



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Whiting Oil and Gas Corporation		Company Whiting Oil and Gas Corporation	
Well Horsetail 8D-1703		Well Horsetail 8D-1703	
Field Wildcat		Field Wildcat	
County Weld		County Weld	
State Colorado		State Colorado	
Location:		API #: 05-123-41021	
SEC 8 TWP 10N RGE 57W		Other Services MIT GR RBP	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing 21 FT	
Elevation 4962 FT		Elevation	
K.B. 4983 FT		D.F. 4984 FT	
G.L. 4962 FT			
Date 22-May-2015			
Run Number Three			
Depth Driller 15875 FT			
Depth Logger 5008 FT			
Bottom Logged Interval 5002 FT			
Top Log Interval Surface			
Open Hole Size 8.750"			
Type Fluid Water			
Density / Viscosity 8.34 lbm/gal			
Max. Recorded Temp. 186°F			
Estimated Cement Top Surface			
Time Well Ready ROA			
Time Logger on Bottom 2:08 PM			
Equipment Number HD-0324			
Location Fort Lupton, CO			
Recorded By C. Bryan			
Witnessed By Casey Jackson			
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing 9 5/8"		Wgt (lbs/Ft) 36	
Intermediate #1 7"		Grade J-55	
Intermediate #2		P-110	
Liner 4 1/2"		P-110	
		Top Surface 1663 FT	
		Bottom 6130 FT	
		4958 FT	
		15865 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

Log ran as per Customer request.  
Depth reference to Casing Tally reported Liner Top at 4958 Ft.  
Adjusted log -12 FT to correlate with Liner Top.  
Log ran from just below liner top to surface.  
Log ran with 1800 PSI surface induced pressure.

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

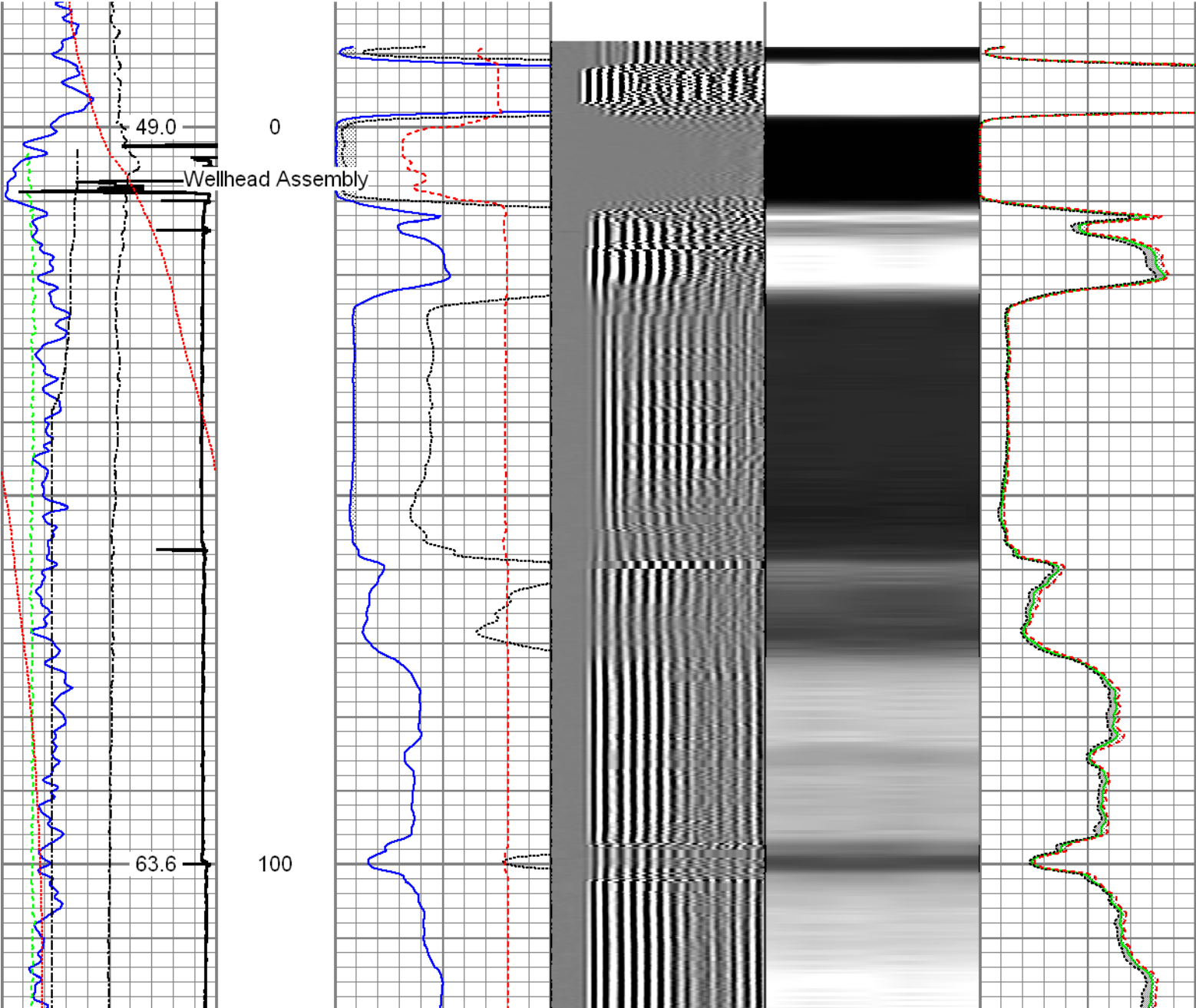


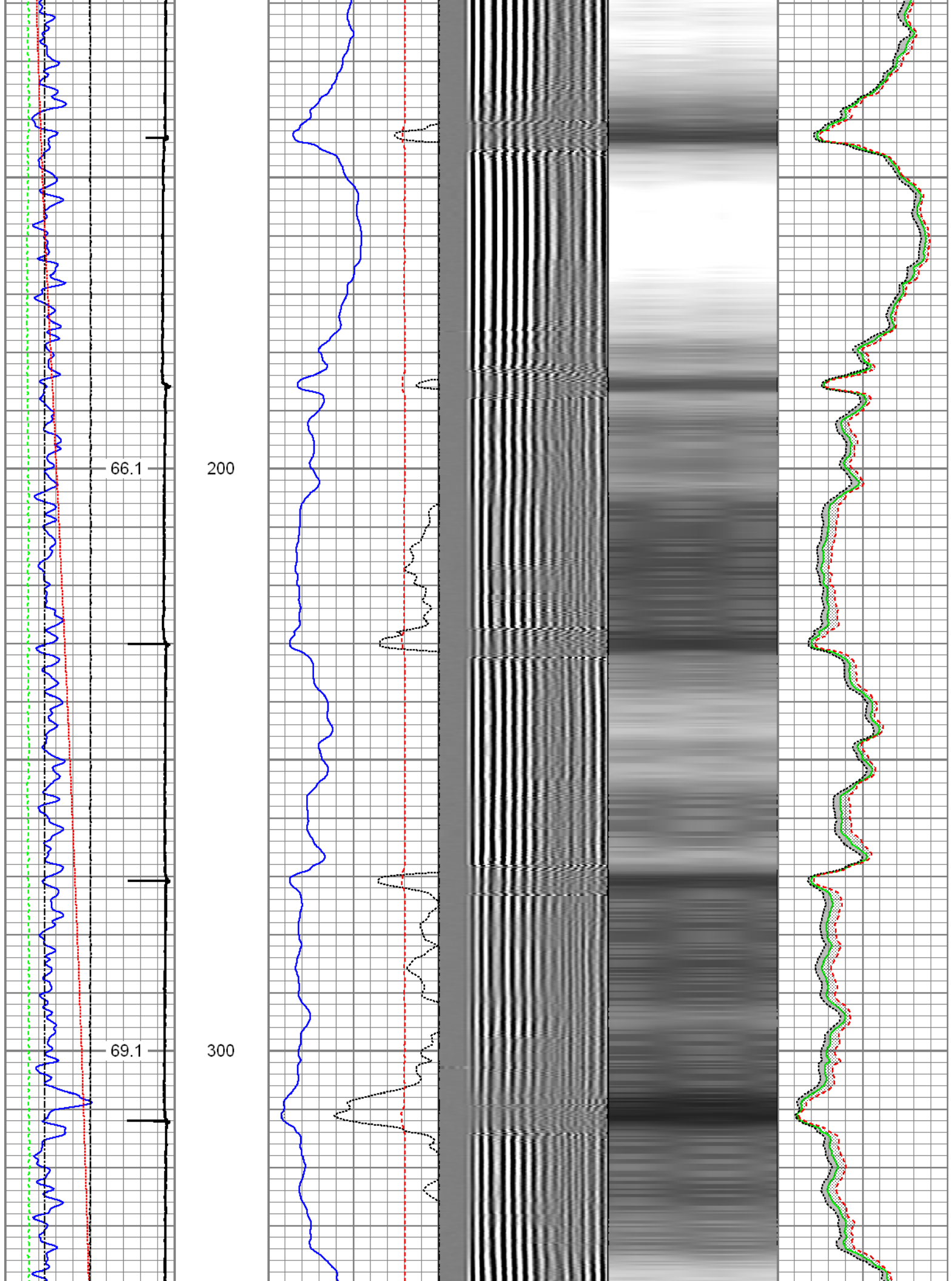
Main Pass

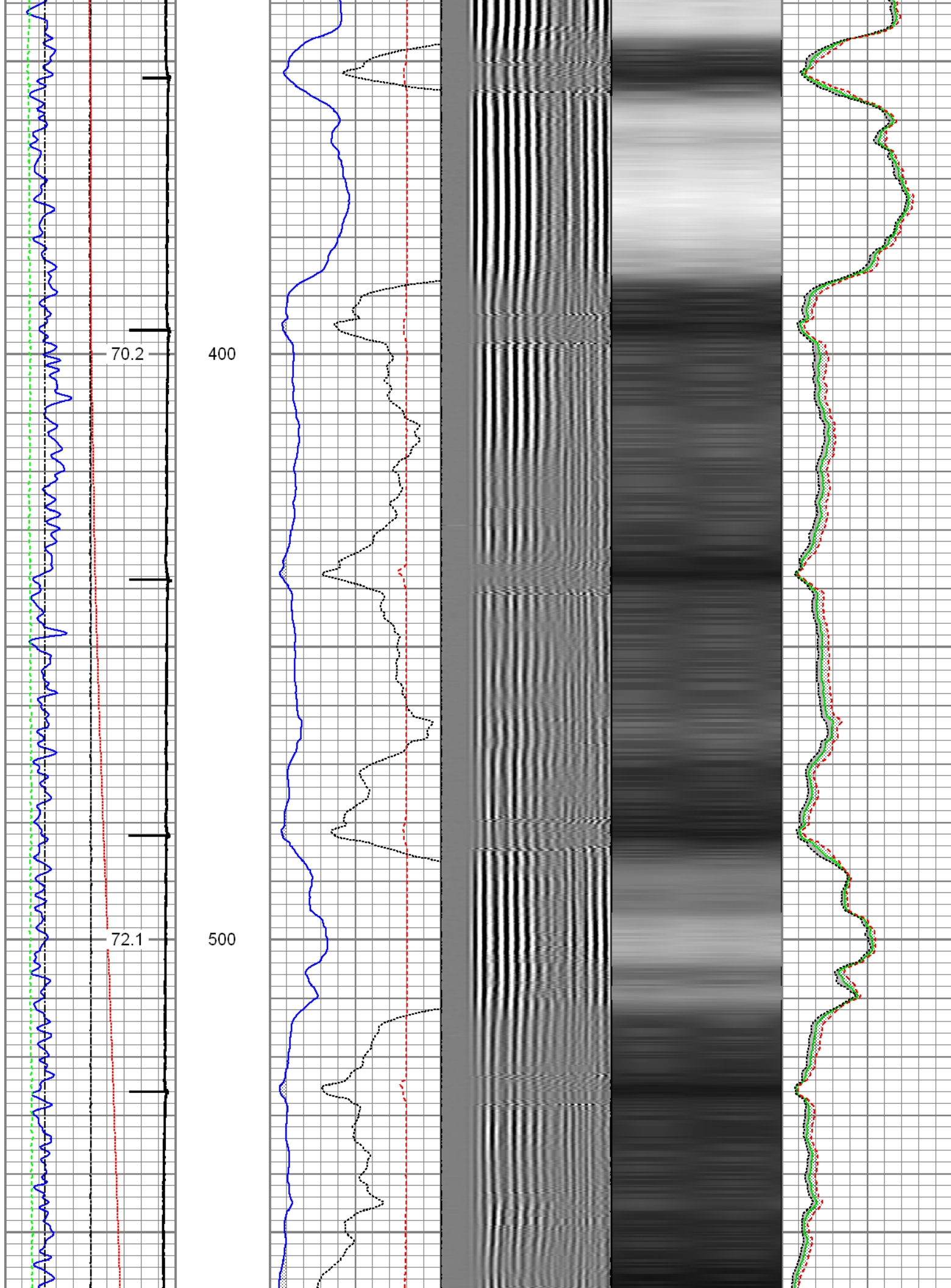
Recorded with 1800 PSI Induced Surface Pressure

Database File: whiting\_horsetail08d-1703\_rcbl\_mit.db  
Dataset Pathname: merge2  
Presentation Format: rbt4\_mit  
Dataset Creation: Fri May 22 16:07:57 2015  
Charted by: Depth in Feet scaled 1:240

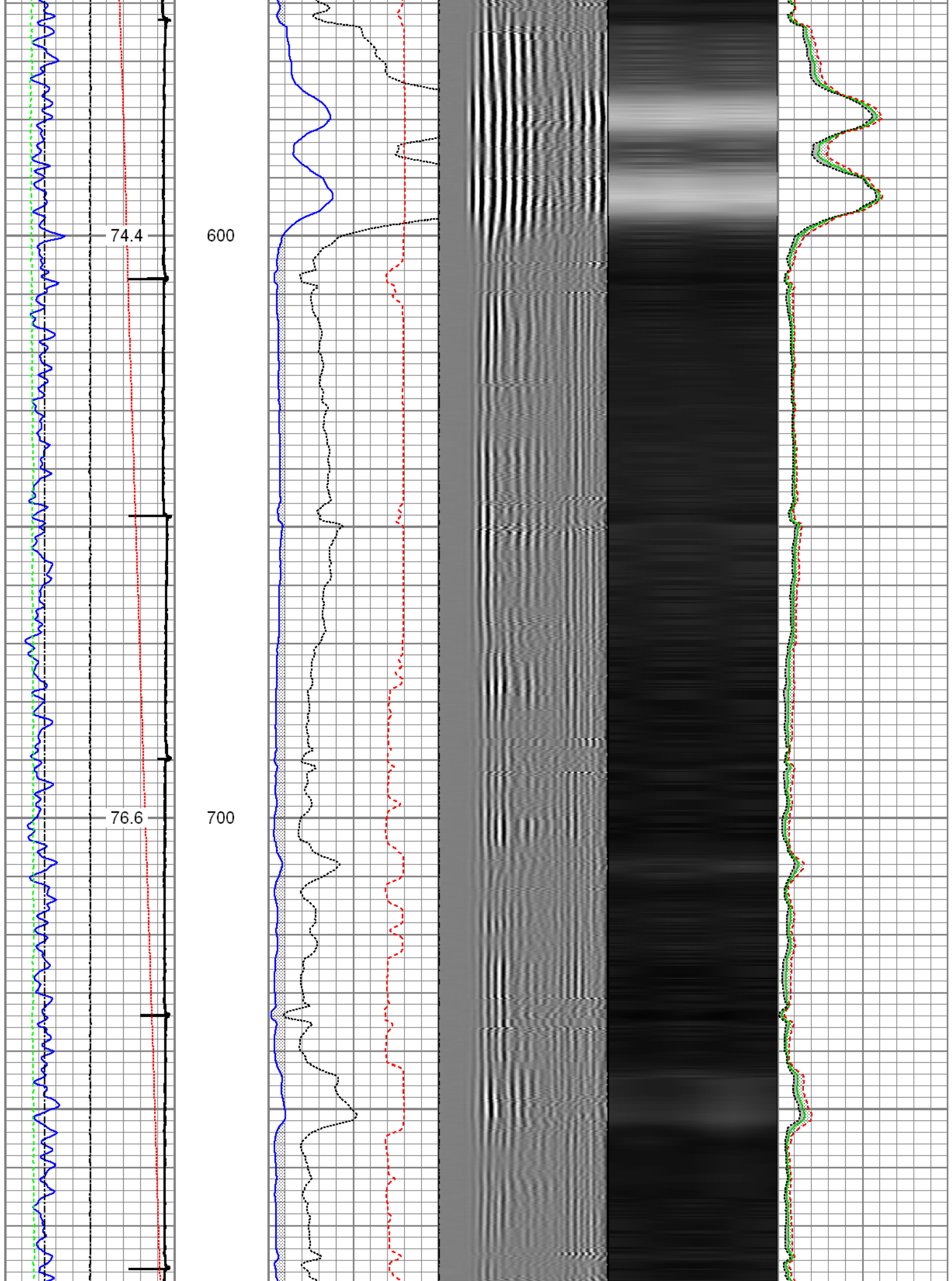
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				

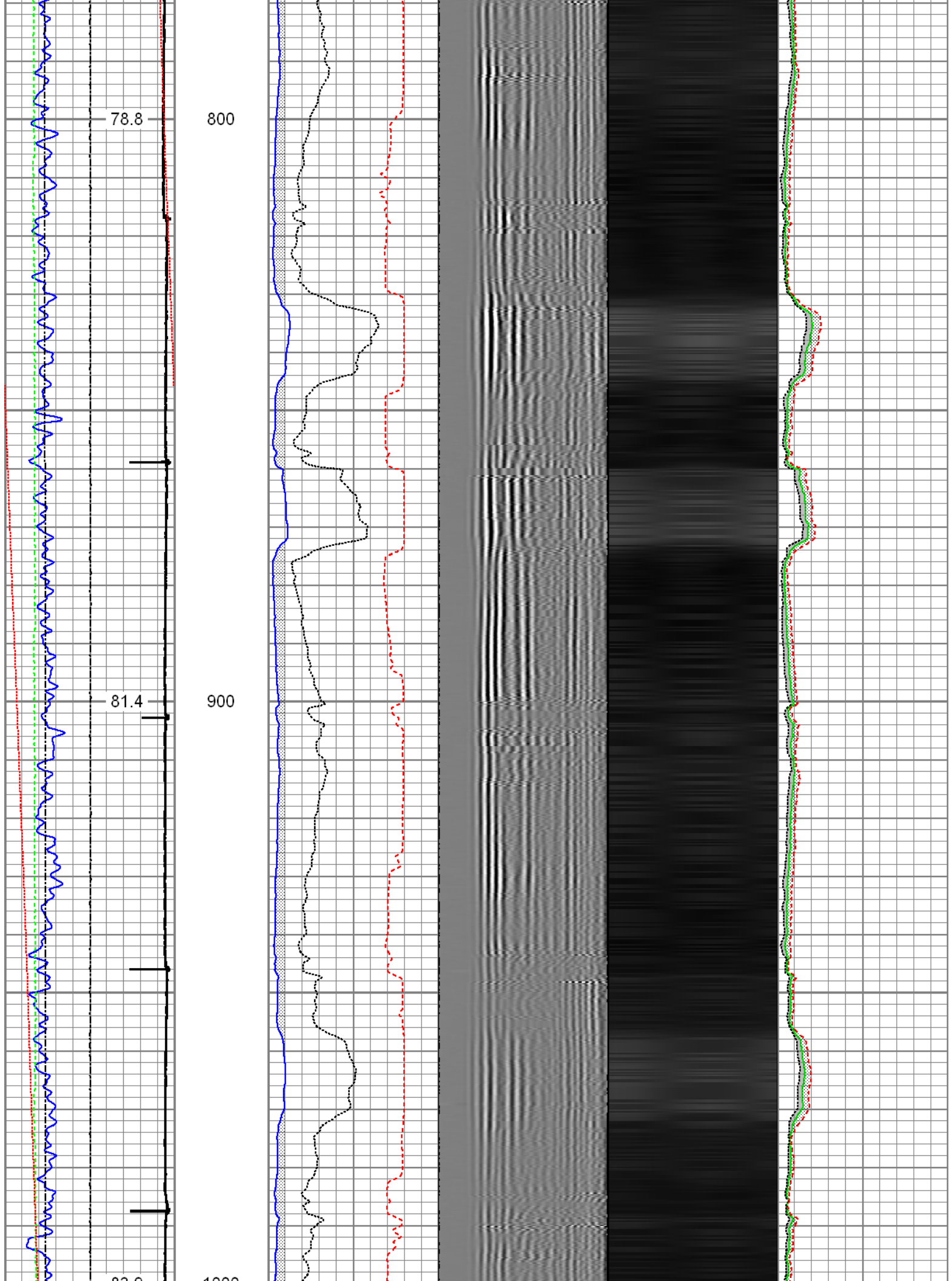


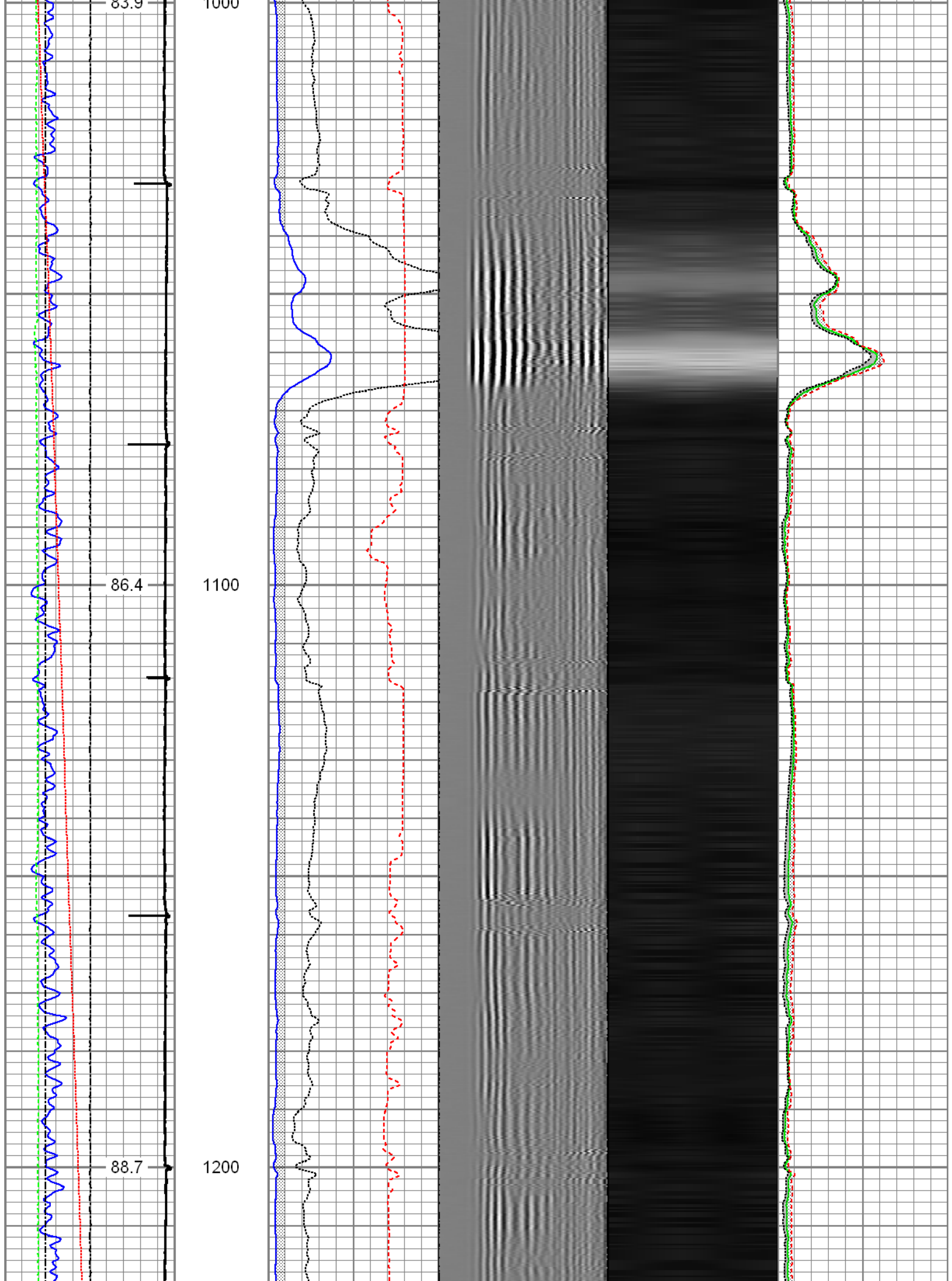


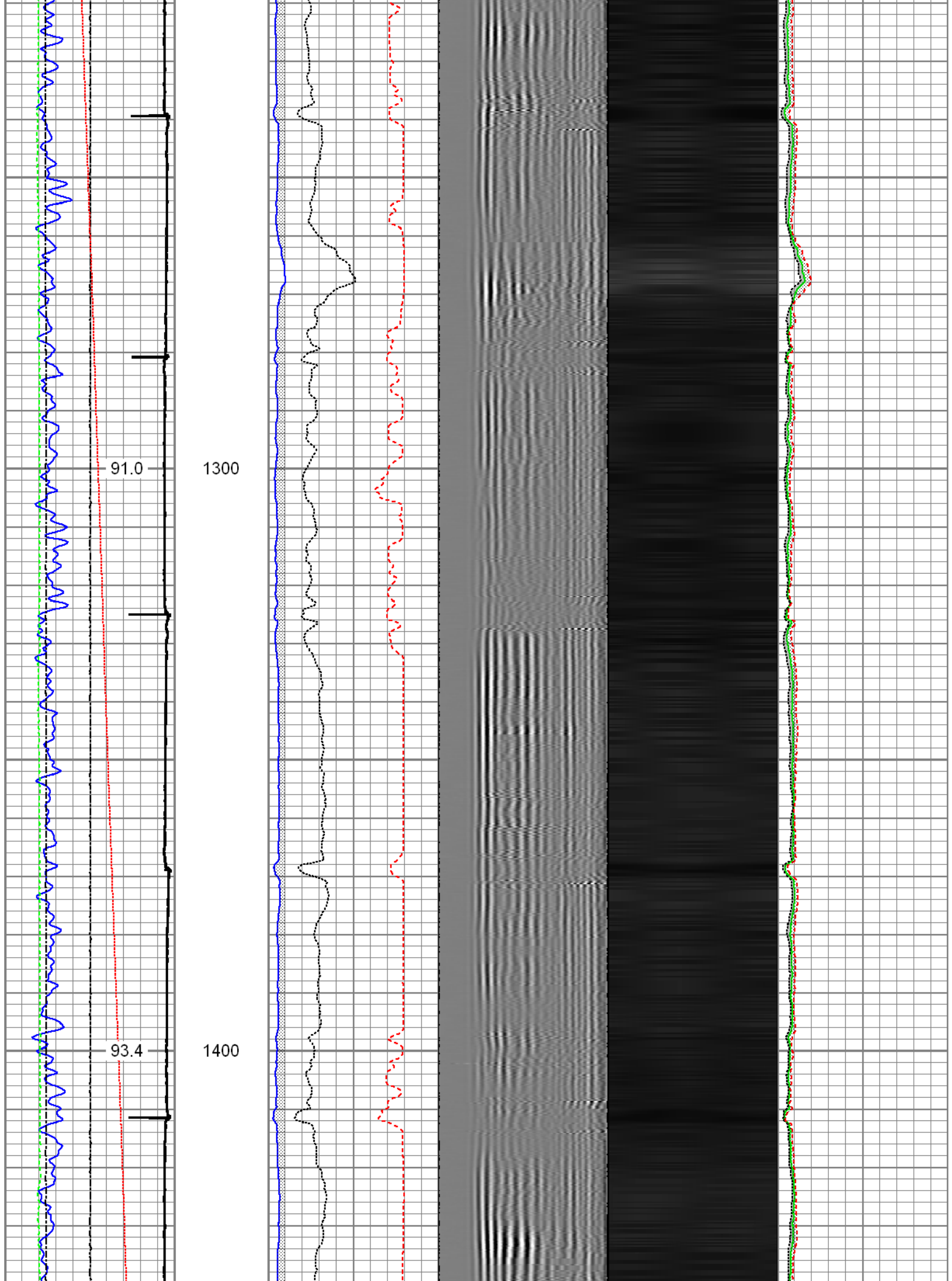




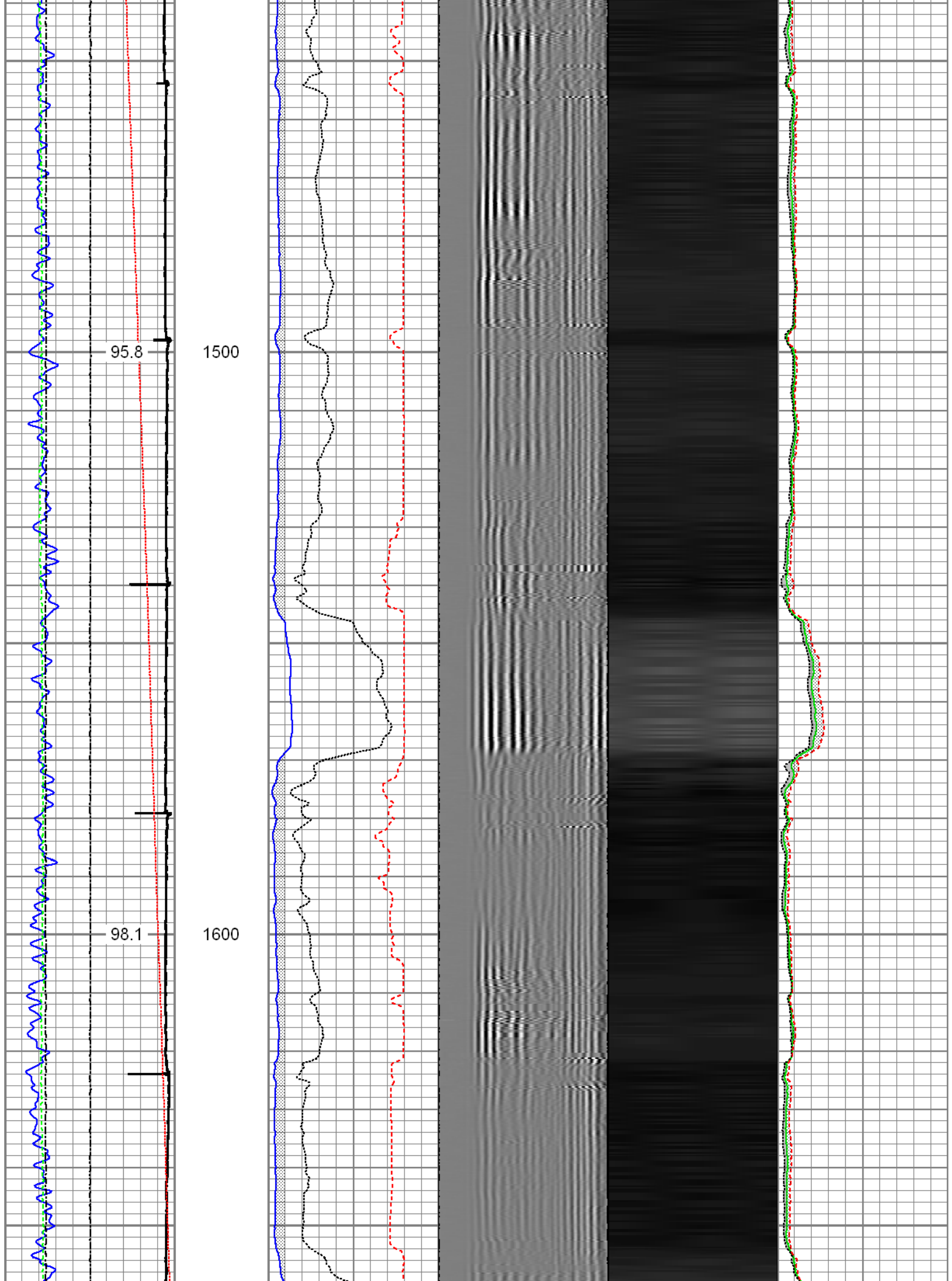


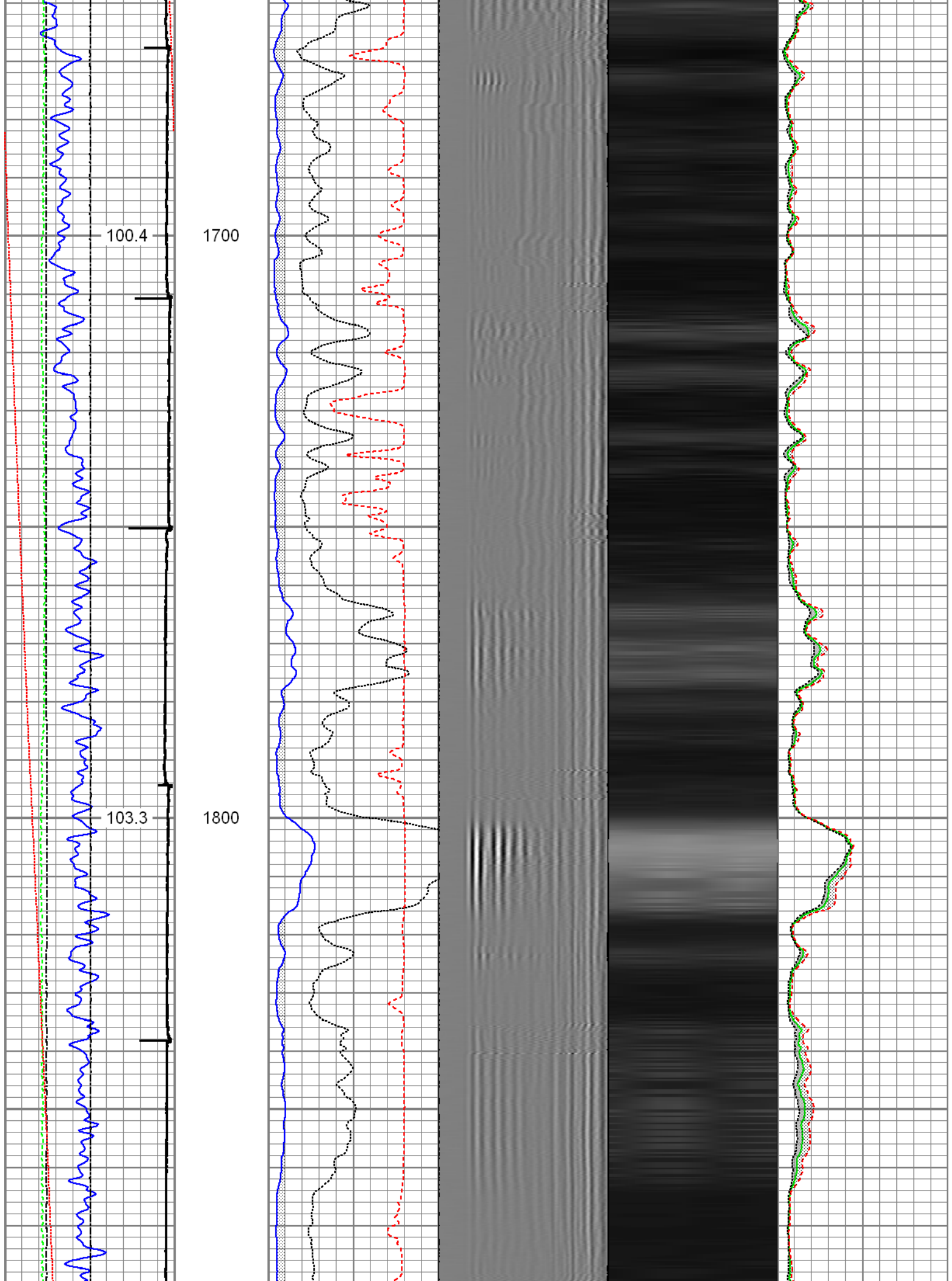


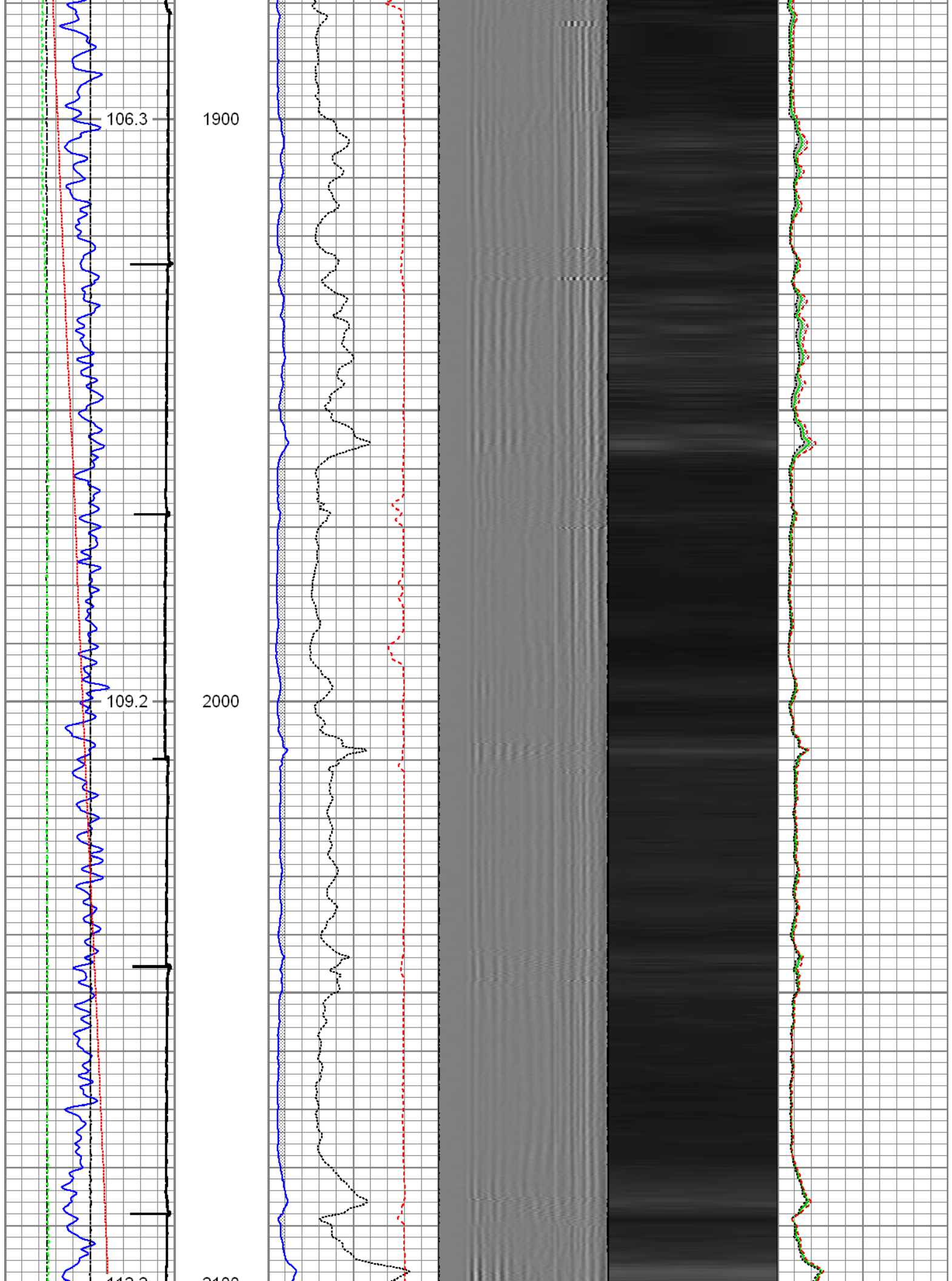


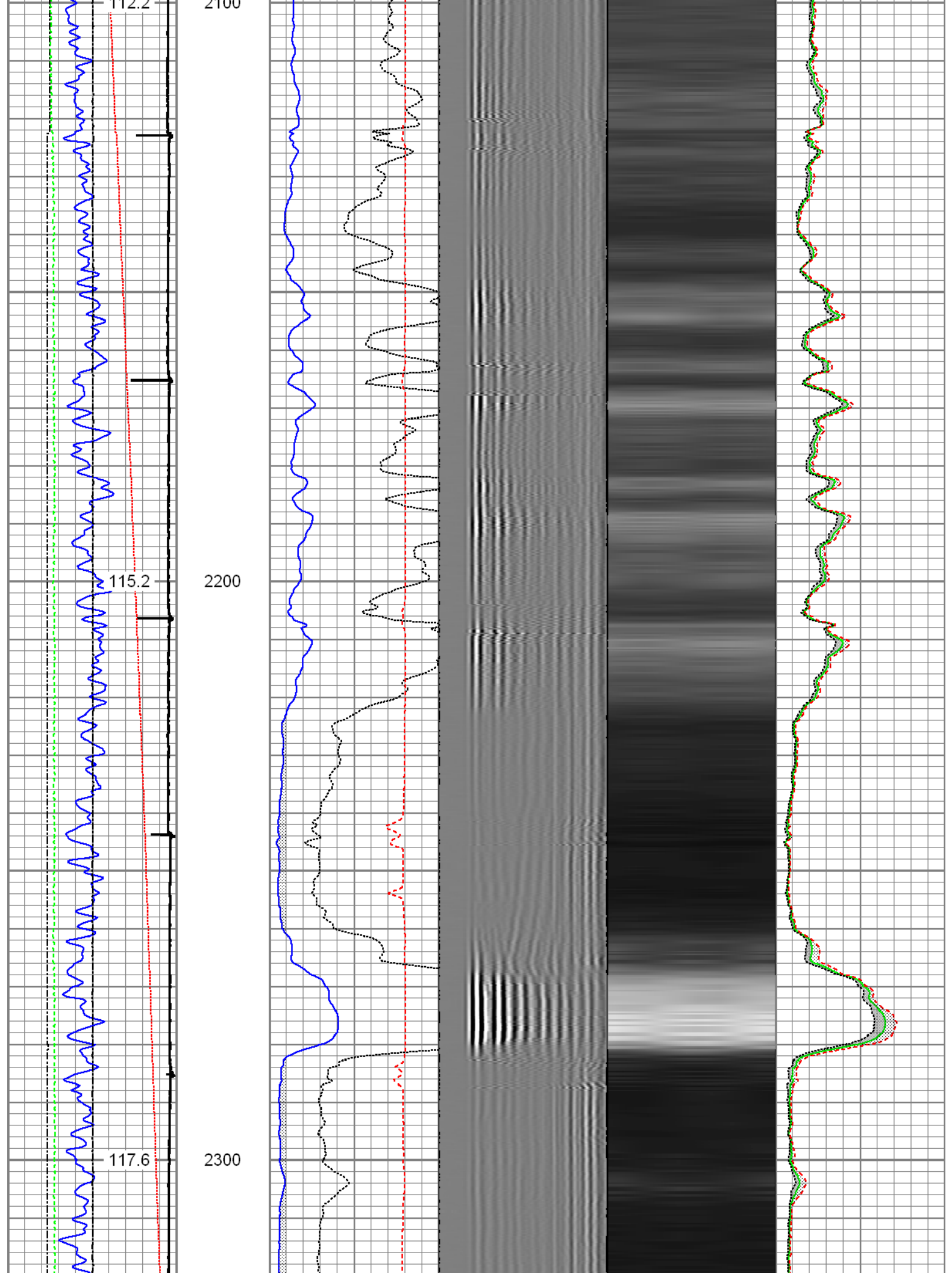




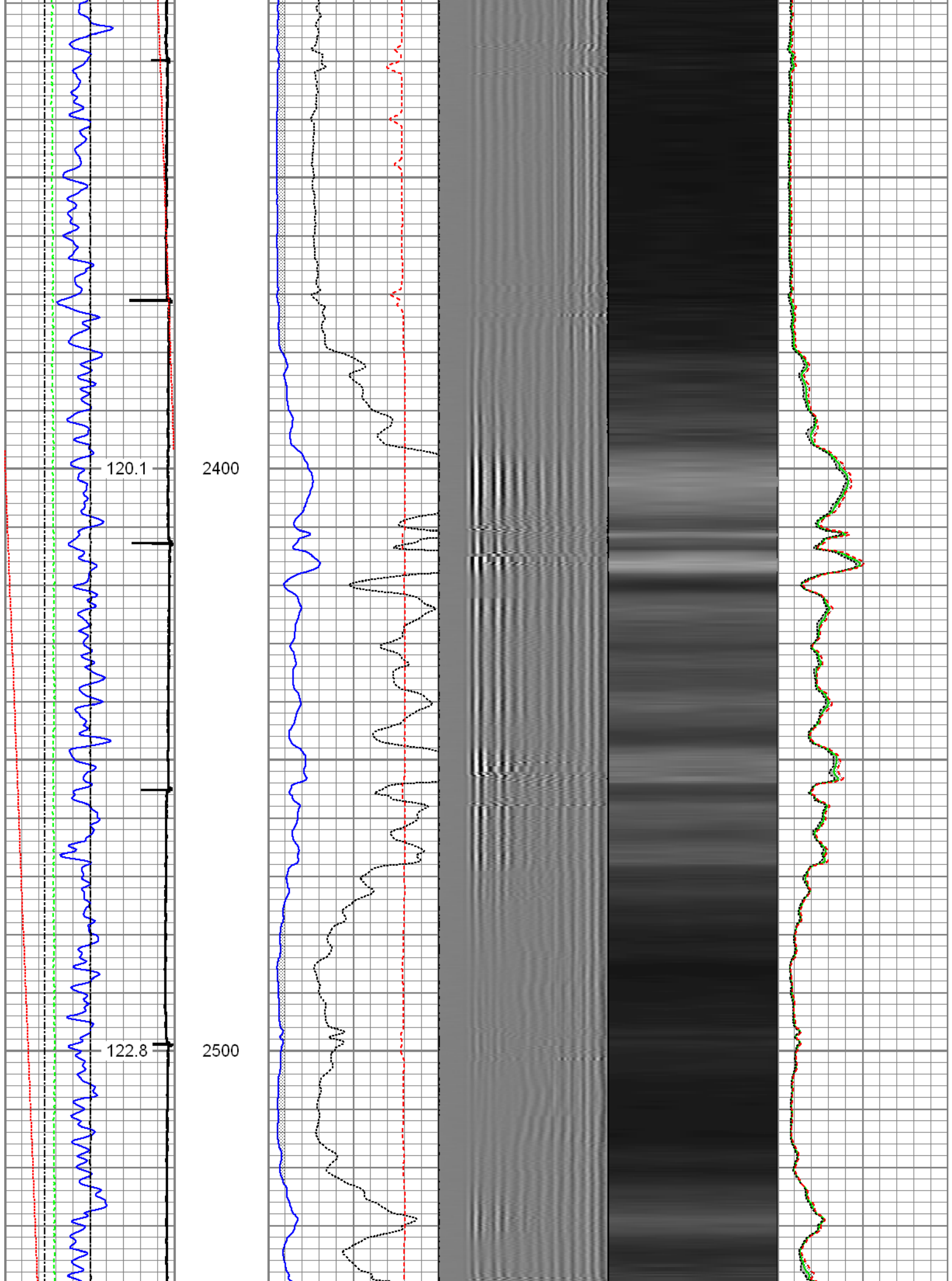


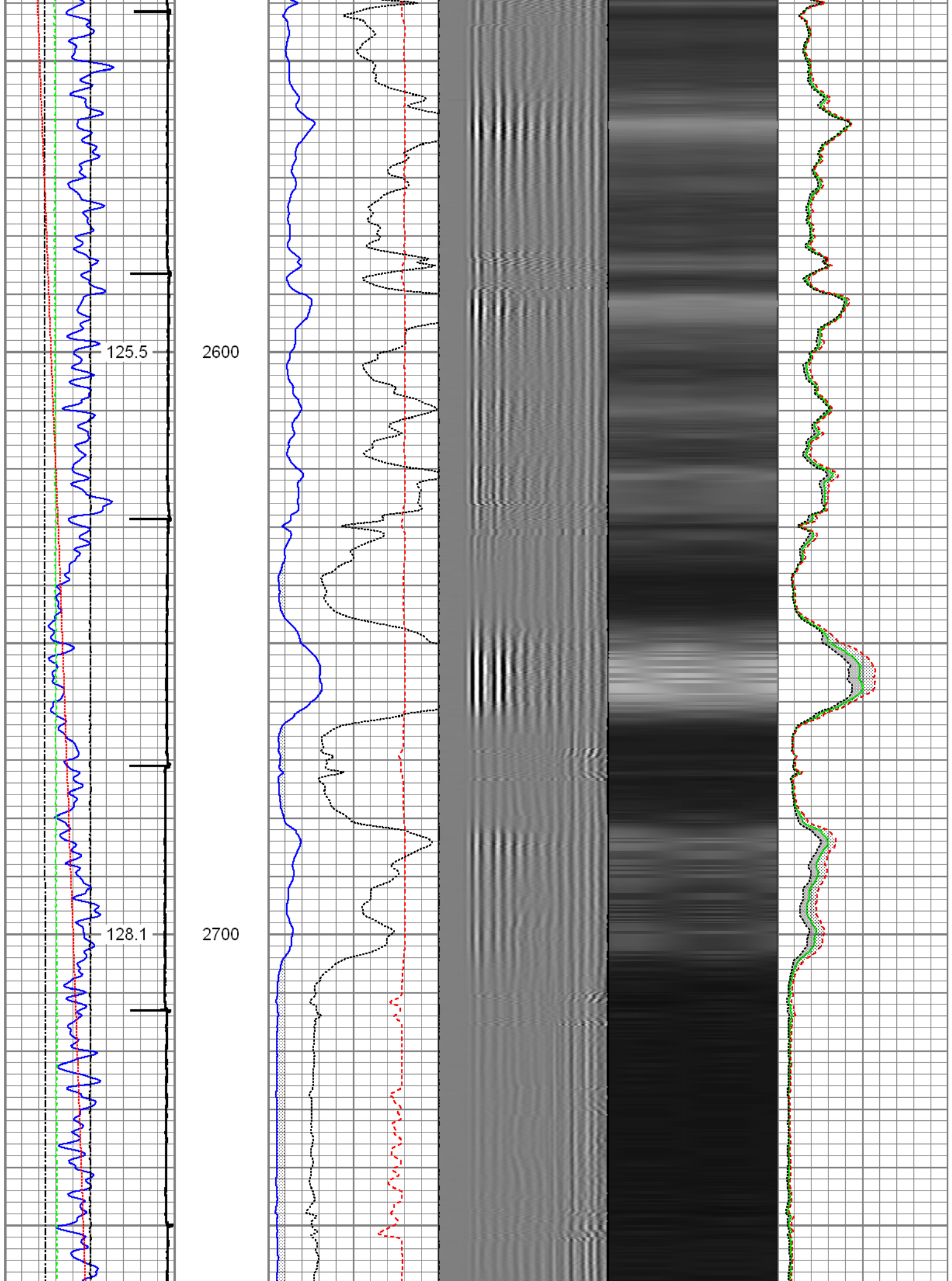


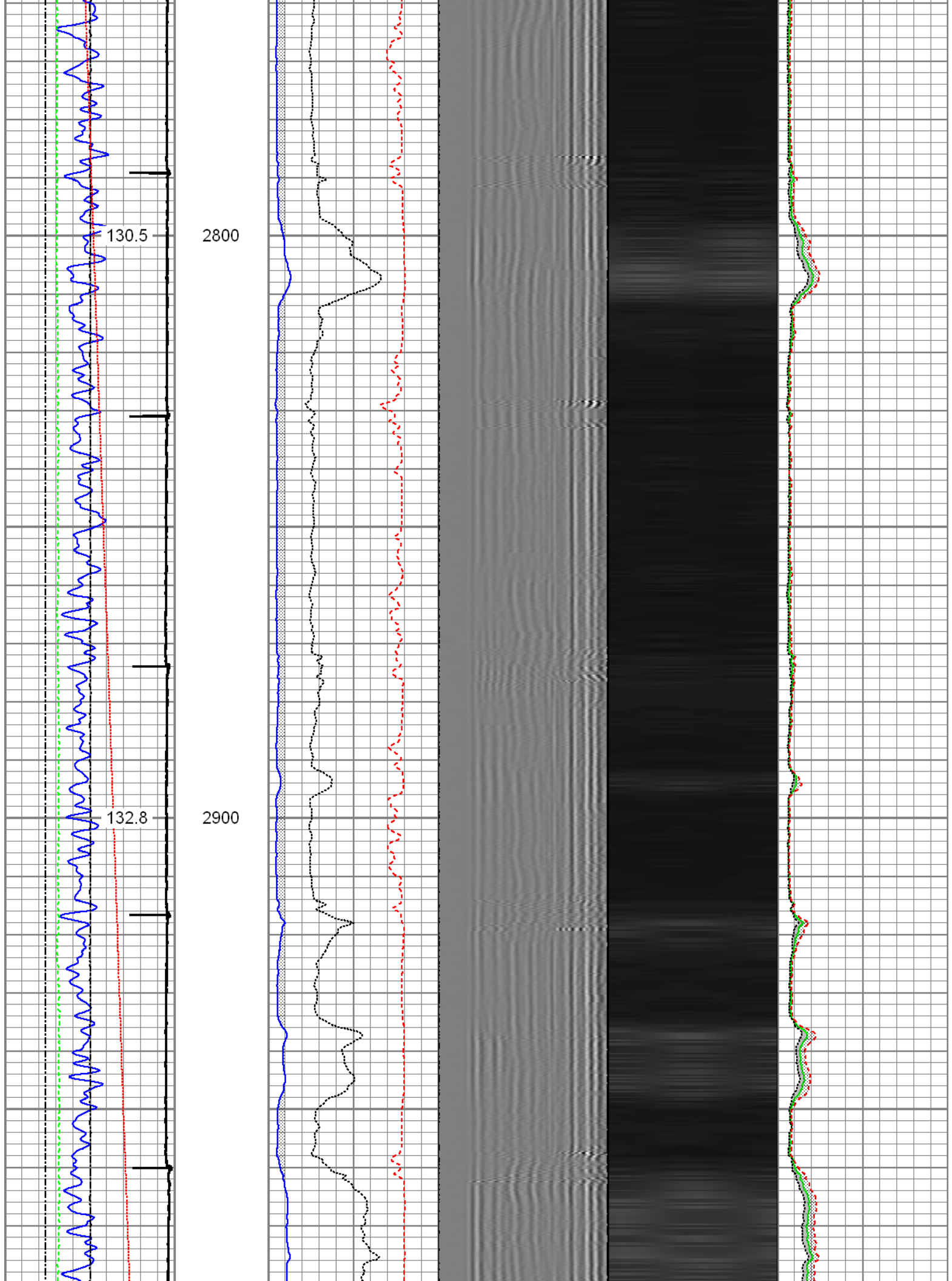


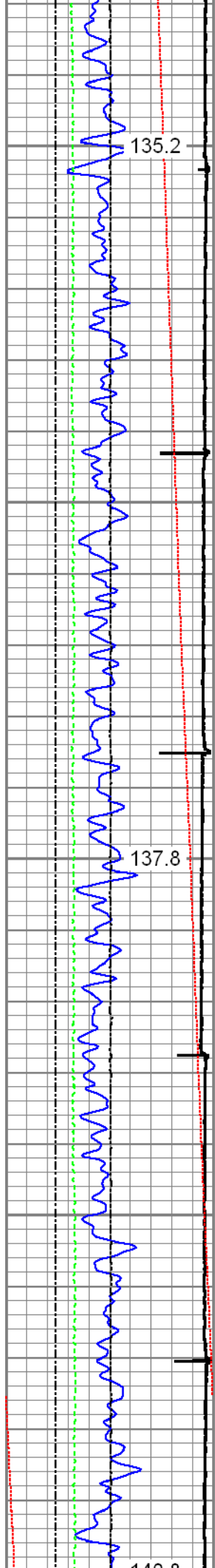












135.2

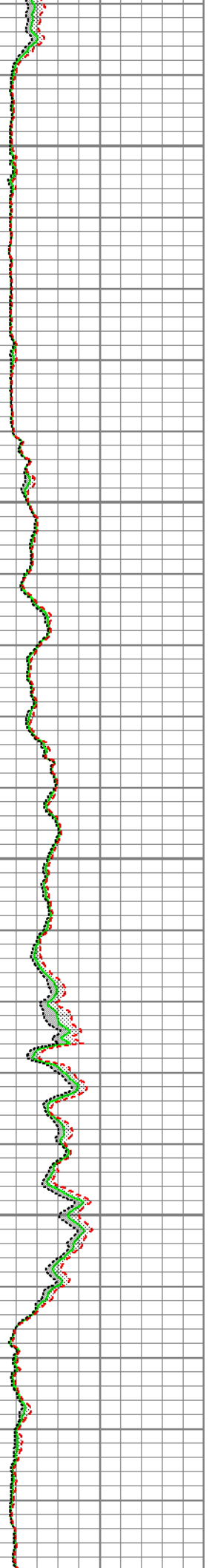
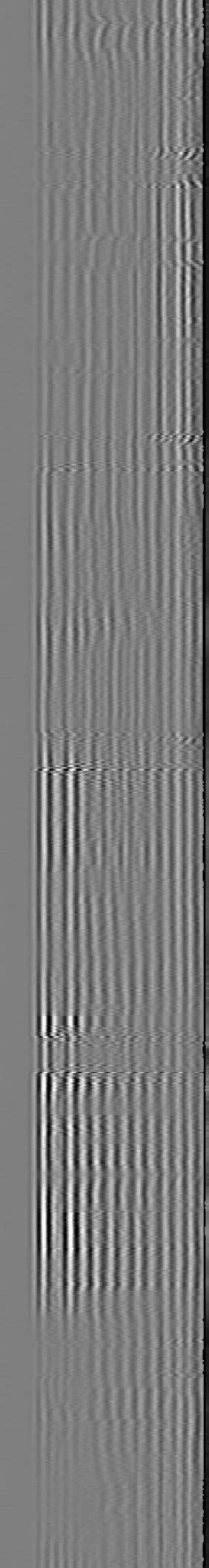
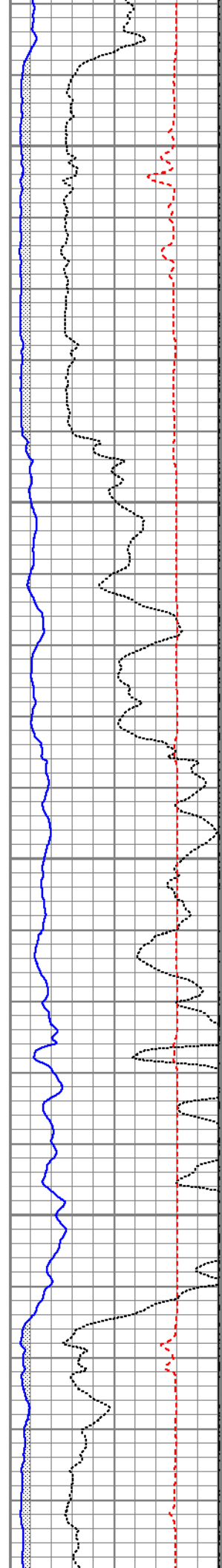
137.8

140.8

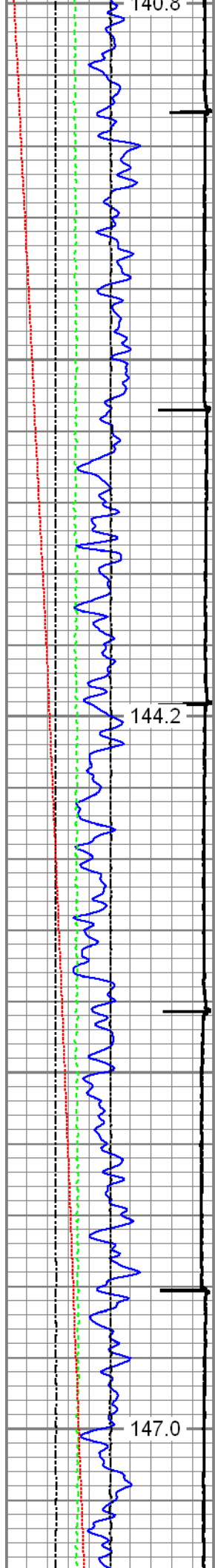
3000

3100

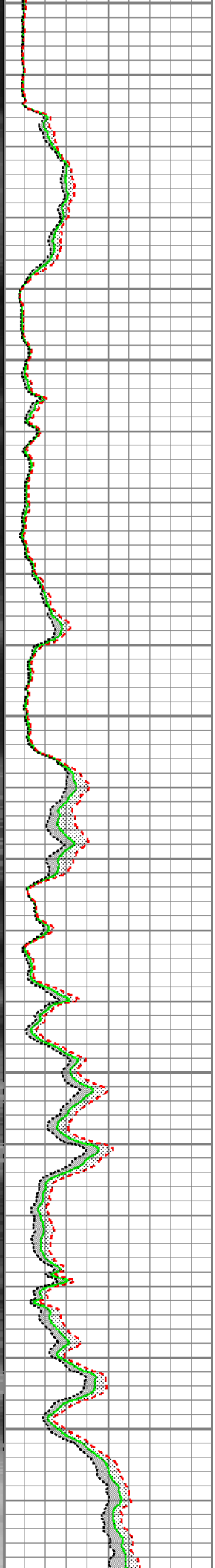
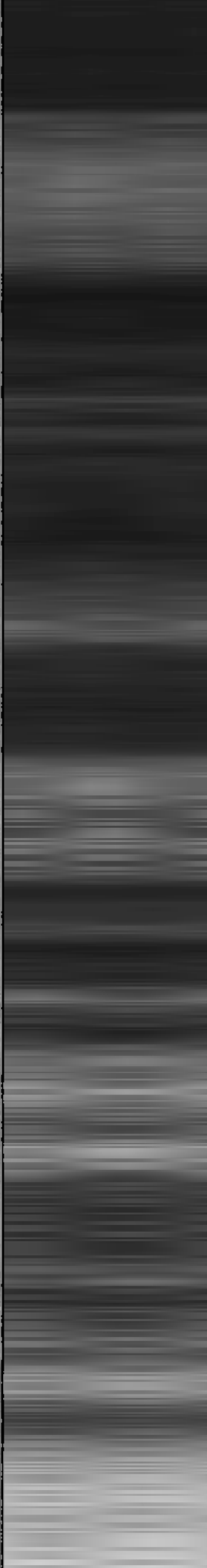
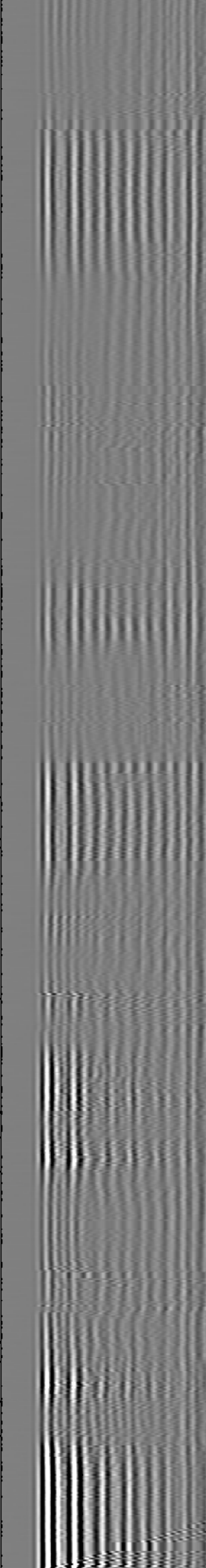
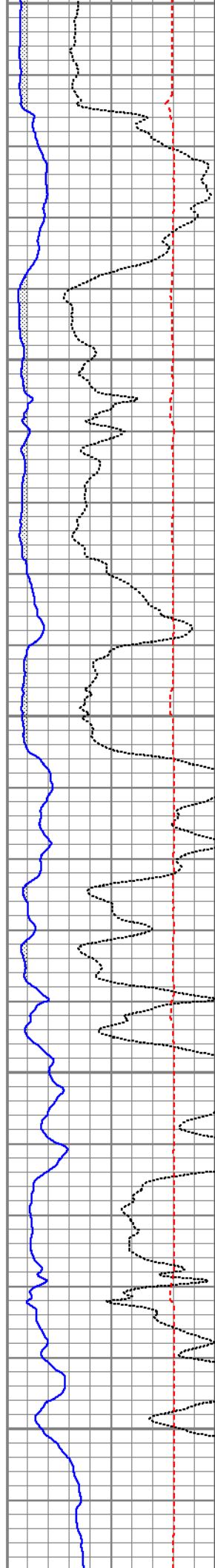
3200

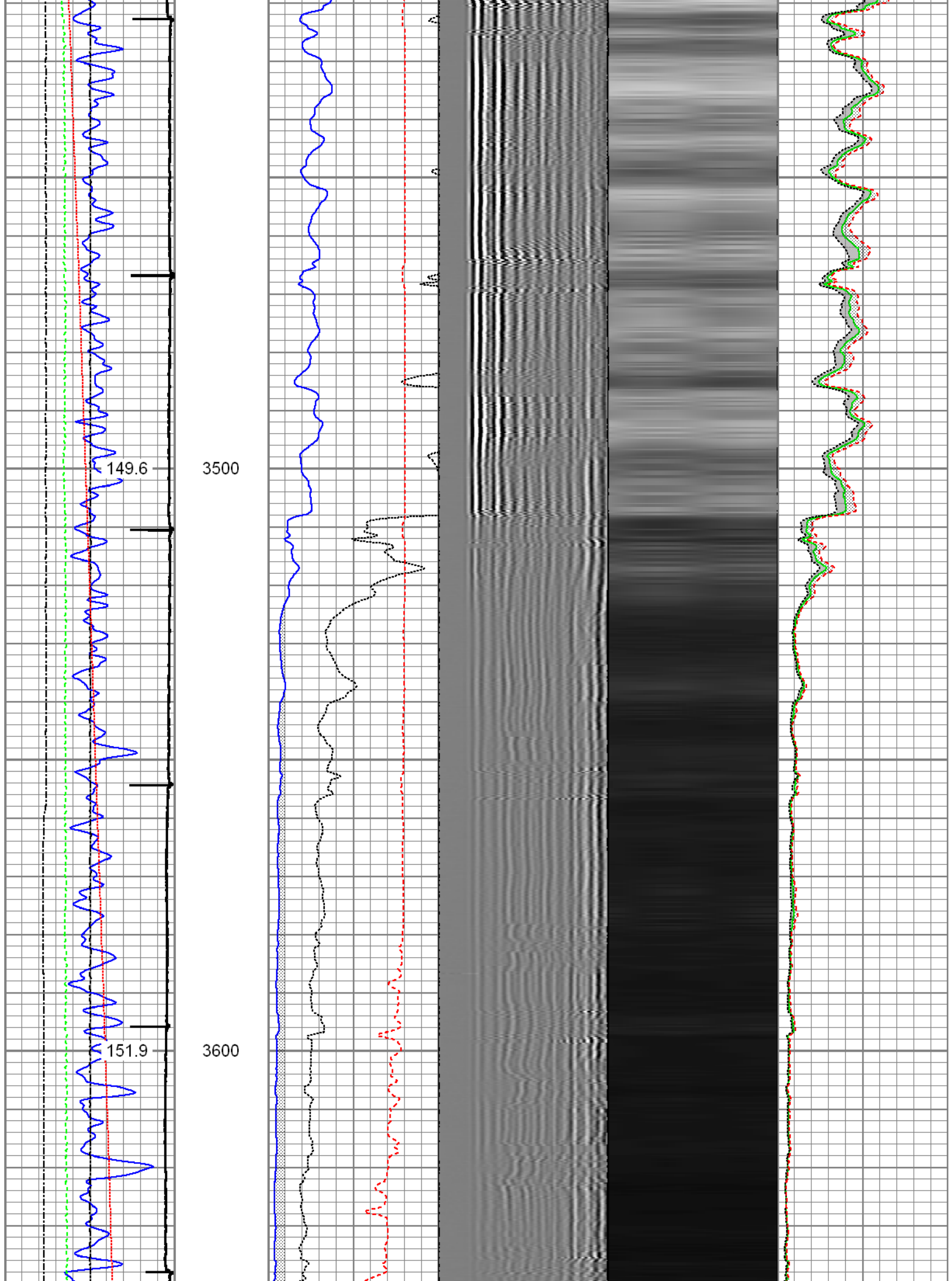


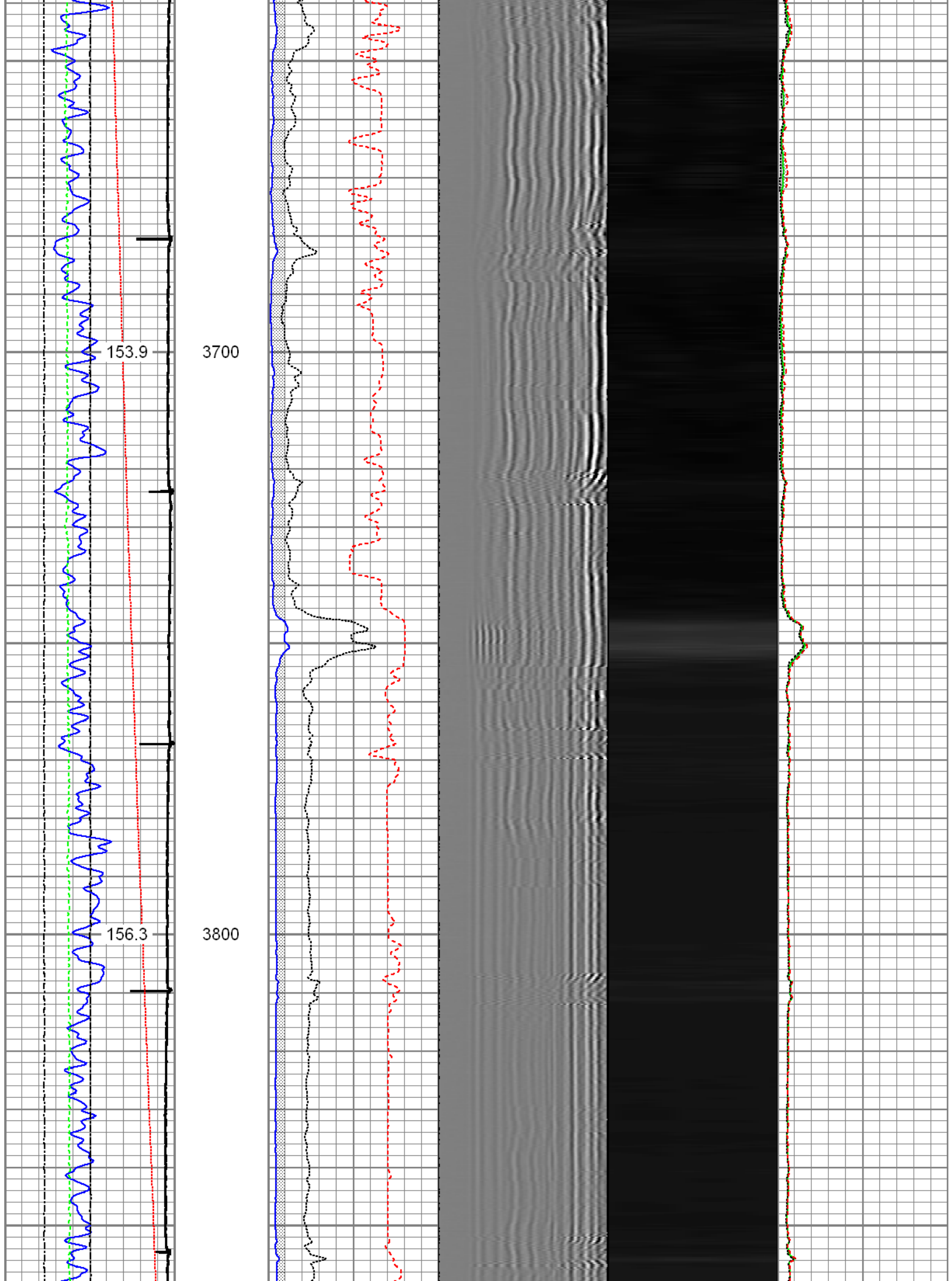


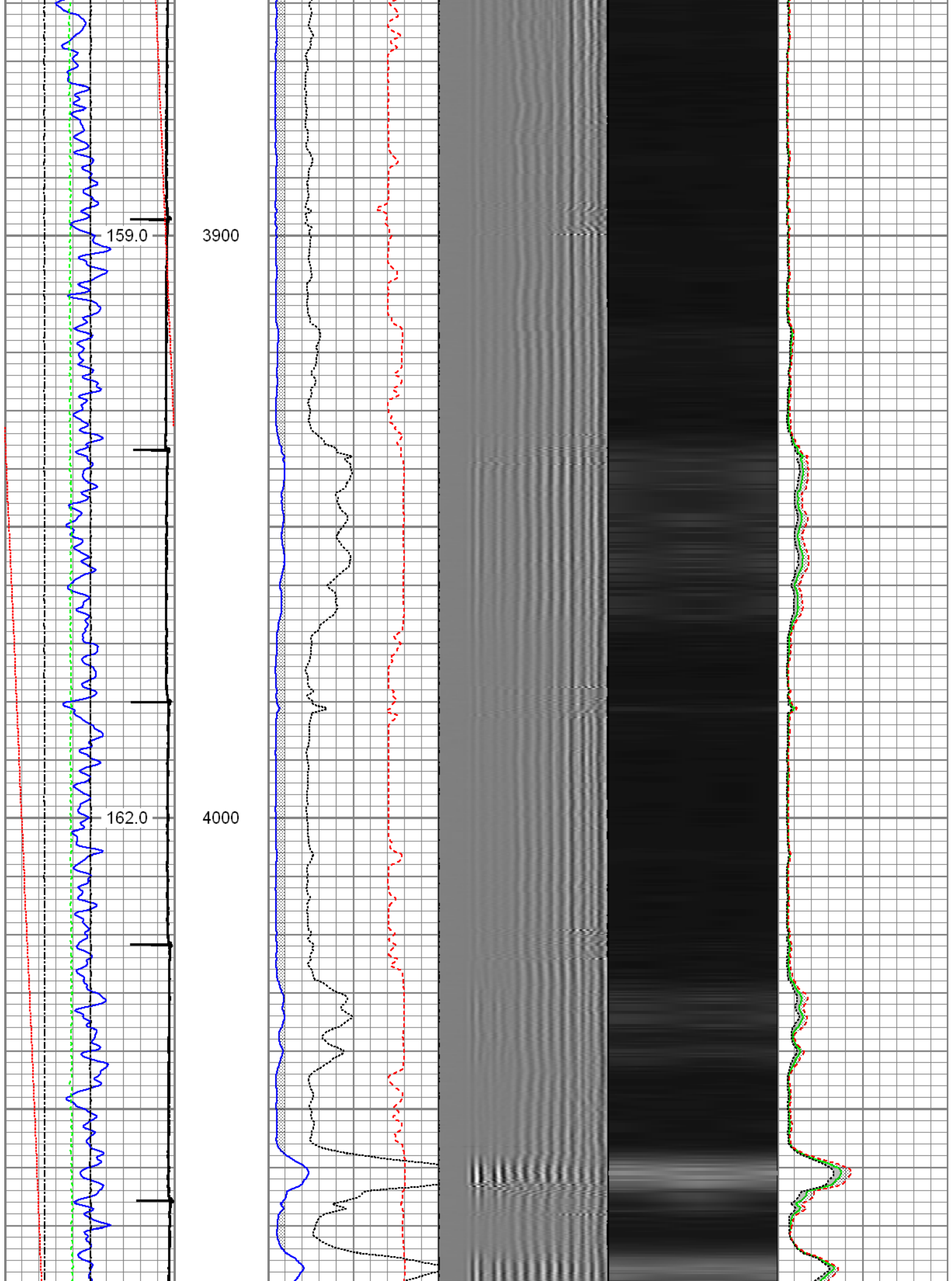


3200  
3300  
3400

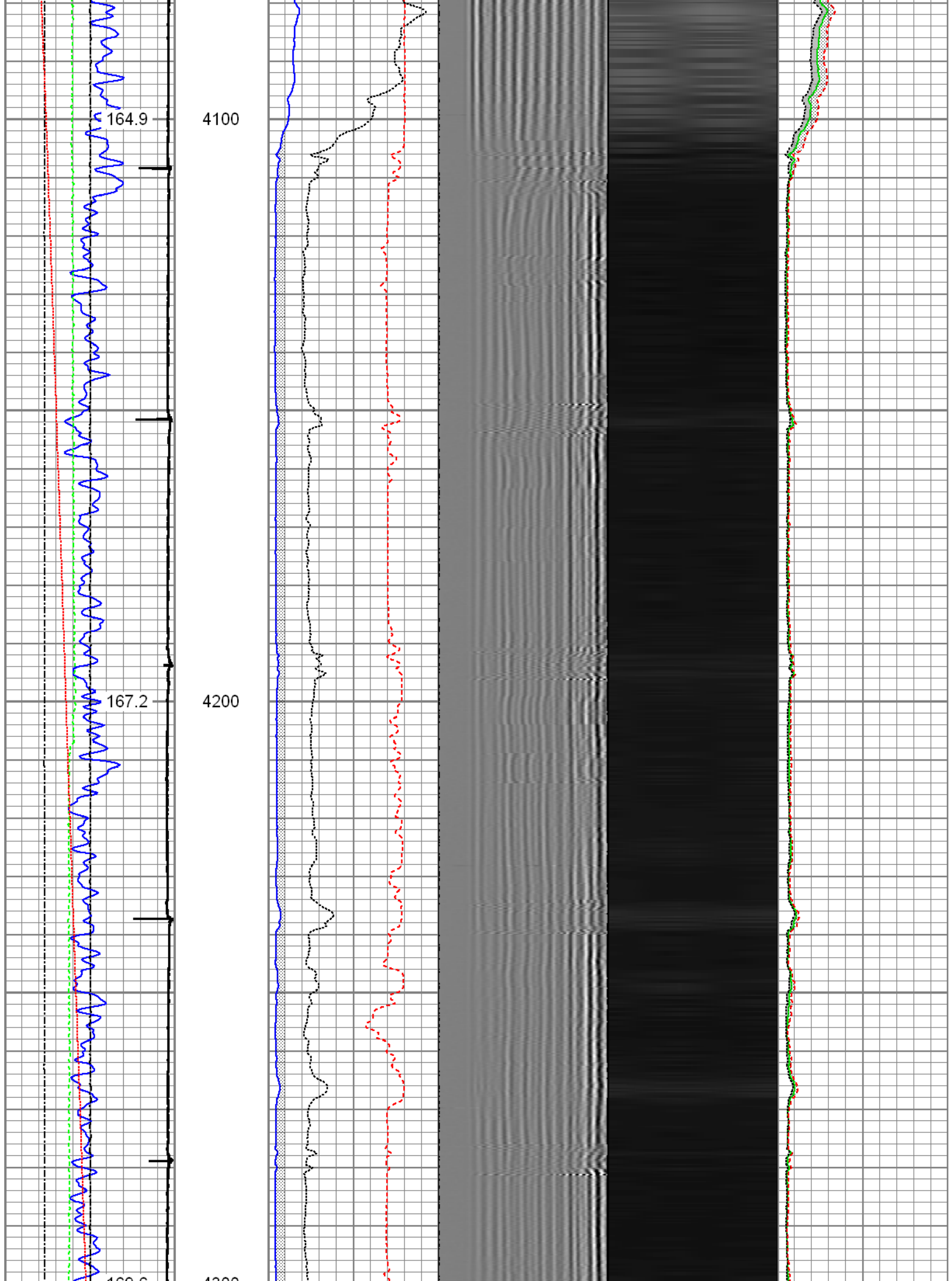


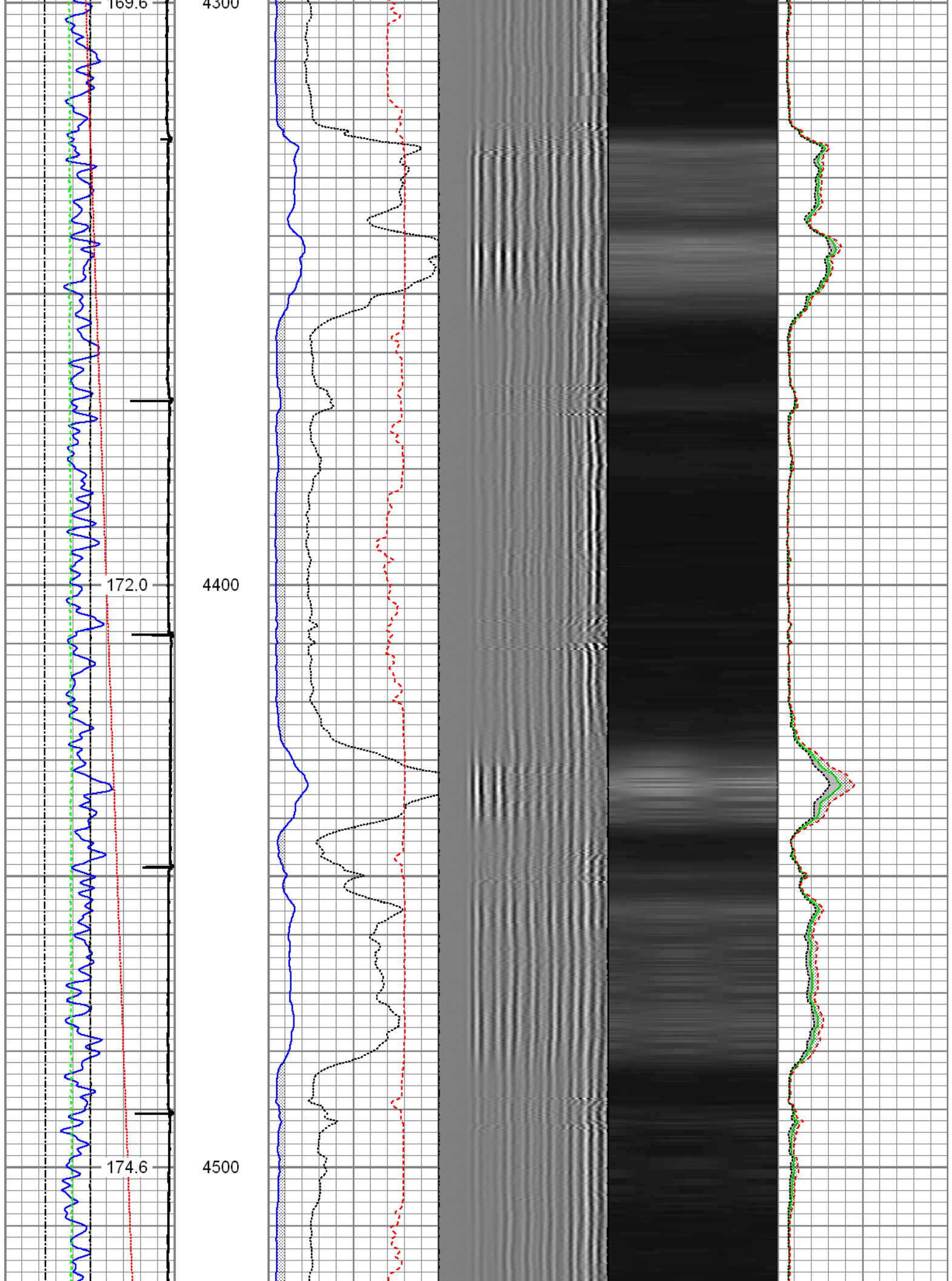


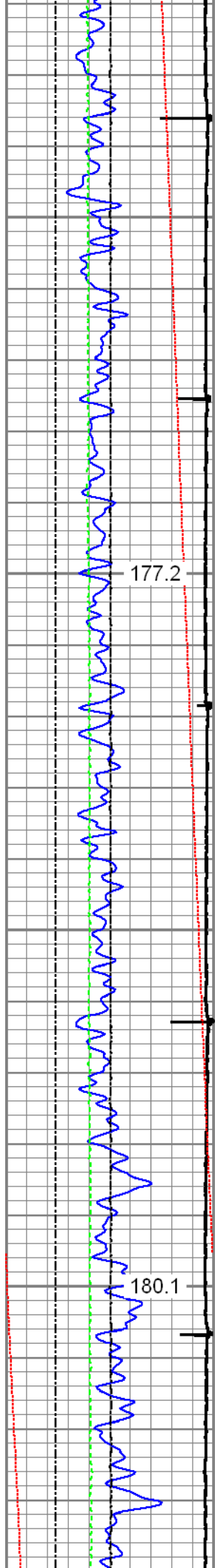






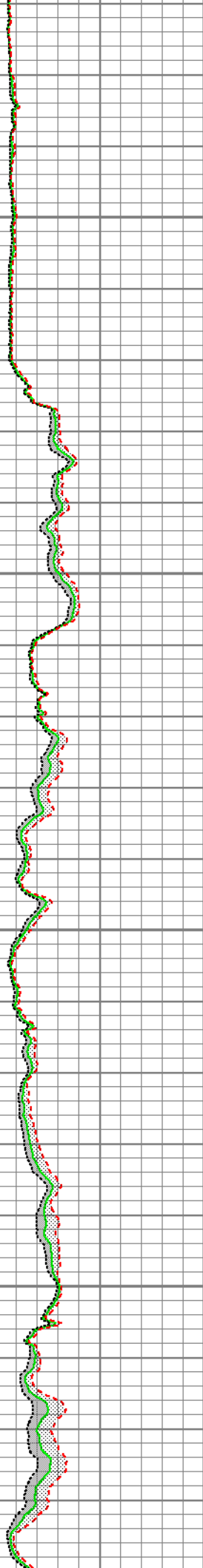
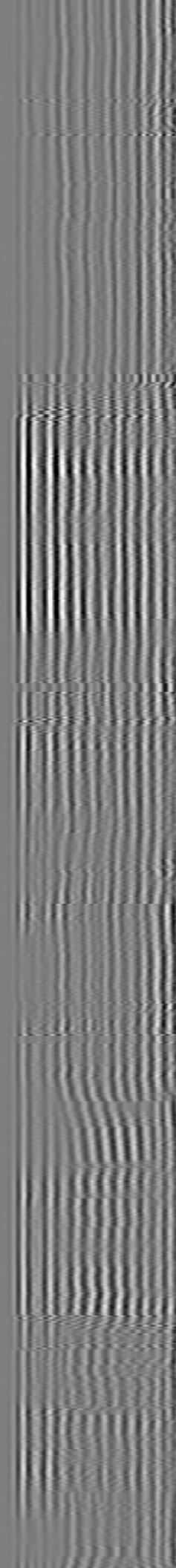
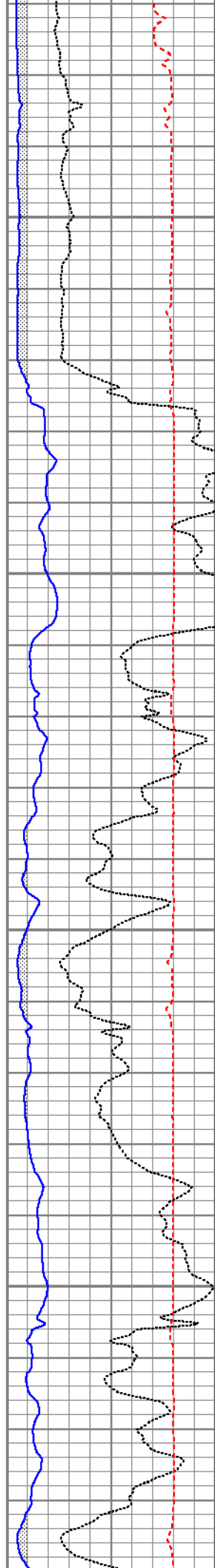


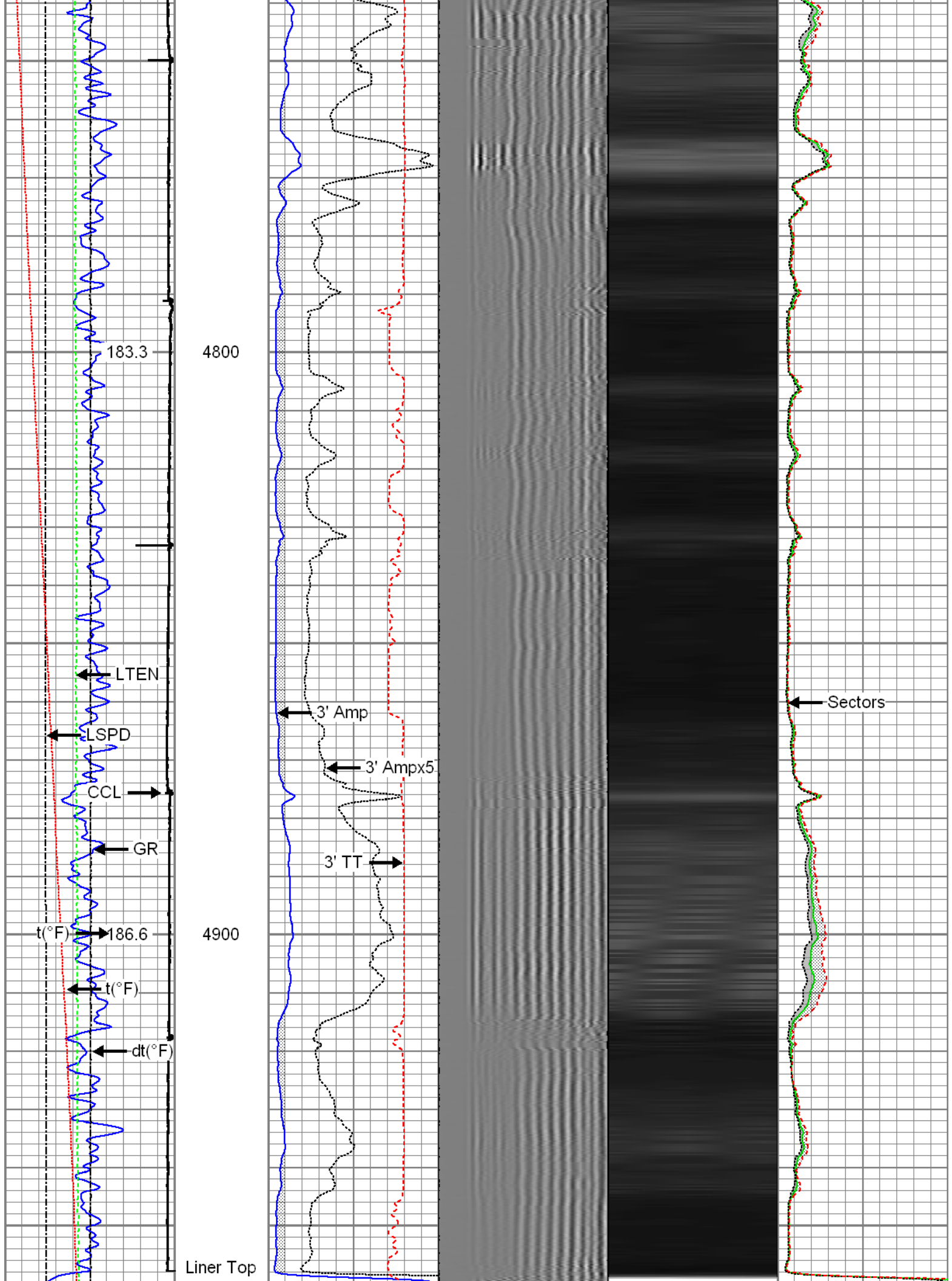




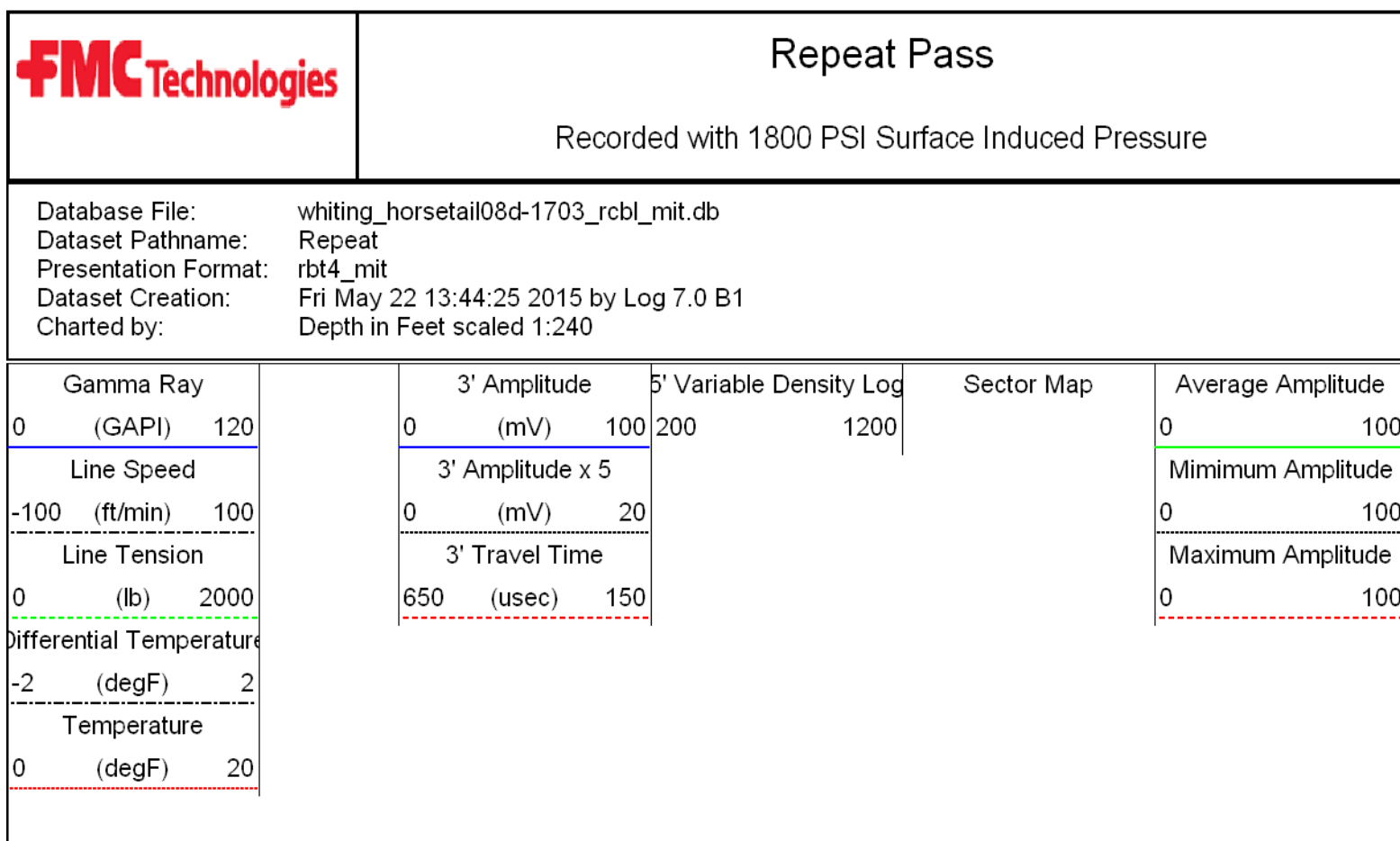
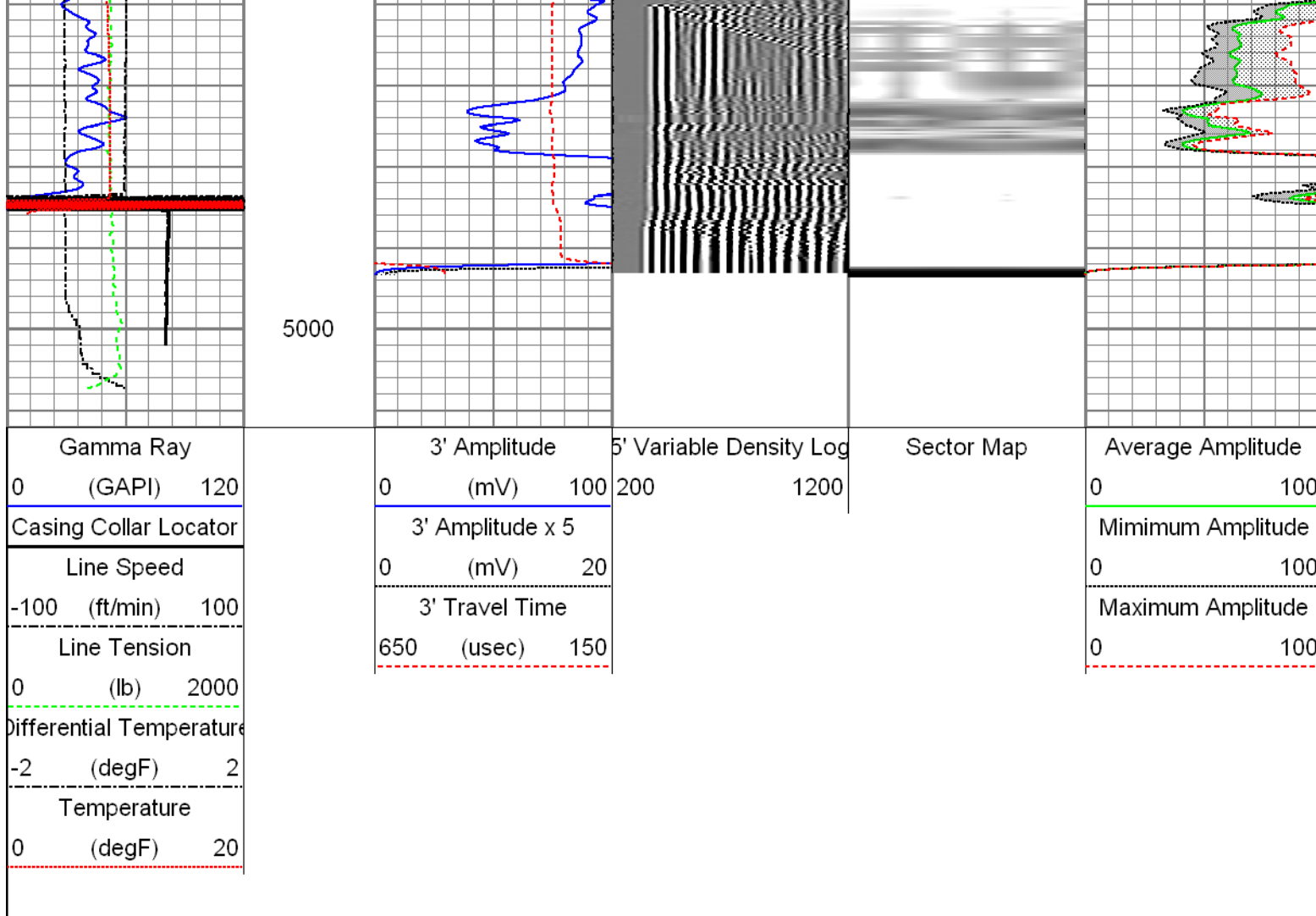
4600

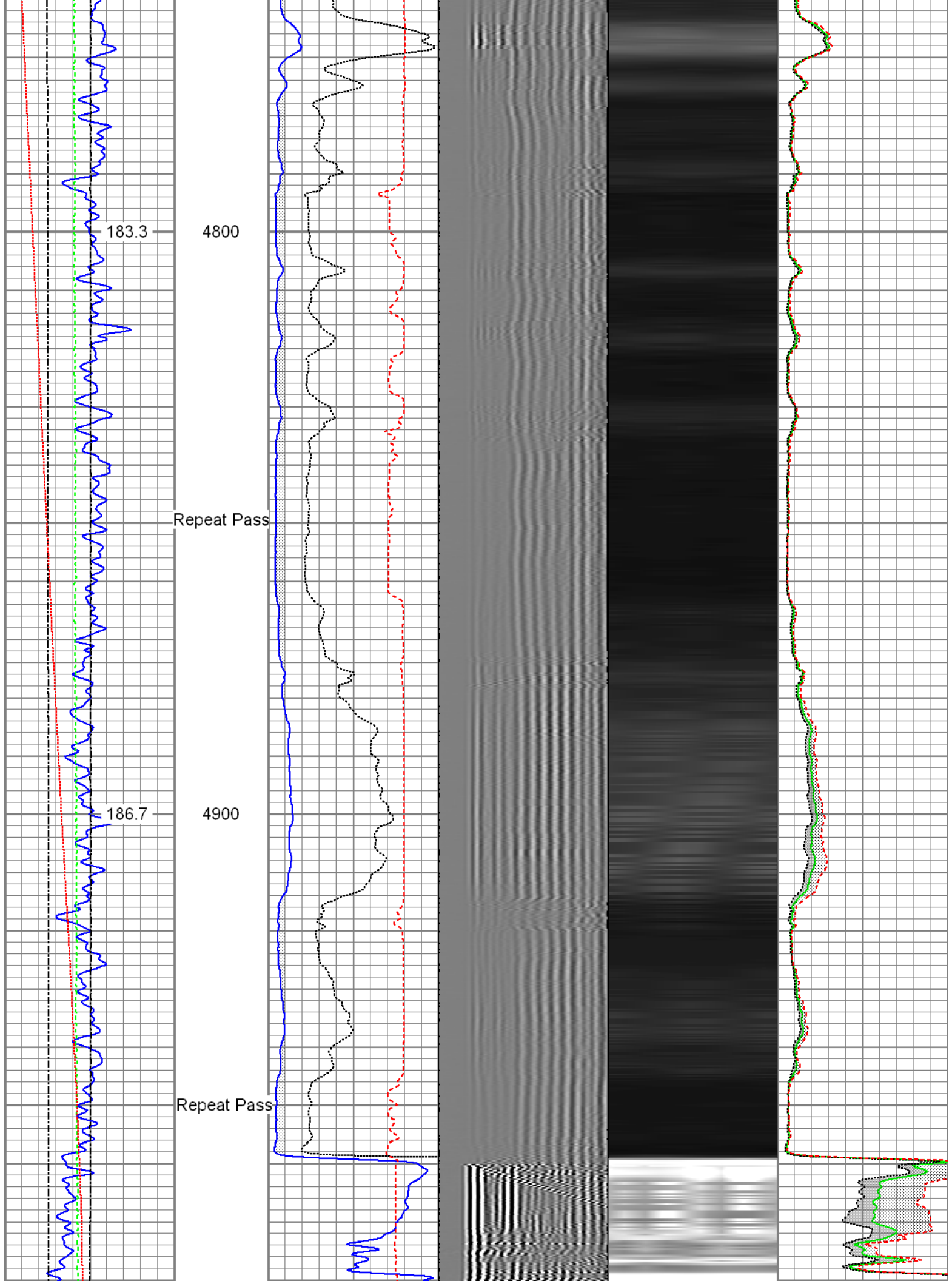
4700

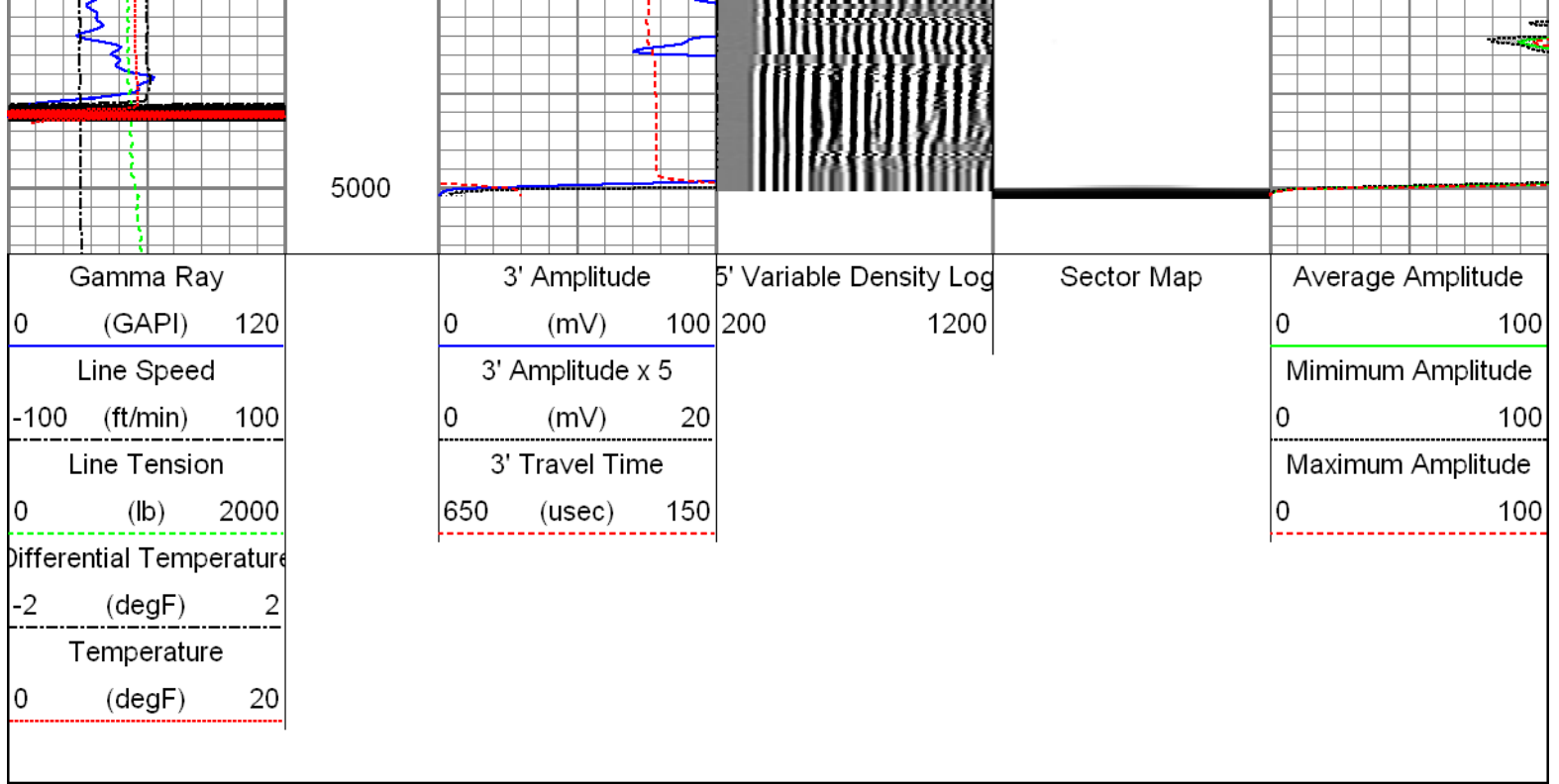


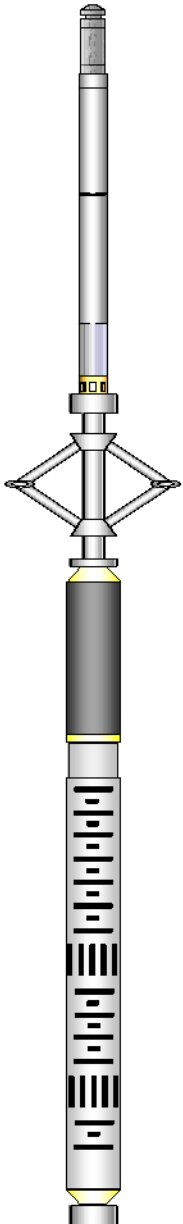
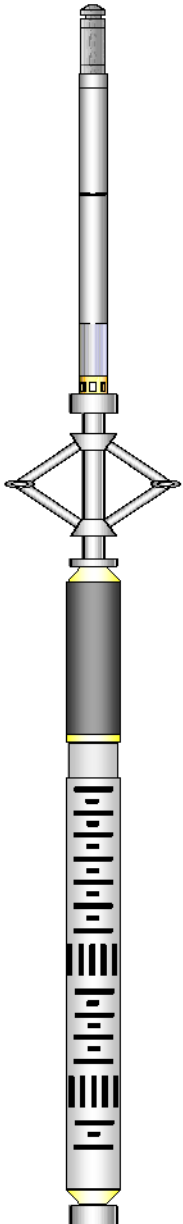


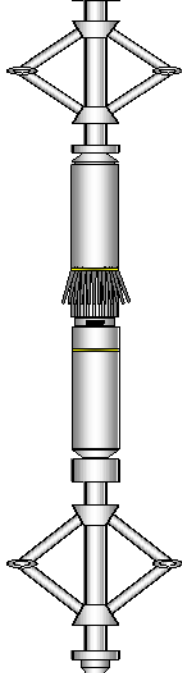








Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)	
GR	23.85		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00	
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00	
			UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50	
			UW_PGR-UW_PGR_020 (10013899) Production Gamma Ray	1.93	1.69	9.50	
TEMP	22.45		UW_PRT-UW_PRT_016 (10025095) Platinum Resistance Thermometer	1.04	1.69	5.20	
			UW_PRC #4 -DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00	
WVF3FT	15.42			UW_RBT-UW_RBT_004 (1066) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	15.42						
WVFS2	15.42						
WVFS3	15.42						
WVFS4	15.42						
WVFS5	15.42						
WVFS6	15.42						
WVFS7	15.42						
WVFS8	15.42						
CBLTEMP	15.42						
CBI ROT	15.42						

WVF5FT	14.42		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
MIT	5.41		UW_MIT-UW_MIT40_027 (218949) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #3 -UW_PRC_057 (1038) 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: whiting_horsetail08d-1703_rcbl_mit.db: field/well/run1/merge2 Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report			
Database File:	whiting_horsetail08d-1703_rcbl_mit.db		
Dataset Pathname:	merge2		
Dataset Creation:	Fri May 22 16:07:57 2015		
Multi-finger Imaging Tool Calibration Report			
Serial Number:	218949		
Number of Fingers:	40		
Tool Model:	UW_MIT40_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 22 12:35:00 2015					
Ring size:	4	5	6	7		
(in)						
	Sens	Sens	Sens			
Finger 01:	1364 274.0	1638 297.0	1935 304.0	2239		
Finger 02:	1435 270.0	1705 288.0	1993 300.0	2293		
Finger 03:	1651 268.0	1919 282.0	2201 285.0	2486		
Finger 04:	1662 267.0	1929 282.0	2211 277.0	2488		
Finger 05:	1523 254.0	1777 268.0	2045 280.0	2325		
Finger 06:	1524 247.0	1771 261.0	2032 273.0	2305		
Finger 07:	1341 262.0	1603 286.0	1889 299.0	2188		
Finger 08:	1540 242.0	1782 261.0	2043 275.0	2318		




Finger 08:	1540	242.0	1782	281.0	2043	273.0	2318
Finger 09:	1417	259.0	1676	279.0	1955	297.0	2252
Finger 10:	1485	254.0	1739	271.0	2010	285.0	2295
Finger 11:	1477	252.0	1729	265.0	1994	284.0	2278
Finger 12:	1319	267.0	1586	291.0	1877	312.0	2189
Finger 13:	1581	269.0	1850	283.0	2133	294.0	2427
Finger 14:	1422	271.0	1693	292.0	1985	309.0	2294
Finger 15:	1544	254.0	1798	270.0	2068	284.0	2352
Finger 16:	1408	273.0	1681	293.0	1974	310.0	2284
Finger 17:	1645	264.0	1909	277.0	2186	287.0	2473
Finger 18:	1385	285.0	1670	303.0	1973	325.0	2298
Finger 19:	1646	258.0	1904	257.0	2161	266.0	2427
Finger 20:	1522	260.0	1782	277.0	2059	288.0	2347
Finger 21:	1597	252.0	1849	258.0	2107	267.0	2374
Finger 22:	1539	274.0	1813	285.0	2098	307.0	2405
Finger 23:	1355	278.0	1633	289.0	1922	305.0	2227
Finger 24:	1684	267.0	1951	269.0	2220	280.0	2500
Finger 25:	1368	293.0	1661	313.0	1974	323.0	2297
Finger 26:	1538	294.0	1832	299.0	2131	308.0	2439
Finger 27:	1472	263.0	1735	275.0	2010	277.0	2287
Finger 28:	1637	282.0	1919	289.0	2208	288.0	2496
Finger 29:	1470	277.0	1747	291.0	2038	296.0	2334
Finger 30:	1421	283.0	1704	296.0	2000	300.0	2300
Finger 31:	1524	271.0	1795	283.0	2078	285.0	2363
Finger 32:	1334	273.0	1607	286.0	1893	299.0	2192
Finger 33:	1603	303.0	1906	317.0	2223	319.0	2542
Finger 34:	1536	272.0	1808	280.0	2088	282.0	2370
Finger 35:	1431	264.0	1695	282.0	1977	288.0	2265
Finger 36:	1581	283.0	1864	294.0	2158	292.0	2450
Finger 37:	1589	273.0	1862	284.0	2146	288.0	2434
Finger 38:	1483	272.0	1755	286.0	2041	296.0	2337
Finger 39:	1452	276.0	1728	296.0	2024	310.0	2334
Finger 40:	1570	282.0	1852	295.0	2147	303.0	2450

Segmented Cement Bond Log Calibration Report						
Serial Number:		1066				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		5.500	in			
Calibration Depth:		-16.075	ft			
Master Calibration, performed Fri May 22 12:37:35 2015:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.000	1.000	0.800	71.921	71.144	0.777
5FT	-0.004	1.000	0.800	71.921	70.866	1.055
S1	-0.000	1.000	0.000	100.000	99.968	0.032
S2	-0.001	1.000	0.000	100.000	99.940	0.060
S3	-0.000	1.000	0.000	100.000	99.979	0.021
S4	-0.001	1.000	0.000	100.000	99.944	0.056
S5	-0.001	1.000	0.000	100.000	99.935	0.065
S6	-0.001	1.000	0.000	100.000	99.928	0.072
S7	-0.000	1.000	0.000	100.000	99.981	0.020
S8	-0.000	1.000	0.000	100.000	99.994	0.006
Temperature Calibration Report						

Serial Number:			10025095		
Tool Model:			UW_PRT_016		
Performed:			Wed Feb 11 13:43:20 2015		
Point #	Readings		Reference		

Point #	Reading		Reference	
1	12798.00	cps	68.00	degF
2	18136.00	cps	104.00	degF
3	29513.00	cps	176.00	degF
4	40905.00	cps	248.00	degF
5	52487.00	cps	320.00	degF
6	58362.00	cps	356.00	degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Gamma Ray Calibration Report				
Serial Number:	10013899			
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 and Gas Corporation
	Well	Horsetail 8D-1703
	Field	Wildcat
	County	Weld
	State	Colorado