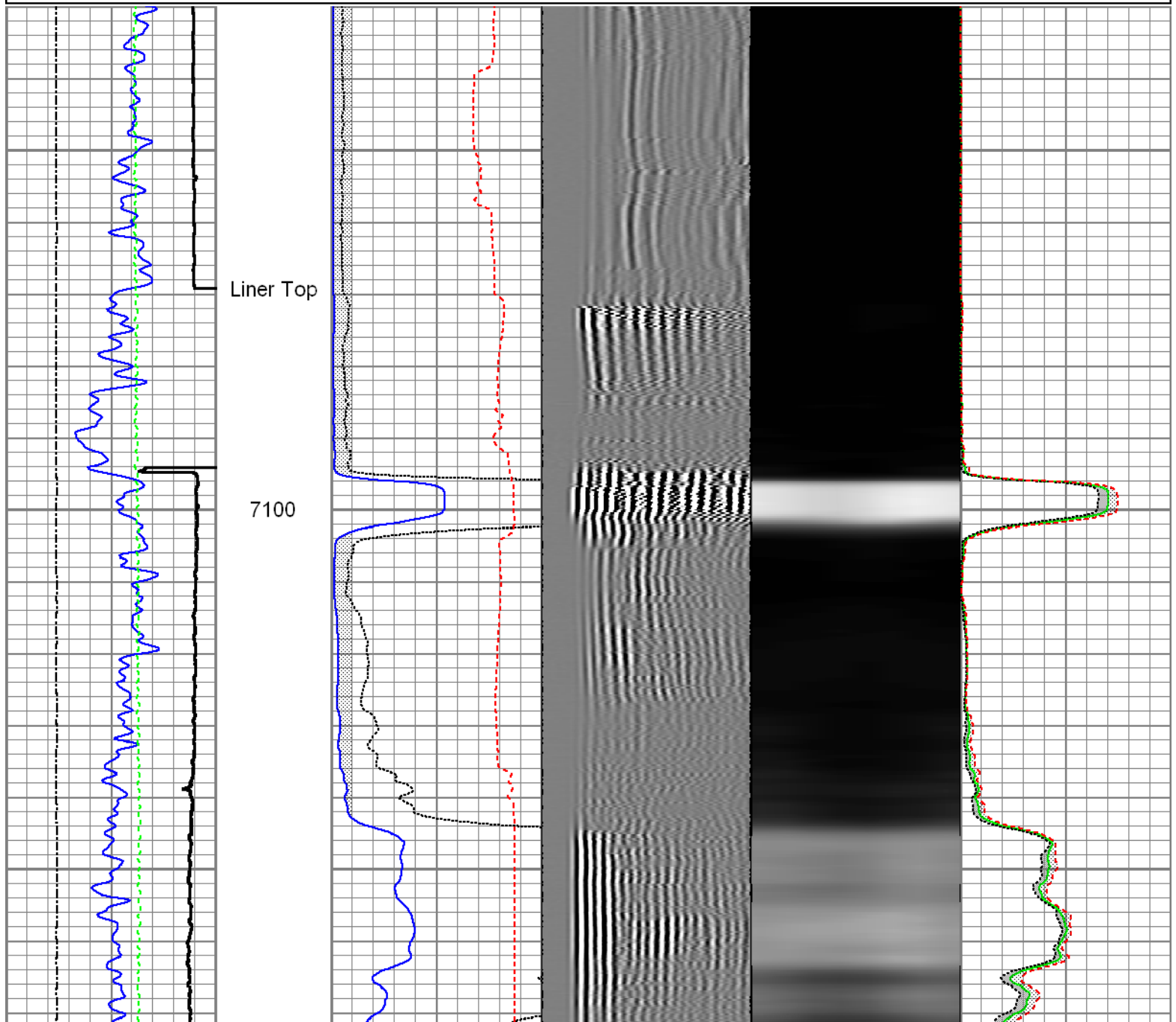


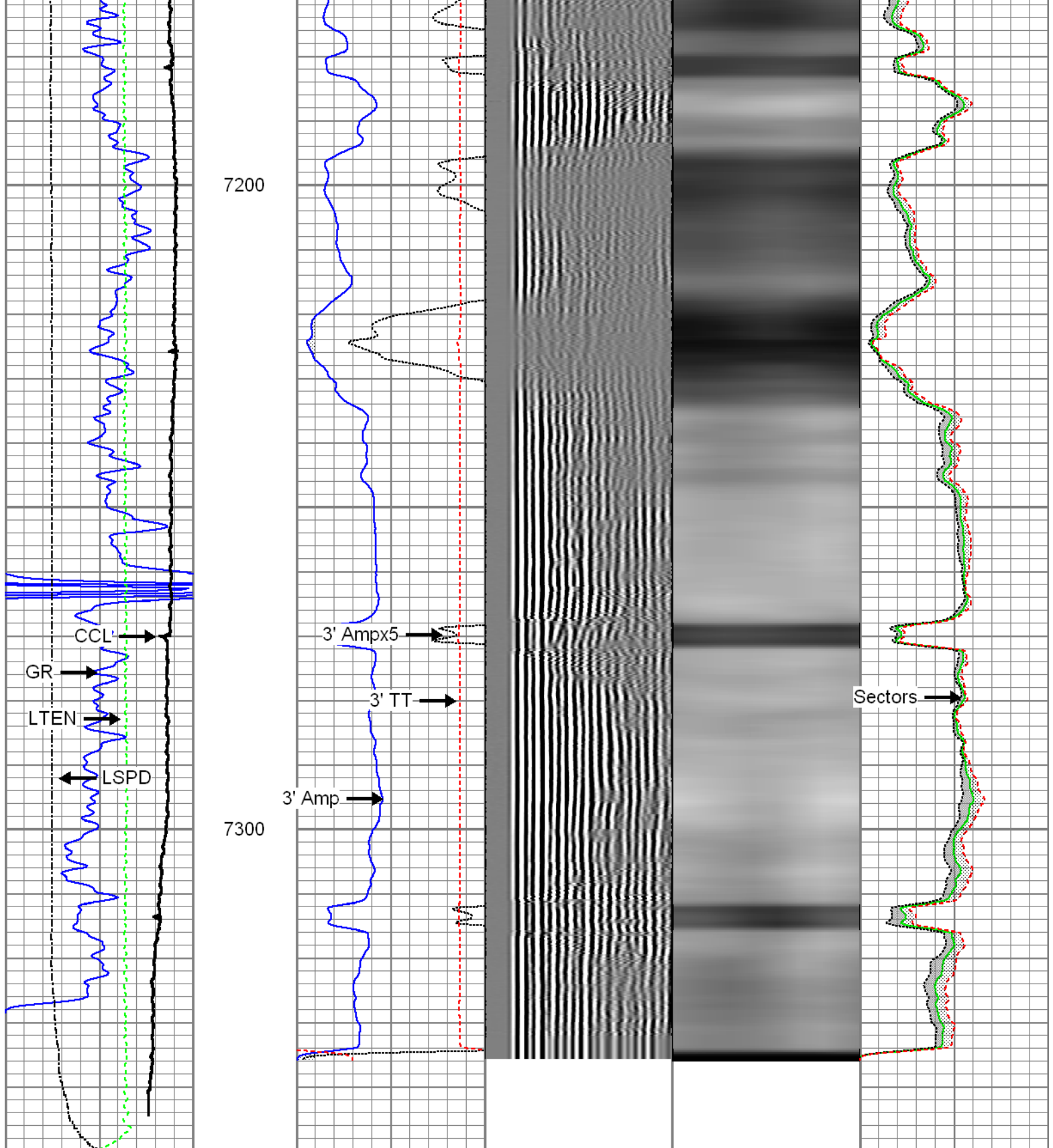


Recorded At 2800 PSI Surface Induced Pressure

Database File: 0512336699_anadarko_turkey springs 1g-15hz_11-20-14_mit_rbl.db
Dataset Pathname: pass14
Presentation Format: rbt4_mit
Dataset Creation: Thu Nov 20 13:01:07 2014 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
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				





7200

7300

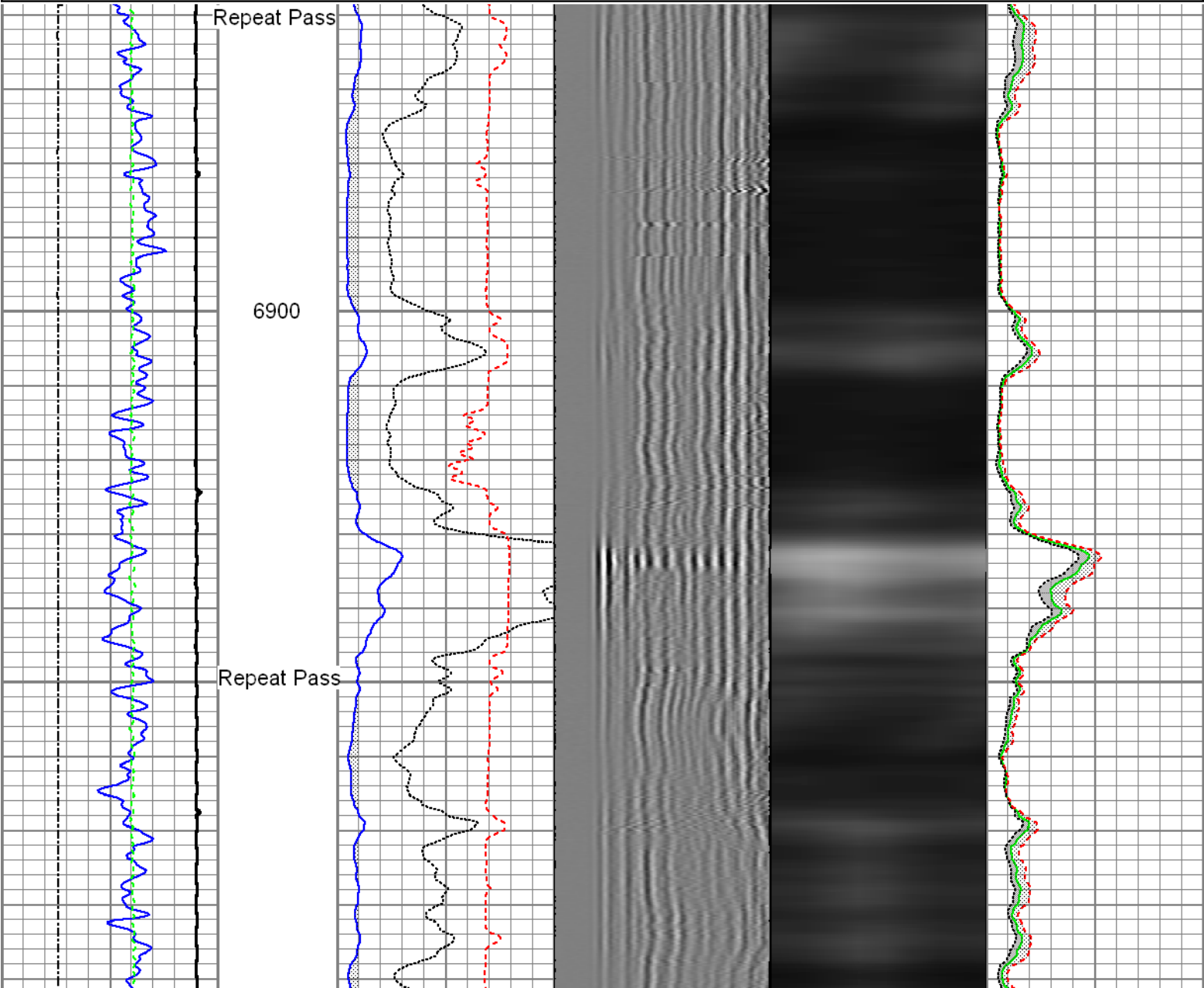
Sectors

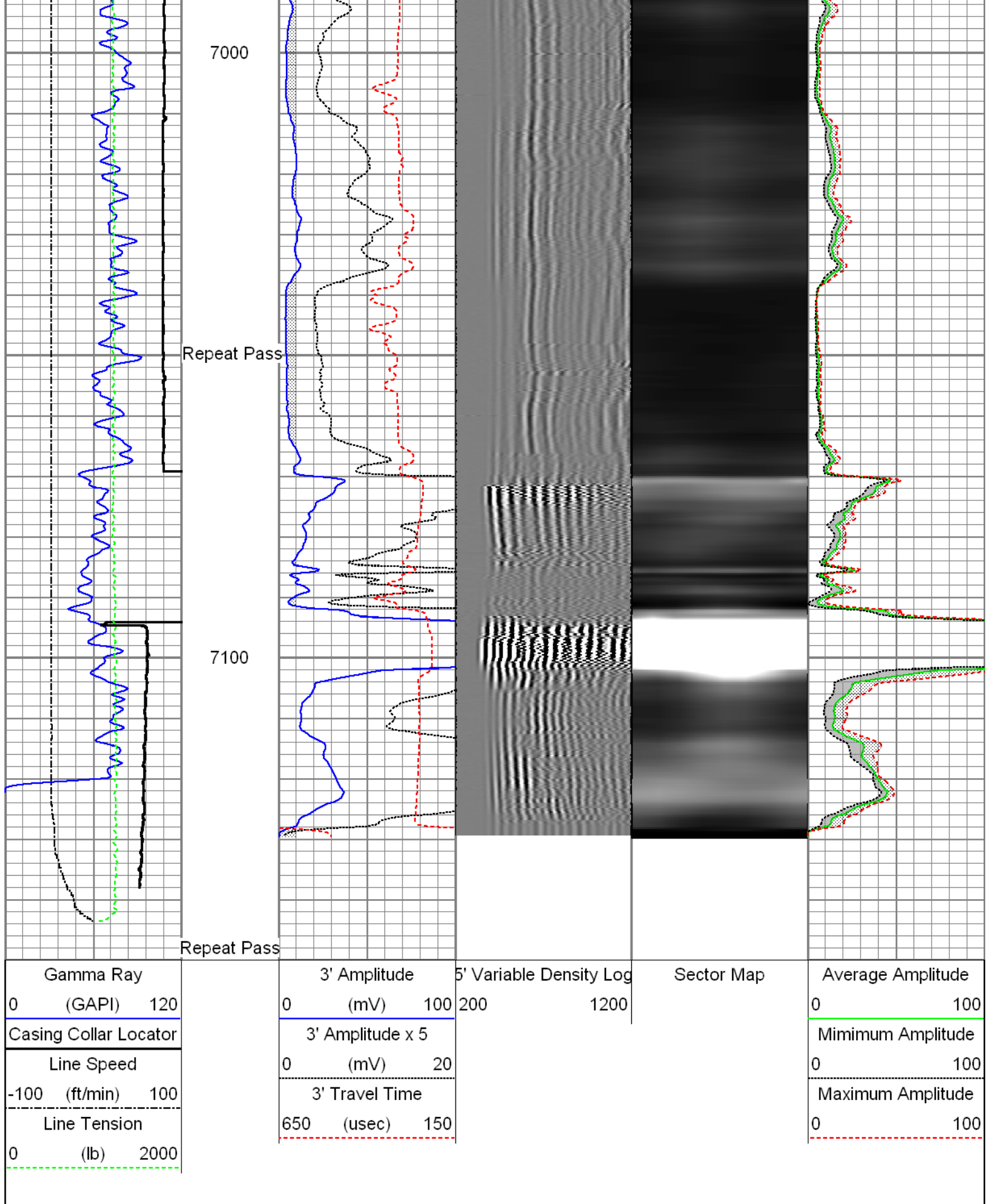
<div>Gamma Ray</div> <div>0 (GAPI) 120</div> <div>Casing Collar Locator</div> <div>Line Speed</div> <div>-100 (ft/min) 100</div> <div>Line Tension</div> <div>0 (lb) 2000</div>	<div>3' Amplitude</div> <div>0 (mV) 100</div> <div>3' Amplitude x 5</div> <div>0 (mV) 20</div> <div>3' Travel Time</div> <div>650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


Database File:
Dataset Pathname:
Presentation Format:
Dataset Creation:
Charted by:

0512336699_anadarko_turkey springs 1g-15hz_11-20-14_mit_rbl.db
pass12
rbt4_mit
Thu Nov 20 12:44:55 2014 by Log 7.0 B1
Depth in Feet scaled 1:240

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





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00

Tool Joint	Tool Joint Length (ft)	Tool Joint Weight (lb)	Tool Joint O.D. (in)	Tool Joint Description	Tool Joint Length (ft)	Tool Joint Weight (lb)	Tool Joint O.D. (in)	Tool Joint Description
GR	22.81			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00	
				UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50	
				UW_PGR-UW_PGR_020 (10013899) 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	
WVFS1	15.42			UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00	
WVFS2	15.42							
WVFS3	15.42							
WVFS4	15.42							
WVFS5	15.42							
WVFS6	15.42							
WVFS7	15.42							
WVFS8	15.42							
CBLTEMP	15.42							
CBLROT	15.42							
WVFS5FT	14.42			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00	
MIT	5.41			UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10	
				UW_PRC #3 -UW_PRC_057 (1102) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00	
TSTAMP	0.00			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20	

Dataset:

0512336699_anadarko_turkey springs 1g-15hz_11-20-14_mit_rbl.db: field/well/run1/pass16

Total Length:

27.05 ft

Total Weight:

319.30 lb

O.D.

3.13 in

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: Thu Nov 20 11:25:18 2014

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1075	382.0	1457	384.0	1841	396.0	2237
Finger 02:	1052	388.0	1440	399.0	1839	419.0	2258
Finger 03:	1045	381.0	1426	387.0	1813	409.0	2222
Finger 04:	1007	393.0	1400	408.0	1808	436.0	2244
Finger 05:	1025	375.0	1400	381.0	1781	401.0	2182
Finger 06:	984	381.0	1365	393.0	1758	417.0	2175
Finger 07:	1029	389.0	1418	392.0	1810	413.0	2223
Finger 08:	1000	389.0	1389	404.0	1793	431.0	2224
Finger 09:	1065	393.0	1458	390.0	1848	405.0	2253
Finger 10:	1019	385.0	1404	391.0	1795	412.0	2207
Finger 11:	1009	385.0	1394	394.0	1788	422.0	2210
Finger 12:	1096	384.0	1480	374.0	1854	384.0	2238
Finger 13:	1064	385.0	1449	392.0	1841	417.0	2258
Finger 14:	1017	395.0	1412	406.0	1818	431.0	2249
Finger 15:	984	390.0	1374	405.0	1779	437.0	2216
Finger 16:	1025	386.0	1411	396.0	1807	422.0	2229
Finger 17:	1069	380.0	1449	385.0	1834	404.0	2238
Finger 18:	1064	376.0	1440	378.0	1818	399.0	2217
Finger 19:	1063	385.0	1448	393.0	1841	413.0	2254
Finger 20:	961	384.0	1345	402.0	1747	430.0	2177
Finger 21:	1063	381.0	1444	388.0	1832	413.0	2245
Finger 22:	1057	384.0	1441	391.0	1832	412.0	2244
Finger 23:	1097	386.0	1483	391.0	1874	410.0	2284
Finger 24:	1088	358.0	1446	363.0	1809	384.0	2193
Finger 25:	1086	390.0	1476	397.0	1873	411.0	2284
Finger 26:	1031	372.0	1403	384.0	1787	408.0	2195
Finger 27:	1212	396.0	1608	391.0	1999	401.0	2400
Finger 28:	1058	362.0	1420	373.0	1793	400.0	2193
Finger 29:	1042	377.0	1419	391.0	1810	416.0	2226
Finger 30:	1027	381.0	1408	396.0	1804	419.0	2223
Finger 31:	1217	402.0	1619	405.0	2024	416.0	2440
Finger 32:	1073	376.0	1449	377.0	1826	393.0	2219
Finger 33:	1070	394.0	1464	404.0	1868	427.0	2295
Finger 34:	1053	377.0	1430	384.0	1814	405.0	2219
Finger 35:	1139	399.0	1538	405.0	1943	420.0	2363
Finger 36:	1036	362.0	1398	370.0	1768	391.0	2159
Finger 37:	1106	398.0	1504	401.0	1905	419.0	2324
Finger 38:	1076	374.0	1450	380.0	1830	399.0	2229
Finger 39:	1084	366.0	1447	369.0	1816	388.0	2284

Finger 39:	1081	366.0	1447	369.0	1816	388.0	2204
Finger 40:	997	395.0	1392	411.0	1803	439.0	2242

Segmented Cement Bond Log Calibration Report

Serial Number:	1063
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	607.095 ft

Master Calibration, performed Thu Nov 20 11:49:07 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.003	0.801	1.000	62.165	76.678	0.740
5FT	-0.002	0.804	1.000	62.165	75.825	1.185
S1	0.003	0.756	0.000	100.000	132.802	-0.457
S2	0.002	0.781	0.000	100.000	128.375	-0.241
S3	0.002	0.805	0.000	100.000	124.588	-0.290
S4	0.002	0.833	0.000	100.000	120.359	-0.206
S5	0.003	0.836	0.000	100.000	120.028	-0.319
S6	0.002	0.832	0.000	100.000	120.590	-0.294
S7	0.003	0.818	0.000	100.000	122.738	-0.417
S8	0.003	0.779	0.000	100.000	128.856	-0.418

Gamma Ray Calibration Report

Serial Number:	10013899
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	Kerr McGee Oil & Gas Onshore LP
Well	Turkey Springs 1G-15HZ
Field	Wattenberg
County	Weld
State	Colorado