

# Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr-McGee Oil and Gas Onshore LP
Well	Taipan 1N-15HZ
Field	Wattenberg
County	Weld
State	Colorado
Company	Kerr-McGee Oil and Gas Onshore LP
Well	Taipan 1N-15HZ
Field	Wattenberg
County	Weld
State	Colorado
Location:	API #: 05-123-40604
Permanent Datum	SEC 22 TWP 2N RGE 67W
Log Measured From	Ground Level
Drilling Measured From	Kelly Bushing
	16 FT
	Elevation 4998'
	Other Services
	RCBL
	JB/GR
	Elevation
	K.B. 5014'
	D.F. 5013'
	G.L. 4998'

Date	27 MAR 2015
Run Number	One
Depth Driller	13488 FT
Depth Logger	7940 FT
Bottom Logged Interval	7940 FT
Top Log Interval	Surface
Open Hole Size	---
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	228°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	12:22 P.M.
Equipment Number	HD-0134
Location	Ft Lupton, CO
Recorded By	J. Amidei
Witnessed By	Josh Gustafson

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	1297 FT		
Intermediate #1	7	26	HCP-110	Surface	8424 FT		
Intermediate #2							
Liner	4.5	11.6	P-110	7556 FT	13439 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.

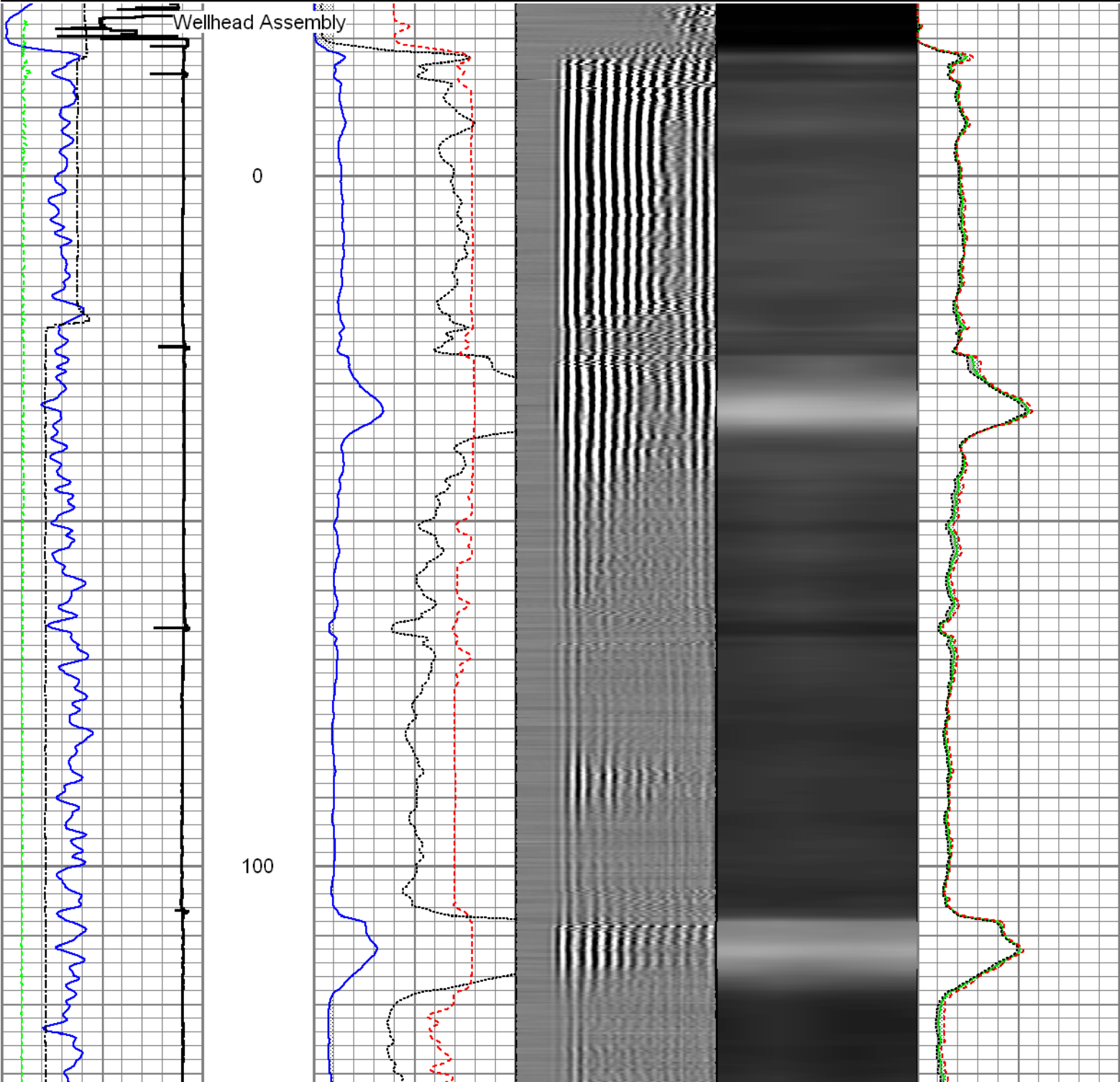
## Comments

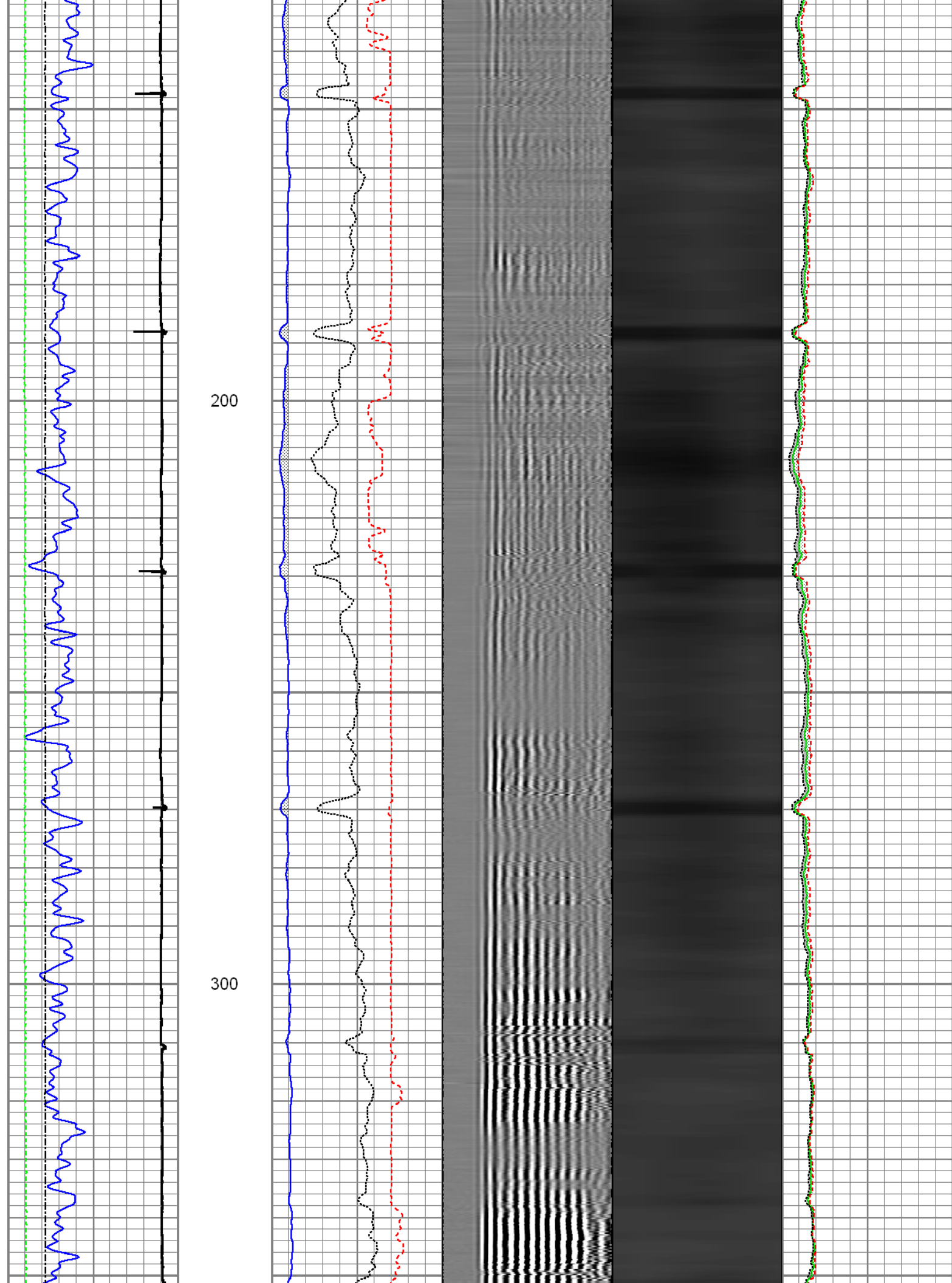
Log ran as per customer request.  
Depth referenced to casing tally reported liner top at 7556 FT.  
Adjusted log -33 FT to correlate with liner top.  
Log ran from as deep as possible to surface  
Log ran with 2800 PSI surface induced pressure.  
No debris found on logging tools after run.

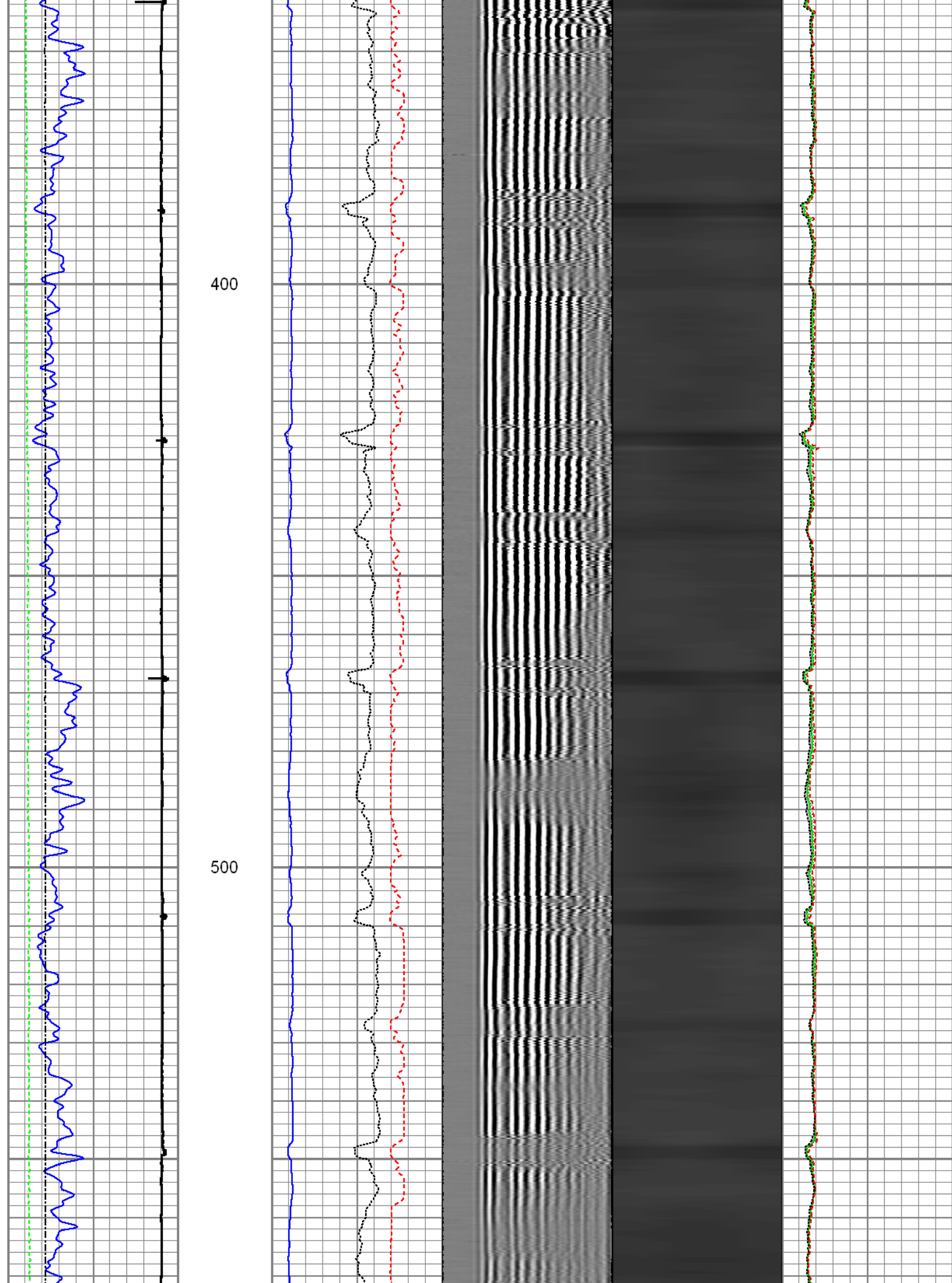
Thank you for choosing FMC Technologies Completion Services, Inc.!!

Database File: 0512340604\_anadarko\_taipan 1n-15hz\_03-27-15\_mit\_rbl.db  
Dataset Pathname: 7  
Presentation Format: rbt4\_mit  
Dataset Creation: Fri Mar 27 13:23:53 2015 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

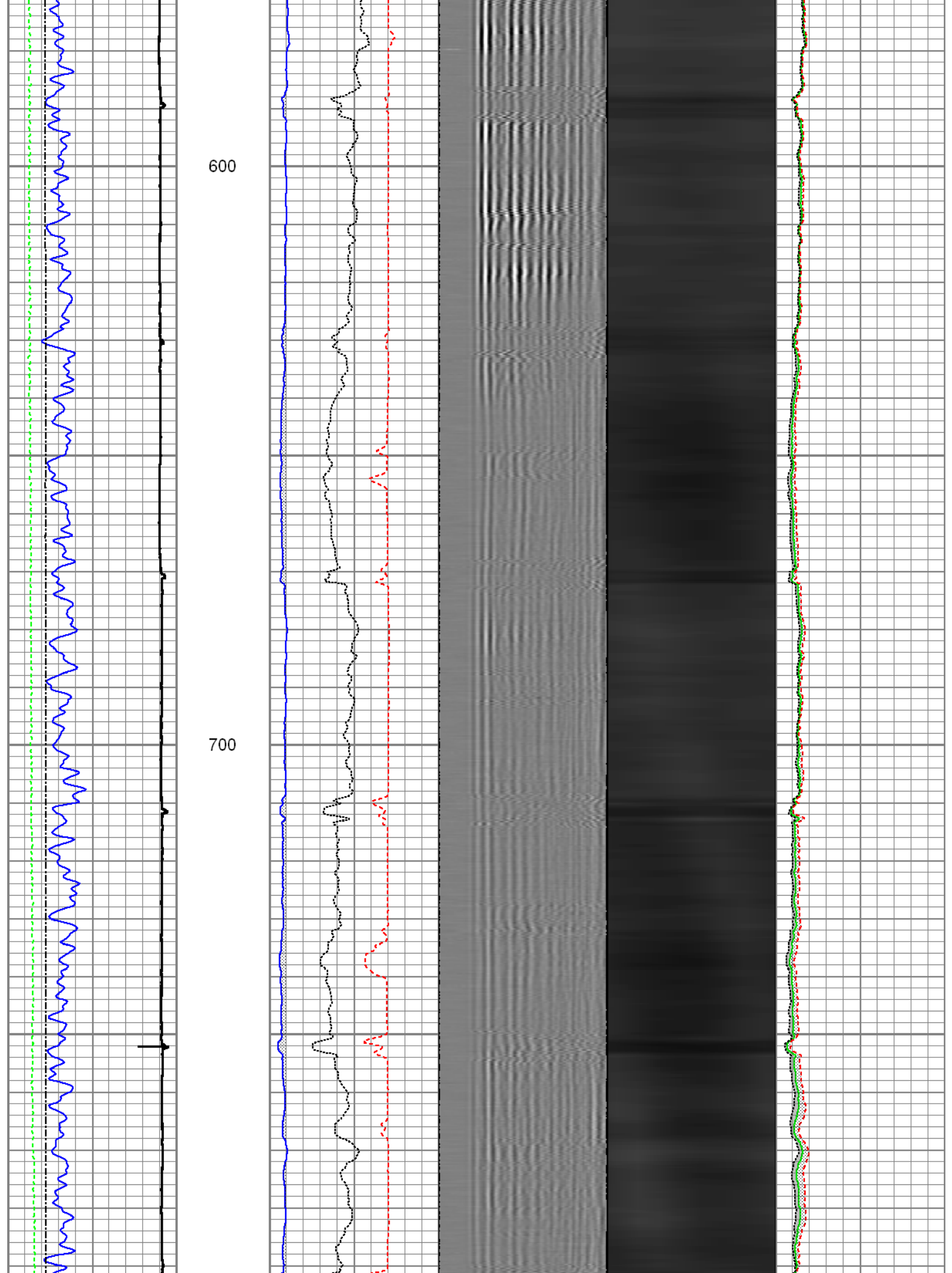
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				

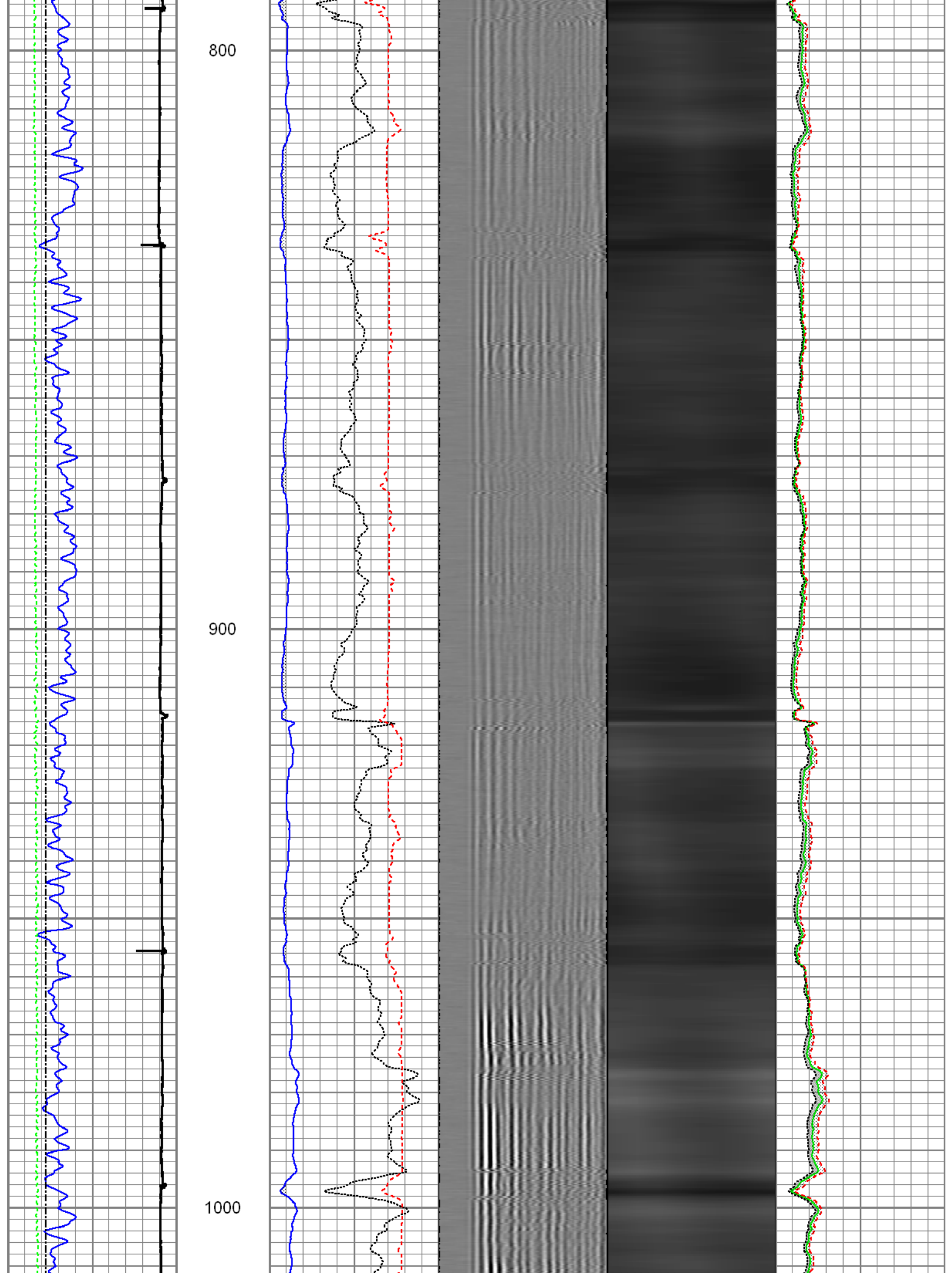


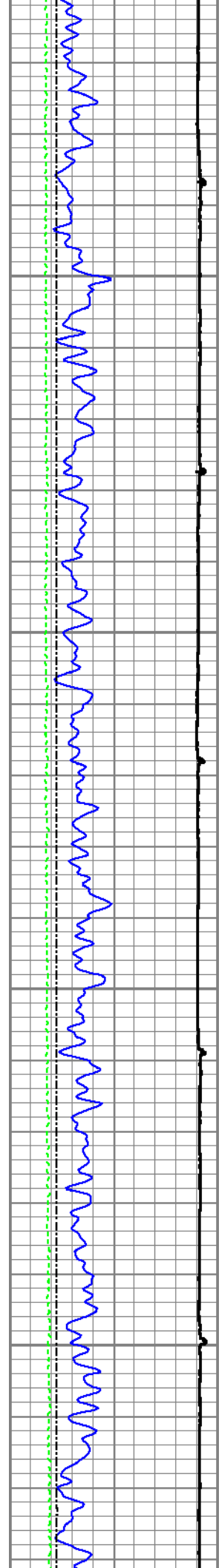






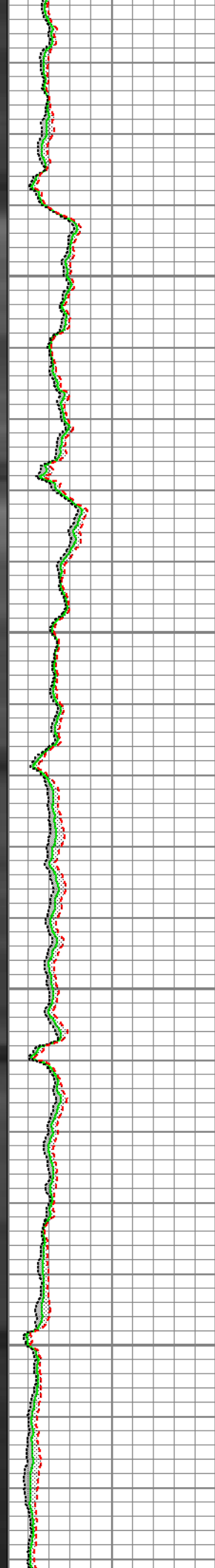
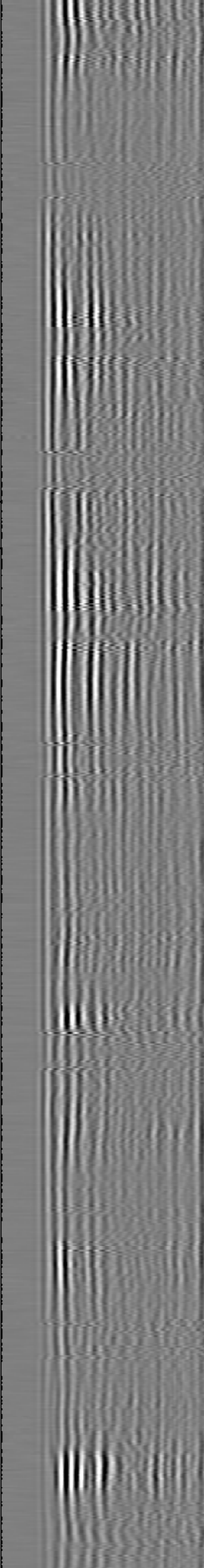
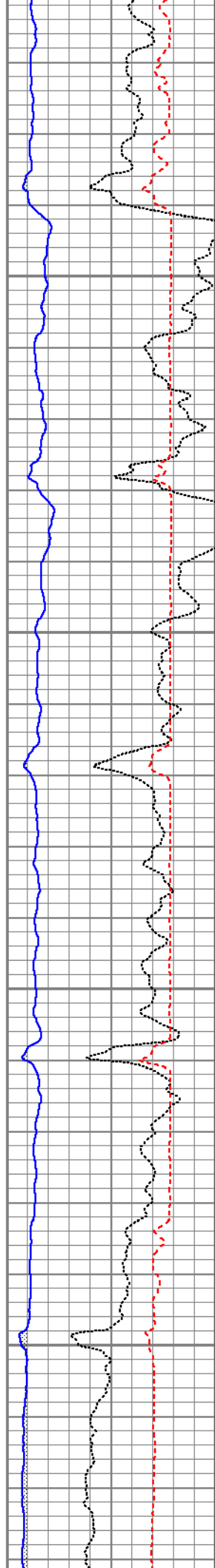


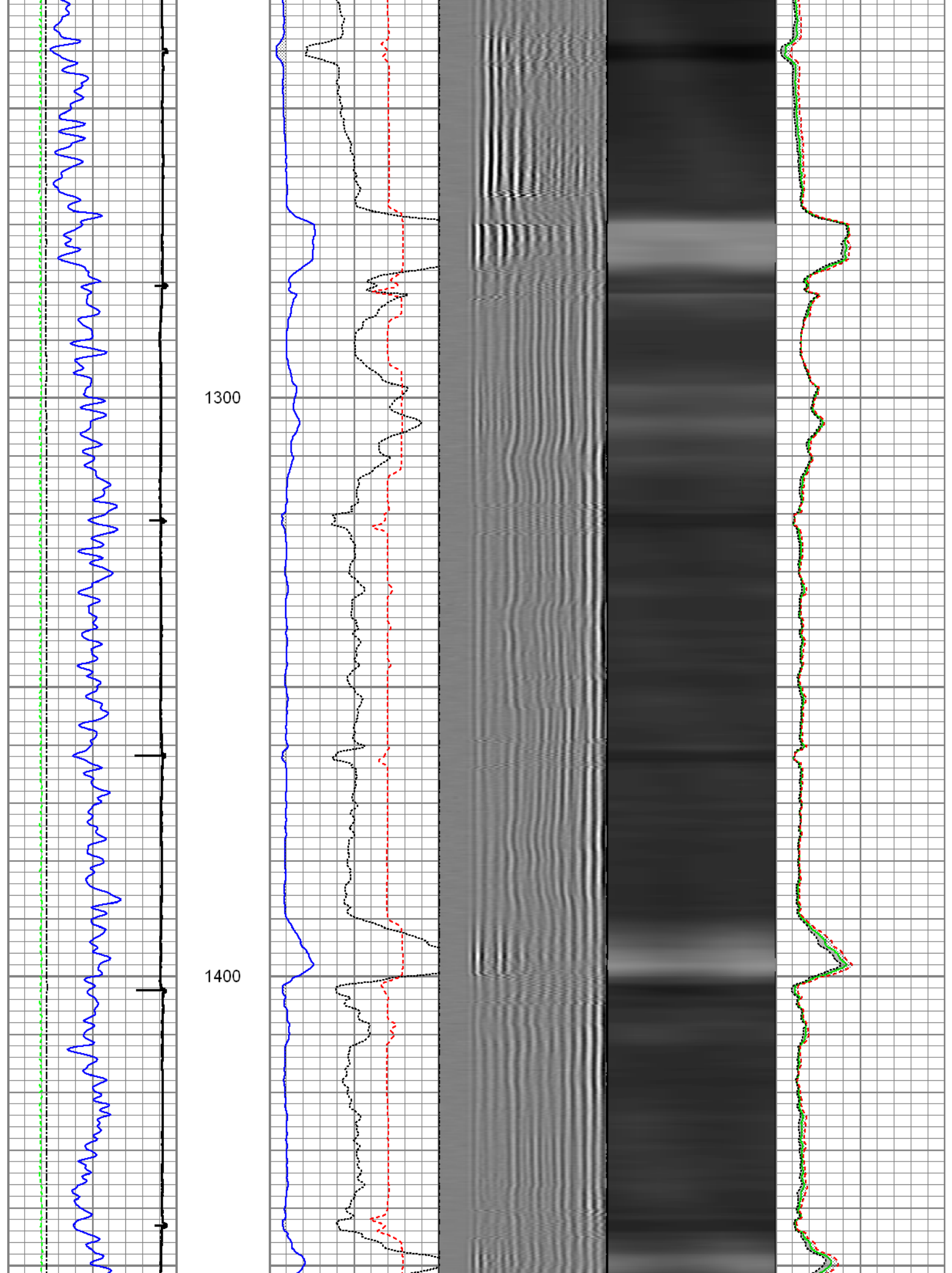




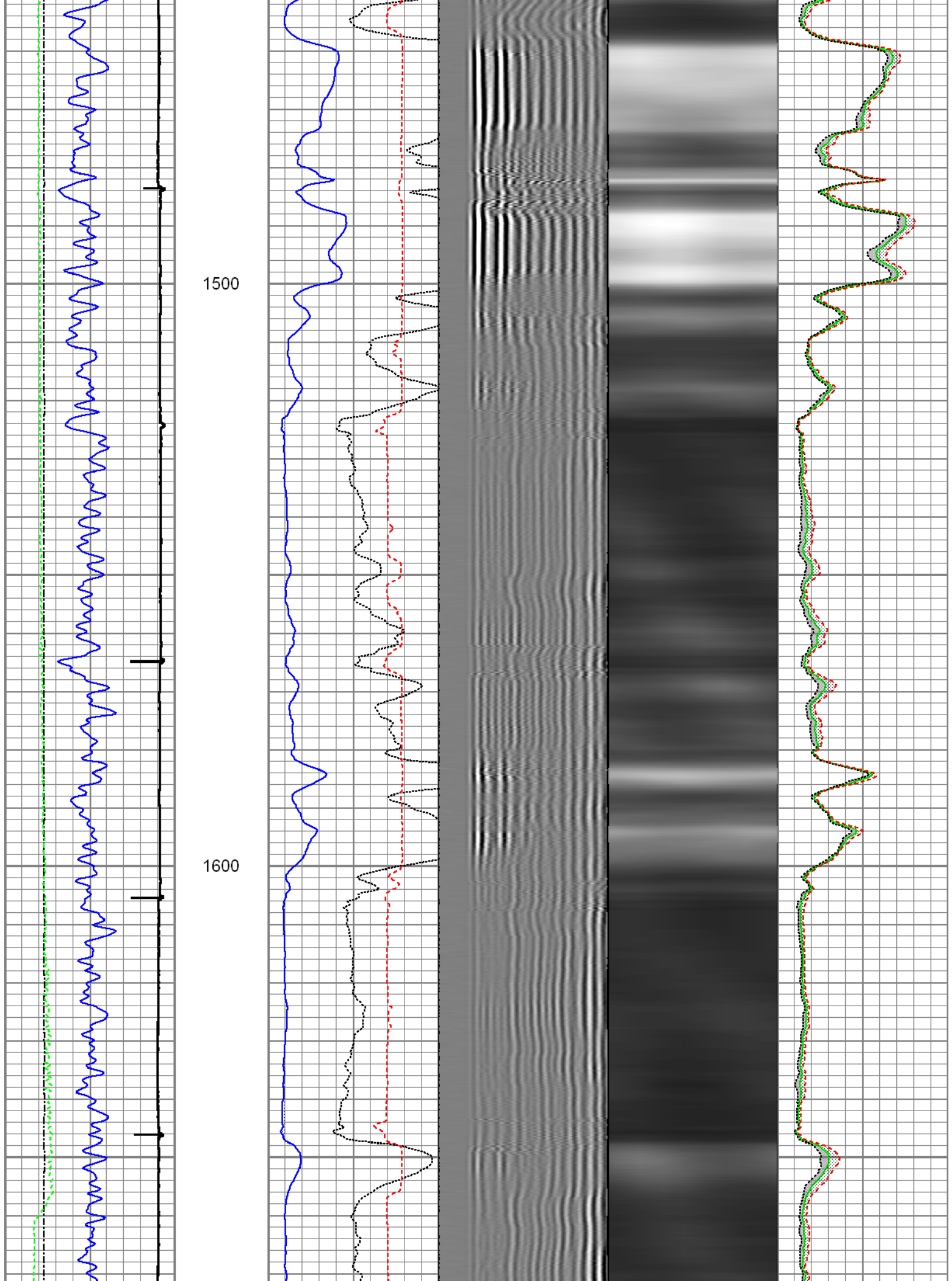
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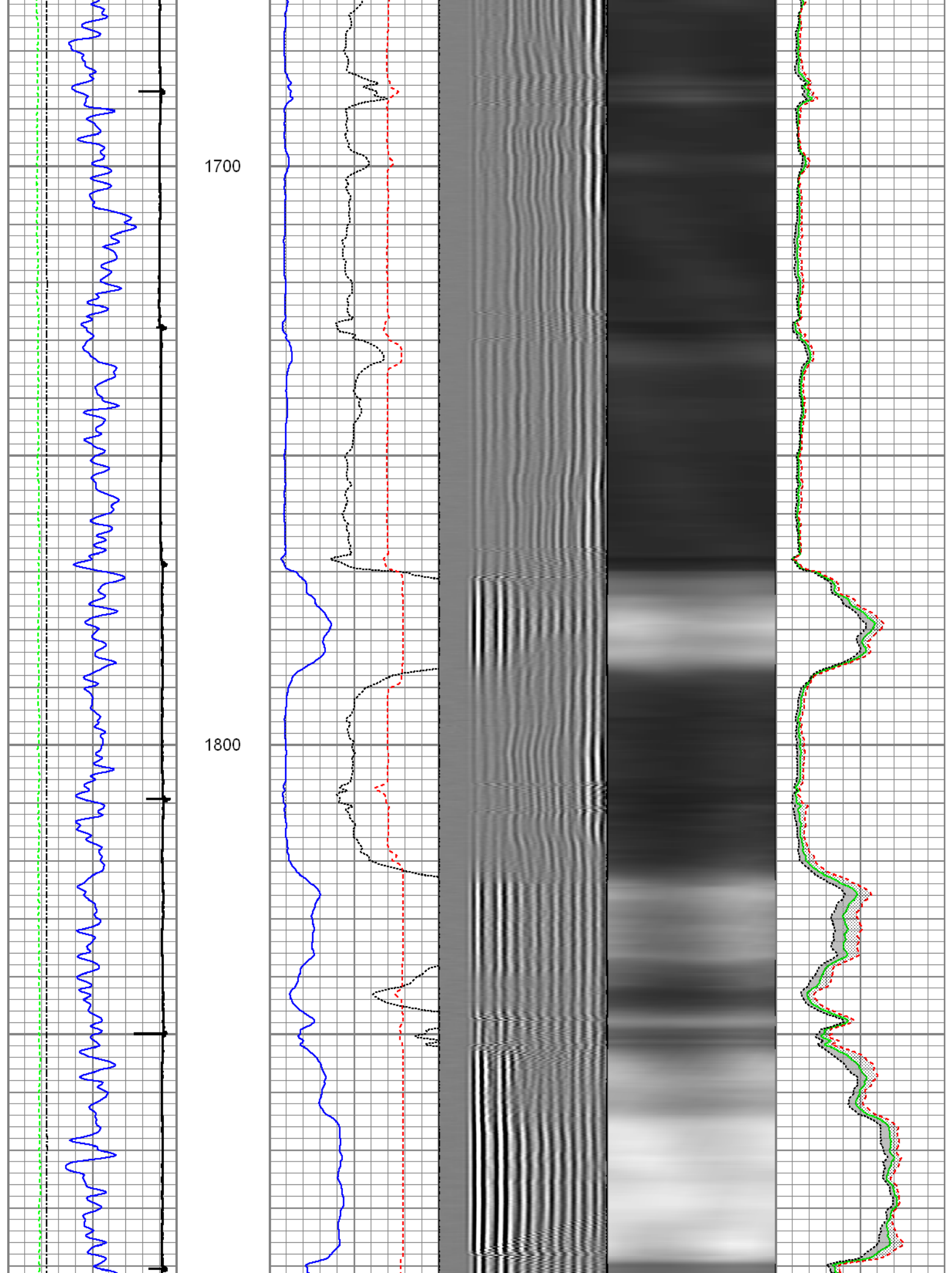
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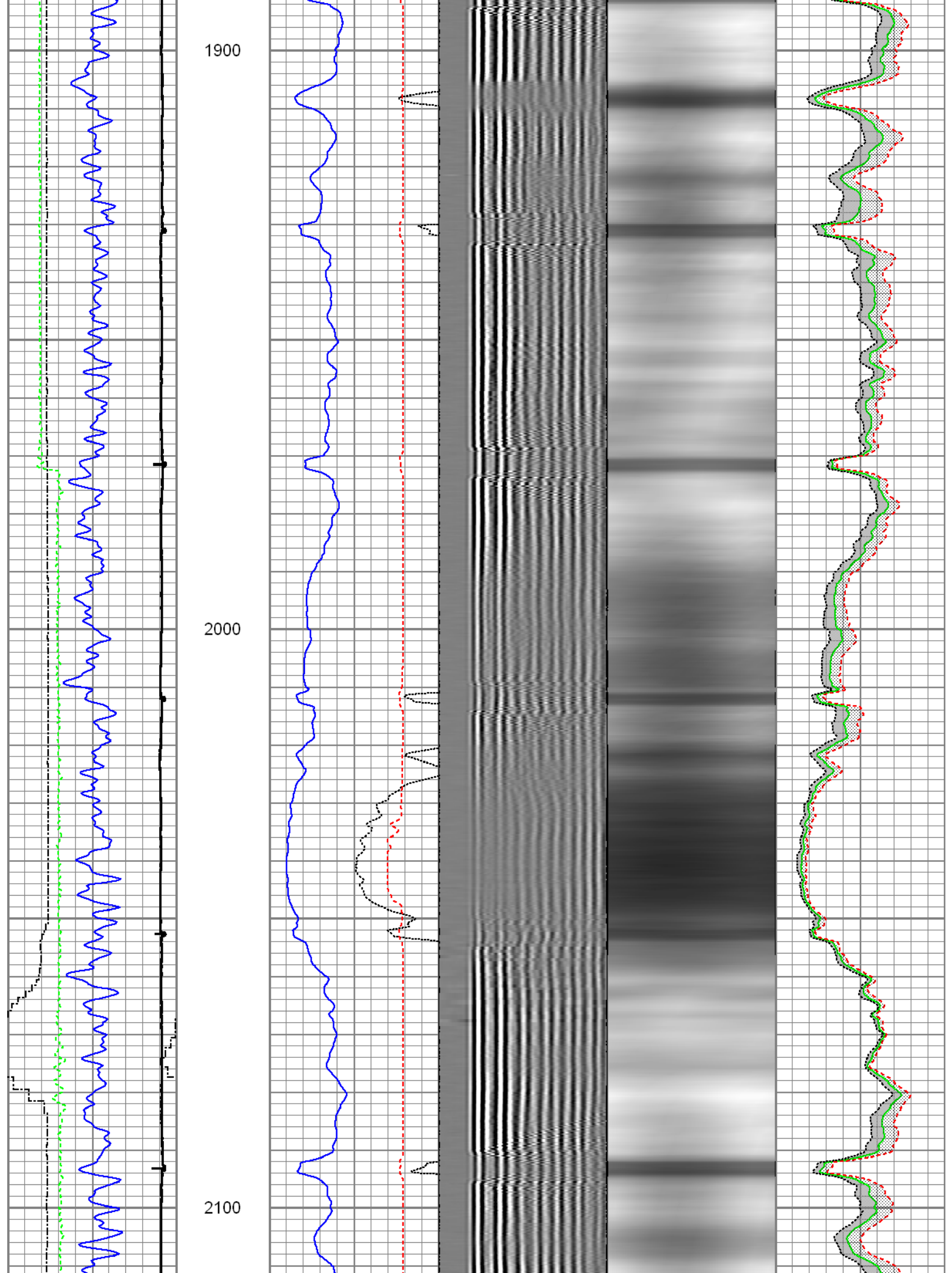


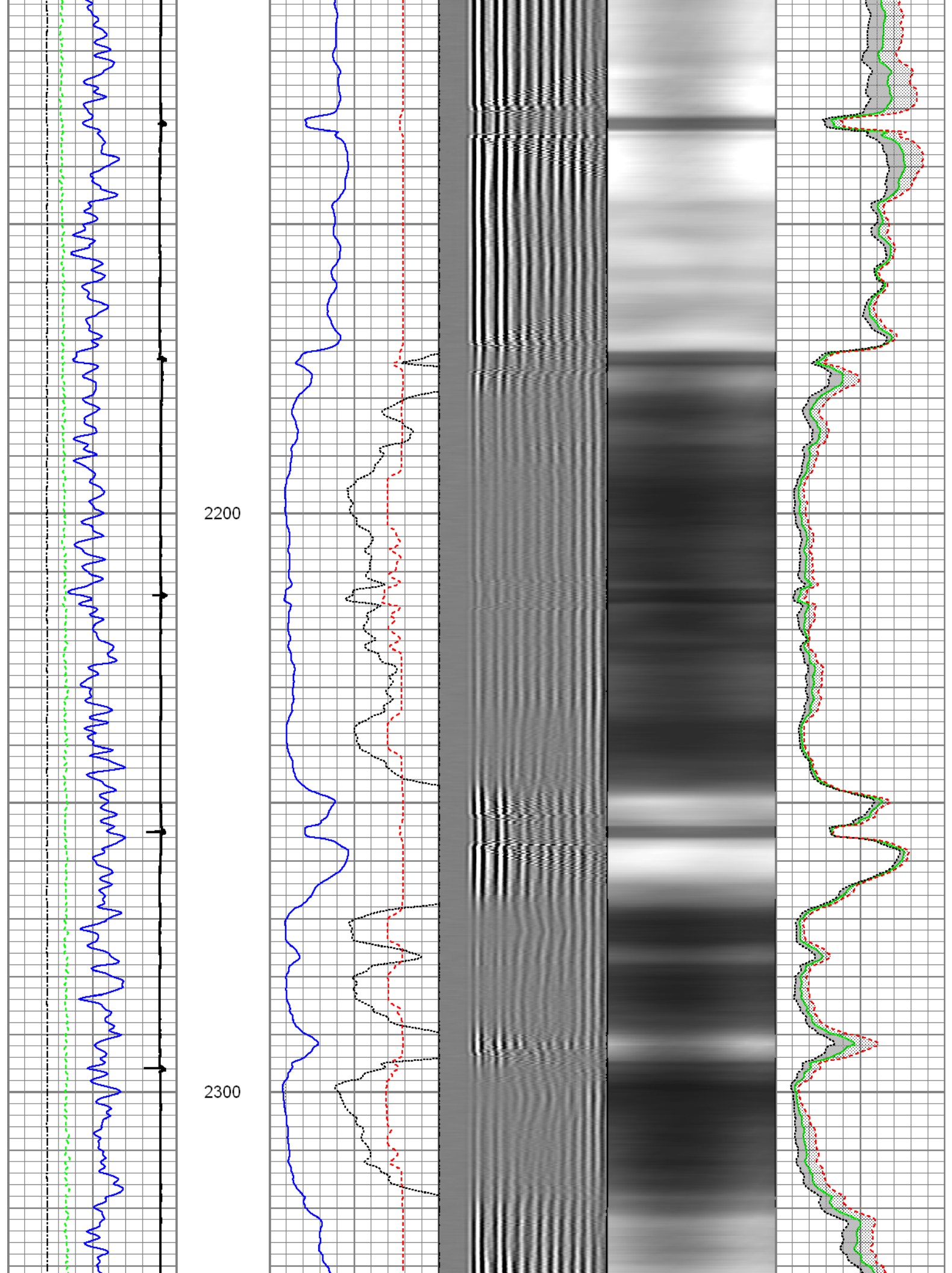




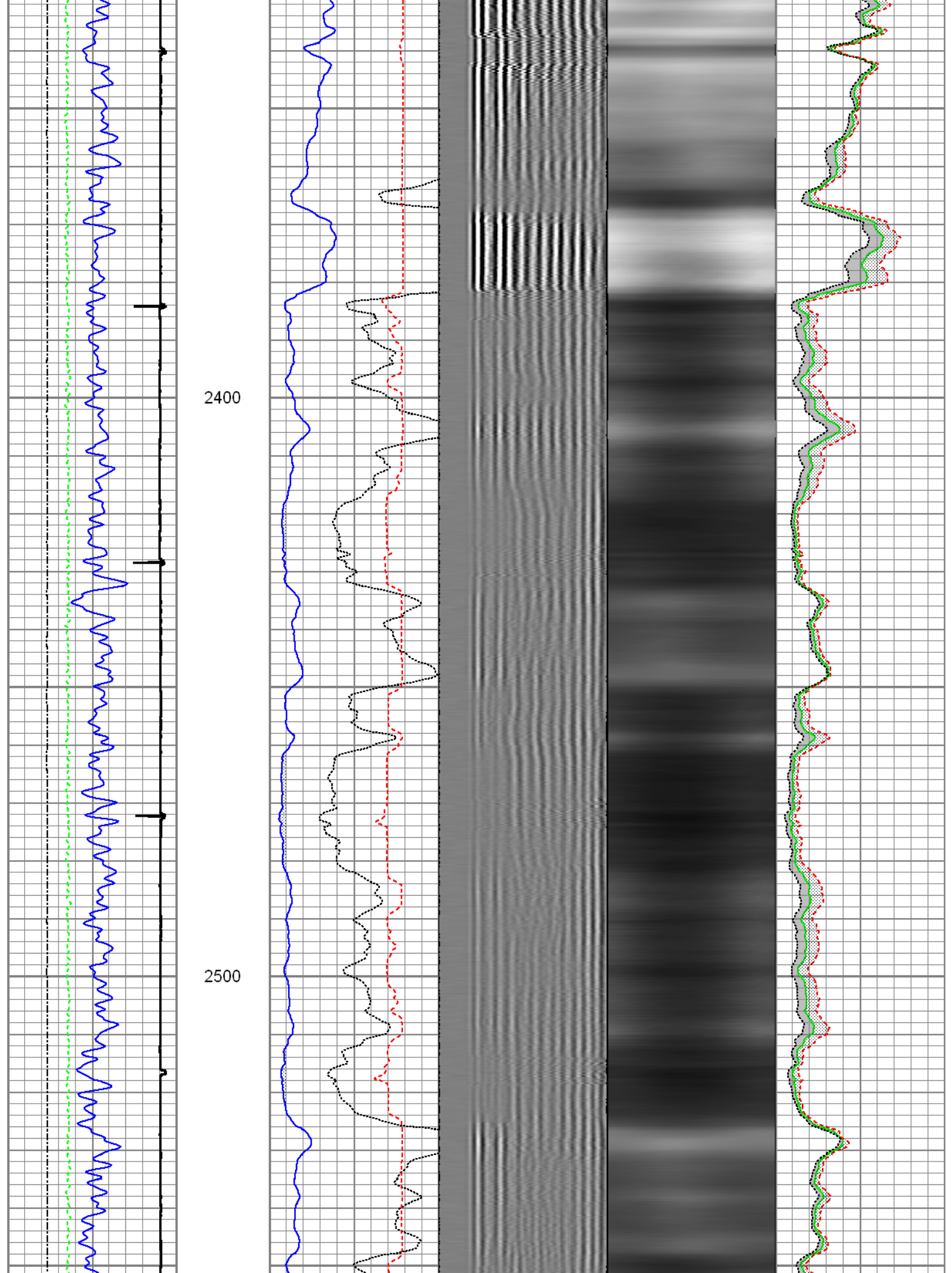


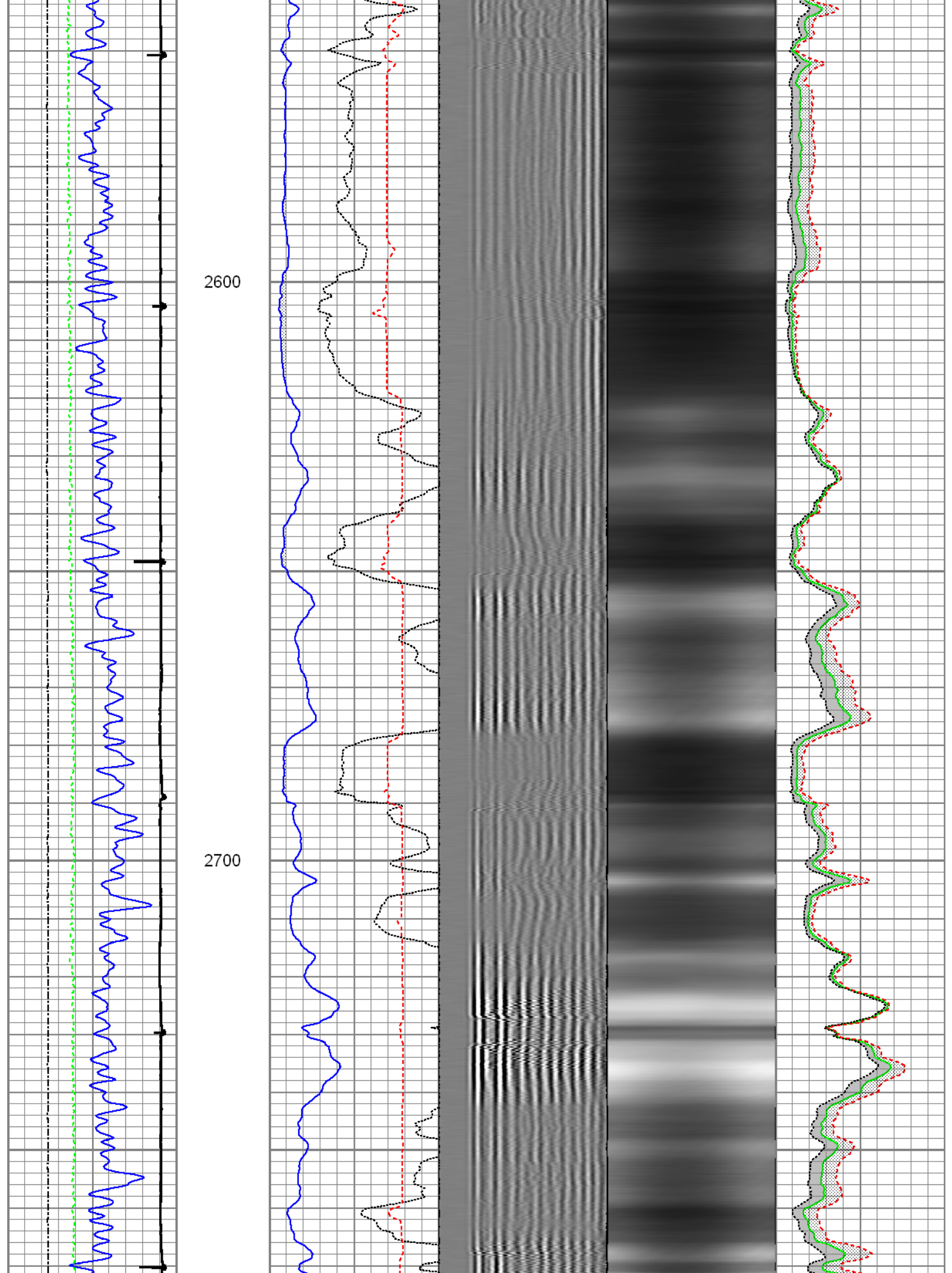


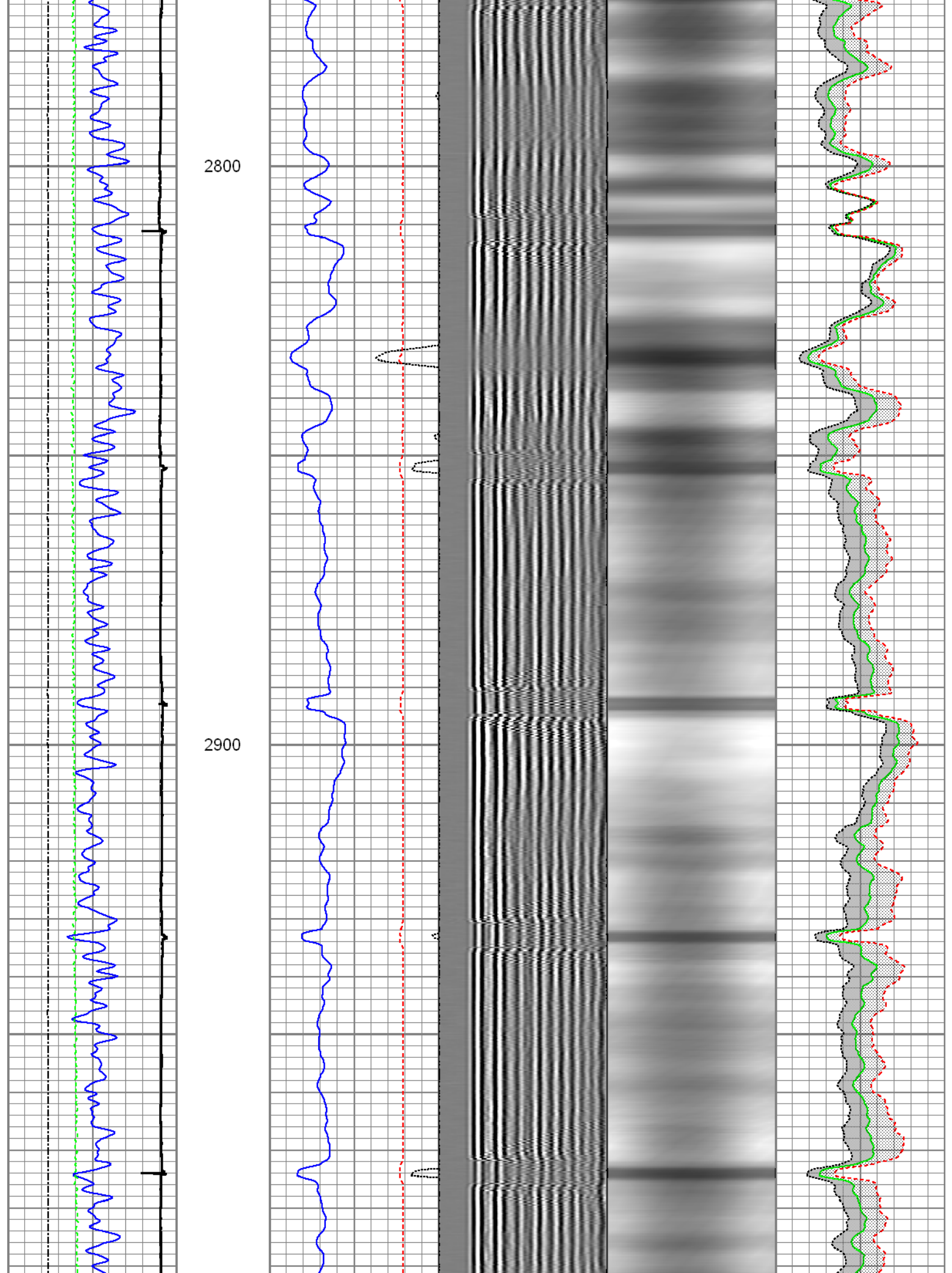




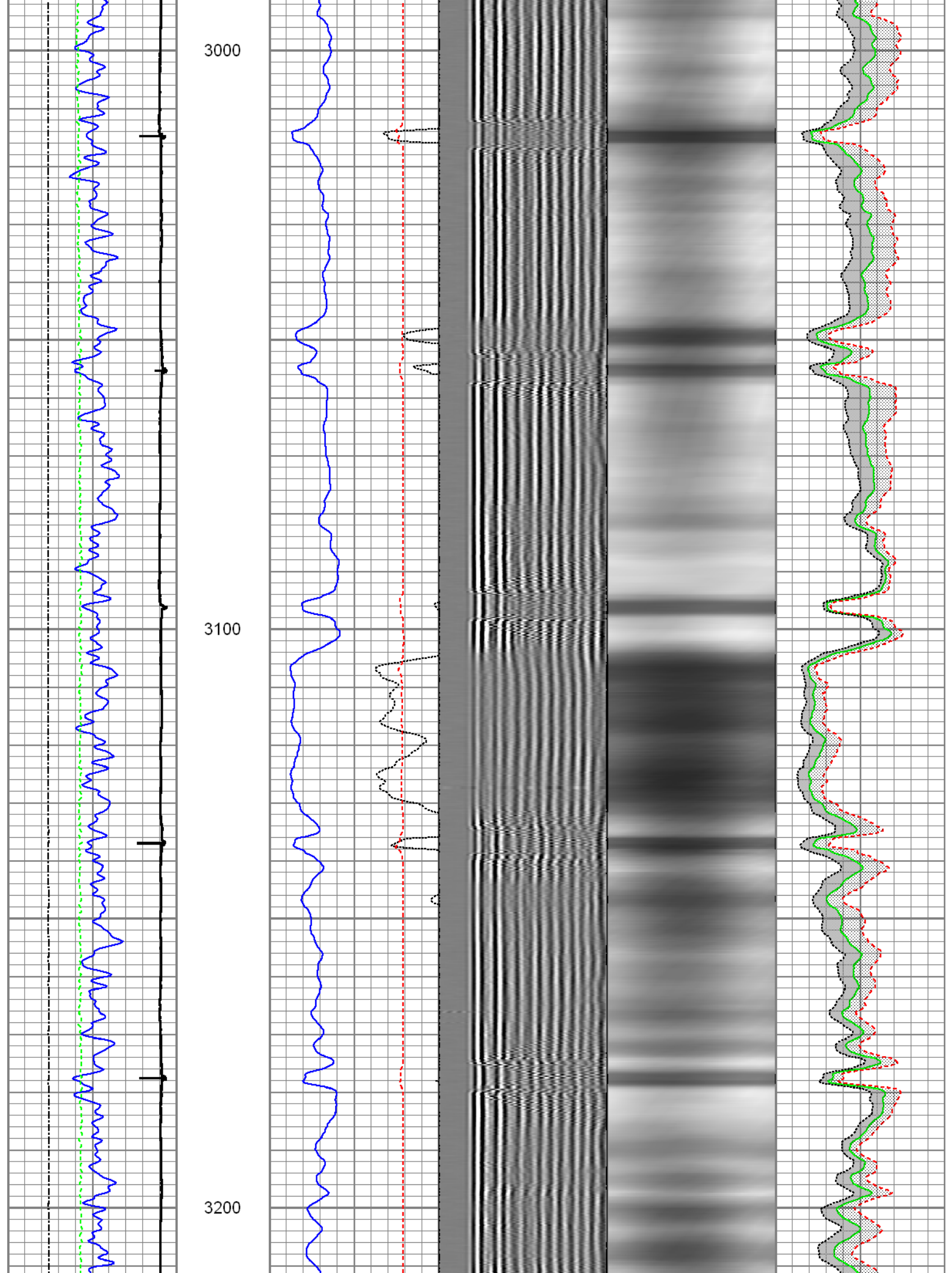




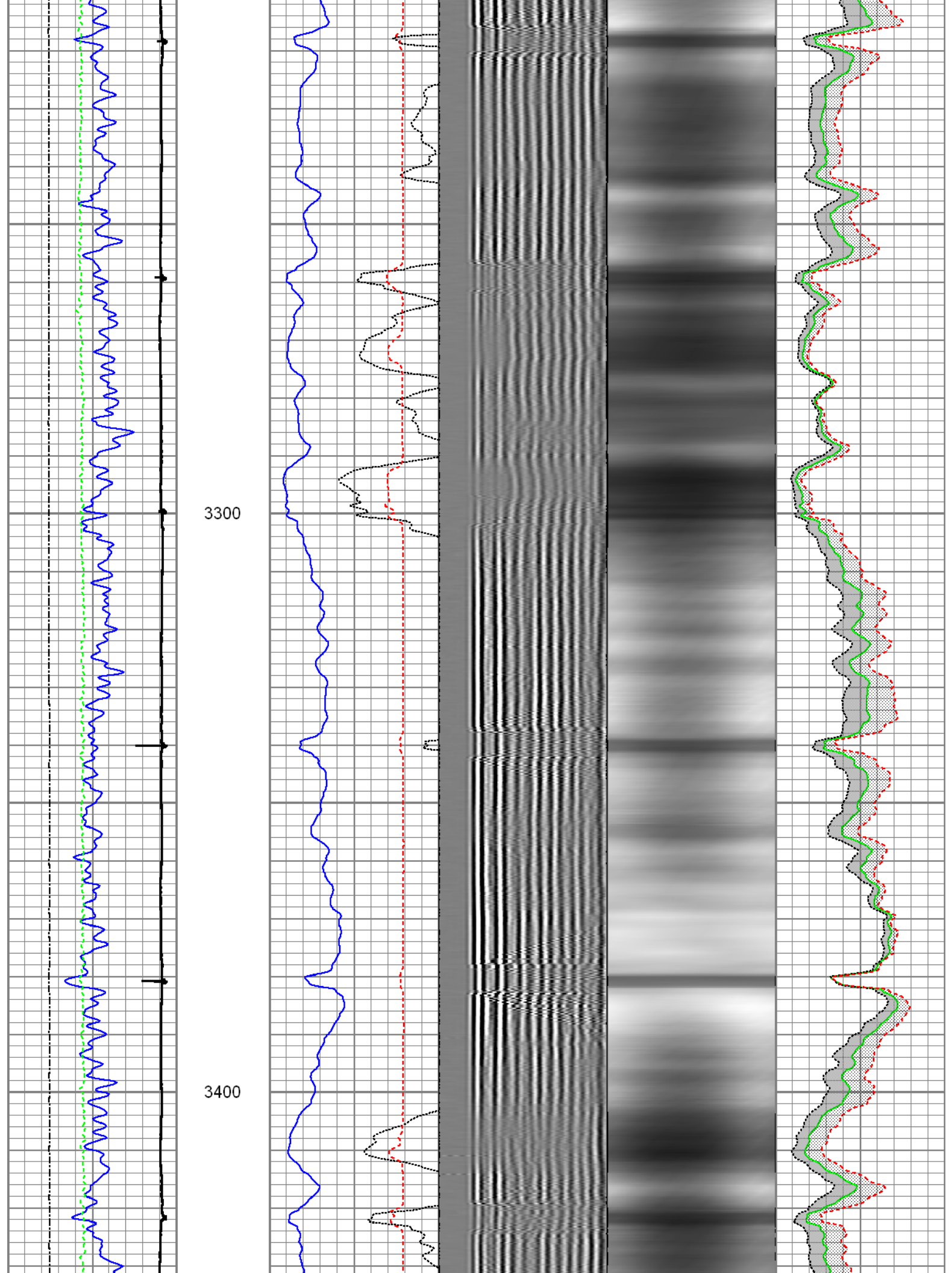


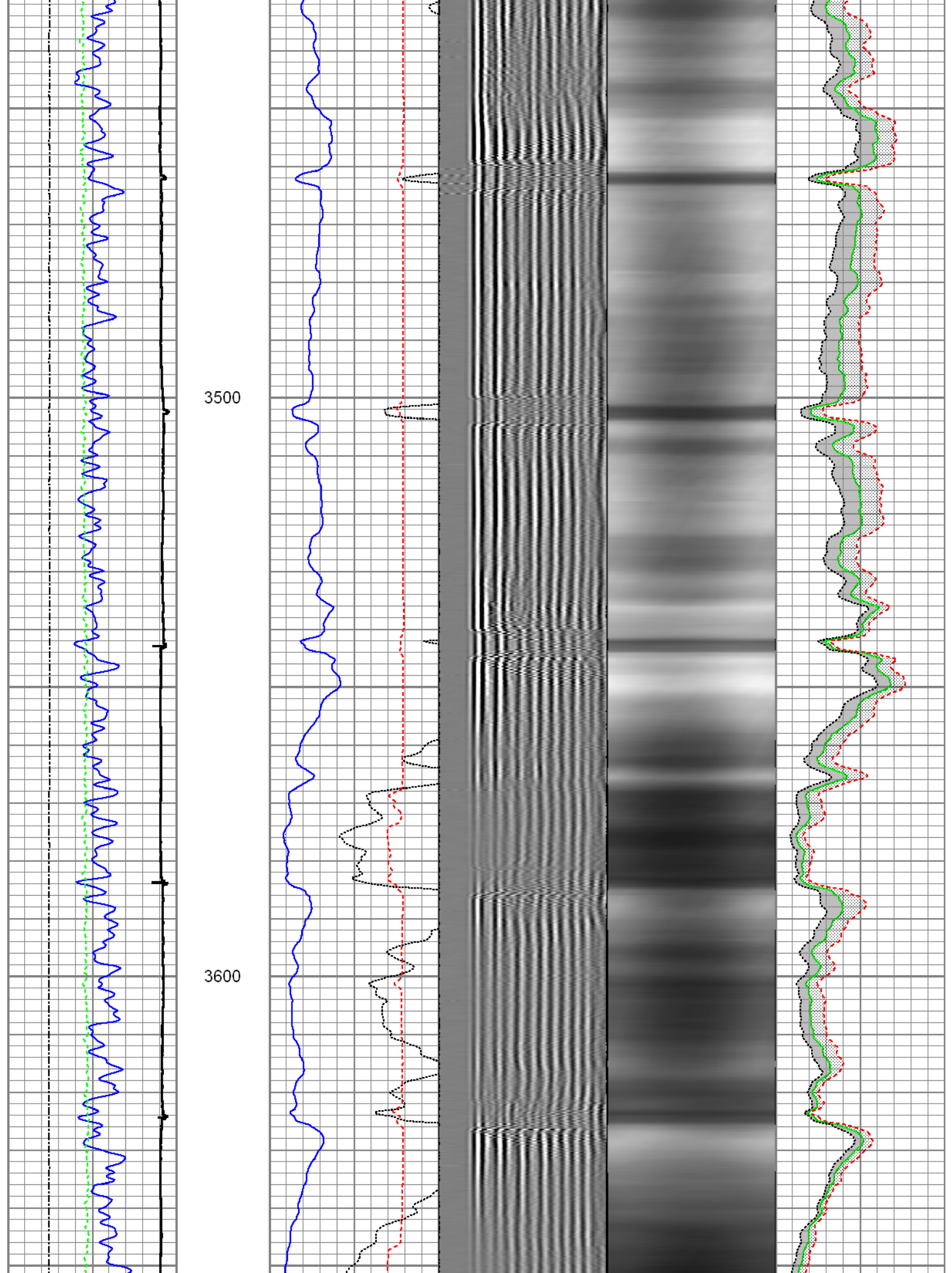


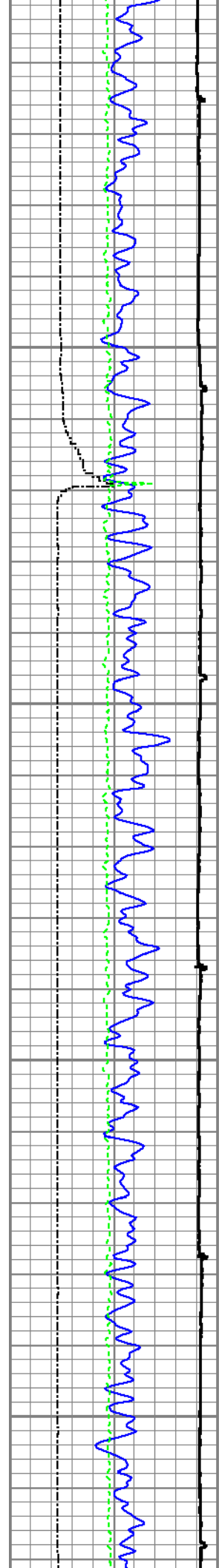






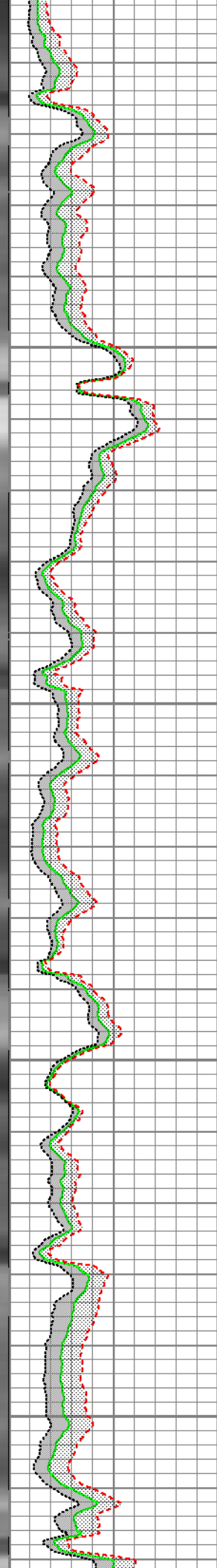
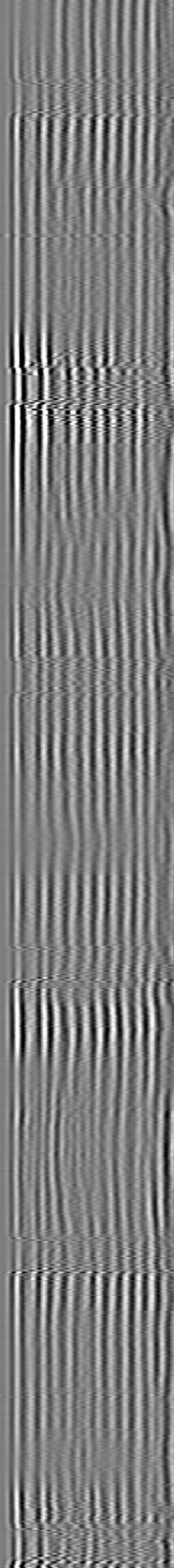
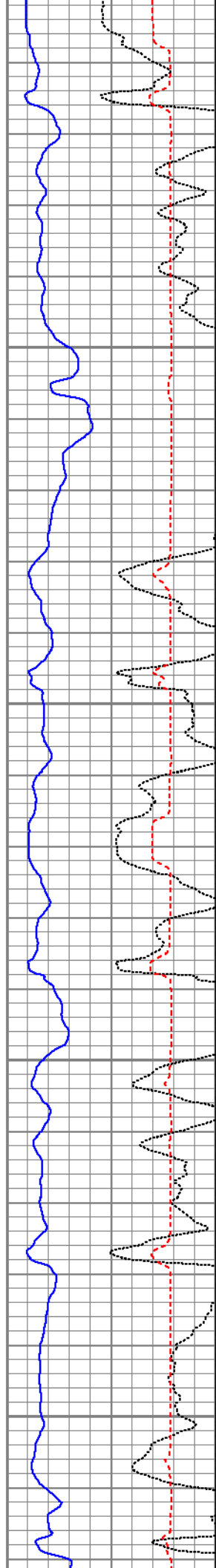




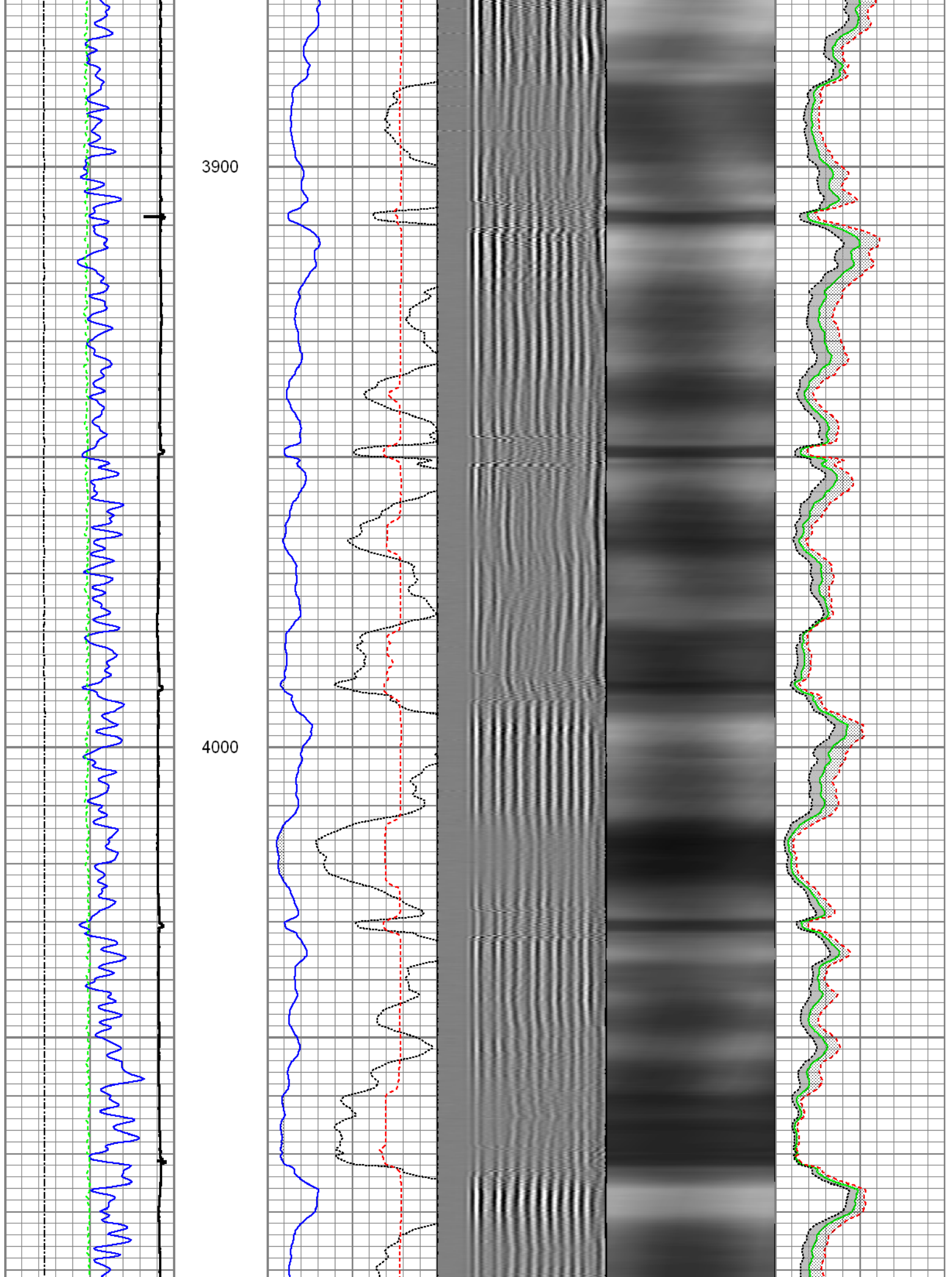


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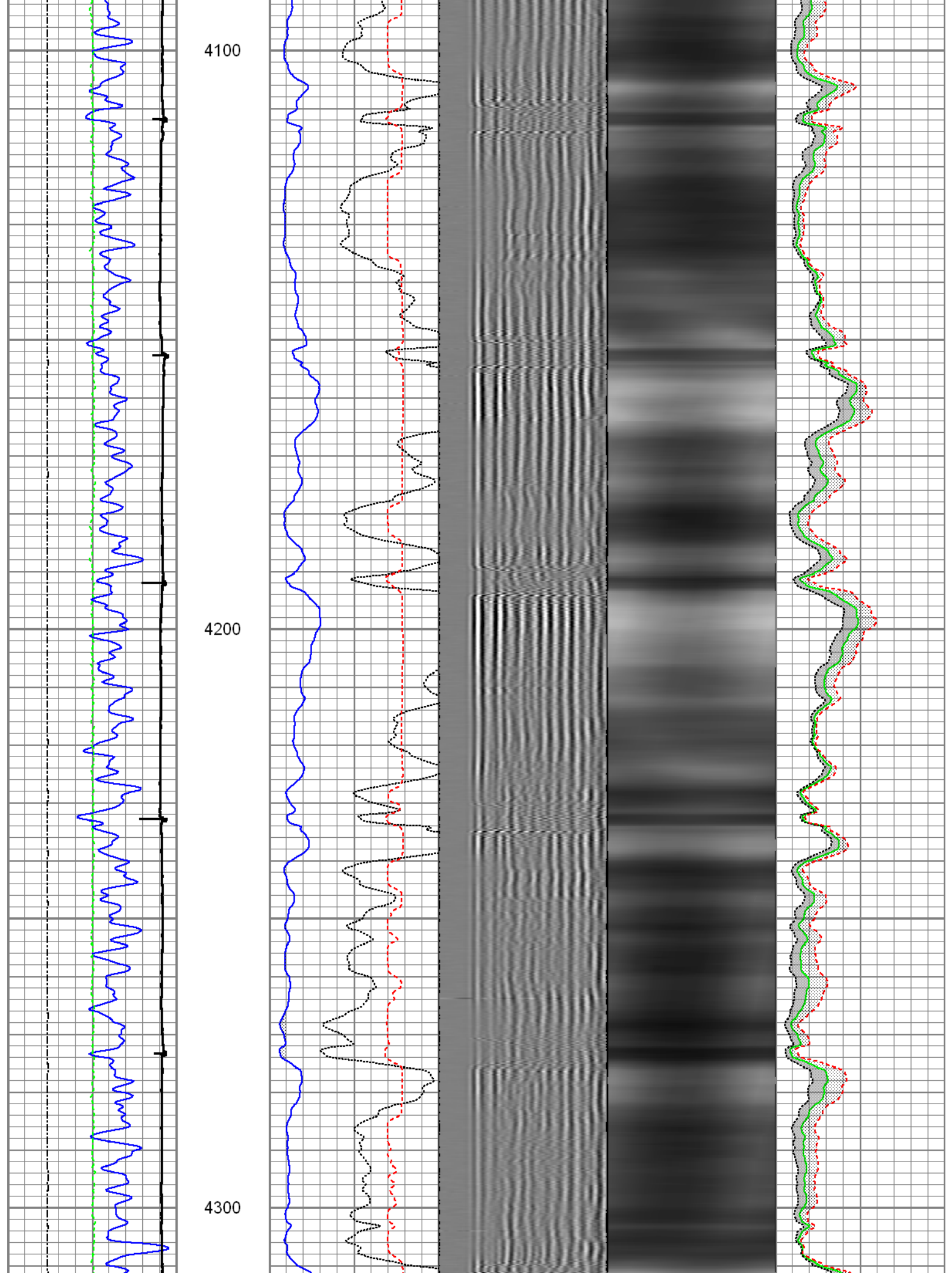
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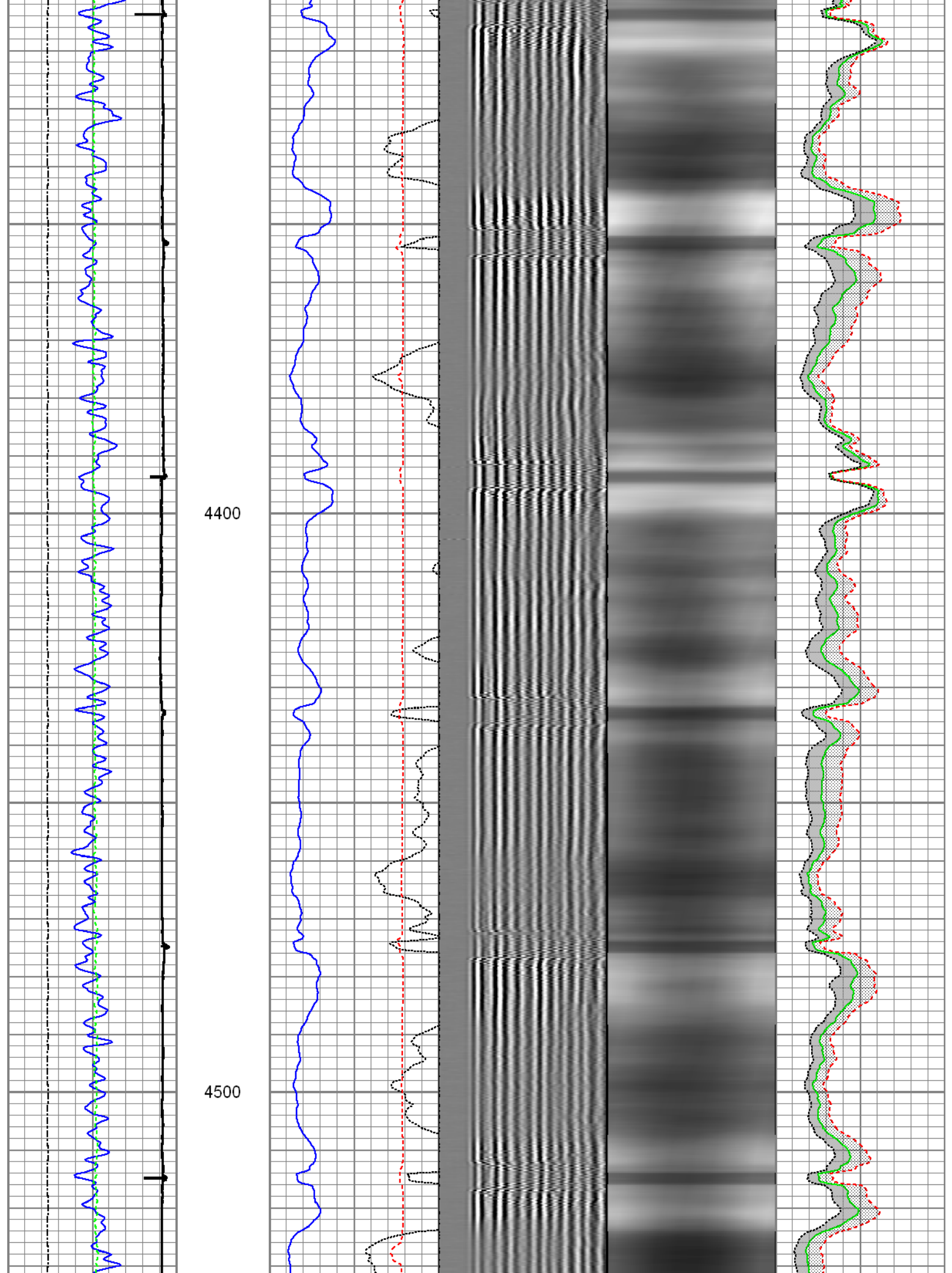


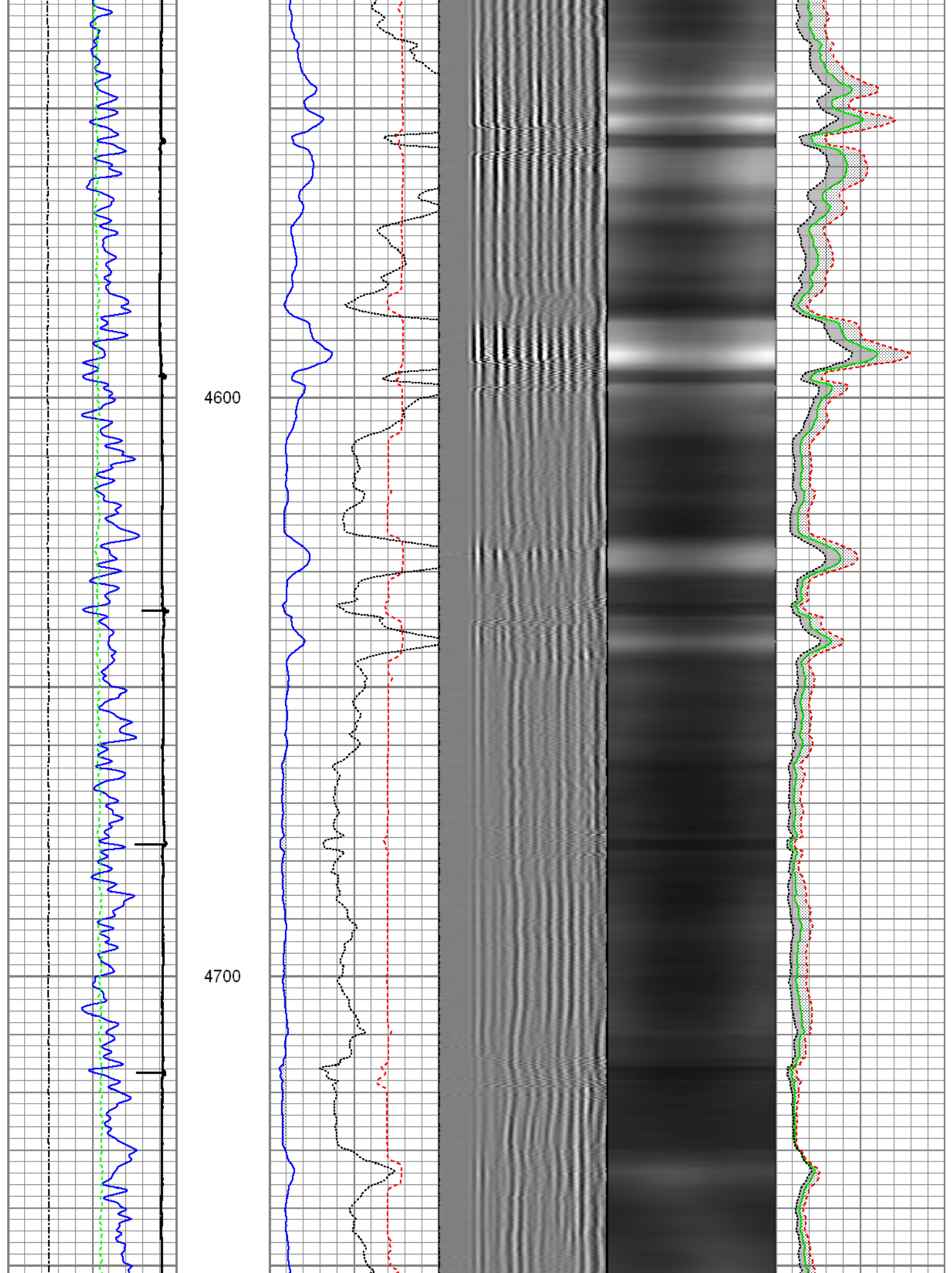




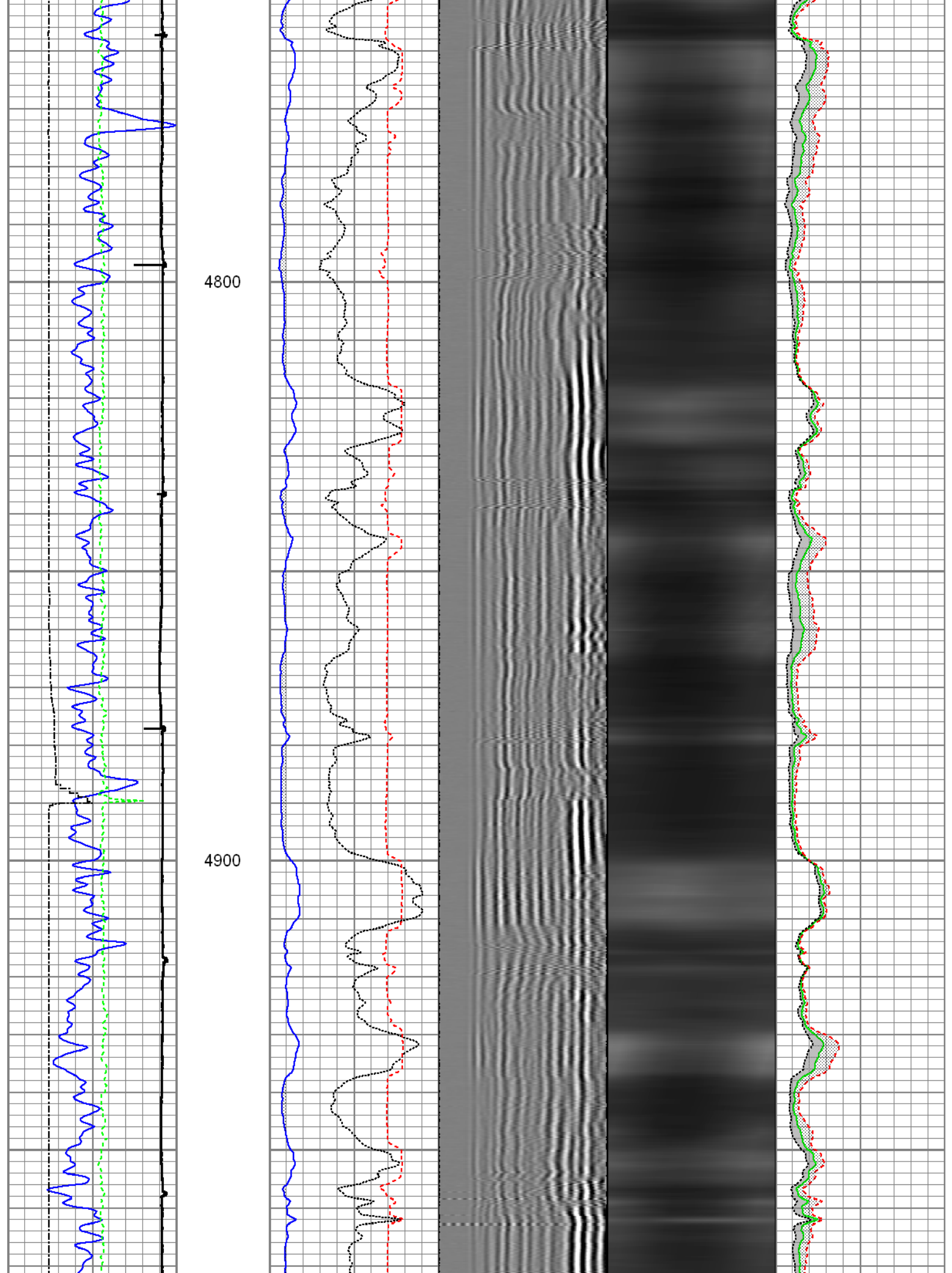




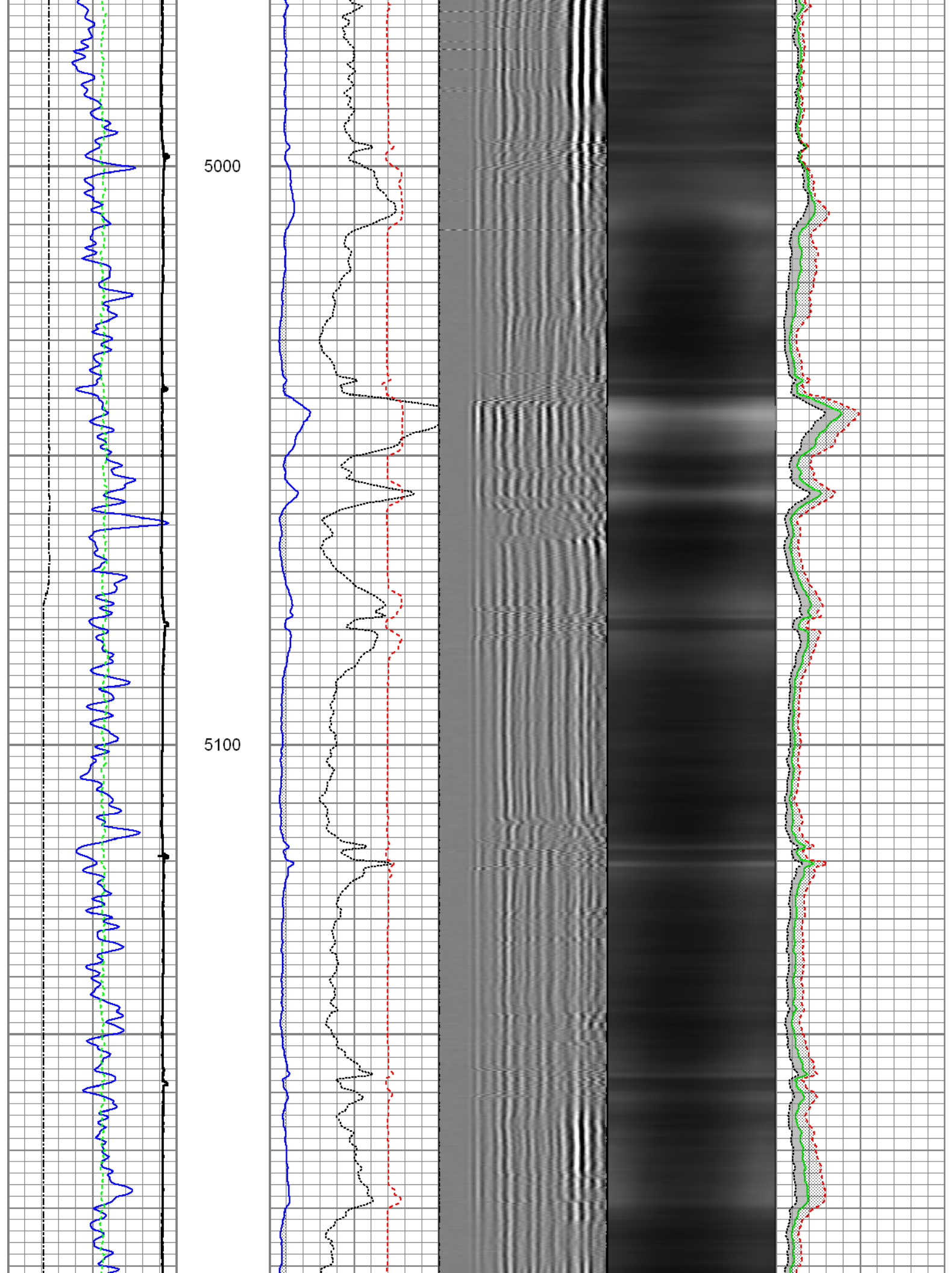


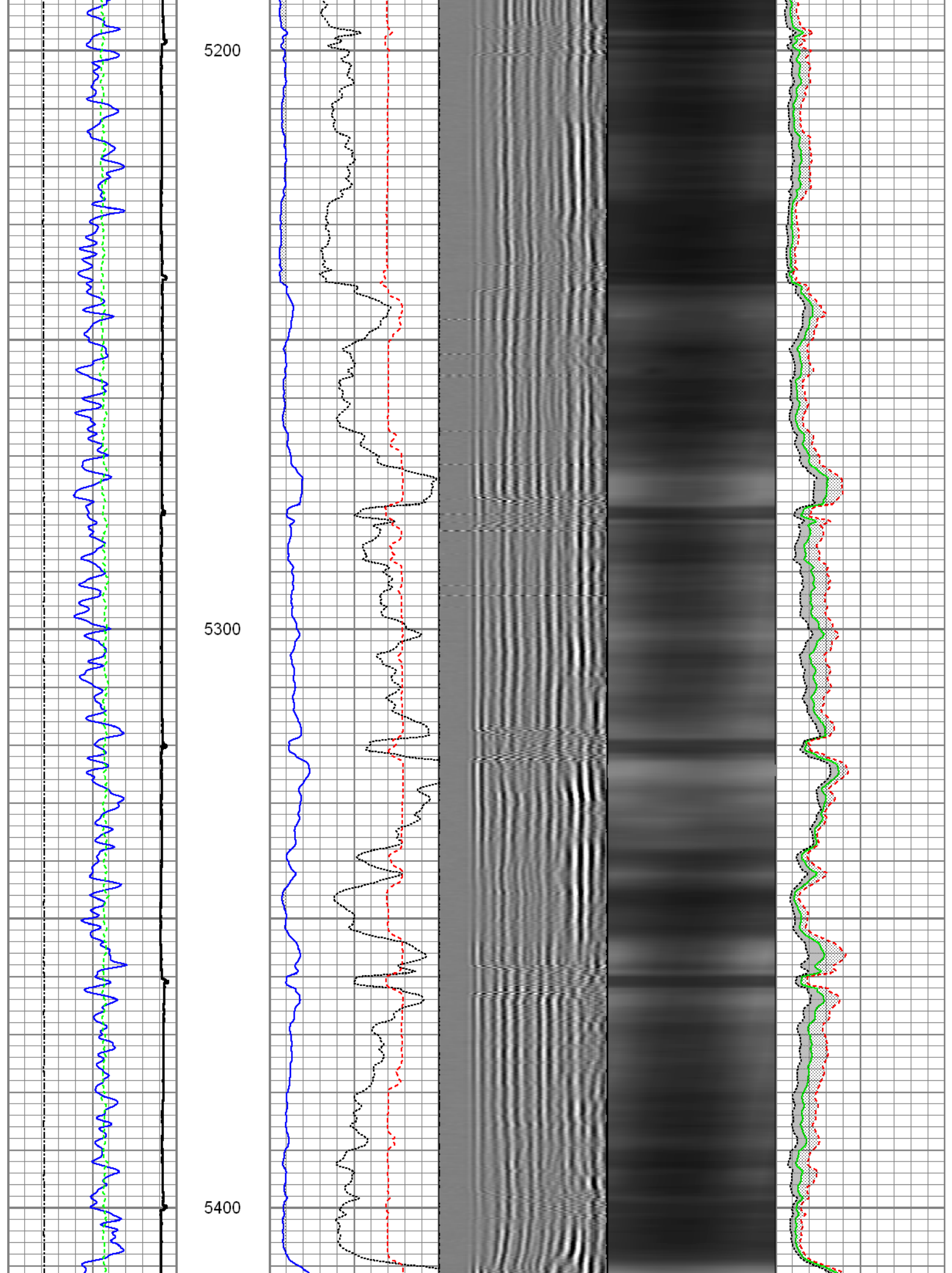


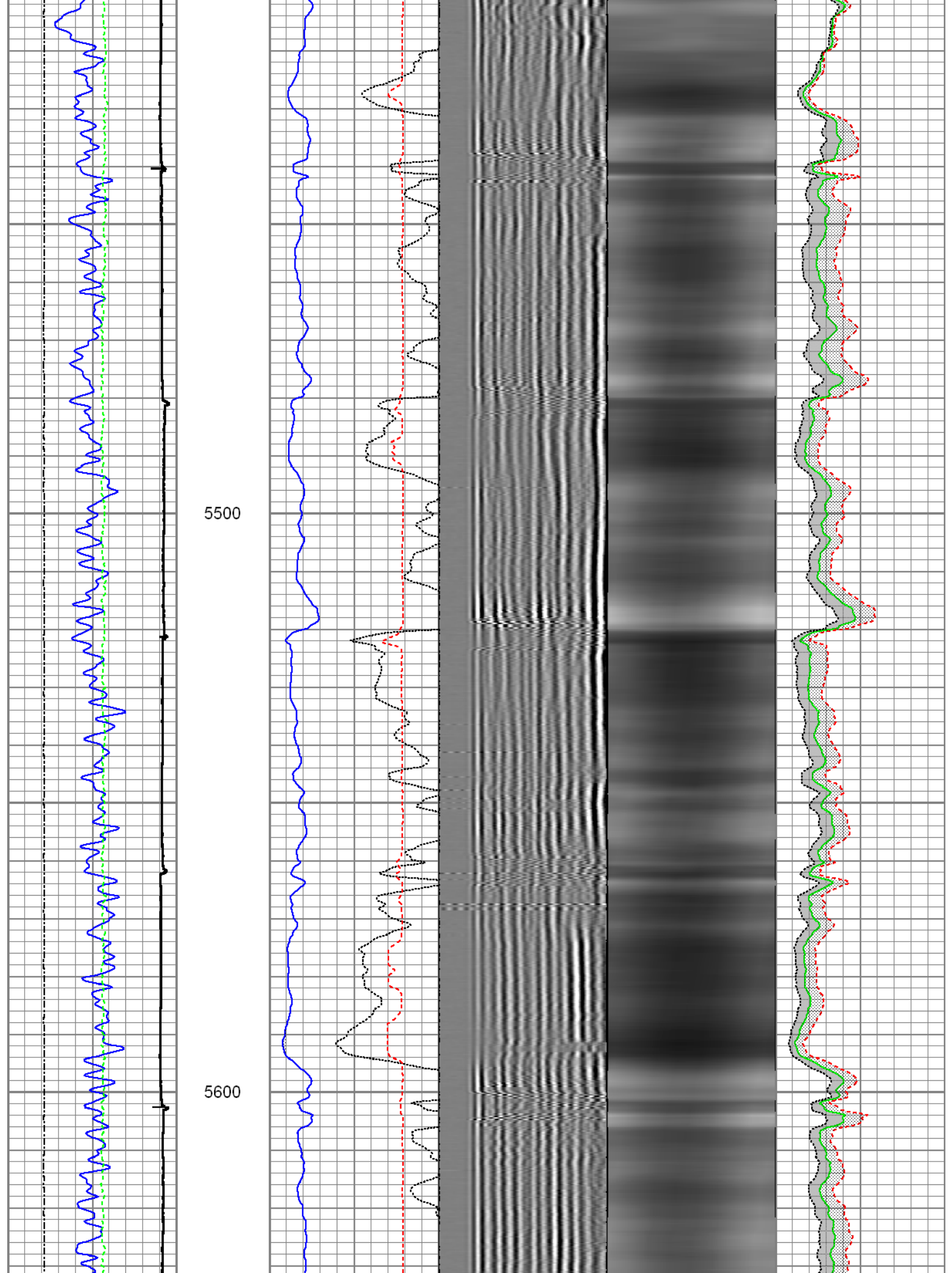




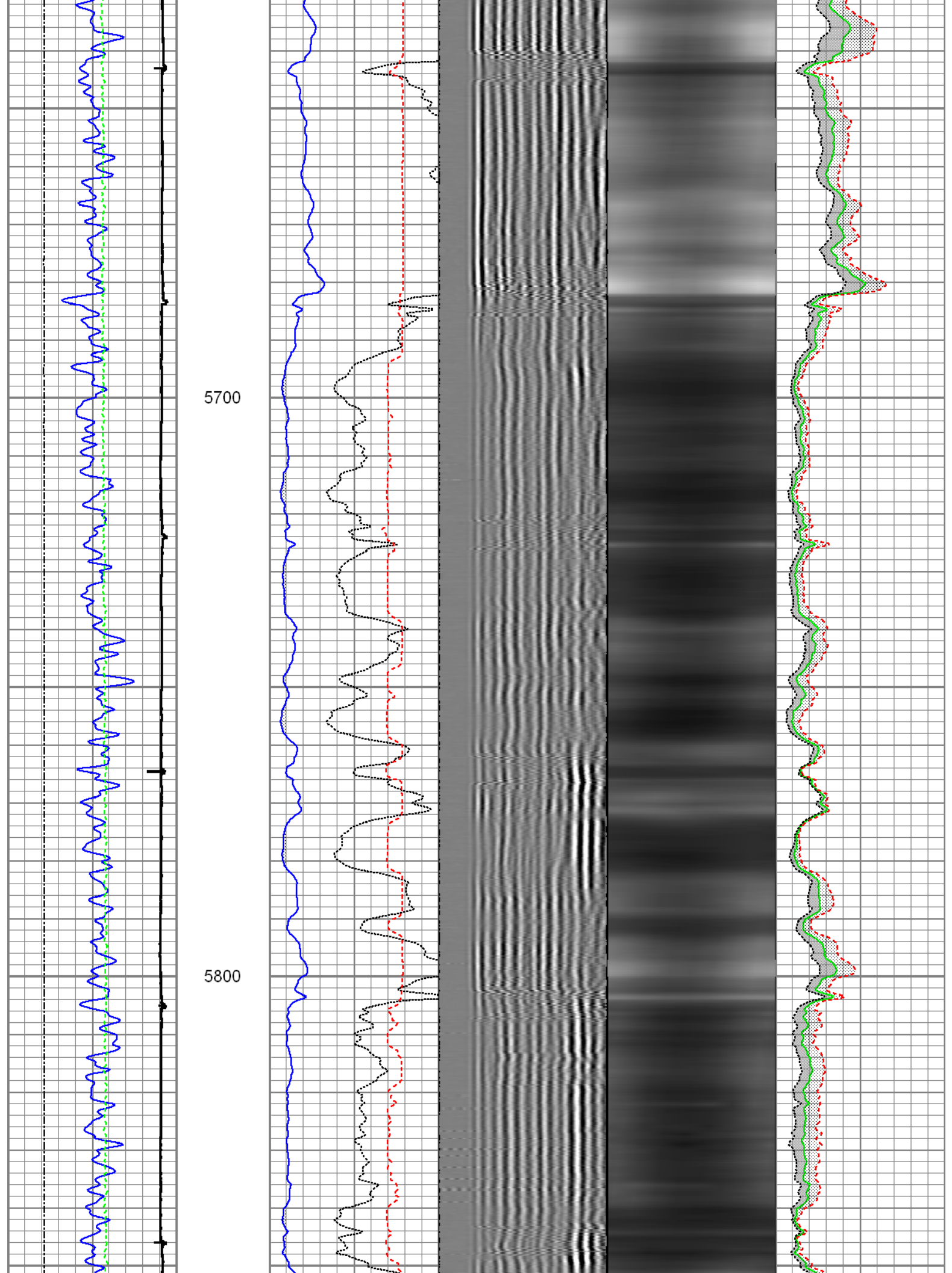




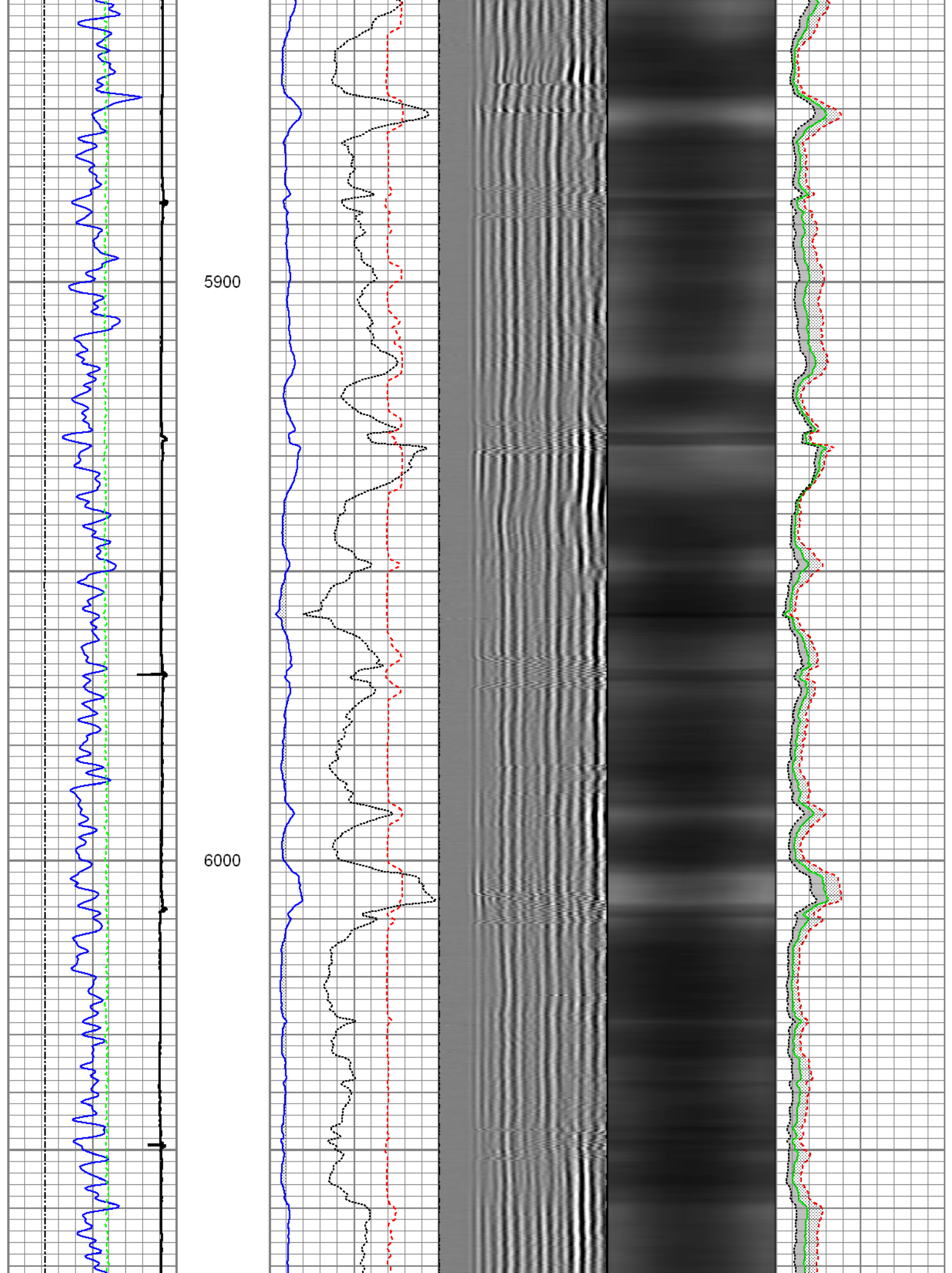






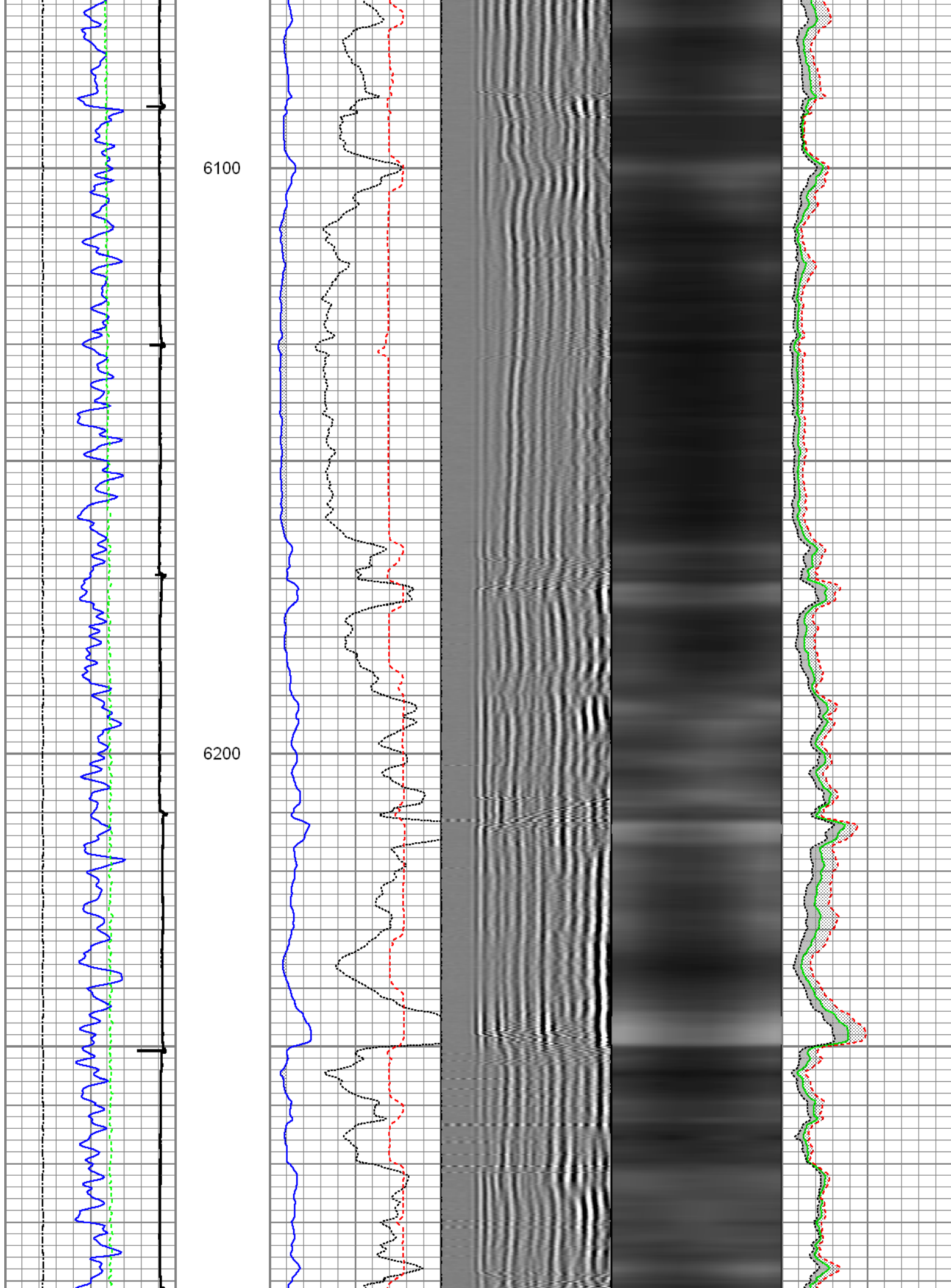


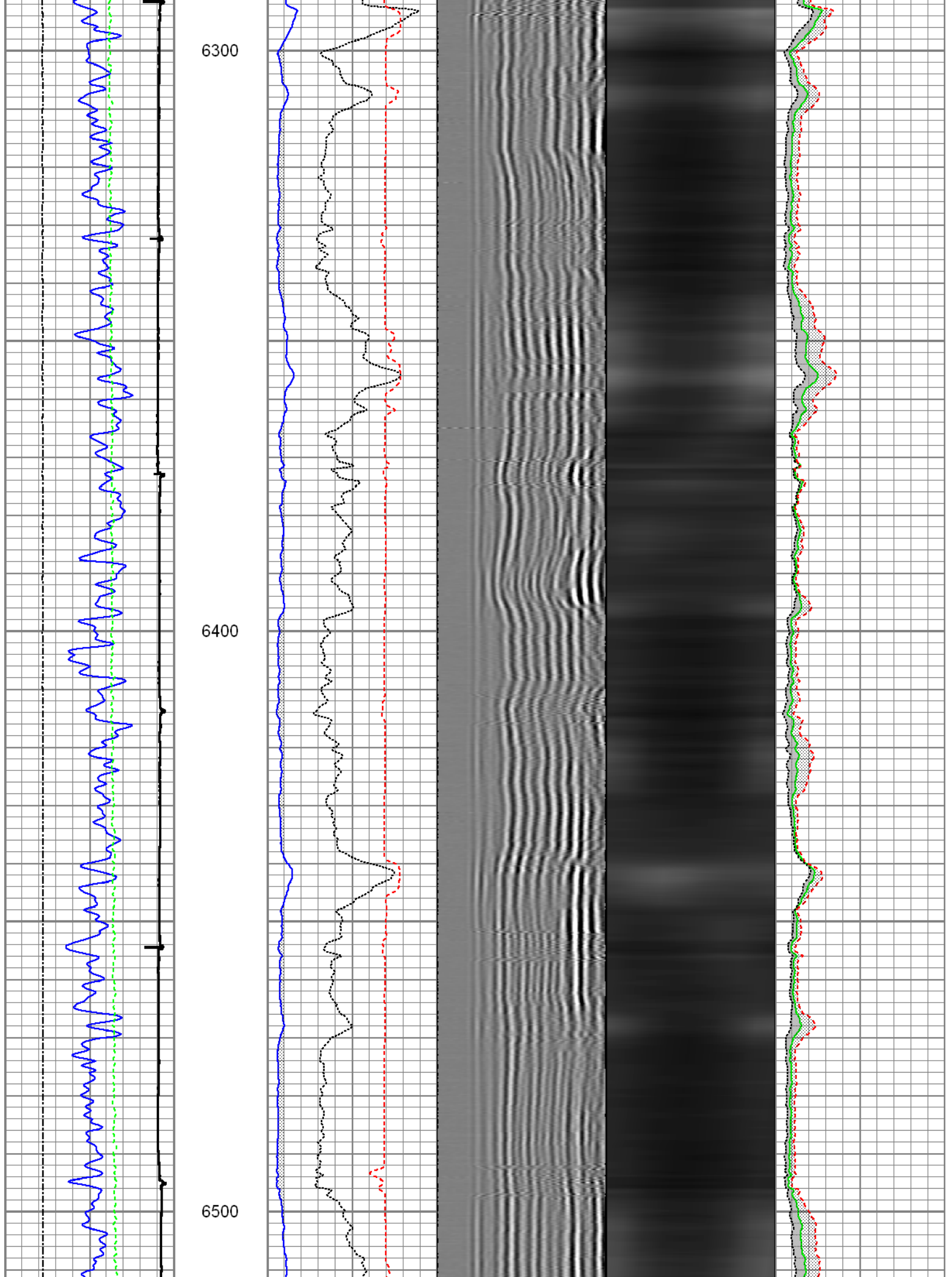


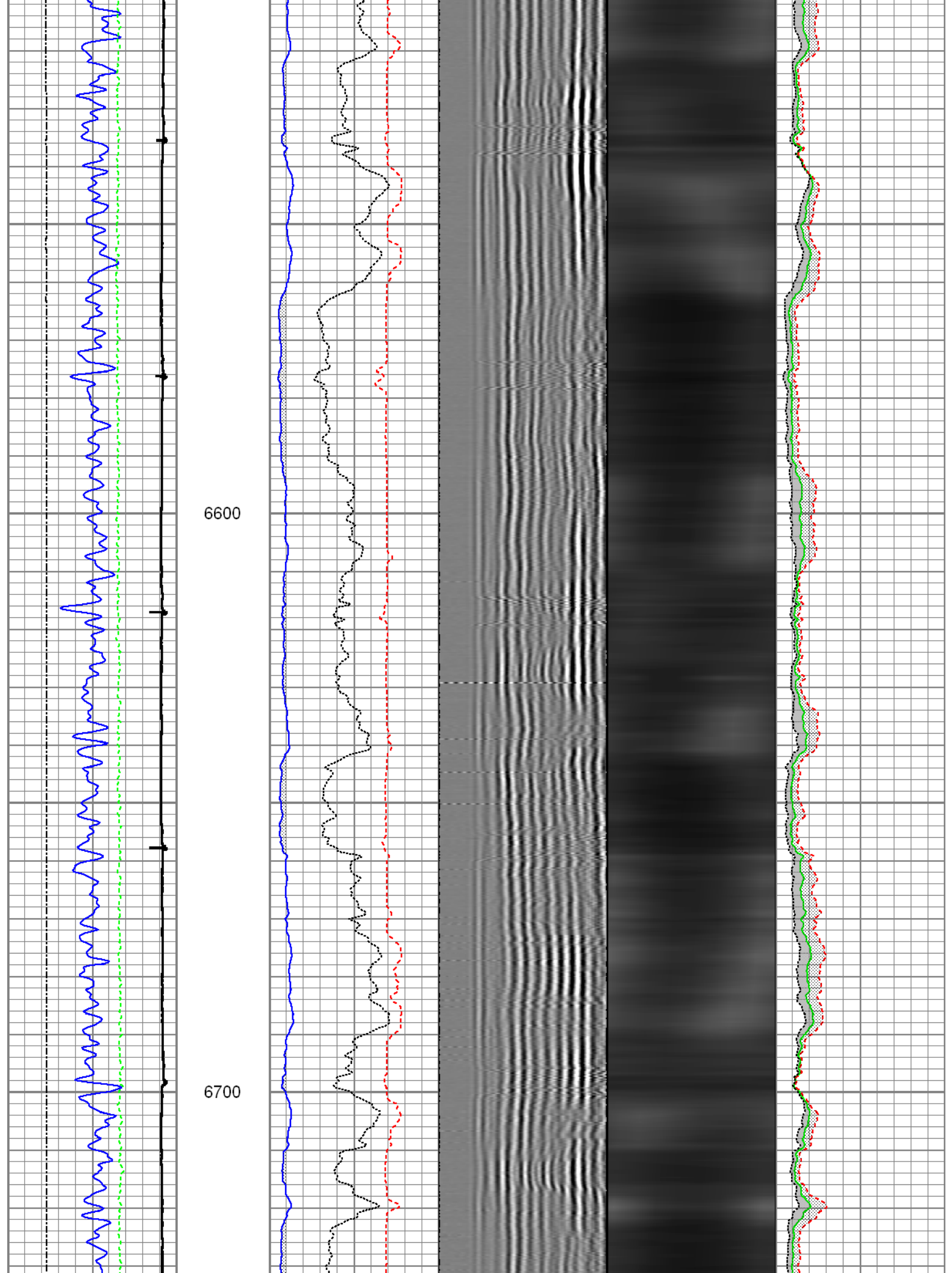


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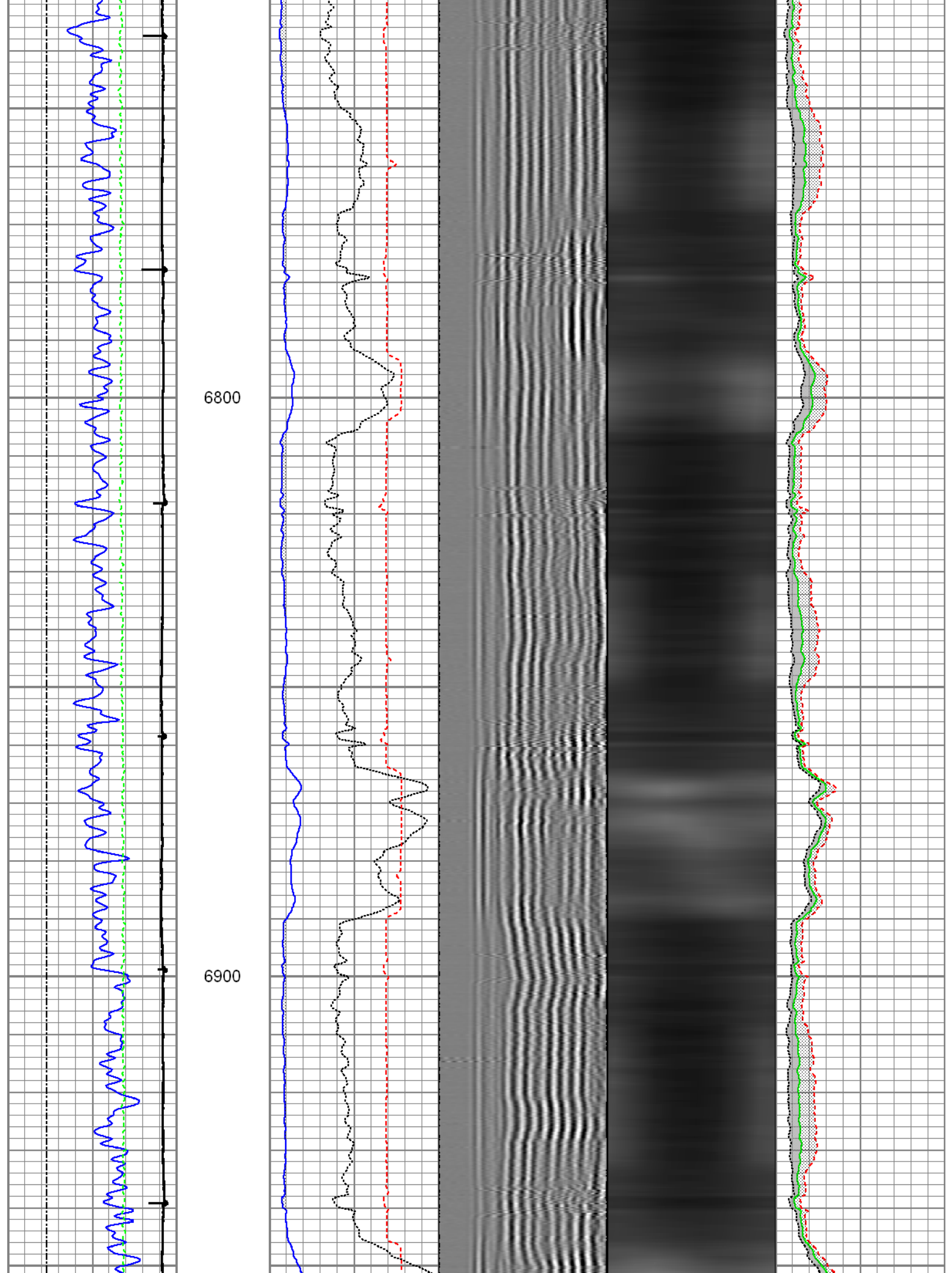
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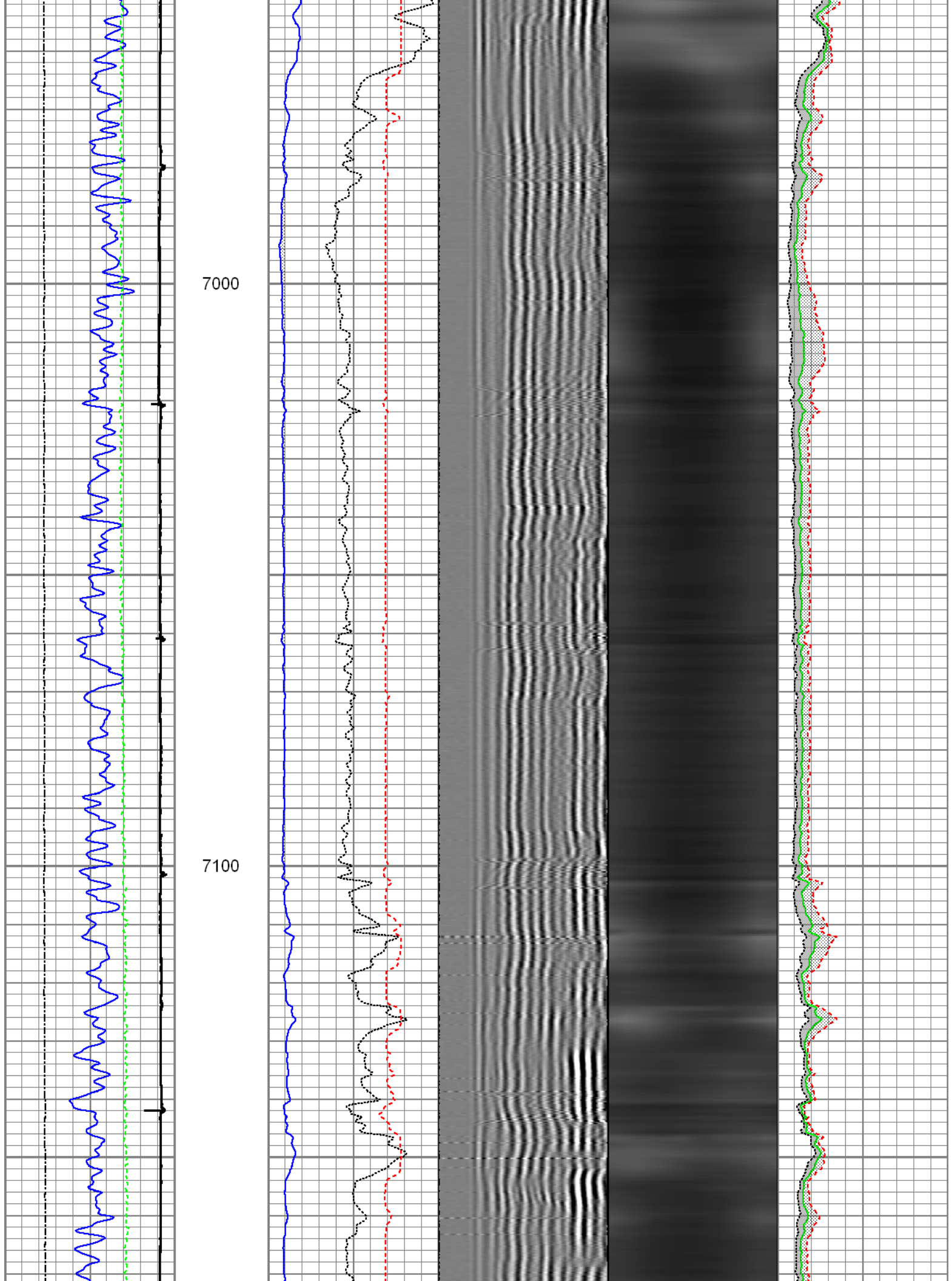


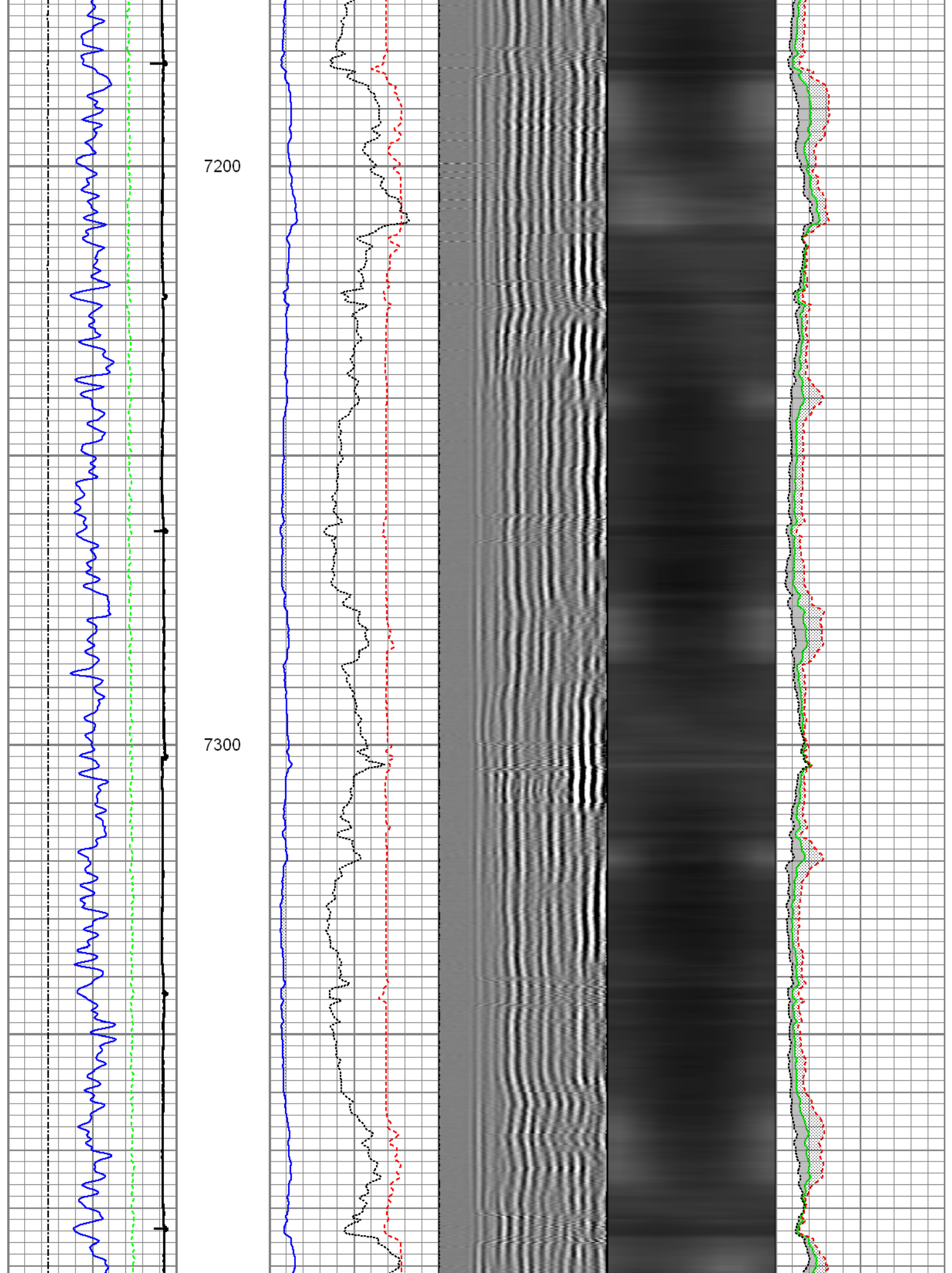


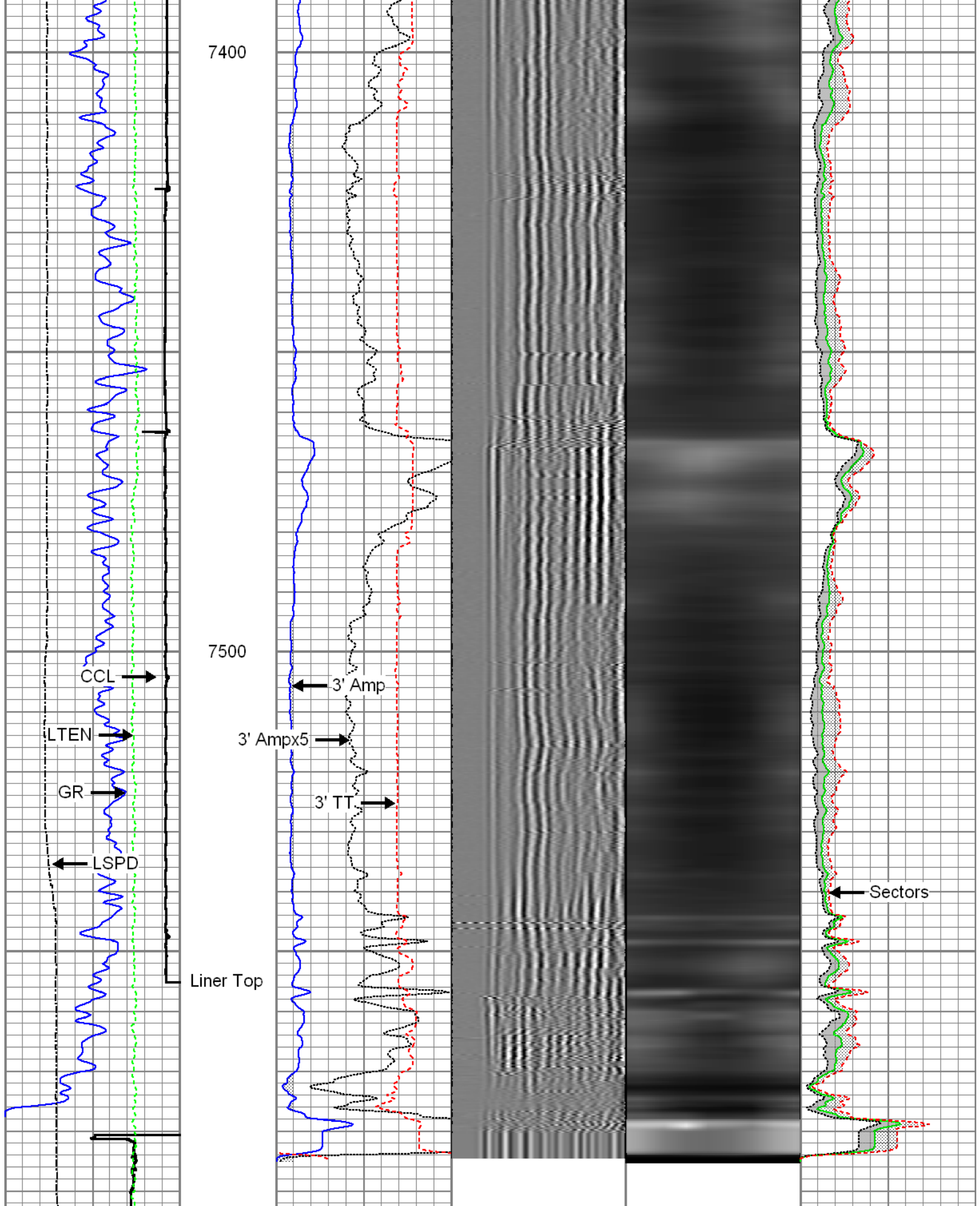












Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Line Speed	0 (mV) 20			0 100

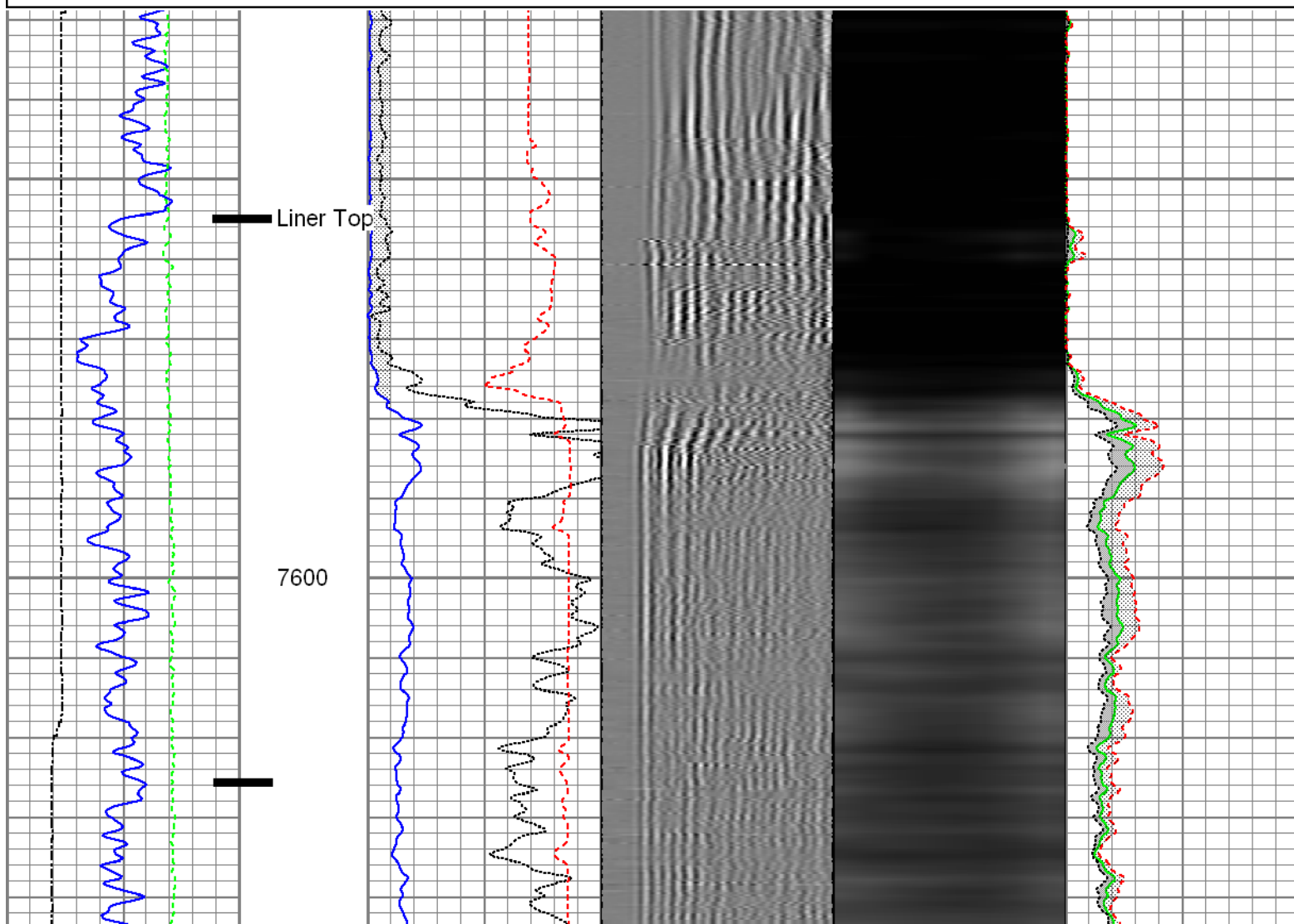


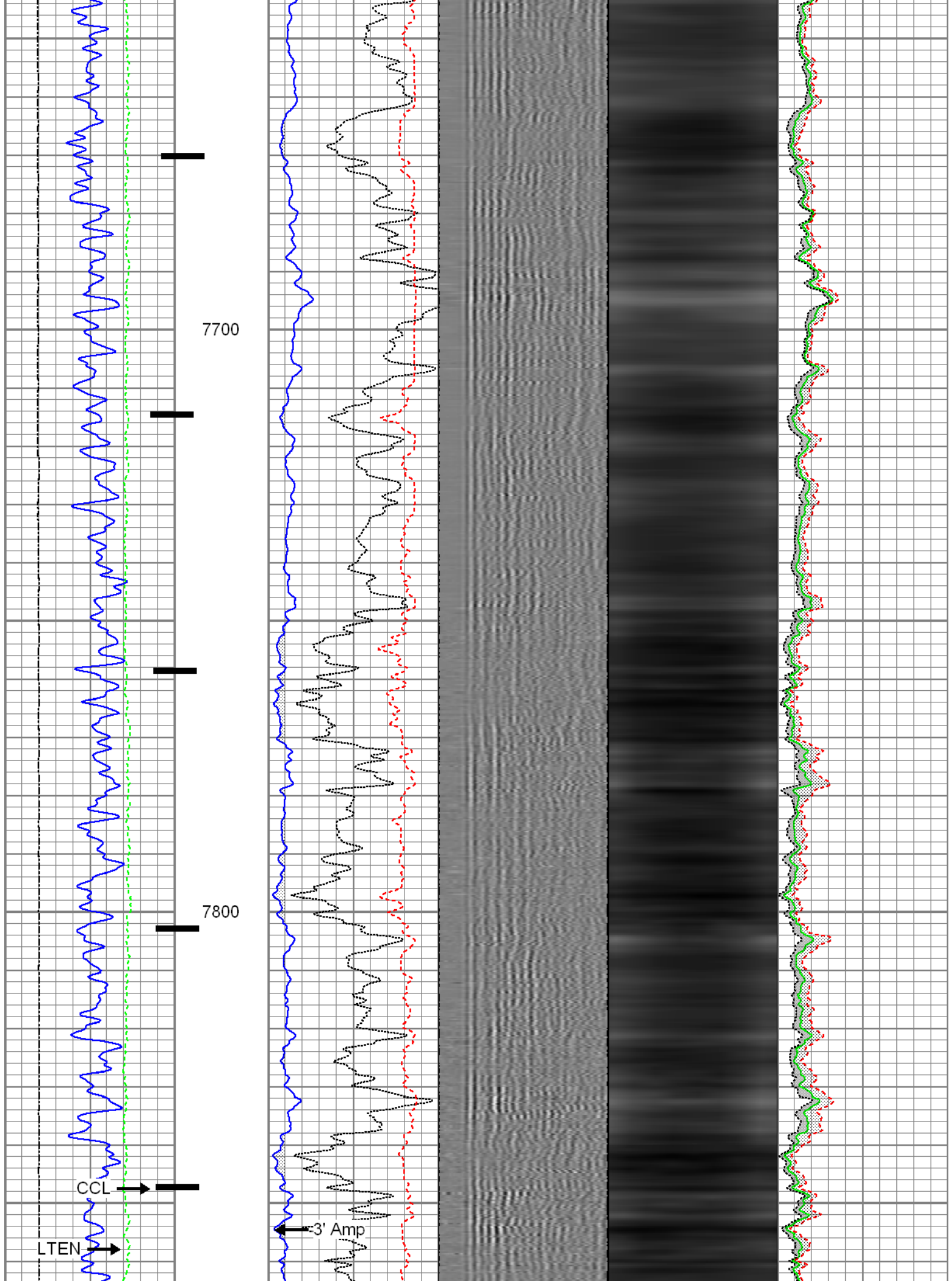
-100 (ft/min) 100	3' Travel Time	Maximum Amplitude
Line Tension	650 (usec) 150	0 100
0 (lb) 2000		

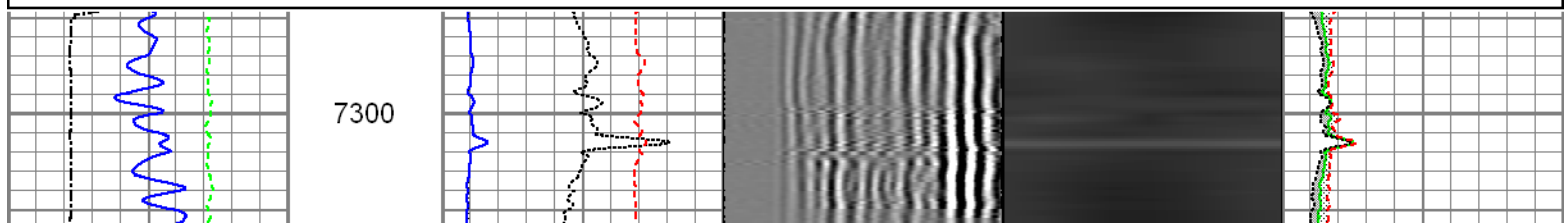
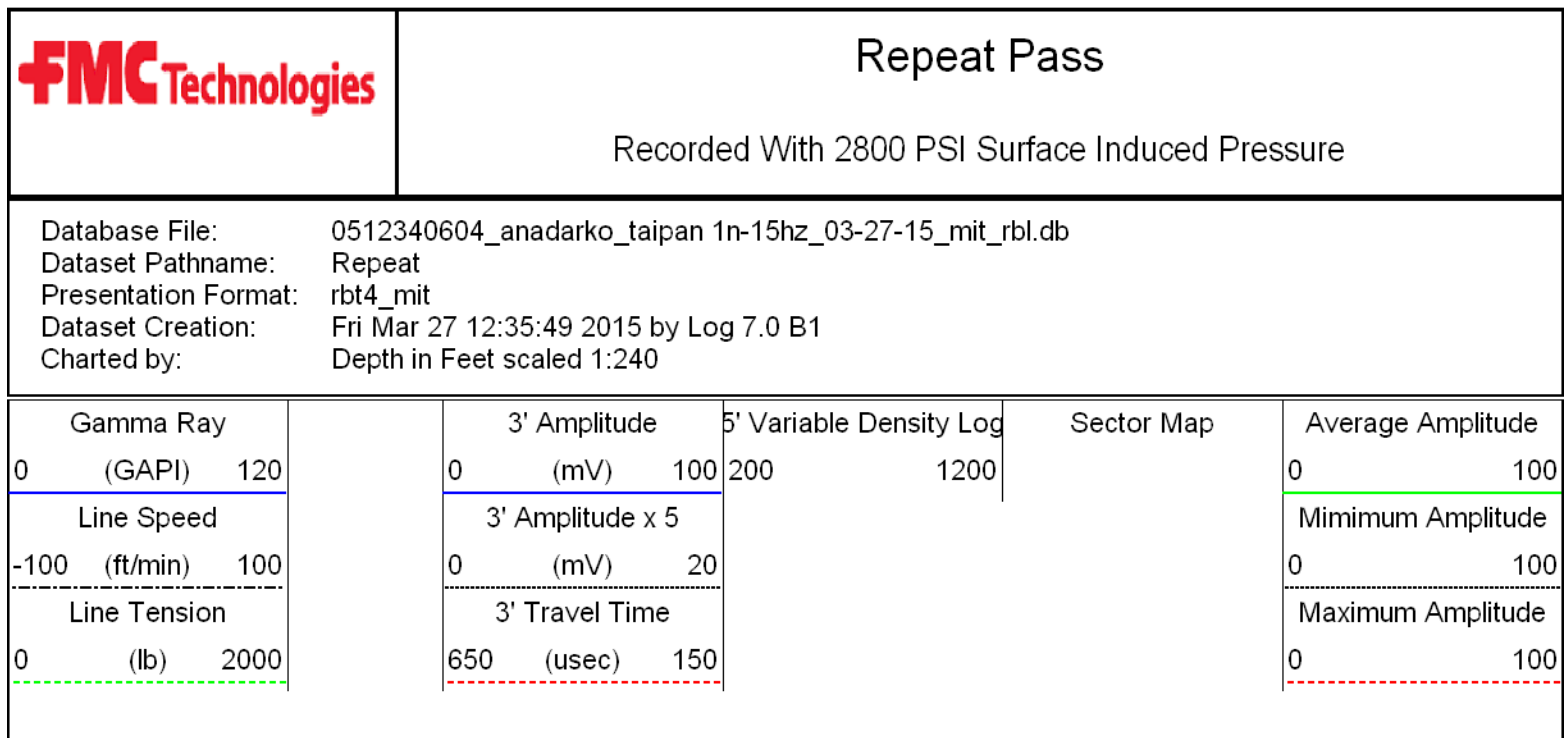
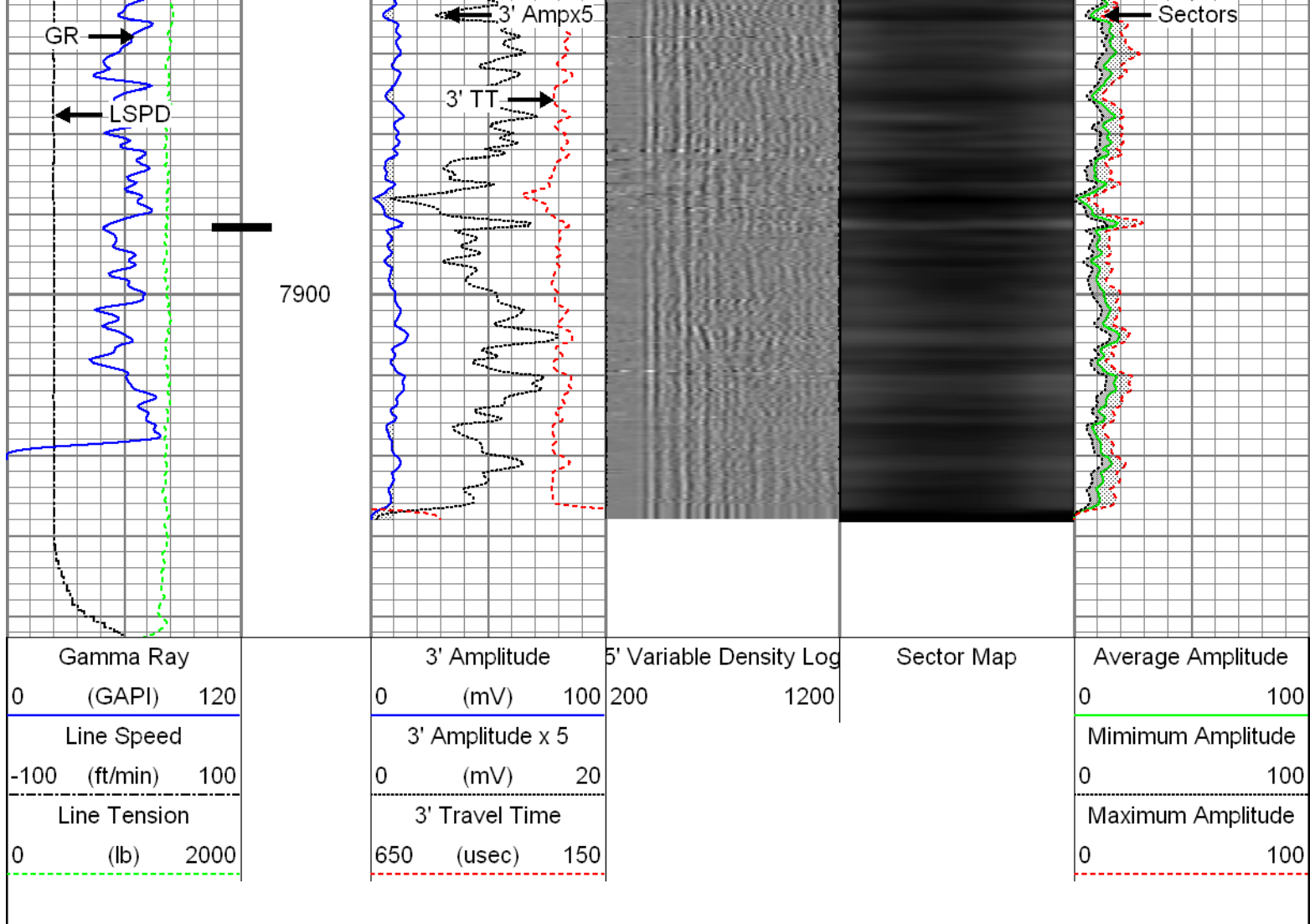
<b>FMC Technologies</b>	<b>4.5" Main Pass</b>
	Recorded With 2800 PSI Surface Induced Pressure

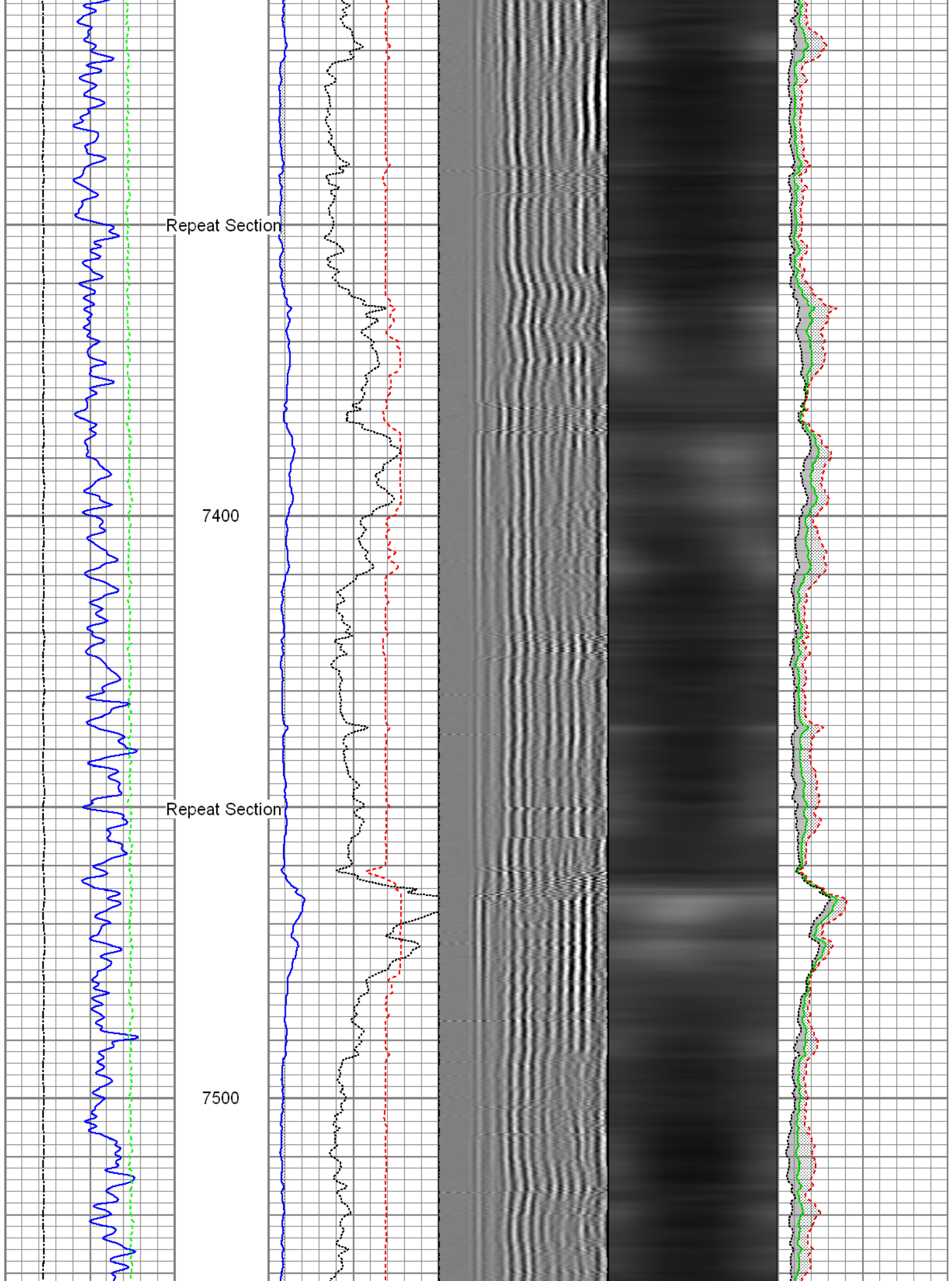
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 Dataset Pathname: 4.5  
 Presentation Format: rbt4\_mit  
 Dataset Creation: Fri Mar 27 13:06:57 2015 by Log 7.0 B1  
 Charted by: Depth in Feet scaled 1:240

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

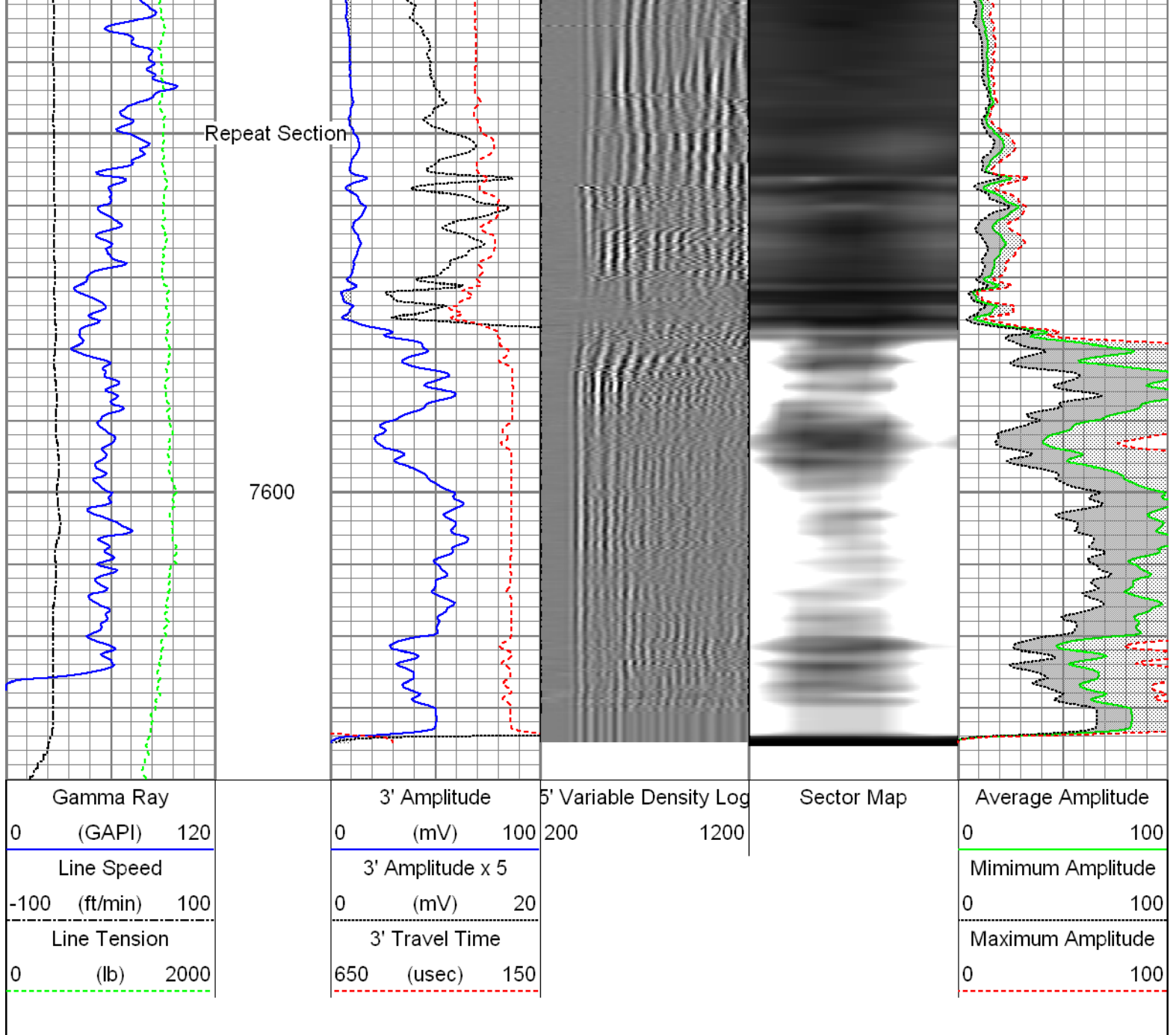




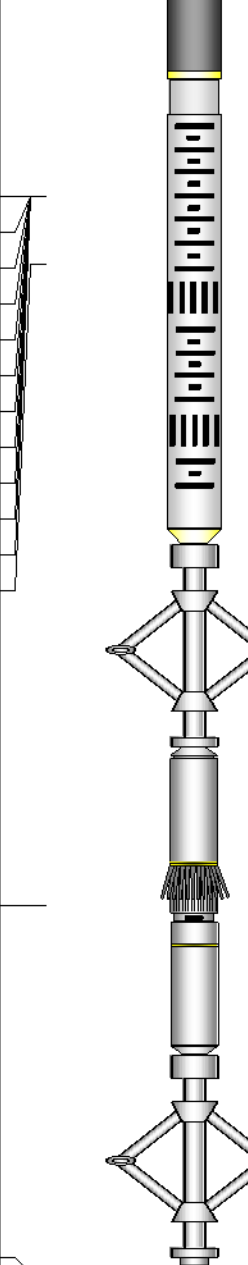








Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	23.67		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10024770) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC #4 -UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00

WVF3FT	15.85		UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	15.85					
WVFS2	15.85					
WVFS3	15.85					
WVFS4	15.85					
WVFS5	15.85					
WVFS6	15.85					
WVFS7	15.85					
WVFS8	15.85					
CBLTEMP	15.85					
CBLROT	15.85					
WVF5FT	14.85					
			UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	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 (1038) 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: 0512340604_Anadarko-Taipan 1N-15HZ_03-27-15_MIT_RBL.db: field/well/run1/7 Total Length: 27.92 ft Total Weight: 319.30 lb O.D. 3.13 in						

Calibration Report		
Database File:	0512340604_Anadarko-Taipan 1N-15HZ_03-27-15_MIT_RBL.db	
Dataset Pathname:	7	
Dataset Creation:	Fri Mar 27 13:23:53 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: Fri Mar 27 11:21:47 2015

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1073	378.0	1451	395.0	1846	400.0	2246
Finger 02:	1024	384.0	1408	411.0	1819	422.0	2241
Finger 03:	1024	374.0	1398	397.0	1795	414.0	2209
Finger 04:	990	387.0	1377	420.0	1797	434.0	2231
Finger 05:	999	366.0	1365	392.0	1757	402.0	2159
Finger 06:	1008	381.0	1389	408.0	1797	418.0	2215
Finger 07:	1013	377.0	1390	396.0	1786	410.0	2196
Finger 08:	982	376.0	1358	409.0	1767	426.0	2193
Finger 09:	1054	384.0	1438	397.0	1835	401.0	2236
Finger 10:	1045	382.0	1427	400.0	1827	411.0	2238
Finger 11:	989	375.0	1364	401.0	1765	419.0	2184
Finger 12:	1093	375.0	1468	375.0	1843	384.0	2227
Finger 13:	1040	373.0	1413	392.0	1805	417.0	2222
Finger 14:	1011	385.0	1396	406.0	1802	430.0	2232
Finger 15:	982	384.0	1366	405.0	1771	435.0	2206
Finger 16:	1019	375.0	1394	392.0	1786	425.0	2211
Finger 17:	1068	370.0	1438	378.0	1816	407.0	2223
Finger 18:	1110	377.0	1487	380.0	1867	413.0	2280
Finger 19:	1060	379.0	1439	387.0	1826	421.0	2247
Finger 20:	989	376.0	1365	395.0	1760	438.0	2198
Finger 21:	1053	368.0	1421	378.0	1799	420.0	2219
Finger 22:	1064	379.0	1443	387.0	1830	422.0	2252
Finger 23:	1100	378.0	1478	384.0	1862	420.0	2282
Finger 24:	1066	344.0	1410	357.0	1767	393.0	2160
Finger 25:	1088	383.0	1471	390.0	1861	423.0	2284
Finger 26:	1036	365.0	1401	379.0	1780	419.0	2199
Finger 27:	1205	393.0	1598	388.0	1986	417.0	2403
Finger 28:	1081	363.0	1444	373.0	1817	415.0	2232
Finger 29:	1029	371.0	1400	388.0	1788	428.0	2216
Finger 30:	999	369.0	1368	391.0	1759	433.0	2192
Finger 31:	1222	398.0	1620	403.0	2023	427.0	2450
Finger 32:	1012	367.0	1379	382.0	1761	410.0	2171
Finger 33:	1179	407.0	1586	418.0	2004	438.0	2442
Finger 34:	981	367.0	1348	391.0	1739	420.0	2159
Finger 35:	1125	396.0	1521	412.0	1933	432.0	2365
Finger 36:	1022	357.0	1379	376.0	1755	398.0	2153
Finger 37:	1070	382.0	1452	403.0	1855	419.0	2274
Finger 38:	1078	371.0	1449	389.0	1838	406.0	2244
Finger 39:	1055	358.0	1413	376.0	1789	393.0	2182
Finger 40:	975	388.0	1363	422.0	1785	441.0	2226

### Segmented Cement Bond Log Calibration Report


Serial Number:	10022773
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	452.120 ft

Master Calibration, performed Fri Mar 27 12:50:43 2015:

Raw (v)	Calibrated (mv)	Results
Zero	Cal	Gain      Offset
	Zero	
	Cal	

3FT	0.003	0.687	0.800	62.165	89.650	0.558
5FT	-0.001	0.674	0.800	62.165	90.879	0.911
S1	0.003	0.642	0.000	100.000	156.527	-0.529
S2	0.001	0.675	0.000	100.000	148.425	-0.181
S3	0.003	0.675	0.000	100.000	148.805	-0.383
S4	0.002	0.671	0.000	100.000	149.506	-0.325
S5	0.002	0.684	0.000	100.000	146.771	-0.364
S6	0.001	0.661	0.000	100.000	151.648	-0.205
S7	0.002	0.649	0.000	100.000	154.566	-0.377
S8	0.002	0.644	0.000	100.000	155.813	-0.320

Gamma Ray Calibration Report						
Serial Number:		10024770				
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 and Gas Onshore LP
	Well	Taipan 1N-15HZ
	Field	Wattenberg
	County	Weld
	State	Colorado