

HALLIBURTON

RADIAL CEMENT
BOND LOG

Company		EXTRACTION OIL & GAS INC	
Well		LIVINGSTON S19-25-9N	
Field		WATTENBERG	
County		BROOMFIELD CO	
Company		EXTRACTION OIL & GAS INC	
Well		LIVINGSTON S19-25-9N	
Field		WATTENBERG	
County		BROOMFIELD State CO	
API No.: 050142074600		Serv #: 906093556	
Location: SURFACE HOLE LOCATION: 2331' FSL & 1384' FEL NWSE		Other Services	
LATITUDE: 39.978562 LONGITUDE: -105.039608		NONE	
Sec: 7 Twp: 1S Rge: 68W			
Permanent Datum		GROUND LEVEL Elevation 5320	
Log Measured From		KB , 29 Ft. above perm. datum	
Drilling Measured From		KB	
Date @ Time Logged		11/6/19 @ 07:00	
Run No.		ONE	
Depth - Driller		20998	
Depth - Logger		7510	
Bottom - Logged Interval		7500	
Top - Log Interval		SURFACE	
Max. Recorded Temp.		228 F	
CEMENTING DATA		Surface String	
Date / Time Cemented		Protection String	
Primary / Squeeze		Production String	
Expected Compressive Strength		Liner	
Cement Volume			
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 20998 5.5 17 0 20998	

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HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

RCBL - GR - CCL RAN IN COMBINATION.

LOG RECORDED WITH 0 PSI WELLHEAD PRESSURE.

LOG CORRELATED TO MARKER JOINT AT 7328.

BOND INDEX CALCULATED FOR 3000 PSI COMPRESSIVE STRENGTH CEMENT.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.

YOUR CREW TODAY WAS:

C. KLEINSASSER & E. GOOD

Service Ticket No.	906093556	API No.	050142074600	PGM Ver	WARRIOR 8
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
RCBL		GAMMA CCL			
Run No.	ONE	Run No.	ONE	Run No.	
Serial No.	11568129	Serial No.	50806	Serial No.	
Model No.	PROBE	Model No.	PROBE	Model No.	
Diameter	2.75	Diameter	2.75	Diameter	
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

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 L
ONE	0	150	0	100	200	1200	1 8
DIRECTIONAL INFORMATION							
Maximum Deviation		90	deg. @		KOP		

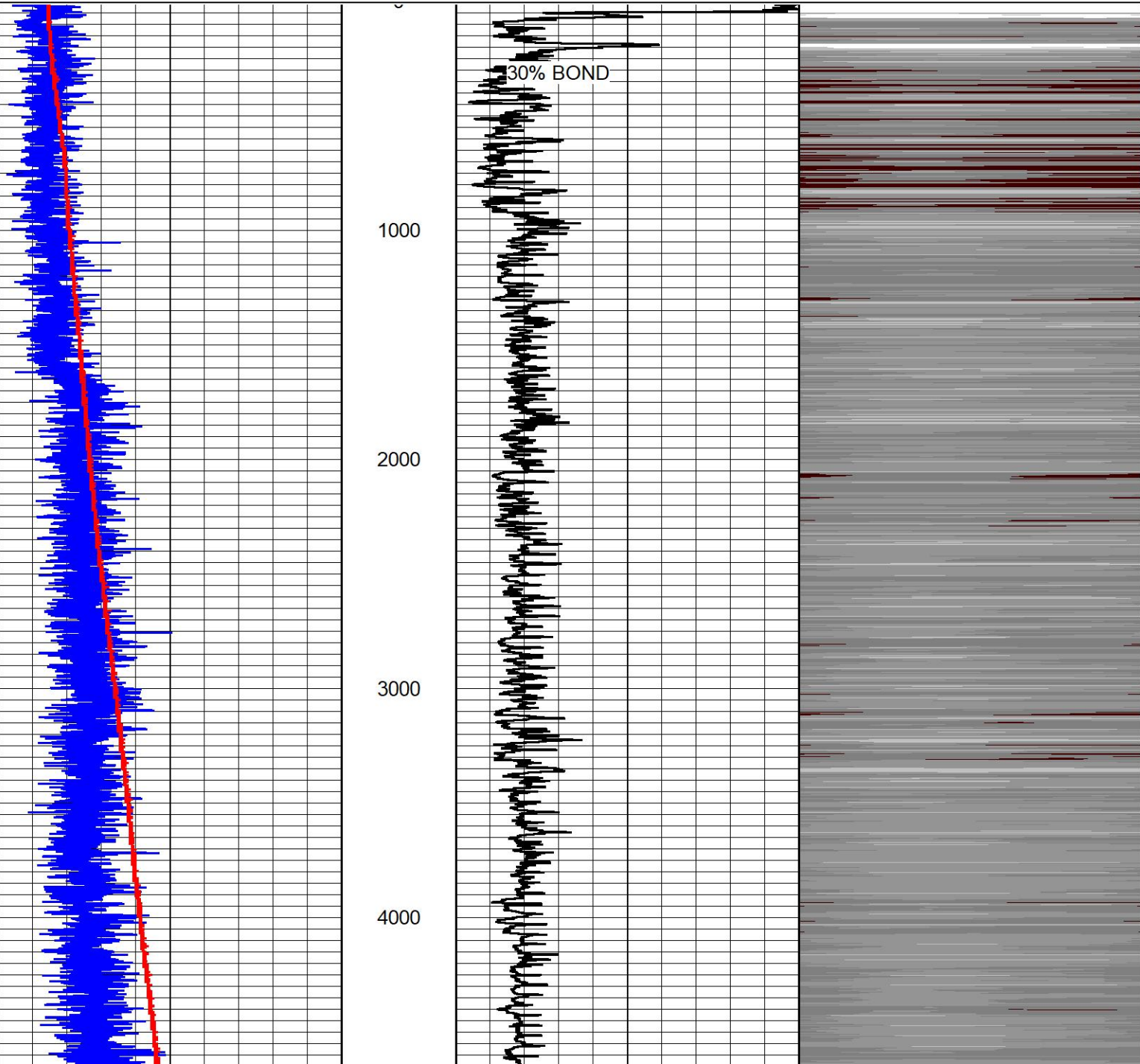
BOND INDEX

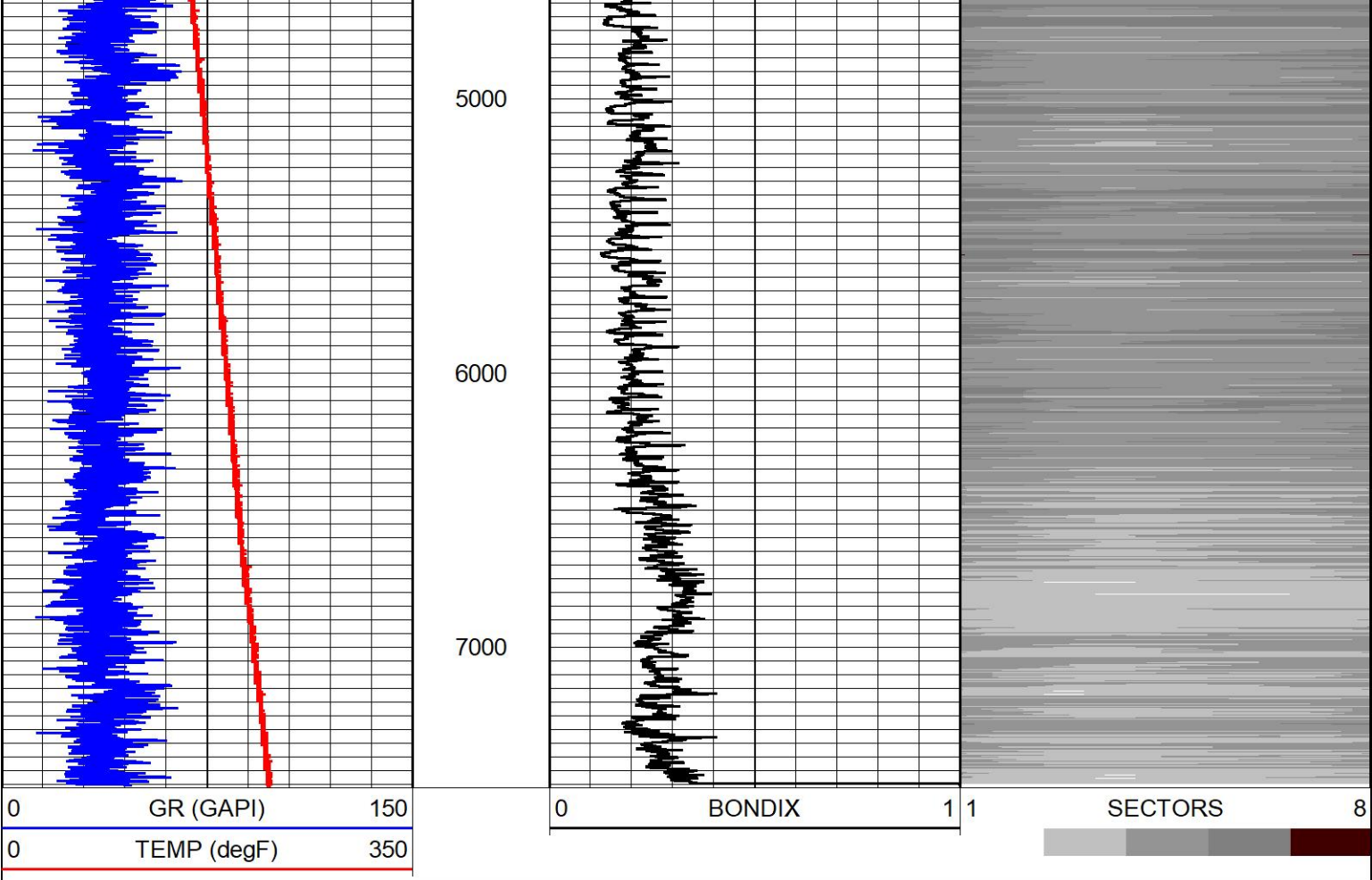
HALLIBURTON

1:7500

Database Filelivingston s19-25-9n.dbDataset PathnameMAIN_PASS.1Presentation FormatEXTRAC~2Dataset CreationWed Nov 06 08:23:01 2019Charted byDepth in Feet scaled 1:7500

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





BOND INDEX

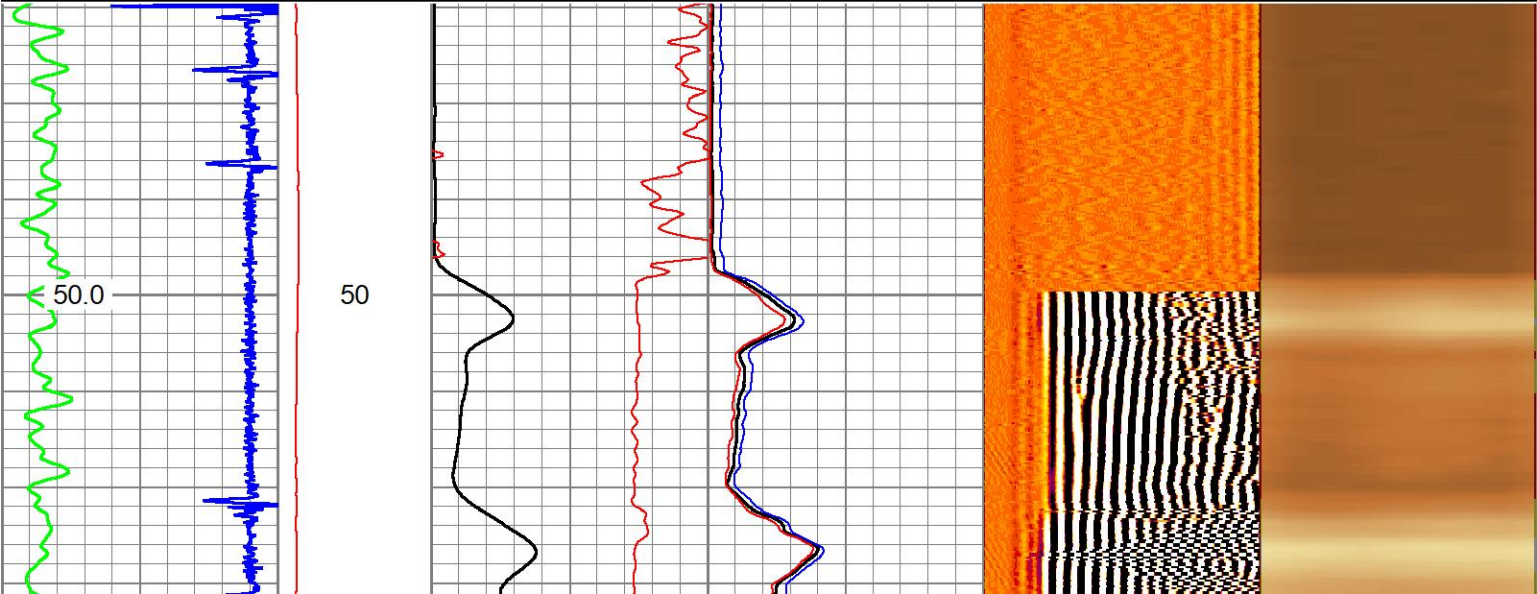
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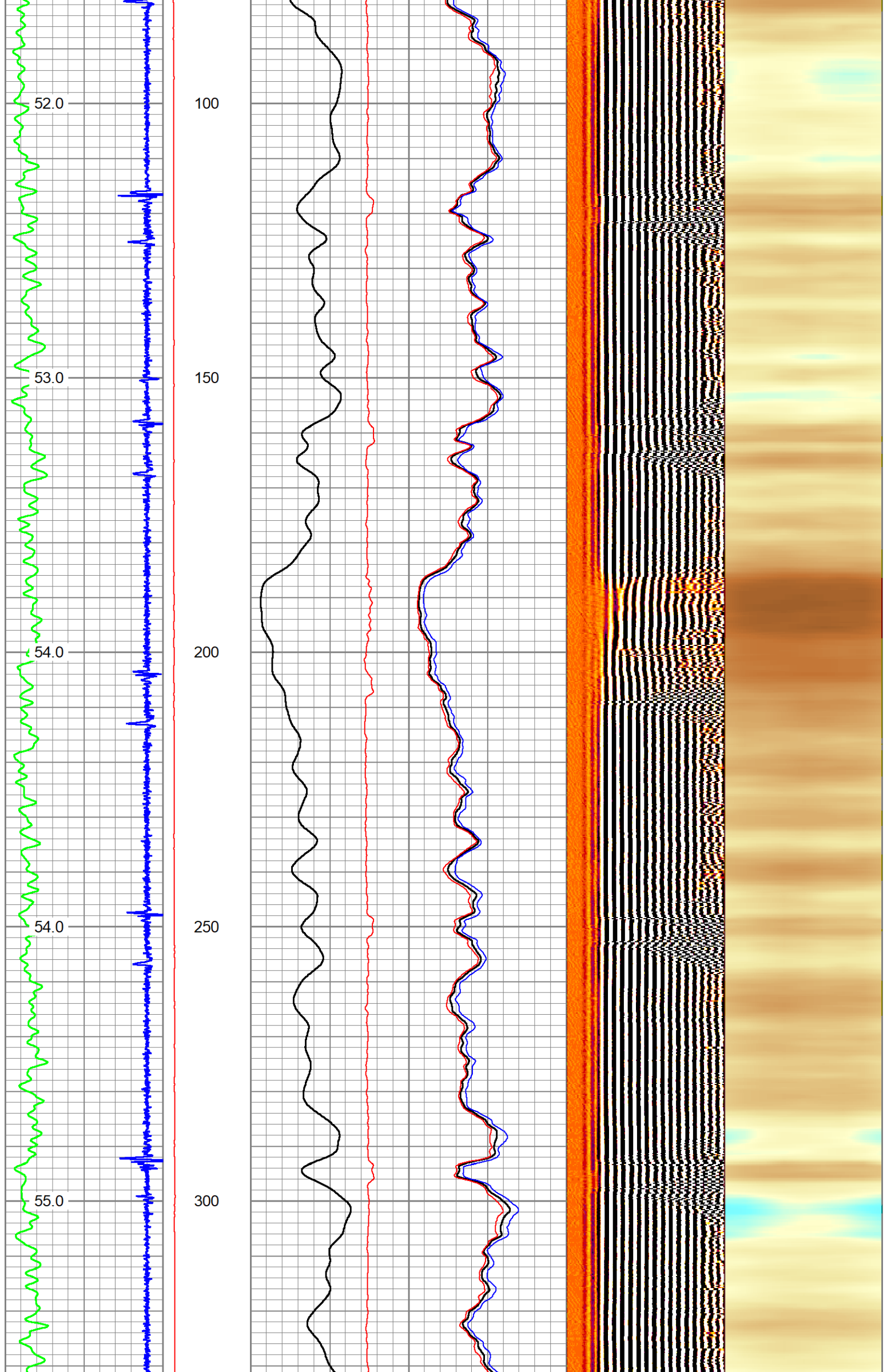
MAIN PASS

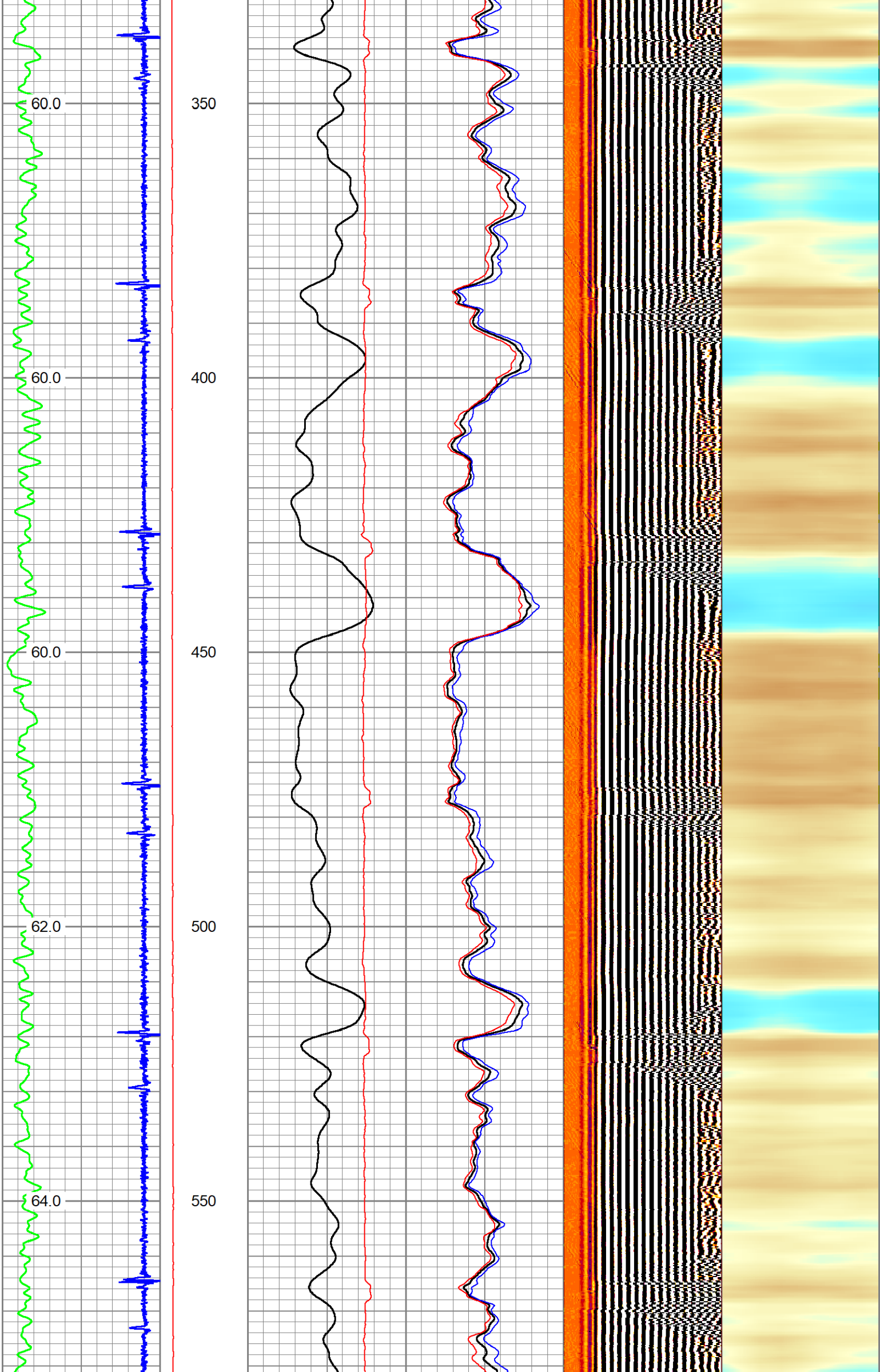
5" = 100'

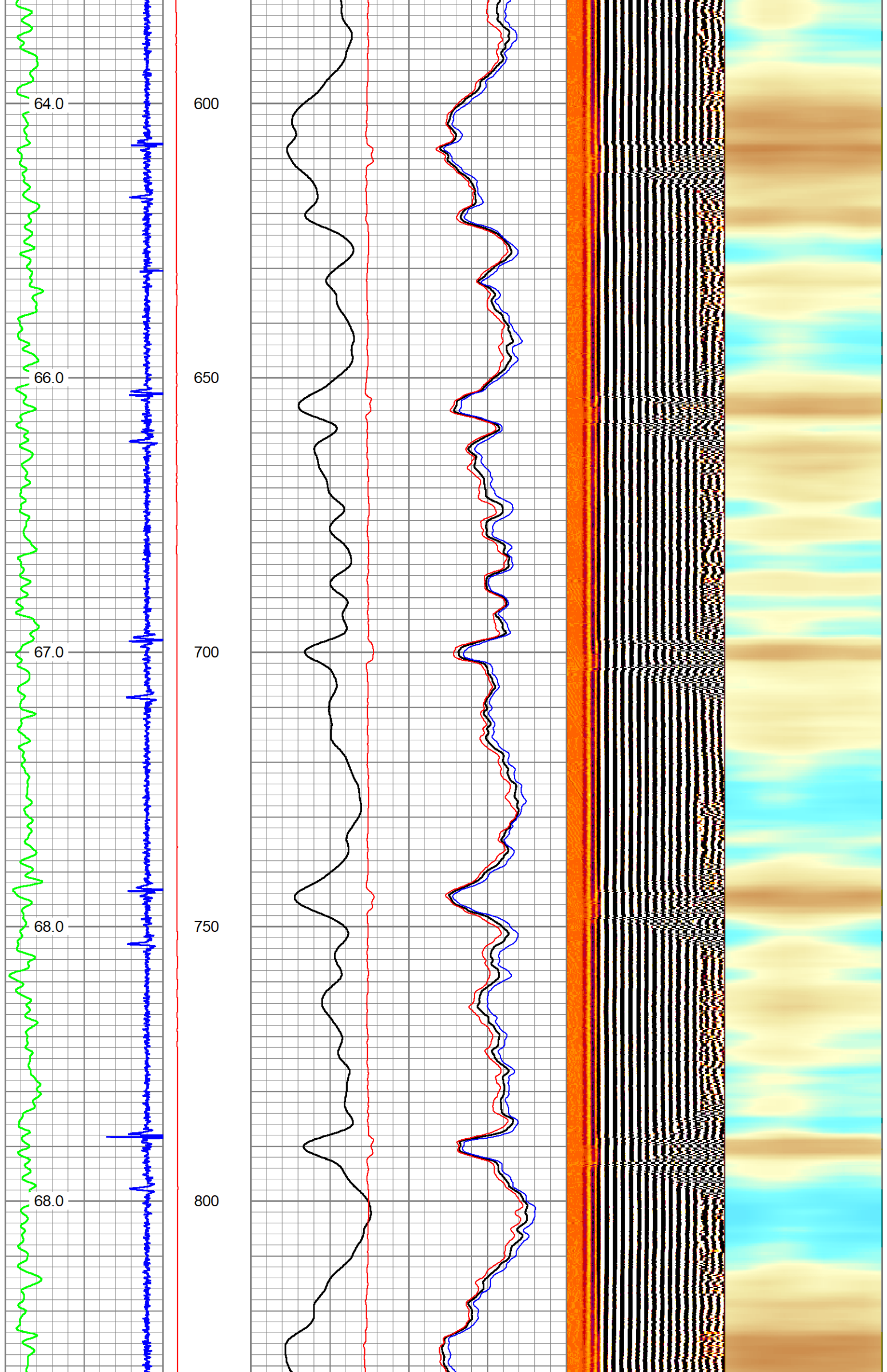
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Dataset Pathname MAIN_PASS
Presentation Format extraction rcbl
Dataset Creation Wed Nov 06 07:21:22 2019
Charted by Depth in Feet scaled 1:240

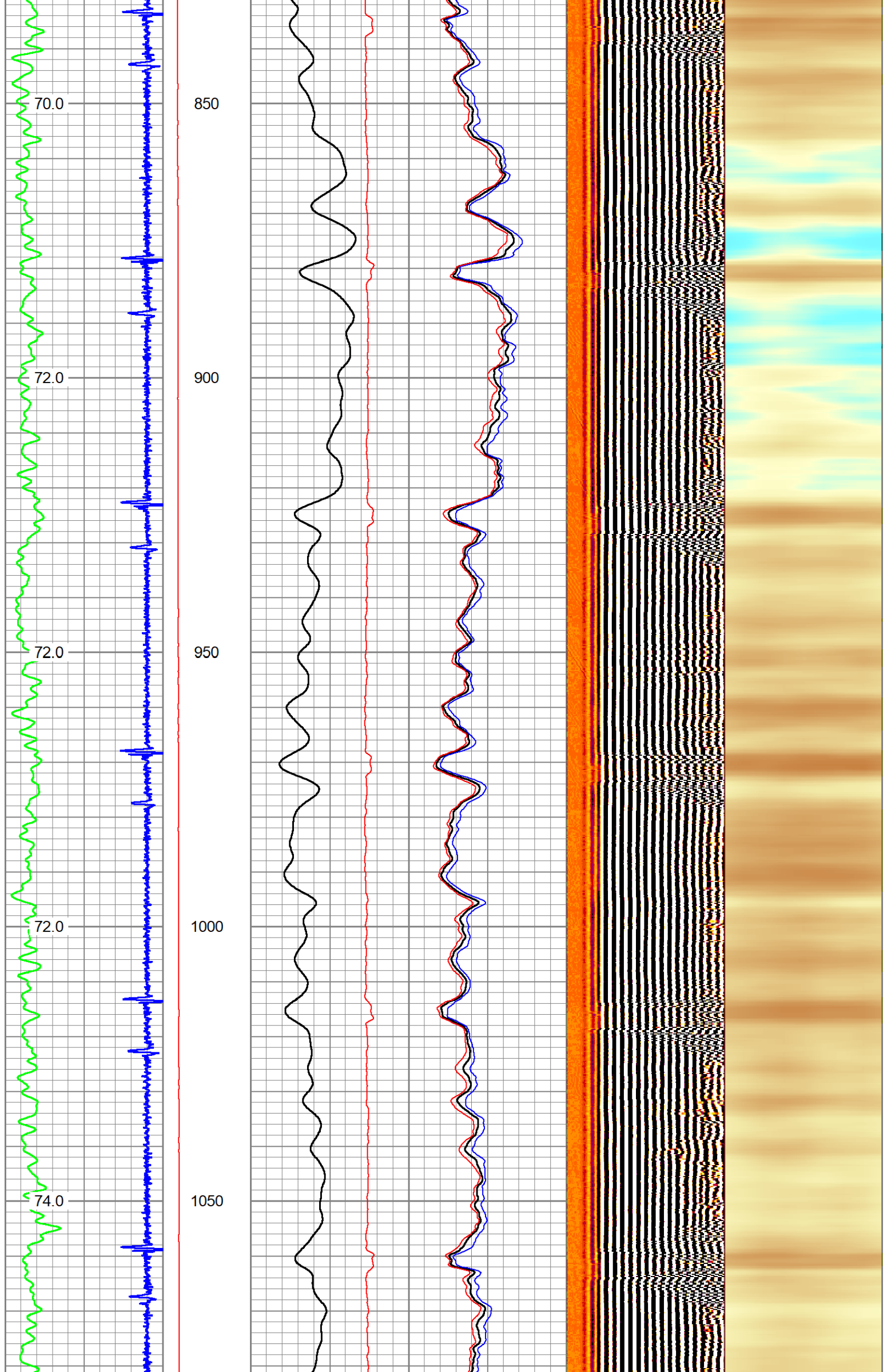
-18	CCL	2	LTEN	0	AMP3FT (mV) 100	0	AMPAVG	100	200	VDL (usec) 1200	1	RADIAL MAP	8	
0	GR (GAPI)	150		0	(lb/2000	3ft Travel Time	0	AMPMAX						100
TEMP					200	(usec)	300	0						AMPMIN
(degF)														

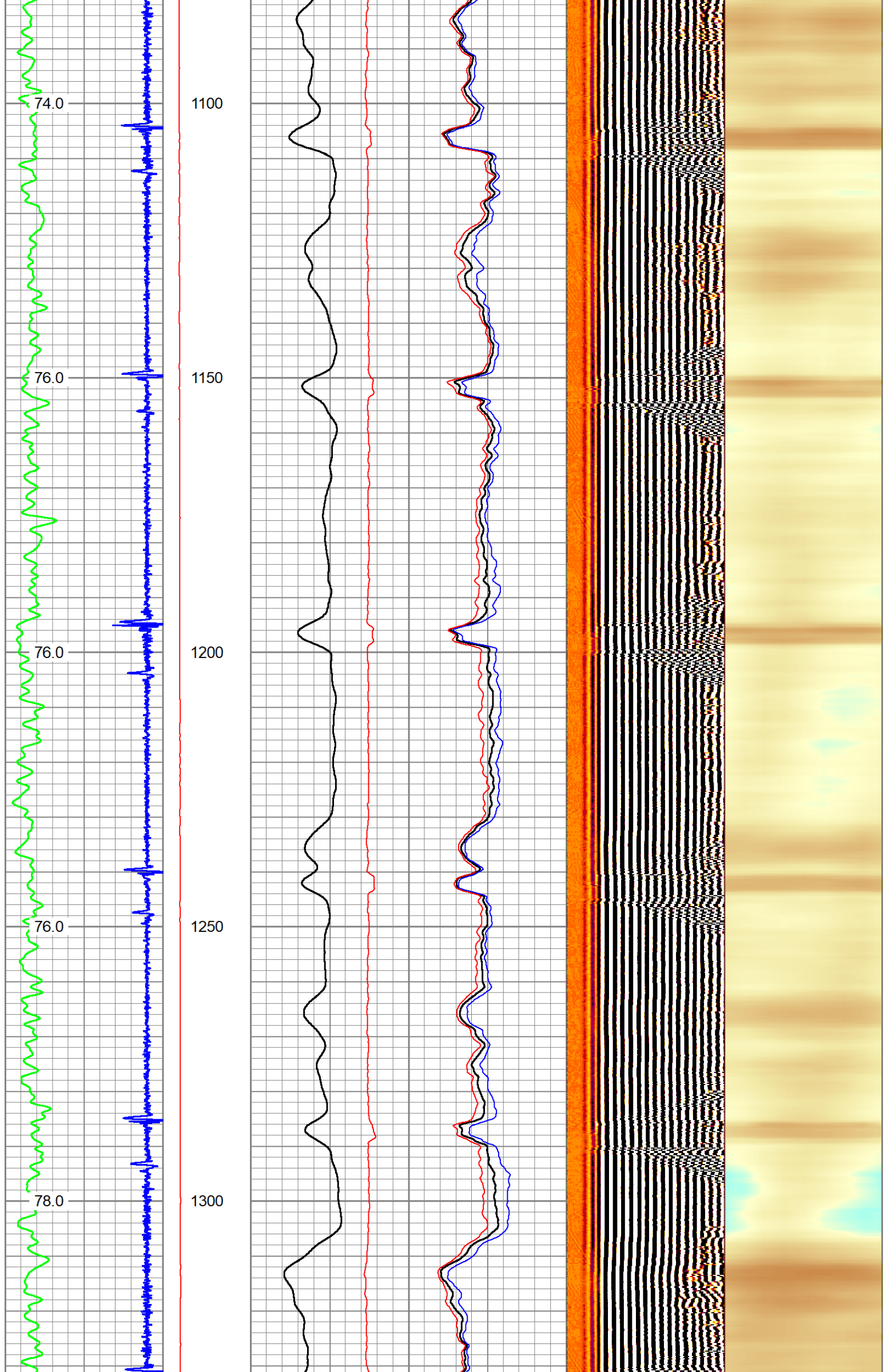


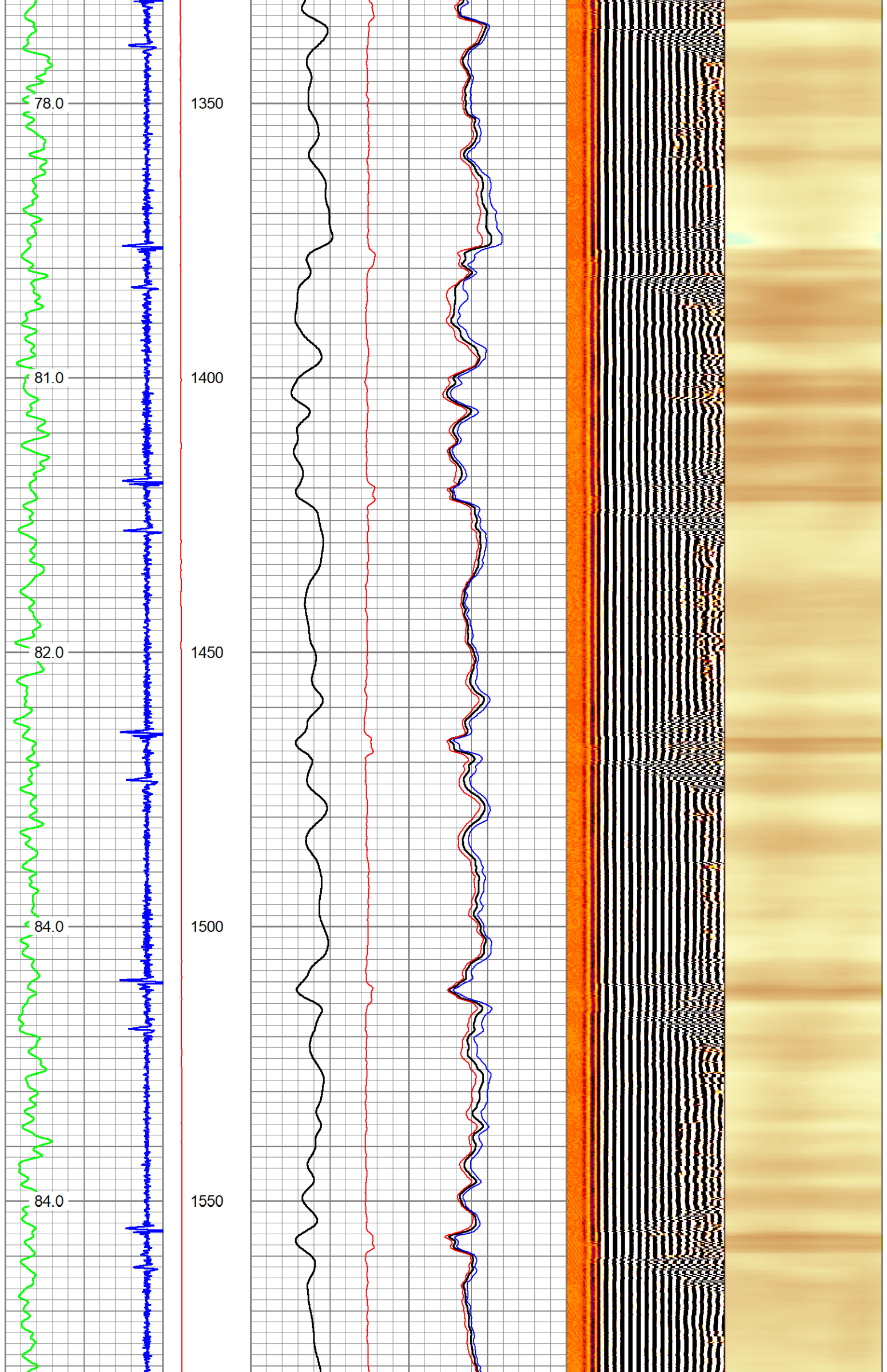


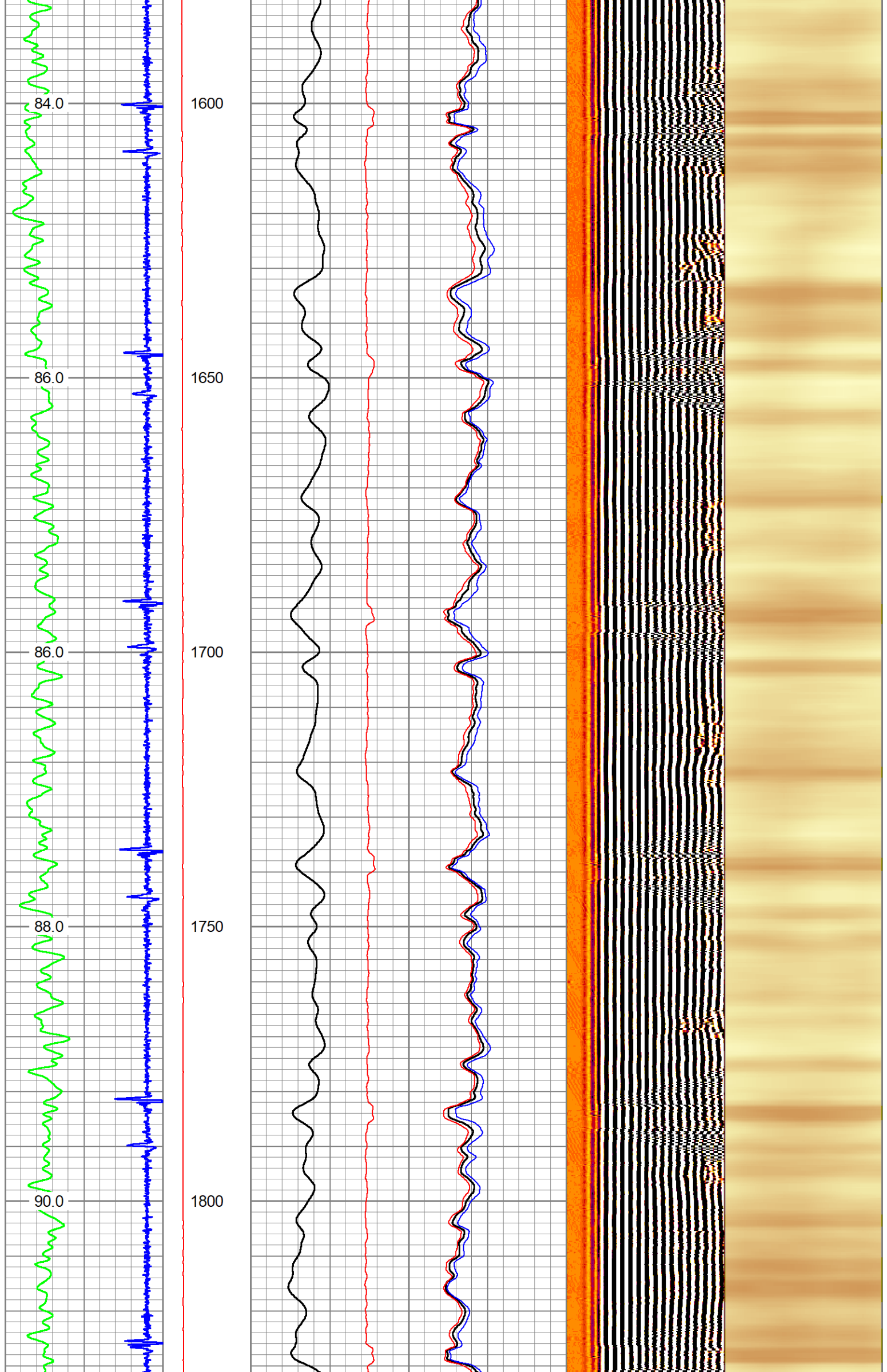


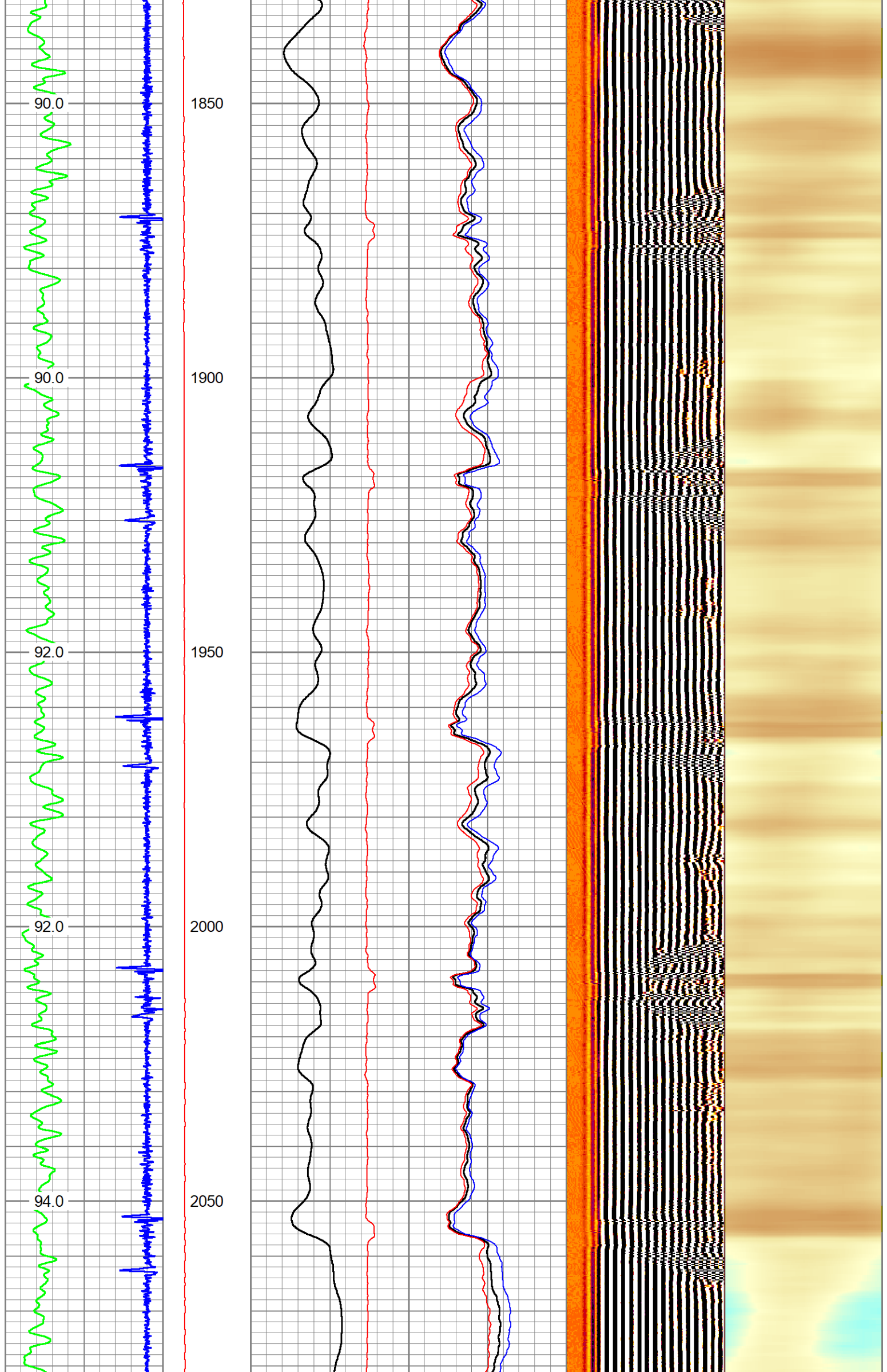


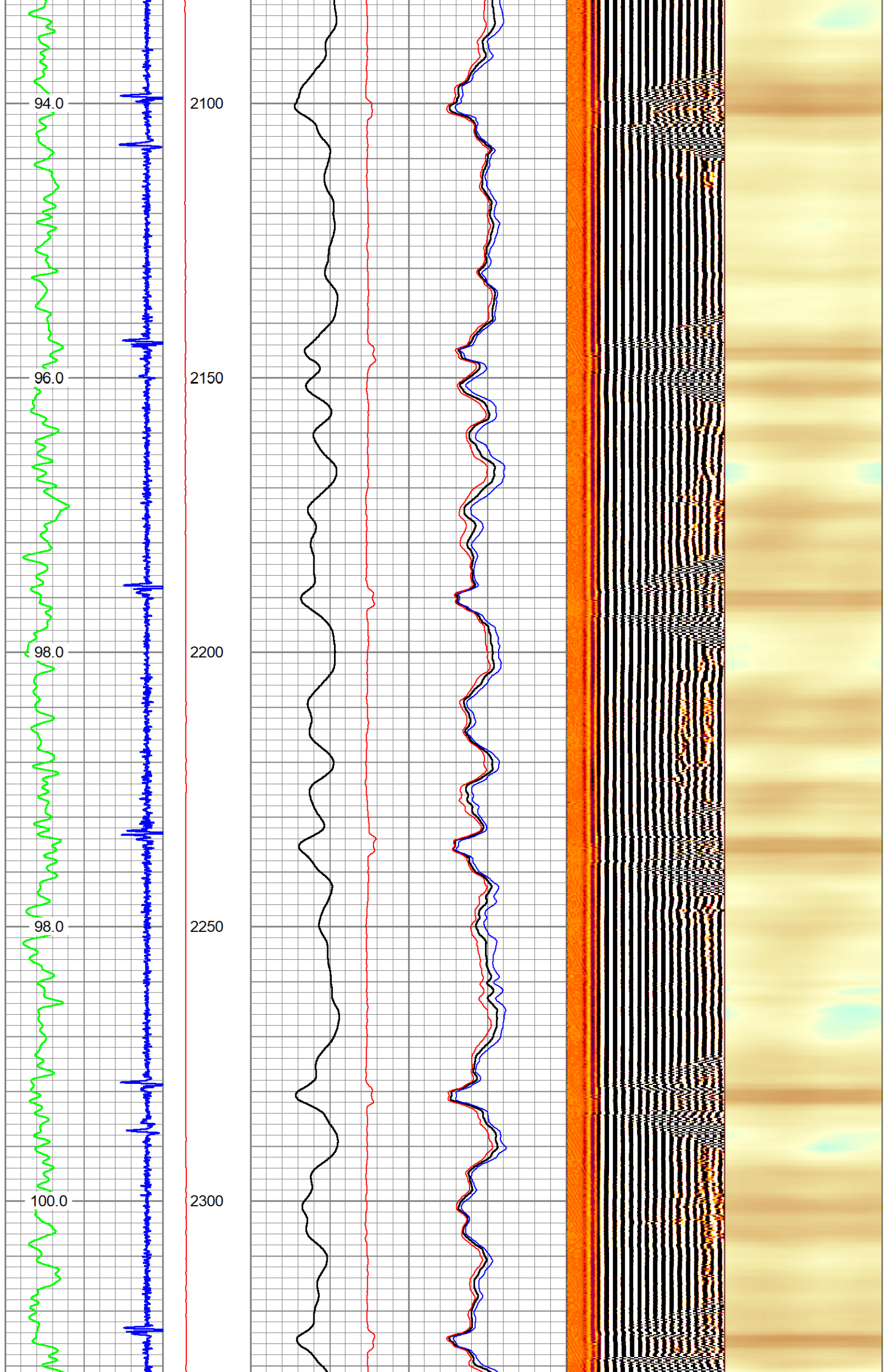


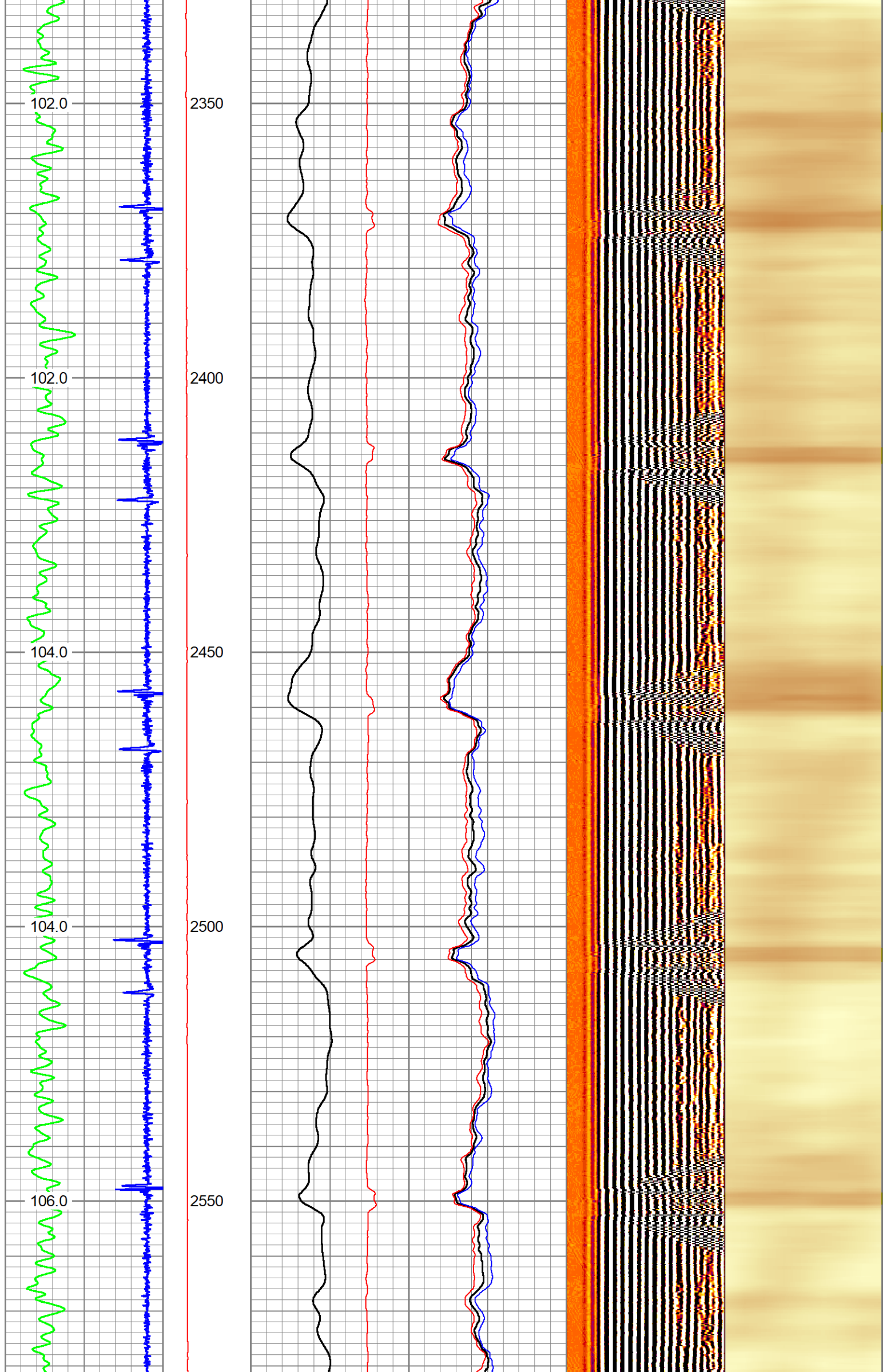


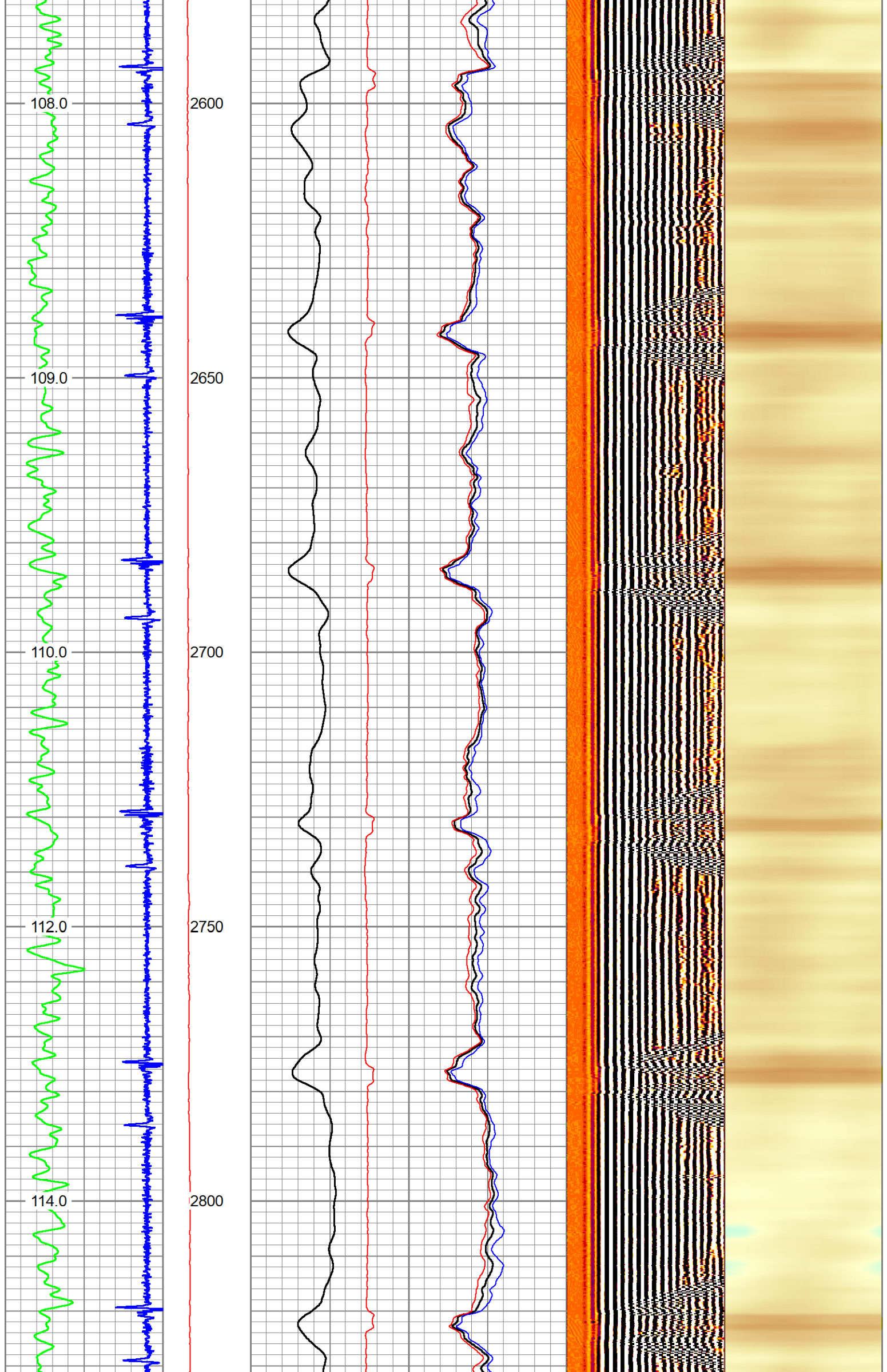


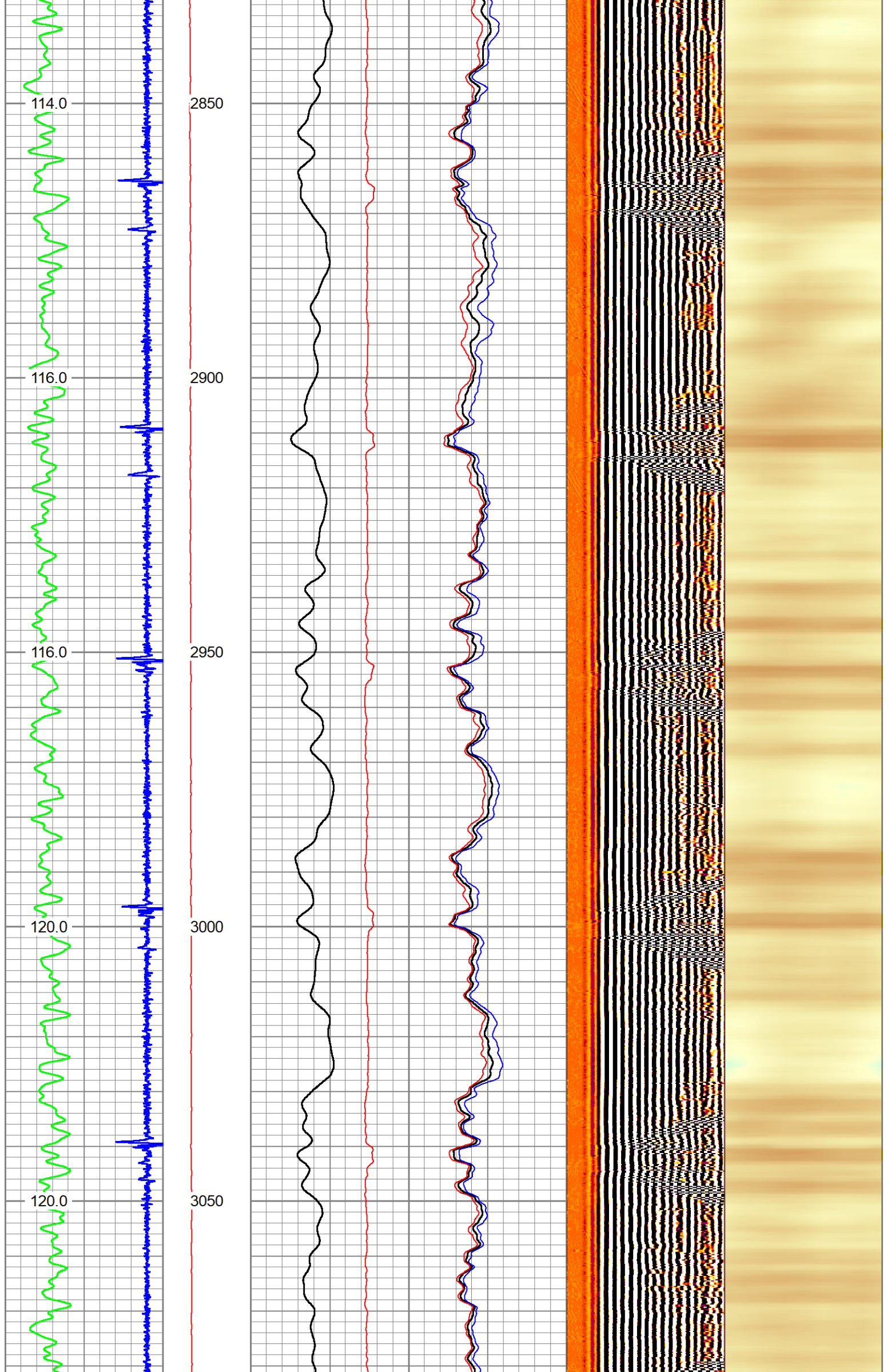


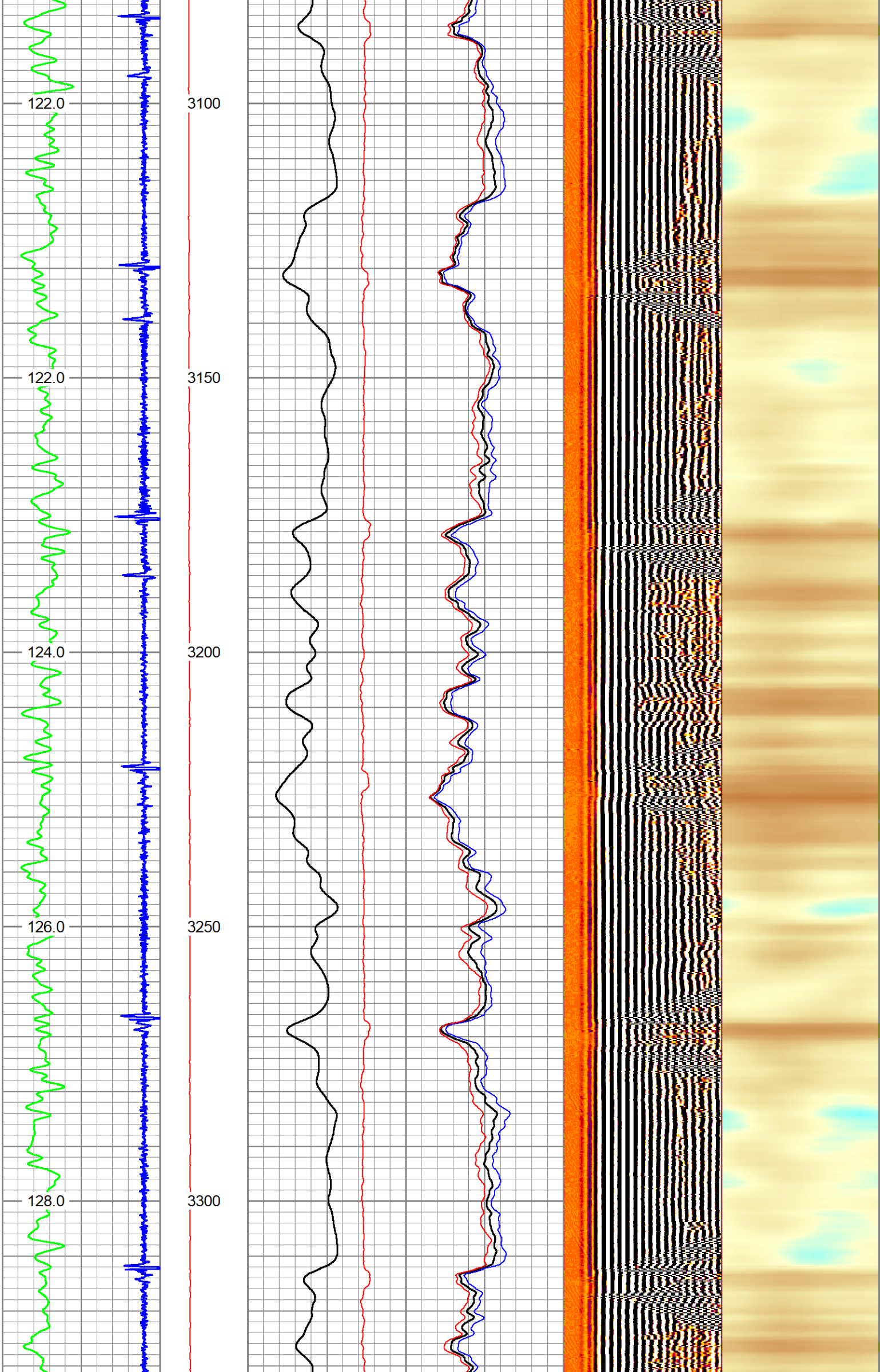


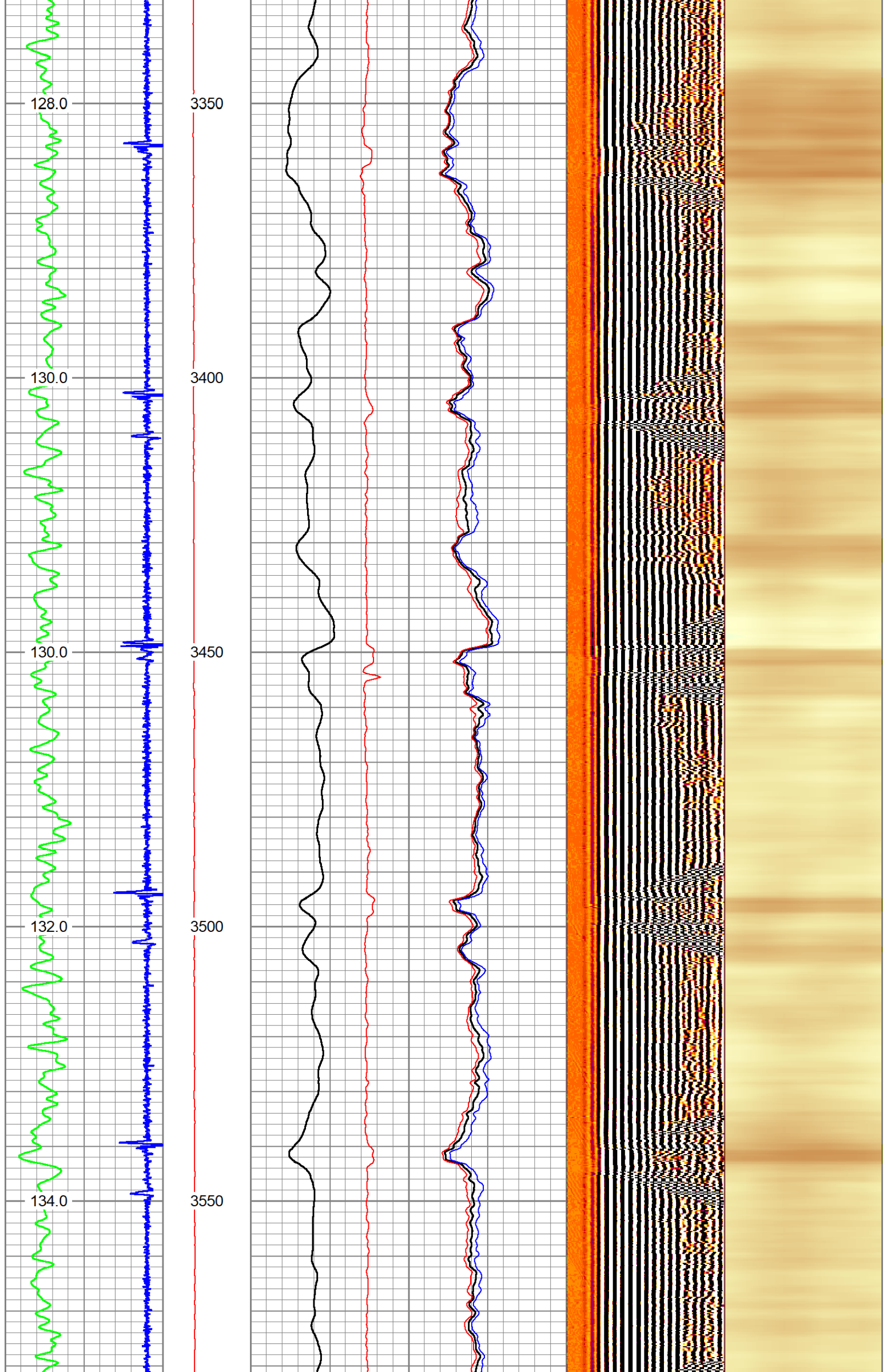


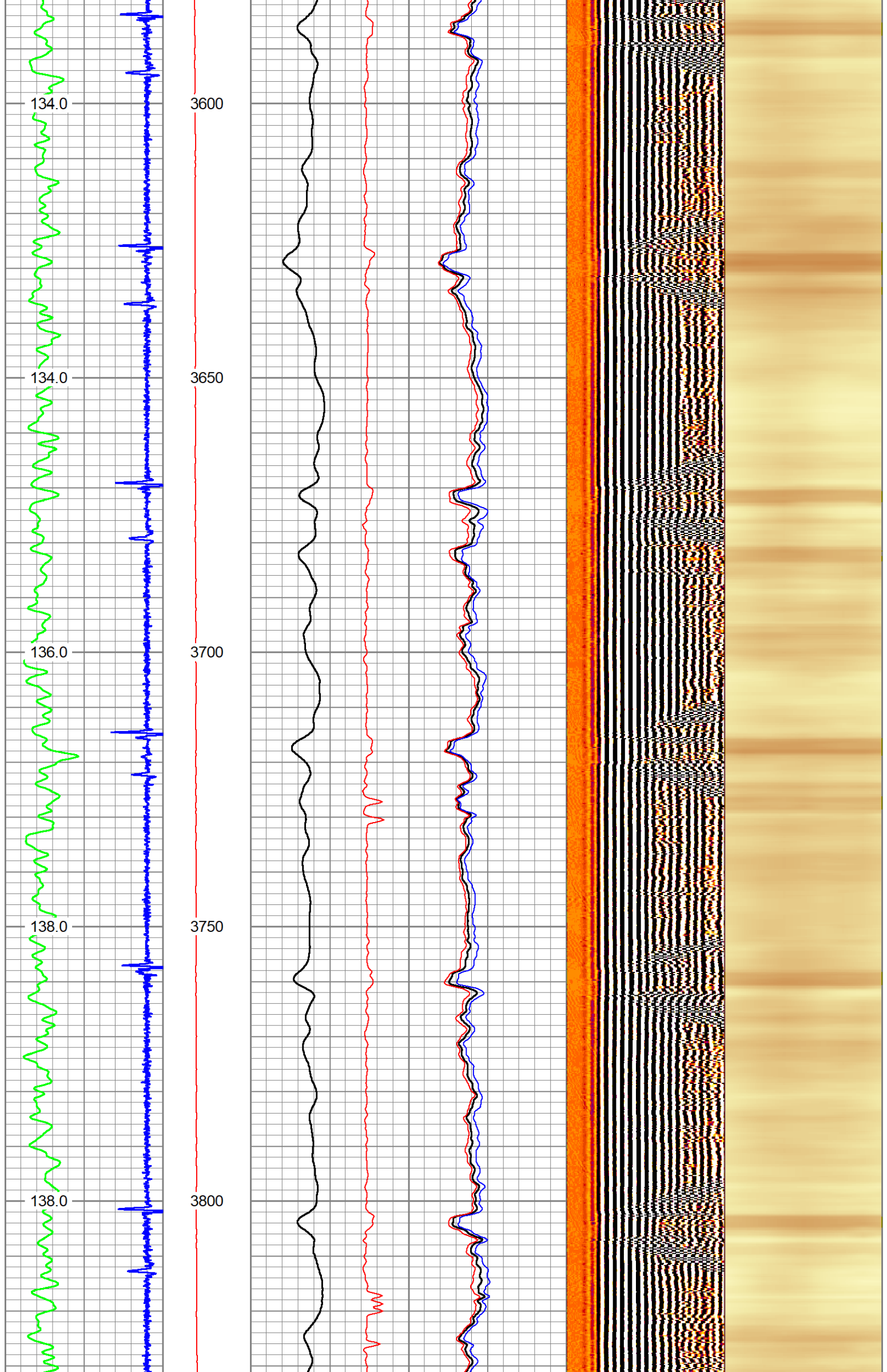


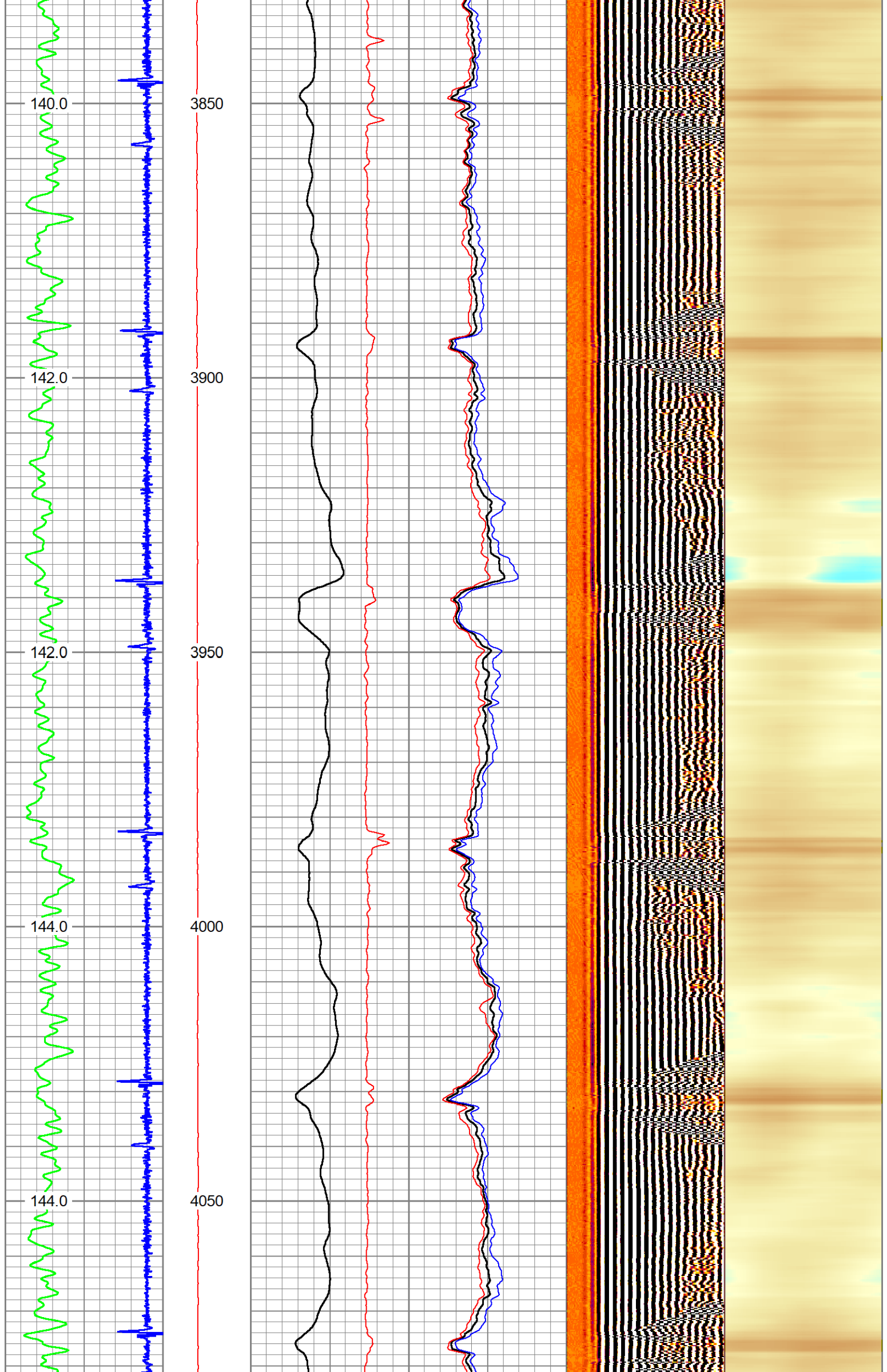


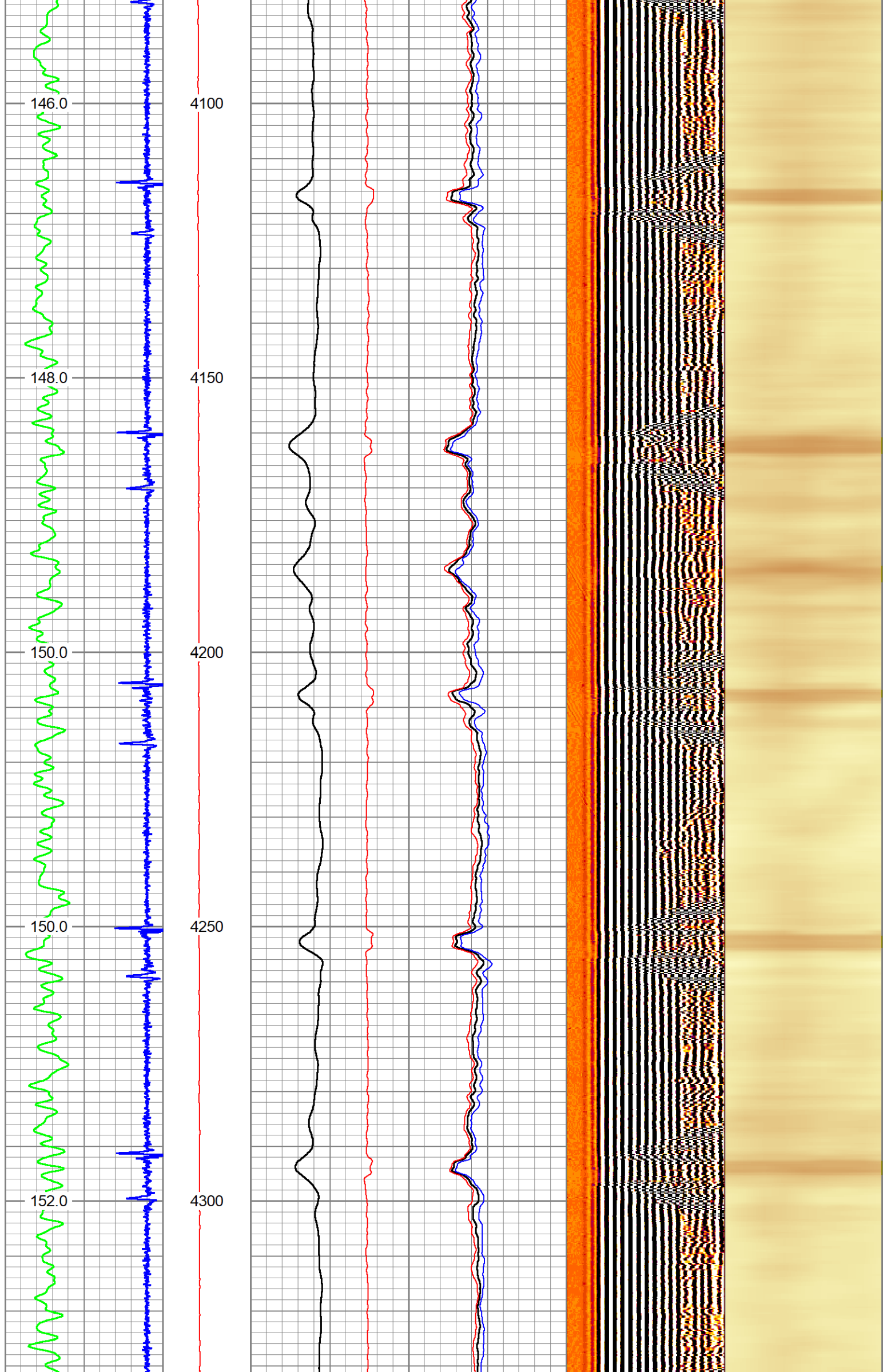


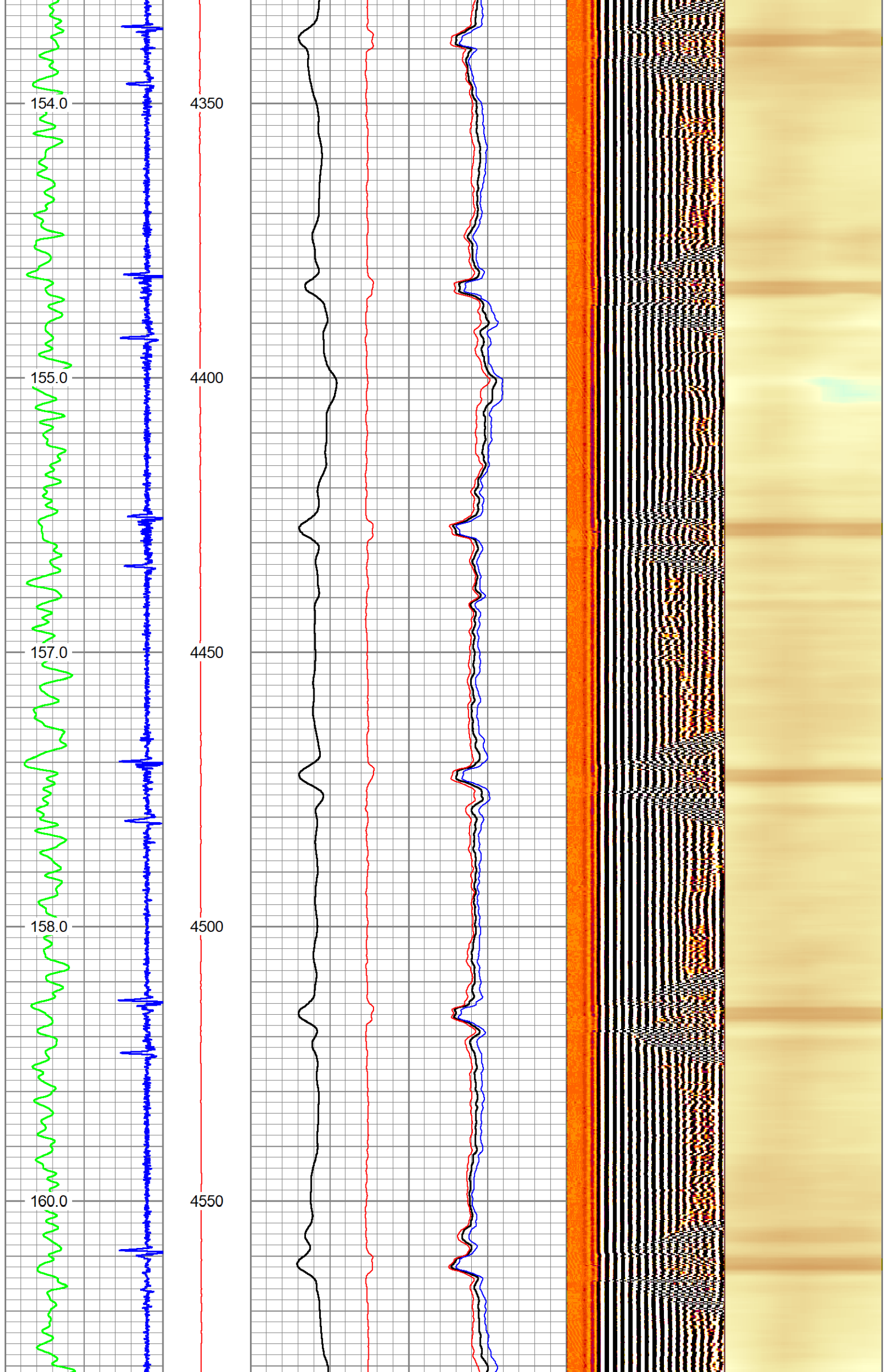


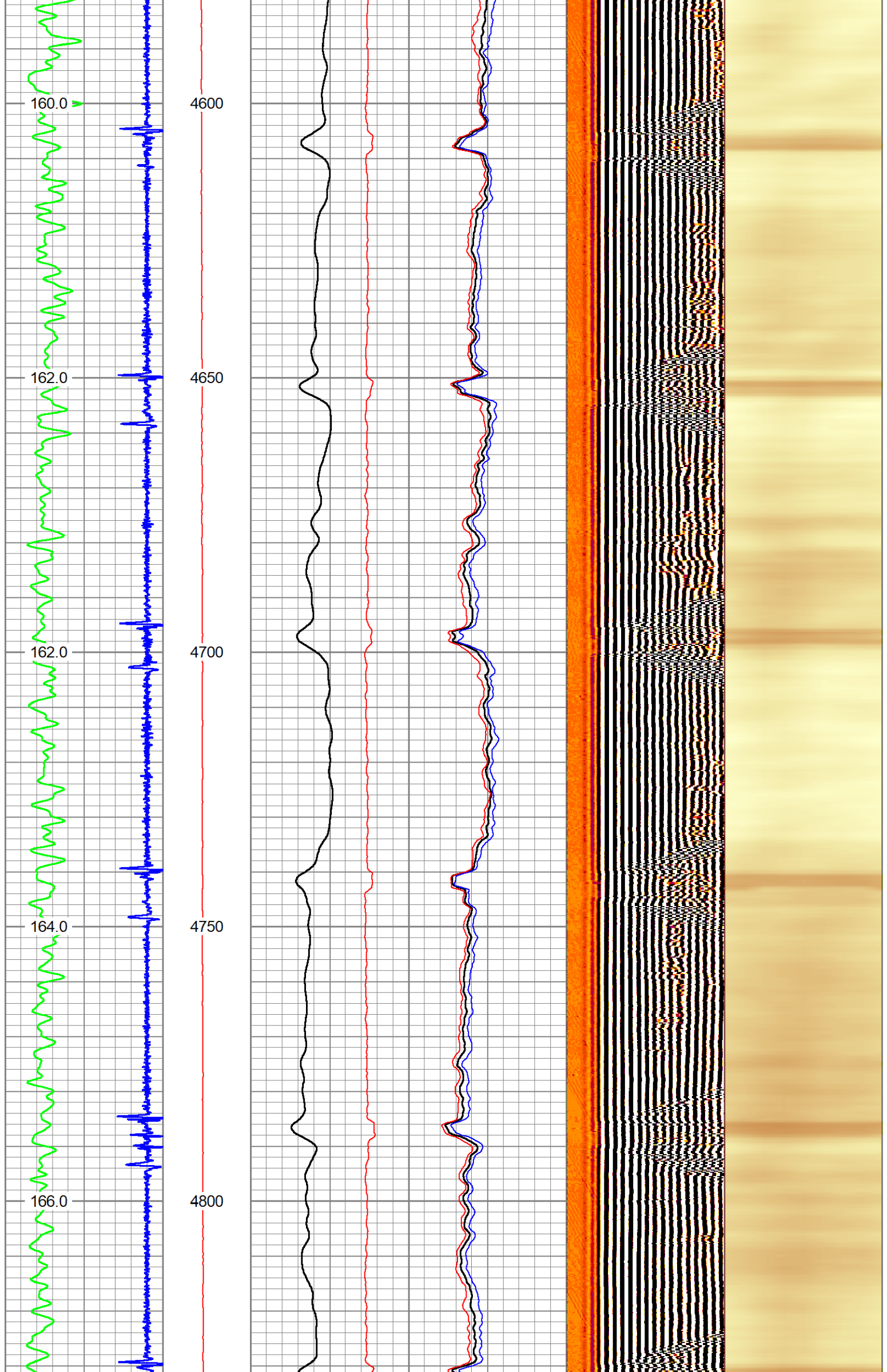


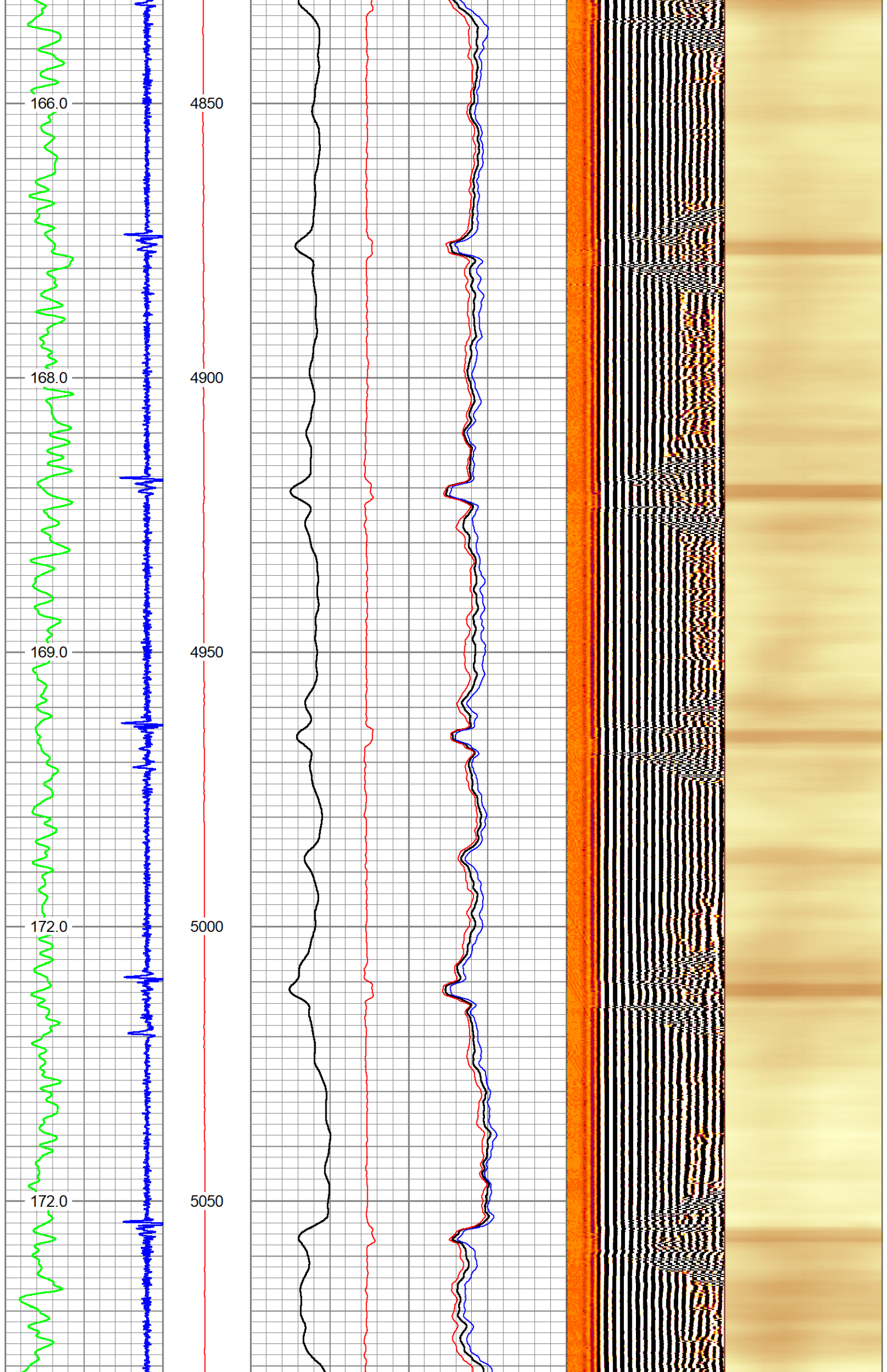


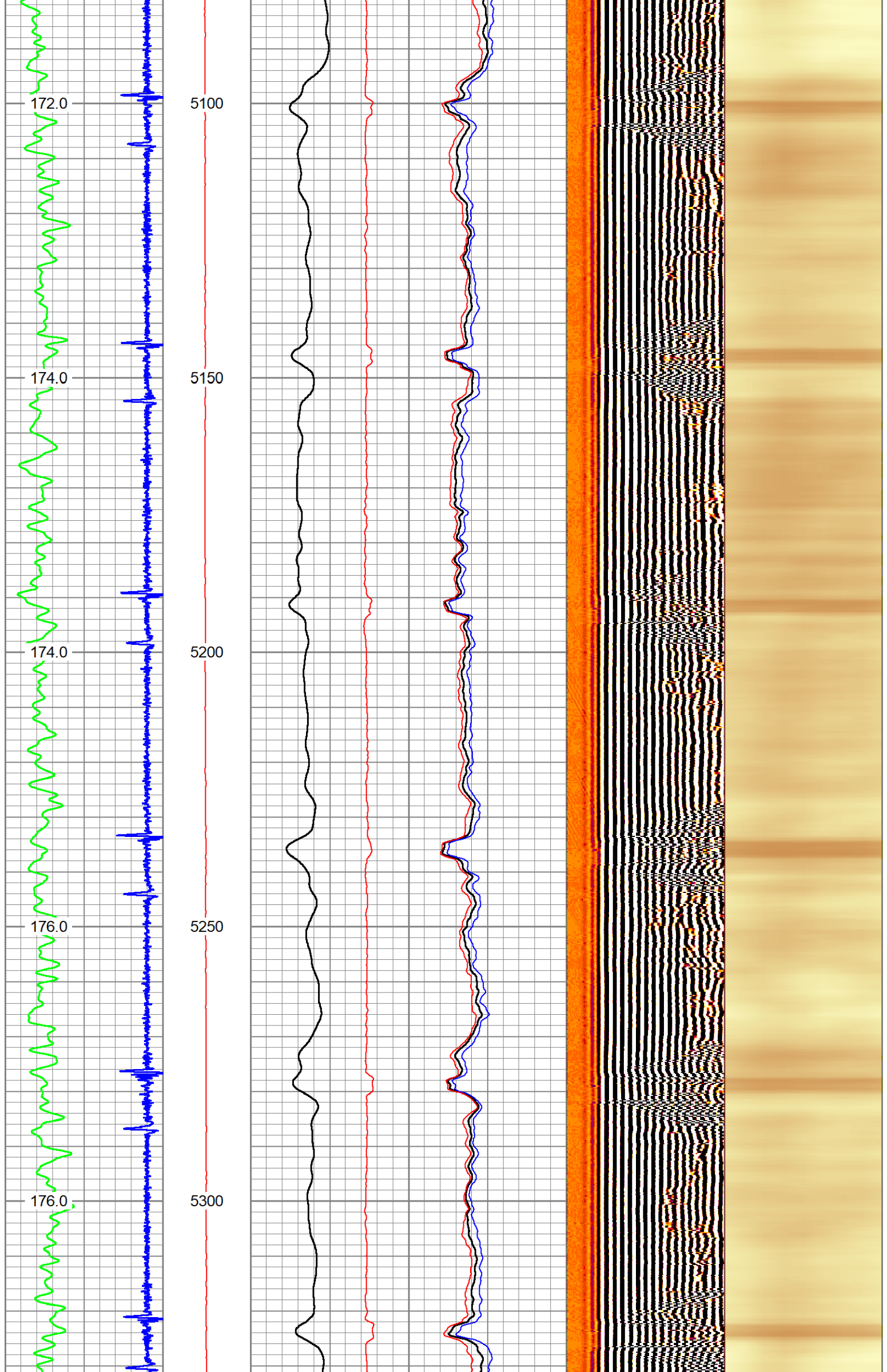


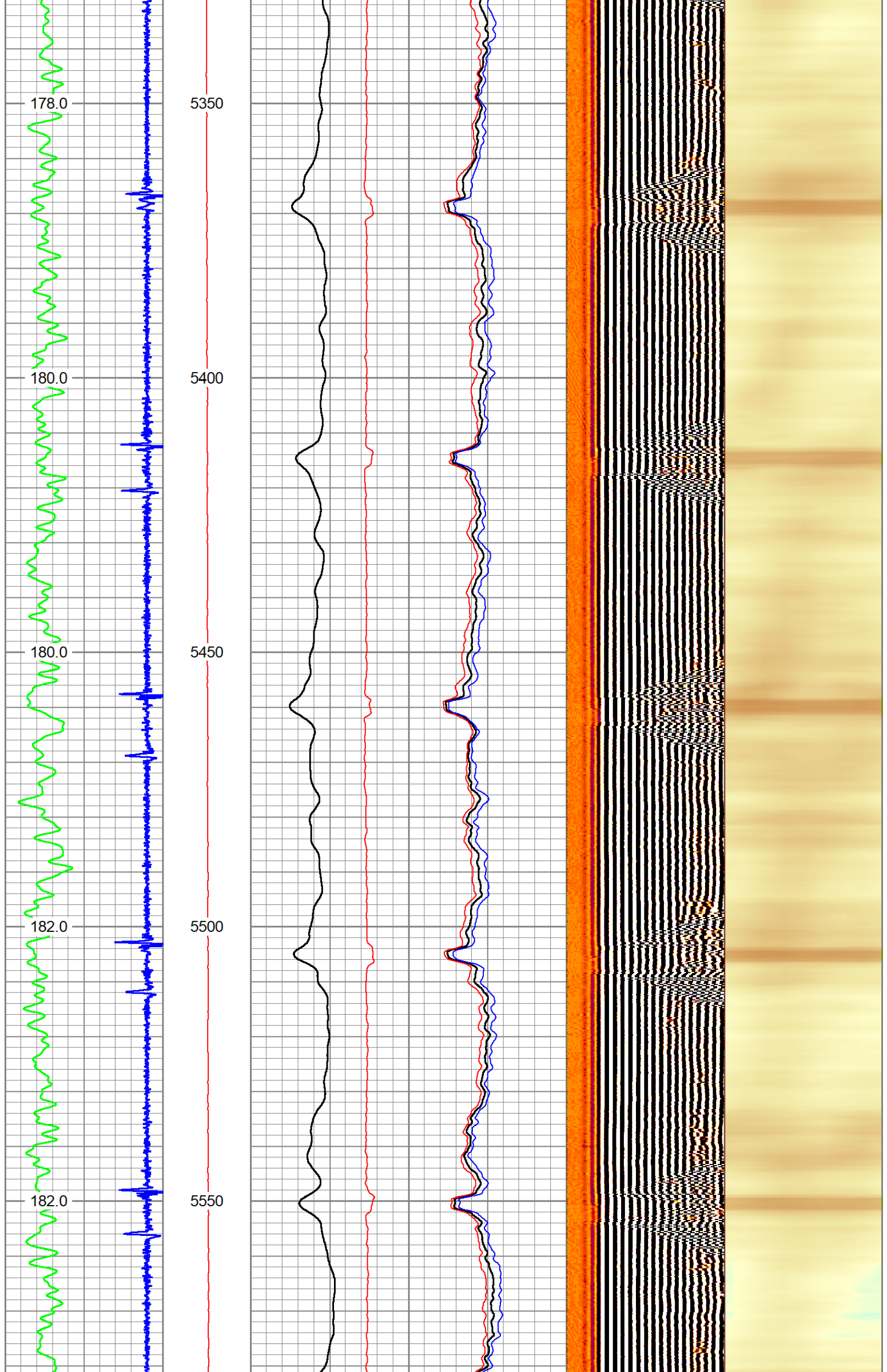


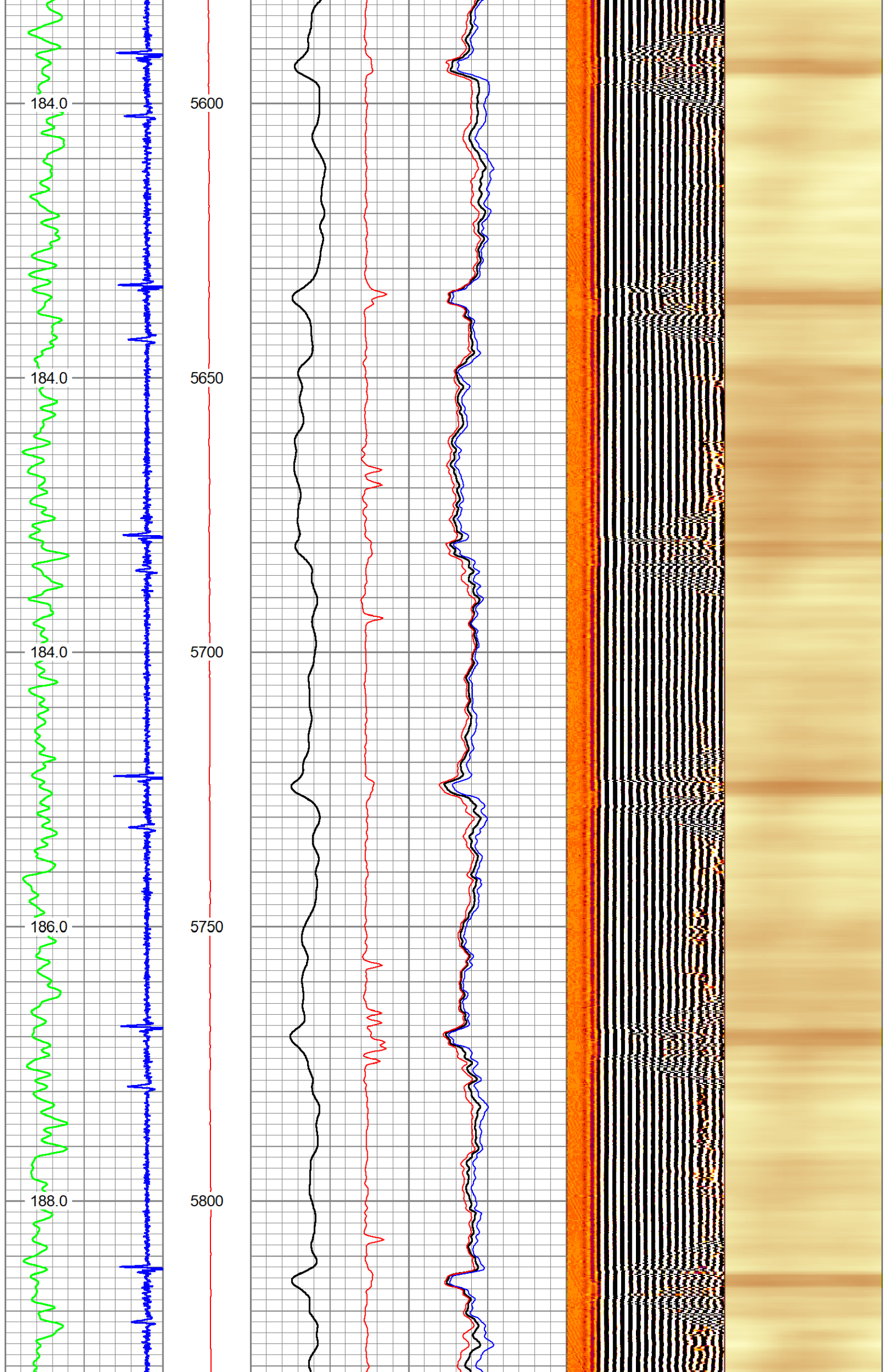


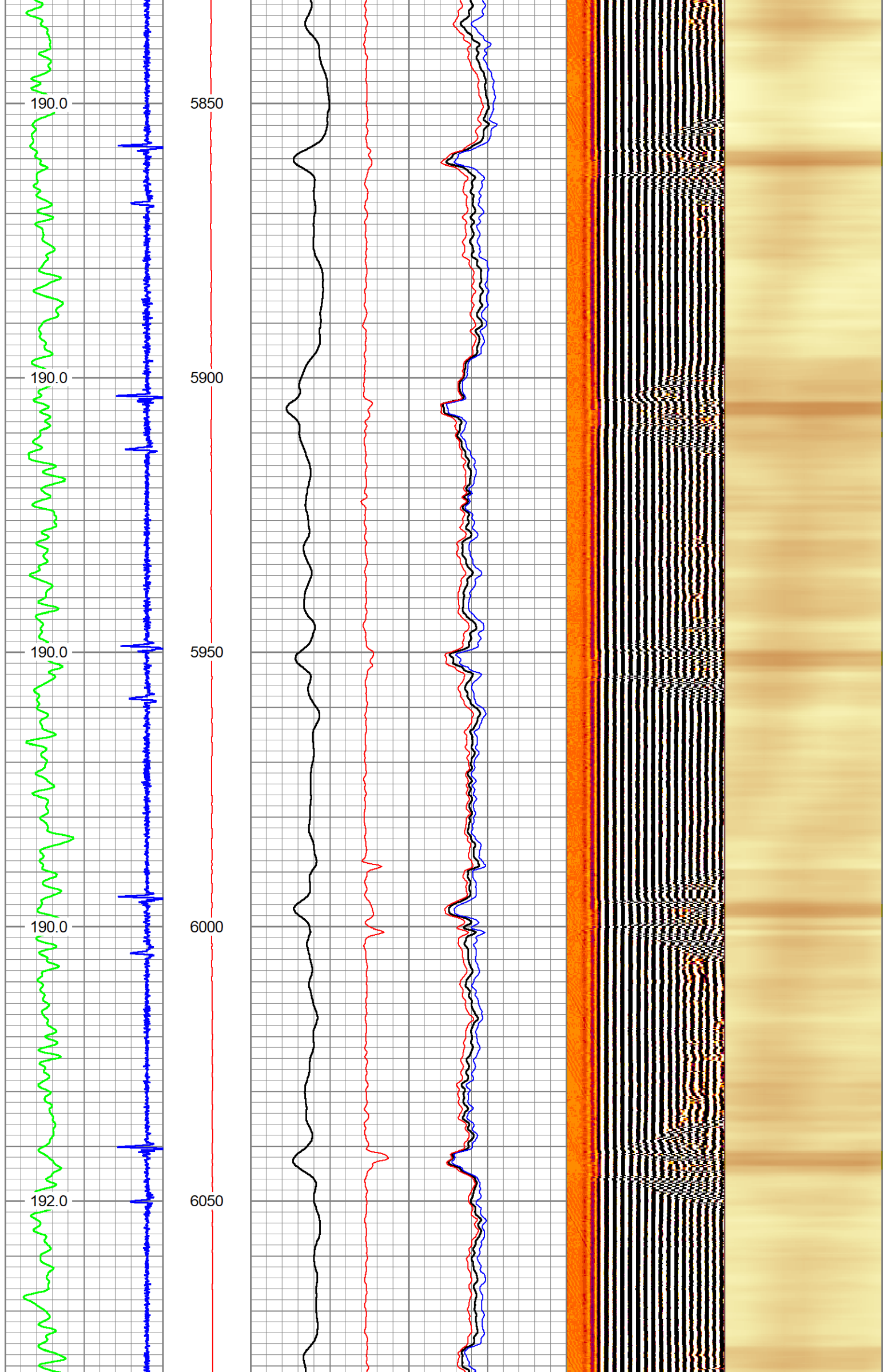


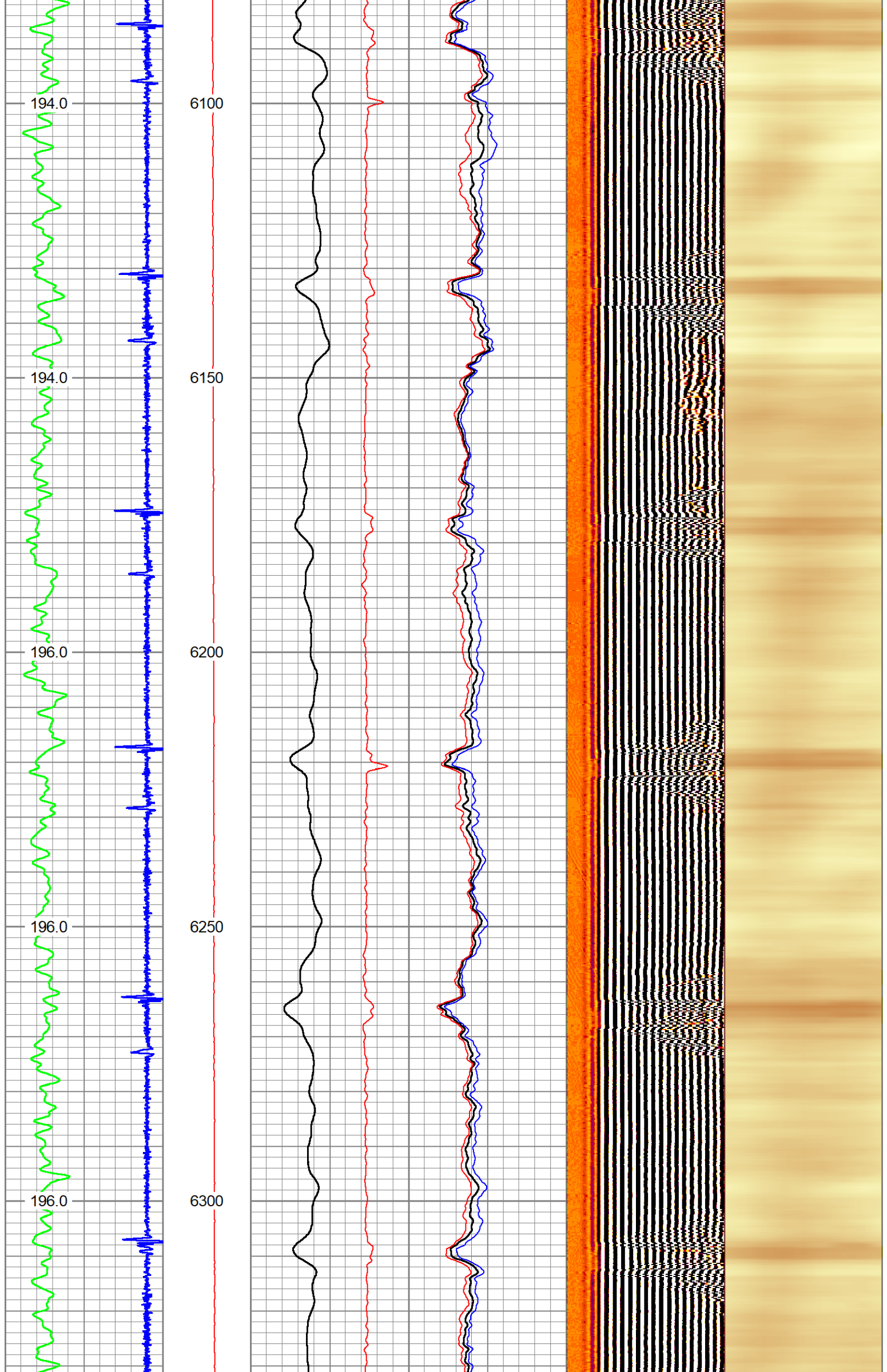


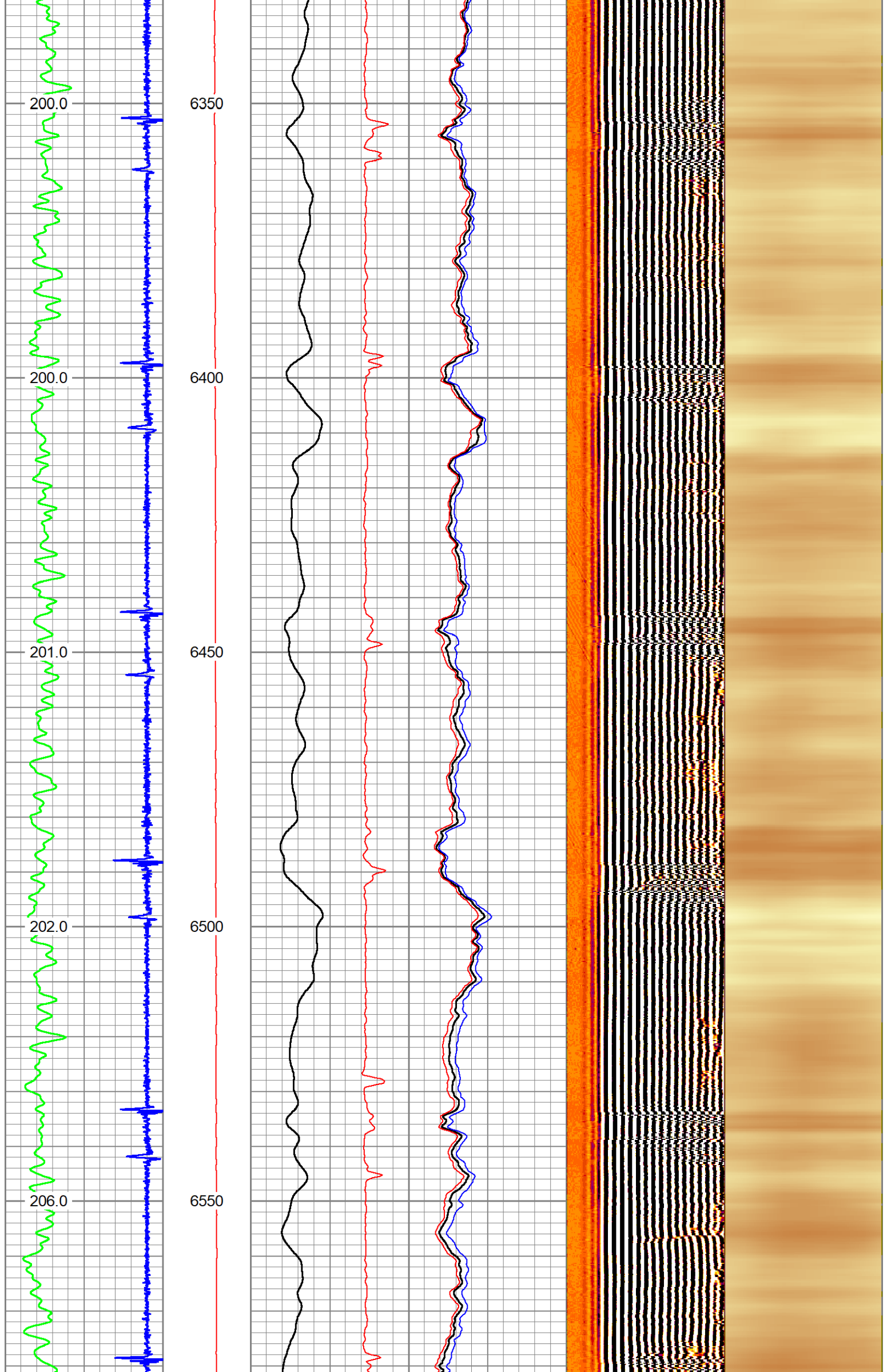


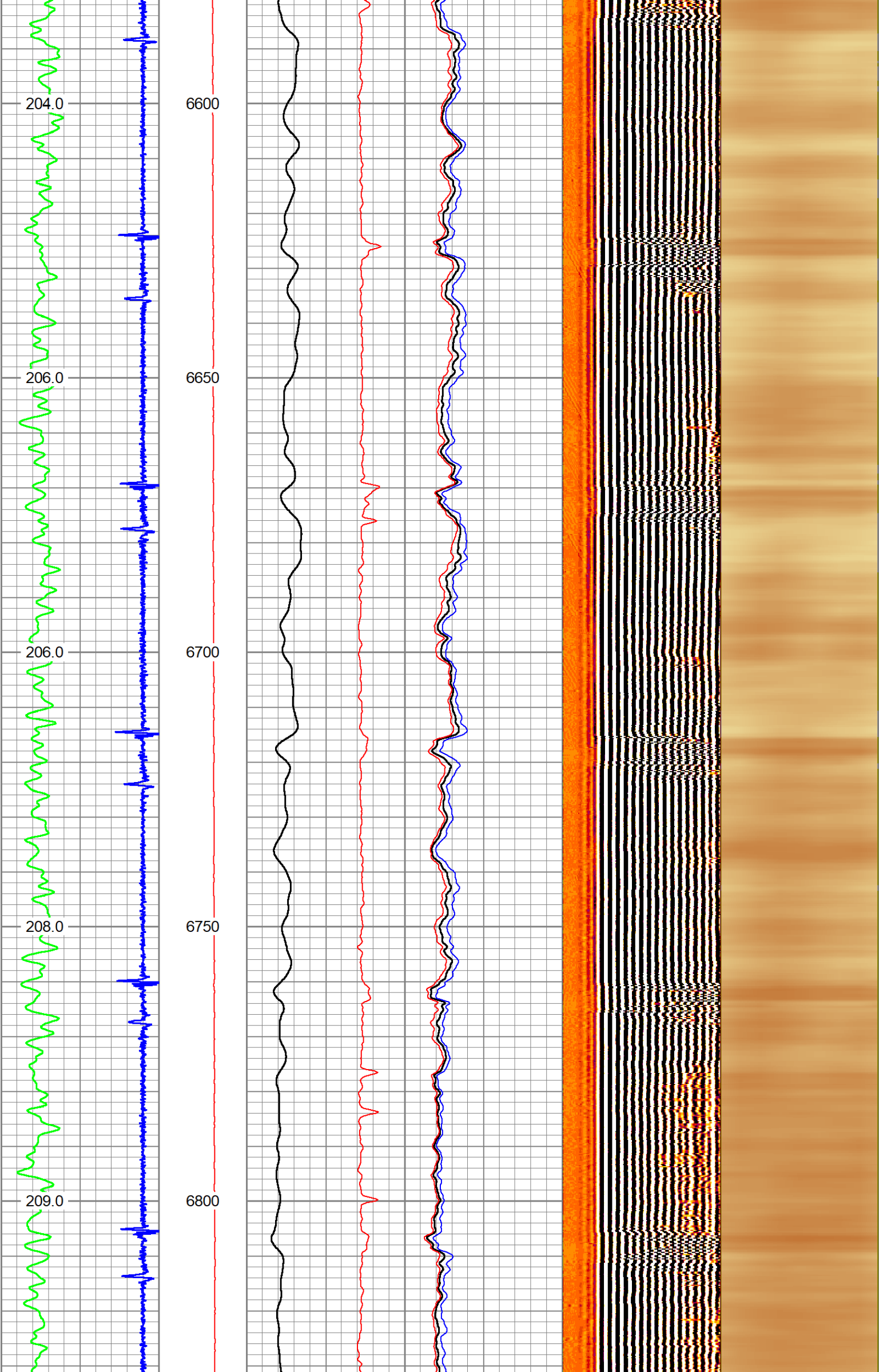


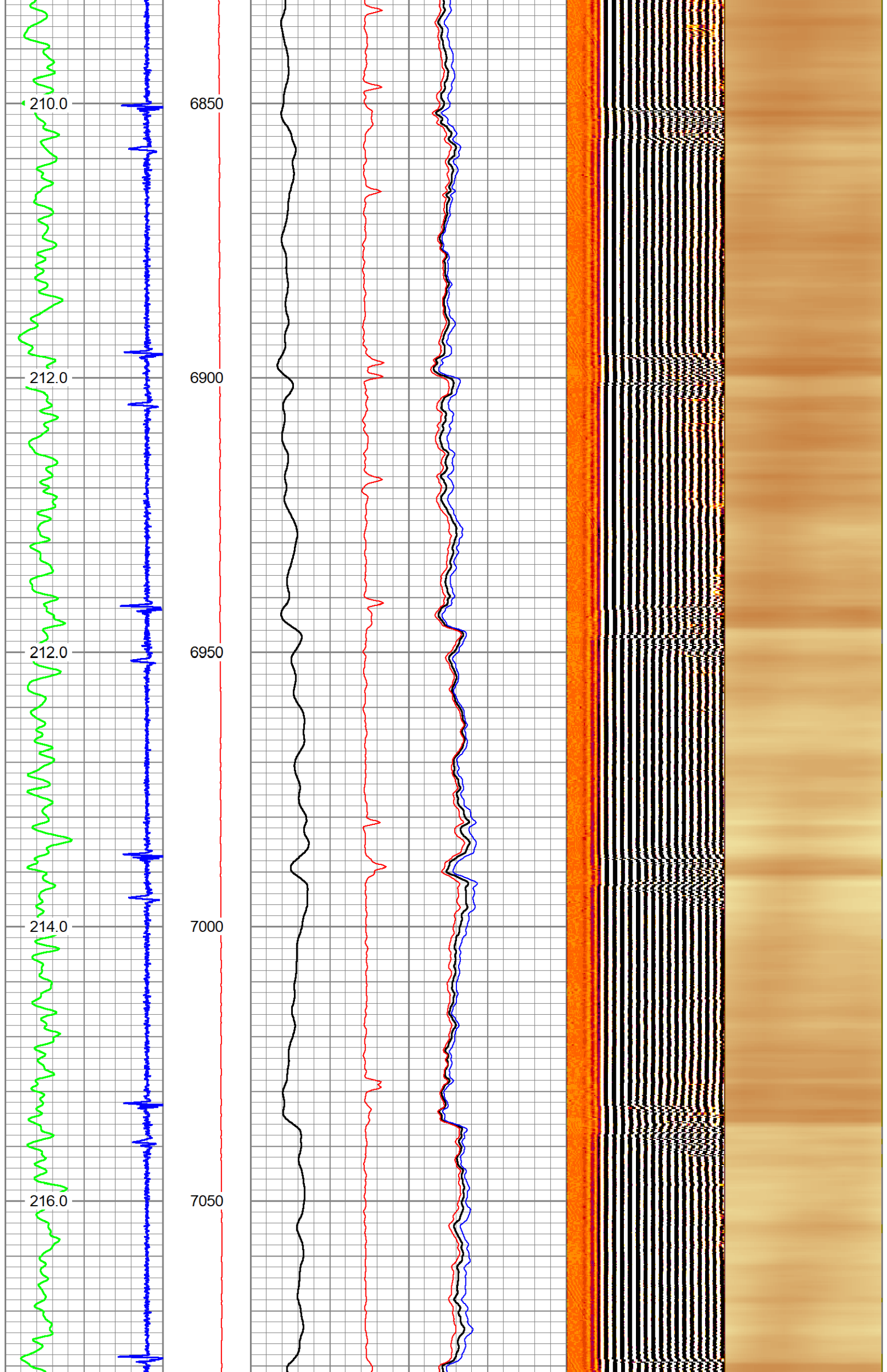


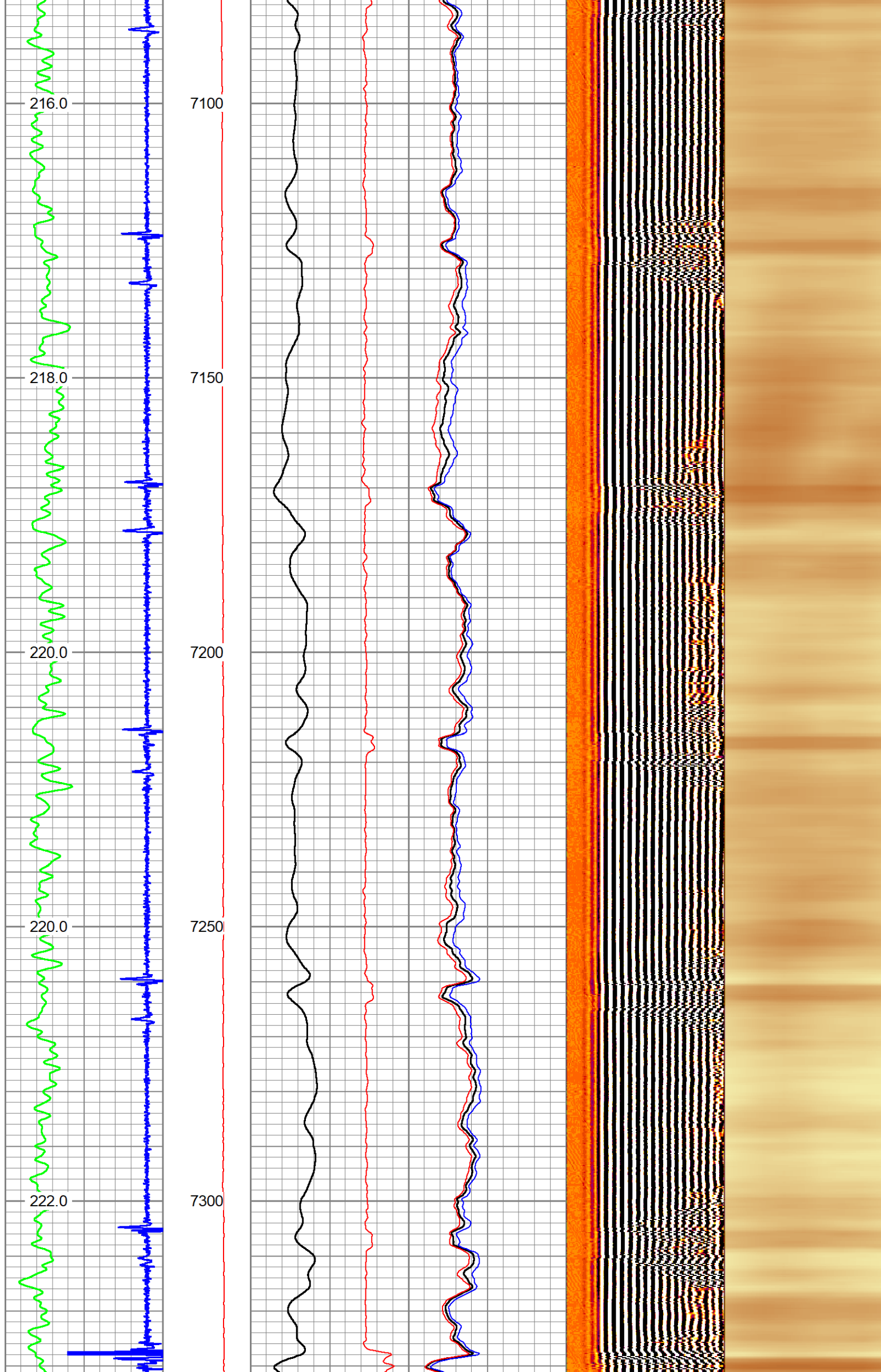


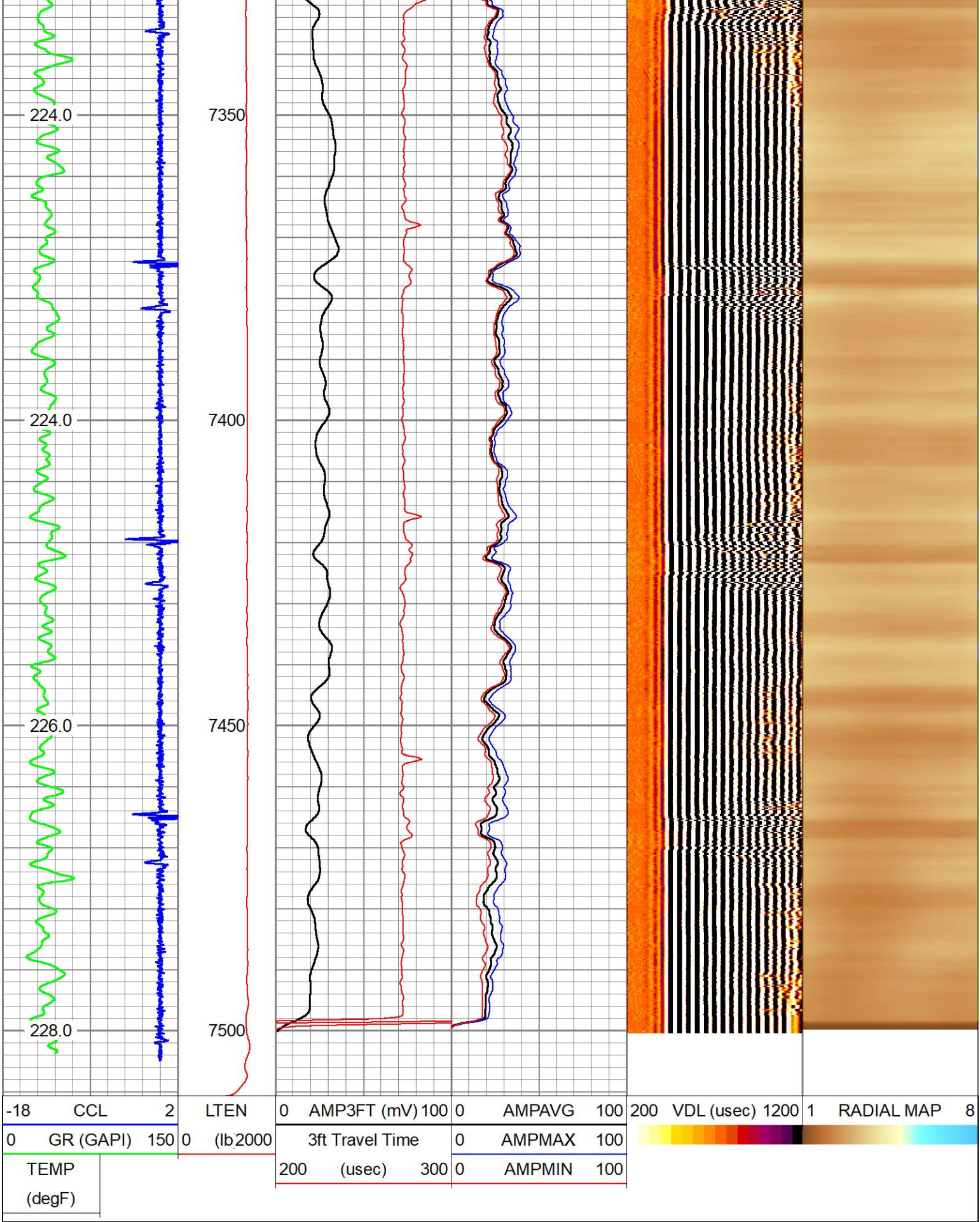












MAIN PASS

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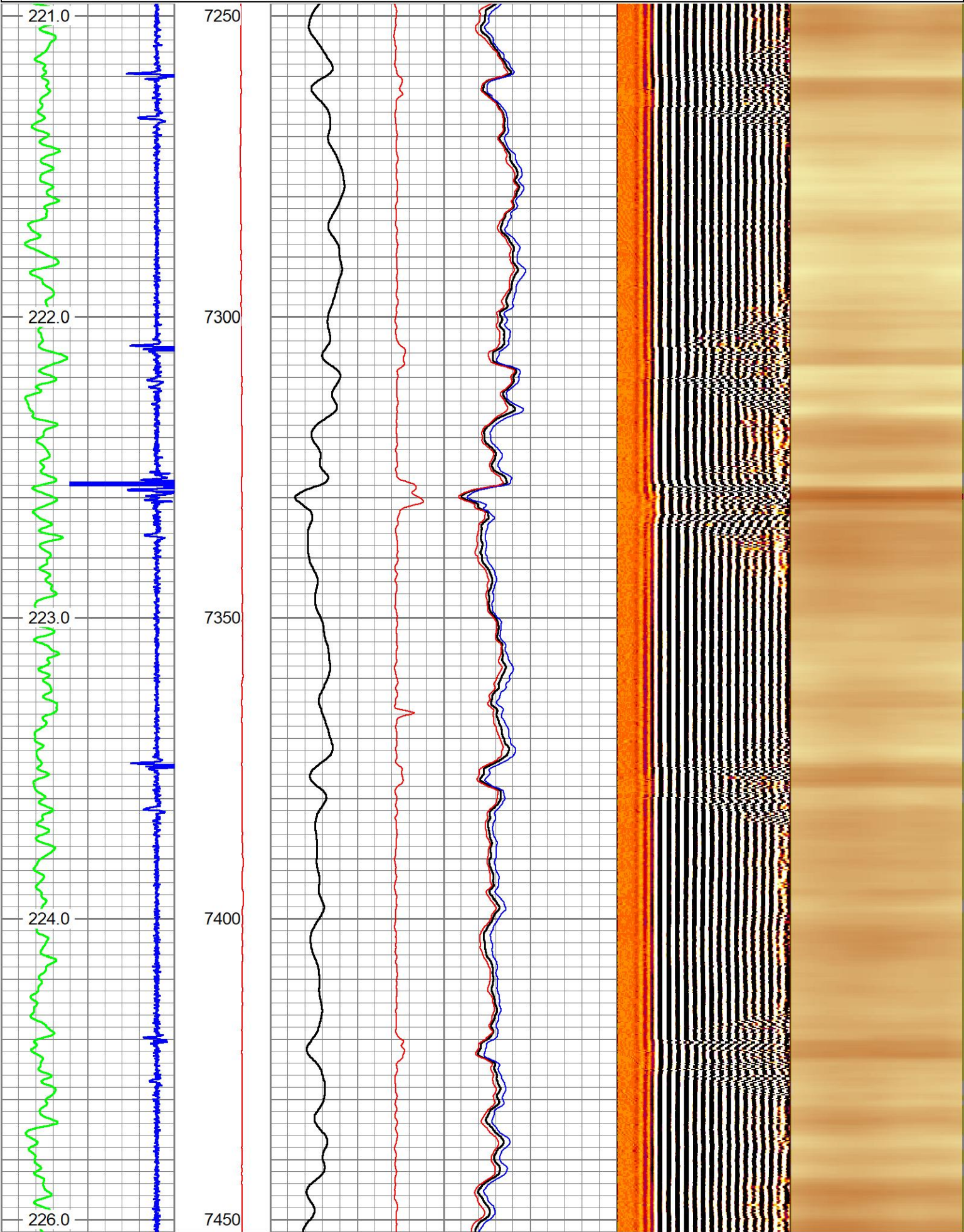
5" = 100'

REPEAT PASS

HALLIBURTON

5" = 100'

-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)													



TEMP (degF)	200	(usec)	300	0	AMPMIN	100
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REPEAT PASS


5" = 100'

Serial Number:		11577056	
Tool Model:		Probe	
Calibration Casing Diameter:		5.500	in
Calibration Depth:		456.272	ft

Master Calibration, performed Wed Nov 06 06:54:45 2019:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.767	0.000	72.000	93.866	0.000
CAL	0.000	0.874				
5'	0.000	0.640	0.000	72.000	112.506	0.000
SUM						
S1	0.000	0.865	0.000	72.000	83.246	0.000
S2	0.000	0.896	0.000	72.000	80.375	0.000
S3	0.000	0.925	0.000	72.000	77.805	0.000
S4	0.000	0.884	0.000	72.000	81.407	0.000
S5	0.000	0.781	0.000	72.000	92.182	0.000
S6	0.000	0.676	0.000	72.000	106.551	0.000
S7	0.000	0.665	0.000	72.000	108.278	0.000
S8	0.000	0.720	0.000	72.000	99.985	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	0.874	1.000	0.000

Air Zero Calibration, performed Wed Nov 06 06:40:25 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

				RBT_PRB275-Probe (11577056) Probe Radii Bond Tool with Digital Telemetry	8.33	2.75	90.00
WVFCAL WVF3FT	12.58 12.58						
WVF5FT	10.58						
				CENT-Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00
CCL	6.13						
GR	4.75			GR_PRB275-probe275dig (pr050806) Probe Digital Gamma CCL	4.75	2.75	57.00
				TEMP-Titan (Tit1.3_02) Titan Temp 1.3875	2.21	1.39	10.00
TEMP LLMTEN	0.17 0.00						
Dataset: livingston s19-25-9n.db: field/well/run1/MAIN_PASS Total length: 22.54 ft Total weight: 198.00 lb O.D.: 2.75 in							

Company	EXTRACTION OIL & GAS INC		
Well	LIVINGSTON S19-25-9N		
Field	WATTENBERG		
County	BROOMFIELD	State	CO
HALLIBURTON	RADIAL CEMENT BOND LOG		