



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Kerr McGee Oil & Gas Onshore LP	
Well		Vollmar 28N-11HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API #: 05-123-40534	
SEC 14 TWP 2N RGE 67W		Other Services	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		4941'	
Gauge Ring		MIT	
Elevation		K.B. 4957'	
		D.F. 4956'	
		G.L. 4941'	
Date		04-MAY-2015	
Run Number		Two	
Depth Driller		12881 FT	
Depth Logger		7463 FT	
Bottom Logged Interval		7450 FT	
Top Log Interval		Surface	
Open Hole Size		8.750"	
Type Fluid		Water	
Density / Viscosity		8.34 lb/gal	
Max. Recorded Temp.		235°F	
Estimated Cement Top		50 FT	
Time Well Ready		ROA	
Time Logger on Bottom		9:15	
Equipment Number		HD-0343	
Location		Ft Lupton, CO	
Recorded By		J. Raby	
Witnessed By		Mario Torrez	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing		9 5/8	
Intermediate #1		7	
Intermediate #2		4 1/2	
Liner		11.6	
HCP-110		6806 FT	
		12877 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 6806 FT.
Adjusted log +8 FT to correlate with liner top.
Gauge ring/junk basket ran to 7463 FT no debris was found after run.
Log ran from 7450 FT to surface.
Log ran with 2800 PSI surface induced pressure.
No debris found on logging tools upon completion of run.

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



Main Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File:0512340534_anadarko_vollmar 28n-11hz_05-04-15_mit_rbl.db

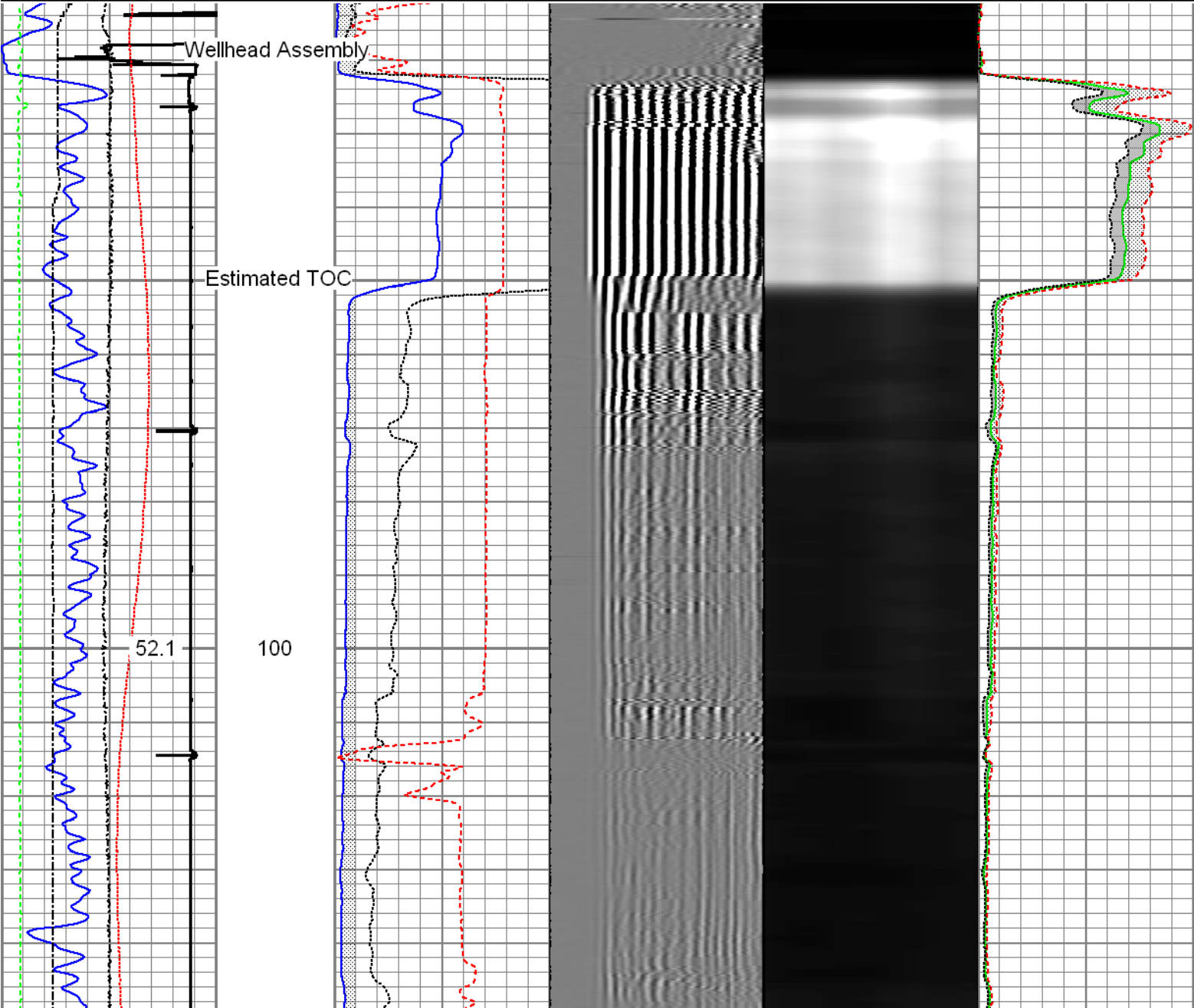
Dataset Pathname:pass6

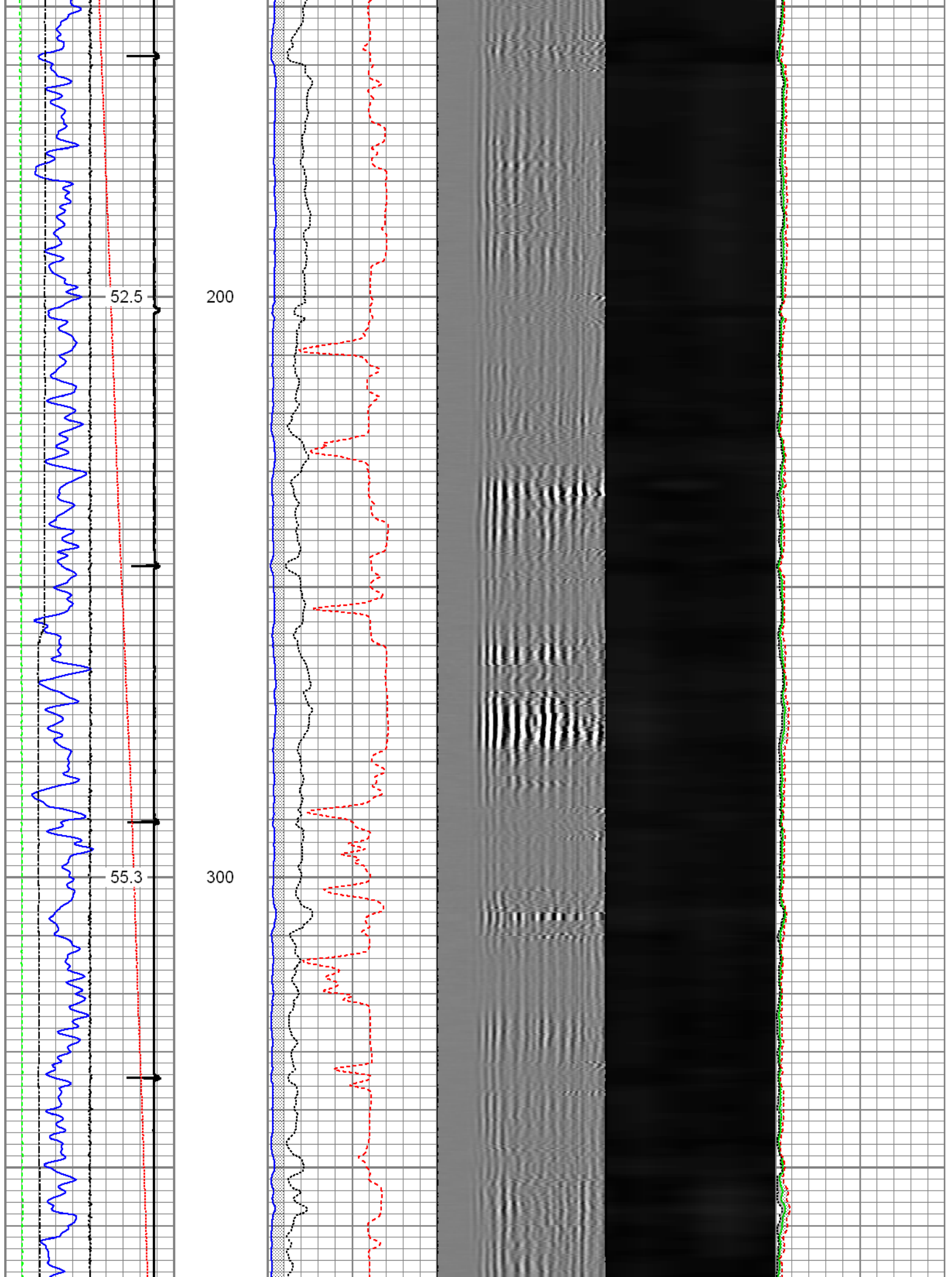
Presentation Format:rbt4_mit

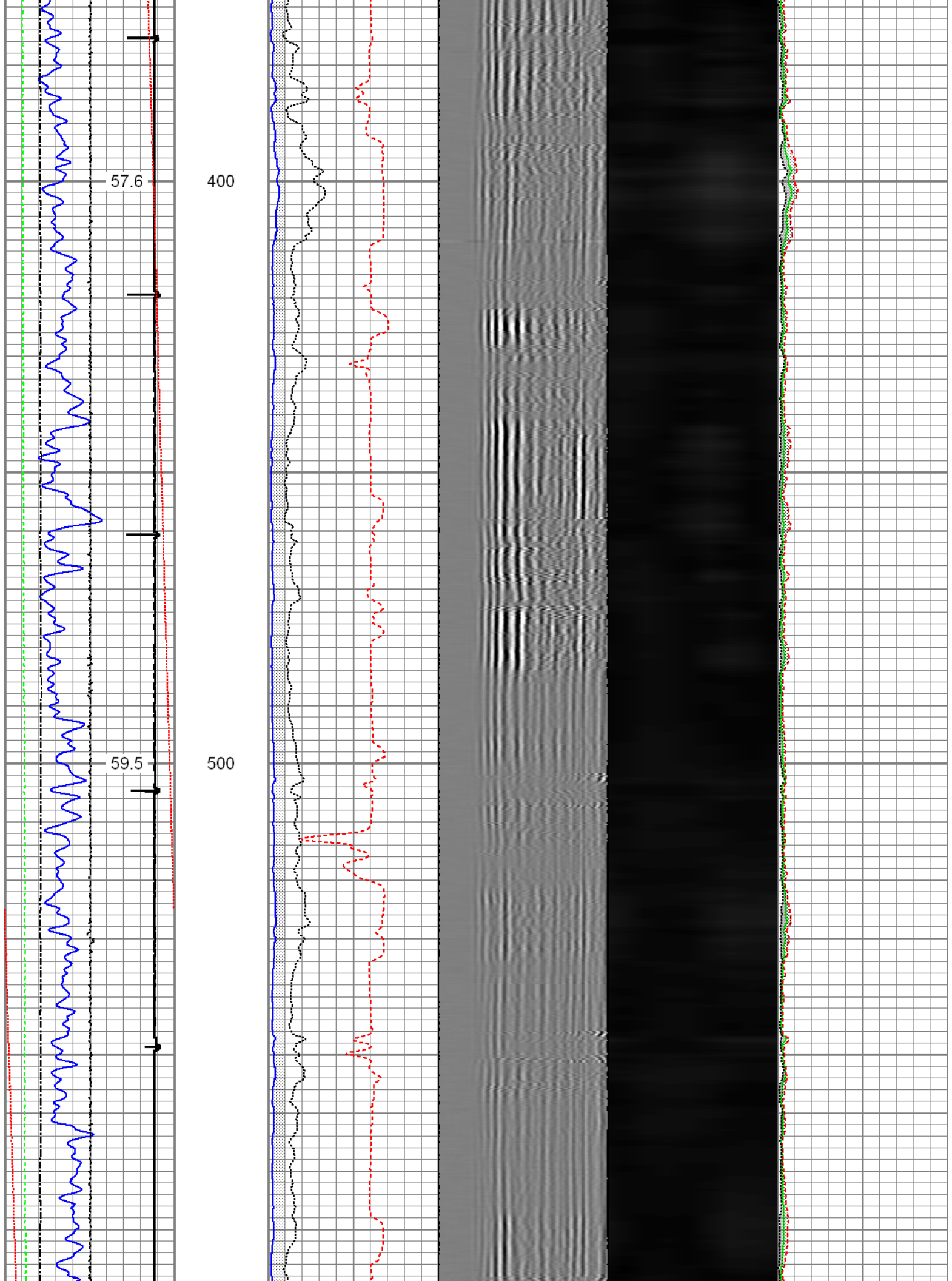
Dataset Creation:Mon May 04 09:30:47 2015 by Log 7.0 B1

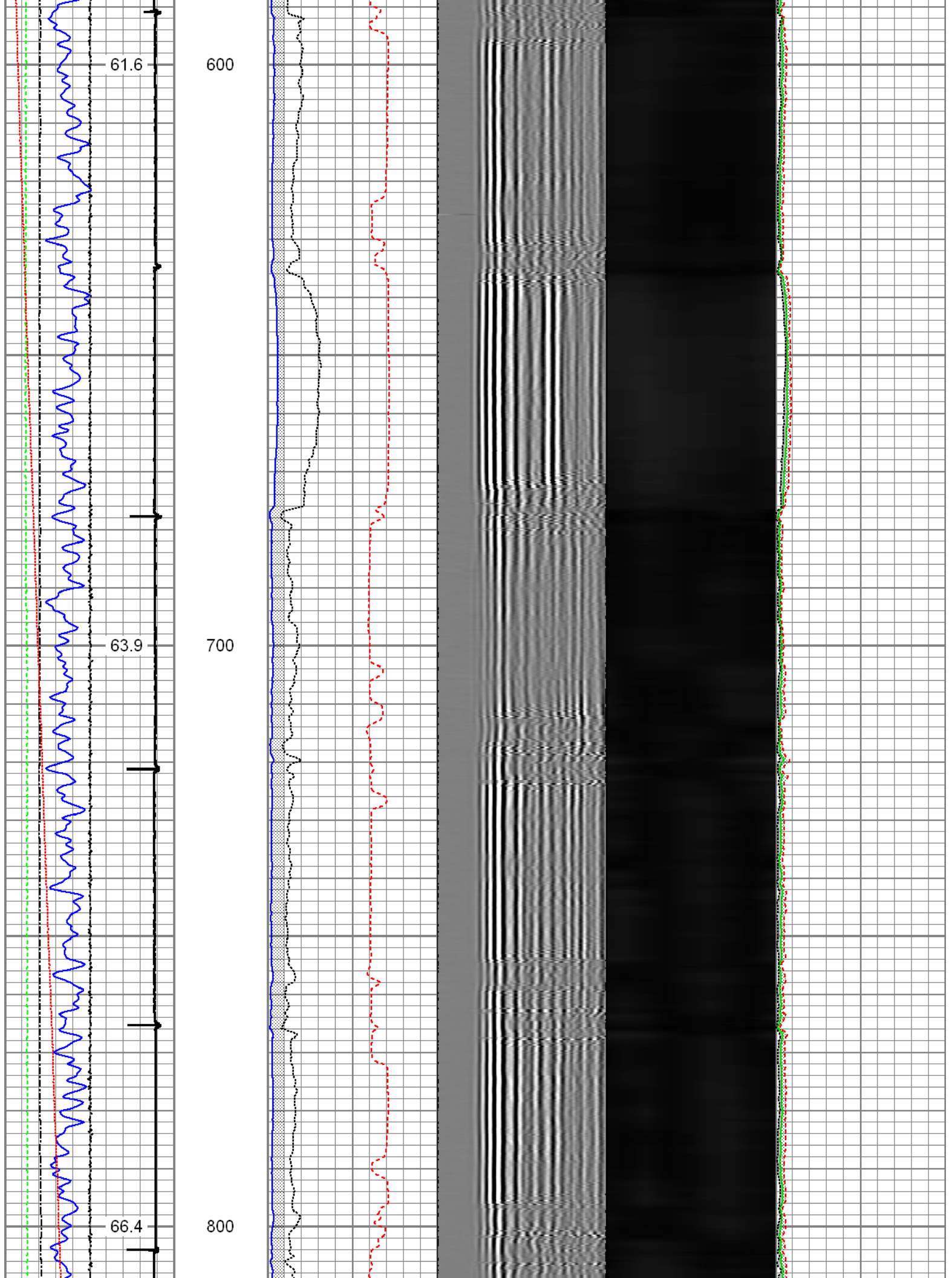
Charted by:Depth in Feet scaled 1:240

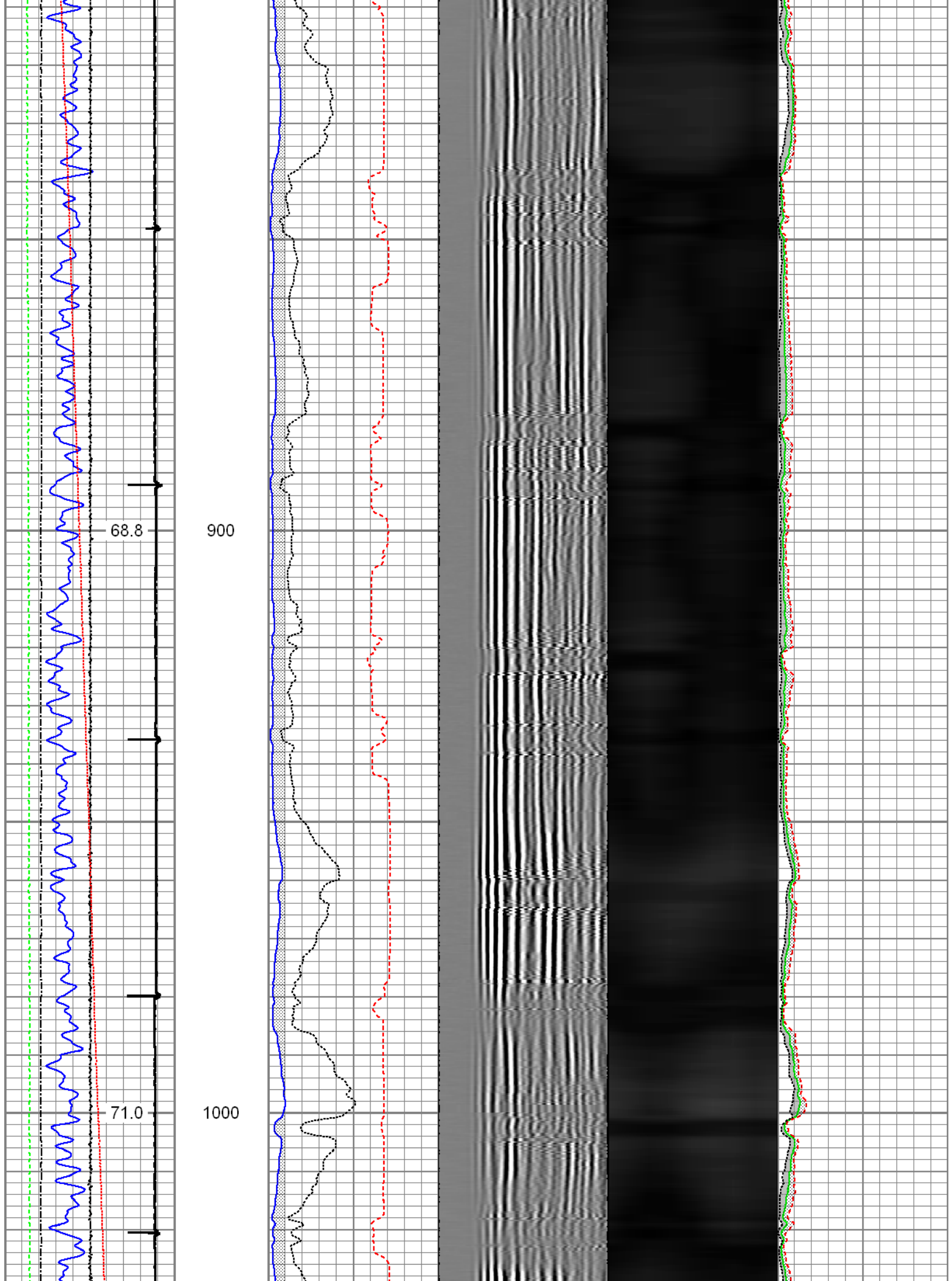
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000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

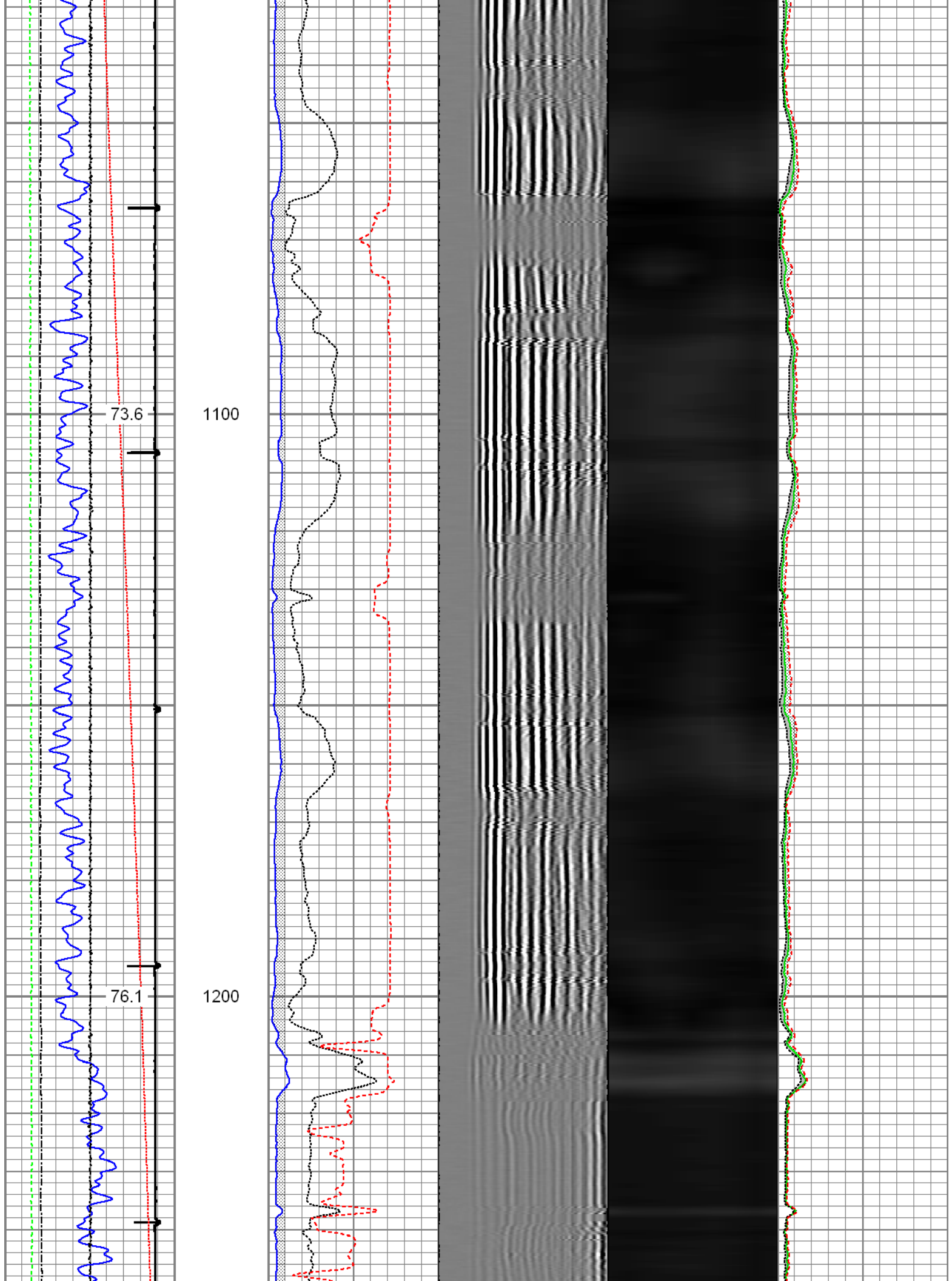


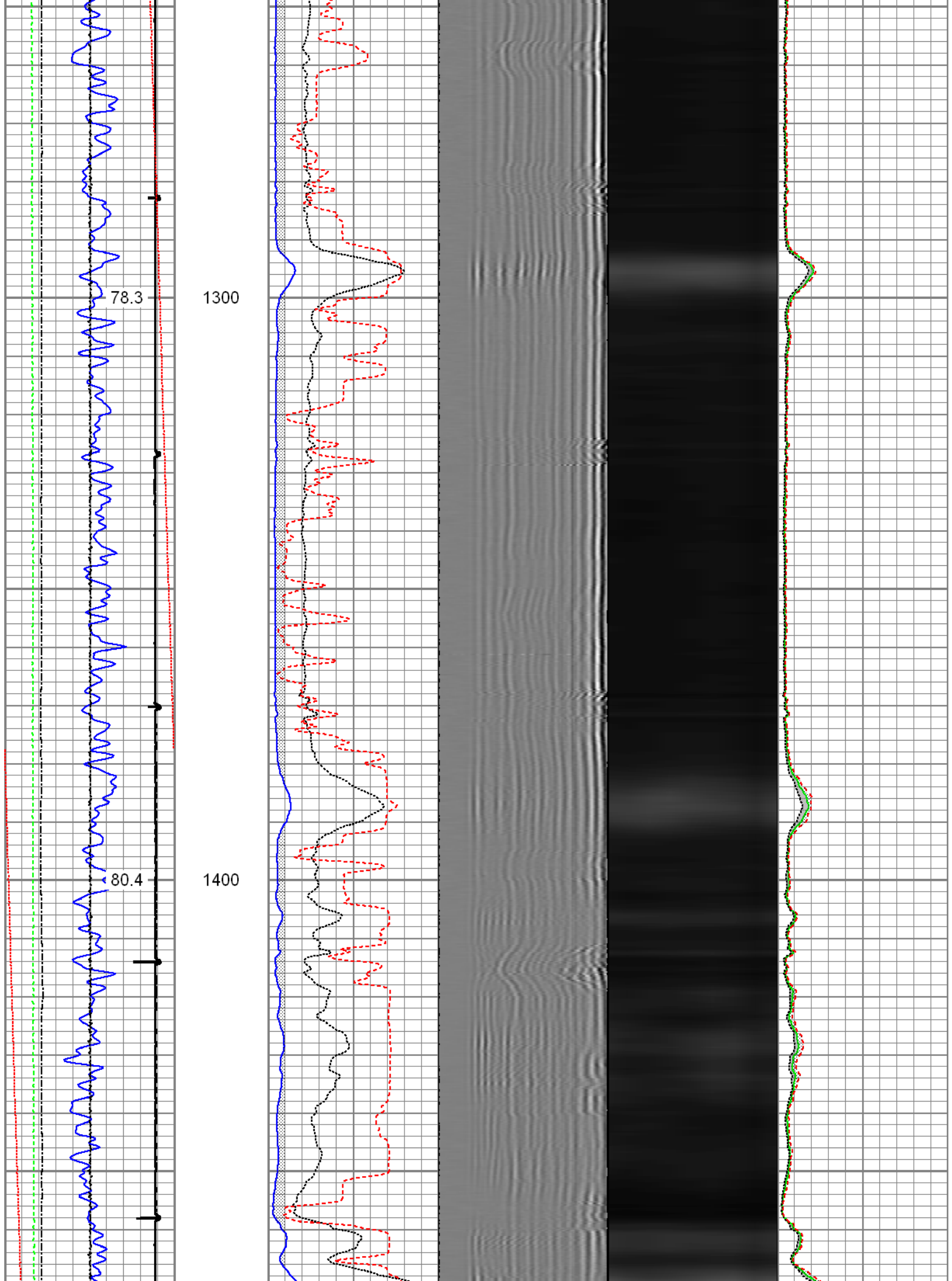


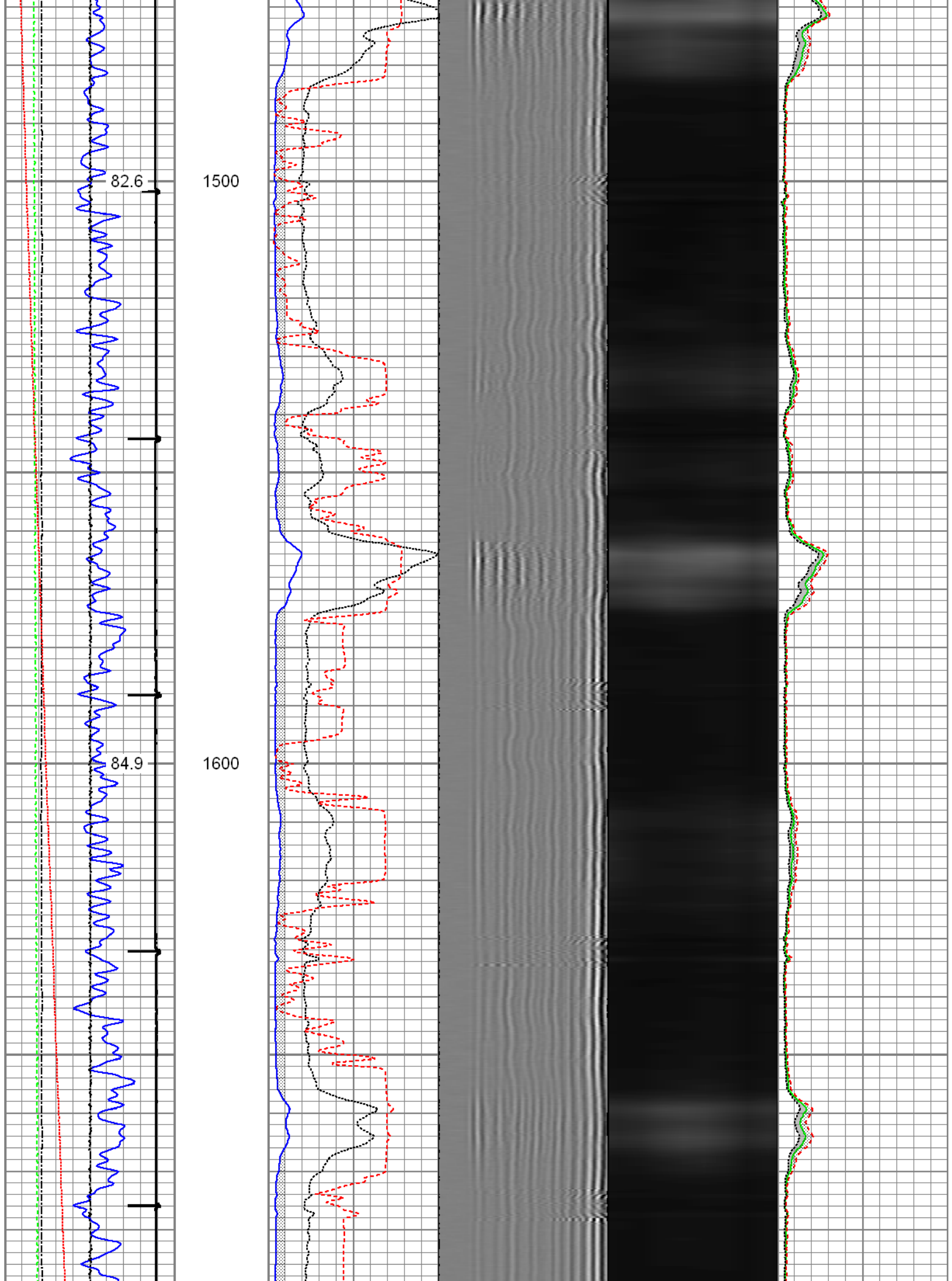


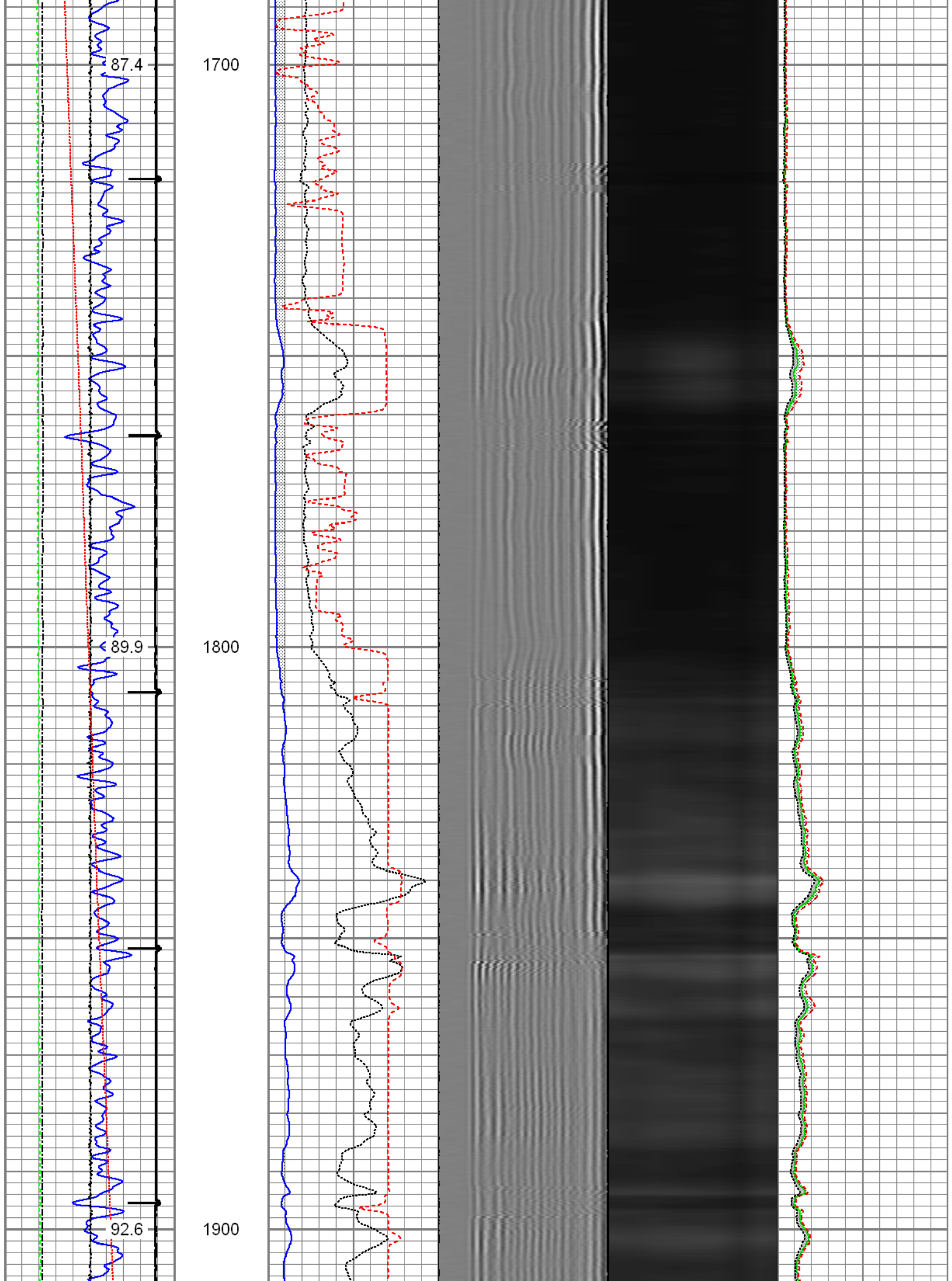


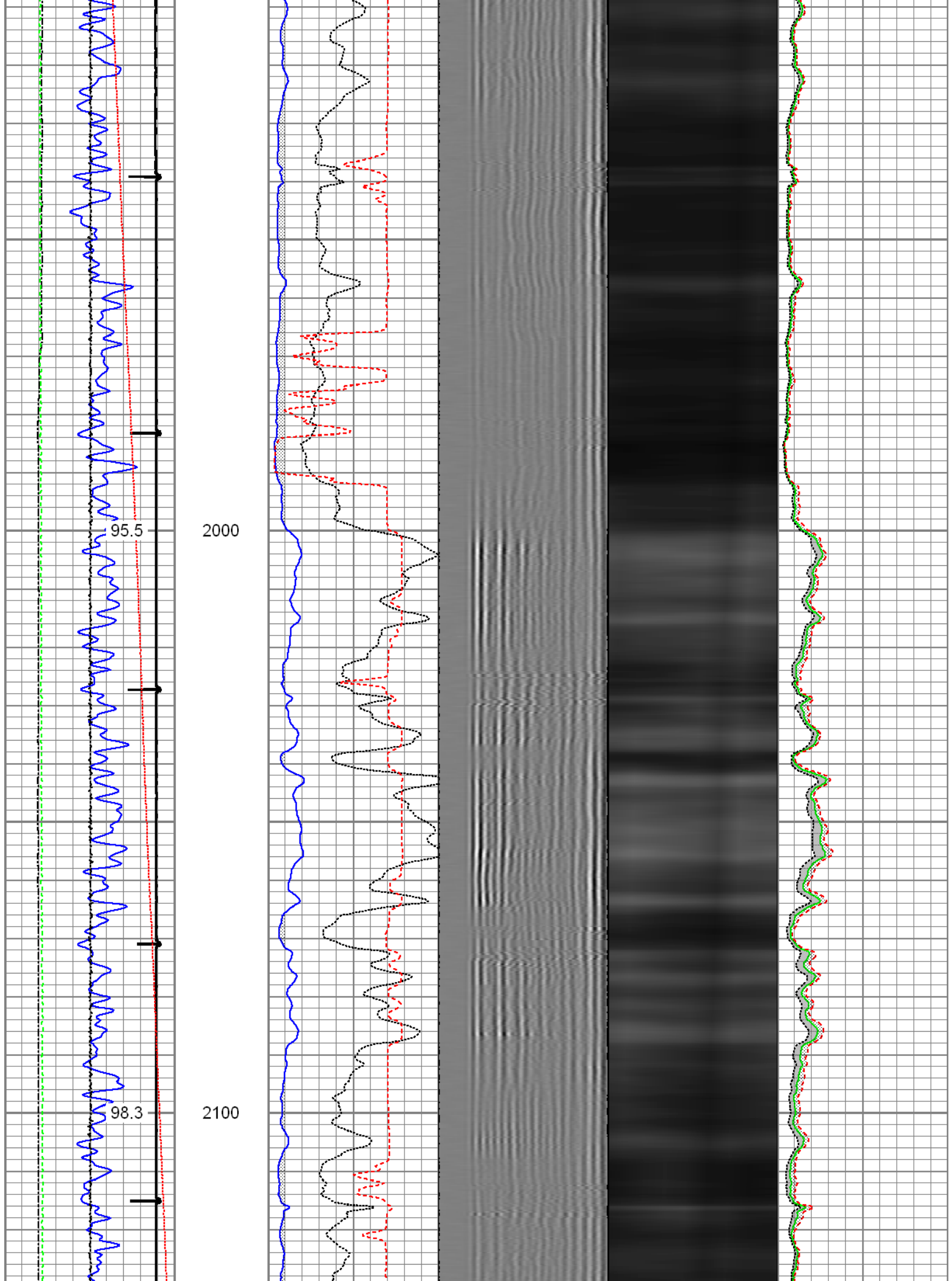


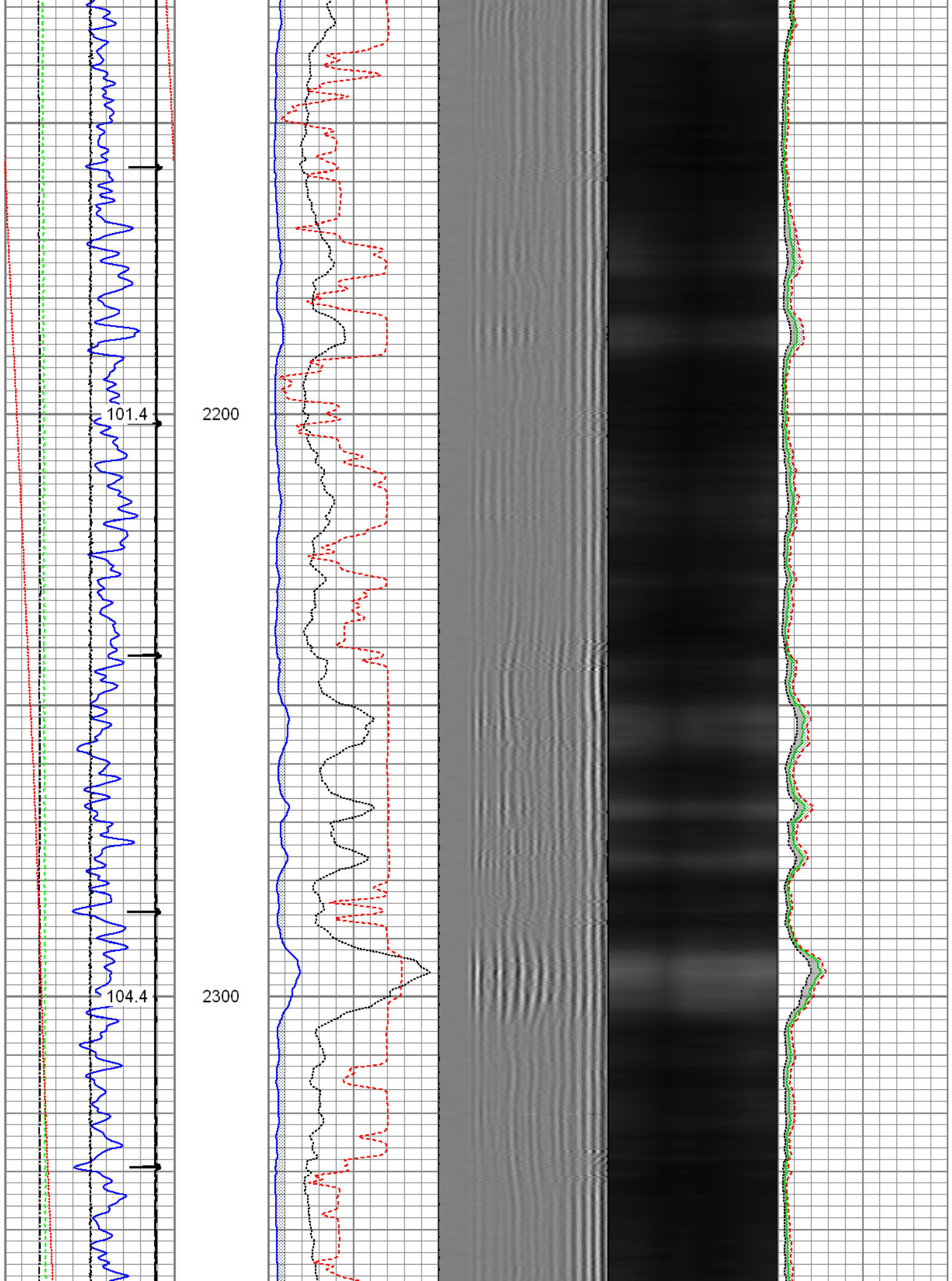


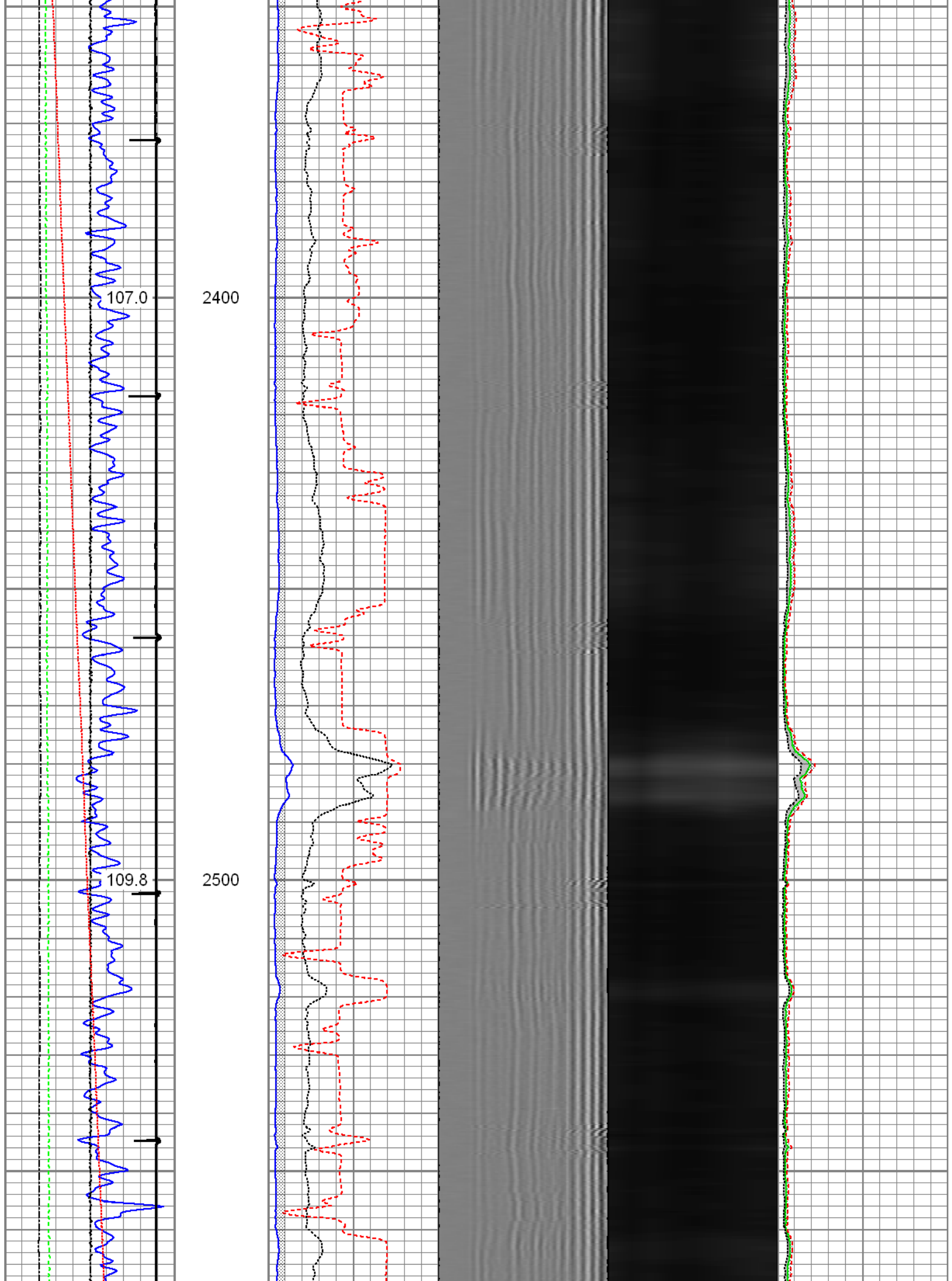


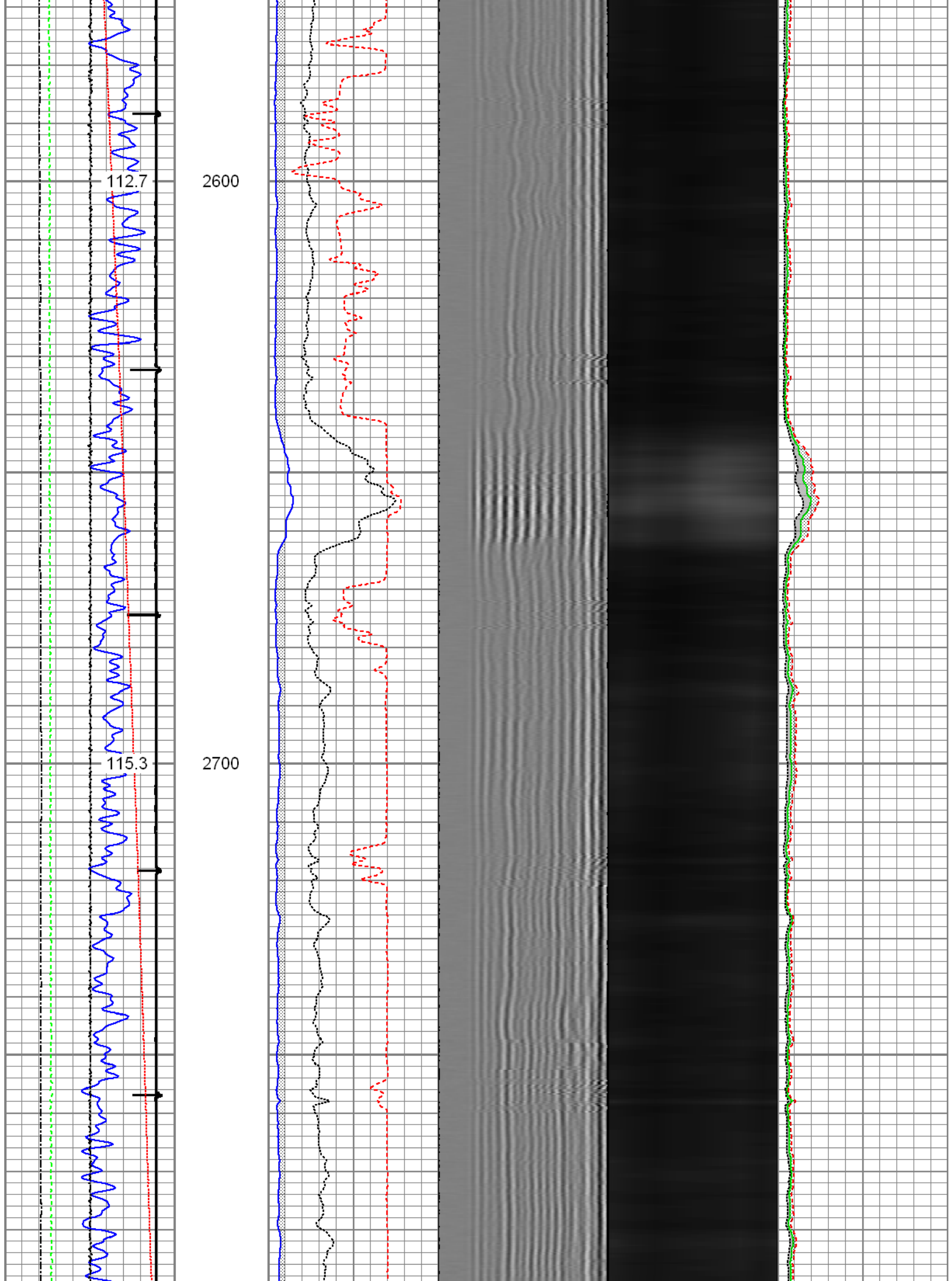


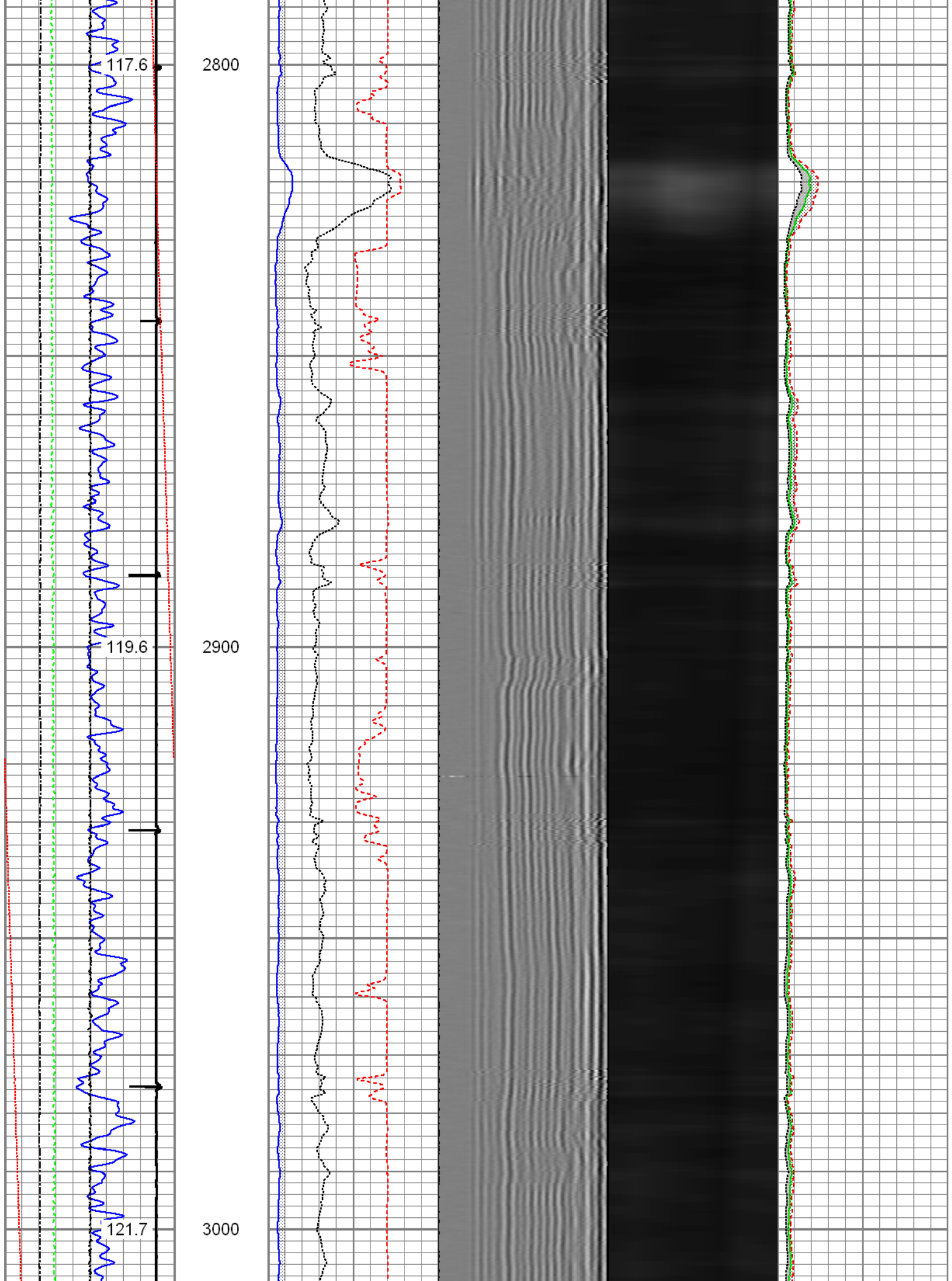


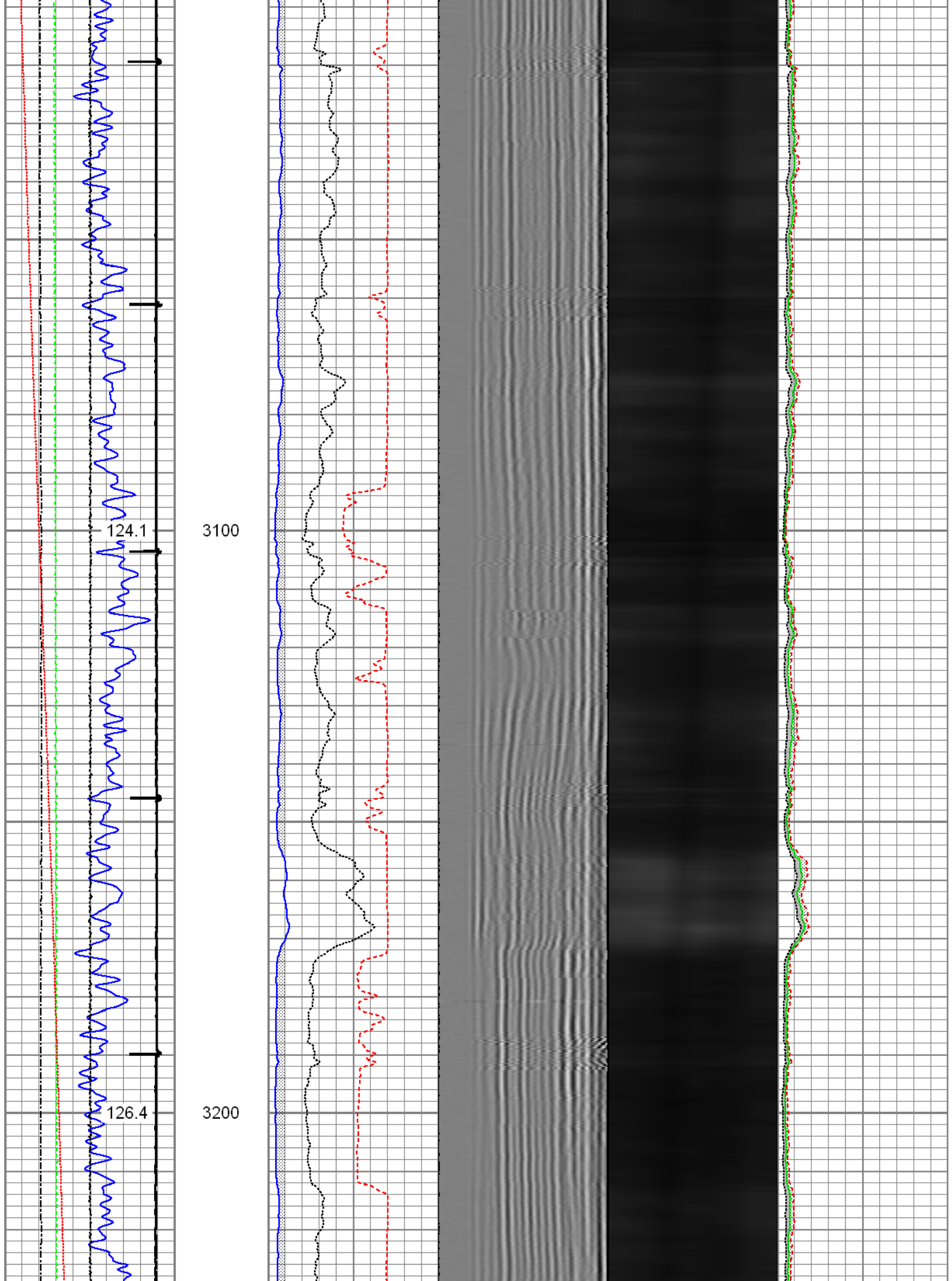


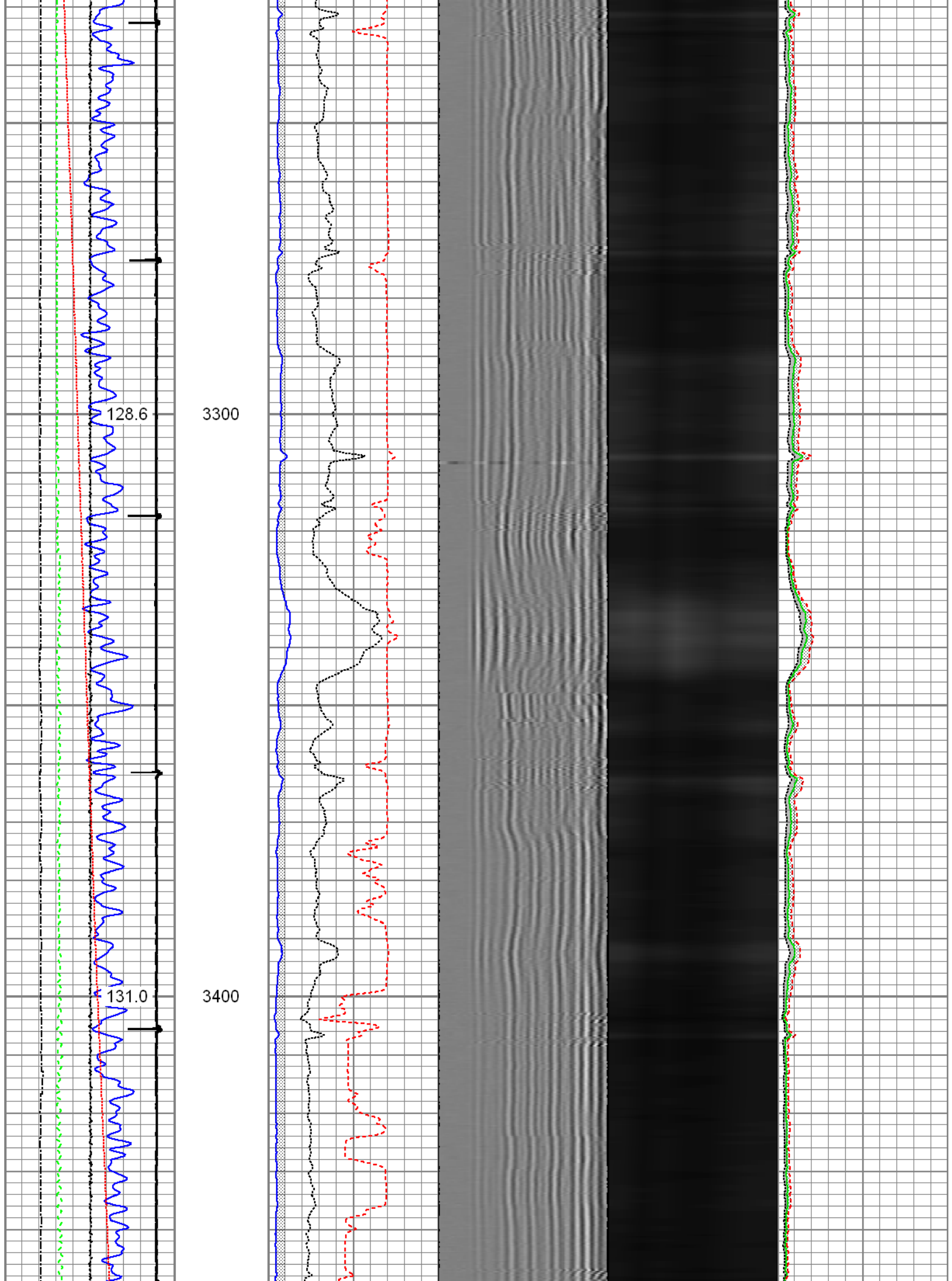


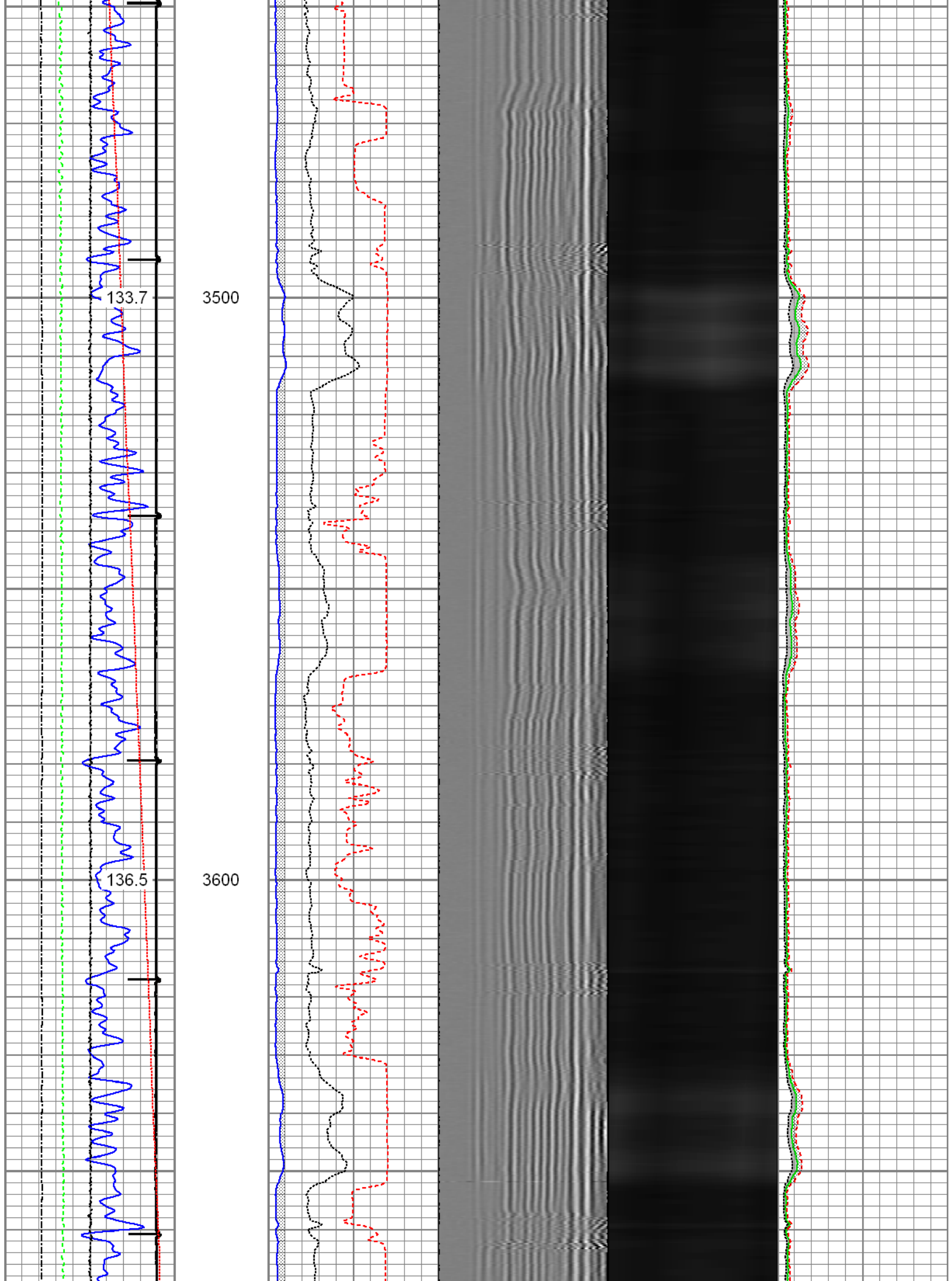


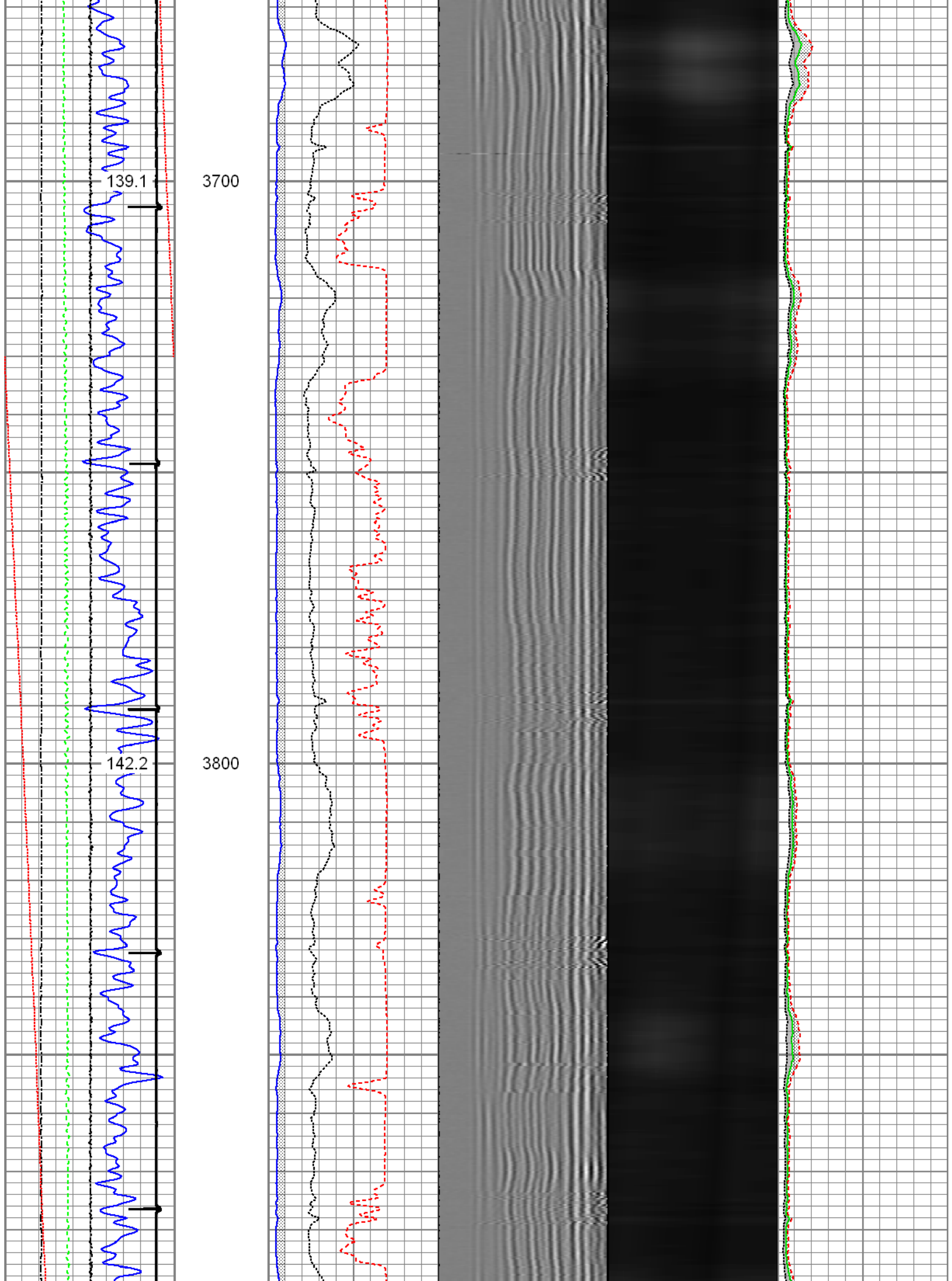


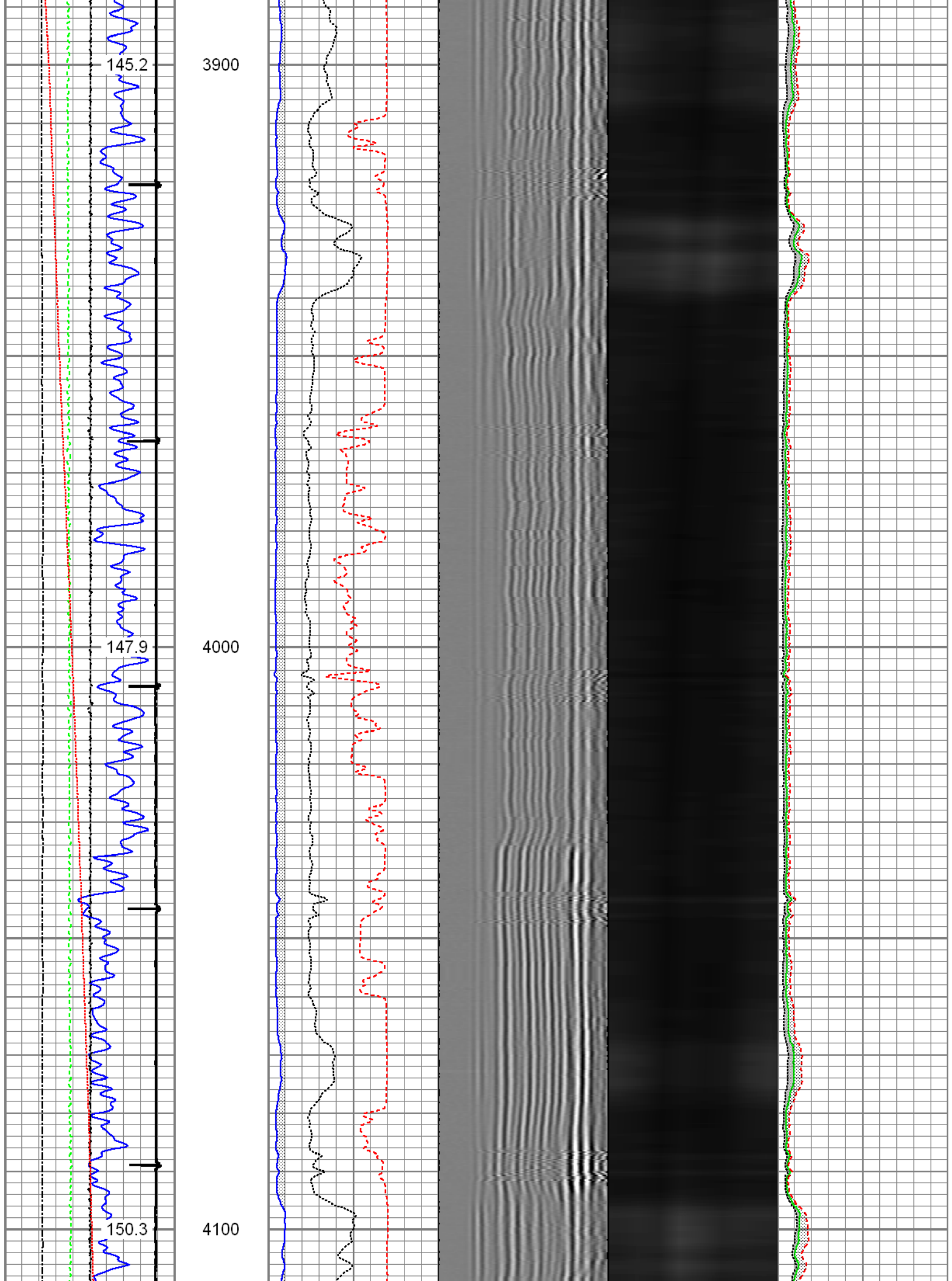


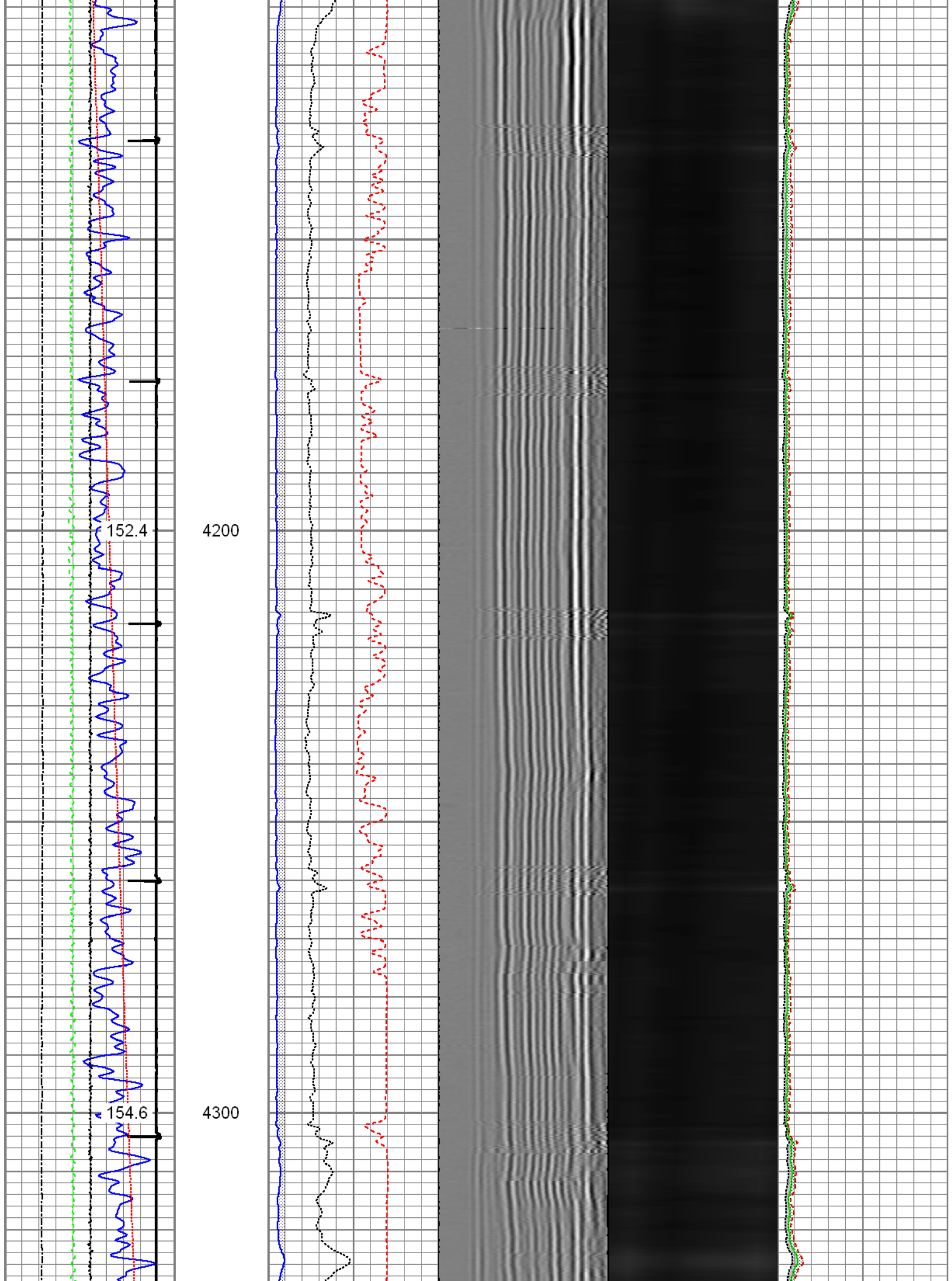


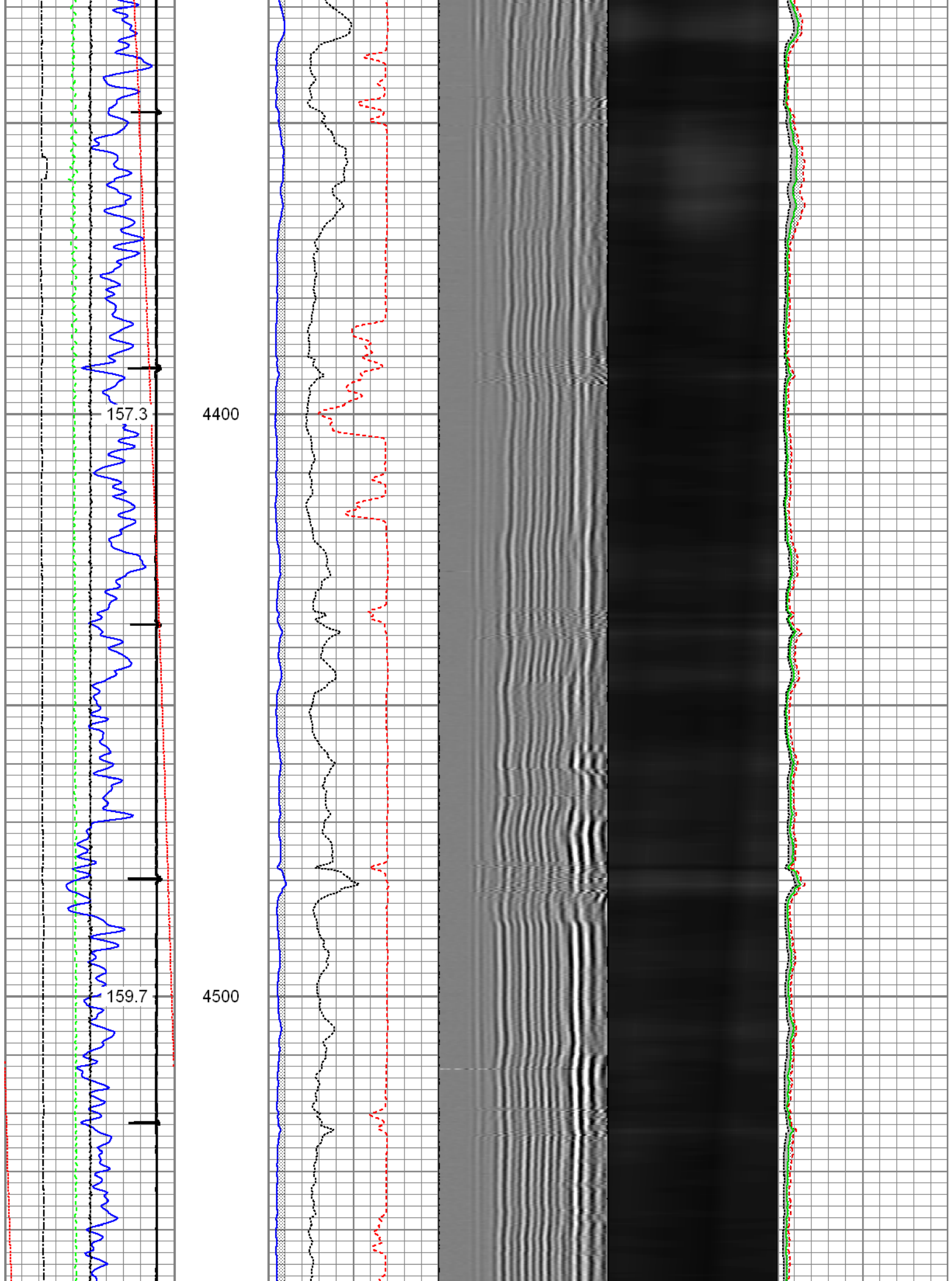


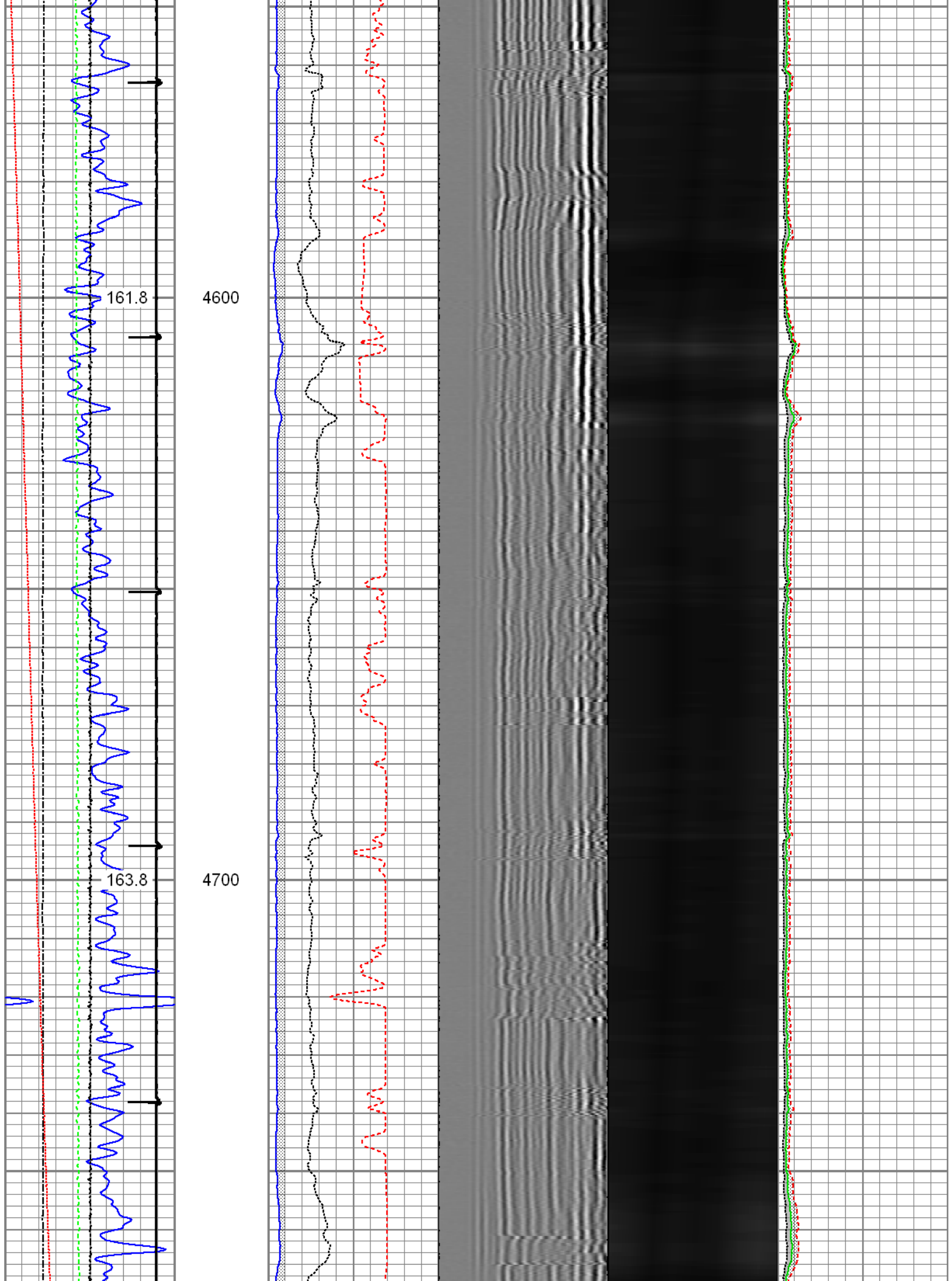


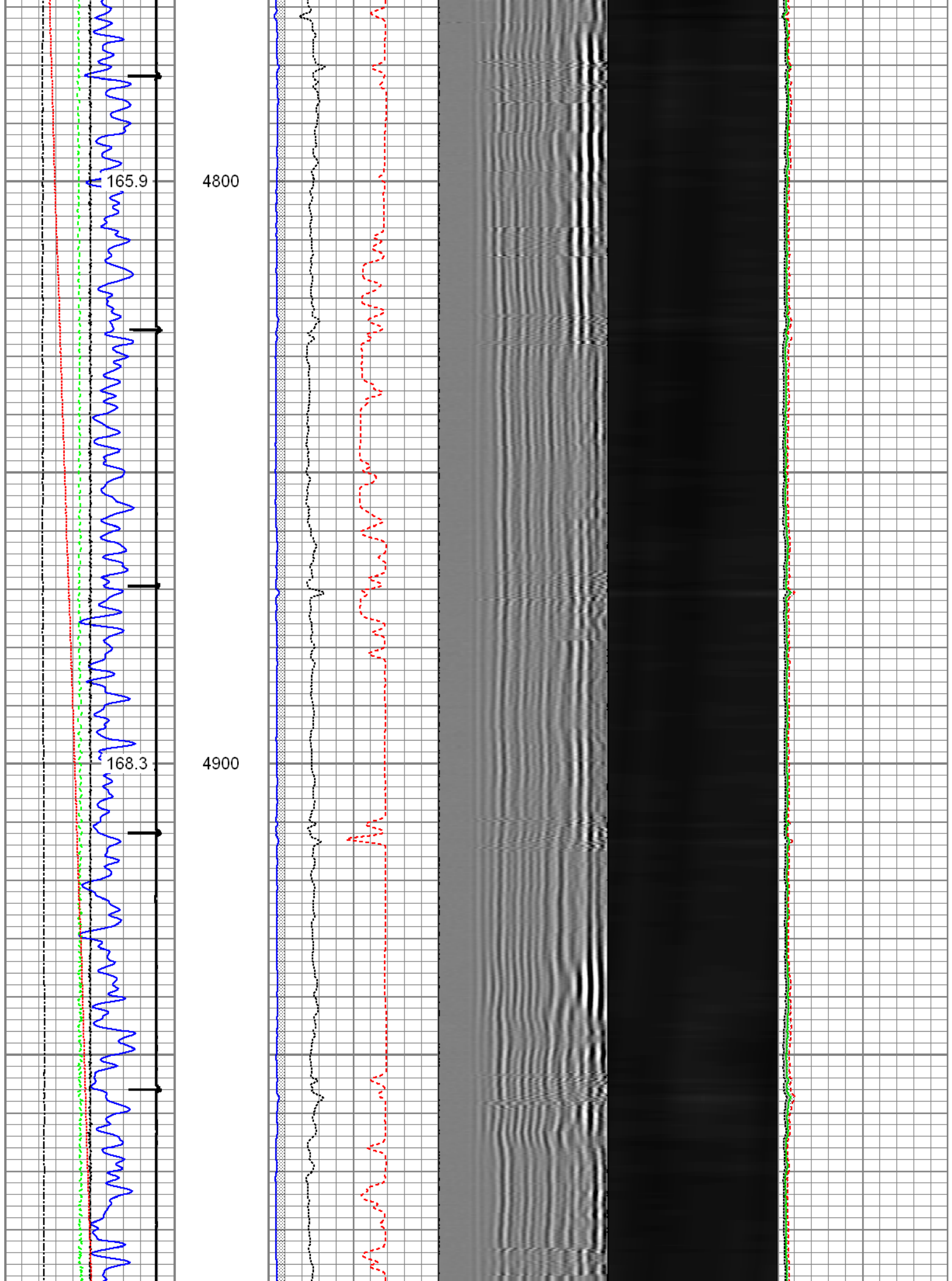


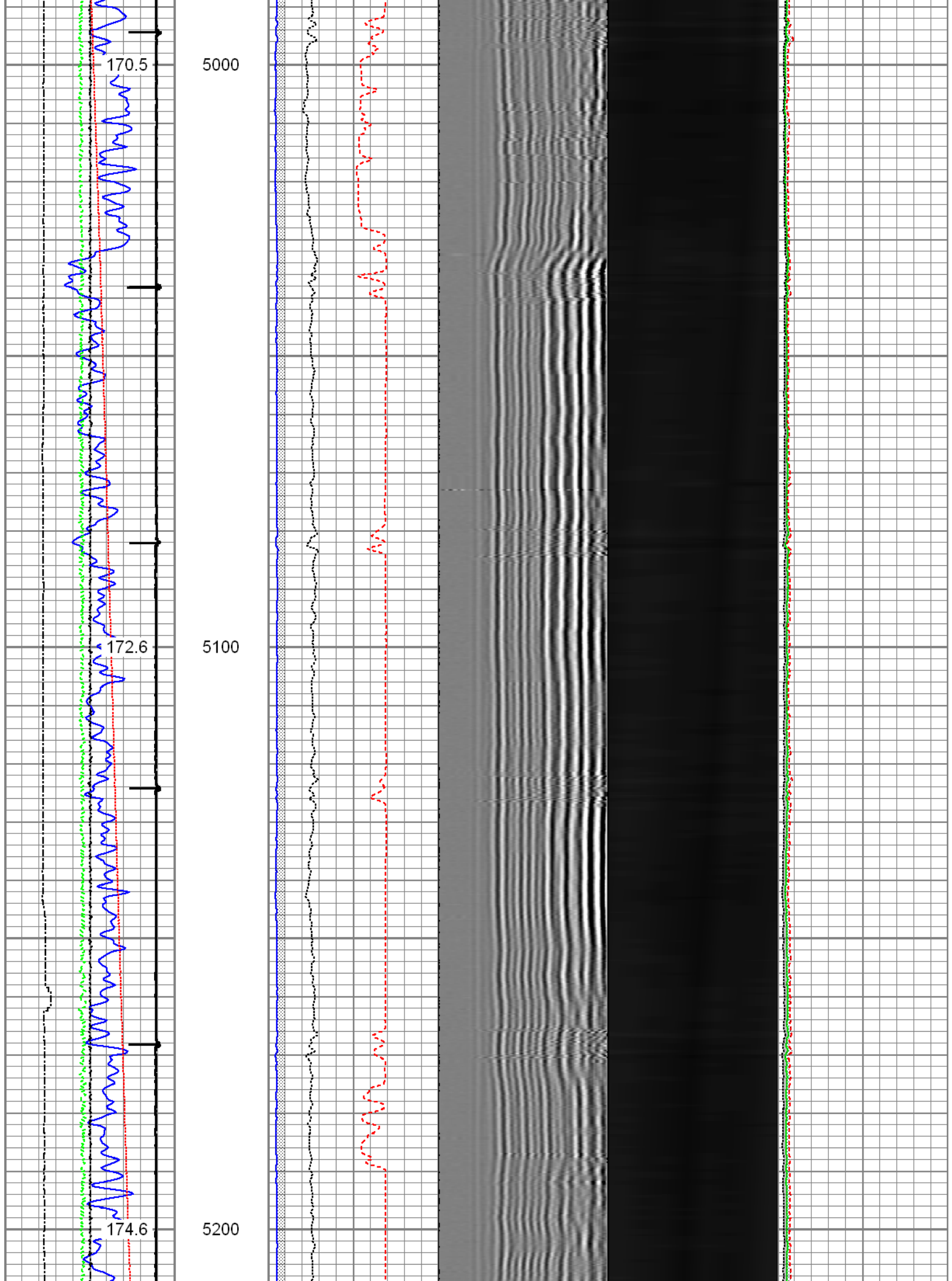


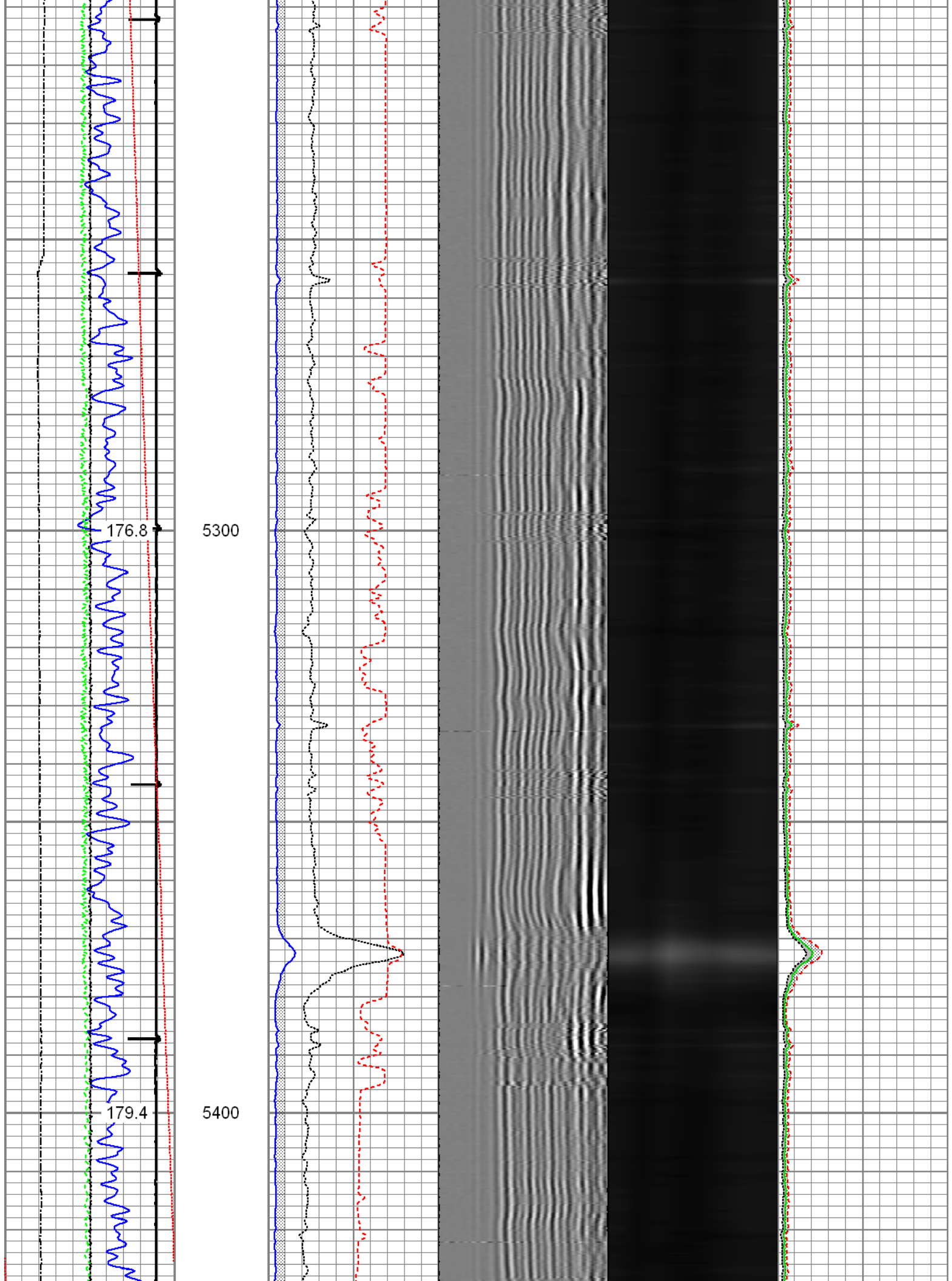


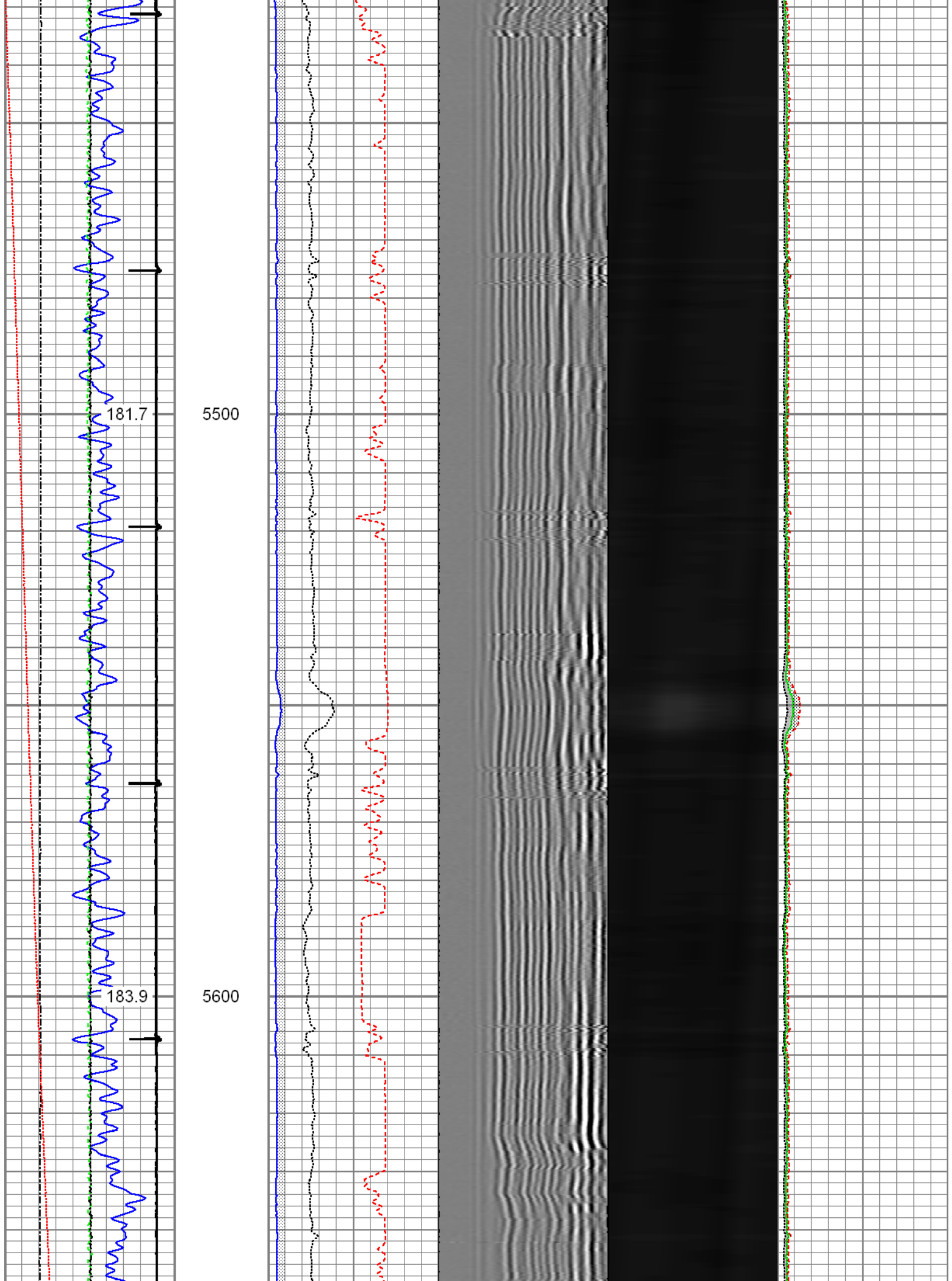


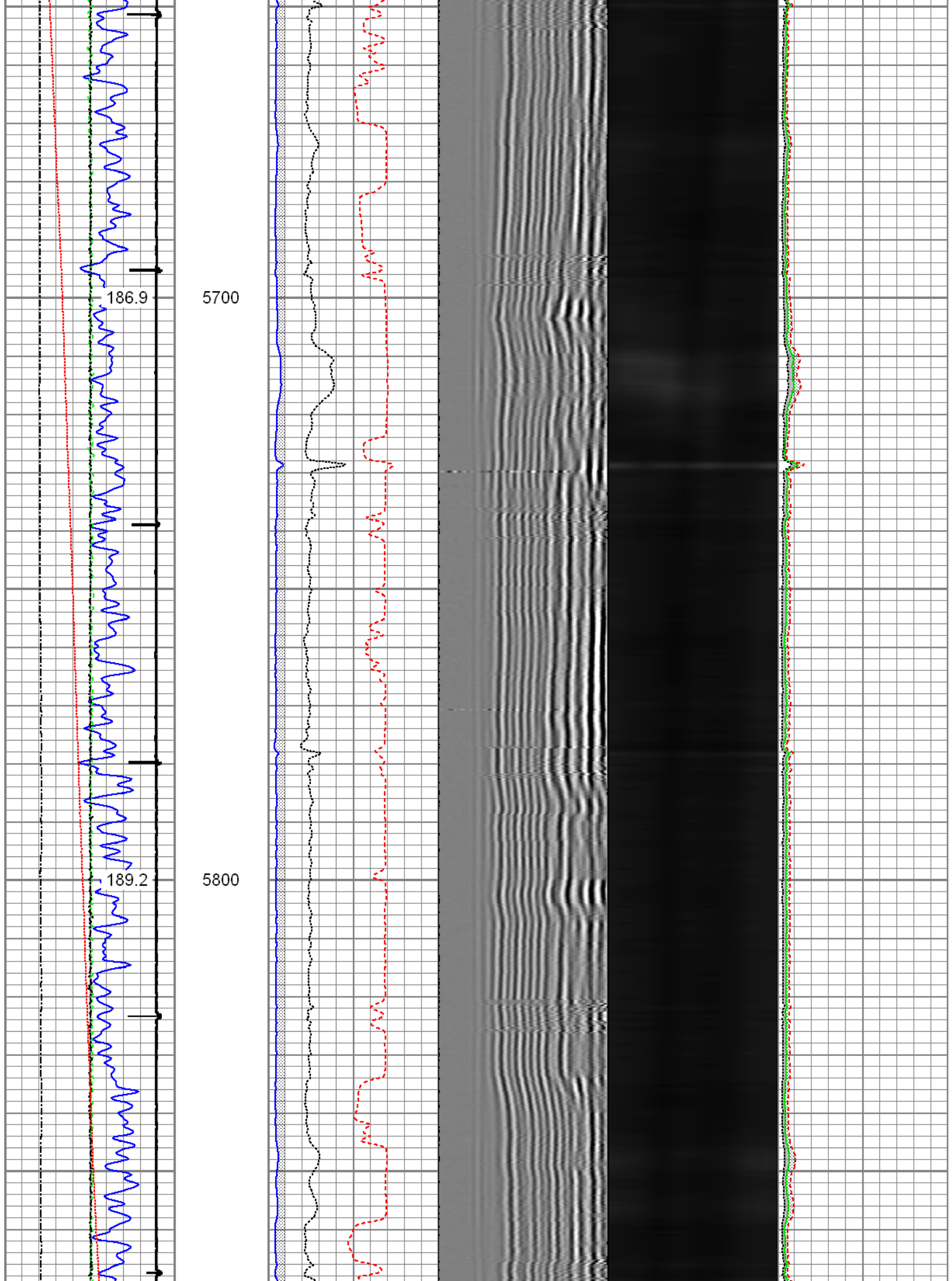


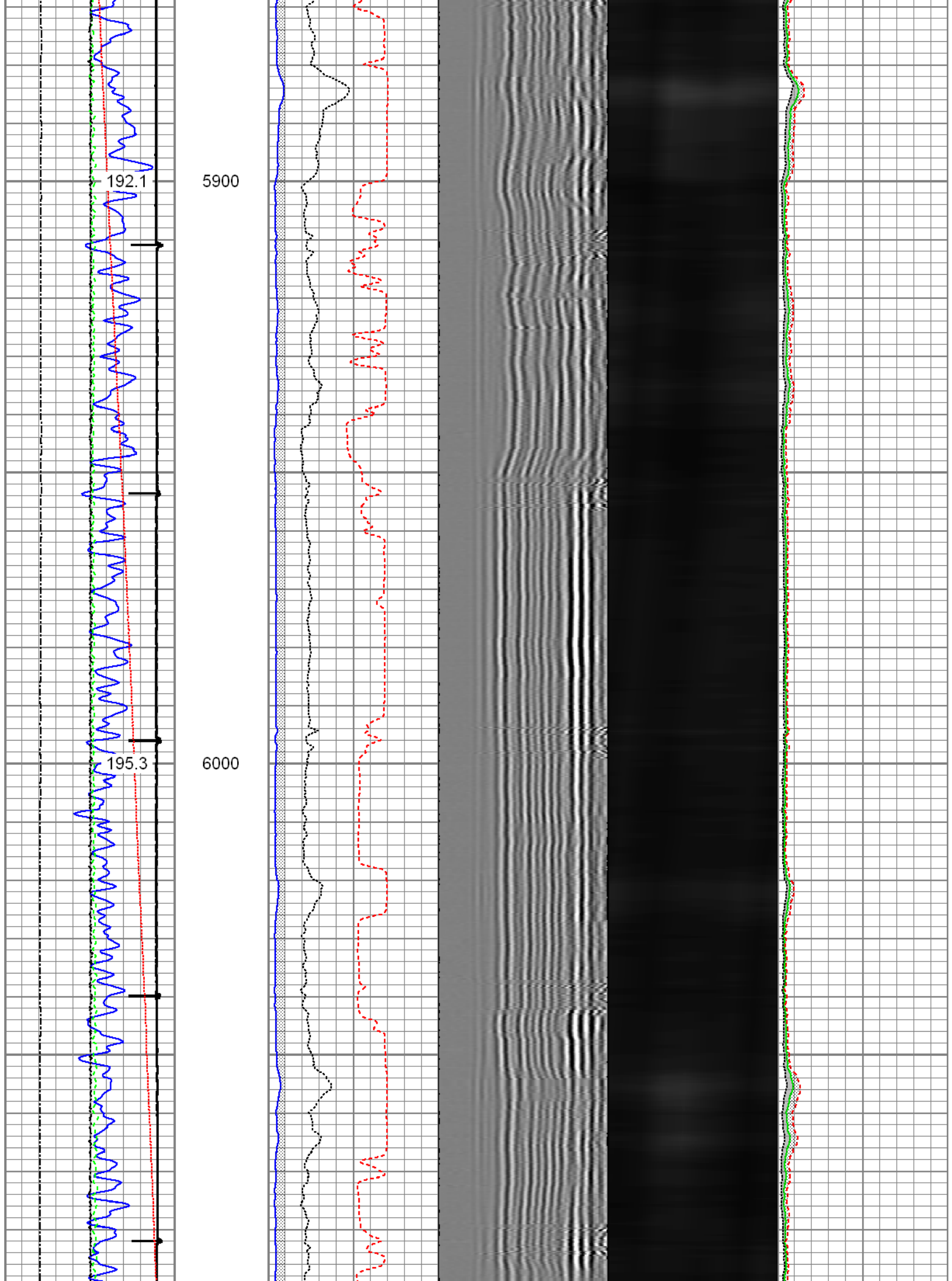


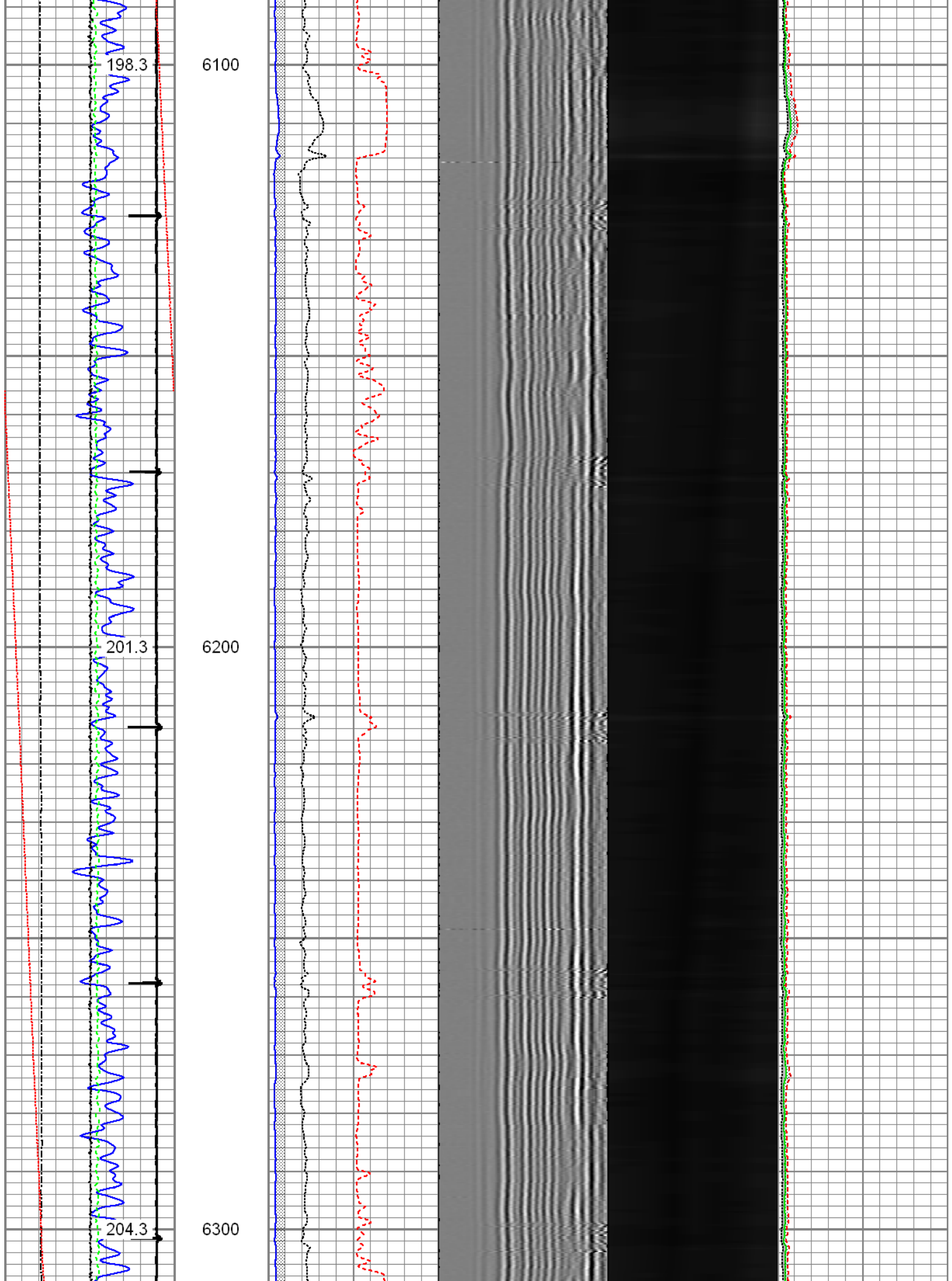


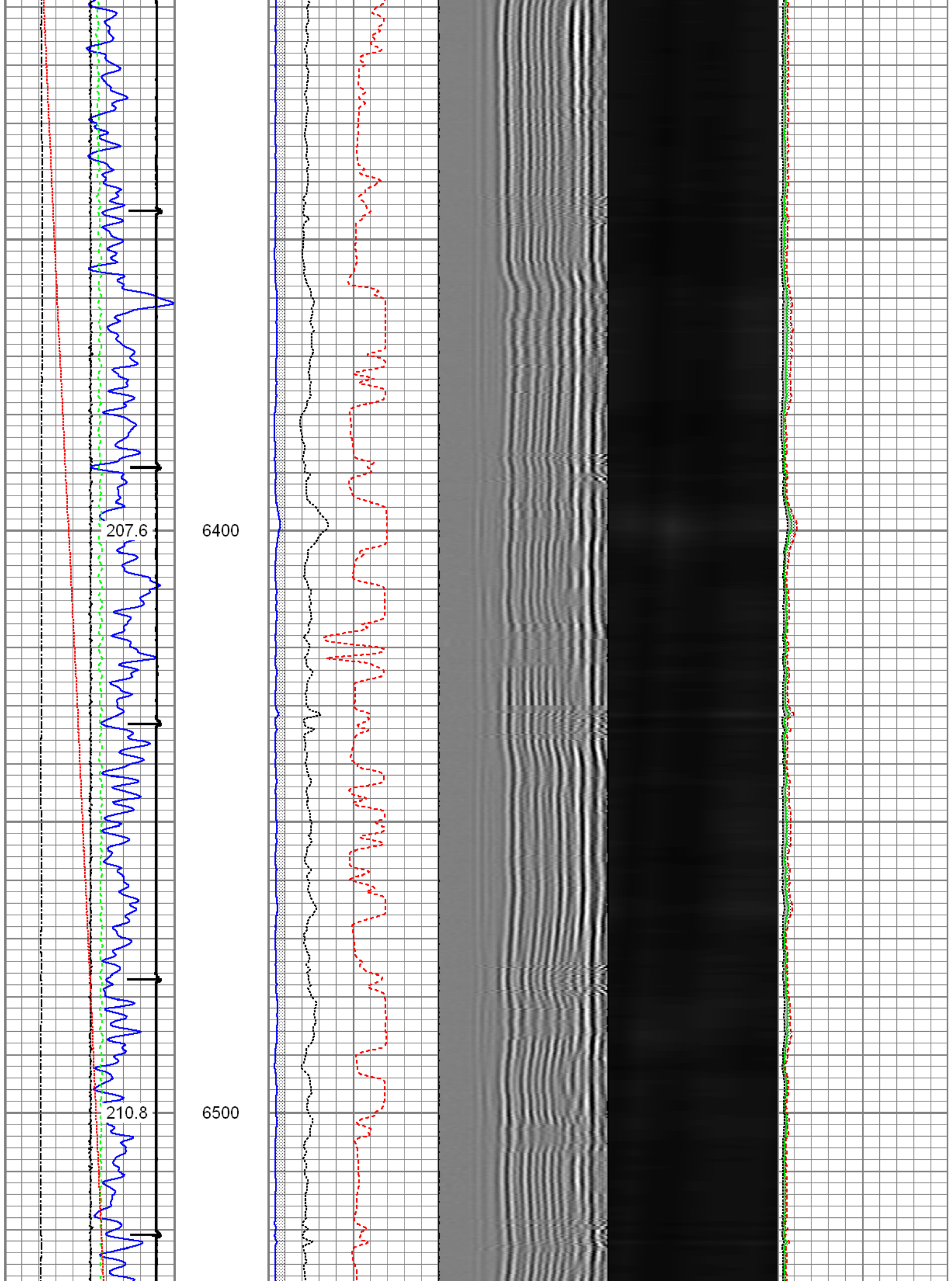


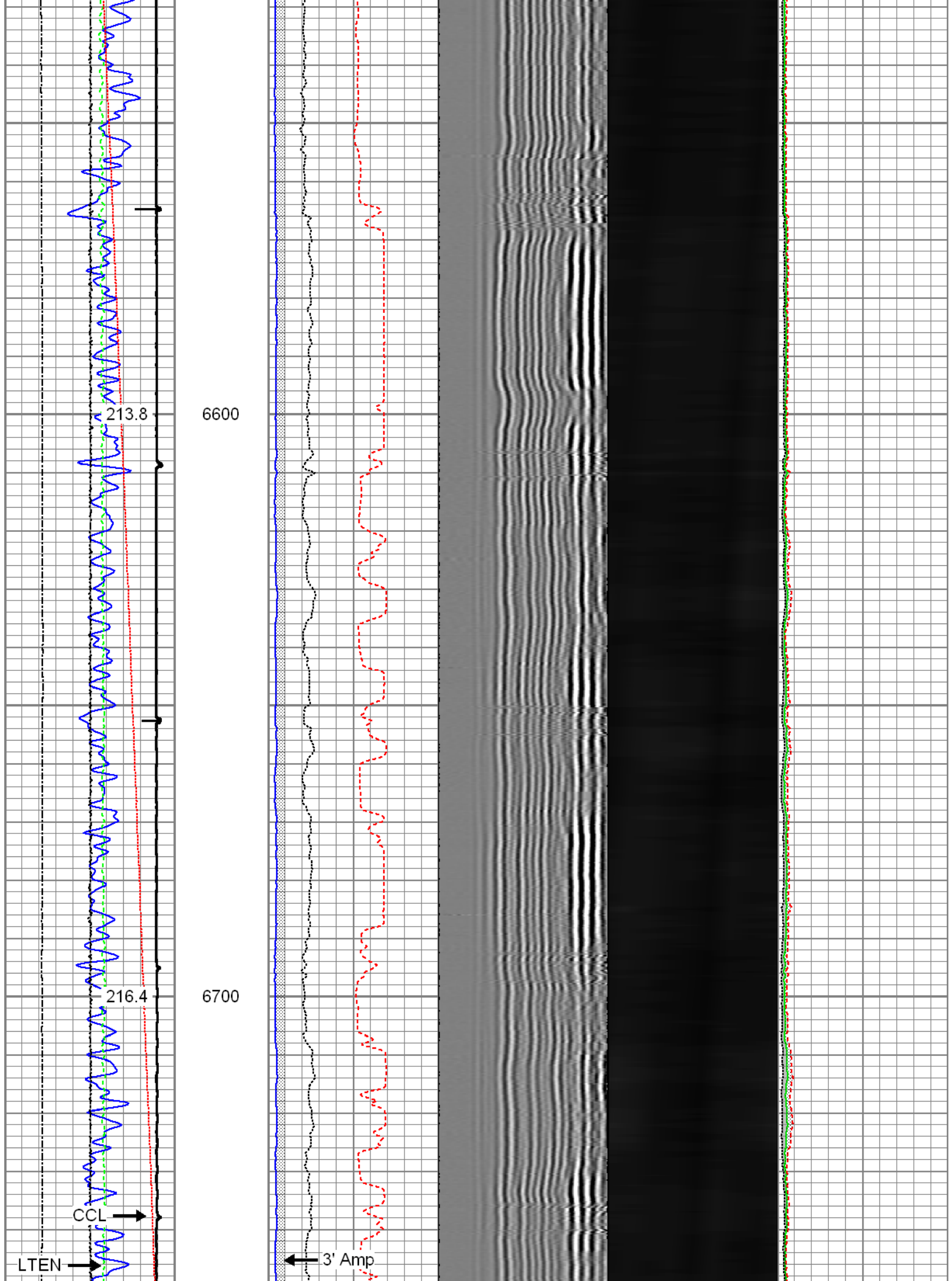


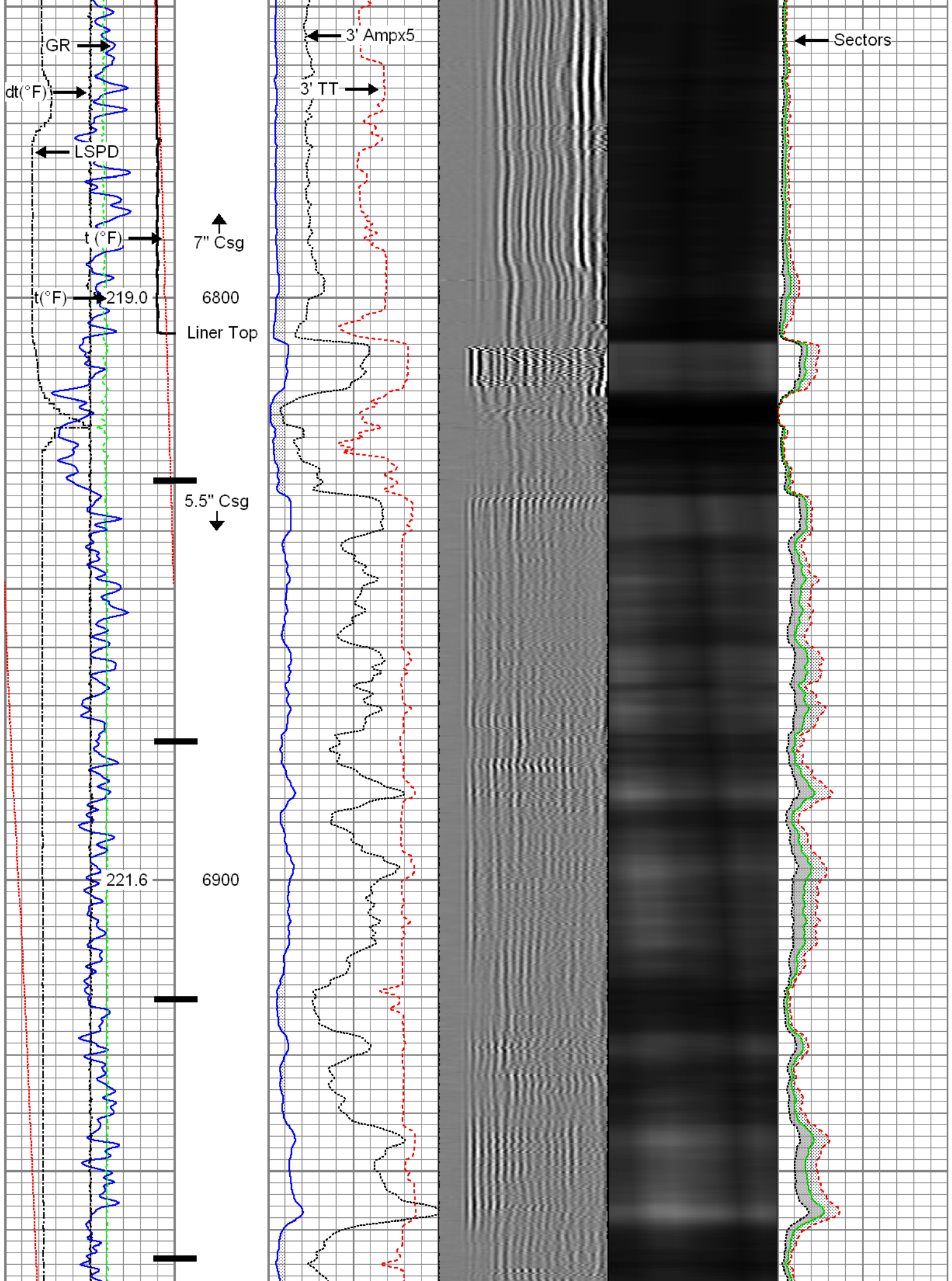


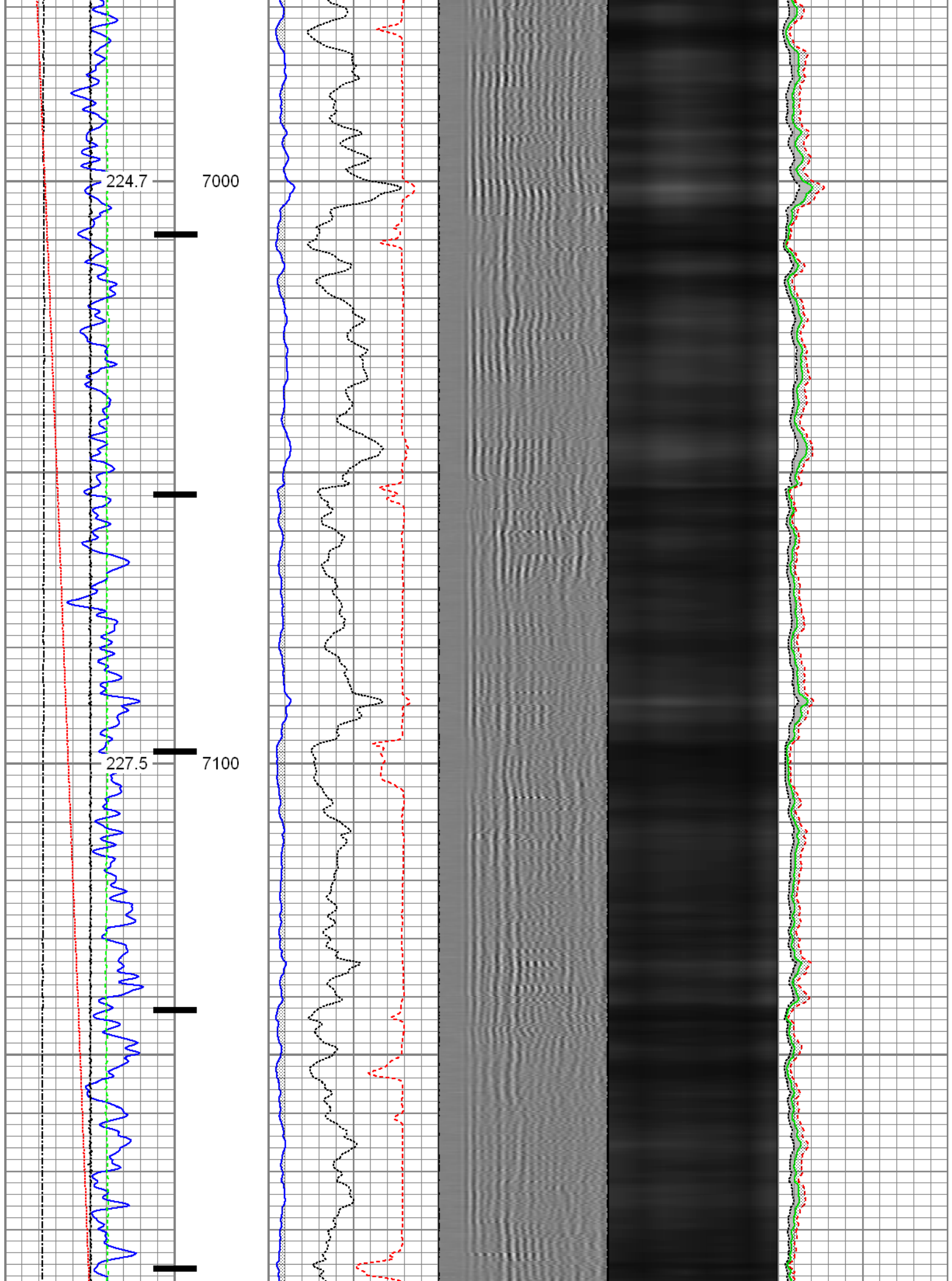


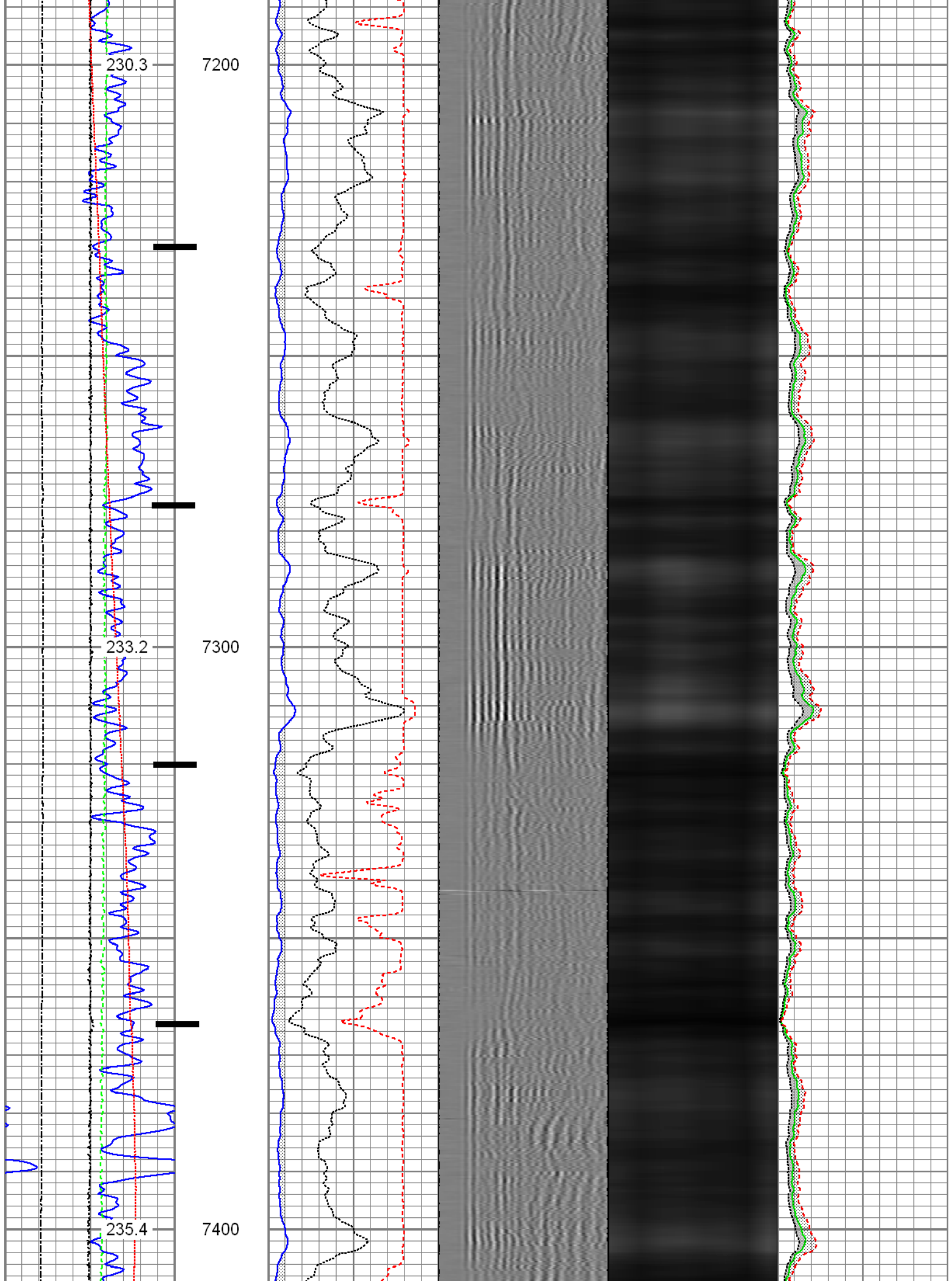


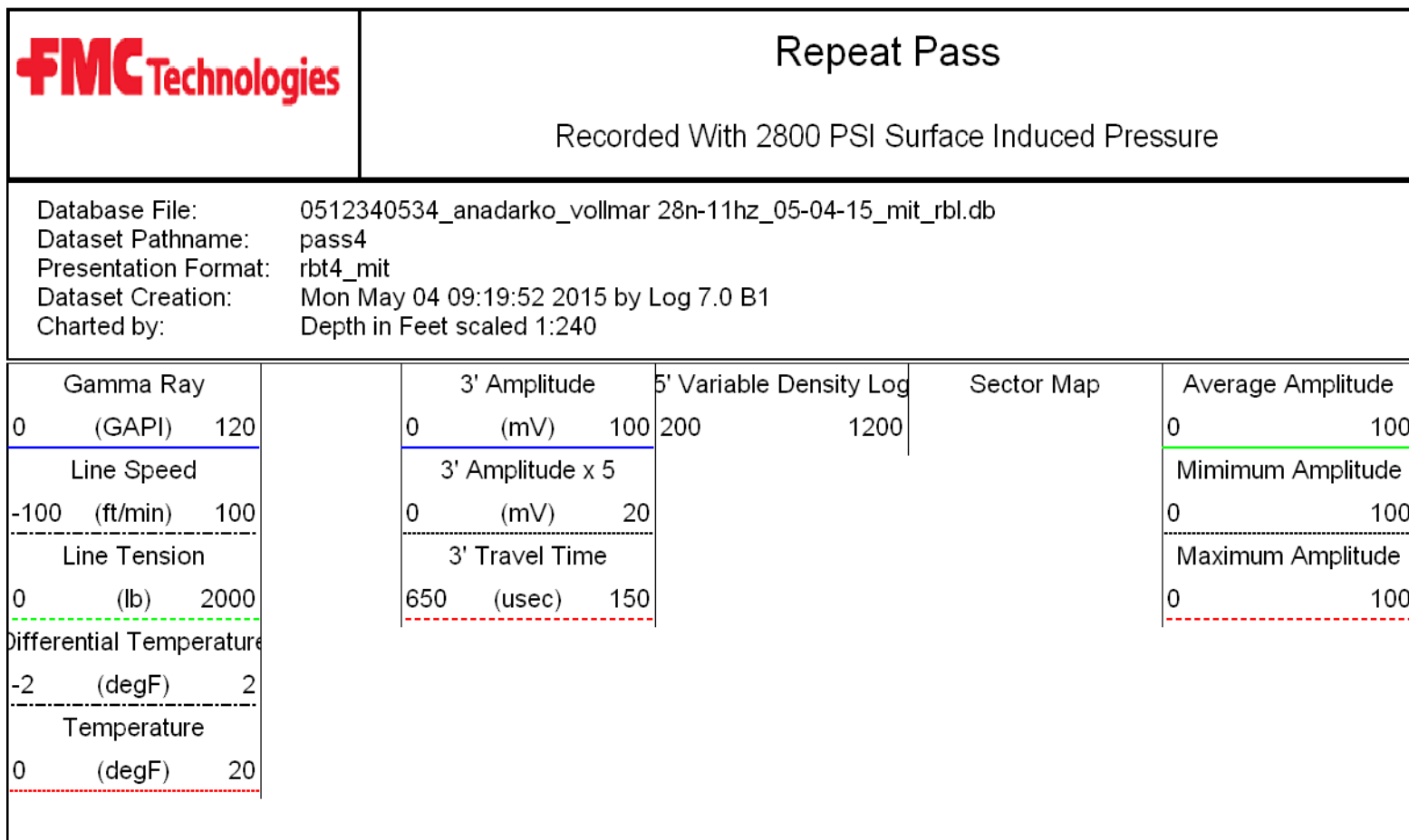
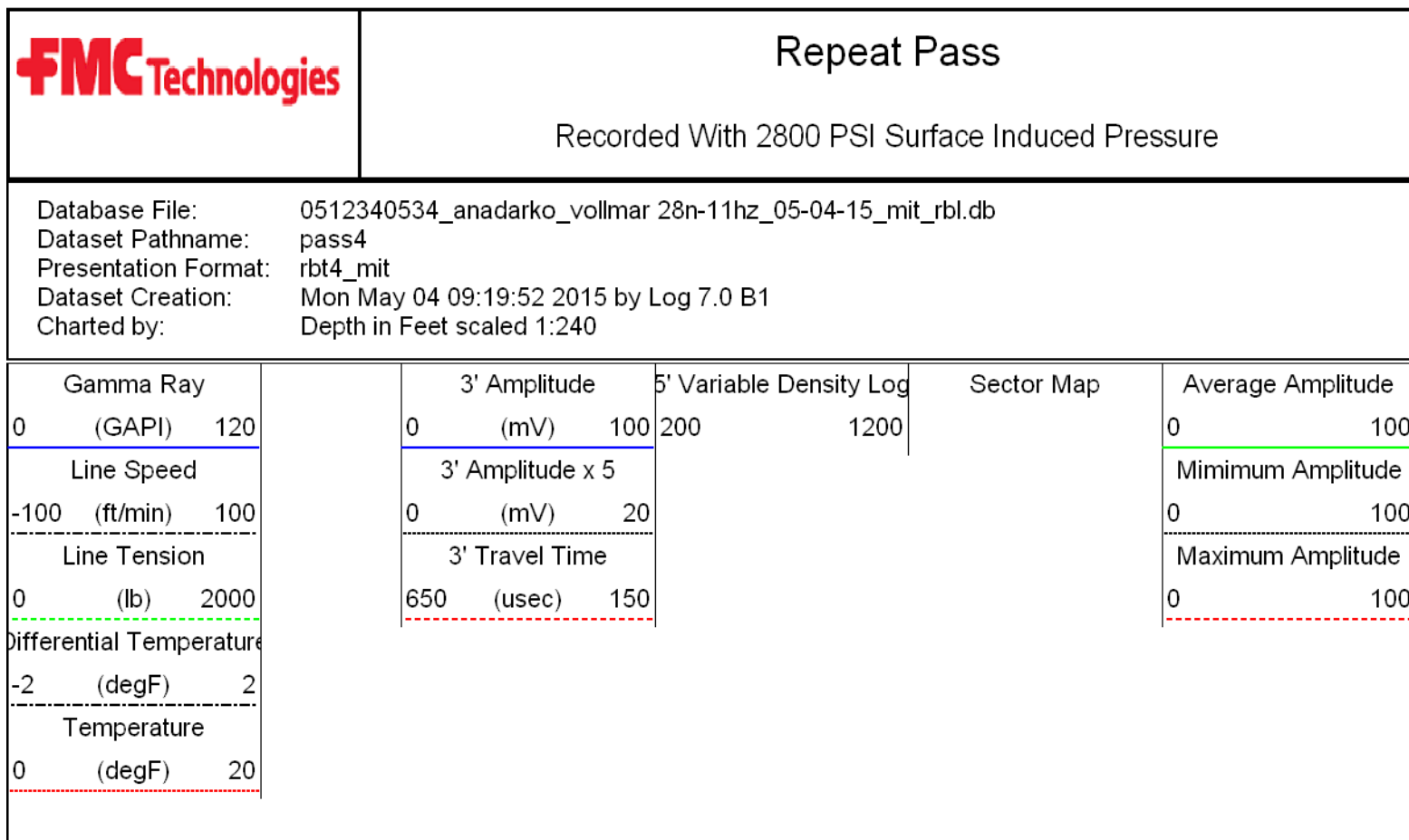
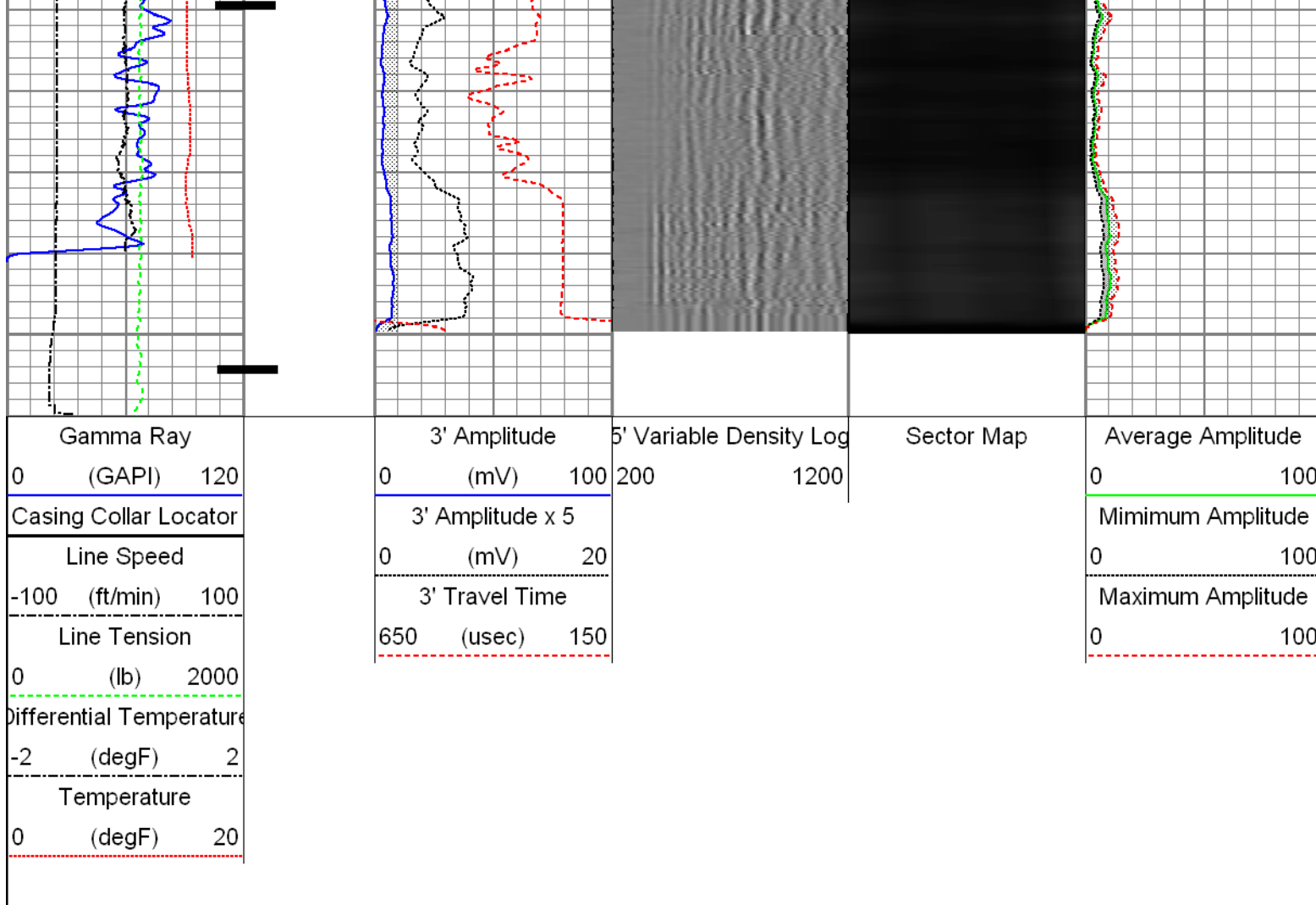


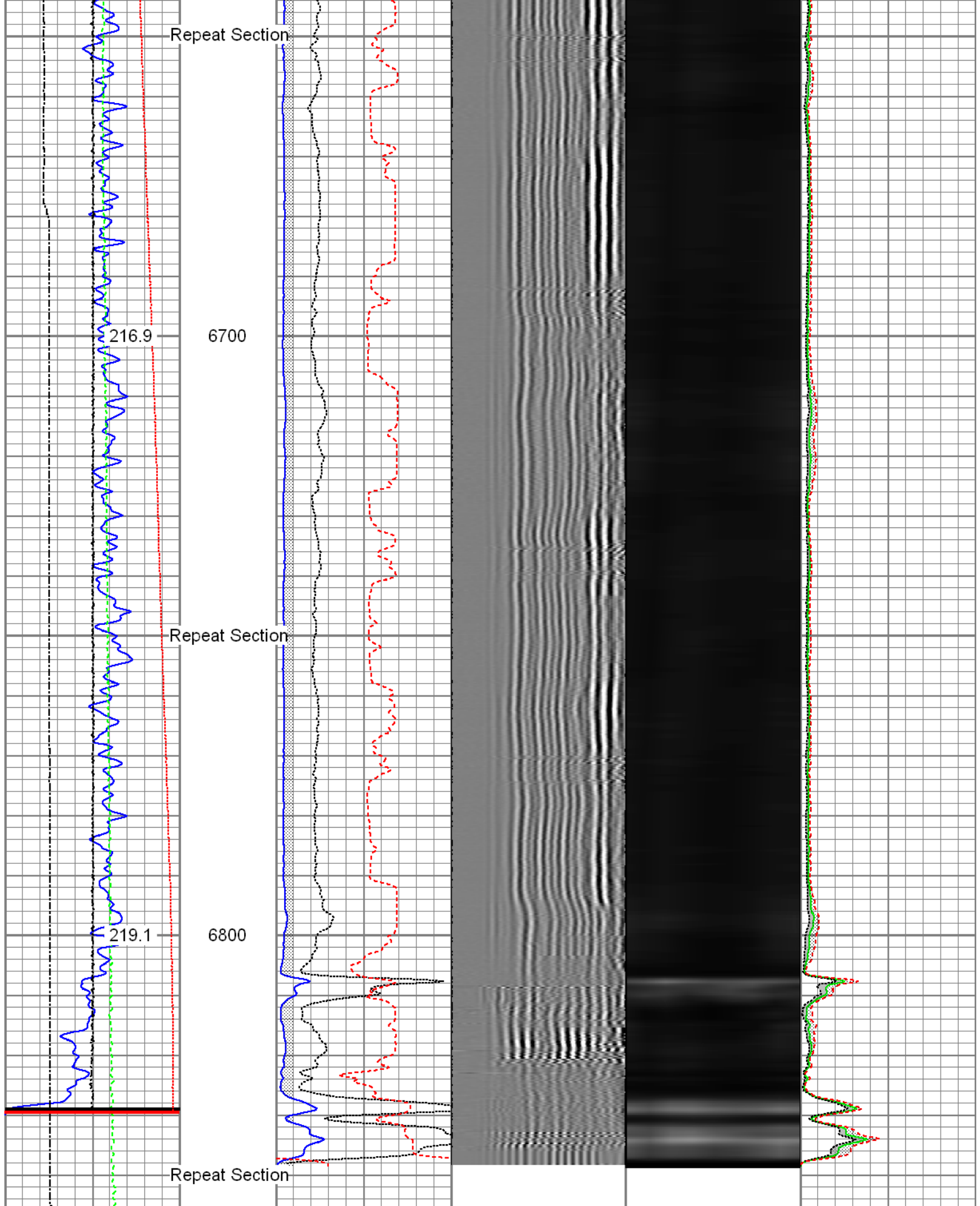






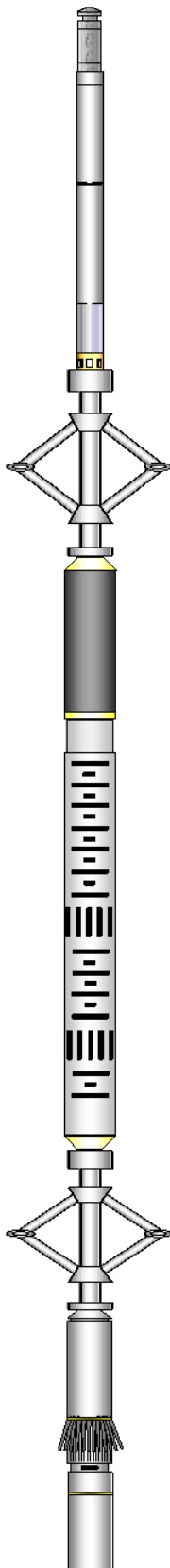


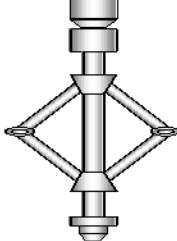




Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Line Speed (ft/min)	3' Amplitude x 5 (mV)			Minimum Amplitude
-100 100	0 20			0 100

Line Tension	3' Travel Time	Maximum Amplitude
0 (lb) 2000	650 (usec) 150	0 100
Differential Temperature		
-2 (degF) 2		
Temperature		
0 (degF) 20		

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	24.28		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
TEMP	22.89		UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
WV3FT	15.42		UW_RBT-UW_RBT_004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	15.42					
WVFS2	15.42					
WVFS3	15.42					
WVFS4	15.42					
WVFS5	15.42					
WVFS6	15.42					
WVFS7	15.42					
WVFS8	15.42					
CBLTEMP	15.42		UW_PRC-DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
CBLROT	15.42					
WV5FT	14.42		UW_MIT-UW_MIT40_027 (218950) 40 Multifinger Imaging Tool	4.54	2.75	61.10
MIT	5.41					

TSTAMP	0.00		UW_PRC #3 -UW_PRC_057 (1038) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512340534_Anadarko_Vollmar 28N-11HZ_05-04-15_MIT_RBL.db: field/well/run1/pass6 Total Length: 28.53 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report	
Database File:	0512340534_anadarko_vollmar 28n-11hz_05-04-15_mit_rbl.db
Dataset Pathname:	pass6
Dataset Creation:	Mon May 04 09:30:47 2015 by Log 7.0 B1

Multi-finger Imaging Tool Calibration Report
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Serial Number:	218950
Number of Fingers:	40
Tool Model:	UW_MIT40_027

Inclinometer Calibration Report		
Performed:	Fri, Oct, 10 10:41:51 2008	
Calibration Angle:	45	
	Inc X	Inc Y
Vertical:	1996	1975
Finger 1 up:	2238	2226
Finger 31 up:	1760	2216
Finger 21 up:	1769	1745
Finger 11 up:	2250	1738
Sensitivity ratio:	1.00023	
X-axis angle:	314.283	
Deviation const.:	339.139	

Finger Calibration Report	
Performed:	Mon May 04 08:35:39 2015

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1455	268.0	1723	289.0	2012	301.0	2313
Finger 02:	1519	248.0	1767	256.0	2023	266.0	2289
Finger 03:	1431	277.0	1708	289.0	1997	304.0	2301
Finger 04:	1455	275.0	1730	287.0	2017	297.0	2314
Finger 05:	1493	267.0	1760	274.0	2034	285.0	2319
Finger 06:	1417	281.0	1698	294.0	1992	309.0	2301
Finger 07:	1440	280.0	1720	288.0	2008	306.0	2314
Finger 08:	1428	277.0	1705	286.0	1991	310.0	2301
Finger 09:	1426	281.0	1707	291.0	1998	308.0	2306
Finger 10:	1445	270.0	1715	284.0	1999	293.0	2292
Finger 11:	1426	279.0	1705	292.0	1997	305.0	2302
Finger 12:	1380	283.0	1663	296.0	1959	311.0	2270
Finger 13:	1478	261.0	1739	271.0	2010	281.0	2291
Finger 14:	1419	267.0	1686	281.0	1967	297.0	2264
Finger 15:	1409	282.0	1691	292.0	1983	308.0	2291
Finger 16:	1416	271.0	1687	289.0	1976	301.0	2277
Finger 17:	1420	281.0	1701	300.0	2001	308.0	2309
Finger 18:	1364	270.0	1634	286.0	1920	299.0	2219
Finger 19:	1421	272.0	1693	290.0	1983	298.0	2281
Finger 20:	1430	272.0	1702	290.0	1992	300.0	2292
Finger 21:	1380	281.0	1661	306.0	1967	313.0	2280

Finger 22:	1408	263.0	1671	281.0	1952	289.0	2241
Finger 23:	1394	274.0	1668	290.0	1958	296.0	2254
Finger 24:	1441	271.0	1712	287.0	1999	286.0	2285
Finger 25:	1419	272.0	1691	292.0	1983	295.0	2278
Finger 26:	1386	275.0	1661	299.0	1960	298.0	2258
Finger 27:	1446	265.0	1711	285.0	1996	284.0	2280
Finger 28:	1432	270.0	1702	294.0	1996	296.0	2292
Finger 29:	1487	253.0	1740	274.0	2014	274.0	2288
Finger 30:	1397	269.0	1666	292.0	1958	299.0	2257
Finger 31:	1428	272.0	1700	298.0	1998	299.0	2297
Finger 32:	1487	259.0	1746	277.0	2023	275.0	2298
Finger 33:	1446	273.0	1719	296.0	2015	301.0	2316
Finger 34:	1454	267.0	1721	291.0	2012	299.0	2311
Finger 35:	1511	248.0	1759	266.0	2025	273.0	2298
Finger 36:	1493	259.0	1752	280.0	2032	288.0	2320
Finger 37:	1468	270.0	1738	292.0	2030	297.0	2327
Finger 38:	1549	242.0	1791	258.0	2049	267.0	2316
Finger 39:	1466	266.0	1732	283.0	2015	287.0	2302
Finger 40:	1423	277.0	1700	297.0	1997	309.0	2306

Segmented Cement Bond Log Calibration Report

Serial Number:	10013454	
Tool Model:	UW_RBT_004	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	37.823	ft

Master Calibration, performed Mon May 04 08:33:24 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.002	0.621	1.000	62.165	98.039	1.236
5FT	-0.004	0.720	1.000	62.165	84.497	1.309
S1	-0.002	0.561	0.000	100.000	177.339	0.433
S2	-0.004	0.672	0.000	100.000	147.913	0.654
S3	-0.004	0.653	0.000	100.000	152.268	0.552
S4	-0.005	0.526	0.000	100.000	188.413	0.892
S5	-0.002	0.560	0.000	100.000	177.666	0.427
S6	-0.004	0.634	0.000	100.000	156.839	0.574
S7	-0.003	0.657	0.000	100.000	151.679	0.404
S8	-0.003	0.679	0.000	100.000	146.574	0.444

Temperature Calibration Report

Serial Number: 10025097
Tool Model: UW_PRT_016
Performed: Wed Feb 11 13:44:44 2015

Point #	Reading	Reference
1	13053.00 cps	68.00 degF
2	18014.00 cps	104.00 degF
3	29668.00 cps	176.00 degF
4	41181.00 cps	248.00 degF
5	52983.00 cps	320.00 degF
6	58931.00 cps	356.00 degF
7	cps	degF
8	cps	degF
9	cps	degF
10	cps	degF

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
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Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps

Sensitivity:	1.0000	GAPI/cps
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Company	Kerr McGee Oil & Gas Onshore LP
Well	Vollmar 28N-11HZ
Field	Wattenberg
County	Weld
State	Colorado