

HALLIBURTON

RADIAL CEMENT
BOND LOG

Company EXTRACTION OIL & GAS INC				Company EXTRACTION OIL & GAS INC				
Well LIVINGSTON S19-25-8C				Well LIVINGSTON S19-25-8C				
Field WATTENBERG				Field WATTENBERG				
County BROOMFIELD CO				County BROOMFIELD State CO				
AP# No.: 050142075400				Serv #: 906093555				
Location: SURFACE HOLE LOCATION: 2331' FSL & 1402' FEL NWSE				Other Services				
LATITUDE: 39.978562				NONE				
LONGITUDE: -105.039672								
Sec: 7 Twp: 1S Rge: 68W								
Permanent Datum GROUND LEVEL Elevation 5320				Elevation				
Log Measured From KB , 29 Ft. above perm. datum				K.B. 5349				
Drilling Measured From KB				D.F. 5349				
				G.L. 5320				
Date @ Time Logged 11/5/19 @ 19:30				Type Fluid in Hole FRESH WATER				
Run No. ONE				Density of Fluid 8.4#				
Depth - Driller 21271				Fluid Level SURFACE				
Depth - Logger 7759				Cement Top Est. Logged 1240				
Bottom - Logged Interval 7749				Equipment / Location 11014931 / BRIGHTON				
Top - Log Interval SURFACE				Recorded by J. SCHMIDT				
Max. Recorded Temp. 227 F				Witnessed by M. PARRAS				
CEMENTING DATA				Protection String				
Date / Time Cemented				Production String				
Primary / Squeeze								
Expected Compressive Strength psi@ hrs				psi@ hrs				
Cement Volume				psi@ hrs				
Cement Type / Weight				/				
Formulation				/				
Mud Type / Mud Wgt.				/				
Borehole Record				Casing & Tubing Record				
Run Number		Bit	From	To	Size	Weight	From	To
ONE		12.25	0	1500	9.625	36	0	1500
TWO		8.5	1500	21271	5.5	17	0	21271
</								

ONE	KOP	SURFACE	0 PSI	100			
	GAMMA RAY		AMPLITUDE		VDL		RADIAL MAP
Pass	Scale		Scale		Scale		Scale
No.	L	R	L	R	L	R	L
ONE	0	150	0	100	200	1200	1
DIRECTIONAL INFORMATION							
Maximum Deviation	90	deg. @		KOP			

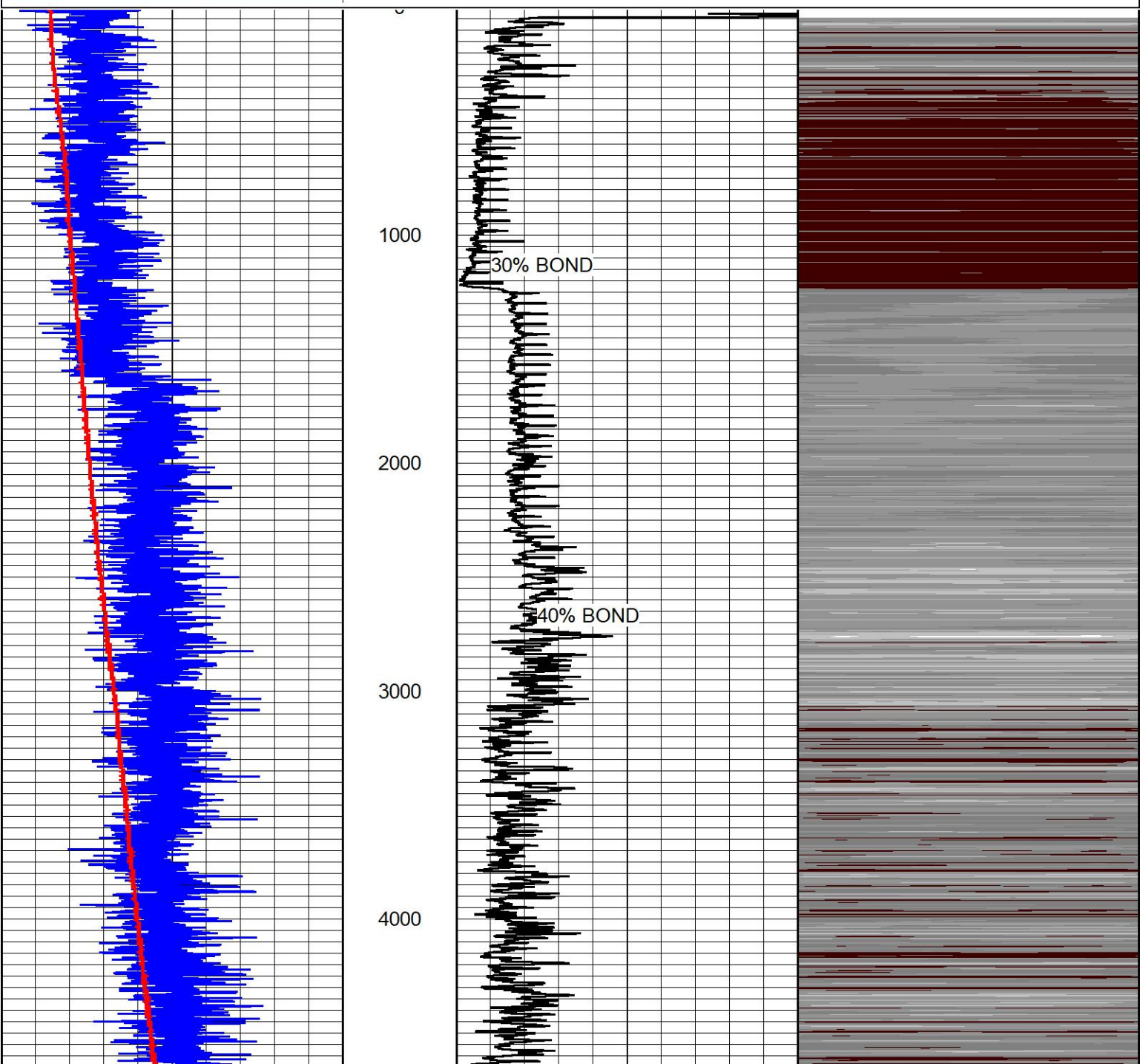
HALLIBURTON

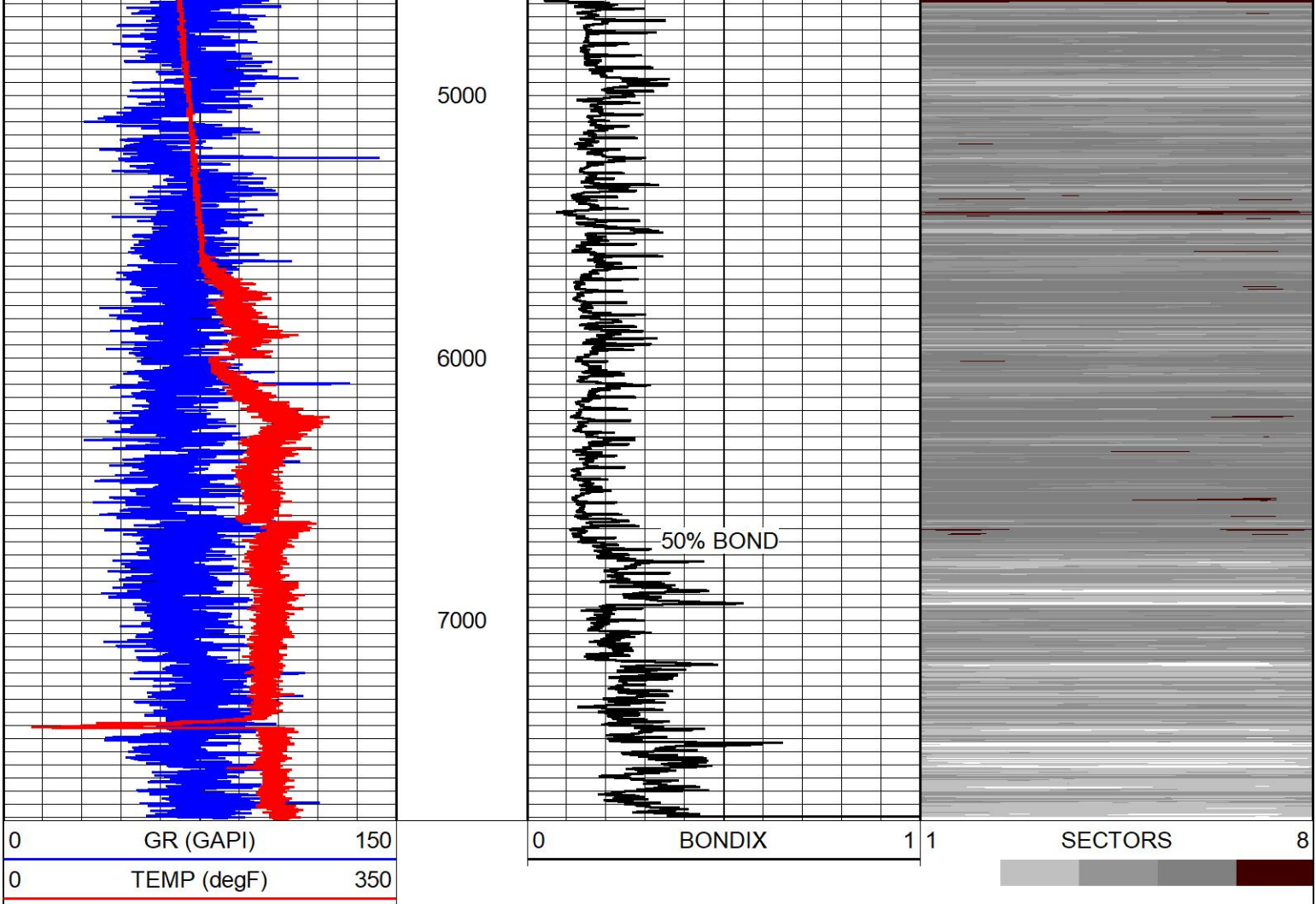
BOND INDEX

1:7500

Database File	livingston s19-25-8c.db
Dataset Pathname	MAIN_PASS.1
Presentation Format	EXTRAC~2
Dataset Creation	Tue Nov 05 20:48:51 2019
Charted by	Depth in Feet scaled 1:7500

0	GR (GAPI)	150	0	BONDIX	1	1	SECTORS	8
0	TEMP (degF)	350						





BOND INDEX

HALLIBURTON


1:7500

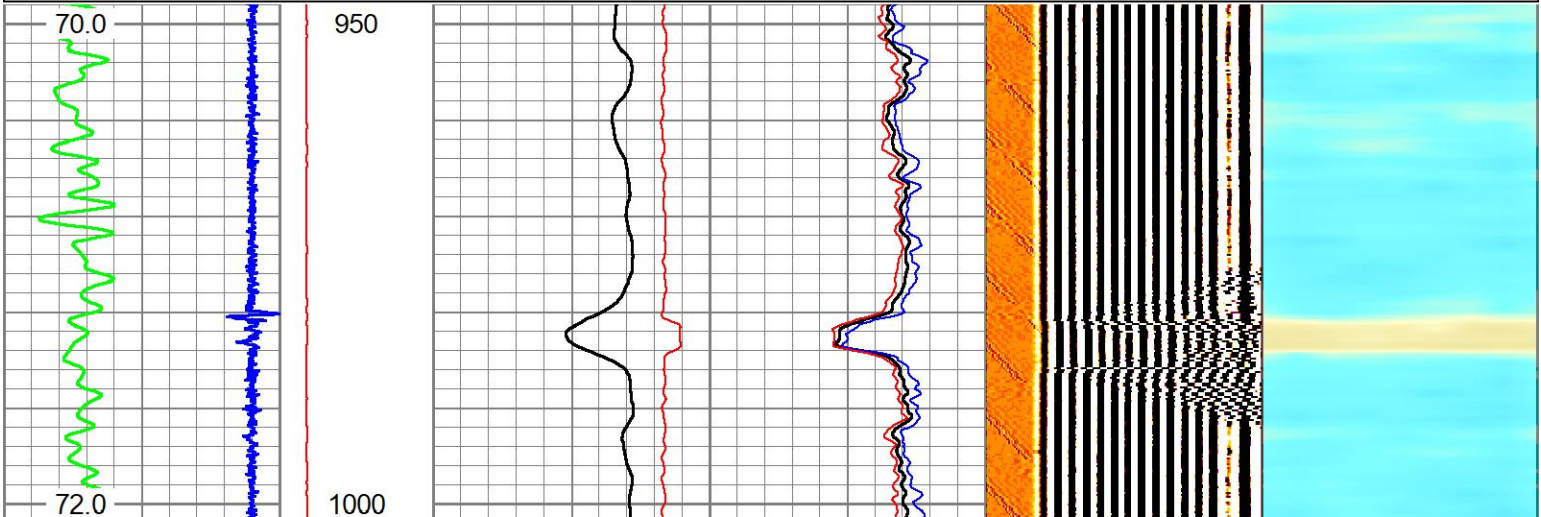
FREE PIPE PASS

HALLIBURTON

5" = 100'

Database File		livingston s19-25-8c.db													
Dataset Pathname		FREE_PIPE_PASS													
Presentation Format		EXTRAC~1													
Dataset Creation		Tue Nov 05 19:09:24 2019													
Charted by		Depth in Feet scaled 1:240													

-18	CCL	2	LTEN	0	AMP3FT (mV)	100	0	AMPAVG	100	200	VDL (usec)	1200	1	RADIAL MAP	8
0	GR (GAPI)	150	0 (lb/2000)	3ft Travel Time			0	AMPMAX	100						
TEMP				200	(usec)	300	0	AMPMIN	100						
(degF)															



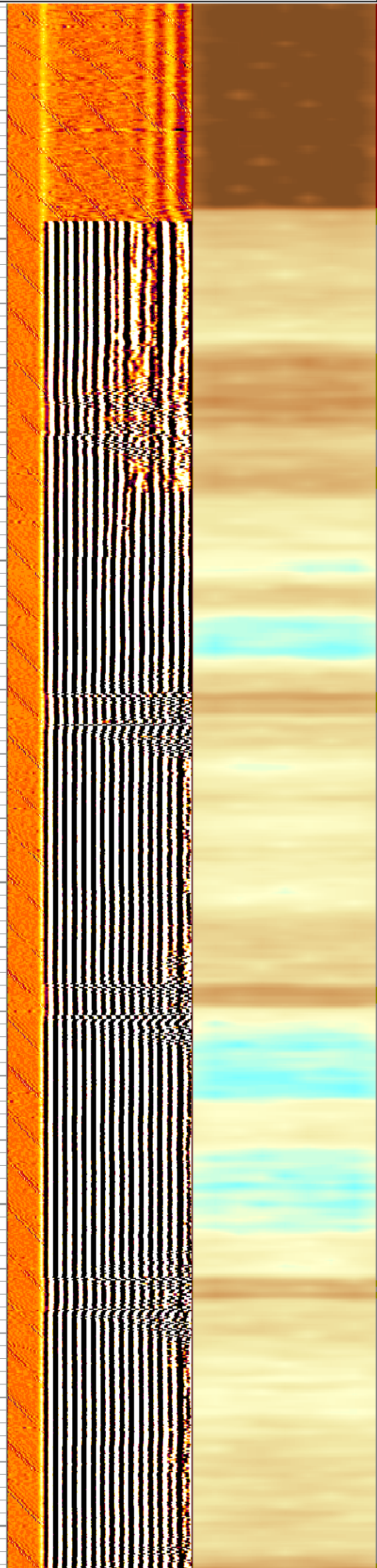
A vertical scale with a red dashed line and a black solid line. The scale is marked with numbers 50, 100, 150, 200, and 250. The red dashed line is positioned to the left of the black solid line.

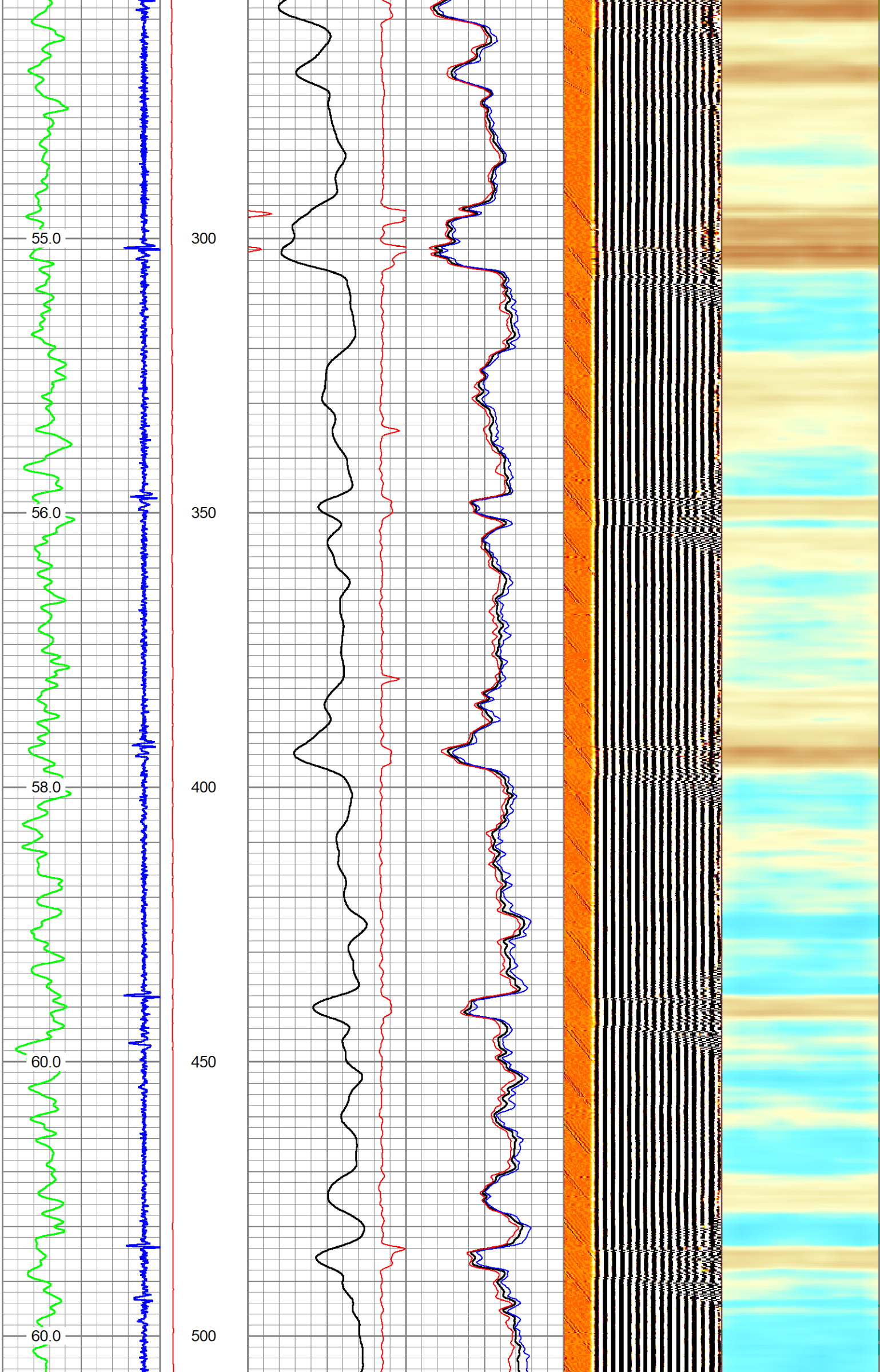
A vertical scale with a red dashed line and a black solid line. The scale is marked with numbers 50, 100, 150, 200, and 250. The red dashed line is positioned to the left of the black solid line.

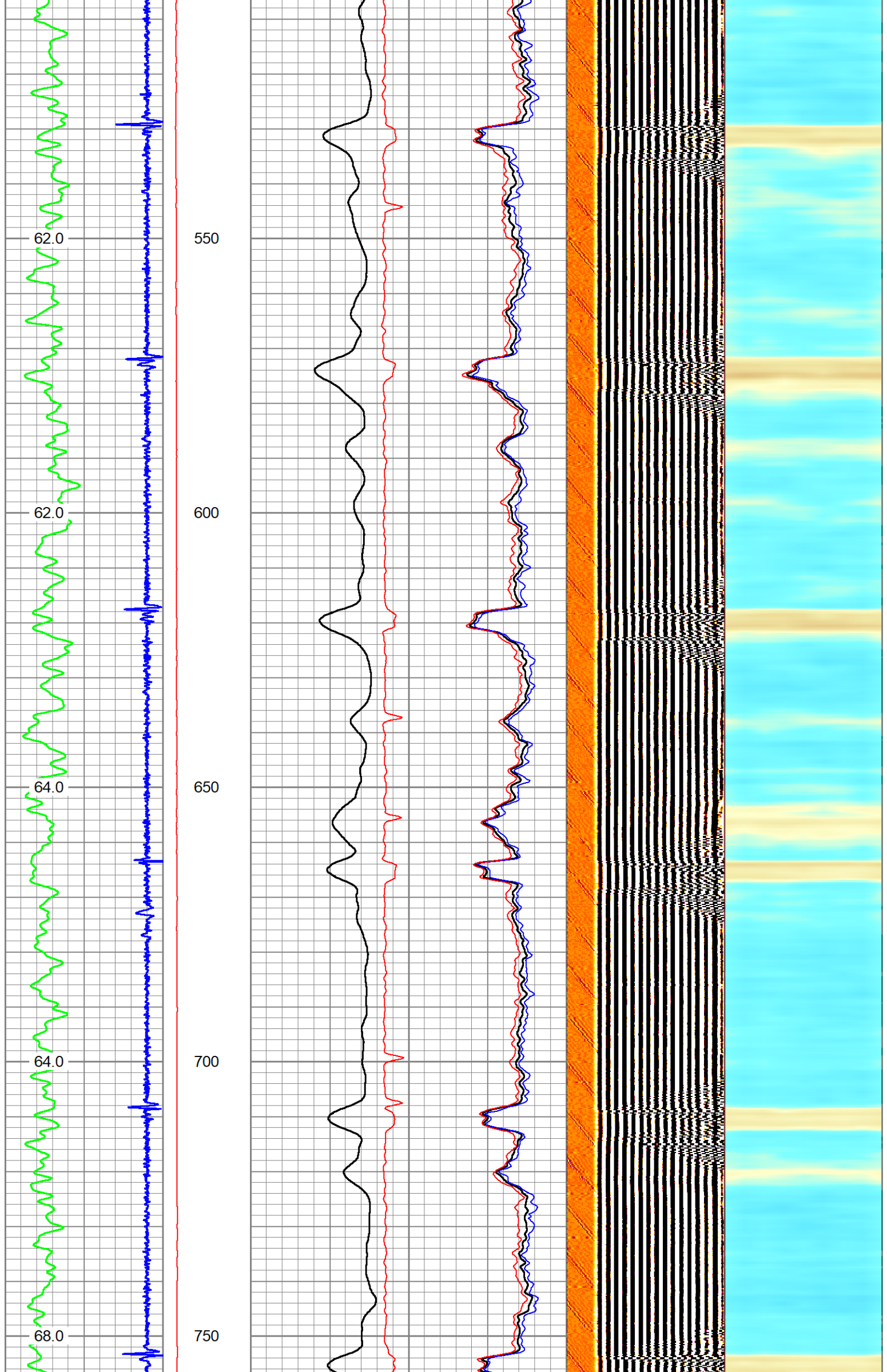
A vertical scale with a red dashed line and a black solid line. The scale is marked with numbers 50, 100, 150, 200, and 250. The red dashed line is positioned to the left of the black solid line.

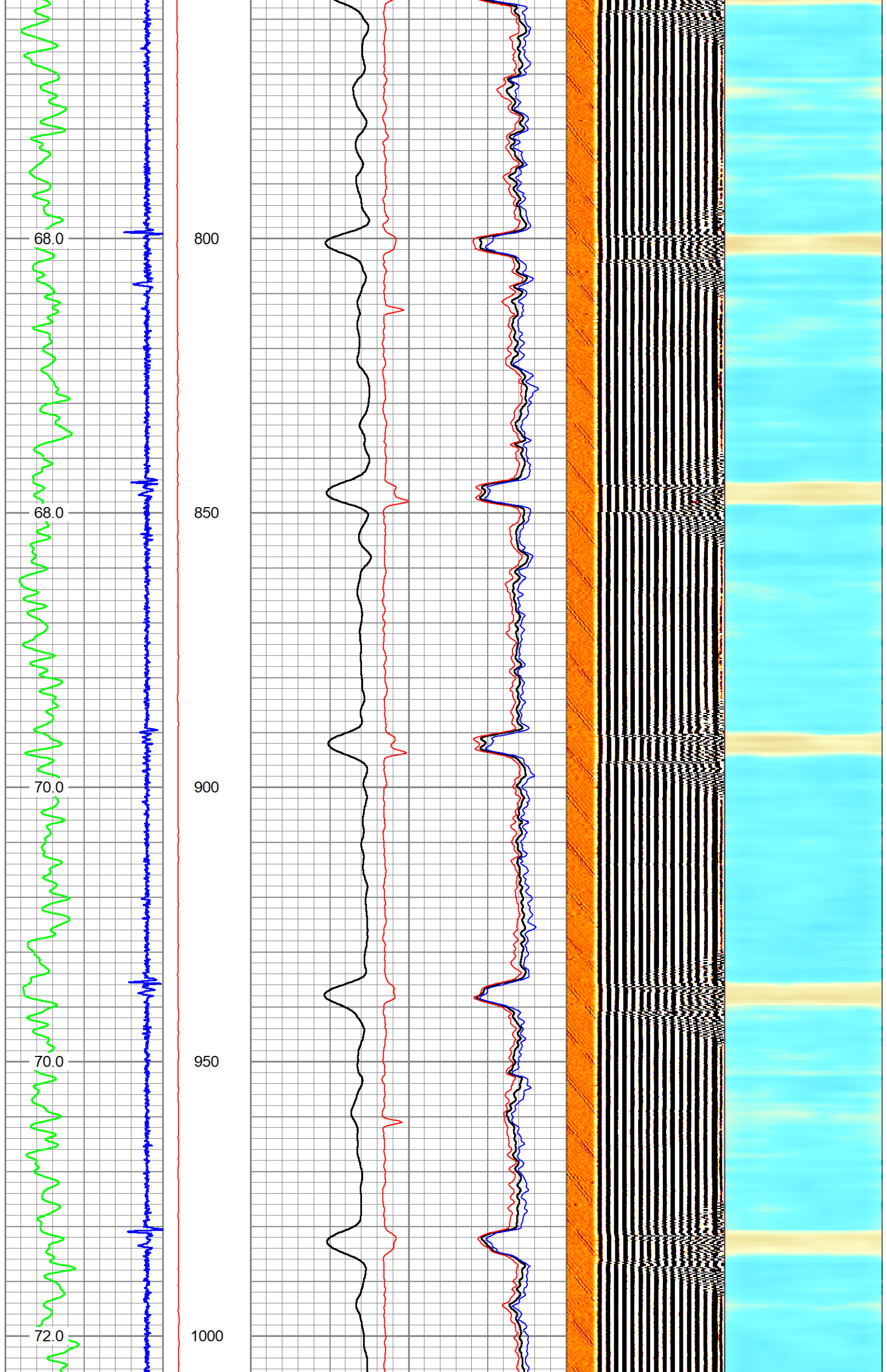
A vertical scale with a red dashed line and a black solid line. The scale is marked with numbers 50, 100, 150, 200, and 250. The red dashed line is positioned to the left of the black solid line.

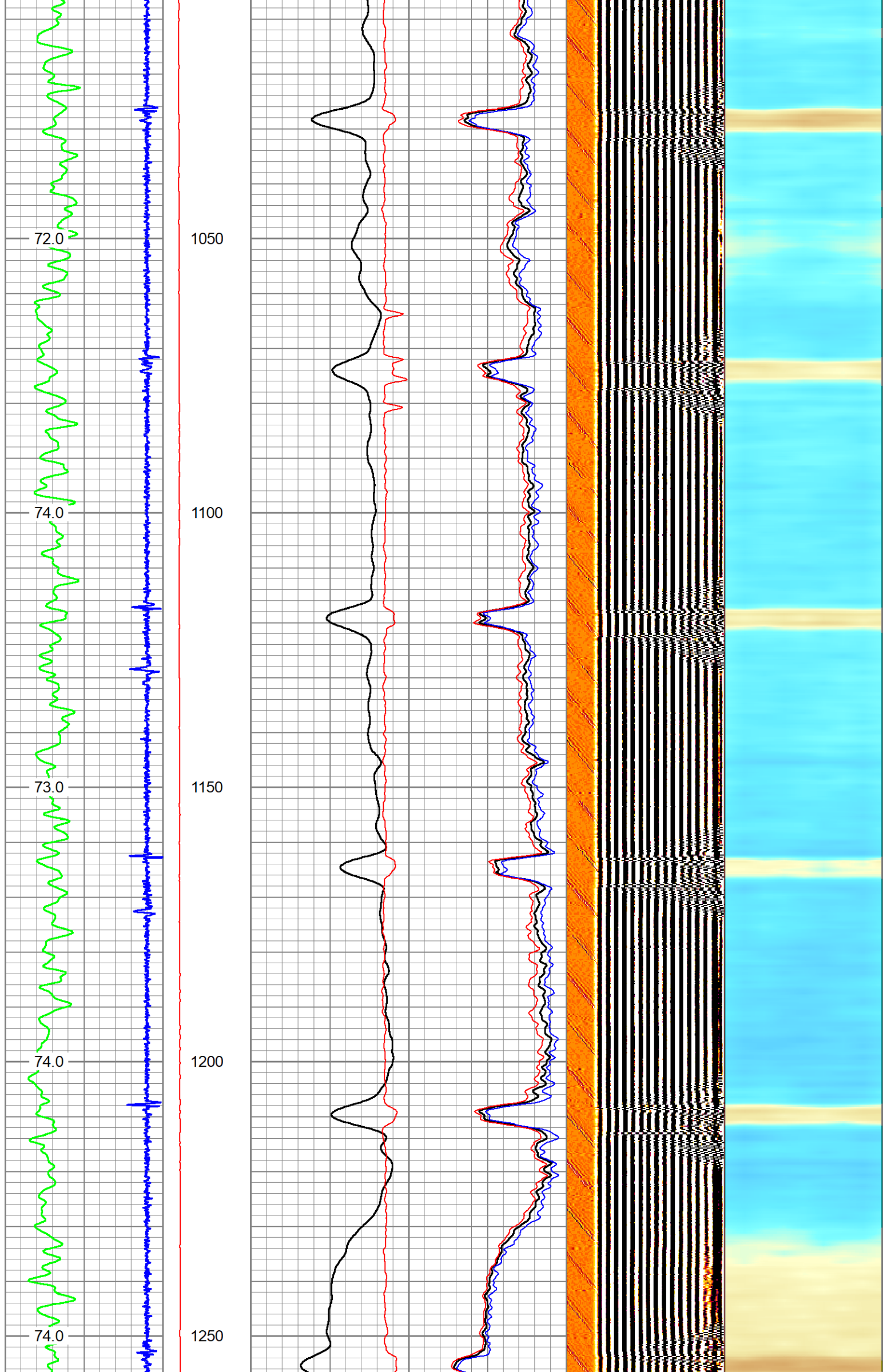
A vertical scale with a red dashed line and a black solid line. The scale is marked with numbers 50, 100, 150, 200, and 250. The red dashed line is positioned to the left of the black solid line.

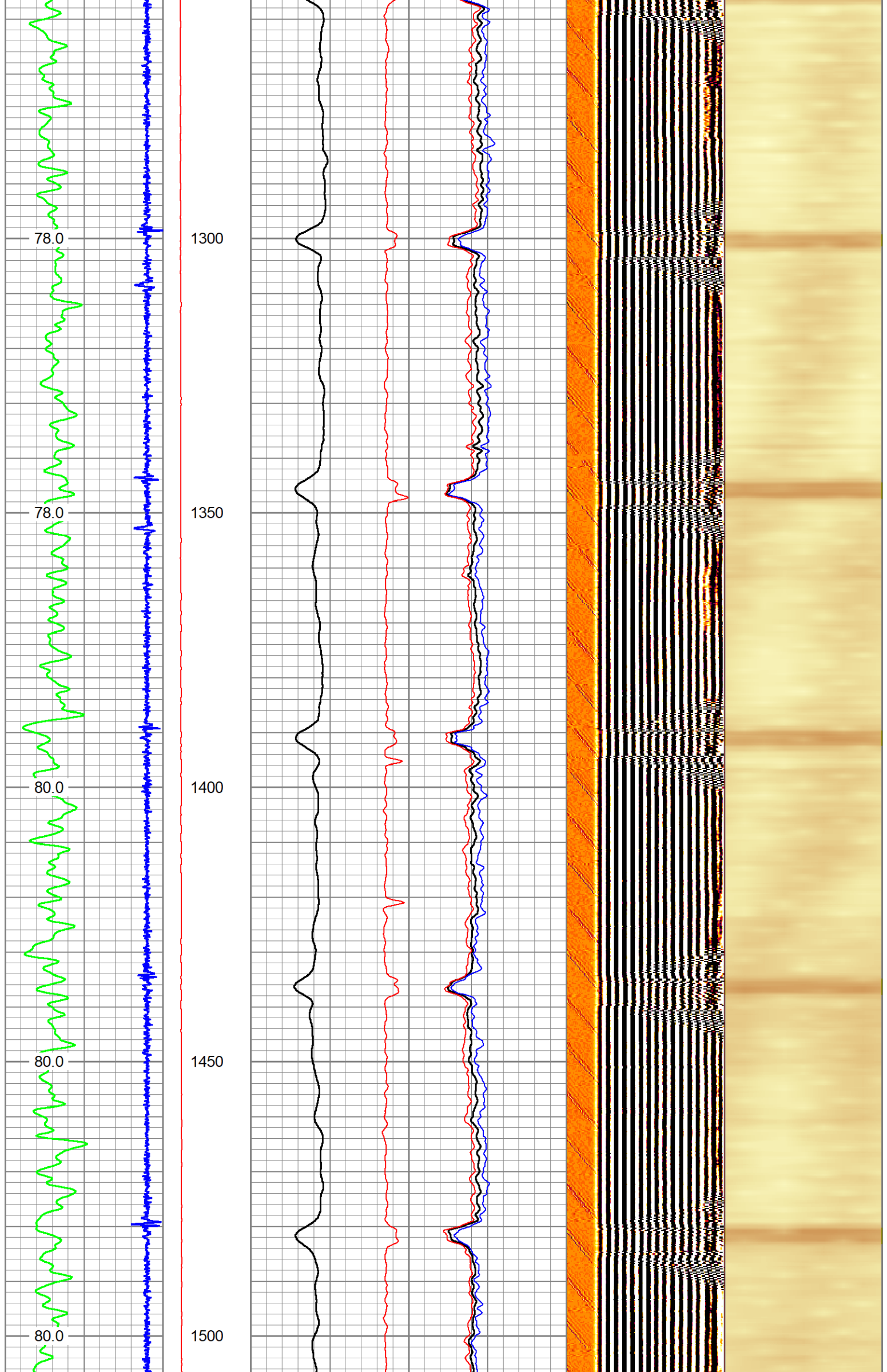


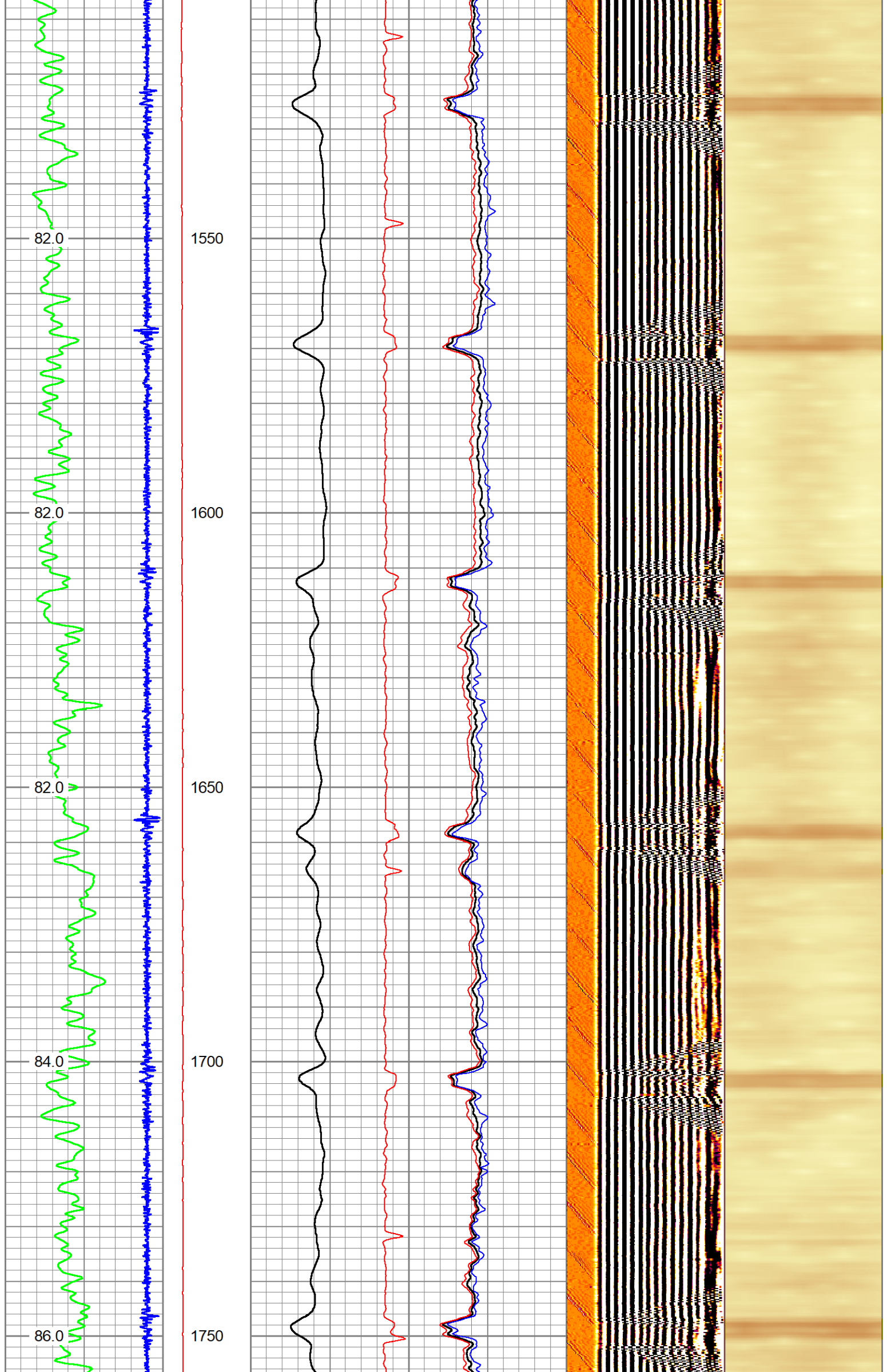


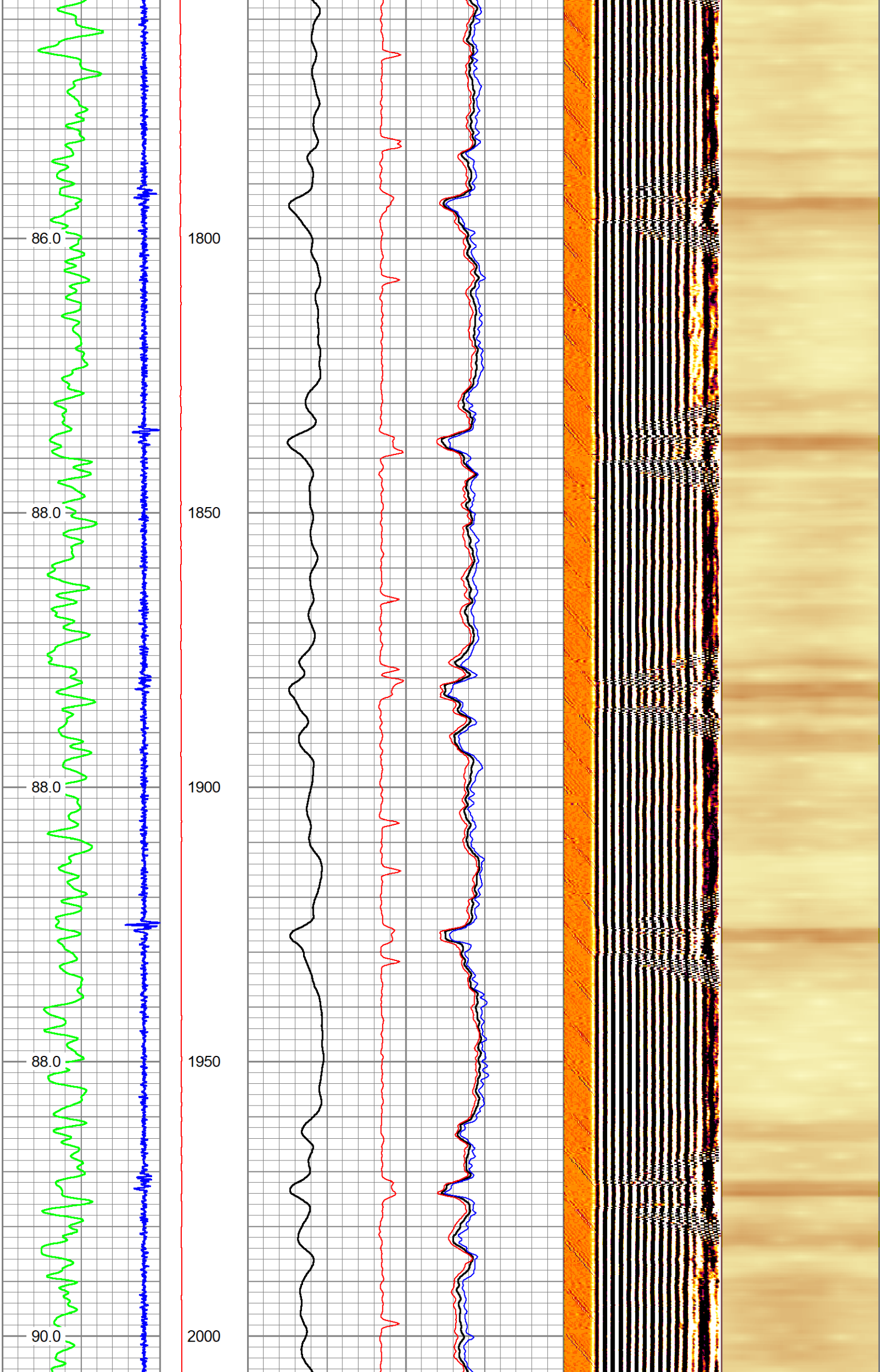


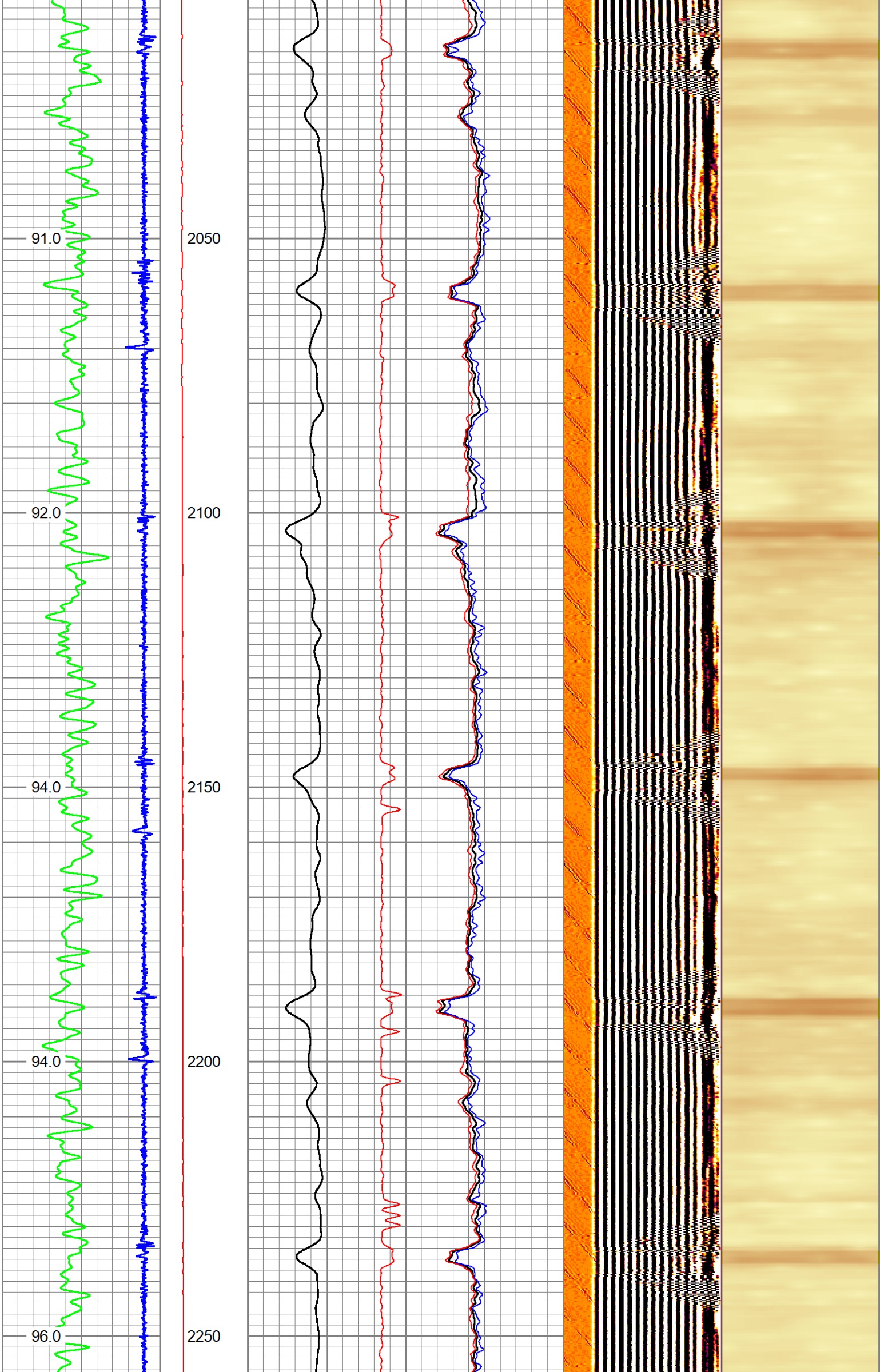


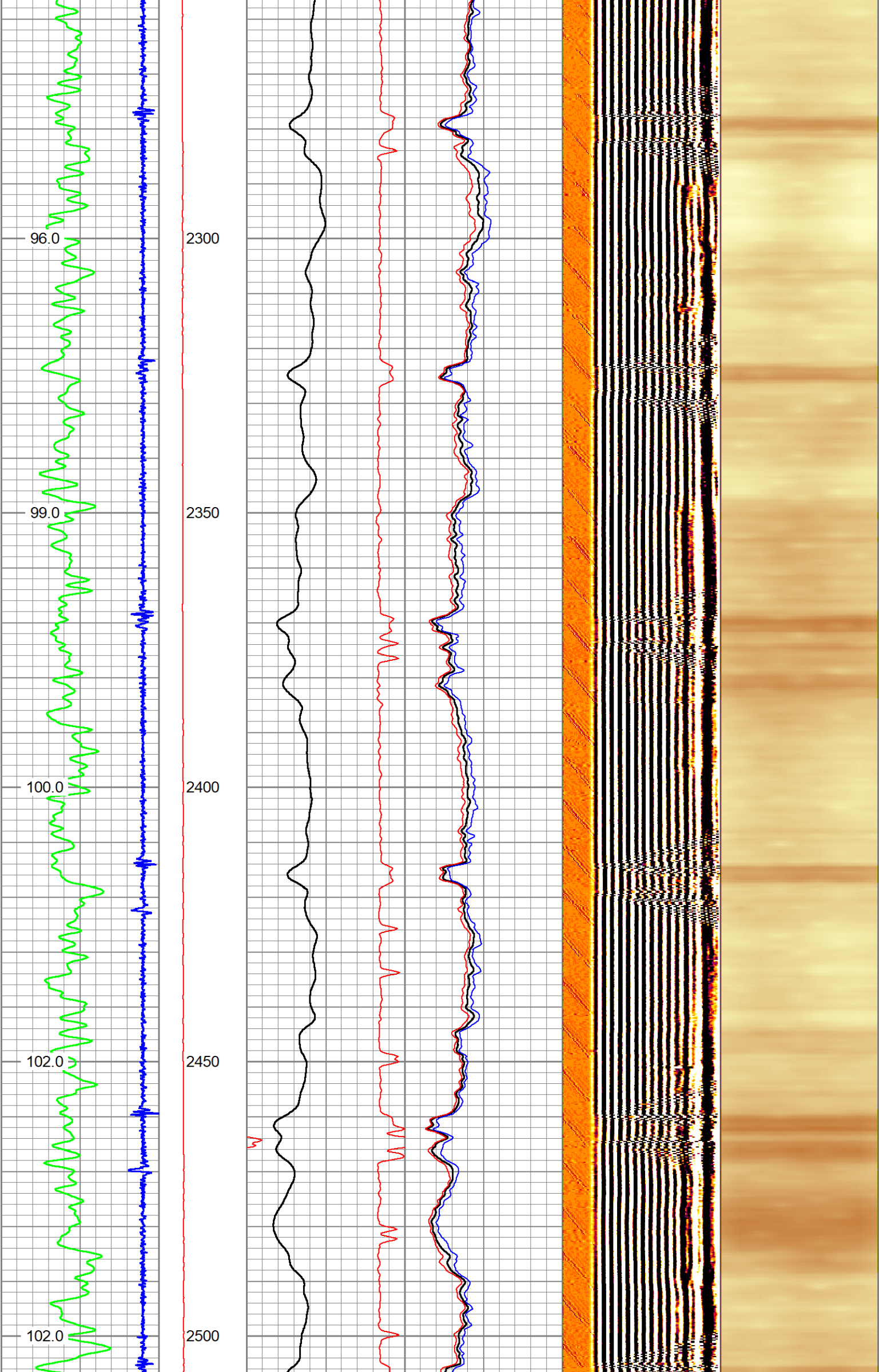


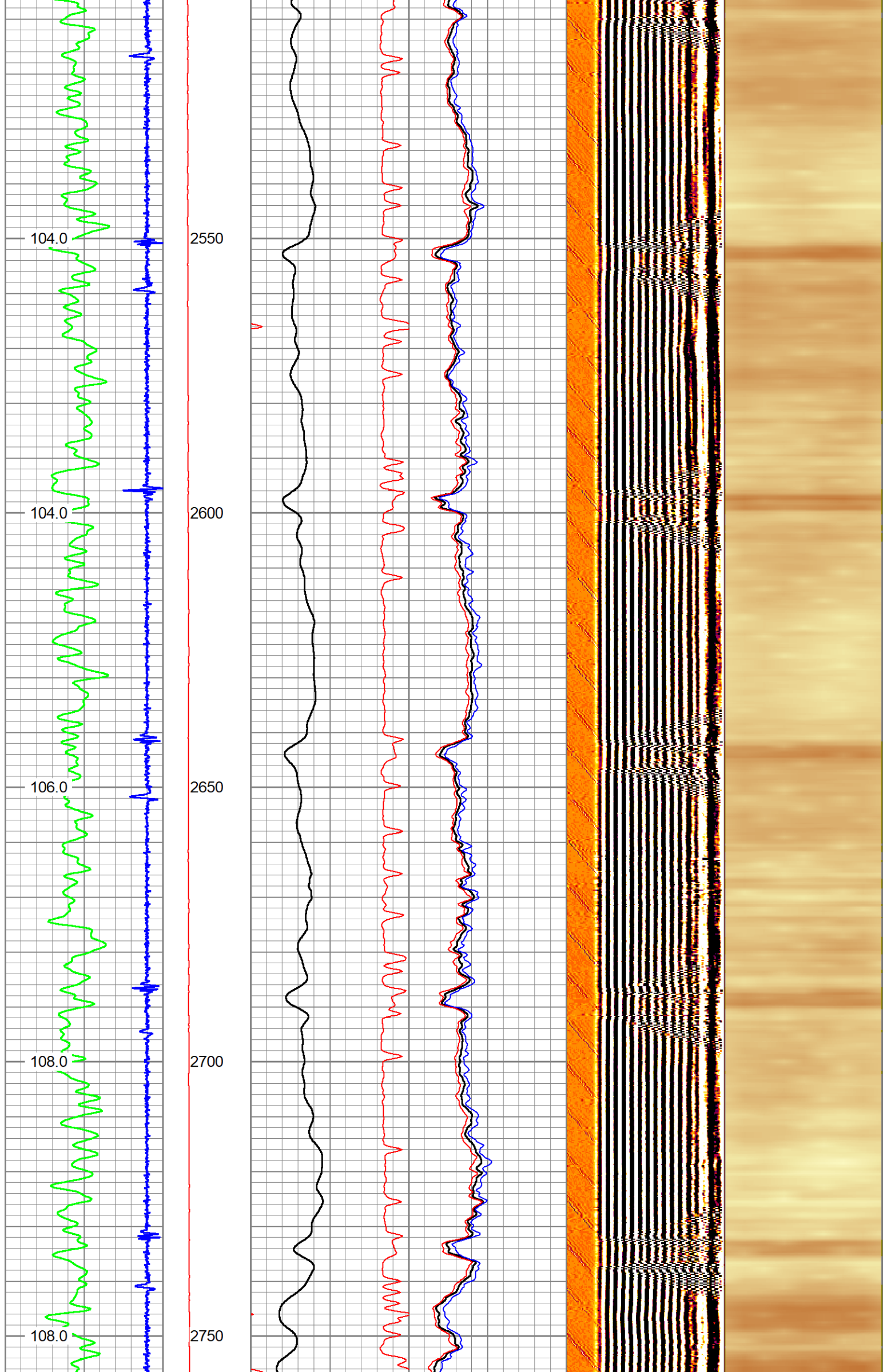


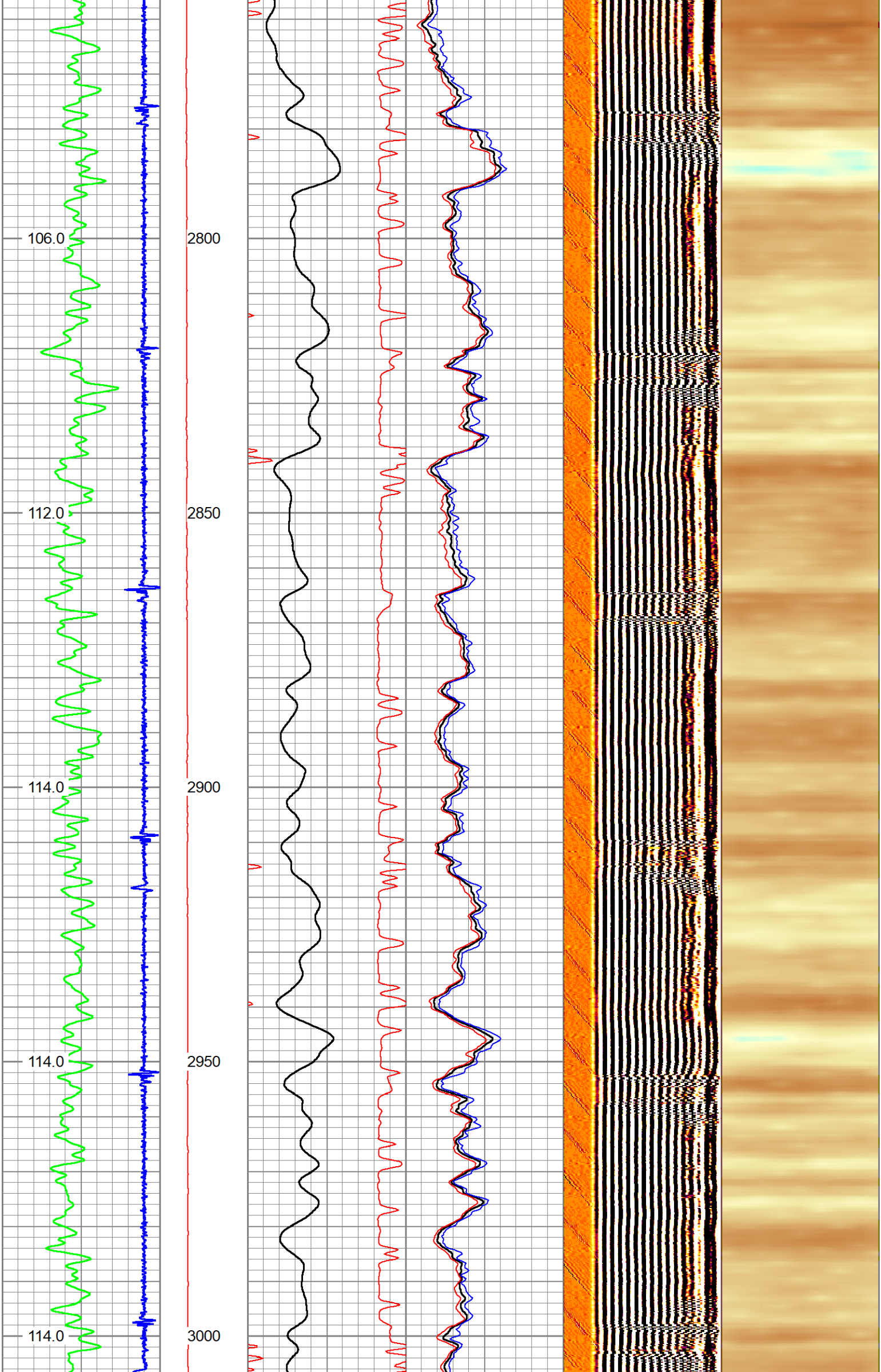


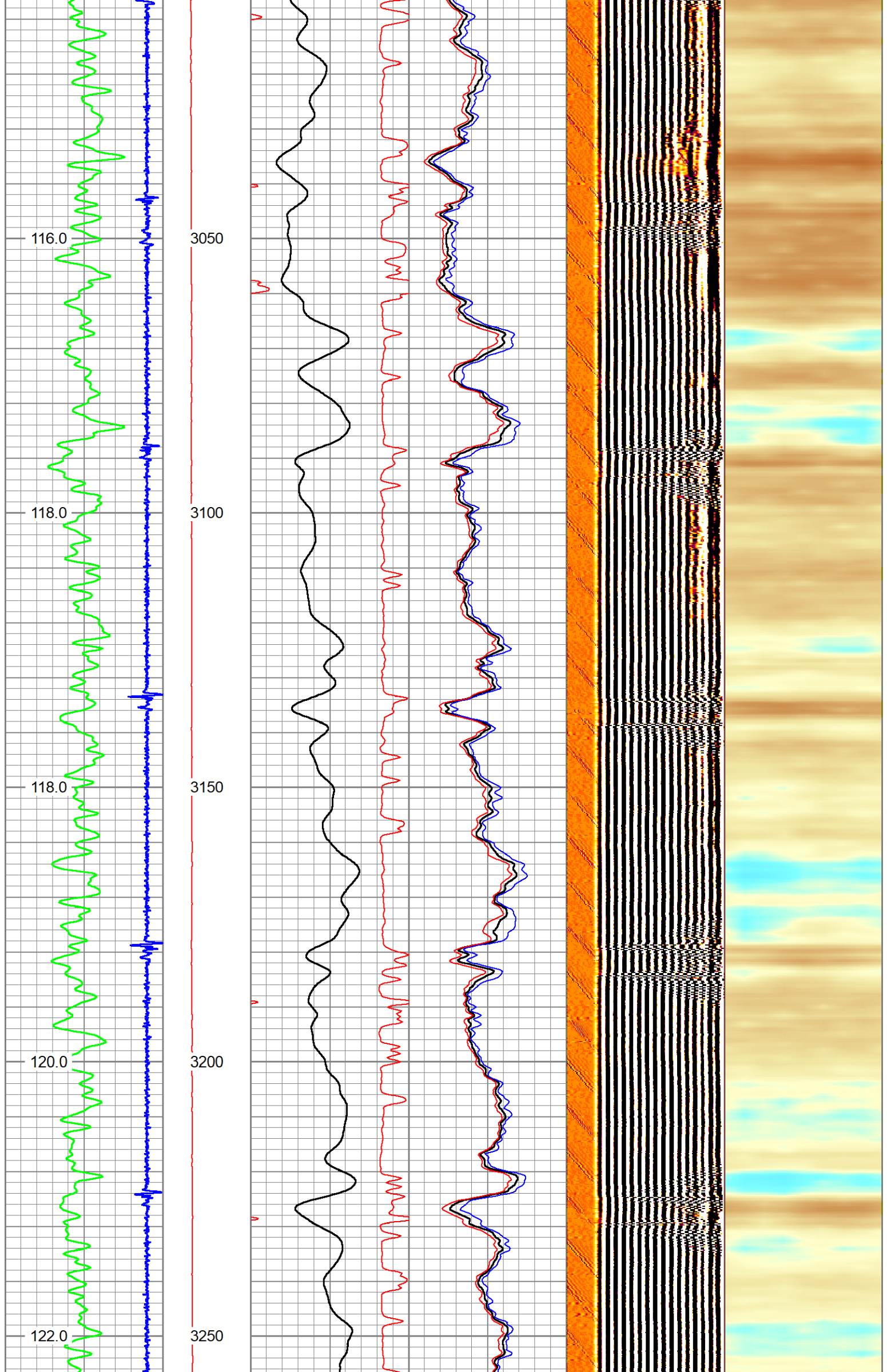


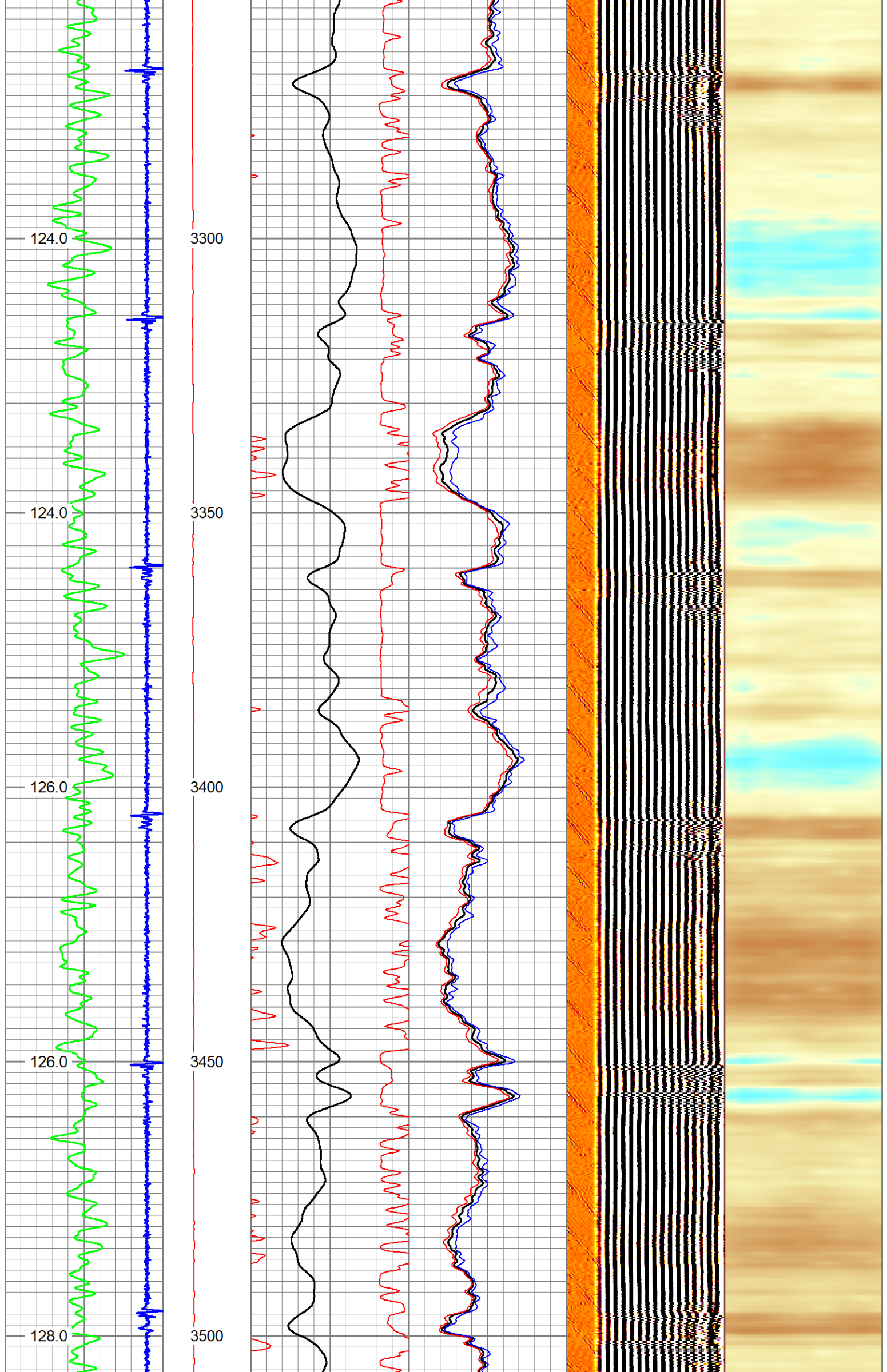


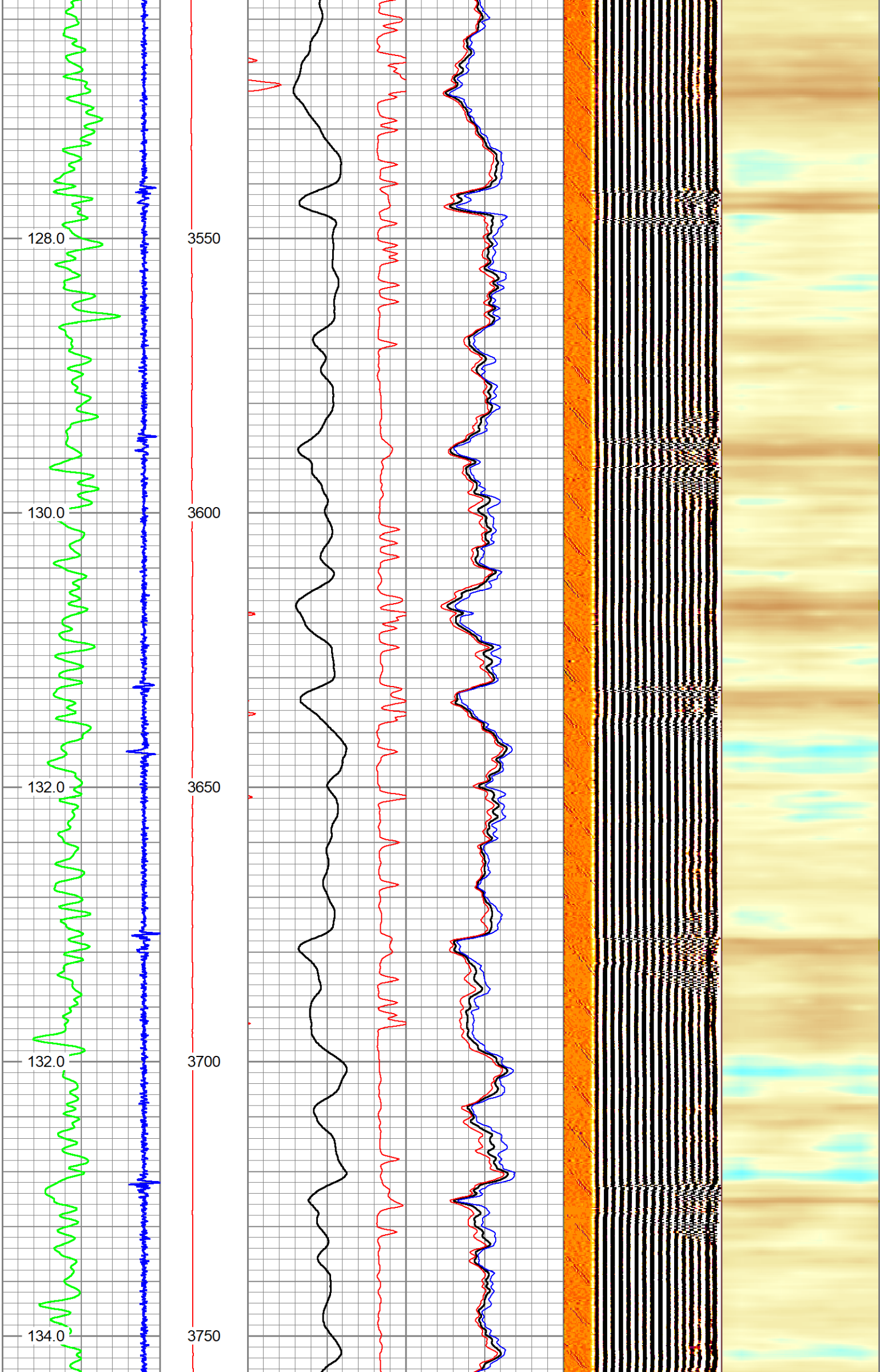


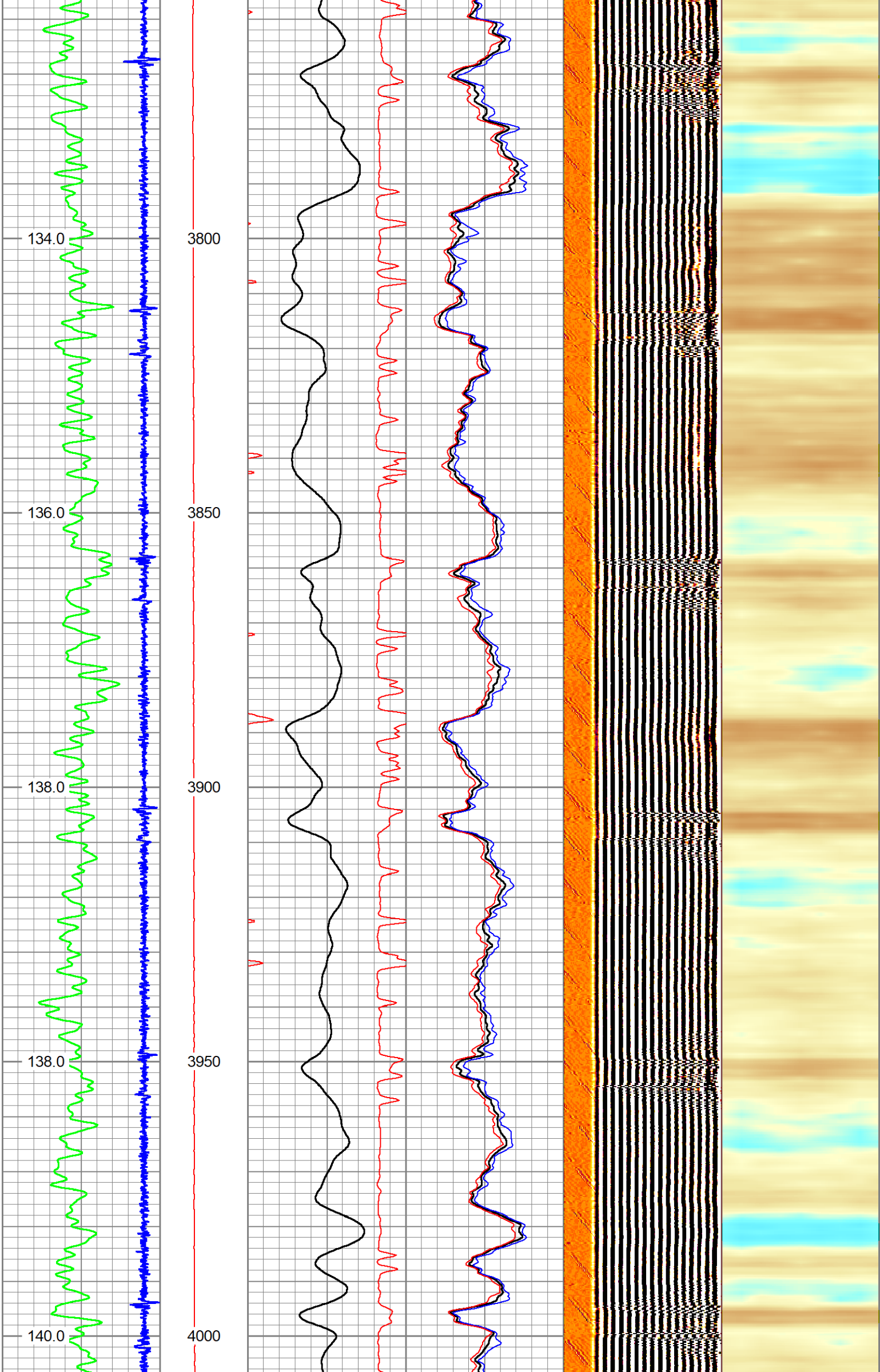


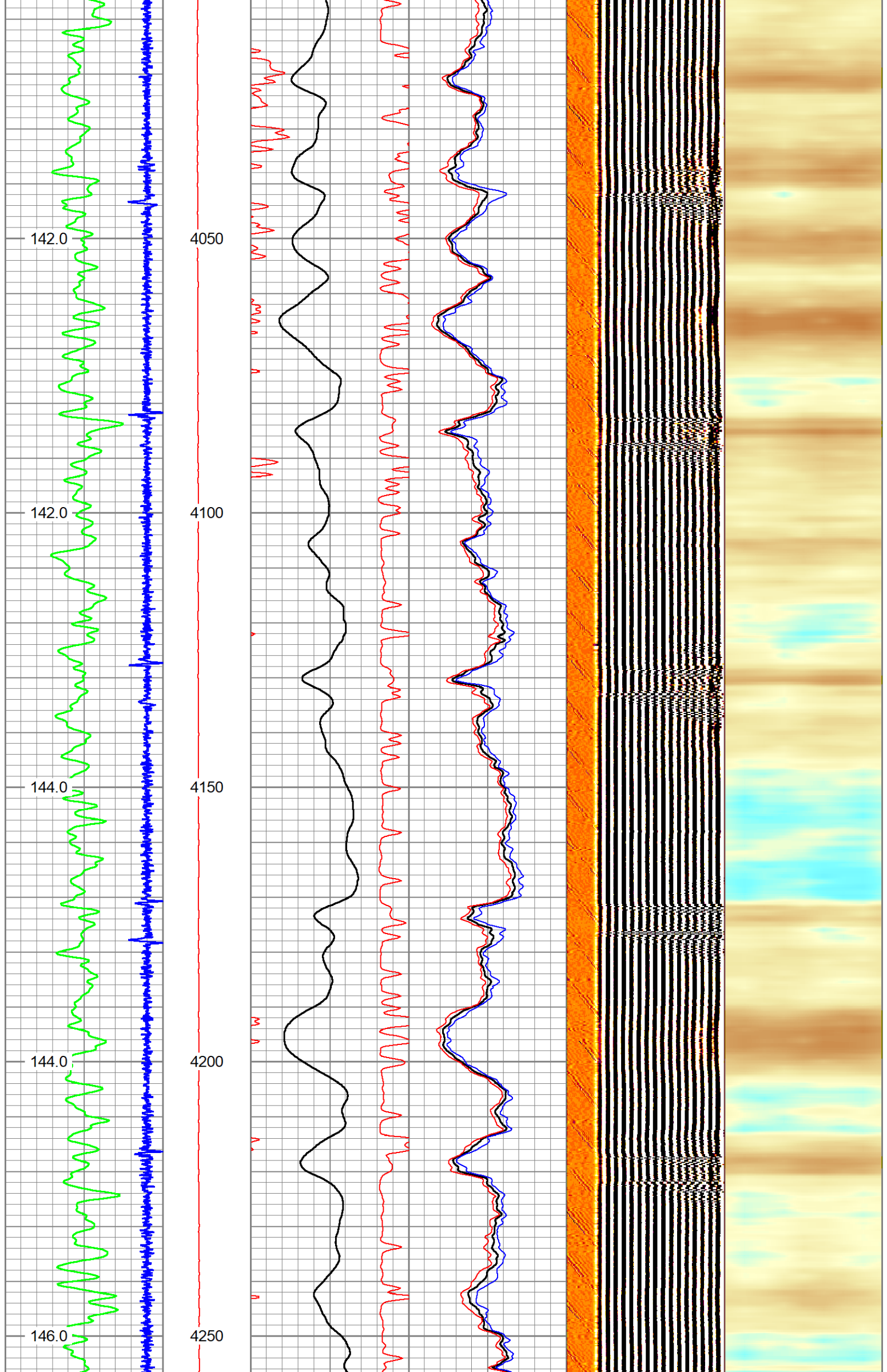


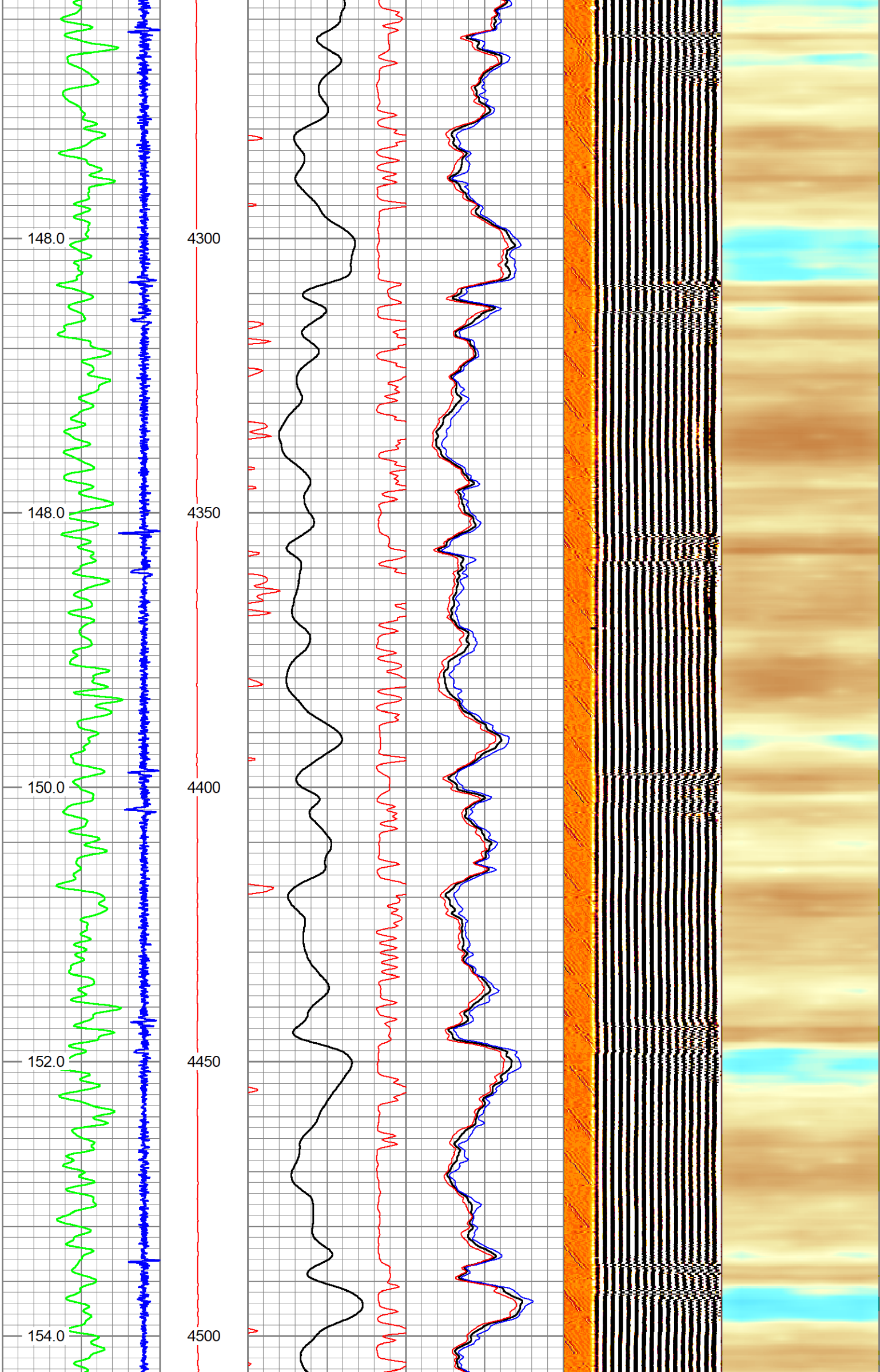


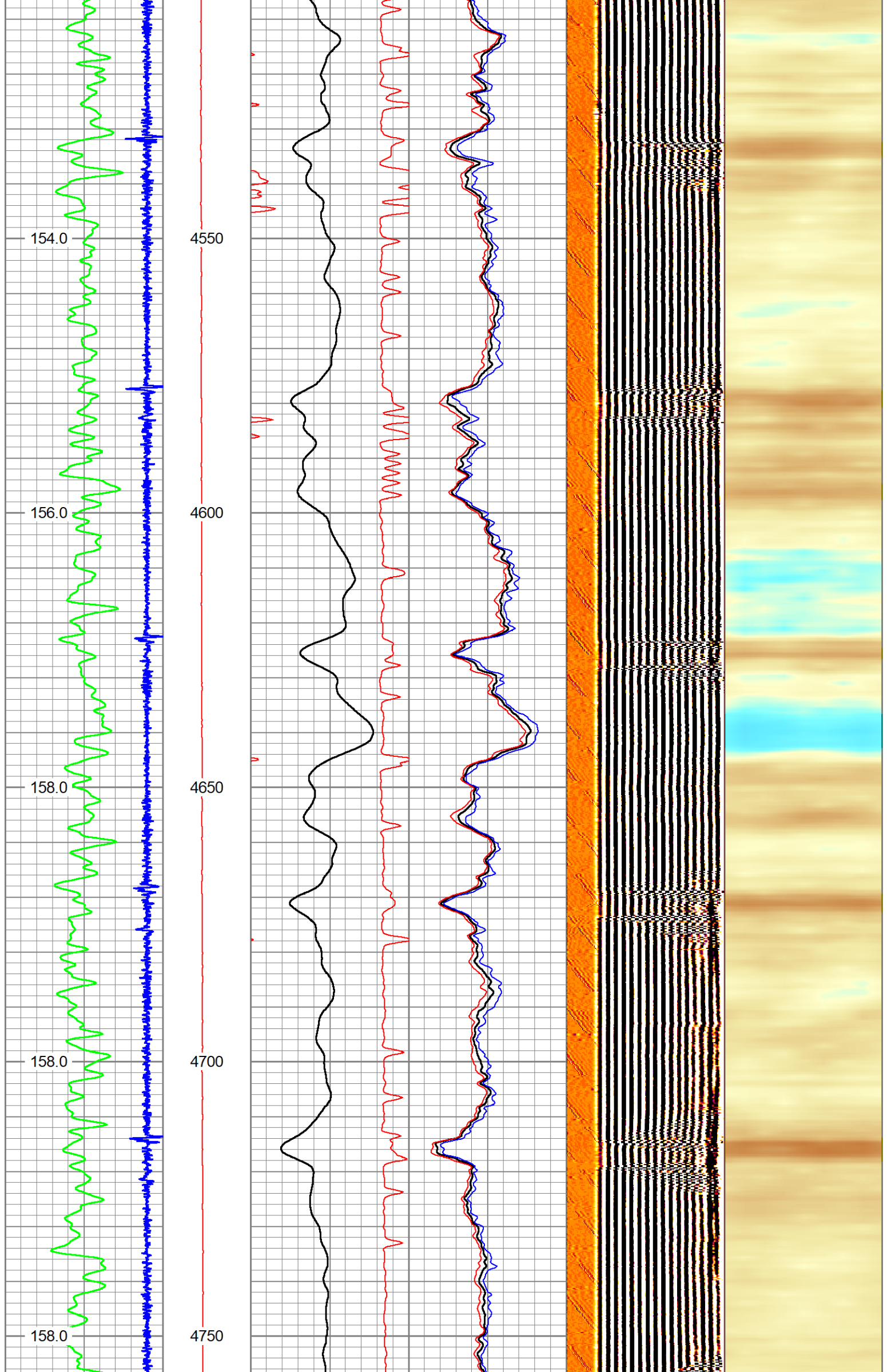


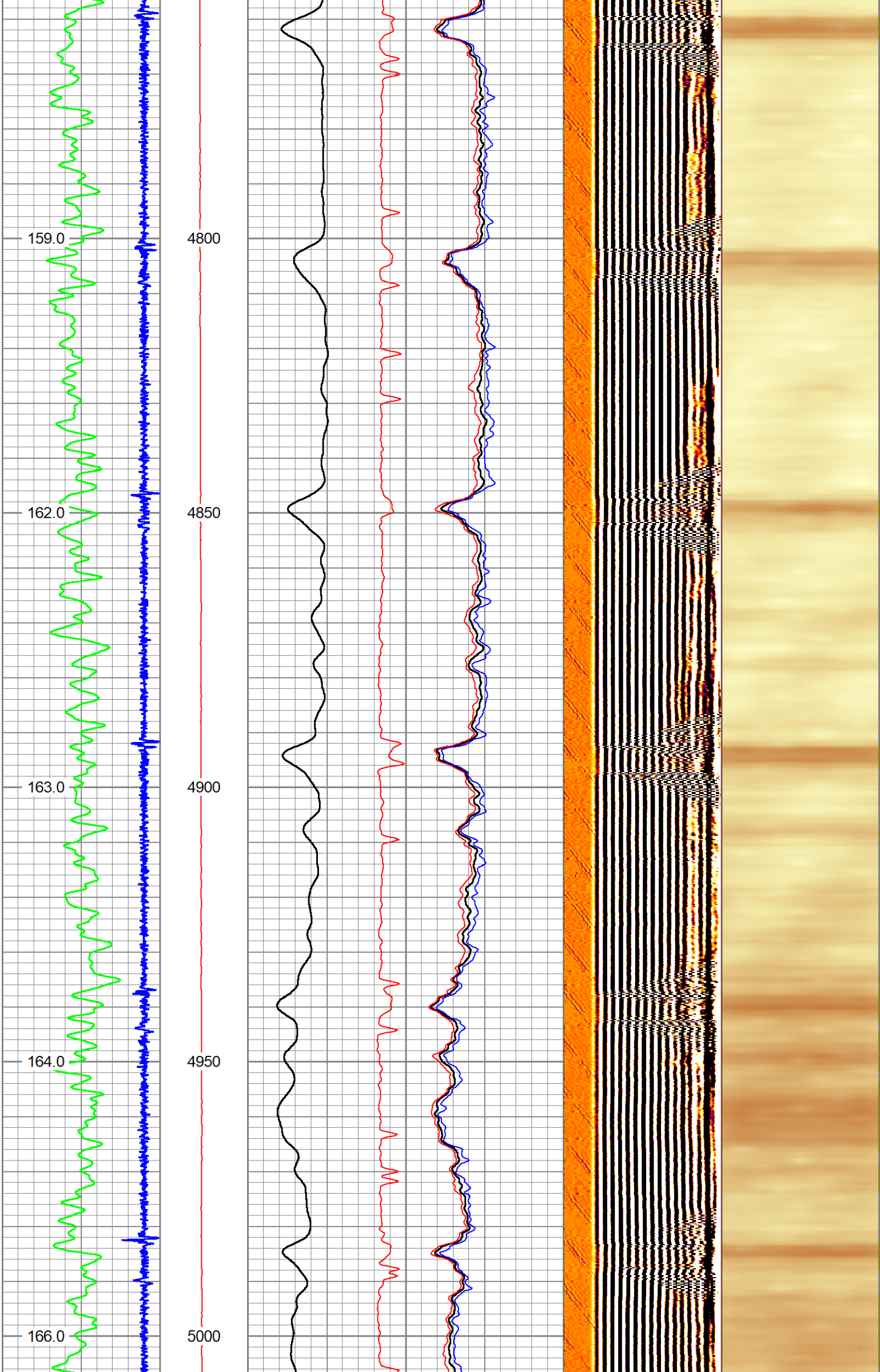


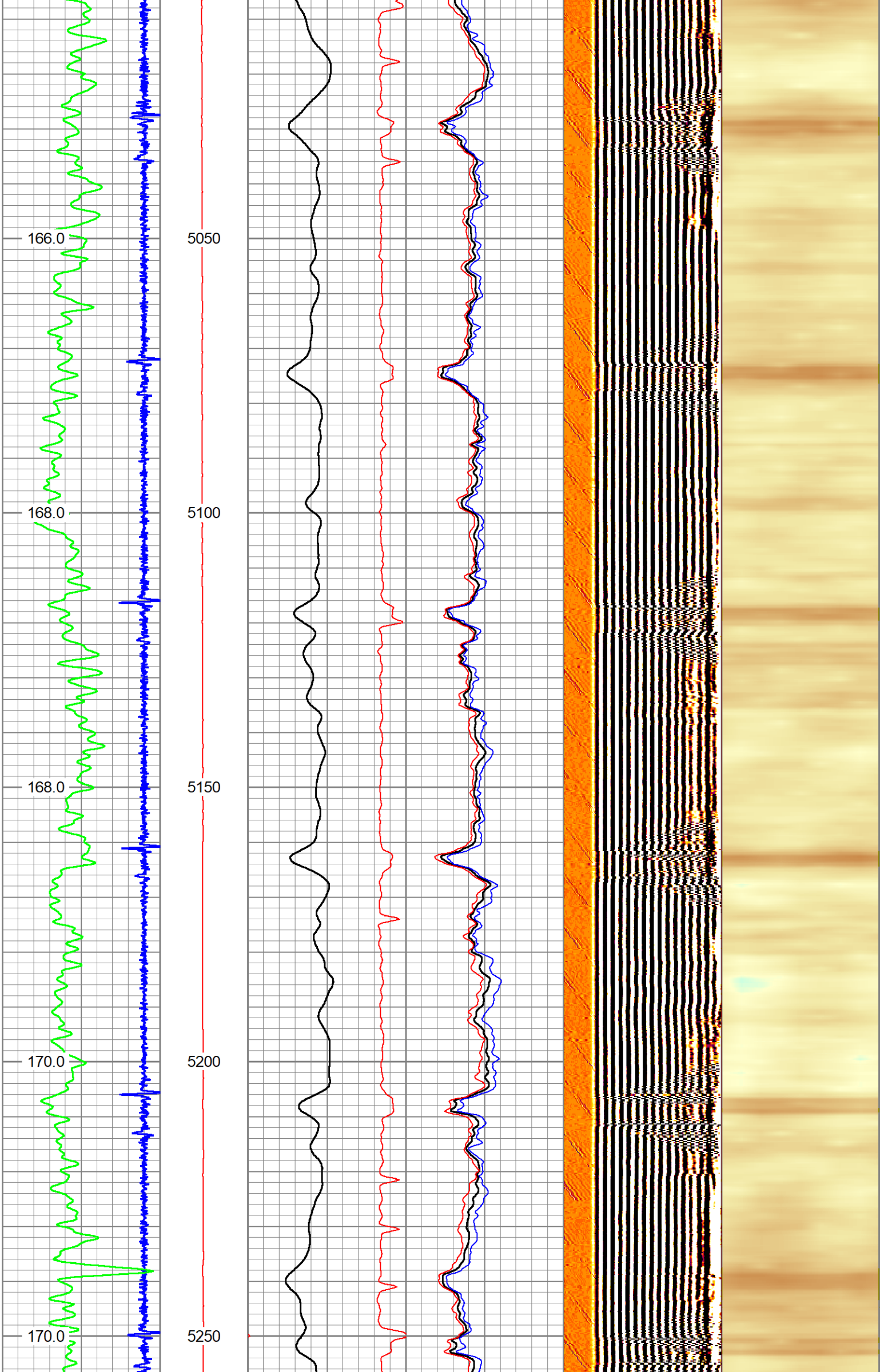


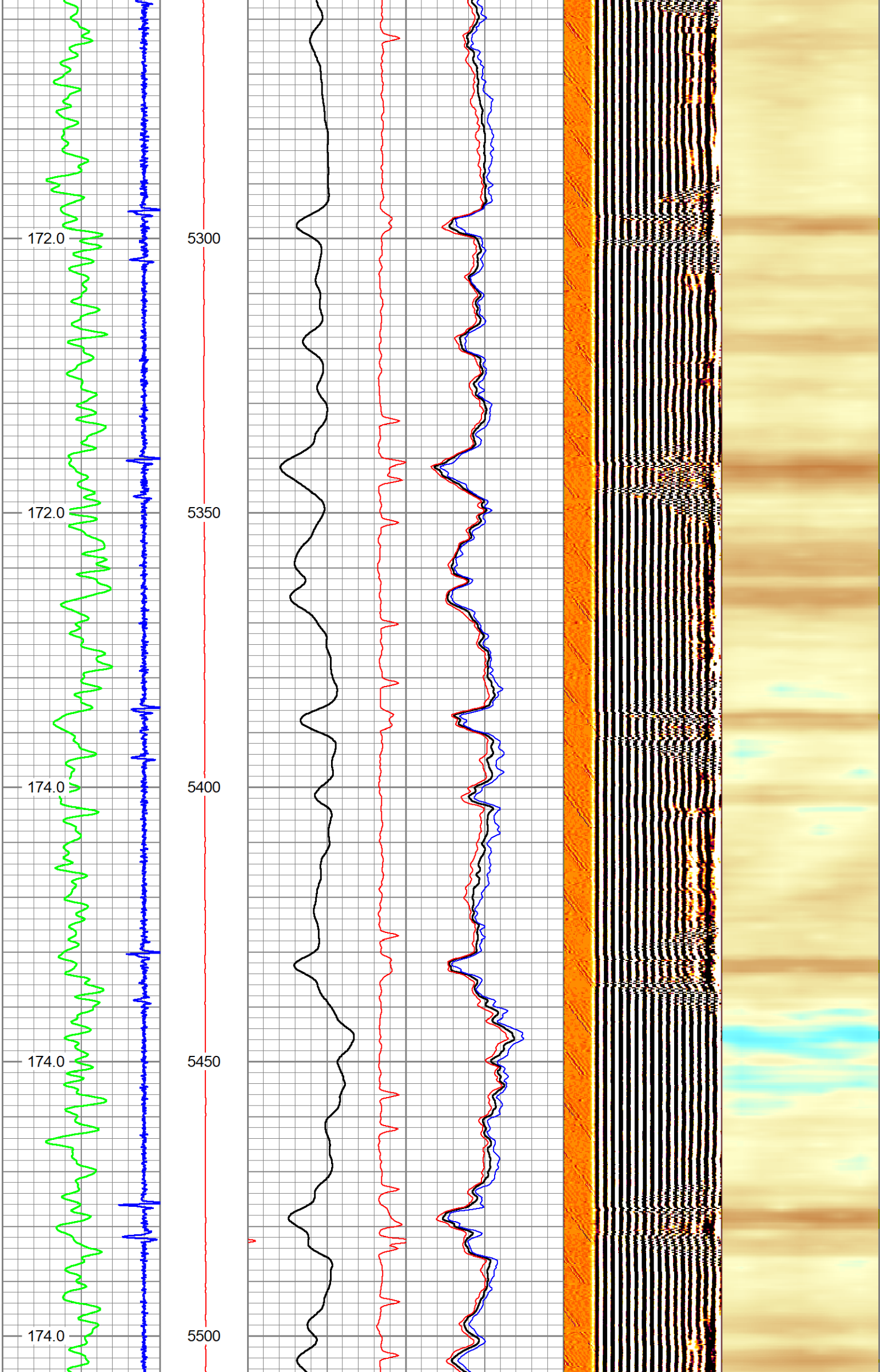


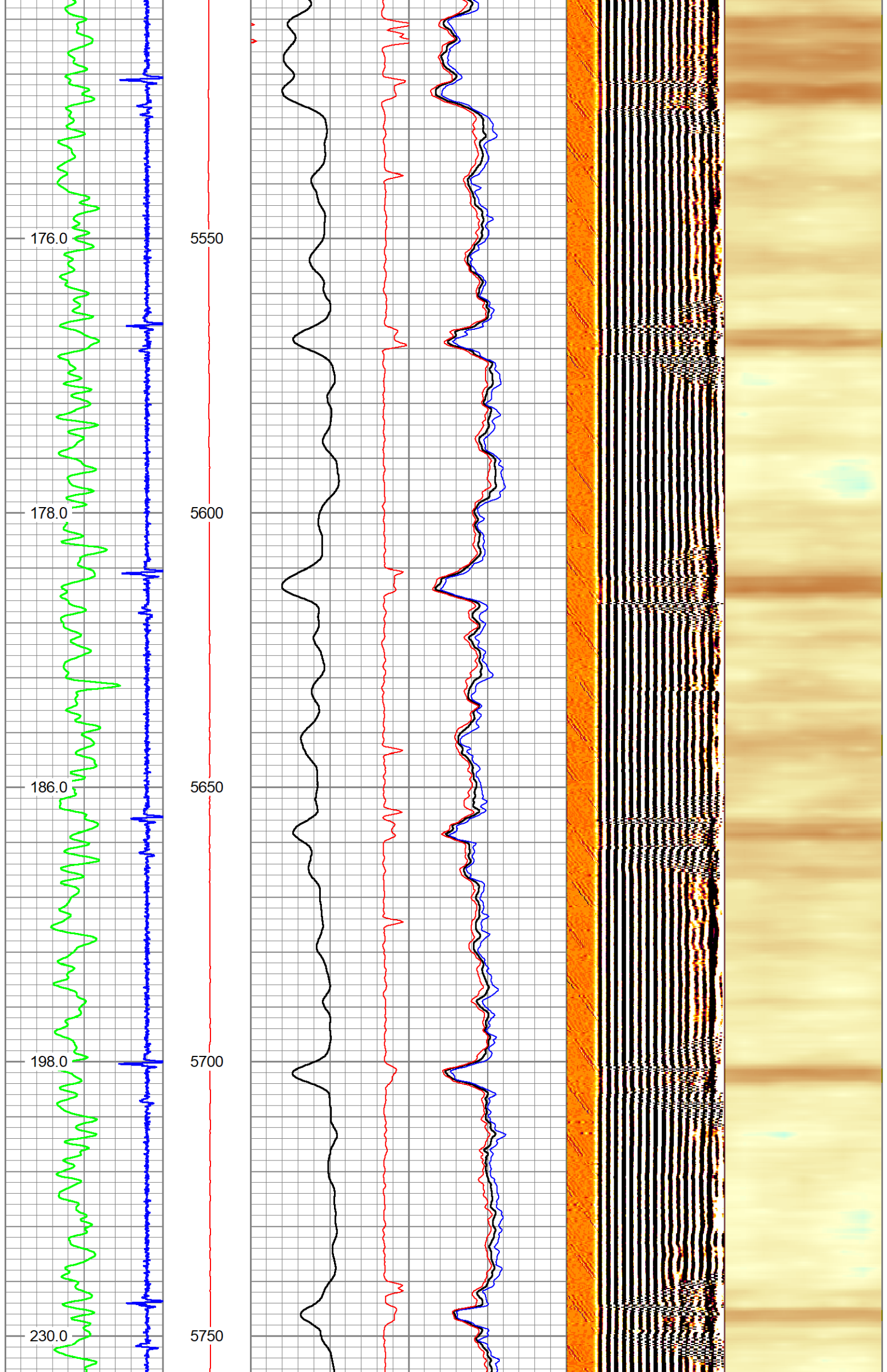


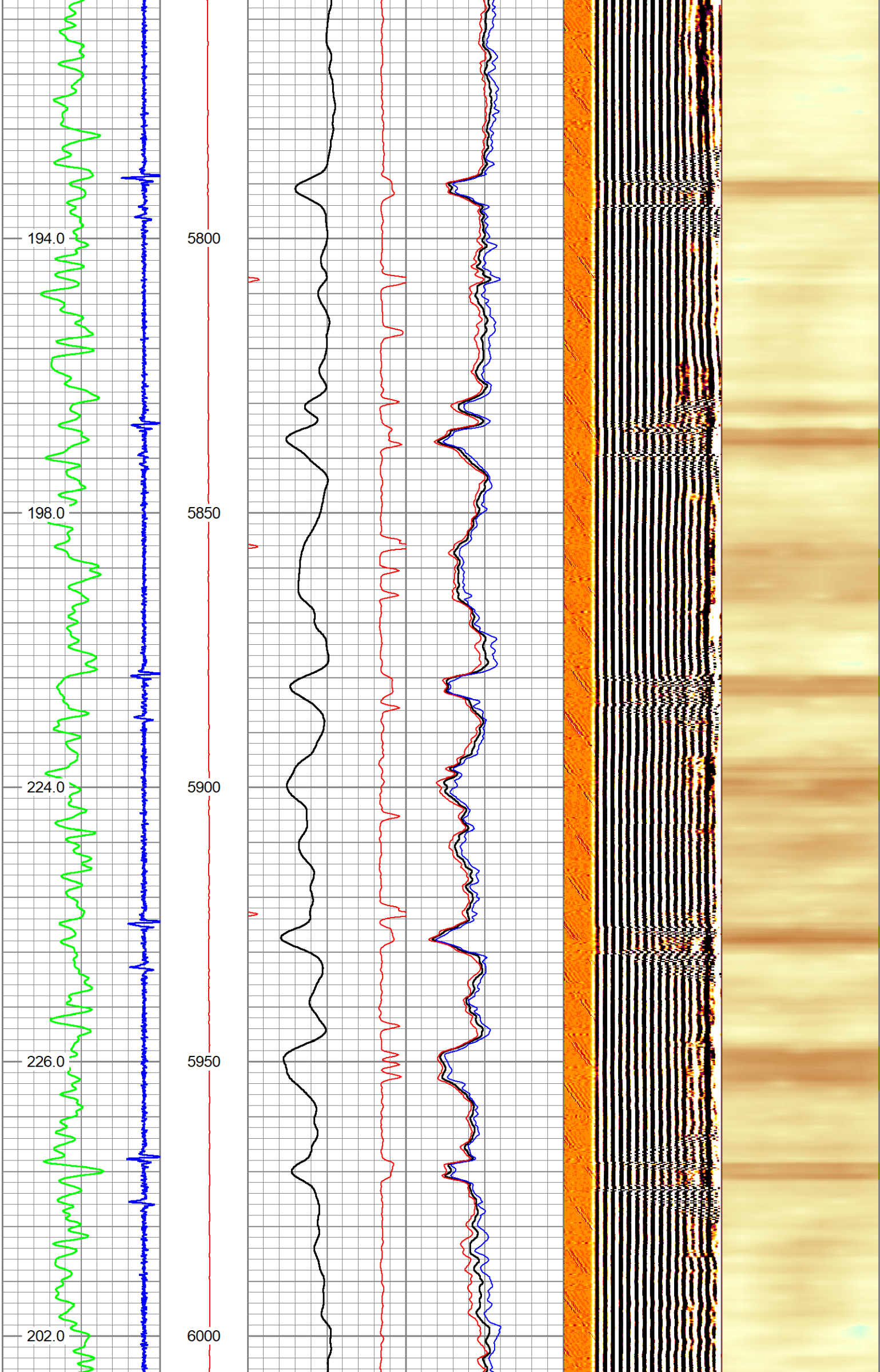


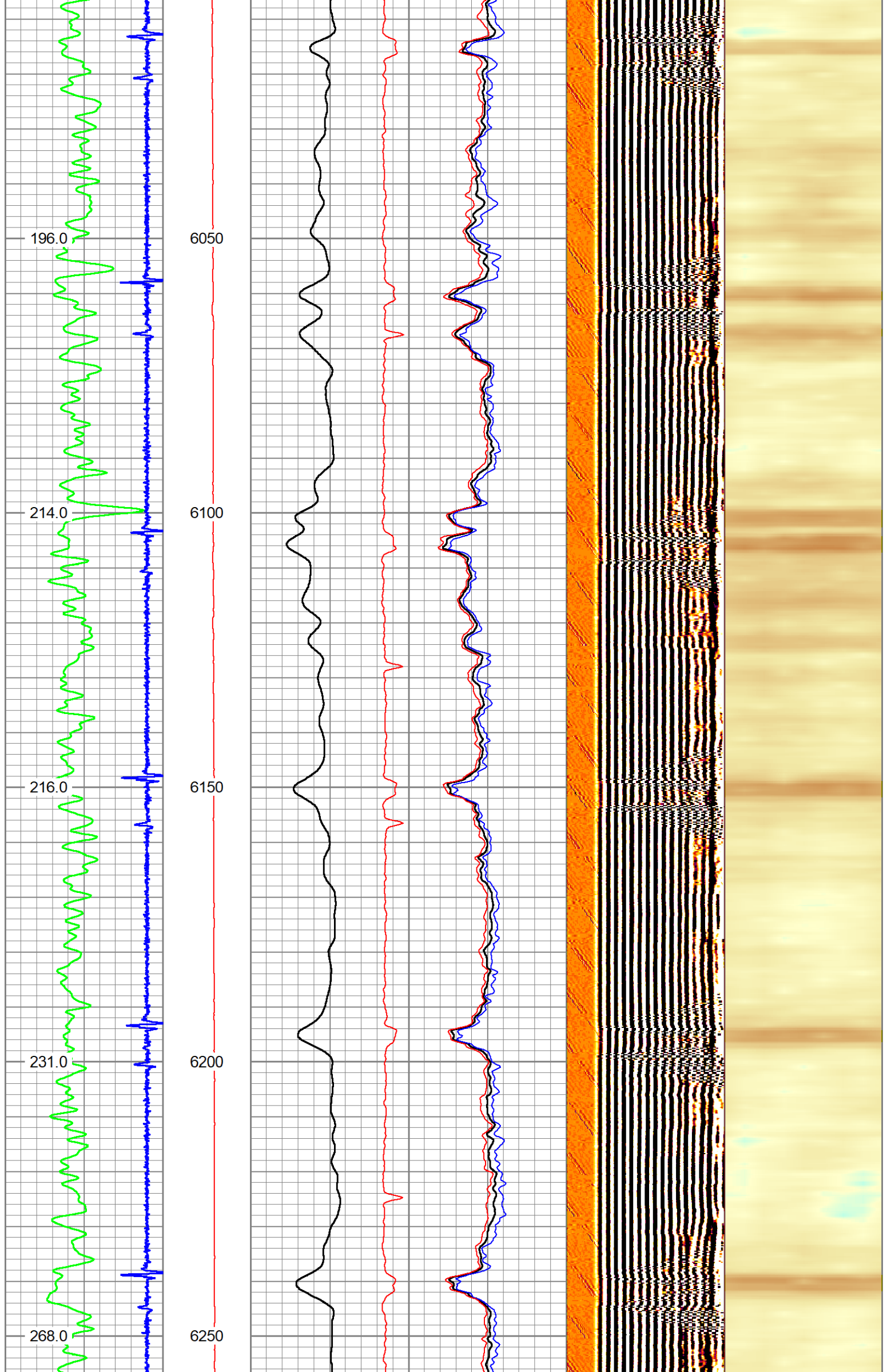


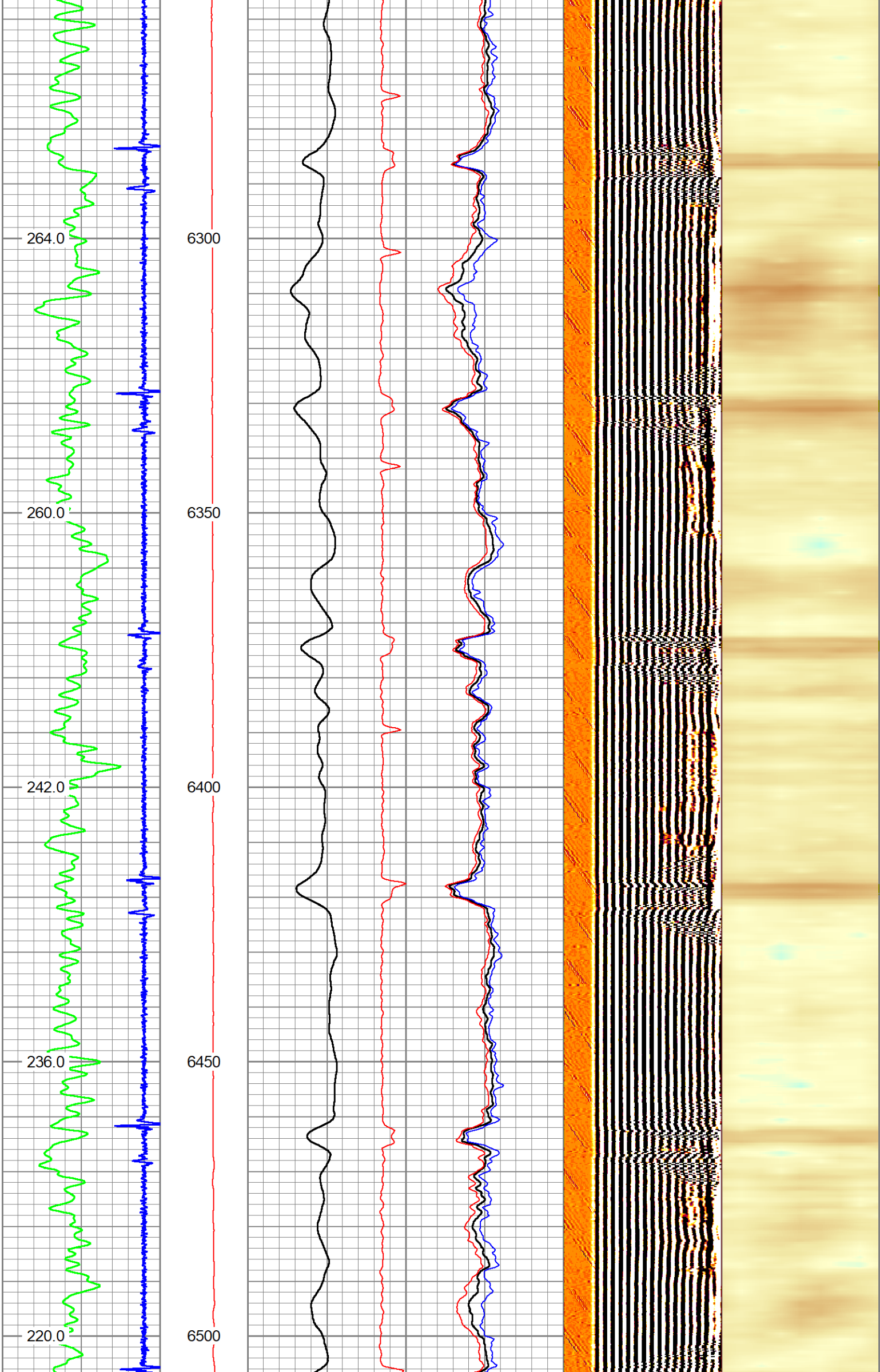


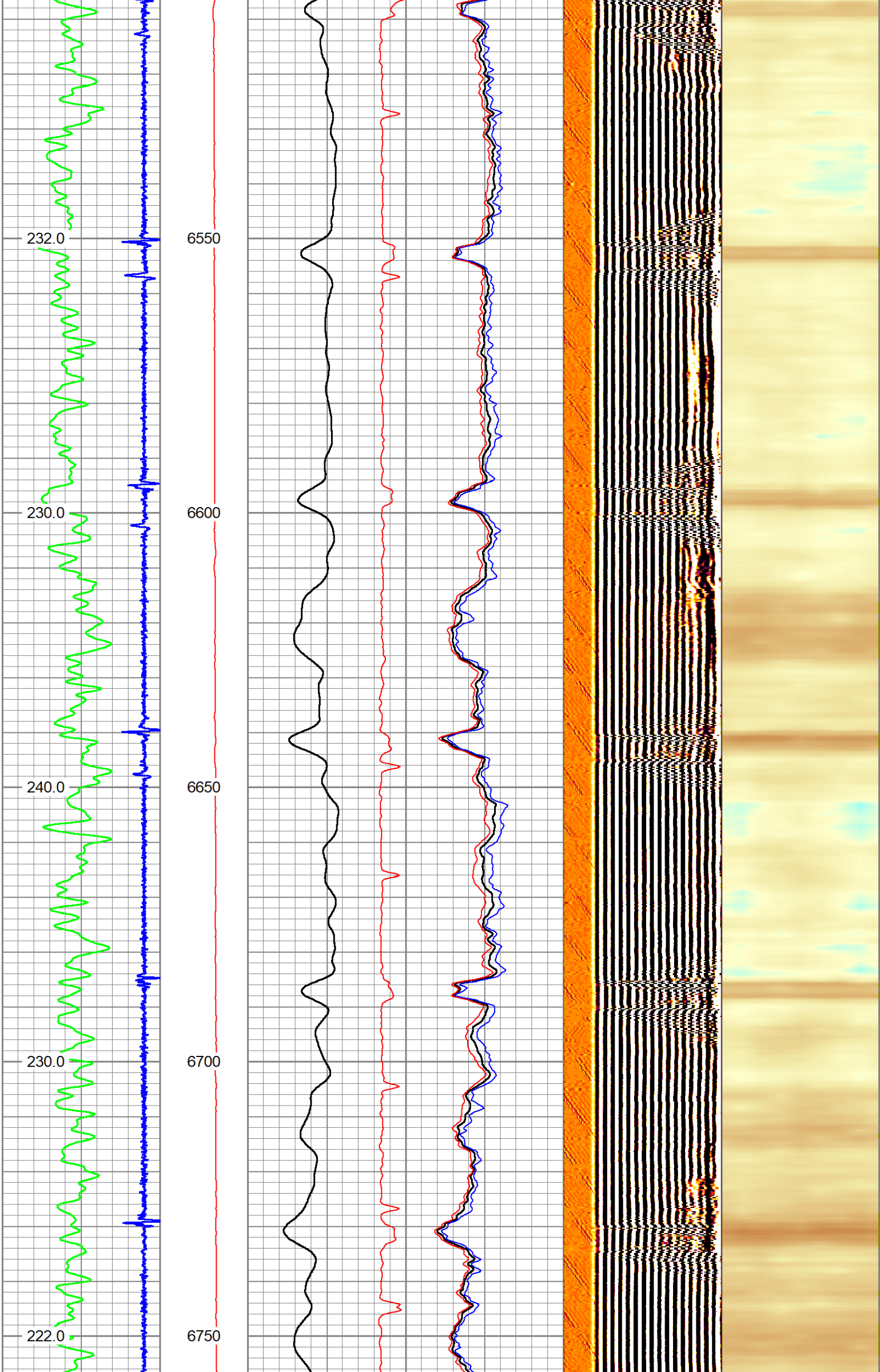


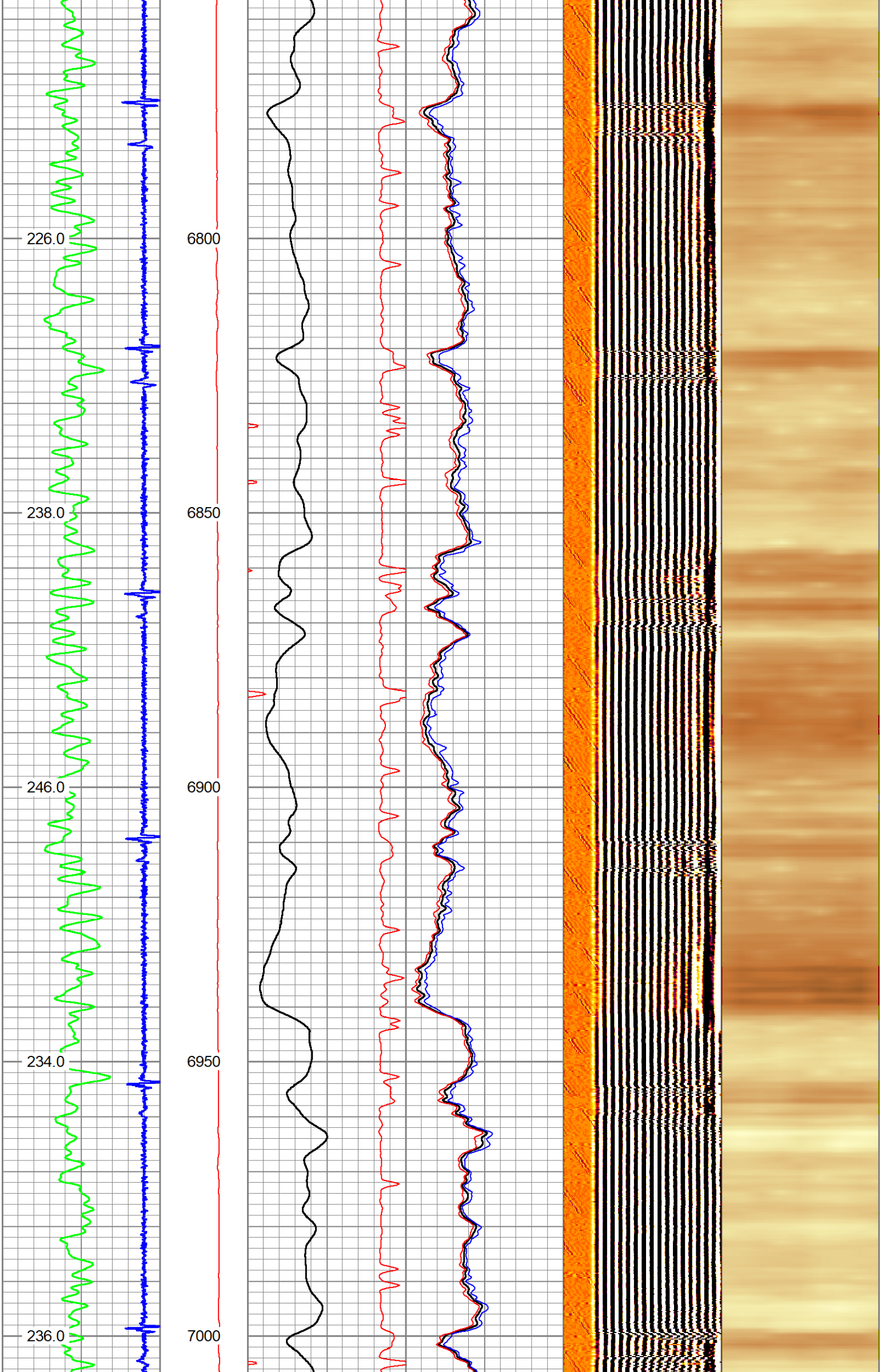


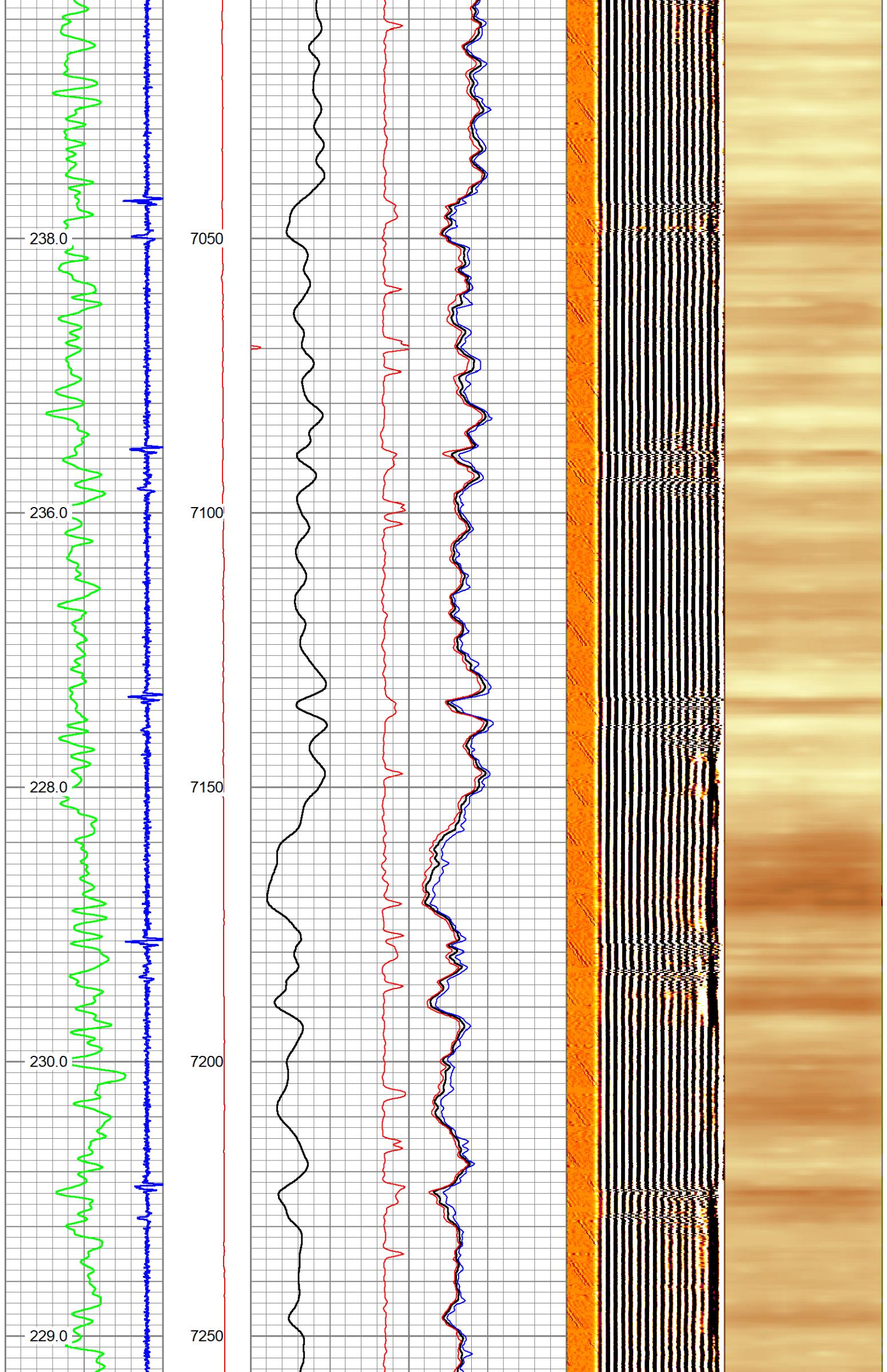


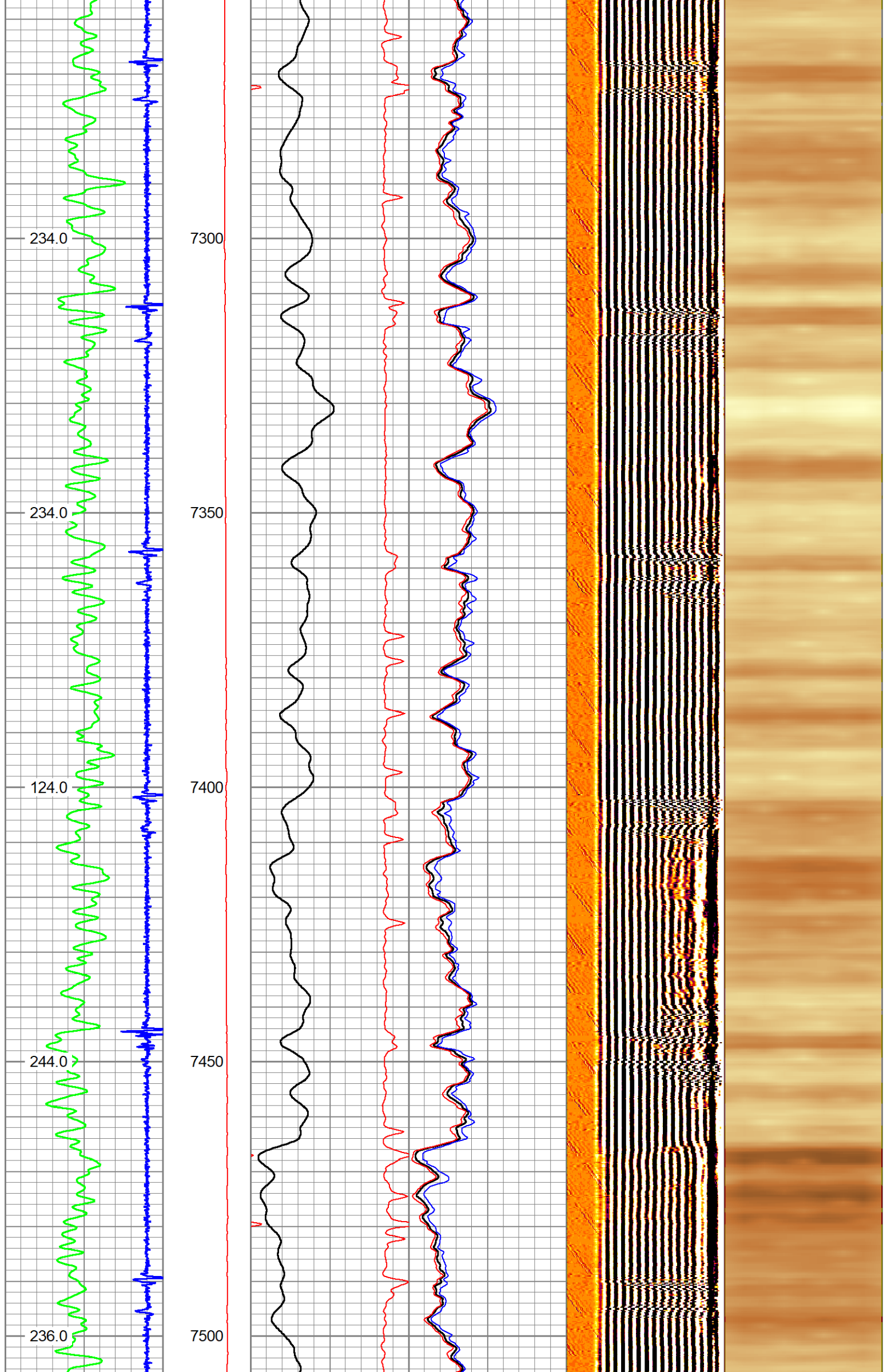


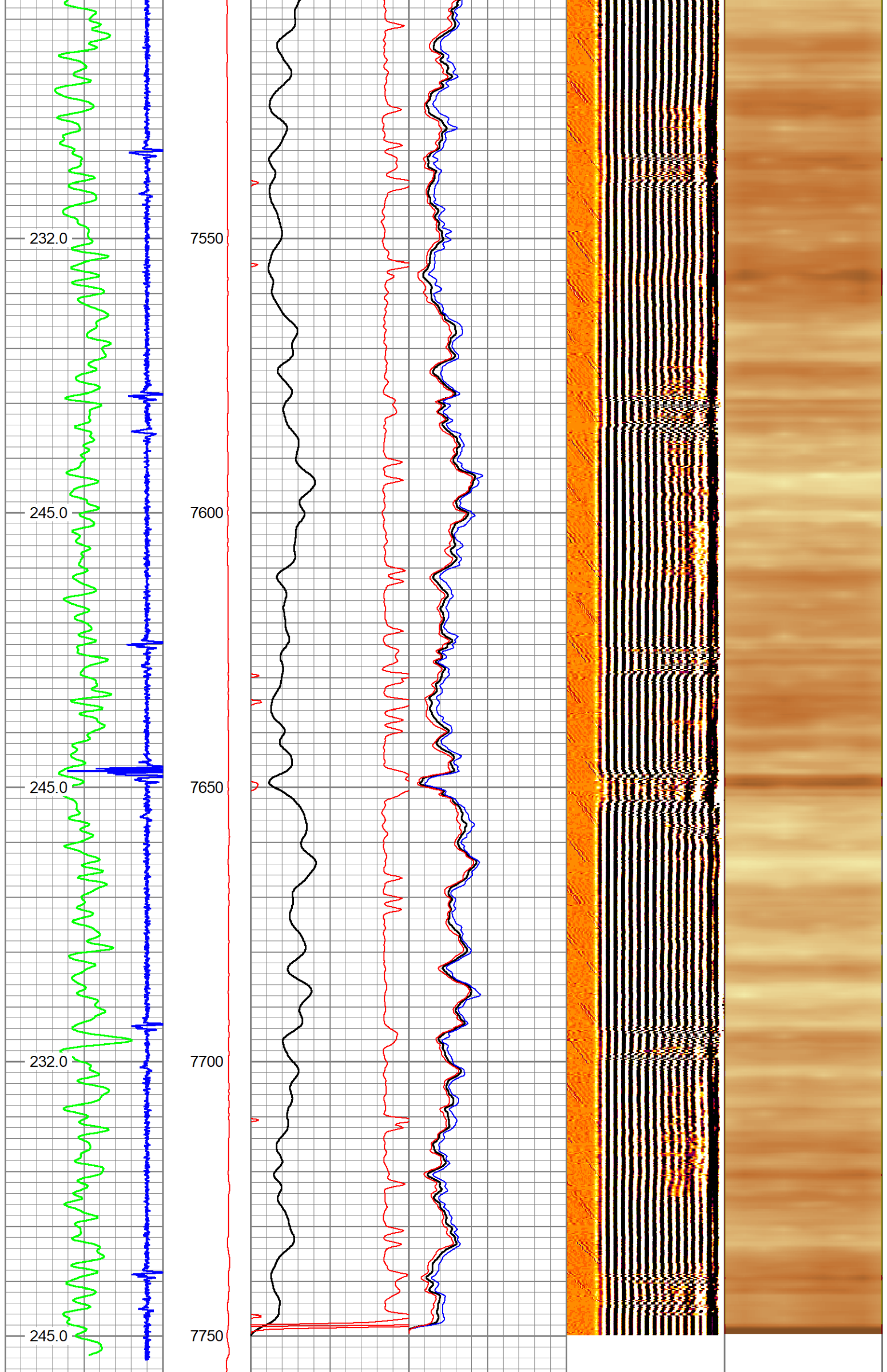













-18	CCL	2	LTEN	0	AMP3FT (mV)	100	0	AMPAVG	100	200	VDL (usec)	1200	1	RADIAL MAP	8
0	GR (GAPI)	150	0	(lb/2000	3ft Travel Time		0	AMPMAX	100						
TEMP					200	(usec)	300	0	AMPMIN	100					
(degF)															

MAIN PASS

HALLIBURTON



5" = 100'

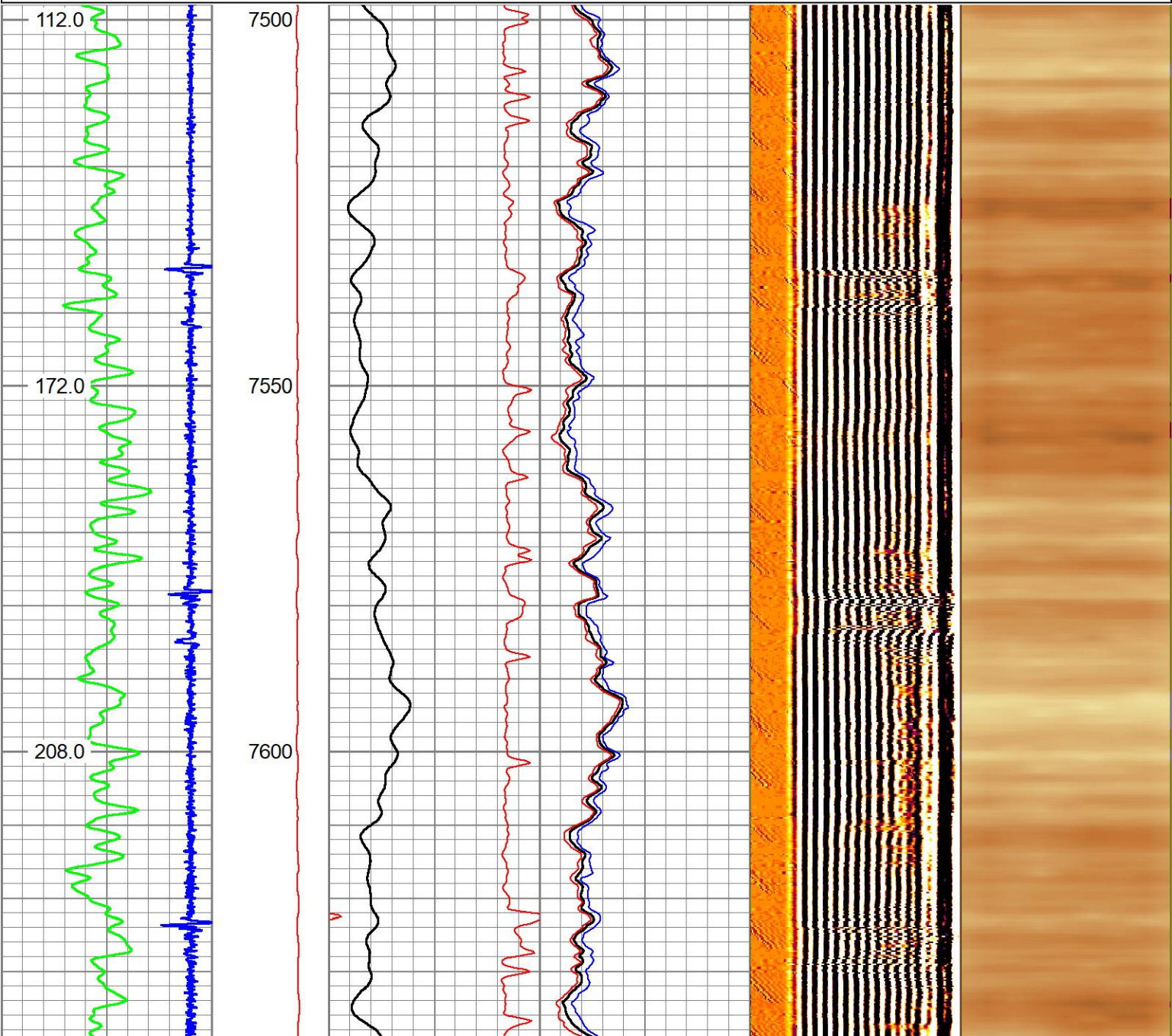
REPEAT PASS

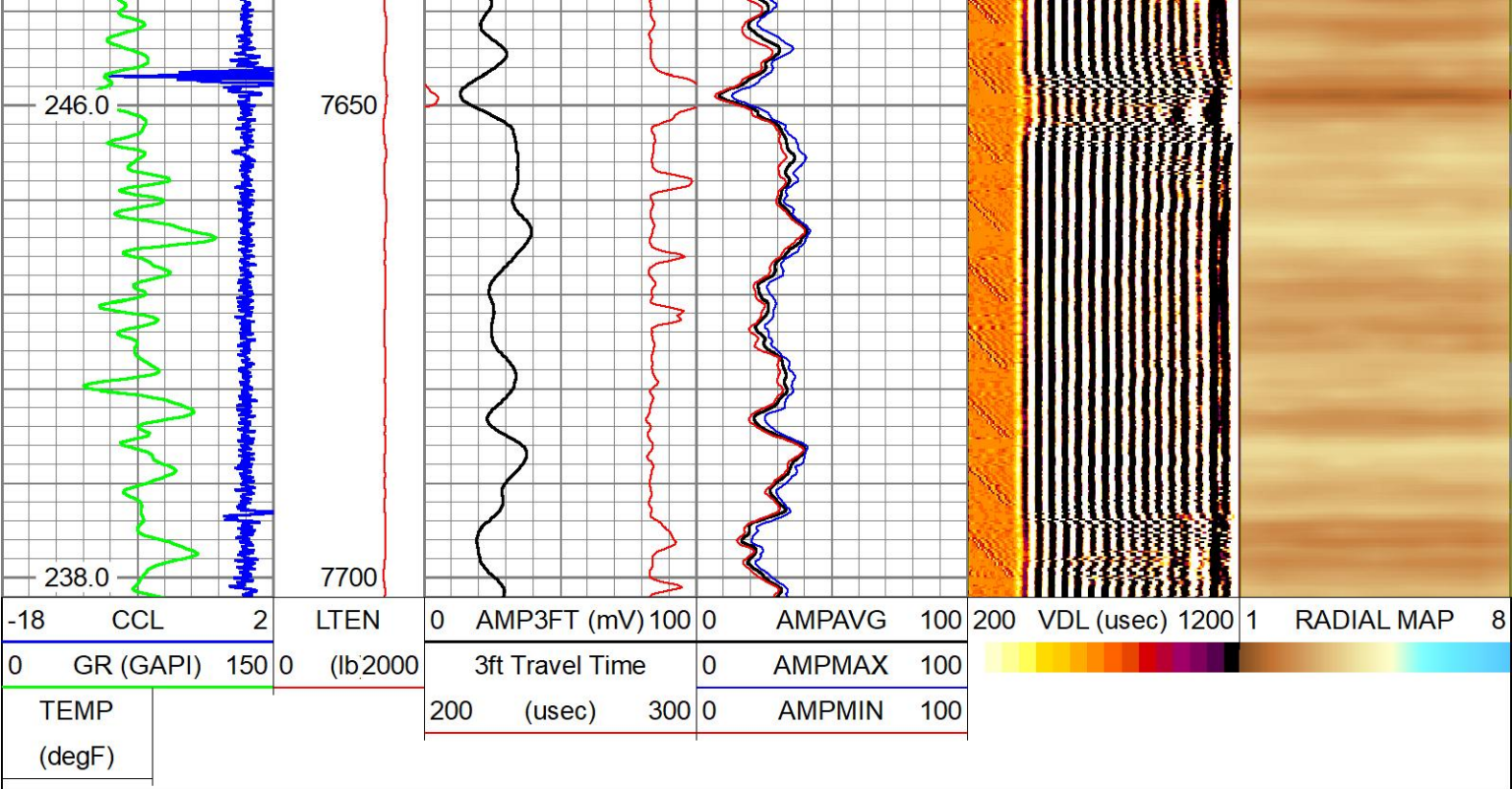
HALLIBURTON

5" = 100'

Database File		livingston s19-25-8c.db													
Dataset Pathname		REPEAT_PASS													
Presentation Format		EXTRAC~1													
Dataset Creation		Tue Nov 05 19:28:02 2019													
Charted by		Depth in Feet scaled 1:240													

-18	CCL	2	LTEN	0	AMP3FT (mV)	100	0	AMPAVG	100	200	VDL (usec)	1200	1	RADIAL MAP	8
0	GR (GAPI)	150	0	(lb/2000	3ft Travel Time		0	AMPMAX	100						
TEMP					200	(usec)	300	0	AMPMIN	100					
(degF)															





REPEAT PASS

HALLIBURTON

5" = 100'

Log Variables

DatabaseC:\ProgramData\Warrior\Data\livingston s19-25-8c.db
Dataset field/well/run1/MAIN_PASS.1/_vars_

Top - Bottom

BHTEMP_Src	BITSIZE	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	8.5	220	5.5	0.304	17	72	1
MINATTN	MudWgt	PERFS	PPT	SRFTEMP	TDEPTH		
db/ft	lb/gal		usec	degF	ft		
0.8	8.4	No	214	40	7500		

Calibration Report

Database File livingston s19-25-8c.db
Dataset Pathname MAIN_PASS.1
Dataset Creation Tue Nov 05 20:48:51 2019

Temperature Calibration Report

Serial Number: Tit1.3_02
Tool Model: Titan
Performed: Fri Jan 04 06:55:24 2002


	Reference	Reading
Low Reference:	0.00 degF	0.00 cps
High Reference:	1.00 degF	1.00 cps
Gain:	0.10	
Offset:	0.00	
Delta Spacing	2	

Gamma Ray Calibration Report

Serial Number: pr050806
Tool Model: Probe275dig
Performed: Tue Nov 01 09:40:24 2005

Calibrator Value: 240.0 GAPI

Background Reading:	79.3	cps				
Calibrator Reading:	459.5	cps				
Sensitivity:	0.6312	GAPI/cps				
Segmented Cement Bond Log Calibration Report						
Serial Number:	11568129					
Tool Model:	Probe					
Calibration Casing Diameter:	5.500	in				
Calibration Depth:	642.102	ft				
Master Calibration, performed Tue Nov 05 15:36:02 2019:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.786	0.000	72.000	91.627	0.000
CAL	0.000	2.251				
5'	0.000	0.661	0.000	72.000	108.858	0.000
SUM						
S1	0.000	0.995	0.000	72.000	72.386	0.000
S2	0.000	0.816	0.000	72.000	88.248	0.000
S3	0.000	0.816	0.000	72.000	88.207	0.000
S4	0.000	0.734	0.000	72.000	98.121	0.000
S5	0.000	0.689	0.000	72.000	104.466	0.000
S6	0.000	0.688	0.000	72.000	104.623	0.000
S7	0.000	0.733	0.000	72.000	98.281	0.000
S8	0.000	0.789	0.000	72.000	91.200	0.000
Internal Reference Calibration, performed (Not Performed):						
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.000	2.251	1.000	0.000
Air Zero Calibration, performed Tue Nov 05 15:10:51 2019:						
	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	Length (ft)	O.D. (in)	Weight (lb)
			STNDCH-1_11_16_CH 1.6875 IN CABLE HEAD	1.50	1.44	1.00
			CENT-Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00

Tool Joint	Tool Joint Length (ft)	Tool Joint Weight (lb)	Tool Joint O.D. (in)	Tool Joint Description	Tool Joint Length (ft)	Tool Joint Weight (lb)	Tool Joint O.D. (in)	Tool Joint Description
WVFCAL	12.58							
WVF3FT	12.58							
WVF5FT	10.58							
CCL	6.13							
GR	4.75							
TEMP	0.17							
LLMTEN	0.00							
<p>Dataset: livingston s19-25-8c.db: field/well/run1/MAIN_PASS.1</p> <p>Total length: 22.54 ft</p> <p>Total weight: 198.00 lb</p> <p>O.D.: 2.75 in</p>								