

Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Goodin 15N-A6HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Company	Kerr-McGee Oil & Gas Onshore, L.P.	Location:	API # : 05-123-40746
Well	Goodin 15N-A6HZ	SEC 7	TWP 1N RGE 65W
Field	Wattenberg	Permanent Datum	Ground Level
County	Weld	Log Measured From	Kelly Bushing
State	Colorado	Drilling Measured From	Kelly Bushing
		Elevation	4981'
		Other Services	Gauge Ring
			MIT
			Elevation
			K.B. 5006'
			D.F. 5005'
			G.L. 4981'

Date	26-JUN-2015
Run Number	Two
Depth Driller	13.320 FT
Depth Logger	7277 FT
Bottom Logged Interval	7.262 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	232°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	4:36 P.M.
Equipment Number	HD-0119
Location	Ft. Lupton, CO
Recorded By	A. Olmsted
Witnessed By	Levi McArthur

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	1,590 FT		
Intermediate #1	7	26	HCP 110 LTC	Surface	7,709 FT		
Intermediate #2							
Liner	4 1/2	11.6	P-110 LTC/DOX	6,639 FT	13,313 FT		

>>> Fold Here >>>

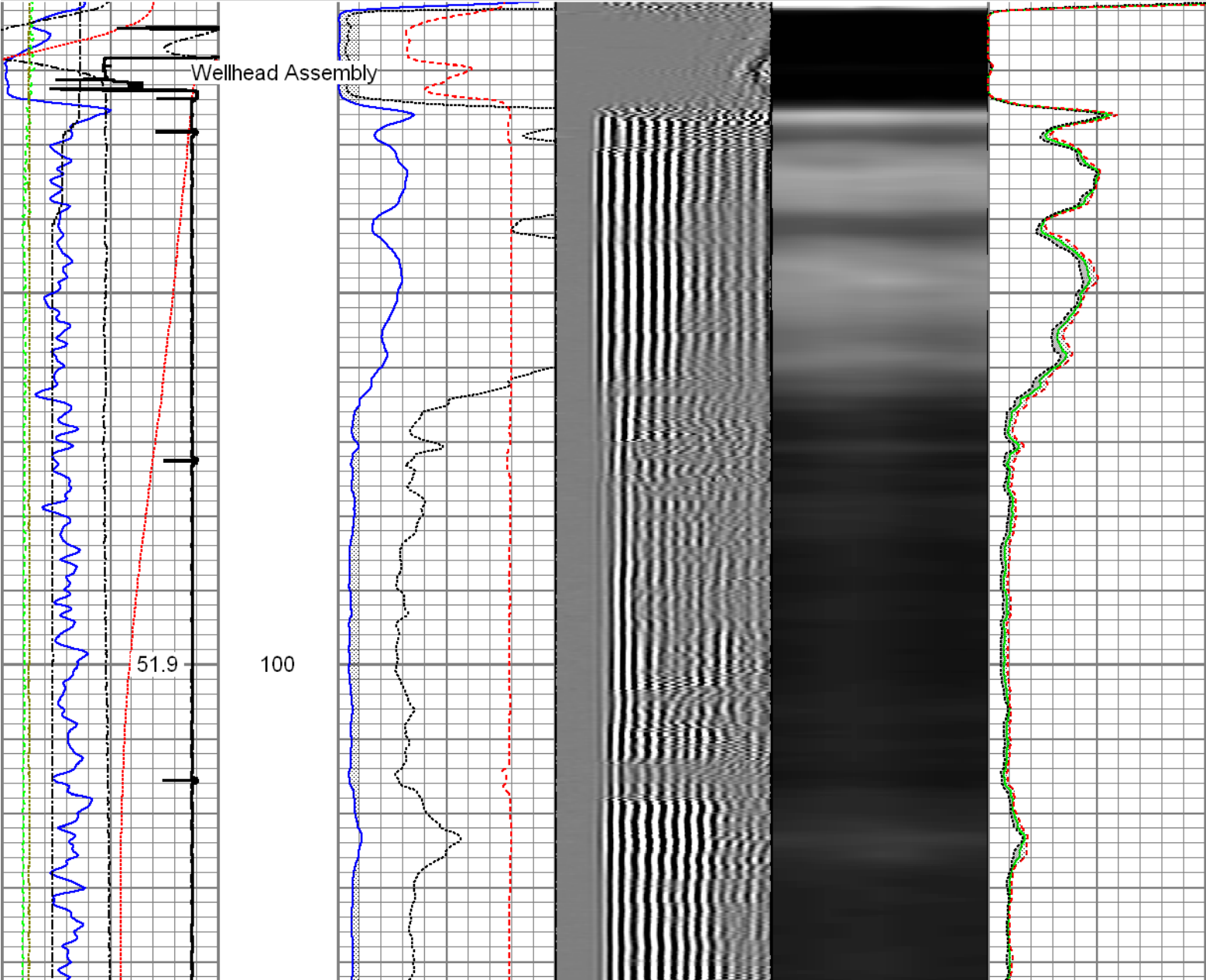
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

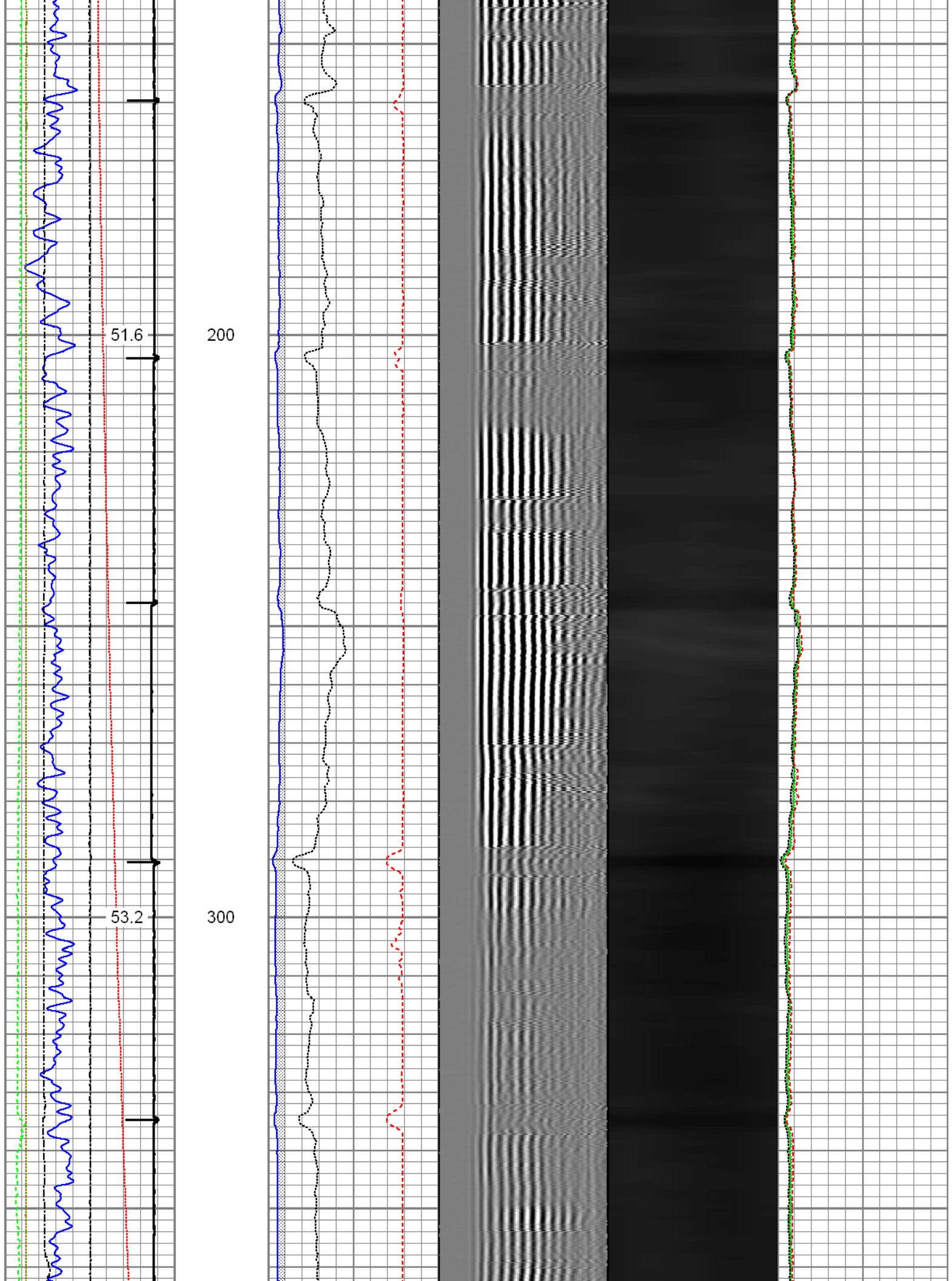
Comments

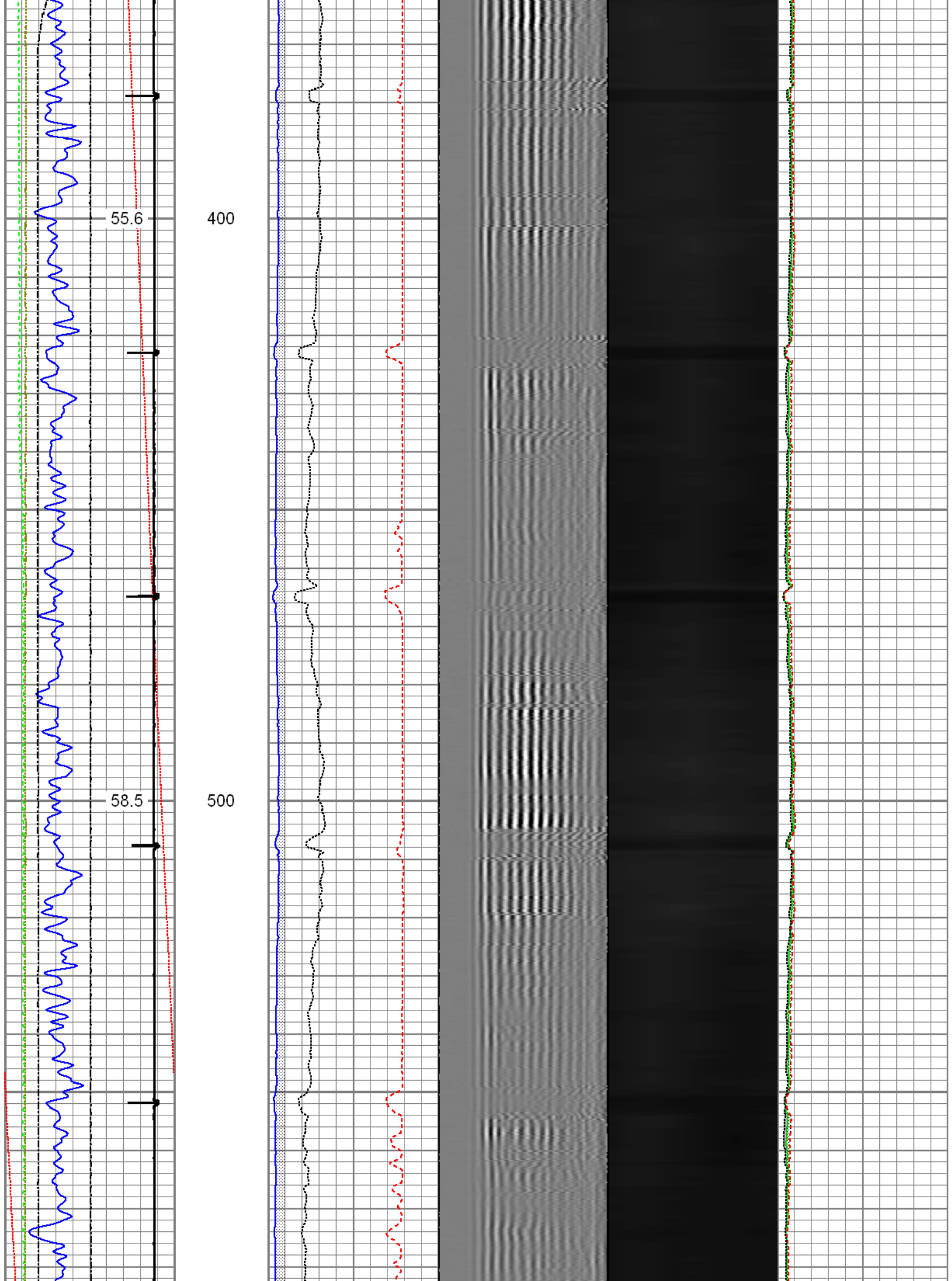
Log ran as per customer request.
 Depth referenced to casing tally reported liner top at 6,639 FT
 Adjusted -3 FT to correlate to liner top
 Gauge Ring/Junk Basket ran to 7,301 FT
 Log ran from as deep as possible in heel to surface
 Logging tools were clean and free of debris upon completion of operations
 Thank you for choosing FMC Technologies Completion Services, Inc.!!

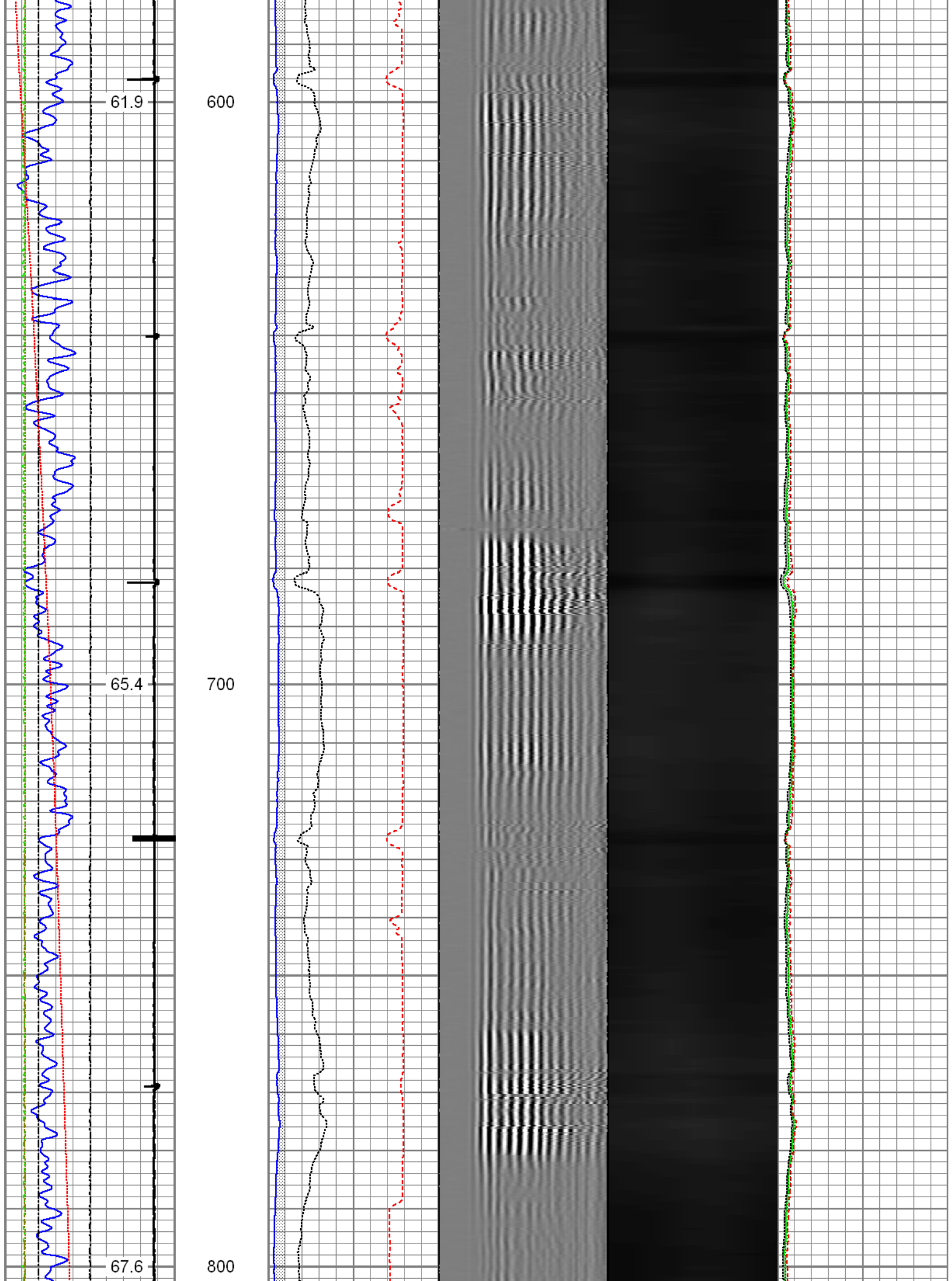
Database File: 0512340746_anadarko_goodin 15n-a6hz_06-26-15_mit_rbl.db
Dataset Pathname: pass4
Presentation Format: rbt4_mit
Dataset Creation: Fri Jun 26 16:37:12 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

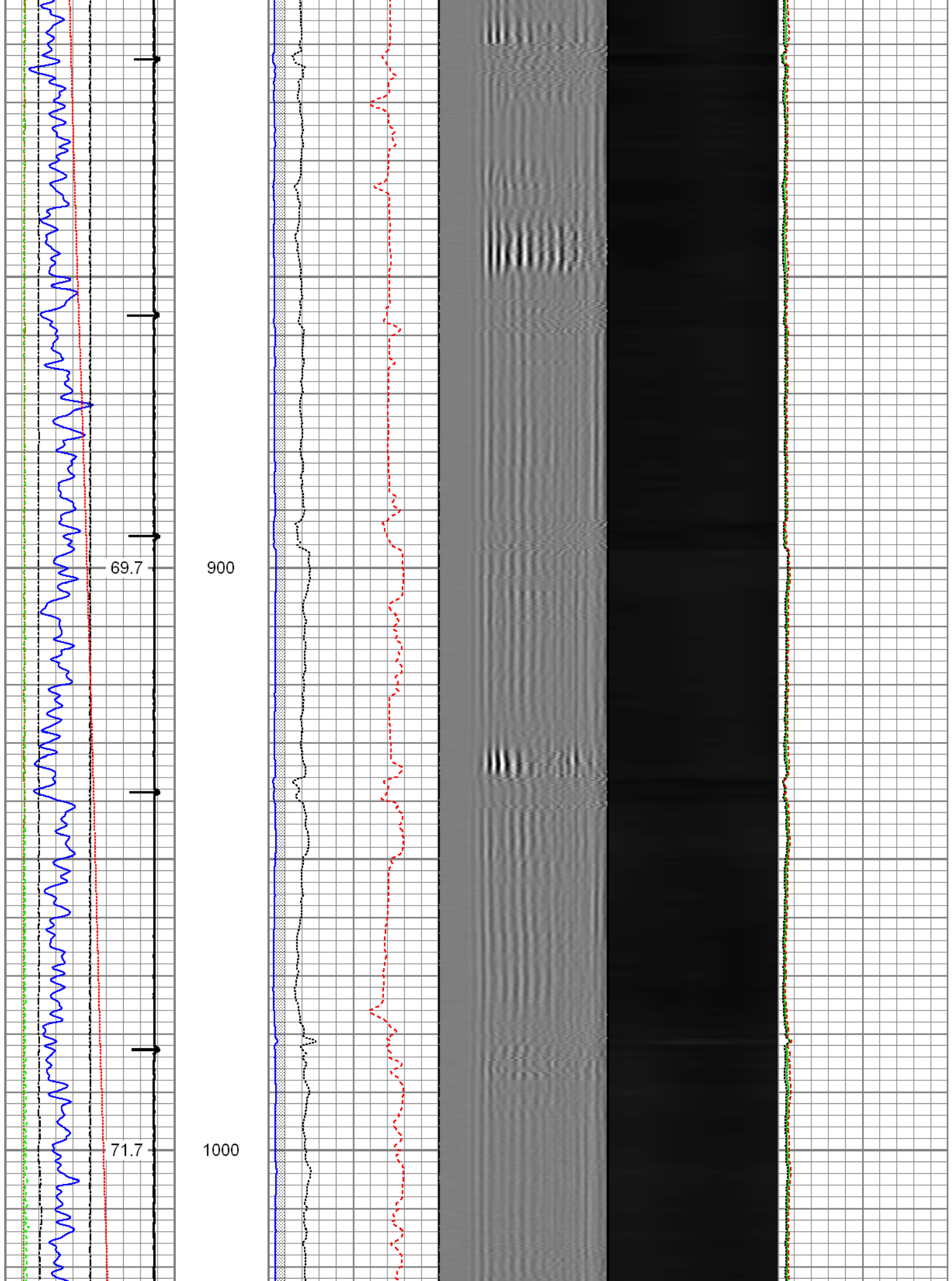
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Line Speed	3' Amplitude x 5			Minimum Amplitude
-100 (ft/min) 100	0 (mV) 20			0 100
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	650 (usec) 150			0 100
Differential Temperature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

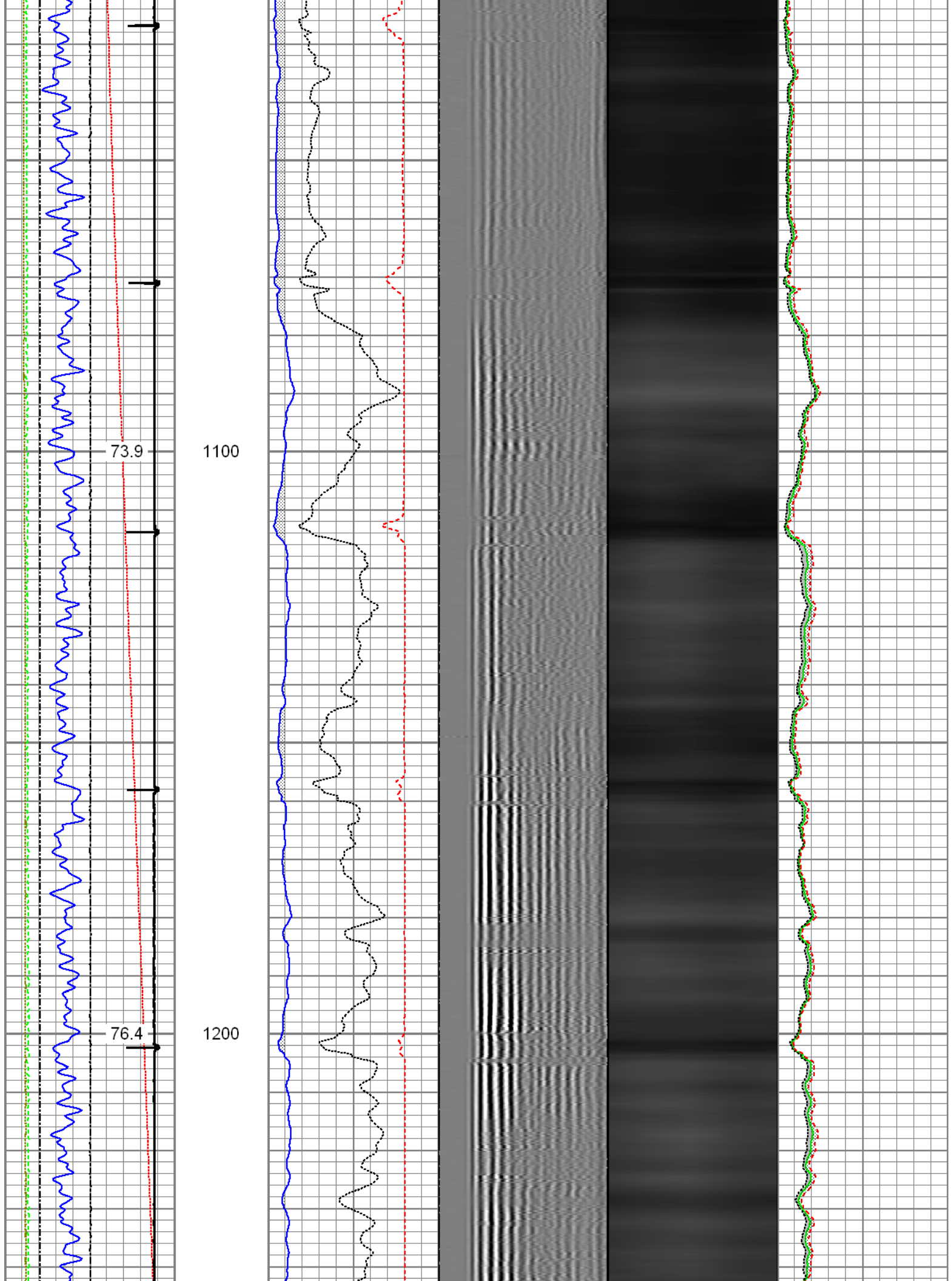


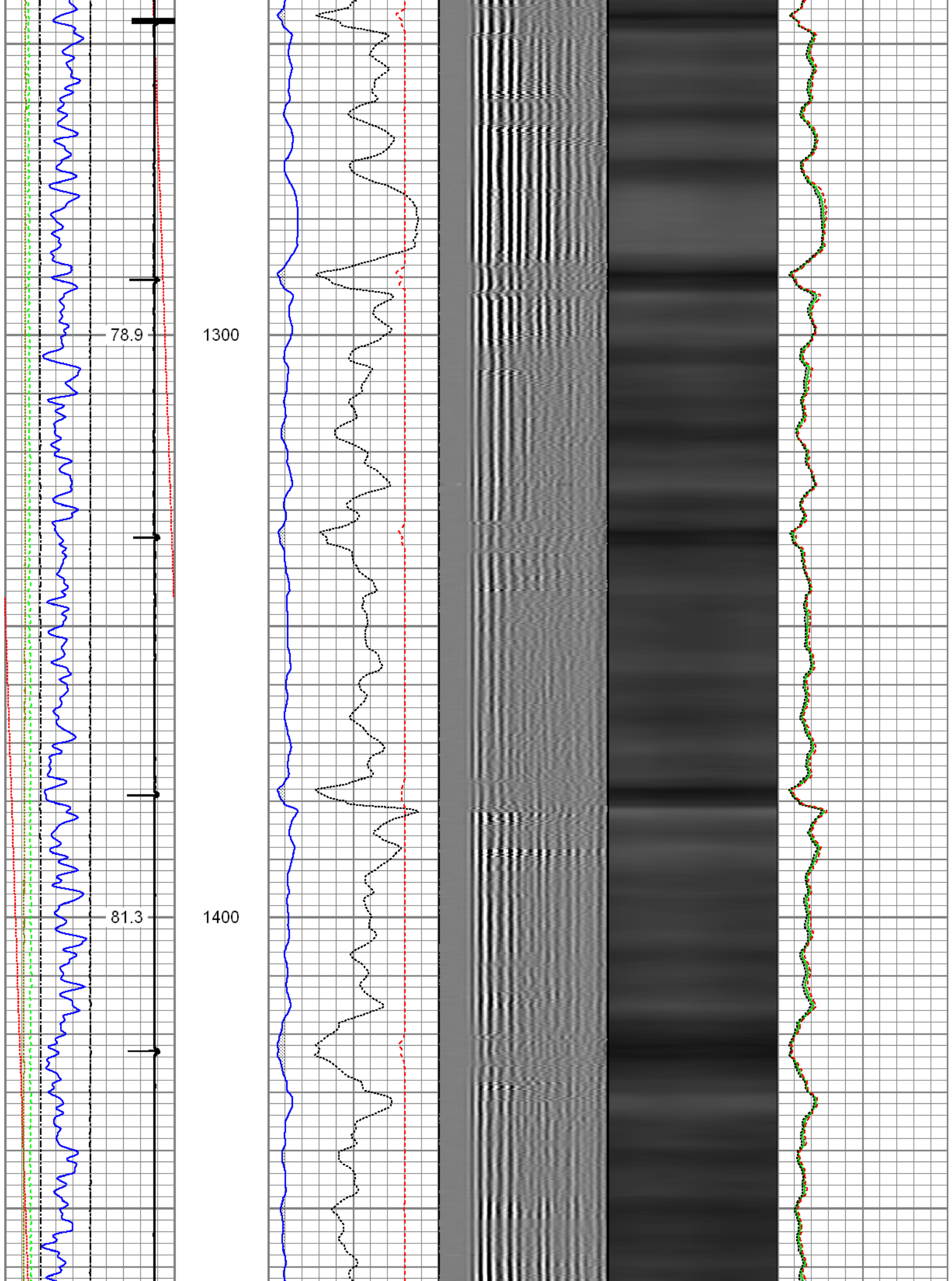


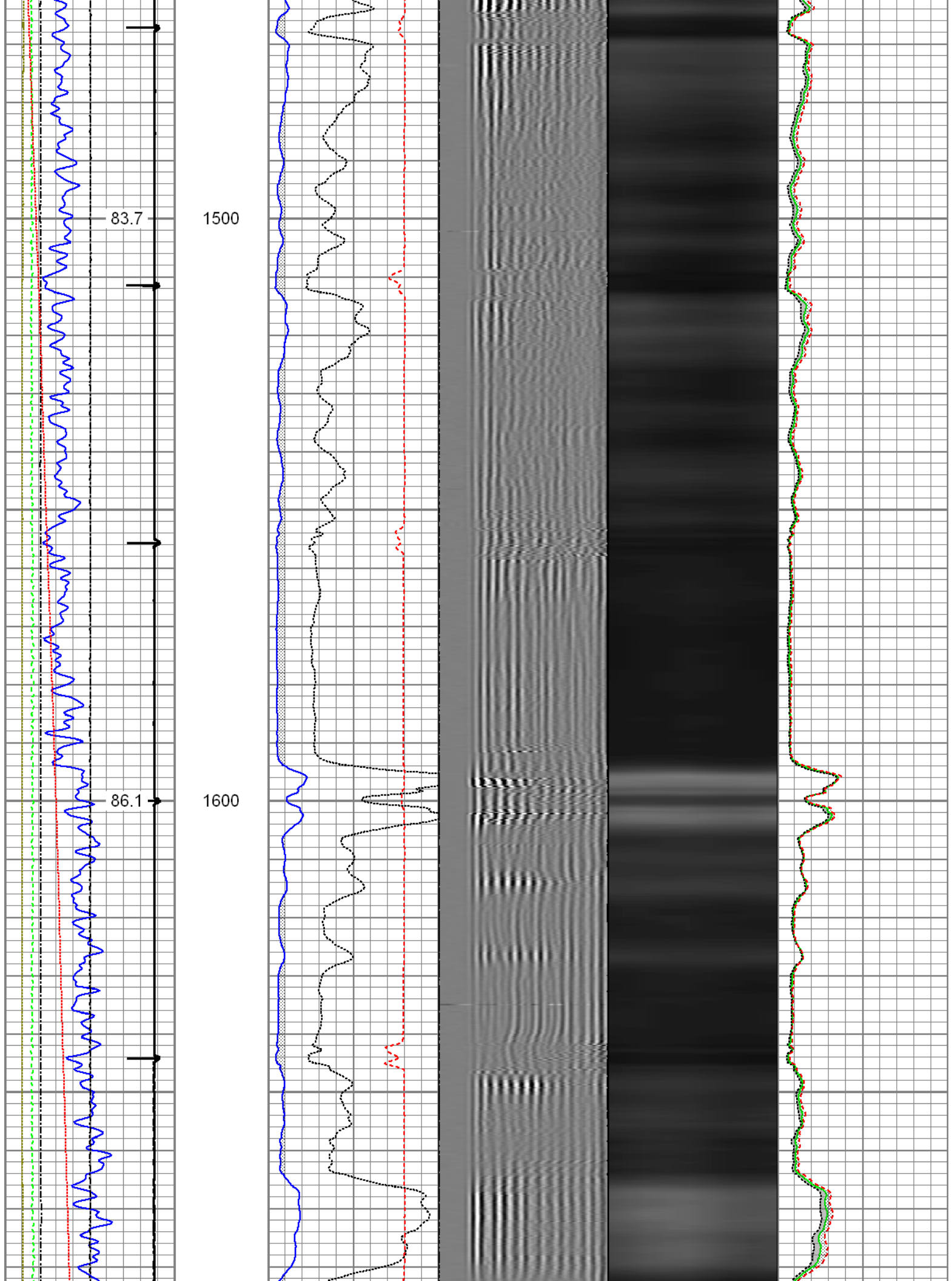


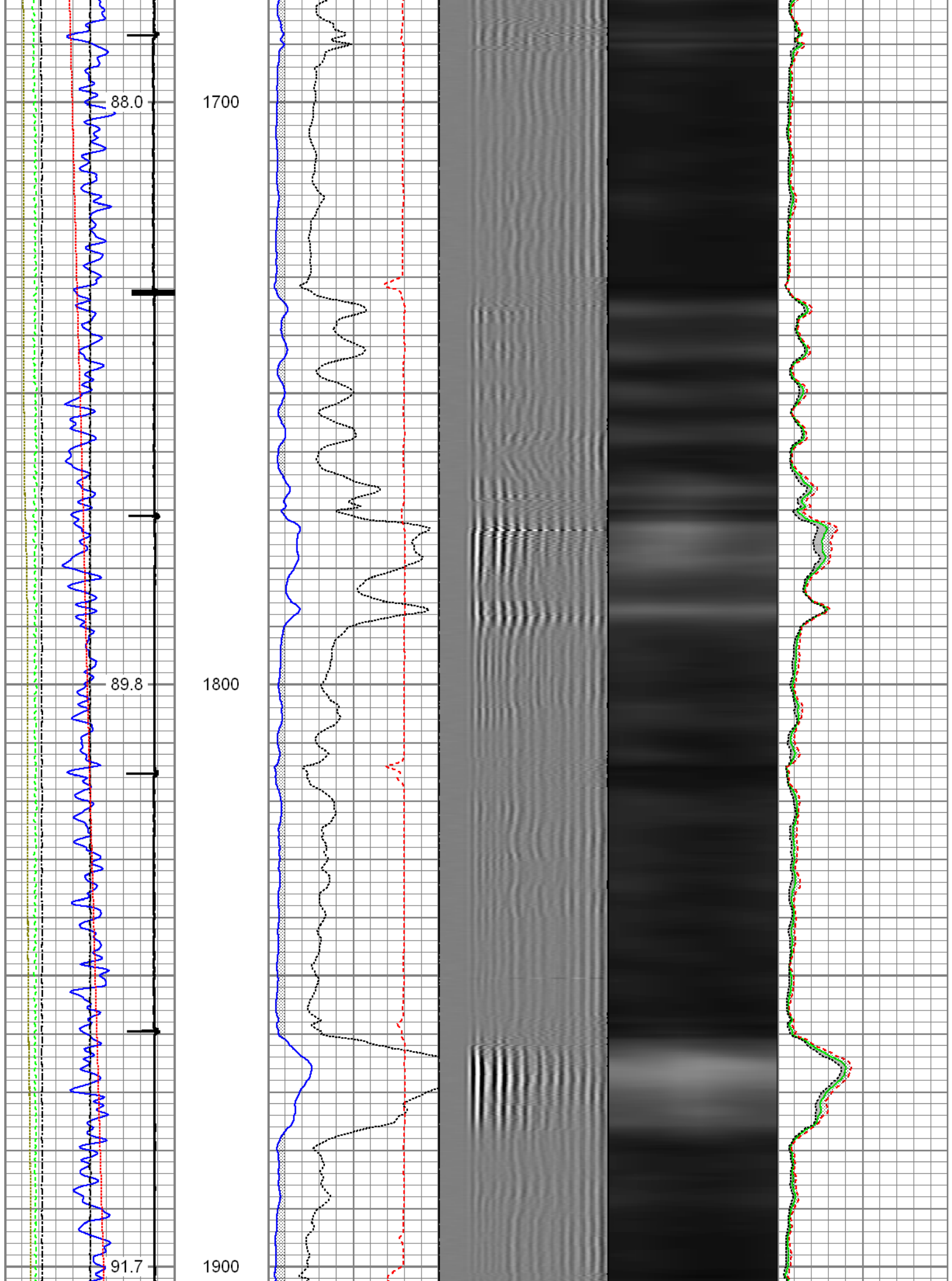


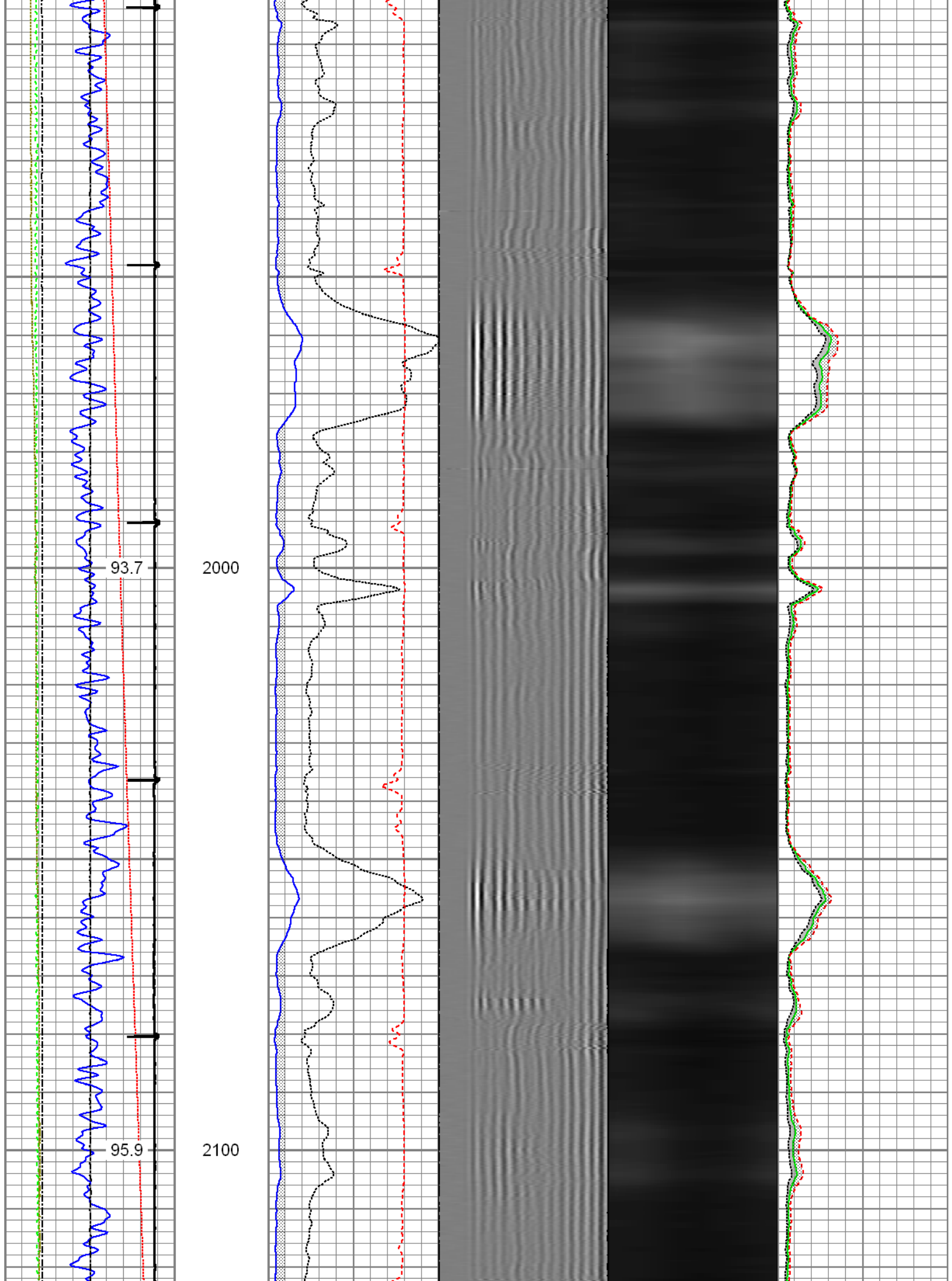


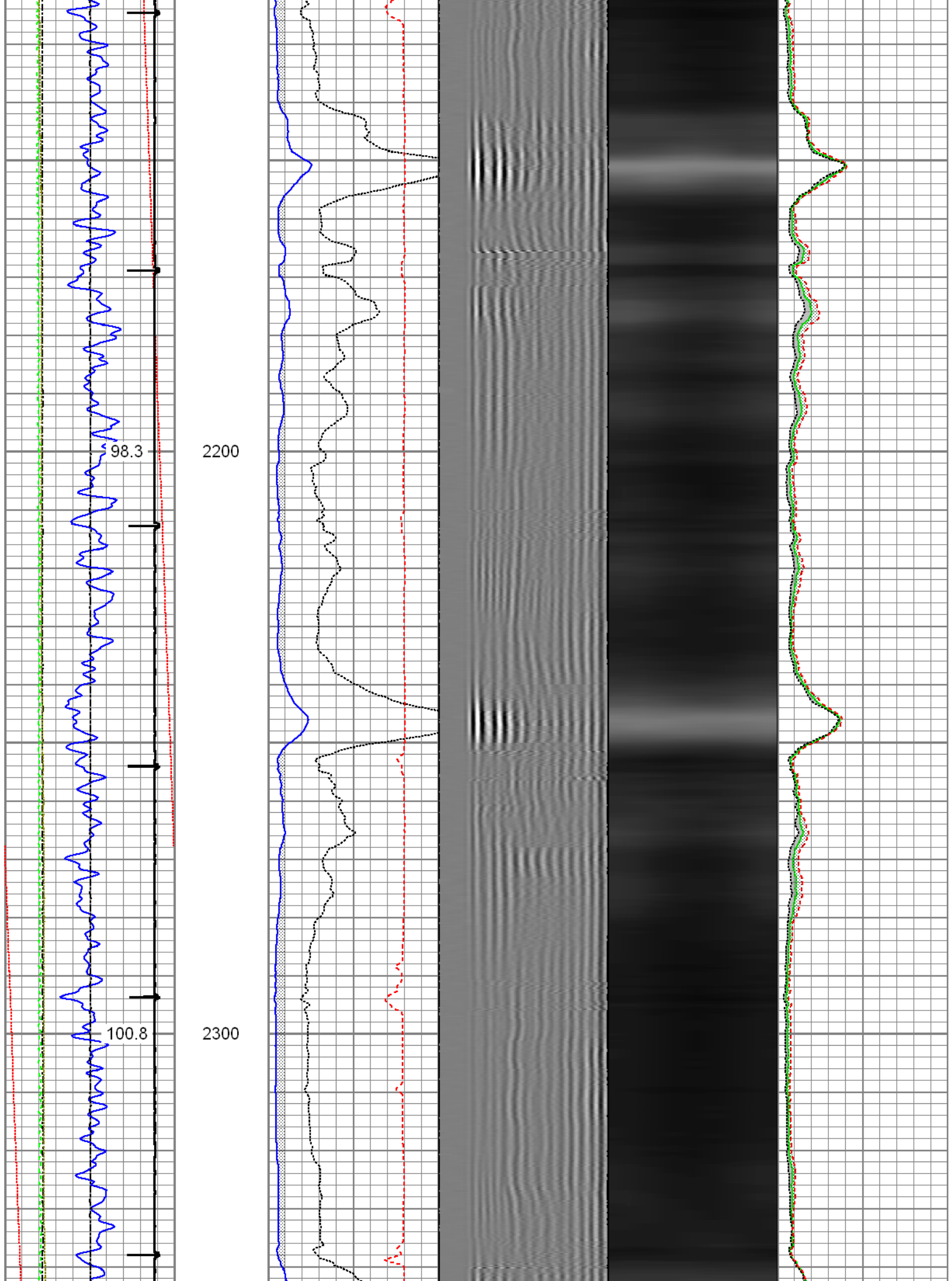


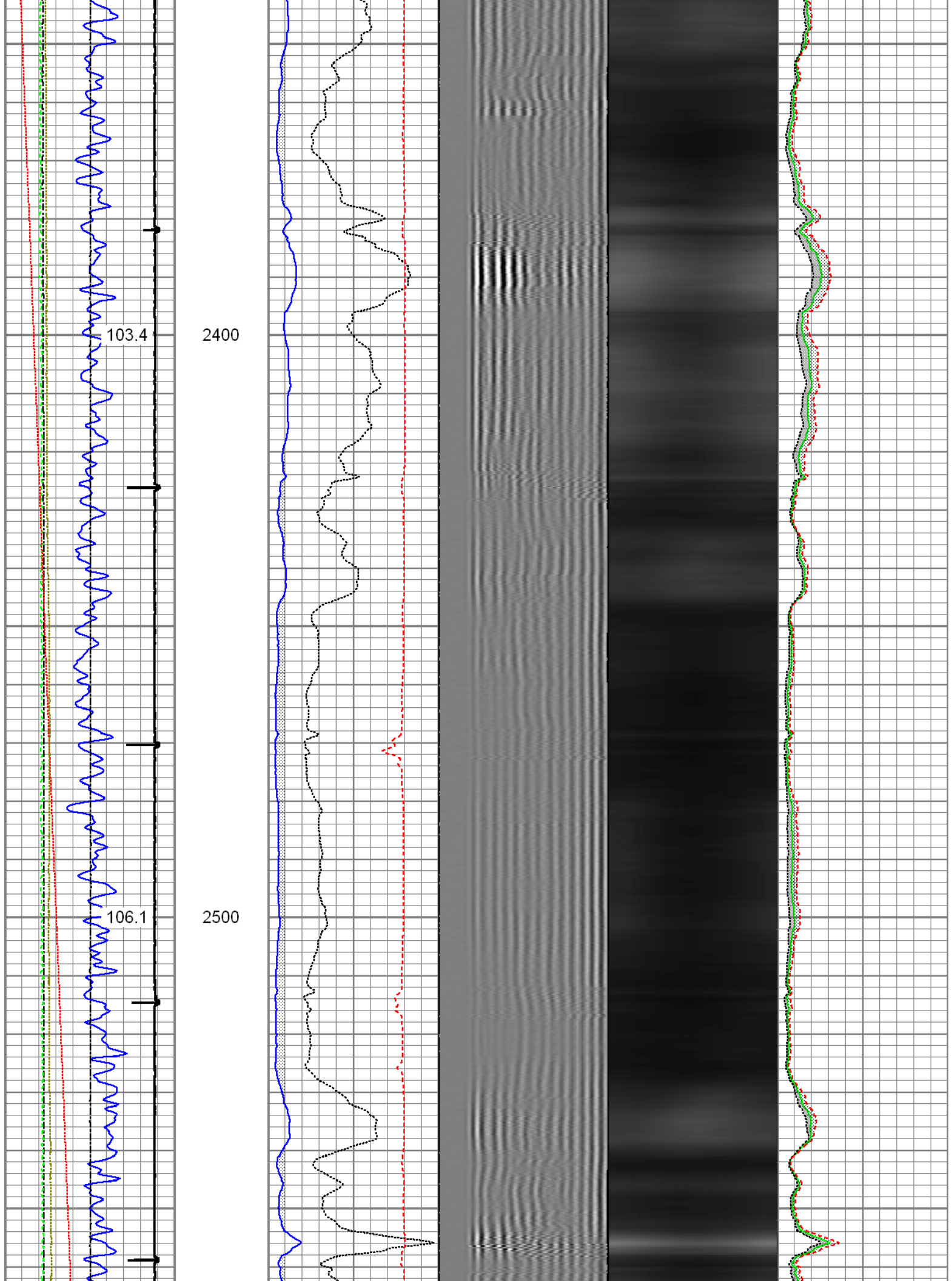


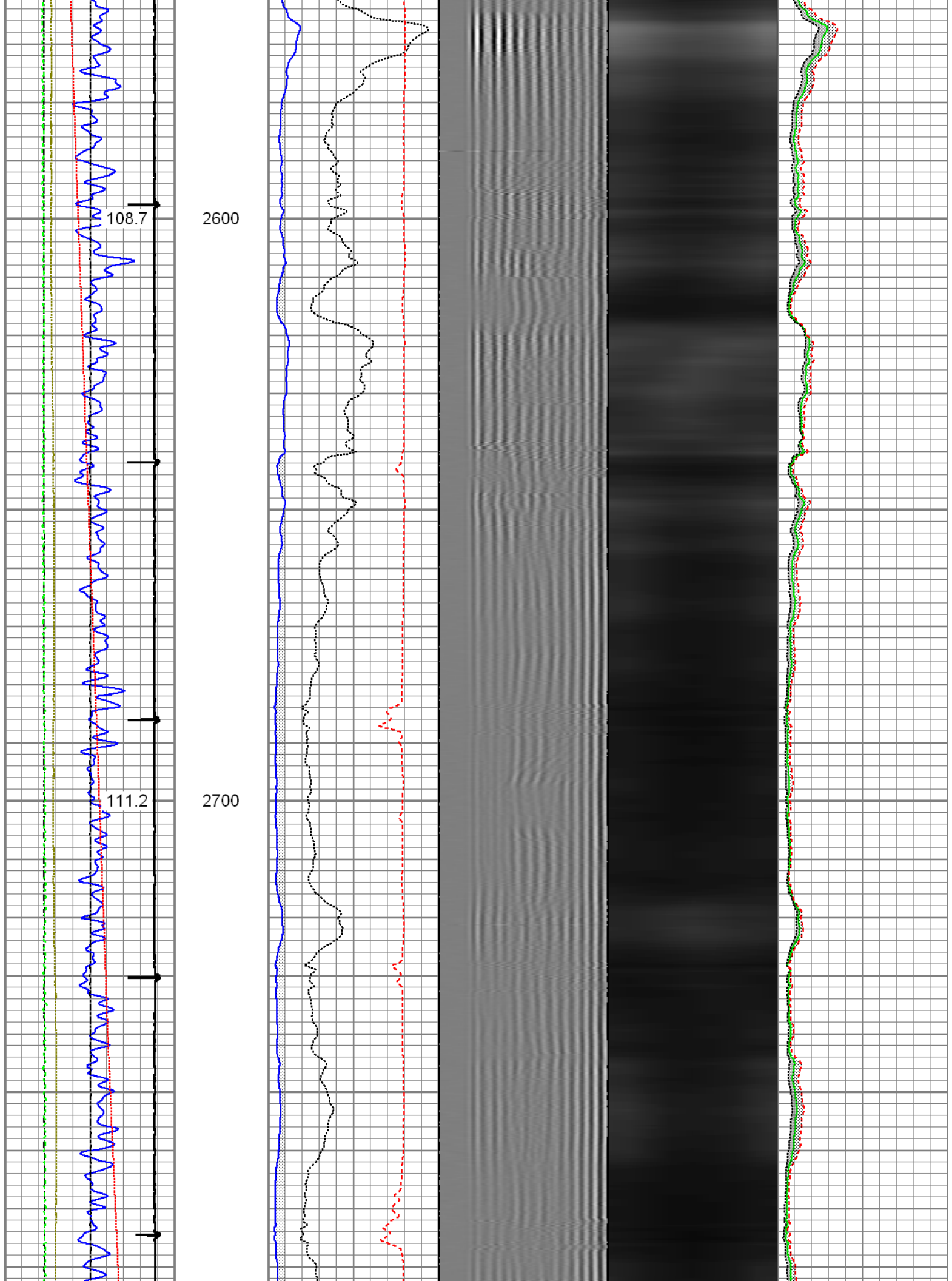


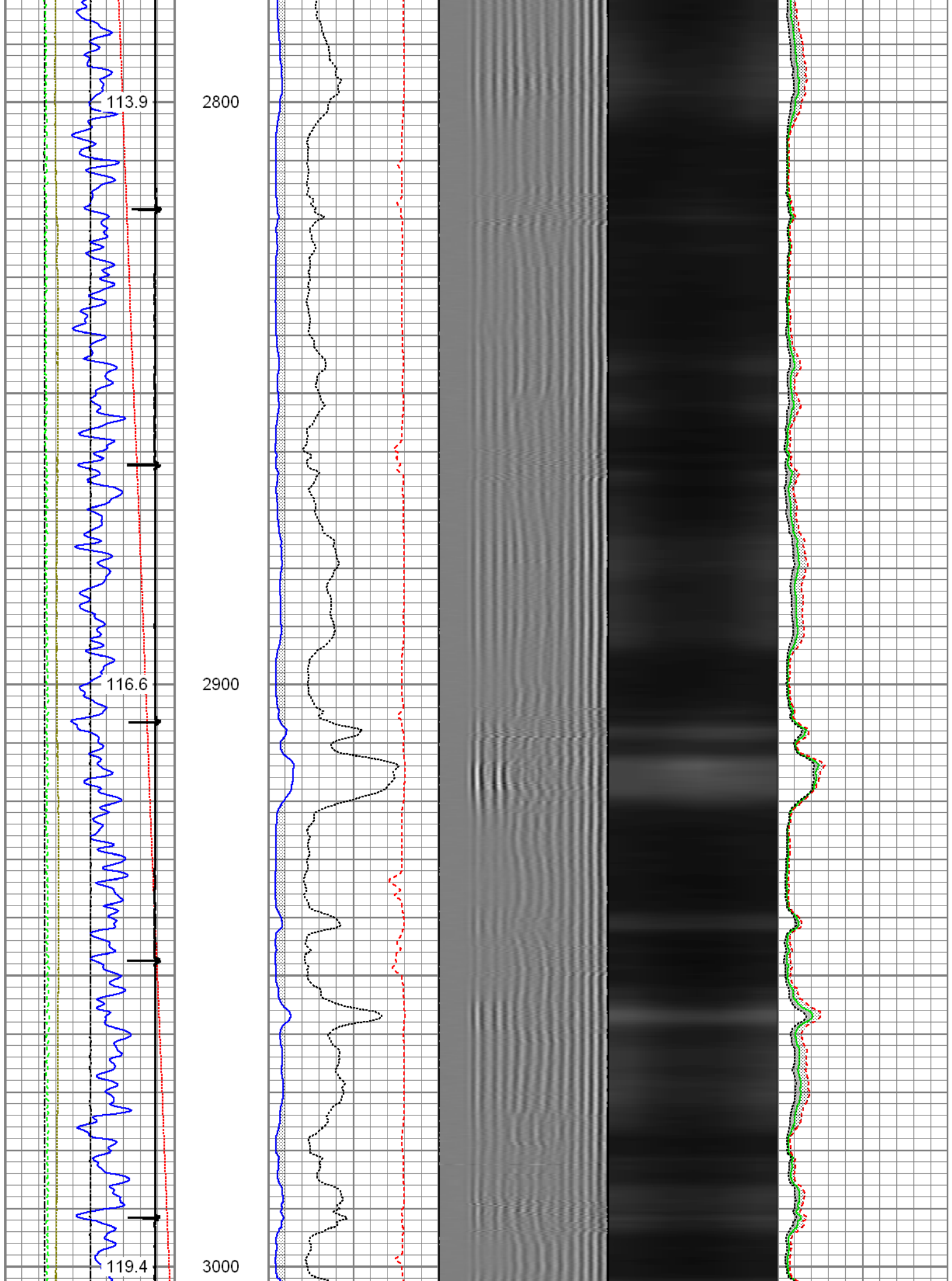


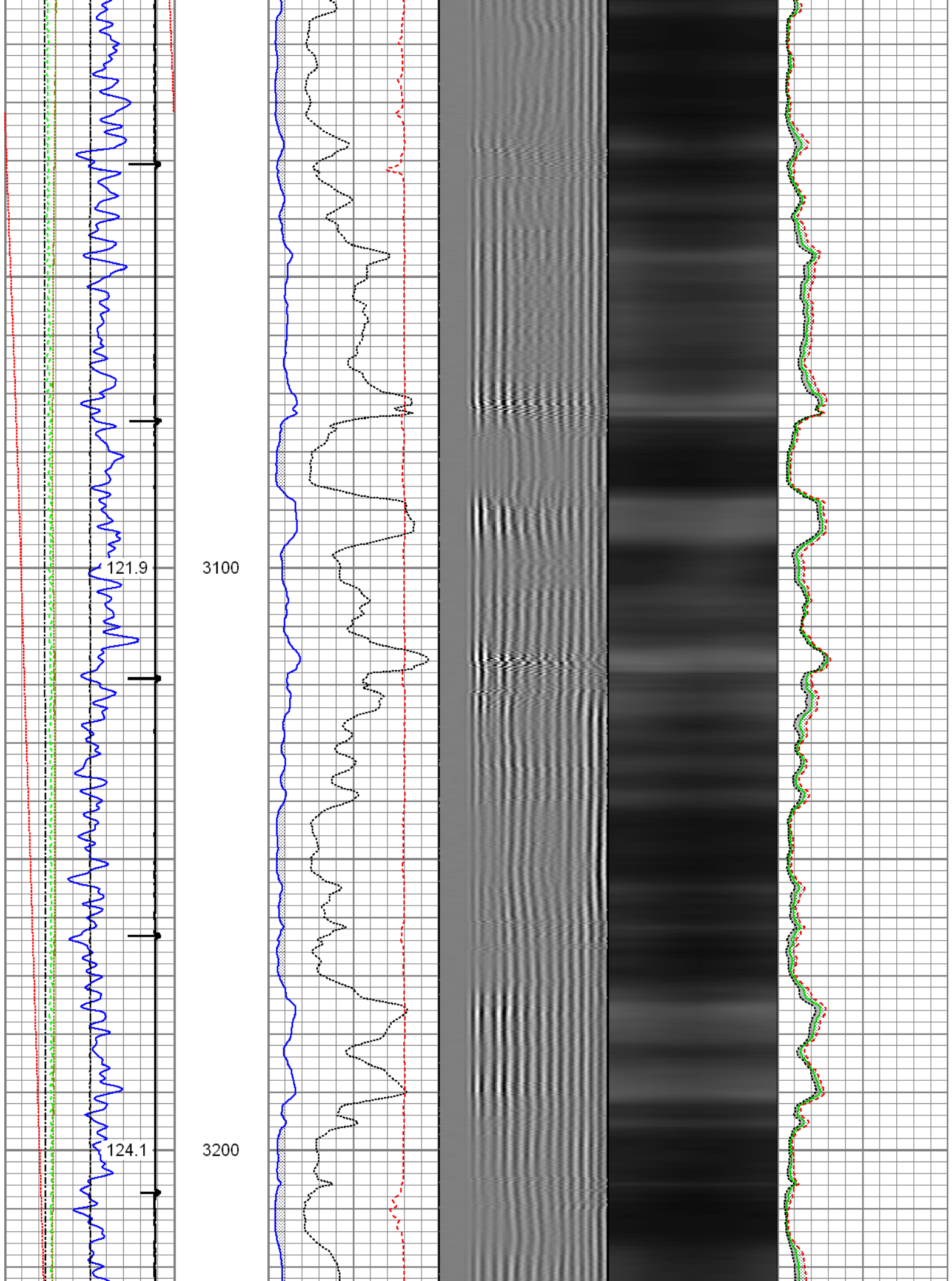


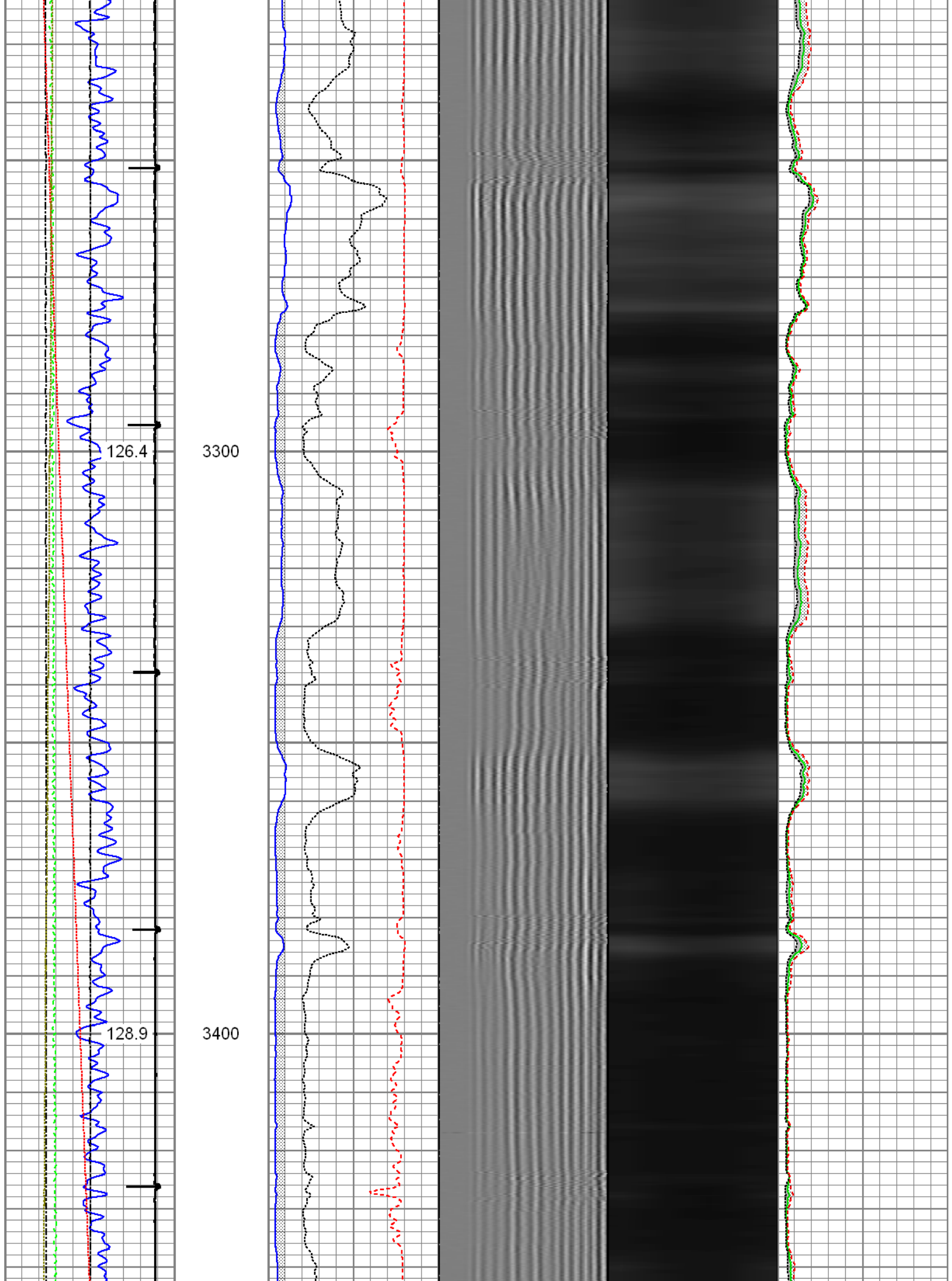


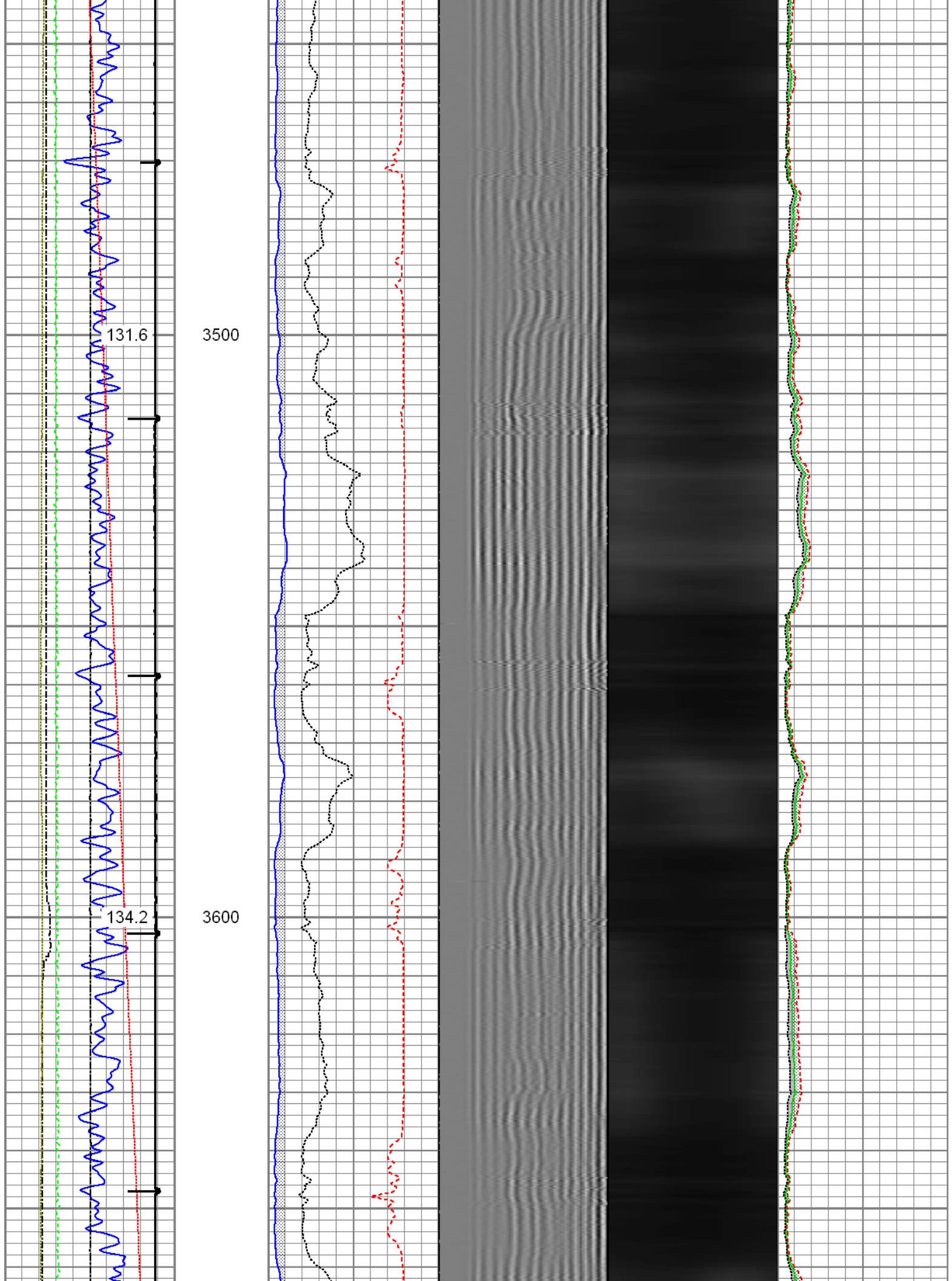


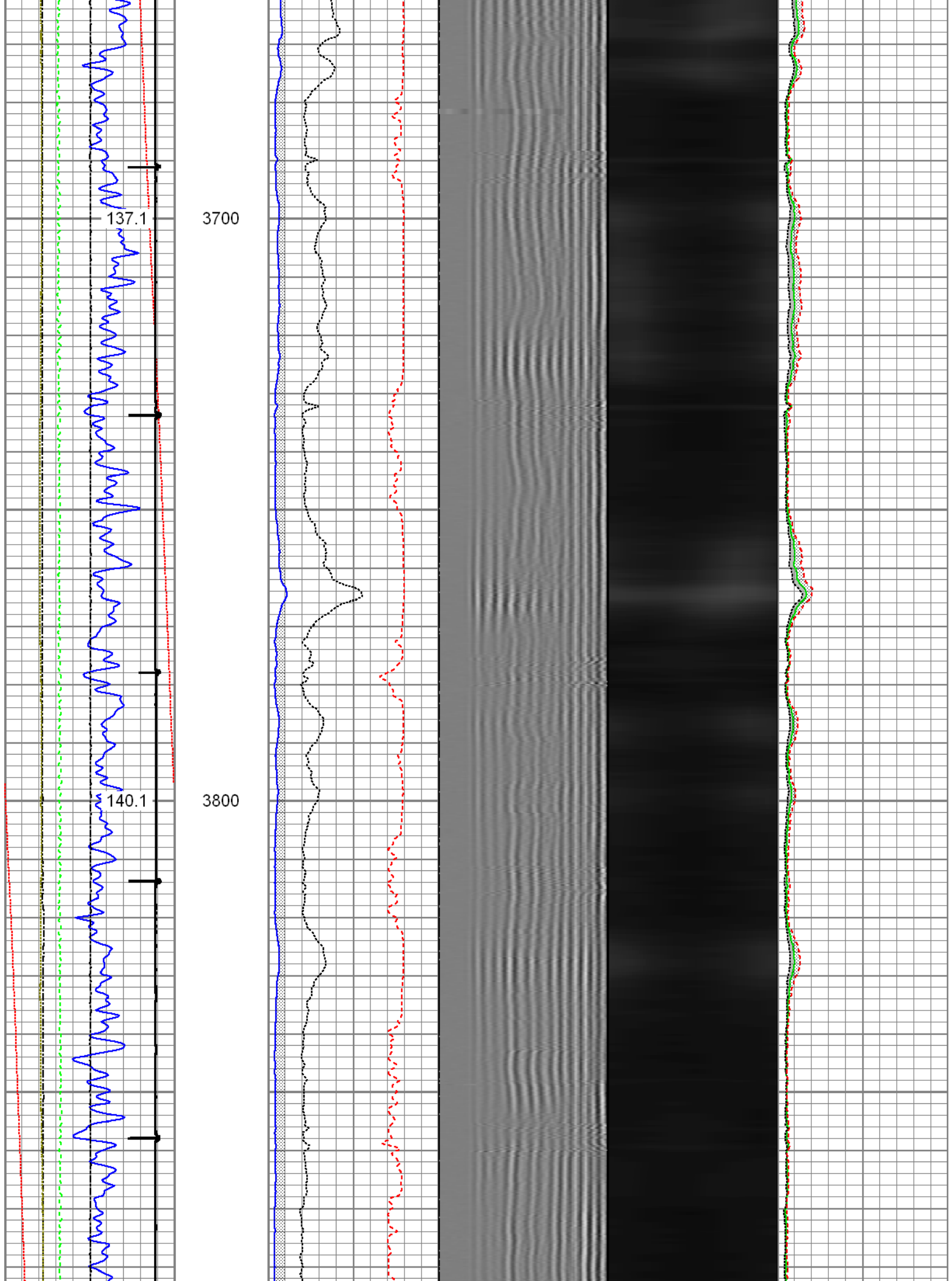


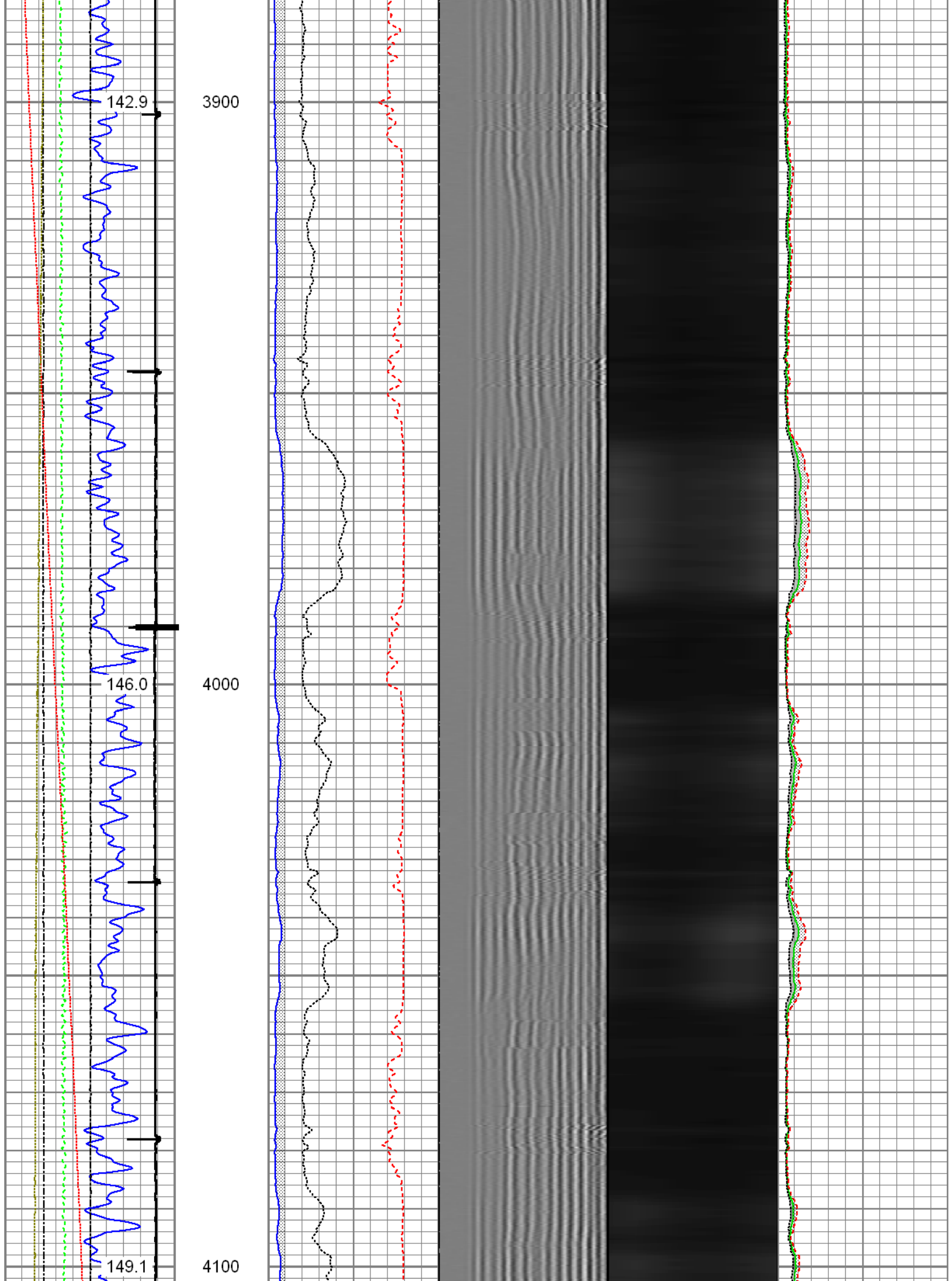


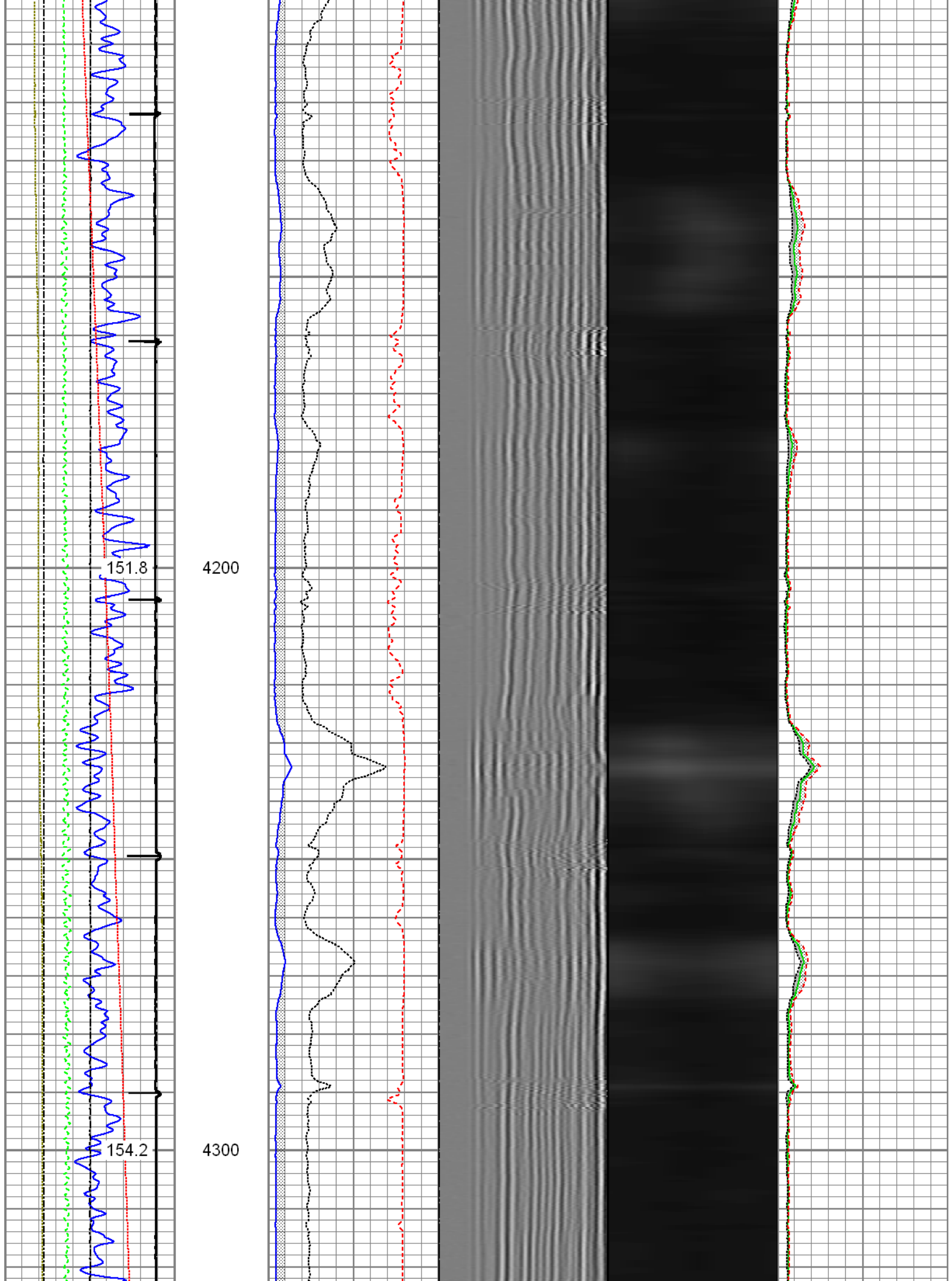


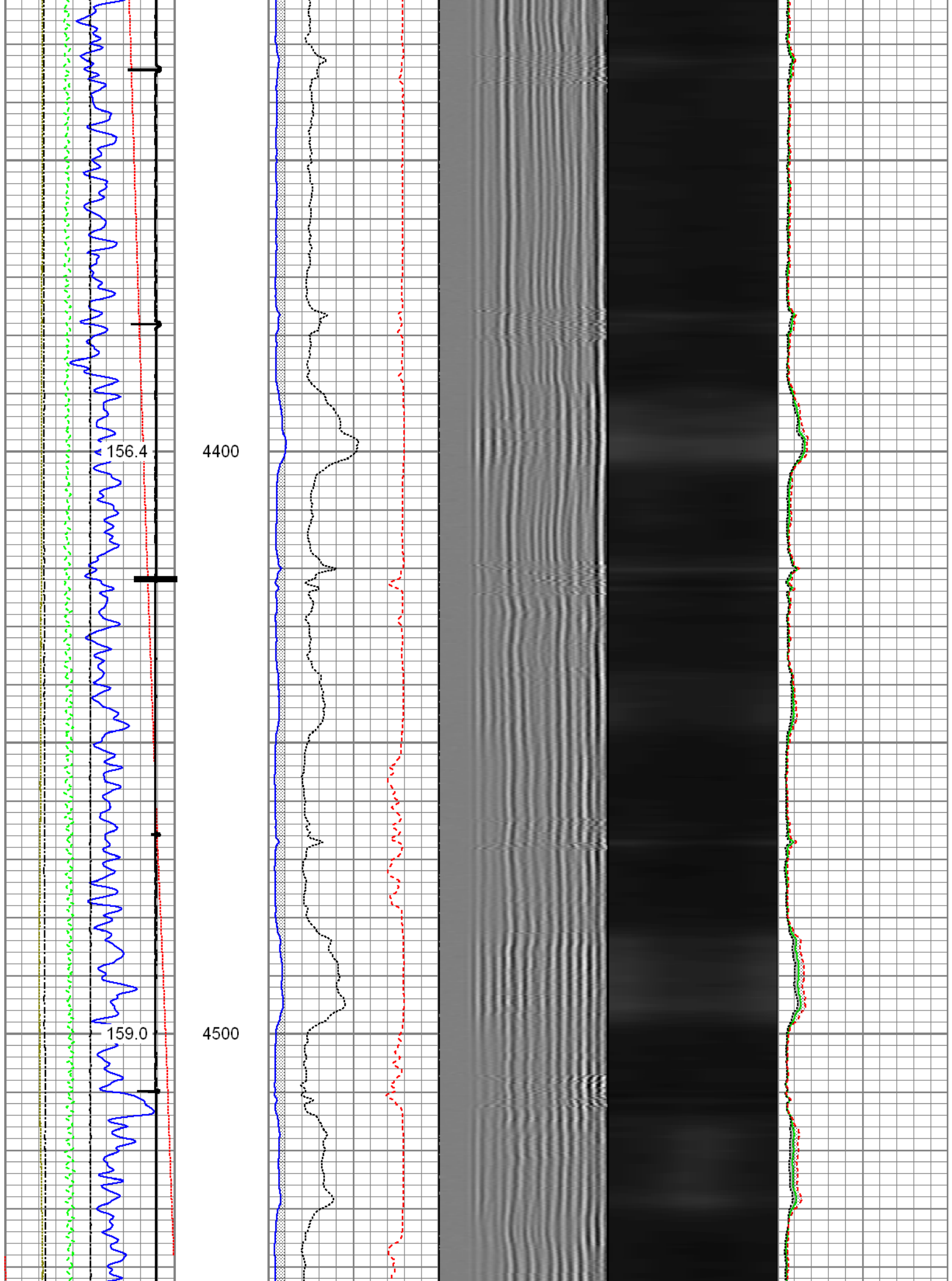


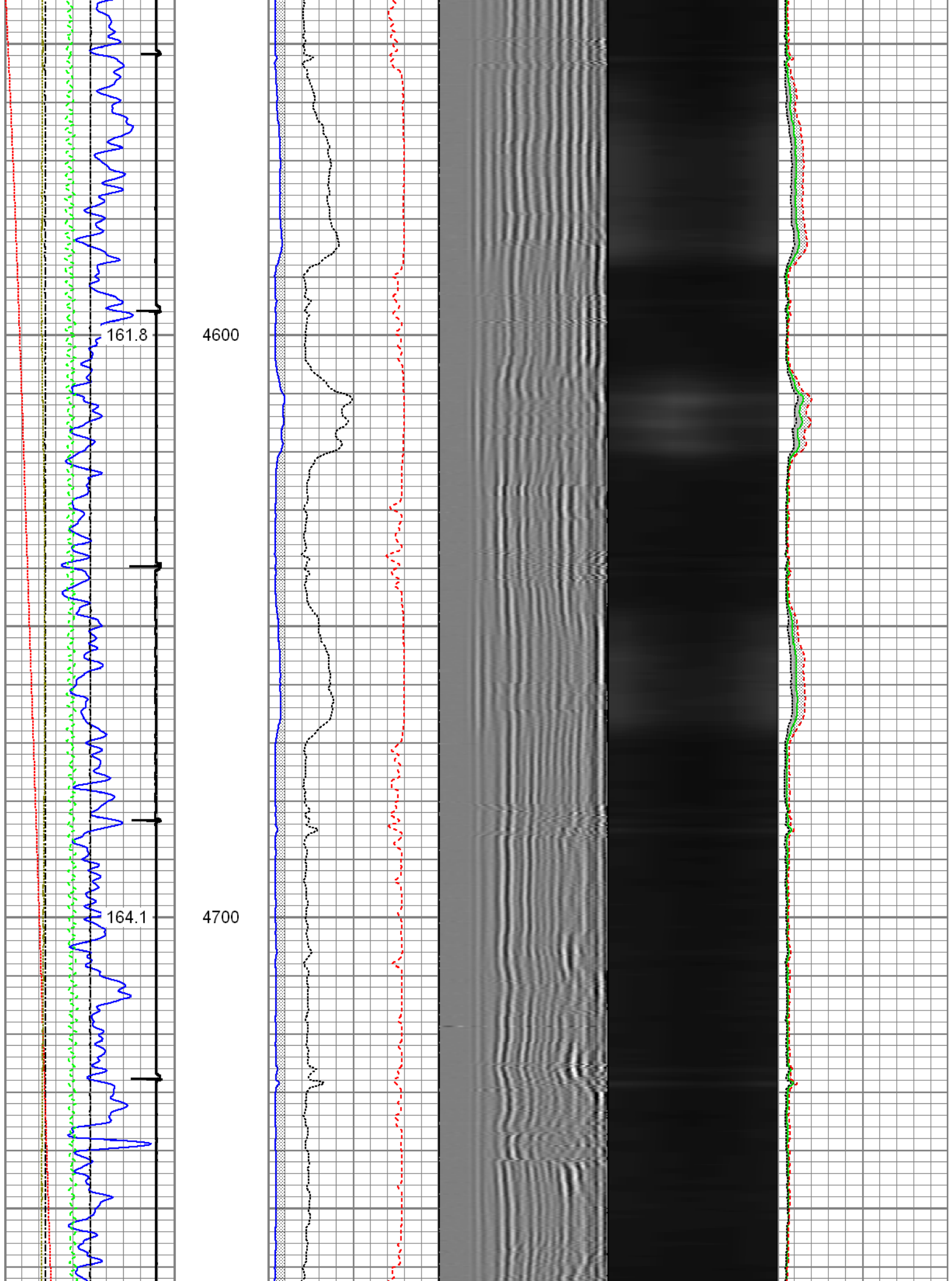


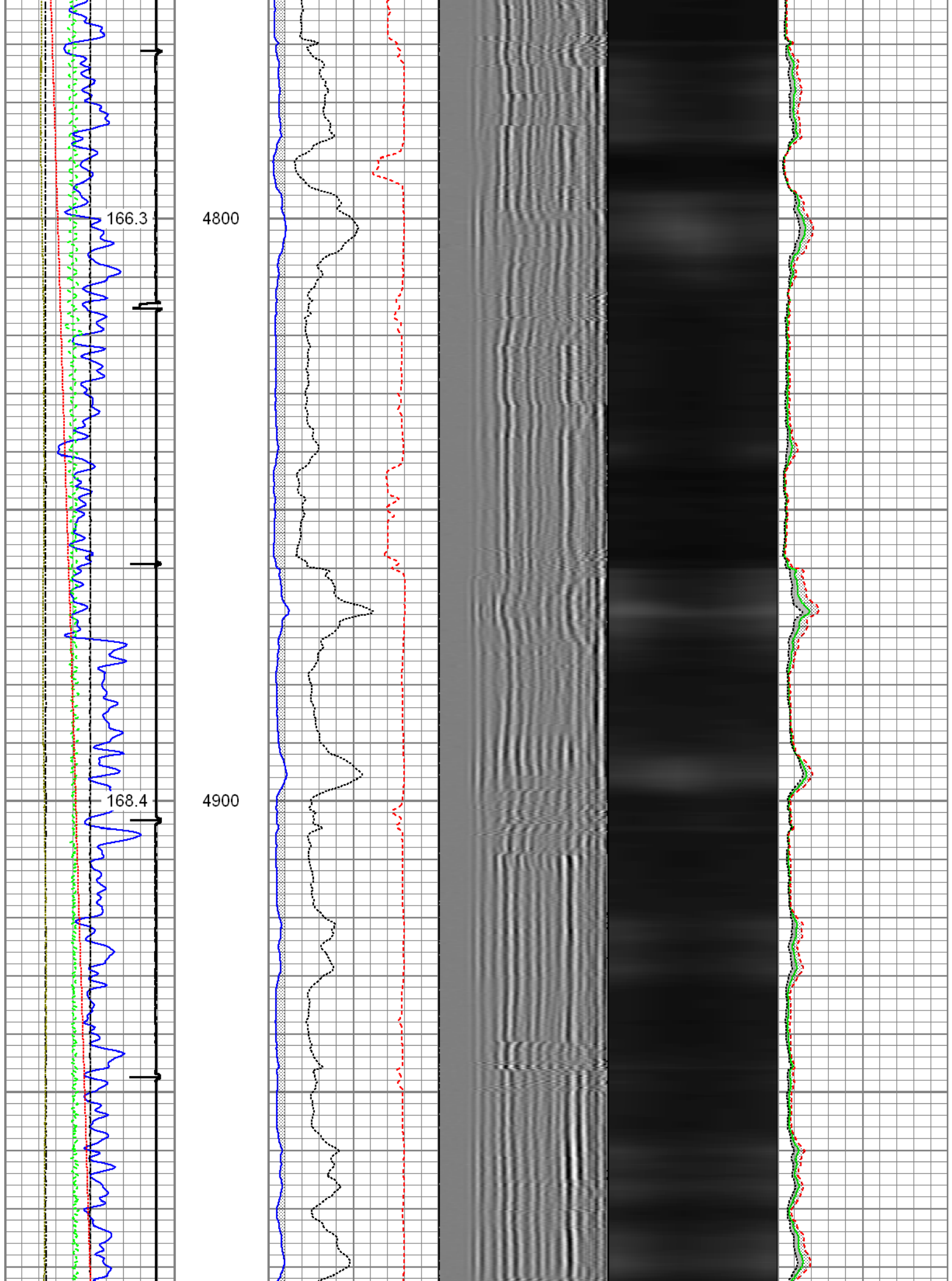


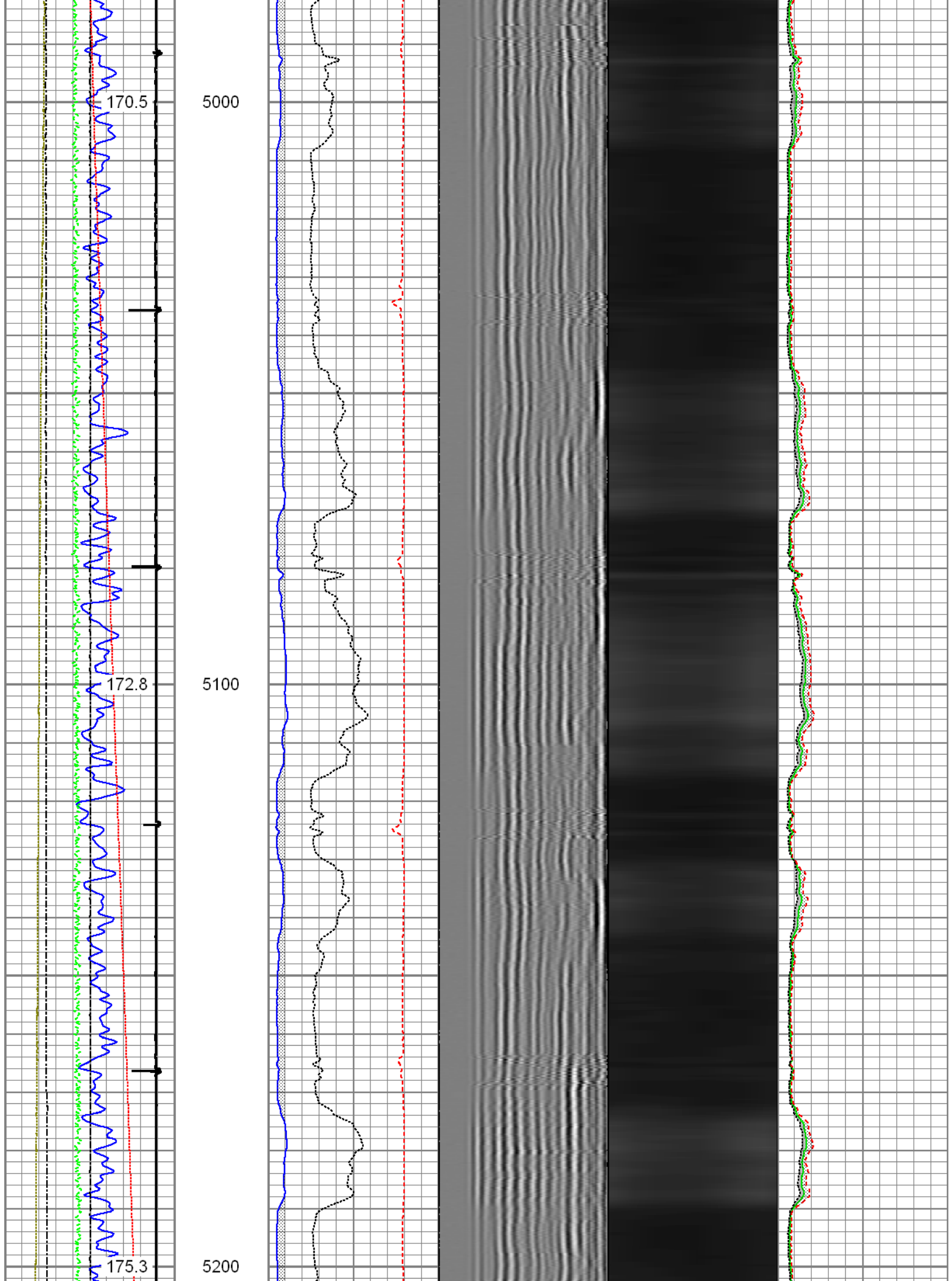


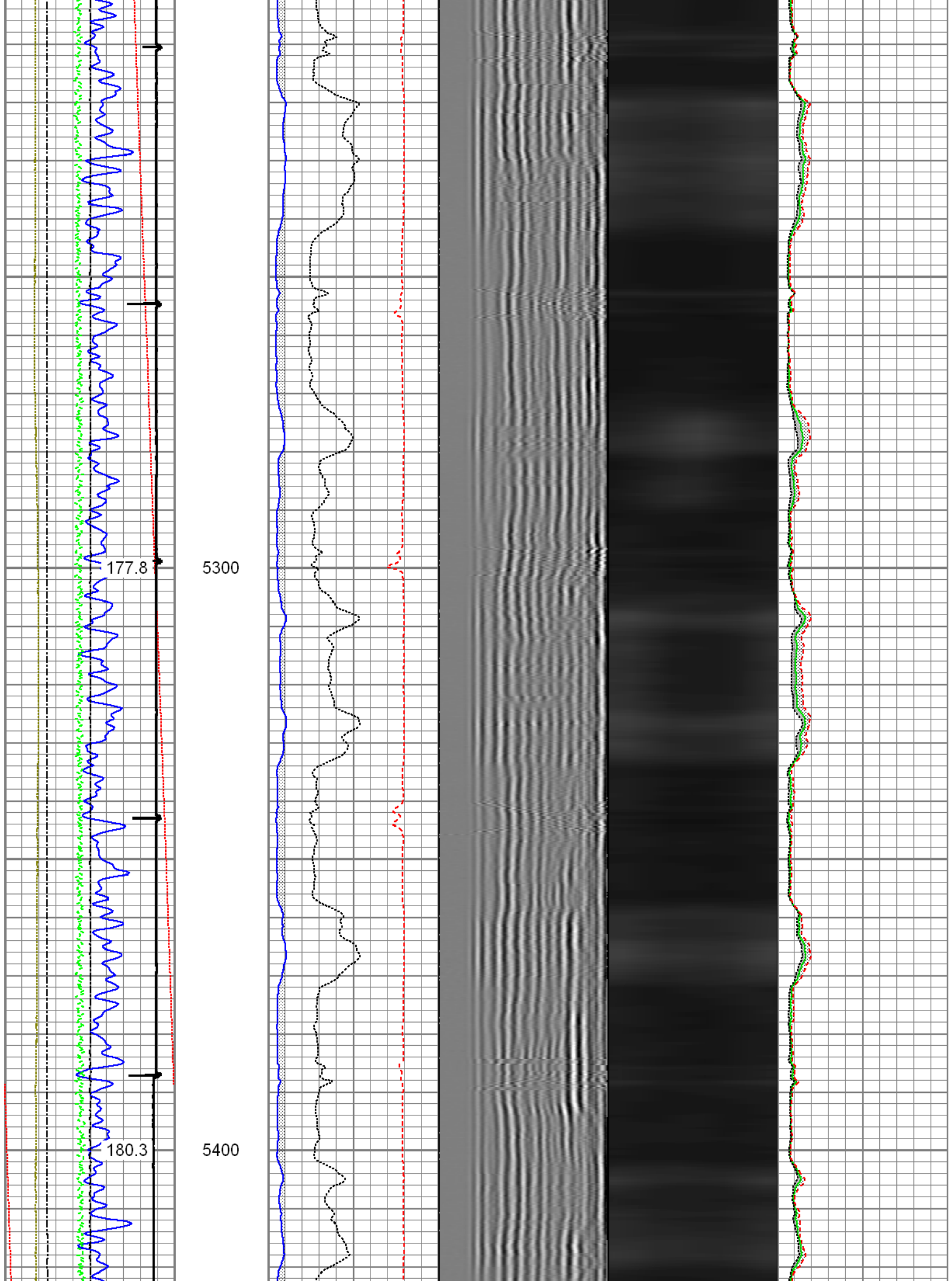


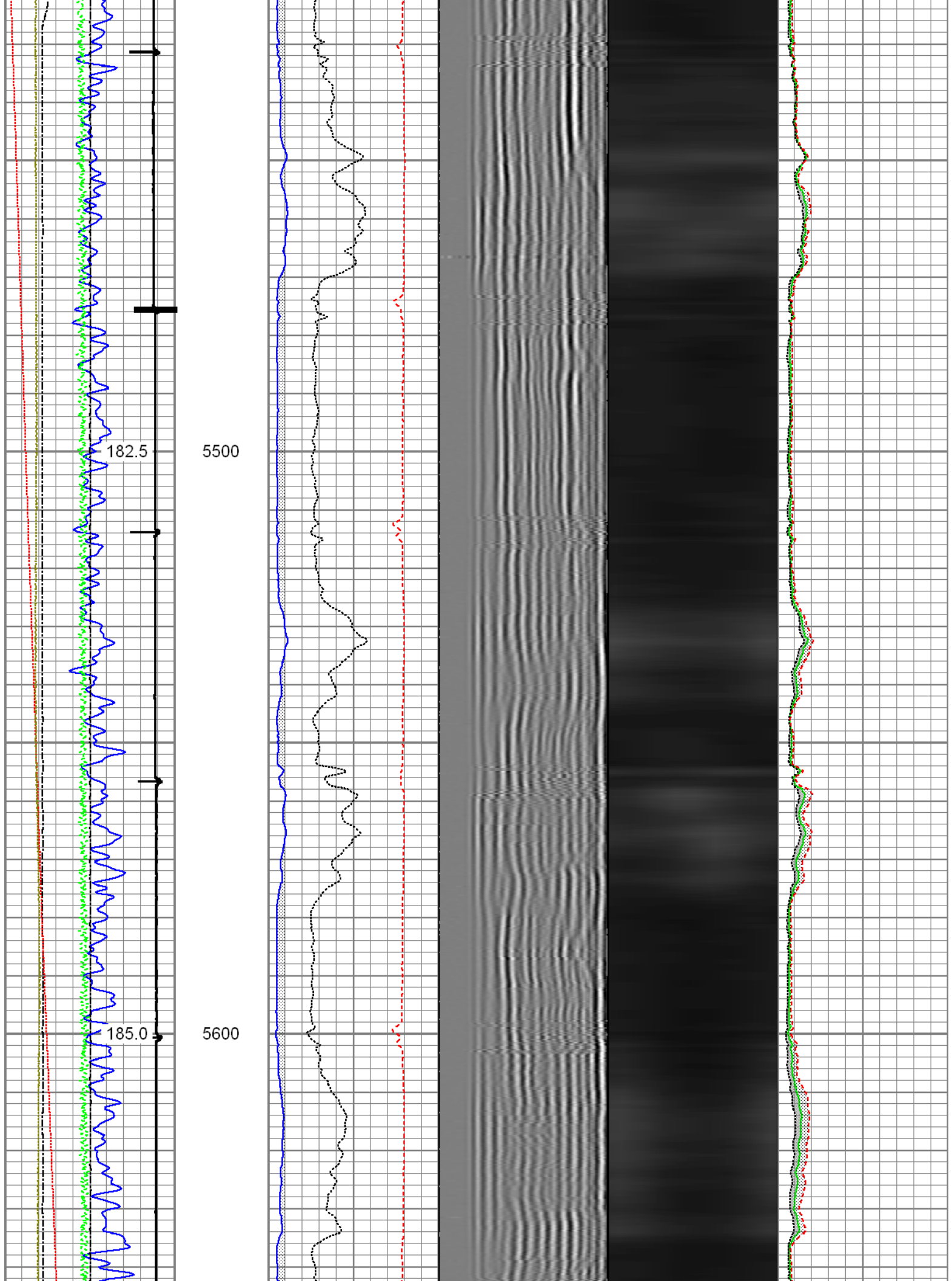


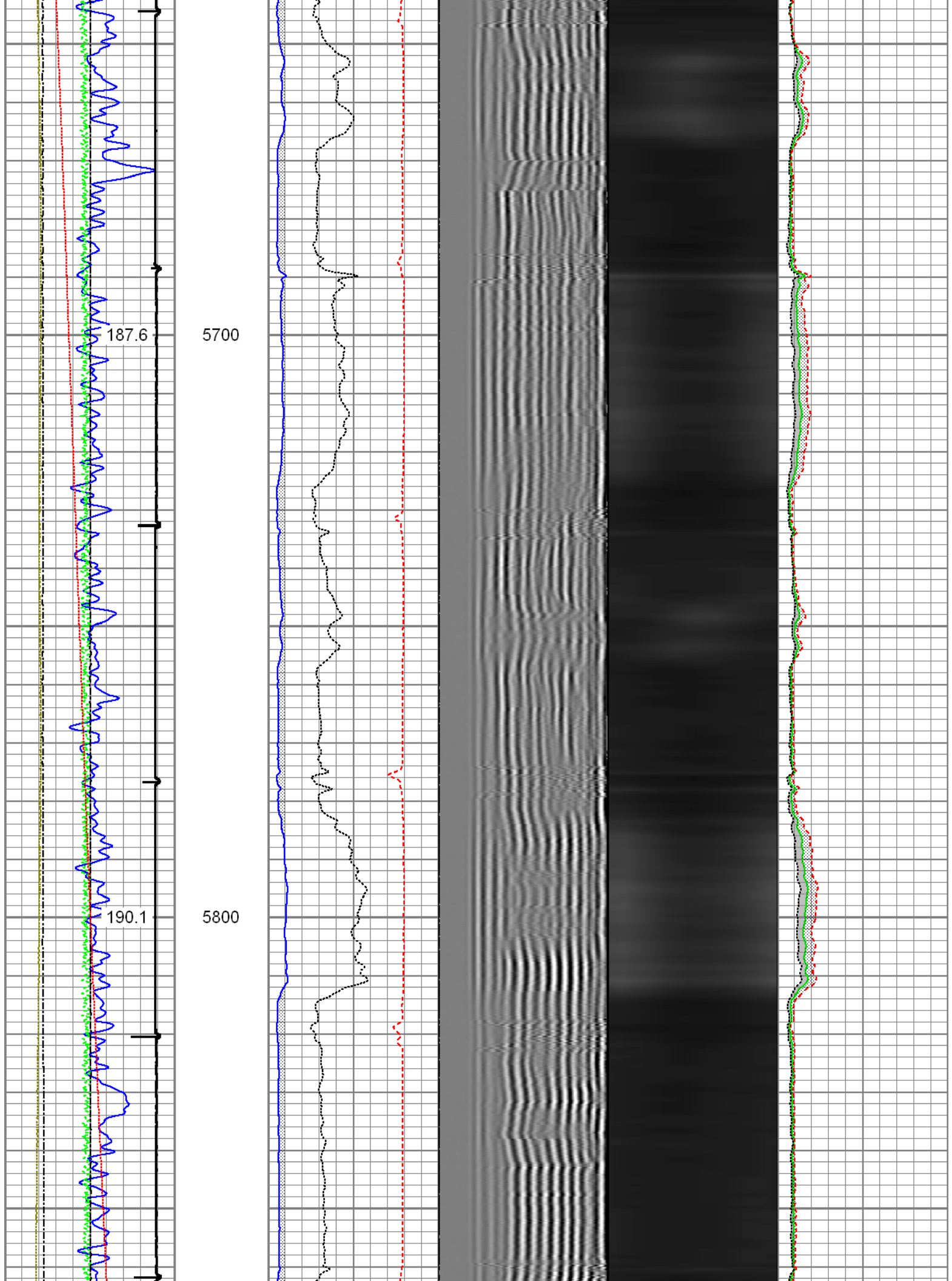


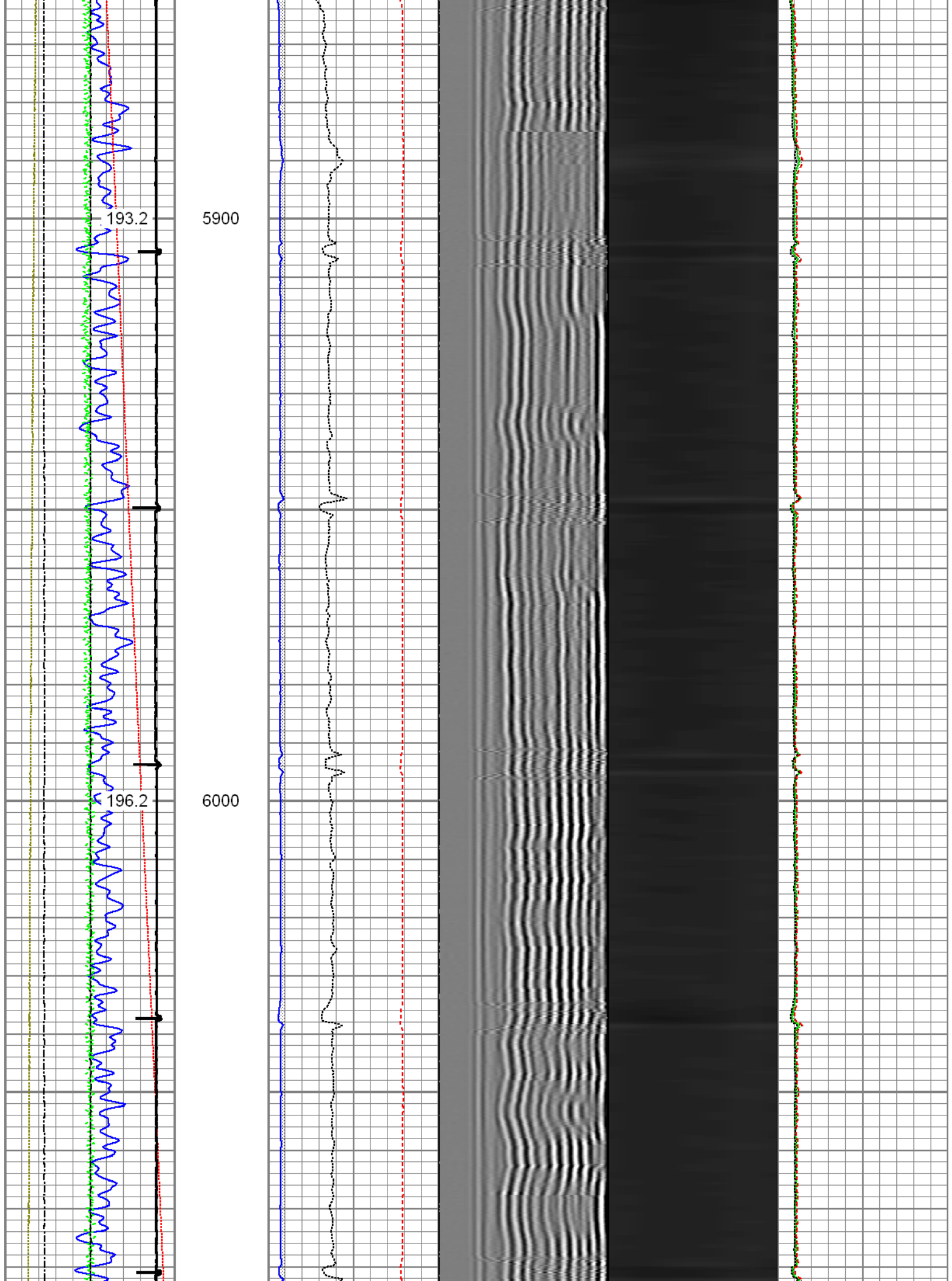


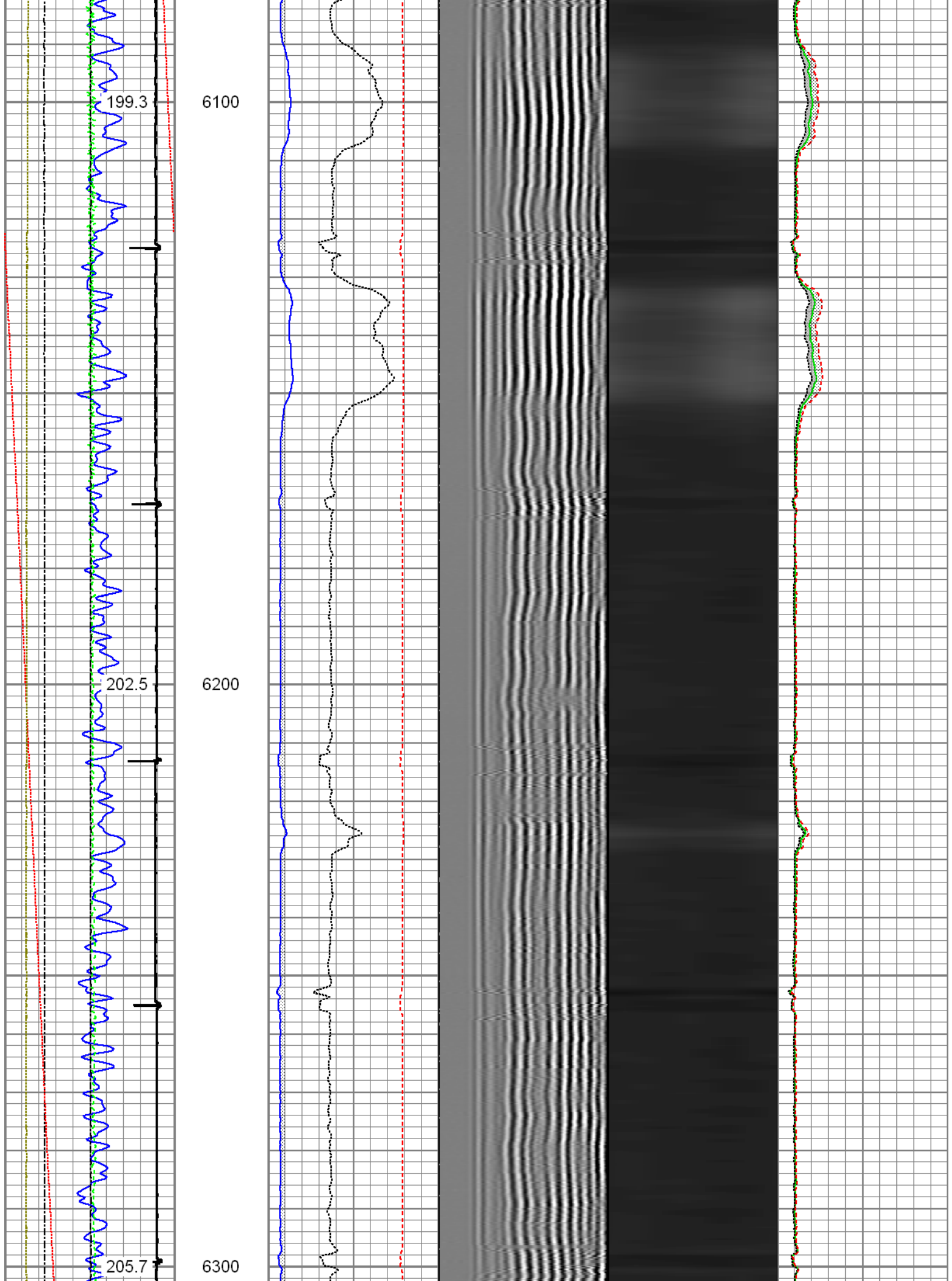


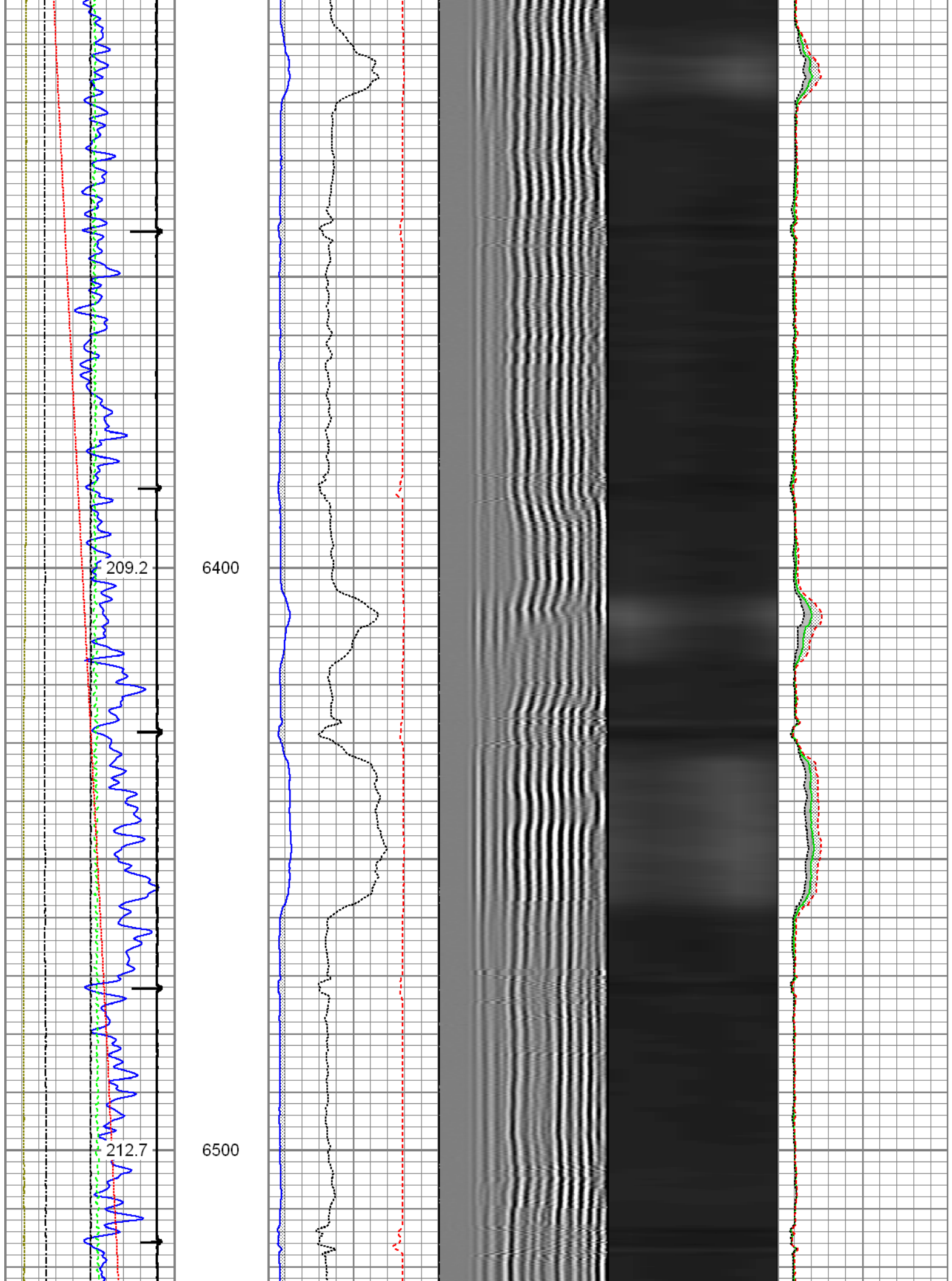


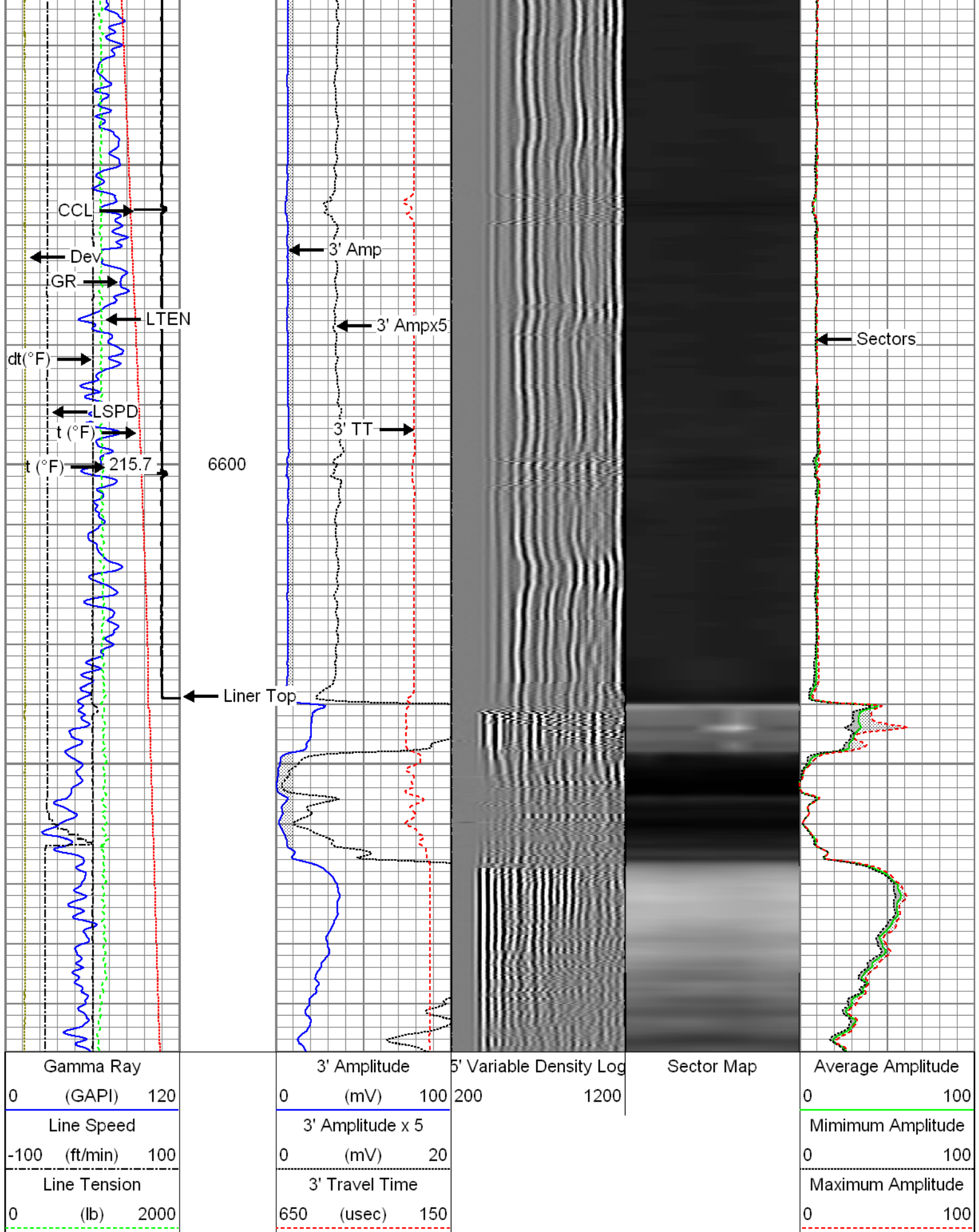












Gamma Ray		
0	(GAPI)	120
Line Speed		
-100	(ft/min)	100
Line Tension		
0	(lb)	2000
Differential Temperature		
-2	(degF)	2
Temperature		


3' Amplitude		
0	(mV)	100
3' Amplitude x 5		
0	(mV)	20
3' Travel Time		
650	(usec)	150

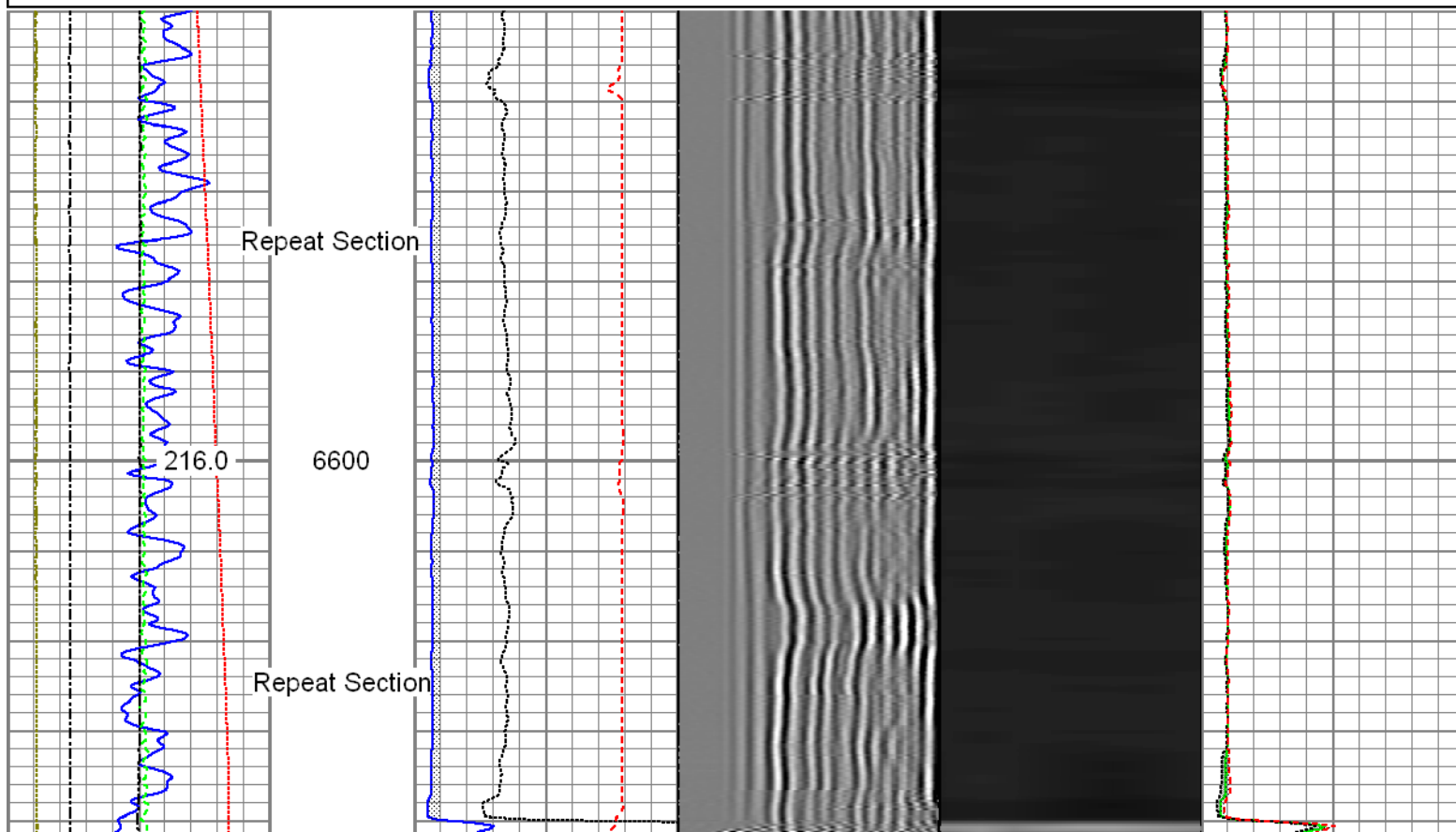
5' Variable Density Log		
200		1200

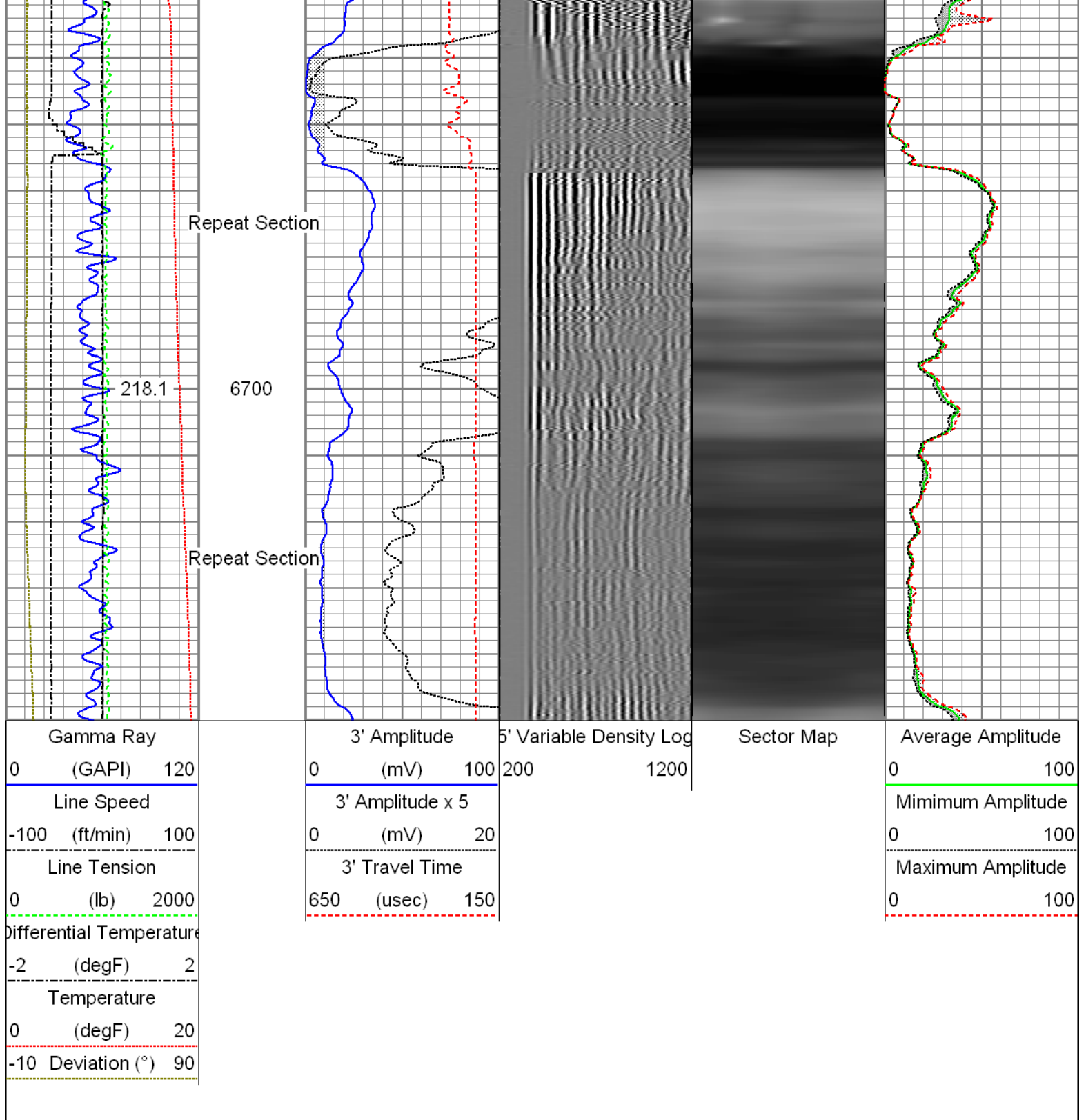
Sector Map		
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Average Amplitude		
0		100
Minimum Amplitude		
0		100
Maximum Amplitude		
0		100

0 (degF) 20
-10 Deviation (°) 90
Casing Collar Locator

	<h1>Repeat Section</h1> <p>Recorded with 2800 PSI Surface Induced Pressure</p>																																																					
<p>Database File: 0512340746_anadarko_goodin 15n-a6hz_06-26-15_mit_rbl.db Dataset Pathname: pass2 Presentation Format: rbt4_mit Dataset Creation: Fri Jun 26 16:26:41 2015 by Log 7.0 B1 Charted by: Depth in Feet scaled 1:240</p>																																																						
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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
			GOpin-GOpin 2" GO Pin to GO Pin Connection	0.23	2.00	5.00
			UW_AGS-UW_AGS_001 (218874) 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
TEMP	23.85		UW_PRT-UW_PRT_010 (10005100) Production Temperature	1.93	1.69	9.50

TEMP	22.45		UW_PRT-UW_PRT_016 (10025100) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW_PRC-DSSRAC (084) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WV3FT	15.42					
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					
			UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
			UW_PRC-DSSRAC (083) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
MIT	5.41		UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #4 -UW_PRC_057 (1101) 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: 0512340746_Anadarko_Goodin 15N-A6HZ_06-26-15_MIT_RBL.db: field/well/run1/pass4 Total Length: 28.32 ft Total Weight: 329.50 lb O.D. 3.13 in						

Calibration Report	
Database File:	0512340746_anadarko_goodin 15n-a6hz_06-26-15_mit_rbl.db
Dataset Pathname:	pass4
Dataset Creation:	Fri Jun 26 16:37:12 2015 by Log 7.0 B1
Multi-finger Imaging Tool Calibration Report	
Serial Number:	10014703
Number of Fingers:	40
Tool Model:	UW_MIT40_042

Inclinometer Calibration Report

Vertical:		Inc X	Inc Y
Finger 1 up:		1963	1960
Finger 31 up:		1748	1727
Finger 21 up:		2195	1742
Finger 11 up:		2178	2188
		1727	2173
Sensitivity ratio:	1.00706		
X-axis angle:	132.825		
Deviation const.:	317.775		

Finger Calibration Report

Performed: Fri Jun 26 15:39:04 2015

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1089	377.0	1466	383.0	1849	400.0	2249
Finger 02:	1048	383.0	1431	397.0	1828	419.0	2247
Finger 03:	1064	371.0	1435	384.0	1819	407.0	2226
Finger 04:	992	380.0	1372	406.0	1778	437.0	2215
Finger 05:	1022	363.0	1385	378.0	1763	399.0	2162
Finger 06:	1022	375.0	1397	394.0	1791	416.0	2207
Finger 07:	1020	371.0	1391	387.0	1778	410.0	2188
Finger 08:	996	375.0	1371	402.0	1773	426.0	2199
Finger 09:	1063	379.0	1442	389.0	1831	401.0	2232
Finger 10:	1027	373.0	1400	392.0	1792	409.0	2201
Finger 11:	1006	374.0	1380	394.0	1774	418.0	2192
Finger 12:	1087	369.0	1456	375.0	1831	386.0	2217
Finger 13:	1036	367.0	1403	392.0	1795	416.0	2211
Finger 14:	1016	381.0	1397	407.0	1804	428.0	2232
Finger 15:	975	376.0	1351	412.0	1763	434.0	2197
Finger 16:	1031	373.0	1404	395.0	1799	419.0	2218
Finger 17:	1060	371.0	1431	388.0	1819	404.0	2223
Finger 18:	1099	370.0	1469	389.0	1858	405.0	2263
Finger 19:	1061	375.0	1436	397.0	1833	413.0	2246
Finger 20:	979	372.0	1351	407.0	1758	429.0	2187
Finger 21:	1077	370.0	1447	390.0	1837	408.0	2245
Finger 22:	1060	374.0	1434	396.0	1830	414.0	2244
Finger 23:	1100	376.0	1476	398.0	1874	420.0	2294
Finger 24:	1067	343.0	1410	369.0	1779	390.0	2169
Finger 25:	1075	379.0	1454	401.0	1855	417.0	2272
Finger 26:	1041	365.0	1406	392.0	1798	414.0	2212
Finger 27:	1209	388.0	1597	394.0	1991	404.0	2395
Finger 28:	1087	359.0	1446	380.0	1826	404.0	2230
Finger 29:	1033	369.0	1402	391.0	1793	421.0	2214
Finger 30:	1020	371.0	1391	394.0	1785	429.0	2214
Finger 31:	1235	400.0	1635	407.0	2042	421.0	2463
Finger 32:	1008	367.0	1375	381.0	1756	403.0	2159
Finger 33:	1107	393.0	1500	410.0	1910	430.0	2340
Finger 34:	982	367.0	1349	387.0	1736	416.0	2152
Finger 35:	1147	392.0	1539	407.0	1946	423.0	2369
Finger 36:	1057	361.0	1418	372.0	1790	395.0	2185
Finger 37:	1127	397.0	1524	404.0	1928	423.0	2351
Finger 38:	1095	369.0	1464	379.0	1843	399.0	2242
Finger 39:	1082	363.0	1445	369.0	1814	390.0	2204
Finger 40:	991	388.0	1379	410.0	1789	436.0	2225

Segmented Cement Bond Log Calibration Report

Serial Number: 1063
 Tool Model: UW_RBT_004

Calibration Casing Diameter: 7.000 in
 Calibration Depth: 22.712 ft

Master Calibration, performed Fri Jun 26 15:39:46 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.003	1.000	0.800	62.165	61.206	0.959
5FT	-0.006	1.000	0.800	62.165	60.993	1.172
S1	-0.004	1.000	0.000	100.000	99.635	0.365
S2	-0.004	1.000	0.000	100.000	99.635	0.365
S3	-0.003	1.000	0.000	100.000	99.703	0.297
S4	-0.004	1.000	0.000	100.000	99.635	0.365
S5	-0.002	1.000	0.000	100.000	99.756	0.244
S6	-0.003	1.000	0.000	100.000	99.705	0.295
S7	-0.003	1.000	0.000	100.000	99.730	0.270
S8	-0.003	1.000	0.000	100.000	99.737	0.263

Temperature Calibration Report

Serial Number: 10025100
Tool Model: UW_PRT_016
Performed: Wed Feb 11 13:47:59 2015

Point #	Reading	Reference
1	13249.00 cps	68.00 degF
2	18454.00 cps	104.00 degF
3	29735.00 cps	176.00 degF
4	41457.00 cps	248.00 degF
5	52851.00 cps	320.00 degF
6	59128.00 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 Kerr-McGee Oil & Gas Onshore, L.P.
Well Goodin 15N-A6HZ
Field Wattenberg
County Weld
State Colorado