



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 NRC 28N-4HZ				Well NRC 28N-4HZ			
Field Wattenberg				Field Wattenberg			
County Weld				County Weld			
State Colorado				State Colorado			
Location:				API # : 05-123-38609			
SHL: 350' FSL & 2010' FWL Lat/Long: 40.059228/-104.897913 SEC 9 TWP 1N RGE 67W				Other Services Gauge Ring CIL			
Permanent Datum		Ground Level		Elevation		5051'	
Log Measured From		Kelly Bushing		16 FT		K.B. 5067' D.F. 5066' G.L. 5051'	
Drilling Measured From		Kelly Bushing					
Date		9-April-2014					
Run Number		Two					
Depth Driller		17151 FT					
Depth Logger		7727 FT					
Bottom Logged Interval		7725 FT					
Top Log Interval		Surface					
Open Hole Size		8.750"					
Type Fluid		Water					
Density / Viscosity		8.4 lbm/gal					
Max. Recorded Temp.		217°F					
Estimated Cement Top		Surface					
Time Well Ready		ROA					
Time Logger on Bottom		12:40 P.M.					
Equipment Number		HD 0311					
Location		Fort Lupton, CO					
Recorded By		Wayne Wacker					
Witnessed By		Edgar Chavez					
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#		HPC-110 LTC	
Intermediate #2							
Liner		4-1/2"		11.6#		P-110	
						6853 FT	
						17139 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 - Casing Inspection Log is first recorded log in hole.
Log correlated to reported casing tally at top of liner @ 6853 FT
Adjusted 3 FT to liner top at 6853 FT
RCBL-CIL ran at 2200 PSI surface induced pressure
Estimated Cement Top recorded at Surface

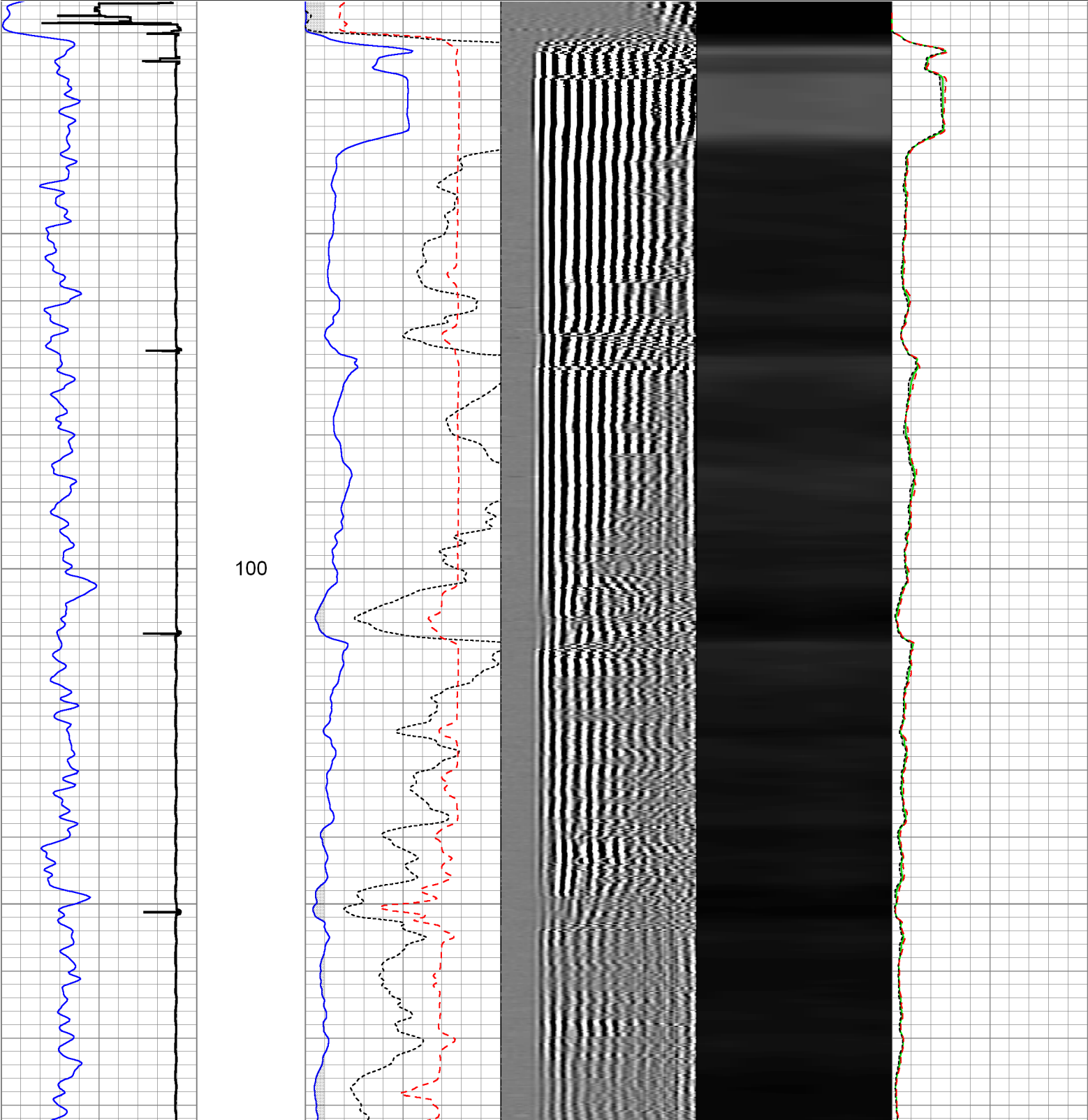
Thank you for choosing FMC Technologies Completion Services, Inc.

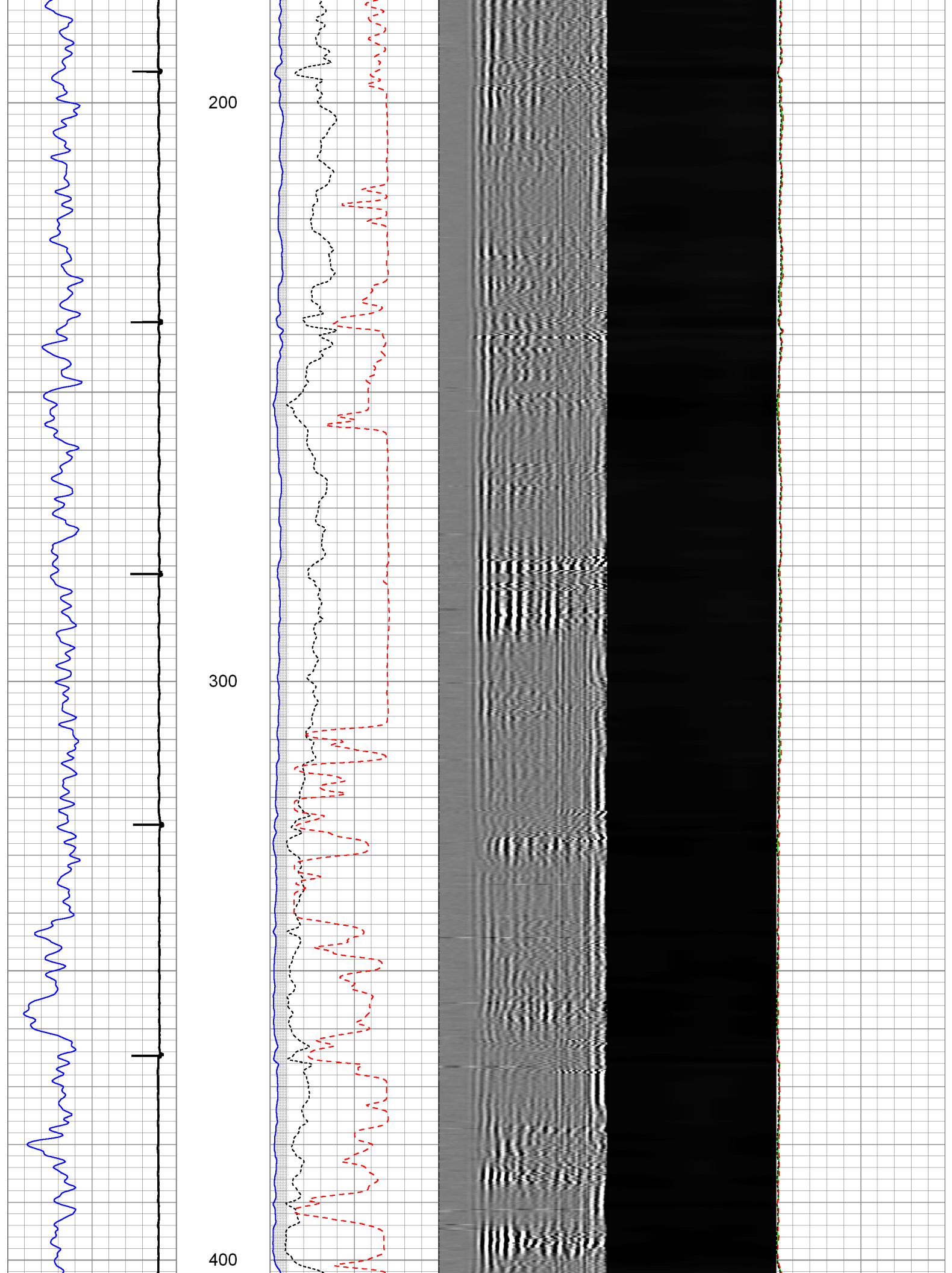


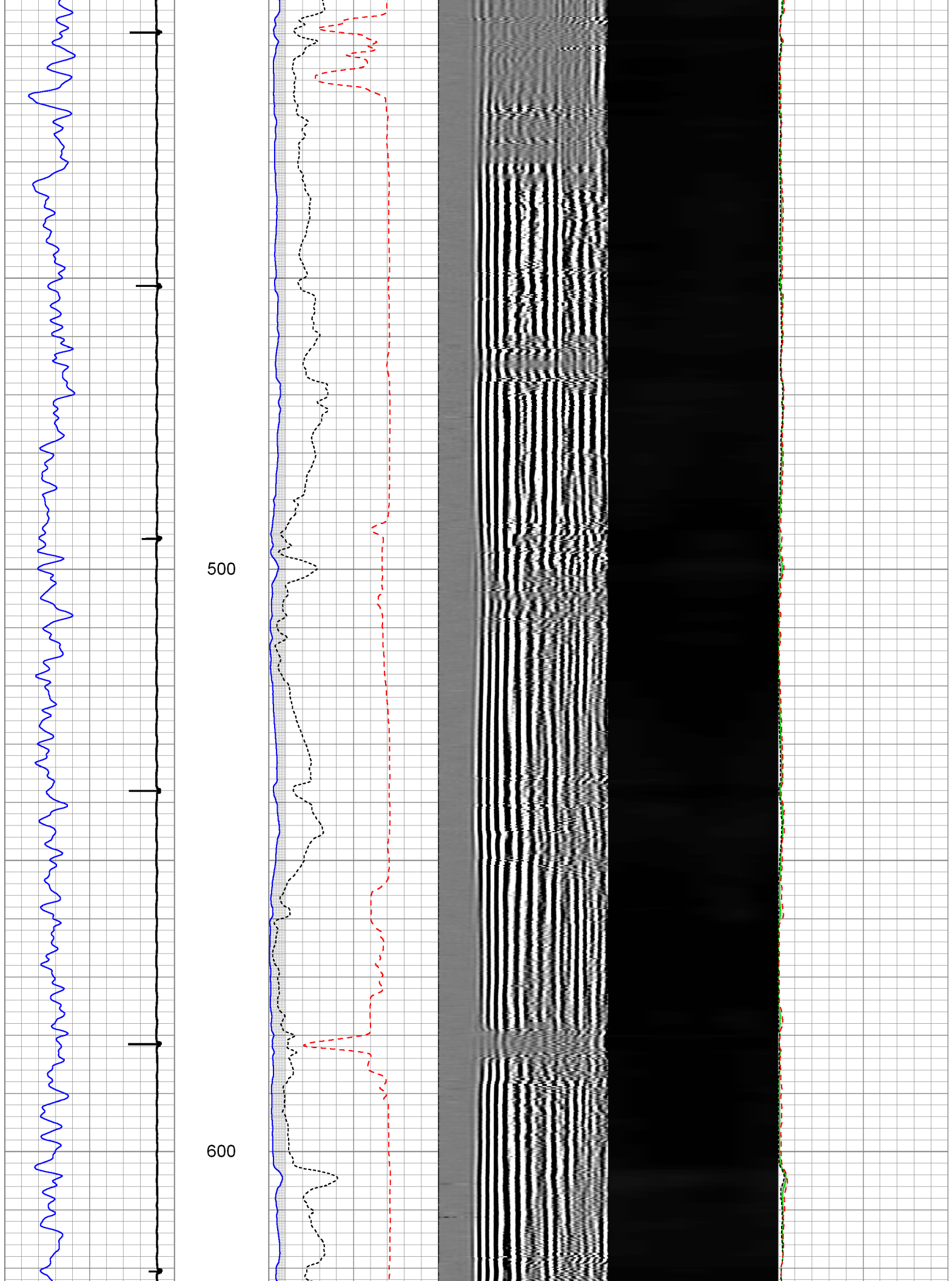
Main Pass: 7" Casing

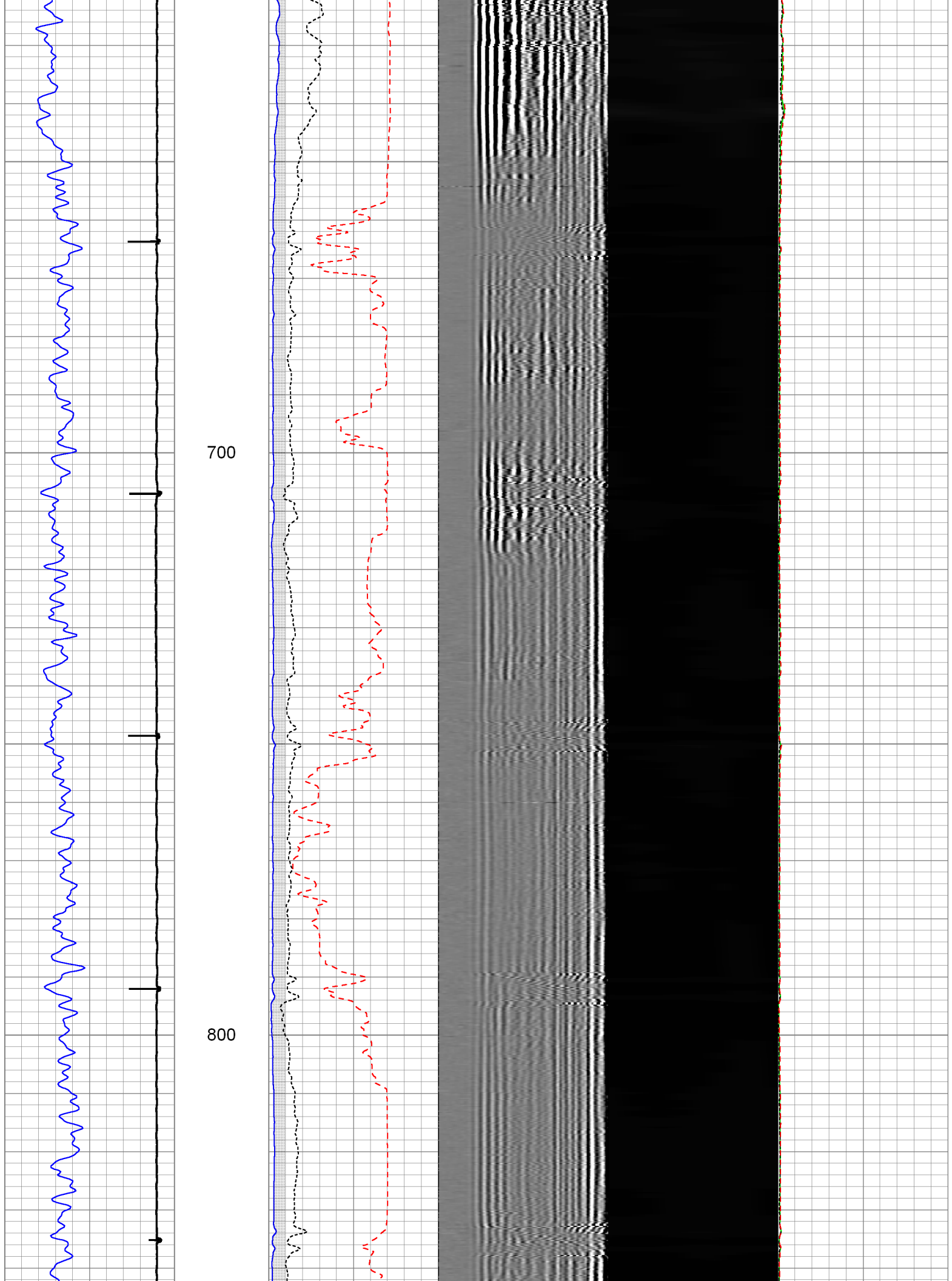
Logged With 2200 PSI At Surface

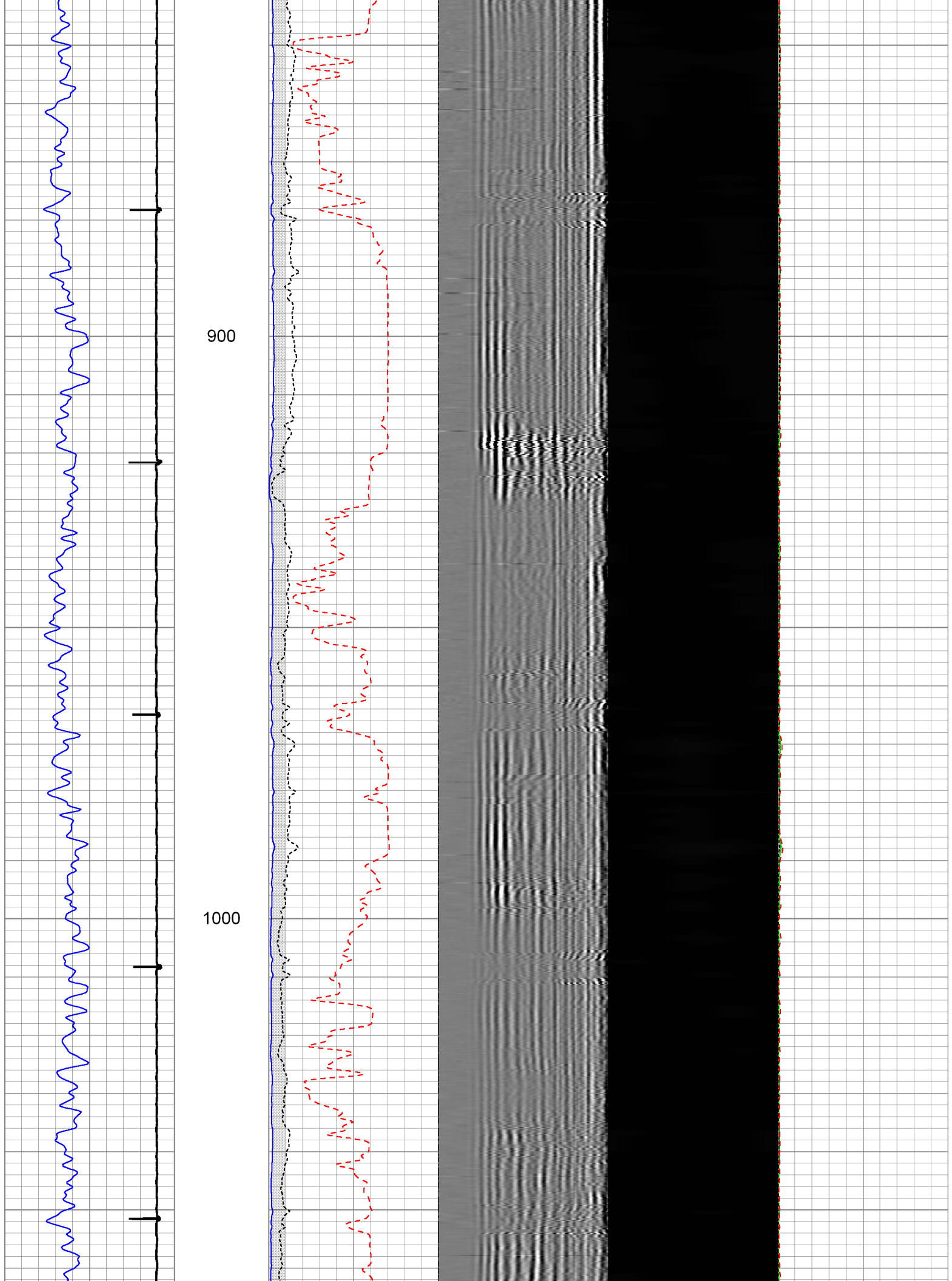
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

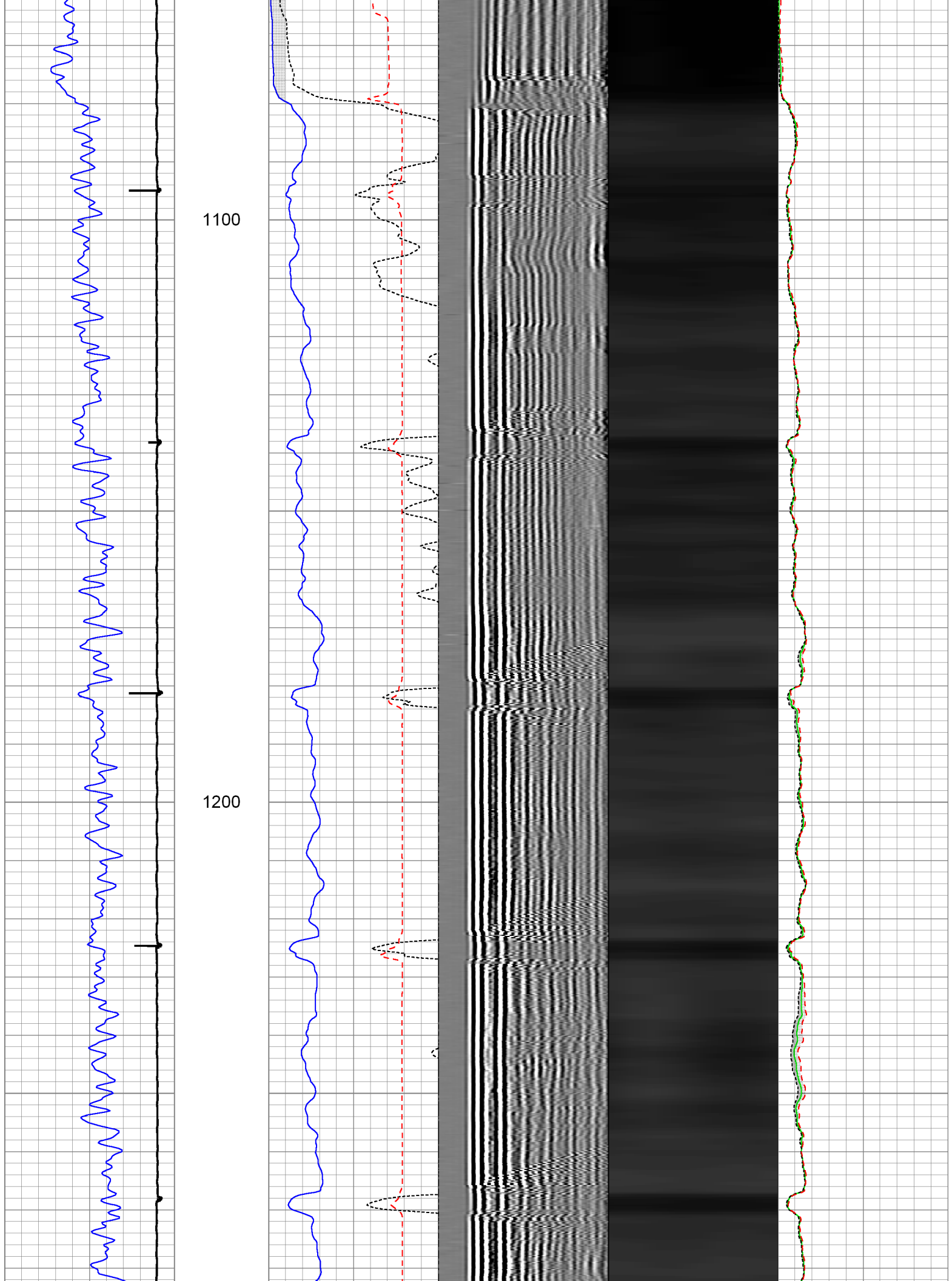


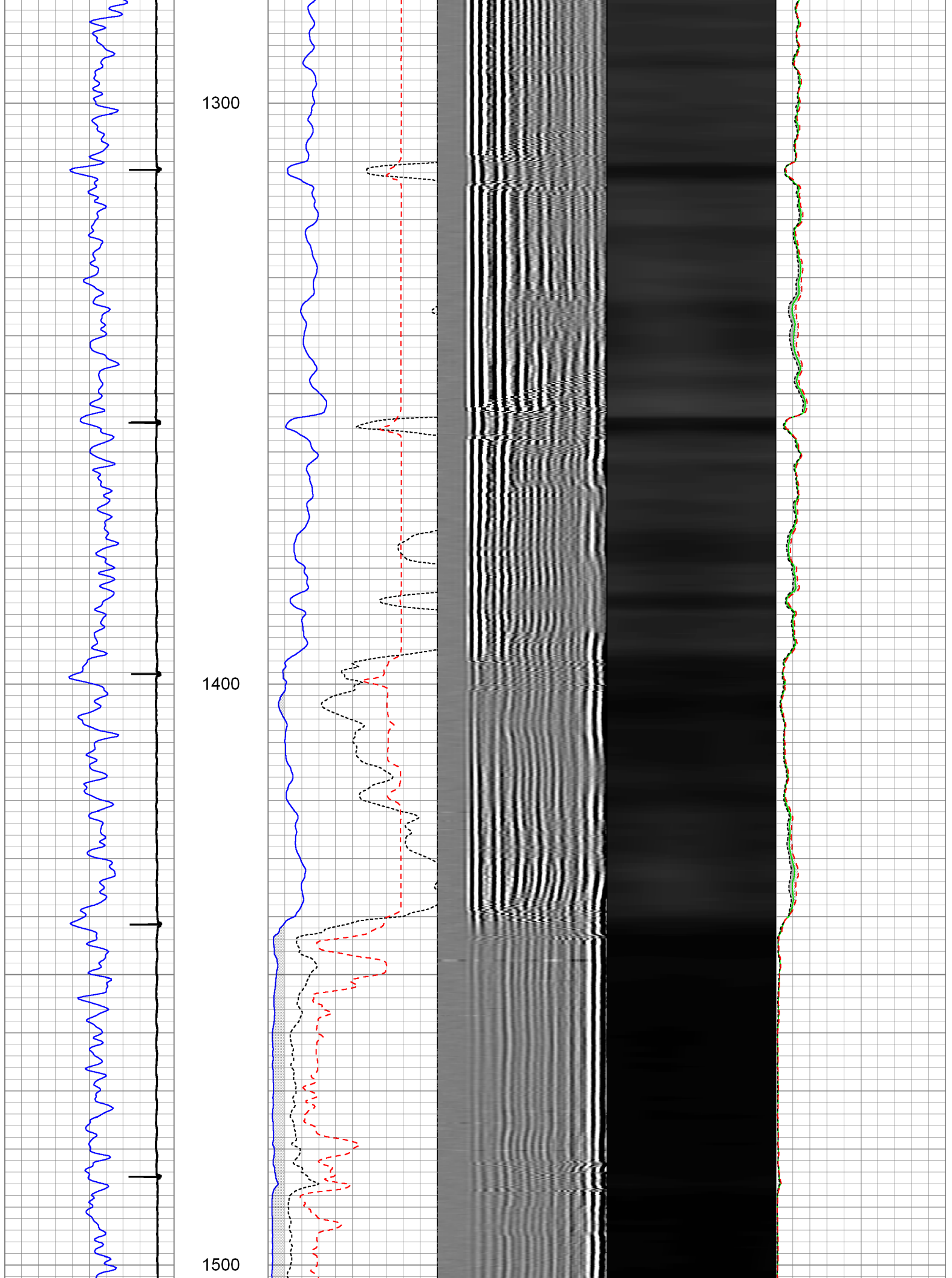


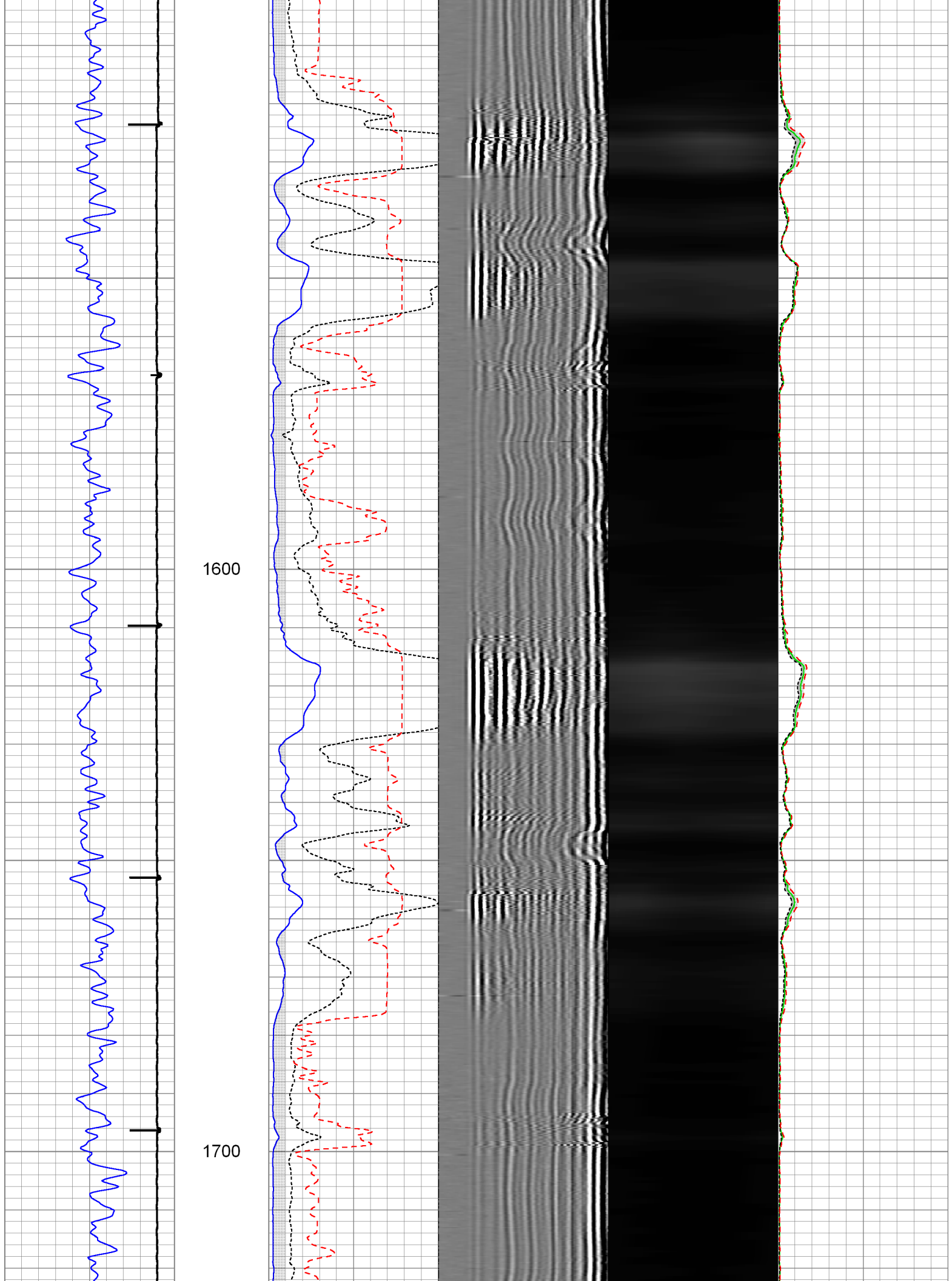


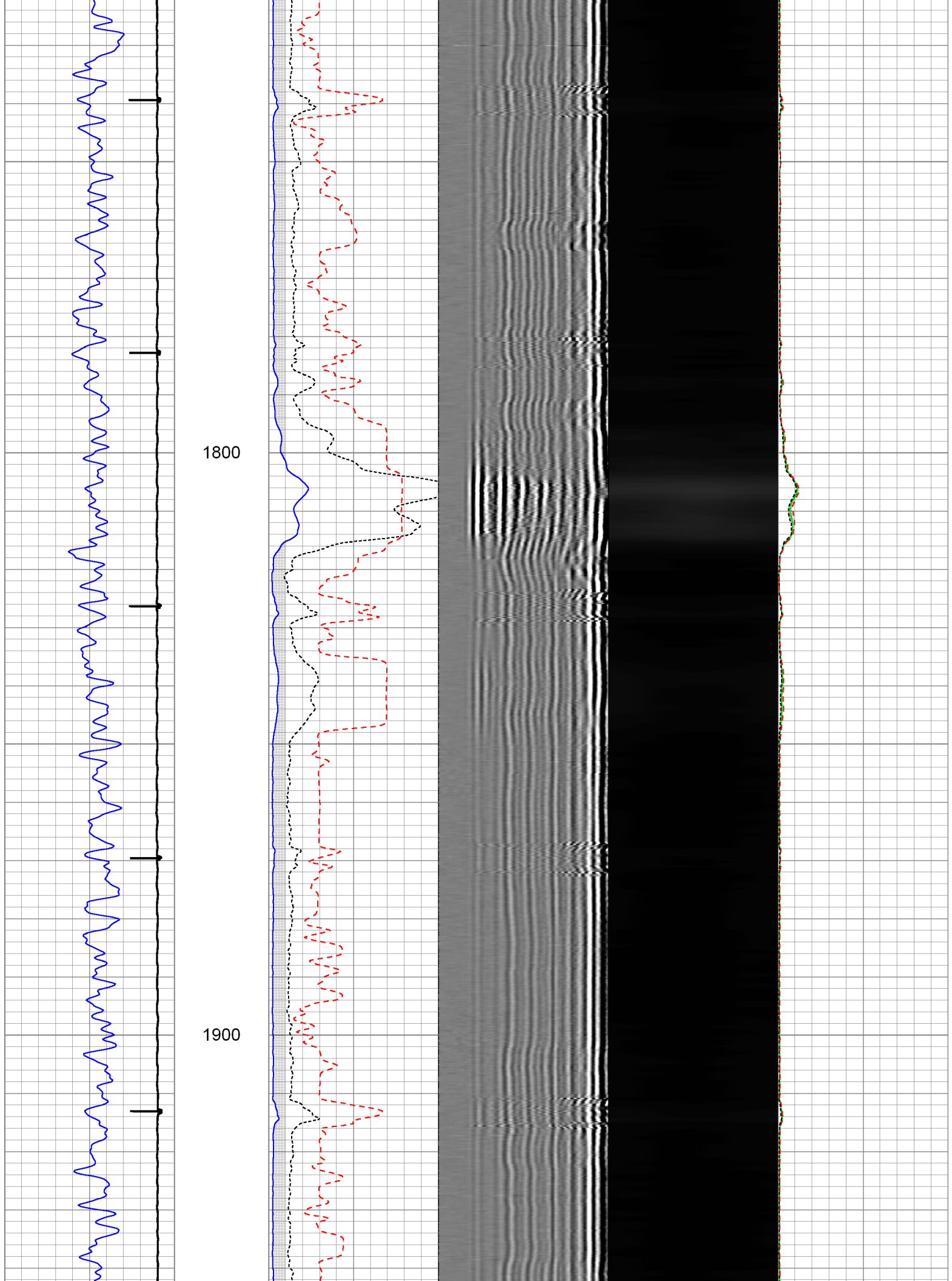


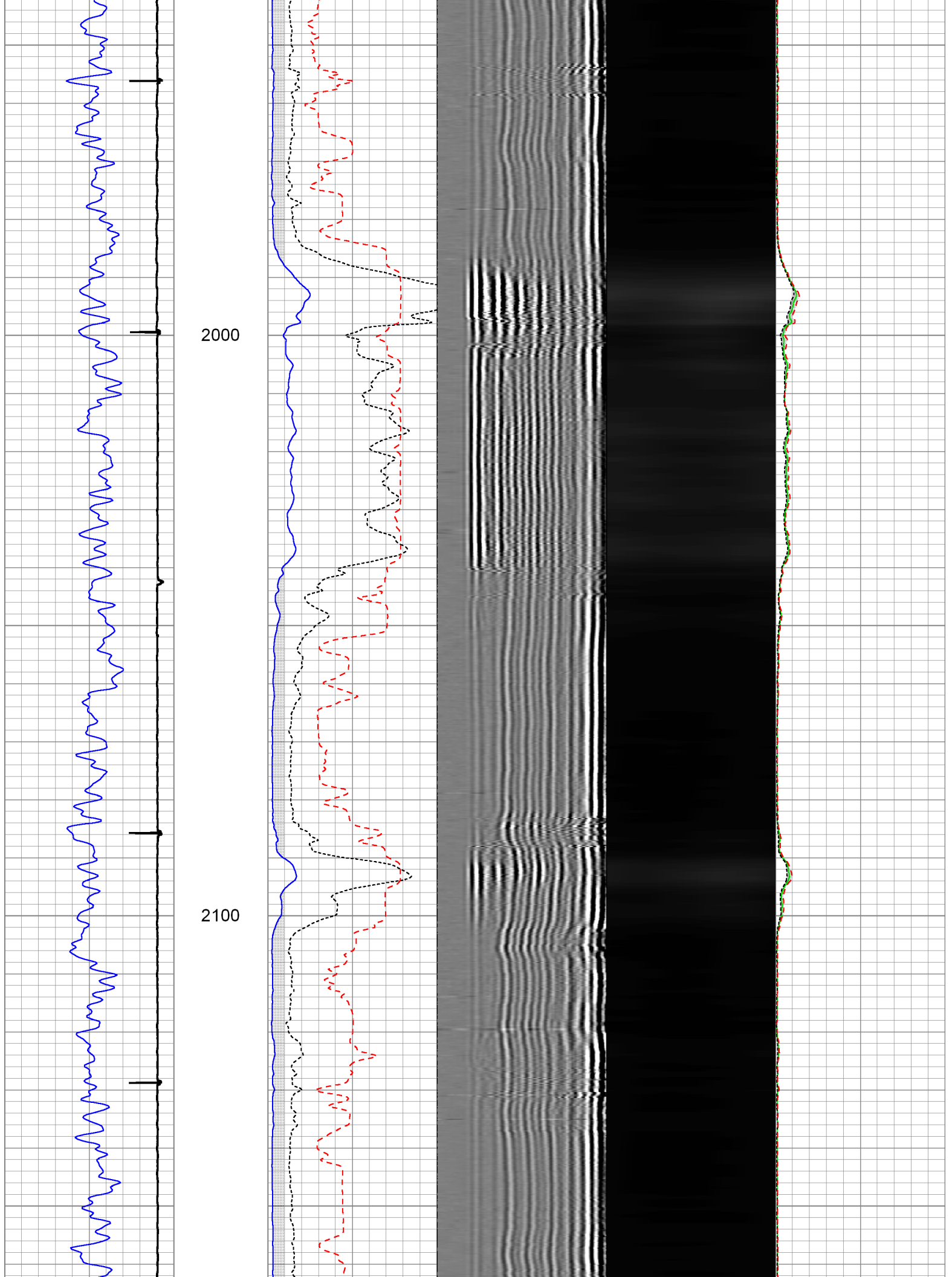


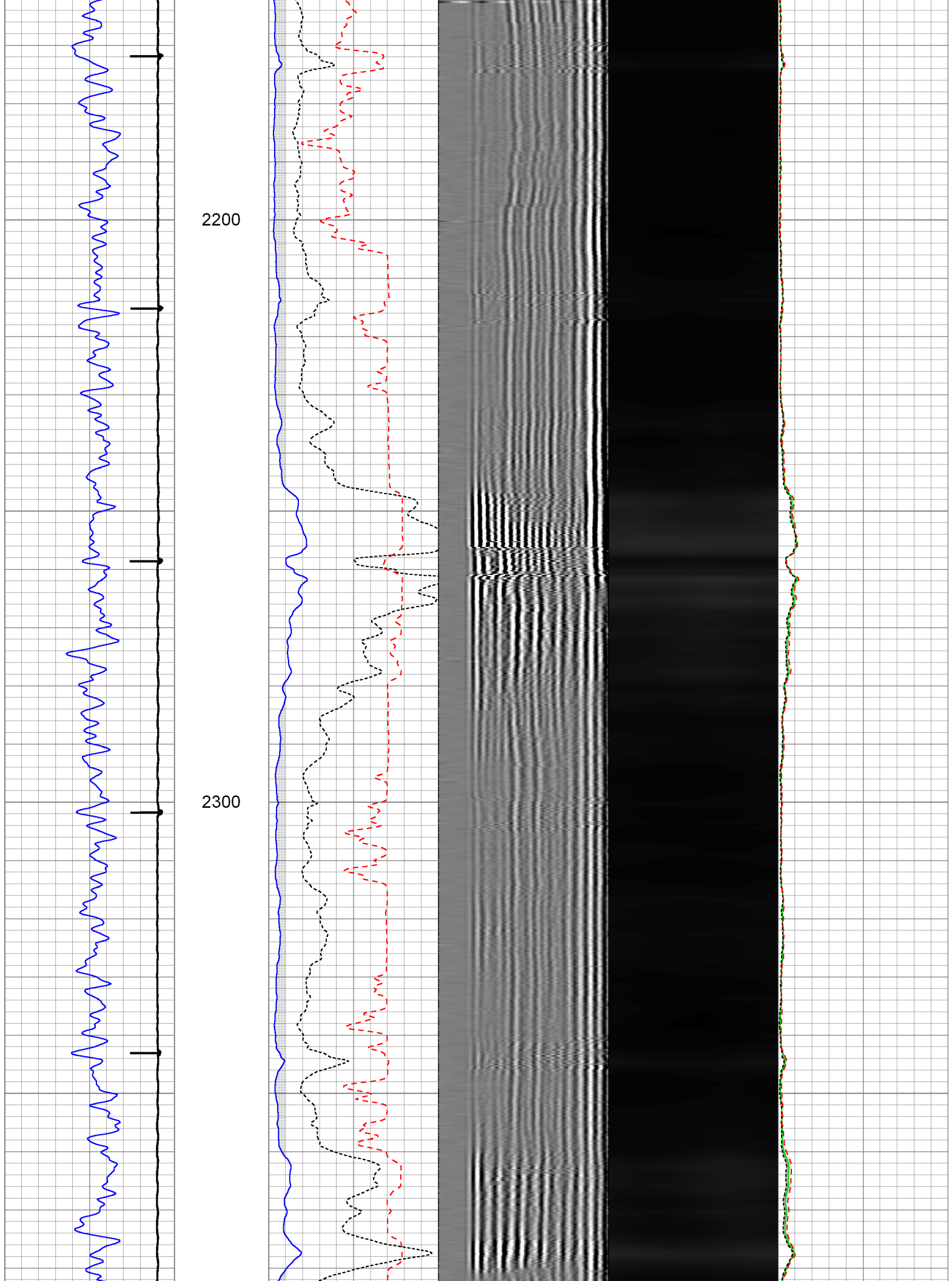


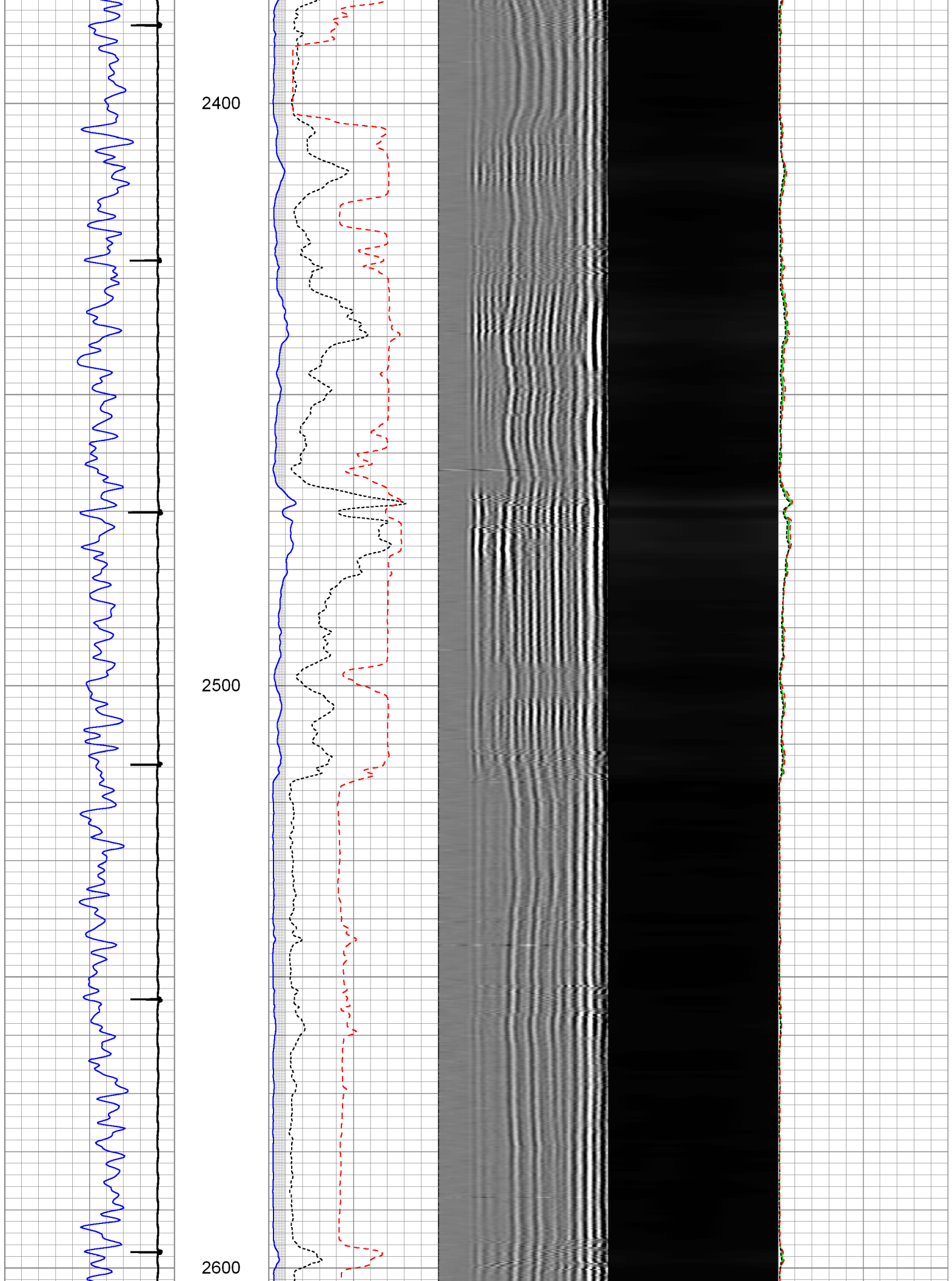


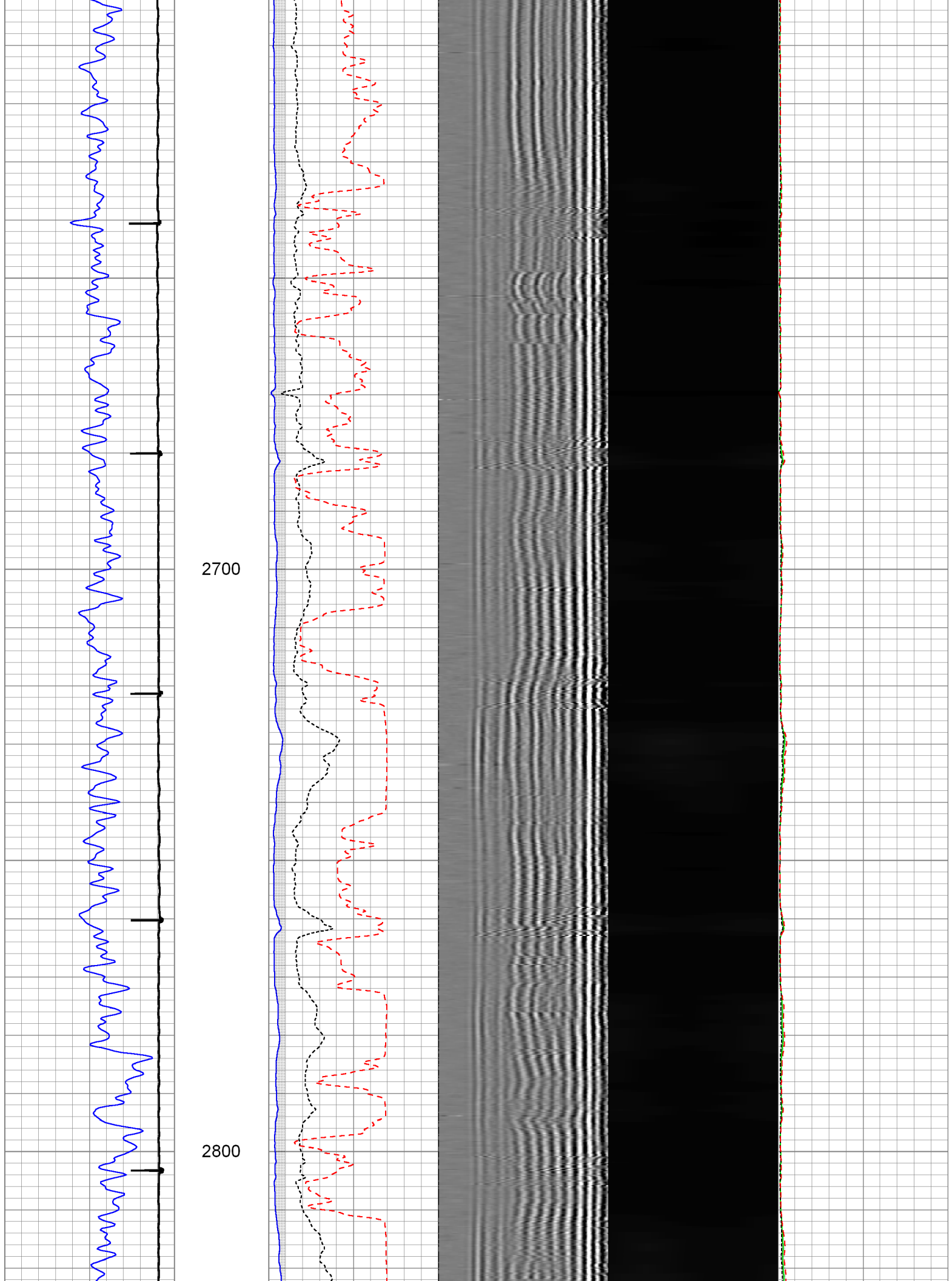


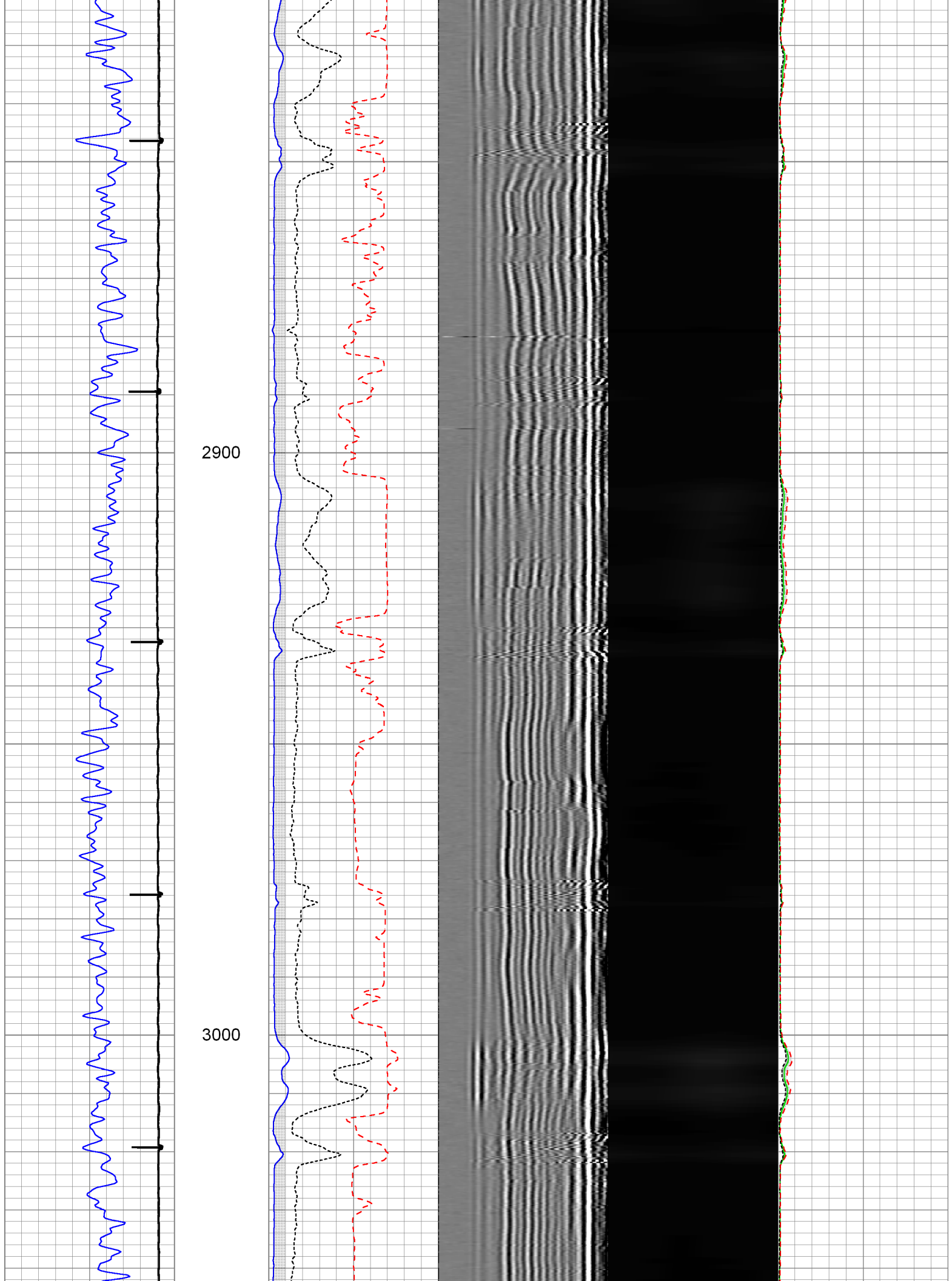


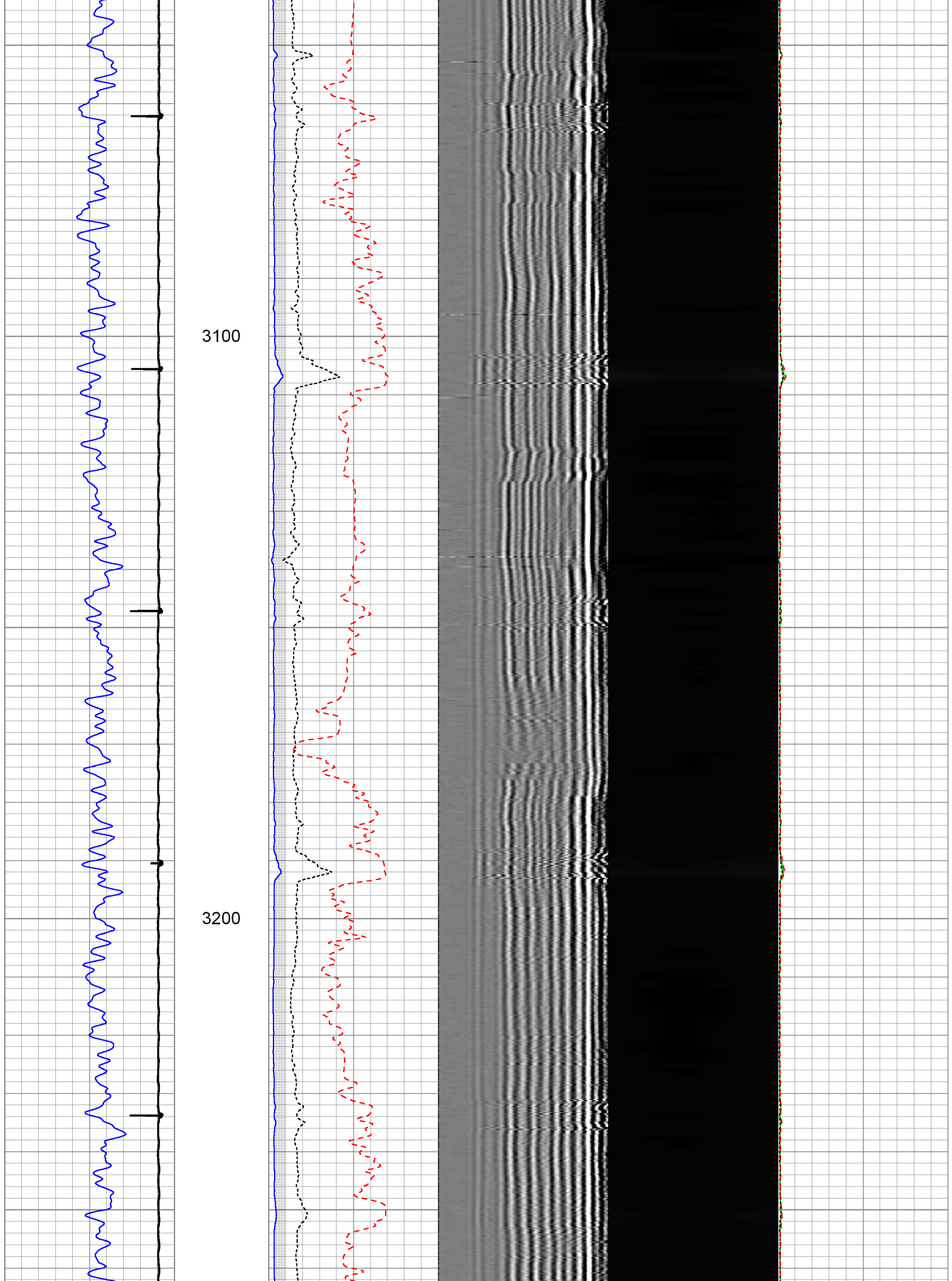


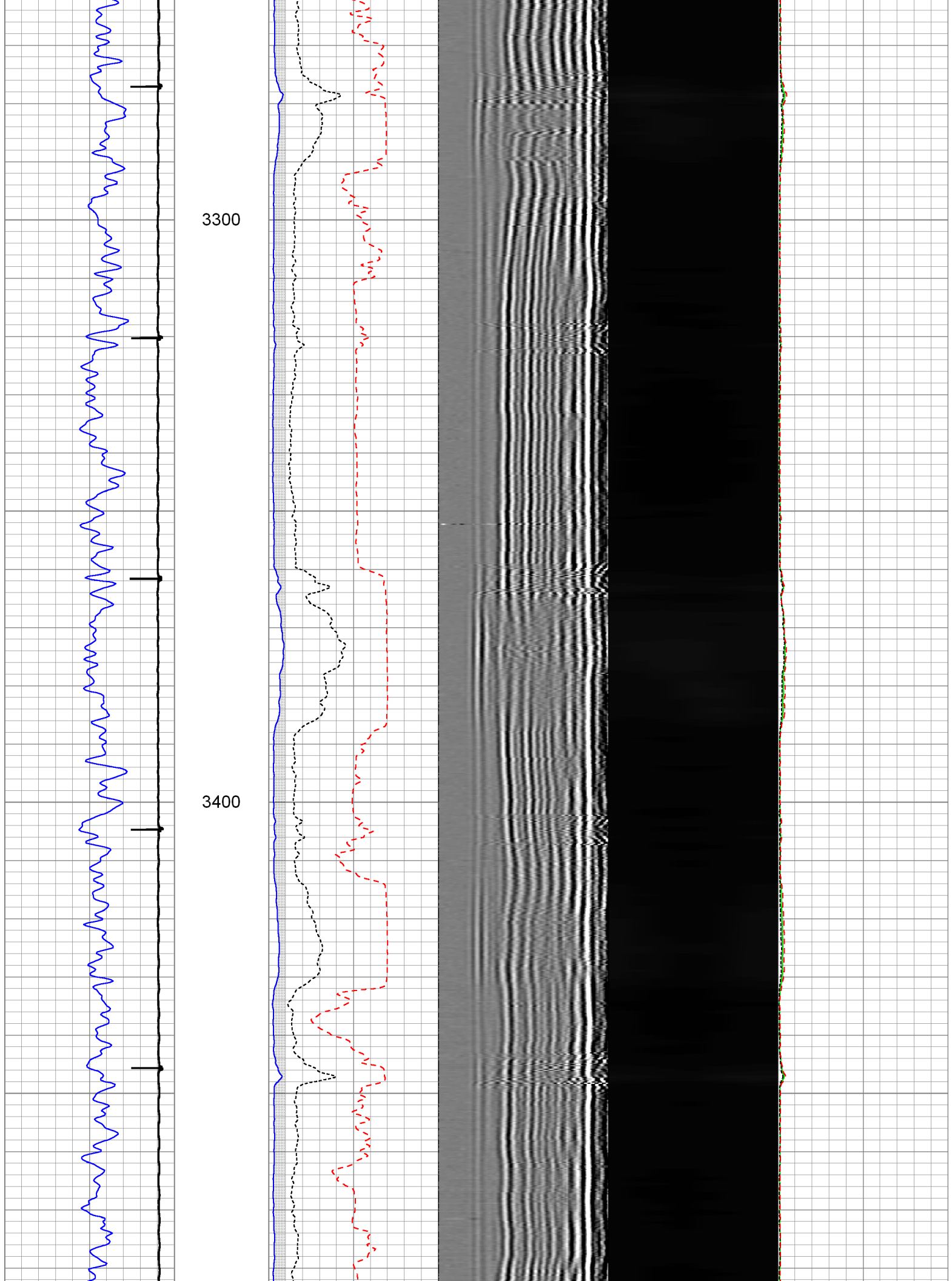


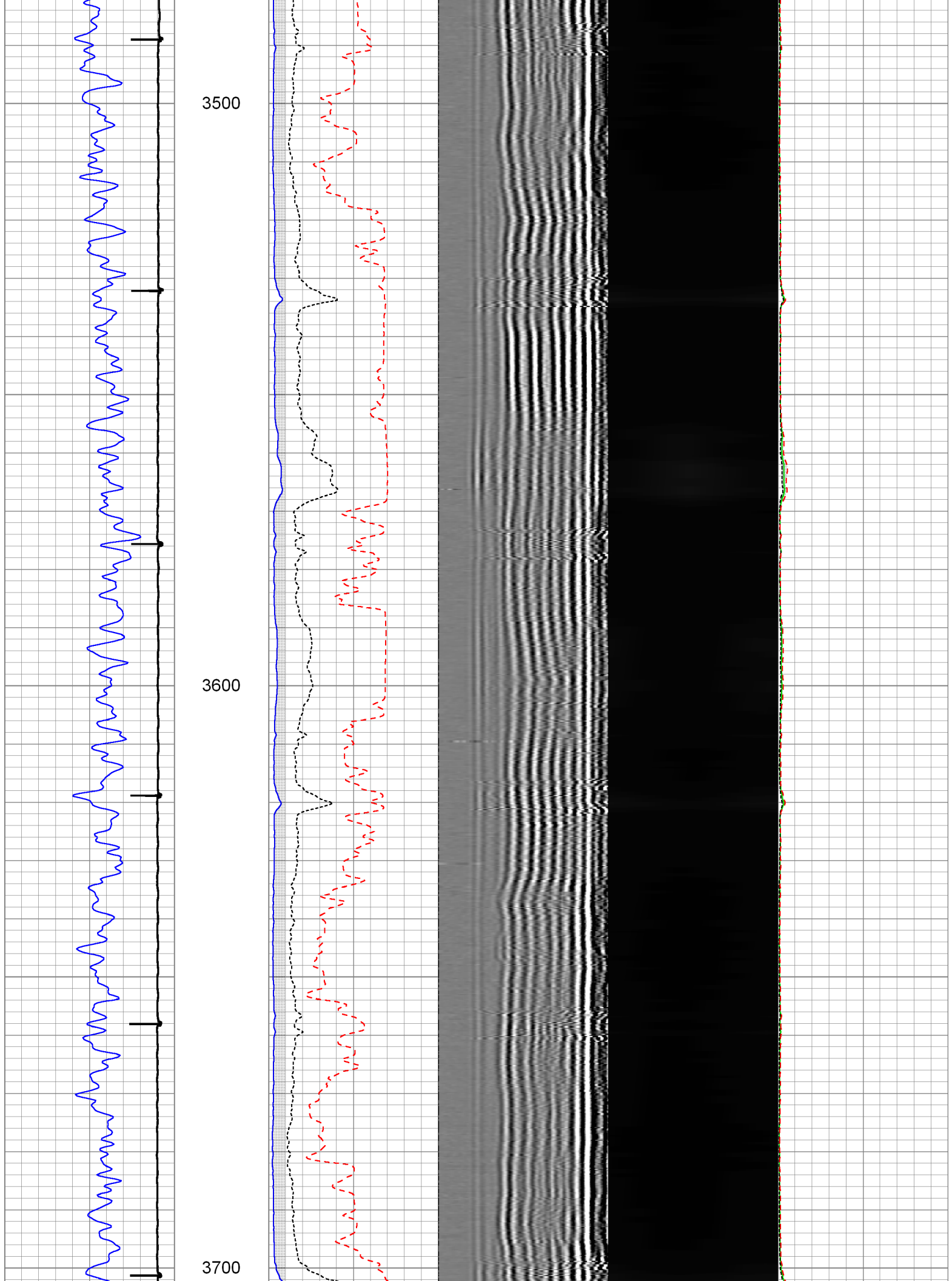


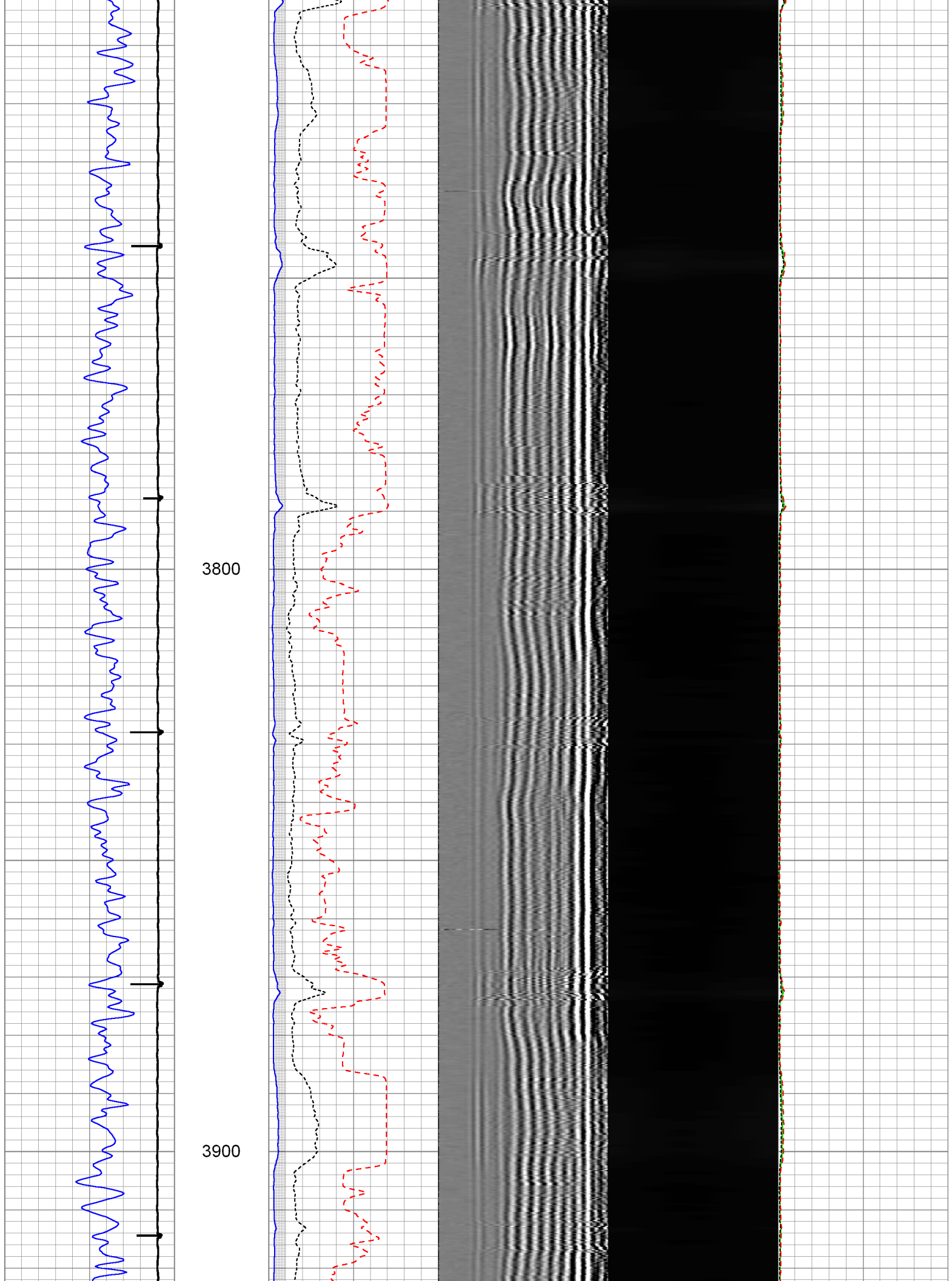


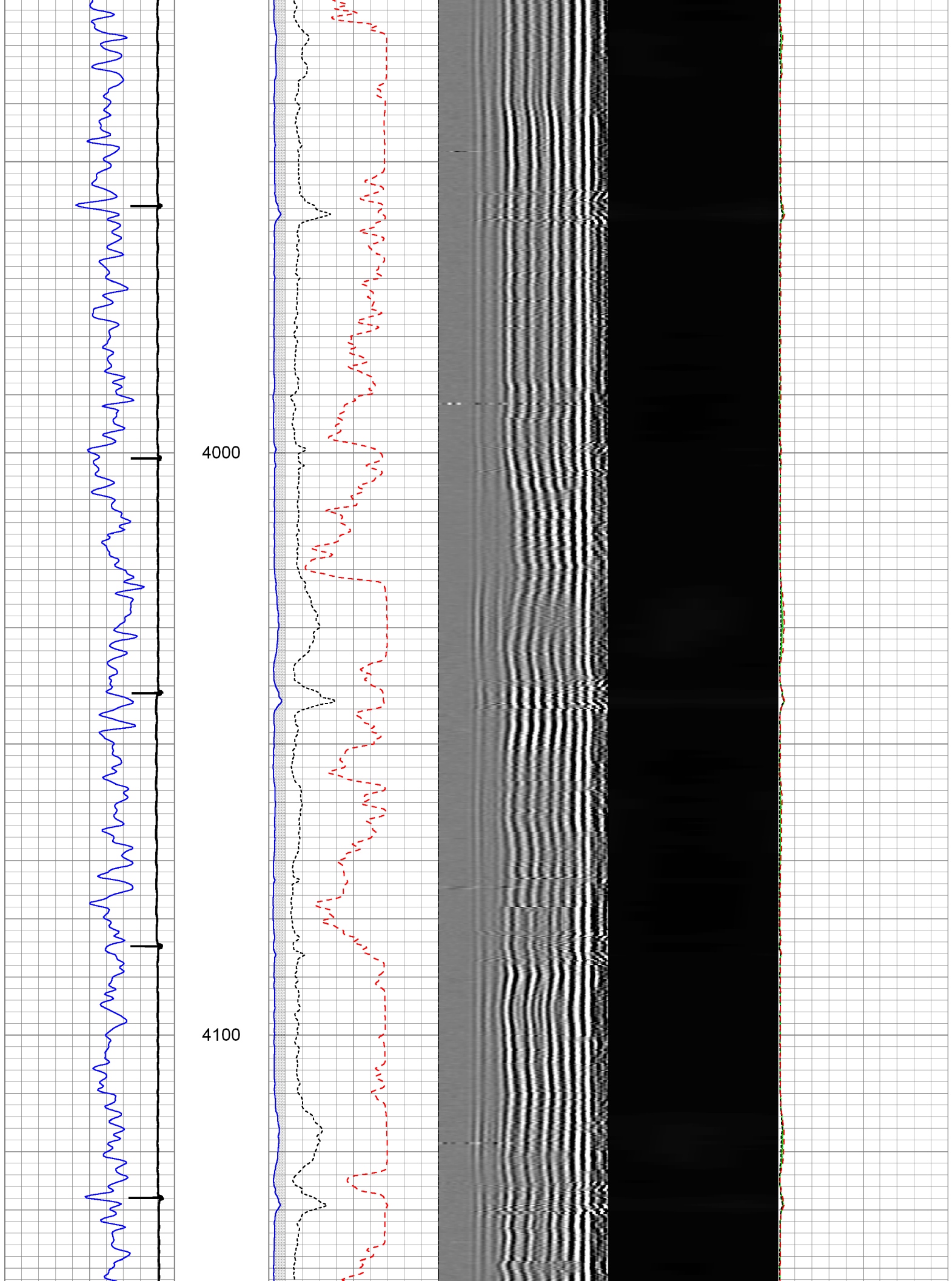


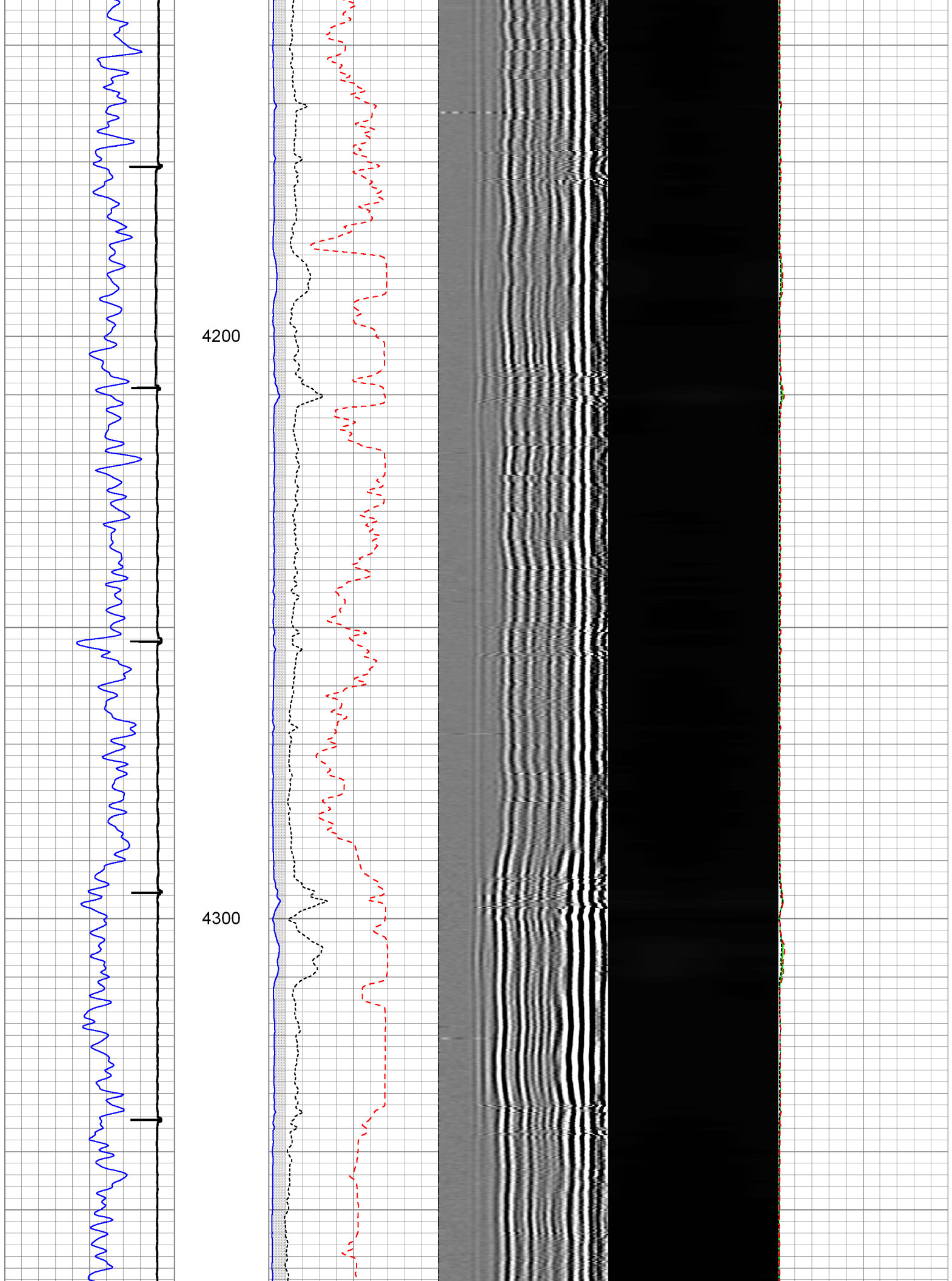


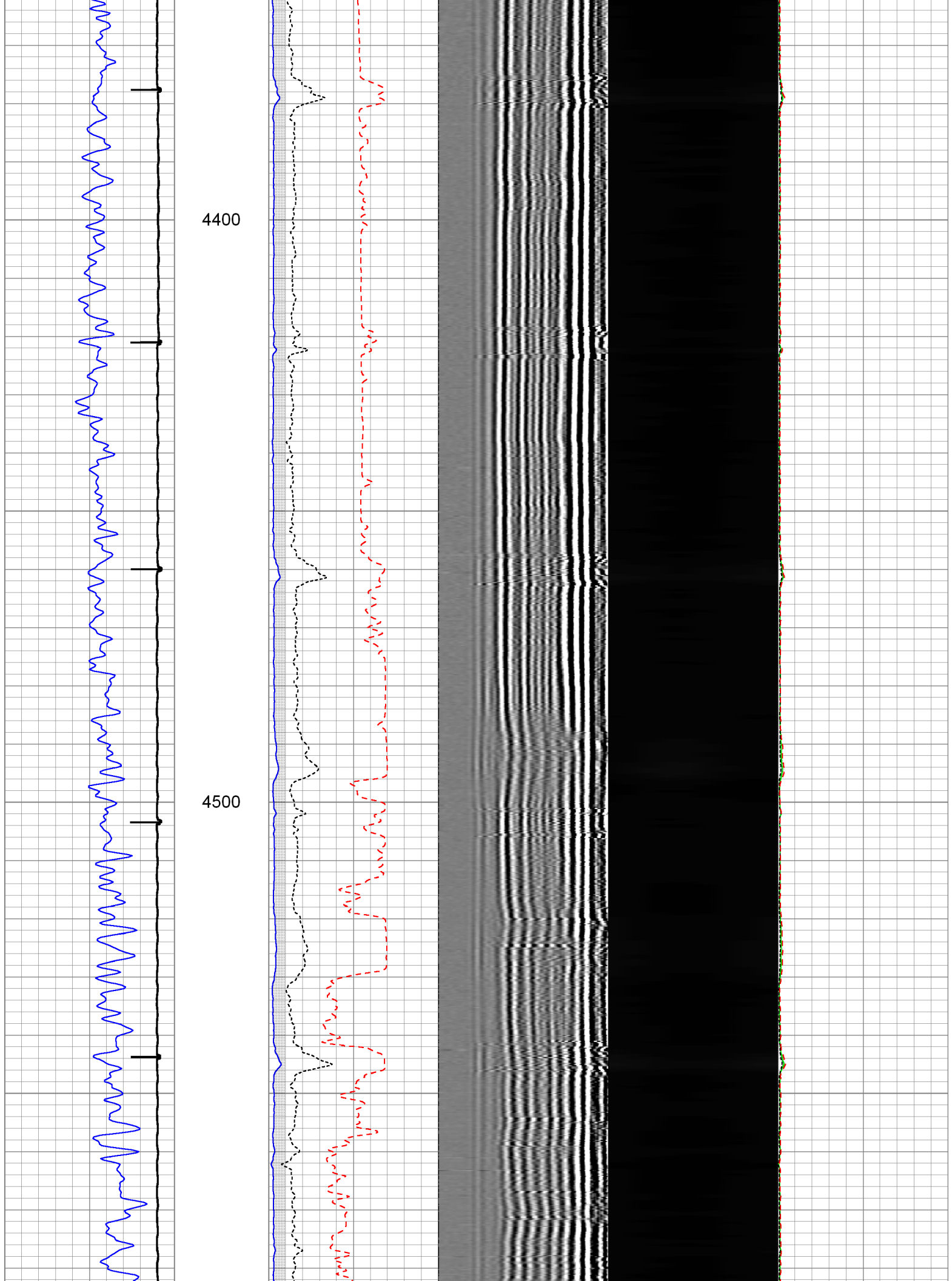


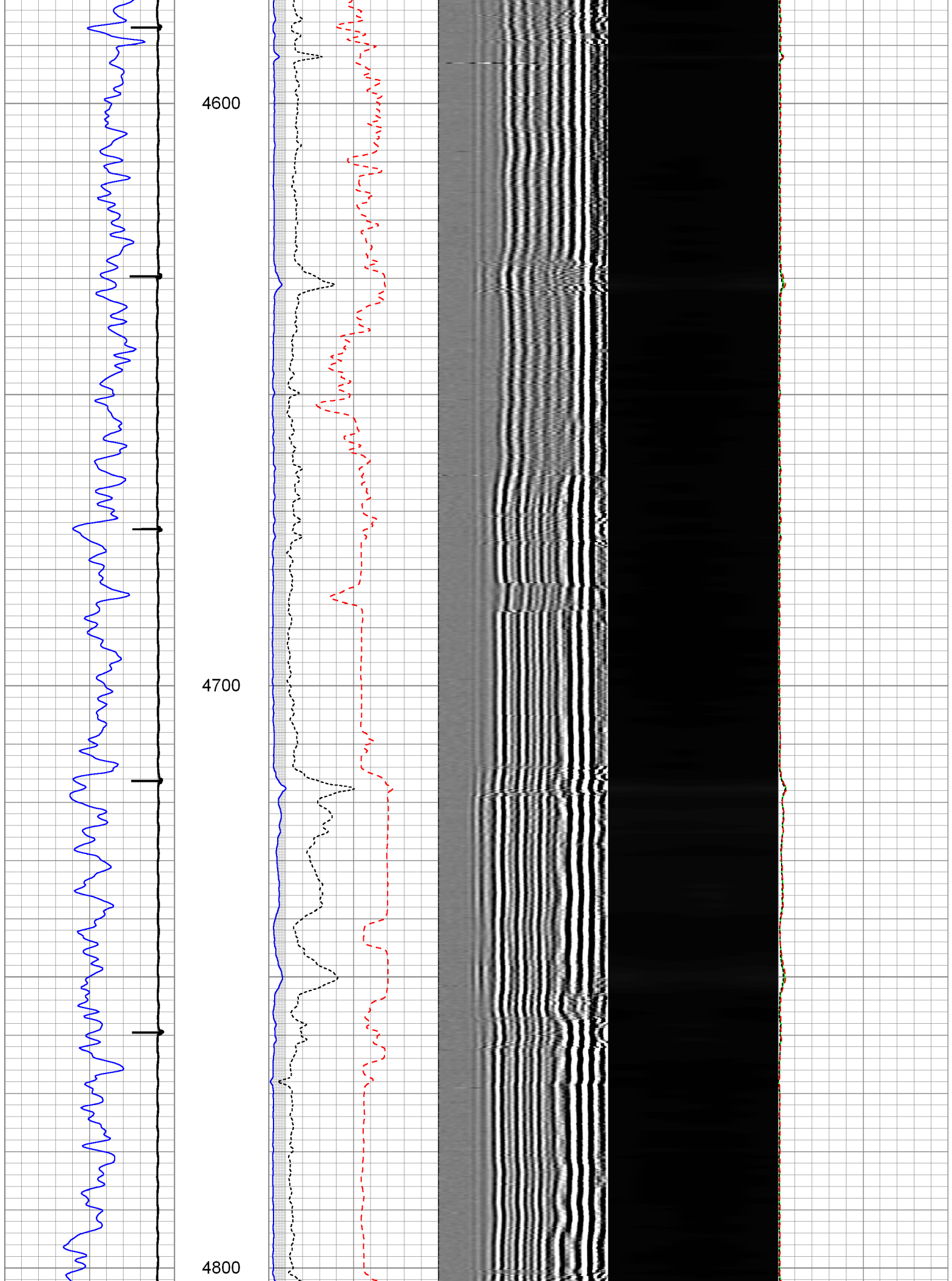


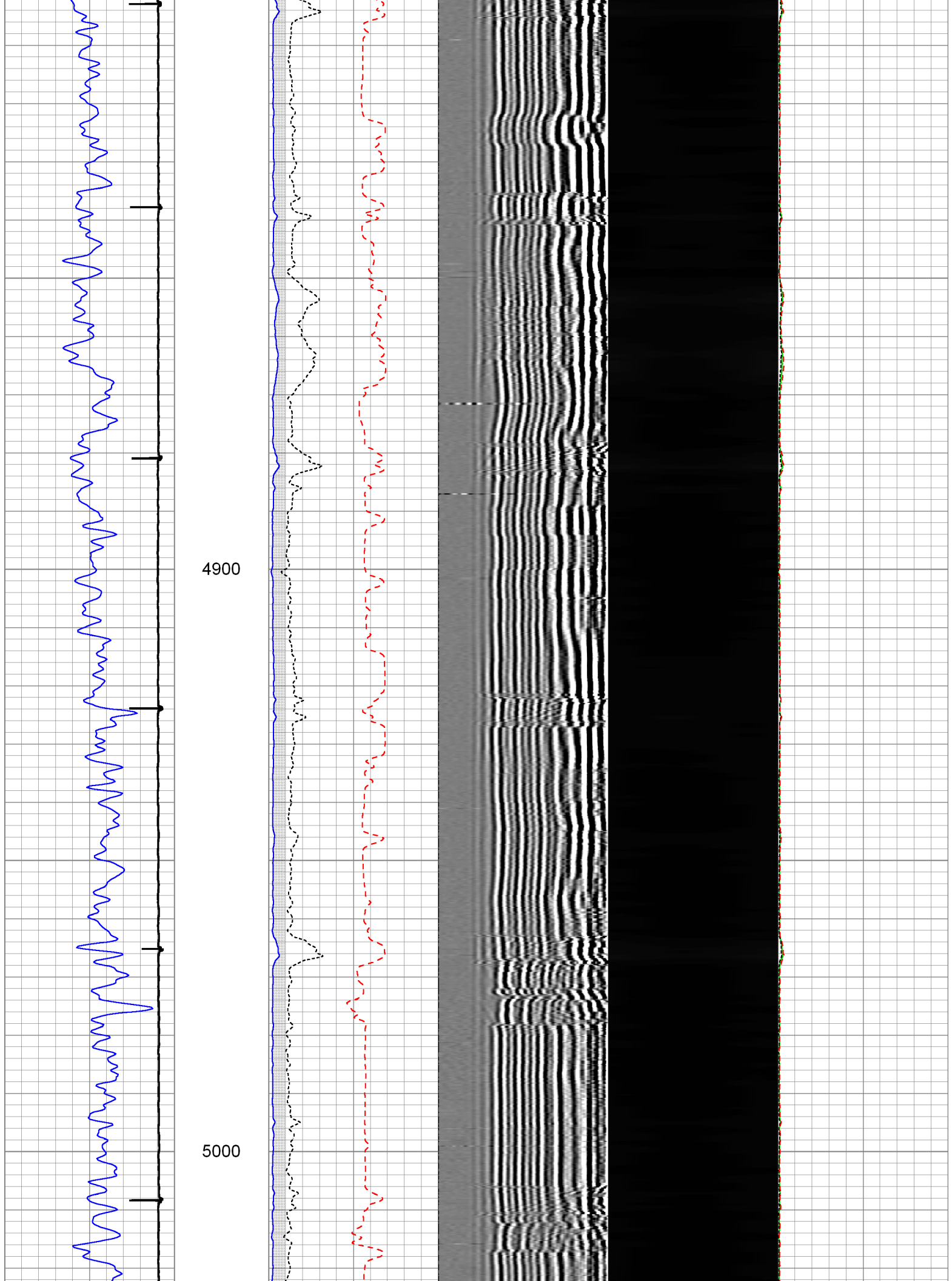


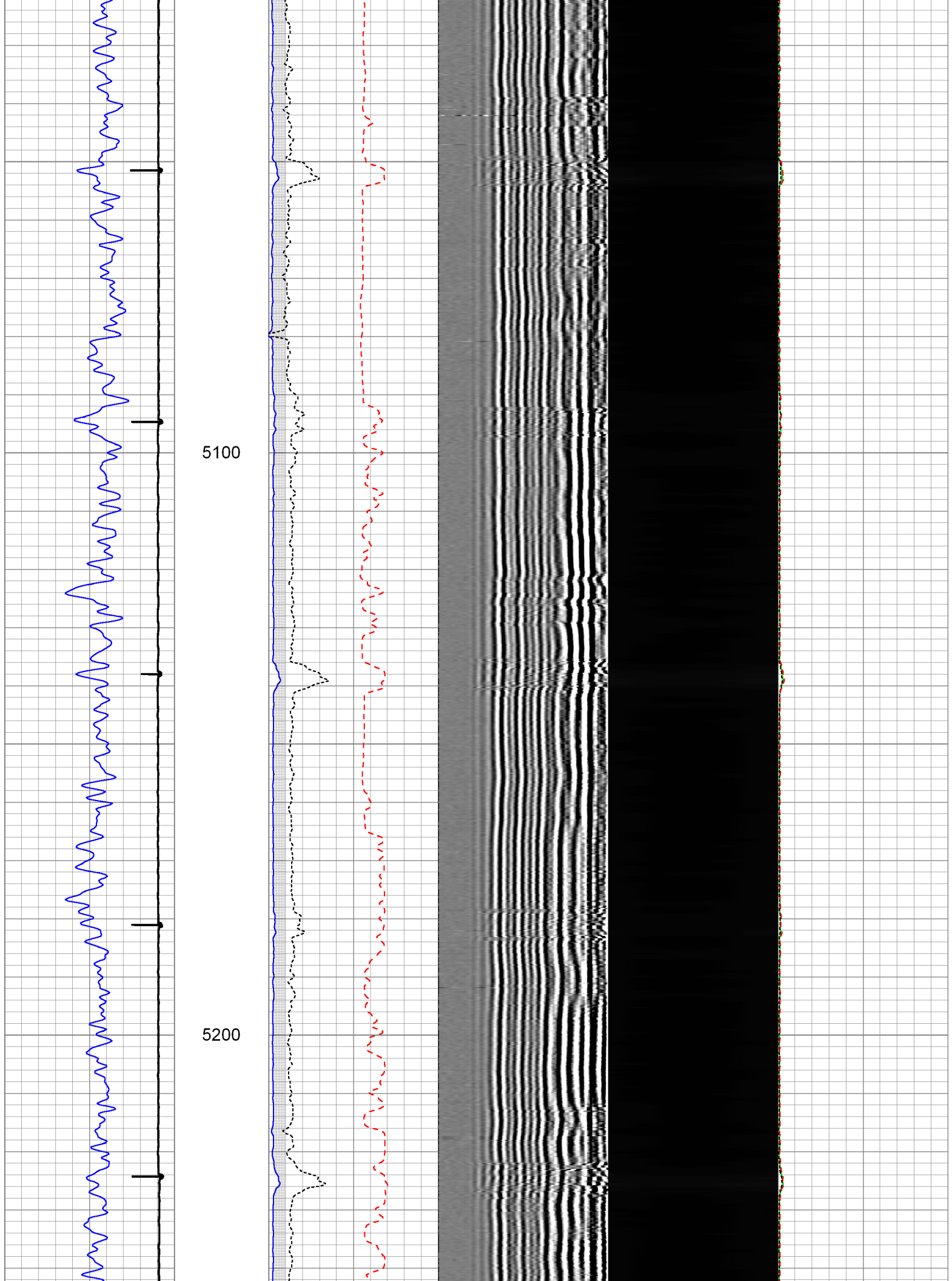


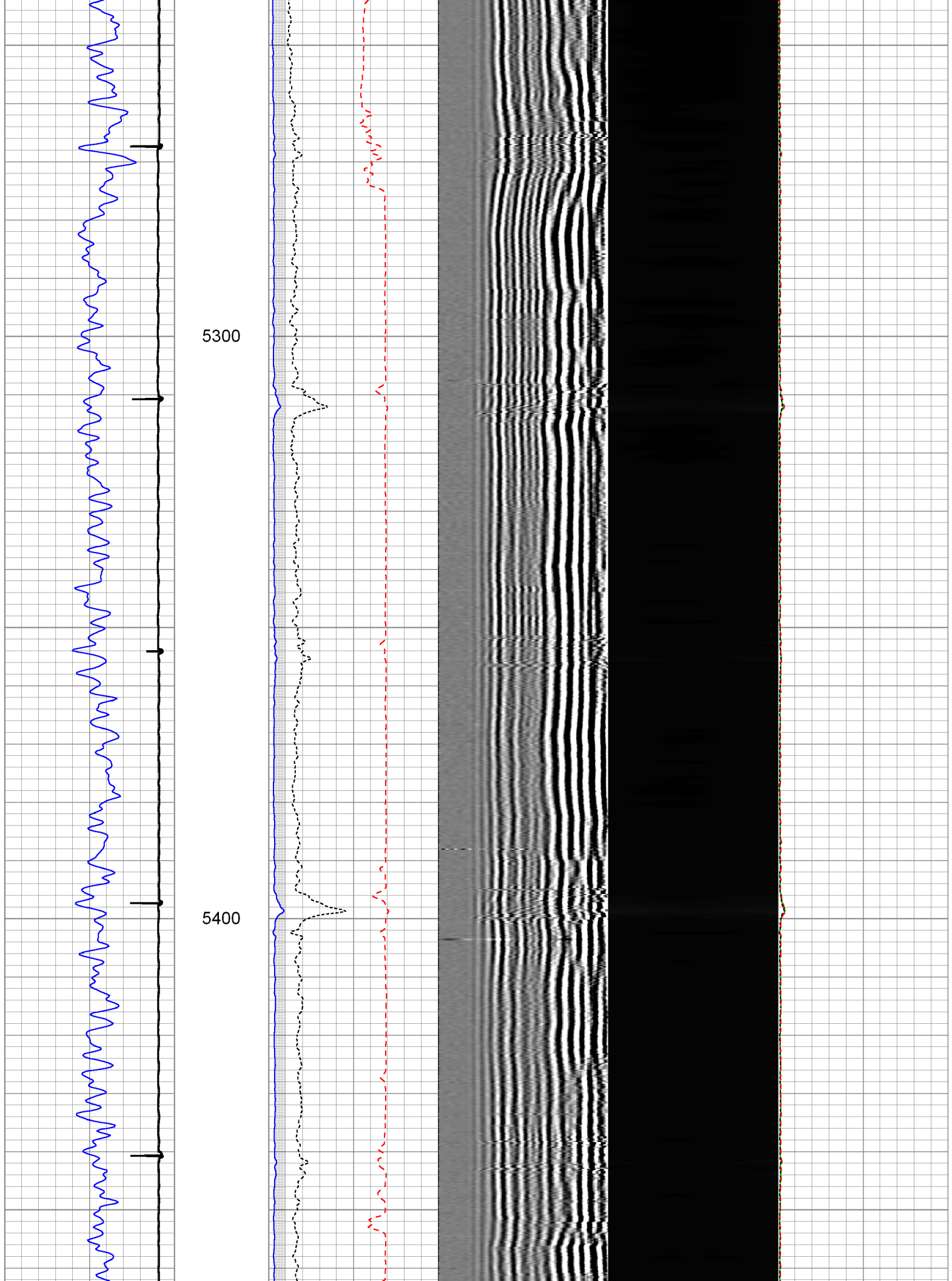






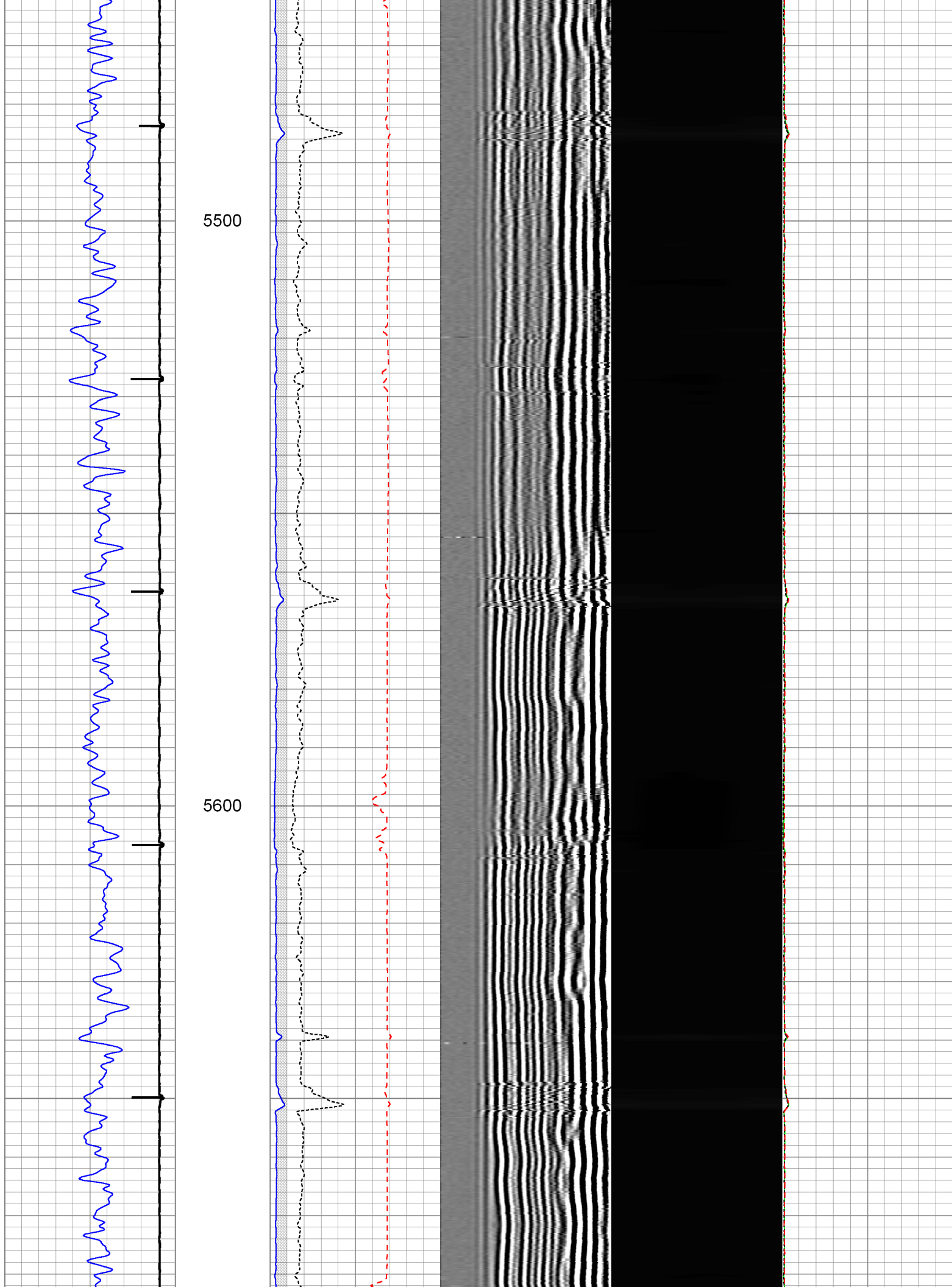






5500

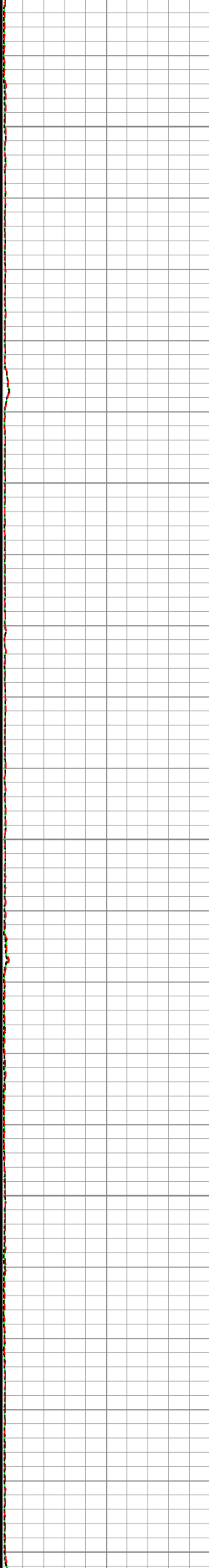
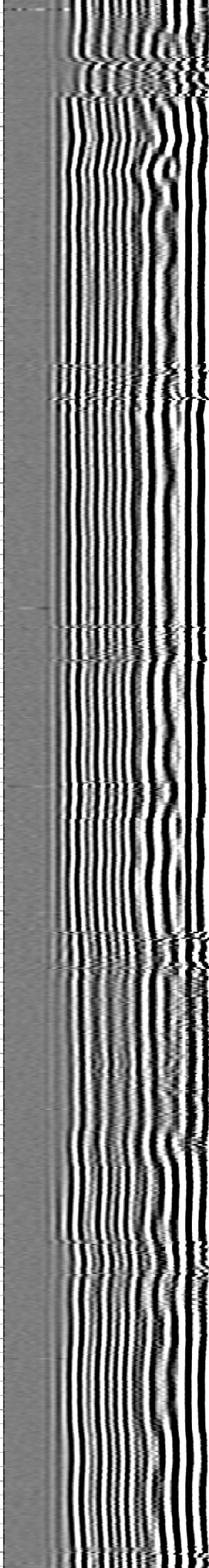
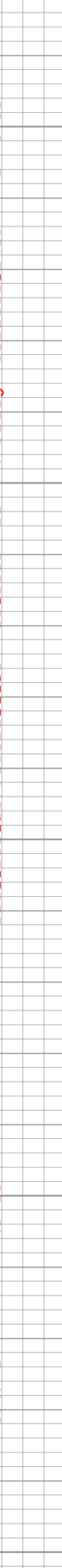
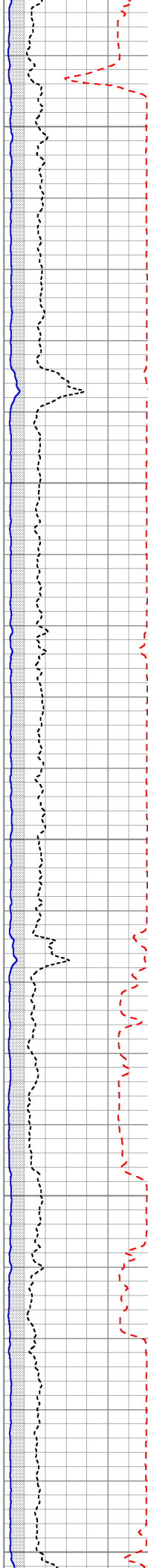
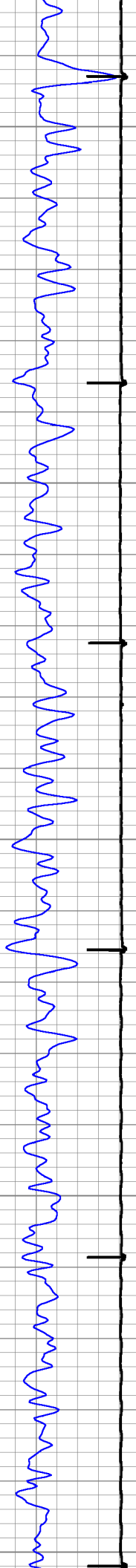
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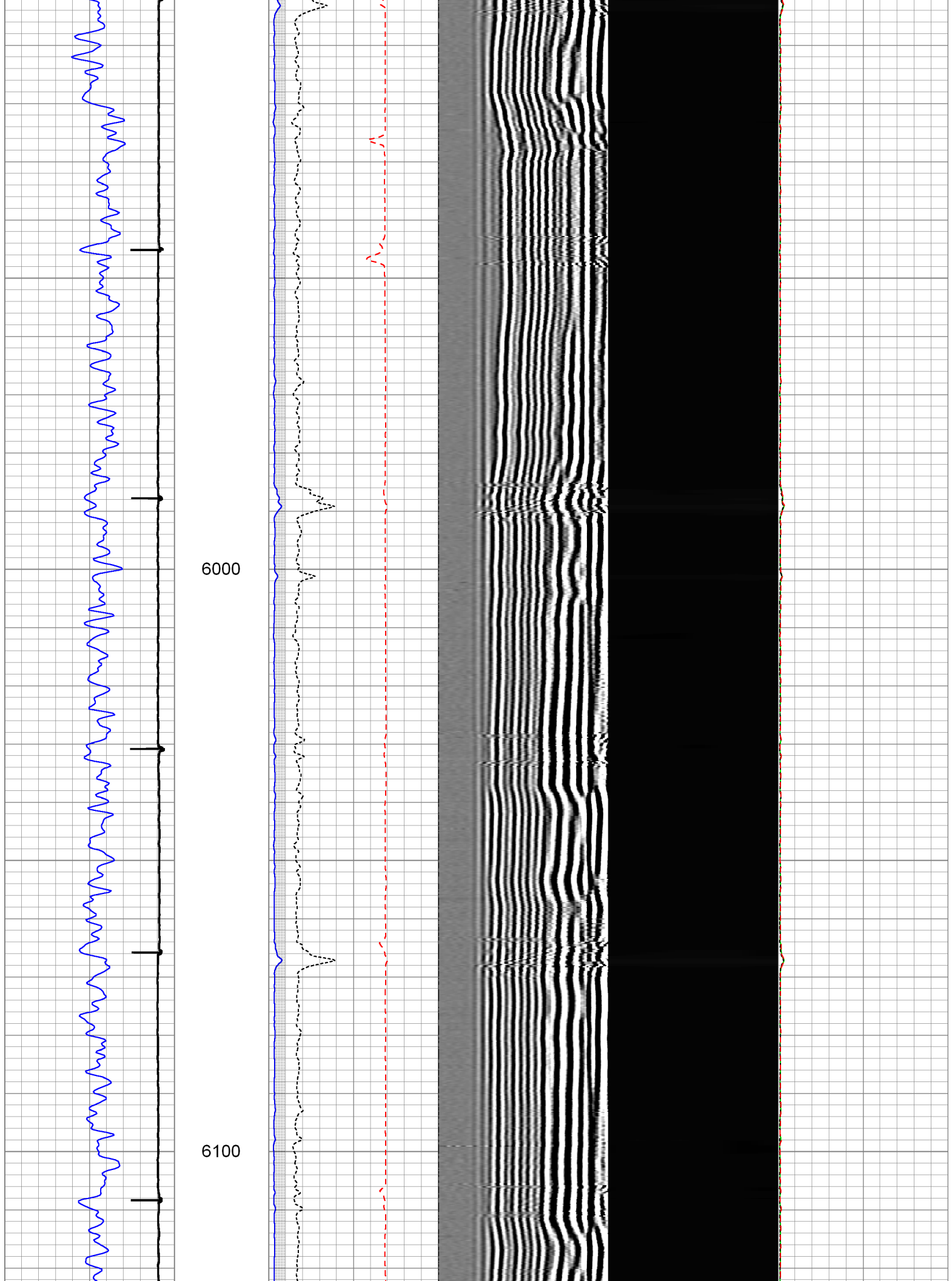


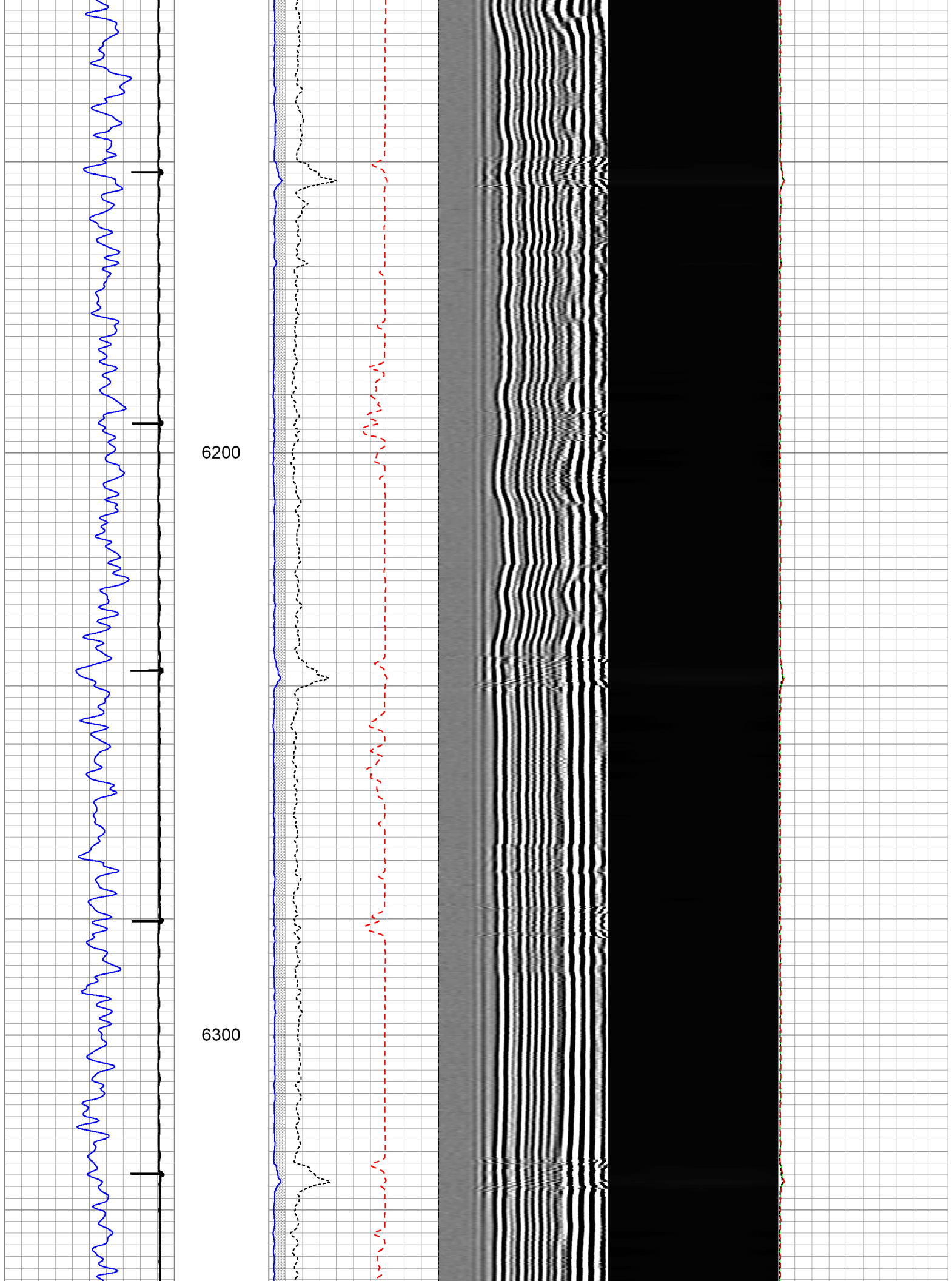
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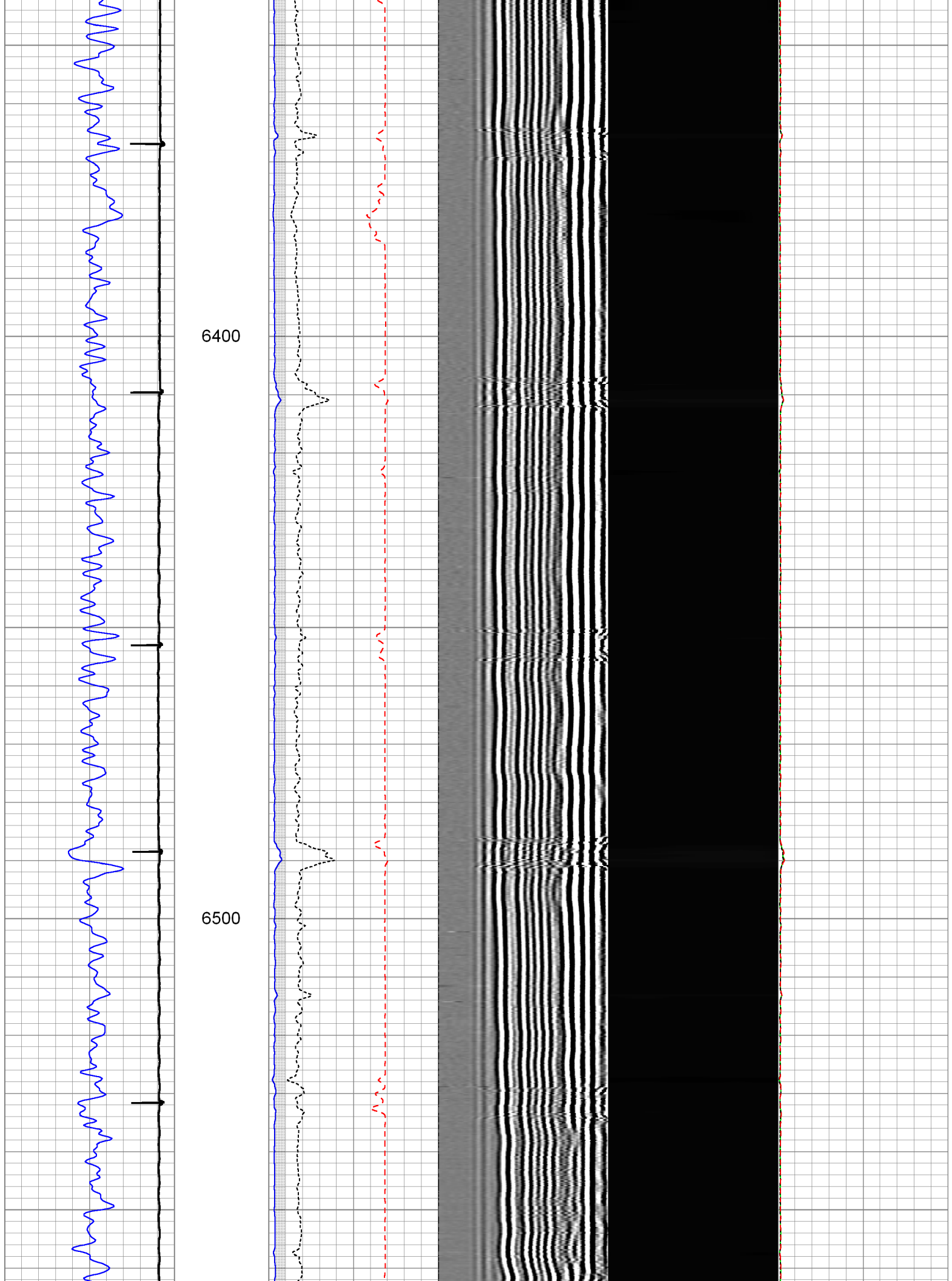
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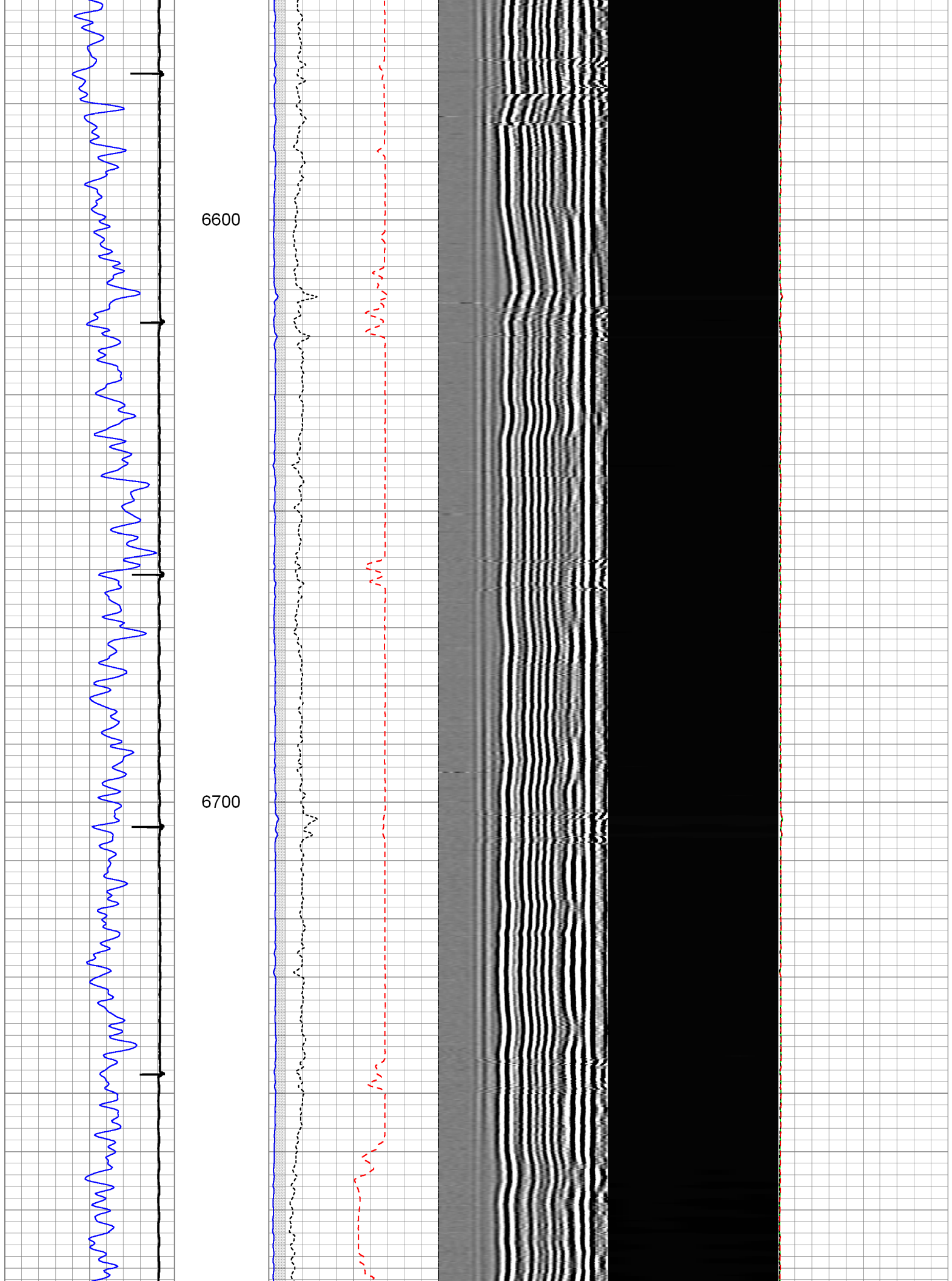
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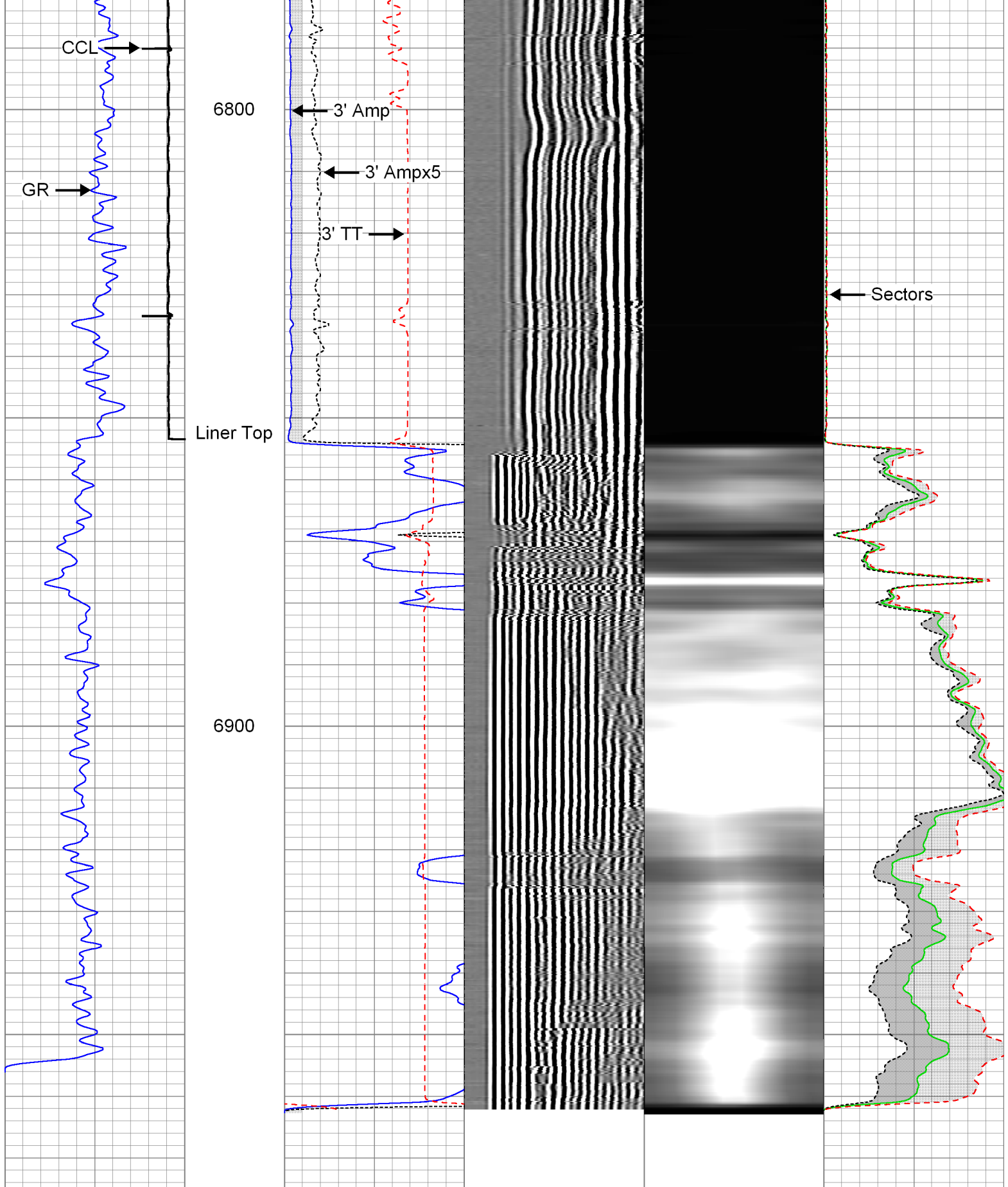












Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	0 150			0 100

650 (usec) 150

0 100

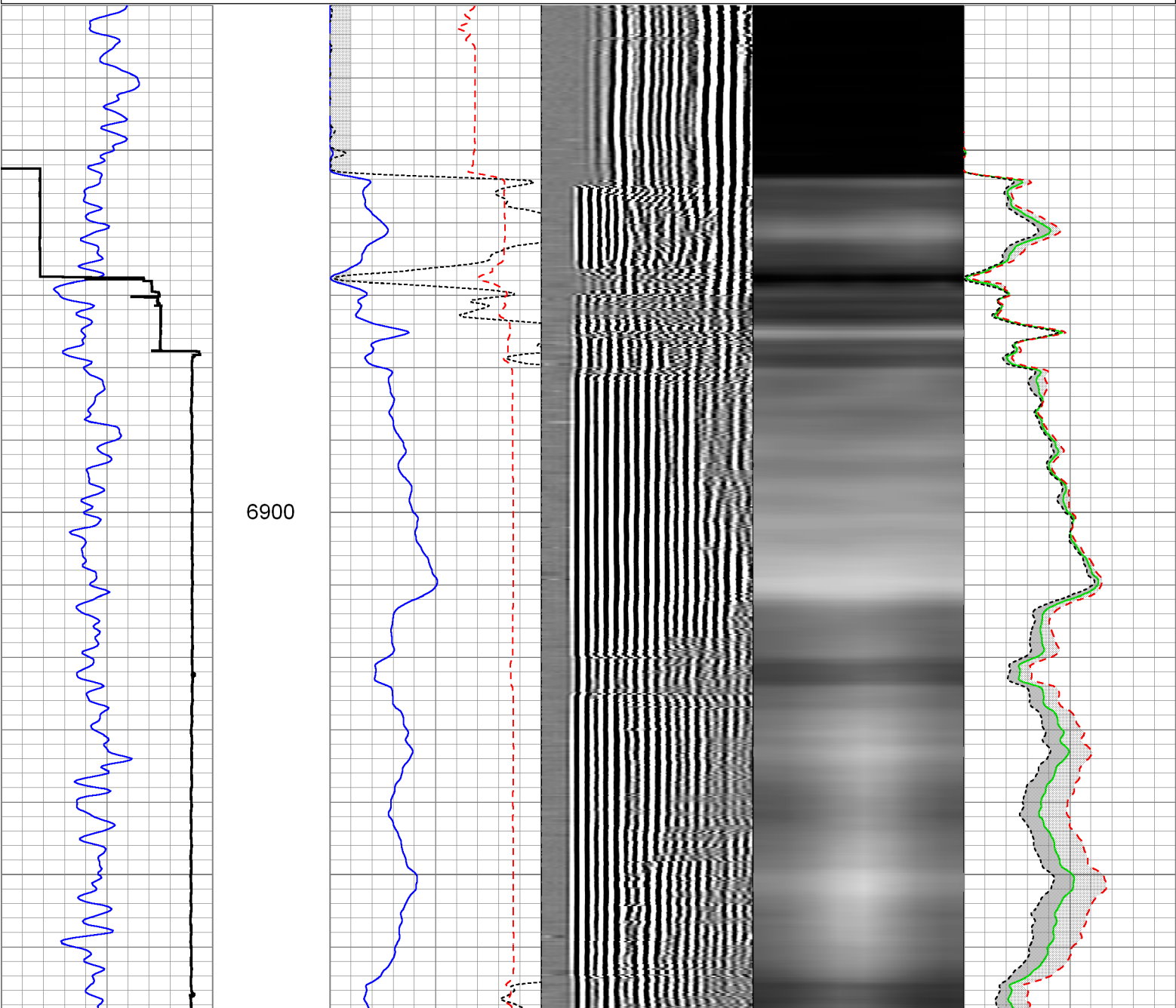


Main Pass: 4.5" Casing

Logged With 2200 PSI At Surface

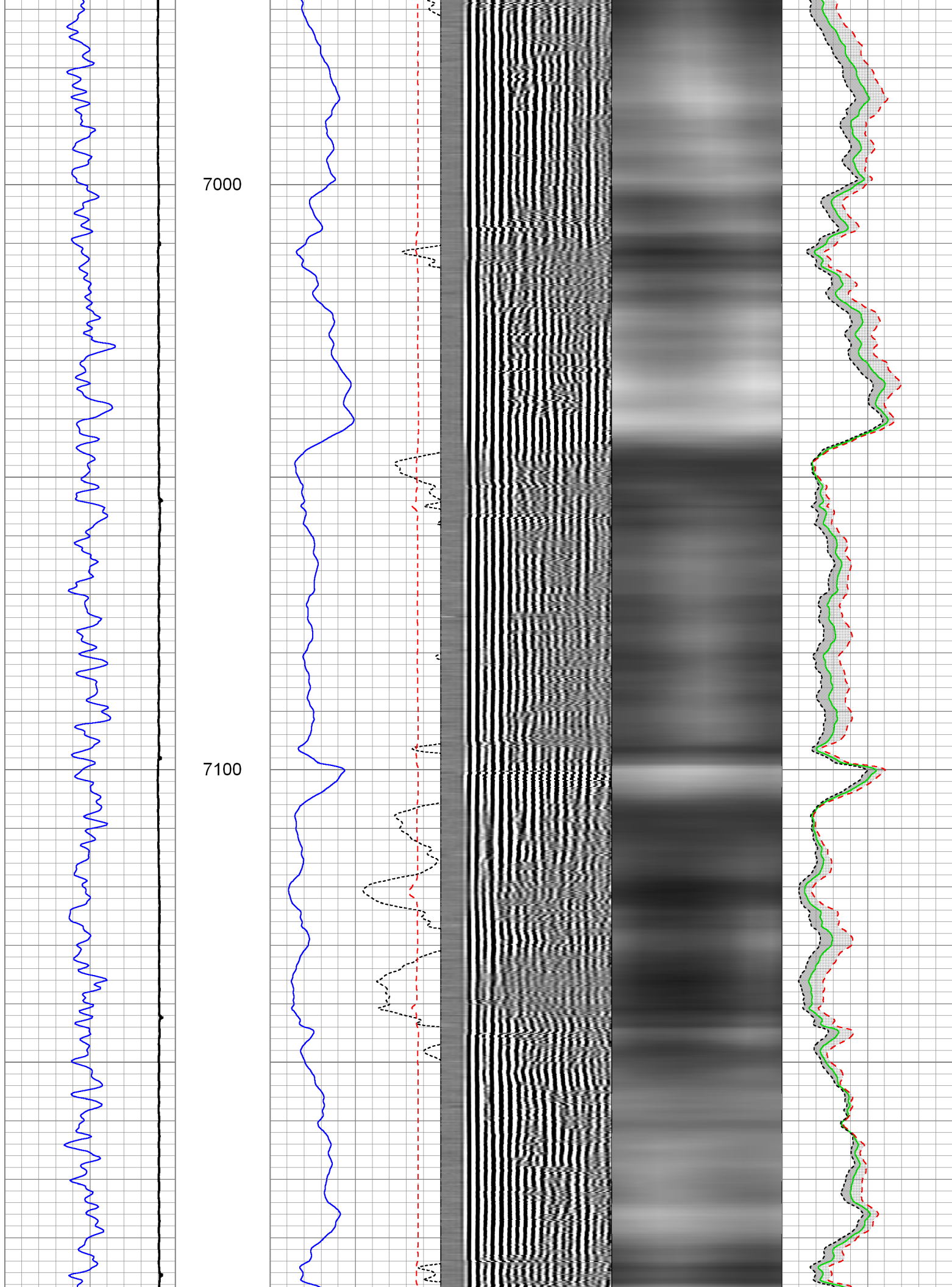
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Dataset Pathname: 4.5main
Presentation Format: rbt007
Dataset Creation: Wed Apr 09 12:48:42 2014 by Log Sondex V7.03
Charted by: Depth in Feet scaled 1:240

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



7000

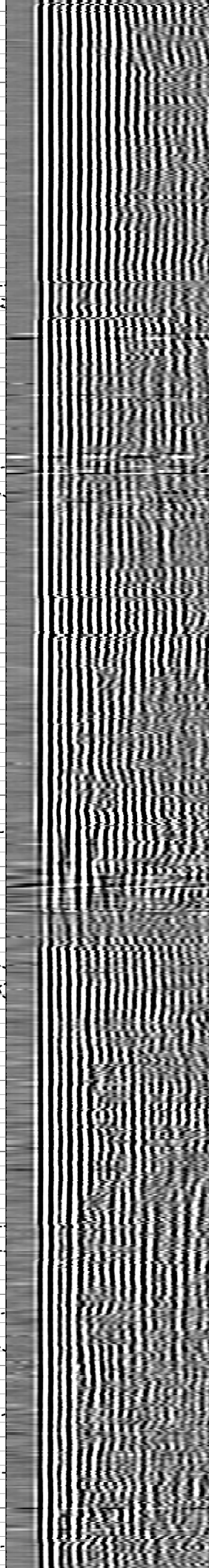
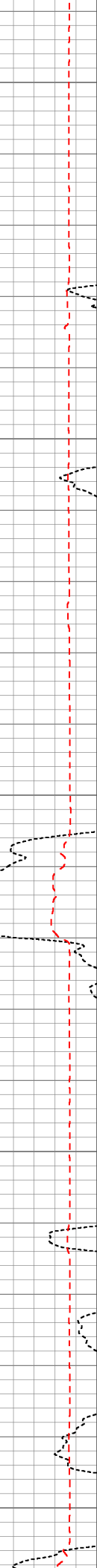
7100



7200

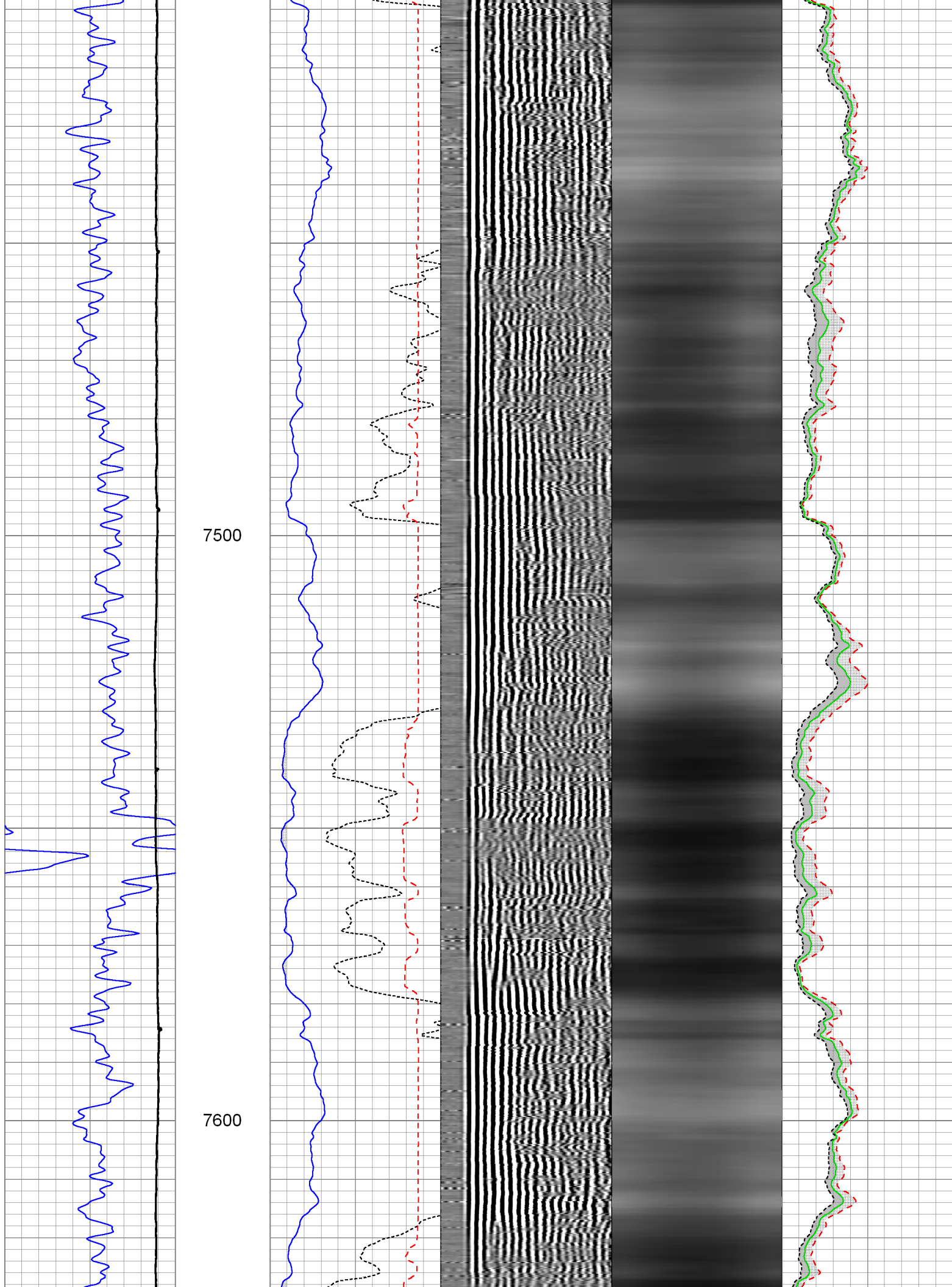
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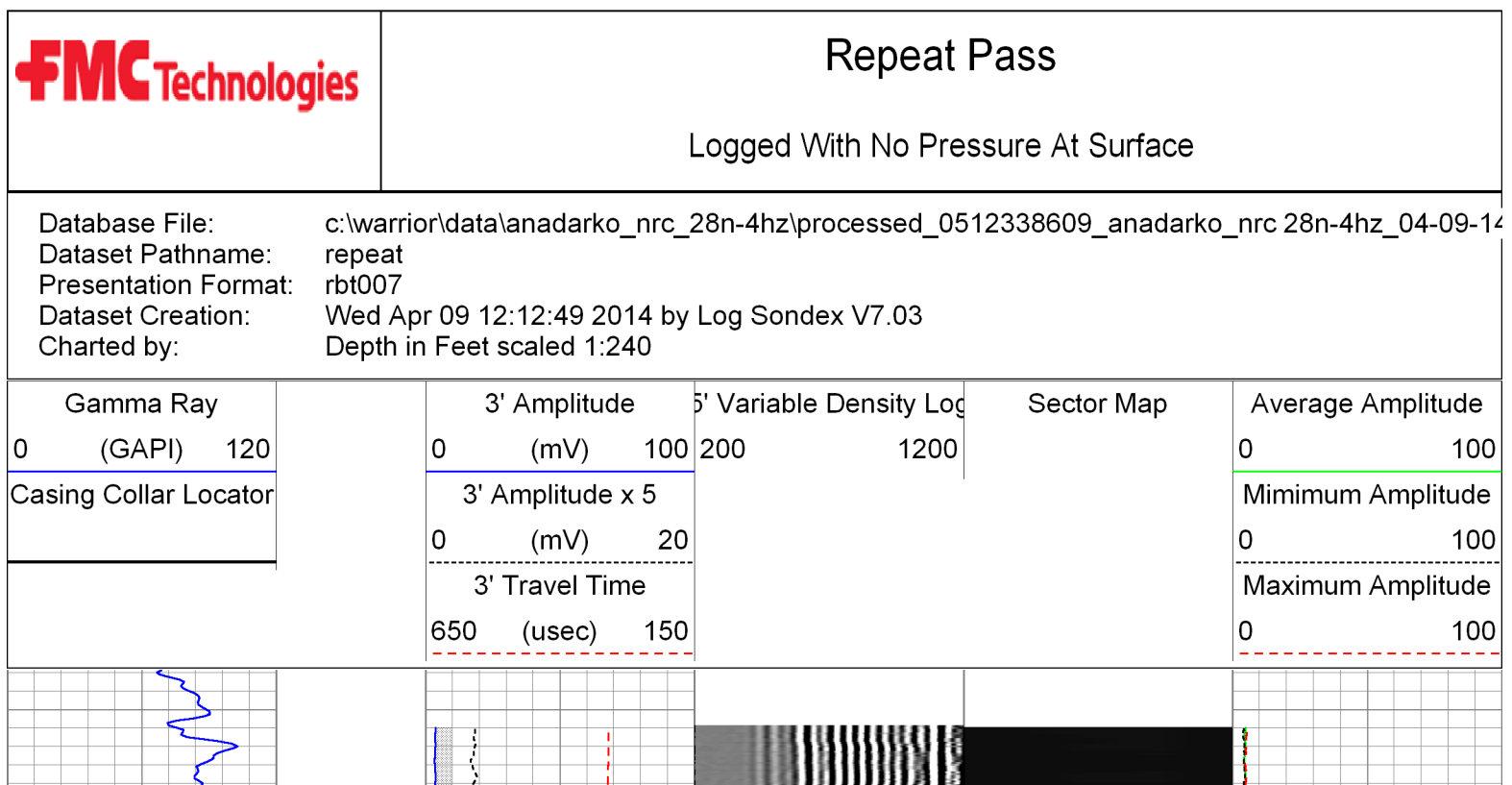
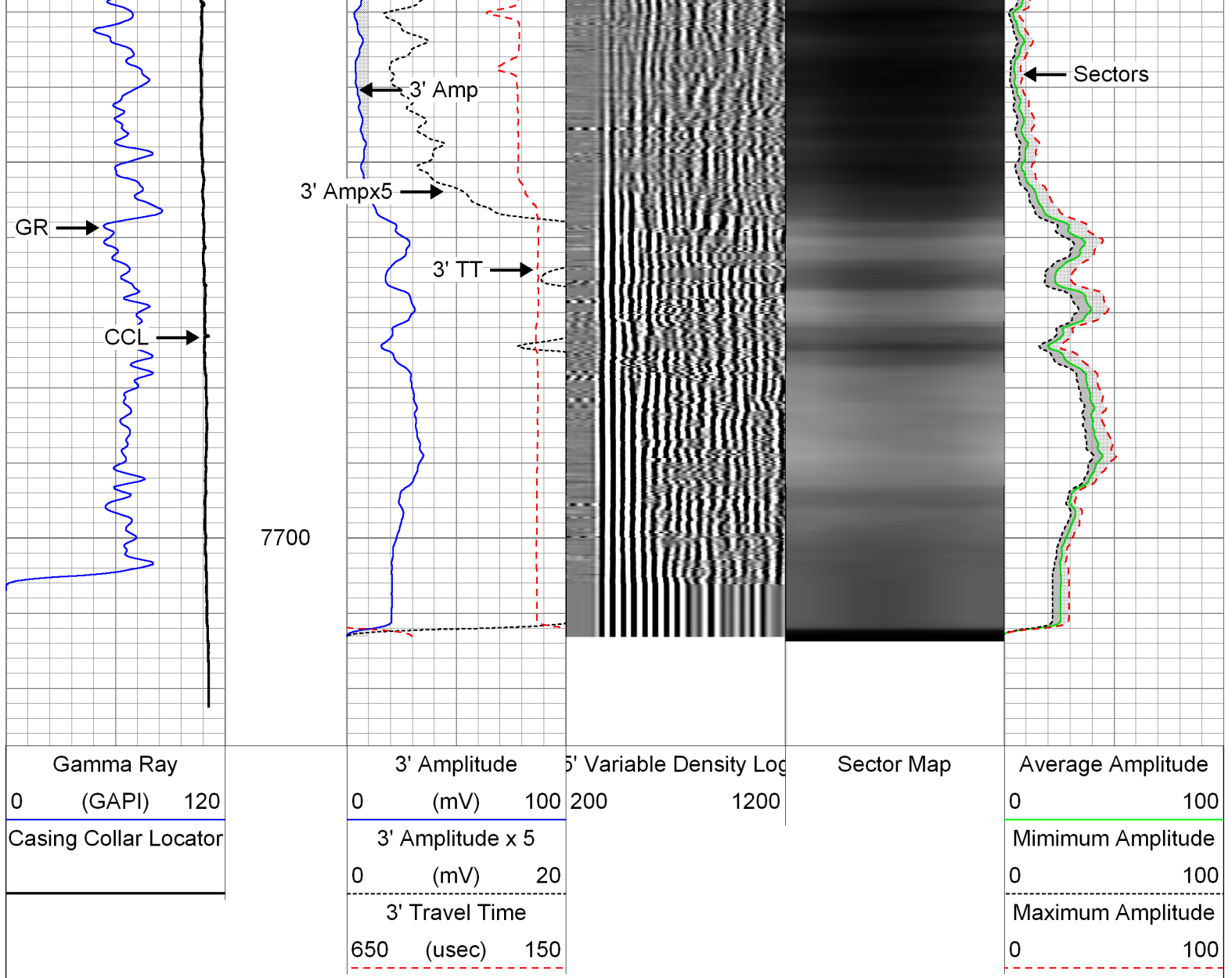
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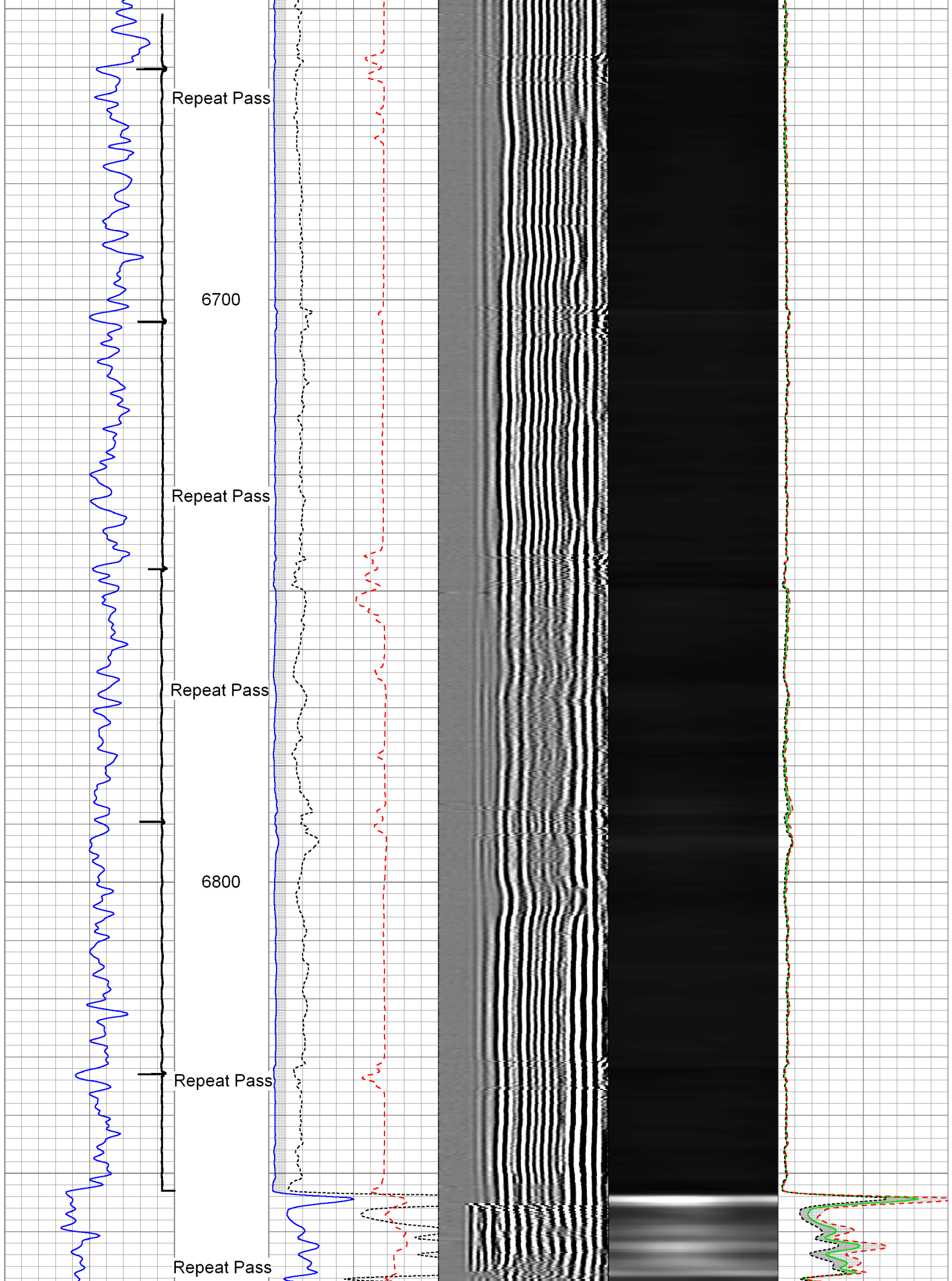


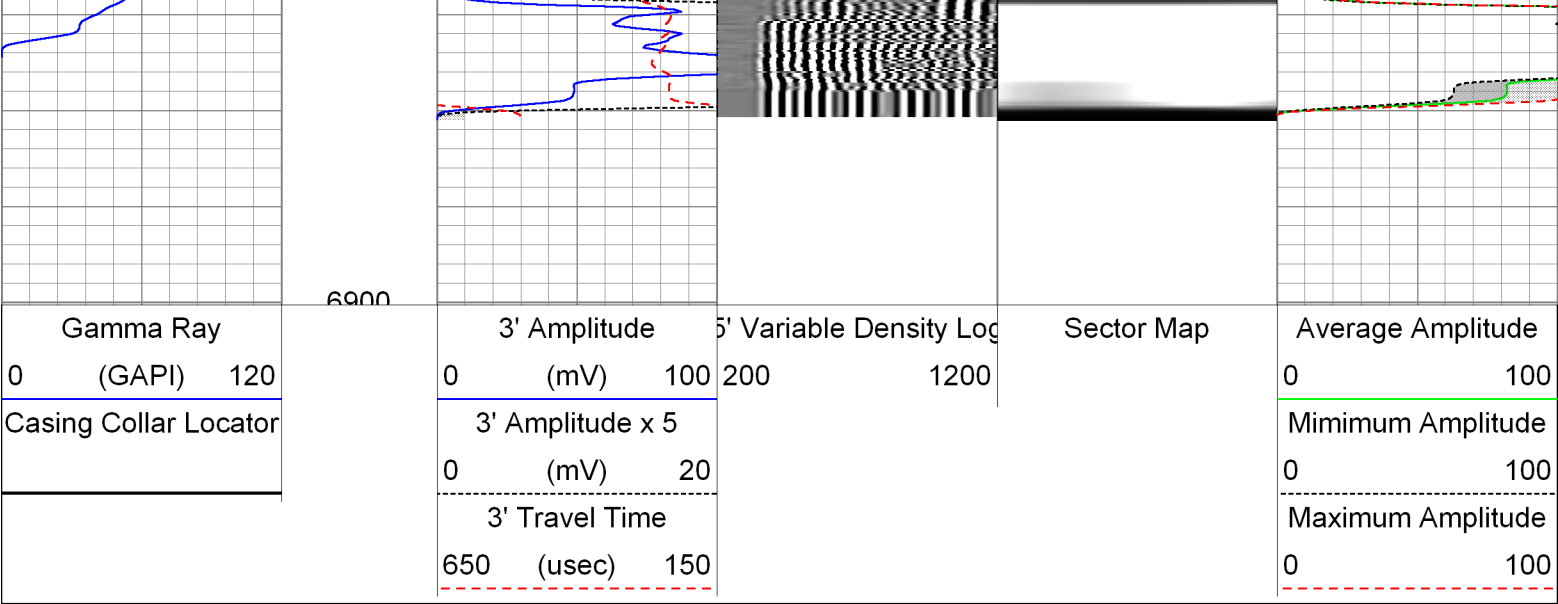
7500

7600

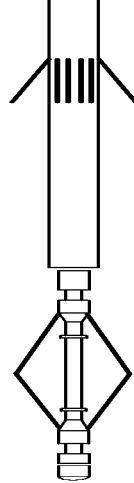








Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.39		CHD-AES (000001) Cable Head	1.04	1.69	2.00
			XTU-002 (218874) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (211727) Production Gamma Ray	1.93	1.69	9.50
			PRC-017 (000002) Production Roller Centraliser (3 Arm)	2.01	1.69	7.00
WVF3FT	15.54		RBT-004 (10012639in7) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	15.54					
WVFS2	15.54					
WVFS3	15.54					
WVFS4	15.54					
WVFS5	15.54					
WVFS6	15.54					
WVFS7	15.54					
WVFS8	15.54					
CBLTEMP	15.54					
CBLROT	15.54					
WVF5FT	14.54					
			PRC-034 (000006) Production Roller Centraliser (4 Arm)	2.91	1.69	13.00

MIT	5.17		MIT-042 (10014703notemp) 40 Multifinger Imaging Tool	4.54	2.75	61.10	
TSTAMP	0.00		PRC-057 (000007) Production Roller Centraliser (4 Arm)	2.74	2.75	32.00	
			BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20	
Dataset: processed_0512338609_anadarko_nrc 28n-4hz_04-09-14_mit.db: field/well/run1/7main Total Length: 26.44 ft Total Weight: 272.30 lb O.D.: 3.13 in							

Calibration Report	
Database File:	c:\warrior\data\anadarko_nrc_28n-4hz\processed_0512338609_anadarko_nrc 28n-4hz_04-09-14_
Dataset Pathname:	7main
Dataset Creation:	Wed Apr 09 13:30:20 2014 by Log Sondex V7.03

Multi-finger Imaging Tool Calibration Report

Serial Number:	10014703notemp
Number of Fingers:	40
Tool Model:	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:	Wed Apr 09 11:11:32 2014					
Ring size:	4	5	6	7		
(in)						
	Sens	Sens	Sens	Sens		
Finger 01:	1074 380.0	1454 373.0	1827 387.0	2214		
Finger 02:	1035 379.0	1414 389.0	1803 406.0	2209		
Finger 03:	1038 366.0	1404 380.0	1784 391.0	2175		
Finger 04:	997 367.0	1364 403.0	1767 414.0	2181		
Finger 05:	1038 348.0	1386 380.0	1766 382.0	2148		
Finger 06:	1035 352.0	1387 397.0	1784 399.0	2183		
Finger 07:	1052 344.0	1396 393.0	1789 389.0	2178		
Finger 08:	1017 342.0	1359 408.0	1767 411.0	2178		
Finger 09:	1083 336.0	1419 400.0	1819 385.0	2204		
Finger 10:	1059 329.0	1388 406.0	1794 395.0	2189		
Finger 11:	1039 322.0	1361 411.0	1772 403.0	2175		
Finger 12:	1125 317.0	1442 393.0	1835 372.0	2207		
Finger 13:	1065 311.0	1376 409.0	1785 411.0	2196		
Finger 14:	1053 320.0	1373 428.0	1801 421.0	2222		

Finger 14:	1033	320.0	1373	428.0	1801	421.0	2222
Finger 15:	1030	317.0	1347	432.0	1779	429.0	2208
Finger 16:	1072	312.0	1384	420.0	1804	417.0	2221
Finger 17:	1105	307.0	1412	408.0	1820	404.0	2224
Finger 18:	1130	310.0	1440	405.0	1845	411.0	2256
Finger 19:	1102	317.0	1419	413.0	1832	420.0	2252
Finger 20:	1020	317.0	1337	424.0	1761	440.0	2201
Finger 21:	1113	316.0	1429	401.0	1830	431.0	2261
Finger 22:	1086	329.0	1415	407.0	1822	433.0	2255
Finger 23:	1190	316.0	1506	376.0	1882	399.0	2281
Finger 24:	1096	347.0	1443	405.0	1848	438.0	2286
Finger 25:	1099	343.0	1442	401.0	1843	438.0	2281
Finger 26:	1121	350.0	1471	389.0	1860	422.0	2282
Finger 27:	1129	348.0	1477	379.0	1856	424.0	2280
Finger 28:	1087	365.0	1452	389.0	1841	437.0	2278
Finger 29:	1060	374.0	1434	395.0	1829	449.0	2278
Finger 30:	1047	376.0	1423	390.0	1813	443.0	2256
Finger 31:	1102	377.0	1479	372.0	1851	416.0	2267
Finger 32:	1044	381.0	1425	378.0	1803	431.0	2234
Finger 33:	1053	390.0	1443	376.0	1819	428.0	2247
Finger 34:	1041	394.0	1435	383.0	1818	431.0	2249
Finger 35:	1095	384.0	1479	361.0	1840	401.0	2241
Finger 36:	1027	394.0	1421	376.0	1797	418.0	2215
Finger 37:	1135	380.0	1515	351.0	1866	387.0	2253
Finger 38:	1086	381.0	1467	370.0	1837	390.0	2227
Finger 39:	1036	386.0	1422	376.0	1798	409.0	2207
Finger 40:	968	393.0	1361	396.0	1757	429.0	2186

Segmented Cement Bond Log Calibration Report

Serial Number:	10012639in7
Tool Model:	004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	348.726 ft

Master Calibration, performed Wed Apr 09 11:34:33 2014:							
	Raw (v)		Calibrated (mv)		Results		
	Zero	Cal	Zero	Cal	Gain	Offset	
3FT	0.011	0.707	0.800	62.165	88.129	-0.149	
5FT	0.010	0.672	0.800	62.165	92.685	-0.165	
S1	0.010	0.681	0.000	100.000	149.008	-1.428	
S2	0.007	0.673	0.000	100.000	150.095	-1.085	
S3	0.010	0.687	0.000	100.000	147.575	-1.450	
S4	0.010	0.707	0.000	100.000	143.443	-1.373	
S5	0.011	0.722	0.000	100.000	140.650	-1.544	
S6	0.010	0.726	0.000	100.000	139.719	-1.375	
S7	0.010	0.714	0.000	100.000	142.057	-1.403	
S8	0.010	0.698	0.000	100.000	145.383	-1.459	

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	NRC 28N-4HZ
Field	Wattenberg
County	Weld
State	Colorado