



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company				Kerr-McGee Oil & Gas Onshore, L.P.			
Well				Ferge 4C-14HZ			
Field				Wattenberg			
County				Weld			
State				Colorado			
Location:				API # : 05-123-36343			
Permanent Datum				SHL: 282' FSL 1058'FWL			
Log Measured From				Lat/Long: 40.218591/-104.750016			
Drilling Measured From				SEC 14 TWP 3N RGE 66W			
Ground Level				Elevation 4913'			
Kelly Bushing				13 FT			
Kelly Bushing				K.B. 4926'			
				D.F. 4925'			
				G.L. 4913'			
Date				20 May 2014			
Run Number				Three			
Depth Driller				12383 FT			
Depth Logger				6820 FT			
Bottom Logged Interval				6825 FT			
Top Log Interval				Surface			
Open Hole Size				8.750"			
Type Fluid				Water			
Density / Viscosity				8.34 lbm/gal			
Max. Recorded Temp.				245°F			
Estimated Cement Top				68 FT			
Time Well Ready				7:00 AM			
Time Logger on Bottom				2:00 PM			
Equipment Number				HD-134			
Location				Fort Lupton, CO			
Recorded By				W. Wacker			
Witnessed By				Sonny Segura			
Borehole Record				Tubing Record			
Run Number				Bit			
From				To			
Size				Weight			
From				To			
Casing Record				Size (in)			
Surface Casing				Wgt (lbs/Ft)			
Intermediate #1				Grade			
Intermediate #2				Top			
Liner				Bottom			
4-1/2"				11.6#			
P-110				6758 FT			
				12368 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 reference to Casing Tally reported Liner Top at 6758 FT.
Adjusted -24 FT from KB zero to correlate with Liner Top
Gauge Ring / Junk Basket run 3 Joints below Liner Top run prior to log run.
Retrievable Bridge Plug set at 6840 FT prior to log.
Log ran from just above RBP to surface.
Log ran with 2800 PSI surface induced pressure.

Thank you for choosing FMC Technologies Completion Services, Inc.



Main Pass

Logged with 2800 PSI at Surface

Database File: 0512336343_anadarko_ferge 4c-14hz_05-20-14_mit_rbl.db

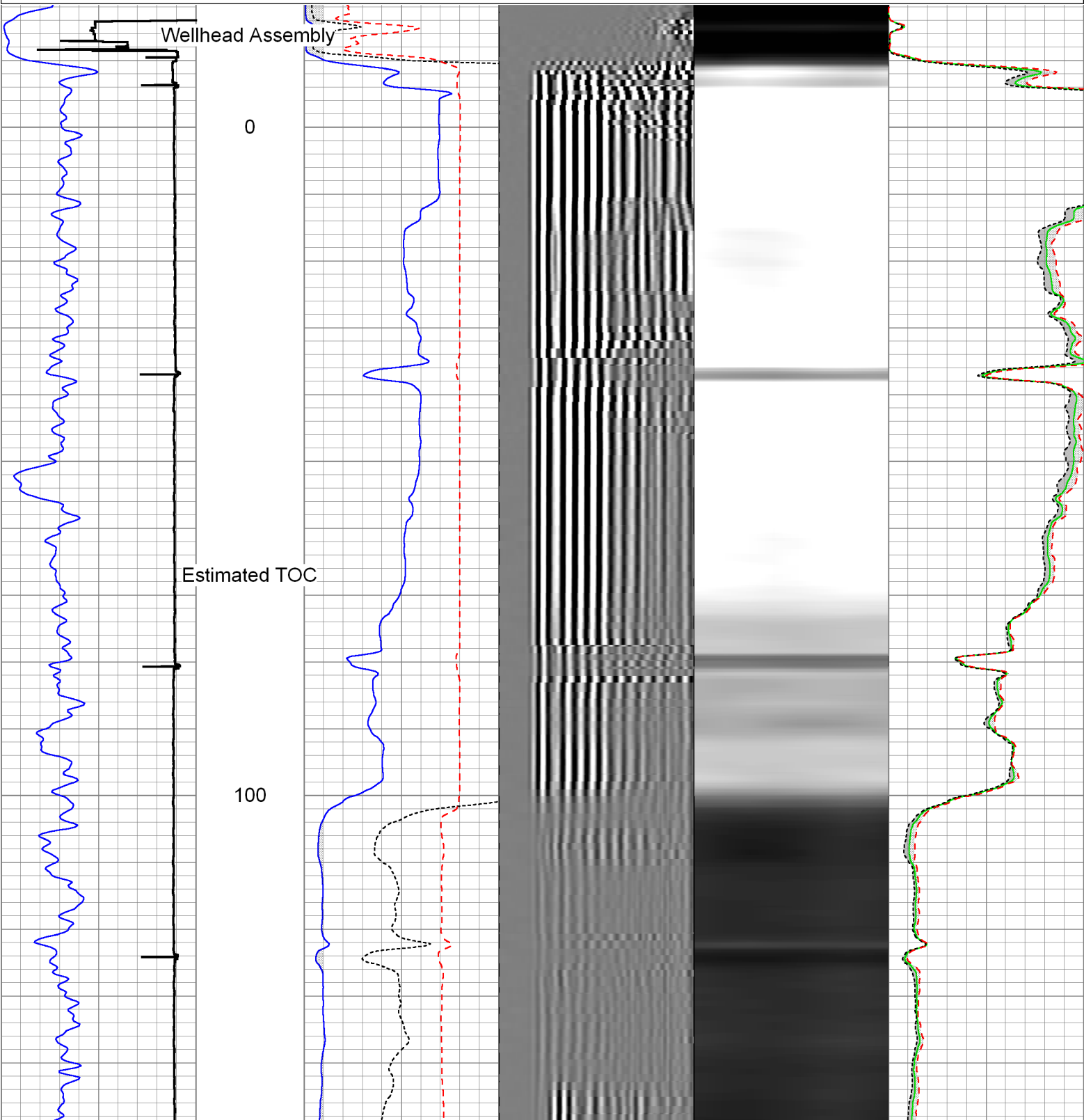
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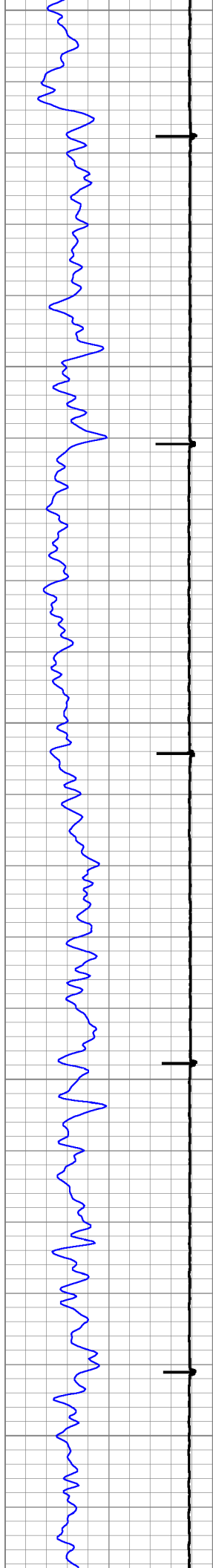
Presentation Format: rbt007

Dataset Creation: Tue May 20 13:55:29 2014 by Log 7.0 B1

Charted by: Depth in Feet scaled 1:240

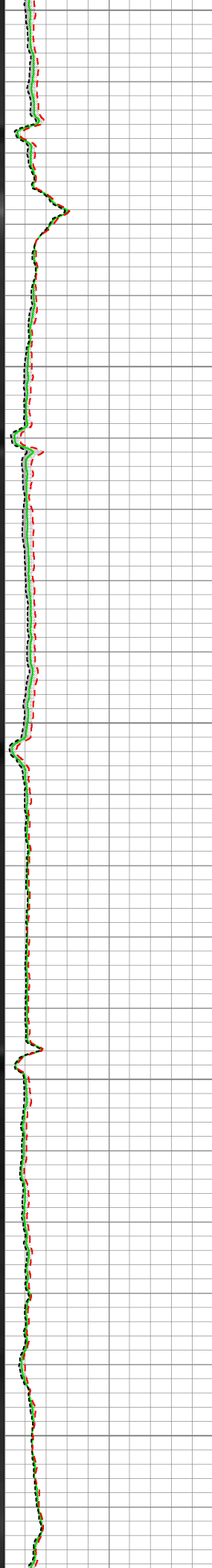
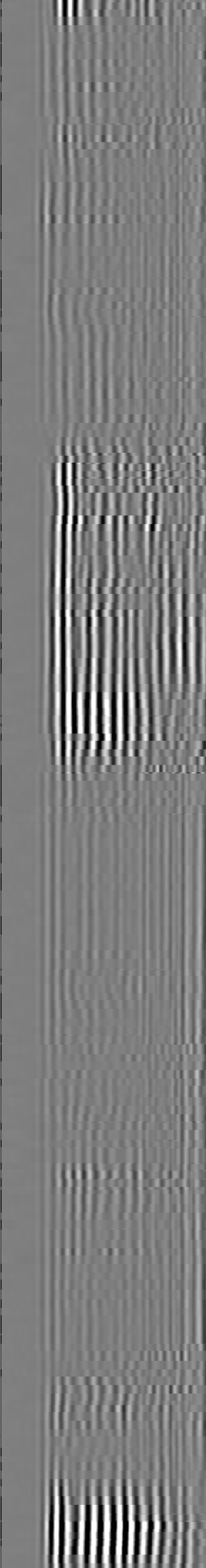
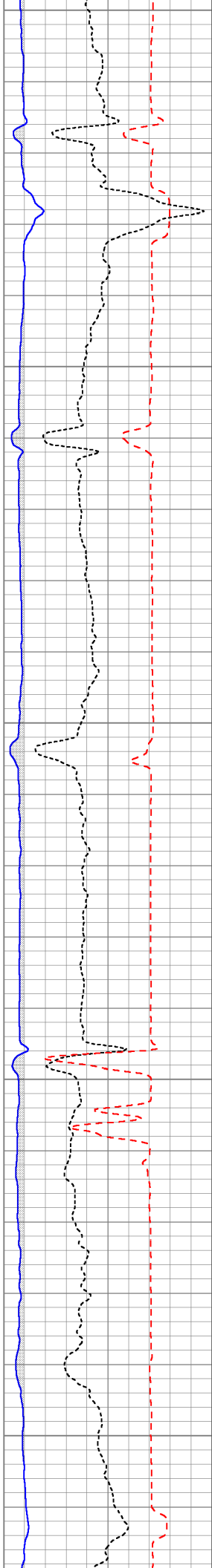
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

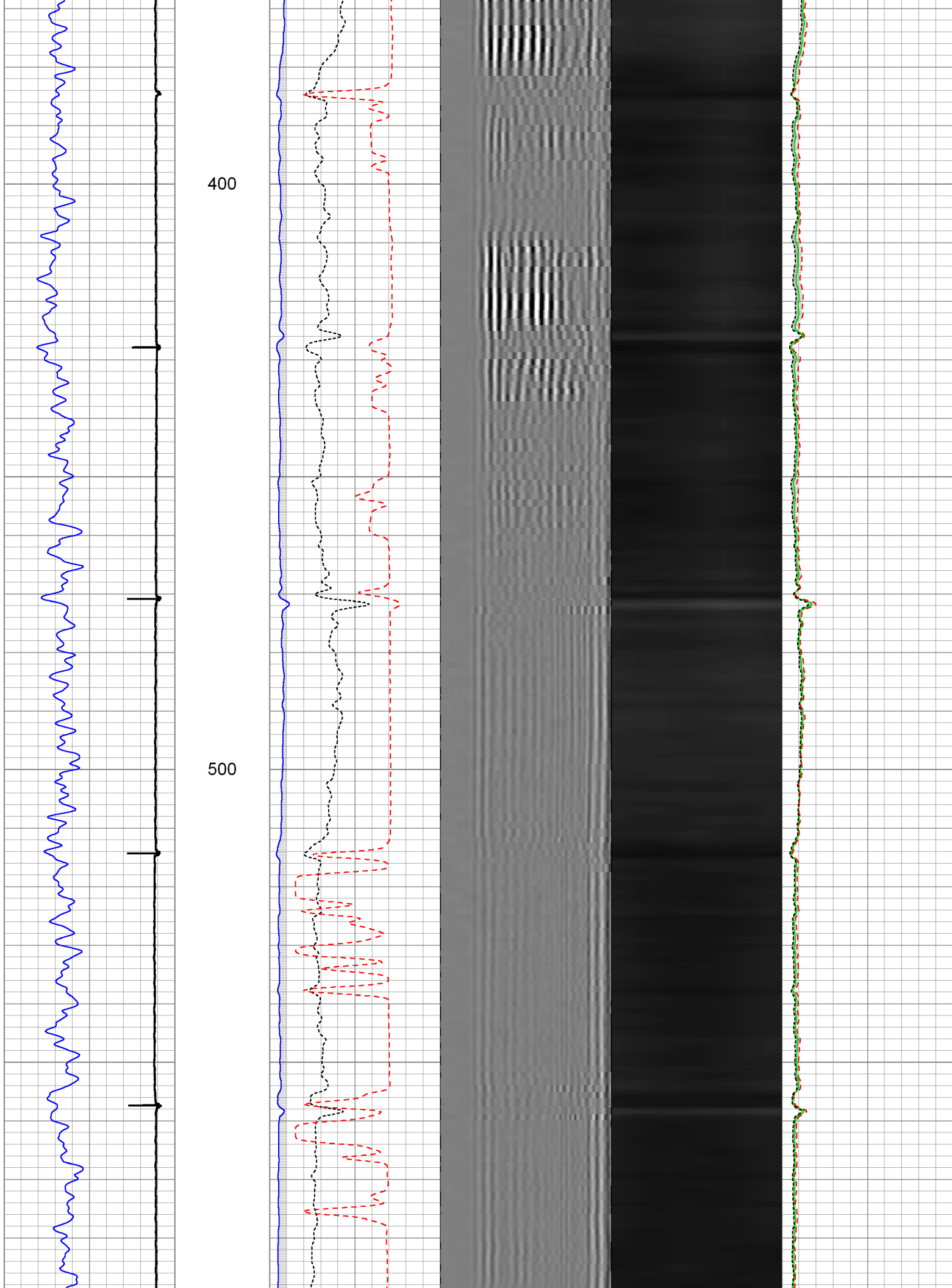


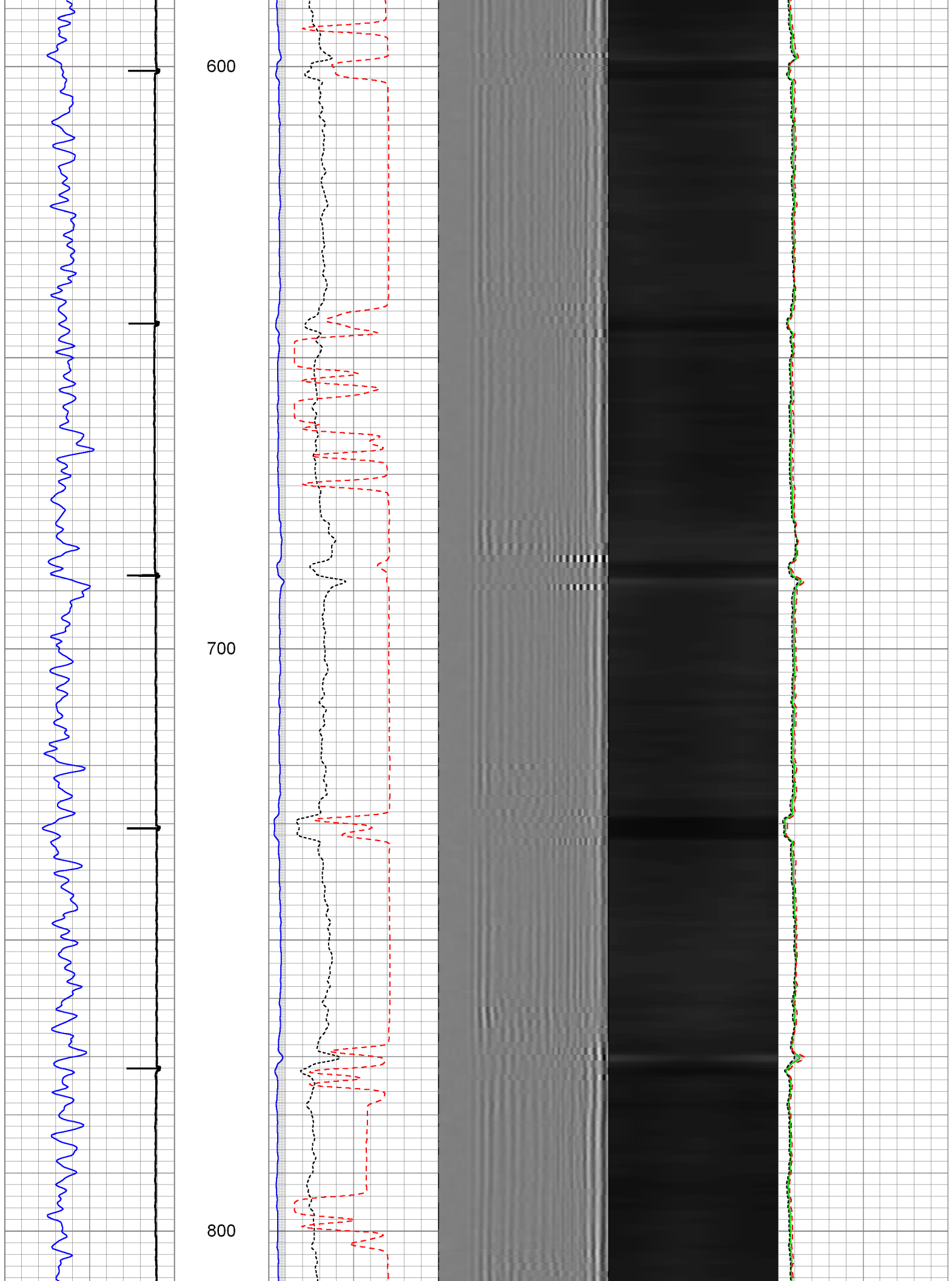


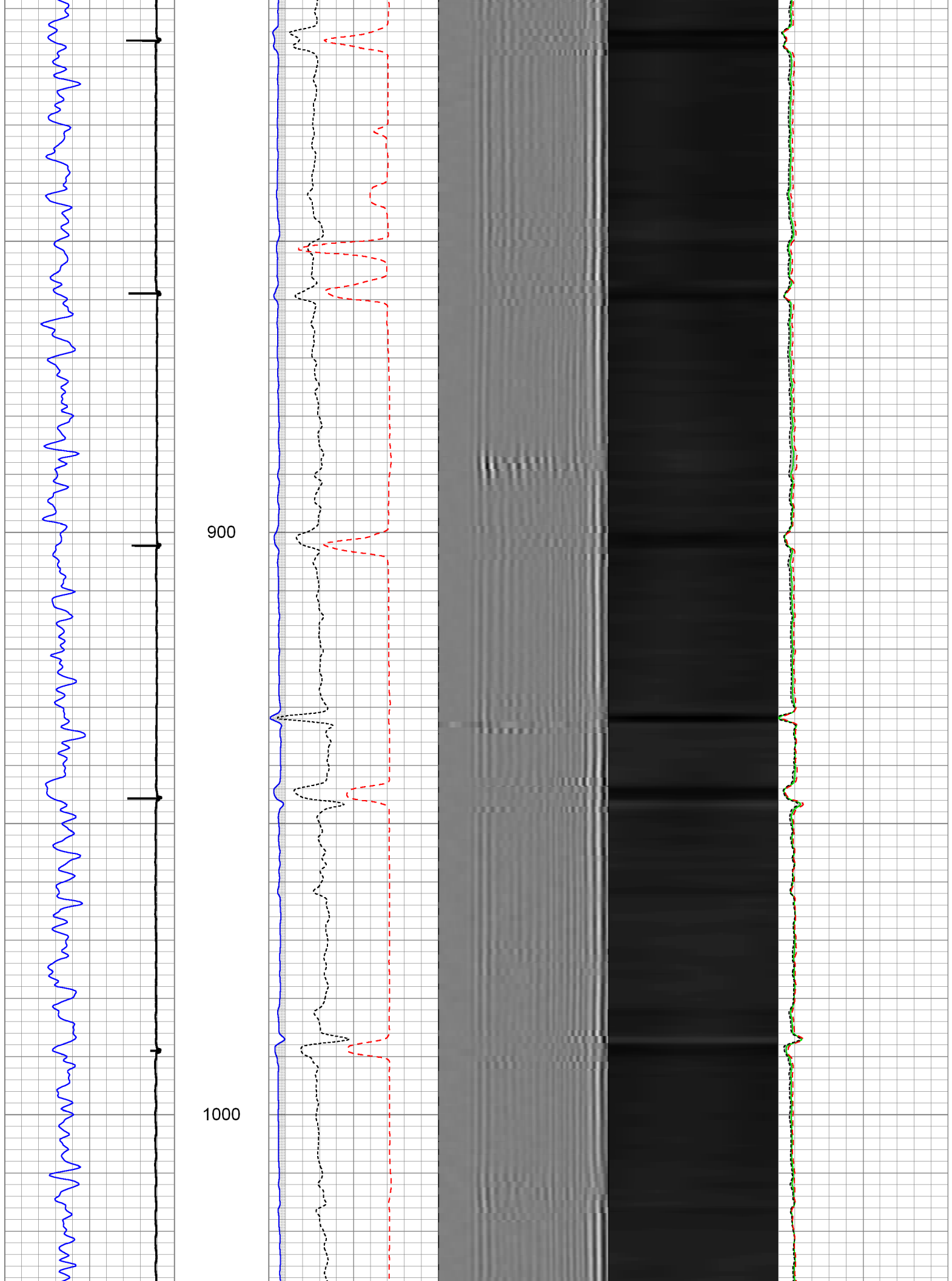
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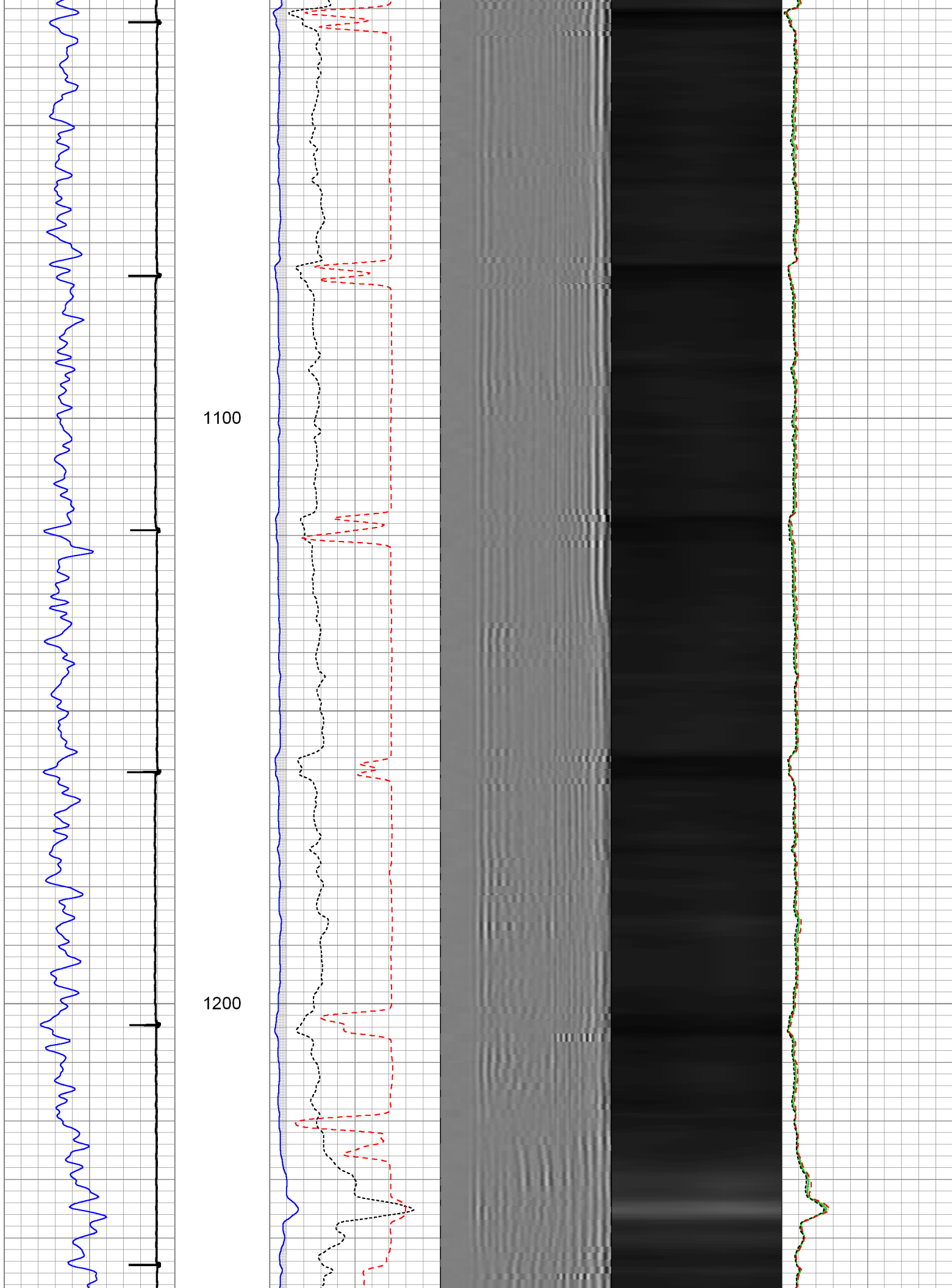
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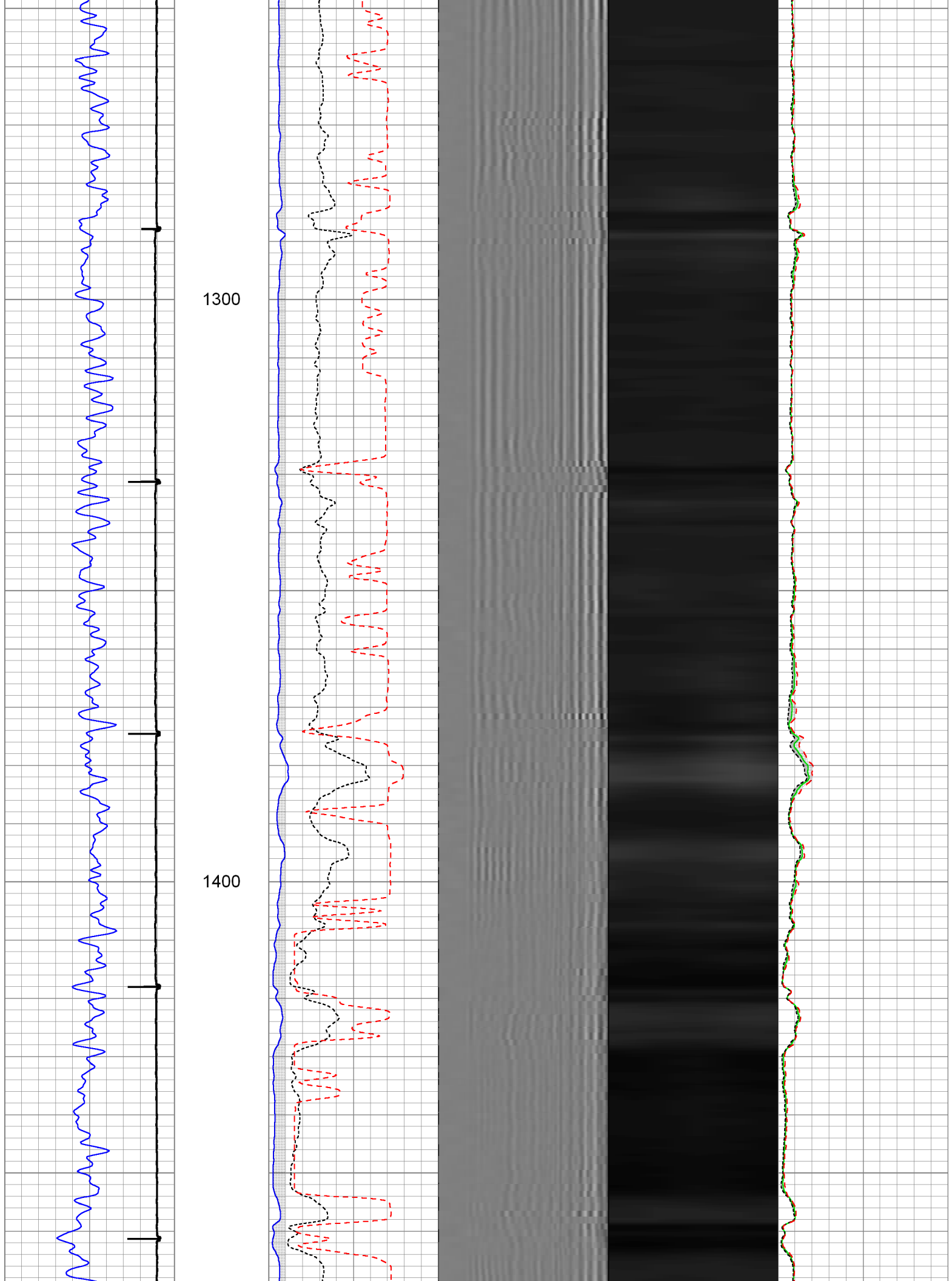


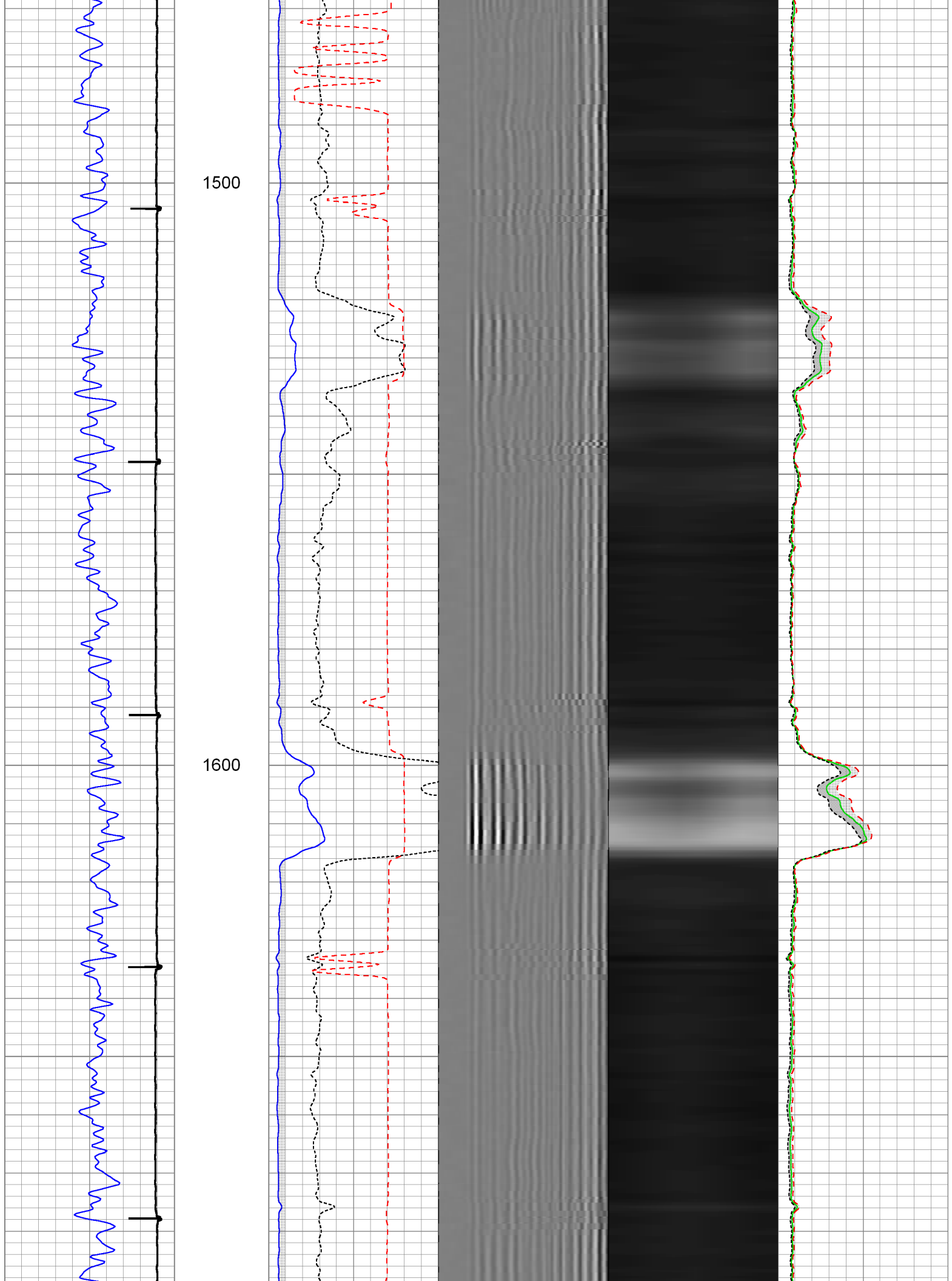








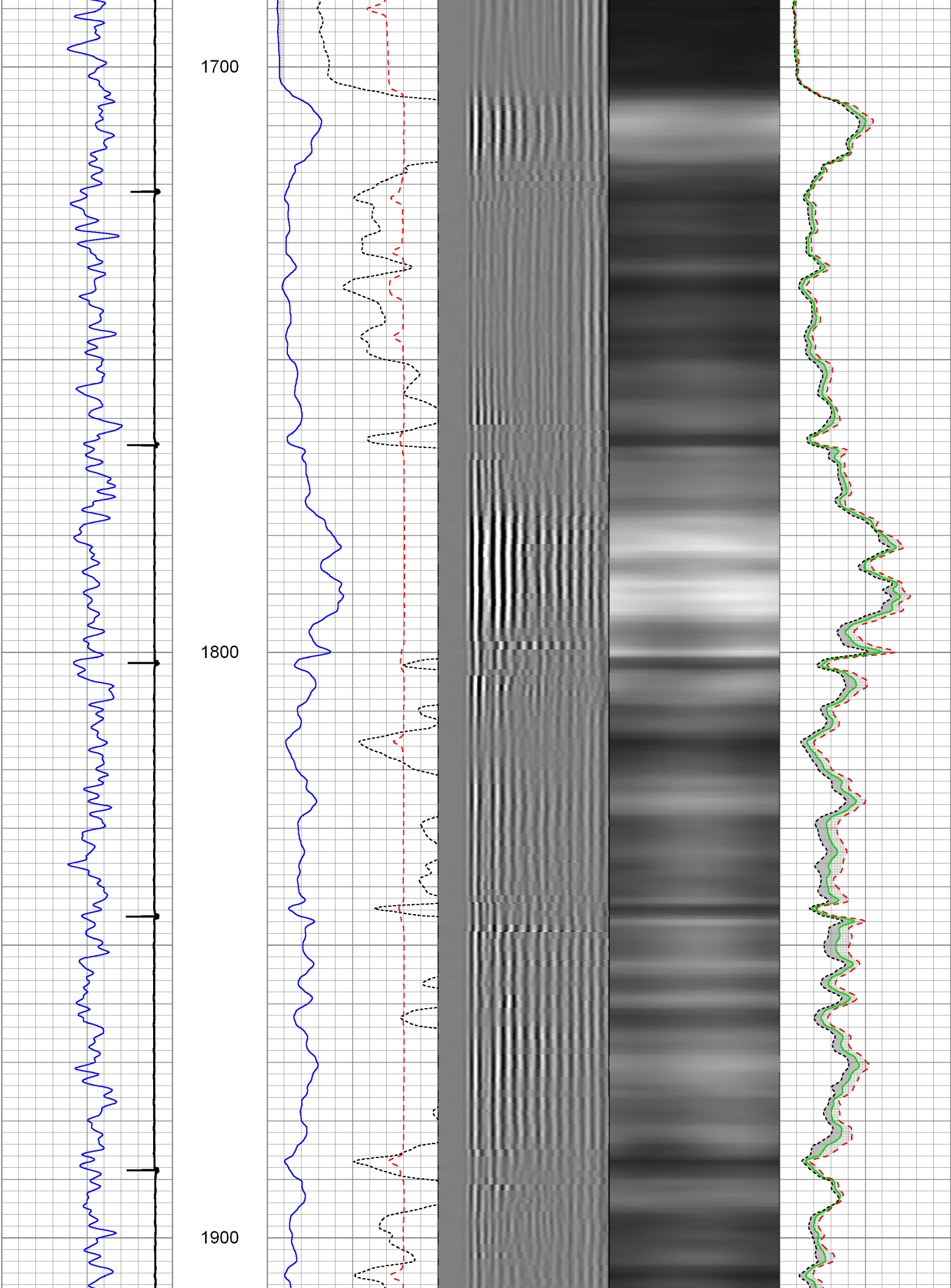


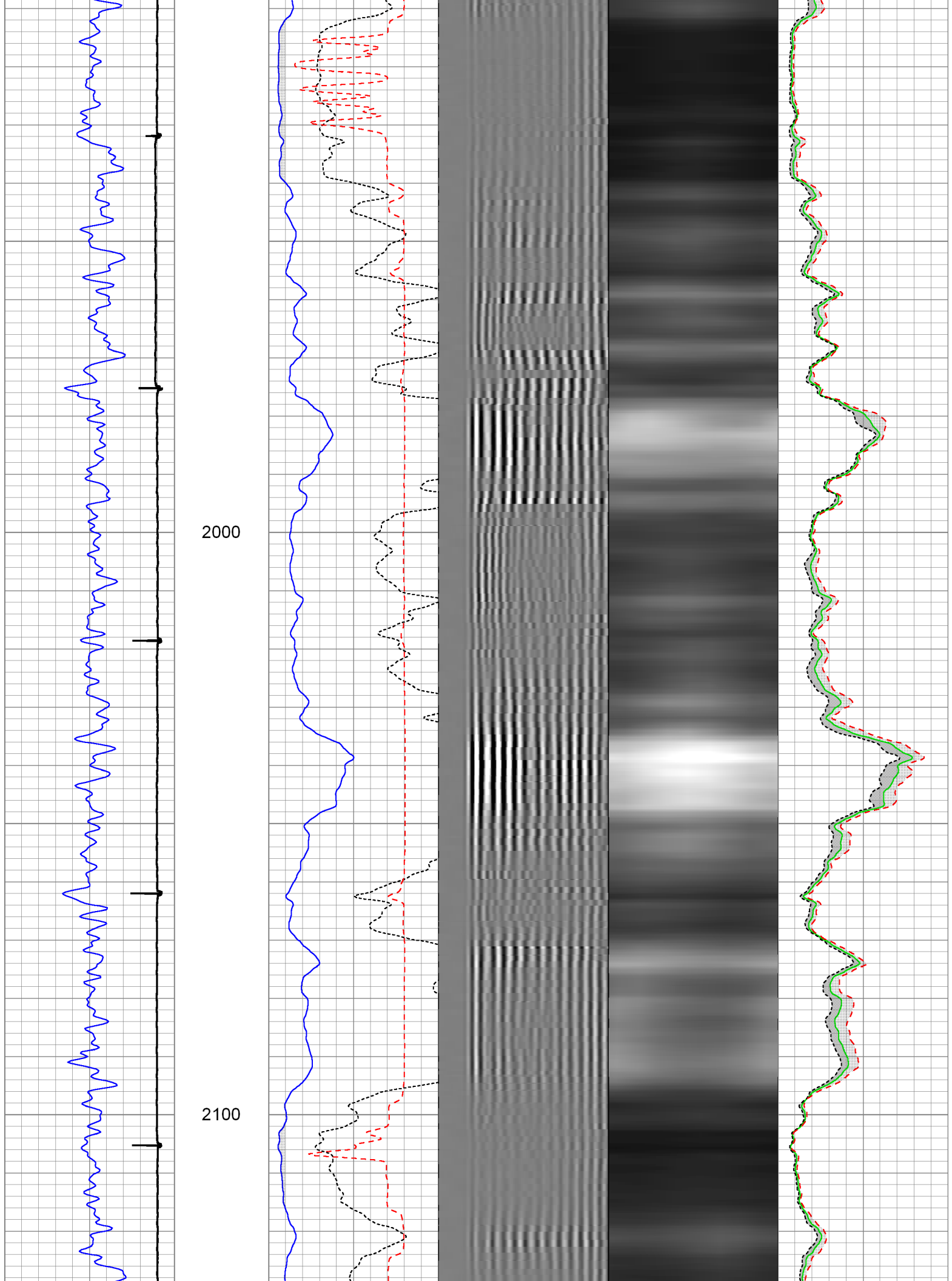


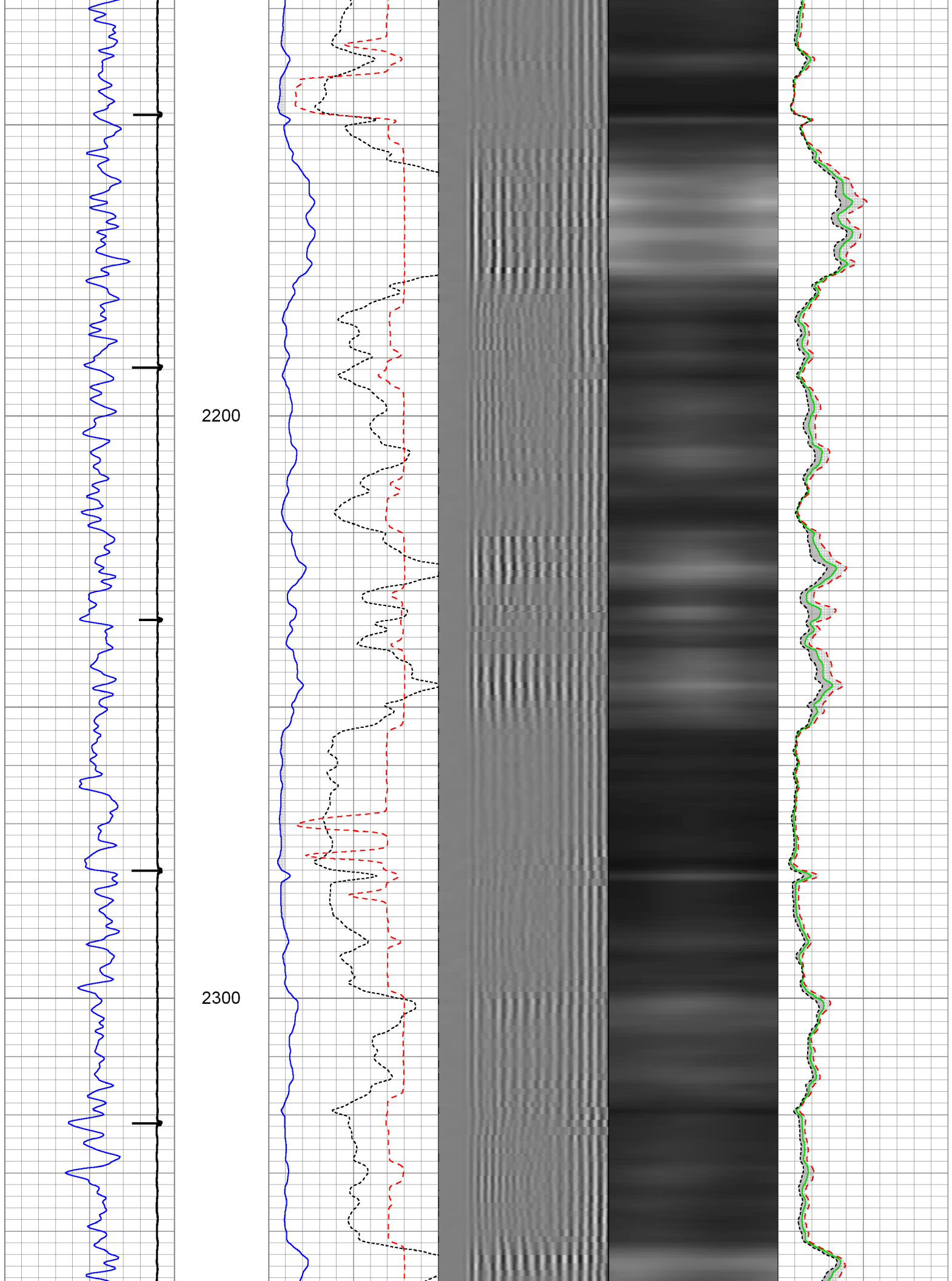
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1800

1900

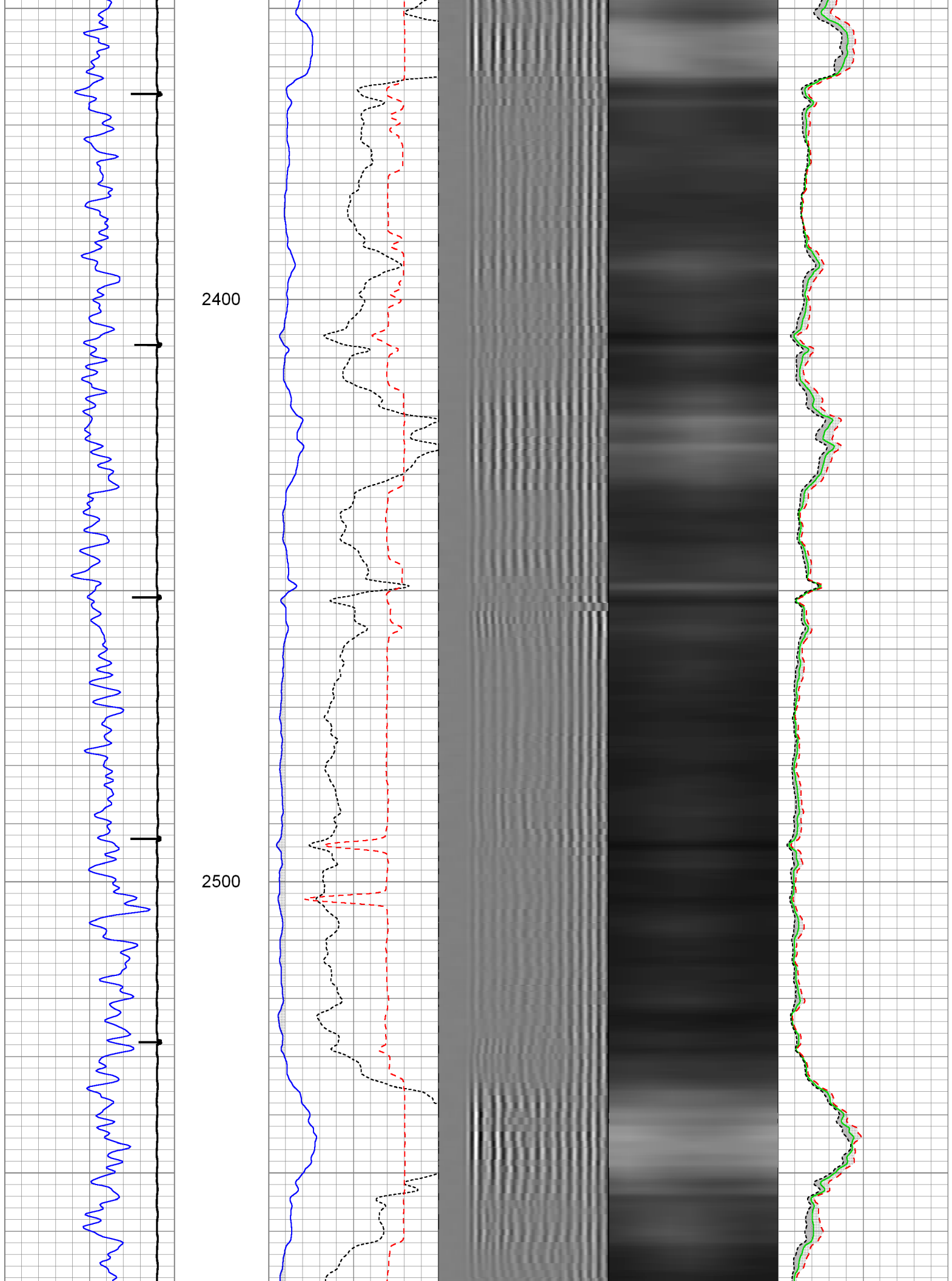






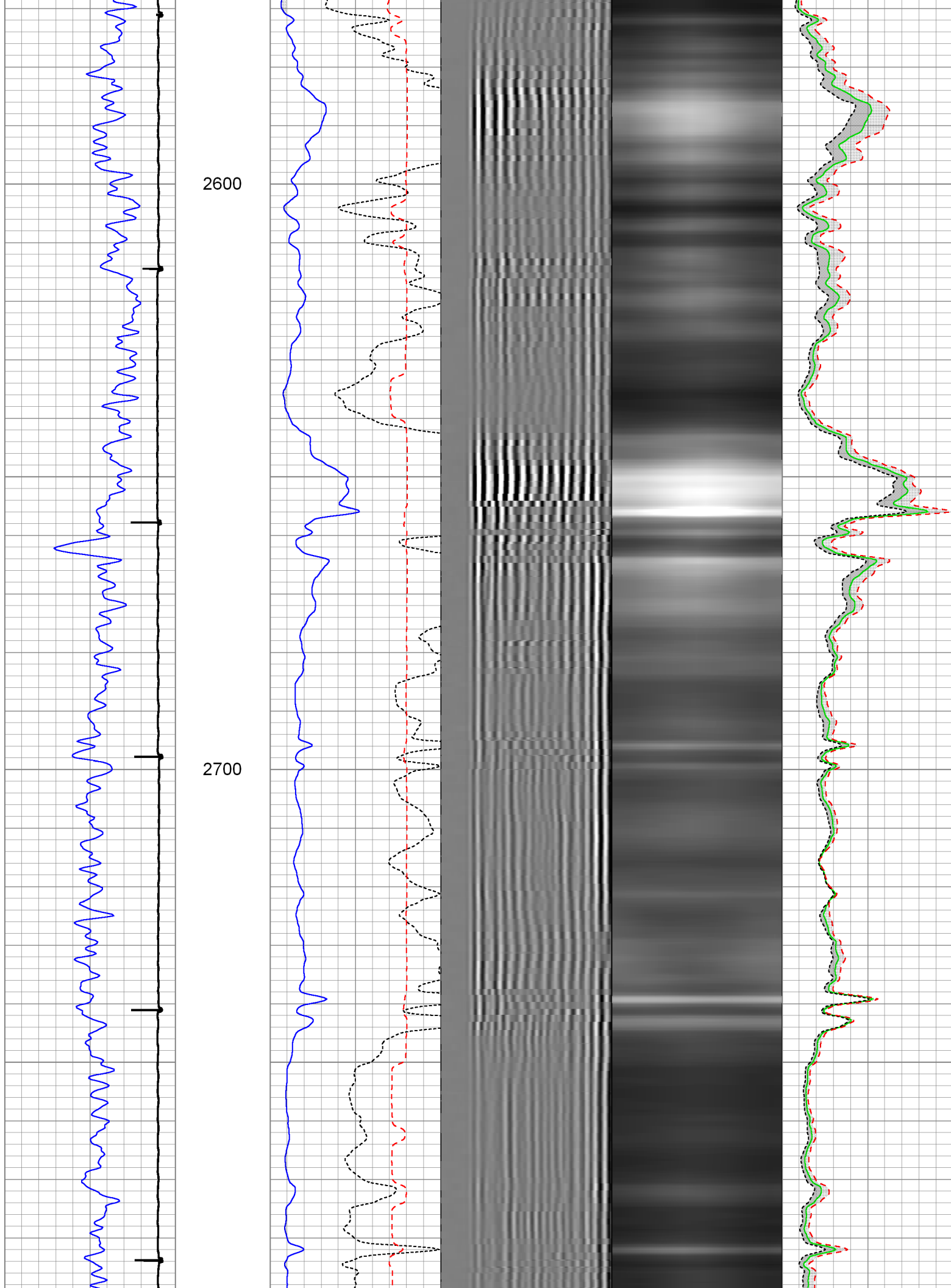
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2600

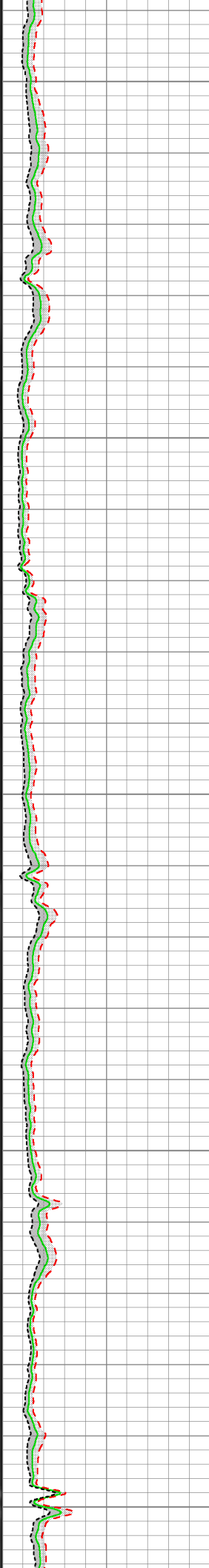
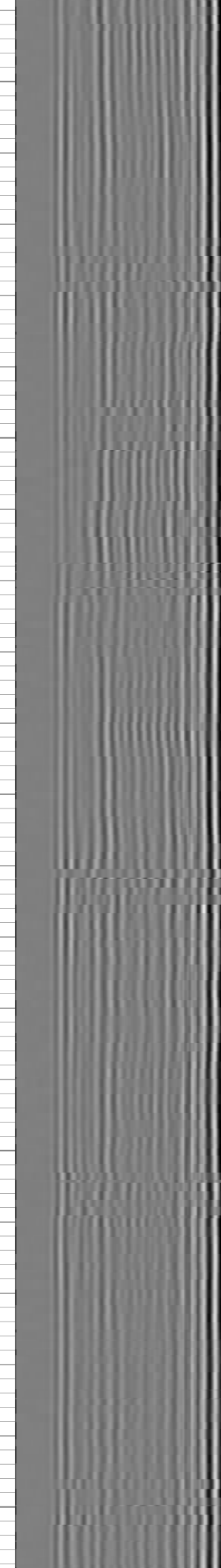
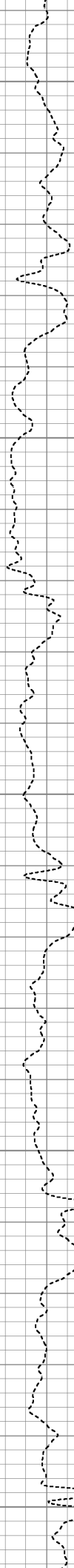
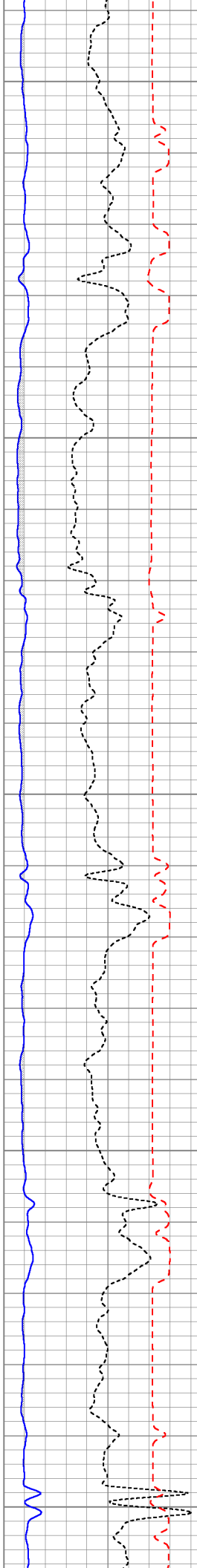
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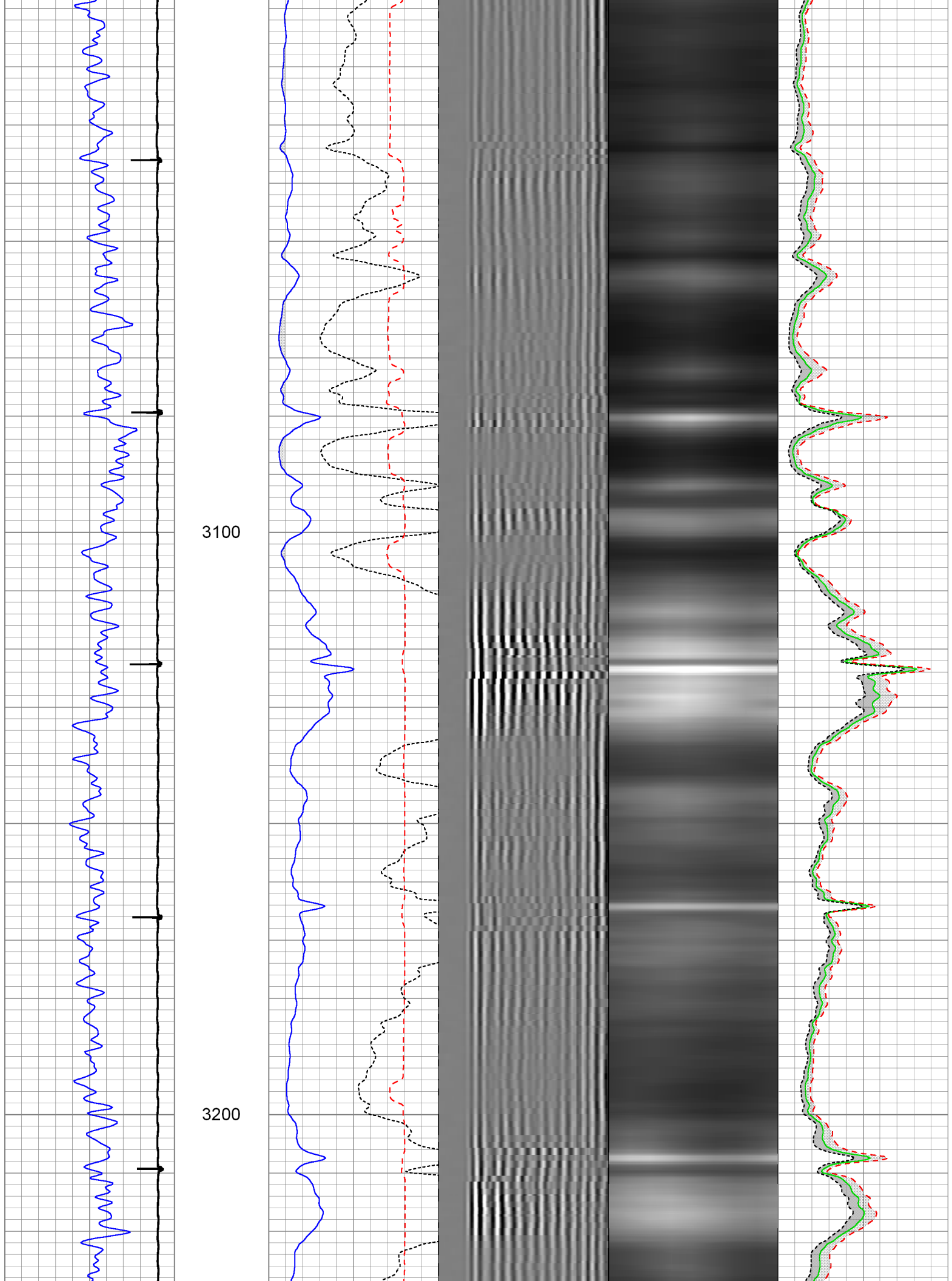
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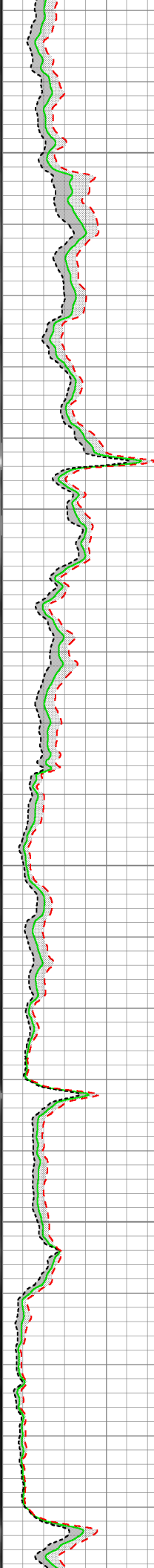
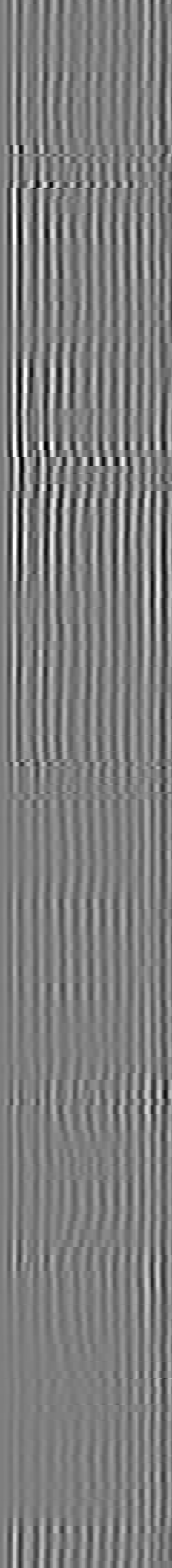
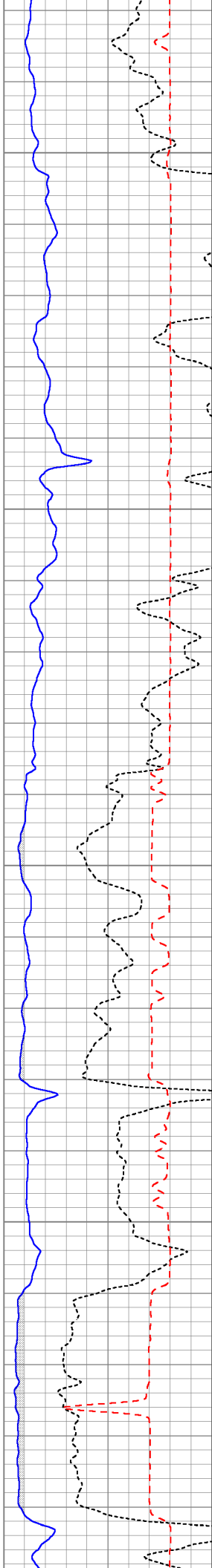
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3200



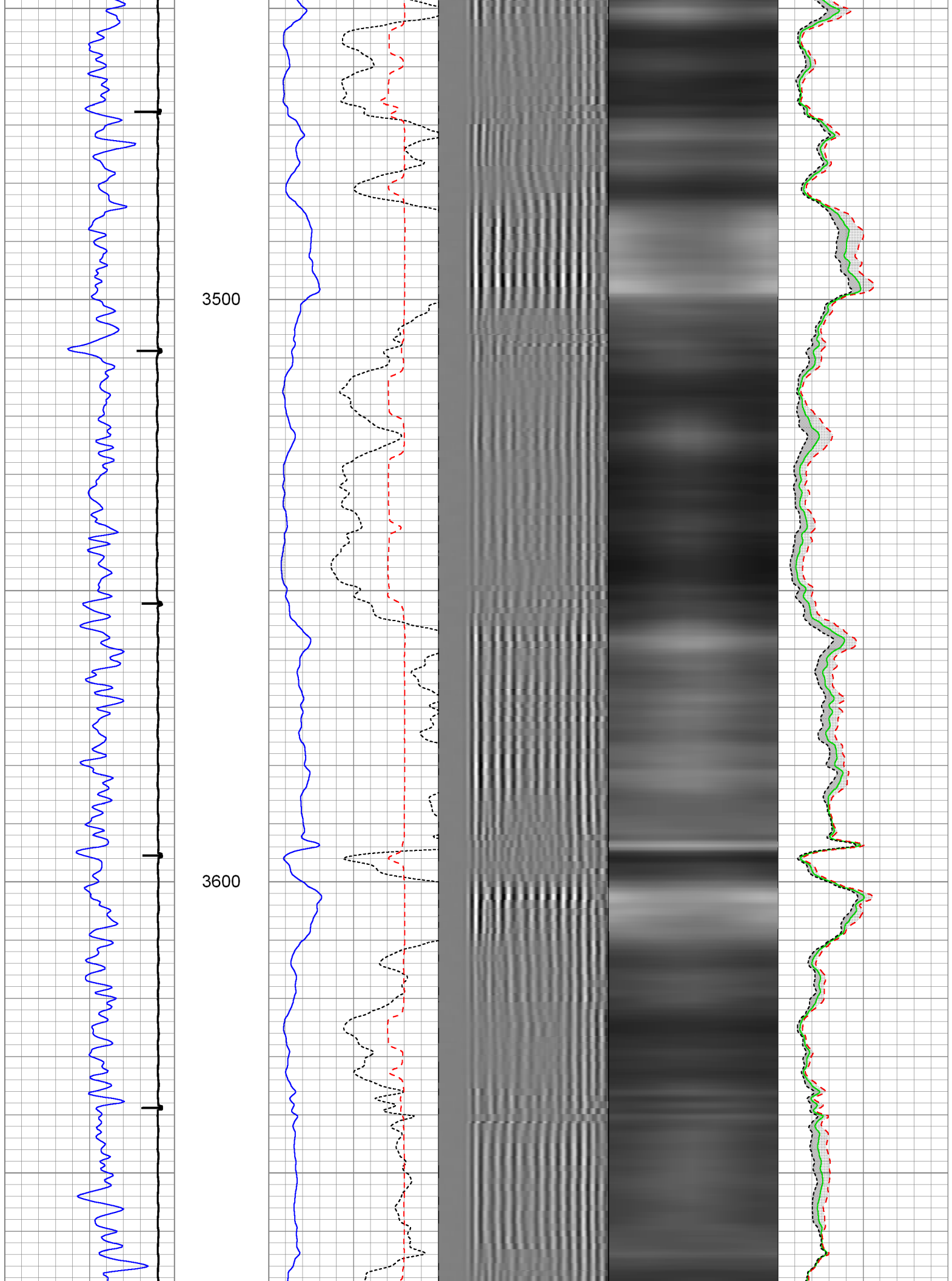
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3400



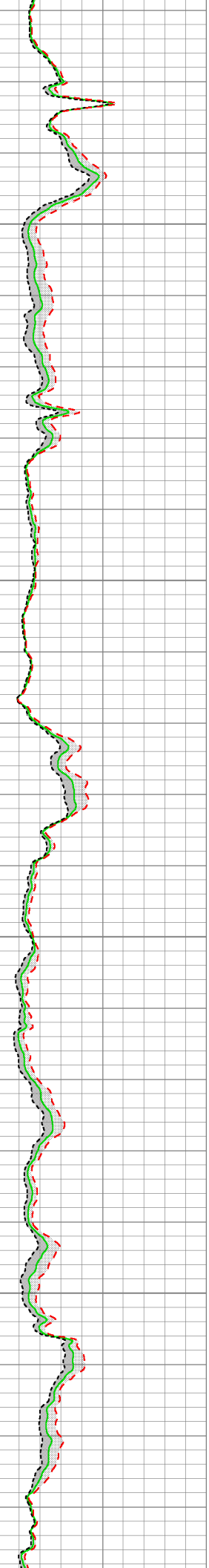
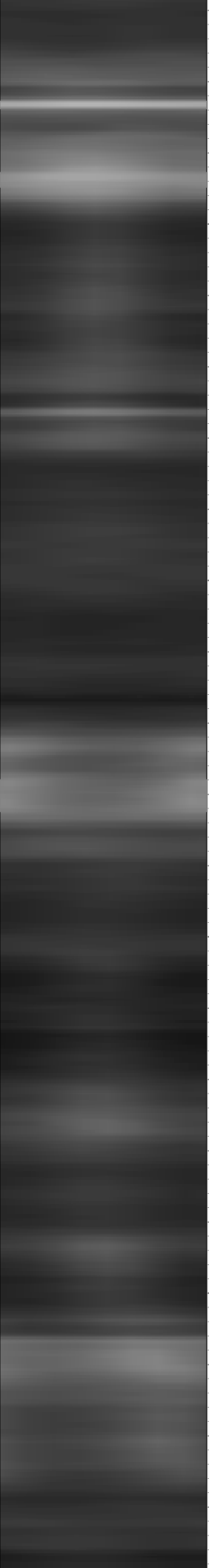
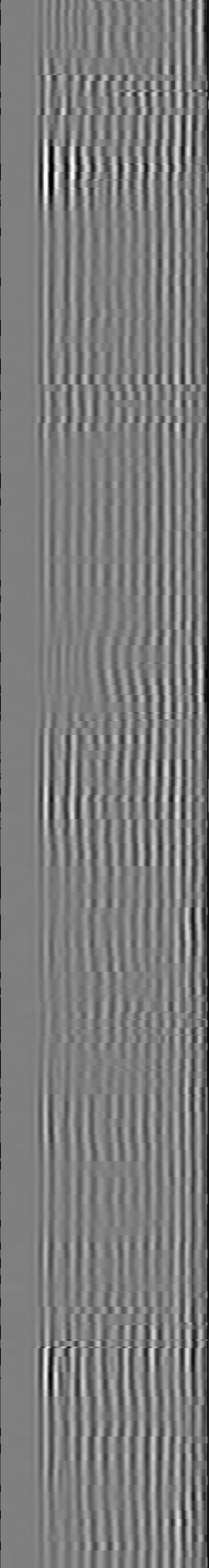
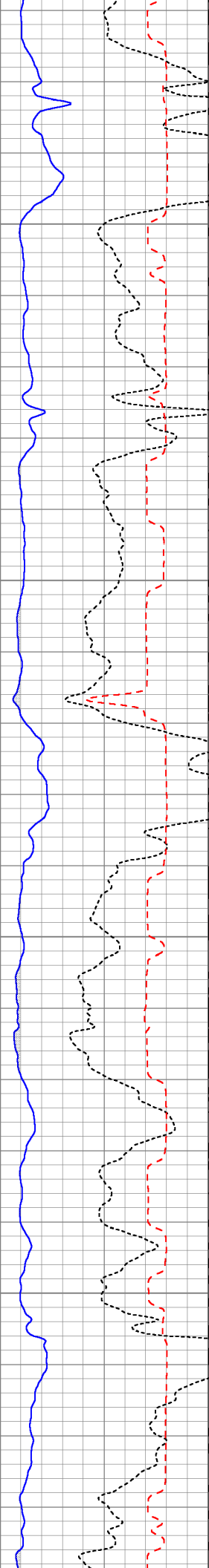
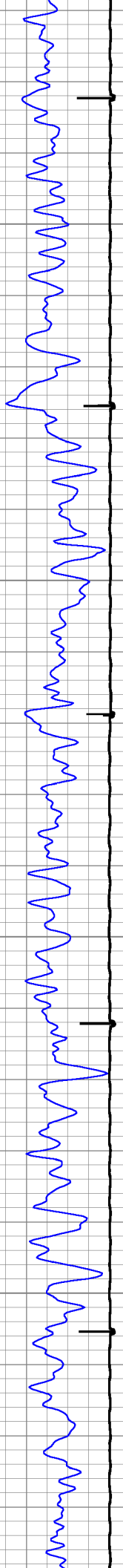
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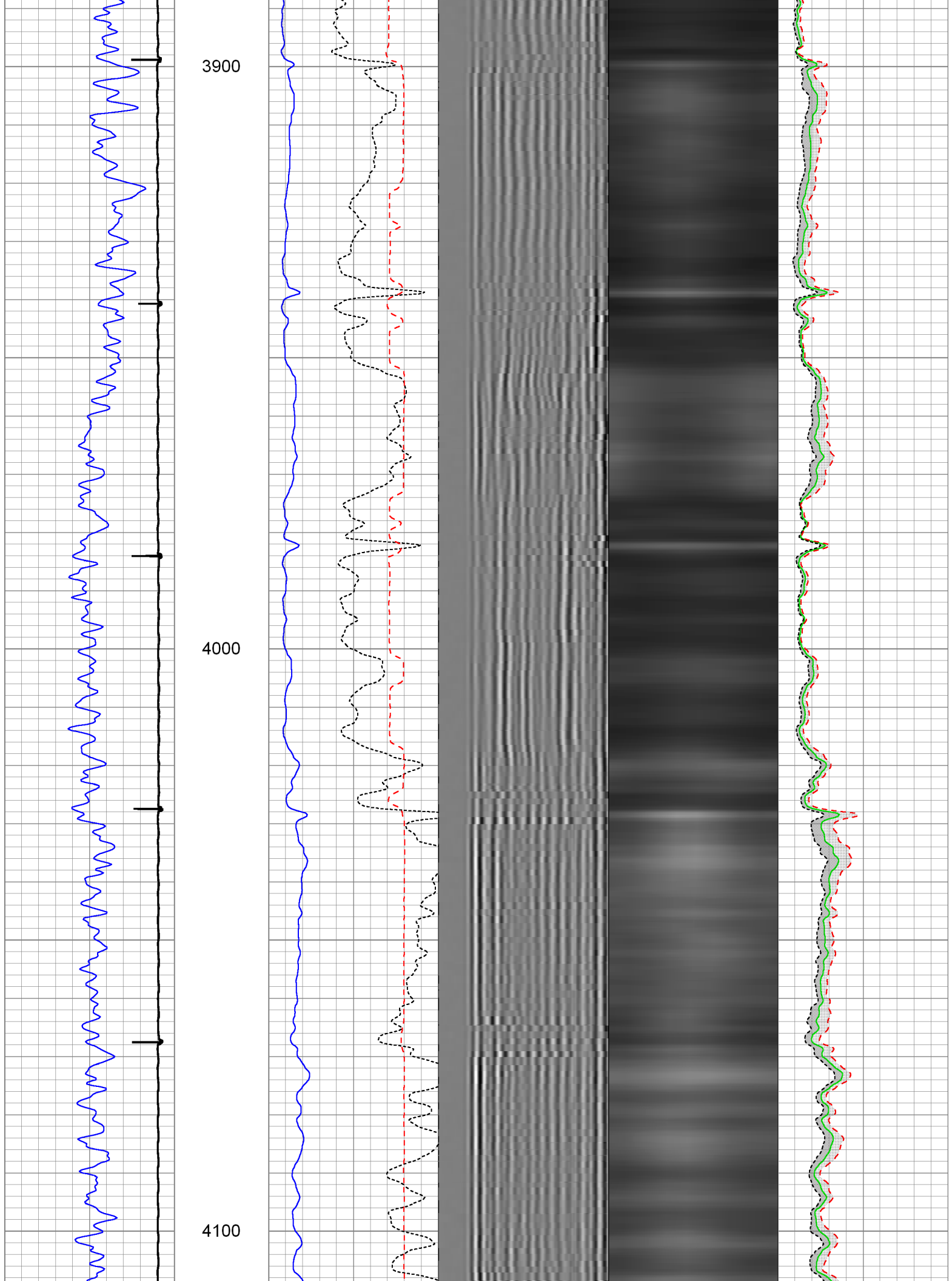
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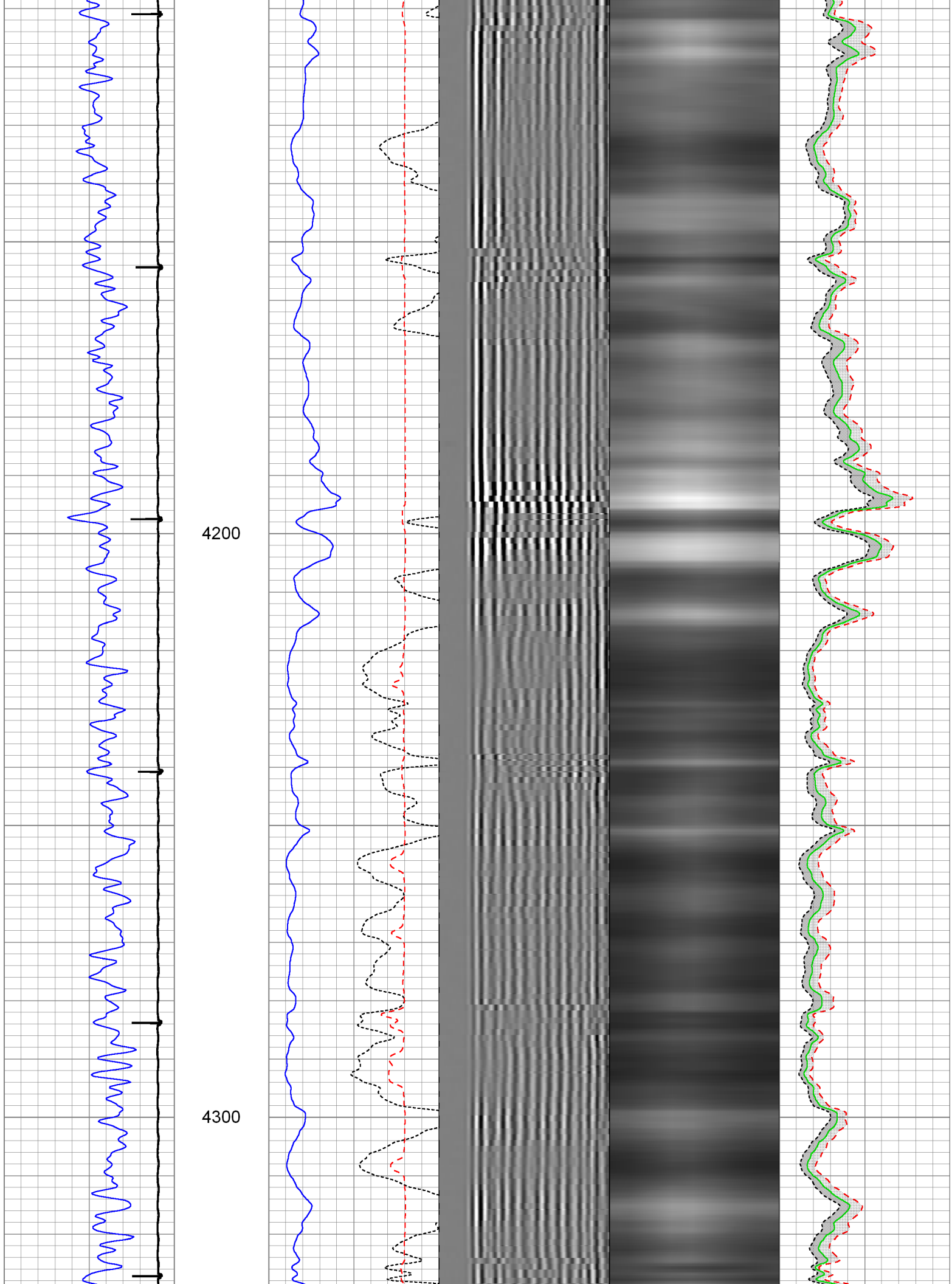


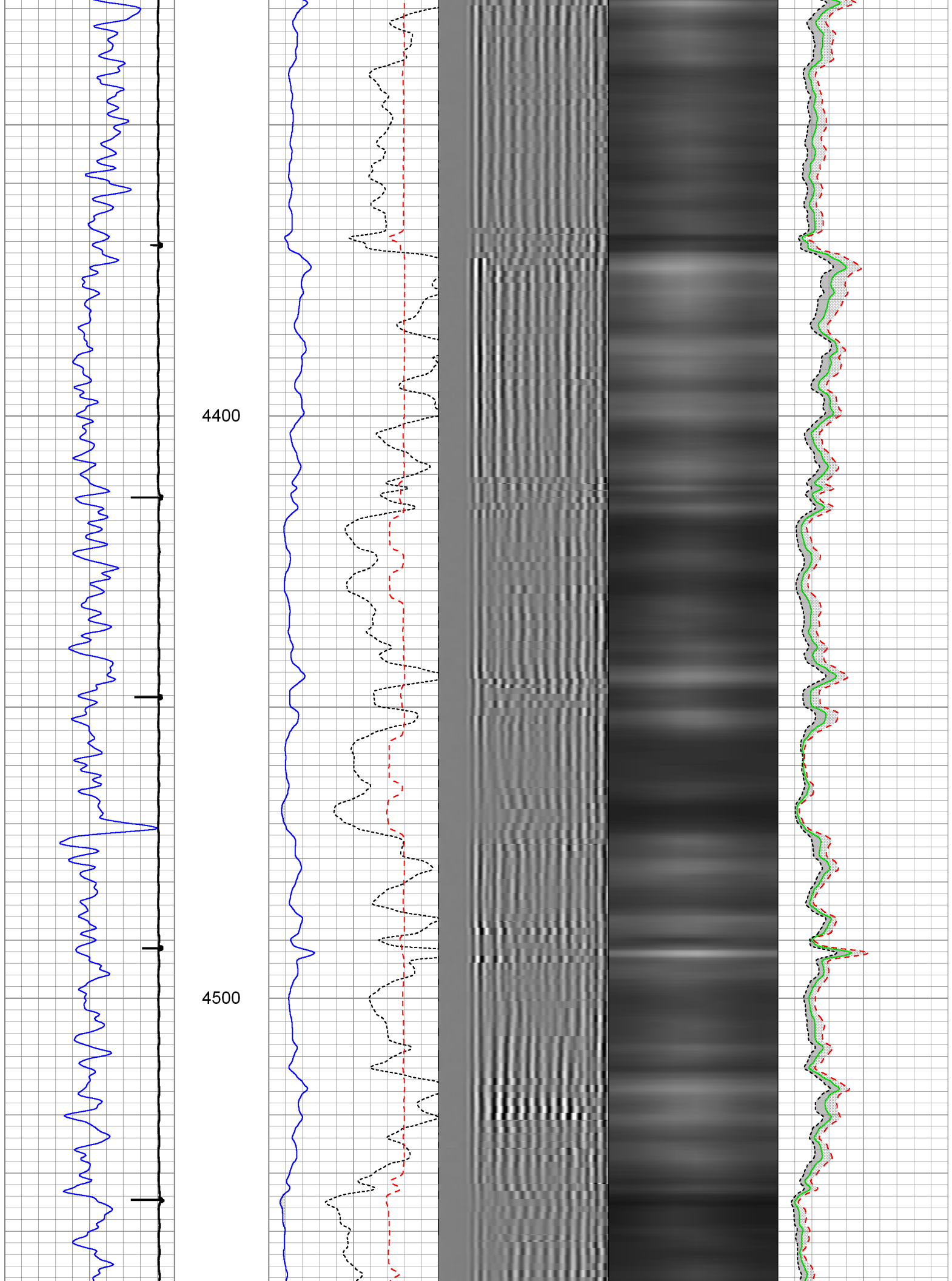
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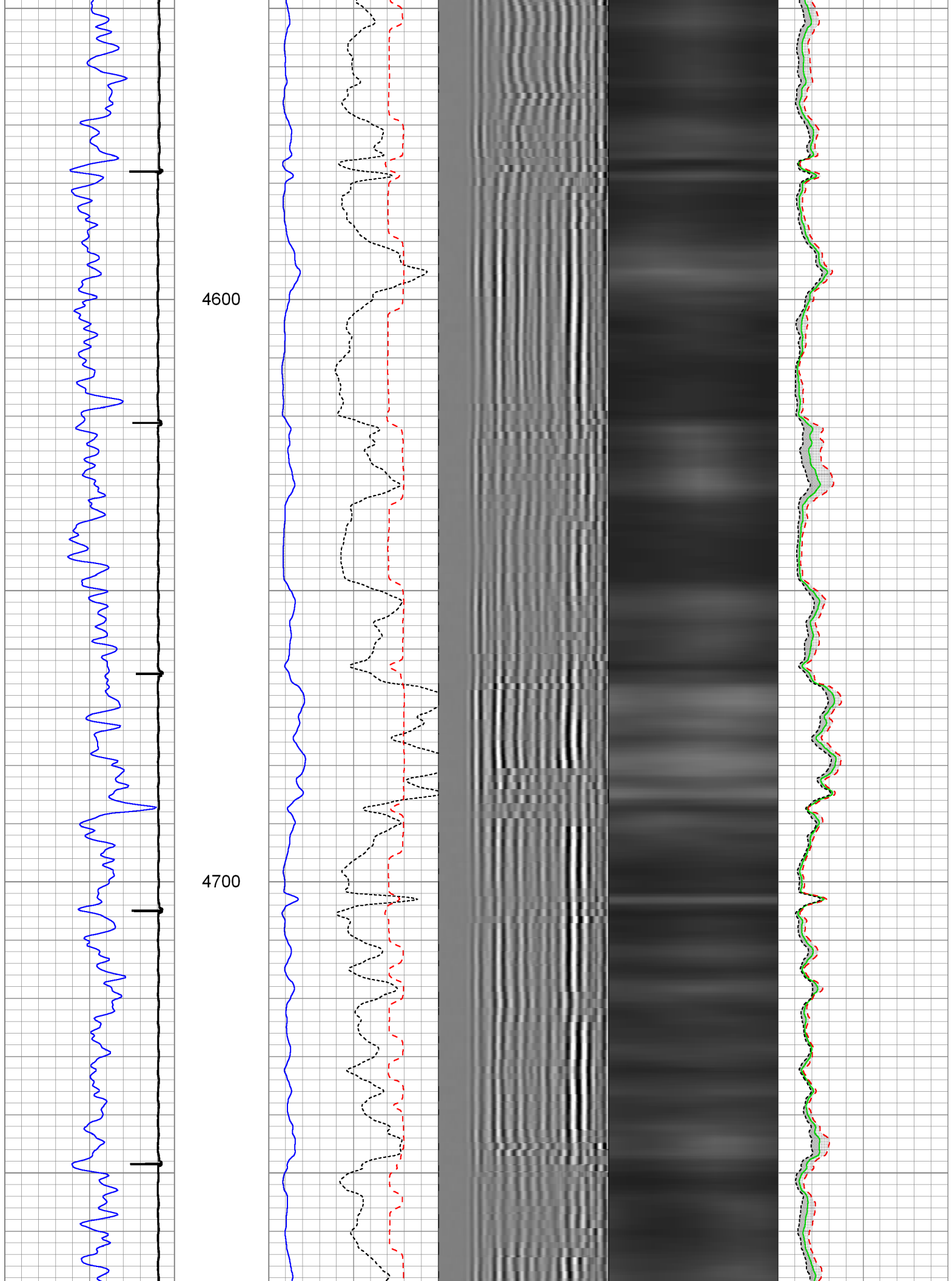
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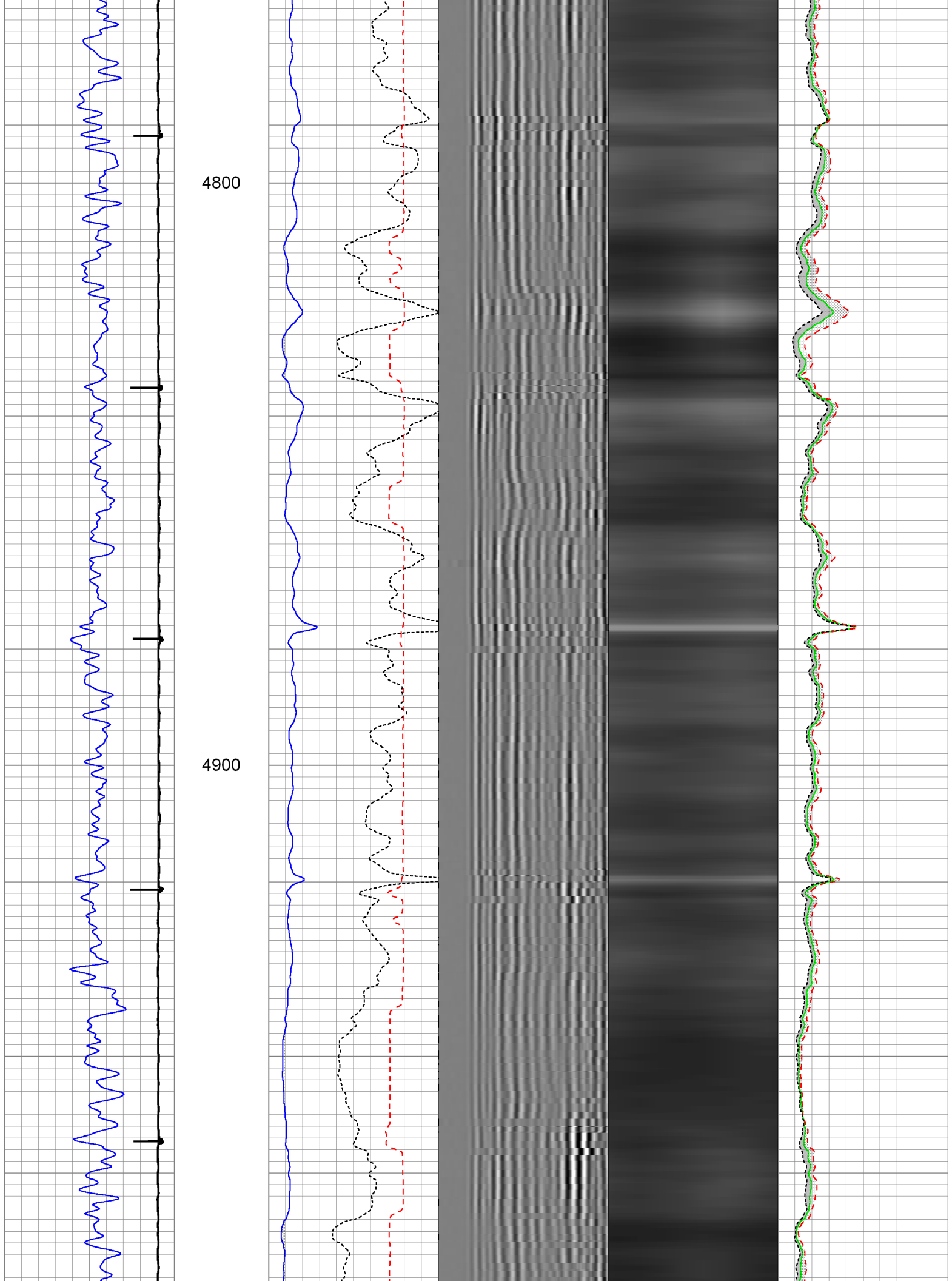






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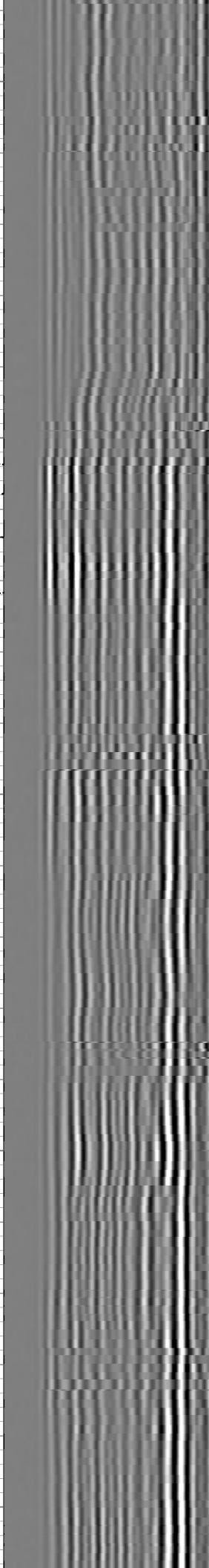
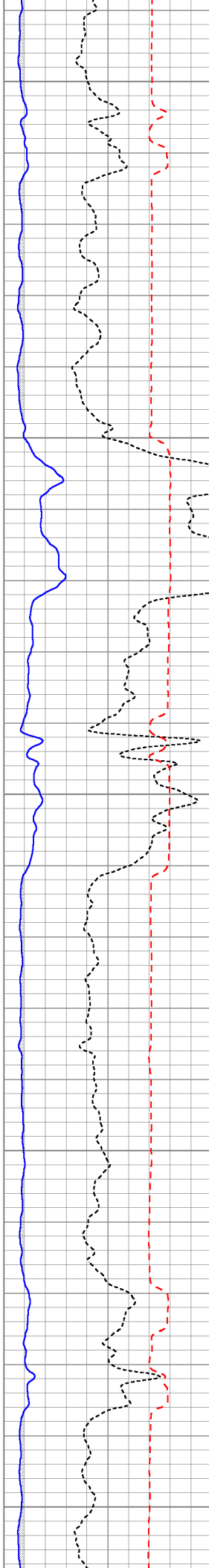
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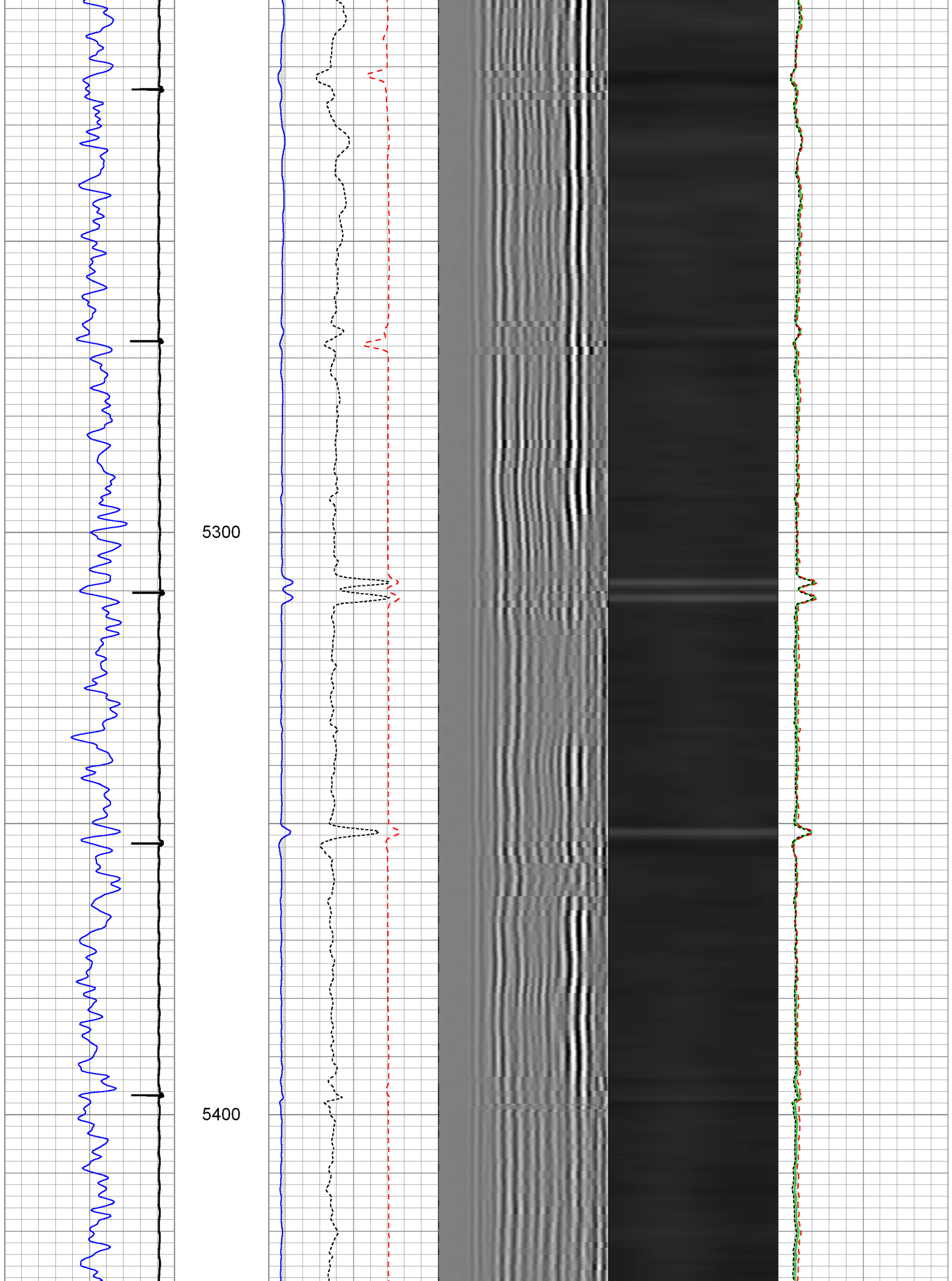


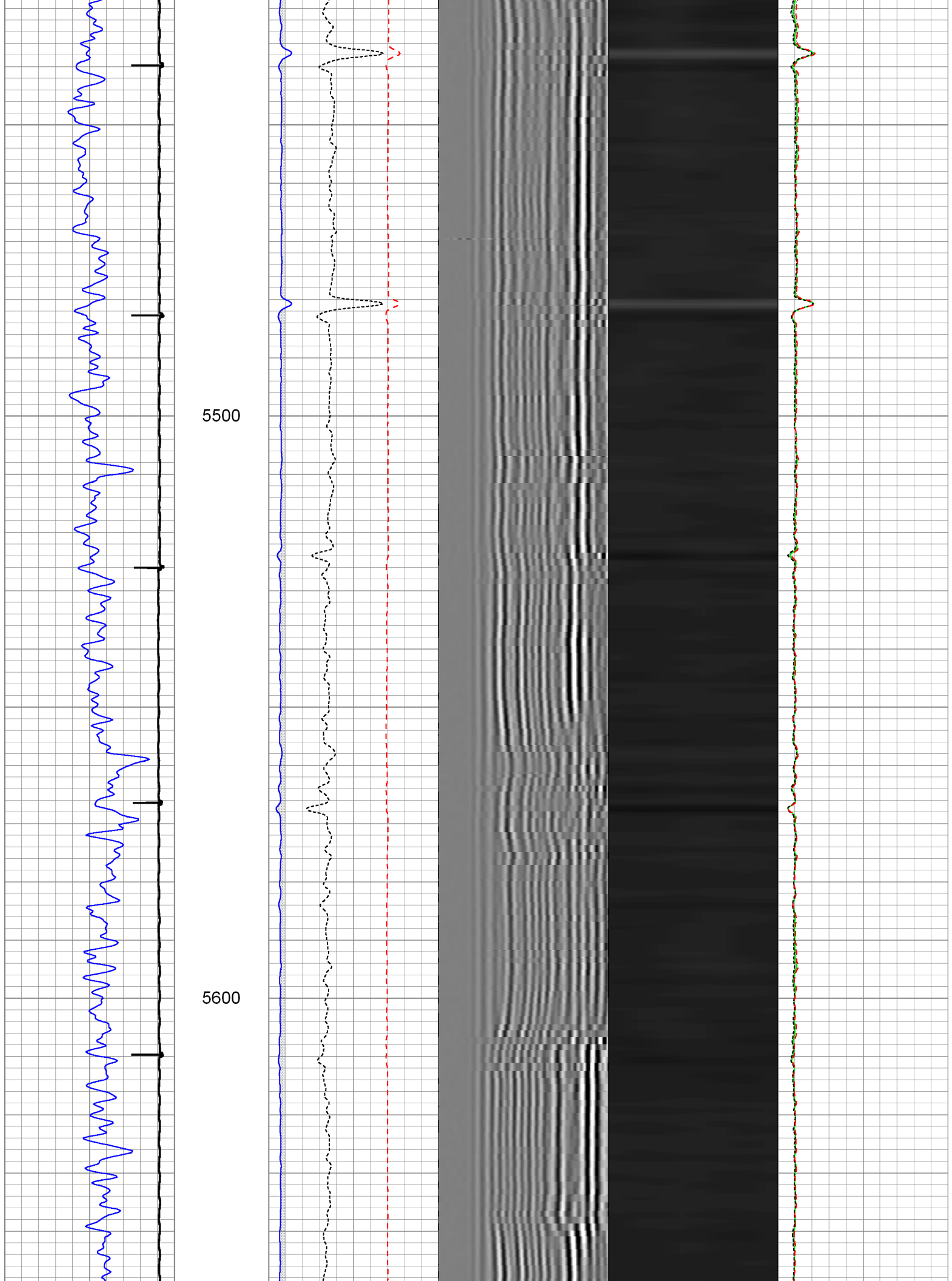
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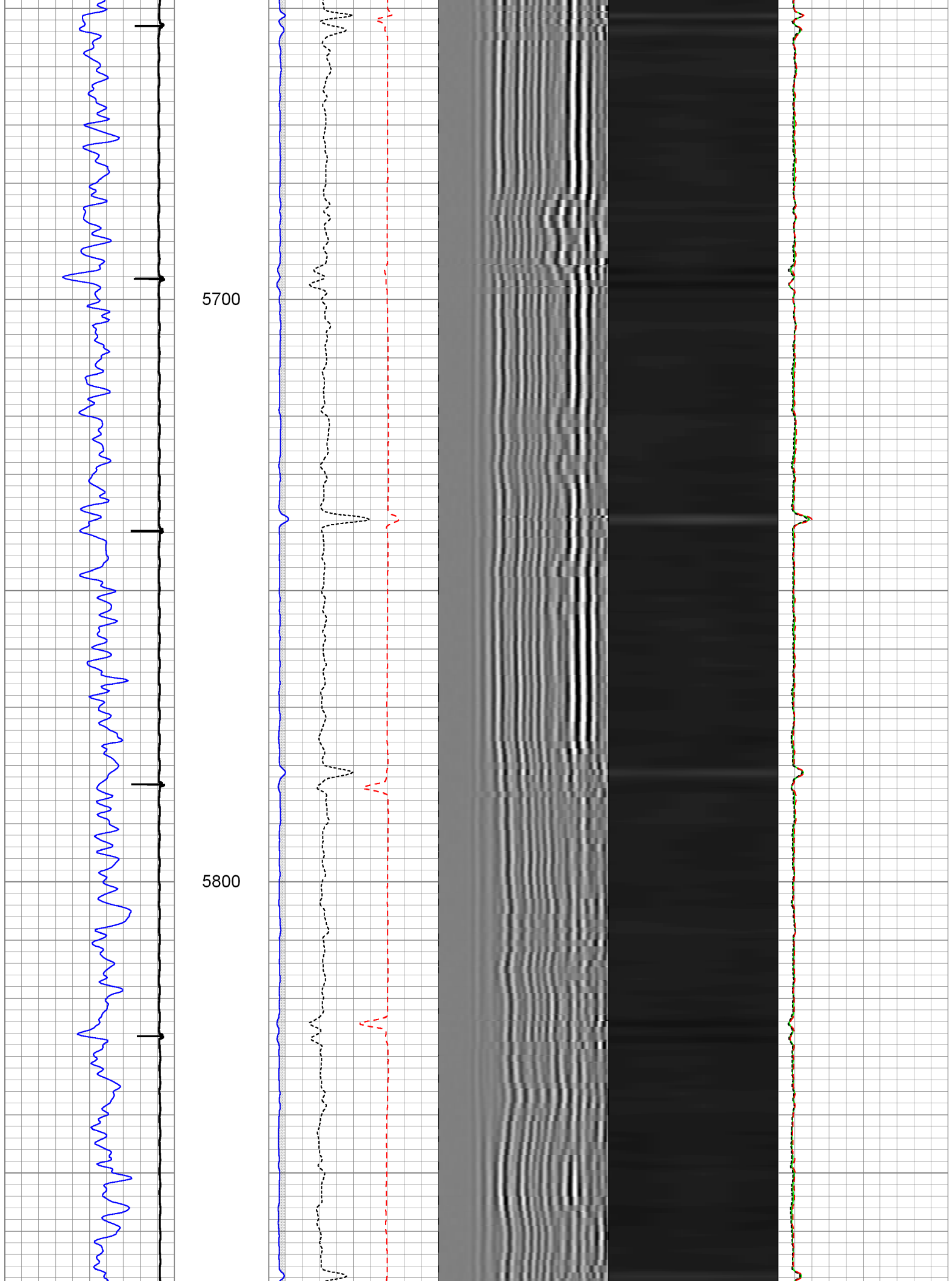
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5200



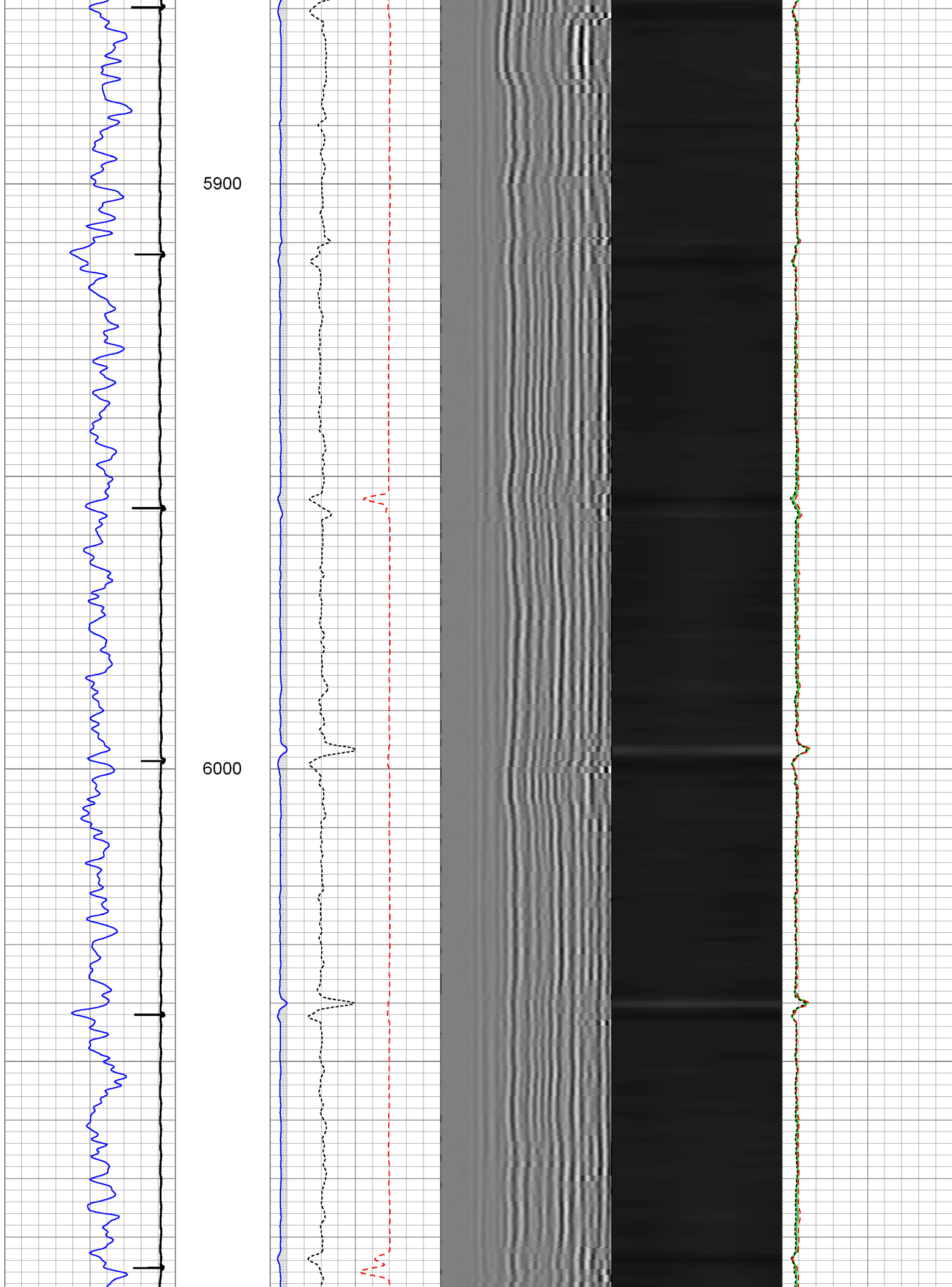






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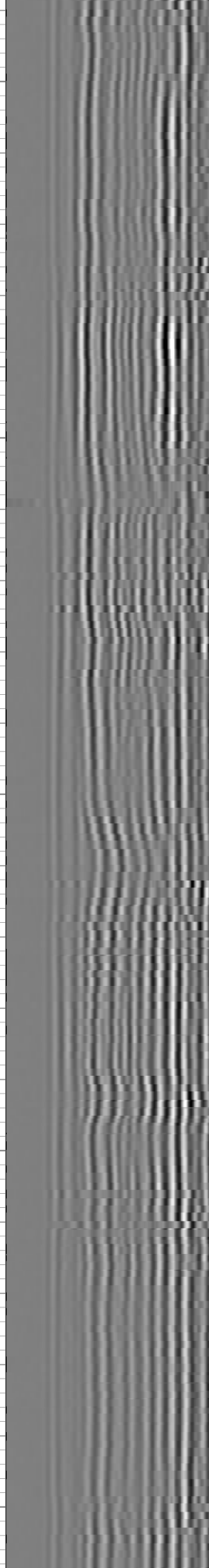
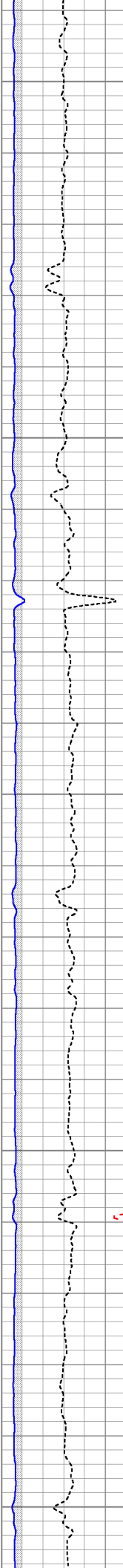
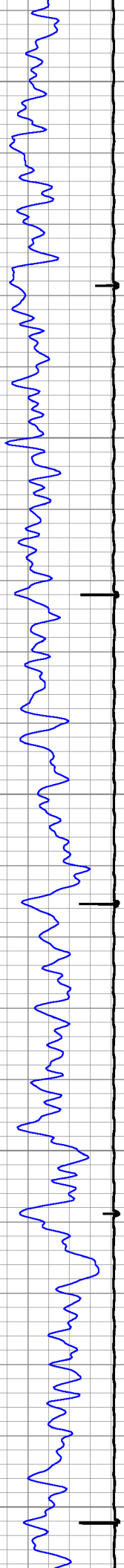
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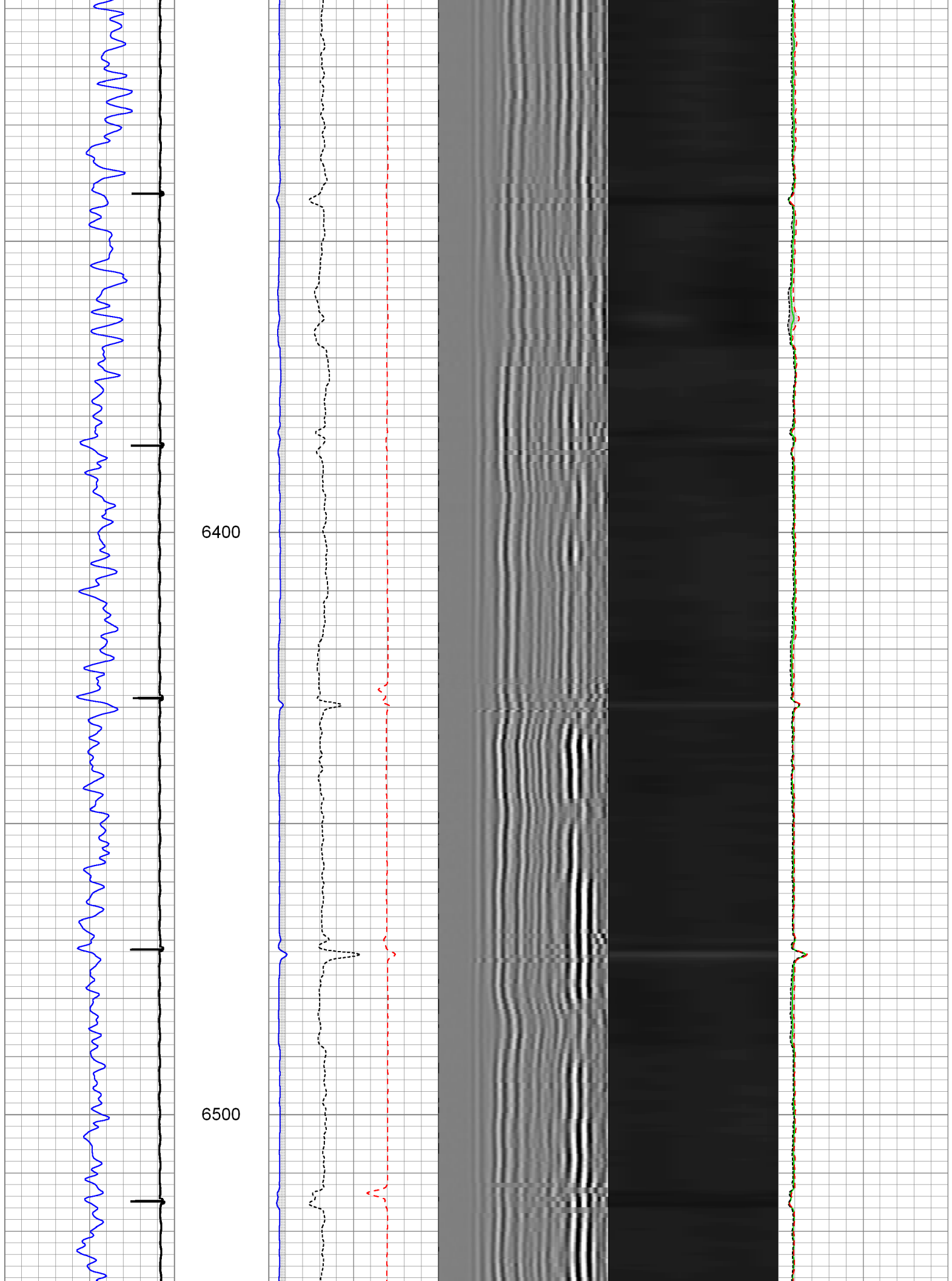


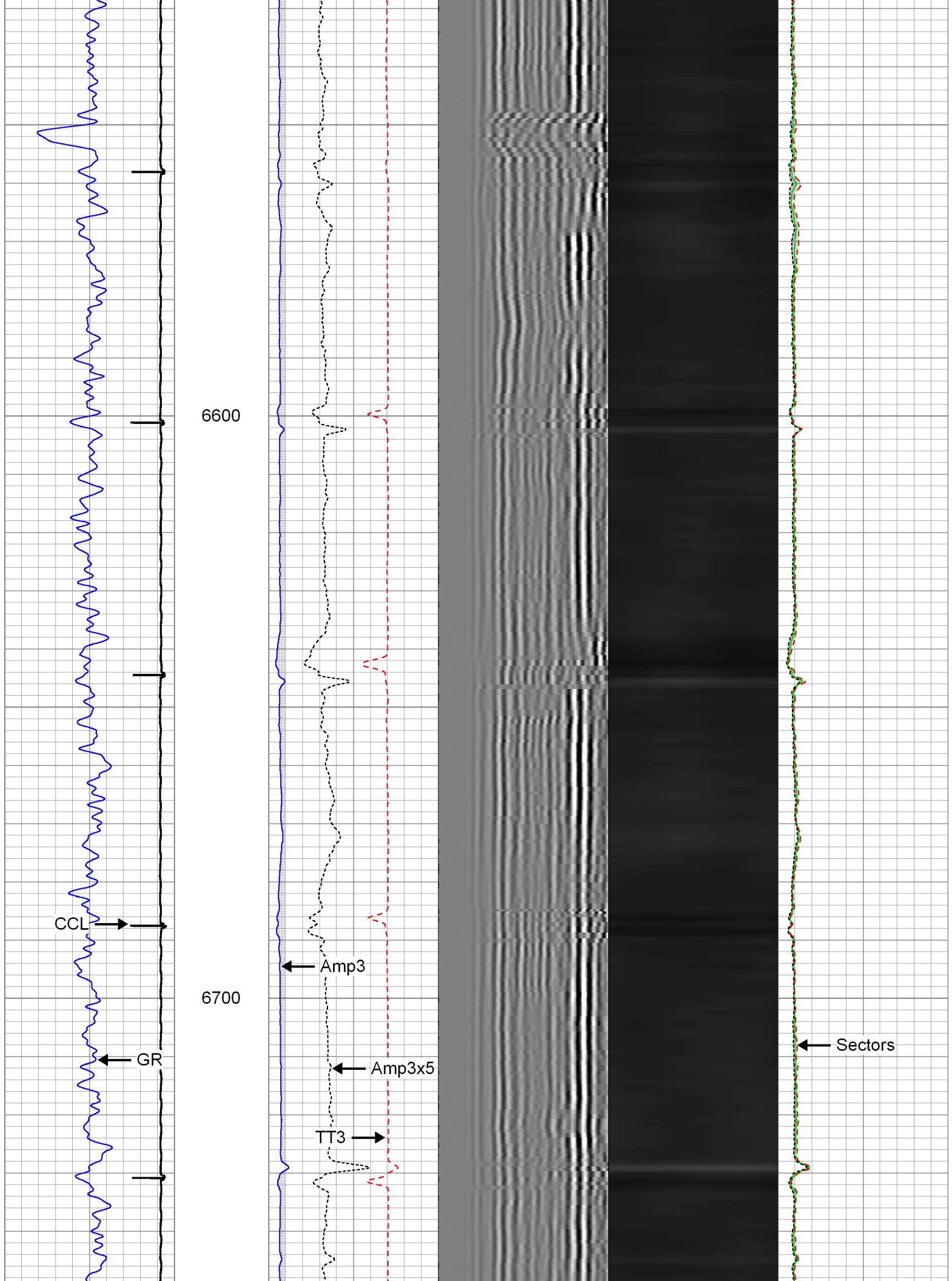
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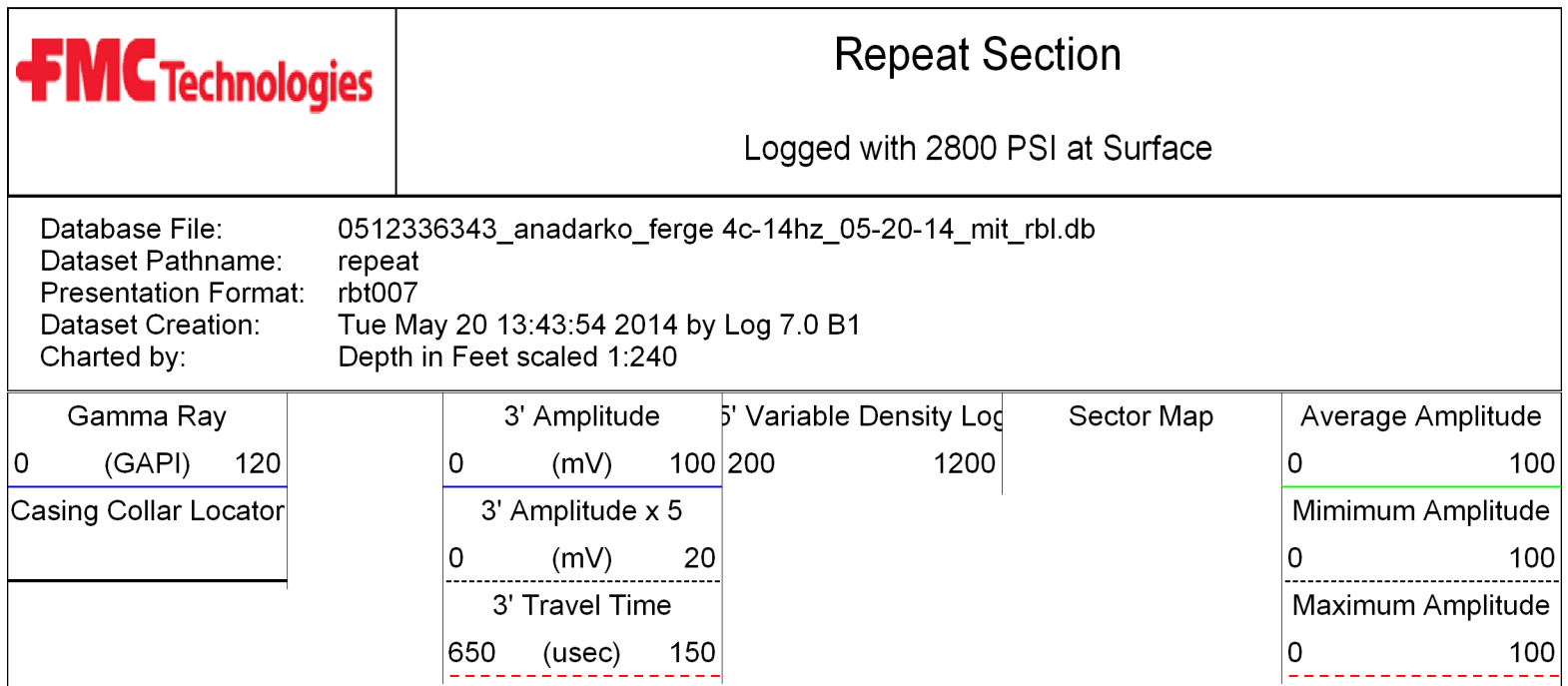
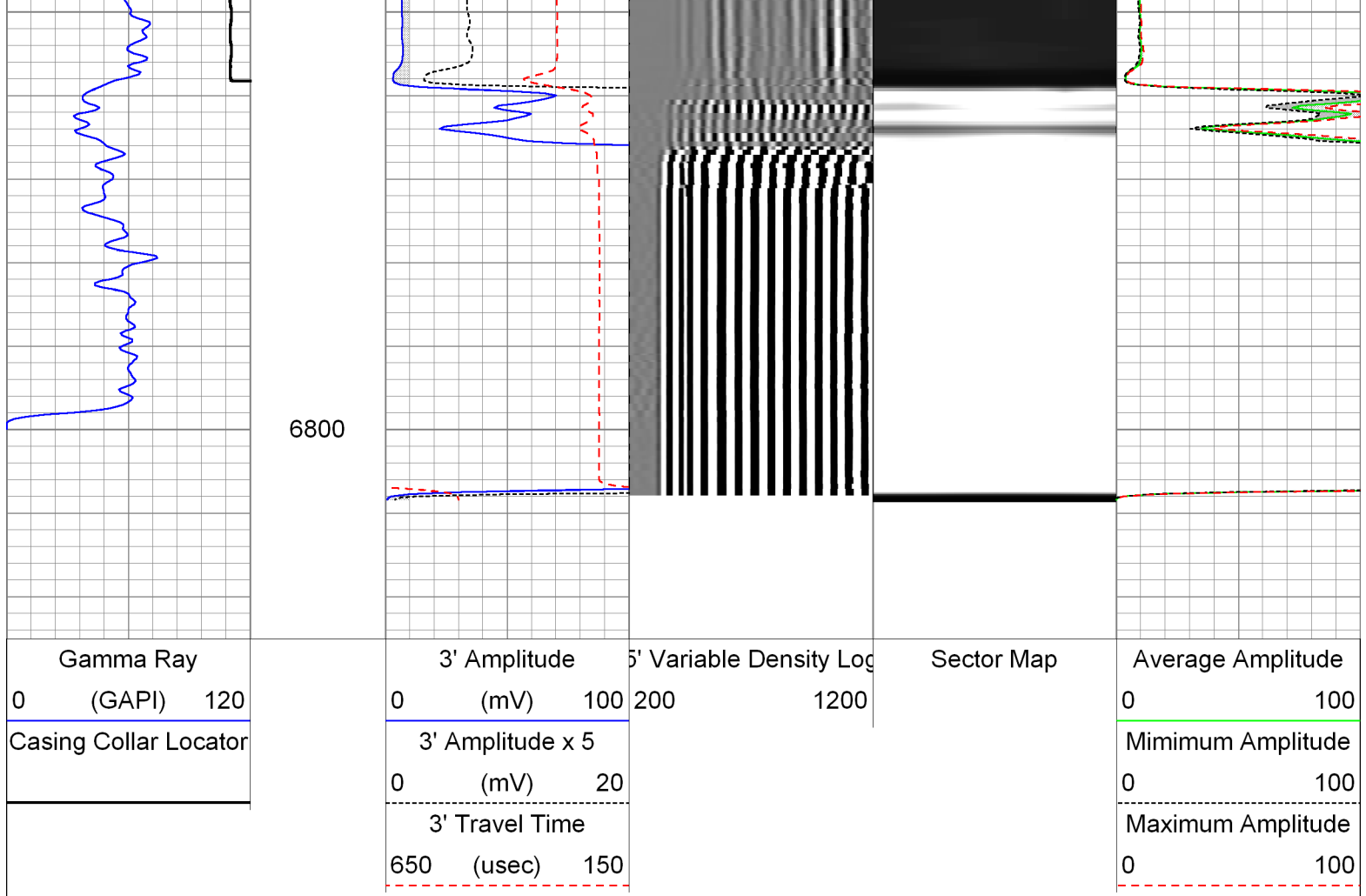
6200

6300









Repeat Section

Logged with 2800 PSI at Surface

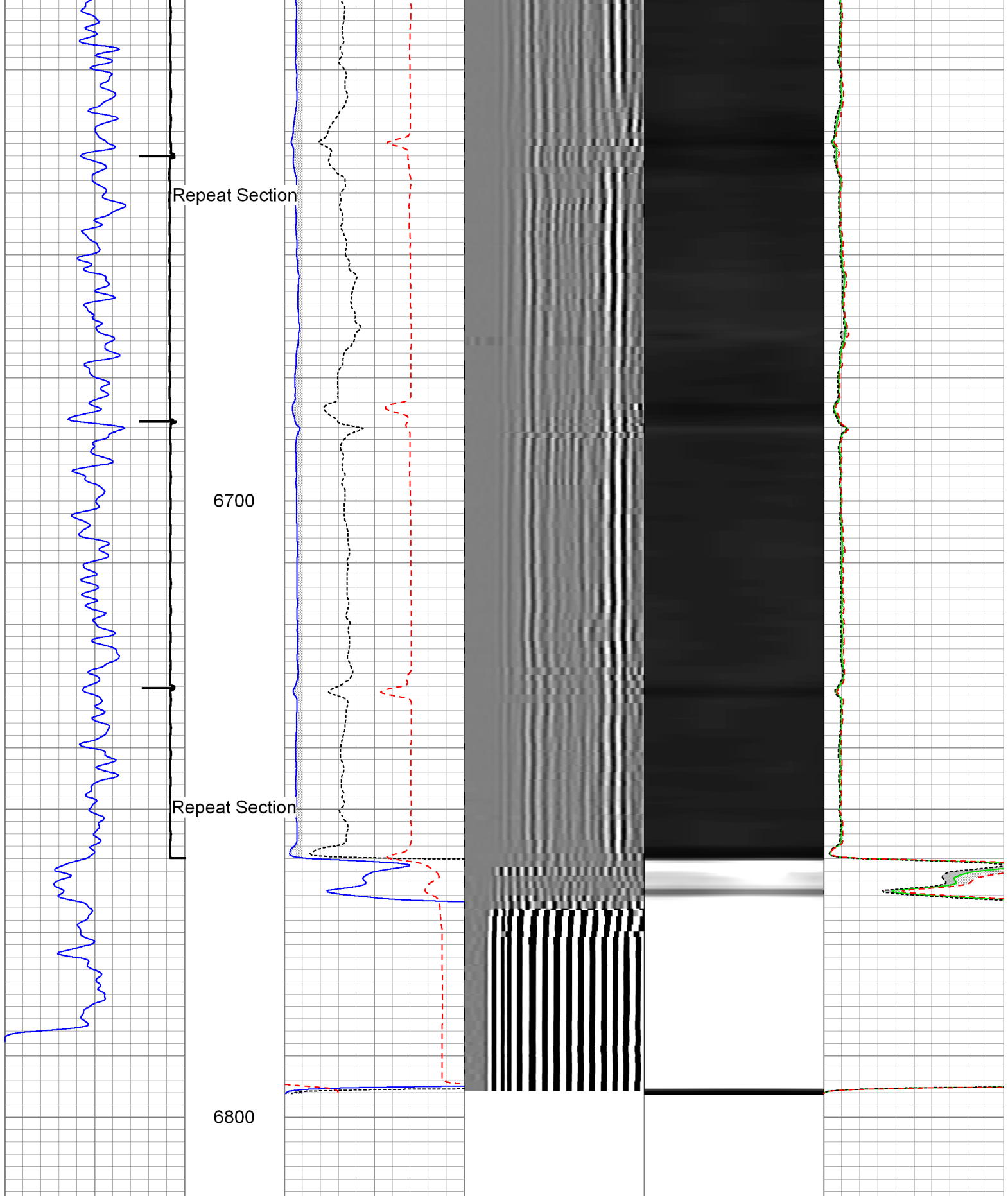
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Dataset Pathname: repeat

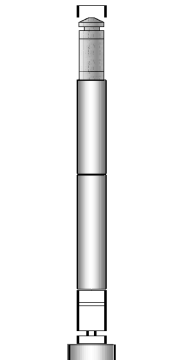
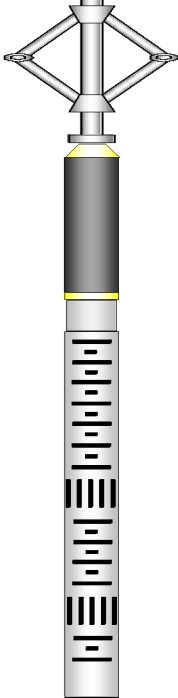
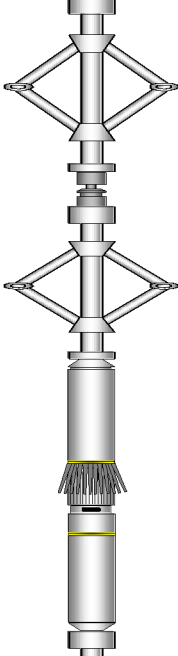
Presentation Format: rbt007

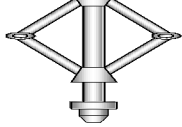
Dataset Creation: Tue May 20 13:43:54 2014 by Log 7.0 B1

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
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	27.26		UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (211727) Production Gamma Ray	1.93	1.69	9.50
			UW_PSJ-PSJ_008 (10018474) Sondex 1-11/16" Ultrawire Swivel Joint	0.91	1.69	9.00
WVFS1 WVFS2 WVFS3 WVFS4 WVFS5 WVFS6 WVFS7 WVFS8 CBLTEMP CBLROT WVF5FT	18.53		UW_PRC #4 -UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_RBT-UW_RBT_004 (1066) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
			UW_PRC-UW_PRC_057 (1038) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_PKJ-PKJ_013 (10018069) Sondex 1-11/16" Ultrawire Knuckle Joint	0.57	1.69	3.50
			UW_PRC-DSSRAC (084) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			UW_MIT-UW_MIT40_042 (10012912) 40 Multifinger Imaging Tool	4.54	2.75	61.10
MIT	4.97					

TSTAMP	0.00		UW_PRC #3 -DSSRAC (081)	2.55	2.75	32.00
			2-3/4" DSS 5 Arm Roller Centralizer UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512336343_anadarko_ferge 4c-14hz_05-20-14_mit_rbl.db: field/well/run1/main Total Length: 31.51 ft Total Weight: 363.80 lb O.D. 3.13 in						

Calibration Report			
Database File:	0512336343_anadarko_ferge 4c-14hz_05-20-14_mit_rbl.db		
Dataset Pathname:	main		
Dataset Creation:	Tue May 20 13:55:29 2014 by Log 7.0 B1		
Multi-finger Imaging Tool Calibration Report			
Serial Number:		10012912	
Number of Fingers:		40	
Tool Model:		UW_MIT40_042	
Inclinometer Calibration Report			
Performed:		Mon Jul 15 09:39:36 2013	
Calibration Angle:		45	
		Inc X	Inc Y
Vertical:		1968	1974
Finger 1 up:		1740	1744
Finger 31 up:		2215	1741
Finger 21 up:		2205	2224
Finger 11 up:		1731	2217
Sensitivity ratio:	0.992868		
X-axis angle:	134.307		
Deviation const.:	335.589		

Finger Calibration Report						
Performed:			Tue May 20 12:45:54 2014			
Ring size:	4	5	6	7		
(in)						
	Sens	Sens	Sens	Sens		
Finger 01:	1068	333.0	1401	397.0	1798	400.0
Finger 02:	1198	346.0	1544	393.0	1937	395.0
Finger 03:	1086	354.0	1440	409.0	1849	416.0
Finger 04:	1099	341.0	1440	396.0	1836	405.0
Finger 05:	1105	349.0	1454	407.0	1861	407.0
Finger 06:	1097	351.0	1448	405.0	1853	407.0
Finger 07:	1092	349.0	1441	413.0	1854	403.0
Finger 08:	1115	343.0	1458	408.0	1866	407.0
Finger 09:	1097	354.0	1451	403.0	1854	399.0
Finger 10:	1100	348.0	1448	403.0	1851	398.0
Finger 11:	1115	351.0	1466	398.0	1864	396.0
Finger 12:	1108	350.0	1458	397.0	1855	397.0
Finger 13:	1117	353.0	1470	389.0	1859	393.0
Finger 14:	1093	360.0	1453	398.0	1851	404.0
Finger 15:	1057	366.0	1423	408.0	1831	415.0
Finger 16:	1074	367.0	1441	402.0	1843	418.0
Finger 17:	1041	367.0	1408	398.0	1806	426.0
Finger 18:	1126	361.0	1487	381.0	1868	402.0
Finger 19:	1087	363.0	1450	385.0	1835	413.0
Finger 20:	1056	370.0	1426	393.0	1819	428.0
Finger 21:	1077	377.0	1454	392.0	1846	409.0
Finger 22:	1038	378.0	1416	391.0	1807	431.0
Finger 23:	1013	378.0	1391	398.0	1789	445.0
Finger 24:	1068	373.0	1441	378.0	1819	410.0
Finger 25:	1030	375.0	1405	397.0	1802	438.0

Finger 26:	1155	365.0	1520	368.0	1888	403.0	2291
Finger 27:	1097	373.0	1470	391.0	1861	423.0	2284
Finger 28:	1124	365.0	1489	376.0	1865	414.0	2279
Finger 29:	1079	371.0	1450	401.0	1851	433.0	2284
Finger 30:	1091	368.0	1459	388.0	1847	427.0	2274
Finger 31:	1118	362.0	1480	384.0	1864	422.0	2286
Finger 32:	1106	364.0	1470	406.0	1876	426.0	2302
Finger 33:	1161	357.0	1518	376.0	1894	396.0	2290
Finger 34:	1137	348.0	1485	389.0	1874	412.0	2286
Finger 35:	1071	365.0	1436	416.0	1852	442.0	2294
Finger 36:	1094	353.0	1447	406.0	1853	423.0	2276
Finger 37:	1128	352.0	1480	397.0	1877	413.0	2290
Finger 38:	1156	342.0	1498	395.0	1893	391.0	2284
Finger 39:	1152	338.0	1490	391.0	1881	398.0	2279
Finger 40:	1108	346.0	1454	405.0	1859	411.0	2270

Segmented Cement Bond Log Calibration Report

Serial Number:	1066
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	-0.766 ft

Master Calibration, performed Tue May 20 12:56:48 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.001	0.710	0.800	62.165	86.500	0.731
5FT	-0.005	0.724	0.800	62.165	84.228	1.211
S1	0.001	0.643	0.000	100.000	155.967	-0.211
S2	0.000	0.662	0.000	100.000	151.181	-0.011
S3	0.000	0.697	0.000	100.000	143.383	-0.005
S4	-0.000	0.748	0.000	100.000	133.625	0.064
S5	0.001	0.770	0.000	100.000	130.059	-0.110
S6	-0.001	0.764	0.000	100.000	130.794	0.067
S7	0.000	0.735	0.000	100.000	136.091	-0.007
S8	0.000	0.679	0.000	100.000	147.299	-0.023

Gamma Ray Calibration Report

Serial Number:	211727
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	Ferge 4C-14HZ
Field	Wattenberg
County	Weld
State	Colorado