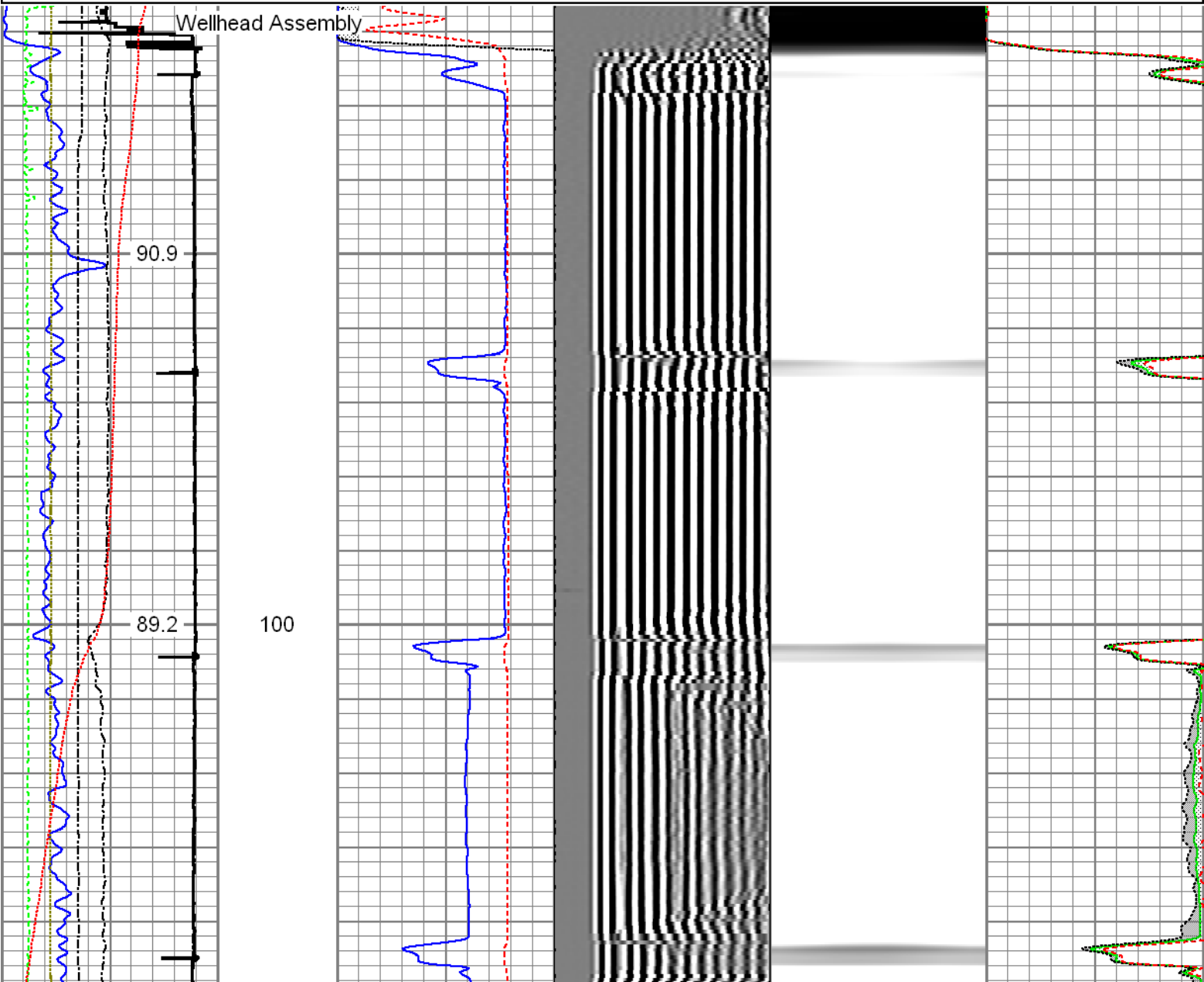


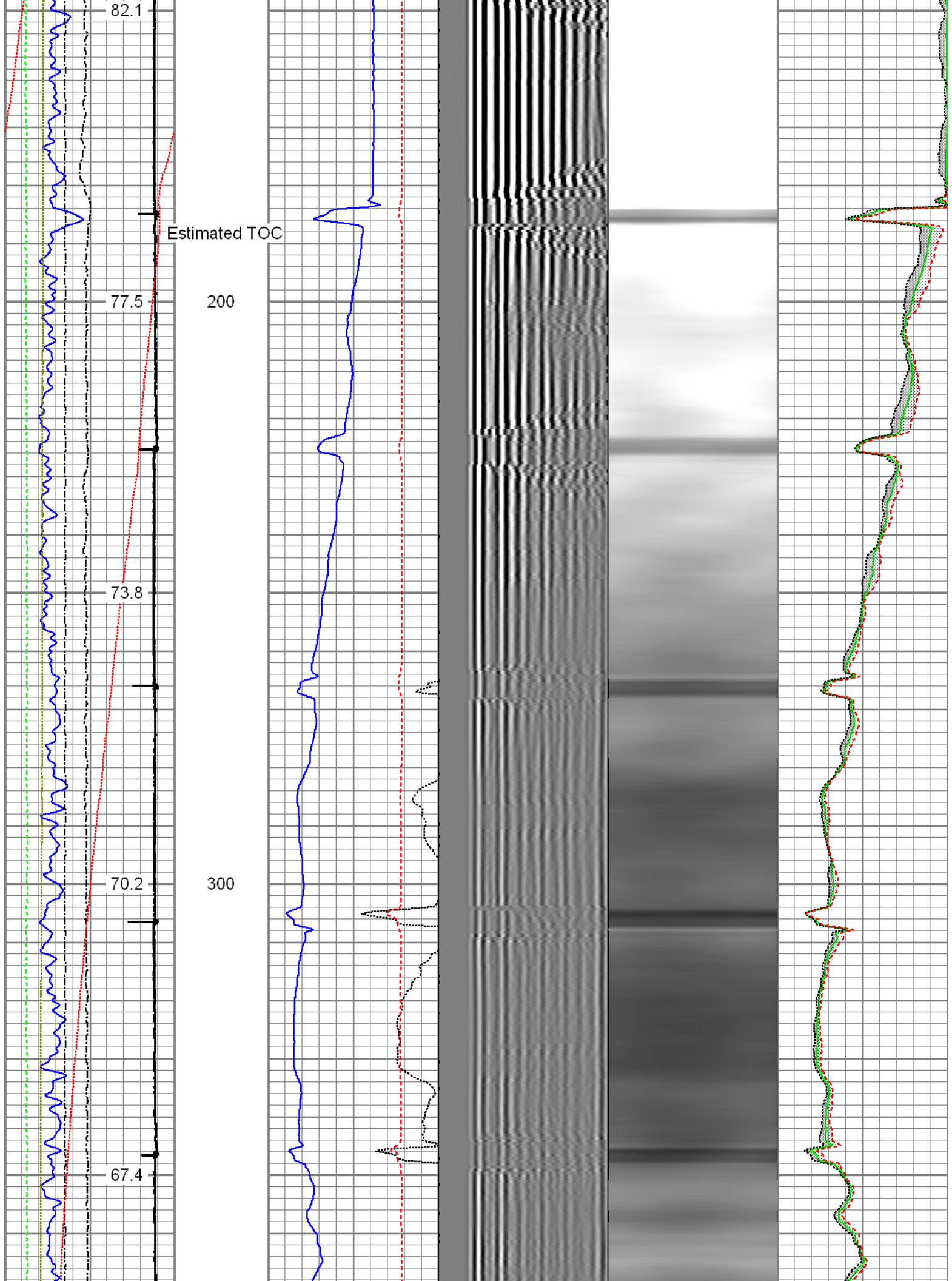
<<< Fold Here >>>
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible 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 Log ran from just above liner top to surface Log recorded with 2400 PSI surface induced pressure No debris found on logging tools upon completion of run Thank you for choosing FMC Technologies Completion Services, Inc.!!

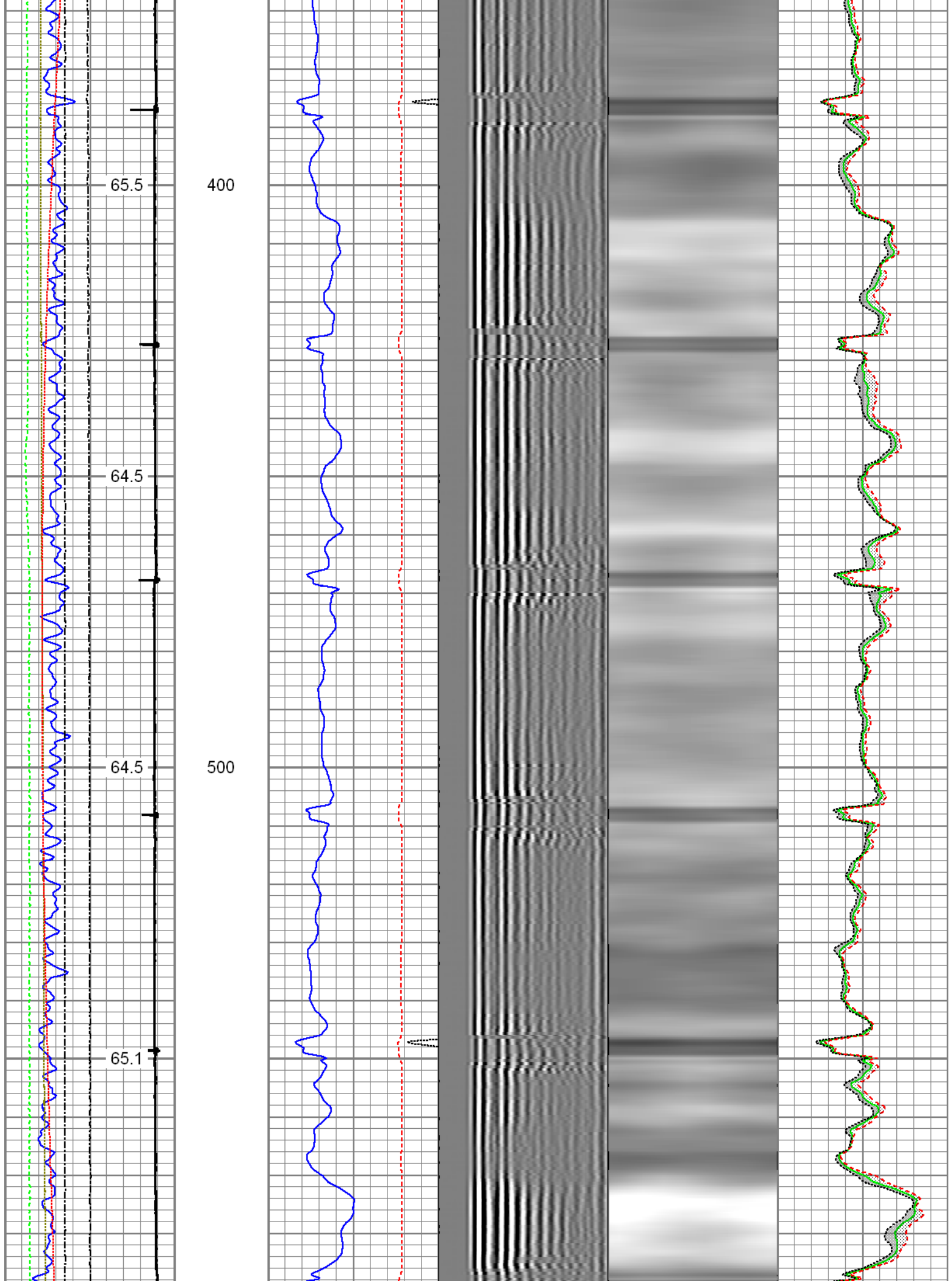


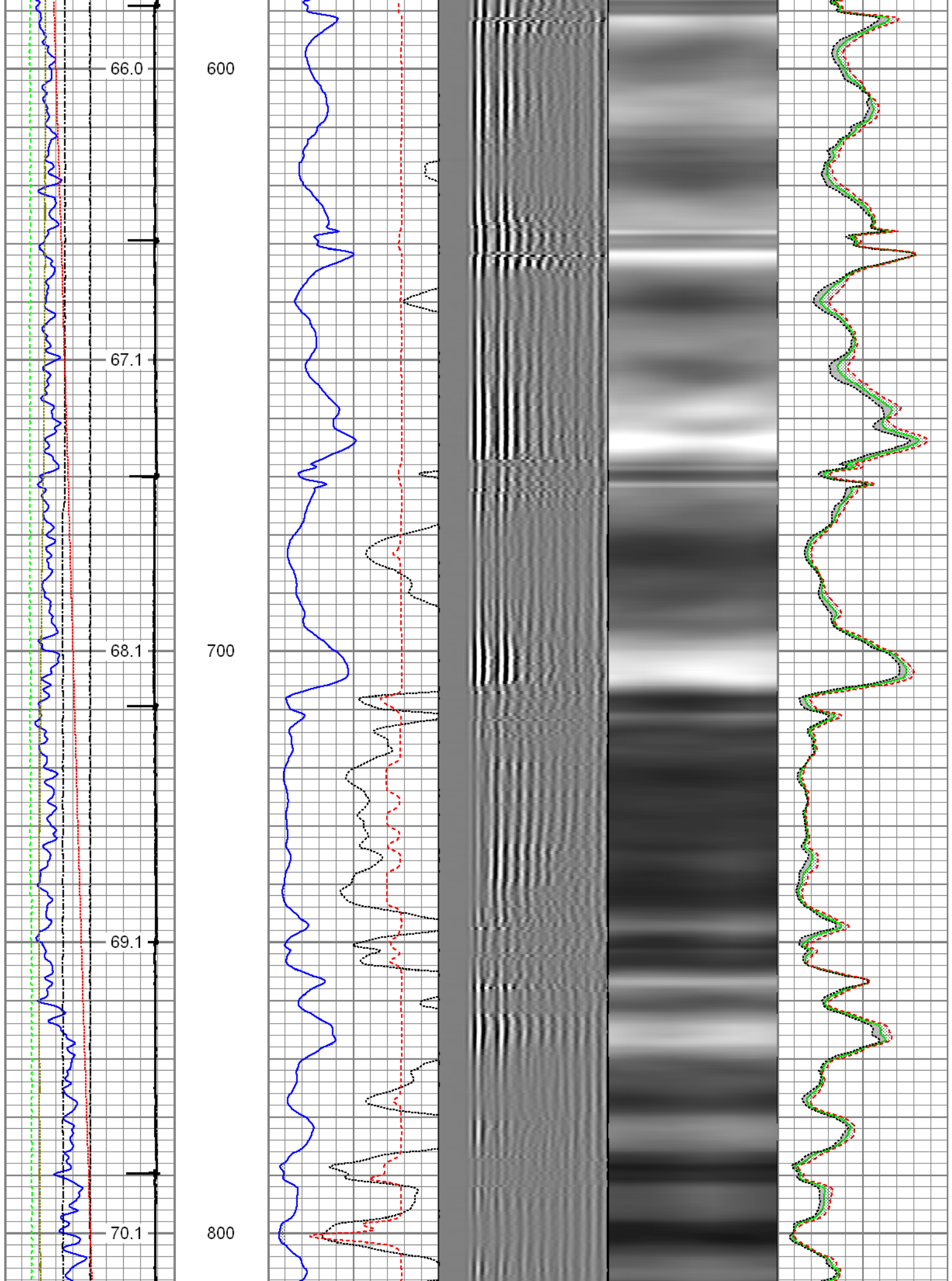
Database File: 08-14-15_noble energy_70 ranch state bb18-681_mit_rbl_cnl.db
Dataset Pathname: main.1
Presentation Format: rbt4_mit
Dataset Creation: Sat Aug 15 18:17:55 2015 by Calc SCH 120430
Charted by: Depth in Feet scaled 1:240

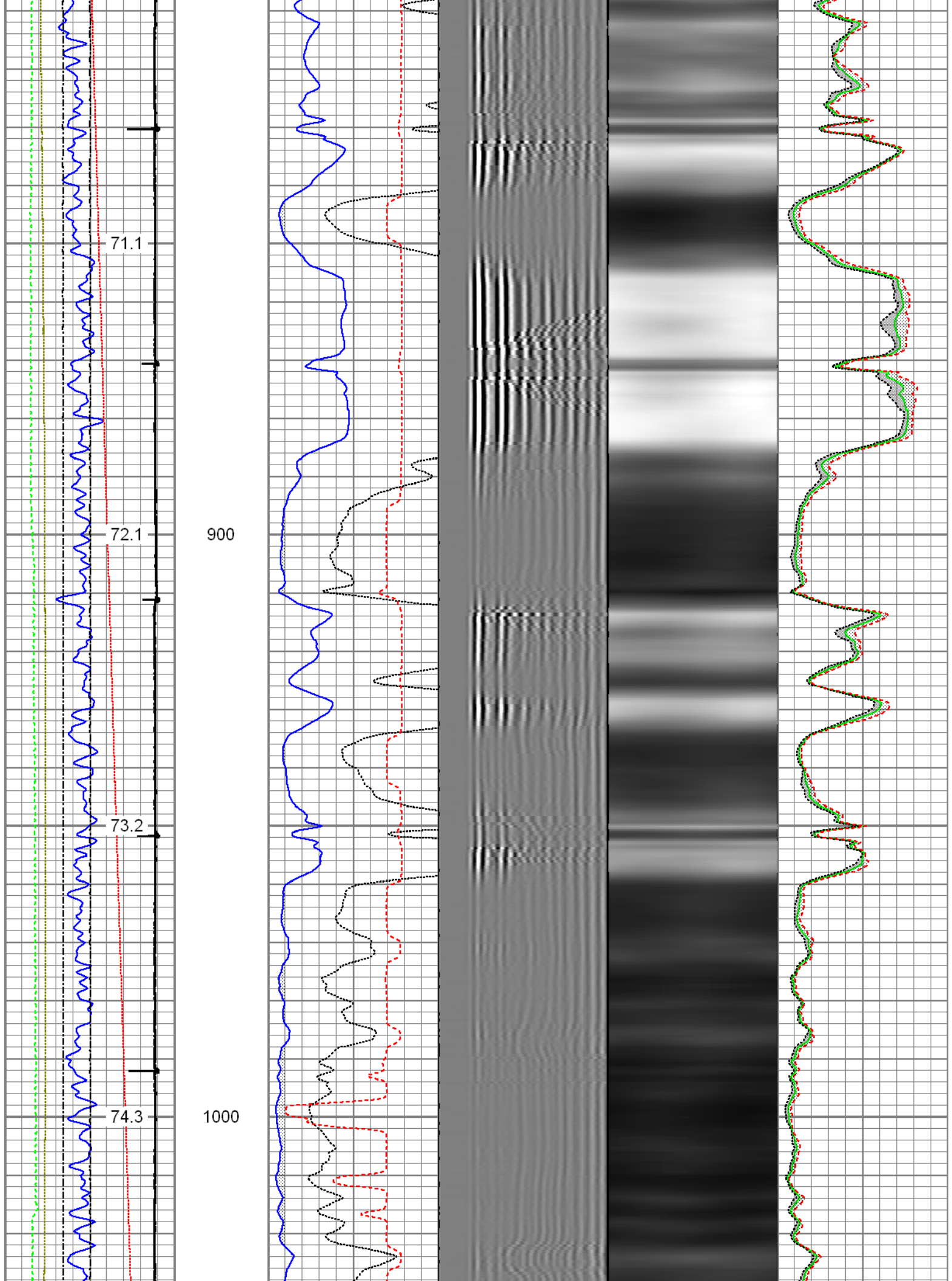
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
-10 Deviation (°) 90				
Temperature				
0 (degF) 20				

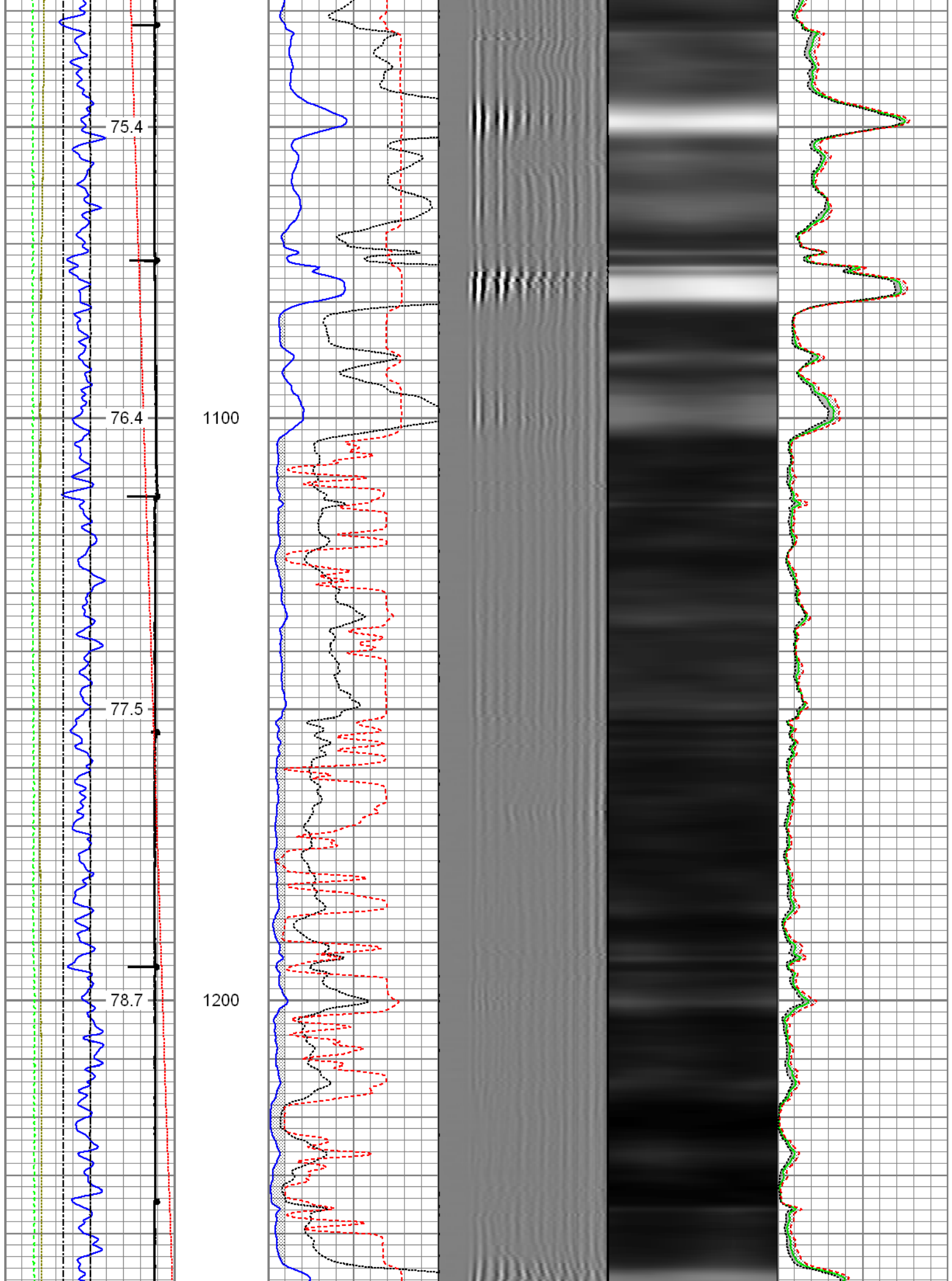


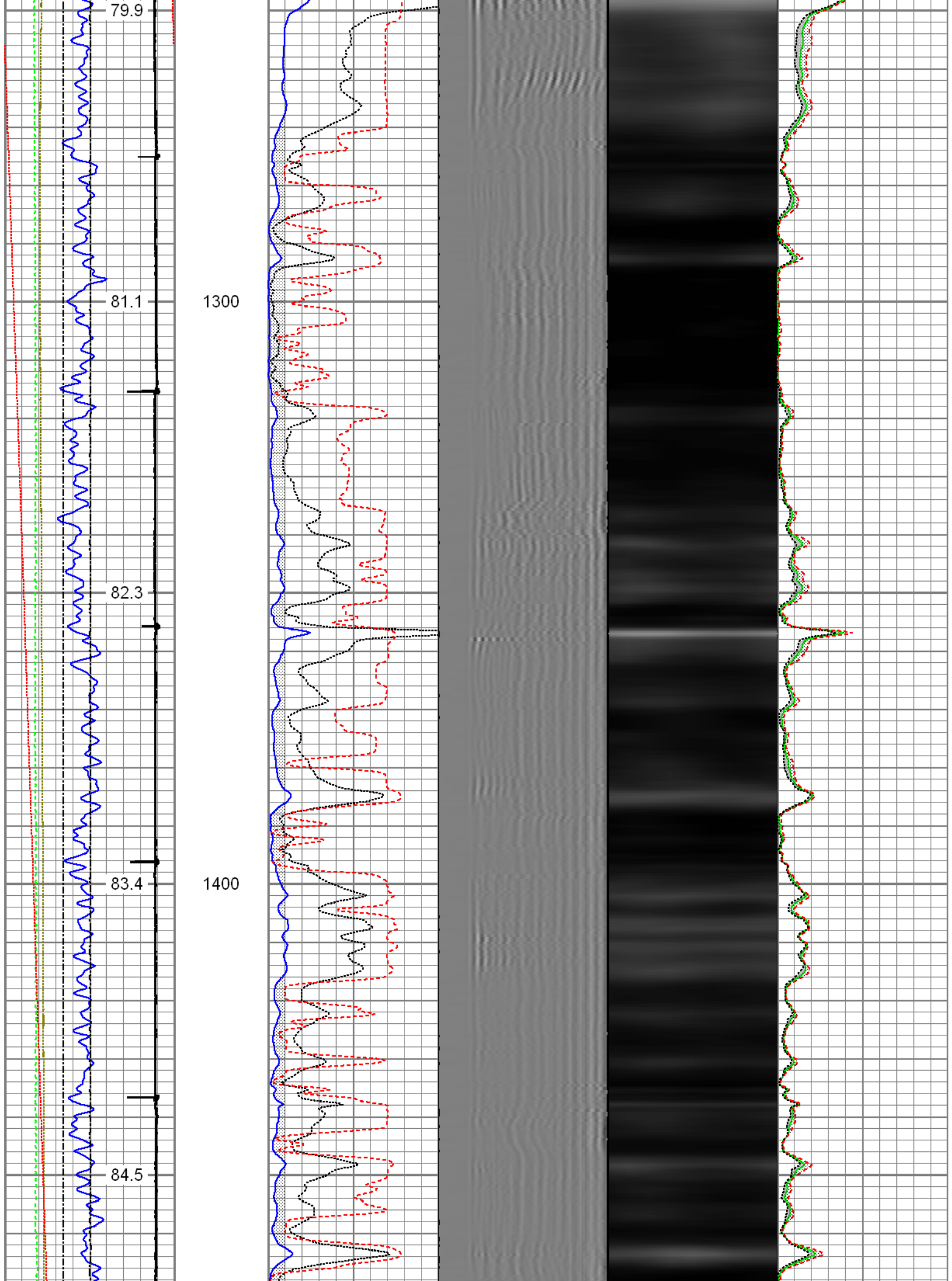


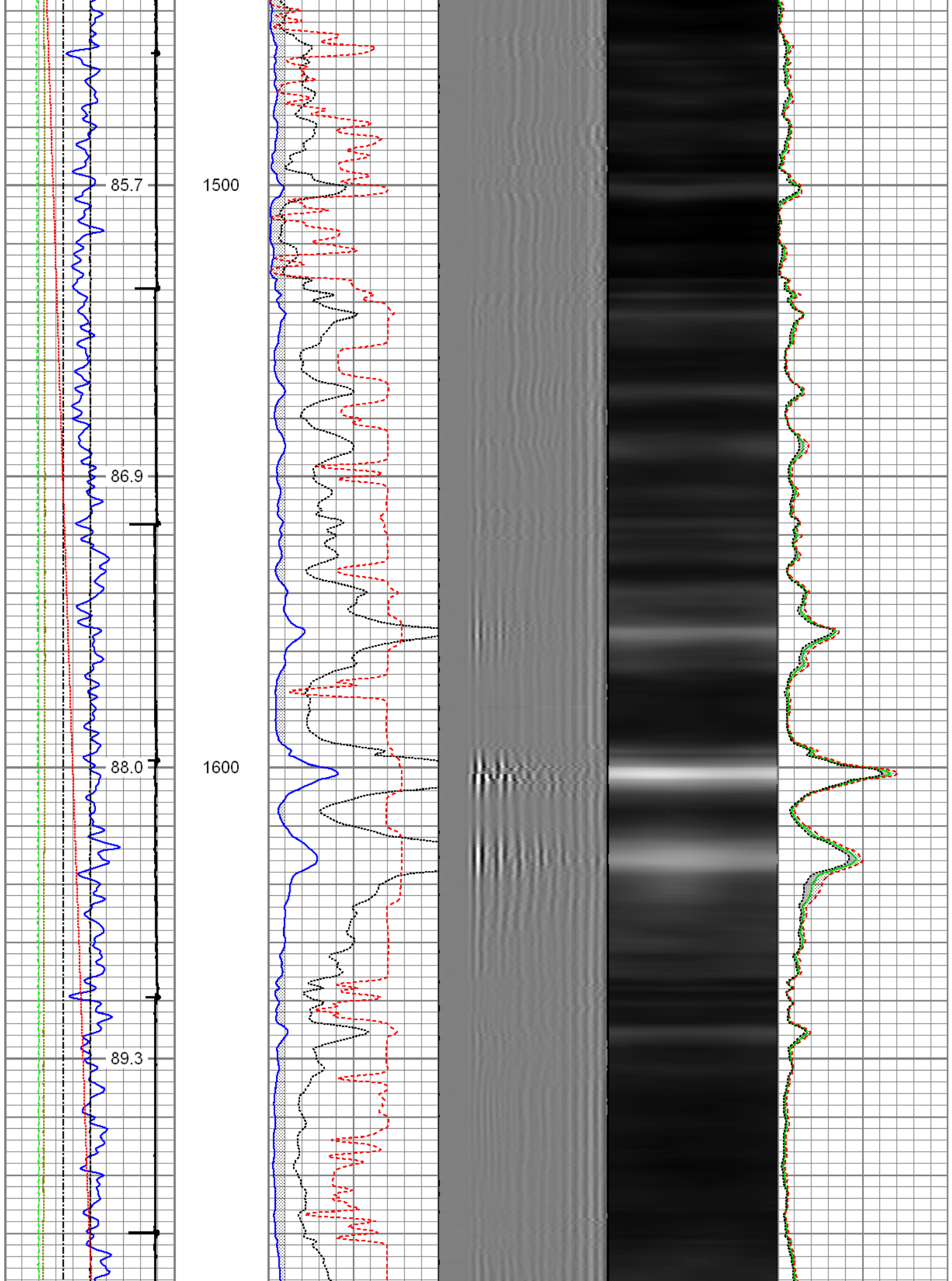


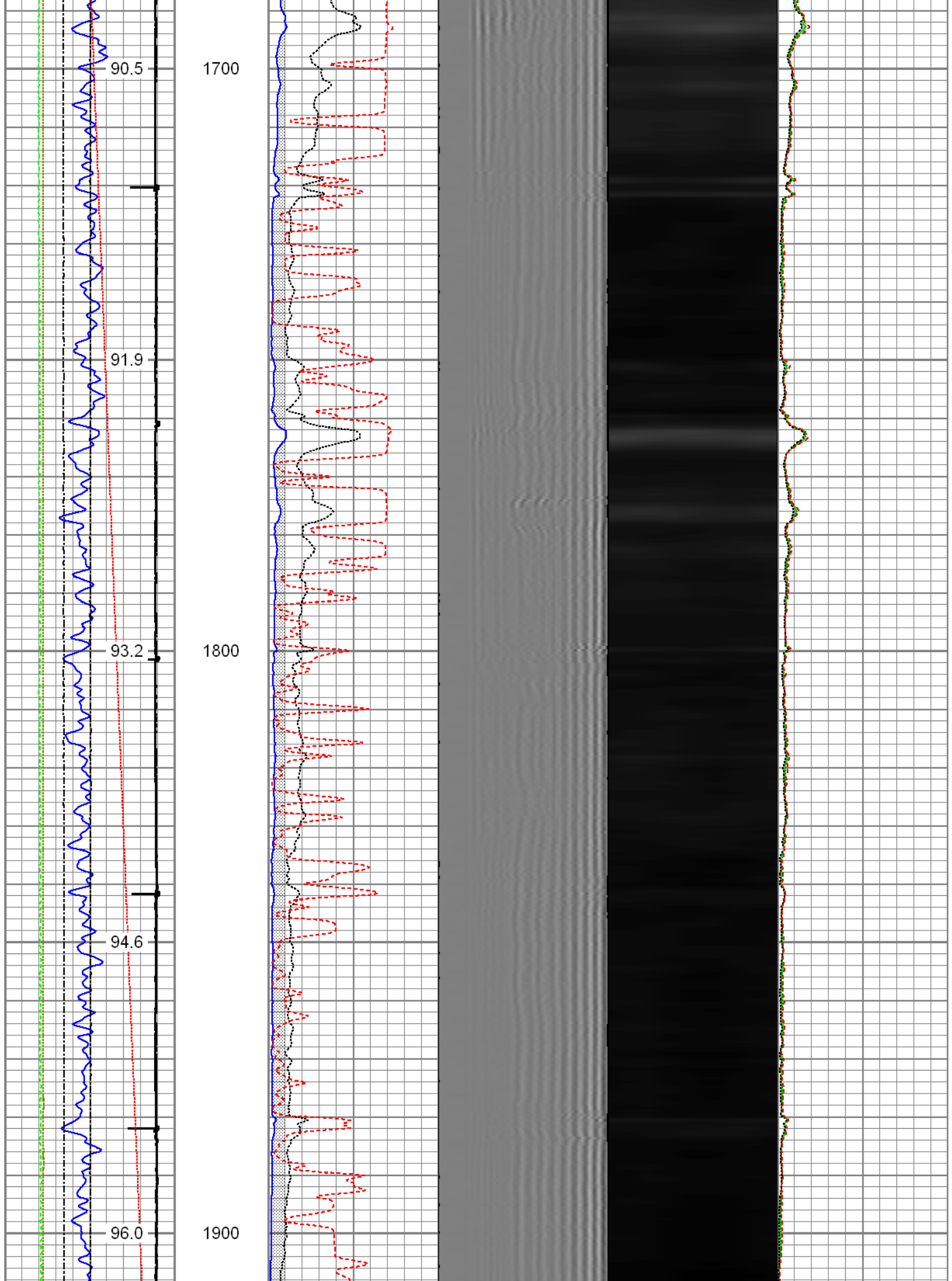


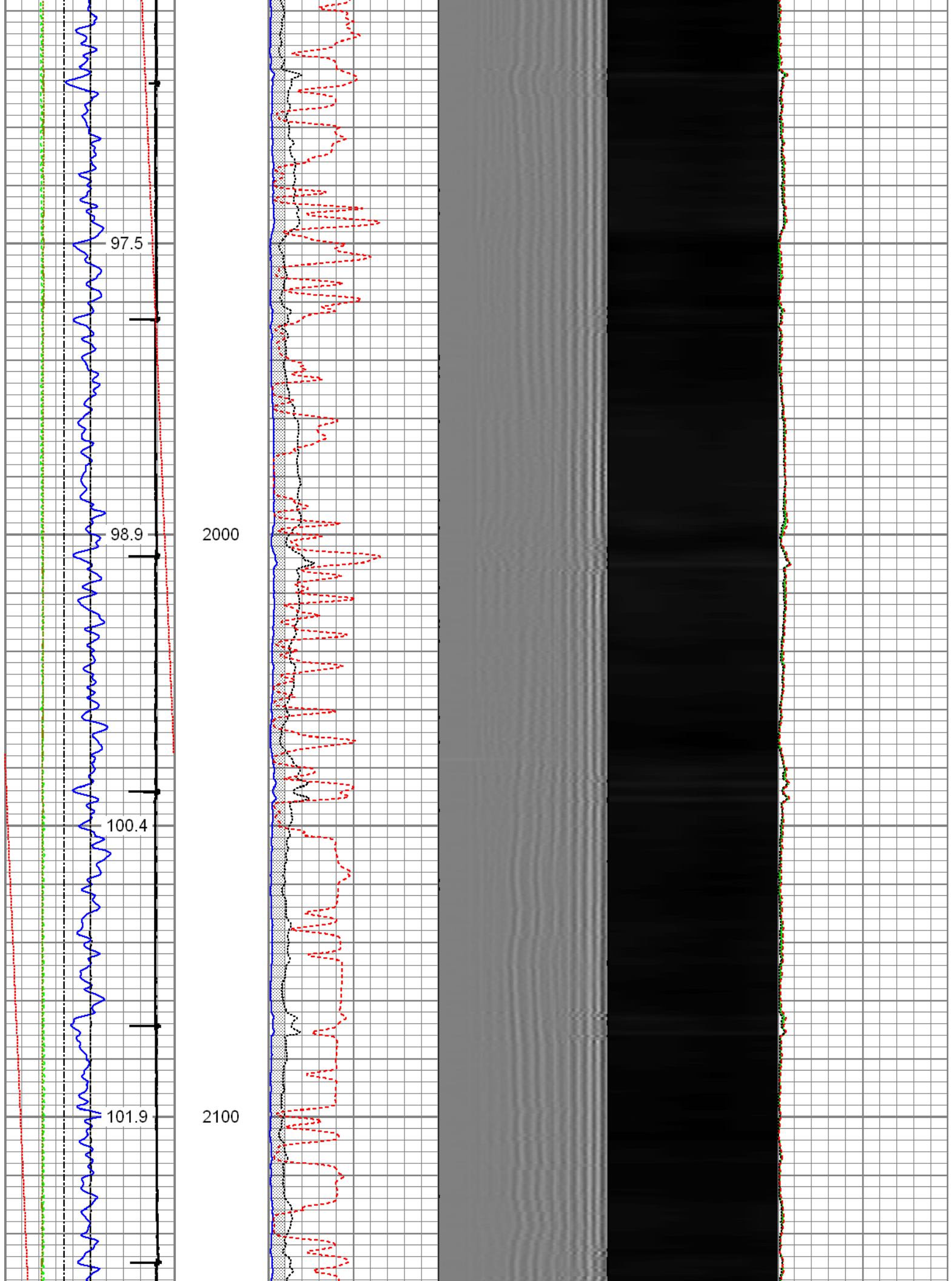


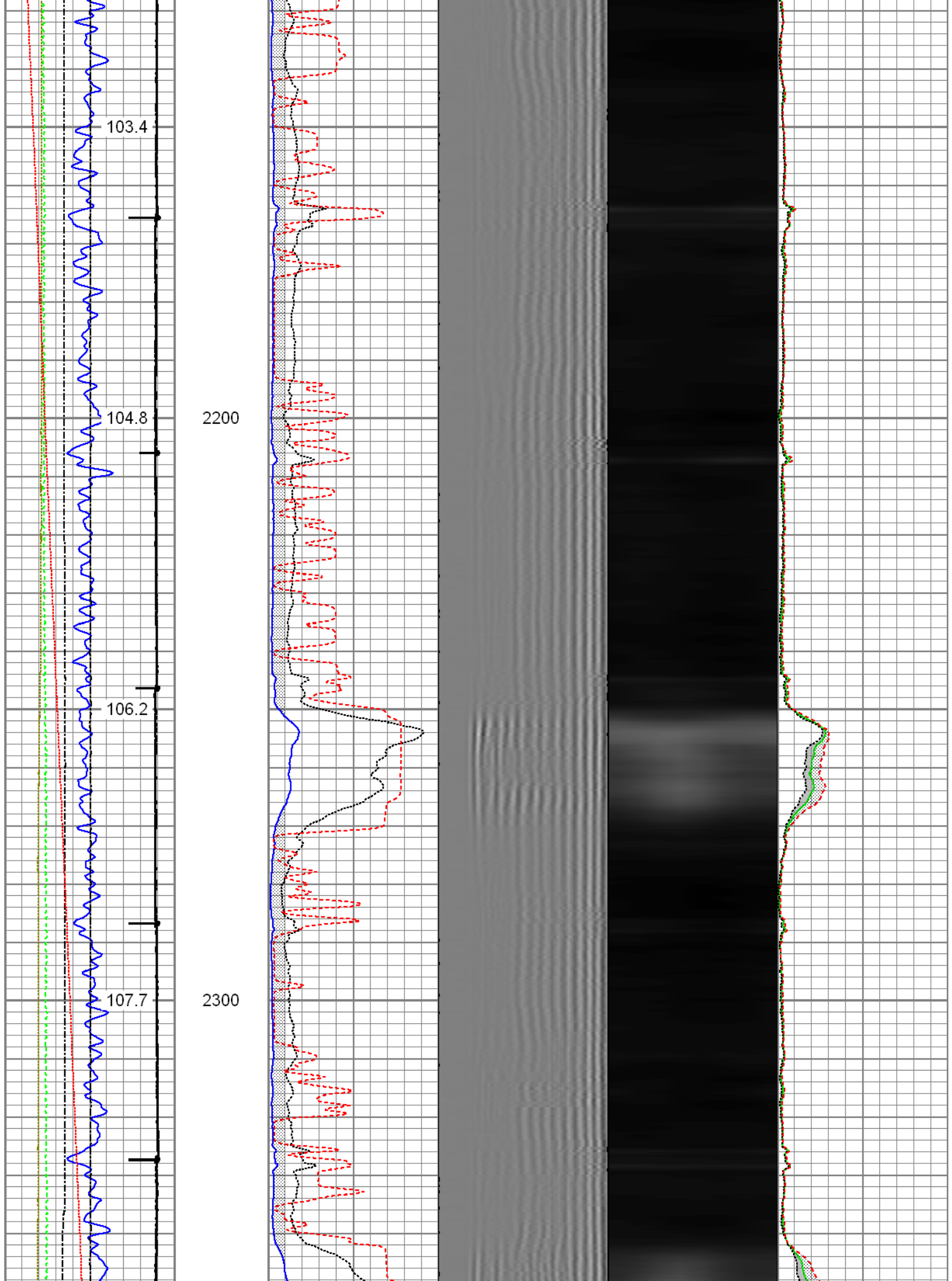


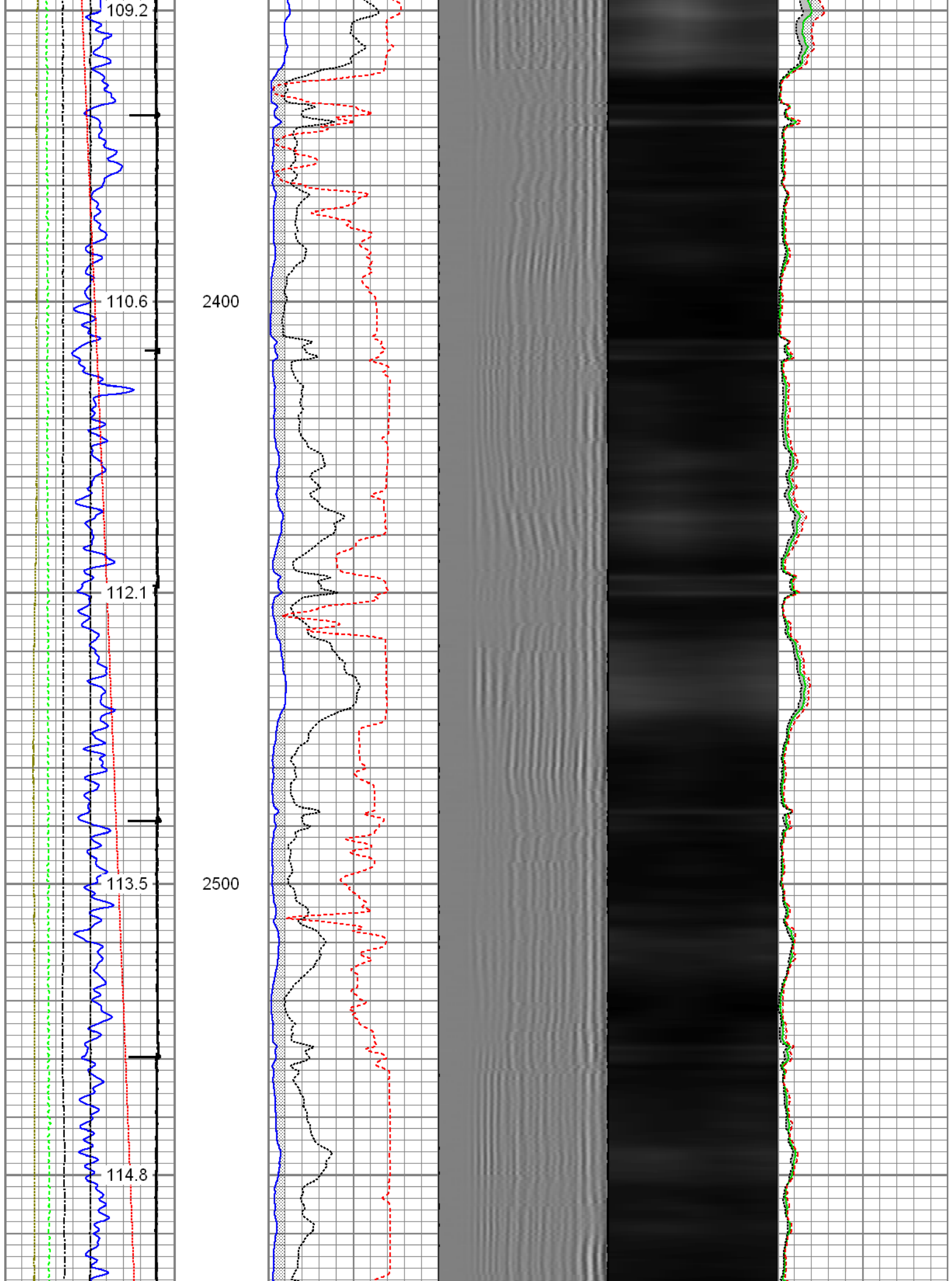


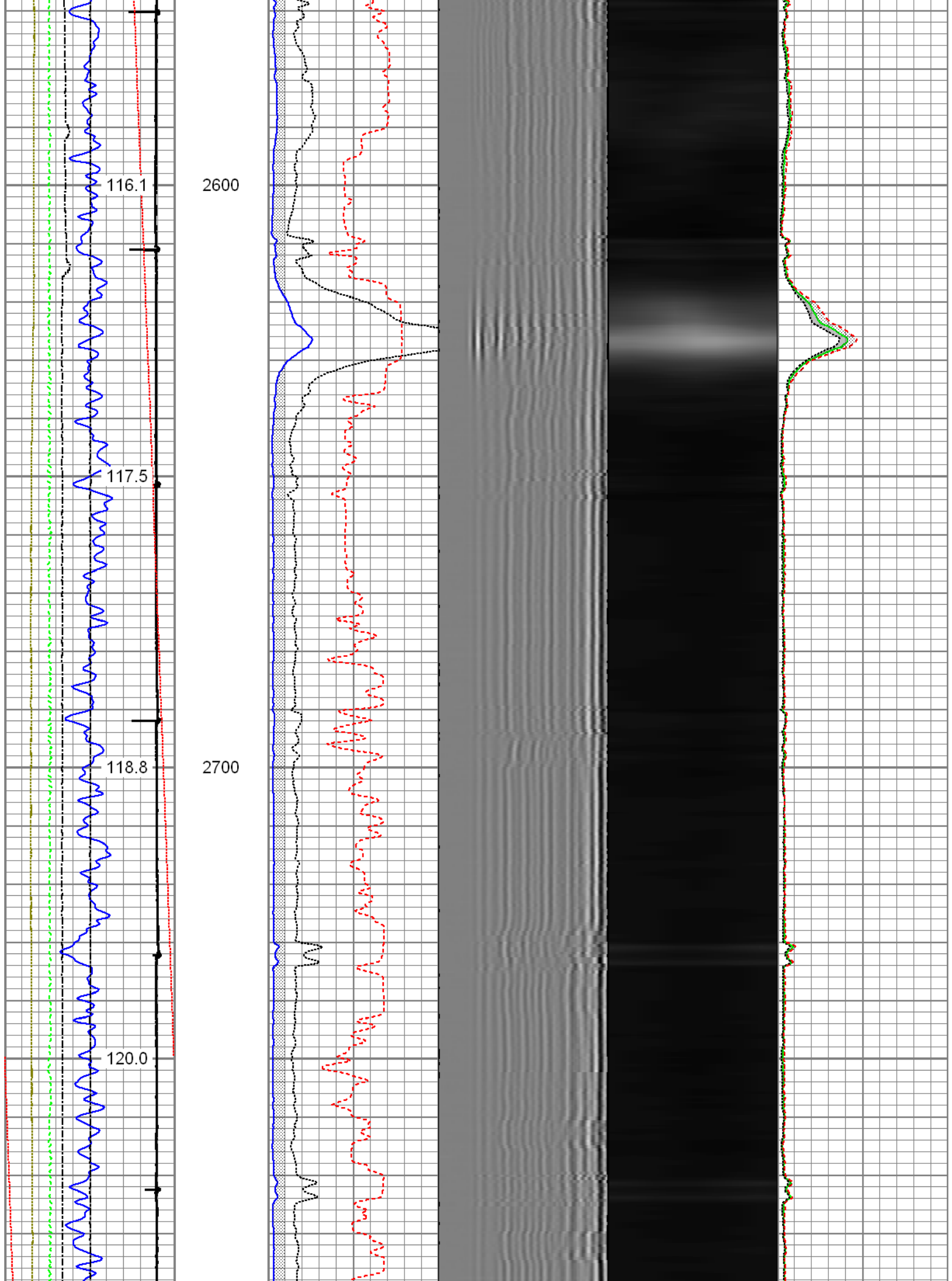


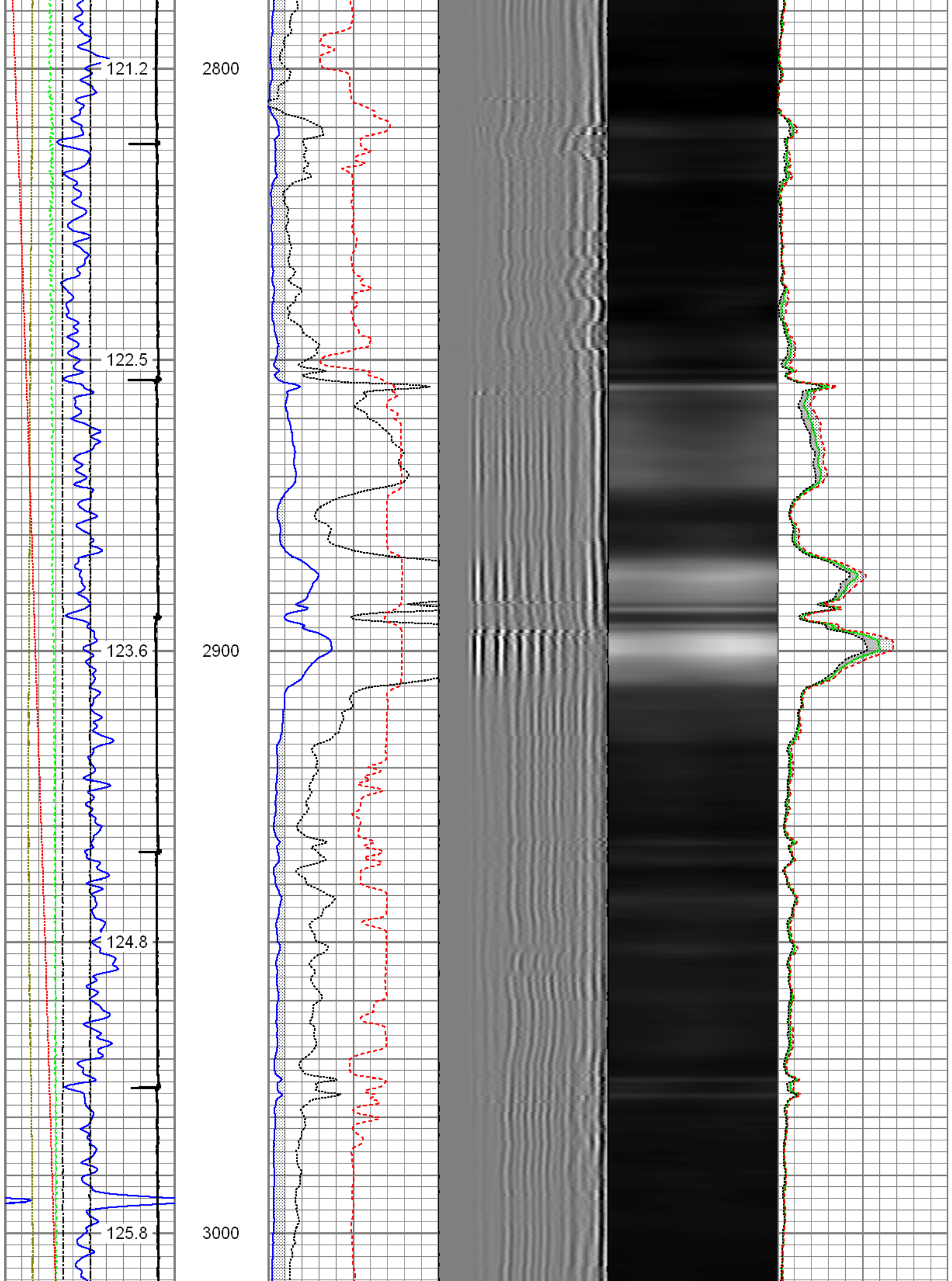


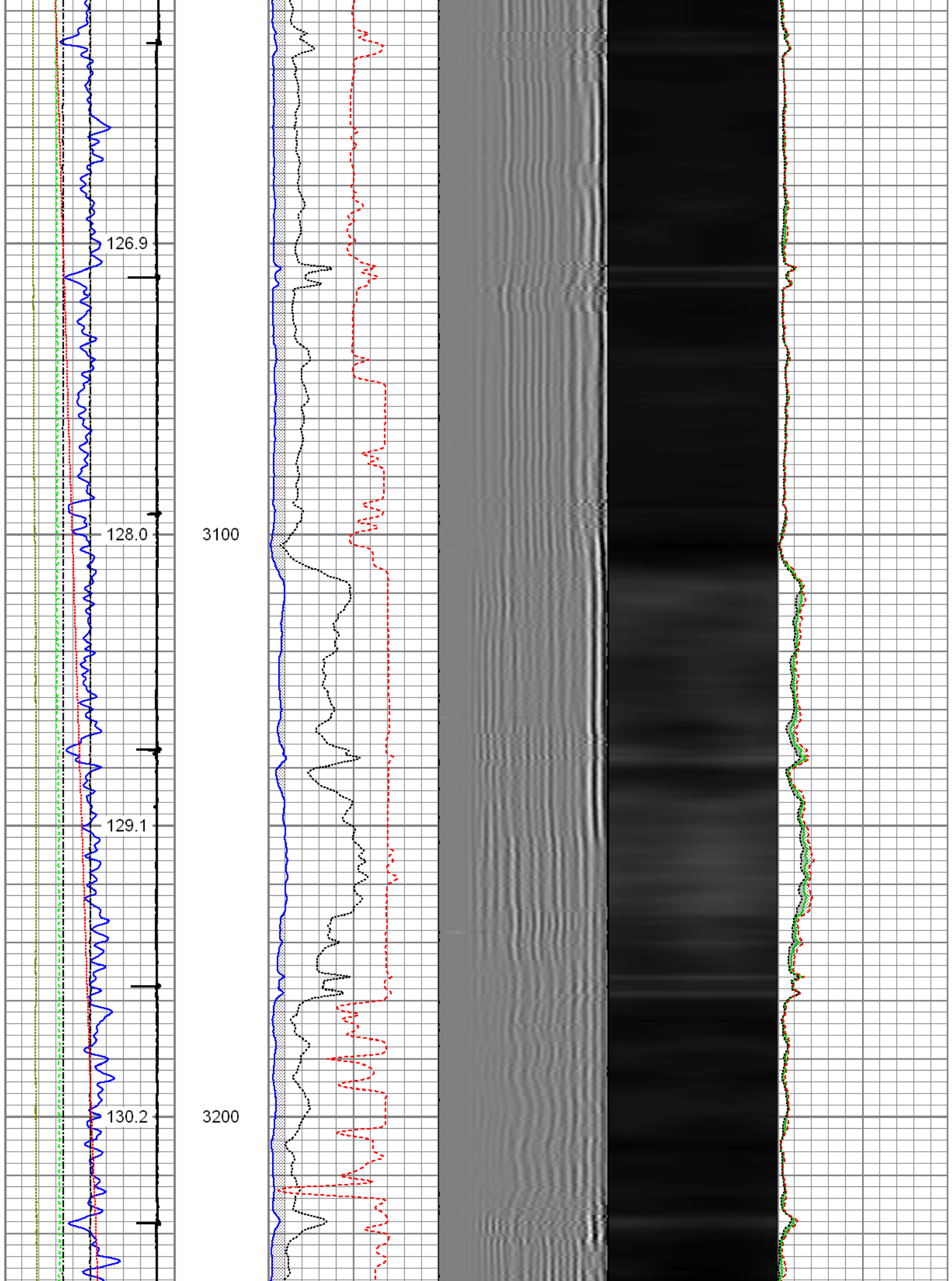


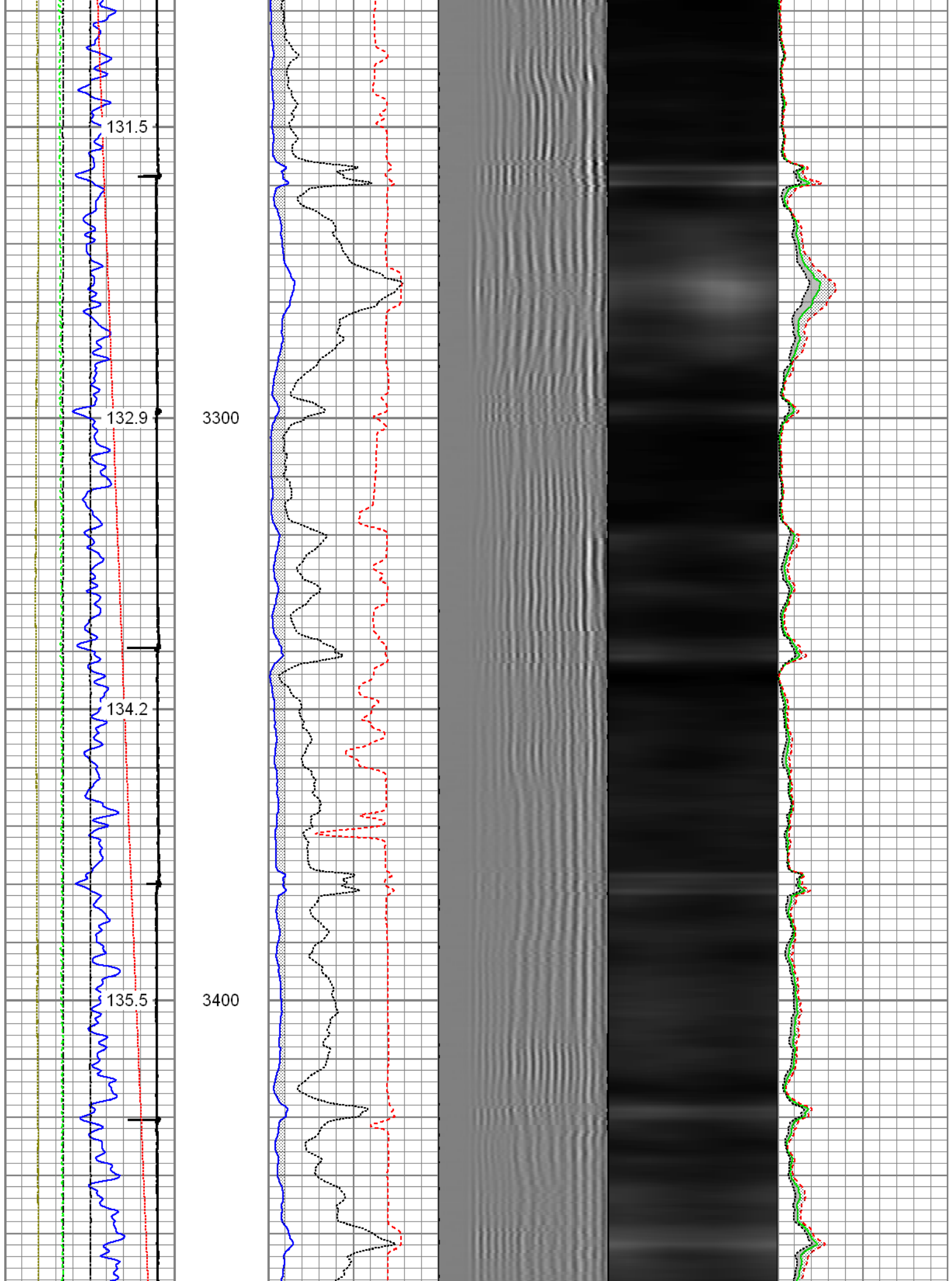


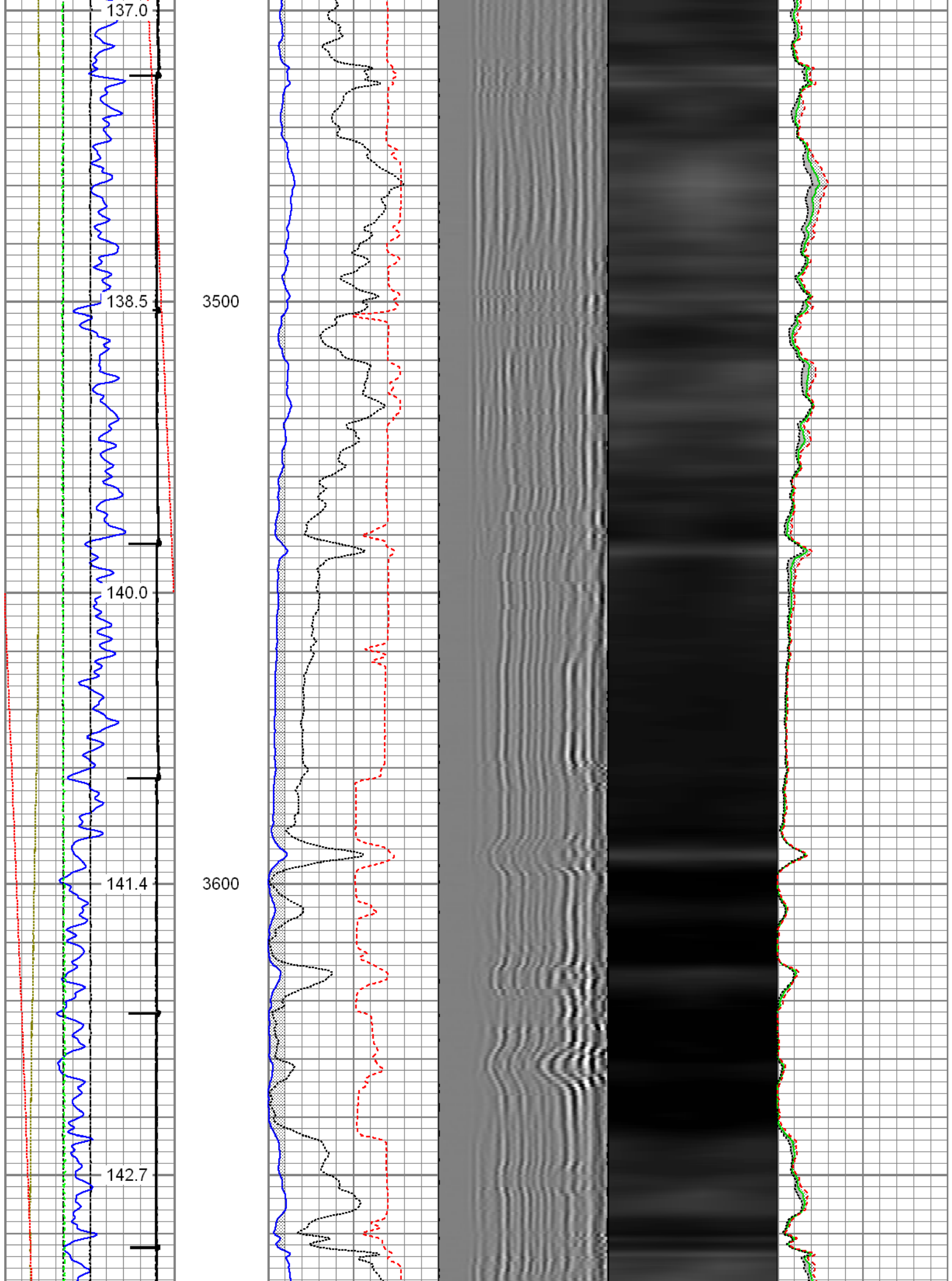


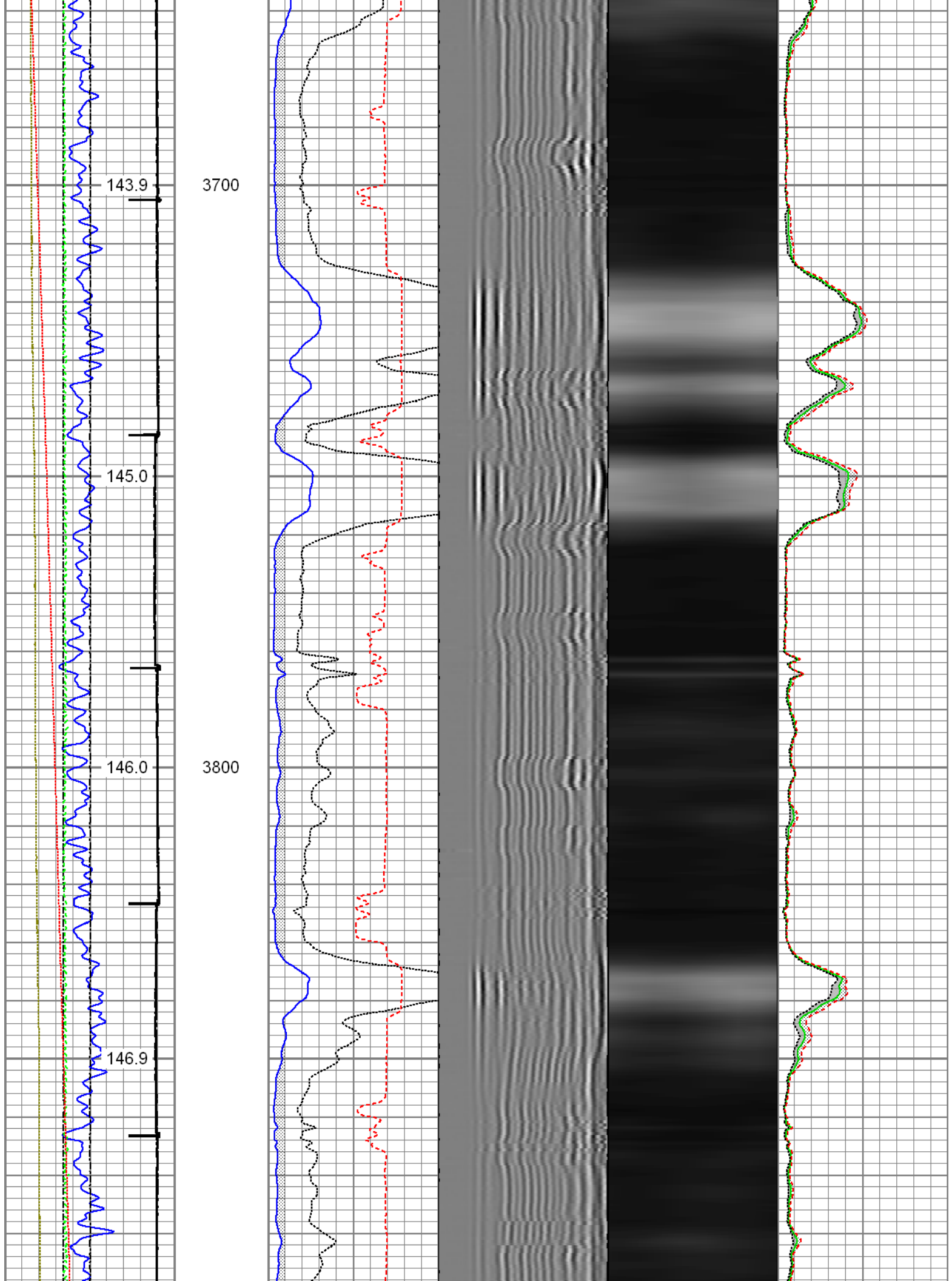


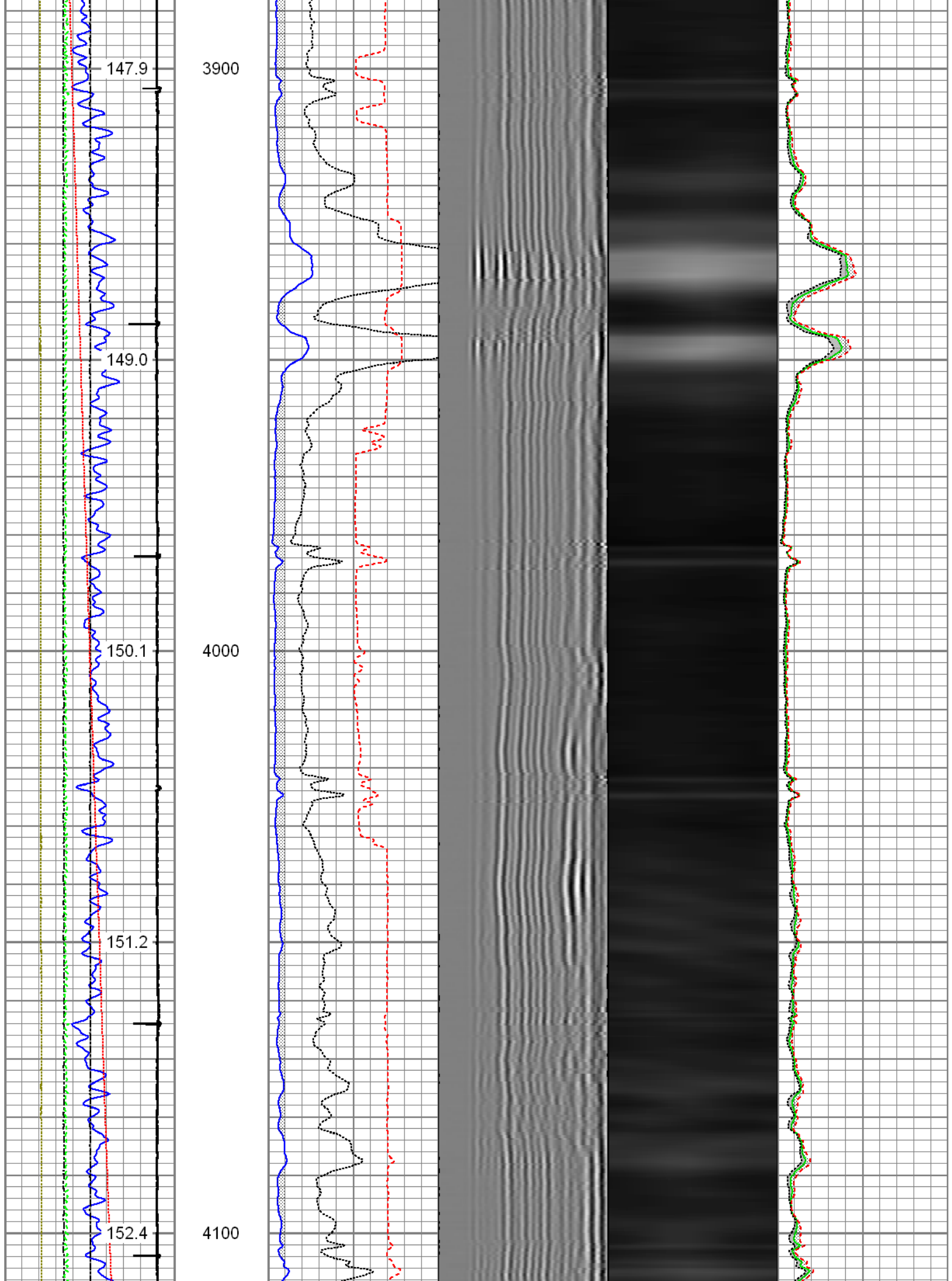


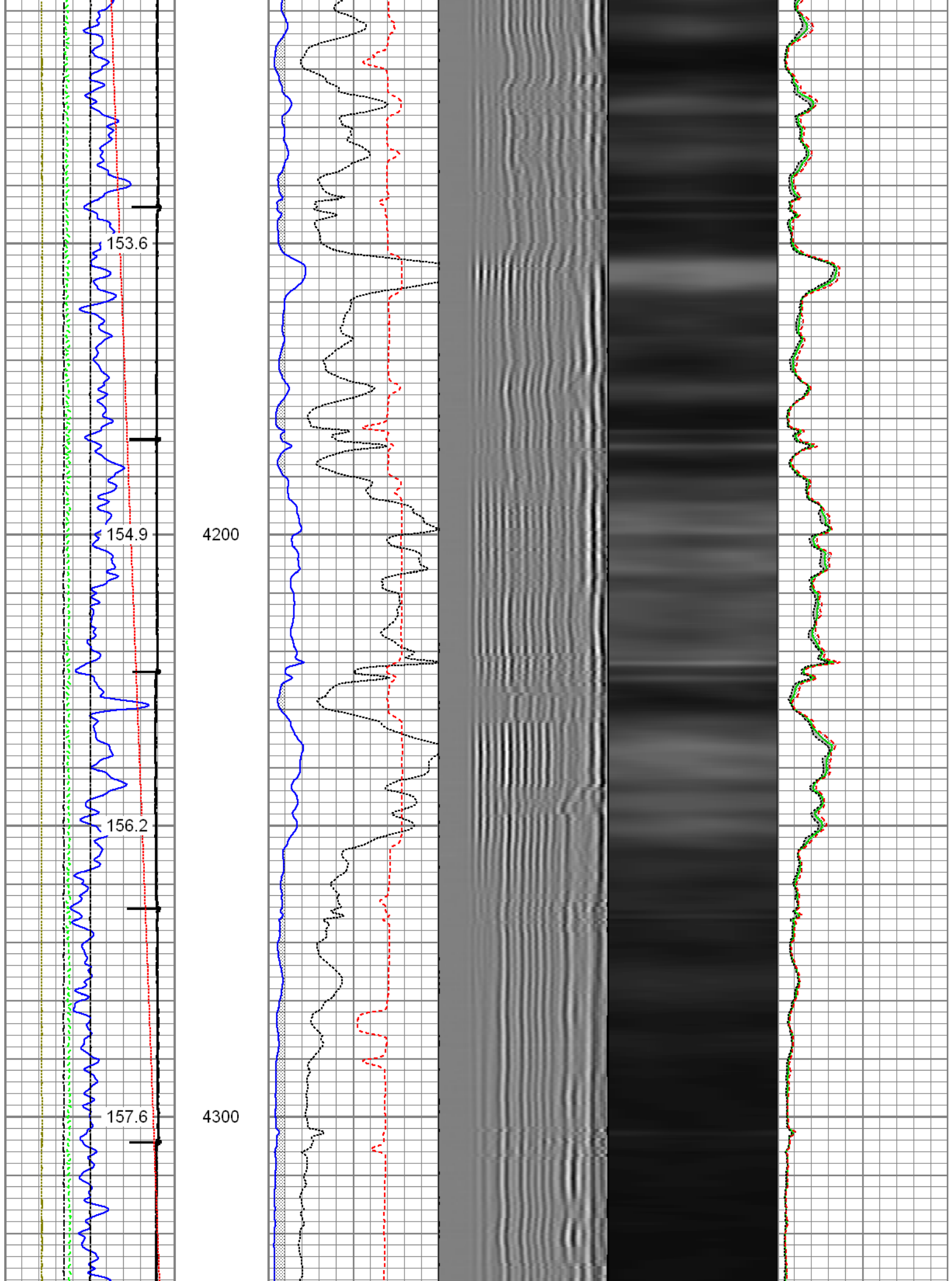


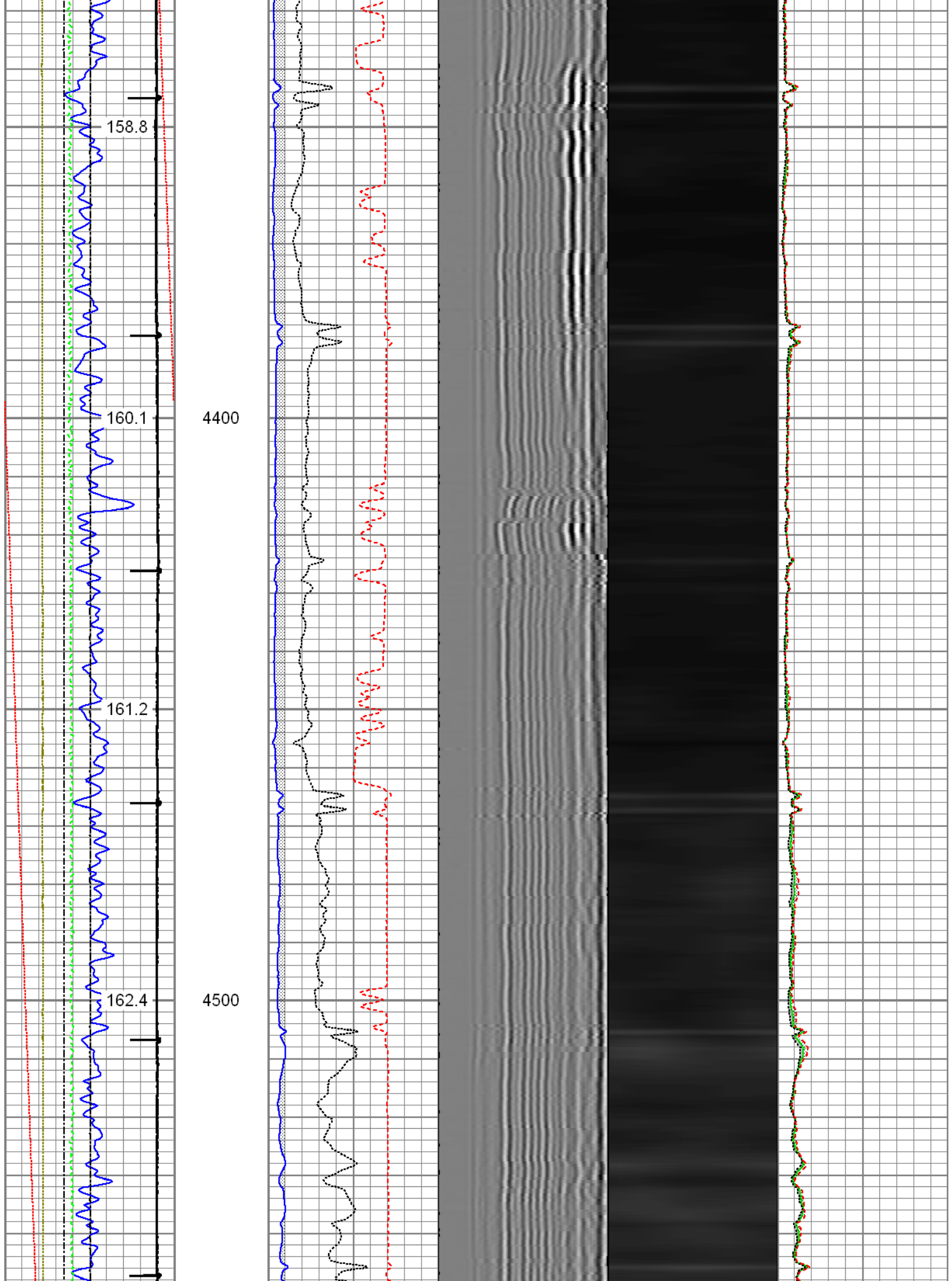


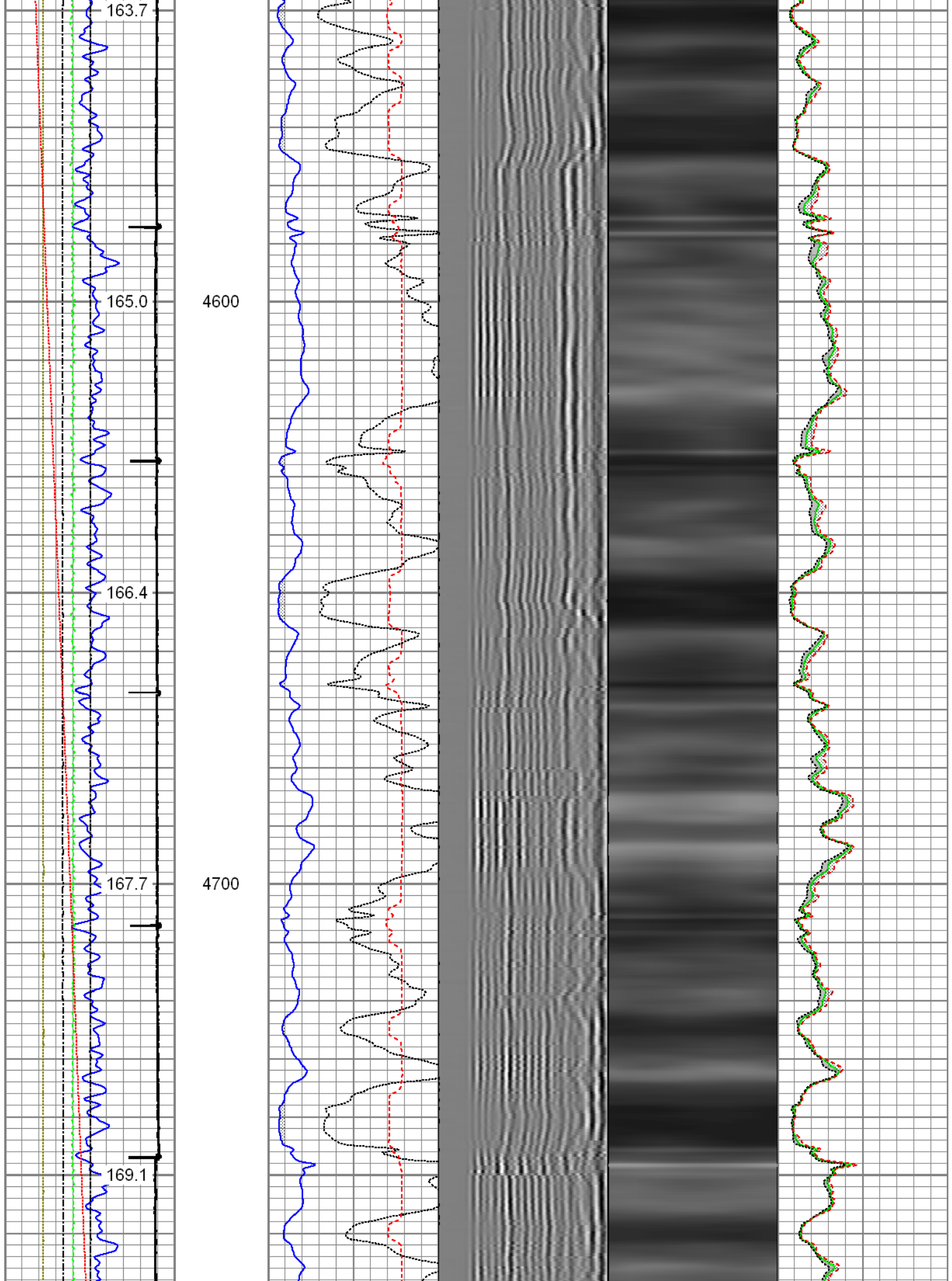


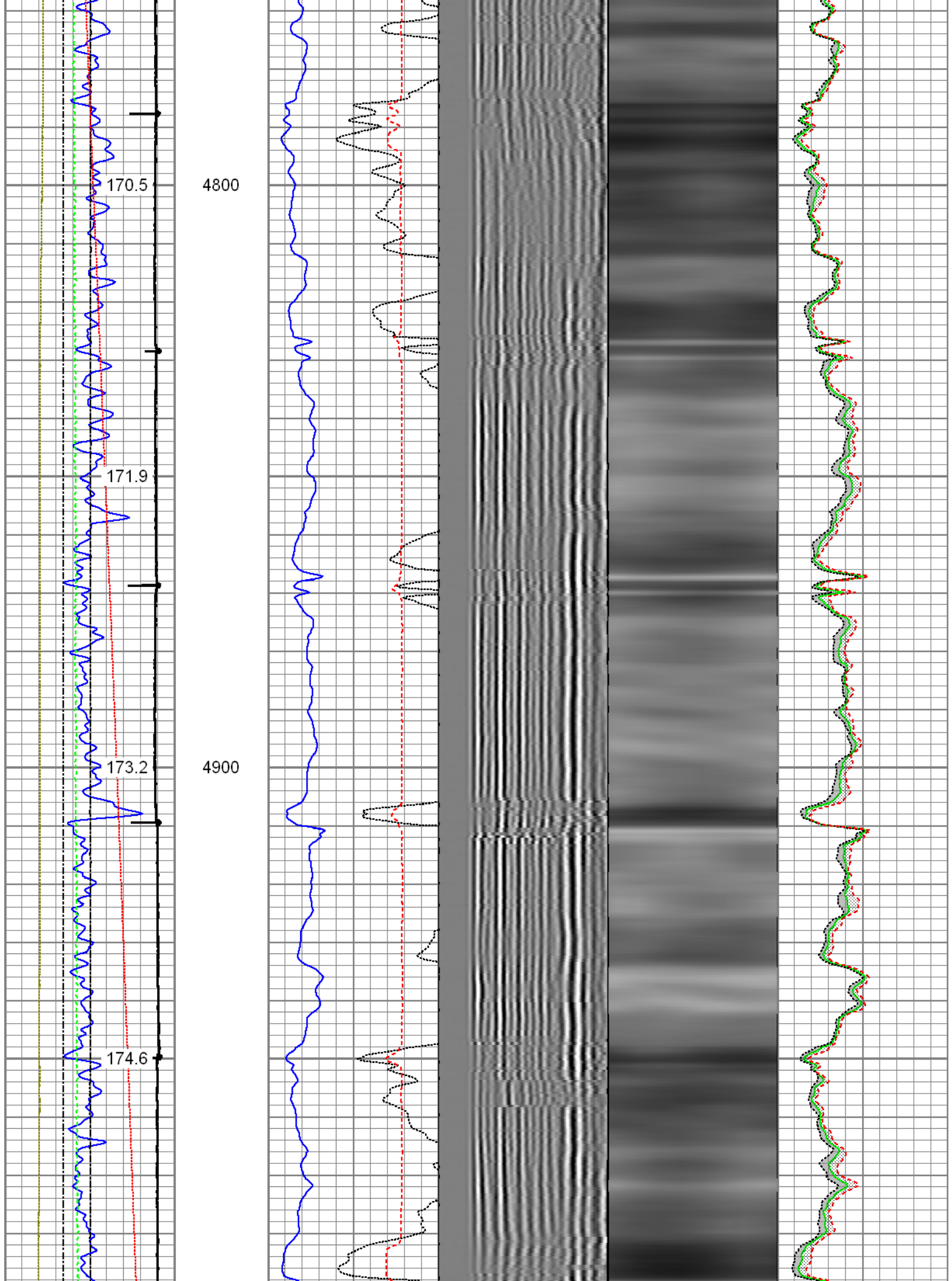


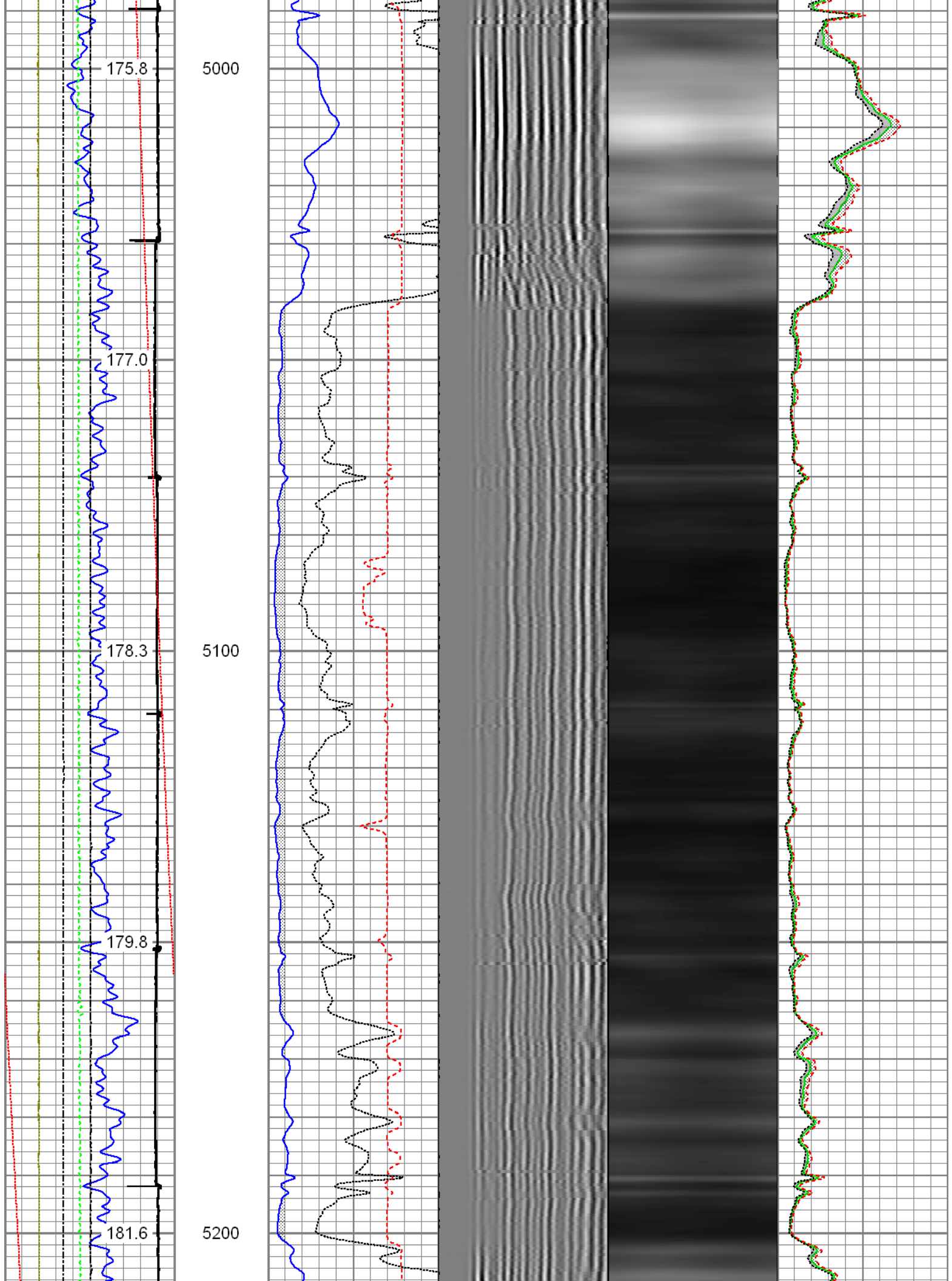


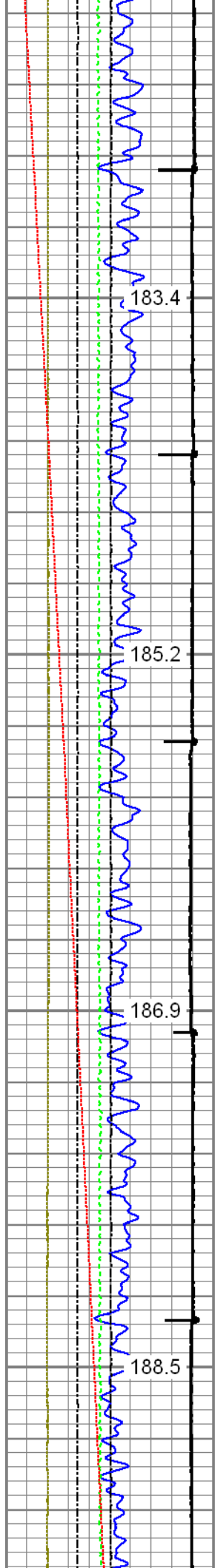






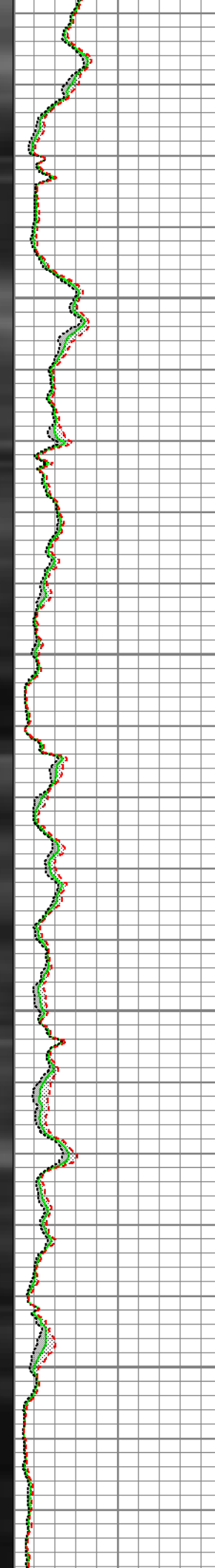
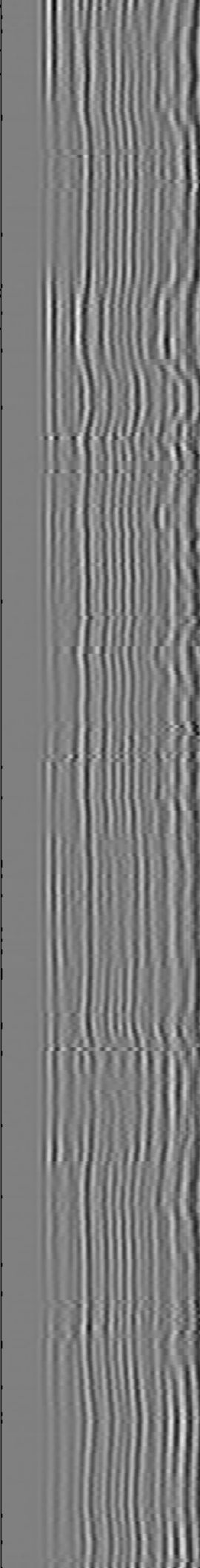
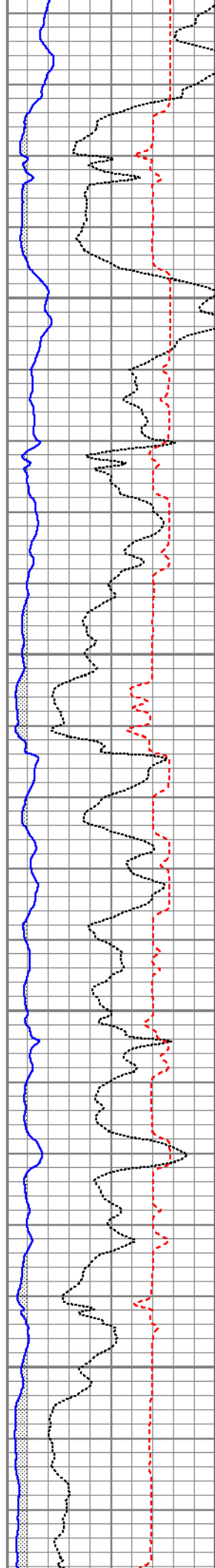


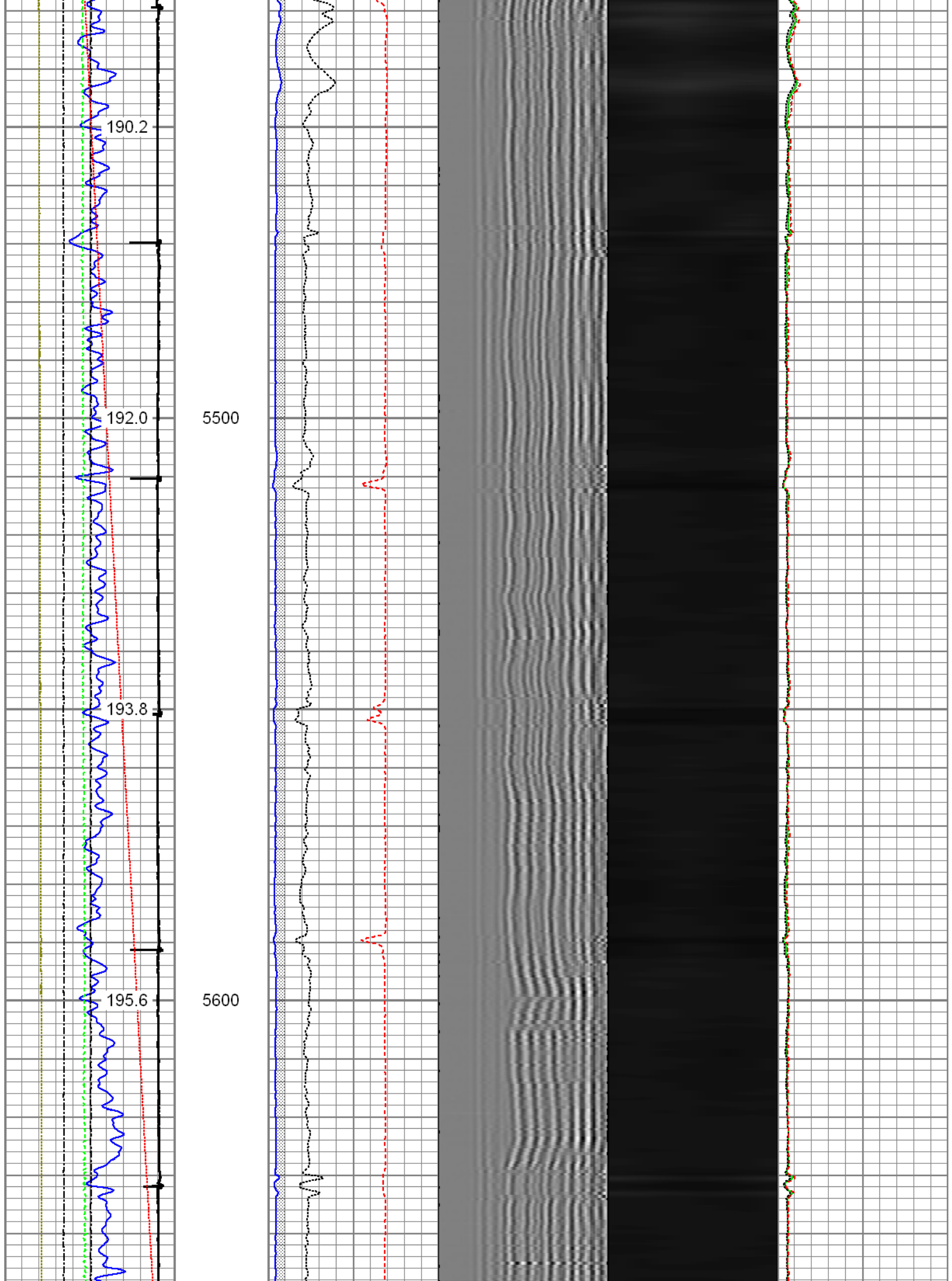


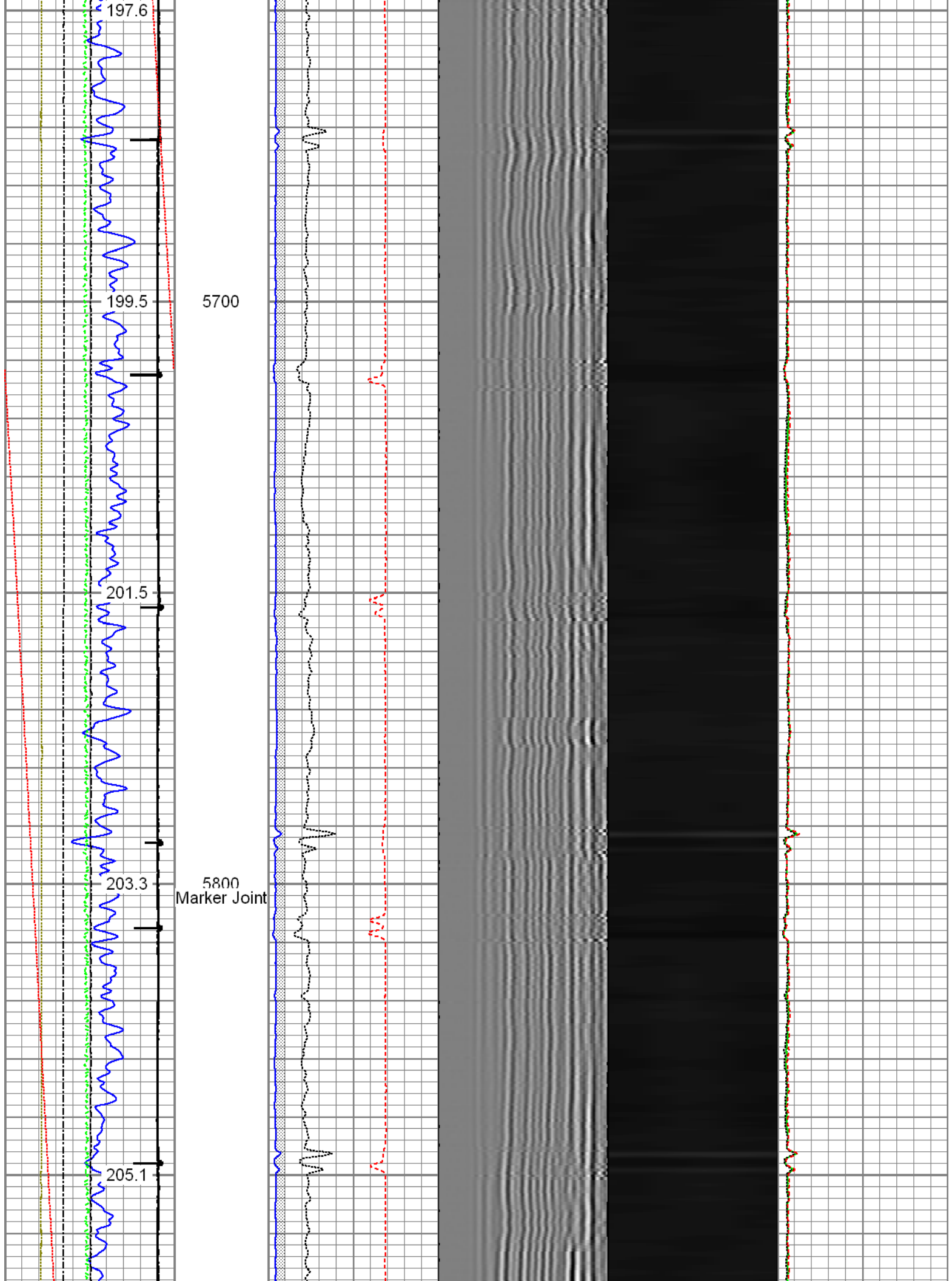


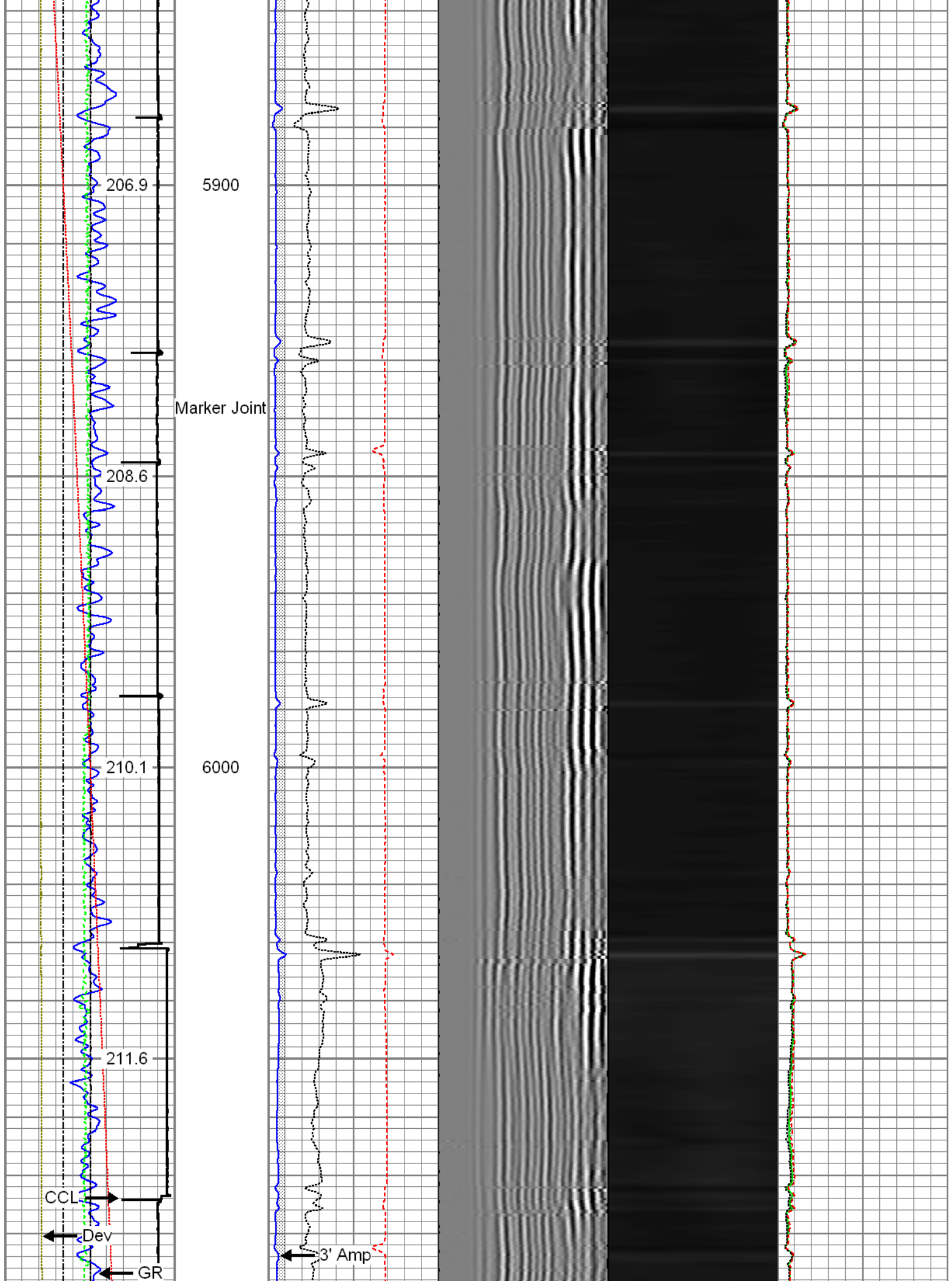
5300

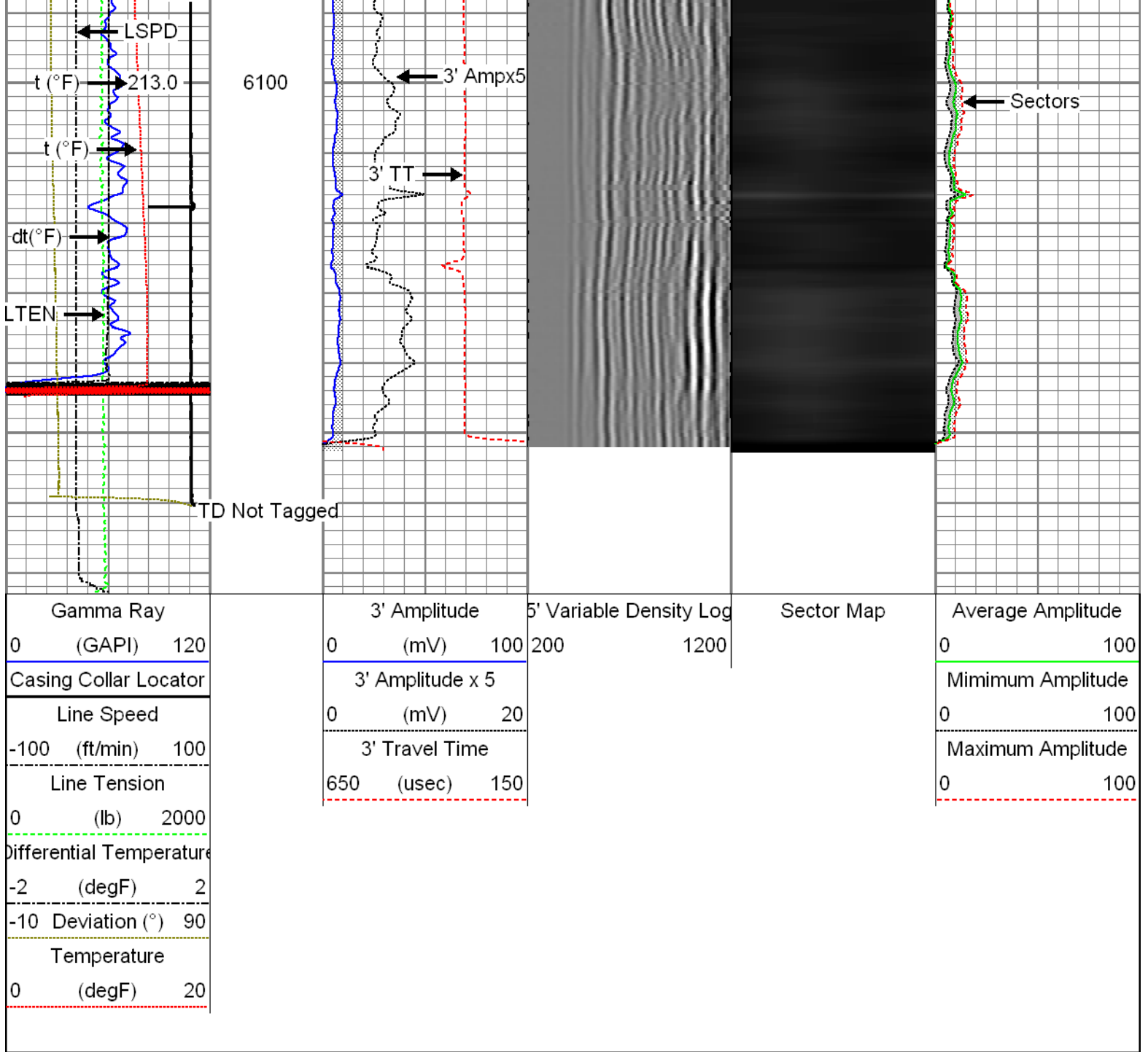
5400







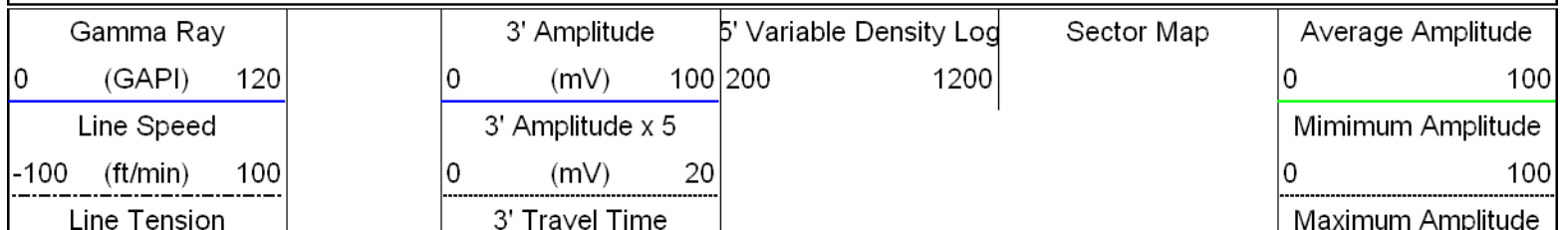




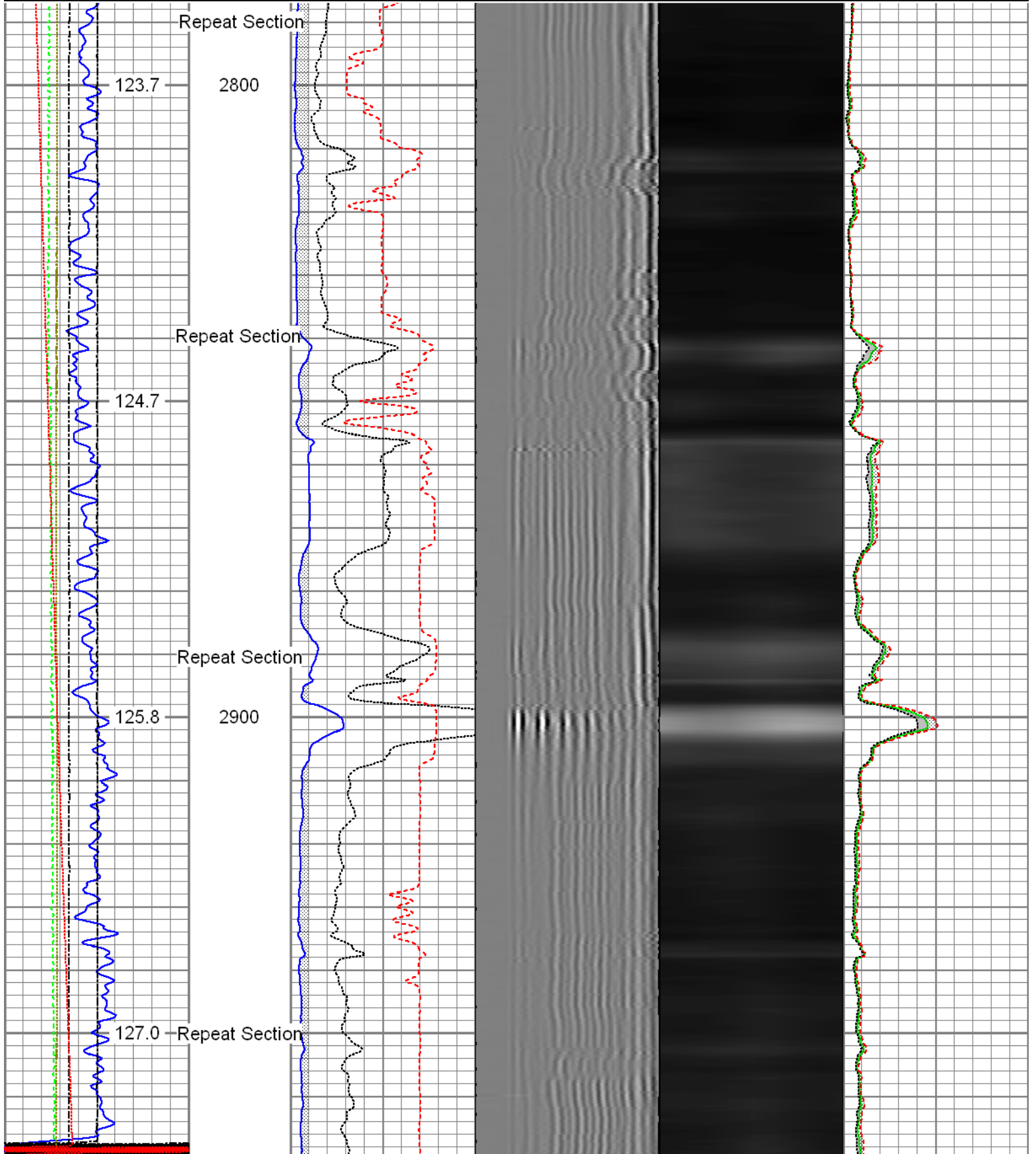
Repeat Section

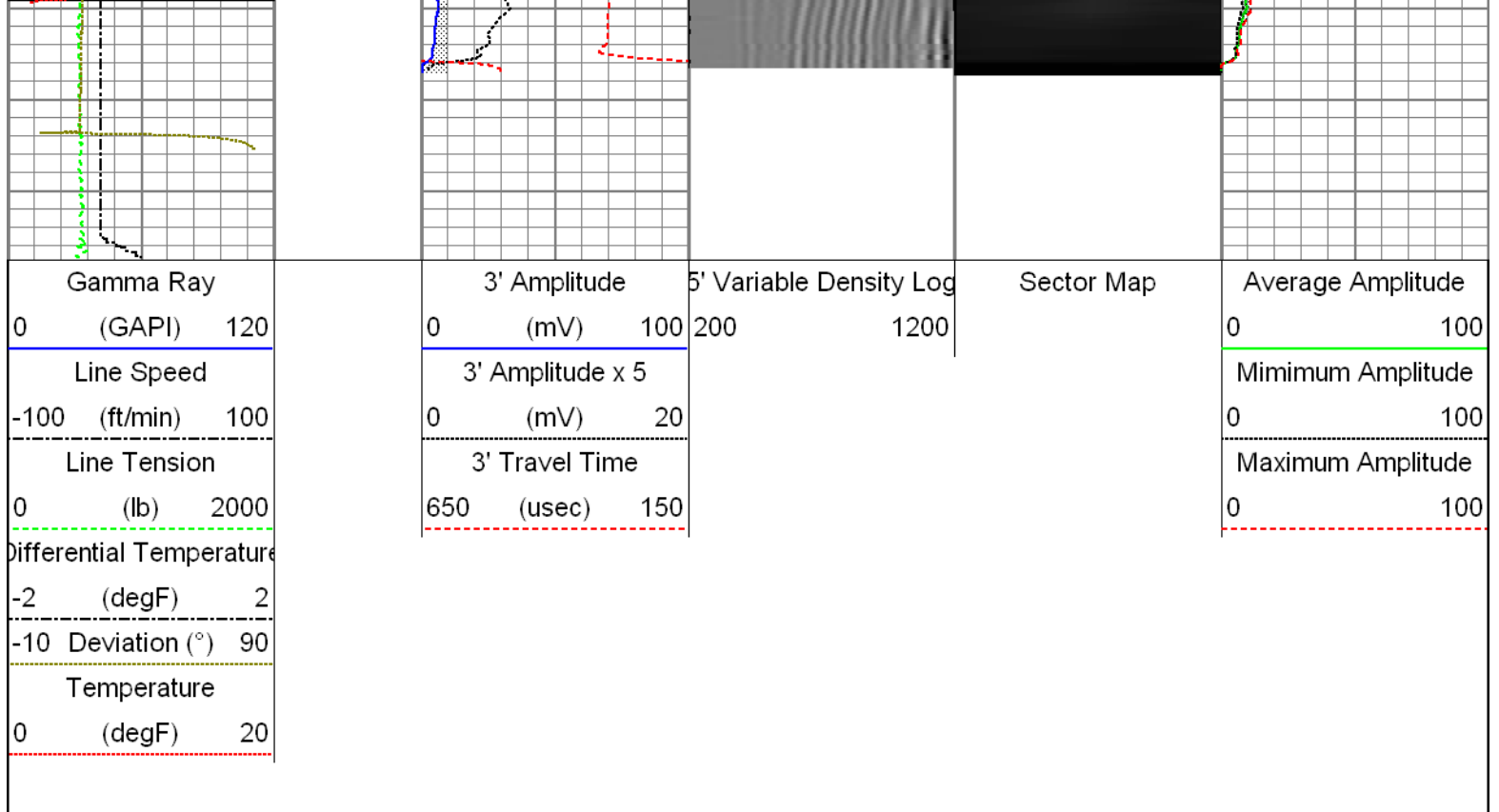
Recorded with 2400 PSI Surface Induced Pressure

Database File: 08-14-15_noble energy_70 ranch state bb18-681_mit_rbl_cnl.db
 Dataset Pathname: repeat1
 Presentation Format: rbt4_mit
 Dataset Creation: Fri Aug 14 14:56:40 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240



0	(lb)	2000	650	(usec)	150	0	100
Differential Temperature							
-2	(degF)	2					
-10	Deviation (°)	90					
Temperature							
0	(degF)	20					





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR TEMP	30.24 28.84		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 (218874) 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
			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 WVFS1 WVFS2 WVFS3 WVFS4 WVFS5 WVFS6 WVFS7 WVFS8 CBLTEMP CBLROT WVF5FT	21.81 21.81 21.81 21.81 21.81 21.81 21.81 21.81 21.81 21.81 21.81 20.81		UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00

MIT	11.80		UW_MIT-UW_MIT40_027 (211111) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC-UW_PRC_057 (1102) Sondex 2-3/4\"/>	2.98	2.75	32.00
			CNL-007 (1004) Compensated Neutron Logging Tool	6.61	1.69	30.00
CNLSC	1.53					
CNSSC	1.12					
TSTAMP	0.00					
Dataset: 08-14-15_Noble Energy_70 Ranch State BB18-681_MIT_RBL_CNL.db: field/well/run1/main Total Length: 34.48 ft Total Weight: 353.30 lb O.D. 3.13 in						

Calibration Report			
Database File:	08-14-15_noble energy_70 ranch state bb18-681_mit_rbl_cnl.db		
Dataset Pathname:	main.1		
Dataset Creation:	Sat Aug 15 18:17:55 2015 by Calc SCH 120430		
Compensated Neutron Calibration Report			
Serial Number:	1004		
Tool Model:	007		
Master Calibration	Tue Jun 03 14:35:57 2014		
Detector	Readings		
Short Space	241.46	cps	
Long Space	300.95	cps	
Ratio	Measured	Reference	
CNRAT Gain K	0.8150	Sleeve: 1.0000	
	1.0158		
Before Survey			
Detector	Readings		
Short Space		cps	
Long Space		cps	
Ratio	Measured	Reference	
After Survey			
Detector	Readings		
Short Space		cps	

Short Space		cps					
Long Space		cps					
Ratio		Measured	Reference				
Multi-finger Imaging Tool Calibration Report							
Serial Number:		211111					
Number of Fingers:		40					
Tool Model:		UW_MIT40_027					
Inclinometer Calibration Report							
Performed:		Mon Nov 18 15:31:59 2013					
Calibration Angle:		46					
Vertical:		Inc X	Inc Y				
Finger 1 up:		1931	1952				
Finger 31 up:		1959	2266				
Finger 21 up:		1608	1962				
Finger 11 up:		1927	1623				
Sensitivity ratio:		2253	1930				
X-axis angle:		1.0031					
Deviation const.:		272.845					
		311.818					
Finger Calibration Report							
Performed:		Fri Aug 14 14:11:16 2015					
Ring size:	4	5	6	7			
(in)	Sens	Sens	Sens				
Finger 01:	1440	273.0	1713	297.0	2010	302.0	2312
Finger 02:	1504	254.0	1758	262.0	2020	267.0	2287
Finger 03:	1432	271.0	1703	293.0	1996	301.0	2297
Finger 04:	1451	273.0	1724	291.0	2015	296.0	2311
Finger 05:	1488	268.0	1756	279.0	2035	284.0	2319
Finger 06:	1422	275.0	1697	294.0	1991	304.0	2295
Finger 07:	1444	271.0	1715	291.0	2006	302.0	2308
Finger 08:	1440	269.0	1709	287.0	1996	294.0	2290
Finger 09:	1432	273.0	1705	292.0	1997	302.0	2299
Finger 10:	1443	264.0	1707	286.0	1993	292.0	2285
Finger 11:	1433	272.0	1705	290.0	1995	301.0	2296
Finger 12:	1381	278.0	1659	293.0	1952	307.0	2259
Finger 13:	1479	261.0	1740	271.0	2011	281.0	2292
Finger 14:	1415	265.0	1680	282.0	1962	296.0	2258
Finger 15:	1411	277.0	1688	291.0	1979	304.0	2283
Finger 16:	1408	274.0	1682	288.0	1970	302.0	2272
Finger 17:	1418	283.0	1701	295.0	1996	307.0	2303
Finger 18:	1366	267.0	1633	282.0	1915	296.0	2211
Finger 19:	1413	278.0	1691	286.0	1977	300.0	2277
Finger 20:	1414	281.0	1695	287.0	1982	301.0	2283
Finger 21:	1370	291.0	1661	307.0	1968	313.0	2281
Finger 22:	1391	273.0	1664	283.0	1947	294.0	2241
Finger 23:	1393	282.0	1675	287.0	1962	299.0	2261
Finger 24:	1418	286.0	1704	287.0	1991	293.0	2284
Finger 25:	1355	271.0	1626	284.0	1910	293.0	2203
Finger 26:	1335	282.0	1617	289.0	1906	303.0	2209
Finger 27:	1424	281.0	1705	286.0	1991	295.0	2286
Finger 28:	1409	294.0	1703	293.0	1996	302.0	2298
Finger 29:	1466	273.0	1739	277.0	2016	285.0	2301
Finger 30:	1375	289.0	1664	294.0	1958	306.0	2264
Finger 31:	1405	291.0	1696	298.0	1994	305.0	2299
Finger 32:	1469	275.0	1744	280.0	2024	285.0	2309
Finger 33:	1424	288.0	1712	305.0	2017	311.0	2328
Finger 34:	1425	287.0	1712	297.0	2009	307.0	2316
Finger 35:	1482	263.0	1745	271.0	2016	276.0	2292
Finger 36:	1468	270.0	1738	287.0	2025	293.0	2318

Finger 36:	1488	270.0	1738	287.0	2023	293.0	2318
Finger 37:	1385	262.0	1647	292.0	1939	295.0	2234
Finger 38:	1517	253.0	1770	263.0	2033	272.0	2305
Finger 39:	1445	272.0	1717	287.0	2004	290.0	2294
Finger 40:	1415	282.0	1697	302.0	1999	308.0	2307

Segmented Cement Bond Log Calibration Report

Serial Number:	10022773
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	125.693 ft

Master Calibration, performed Sat Aug 15 18:17:52 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.017	0.631	0.800	62.165	99.951	-0.868
5FT	0.001	0.651	0.800	62.165	94.387	0.727
S1	0.017	0.607	0.000	100.000	169.414	-2.870
S2	0.015	0.629	0.000	100.000	162.734	-2.362
S3	0.015	0.621	0.000	100.000	165.061	-2.445
S4	0.014	0.610	0.000	100.000	167.513	-2.266
S5	0.016	0.622	0.000	100.000	165.037	-2.571
S6	0.016	0.617	0.000	100.000	166.526	-2.698
S7	0.018	0.614	0.000	100.000	167.586	-2.941
S8	0.017	0.610	0.000	100.000	168.456	-2.827

Temperature Calibration Report

Serial Number:	10025095
Tool Model:	UW_PRT_016
Performed:	Wed Feb 11 13:43:20 2015

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	Noble Energy Inc.
Well	70 Ranch State BB18-681
Field	Wattenberg
County	Weld
State	Colorado