



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company				Kerr-McGee Oil & Gas Onshore, L.P.			
Well				Lansdown State 3C-21HZ			
Field				Wattenberg			
County				Weld			
State				Colorado			
Location:				API # : 05-123-39045			
Permanent Datum				SHL: 914' FSL, 682' FWL, SWSW			
Log Measured From				Lat / Long: 40.11886 / -104.78926			
Drilling Measured From				SEC 21 TWP 2N RGE 66W			
Ground Level				Elevation 4,935'			
Kelly Bushing				16 FT			
Kelly Bushing				Elevation 4,935'			
Elevation				K.B. 4,951'			
Elevation				D.F. 4,950'			
Elevation				G.L. 4,935'			
Date				30-MAY-14			
Run Number				Three			
Depth Driller				12,641 FT			
Depth Logger				7,104 FT			
Bottom Logged Interval				7,100 FT			
Top Log Interval				Surface			
Open Hole Size				8.750"			
Type Fluid				Water			
Density / Viscosity				8.34 lbm/gal			
Max. Recorded Temp.				217.4°F			
Estimated Cement Top				48 FT			
Time Well Ready				ROA			
Time Logger on Bottom				15:00			
Equipment Number				HD-0119			
Location				Fort Lupton, CO			
Recorded By				H. Raby			
Witnessed By				Kent Evers			
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 LTC Surface 1,233 FT			
Intermediate #1							
Intermediate #2				7" 26 P-110 Surface 7,806 FT			
Liner				4 1/2" 11.6 HCP-110 7,070 FT 12,626 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 Talley reported Liner top @ 7,070 FT.  
Adjusted log 8 FT to correlate with Liner Top.  
Log ran to surface.  
Log ran with 2800 PSI surface induced pressure.  
No debris found on logging tools upon completion of operations.  
  
Thank you for choosing FMC Technologies Completion Services, Inc.!!



Main Pass

Recorded with 2800 PSI surface induced pressure

Database File: 0512339045\_anadarko\_lansdown state 3c-21hz\_05-30-14\_mit\_rbl.db

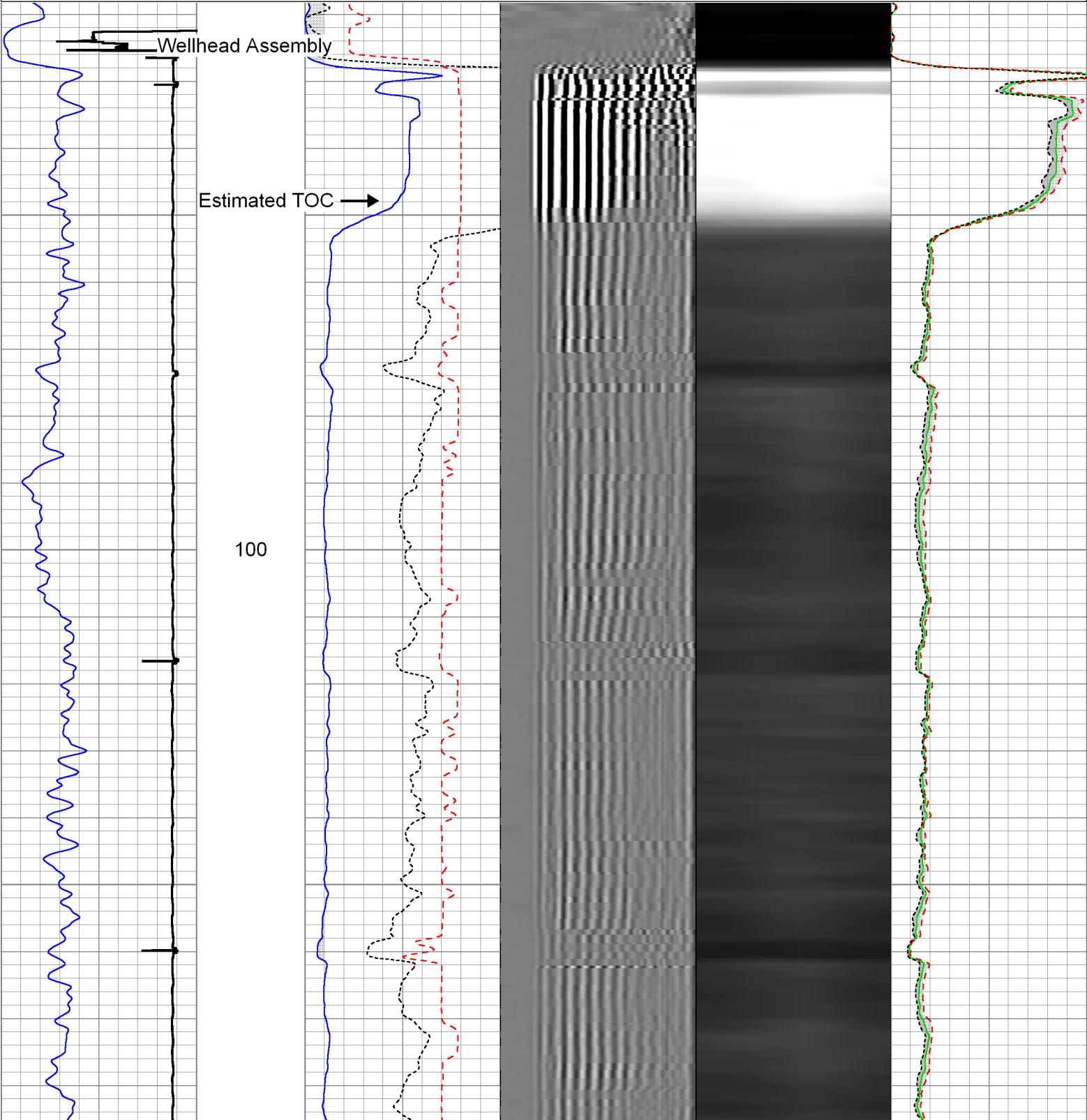
Dataset Pathname: pass9

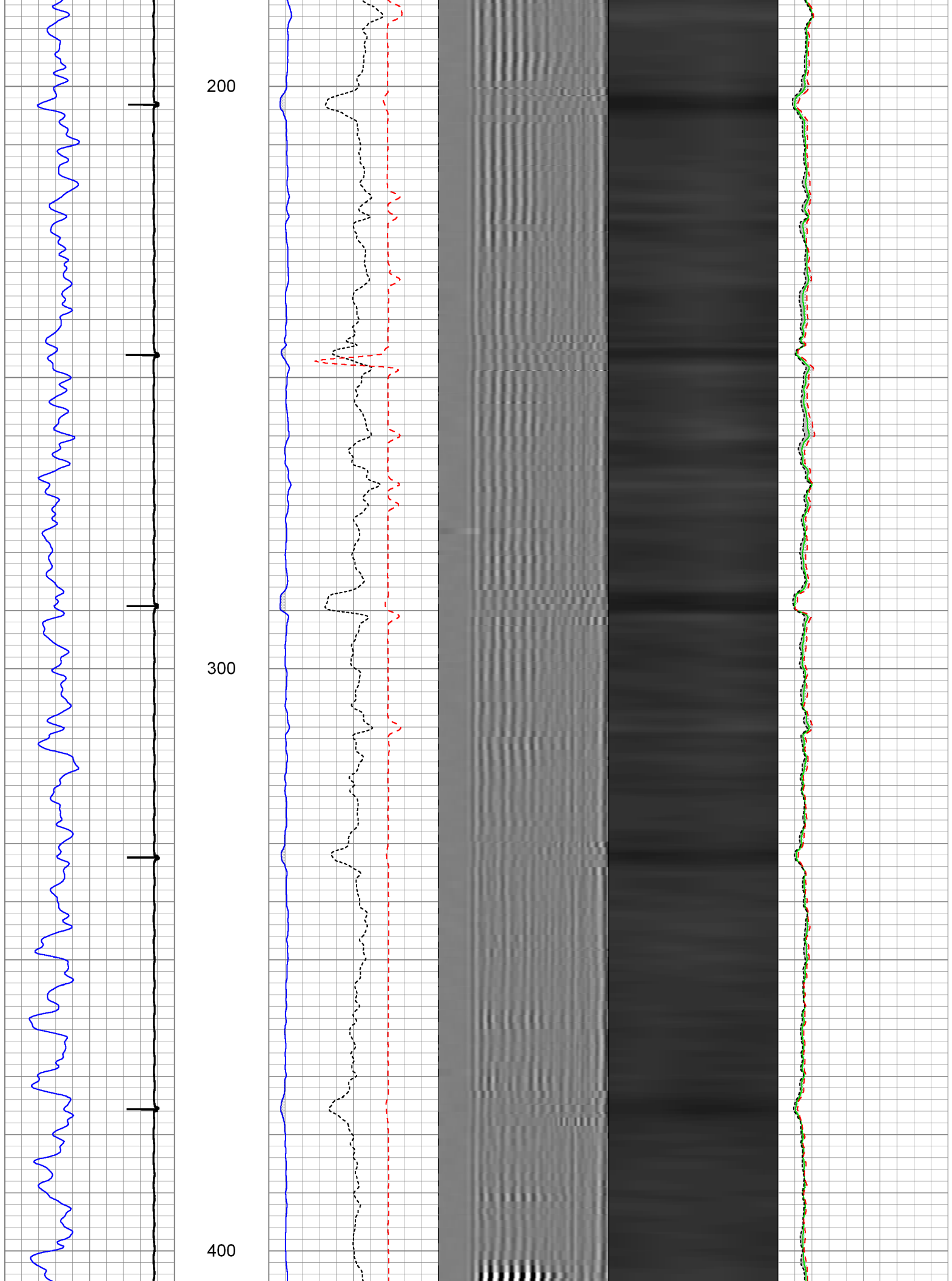
Presentation Format: rbt007

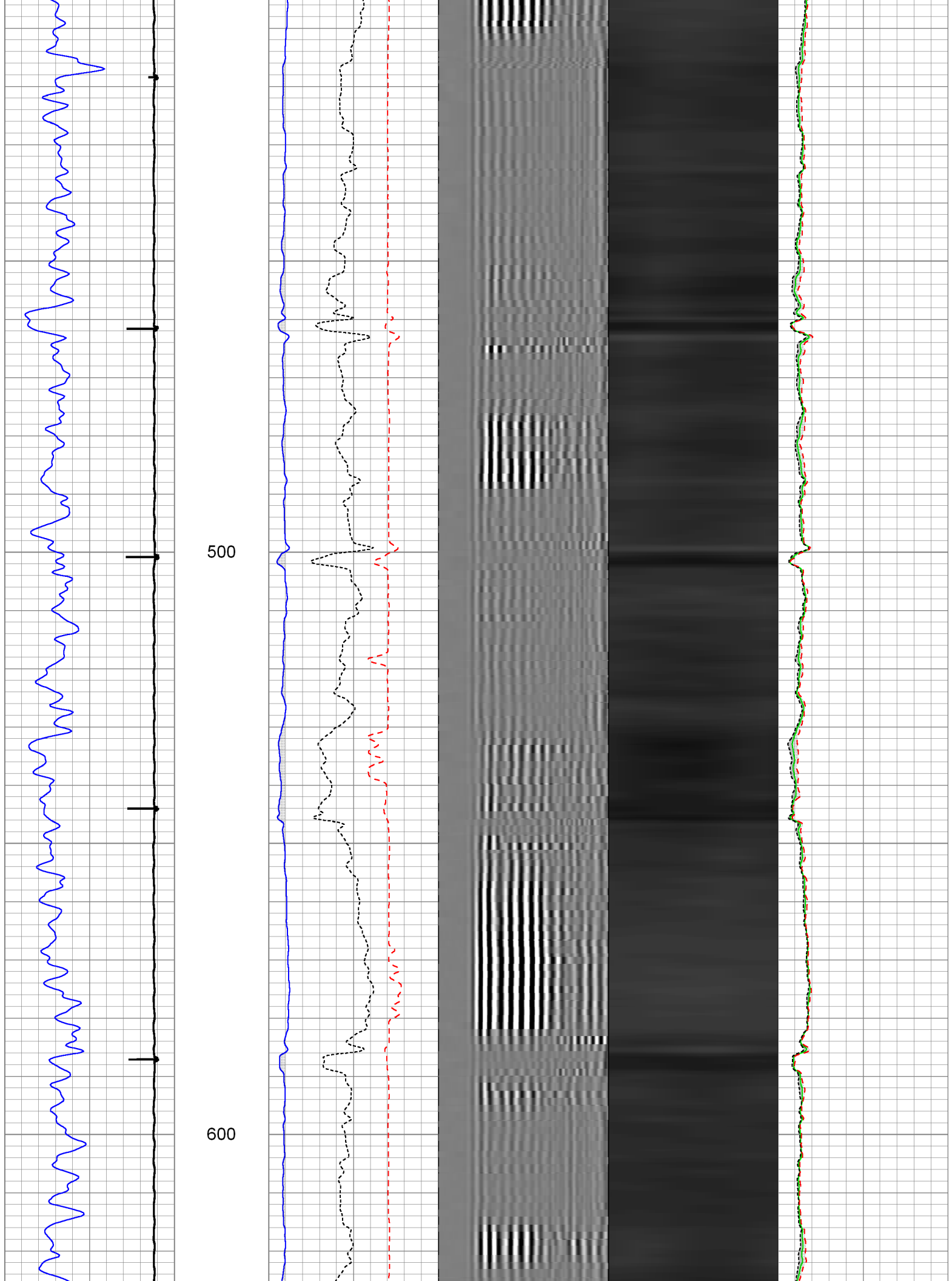
Dataset Creation: Fri May 30 15:02:29 2014 by Log Sondex V7.03

Charted by: Depth in Feet scaled 1:240

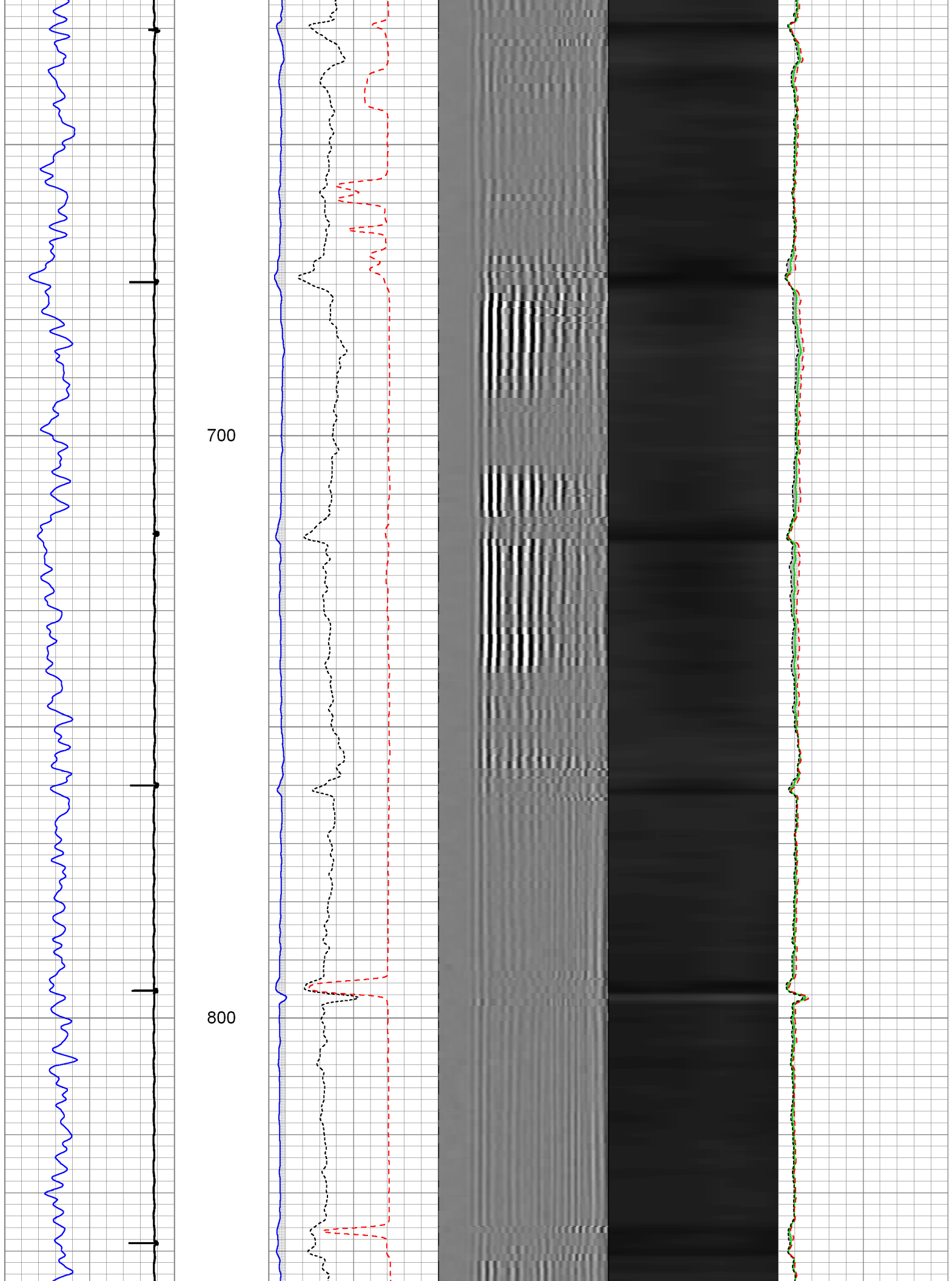
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

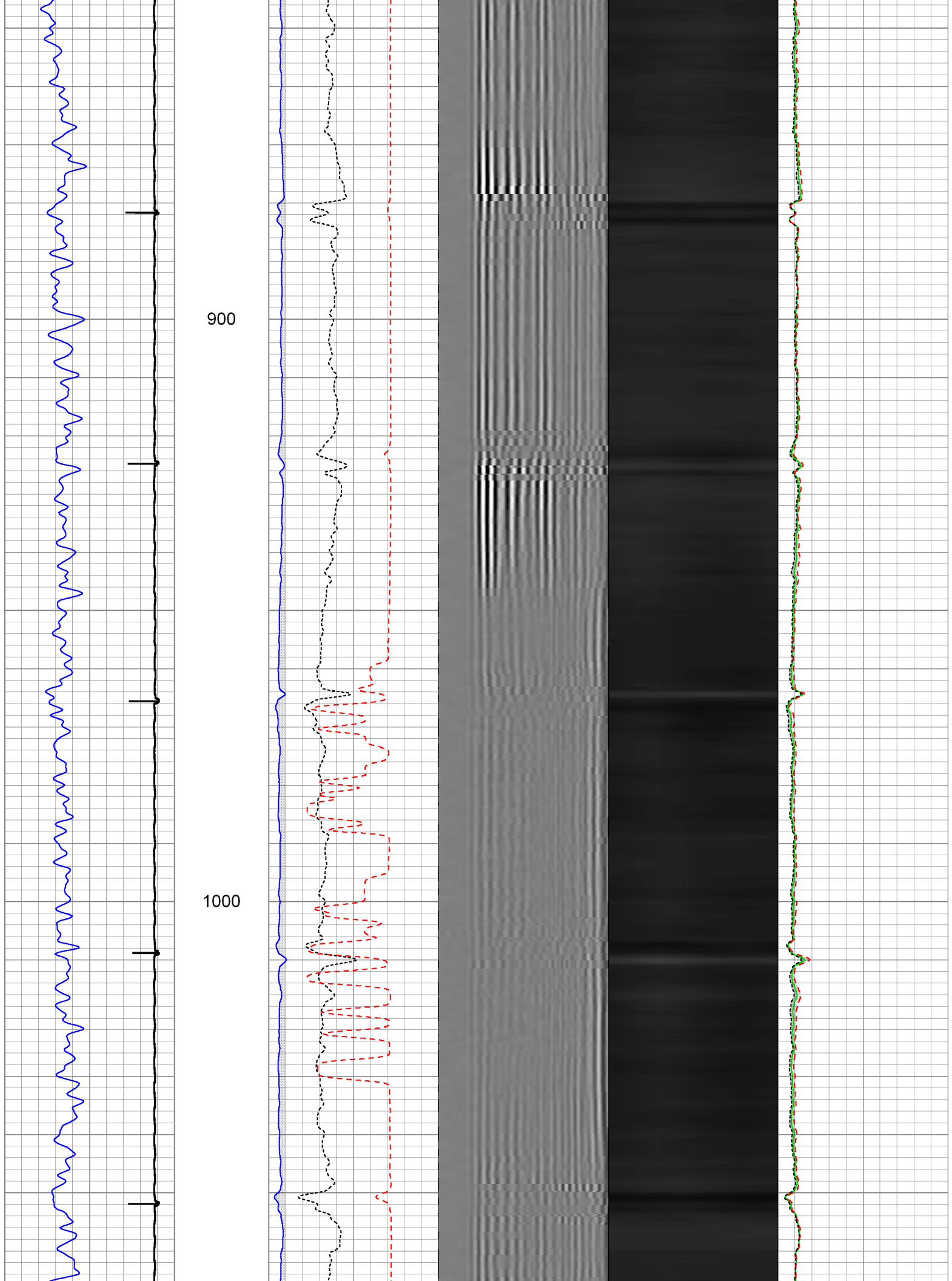






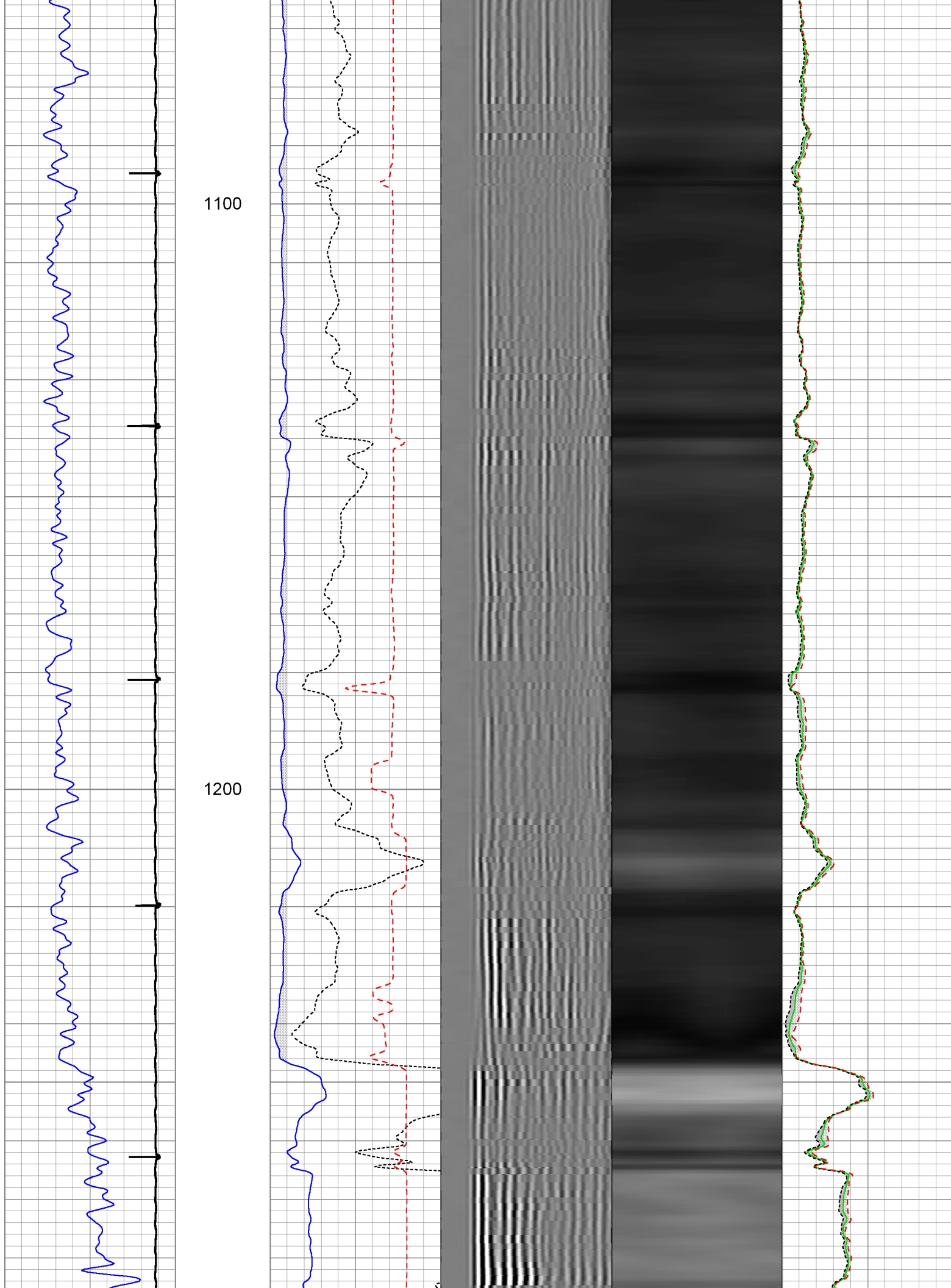






1100

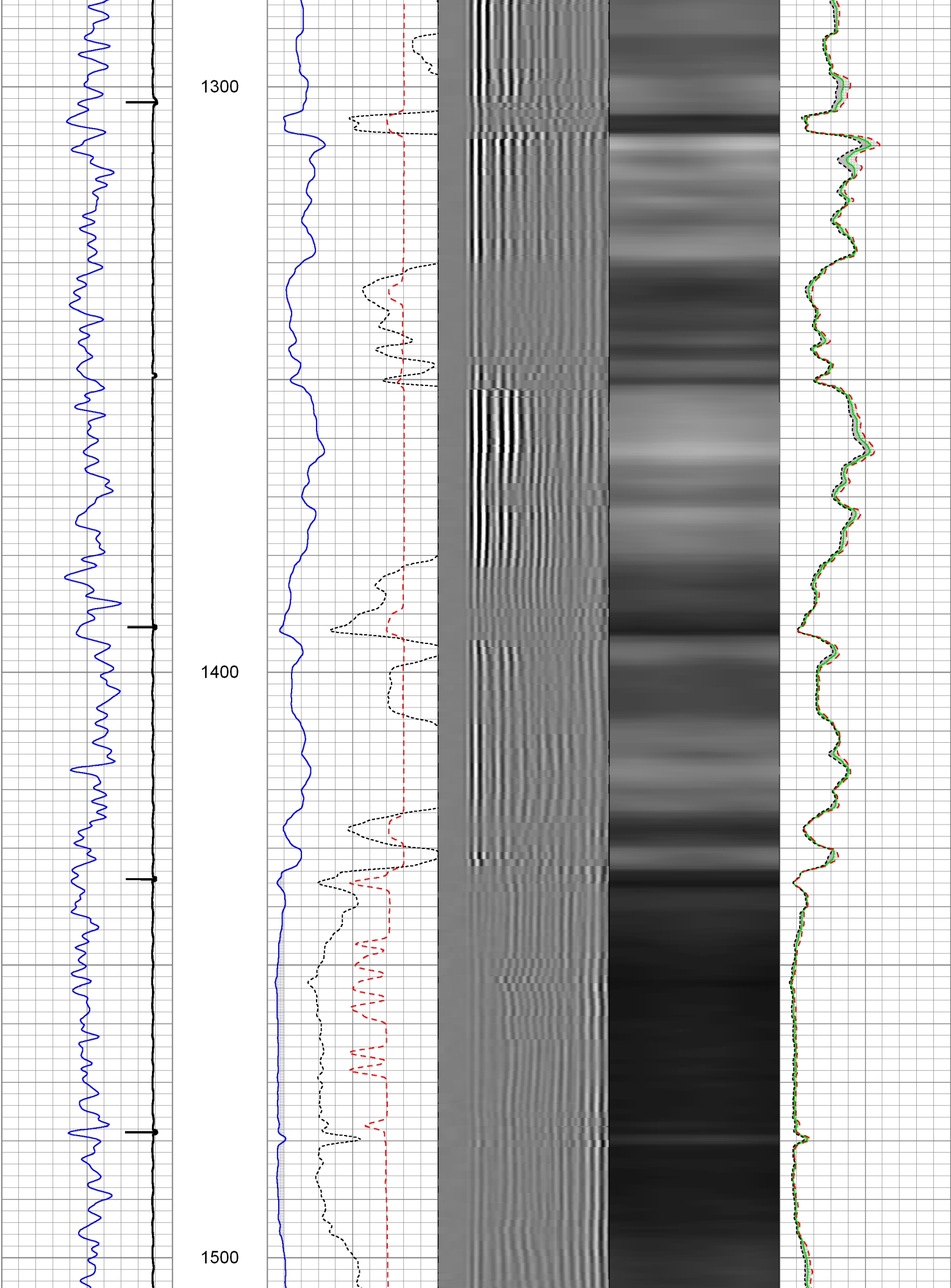
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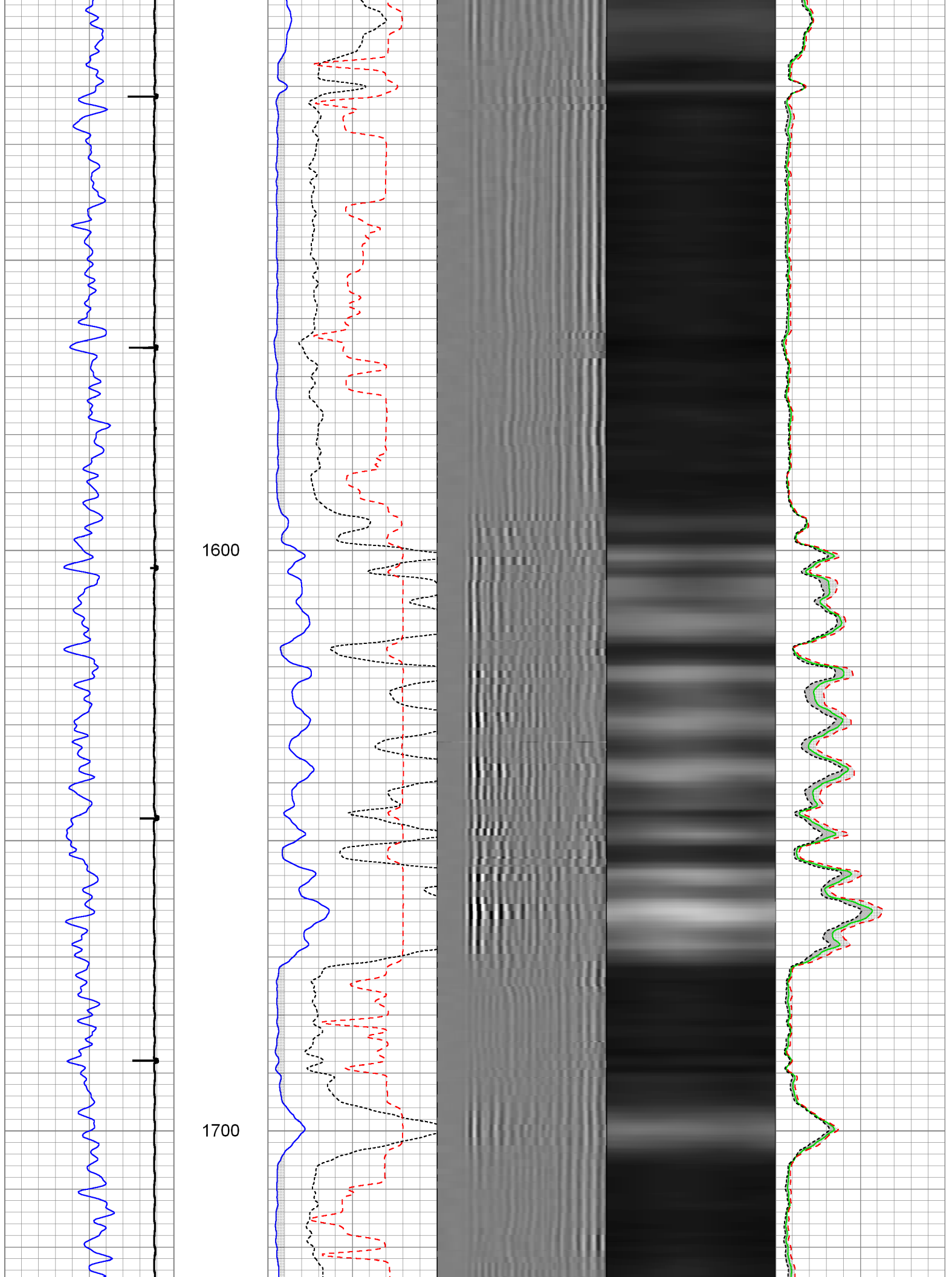


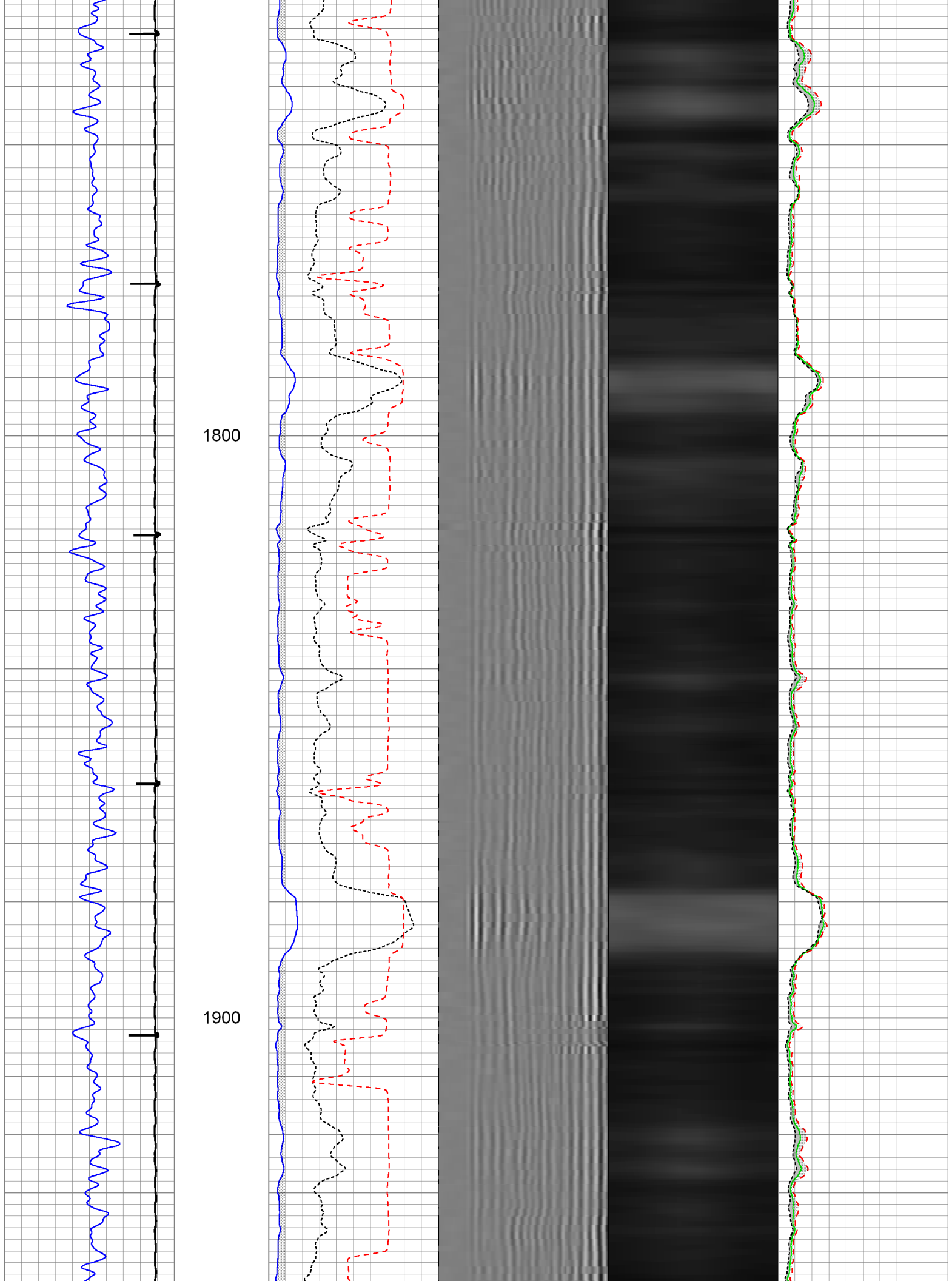
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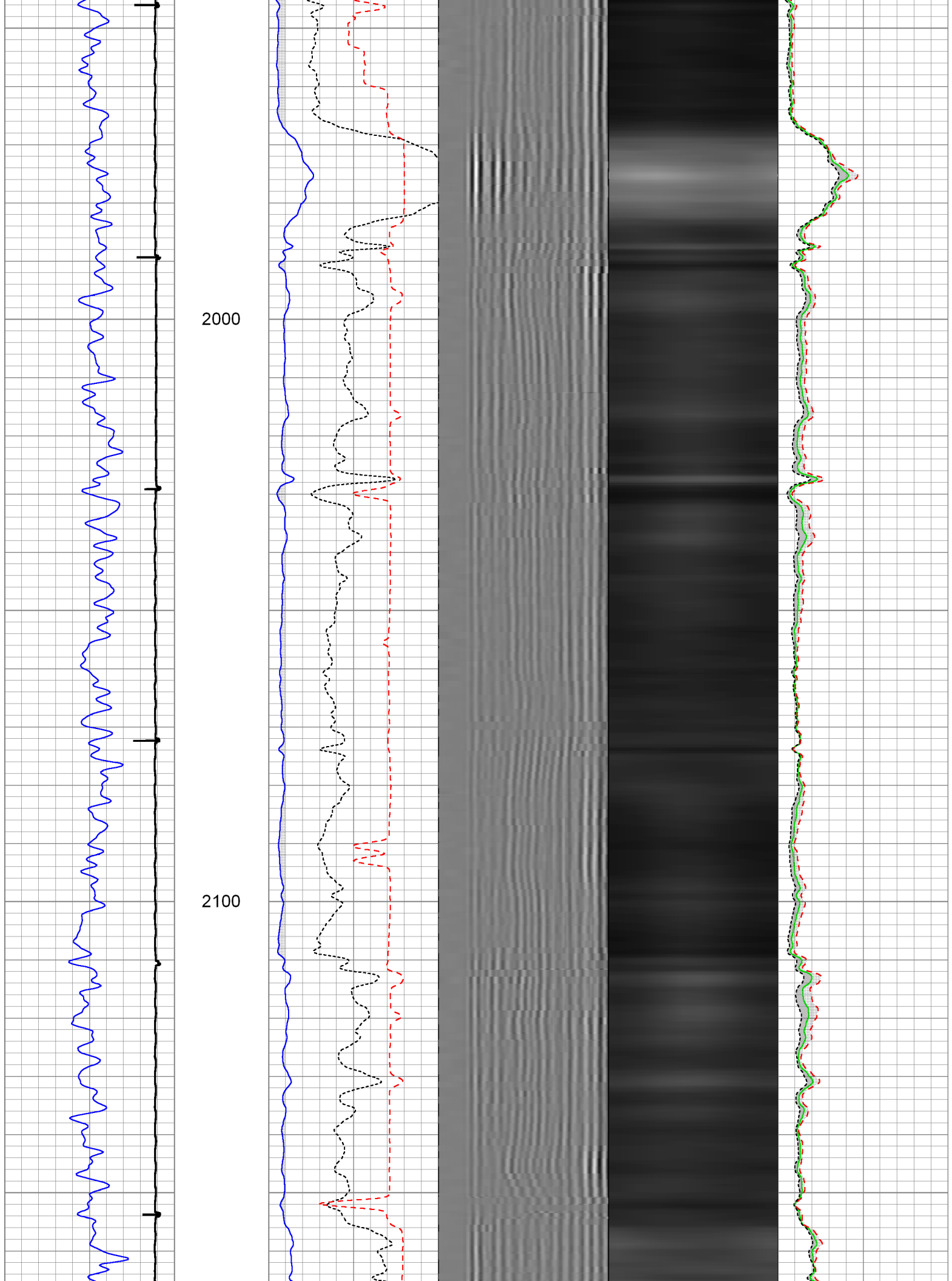
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1500



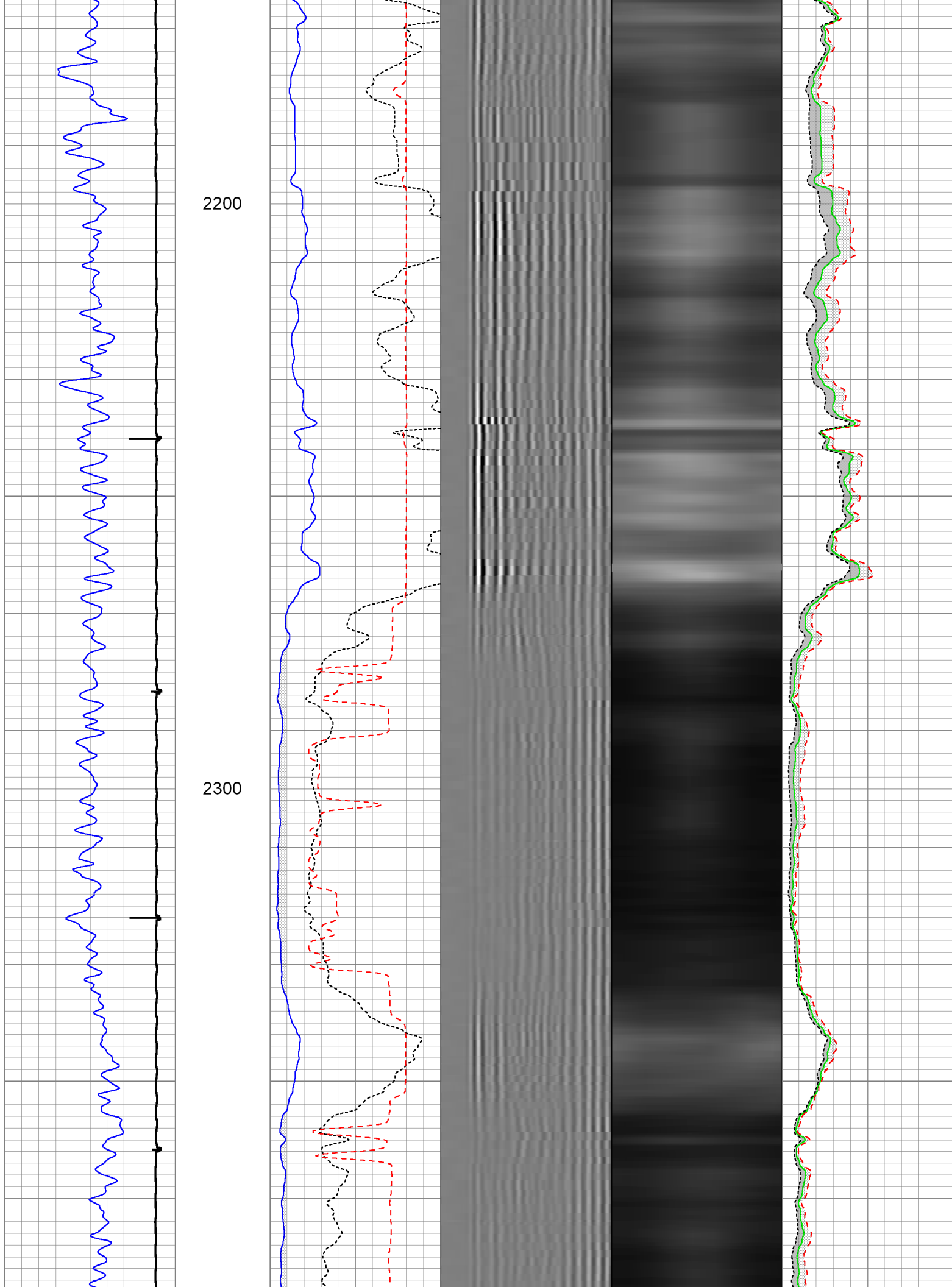






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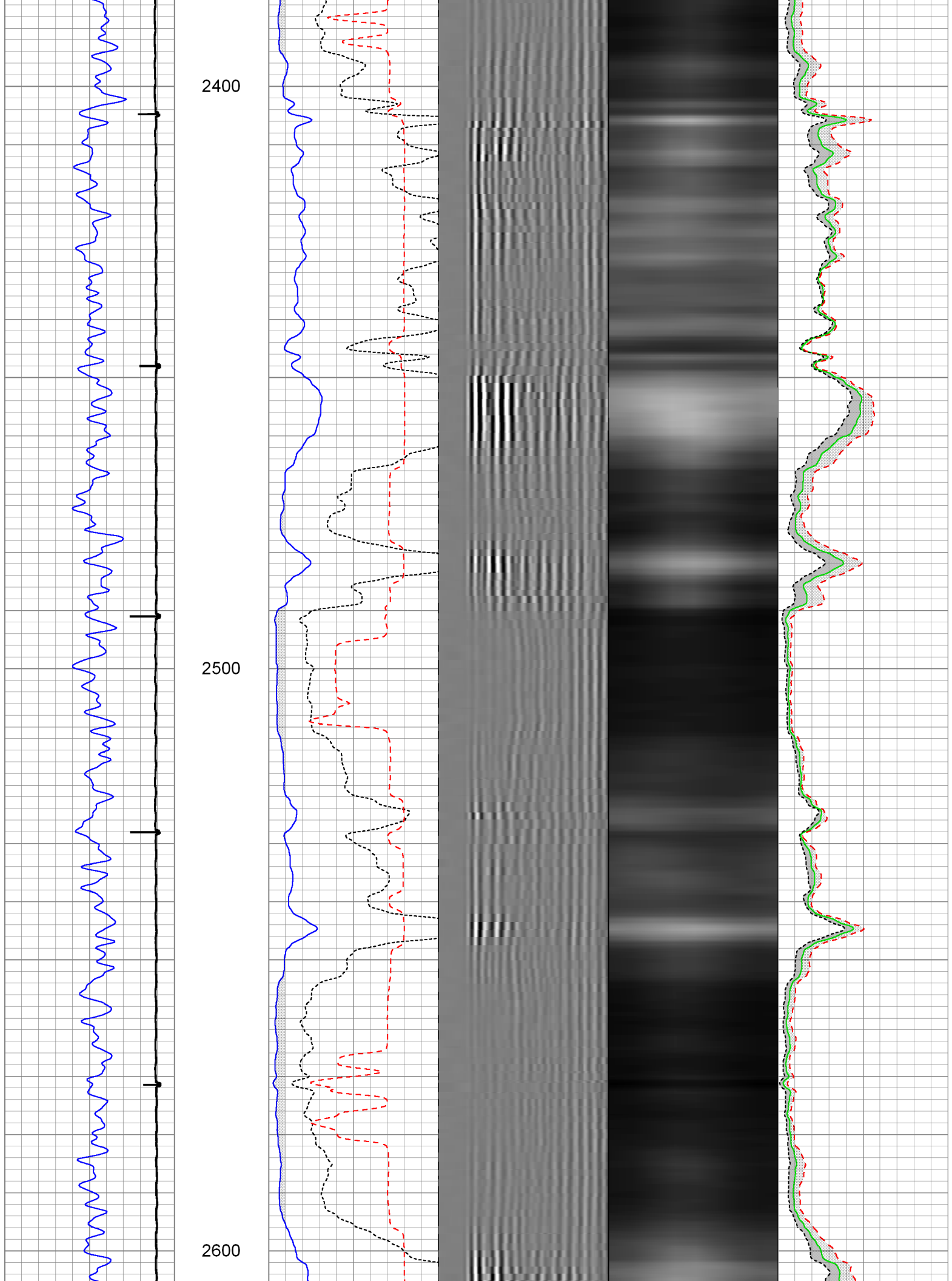




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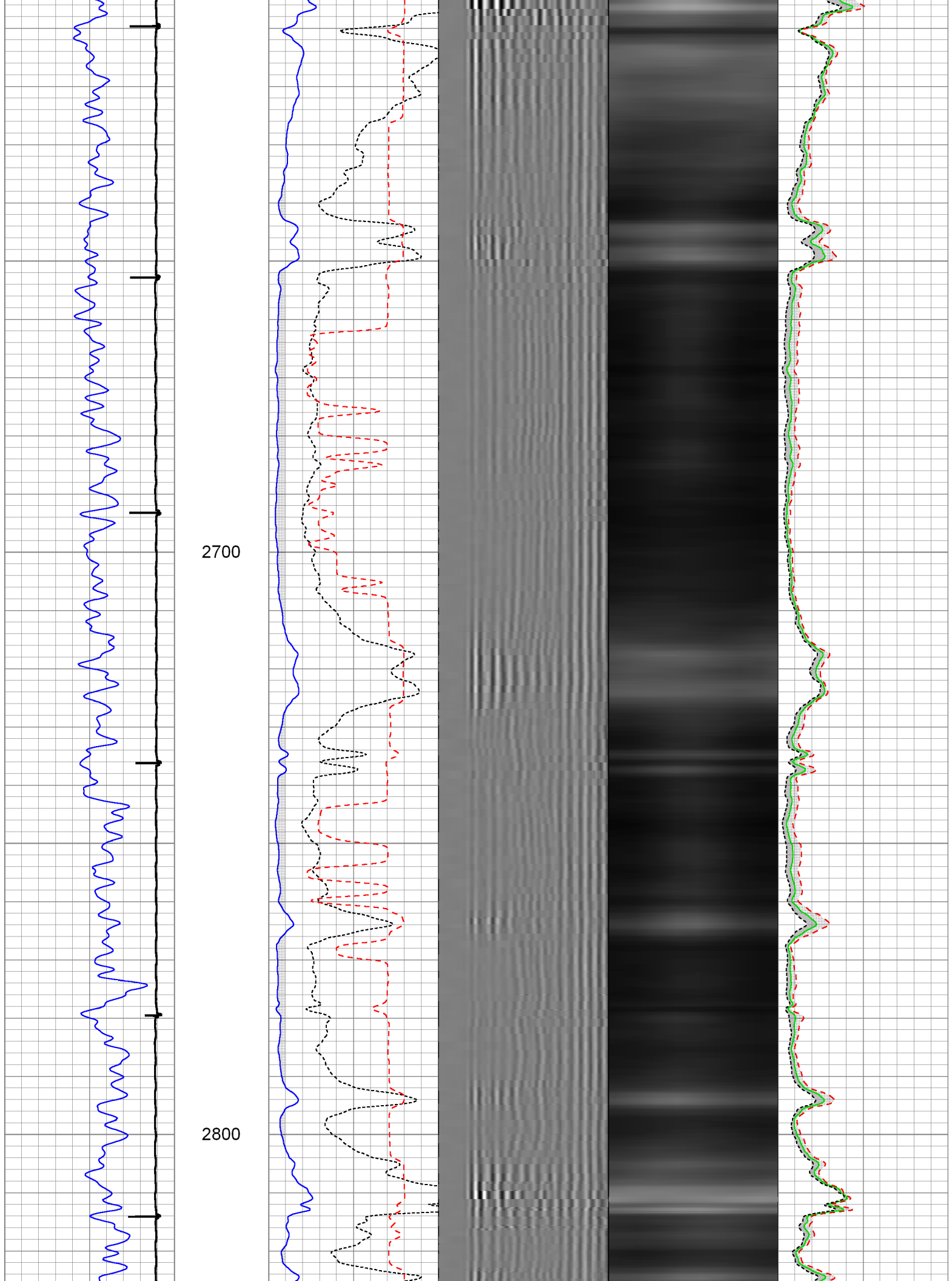
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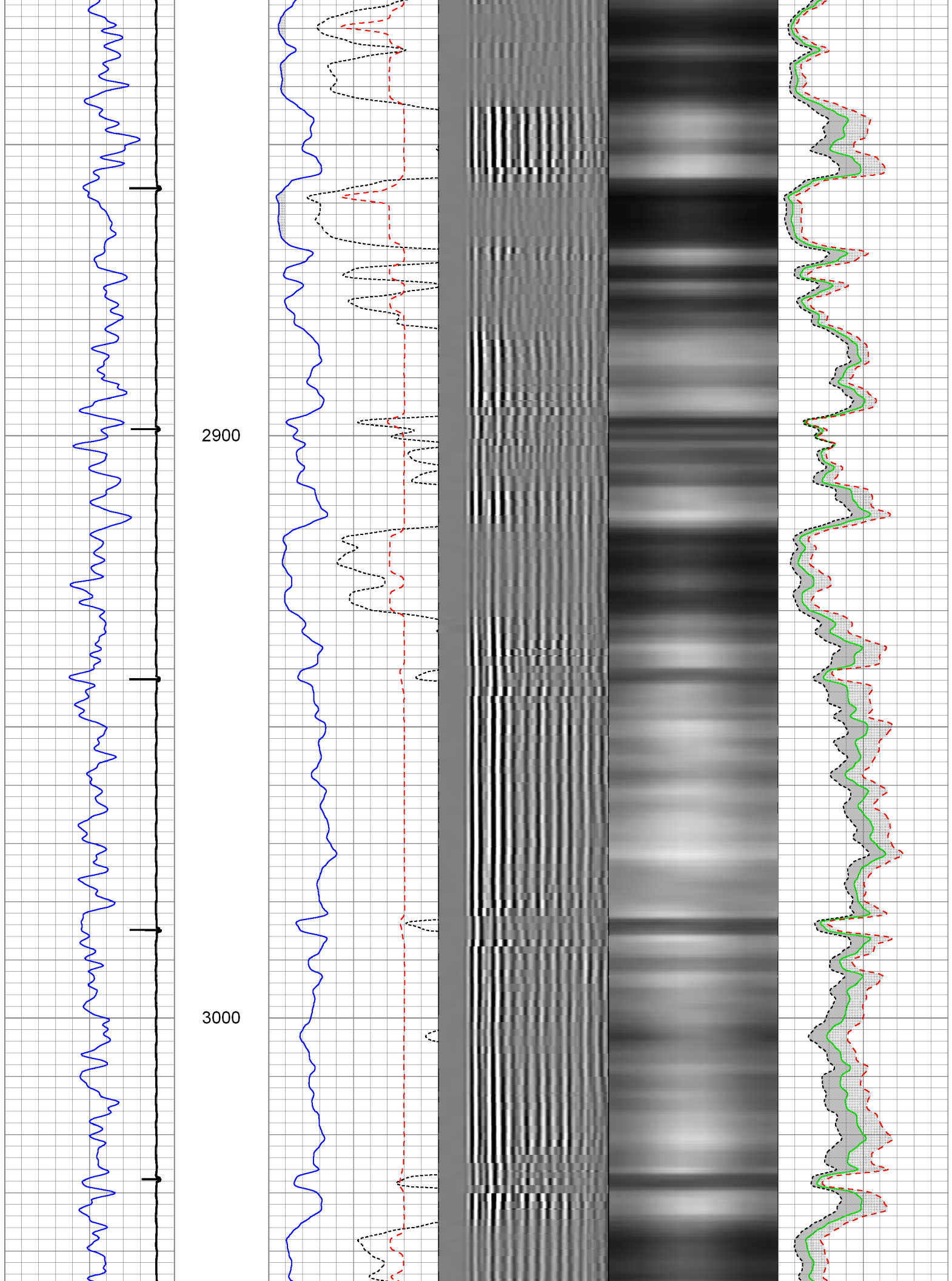
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2700

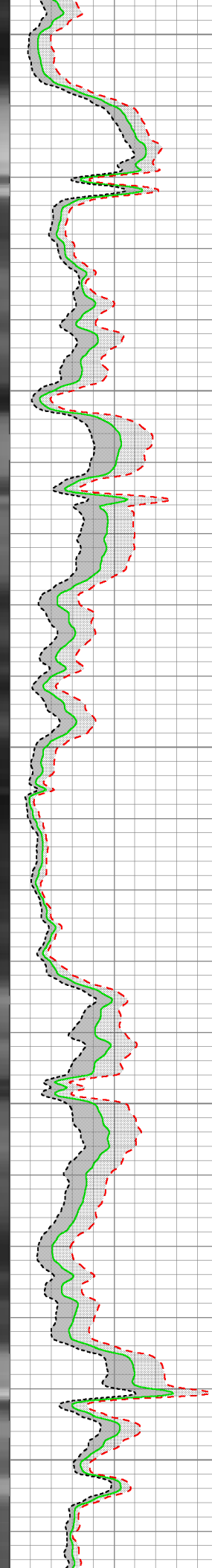
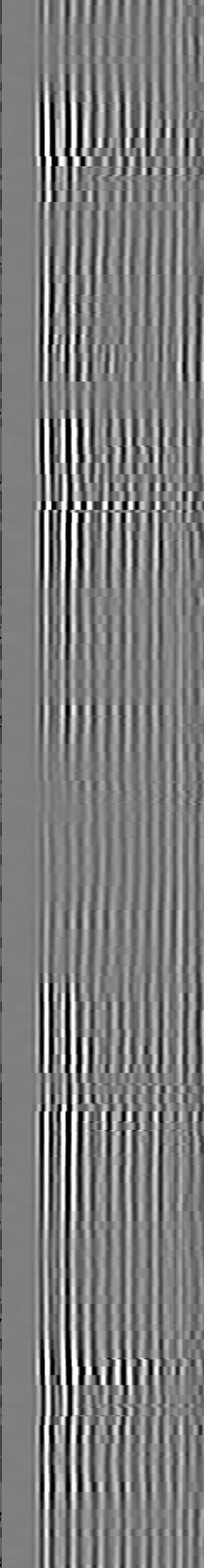
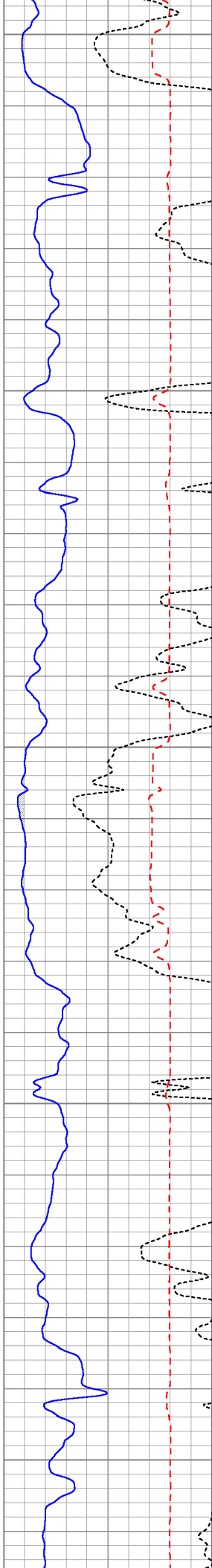
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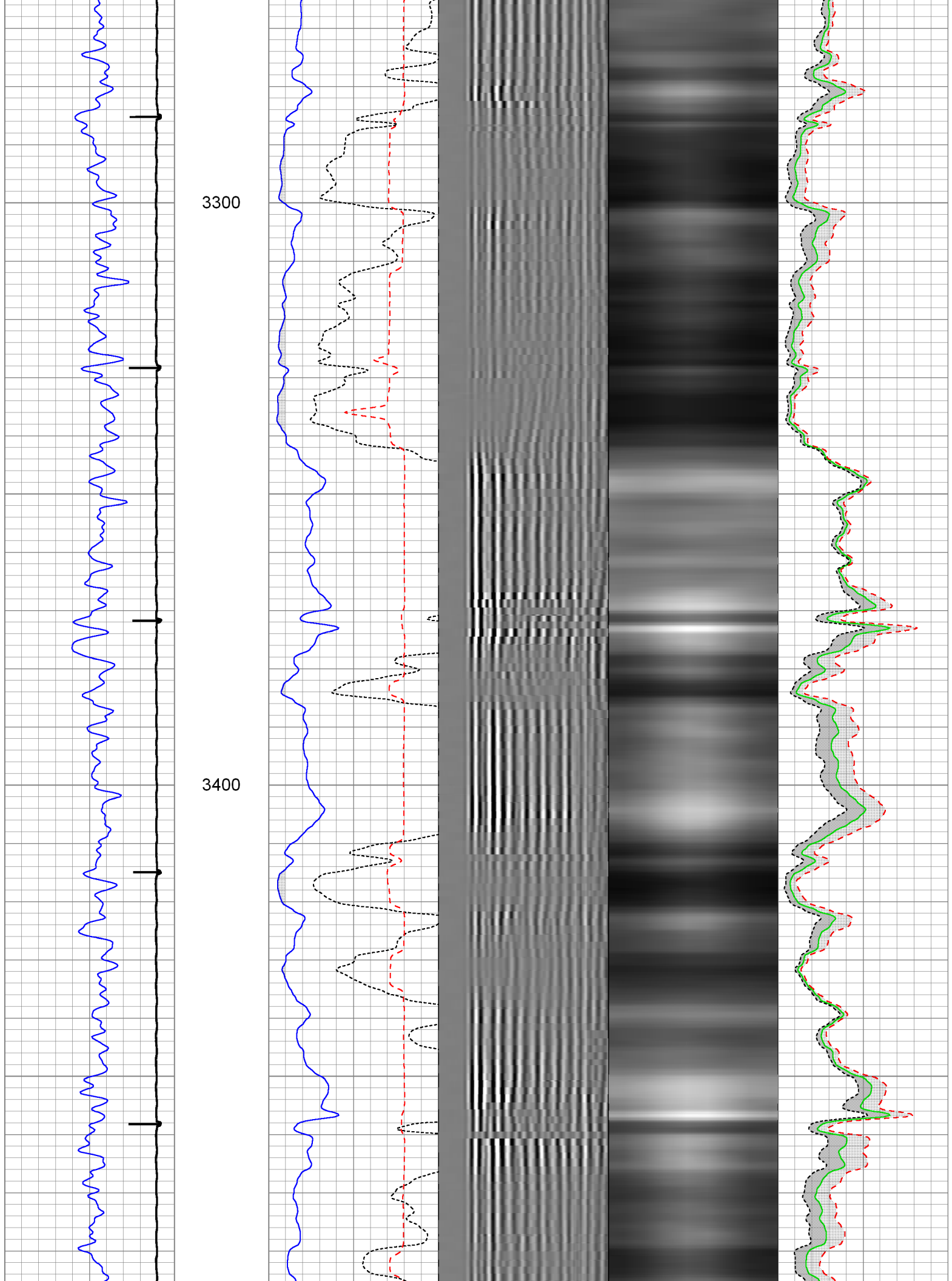
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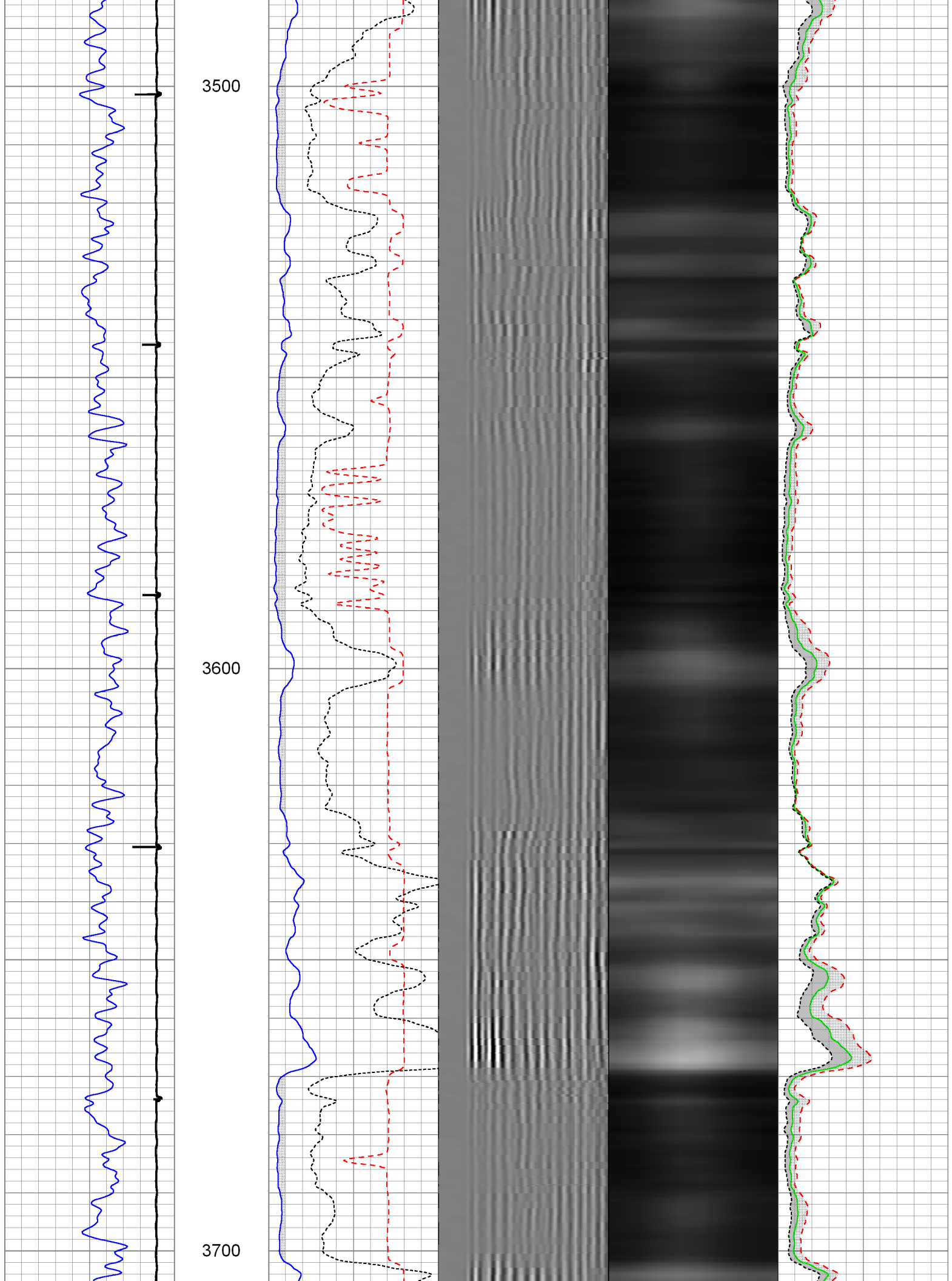
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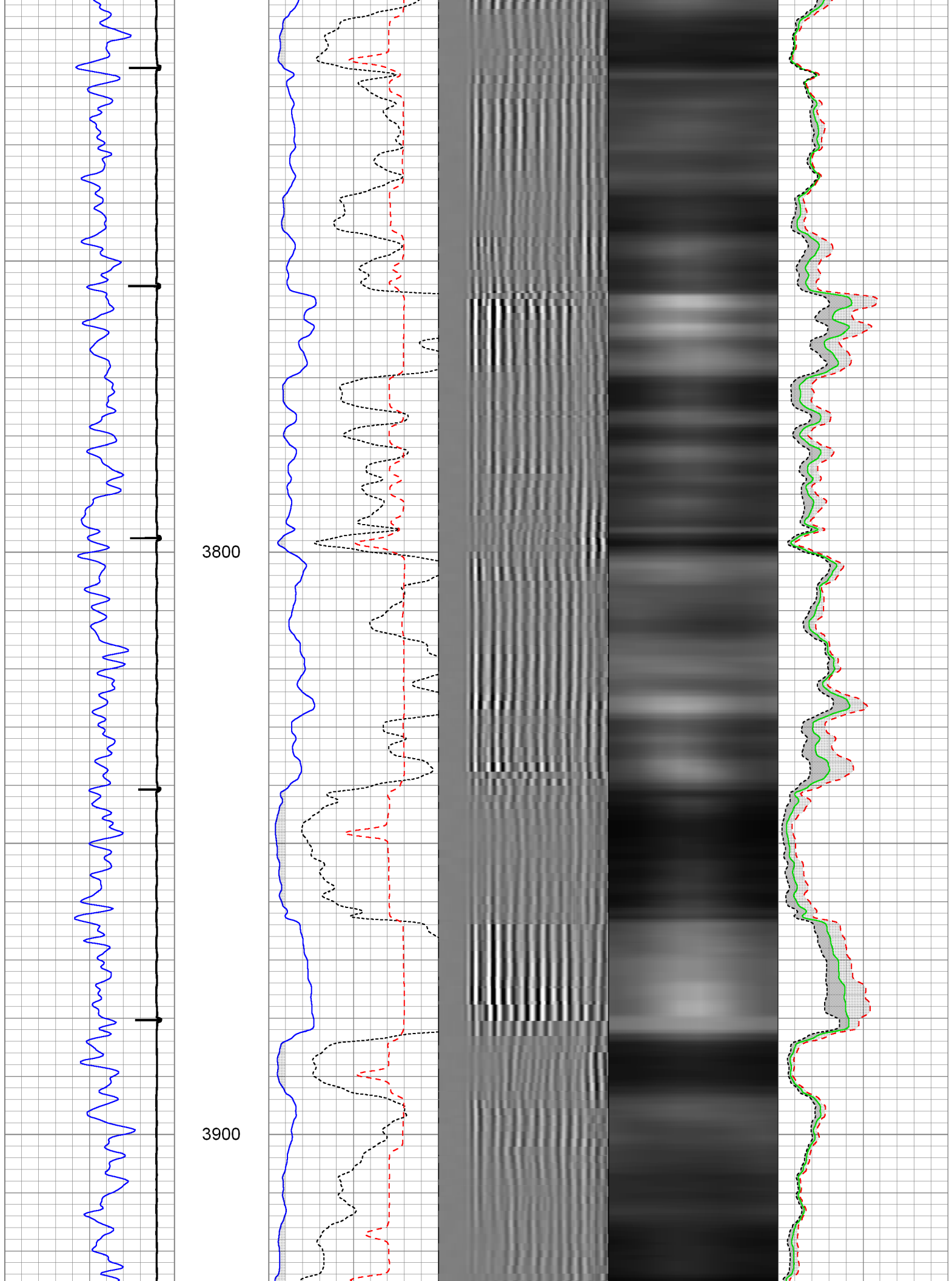
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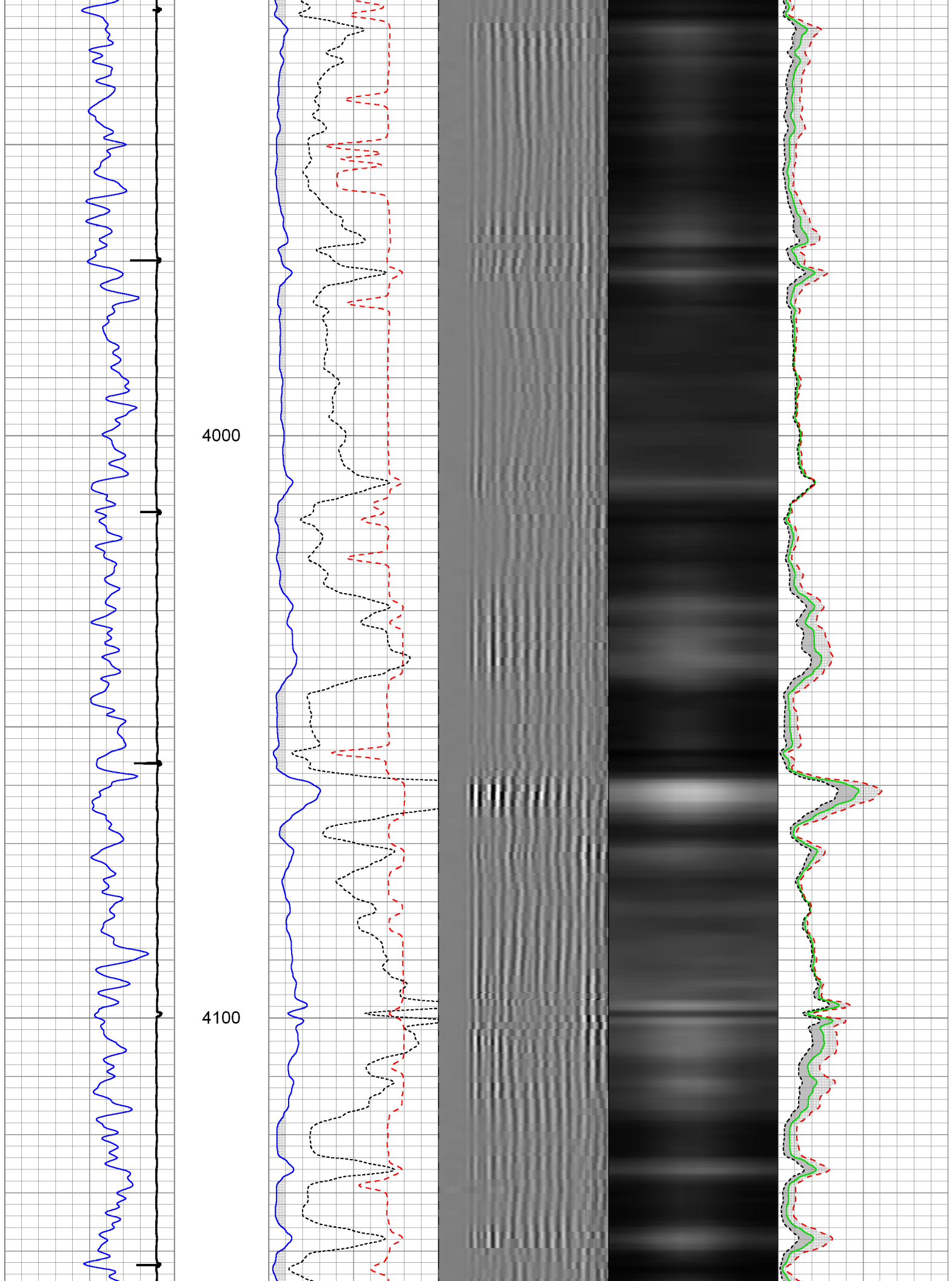
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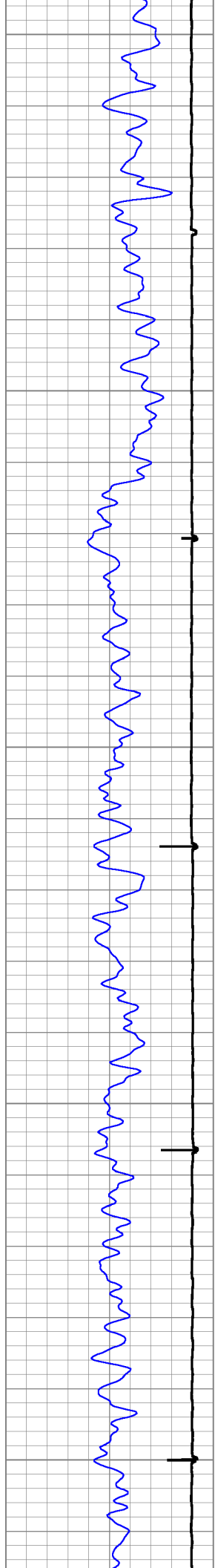






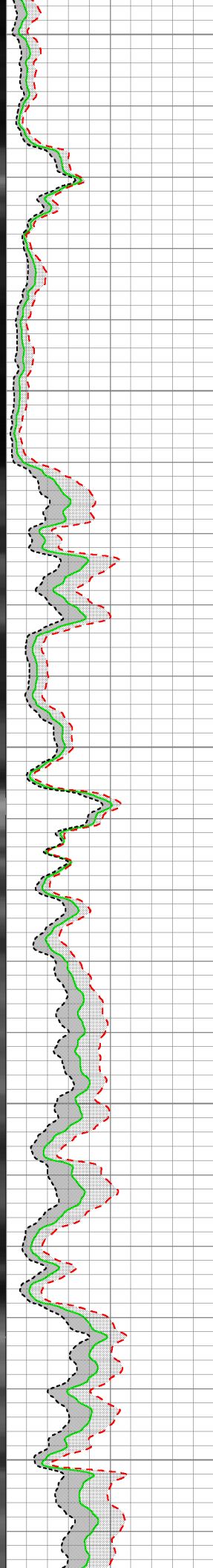
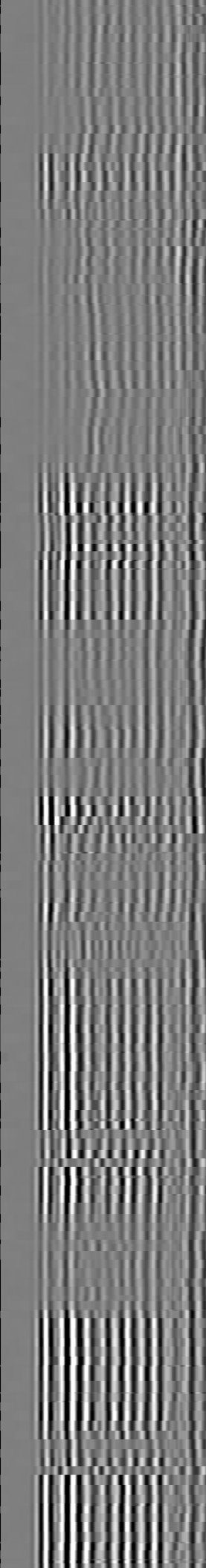
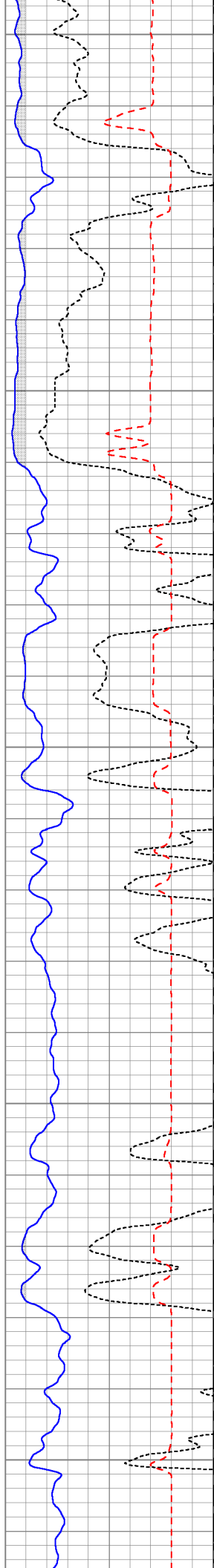






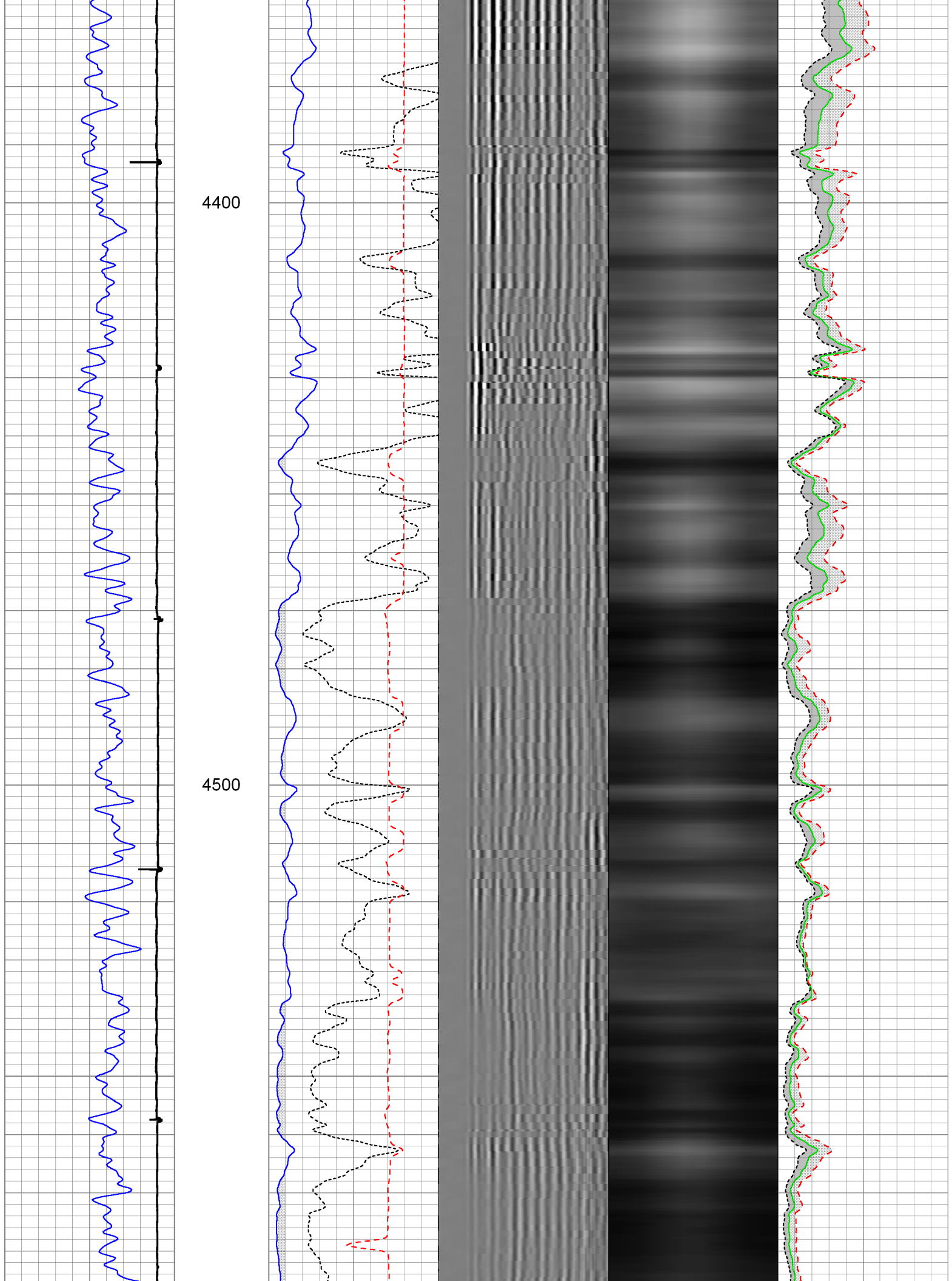
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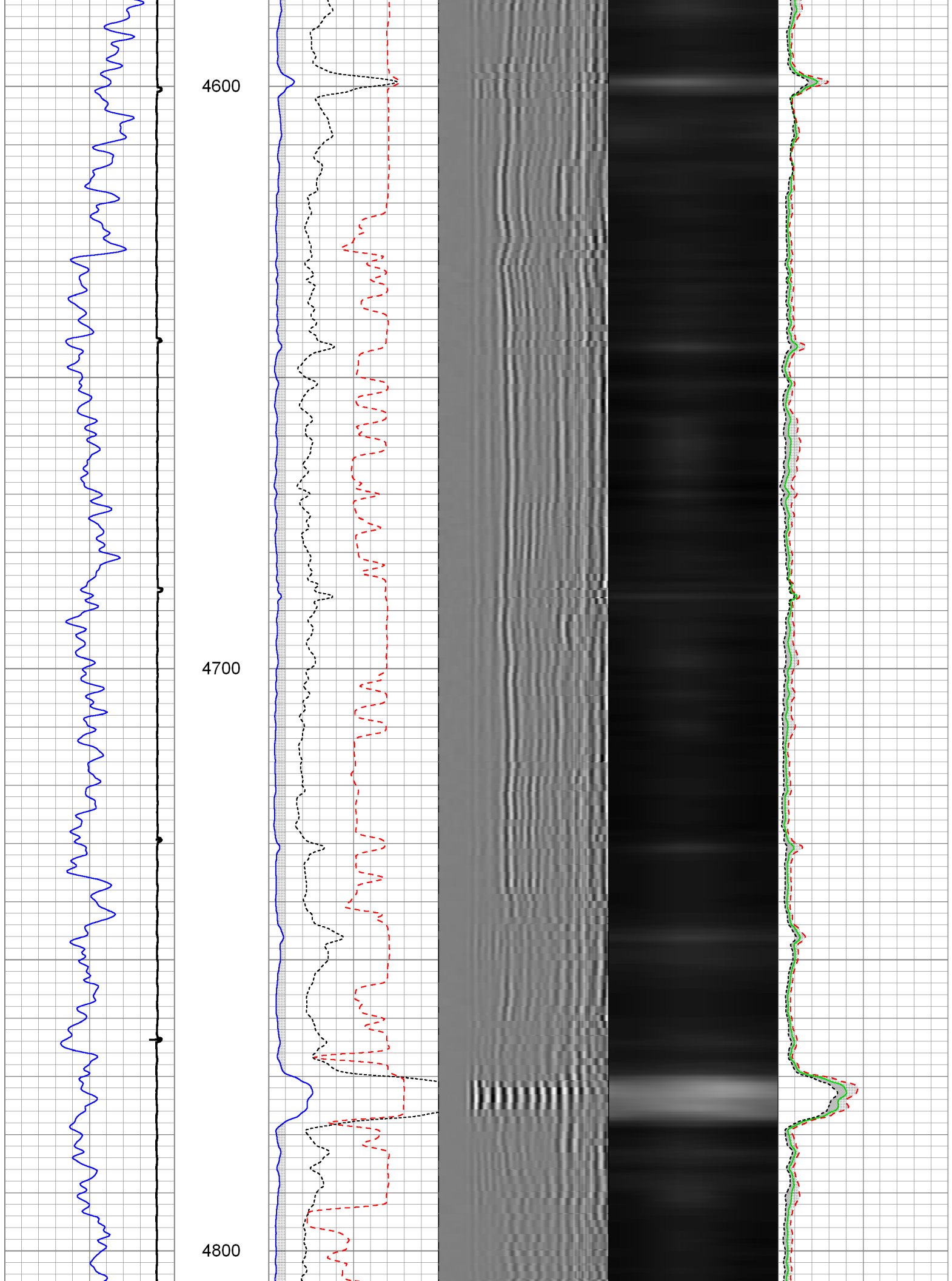
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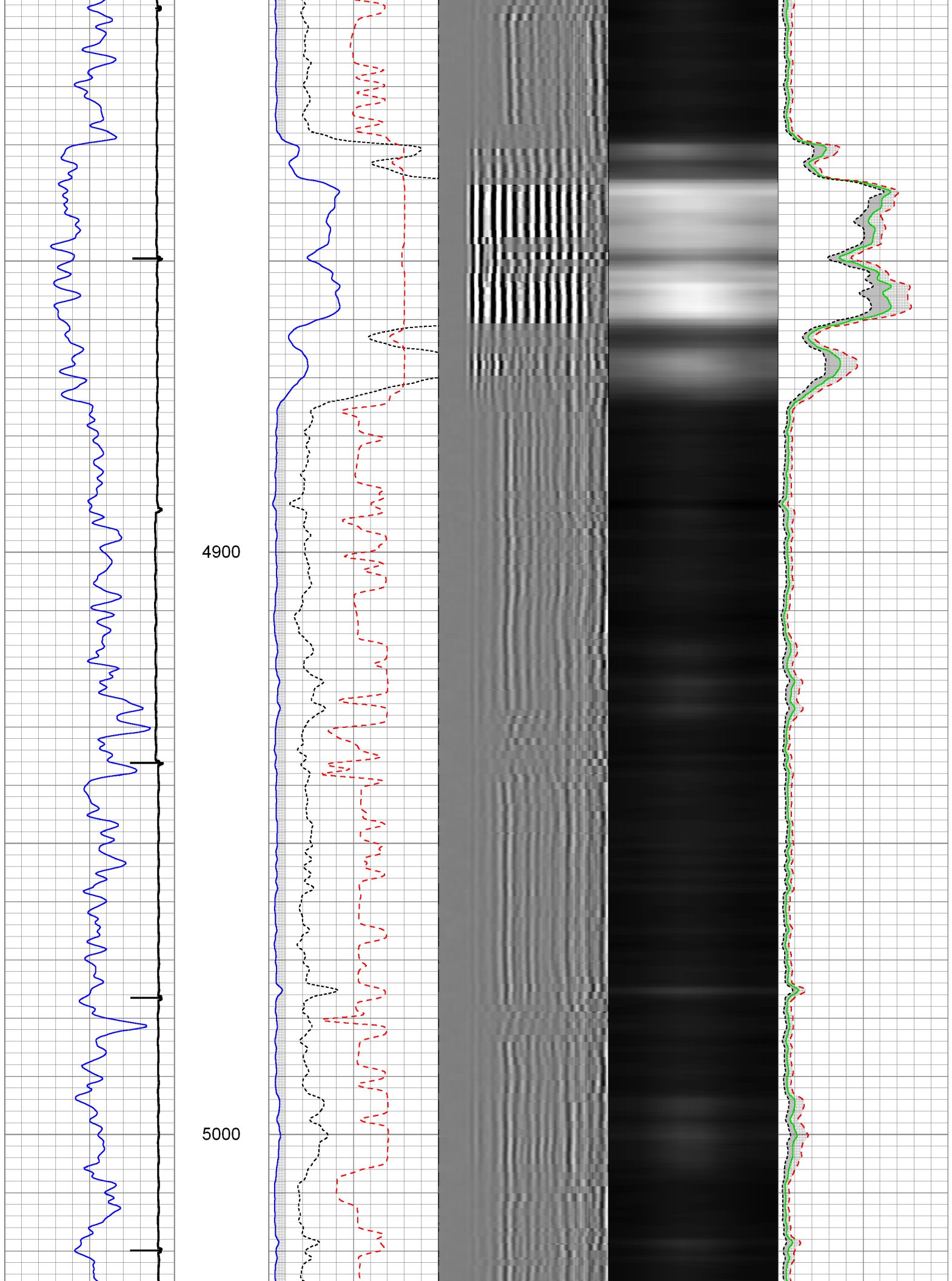


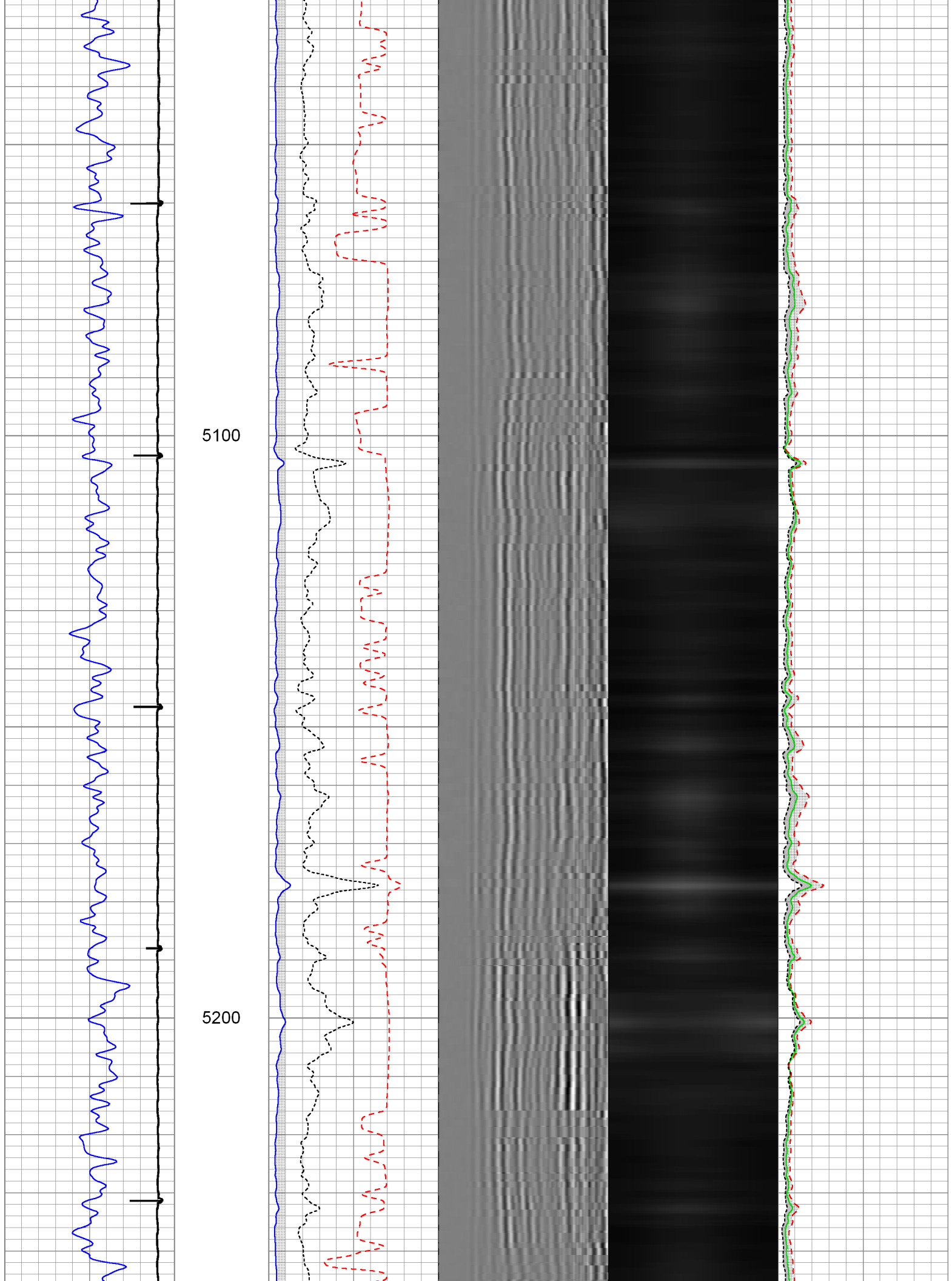
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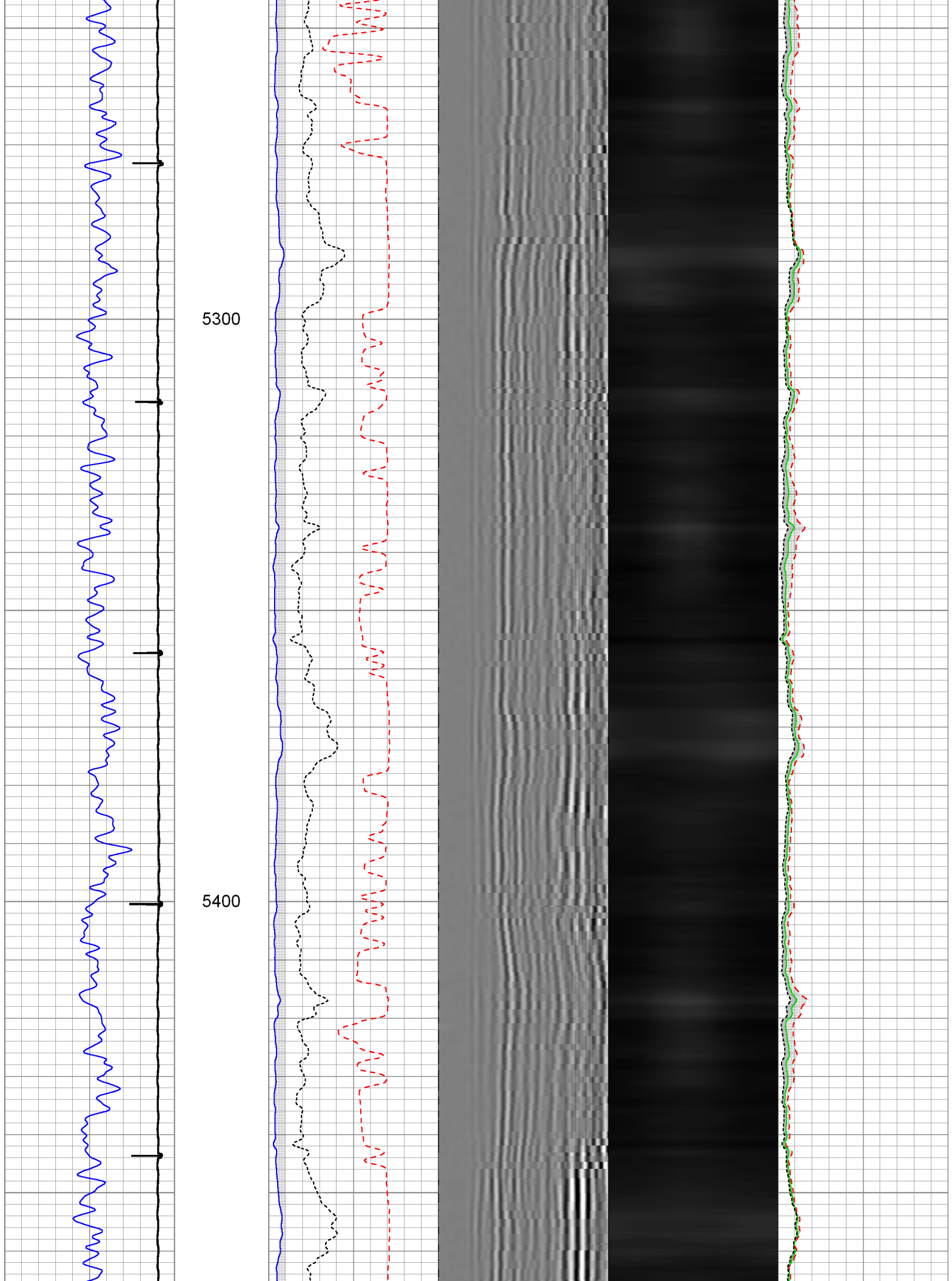
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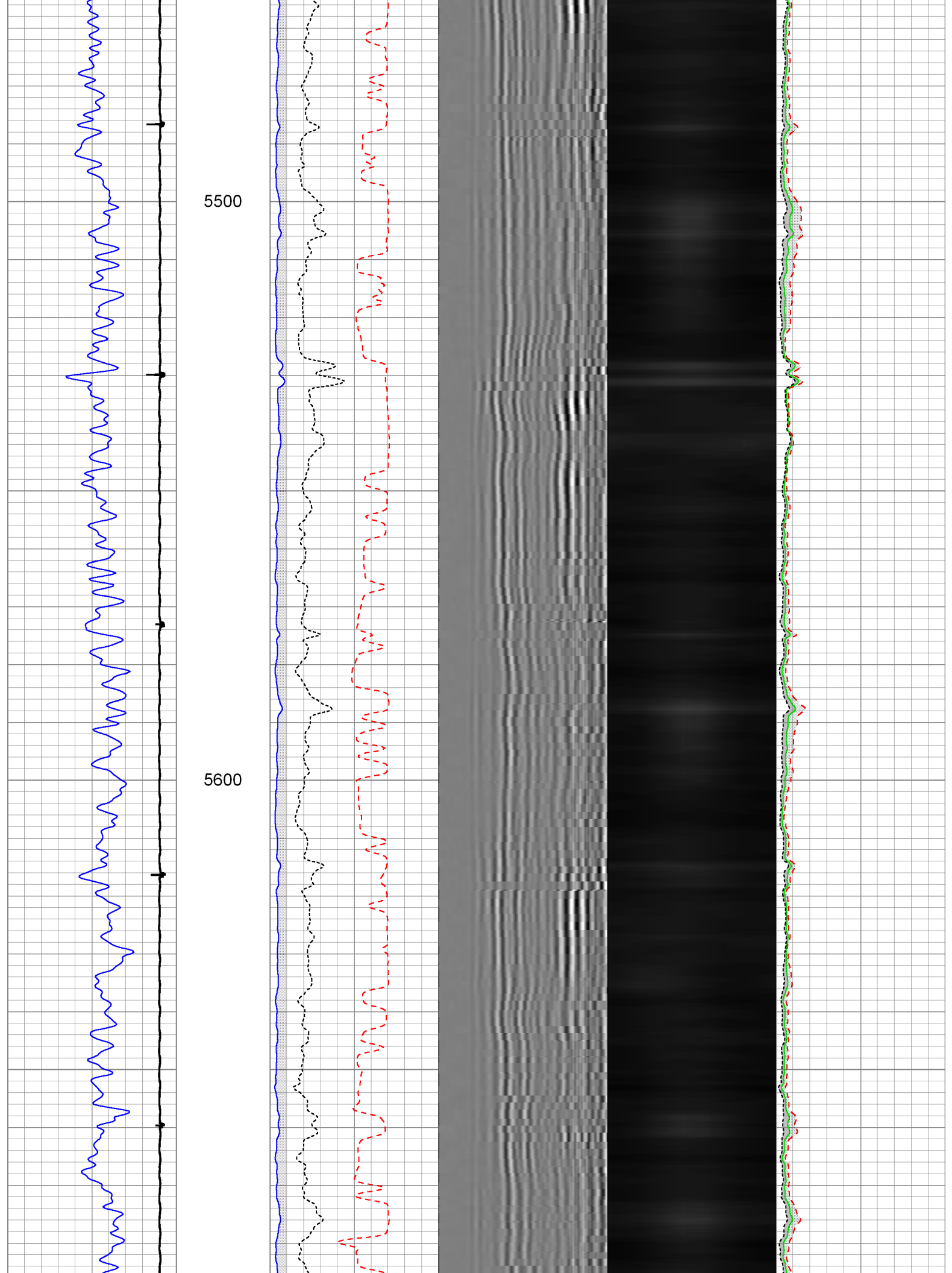








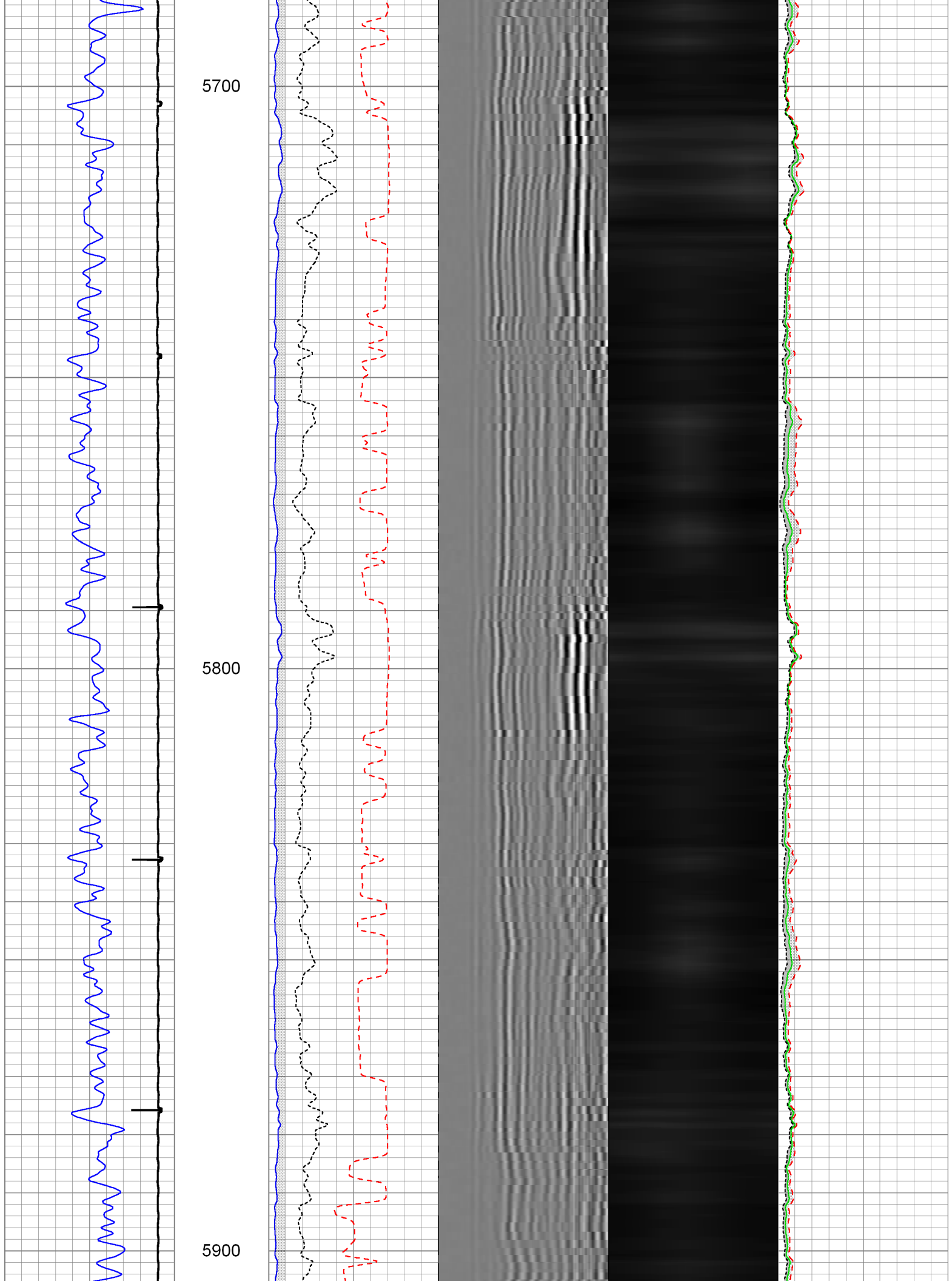




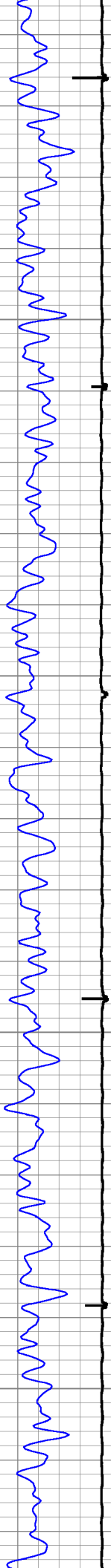
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5800

5900

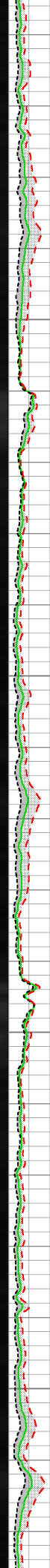
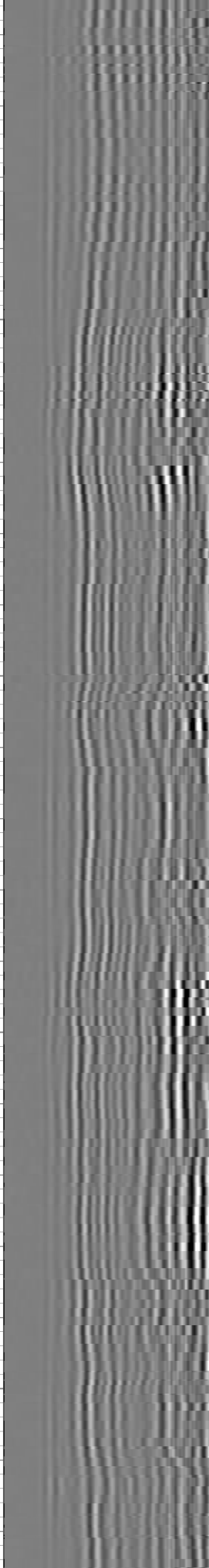
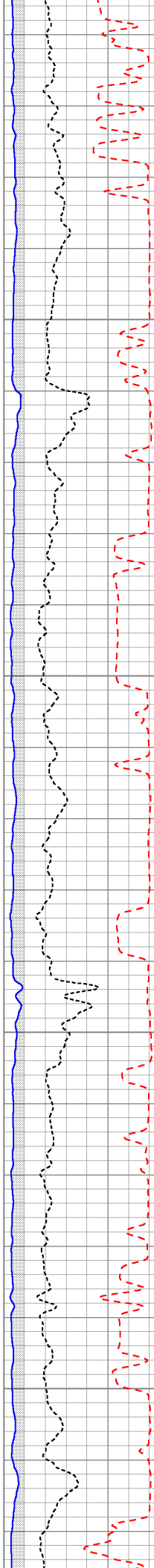


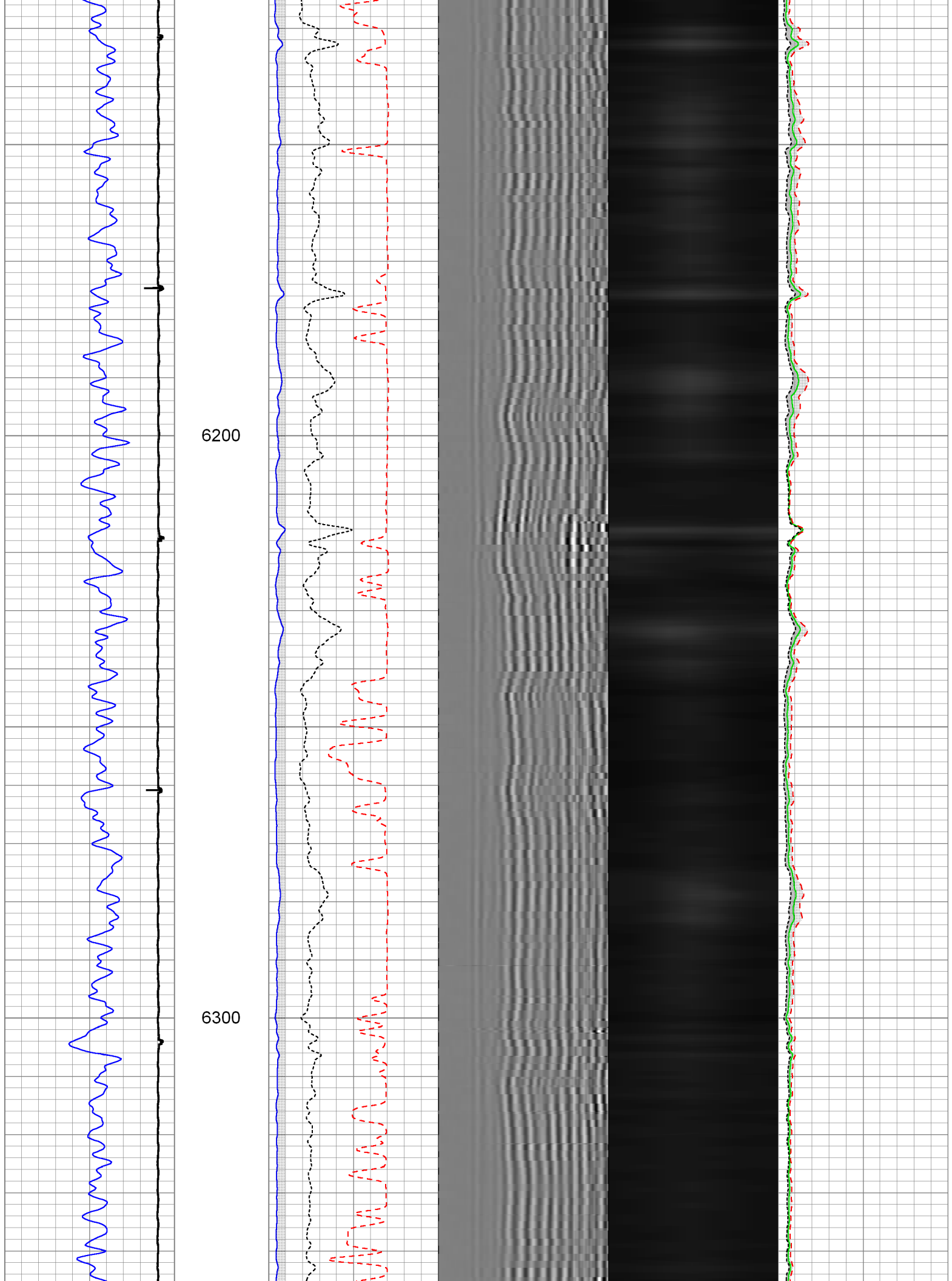


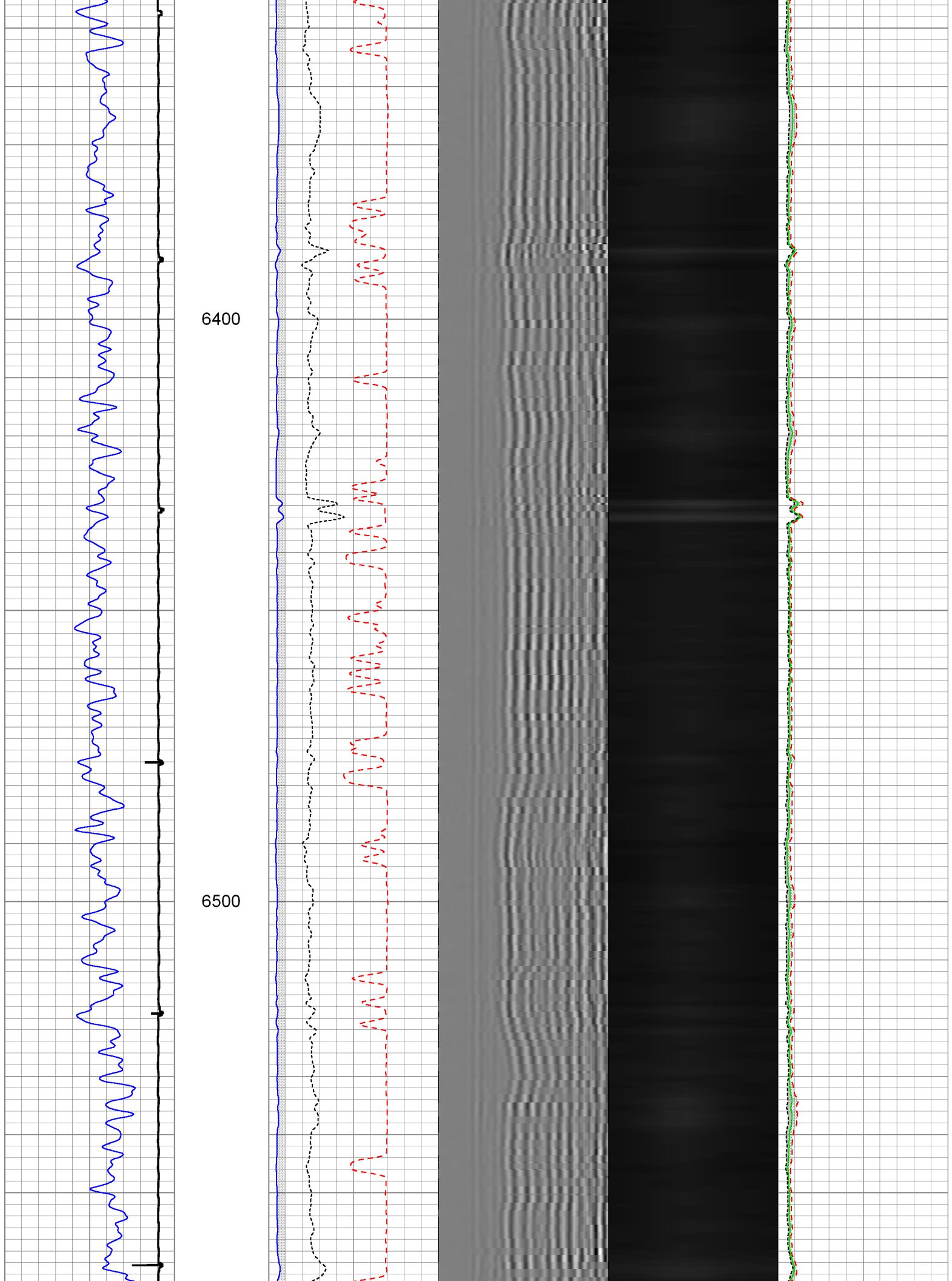


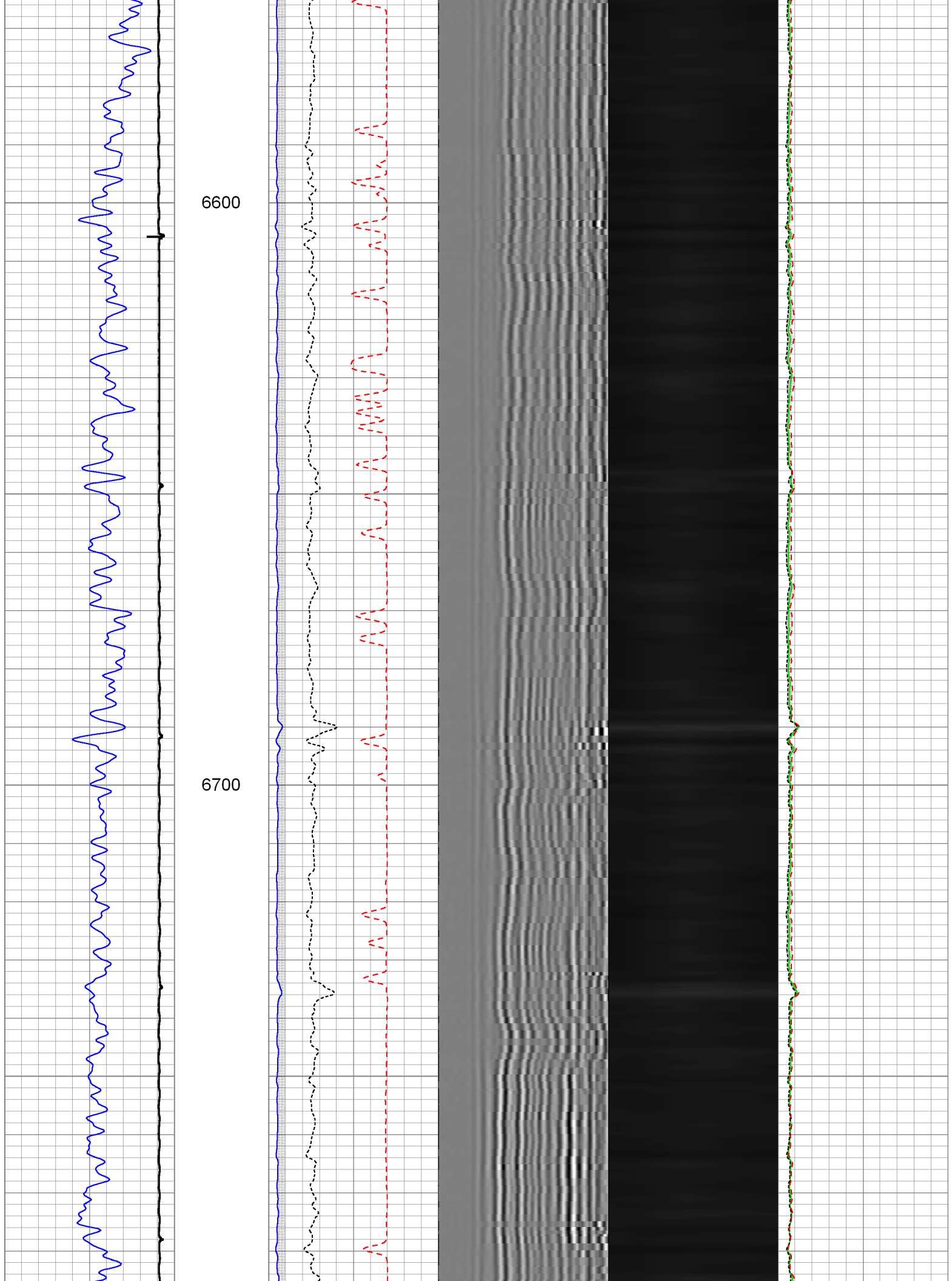
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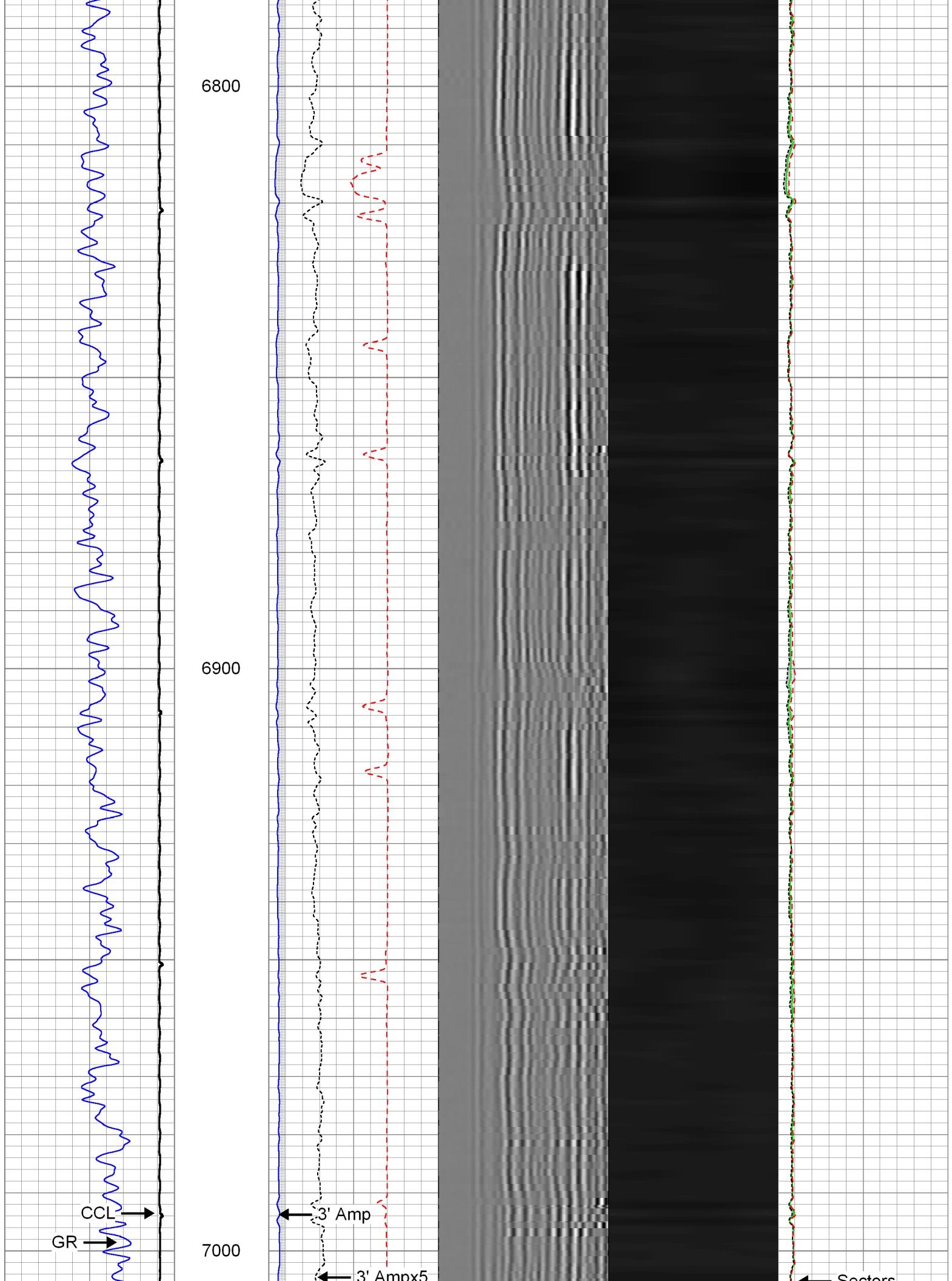
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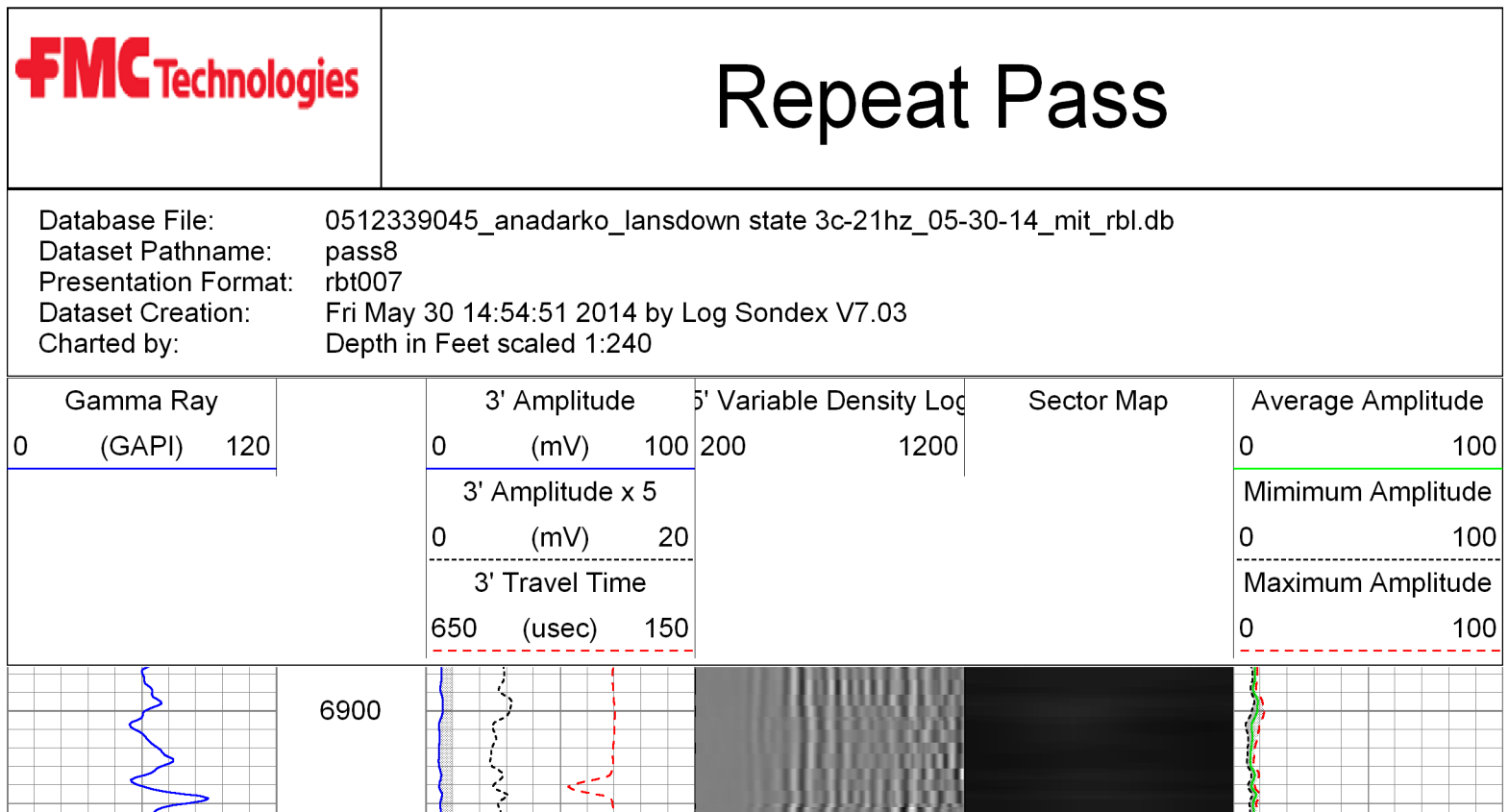
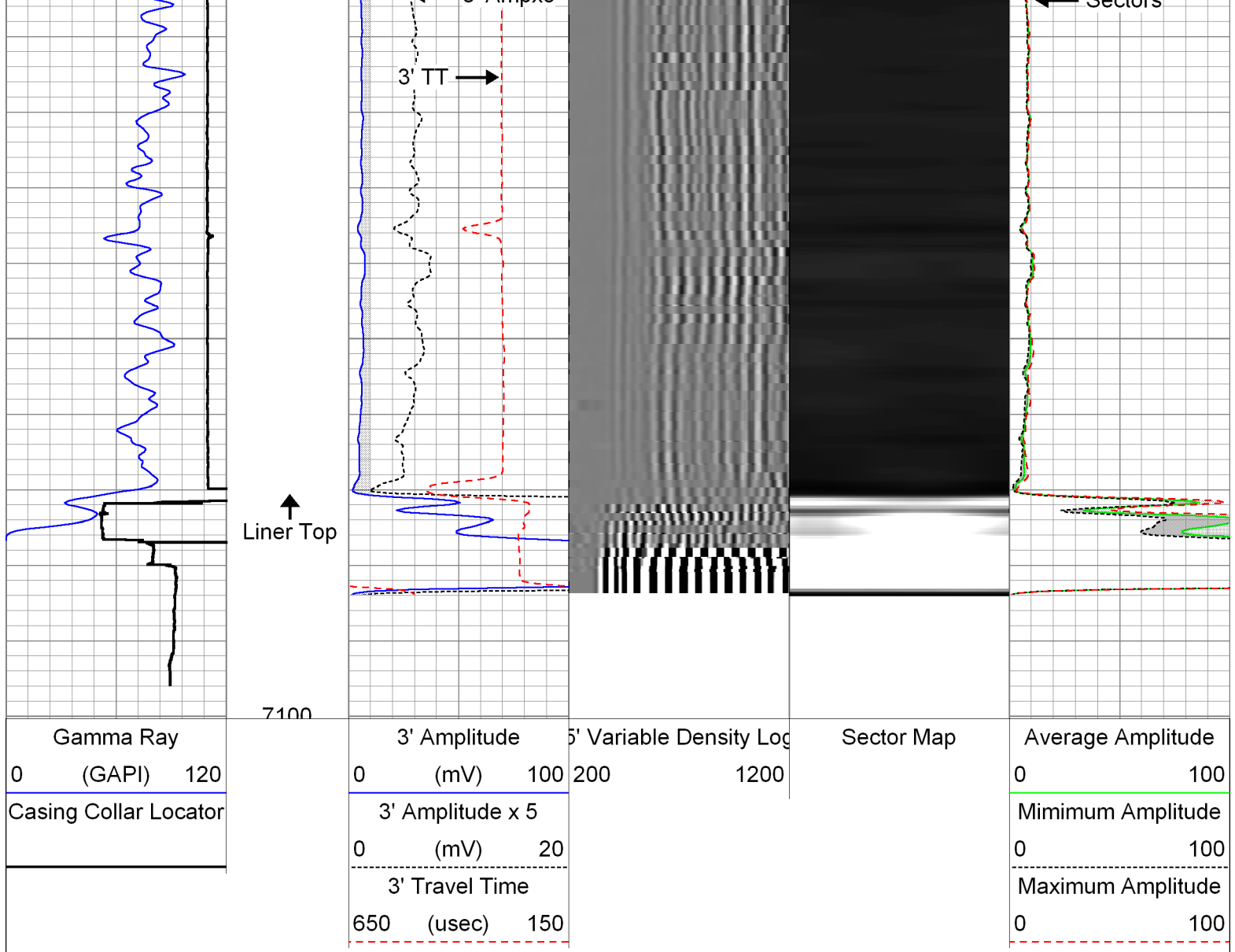










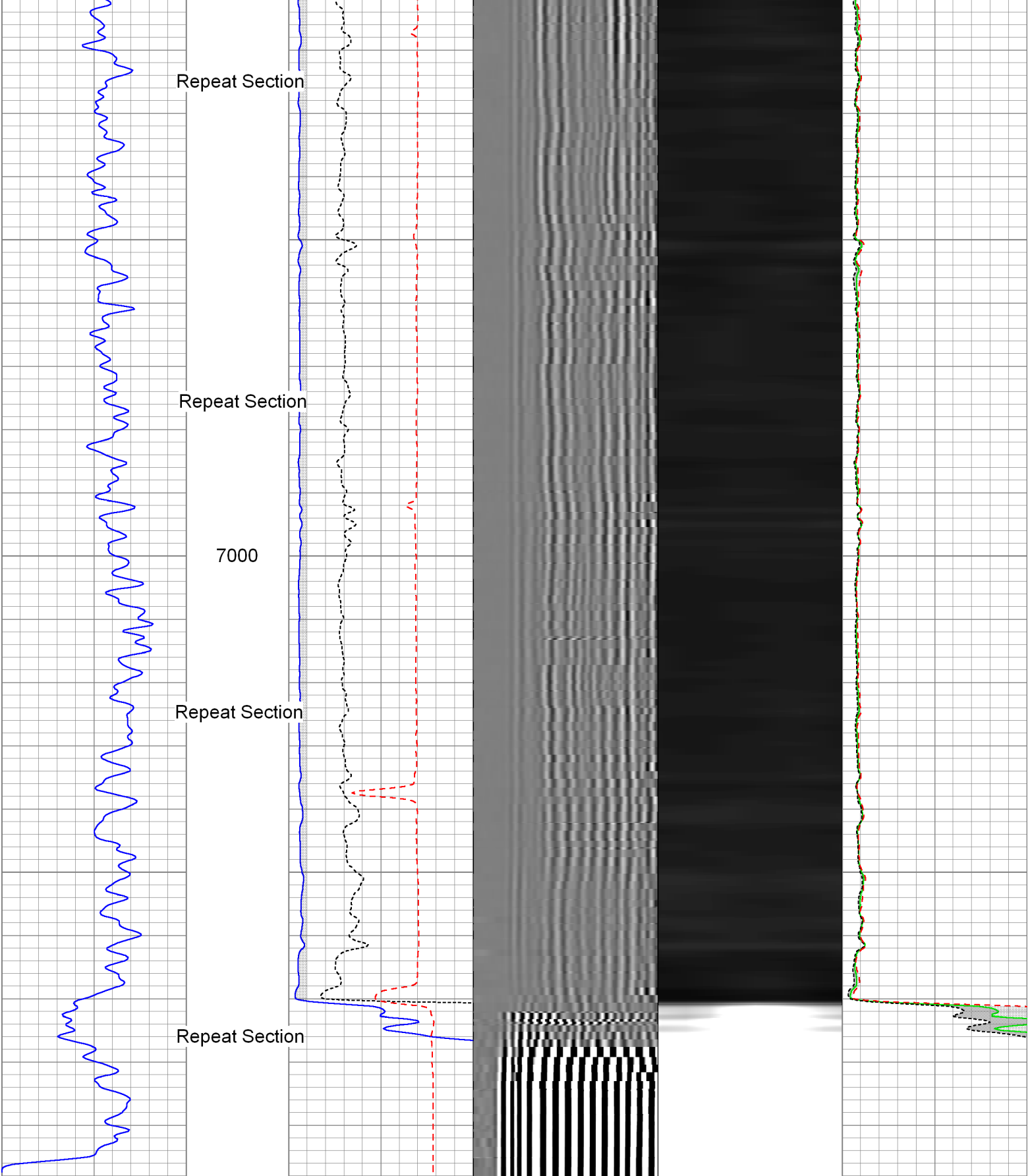


# Repeat Pass

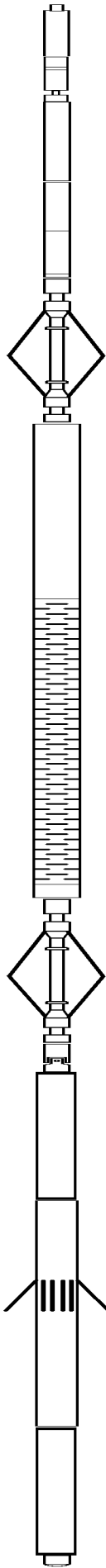
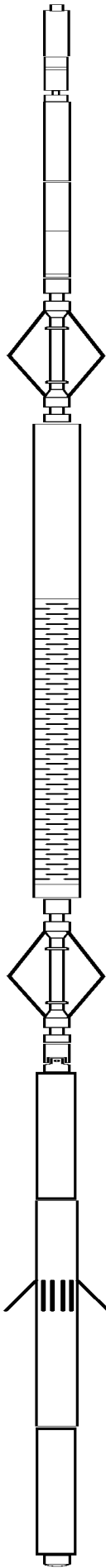
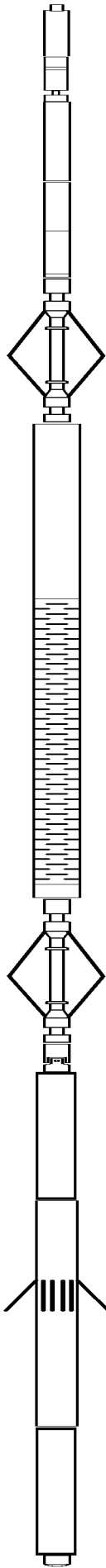
Database File: 0512339045\_anadarko\_lansdown state 3c-21hz\_05-30-14\_mit\_rbl.db  
 Dataset Pathname: pass8  
 Presentation Format: rbt007  
 Dataset Creation: Fri May 30 14:54:51 2014 by Log Sondex V7.03  
 Charted by: Depth in Feet scaled 1:240

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





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

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)	
GR	26.18		CHD-AES (000001) Cable Head	1.04	1.69	2.00	
			PSJ-008 (000001) Production Swivel Joint	0.91	1.69	6.10	
			XTU-001 (000001) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50	
			PGR-020 (000001) Production Gamma Ray	1.93	1.69	9.50	
			PRC-034 (000007) Production Roller Centralizer (4 Arm)	2.90	2.75	32.00	
WVF3FT	18.45			RBT-004 (1066) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	18.45						
WVFS2	18.45						
WVFS3	18.45						
WVFS4	18.45						
WVFS5	18.45						
WVFS6	18.45						
WVFS7	18.45						
WVFS8	18.45						
CBLTEMP	18.45						
CBLROT	18.45						
WVF5FT	17.45	PRC-034 (000009) Production Roller Centralizer (4 Arm)		2.90	2.75	32.00	
MIT	5.11			PKJ-013 (000001) Production Knuckle Joint	0.57	1.69	3.50
				PRC-RAC.20 (20081) Roller Arm Centralizer (5 Arm)	2.55	2.75	32.00
				MIT-027 (10012912) Multifinger Imaging Tool (UW 40F)	4.54	2.75	61.10
				PRC-RAC.20 (20080) Roller Arm Centralizer (5 Arm)	2.55	2.75	32.00
TSTAMP	0.00		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20	



# Calibration Report

Database File: 0512339045\_Anadarko\_Lansdown State 3C-21HZ\_05-30-14\_MIT\_RBL.db  
 Dataset Pathname: pass10  
 Dataset Creation: Fri May 30 17:30:50 2014 by Log Sondex V7.03

## Multi-finger Imaging Tool Calibration Report

Serial Number: 10012912  
 Number of Fingers: 40  
 Tool Model: 027

## Inclinometer Calibration Report

Performed: Mon, Oct, 06 14:03:04 2008  
 Calibration Angle: 45

	Inc X	Inc Y
Vertical:	1996	1984
Finger 1 up:	1780	1738
Finger 31 up:	2235	1756
Finger 21 up:	2216	2228
Finger 11 up:	1736	2196
Sensitivity ratio:	1.0062	
X-axis angle:	131.534	
Deviation const.:	331.322	

## Finger Calibration Report

Performed: Fri May 30 14:07:53 2014

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1058	355.0	1413	390.0	1803	402.0	2205
Finger 02:	1186	365.0	1551	390.0	1941	398.0	2339
Finger 03:	1075	369.0	1444	408.0	1852	421.0	2273
Finger 04:	1089	356.0	1445	395.0	1840	415.0	2255
Finger 05:	1096	364.0	1460	401.0	1861	420.0	2281
Finger 06:	1088	363.0	1451	398.0	1849	420.0	2269
Finger 07:	1083	363.0	1446	402.0	1848	423.0	2271
Finger 08:	1106	358.0	1464	393.0	1857	425.0	2282
Finger 09:	1094	359.0	1453	394.0	1847	418.0	2265
Finger 10:	1093	365.0	1458	385.0	1843	425.0	2268
Finger 11:	1108	355.0	1463	390.0	1853	415.0	2268
Finger 12:	1103	358.0	1461	385.0	1846	419.0	2265
Finger 13:	1111	353.0	1464	385.0	1849	410.0	2259
Finger 14:	1089	356.0	1445	393.0	1838	423.0	2261
Finger 15:	1053	362.0	1415	405.0	1820	435.0	2255
Finger 16:	1069	359.0	1428	399.0	1827	434.0	2261
Finger 17:	1040	355.0	1395	399.0	1794	439.0	2233
Finger 18:	1125	350.0	1475	382.0	1857	415.0	2272
Finger 19:	1085	349.0	1434	387.0	1821	422.0	2243
Finger 20:	1052	358.0	1410	397.0	1807	432.0	2239
Finger 21:	1077	362.0	1439	396.0	1835	414.0	2249
Finger 22:	1041	359.0	1400	398.0	1798	430.0	2228
Finger 23:	1016	360.0	1376	405.0	1781	438.0	2219
Finger 24:	1072	356.0	1428	385.0	1813	402.0	2215
Finger 25:	1030	361.0	1391	403.0	1794	429.0	2223
Finger 26:	1158	352.0	1510	374.0	1884	390.0	2274
Finger 27:	1097	362.0	1459	395.0	1854	413.0	2267
Finger 28:	1125	357.0	1482	382.0	1864	399.0	2263
Finger 29:	1076	368.0	1444	401.0	1845	421.0	2266
Finger 30:	1092	364.0	1456	395.0	1851	408.0	2259
Finger 31:	1118	363.0	1481	389.0	1870	401.0	2271
Finger 32:	1102	373.0	1475	404.0	1879	413.0	2292
Finger 33:	1159	363.0	1522	378.0	1900	381.0	2281



	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.002	0.760	0.800	62.165	80.555	0.938
5FT	-0.007	0.735	0.800	62.165	82.646	1.405
S1	-0.001	0.736	0.000	100.000	135.652	0.151
S2	-0.002	0.779	0.000	100.000	128.030	0.294
S3	-0.002	0.798	0.000	100.000	124.890	0.306
S4	-0.004	0.800	0.000	100.000	124.452	0.456
S5	-0.002	0.777	0.000	100.000	128.498	0.210
S6	-0.003	0.755	0.000	100.000	131.982	0.358
S7	-0.002	0.744	0.000	100.000	133.946	0.322
S8	-0.002	0.729	0.000	100.000	136.805	0.316

Gamma Ray Calibration Report			
Serial Number:	000001		
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	Lansdown State 3C-21HZ
	Field	Wattenberg
	County	Weld
	State	Colorado