

# Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr McGee Oil & Gas Onshore LP	Company	Kerr McGee Oil & Gas Onshore LP
Well	Deepe 35C-27HZ	Well	Deepe 35C-27HZ
Field	Wattenberg	Field	Wattenberg
County	Weld	County	Weld
State	Colorado	State	Colorado
Location:	API #: 05-123-38563 SHL: 656' FNL 870' FWL Lat/Long: 40.129204/-104.882983 SEC 22 TWP 2N RGE 67W	Other Services Gauge Ring MIT	Elevation K.B. 5032' D.F. 5031' G.L. 5007'
Permanent Datum	Ground Level	Elevation	5007'
Log Measured From	Kelly Bushing	25 FT	
Drilling Measured From	Kelly Bushing		

Date	07-01-2014
Run Number	Two
Depth Driller	17318 FT
Depth Logger	7614 FT
Bottom Logged Interval	7609 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	220°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	09:20
Equipment Number	HD-0324
Location	Fort Lupton, CO
Recorded By	Zach Fisher
Witnessed By	Mike Aspa

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	1041 FT		
Intermediate #1	7	26	HCP-110	Surface	8010 FT		
Intermediate #2							
Liner	4-1/2	11.6	HCP-110	6991 FT	17303 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.

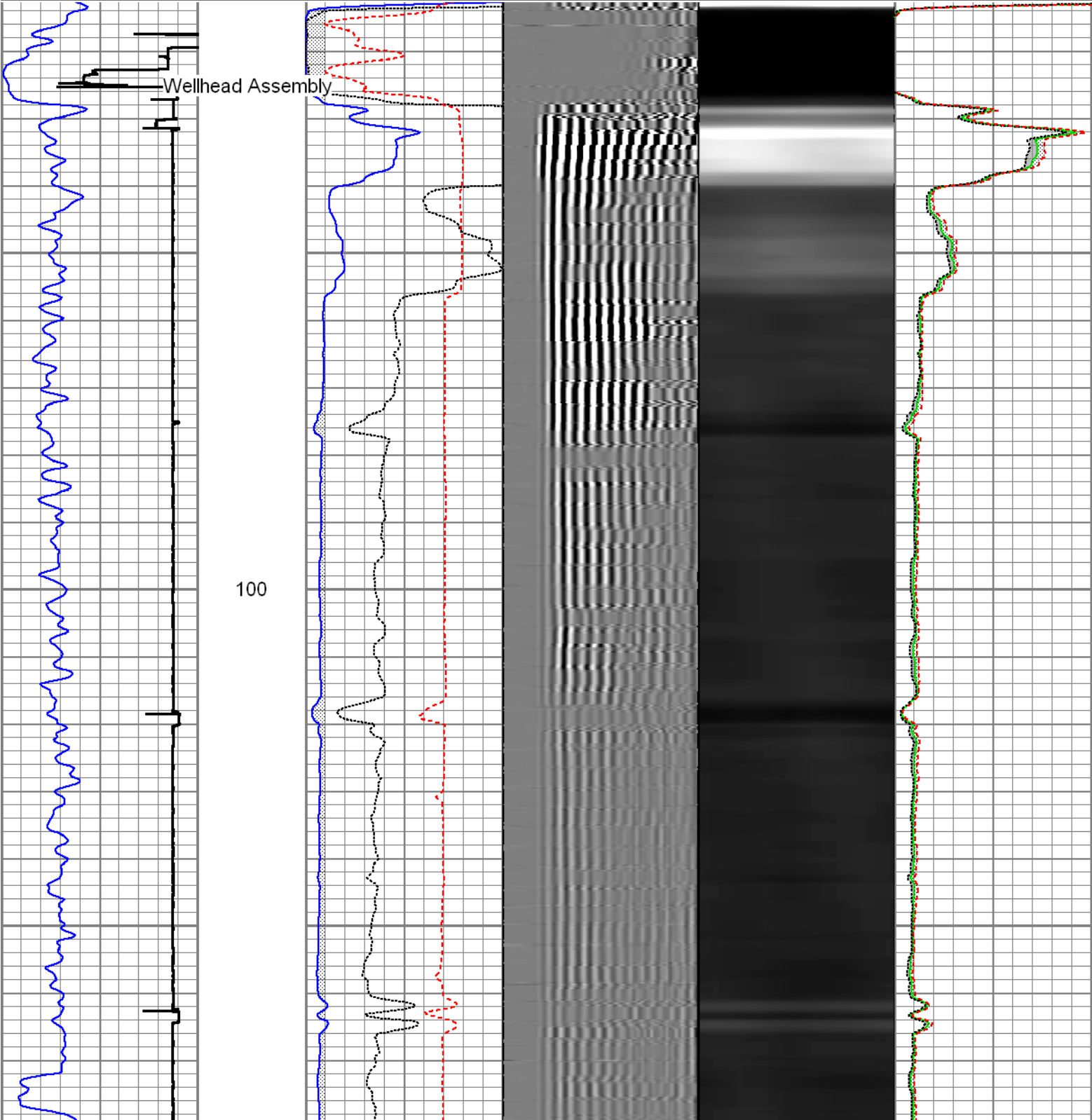
## Comments

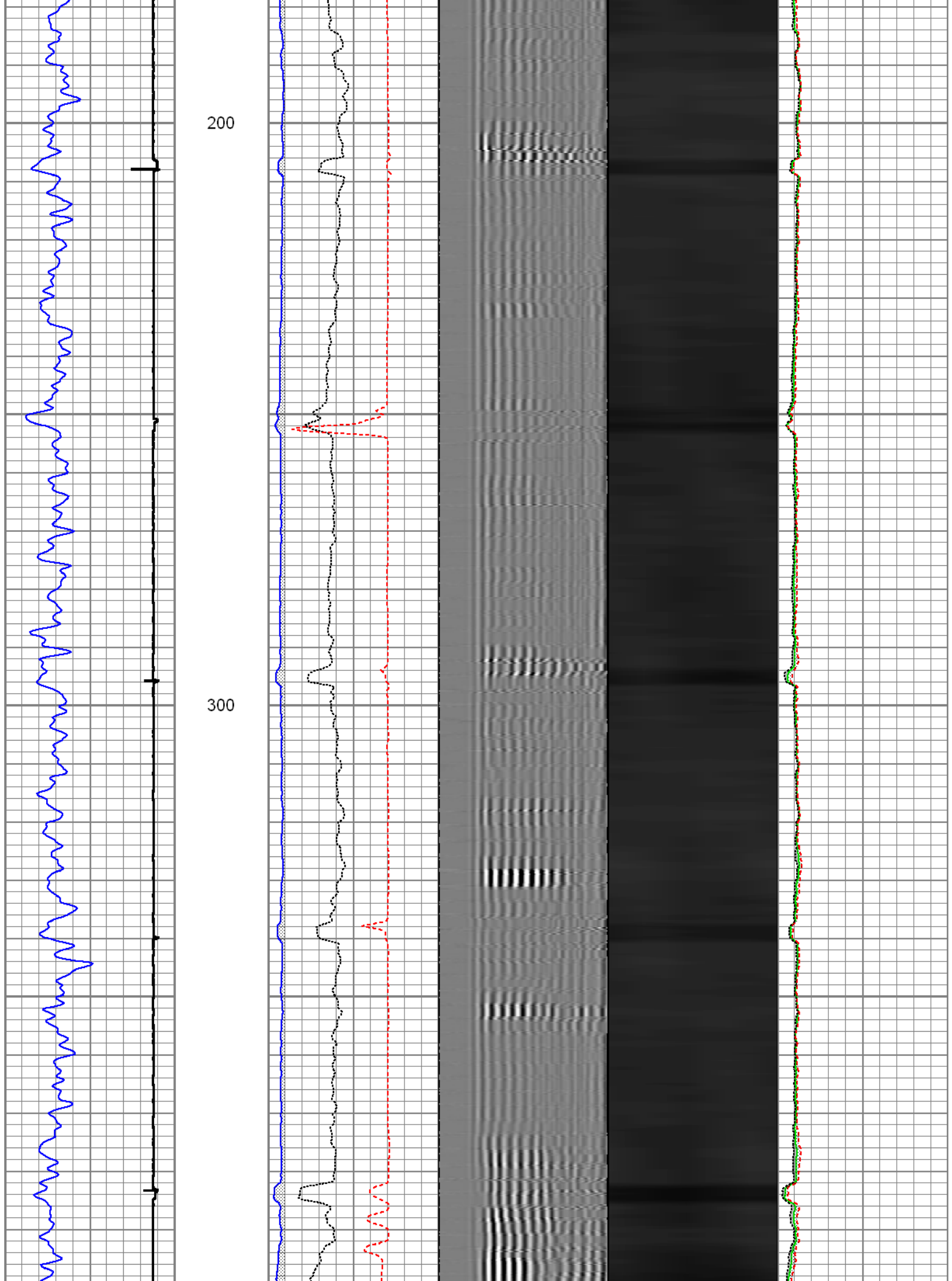
Log ran as per Customer request.  
 Depth reference to Casing Tally reported Liner Top at 6991 FT.  
 Adjusted log + 1.8 FT to correlate with Liner Top.  
 Gauge Ring/Junk Basket ran to 7614 FT prior to log run.  
 Log ran with 2800 PSI surface induced pressure.

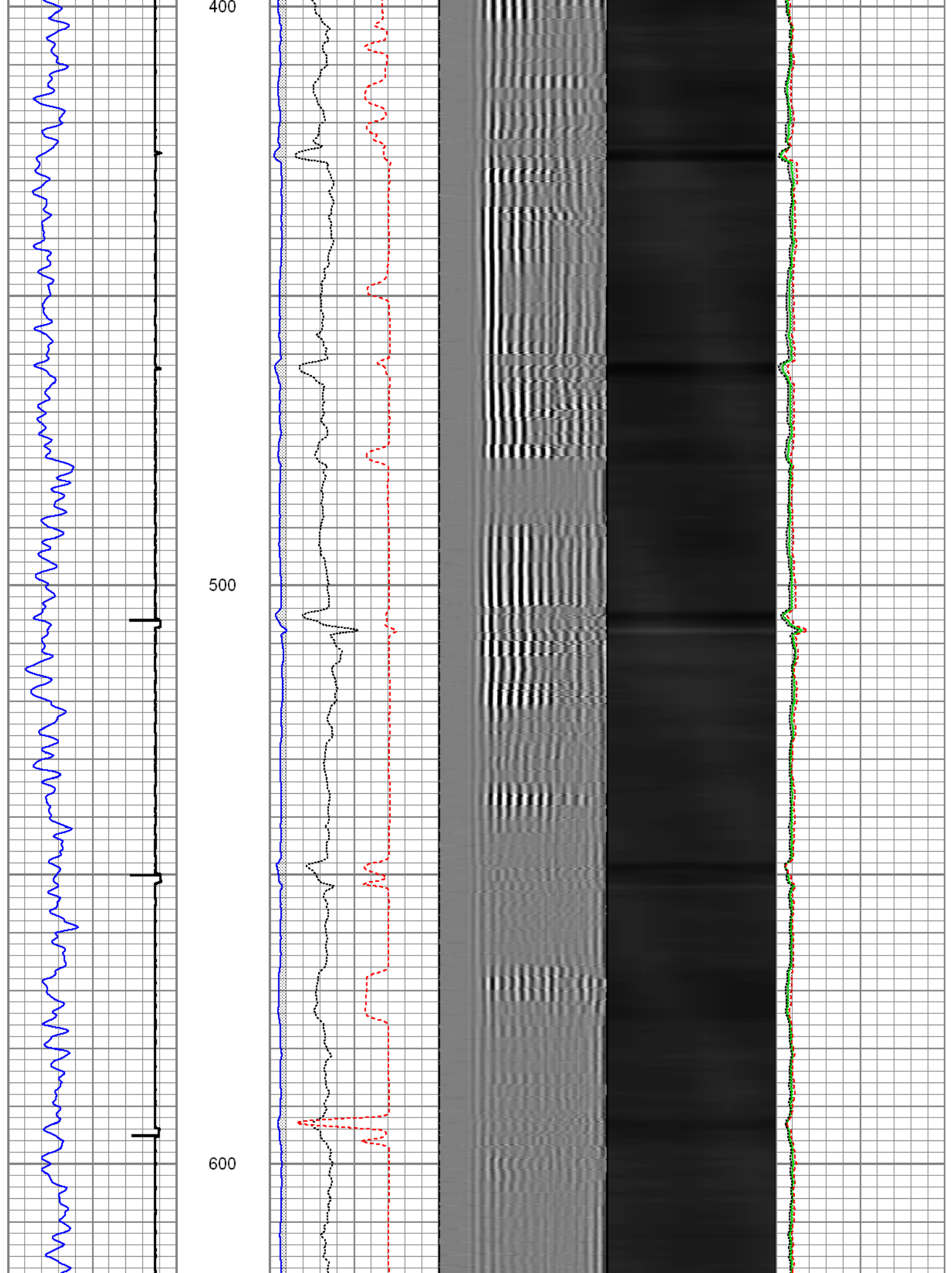
Thank You for choosing FMC Technologies Completion Services, Inc.!!

Database File: 0512338563\_anadarko\_deepe 35c-27hz\_07-01-14\_mit\_rbl.db  
Dataset Pathname: 7Main  
Presentation Format: rbt4\_mit  
Dataset Creation: Tue Jul 01 09:38:13 2014 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

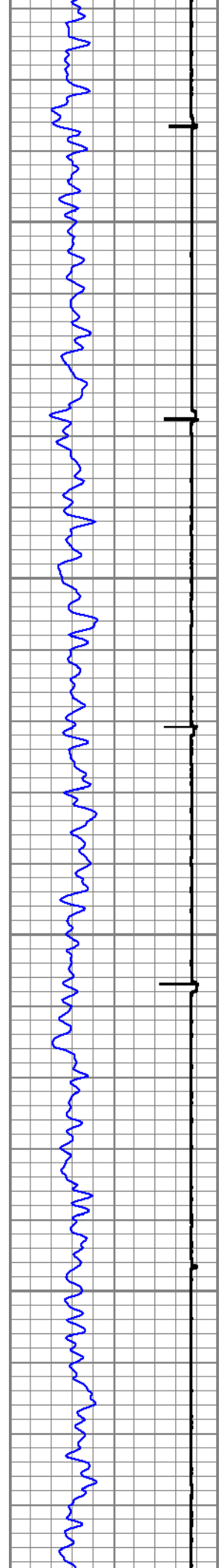
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100





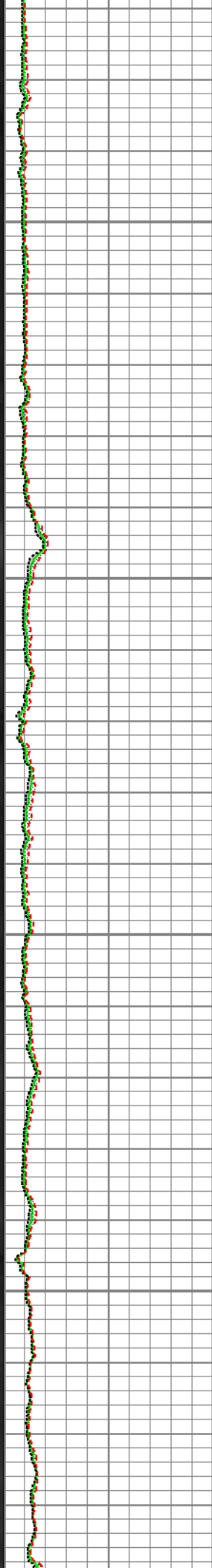
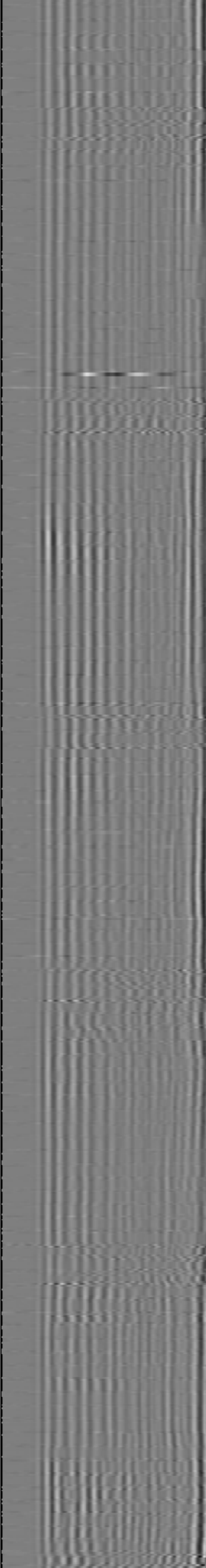
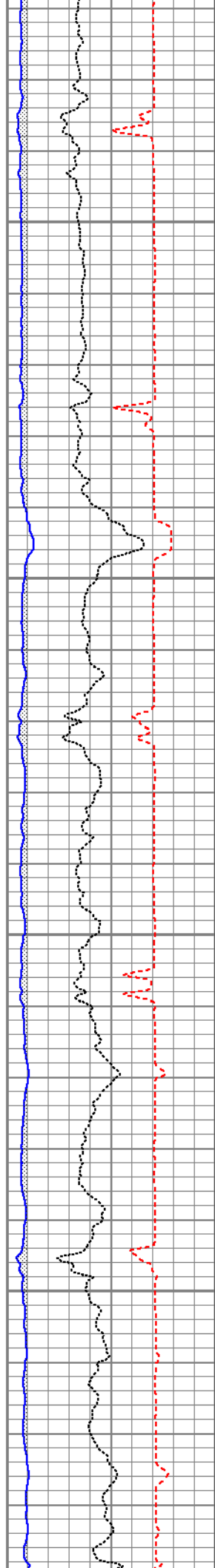


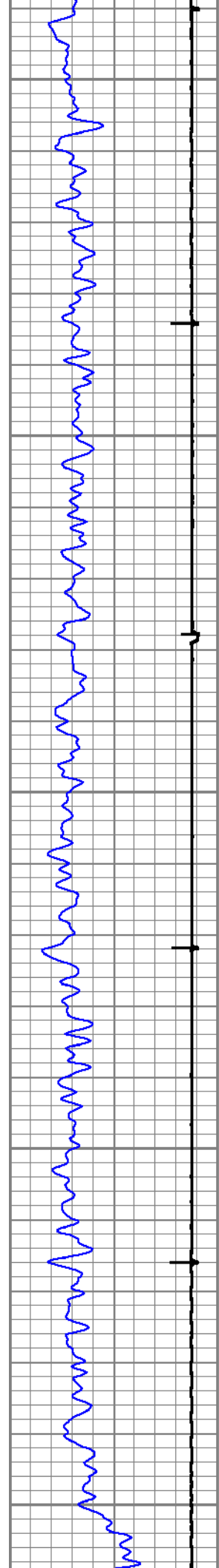




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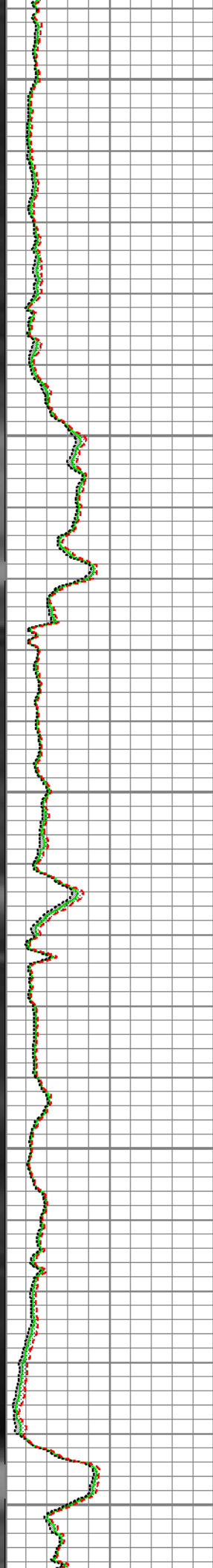
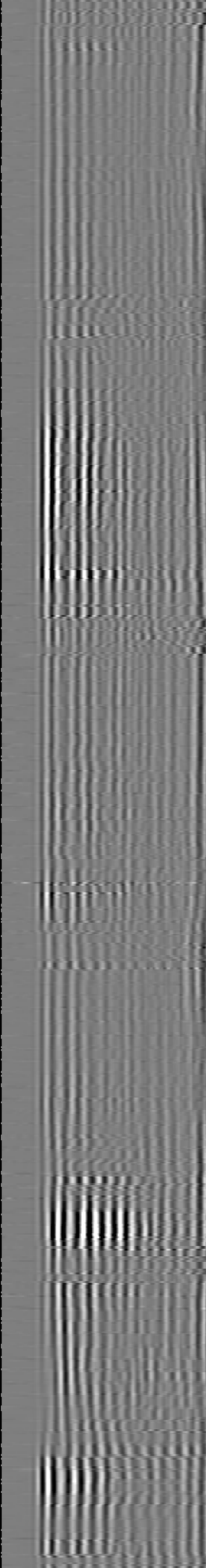
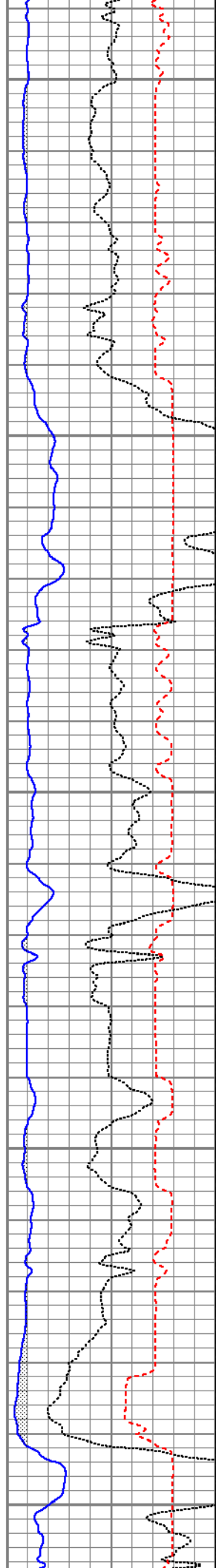
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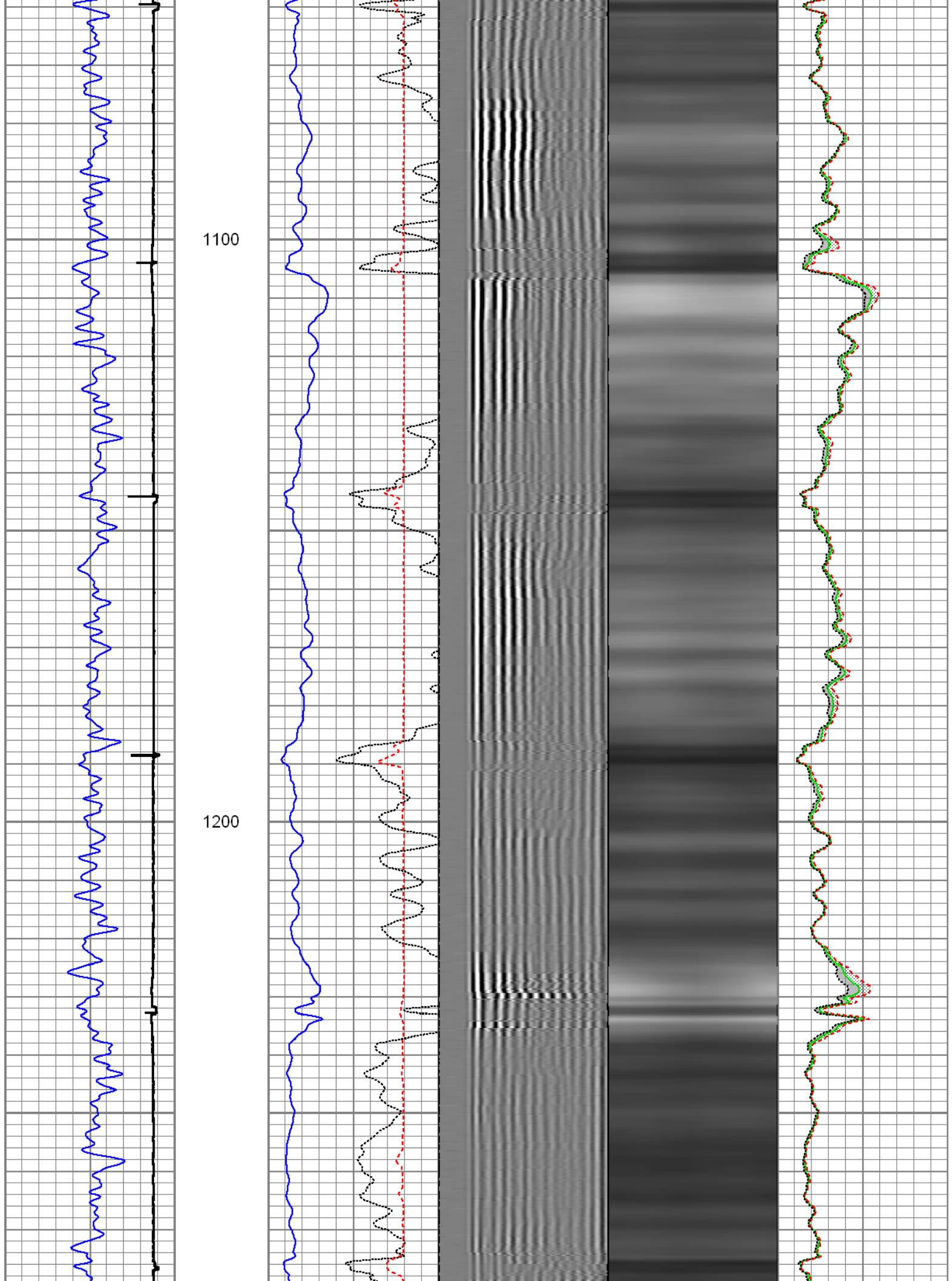


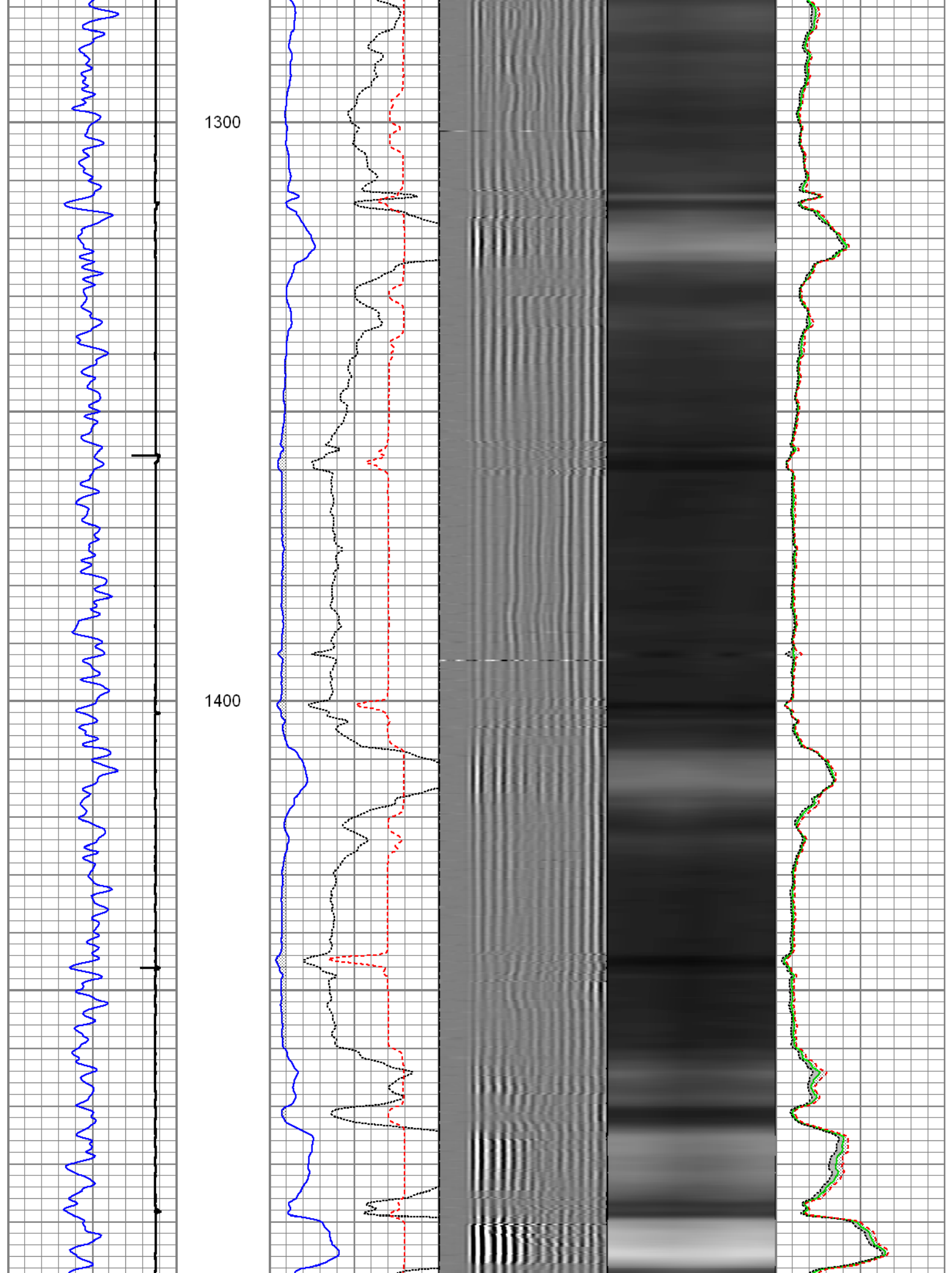


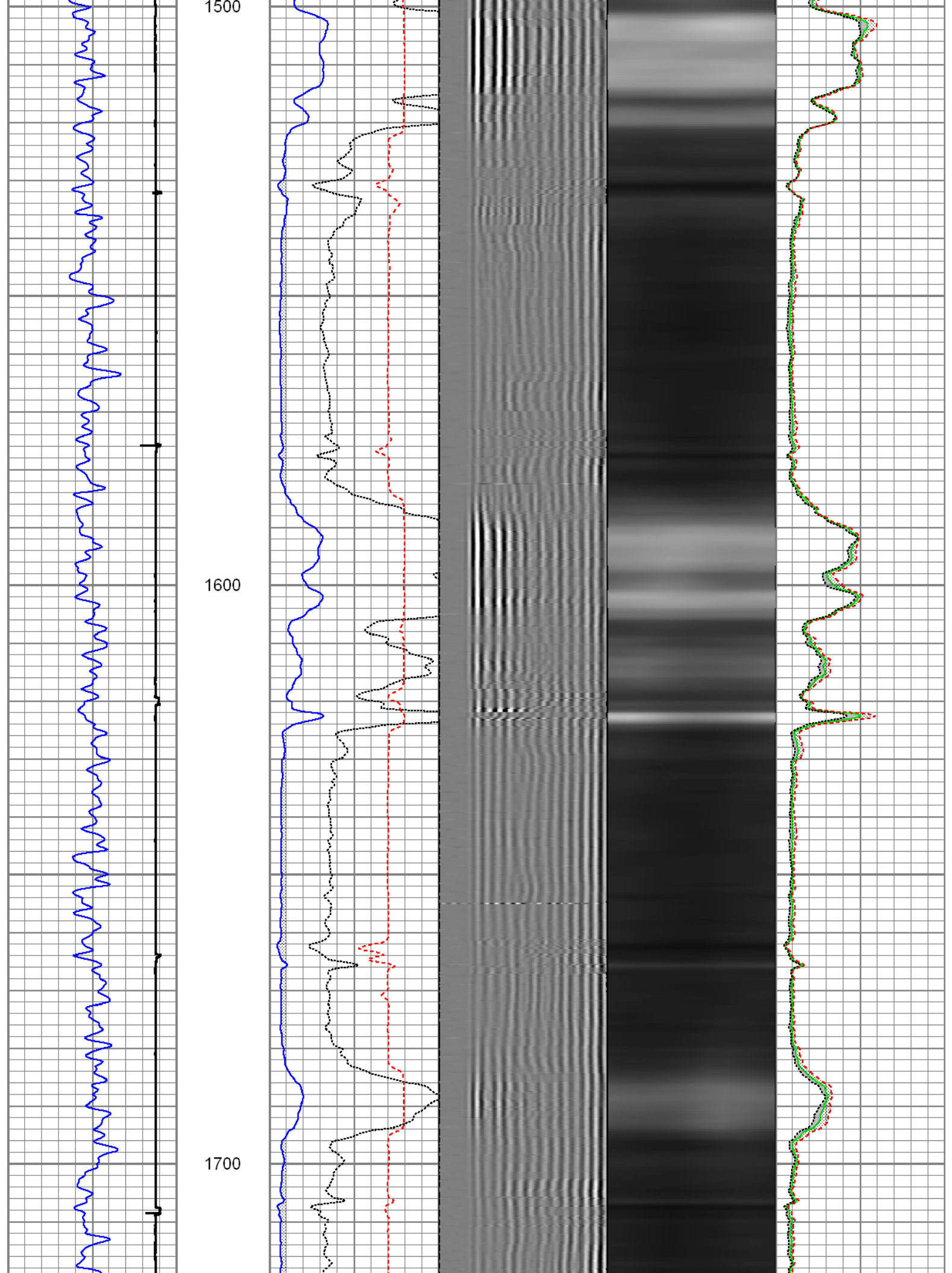
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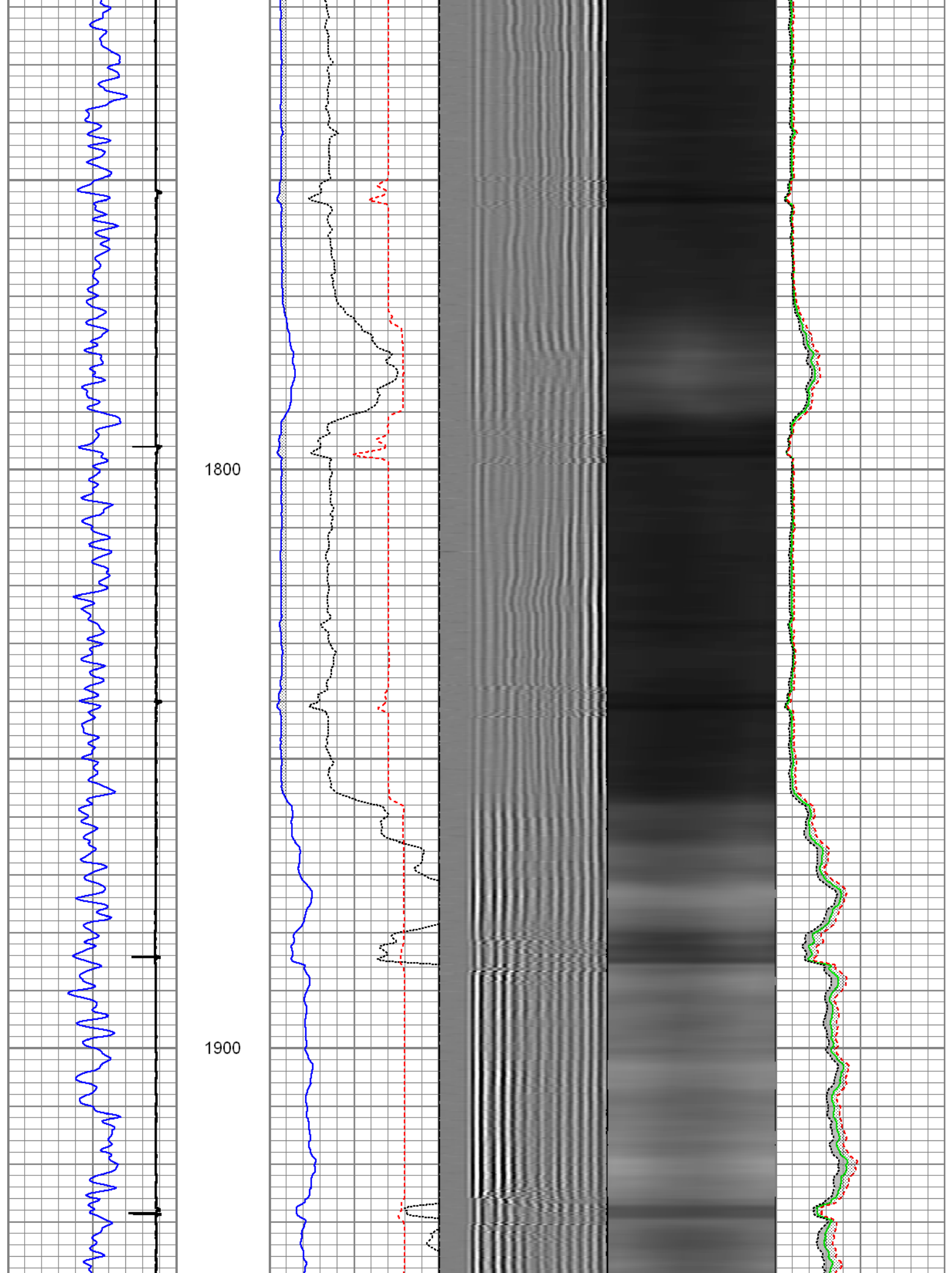






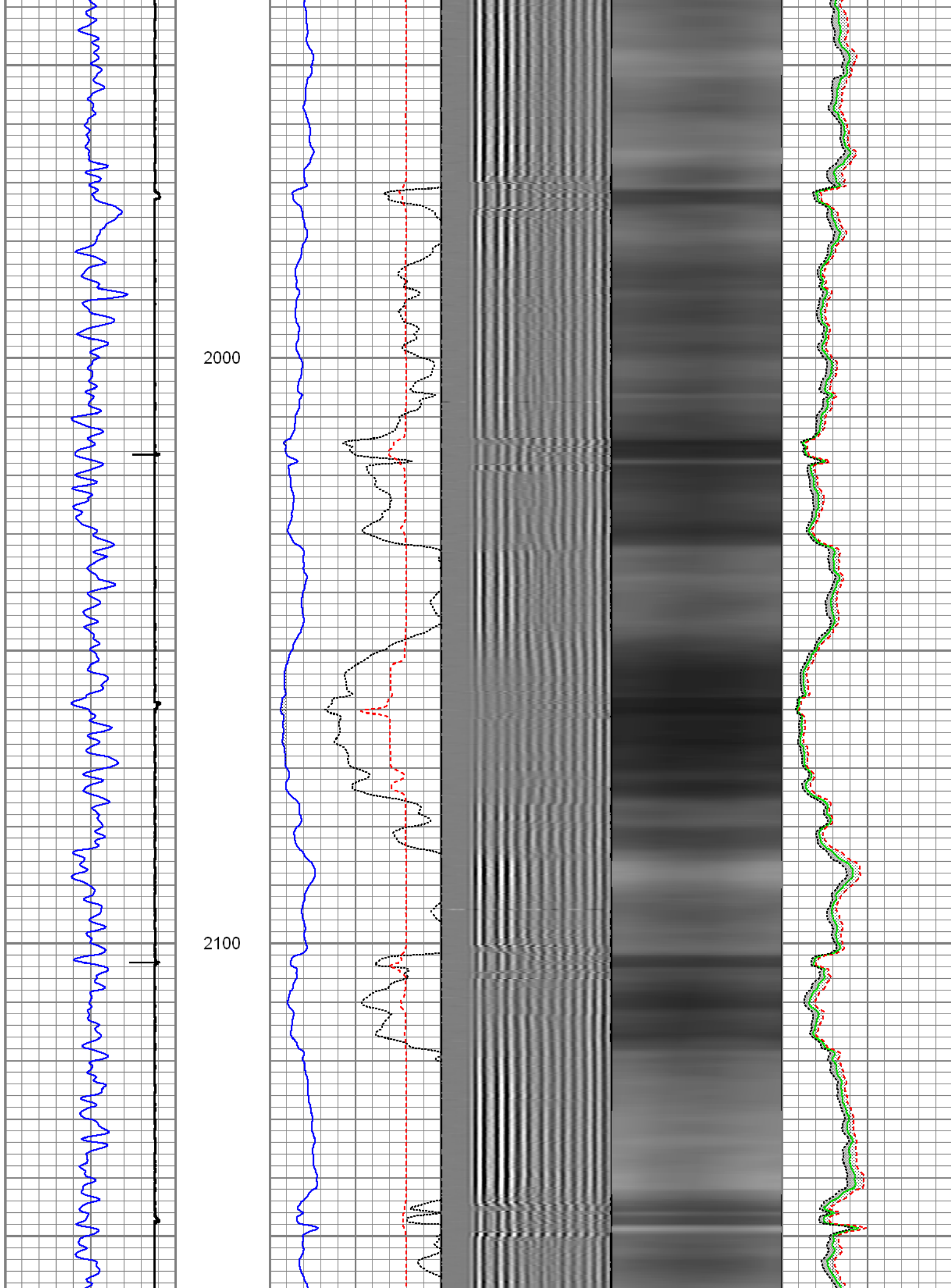


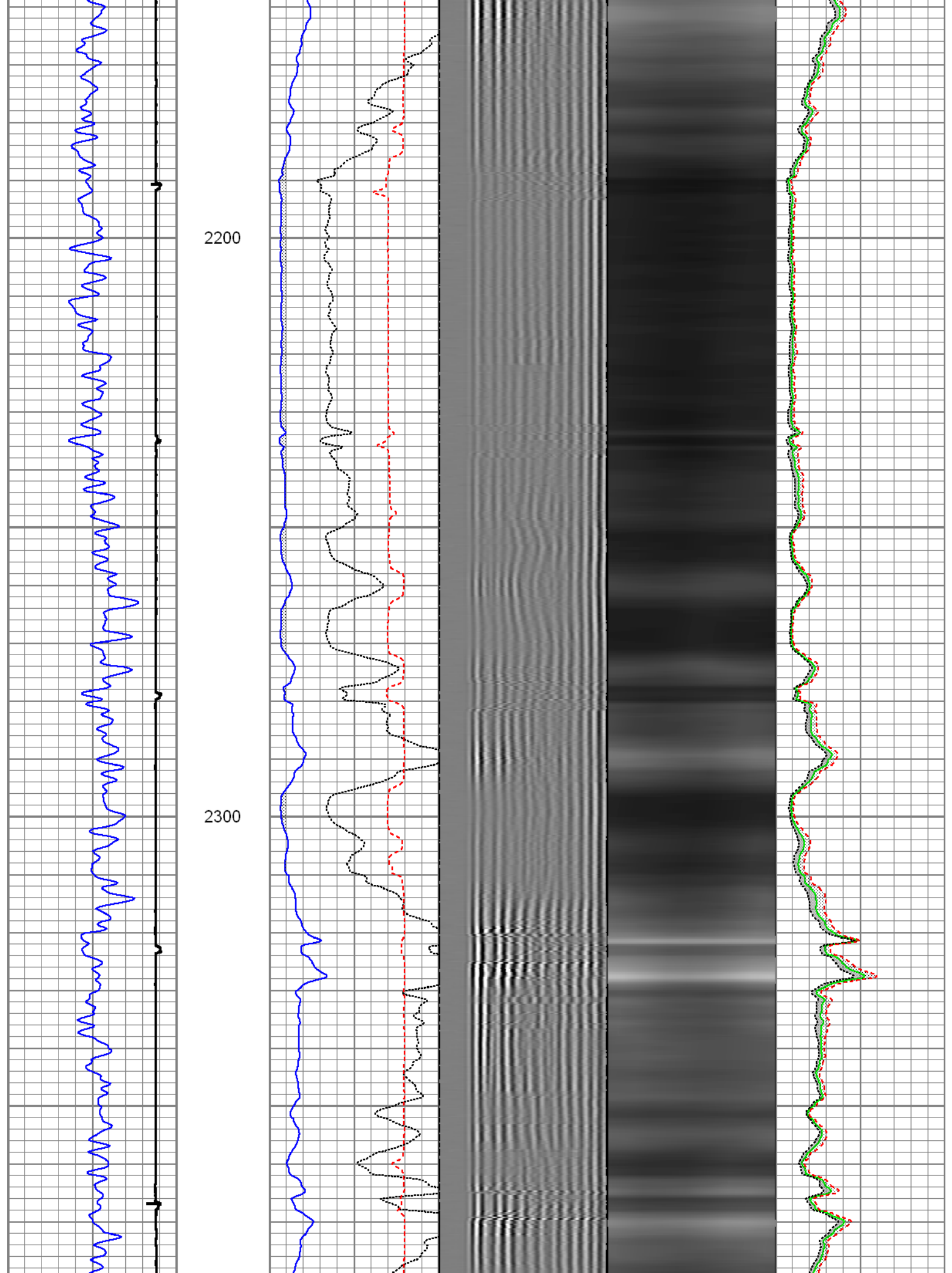




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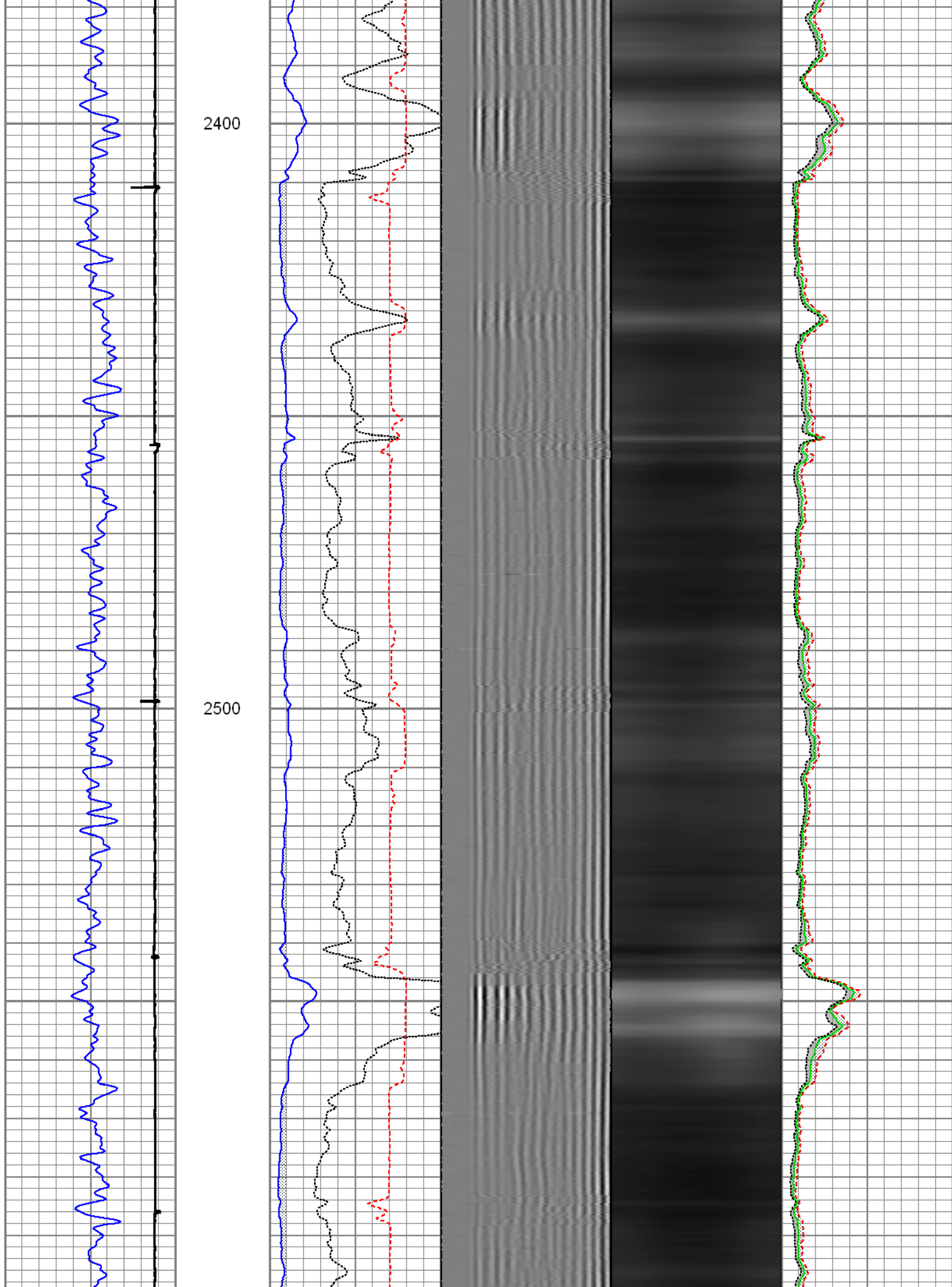
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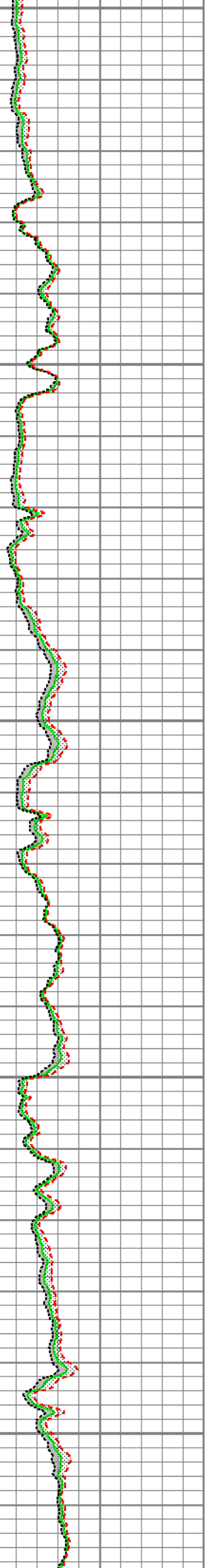
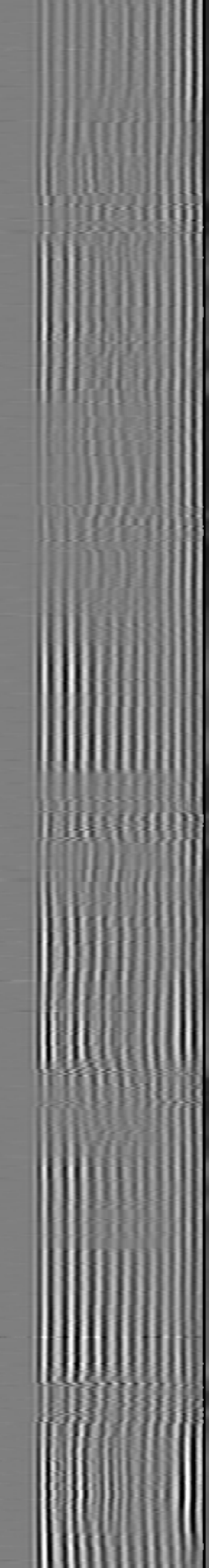
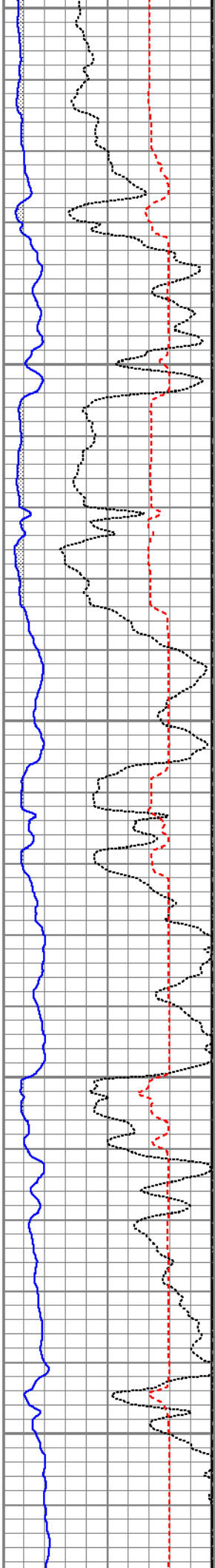
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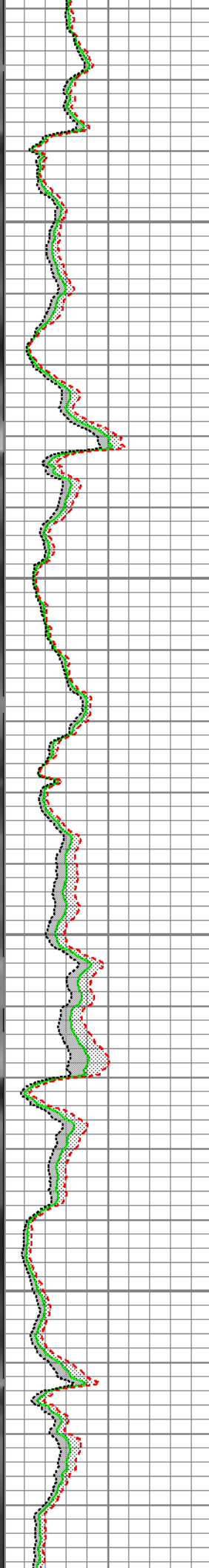
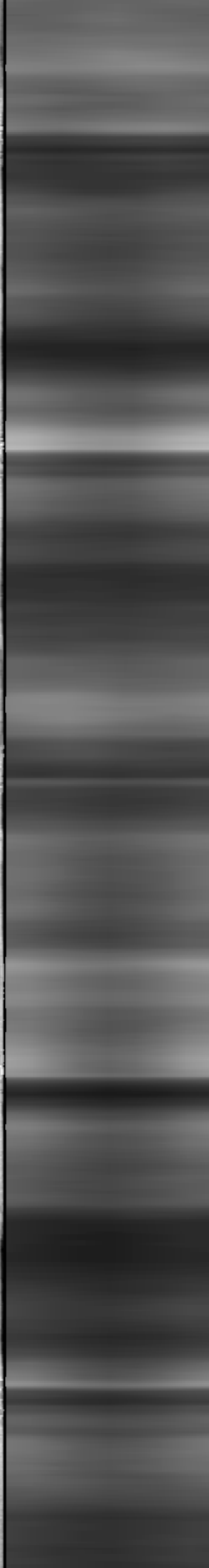
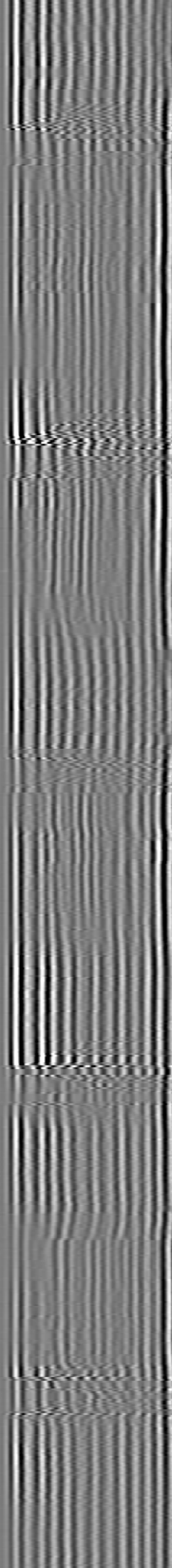
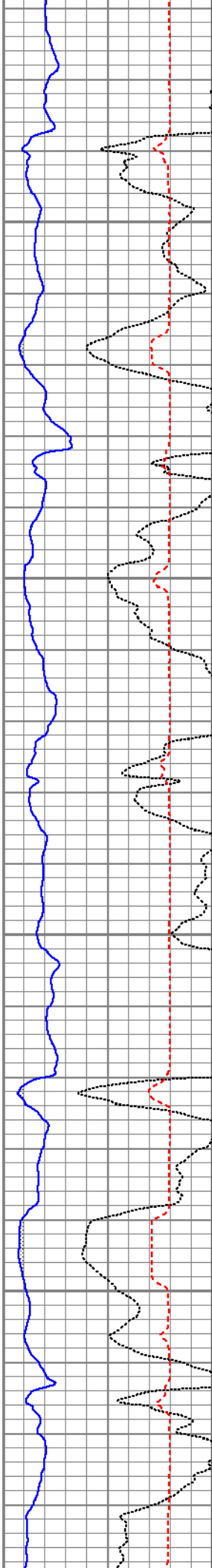
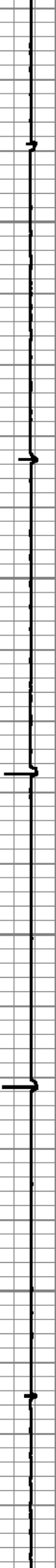
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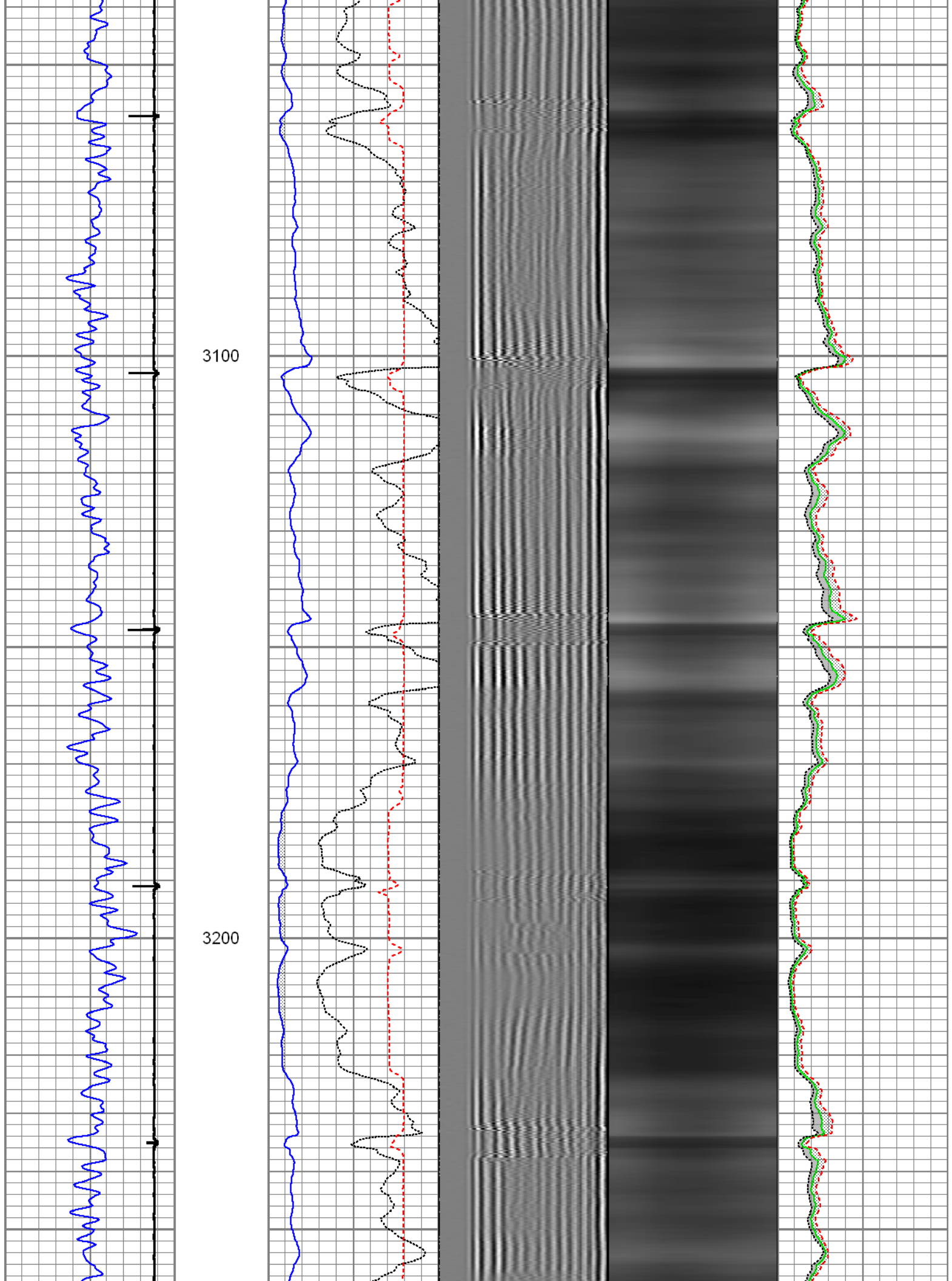




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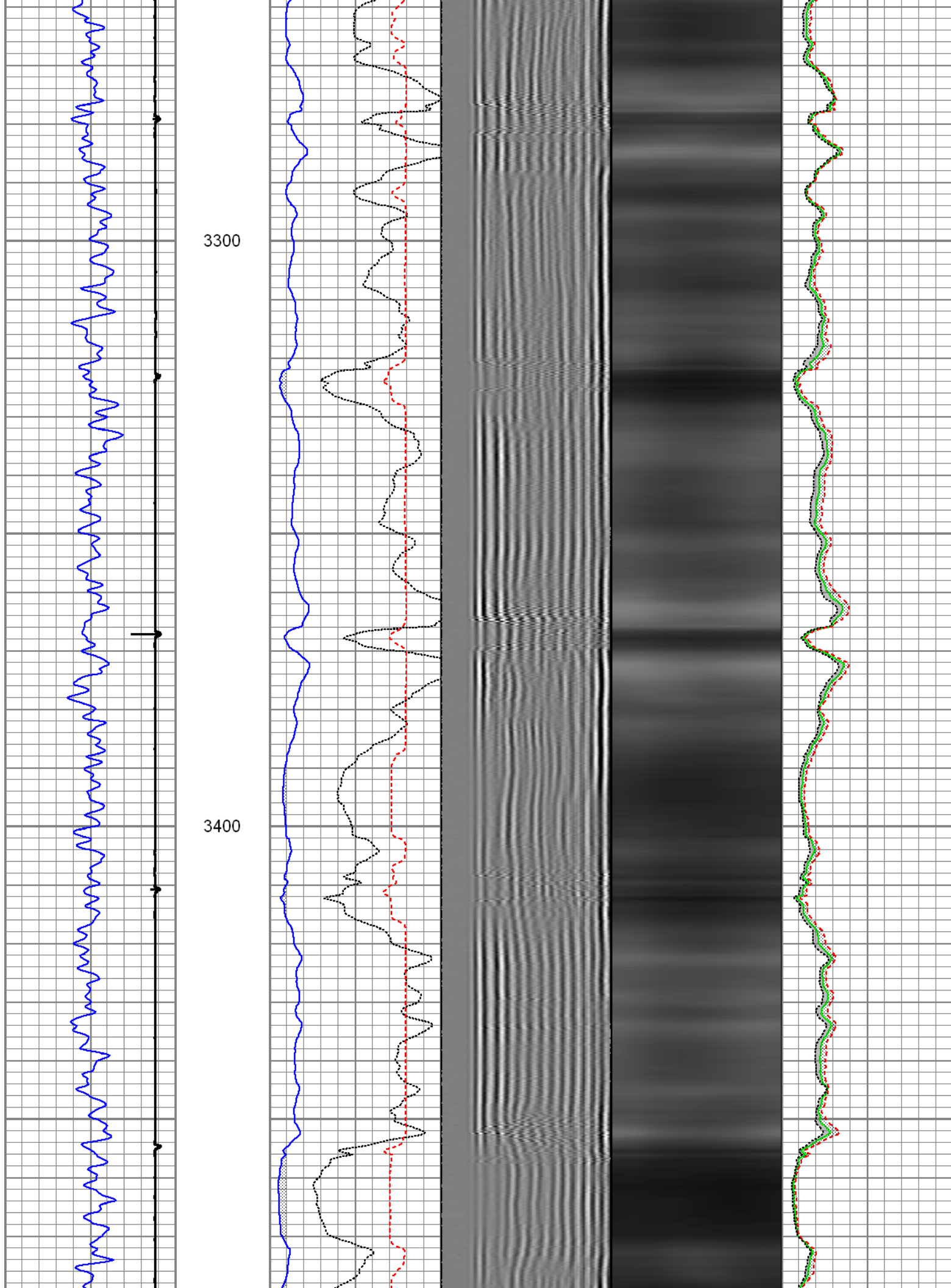
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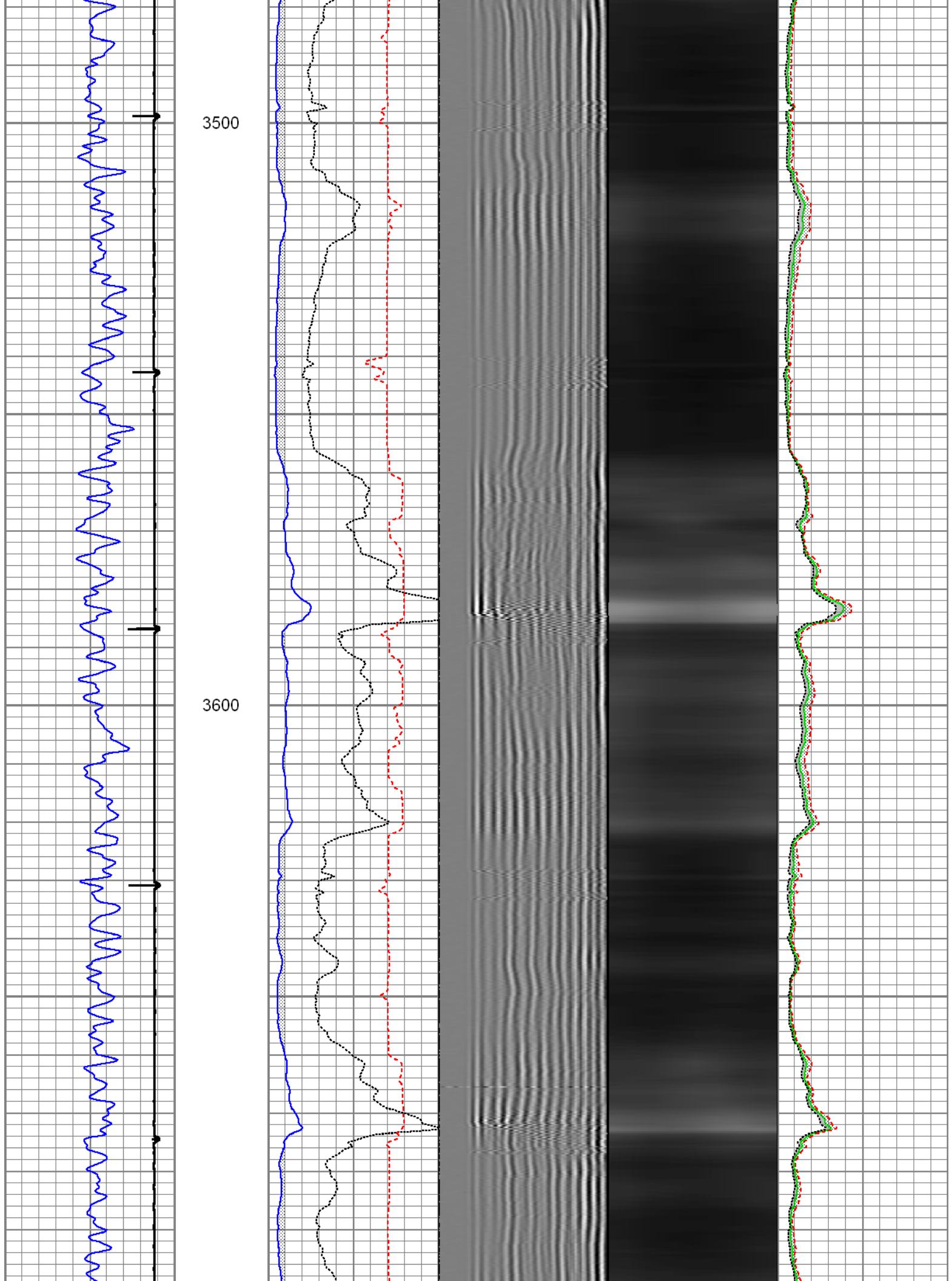




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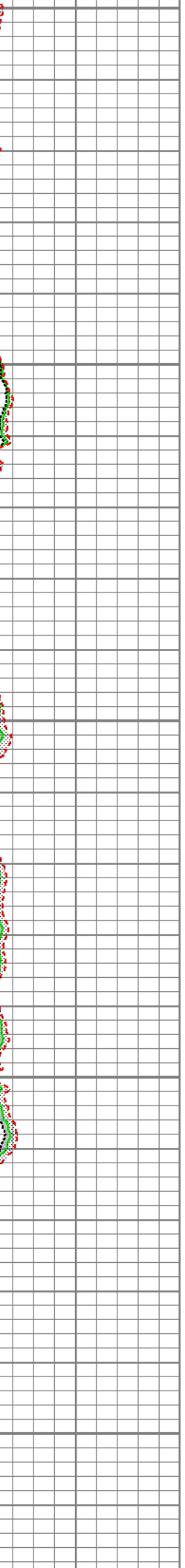
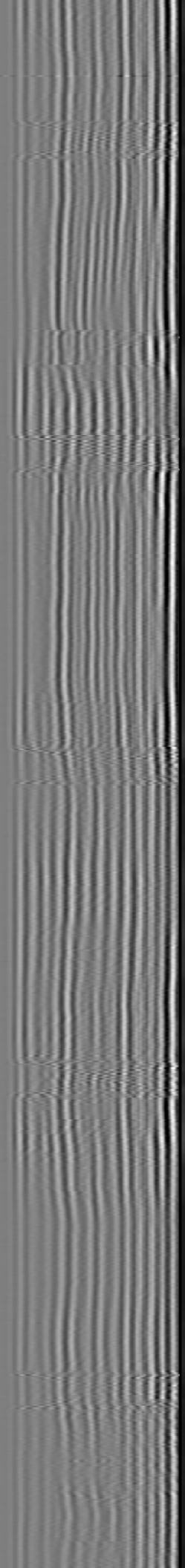
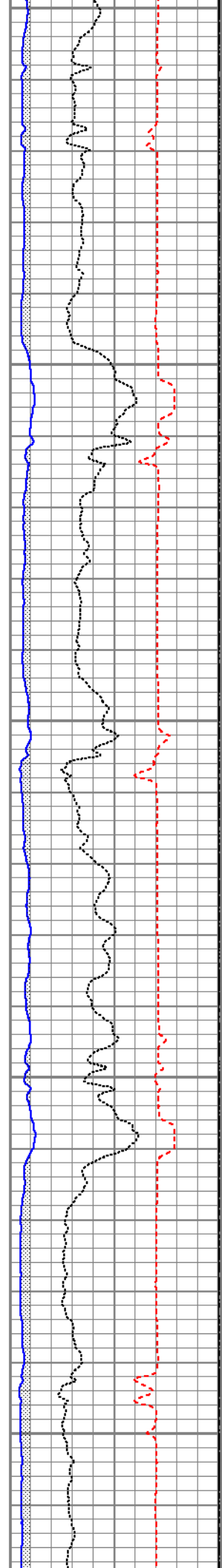
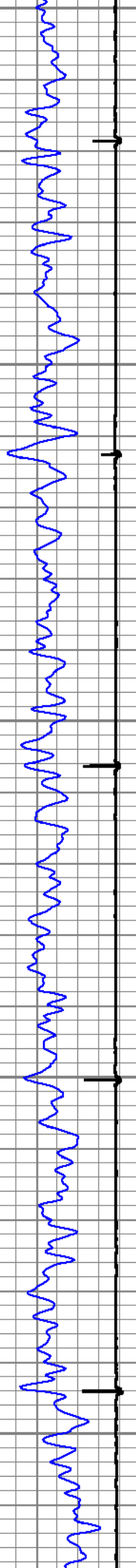




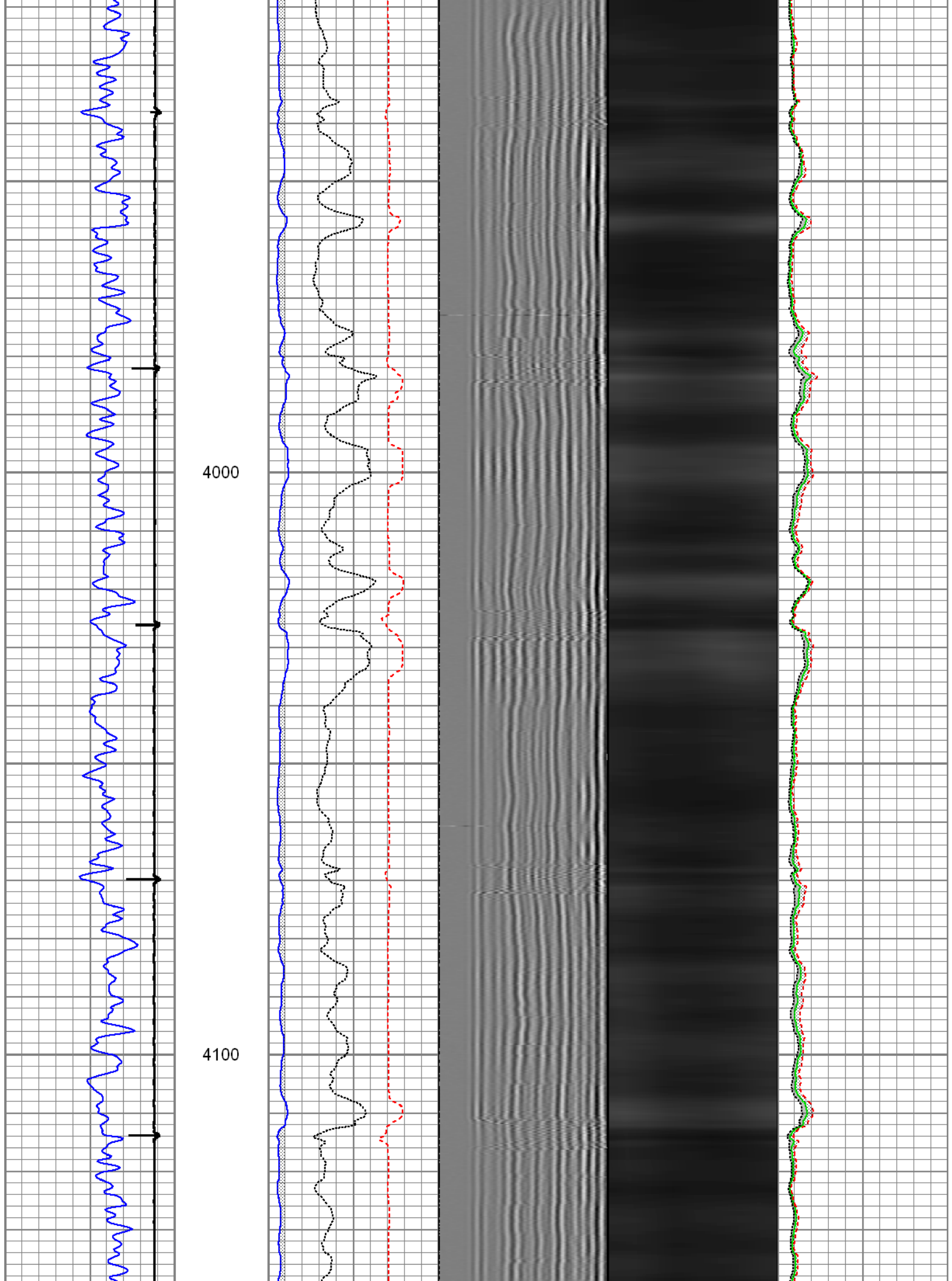
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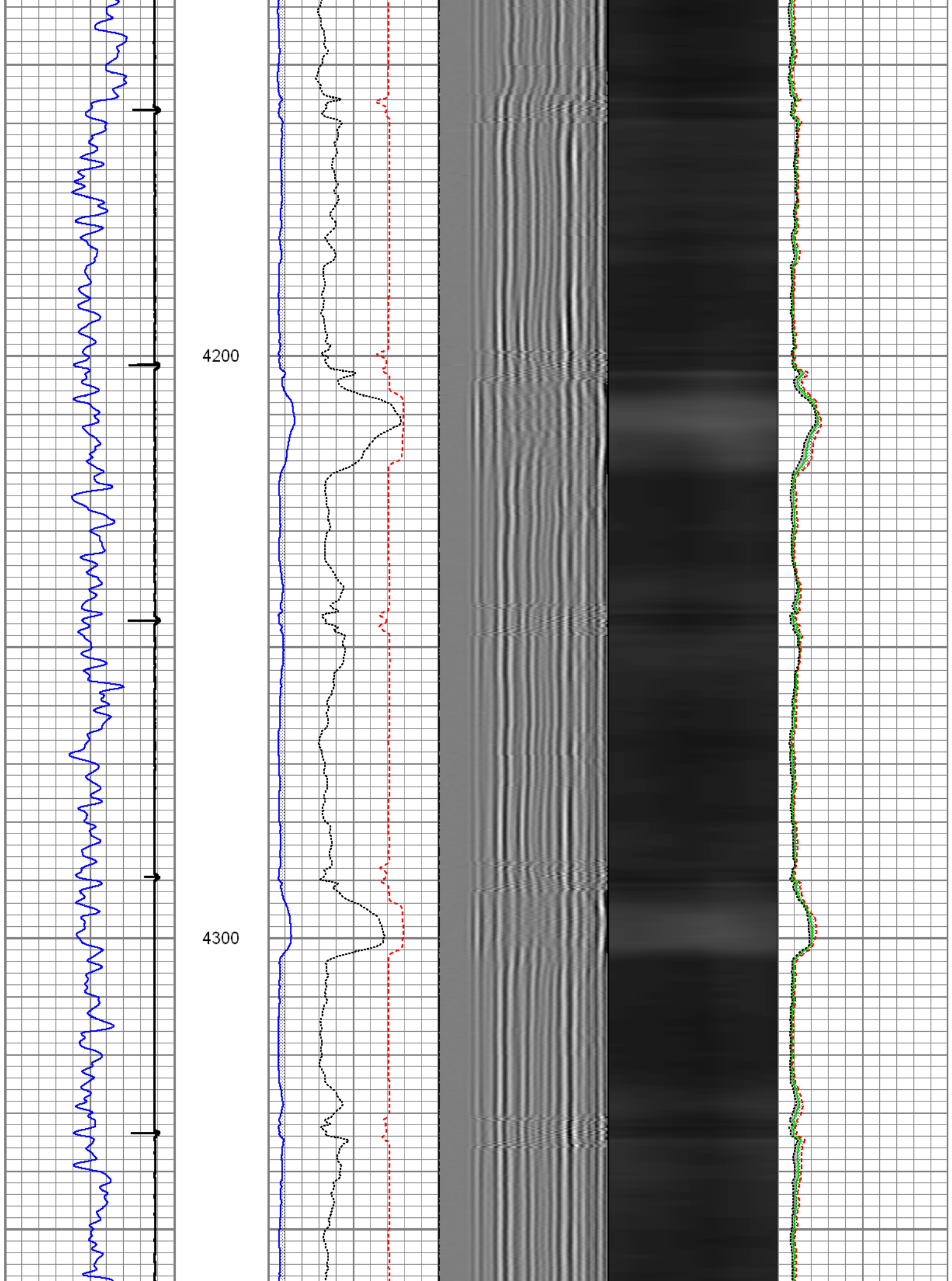
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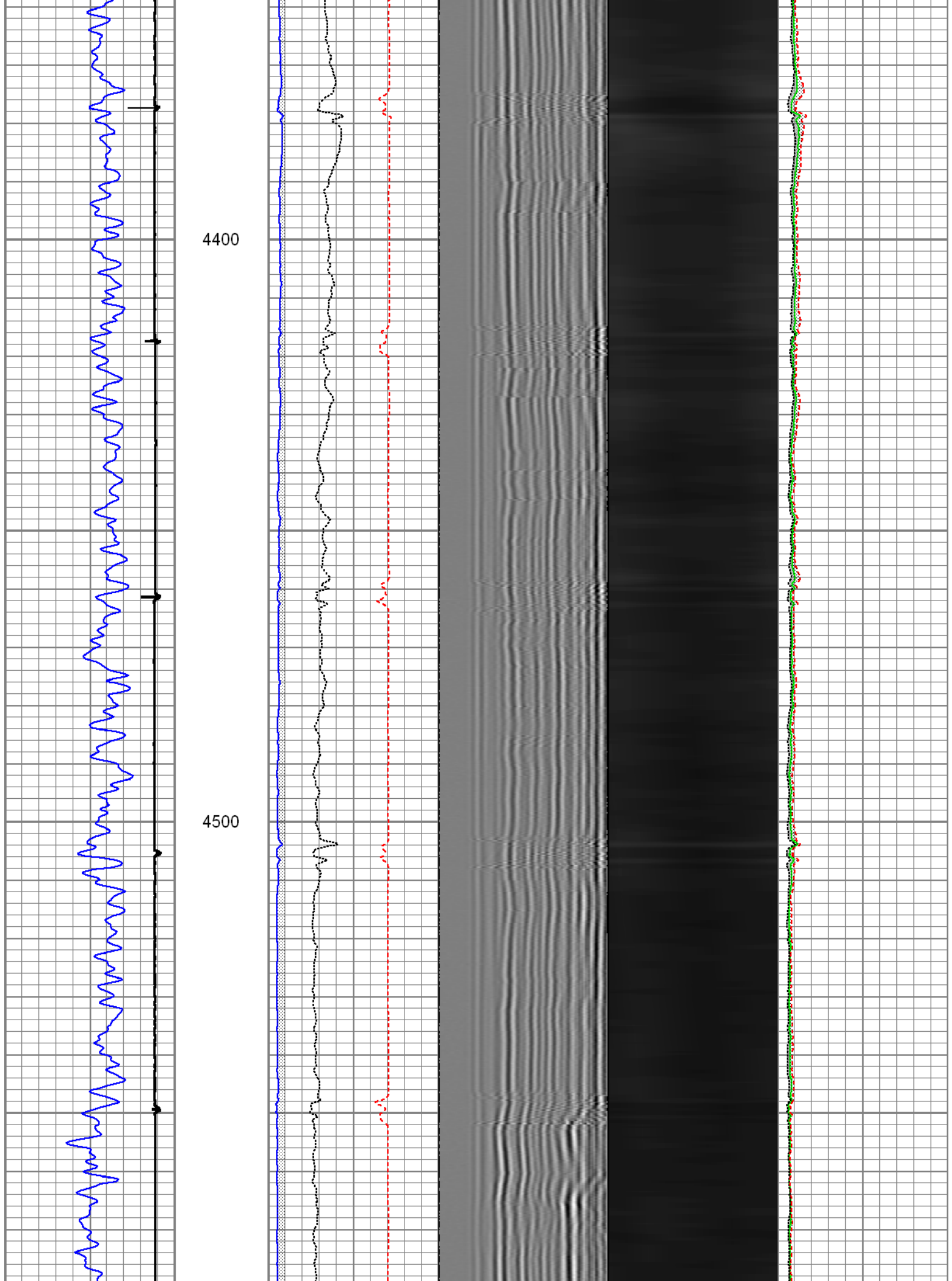
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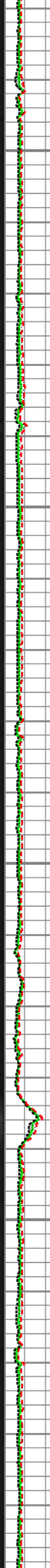
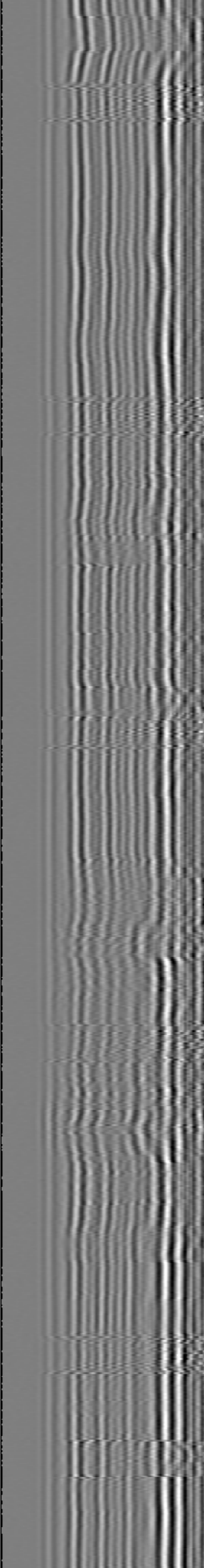
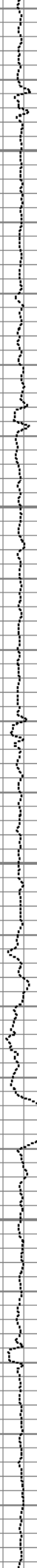






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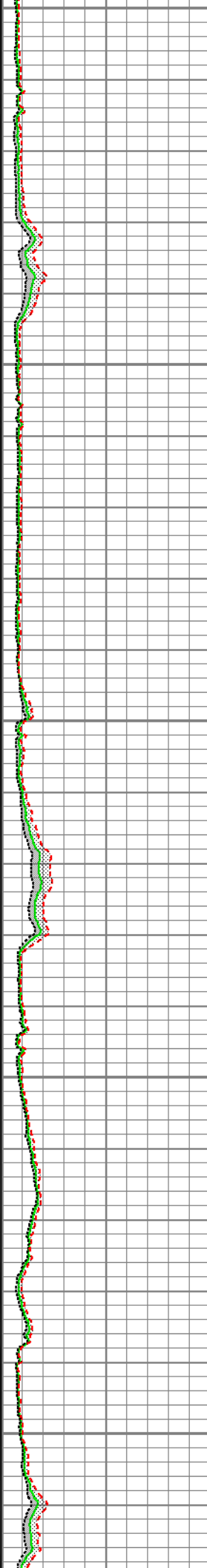
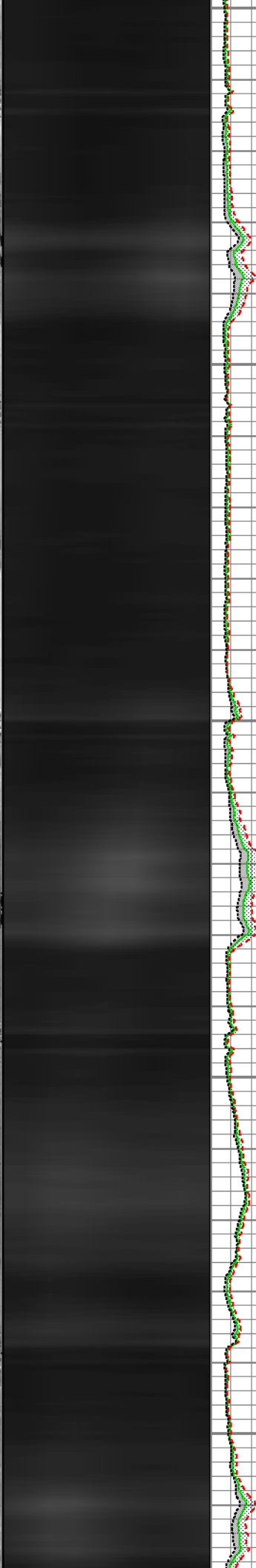
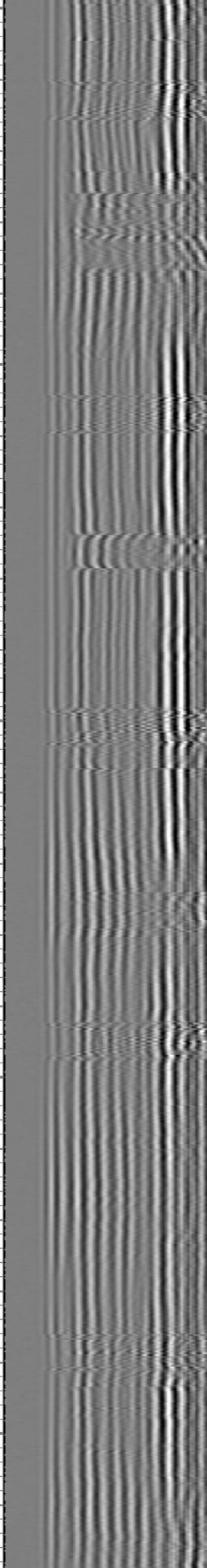
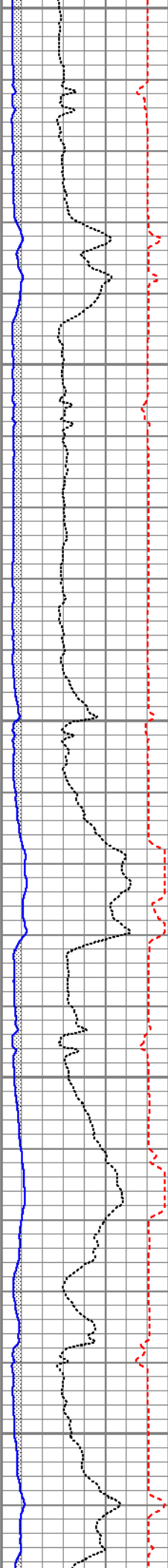
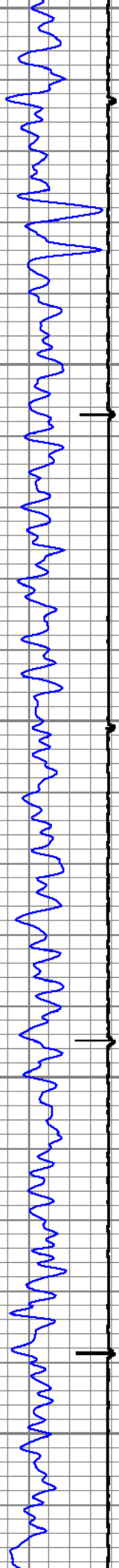
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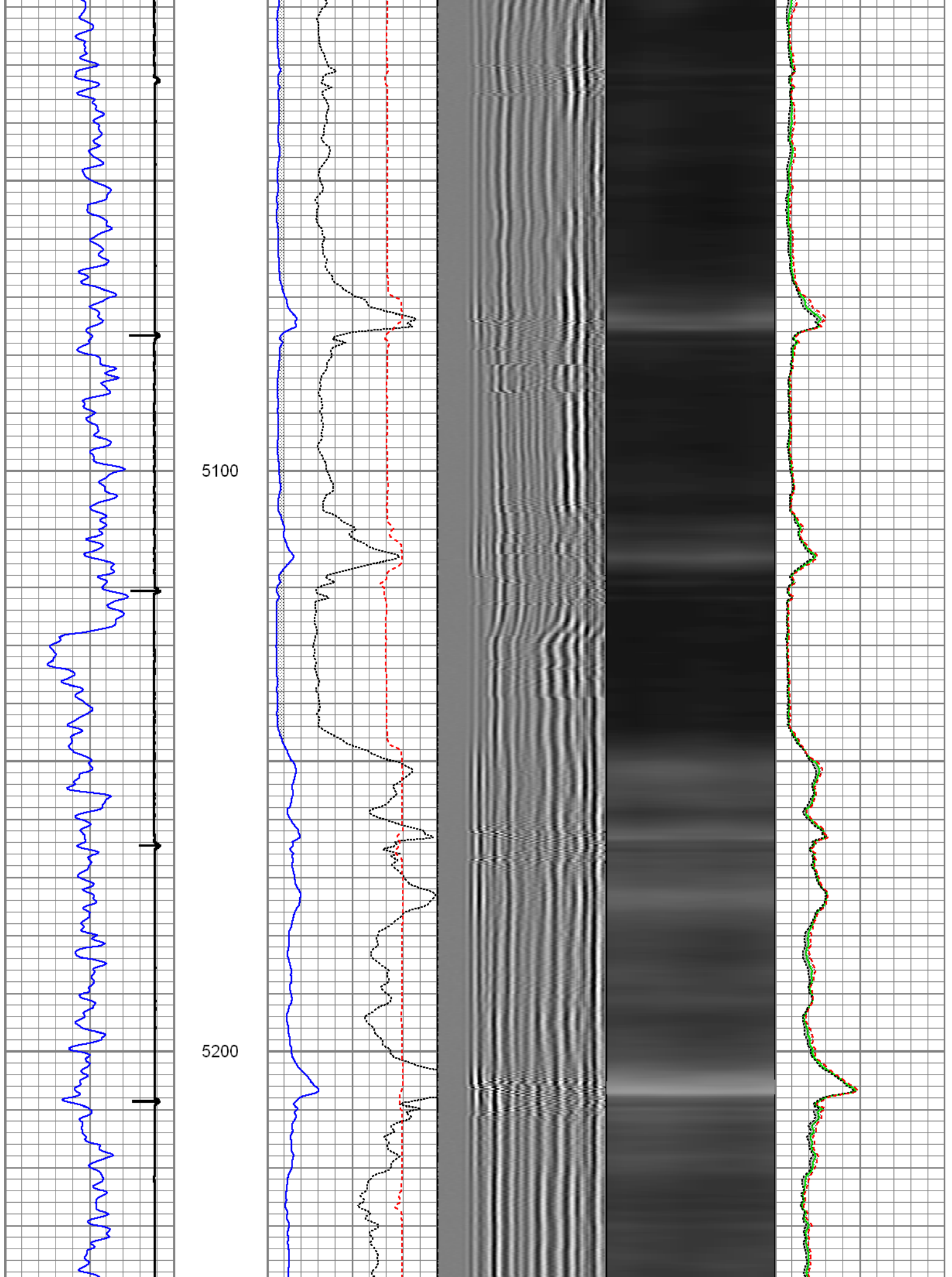
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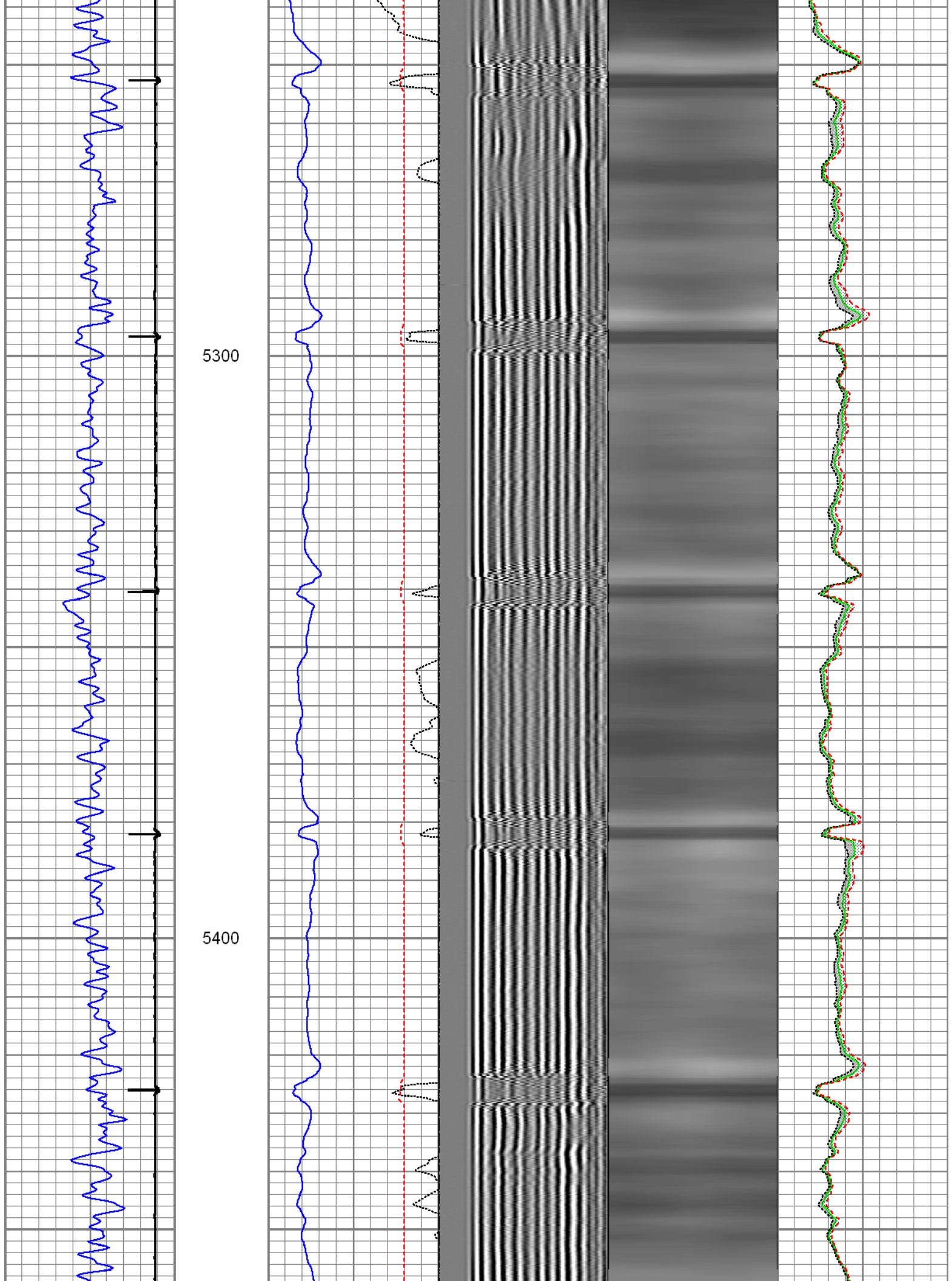
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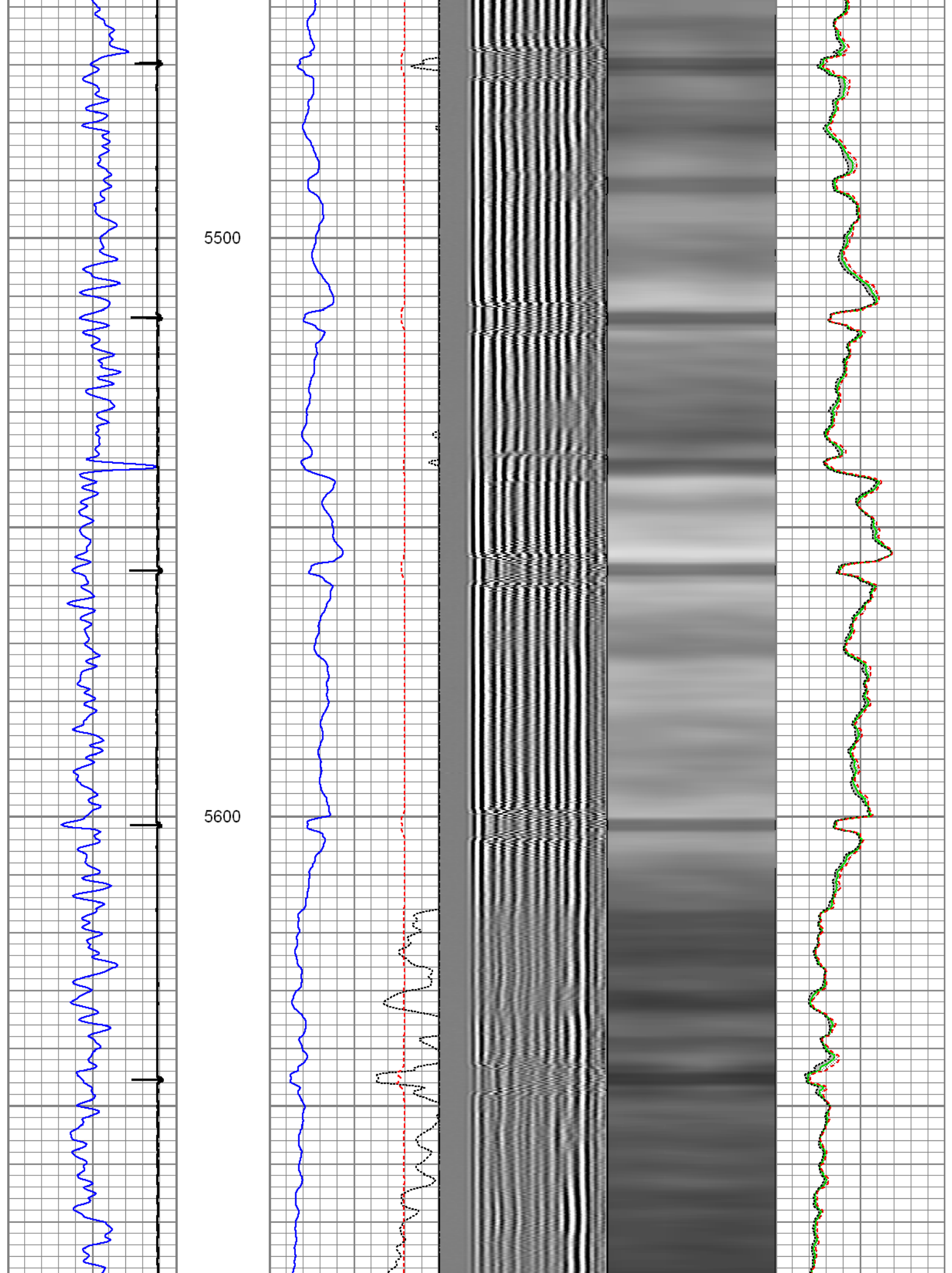
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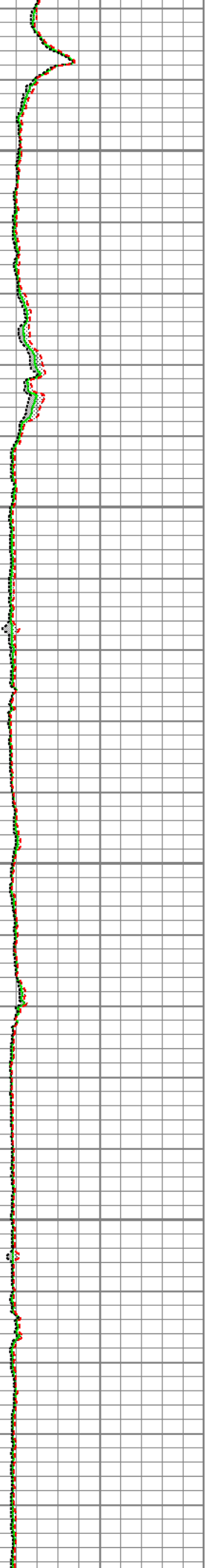
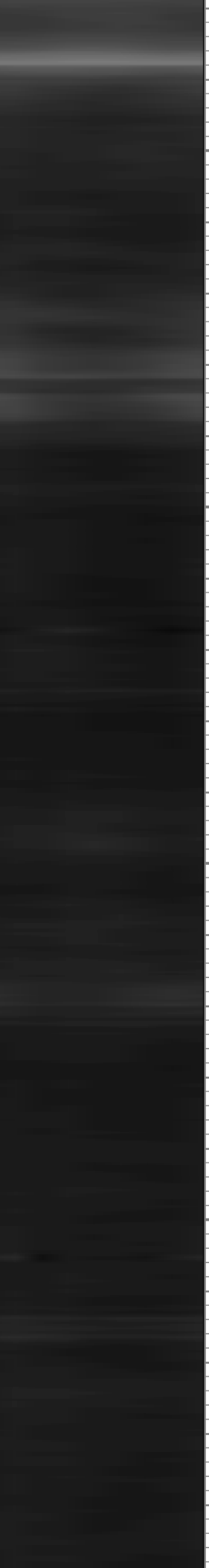
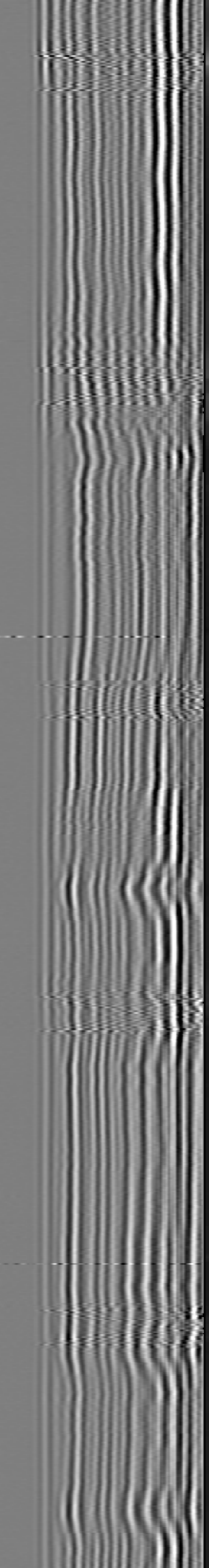
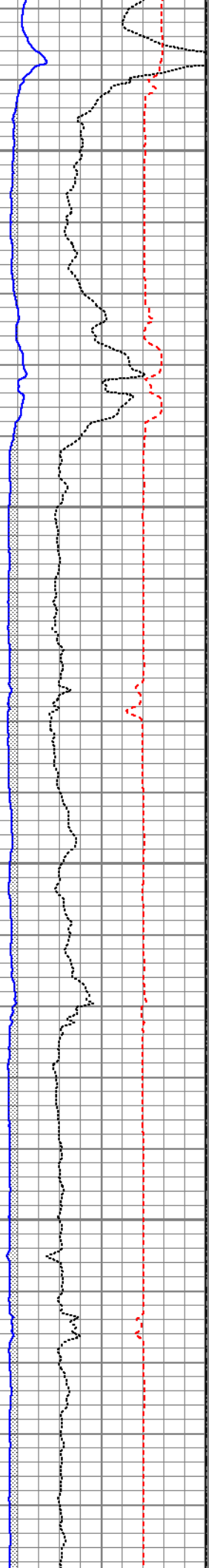
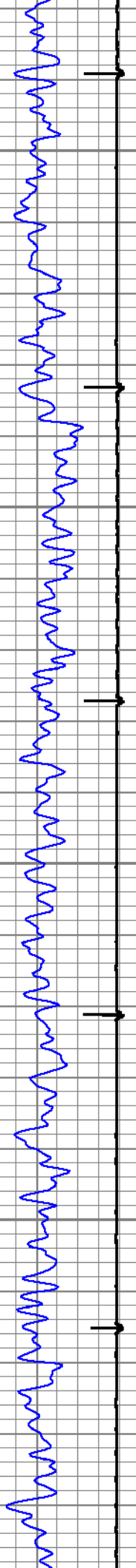






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5800

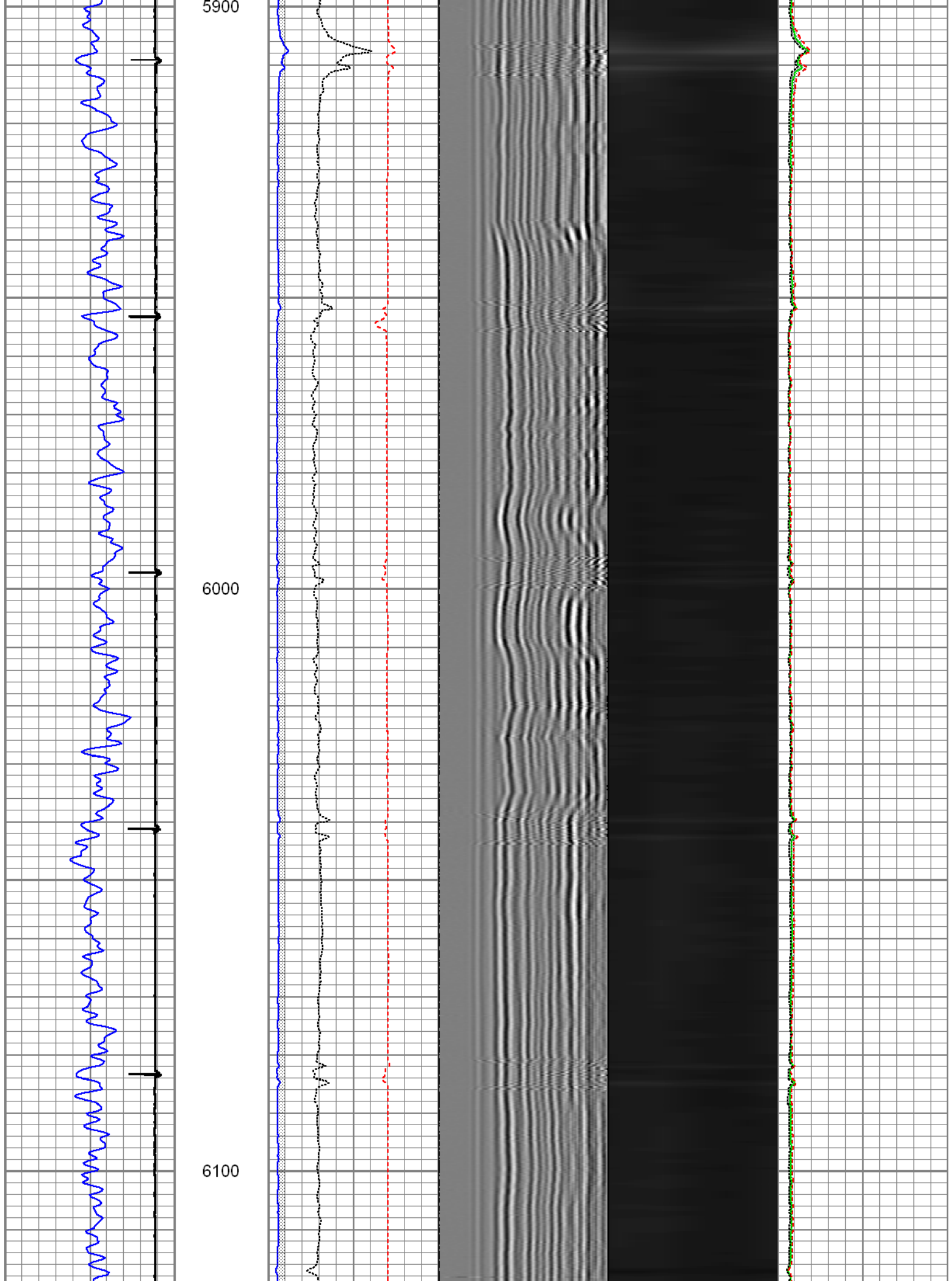




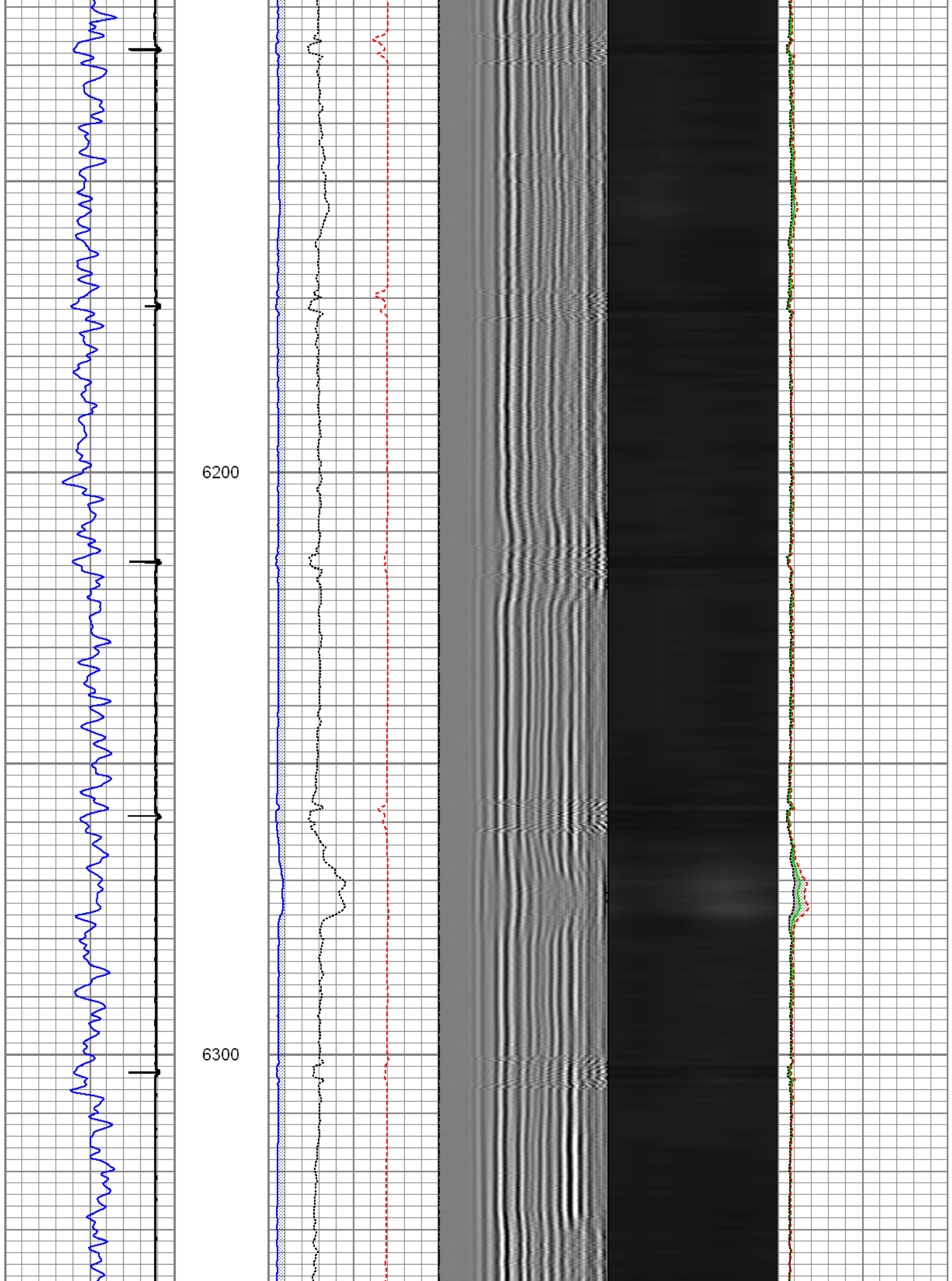
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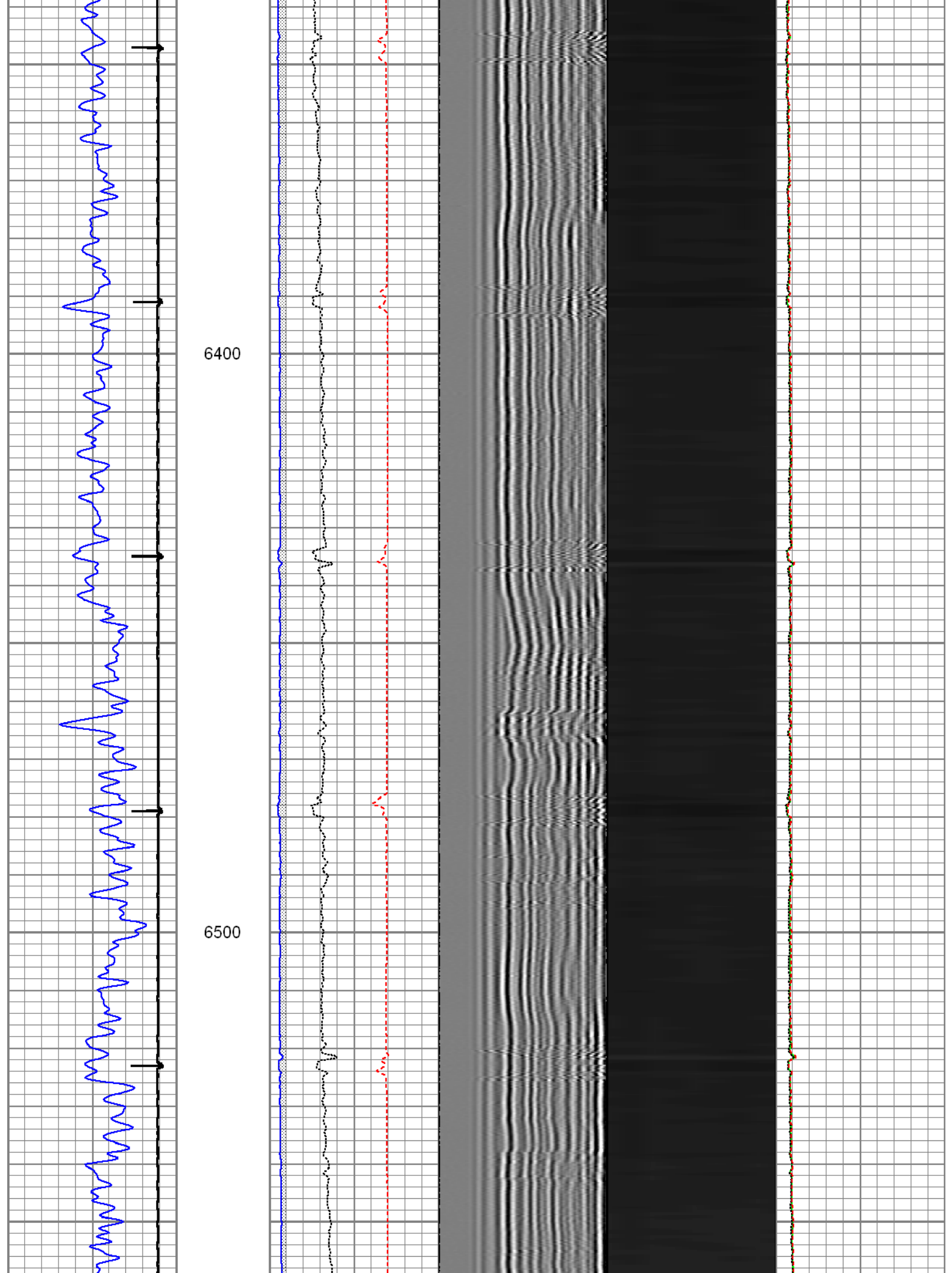
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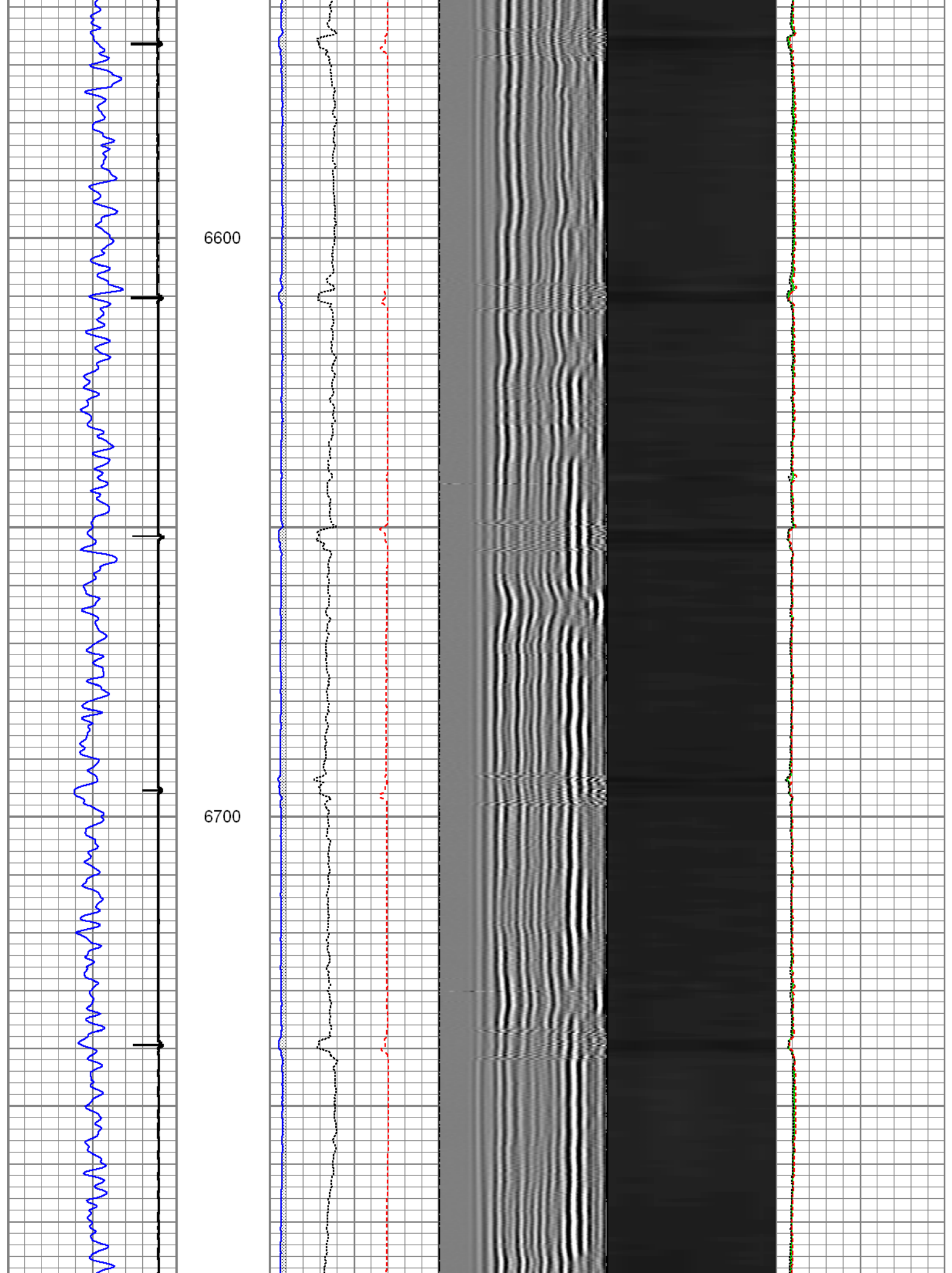
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6800

6900

GR

CCL

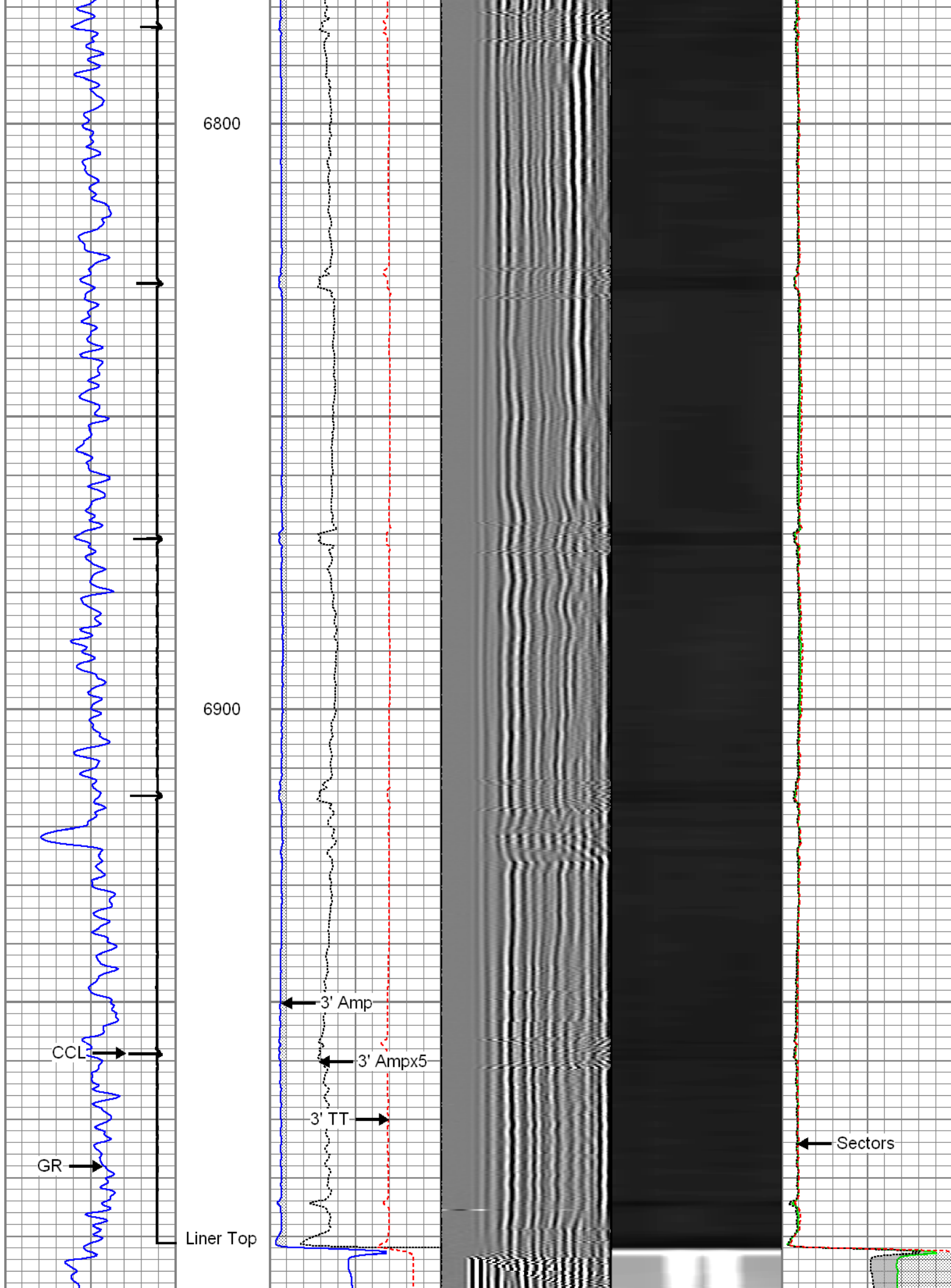
Liner Top

3' Amp

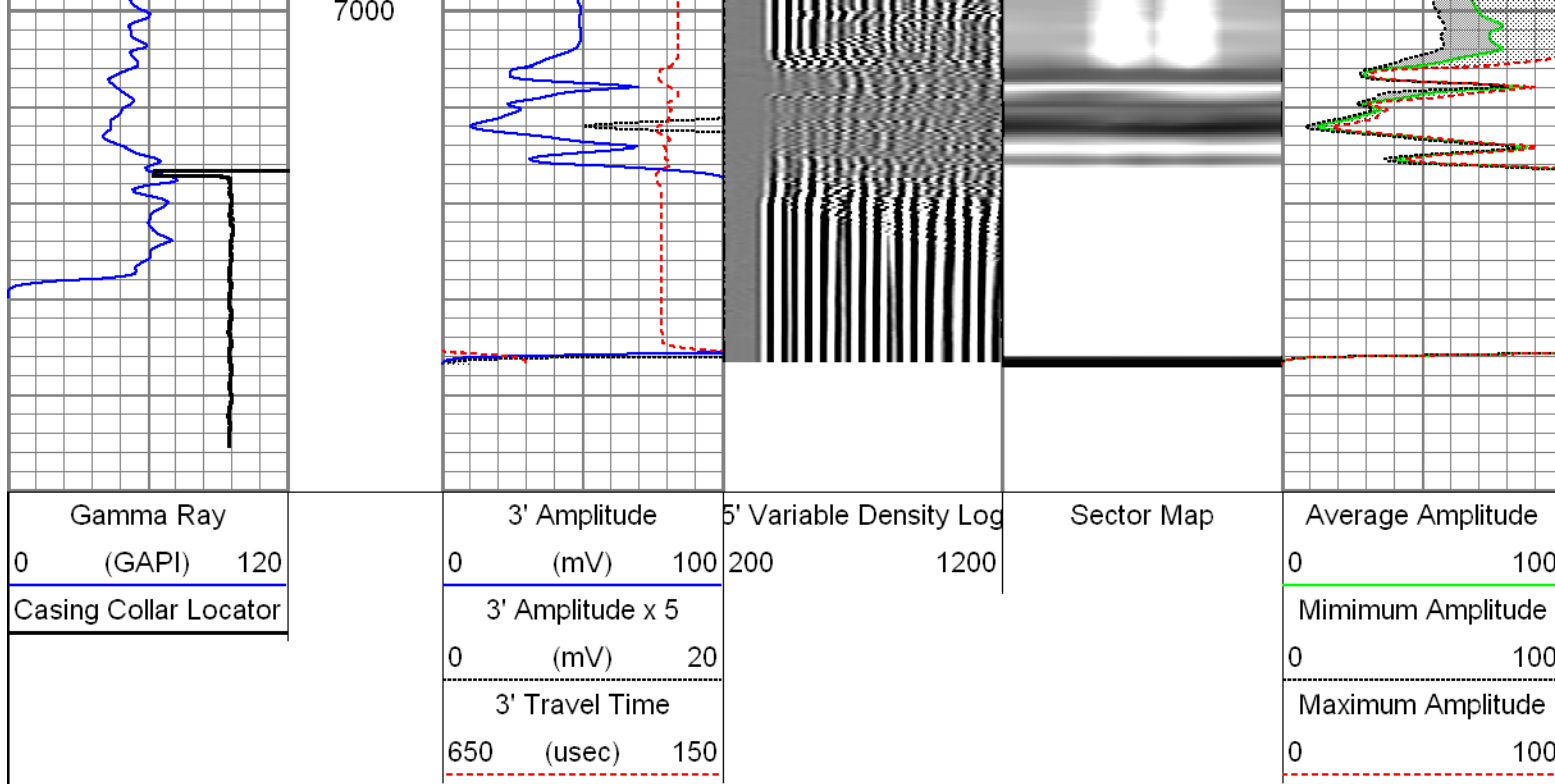
3' Ampx5

3' TT

Sectors



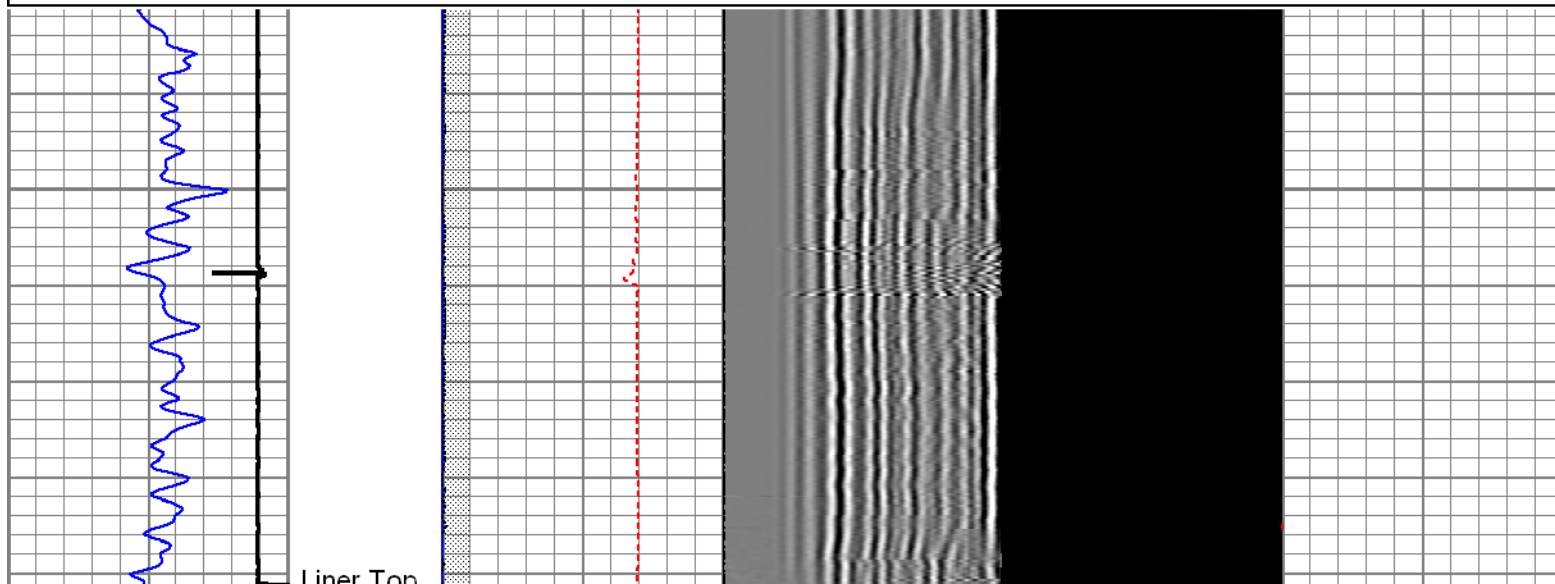
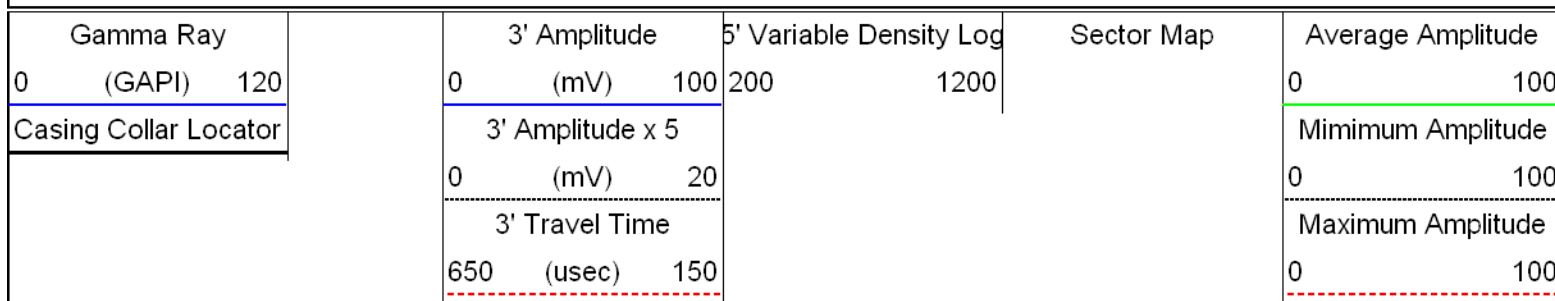
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## 4.5" Main Pass

Recorded with 2800 Psi surface induced pressure

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 Presentation Format: rbt4\_mit  
 Dataset Creation: Tue Jul 01 09:21:26 2014 by Log 7.0 B1  
 Charted by: Depth in Feet scaled 1:240



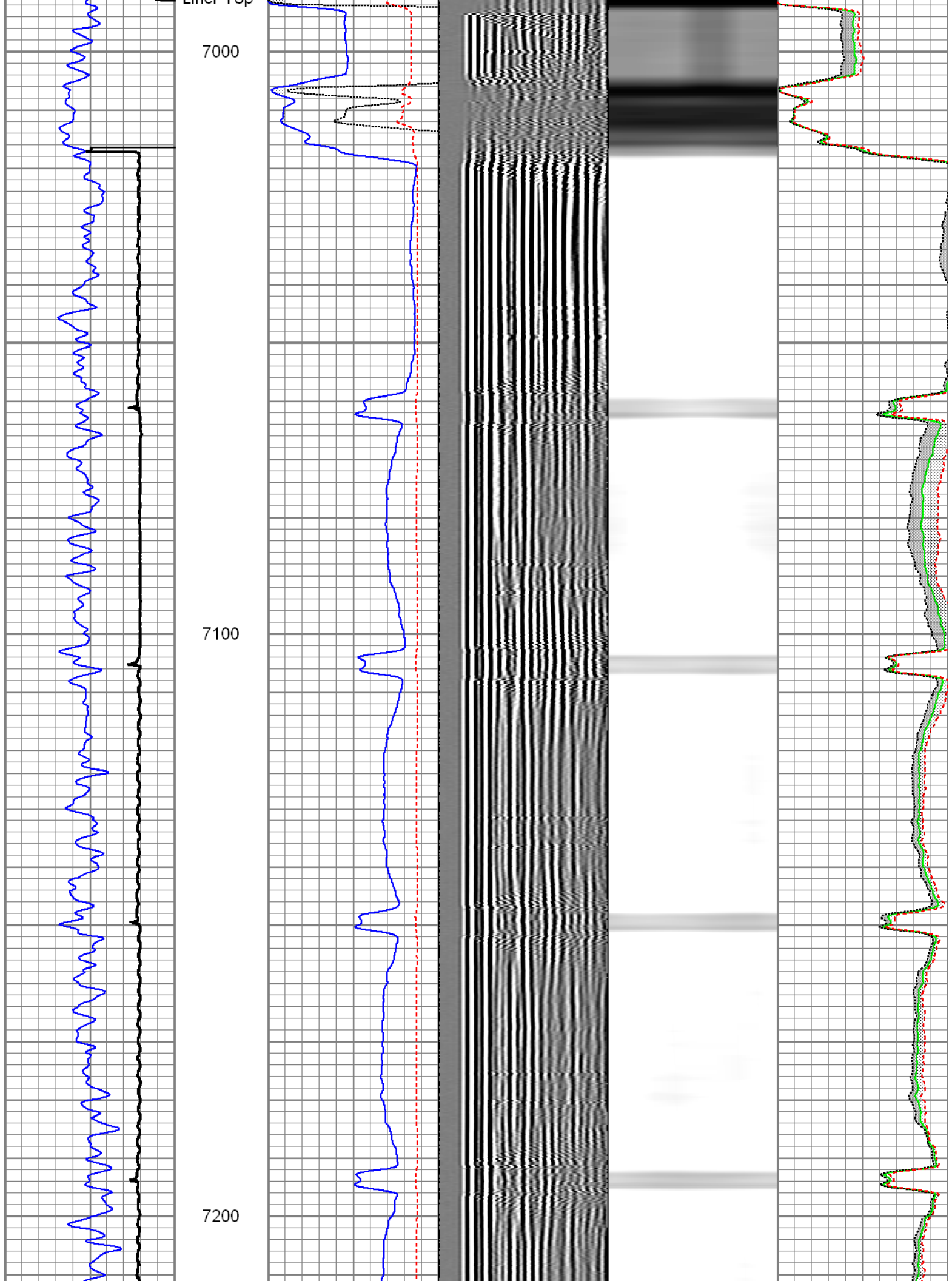


Line 10p

7000

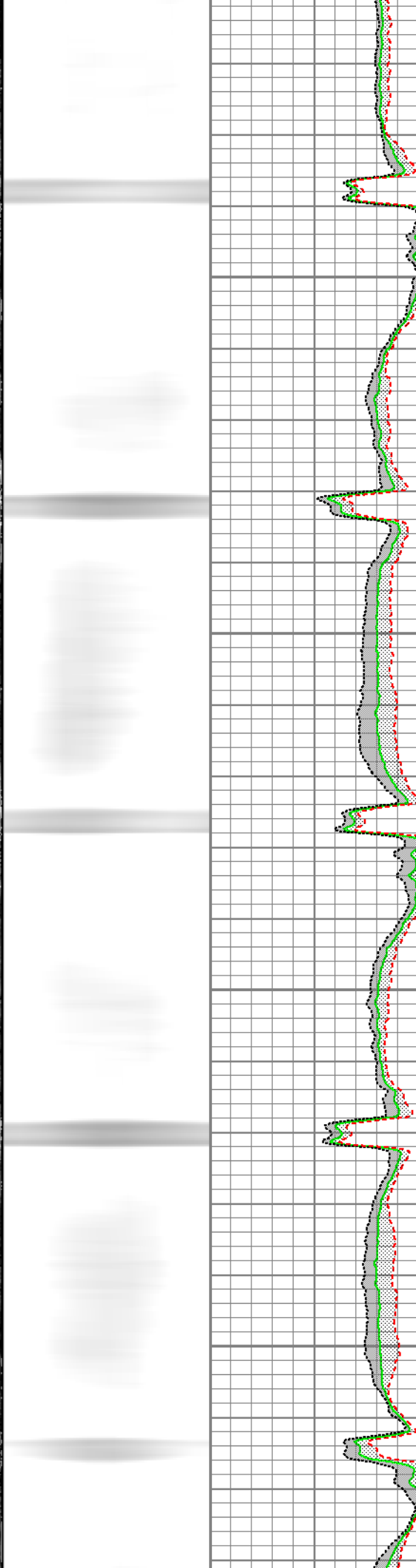
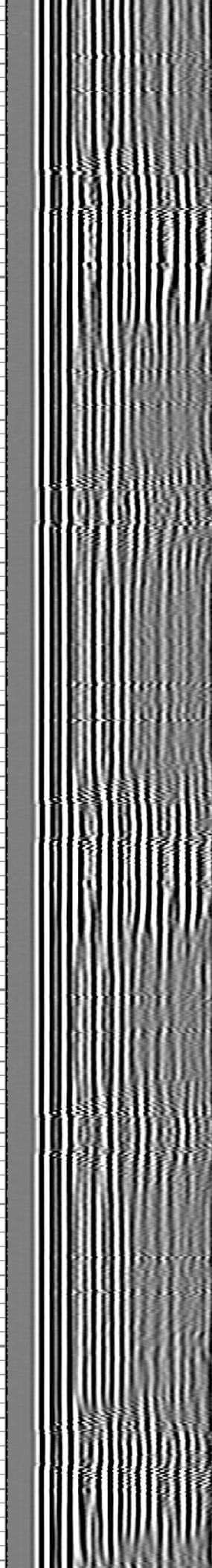
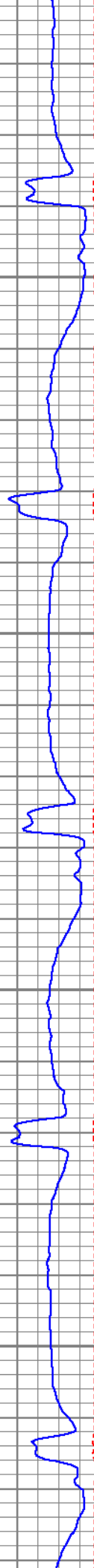
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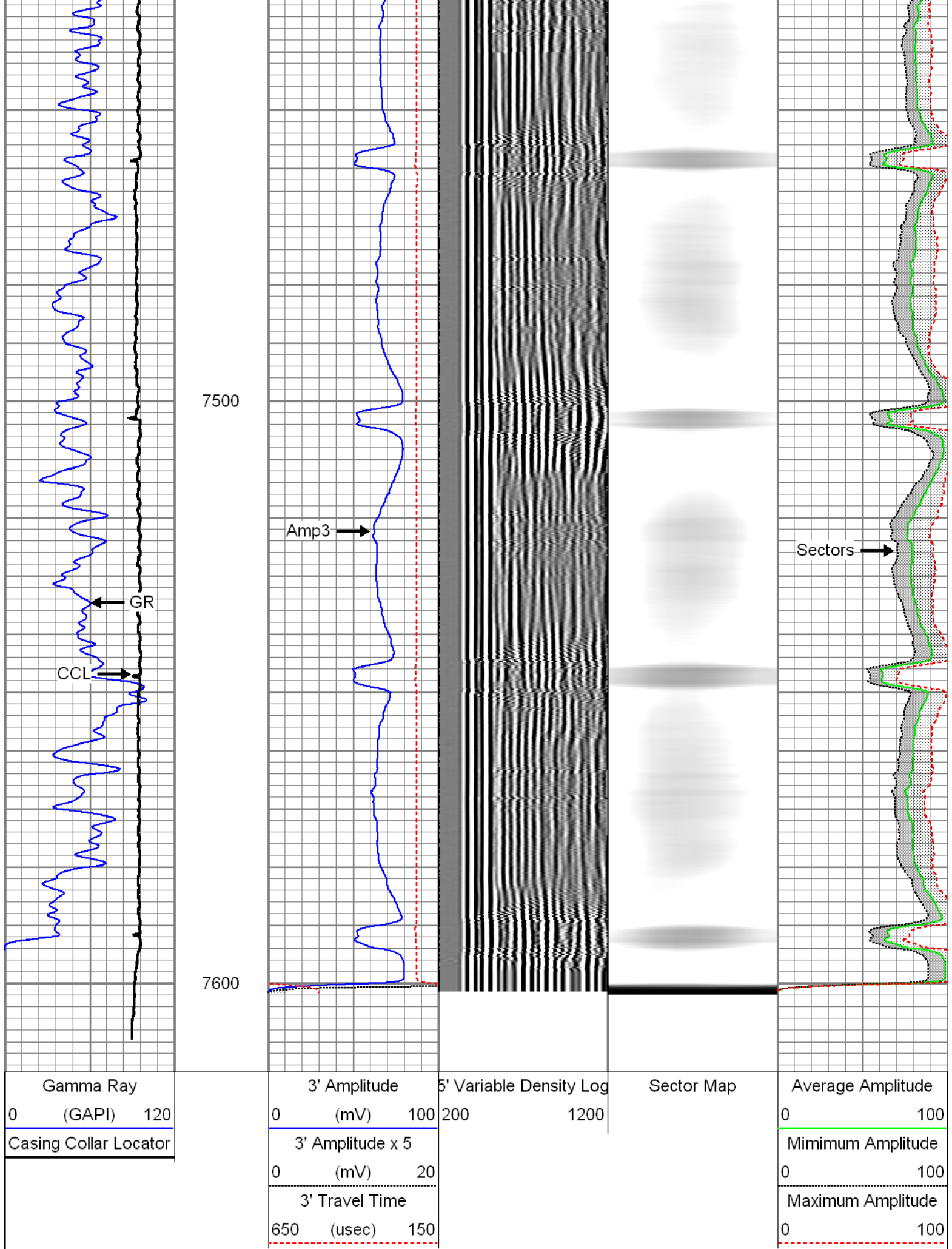
7200



7300

7400





Gamma Ray		
0	(GAPI)	120
Casing Collar Locator		

3' Amplitude		
0	(mV)	100
3' Amplitude x 5		
0	(mV)	20
3' Travel Time		
650	(usec)	150

5' Variable Density Log
200 1200

Sector Map
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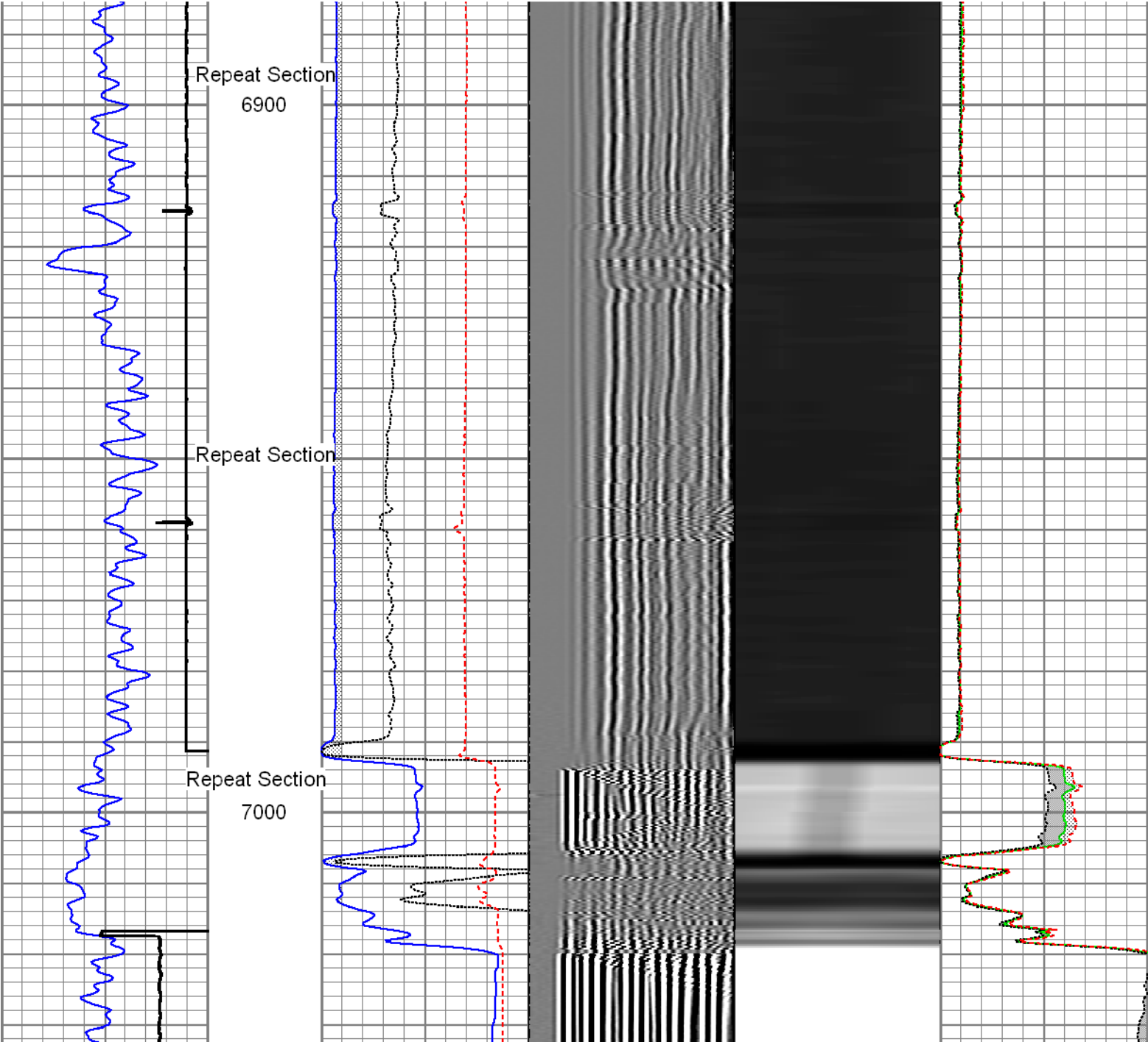
Average Amplitude		
0		100
Minimum Amplitude		
0		100
Maximum Amplitude		
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Recorded with 2800 Psi surface induced pressure

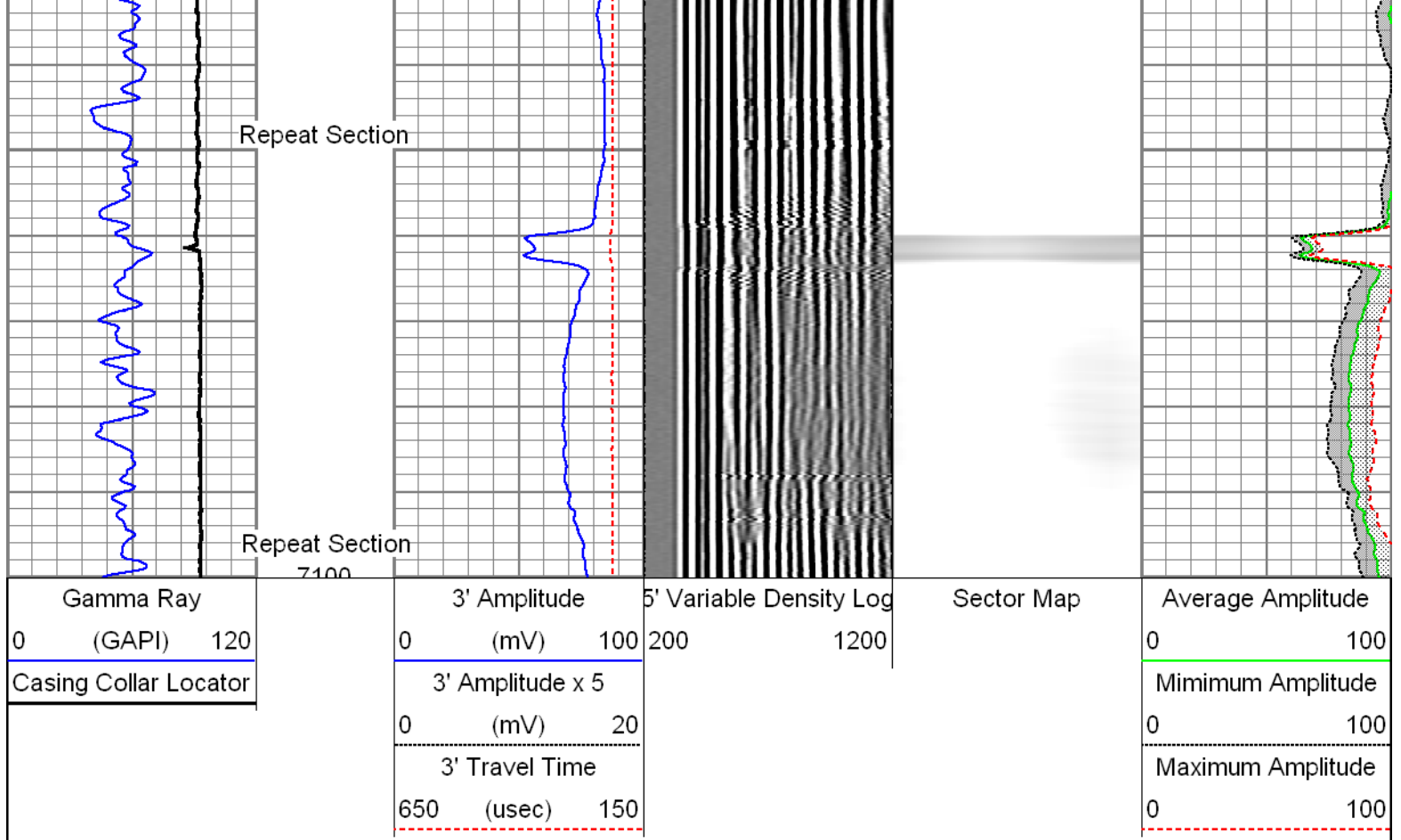
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Dataset Pathname:  
Presentation Format:  
Dataset Creation:  
Charted by:

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Repeat  
rbt4\_mit  
Tue Jul 01 09:09:46 2014 by Log 7.0 B1  
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

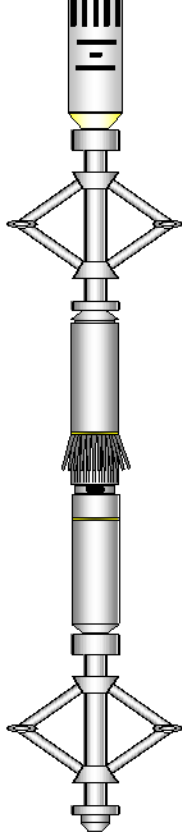






Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.37		UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_XTU-UW_XTU_002 (10010519) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (050836) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC #3 -DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVFS1	14.99		UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS2	14.99					
WVFS3	14.99					
WVFS4	14.99					
WVFS5	14.99					
WVFS6	14.99					



WVFS7	14.99		UW_PRC #4 -DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVFS8	14.99					
CBLTEMP	14.99					
CBLROT	14.99					
WVF5FT	13.99					
MIT	4.97		UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
TSTAMP	0.00		UW_PRC-DSSRAC (084) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512338563_Anadarko_Deepe 35C-27HZ_07-01-14_MIT_RBL.db: field/well/run1/7Main Total Length: 26.62 ft Total Weight: 319.30 lb O.D. 3.13 in						

Calibration Report			
Database File:	0512338563_Anadarko_Deepe 35C-27HZ_07-01-14_MIT_RBL.db		
Dataset Pathname:	CalReport		
Dataset Creation:	Tue Jul 01 12:44:56 2014 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:			Tue Jul 01 08:04:42 2014			
Ring size:	4	5	6	7		
(in)	Sens	Sens	Sens	Sens		
Finger 01:	1201	351.0	1552	374.0	1926	380.0
Finger 02:	1143	365.0	1508	396.0	1904	408.0
Finger 03:	1148	350.0	1498	381.0	1879	394.0
					2273	

Finger 03:	1116	353.0	1453	391.0	1879	421.0	2270
Finger 04:	1094	367.0	1461	407.0	1868	426.0	2294
Finger 05:	1106	346.0	1452	378.0	1830	392.0	2222
Finger 06:	1106	360.0	1466	395.0	1861	410.0	2271
Finger 07:	1131	349.0	1480	382.0	1862	395.0	2257
Finger 08:	1088	355.0	1443	397.0	1840	414.0	2254
Finger 09:	1164	359.0	1523	387.0	1910	393.0	2303
Finger 10:	1100	352.0	1452	385.0	1837	397.0	2234
Finger 11:	1105	349.0	1454	391.0	1845	409.0	2254
Finger 12:	1175	352.0	1527	373.0	1900	378.0	2278
Finger 13:	1124	351.0	1475	389.0	1864	409.0	2273
Finger 14:	1097	363.0	1460	404.0	1864	422.0	2286
Finger 15:	1059	363.0	1422	408.0	1830	434.0	2264
Finger 16:	1136	356.0	1492	391.0	1883	414.0	2297
Finger 17:	1144	354.0	1498	383.0	1881	402.0	2283
Finger 18:	1196	350.0	1546	382.0	1928	403.0	2331
Finger 19:	1146	357.0	1503	391.0	1894	413.0	2307
Finger 20:	1061	359.0	1420	403.0	1823	428.0	2251
Finger 21:	1145	352.0	1497	387.0	1884	412.0	2296
Finger 22:	1141	355.0	1496	392.0	1888	416.0	2304
Finger 23:	1235	338.0	1573	365.0	1938	387.0	2325
Finger 24:	1154	363.0	1517	399.0	1916	418.0	2334
Finger 25:	1153	356.0	1509	395.0	1904	422.0	2326
Finger 26:	1191	358.0	1549	388.0	1937	404.0	2341
Finger 27:	1199	346.0	1545	381.0	1926	404.0	2330
Finger 28:	1165	362.0	1527	396.0	1923	419.0	2342
Finger 29:	1143	363.0	1506	403.0	1909	428.0	2337
Finger 30:	1144	359.0	1503	395.0	1898	423.0	2321
Finger 31:	1198	353.0	1551	380.0	1931	395.0	2326
Finger 32:	1144	360.0	1504	396.0	1900	417.0	2317
Finger 33:	1149	361.0	1510	393.0	1903	416.0	2319
Finger 34:	1135	366.0	1501	401.0	1902	419.0	2321
Finger 35:	1193	351.0	1544	377.0	1921	392.0	2313
Finger 36:	1132	362.0	1494	396.0	1890	413.0	2303
Finger 37:	1195	347.0	1542	371.0	1913	388.0	2301
Finger 38:	1224	349.0	1573	372.0	1945	386.0	2331
Finger 39:	1126	354.0	1480	389.0	1869	404.0	2273
Finger 40:	1077	369.0	1446	412.0	1858	427.0	2285

Post Survey Calibration Check								
Performed:					Tue Jul 01 12:44:42 2014			
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.019	0.009	5.012	0.006	6.012	0.006	7.010	0.005
Finger 02:	4.014	0.007	5.009	0.005	6.011	0.006	7.012	0.006
Finger 03:	4.009	0.005	5.010	0.005	6.008	0.004	7.008	0.004
Finger 04:	4.010	0.005	5.002	0.001	6.006	0.003	7.001	0.001
Finger 05:	4.019	0.010	5.013	0.007	6.015	0.008	7.010	0.005
Finger 06:	4.021	0.011	5.010	0.005	6.013	0.007	7.012	0.006
Finger 07:	4.014	0.007	5.012	0.006	6.013	0.006	7.012	0.006
Finger 08:	4.011	0.006	5.011	0.006	6.013	0.006	7.009	0.005
Finger 09:	4.015	0.008	5.011	0.005	6.011	0.006	7.009	0.005
Finger 10:	4.022	0.011	5.013	0.007	6.014	0.007	7.016	0.008
Finger 11:	4.009	0.005	5.013	0.006	6.015	0.007	7.012	0.006
Finger 12:	4.017	0.008	5.010	0.005	6.012	0.006	7.012	0.006
Finger 13:	4.023	0.011	5.011	0.006	6.010	0.005	7.011	0.006
Finger 14:	4.016	0.008	5.009	0.004	6.010	0.005	7.011	0.006
Finger 15:	4.018	0.009	5.012	0.006	6.012	0.006	7.011	0.005
Finger 16:	4.016	0.008	5.014	0.007	6.017	0.009	7.013	0.007
Finger 17:	4.017	0.009	4.992	-0.004	5.982	-0.009	6.986	-0.007
Finger 18:	4.013	0.006	5.014	0.007	6.016	0.008	7.012	0.006
Finger 19:	4.013	0.007	5.012	0.006	6.014	0.007	7.013	0.006
Finger 20:	4.026	0.013	5.013	0.006	6.011	0.006	7.012	0.006
Finger 21:	4.013	0.006	5.007	0.004	6.009	0.005	7.010	0.005
Finger 22:	4.014	0.007	5.014	0.007	6.012	0.006	7.009	0.004
Finger 23:	4.014	0.007	5.011	0.006	6.015	0.008	7.015	0.008

Finger 23:	4.014	0.007	5.011	0.008	6.015	0.008	7.015	0.008
Finger 24:	4.009	0.004	5.008	0.004	6.010	0.005	7.008	0.004
Finger 25:	4.016	0.008	5.012	0.006	6.015	0.008	7.012	0.006
Finger 26:	4.015	0.007	5.010	0.005	6.011	0.005	7.012	0.006
Finger 27:	4.011	0.006	5.014	0.007	6.011	0.006	7.010	0.005
Finger 28:	4.015	0.007	5.014	0.007	6.014	0.007	7.011	0.005
Finger 29:	4.010	0.005	5.009	0.005	6.011	0.006	7.009	0.005
Finger 30:	4.016	0.008	5.006	0.003	6.009	0.005	7.009	0.004
Finger 31:	4.017	0.008	5.012	0.006	6.013	0.006	7.010	0.005
Finger 32:	4.032	0.016	5.011	0.006	6.009	0.004	7.010	0.005
Finger 33:	4.026	0.013	5.010	0.005	6.010	0.005	7.009	0.005
Finger 34:	4.012	0.006	5.008	0.004	6.008	0.004	7.006	0.003
Finger 35:	4.014	0.007	5.010	0.005	6.012	0.006	7.012	0.006
Finger 36:	4.015	0.007	5.010	0.005	6.012	0.006	7.009	0.004
Finger 37:	4.017	0.009	5.008	0.004	6.013	0.006	7.015	0.007
Finger 38:	4.014	0.007	5.008	0.004	6.009	0.005	7.009	0.004
Finger 39:	4.015	0.008	5.015	0.007	6.010	0.005	7.010	0.005
Finger 40:	4.011	0.005	5.012	0.006	6.008	0.004	7.010	0.005
Average:	4.016	0.008	5.010	0.005	6.011	0.006	7.010	0.005

#### Segmented Cement Bond Log Calibration Report

Serial Number: 1063  
Tool Model: UW\_RBT\_004  
  
Calibration Casing Diameter: 4.500 in  
Calibration Depth: 7024.060 ft

Master Calibration, performed Tue Jul 01 09:04:16 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.007	0.964	0.800	81.196	83.996	0.222
5FT	0.005	0.740	0.800	81.196	109.478	0.225
S1	0.005	0.984	0.000	100.000	102.125	-0.491
S2	0.004	1.009	0.000	100.000	99.502	-0.413
S3	0.010	1.006	0.000	100.000	100.342	-0.954
S4	0.005	1.007	0.000	100.000	99.813	-0.513
S5	0.008	0.969	0.000	100.000	104.120	-0.874
S6	0.007	0.932	0.000	100.000	108.210	-0.808
S7	0.009	0.933	0.000	100.000	108.234	-0.930
S8	0.008	0.949	0.000	100.000	106.278	-0.896

#### Gamma Ray Calibration Report

Serial Number: 050836  
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 LP  
Well Deepe 35C-27HZ  
Field Wattenberg

	County	Weld
	State	Colorado