



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company		Kerr-McGee Oil & Gas Onshore, L.P.	
Well		Goodin 36N - A6HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Company		Kerr-McGee Oil & Gas Onshore, L.P.	
Well		Goodin 36N - A6HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API #: 05-123-40752	
SEC 7		TWP 1N	
RGE 65W		Other Services	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		4981'	
K.B. 5006'		D.F. 5005'	
G.L. 4981'		Gauge Ring	
MIT			
Date		25-JUN-2015	
Run Number		Two	
Depth Driller		13.407 FT	
Depth Logger		7.429 FT	
Bottom Logged Interval		7.414 FT	
Top Log Interval		Surface	
Open Hole Size		8.750"	
Type Fluid		Water	
Density / Viscosity		8.34 lbm/gal	
Max. Recorded Temp.		235°F	
Estimated Cement Top		Surface	
Time Well Ready		ROA	
Time Logger on Bottom		10:45 A.M.	
Equipment Number		HD-0119	
Location		Ft. Lupton, CO	
Recorded By		A. Olmsted	
Witnessed By		Levi McArthur	
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	
J-55		Surface	
Intermediate #1		7	
HCP 110 LTC		Surface	
Intermediate #2		4 1/2	
P-110 LTC/DOX		6,682 FT	
Liner		11.6	
13.404 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 6,682 FT  
Adjusted +3 FT to correlate to liner top  
Gauge Ring/Junk Basket ran to 7,446 FT  
Log ran from as deep as possible in heel to surface  
Logging tools were clean and free of debris upon completion of operations  
  
Thank you for choosing FMC Technologies Completion Services, Inc.!!



Main Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File:0512340752\_anadarko\_goodin 36n-a6hz\_06-25-15\_mit\_rbl.db

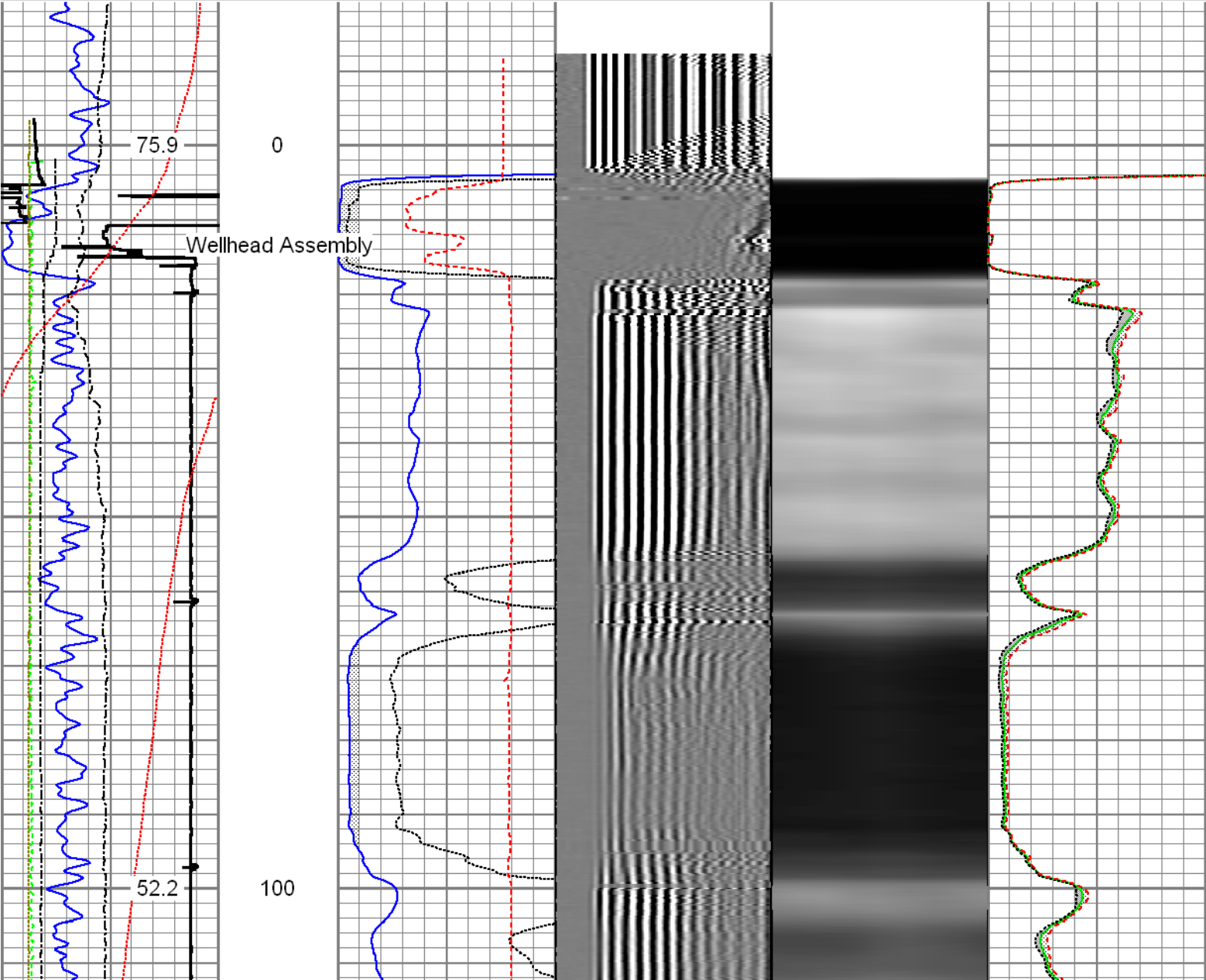
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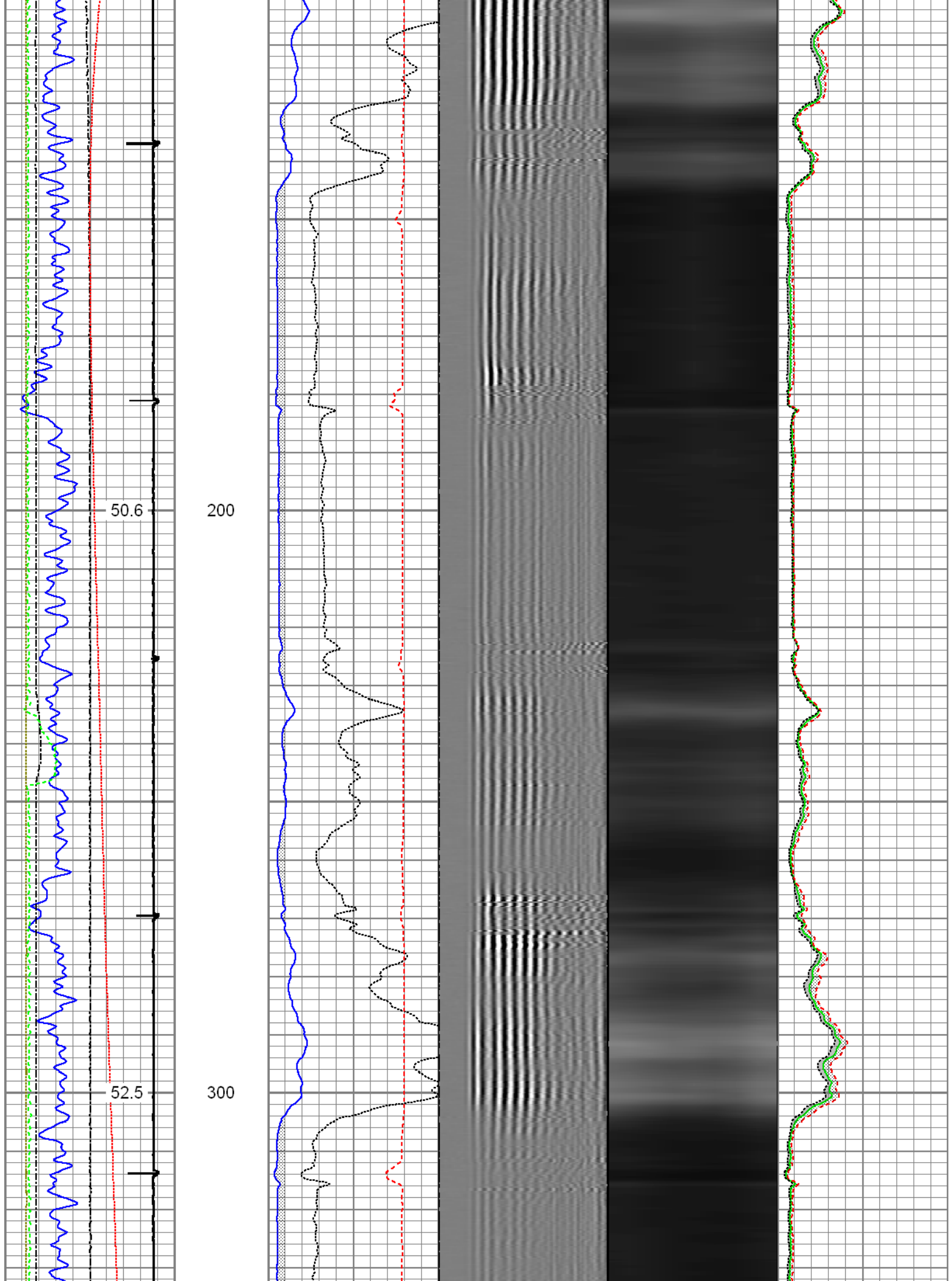
Presentation Format:rbt4\_mit

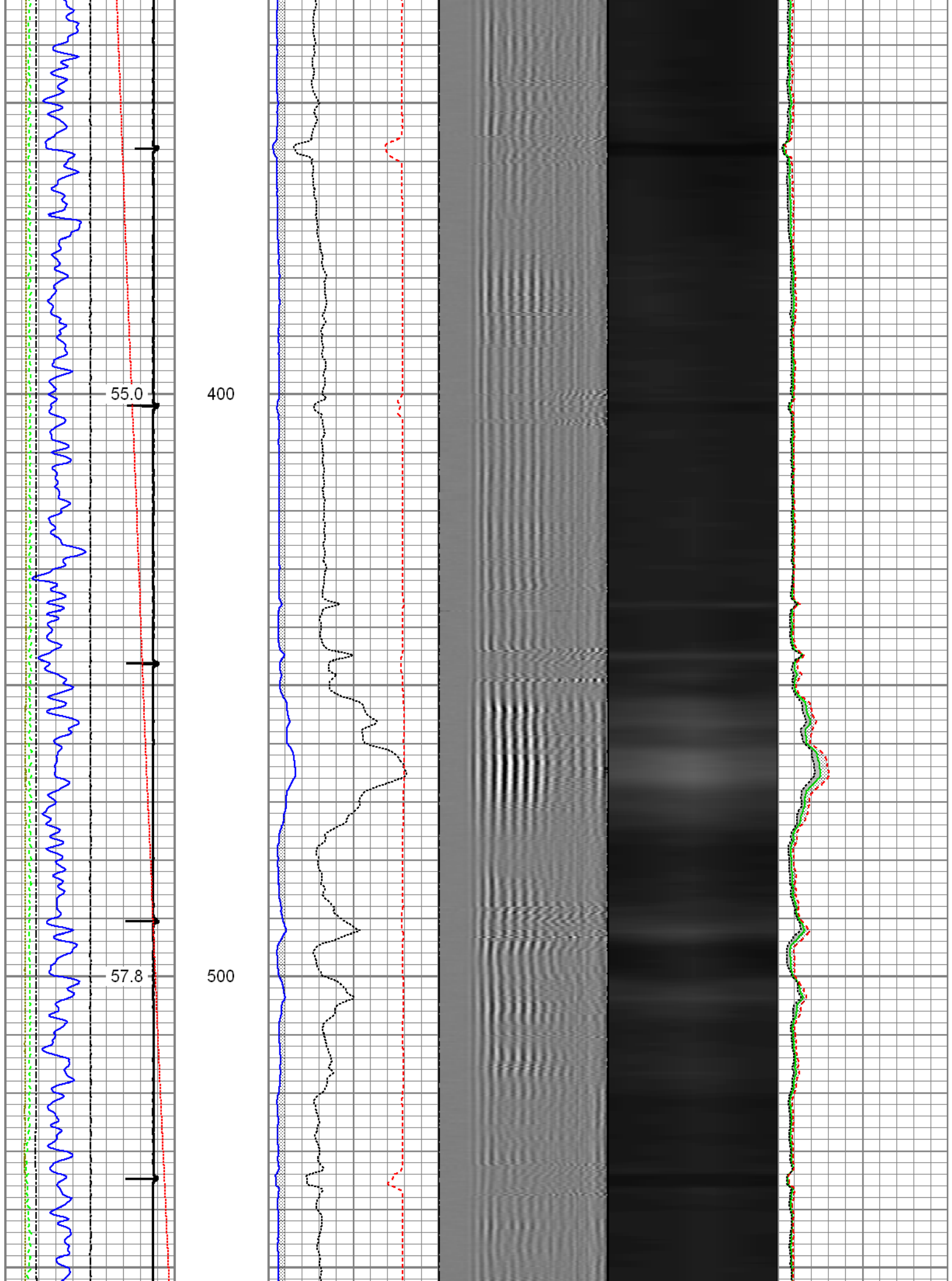
Dataset Creation:Thu Jun 25 11:07:17 2015 by Log 7.0 B1

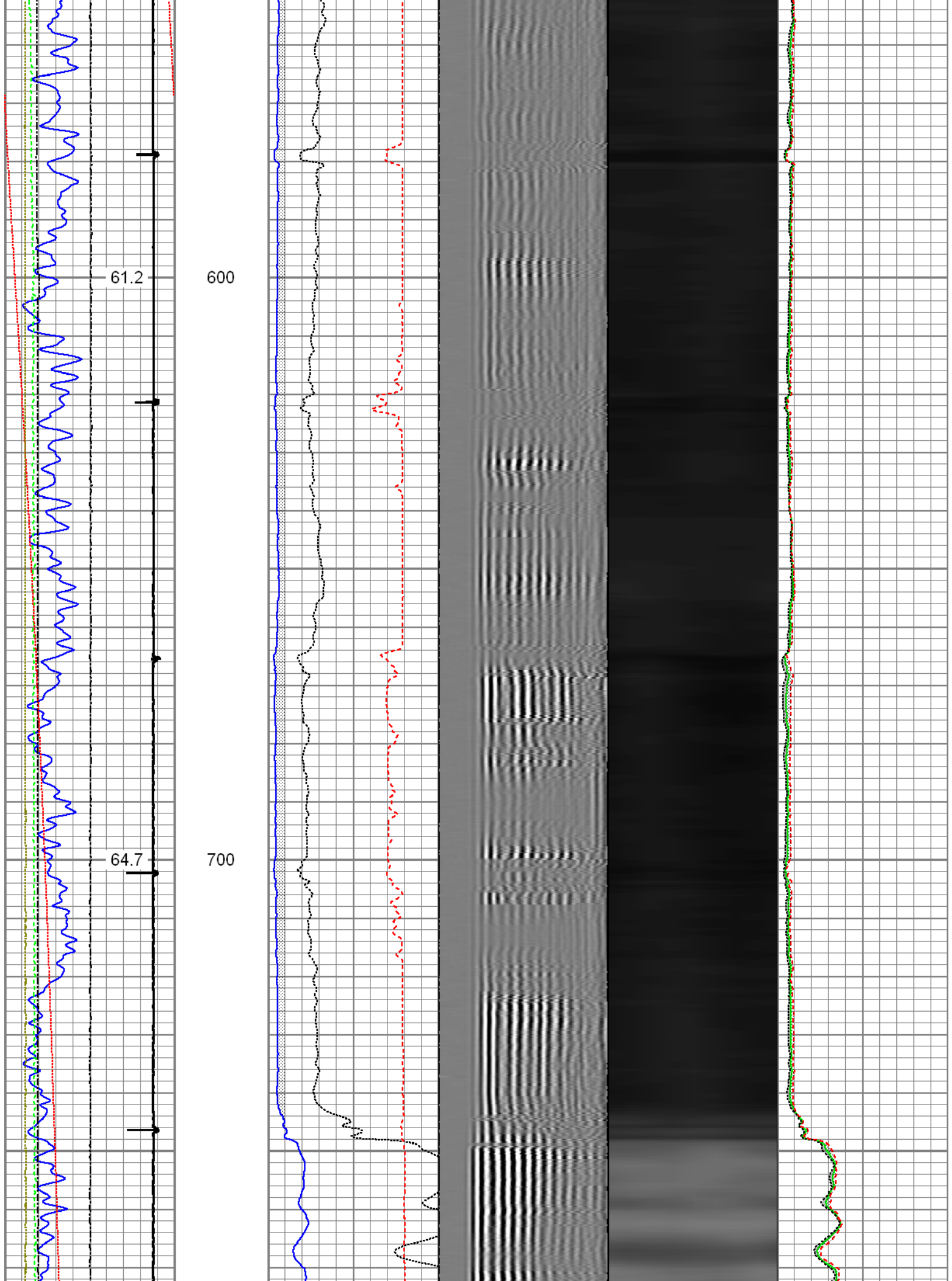
Charted by:Depth in Feet scaled 1:240

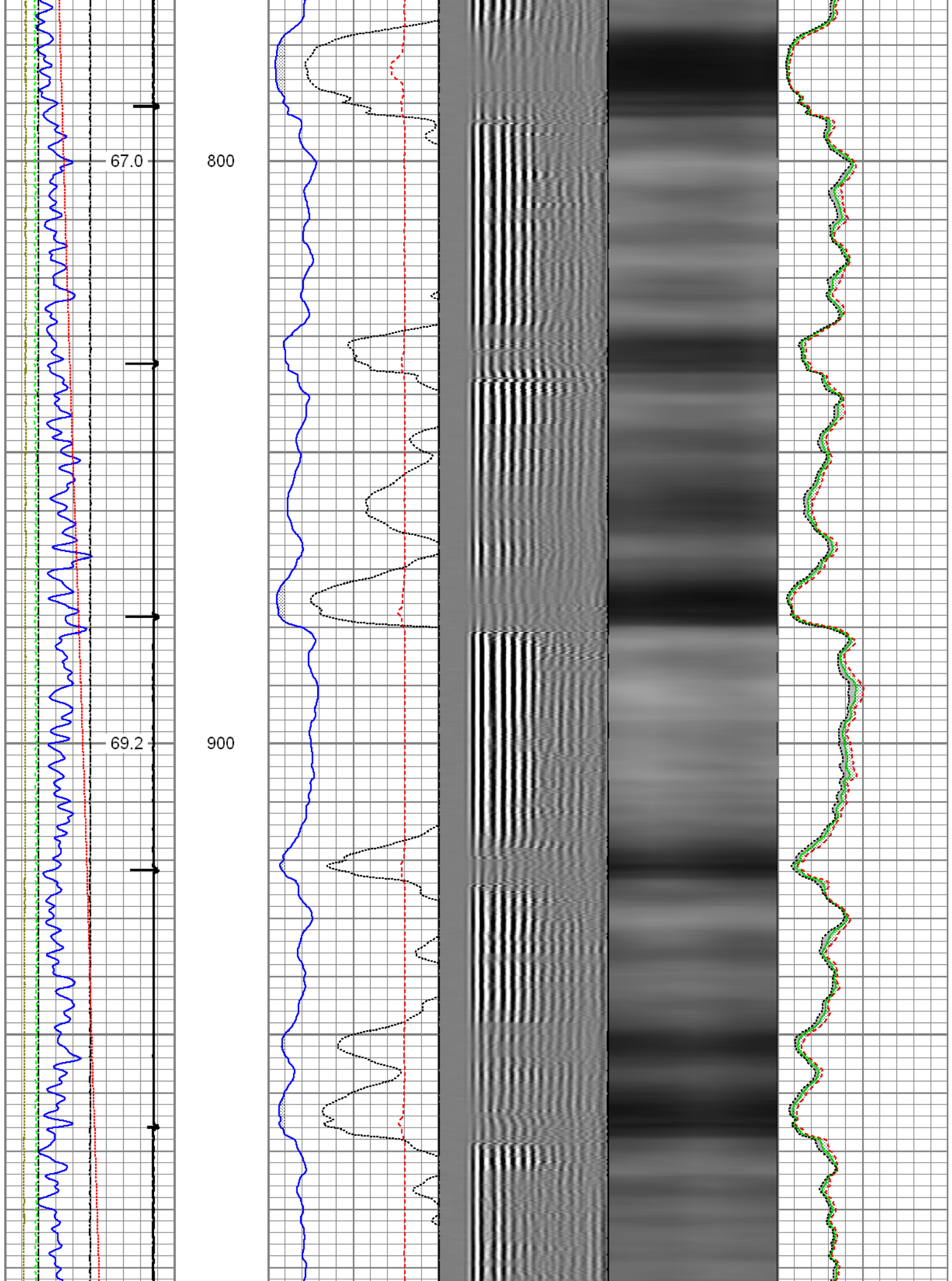
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				
-10 Deviation (°) 90				

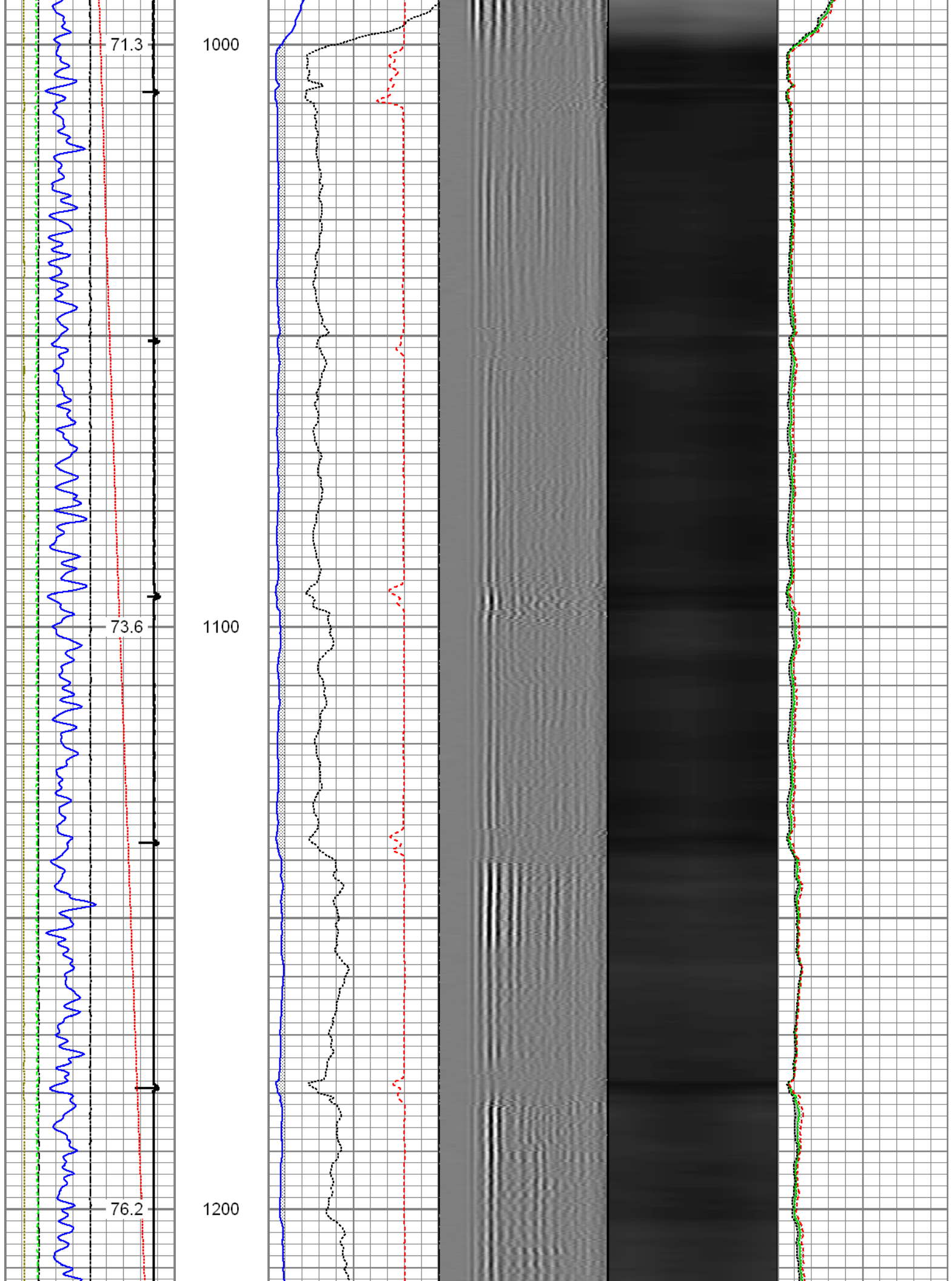


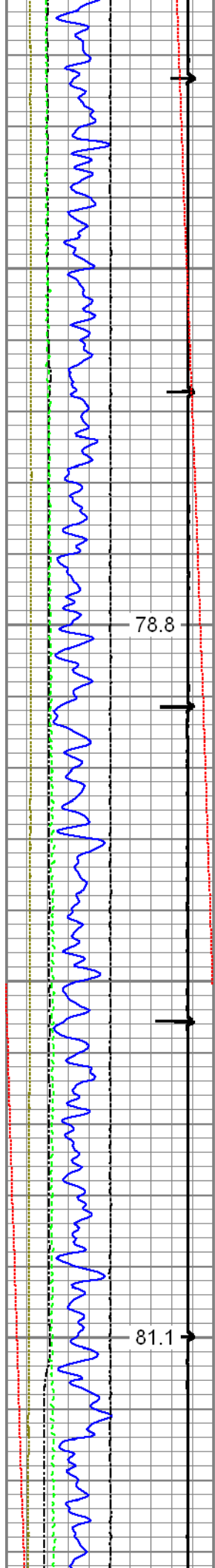






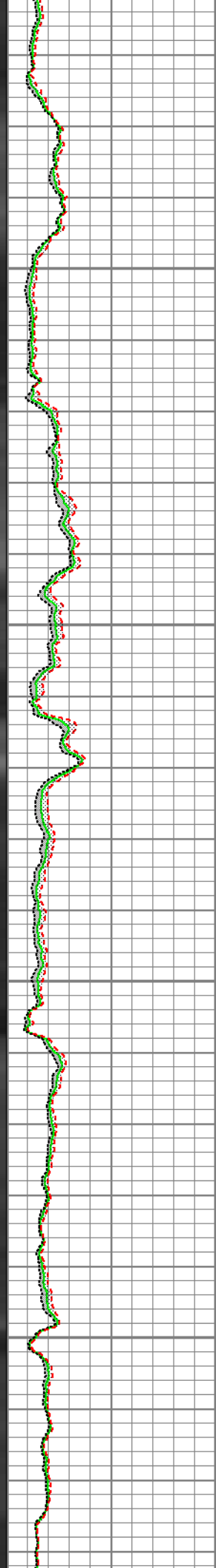
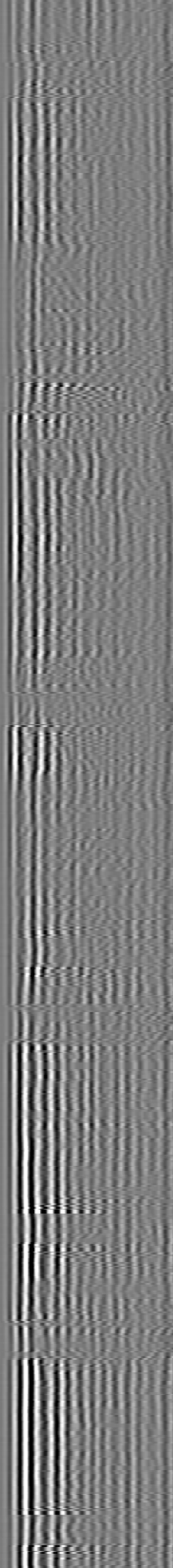
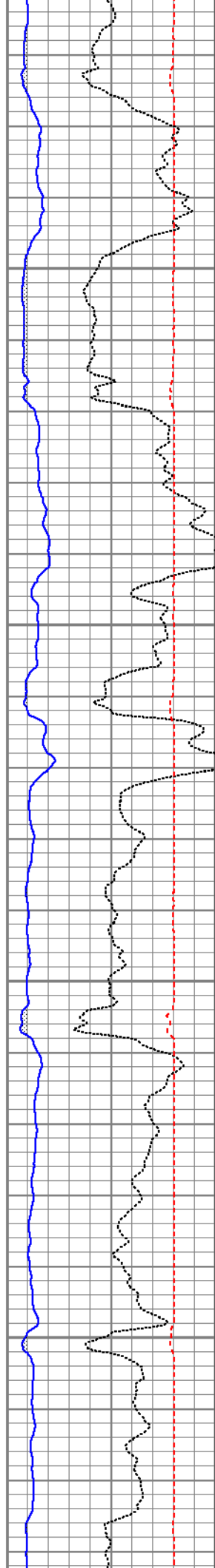


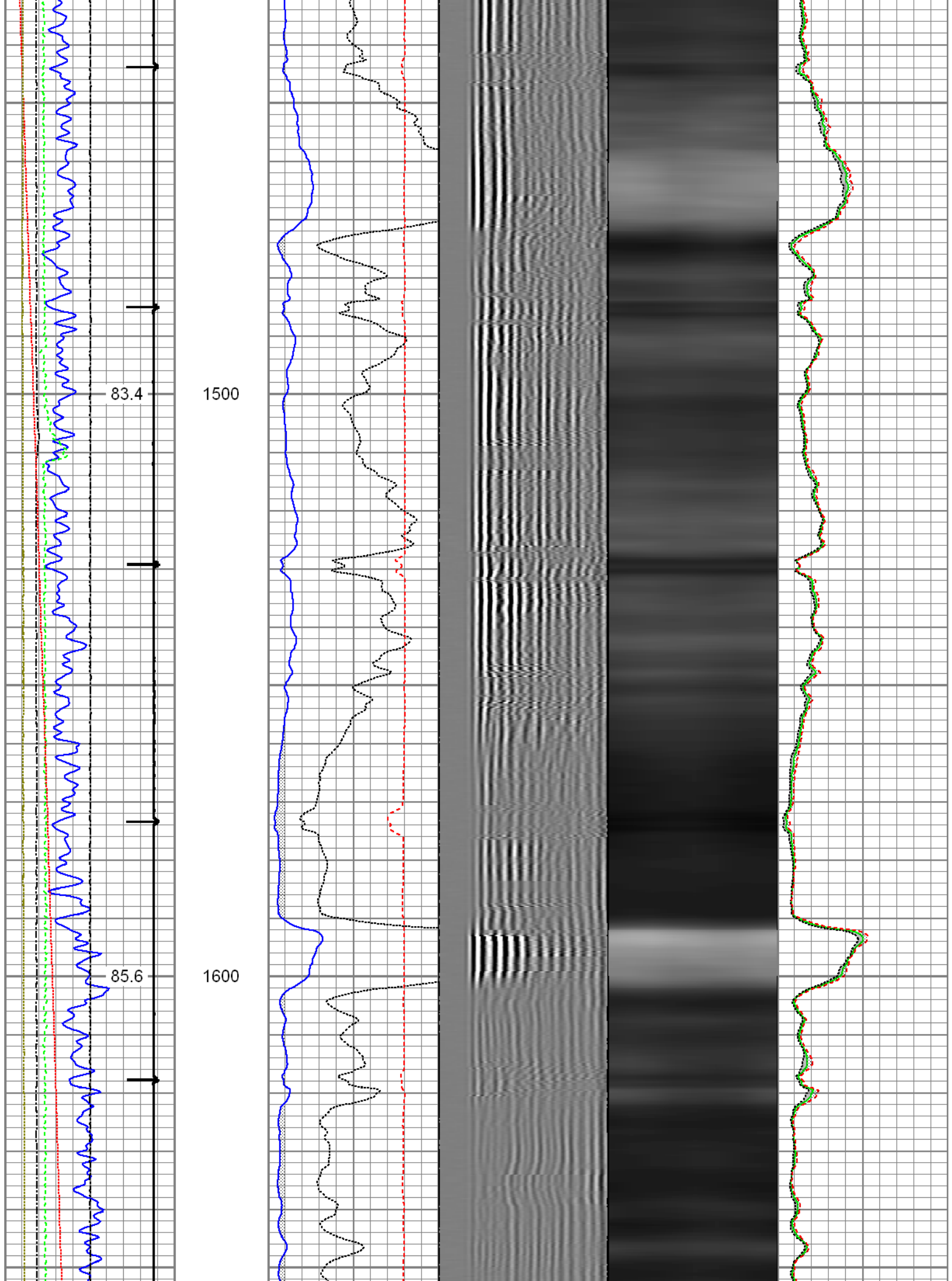


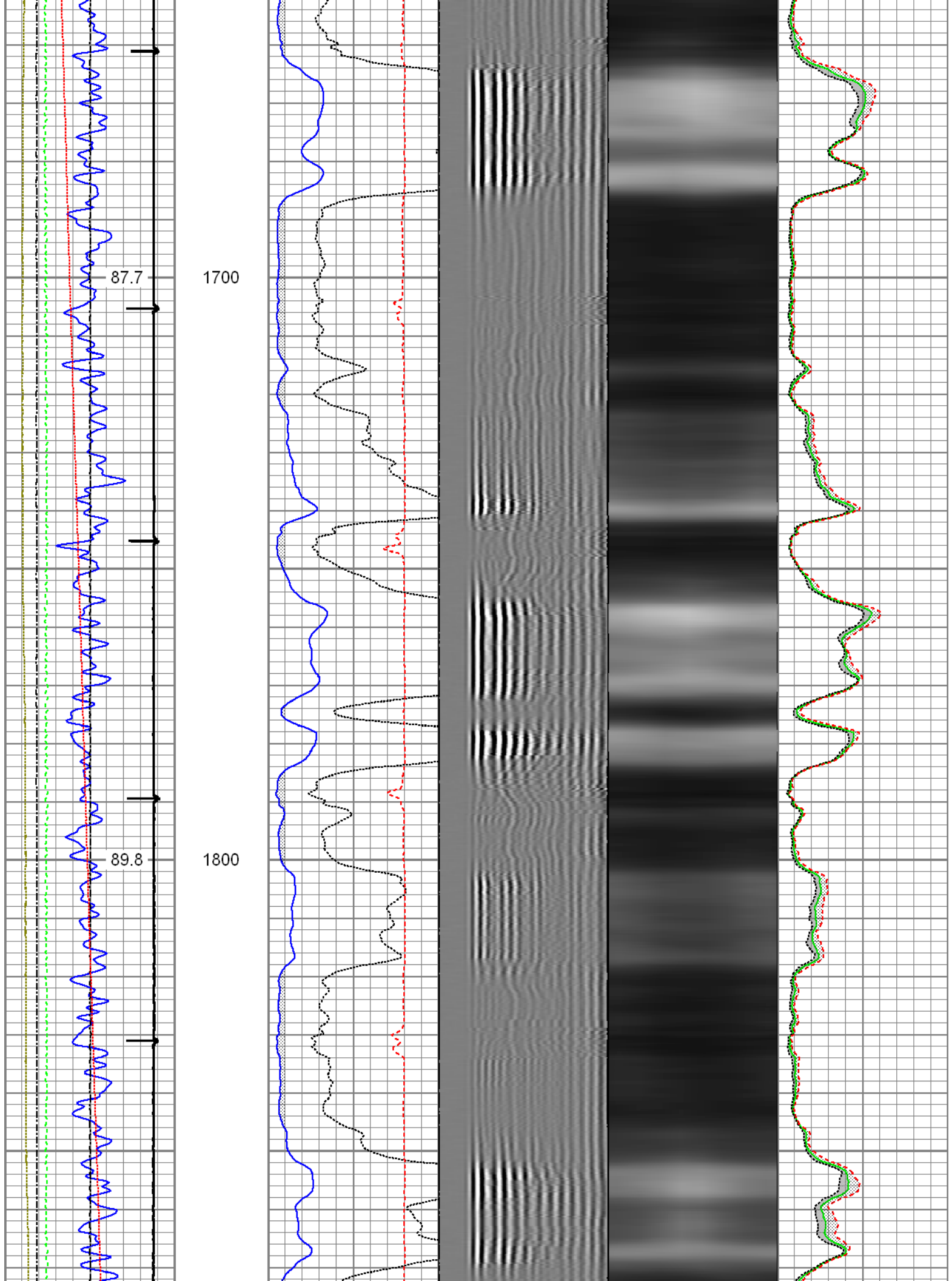


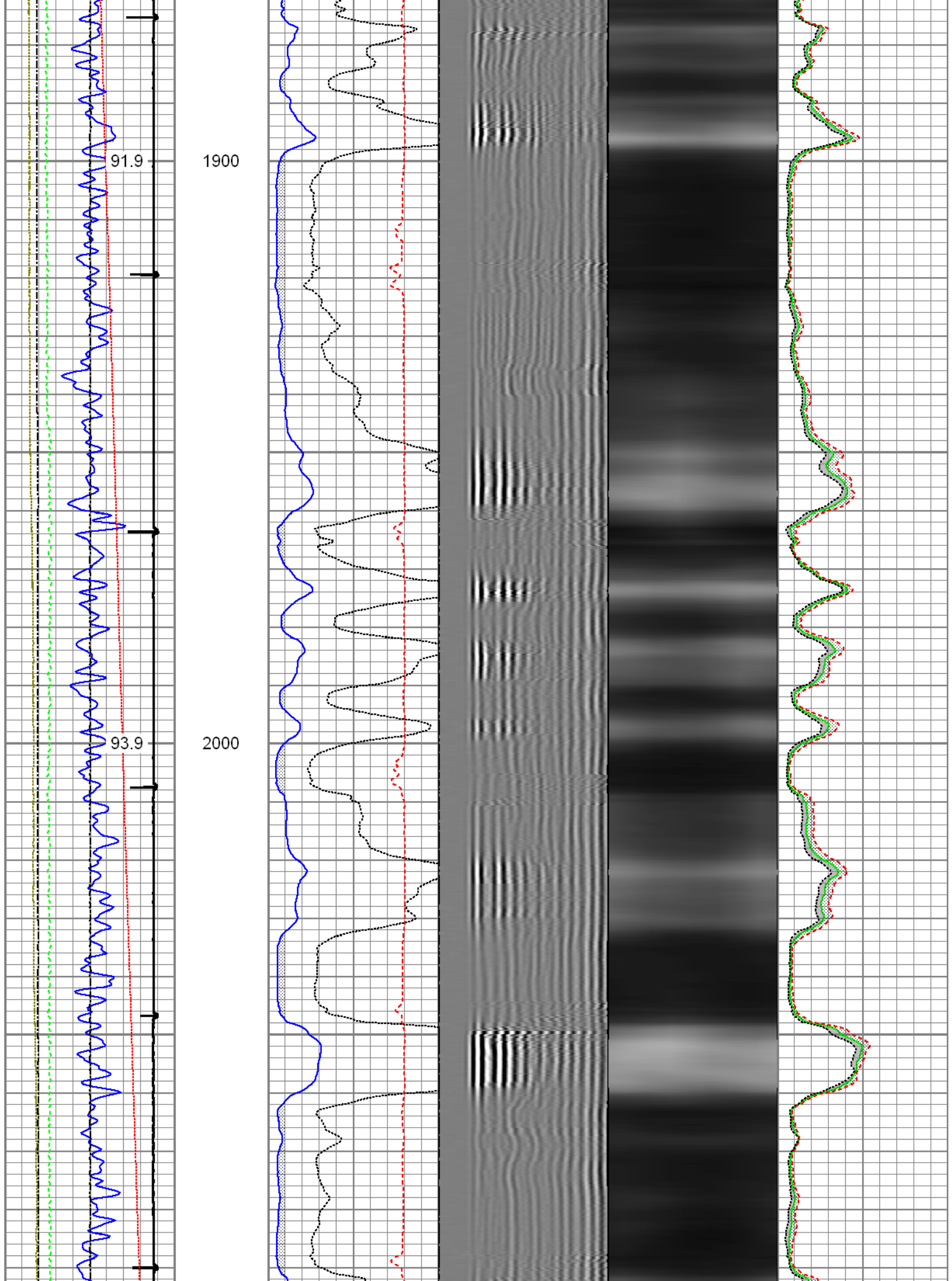
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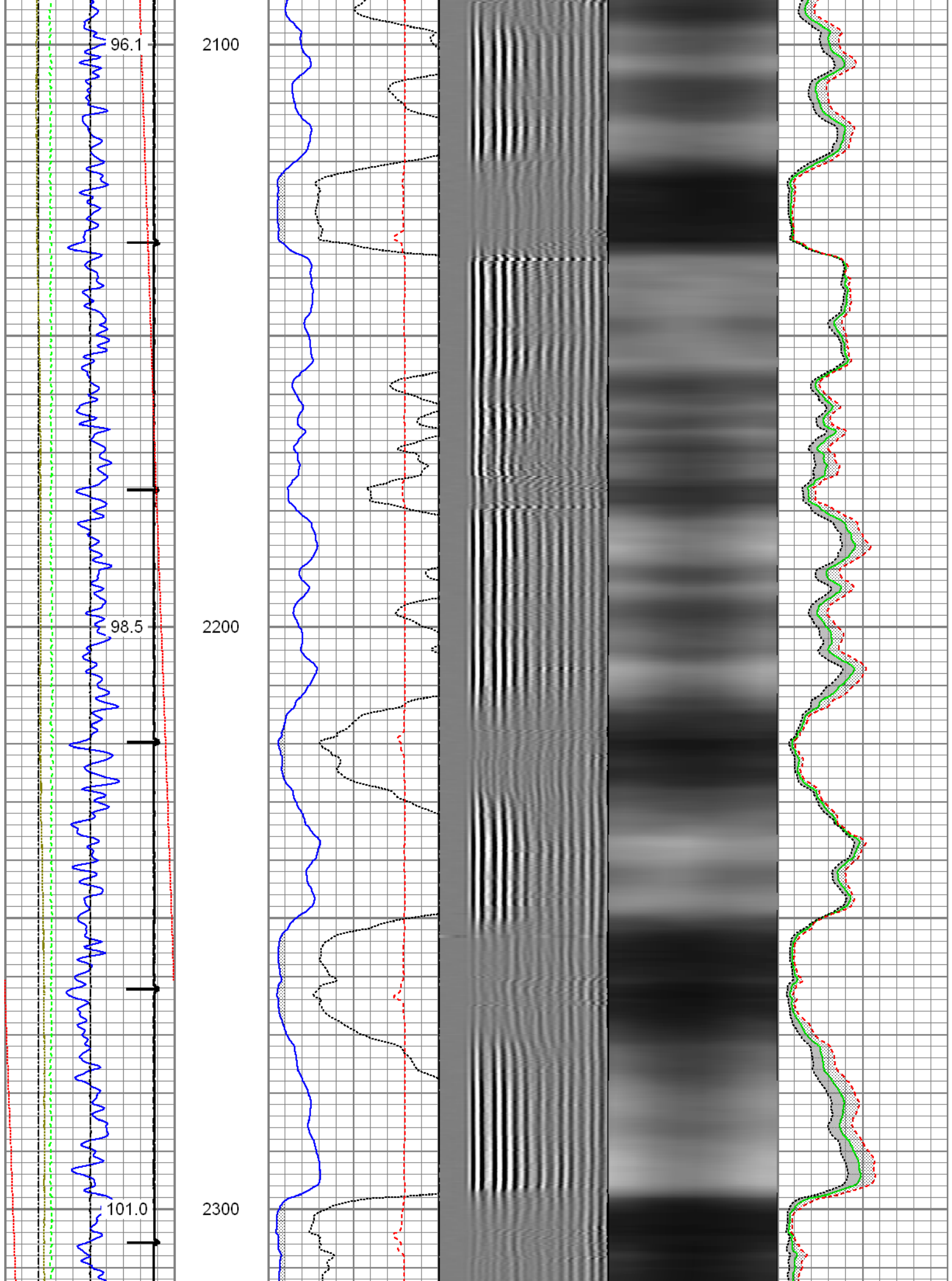
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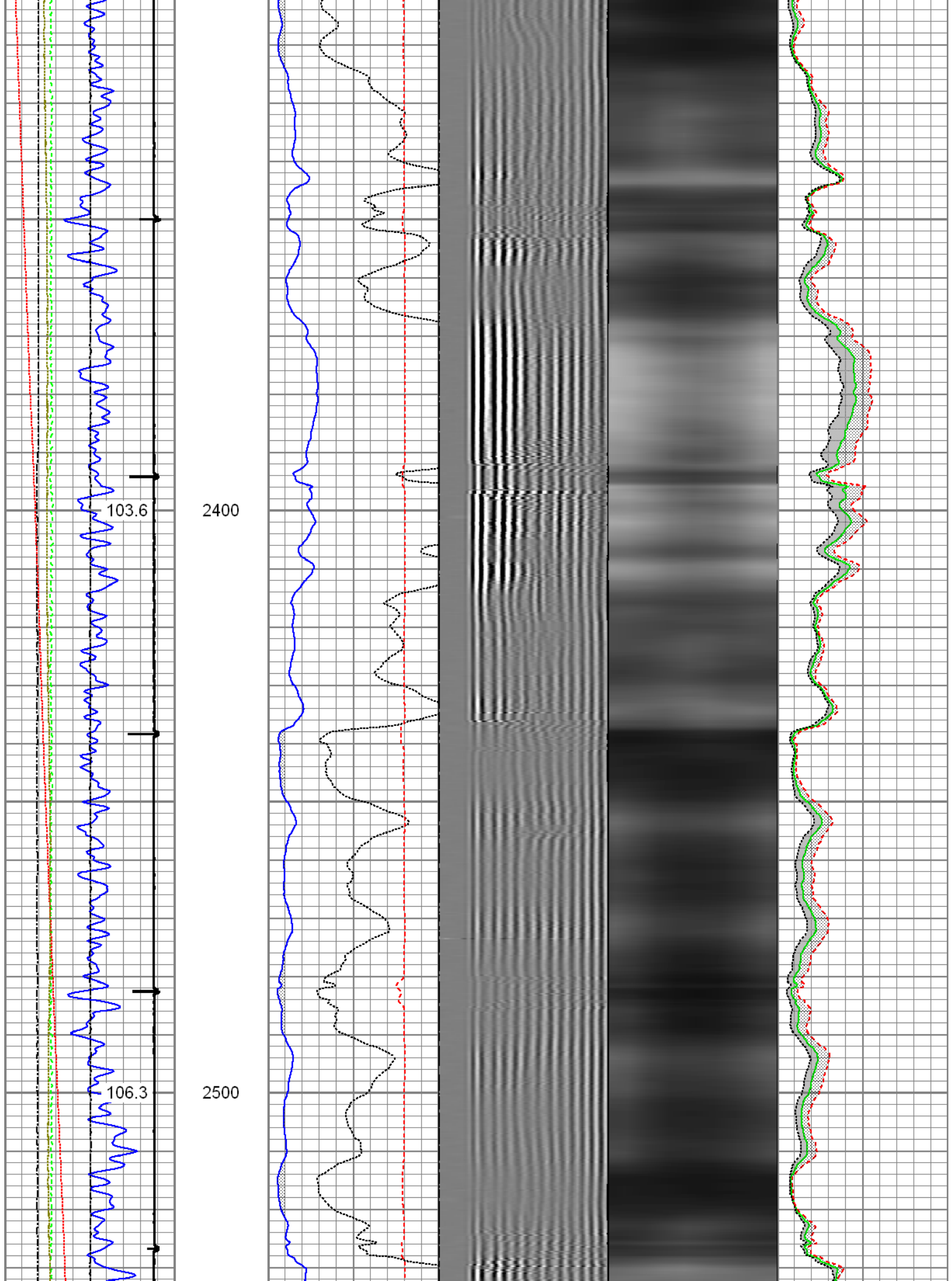


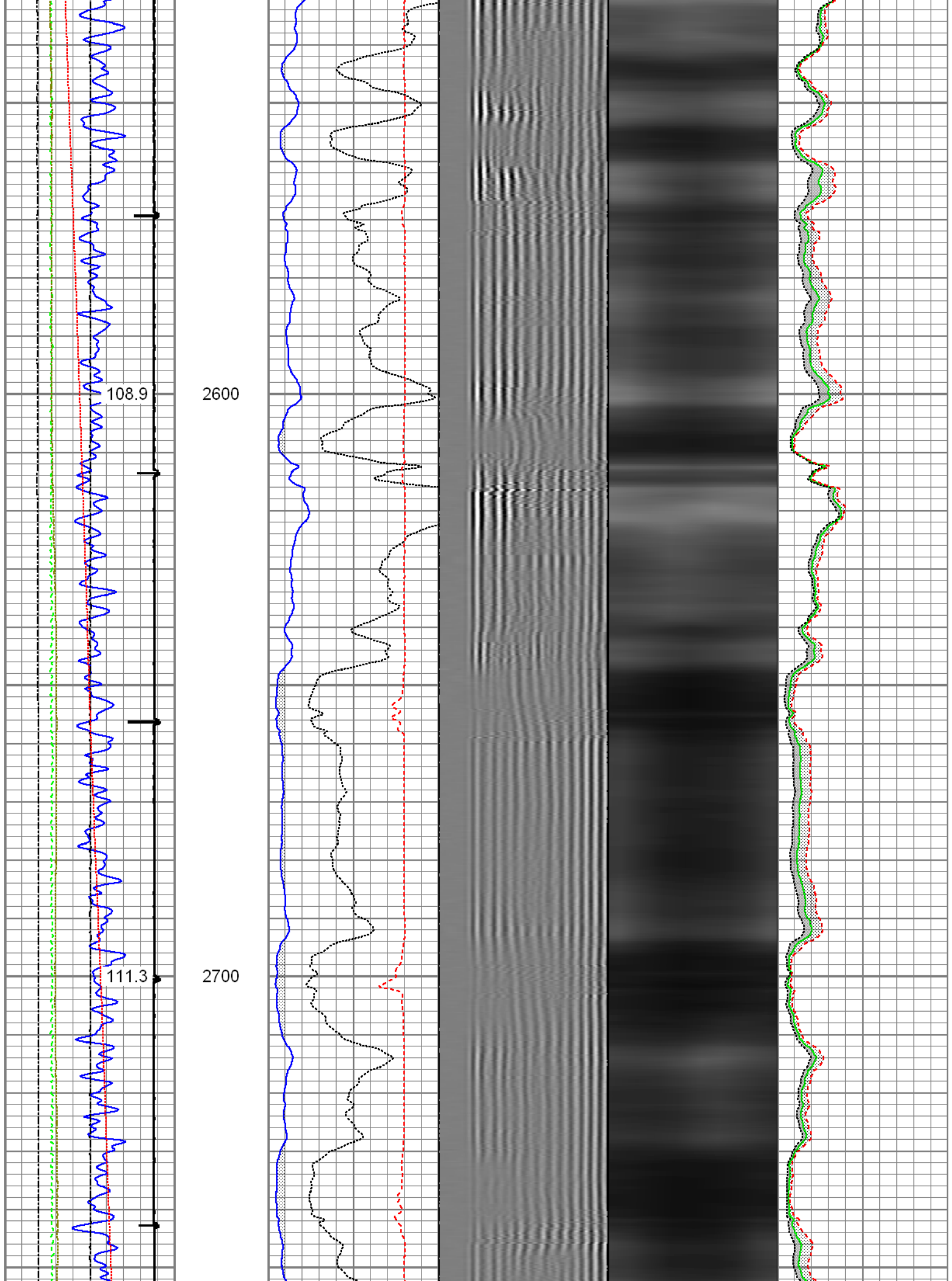


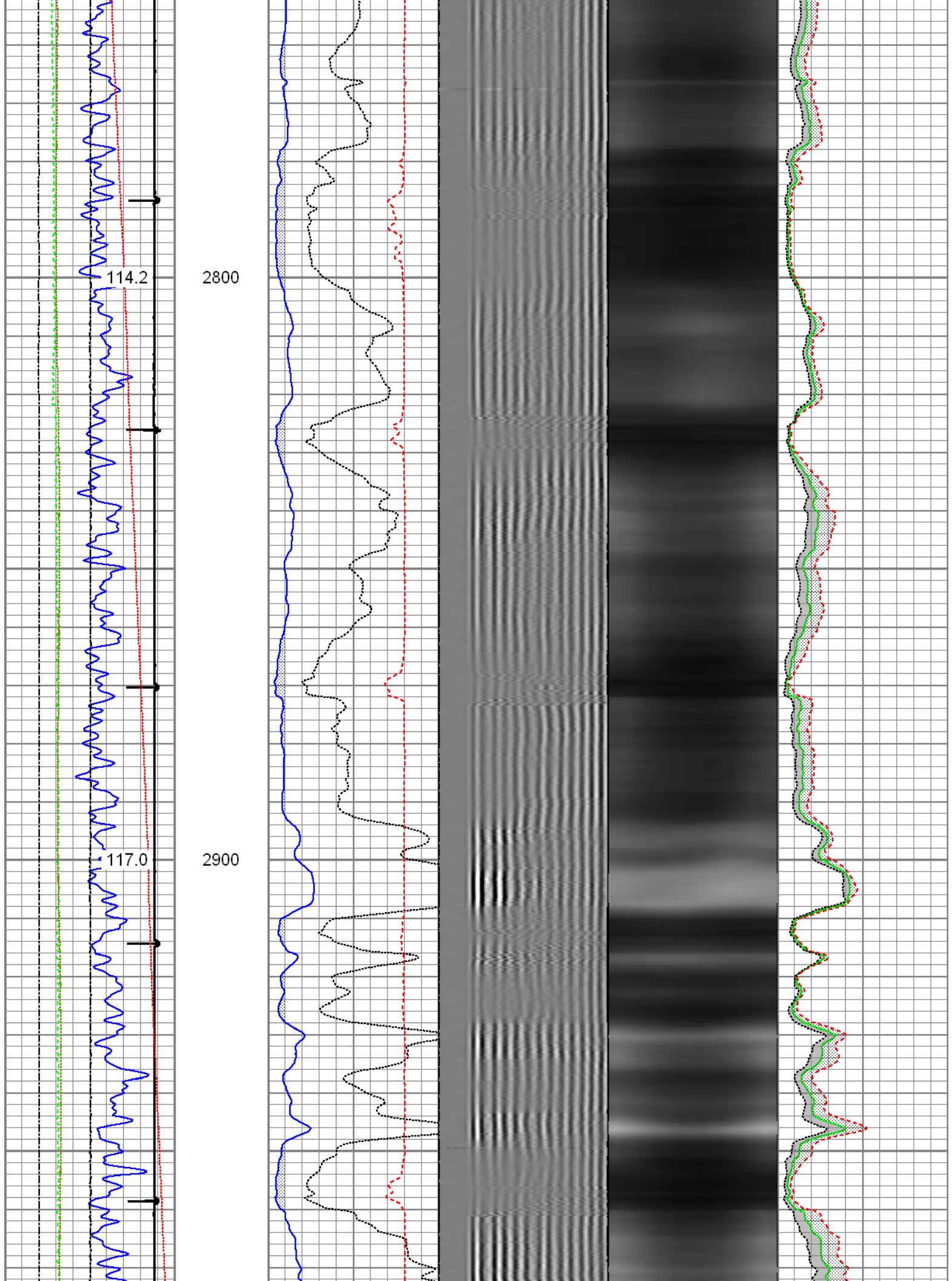


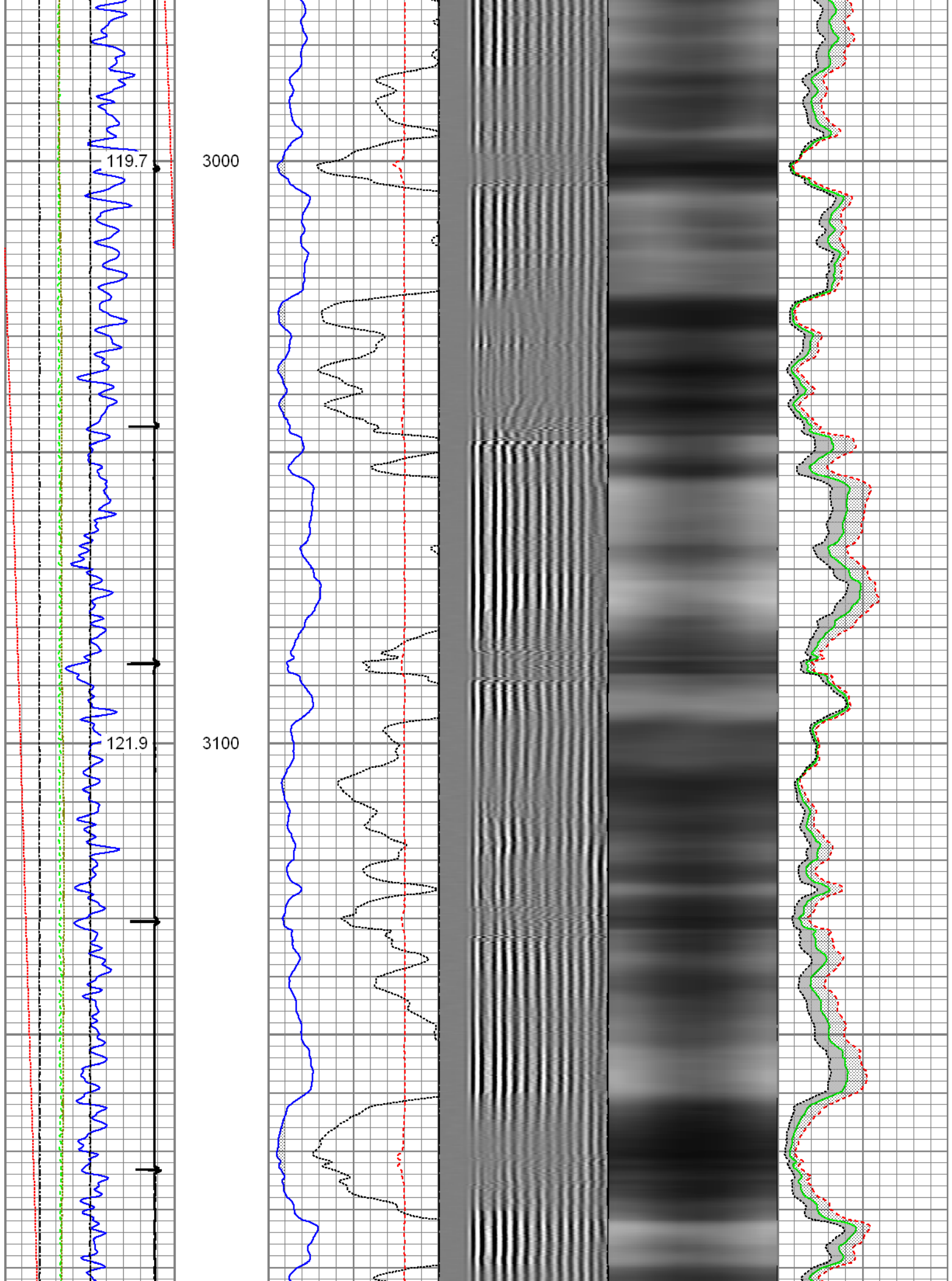


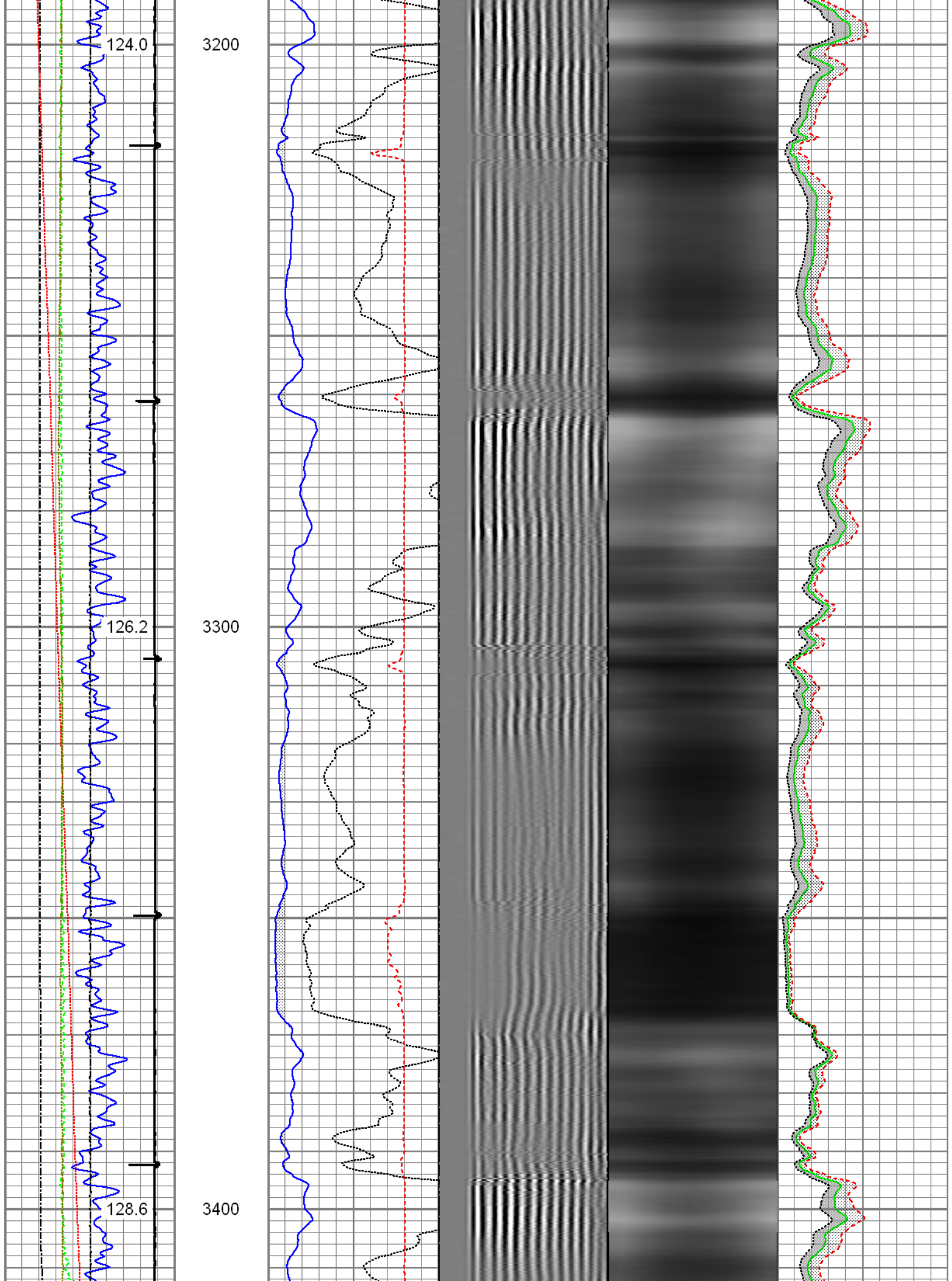


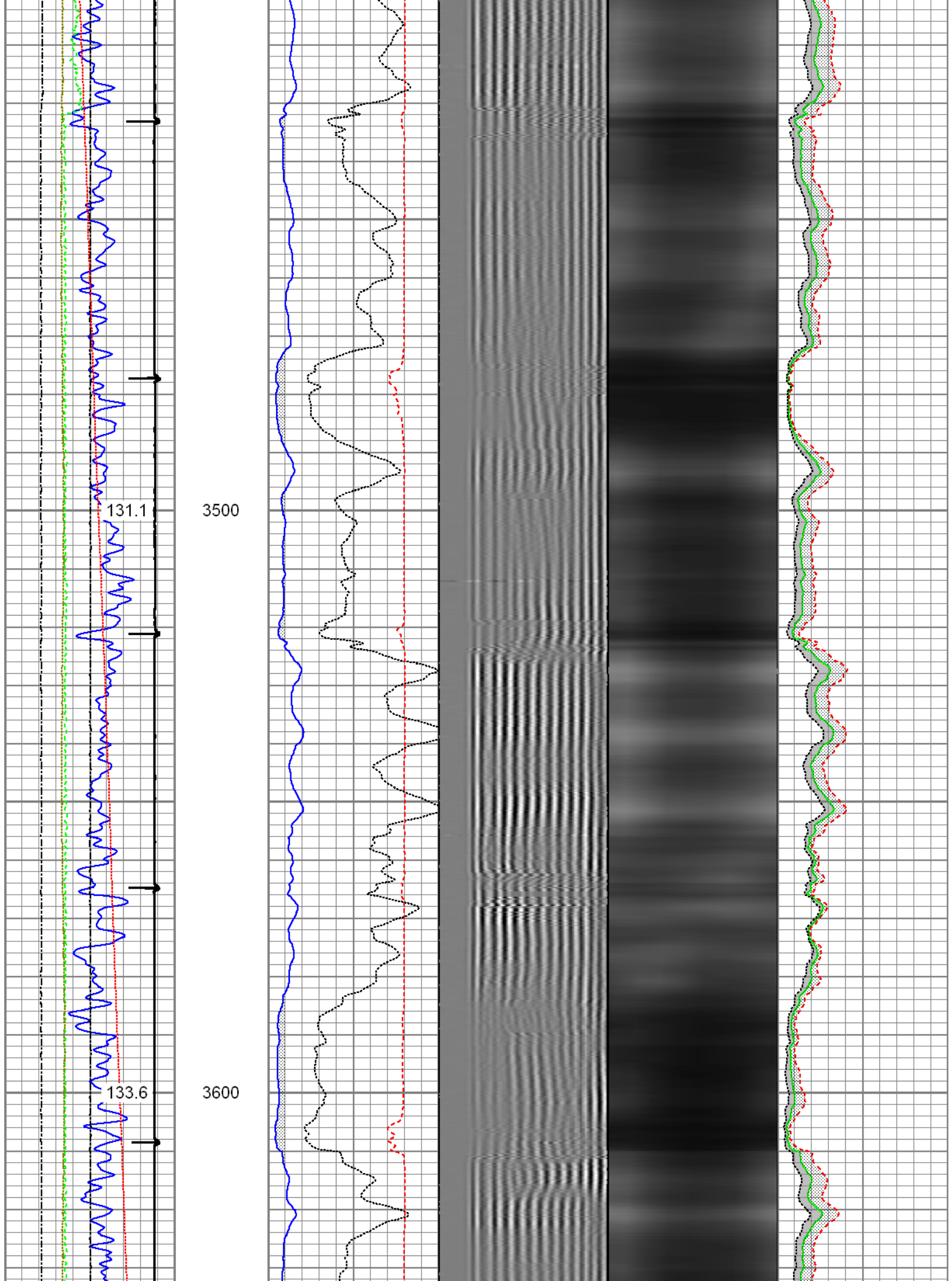


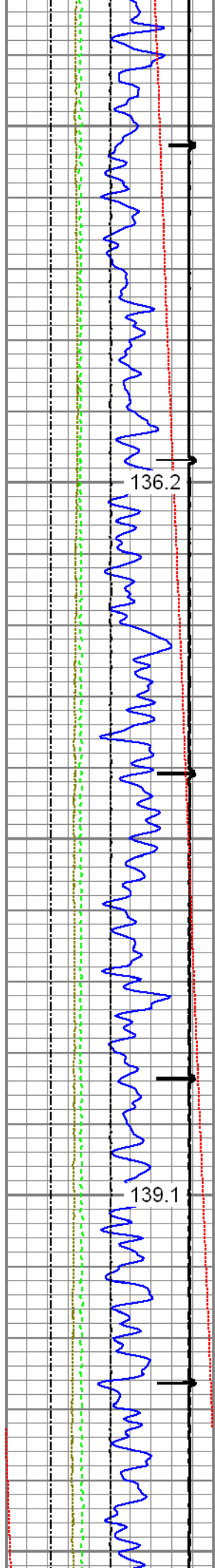






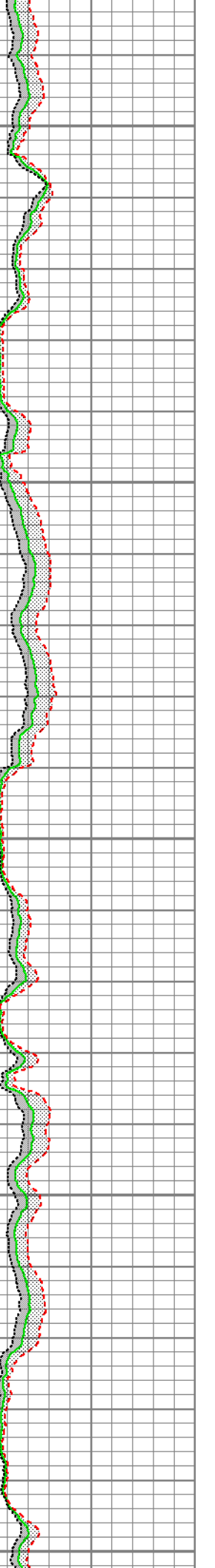
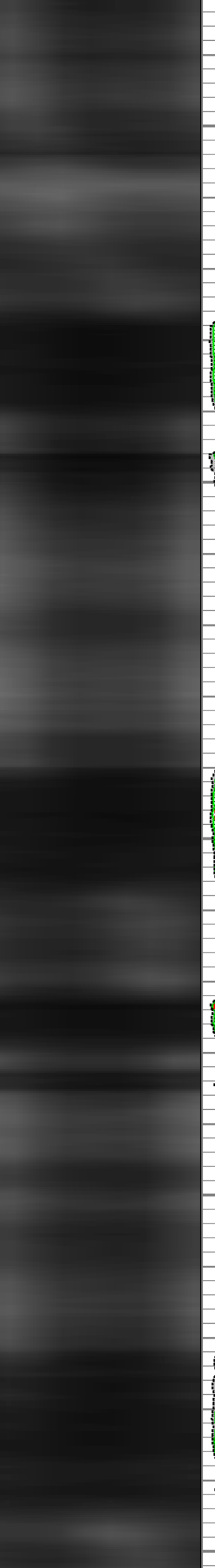
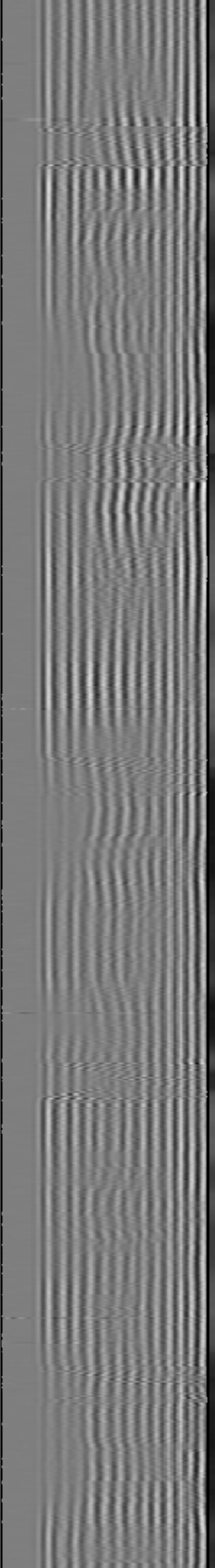
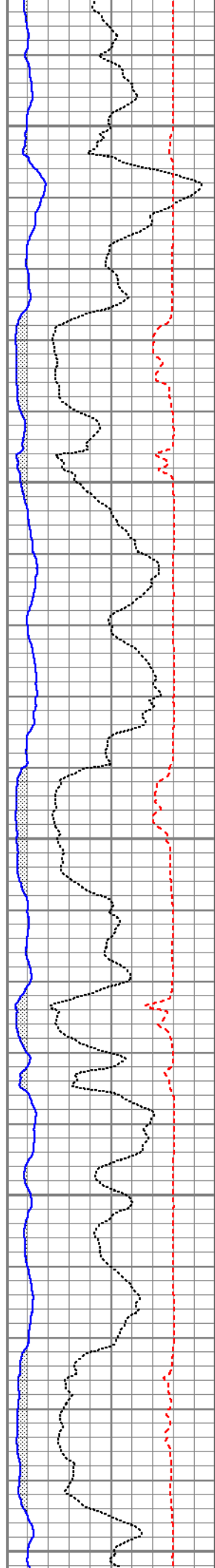


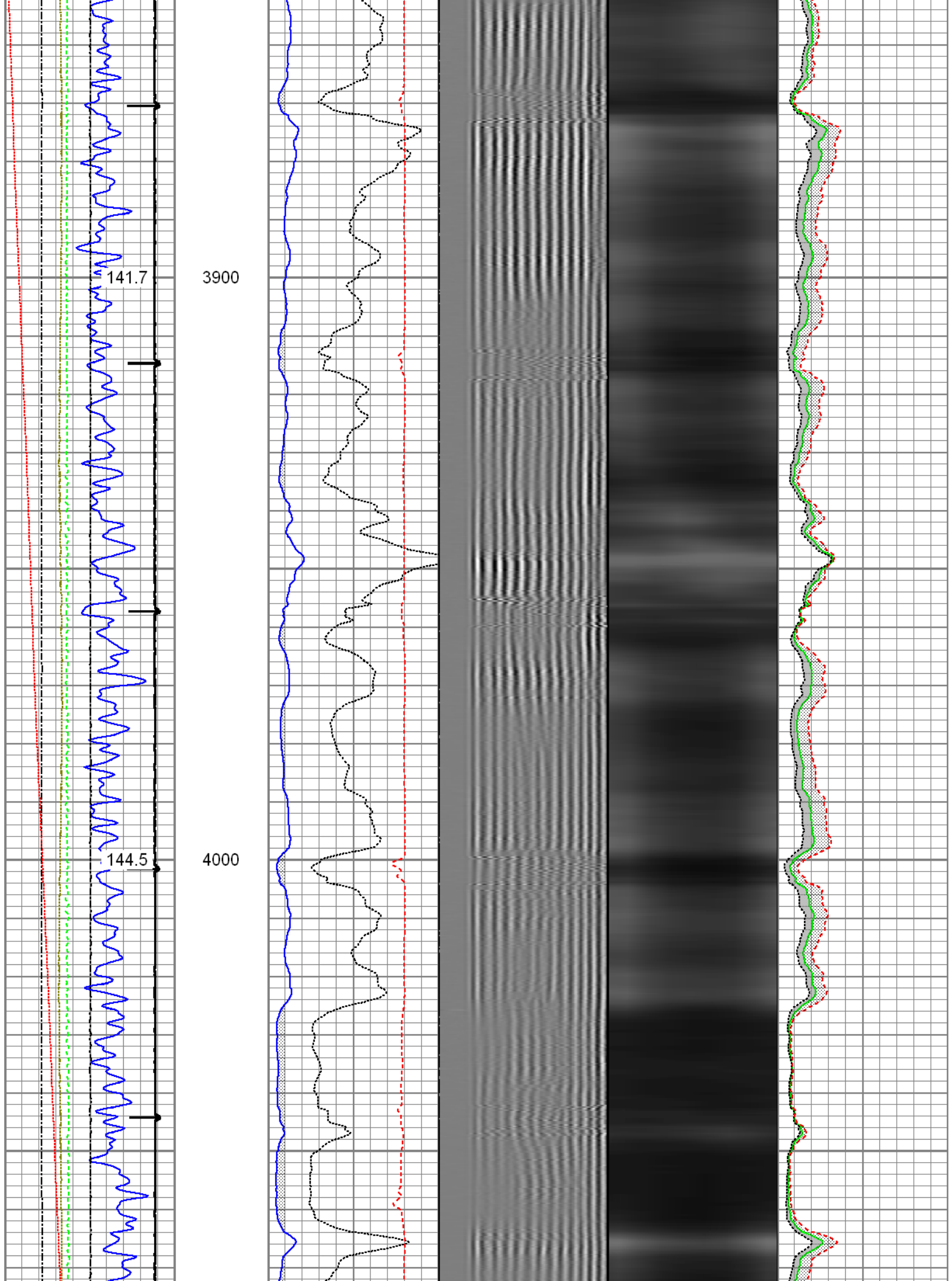


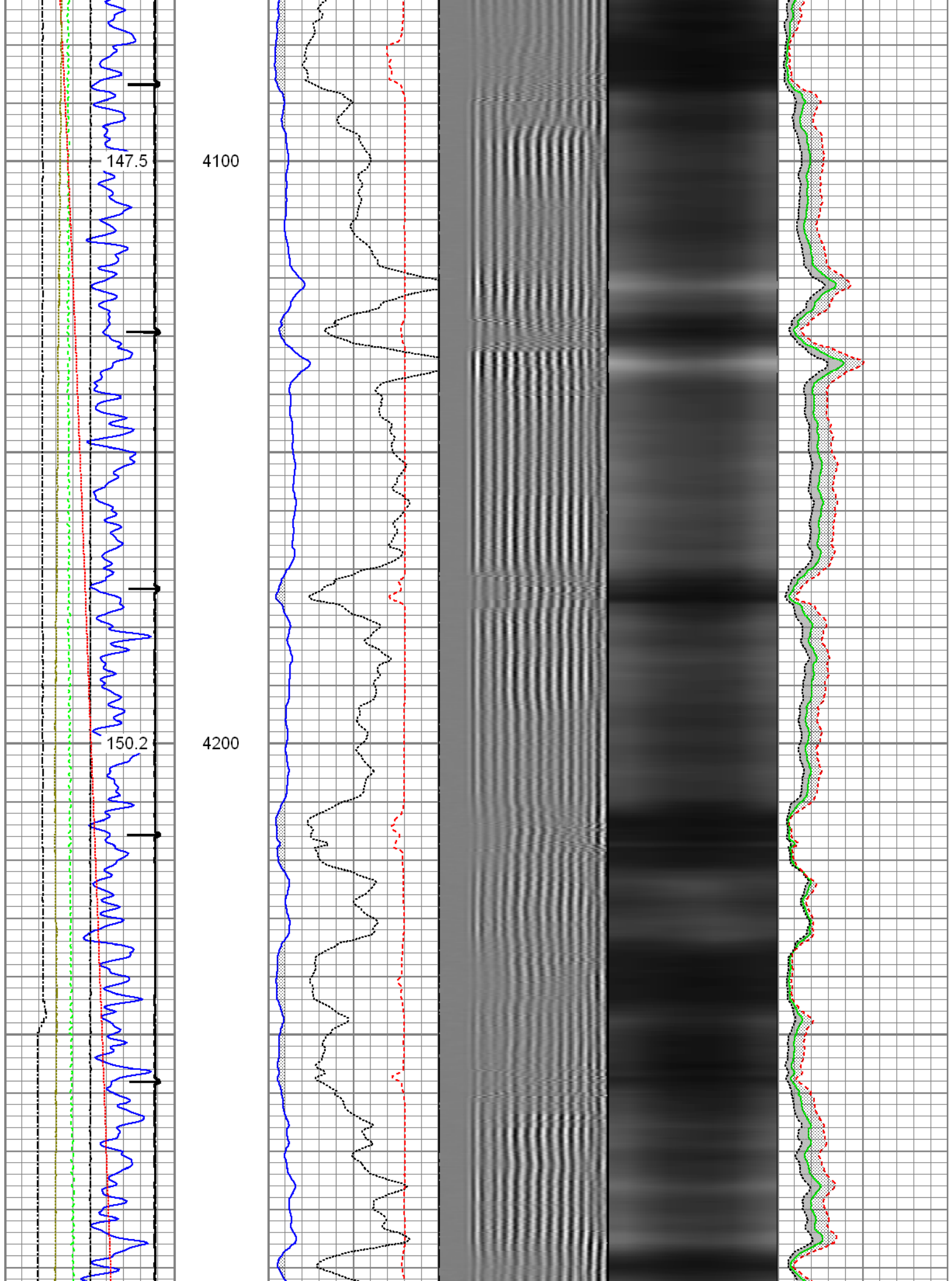


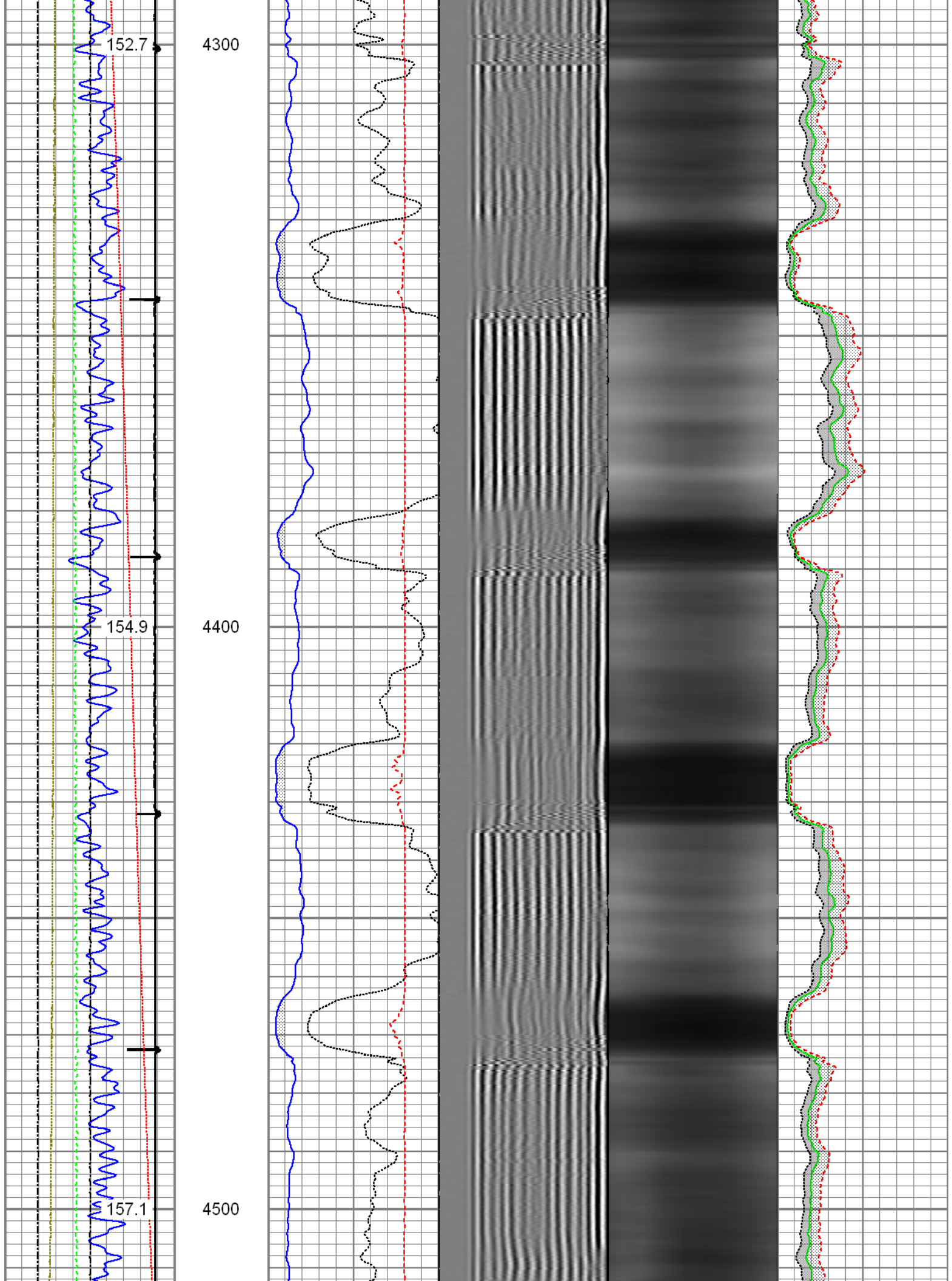
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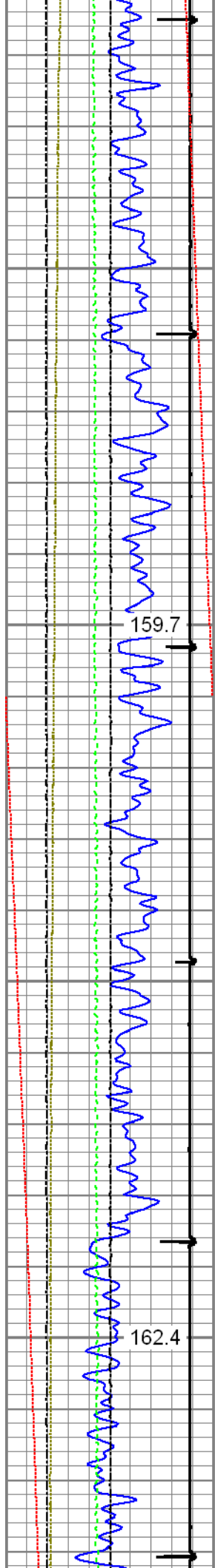
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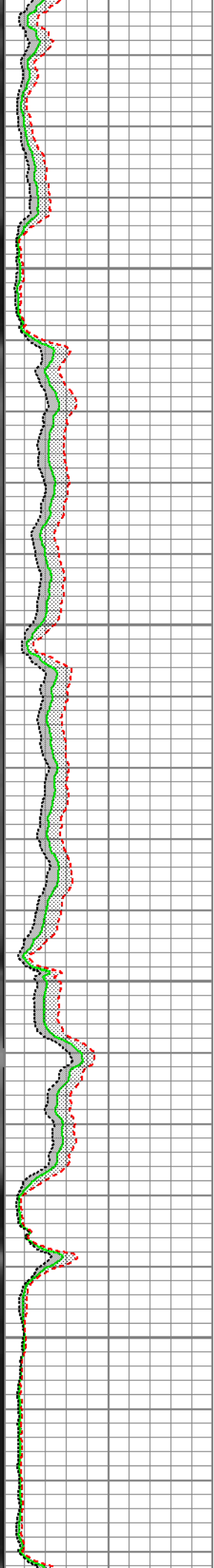
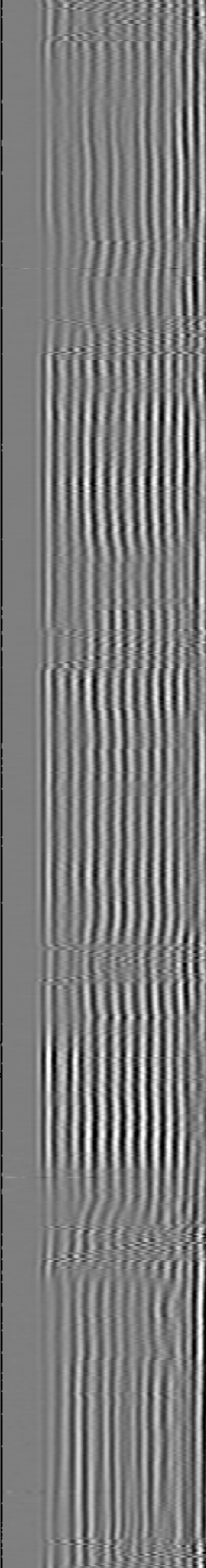
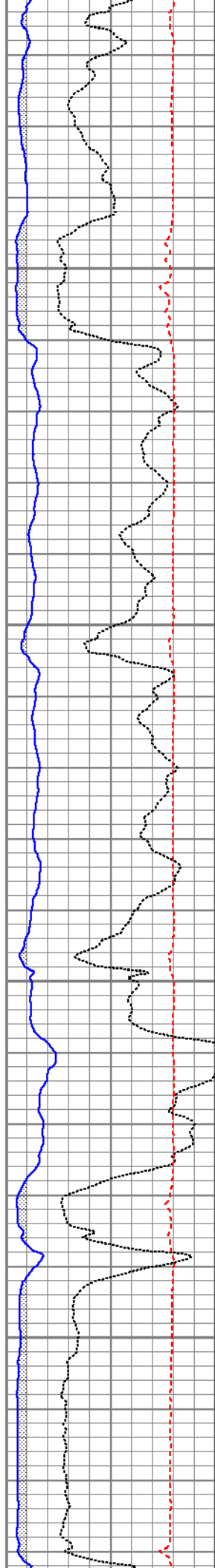


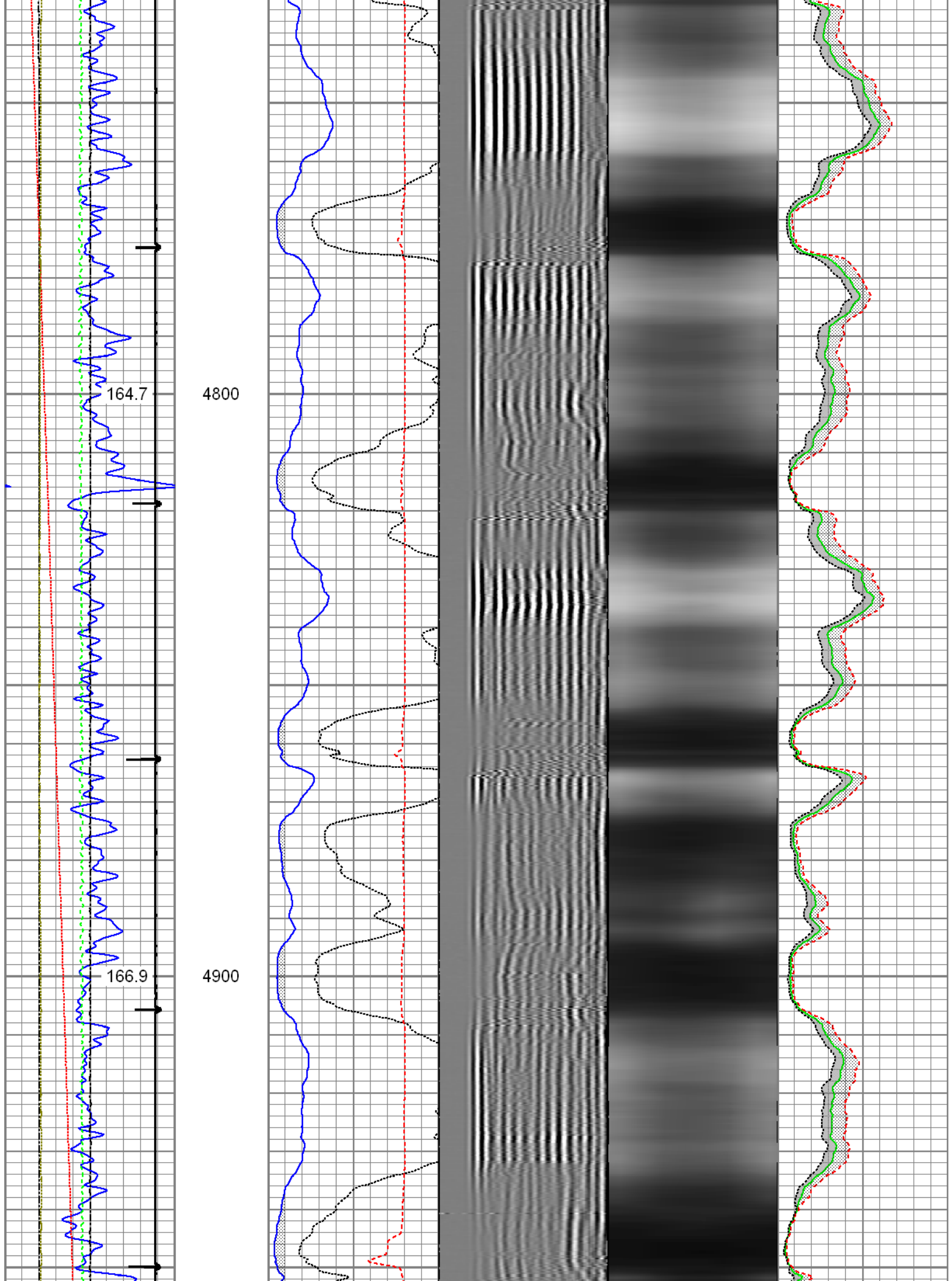


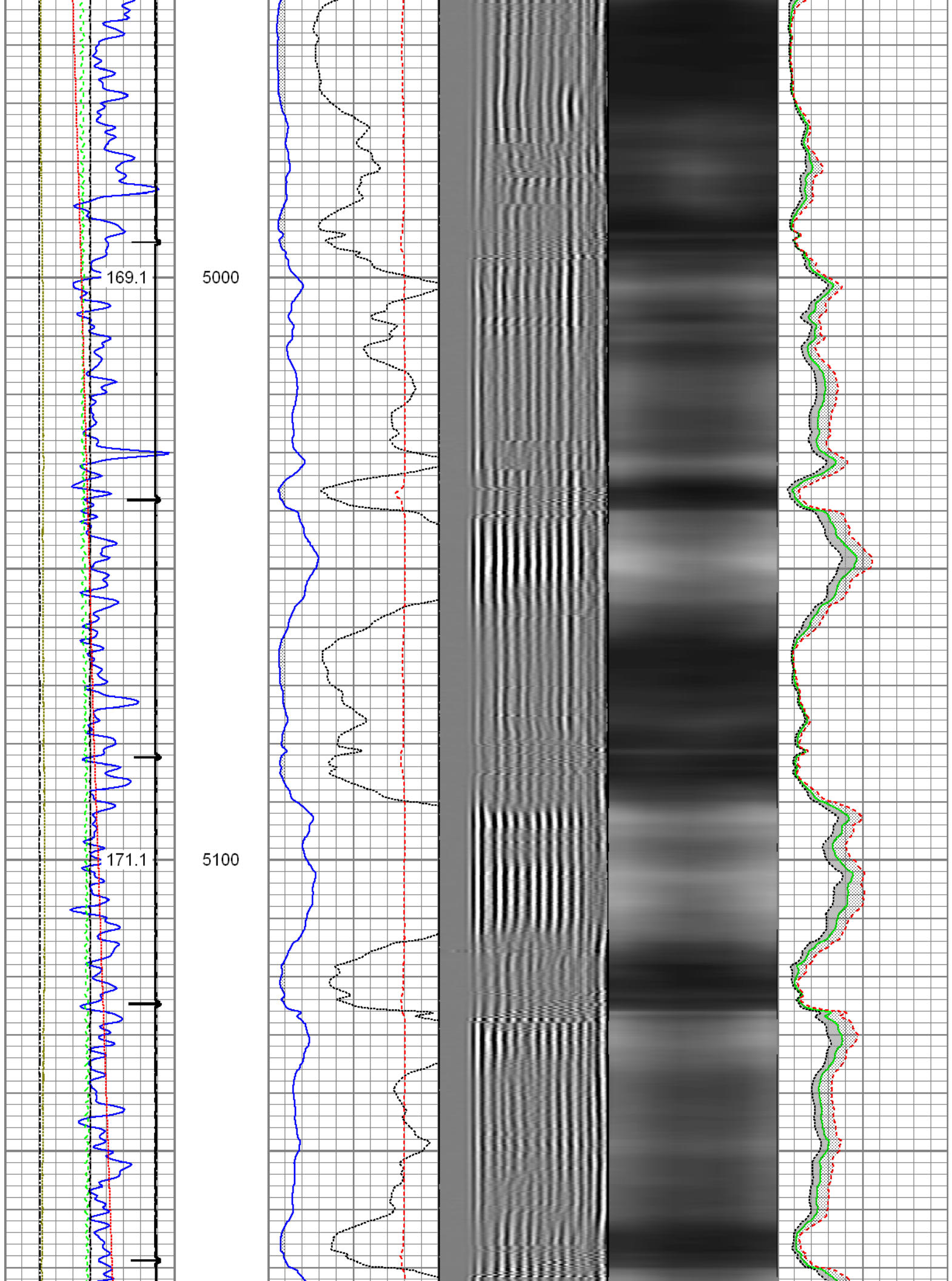


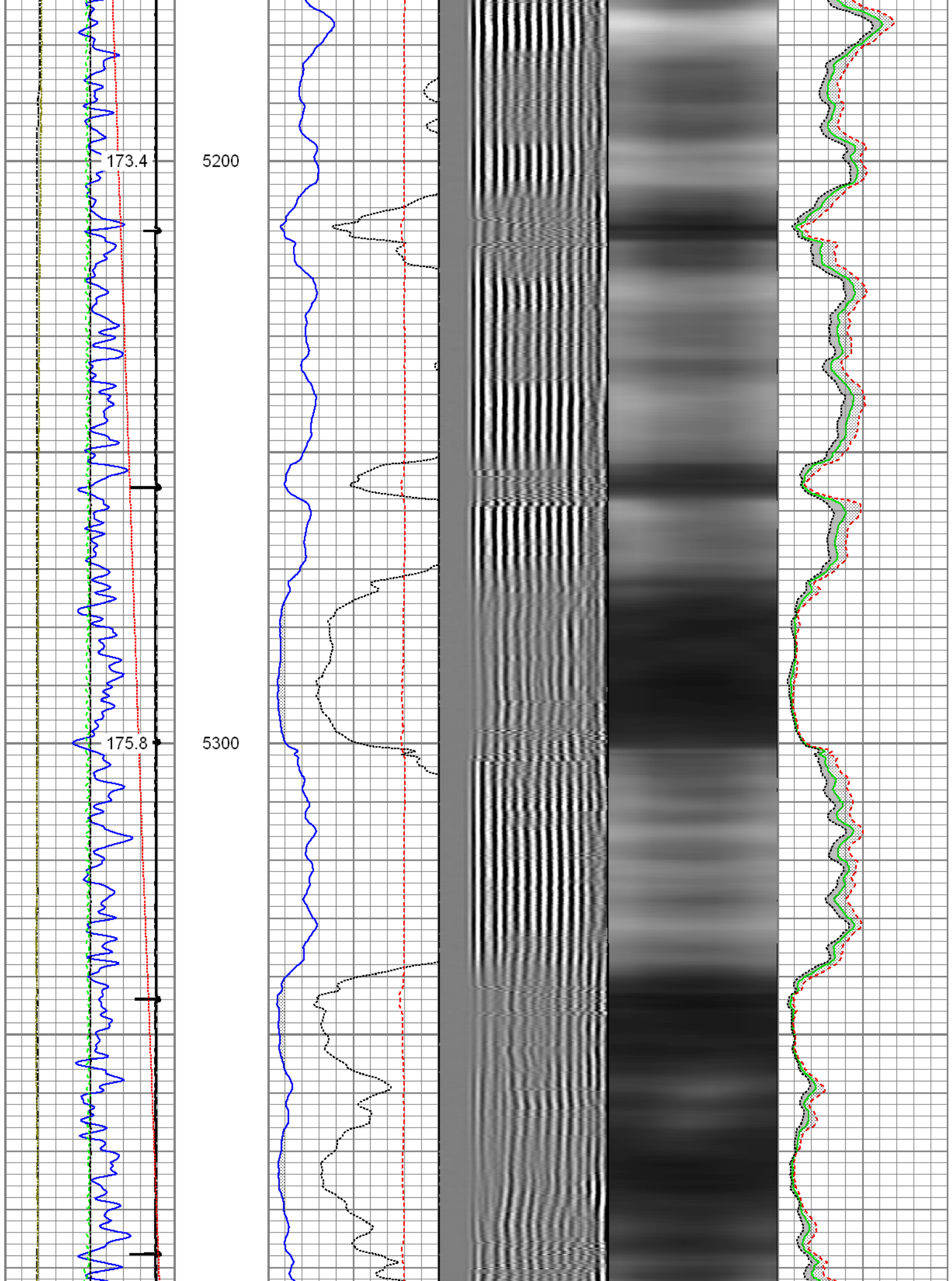
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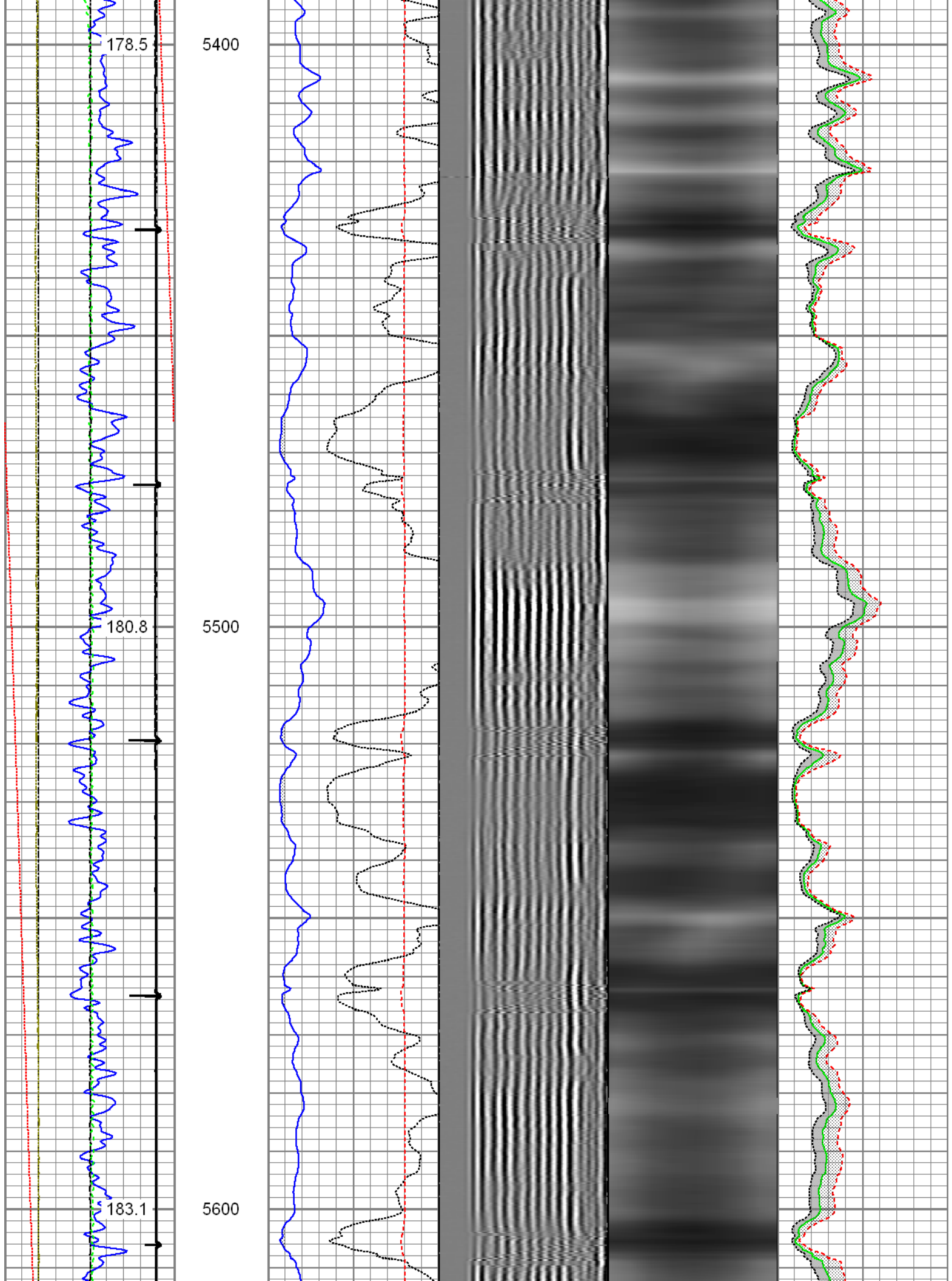
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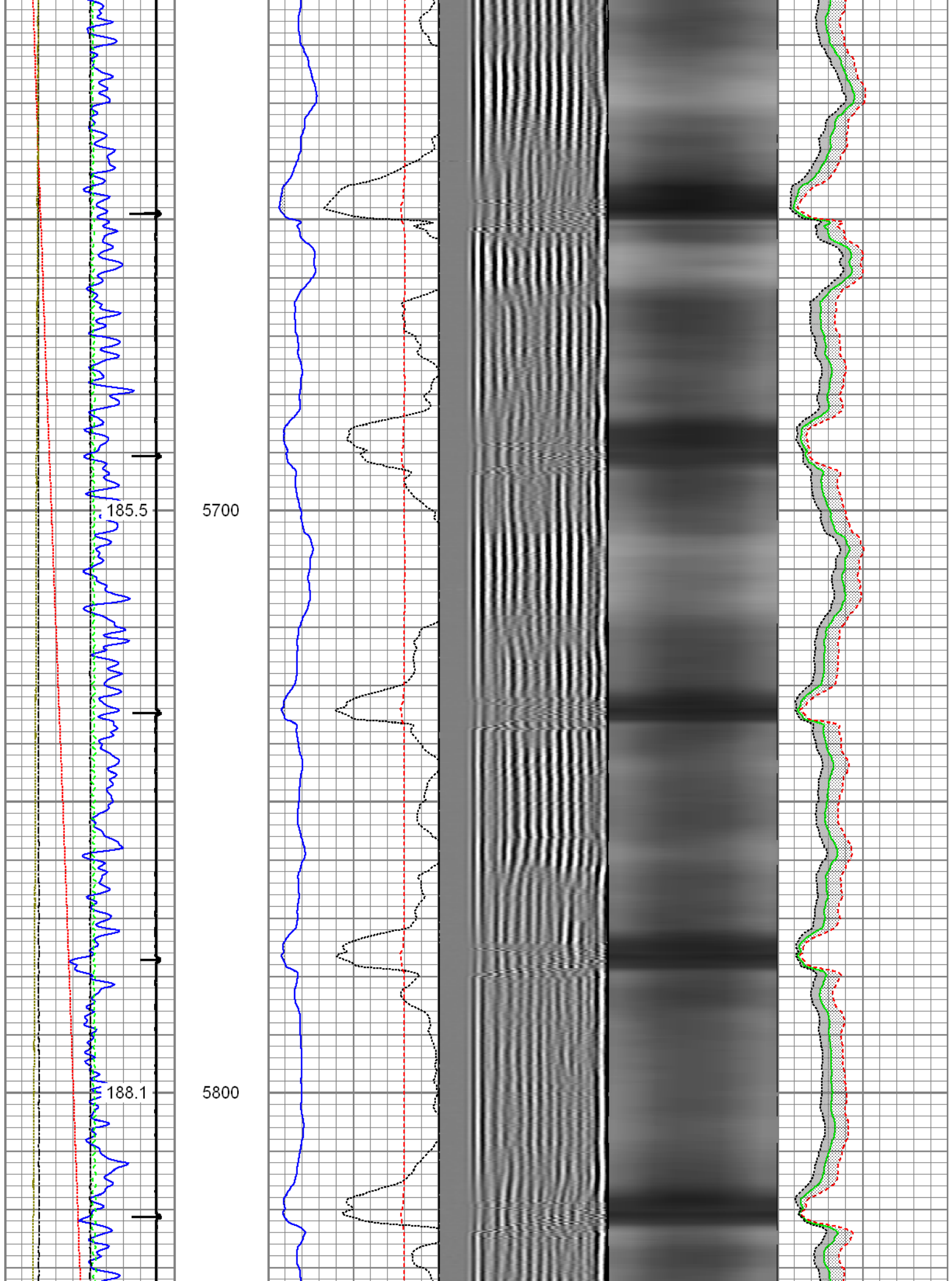


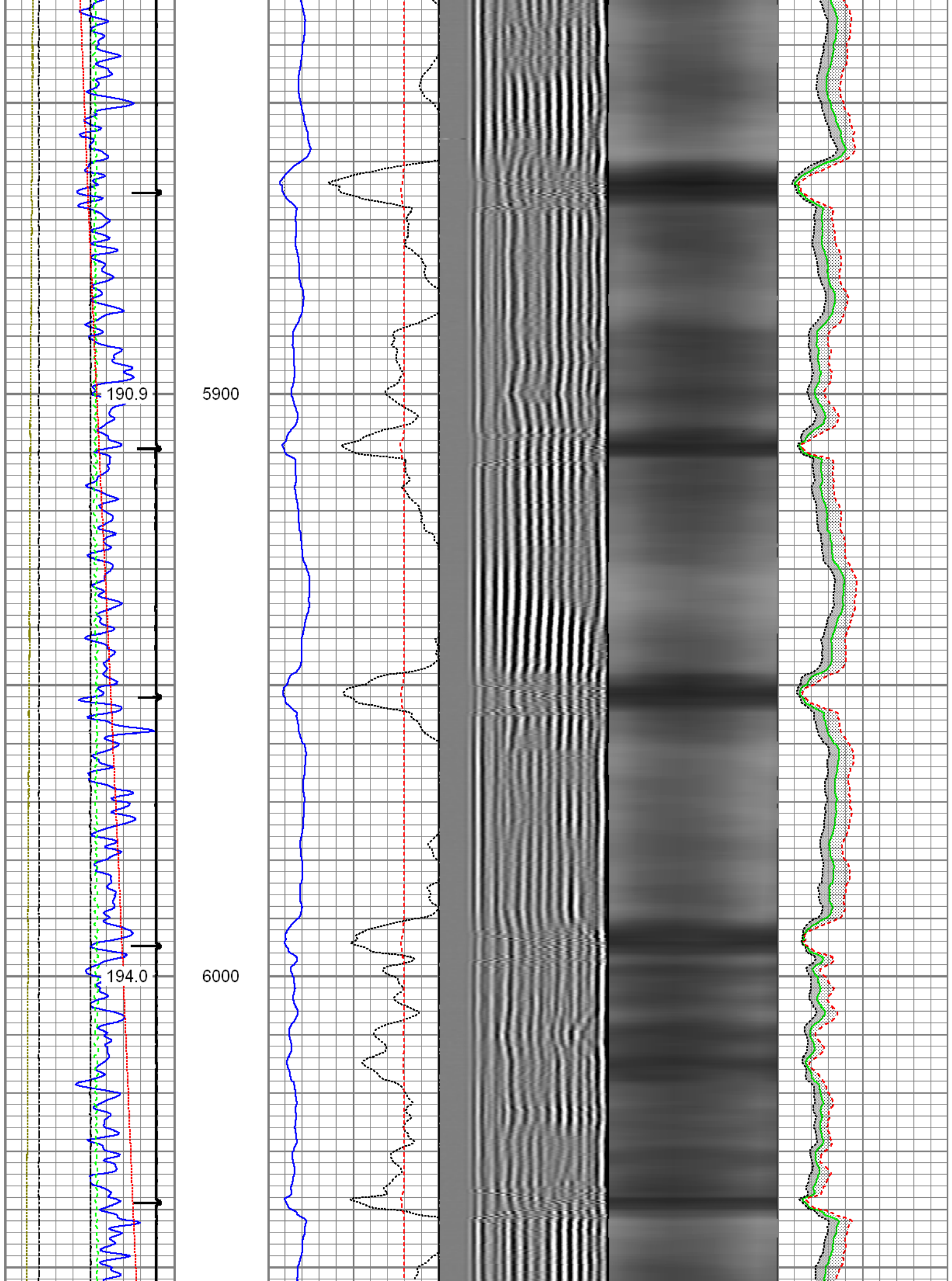


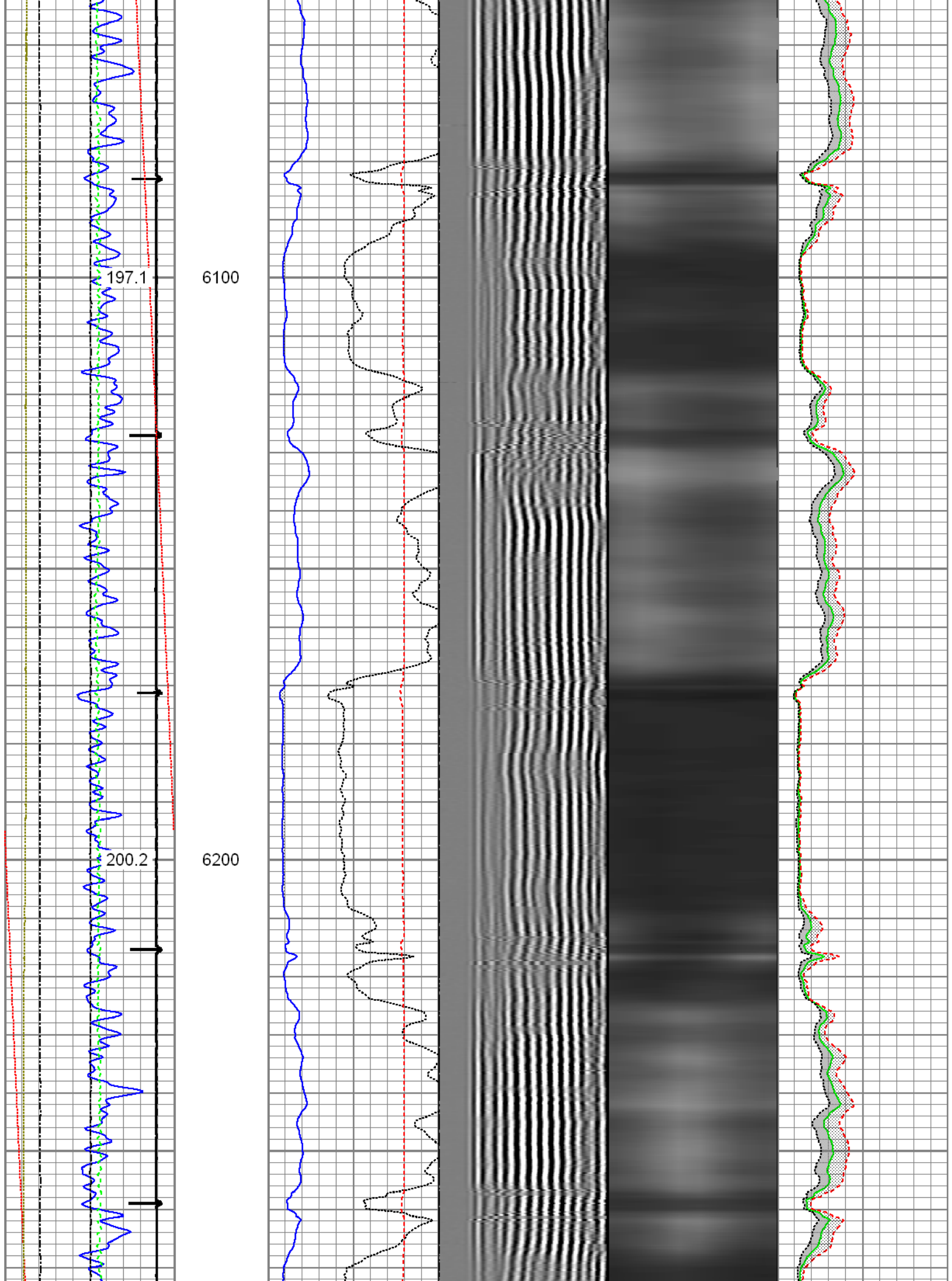


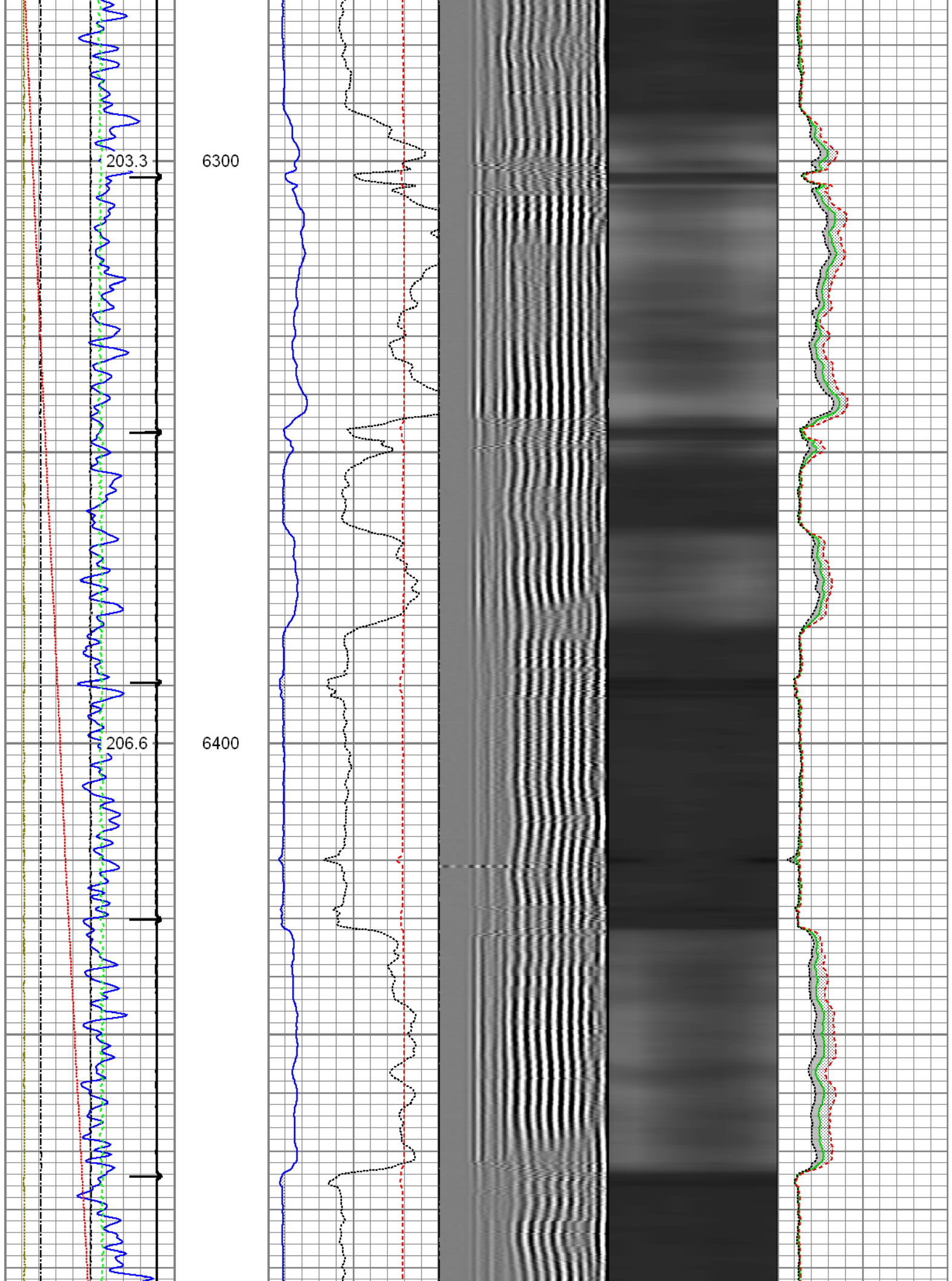


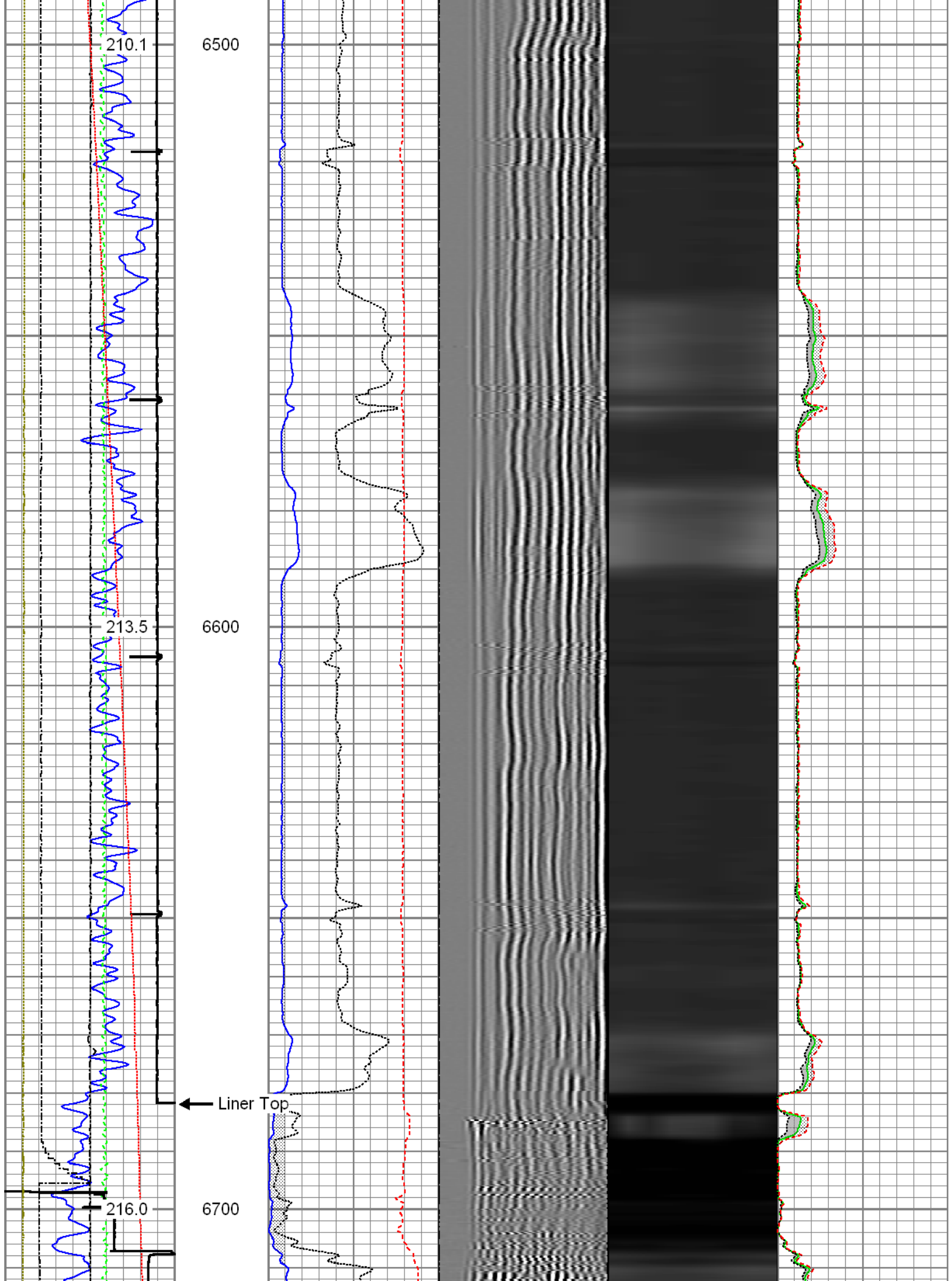


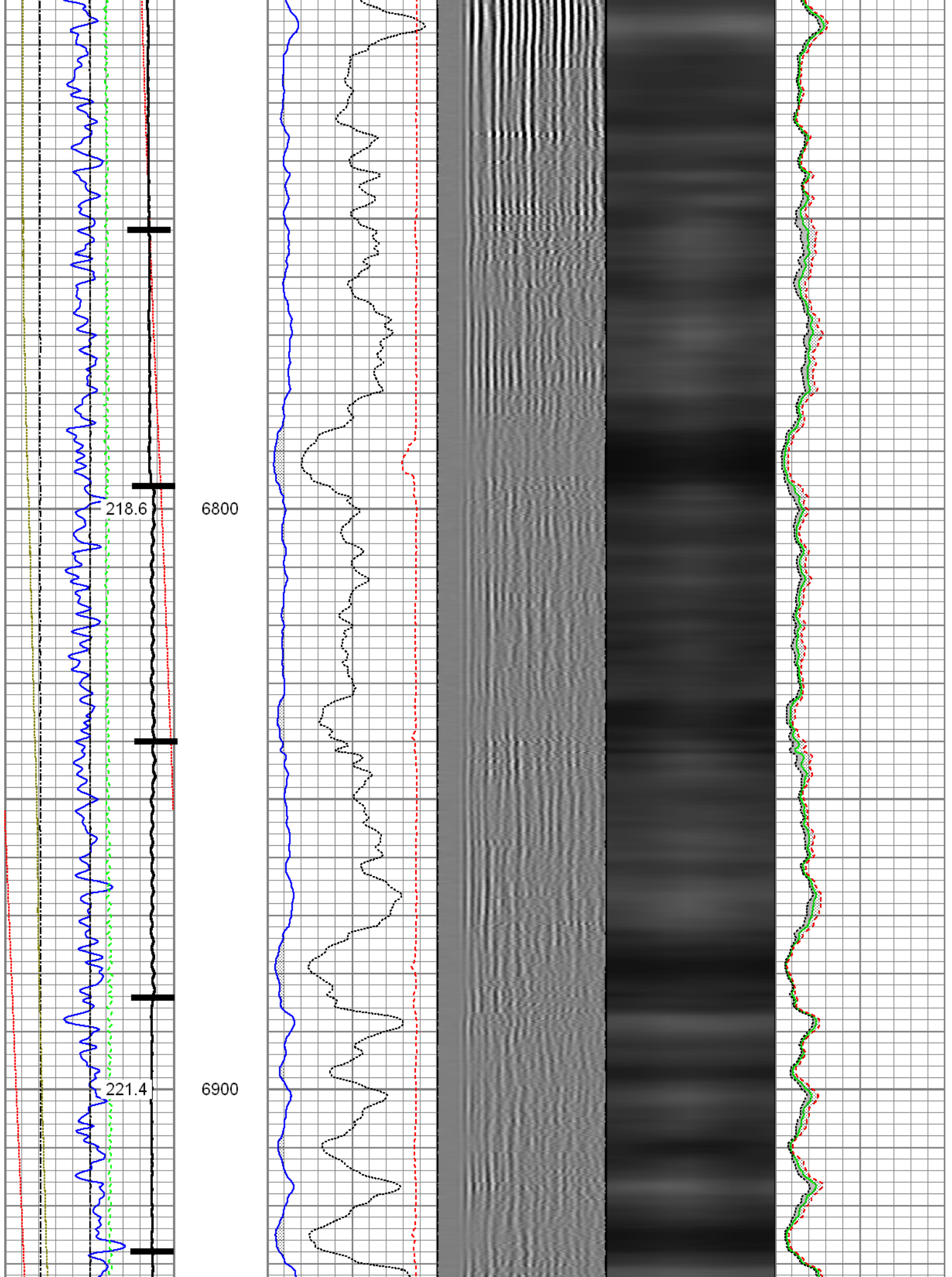


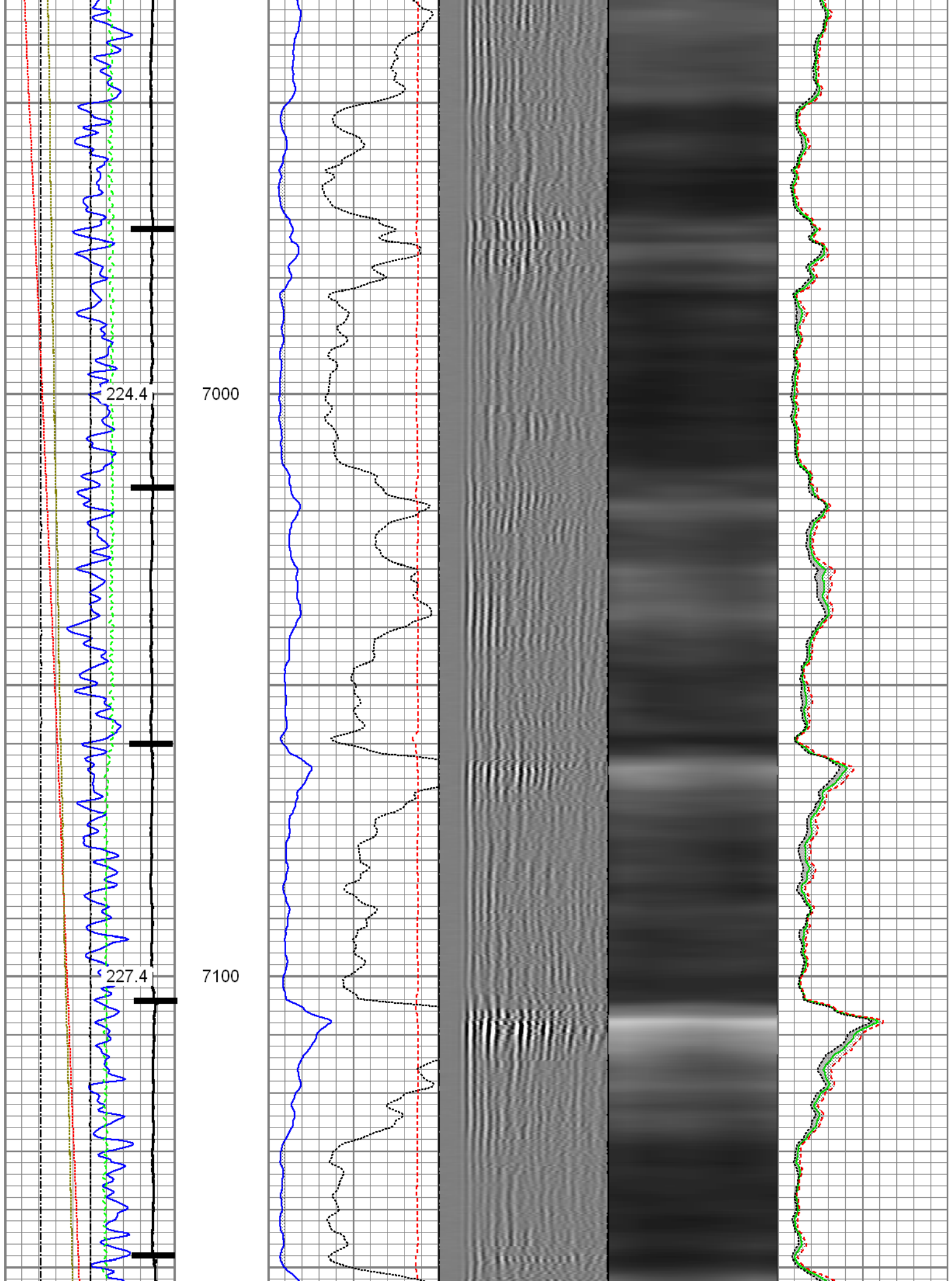


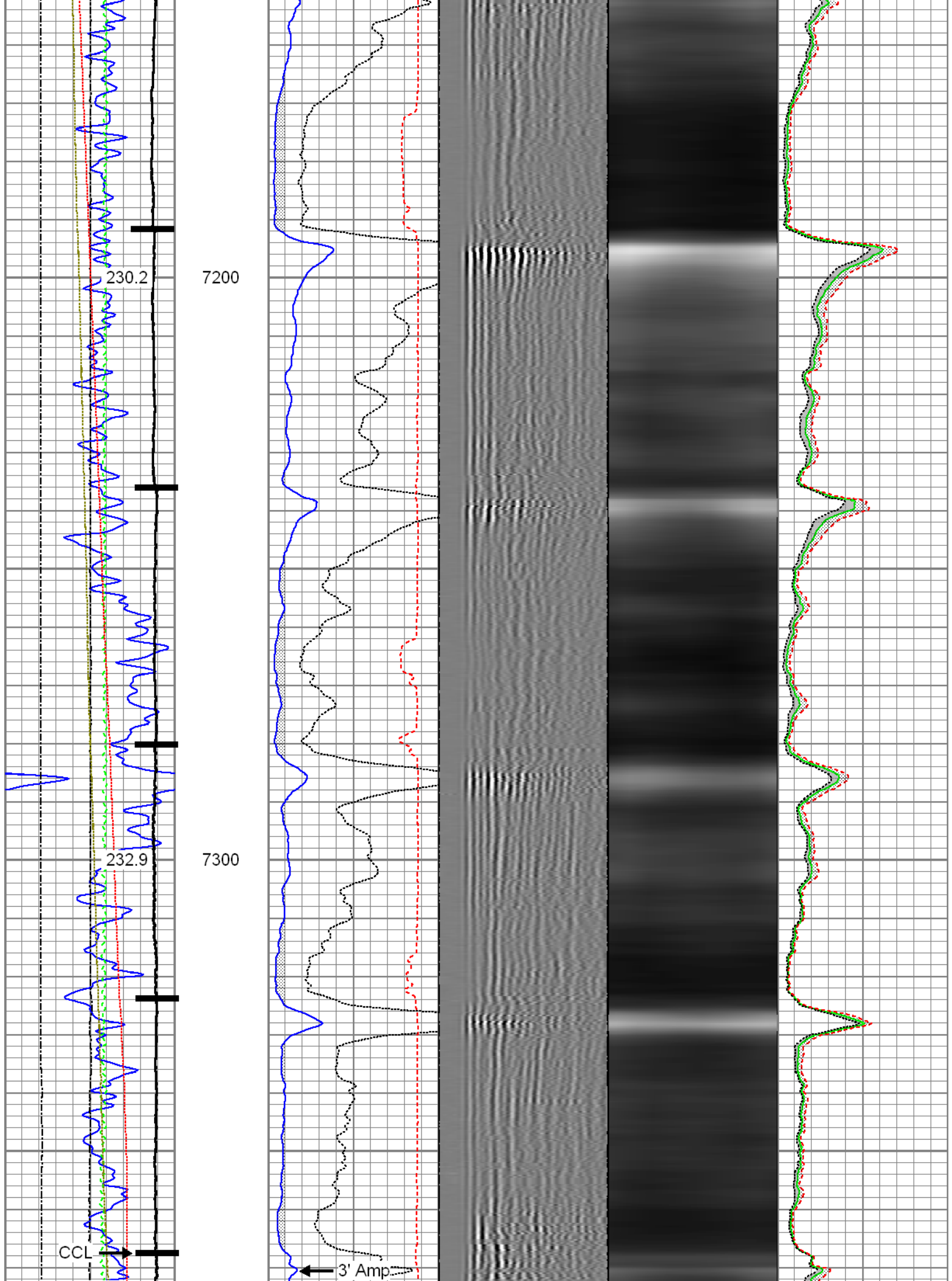


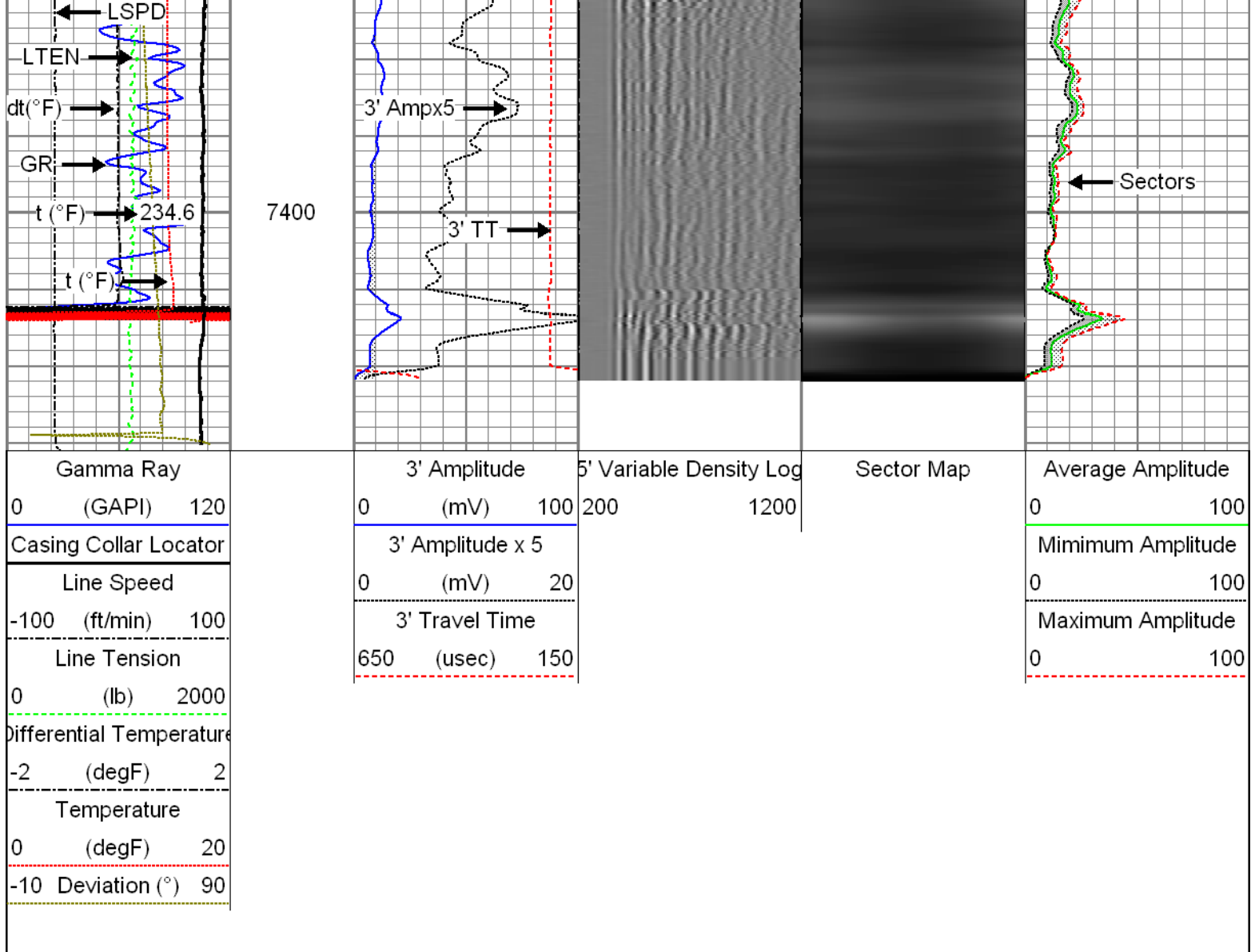








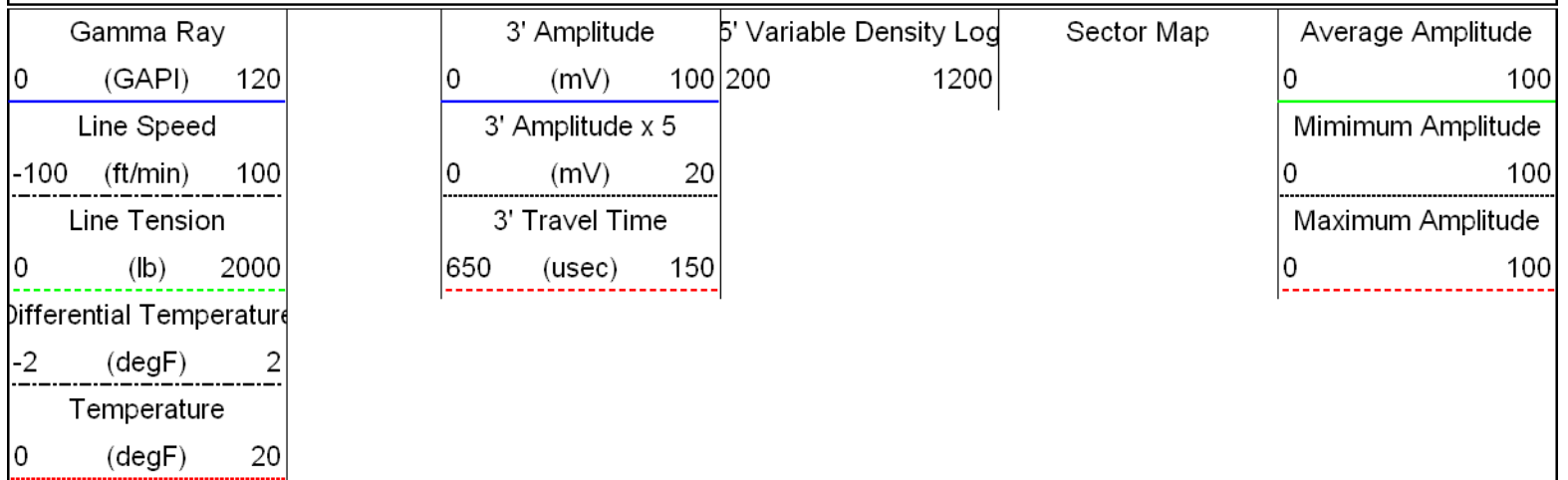




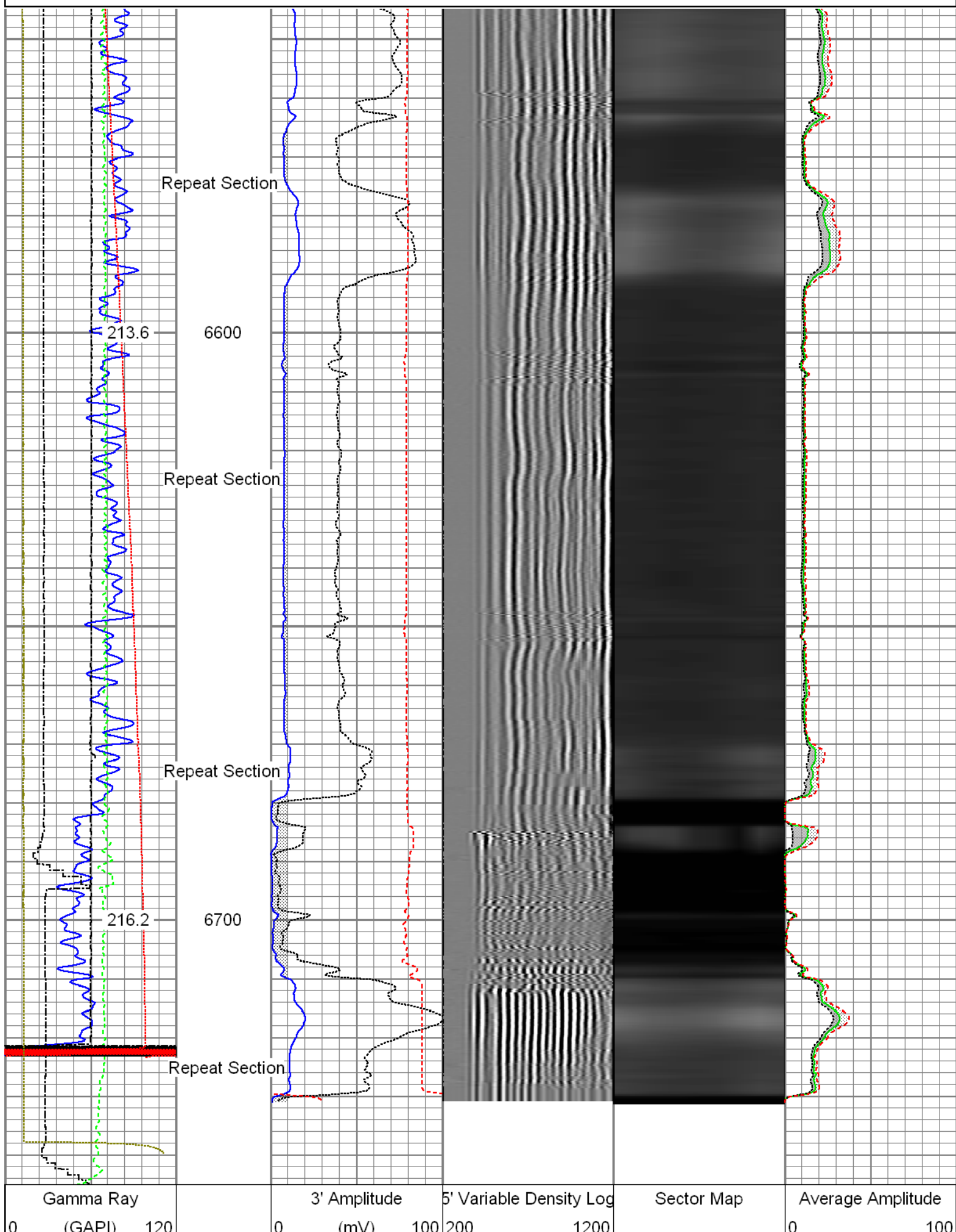
## Repeat Pass

Recorded with 2800 PSI Surface Induced Pressure


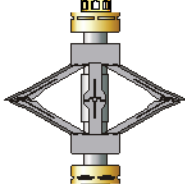
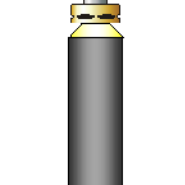
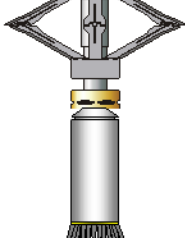
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 Dataset Pathname: pass5  
 Presentation Format: rbt4\_mit  
 Dataset Creation: Thu Jun 25 10:57:31 2015 by Log 7.0 B1  
 Charted by: Depth in Feet scaled 1:240

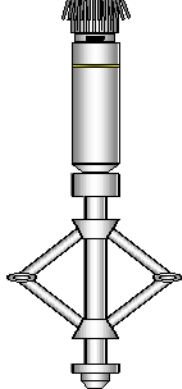


-10 Deviation (°) 90



Line Speed -100 (ft/min) 100	3' Amplitude x 5 0 (mV) 20	Minimum Amplitude 0 100
Line Tension 0 (lb) 2000	3' Travel Time 650 (usec) 150	Maximum Amplitude 0 100
Differential Temperature -2 (degF) 2		
Temperature 0 (degF) 20		
-10 Deviation (°) 90		

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
			GOpin-GOpin 2" GO Pin to GO Pin Connection	0.23	2.00	5.00
			UW_AGS-UW_AGS_001 (218874) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (218874) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10013899) Production Gamma Ray	1.93	1.69	9.50
TEMP	22.45		UW_PRT-UW_PRT_016 (10025100) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW_PRC-DSSRAC (084) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WV3FT	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					
CBLROT	15.42					
WV5FT	14.42		UW_PRC-DSSRAC (083) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00

MIT	5.41		UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10	
TSTAMP	0.00		UW_PRC #4 -UW_PRC_057 (1101) 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: 0512340752_Anadarko_Goodin 36N-A6HZ_06-25-15_MIT_RBL.db: field/well/run1/pass7 Total Length: 28.32 ft Total Weight: 329.50 lb O.D. 3.13 in							

Calibration Report			
Database File:	0512340752_anadarko_goodin 36n-a6hz_06-25-15_mit_rbl.db		
Dataset Pathname:	pass7		
Dataset Creation:	Thu Jun 25 11:07:17 2015 by Log 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: Thu Jun 25 10:19:34 2015							
Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1066	385.0	1451	390.0	1841	400.0	2241
Finger 02:	1028	389.0	1417	406.0	1823	420.0	2243
Finger 03:	1043	382.0	1425	390.0	1815	408.0	2223
Finger 04:	977	387.0	1364	414.0	1778	436.0	2214
Finger 05:	1010	369.0	1379	385.0	1764	399.0	2163
Finger 06:	1009	382.0	1391	403.0	1794	414.0	2208
Finger 07:	1008	379.0	1387	395.0	1782	407.0	2189
Finger 08:	987	382.0	1369	409.0	1778	424.0	2202
Finger 09:	1057	386.0	1443	396.0	1839	398.0	2237
Finger 10:	1021	379.0	1400	398.0	1798	406.0	2204
Finger 11:	1003	379.0	1382	400.0	1782	414.0	2196
Finger 12:	1086	373.0	1459	379.0	1838	382.0	2220
Finger 13:	1035	372.0	1407	397.0	1804	411.0	2215
Finger 14:	1016	386.0	1402	410.0	1812	423.0	2235
Finger 15:	973	382.0	1355	414.0	1769	432.0	2201
Finger 16:	1030	377.0	1407	399.0	1806	416.0	2222
Finger 17:	1060	377.0	1437	387.0	1824	401.0	2225

Finger 17:	1060	377.0	1437	387.0	1824	401.0	2223
Finger 18:	1095	378.0	1473	387.0	1860	403.0	2263
Finger 19:	1056	384.0	1440	393.0	1833	413.0	2246
Finger 20:	970	382.0	1352	401.0	1753	430.0	2183
Finger 21:	1070	378.0	1448	386.0	1834	410.0	2244
Finger 22:	1051	383.0	1434	390.0	1824	418.0	2242
Finger 23:	1087	389.0	1476	389.0	1865	416.0	2281
Finger 24:	1059	351.0	1410	362.0	1772	391.0	2163
Finger 25:	1062	388.0	1450	394.0	1844	421.0	2265
Finger 26:	1027	372.0	1399	385.0	1784	417.0	2201
Finger 27:	1192	401.0	1593	385.0	1978	408.0	2386
Finger 28:	1066	376.0	1442	372.0	1814	408.0	2222
Finger 29:	1015	375.0	1390	389.0	1779	423.0	2202
Finger 30:	998	378.0	1376	394.0	1770	429.0	2199
Finger 31:	1210	411.0	1621	403.0	2024	425.0	2449
Finger 32:	982	378.0	1360	377.0	1737	407.0	2144
Finger 33:	1079	404.0	1483	405.0	1888	439.0	2327
Finger 34:	956	376.0	1332	386.0	1718	419.0	2137
Finger 35:	1116	404.0	1520	406.0	1926	429.0	2355
Finger 36:	1031	369.0	1400	371.0	1771	400.0	2171
Finger 37:	1099	408.0	1507	406.0	1913	427.0	2340
Finger 38:	1067	378.0	1445	383.0	1828	403.0	2231
Finger 39:	1060	372.0	1432	372.0	1804	392.0	2196
Finger 40:	969	394.0	1363	416.0	1779	439.0	2218

Segmented Cement Bond Log Calibration Report

Serial Number:	1063
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	5.500 in
Calibration Depth:	-27.834 ft

Master Calibration, performed Thu Jun 25 10:22:02 2015:							
	Raw (v)		Calibrated (mv)		Results		
	Zero	Cal	Zero	Cal	Gain	Offset	
3FT	-0.002	1.000	0.800	71.921	70.948	0.973	
5FT	-0.006	1.000	0.800	71.921	70.690	1.231	
S1	-0.004	1.000	0.000	100.000	99.635	0.365	
S2	-0.004	1.000	0.000	100.000	99.635	0.365	
S3	-0.003	1.000	0.000	100.000	99.742	0.258	
S4	-0.004	1.000	0.000	100.000	99.635	0.365	
S5	-0.002	1.000	0.000	100.000	99.756	0.244	
S6	-0.003	1.000	0.000	100.000	99.726	0.274	
S7	-0.002	1.000	0.000	100.000	99.753	0.247	
S8	-0.003	1.000	0.000	100.000	99.744	0.256	

Temperature Calibration Report

Serial Number:	10025100			
Tool Model:	UW_PRT_016			
Performed:	Wed Feb 11 13:47:59 2015			
Point #	Reading		Reference	
1	13249.00	cps	68.00	degF
2	18454.00	cps	104.00	degF
3	29735.00	cps	176.00	degF
4	41457.00	cps	248.00	degF
5	52851.00	cps	320.00	degF
6	59128.00	cps	356.00	degF
7		cps		degF
8				degF

8  
9  
10

cps  
cps  
cps

degF  
degF  
degF

### Gamma Ray Calibration Report

Serial Number:	10013899	
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	Goodin 36N - A6HZ
Field	Wattenberg
County	Weld
State	Colorado