

Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr-McGee Oil & Gas OnShore L.P.		
Well	Barclay 15N-26HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Company	Kerr-McGee Oil & Gas OnShore L.P.		
Well	Barclay 15N-26HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:	API # : 05-123-39057		
SEC 14	TWP 2N	RGE 67W	Other Services Gauge Ring MIT
Permanent Datum	Ground Level	Elevation	4933'
Log Measured From	Kelly Bushing	16 FT	
Drilling Measured From	Kelly Bushing		
Elevation	K.B. 4949'		
	D.F. 4948'		
	G.L. 4933'		

Date	8-June-2015
Run Number	Two
Depth Driller	17250 FT
Depth Logger	7500 FT
Bottom Logged Interval	7495 FT
Top Log Interval	Surface
Open Hole Size	8-3/4"
Type Fluid	Water
Density / Viscosity	8.34lbm/gal
Max. Recorded Temp.	235°F
Estimated Cement Top	36 FT
Time Well Ready	ROA
Time Logger on Bottom	14:40
Equipment Number	HD-0340
Location	Ft. Lupton, CO
Recorded By	Zach Fisher
Witnessed By	DJ Anderson

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	1125 FT		
Intermediate #1	7	26	HCP-110	Surface	7728 FT		
Intermediate #2							
Liner	4 1/2	11.6	HCP-110	6721 FT	17142 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 6721 FT.
 Adjusted log -10 FT to correlate with liner top.
 Gauge Ring/Junk Basket run to 7500 FT had no debris prior to log run.
 Log ran from as deep as possible to surface.
 No debris found on logging tools after run.

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

Database File: c:\warrior\data\0512339057_anadarko_barclay 15n-26hz_06-08-15_mit_rbl\0512339057_anadarko_b

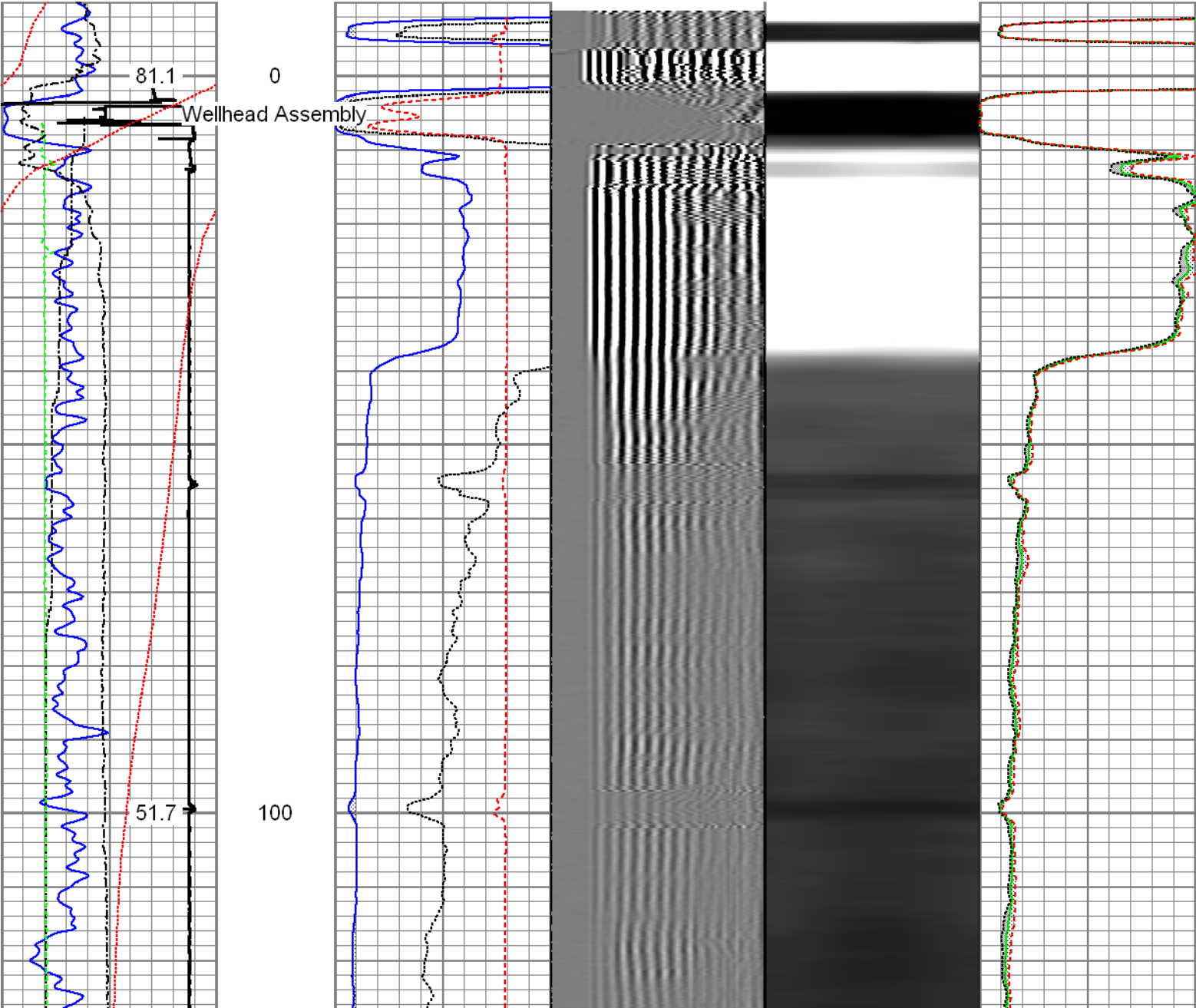
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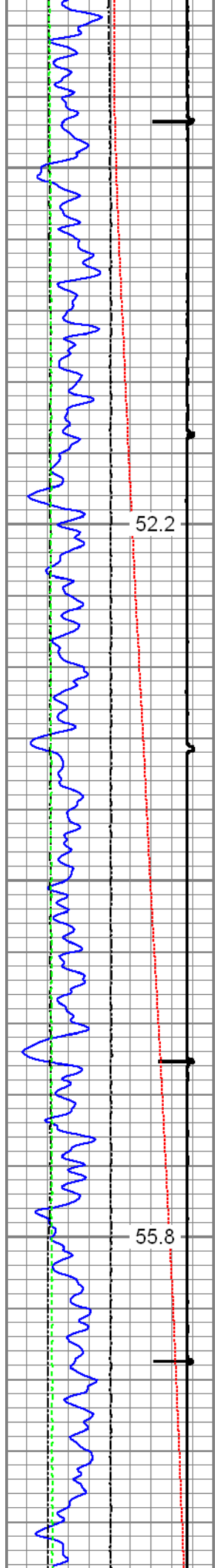
Presentation Format: rbt4_mit

Dataset Creation: Mon Jun 08 17:44:33 2015 by Calc 7.0 B1

Charted by: Depth in Feet scaled 1:240

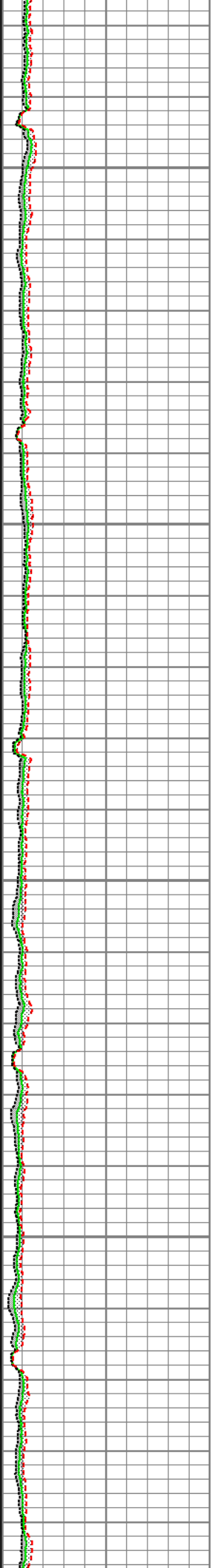
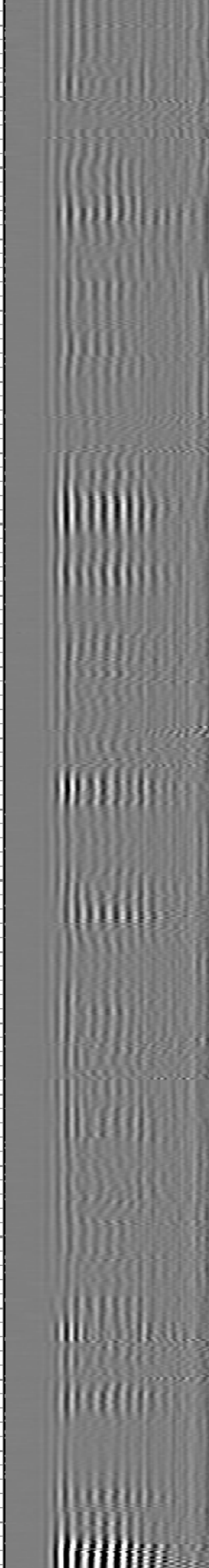
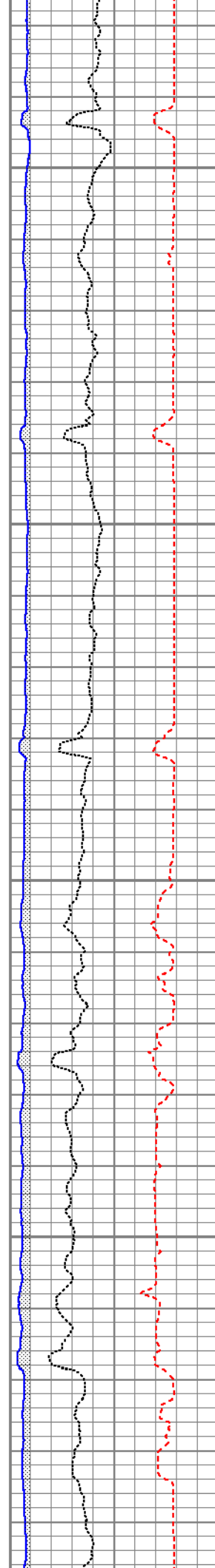
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000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

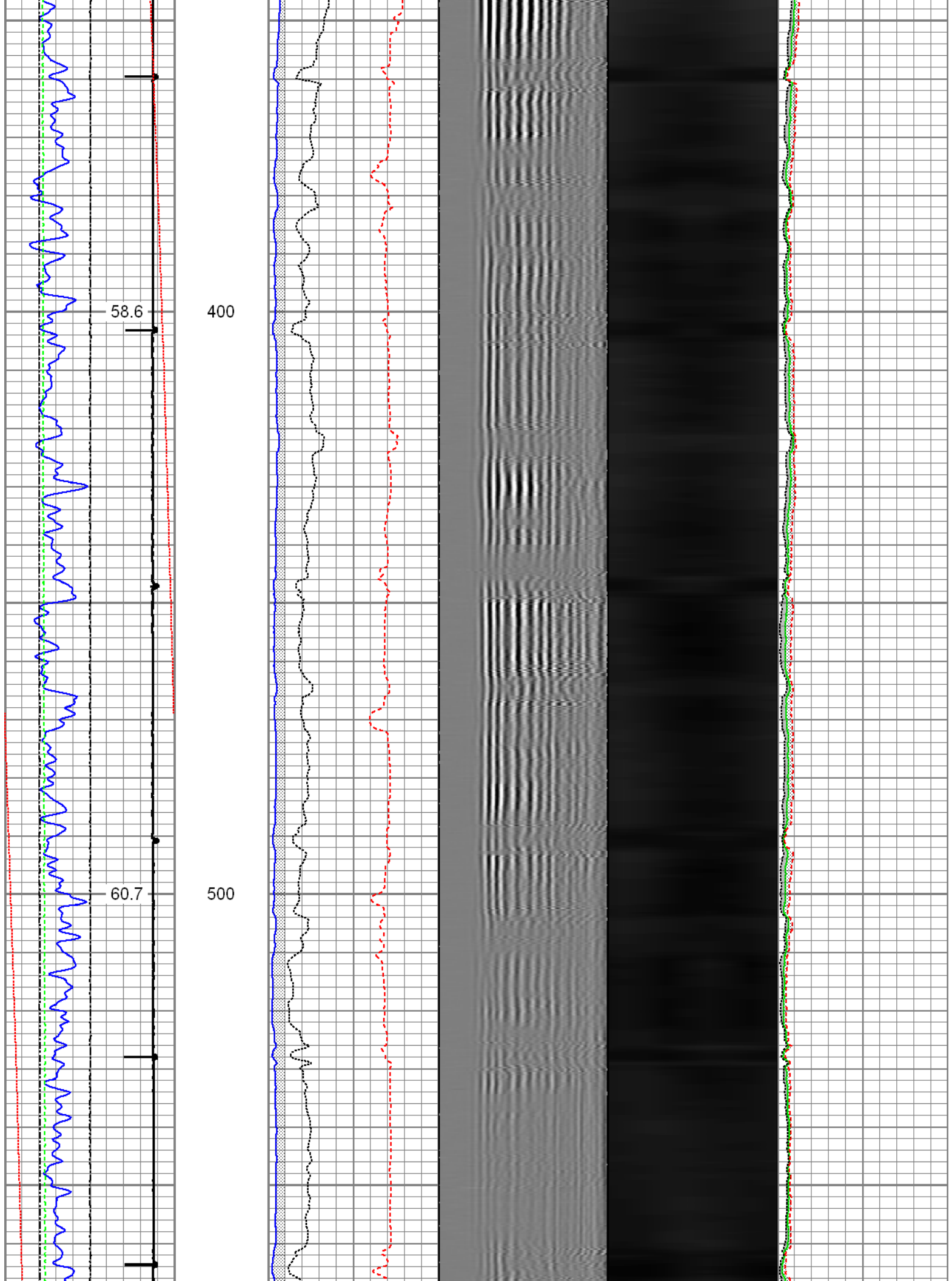


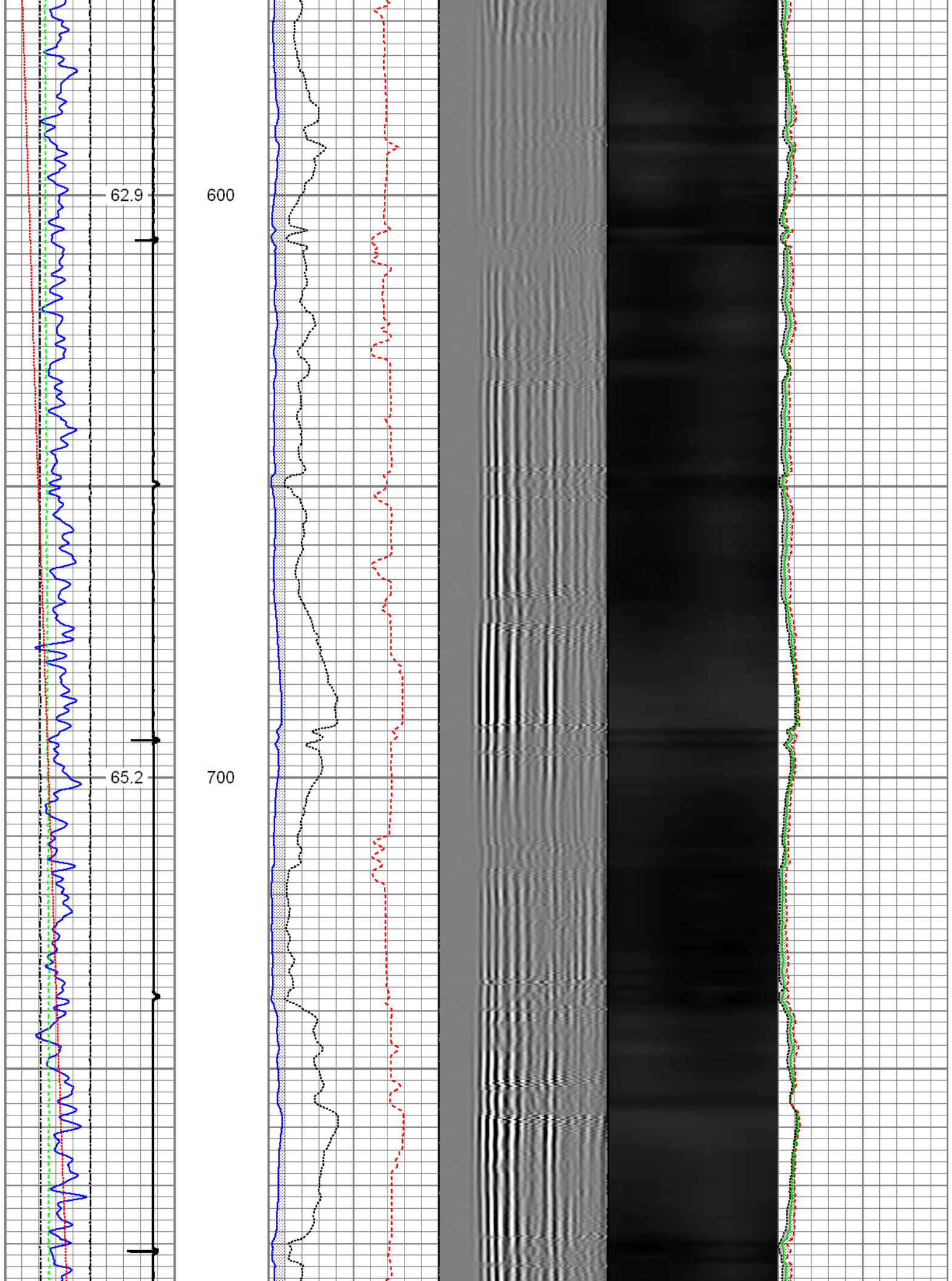


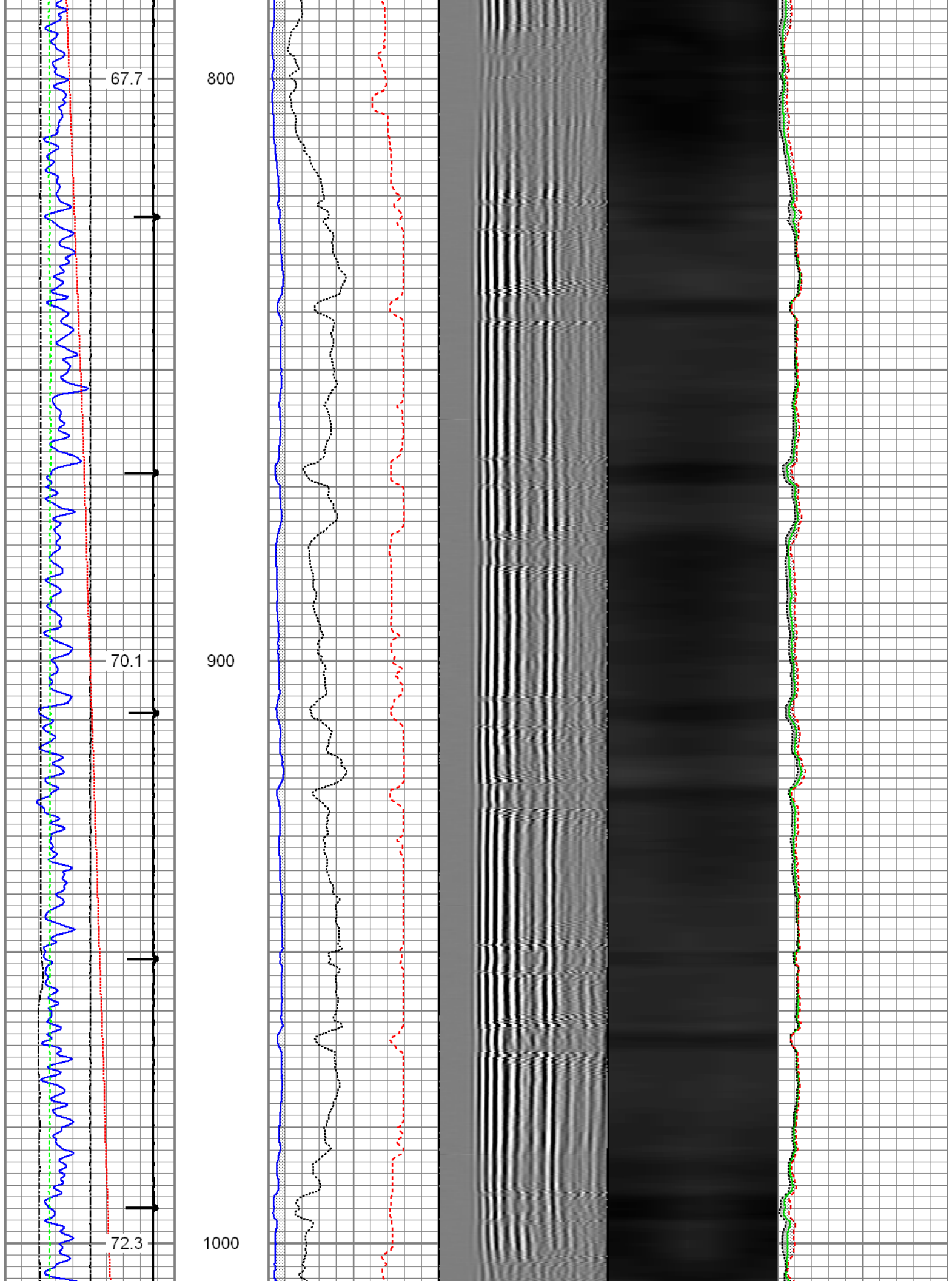
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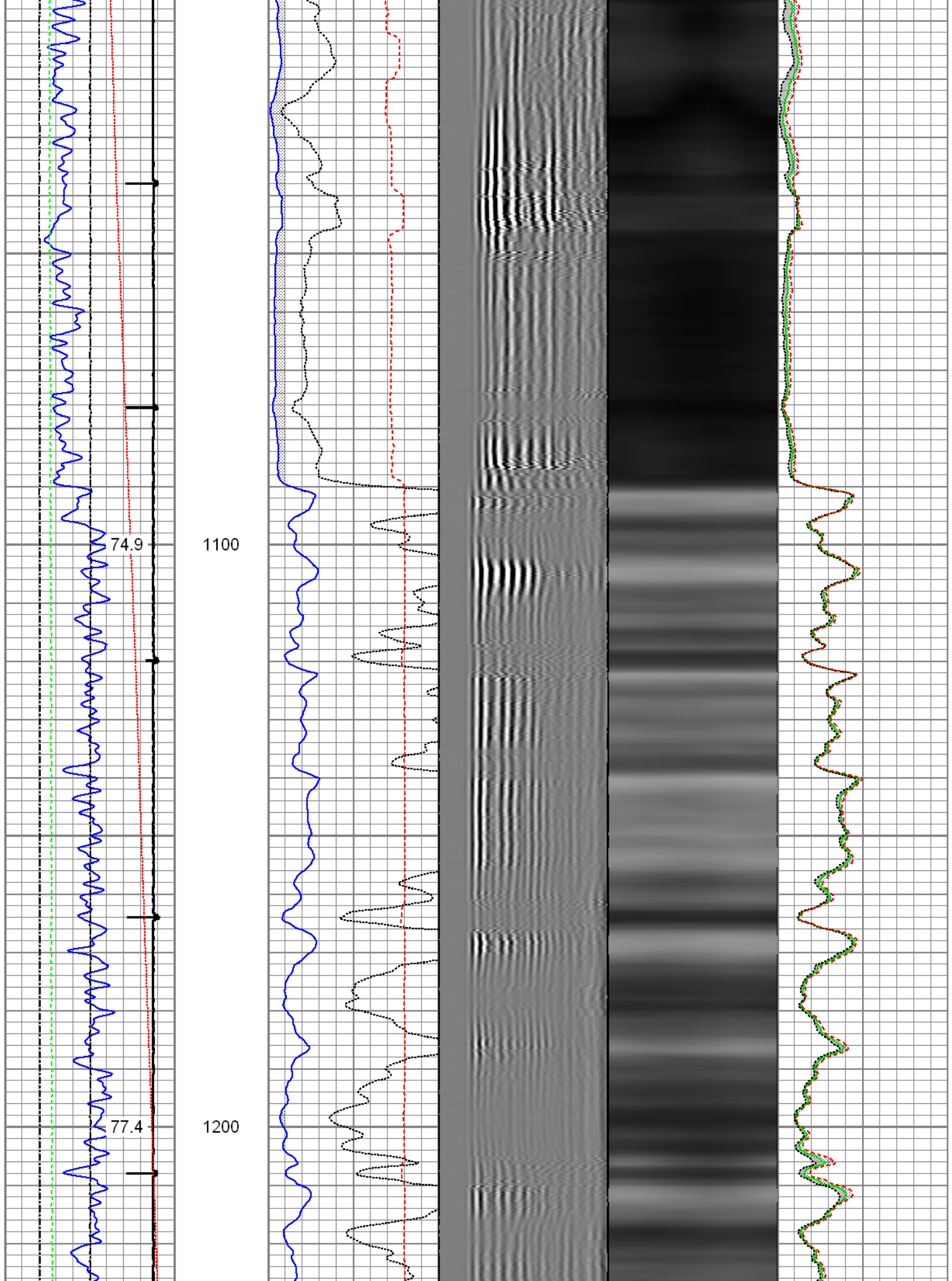
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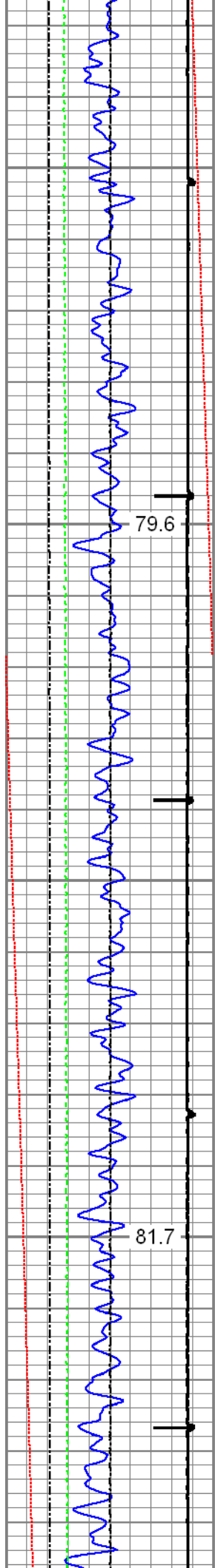






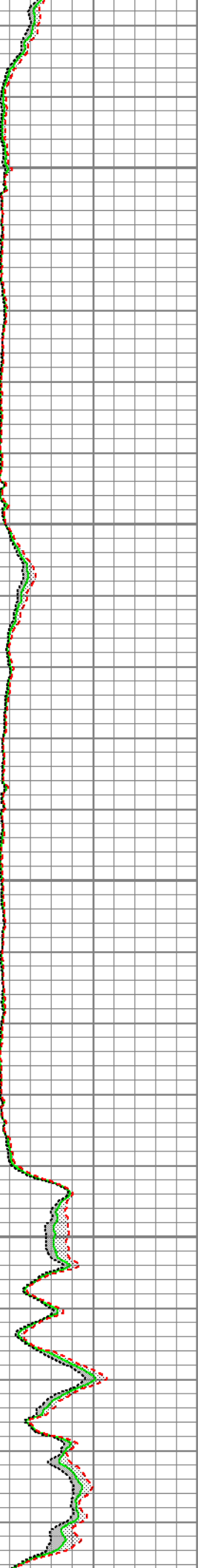
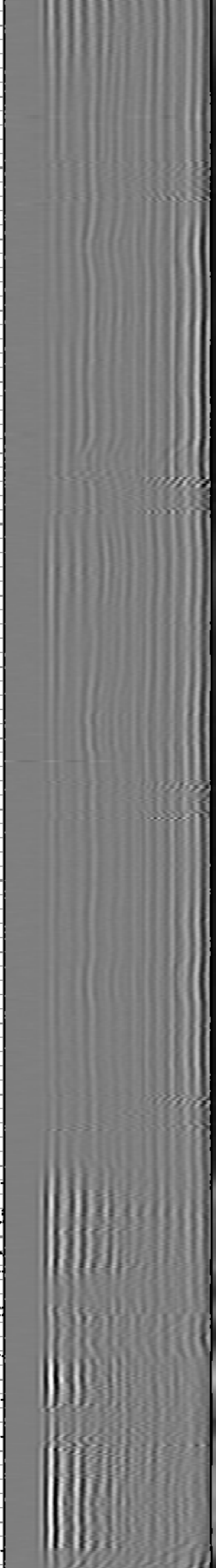
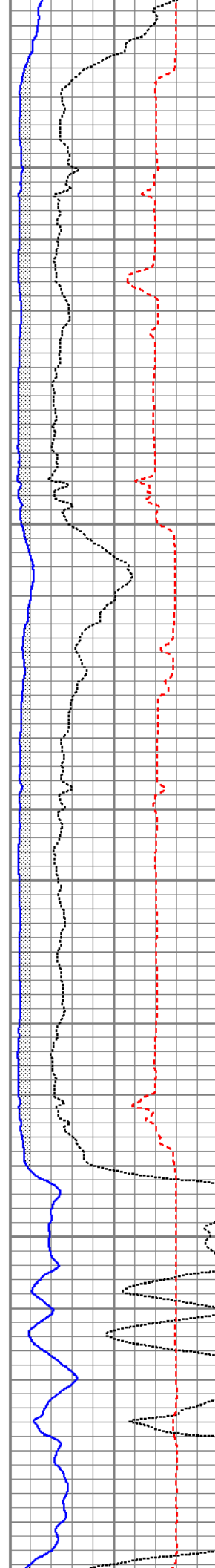


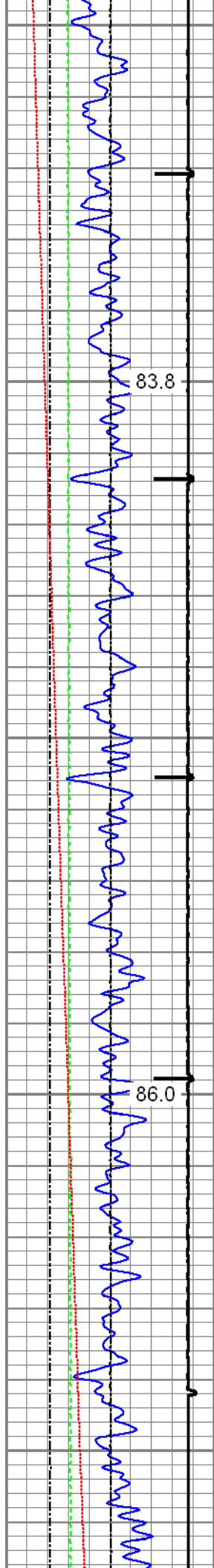




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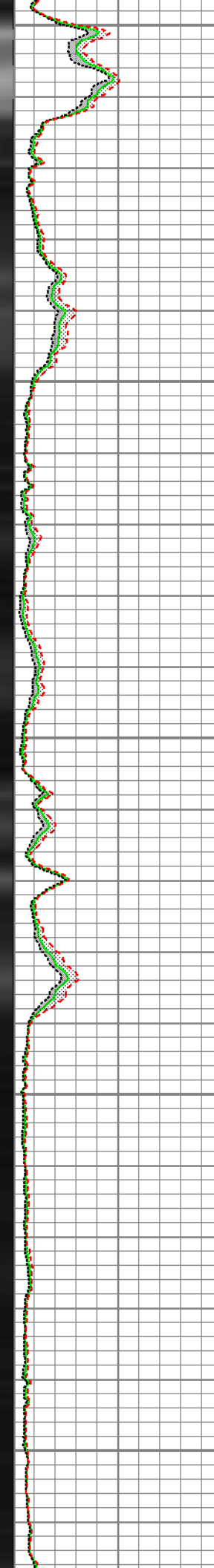
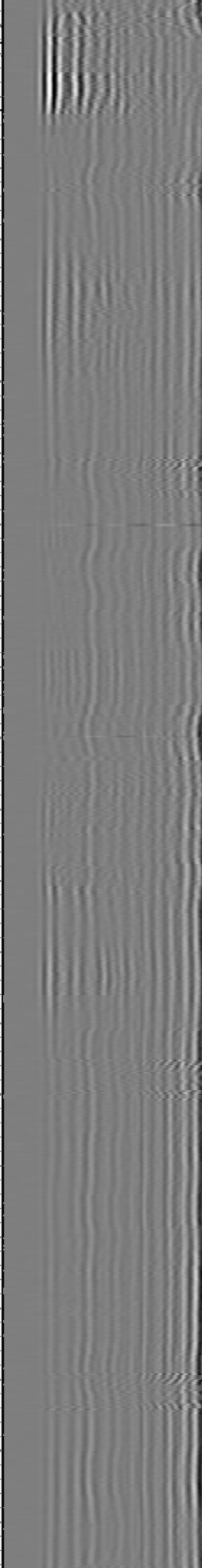
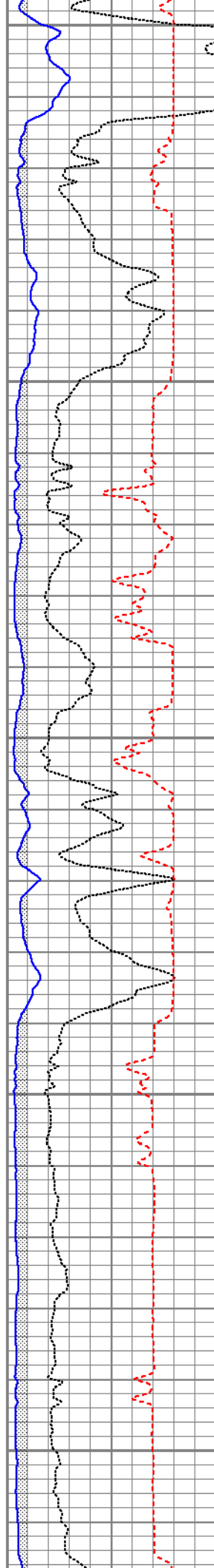
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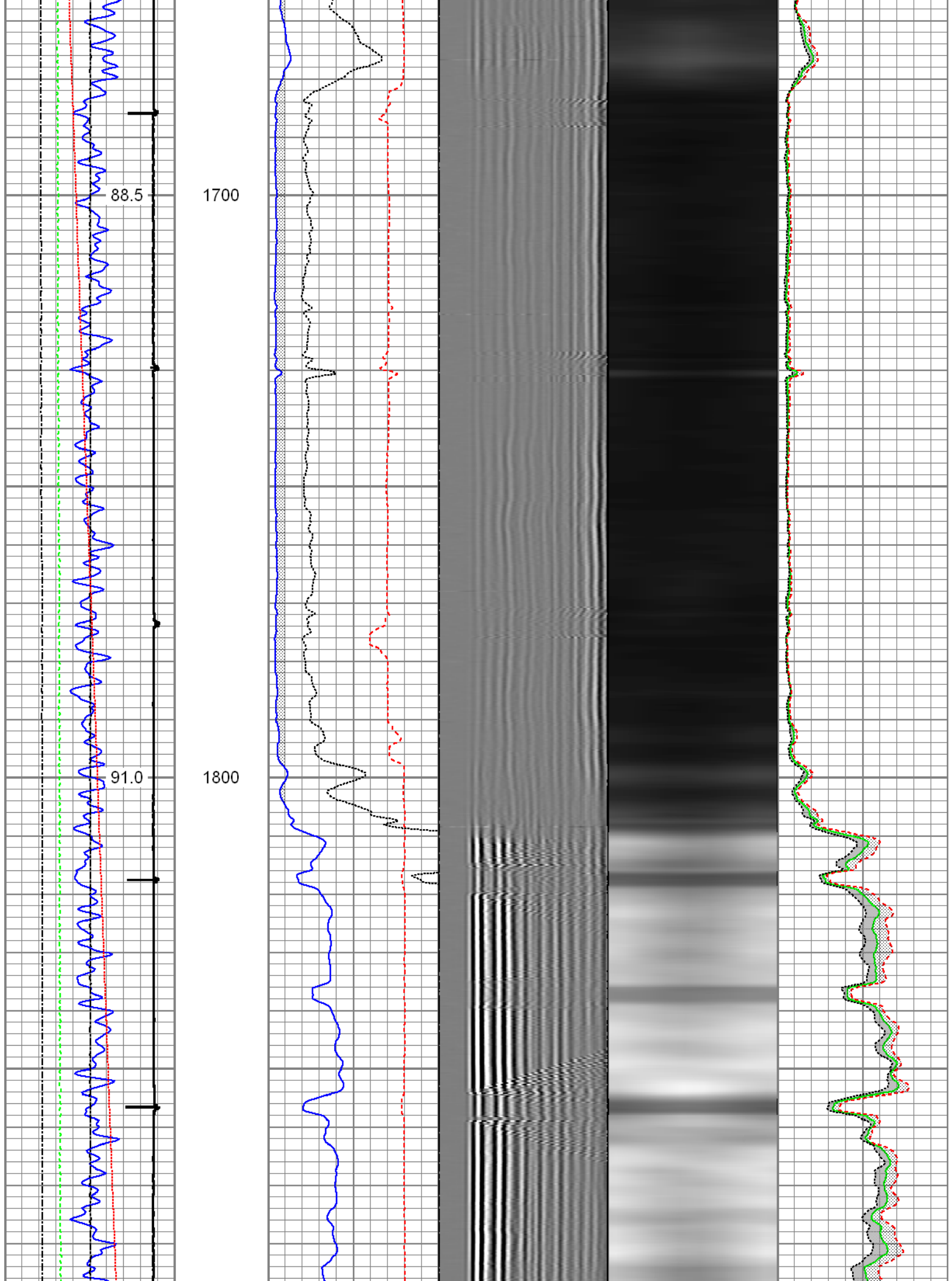


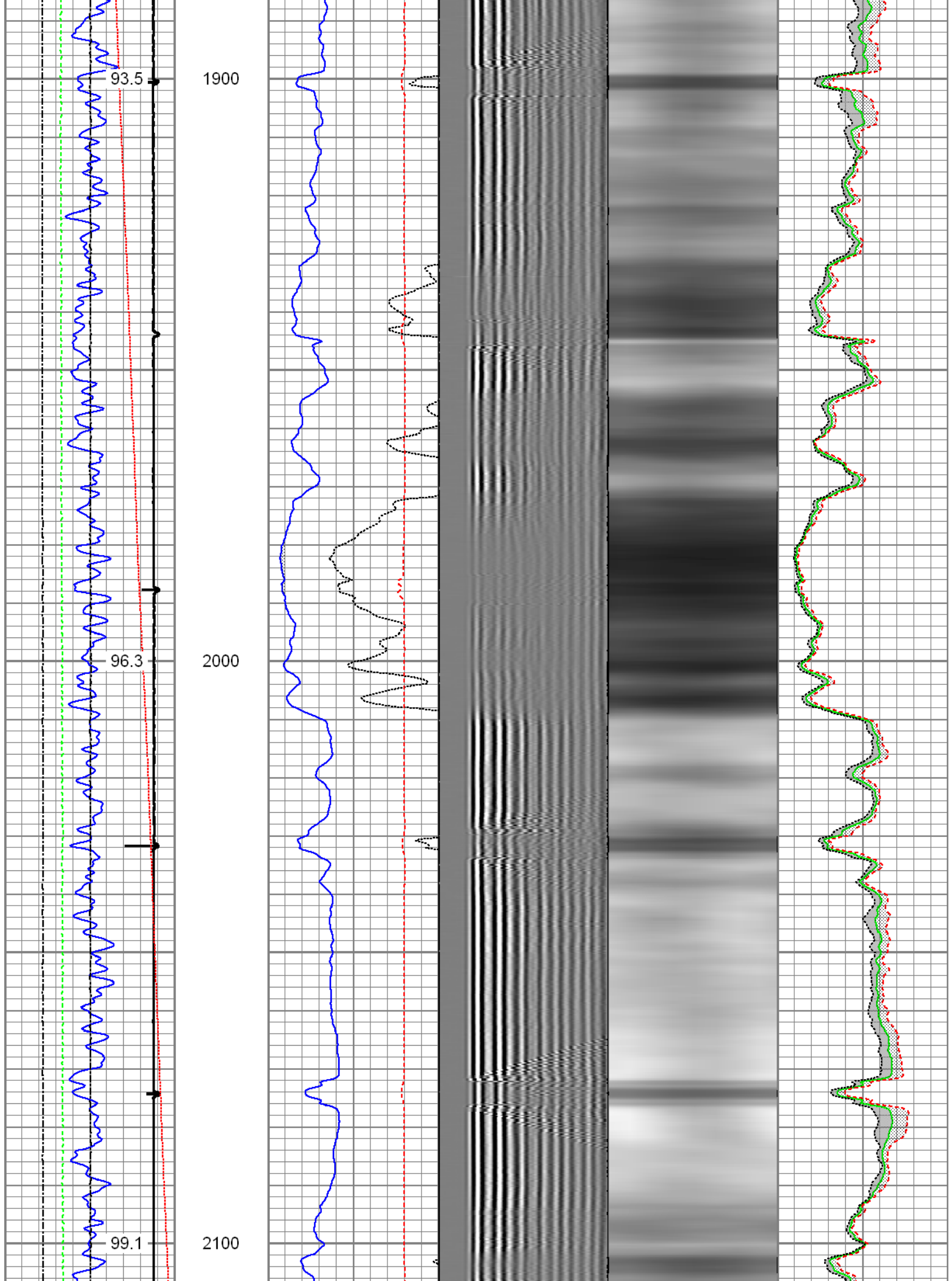


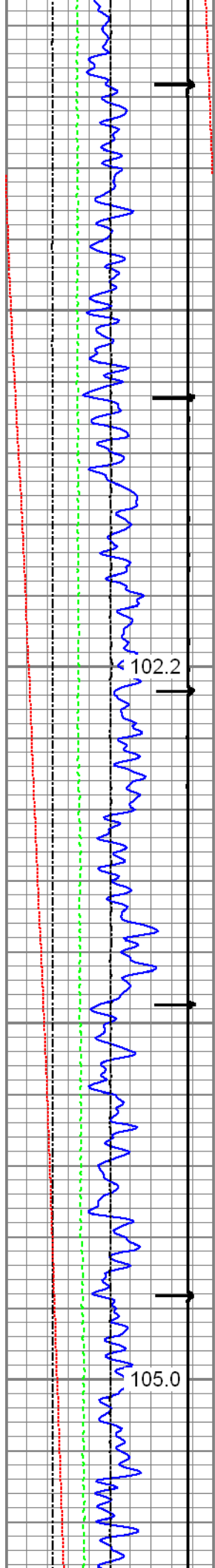
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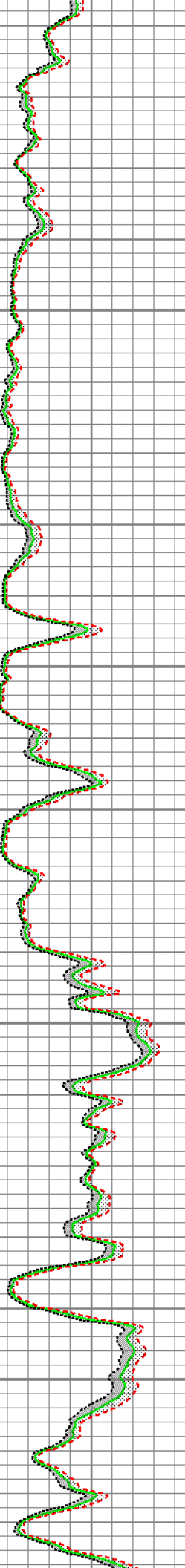
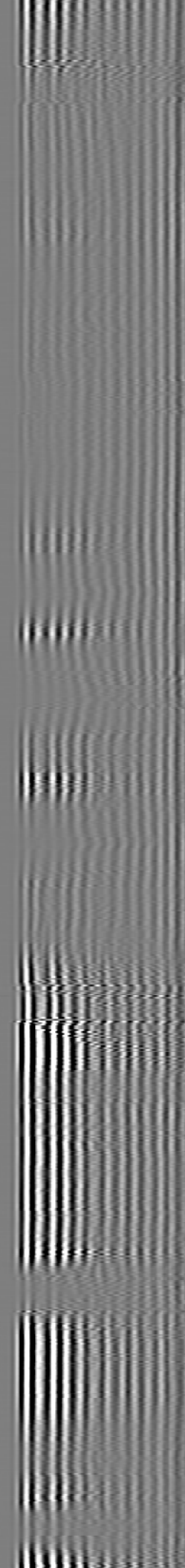
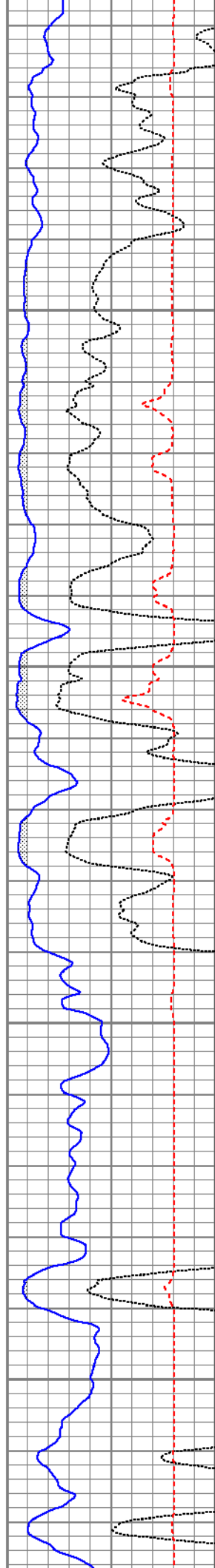


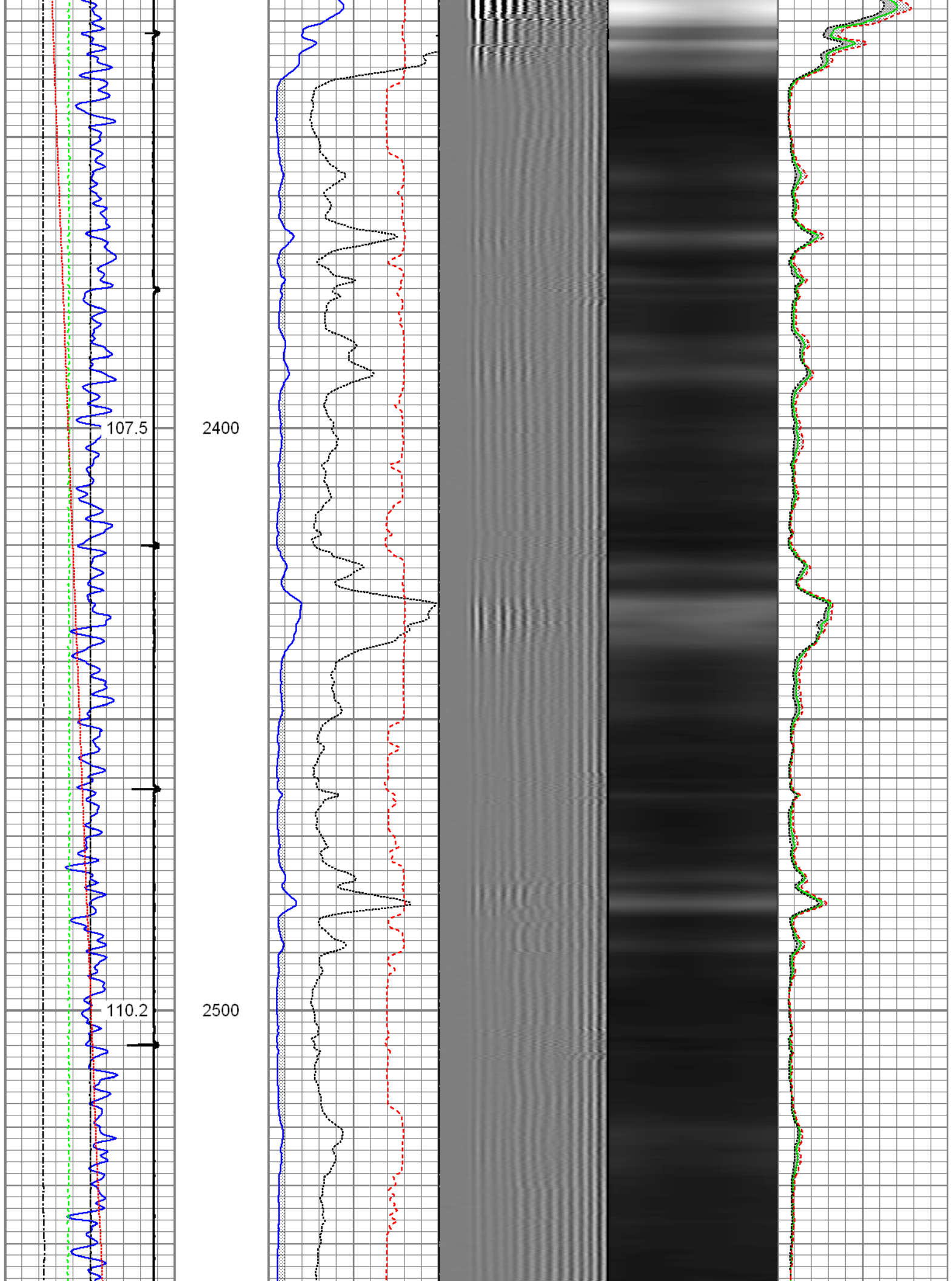


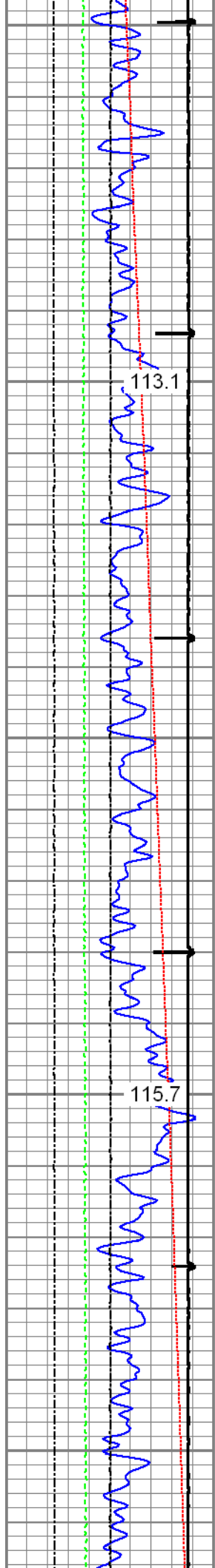


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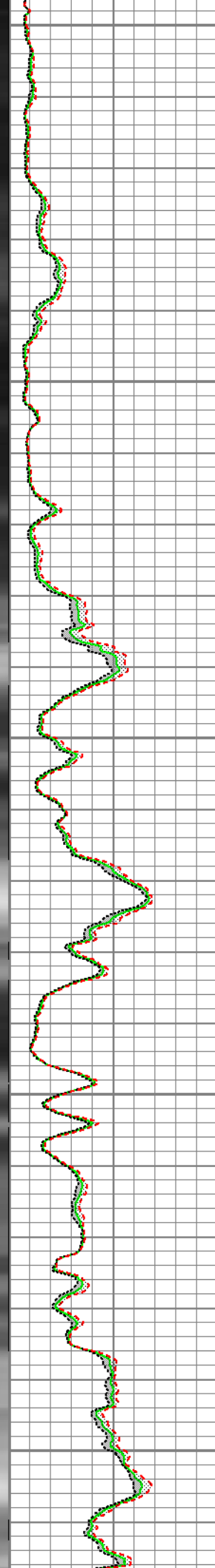
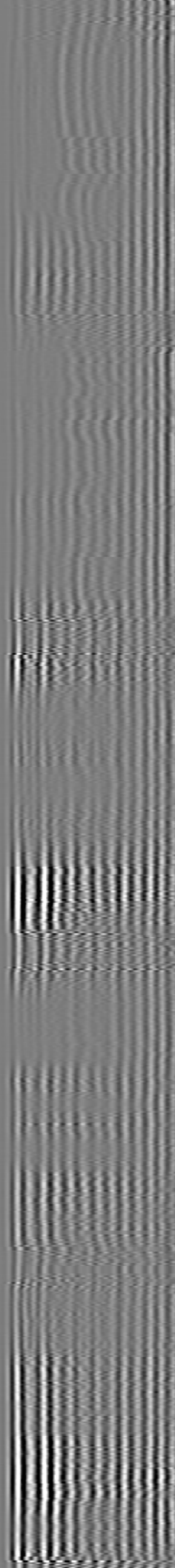
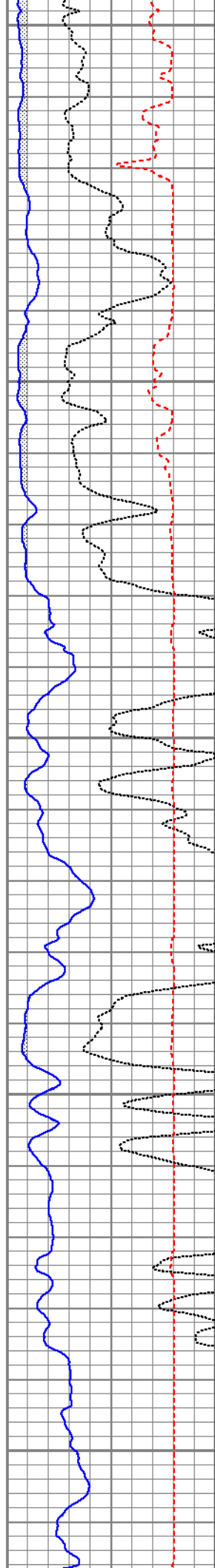


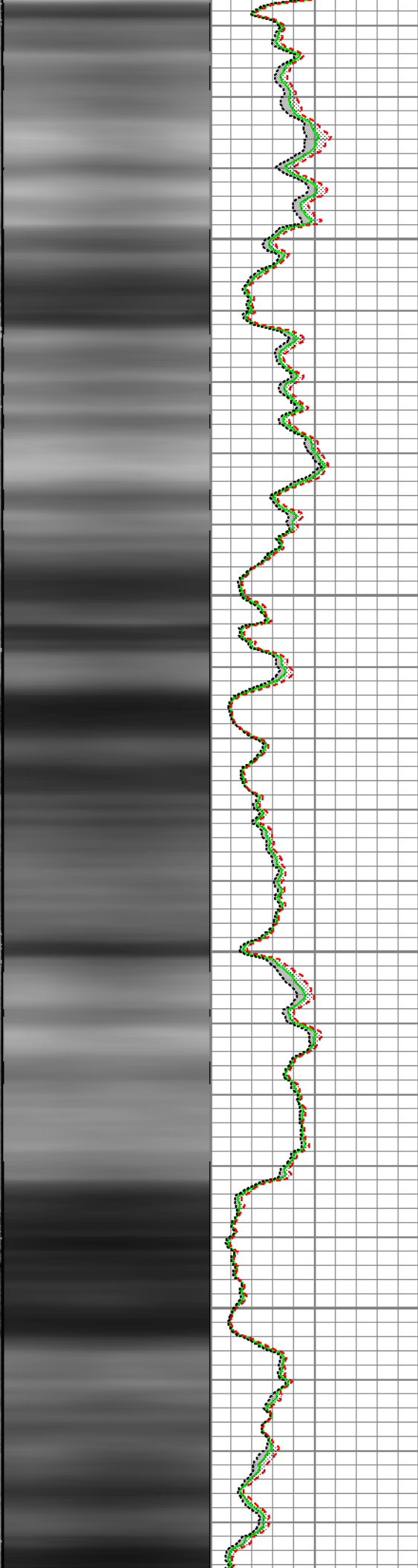
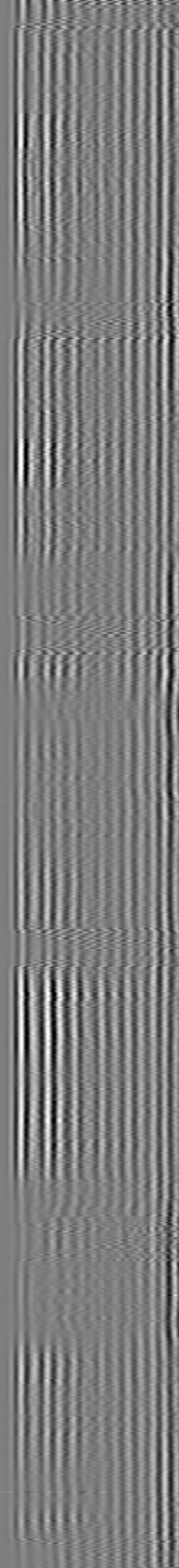
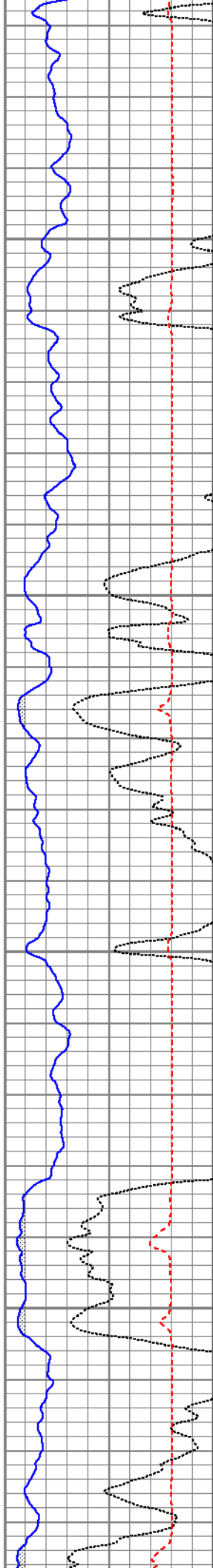
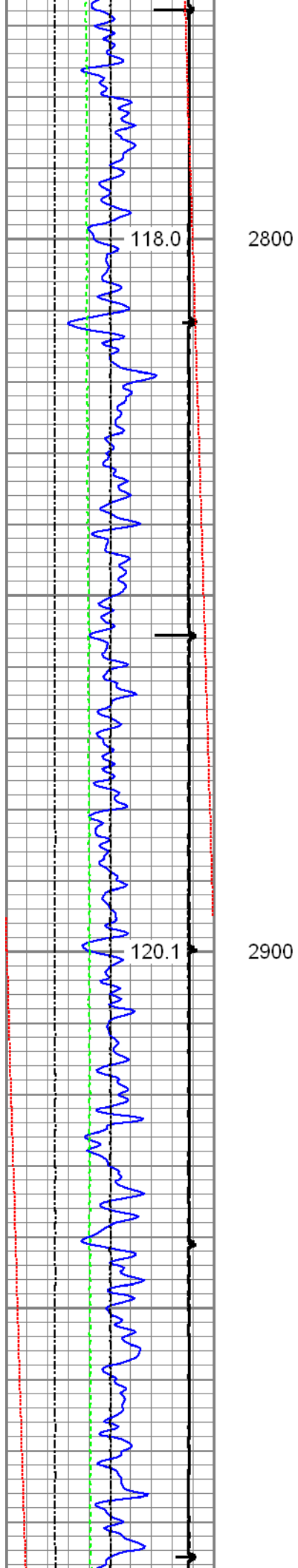


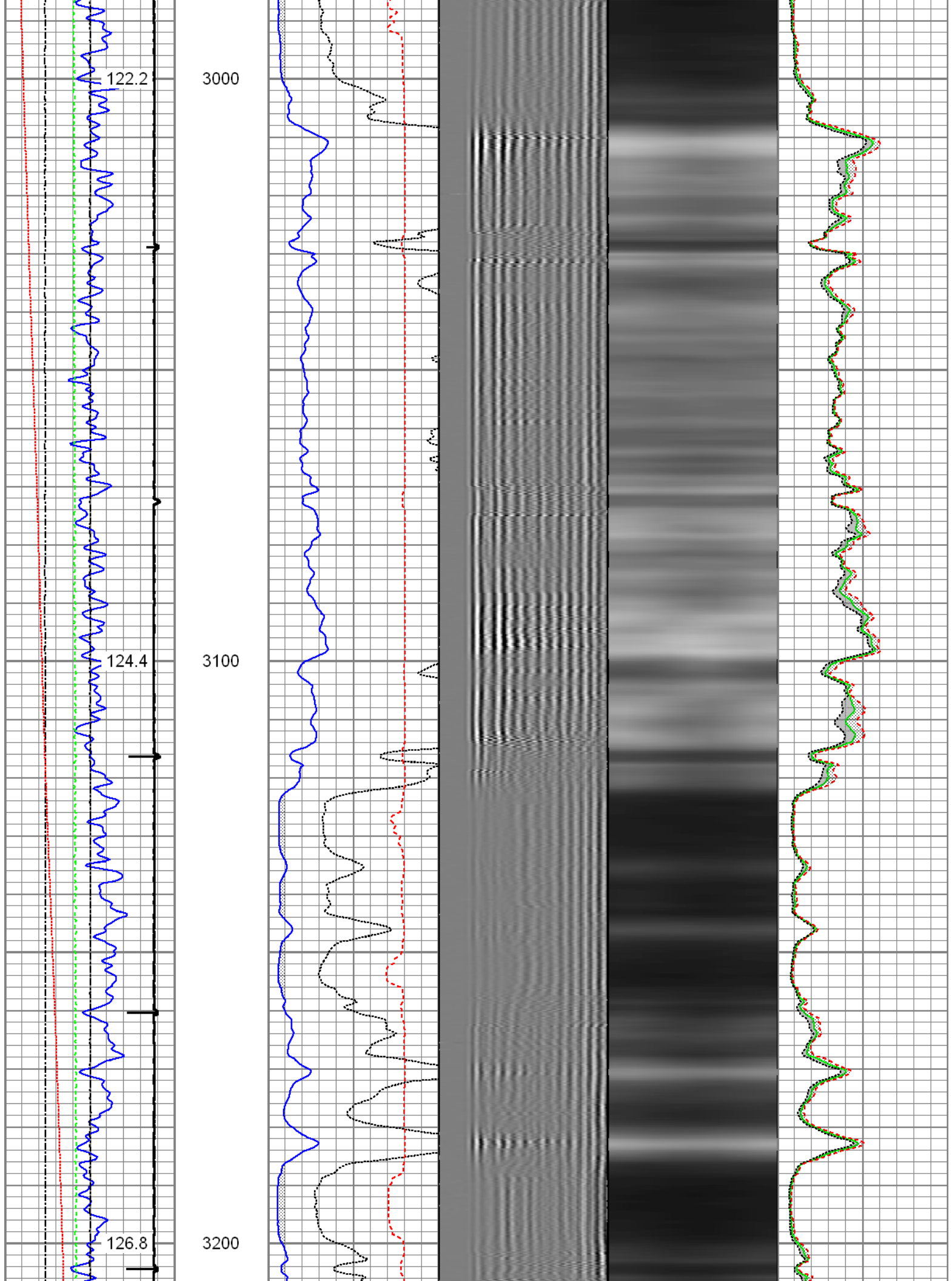


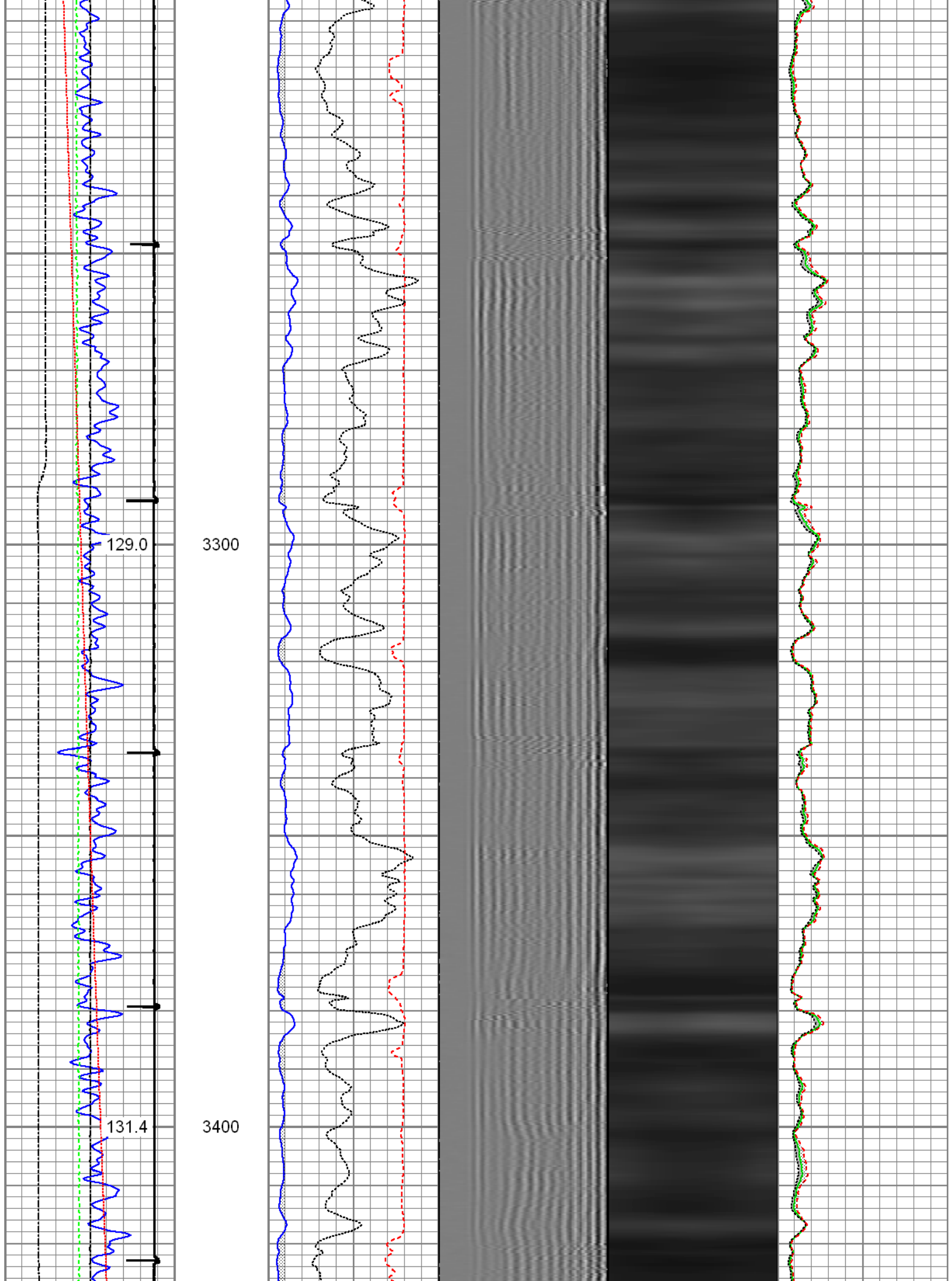
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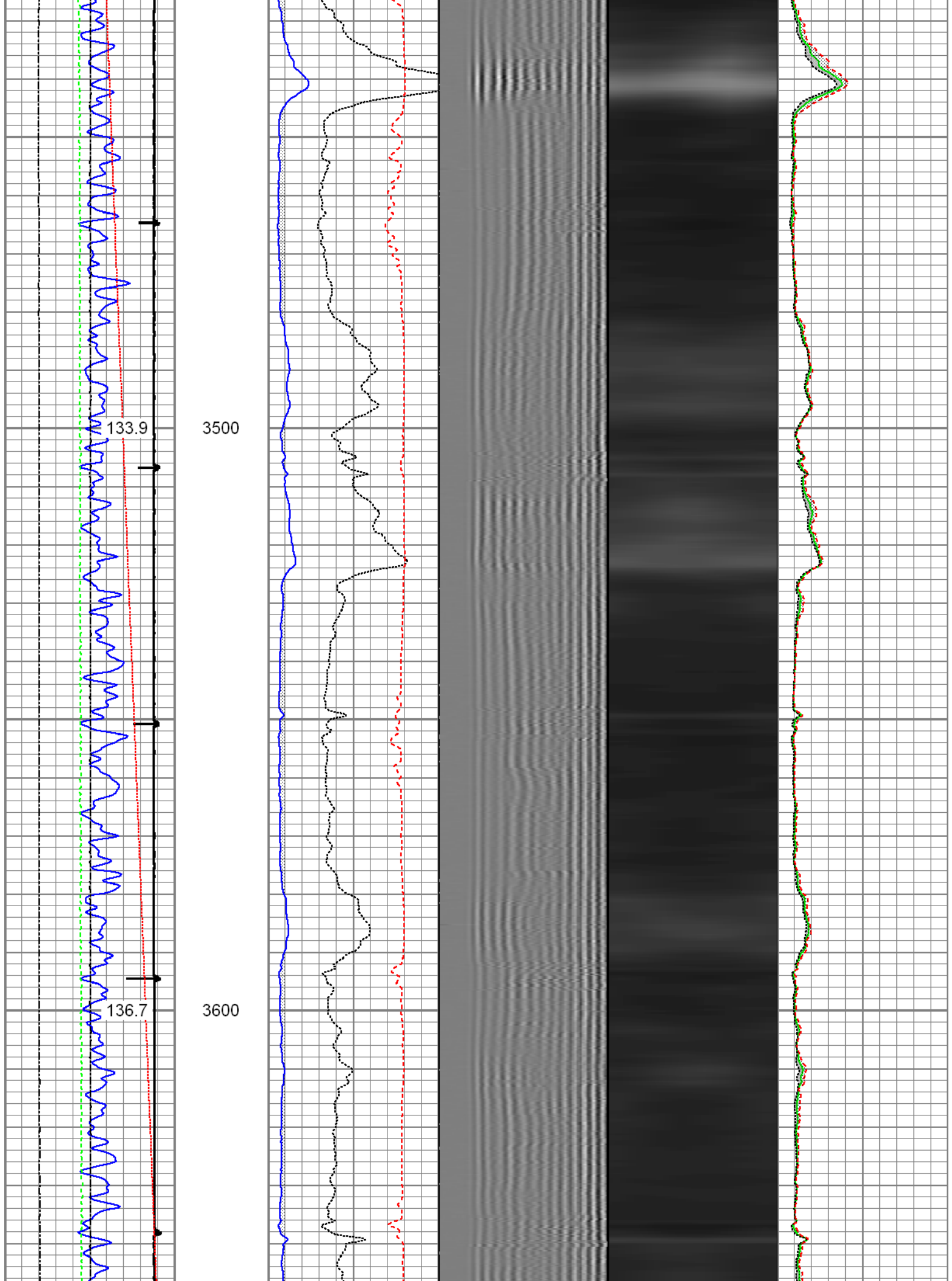
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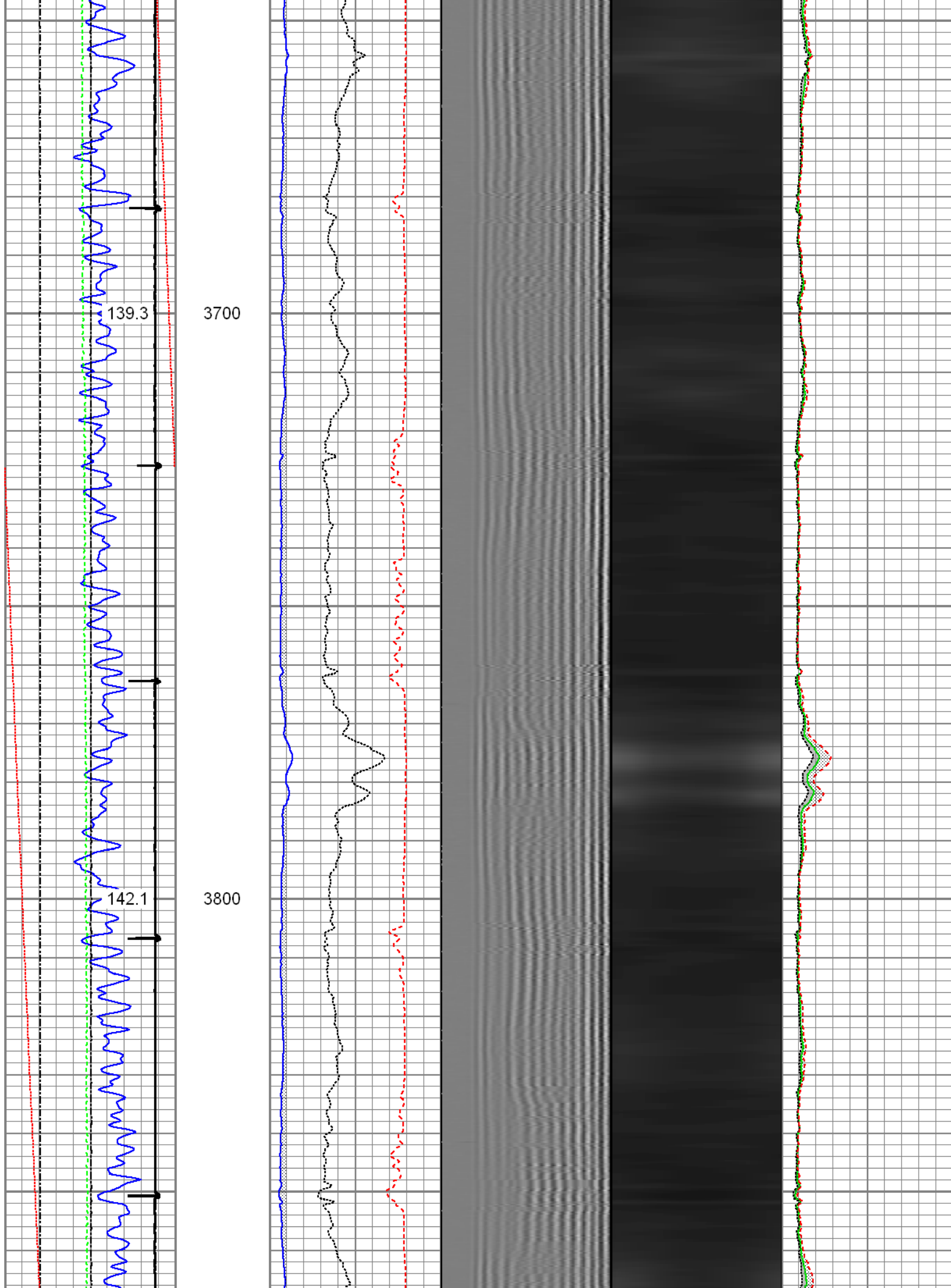


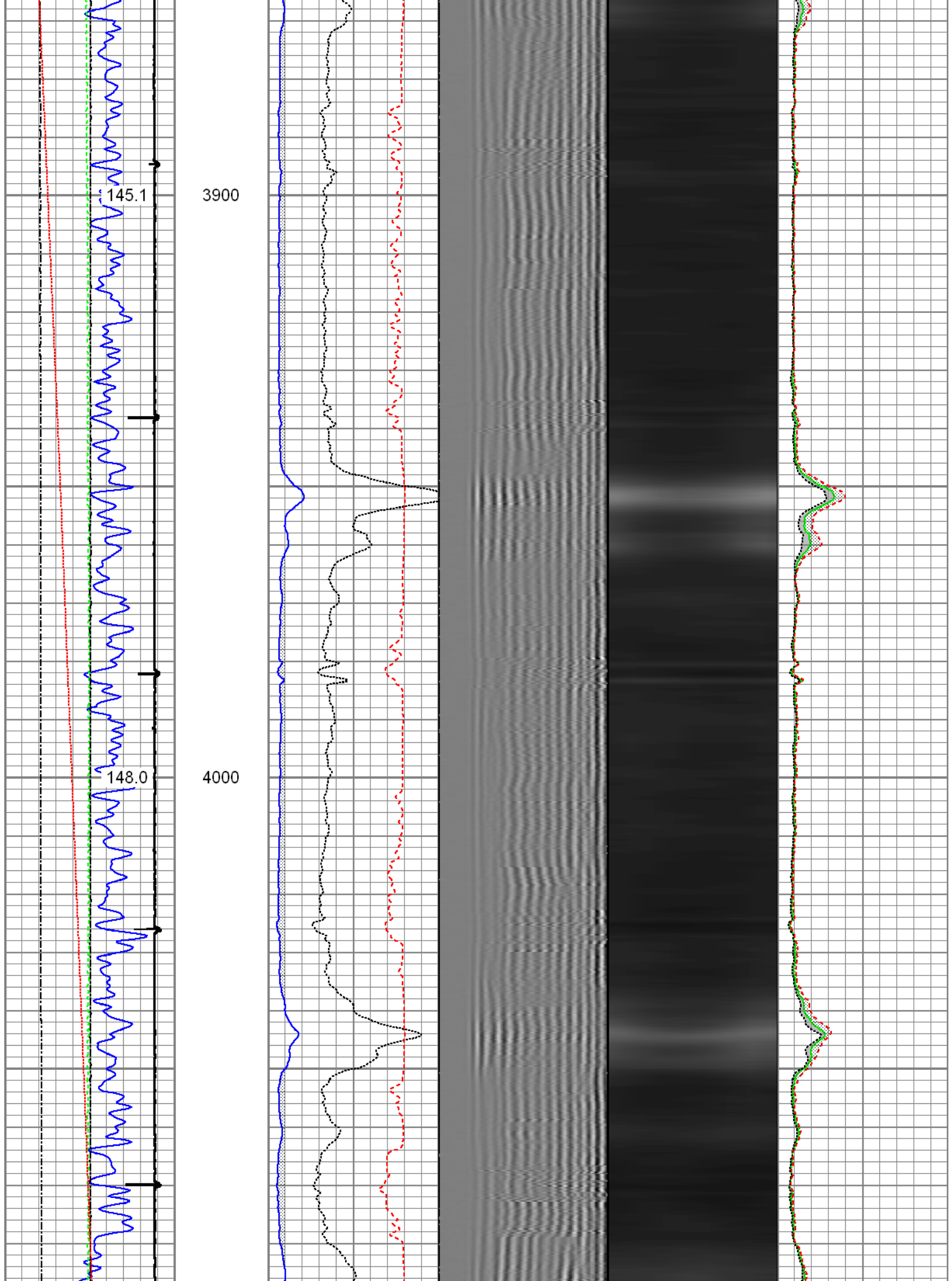


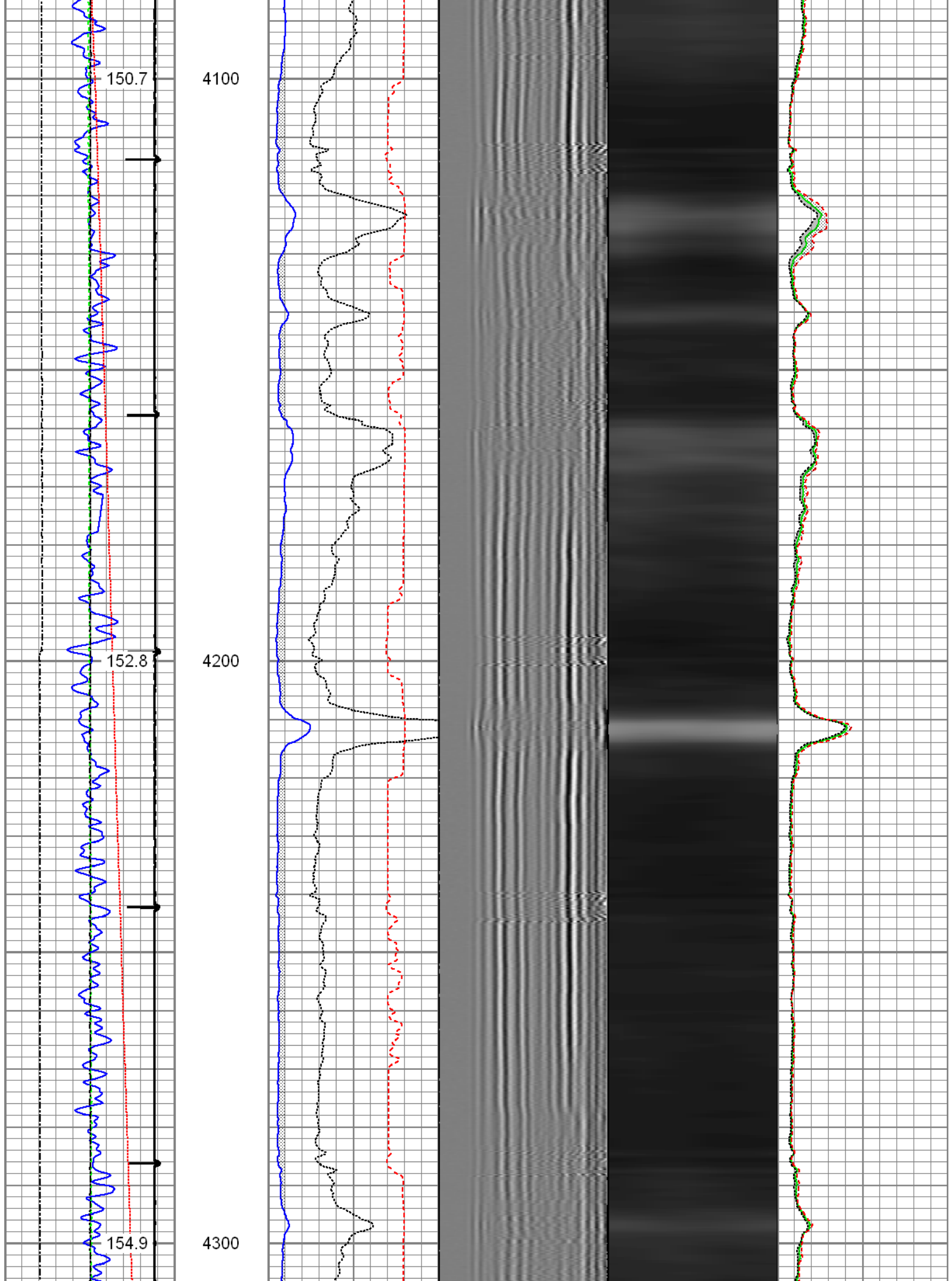


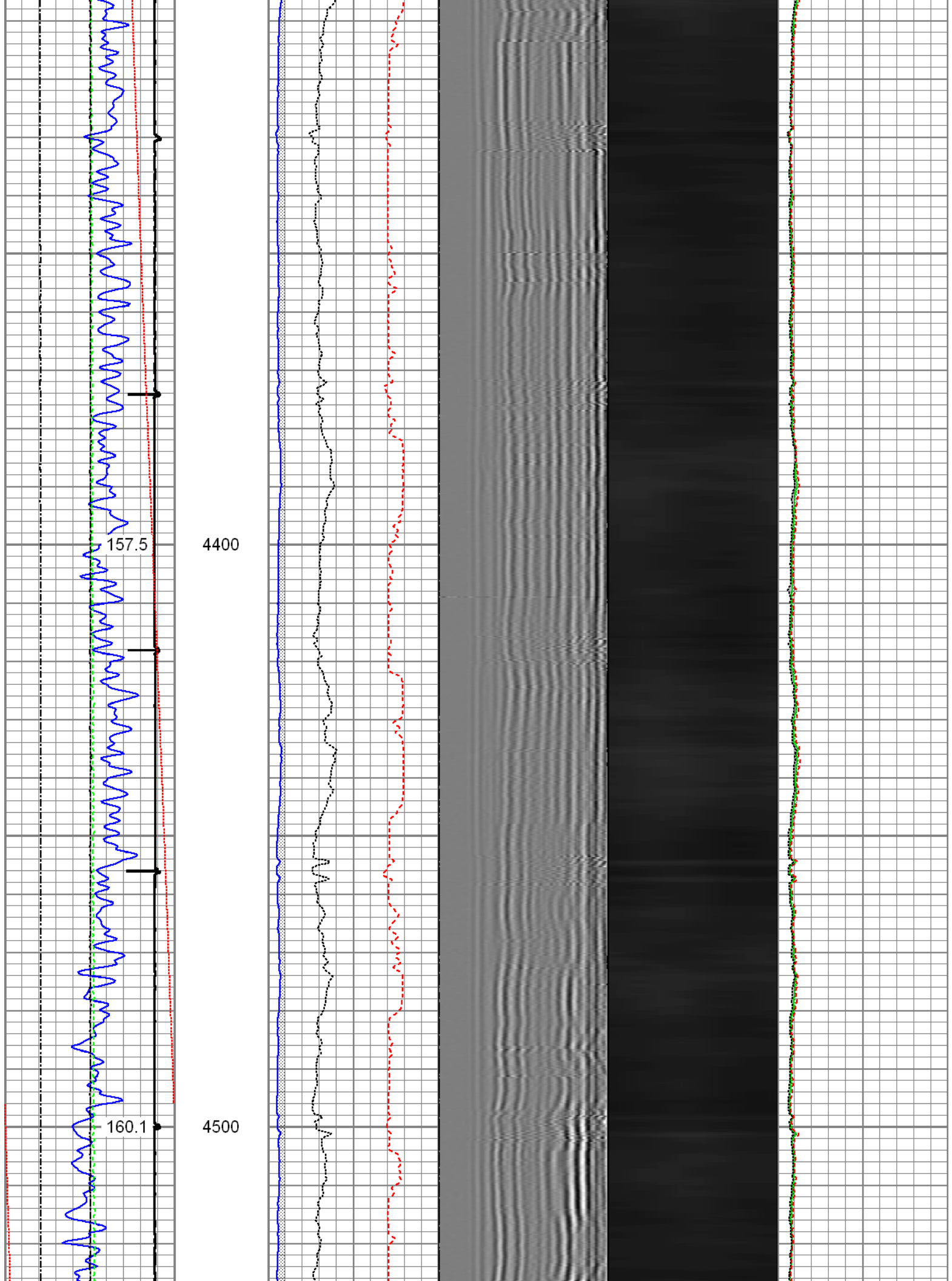


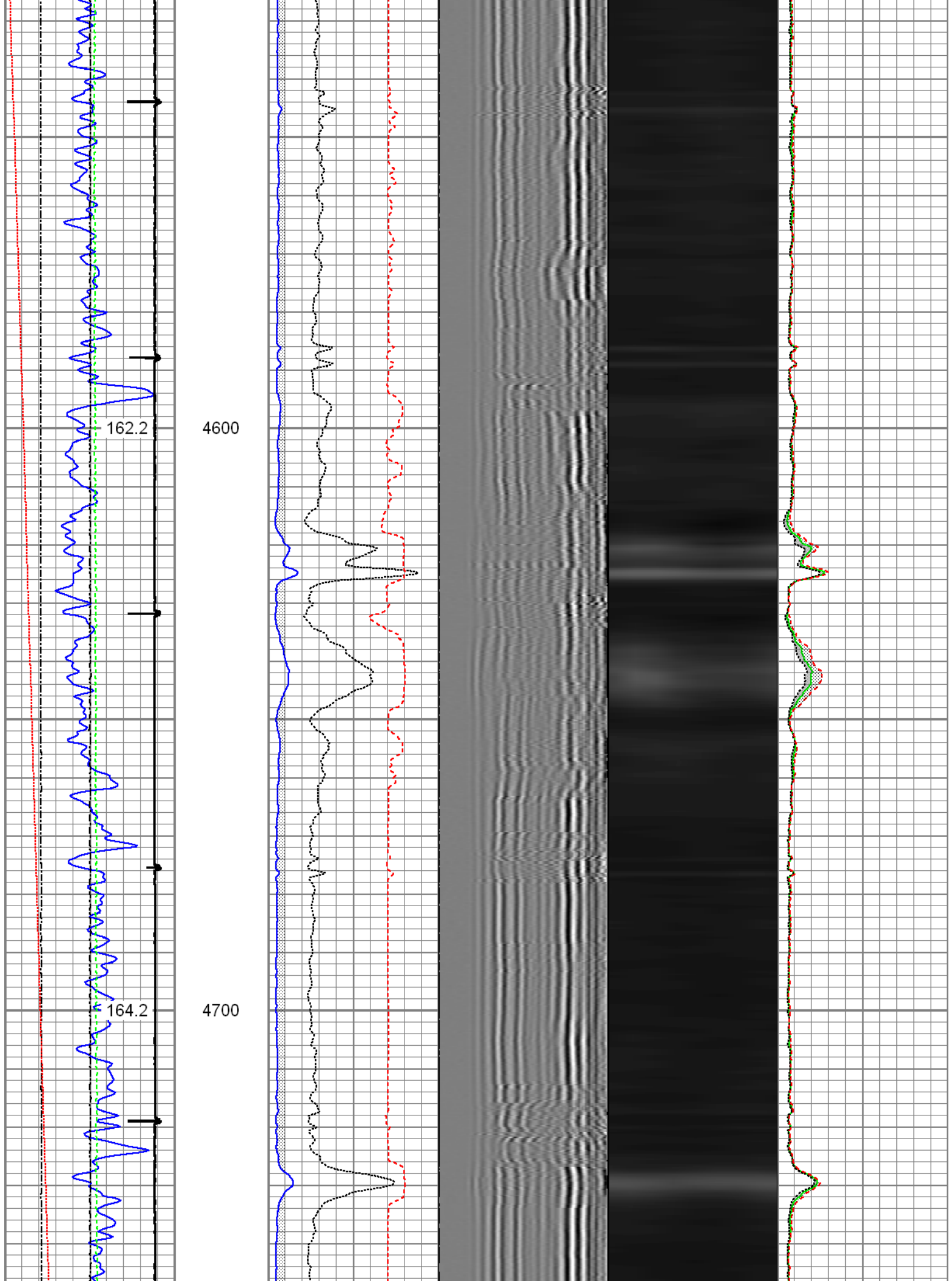


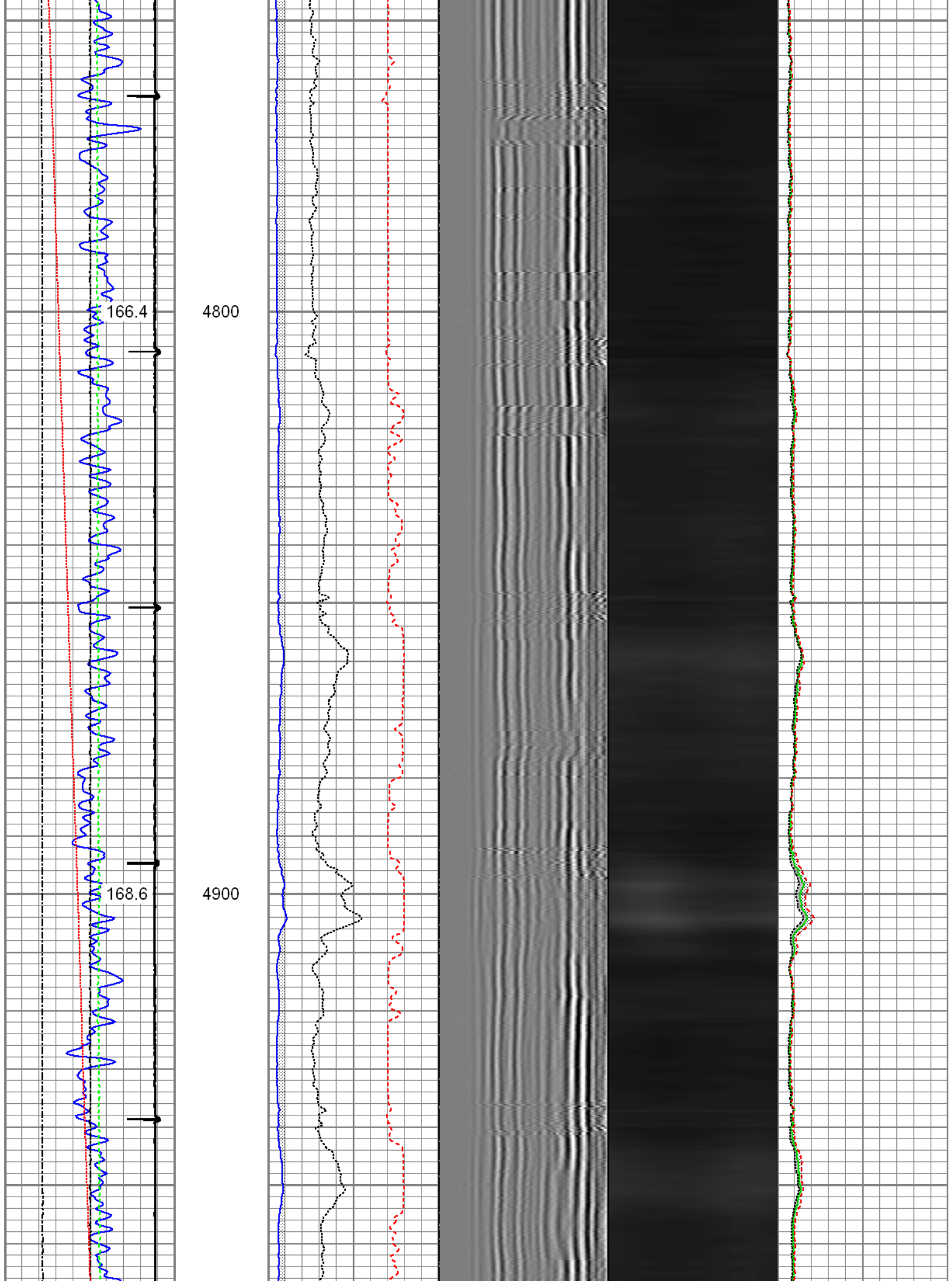


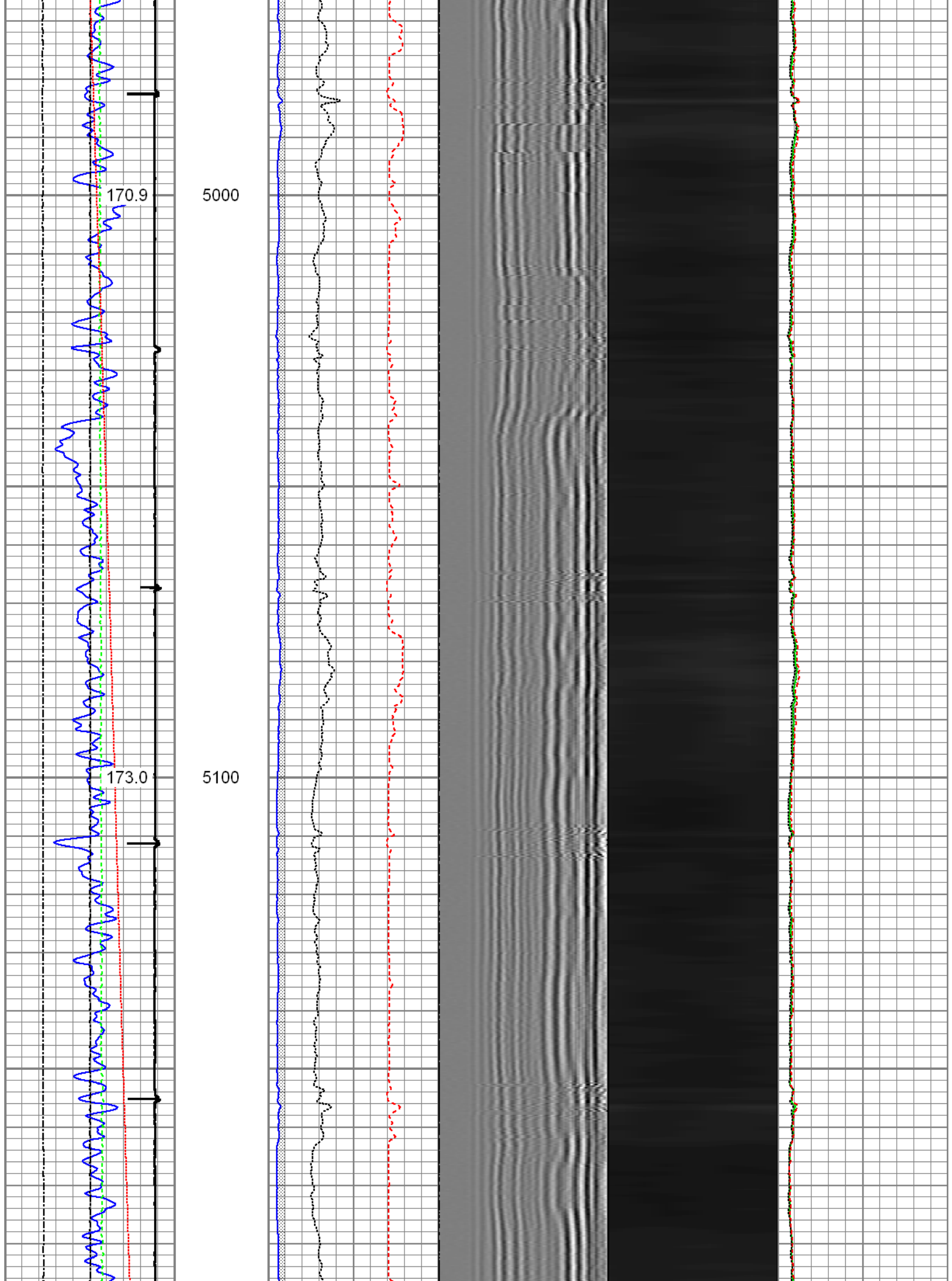


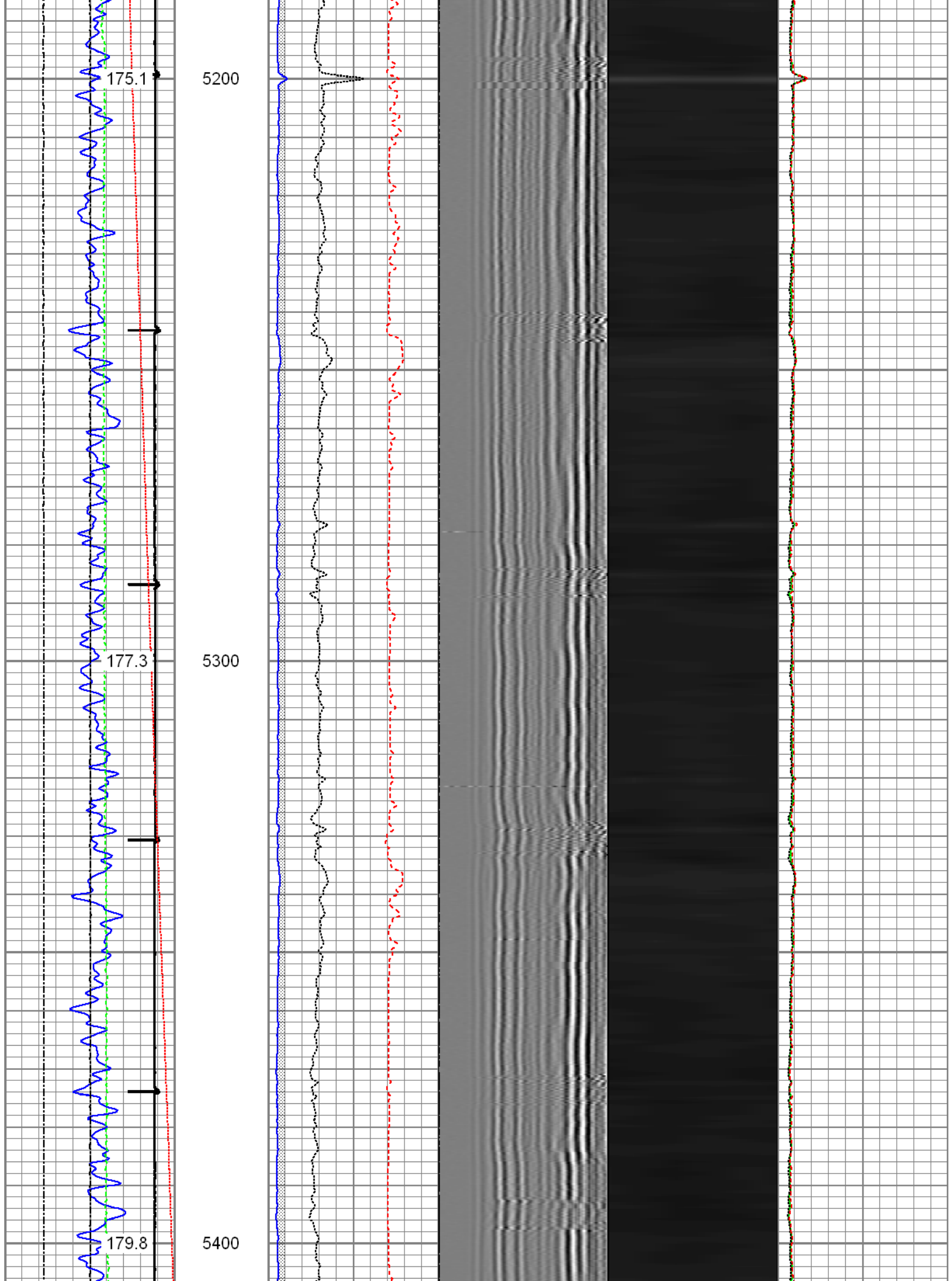


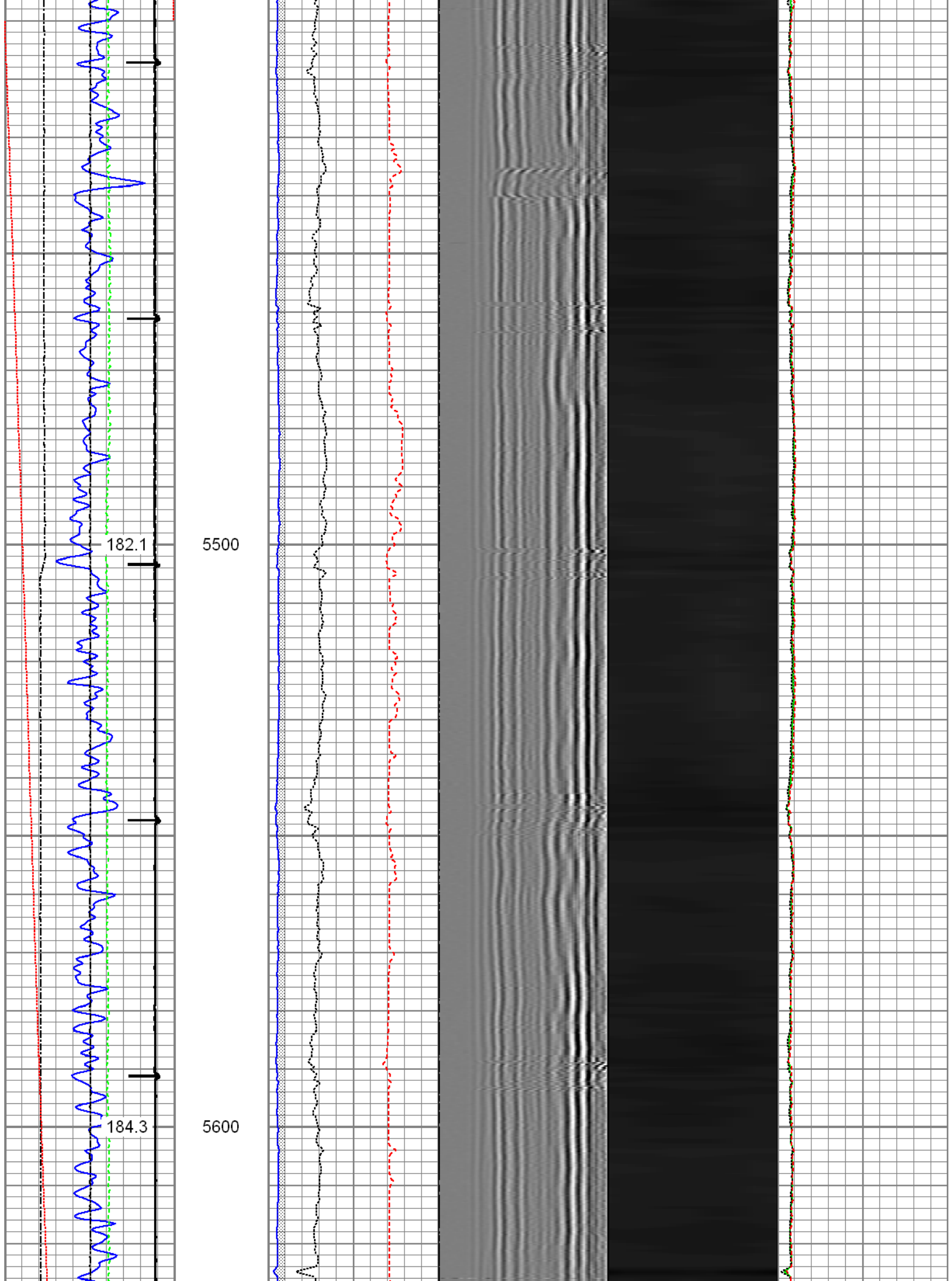


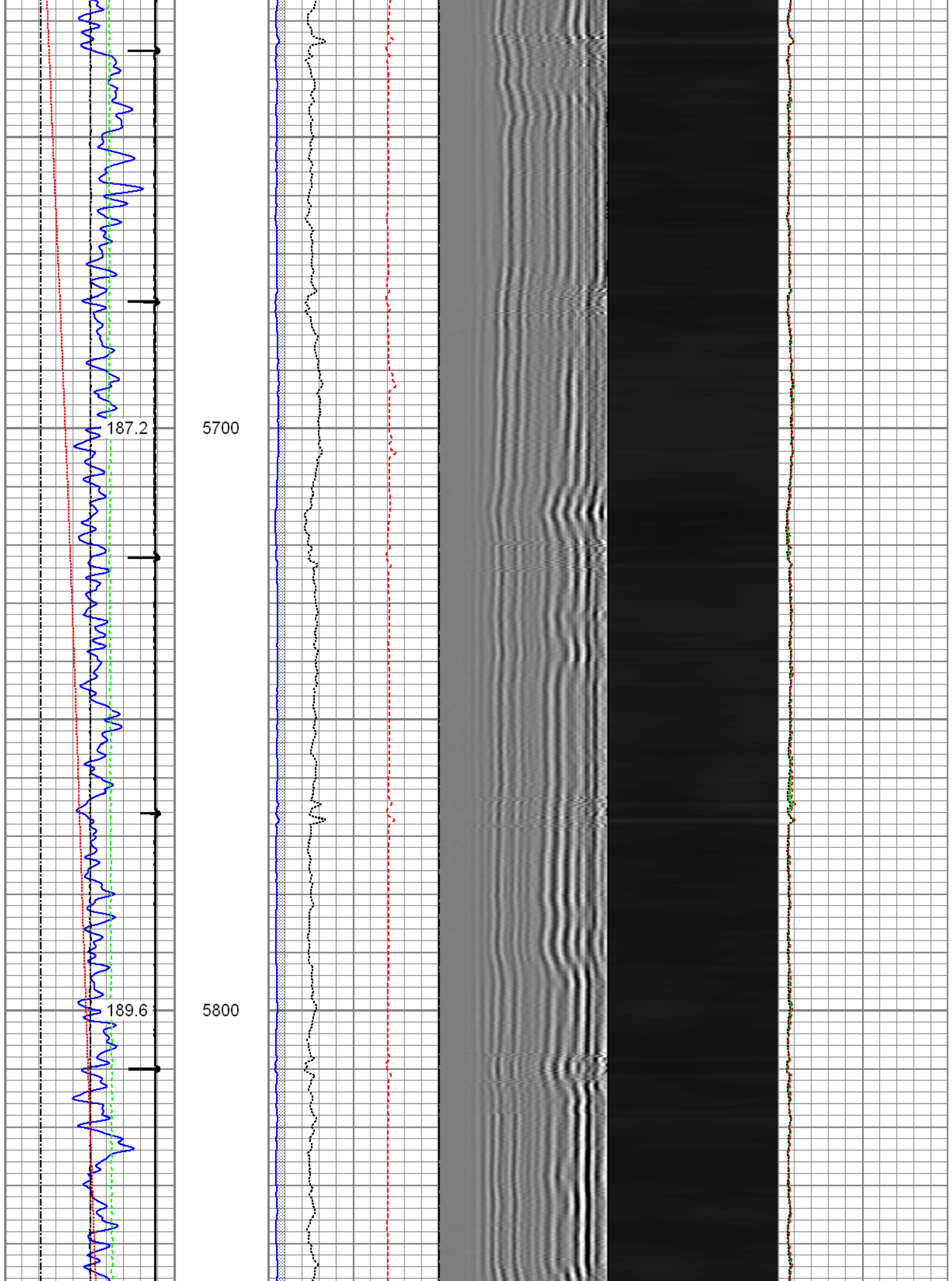


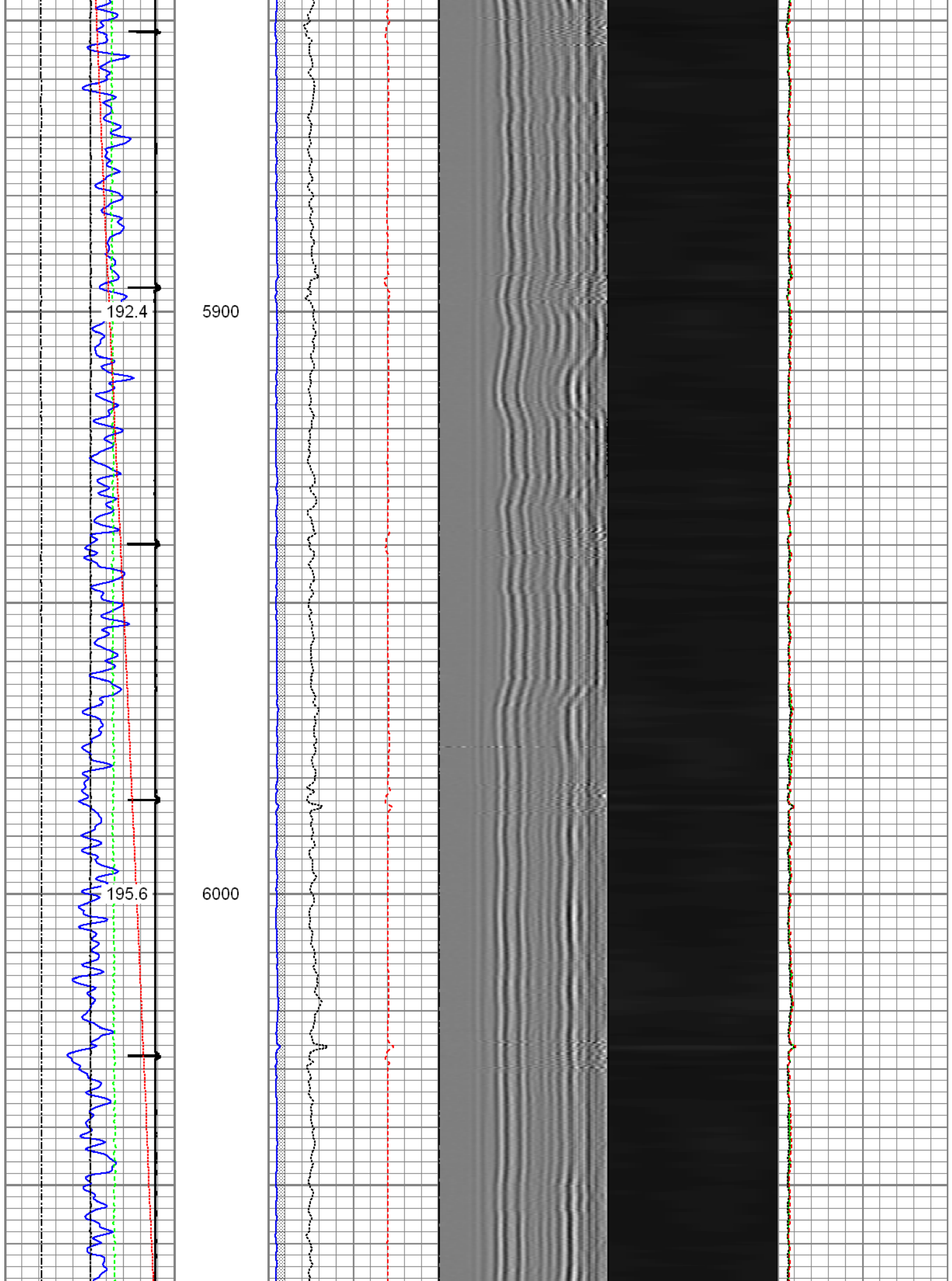


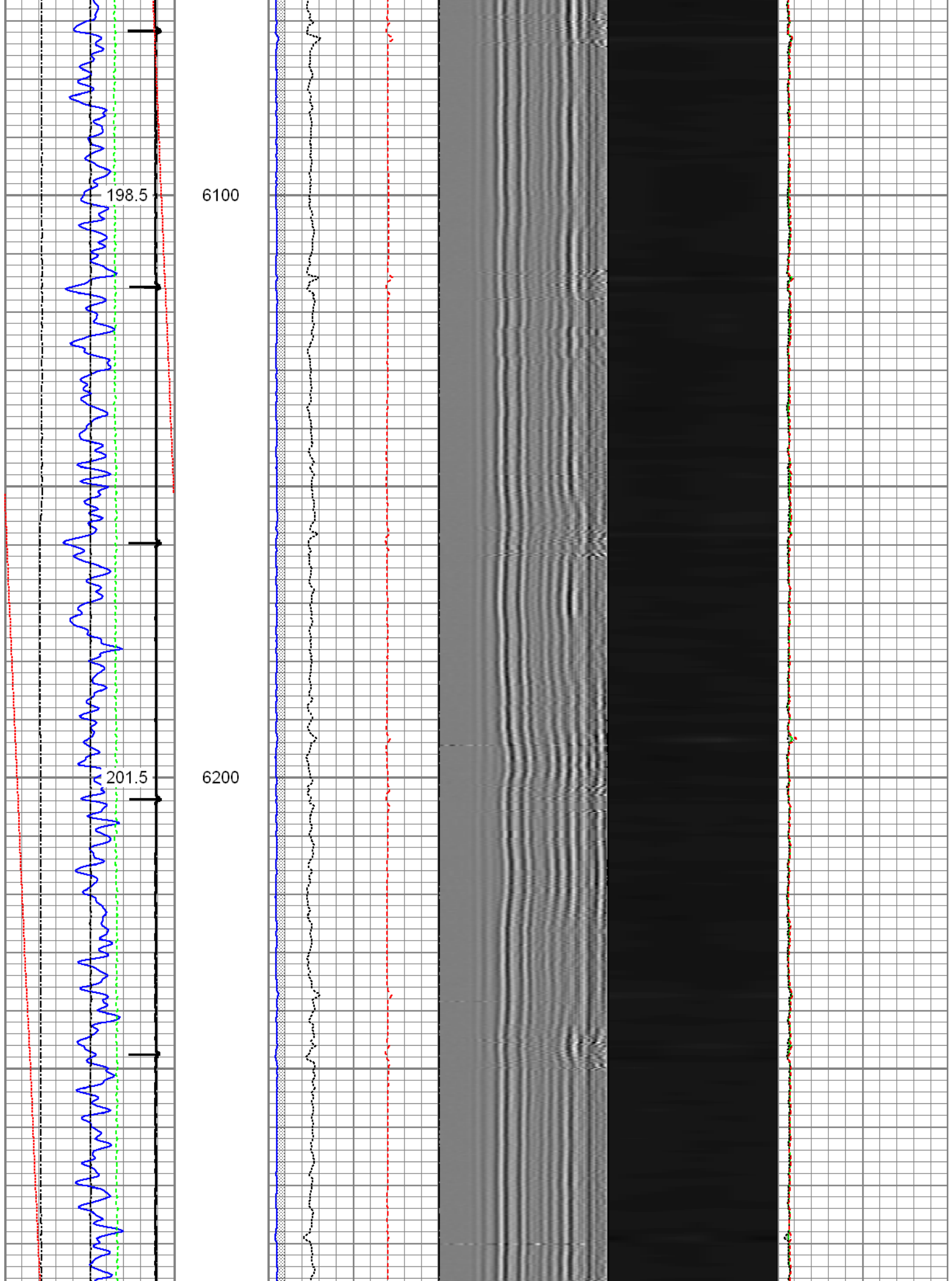


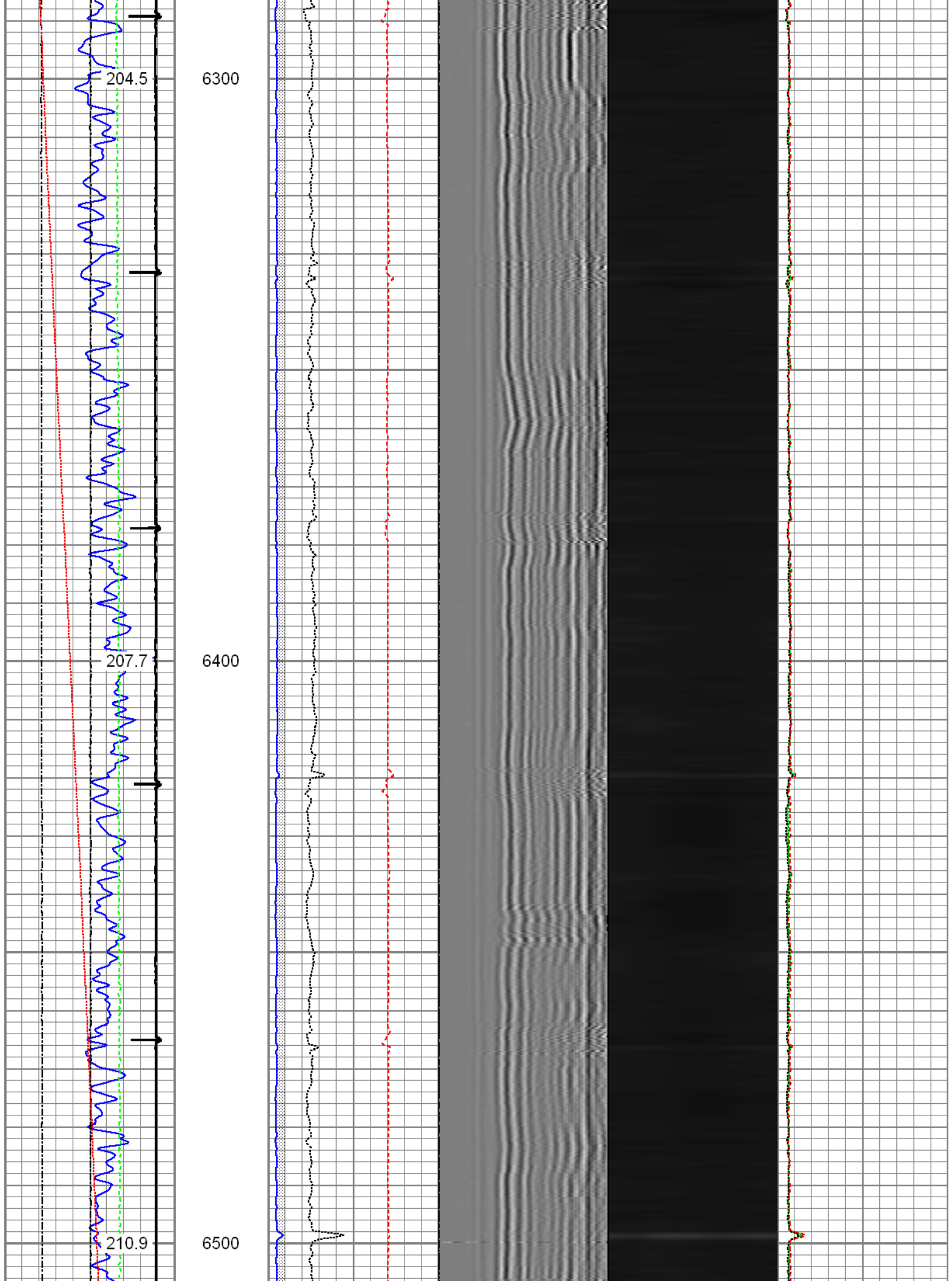


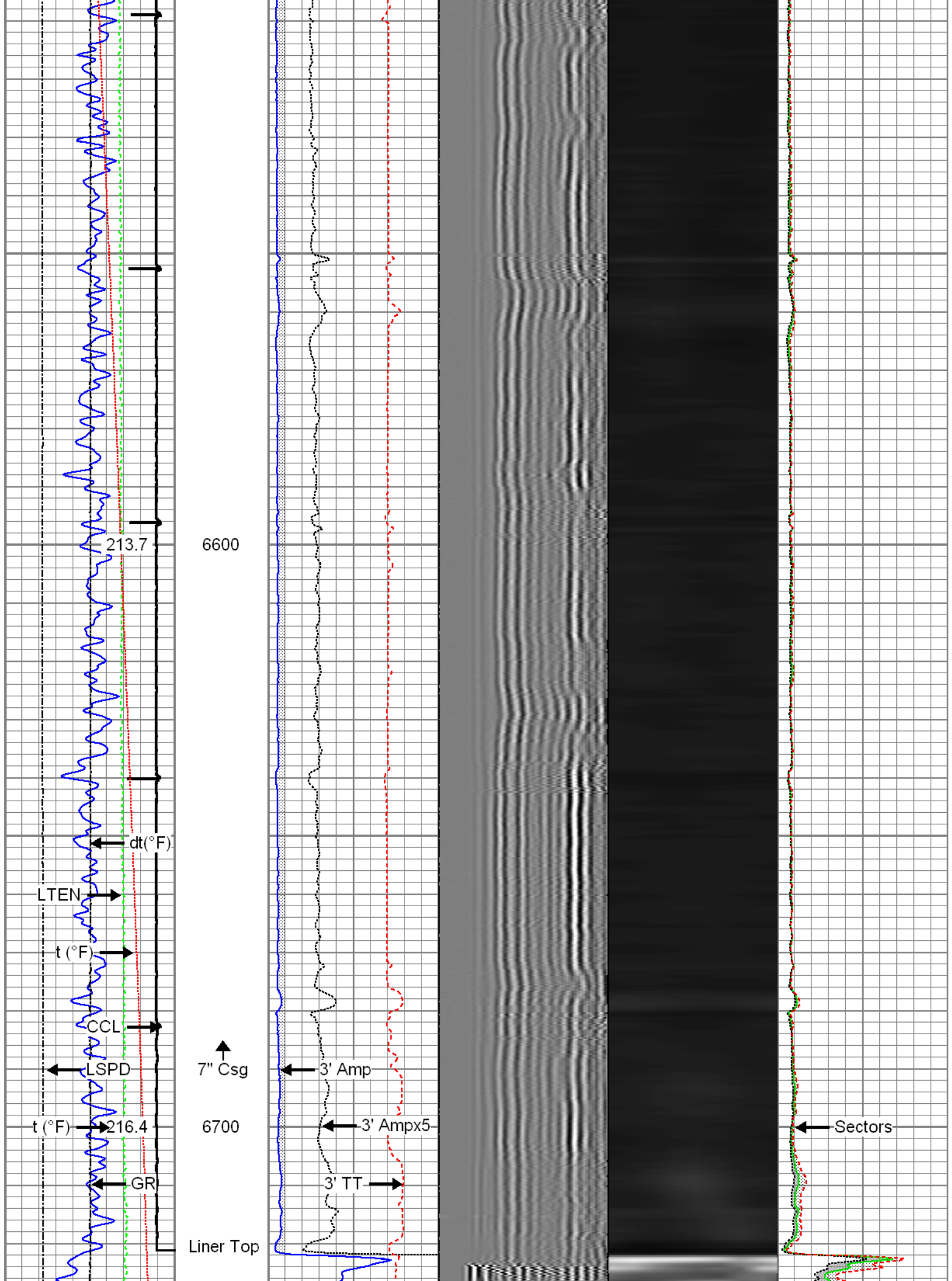












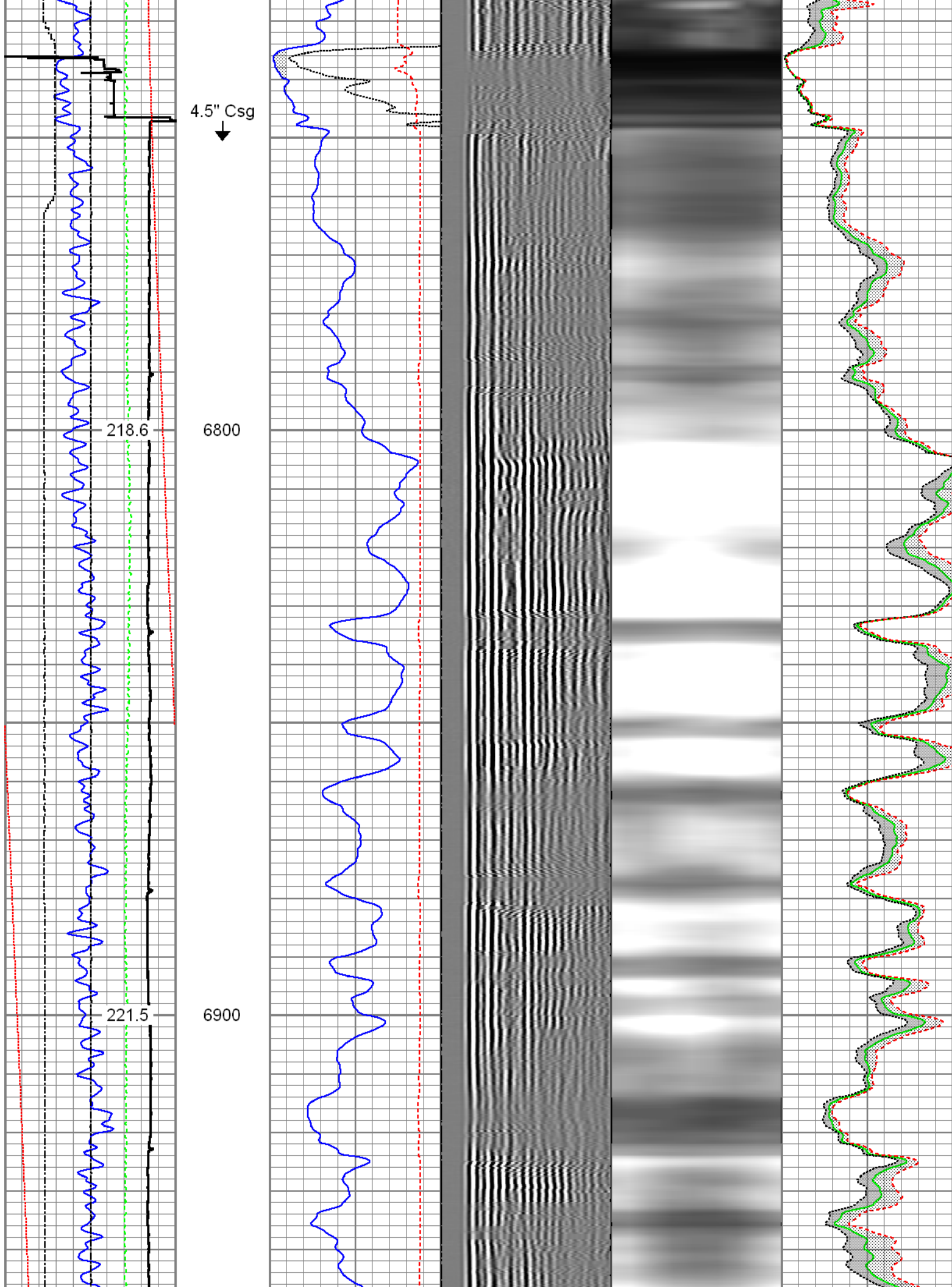
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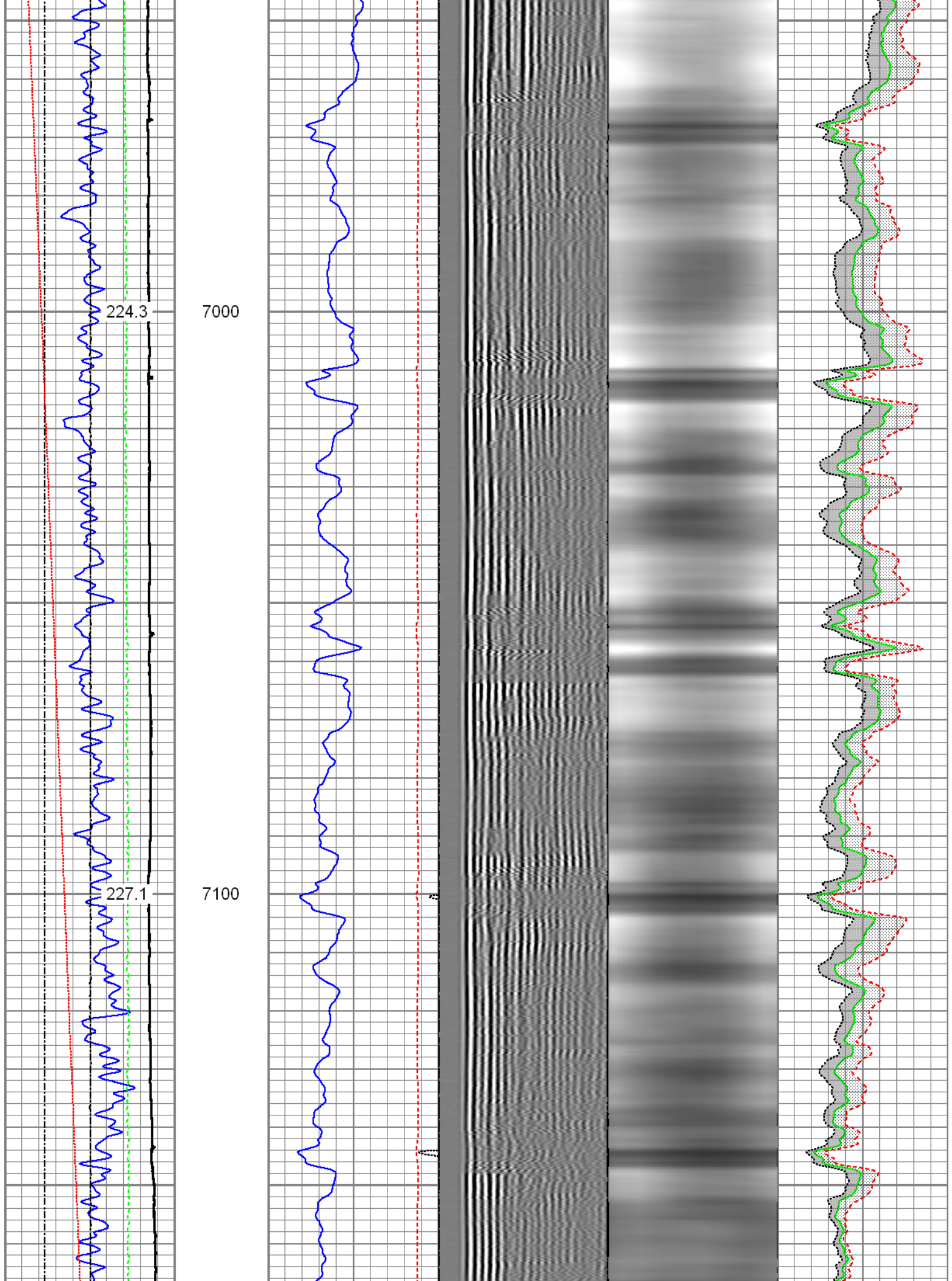
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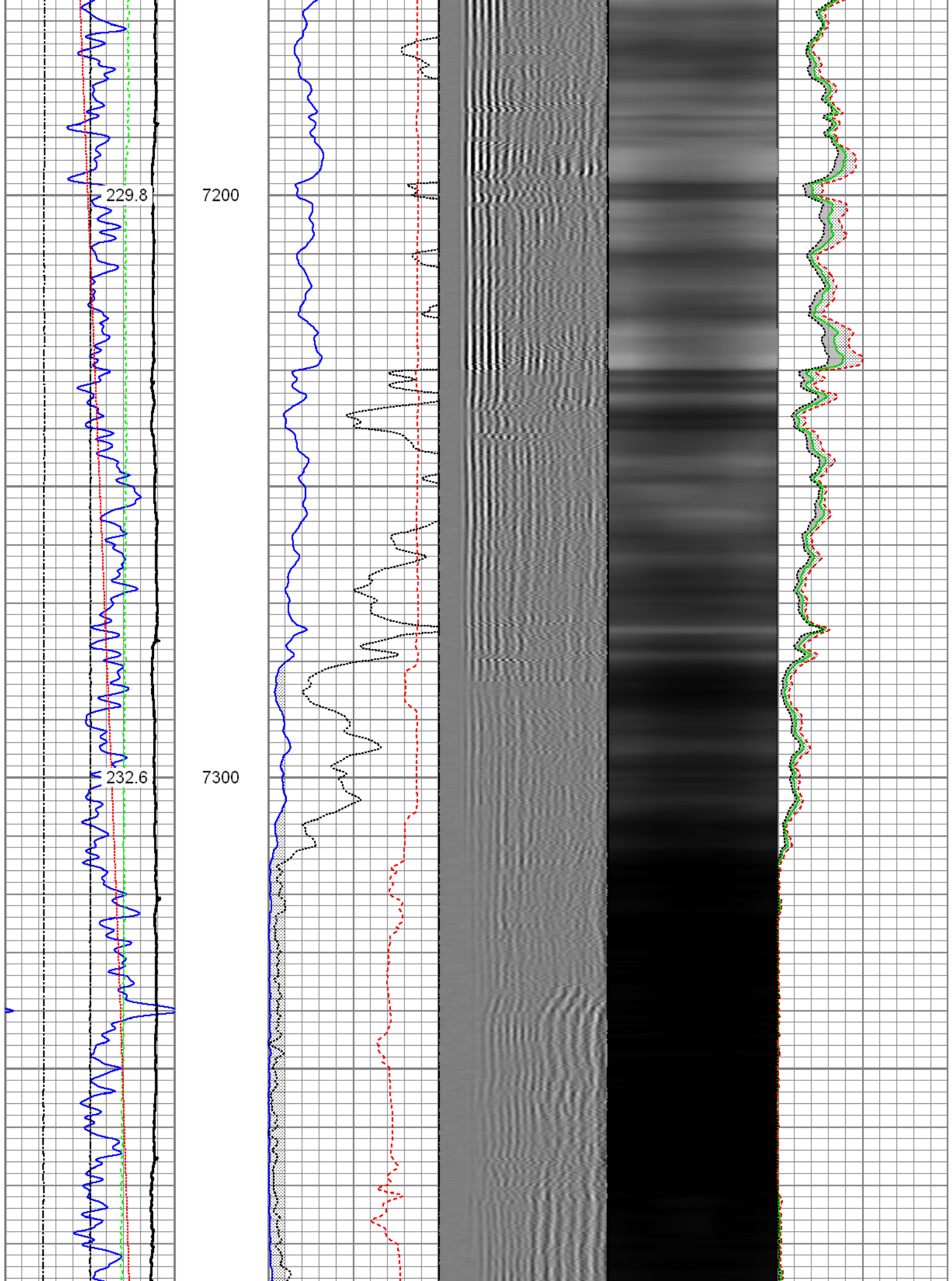
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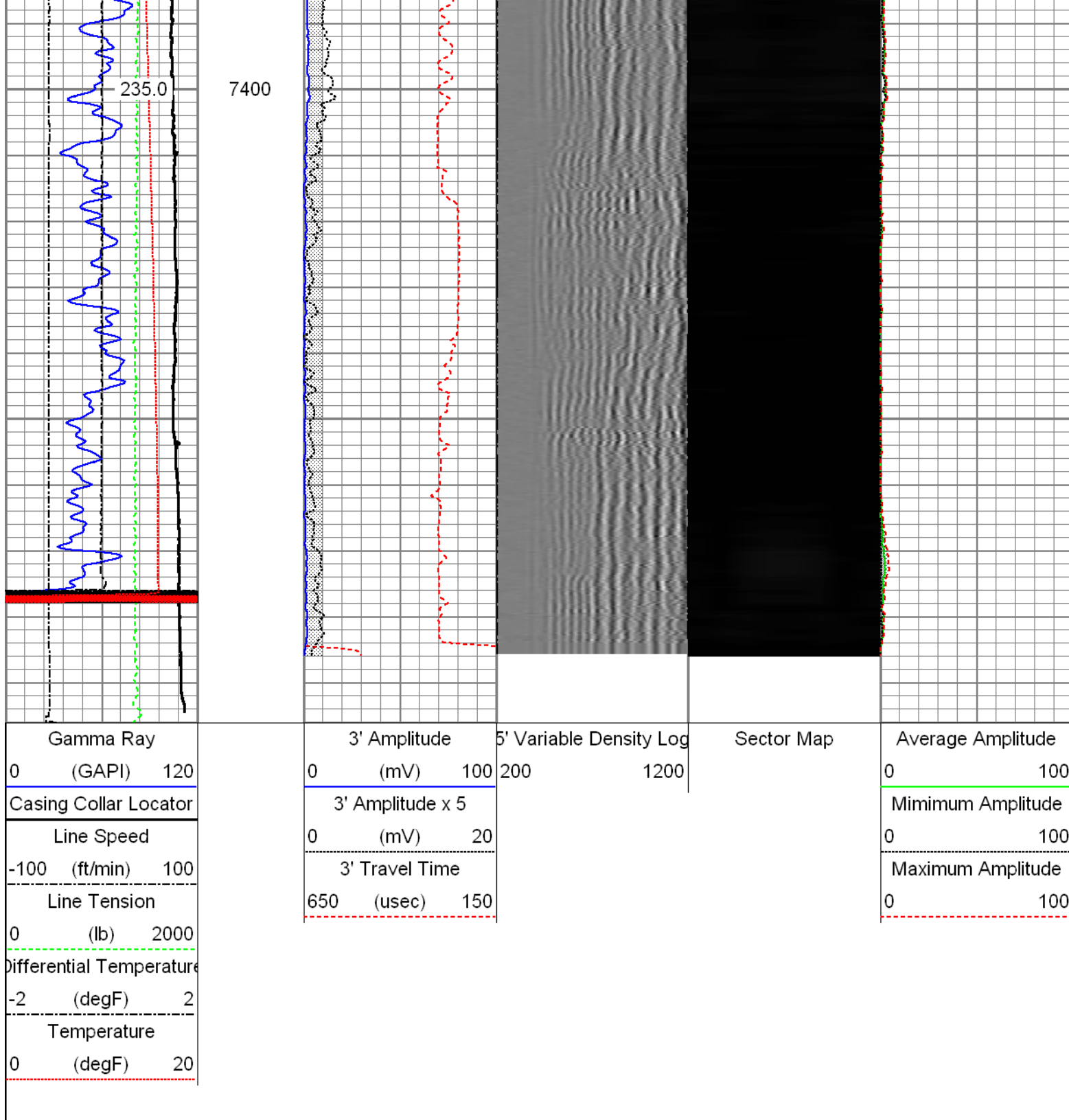
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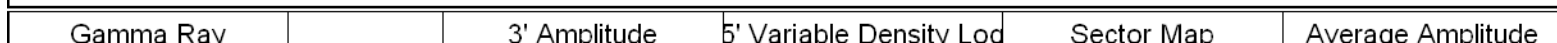




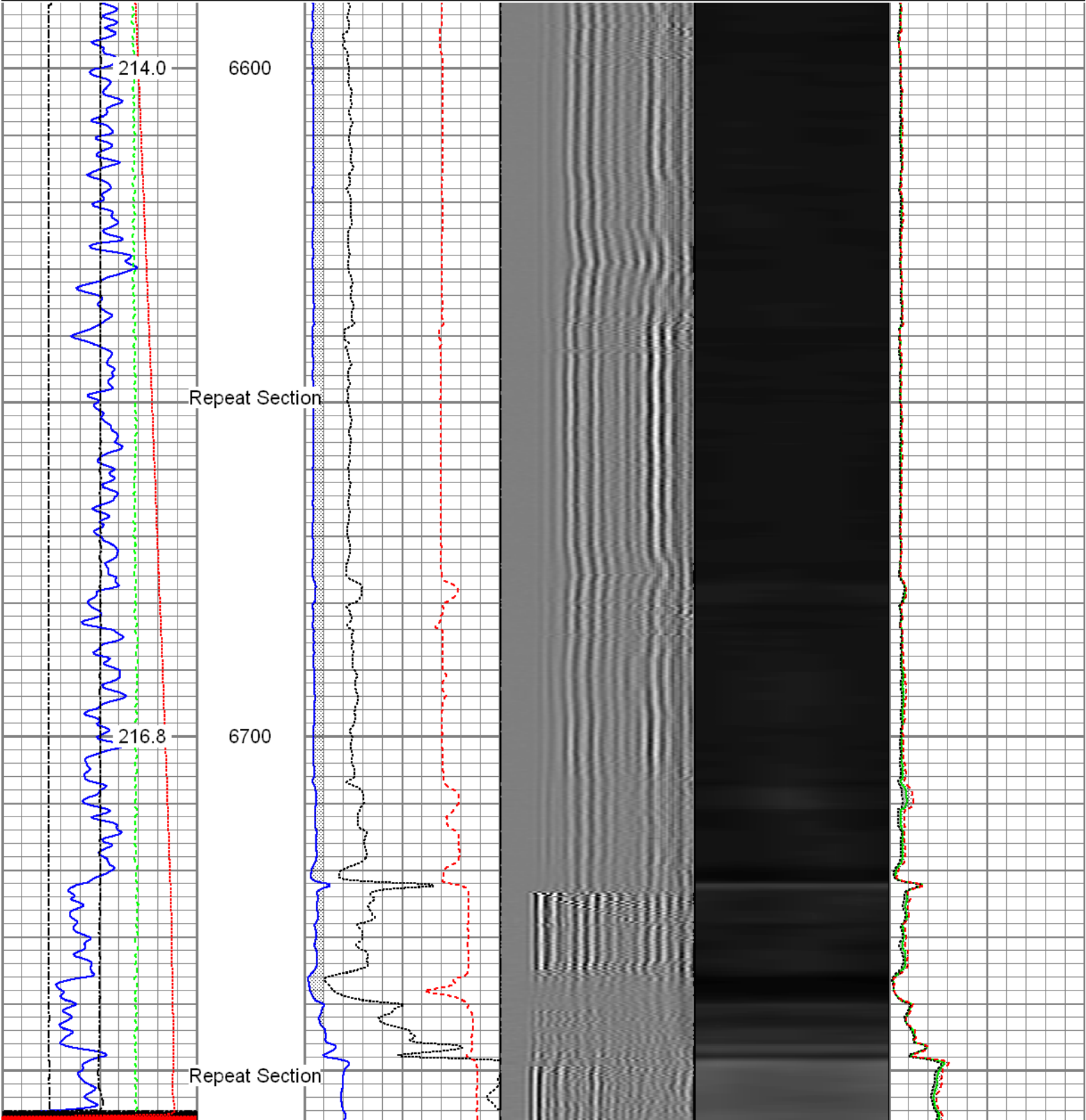


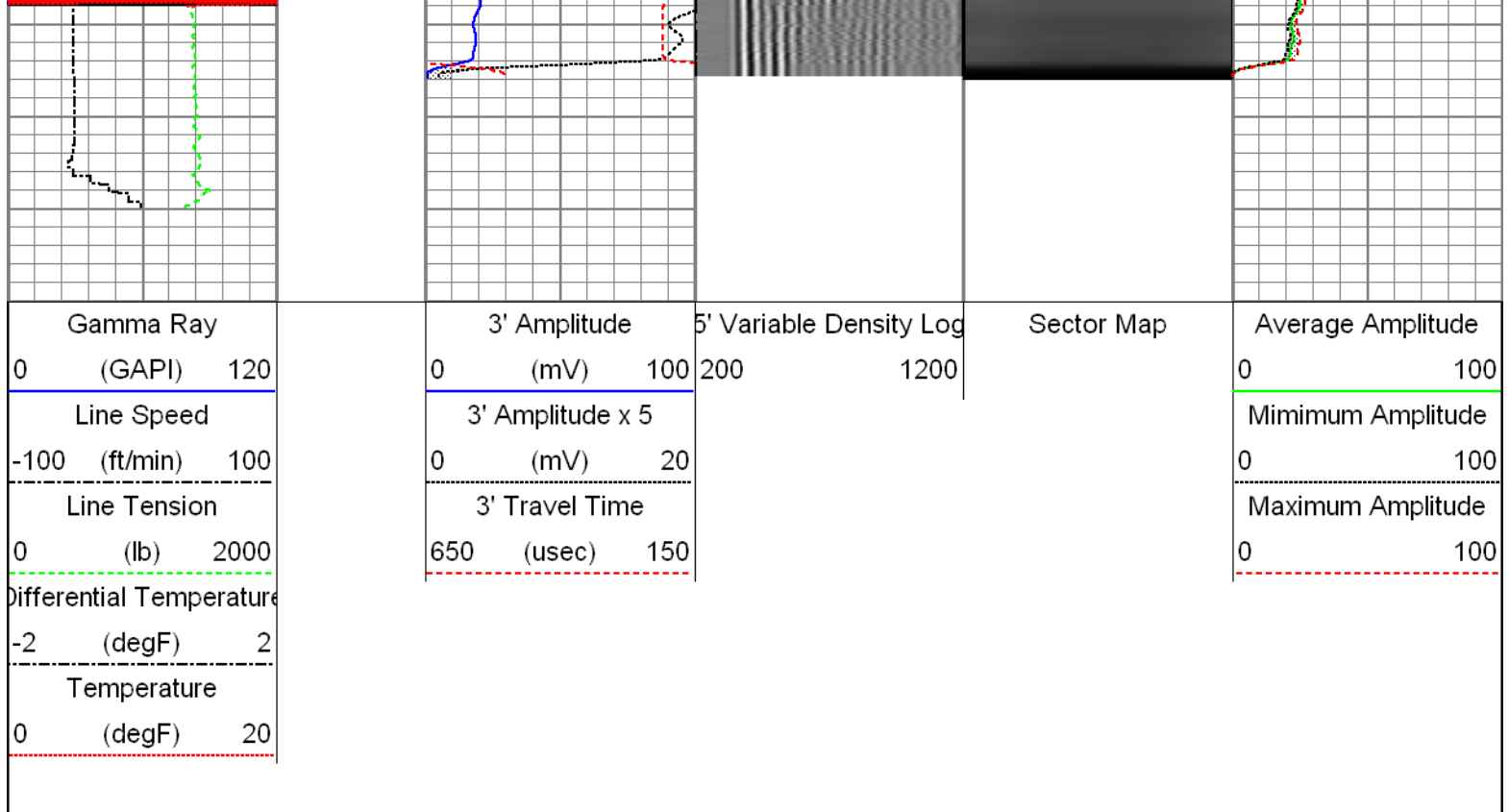


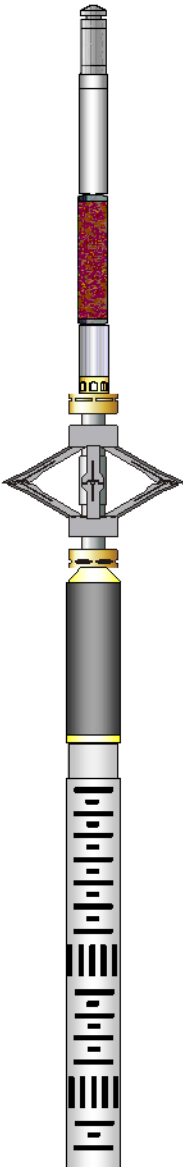
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<div>Database File: c:\warrior\data\0512339057_anadarko_barclay 15n-26hz_06-08-15_mit_rbl\0512339057_anadarko_b</div> <div>Dataset Pathname: Repeat</div> <div>Presentation Format: rbt4_mit</div> <div>Dataset Creation: Mon Jun 08 14:30:40 2015 by Log 7.0 B1</div> <div>Charted by: Depth in Feet scaled 1:240</div>	

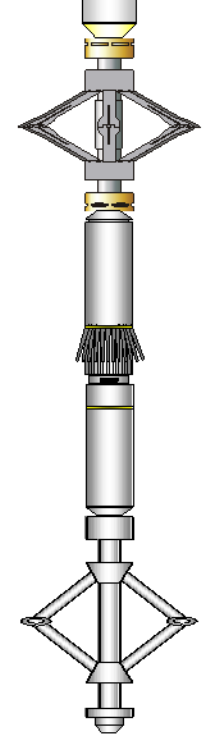


0	(GAPI)	120	0	(mV)	100	200	1200	0	100	
Line Speed			3' Amplitude x 5			Minimum Amplitude				
-100	(ft/min)	100	0	(mV)	20	0				100
Line Tension			3' Travel Time			Maximum Amplitude				
0	(lb)	2000	650	(usec)	150	0				100
Differential Temperature										
-2	(degF)	2								
Temperature										
0	(degF)	20								





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	23.85		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	22.45		UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW_PRC #3 -DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVFS3FT	15.42		UW_RBT-UW_RBT_004 (1063) 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 (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
CBLROT	15.42					
WVF5FT	14.42					
MIT	5.41		UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #4 -UW_PRC_057 (1037) 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: 0512339057_anadarko_barclay 15n-26hz_06-08-15_mit_rbl.db: field/well/run1/MainMain Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report			
Database File:	c:\warrior\data\0512339057_anadarko_barclay 15n-26hz_06-08-15_mit_rbl\0512339057_anadarko_bar		
Dataset Pathname:	MainMain		
Dataset Creation:	Mon Jun 08 17:44:33 2015 by Calc 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: Mon Jun 08 13:59:32 2015						
Ring size:	4	5	6	7			
(in)							
	Sens	Sens	Sens				
Finger 01:	1054	398.0	1452	386.0	1838	403.0	2241
Finger 02:	1013	403.0	1416	400.0	1816	426.0	2242
Finger 03:	1027	394.0	1421	382.0	1803	412.0	2215
Finger 04:	957	401.0	1358	409.0	1767	441.0	2208
Finger 05:	988	383.0	1371	380.0	1751	407.0	2158
Finger 06:	987	395.0	1382	395.0	1777	423.0	2200

Finger 07:	985	394.0	1379	387.0	1766	416.0	2182
Finger 08:	964	392.0	1356	401.0	1757	434.0	2191
Finger 09:	1031	398.0	1429	389.0	1818	408.0	2226
Finger 10:	998	389.0	1387	391.0	1778	417.0	2195
Finger 11:	981	387.0	1368	393.0	1761	424.0	2185
Finger 12:	1065	382.0	1447	374.0	1821	390.0	2211
Finger 13:	1013	379.0	1392	390.0	1782	421.0	2203
Finger 14:	997	388.0	1385	406.0	1791	430.0	2221
Finger 15:	959	385.0	1344	408.0	1752	435.0	2187
Finger 16:	1019	378.0	1397	394.0	1791	419.0	2210
Finger 17:	1053	374.0	1427	386.0	1813	403.0	2216
Finger 18:	1087	376.0	1463	387.0	1850	403.0	2253
Finger 19:	1055	378.0	1433	393.0	1826	412.0	2238
Finger 20:	975	377.0	1352	403.0	1755	425.0	2180
Finger 21:	1073	386.0	1459	373.0	1832	419.0	2251
Finger 22:	1057	377.0	1434	392.0	1826	415.0	2241
Finger 23:	1098	378.0	1476	393.0	1869	411.0	2280
Finger 24:	1066	347.0	1413	364.0	1777	388.0	2165
Finger 25:	1076	382.0	1458	399.0	1857	412.0	2269
Finger 26:	1039	368.0	1407	389.0	1796	407.0	2203
Finger 27:	1206	391.0	1597	389.0	1986	403.0	2389
Finger 28:	1083	359.0	1442	378.0	1820	398.0	2218
Finger 29:	1026	371.0	1397	393.0	1790	413.0	2203
Finger 30:	1013	373.0	1386	399.0	1785	420.0	2205
Finger 31:	1225	406.0	1631	408.0	2039	415.0	2454
Finger 32:	994	374.0	1368	382.0	1750	399.0	2149
Finger 33:	1091	403.0	1494	411.0	1905	425.0	2330
Finger 34:	963	378.0	1341	390.0	1731	412.0	2143
Finger 35:	1121	410.0	1531	409.0	1940	421.0	2361
Finger 36:	1033	374.0	1407	376.0	1783	396.0	2179
Finger 37:	1099	414.0	1513	408.0	1921	421.0	2342
Finger 38:	1064	388.0	1452	383.0	1835	400.0	2235
Finger 39:	1053	380.0	1433	371.0	1804	392.0	2196
Finger 40:	958	408.0	1366	412.0	1778	440.0	2218

Segmented Cement Bond Log Calibration Report						
Serial Number:		1063				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		7.000	in			
Calibration Depth:		237.746	ft			
Master Calibration, performed Mon Jun 08 17:44:27 2015:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.001	0.603	0.800	62.165	101.678	0.869
5FT	-0.005	0.587	0.800	62.165	103.712	1.277
S1	-0.002	0.586	0.000	100.000	170.074	0.296
S2	-0.001	0.605	0.000	100.000	164.984	0.191
S3	-0.001	0.612	0.000	100.000	163.144	0.118
S4	-0.000	0.626	0.000	100.000	159.711	0.062
S5	-0.000	0.615	0.000	100.000	162.425	0.054
S6	-0.001	0.592	0.000	100.000	168.427	0.233
S7	-0.001	0.582	0.000	100.000	171.406	0.242
S8	-0.002	0.575	0.000	100.000	173.303	0.284

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	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	1.0000	GAPI/cps	

	Company	Kerr-McGee Oil & Gas OnShore L.P.	
	Well	Barclay 15N-26HZ	
	Field	Wattenberg	
	County	Weld	
	State	Colorado	