

Radial Cement Bond Gamma Ray Casing Collar Log

Company Kerr-McGee Oil & Gas OnShore L.P.
Well Barclay 3N-14HZ
Field Wattenberg
County Weld
State Colorado

Company Kerr-McGee Oil & Gas OnShore L.P.
Well Barclay 3N-14HZ
Field Wattenberg
County Weld
State Colorado

Location: API #: 05-123-39059
SEC 14 TWP 2N RGE 67W
Permanent Datum Ground Level Elevation 4933'
Log Measured From Kelly Bushing 16 FT
Drilling Measured From Kelly Bushing
Other Services
Gauge Ring
MIT
Elevation
K.B. 4949'
D.F. 4948'
G.L. 4933'

Date	8-June-2015
Run Number	Two
Depth Driller	12460 FT
Depth Logger	7329 FT
Bottom Logged Interval	7324 FT
Top Log Interval	Surface
Open Hole Size	8-3/4"
Type Fluid	Water
Density / Viscosity	8.34lbm/gal
Max. Recorded Temp.	231°F
Estimated Cement Top	66 FT
Time Well Ready	ROA
Time Logger on Bottom	10:30
Equipment Number	HD-0340
Location	Ft. Lupton, CO
Recorded By	Zach Fisher
Witnessed By	DJ Anderson

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	1125 FT		
Intermediate #1	7	26	HCP-110	Surface	7709 FT		
Intermediate #2							
Liner	4 1/2	11.6	HCP-110	6690 FT	12406 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.

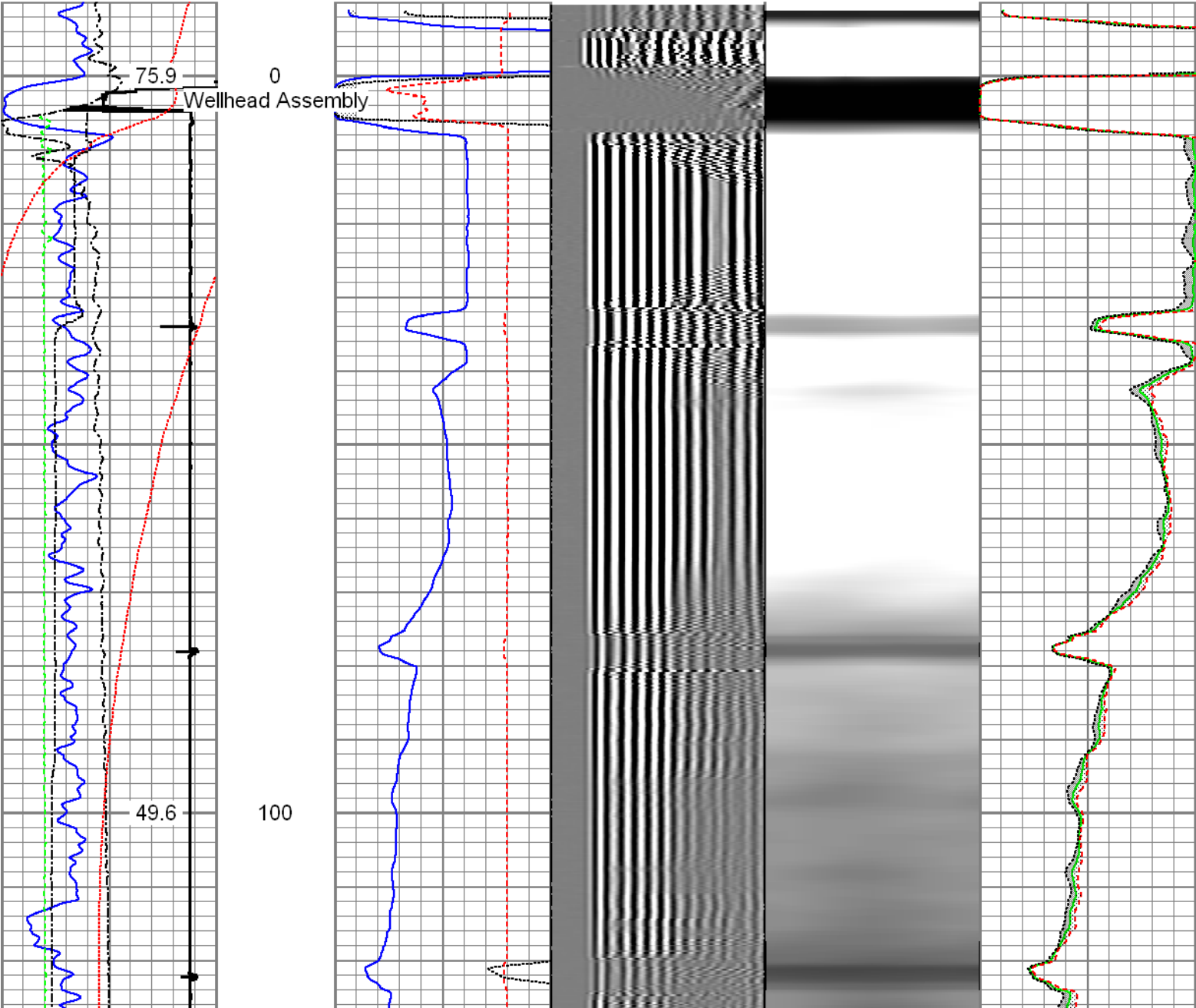
Comments

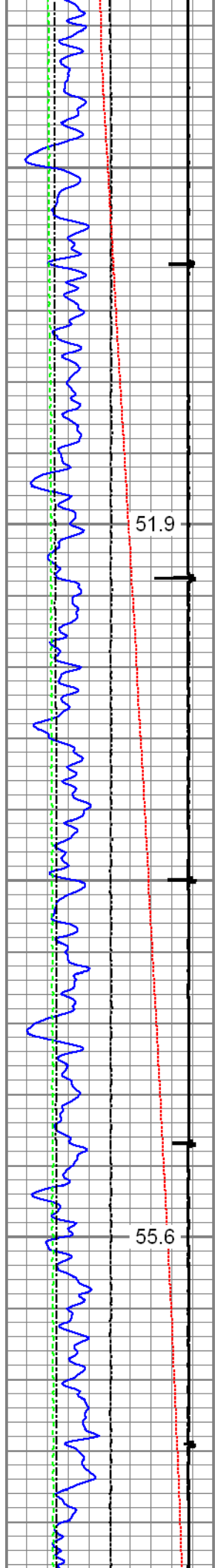
Log ran as per customer request.
Depth referenced to casing tally reported liner top at 6690 FT.
Adjusted log -7 FT to correlate with liner top.
Gauge Ring/Junk Basket run to 7320 FT had no debris prior to log run.
Log ran from as deep as possible to surface.
No debris found on logging tools after run.

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

Database File: rbl_0512339059_anadarko_barclay 3n-14hz_06-08-15_mit_rbl.db
Dataset Pathname: main2.1
Presentation Format: rbt4_mit
Dataset Creation: Mon Jun 08 13:17:32 2015 by Calc 7.0 B1
Charted by: Depth in Feet scaled 1:240

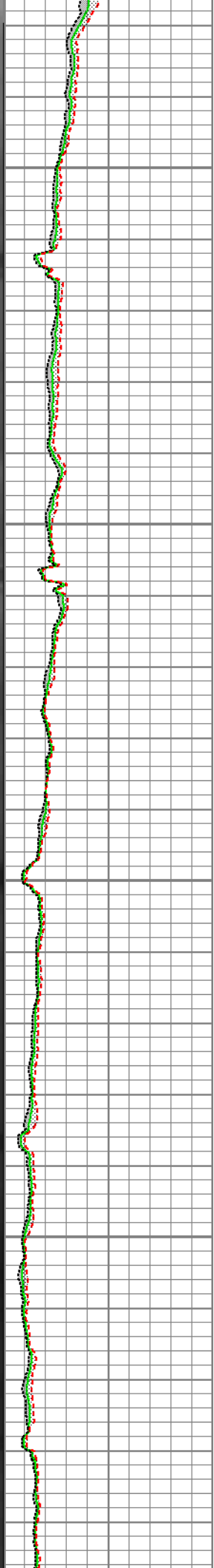
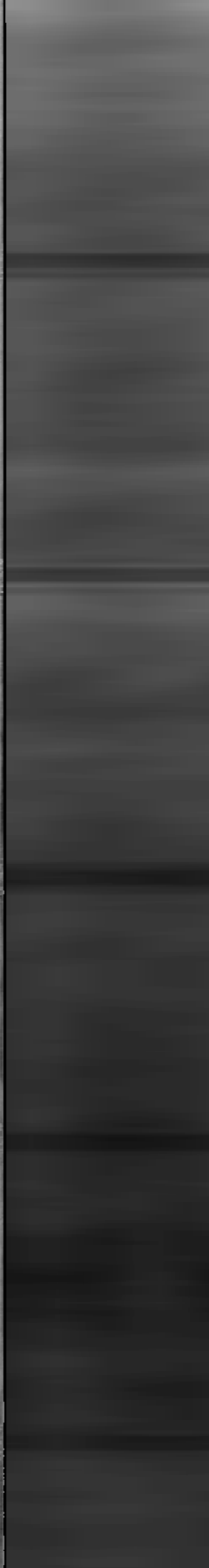
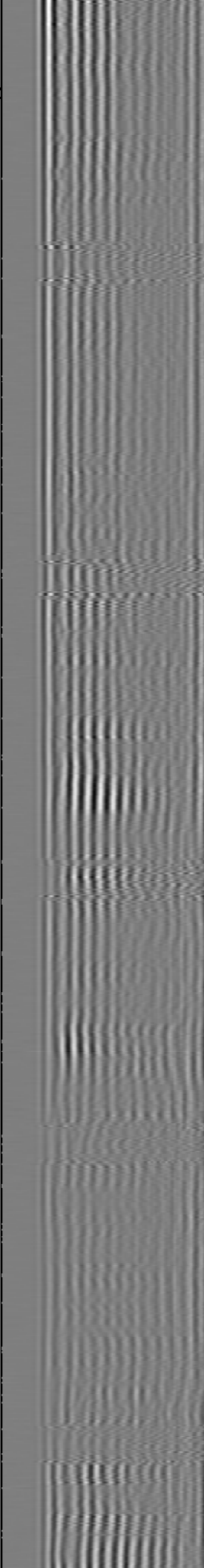
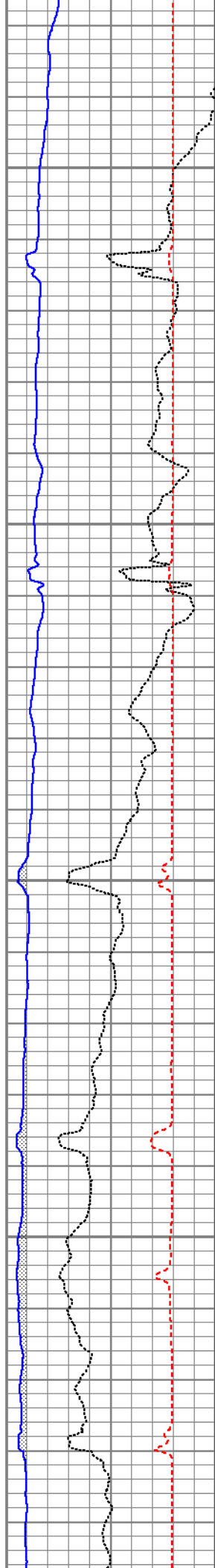
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000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

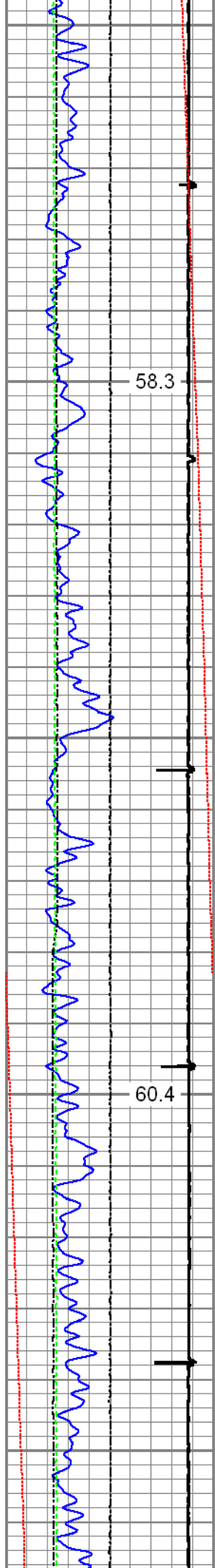




200

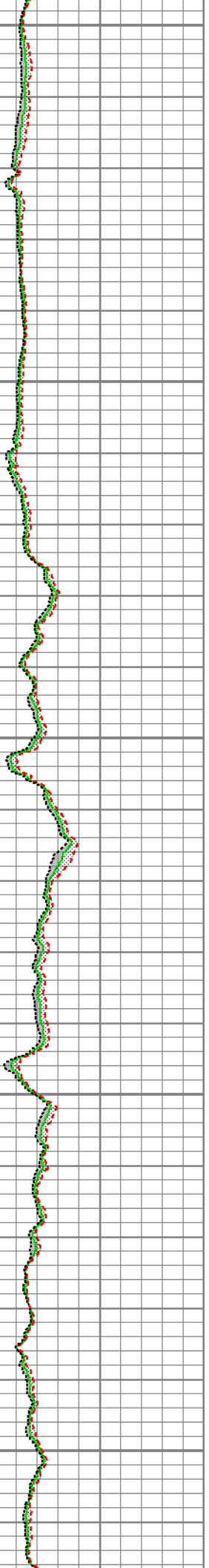
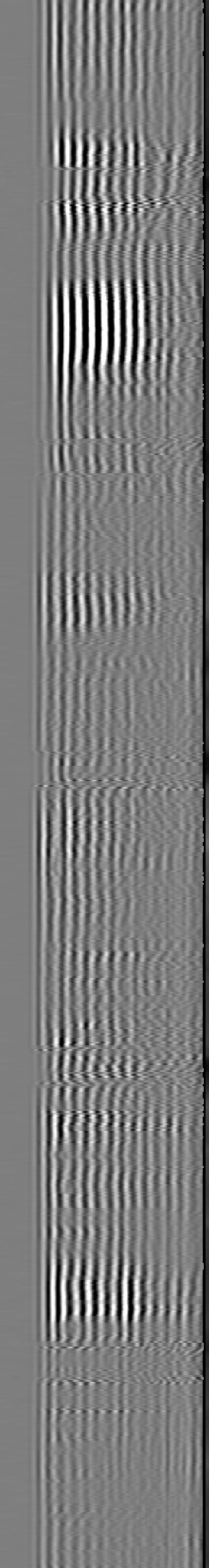
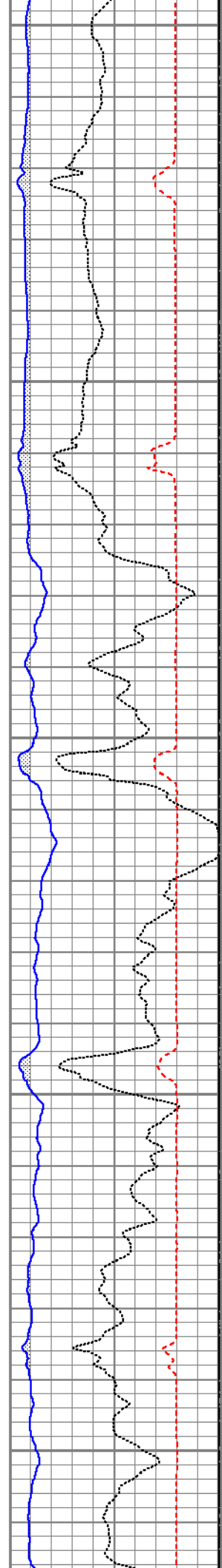
300

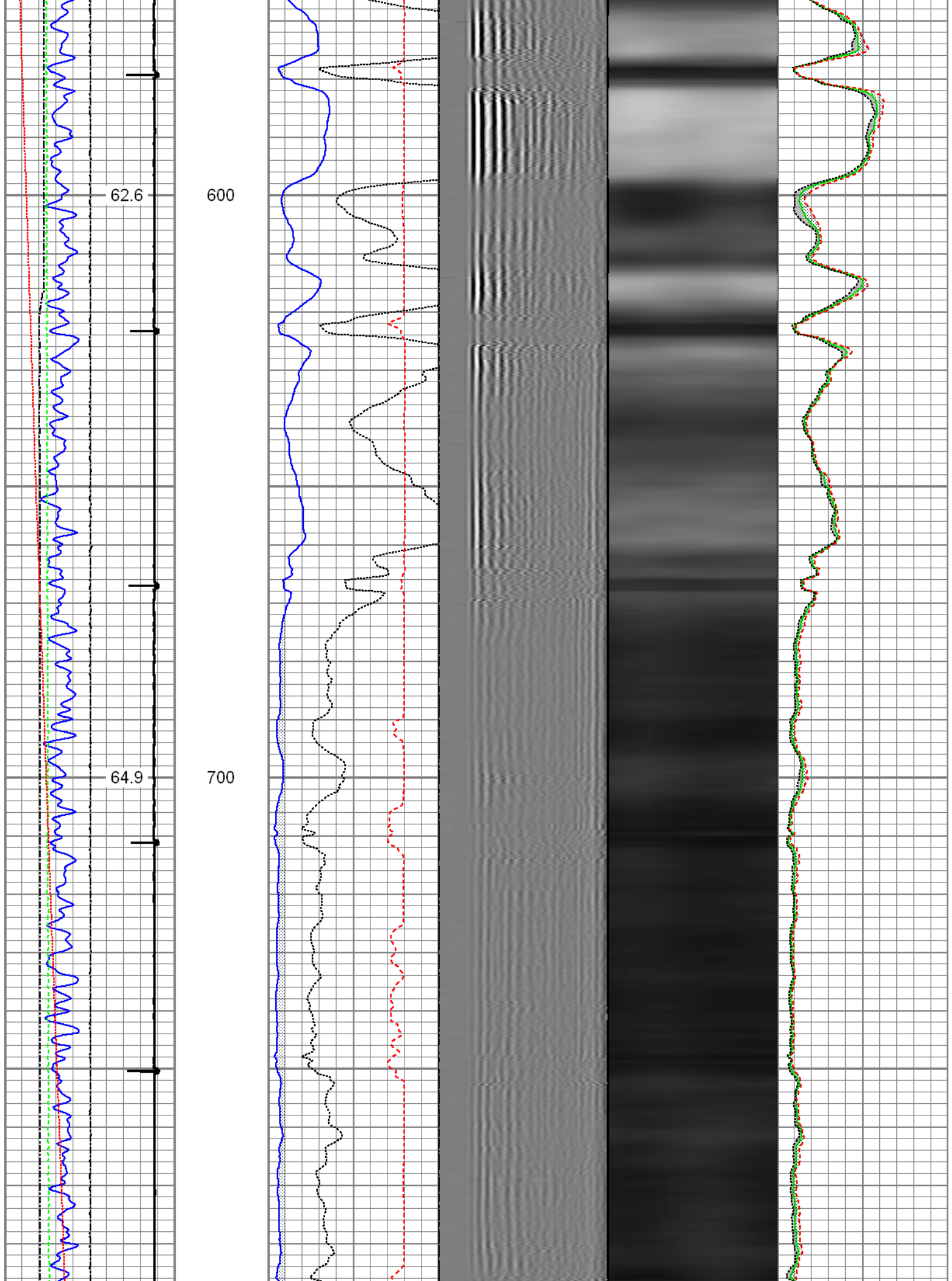


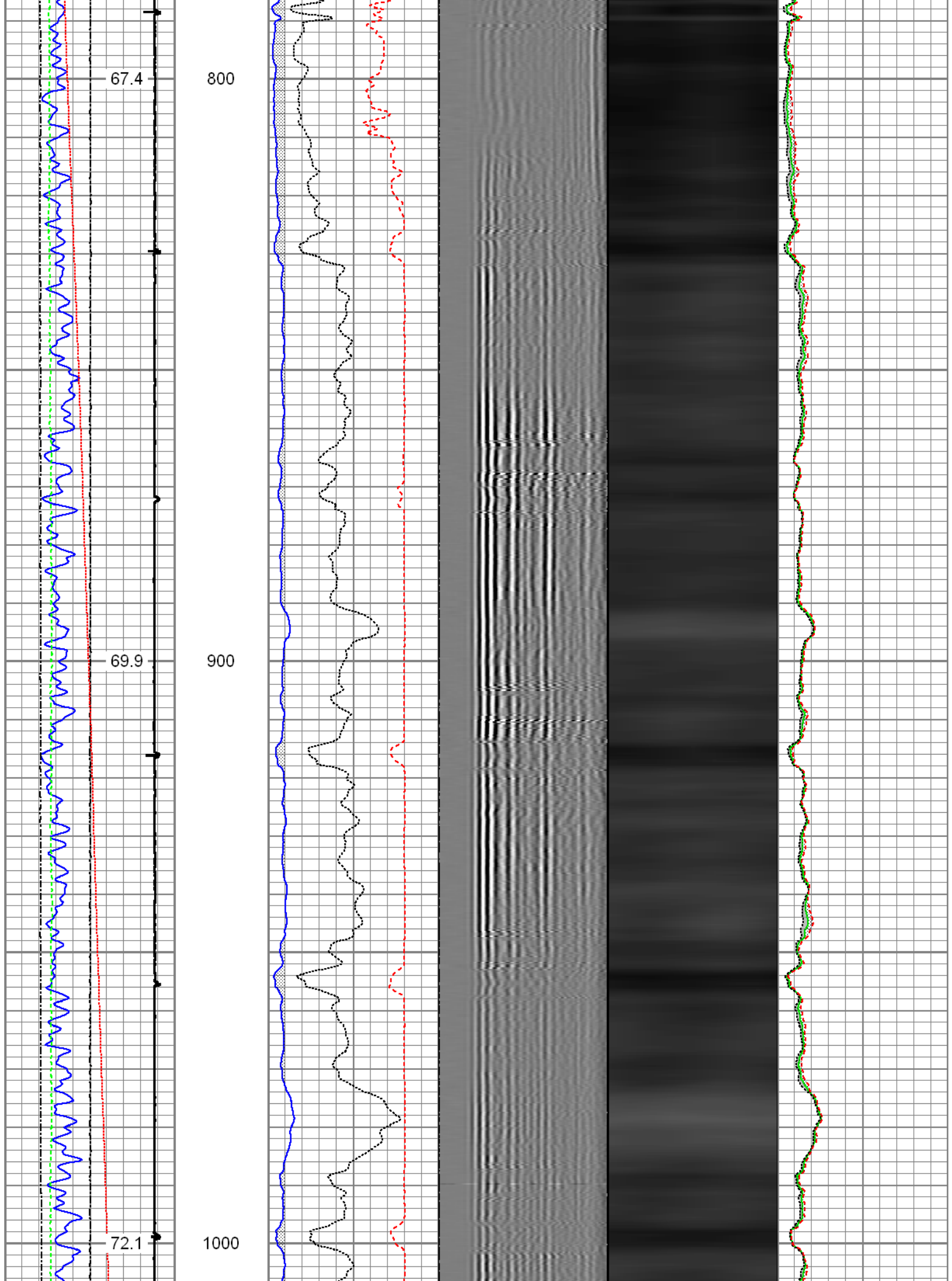


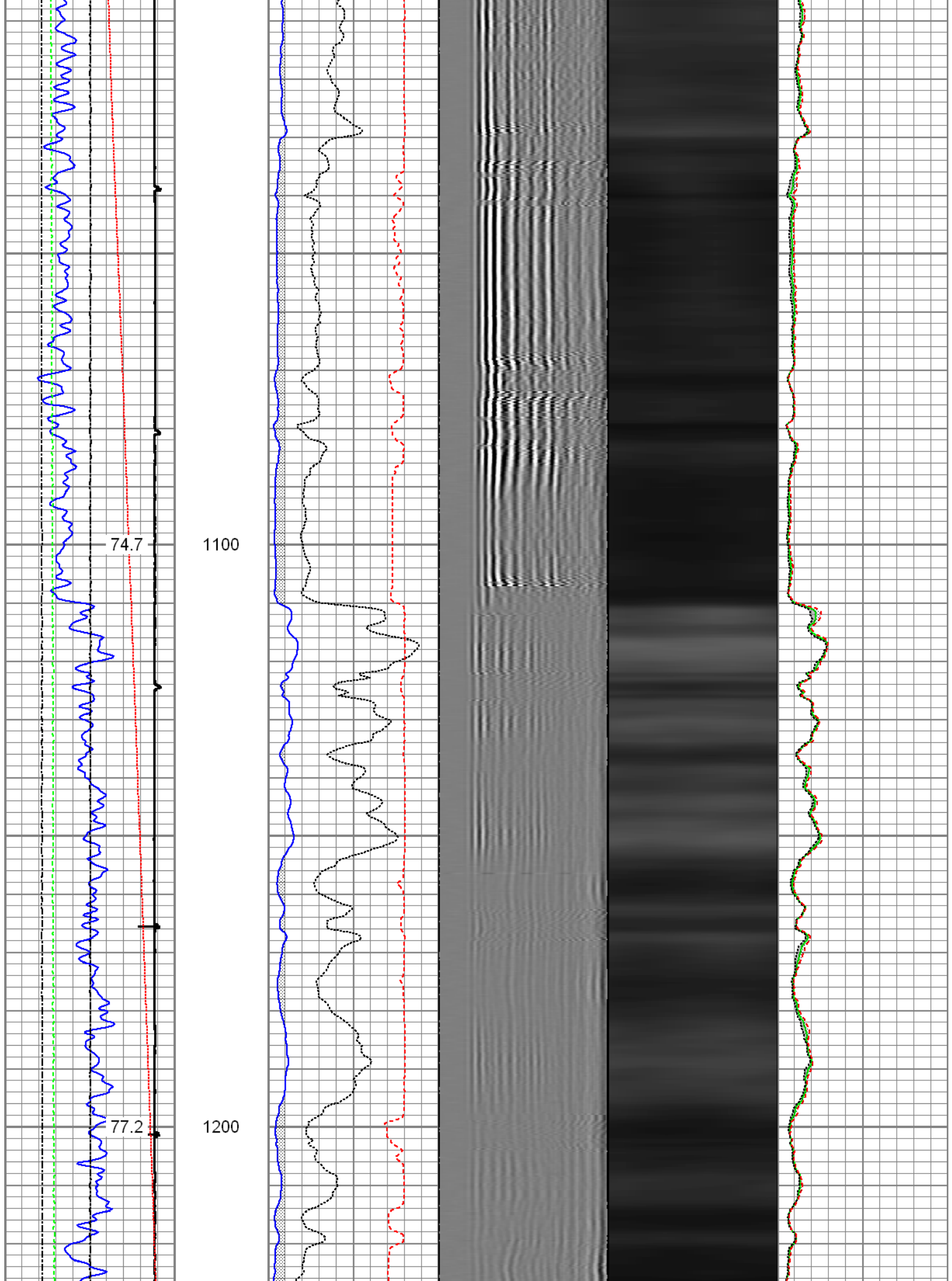
400

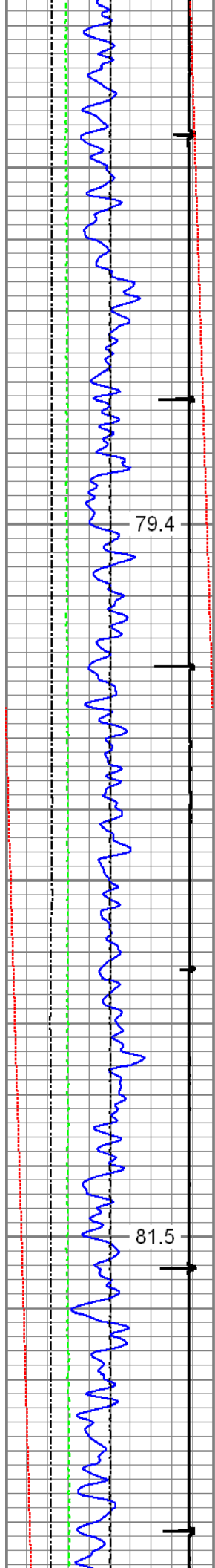
500









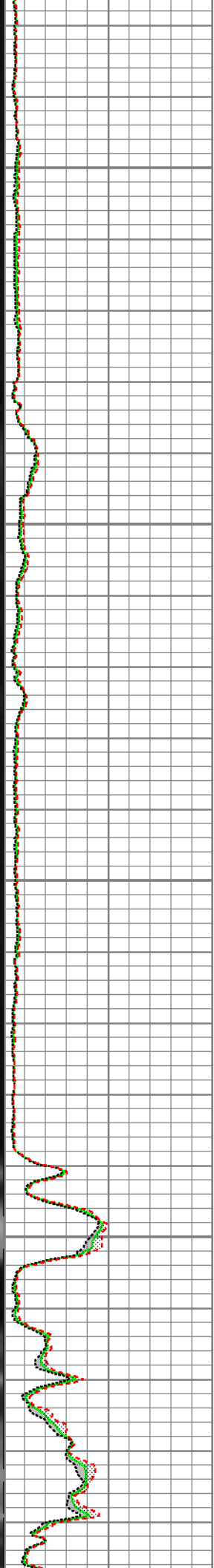
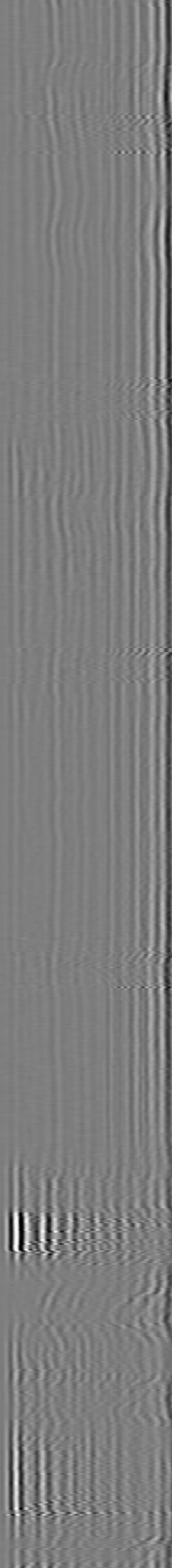
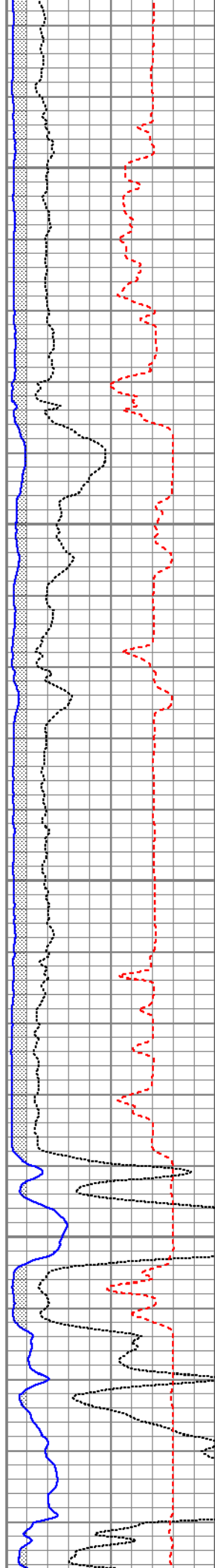


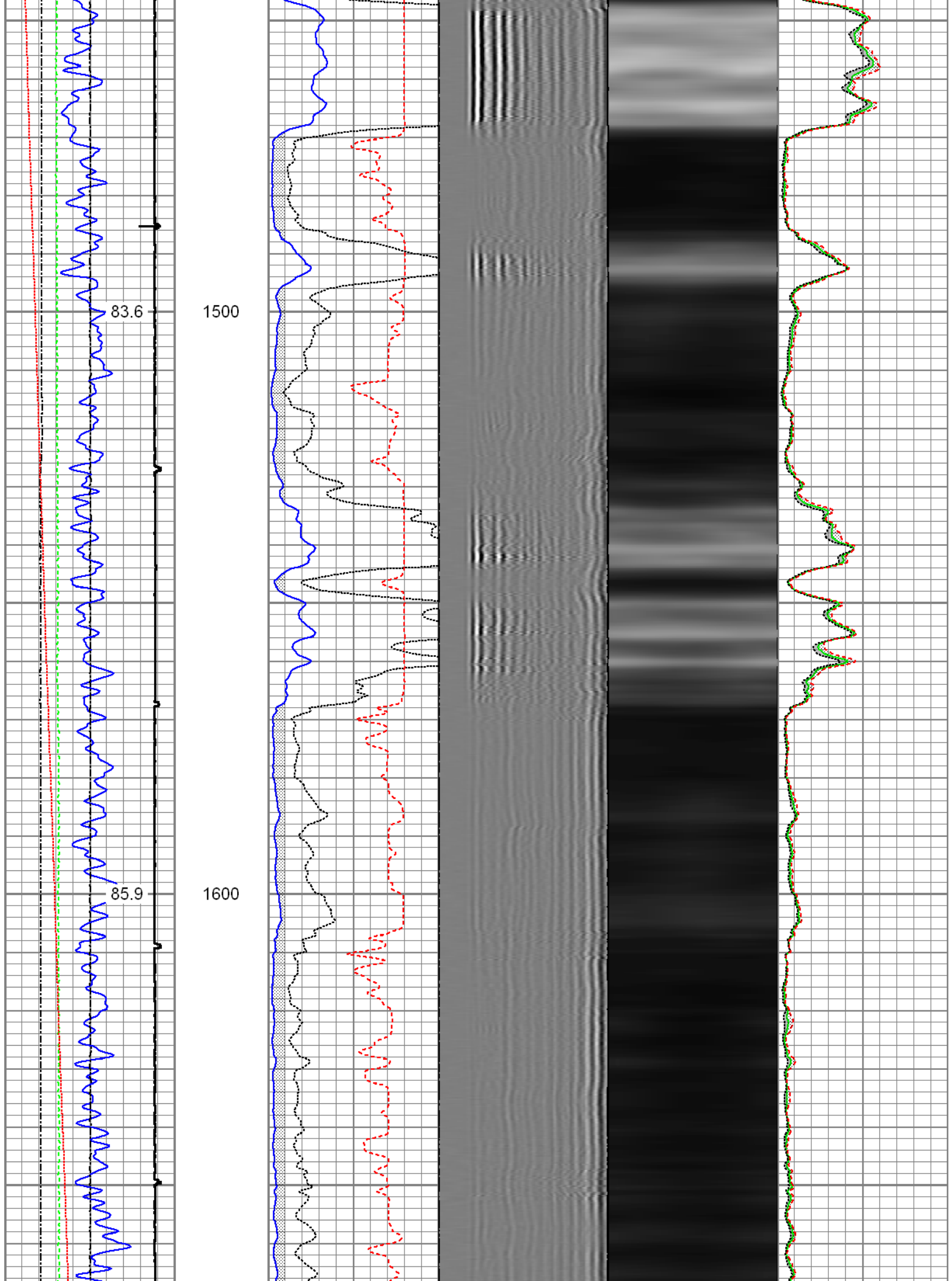
79.4

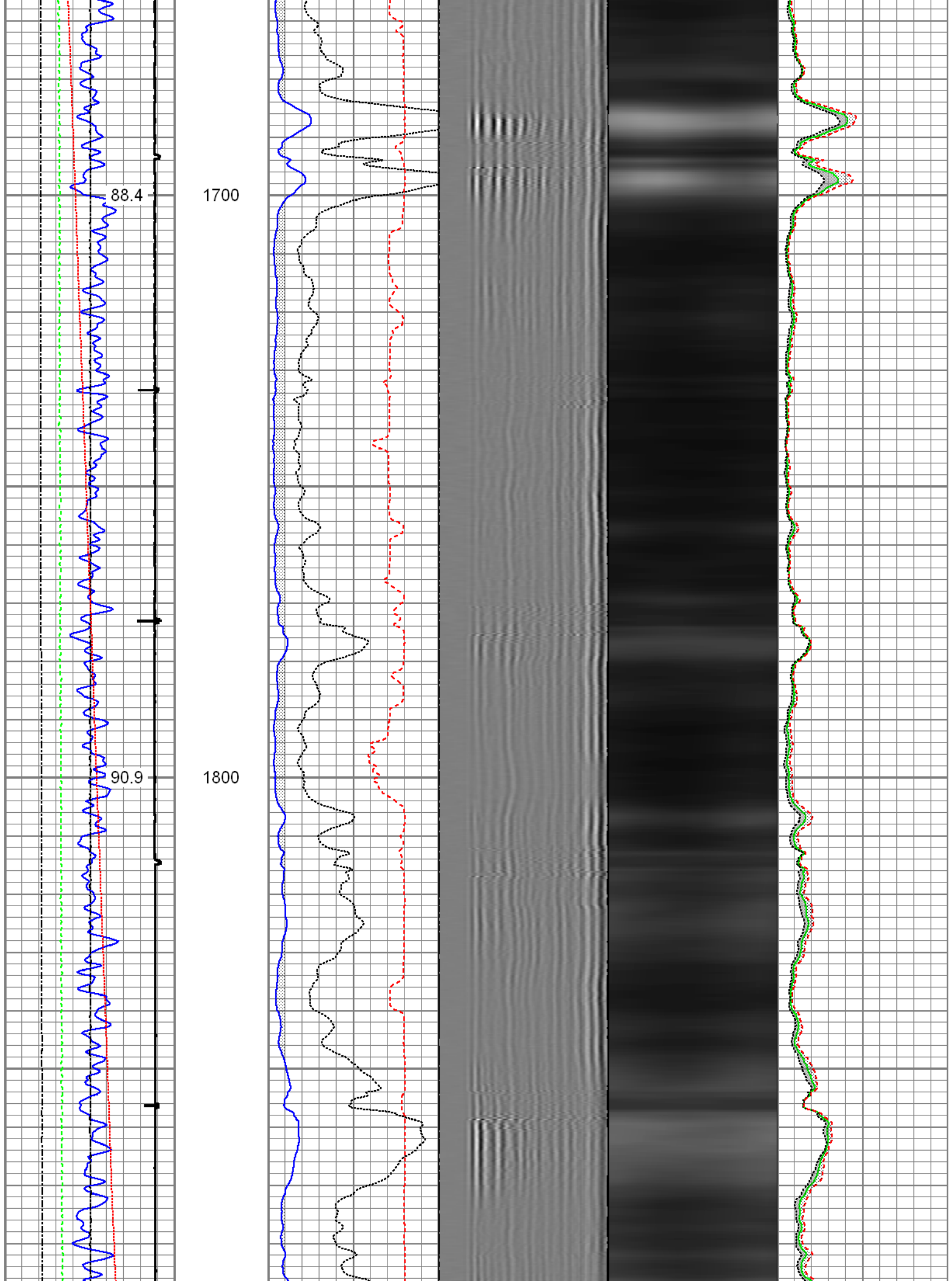
81.5

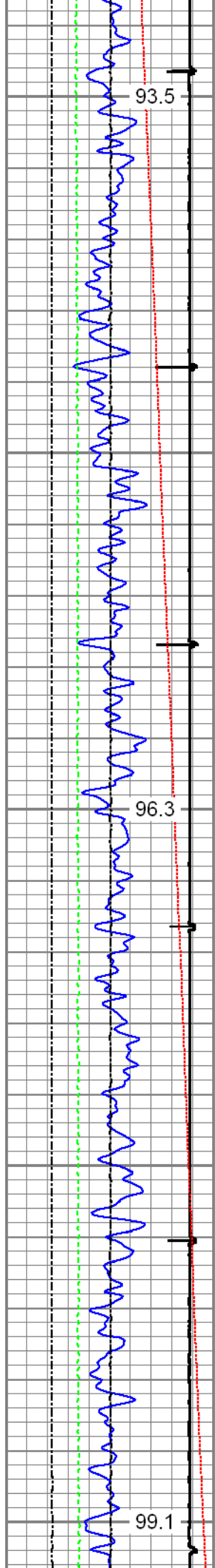
1300

1400





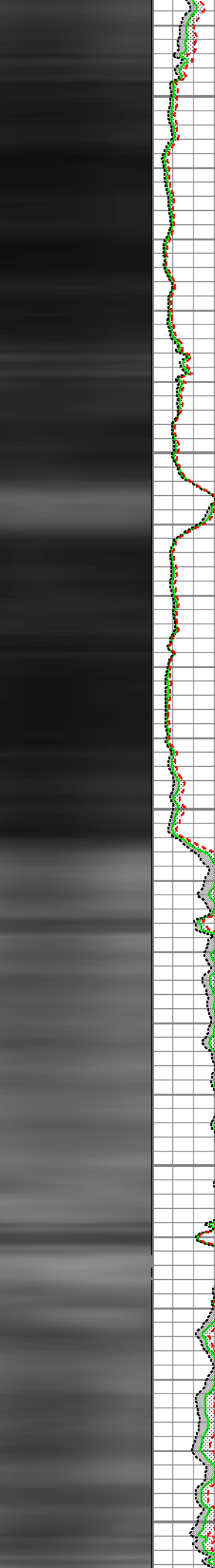
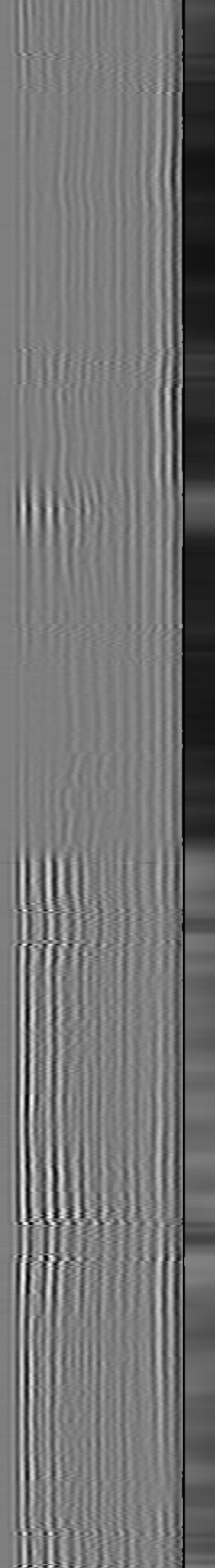
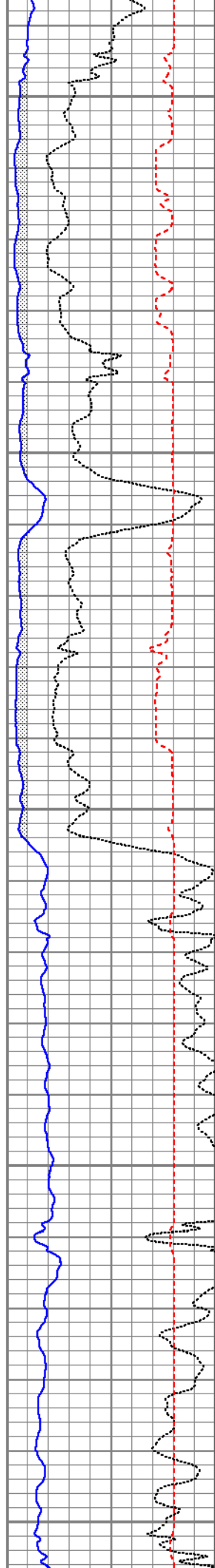


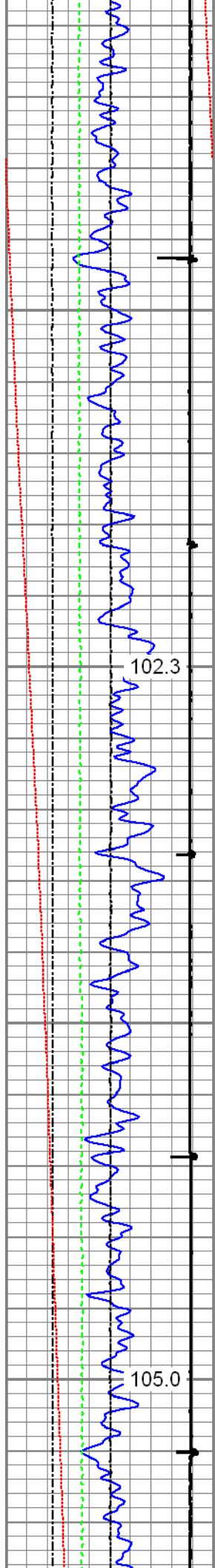


1900

2000

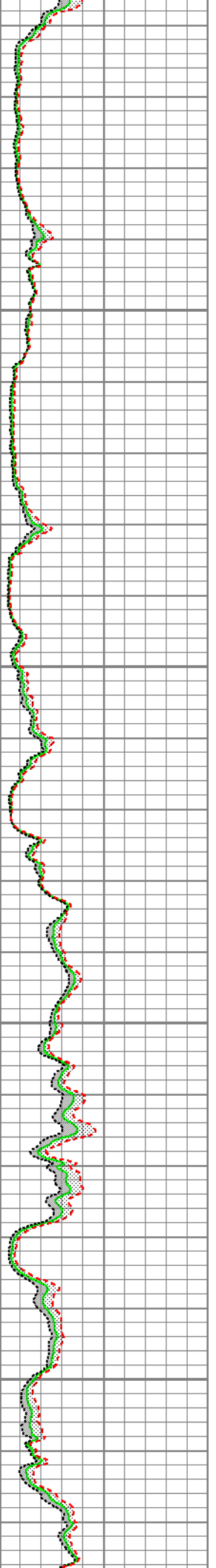
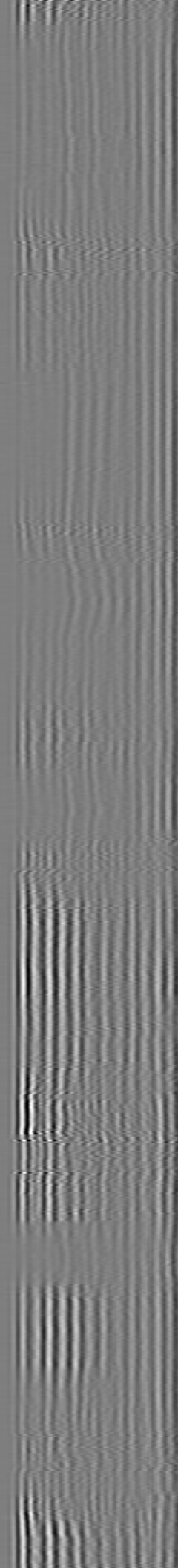
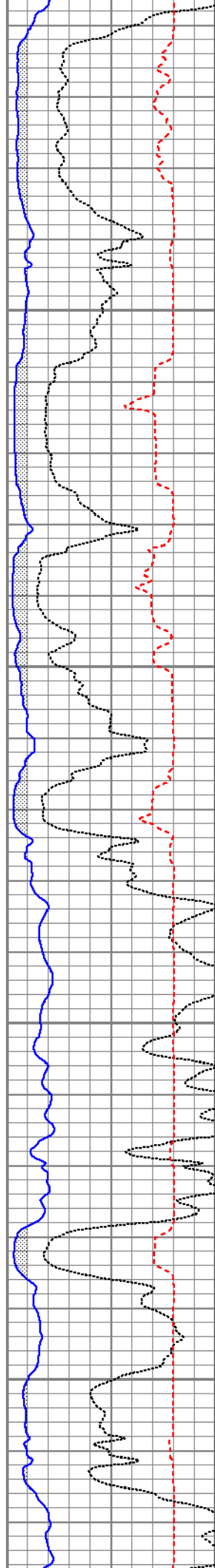
2100

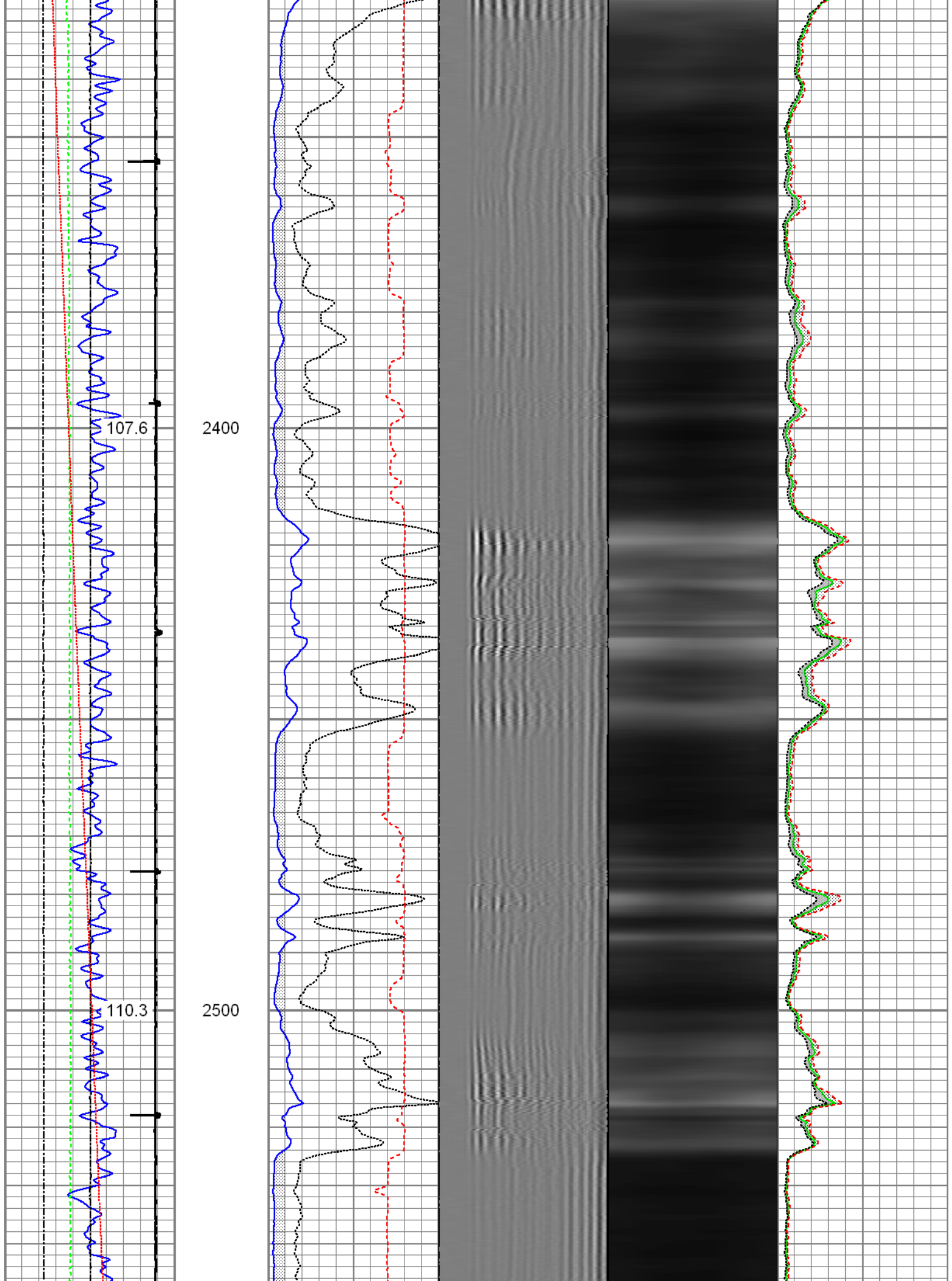


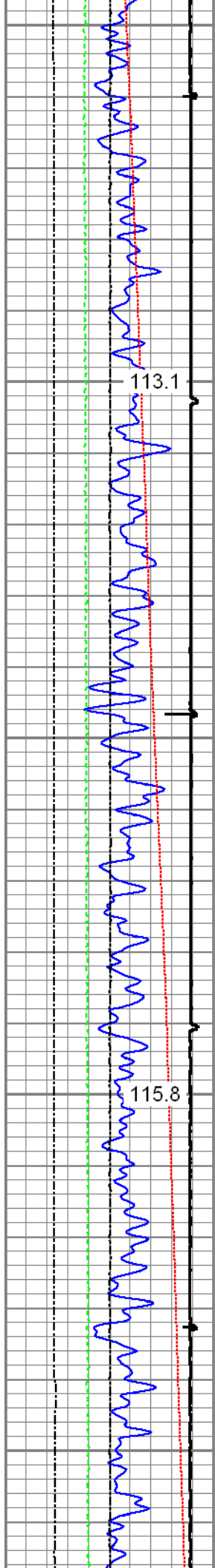


2200

2300





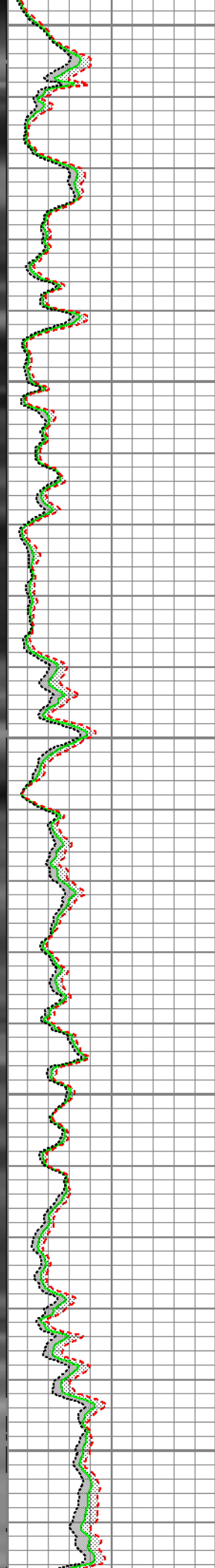
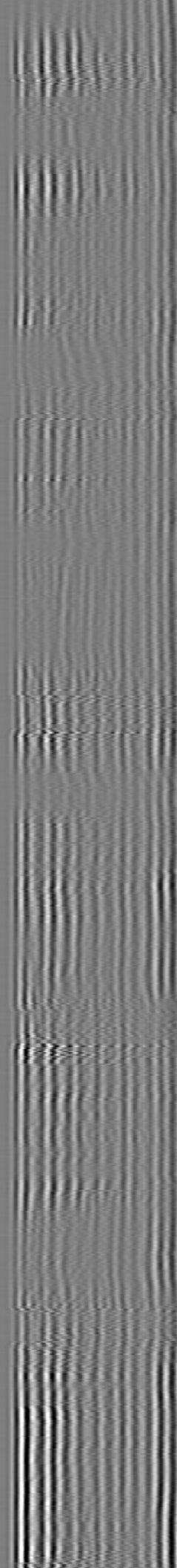
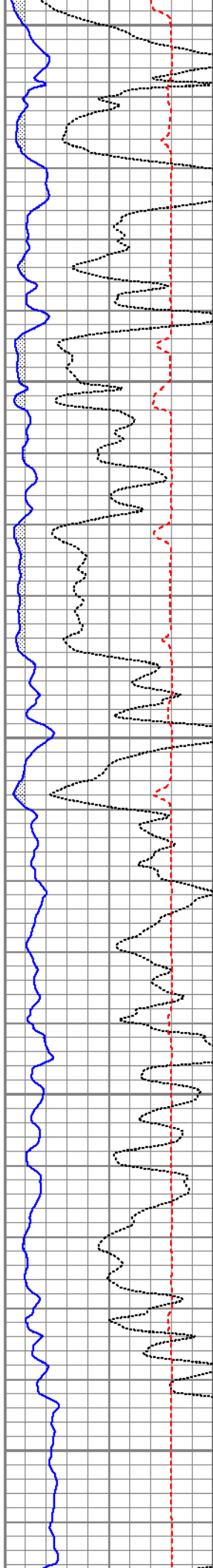


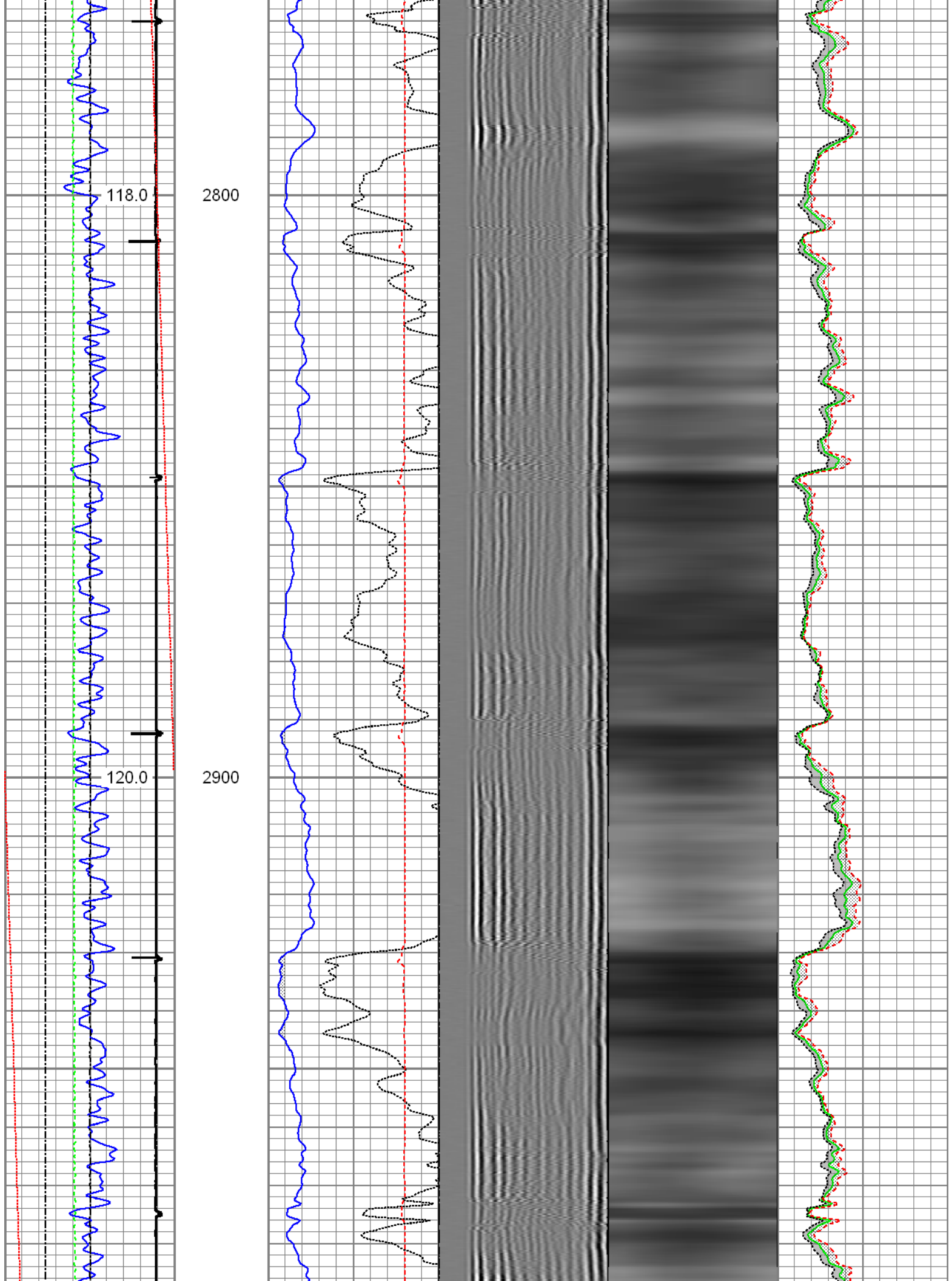
113.1

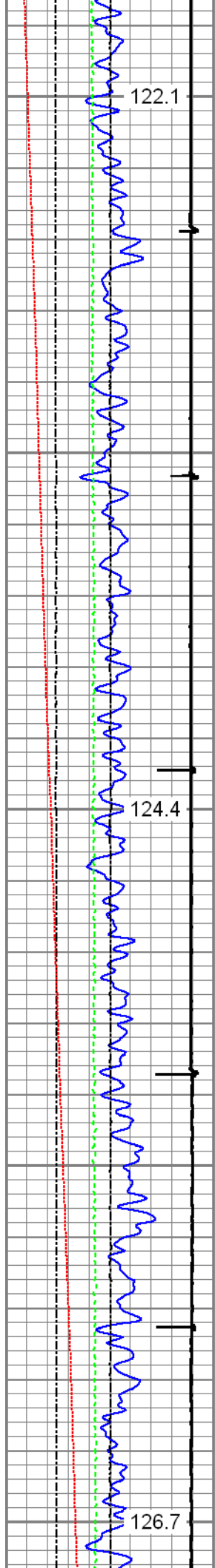
2600

115.8

2700



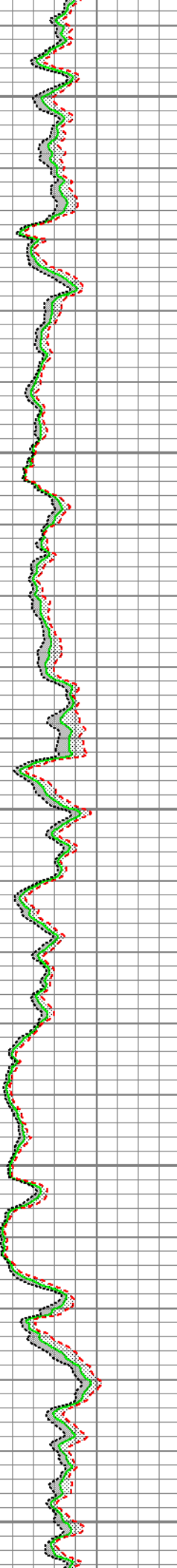
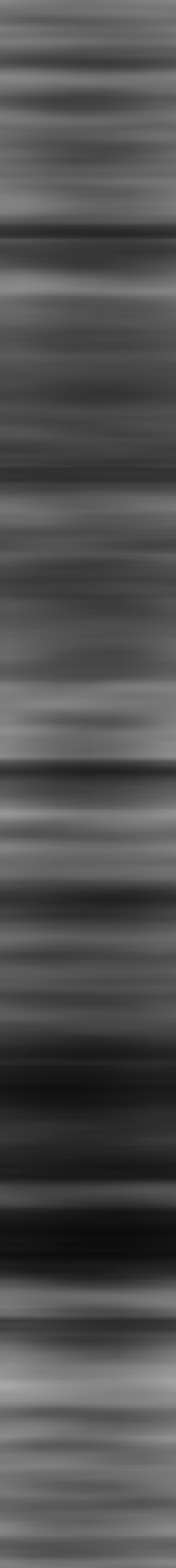
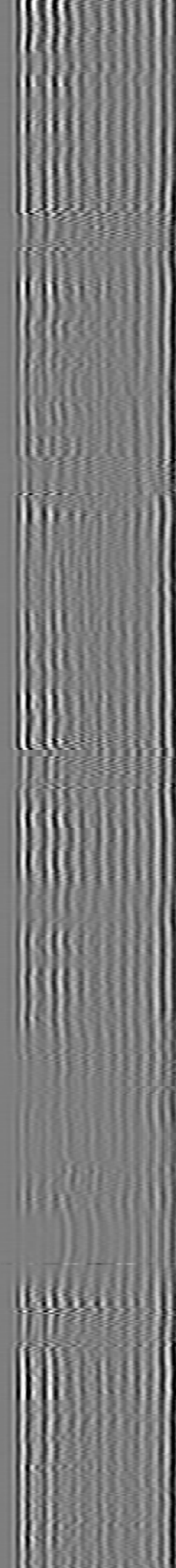
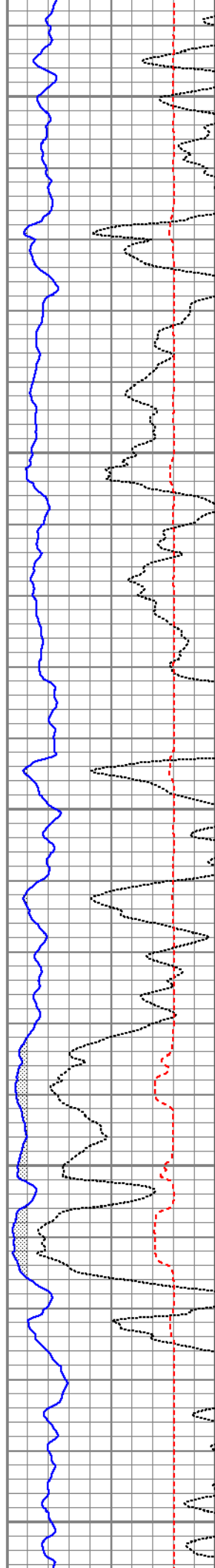


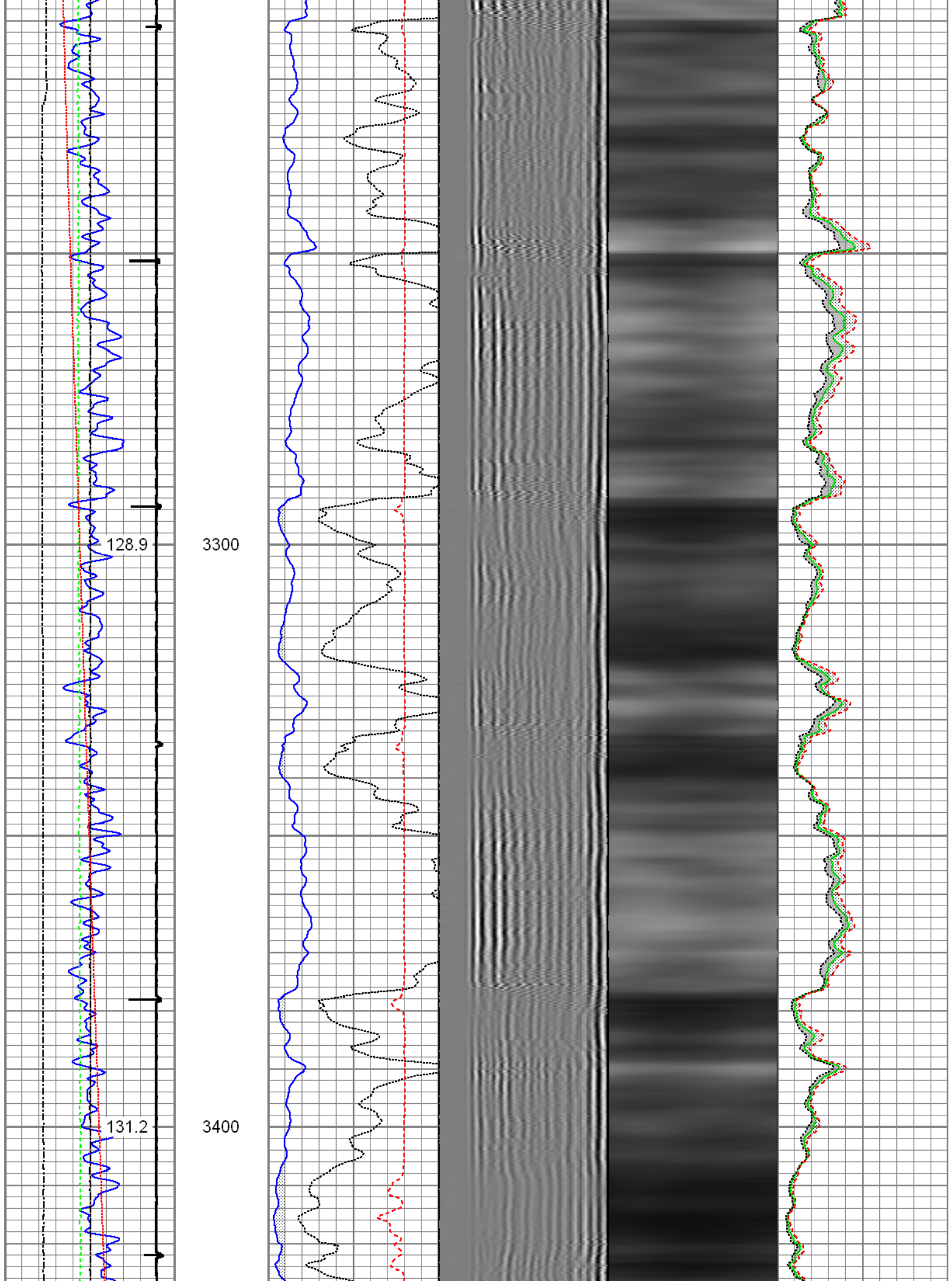


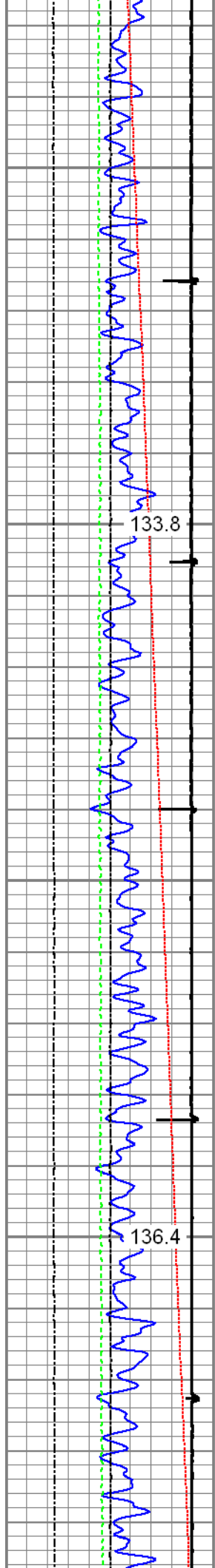
3000

3100

3200

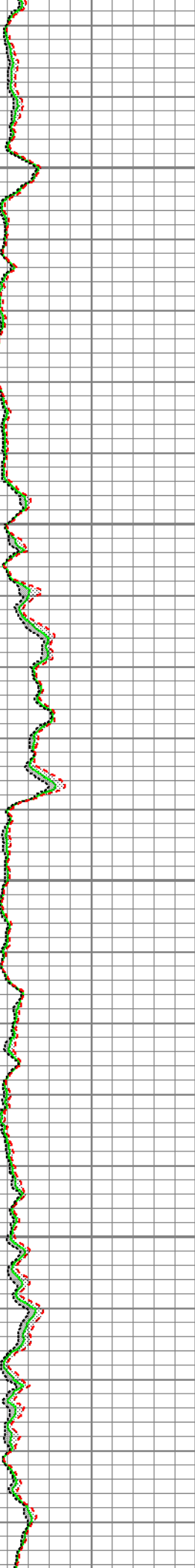
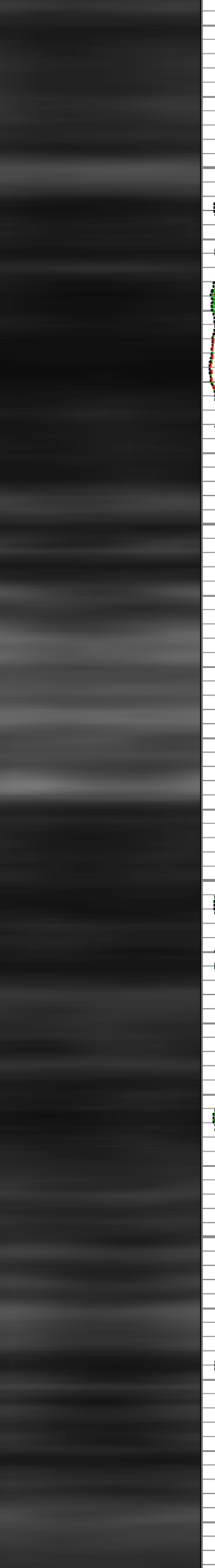
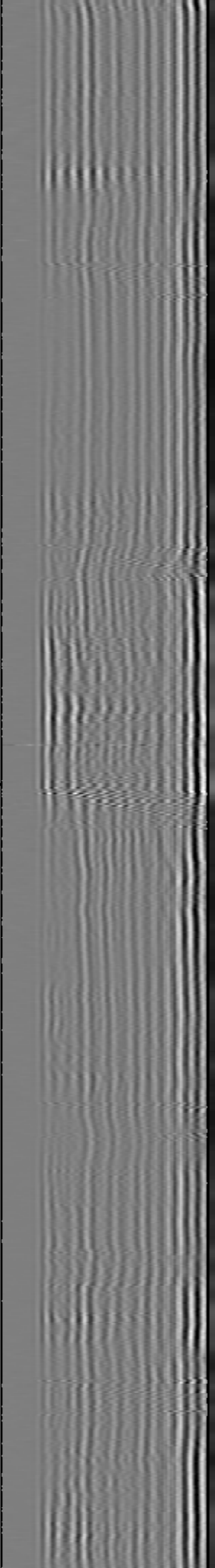
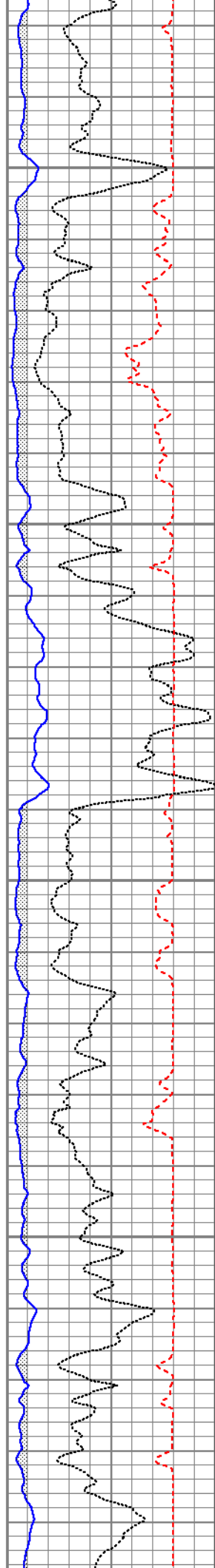


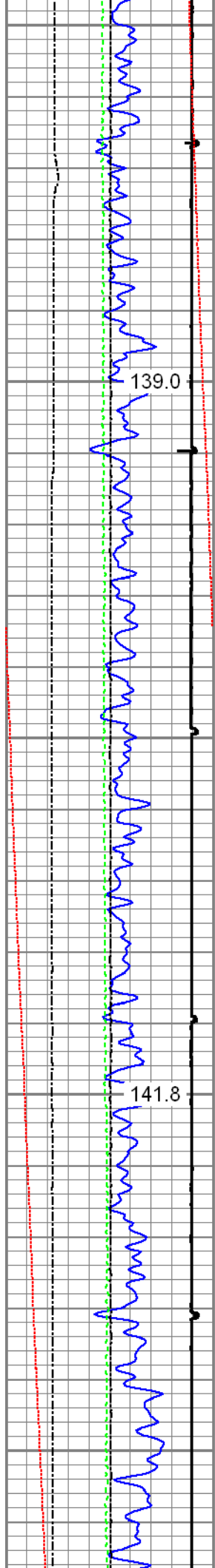




3500

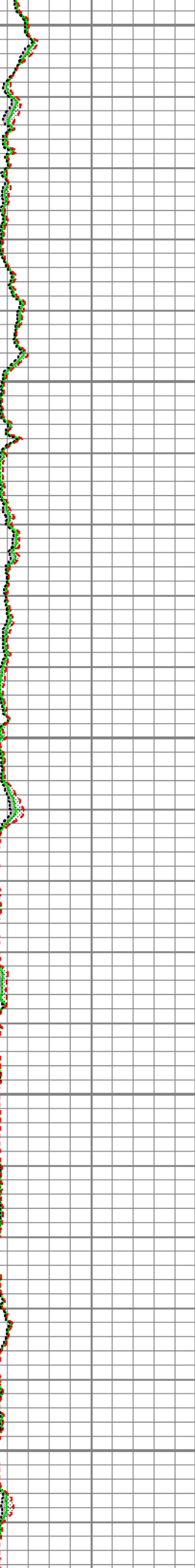
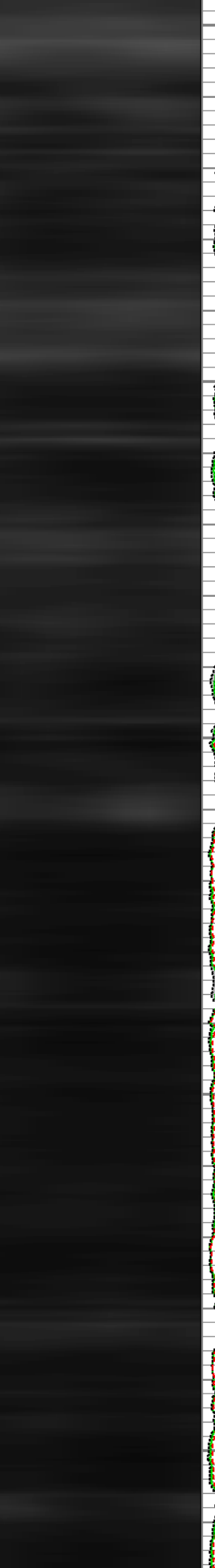
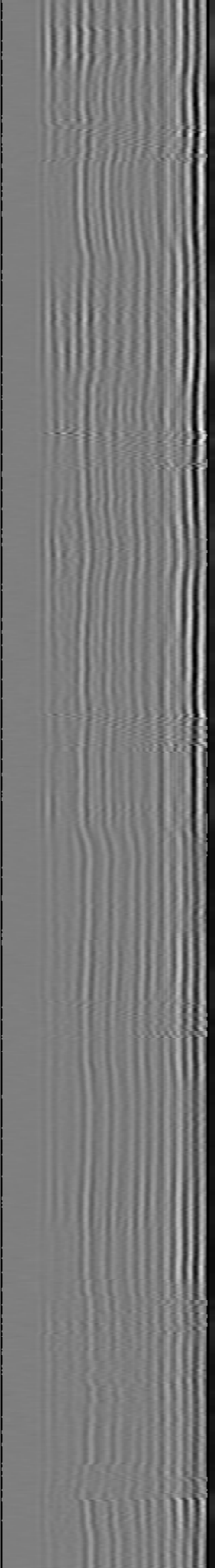
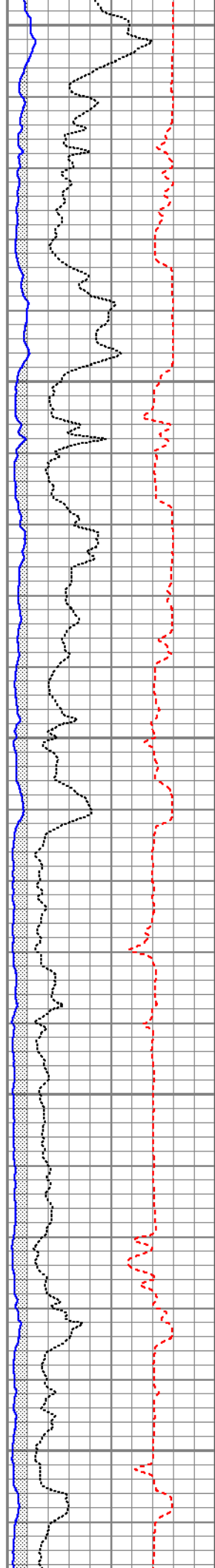
3600

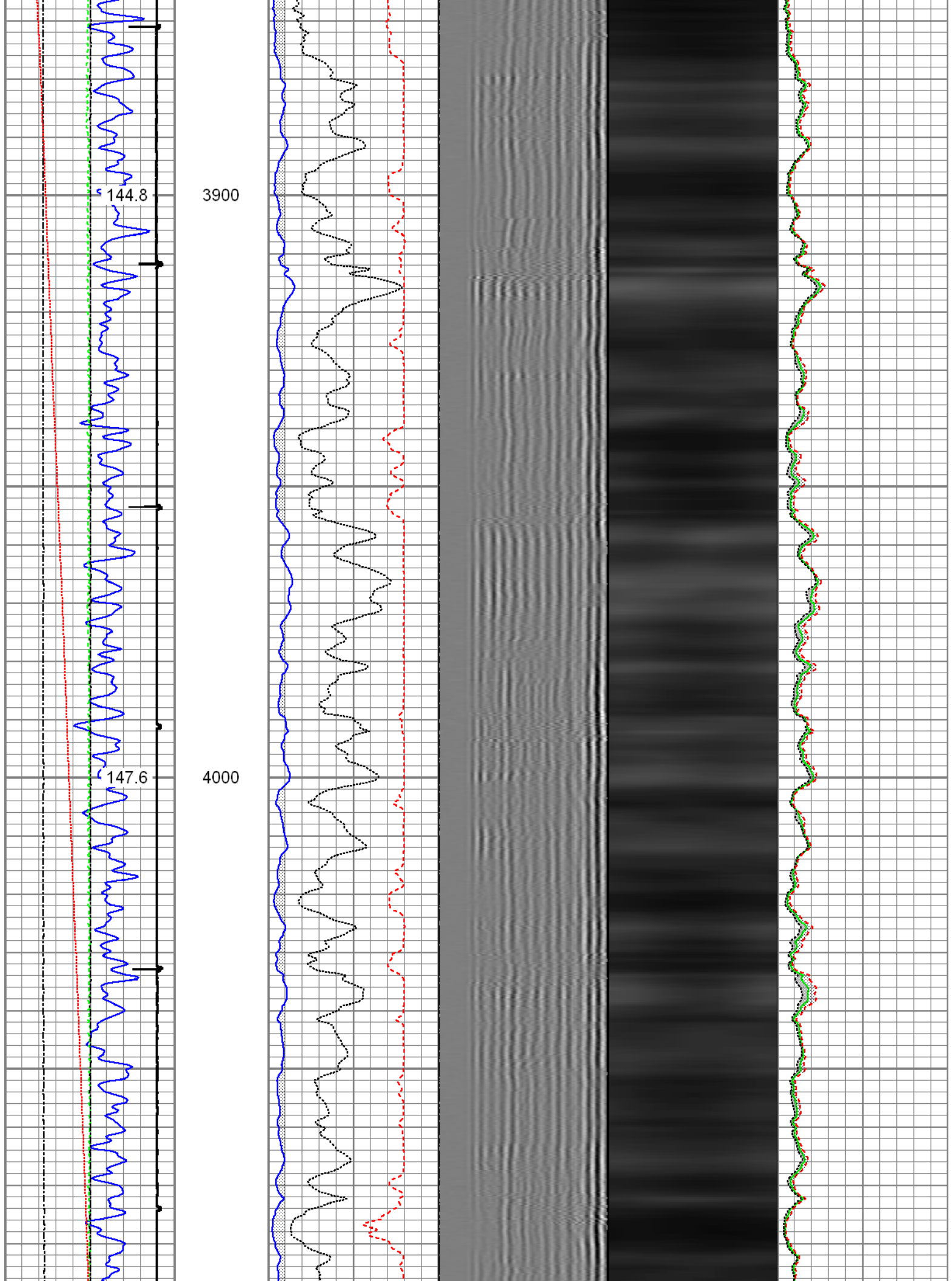


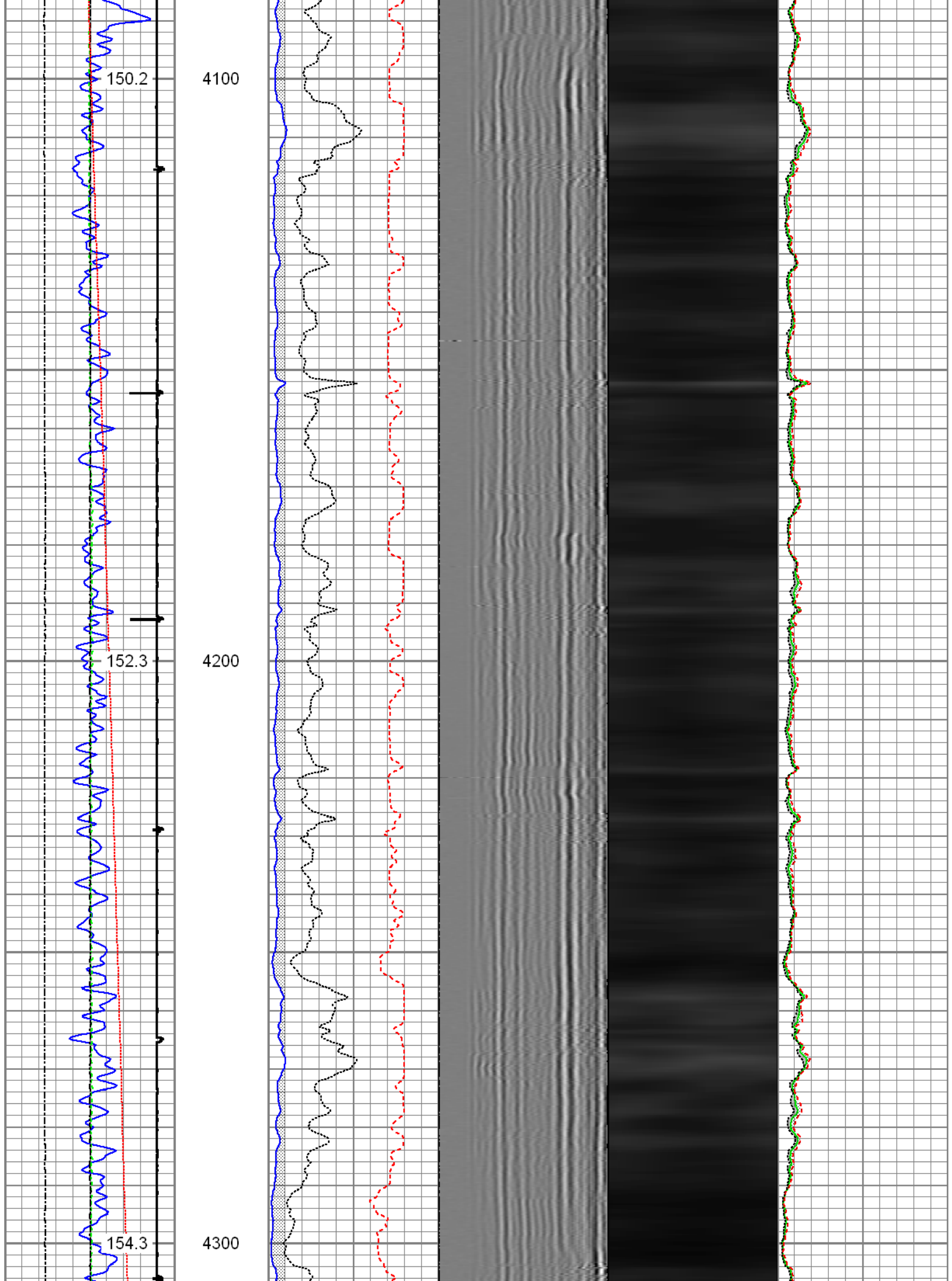


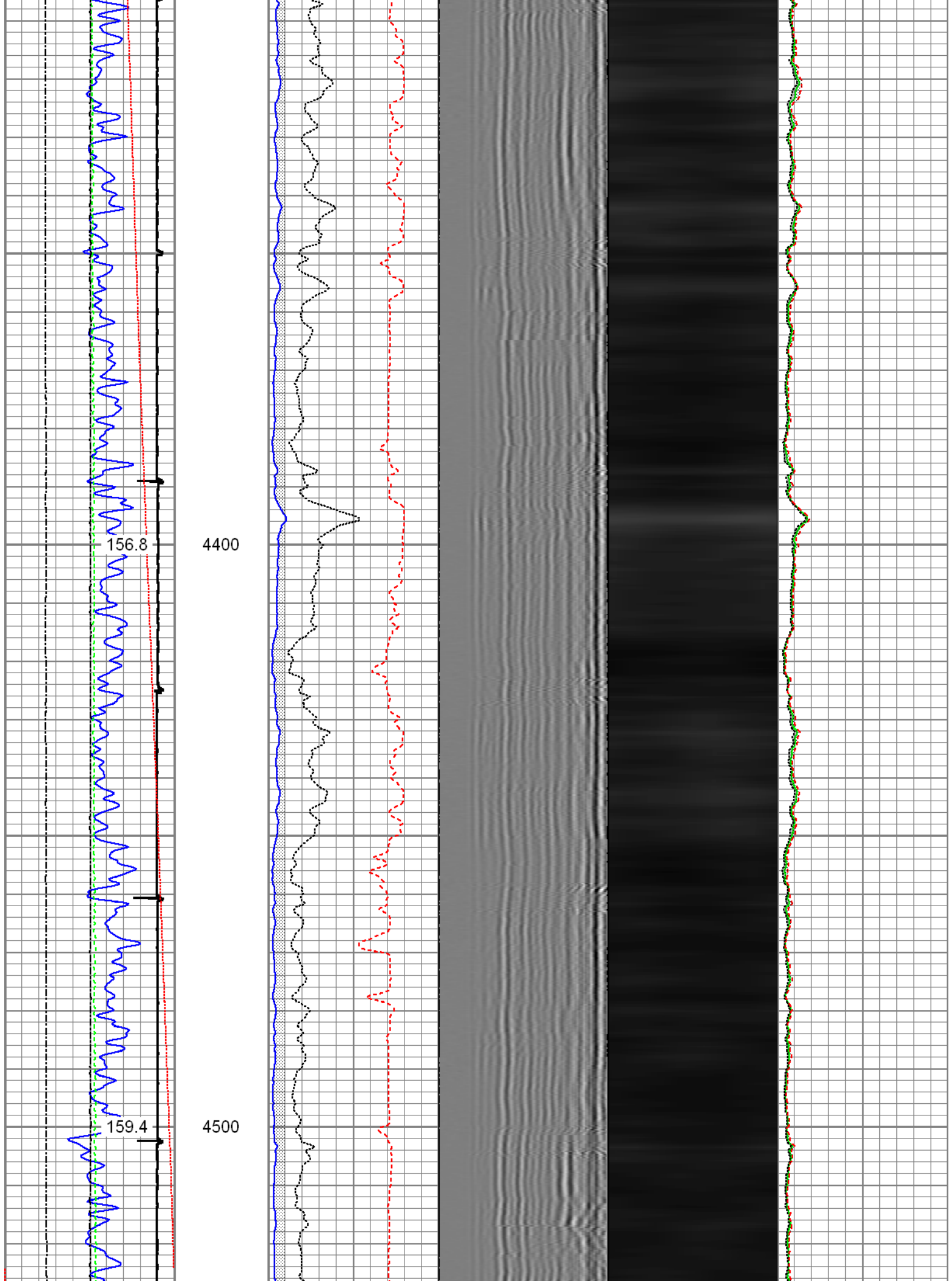
3700

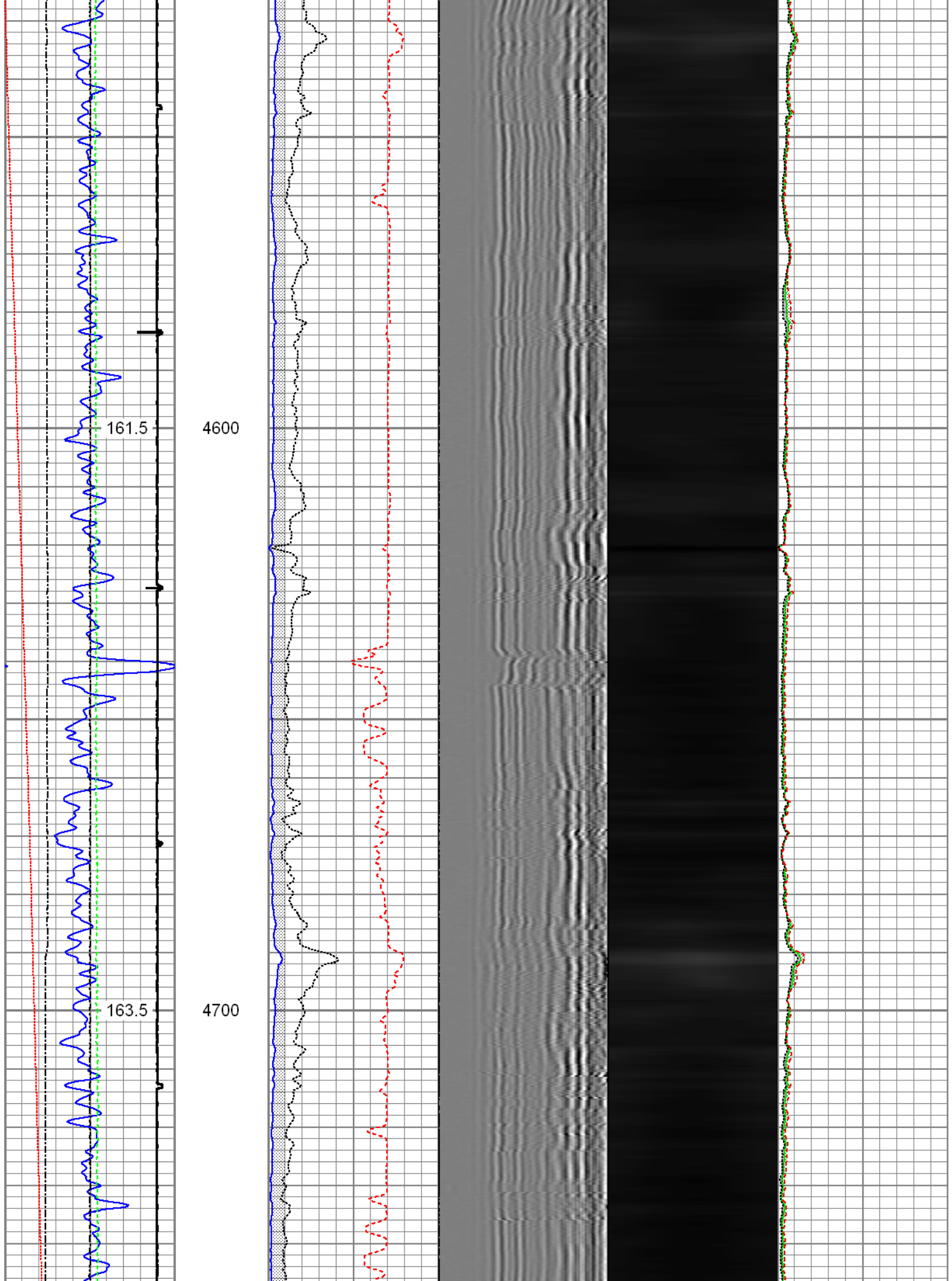
3800

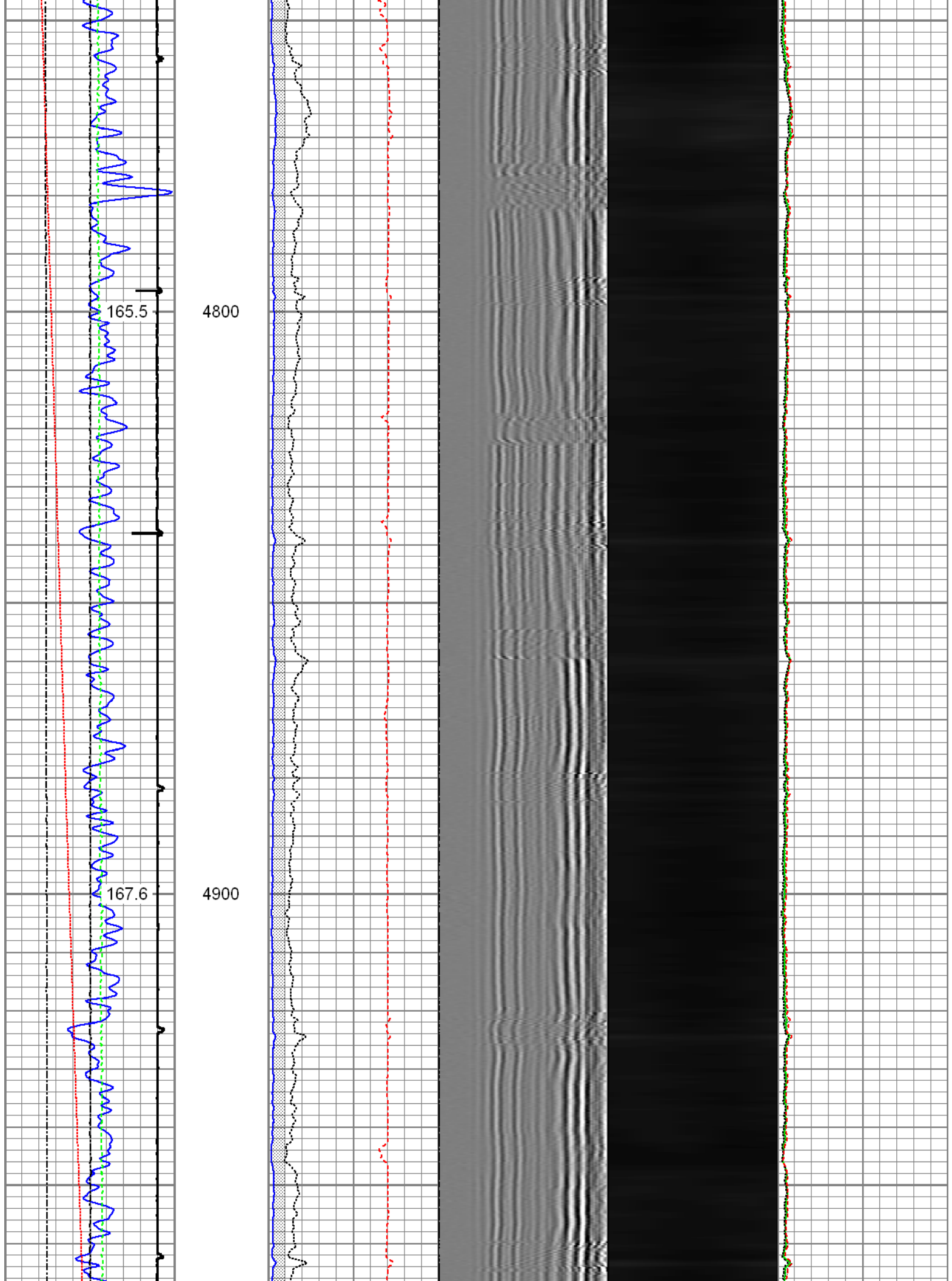


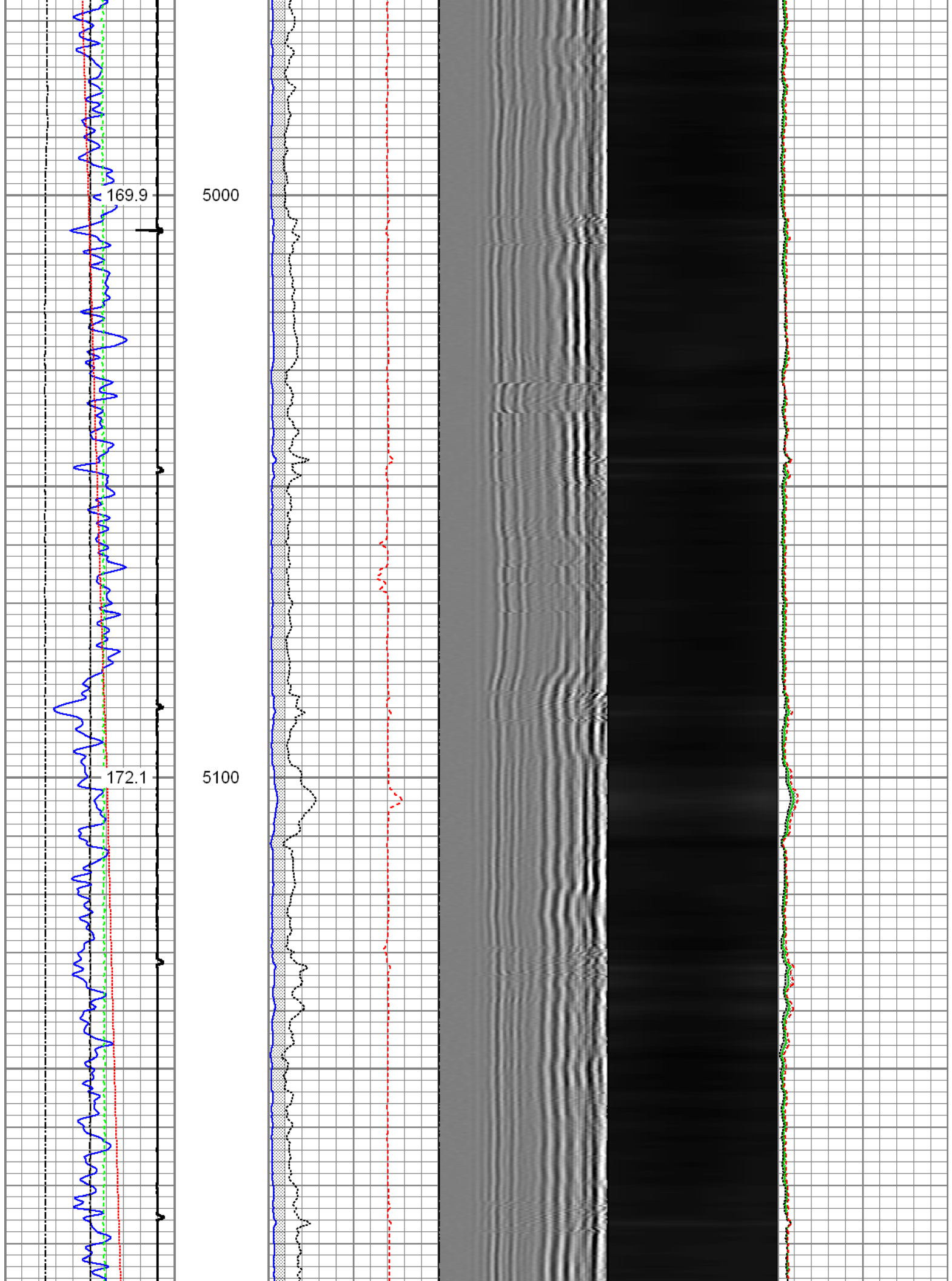


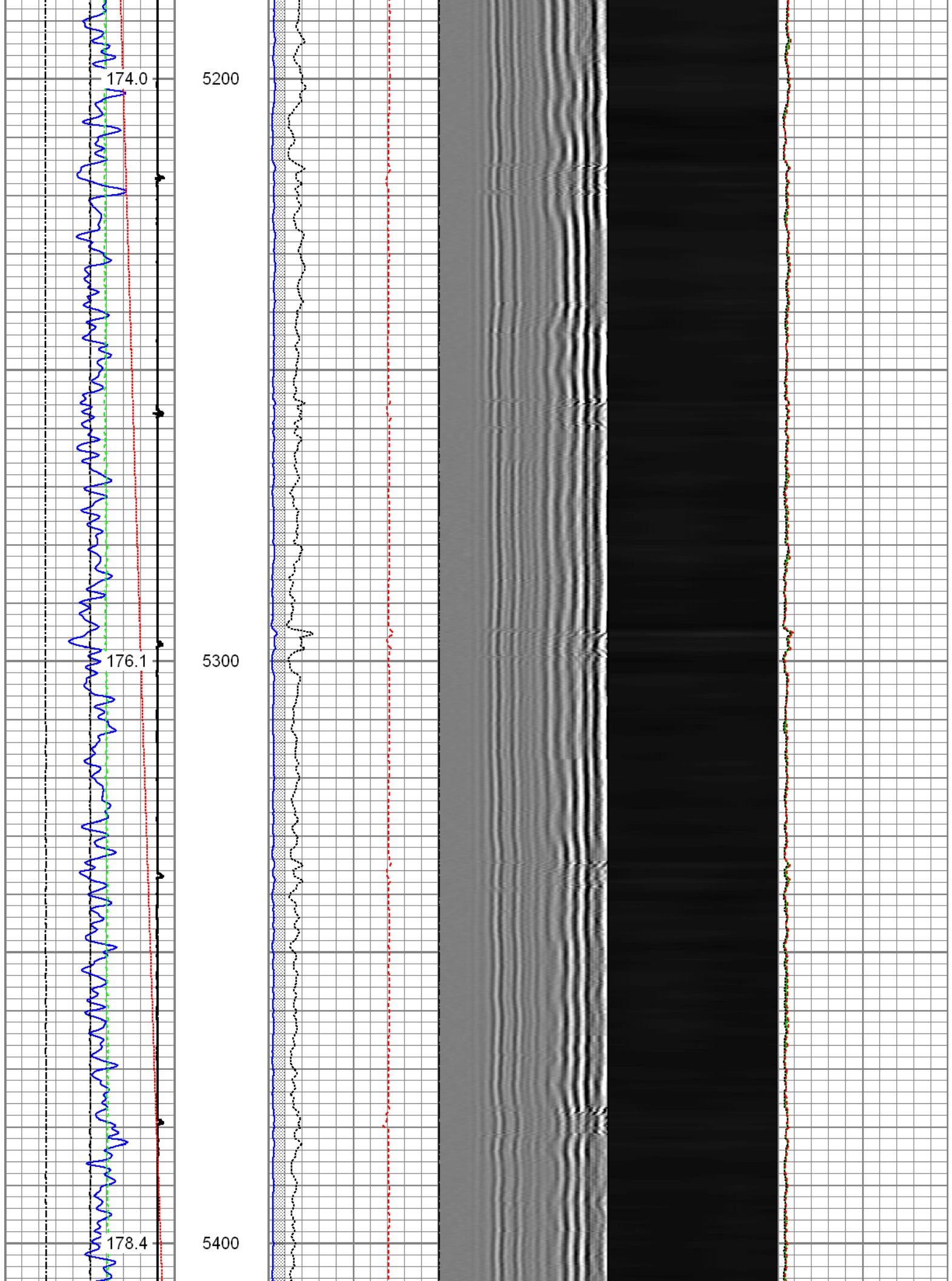


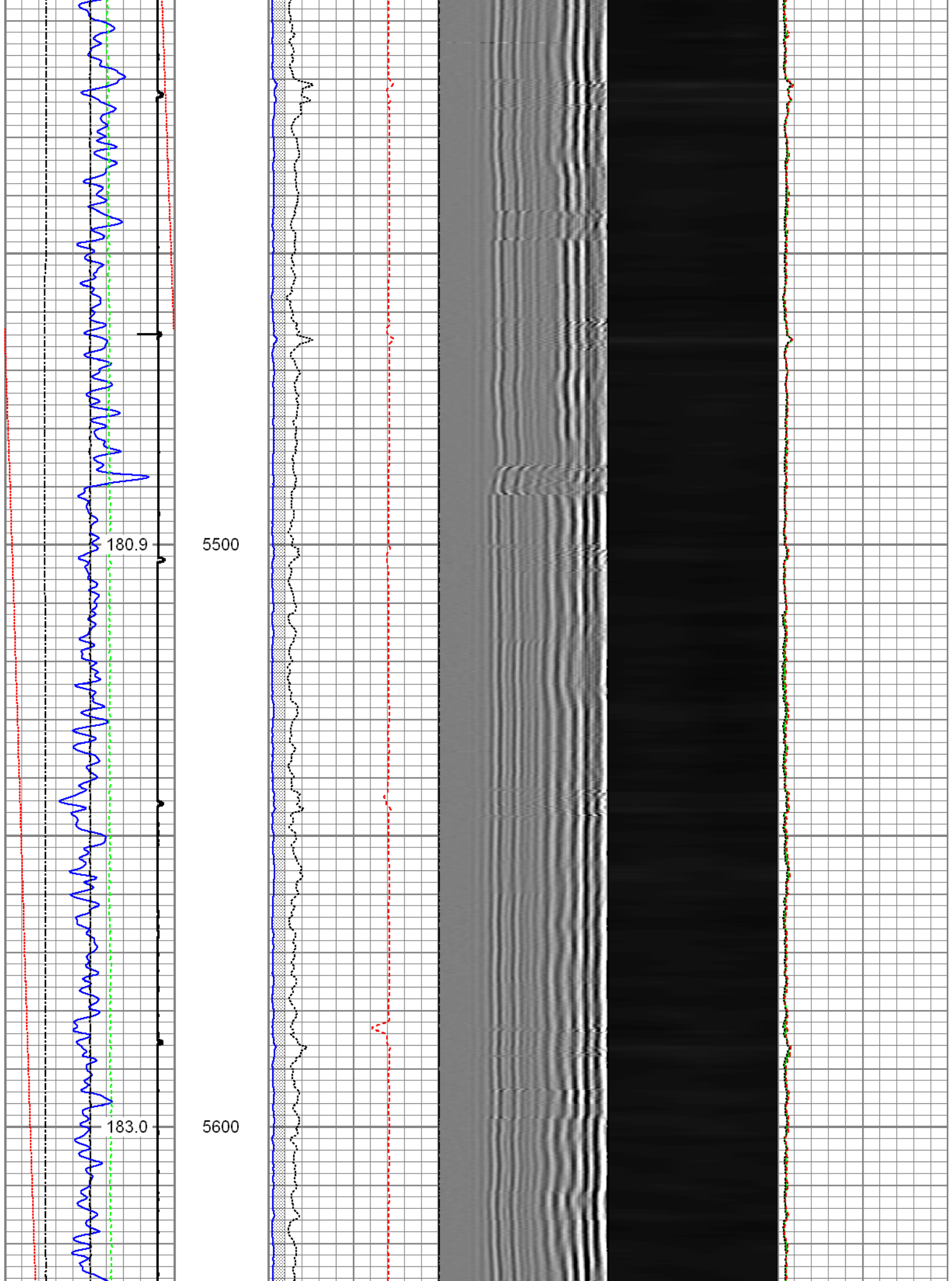


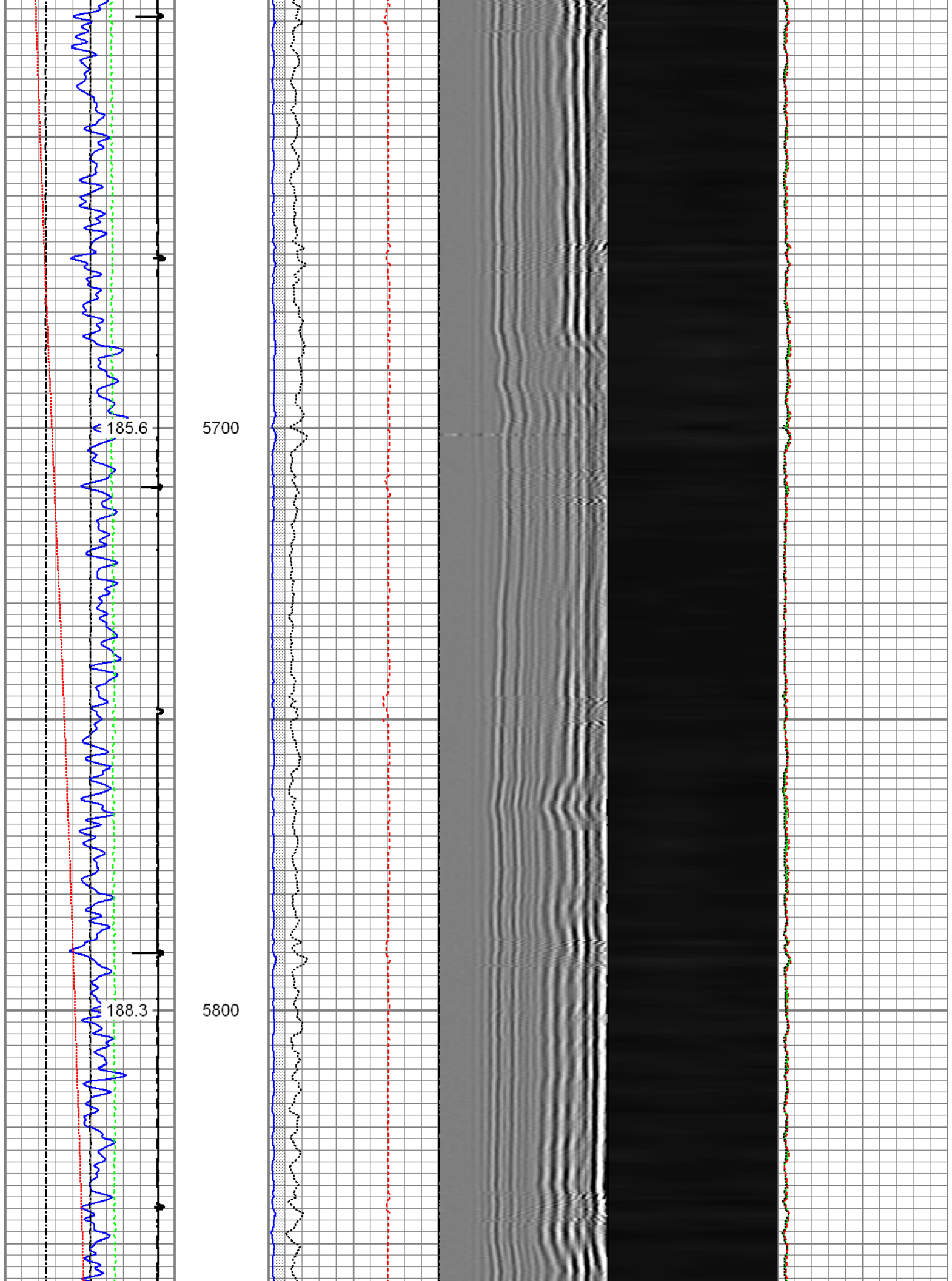


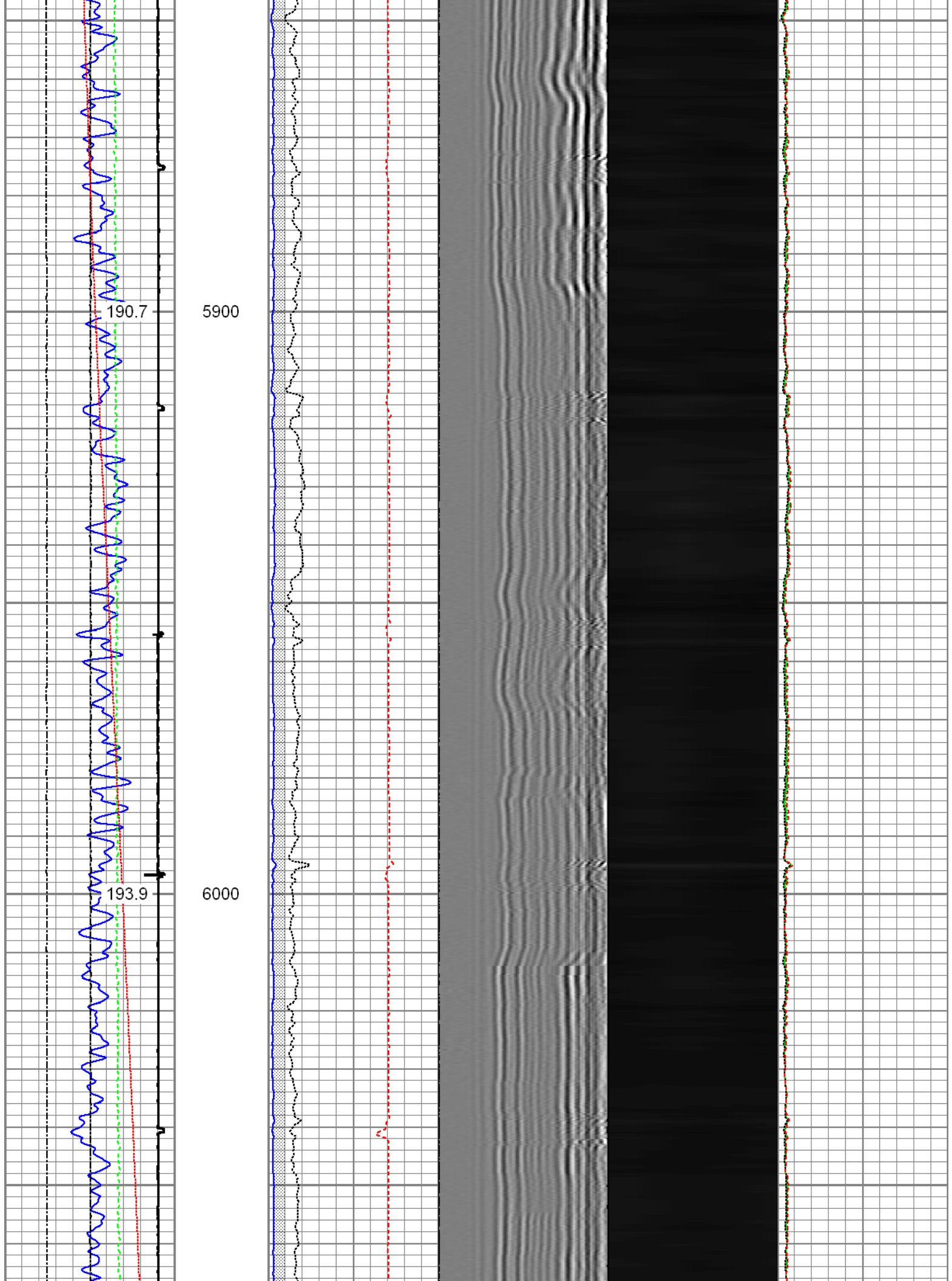


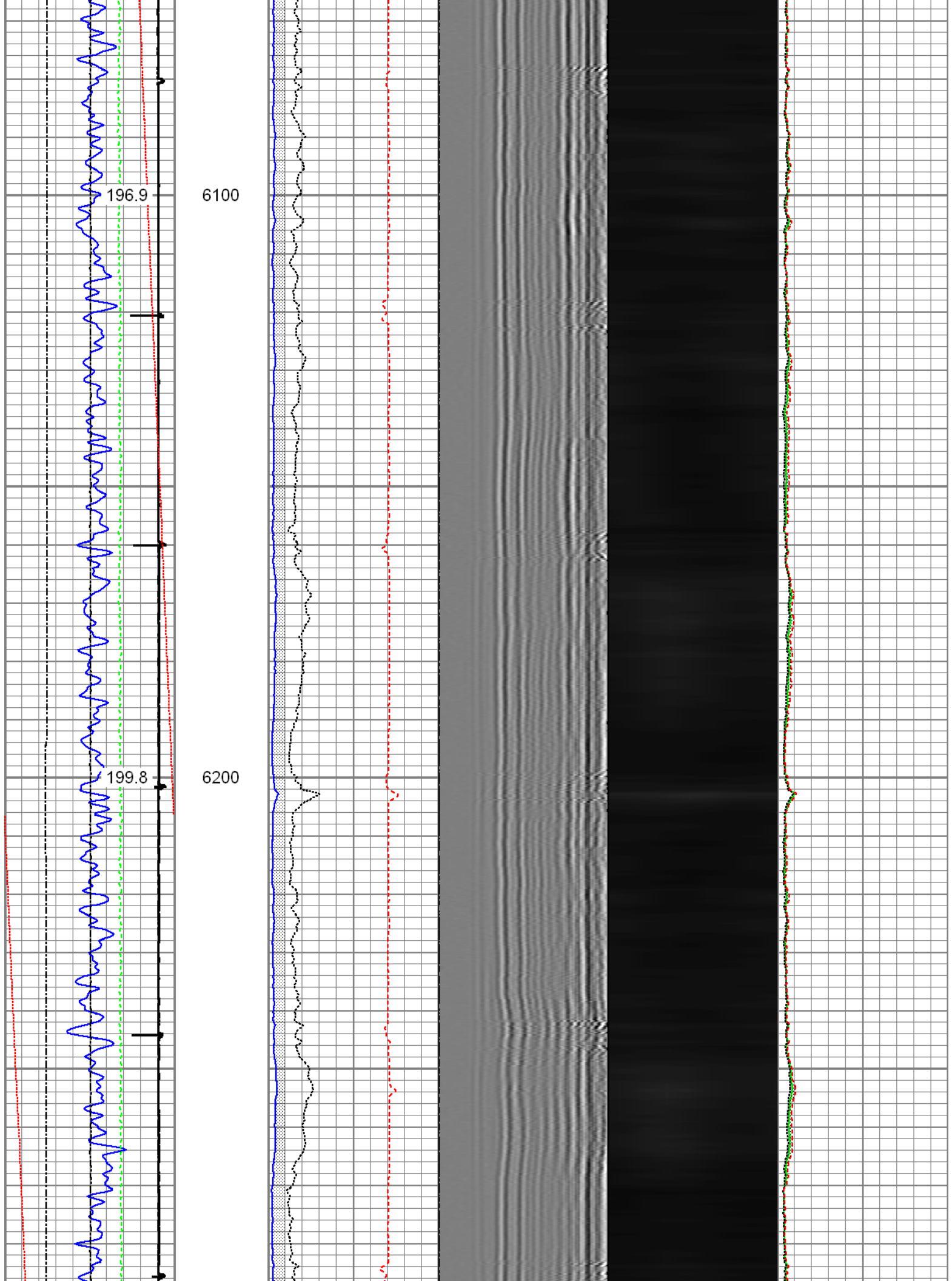


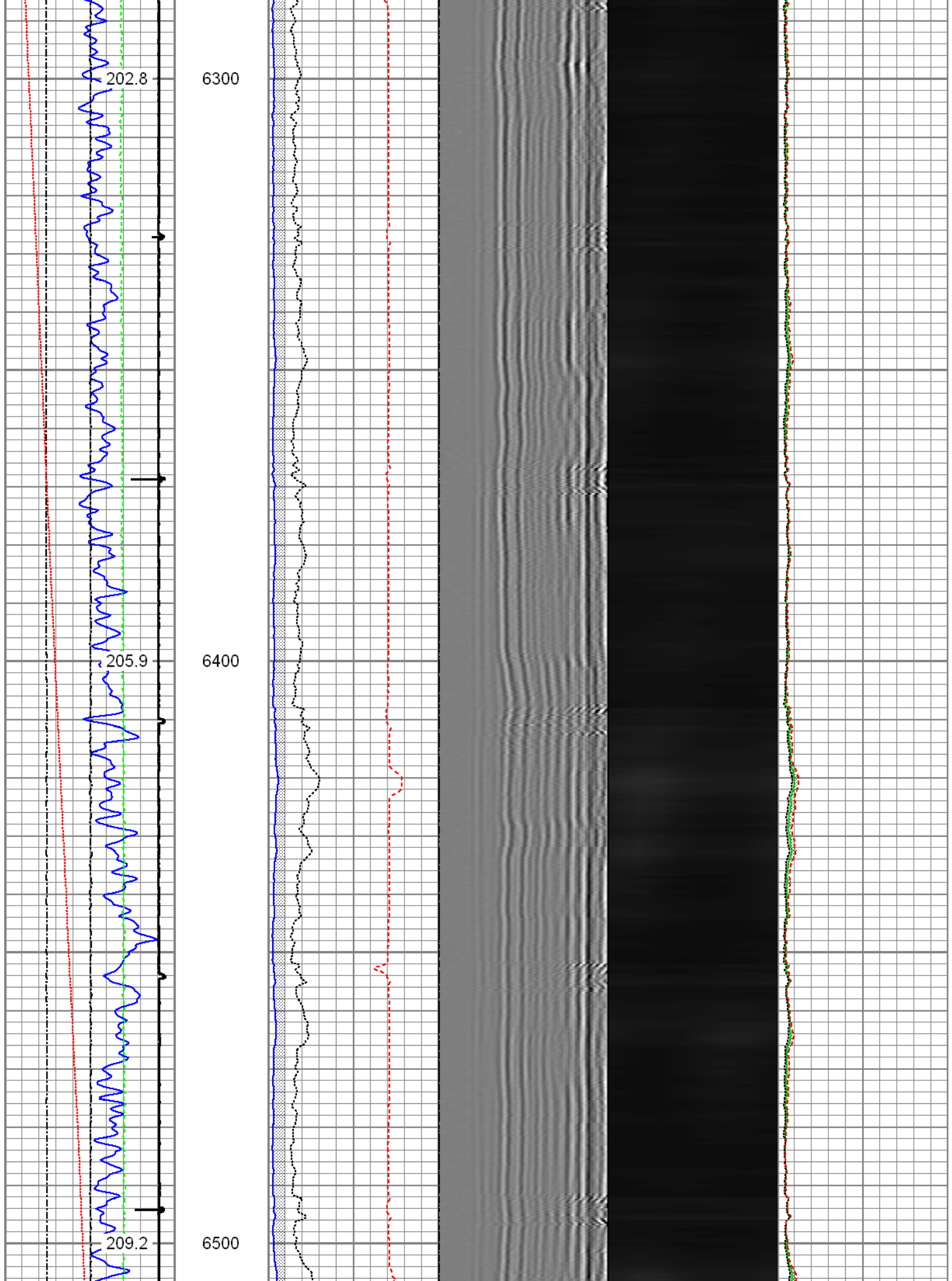


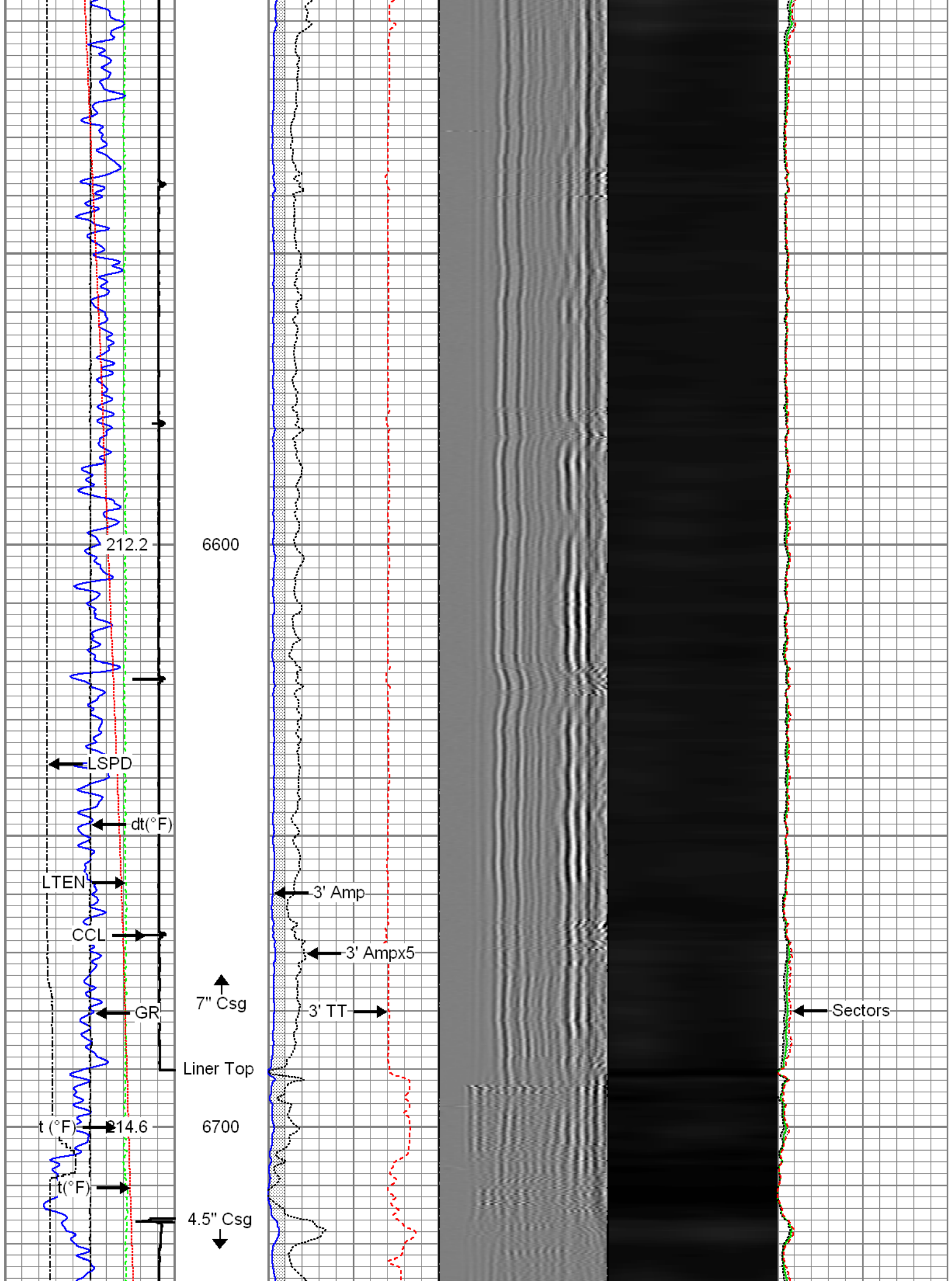


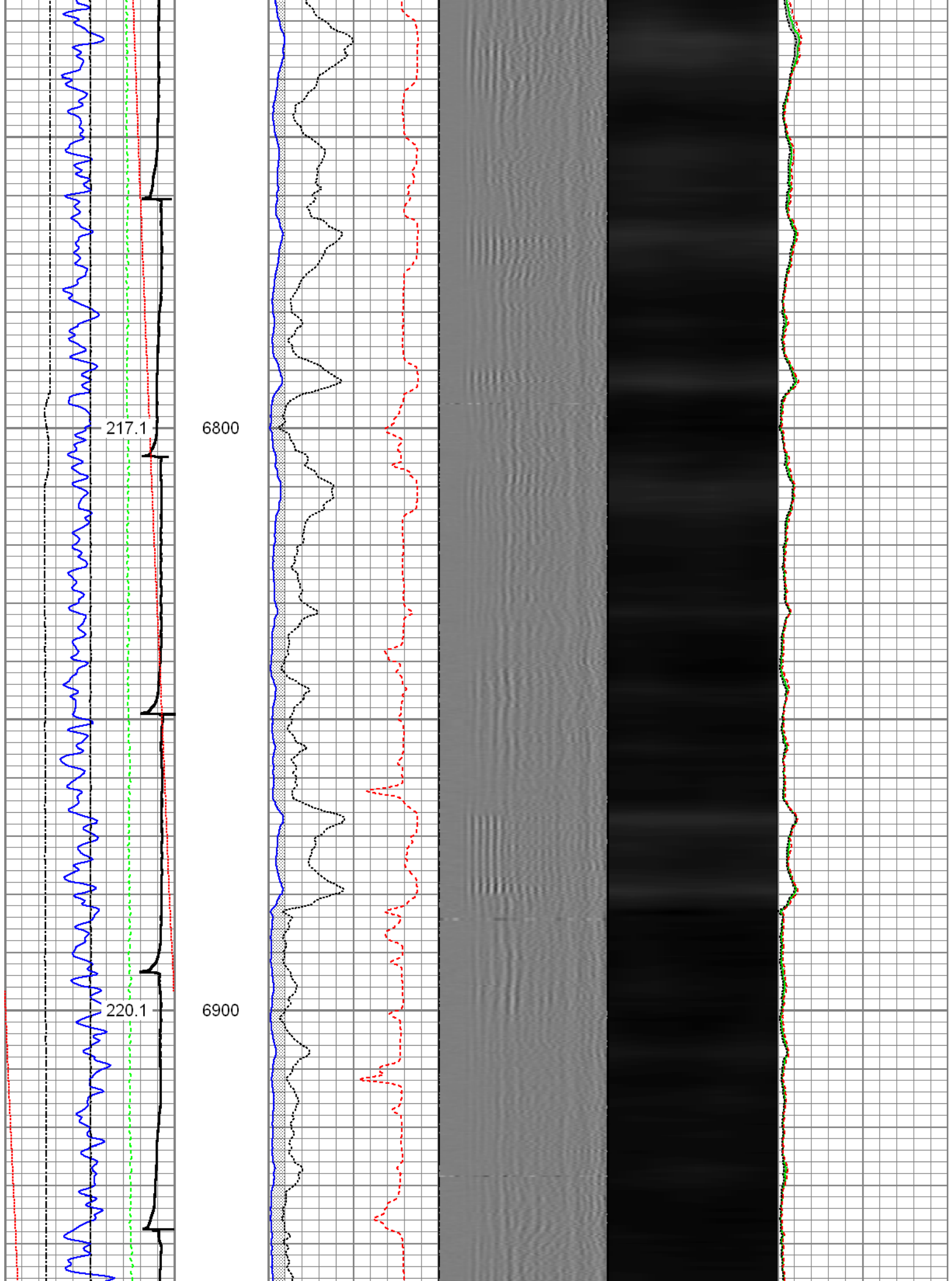


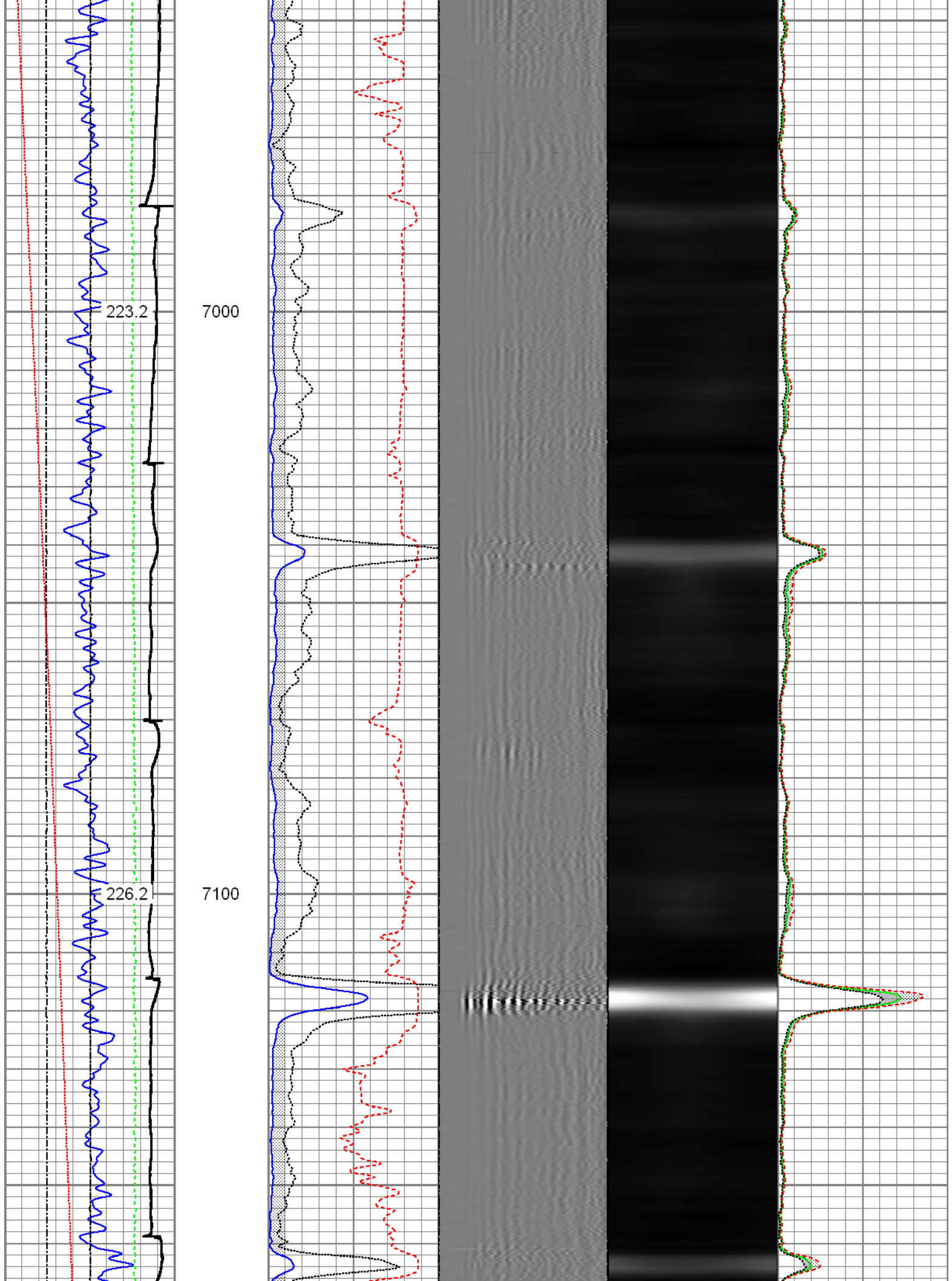


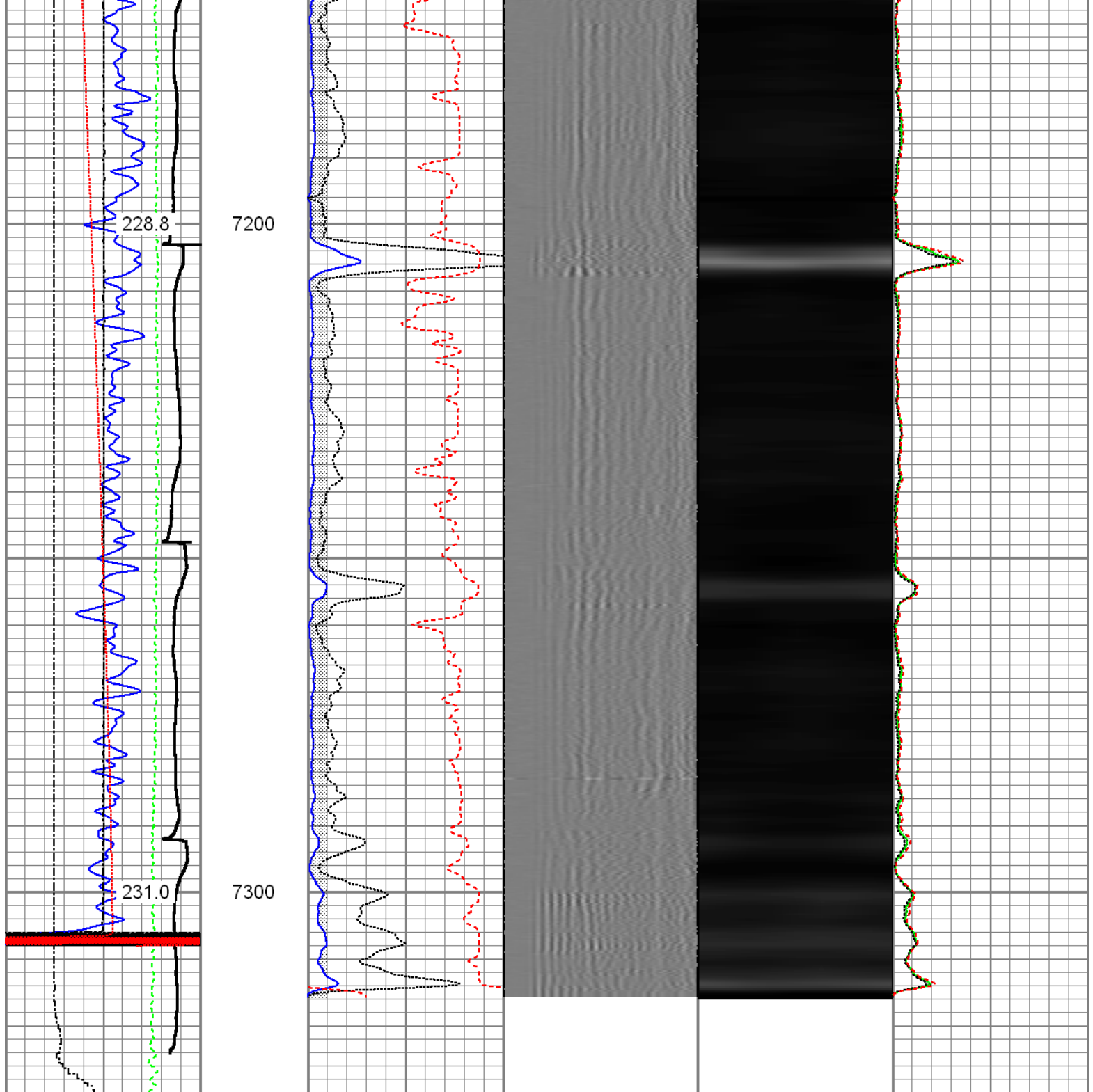












Gamma Ray 0 (GAPI) 120	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100
Casing Collar Locator	3' Amplitude x 5 0 (mV) 20			Minimum Amplitude 0 100
Line Speed -100 (ft/min) 100	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
Line Tension 0 (lb) 2000	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

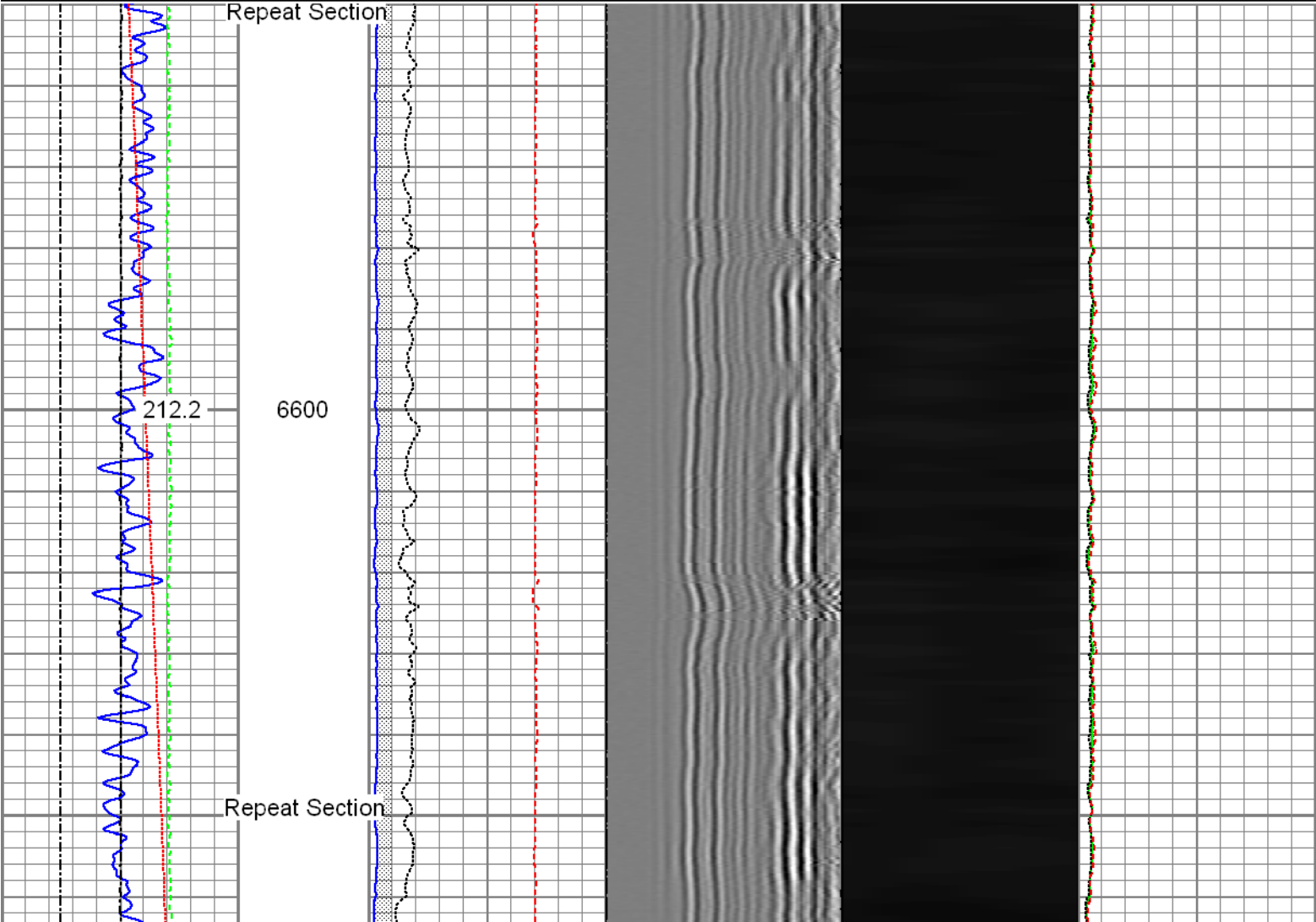


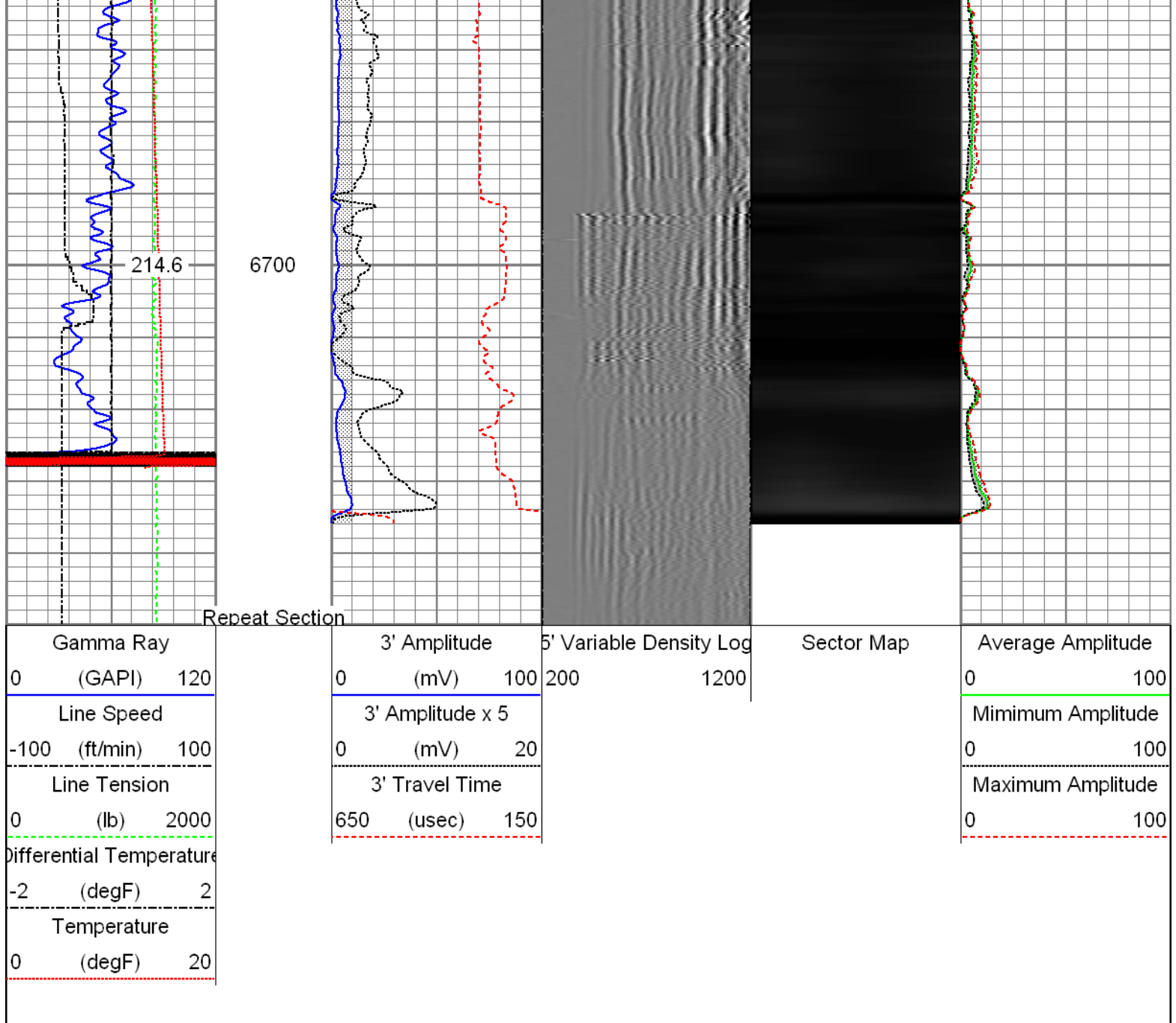
Repeat Pass

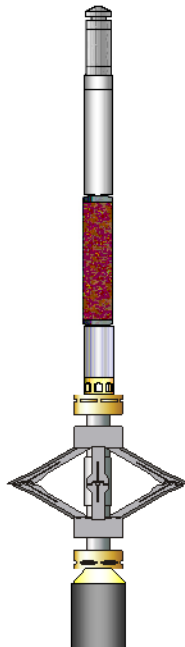
Recorded with 2600 PSI surface induced pressure.

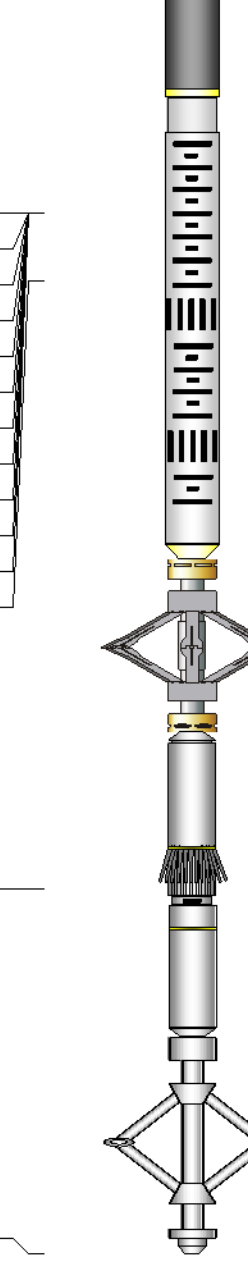
Database File: rbl_0512339059_anadarko_barclay 3n-14hz_06-08-15_mit_rbl.db
Dataset Pathname: Repeat1
Presentation Format: rbt4_mit
Dataset Creation: Mon Jun 08 13:40:46 2015 by Calc 7.0 B1
Charted by: Depth in Feet scaled 1:240

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





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 (10024770) Production Gamma Ray	1.93	1.69	9.50
TEMP	22.45		UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW_PRC #3 -DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00

WV3FT	15.42		UW_RBT-UW_RBT_004 (1063) 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					
CBLROT	15.42					
WV5FT	14.42					
MIT	5.41		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			UW_MIT-UW_MIT40_042 (10012912) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #4 -UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
TSTAMP	0.00					
Dataset: RBL_0512339059_Anadarko_Barclay 3N-14HZ_06-08-15_MIT_RBL.db: field/well/run1/main2.1 Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report			
Database File:	RBL_0512339059_Anadarko_Barclay 3N-14HZ_06-08-15_MIT_RBL.db		
Dataset Pathname:	main2.1		
Dataset Creation:	Mon Jun 08 13:17:32 2015 by Calc 7.0 B1		
Multi-finger Imaging Tool Calibration Report			
Serial Number:	10012912		
Number of Fingers:	40		
Tool Model:	UW_MIT40_042		
Inclinometer Calibration Report			
Performed:	Mon Jul 15 09:39:36 2013		
Calibration Angle:	45		
	Inc X	Inc Y	
Vertical:	1968	1974	
Finger 1 up:	1740	1744	
Finger 31 up:	2215	1741	
Finger 21 up:	2205	2224	

Finger 21 up:	2205	2224
Finger 11 up:	1731	2217
Sensitivity ratio:	0.992868	
X-axis angle:	134.307	
Deviation const.:	335.589	

Finger Calibration Report

Performed: Mon Jun 08 09:34:33 2015

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1005	410.0	1415	380.0	1795	402.0	2197
Finger 02:	1137	421.0	1558	382.0	1940	396.0	2336
Finger 03:	1017	432.0	1449	401.0	1850	422.0	2272
Finger 04:	1043	418.0	1461	390.0	1851	416.0	2267
Finger 05:	1036	427.0	1463	396.0	1859	416.0	2275
Finger 06:	1040	428.0	1468	397.0	1865	415.0	2280
Finger 07:	1021	430.0	1451	401.0	1852	416.0	2268
Finger 08:	1044	425.0	1469	394.0	1863	415.0	2278
Finger 09:	1034	427.0	1461	395.0	1856	412.0	2268
Finger 10:	1036	430.0	1466	396.0	1862	415.0	2277
Finger 11:	1034	429.0	1463	393.0	1856	408.0	2264
Finger 12:	1031	431.0	1462	395.0	1857	414.0	2271
Finger 13:	1036	426.0	1462	389.0	1851	404.0	2255
Finger 14:	1019	437.0	1456	400.0	1856	415.0	2271
Finger 15:	968	438.0	1406	411.0	1817	427.0	2244
Finger 16:	982	439.0	1421	407.0	1828	428.0	2256
Finger 17:	900	416.0	1316	393.0	1709	424.0	2133
Finger 18:	1038	427.0	1465	392.0	1857	410.0	2267
Finger 19:	997	429.0	1426	397.0	1823	416.0	2239
Finger 20:	985	435.0	1420	407.0	1827	430.0	2257
Finger 21:	998	445.0	1443	403.0	1846	414.0	2260
Finger 22:	967	438.0	1405	405.0	1810	428.0	2238
Finger 23:	931	437.0	1368	411.0	1779	442.0	2221
Finger 24:	1000	433.0	1433	390.0	1823	403.0	2226
Finger 25:	948	431.0	1379	405.0	1784	433.0	2217
Finger 26:	1088	423.0	1511	376.0	1887	396.0	2283
Finger 27:	1021	429.0	1450	396.0	1846	416.0	2262
Finger 28:	1036	429.0	1465	381.0	1846	405.0	2251
Finger 29:	982	424.0	1406	401.0	1807	428.0	2235
Finger 30:	1039	429.0	1468	389.0	1857	416.0	2273
Finger 31:	1046	419.0	1465	383.0	1848	412.0	2260
Finger 32:	1020	427.0	1447	397.0	1844	423.0	2267
Finger 33:	1109	419.0	1528	369.0	1897	387.0	2284
Finger 34:	1071	413.0	1484	380.0	1864	404.0	2268
Finger 35:	1006	428.0	1434	406.0	1840	433.0	2273
Finger 36:	1027	420.0	1447	393.0	1840	418.0	2258
Finger 37:	1080	420.0	1500	382.0	1882	405.0	2287
Finger 38:	1099	419.0	1518	378.0	1896	391.0	2287
Finger 39:	1102	409.0	1511	377.0	1888	395.0	2283
Finger 40:	1044	422.0	1466	392.0	1858	411.0	2269

Segmented Cement Bond Log Calibration Report

Serial Number:	1063
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	-68.809 ft

Master Calibration, performed Mon Jun 08 13:17:02 2015:

Raw (v)		Calibrated (mv)		Results	
Zero	Cal	Zero	Cal	Gain	Offset

3FT	-0.001	0.651	0.000	62.165	95.351	0.128
5FT	0.000	0.667	0.000	62.165	93.301	-0.034
S1	-0.003	0.629	0.000	100.000	158.370	0.413
S2	-0.003	0.649	0.000	100.000	153.436	0.392
S3	-0.002	0.659	0.000	100.000	151.204	0.286
S4	-0.002	0.678	0.000	100.000	147.032	0.347
S5	-0.001	0.664	0.000	100.000	150.262	0.215
S6	-0.001	0.635	0.000	100.000	157.084	0.211
S7	-0.001	0.623	0.000	100.000	160.140	0.193
S8	-0.002	0.616	0.000	100.000	161.882	0.271

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 L.P.
 Well: Barclay 3N-14HZ
 Field: Wattenberg
 County: Weld
 State: Colorado