



CEMENT BOND LOG

Mesa Wireline

Company ANTERO RESOURCES CORPORATION		Company ANTERO RESOURCES CORPORATION	
Well CSF 21C 07-07-91		Well CSF 21C 07-07-91	
Field MAMM CREEK		Field MAMM CREEK	
County GARFIELD		County GARFIELD	
State COLORADO		State COLORADO	
Location: API # 85043170840000		Other Services	
SURFACE HOLE: 2081' FILL & 1975' F.W.L.		NONE	
SEC. 07 TWP. 07S. RGE. 91W		Elevation	
Permanent Datum GROUND LEVEL Elevation 6837'		K.B. 6859'	
Log Measured From KELLY-BUSHING = 22 FT		D.F. 6858'	
Drilling Measured From KELLY-BUSHING		G.L. 6837'	

Date	23 NOV 2008
Run Number	ONE
Depth Driller	12431'
Depth Logger	12372'
Bottom Logged Interval	12372'
Top Log Interval	SURFACE
Open Hole Size	17.875"
Type Fluid	WATER
Density / Viscosity	8.34# /
Max. Recorded Temp.	339.0 DEG F
Estimated Cement Top	3560'
Time Well Ready	N/A
Time Logger on Bottom	N/A
Equipment Number	16901/RBT03
Location	GRAND JUNCTION
Recorded By	D. SOLIS
Witnessed By	M. PECKLER
	K. HOLMES
Borehole Record	
Run Number	Bit From To Size Weight From To
N/A	N/A
Casing Record	
Surface String	Size 9.875" Weight 47.0# Top SURFACE Bottom 2513.9'
Prot. String	
Production String	Size 5.5" Weight 23.0# Top SURFACE Bottom 12431.2'
Liner	
CONDUCTOR	Size 18.0" Weight 87.5# Top SURFACE Bottom 75'

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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

RBT-GR-TEMP RAN IN COMBINATION.  
 NO LOGS AVAILABLE TO CORRELATE WITH,  
 SHORT JOINTS @.4017' TO 4036' AND 11859' TO 11881'.

WE APPRECIATE YOUR BUSINESS, MESA WIRELINE LLC, GRAND JUNCTION CO. (970) 257-0



MAIN LOG SECTION, 2000 PSI

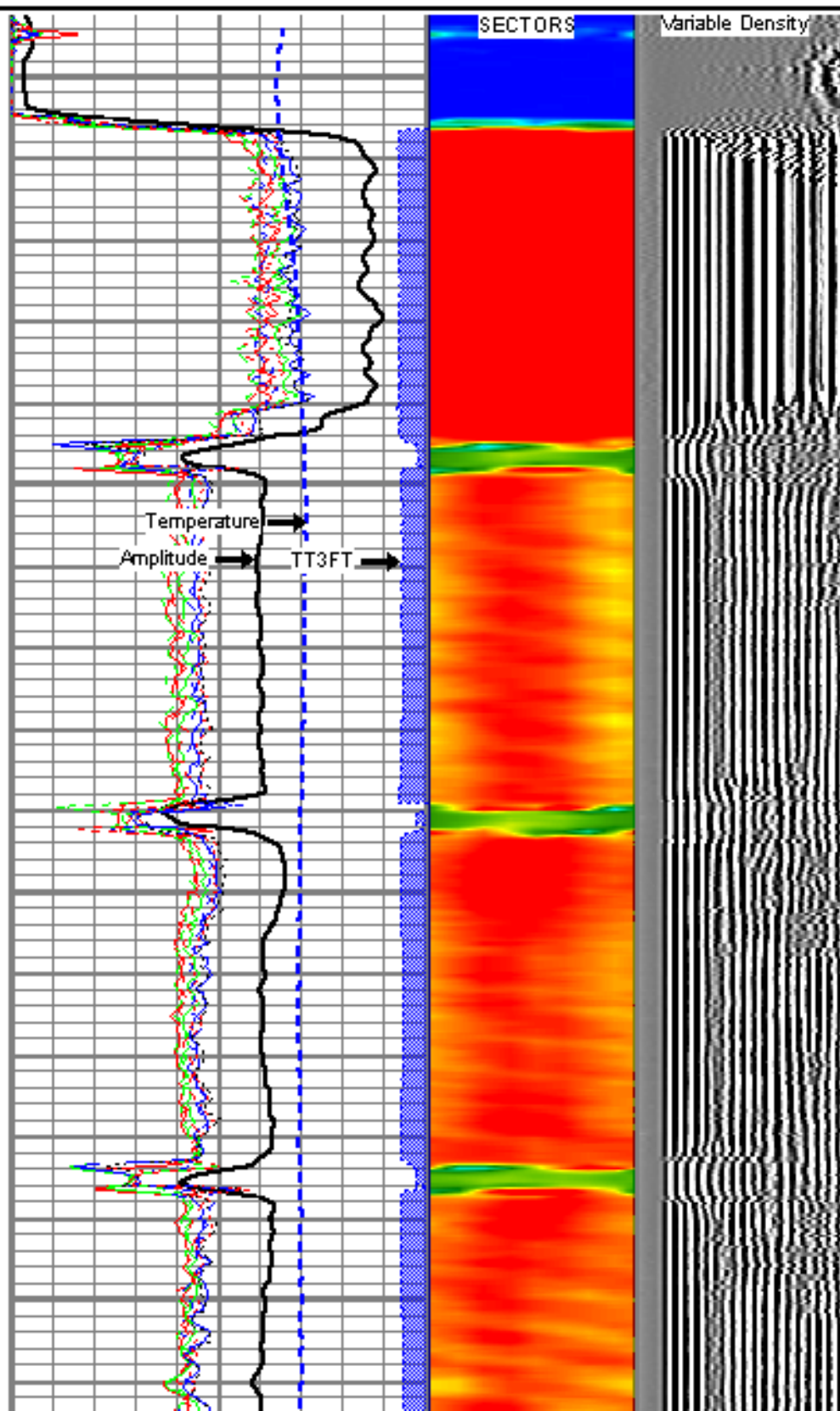
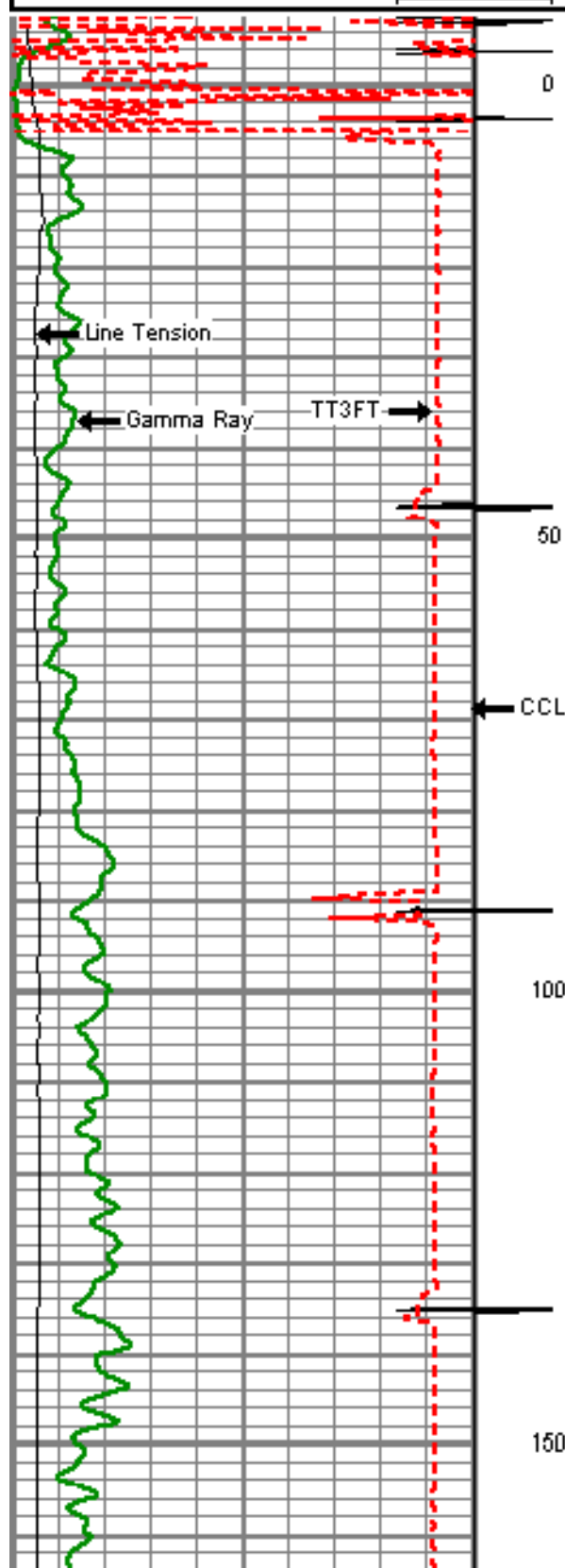


Database File: a\_csfcbl.db  
 Dataset Pathname: pass5  
 Presentation Format: rbt\_fin  
 Dataset Creation: Sun Nov 23 12:05:45 2008 by Log Std Casedhole 07122  
 Charted by: Depth in Feet scaled 1:240

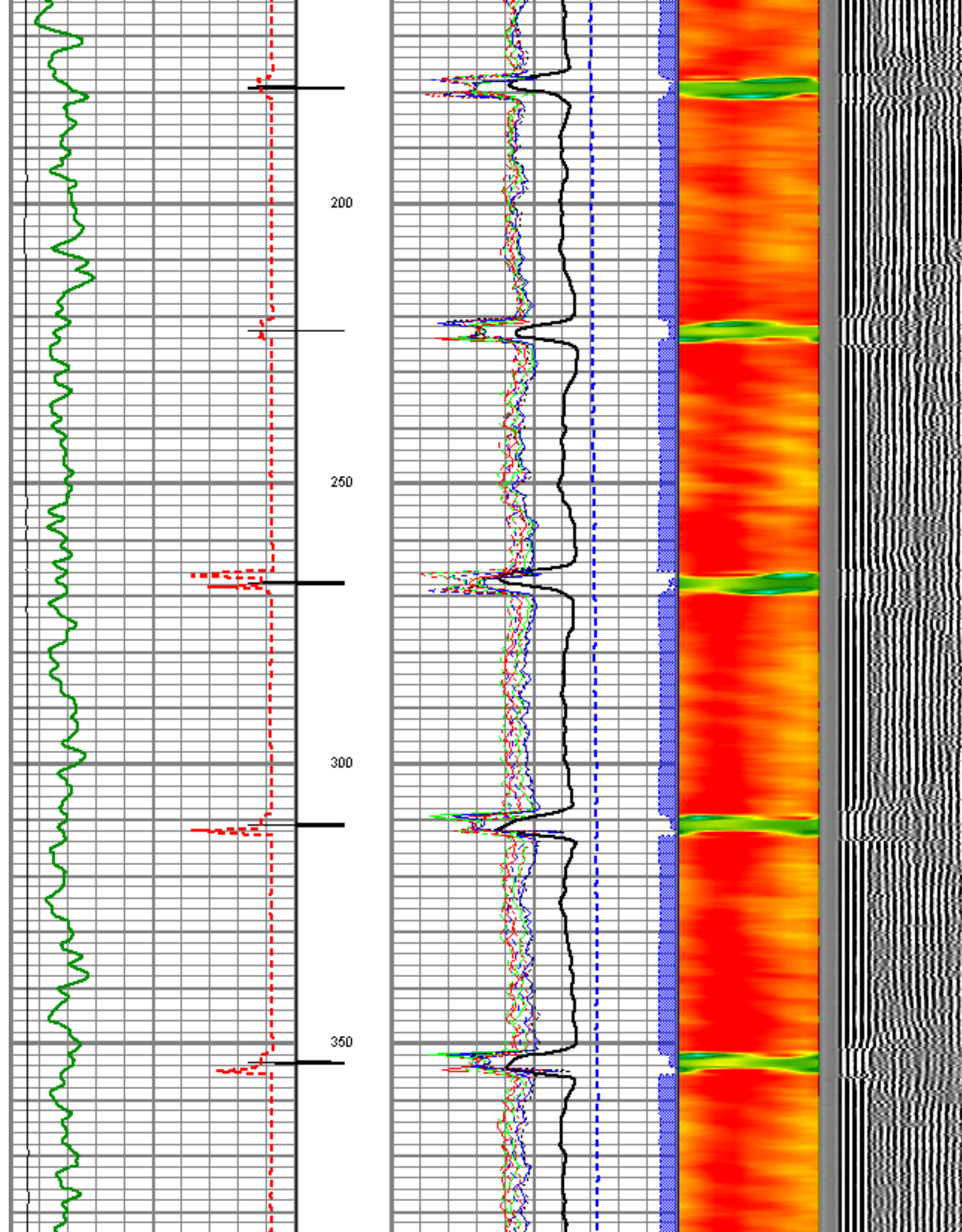
0	LTEN (lb)	4000
0	GR (GAPI)	200
400	TT3FT (usec)	185
CCL		

0	Amplitude (mV)	100
0	TT3FT (usec)	215
0	TEMP (degF)	100

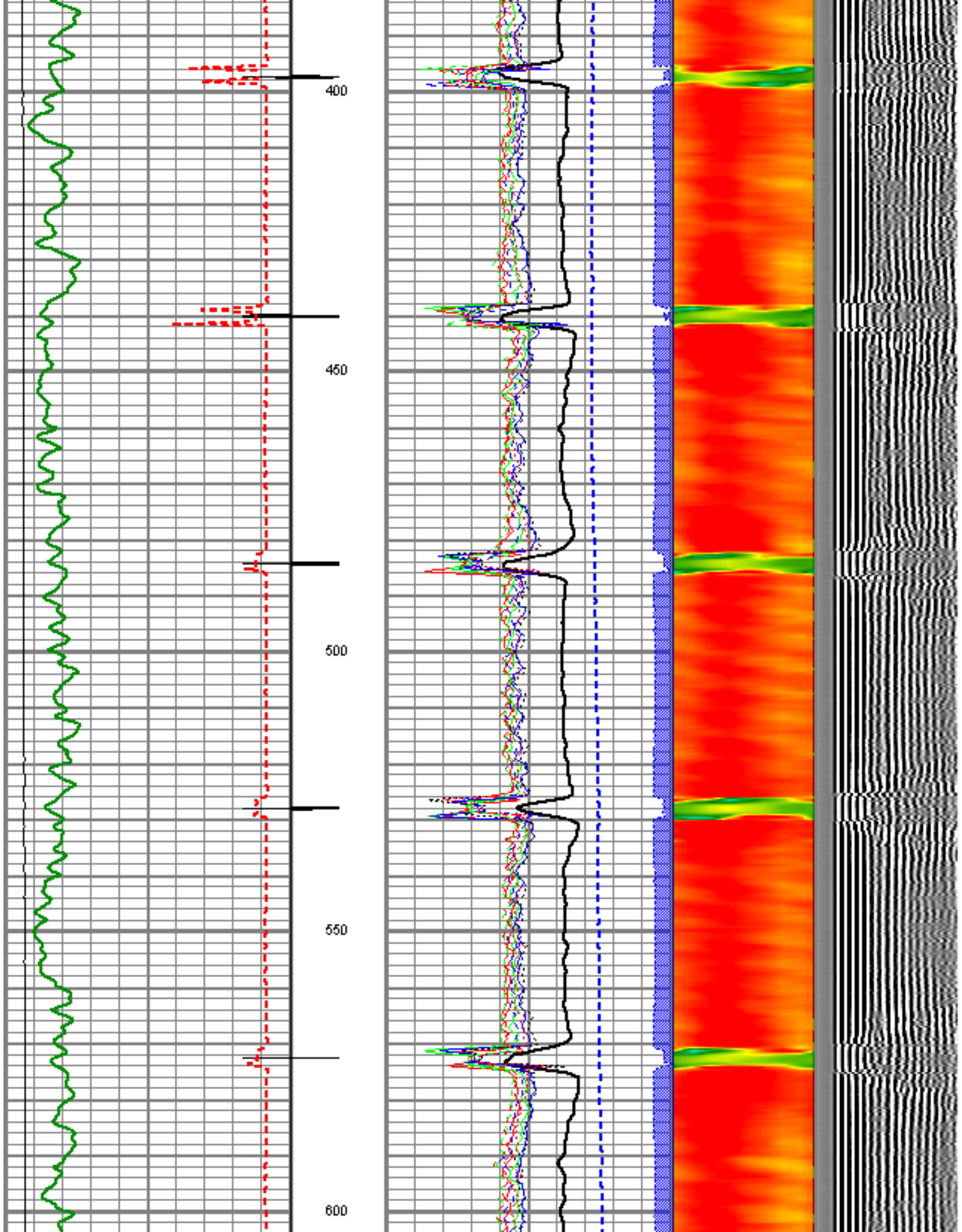
1	SECTORS	8	Variable Density
0		70	200 1200



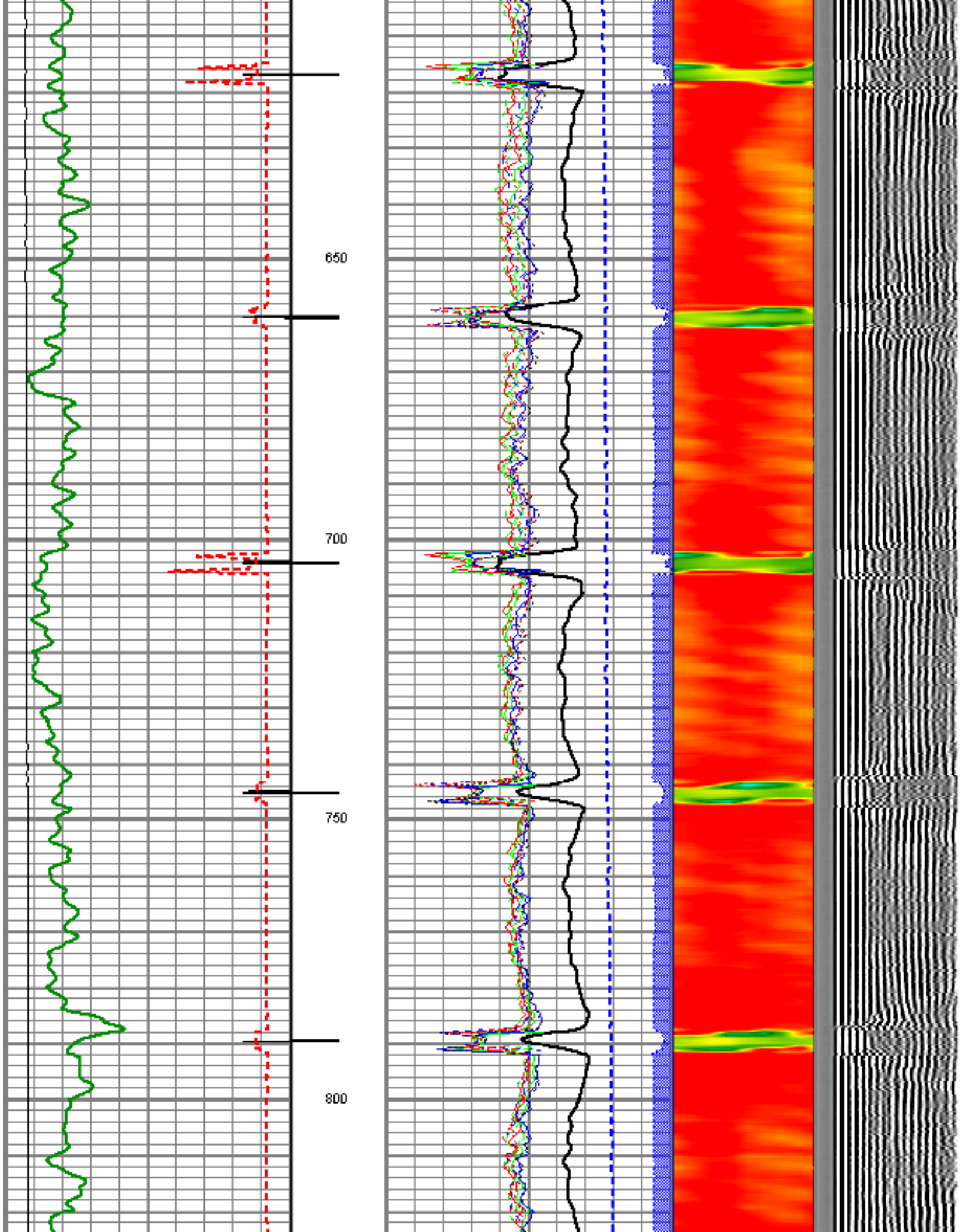




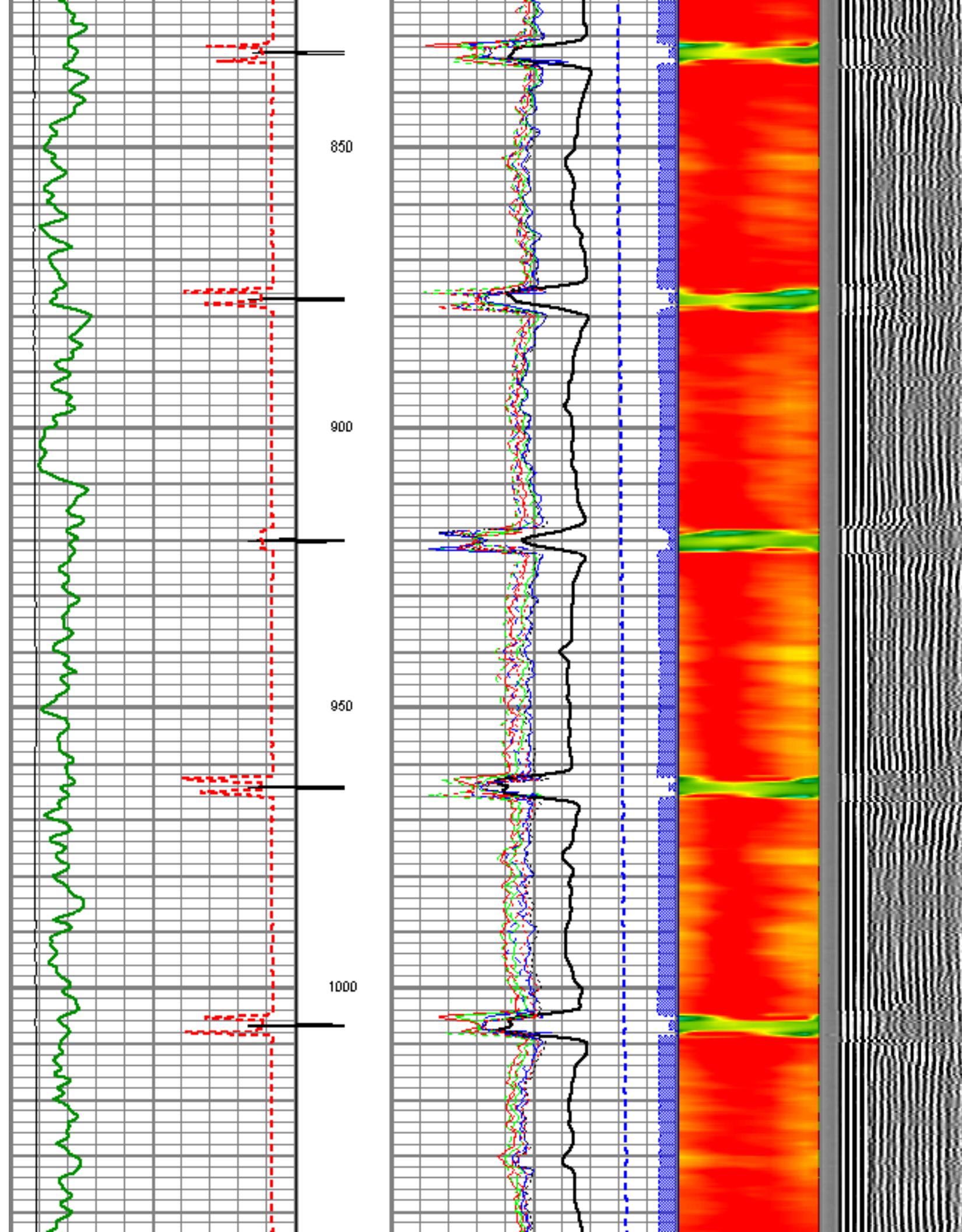




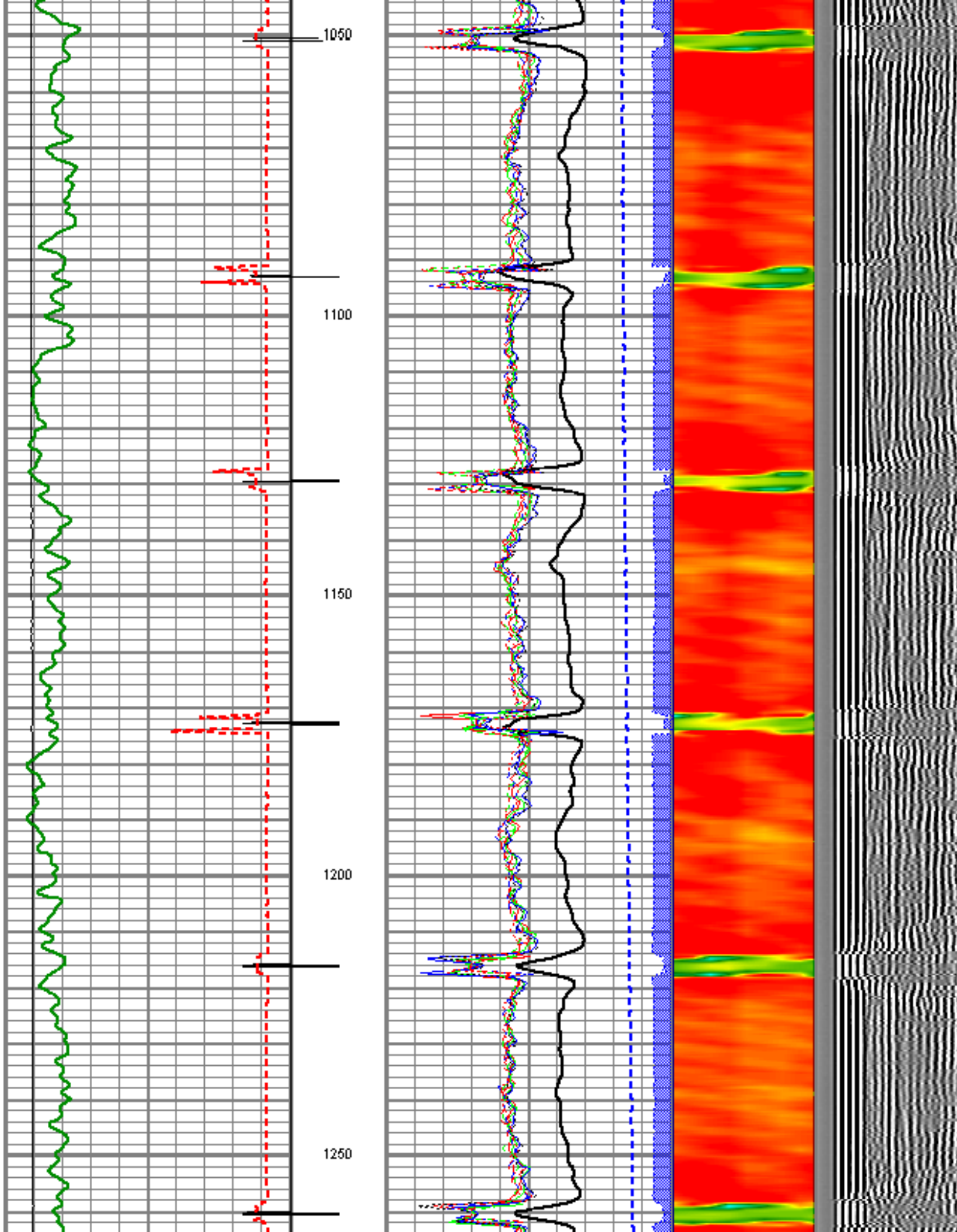




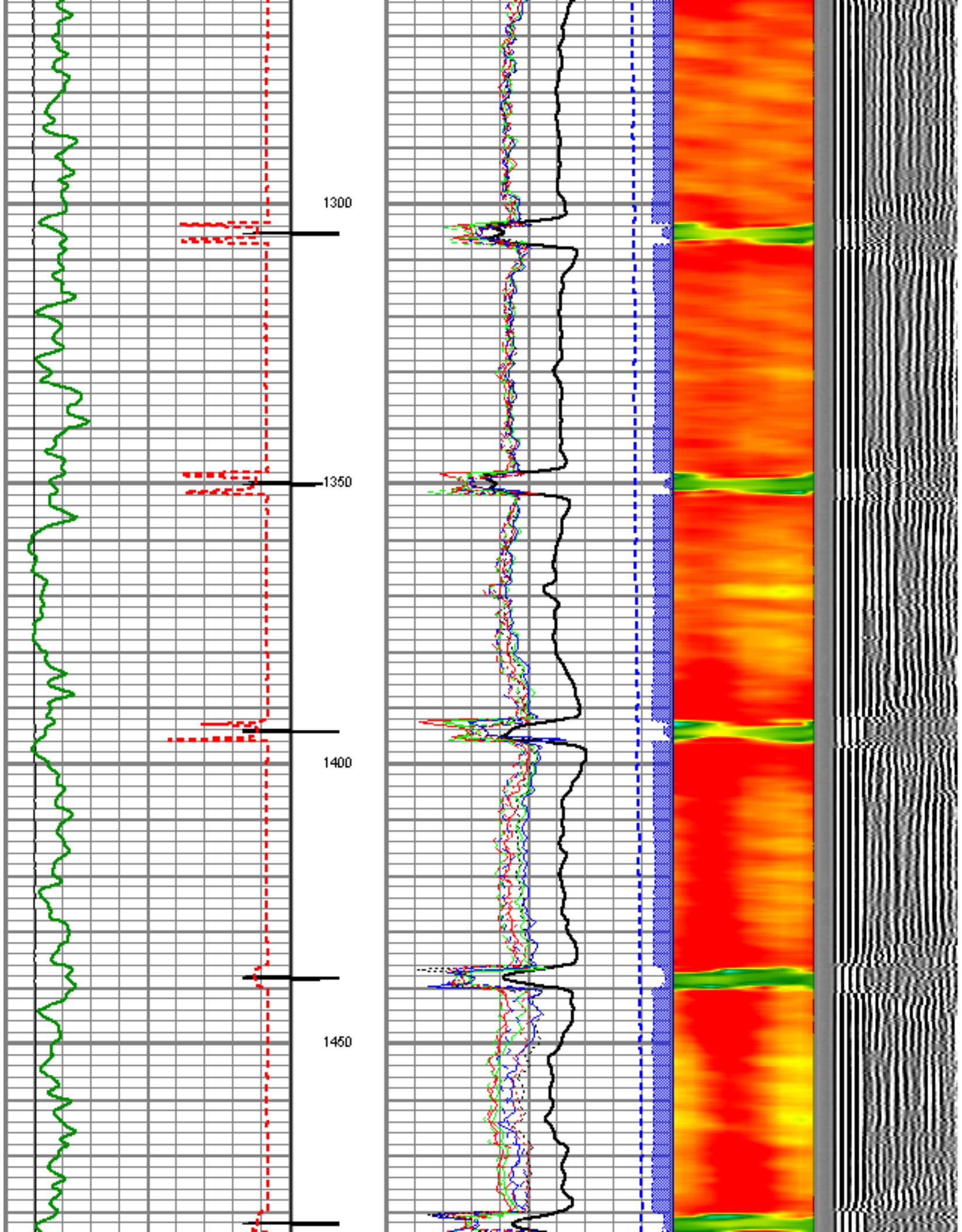




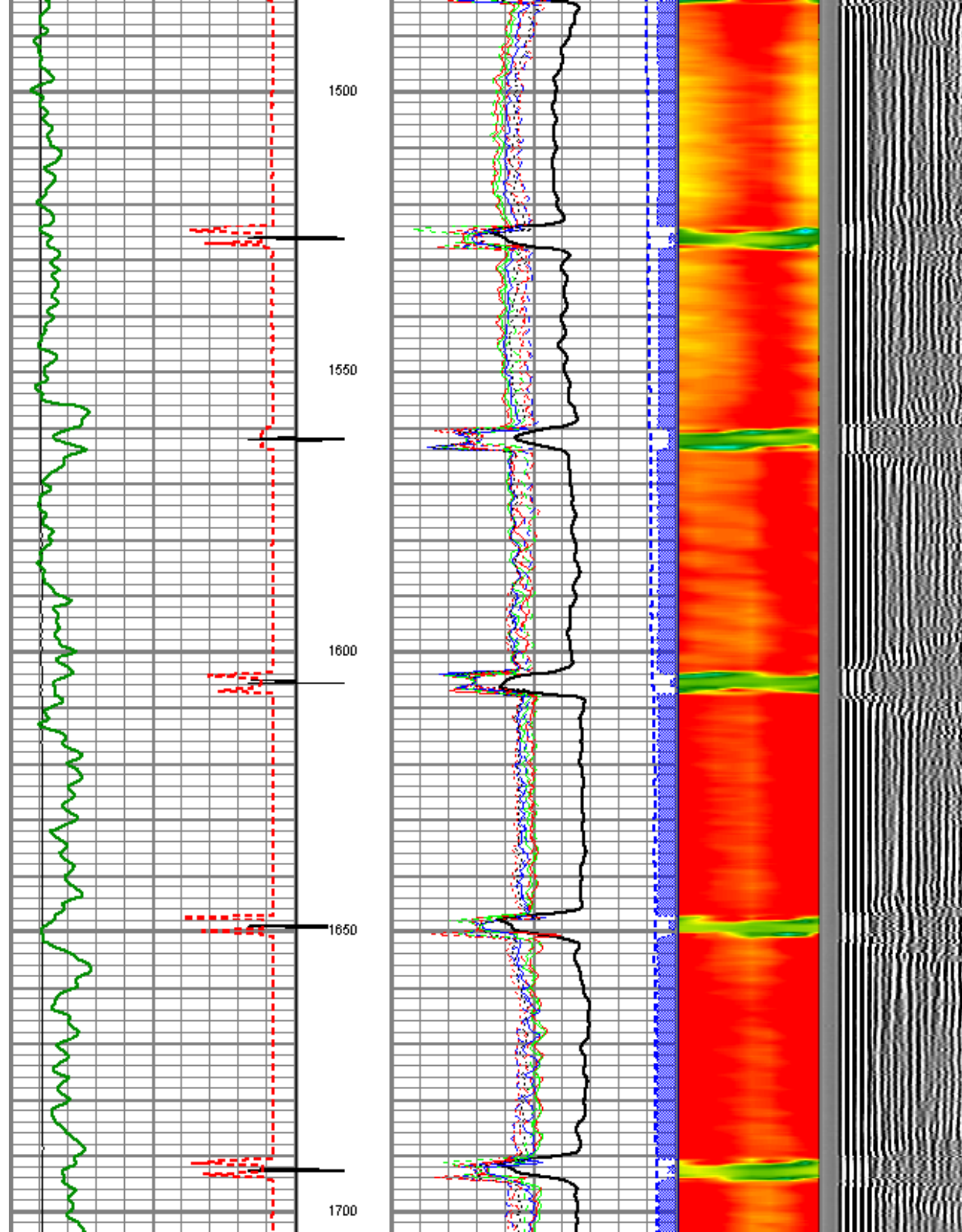




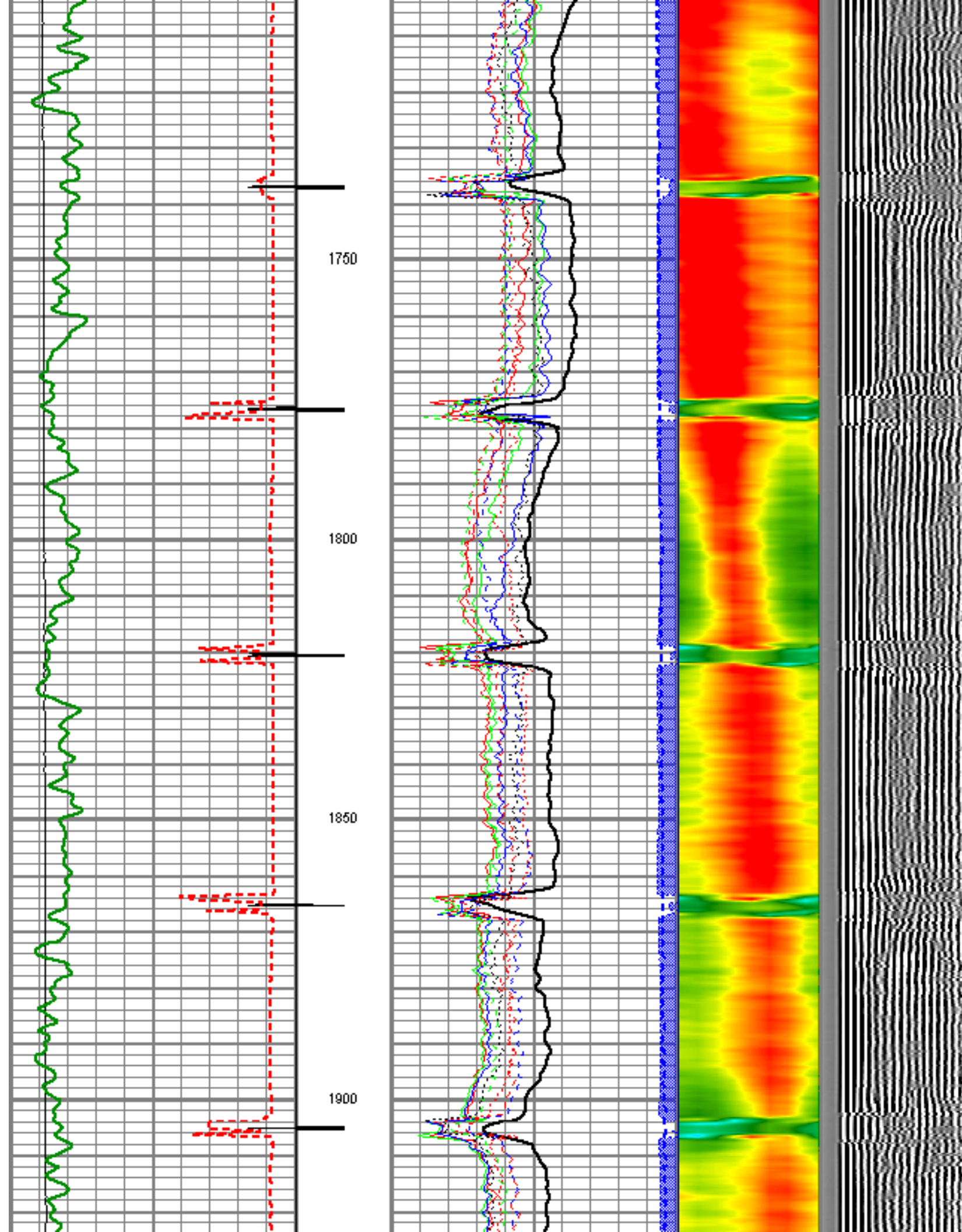




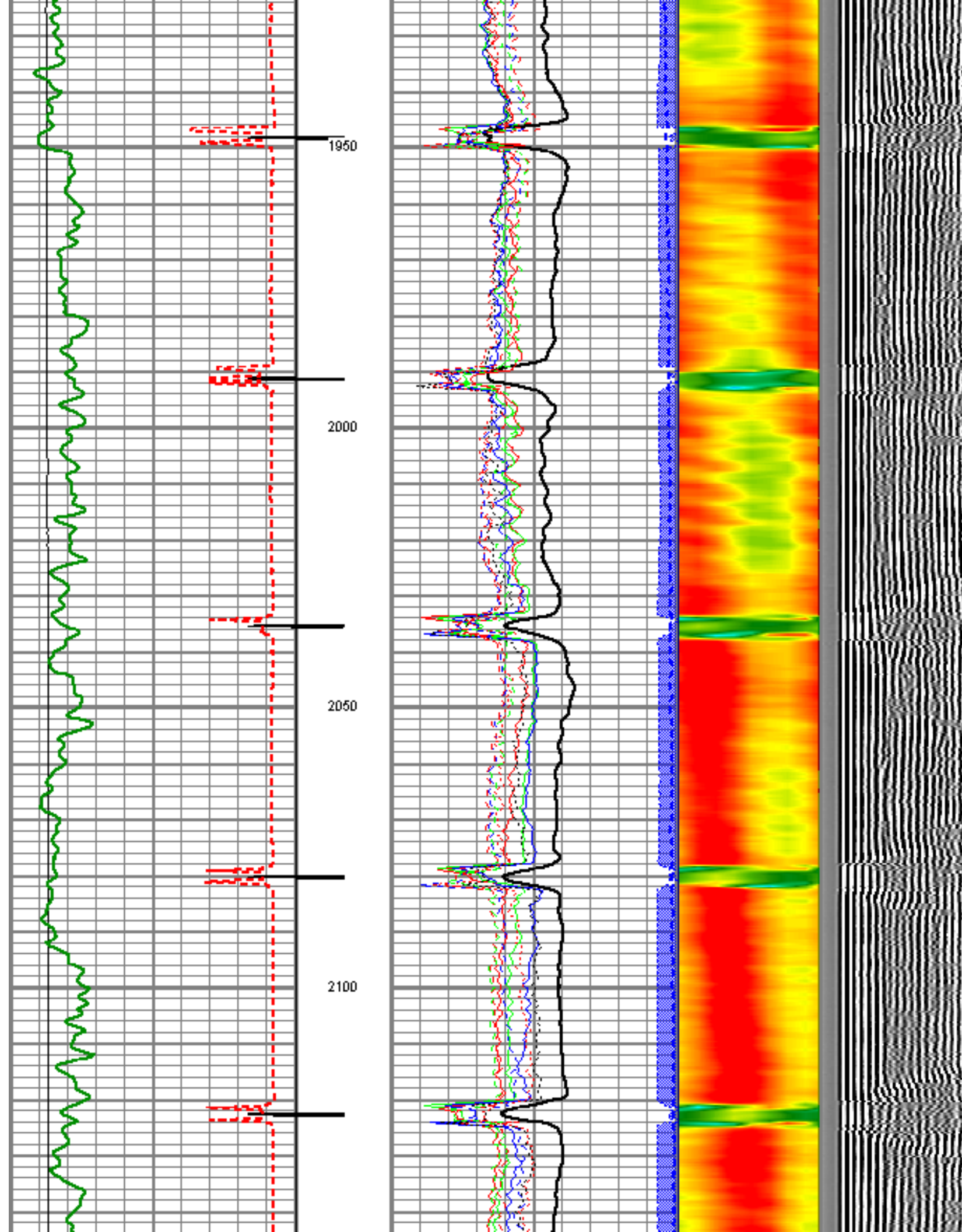




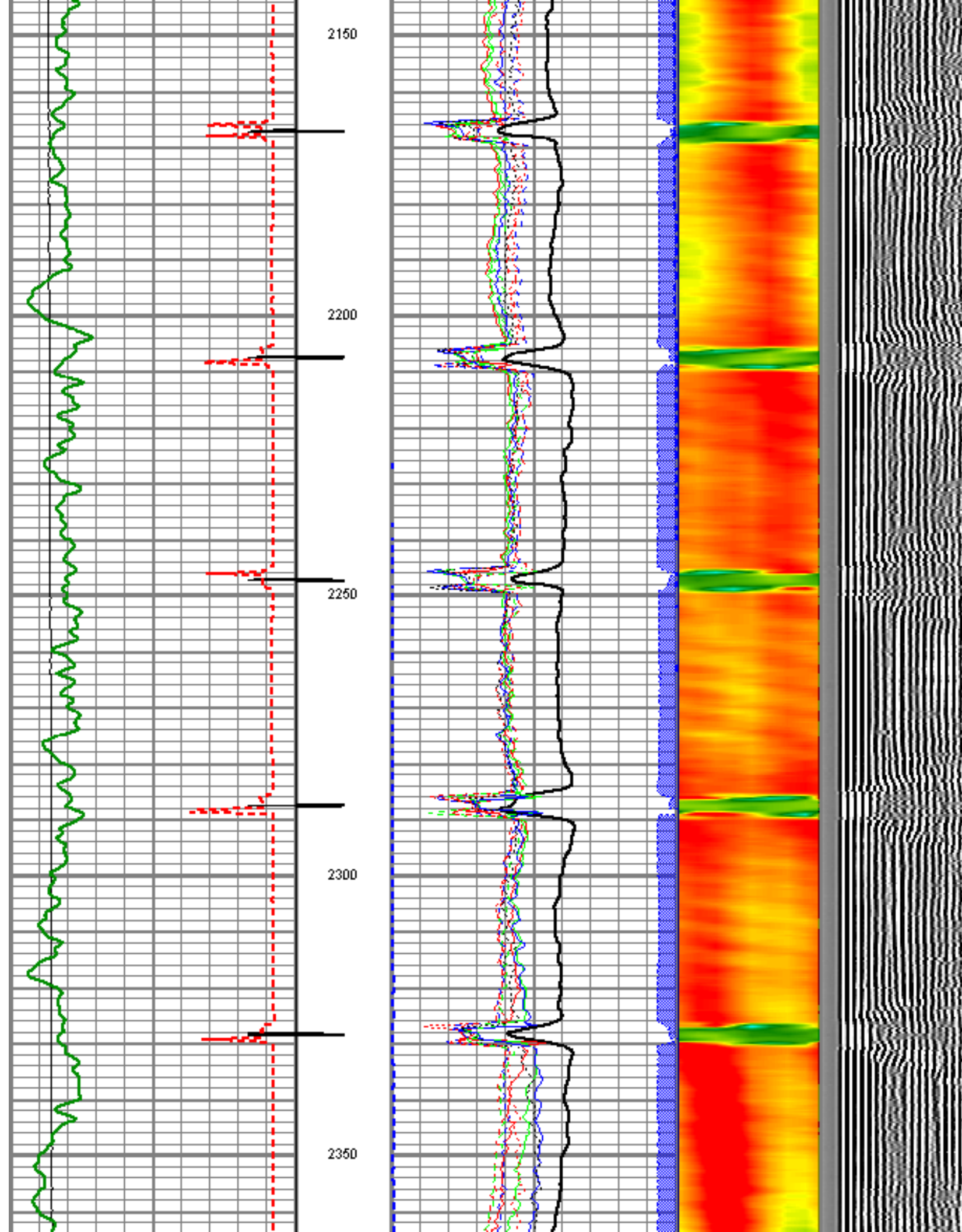




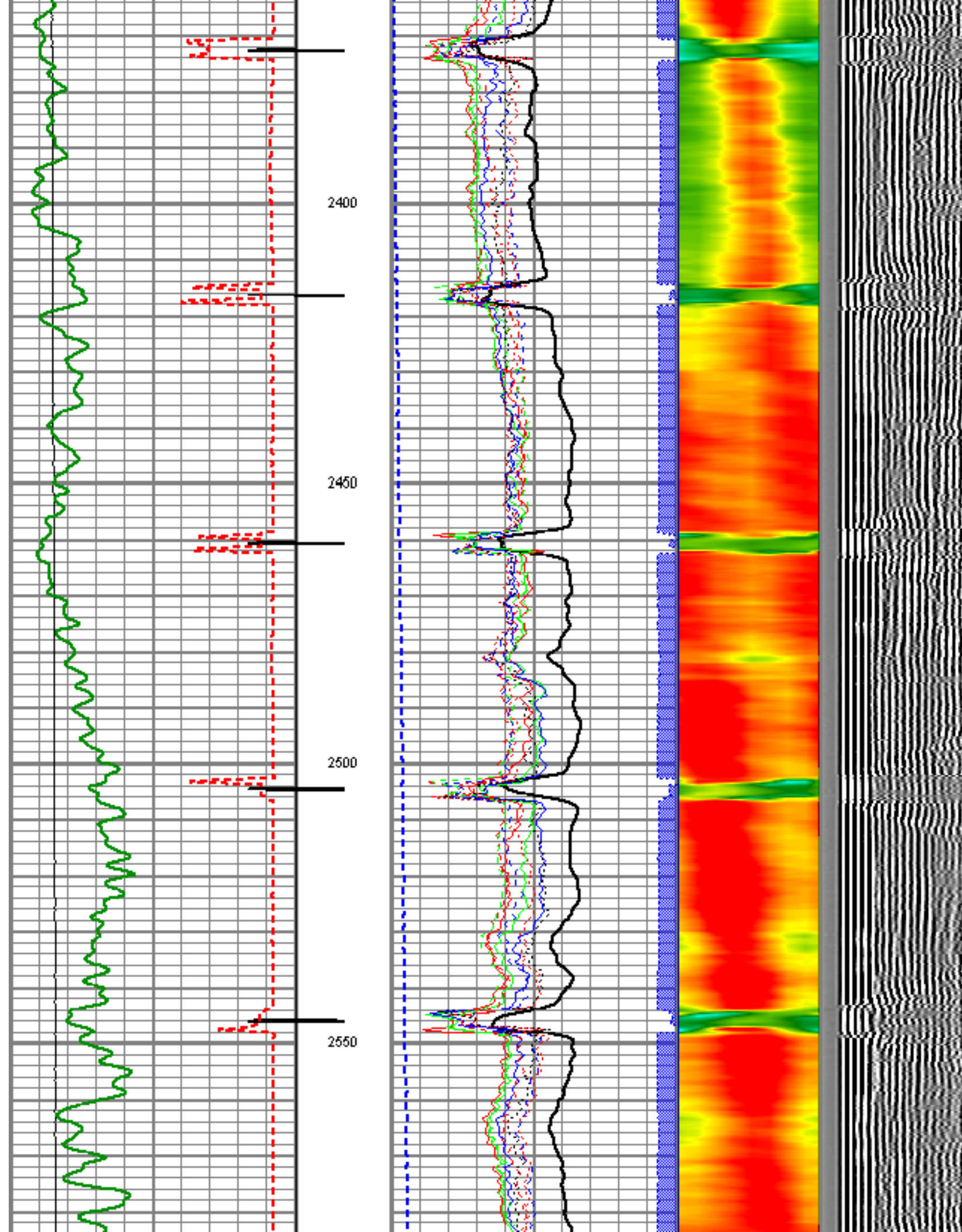




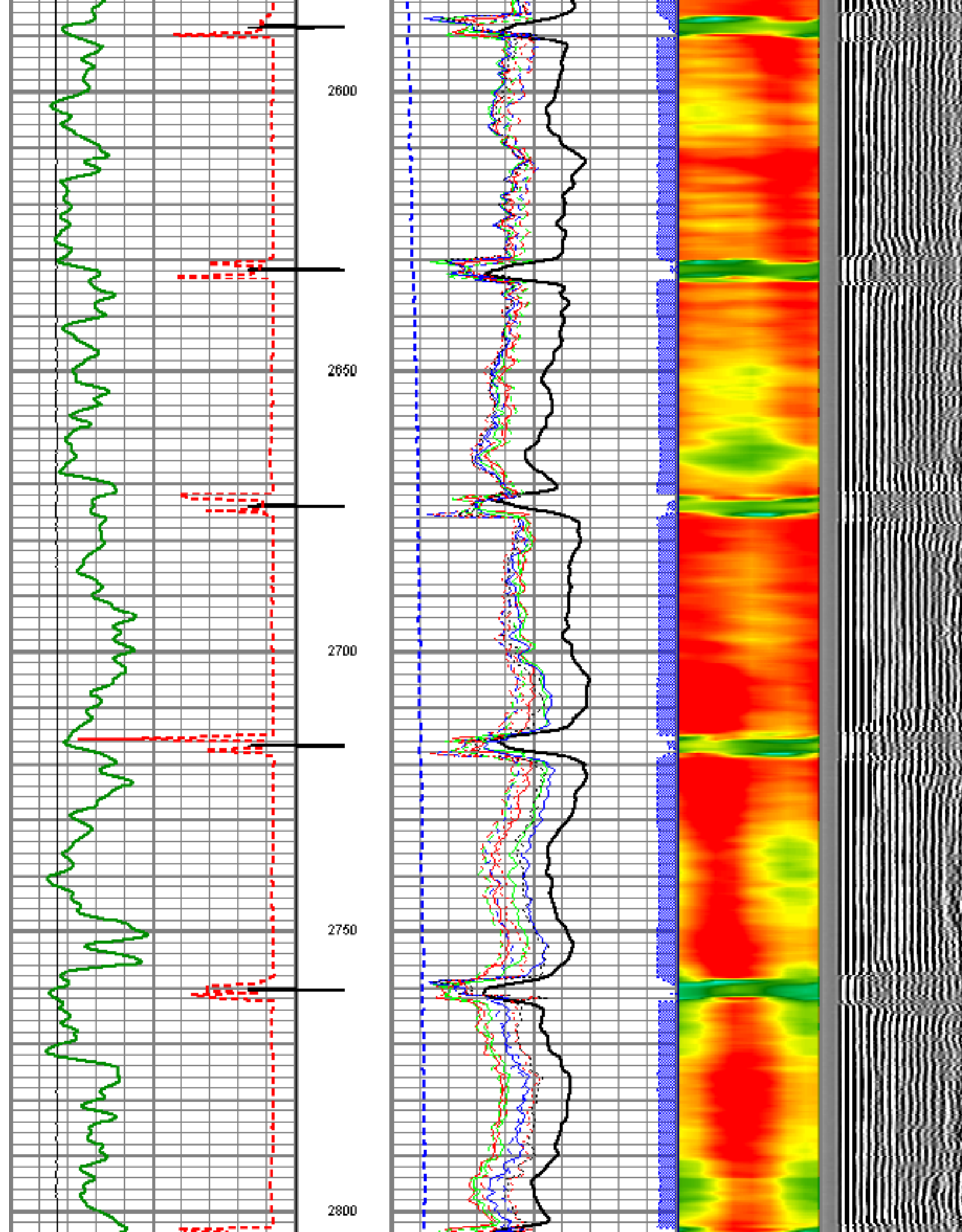




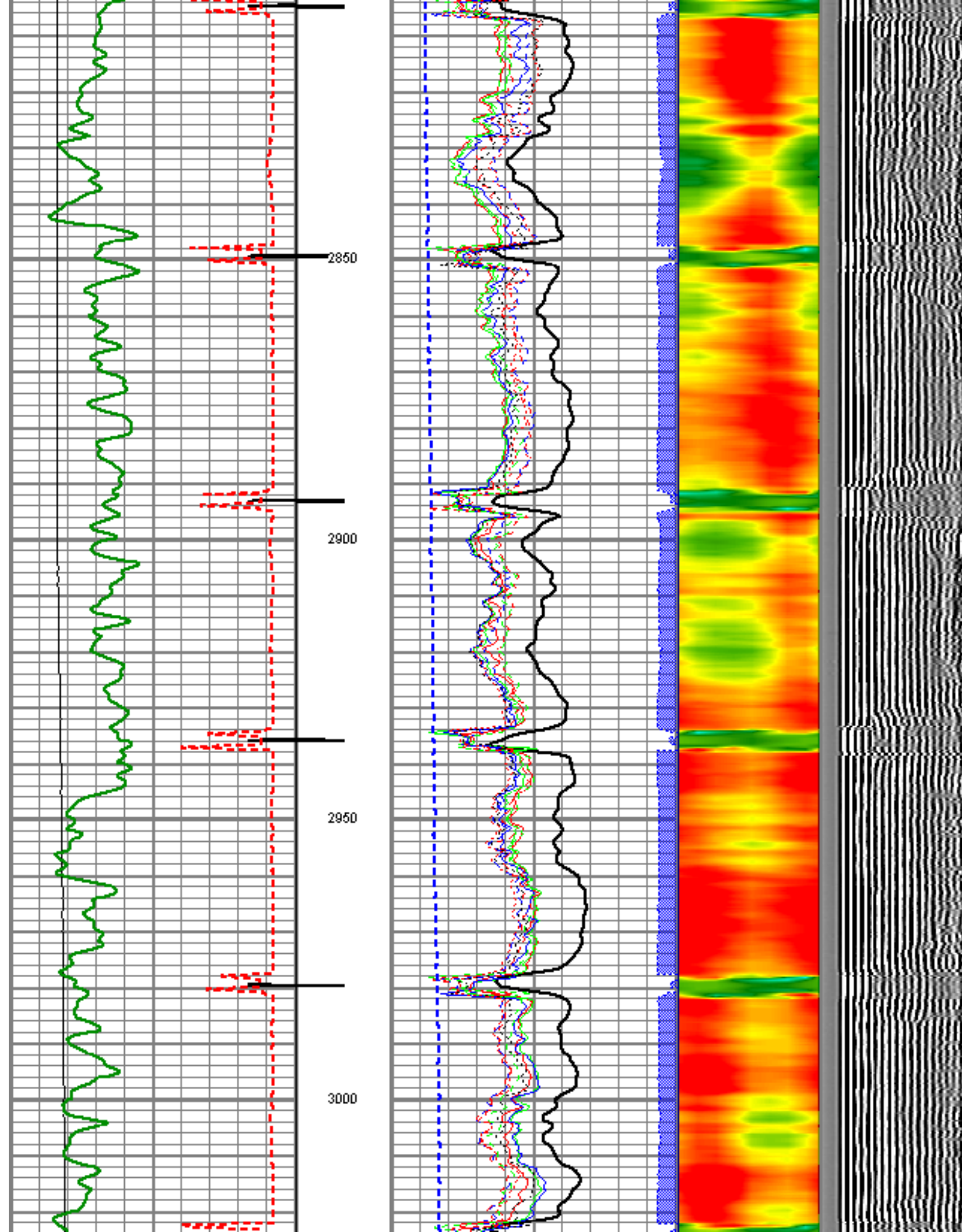




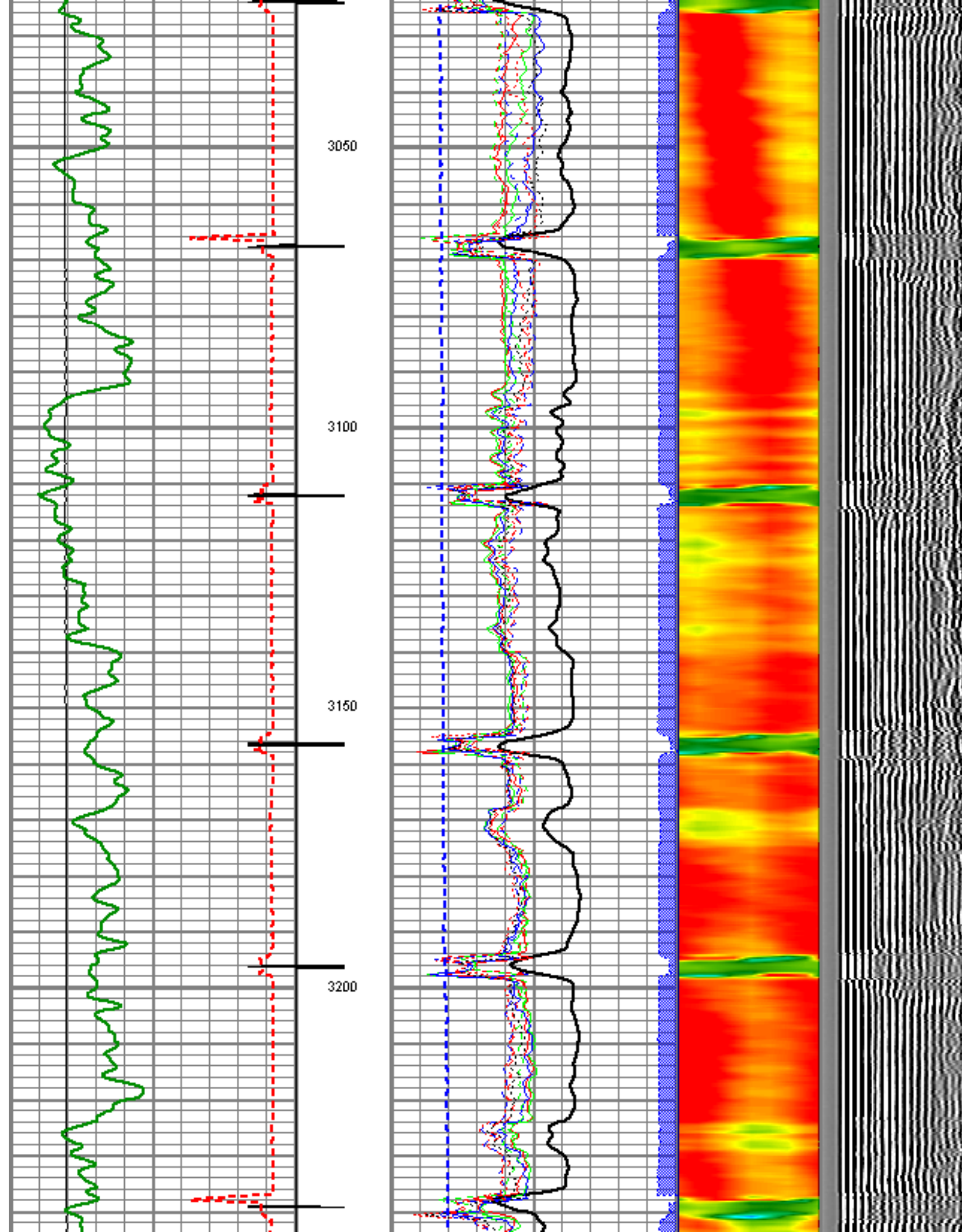




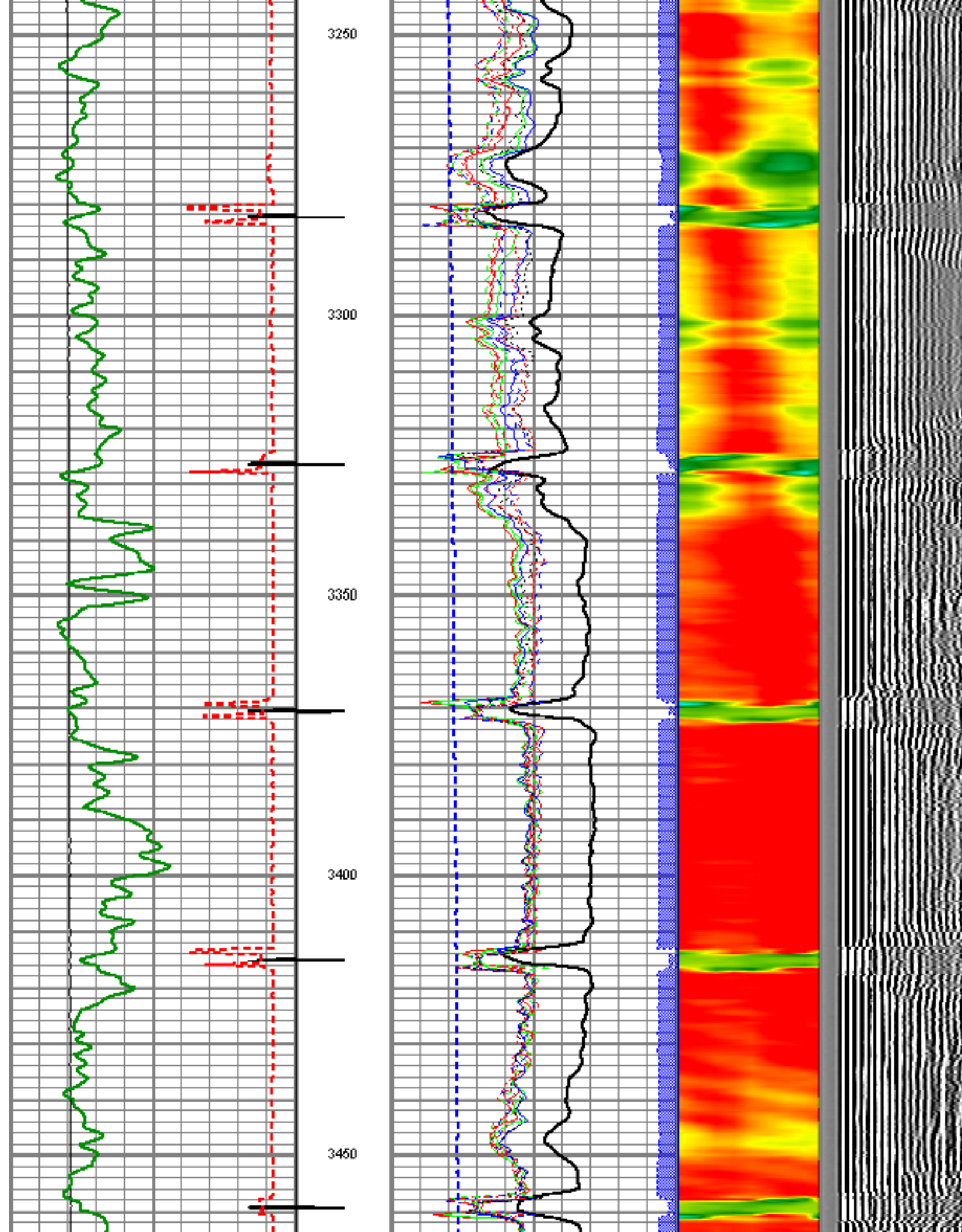




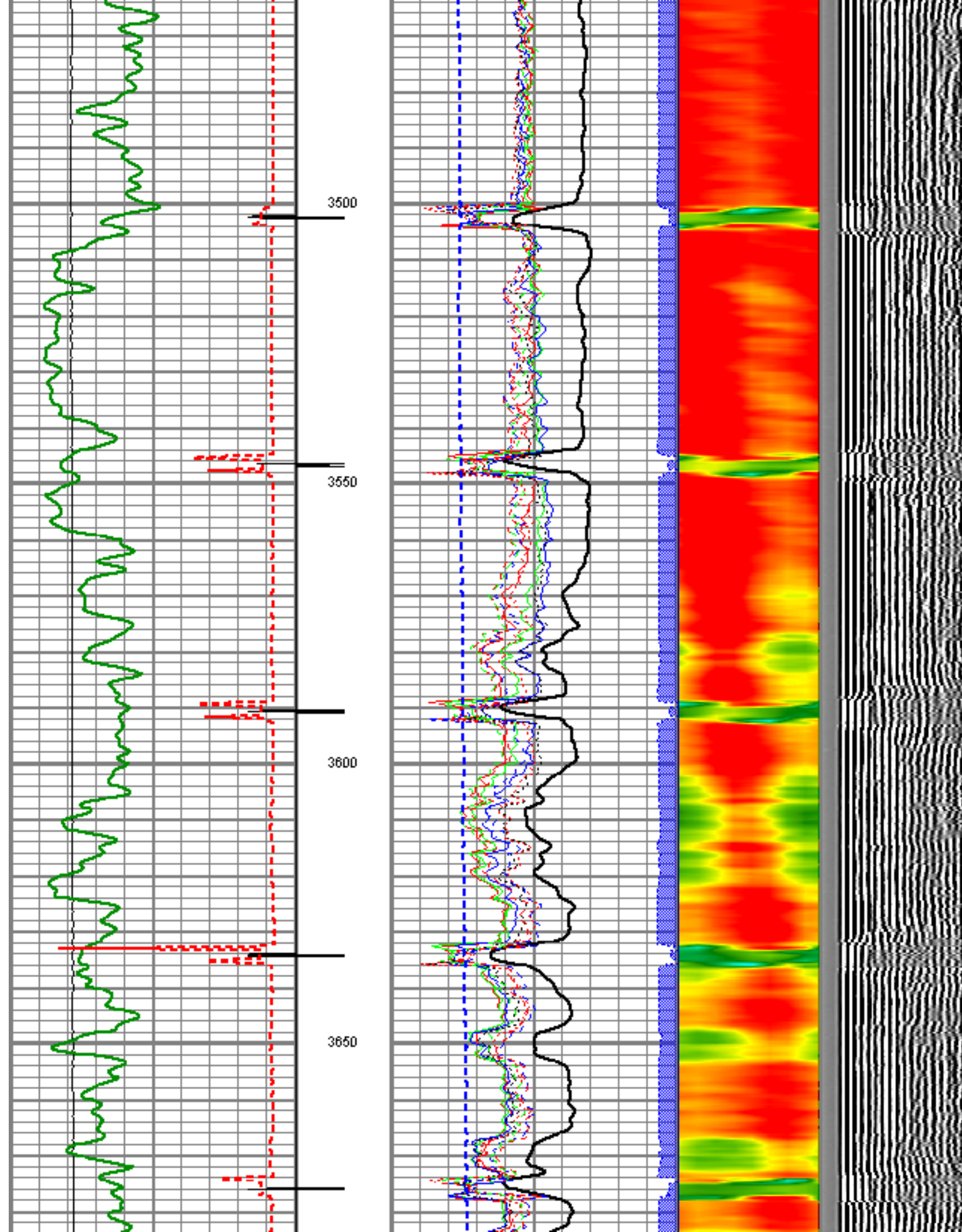




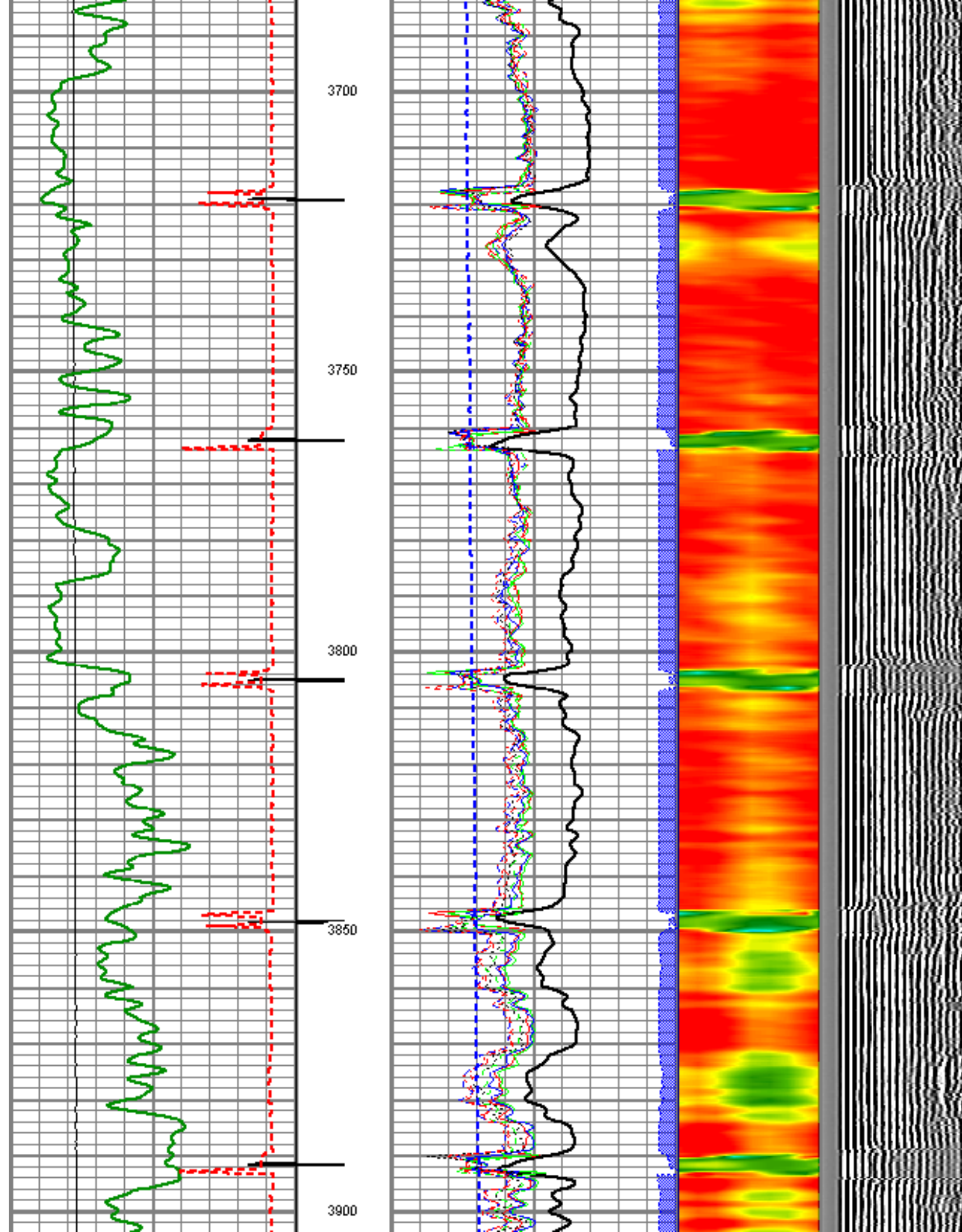




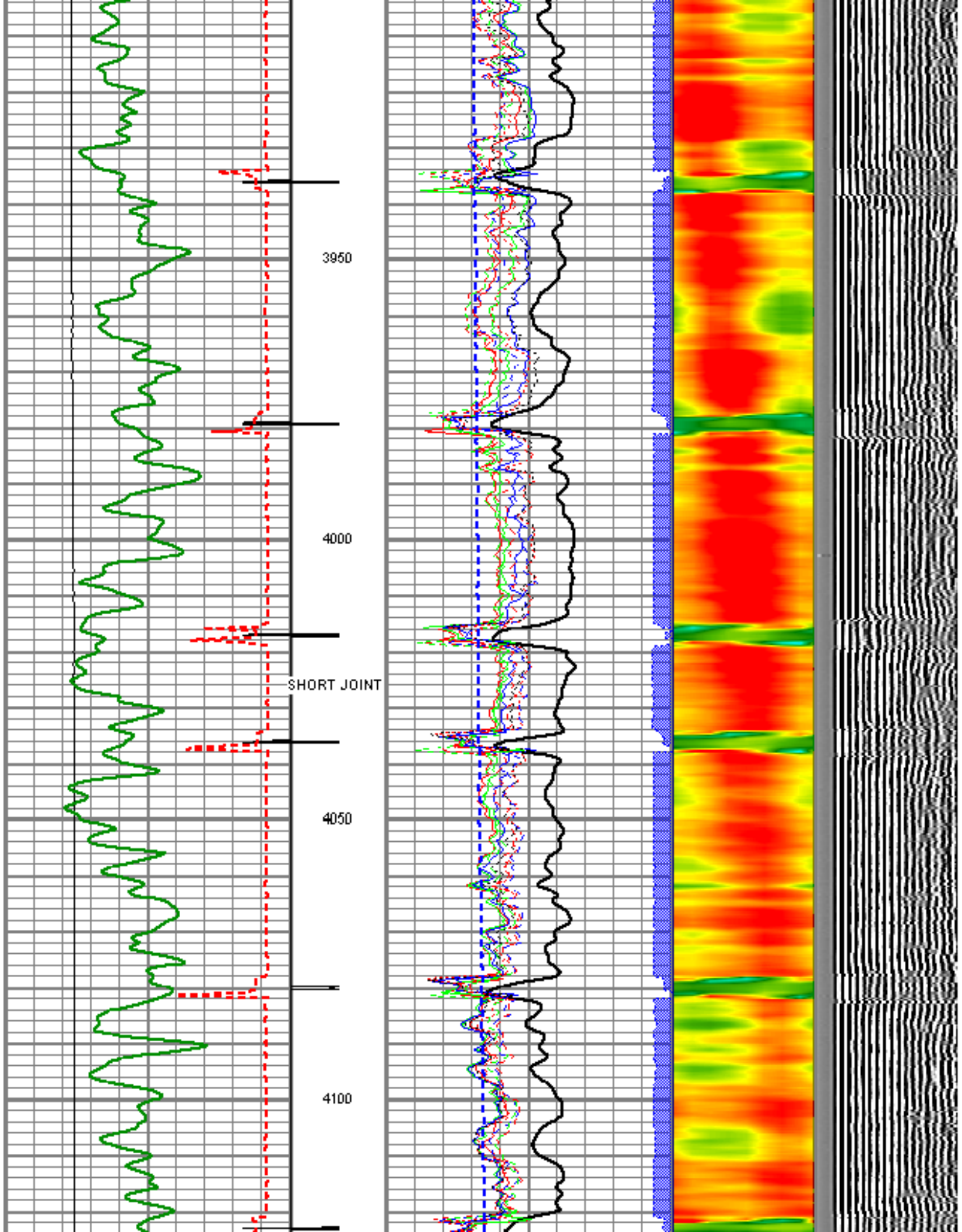




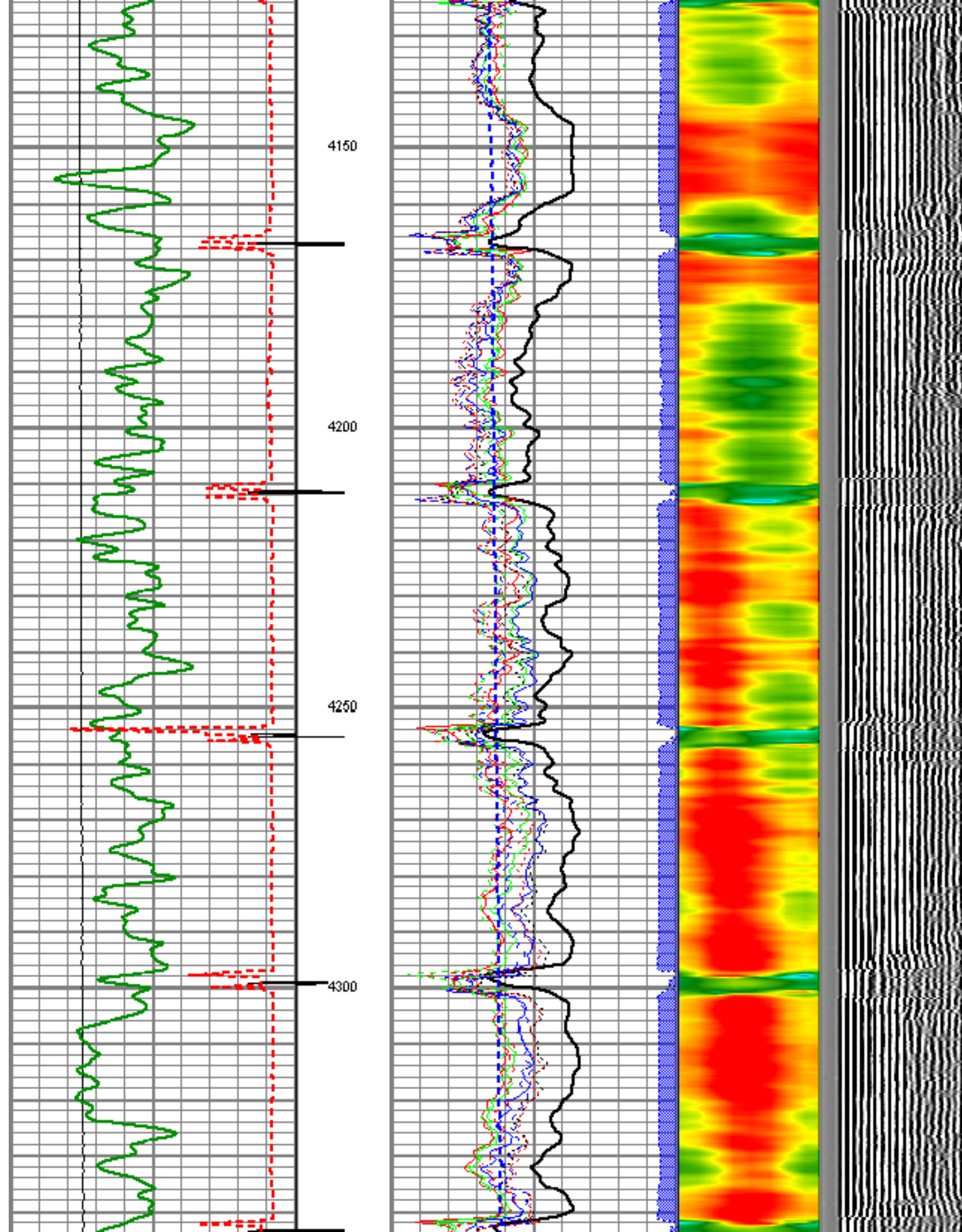




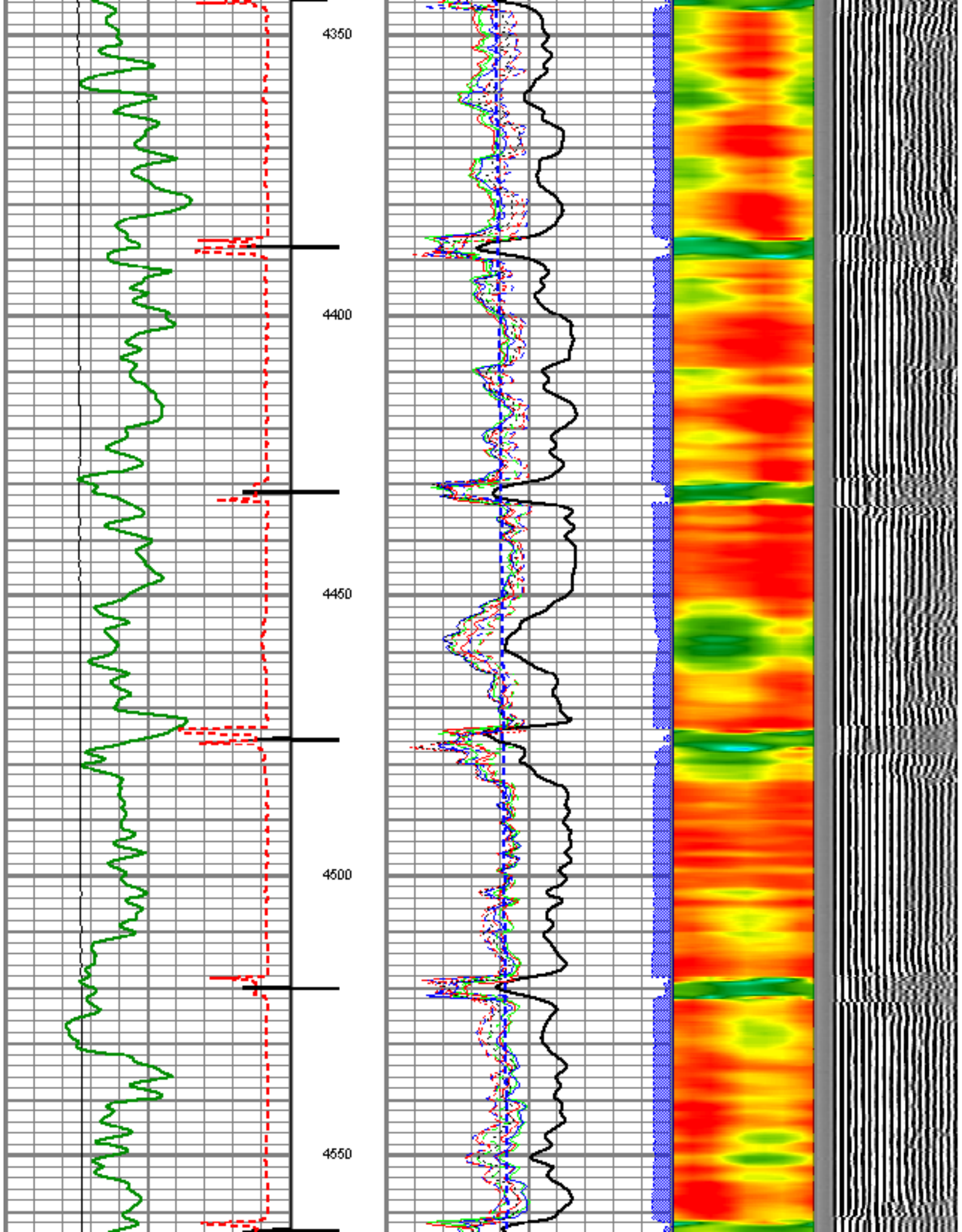




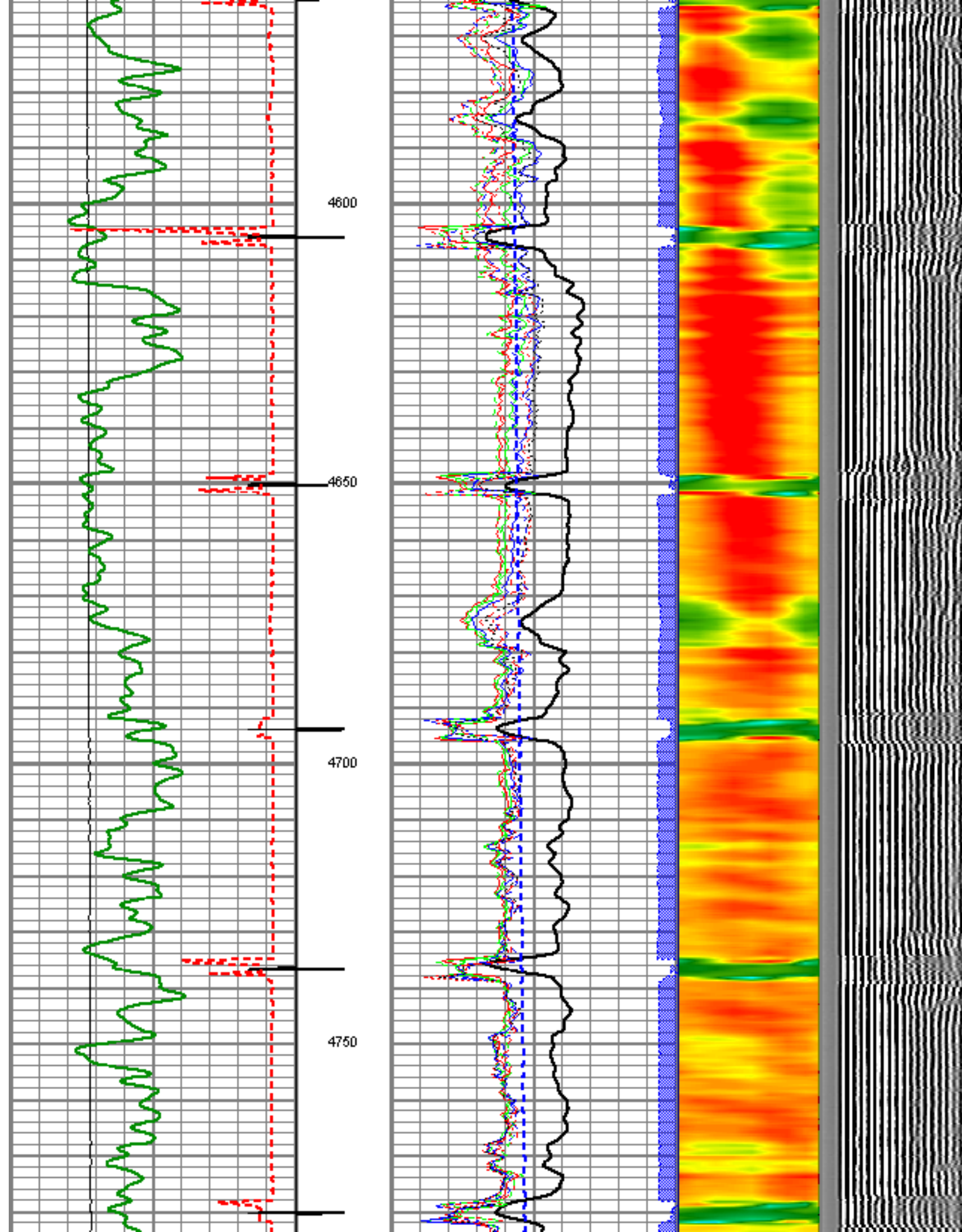




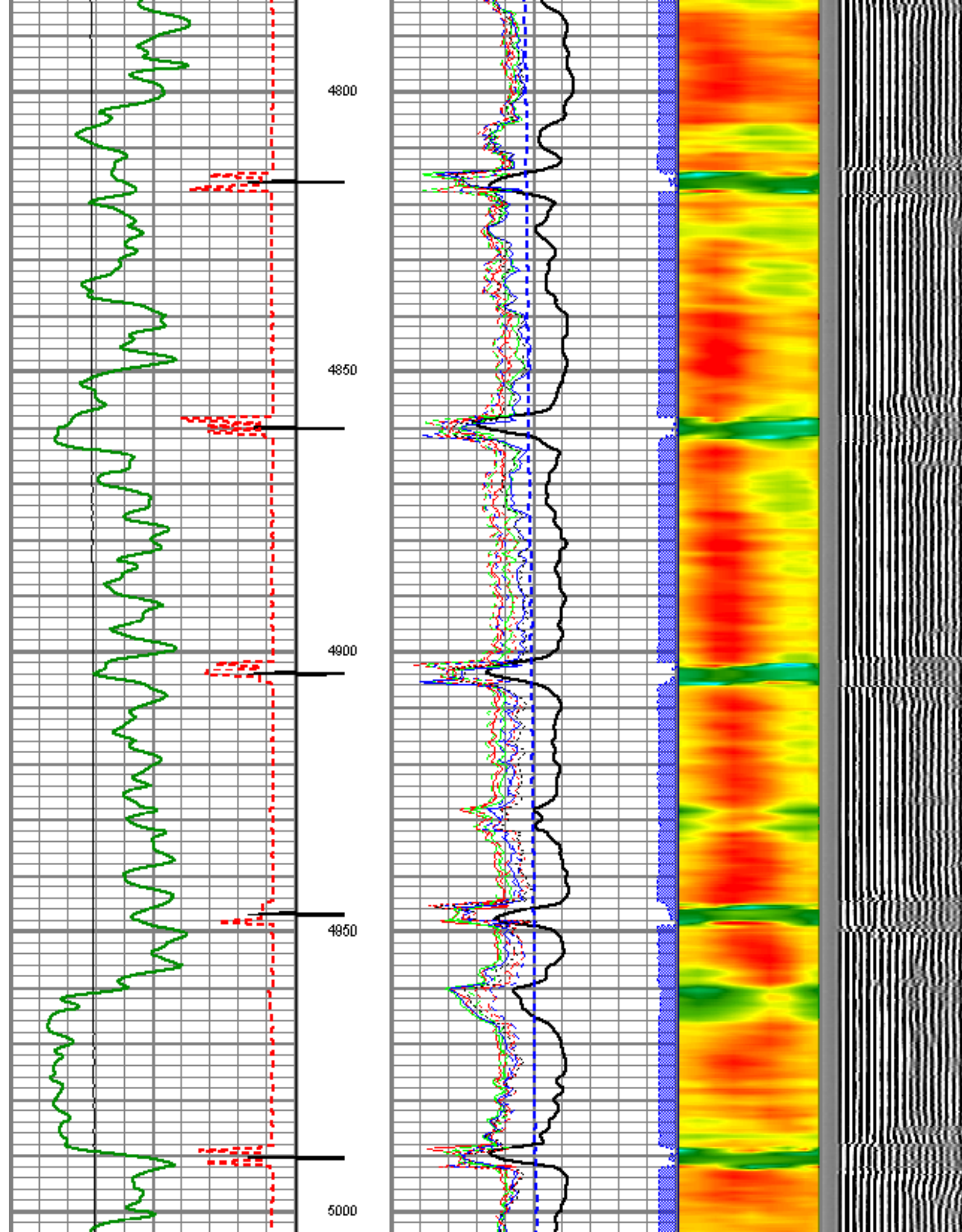




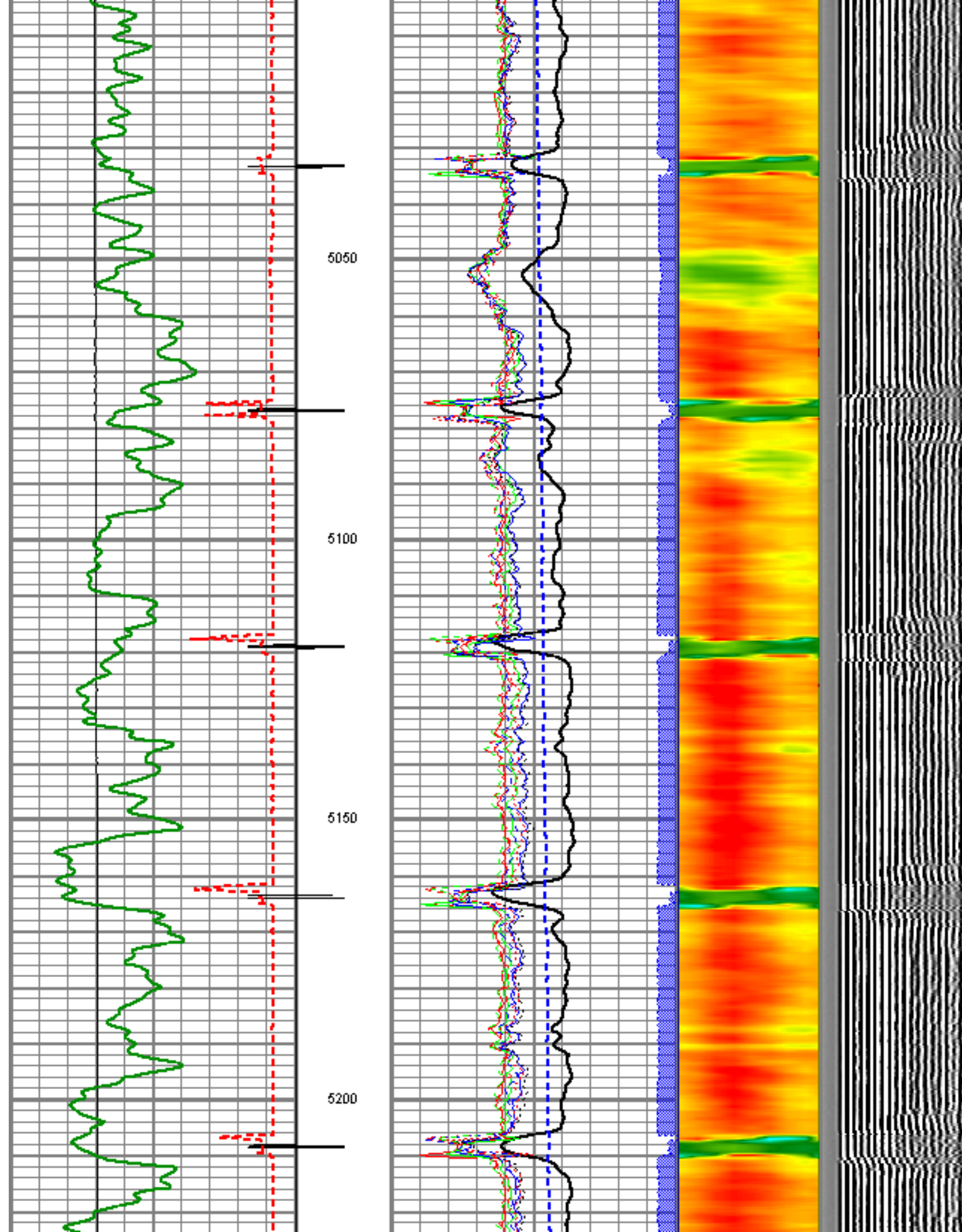




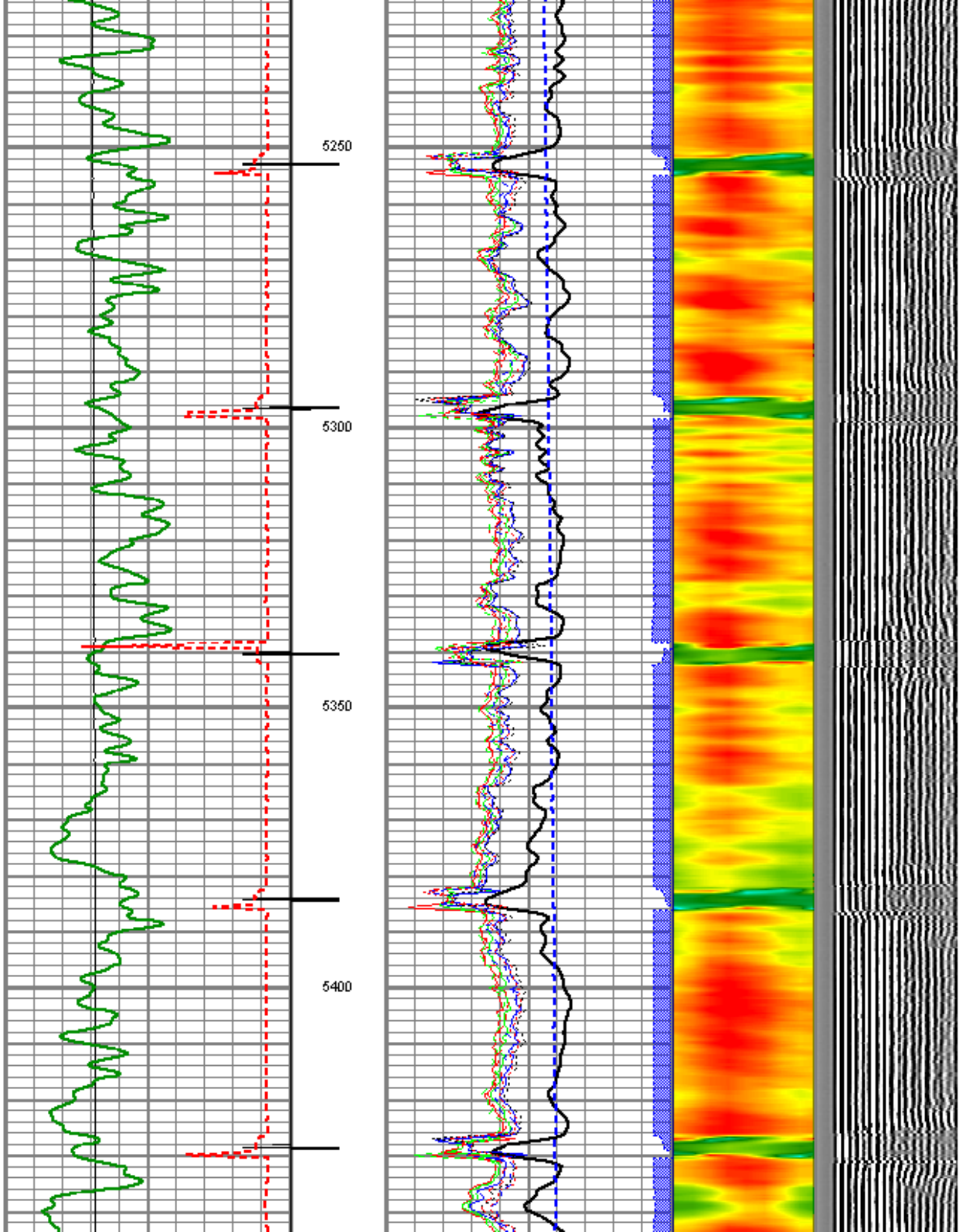




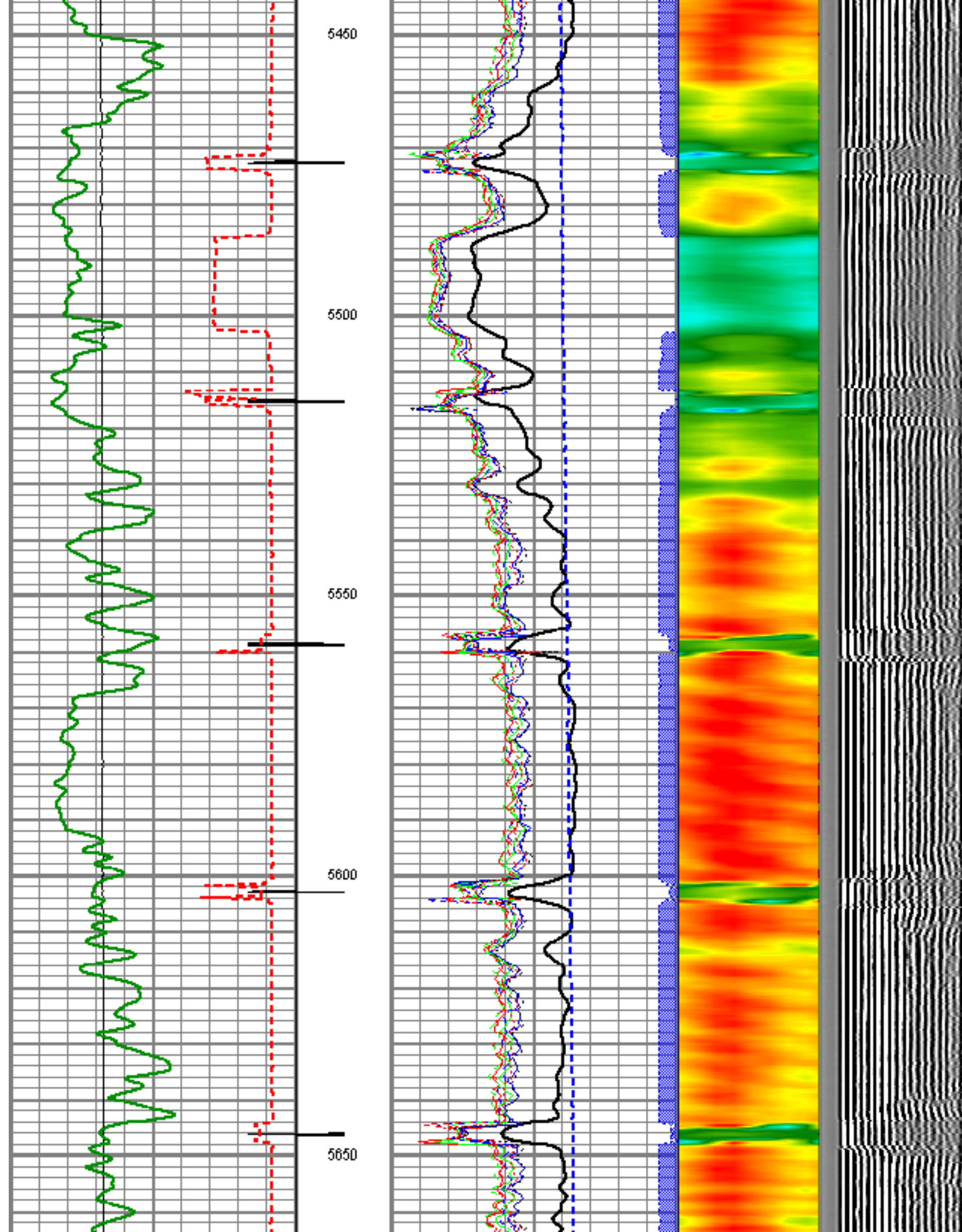




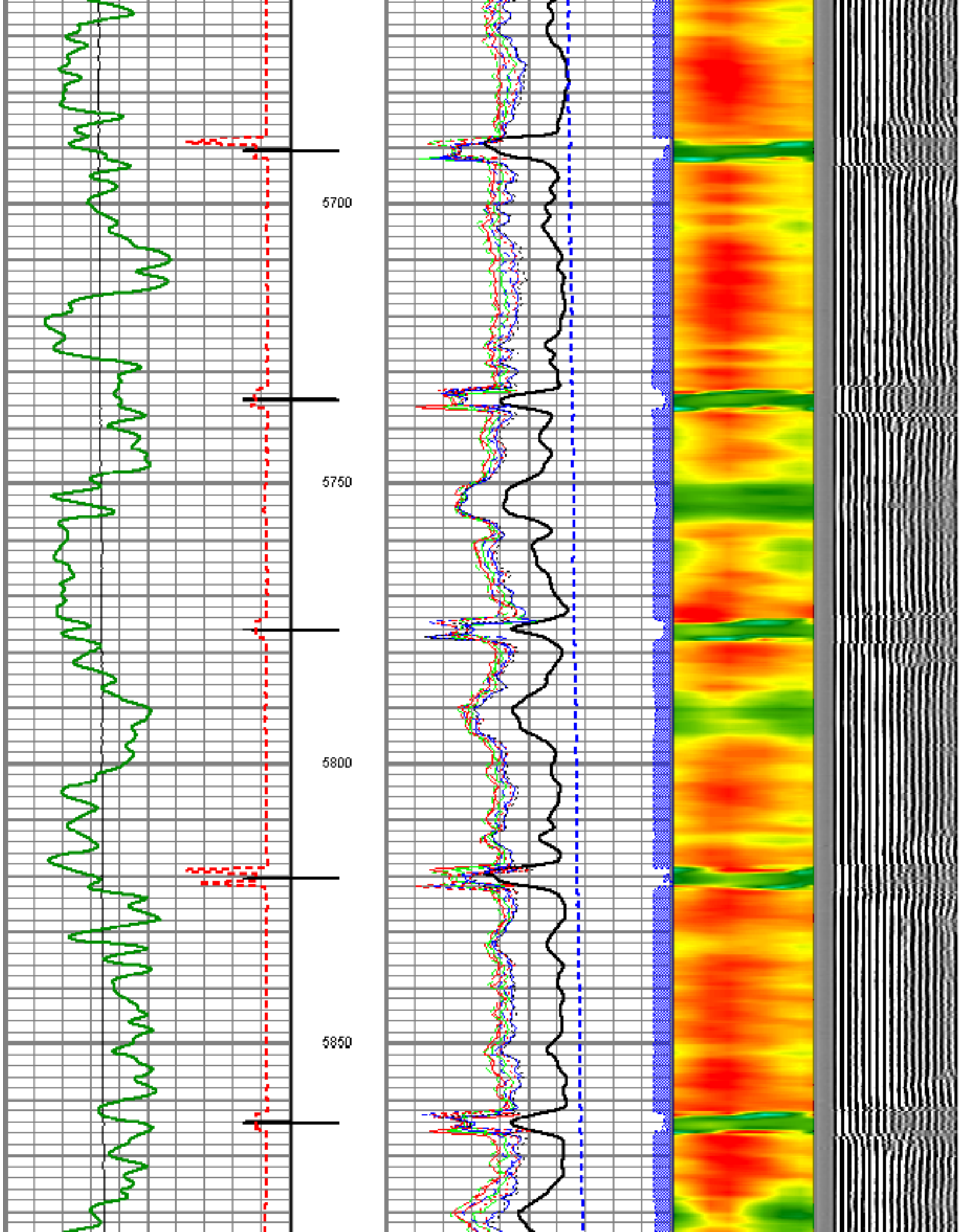




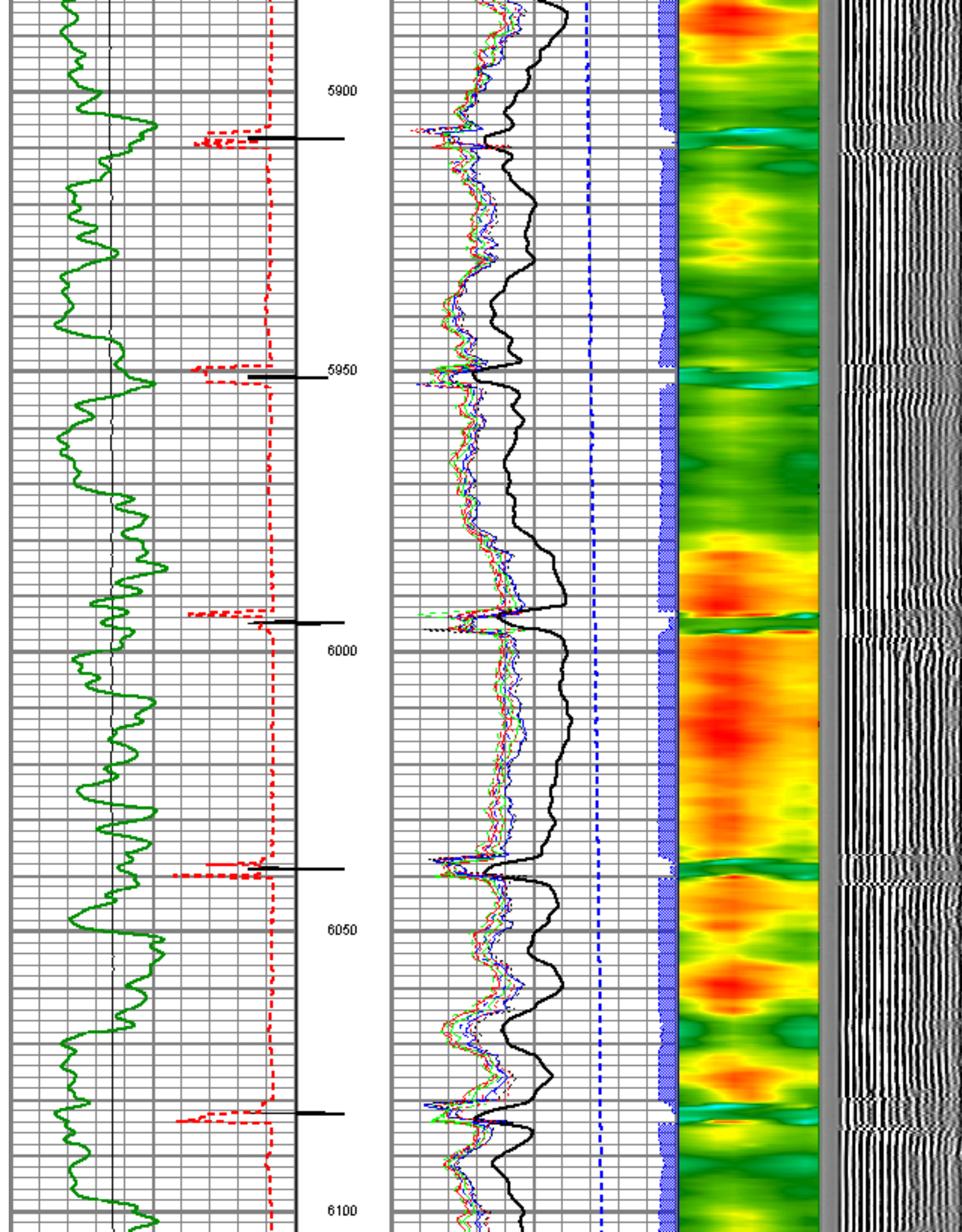




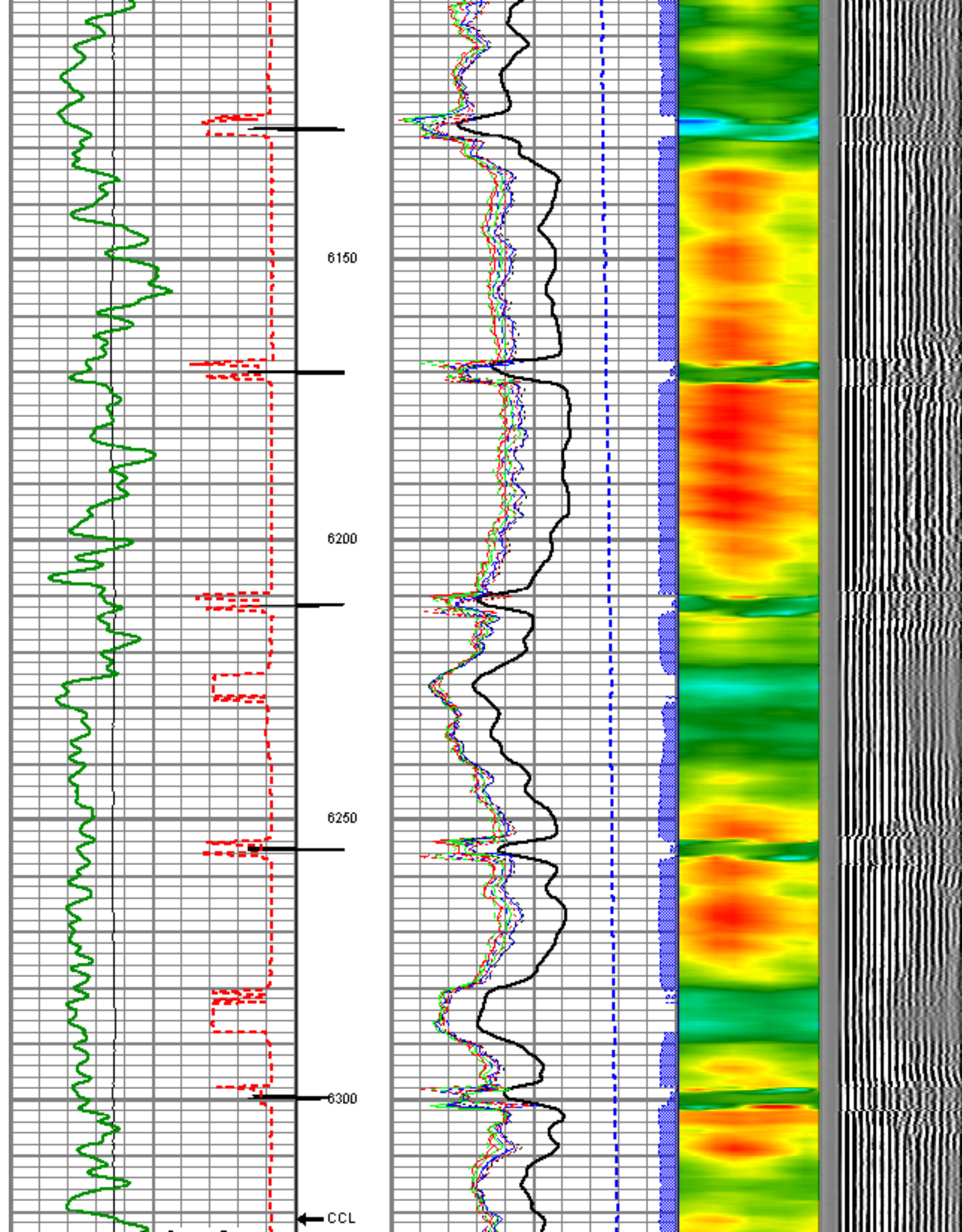




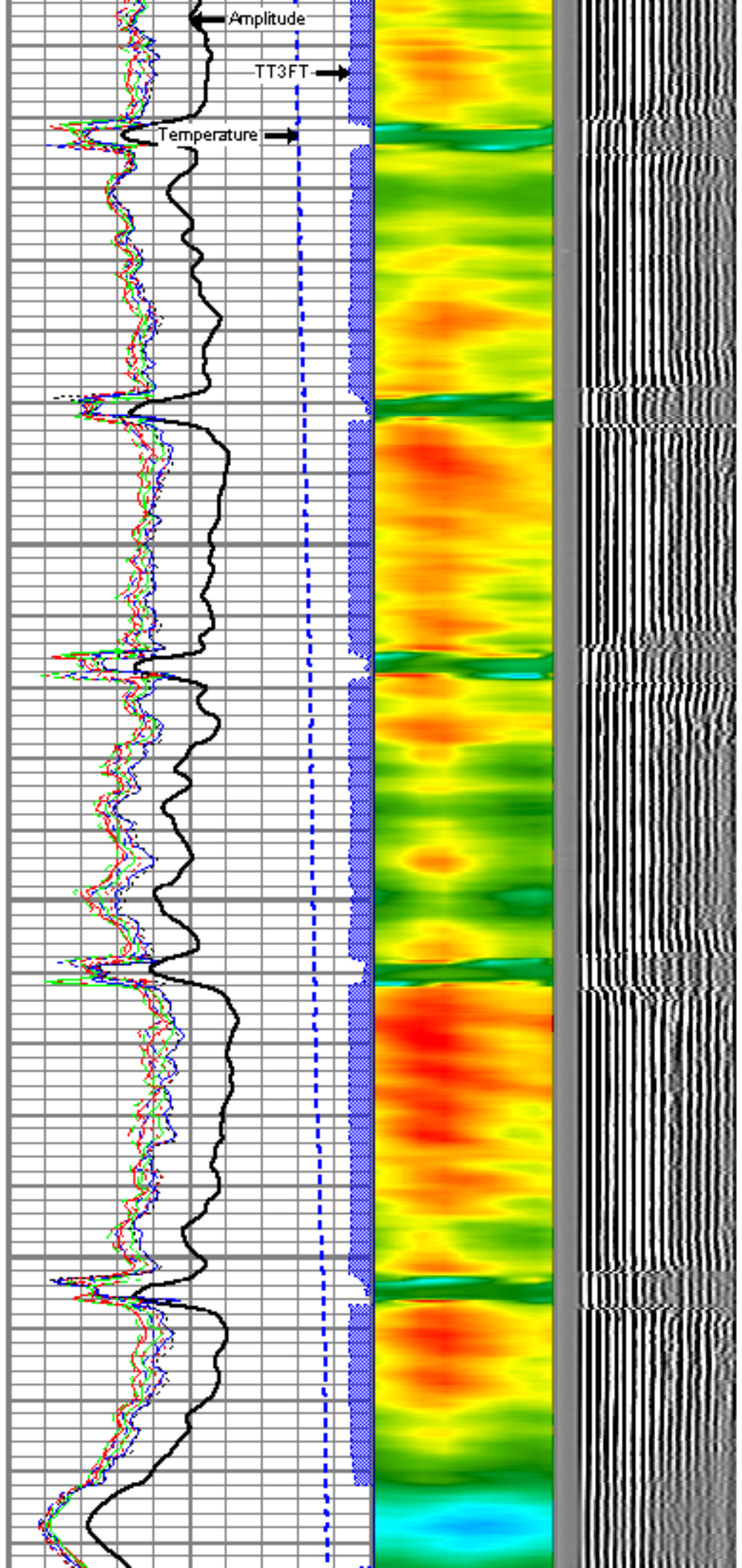
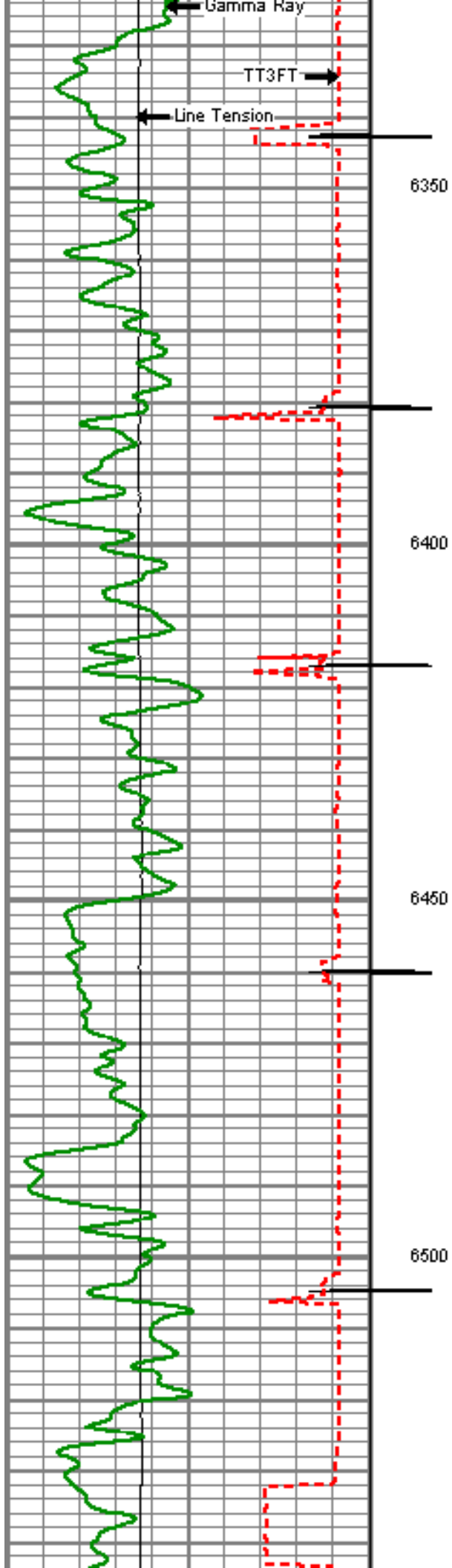




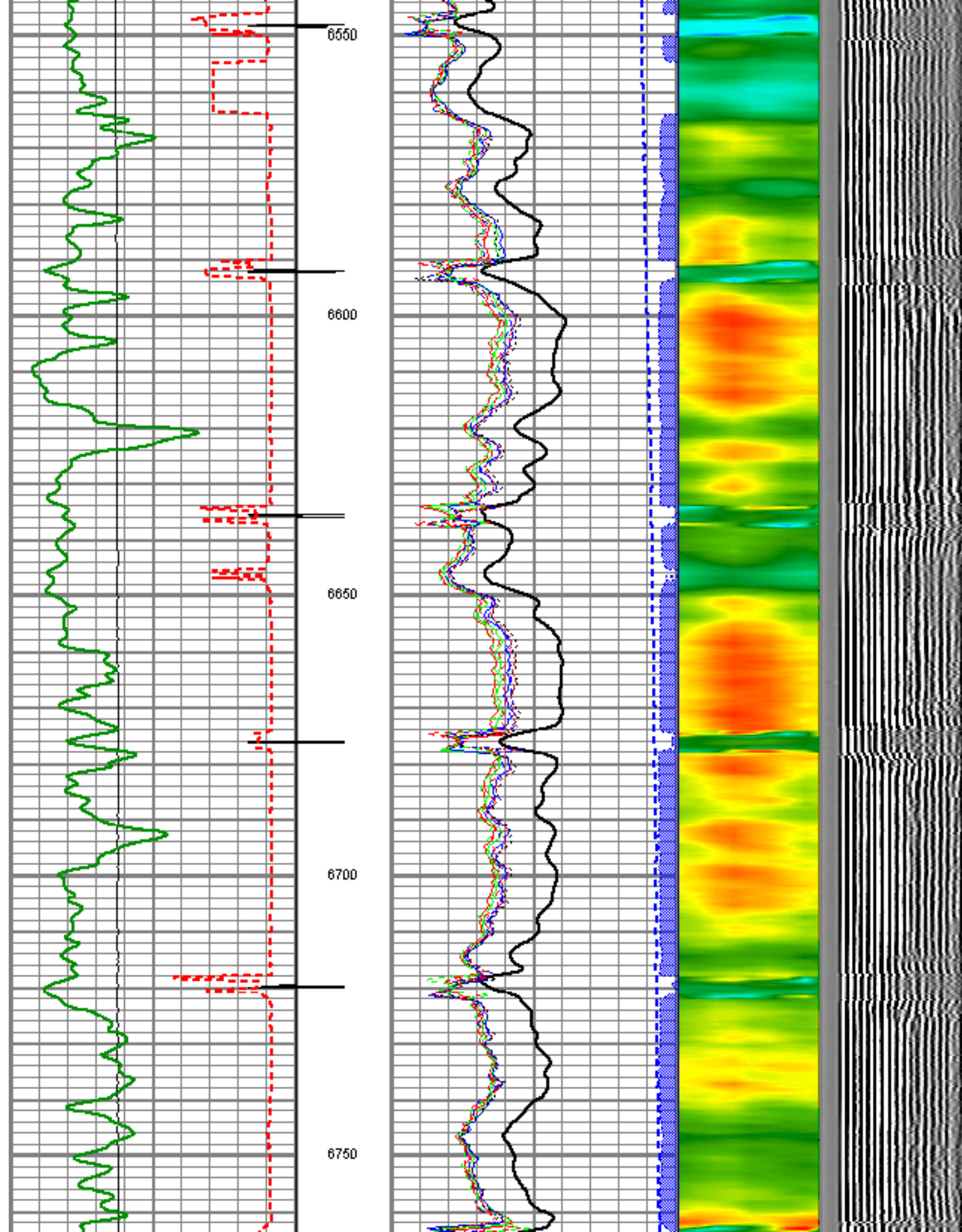




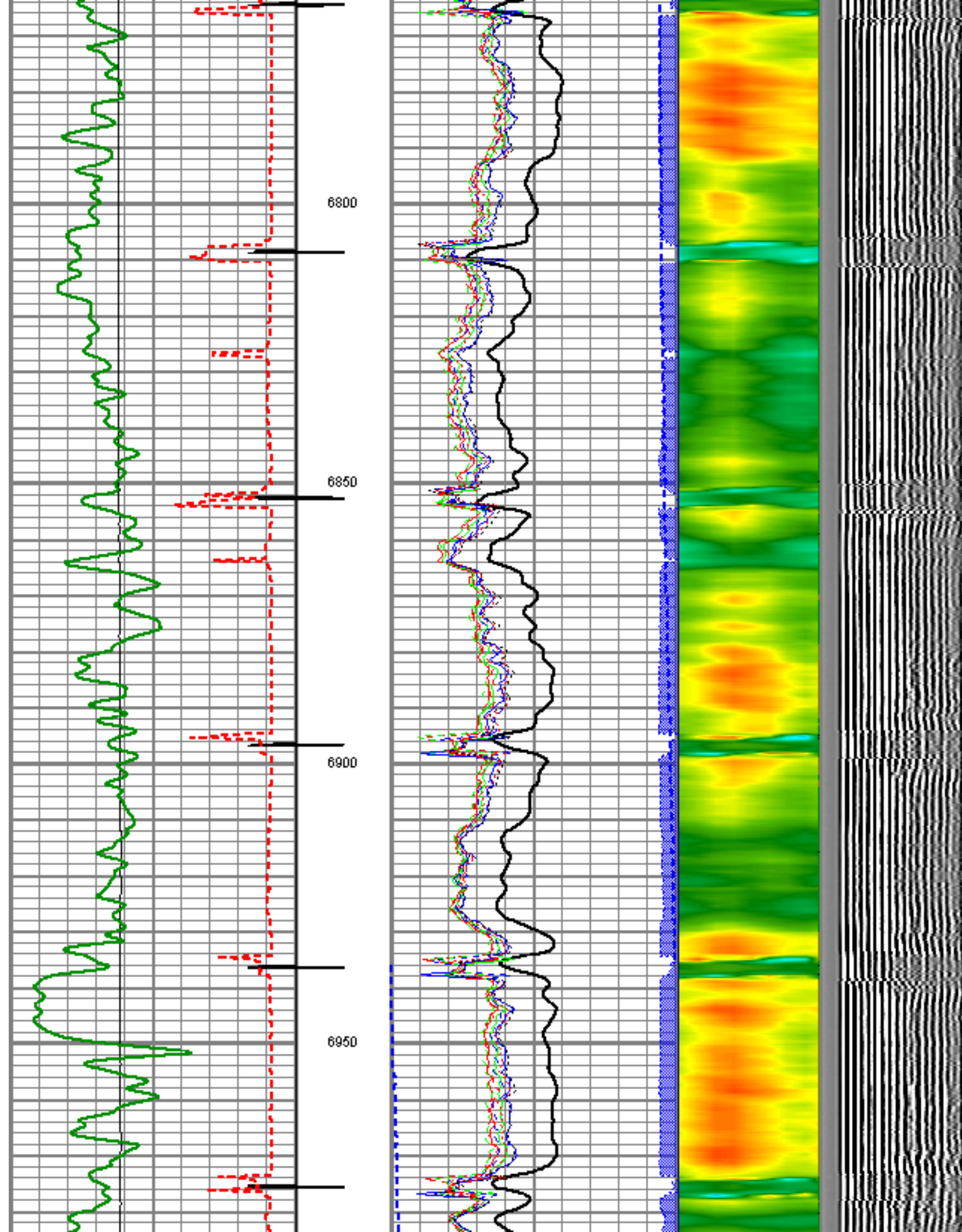




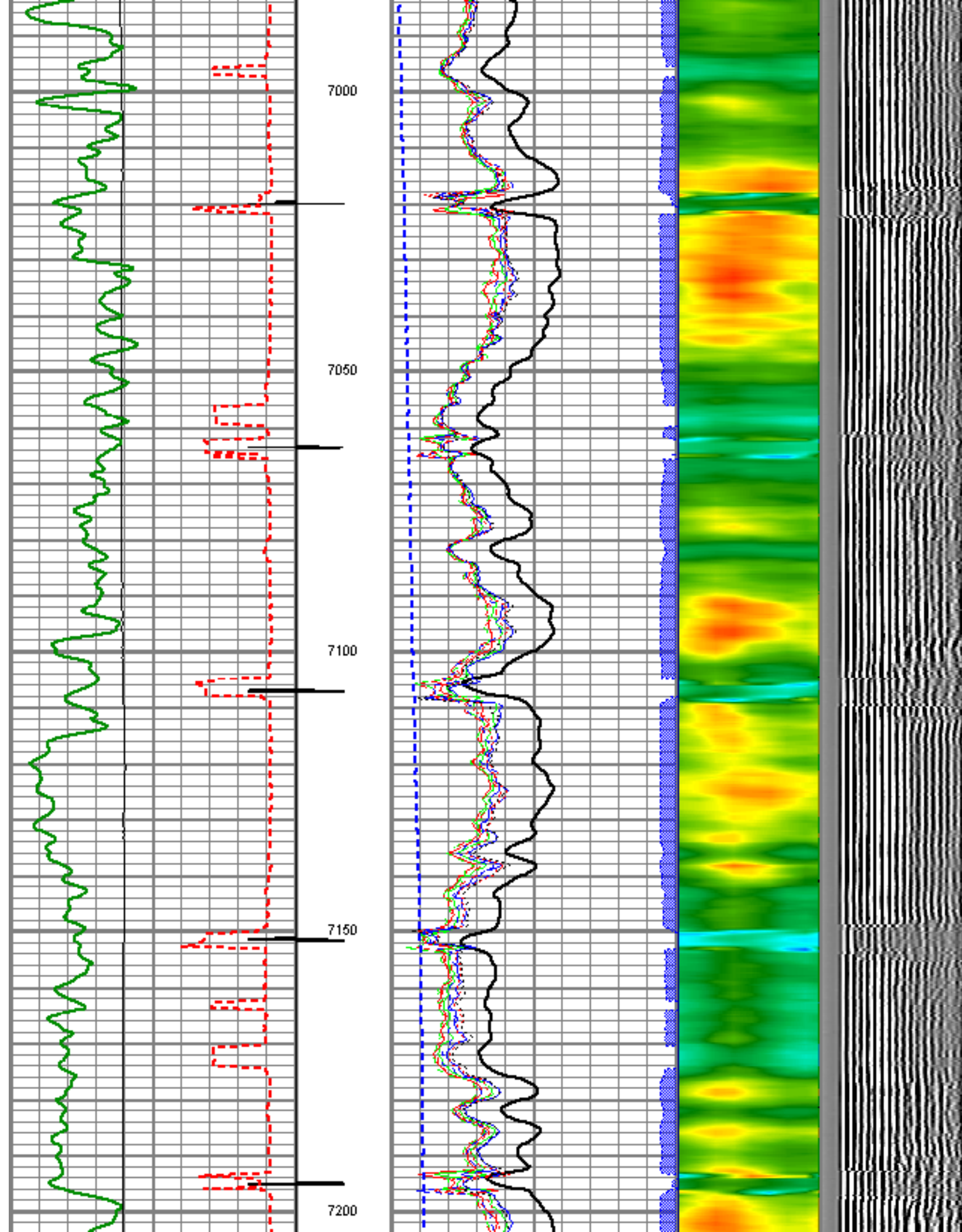




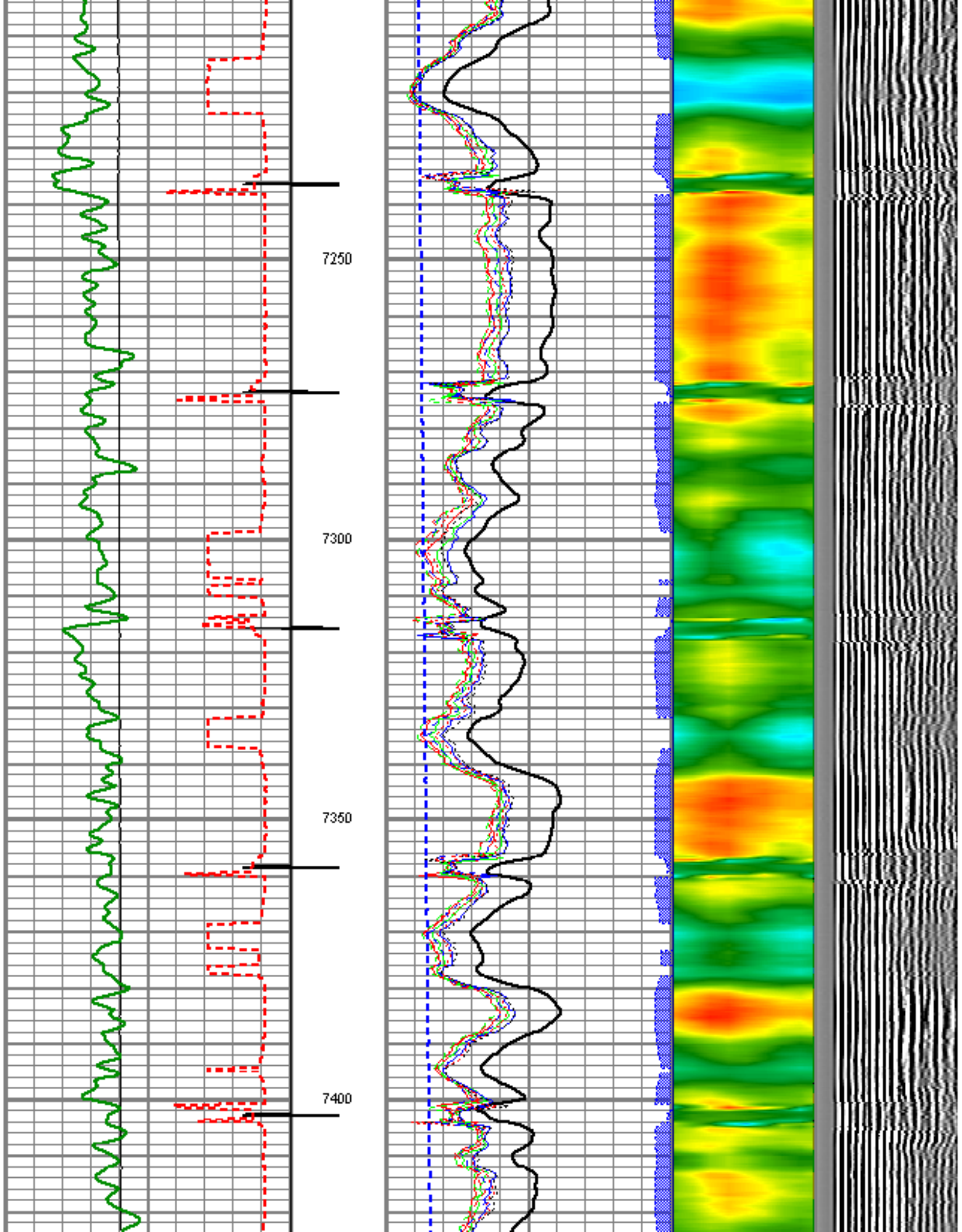




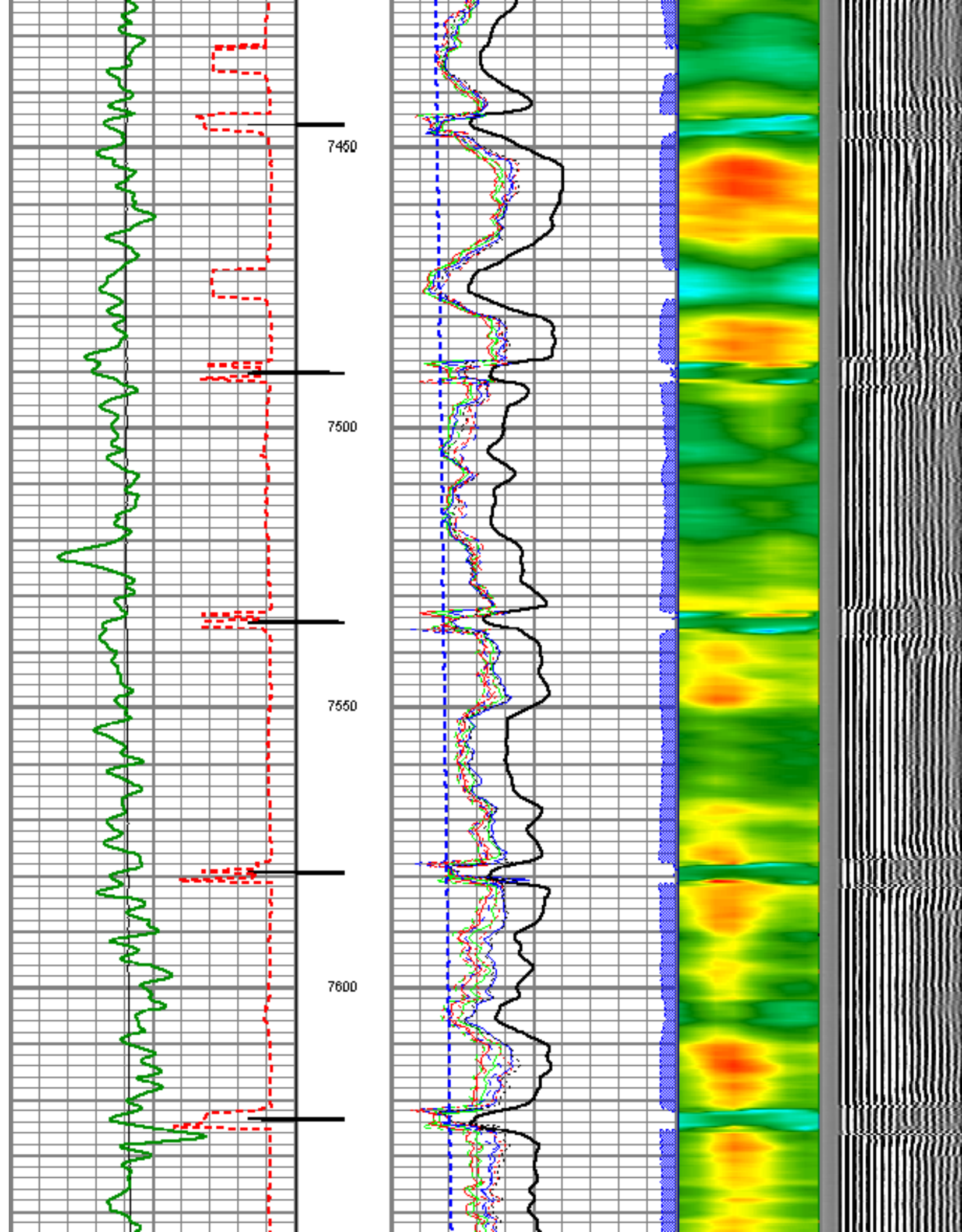




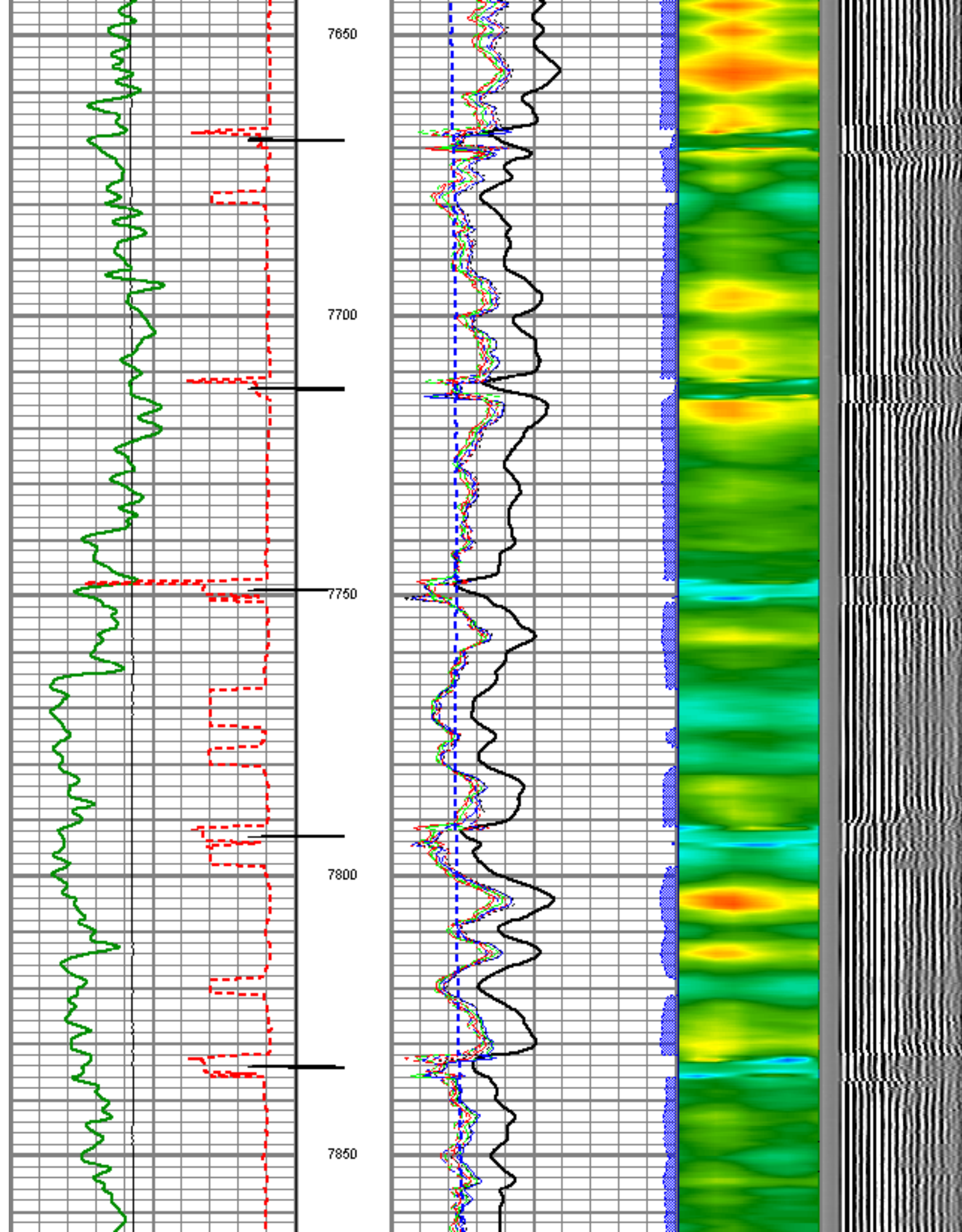




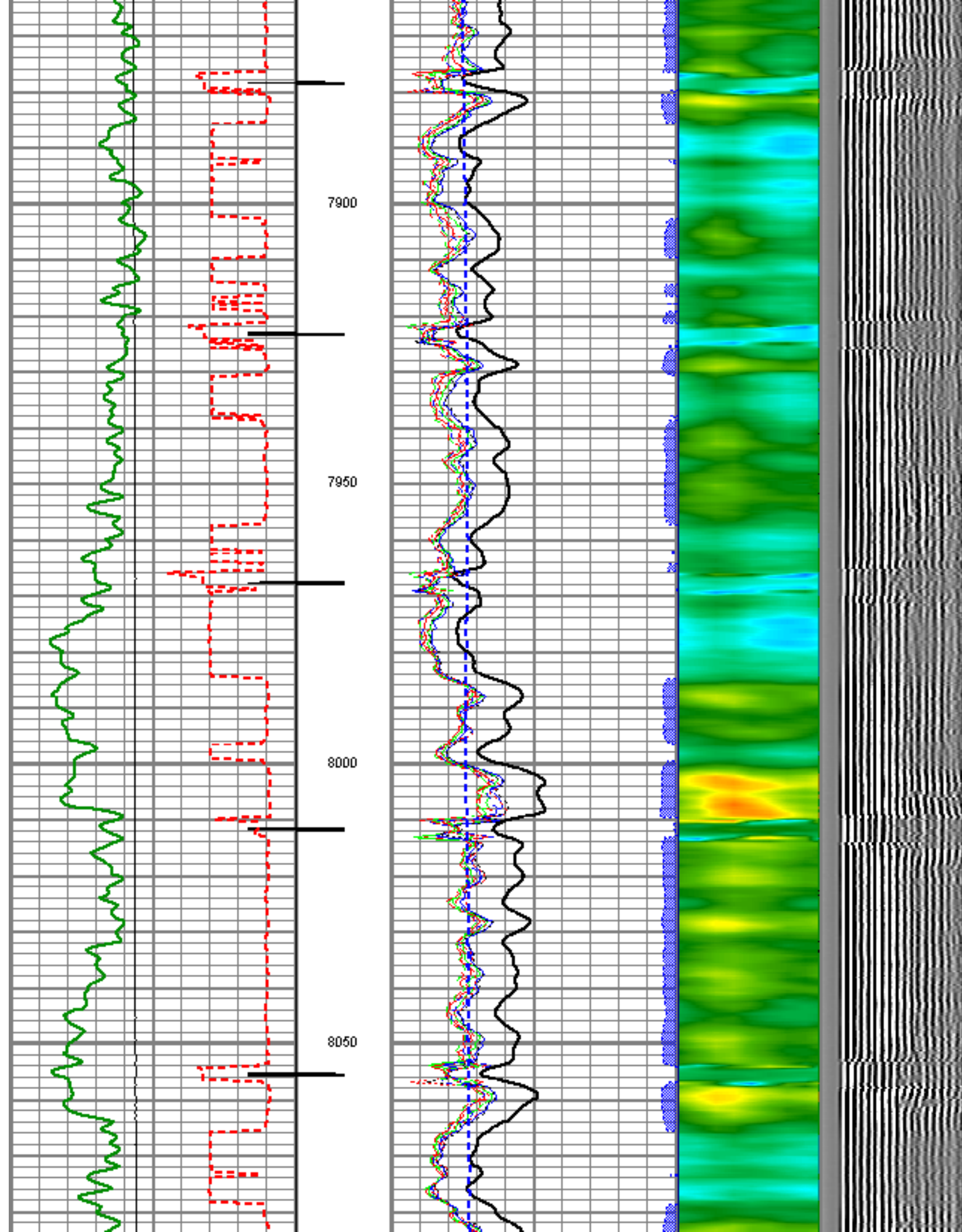




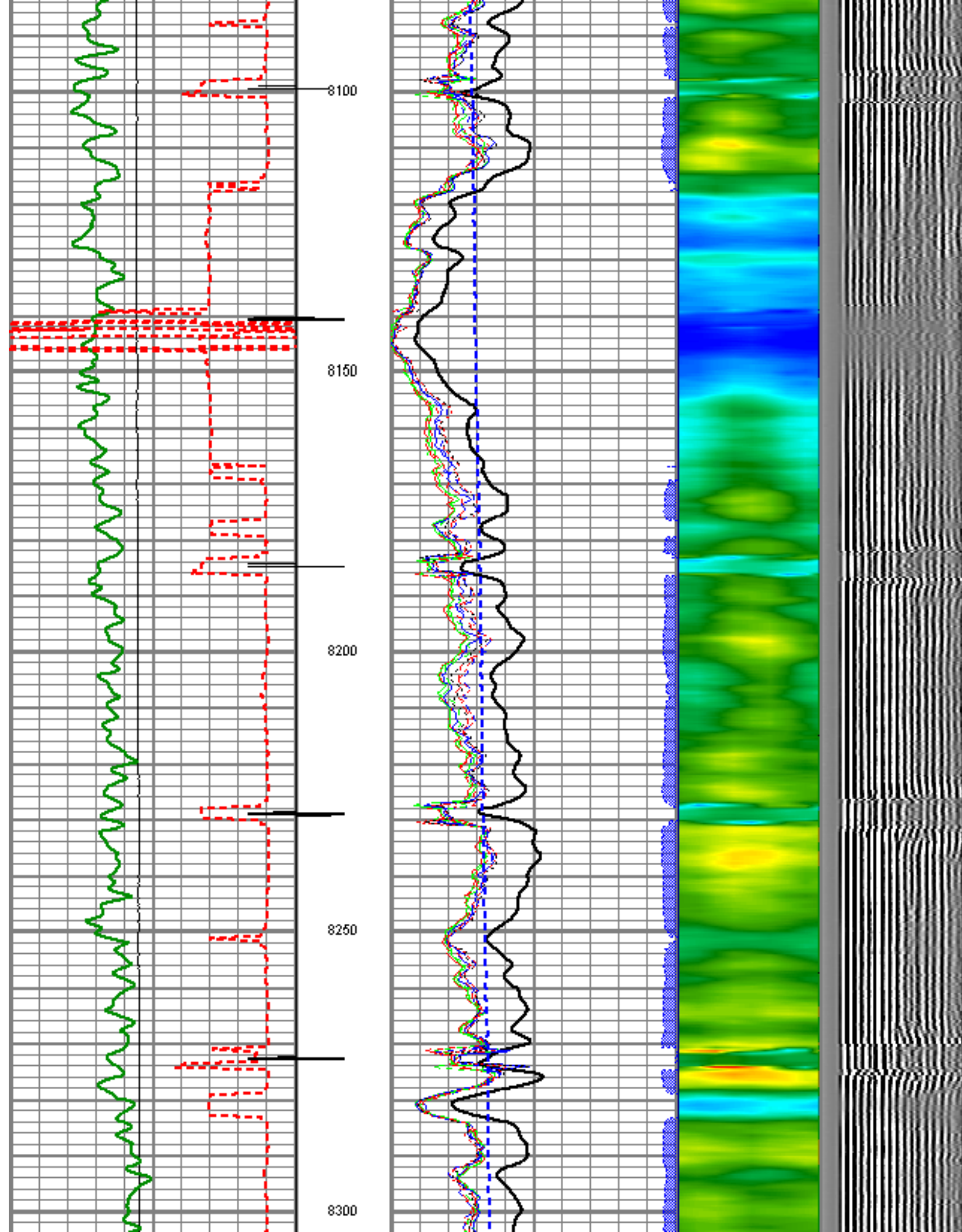




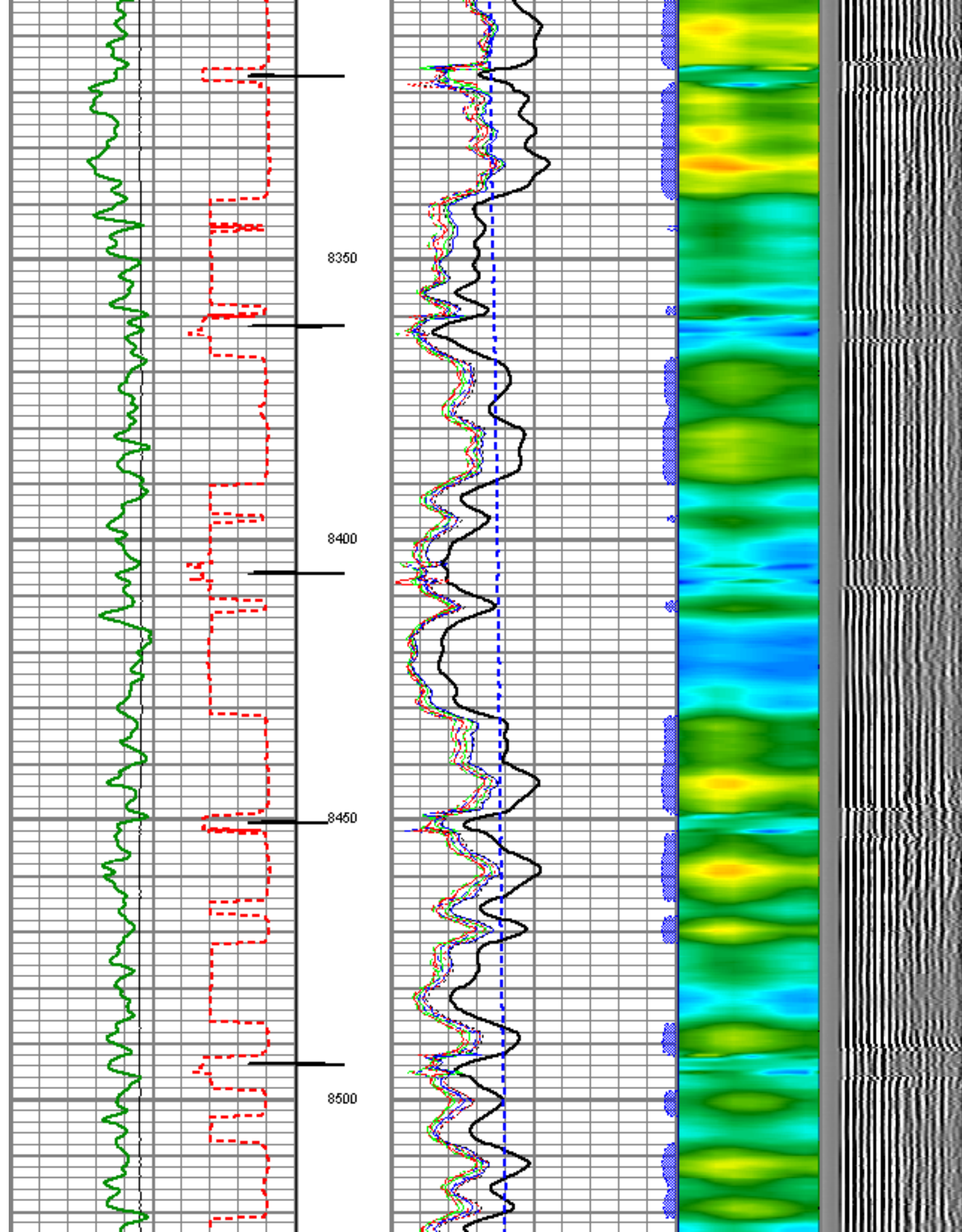




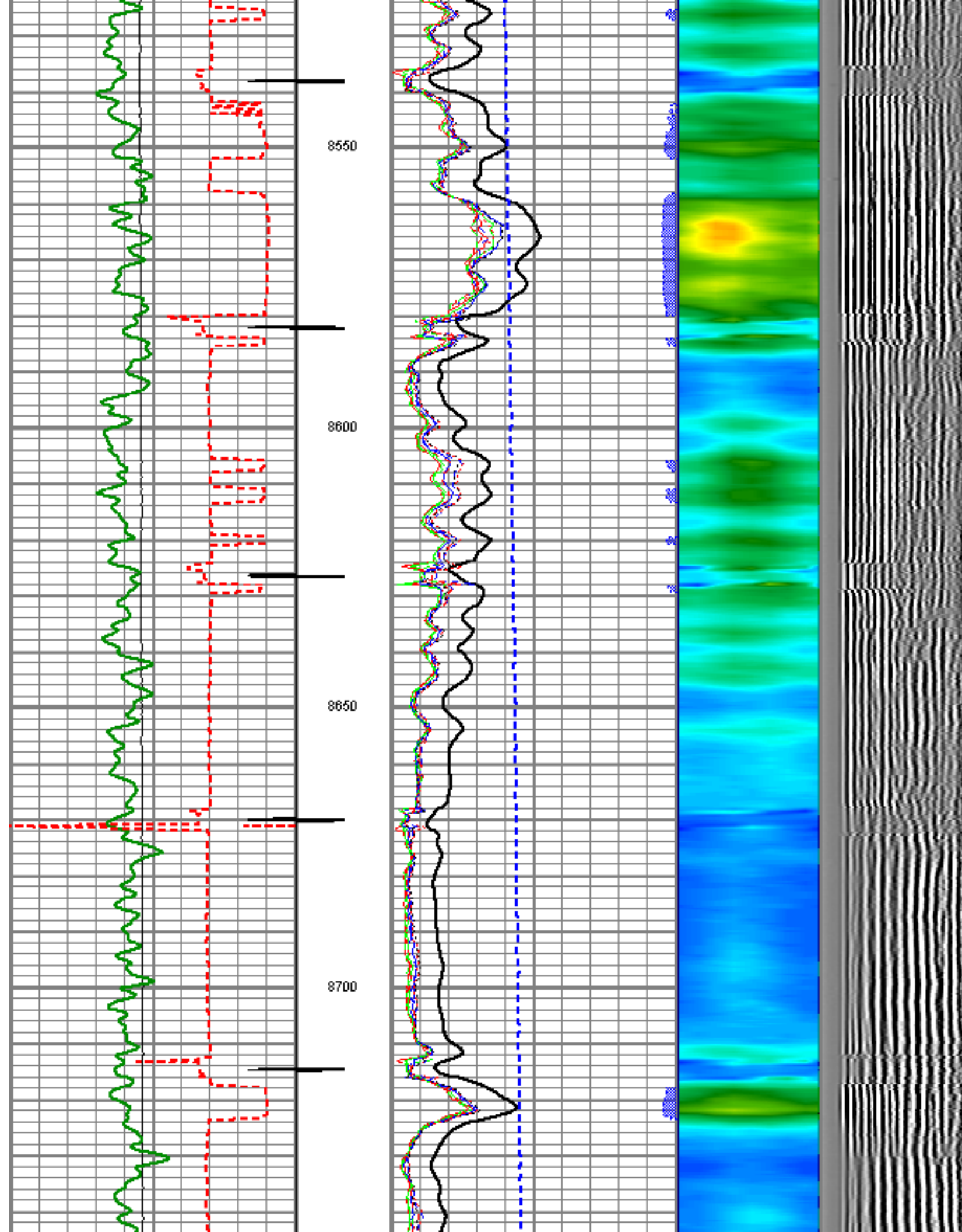




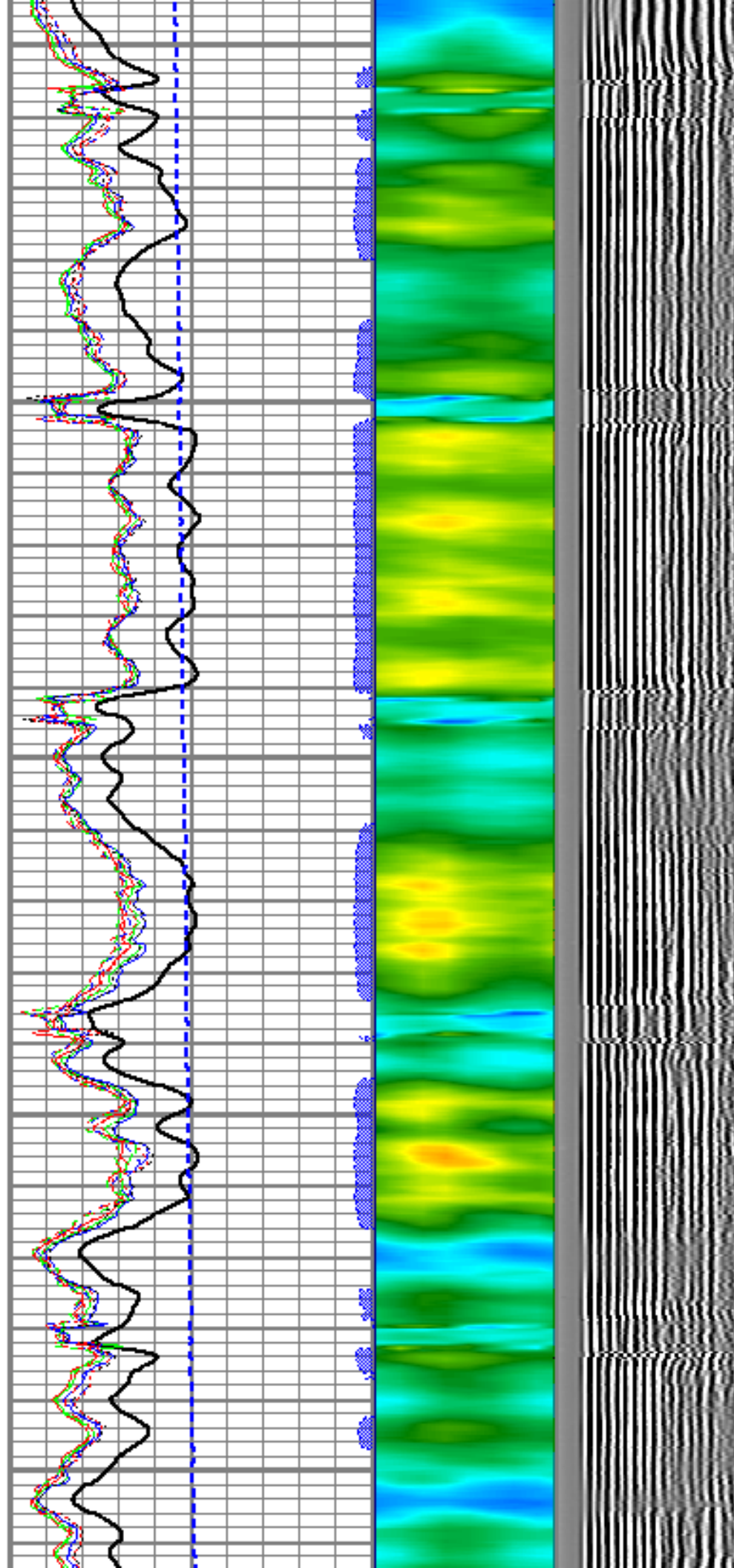
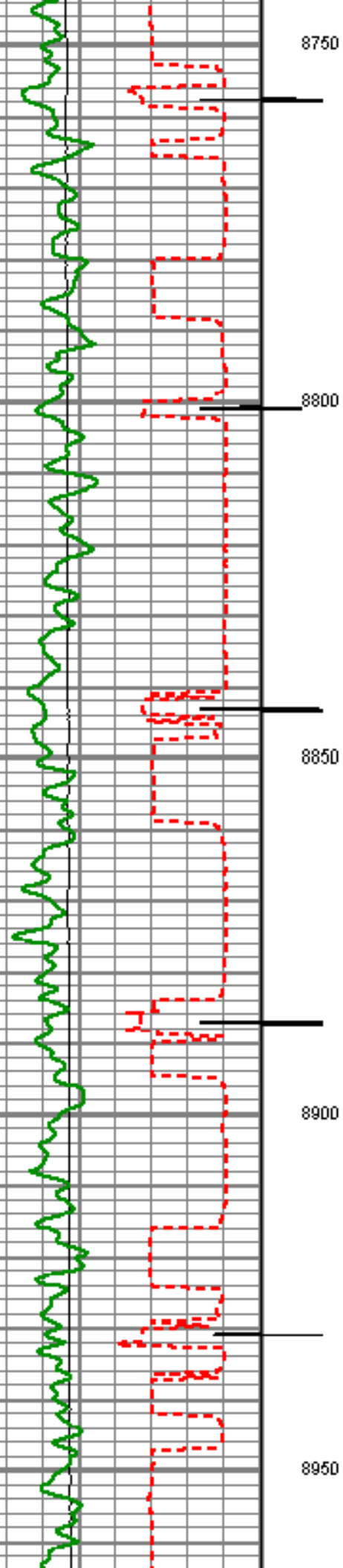




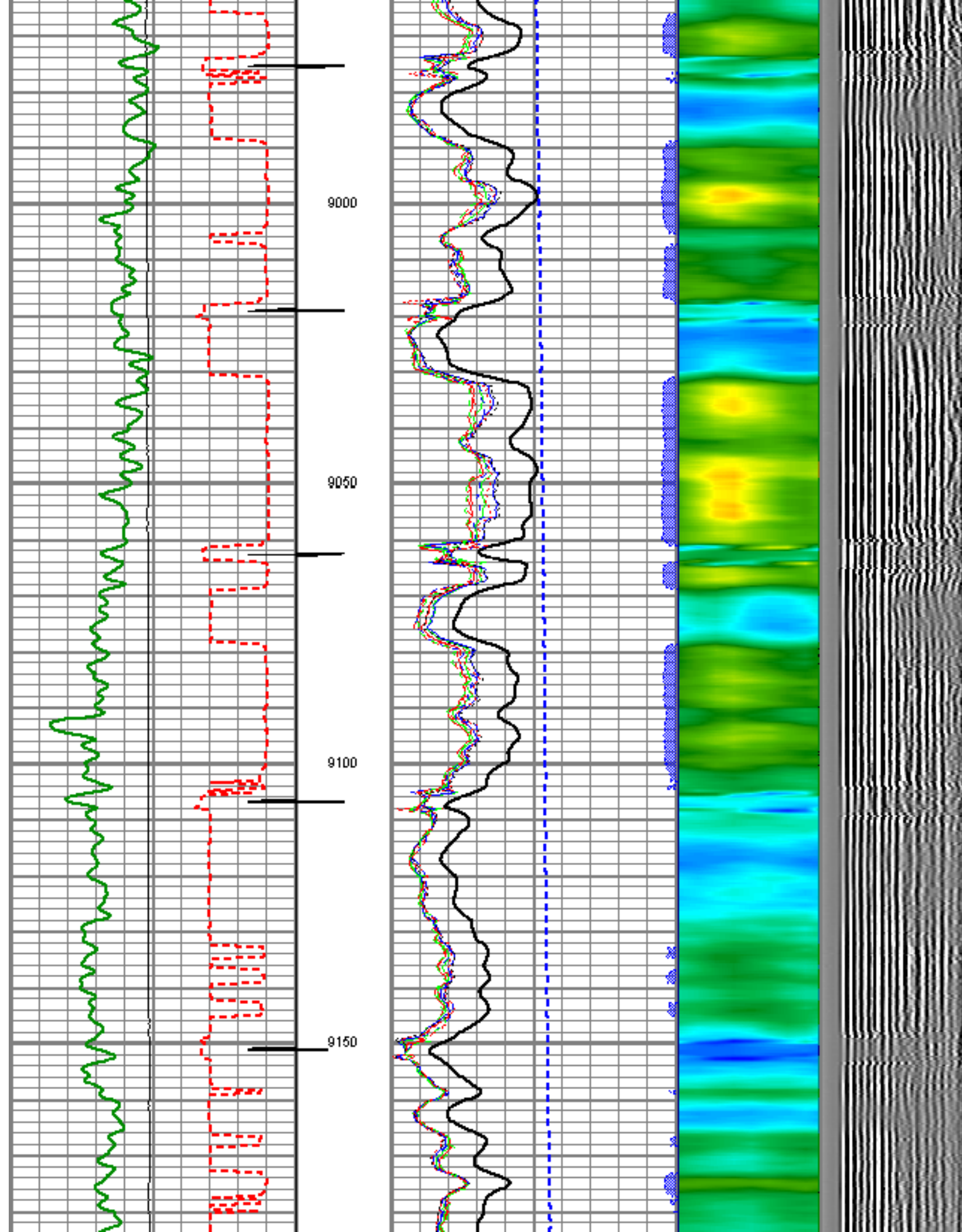




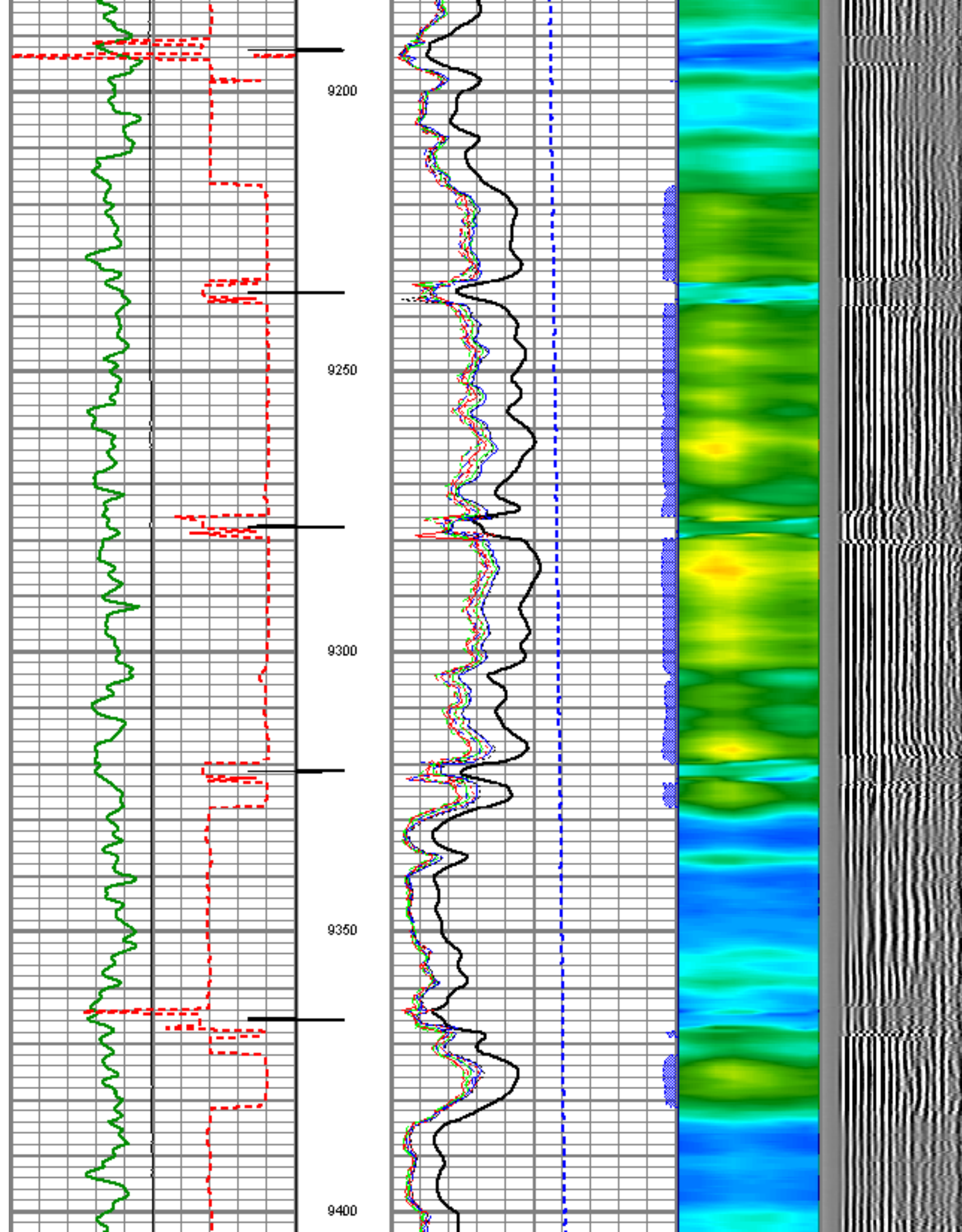




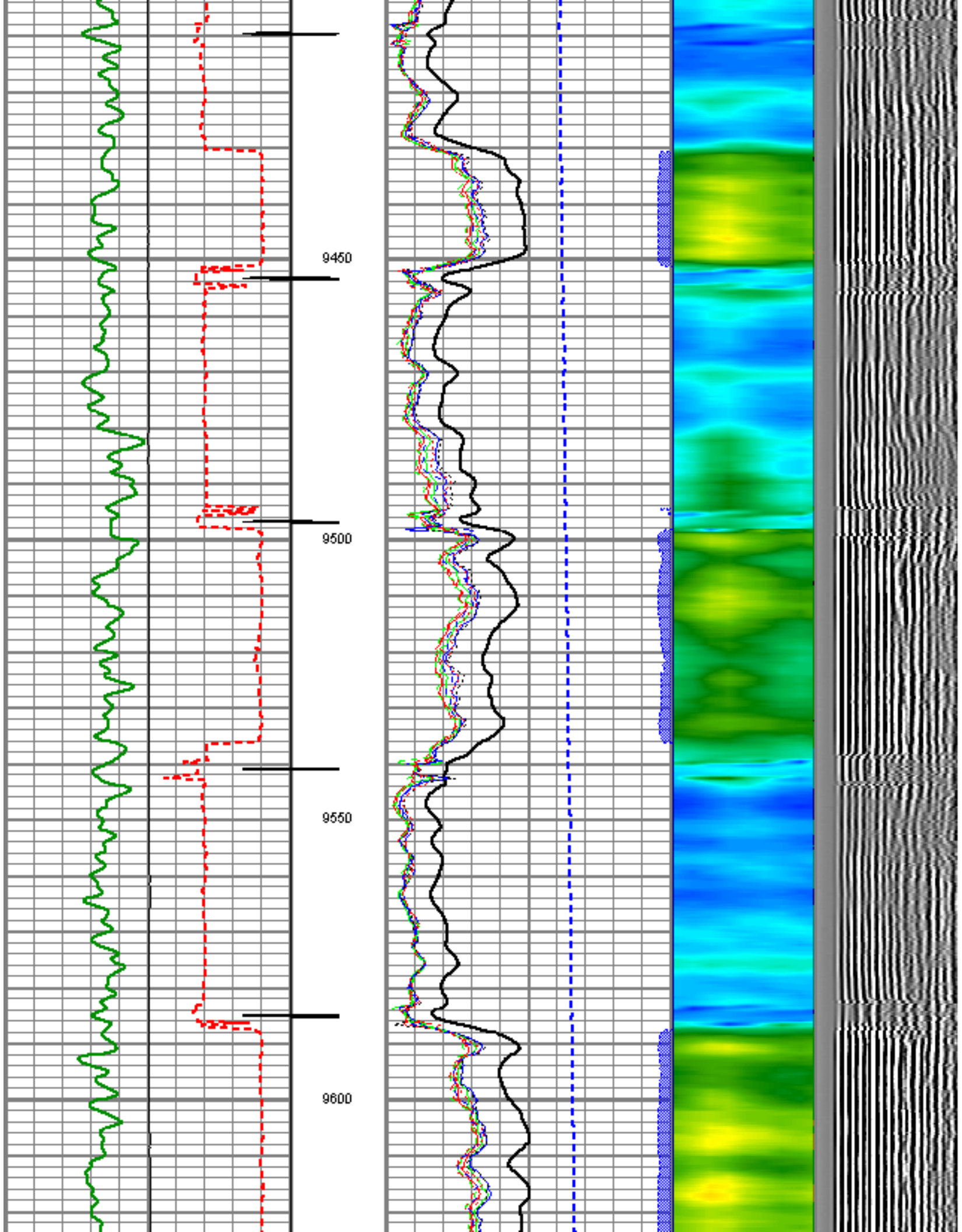




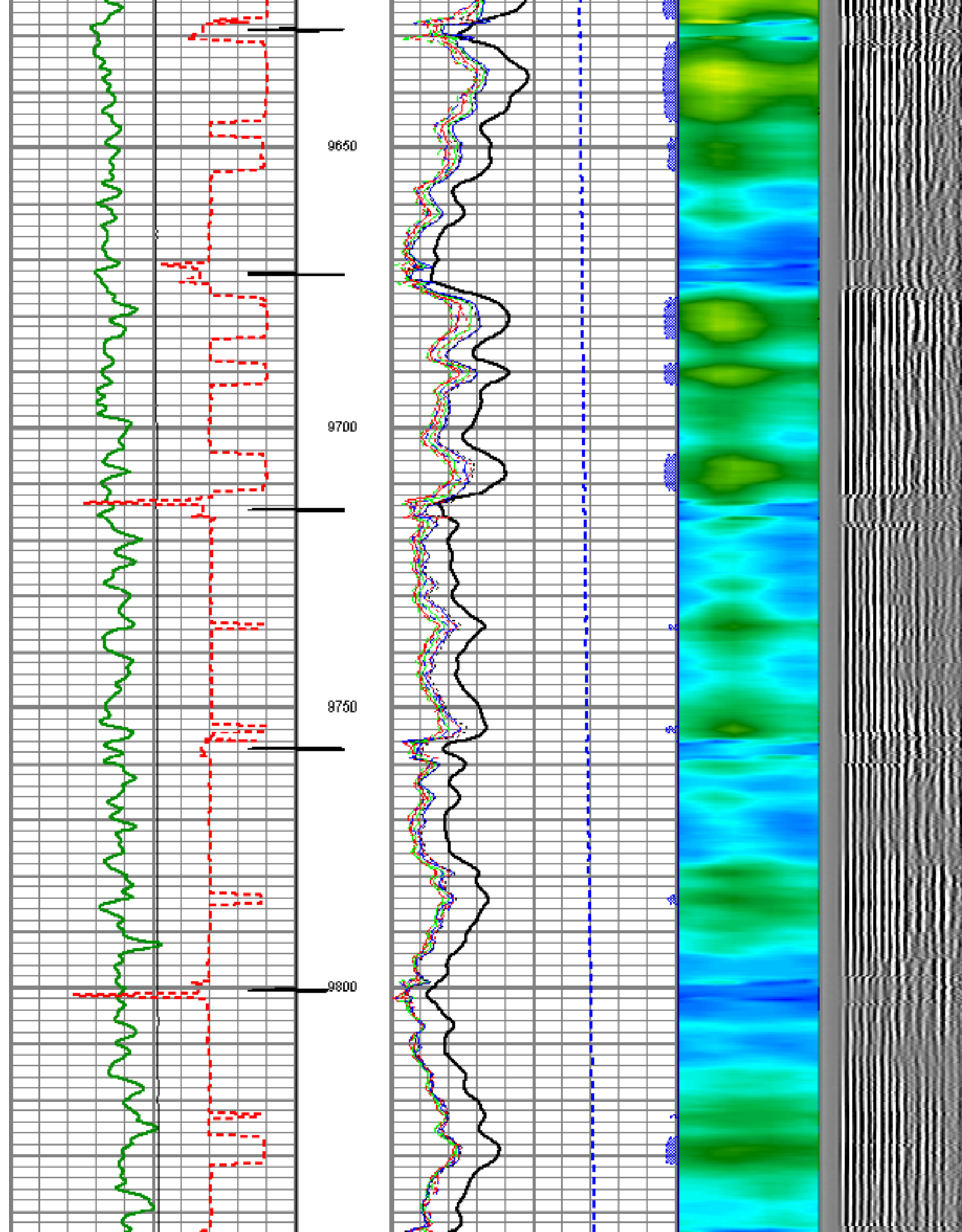




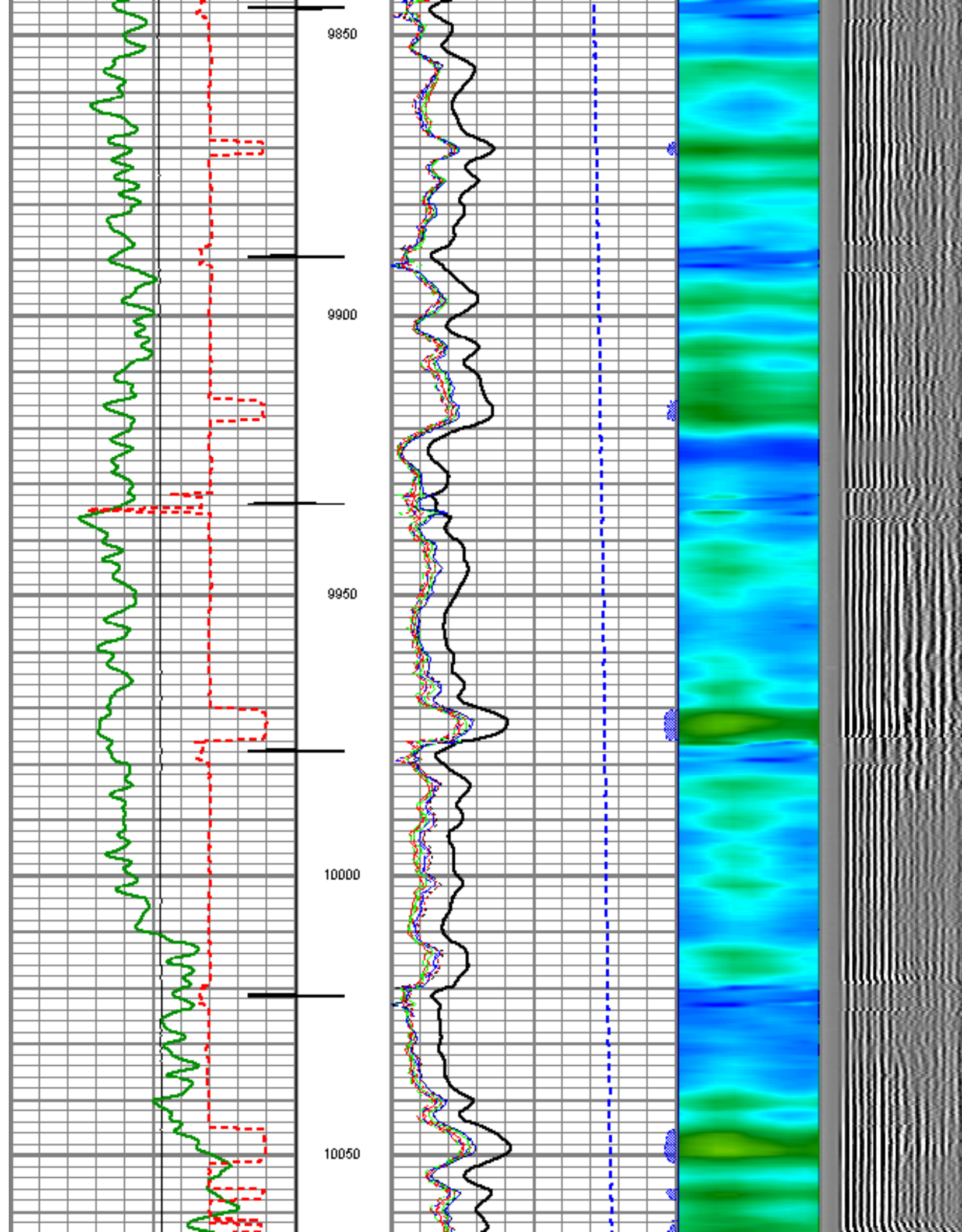




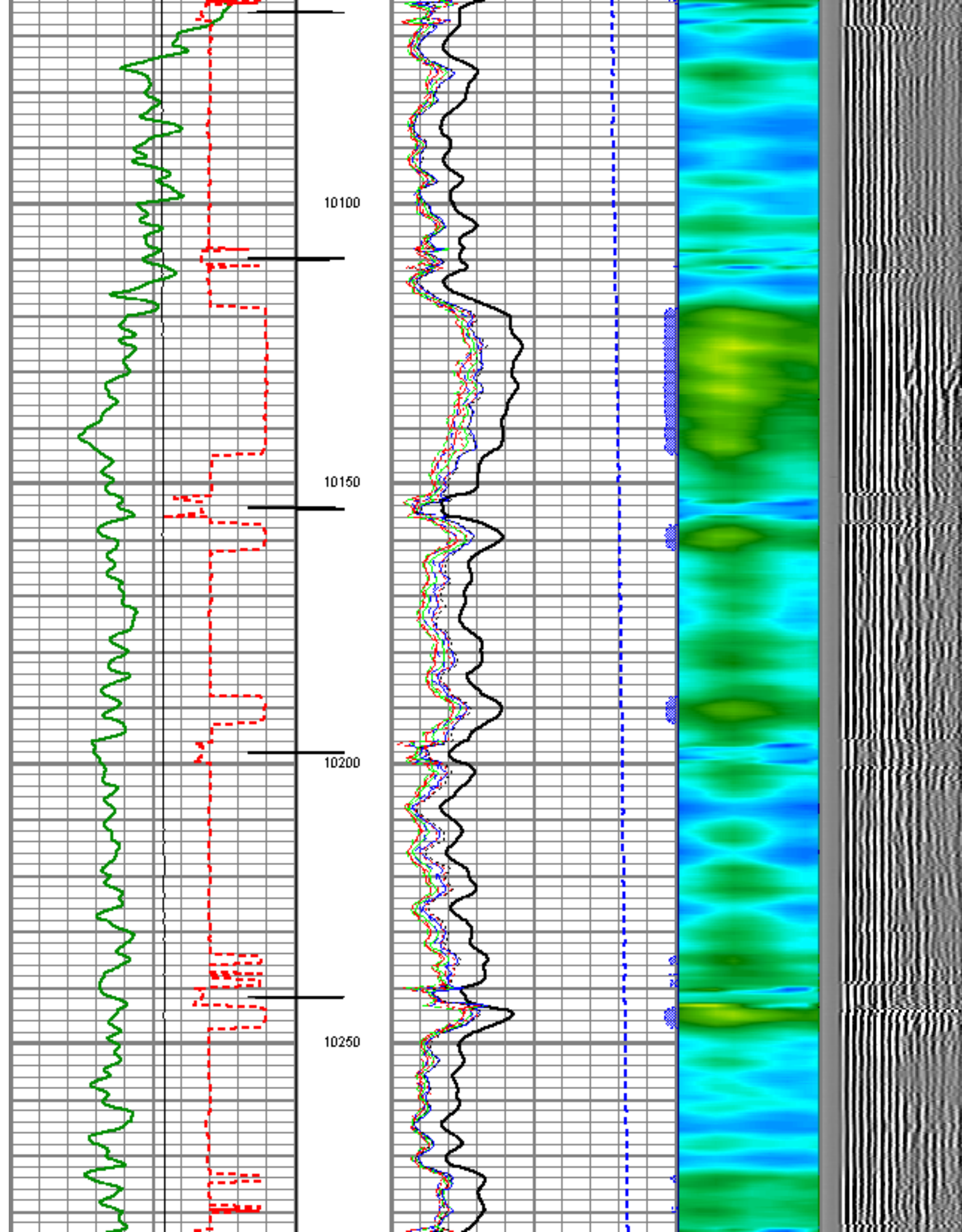




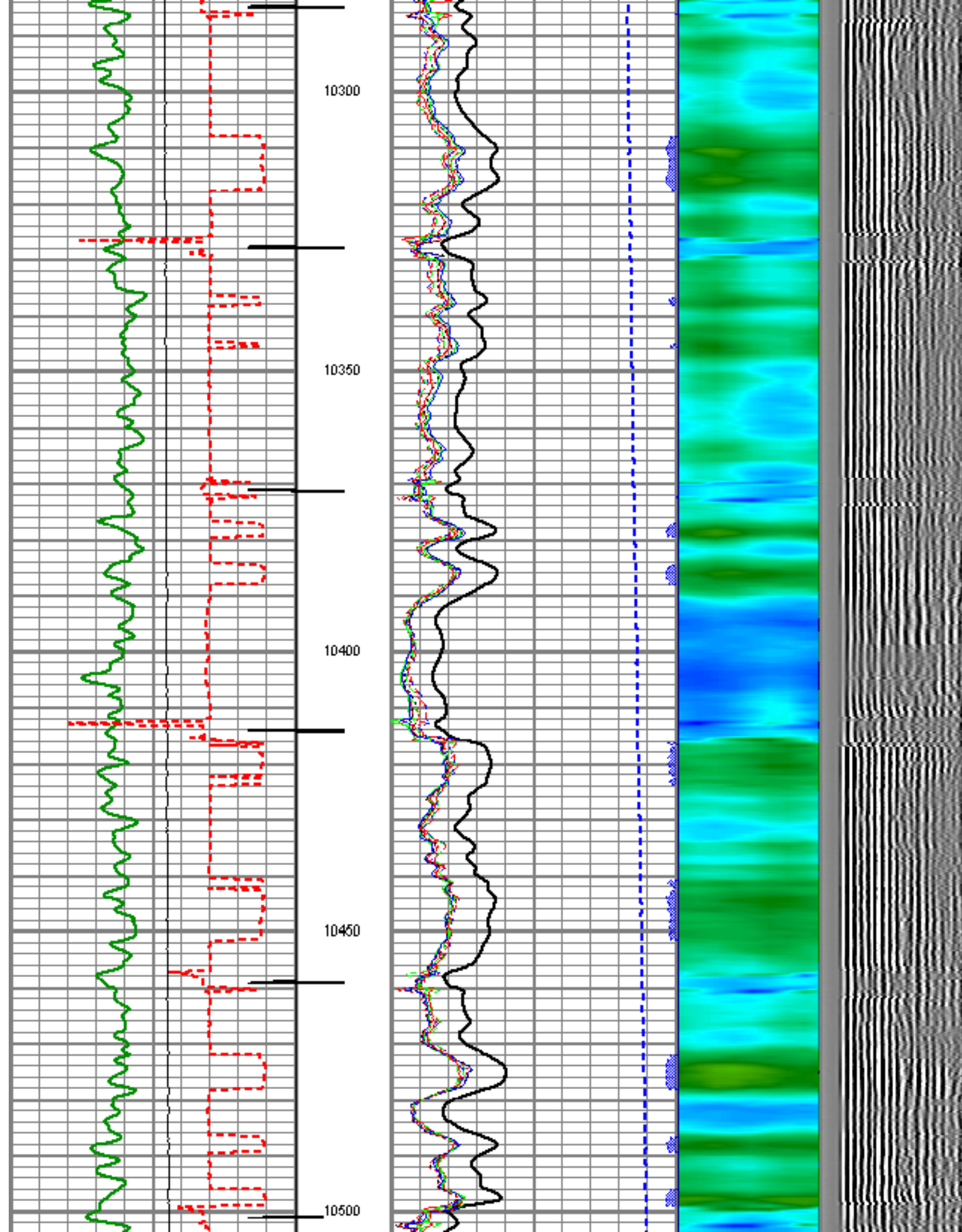




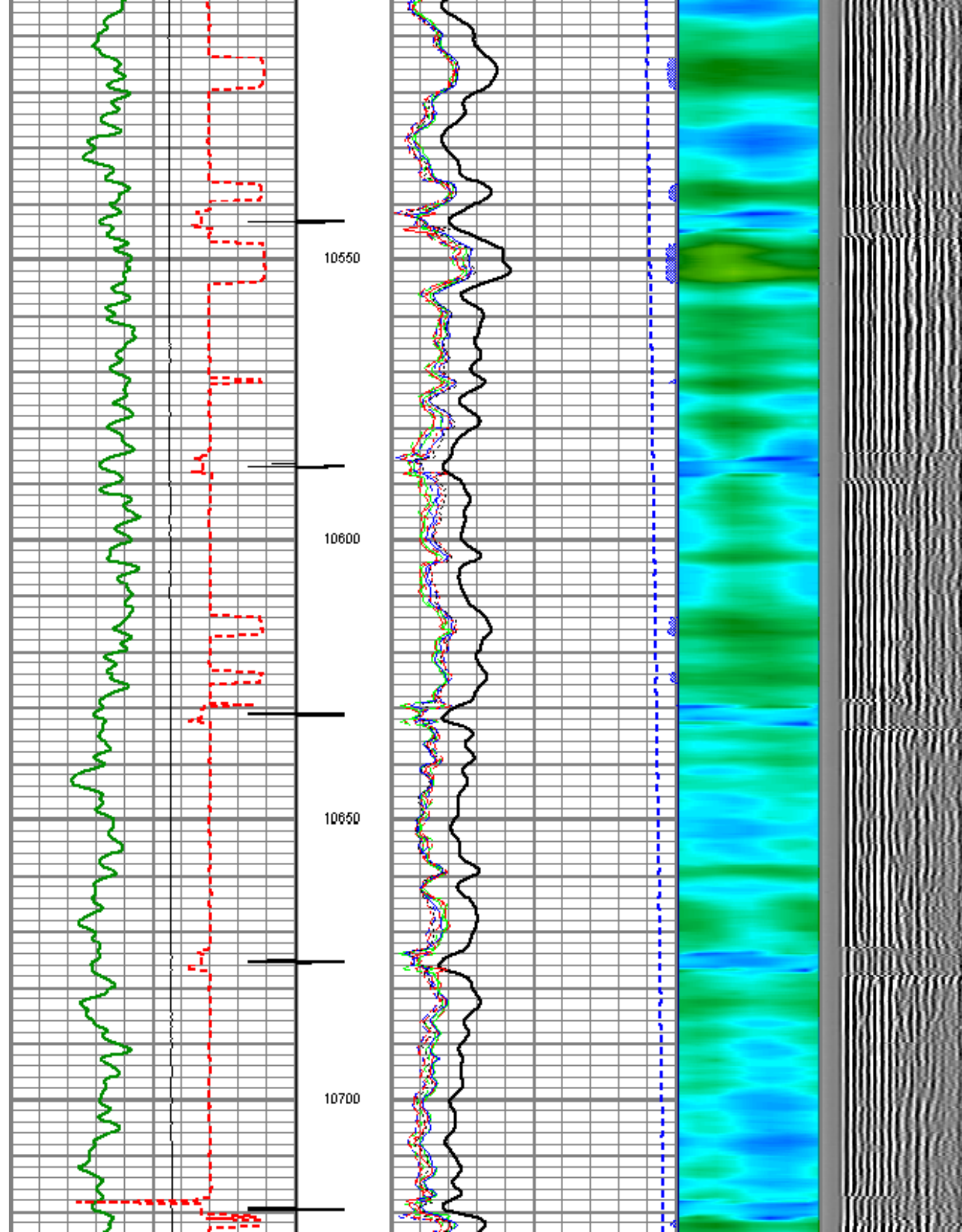




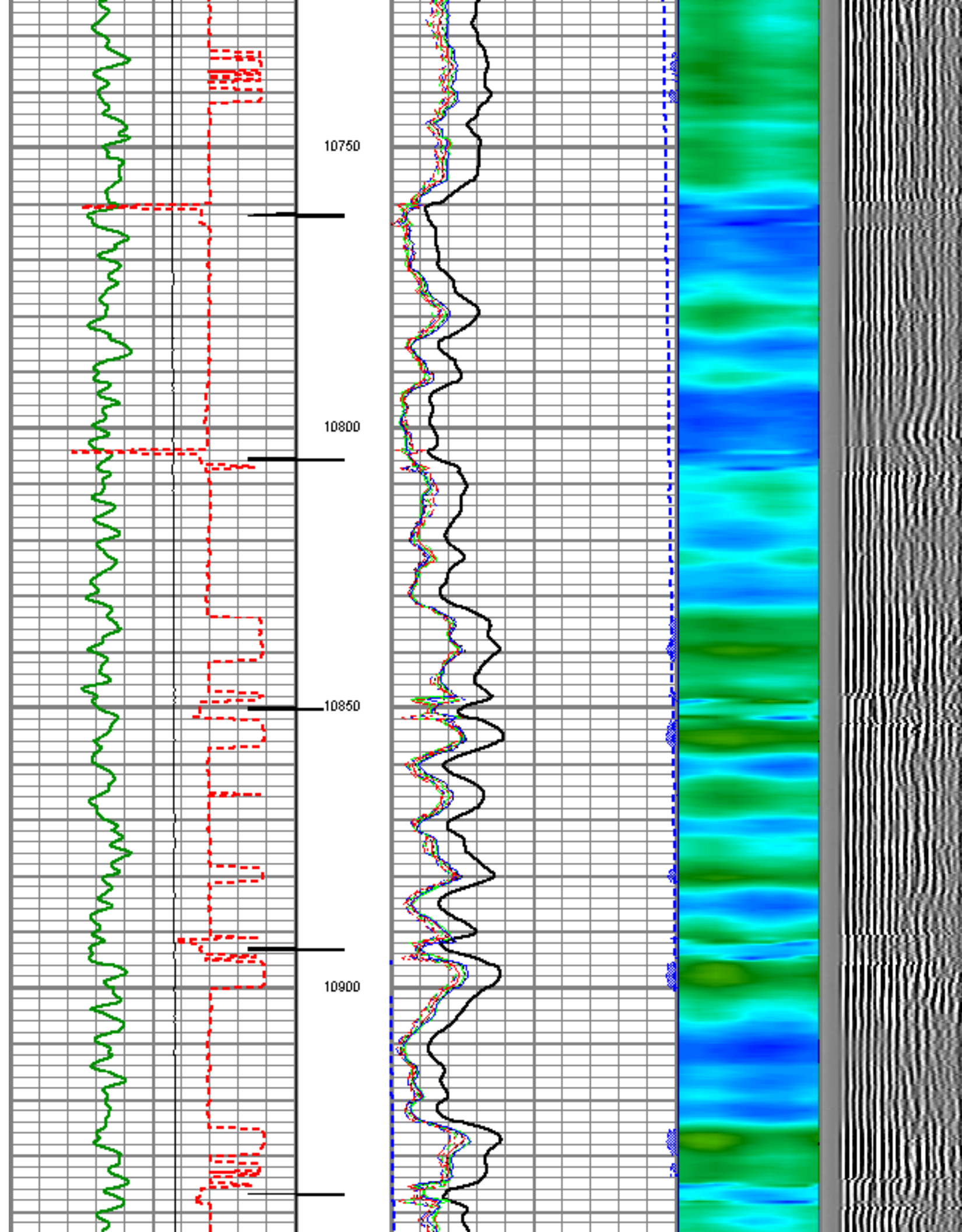




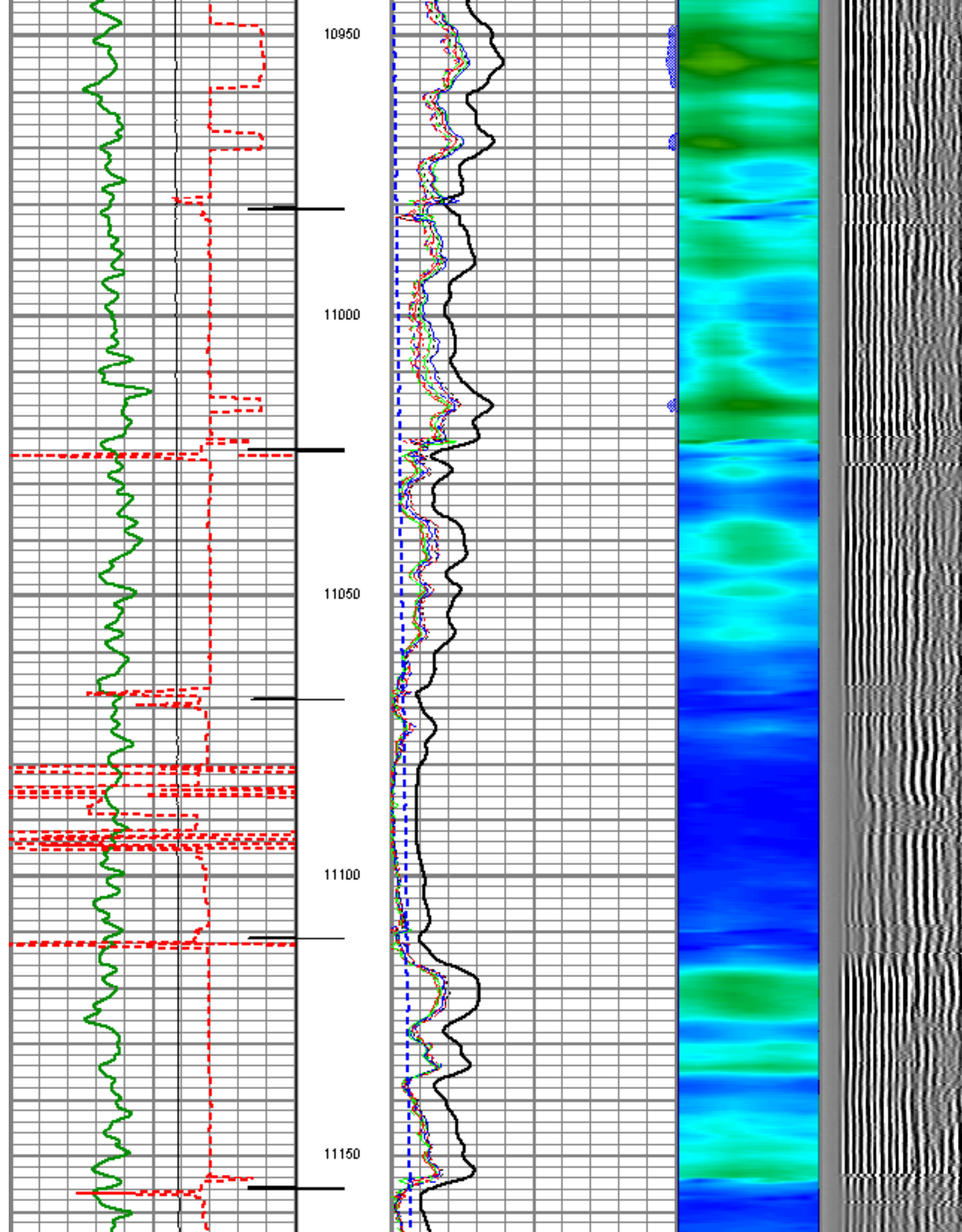




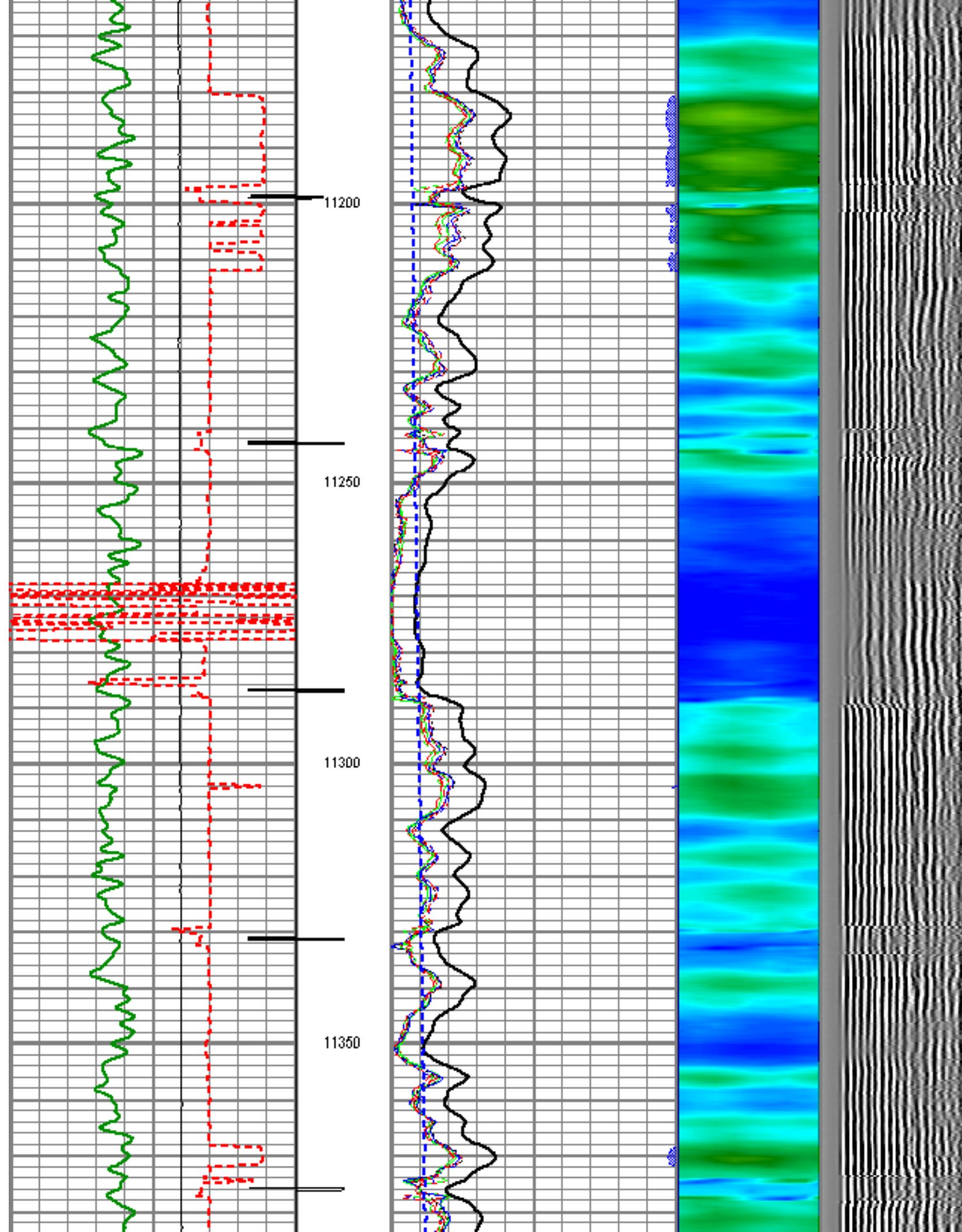




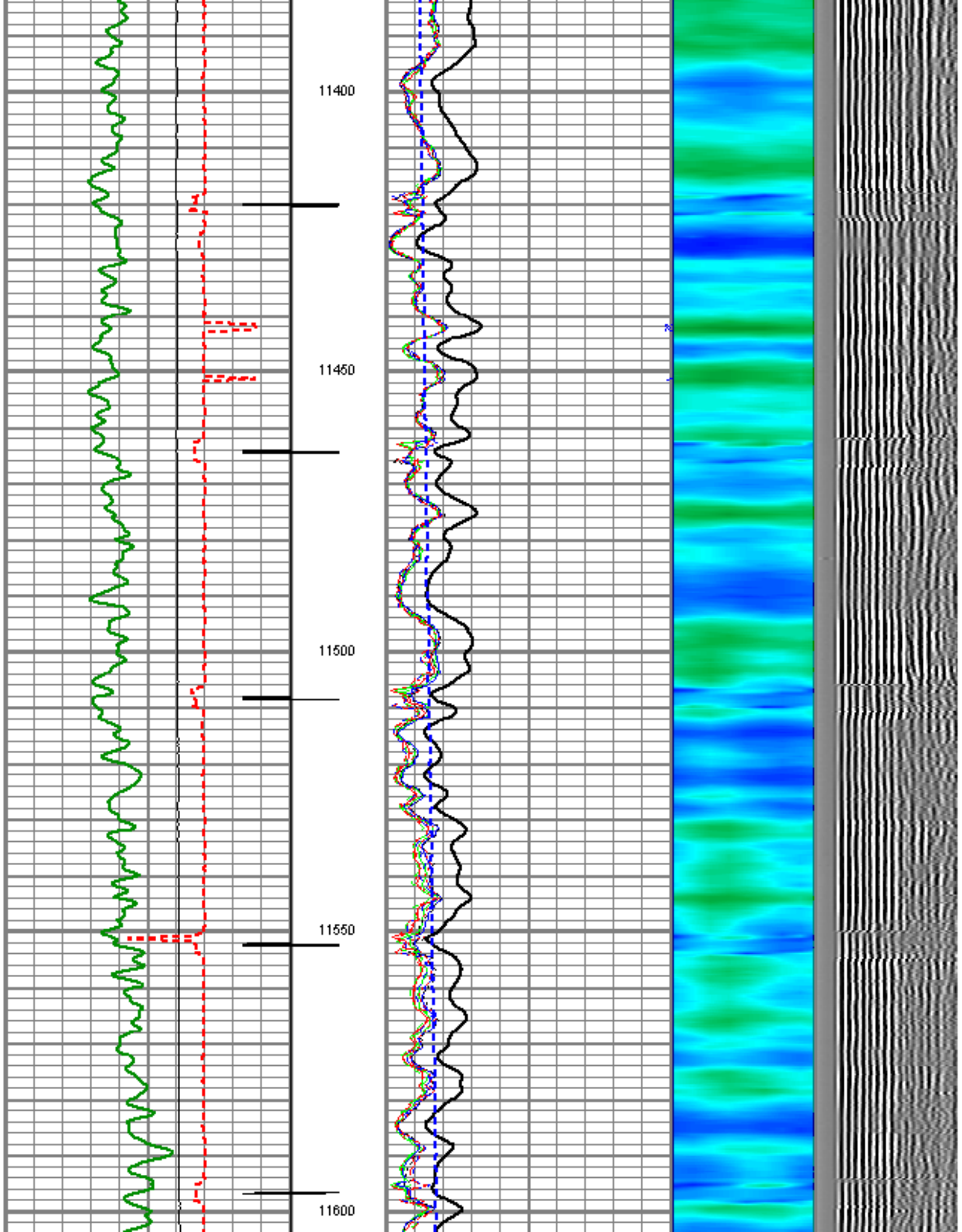




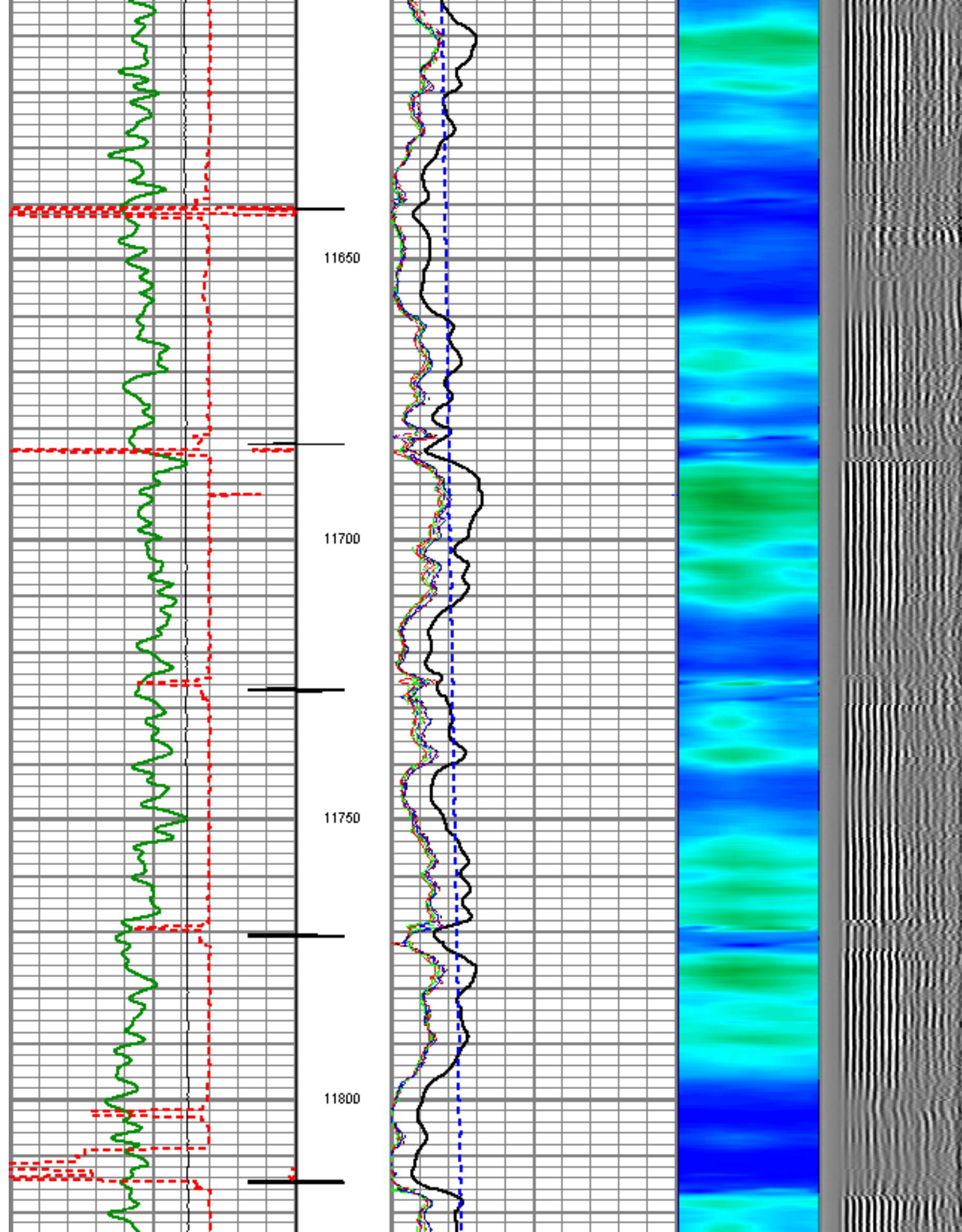




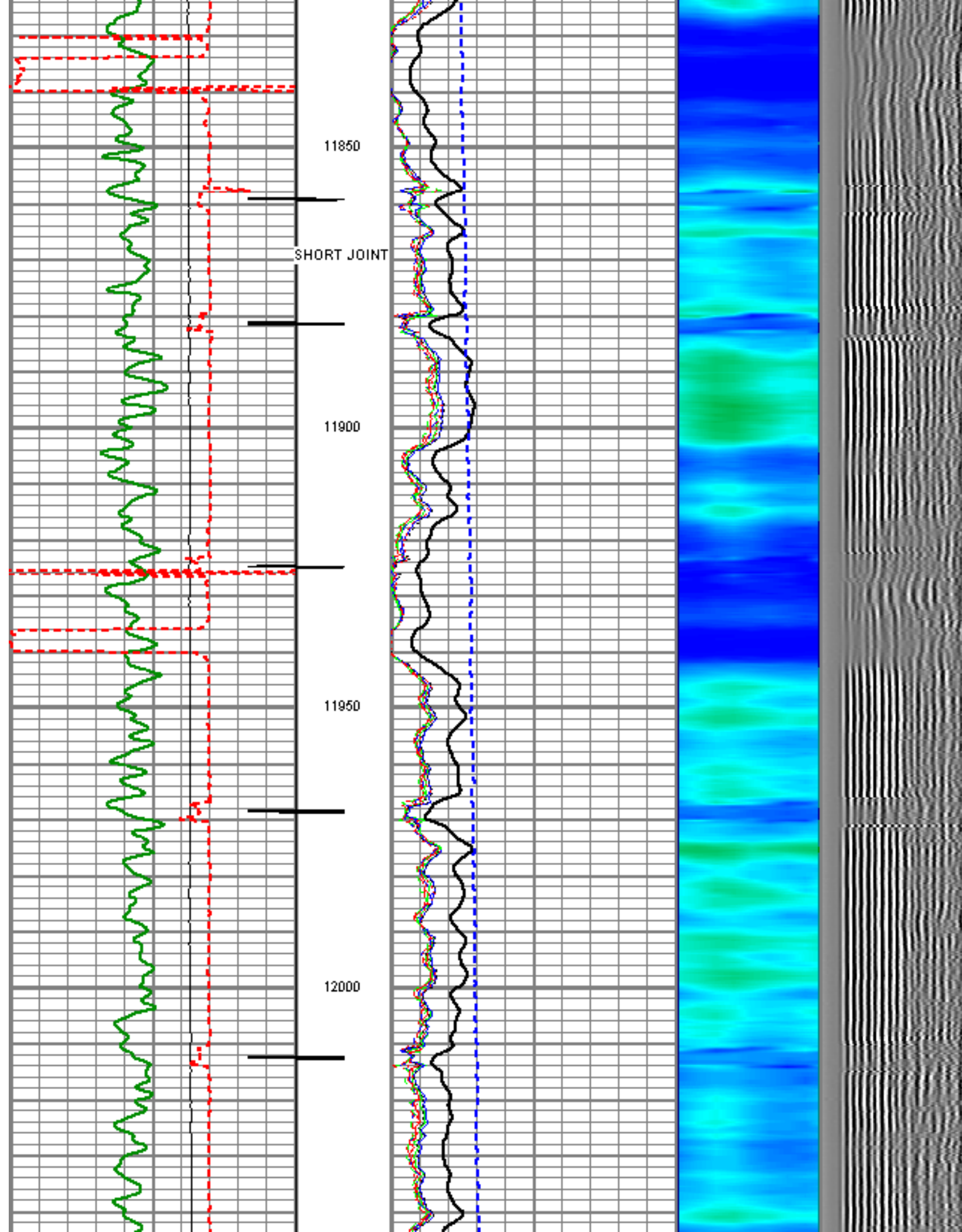




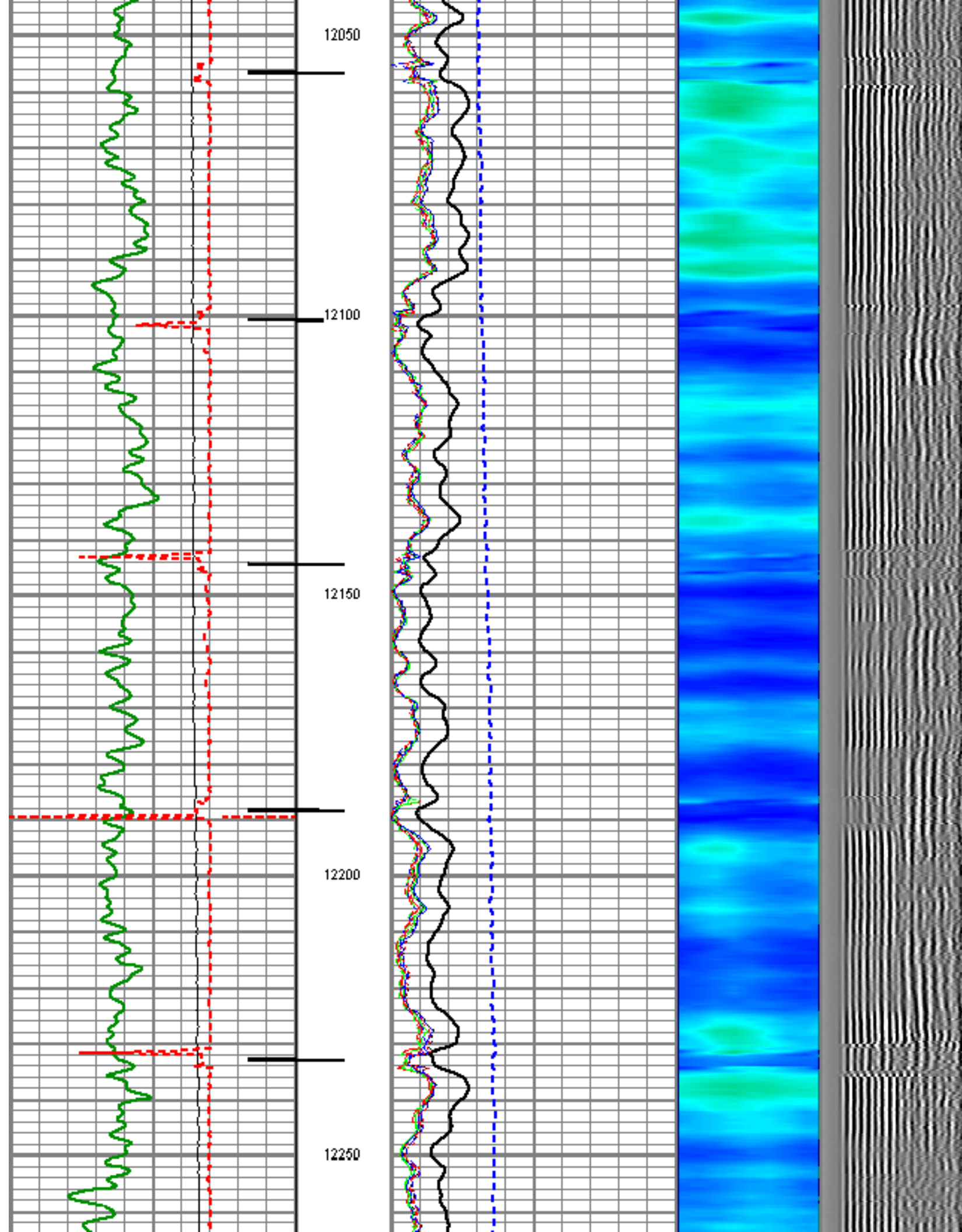




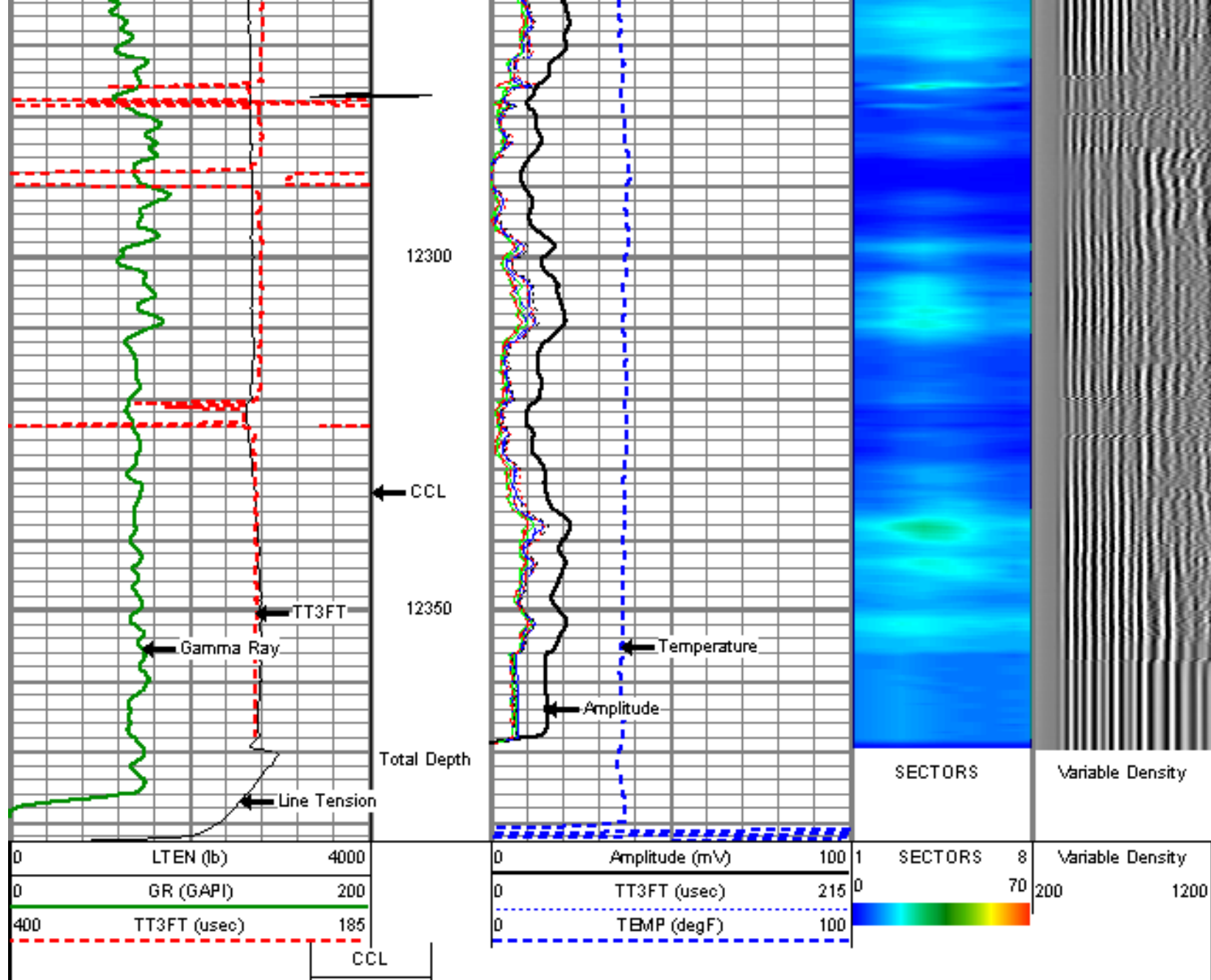












**MW**  
Mesa Wireline

## MAIN LOG SECTION, 2000 PSI

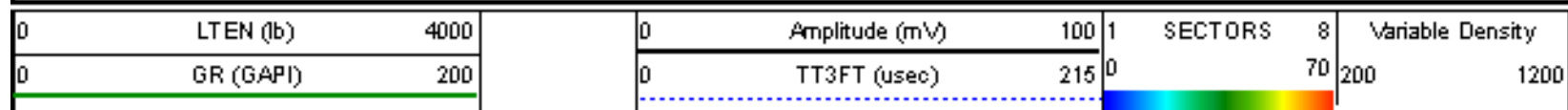
5" = 100'

**MW**  
Mesa Wireline

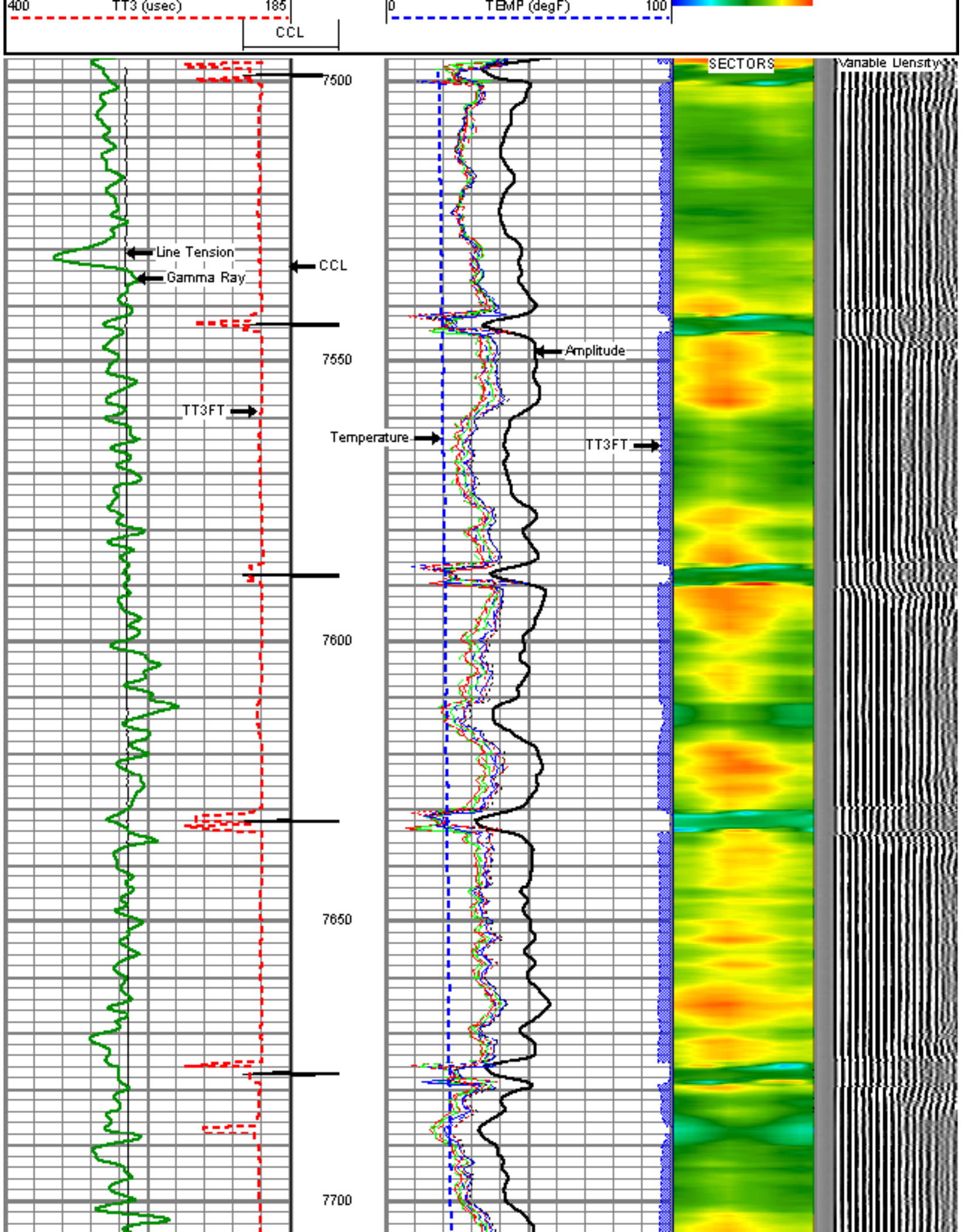
## LOWER LOG SECTION, 0 PSI

5" = 100'

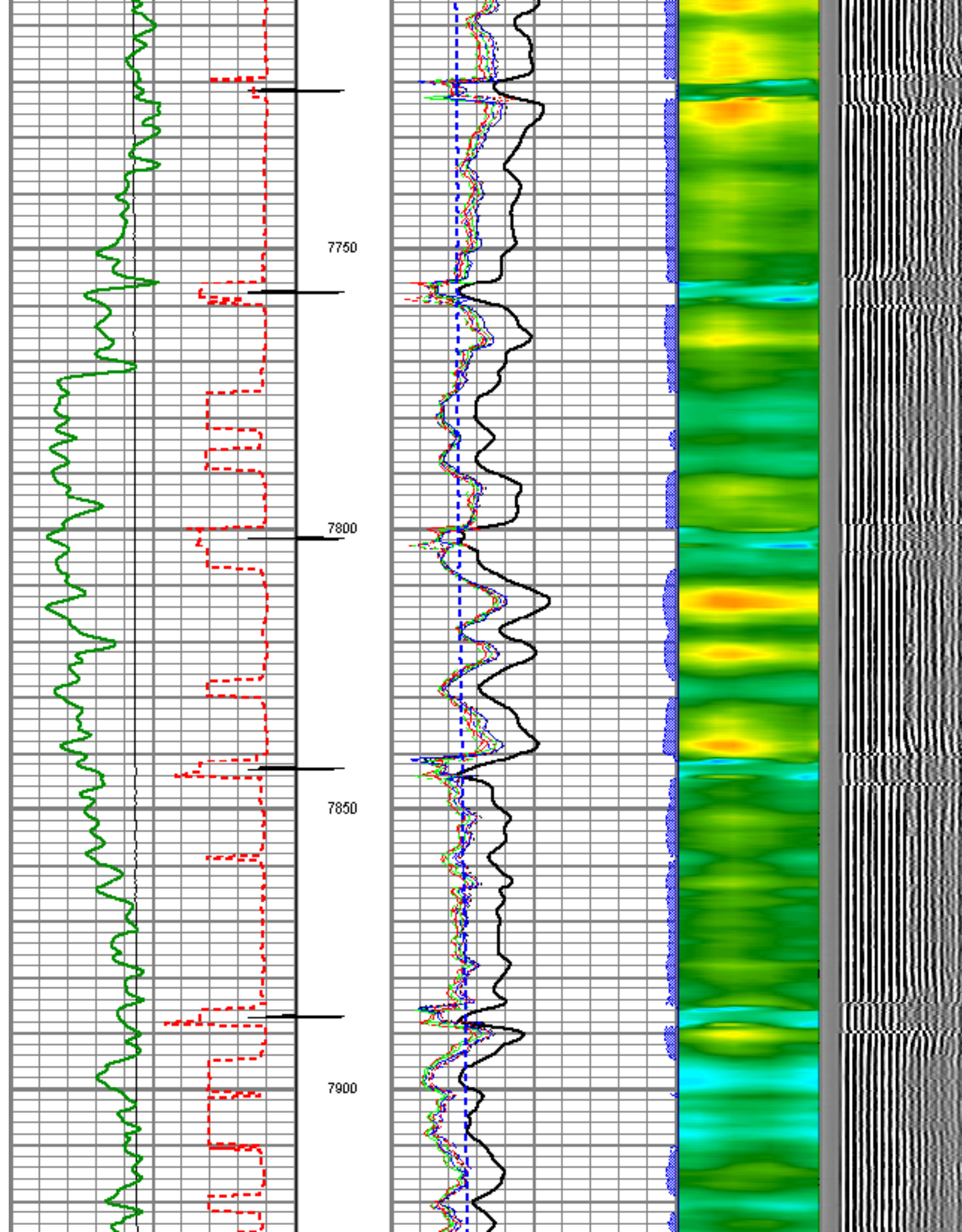
Database File: a\_csfcbl.db  
 Dataset Pathname: pass3  
 Presentation Format: rbt\_fin  
 Dataset Creation: Sun Nov 23 10:11:44 2008 by Log Std Casedhole 07122  
 Charted by: Depth in Feet scaled 1:240



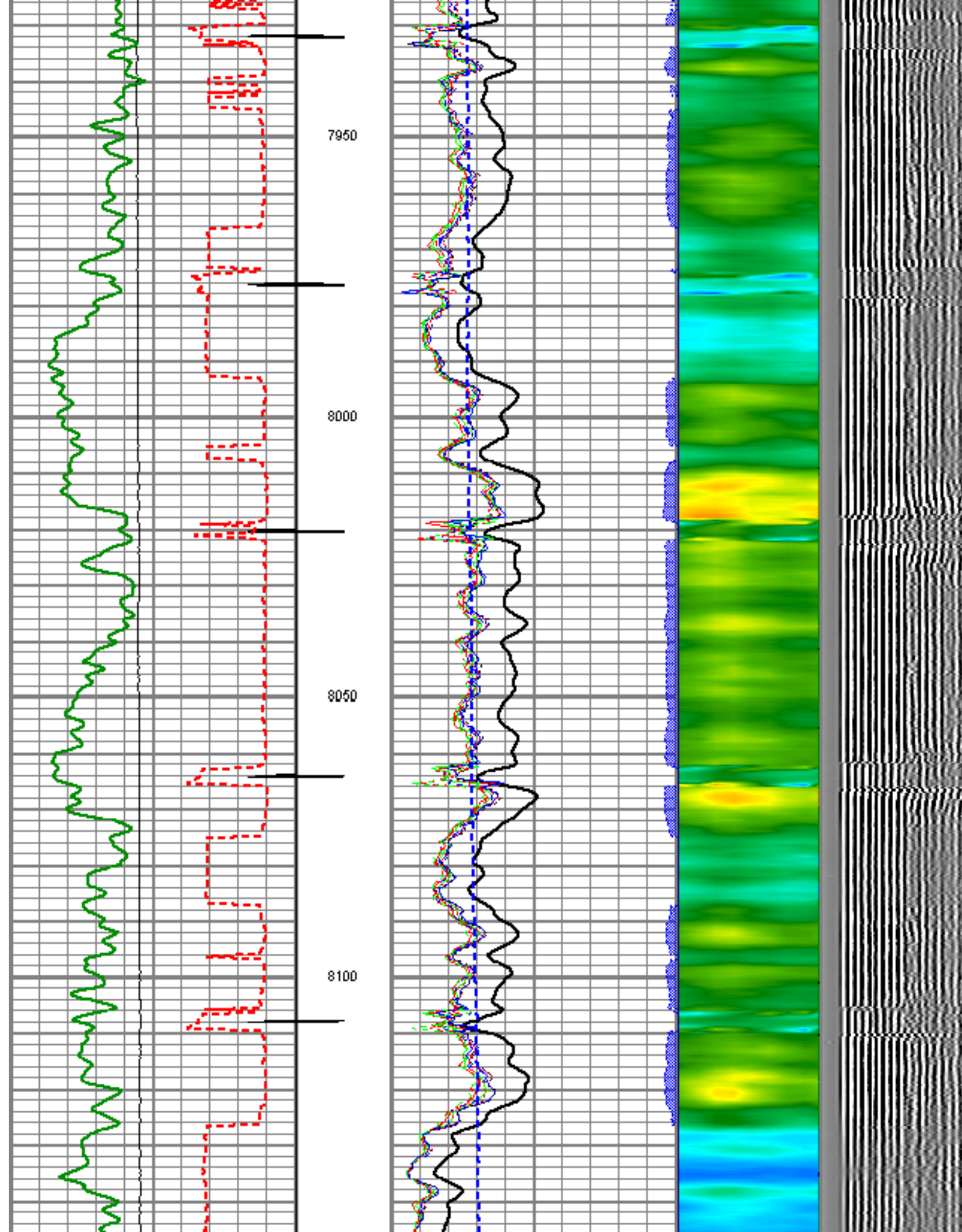




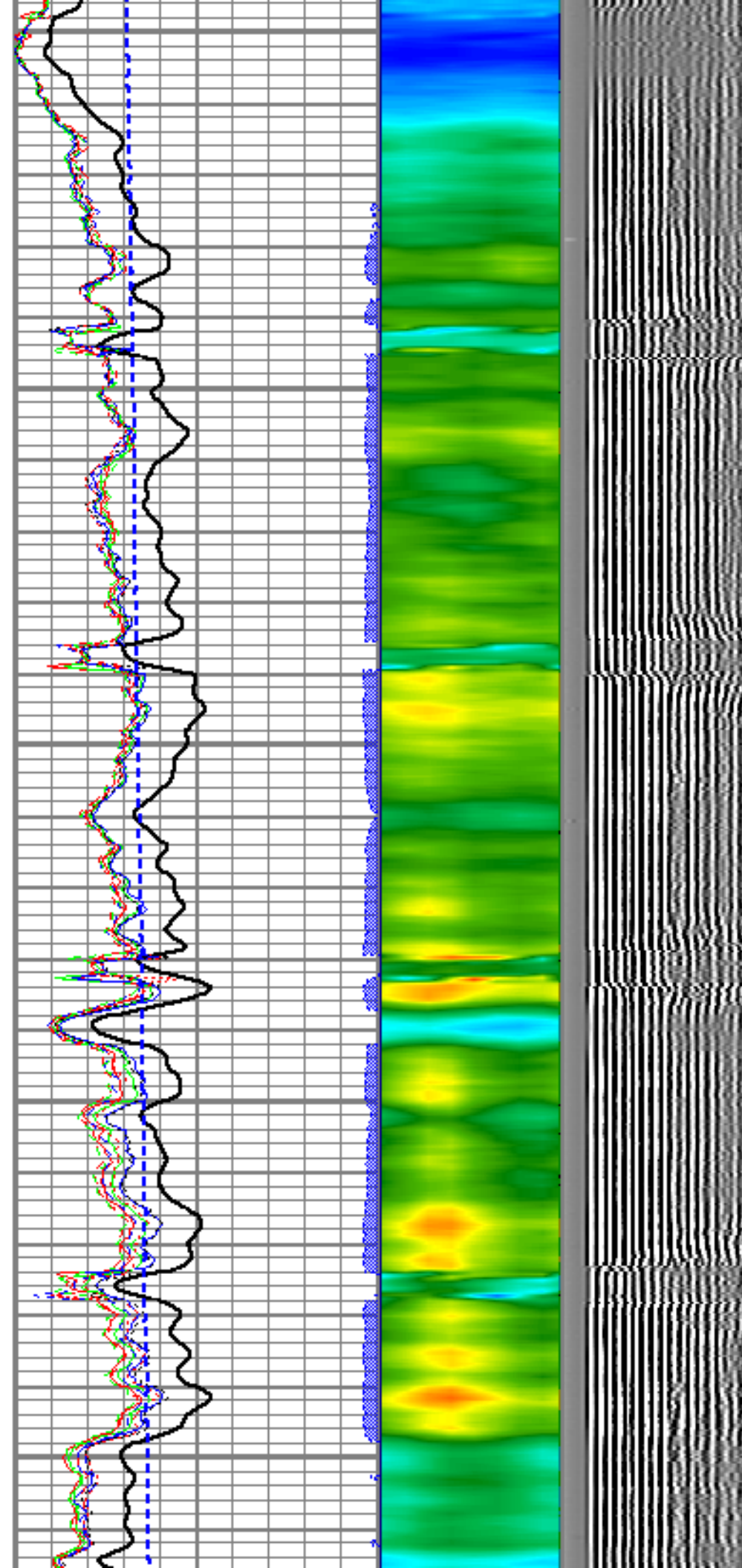
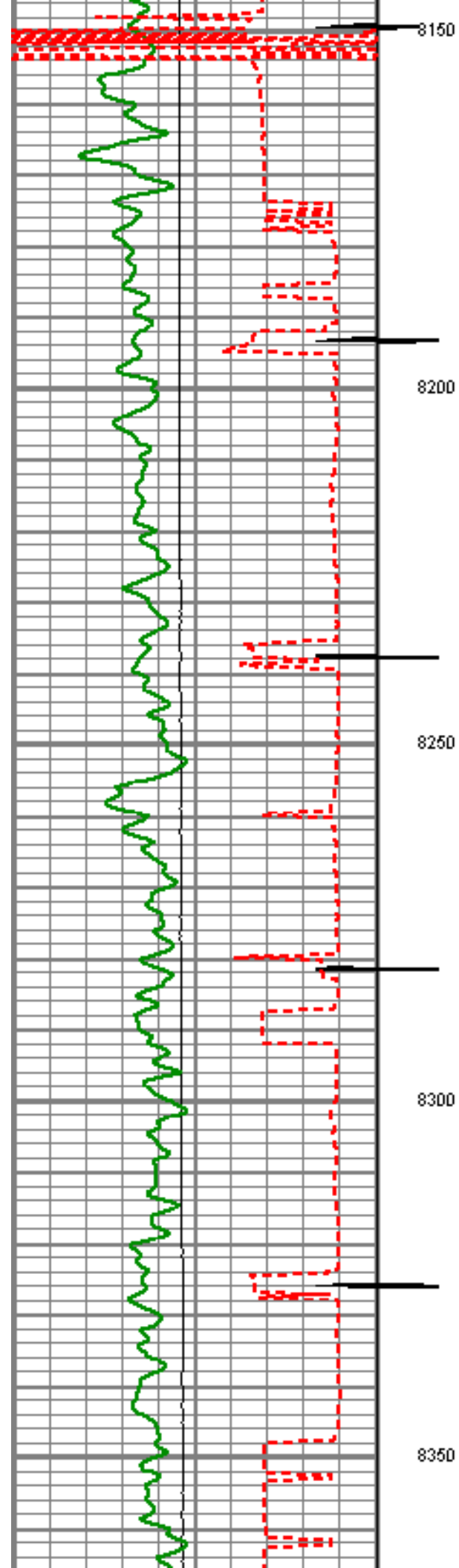




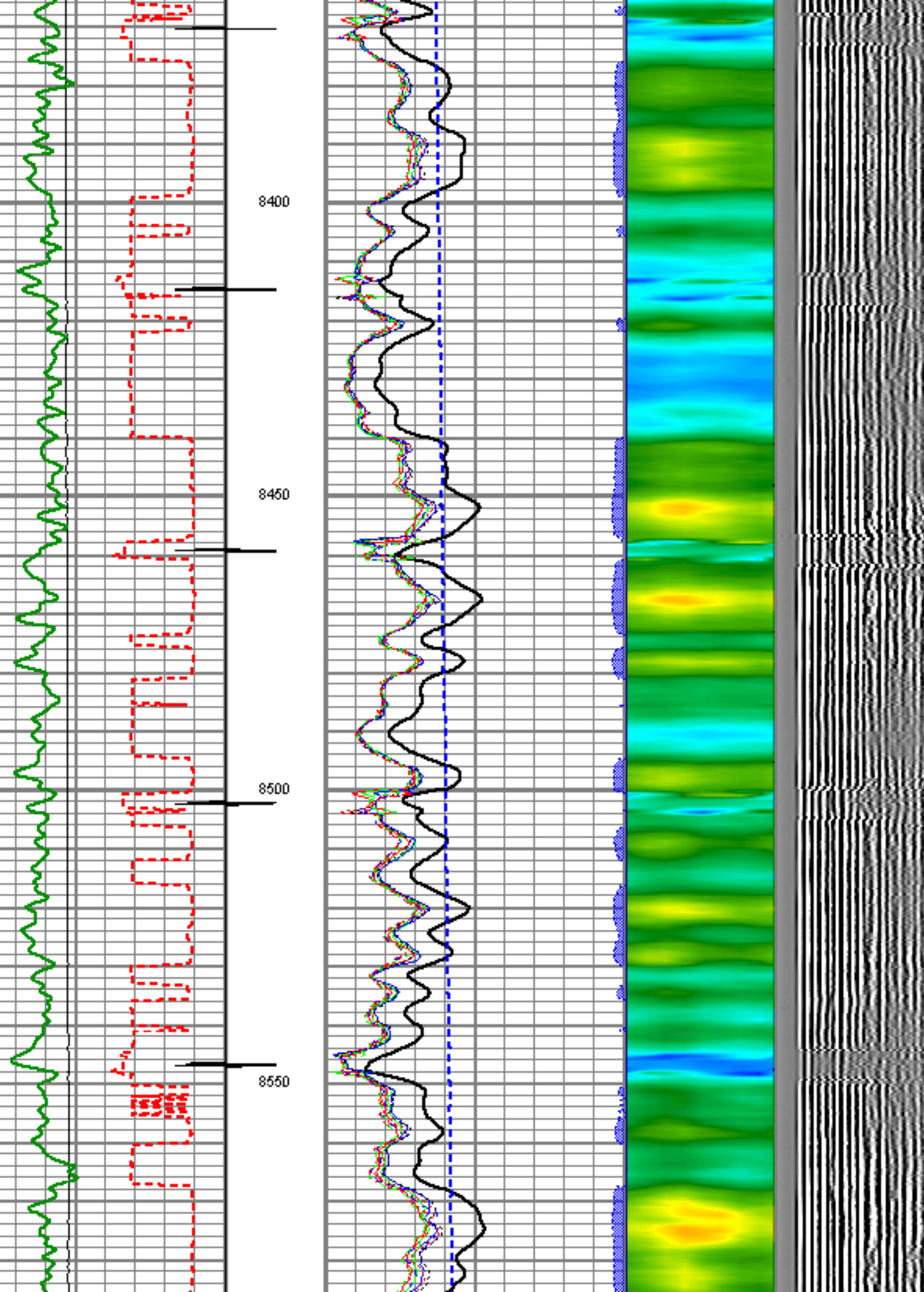




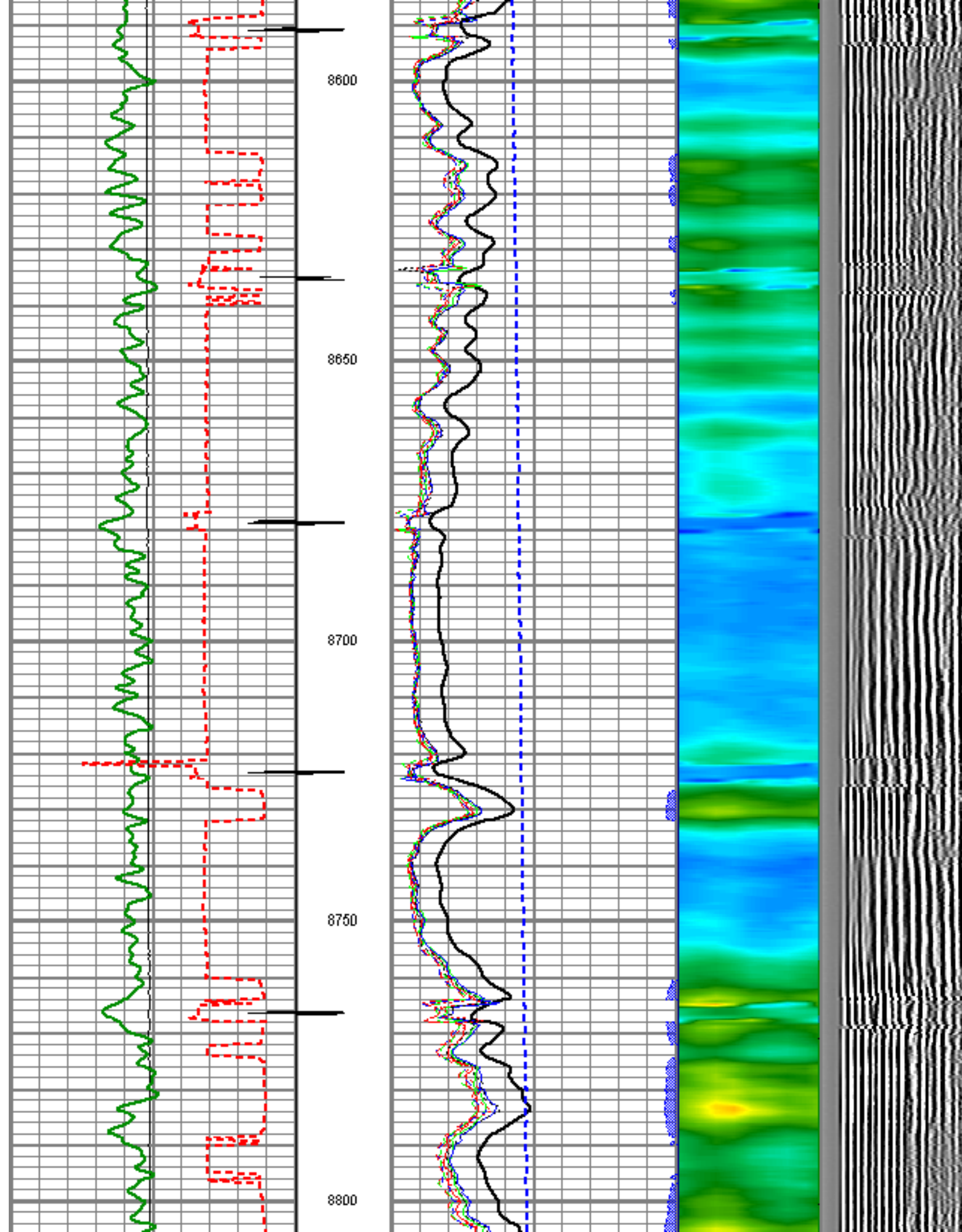




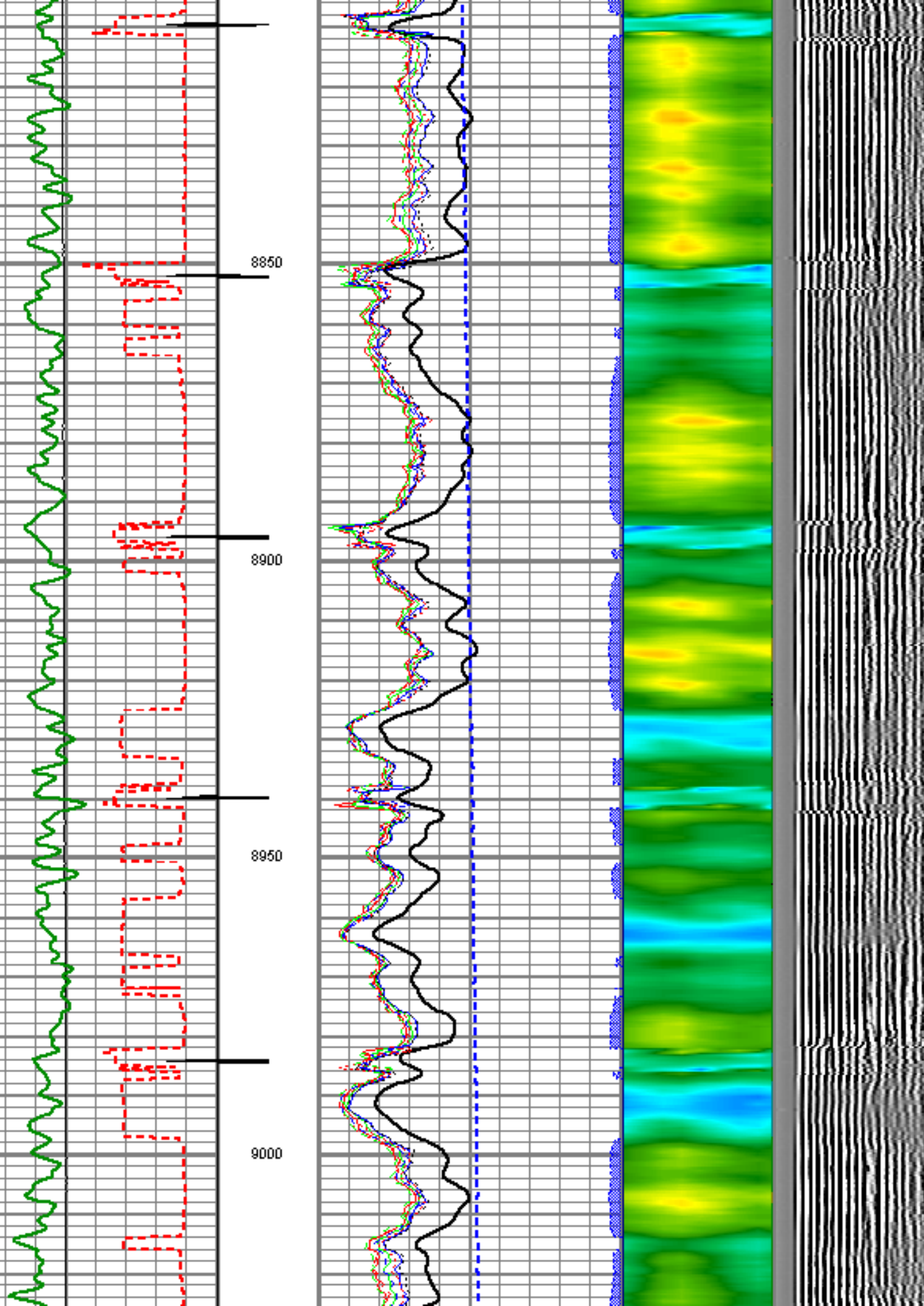




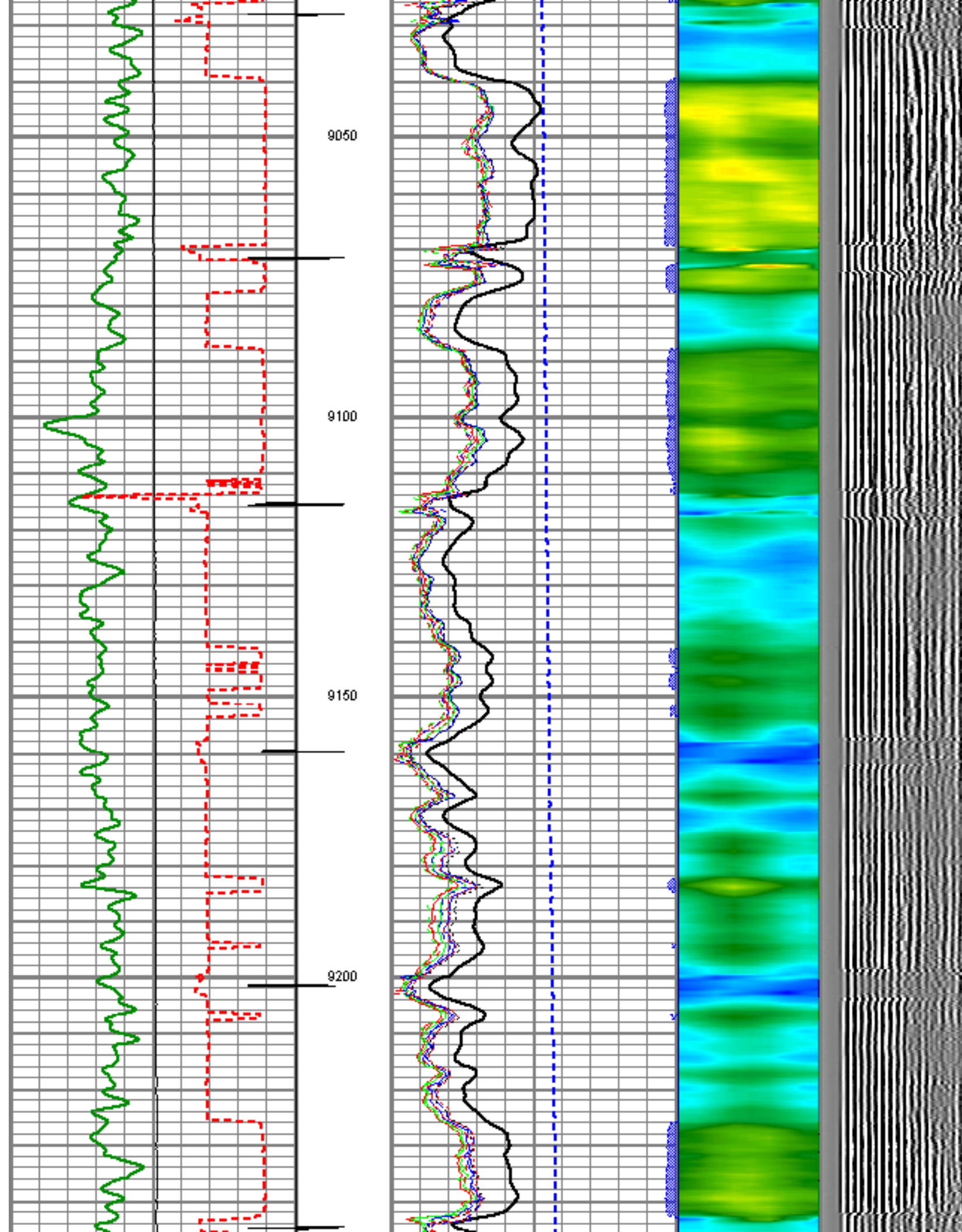




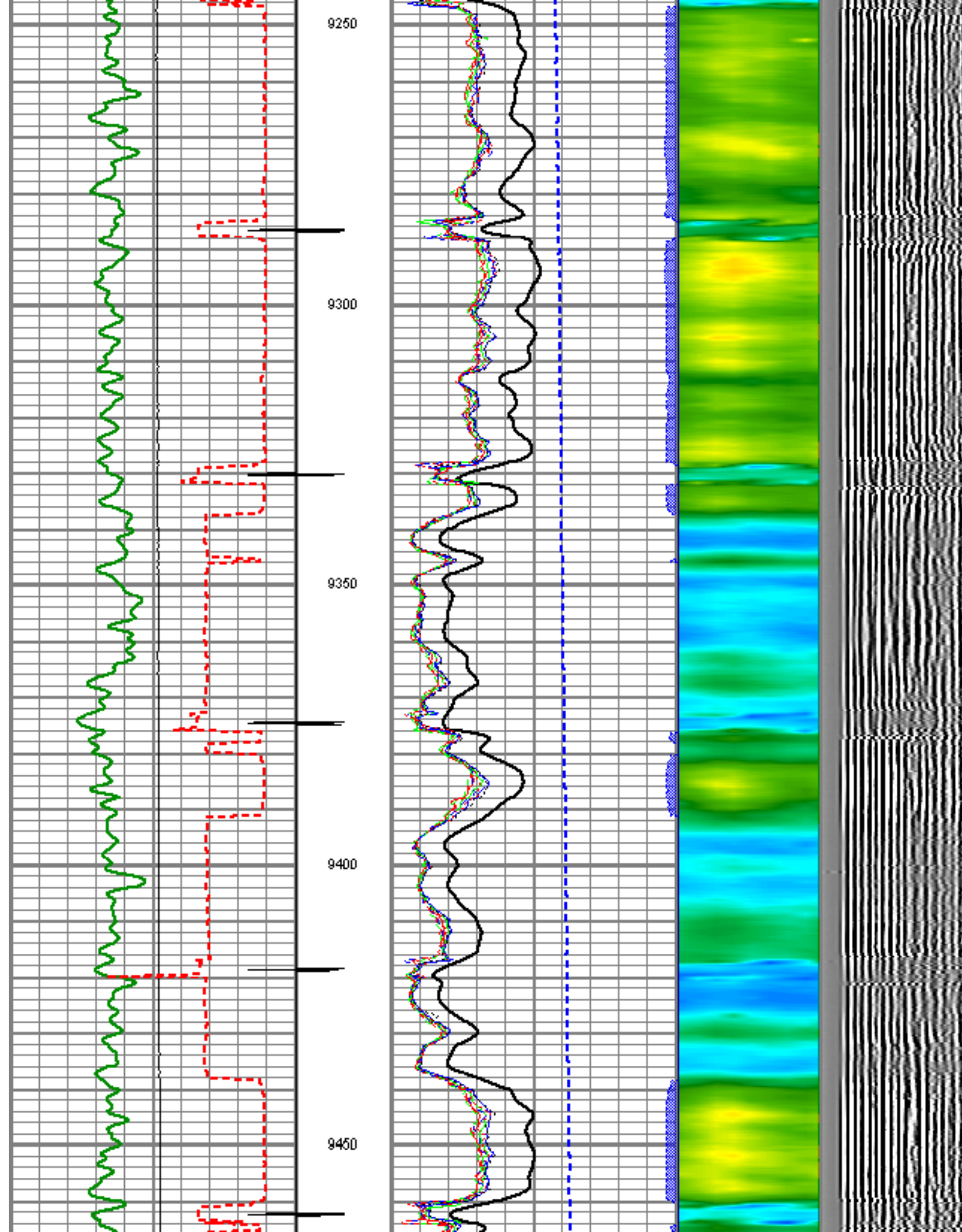




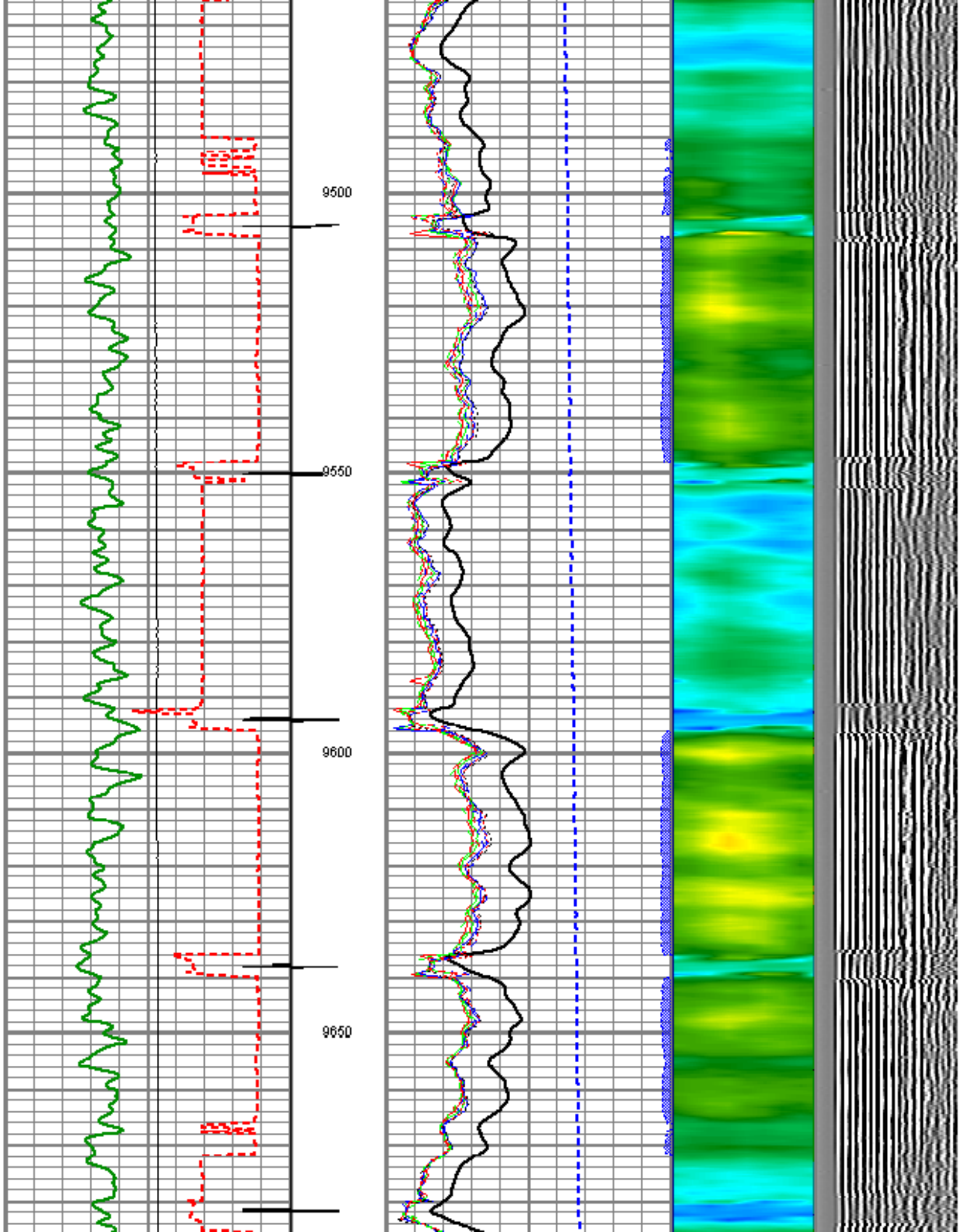




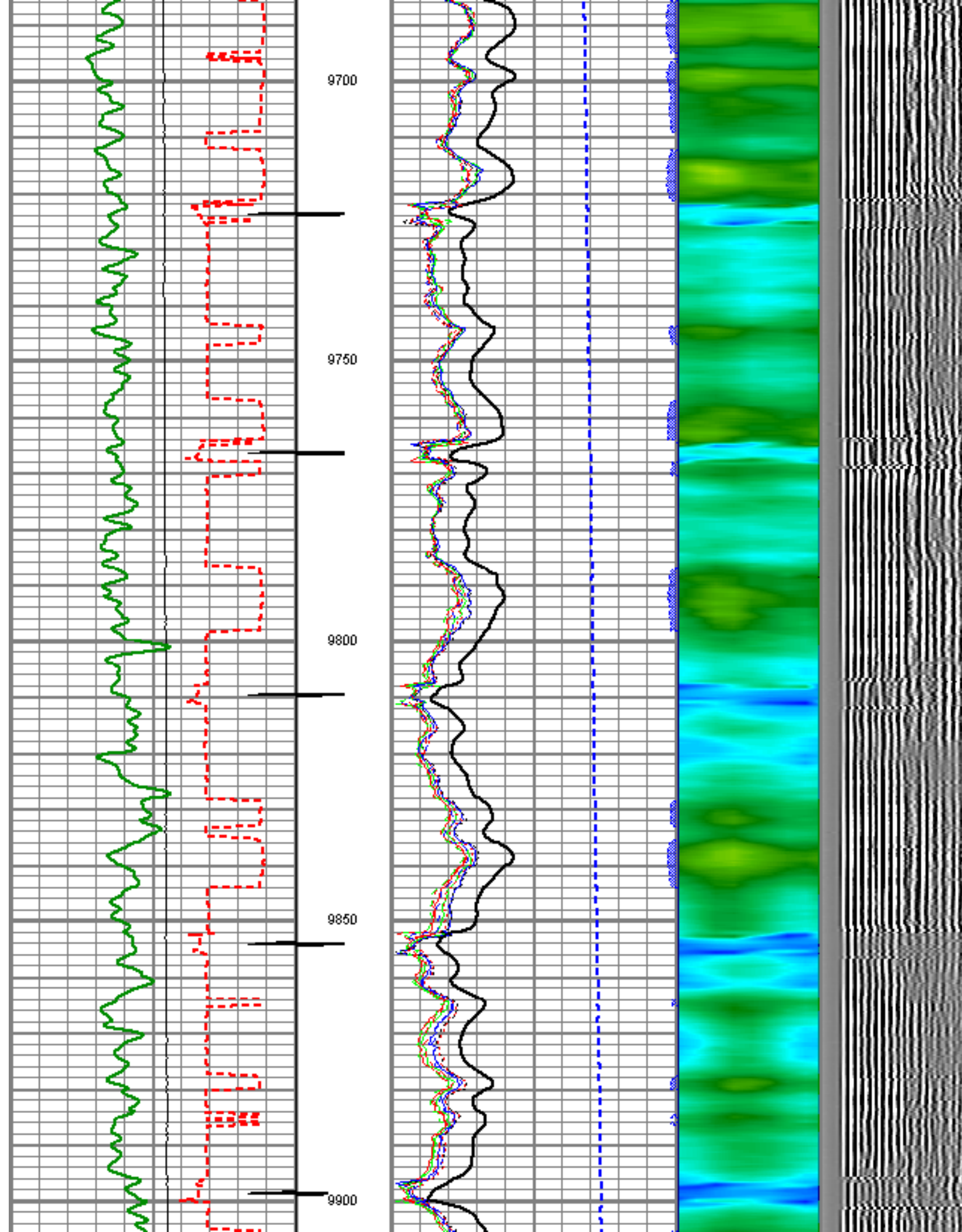




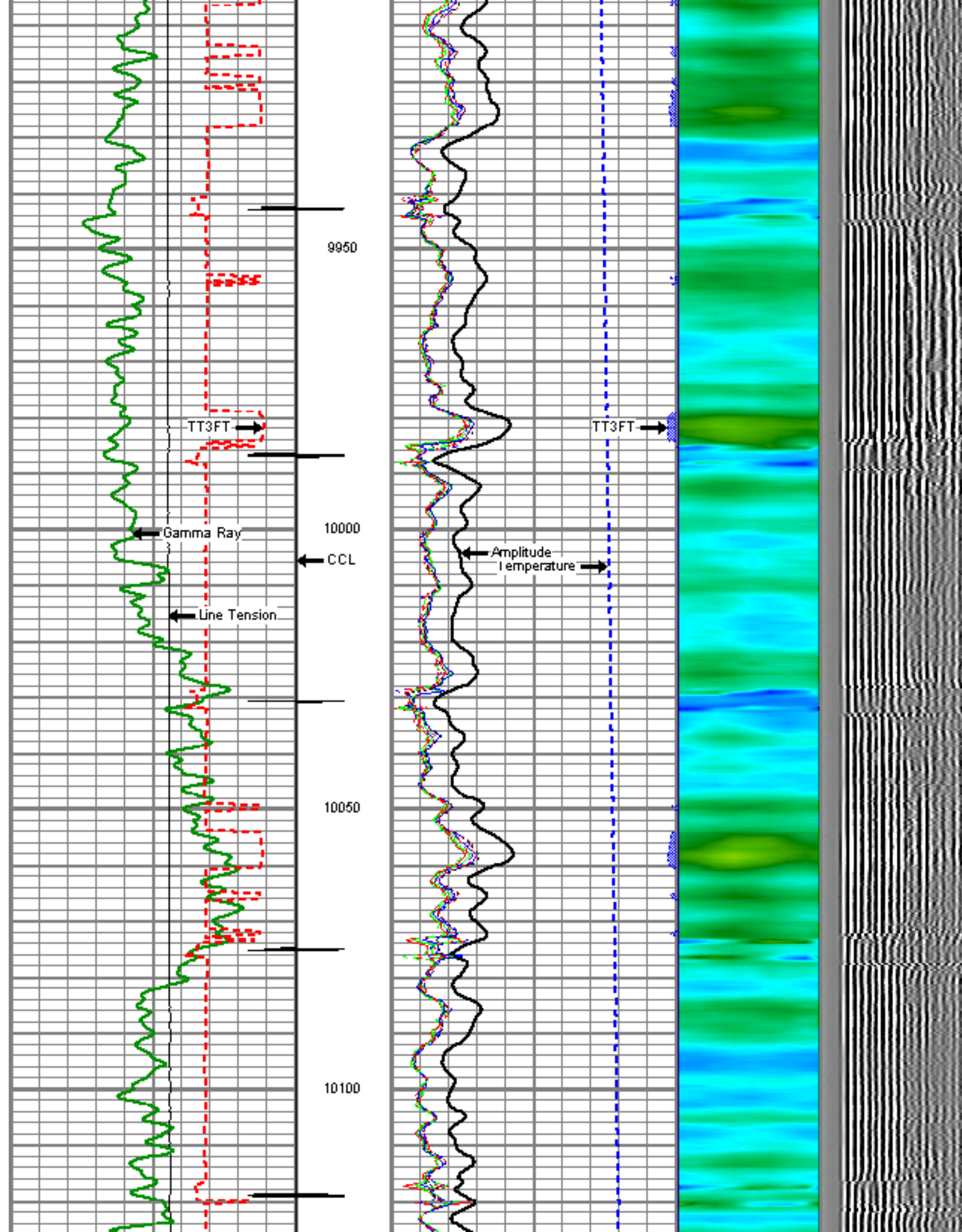




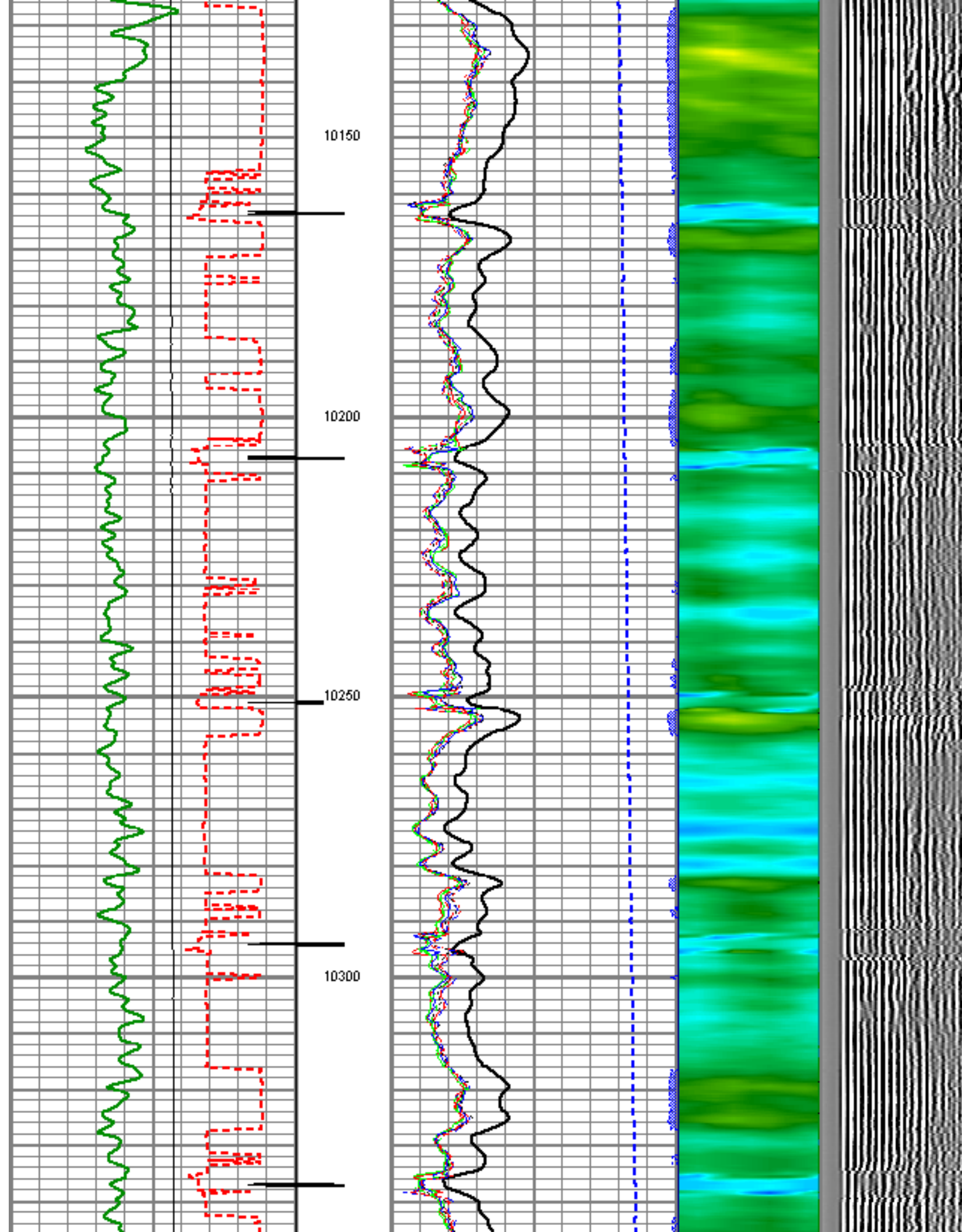




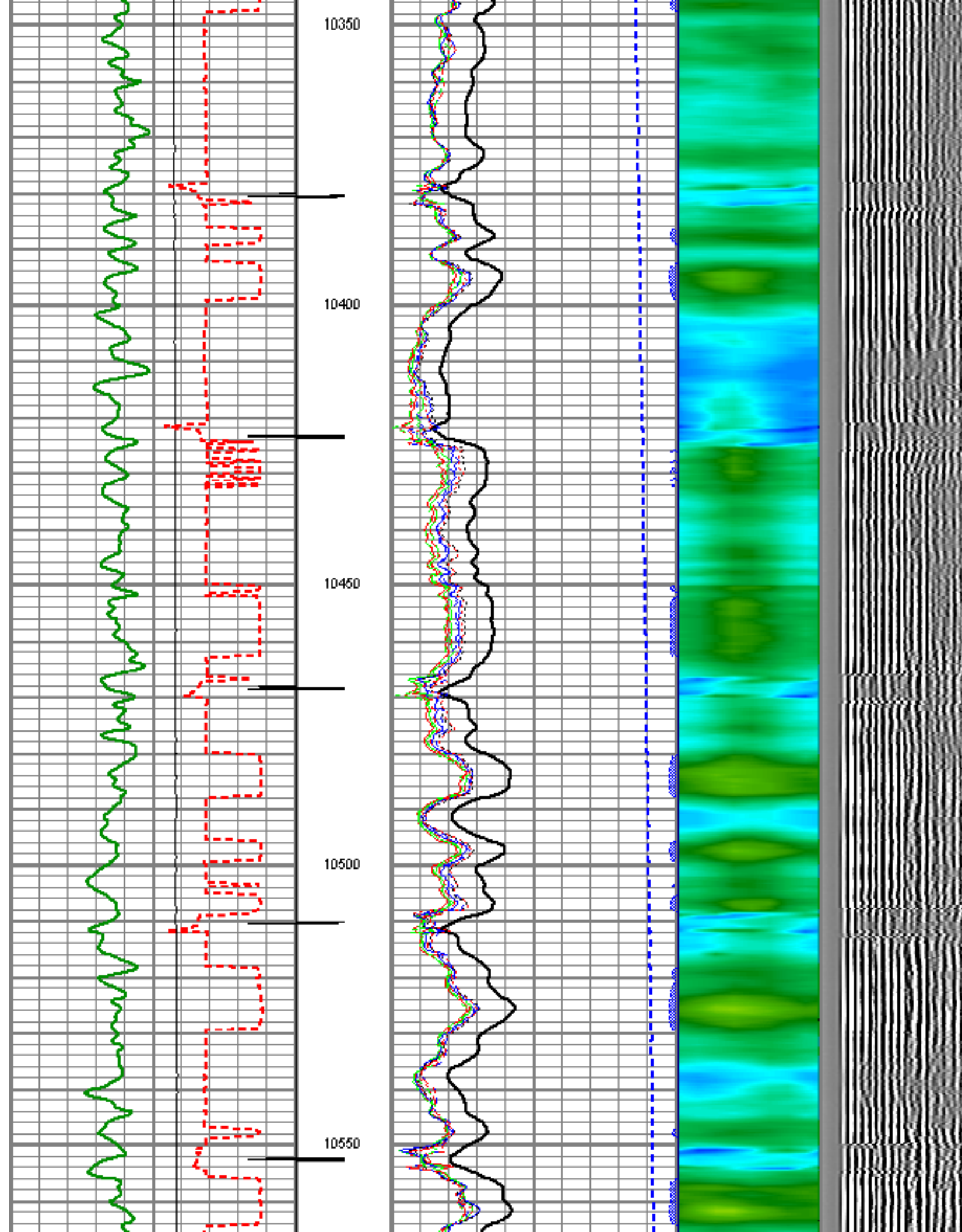




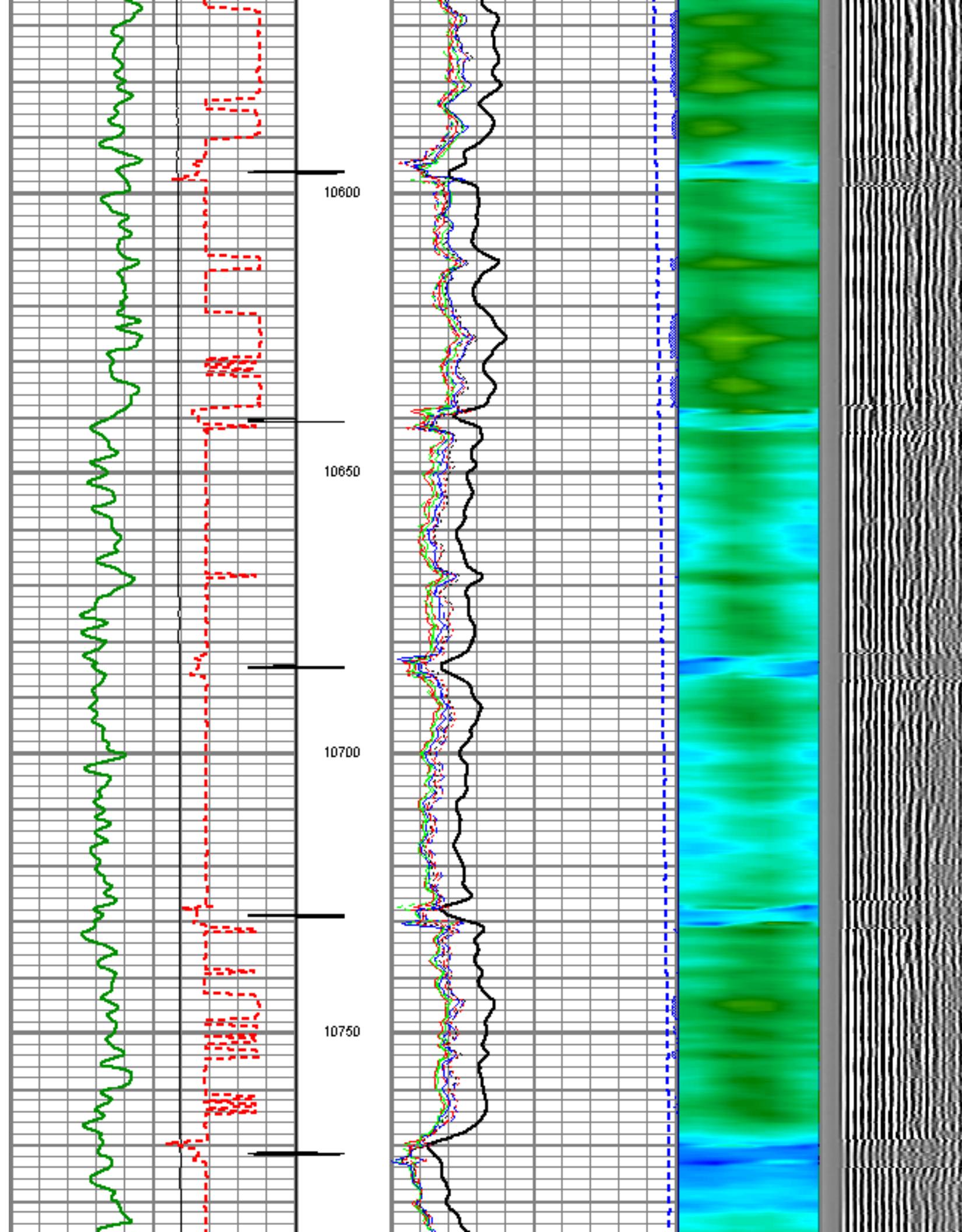




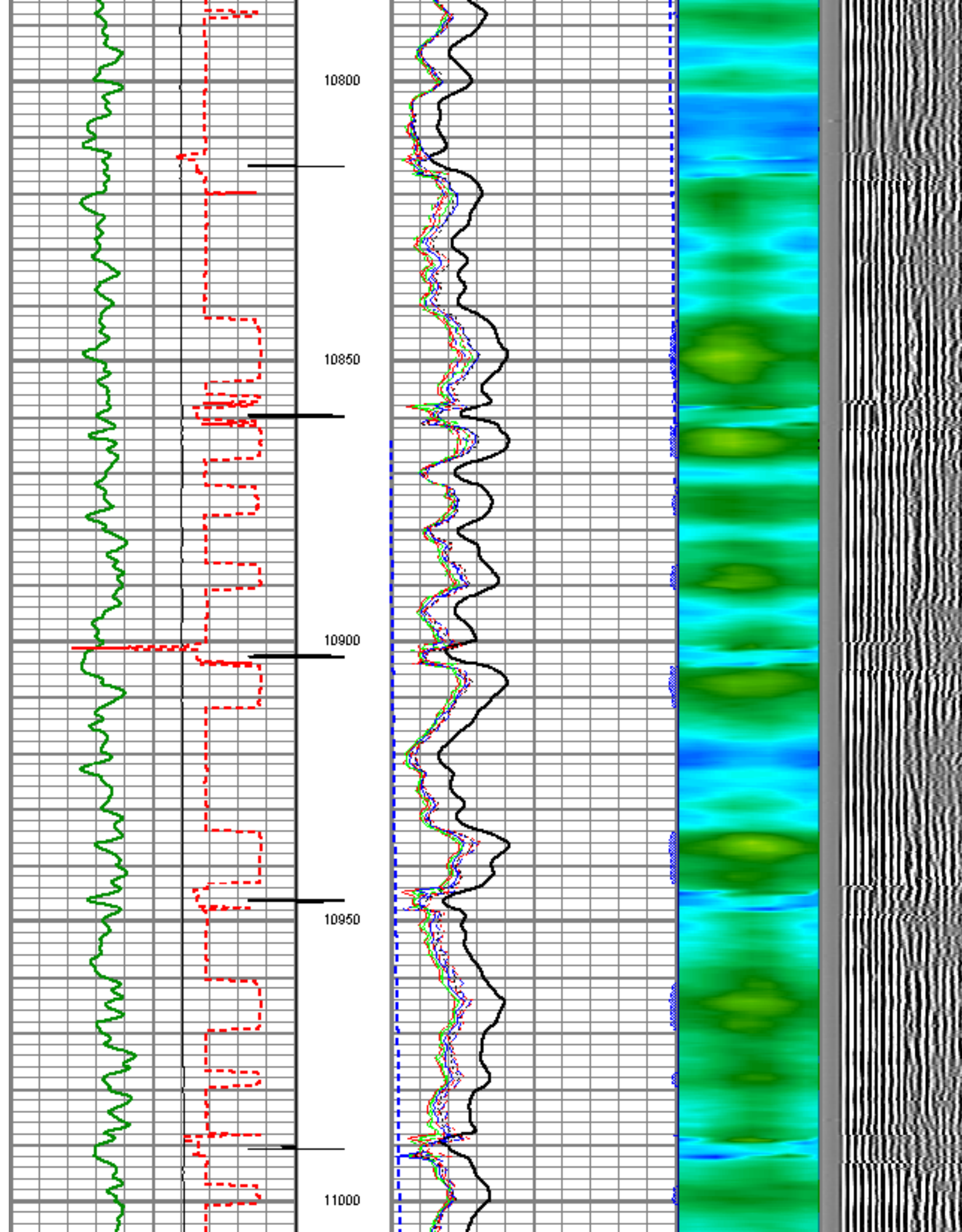




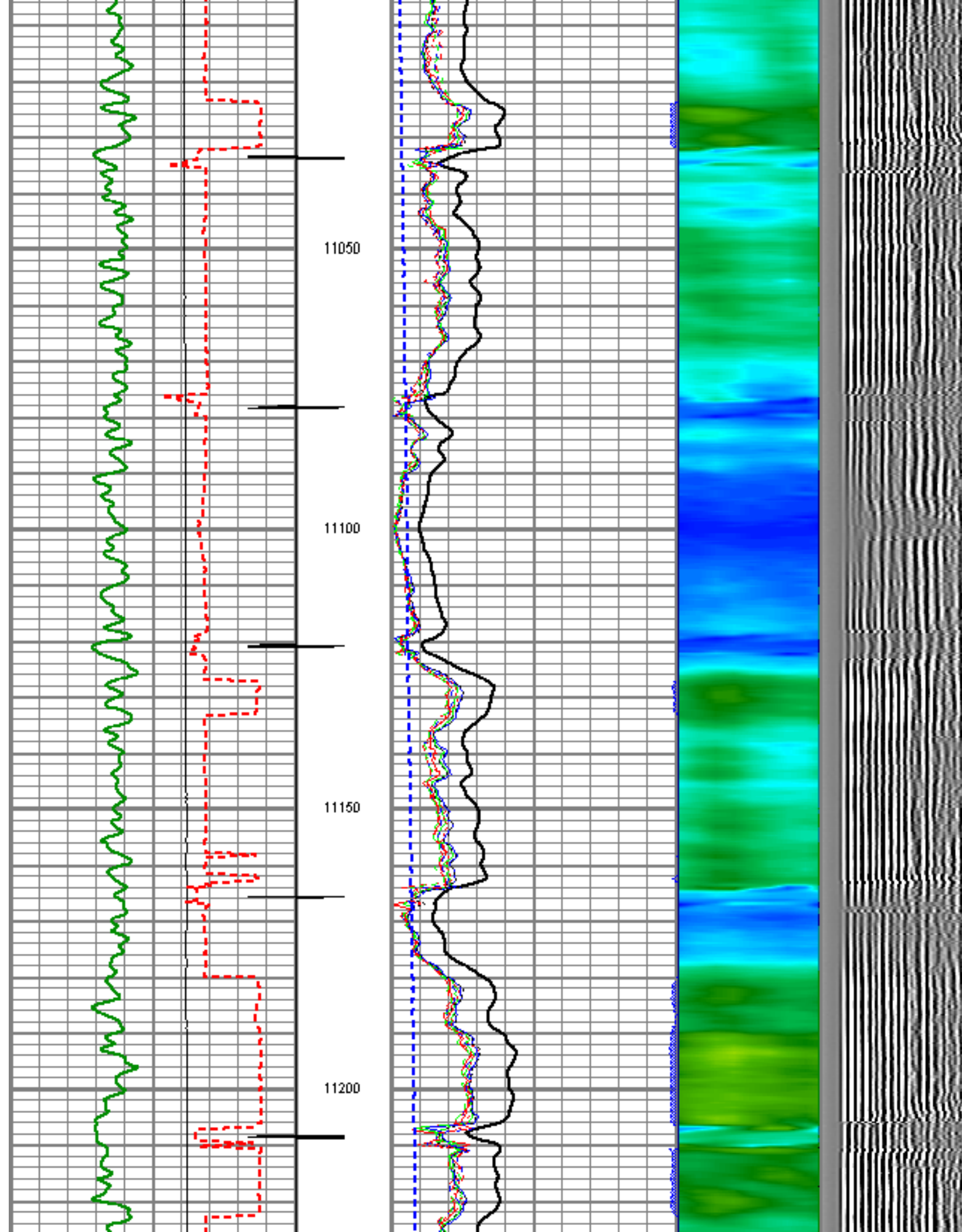




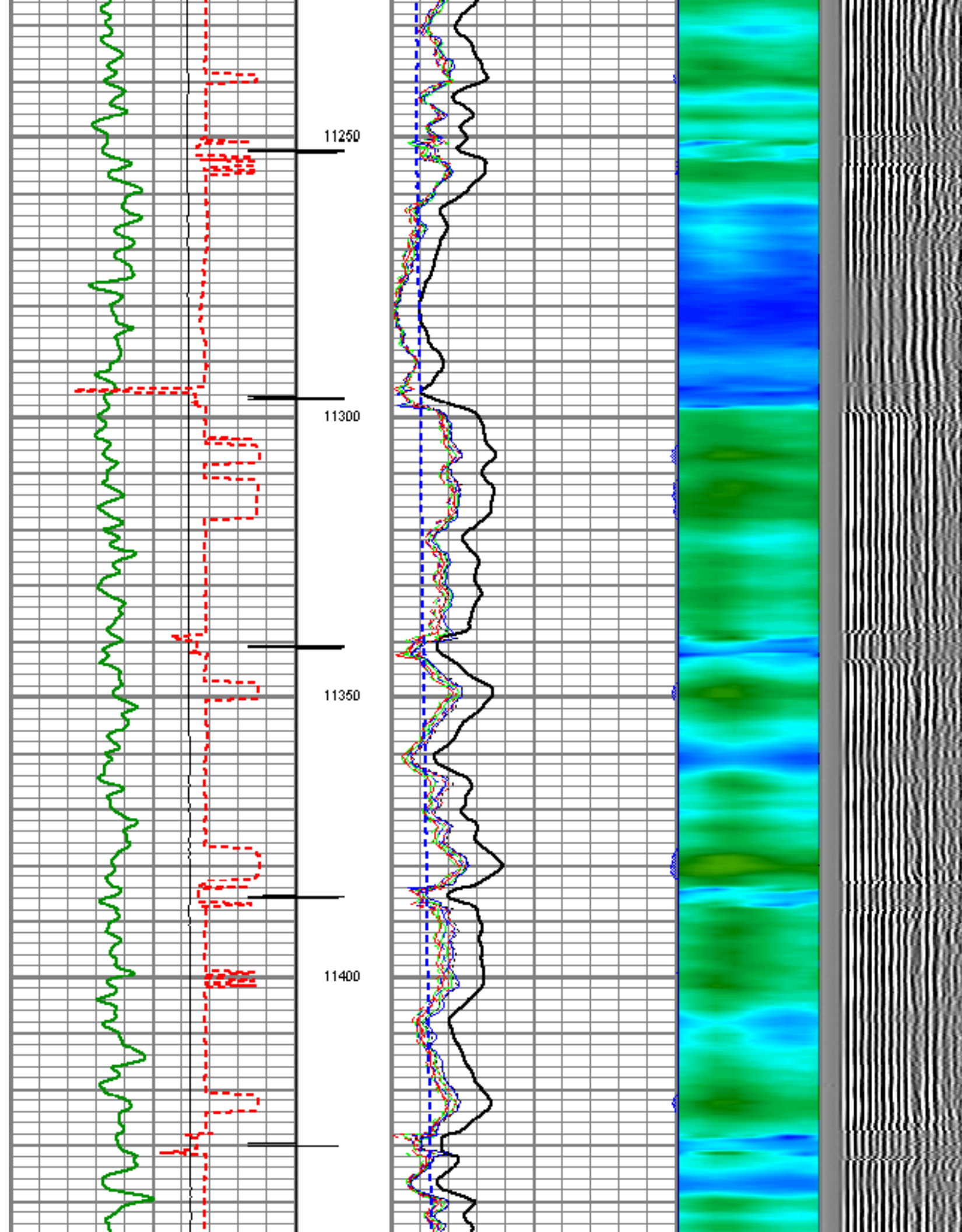




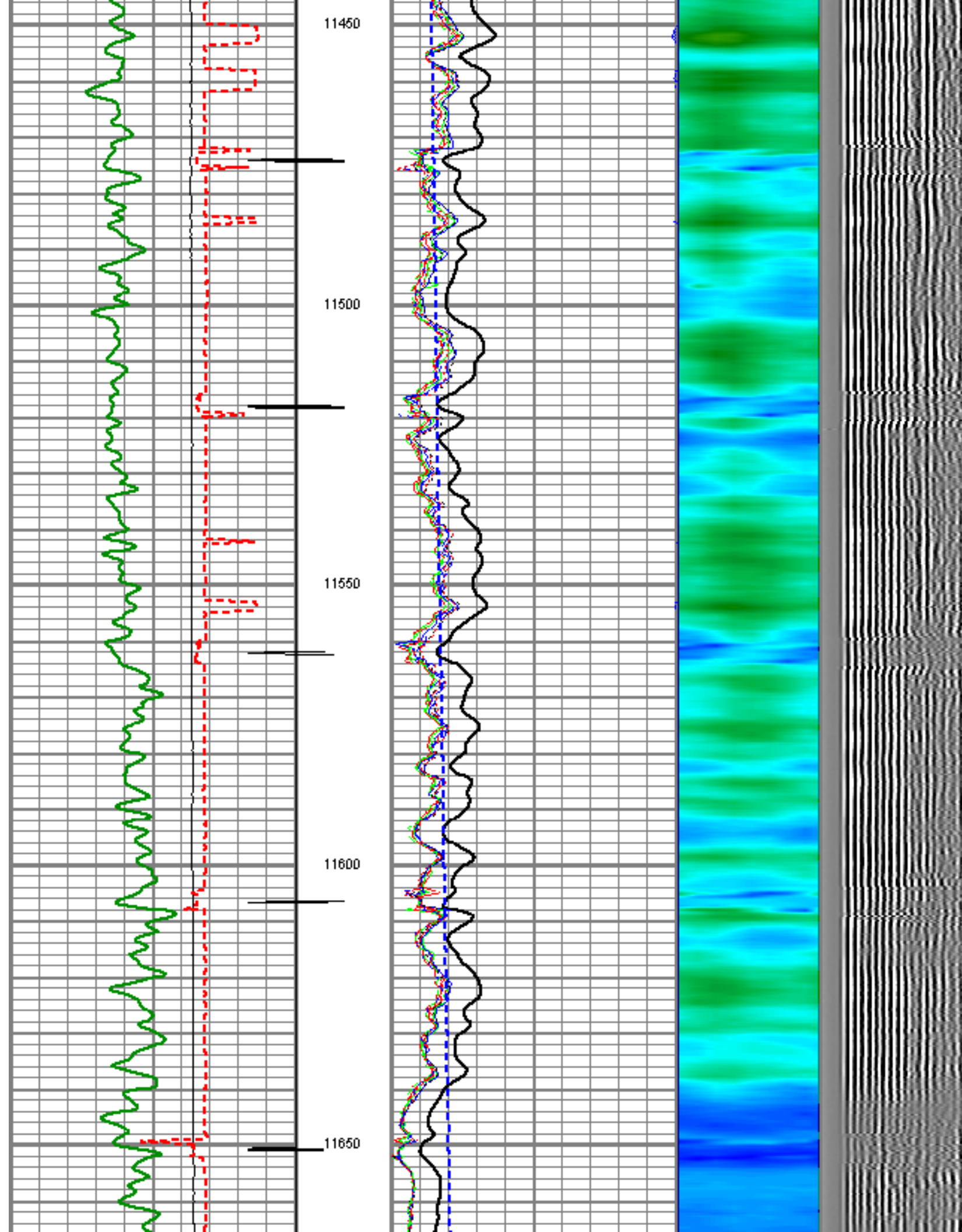




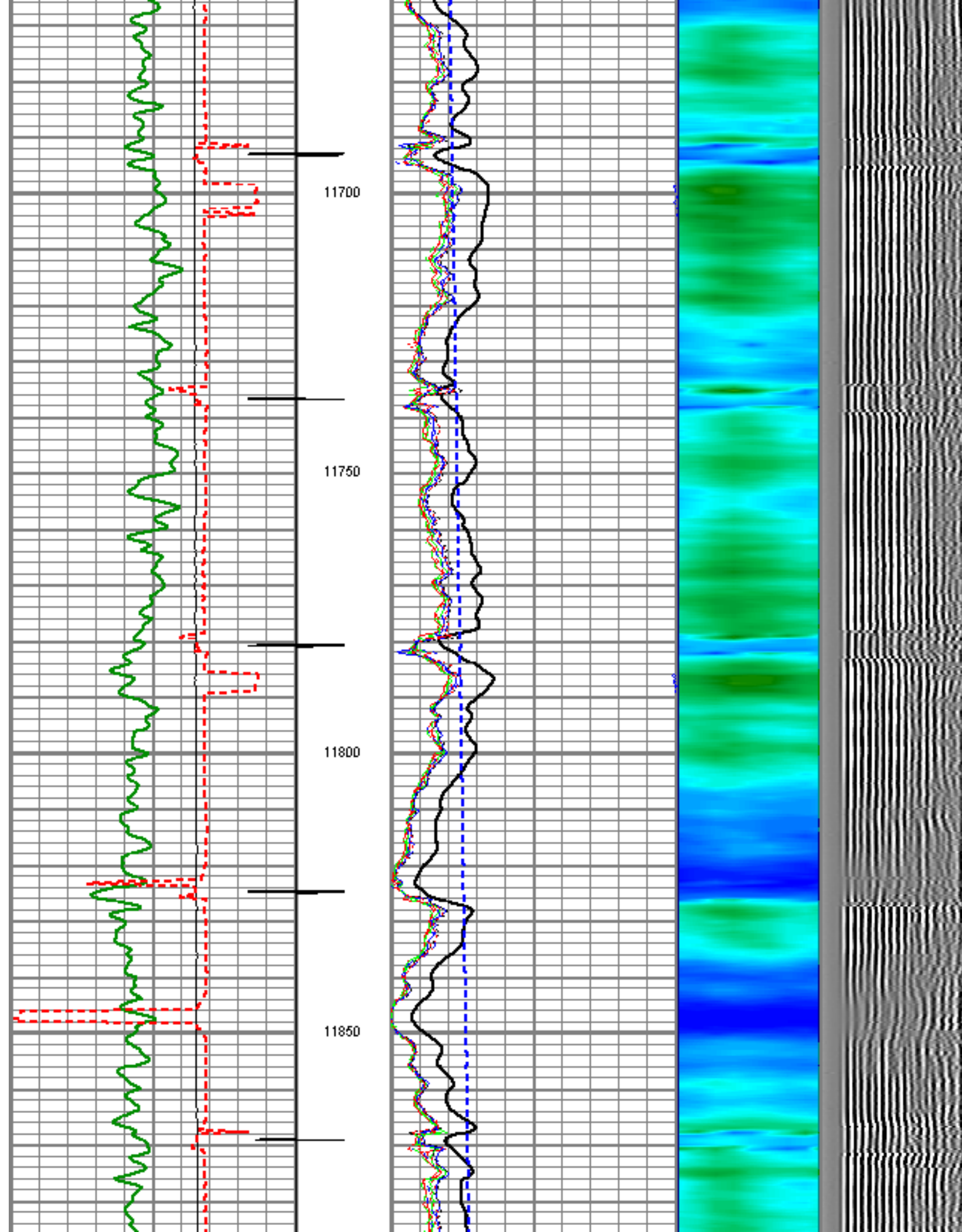




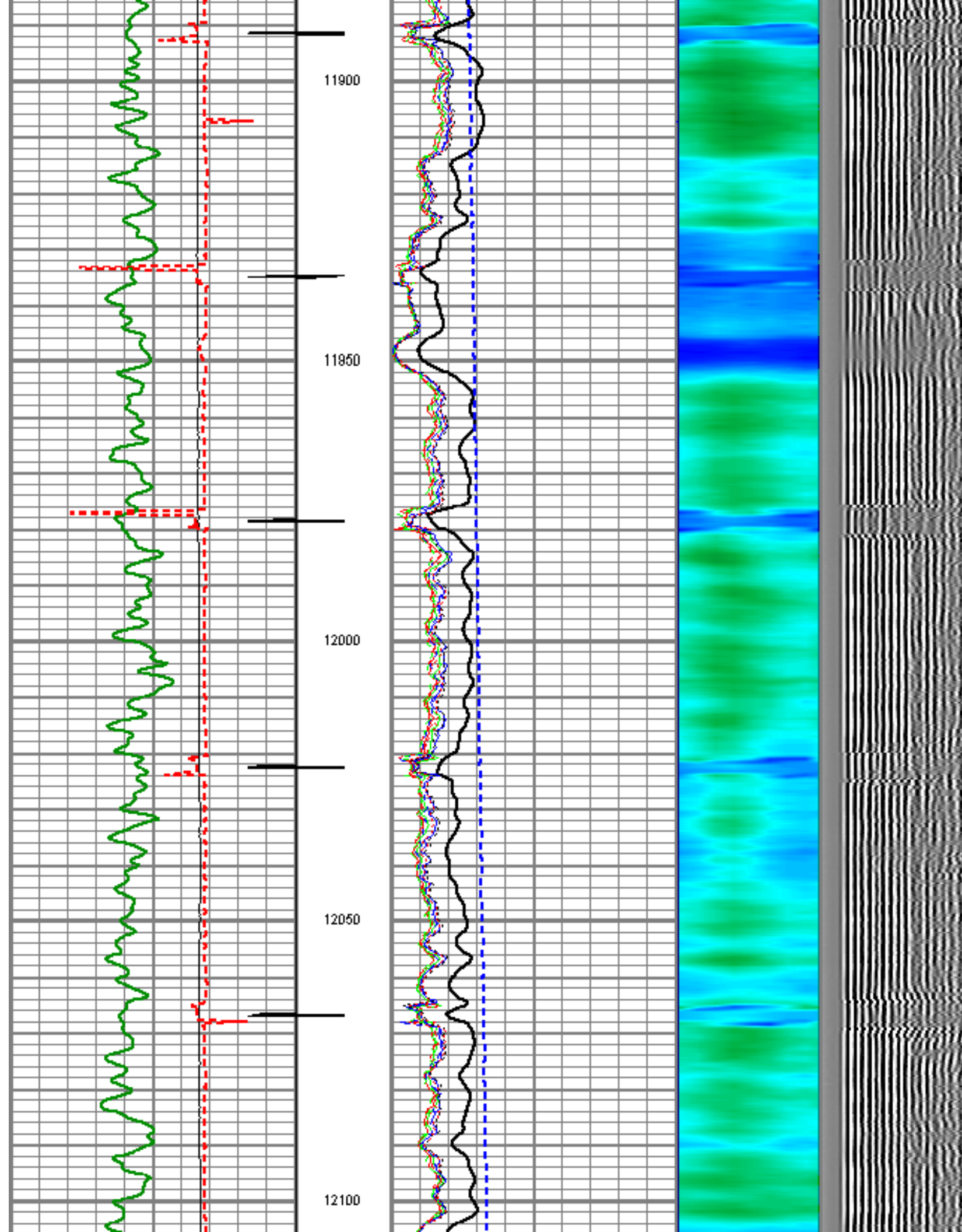




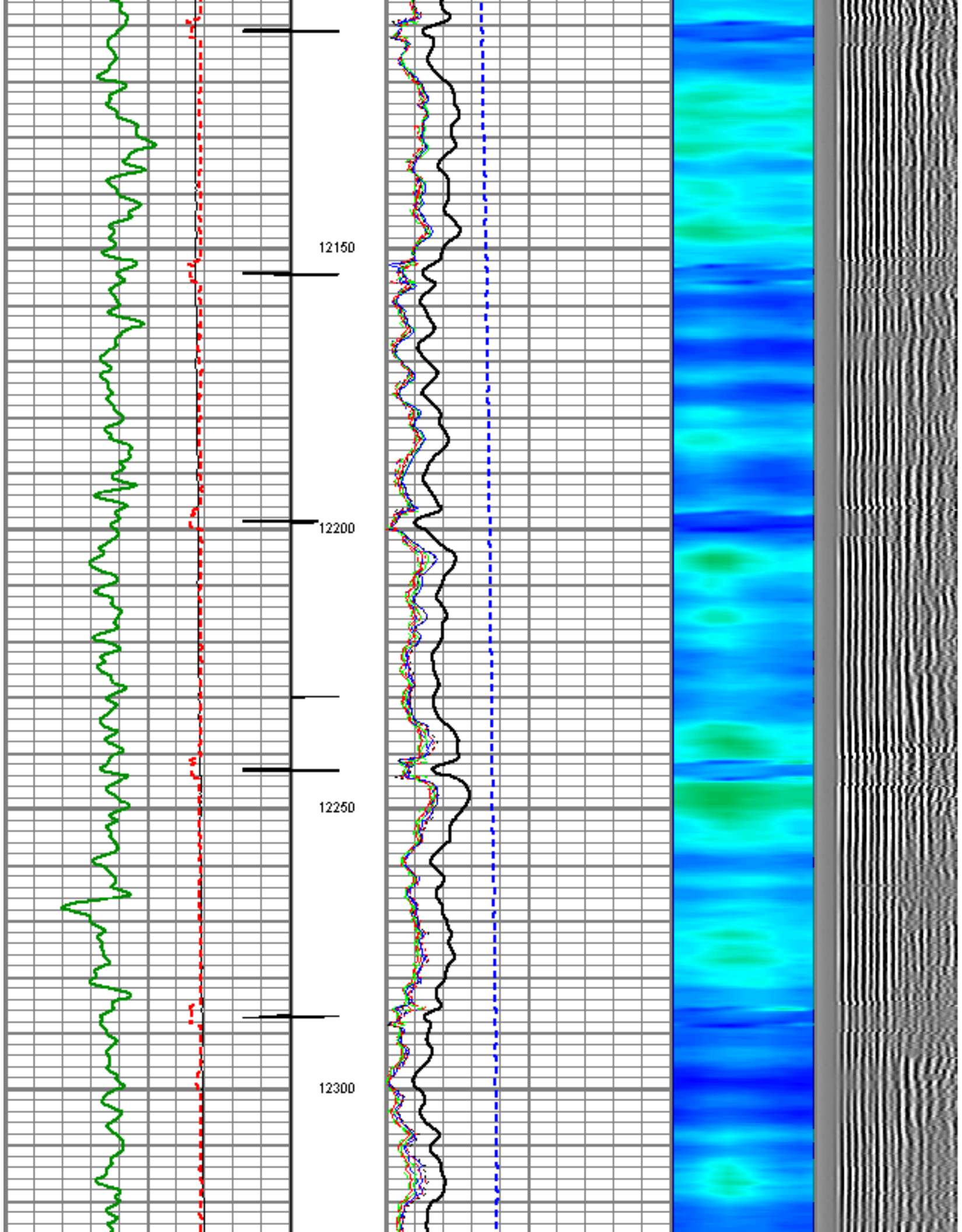




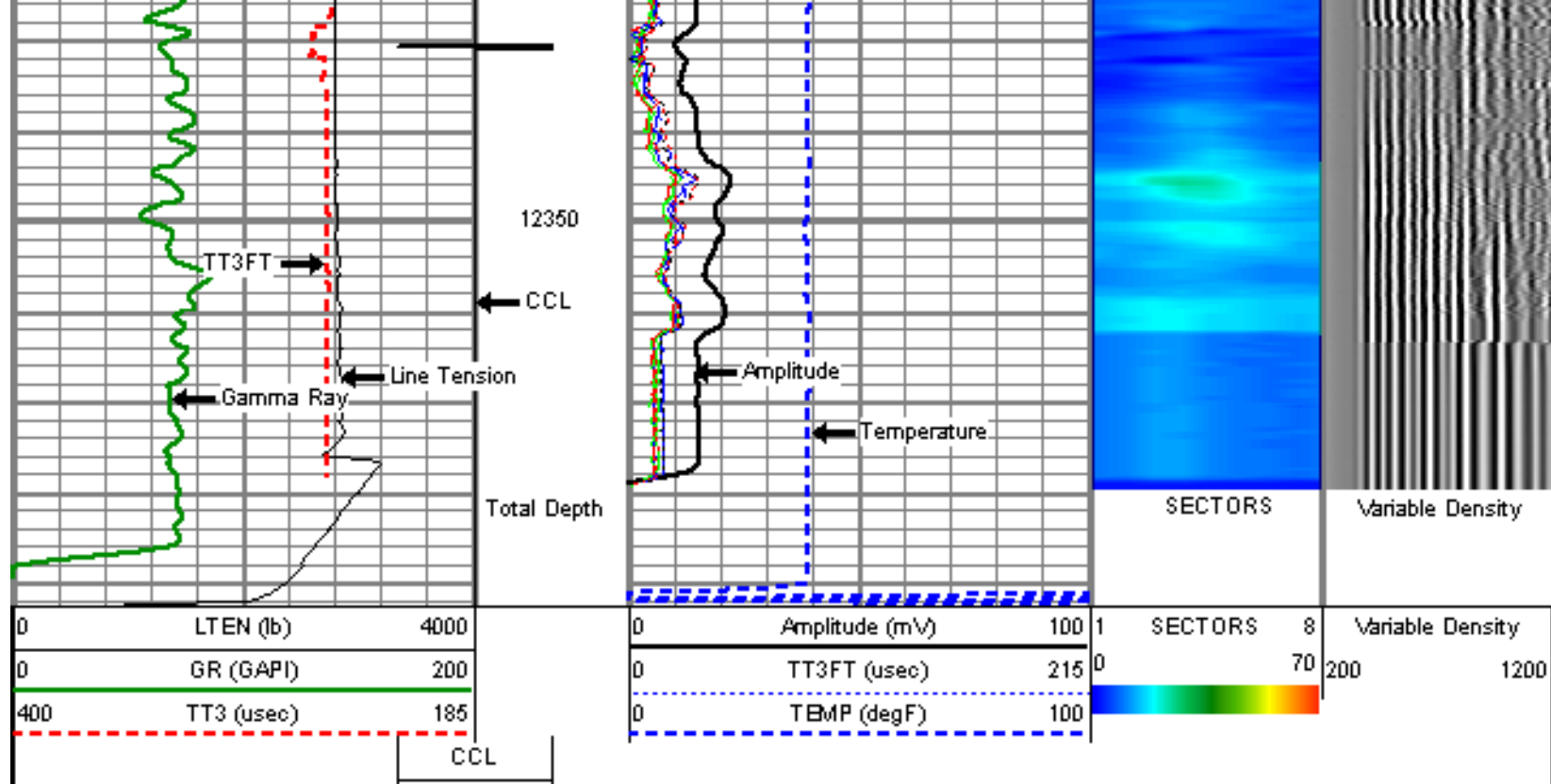












**MW**  
Mesa Wireline

## LOWER LOG SECTION, 0 PSI

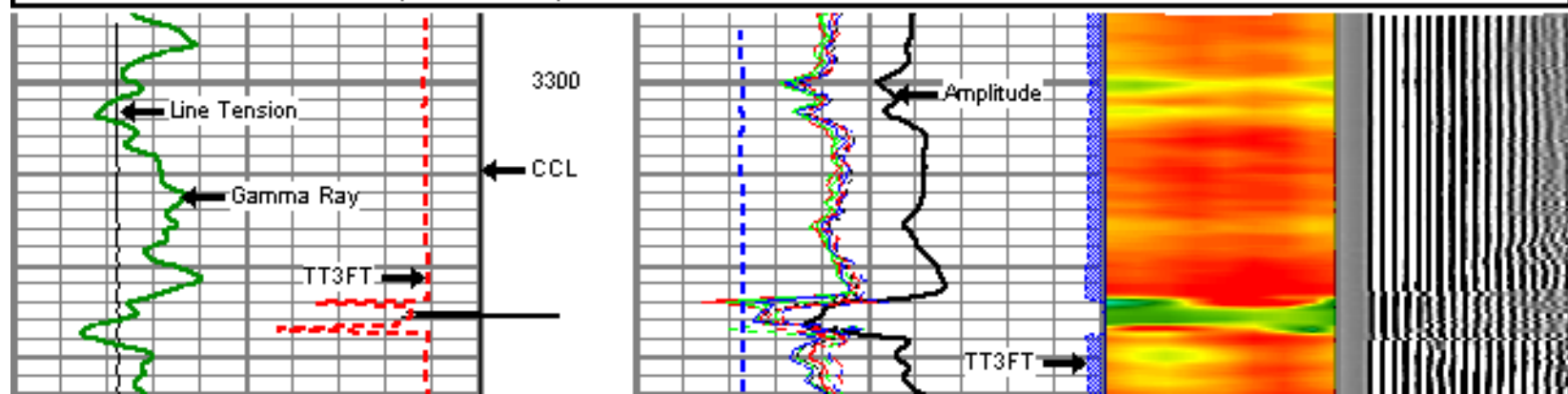
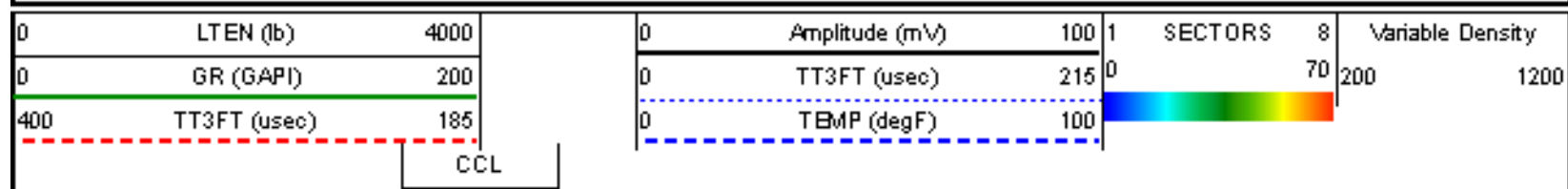
5" = 100'

**MW**  
Mesa Wireline

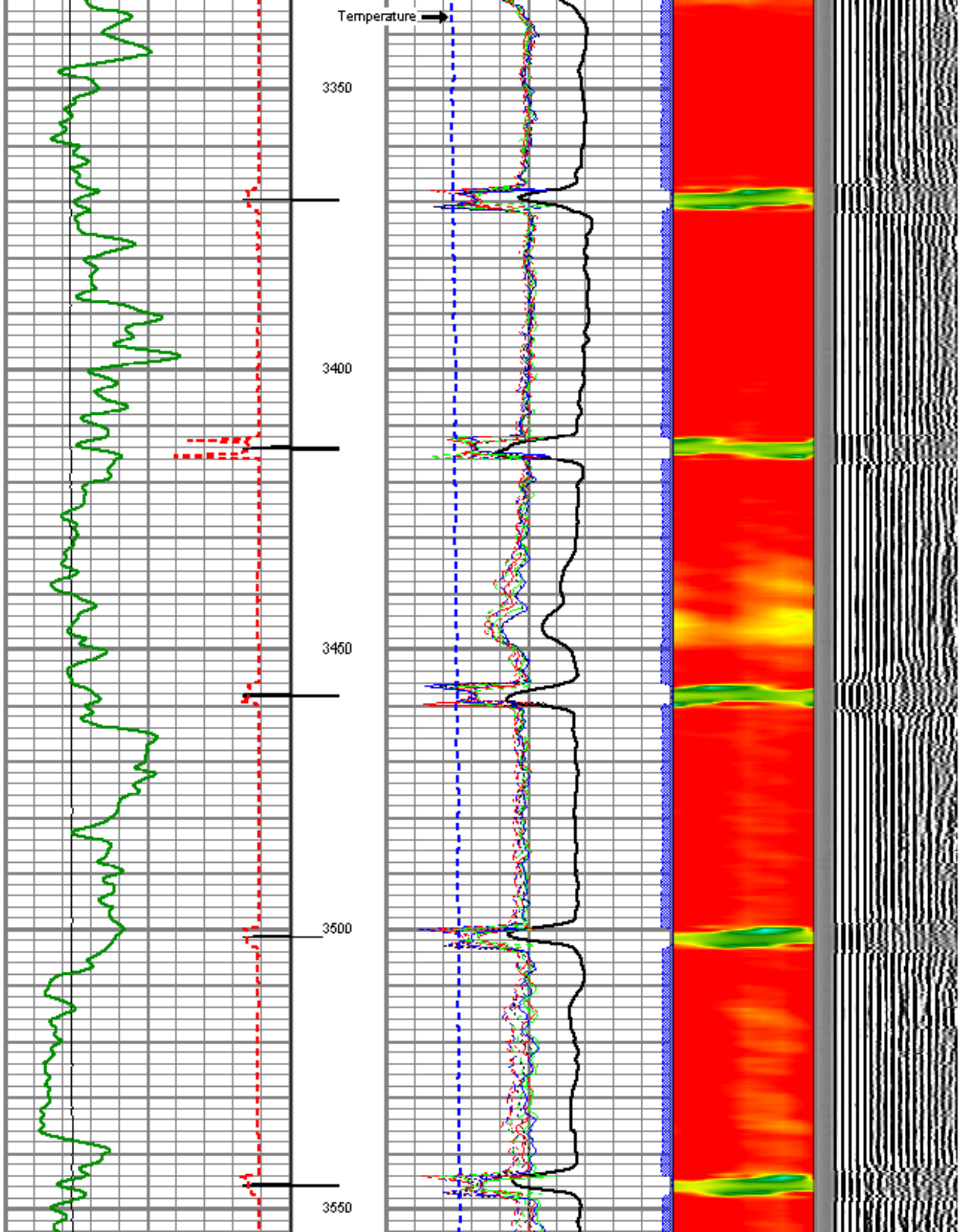
## TOP OF CEMENT LOG SECTION, 0 PSI

5" = 100'

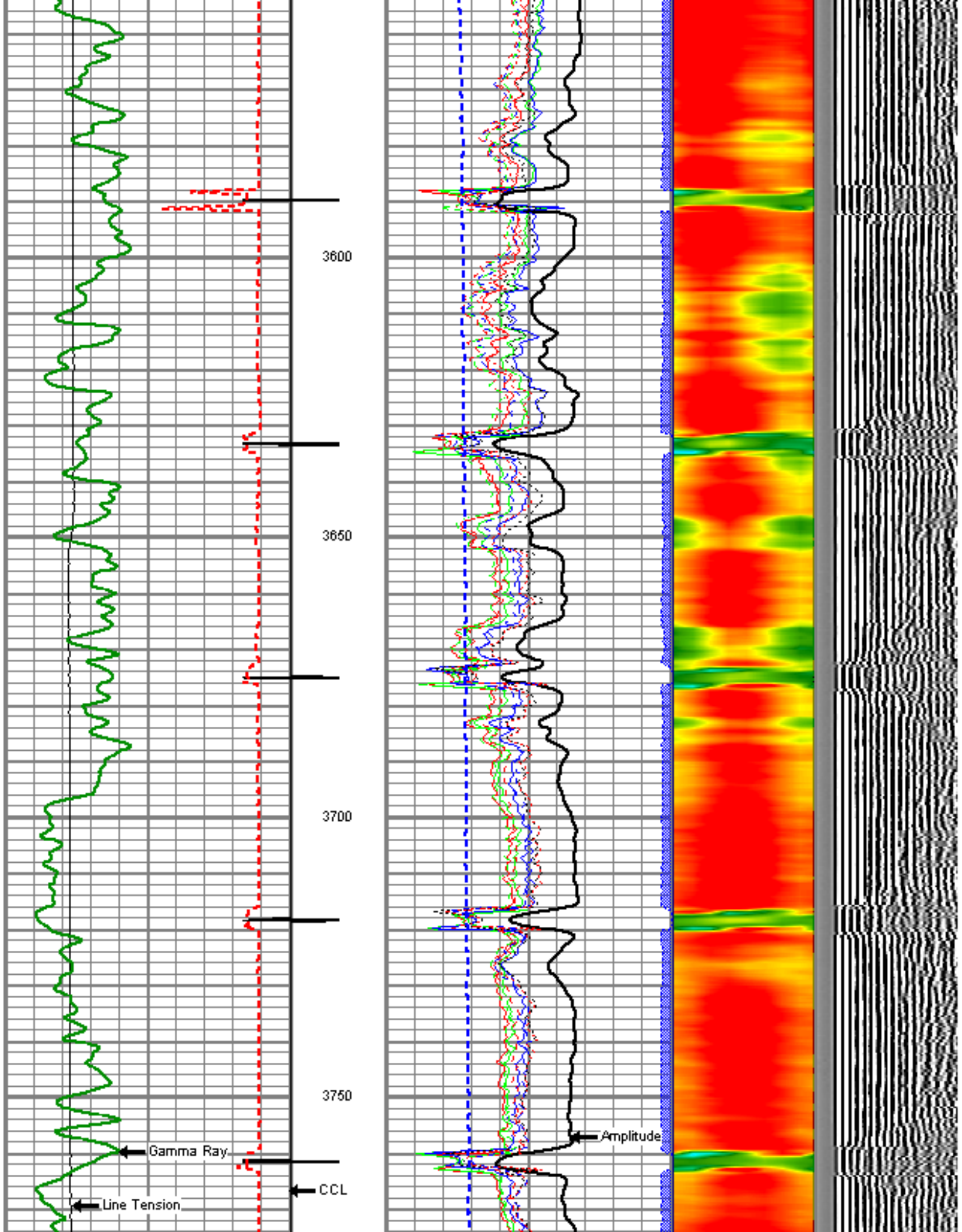
Database File: a\_csfol.db  
Dataset Pathname: pass6  
Presentation Format: rbt\_fin  
Dataset Creation: Sun Nov 23 16:10:46 2008 by Log Std Casedhole 07122  
Charted by: Depth in Feet scaled 1:240



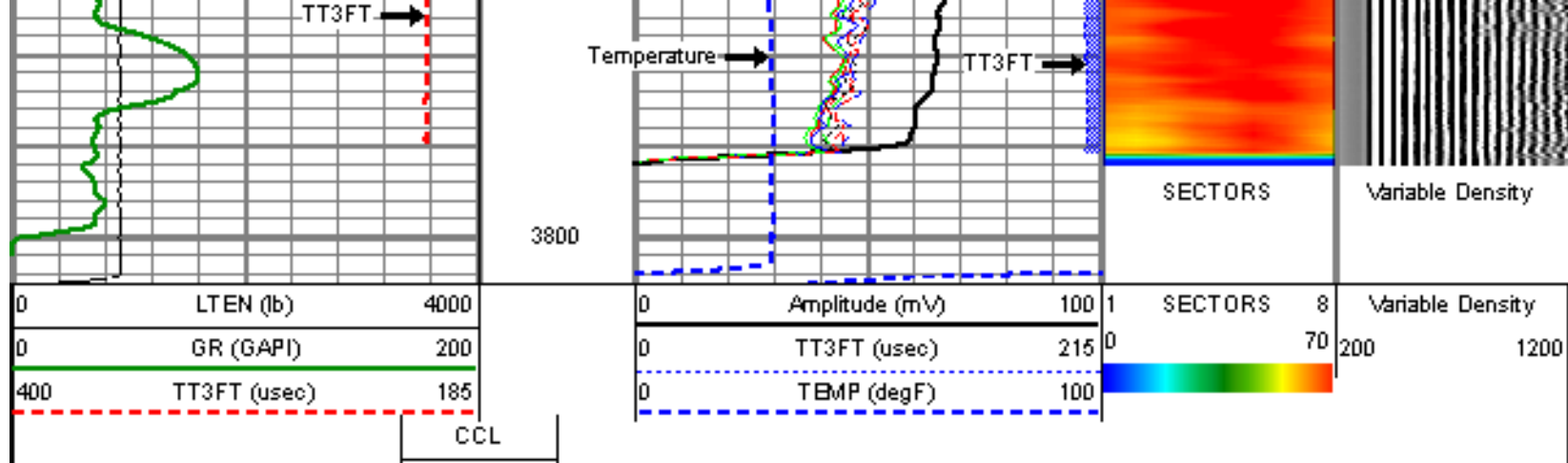




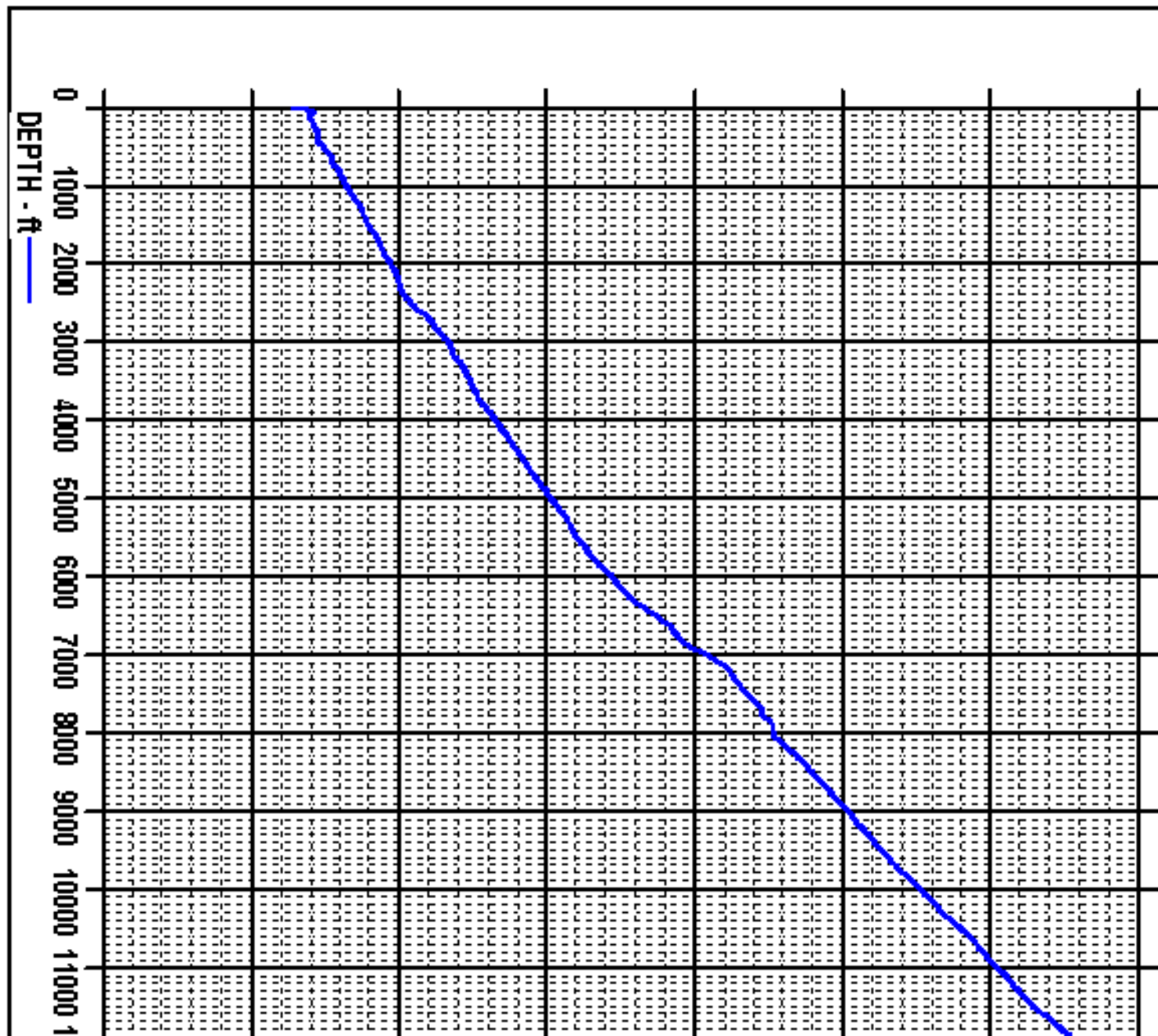




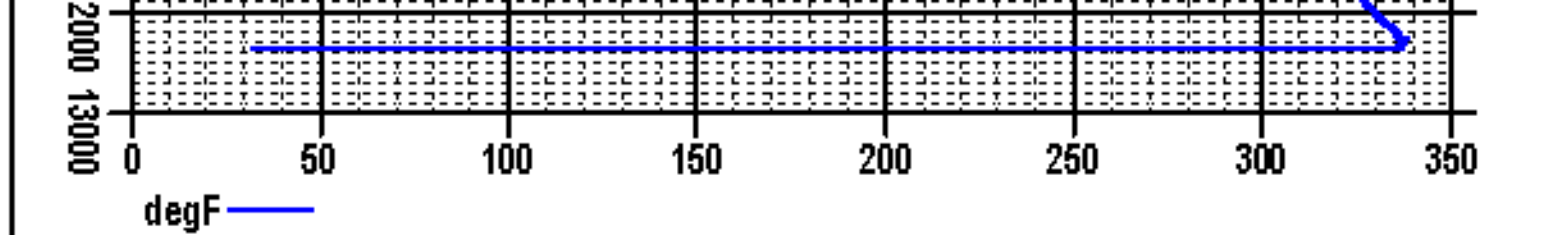




## TEMPERATURE PLOT







### Calibration Report

Database File: a\_csfbldb  
 Dataset Pathname: pass6  
 Dataset Creation: Sun Nov 23 16:10:46 2008 by Log Std Casedhole 07122

### Temperature Calibration Report

Serial Number: SNDX\_TEMP\_01  
 Tool Model: SNDX\_TEMP  
 Performed: Tue Jul 25 10:31:04 2006

	Reference	Reading
Low Reference:	50.00 degF	200.00 cps
High Reference:	320.00 degF	3200.00 cps
Gain:	0.09	
Offset:	32.00	
Delta Spacing	1	

### Gamma Ray Calibration Report

Serial Number: 000001  
 Tool Model: SNDX\_3\_13\_GR  
 Performed: Wed Sep 10 13:12:35 2008

Calibrator Value:	200.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	169.0	cps
Sensitivity:	1.0651	GAPI/cps

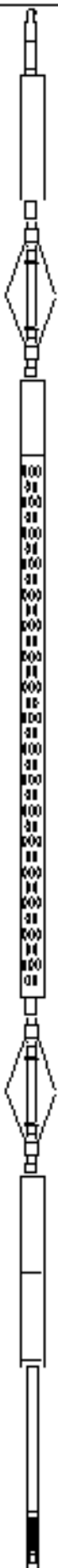
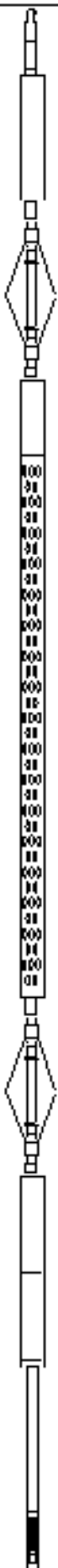
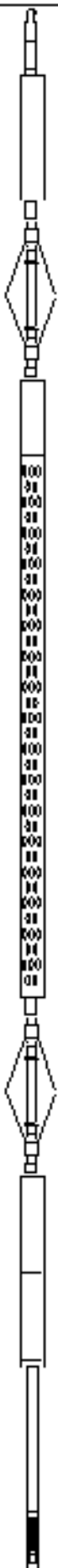
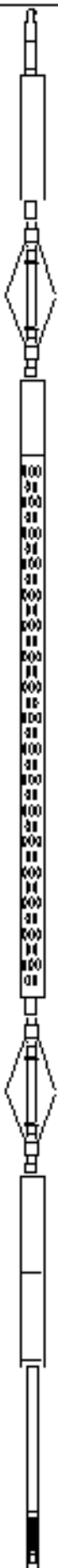
### Segmented Cement Bond Log Calibration Report

Serial Number: 000002  
 Tool Model: 007  
 Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 149.358 ft

Master Calibration, performed Mon Oct 13 07:50:33 2008:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.011	0.757	1.000	82.000	105.546	2.130
5FT	-0.012	0.700	1.000	82.000	113.735	2.341
S1	-0.001	0.834	0.000	100.000	119.780	0.082
S2	-0.002	0.772	0.000	100.000	129.160	0.271
S3	-0.003	0.763	0.000	100.000	130.500	0.368
S4	-0.004	0.765	0.000	100.000	130.050	0.514
S5	-0.004	0.805	0.000	100.000	123.597	0.501
S6	-0.004	0.822	0.000	100.000	121.119	0.476
S7	-0.004	0.867	0.000	100.000	114.846	0.404



Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
CCL	21.68		TITAN	1.02	1.44	1.00
			SNDX_CCL-SNDX_3_13_CCL (000001) CSS Gamma Ray/CCL (CCL Section)	1.92	3.13	11.02
			SONDEX	2.71	2.75	32.00
WVFS3FT	13.92		SNDX_RBT-007 (000002) Radial Bore Tool - Analog 3 1/8	9.47	3.13	140.00
WVFS1	13.92					
WVFS2	13.92					
WVFS3	13.92					
WVFS4	13.92					
WVFS5	13.92					
WVFS6	13.92					
WVFS7	13.92					
WVFS8	13.92					
WVFS5FT	12.92					
GR	5.17		SONDEX	2.71	2.75	32.00
			SNDX_GR-SNDX_3_13_GR (000001) Sondex Production Gamma Ray	2.94	3.13	22.05
			TEMP-SNDX_TEMP (SNDX_TEMP_01) Sondex Production Temperature Tool	3.14	1.63	10.00
TEMP	0.58					

Dataset: a\_csfcbl.db: field/well/run1/pass6

Total Length: 22.00 ft



Total Length:	25.80 ft
Total Weight:	248.07 lb
O.D.	3.13 in



Company	ANTERO RESOURCES CORPORATION
Well	CSF 21C 07-07-91
Field	MAMM CREEK
County	GARFIELD
State	COLORADO