



Radial Cement Bond
Variable Density Log
W/Gamma Ray/CCL

Company	Noble Energy	Company	Noble Energy
Well	NCLP PC AA04-65HN	Well	NCLP PC AA04-65HN
Field	Wattenberg	Field	Wattenberg
County	Weld	County	Weld
State	Colorado	State	Colorado
Location: 2559' FSL & 535' FEL		Other Services None	
SEC 4 TWP 6N RGE 63W		Elevation K.B. 4735' D.F. 4734' G.L. 4711'	
Permanent Datum	Ground Level	Elevation	4711'
Log Measured From	Kelly Bushing	24' APD	
Drilling Measured From	Kelly Bushing		
Date	09-JAN-2014		
Run Number	One		
Depth Driller	16216'		
Depth Logger	7066'		
Bottom Logged Interval	7054'		
Top Log Interval	Surface		
Open Hole Size	8 3/4"		
Type Fluid	Water		
Density / Viscosity	8.4		
Max. Recorded Temp.	235degF		
Estimated Cement Top	570'		
Time Well Ready	17:00		
Time Logger on Bottom	17:30		
Equipment Number	13034		
Location	Brighton, CO		
Recorded By	Jarod Lee		
Witnessed By	Bill Mansfield		
Borehole Record			
Run Number	Bit	From	To
		Size	Weight
		From	To
Casing Record	Size	Wgt/Ft	Top
Surface String	9 5/8"	36#	Surface
Prot. String			Bottom
Production String	7"	26#	Surface
Liner	4.5"	11.6#	7175'
			16216'
Short Joint			5806'

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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 Correlated to 24' Drilling Rig KB

Main Pass and Repeat Pass logged with zero Pressure on surface

Short Joint @ 5790' - 5806'

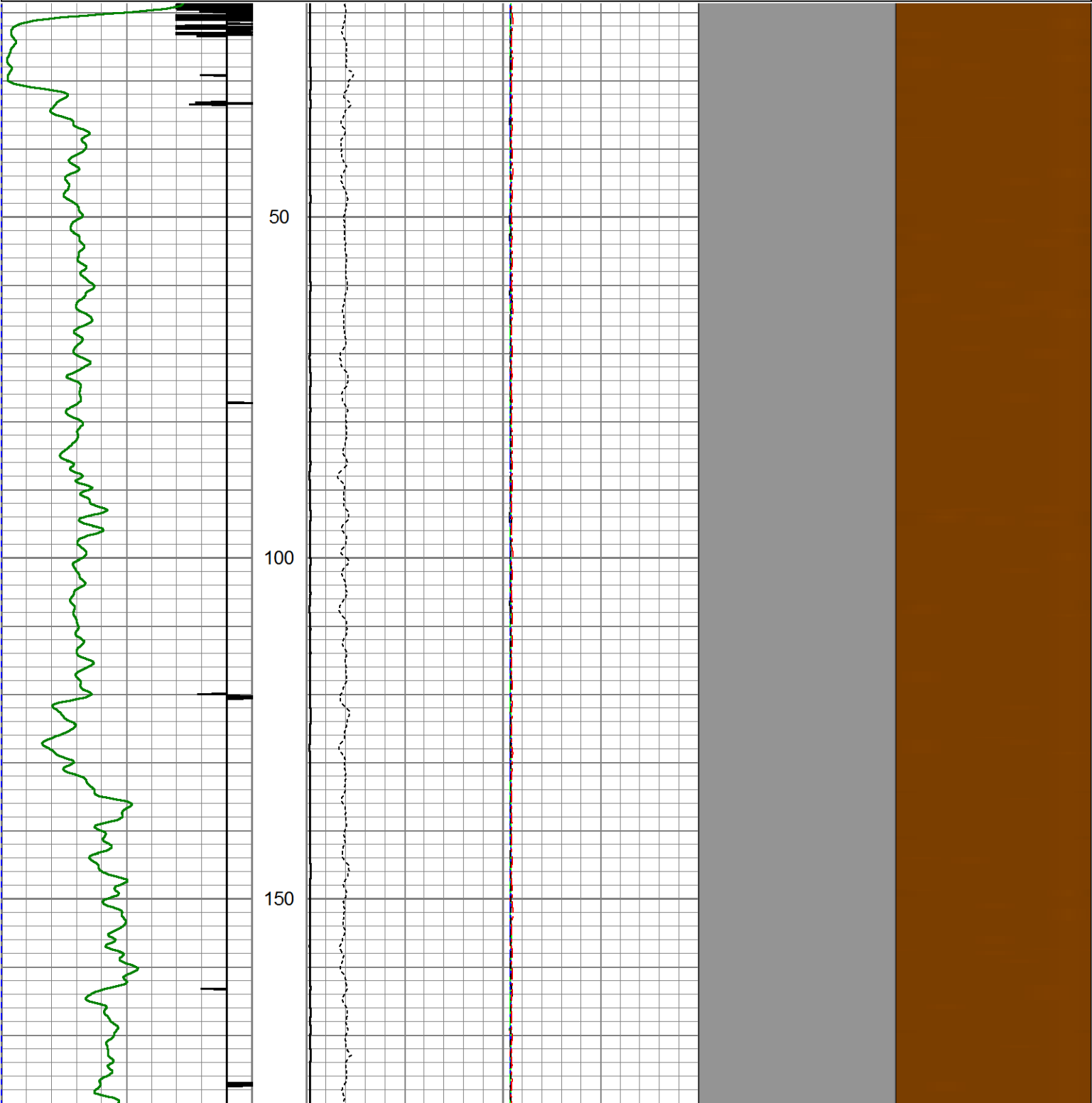
Thank You for using Allied Wireline

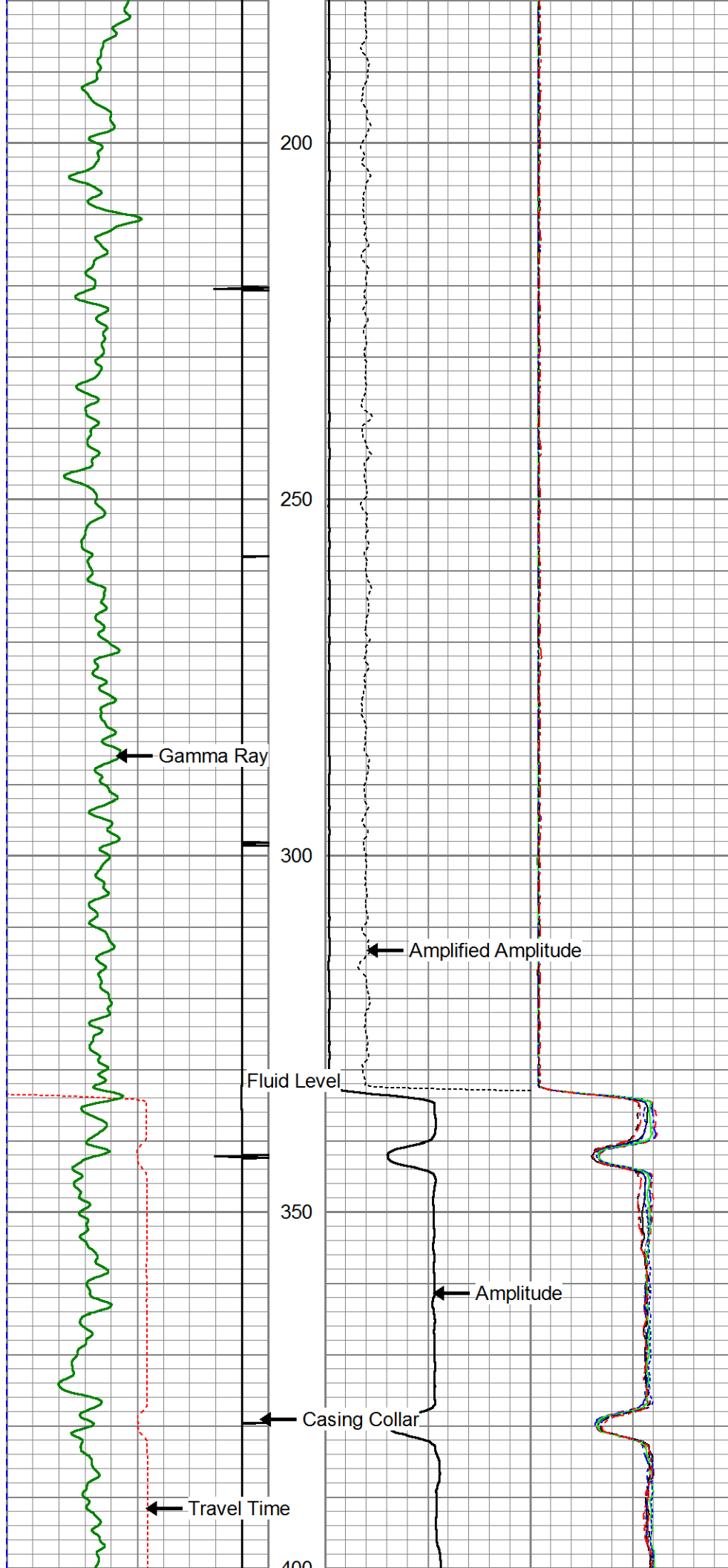
(303)659-4609



Main Pass (0 PSI)

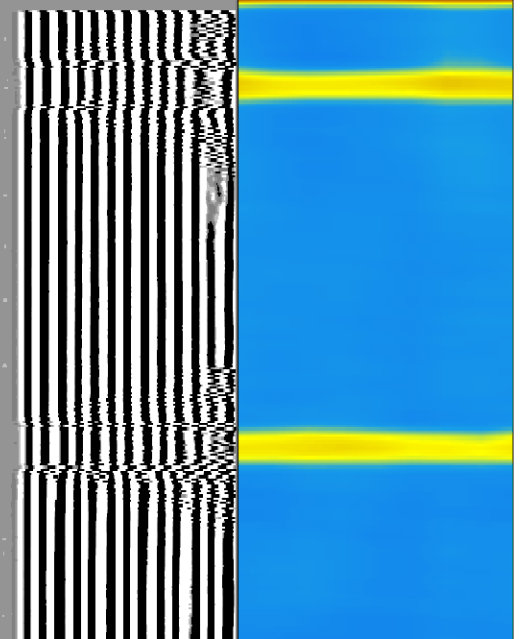
400	Travel Time (usec)	200	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density		1	Cement Map	8
9	Casing Collar	-1	Amplified Amplitude			-5	AMPS2	150	200	1200	0	100	
0	Gamma Ray (GAPI)	150	0	(mV)	10	-5	AMPS3	150					
0	Line Tension (lb)	5000				-5	AMPS4	150					
						-5	AMPS5	150					
						-5	AMPS6	150					
						-5	AMPS7	150					
						-5	AMPS8	150					

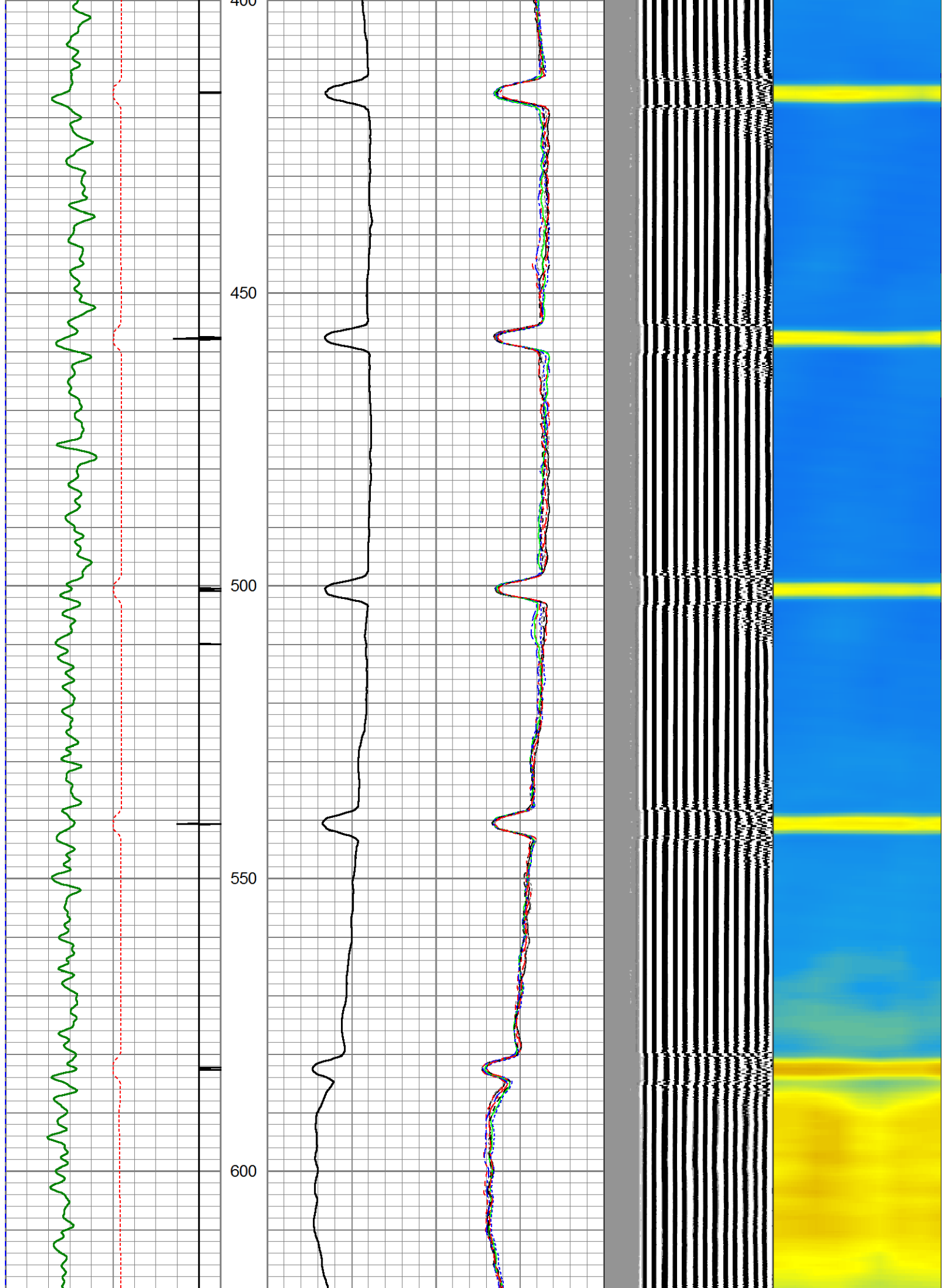


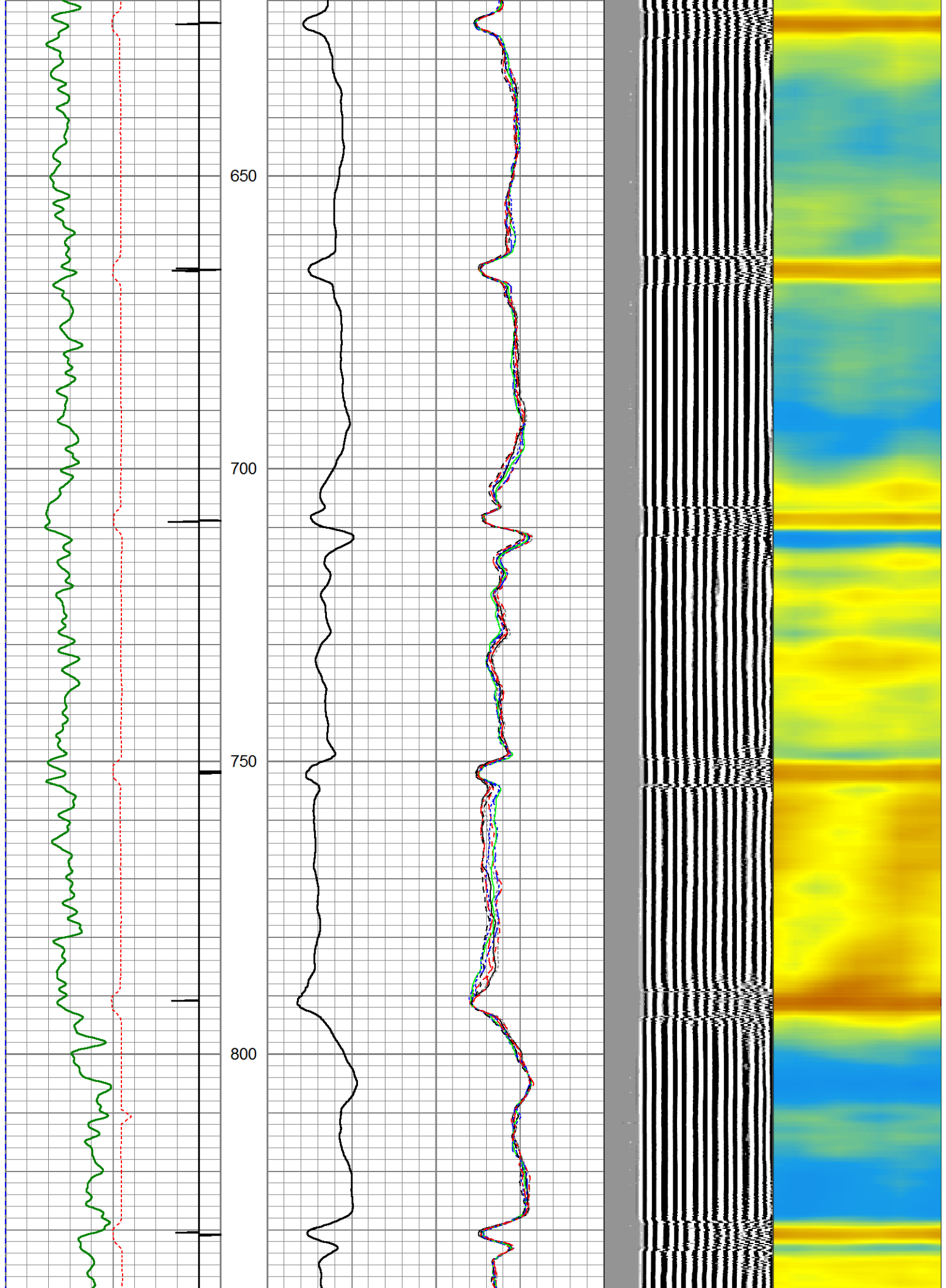


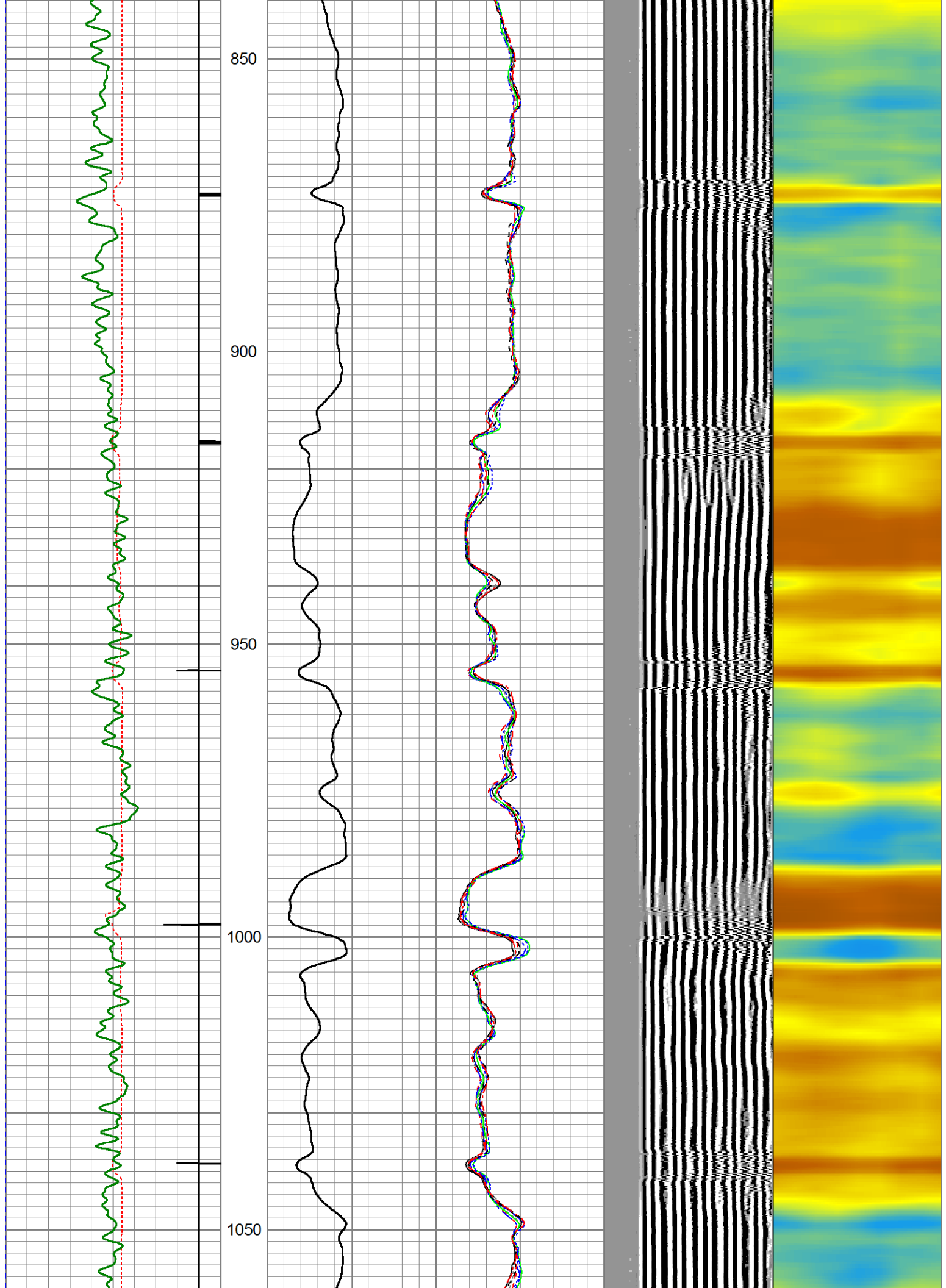
Variable Density

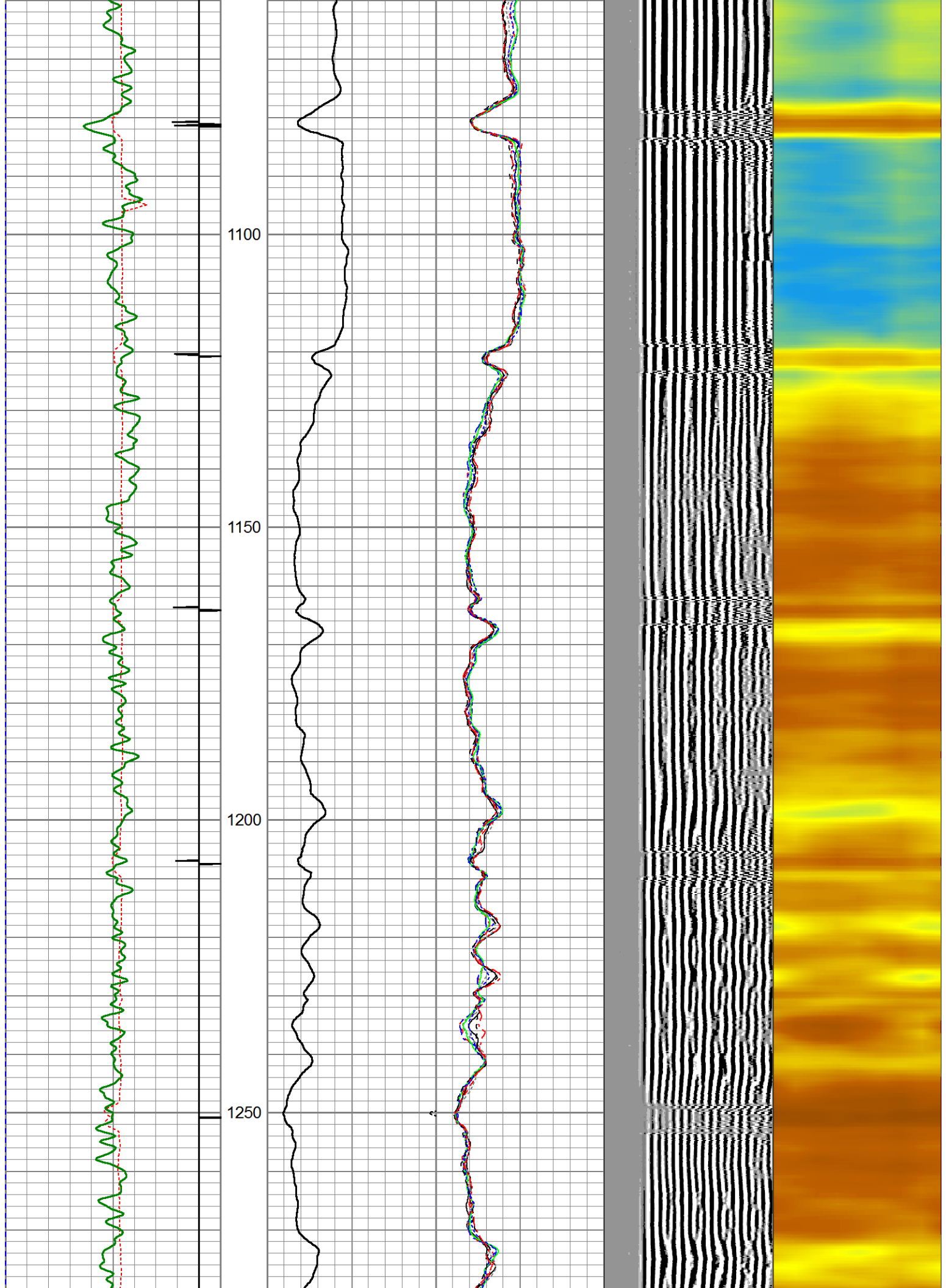
Cement Map

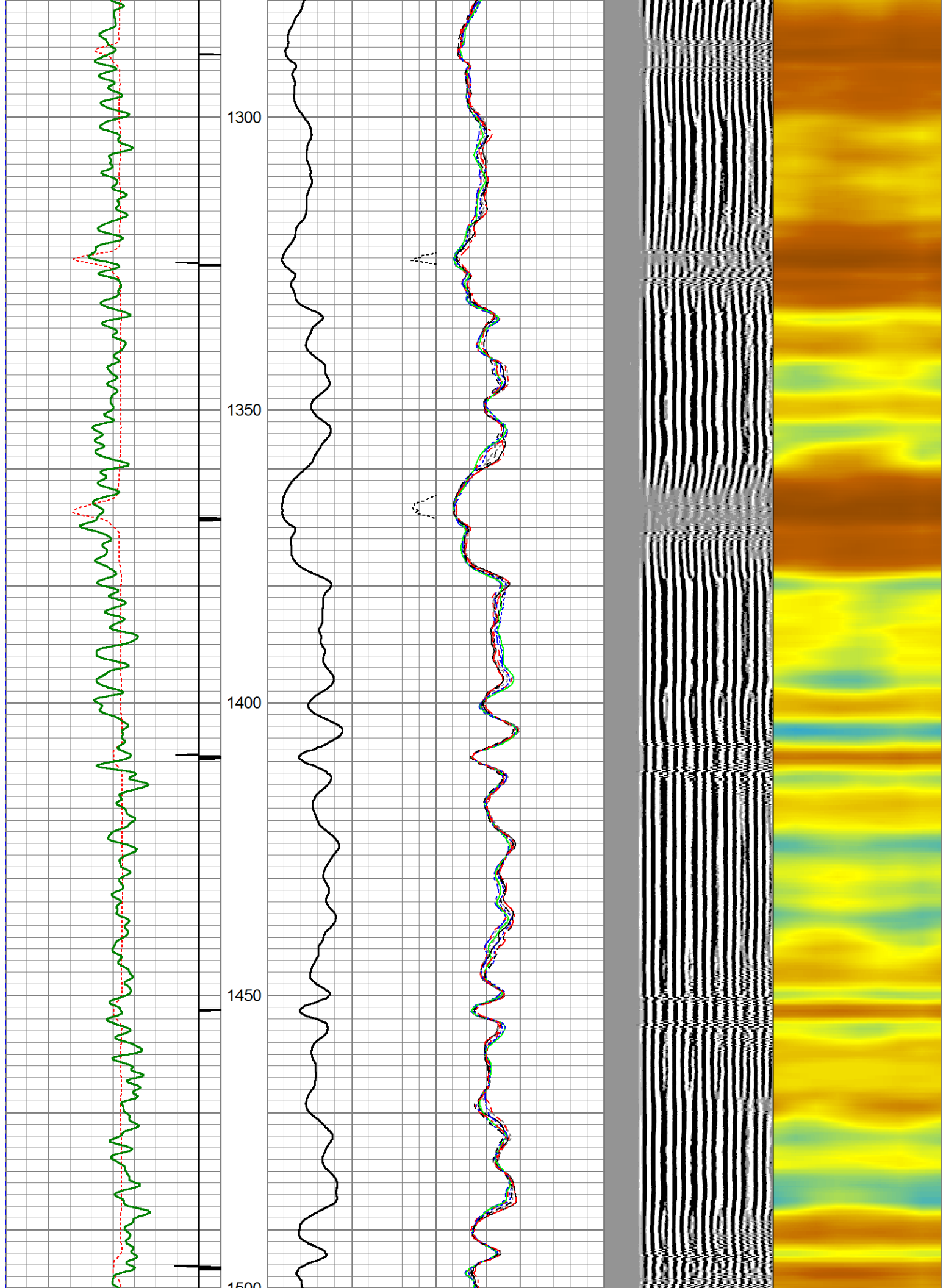


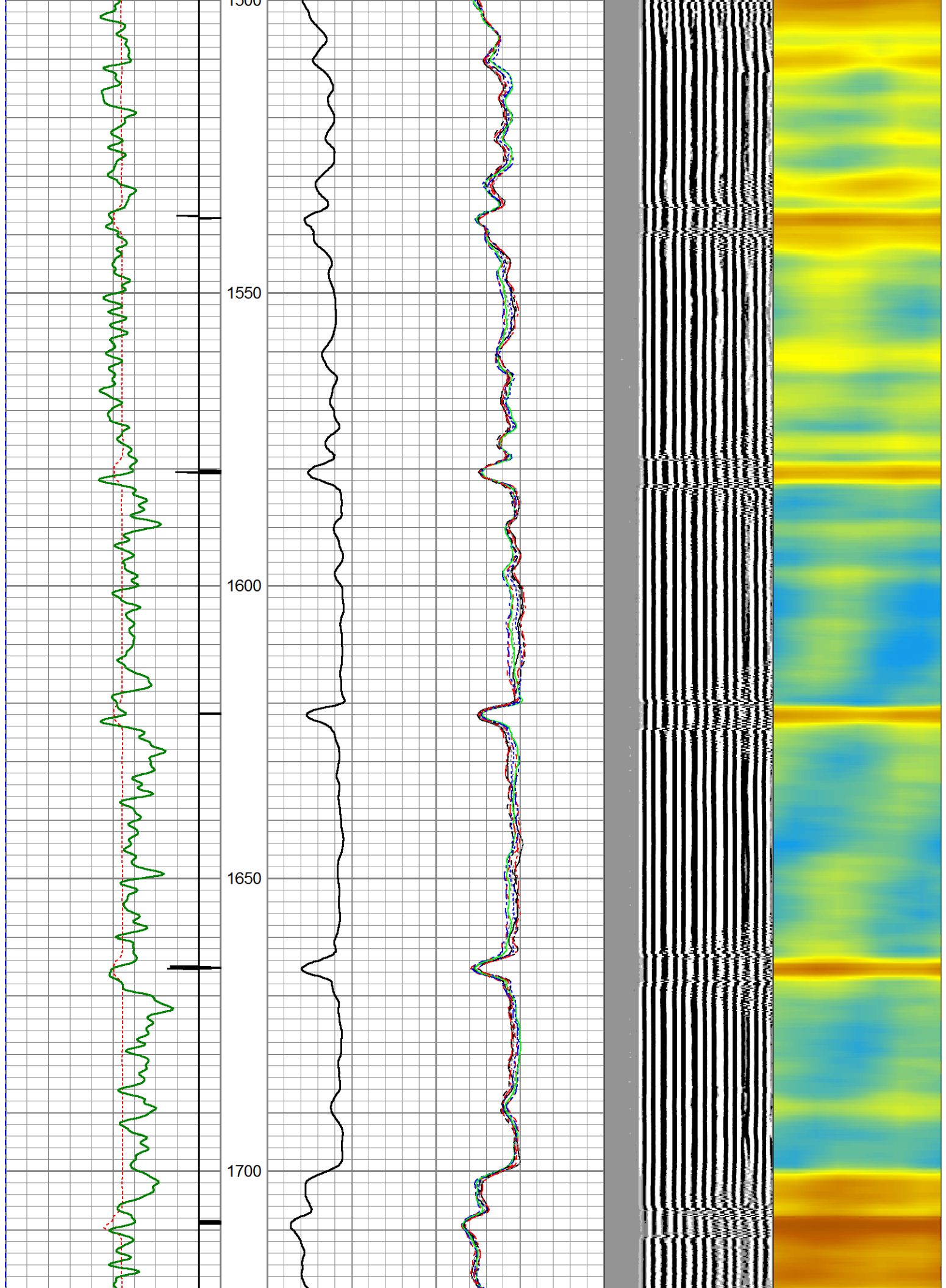


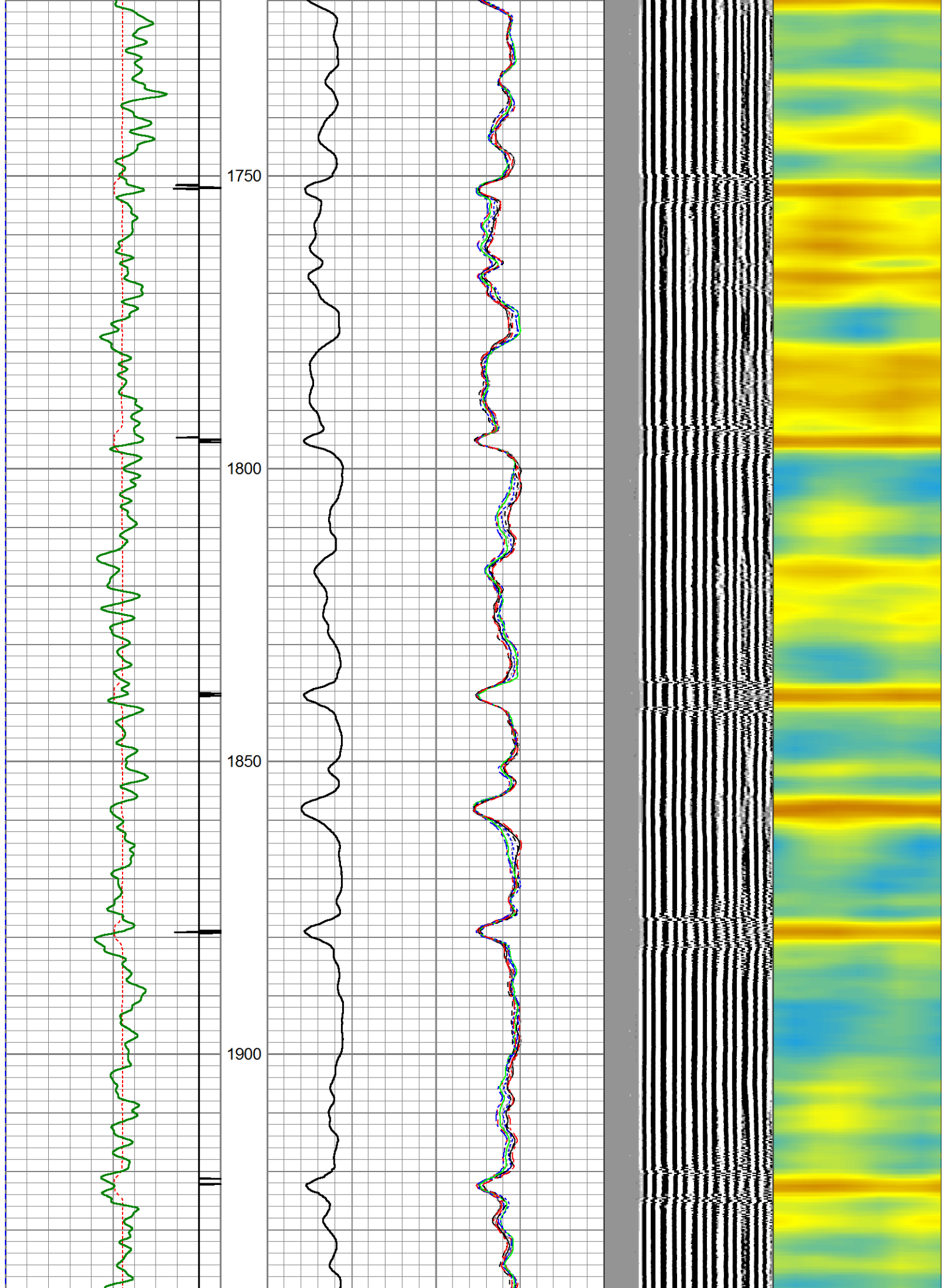


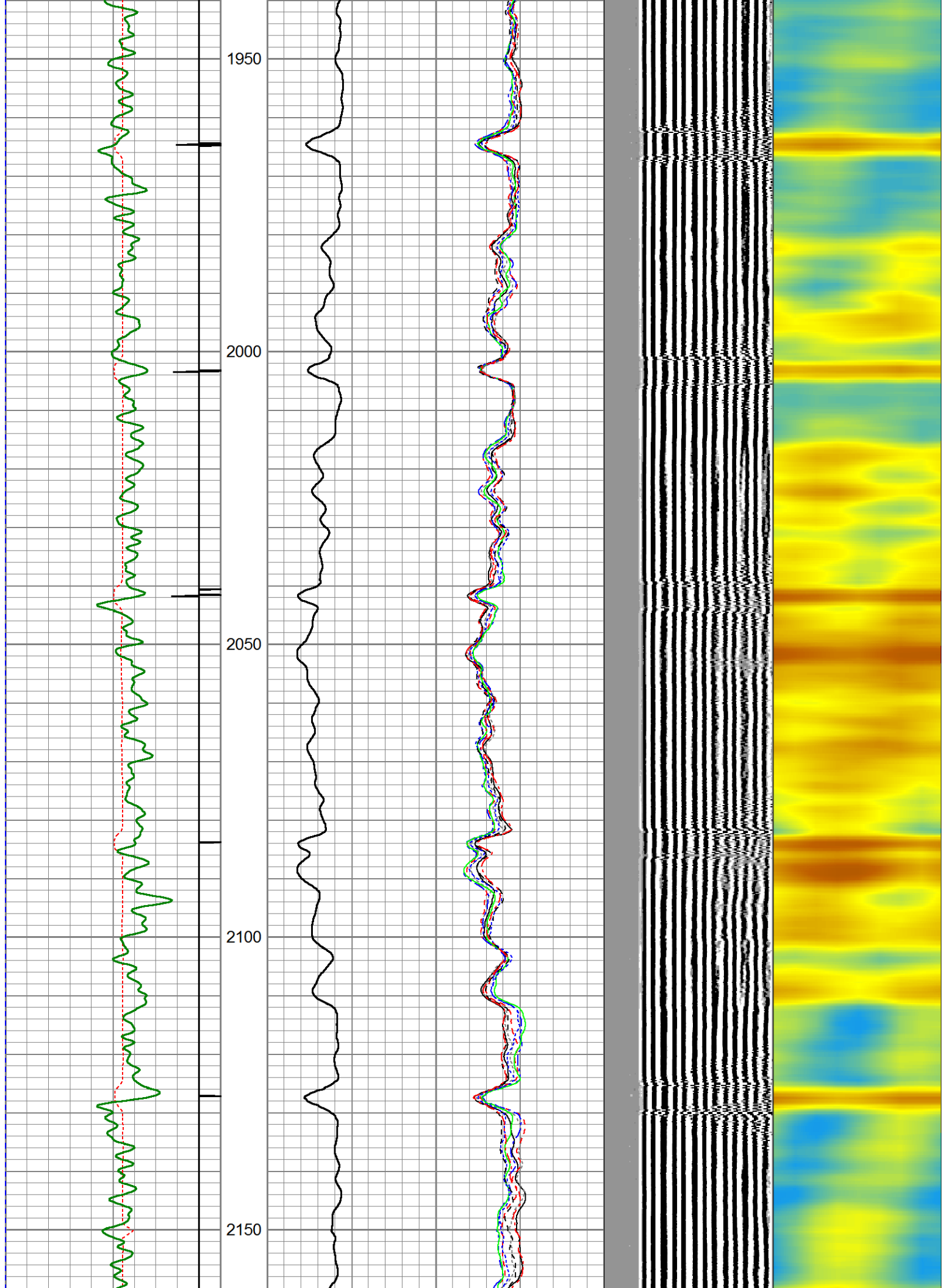


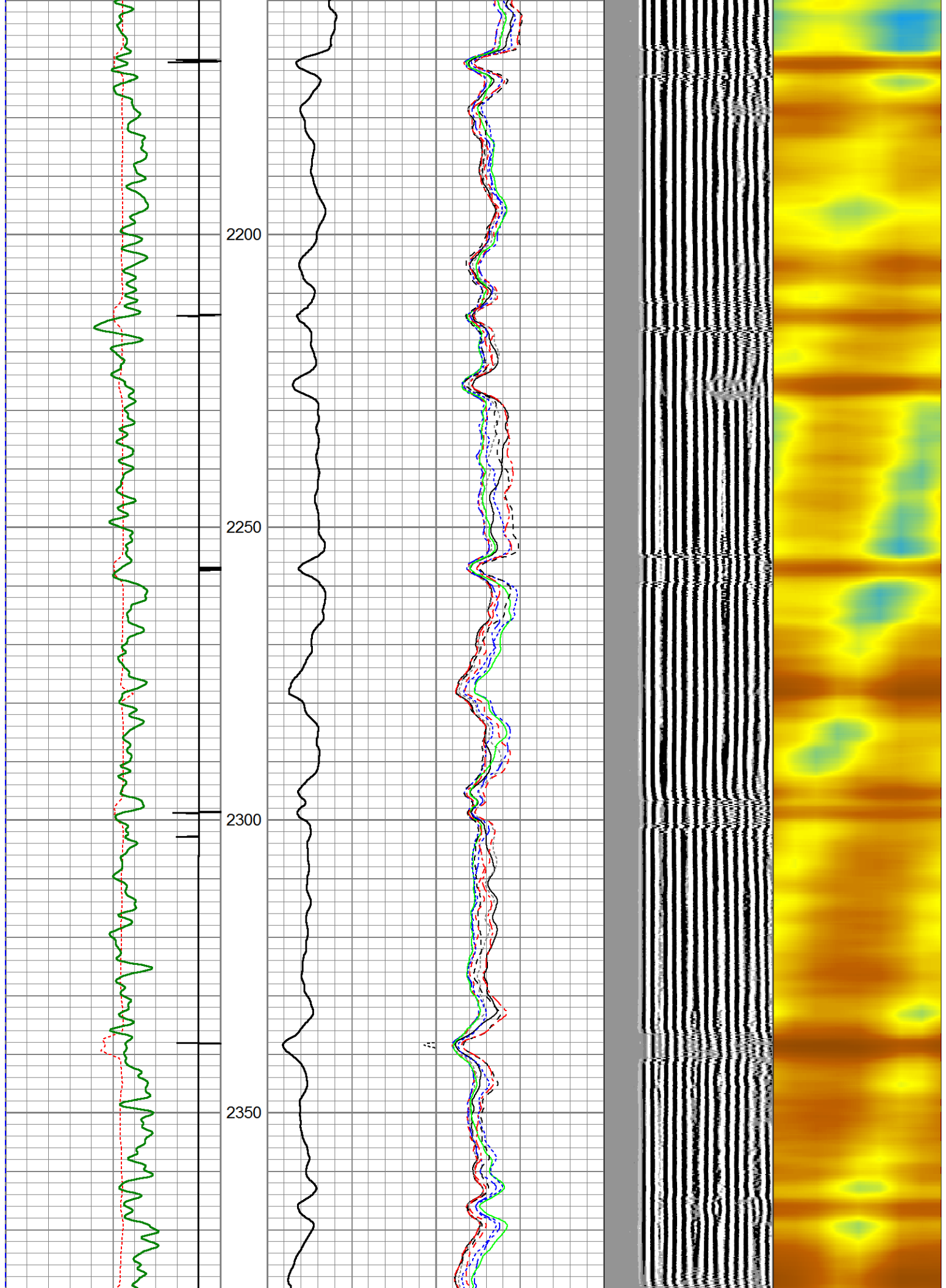


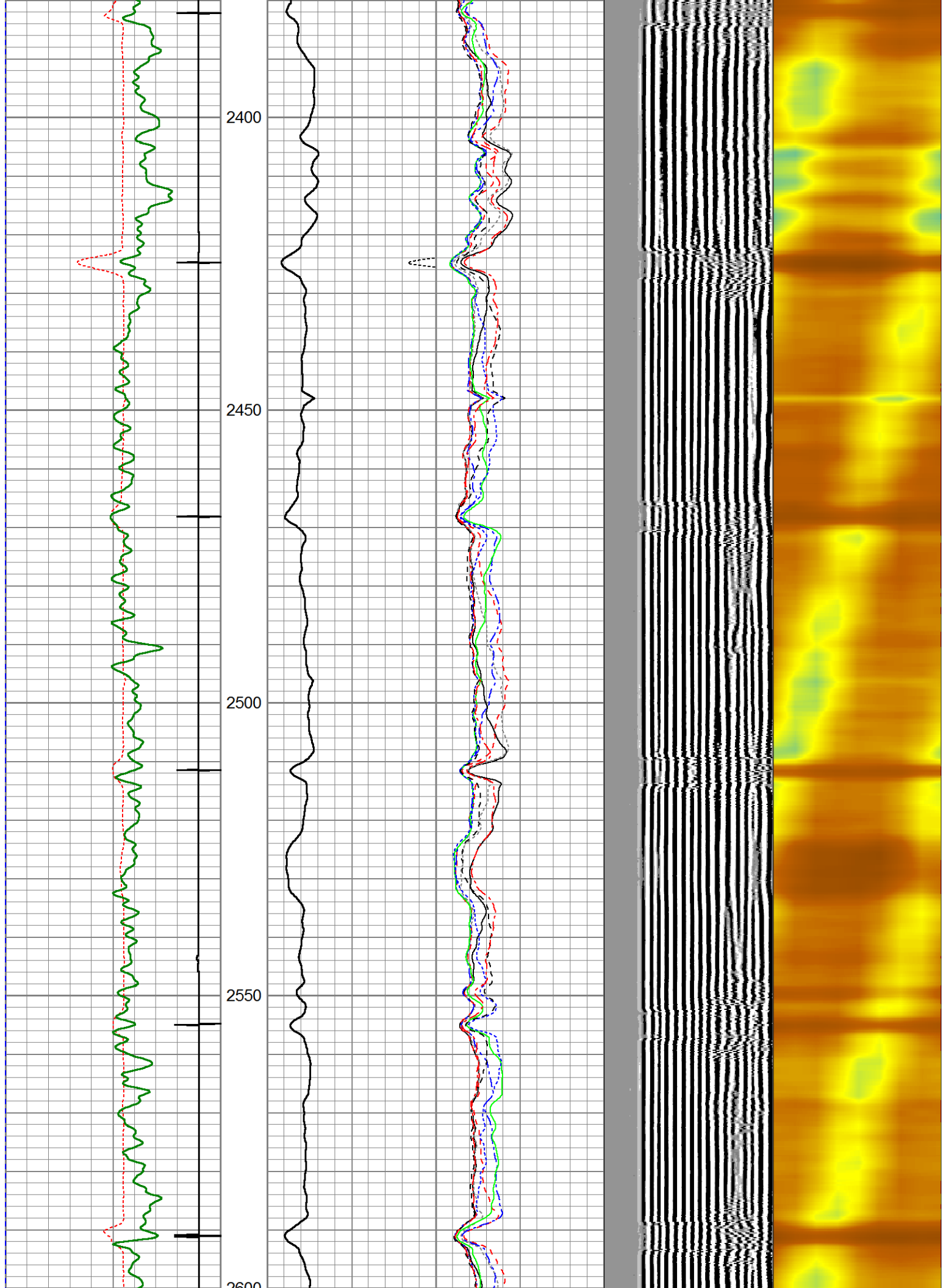


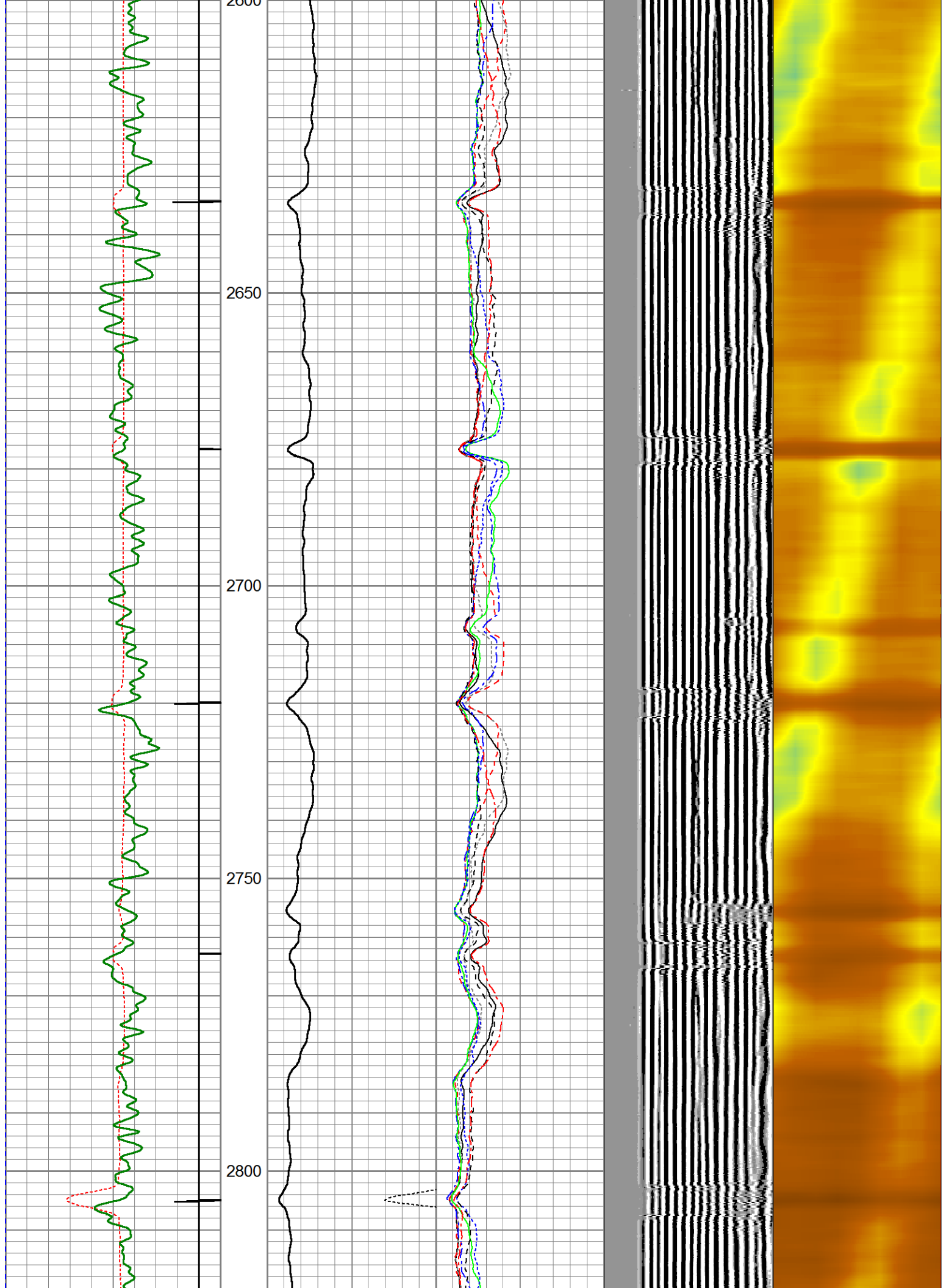


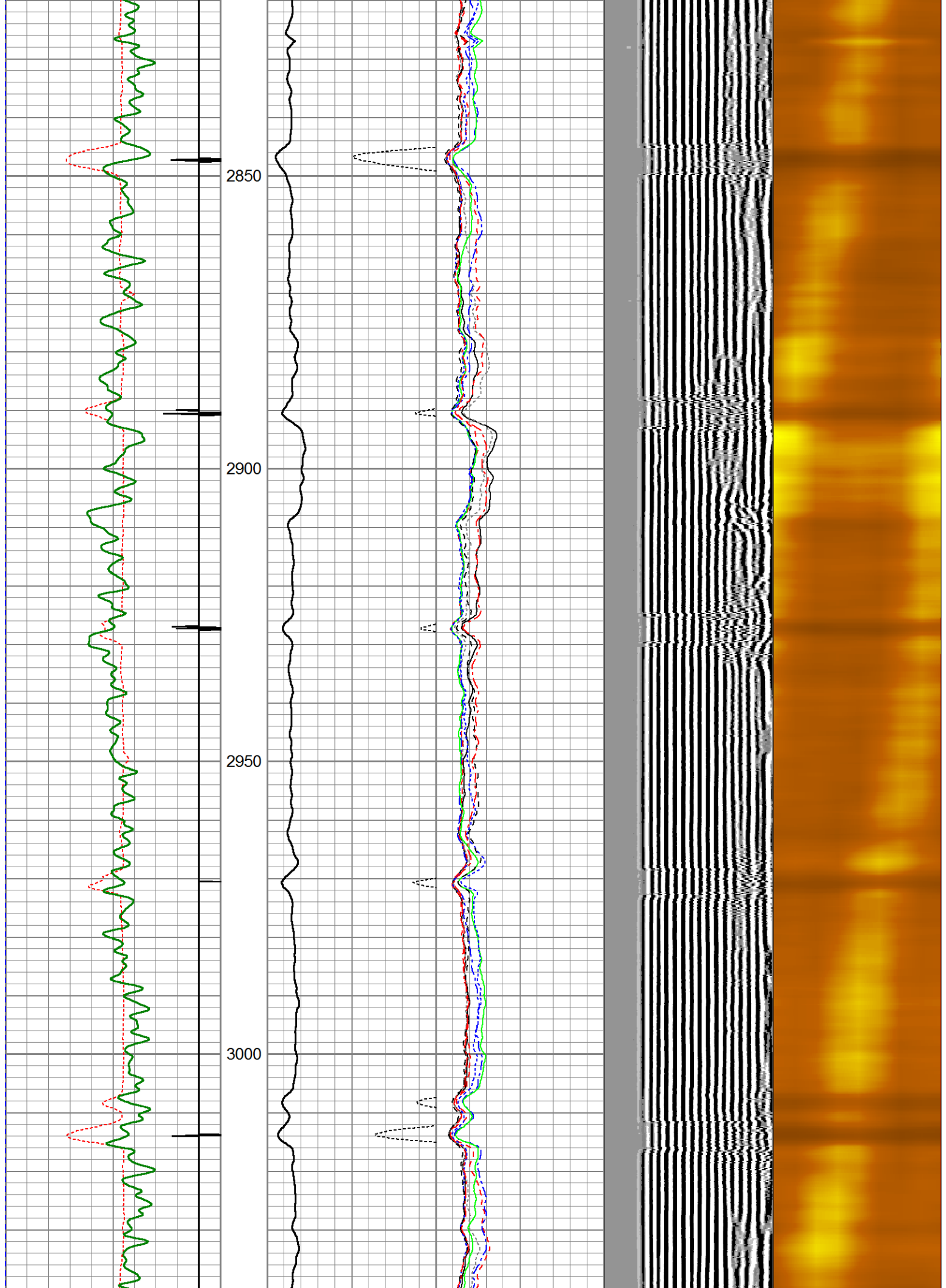


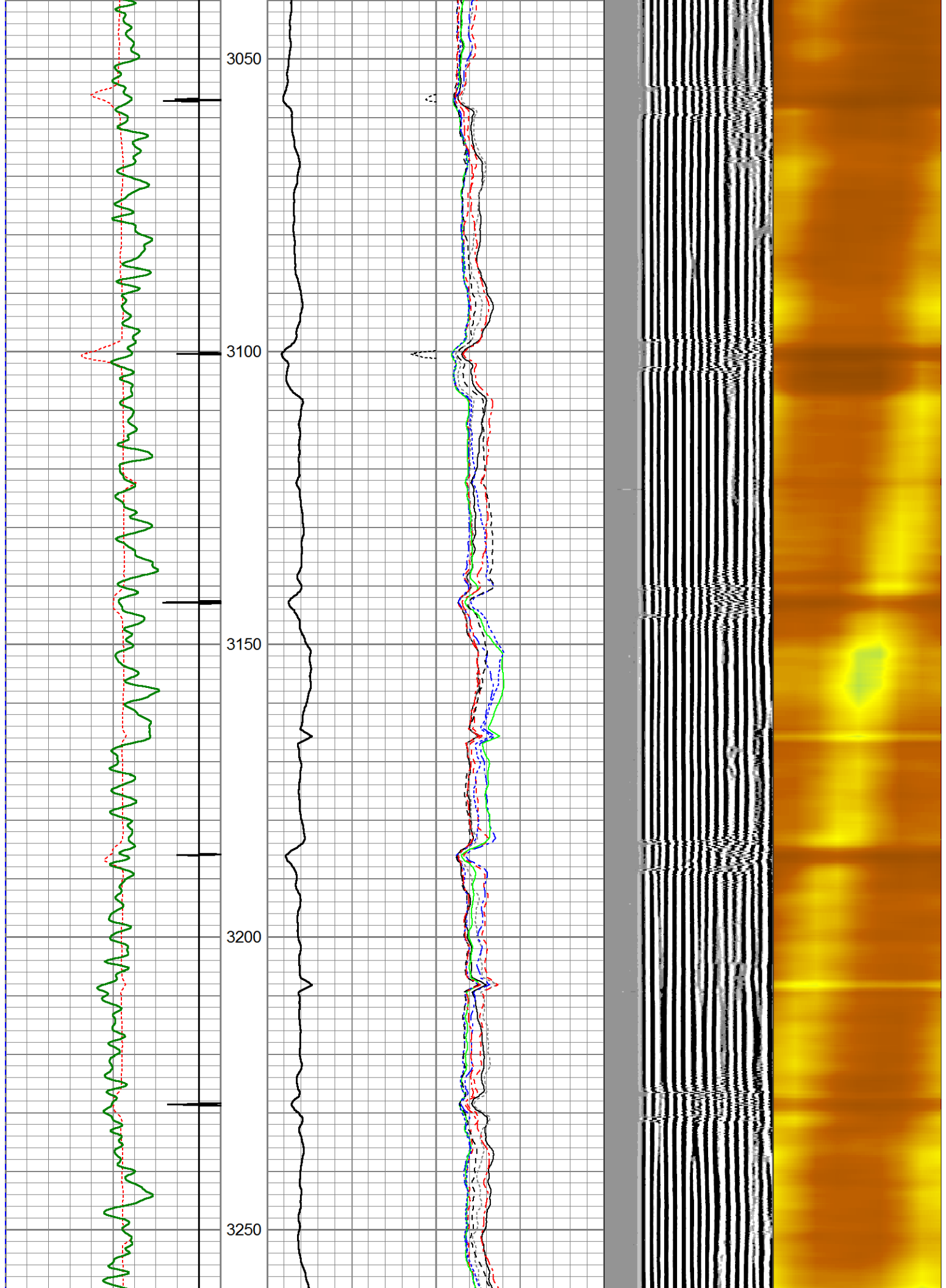


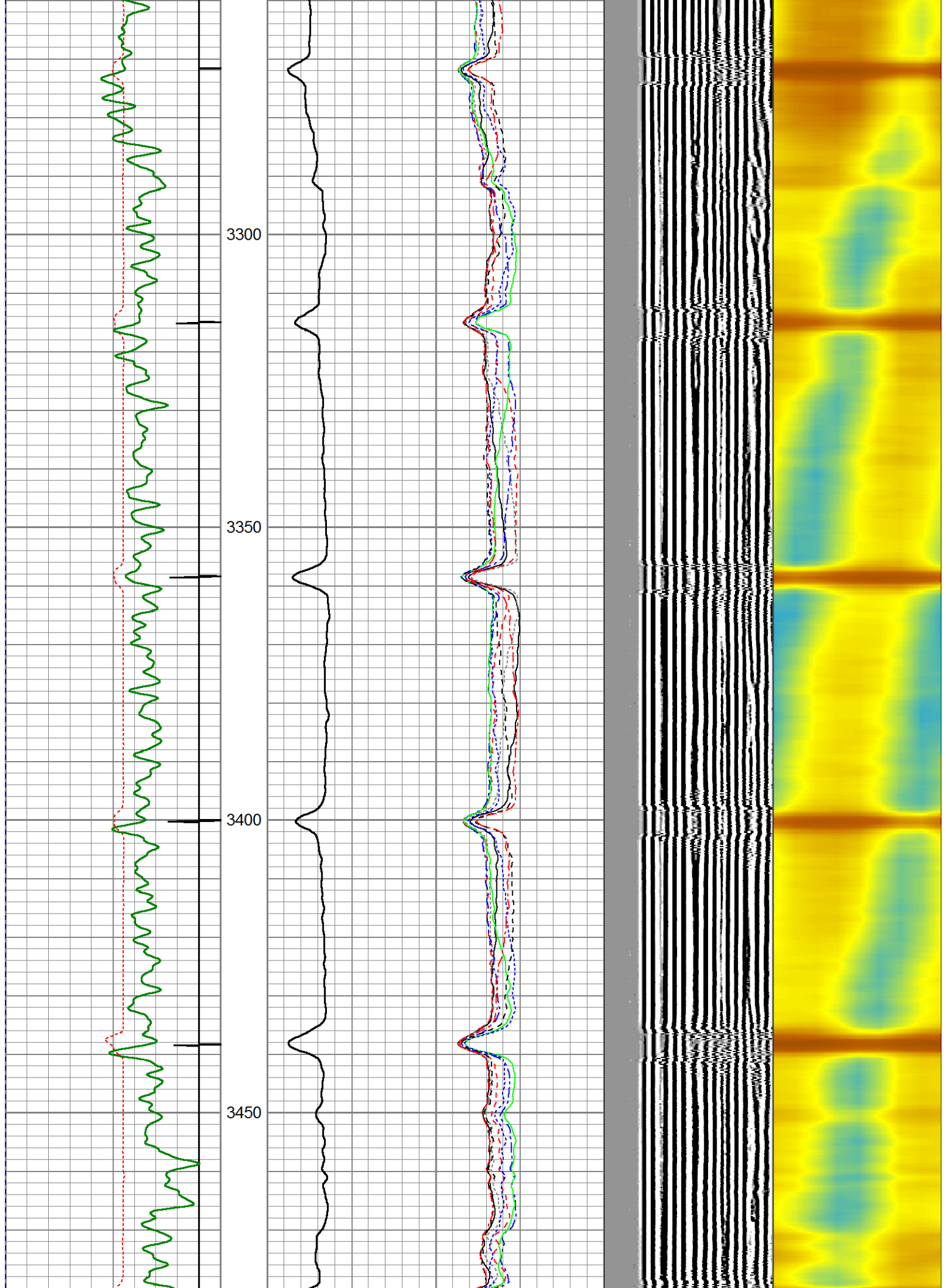


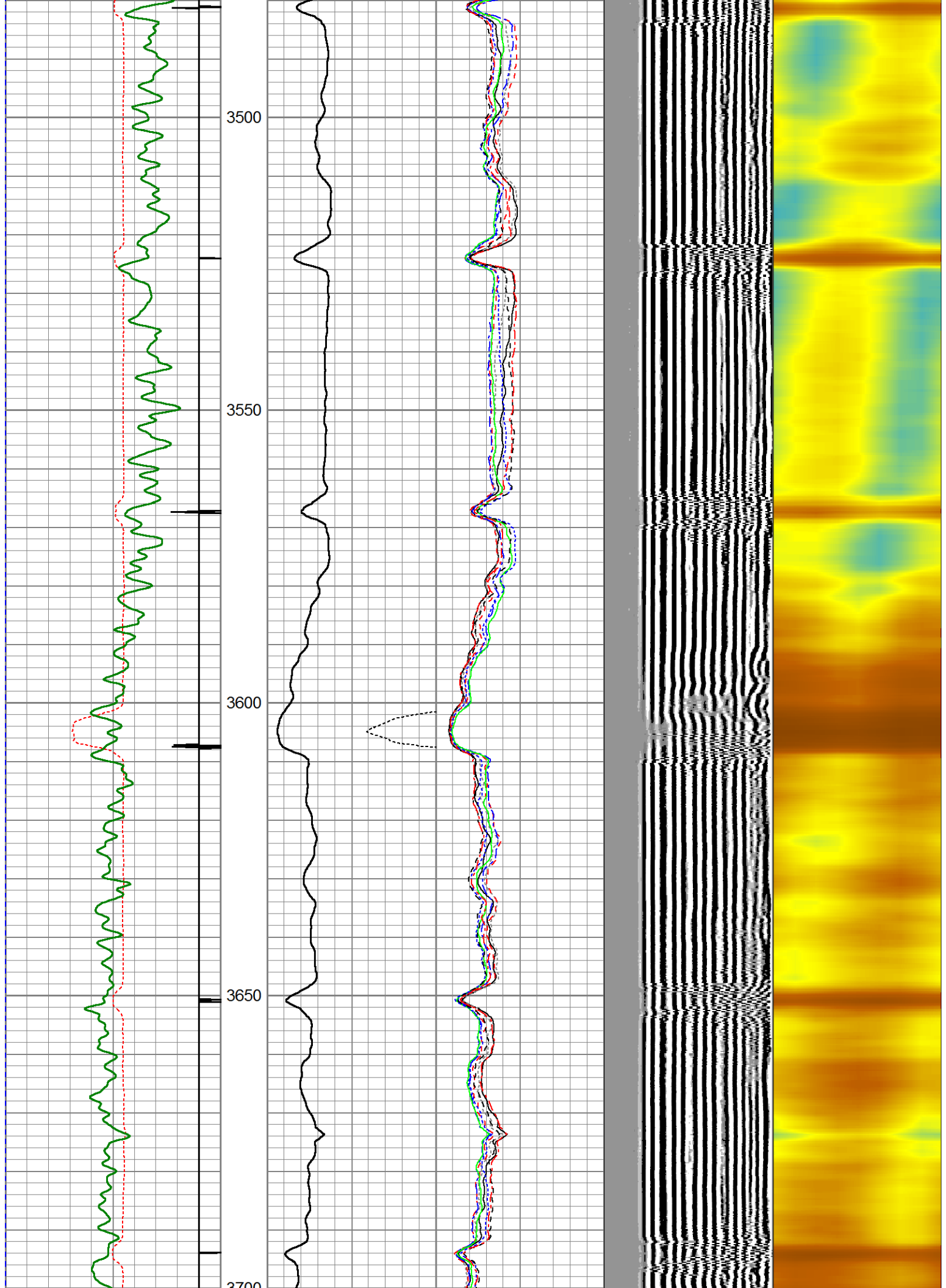


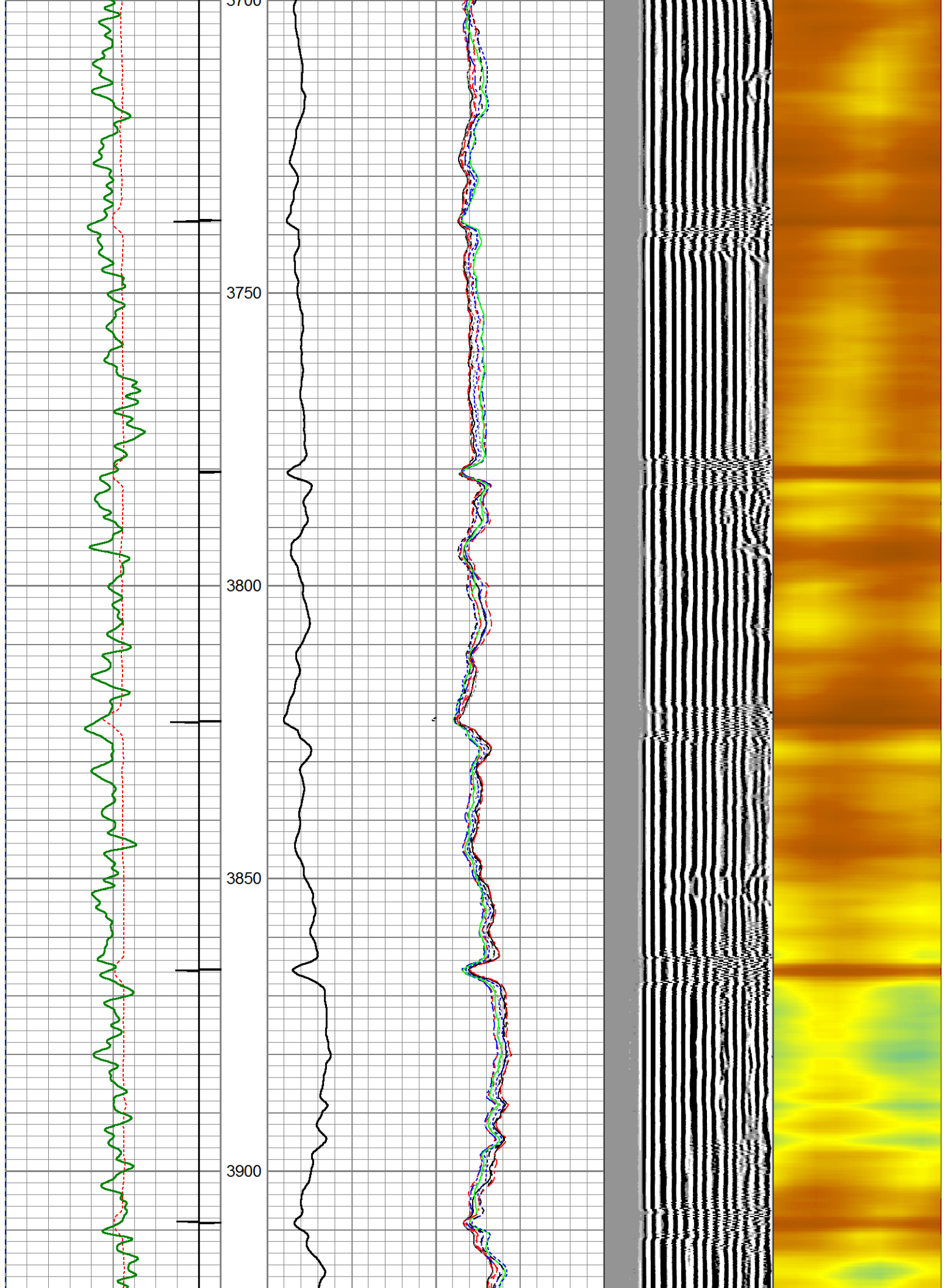


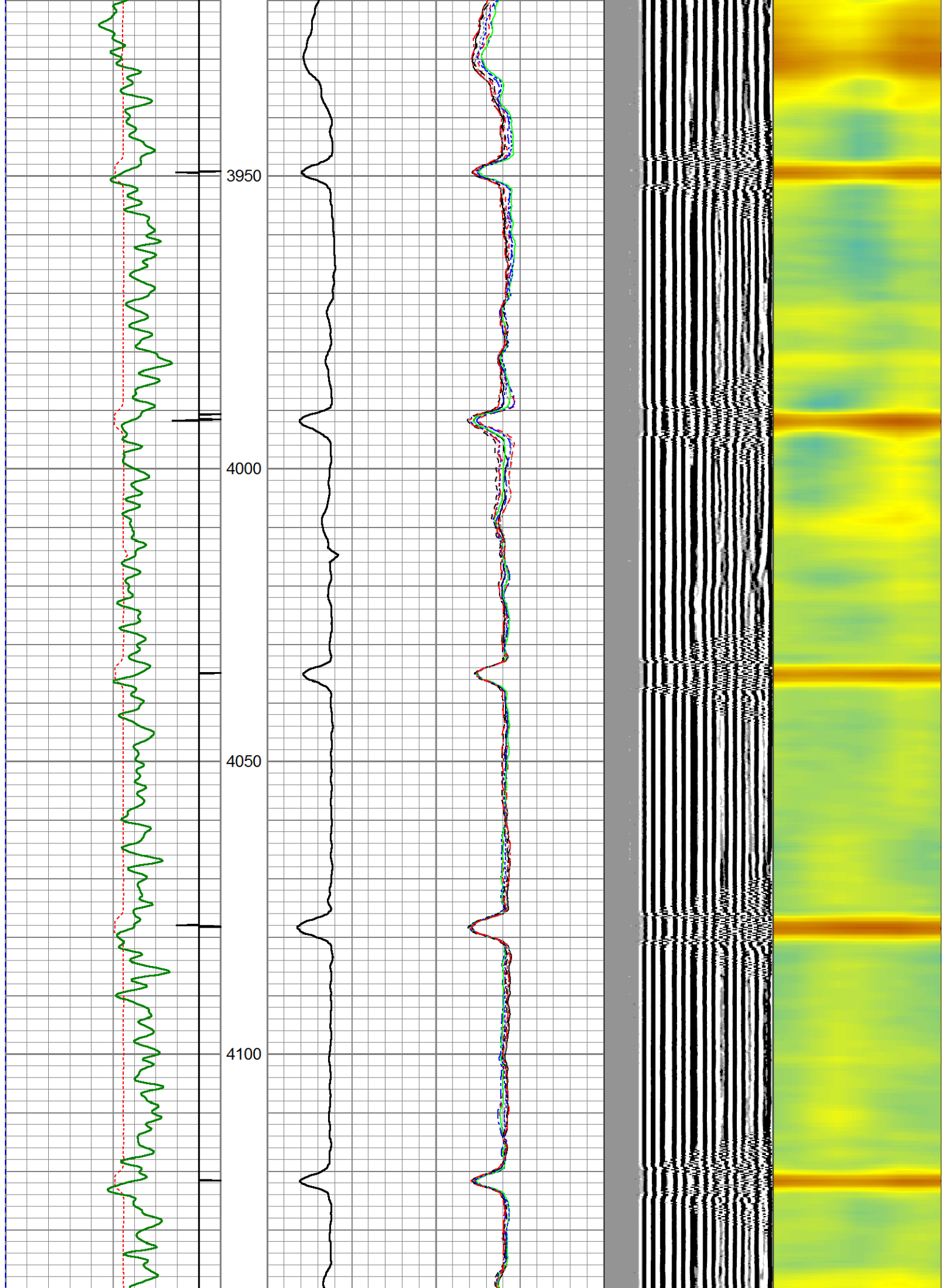


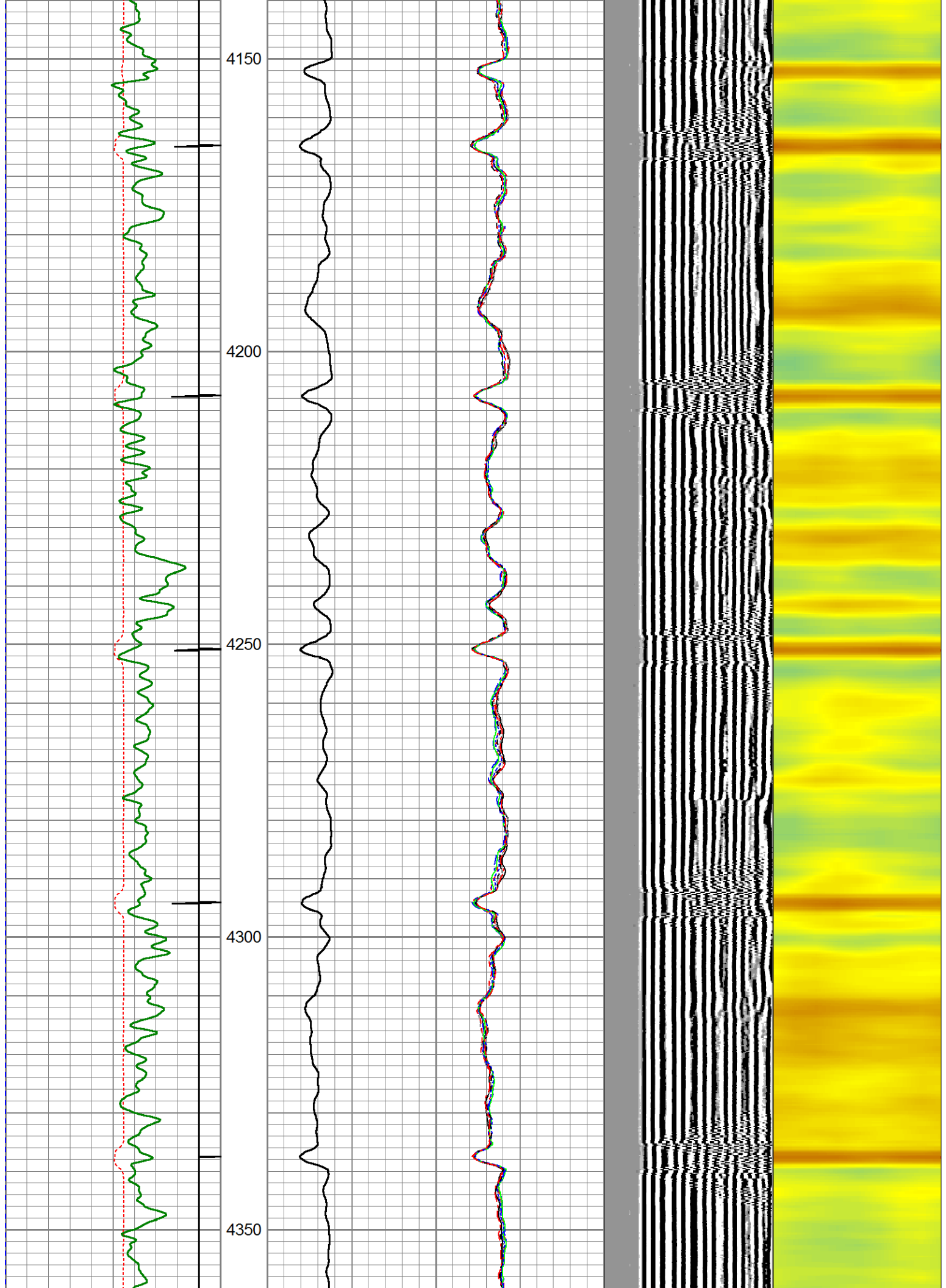


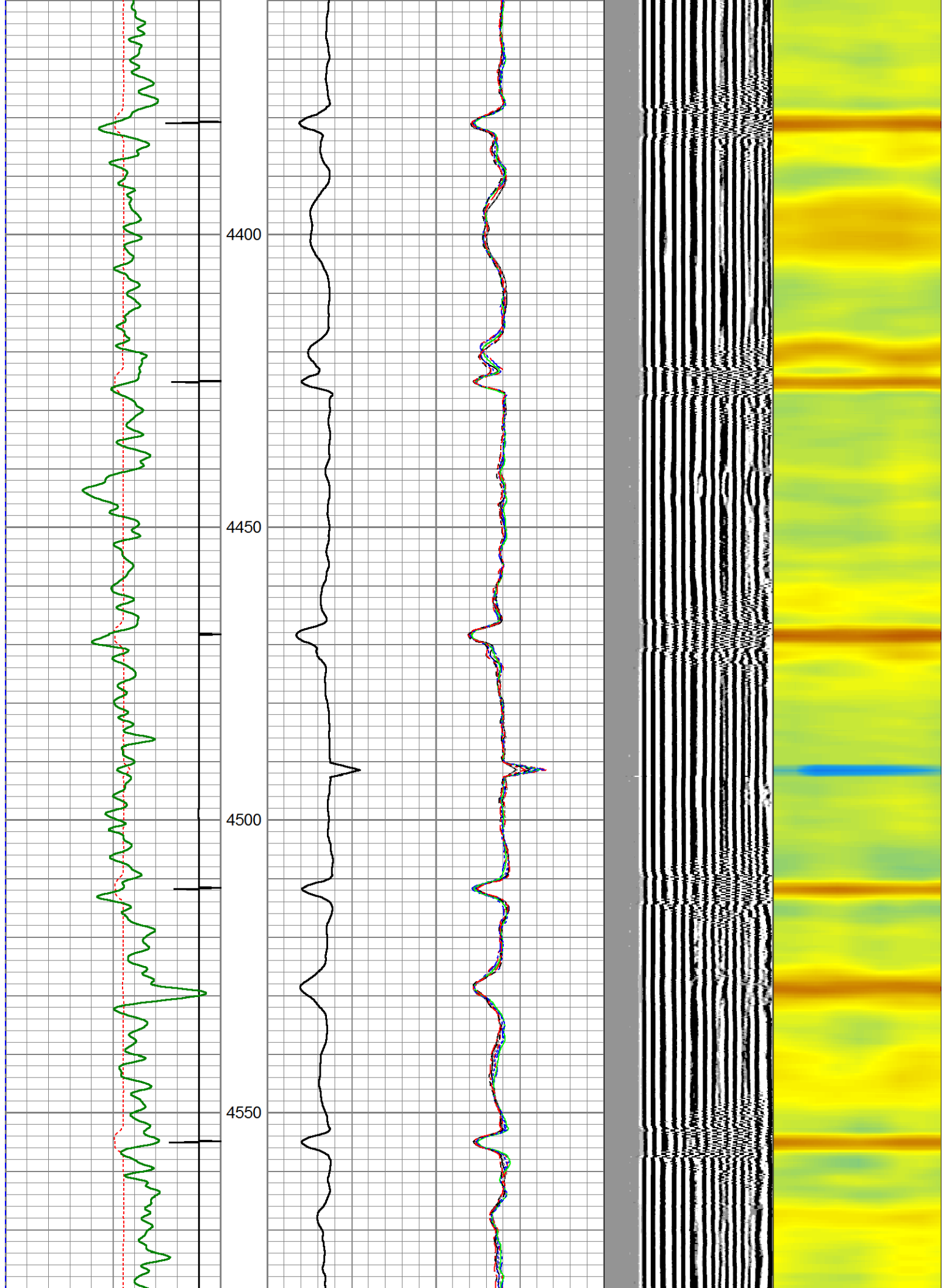


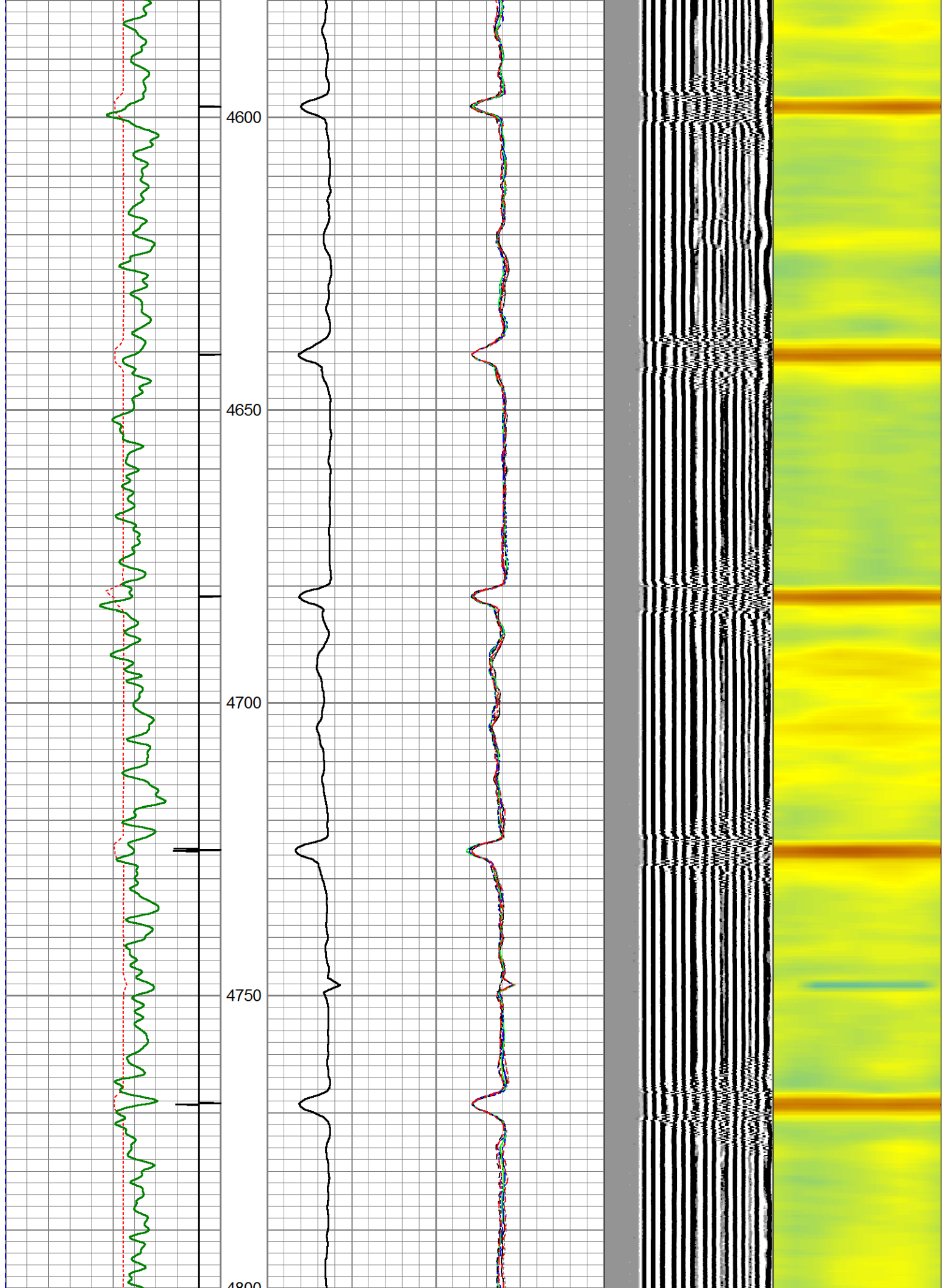


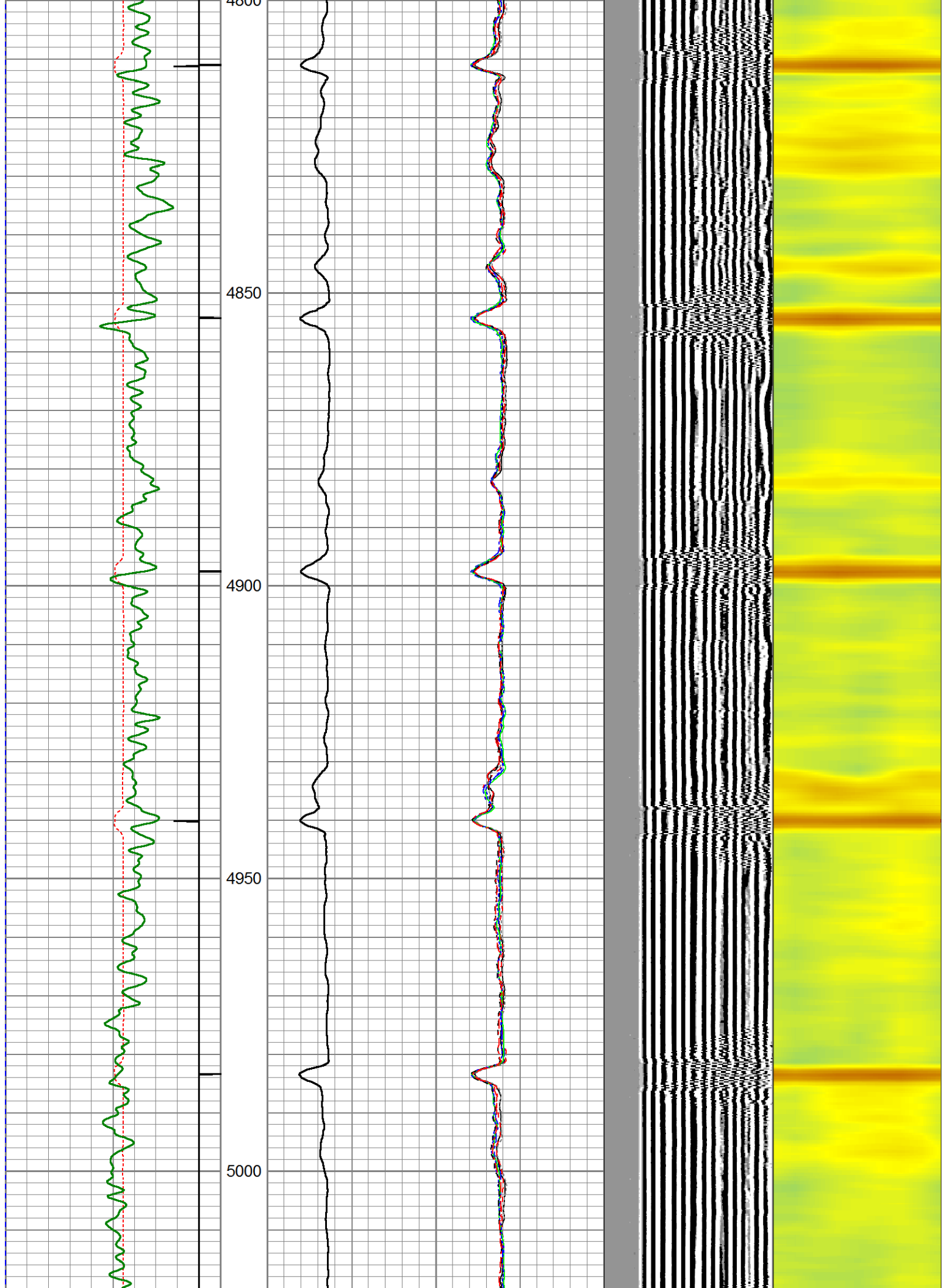


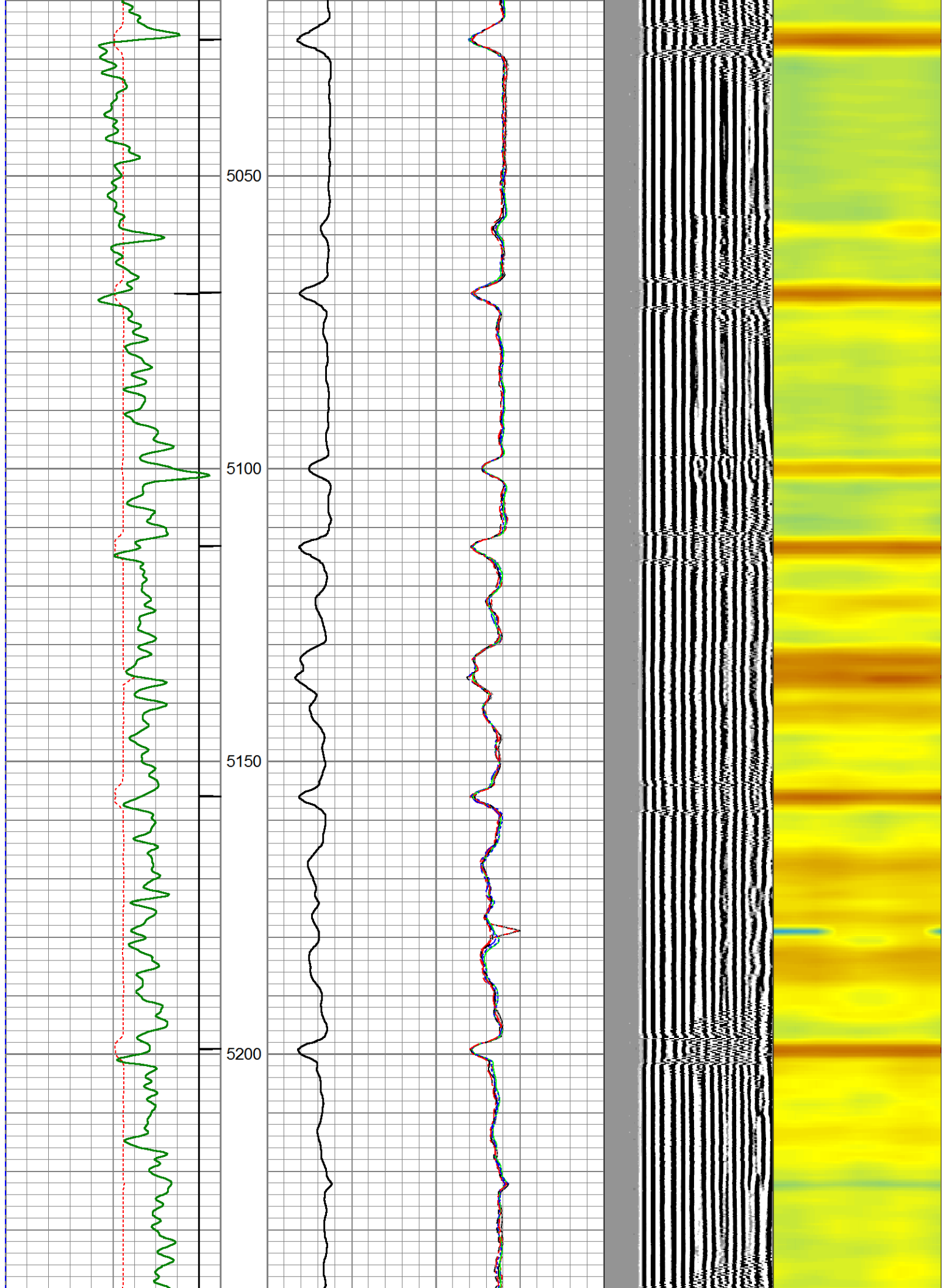


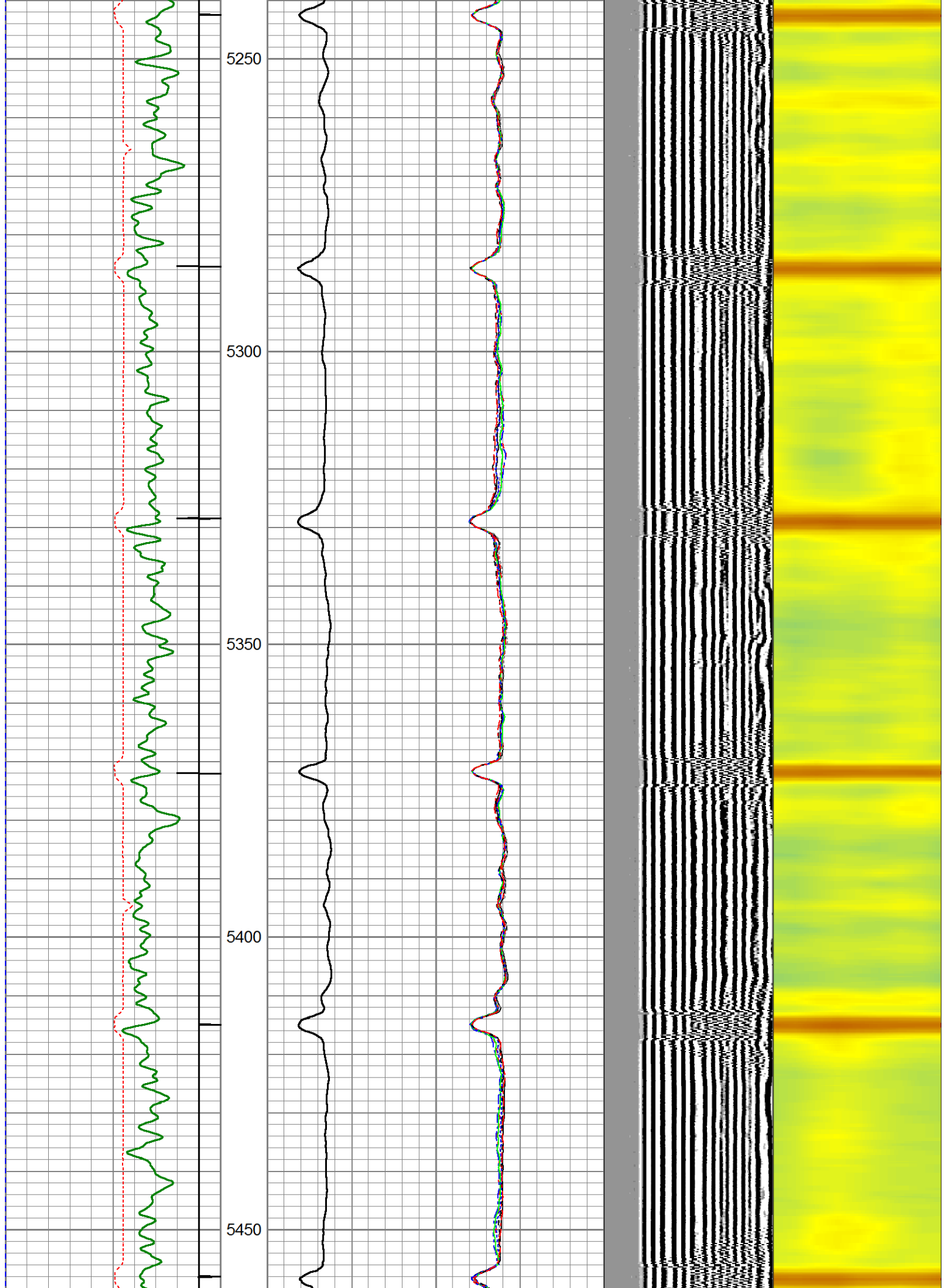


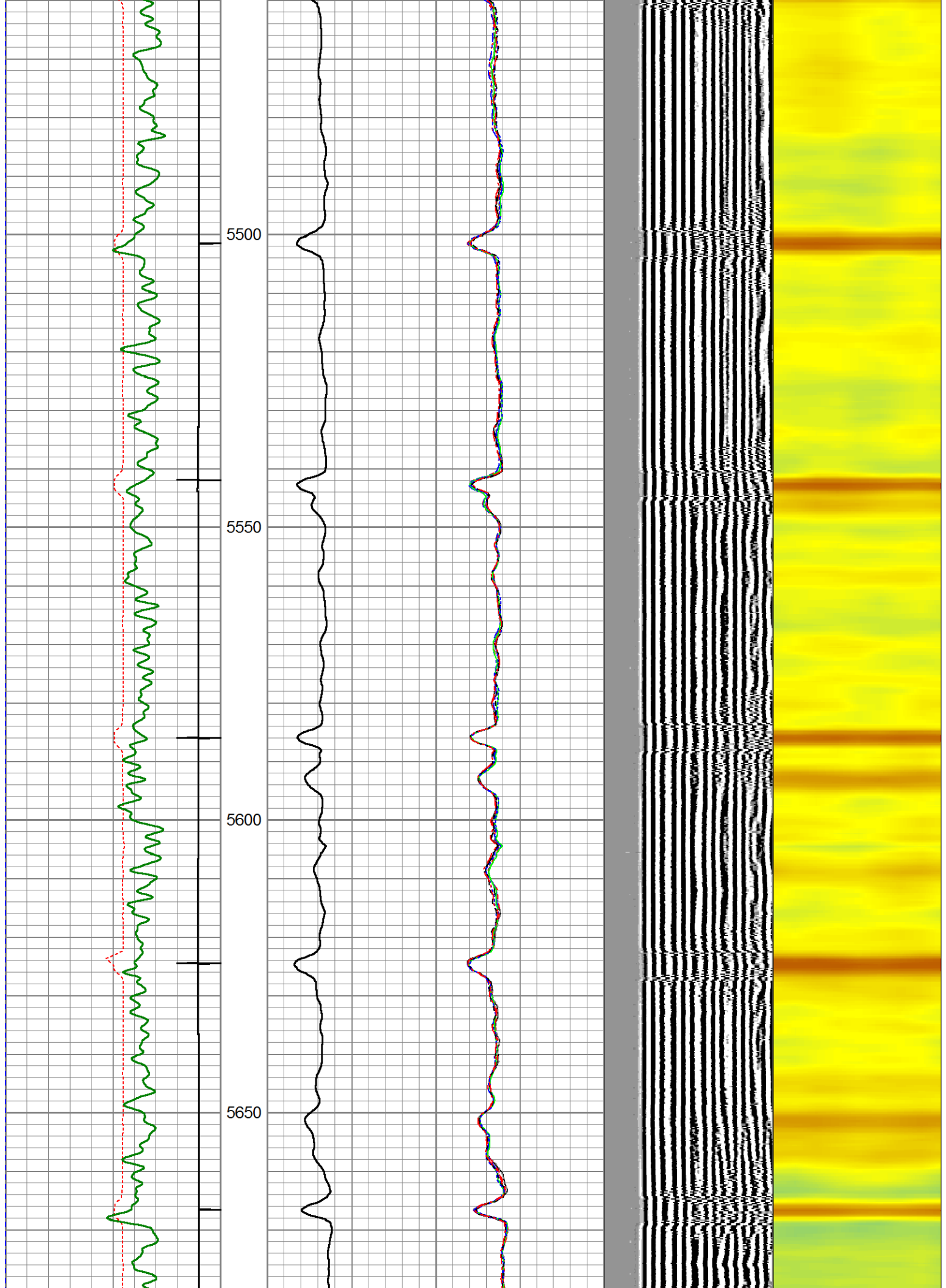


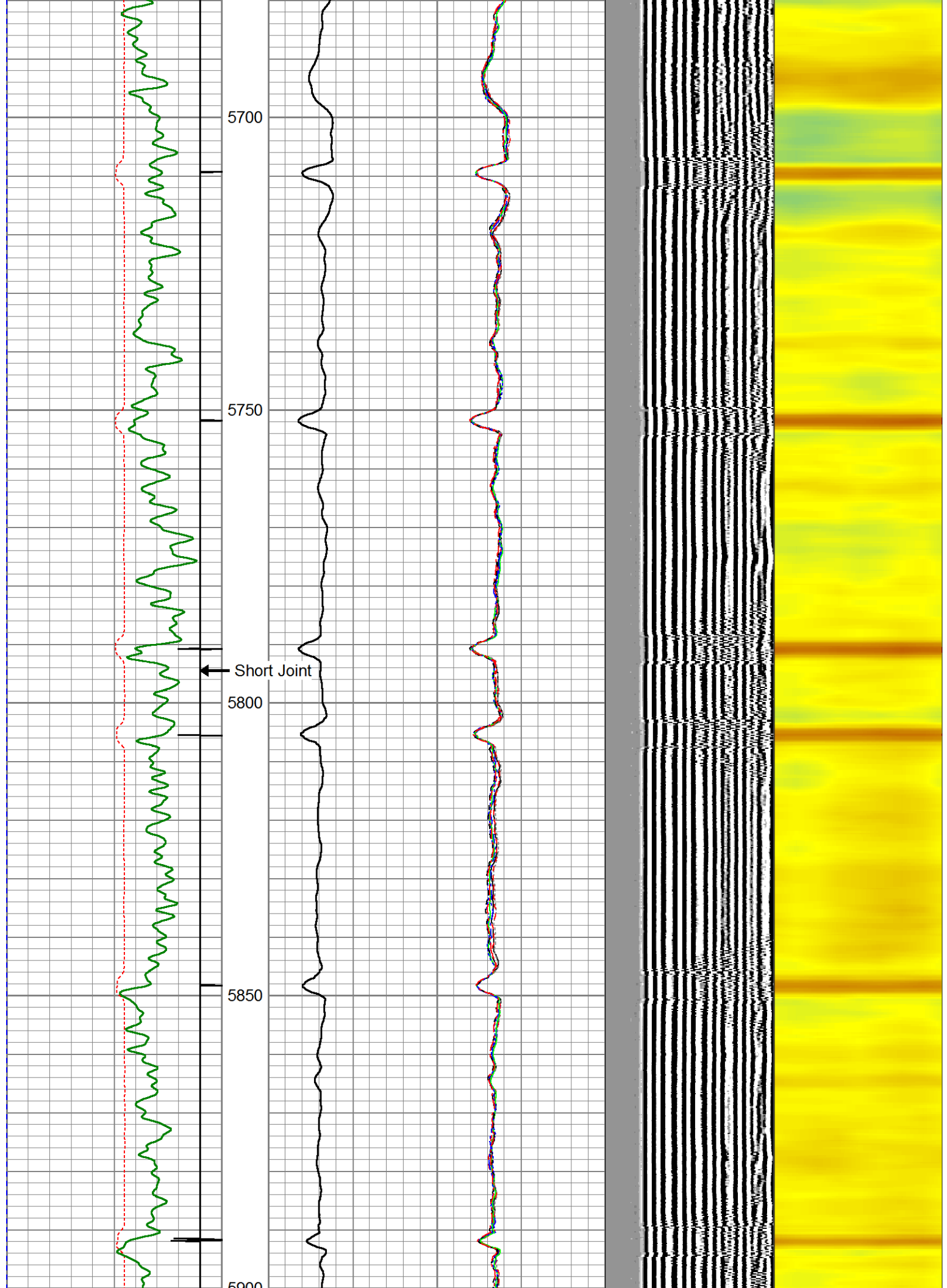


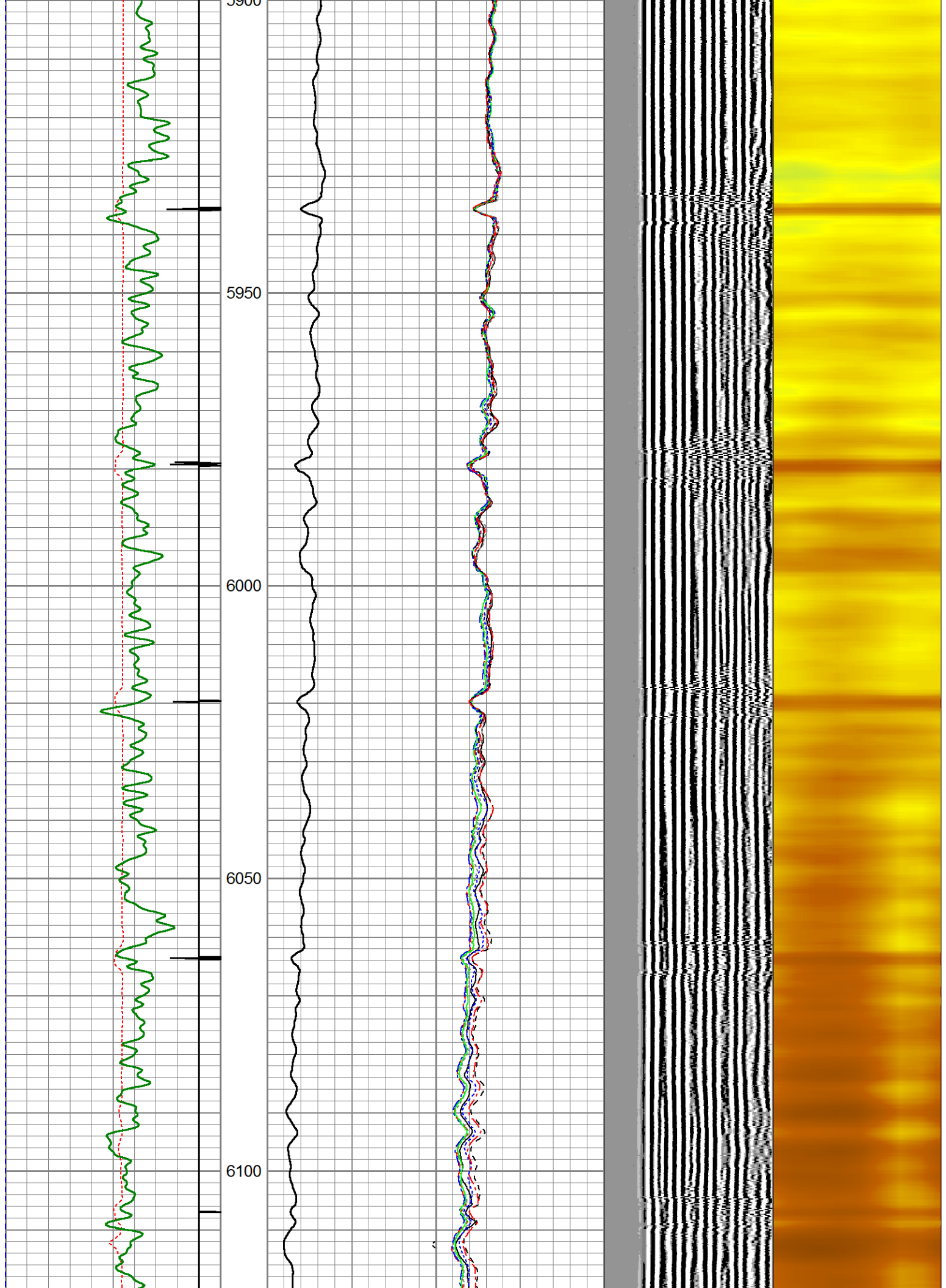


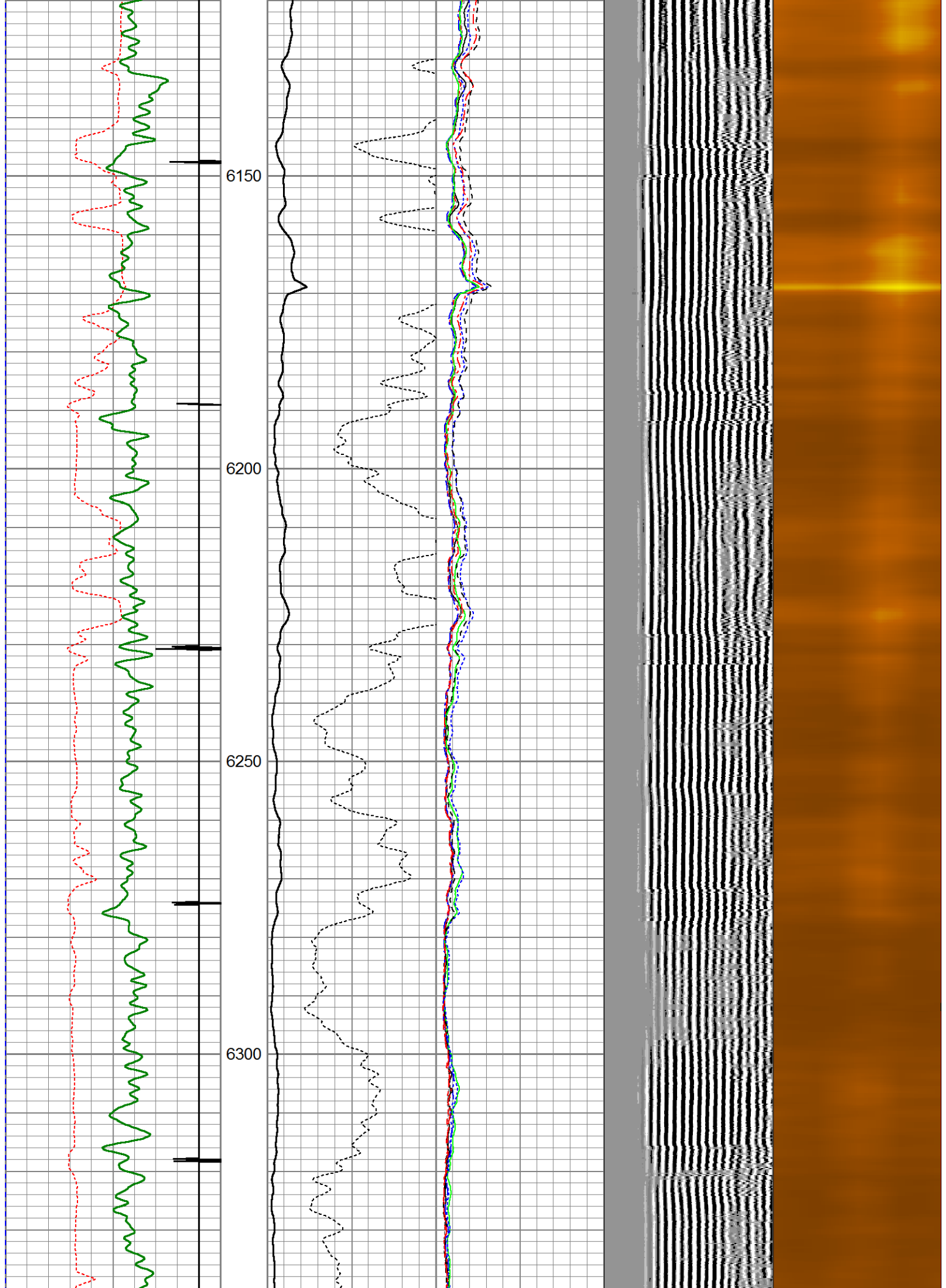


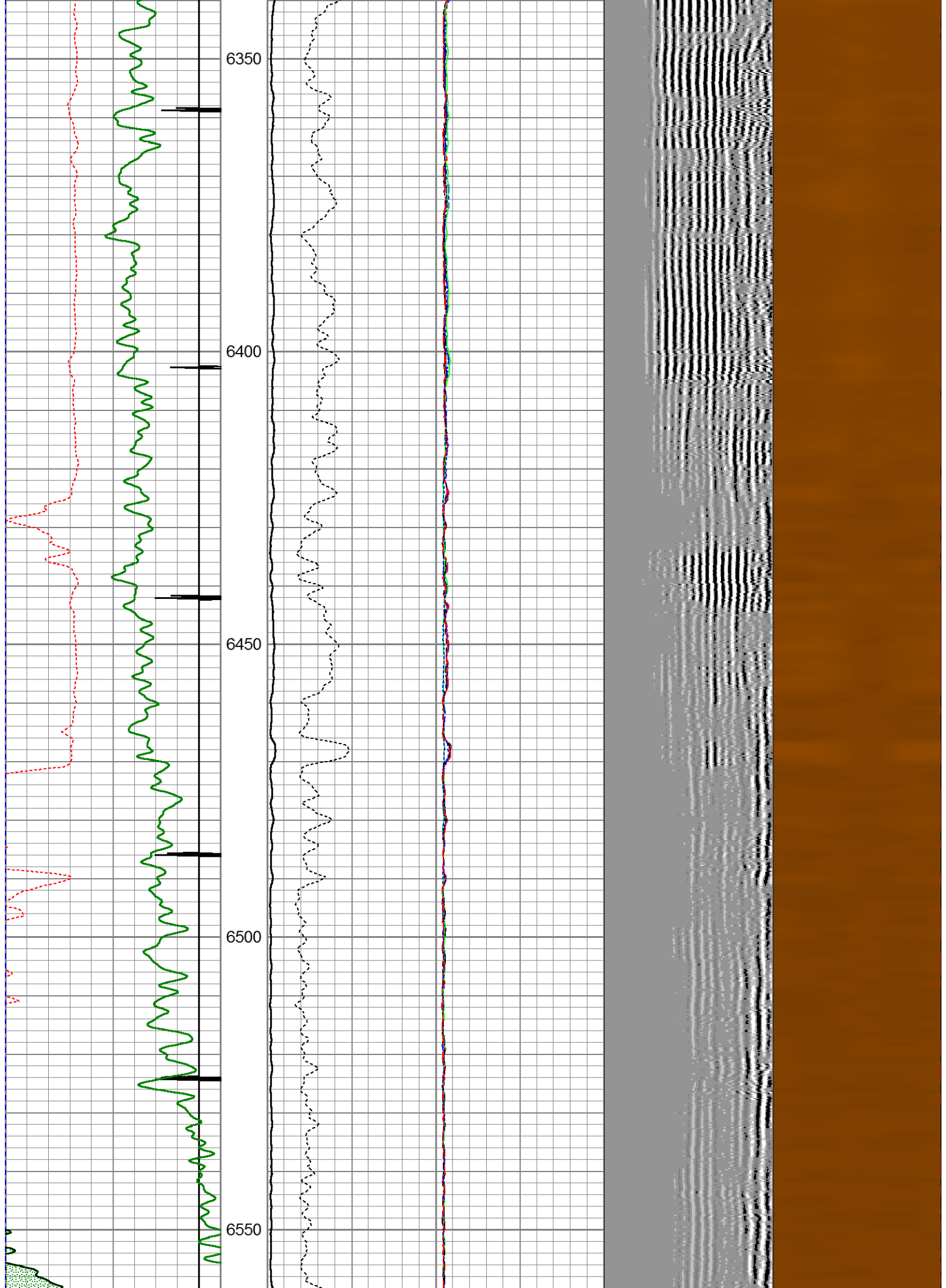


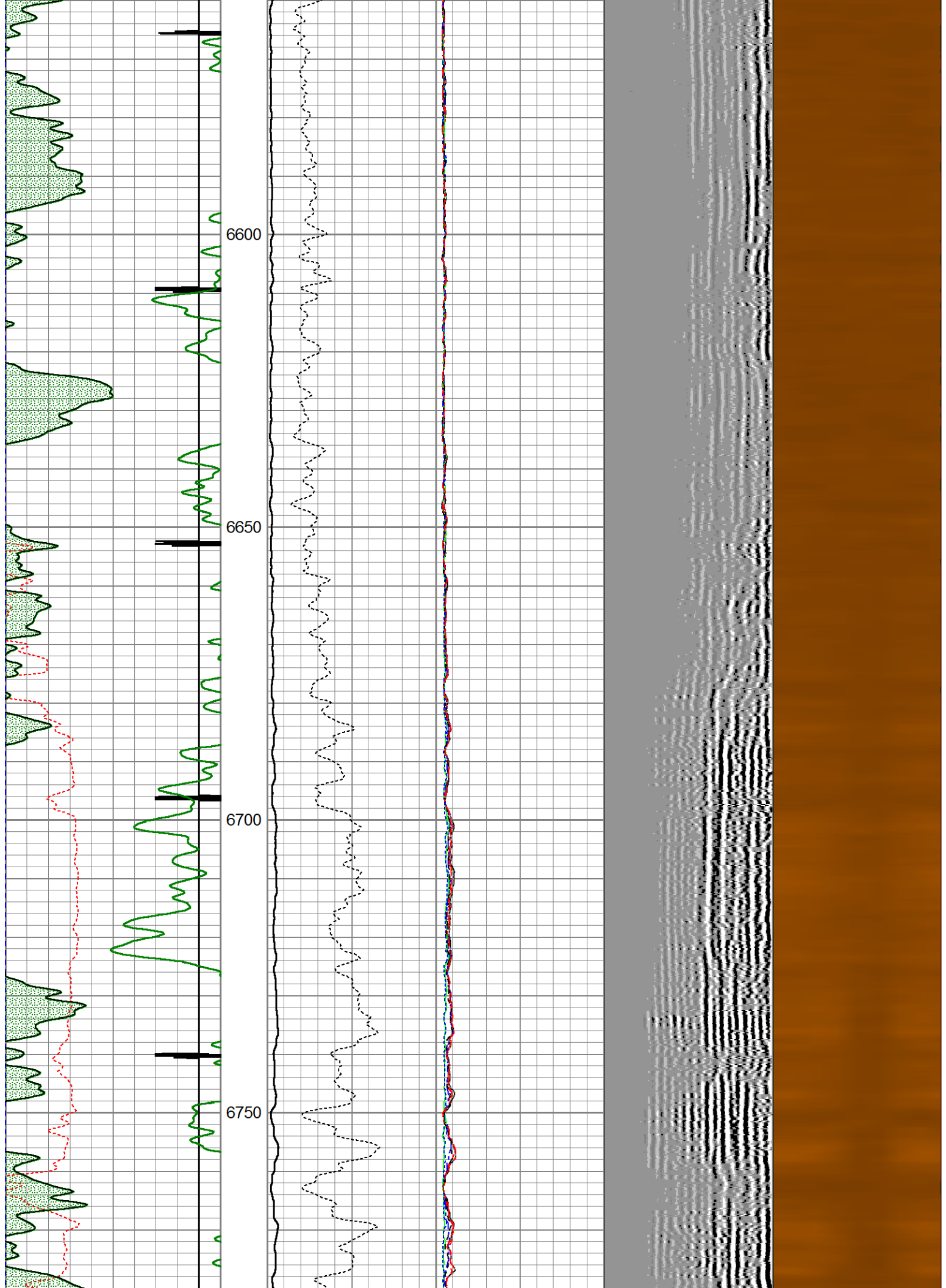


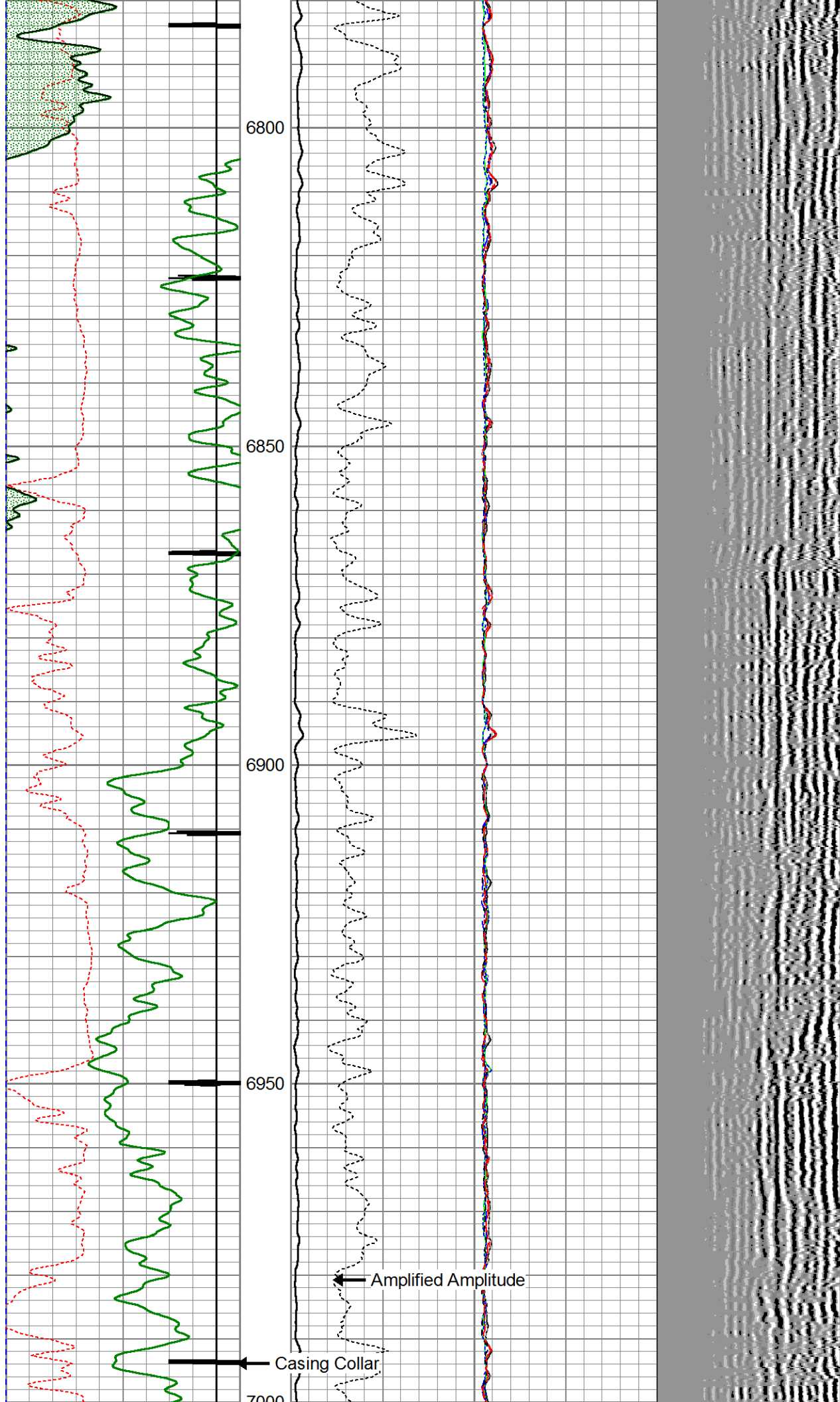


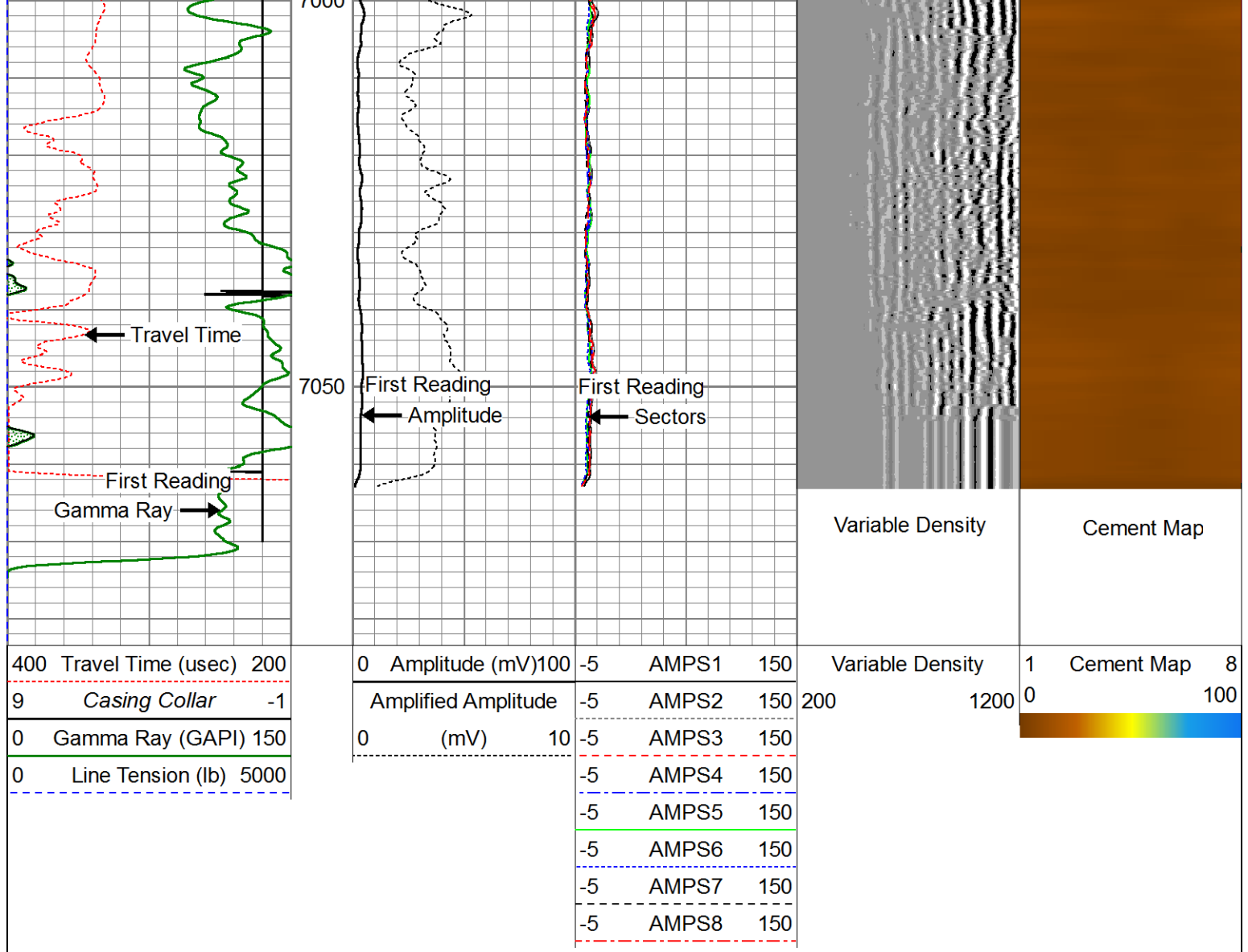





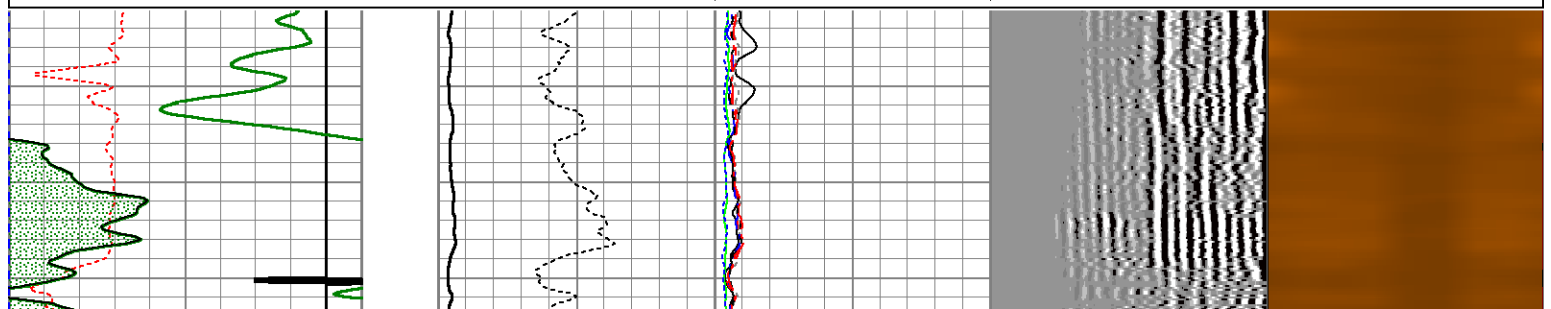


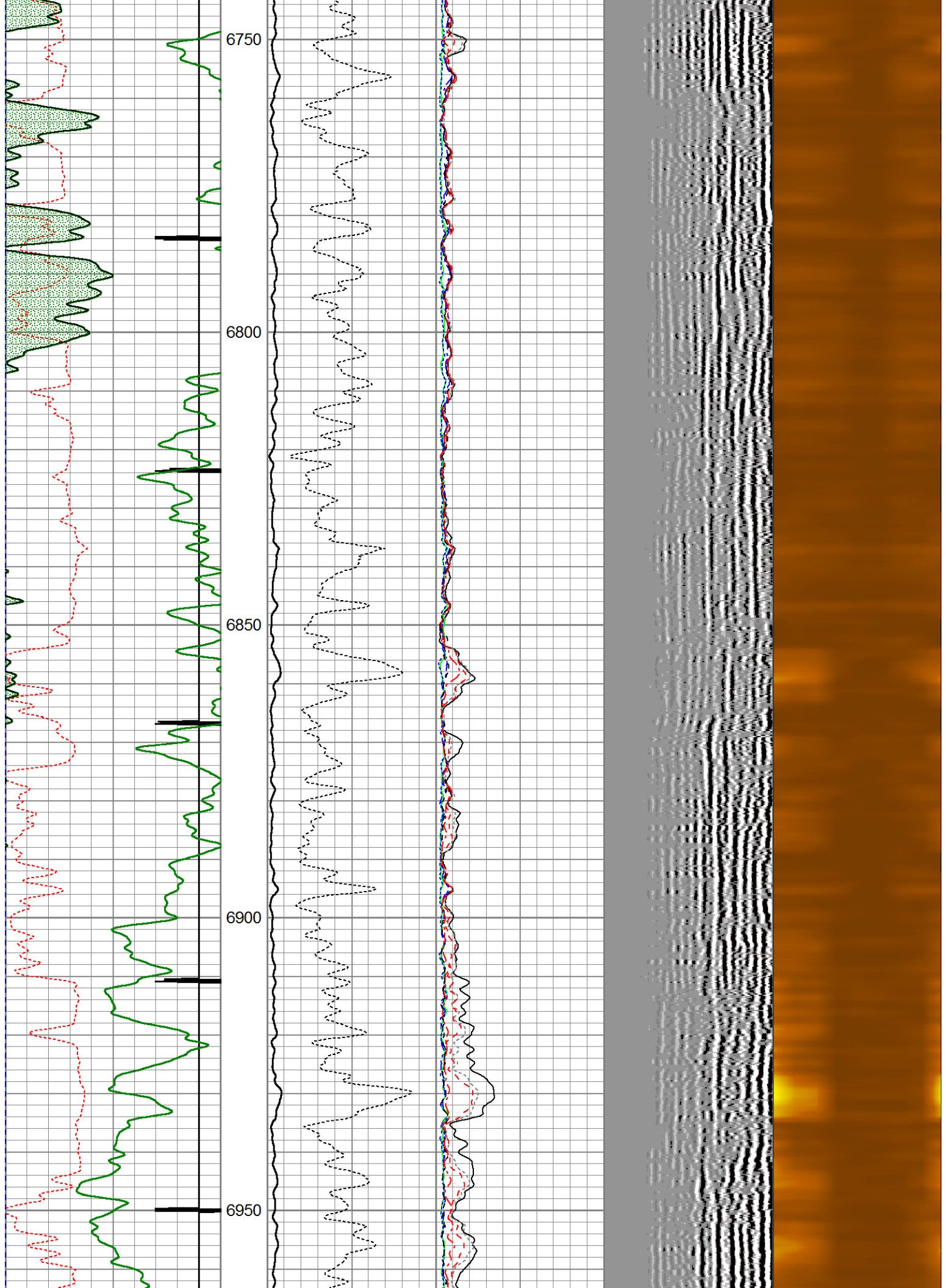


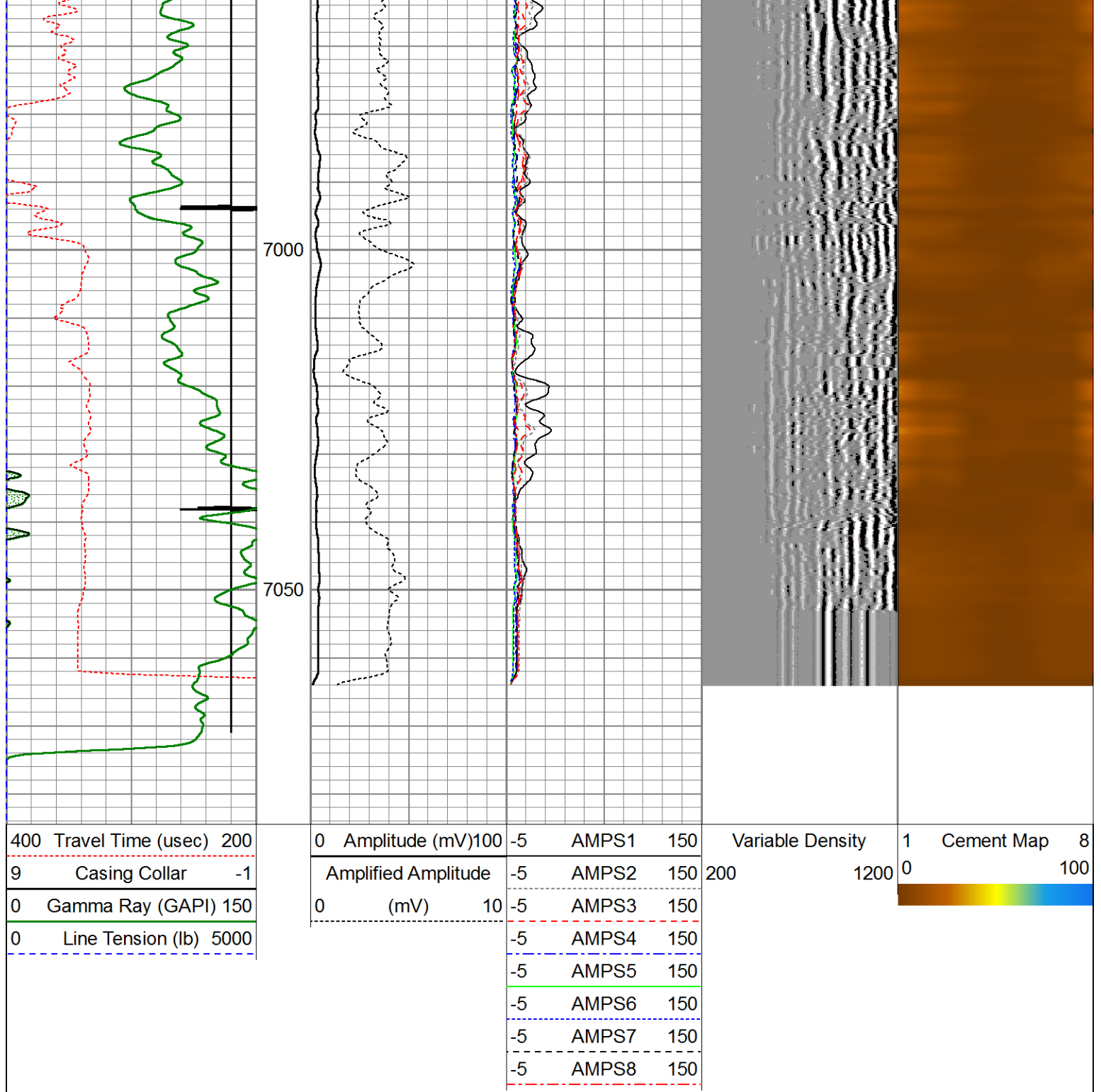




Database File: k:\noble\nc\p pc aa04-65hn_rcb\noble nc\p aa04-65hn.db														
Dataset Pathname: pass6														
Presentation Format: scbl03														
Dataset Creation: Thu Jan 09 20:06:44 2014 by Log 7.0 B1														
Charted by: Depth in Feet scaled 1:240														
400	Travel Time (usec)	200		0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density		1	Cement Map	8
9	Casing Collar	-1		Amplified Amplitude			-5	AMPS2	150	200		1200	0	100
0	Gamma Ray (GAPI)	150		0	(mV)	10	-5	AMPS3	150					
0	Line Tension (lb)	5000					-5	AMPS4	150					
							-5	AMPS5	150					
							-5	AMPS6	150					
							-5	AMPS7	150					
							-5	AMPS8	150					







Calibration Report						
Database File:	K:\Noble\NCLP PC AA04-65HN_RCBL\noble nclp aa04-65hn.db					
Dataset Pathname:	pass8					
Dataset Creation:	Thu Jan 09 20:30:05 2014 by Log 7.0 B1					
40 Arm Multi Sensor Caliper Calibration Report						
Serial Number:	110849					
Tool Model:	40incl					
Performed:	Thu Jan 09 18:21:29 2014					
Ref ID: (inches)	3.00	4.00	5.00	6.00	7.00	
Arm1	1.42	1.90	2.46	3.02	3.58	
Arm2	1.36	1.83	2.38	2.95	3.58	
Arm3	1.46	1.88	2.43	3.00	3.60	

Arm4	1.44	1.87	2.41	2.99	3.60
Arm5	1.48	1.87	2.41	2.99	3.60
Arm6	1.46	1.88	2.41	2.98	3.63
Arm7	1.47	1.87	2.41	2.98	3.59
Arm8	1.48	1.90	2.43	2.98	3.61
Arm9	1.42	1.81	2.34	2.90	3.53
Arm10	1.45	1.85	2.37	2.93	3.55
Arm11	1.48	1.87	2.40	2.97	3.58
Arm12	1.46	1.90	2.42	2.95	3.57
Arm13	1.47	1.88	2.40	2.95	3.54
Arm14	1.47	1.92	2.43	2.96	3.57
Arm15	1.45	1.91	2.42	2.95	3.54
Arm16	1.39	1.85	2.35	2.88	3.47
Arm17	1.33	1.81	2.32	2.85	3.42
* Arm18	1.44	0.90	0.40	-0.09	-0.55
Arm19	1.50	2.04	2.56	3.08	3.58
Arm20	1.40	1.95	2.47	3.00	3.52
Arm21	1.47	2.03	2.54	3.07	3.54
Arm22	1.43	2.01	2.54	3.05	3.53
Arm23	1.32	1.92	2.45	2.99	3.46
Arm24	1.32	1.92	2.46	2.98	3.47
Arm25	1.41	2.01	2.54	3.08	3.52
Arm26	1.49	2.09	2.61	3.14	3.55
Arm27	1.45	2.08	2.61	3.14	3.56
Arm28	1.53	2.16	2.68	3.19	3.61
Arm29	1.40	2.05	2.60	3.14	3.57
Arm30	1.46	2.11	2.63	3.16	3.60
Arm31	1.48	2.11	2.63	3.16	3.57
Arm32	1.46	2.10	2.62	3.15	3.61
Arm33	1.36	1.96	2.51	3.05	3.49
Arm34	1.35	1.95	2.51	3.06	3.52
Arm35	1.33	1.89	2.49	3.06	3.50
Arm36	1.33	1.91	2.46	3.02	3.51
Arm37	1.35	1.93	2.50	3.05	3.52
Arm38	1.27	1.81	2.37	2.93	3.46
Arm39	1.31	1.82	2.36	2.93	3.45
Arm40	1.36	1.86	2.39	2.94	3.51

* = Bad Arm Flag

PROBE verifications Calibration Report

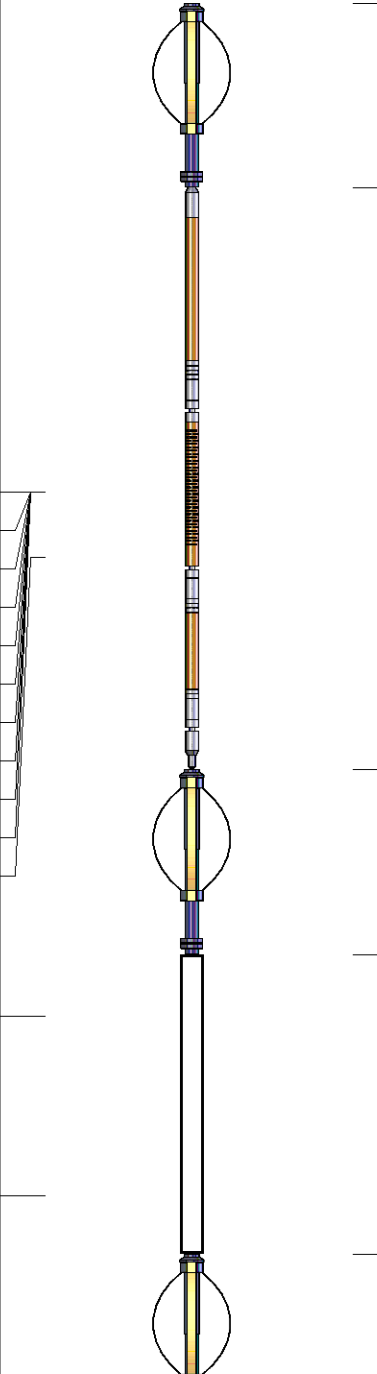
Performed:	Pre Verification	Post Verification	Casing Check	
Ref ID:	0.00	0.00	0.00	in
Min.	0.00	0.00	0.00	in
Max.	0.00	0.00	0.00	in
Avg.	0.00	0.00	0.00	in
Dia1	0.00	0.00	0.00	in
Dia2	0.00	0.00	0.00	in
Dia3	0.00	0.00	0.00	in
Dia4	0.00	0.00	0.00	in
Dia5	0.00	0.00	0.00	in
Dia6	0.00	0.00	0.00	in
Dia7	0.00	0.00	0.00	in
Dia8	0.00	0.00	0.00	in
Dia9	0.00	0.00	0.00	in
Dia10	0.00	0.00	0.00	in
Dia11	0.00	0.00	0.00	in
Dia12	0.00	0.00	0.00	in
Dia13	0.00	0.00	0.00	in
Dia14	0.00	0.00	0.00	in
Dia15	0.00	0.00	0.00	in
Dia16	0.00	0.00	0.00	in
Dia17	0.00	0.00	0.00	in
Dia18	0.00	0.00	0.00	in

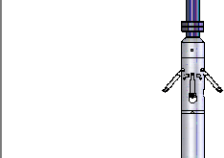
Dia19	0.00	0.00	0.00	in		
Dia20	0.00	0.00	0.00			
Inclinometer Calibration Report						
Performed:	Sun Sep 18 20:54:50 2011					
	Low Read.	High Read.	Low Ref.	High Ref.		
X Accelerometer	-3712.00	3546.00	-1.00	1.00 gee		
Y Accelerometer	-3702.00	3754.00	-1.00	1.00 gee		
Z Accelerometer	60.93	3652.62	0.00	1.00 gee		
Gamma Ray Calibration Report						
Serial Number:	275					
Tool Model:	Probe					
Performed:	Thu Jan 09 18:52:57 2014					
Calibrator Value:	1.0	GAPI				
Background Reading:	0.0	cps				
Calibrator Reading:	1.0	cps				
Sensitivity:	0.8500	GAPI/cps				
Segmented Cement Bond Log Calibration Report						
Serial Number:	CORROSION					
Tool Model:	RBTC3					
Calibration Casing Diameter:	7.000	in				
Calibration Depth:	501.058	ft				
Master Calibration, performed Thu Jan 09 19:54:07 2014:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	0.614	1.000	62.165	100.800	1.233
CAL	0.007	1.089				
5'	0.007	0.715	1.000	62.165	86.404	0.358
SUM						
S1	0.007	0.593	0.000	100.000	170.684	-1.277
S2	0.008	0.599	0.000	100.000	178.057	-1.269
S3	0.008	0.595	0.000	100.000	155.156	-1.290
S4	0.008	0.610	0.000	100.000	166.112	-1.263
S5	0.007	0.627	0.000	100.000	161.346	-1.207
S6	0.007	0.646	0.000	100.000	156.530	-1.162
S7	0.007	0.645	0.000	100.000	156.965	-1.171
S8	0.008	0.635	0.000	100.000	159.452	-1.209
Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:						
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
24'	0.000	0.000	0.000	0.000	0.000	0.000

CAL 0.000 0.000 0.007 1.089 1.000 0.000

Air Zero Calibration, performed Thu Sep 06 14:49:25 2012:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			PTS275	2.83	2.75	
WV3FT	21.39		RBT-RBTC3 (CORROSION)	8.92	2.75	90.00
WVFCAL	21.39					
WVFS1	21.39					
WVFS2	21.39					
WVFS3	21.39					
WVFS4	21.39					
WVFS5	21.39					
WVFS6	21.39					
WVFS7	21.39					
WVFS8	21.39					
WVF5FT	20.39		PTS275	2.83	2.75	
CCL	13.36					
			GR-Probe (275) Probe 2.75" 4 Channel Pulse	4.58	2.75	30.00
GR	10.62					
			PTS275	2.83	2.75	

ACCX	5.00		6.89	2.75	50.00
ACCY	5.00				
ACCZ	5.00				
ETEMP	2.00				
Meas	1.25				
Dataset: noble nclp aa04-65hn.db: field/well/run1/pass8 Total Length: 28.89 ft Total Weight: 170.00 lb O.D. 2.75 in					