

Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr McGee Oil & Gas Onshore LP		
Well	Vollmar 3N-11HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Company	Kerr McGee Oil & Gas Onshore LP		
Well	Vollmar 3N-11HZ		
Field	Wattenberg		
County	Weld	State	Colorado
Location:	API # : 05-123-40533		
Permanent Datum Log Measured From Drilling Measured From	SEC 14	TWP 2N	RGE 67W
	Ground Level	Kelly Bushing	Elevation 4941'
	16 FT	Kelly Bushing	
	Other Services		
	Gauge Ring		
	MIT		
	Elevation		
	K.B. 4957'		
	D.F. 4956'		
	G.L. 4941'		

Date	04-MAY-2015
Run Number	Two
Depth Driller	12934 FT
Depth Logger	7435 FT
Bottom Logged Interval	7421 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	235°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	12:45
Equipment Number	HD-0343
Location	Ft Lupton, CO
Recorded By	J. Raby
Witnessed By	Mario Torres

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	1184 FT		
Intermediate #1	7	26	P-110	Surface	7804 FT		
Intermediate #2							
Liner	4 1/2	11.6	HCP-110	6772 FT	12930 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.

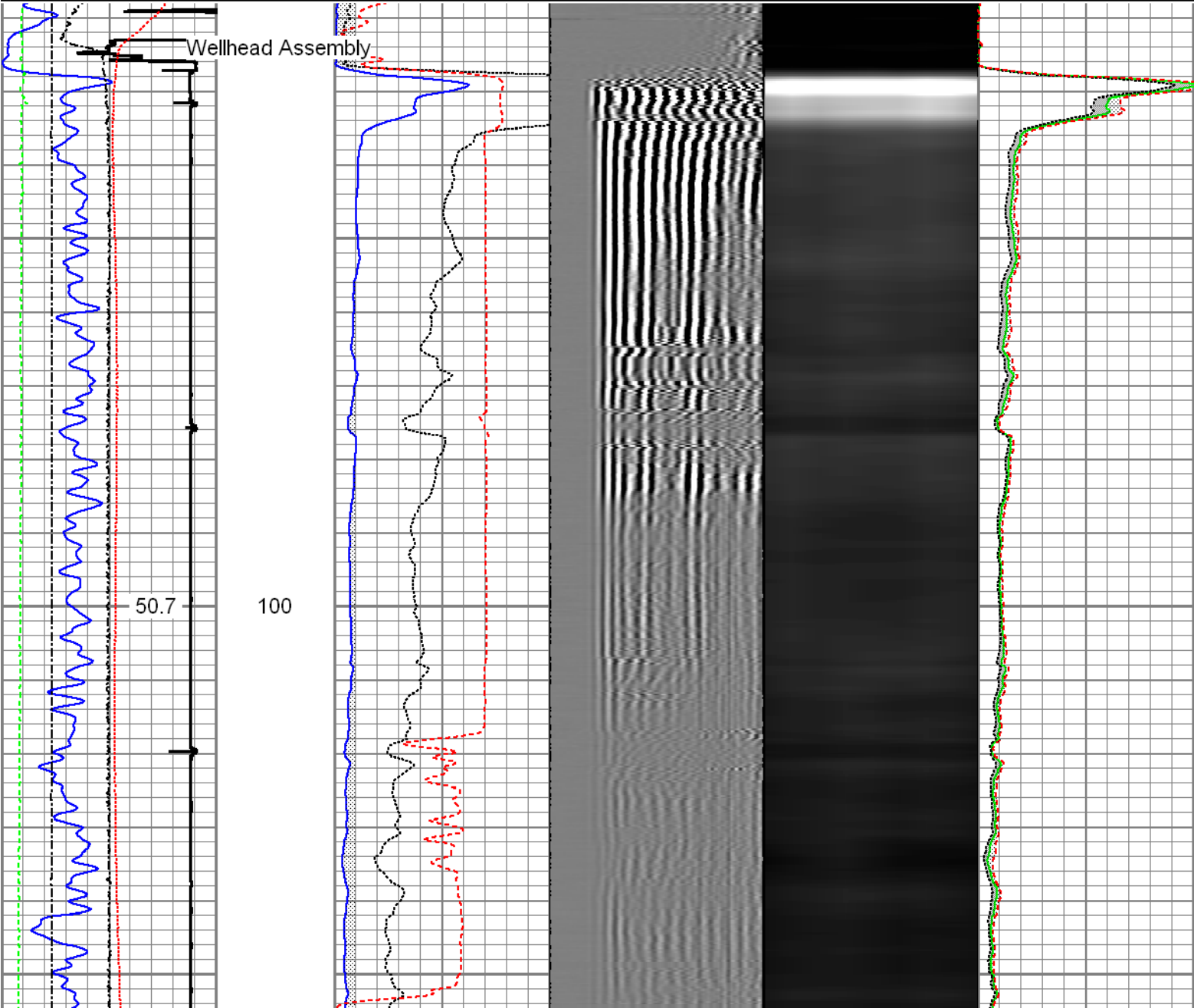
Comments

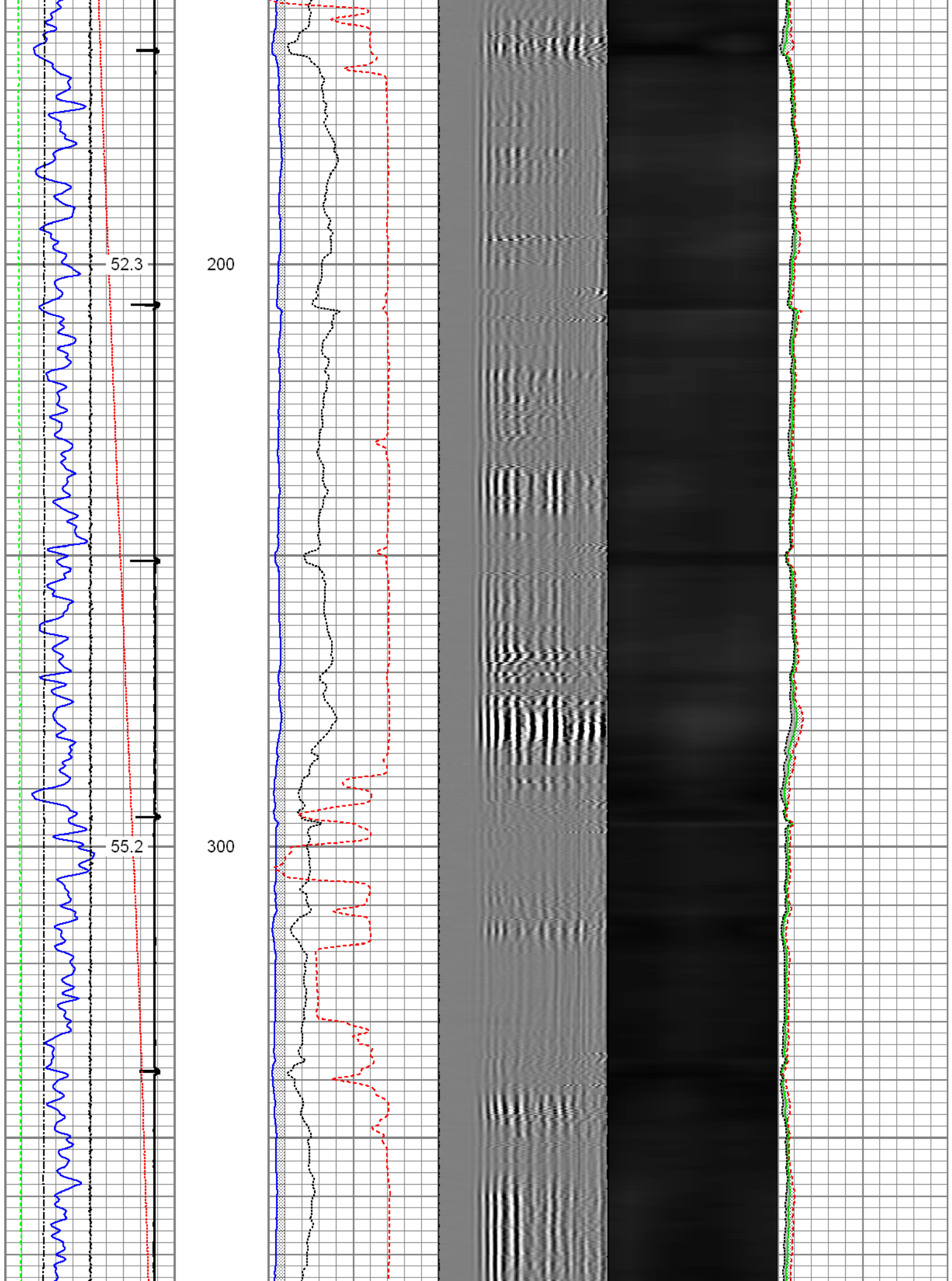
Log ran as per customer request.
Depth referenced to casing tally reported liner top at 6772 FT.
Adjusted log +12 FT to correlate with liner top.
Gauge ring/junk basket ran to 7434 FT no debris was found after run.
Log ran from 7421 FT to surface.
Log ran with 2800 PSI surface induced pressure.
No debris found on logging tools upon completion of run.

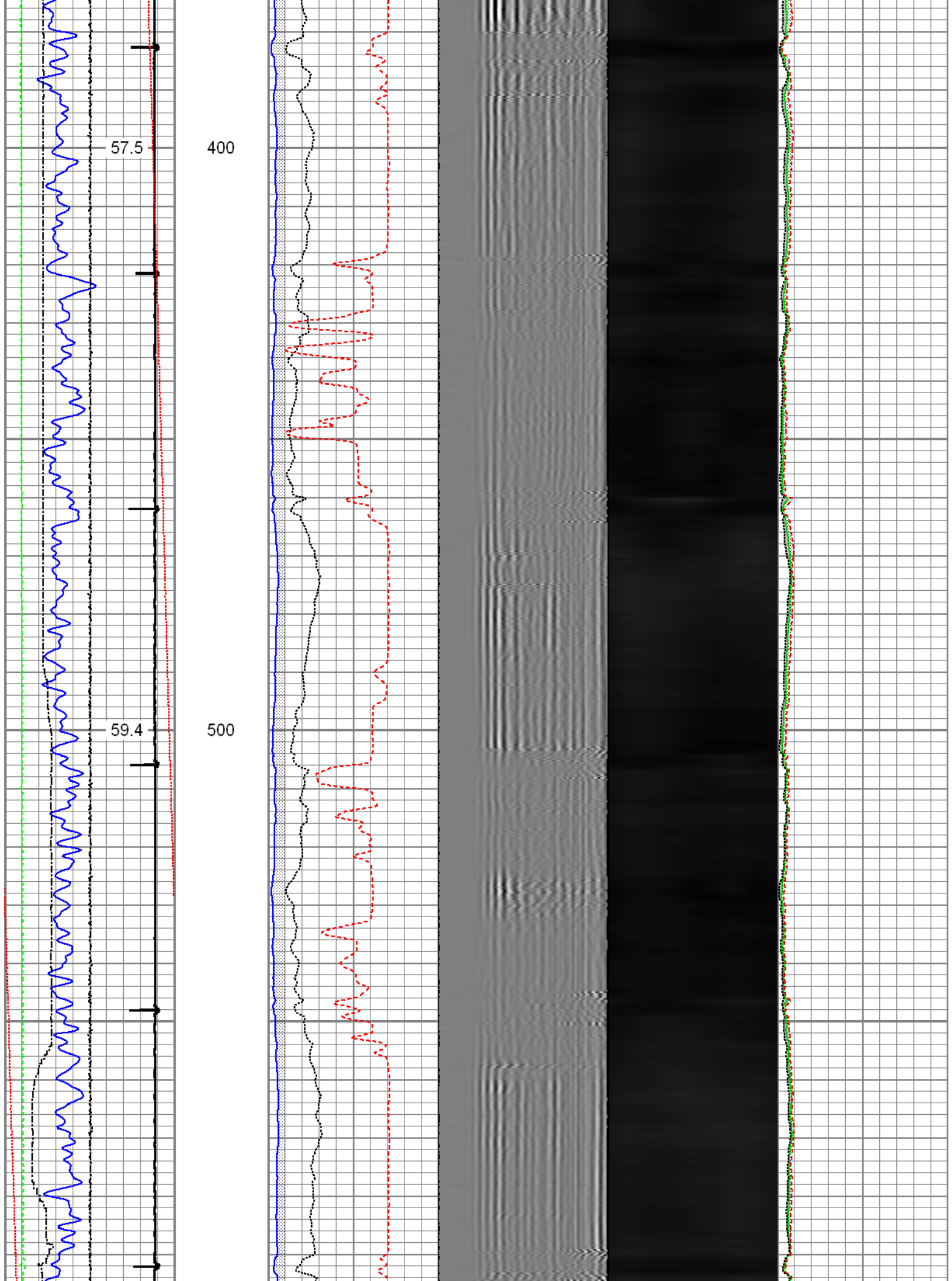
Thank you for choosing FMC Technologies Completion Services, Inc.!!

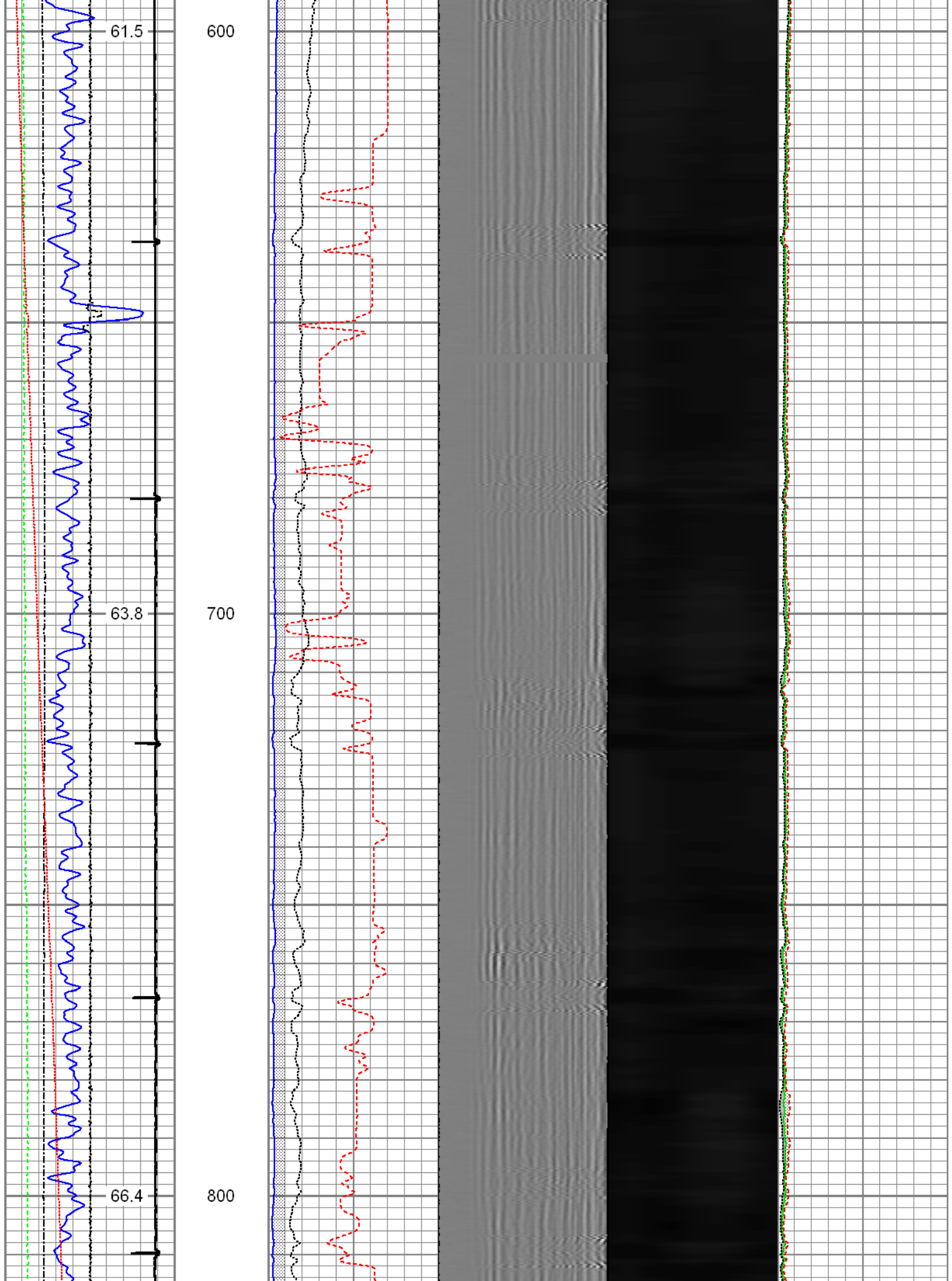
Database File: 0512340533_anadarko_vollmar 3n-11hz_05-04-15_mit_rbl.db
Dataset Pathname: pass4
Presentation Format: rbt4_mit
Dataset Creation: Mon May 04 13:02:38 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

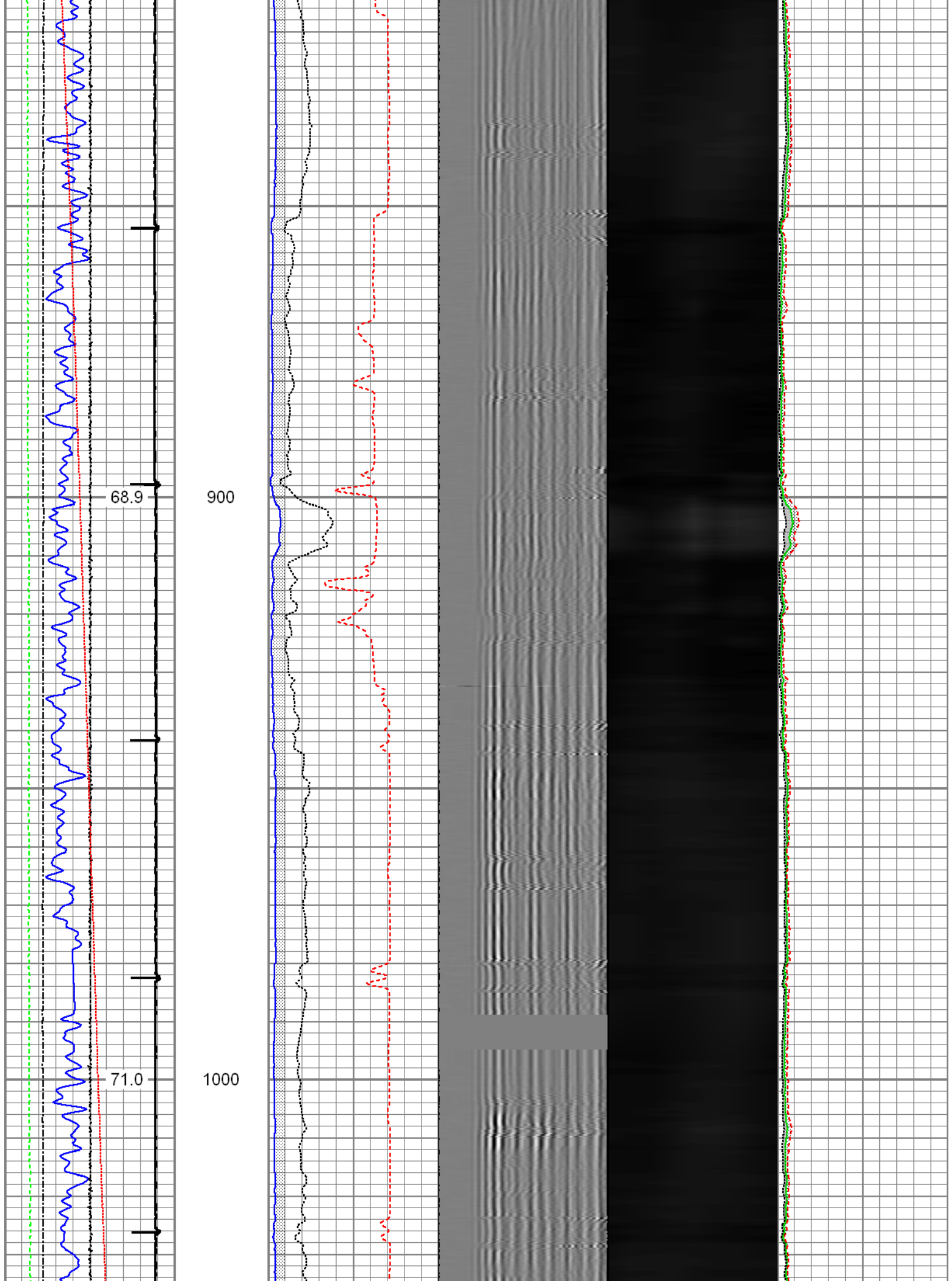
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000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

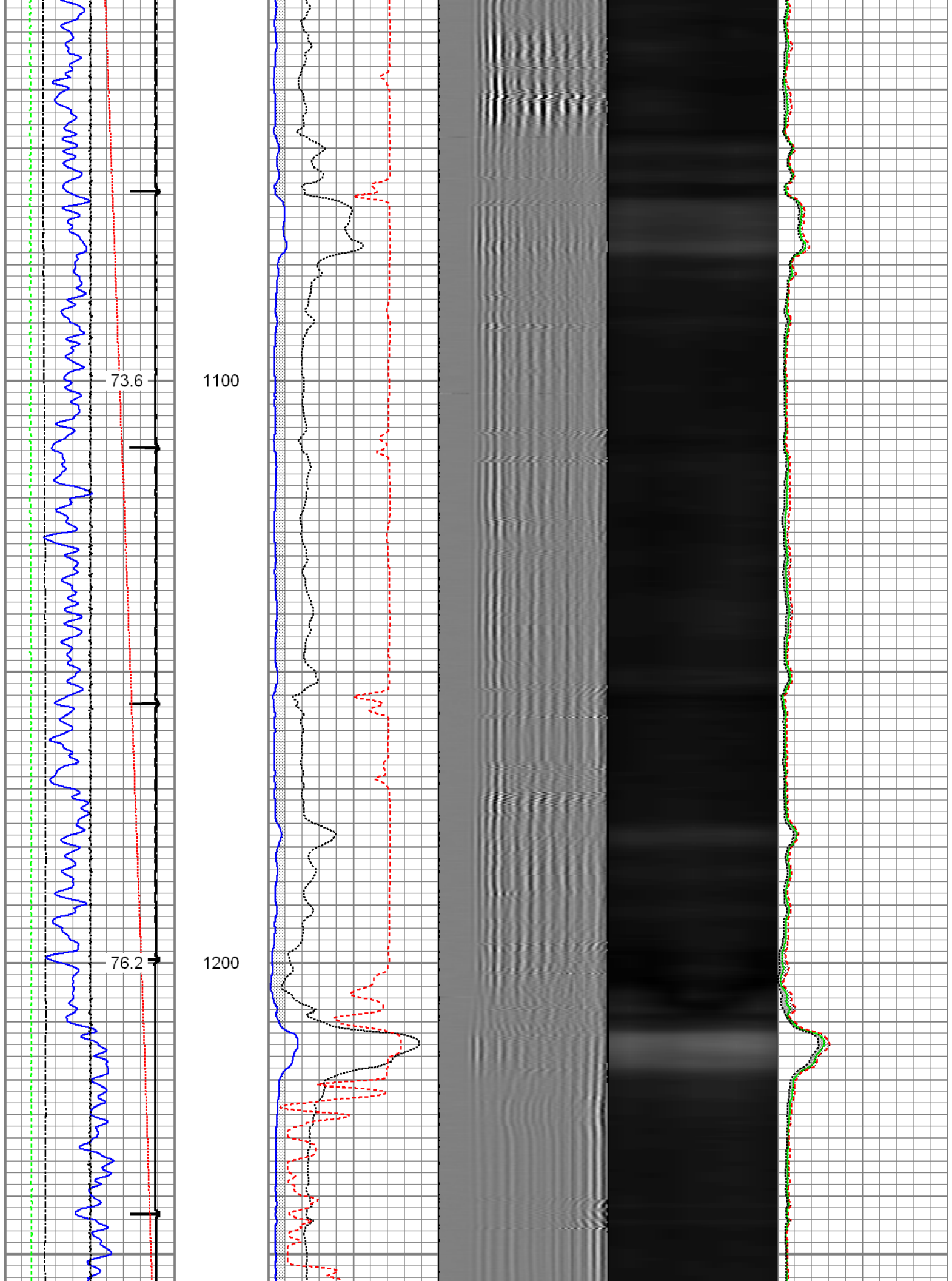


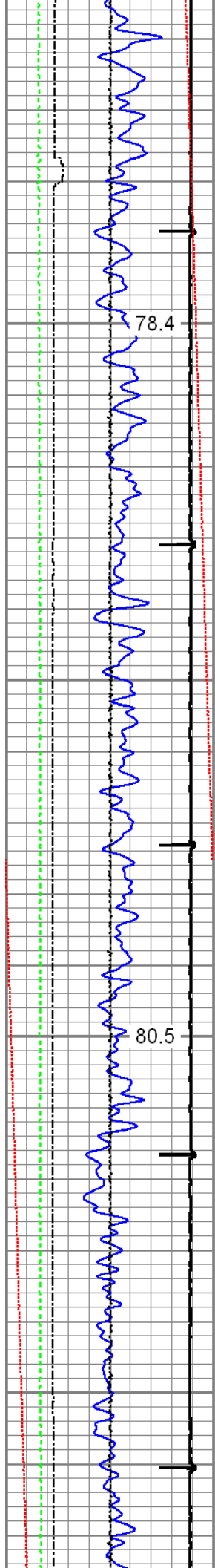










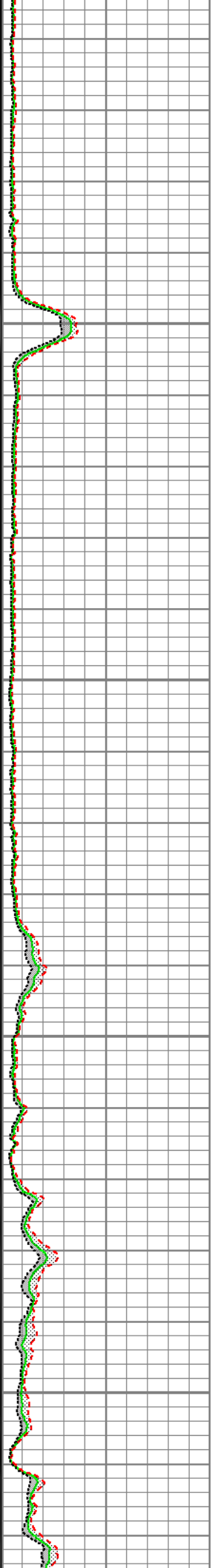
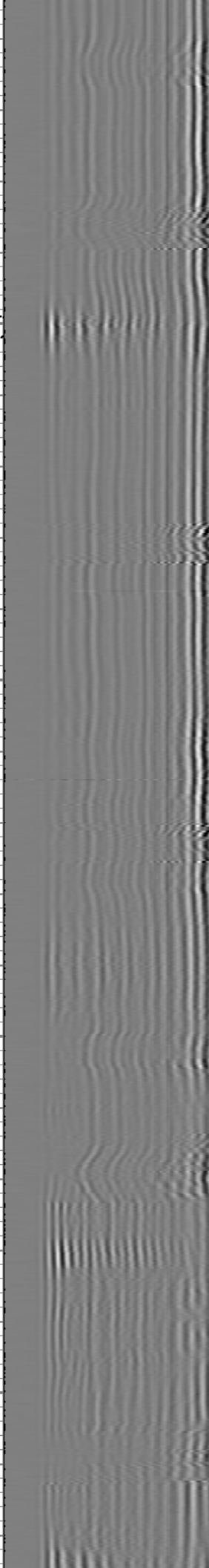
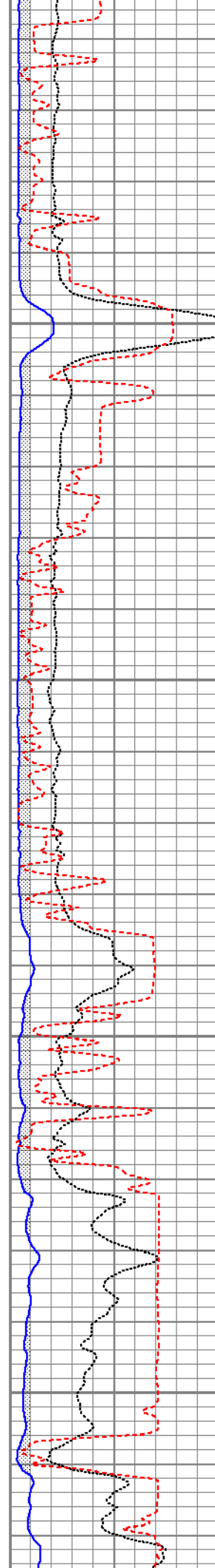


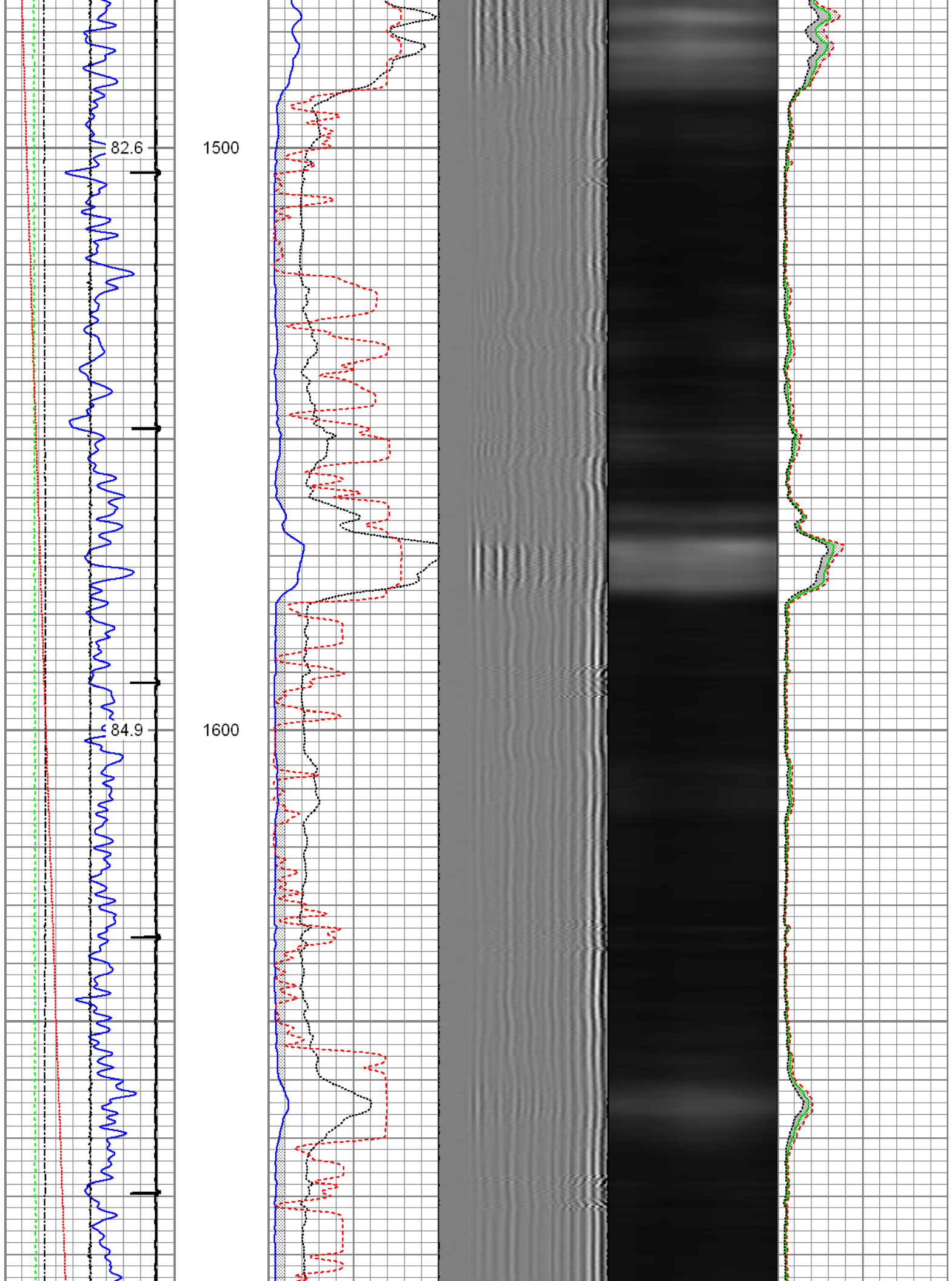
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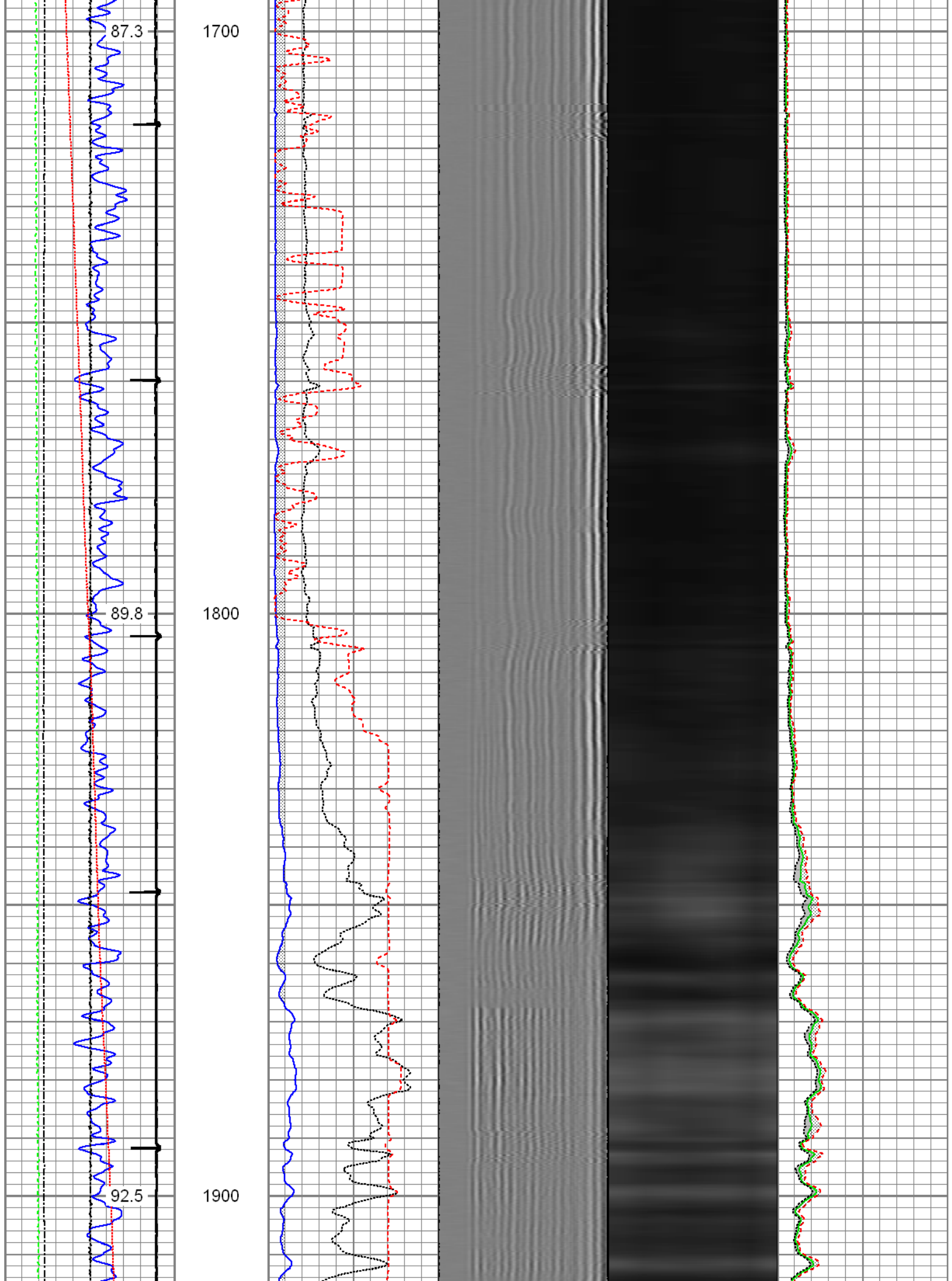
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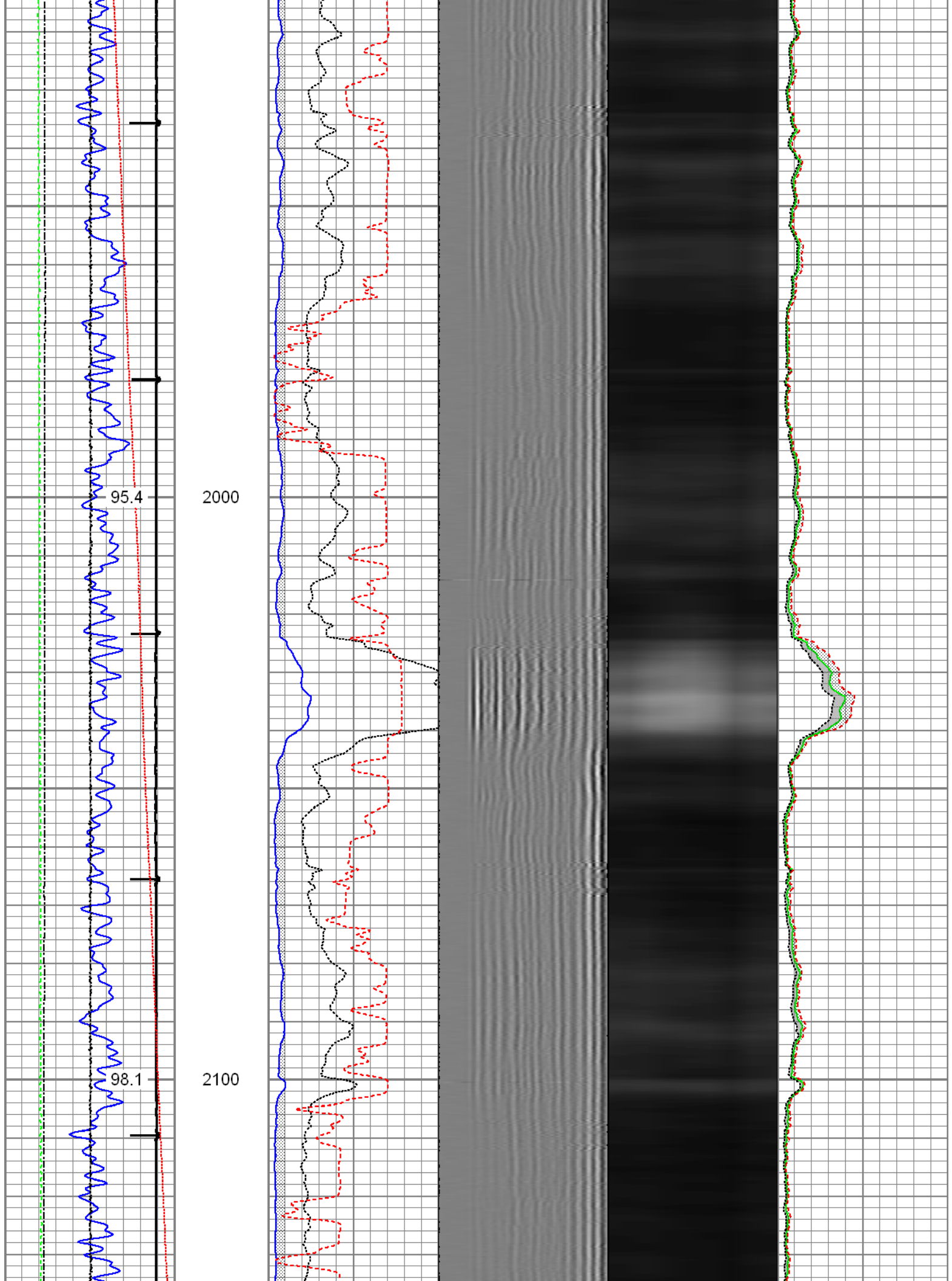
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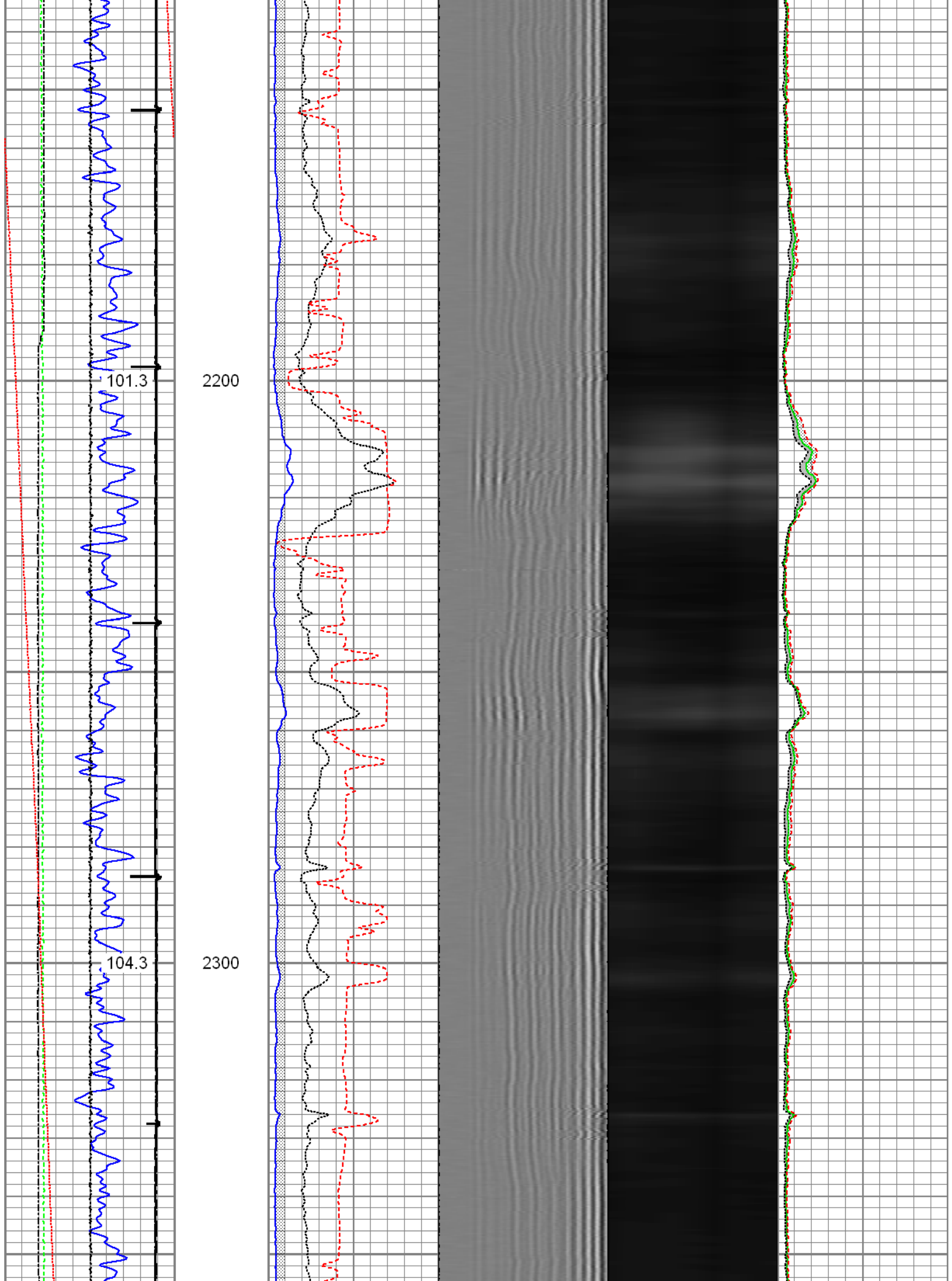
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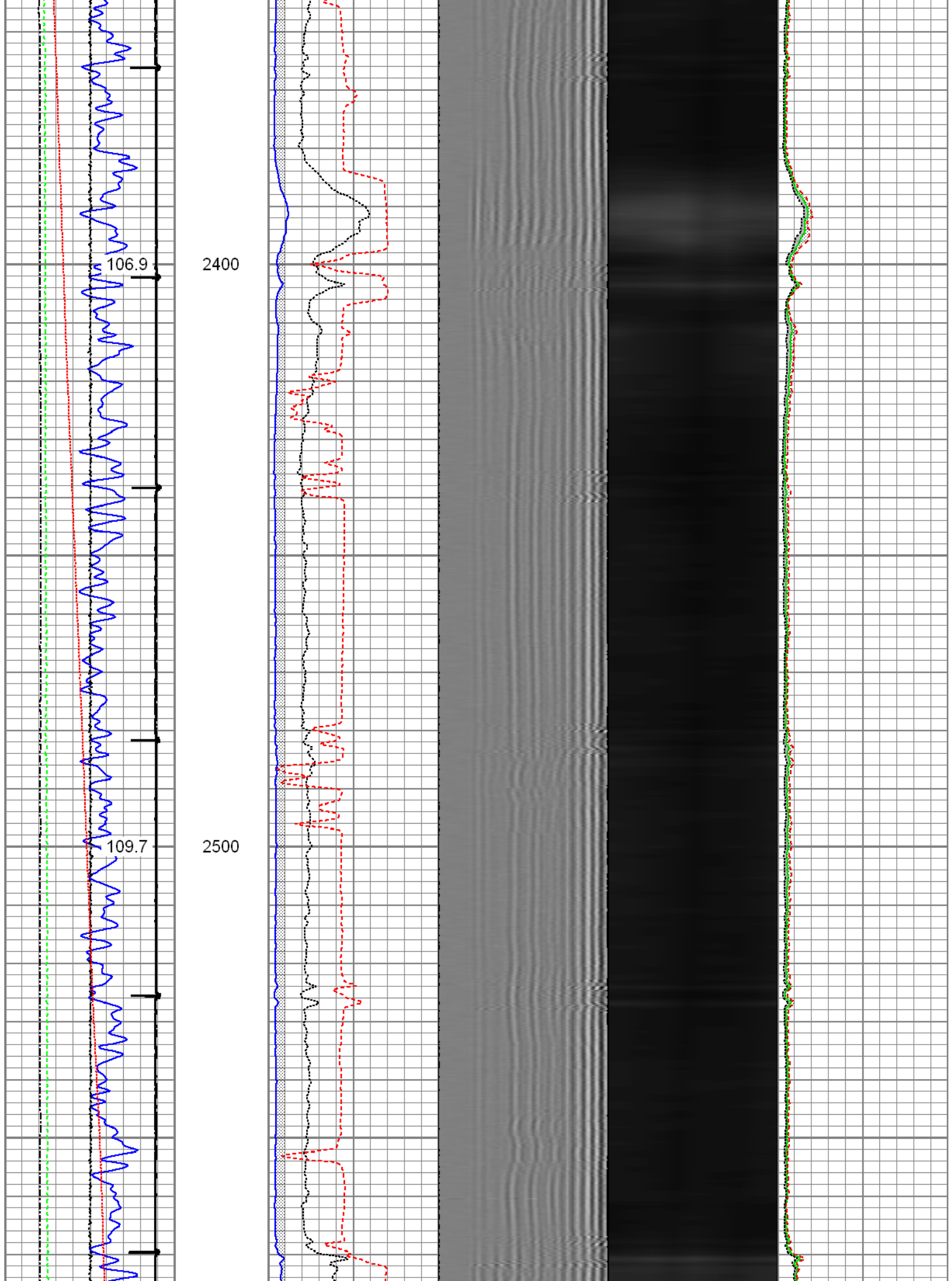


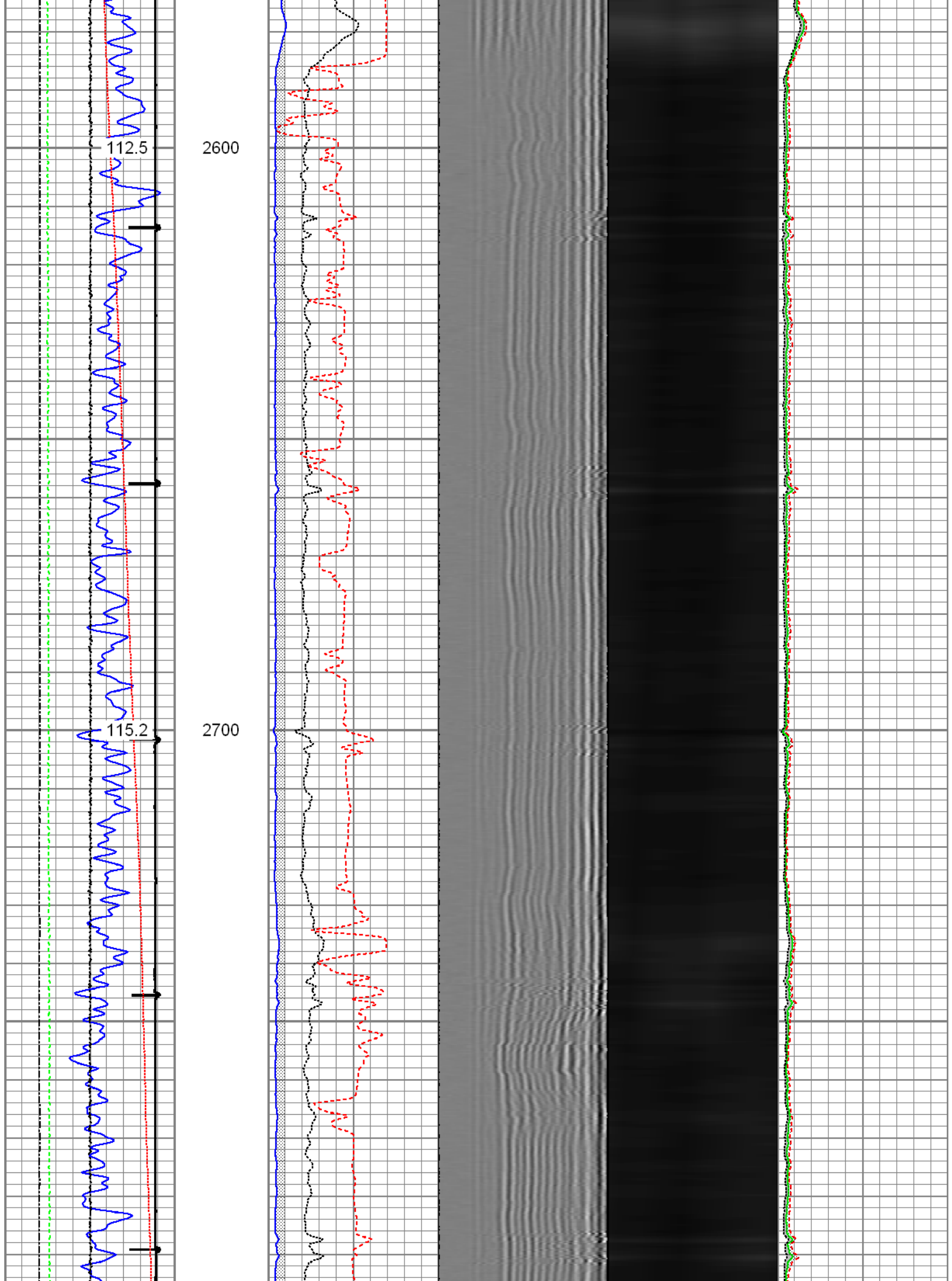


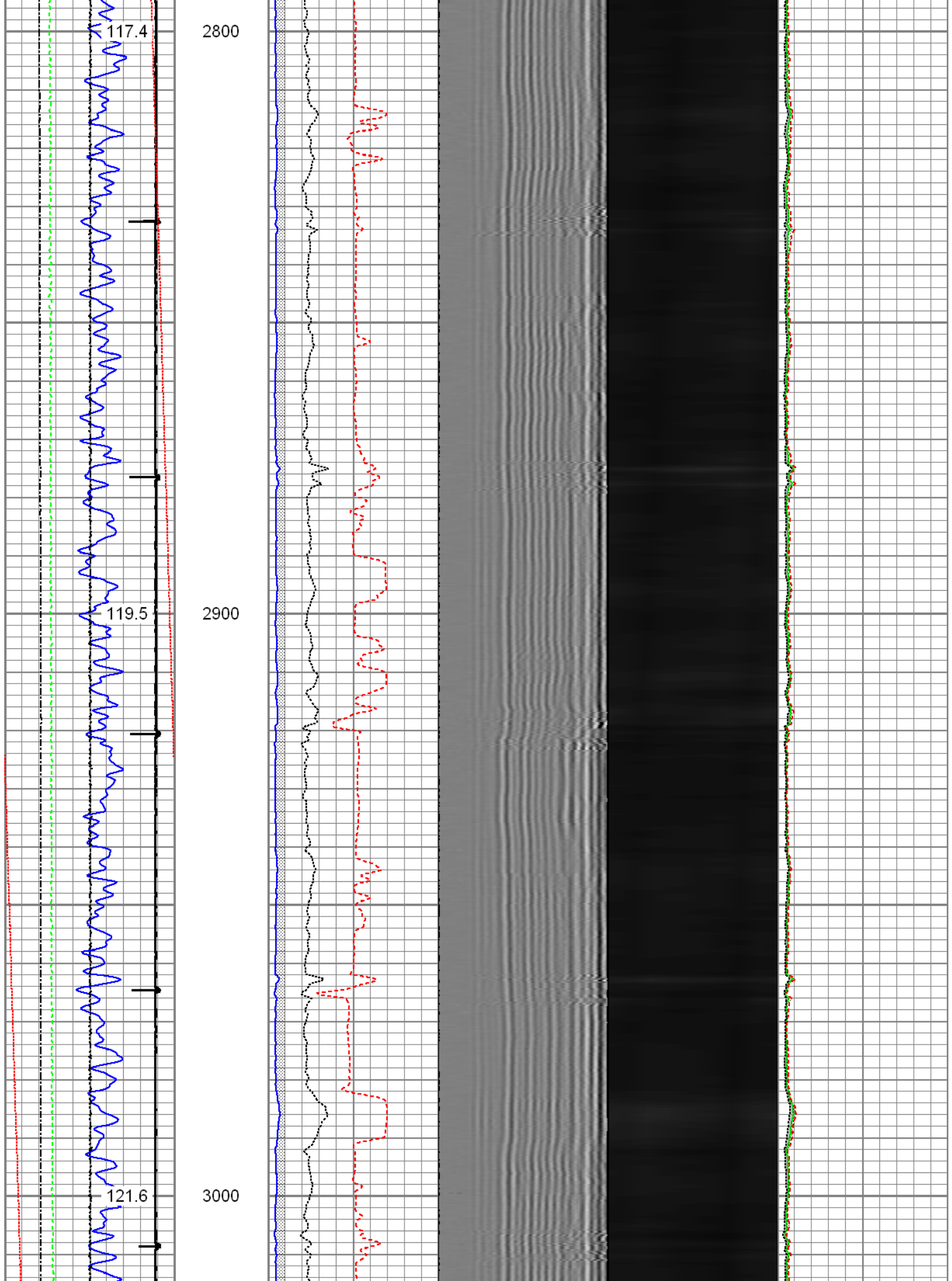


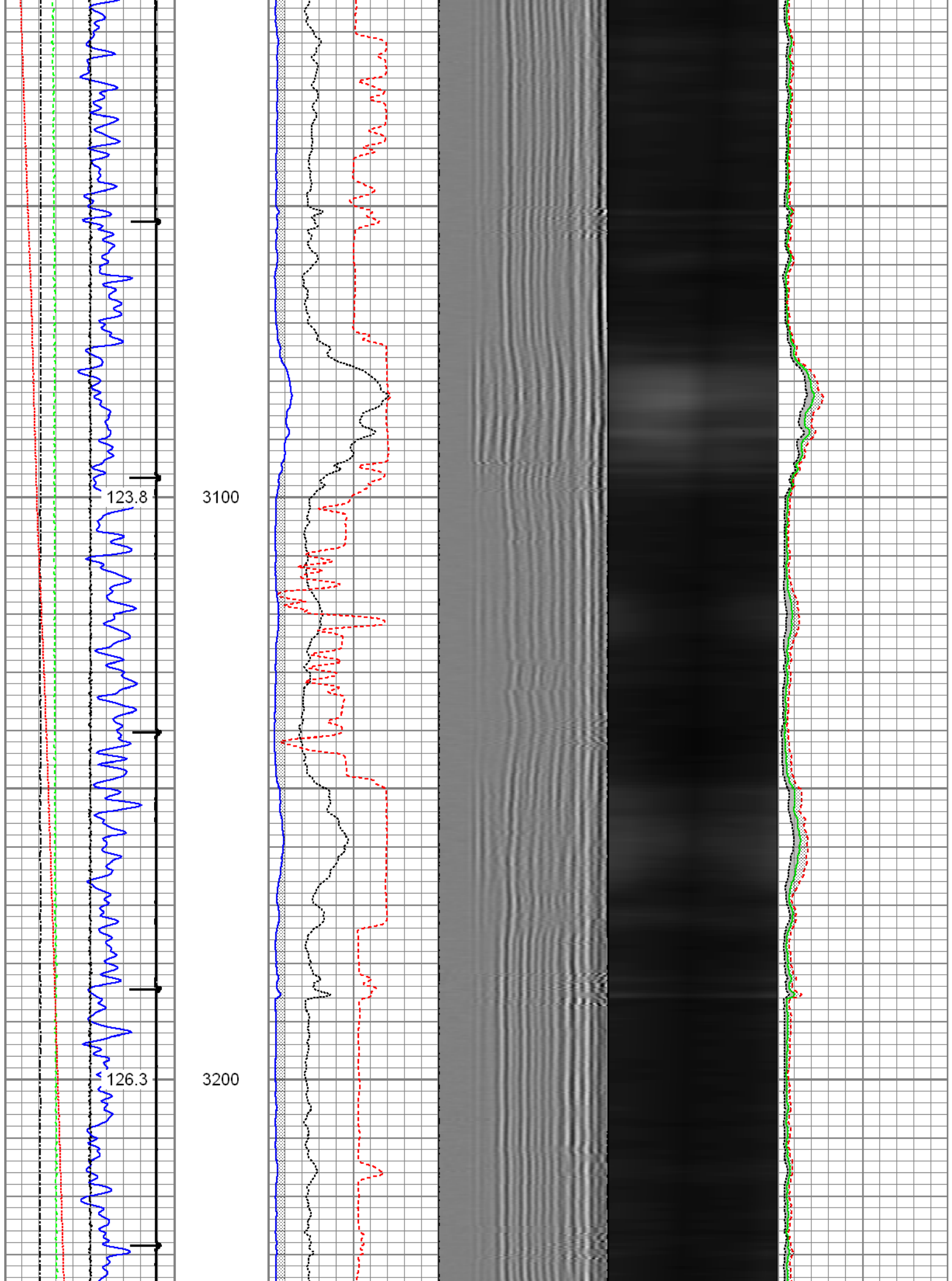


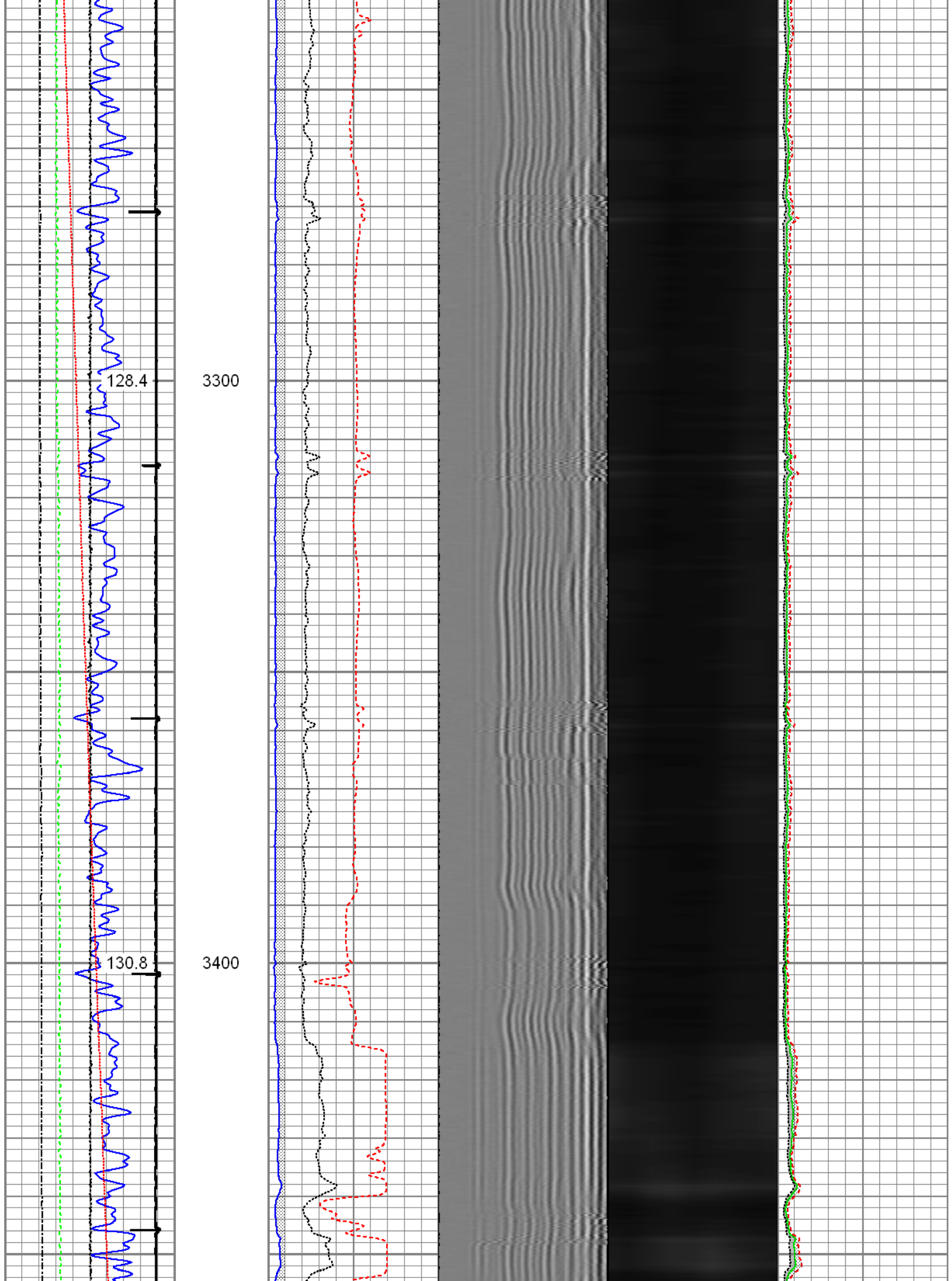


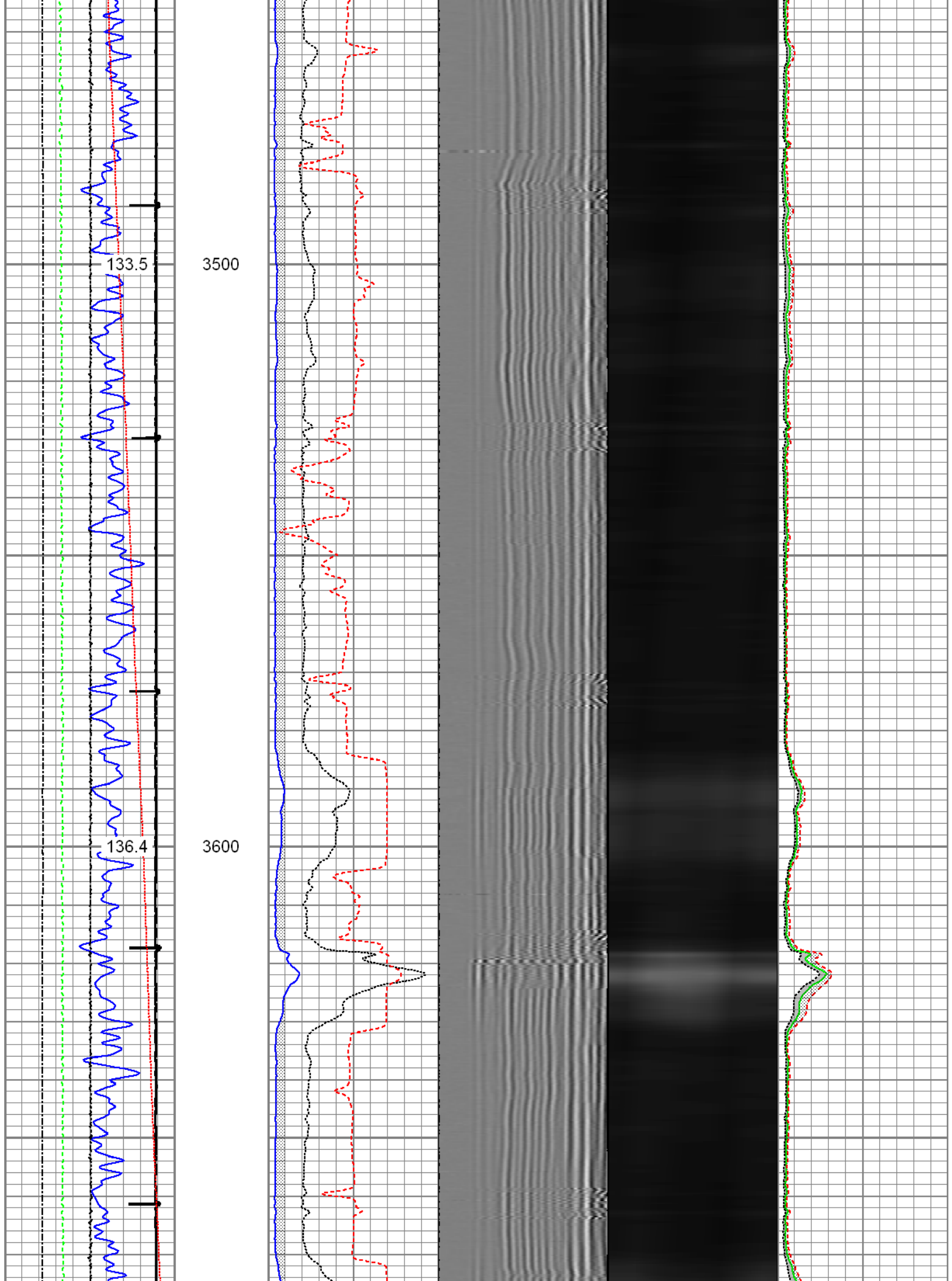


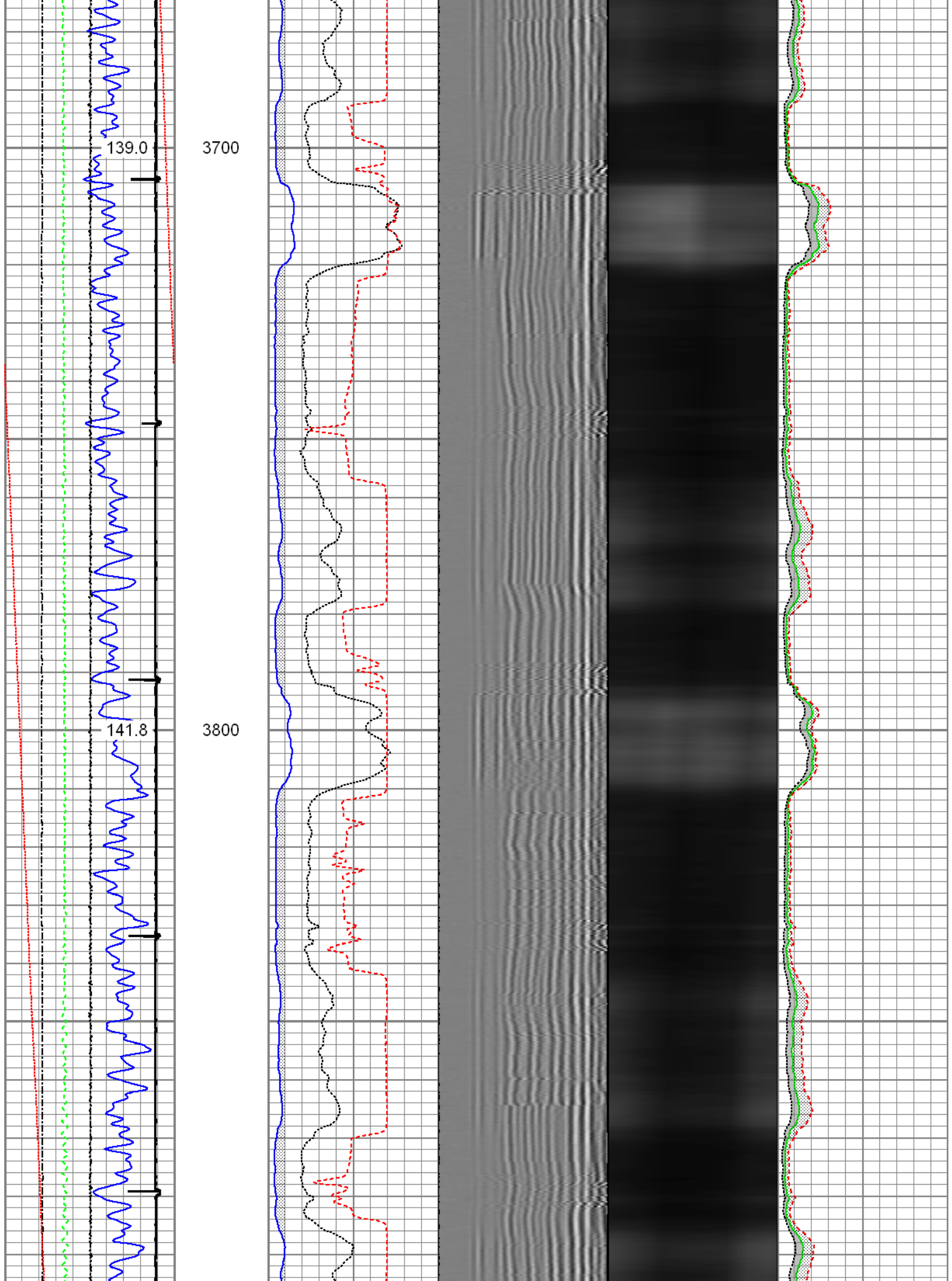


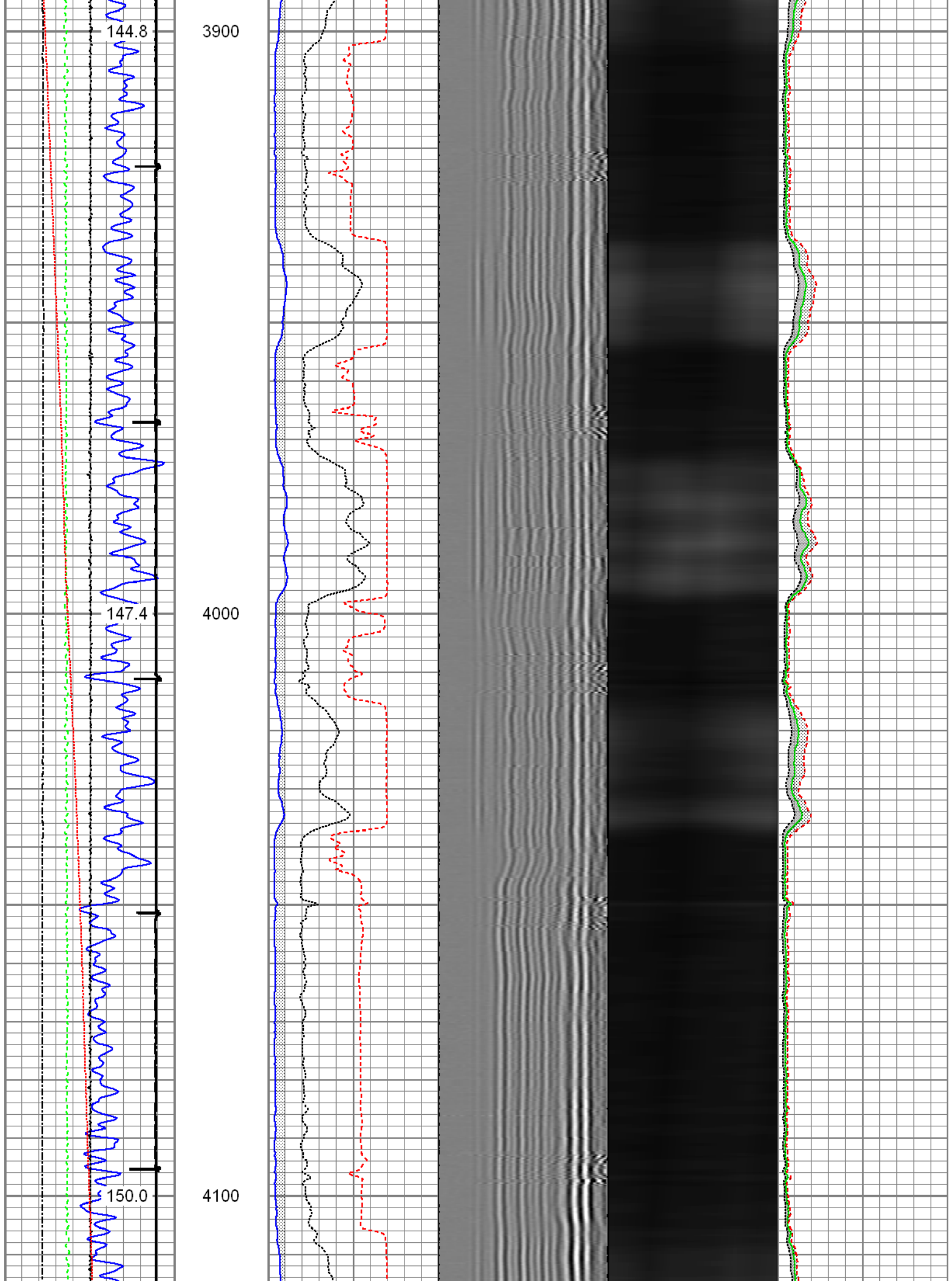


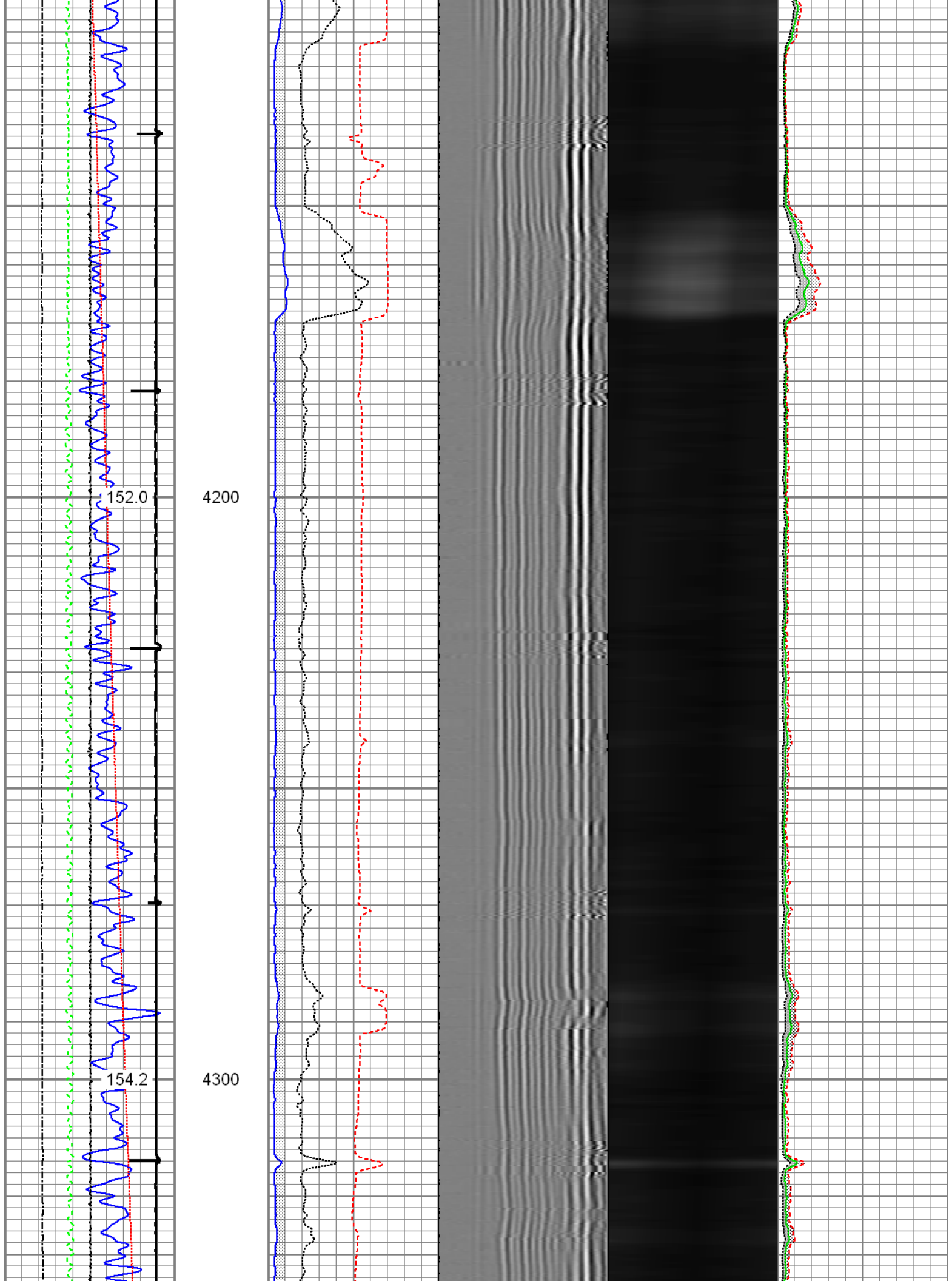


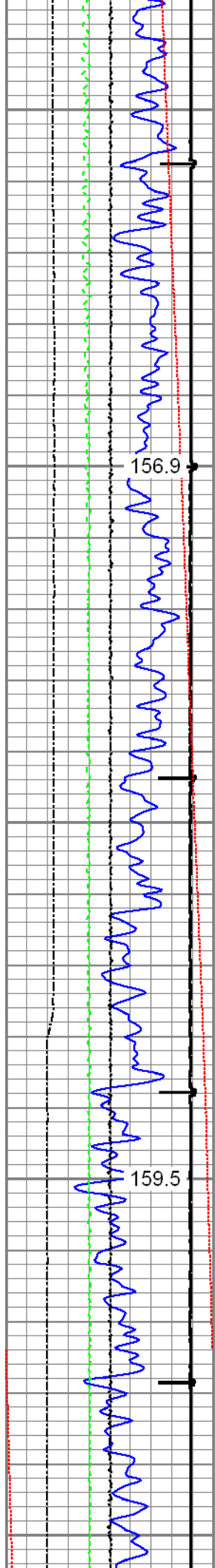






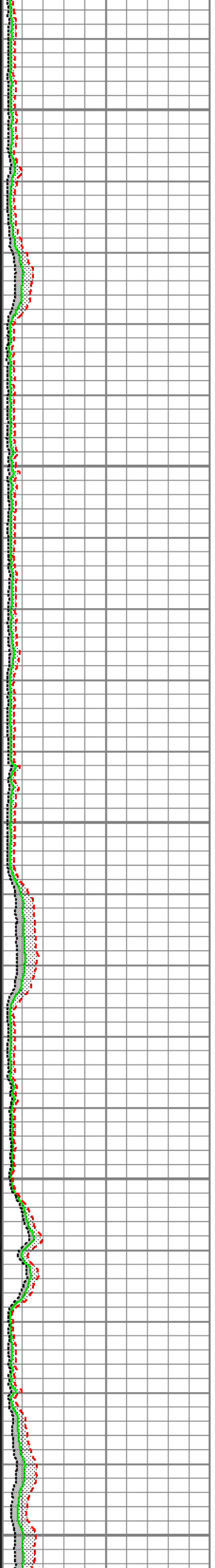
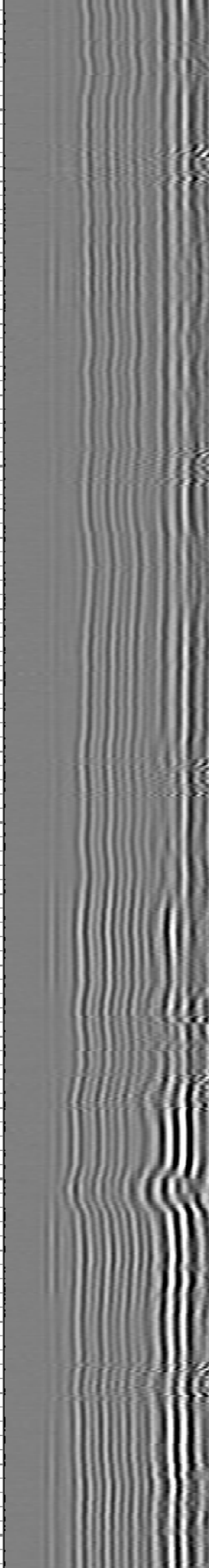


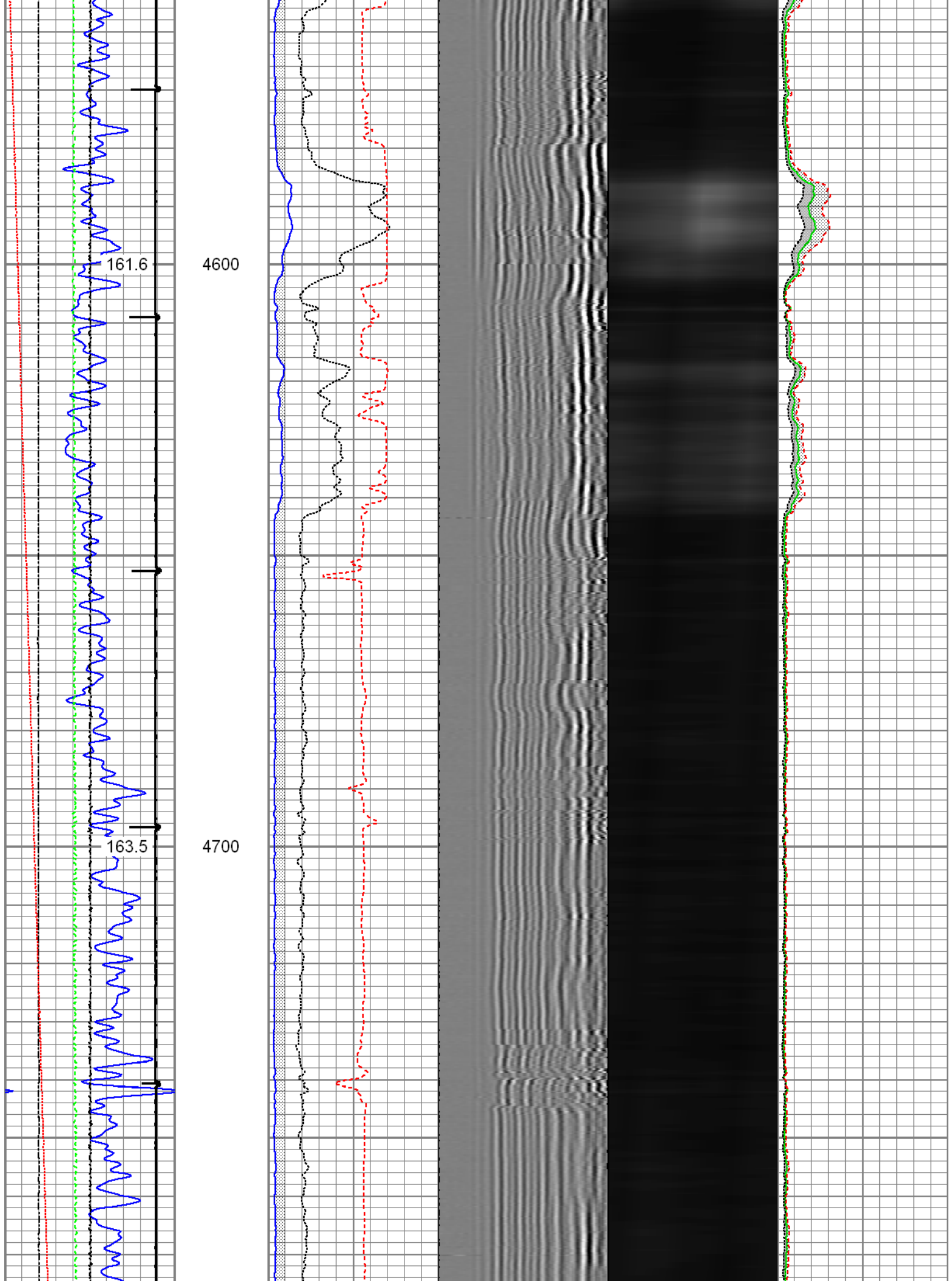


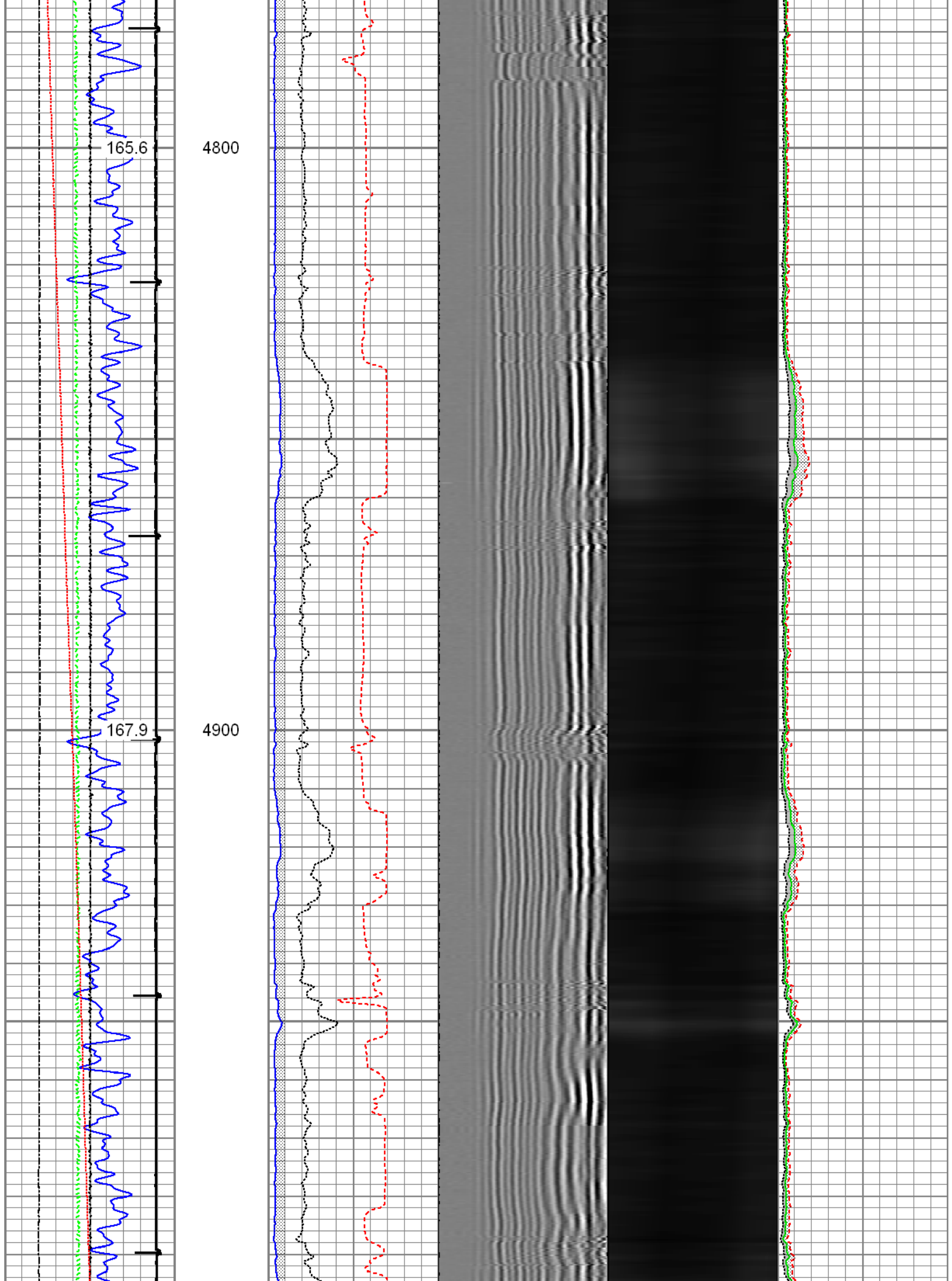


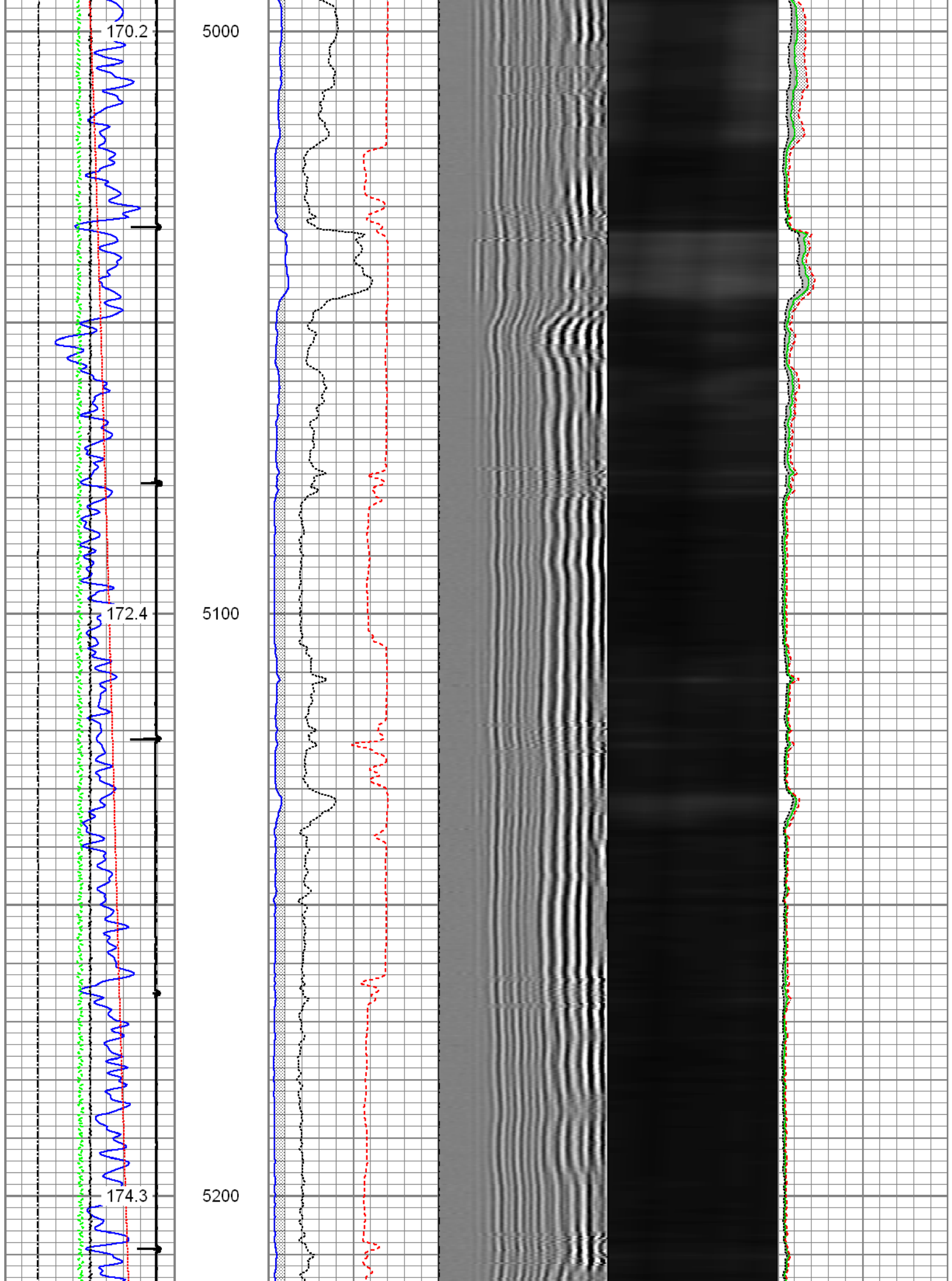
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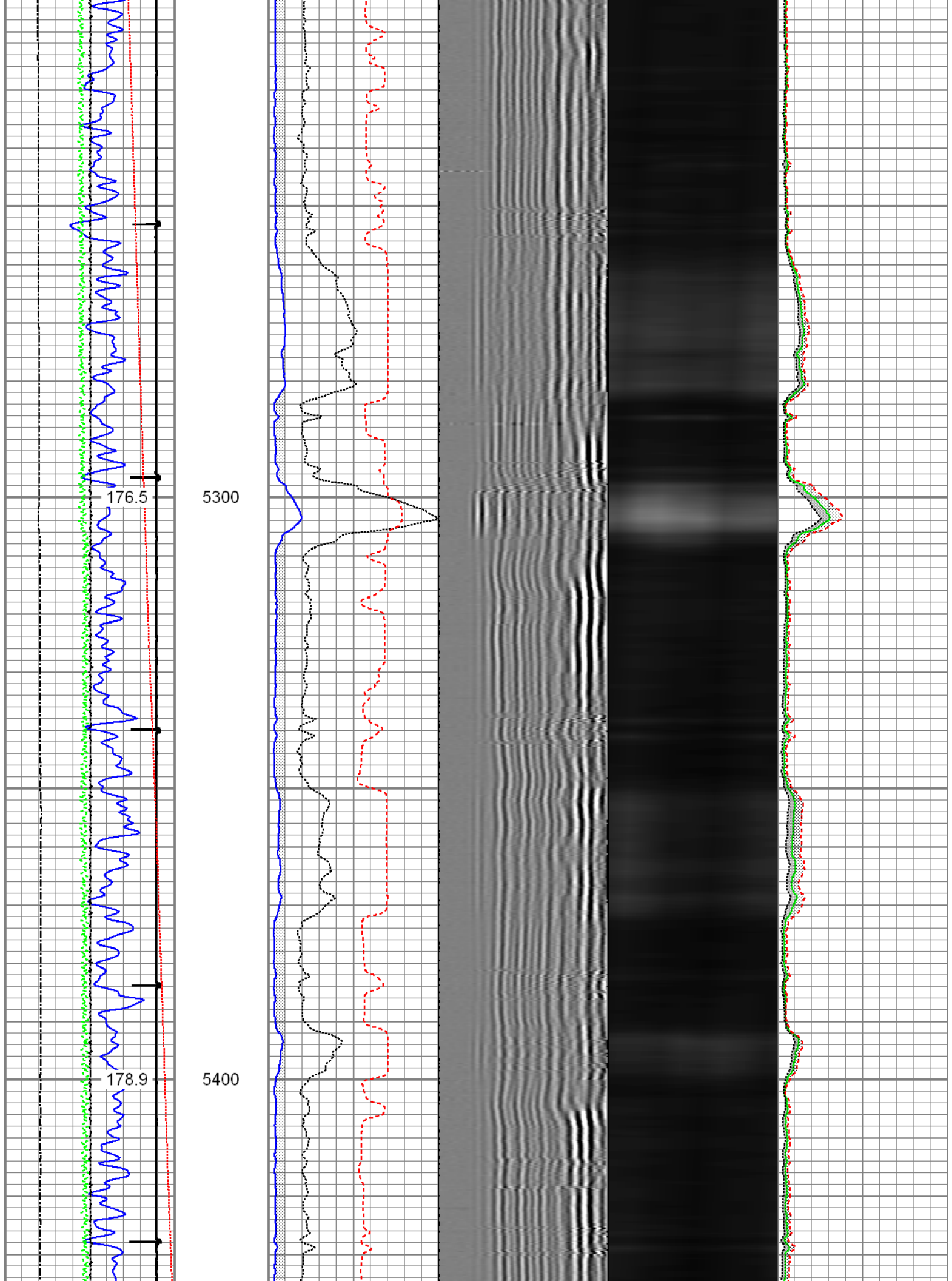
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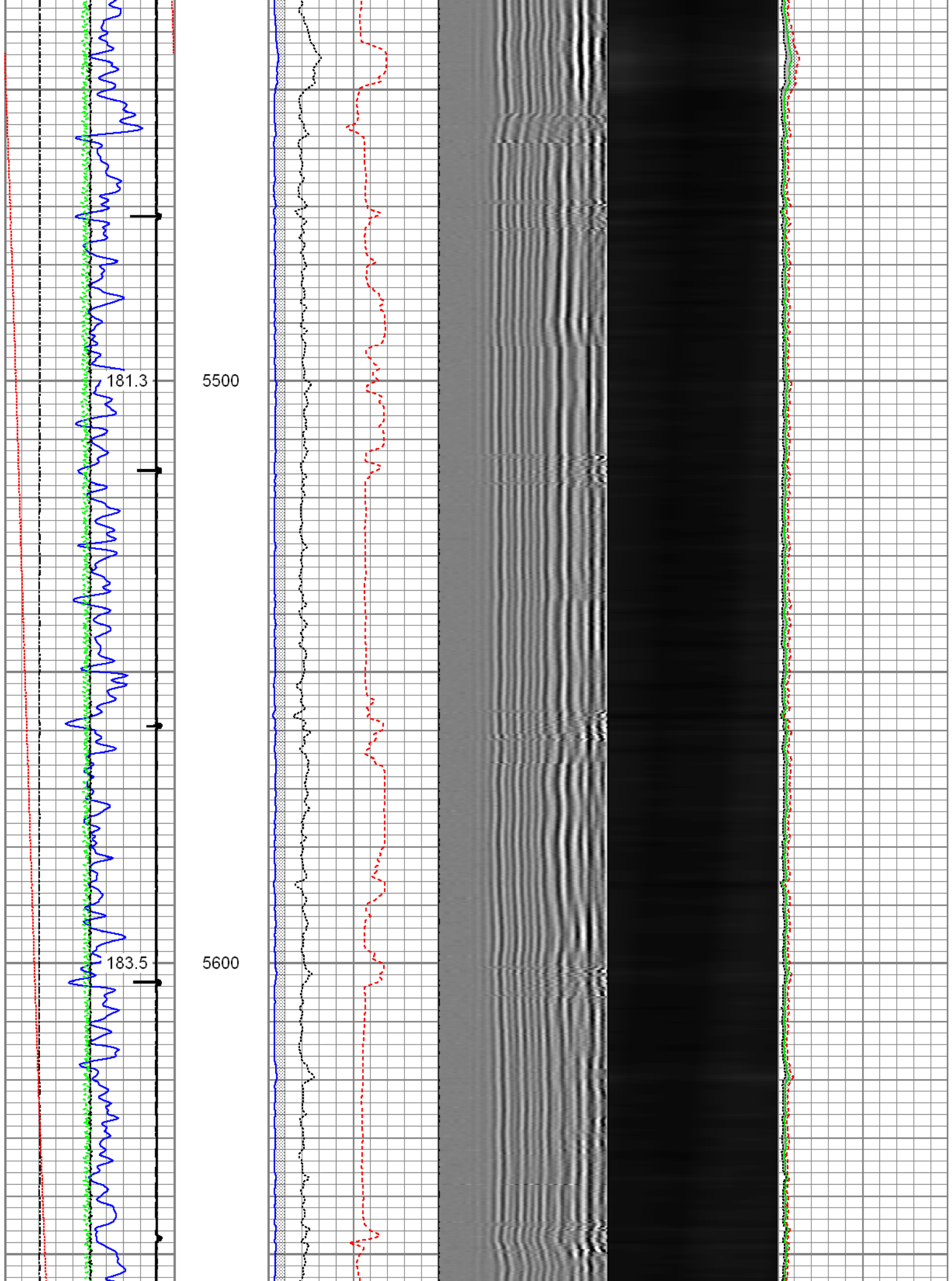


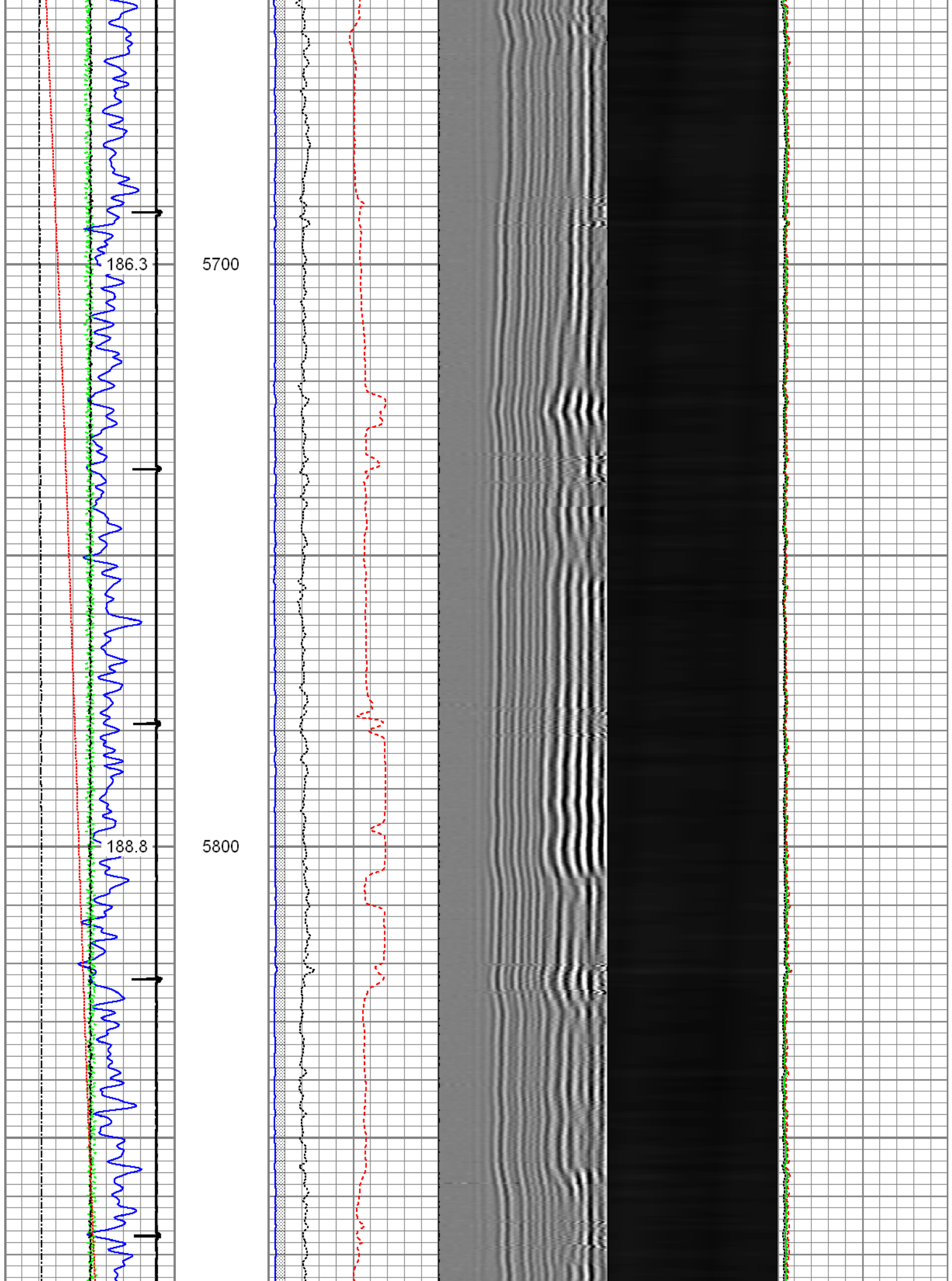


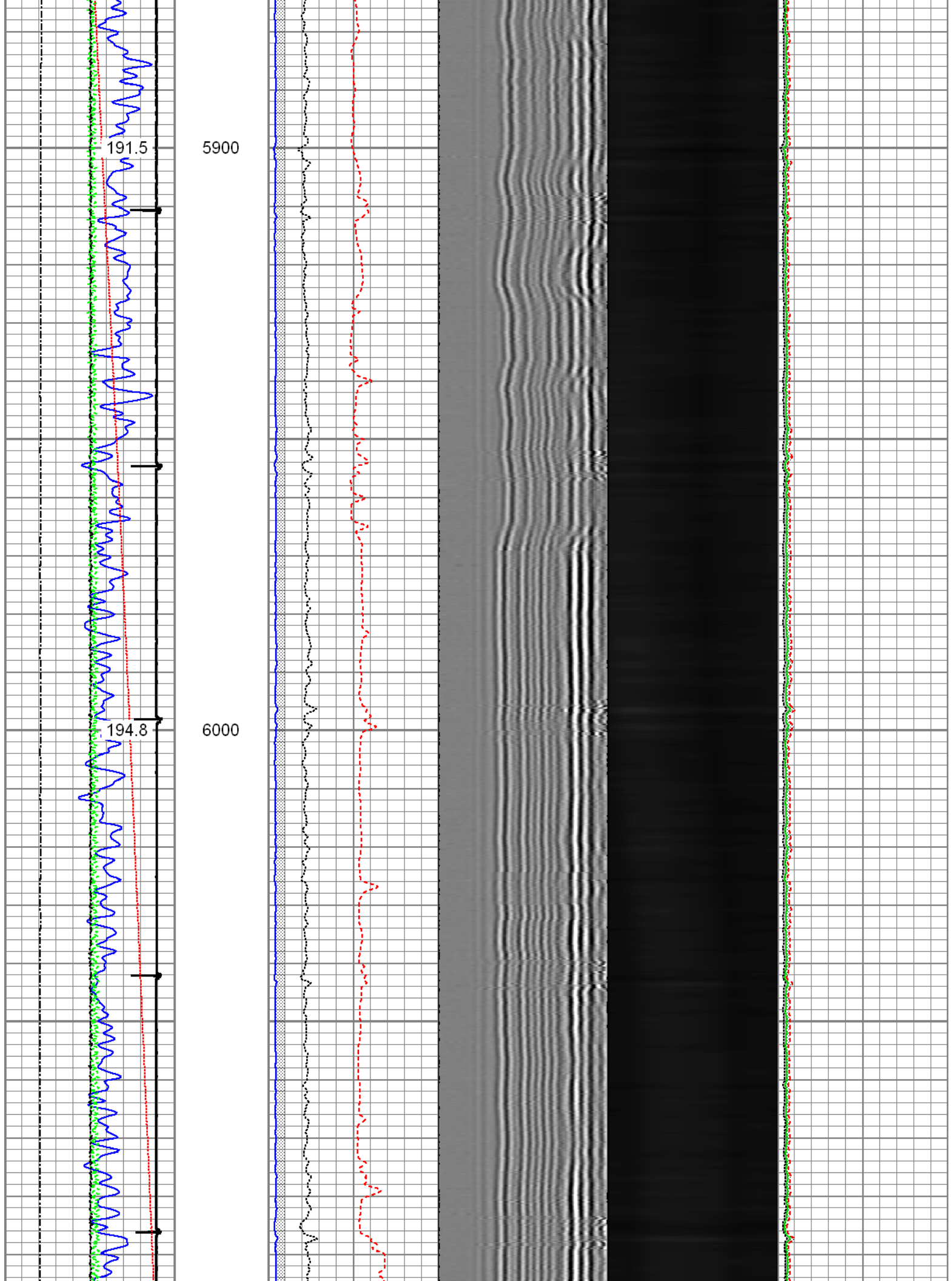


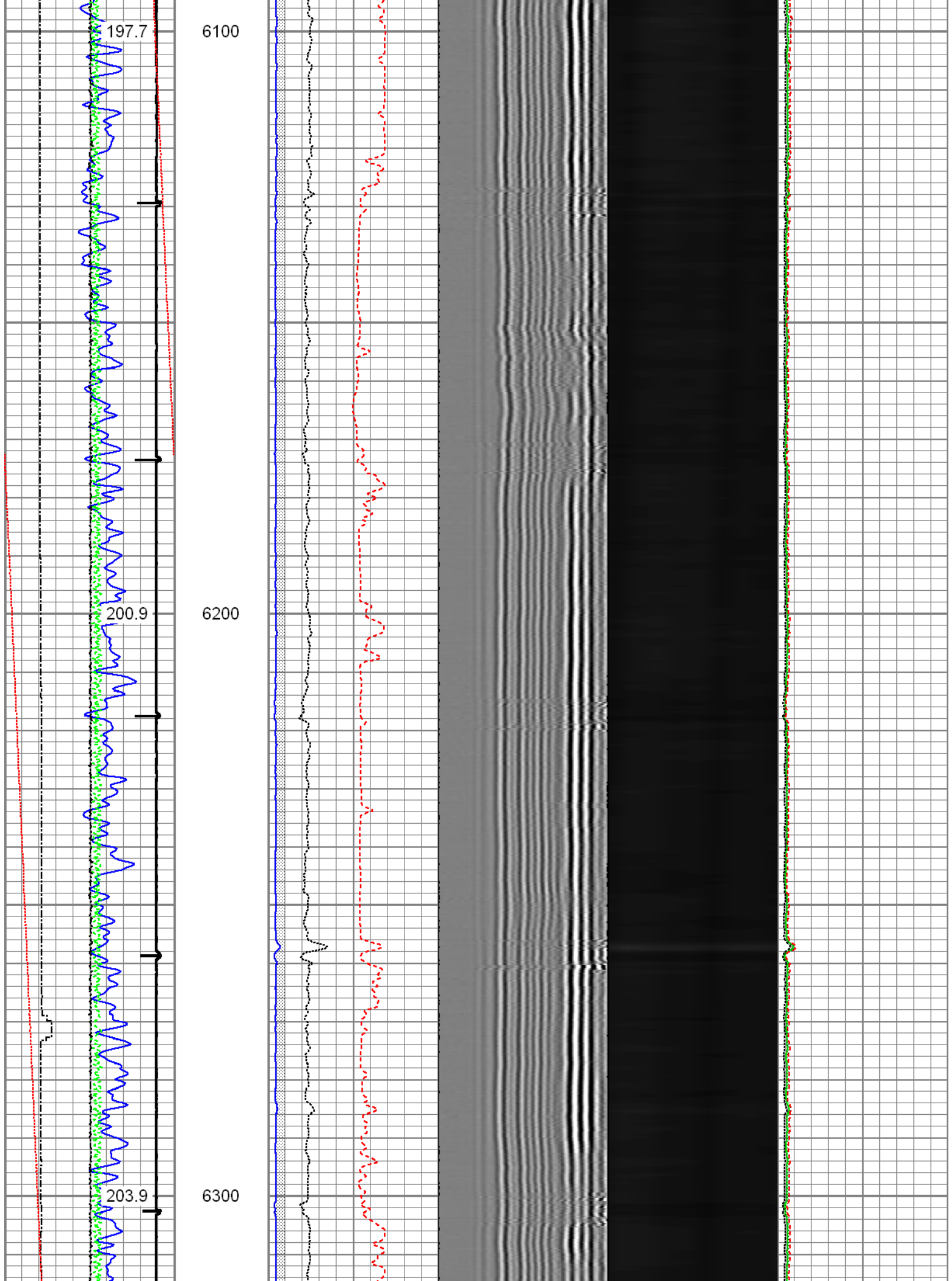


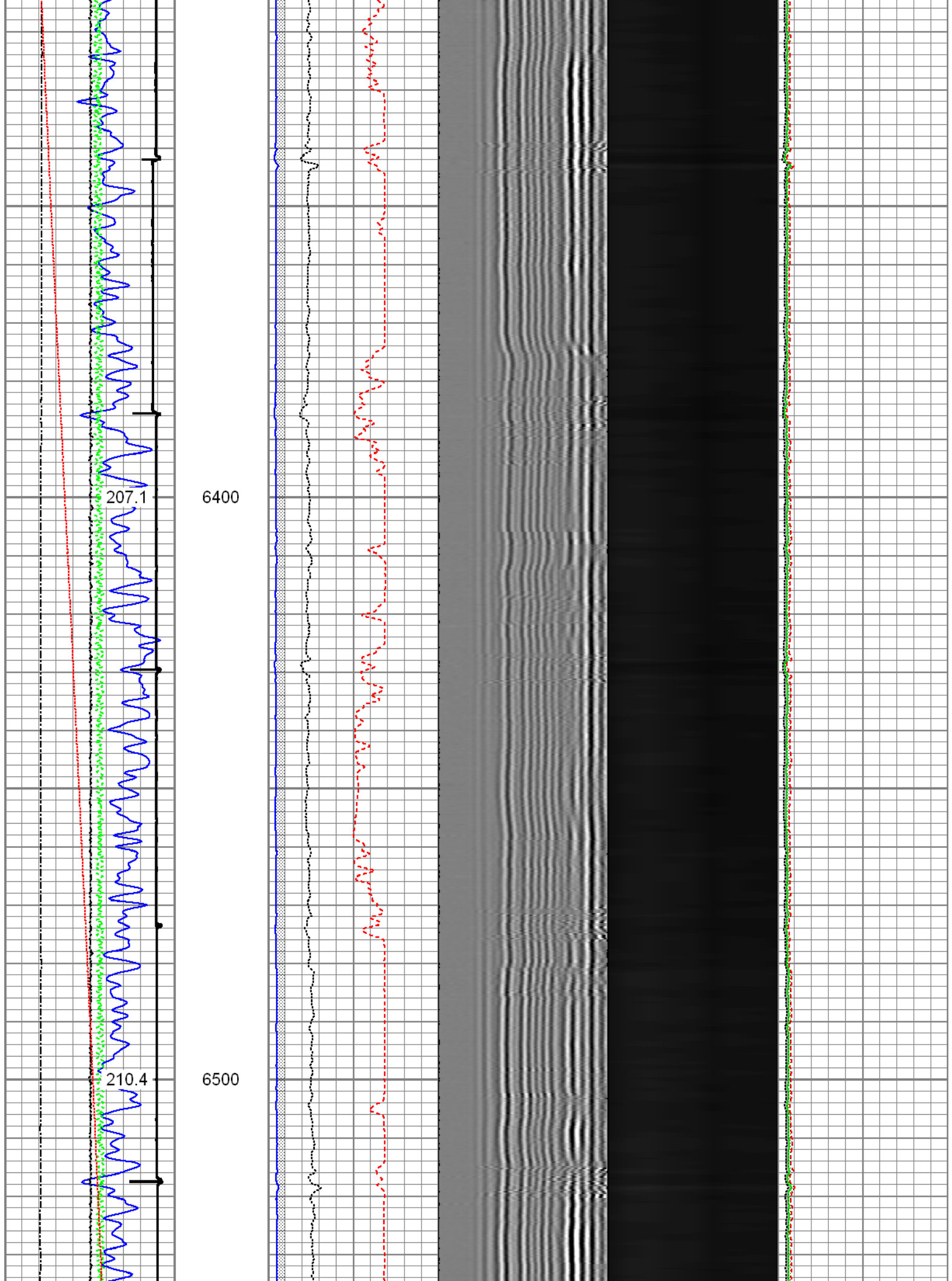


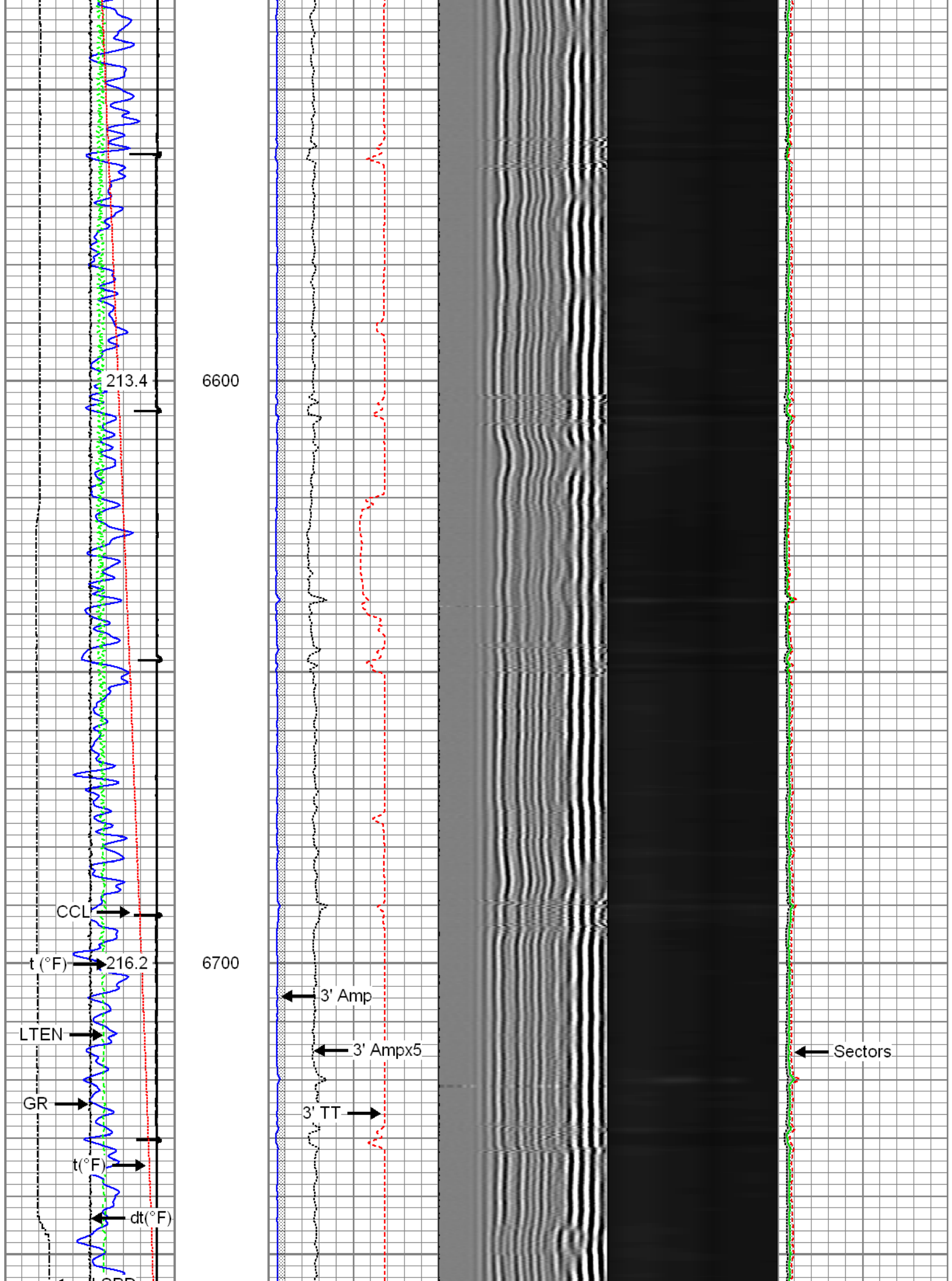


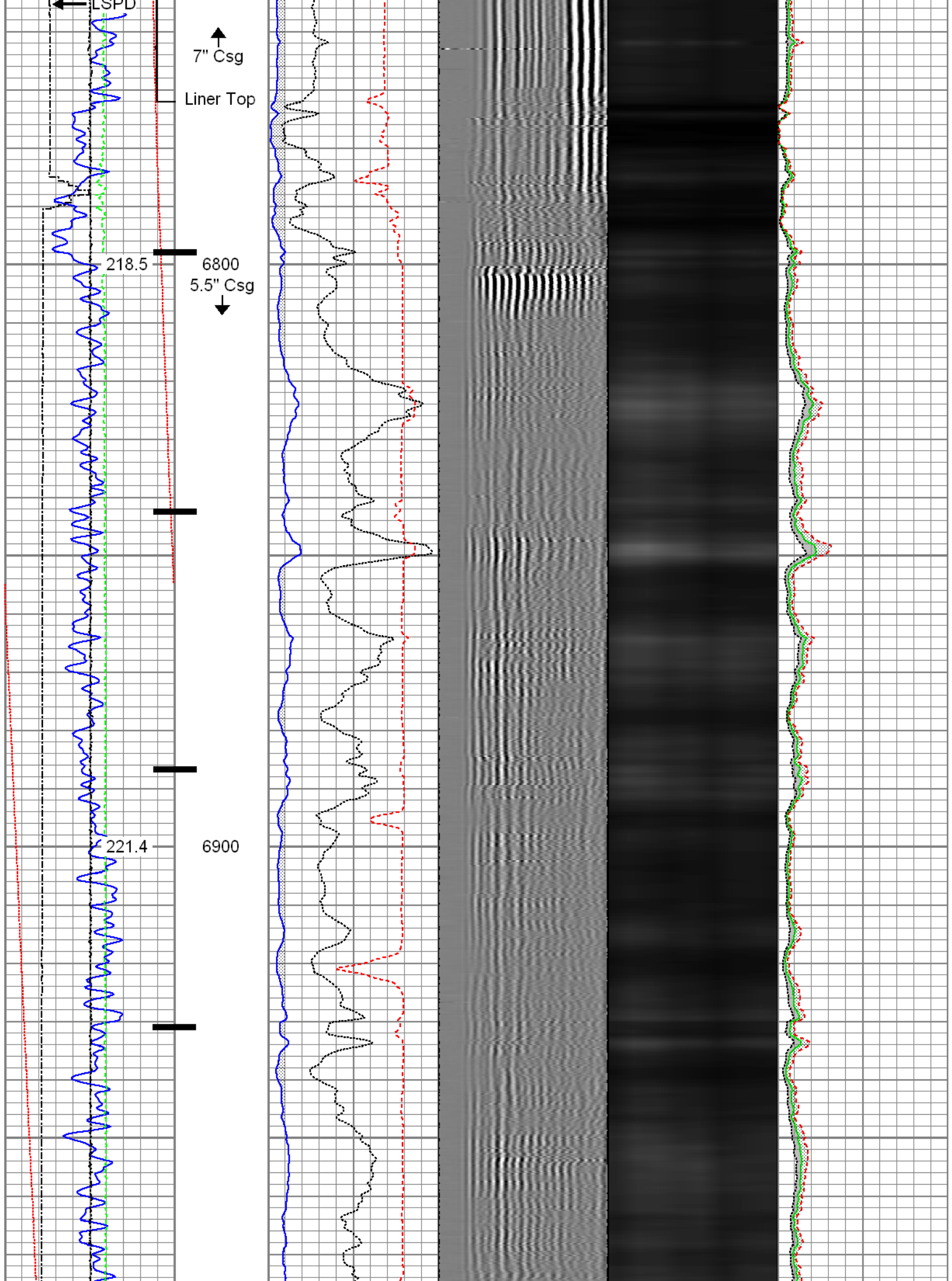


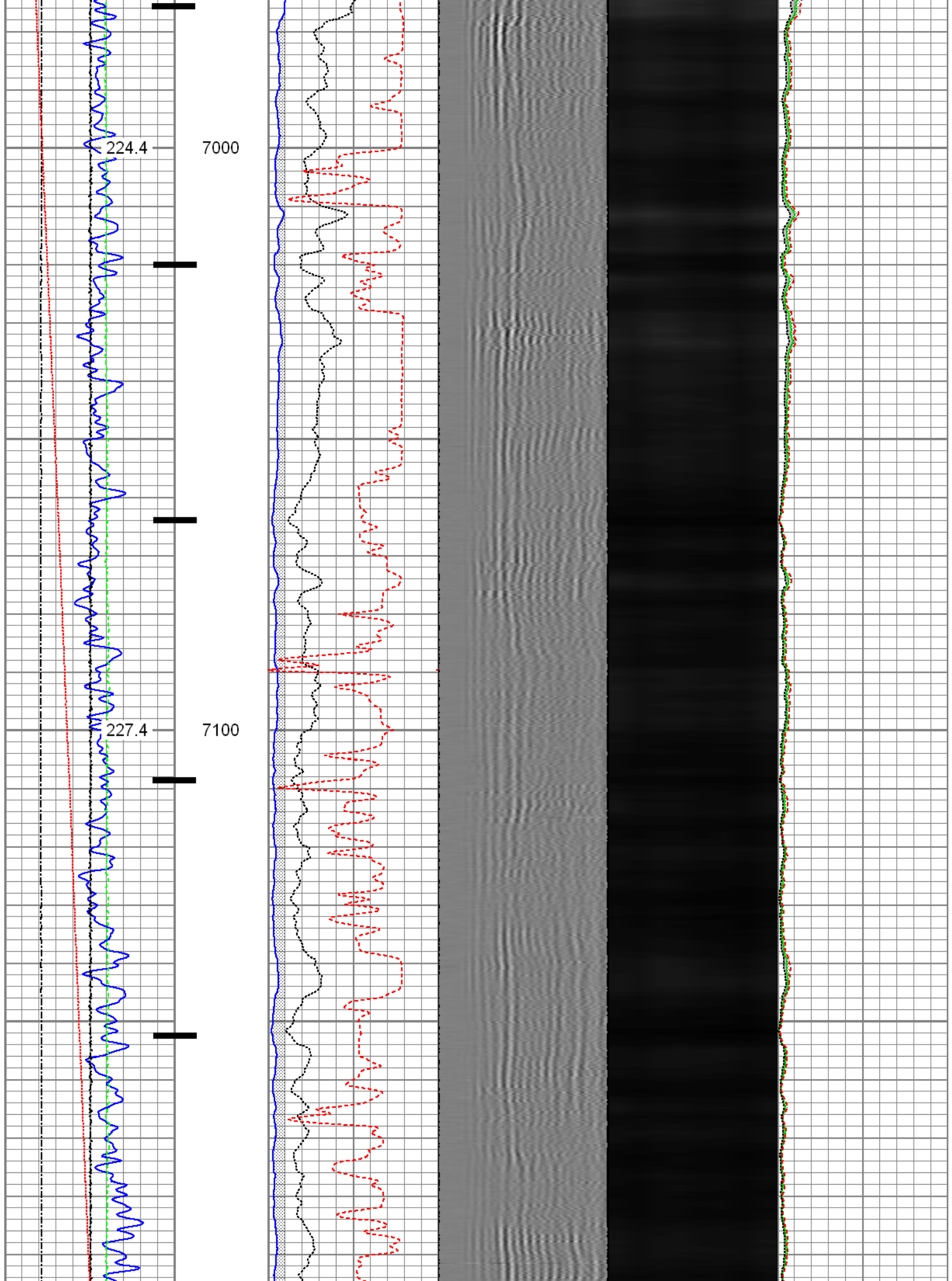


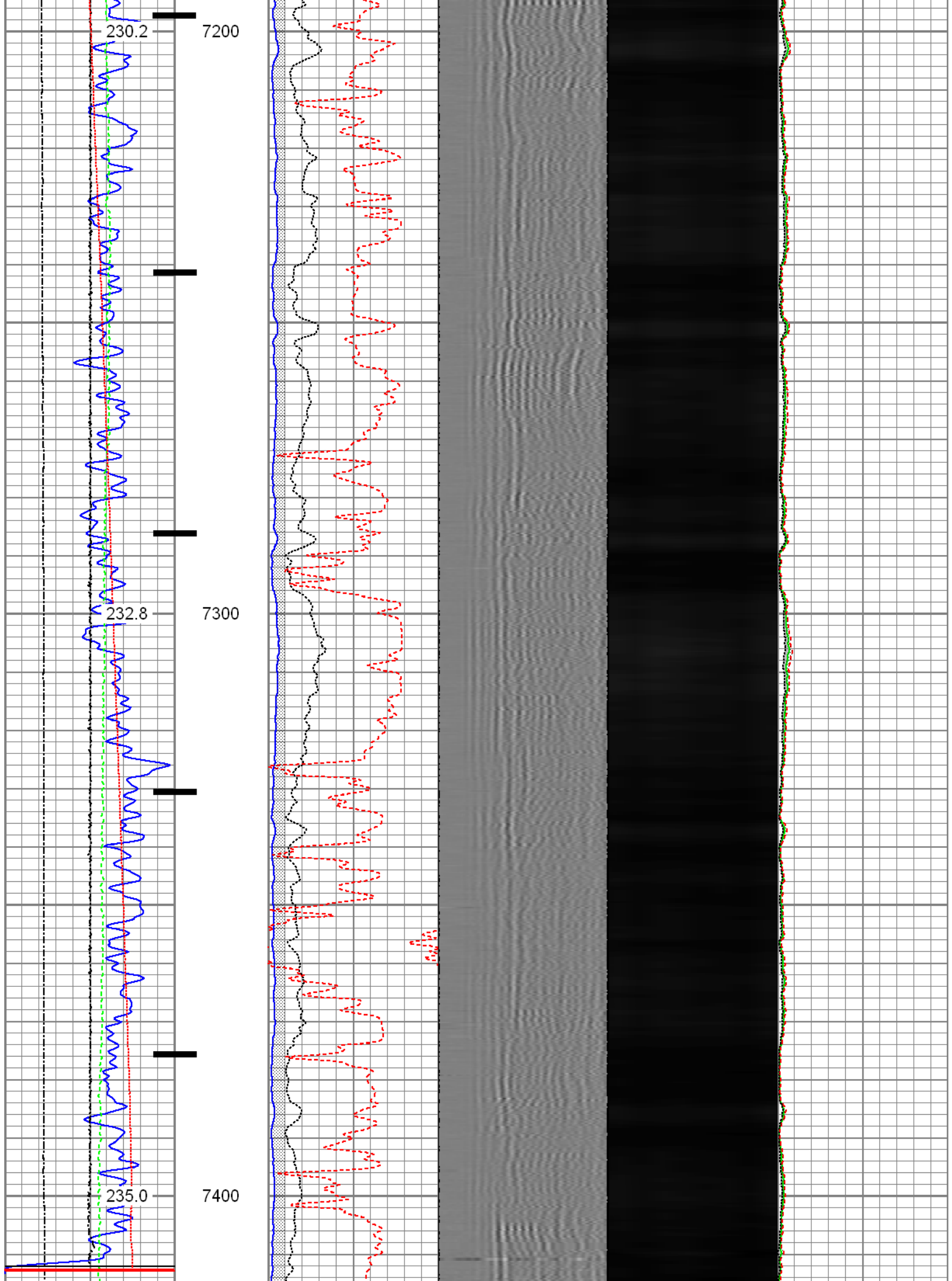


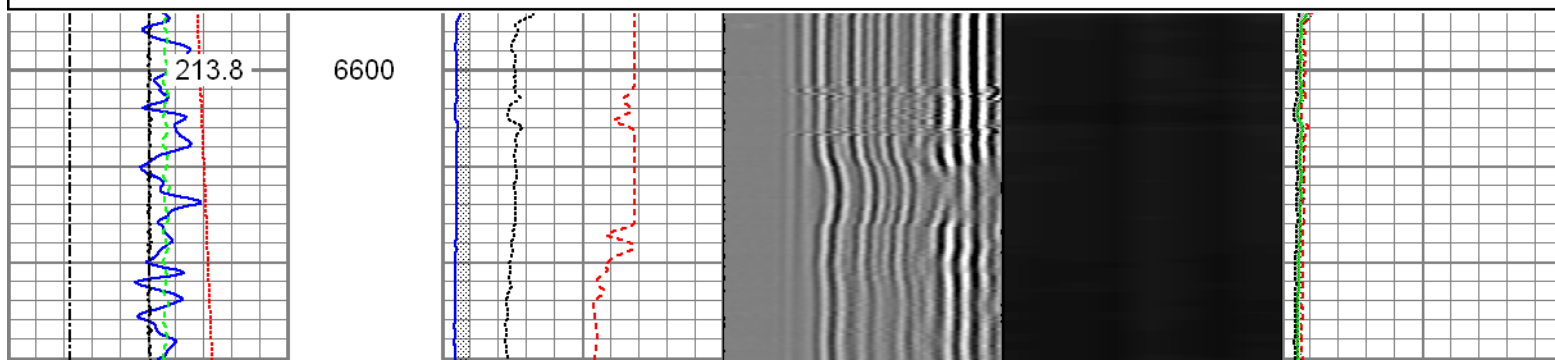
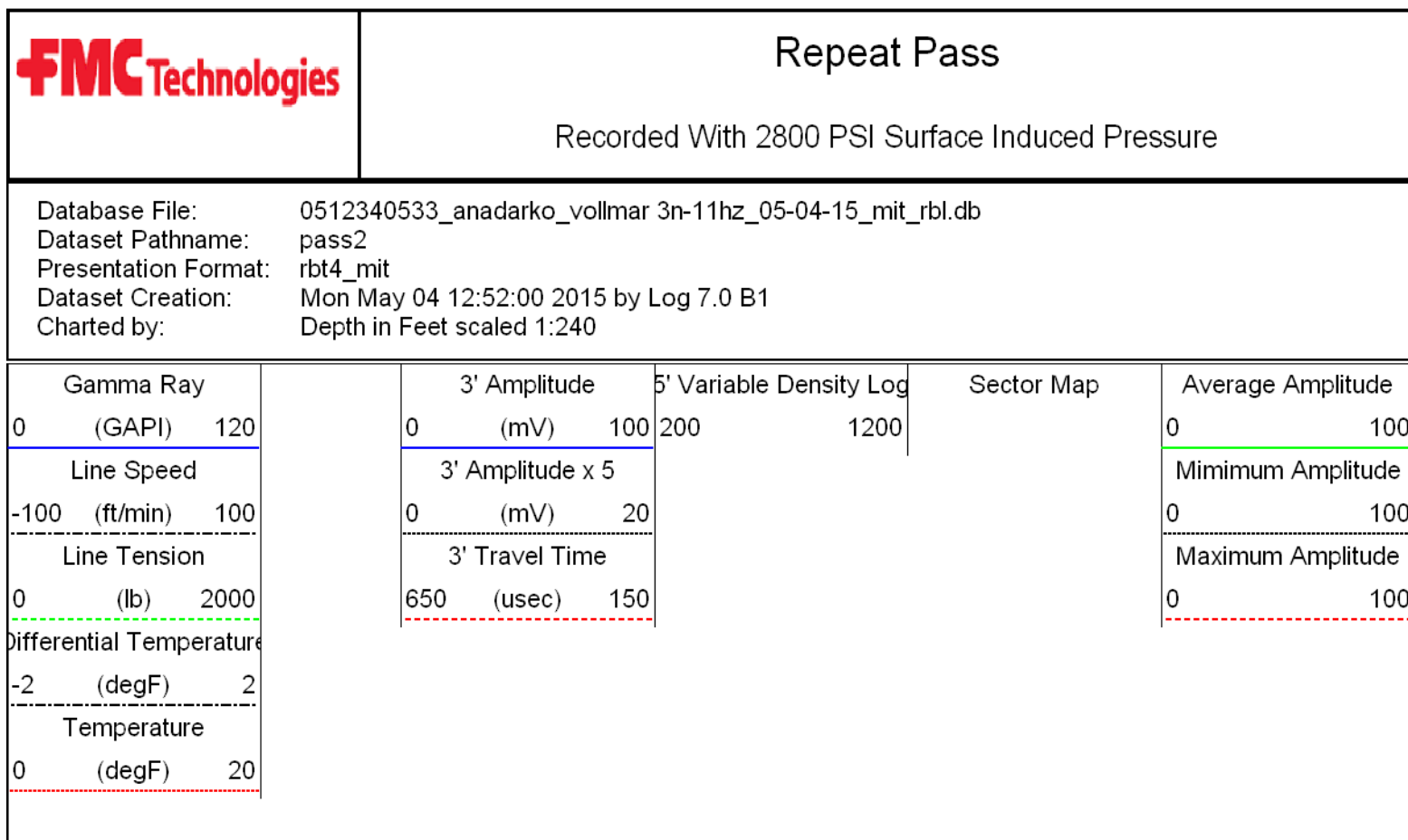
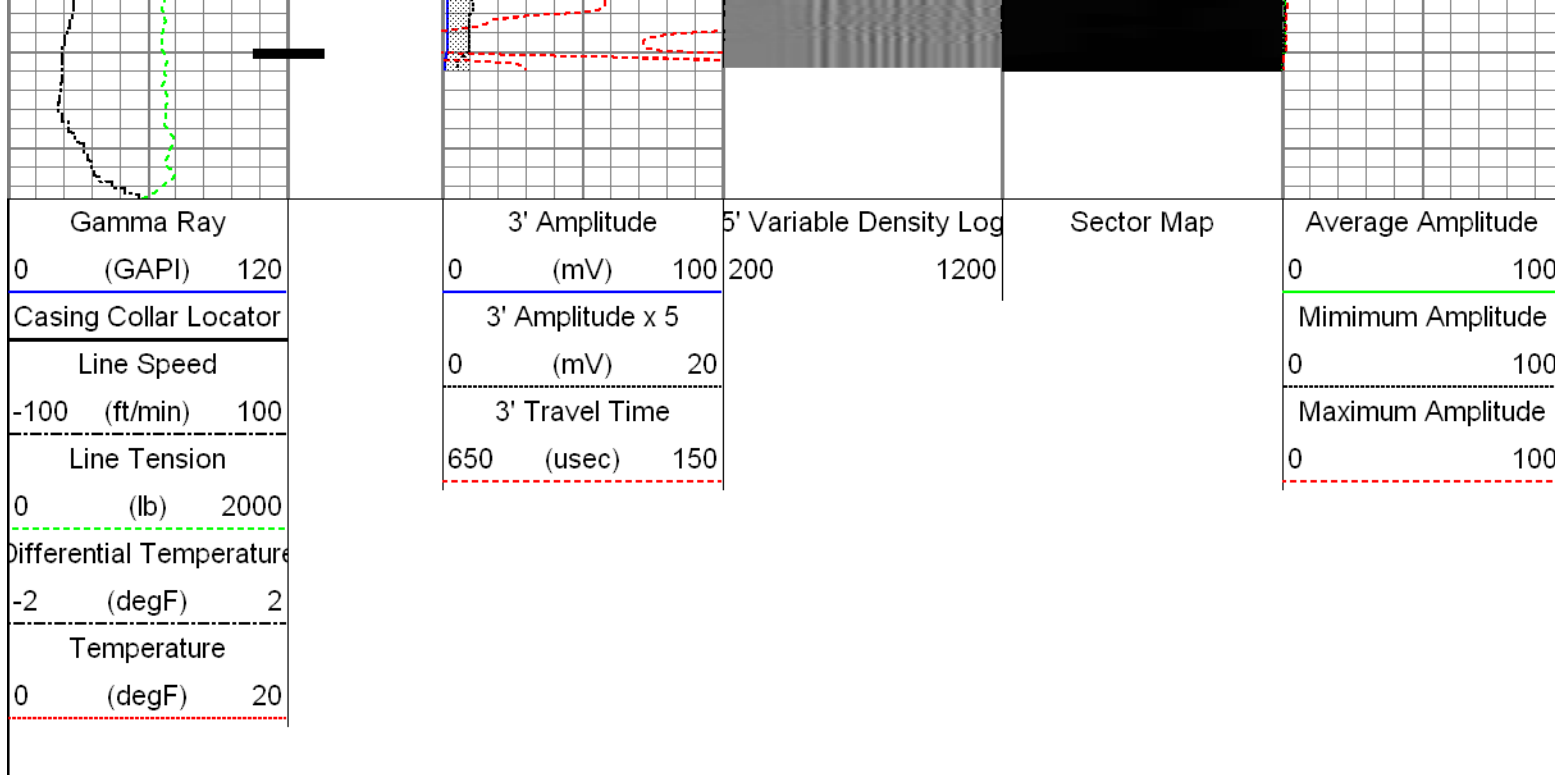


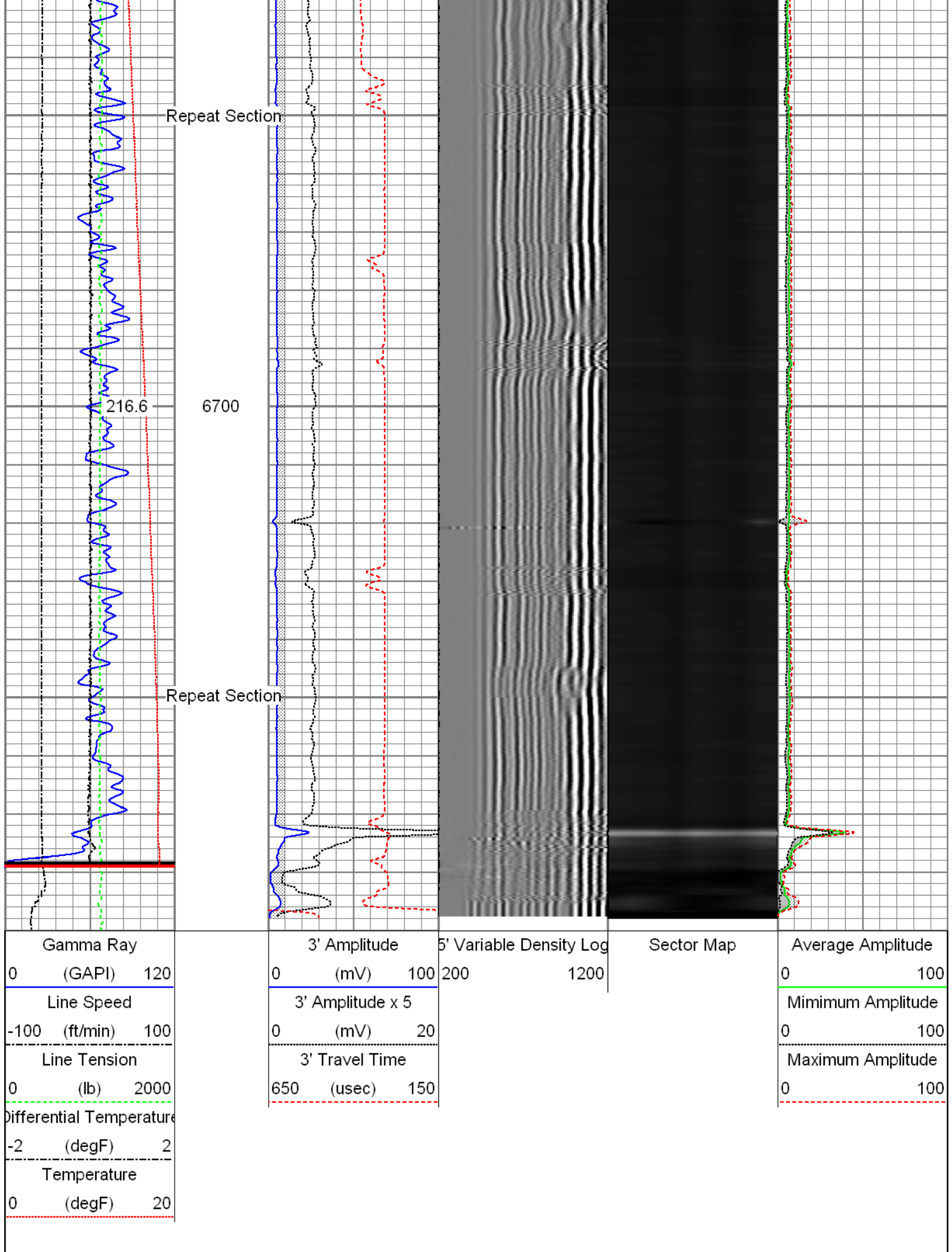


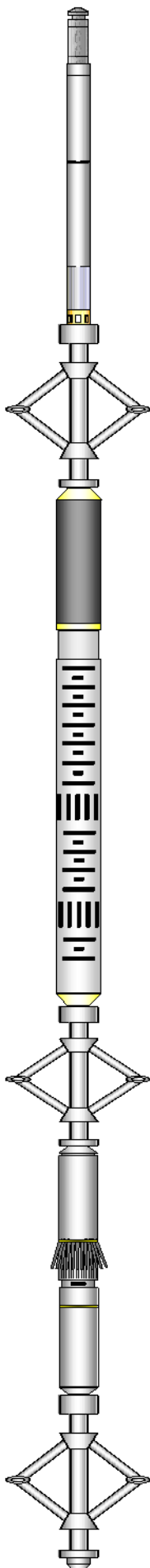










Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)					
GR	24.28		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00					
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00					
			UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50					
			UW_PGR-UW_PGR_020 (10024770) Production Gamma Ray	1.93	1.69	9.50					
TEMP	22.89		UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20					
			UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00					
WV3FT	15.42		UW_RBT-UW_RBT_004 (10013454) 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		UW_PRC-DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00					
CBLROT	15.42										
WV5FT	14.42		UW_MIT-UW_MIT40_027 (218950) 40 Multifinger Imaging Tool	4.54	2.75	61.10					
MIT	5.41		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: 0512340533_anadarko_vollmar 3n-11hz_05-04-15_mit_rbl.db: field/well/run1/pass4
 Total Length: 28.53 ft
 Total Weight: 324.50 lb
 O.D. 3.13 in

Calibration Report

Database File: 0512340533_anadarko_vollmar 3n-11hz_05-04-15_mit_rbl.db
 Dataset Pathname: pass4
 Dataset Creation: Mon May 04 13:02:38 2015 by Log 7.0 B1

Multi-finger Imaging Tool Calibration Report

Serial Number: 218950
 Number of Fingers: 40
 Tool Model: UW_MIT40_027

Inclinometer Calibration Report

Performed: Fri, Oct, 10 10:41:51 2008
 Calibration Angle: 45

		Inc X	Inc Y
Vertical:		1996	1975
Finger 1 up:		2238	2226
Finger 31 up:		1760	2216
Finger 21 up:		1769	1745
Finger 11 up:		2250	1738
Sensitivity ratio:	1.00023		
X-axis angle:	314.283		
Deviation const.:	339.139		

Finger Calibration Report

Performed: Mon May 04 12:10:31 2015

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1447	269.0	1716	289.0	2005	299.0	2304
Finger 02:	1512	247.0	1759	257.0	2016	265.0	2281
Finger 03:	1424	273.0	1697	291.0	1988	300.0	2288
Finger 04:	1446	278.0	1724	284.0	2008	292.0	2300
Finger 05:	1483	266.0	1749	276.0	2025	280.0	2305
Finger 06:	1409	279.0	1688	293.0	1981	303.0	2284
Finger 07:	1430	277.0	1707	290.0	1997	300.0	2297
Finger 08:	1423	275.0	1698	287.0	1985	292.0	2277
Finger 09:	1417	280.0	1697	292.0	1989	301.0	2290
Finger 10:	1437	269.0	1706	282.0	1988	289.0	2277
Finger 11:	1419	280.0	1699	292.0	1991	299.0	2290
Finger 12:	1377	282.0	1659	295.0	1954	306.0	2260
Finger 13:	1475	262.0	1737	270.0	2007	276.0	2283
Finger 14:	1418	267.0	1685	280.0	1965	294.0	2259
Finger 15:	1410	282.0	1692	292.0	1984	304.0	2288
Finger 16:	1418	273.0	1691	287.0	1978	298.0	2276
Finger 17:	1422	286.0	1708	297.0	2005	307.0	2312
Finger 18:	1371	269.0	1640	282.0	1922	296.0	2218
Finger 19:	1427	275.0	1702	288.0	1990	298.0	2288
Finger 20:	1439	273.0	1712	288.0	2000	302.0	2302
Finger 21:	1390	284.0	1674	304.0	1978	316.0	2294
Finger 22:	1419	263.0	1682	280.0	1962	292.0	2254
Finger 23:	1415	270.0	1685	288.0	1973	297.0	2270
Finger 24:	1454	271.0	1725	284.0	2009	291.0	2300
Finger 25:	1433	272.0	1705	290.0	1995	300.0	2295
Finger 26:	1402	276.0	1678	292.0	1970	304.0	2274
Finger 27:X	1459	264.0	1723	284.0	2007	295.0	2302
Finger 28:	1443	273.0	1716	292.0	2008	302.0	2310
Finger 29:	1497	254.0	1751	272.0	2023	281.0	2304
Finger 30:	1408	268.0	1676	292.0	1968	305.0	2273
Finger 31:	1438	273.0	1711	295.0	2006	306.0	2312
Finger 32:	1495	257.0	1752	276.0	2028	282.0	2310
Finger 33:	1453	269.0	1722	299.0	2021	305.0	2326
Finger 34:	1461	264.0	1725	291.0	2016	303.0	2319

Finger 34:	1461	204.0	1725	251.0	2010	265.0	2310
Finger 35:	1512	248.0	1760	267.0	2027	275.0	2302
Finger 36:	1494	257.0	1751	280.0	2031	290.0	2321
Finger 37:	1467	271.0	1738	291.0	2029	299.0	2328
Finger 38:	1544	243.0	1787	258.0	2045	268.0	2313
Finger 39:	1462	265.0	1727	282.0	2009	288.0	2297
Finger 40:	1420	277.0	1697	295.0	1992	307.0	2299

Segmented Cement Bond Log Calibration Report

Serial Number:	10013454
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	5.500 in
Calibration Depth:	6.940 ft

Master Calibration, performed Mon May 04 12:12:54 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.001	0.621	1.000	71.921	113.892	1.139
5FT	-0.002	0.720	1.000	71.921	98.140	1.240
S1	-0.001	0.561	0.000	100.000	177.724	0.217
S2	-0.004	0.672	0.000	100.000	148.100	0.528
S3	-0.002	0.653	0.000	100.000	152.543	0.372
S4	-0.004	0.526	0.000	100.000	188.808	0.685
S5	-0.001	0.560	0.000	100.000	177.964	0.261
S6	-0.003	0.634	0.000	100.000	157.004	0.470
S7	-0.002	0.657	0.000	100.000	151.755	0.354
S8	-0.002	0.679	0.000	100.000	146.837	0.265

Temperature Calibration Report

Serial Number:	10025097
Tool Model:	UW_PRT_016
Performed:	Wed Feb 11 13:44:44 2015

Point #	Reading	Reference
1	13053.00 cps	68.00 degF
2	18014.00 cps	104.00 degF
3	29668.00 cps	176.00 degF
4	41181.00 cps	248.00 degF
5	52983.00 cps	320.00 degF
6	58931.00 cps	356.00 degF
7	cps	degF
8	cps	degF
9	cps	degF
10	cps	degF

Gamma Ray Calibration Report

Serial Number:	10024770
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	Vollmar 3N-11HZ
Field	Wattenberg
County	Weld
State	Colorado