



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company				Kerr-McGee Oil & Gas Onshore, L.P.			
Well				NRC 3C-4HZX			
Field				Wattenberg			
County				Weld			
State				Colorado			
Location:				API # : 05-123-38607			
SHL: 350' FSL & 1,980' FWL Lat/Long: 40.059228/-104.89802				Other Services Gauge Ring CIL			
SEC 9 TWP 1N RGE 67W				Elevation			
Permanent Datum		Ground Level		Elevation		5052'	
Log Measured From		Kelly Bushing		16 FT		K.B. 5068' D.F. 5067' G.L. 5052'	
Drilling Measured From		Kelly Bushing					
Date				10-APR-2014			
Run Number				Two			
Depth Driller				17000 FT			
Depth Logger				7890 FT			
Bottom Logged Interval				7885 FT			
Top Log Interval				Surface			
Open Hole Size				8.750"			
Type Fluid				Water			
Density / Viscosity				8.4 lbm/gal			
Max. Recorded Temp.				217°F			
Estimated Cement Top				17 FT			
Time Well Ready				ROA			
Time Logger on Bottom				9:20 A.M.			
Equipment Number				HD 0311			
Location				Fort Lupton, CO			
Recorded By				Wayne Wacker			
Witnessed By				Edgar Chavez			
Borehole Record				Tubing Record			
Run Number		Bit		From		To	
Casing Record		Size (in)		Wgt (lbs/Ft)		Grade	
Surface Casing		9-5/8"		36#		J-55	
Intermediate #1		7"		26#		HPC-110 LTC	
Intermediate #2							
Liner		4-1/2"		11.6#		P-110	
						7057 FT	
						17360 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

Radial Cement Bond Log - Casing Inspection Log is first recorded log in hole.
Log correlated to reported casing tally at top of liner @ 7057 FT
Adjusted 29 FT to liner top at 7057 FT
RCBL-CIL ran at 2200 PSI surface induced pressure
Estimated Cement Top recorded at 17 FT

Thank you for choosing FMC Technologies Completion Services, Inc.

Main Pass



Logged With 2200 PSI At Surface

Database File: 0512338607_anadarko_nrc 3c-4hzx_04-10-14_mit_rbl.db

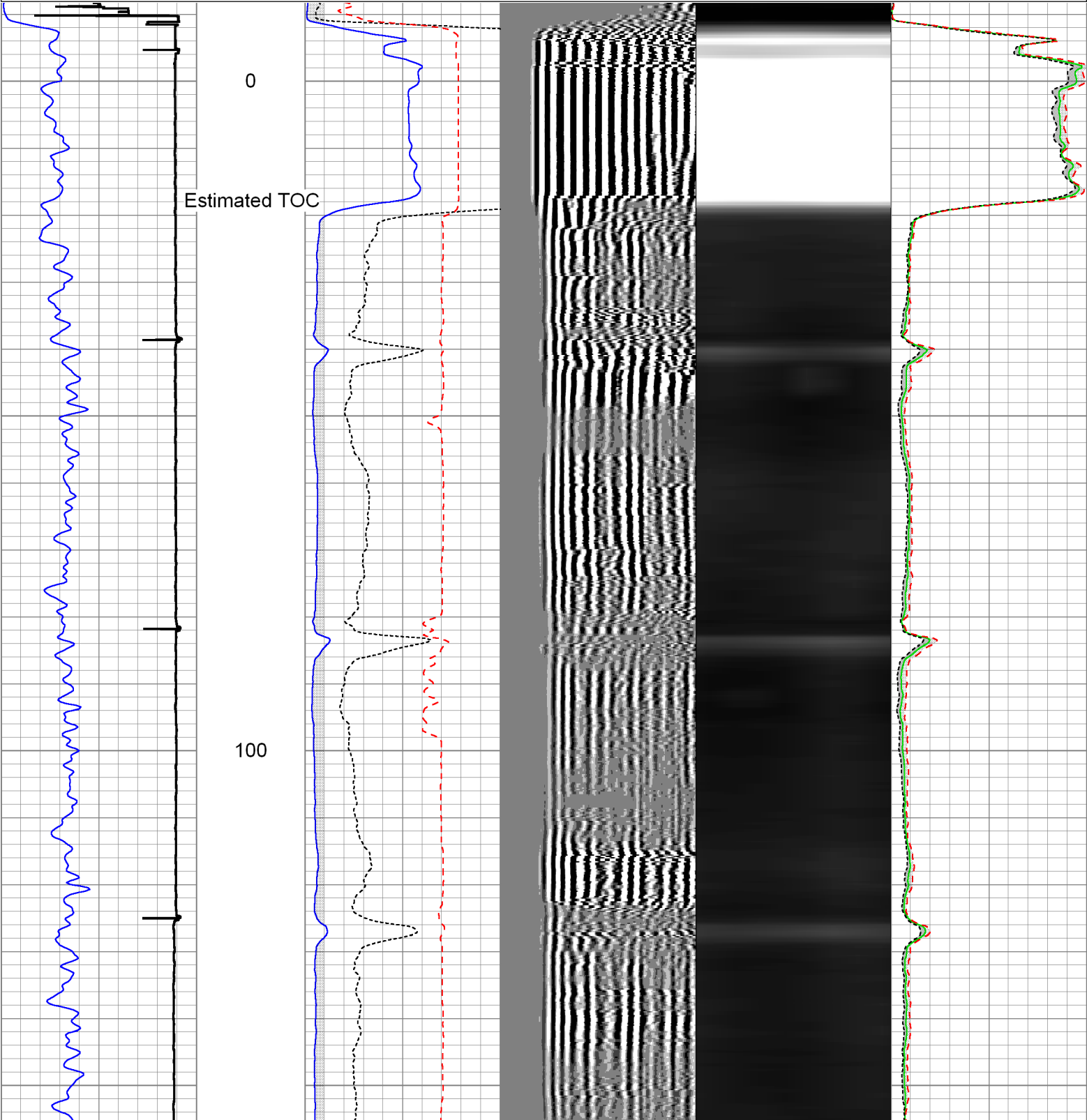
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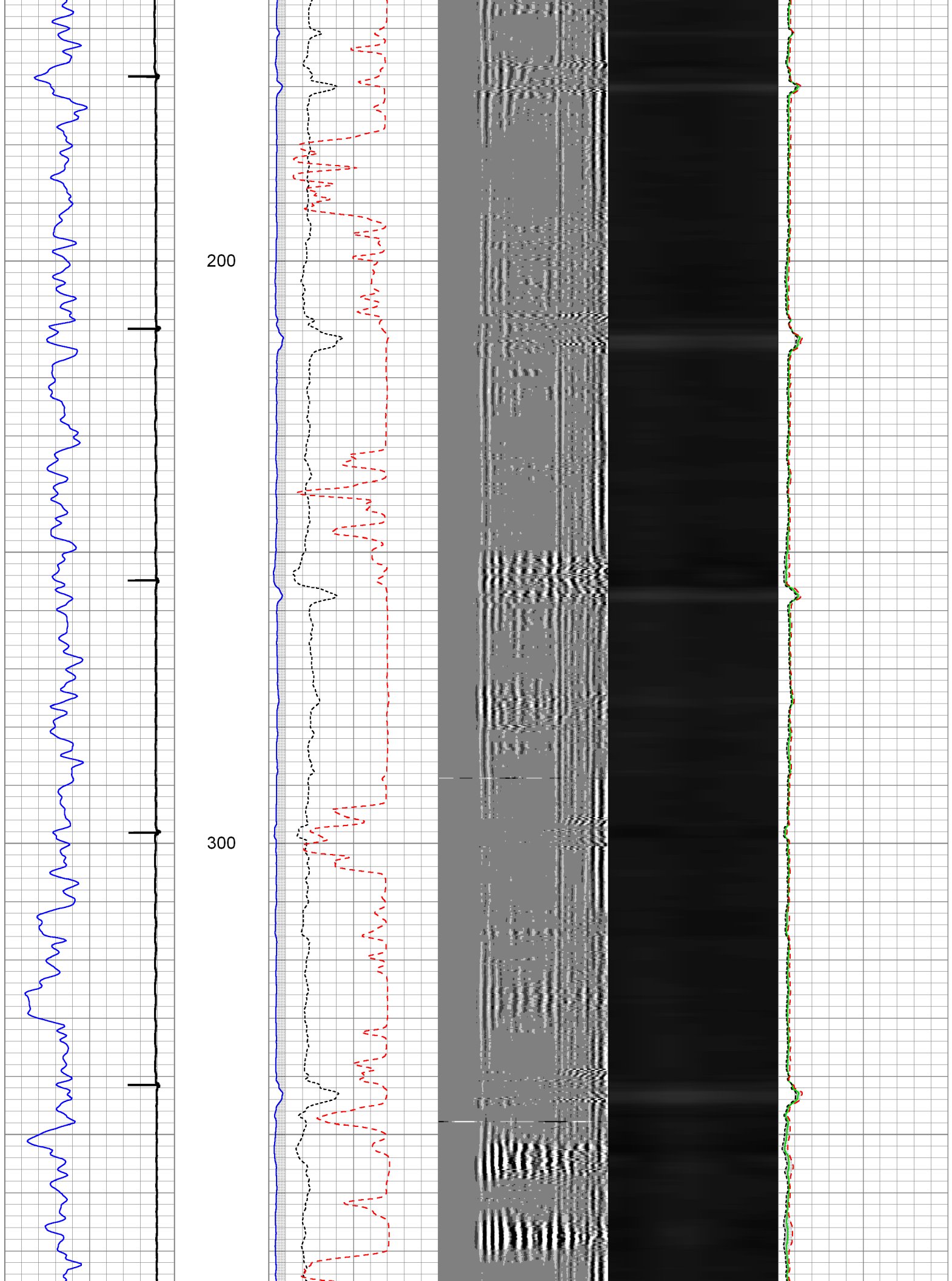
Presentation Format: rbt007

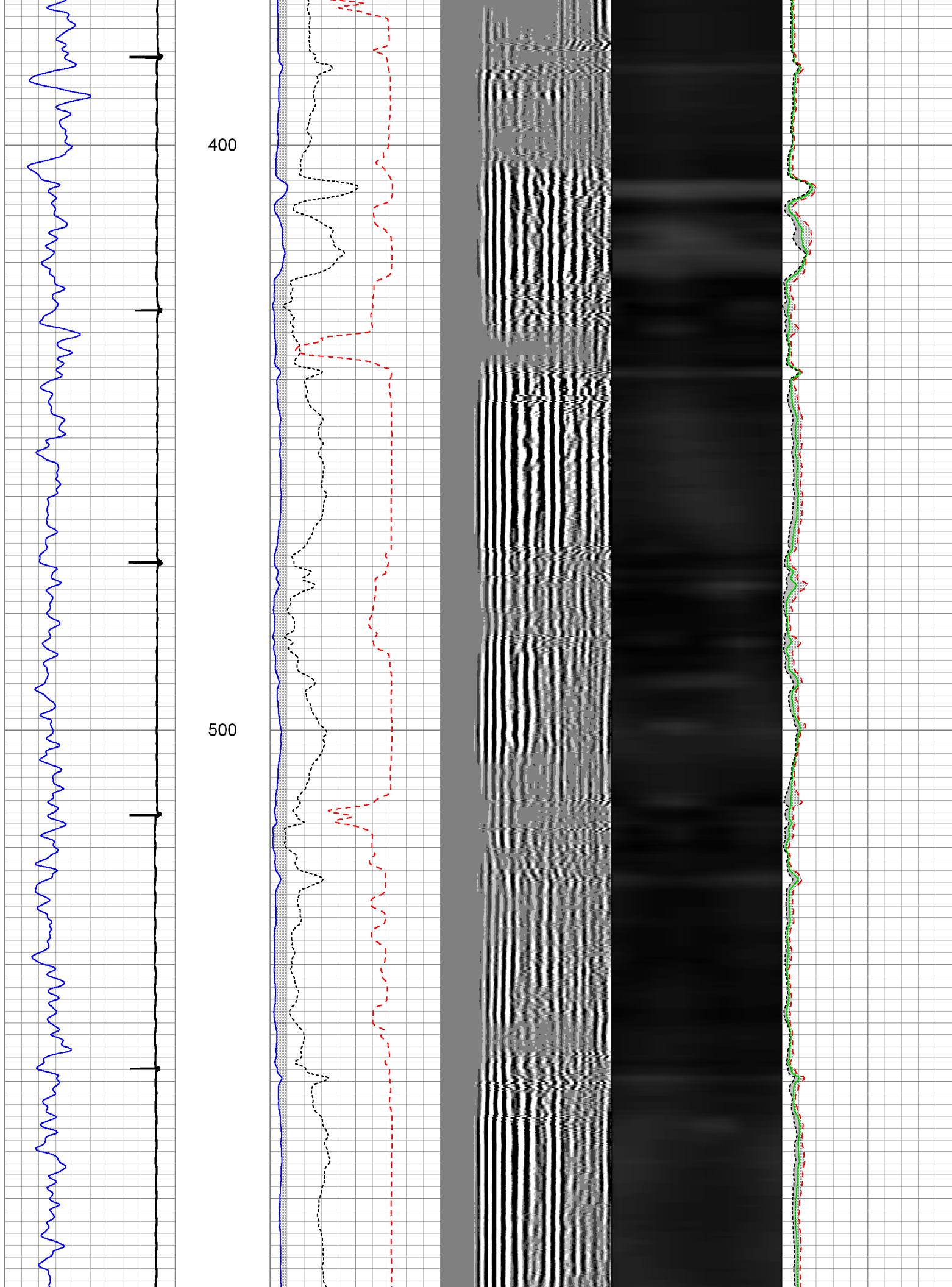
Dataset Creation: Thu Apr 10 10:01:57 2014 by Log Sondex V7.03

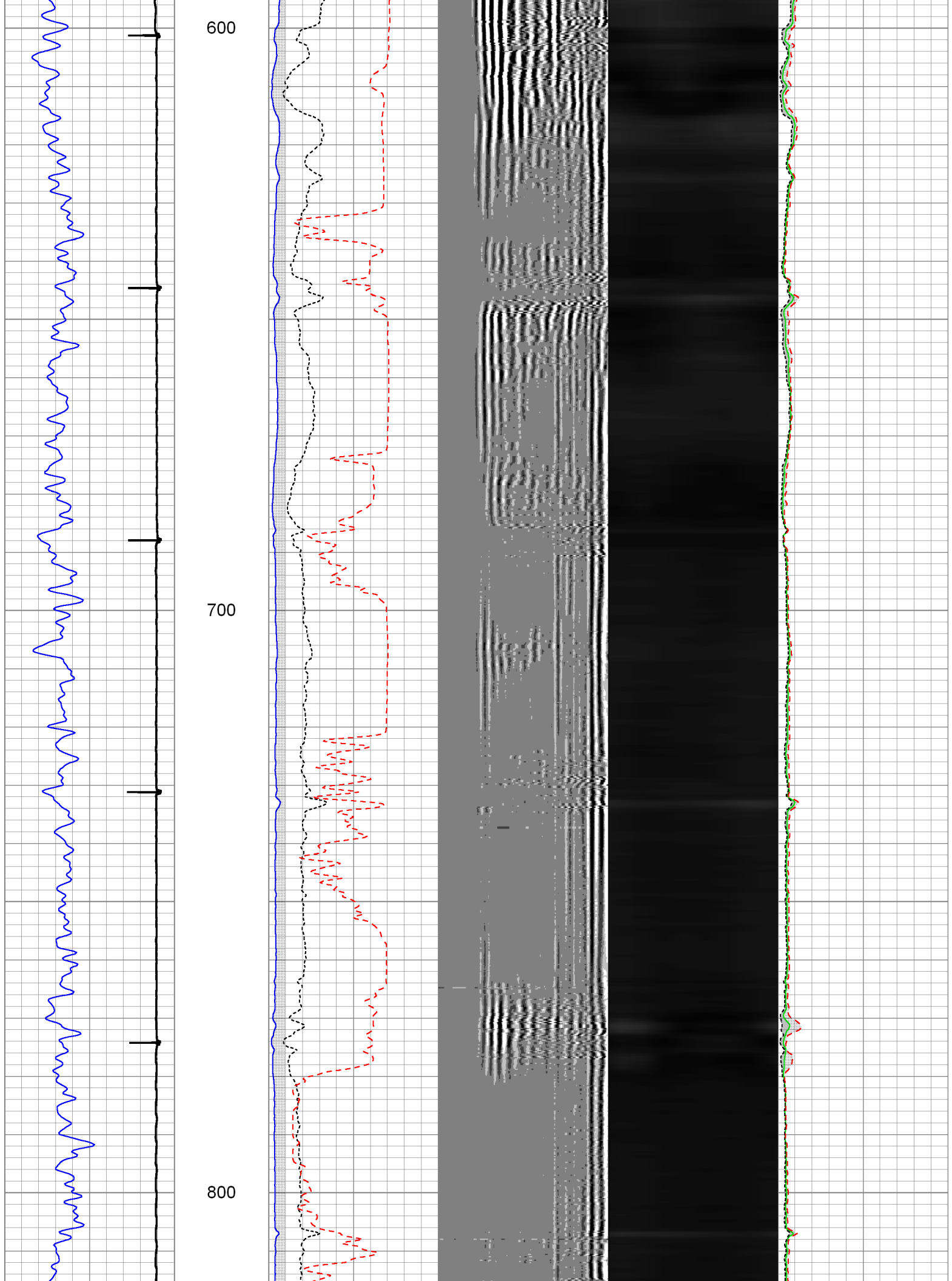
Charted by: Depth in Feet scaled 1:240

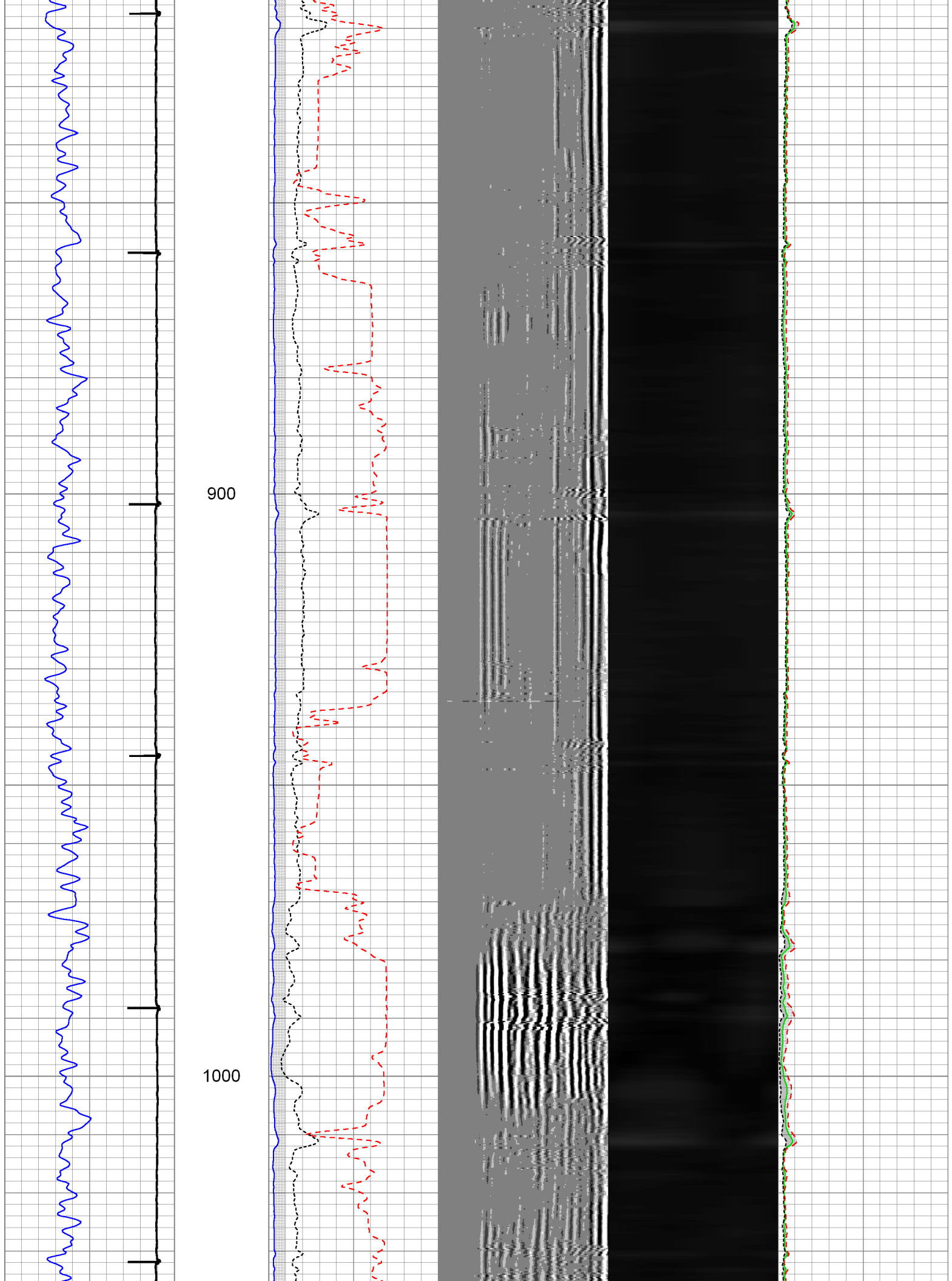
Gamma Ray		3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude	
0	(GAPI) 120	0	(mV) 100			0	100
Collar Locator		3' Amplitude x 5				Minimum Amplitude	
		0	(mV) 20			0	100
		3' Travel Time				Maximum Amplitude	
		650	(usec) 150			0	100

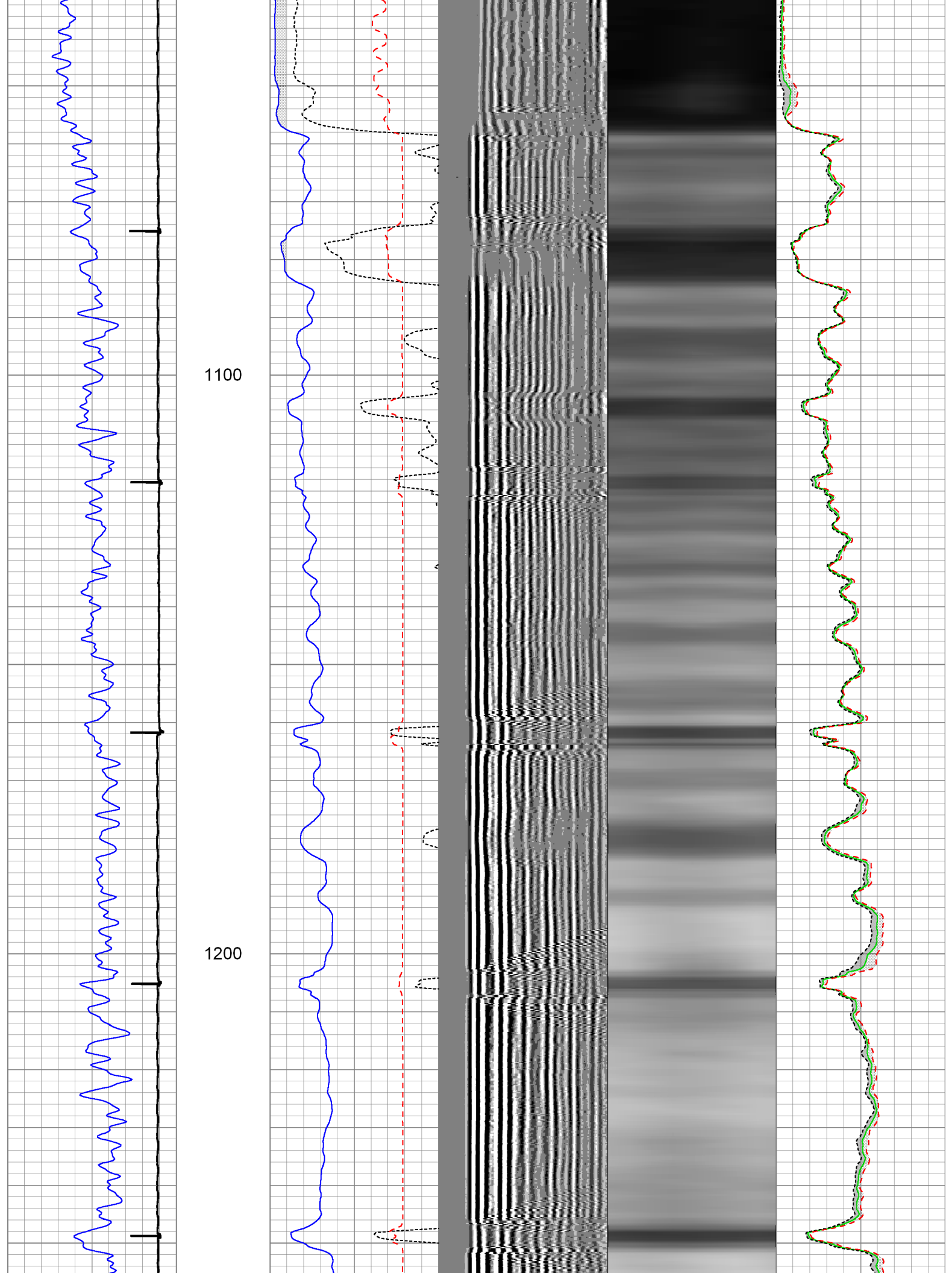


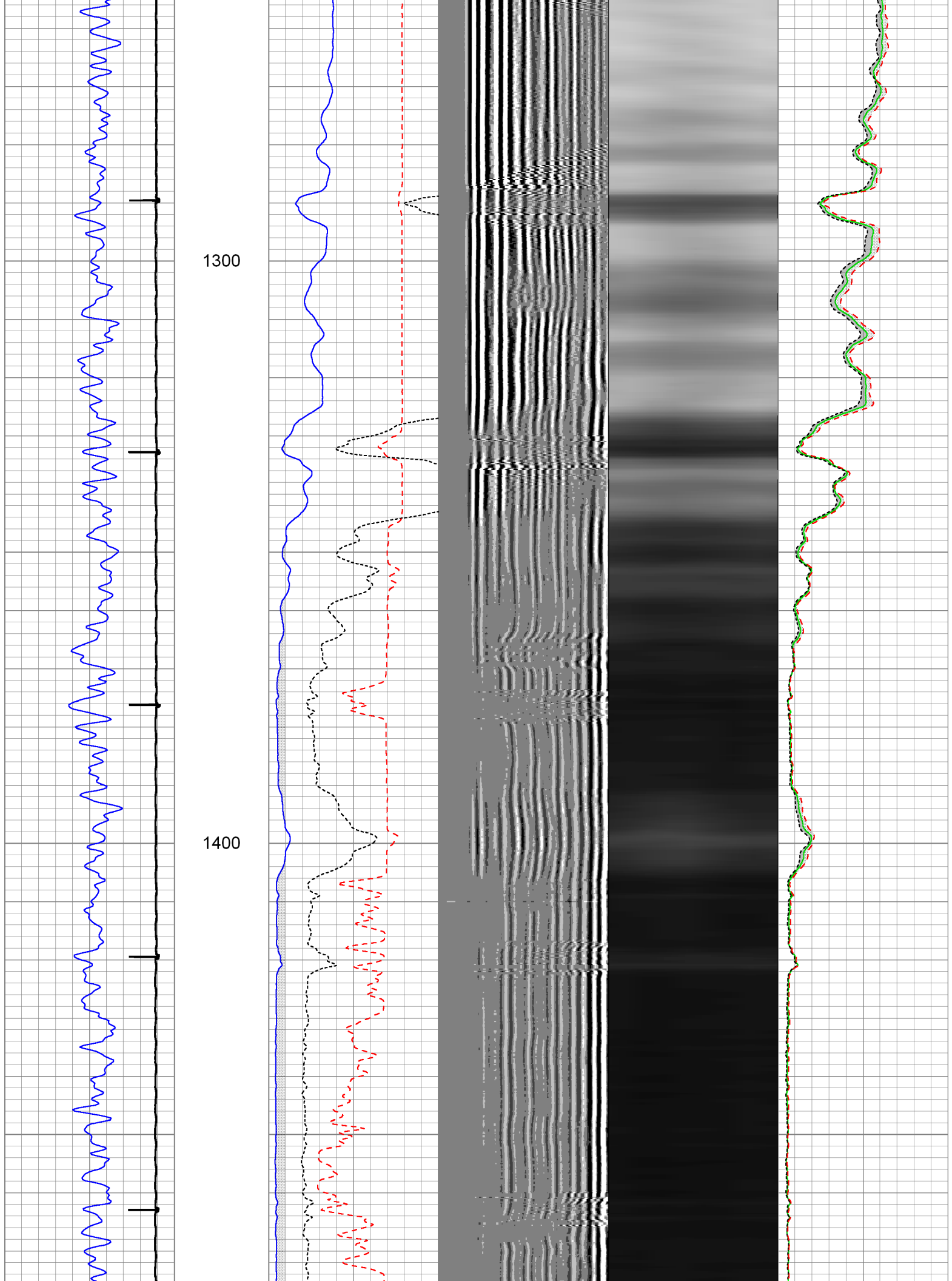


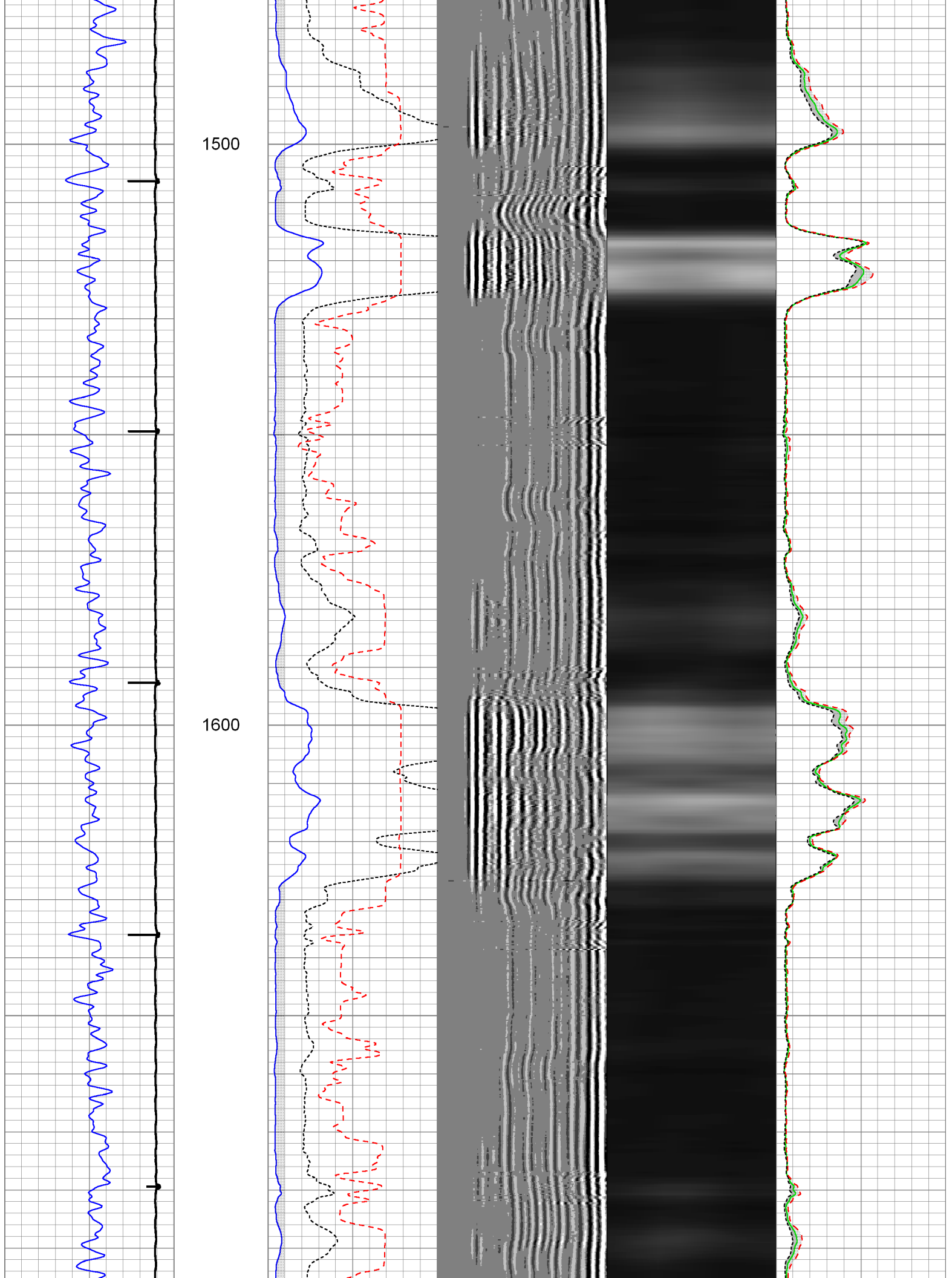








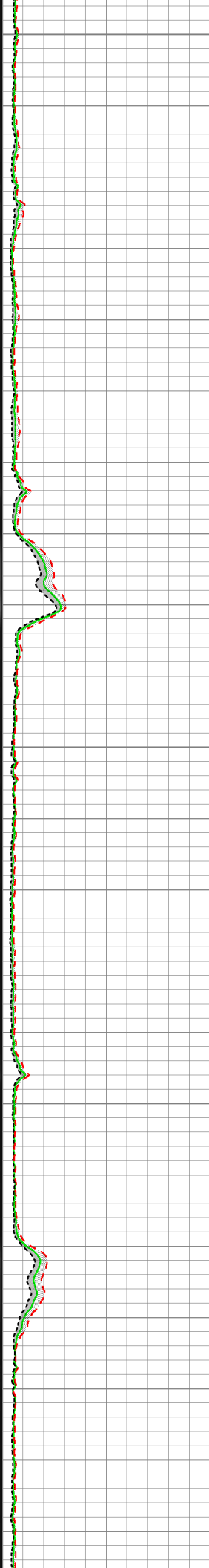
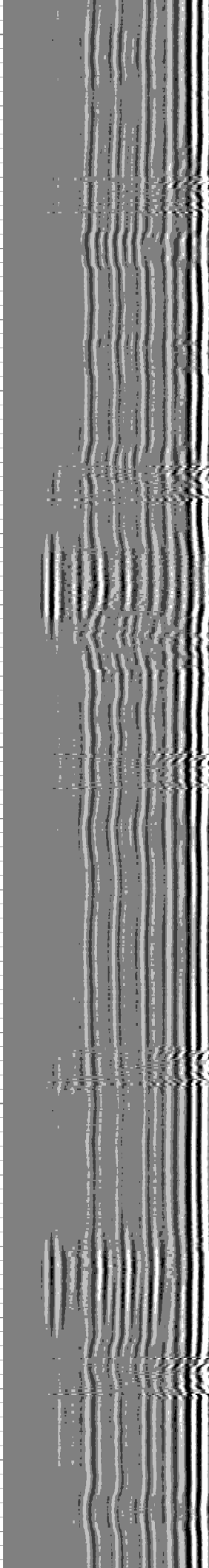
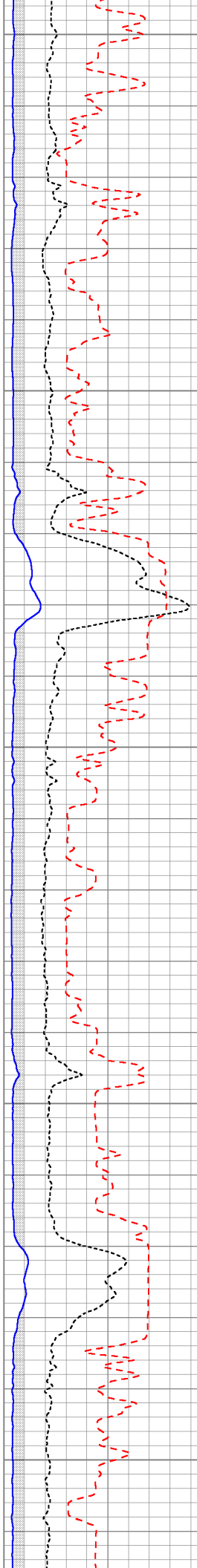


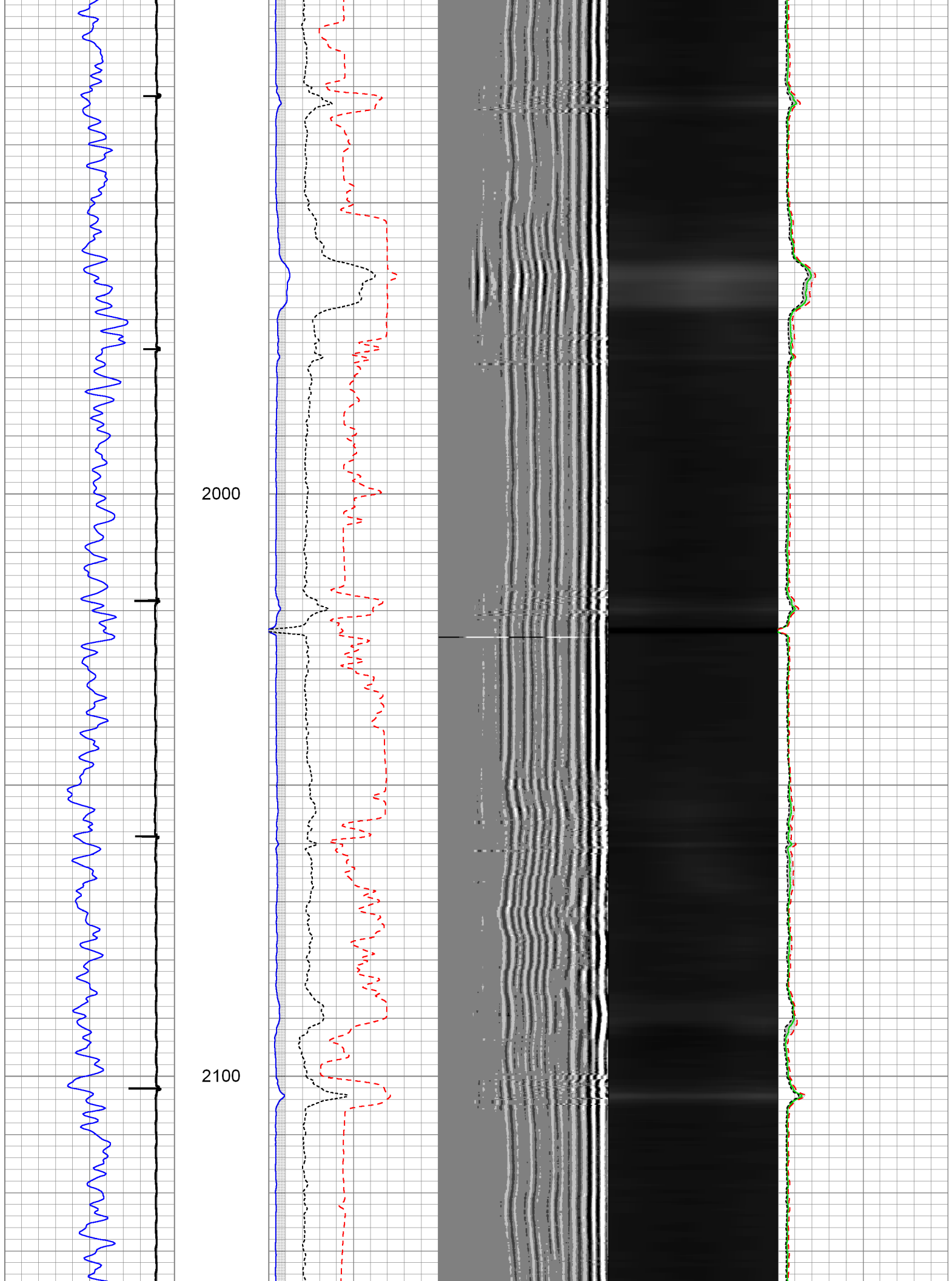


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1800

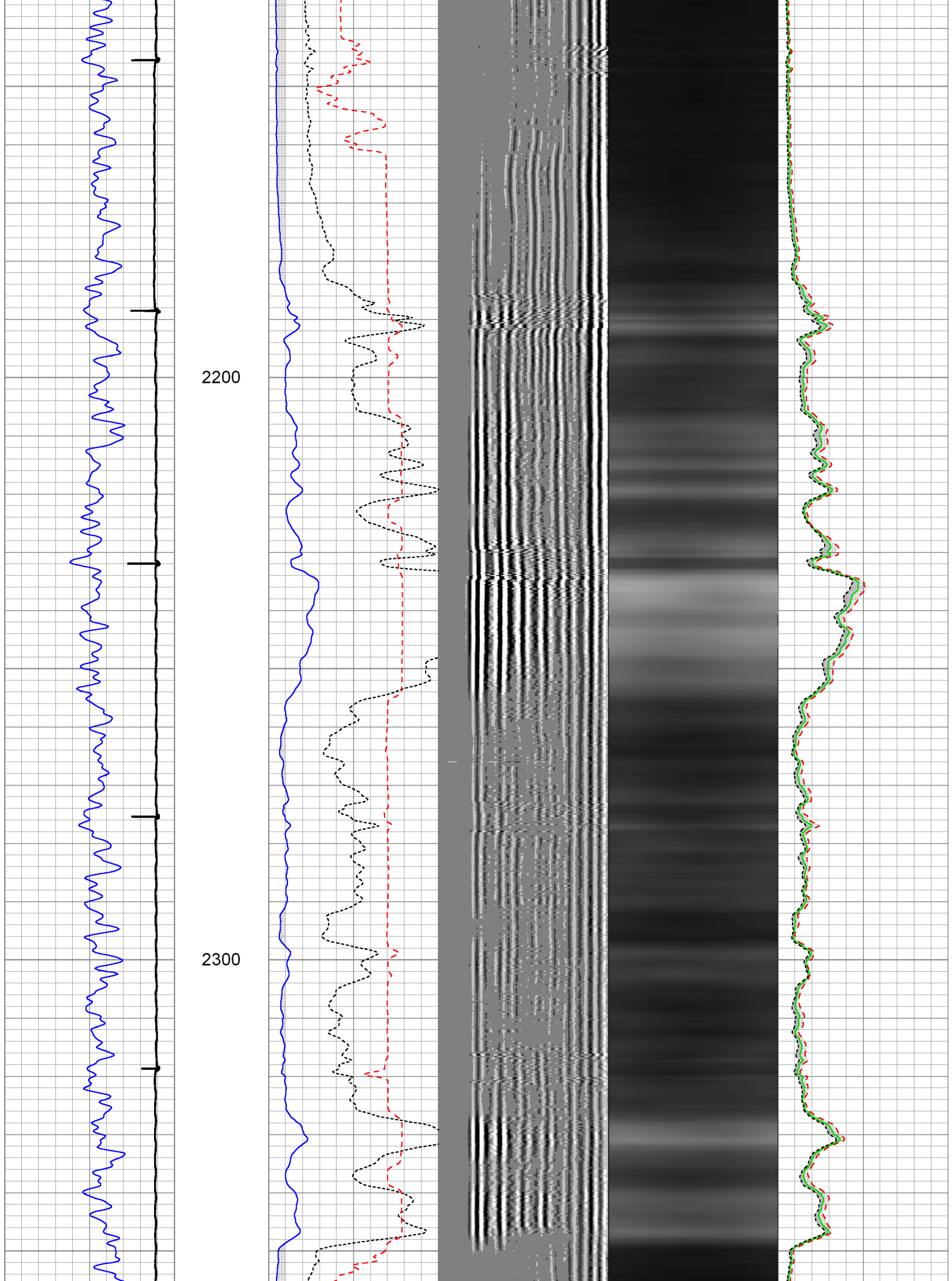
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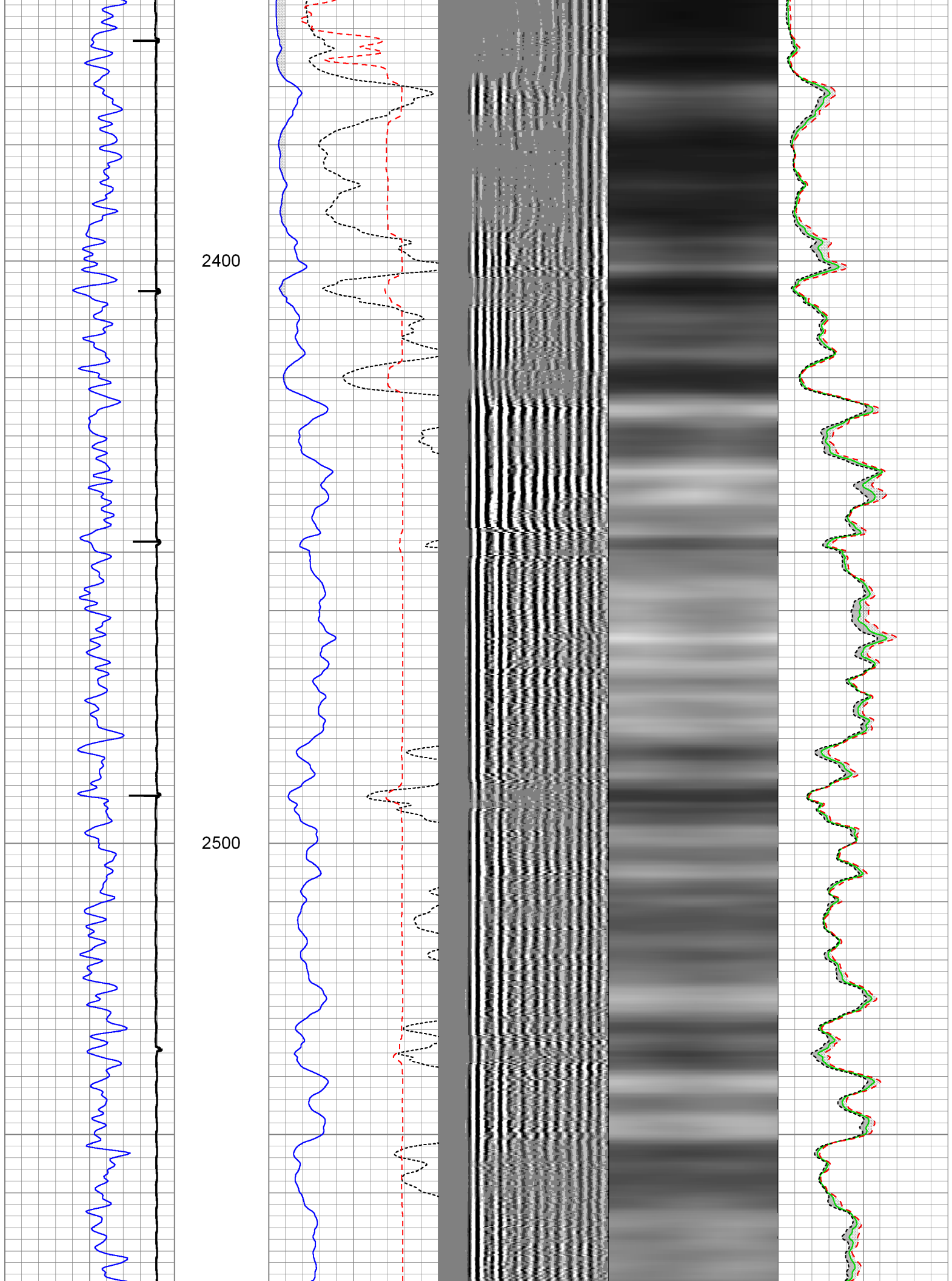
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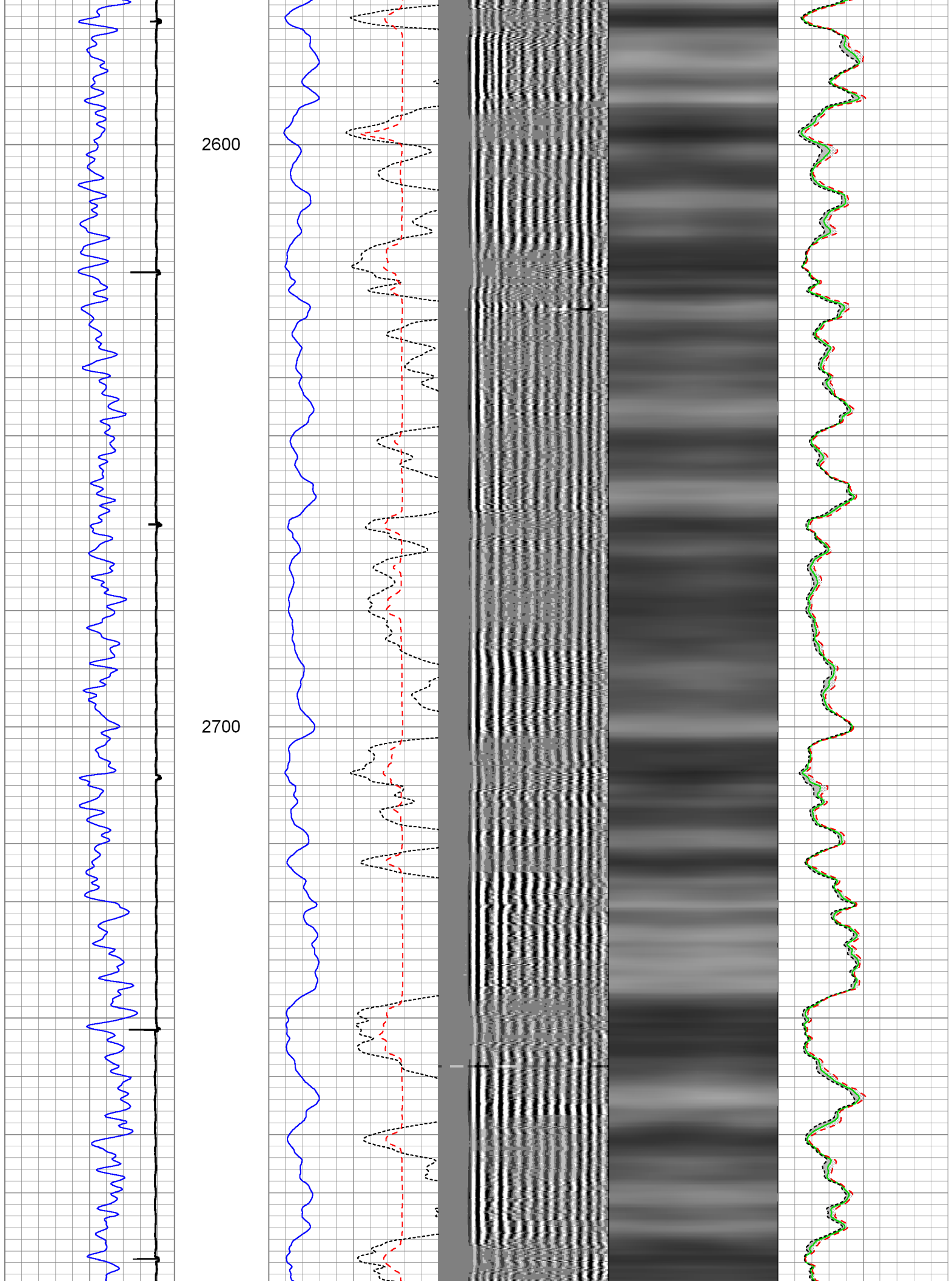
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2600

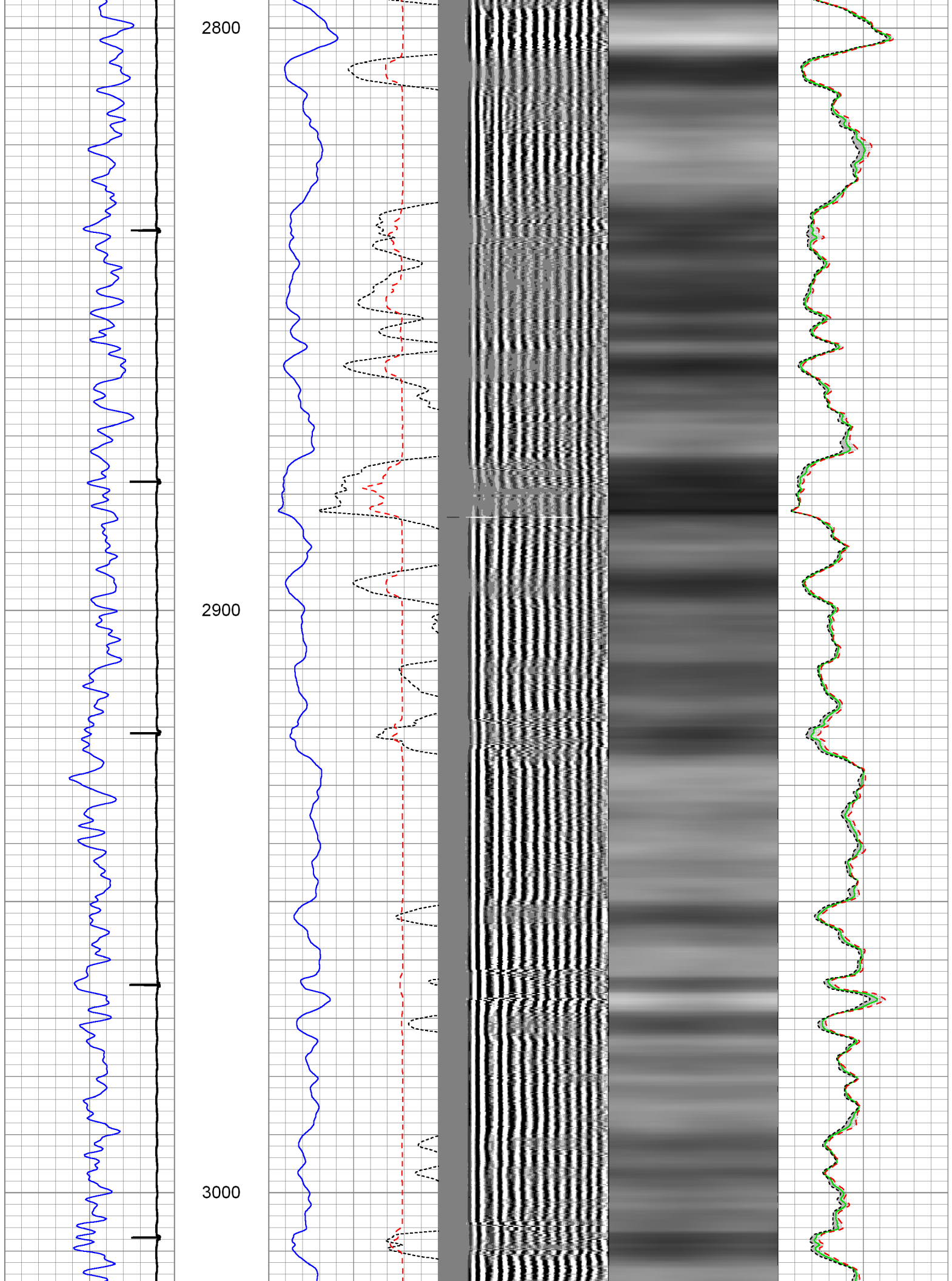
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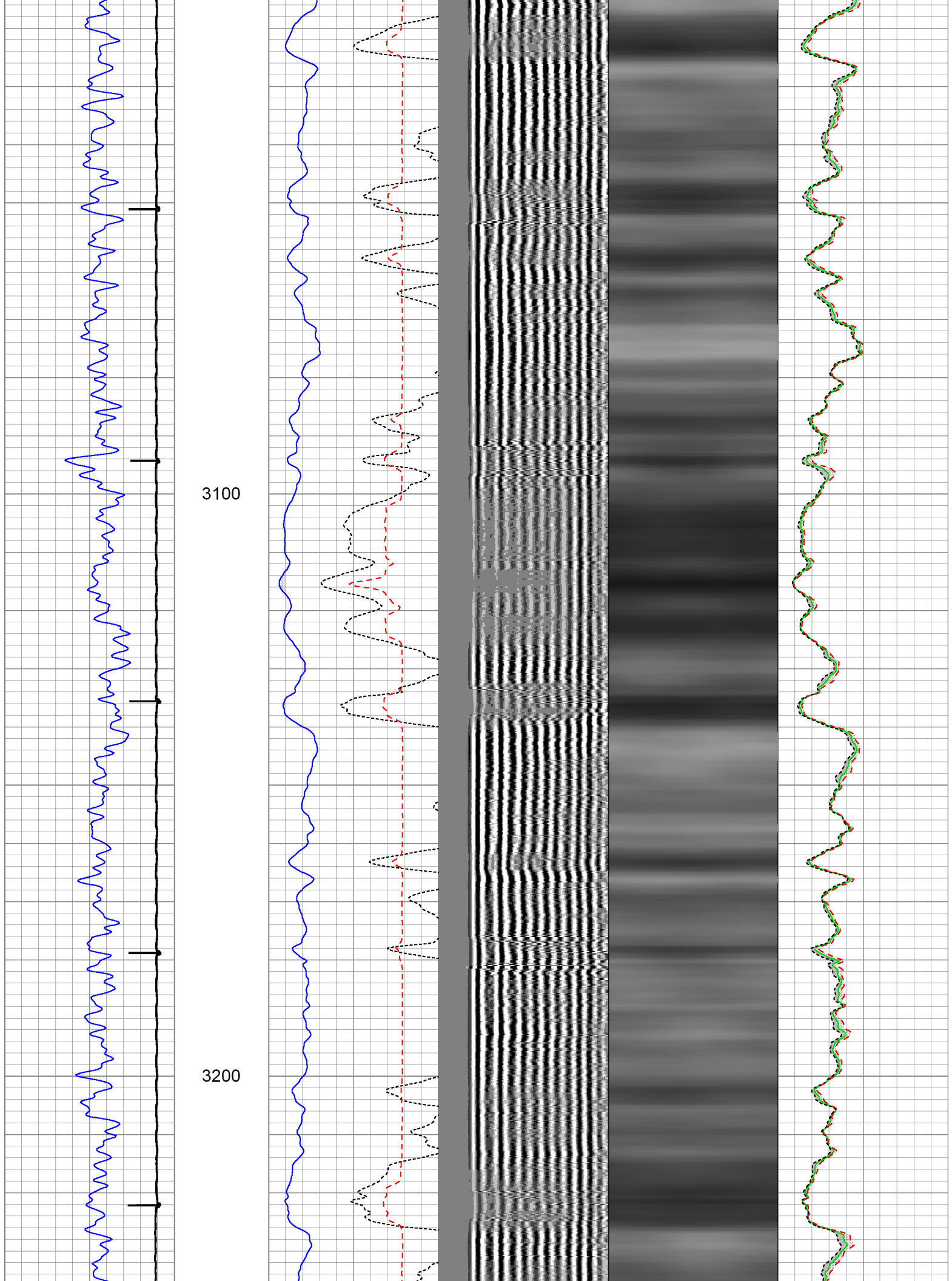


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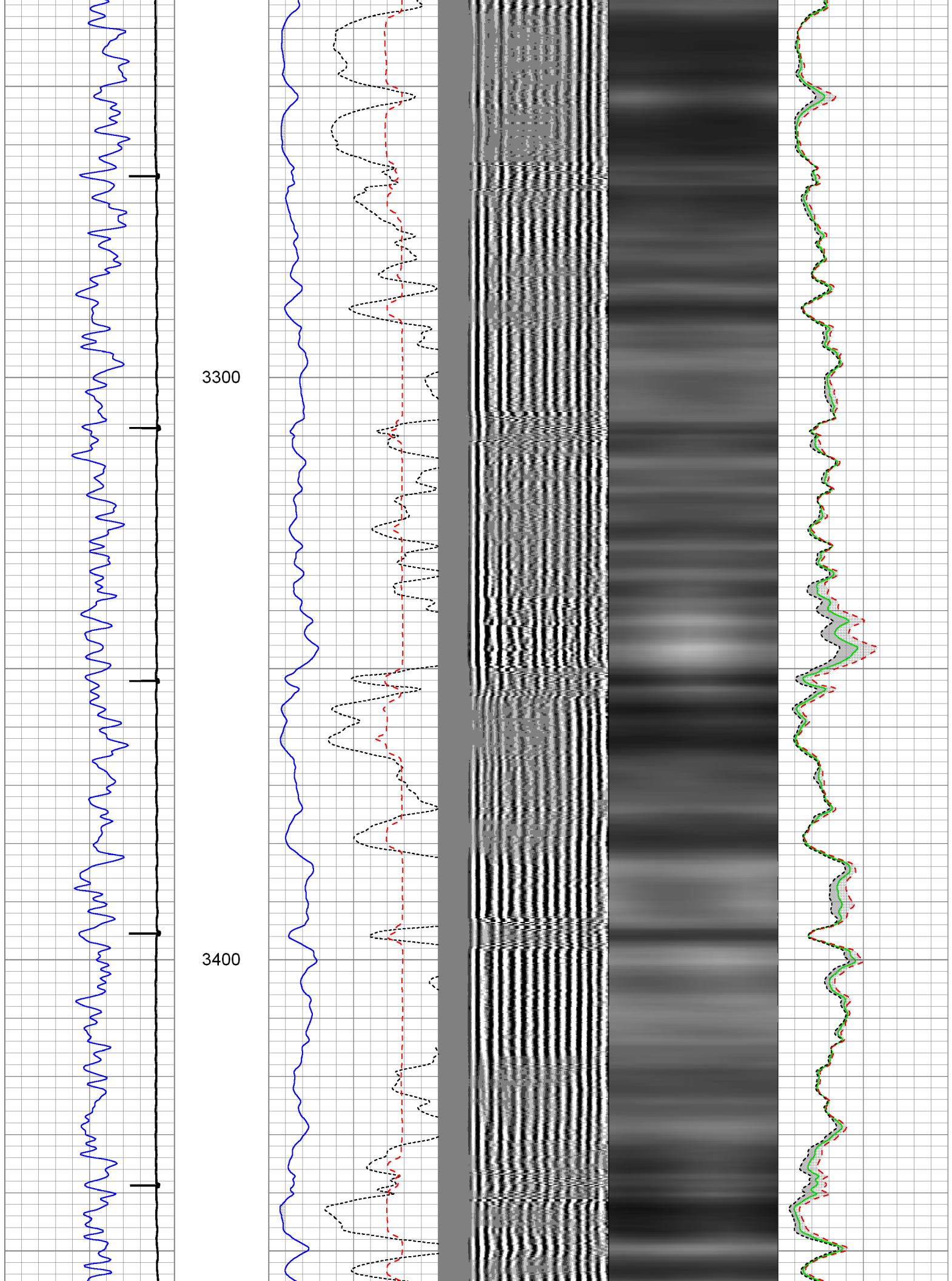
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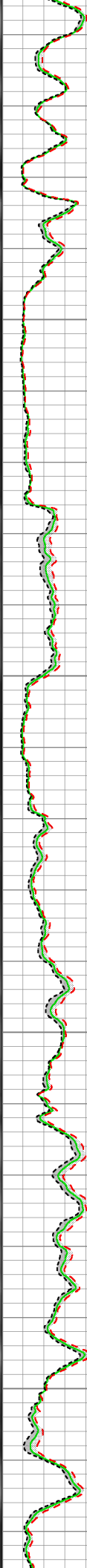
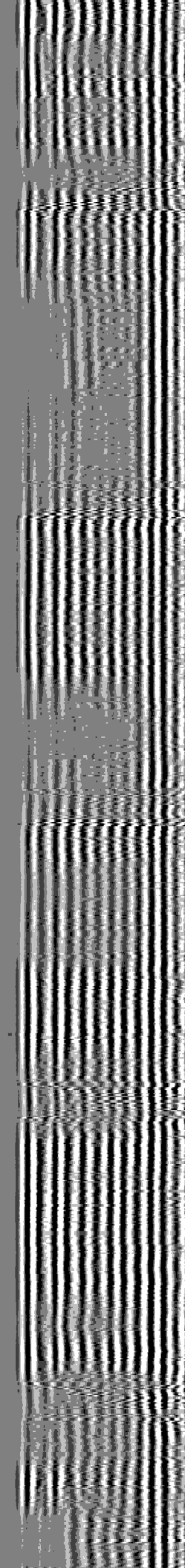
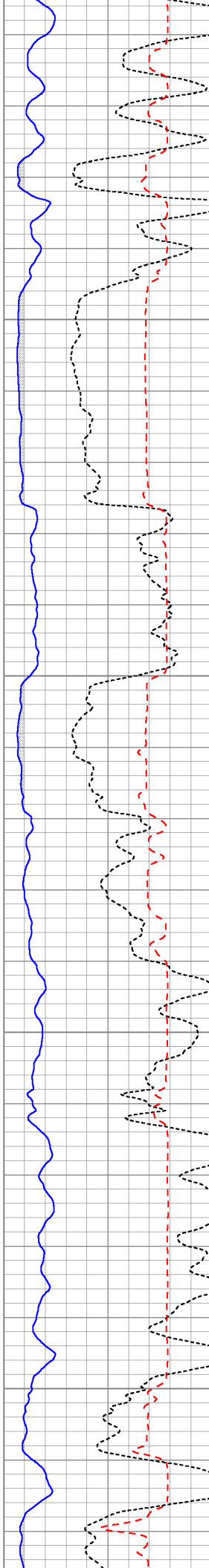
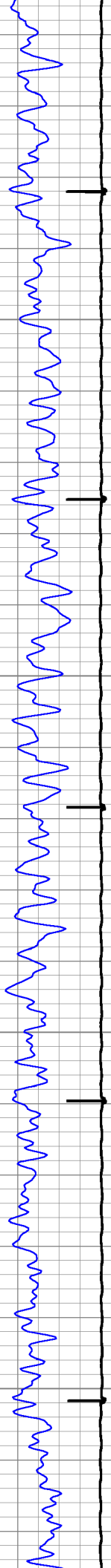
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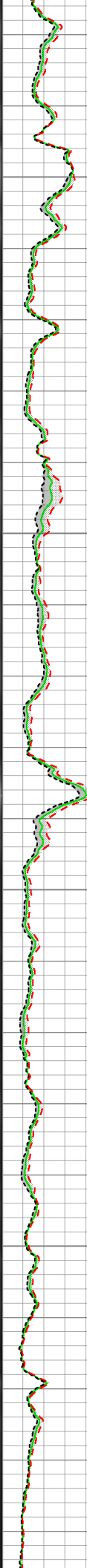
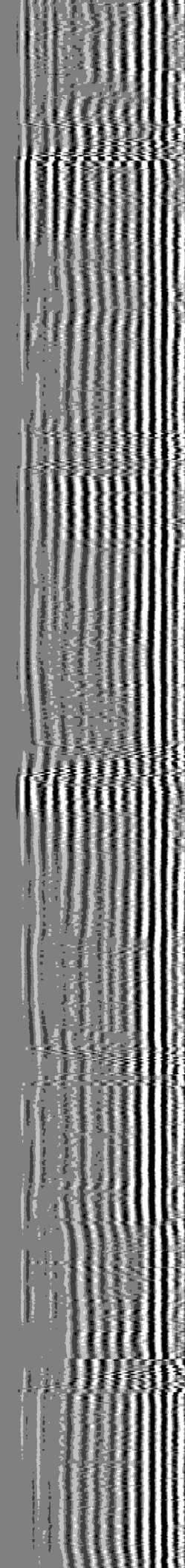
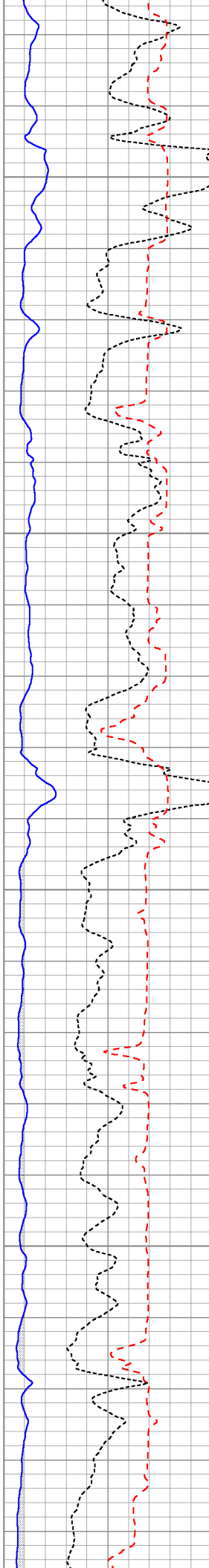
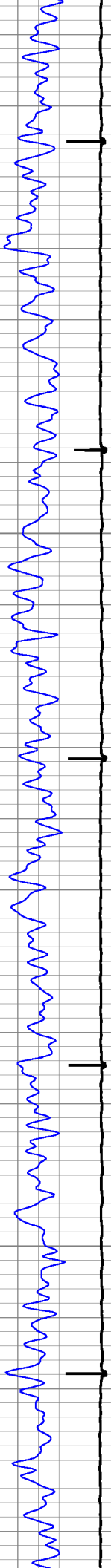
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3700

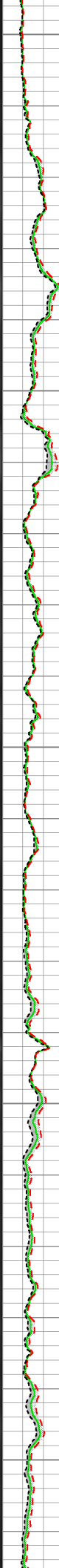
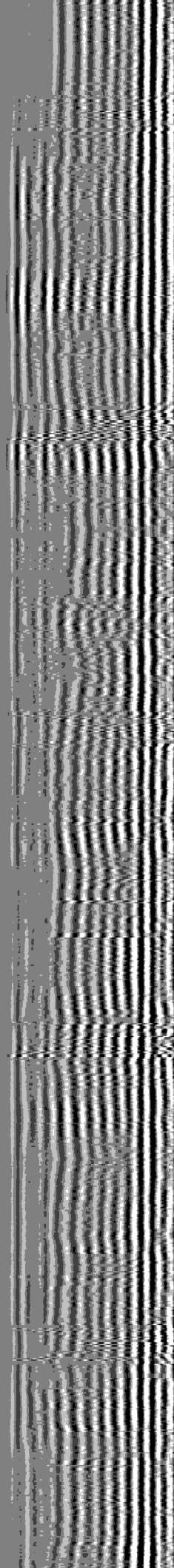
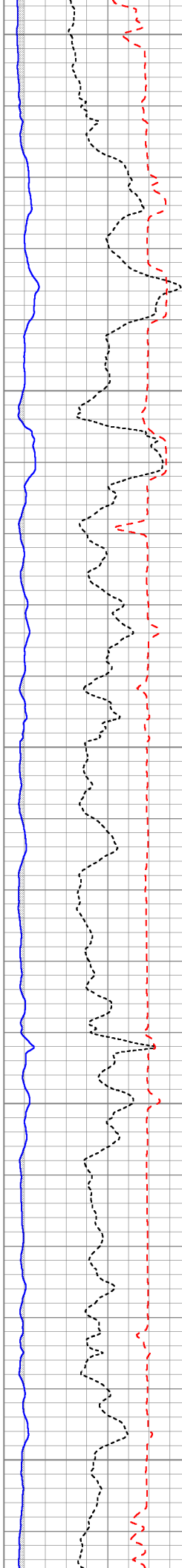
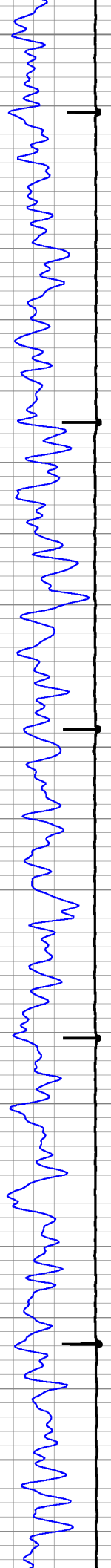
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3900

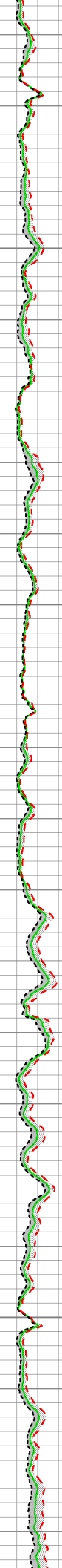
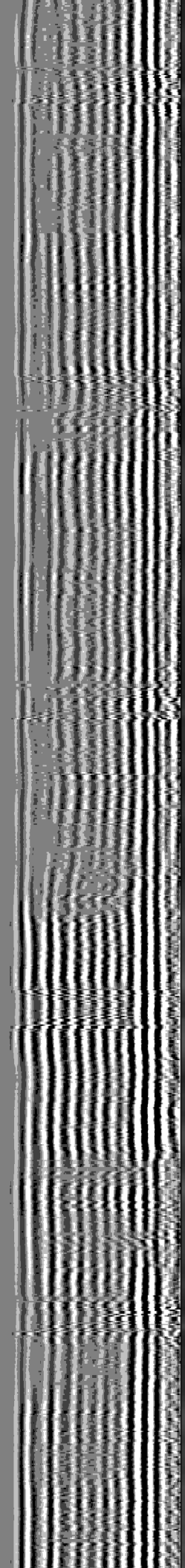
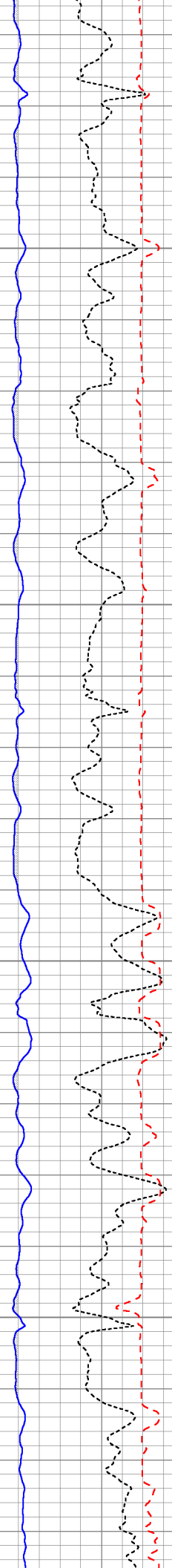
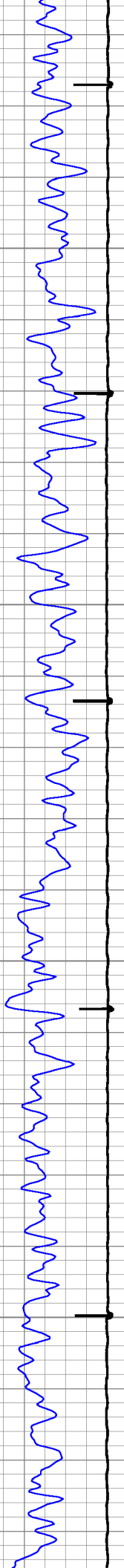
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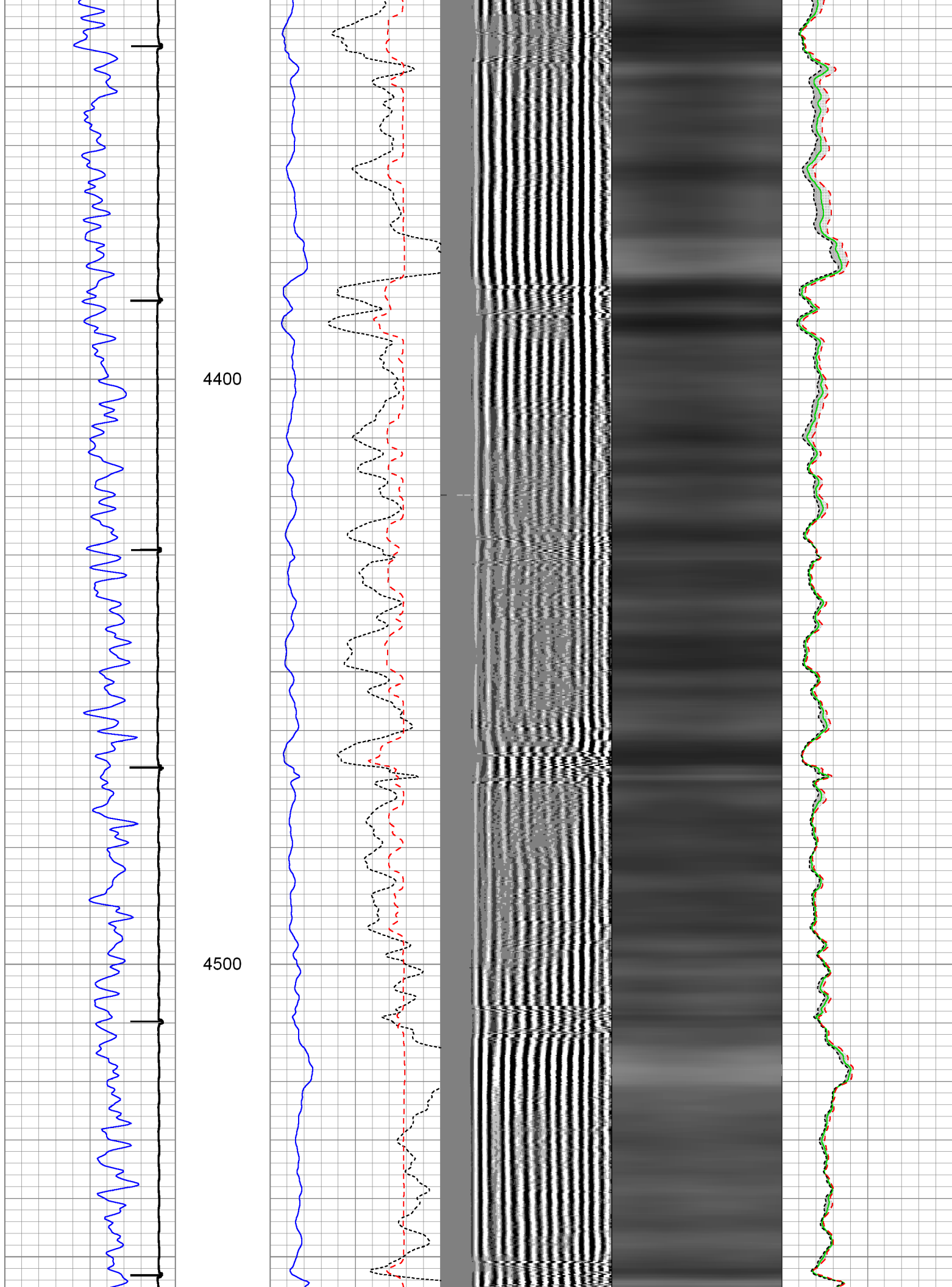
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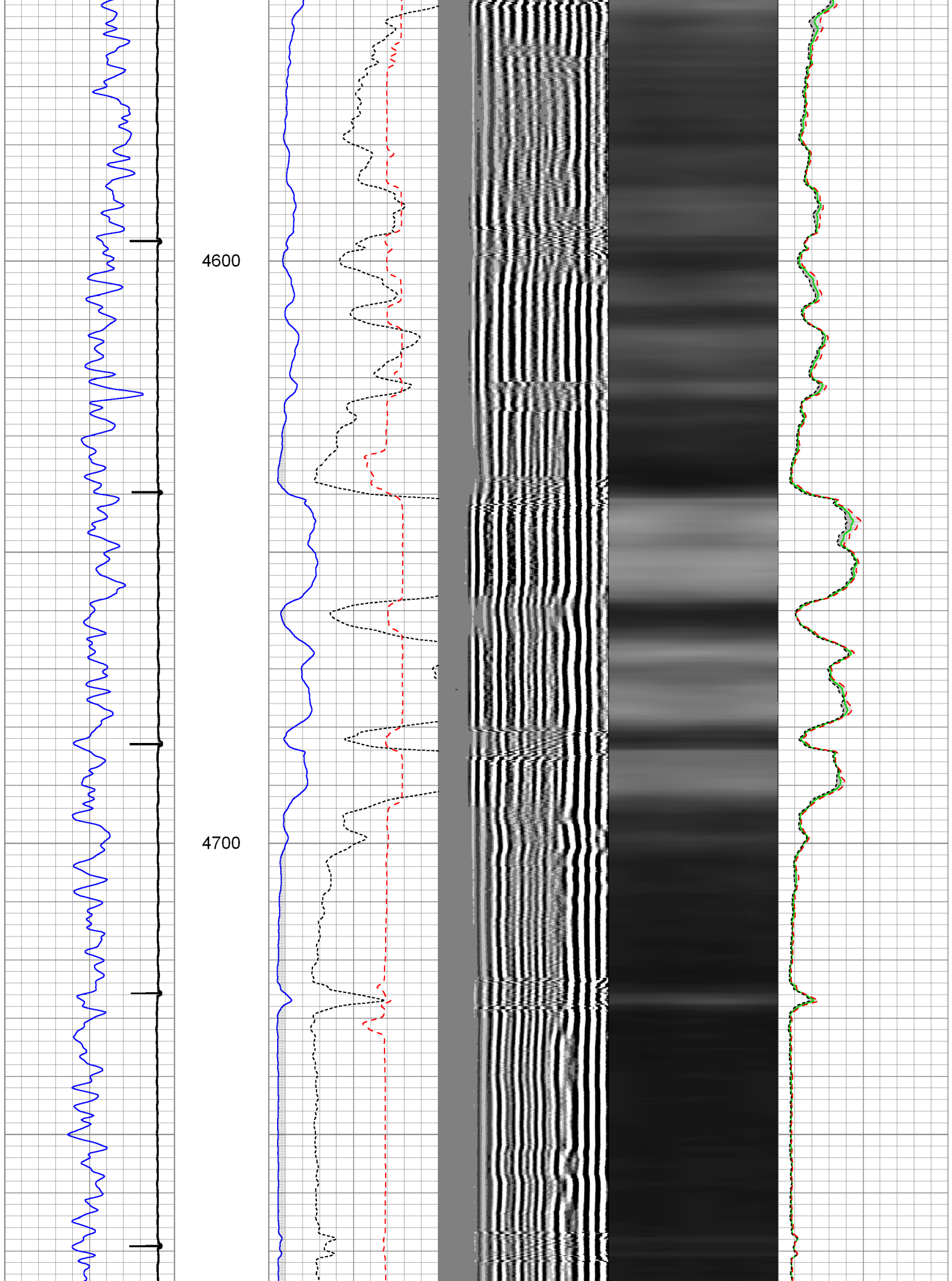
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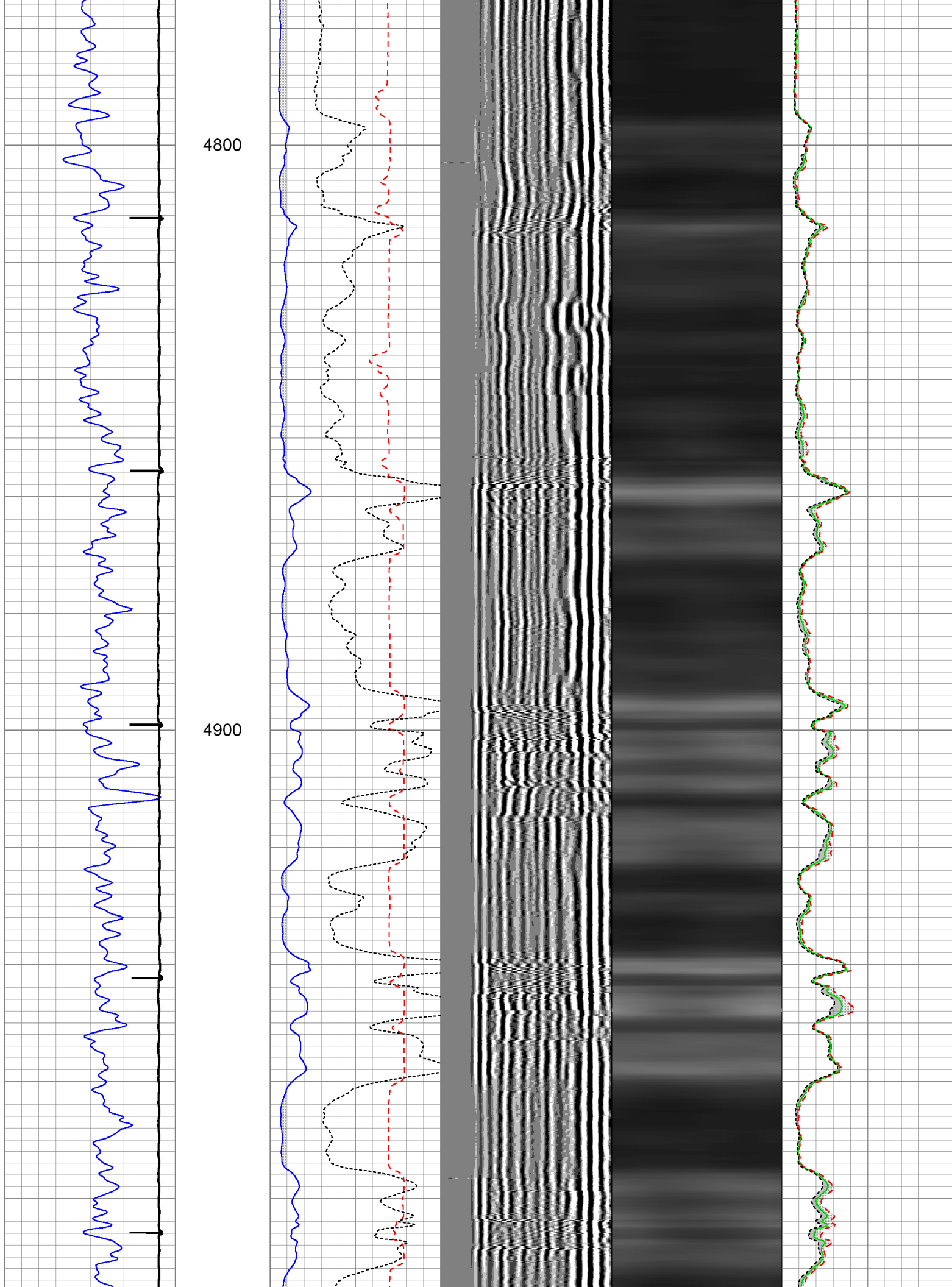
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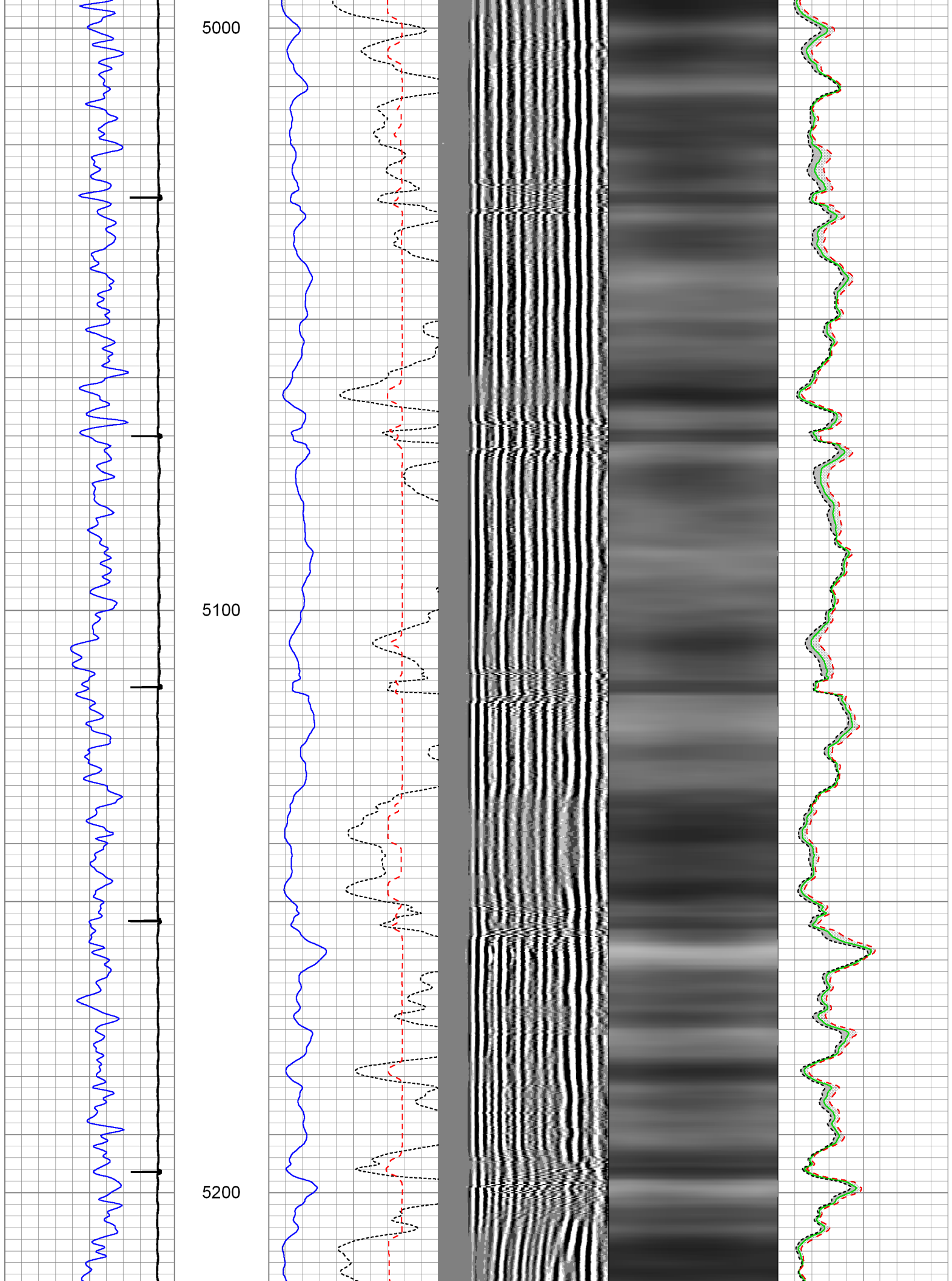
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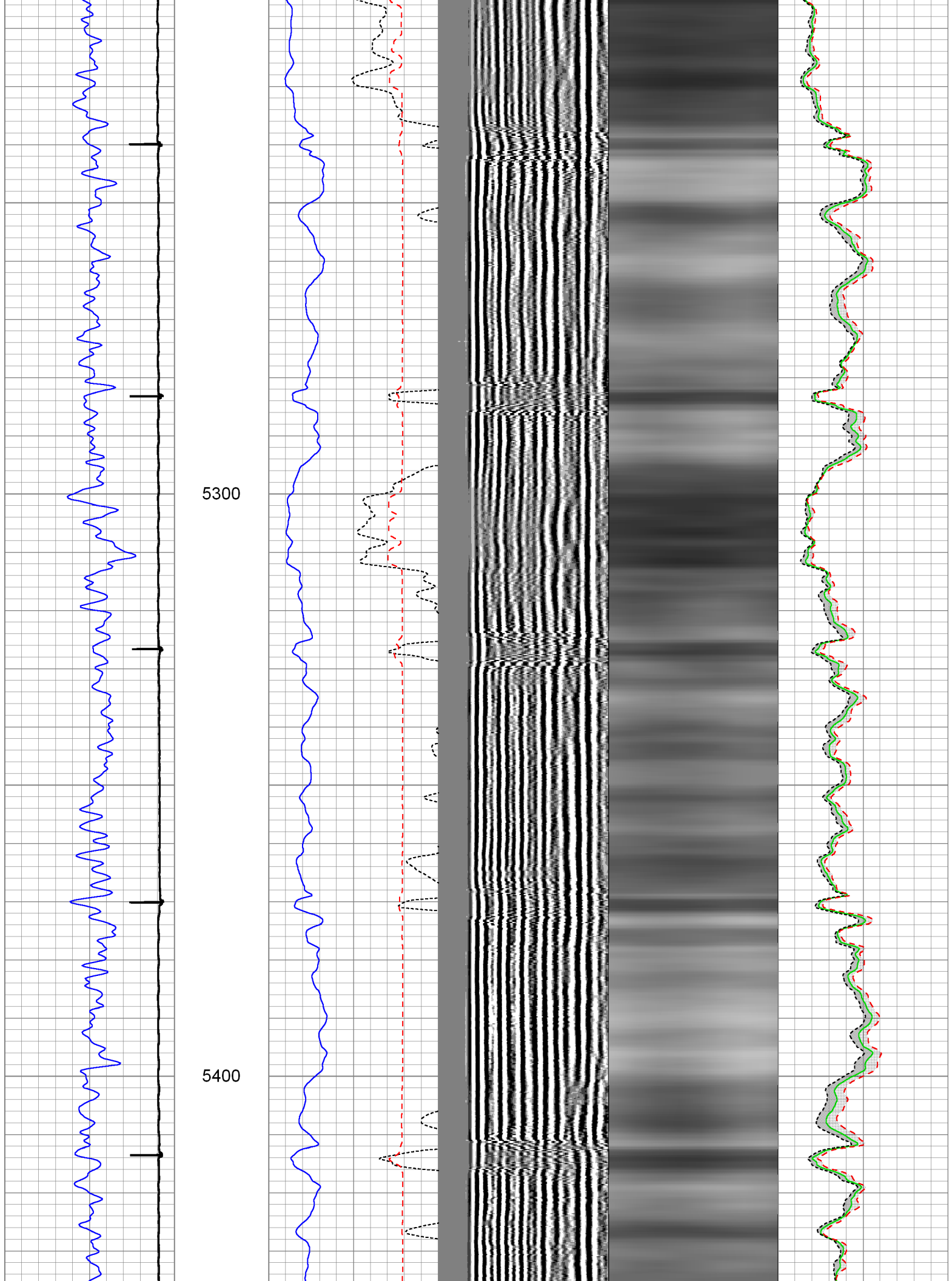


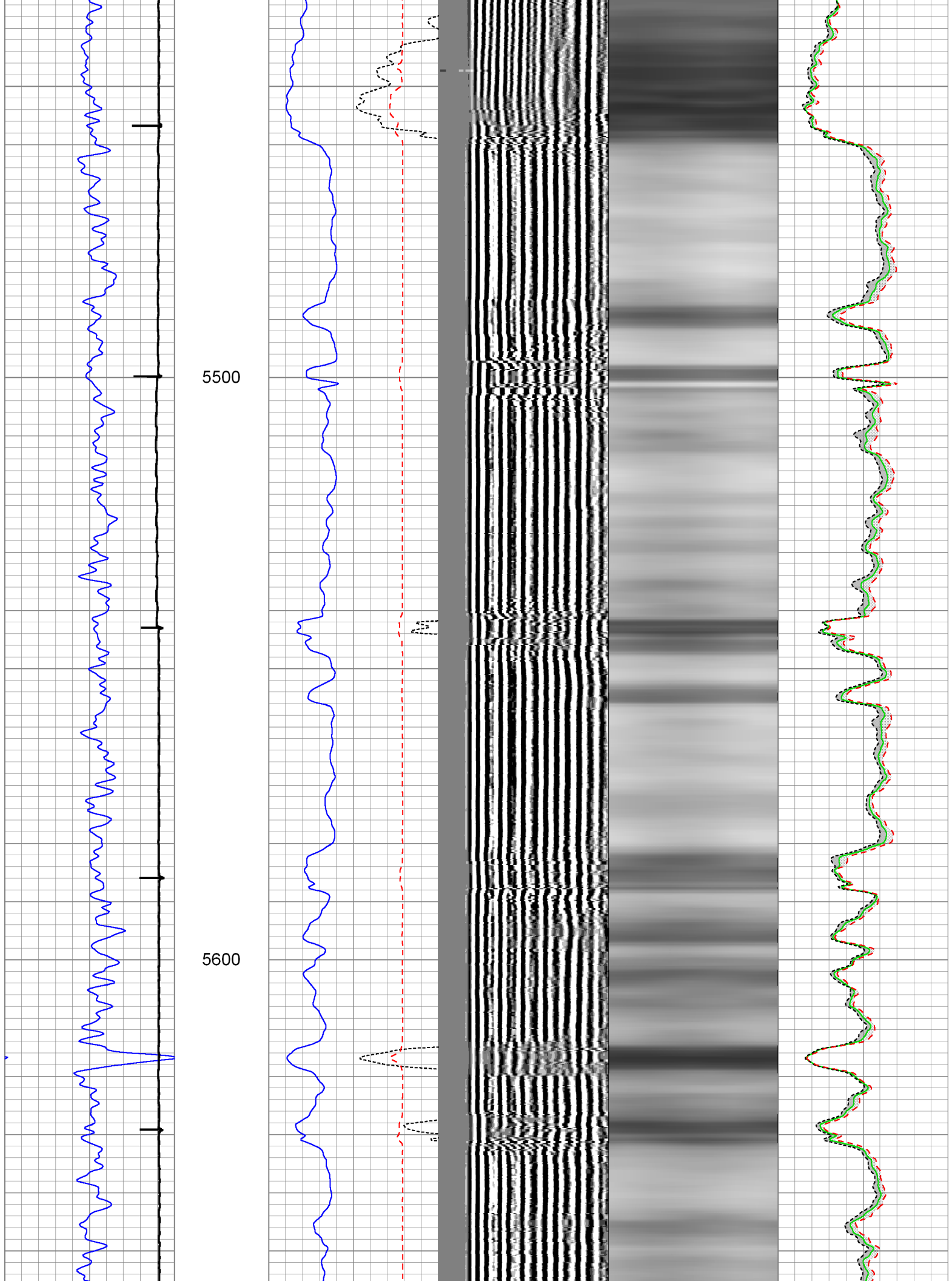
5000

5100

5200

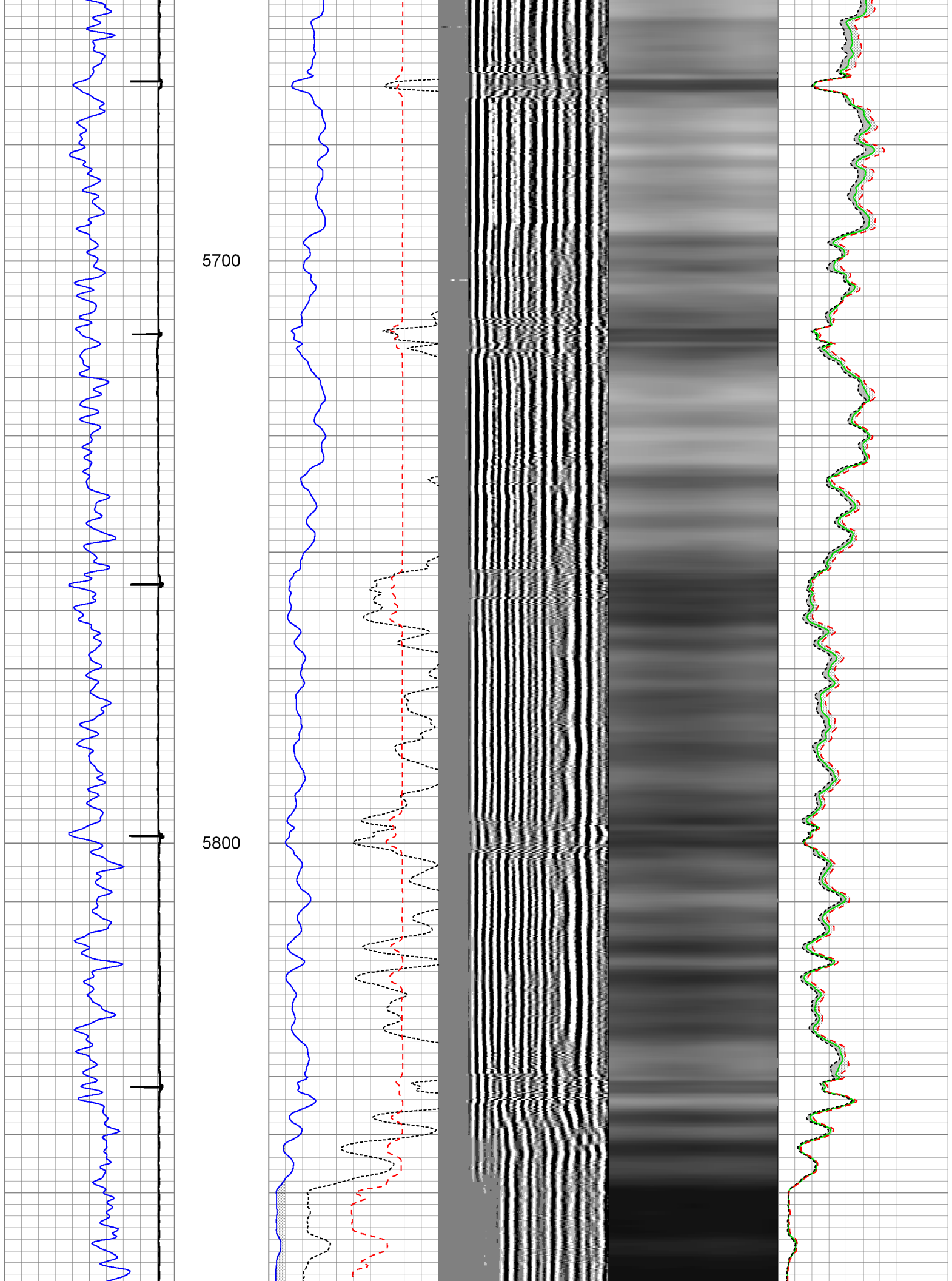


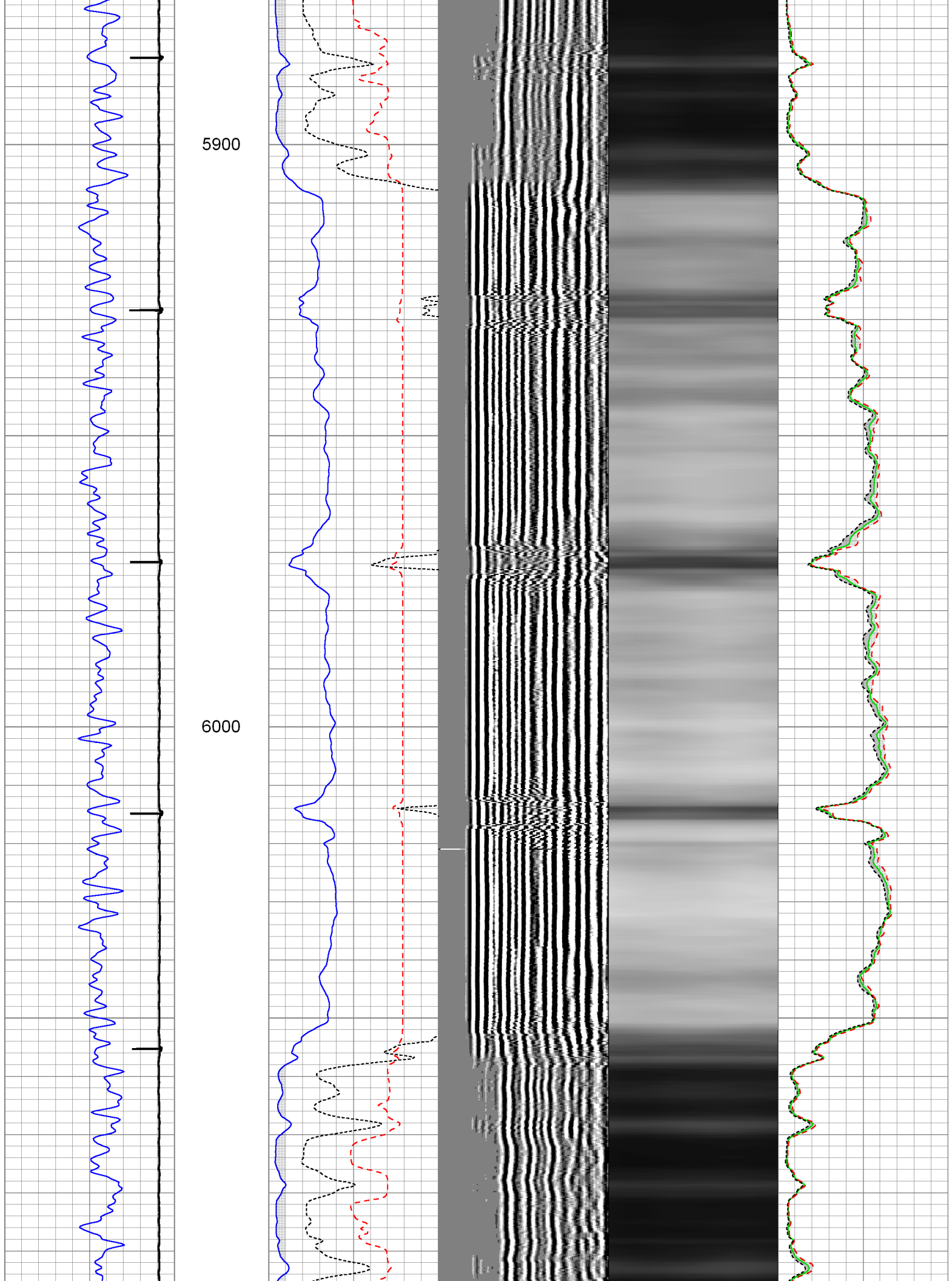




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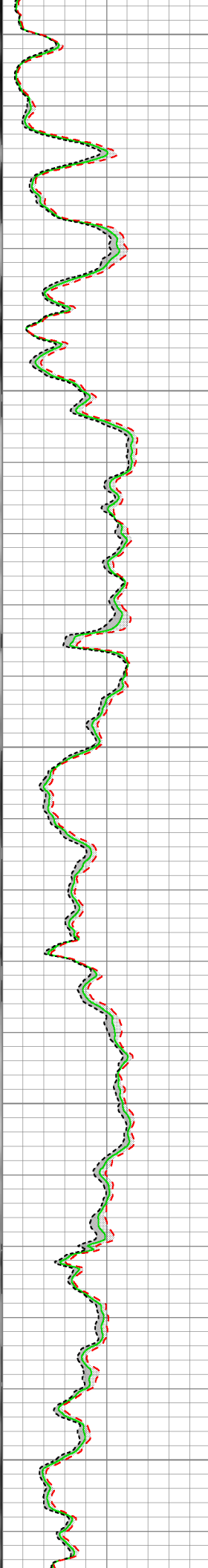
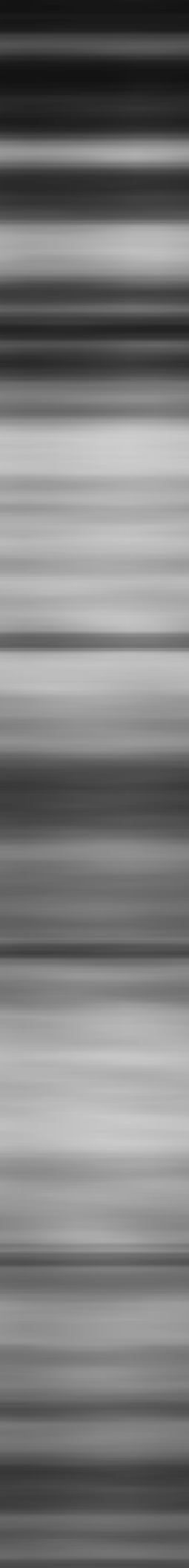
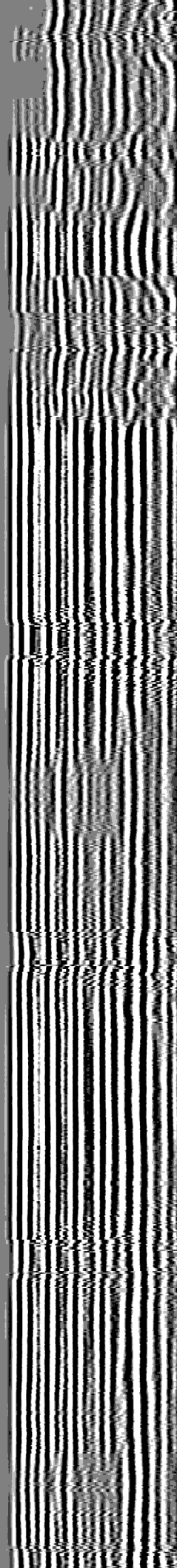
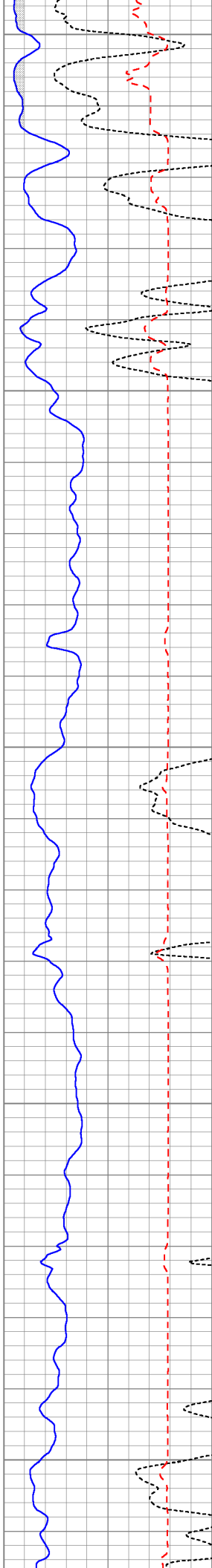
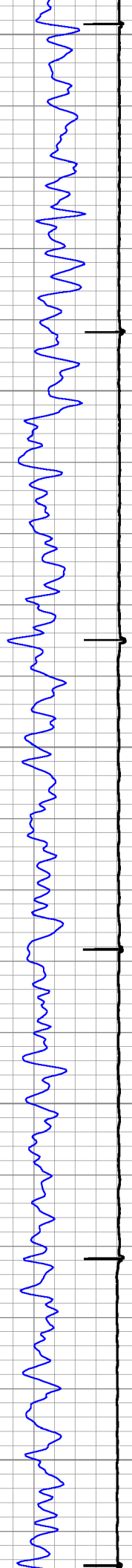


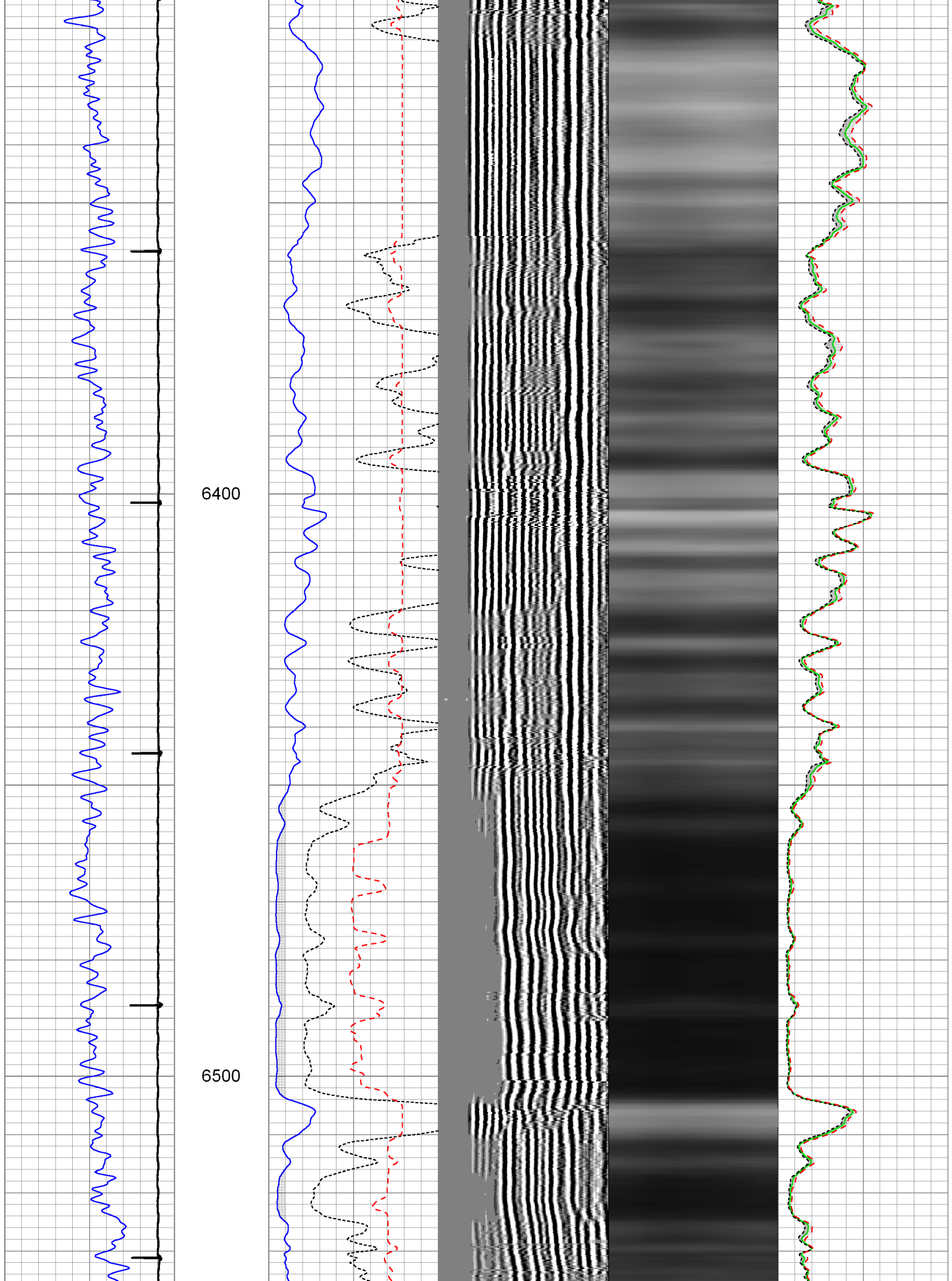


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6200

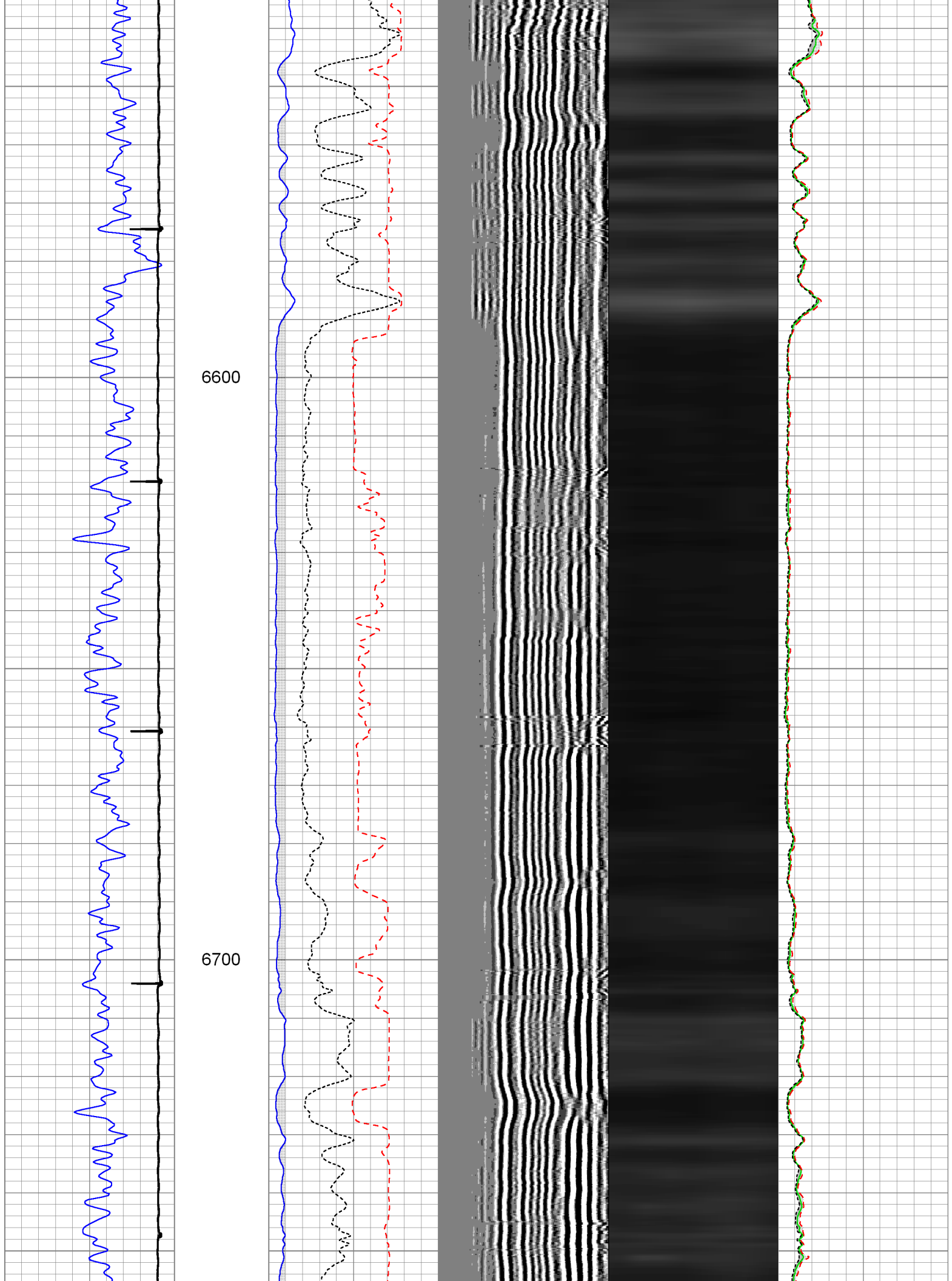
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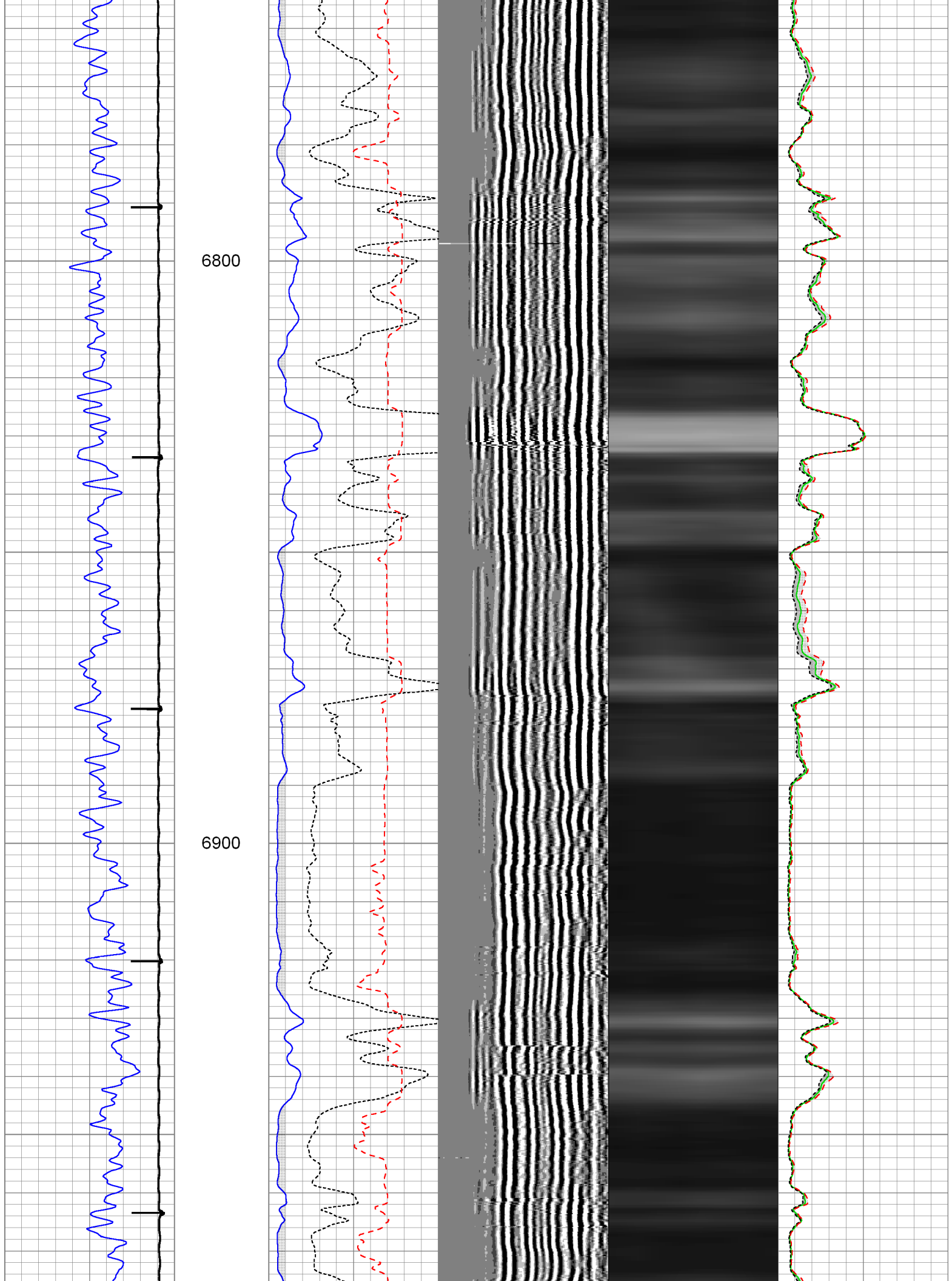
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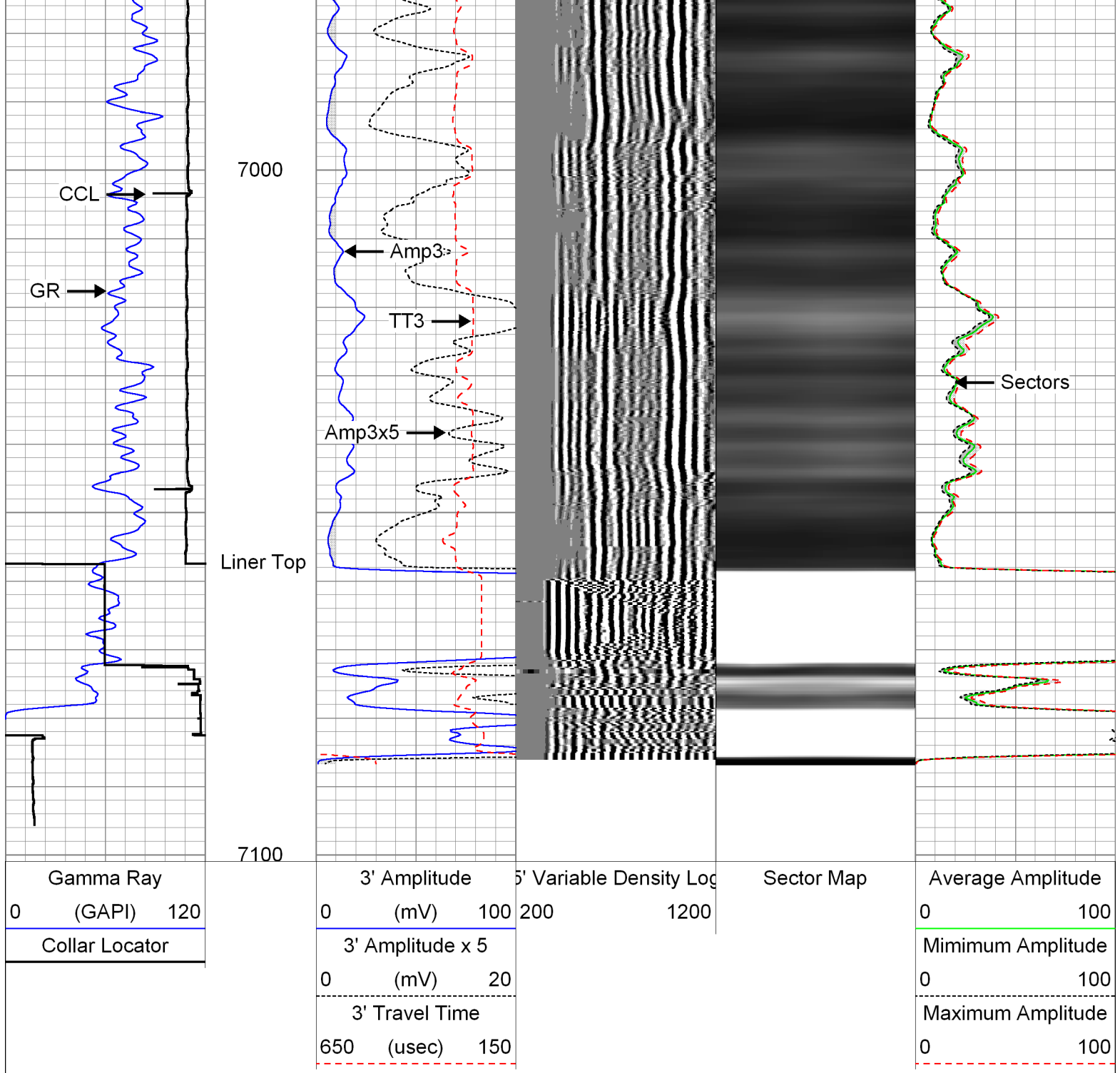
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6800

6900

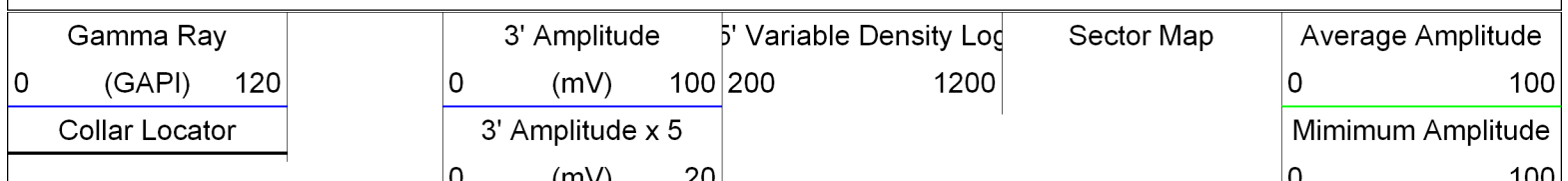




Repeat Pass

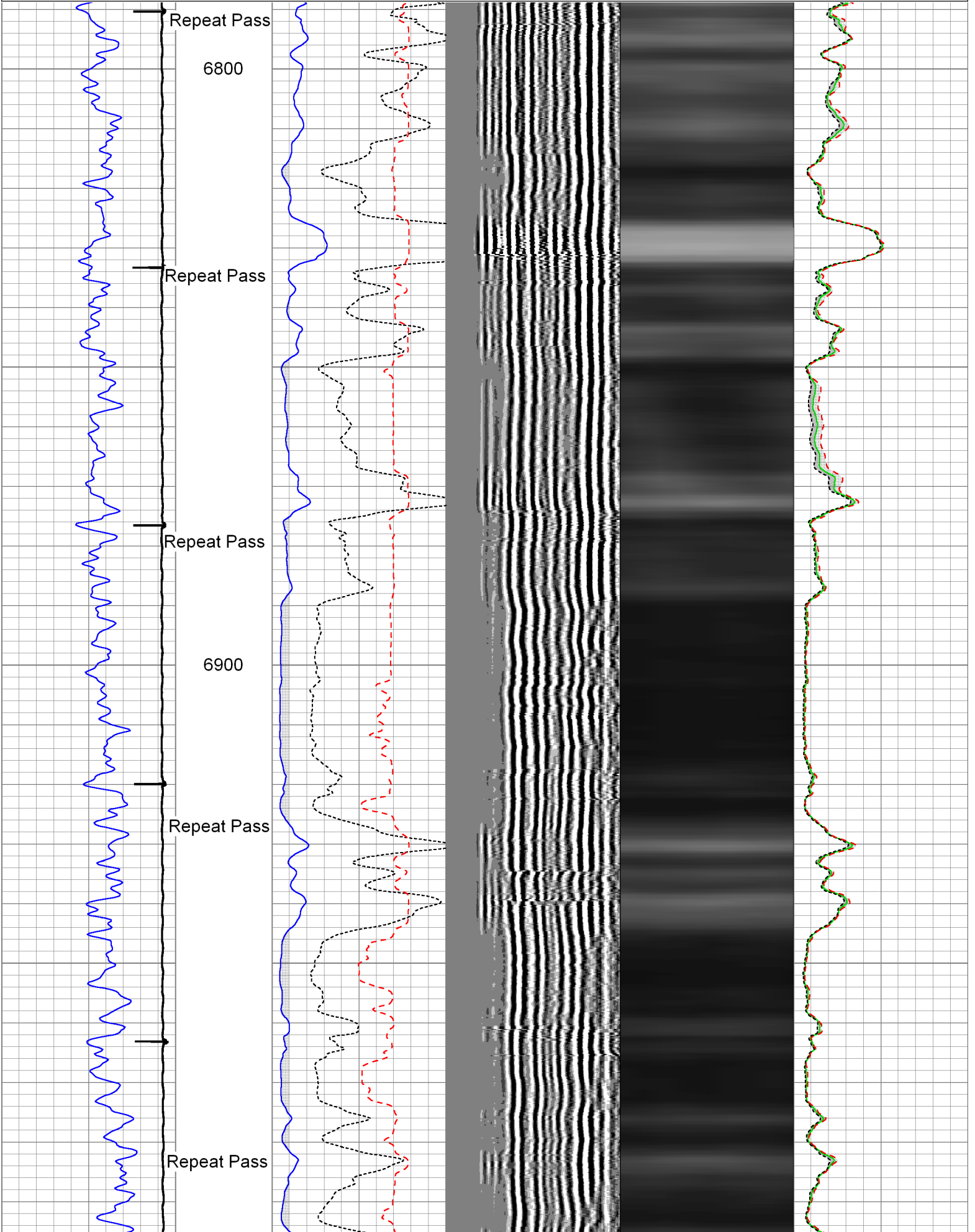
Logged With 2200 PSI At Surface

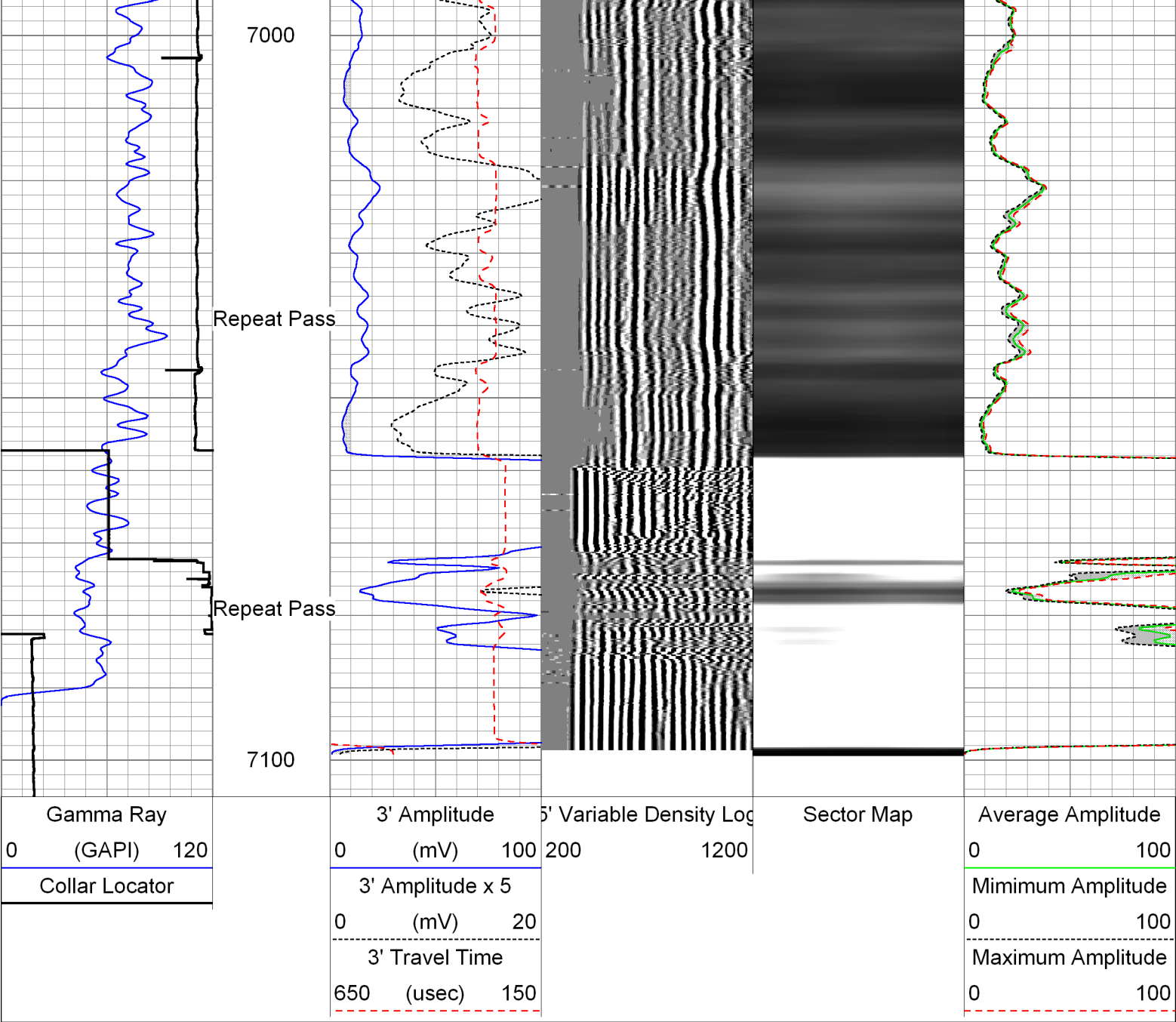
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 Presentation Format: rbt007
 Dataset Creation: Thu Apr 10 09:00:24 2014 by Log Sondex V7.03
 Charted by: Depth in Feet scaled 1:240



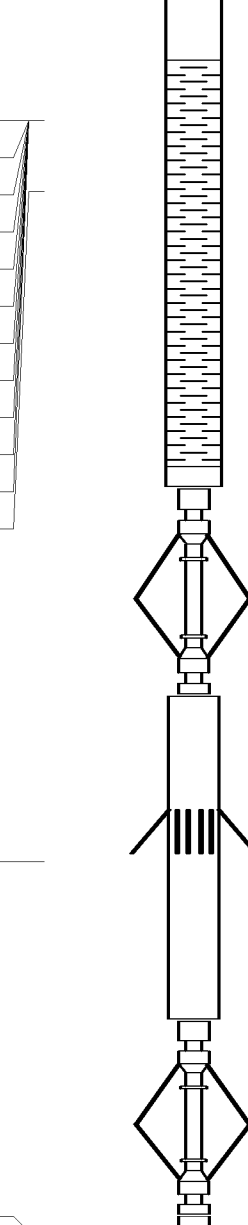
0 (mV) 20
3' Travel Time
650 (usec) 150

0 100
Maximum Amplitude
0 100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.39		CHD-AES (000001) Cable Head	1.04	1.69	2.00
			XTU-002 (218874) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (211727) Production Gamma Ray	1.93	1.69	9.50
			PRC-017 (000002) Production Roller Centraliser (3 Arm)	2.01	1.69	7.00

WVF3FT	15.54		RBT-004 (10012639in7) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	15.54					
WVFS2	15.54					
WVFS3	15.54					
WVFS4	15.54					
WVFS5	15.54					
WVFS6	15.54					
WVFS7	15.54					
WVFS8	15.54					
CBLTEMP	15.54					
CBLROT	15.54					
WVF5FT	14.54					
			PRC-034 (000006) Production Roller Centraliser (4 Arm)	2.91	1.69	13.00
MIT	5.17		MIT-042 (10014703notemp) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			PRC-057 (000007) Production Roller Centraliser (4 Arm)	2.74	2.75	32.00
			BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
TSTAMP	0.00					
Dataset: 0512338607_anadarko_nrc 3c-4hzx_04-10-14_mit_rbl.db: field/well/run1/7main Total Length: 26.44 ft Total Weight: 272.30 lb O.D.: 3.13 in						

Calibration Report		
Database File:	0512338607_anadarko_nrc 3c-4hzx_04-10-14_mit_rbl.db	
Dataset Pathname:	7main	
Dataset Creation:	Thu Apr 10 10:01:57 2014 by Log Sondex V7.03	
Multi-finger Imaging Tool Calibration Report		
Serial Number:	10014703notemp	
Number of Fingers:	40	
Tool Model:	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 Apr 10 07:58:38 2014

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1054	348.0	1402	407.0	1809	406.0	2215
Finger 02:	1008	358.0	1366	414.0	1780	420.0	2200
Finger 03:	1014	358.0	1372	393.0	1765	413.0	2178
Finger 04:	975	370.0	1345	407.0	1752	433.0	2185
Finger 05:	1014	365.0	1379	373.0	1752	401.0	2153
Finger 06:	1009	382.0	1391	380.0	1771	411.0	2182
Finger 07:	1028	390.0	1418	365.0	1783	402.0	2185
Finger 08:	994	397.0	1391	371.0	1762	421.0	2183
Finger 09:	1061	406.0	1467	353.0	1820	392.0	2212
Finger 10:	1035	410.0	1445	351.0	1796	398.0	2194
Finger 11:	1017	411.0	1428	349.0	1777	404.0	2181
Finger 12:	1103	413.0	1516	328.0	1844	370.0	2214
Finger 13:	1040	412.0	1452	341.0	1793	399.0	2192
Finger 14:	1029	432.0	1461	355.0	1816	411.0	2227
Finger 15:	1009	430.0	1439	357.0	1796	416.0	2212
Finger 16:	1049	423.0	1472	350.0	1822	401.0	2223
Finger 17:	1139	359.0	1498	342.0	1840	386.0	2226
Finger 18:	1109	412.0	1521	345.0	1866	388.0	2254
Finger 19:	1075	418.0	1493	362.0	1855	398.0	2253
Finger 20:	991	414.0	1405	376.0	1781	415.0	2196
Finger 21:	1082	402.0	1484	367.0	1851	401.0	2252
Finger 22:	1059	402.0	1461	384.0	1845	408.0	2253
Finger 23:	1165	371.0	1536	362.0	1898	377.0	2275
Finger 24:	1067	392.0	1459	408.0	1867	414.0	2281
Finger 25:	1075	372.0	1447	408.0	1855	420.0	2275
Finger 26:	1095	370.0	1465	409.0	1874	402.0	2276
Finger 27:	1109	349.0	1458	408.0	1866	409.0	2275
Finger 28:	1062	355.0	1417	431.0	1848	423.0	2271
Finger 29:	1032	356.0	1388	446.0	1834	436.0	2270
Finger 30:	1021	346.0	1367	449.0	1816	436.0	2252
Finger 31:	1074	343.0	1417	429.0	1846	414.0	2260
Finger 32:	1014	338.0	1352	445.0	1797	434.0	2231
Finger 33:	1025	337.0	1362	448.0	1810	432.0	2242
Finger 34:	1014	336.0	1350	455.0	1805	439.0	2244
Finger 35:	1071	326.0	1397	426.0	1823	410.0	2233
Finger 36:	1002	334.0	1336	441.0	1777	433.0	2210
Finger 37:	1111	325.0	1436	412.0	1848	403.0	2251
Finger 38:	1061	330.0	1391	420.0	1811	412.0	2223
Finger 39:	1012	339.0	1351	425.0	1776	427.0	2203
Finger 40:	946	348.0	1294	441.0	1735	451.0	2186

Segmented Cement Bond Log Calibration Report


Serial Number:	10012639in7
Tool Model:	004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	15.906 ft

Master Calibration, performed Thu Apr 10 08:01:39 2014:

Raw (v)		Calibrated (mv)		Results	
Zero	Cal	Zero	Cal	Gain	Offset

3FT	-0.001	0.707	0.800	62.165	86.610	0.925
5FT	-0.005	0.672	0.800	62.165	90.592	1.242
S1	-0.001	0.681	0.000	100.000	146.776	0.091
S2	-0.001	0.673	0.000	100.000	148.208	0.186
S3	-0.001	0.687	0.000	100.000	145.207	0.177
S4	-0.004	0.707	0.000	100.000	140.771	0.516
S5	-0.001	0.722	0.000	100.000	138.278	0.169
S6	-0.001	0.726	0.000	100.000	137.600	0.163
S7	-0.002	0.714	0.000	100.000	139.700	0.280
S8	-0.002	0.698	0.000	100.000	142.942	0.244

Gamma Ray Calibration Report						
Serial Number:		211727				
Tool Model:		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	NRC 3C-4HZX
	Field	Wattenberg
	County	Weld
	State	Colorado