



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Kerr McGee Oil & Gas Onshore LP	
Well		Vollmar 29C-11HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API #: 05-123-40535	
SEC 14		TWP 2N	
RGE 67W		Other Services	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		K.B. 4957'	
Elevation		D.F. 4956'	
Elevation		G.L. 4941'	
Date		04-MAY-2015	
Run Number		Two	
Depth Driller		13082 FT	
Depth Logger		7600 FT	
Bottom Logged Interval		7599 FT	
Top Log Interval		Surface	
Open Hole Size		8.765"	
Type Fluid		Water	
Density / Viscosity		8.34 lb/gal	
Max. Recorded Temp.		237°F	
Estimated Cement Top		Surface	
Time Well Ready		ROA	
Time Logger on Bottom		1:00 PM	
Equipment Number		HD-0340	
Location		Ft Lupton, CO	
Recorded By		B. Kalkwarf	
Witnessed By		Mario Torrez	
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		J-55 LTC	
Intermediate #1		P-110 LT&C	
Intermediate #2		Surface	
Liner		4 1/2	
11.6		P-110 LT&C	
6921 FT		13078 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 referenced to liner top at 6921 FT.
Adjusted +12 FT to correlate with casing tally liner top.
Log ran from 7600 FT to surface.
Log ran with 2800 PSI surface induced pressure.

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

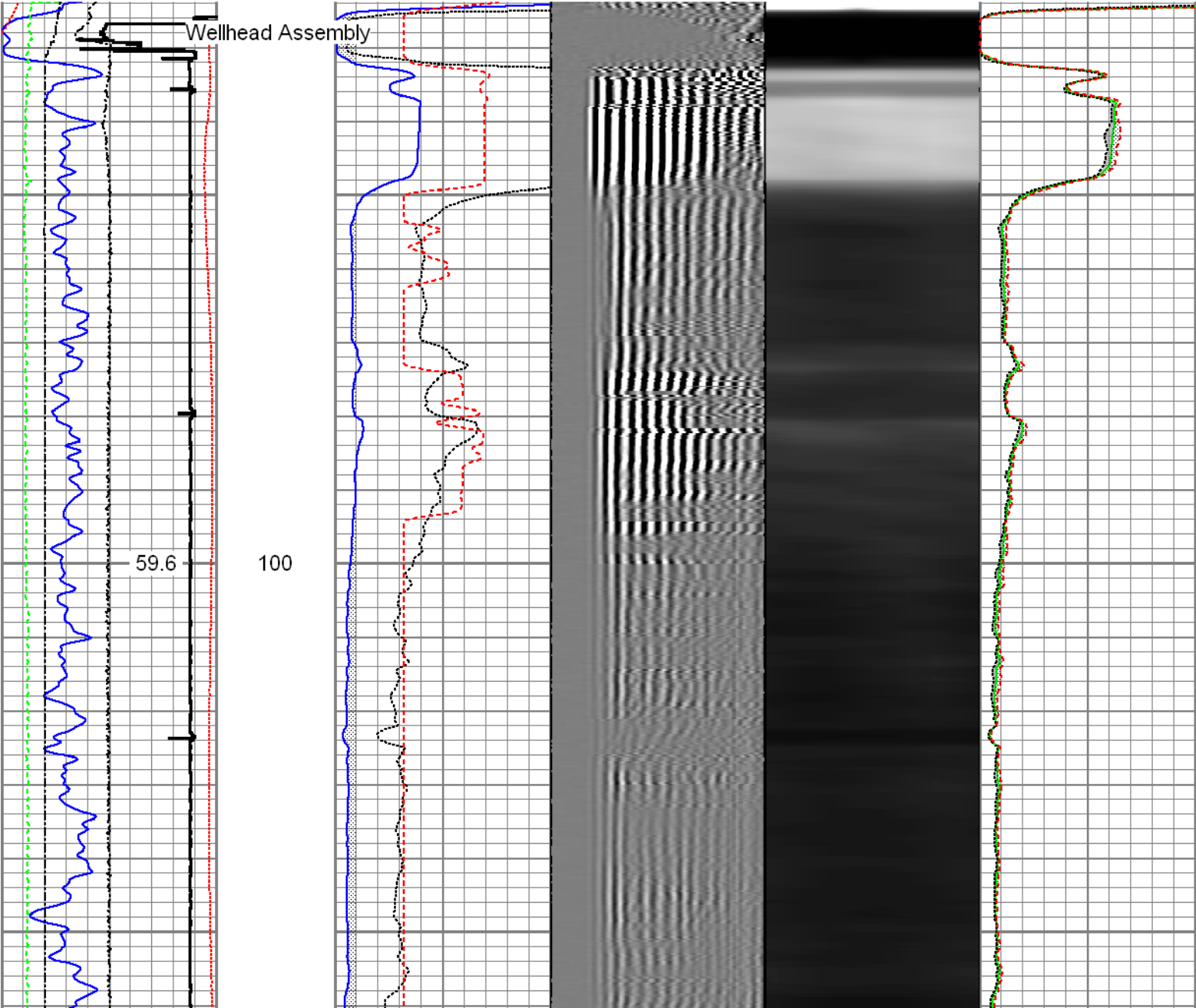


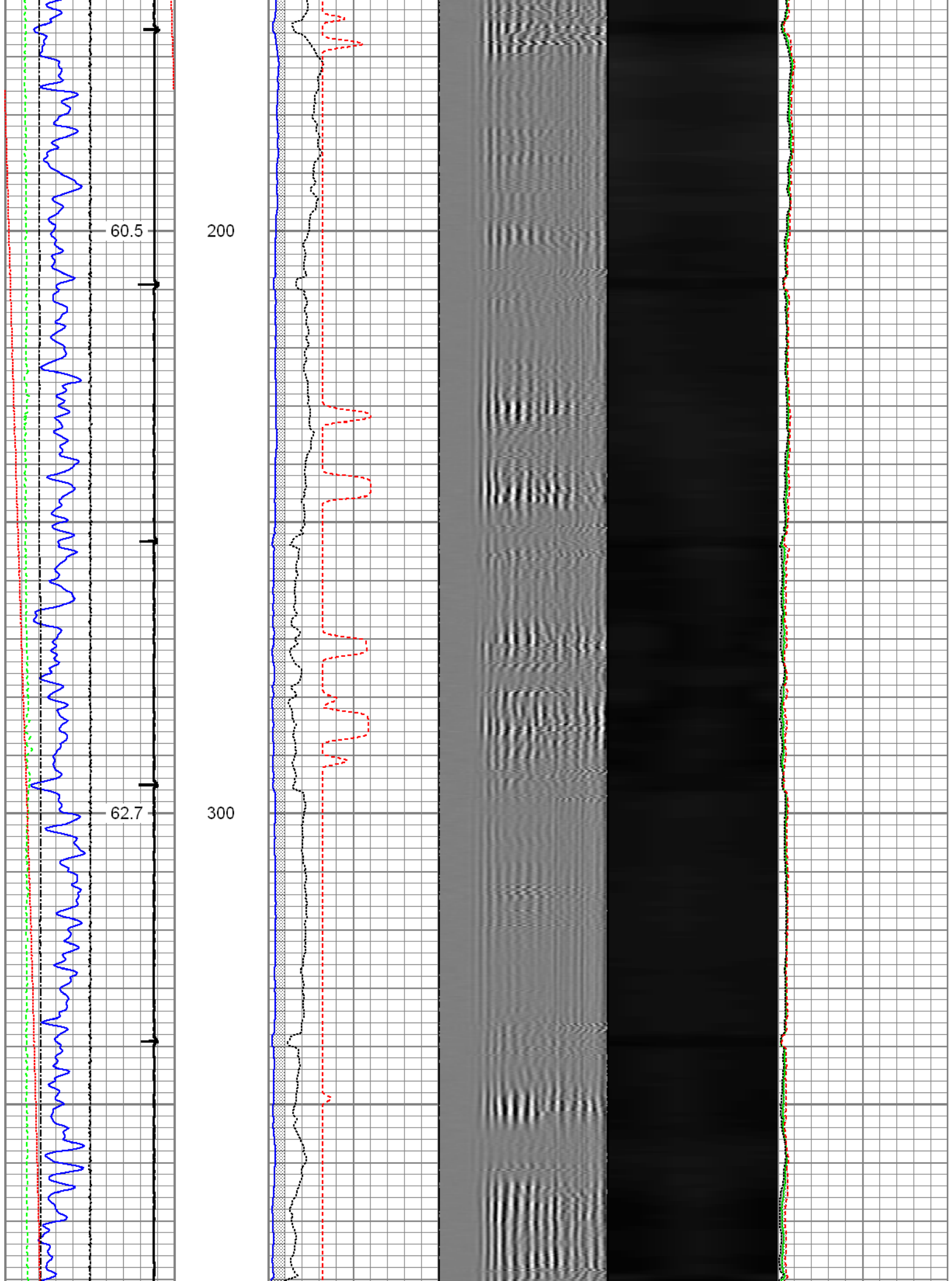
7" Main Pass

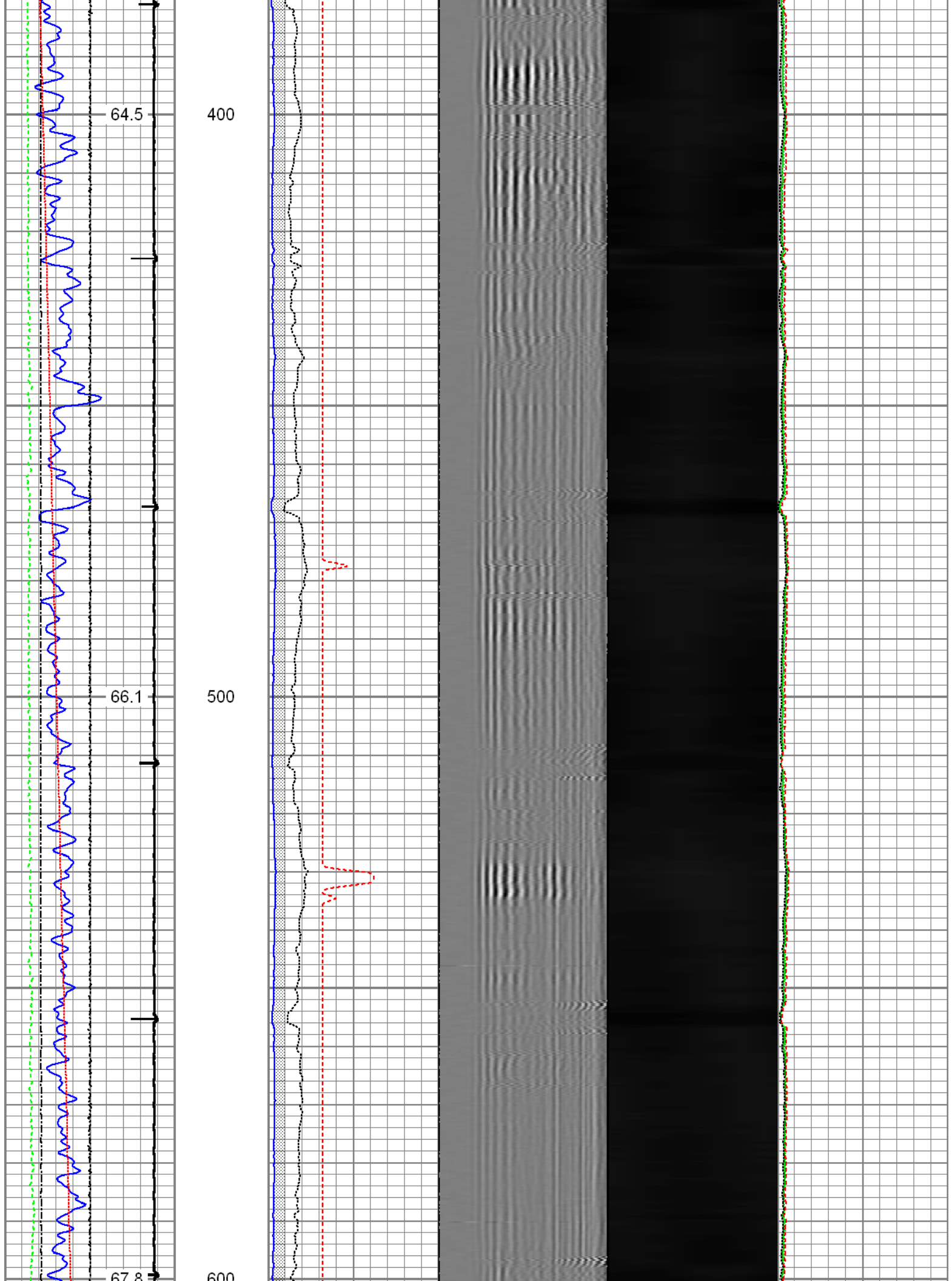
Recorded With 2800 PSI Surface Induced Pressure

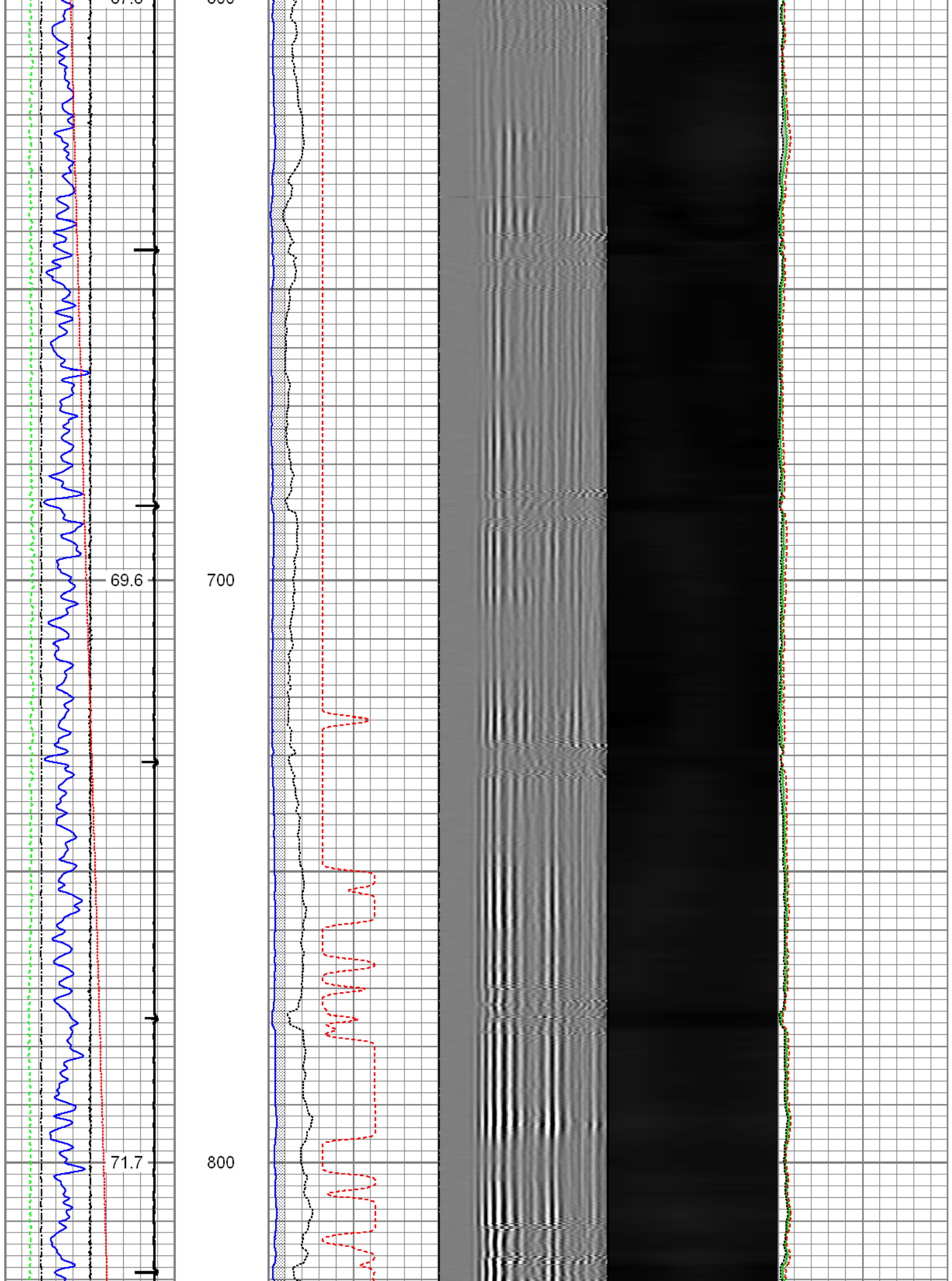
Database File: 0512340535_anadarko_vollmar 29c-11hz_05-04-15_mit_rbl.db
Dataset Pathname: pass7
Presentation Format: rbt4_mit
Dataset Creation: Mon May 04 13:21:39 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

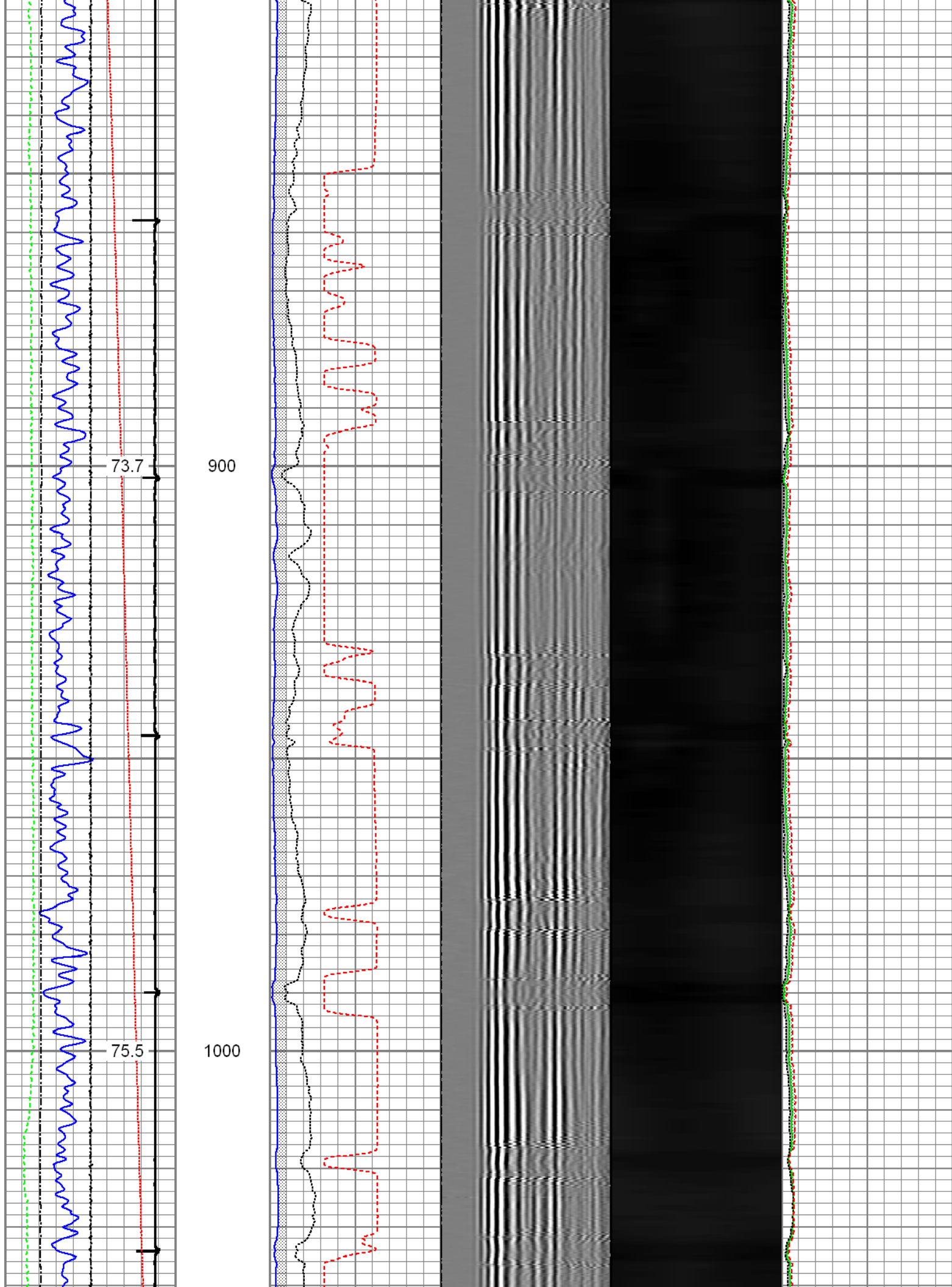
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				

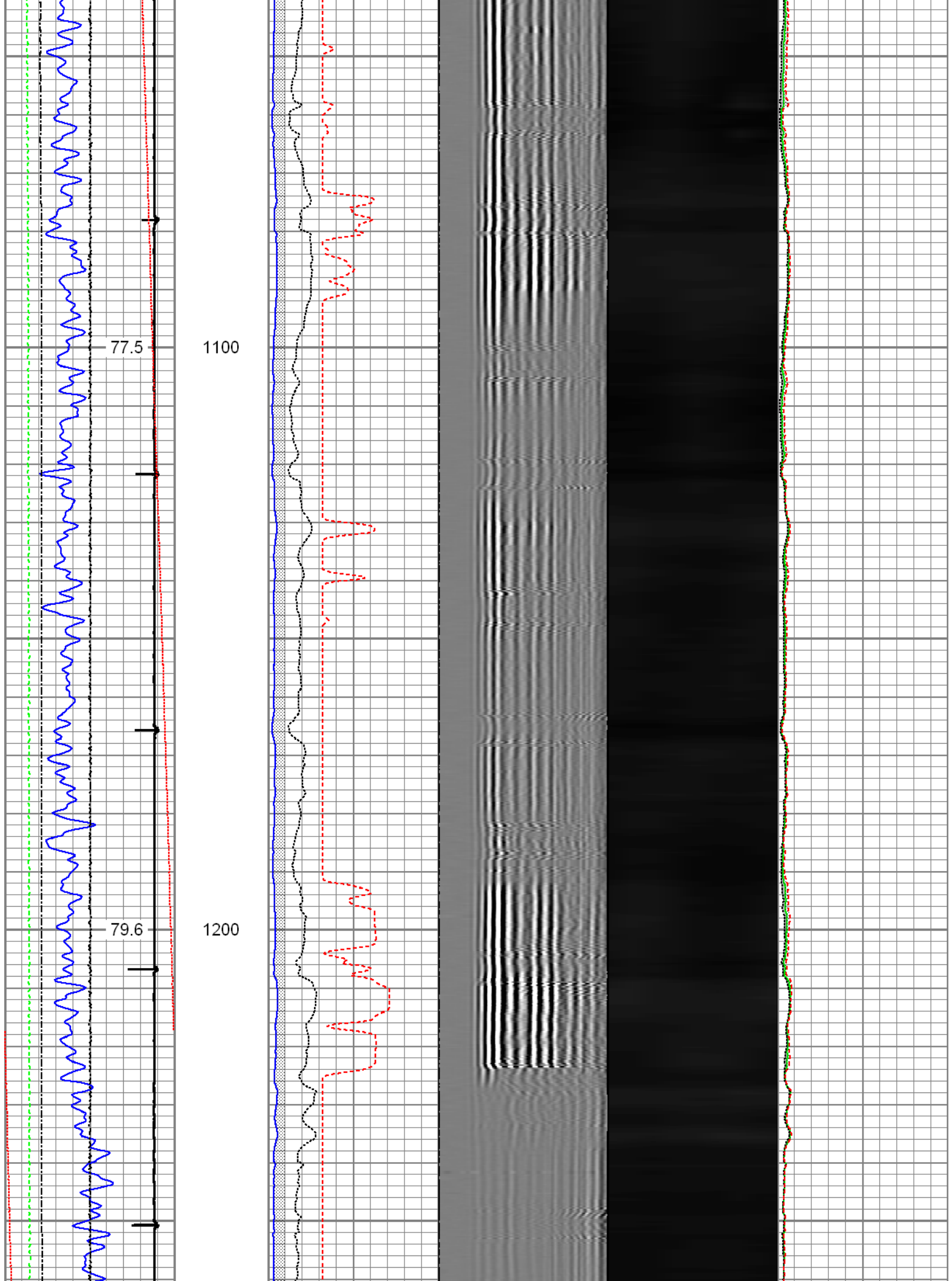


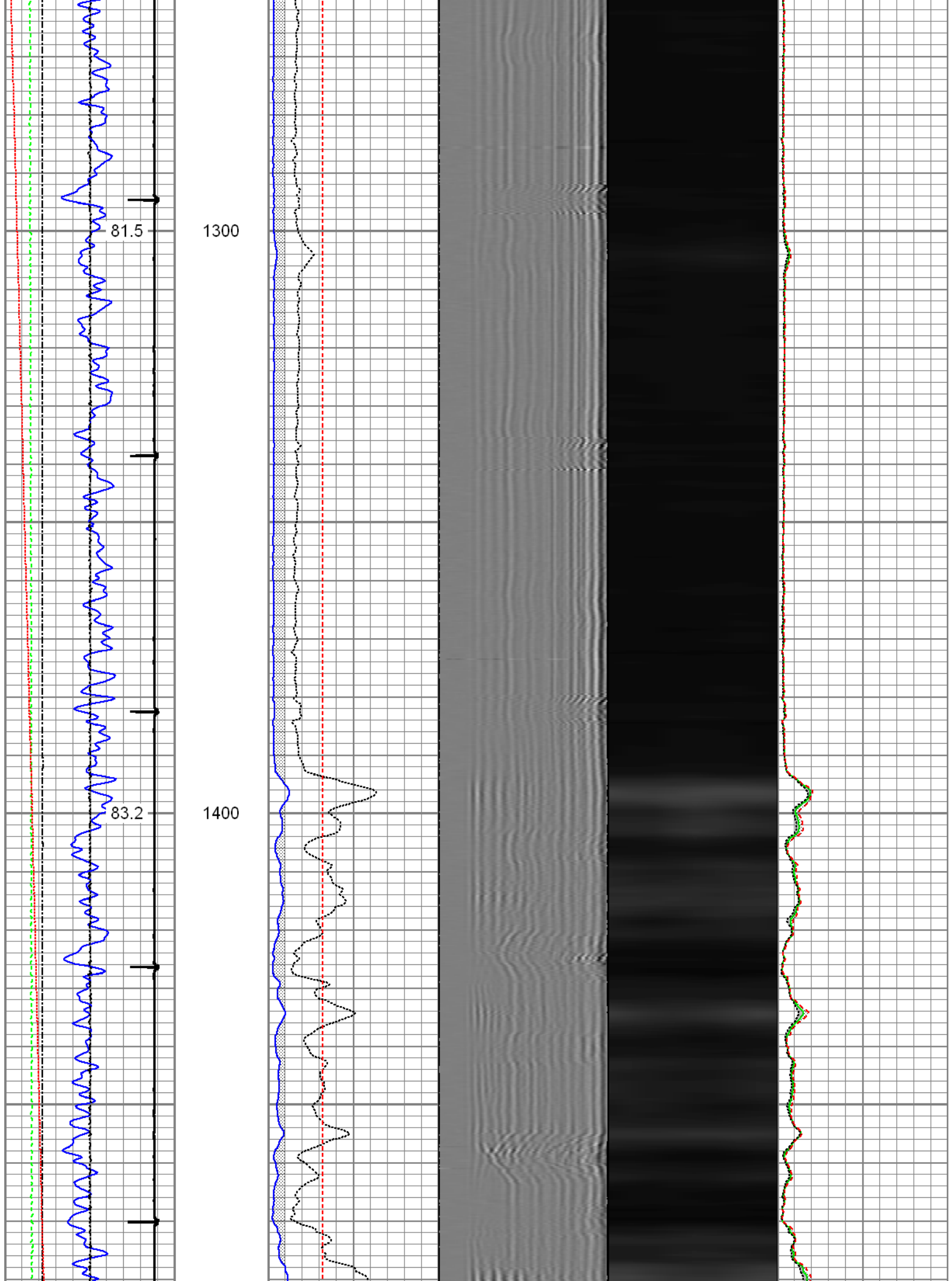


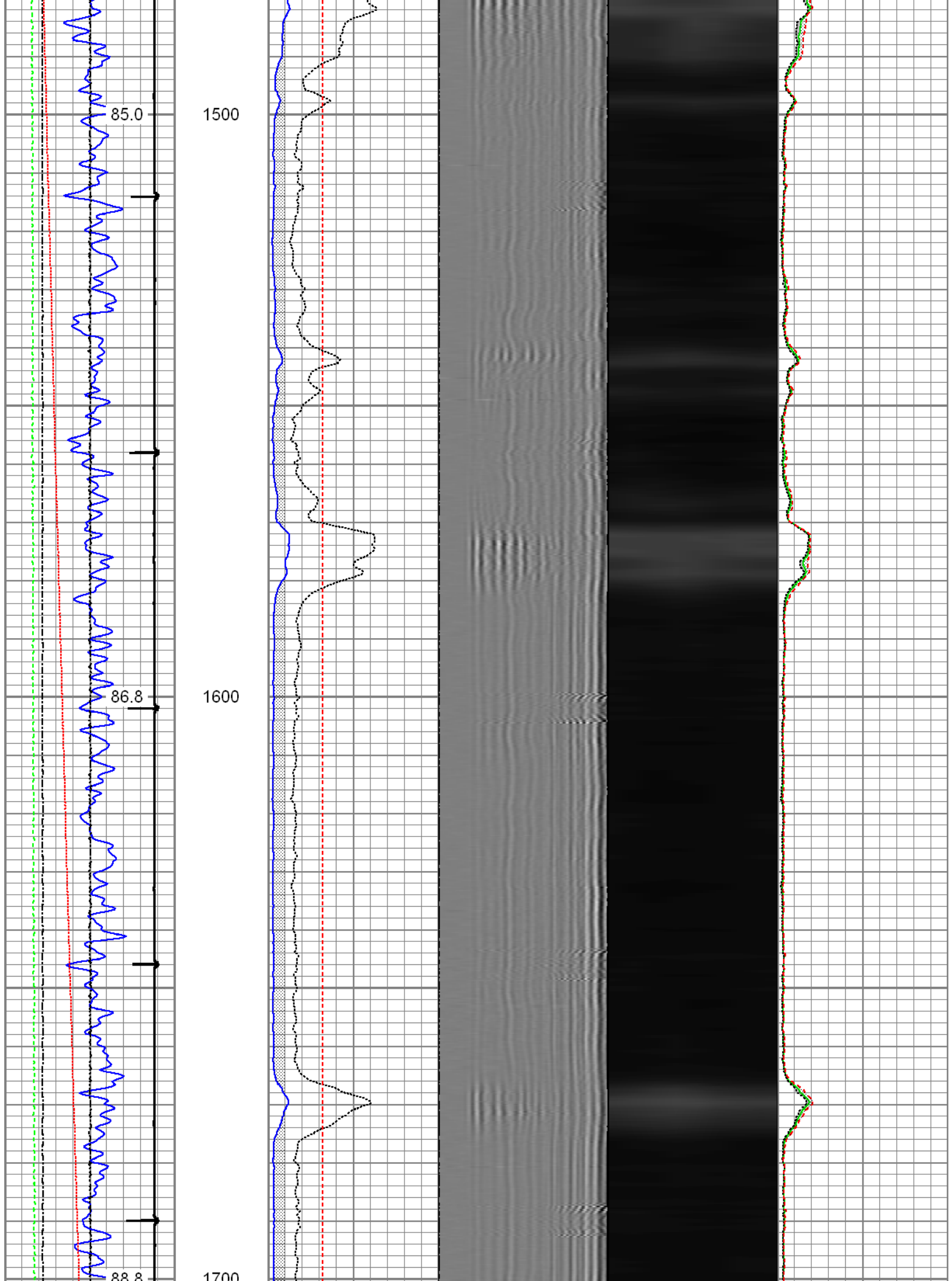


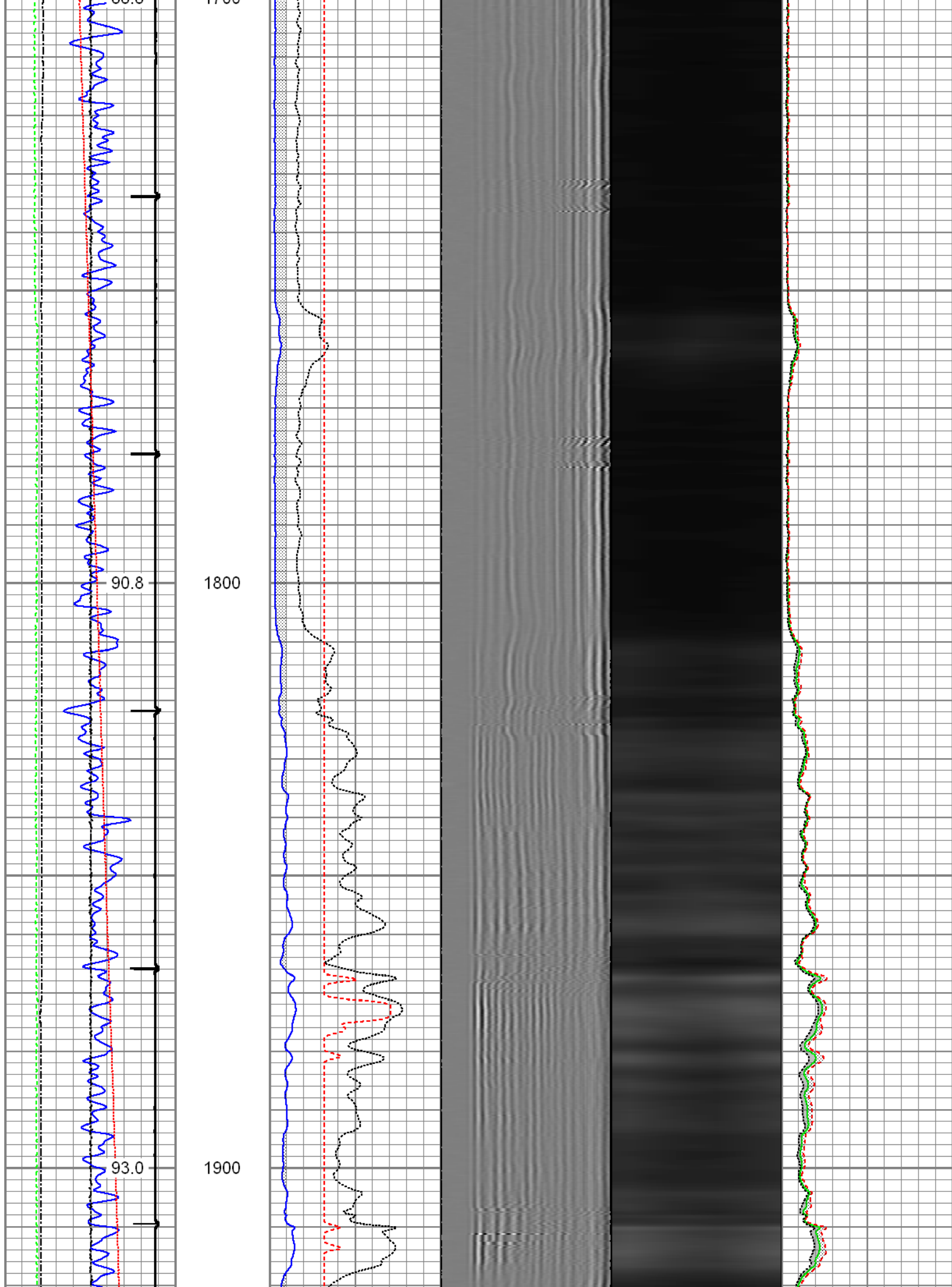


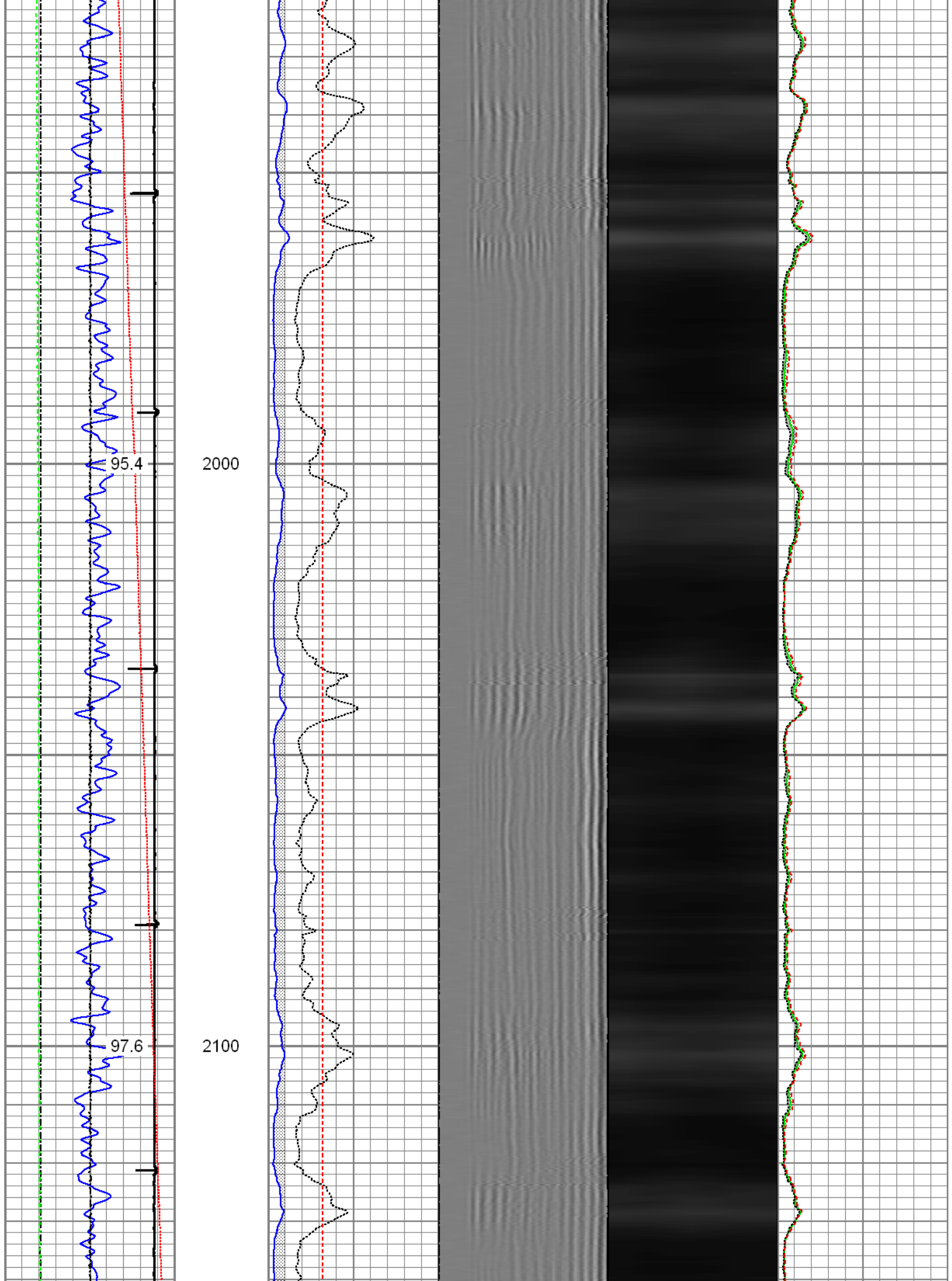


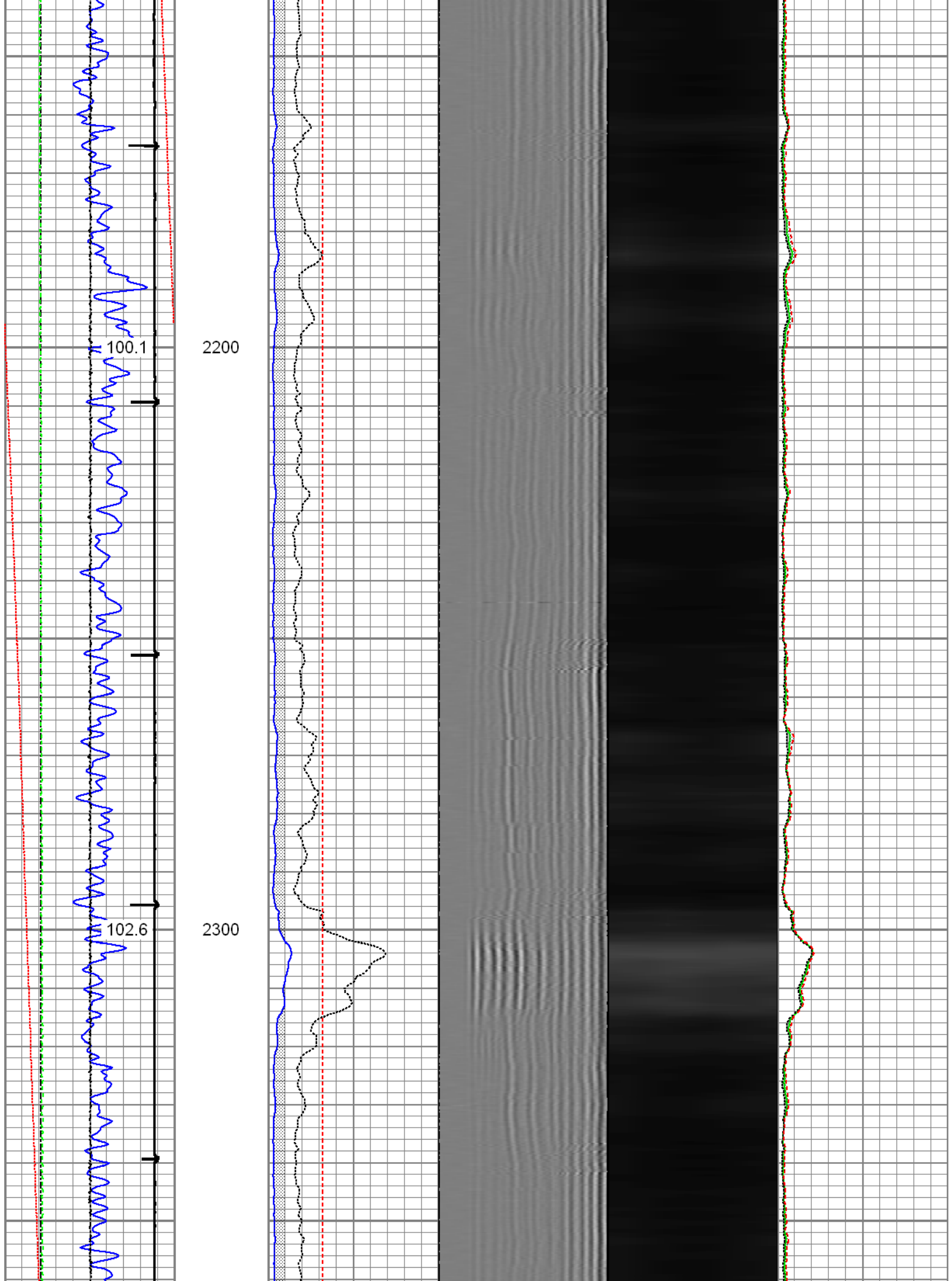


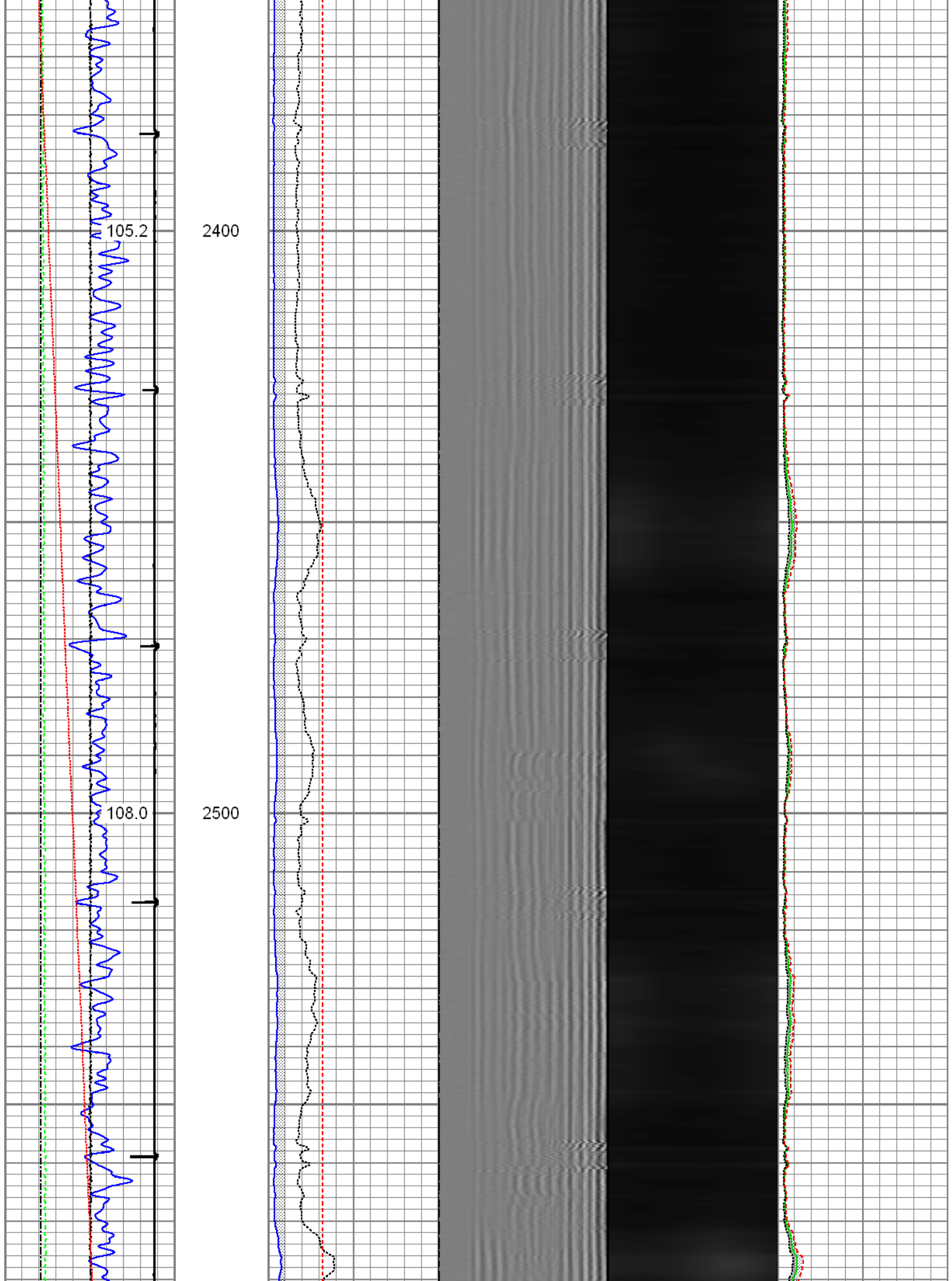


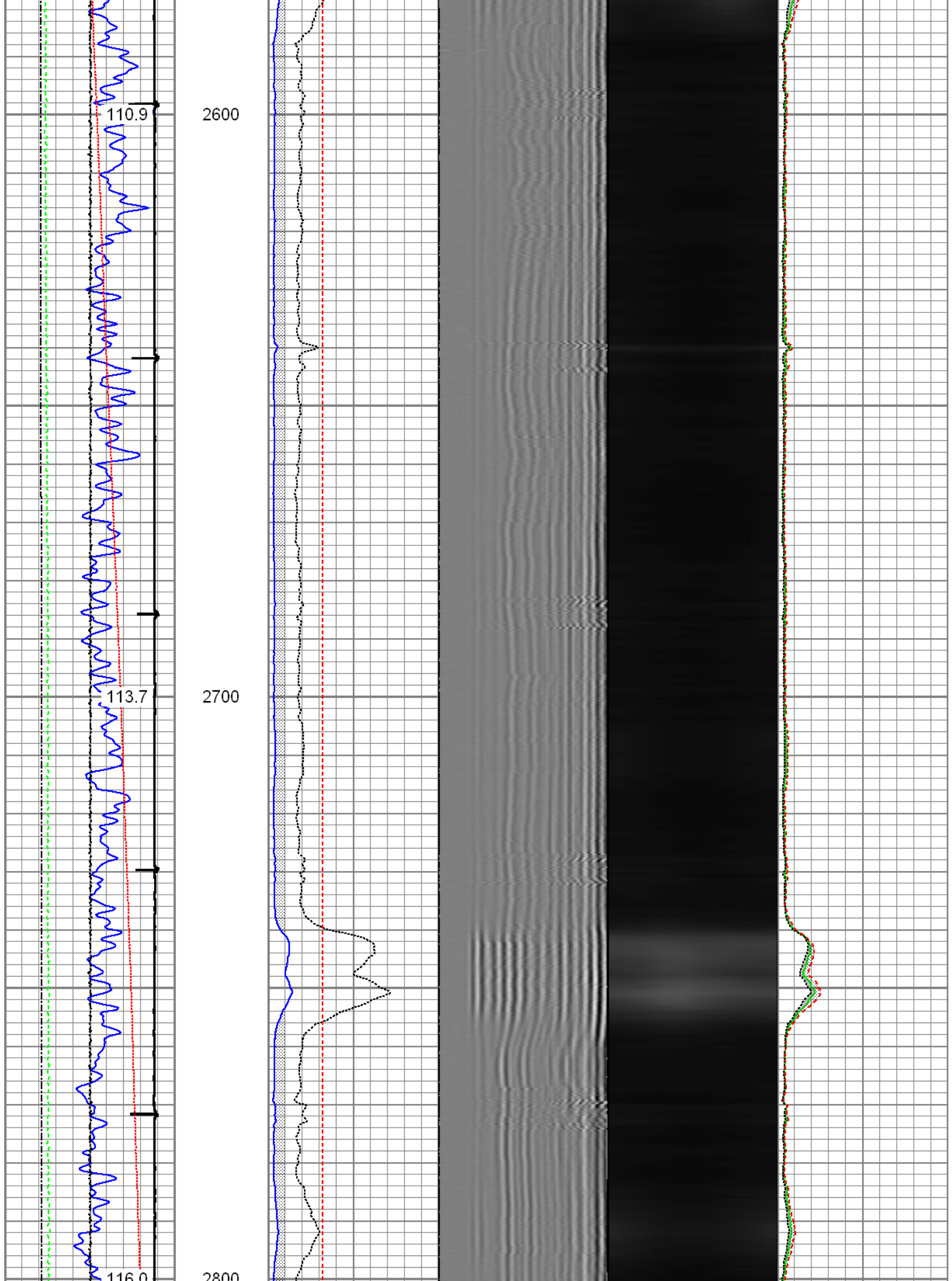


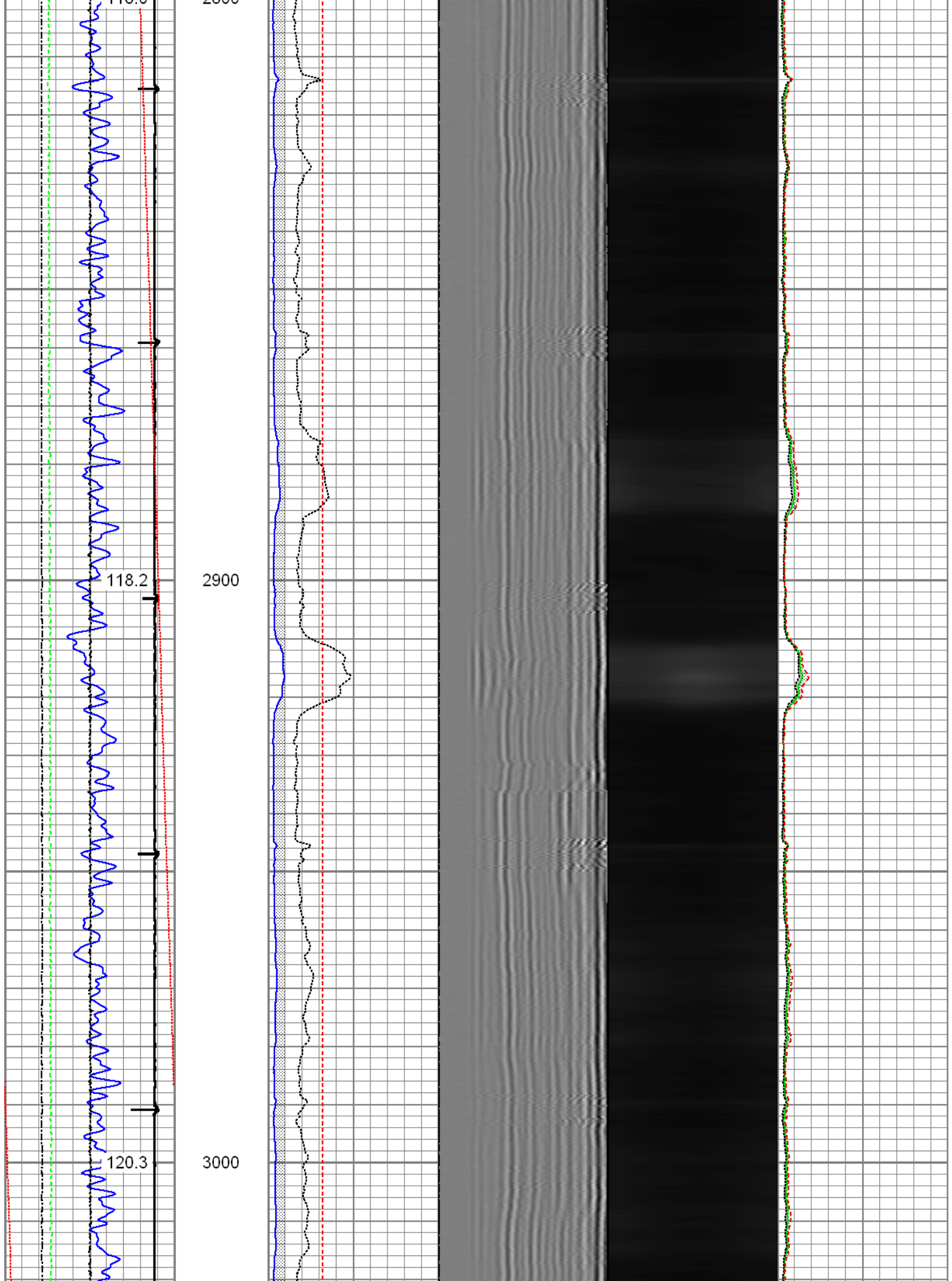


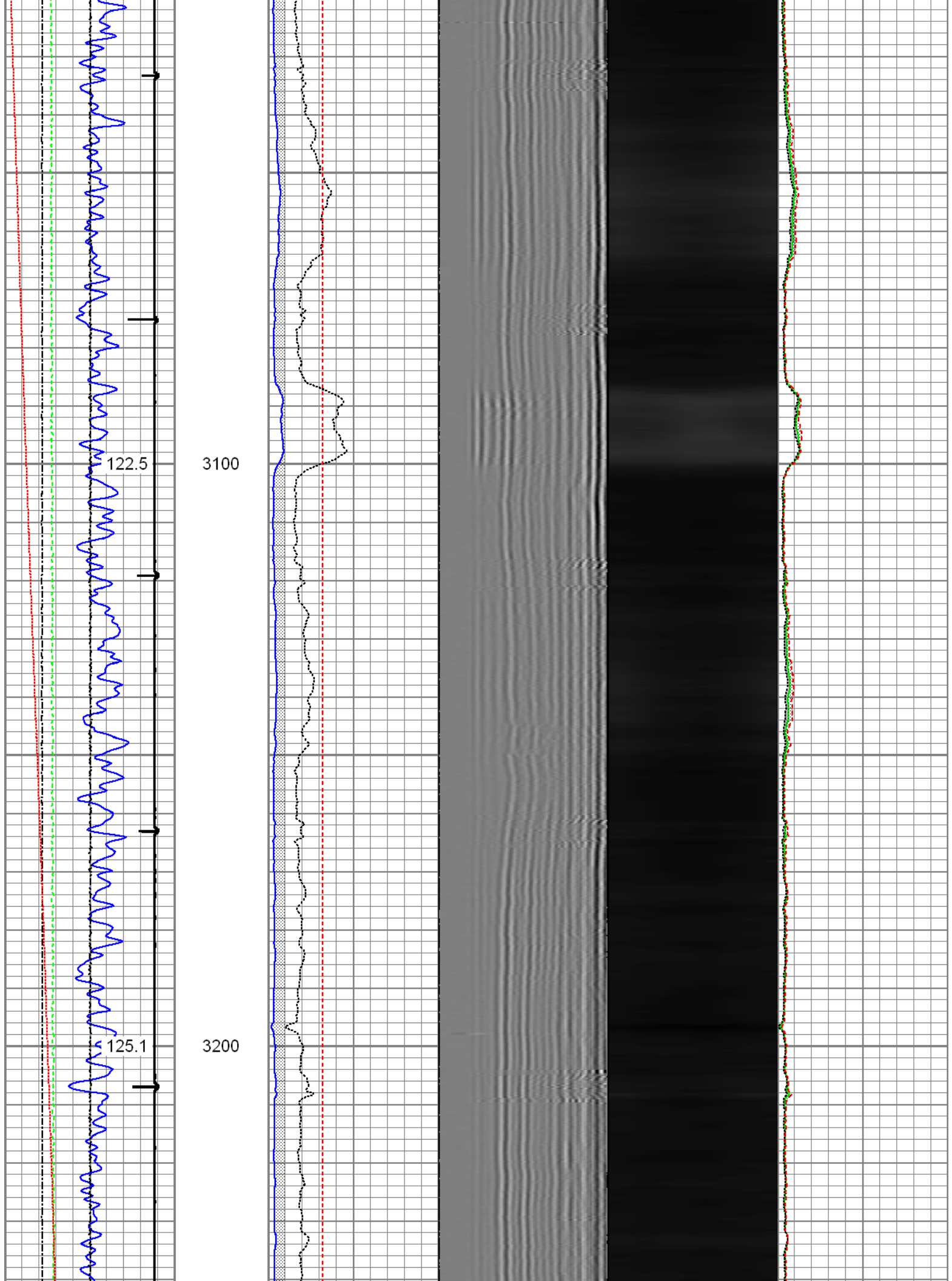


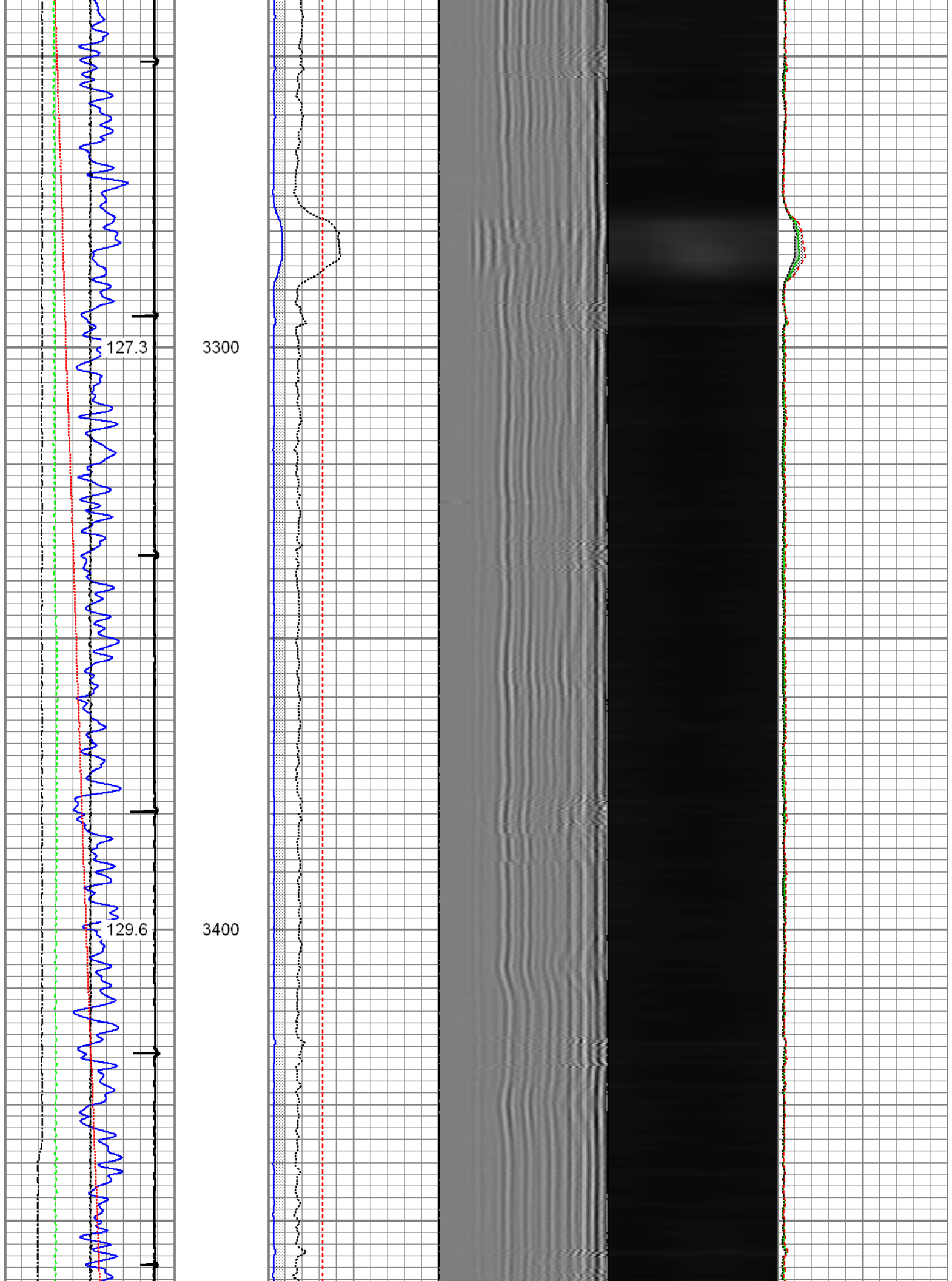


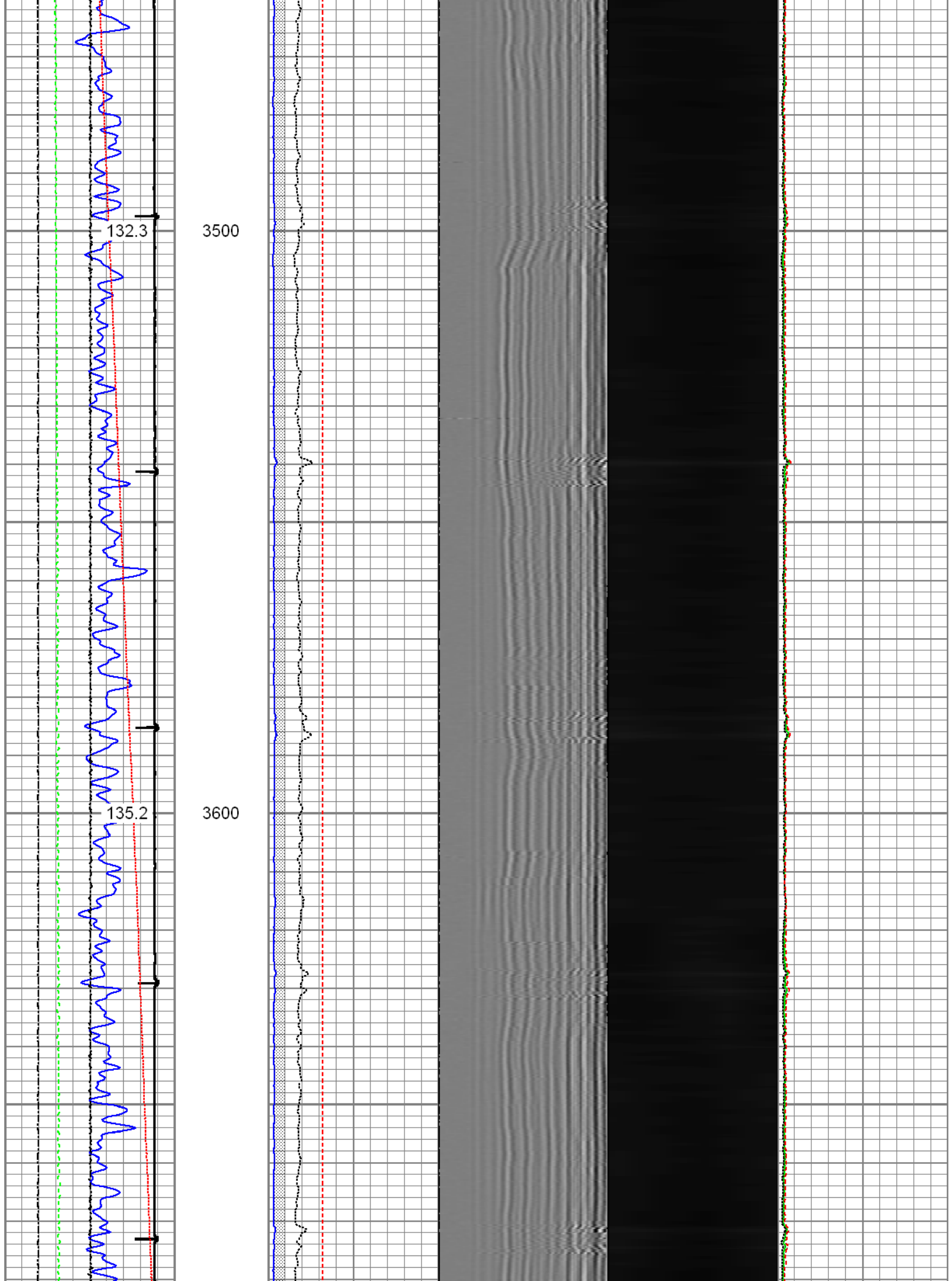


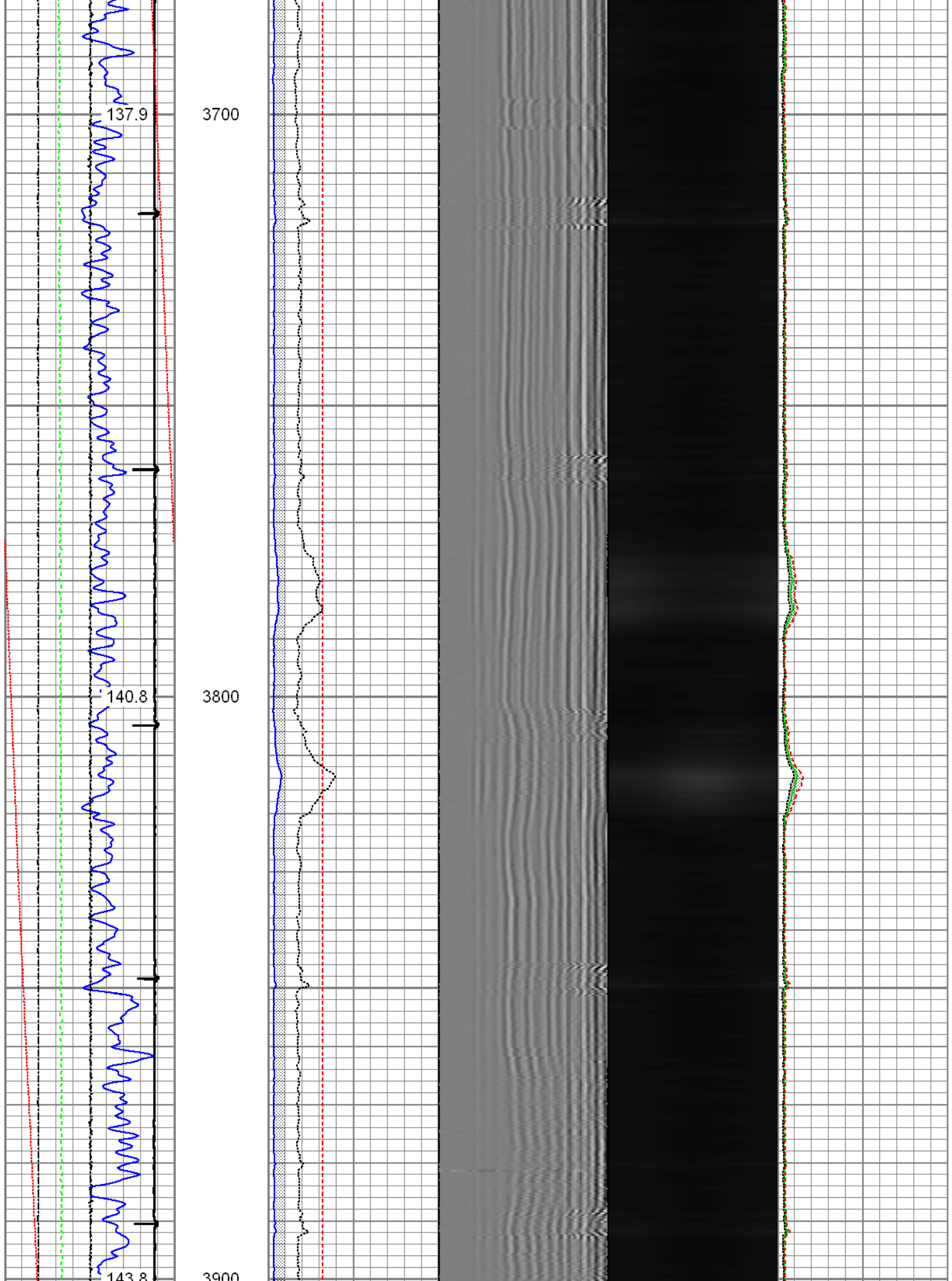


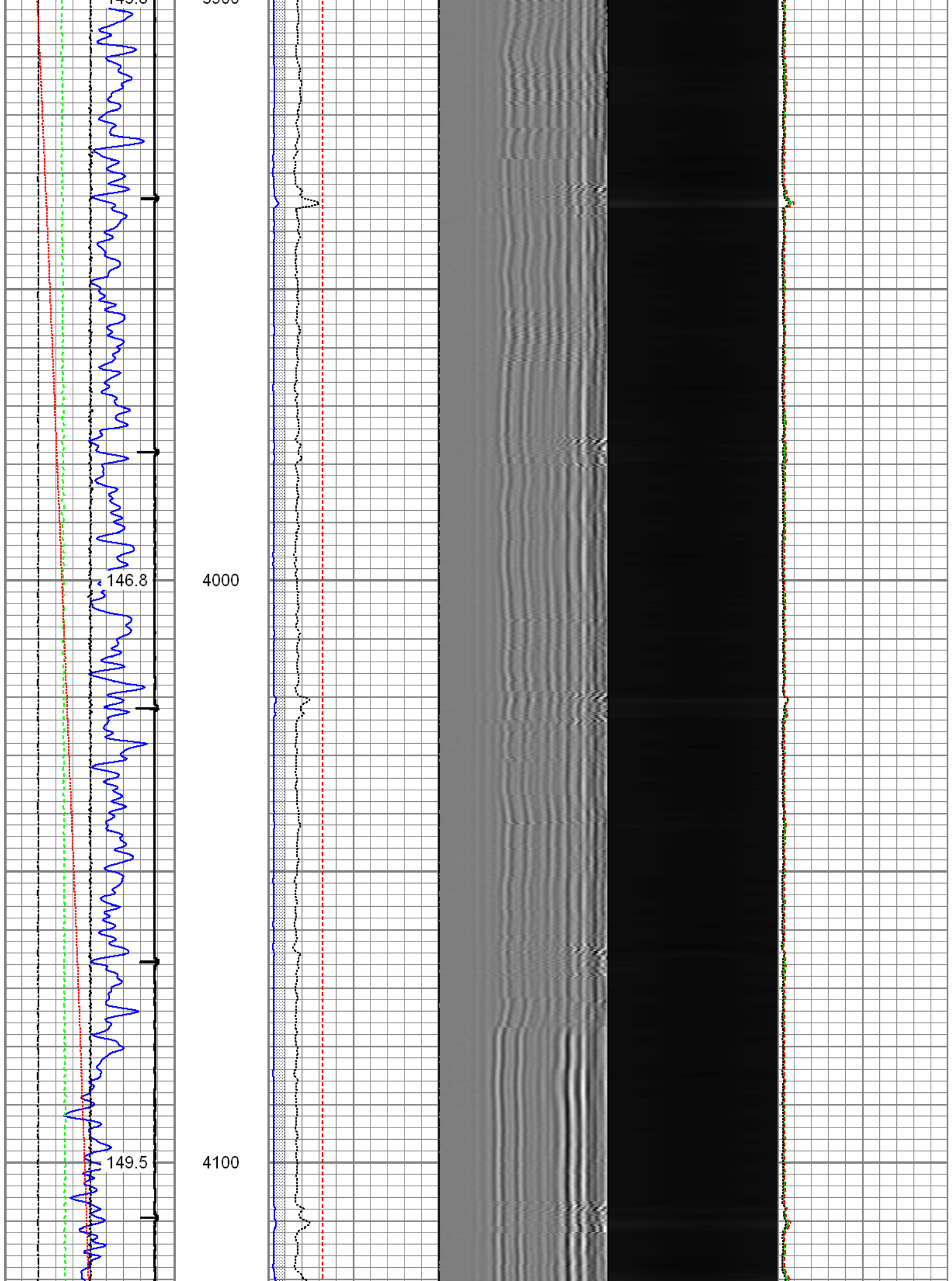


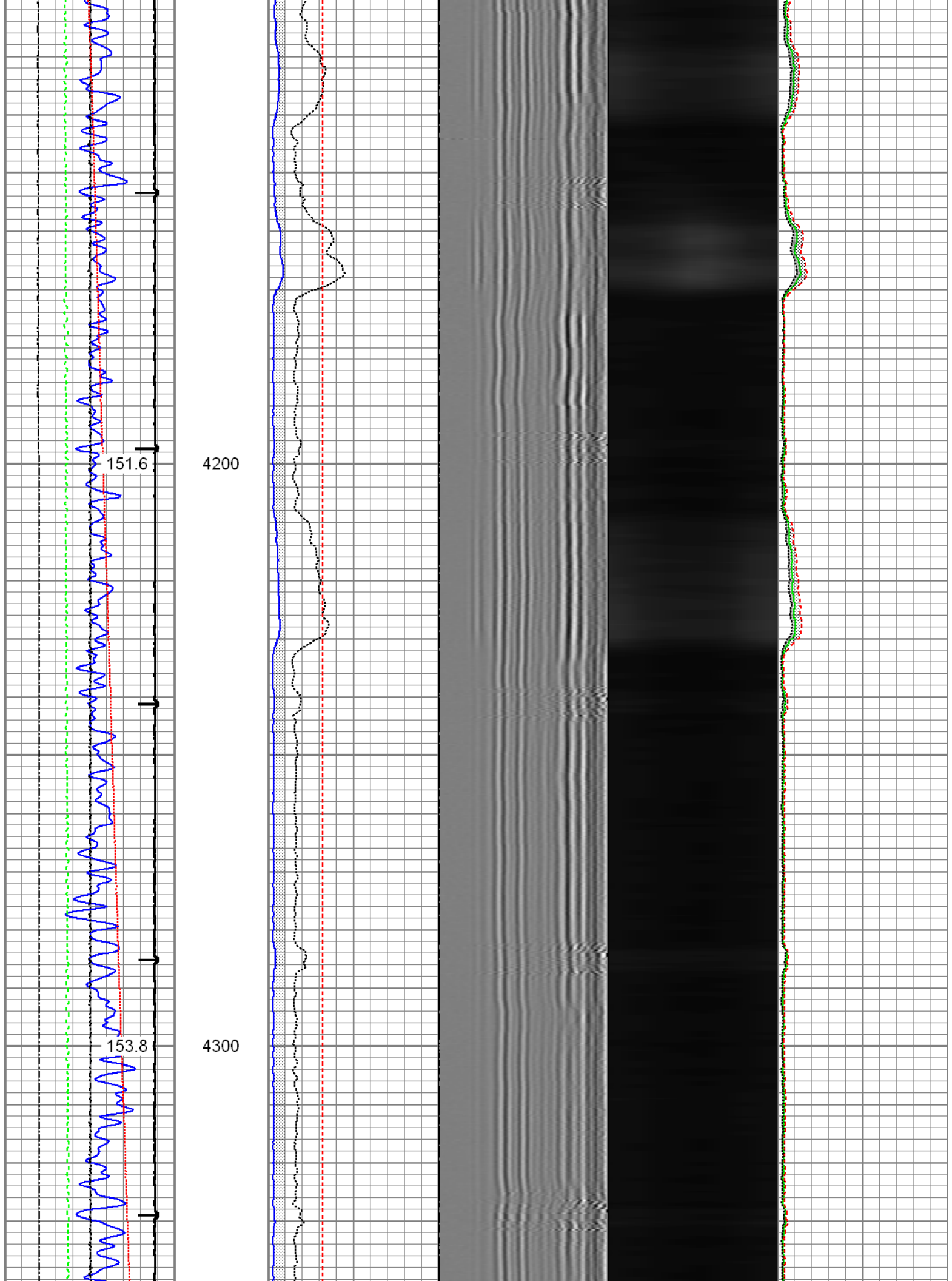


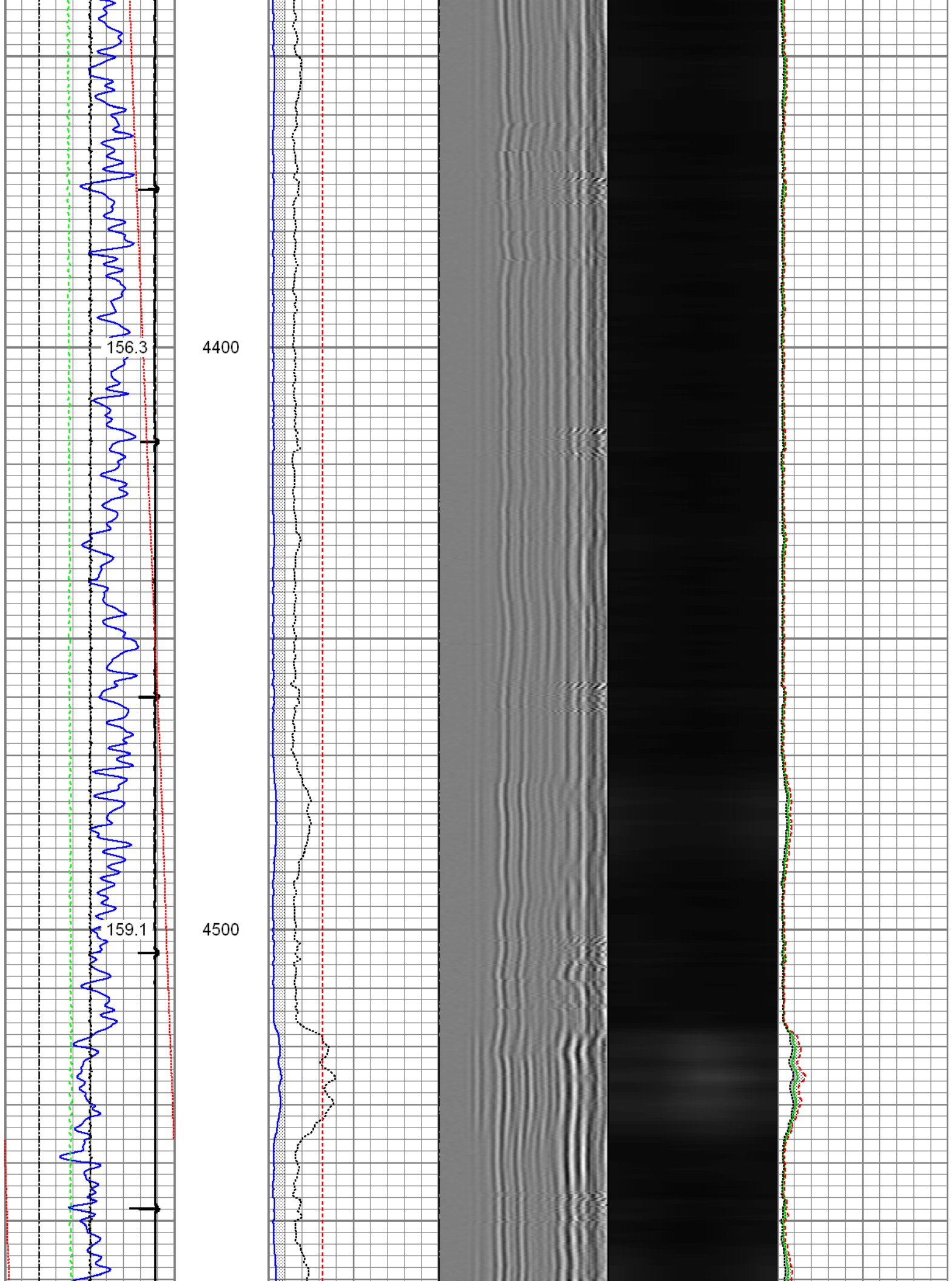


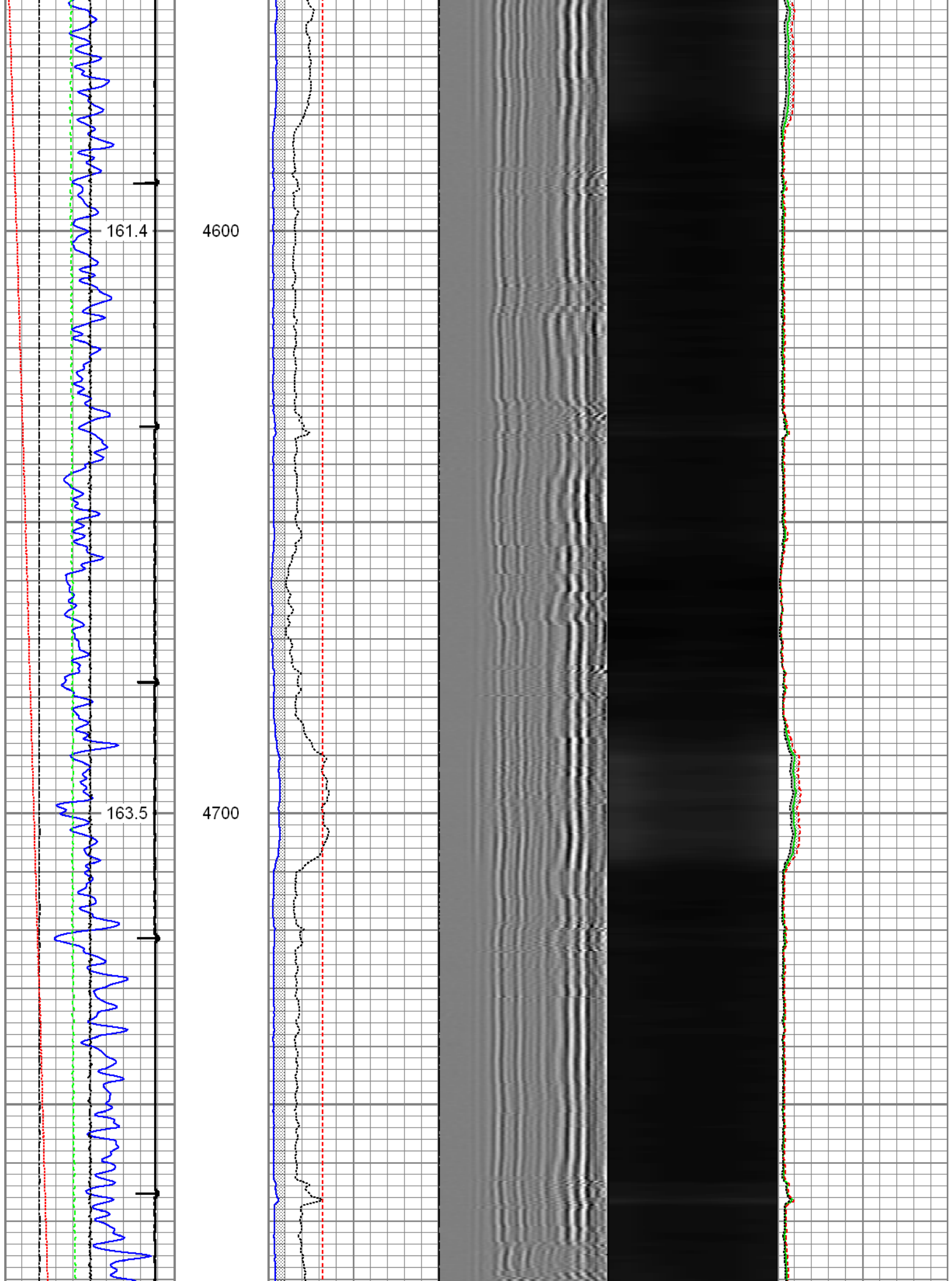


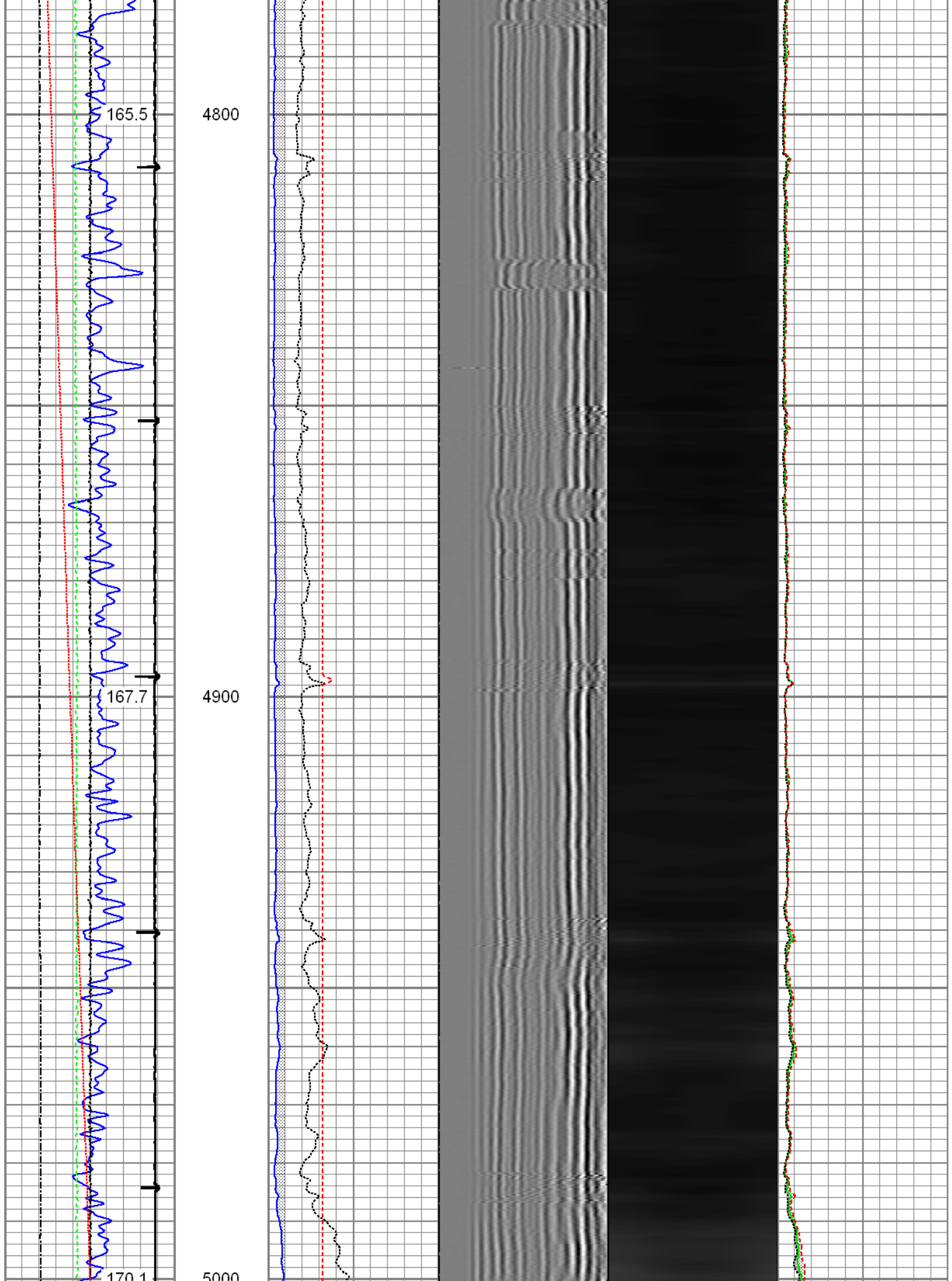


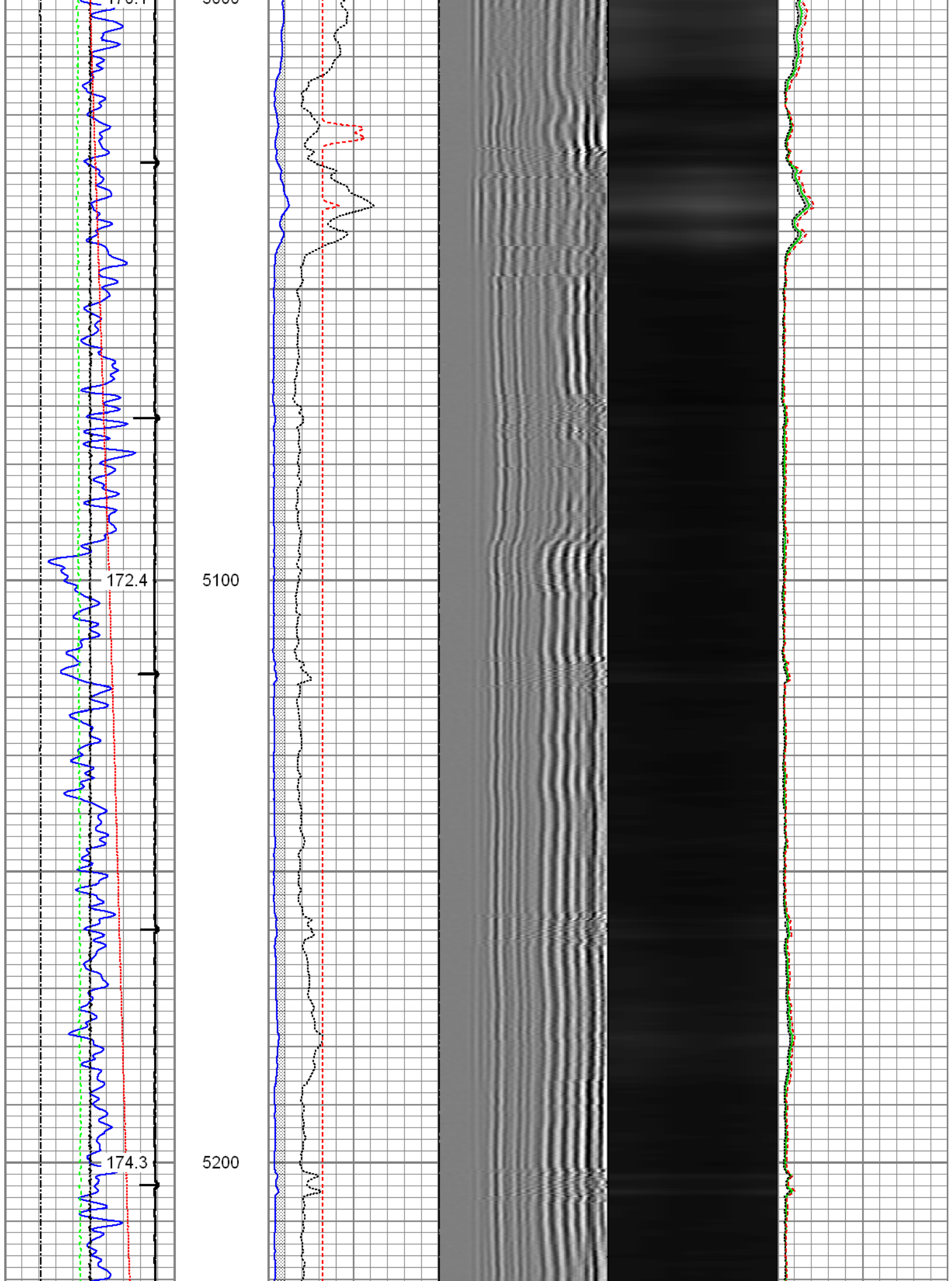


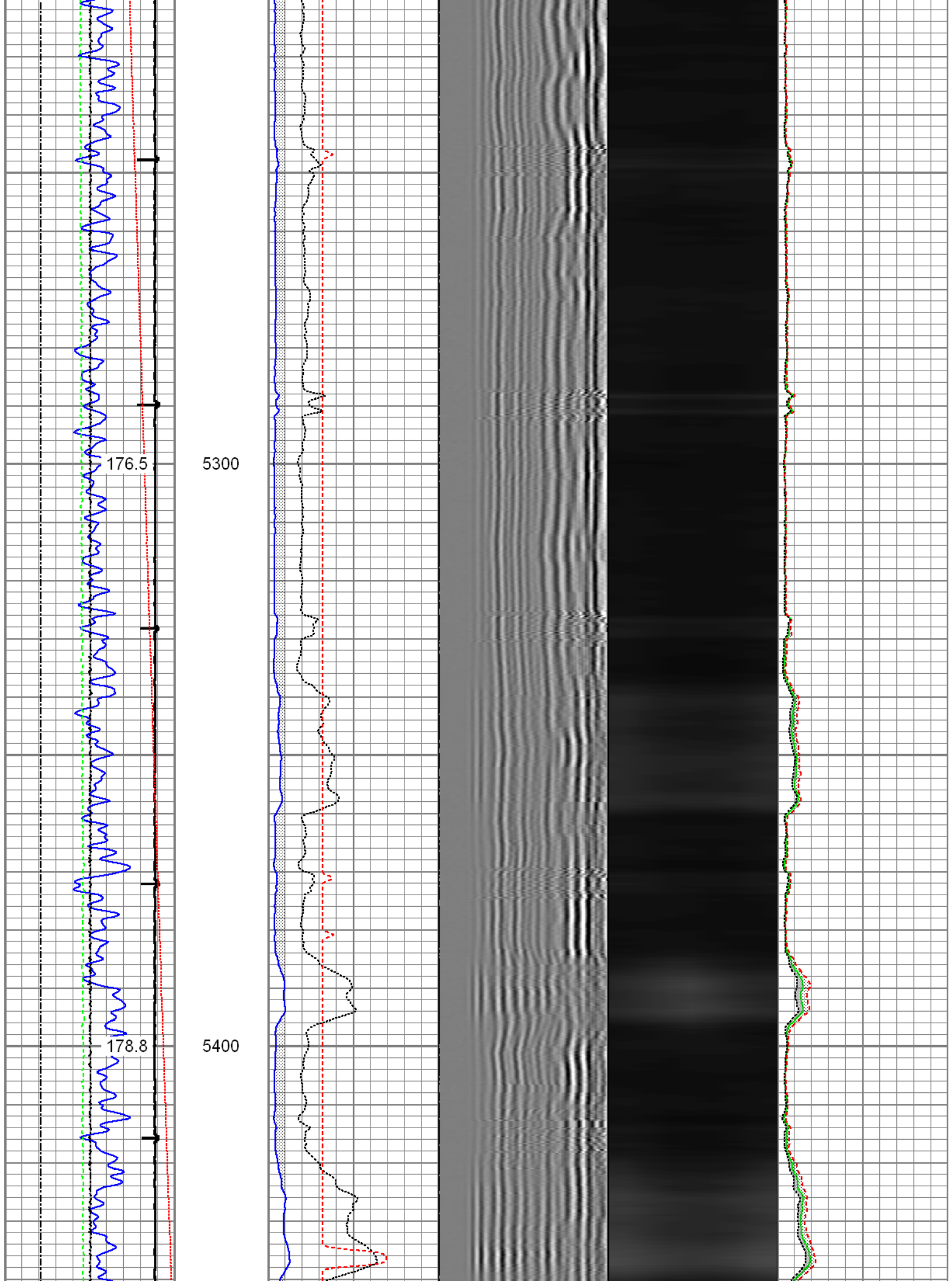


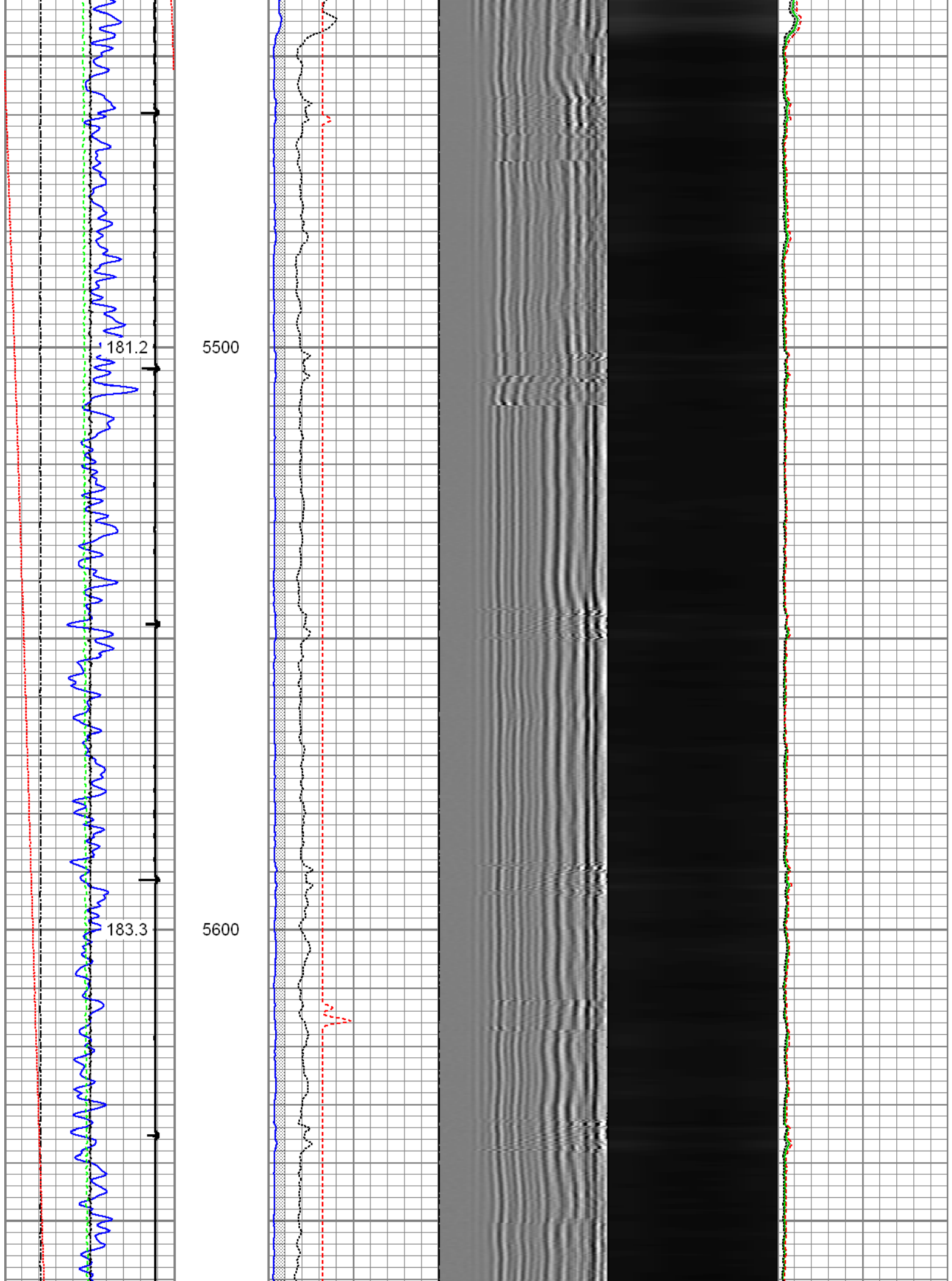


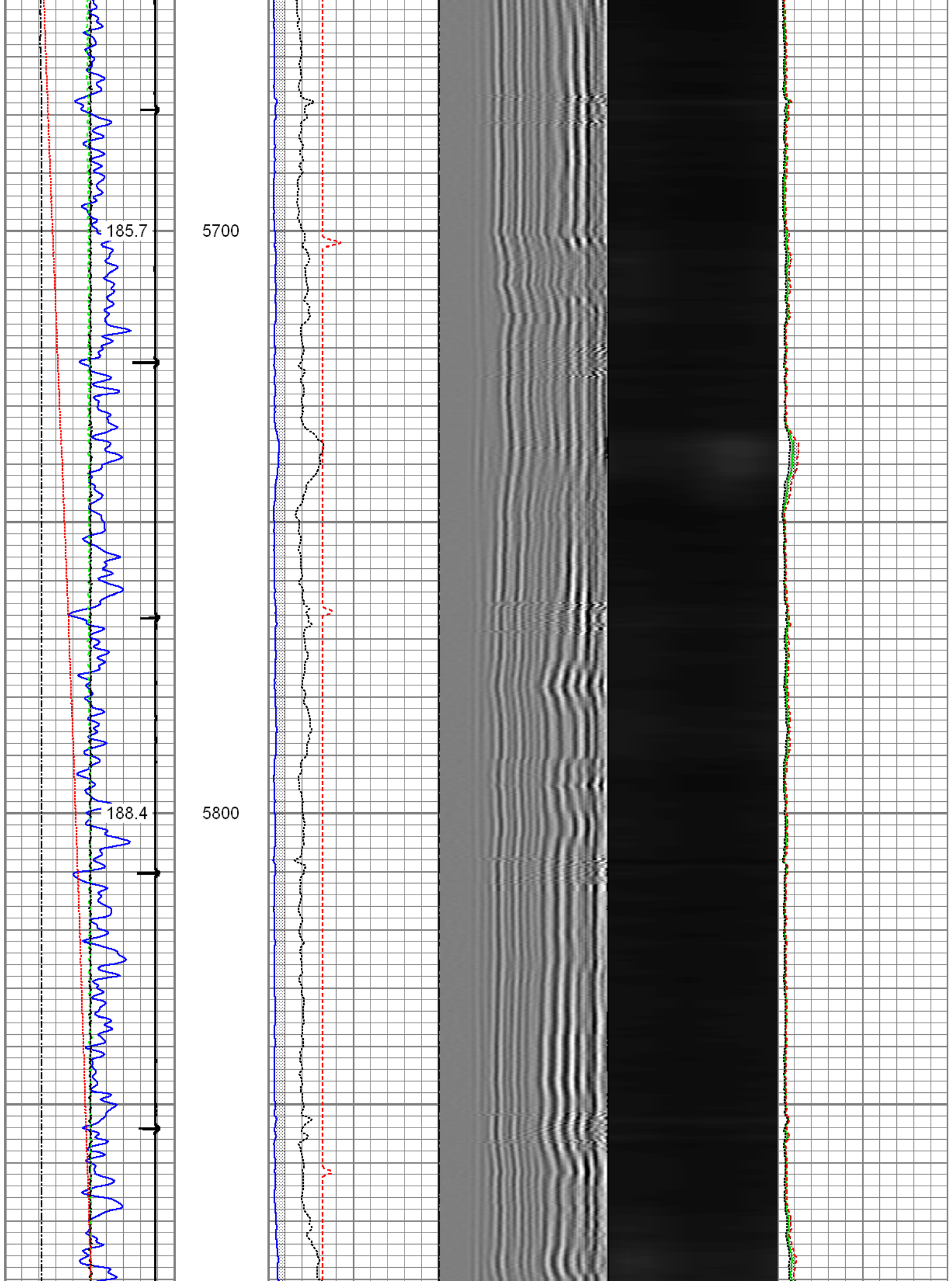


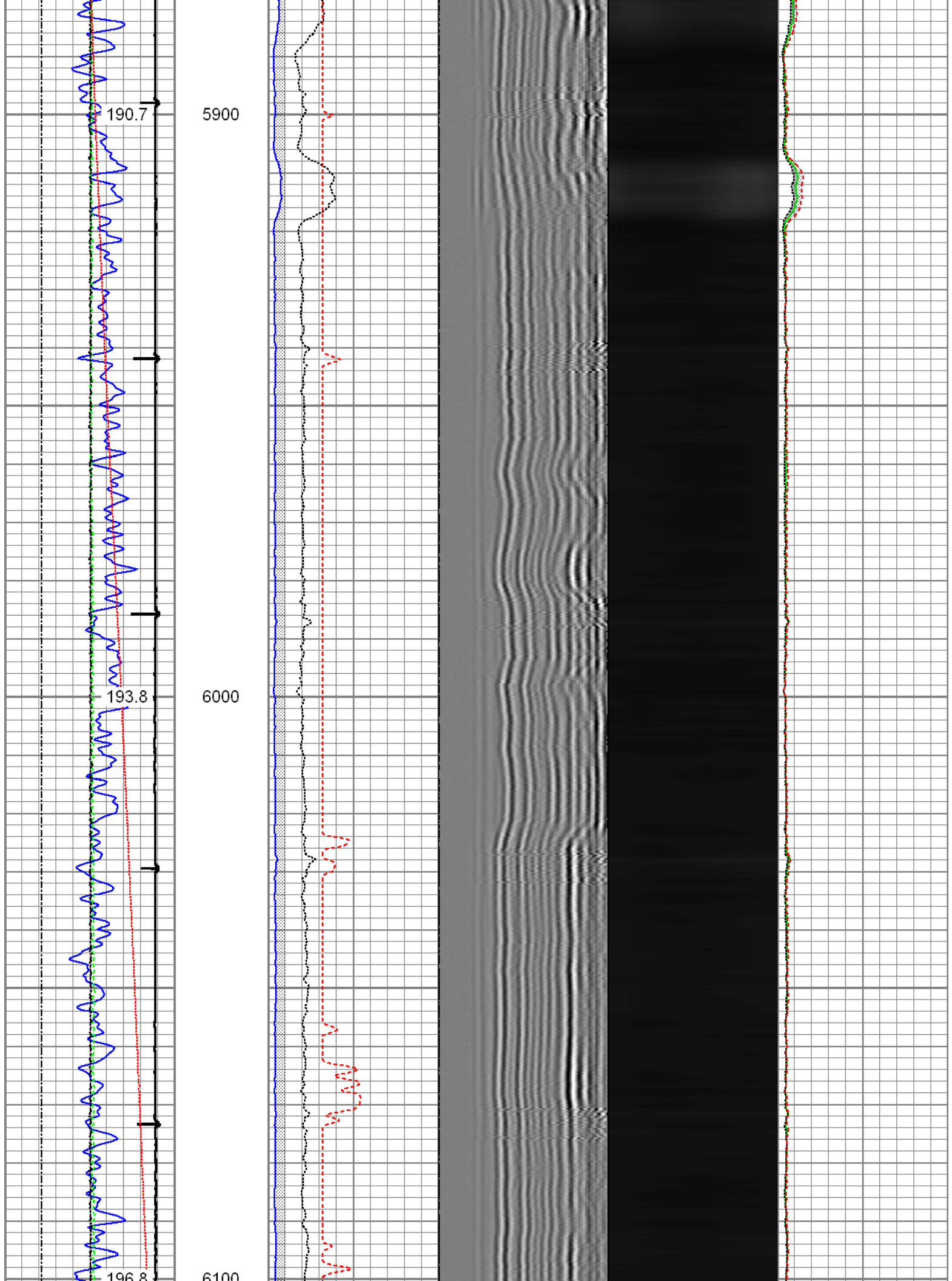


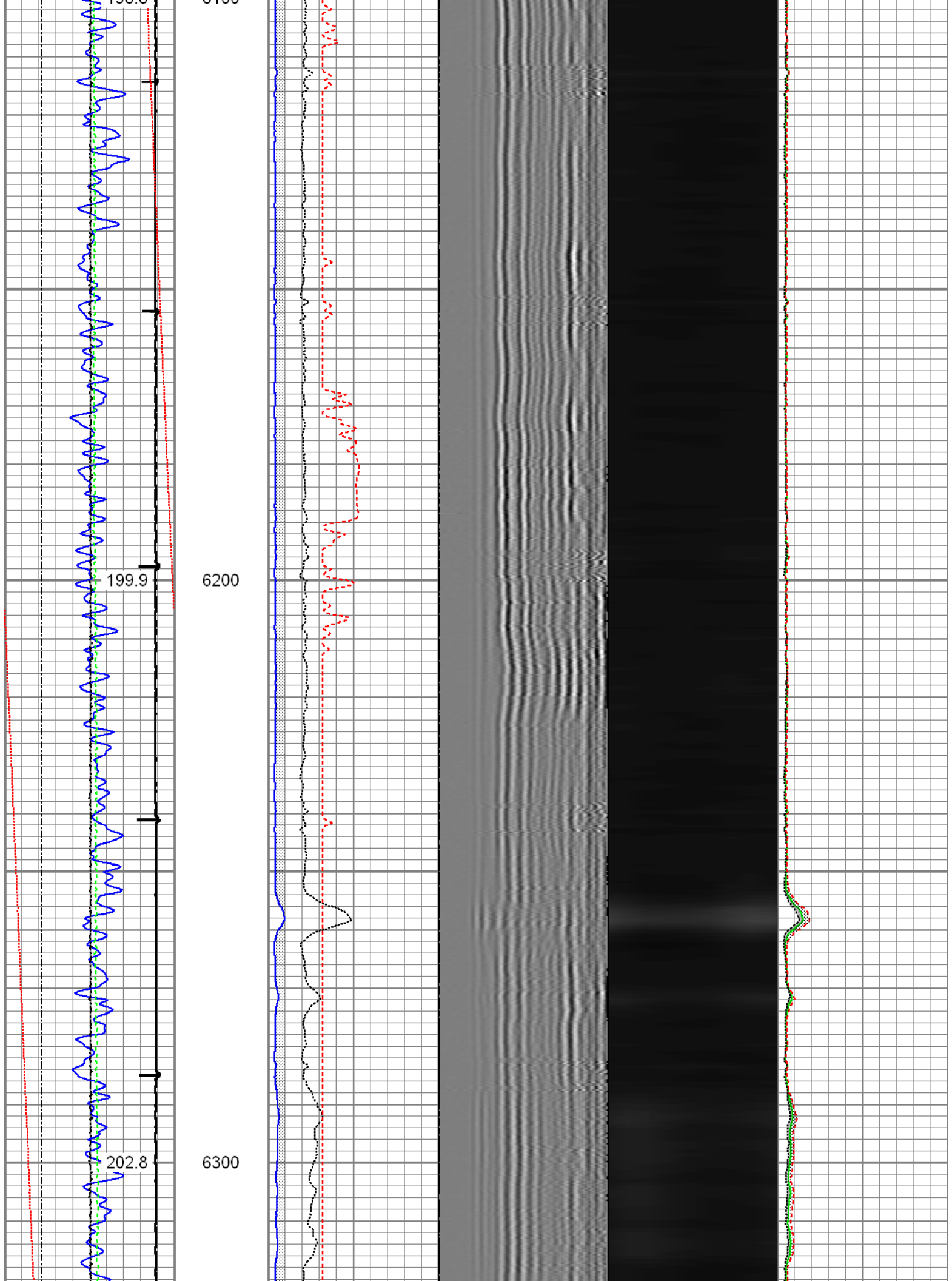


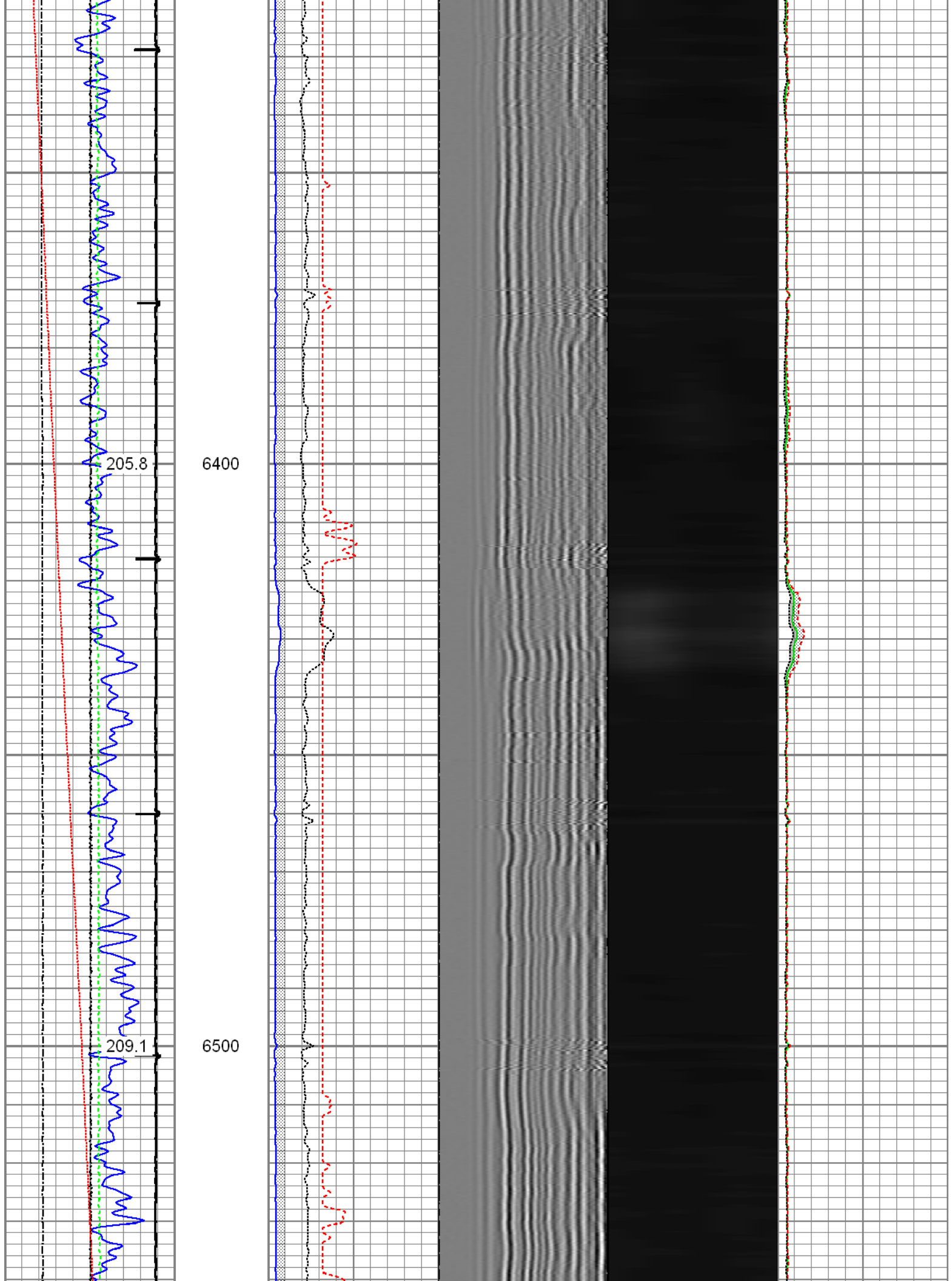


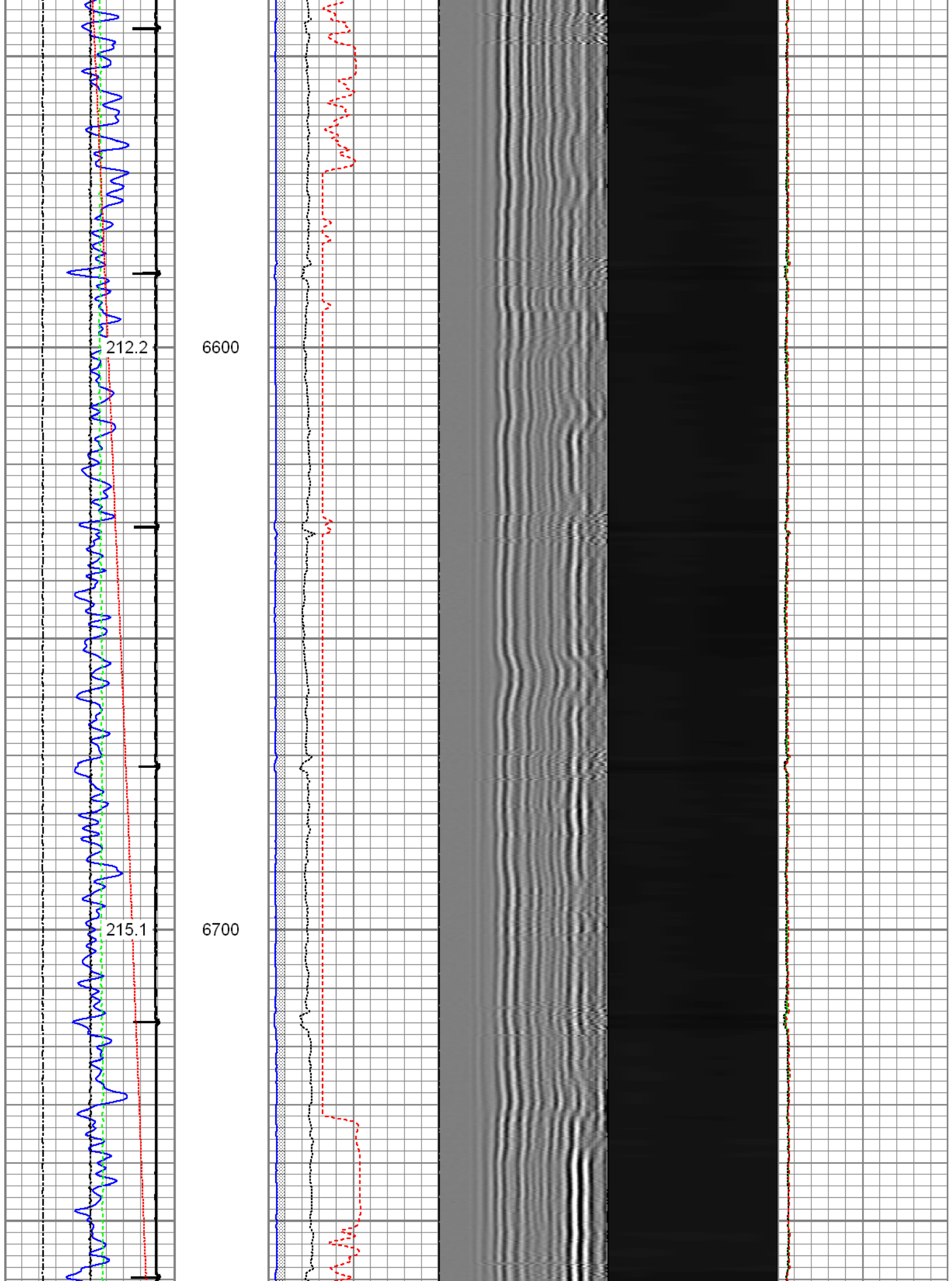


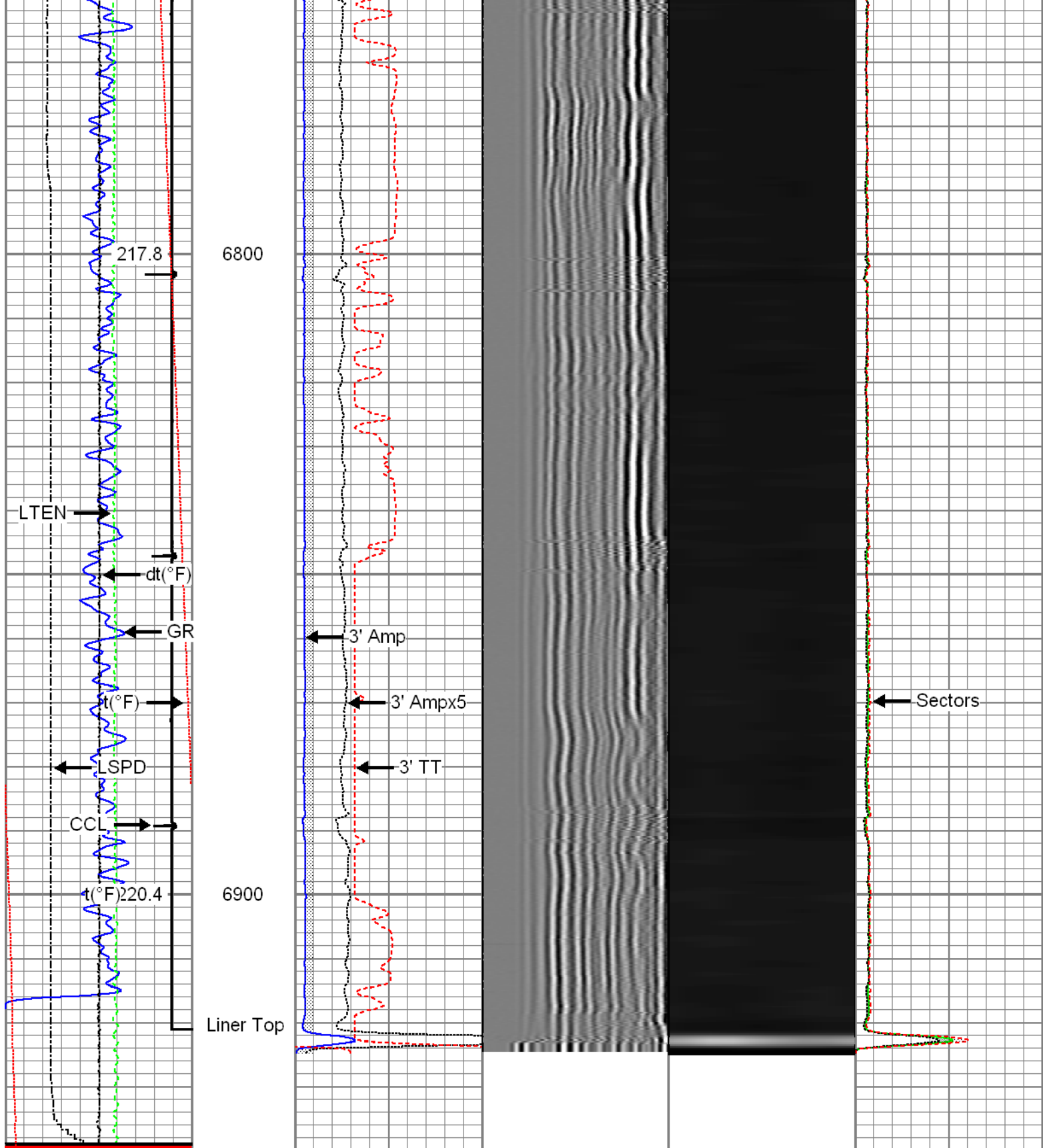













Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5 (mV)			Minimum Amplitude
Line Speed (ft/min)	0 20			0 100
-100 100	3' Travel Time (usec)			Maximum Amplitude
Line Tension (lb)	650 150			0 100
0 2000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

-2	(degF)	2
Temperature		
0	(degF)	20

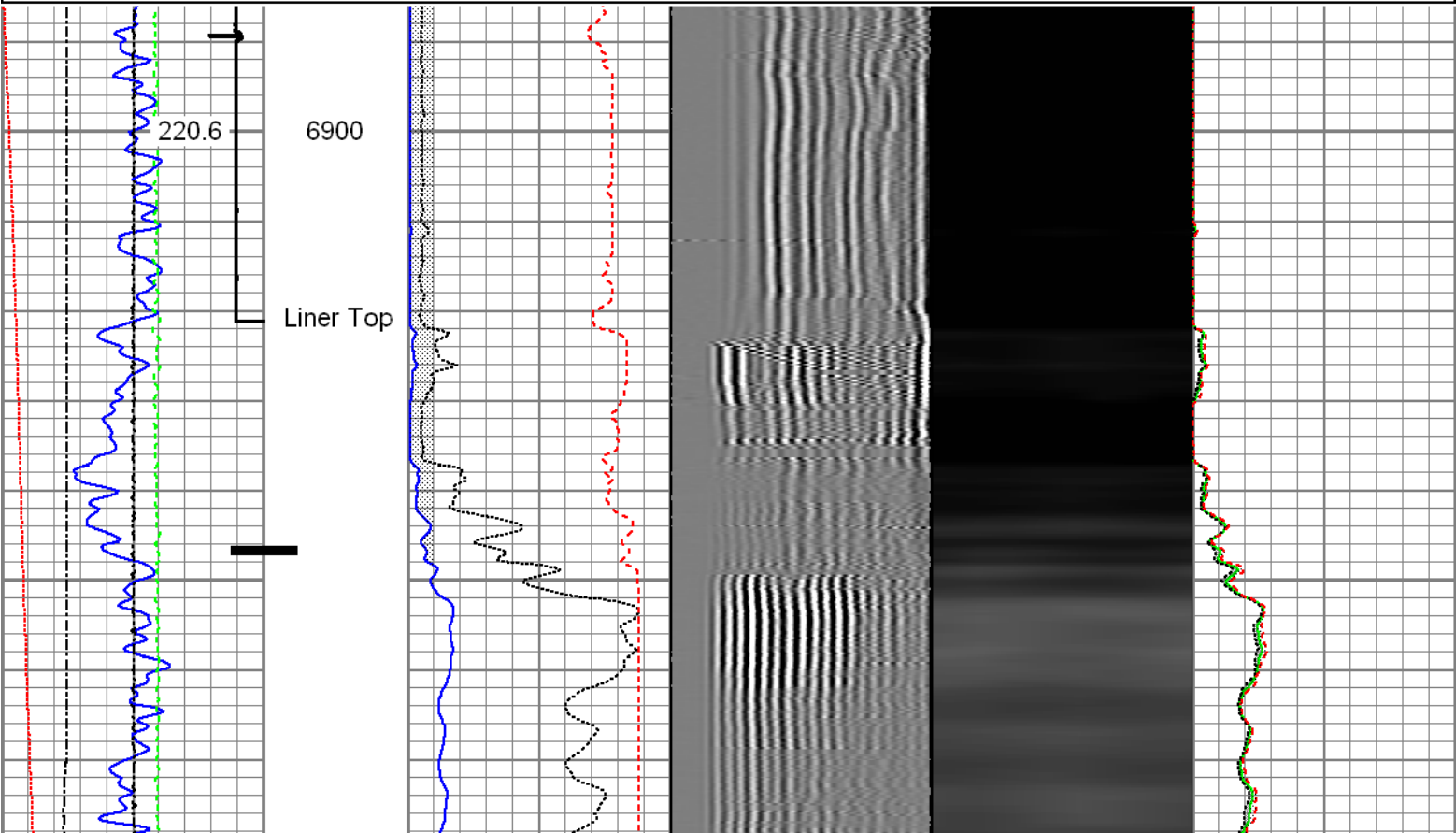


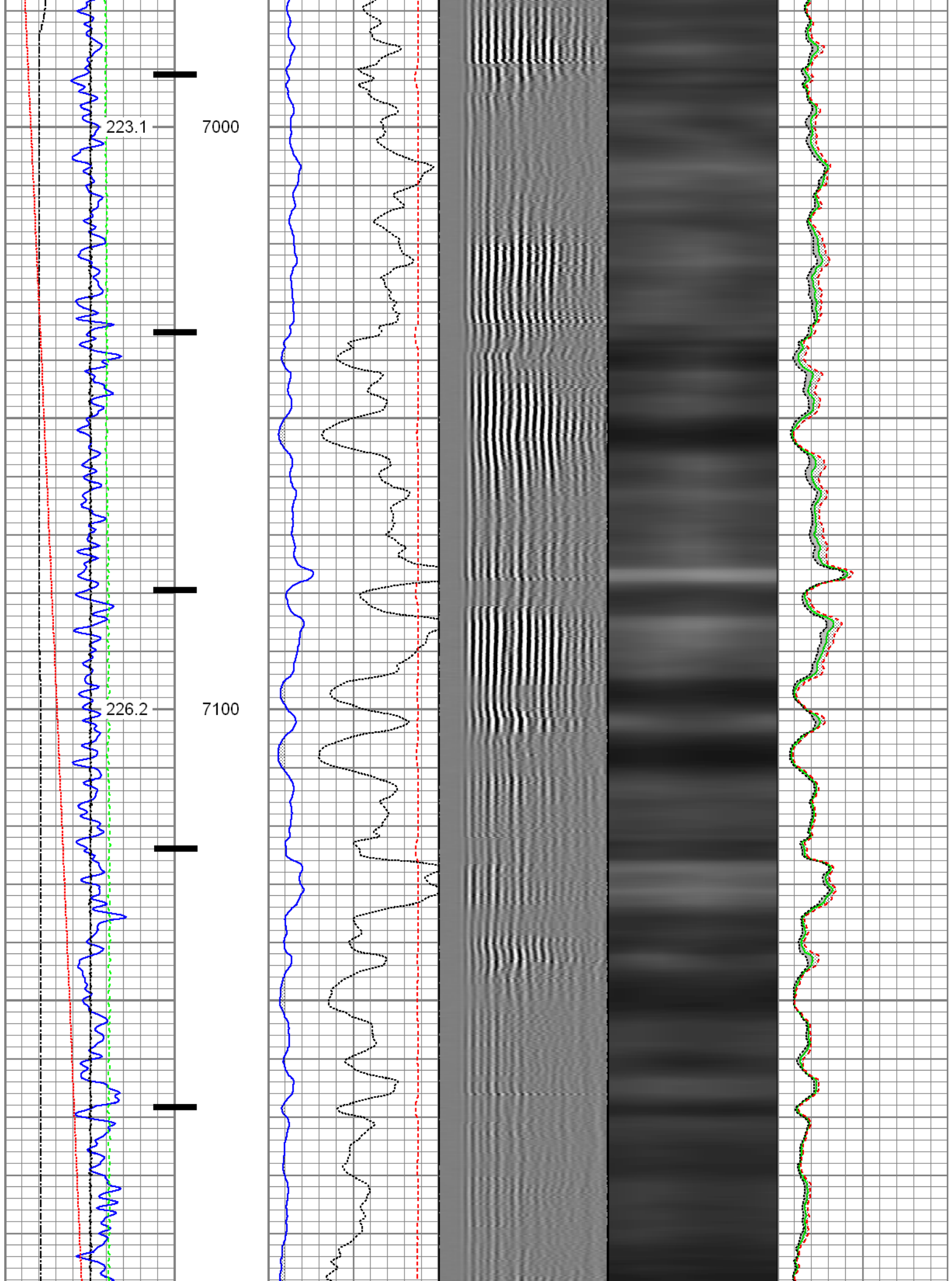
4.5" Main Pass

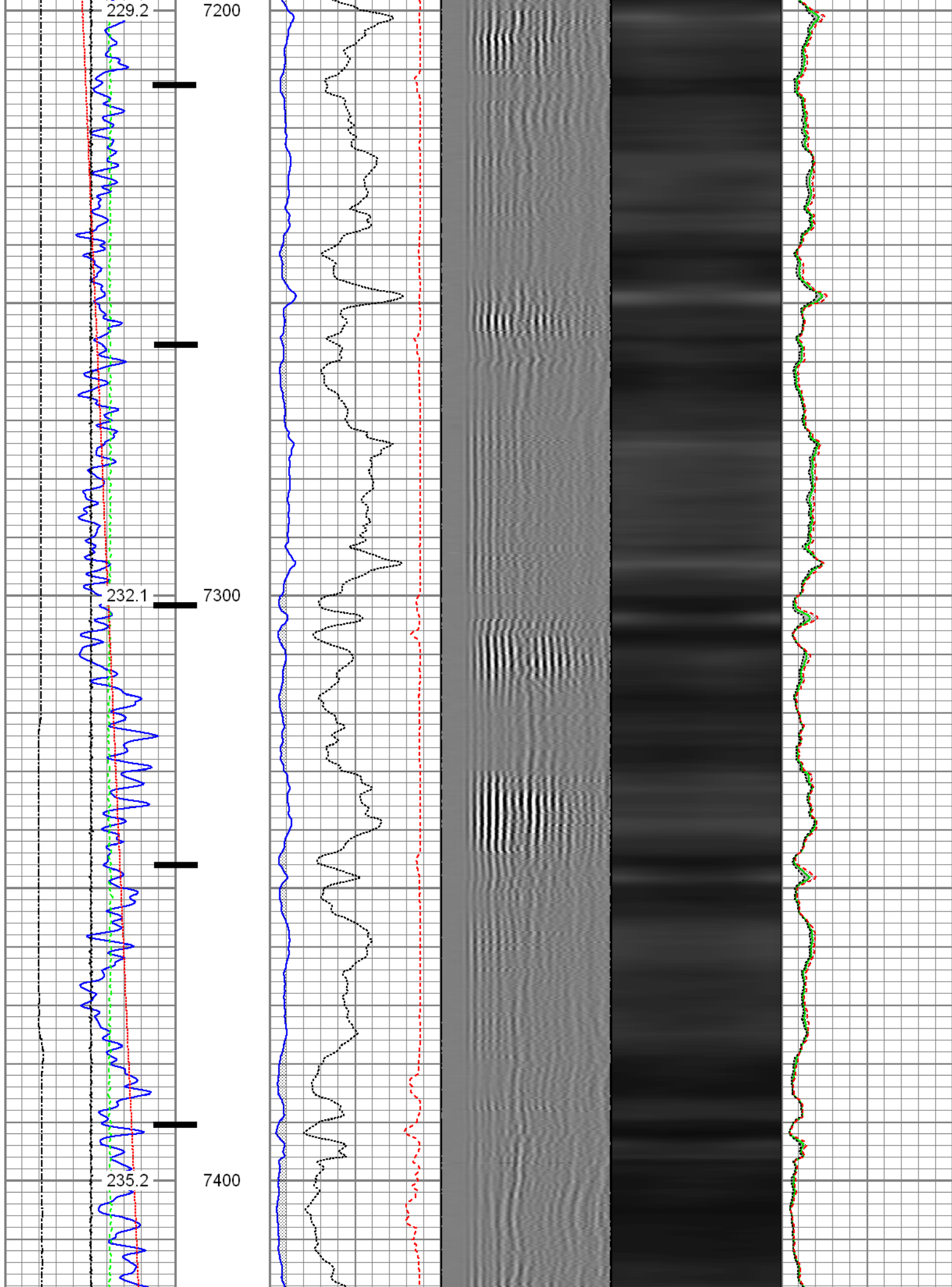
Recorded With 2800 PSI Surface Induced Pressure

Database File: 0512340535_anadarko_vollmar 29c-11hz_05-04-15_mit_rbl.db
Dataset Pathname: pass2
Presentation Format: rbt4_mit
Dataset Creation: Mon May 04 12:47:05 2015 by Log 7.0 B1
Charted by: 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>Differential Temperature</div> <div>-2 (degF) 2</div> <div>Temperature</div> <div>0 (degF) 20</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>
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-2	(degF)	2
Temperature		
0	(degF)	20

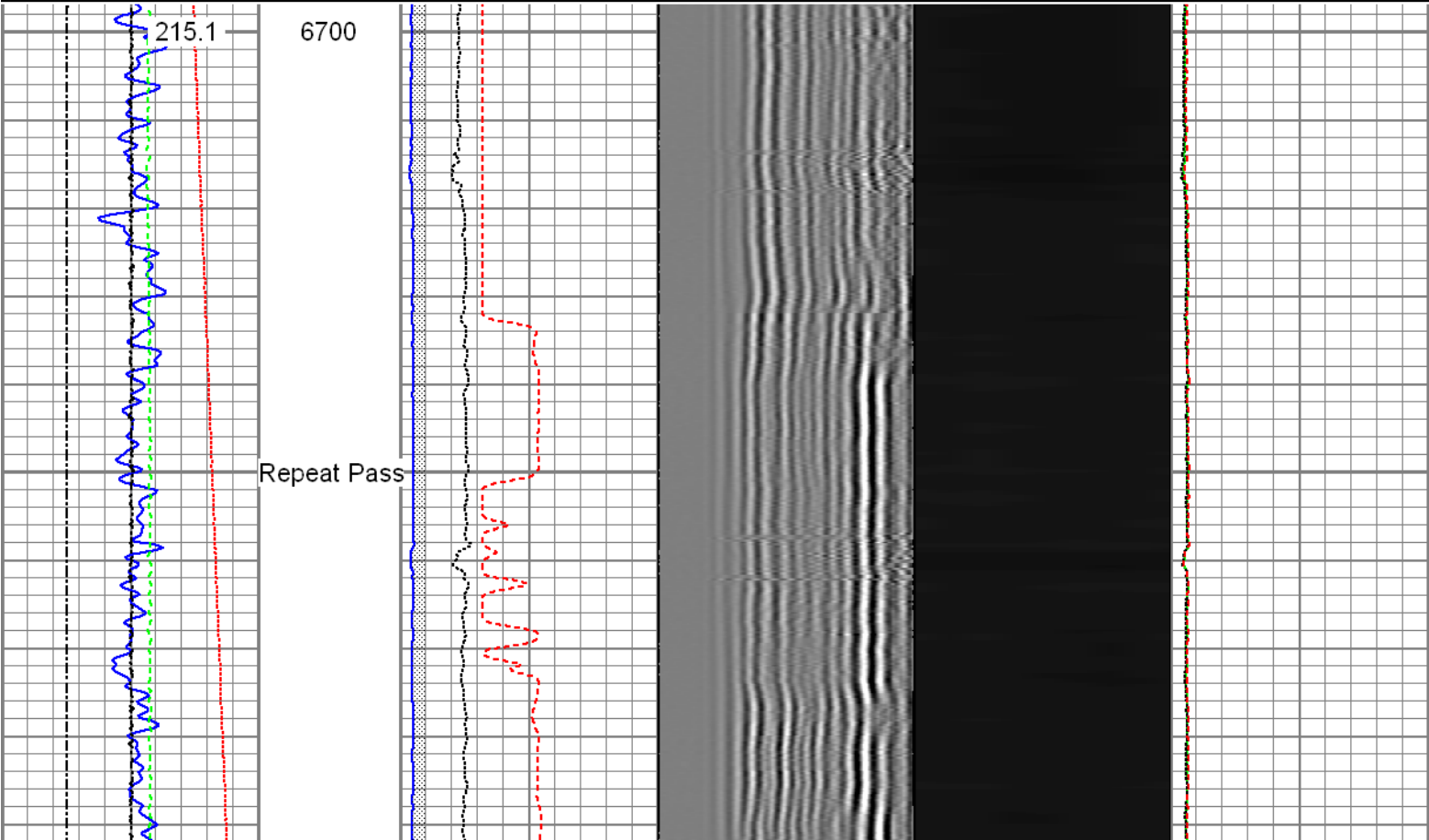


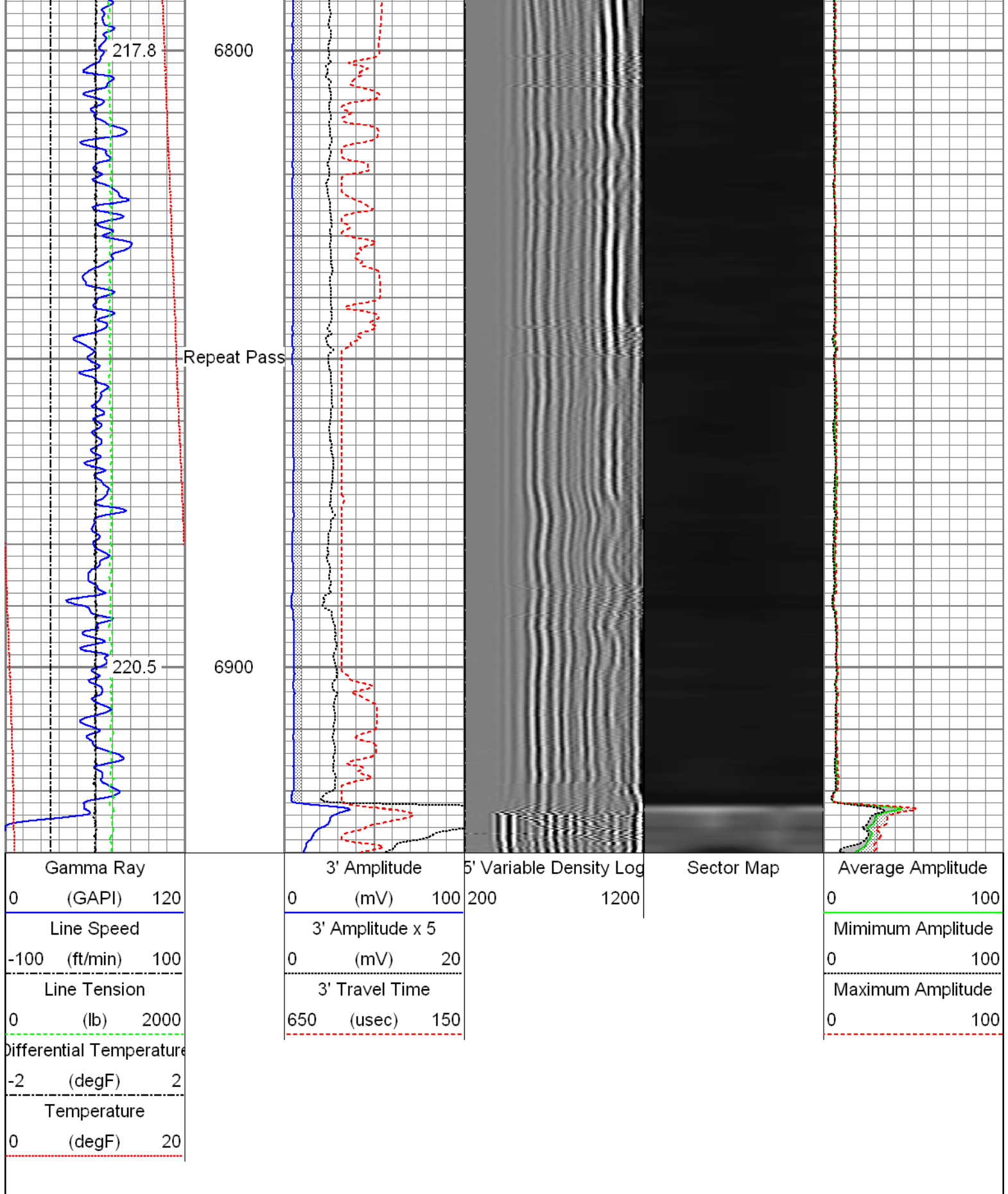
Repeat Pass


Recorded With 2800 PSI Surface Induced Pressure

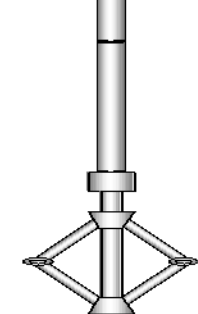
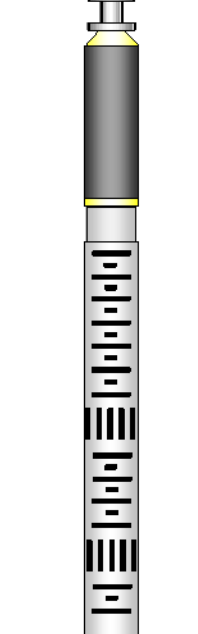
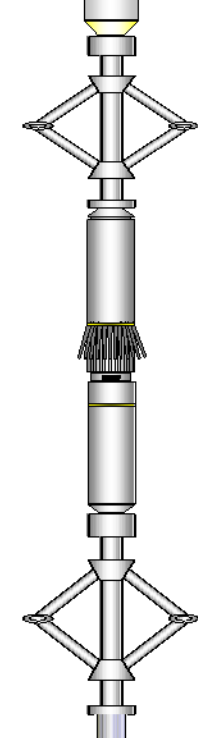
Database File: 0512340535_anadarko_vollmar 29c-11hz_05-04-15_mit_rbl.db
Dataset Pathname: pass6
Presentation Format: rbt4_mit
Dataset Creation: Mon May 04 13:13:19 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

<div>Gamma Ray</div> <div>0 (GAPI) 120</div> <hr/> <div>Line Speed</div> <div>-100 (ft/min) 100</div> <hr/> <div>Line Tension</div> <div>0 (lb) 2000</div> <hr/> <div>Differential Temperature</div> <div>-2 (degF) 2</div> <hr/> <div>Temperature</div> <div>0 (degF) 20</div> <hr/>	<div>3' Amplitude</div> <div>0 (mV) 100</div> <hr/> <div>3' Amplitude x 5</div> <div>0 (mV) 20</div> <hr/> <div>3' Travel Time</div> <div>650 (usec) 150</div> <hr/>	<div>5' Variable Density Log</div> <div>200 1200</div>	<div>Sector Map</div>	<div>Average Amplitude</div> <div>0 100</div> <hr/> <div>Mimimum Amplitude</div> <div>0 100</div> <hr/> <div>Maximum Amplitude</div> <div>0 100</div> <hr/>
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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
			UW_AGS-UW_AGS_001 (215017)	0.21	1.69	1.00

GR	23.85		Sondex Adapter - GO Box to Sondex Pin	1.58	1.69	6.50
			UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.93	1.69	9.50
			UW_PGR-UW_PGR_020 (10024770) Production Gamma Ray			
			UW_PRC #4 -DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVF3FT	16.46		UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	16.46					
WVFS2	16.46					
WVFS3	16.46					
WVFS4	16.46					
WVFS5	16.46					
WVFS6	16.46					
WVFS7	16.46					
WVFS8	16.46					
CBLTEMP	16.46					
CBLROT	16.46					
WVF5FT	15.46					
			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
MIT	6.45		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
			UW_PRT-UW_PRT_016 (10024052) Platinum Resistance Thermometer	1.04	1.69	5.20
TEMP	0.37		UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
TSTAMP	0.00					
Dataset: 0512340535_anadarko_vollmar 29c-11hz_05-04-15_mit_rbl.db: field/well/run1/pass7 Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report

Database File: 0512340535_anadarko_vollmar 29c-11hz_05-04-15_mit_rbl.db
 Dataset Pathname: pass7
 Dataset Creation: Mon May 04 13:21:39 2015 by Log 7.0 B1

Temperature Calibration Report

Serial Number: 10024052
 Tool Model: UW_PRT_016
 Performed: Wed Feb 11 16:41:28 2015

Point #	Reading			Reference	
1	12242.00	cps		68.00	degF
2	18329.00	cps		104.00	degF
3	29563.00	cps		176.00	degF
4	41222.00	cps		248.00	degF
5	52988.00	cps		320.00	degF
6	58824.00	cps		356.00	degF
7		cps			degF
8		cps			degF
9		cps			degF
10		cps			degF

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: Mon May 04 12:15:25 2015

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1103	376.0	1479	386.0	1865	400.0	2265
Finger 02:	1049	381.0	1430	405.0	1835	420.0	2255
Finger 03:	1135	378.0	1513	388.0	1901	403.0	2304
Finger 04:	1018	386.0	1404	415.0	1819	431.0	2250
Finger 05:	1061	373.0	1434	387.0	1821	399.0	2220
Finger 06:	1010	375.0	1385	398.0	1783	416.0	2199
Finger 07:	1031	379.0	1410	396.0	1806	408.0	2214
Finger 08:	1021	384.0	1405	409.0	1814	430.0	2244
Finger 09:	1069	386.0	1455	399.0	1854	399.0	2253
Finger 10:	1070	388.0	1458	403.0	1861	414.0	2275
Finger 11:	1024	382.0	1406	402.0	1808	423.0	2231
Finger 12:	1117	380.0	1497	381.0	1878	379.0	2257
Finger 13:	1037	373.0	1410	397.0	1807	412.0	2219
Finger 14:	1016	388.0	1404	412.0	1816	428.0	2244
Finger 15:	998	387.0	1385	415.0	1800	435.0	2235
Finger 16:	996	372.0	1368	399.0	1767	420.0	2187
Finger 17:	1085	373.0	1458	387.0	1845	402.0	2247
Finger 18:	1089	367.0	1456	385.0	1841	399.0	2240
Finger 19:	1053	374.0	1427	394.0	1821	413.0	2234
Finger 20:	1002	377.0	1379	409.0	1788	428.0	2216
Finger 21:	1074	367.0	1441	389.0	1830	412.0	2242

Finger 22:	1029	366.0	1395	394.0	1789	415.0	2204
Finger 23:	1098	373.0	1471	392.0	1863	413.0	2276
Finger 24:	1088	344.0	1432	363.0	1795	386.0	2181
Finger 25:	1083	375.0	1458	395.0	1853	415.0	2268
Finger 26:	1120	365.0	1485	386.0	1871	411.0	2282
Finger 27:	1210	381.0	1591	393.0	1984	407.0	2391
Finger 28:	1082	350.0	1432	377.0	1809	407.0	2216
Finger 29:	1049	364.0	1413	389.0	1802	420.0	2222
Finger 30:	1024	359.0	1383	396.0	1779	423.0	2202
Finger 31:	1234	388.0	1622	402.0	2024	421.0	2445
Finger 32:	1008	355.0	1363	378.0	1741	404.0	2145
Finger 33:	1103	381.0	1484	404.0	1888	434.0	2322
Finger 34:	1000	360.0	1360	386.0	1746	414.0	2160
Finger 35:	1154	386.0	1540	405.0	1945	422.0	2367
Finger 36:	1059	352.0	1411	371.0	1782	394.0	2176
Finger 37:	1149	390.0	1539	404.0	1943	423.0	2366
Finger 38:	1091	365.0	1456	380.0	1836	401.0	2237
Finger 39:	1055	355.0	1410	369.0	1779	388.0	2167
Finger 40:	961	372.0	1333	409.0	1742	435.0	2177

Segmented Cement Bond Log Calibration Report

Serial Number:	1063
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	5.500 in
Calibration Depth:	-3.873 ft

Master Calibration, performed Mon May 04 08:45:11 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.004	1.000	1.000	71.921	70.670	1.251
5FT	-0.006	1.000	1.000	71.921	70.491	1.430
S1	-0.004	1.000	0.000	100.000	99.567	0.433
S2	-0.004	1.000	0.000	100.000	99.576	0.424
S3	-0.003	1.000	0.000	100.000	99.655	0.345
S4	-0.004	1.000	0.000	100.000	99.610	0.390
S5	-0.003	1.000	0.000	100.000	99.729	0.271
S6	-0.004	1.000	0.000	100.000	99.635	0.365
S7	-0.003	1.000	0.000	100.000	99.657	0.343
S8	-0.003	1.000	0.000	100.000	99.696	0.304

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 & Gas Onshore LP
Well	Vollmar 29C-11HZ
Field	Wattenberg

	County	Weld
	State	Colorado