



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Whiting Oil & Gas Corporation		Company Whiting Oil & Gas Corporation	
Well Razor Federal 26L-2304B		Well Razor Federal 26L-2304B	
Field Wildcat		Field Wildcat	
County Weld		County Weld	
State Colorado		State Colorado	
Location:		API # : 05-123-37987	
SHL: 2244' FSL 659' FWL		Other Services	
Lat/Long: 40.808533/-103.839292		JB/GR RBP MIT	
SEC 26 TWP 10N RGE 58W		Elevation	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Date		12-JUL-2014	
Run Number		One	
Depth Driller		14.021 FT	
Depth Logger		5.150 FT	
Bottom Logged Interval		5.145 FT	
Top Log Interval		Surface	
Open Hole Size		9.625"	
Type Fluid		Water	
Density / Viscosity		8.34 LB/GAL	
Max. Recorded Temp.		191°F	
Estimated Cement Top		435 FT	
Time Well Ready		ROA	
Time Logger on Bottom		8:50	
Equipment Number		HD 0255	
Location		Fort Lupton, CO	
Recorded By		Brent Kalkwarf	
Witnessed By		Tom Flynn	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing		9 5/8	
Intermediate #1		36	
Intermediate #2		J-55	
Liner		Top	
4 1/2		Surface	
29		Bottom	
L-80		1.559 FT	
5057.7 FT		6.048 FT	
14.011 FT		14.011 FT	

>>> Fold Here >>>

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

Logged as per Customer Request
Radial Cement Bond is Primary Log on the Well
RCBL Logged with 1500 PSI Induced pressure @ surface
Depth Corrected -2 FT to Casing Tally reported Liner Top @ 5057.7'

Thank you for choosing FMC Technologies Completion Services, Inc.

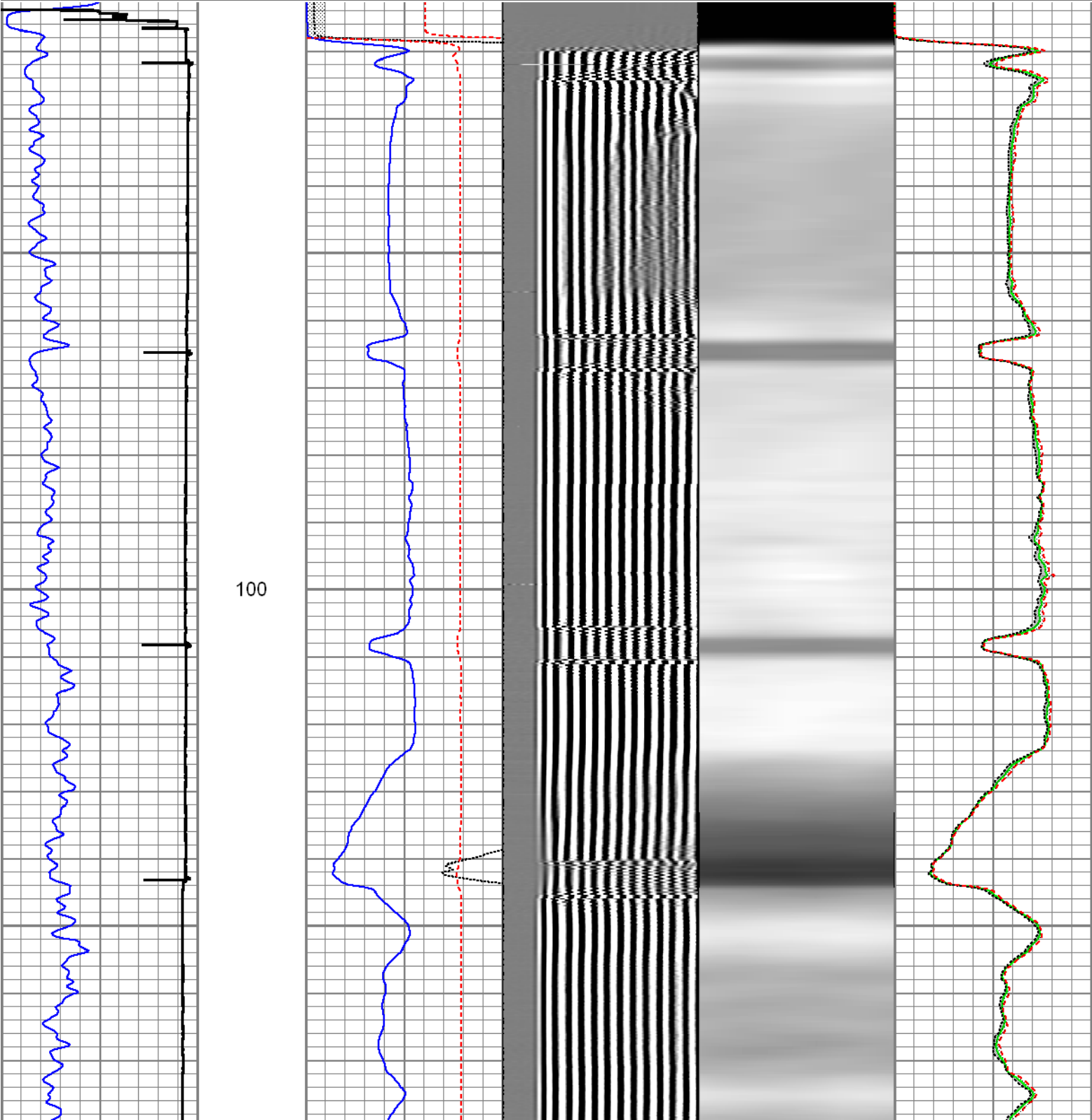


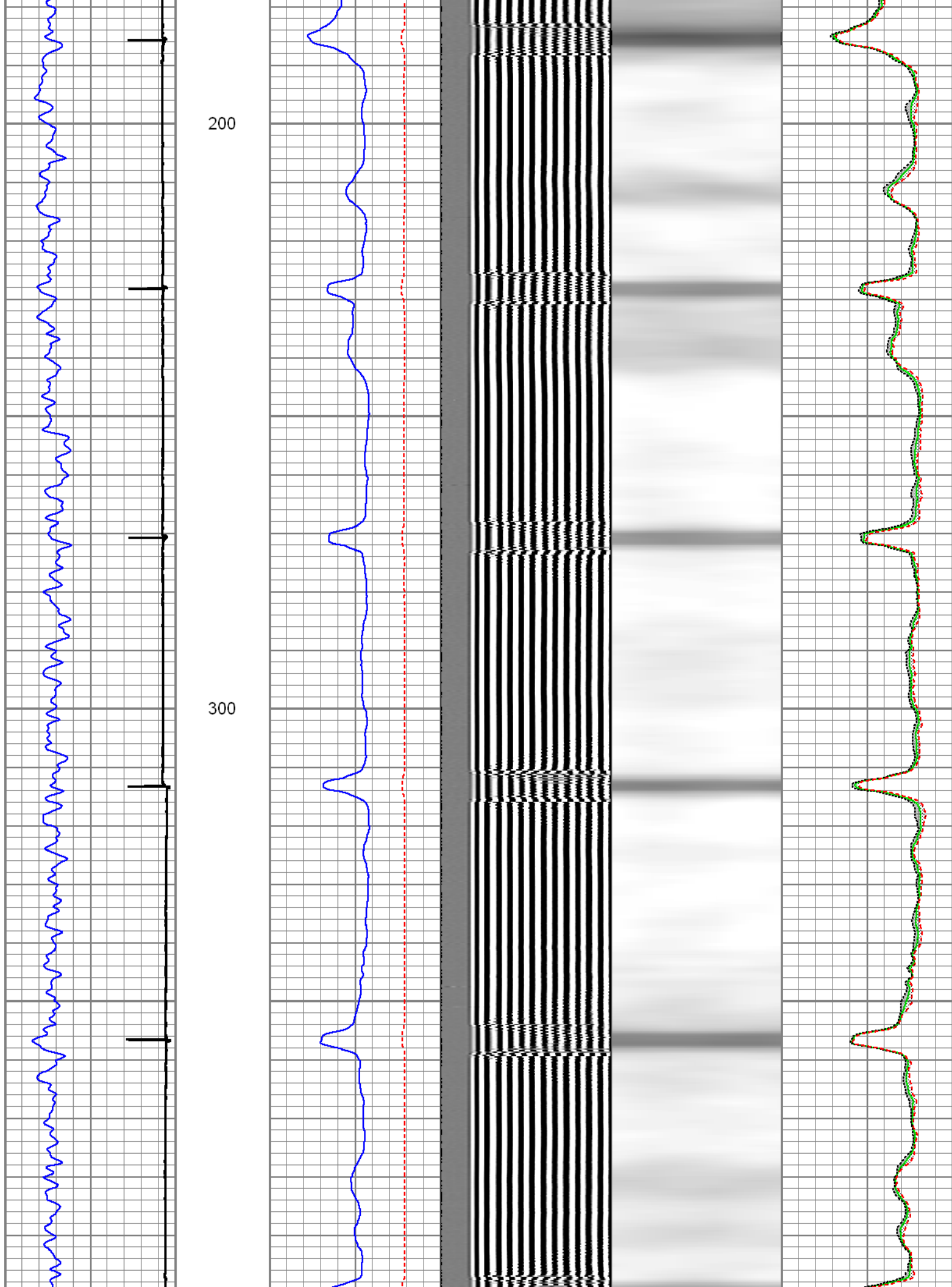
Main Pass

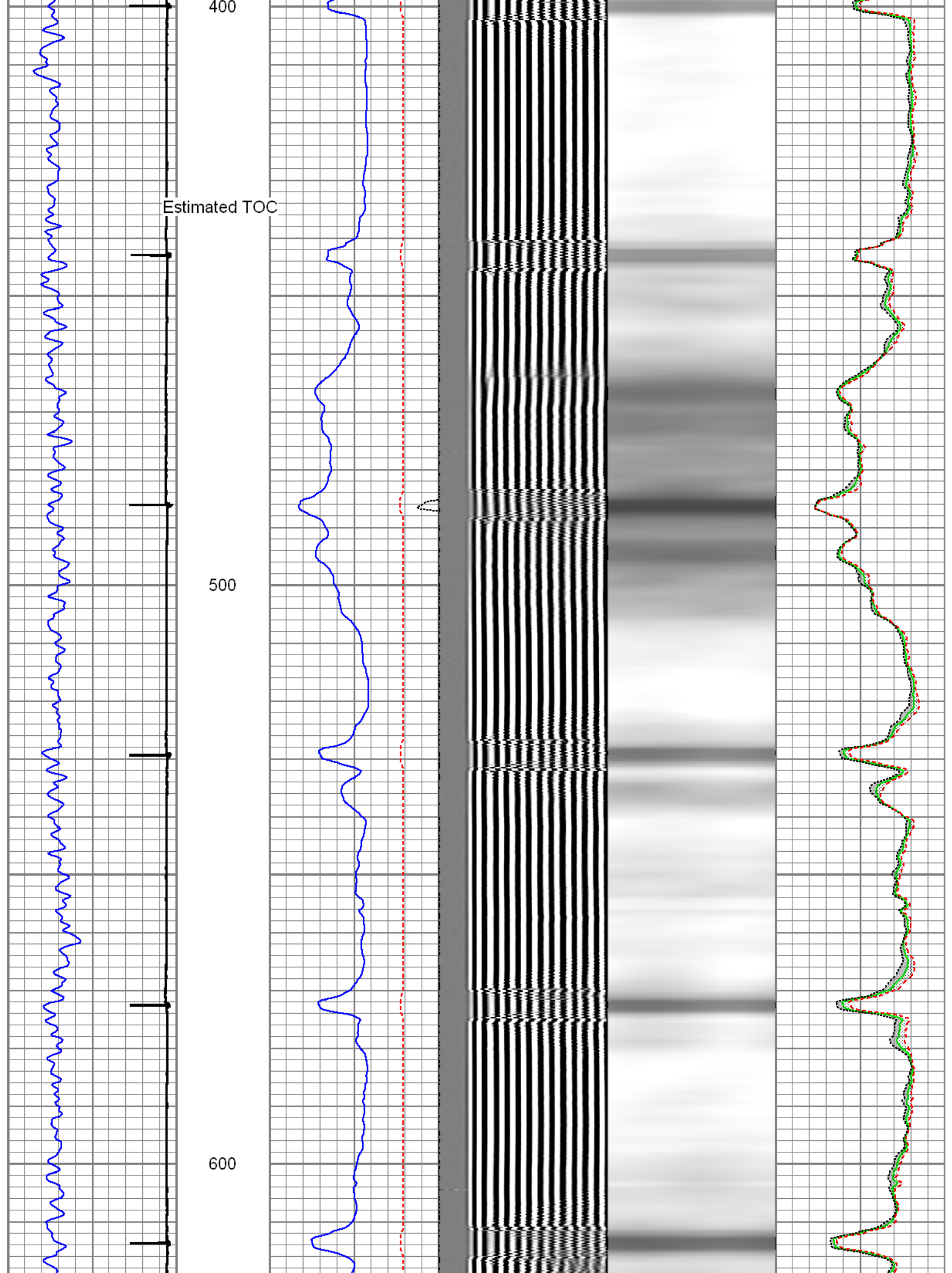
Recorded At 1500 PSI Surface Induced Pressure

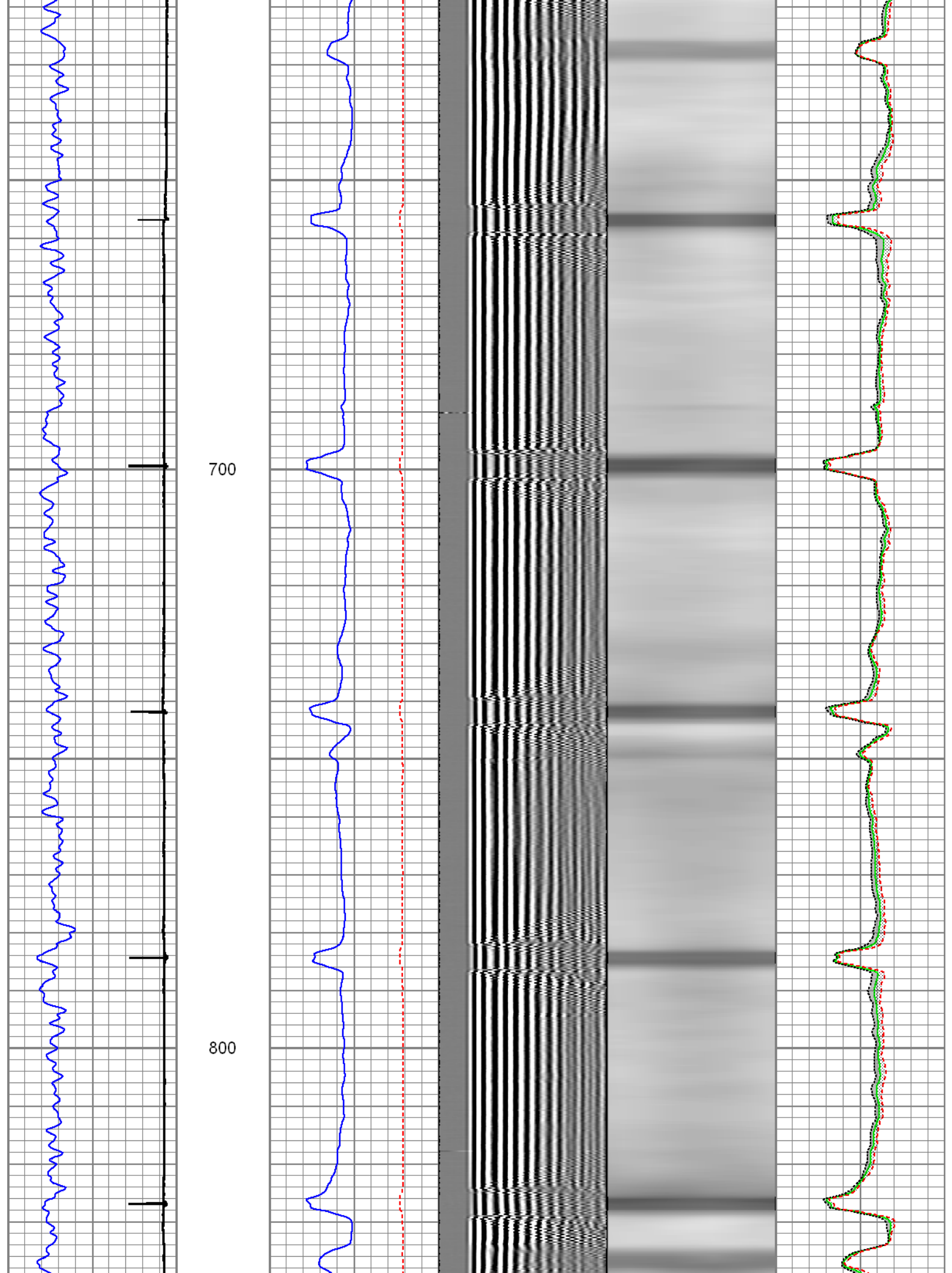
Database File: 07-12-14_whiting_razor federal 26l-2304b_mit_rbl.db
Dataset Pathname: Main1
Presentation Format: rbt4_mit
Dataset Creation: Sat Jul 12 09:22:44 2014 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

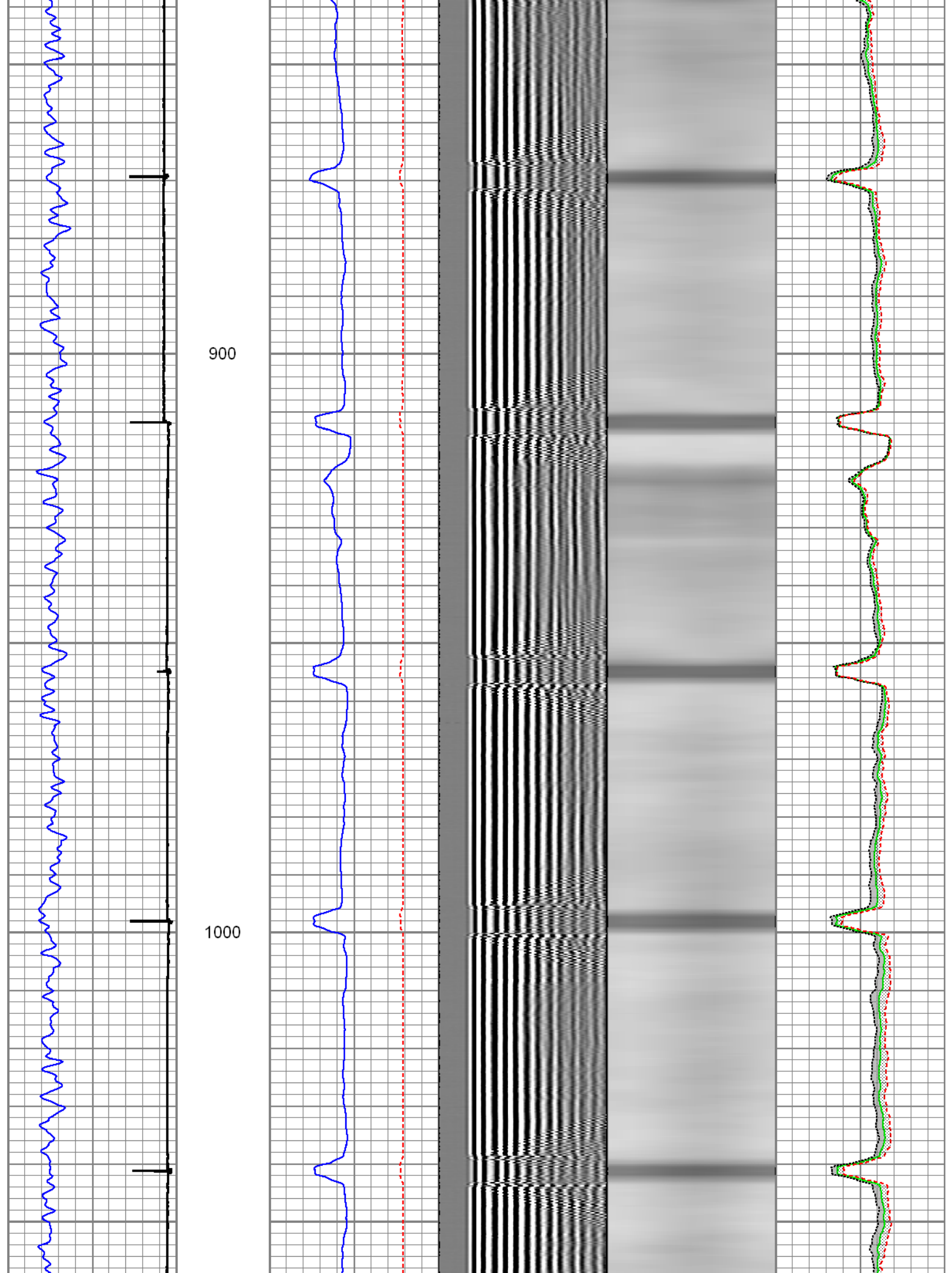
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

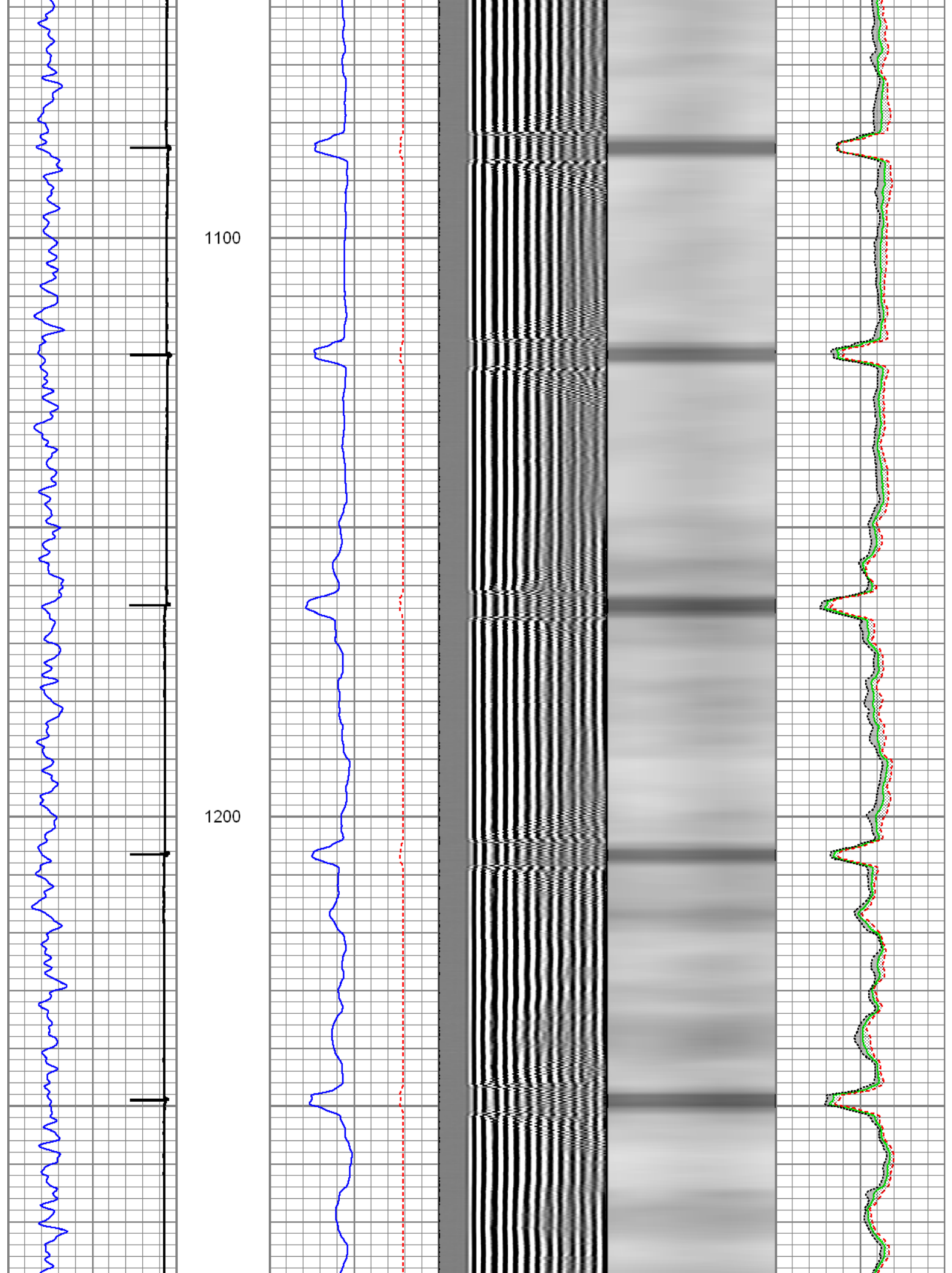


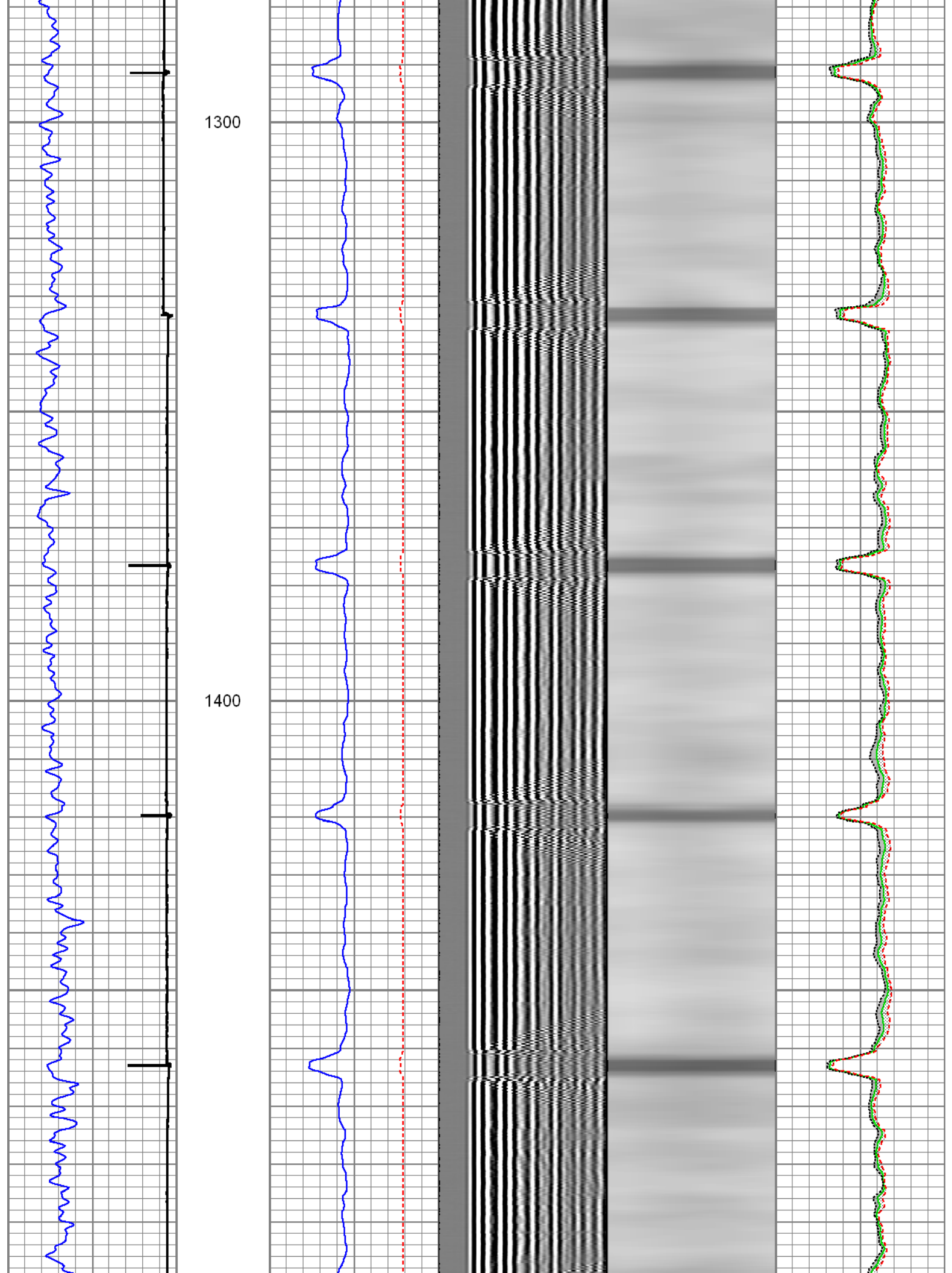


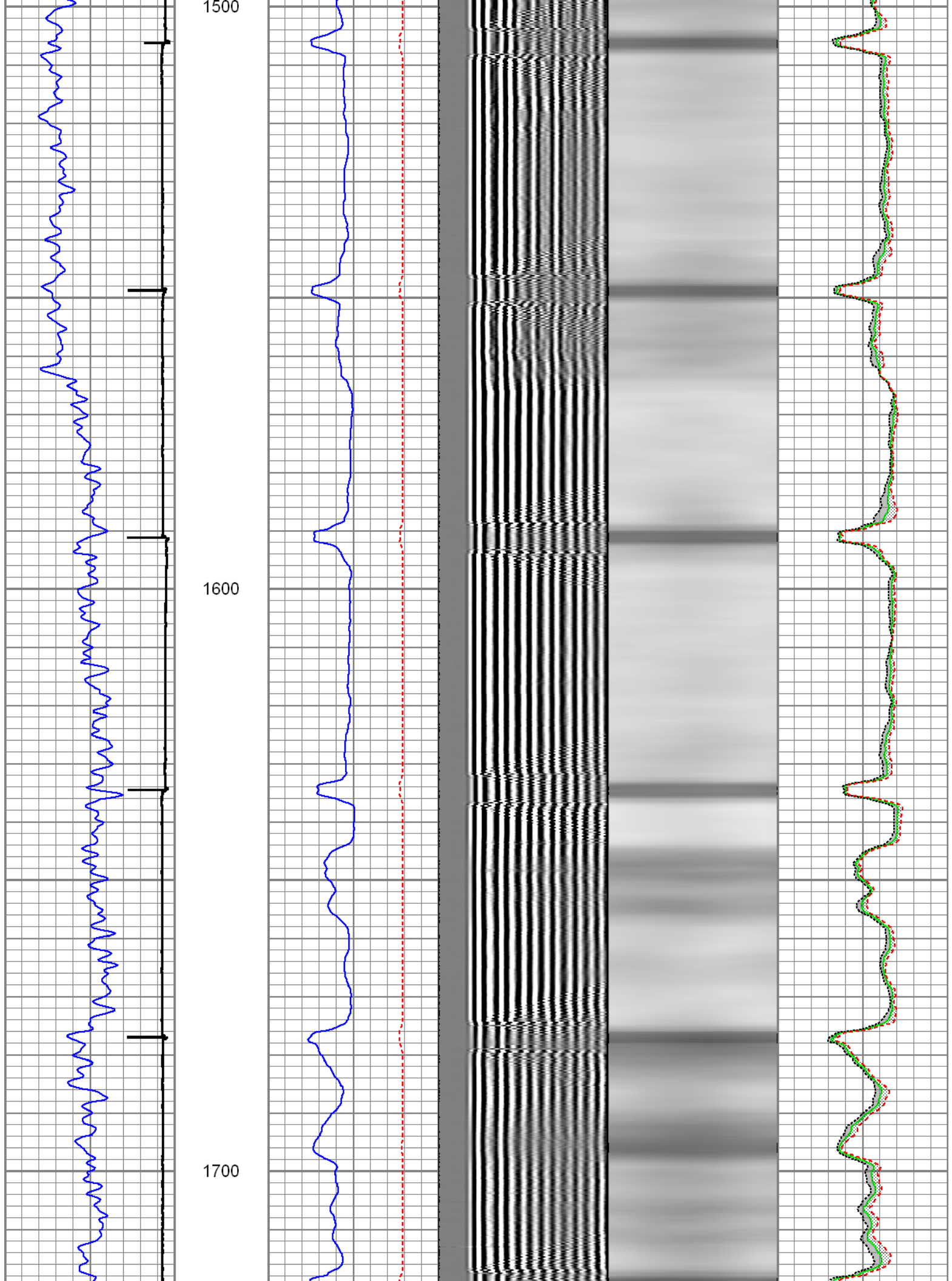


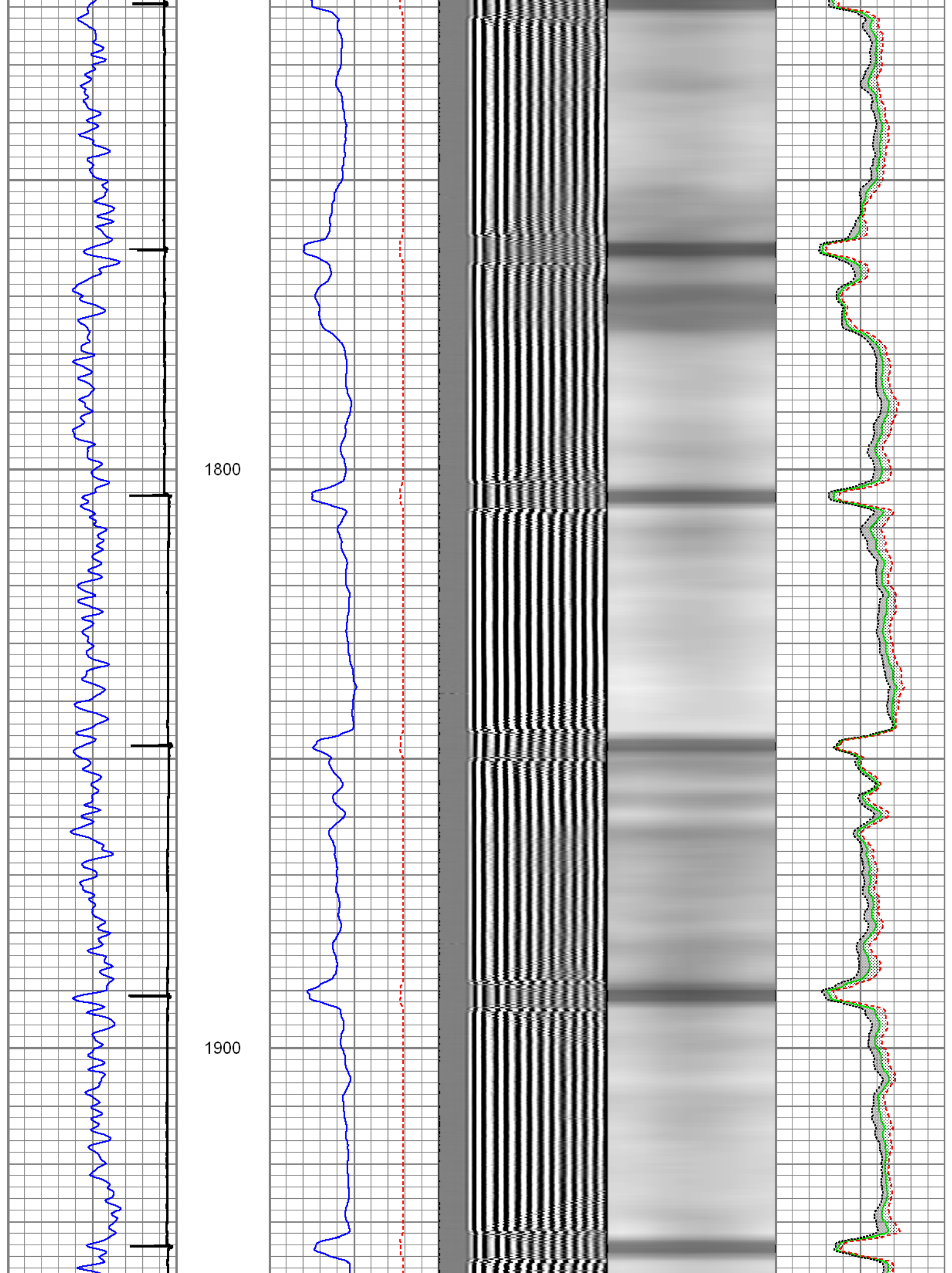


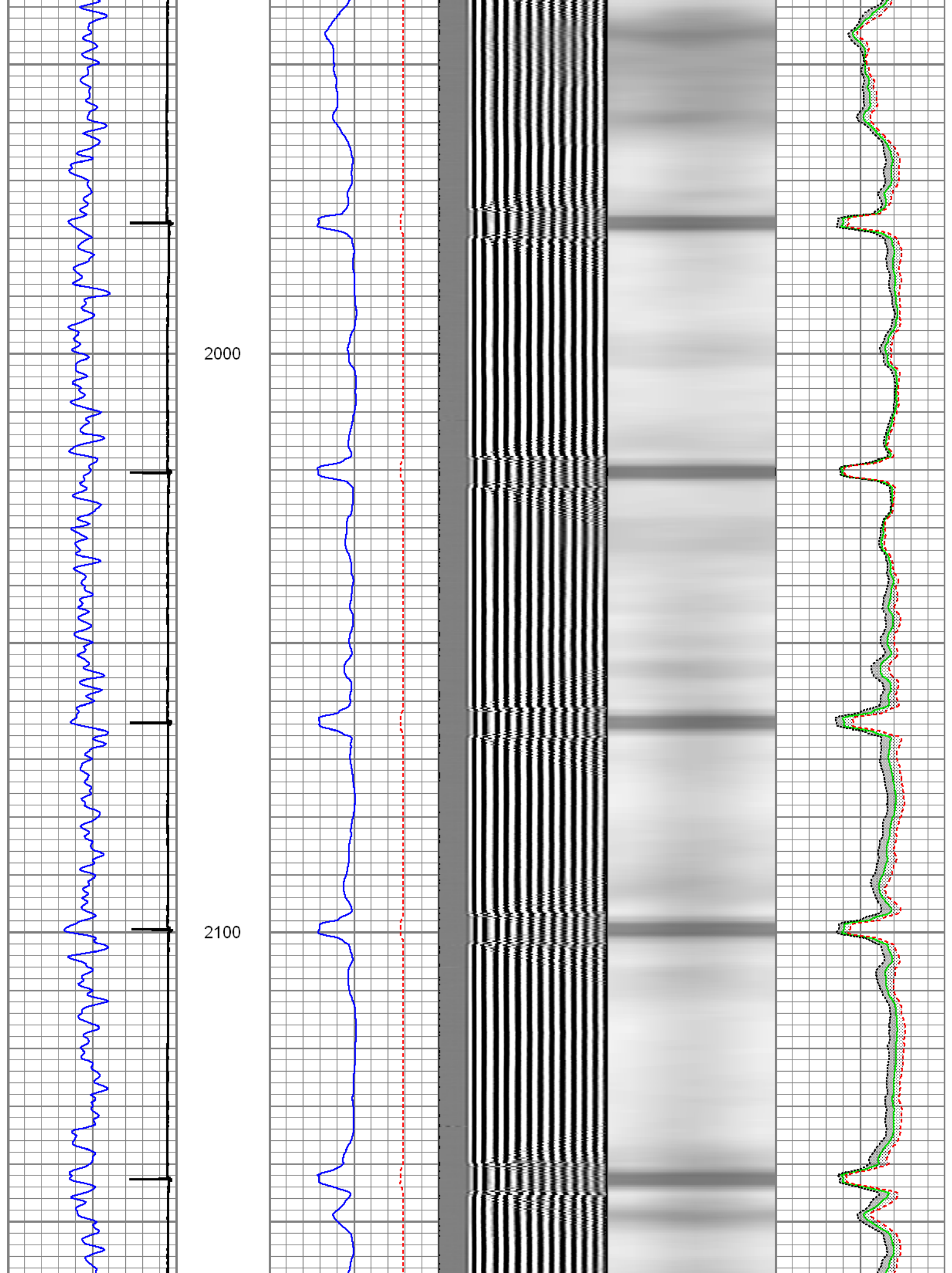






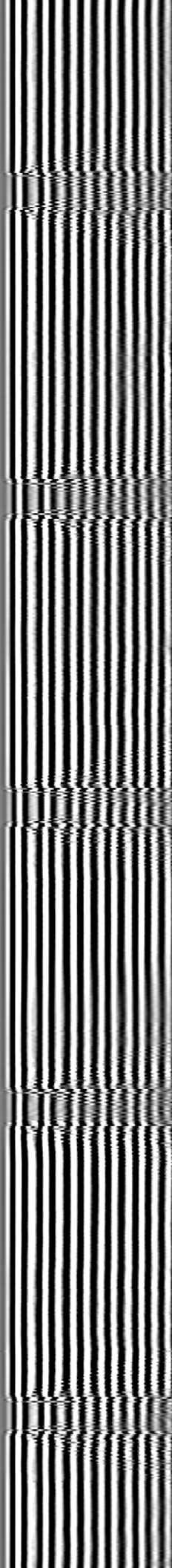


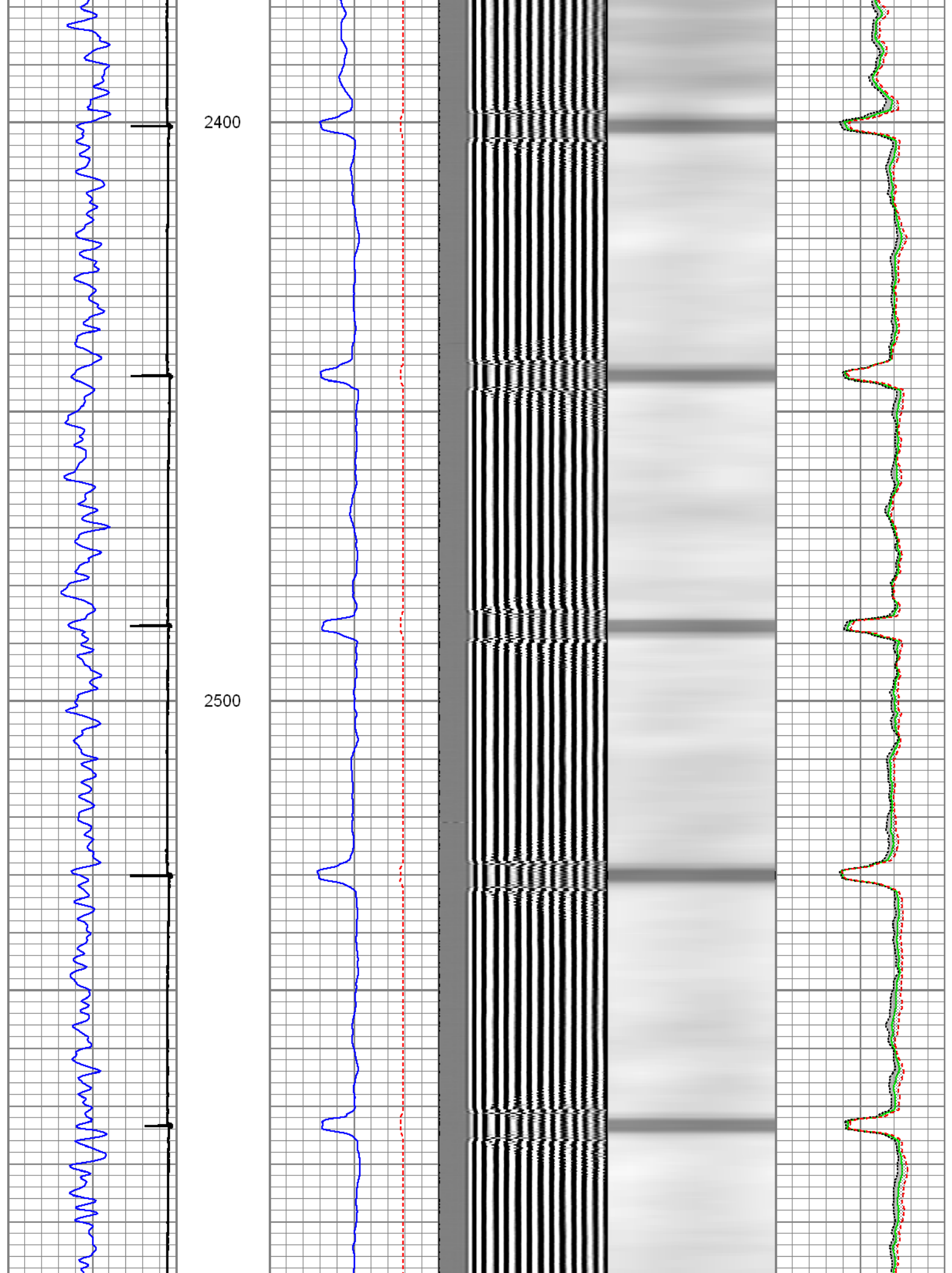




2200

2300

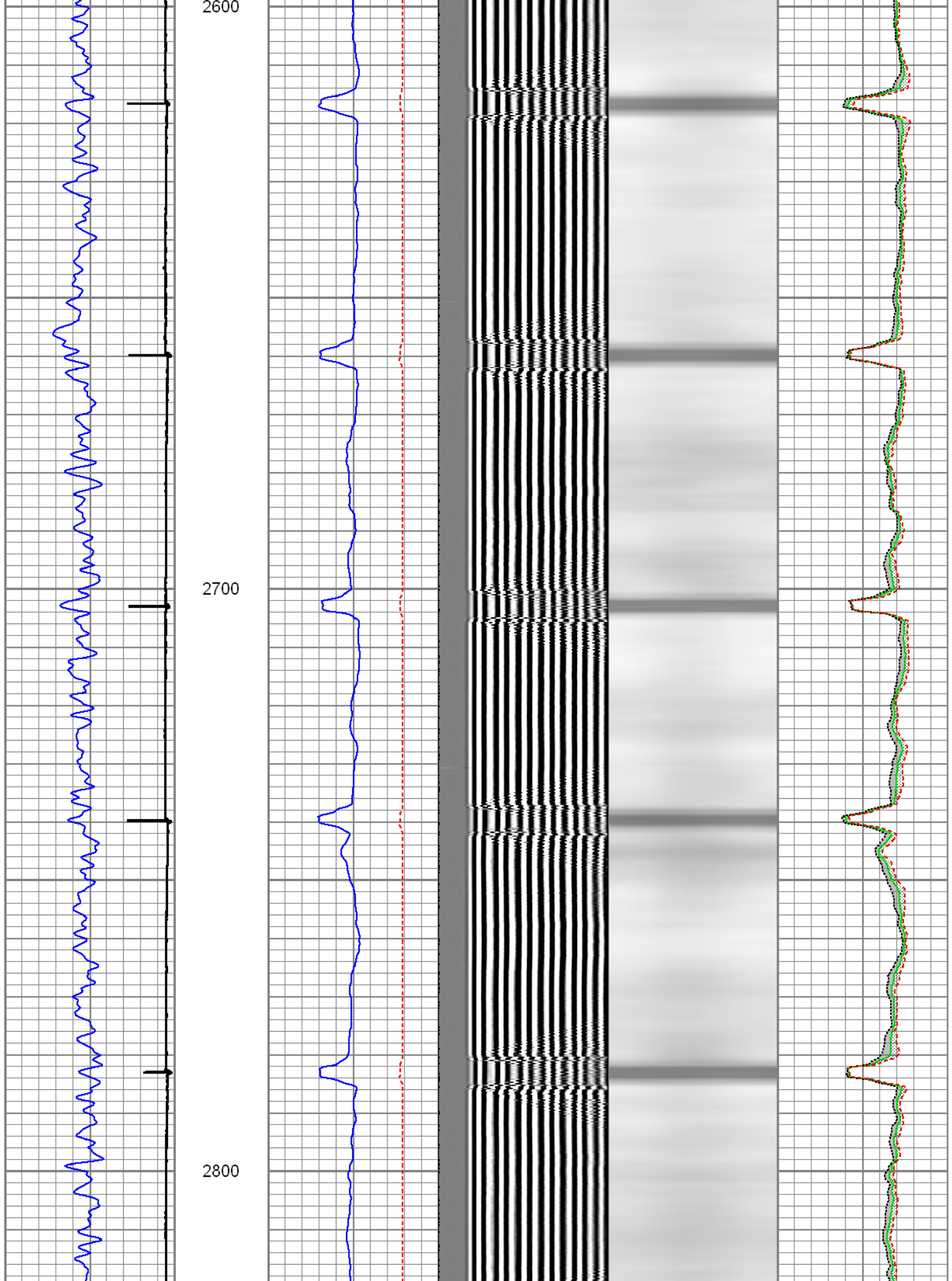


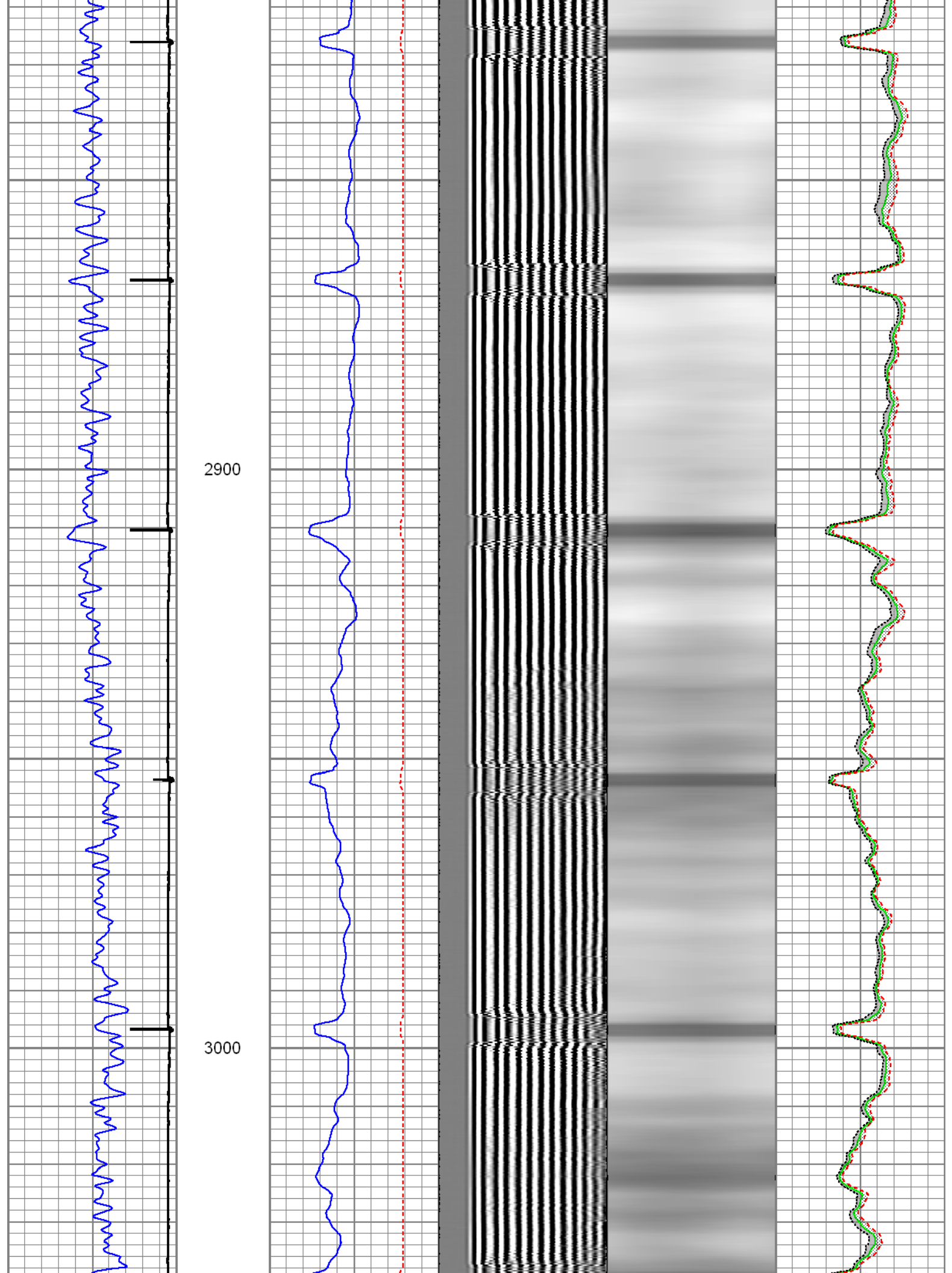


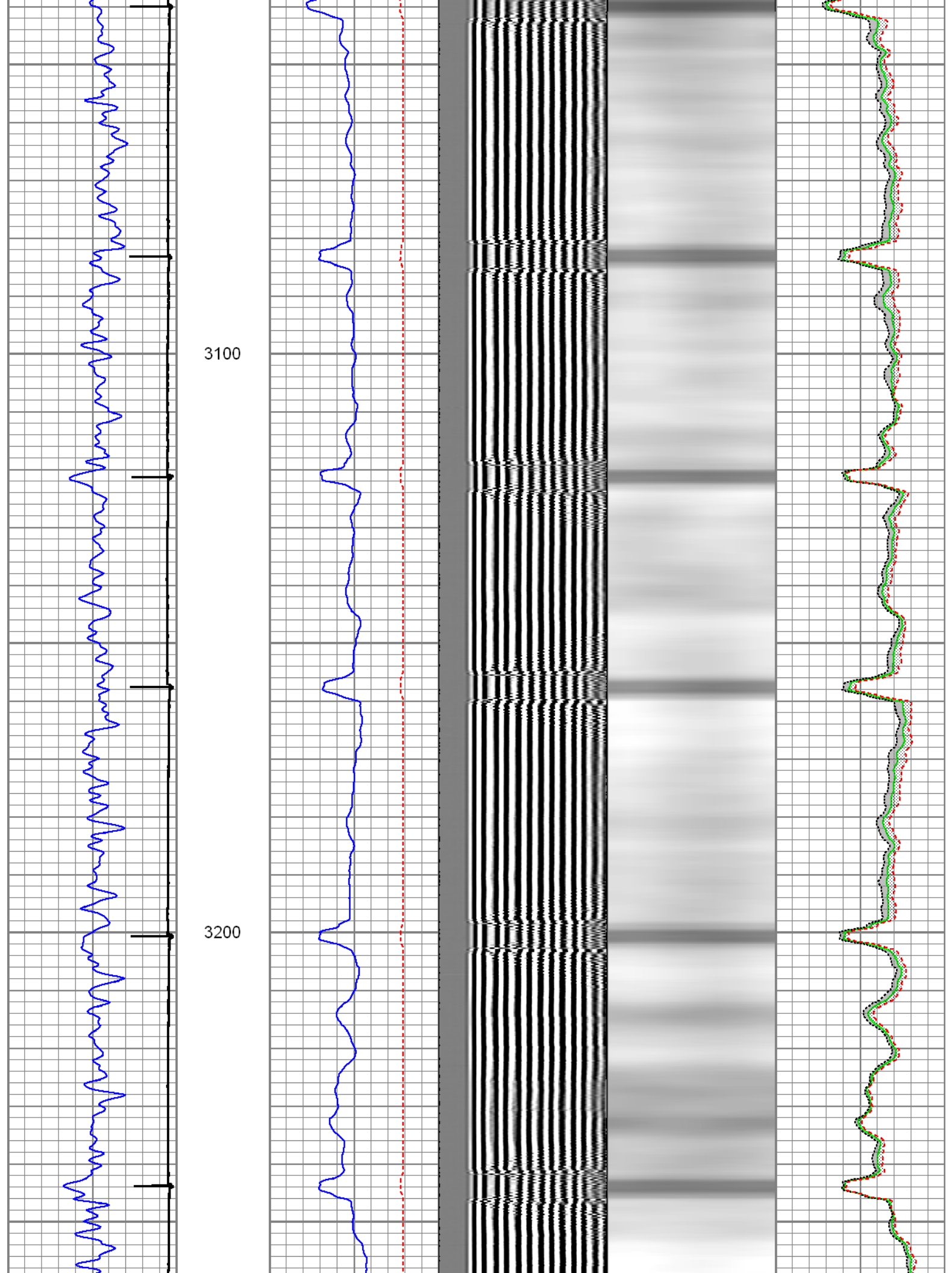
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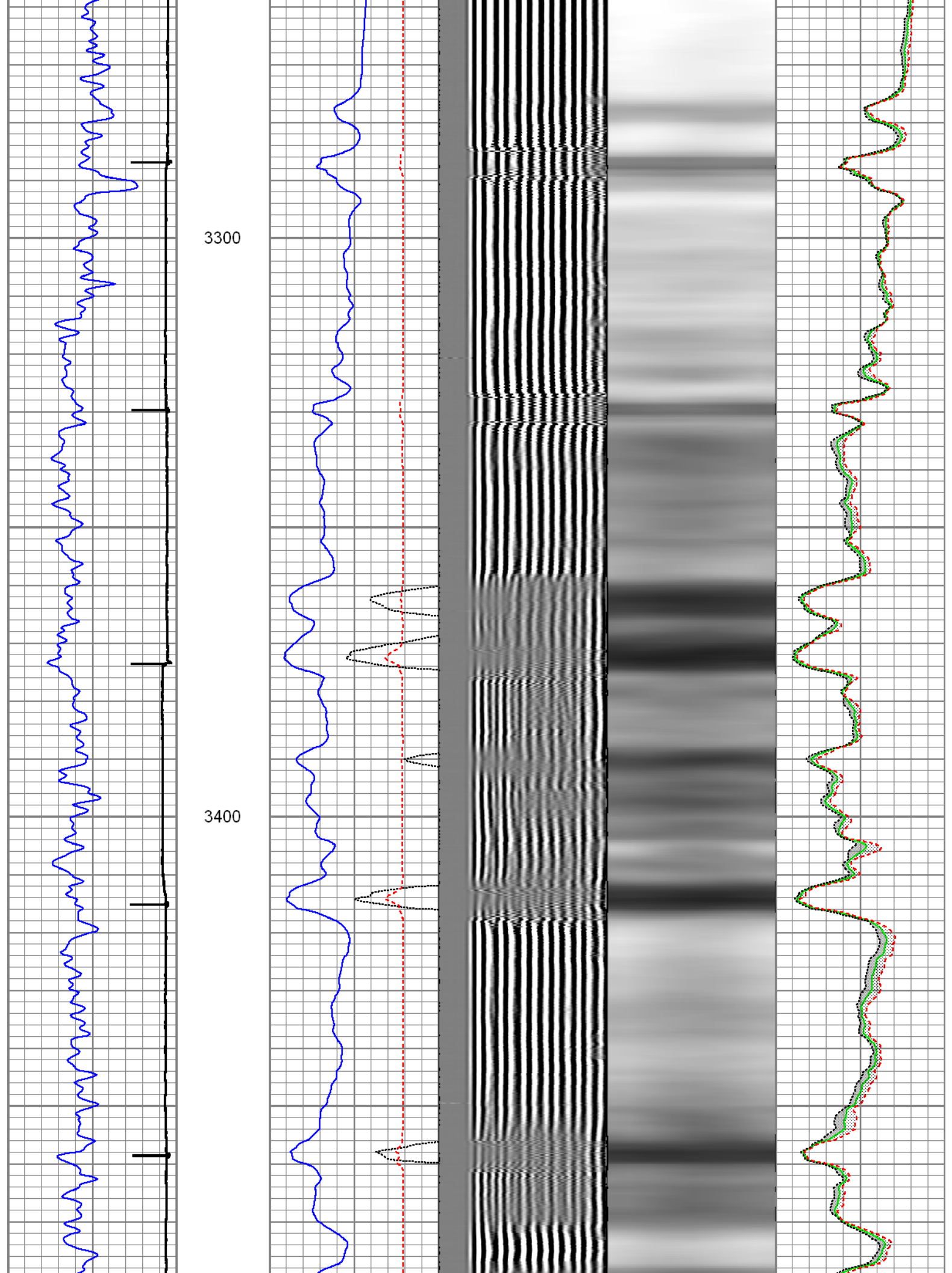
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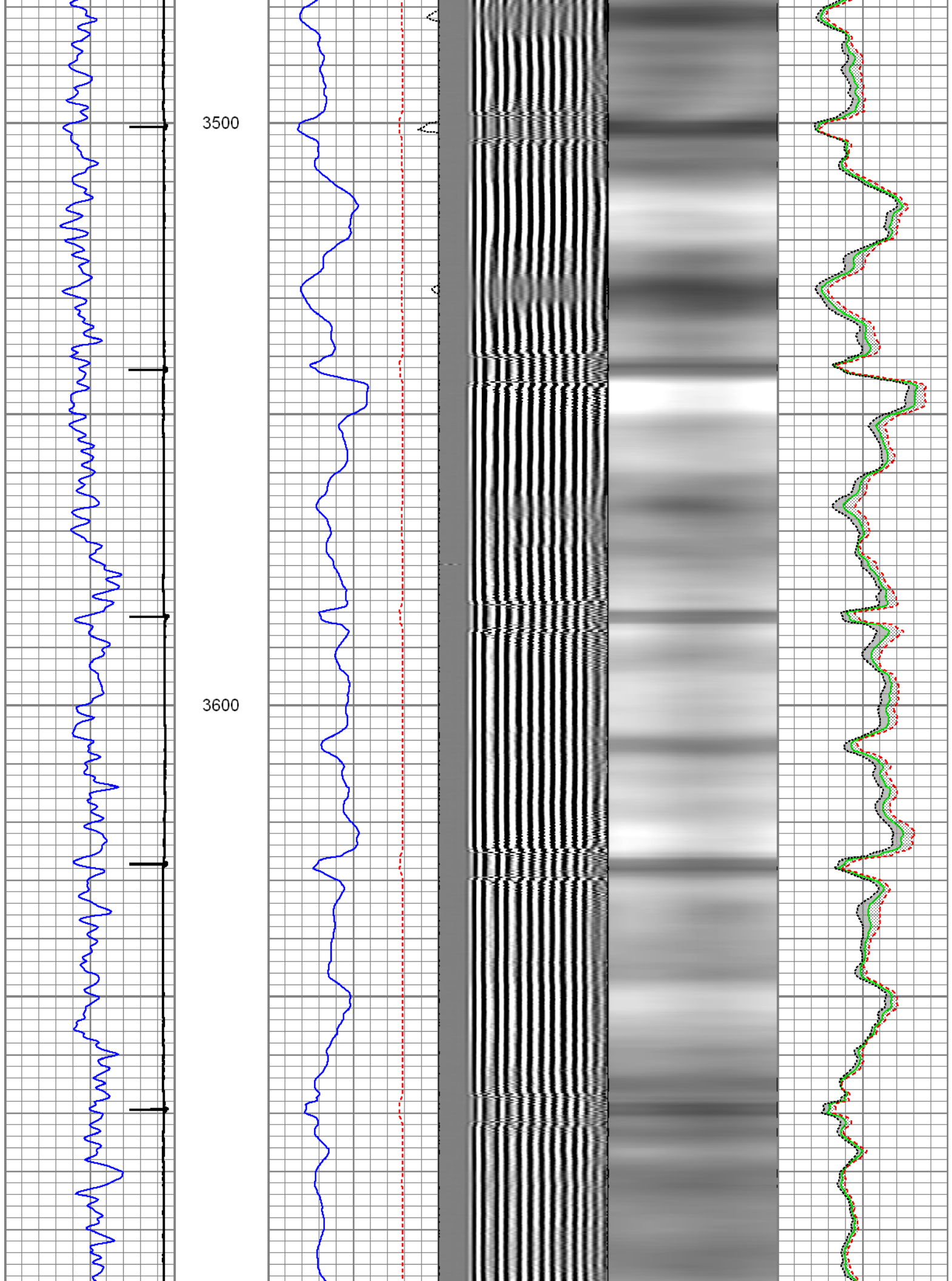
2800







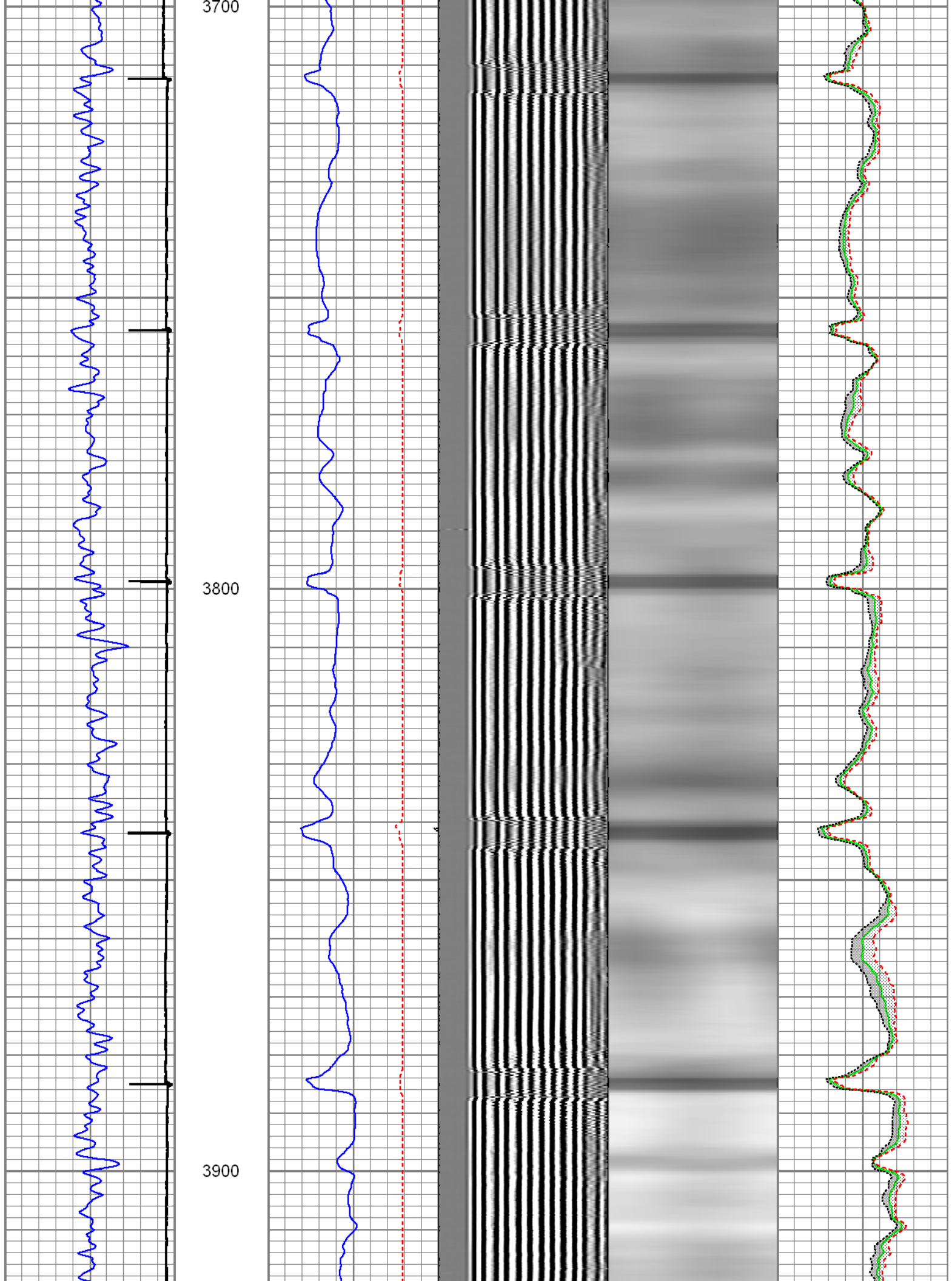


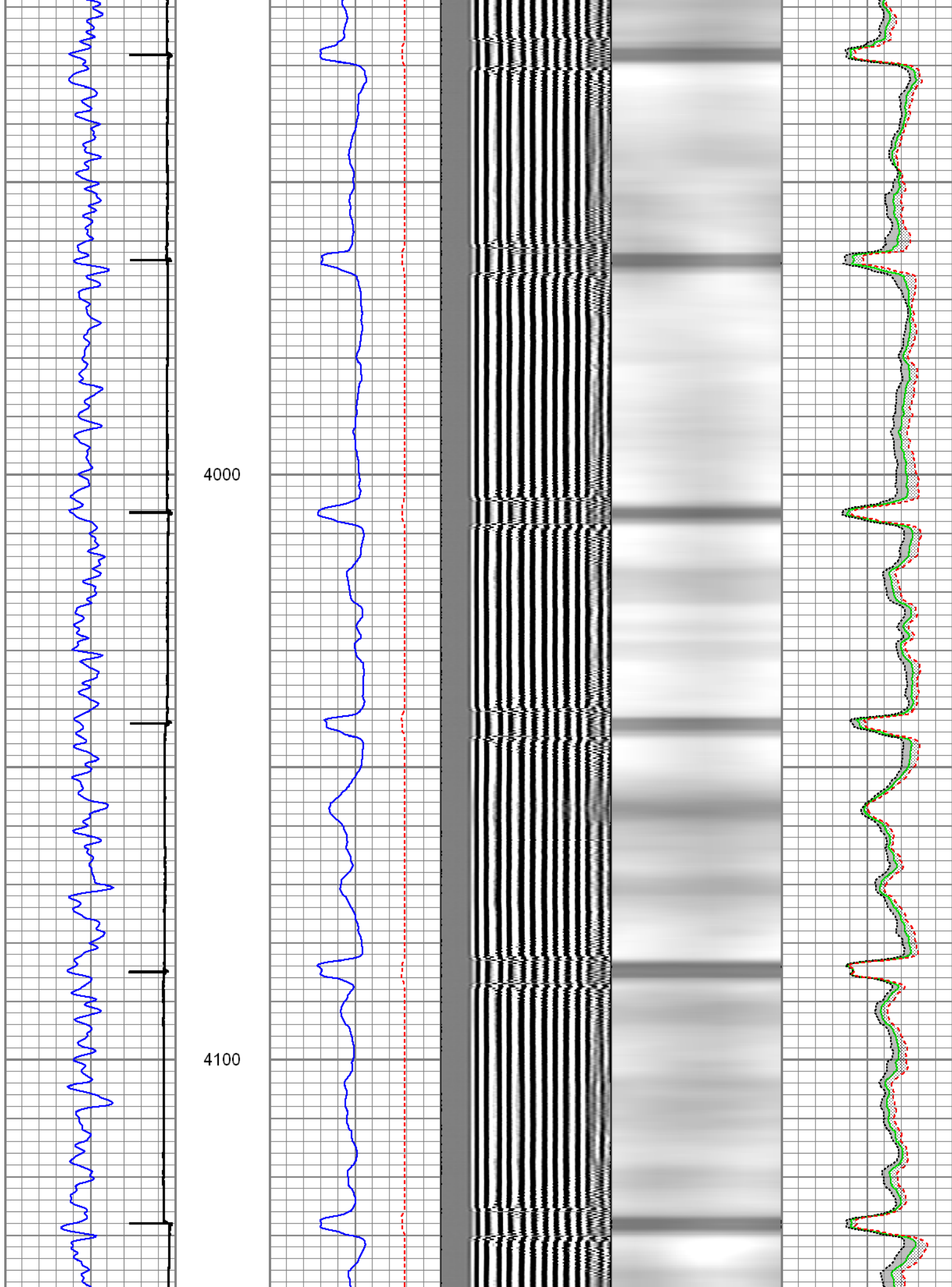


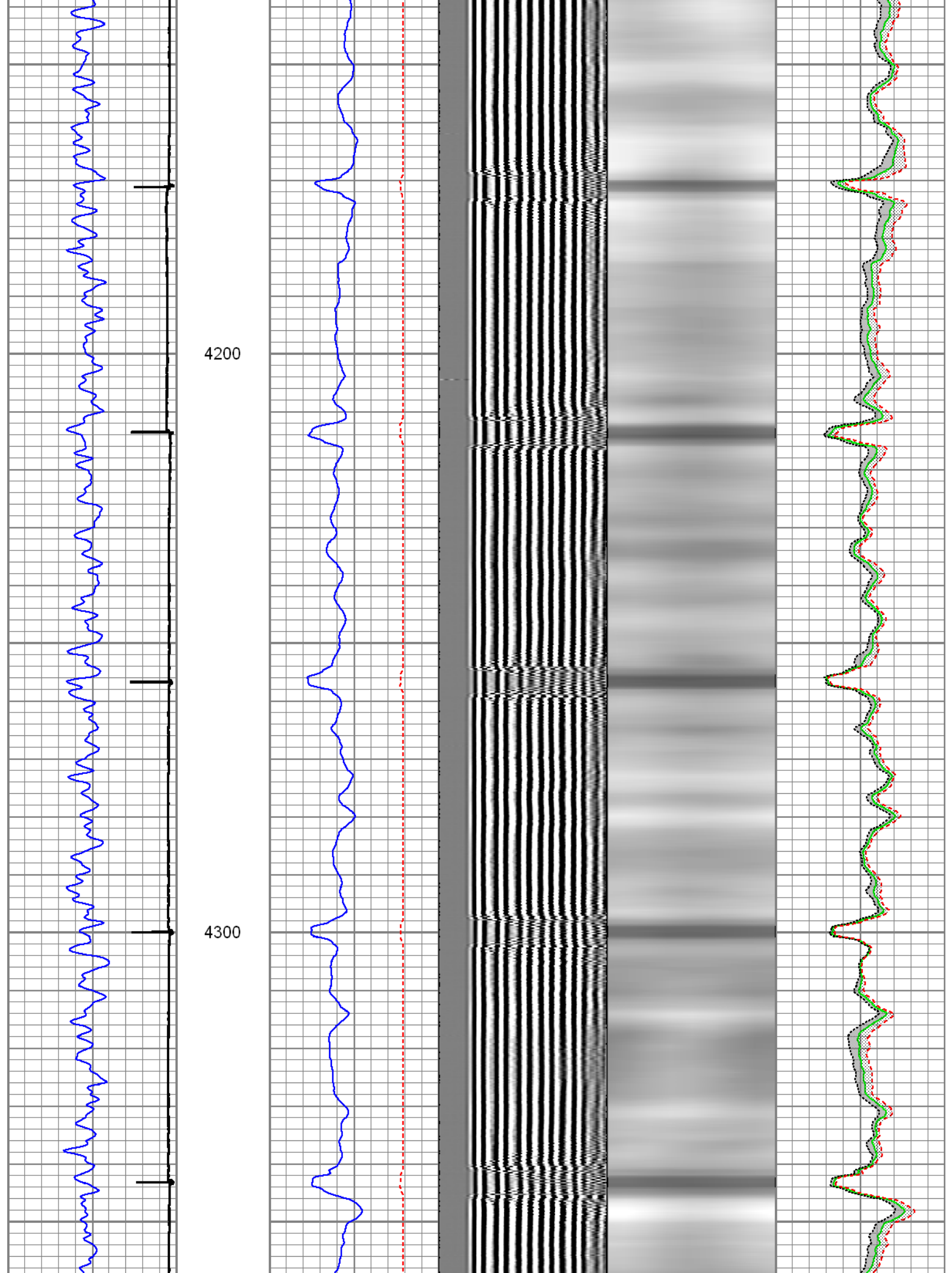
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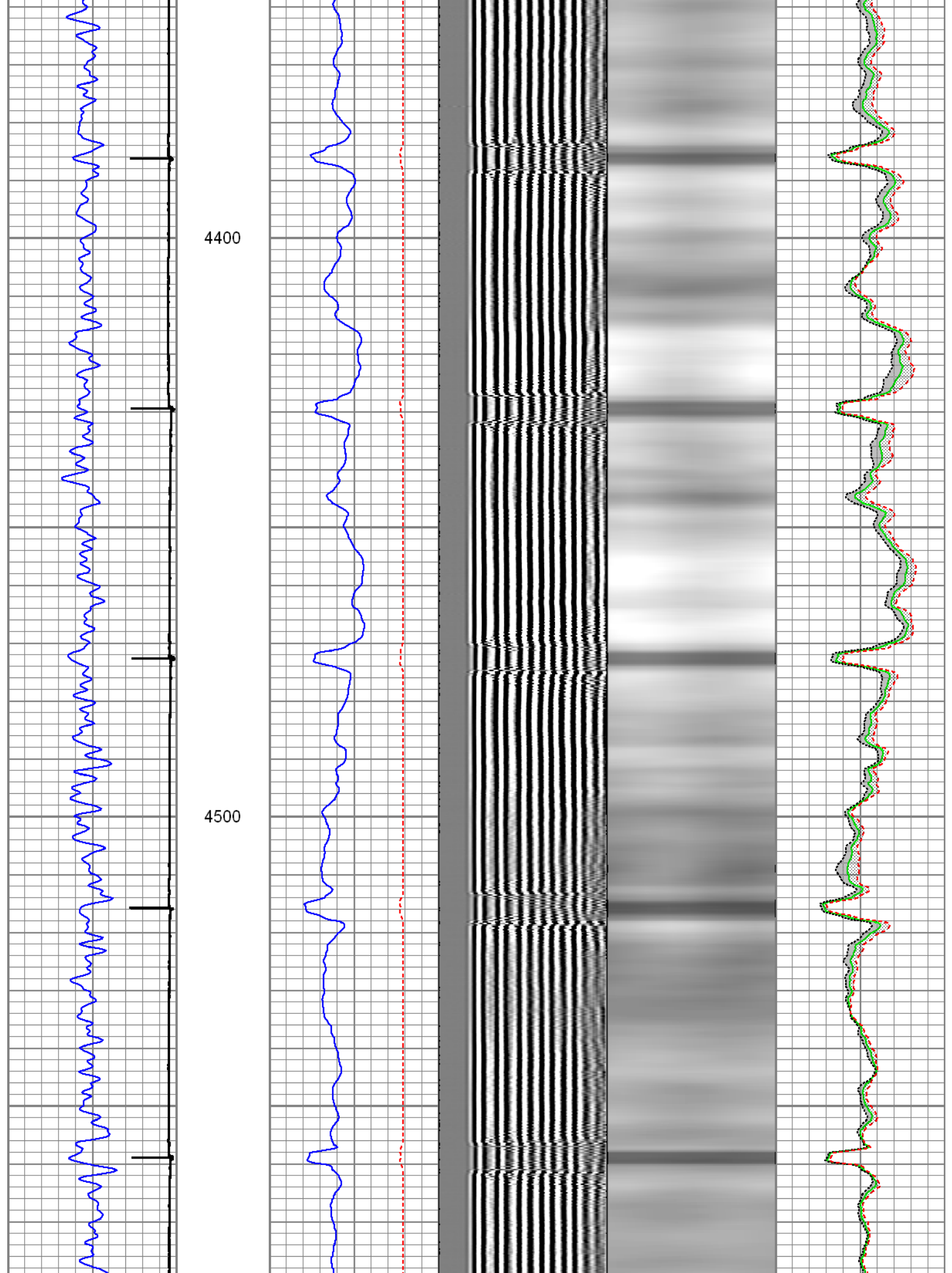
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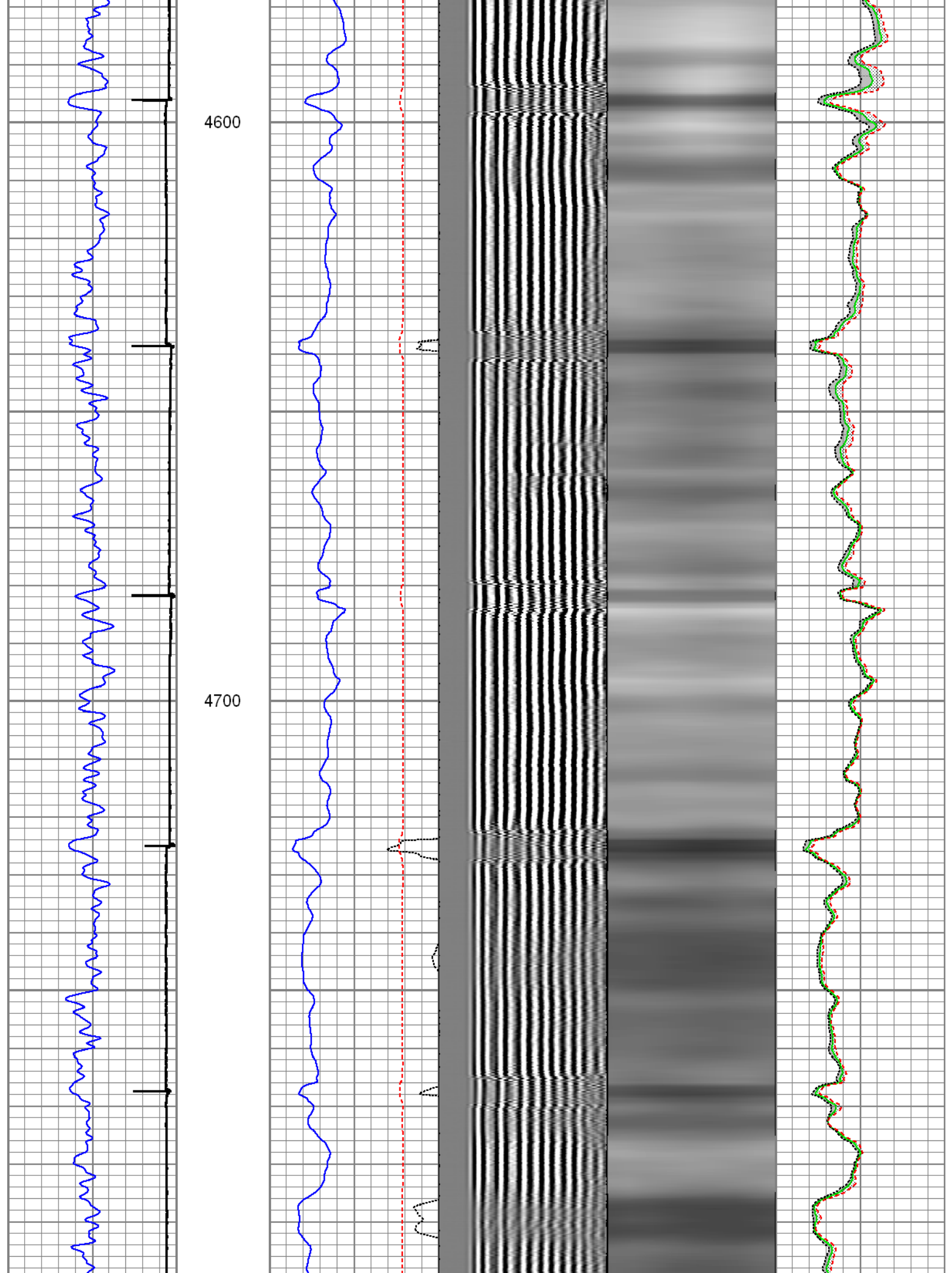
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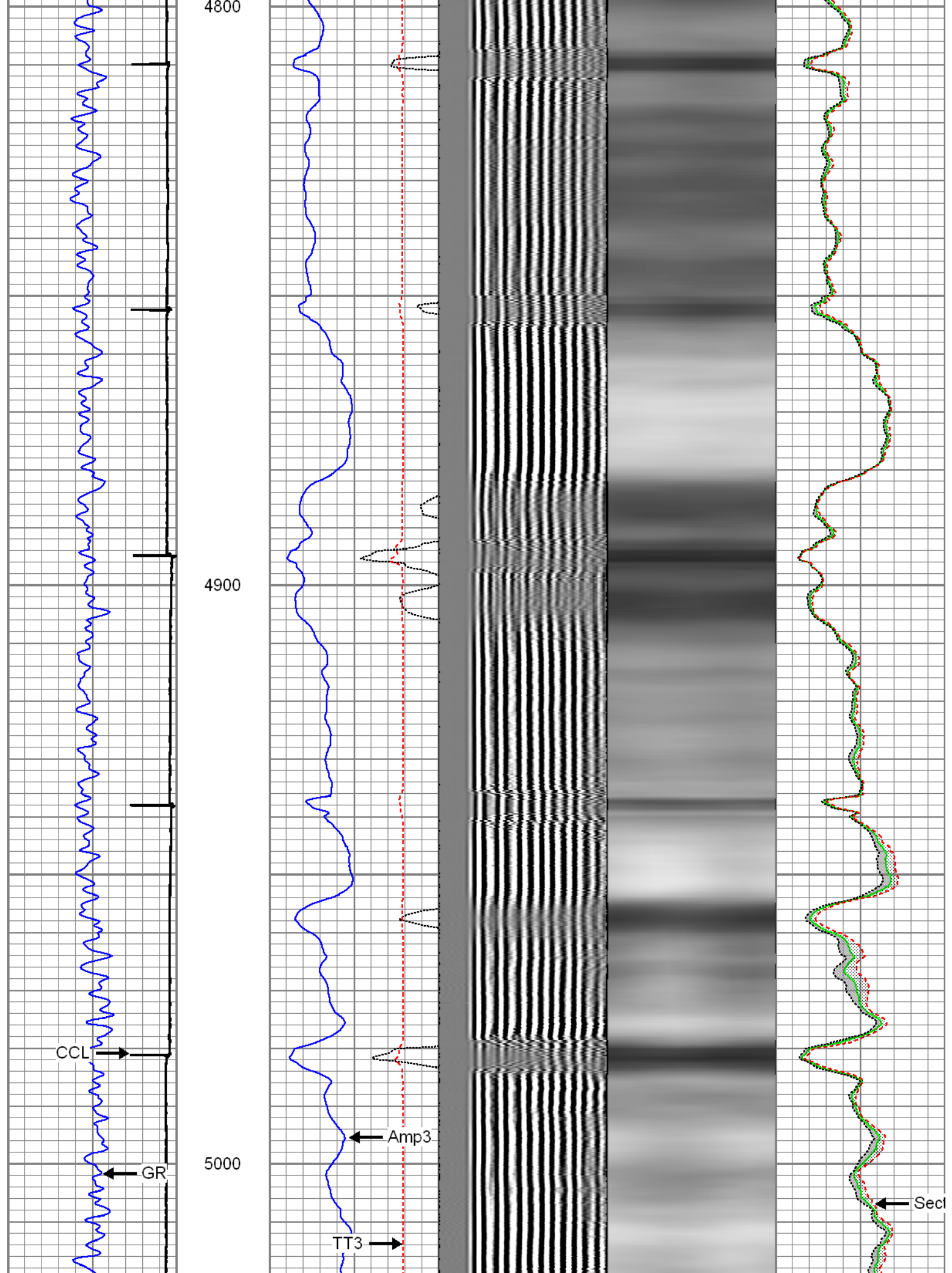


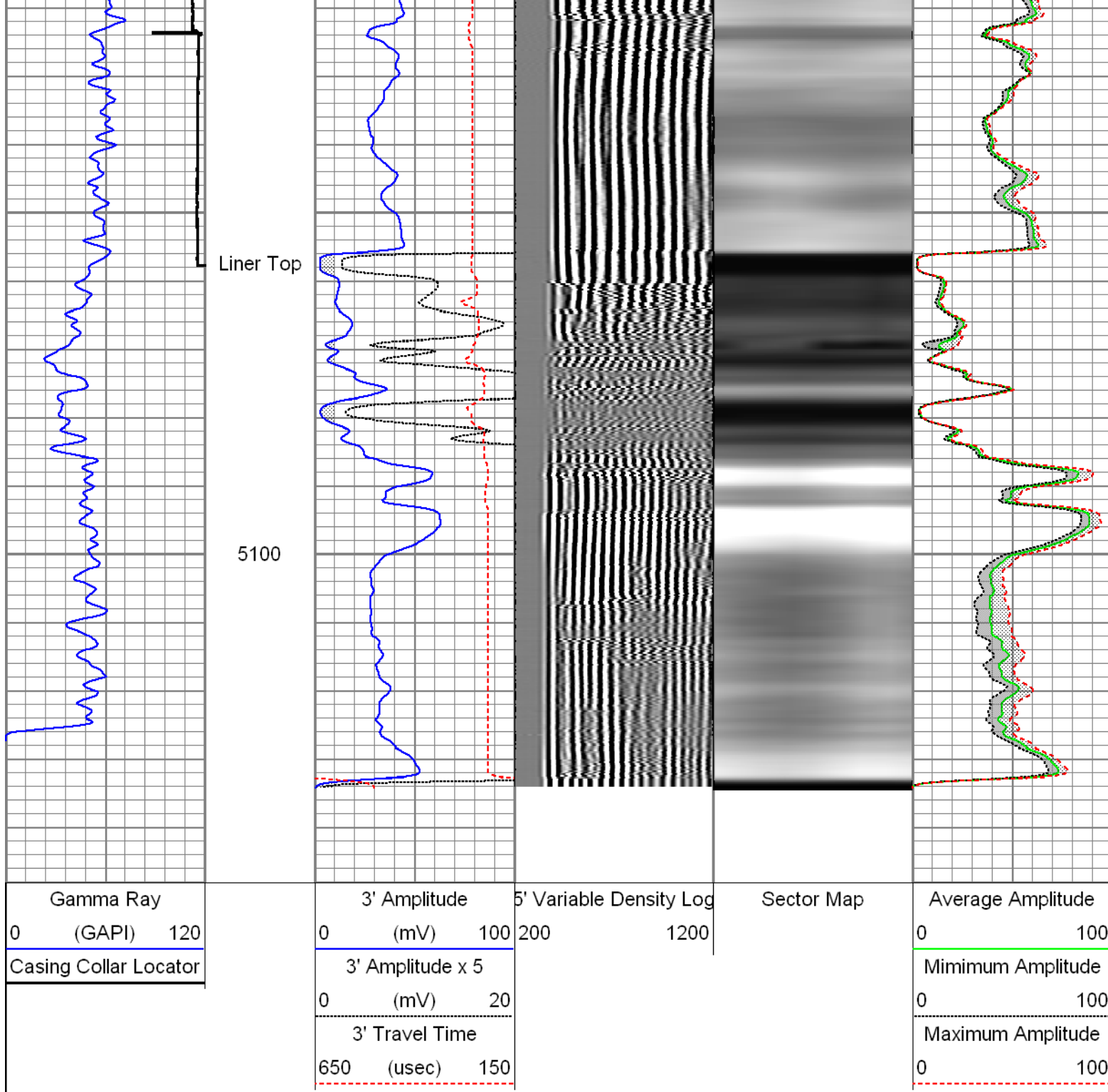








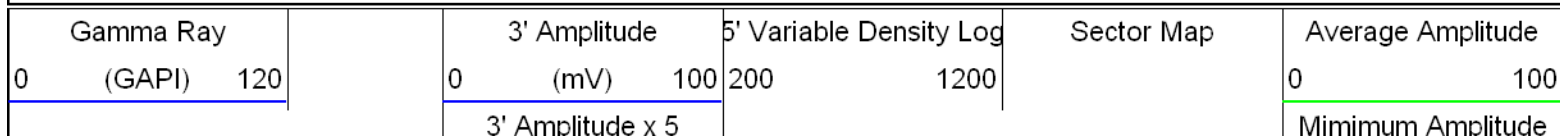




Repeat Pass

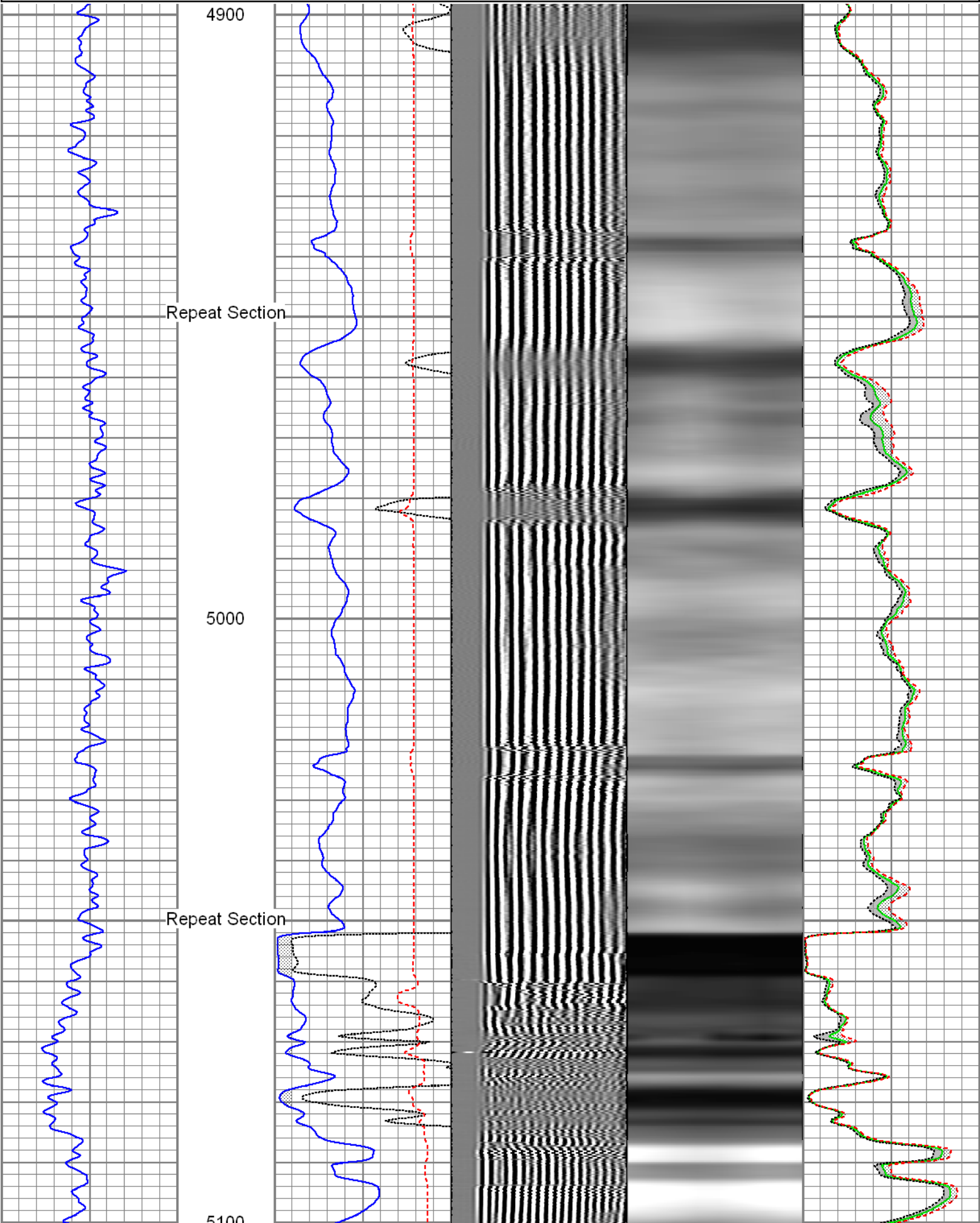
Recorded At 1500 PSI Surface Induced Pressure

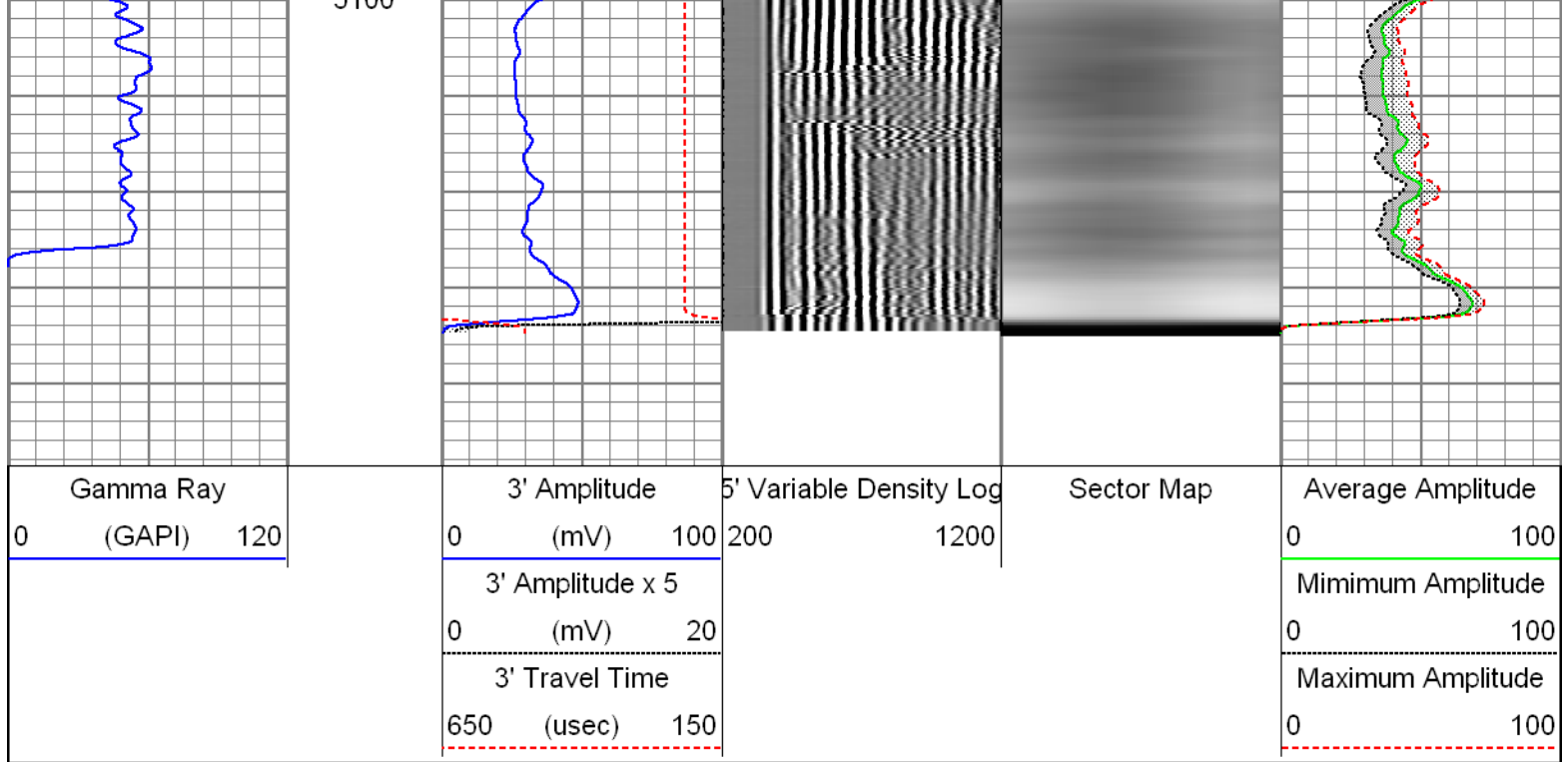
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 Dataset Pathname: pass15
 Presentation Format: rbt4_mit
 Dataset Creation: Sat Jul 12 08:56:17 2014 by Log SCH 111116
 Charted by: Depth in Feet scaled 1:240



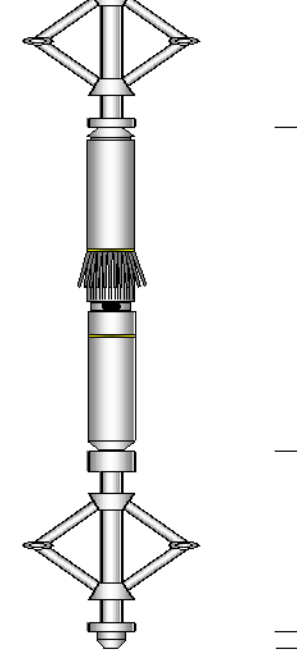
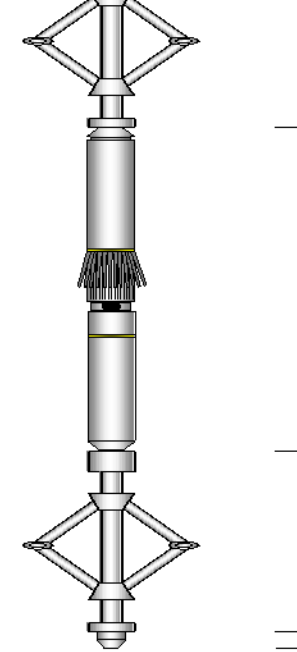
0	(mV)	20
3' Travel Time		
650	(usec)	150

0	100
Maximum Amplitude	
0	100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.37		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 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (211461) 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-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVFS1	14.99		UW_RBT-UW_RBT_004 (10013454) 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					
WVFS8	14.99					
CBLTEMP	14.99					
CBLROT	14.99					
WVFS5FT	13.99					

MIT	4.97		UW_PRC-DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
TSTAMP	0.00		UW_PRC #3 -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: 07-12-14_Whiting_Razor Federal 26L-2304B_MIT_RBL.db: field/well/run1/Main2 Total Length: 26.62 ft Total Weight: 319.30 lb O.D.: 3.13 in						

Calibration Report			
Database File:	07-12-14_Whiting_Razor Federal 26L-2304B_MIT_RBL.db		
Dataset Pathname:	Main2		
Dataset Creation:	Sat Jul 12 11:24:07 2014 by Log SCH 111116		
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: Sat Jul 12 08:23:32 2014						
Ring size:	4	5	6	7		
(in)						
	Sens	Sens	Sens	Sens		
Finger 01:	1201 340.0	1541 378.0	1919 392.0	2311		
Finger 02:	1140 358.0	1498 401.0	1899 417.0	2316		
Finger 03:	1148 342.0	1490 384.0	1874 413.0	2287		
Finger 04:	1092 361.0	1453 412.0	1865 436.0	2301		
Finger 05:	1107 343.0	1450 383.0	1833 401.0	2234		
Finger 06:	1110 356.0	1466 401.0	1867 421.0	2288		
Finger 07:	1140 342.0	1482 386.0	1868 412.0	2280		
Finger 08:	1093 355.0	1448 401.0	1849 427.0	2276		
Finger 09:	1170 350.0	1520 391.0	1920 425.0	2325		

Finger 09:	1170	359.0	1529	391.0	1920	405.0	2325
Finger 10:	1109	352.0	1461	390.0	1851	407.0	2258
Finger 11:	1113	354.0	1467	395.0	1862	419.0	2281
Finger 12:	1186	355.0	1541	376.0	1917	386.0	2303
Finger 13:	1138	353.0	1491	391.0	1882	417.0	2299
Finger 14:	1110	367.0	1477	406.0	1883	429.0	2312
Finger 15:	1076	366.0	1442	410.0	1852	437.0	2289
Finger 16:	1150	362.0	1512	393.0	1905	416.0	2321
Finger 17:	1158	358.0	1516	379.0	1895	396.0	2291
Finger 18:	1209	358.0	1567	381.0	1948	401.0	2349
Finger 19:	1160	363.0	1523	390.0	1913	410.0	2323
Finger 20:	1074	365.0	1439	401.0	1840	425.0	2265
Finger 21:	1157	356.0	1513	385.0	1898	406.0	2304
Finger 22:	1152	361.0	1513	389.0	1902	407.0	2309
Finger 23:	1246	340.0	1586	363.0	1949	378.0	2327
Finger 24:	1163	367.0	1530	394.0	1924	407.0	2331
Finger 25:	1161	359.0	1520	391.0	1911	410.0	2321
Finger 26:	1199	359.0	1558	383.0	1941	393.0	2334
Finger 27:	1205	346.0	1551	375.0	1926	393.0	2319
Finger 28:	1169	361.0	1530	393.0	1923	405.0	2328
Finger 29:	1145	361.0	1506	400.0	1906	415.0	2321
Finger 30:	1144	357.0	1501	391.0	1892	411.0	2303
Finger 31:	1198	349.0	1547	376.0	1923	385.0	2308
Finger 32:	1145	354.0	1499	392.0	1891	412.0	2303
Finger 33:	1152	352.0	1504	390.0	1894	406.0	2300
Finger 34:	1129	360.0	1489	400.0	1889	413.0	2302
Finger 35:	1187	344.0	1531	377.0	1908	390.0	2298
Finger 36:	1127	355.0	1482	396.0	1878	410.0	2288
Finger 37:	1191	340.0	1531	372.0	1903	389.0	2292
Finger 38:	1218	342.0	1560	374.0	1934	387.0	2321
Finger 39:	1119	349.0	1468	391.0	1859	408.0	2267
Finger 40:	1071	363.0	1434	413.0	1847	433.0	2280

Post Survey Calibration Check								
Performed: Sat Jul 12 11:23:49 2014								
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.005	0.003	5.012	0.006	6.007	0.004	6.995	-0.002
Finger 02:	4.012	0.006	5.008	0.004	6.006	0.003	7.005	0.003
Finger 03:	3.999	-0.000	5.008	0.004	6.006	0.003	6.985	-0.008
Finger 04:	4.020	0.010	5.017	0.008	6.015	0.008	7.013	0.007
Finger 05:	4.014	0.007	5.006	0.003	6.005	0.003	7.008	0.004
Finger 06:	4.011	0.006	5.008	0.004	6.008	0.004	7.008	0.004
Finger 07:	3.990	-0.005	5.006	0.003	6.006	0.003	6.996	-0.002
Finger 08:	4.009	0.004	5.005	0.002	6.008	0.004	7.004	0.002
Finger 09:	4.013	0.007	5.013	0.006	6.013	0.006	7.006	0.003
Finger 10:	4.009	0.005	5.010	0.005	6.005	0.002	7.009	0.004
Finger 11:	4.013	0.007	5.009	0.005	6.004	0.002	7.001	0.001
Finger 12:	4.014	0.007	5.012	0.006	6.008	0.004	7.002	0.001
Finger 13:	4.011	0.006	5.008	0.004	6.005	0.003	7.003	0.001
Finger 14:	4.008	0.004	5.007	0.003	6.005	0.003	7.003	0.002
Finger 15:	4.012	0.006	5.008	0.004	6.007	0.003	7.000	0.000
Finger 16:	4.009	0.005	5.006	0.003	6.003	0.001	7.005	0.002
Finger 17:	4.019	0.009	5.020	0.010	6.015	0.007	7.036	0.018
Finger 18:	4.011	0.005	5.003	0.002	6.004	0.002	7.001	0.001
Finger 19:	4.014	0.007	5.013	0.006	6.007	0.003	7.001	0.000
Finger 20:	4.015	0.007	5.007	0.004	6.009	0.004	6.997	-0.001
Finger 21:	4.008	0.004	5.013	0.006	6.010	0.005	7.004	0.002
Finger 22:	4.008	0.004	5.009	0.004	6.005	0.003	7.004	0.002
Finger 23:	4.016	0.008	5.011	0.005	6.006	0.003	6.996	-0.002
Finger 24:	4.011	0.006	5.012	0.006	6.011	0.006	7.007	0.003
Finger 25:	4.008	0.004	5.006	0.003	6.006	0.003	7.000	-0.000
Finger 26:	4.012	0.006	5.010	0.005	6.009	0.004	7.007	0.003
Finger 27:	4.002	0.001	5.005	0.003	6.004	0.002	6.999	-0.000
Finger 28:	4.003	0.001	5.003	0.002	6.000	0.000	7.002	0.001
Finger 29:	4.000	0.000	5.000	0.000	6.000	0.000	7.000	0.000

Finger 29:	4.009	0.005	5.011	0.005	6.007	0.004	7.003	0.002
Finger 30:	4.016	0.008	5.009	0.004	6.013	0.006	7.013	0.007
Finger 31:	4.013	0.006	5.011	0.005	6.011	0.006	7.009	0.005
Finger 32:	4.009	0.004	5.011	0.005	6.008	0.004	6.998	-0.001
Finger 33:	3.998	-0.001	5.005	0.003	6.004	0.002	7.006	0.003
Finger 34:	4.017	0.009	5.012	0.006	6.009	0.004	7.008	0.004
Finger 35:	4.016	0.008	5.012	0.006	6.007	0.004	7.003	0.001
Finger 36:	4.014	0.007	5.009	0.005	6.008	0.004	7.008	0.004
Finger 37:	4.012	0.006	5.008	0.004	6.001	0.001	7.003	0.001
Finger 38:	4.017	0.009	5.011	0.006	6.006	0.003	7.008	0.004
Finger 39:	4.014	0.007	5.008	0.004	6.006	0.003	7.007	0.003
Finger 40:	4.016	0.008	5.008	0.004	6.009	0.005	7.011	0.006
Average:	4.011	0.005	5.009	0.005	6.007	0.004	7.004	0.002

Segmented Cement Bond Log Calibration Report

Serial Number: 10013454
Tool Model: UW_RBT_004

Calibration Casing Diameter: 7.000 in
Calibration Depth: 29.865 ft

Master Calibration, performed Sun Jun 29 15:29:41 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.001	0.764	0.800	62.165	80.230	0.874
5FT	-0.002	0.802	0.800	62.165	76.263	0.986
S1	-0.000	0.769	0.000	100.000	129.937	0.049
S2	-0.002	0.773	0.000	100.000	128.976	0.315
S3	-0.001	0.771	0.000	100.000	129.492	0.168
S4	-0.003	0.765	0.000	100.000	130.301	0.329
S5	-0.001	0.755	0.000	100.000	132.210	0.157
S6	-0.002	0.757	0.000	100.000	131.751	0.322
S7	-0.001	0.757	0.000	100.000	131.859	0.161
S8	-0.001	0.764	0.000	100.000	130.729	0.160

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 Whiting Oil & Gas Corporation
Well Razor Federal 26L-2304B
Field Wildcat
County Weld
State Colorado