



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Cream 15N - A28HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:	Company	Kerr-McGee Oil & Gas Onshore, L.P.	
	Well	Cream 15N - A28HZ	
	Field	Wattenberg	
Location:	County	Weld	State Colorado
	API # : 05-123-40951		
	Other Services Gauge Ring MIT		
Permanent Datum	SEC 28	TWP 3N	RGE 65W
Log Measured From	Ground Level	Kelly Bushing	Elevation 4827'
Drilling Measured From	Kelly Bushing	20 FT	Elevation K.B. 4847' D.F. 4846' G.L. 4827'

Date	21-JUL-2015
Run Number	Two
Depth Driller	12,647 FT
Depth Logger	7238 FT
Bottom Logged Interval	7233 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	215°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	3:48 PM
Equipment Number	HD-0343
Location	Fort Lupton, CO
Recorded By	J. Houim
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	1206 FT		
Intermediate #1	7	26	HC-P110	Surface	7564 FT		
Intermediate #2							
Liner	4 1/2	11.6	HCP-110	6447 FT	12,647 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 6447 FT
Adjusted log +10 FT to correlate with liner top
Gauge Ring/Junk Basket ran to 7242 FT no debris was found after run
Log ran from 7238 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.!!

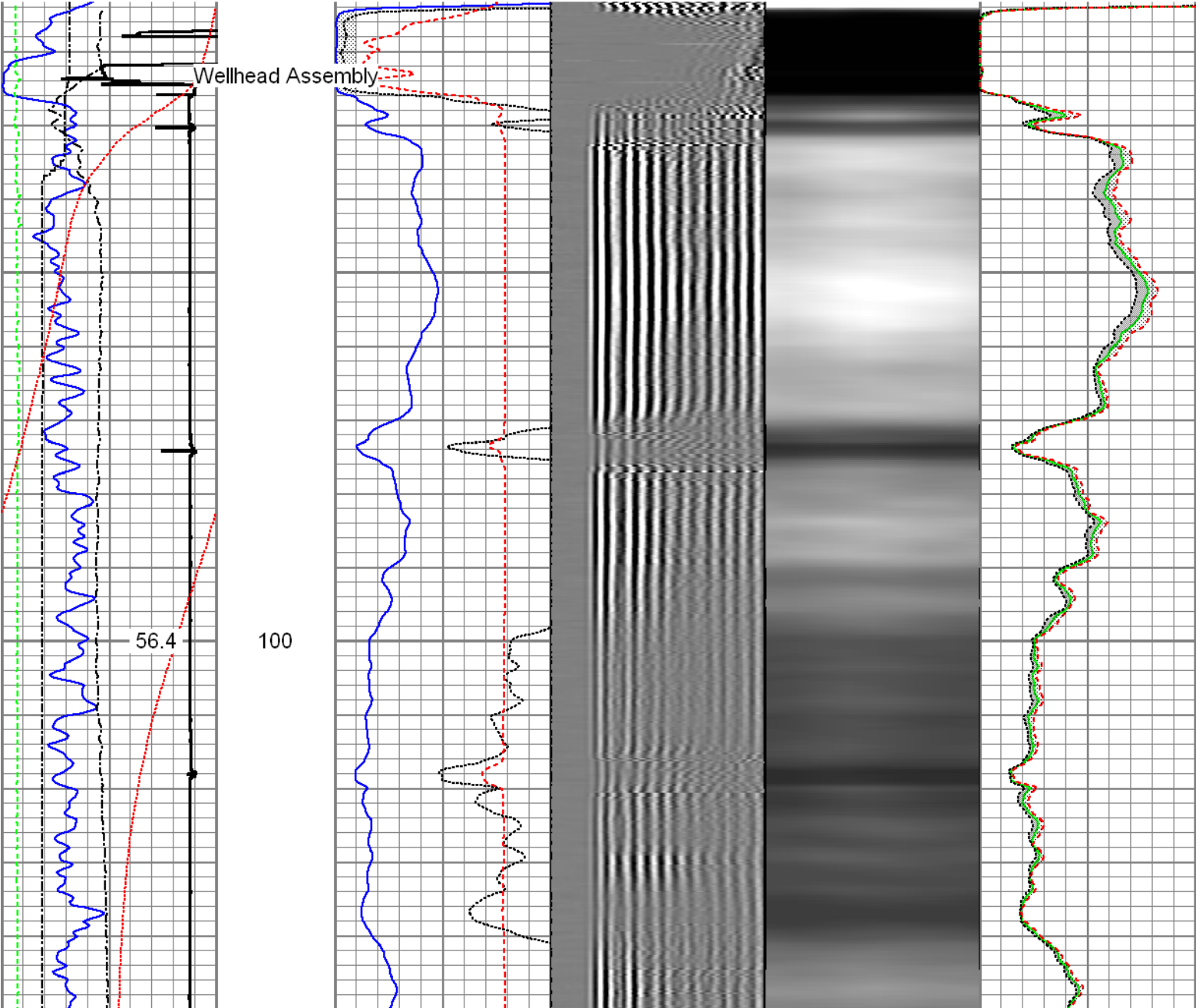


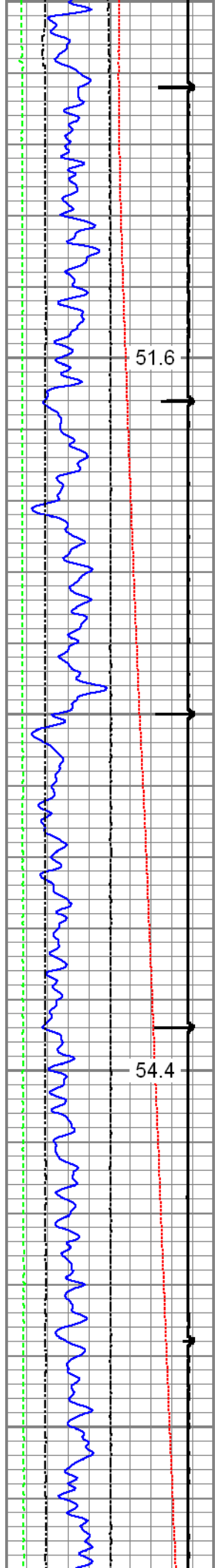
Main Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File: 0512340951_anadarko_cream 15n-a28hz_07-21-15_mit_rbl.db
Dataset Pathname: pass4
Presentation Format: rbt4_mit
Dataset Creation: Tue Jul 21 15:47:43 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

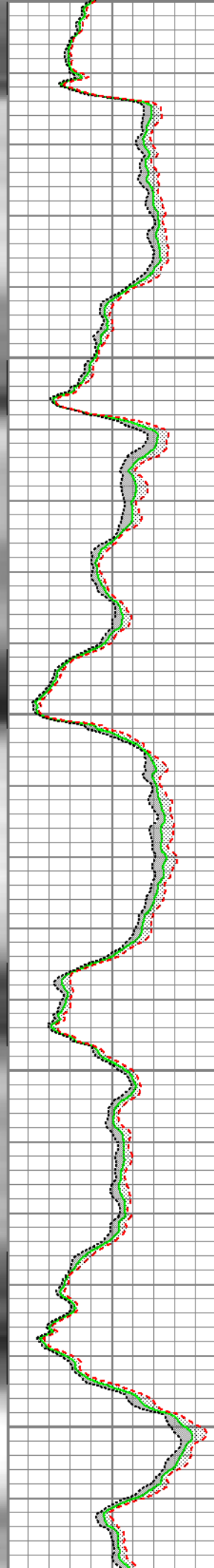
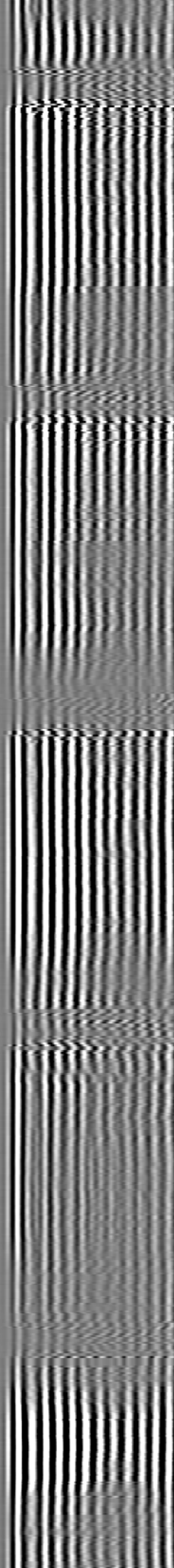
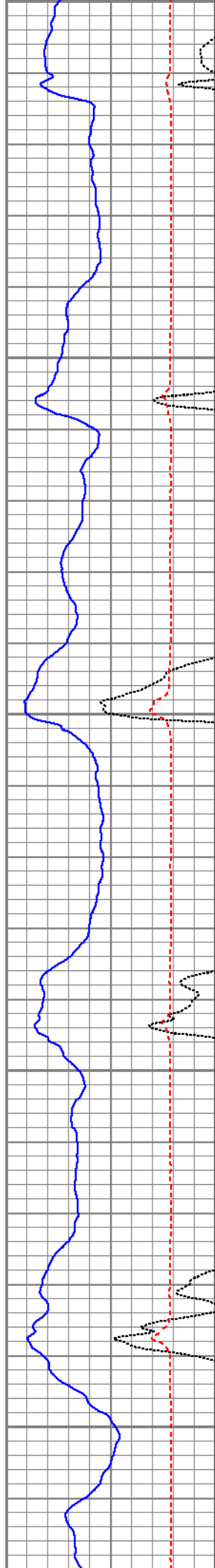
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000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

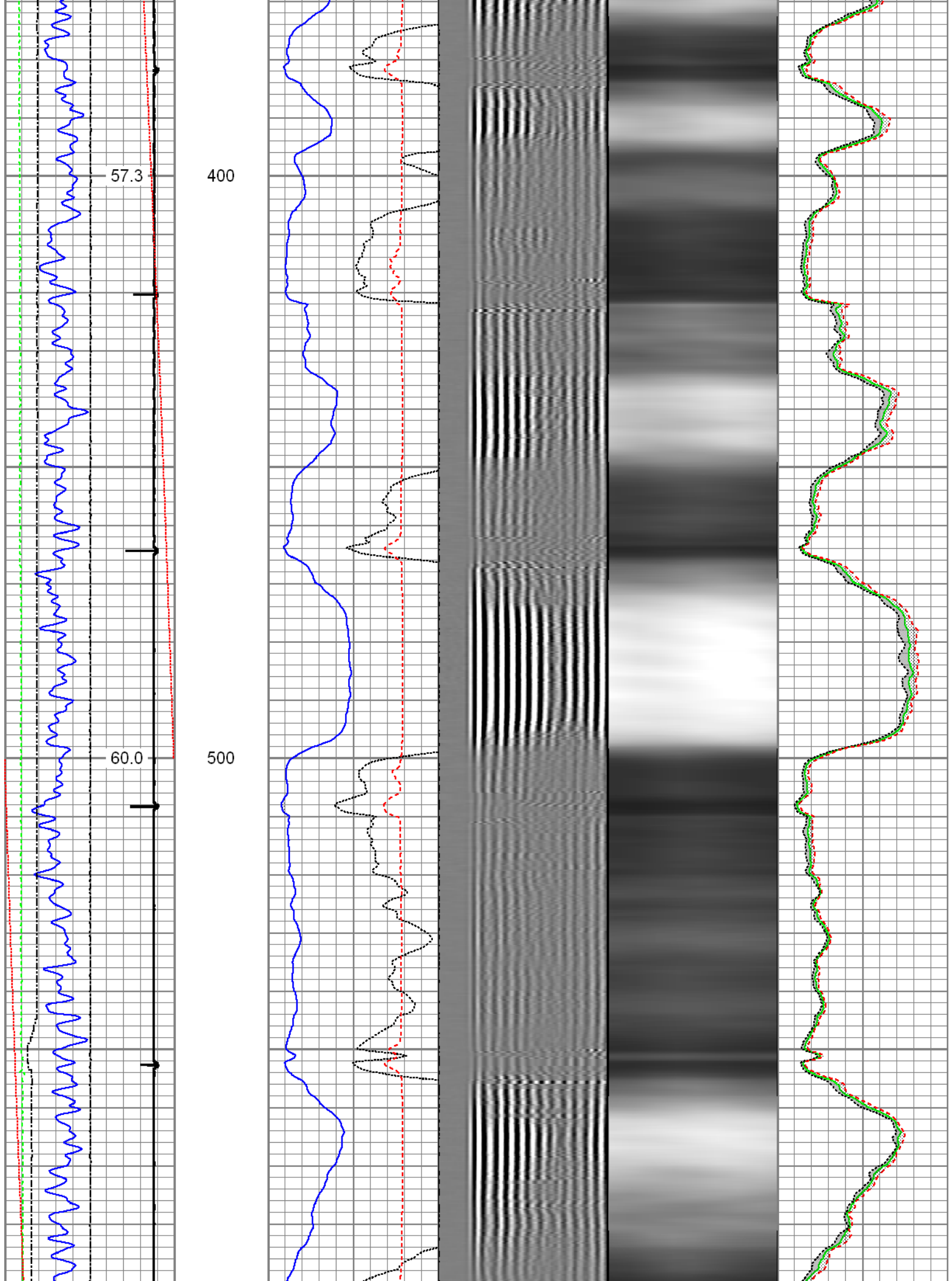


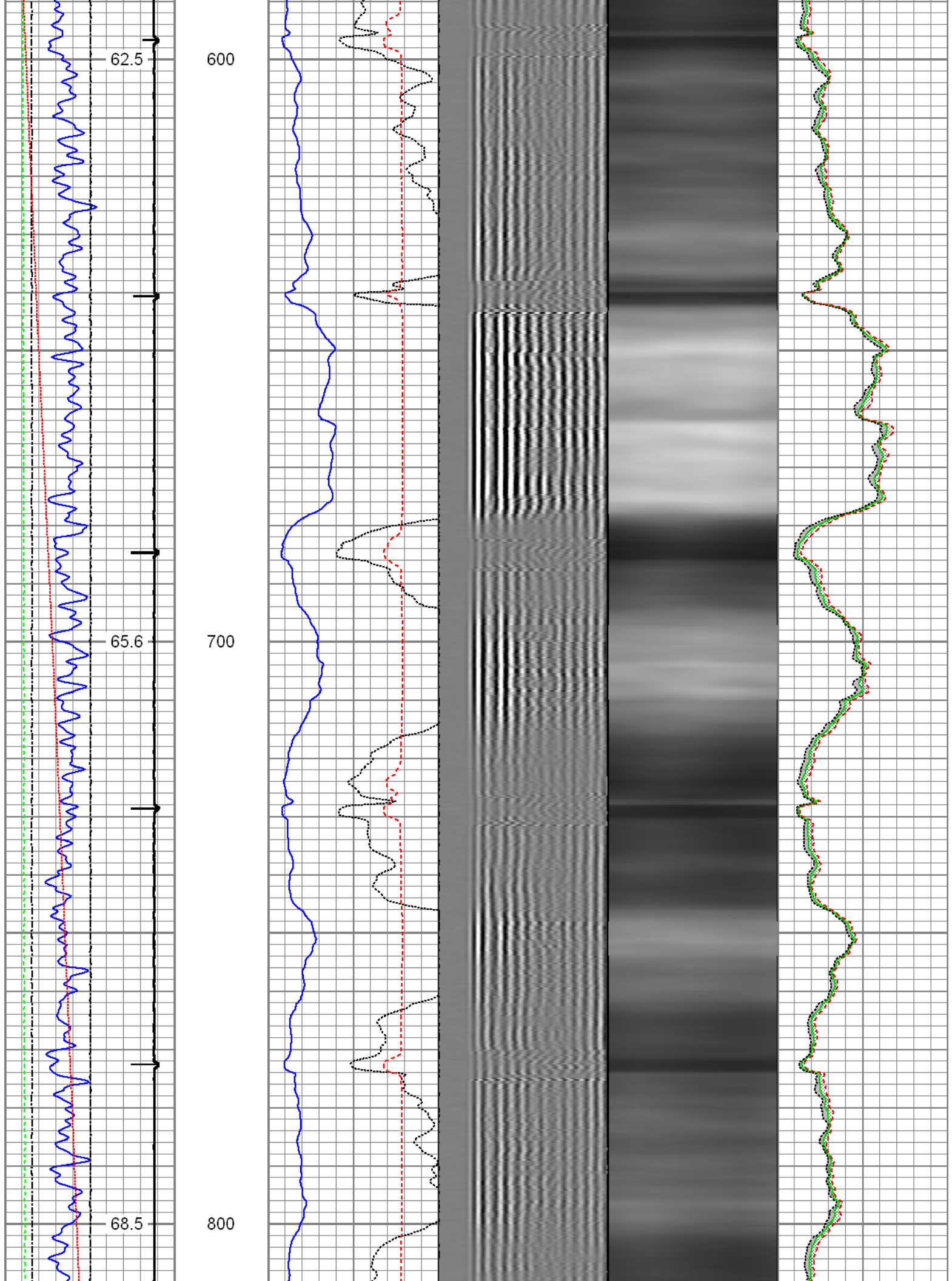


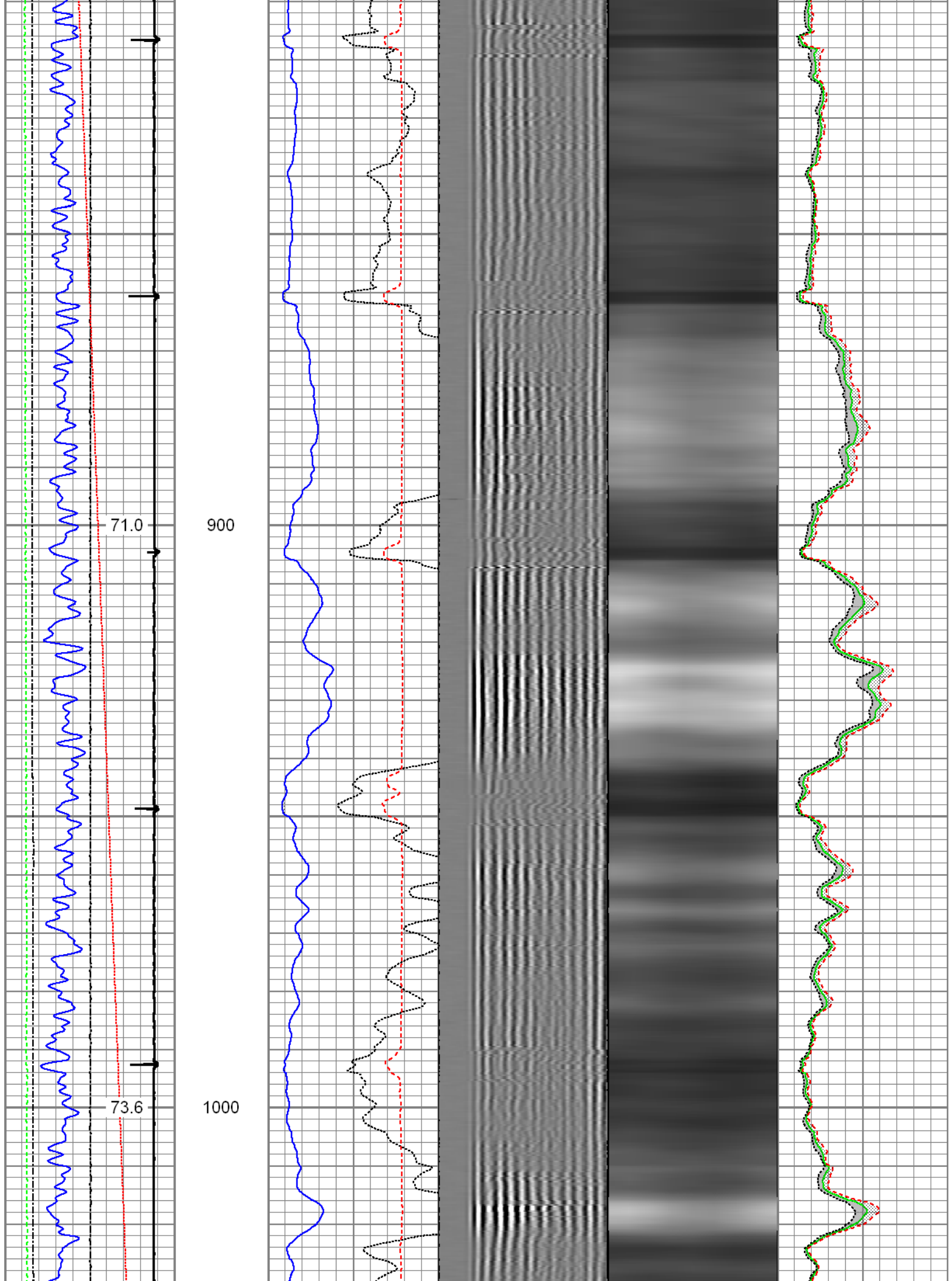
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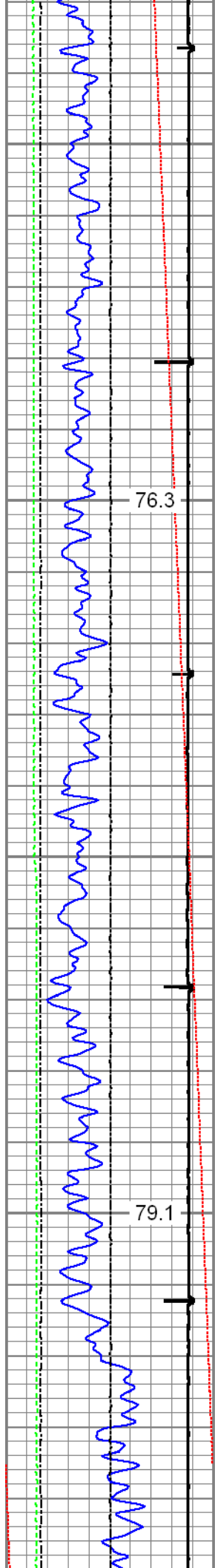
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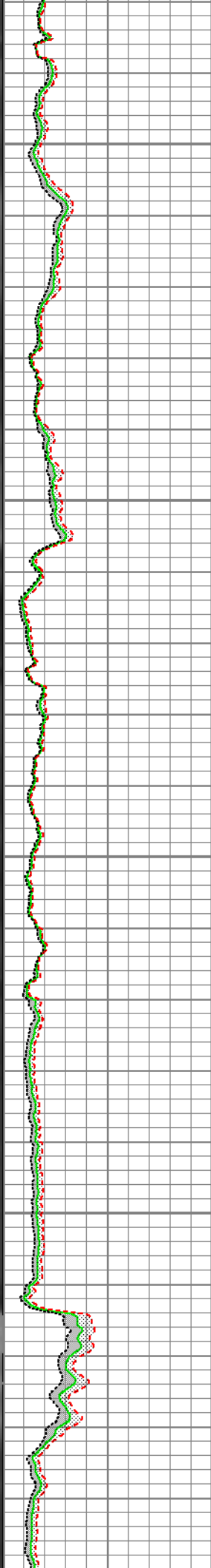
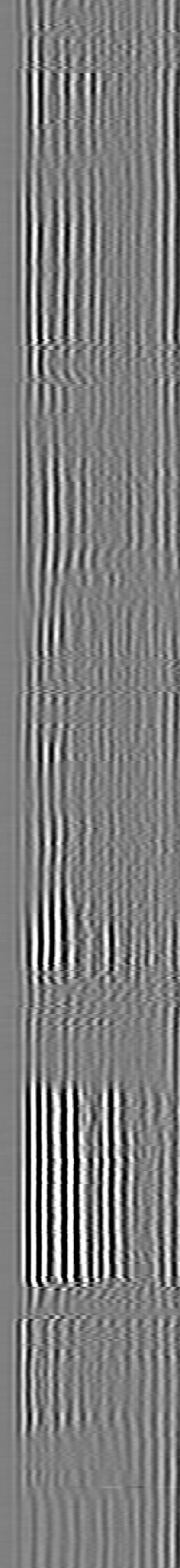
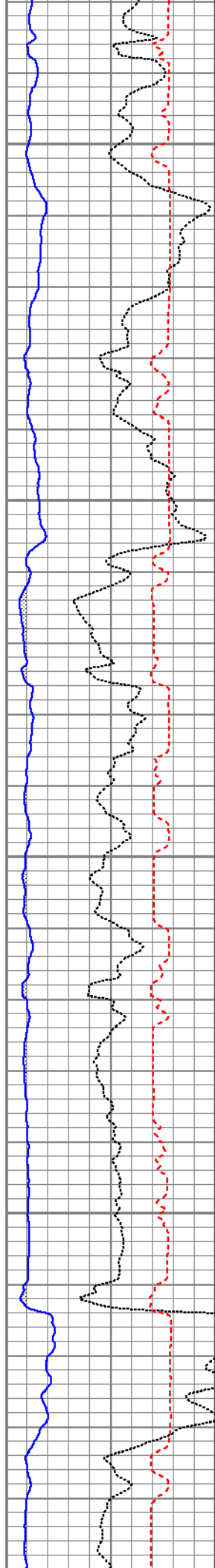


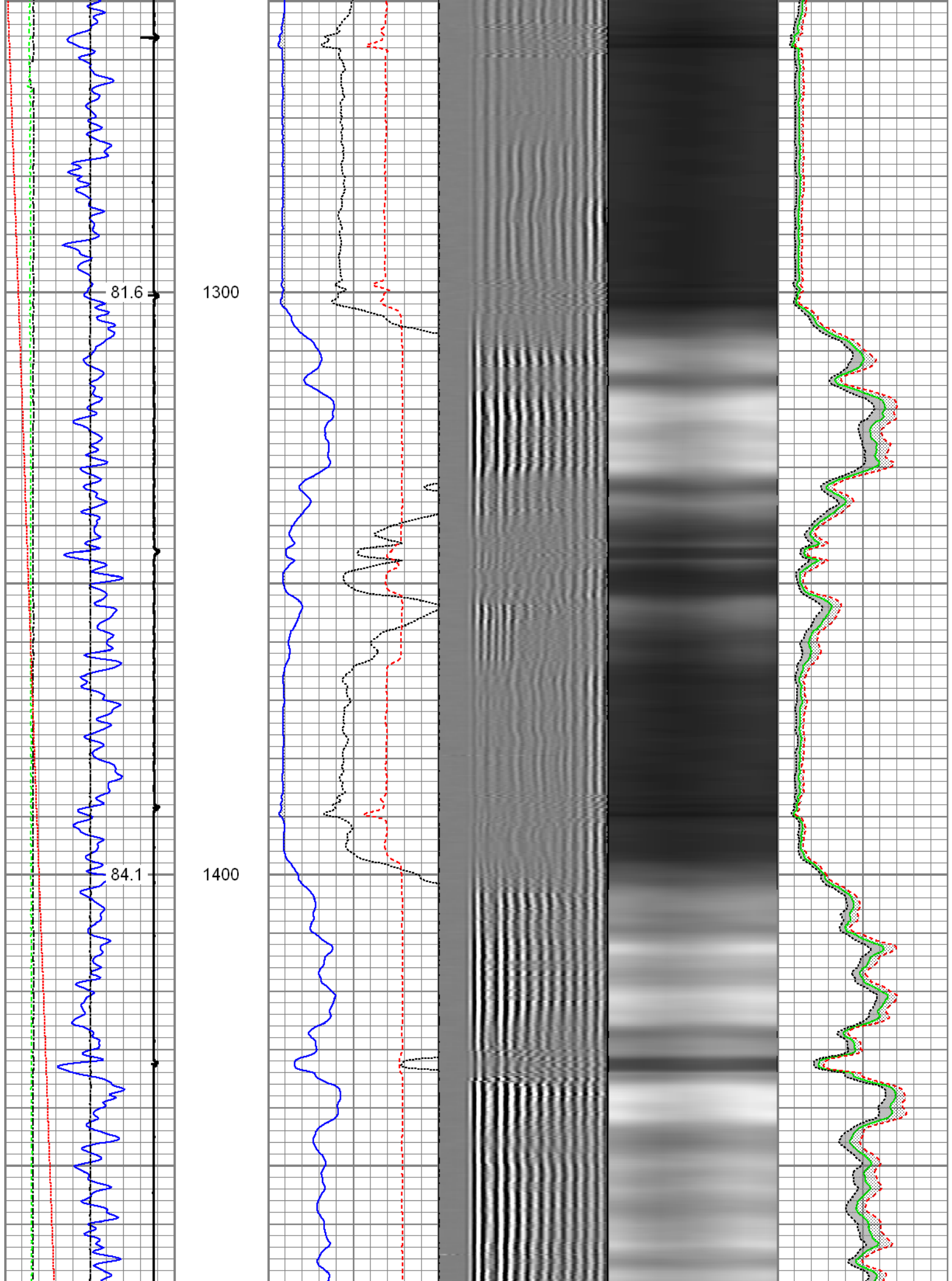
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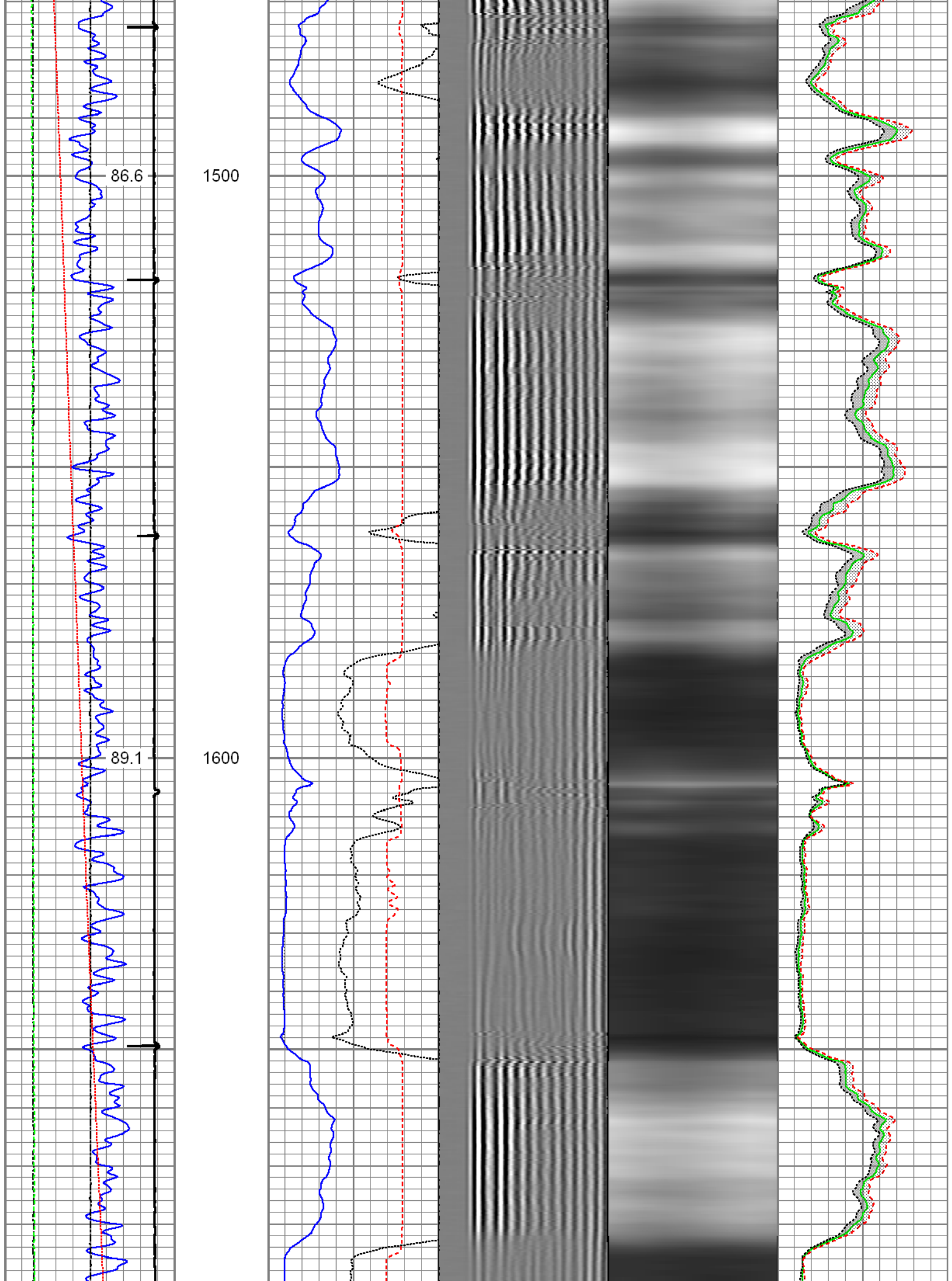
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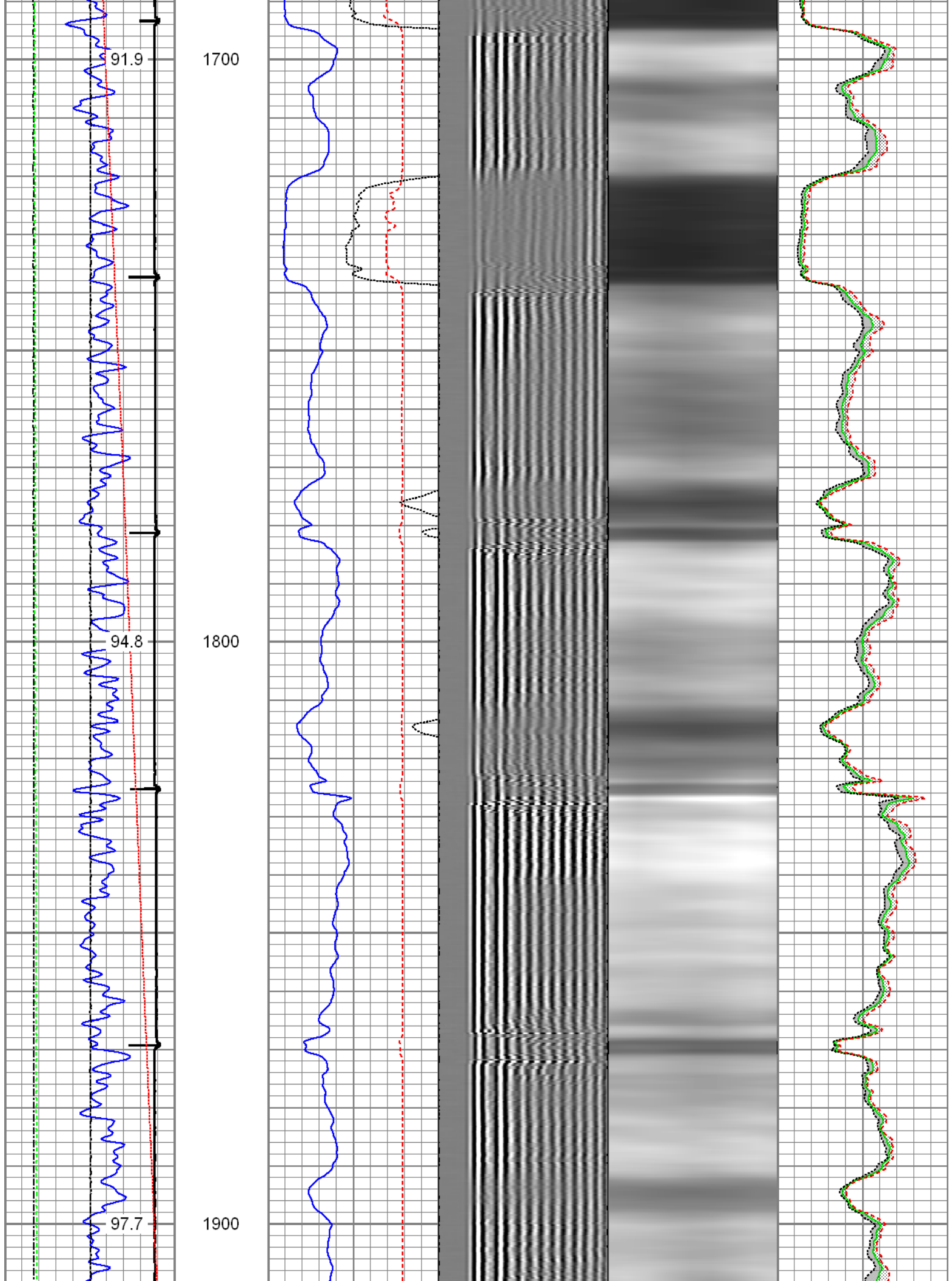
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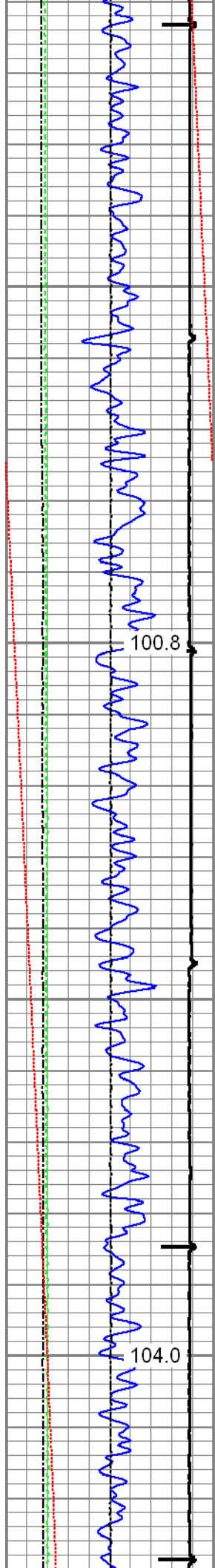
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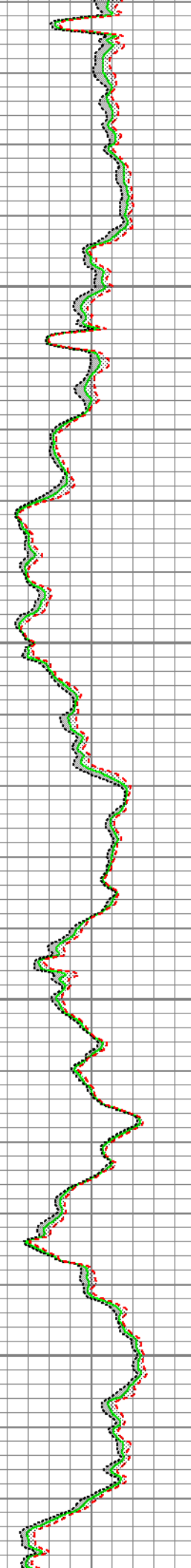
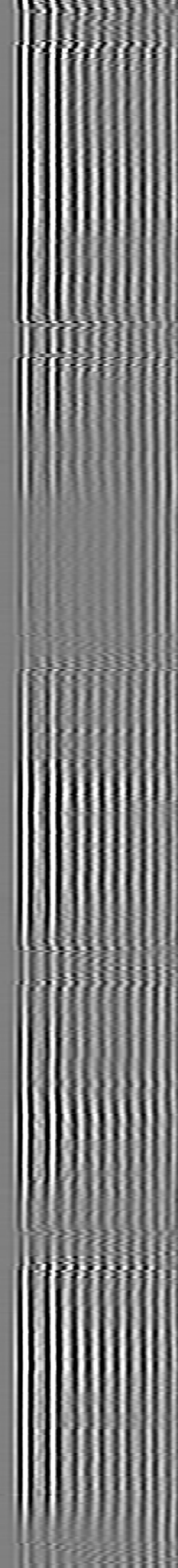
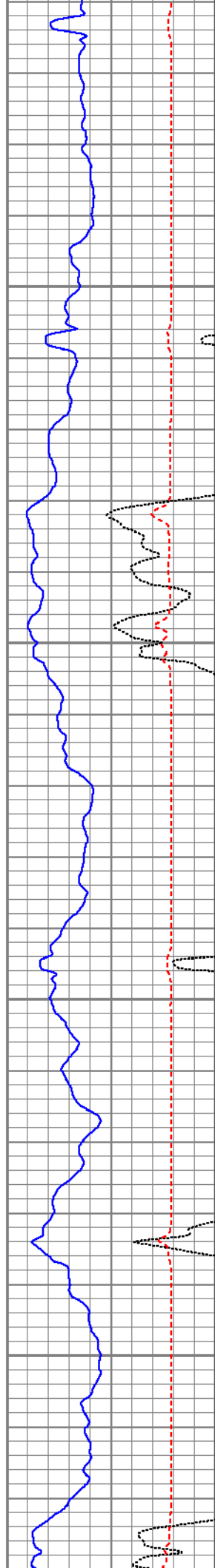


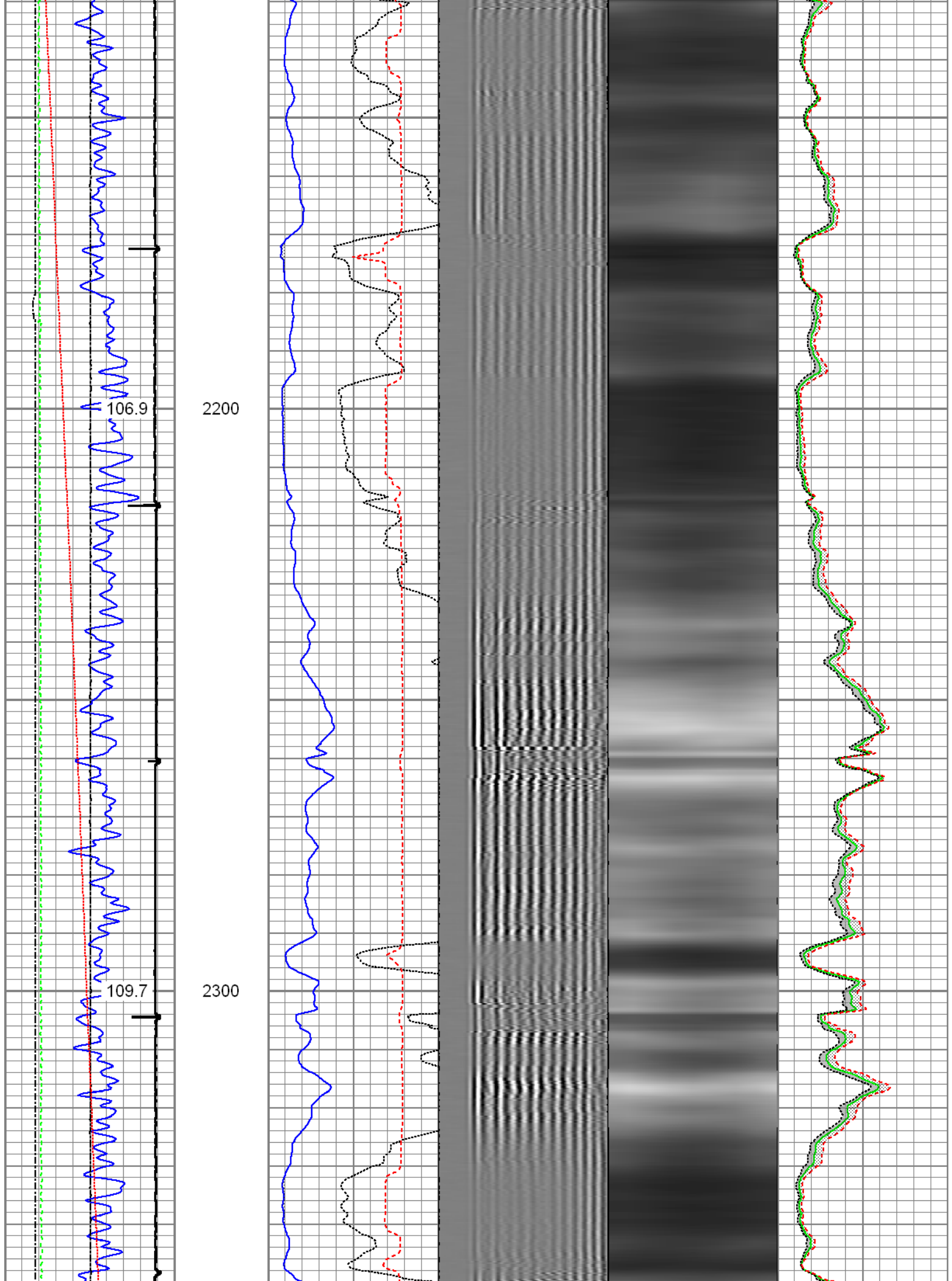


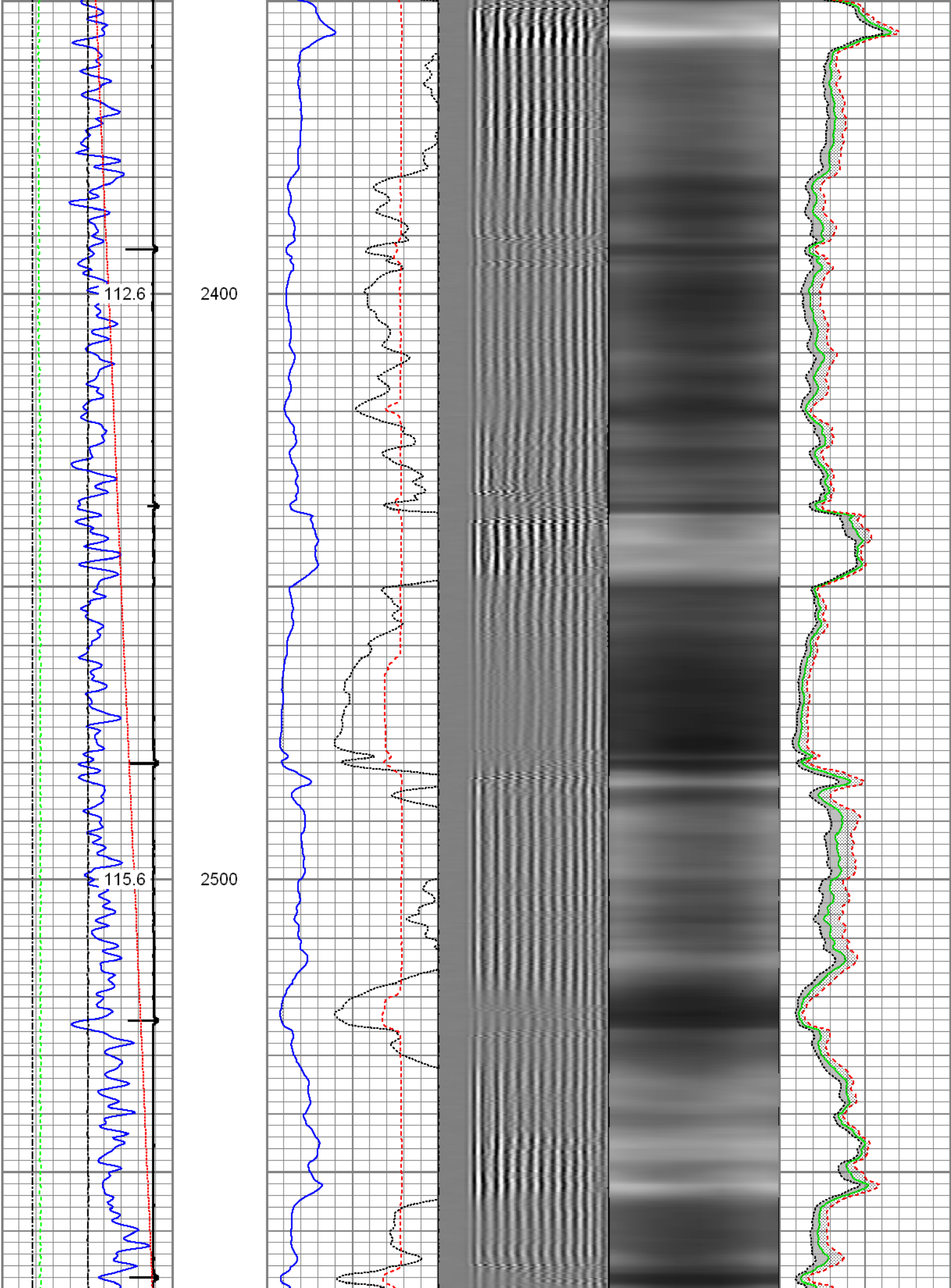


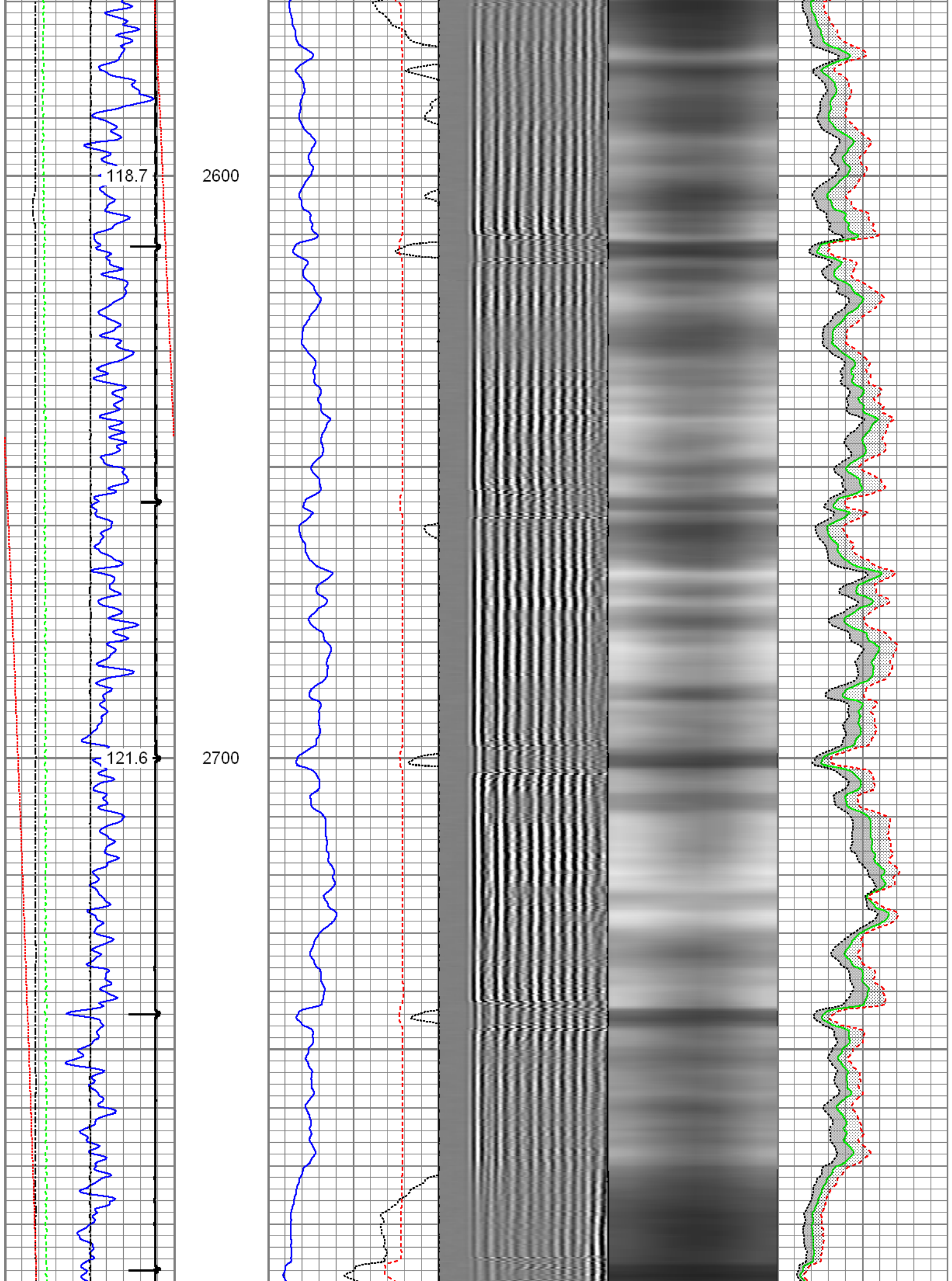
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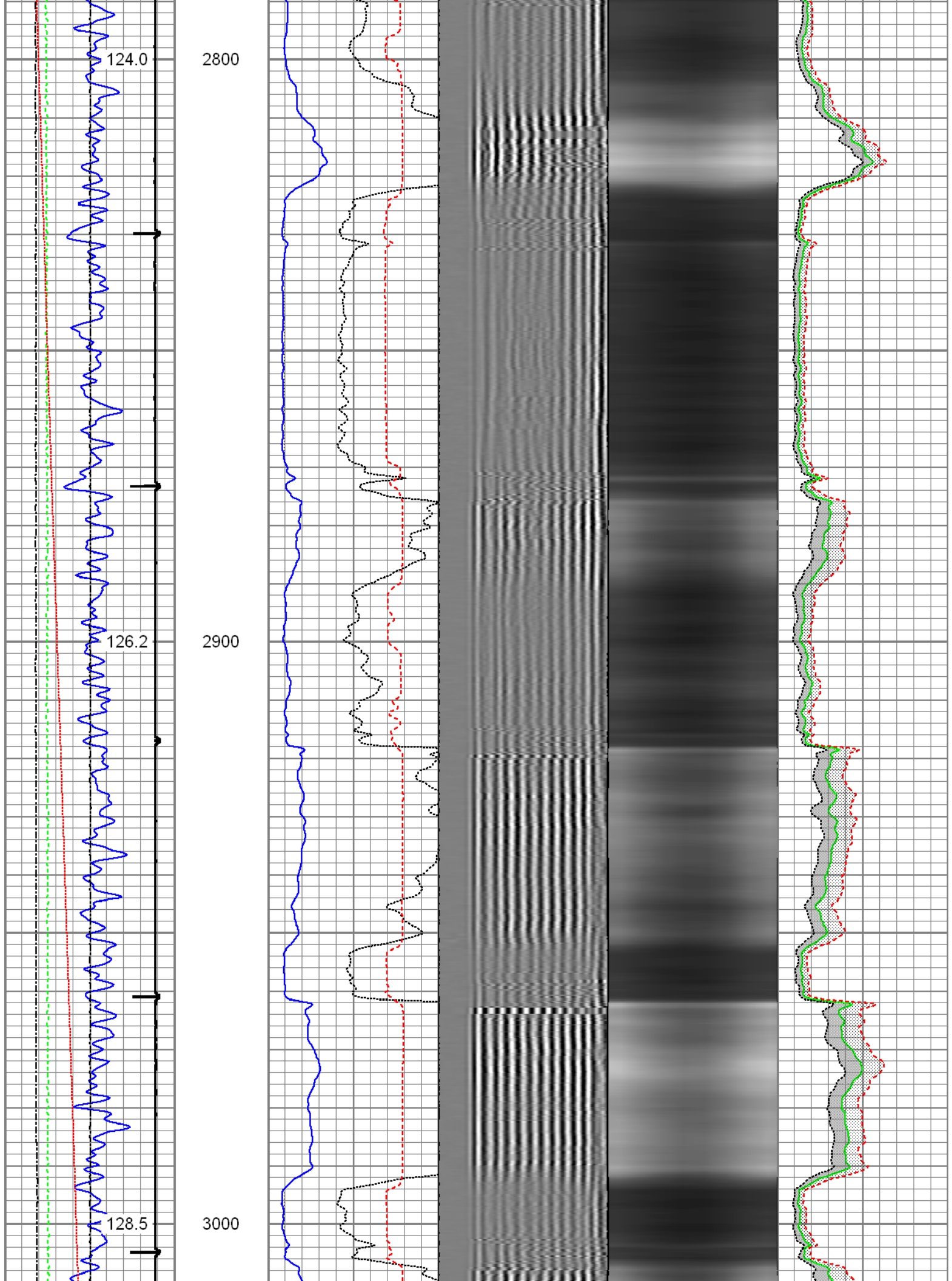
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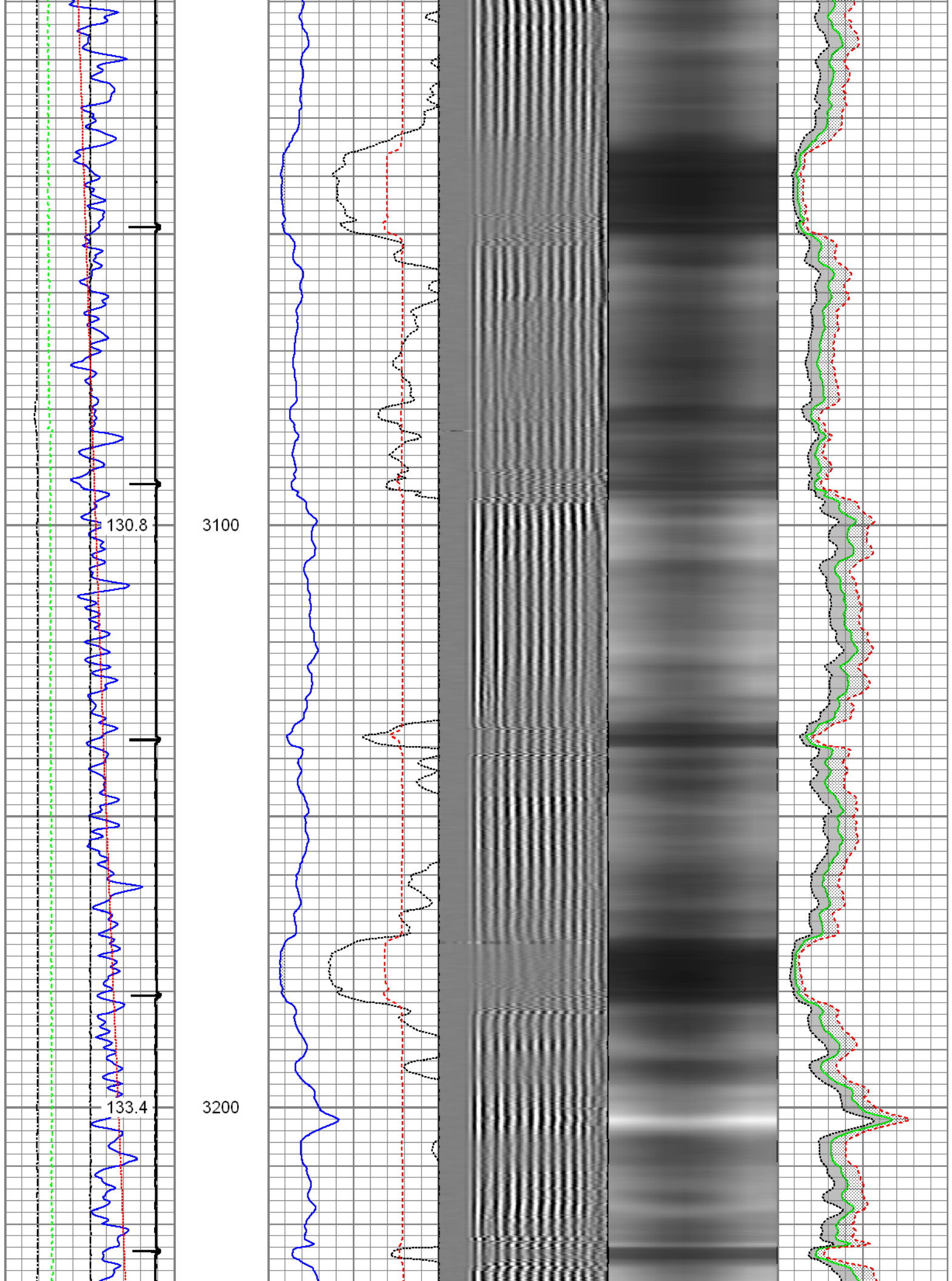


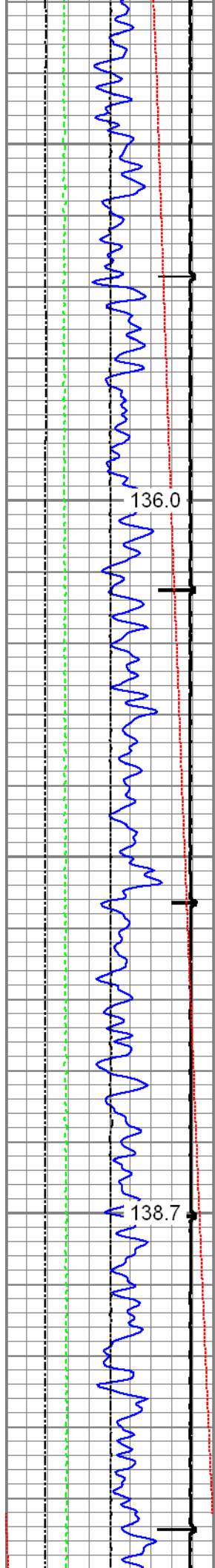










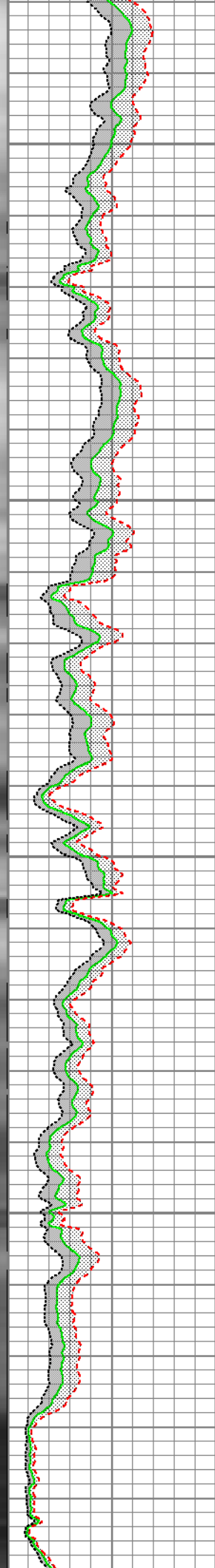
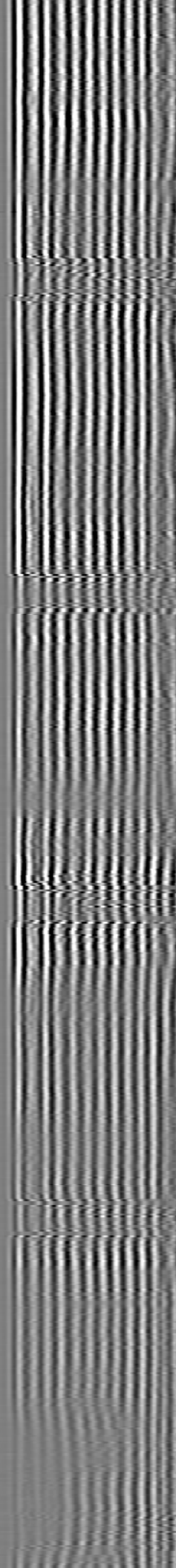
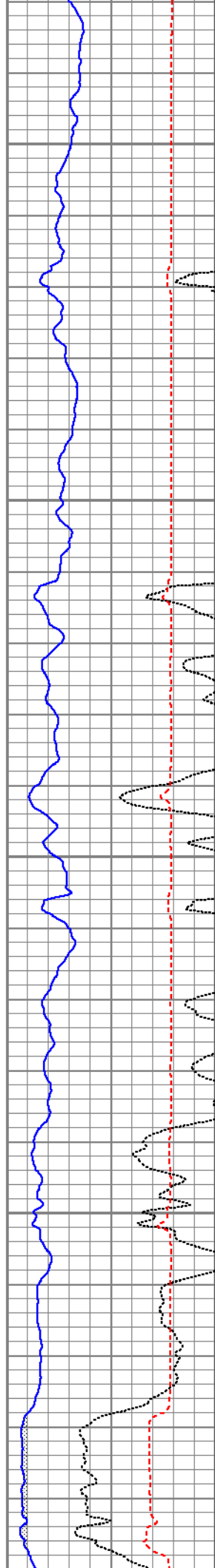


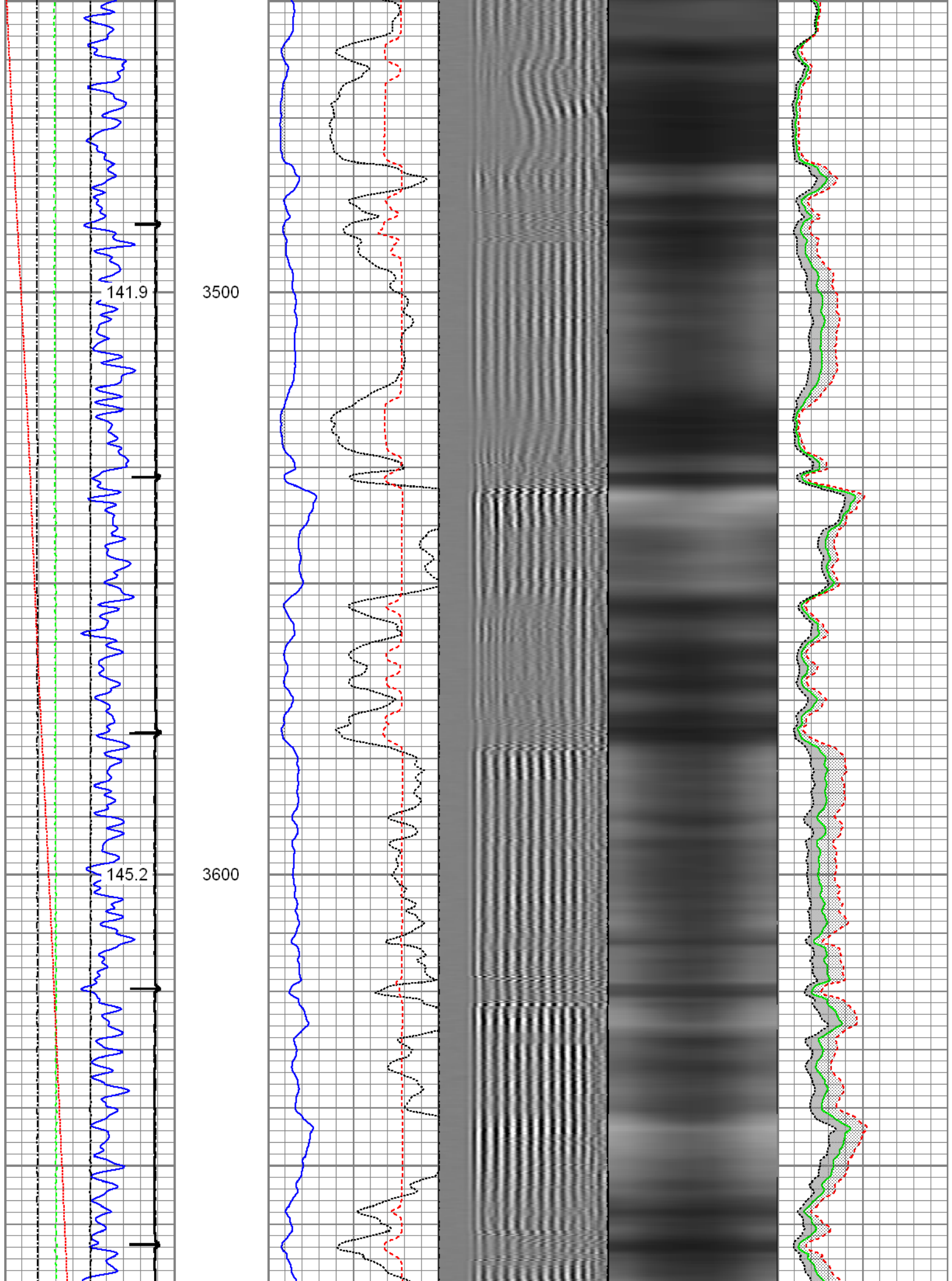
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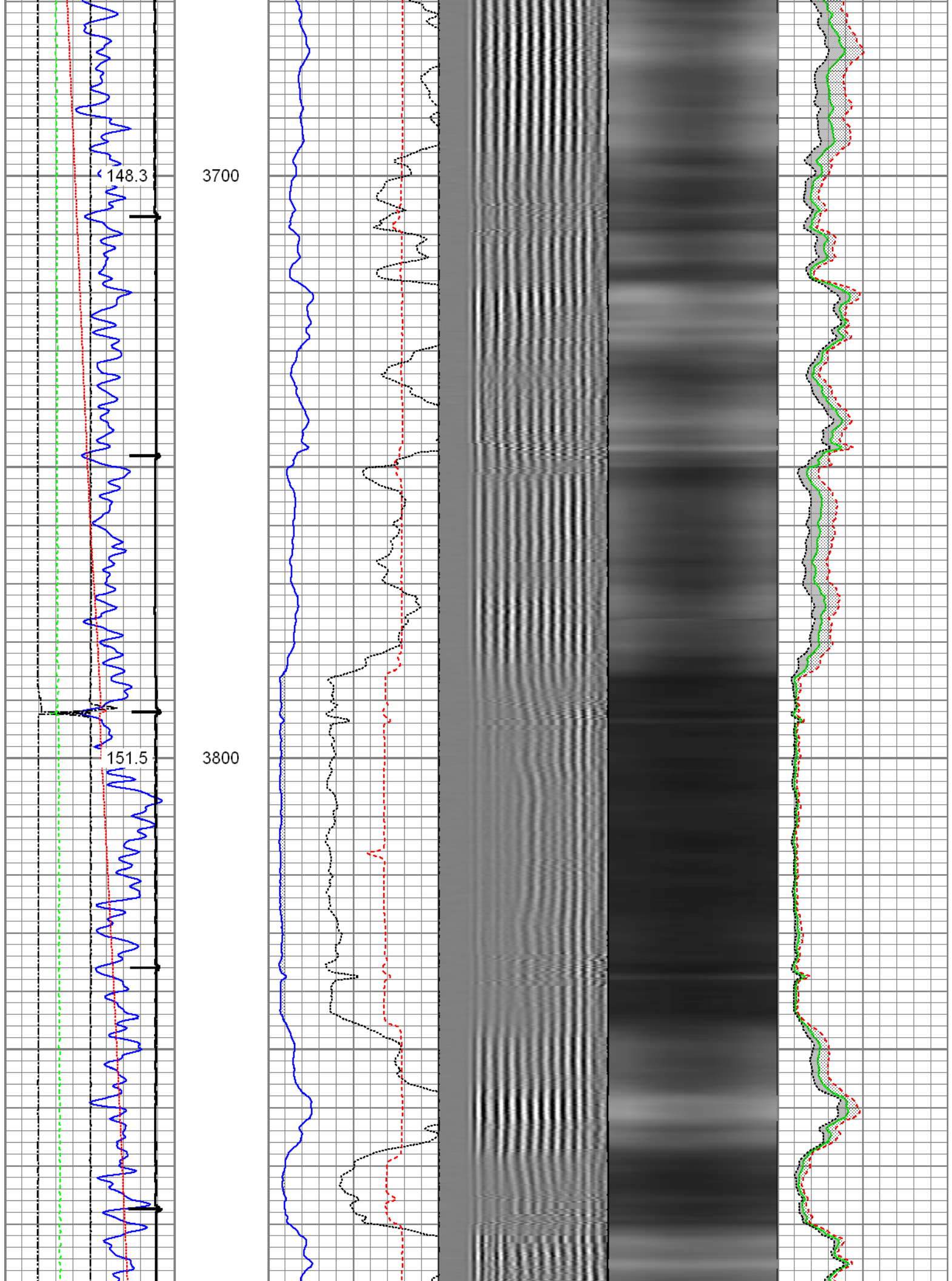
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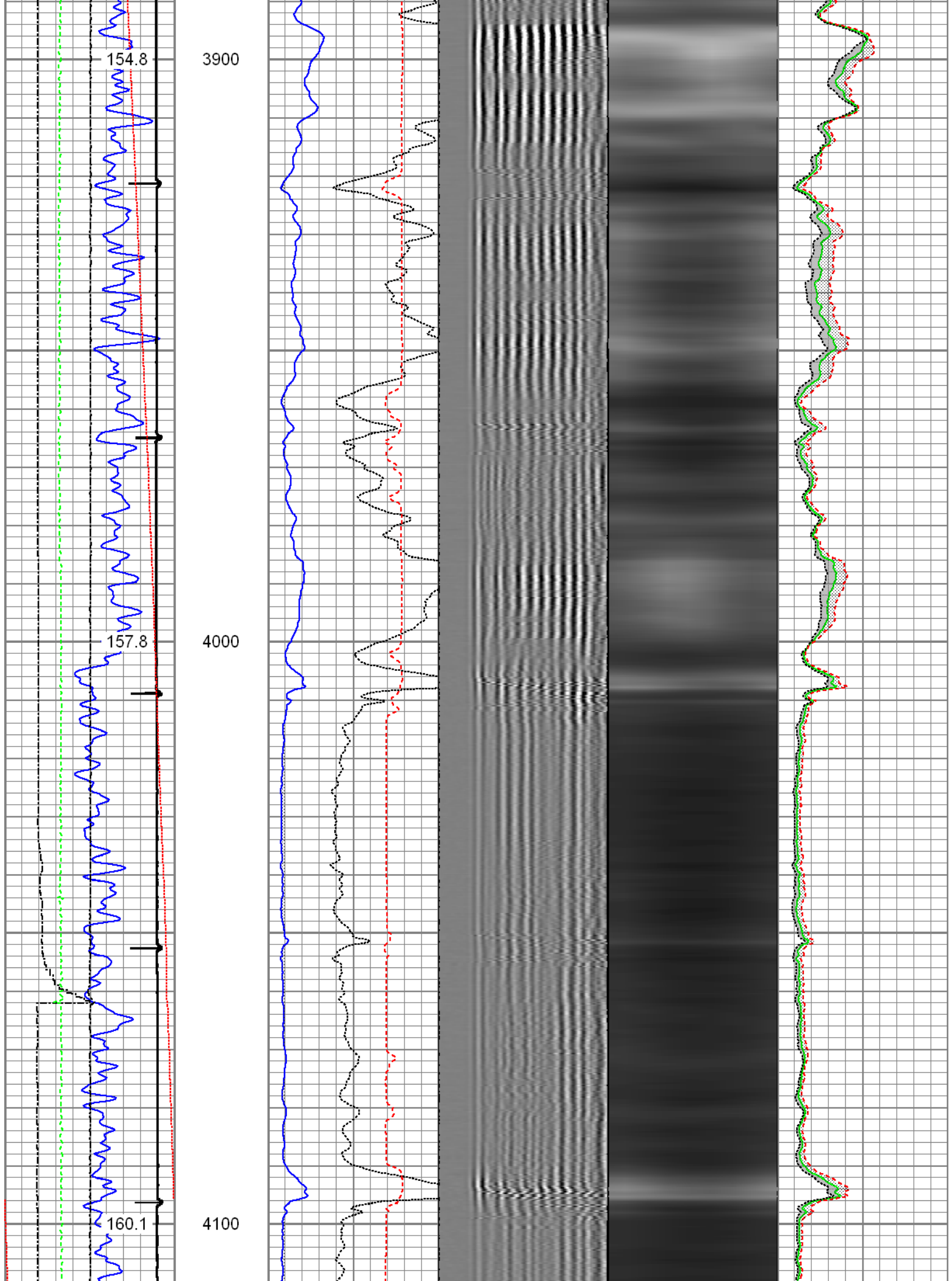
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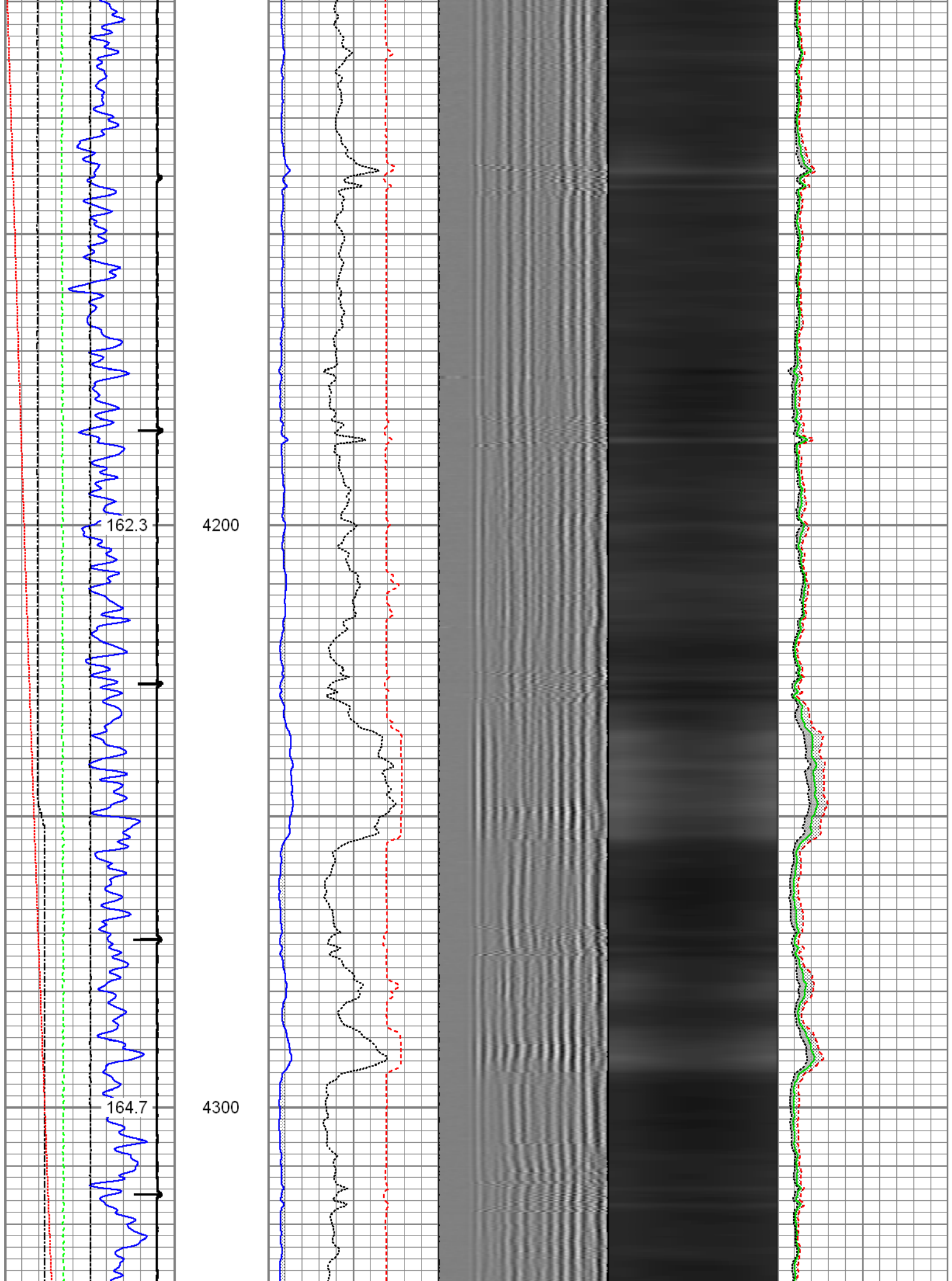
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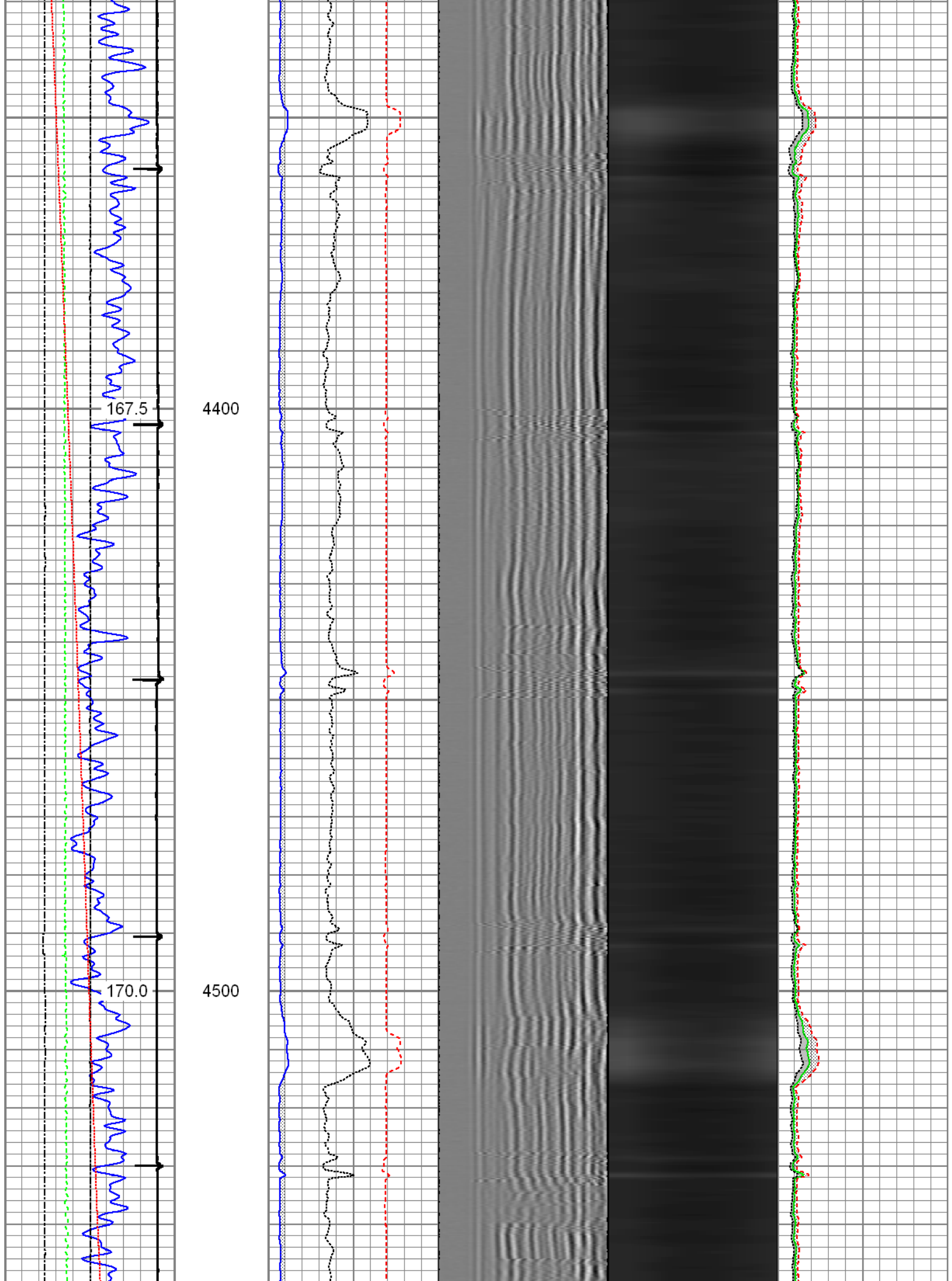


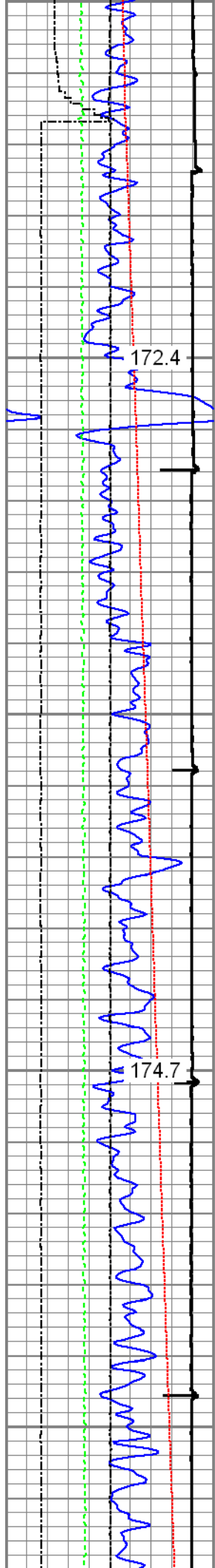






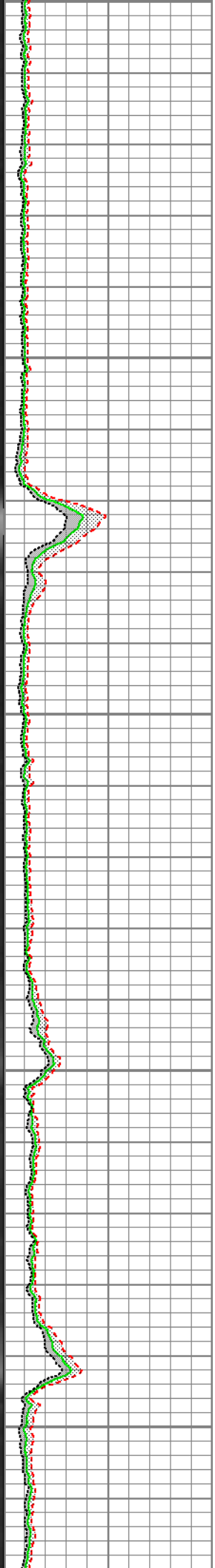
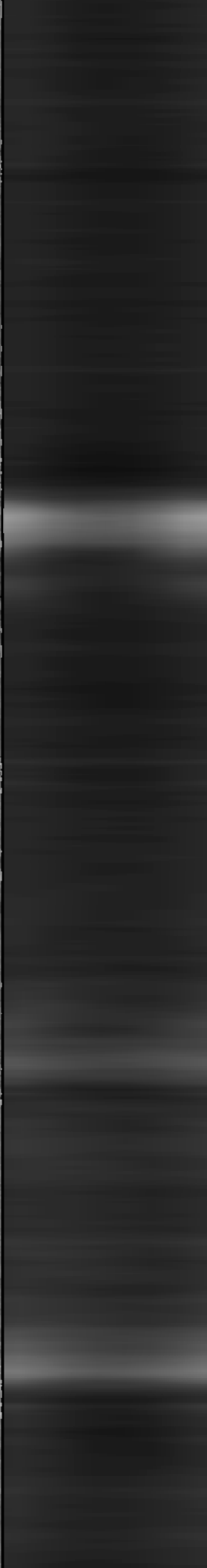
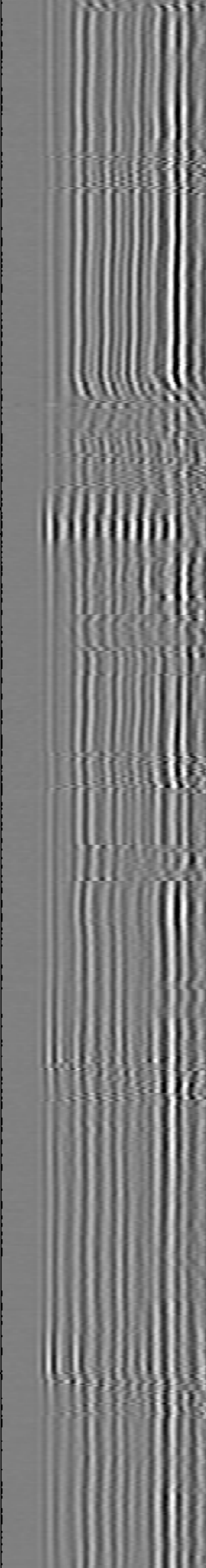
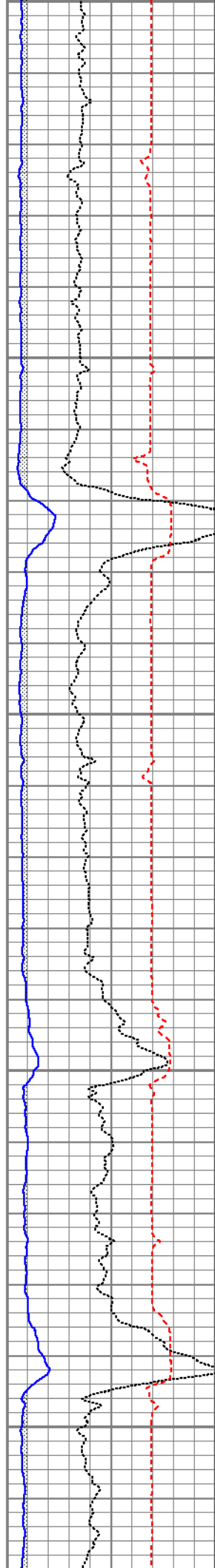


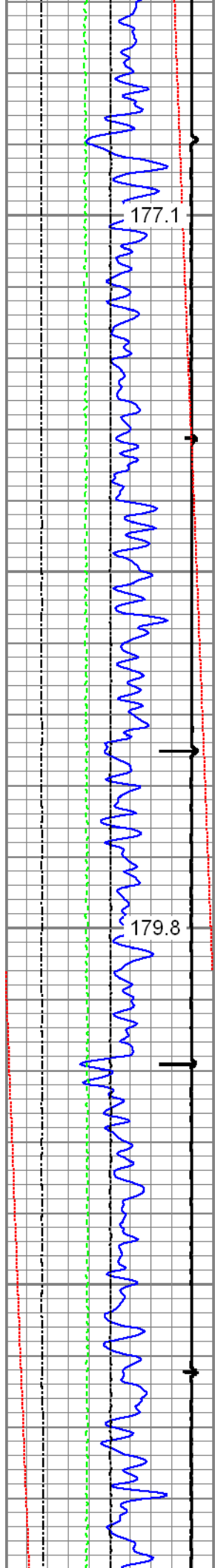




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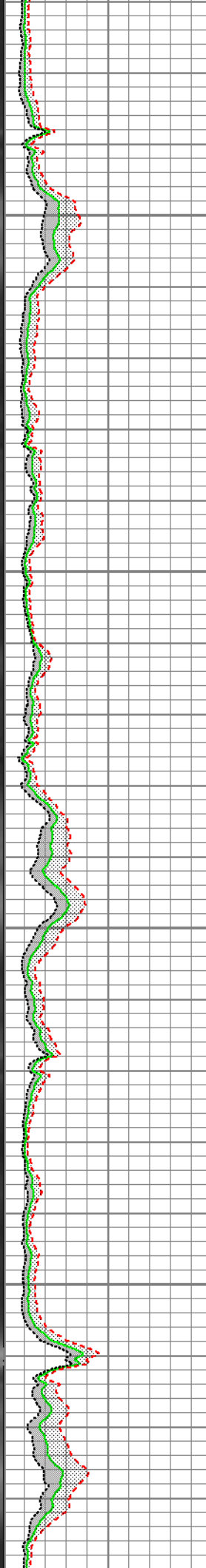
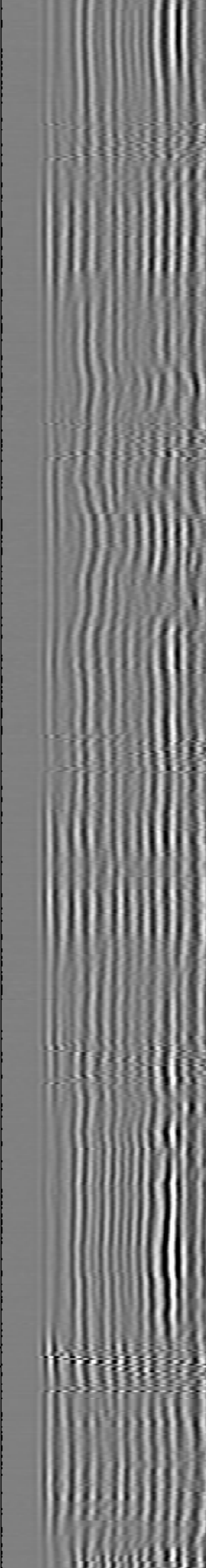
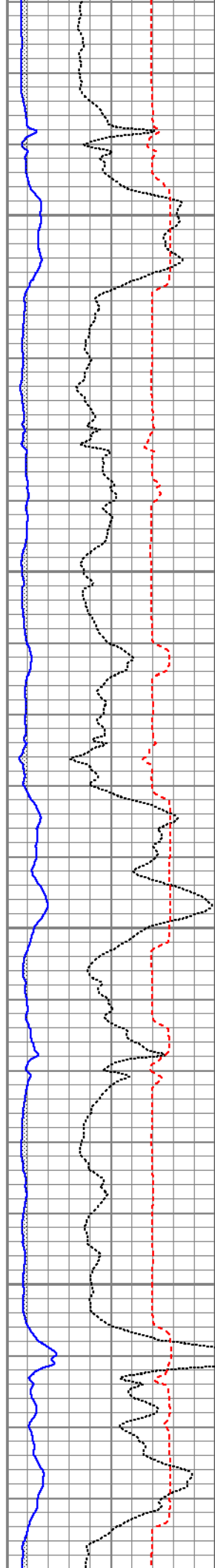
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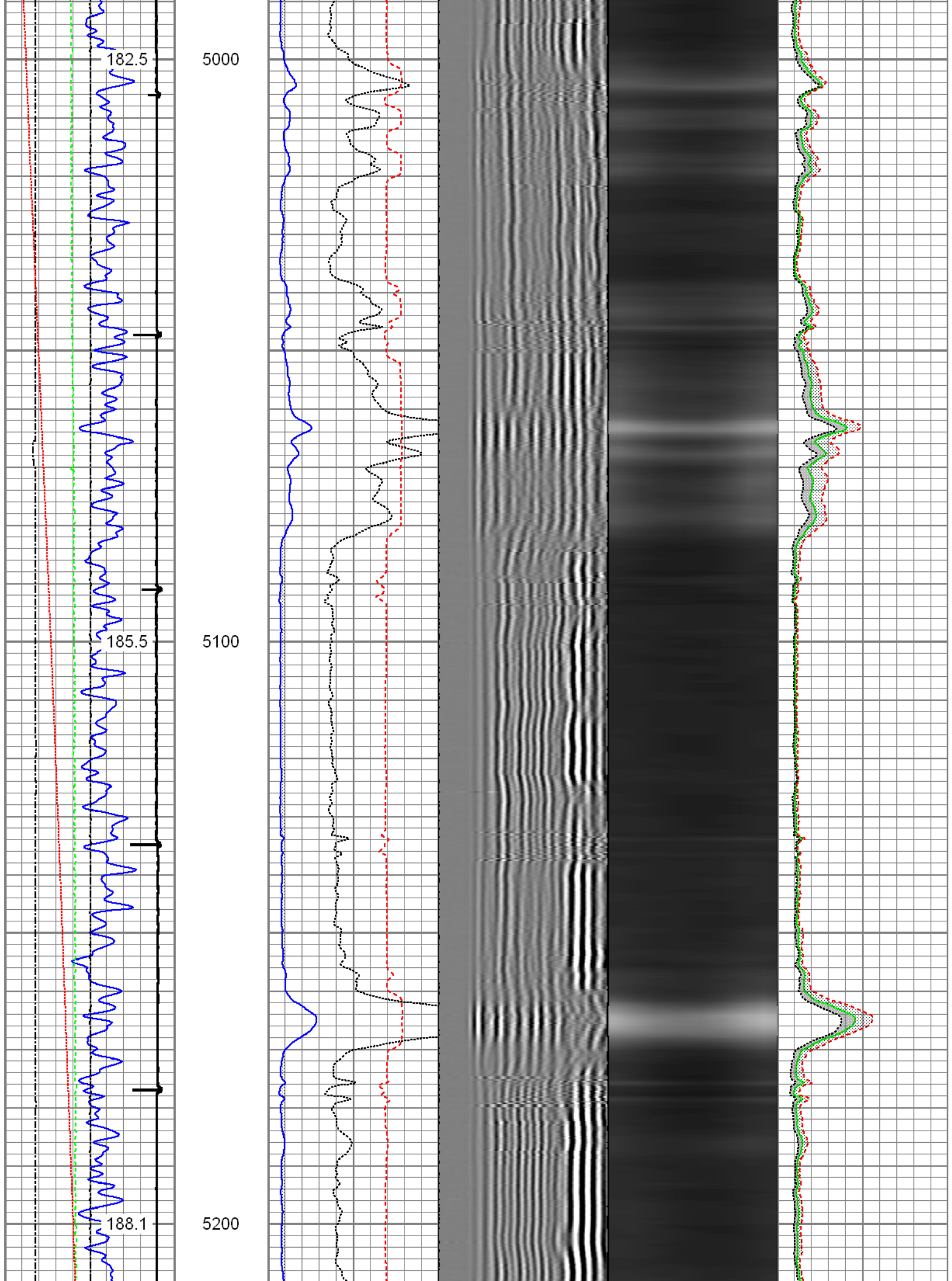


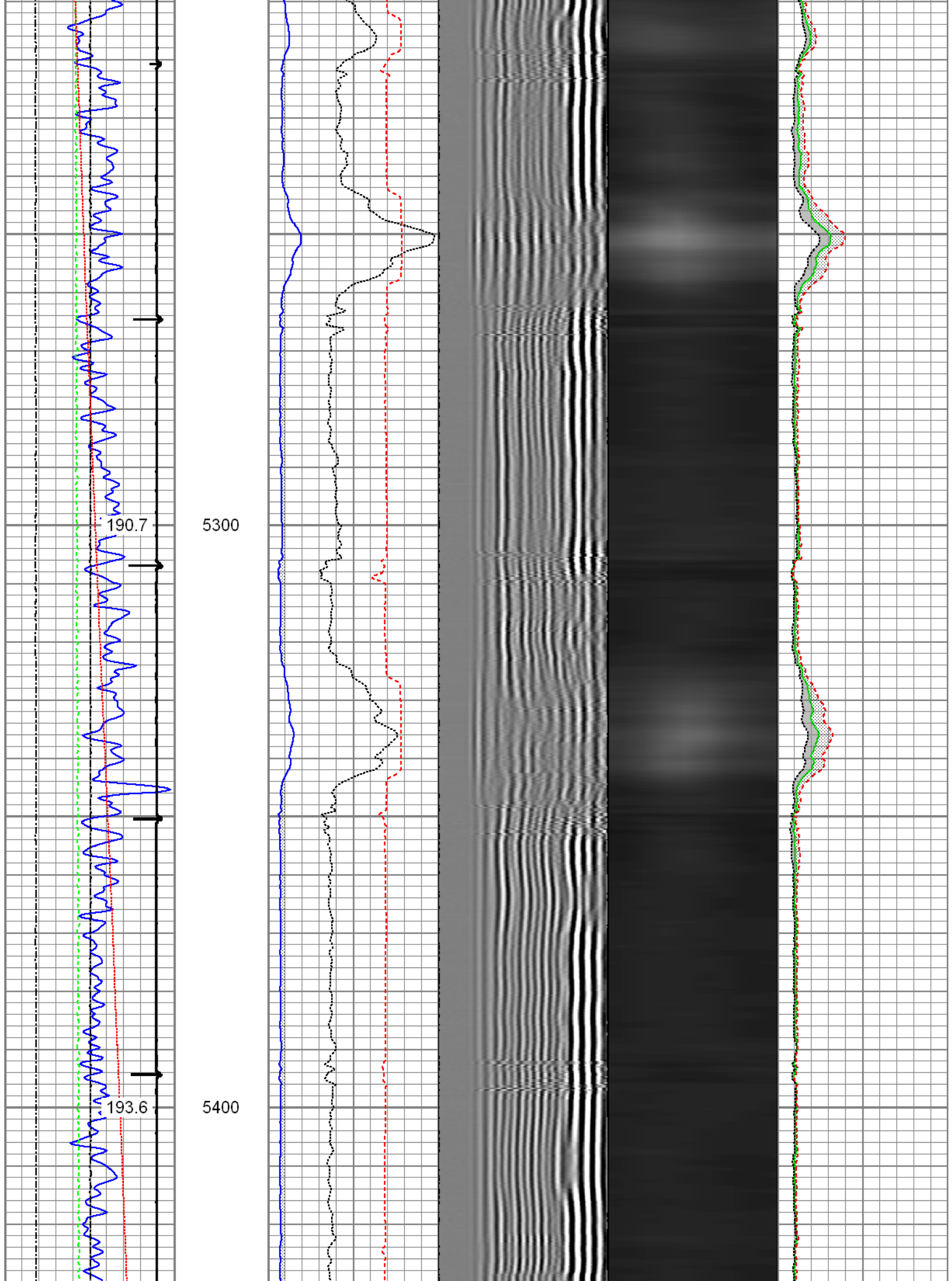


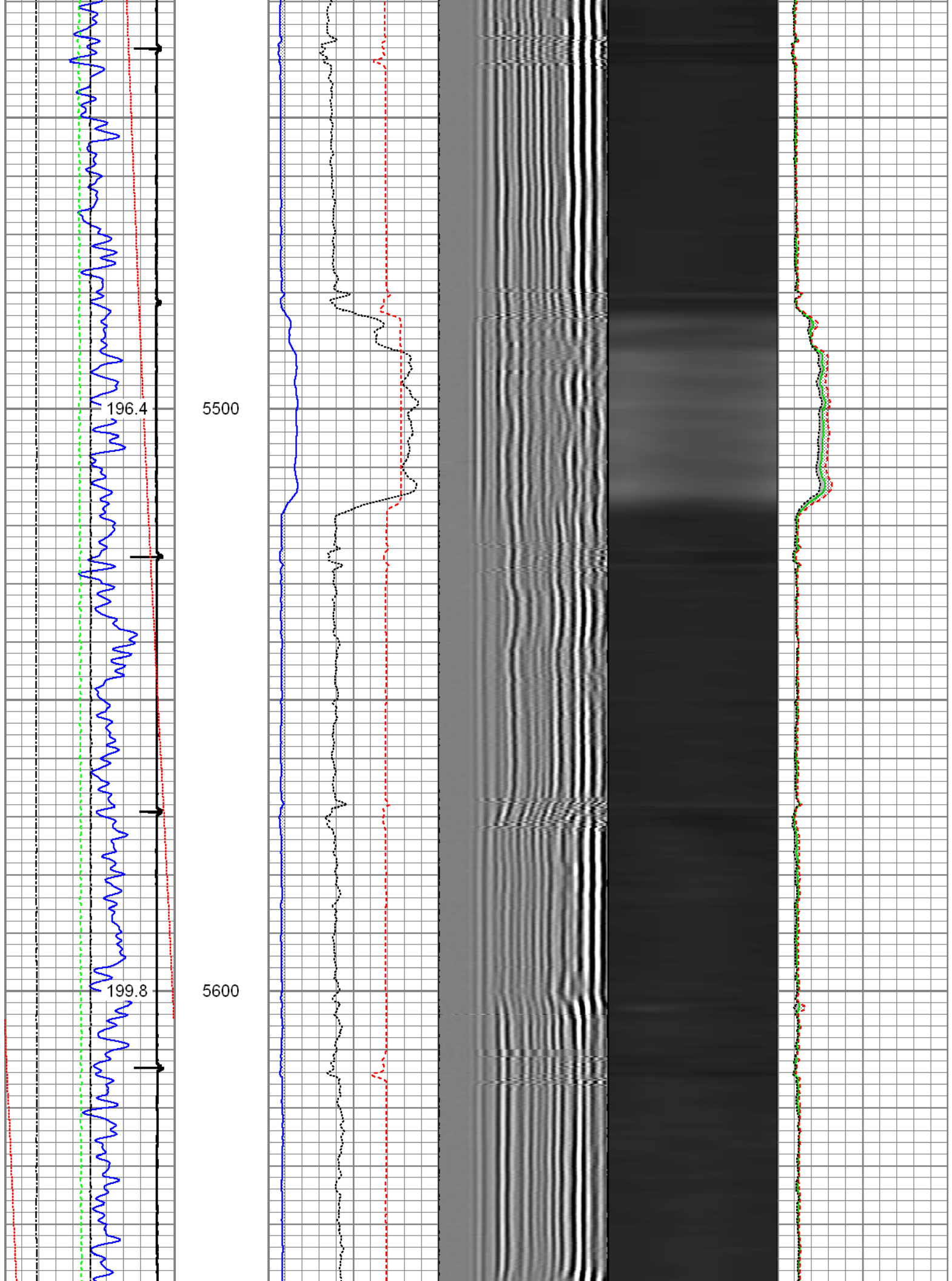
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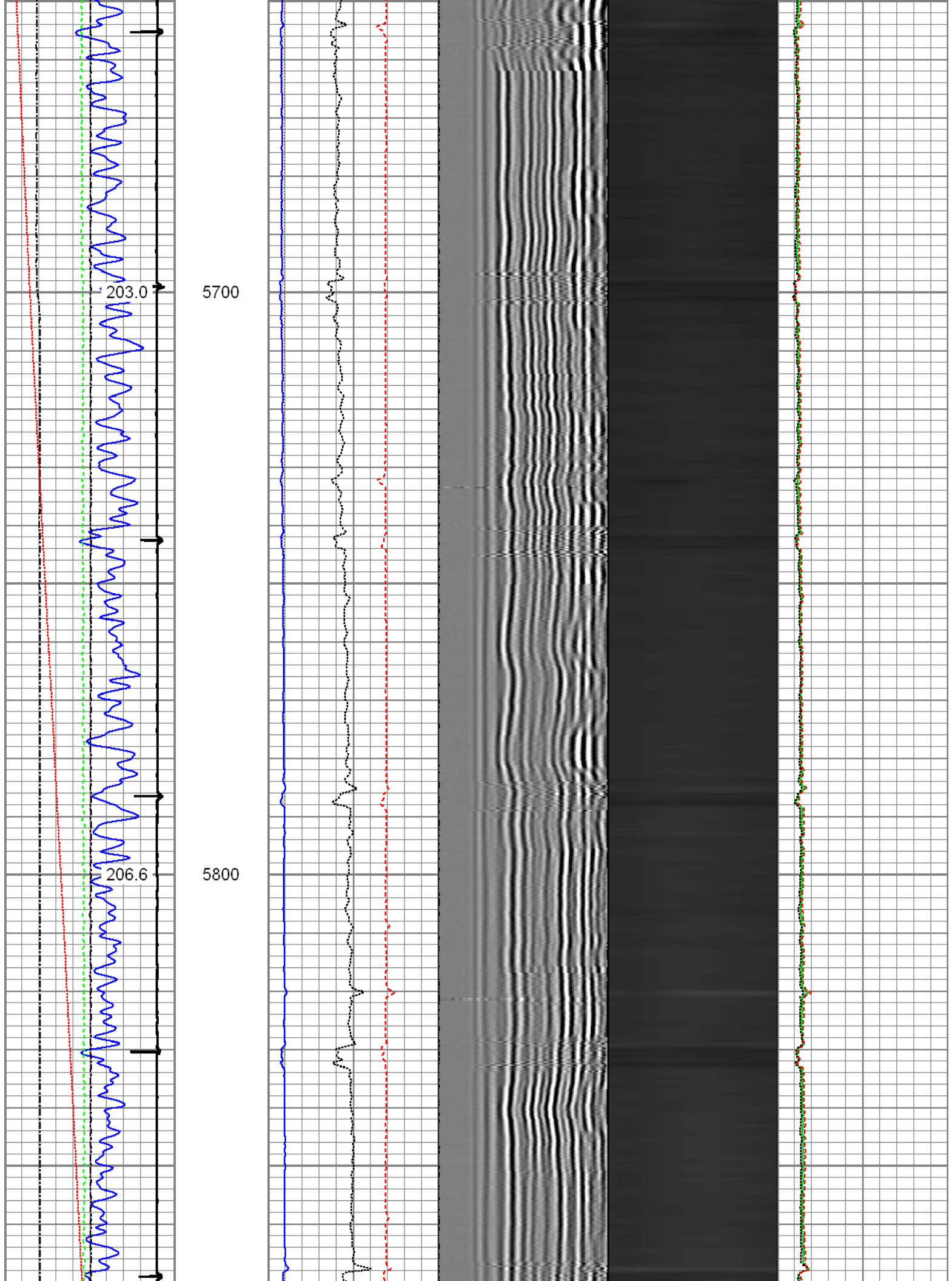
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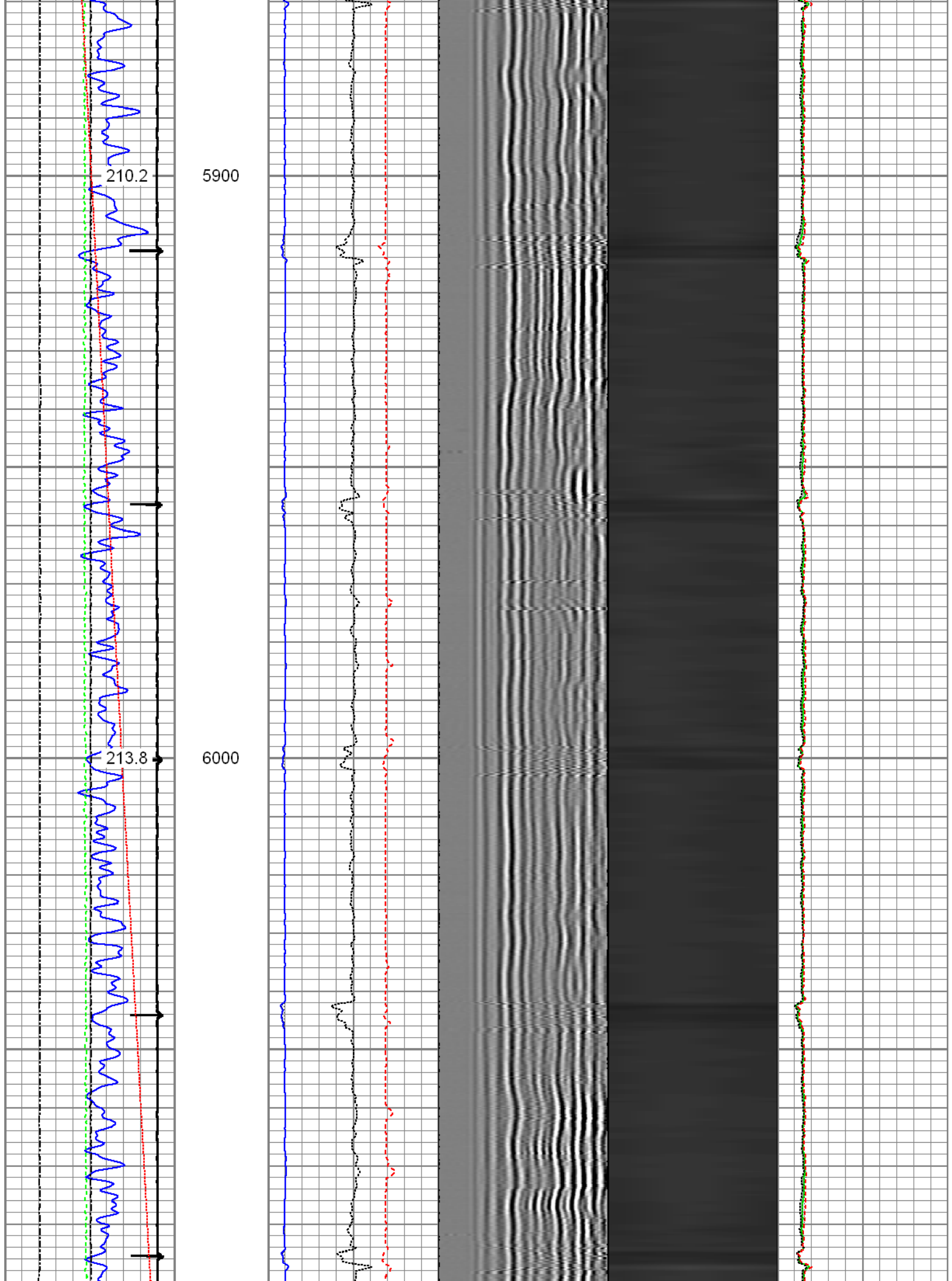


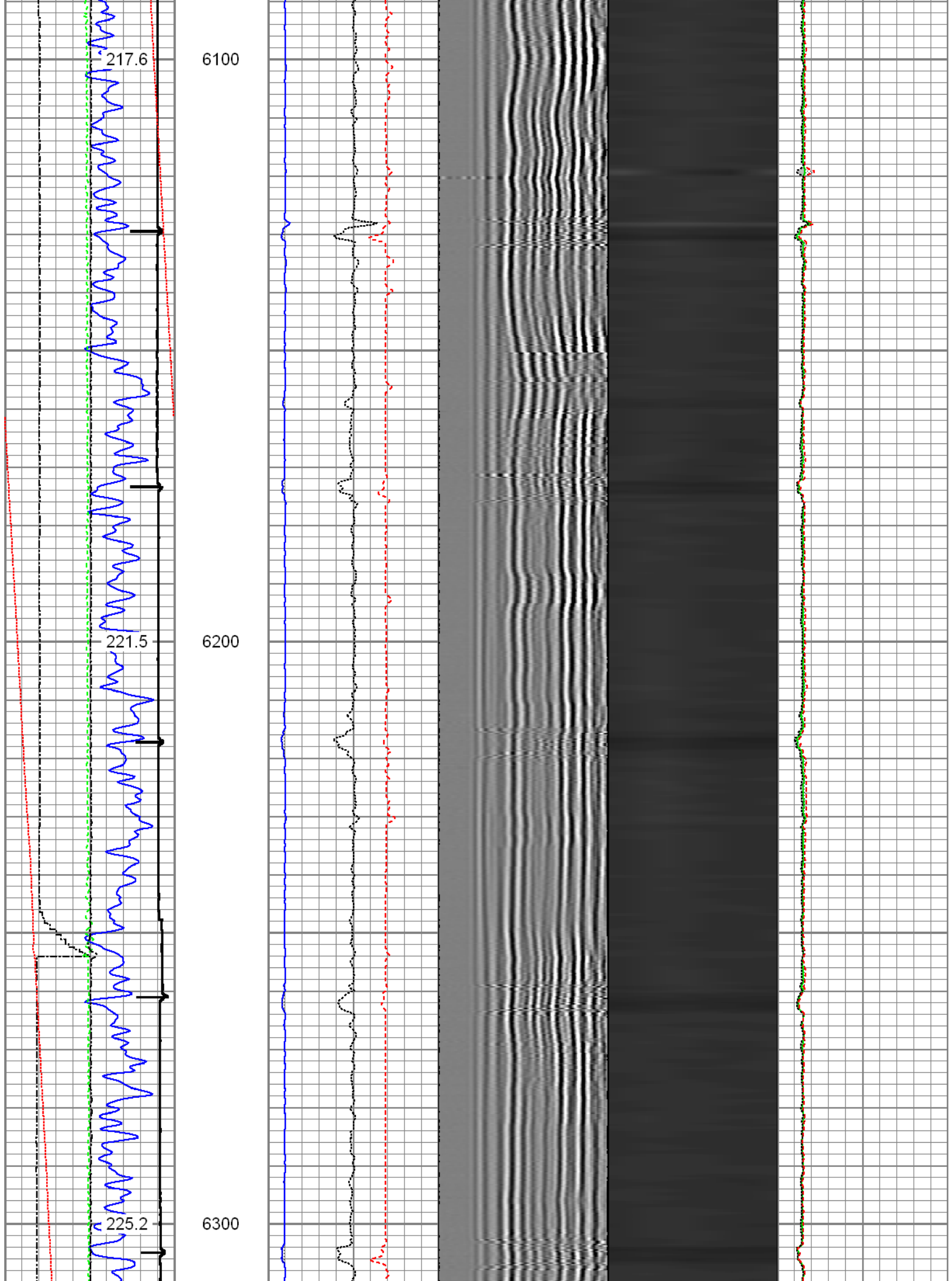


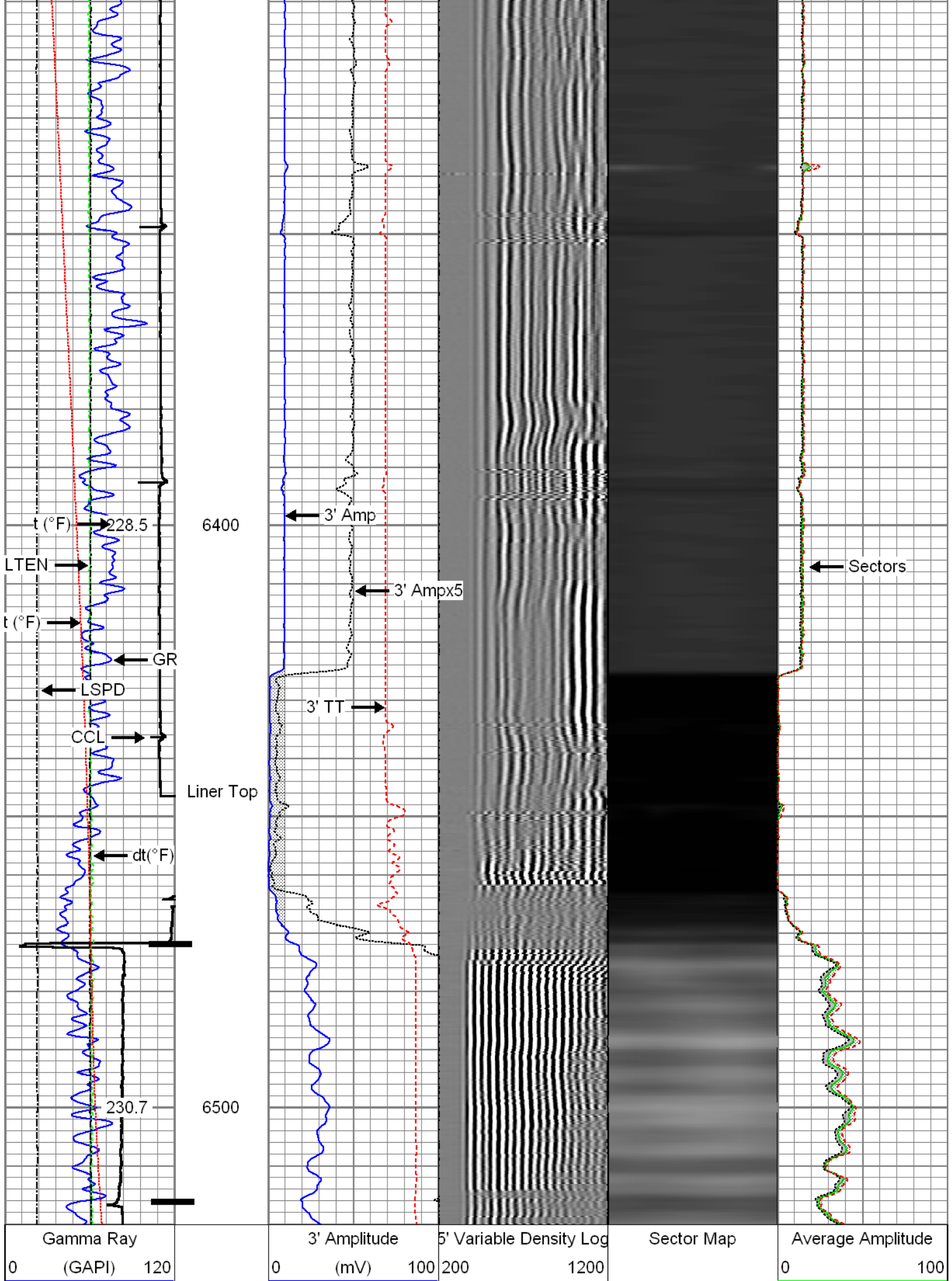






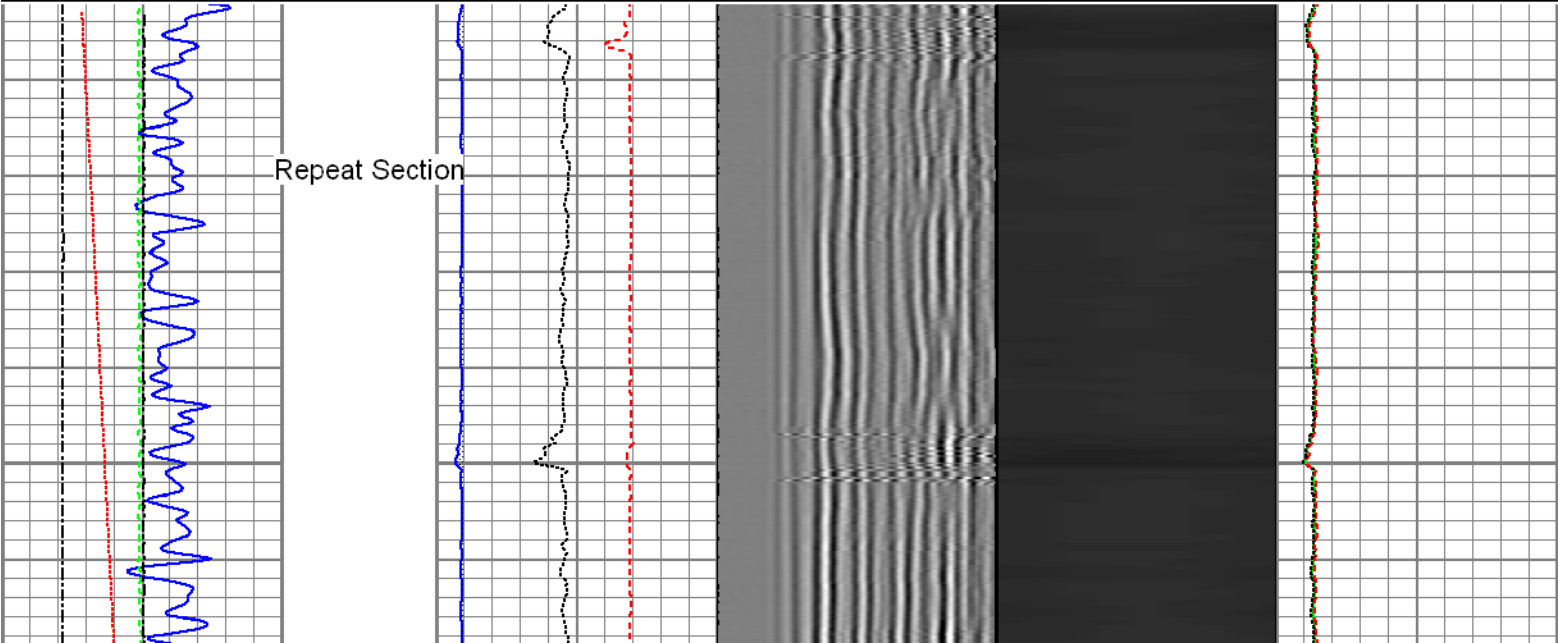


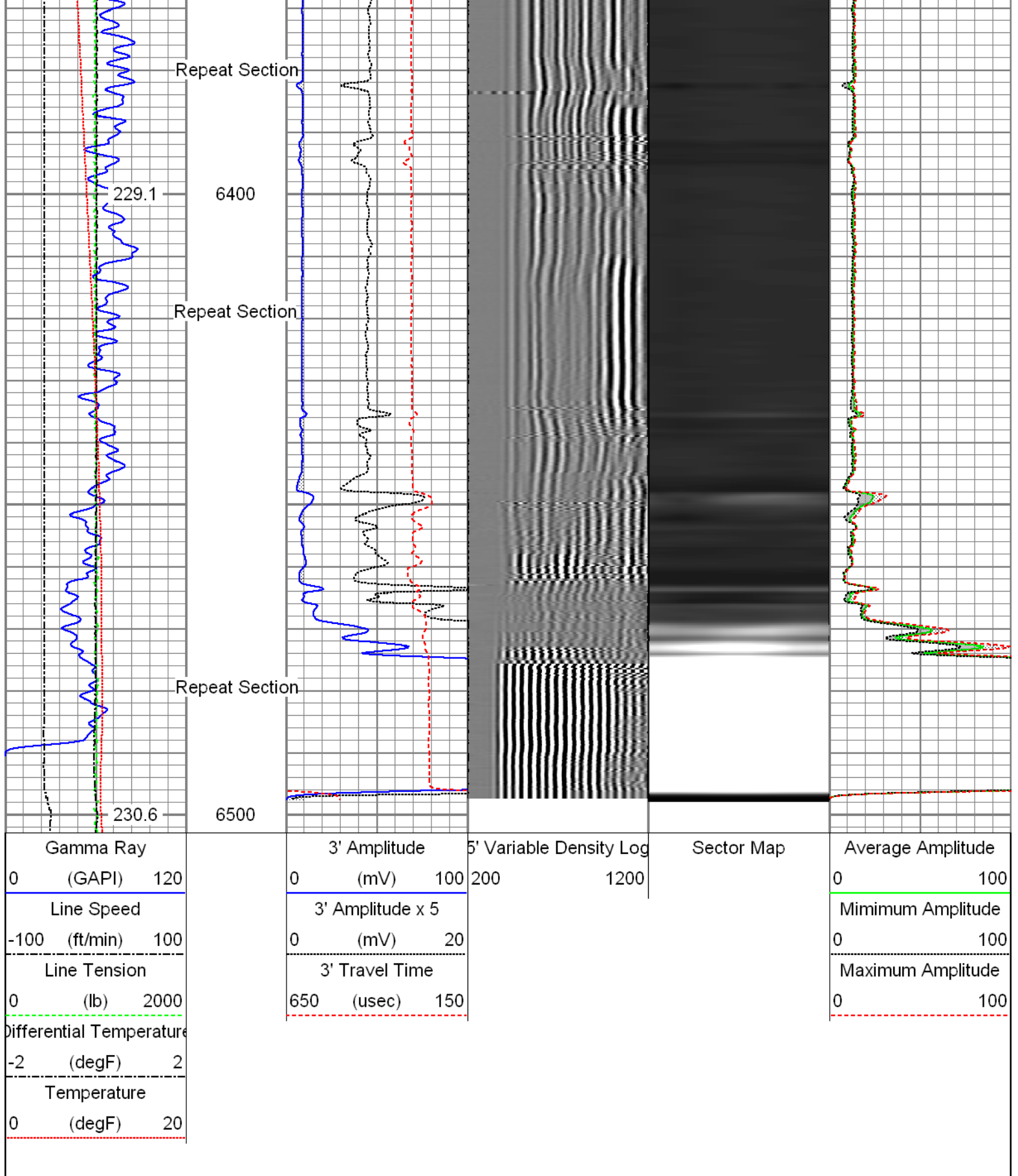






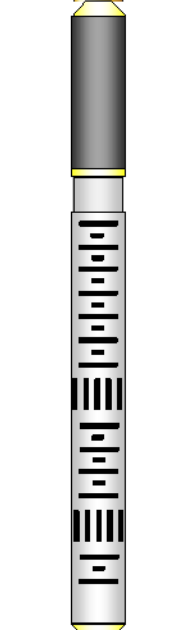
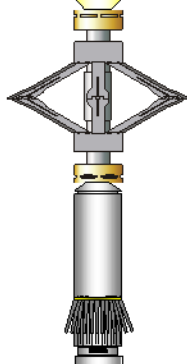
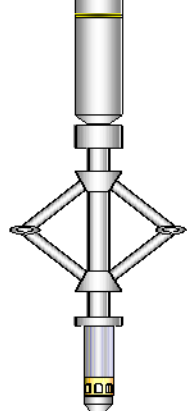
Casing Collar Locator	3' Amplitude x 5	Minimum Amplitude
Line Speed	0 (mV) 20	0 100
-100 (ft/min) 100	3' Travel Time	Maximum Amplitude
Line Tension	650 (usec) 150	0 100
0 (lb) 2000		
Differential Temperature		
-2 (degF) 2		
Temperature		
0 (degF) 20		

<div>FMC Technologies</div>		<div>Repeat Pass</div> <div>Recorded with 2800 PSI Surface Induced Pressure</div>			
<div>Database File: 0512340951_anadarko_cream 15n-a28hz_07-21-15_mit_rbl.db</div> <div>Dataset Pathname: pass3</div> <div>Presentation Format: rbt4_mit</div> <div>Dataset Creation: Tue Jul 21 15:35:31 2015 by Log 7.0 B1</div> <div>Charted by: Depth in Feet scaled 1:240</div>					
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	
Differential Temperature					
-2 (degF) 2					
Temperature					
0 (degF) 20					





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) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTH-UW_XTH_000 (214107)	1.50	1.00	0.50

GR	23.85		UW_XIU-UW_XIU_002 (219135) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50			
			UW_PGR-UW_PGR_020 (10019072) Production Gamma Ray	1.93	1.69	9.50			
			UW_PRC #4 -DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00			
WV3FT WVFS1 WVFS2 WVFS3 WVFS4 WVFS5 WVFS6 WVFS7 WVFS8 CBLTEMP CBLROT WVF5FT	16.46 16.46 16.46 16.46 16.46 16.46 16.46 16.46 16.46 16.46 15.46		UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00			
			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00			
							MIT	6.45	
			UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00			
TEMP TSTAMP	0.37 0.00		UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20			
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20			
			Dataset: 0512340951_anadarko_cream 15n-a28hz_07-21-15_mit_rbl.db: field/well/run1/pass4 Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report	
Database File:	0512340951_anadarko_cream 15n-a28hz_07-21-15_mit_rbl.db
Dataset Pathname:	pass4
Dataset Creation:	Tue Jul 21 15:47:43 2015 by Log 7.0 B1

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

Multi-finger Imaging Tool Calibration Report

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: Tue Jul 21 15:09:57 2015

Ring size:	4	5	6	7
(in)	Sens	Sens	Sens	
Finger 01:	1452 264.0	1716 293.0	2009 292.0	2301
Finger 02:	1519 242.0	1761 263.0	2024 256.0	2280
Finger 03:	1435 266.0	1701 295.0	1996 292.0	2288
Finger 04:	1451 267.0	1718 293.0	2011 288.0	2299
Finger 05:	1490 258.0	1748 285.0	2033 275.0	2308
Finger 06:	1415 269.0	1684 305.0	1989 298.0	2287
Finger 07:	1435 268.0	1703 300.0	2003 296.0	2299
Finger 08:	1428 266.0	1694 298.0	1992 290.0	2282
Finger 09:	1417 271.0	1688 306.0	1994 300.0	2294
Finger 10:	1427 264.0	1691 298.0	1989 292.0	2281
Finger 11:	1410 274.0	1684 307.0	1991 302.0	2293
Finger 12:	1361 279.0	1640 311.0	1951 309.0	2260
Finger 13:	1458 263.0	1721 286.0	2007 283.0	2290
Finger 14:	1393 268.0	1661 299.0	1960 303.0	2263
Finger 15:	1387 285.0	1672 307.0	1979 311.0	2290
Finger 16:	1387 280.0	1667 303.0	1970 309.0	2279
Finger 17:	1396 293.0	1689 308.0	1997 319.0	2316
Finger 18:	1339 280.0	1619 293.0	1912 308.0	2220
Finger 19:	1392 290.0	1682 299.0	1981 311.0	2292
Finger 20:	1401 289.0	1690 302.0	1992 315.0	2307
Finger 21:	1352 300.0	1652 311.0	1963 328.0	2291
Finger 22:	1375 282.0	1657 290.0	1947 304.0	2251

Finger 23:	1379	290.0	1669	293.0	1962	309.0	2271
Finger 24:	1418	292.0	1710	291.0	2001	303.0	2304
Finger 25:	1346	287.0	1633	286.0	1919	302.0	2221
Finger 26:	1337	292.0	1629	290.0	1919	308.0	2227
Finger 27:	1426	287.0	1713	282.0	1995	299.0	2294
Finger 28:	1418	293.0	1711	290.0	2001	305.0	2306
Finger 29:	1472	275.0	1747	272.0	2019	285.0	2304
Finger 30:	1385	289.0	1674	288.0	1962	305.0	2267
Finger 31:	1419	292.0	1711	292.0	2003	305.0	2308
Finger 32:	1481	275.0	1756	272.0	2028	281.0	2309
Finger 33:	1437	288.0	1725	295.0	2020	304.0	2324
Finger 34:	1449	280.0	1729	286.0	2015	299.0	2314
Finger 35:	1500	258.0	1758	262.0	2020	268.0	2288
Finger 36:	1485	266.0	1751	277.0	2028	285.0	2313
Finger 37:	1463	276.0	1739	290.0	2029	289.0	2318
Finger 38:	1537	243.0	1780	256.0	2036	259.0	2295
Finger 39:	1461	266.0	1727	280.0	2007	279.0	2286
Finger 40:	1430	275.0	1705	296.0	2001	296.0	2297

Segmented Cement Bond Log Calibration Report

Serial Number:	10022773
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	139.574 ft

Master Calibration, performed Tue Jul 21 08:41:45 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.002	0.747	0.800	62.165	82.386	0.599
5FT	-0.001	0.760	0.800	62.165	80.662	0.898
S1	0.002	0.745	0.000	100.000	134.624	-0.329
S2	0.001	0.759	0.000	100.000	131.908	-0.161
S3	0.002	0.730	0.000	100.000	137.390	-0.320
S4	0.001	0.694	0.000	100.000	144.307	-0.194
S5	0.002	0.692	0.000	100.000	144.971	-0.354
S6	0.001	0.689	0.000	100.000	145.367	-0.177
S7	0.002	0.719	0.000	100.000	139.462	-0.238
S8	0.002	0.743	0.000	100.000	134.946	-0.226

Gamma Ray Calibration Report

Serial Number:	10019072
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	Cream 15N - A28HZ
Field	Wattenberg
County	Weld

	State	Colorado
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