

Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr-McGee Oil and Gas Onshore LP				
Well	Sack 37N-6HZ				
Field	Wattenberg				
County	Weld				
State	Colorado				
Company	Kerr-McGee Oil and Gas Onshore LP				
Well	Sack 37N-6HZ				
Field	Wattenberg				
County	Weld	State	Colorado		
Location:	API # : 05-123-39426			Other Services	
SEC 31		TWP 1N	RGE 67W	Gauge Ring	
Permanent Datum	Ground Level	Elevation	5040'	Elevation	
Log Measured From	Kelly Bushing	16 FT		K.B. 5056'	
Drilling Measured From	Kelly Bushing			D.F. 5055'	
				G.L. 5040'	

Date	02-JAN-2015
Run Number	One
Depth Driller	12,680 FT
Depth Logger	7058 FT
Bottom Logged Interval	7053 FT
Top Log Interval	Surface
Open Hole Size	8.75
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	242°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	---
Equipment Number	HD-0255
Location	Ft. Lupton, CO
Recorded By	Greg Jackson
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	1353 FT		
Intermediate #1	7	26	HCP-110 LTC	Surface	8112 FT		
Intermediate #2							
Liner	4.5	11.6	P-110 LT&C/DOX	7094 FT	12,675 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 Kelly Bushing.
Was unable to get to TOL with 3.75" & 3.625" Gauge Rings.
Came out of hole both times full of mud.
Log ran from just above tag to surface
Log ran with 2800 PSI surface induced pressure.
Logging Tools did have some mud in them once out of the hole.

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

Database File:0512339426_anadarko_sack 37n-6hz_01-02-15_mit_rbl.db

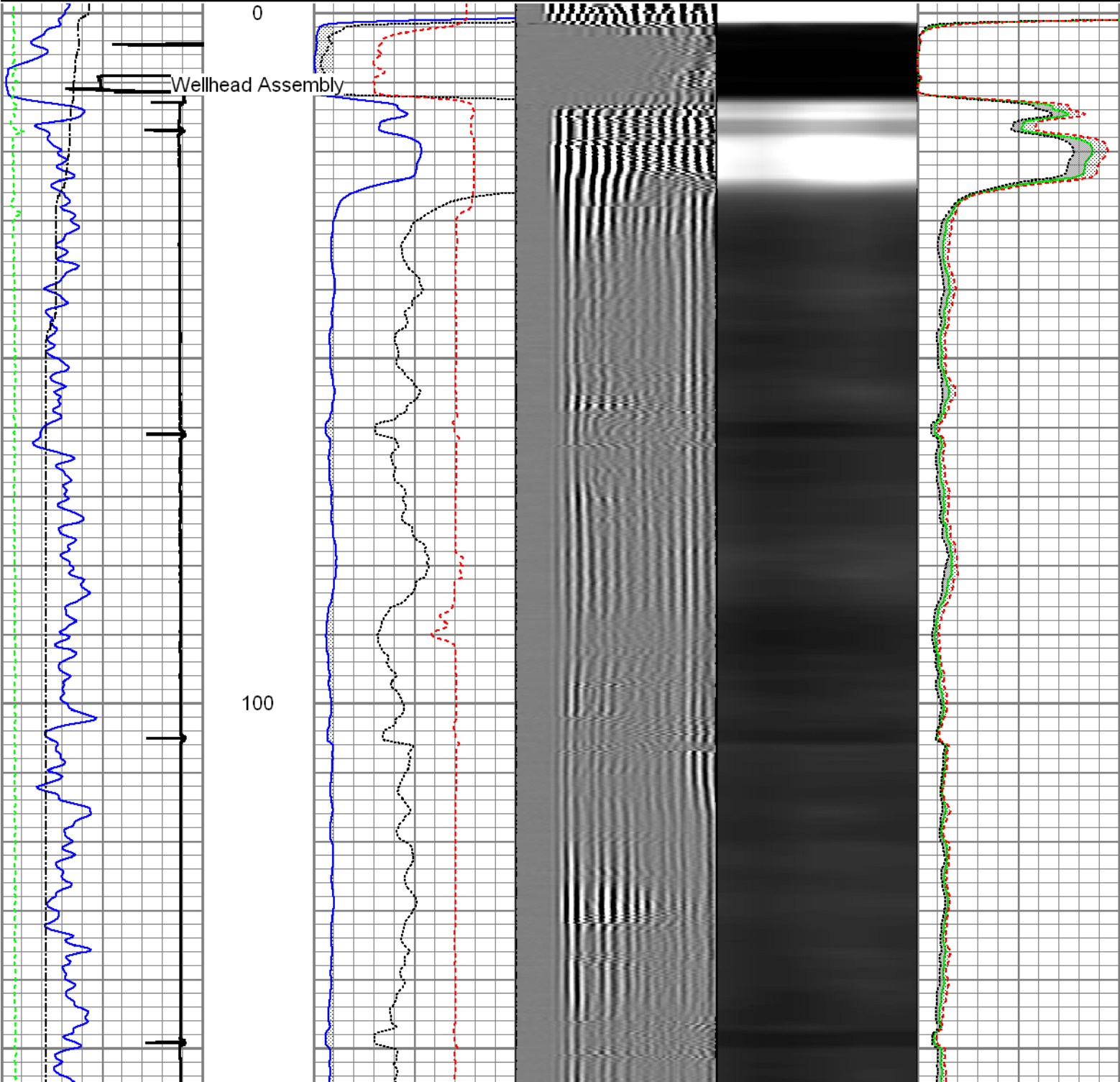
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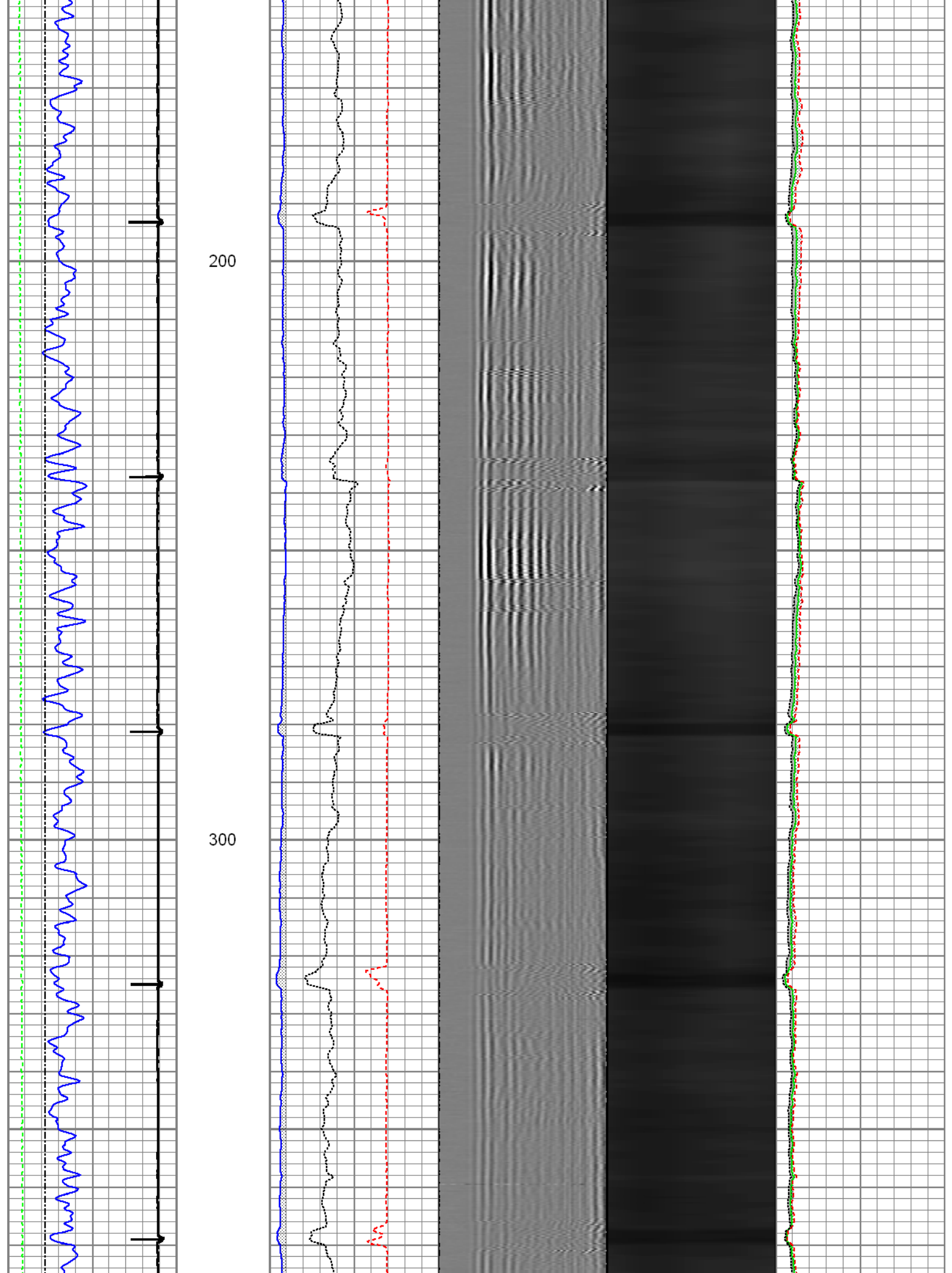
Presentation Format:rbt4_mit

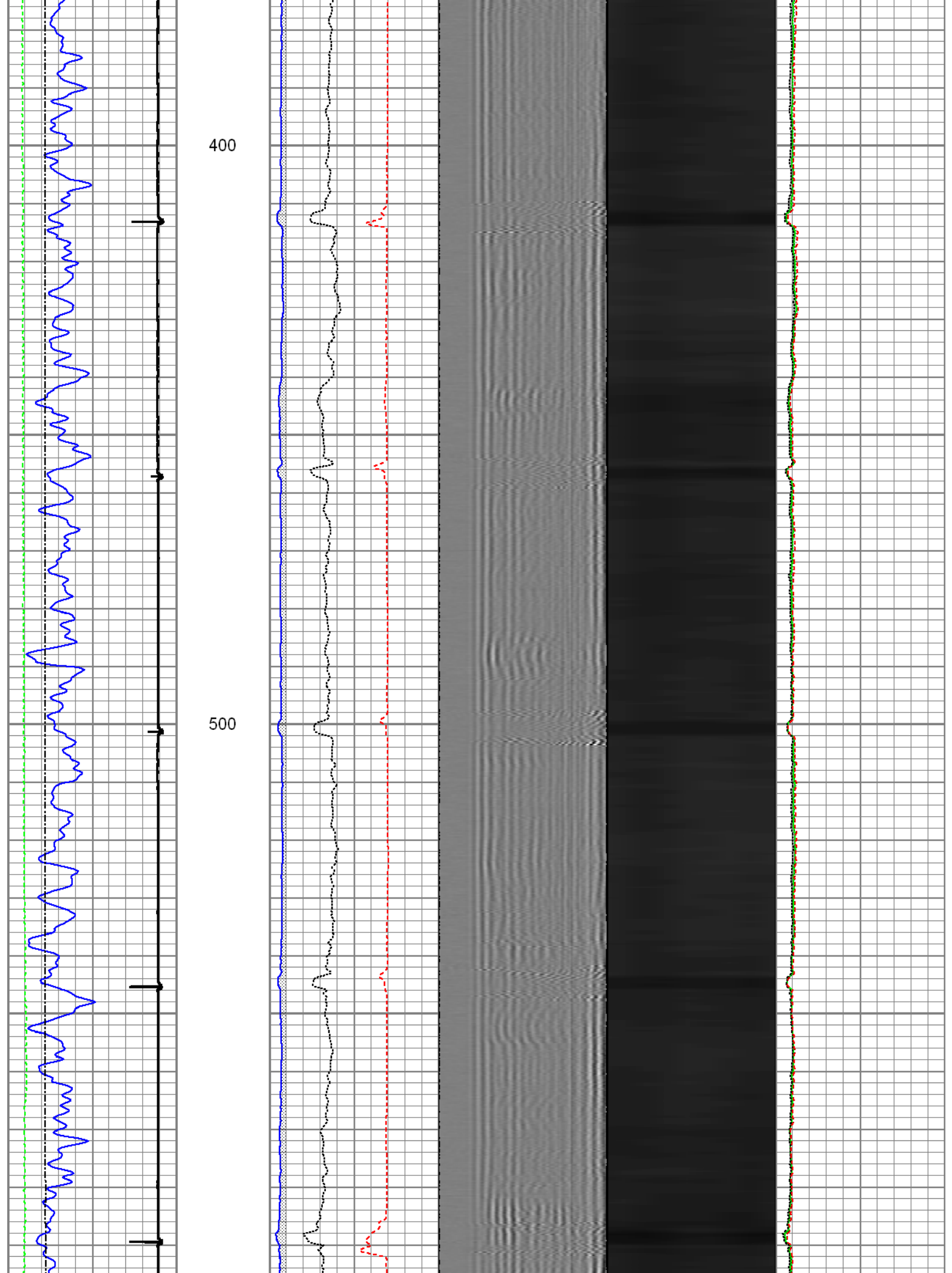
Dataset Creation:Fri Jan 02 15:22:41 2015 by Log 7.0 B1

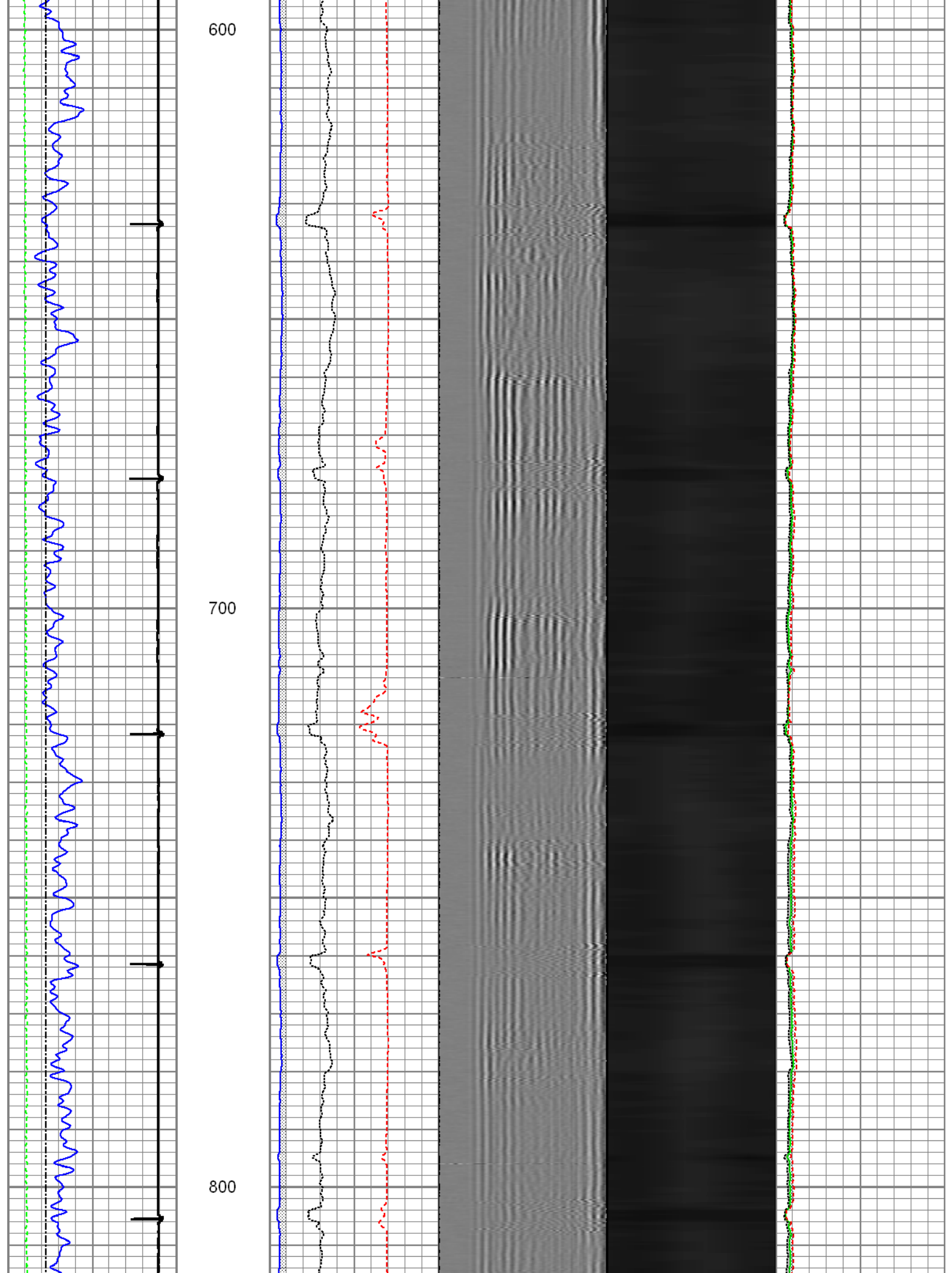
Charted by:Depth in Feet scaled 1:240

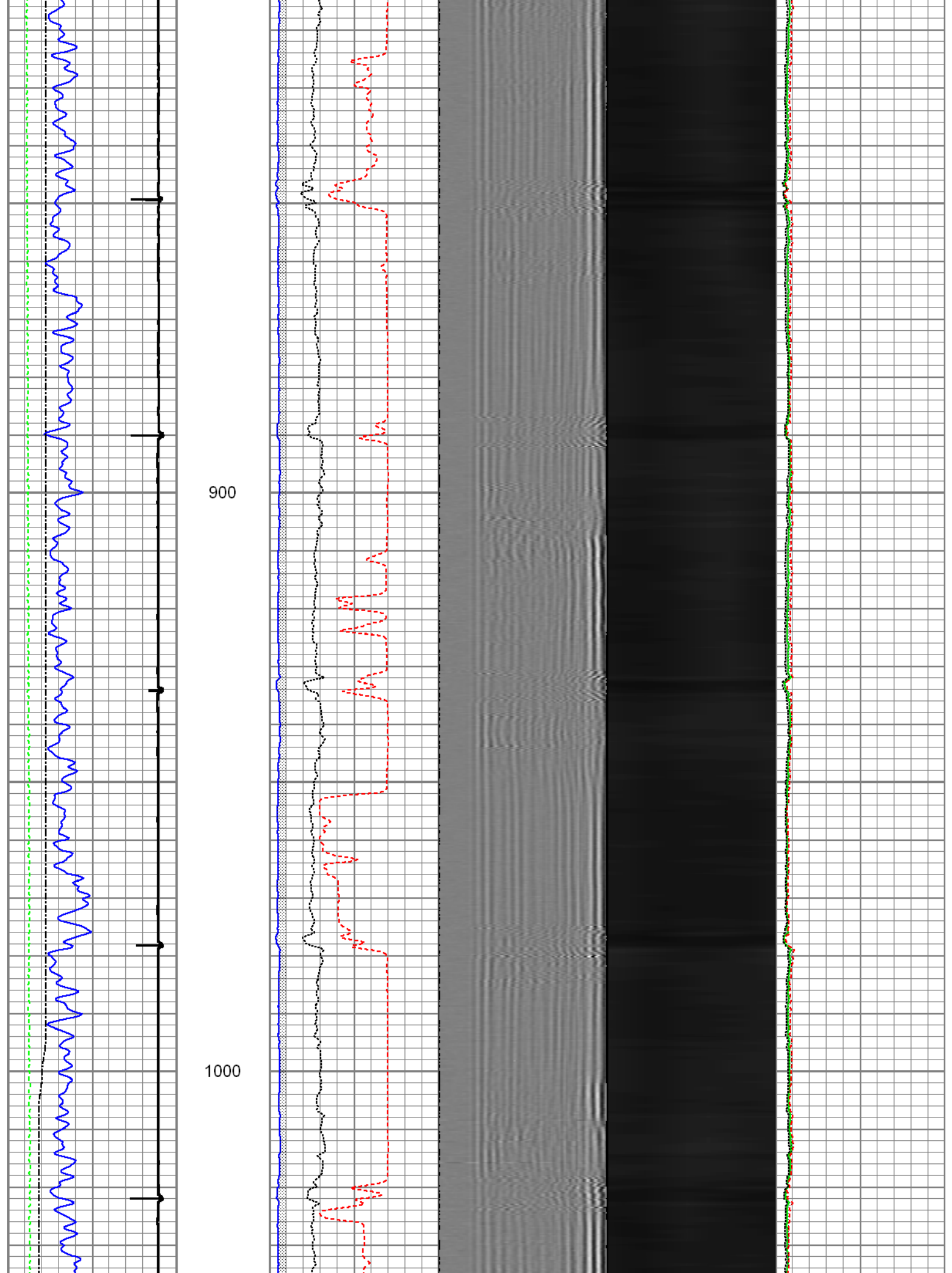
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				

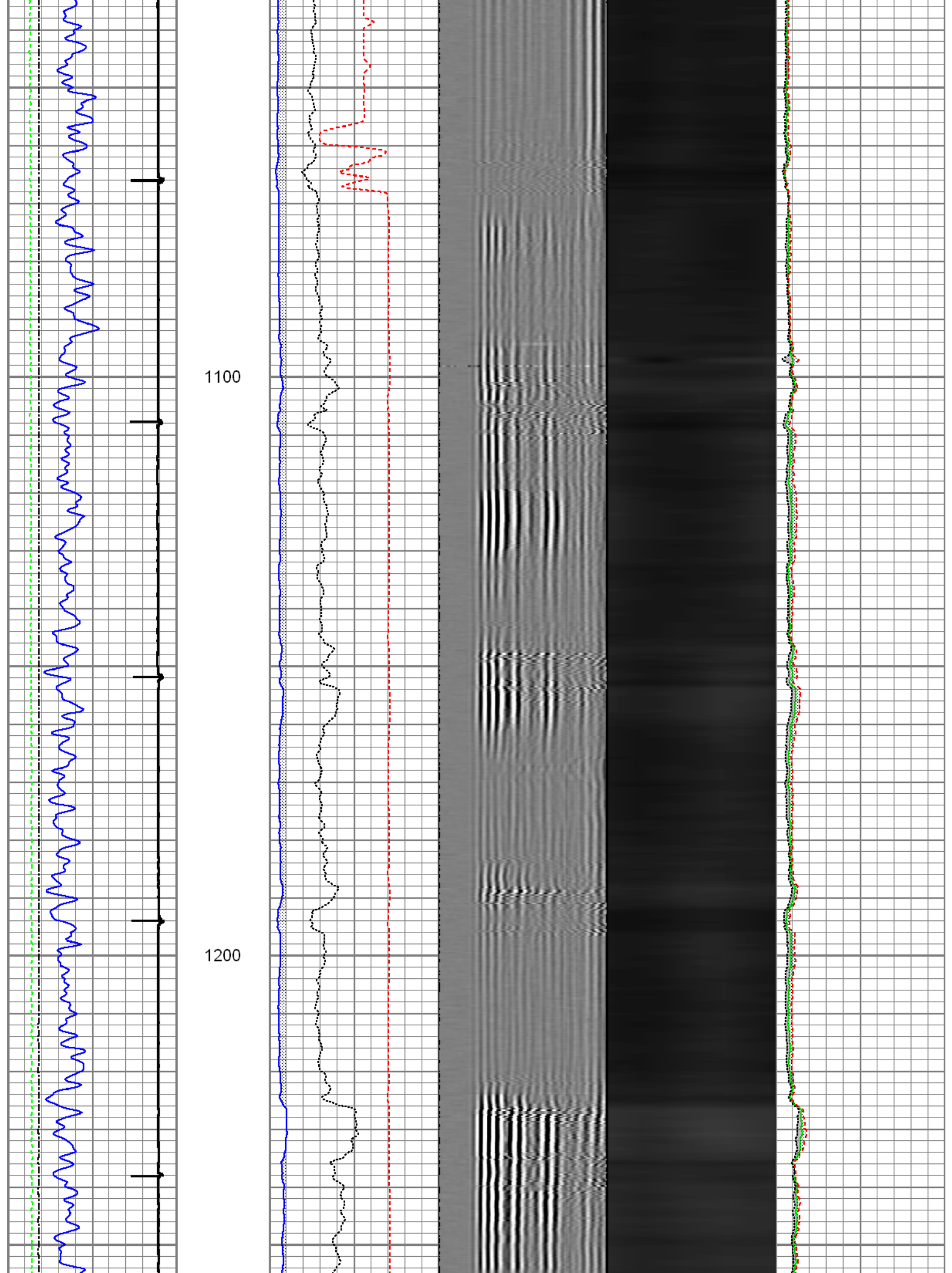


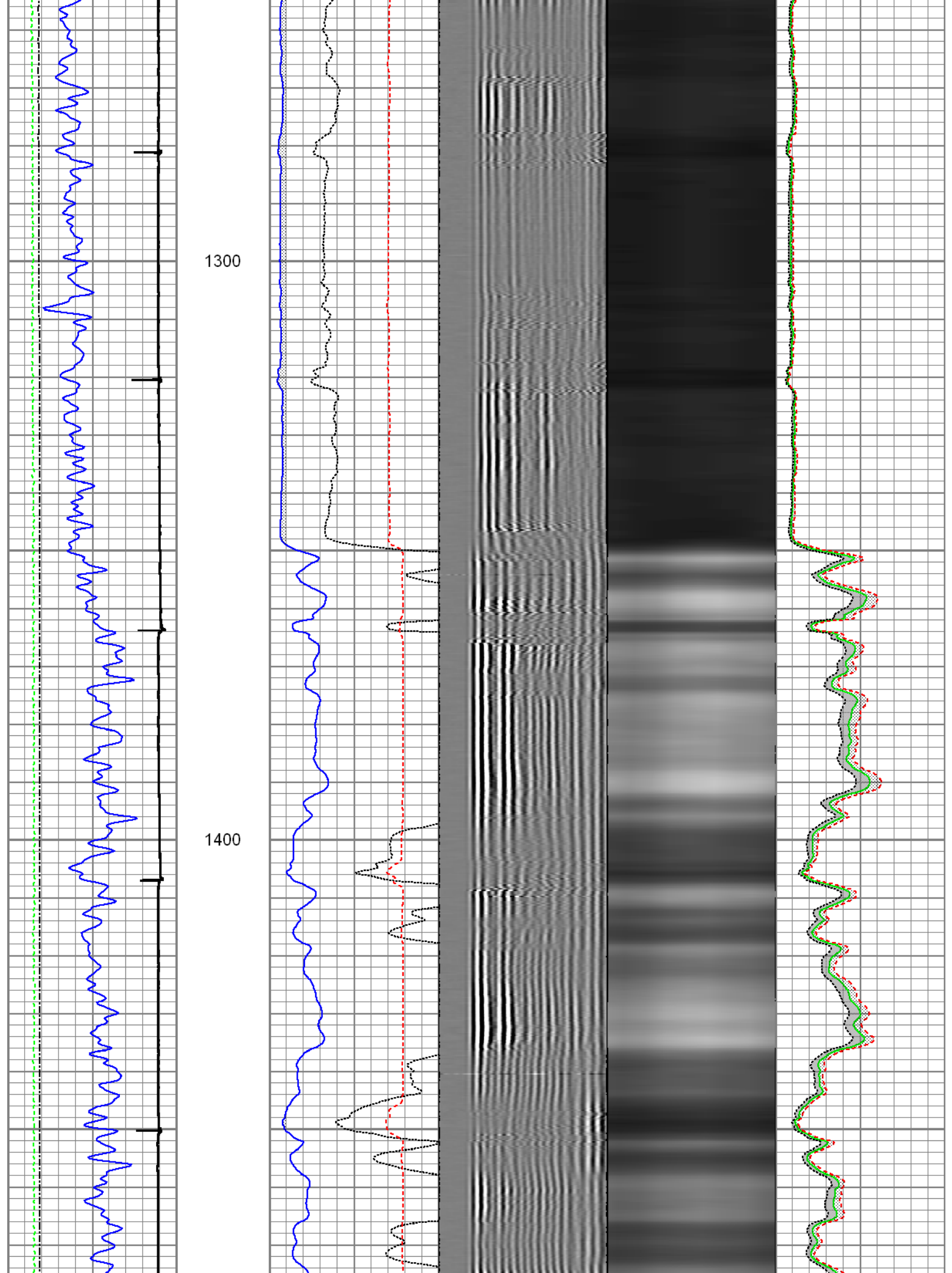


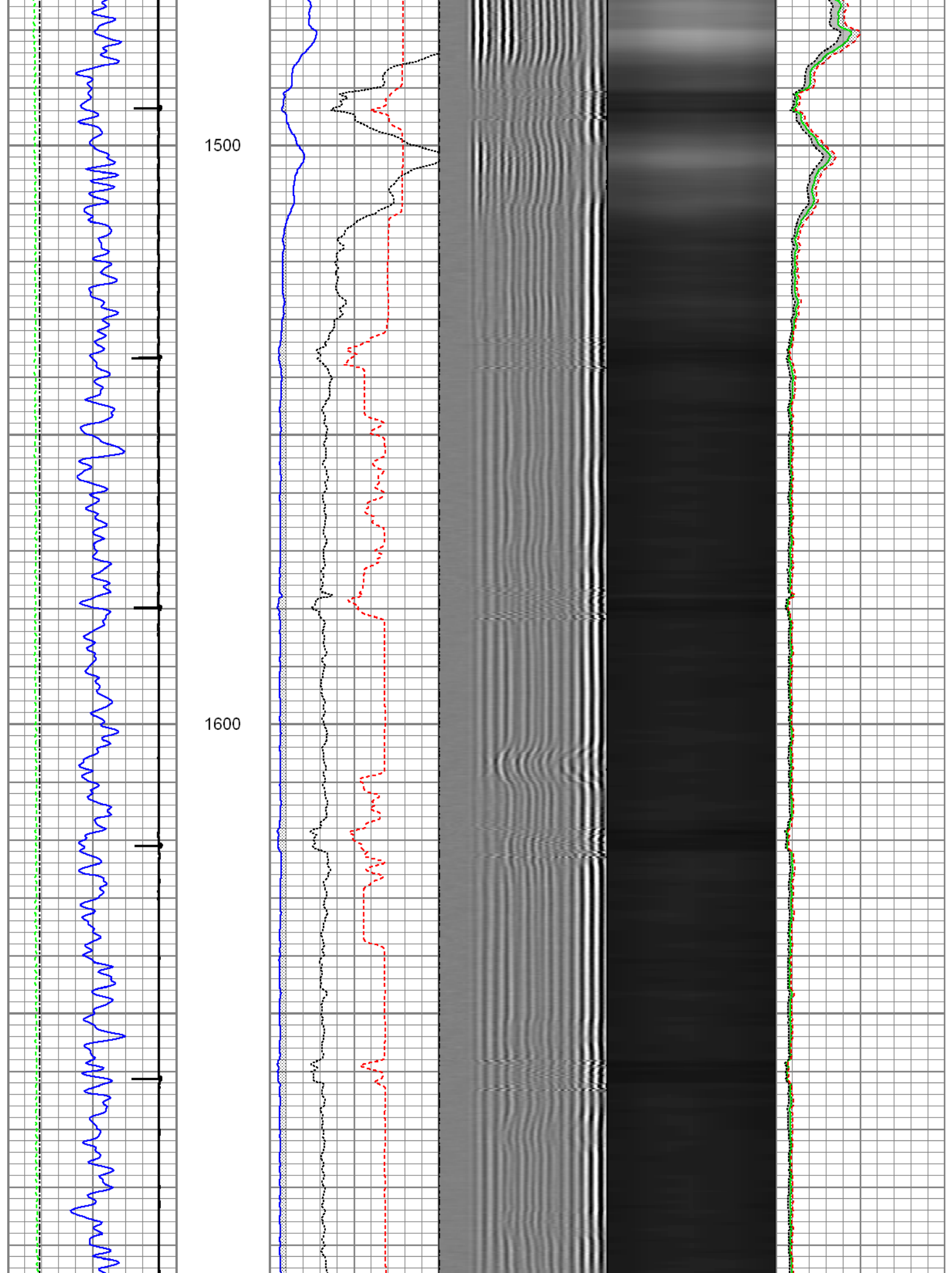


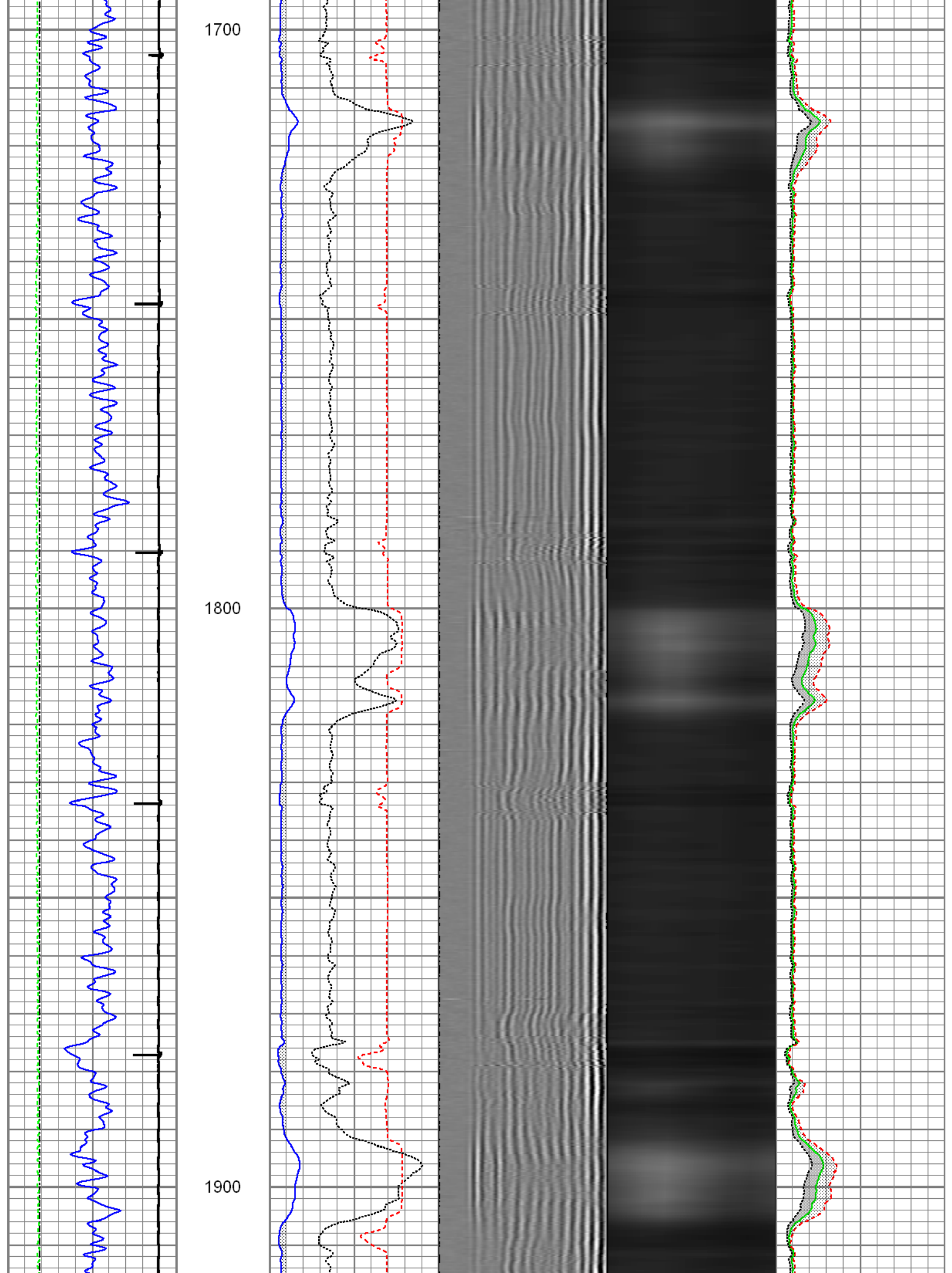






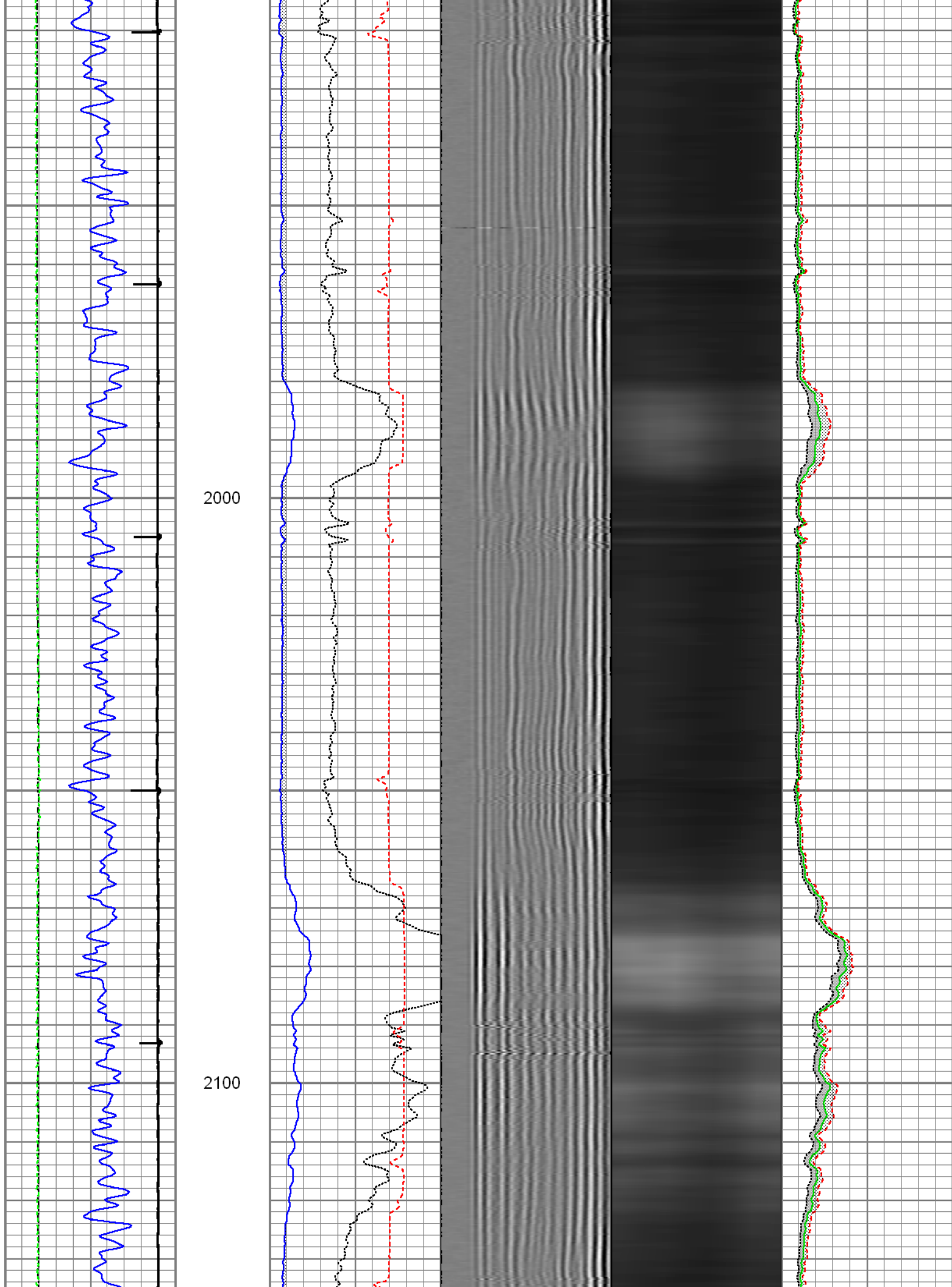






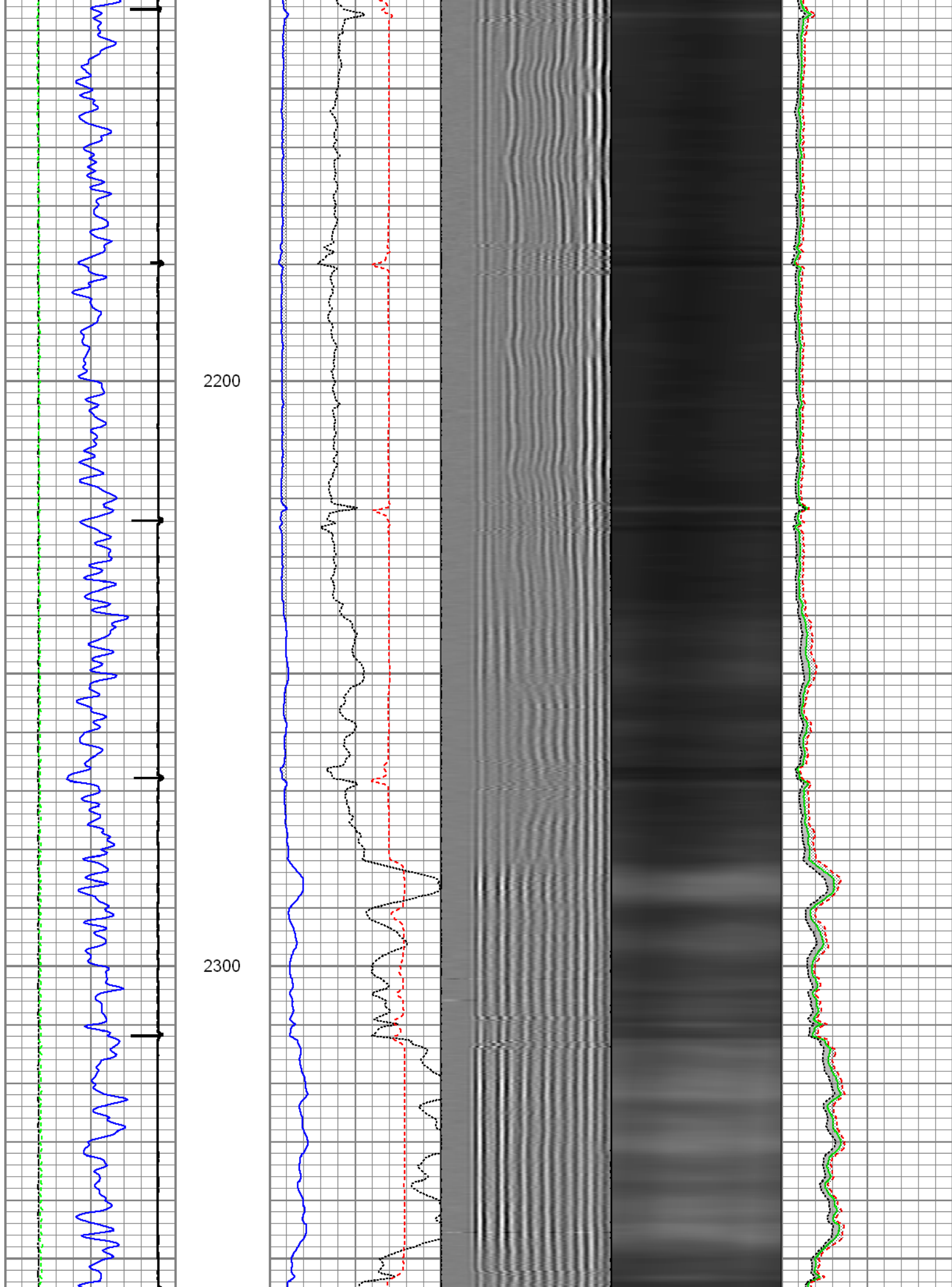
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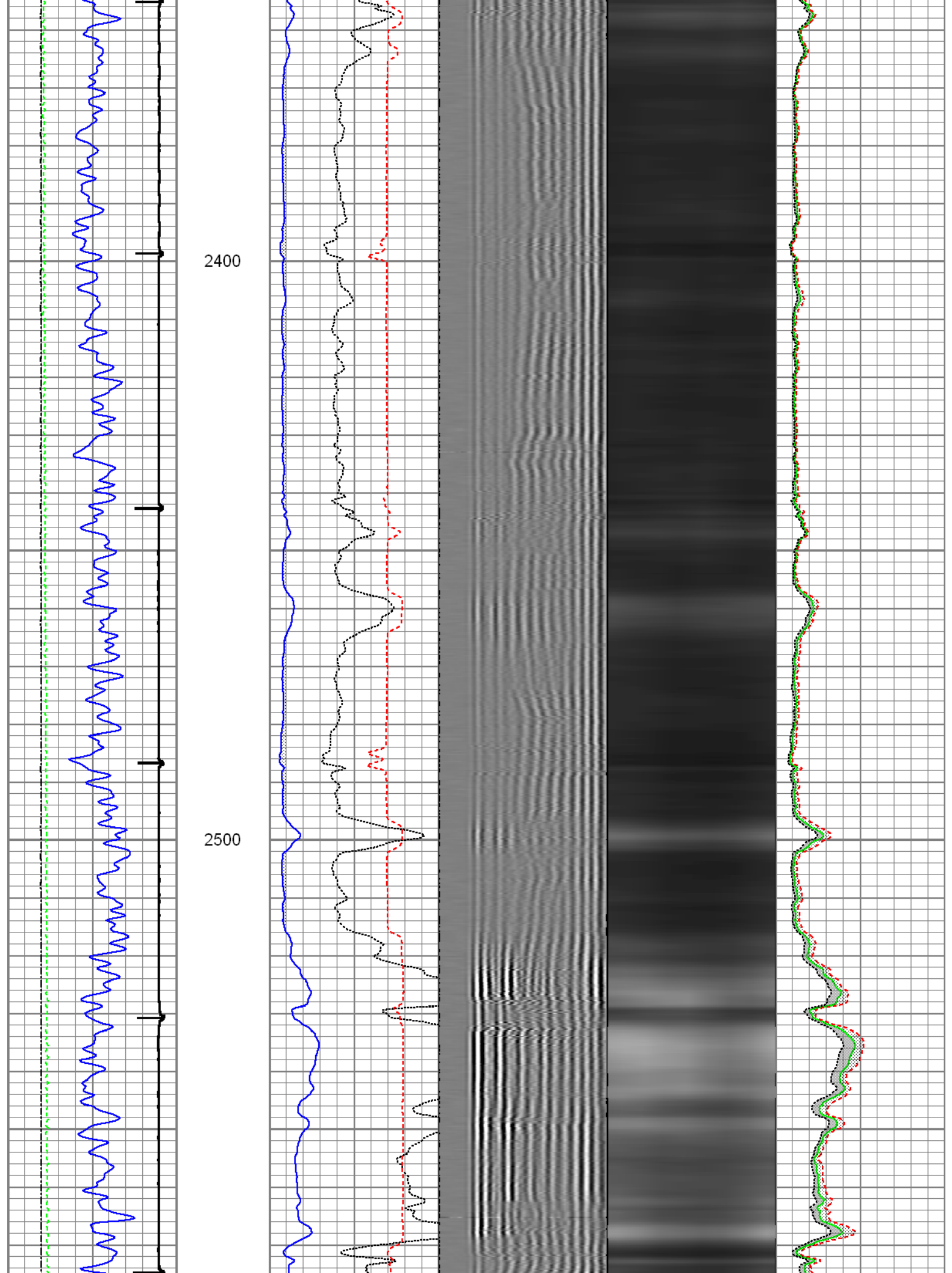
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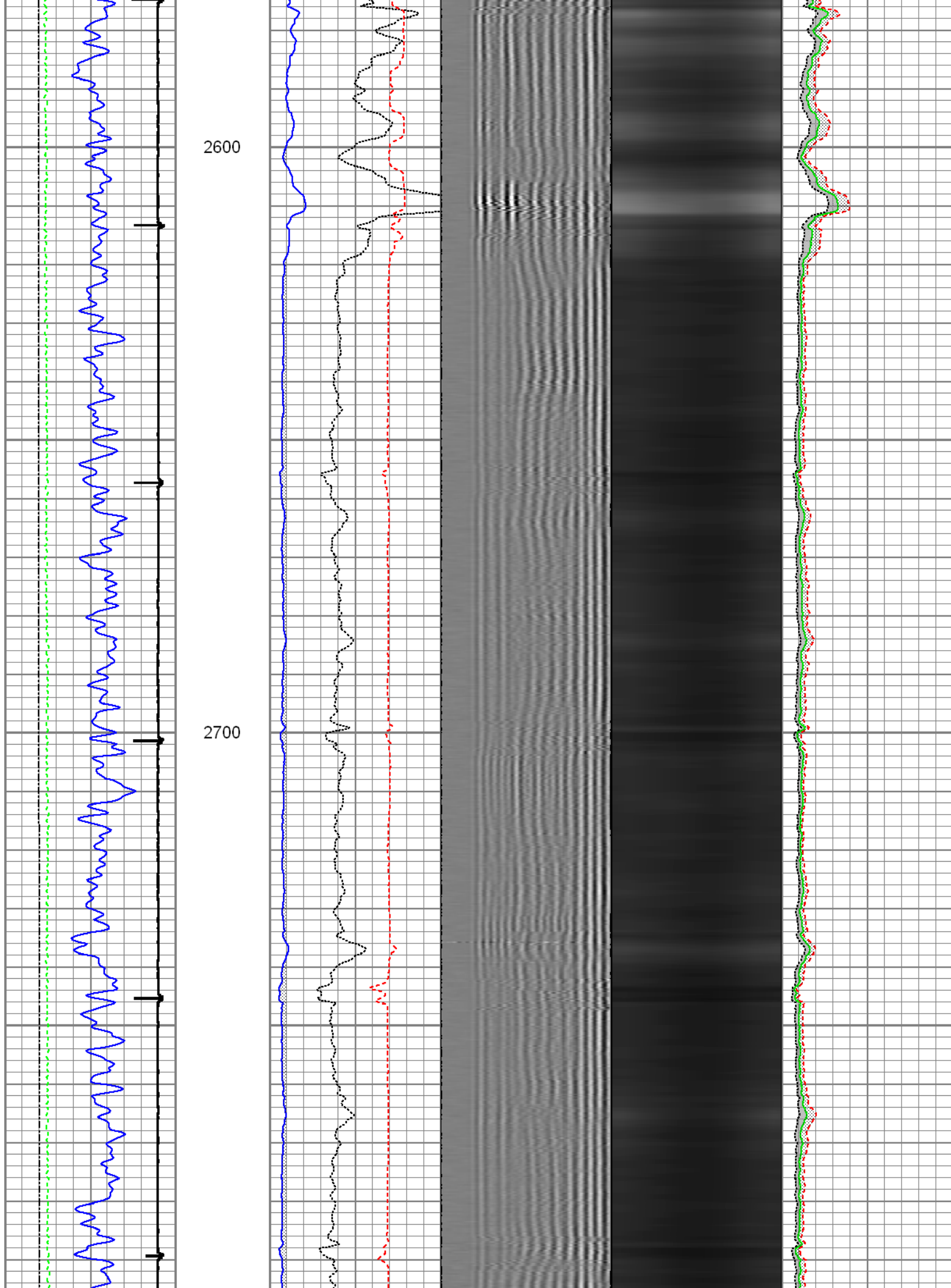
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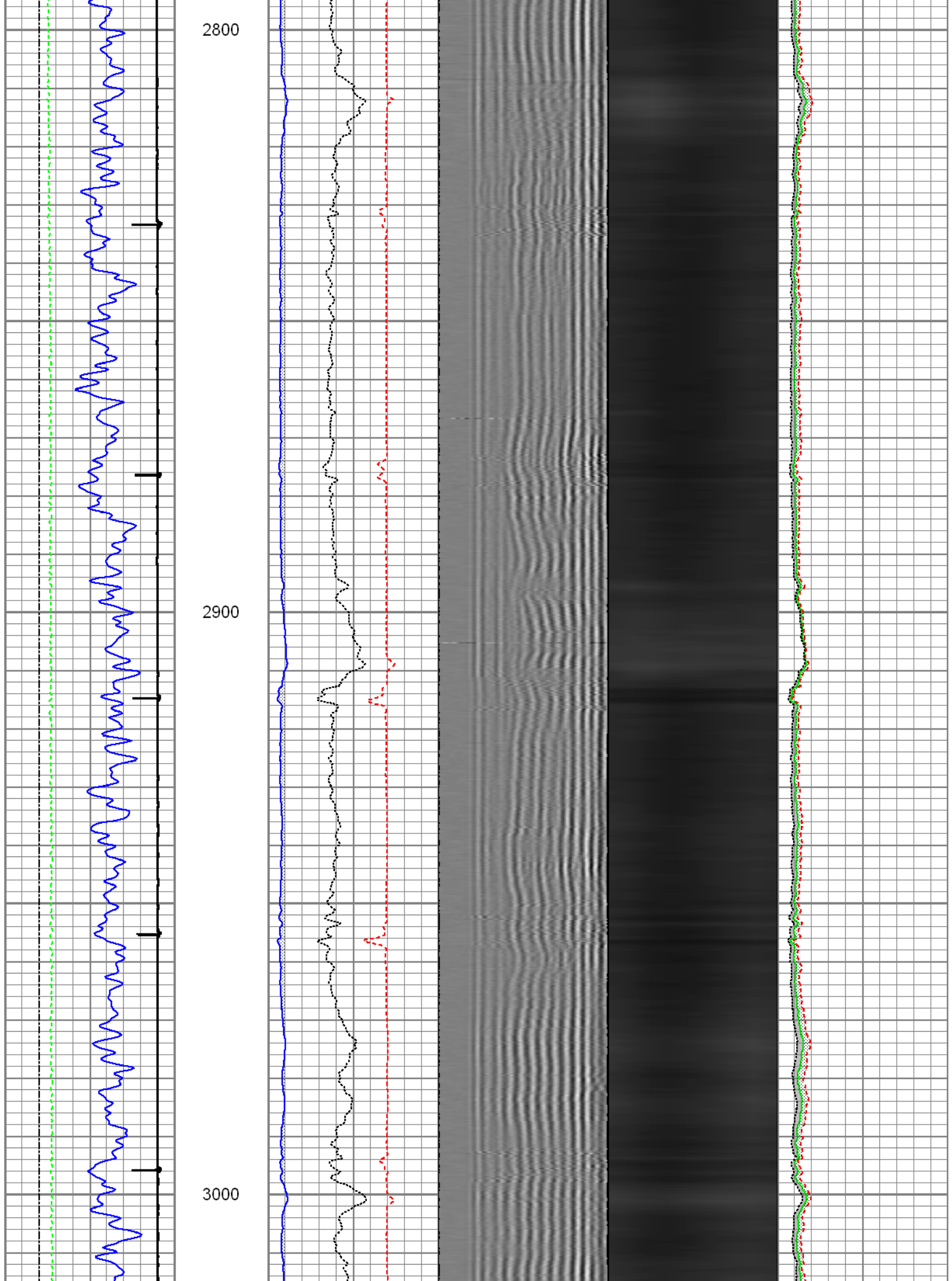
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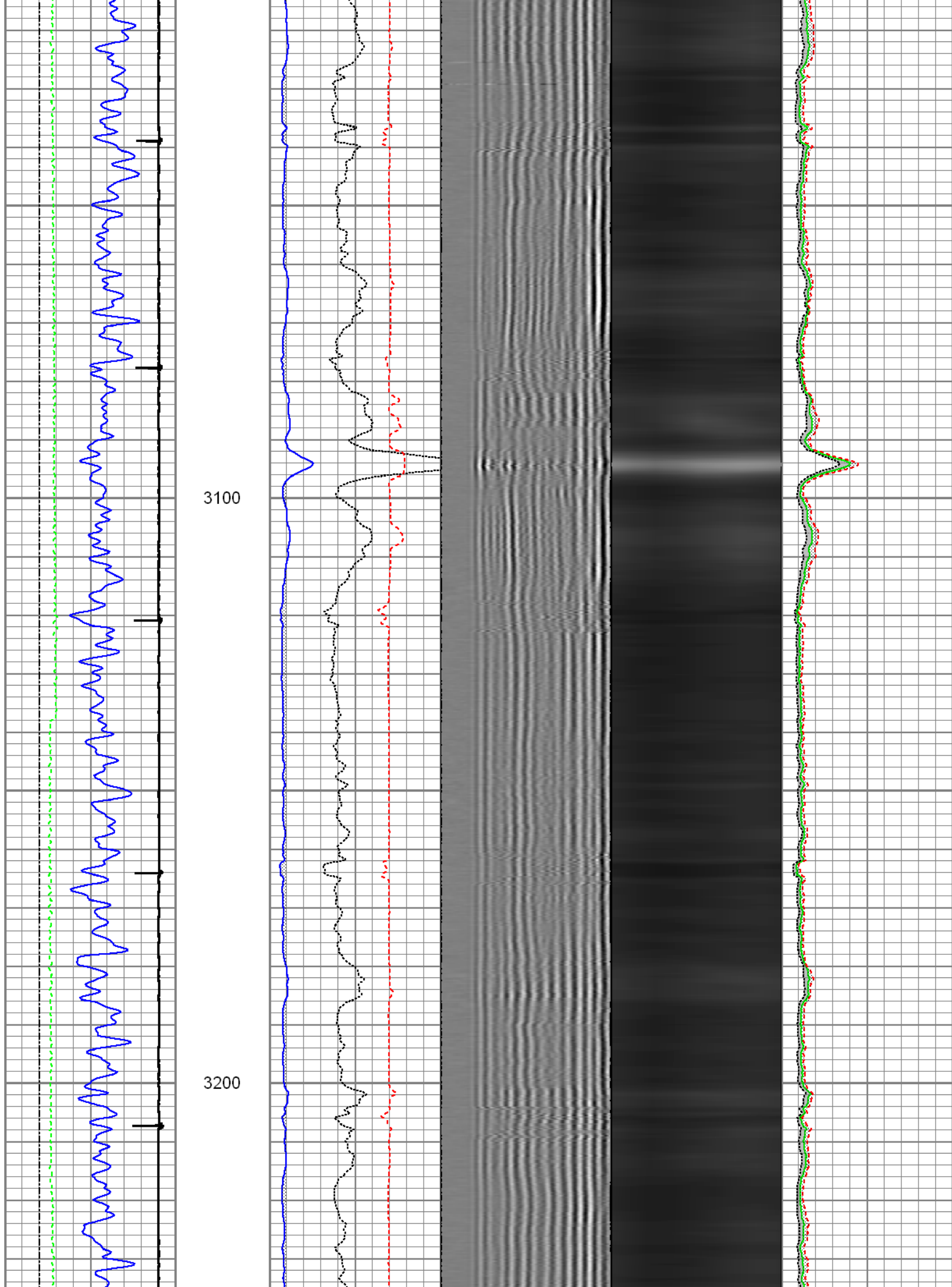
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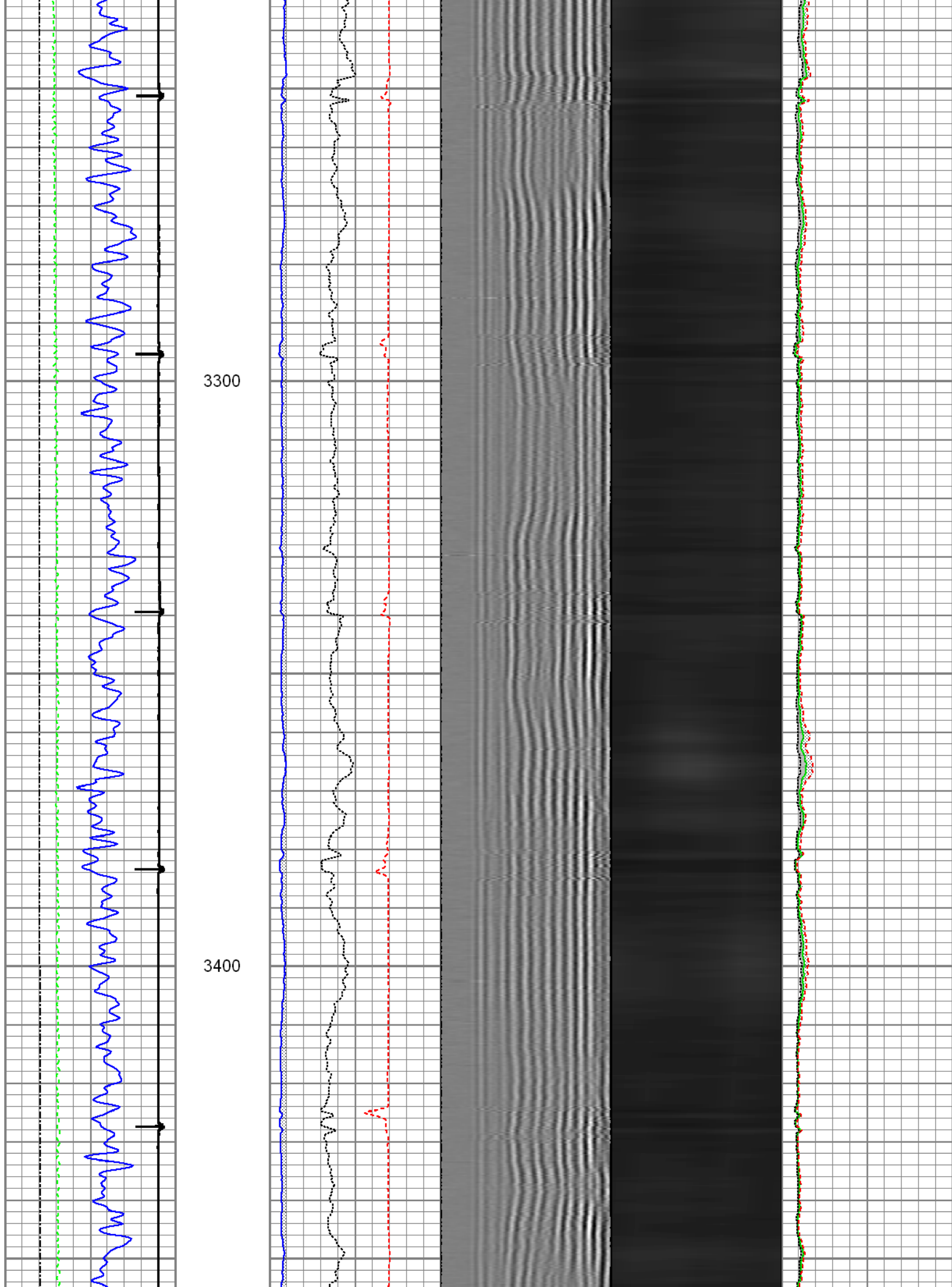
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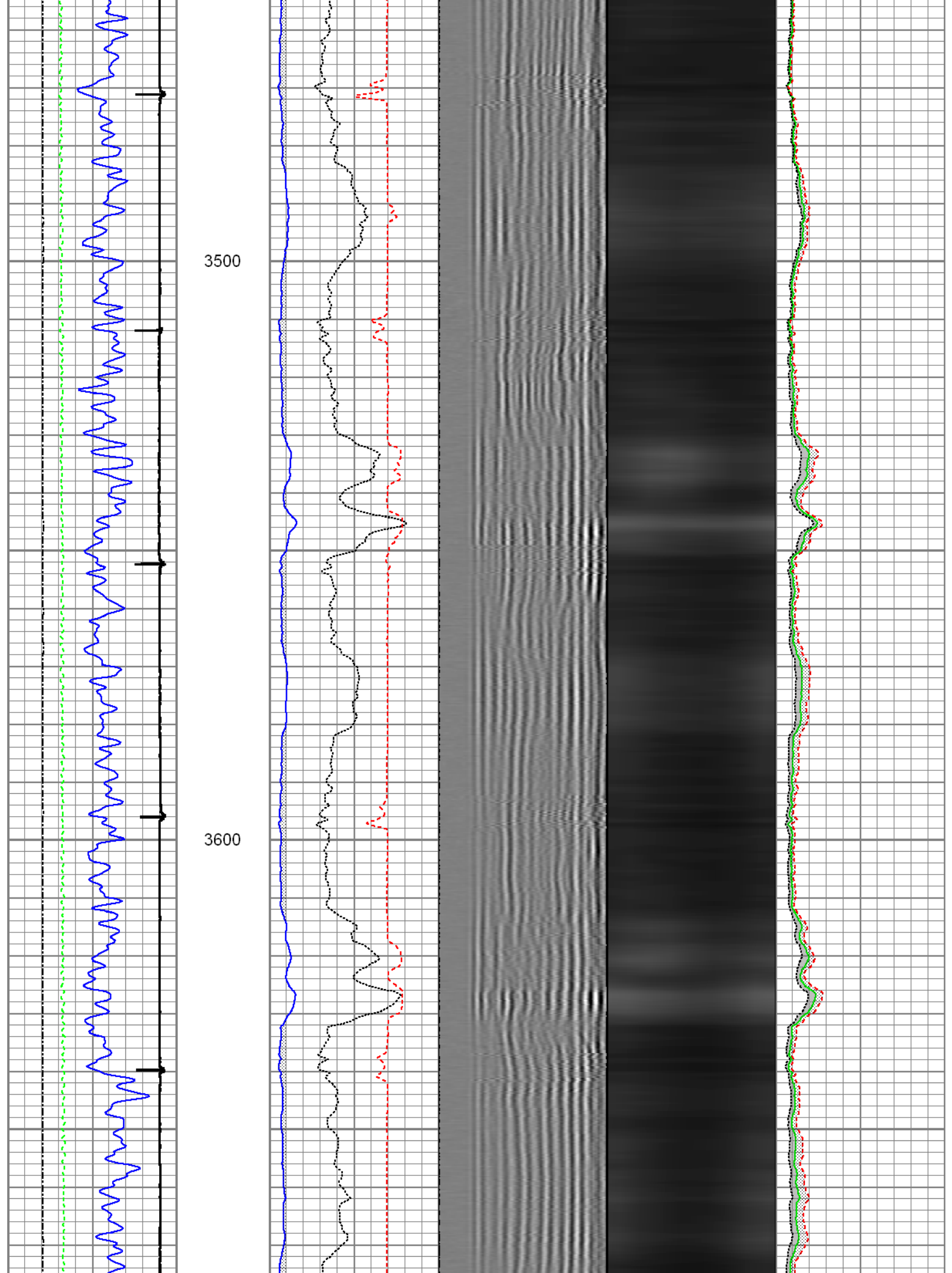
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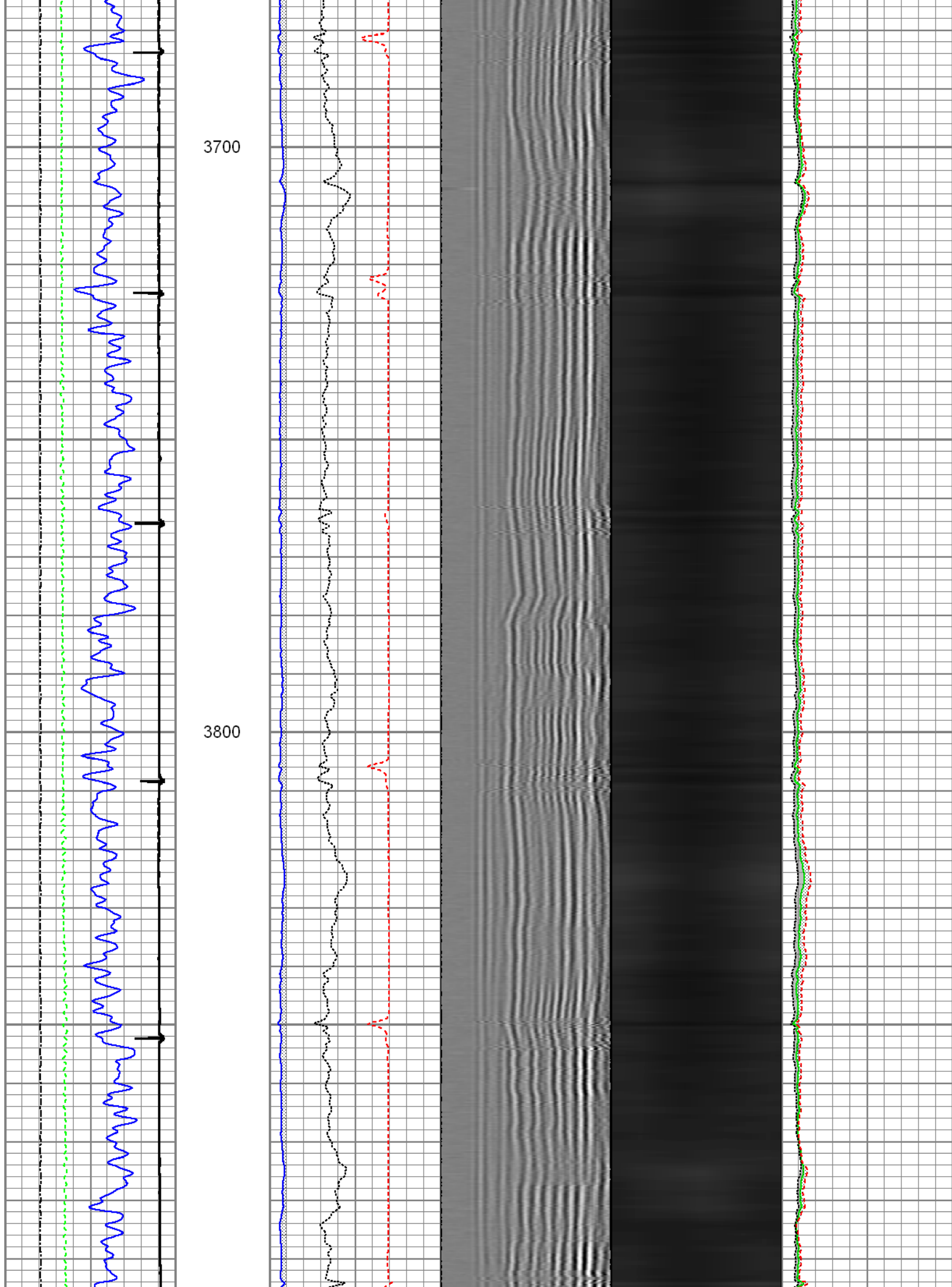
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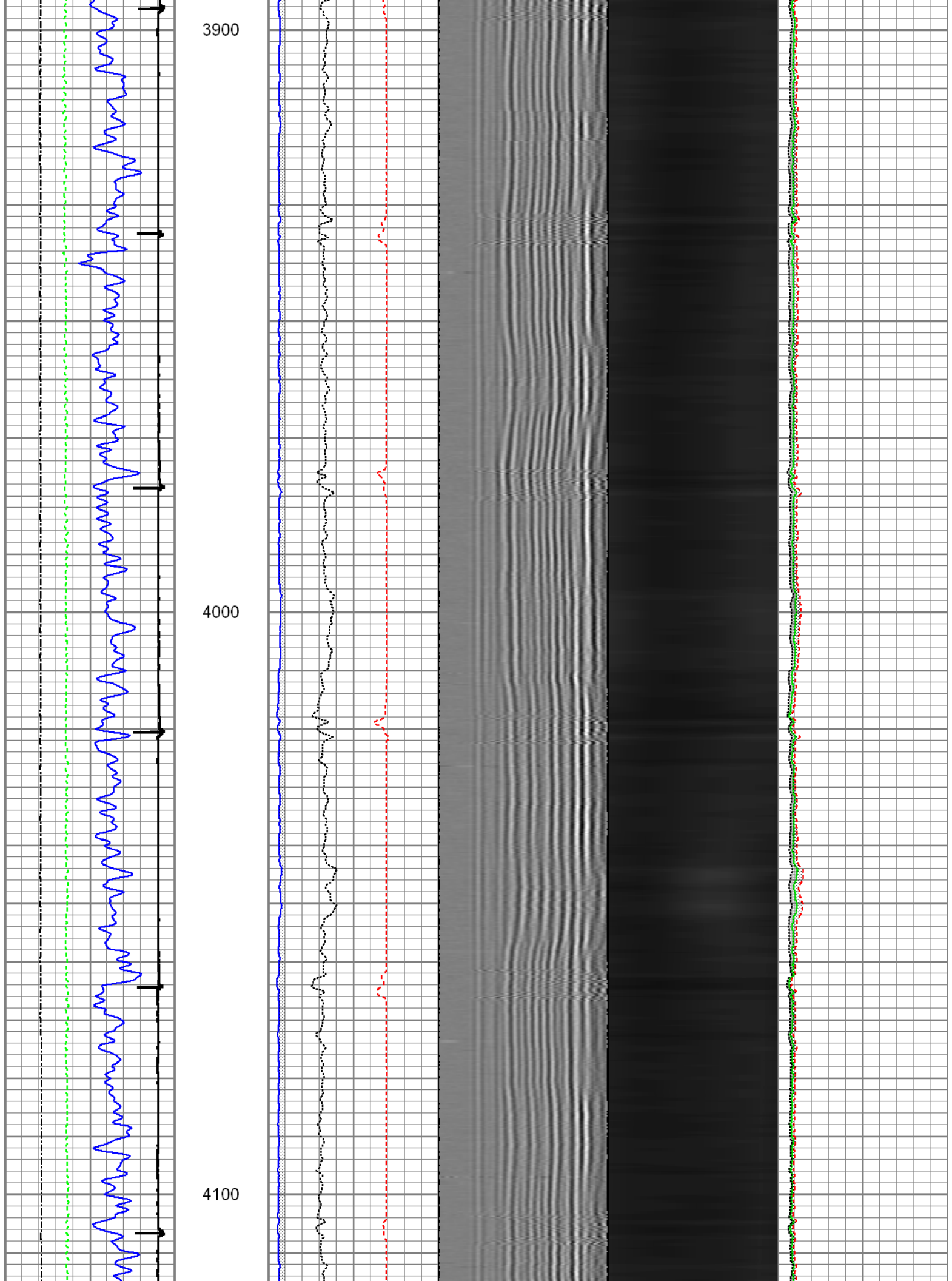
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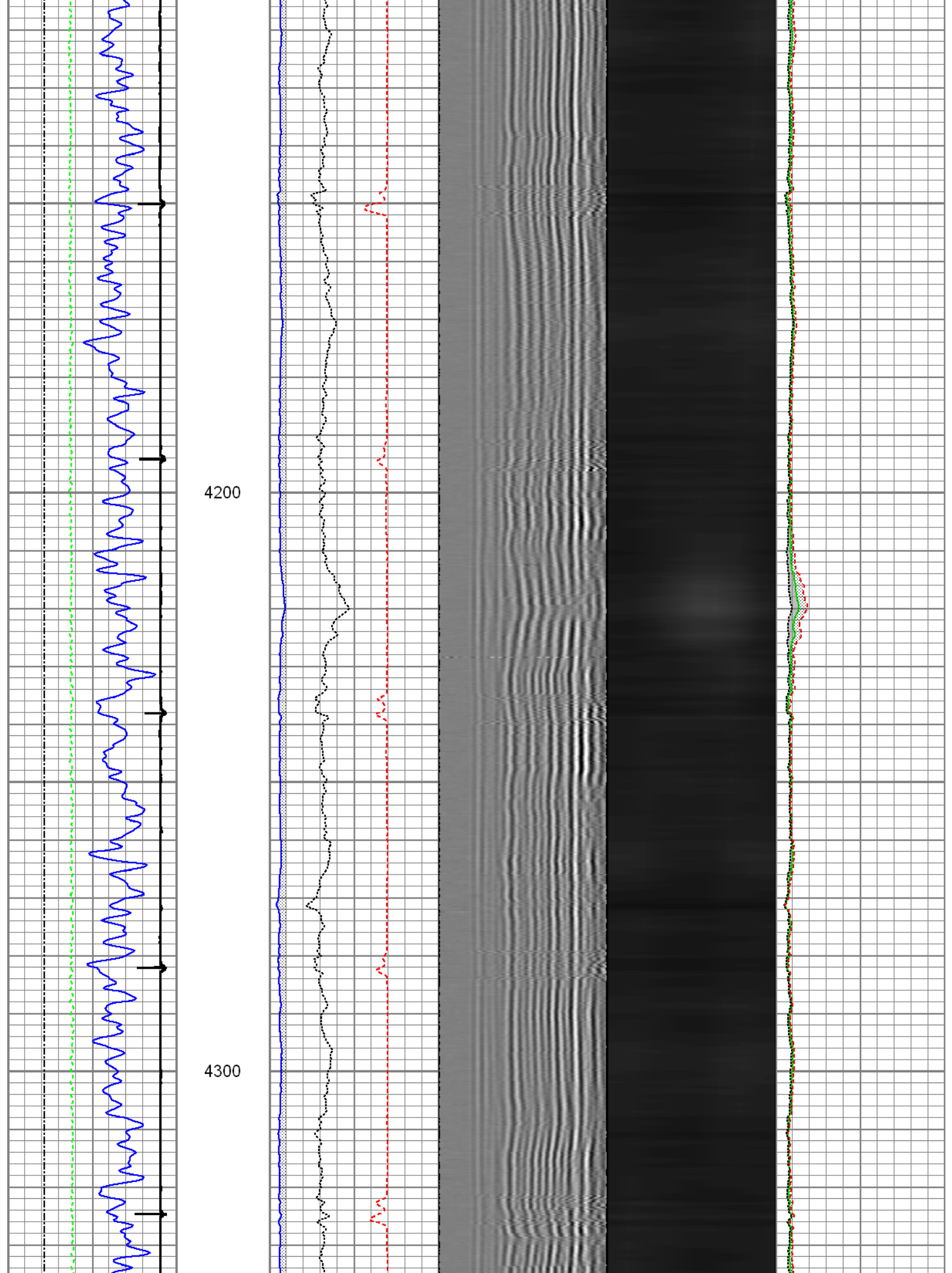


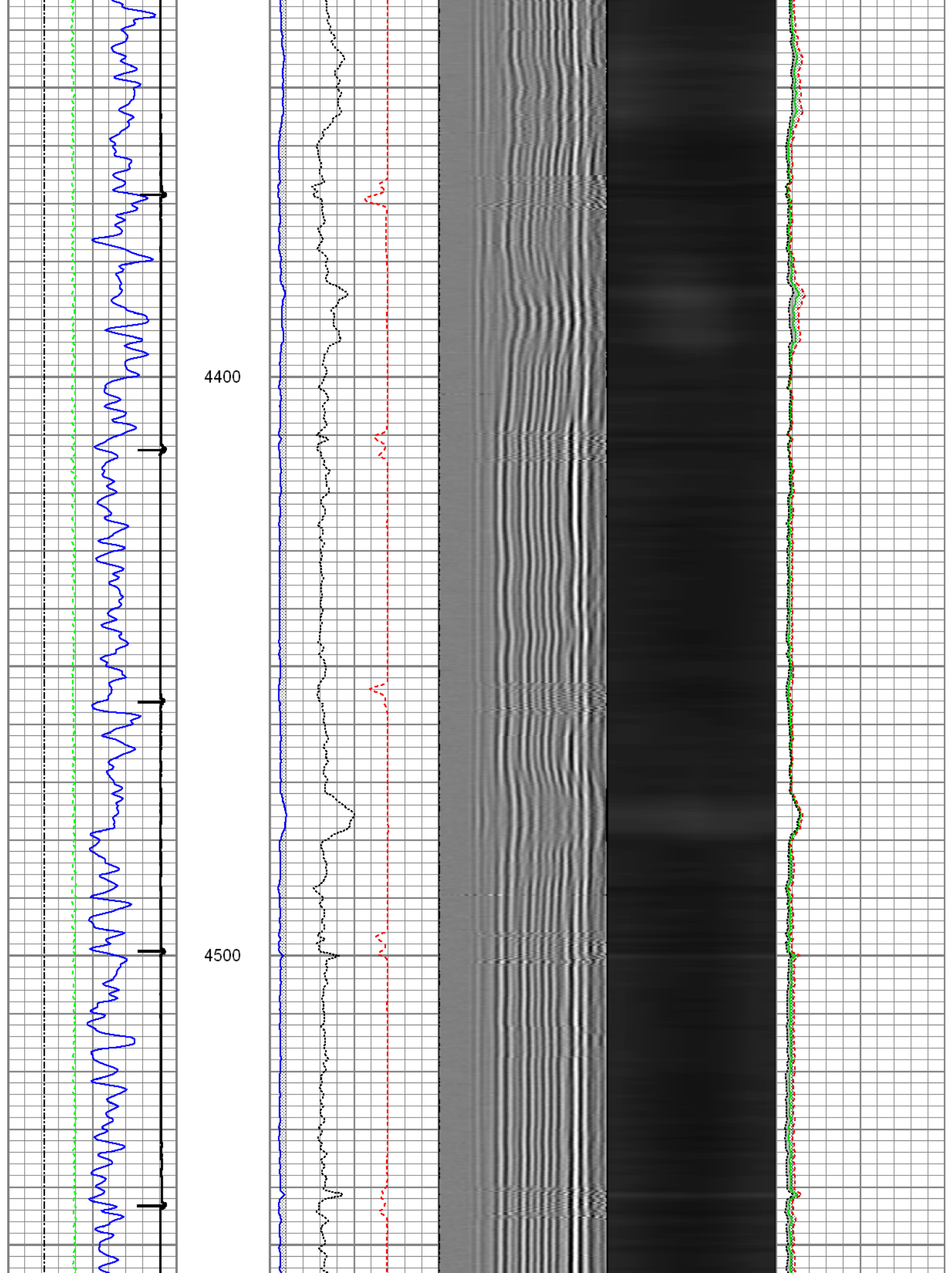
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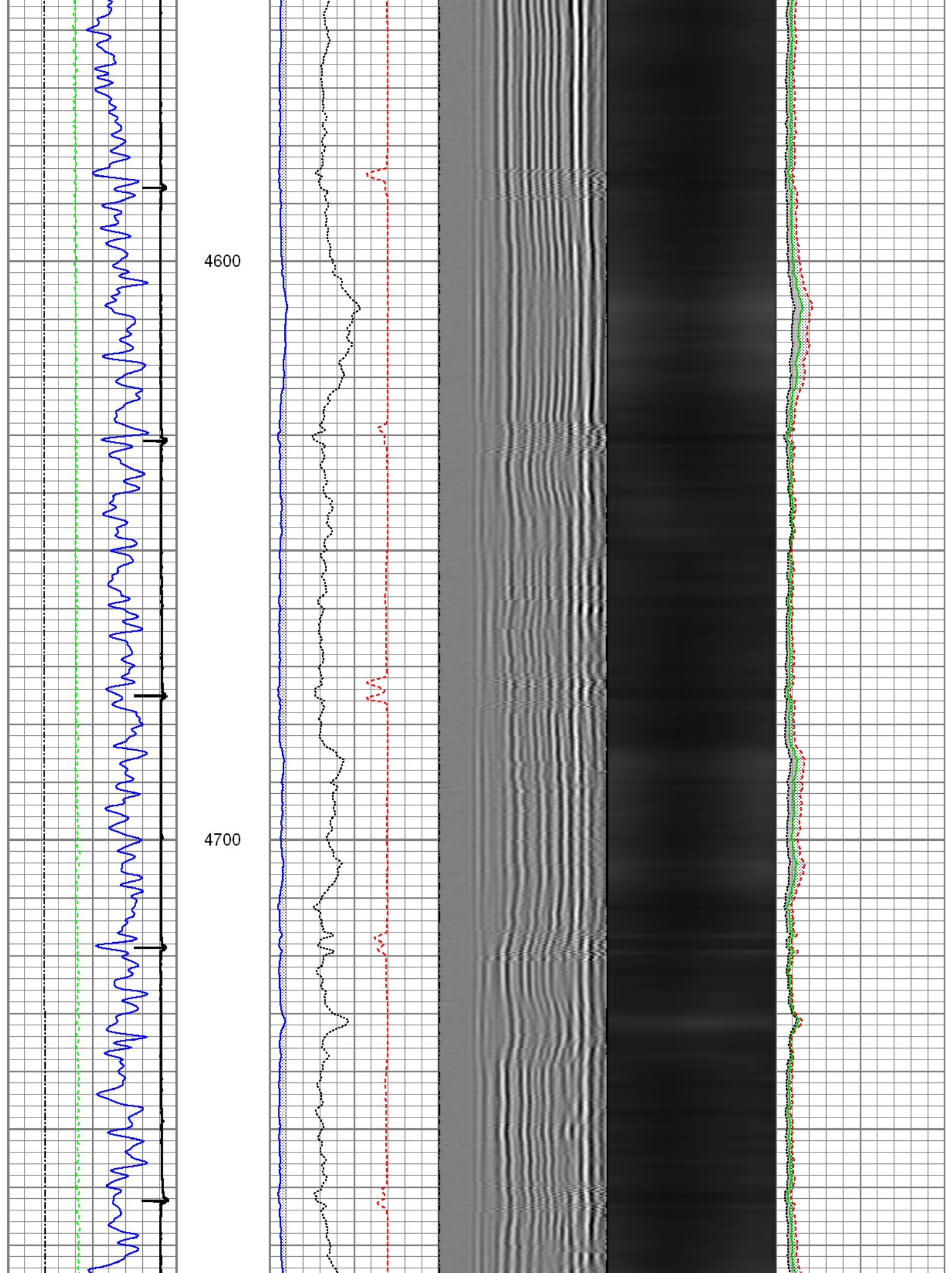
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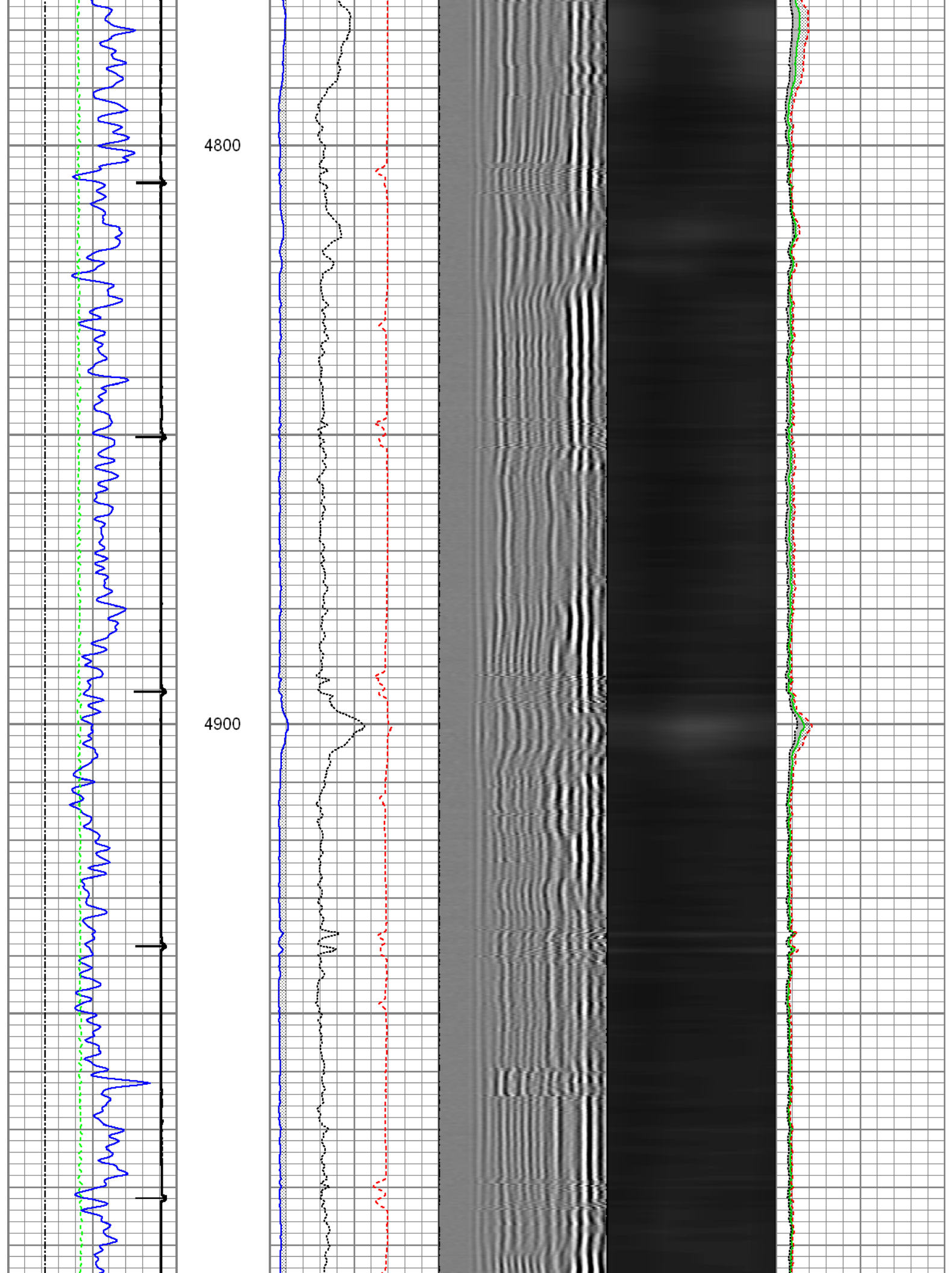
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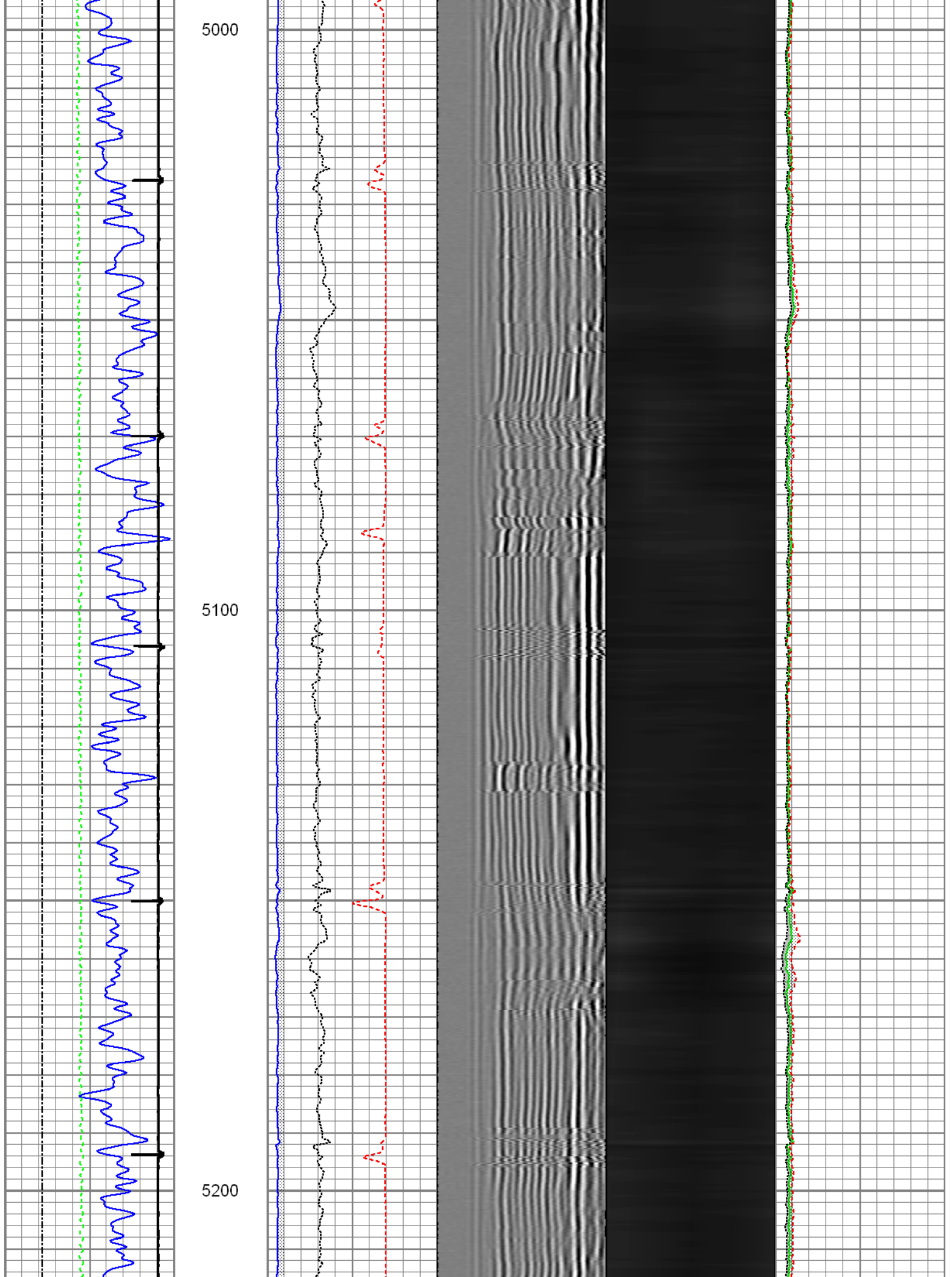


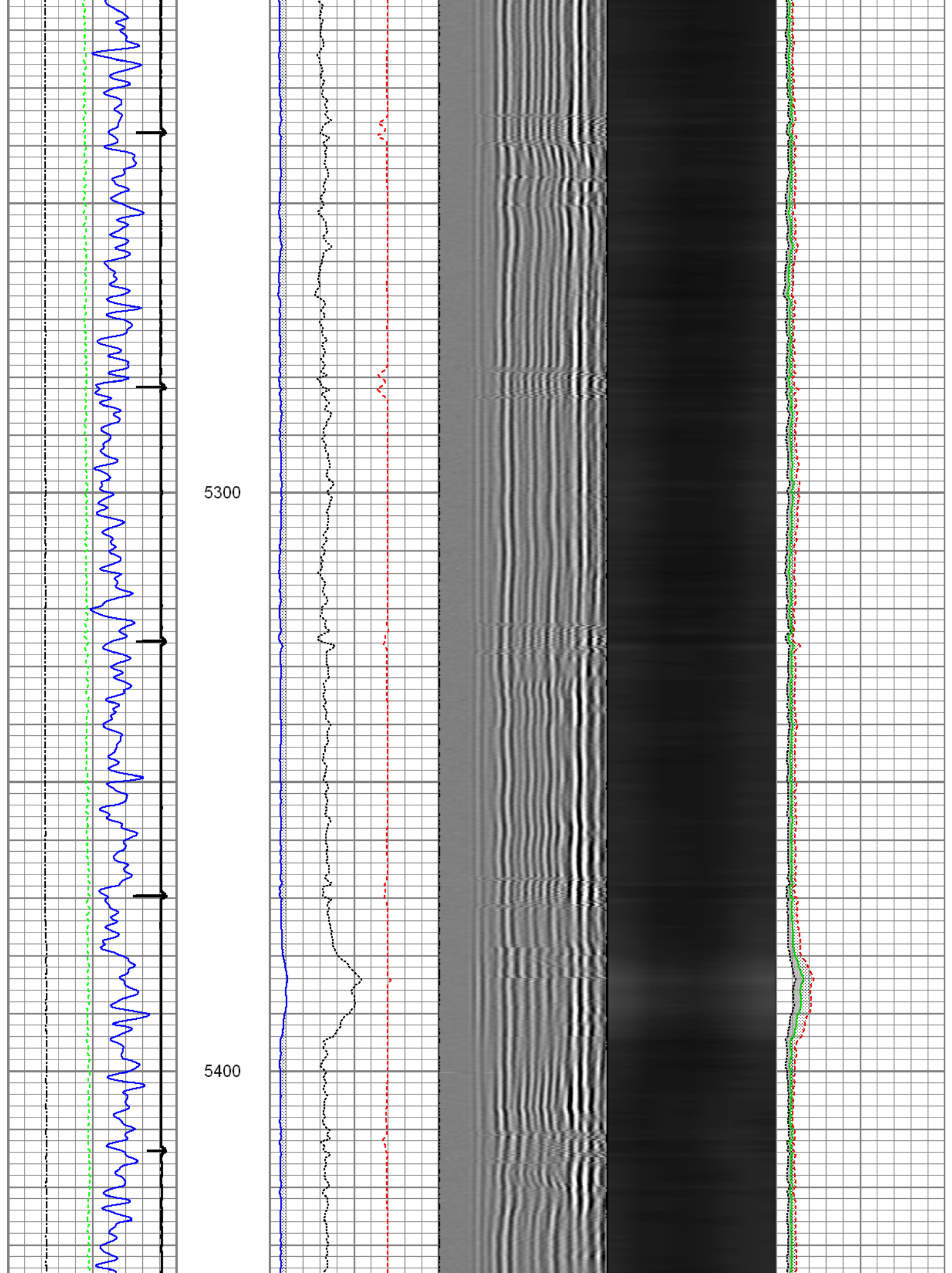


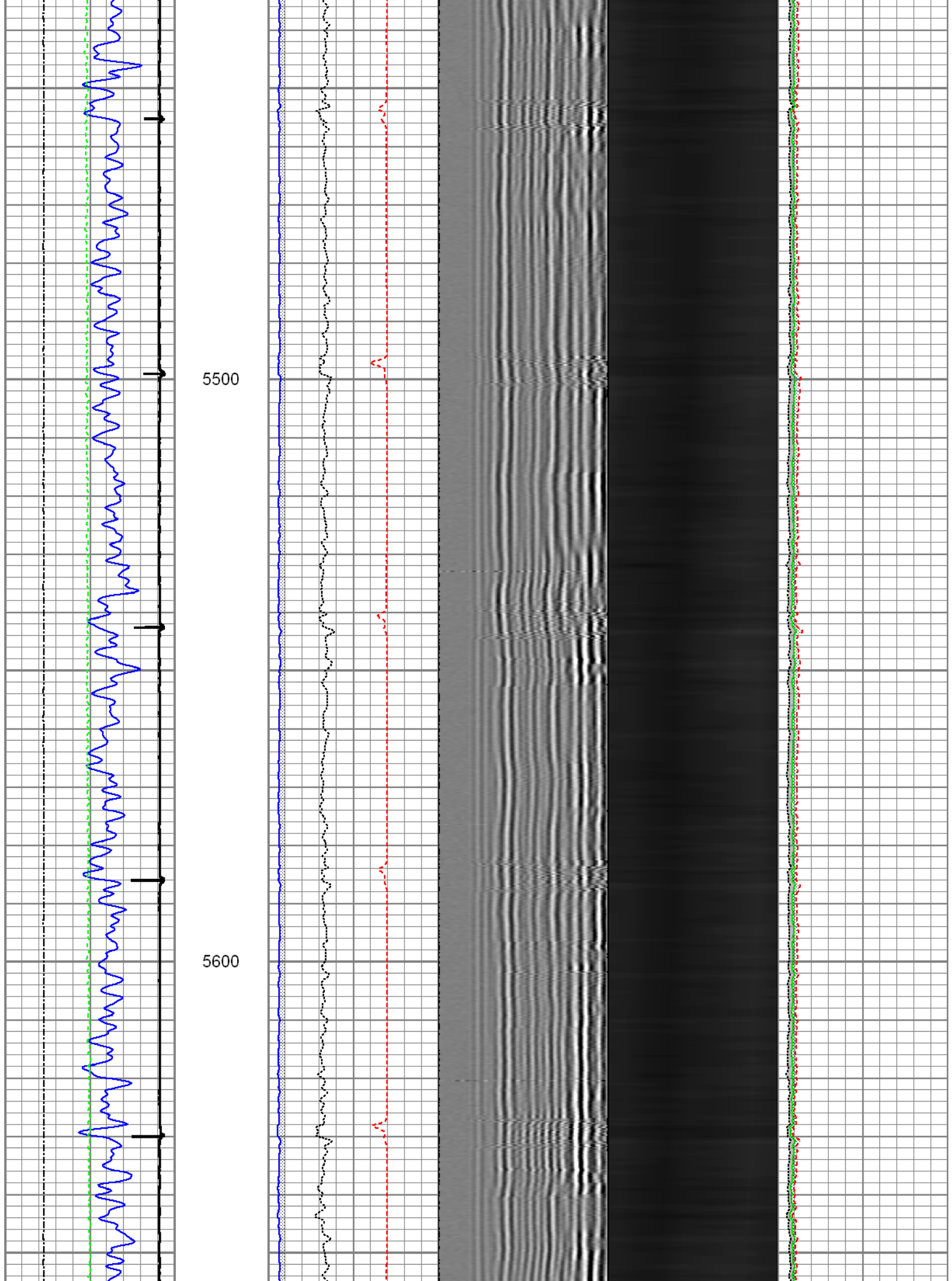
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5100

5200

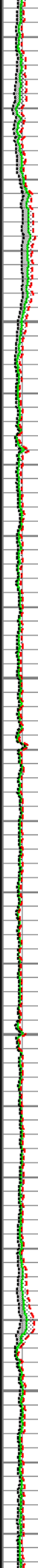
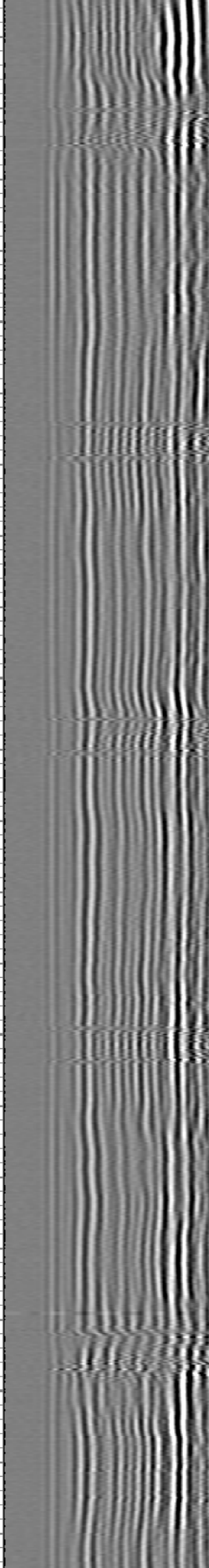
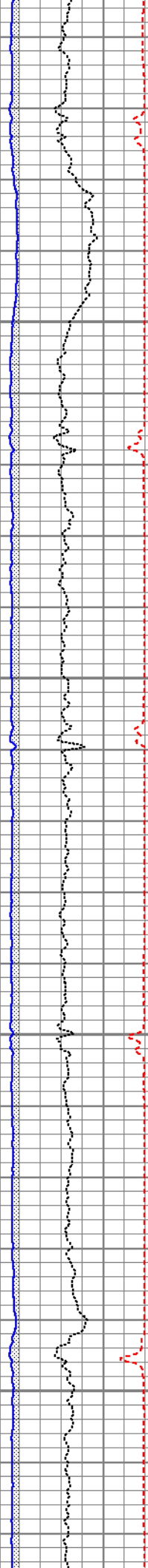
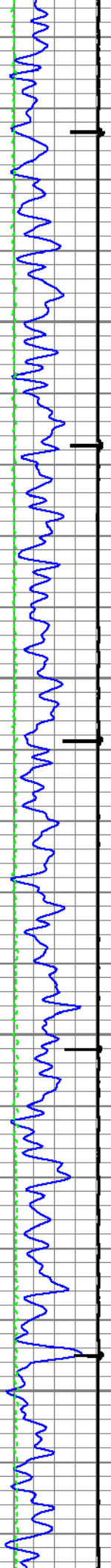


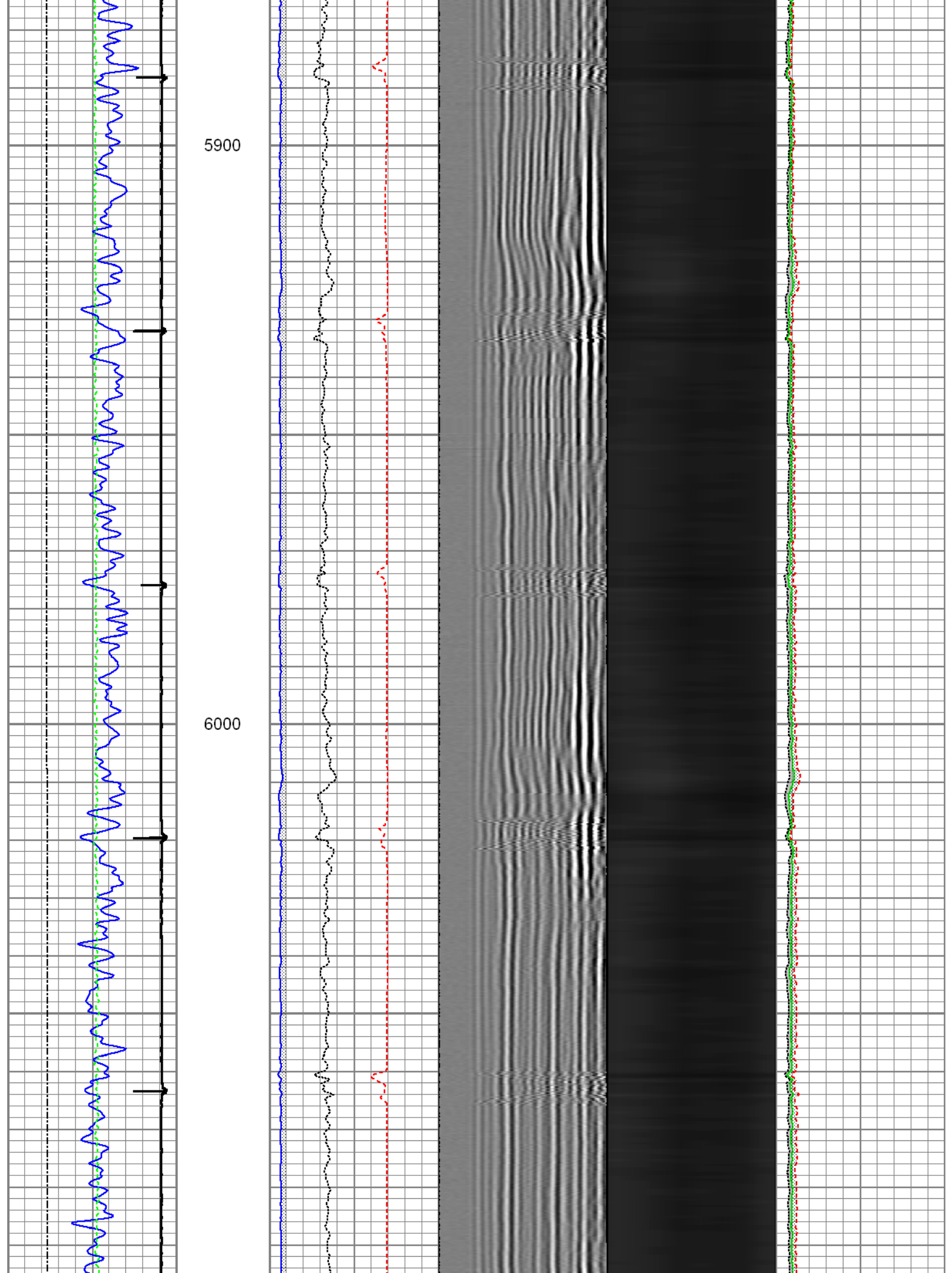




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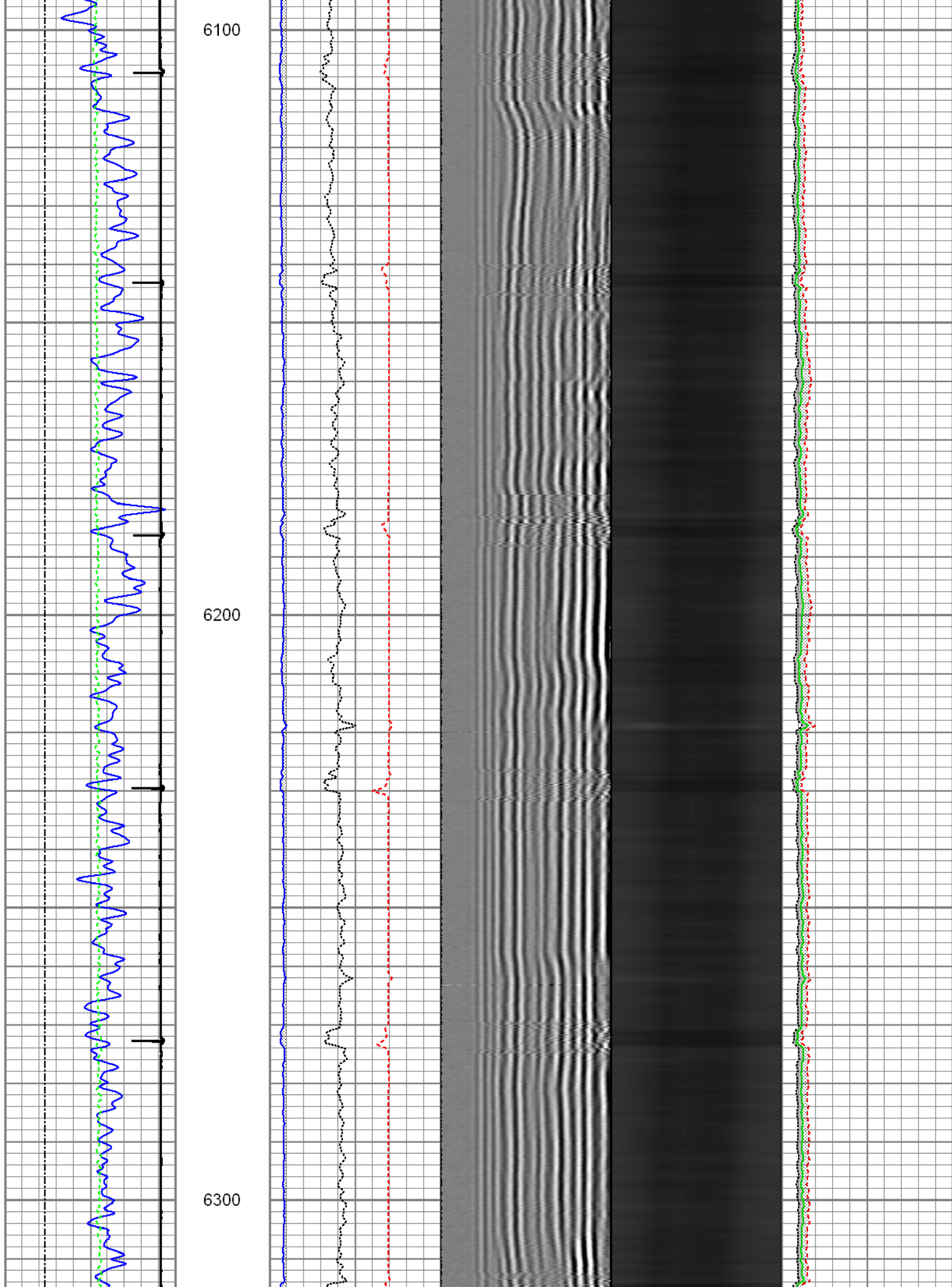


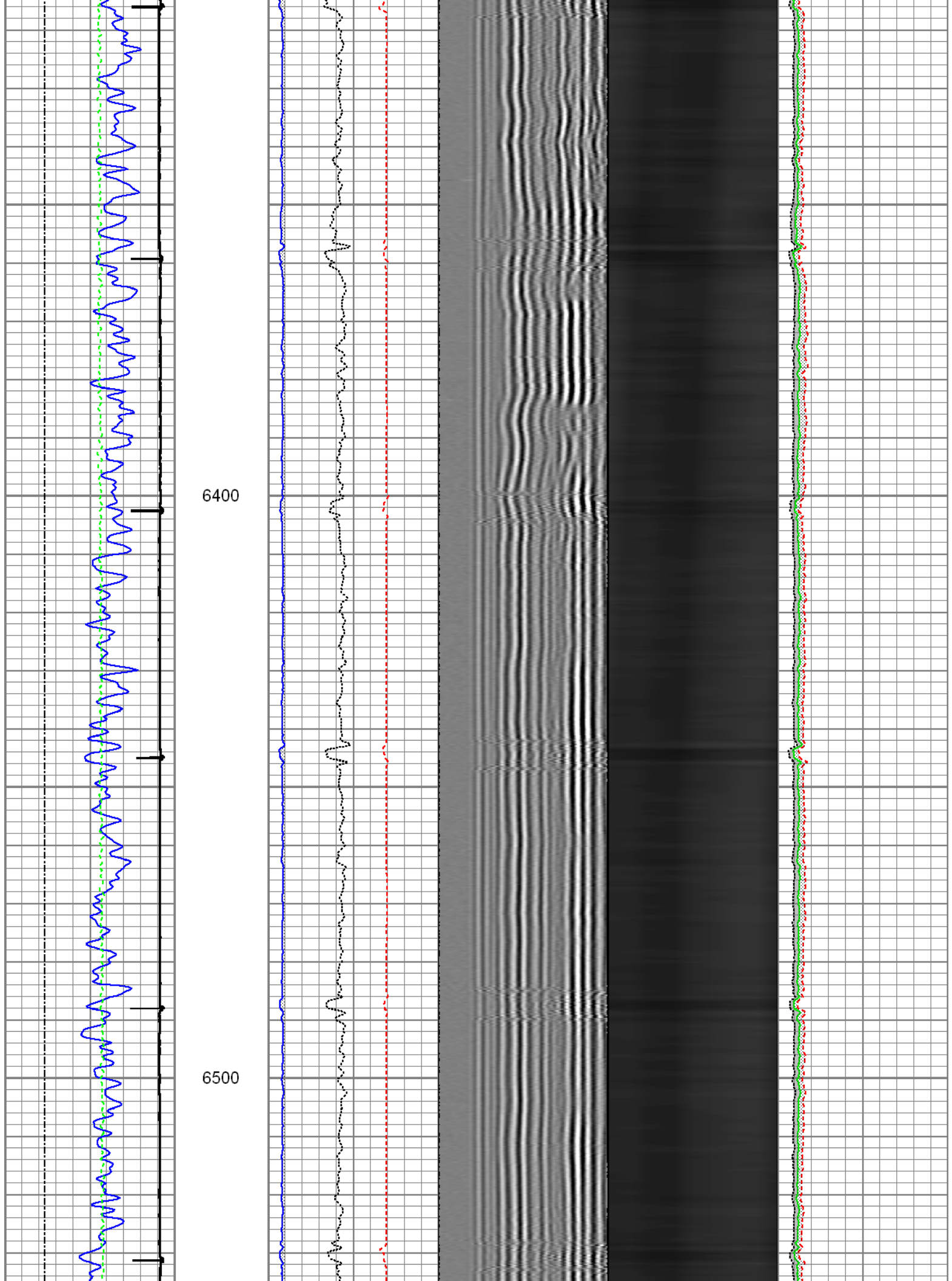


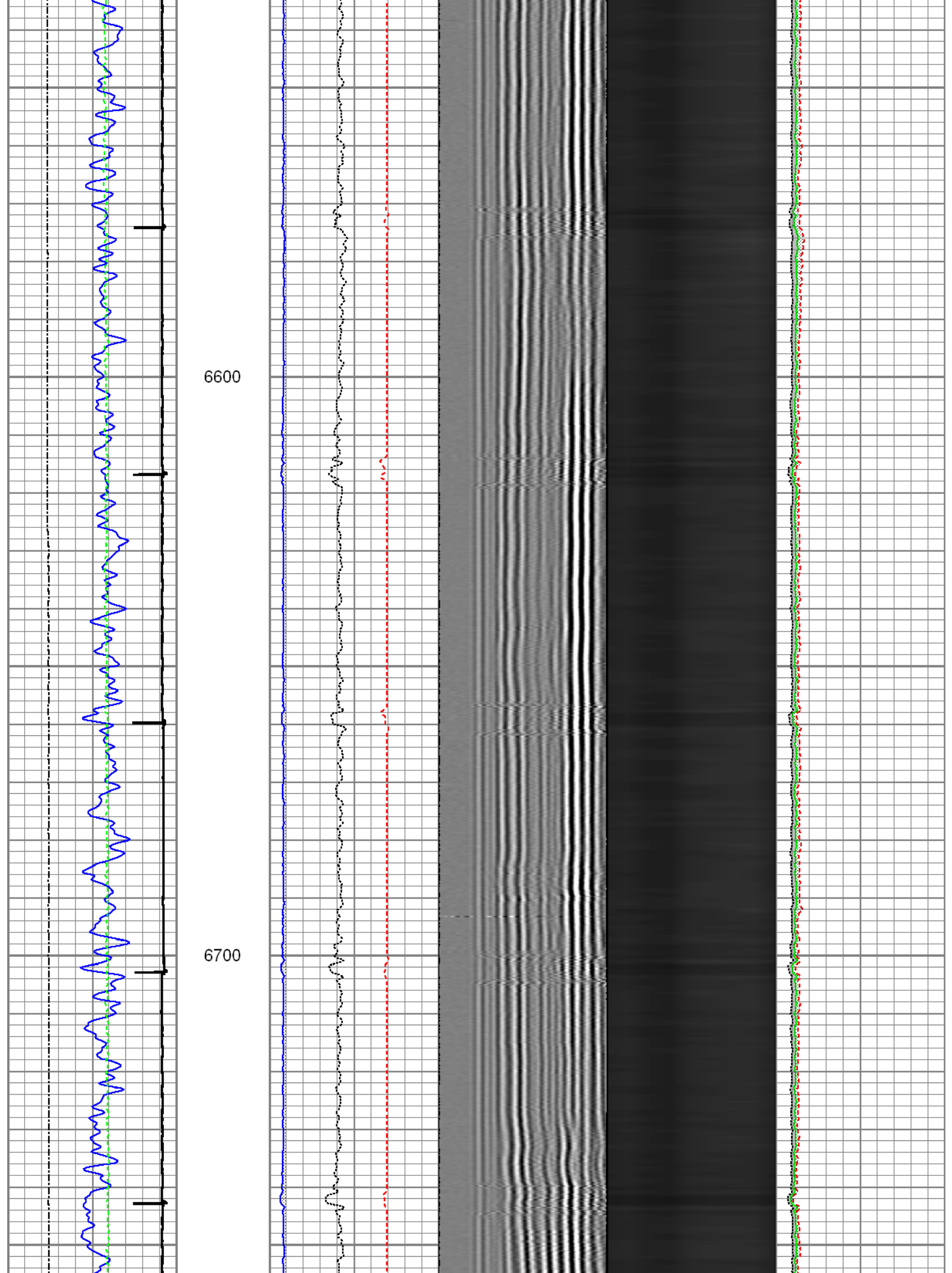
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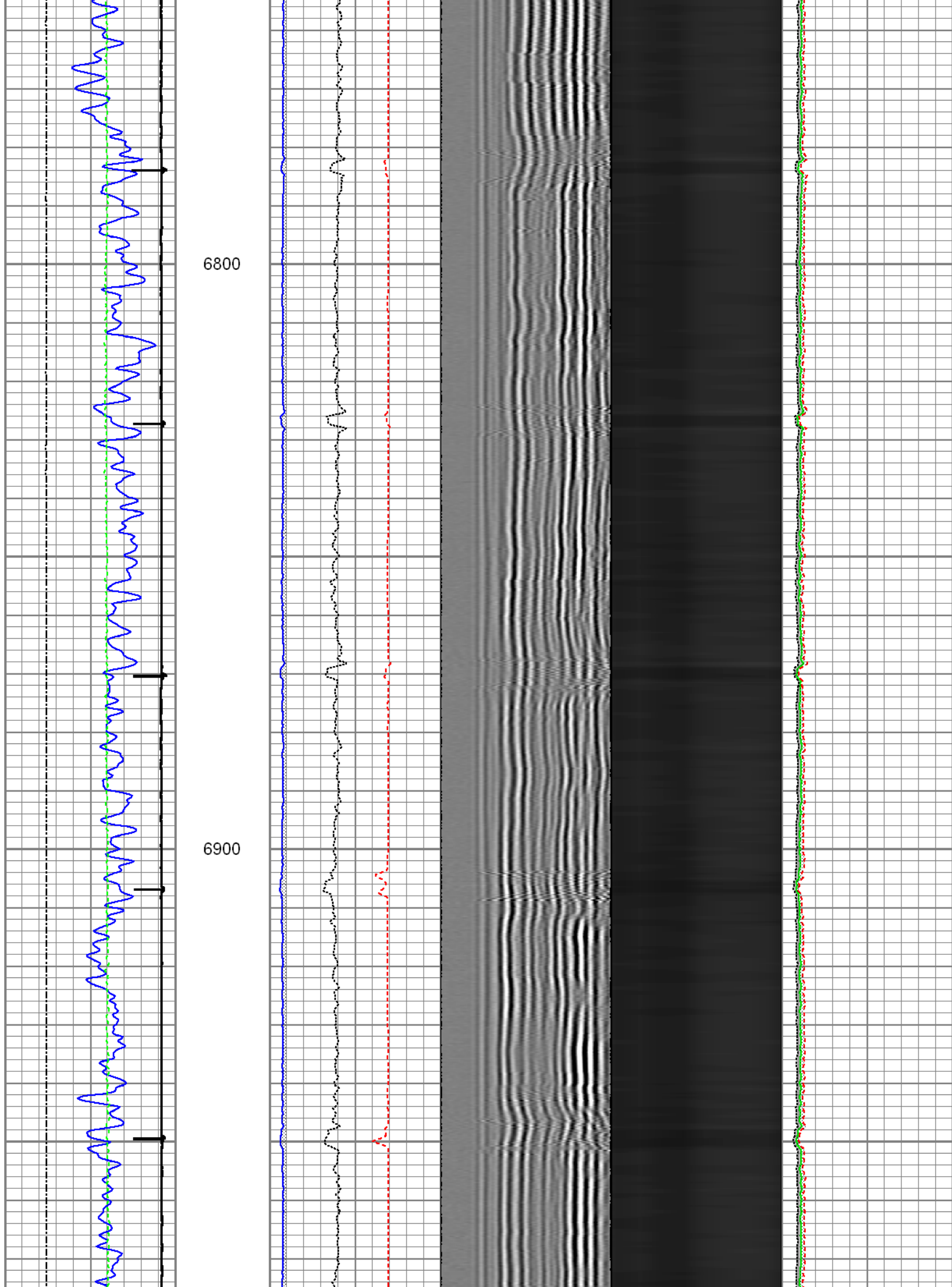


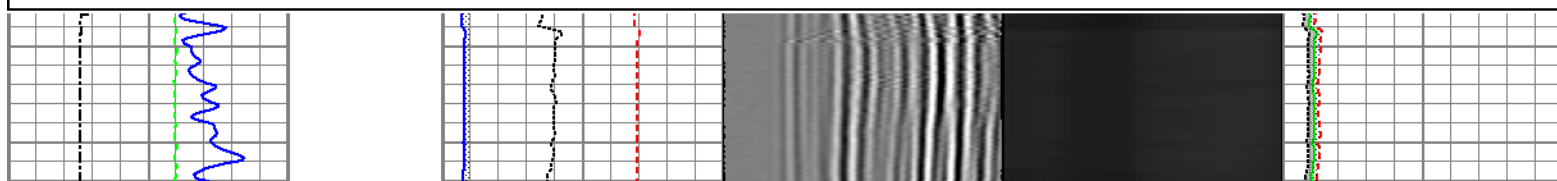
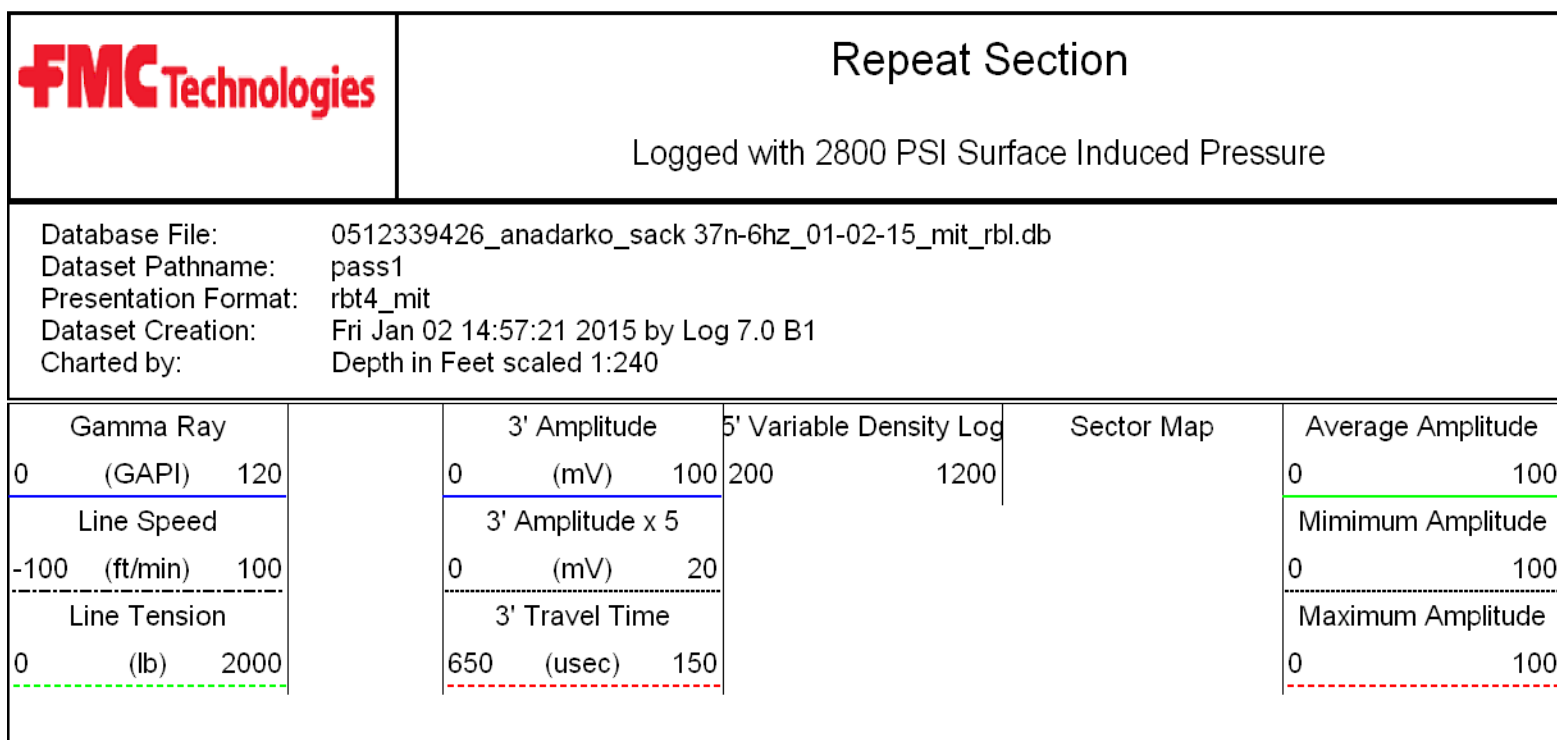
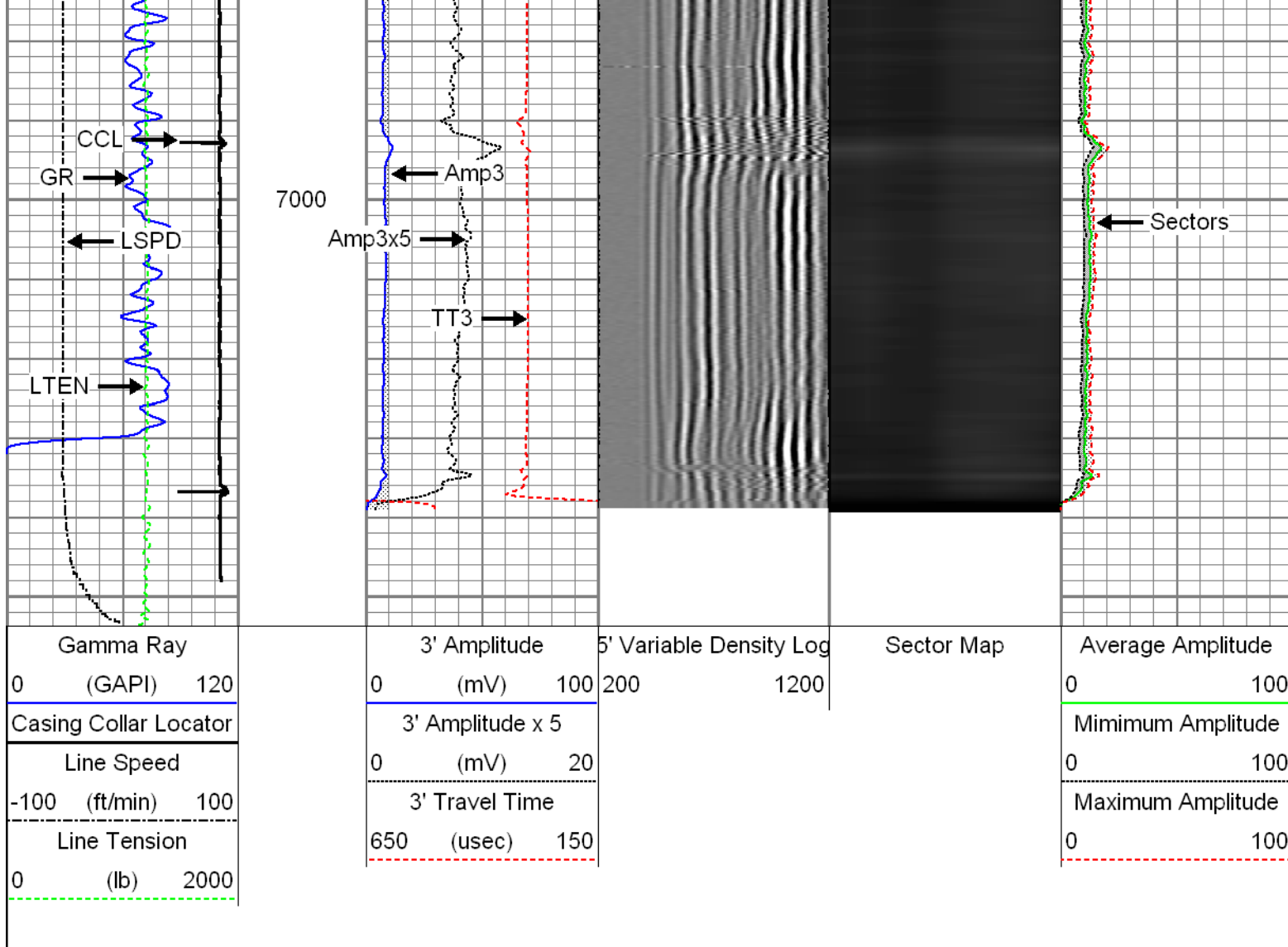


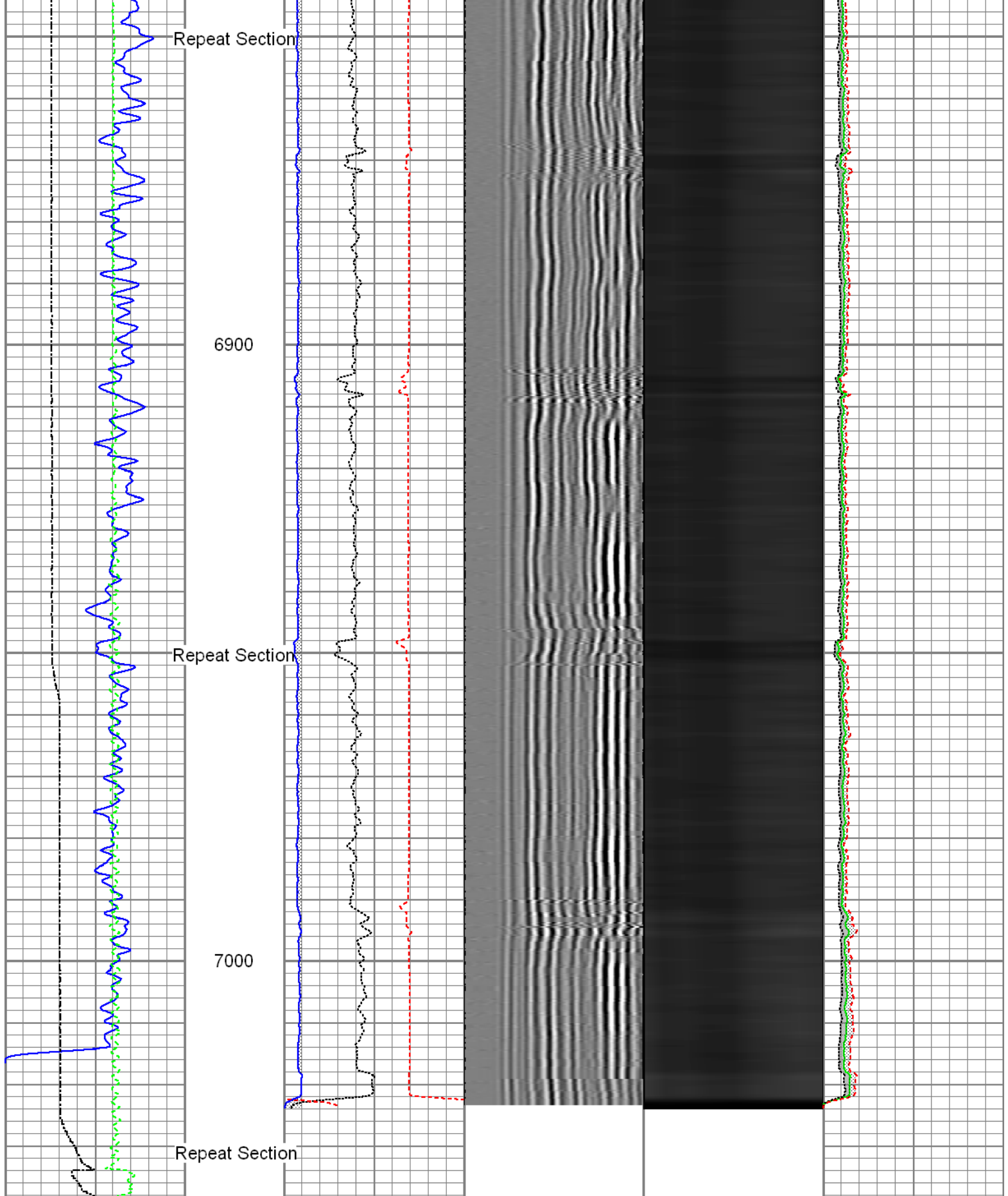


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6900

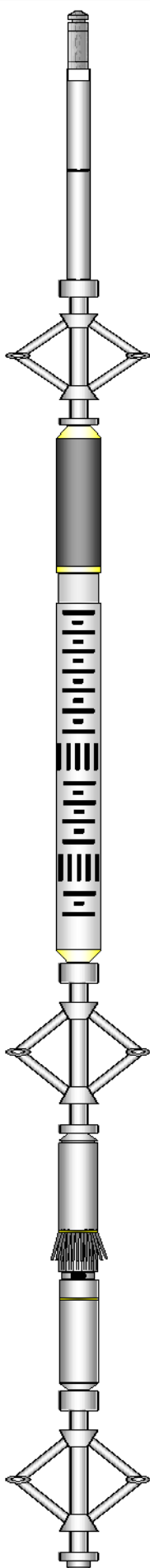
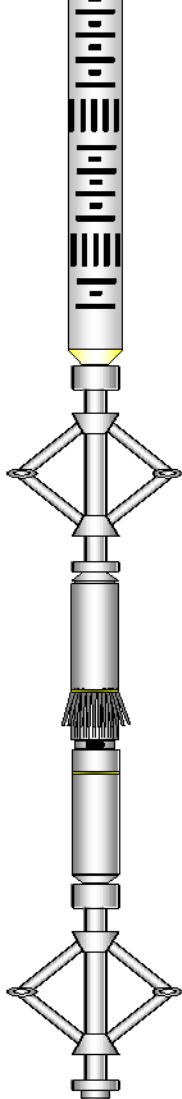
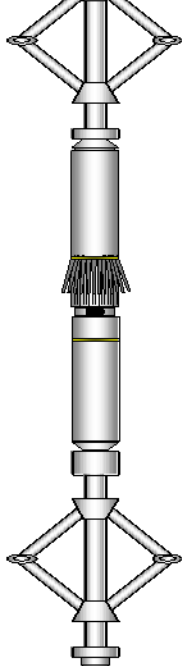
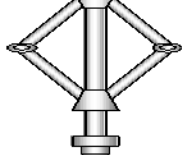






Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Line Speed (ft/min)	3' Amplitude x 5 (mV)			Minimum Amplitude
-100 100	0 20			0 100
Line Tension	3' Travel Time			Maximum Amplitude

0	(lb)	2000	650	(usec)	150	0	100

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	23.24		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 (10024281) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (10010519) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10024555) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC-DSSRAC (084) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVF3FT	15.85		UW_RBT-UW_RBT_004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	15.85					
WVFS2	15.85					
WVFS3	15.85					
WVFS4	15.85					
WVFS5	15.85					
WVFS6	15.85					
WVFS7	15.85					
WVFS8	15.85					
CBLTEMP	15.85					
CBLROT	15.85					
WVF5FT	14.85					
MIT	5.41		UW_PRC-UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_MIT-UW_MIT40_042 (10012912) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #4 -UW_PRC_057 (1102) 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: 0512339426_Anadarko_Sack 37N-6HZ_01-02-15_MIT_RBL.db: field/well/run1/pass2
 Total Length: 27.49 ft
 Total Weight: 319.30 lb
 O.D. 3.13 in

Calibration Report

Database File: 0512339426_Anadarko_Sack 37N-6HZ_01-02-15_MIT_RBL.db
 Dataset Pathname: pass3
 Dataset Creation: Fri Jan 02 17:59:37 2015 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: Fri Jan 02 14:13:20 2015

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1027	392.0	1419	379.0	1798	444.0	2242
Finger 02:	1159	411.0	1570	379.0	1949	431.0	2380
Finger 03:	1051	424.0	1475	398.0	1873	455.0	2328
Finger 04:	1071	414.0	1485	386.0	1871	440.0	2311
Finger 05:	1066	428.0	1494	391.0	1885	444.0	2329
Finger 06:	1082	434.0	1516	393.0	1909	428.0	2337
Finger 07:	1059	442.0	1501	398.0	1899	425.0	2324
Finger 08:	1090	437.0	1527	390.0	1917	423.0	2340
Finger 09:	1069	437.0	1506	390.0	1896	412.0	2308
Finger 10:	1079	440.0	1519	394.0	1913	402.0	2315
Finger 11:	1090	436.0	1526	390.0	1916	386.0	2302
Finger 12:	1093	429.0	1522	395.0	1917	391.0	2308
Finger 13:	1102	422.0	1524	390.0	1914	372.0	2286
Finger 14:	1102	427.0	1529	400.0	1929	377.0	2306
Finger 15:	1049	426.0	1475	415.0	1890	389.0	2279
Finger 16:	1065	417.0	1482	414.0	1896	387.0	2283
Finger 17:	1039	412.0	1451	414.0	1865	388.0	2253
Finger 18:	1123	395.0	1518	401.0	1919	369.0	2288
Finger 19:	1078	393.0	1471	408.0	1879	368.0	2247
Finger 20:	1026	383.0	1409	413.0	1822	382.0	2204
Finger 21:	1032	382.0	1414	415.0	1829	372.0	2201
Finger 22:	1035	380.0	1415	418.0	1833	387.0	2220
Finger 23:	965	367.0	1332	424.0	1756	404.0	2160
Finger 24:	1069	366.0	1435	402.0	1837	375.0	2212
Finger 25:	1007	360.0	1367	418.0	1785	408.0	2193
Finger 26:	1127	347.0	1474	388.0	1862	379.0	2241
Finger 27:	1036	349.0	1385	407.0	1792	407.0	2199
Finger 28:	1089	351.0	1440	397.0	1837	400.0	2237
Finger 29:	1013	355.0	1368	413.0	1781	433.0	2214

Finger 30:	1060	354.0	1414	403.0	1817	428.0	2245
Finger 31:	1076	349.0	1425	393.0	1818	428.0	2246
Finger 32:	1045	358.0	1403	406.0	1809	447.0	2256
Finger 33:	1130	355.0	1485	379.0	1864	412.0	2276
Finger 34:	1088	353.0	1441	386.0	1827	436.0	2263
Finger 35:	1020	376.0	1396	413.0	1809	473.0	2282
Finger 36:	1042	374.0	1416	400.0	1816	457.0	2273
Finger 37:	1080	377.0	1457	388.0	1845	448.0	2293
Finger 38:	1104	384.0	1488	380.0	1868	436.0	2304
Finger 39:	1123	383.0	1506	374.0	1880	442.0	2322
Finger 40:	1058	399.0	1457	389.0	1846	457.0	2303

Post Survey Calibration Check								
Performed: Fri Jan 02 17:59:32 2015								
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.074	0.037	5.032	0.016	6.014	0.007	7.017	0.008
Finger 02:	4.072	0.036	5.026	0.013	6.014	0.007	7.015	0.007
Finger 03:	4.068	0.034	5.027	0.014	6.013	0.006	7.009	0.005
Finger 04:	4.074	0.037	5.027	0.014	6.008	0.004	7.010	0.005
Finger 05:	4.074	0.037	5.026	0.013	6.014	0.007	6.991	-0.004
Finger 06:	4.074	0.037	5.032	0.016	6.017	0.008	7.009	0.005
Finger 07:	4.081	0.040	5.031	0.016	6.009	0.005	7.002	0.001
Finger 08:	4.084	0.042	5.019	0.010	6.014	0.007	6.989	-0.005
Finger 09:	4.080	0.040	5.029	0.014	6.018	0.009	7.003	0.001
Finger 10:	4.079	0.040	5.021	0.011	6.012	0.006	7.004	0.002
Finger 11:	4.079	0.040	5.019	0.009	6.008	0.004	7.016	0.008
Finger 12:	4.079	0.040	5.023	0.011	6.009	0.004	7.004	0.002
Finger 13:	4.077	0.039	5.031	0.015	6.011	0.005	7.014	0.007
Finger 14:	4.074	0.037	5.027	0.013	6.011	0.005	7.021	0.011
Finger 15:	4.078	0.039	5.033	0.016	6.013	0.006	7.017	0.008
Finger 16:	4.075	0.037	5.030	0.015	6.011	0.005	7.004	0.002
Finger 17:	4.081	0.041	5.027	0.014	6.006	0.003	7.000	-0.000
Finger 18:	4.076	0.038	5.032	0.016	6.010	0.005	6.997	-0.002
Finger 19:	4.076	0.038	5.022	0.011	6.006	0.003	6.995	-0.002
Finger 20:	4.078	0.039	5.028	0.014	6.011	0.005	7.022	0.011
Finger 21:	4.072	0.036	5.031	0.016	6.011	0.005	7.007	0.004
Finger 22:	4.075	0.037	5.023	0.011	6.006	0.003	7.012	0.006
Finger 23:	4.072	0.036	5.027	0.014	6.011	0.005	7.011	0.006
Finger 24:	4.078	0.039	5.030	0.015	6.012	0.006	6.998	-0.001
Finger 25:	4.069	0.034	5.026	0.013	6.016	0.008	7.016	0.008
Finger 26:	4.071	0.036	5.027	0.014	6.017	0.009	7.006	0.003
Finger 27:	4.075	0.037	5.030	0.015	6.017	0.009	7.008	0.004
Finger 28:	4.086	0.043	5.023	0.011	6.013	0.007	7.002	0.001
Finger 29:	4.087	0.044	5.024	0.012	6.015	0.007	7.001	0.000
Finger 30:	4.079	0.039	5.017	0.009	6.011	0.006	7.000	-0.000
Finger 31:	4.078	0.039	5.029	0.015	6.017	0.008	7.006	0.003
Finger 32:	4.078	0.039	5.021	0.010	6.010	0.005	7.005	0.003
Finger 33:	4.067	0.033	5.031	0.016	6.005	0.003	7.010	0.005
Finger 34:	4.079	0.039	5.045	0.023	6.013	0.006	7.001	0.000
Finger 35:	4.079	0.040	5.021	0.011	6.006	0.003	7.013	0.006
Finger 36:	4.080	0.040	5.024	0.012	6.002	0.001	7.012	0.006
Finger 37:	4.080	0.040	5.028	0.014	6.009	0.004	7.014	0.007
Finger 38:	4.085	0.043	5.025	0.012	6.008	0.004	7.009	0.005
Finger 39:	4.072	0.036	5.023	0.011	6.008	0.004	6.999	-0.001
Finger 40:	4.073	0.036	5.030	0.015	6.015	0.008	7.008	0.004
Average:	4.077	0.038	5.027	0.013	6.011	0.006	7.007	0.003

Segmented Cement Bond Log Calibration Report
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Serial Number:	10013454
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in

Calibration Depth: -13.888 ft

Master Calibration, performed Fri Jan 02 14:15:34 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.001	0.746	0.800	62.165	82.121	0.900
5FT	-0.002	0.779	0.800	62.165	78.541	0.992
S1	-0.000	0.704	0.000	100.000	142.033	0.014
S2	-0.003	0.725	0.000	100.000	137.438	0.359
S3	-0.002	0.748	0.000	100.000	133.375	0.230
S4	-0.003	0.770	0.000	100.000	129.314	0.368
S5	-0.001	0.777	0.000	100.000	128.480	0.124
S6	-0.002	0.770	0.000	100.000	129.422	0.316
S7	-0.001	0.754	0.000	100.000	132.475	0.162
S8	-0.001	0.718	0.000	100.000	139.095	0.194

Gamma Ray Calibration Report

Serial Number:	10024555
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 and Gas Onshore LP
Well	Sack 37N-6HZ
Field	Wattenberg
County	Weld
State	Colorado