

Company: Mississippi Power Company

Well: MPC 26-5 #1

Field: Wildcat

County: Kemper State: Mississippi

500 psi Isolation Scanner - CBL VDL

Cement Evaluation

Gamma Ray - CCL Log

County:	Kemper	Location:	1783' FNL & 816' FWL	Elev.:	K.B.	397.00 ft
Field:	Wildcat				G.L.	385.00 ft
Well:	MPC 26-5 #1				D.F.	396.00 ft
Company:	Mississippi Power Company	Location:	Permanent Datum:	Ground Level	Elev.:	385.00 ft
			Log Measured From:	Kelly Bushing	12.00 ft	above Perm.Datum
			Drilling Measured From:	Kelly Bushing		
		API Serial No.	Section:	Township:	Range:	
		23-069-20013	26	9S	14E	

Logging Date	04-Aug-2017
Run Number	Trip 3 Run 1
Depth Driller	5877.00 ft
Schlumberger Depth	5877.00 ft
Bottom Log Interval	5740.00 ft
Top Log Interval	100.00 ft
Casing Fluid Type	Water
Salinity	
Density	8.34 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	8.50 in
From	2489.00 ft
To	5877.00 ft
Casing/Tubing Size	5.5 in
Weight	17 lbm/ft
Grade	N/A
From	0.00 ft
To	5871.00 ft
Max Recorded Temperatures	
Logger on Bottom	04-Aug-2017 12:15:00
Unit Number	2365
Location:	Laurel, MS
Recorded By	Mark Butler
Witnessed By	

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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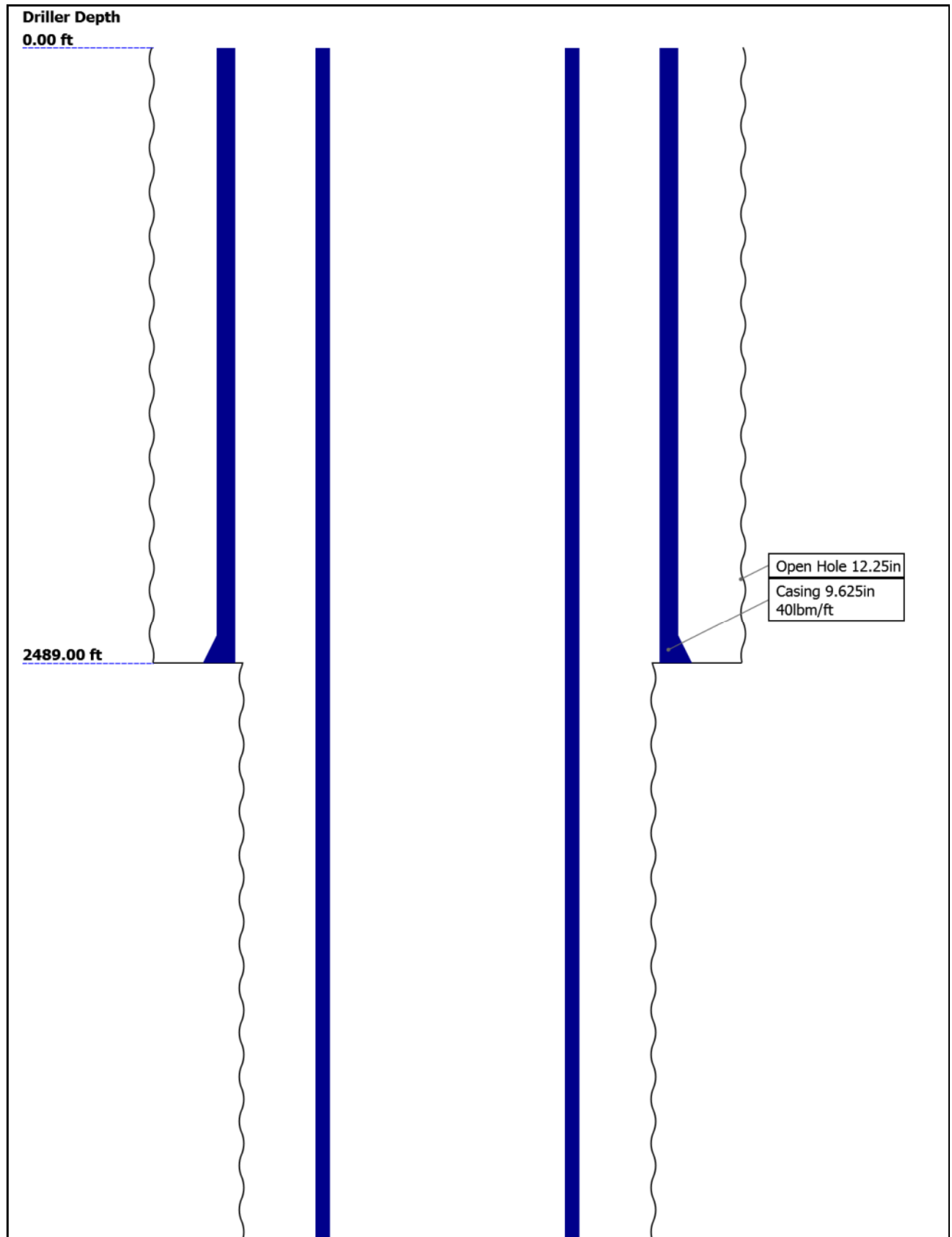
11.3 Log (IBC Goodwin)

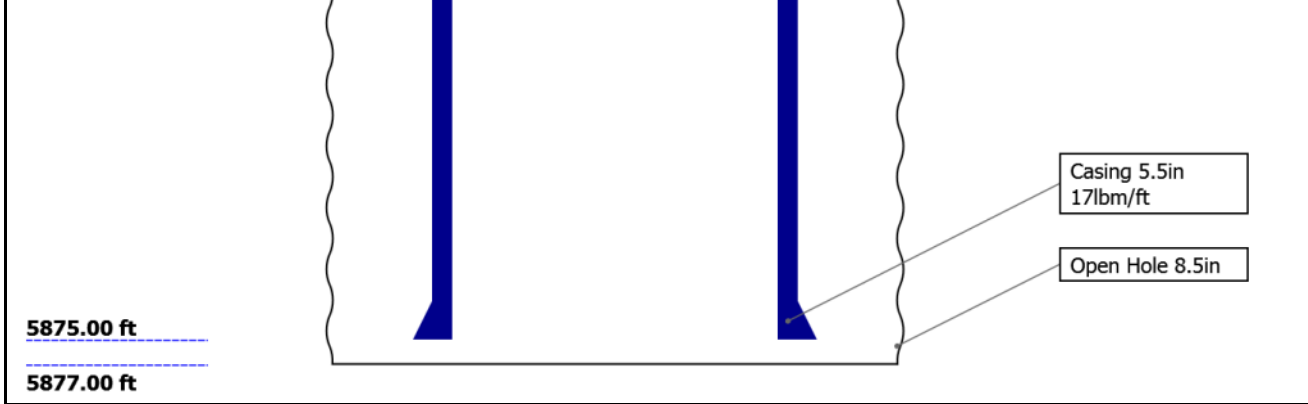
12. Xyz (Import of IBC Fluid Acoustic Slowness vs Depth
6.0 in)

13. Xyz (Import of IBC Acoustic Impedance of Mud vs
Depth 6.0 in)

14. Tail

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	12.25	8.5				
Top Driller (ft)	0	2489				
Top Logger (ft)	0	2489				
Bottom Driller (ft)	2489	5877				
Bottom Logger (ft)	2489	5877				
Casing						
Size (in)	9.625	5.5				
Weight (lbm/ft)	40	17				
Inner Diameter (in)	8.835	4.892				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	2489	5875				
Bottom Logger (ft)	2489	5871				

Operational Run Summary

Parameter (unit)	Trip 3 Run 1					
Date Log Started	04-Aug-2017					
Time Log Started	11:28:35					
Date Log Finished	04-Aug-2017					
Time Log Finished	15:11:11					
Top Log Interval (ft)	100.00					
Bottom Log Interval (ft)	5740.00					
Total Depth (ft)						
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.500					
Logging Unit Number	2365					
Logging Unit Location	Laurel, MS					
Recorded By	Mark Butler					

The diagram illustrates a wellbore toolstring with various sensors and their depths. The toolstring is shown vertically, with labels for different components and their corresponding depths in feet. A table on the right lists the equipment names and lengths.

Equip name	Length	MP name	Offset
LEH-QT	48.8		
DTC-H:84	45.88		
87			
ECH-KC			
DTC-H:848			
7			
SGT-N:95	42.88		
35			
SGH-K:239			
2			
SGD-TAA:			
21049			
SGC-TB:95			
35			
DSLT-H:8	37.38		
279			
ECH-KH:8			
331			
DSLH-H:82			
79			
SLS-E:175			
USIT-E:94	16.74		
3			
ECH-MFA:			
1928			
USAC-A:9			
43			
USIS-A:27			
39			
USSC-B:17			
07			
IBCS-A:87			
0			
FAR-SENS			
OR			
NEAR-SEN			
SOR			

USI-SENS OR EMITTER- SENSOR  USI Sensor Head Tension TOOL_ZERO Lengths are in ft Maximum Outer Diameter = 6.250 in Line: Sensor Location, Value: Gating Offset All measurements are relative to TOOL_ZERO		
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Depth Summary			
	Trip 3 Run 1		
Depth Measuring Device			
Type	IDW-JA		
Serial Number	6228		
Calibration Date	17-May-2016		
Calibrator Serial Number			
Calibration Cable Type	7-46-AXS		
Wheel Correction 1	-6		
Wheel Correction 2	-6		
Tension Device			
Type	CMTD-B/A		
Serial Number	3015		
Calibration Date	18-Jul-2017		
Calibrator Serial Number	1241		
Number of Calibration Points	10		
Calibration Root Mean Square Error	6		
Calibration Peak Error	10		
Logging Cable			
Type	7-46A-XS		
Serial Number			
Length	26000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		
Trip 3 Run 1:Depth Control Parameters		Depth Control Remarks	
Log Sequence	Subsequent Trip To the Well		
Reference Log Name			
Reference Log Run Number			
Reference Log Date			
Subsequent Trip Down Log Correction			
USIT - Fluid Properties Measurement			
Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Log[4]:Up	5738.87	39.35
Fluid Velocity = "Automatic"			

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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Trip 3 Run 1

100.00%

Software Version	
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Software Version	
Application Code	Version

Pass Summary	
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Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include
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All depths are referenced to toolstring zero

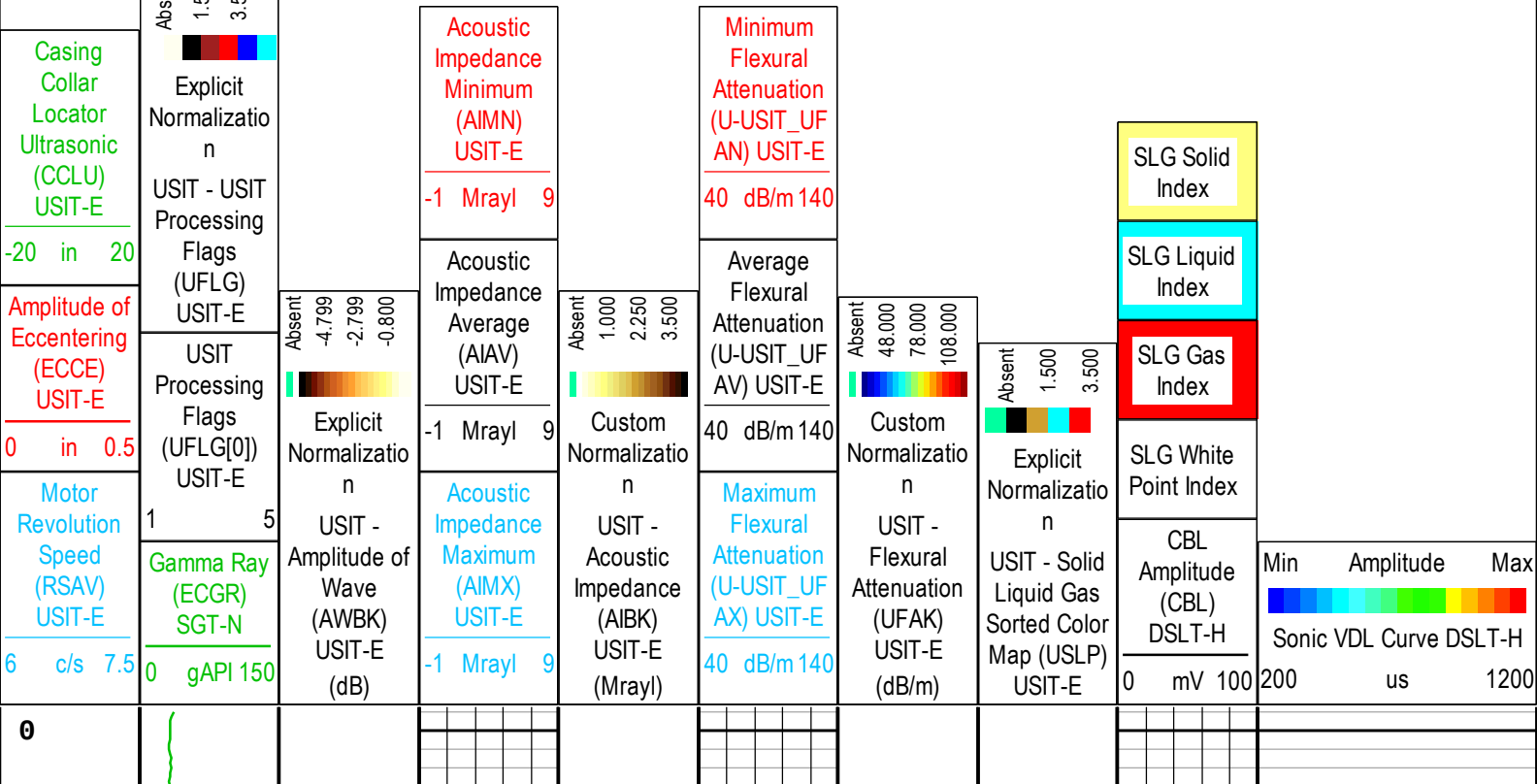
Trip 3 Run 1: Log[4]:Up:S010

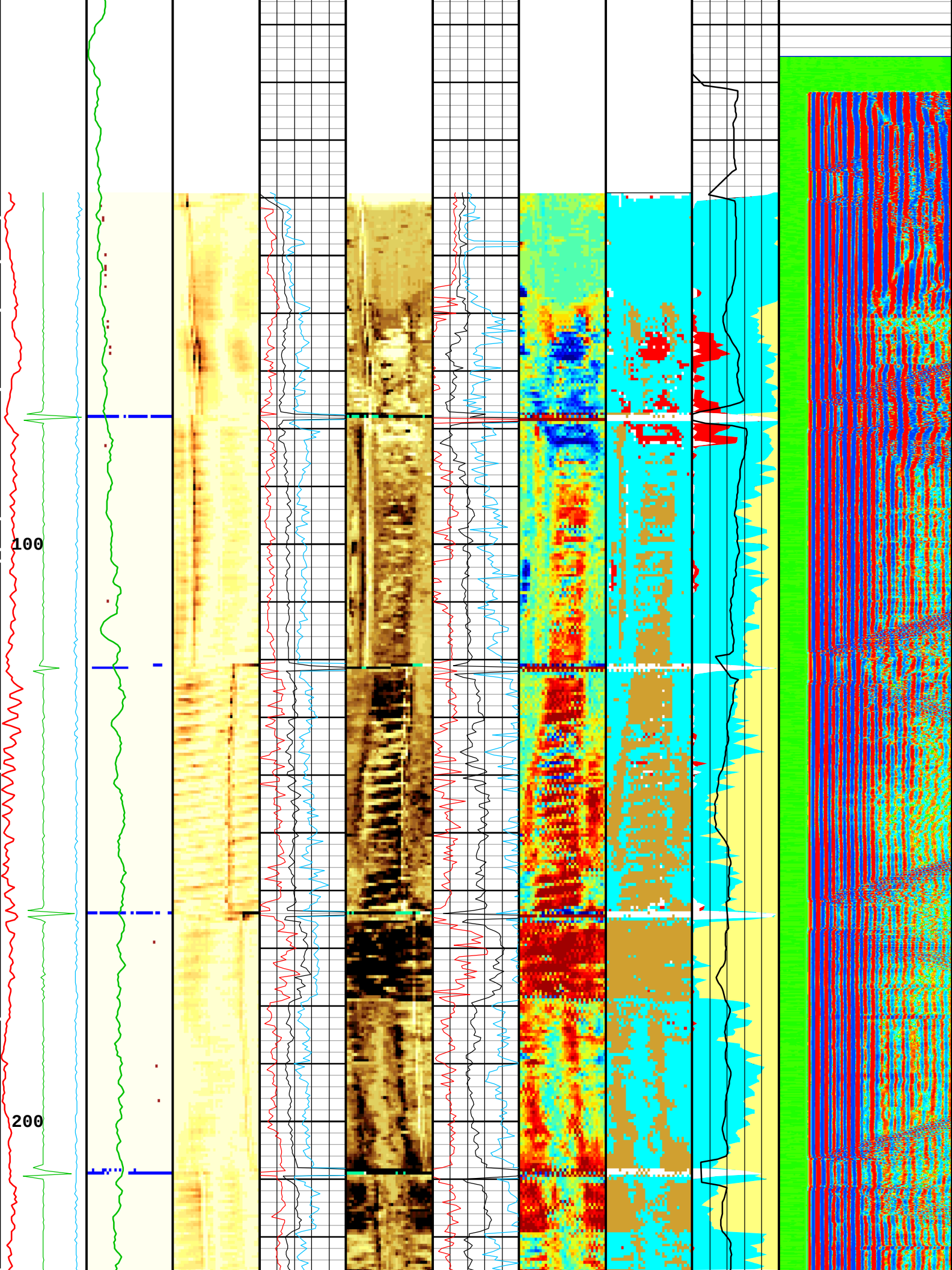
USIT Processing Flags (UFLG[0])	USIT-E
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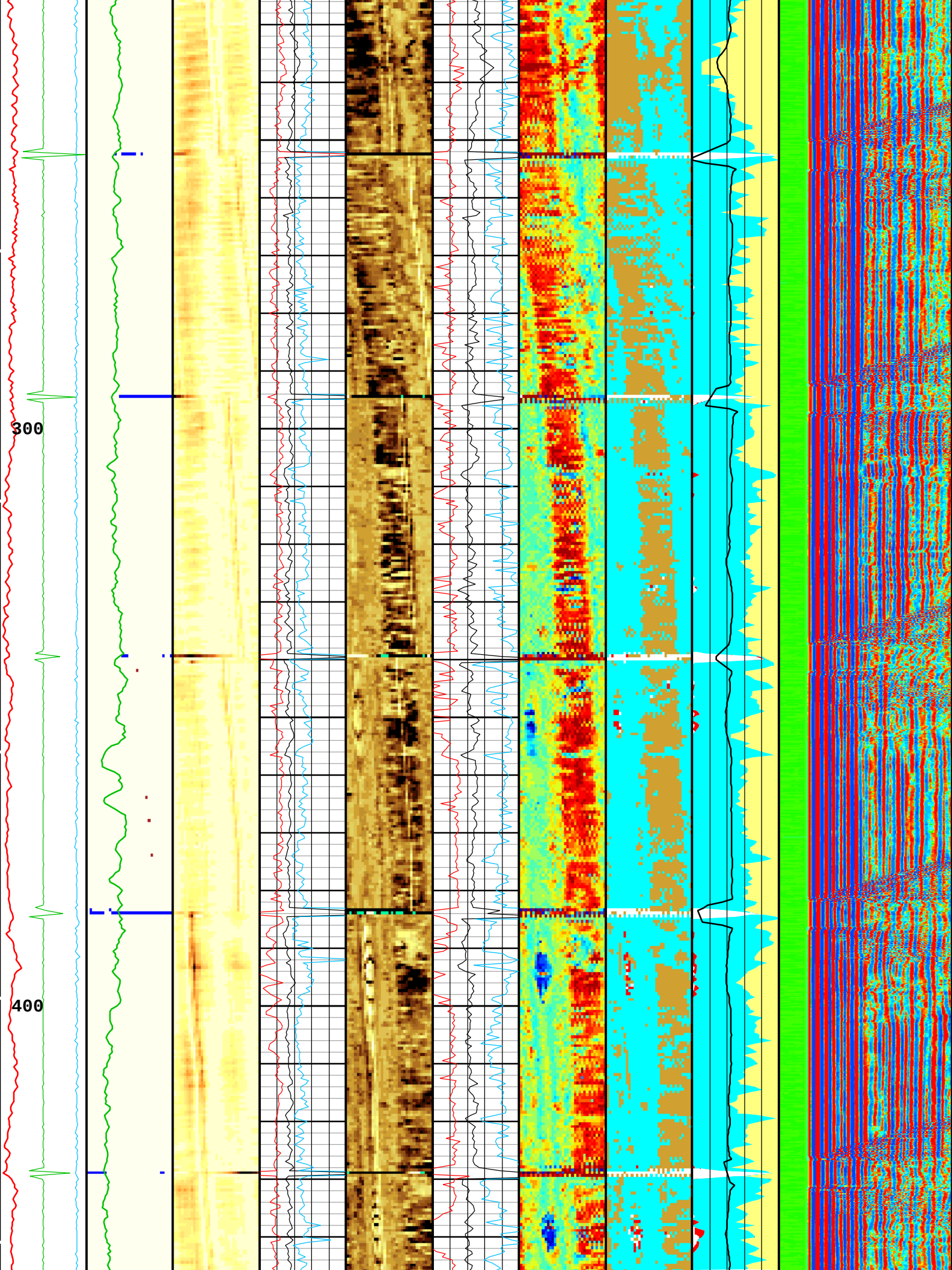
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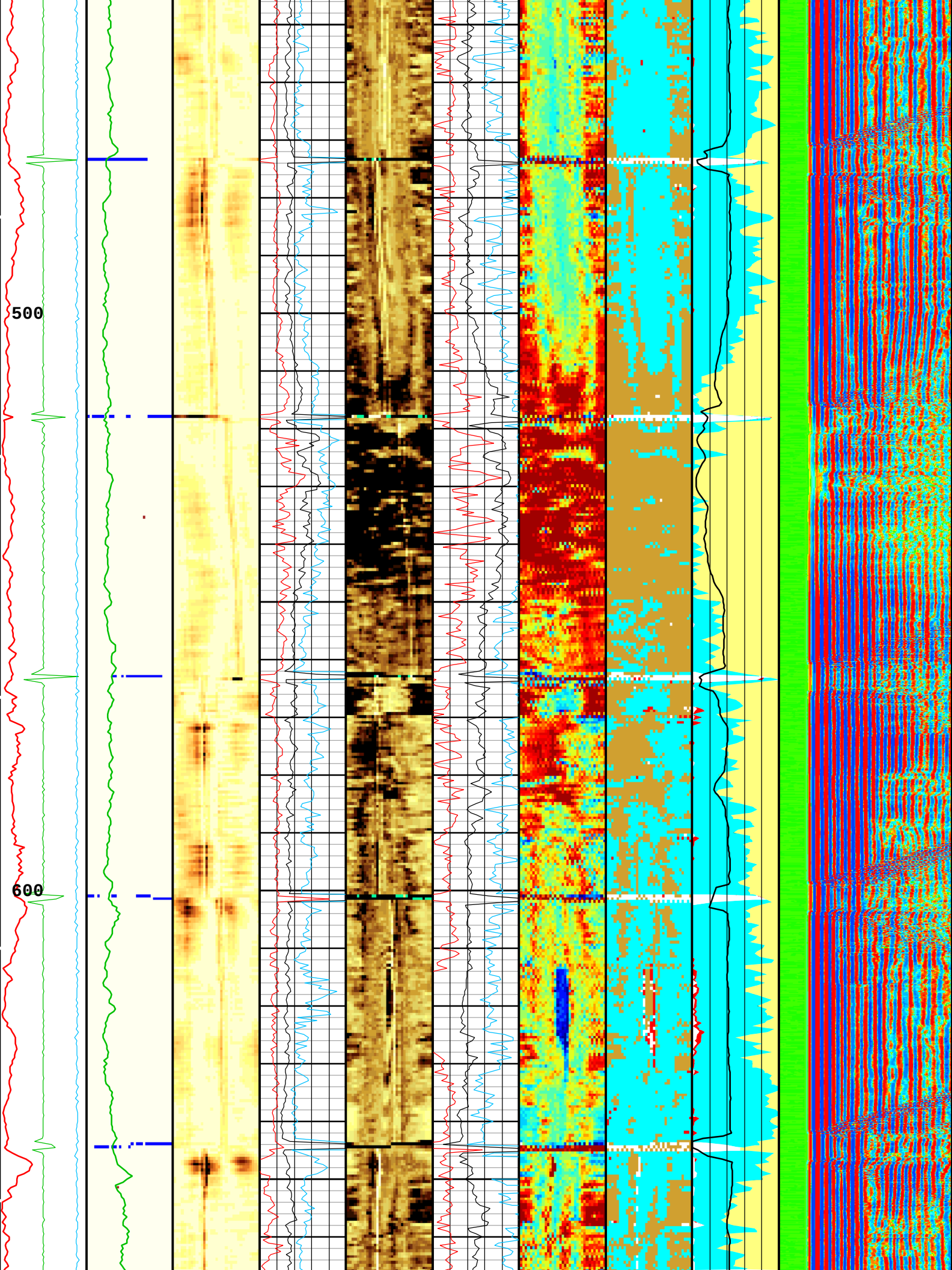
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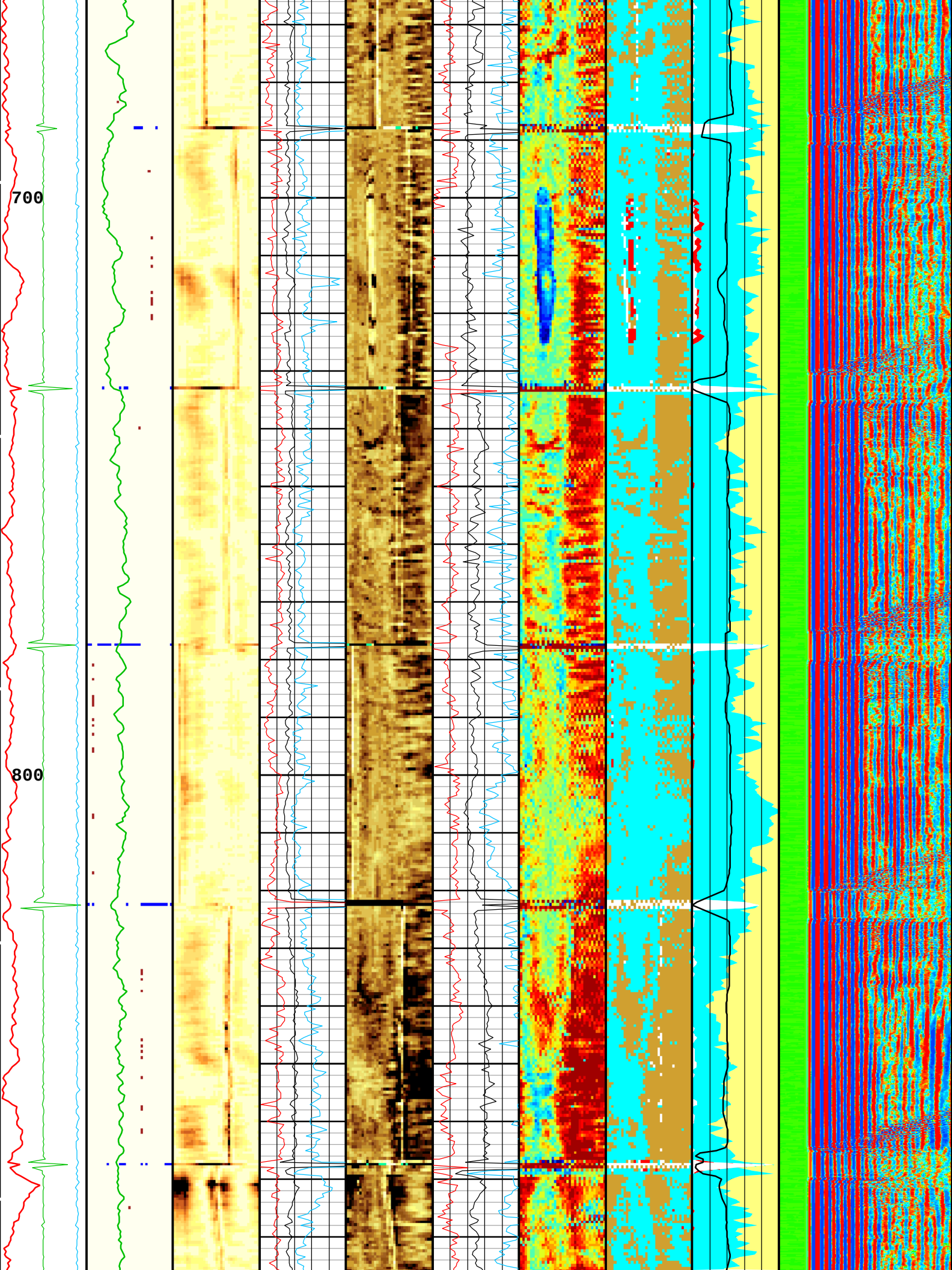
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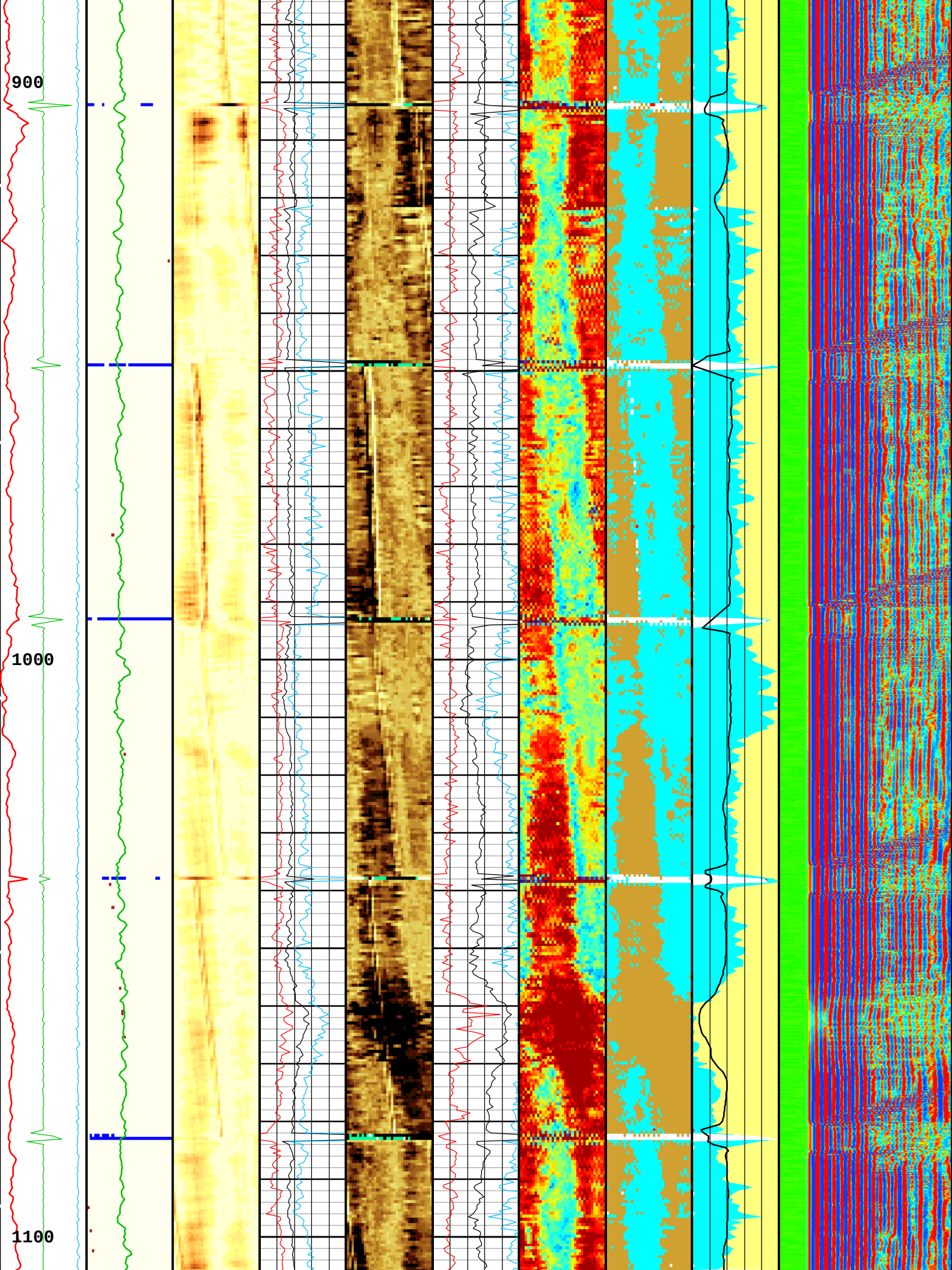


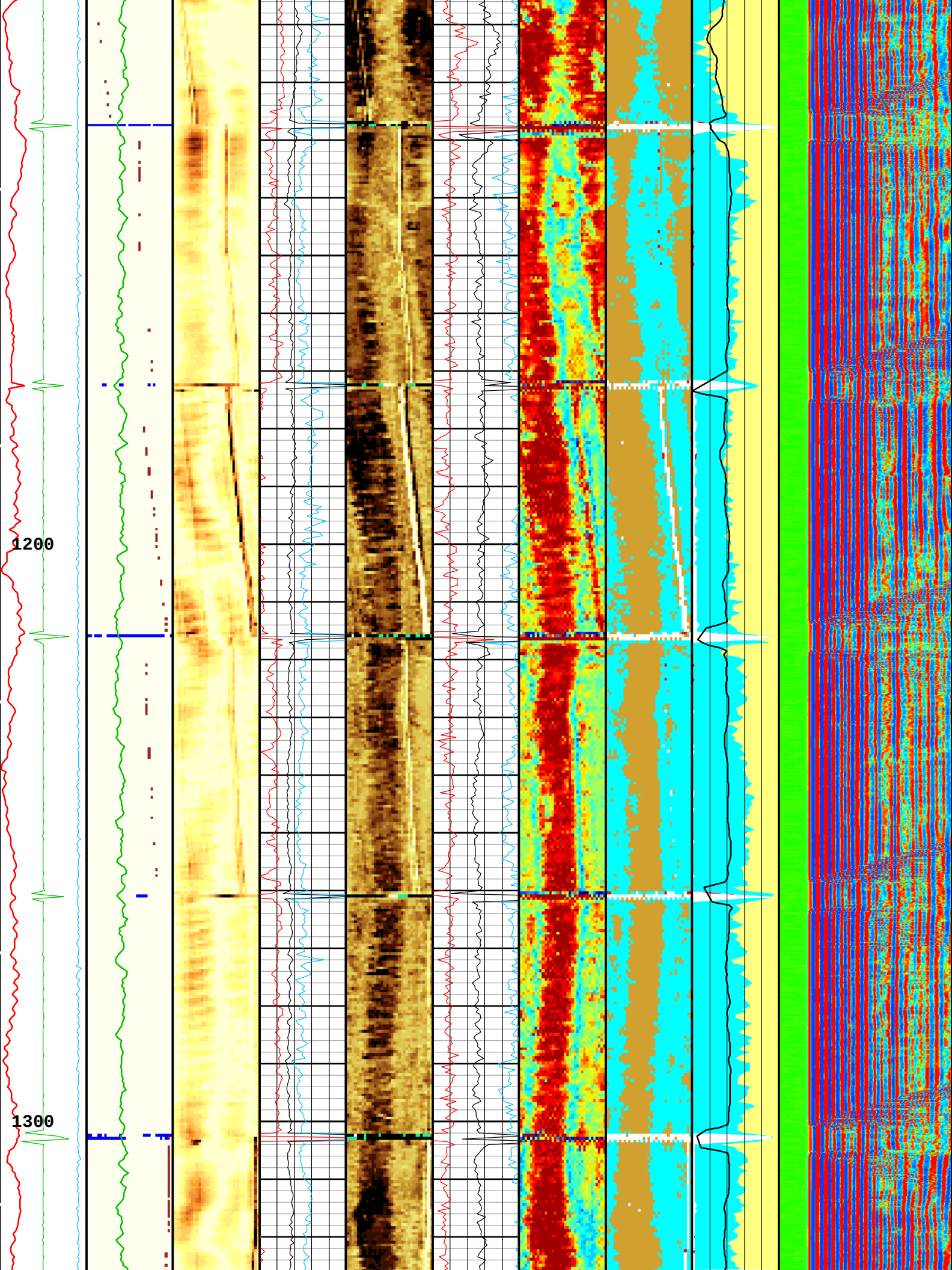


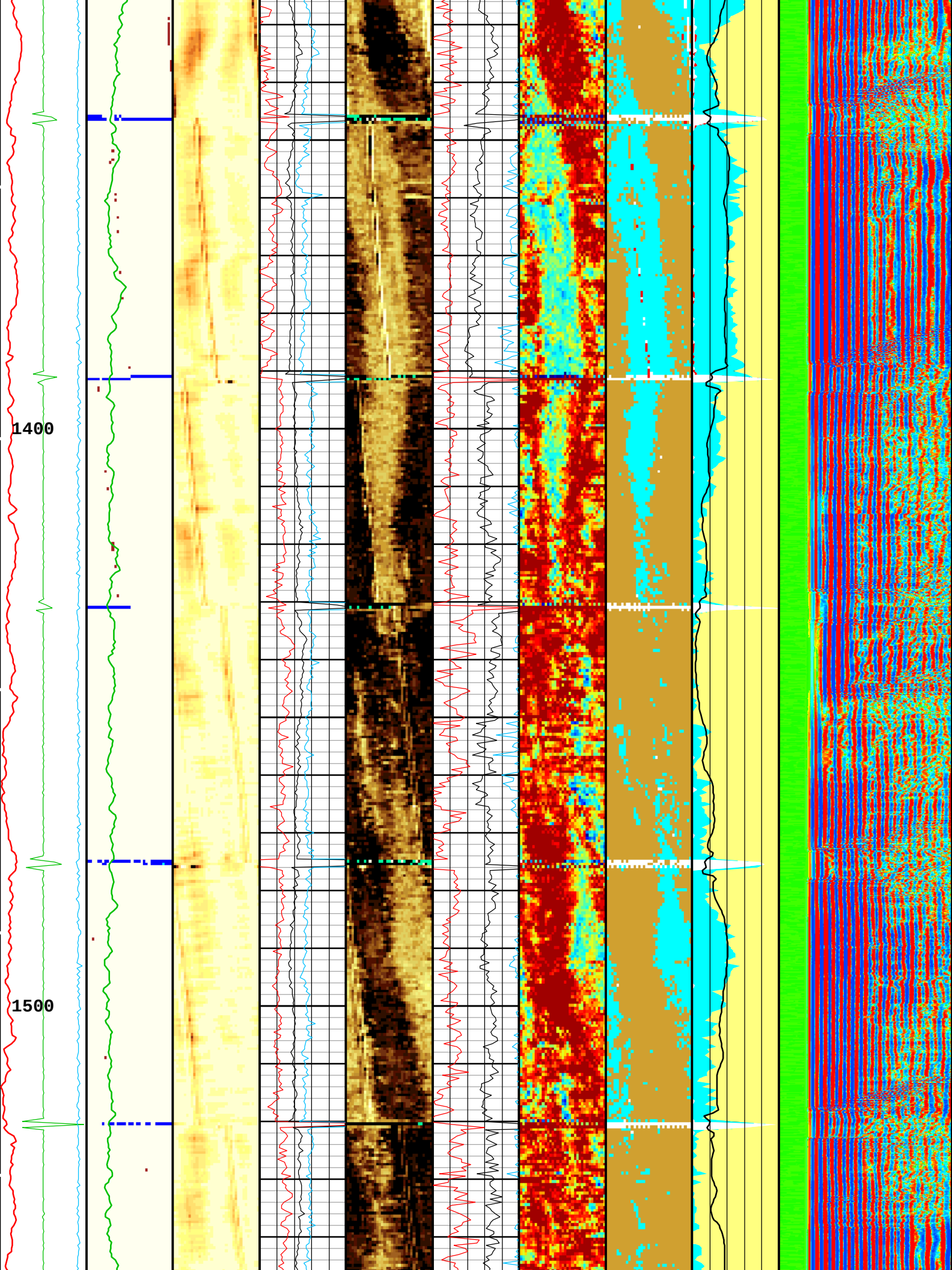


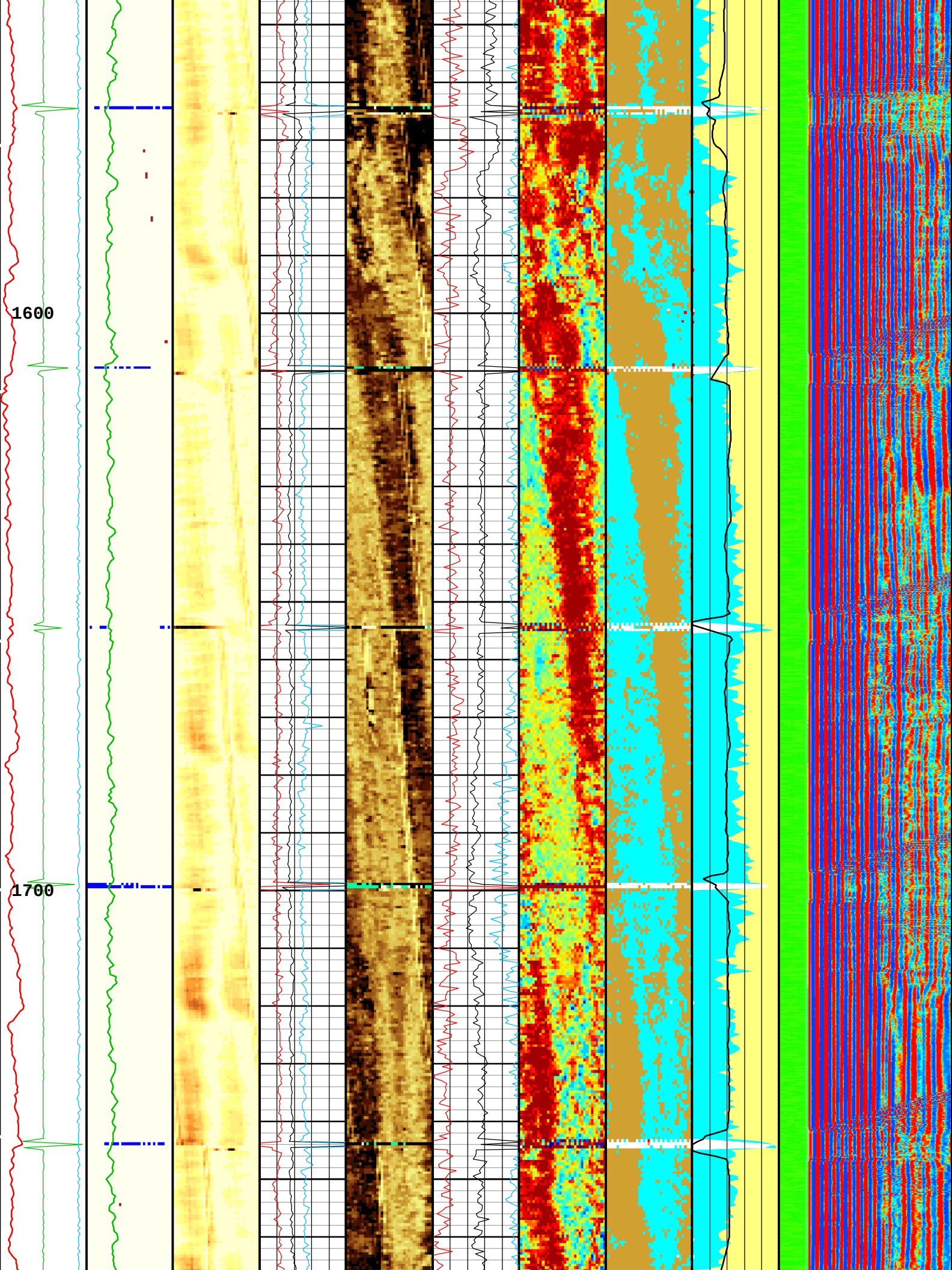


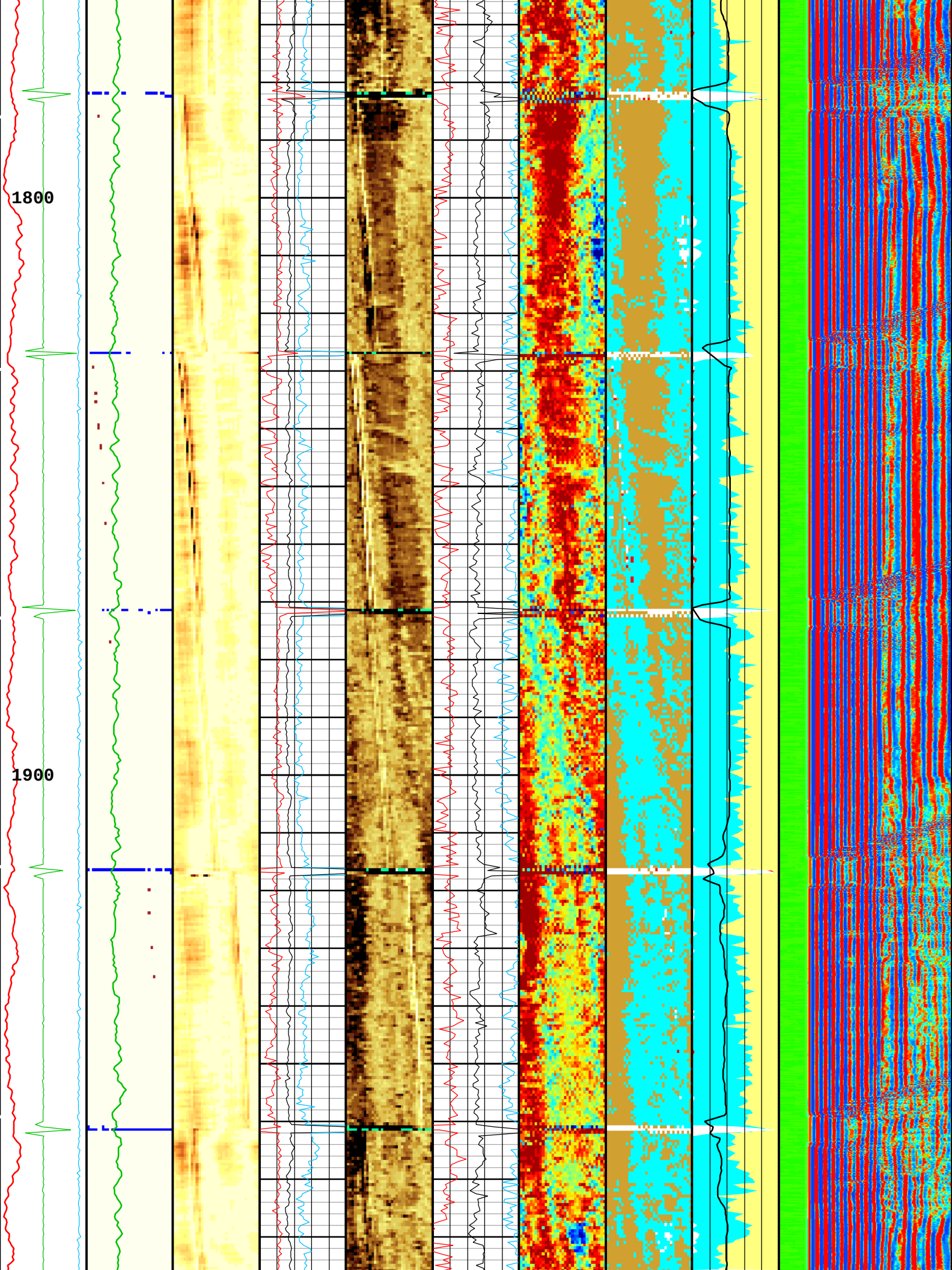


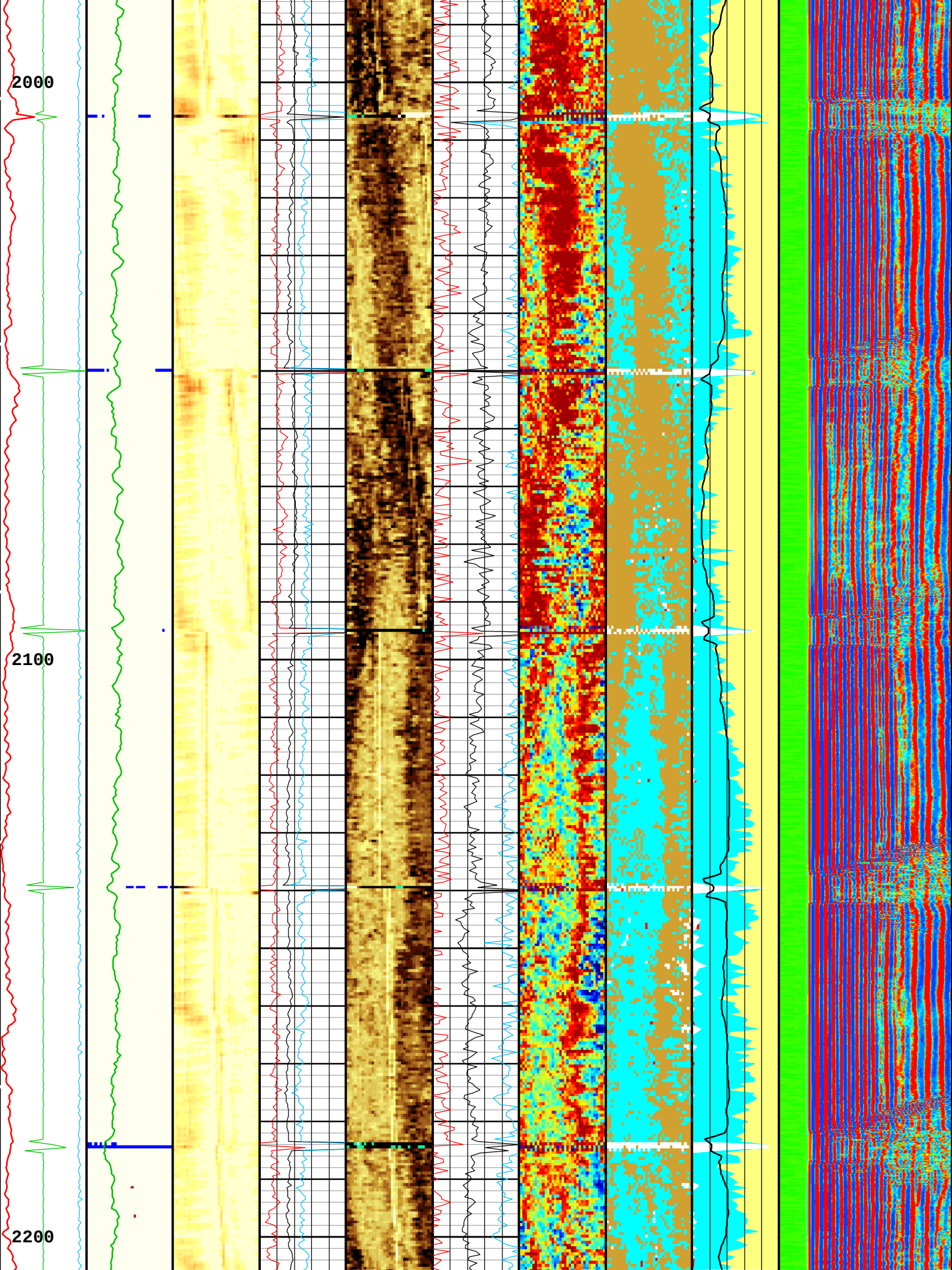


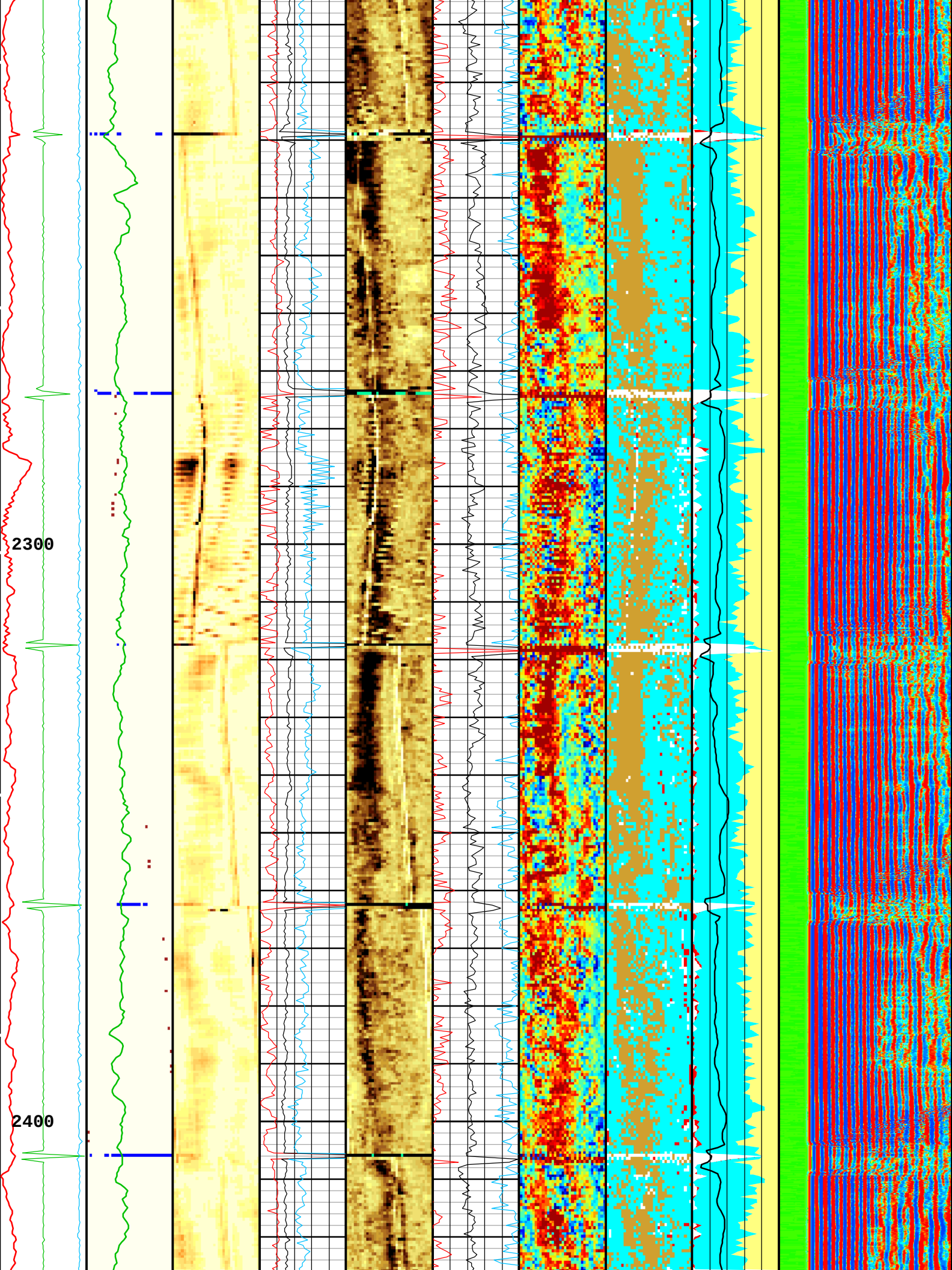


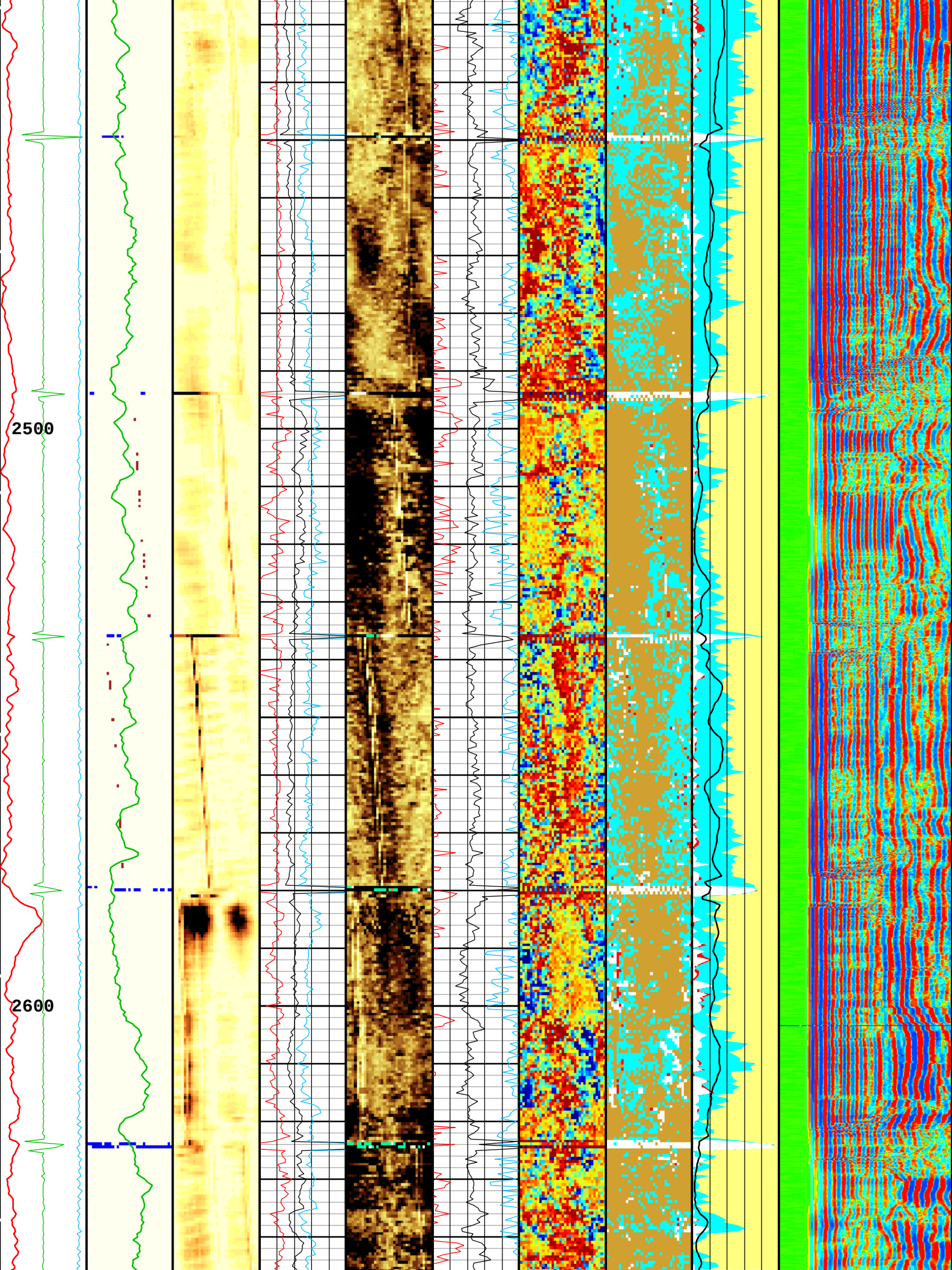


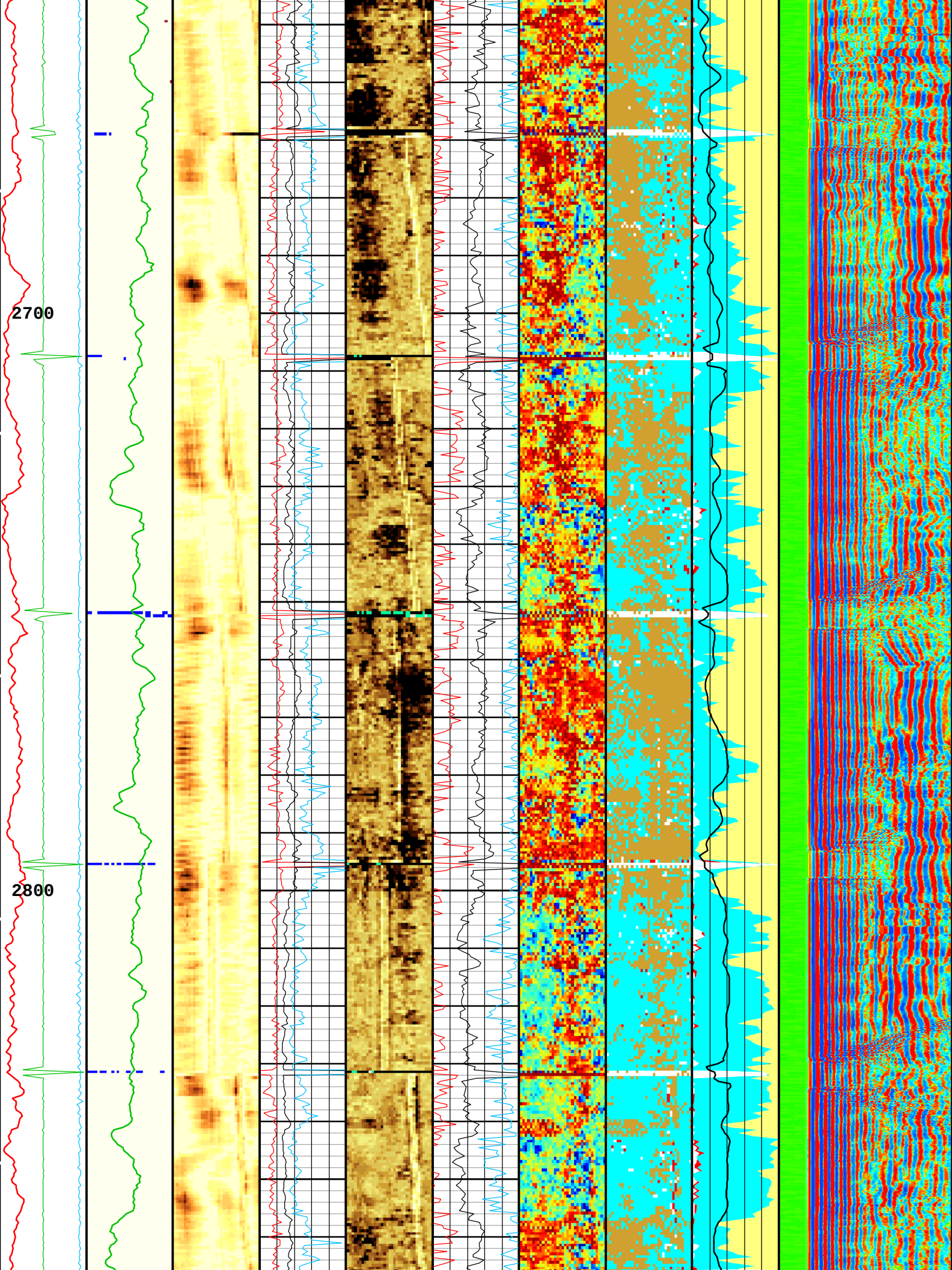


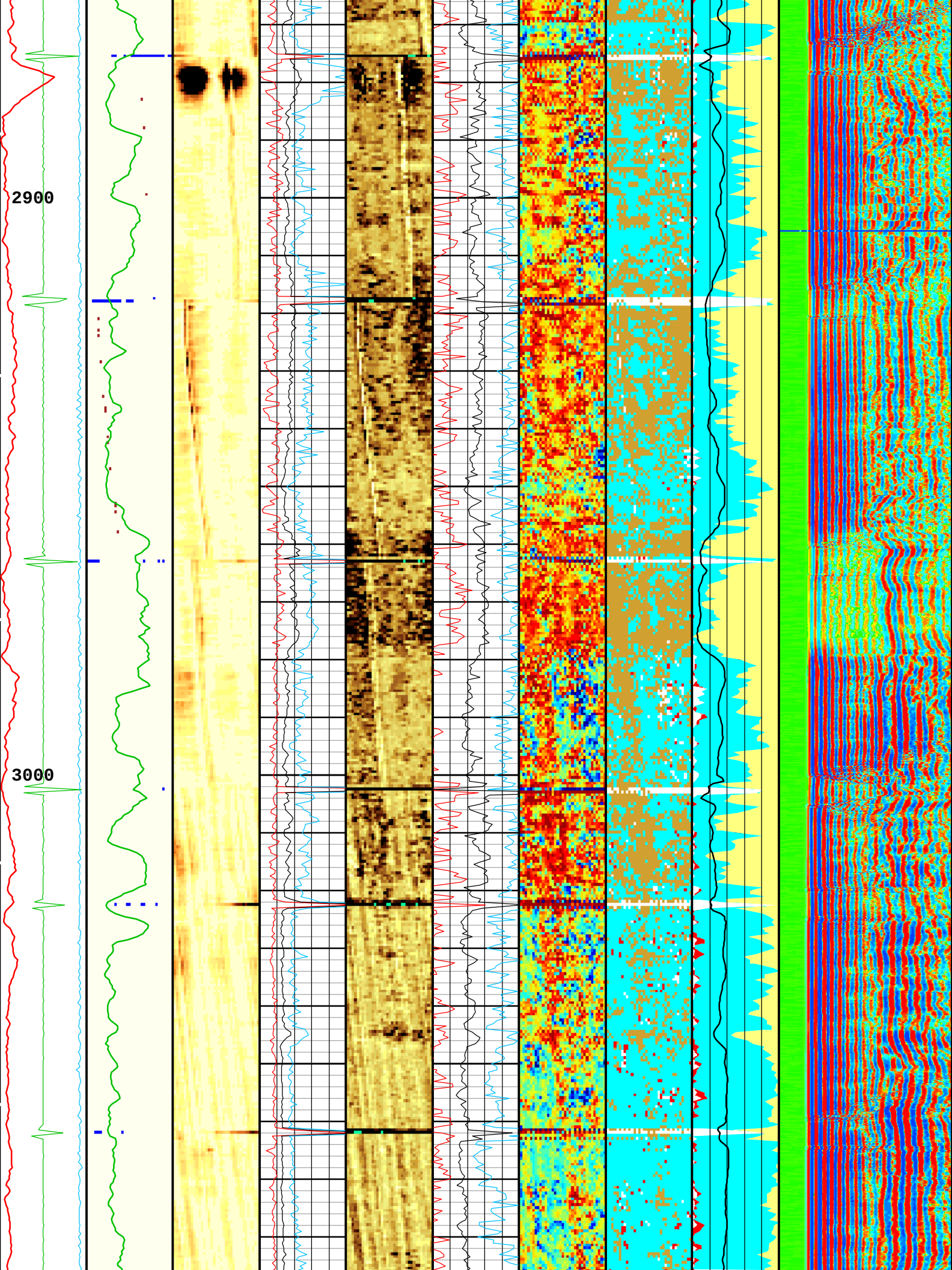


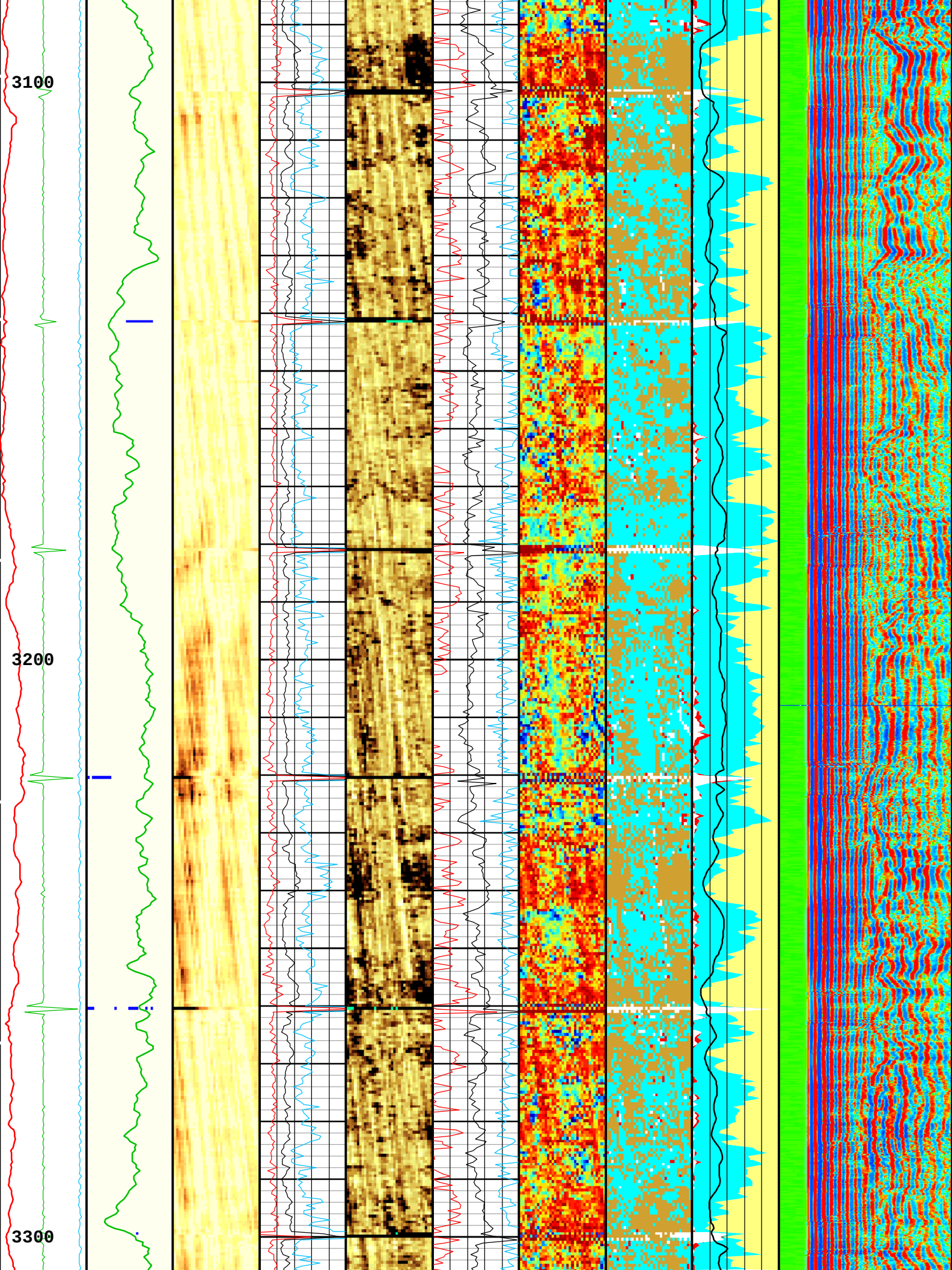


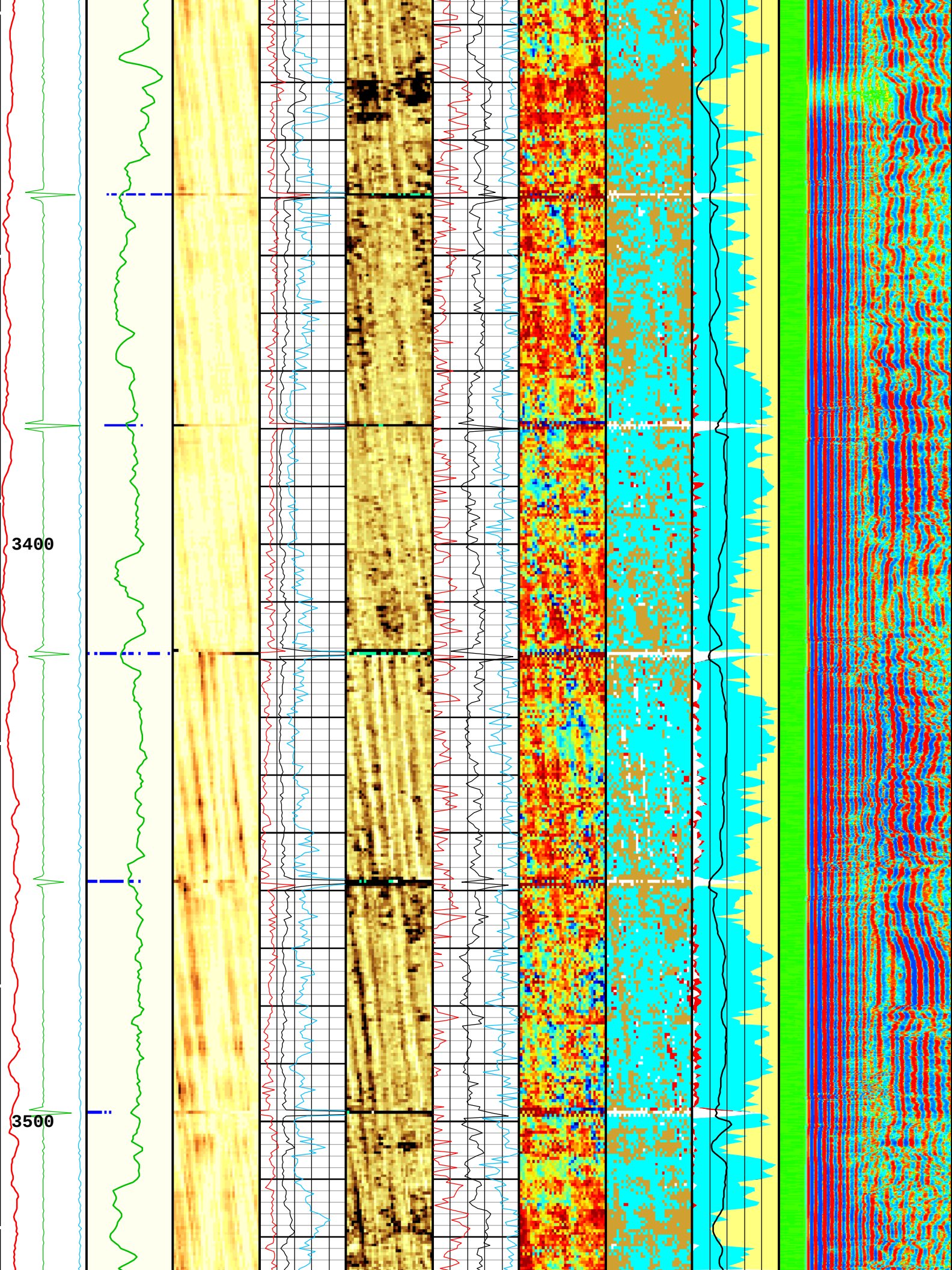


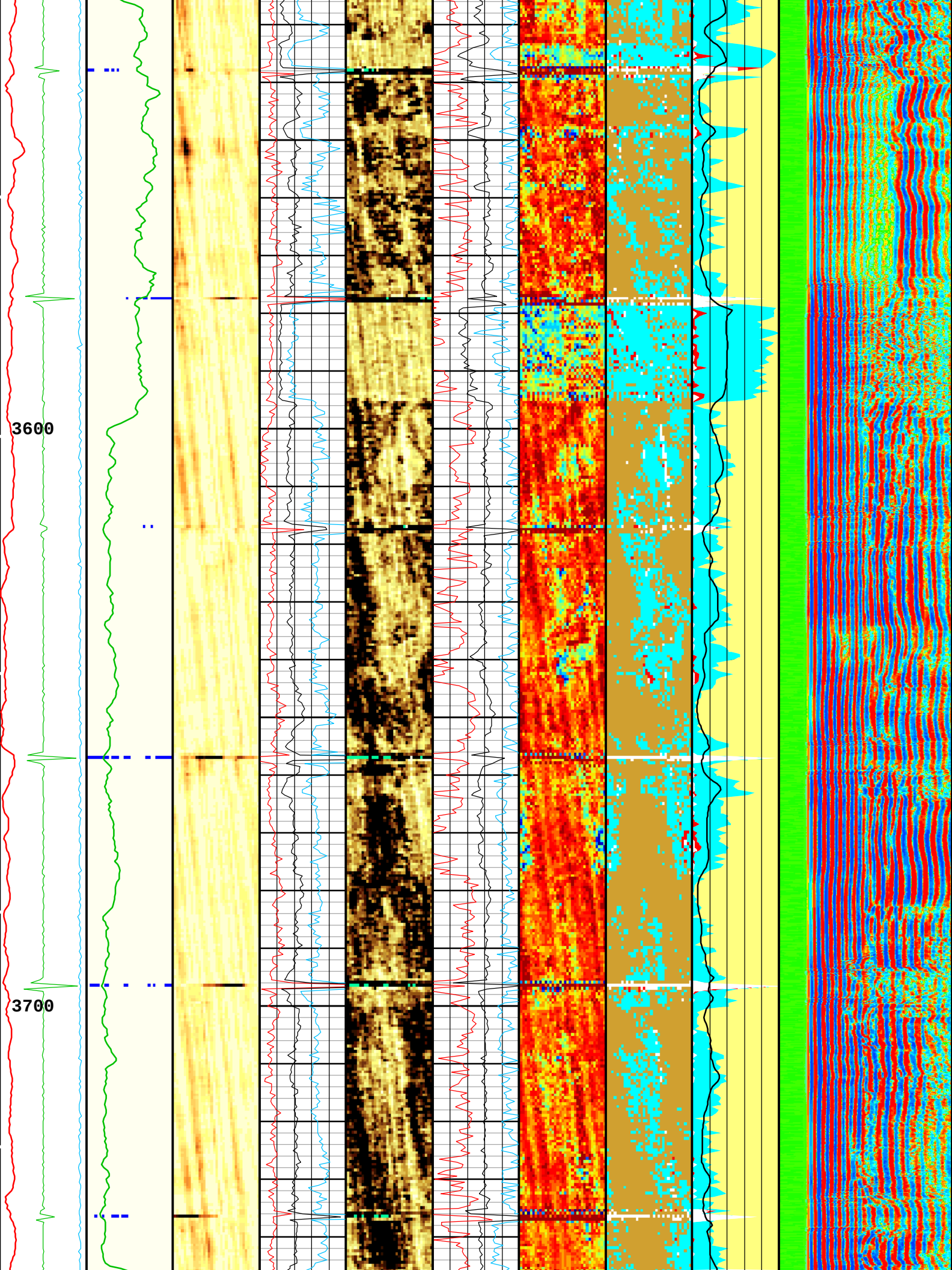


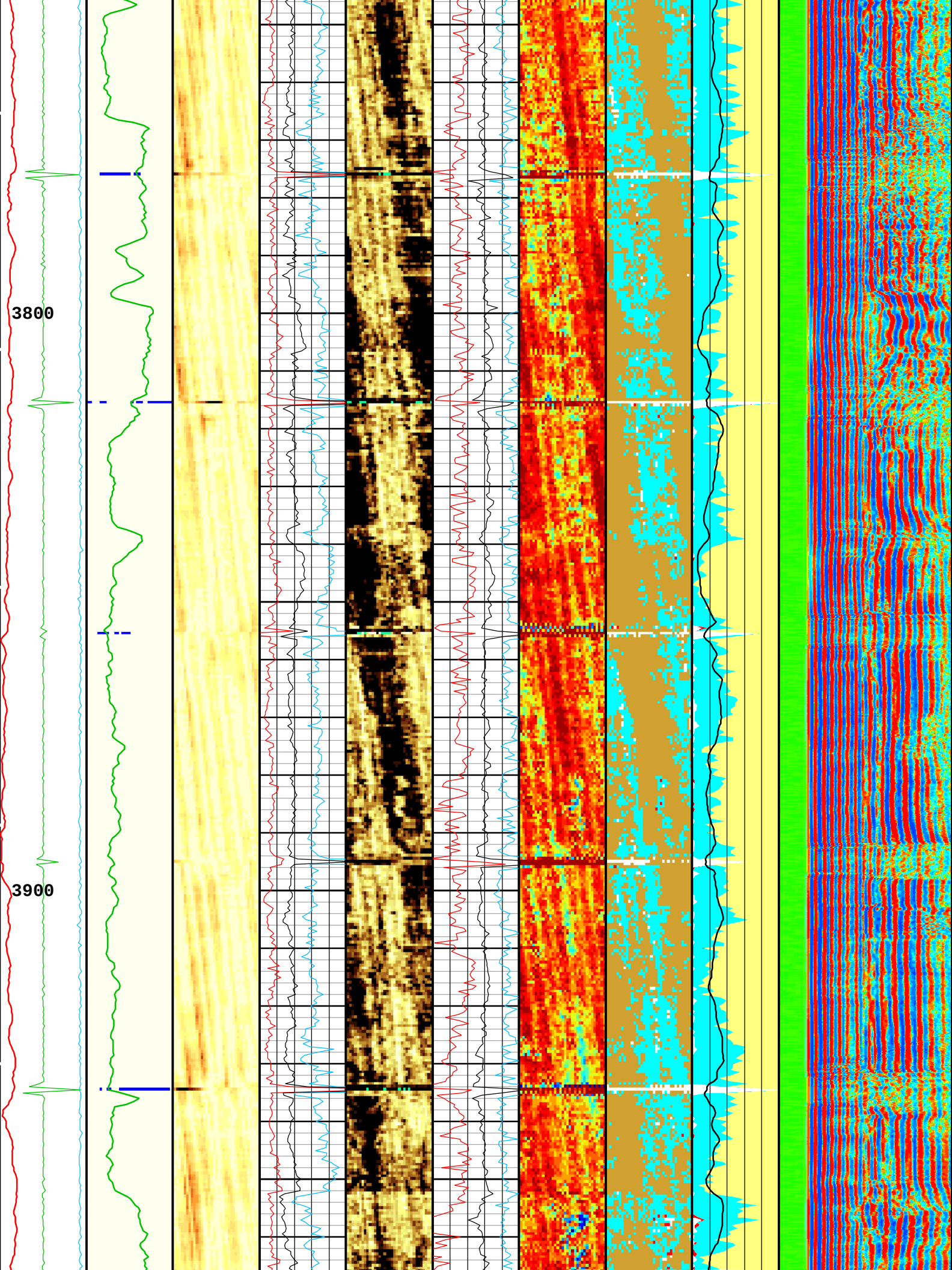


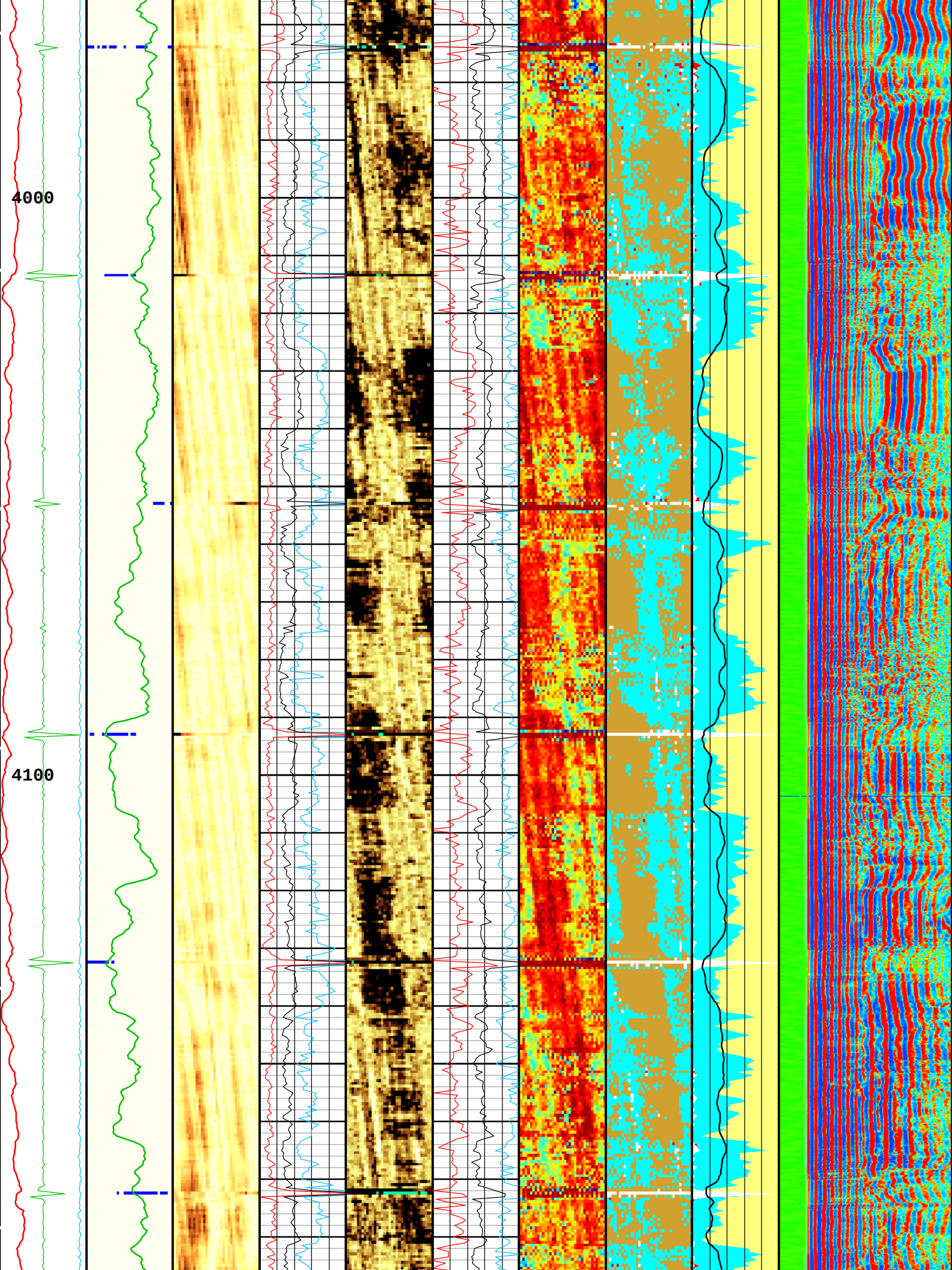


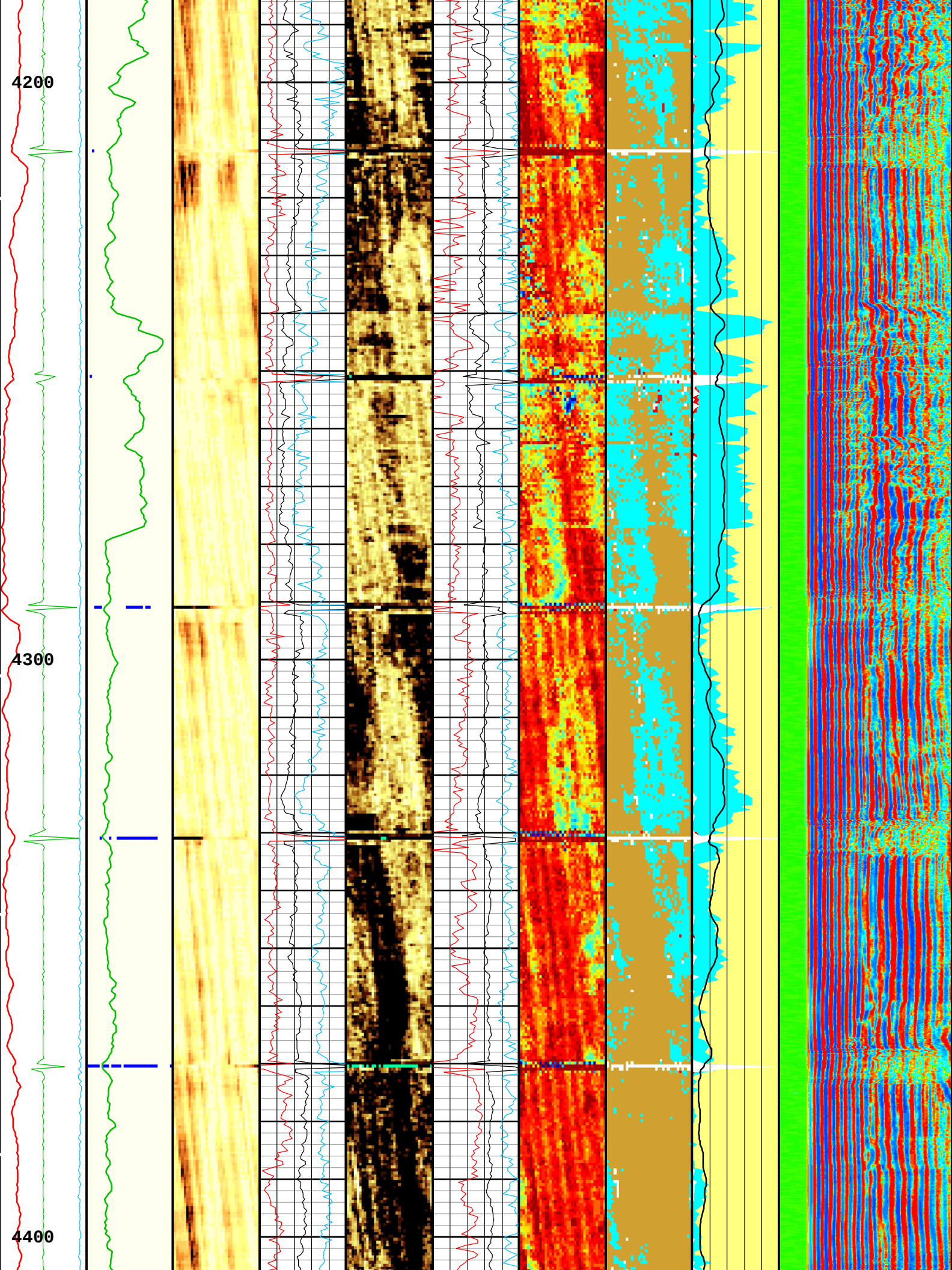


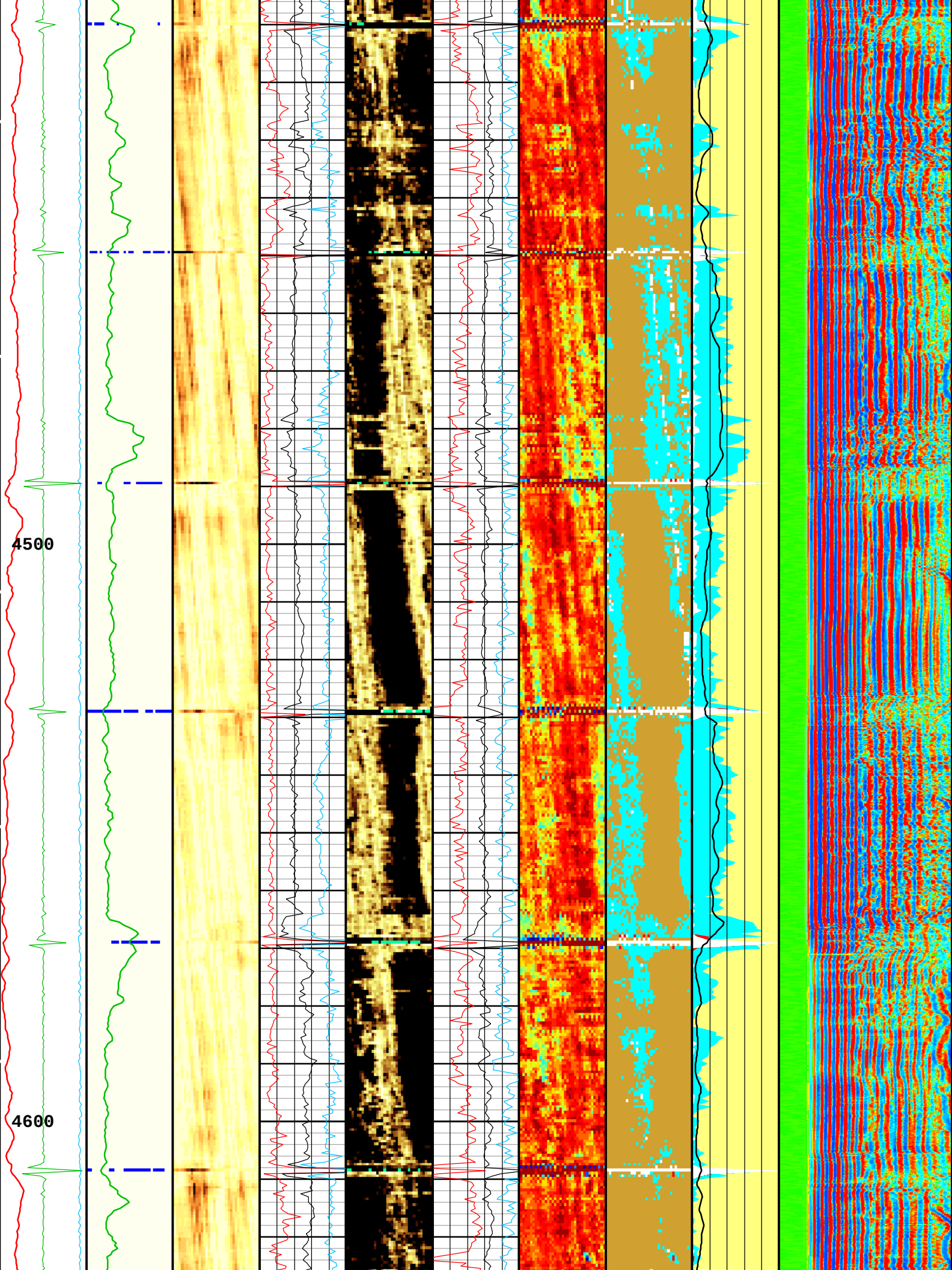


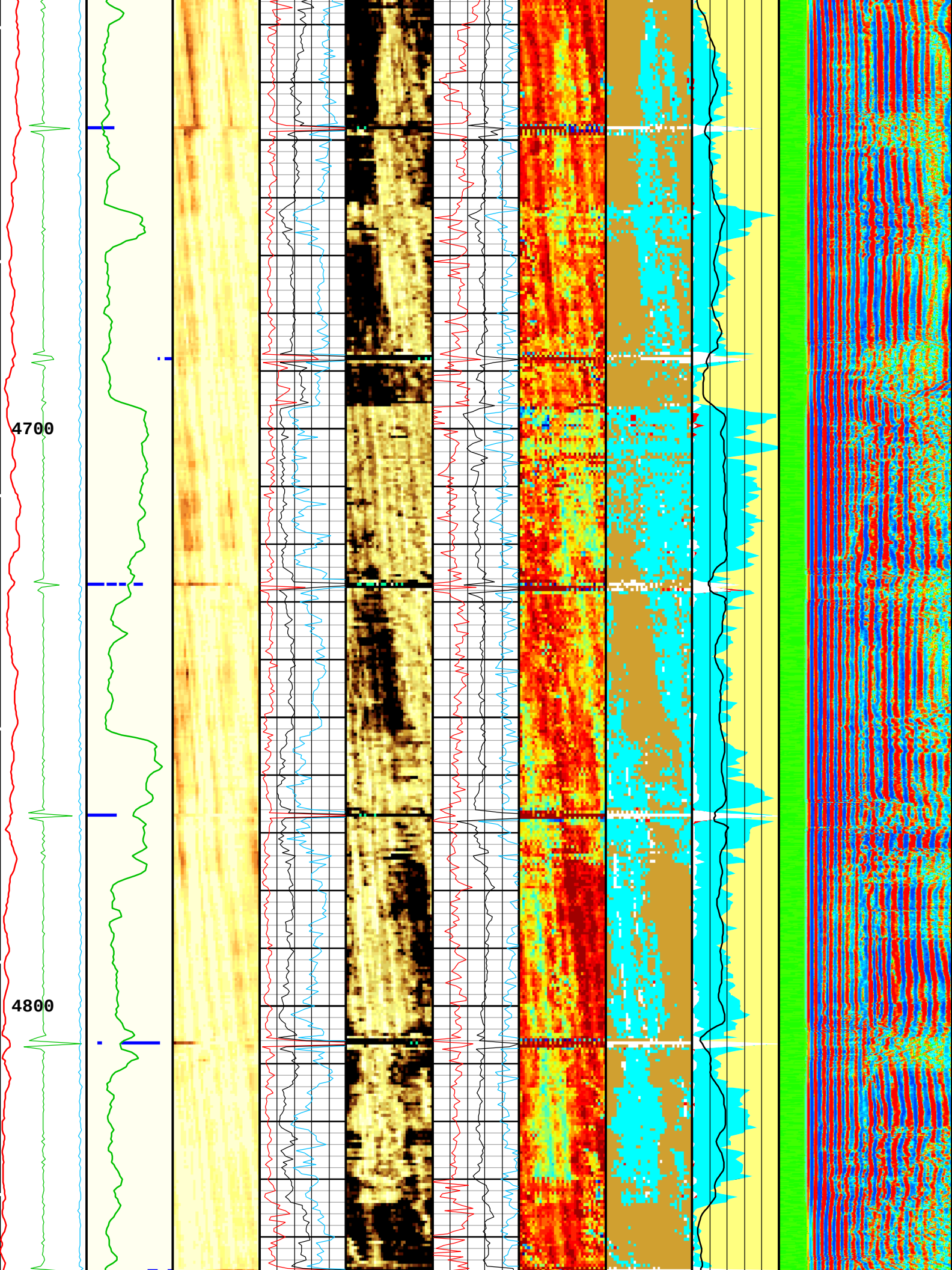


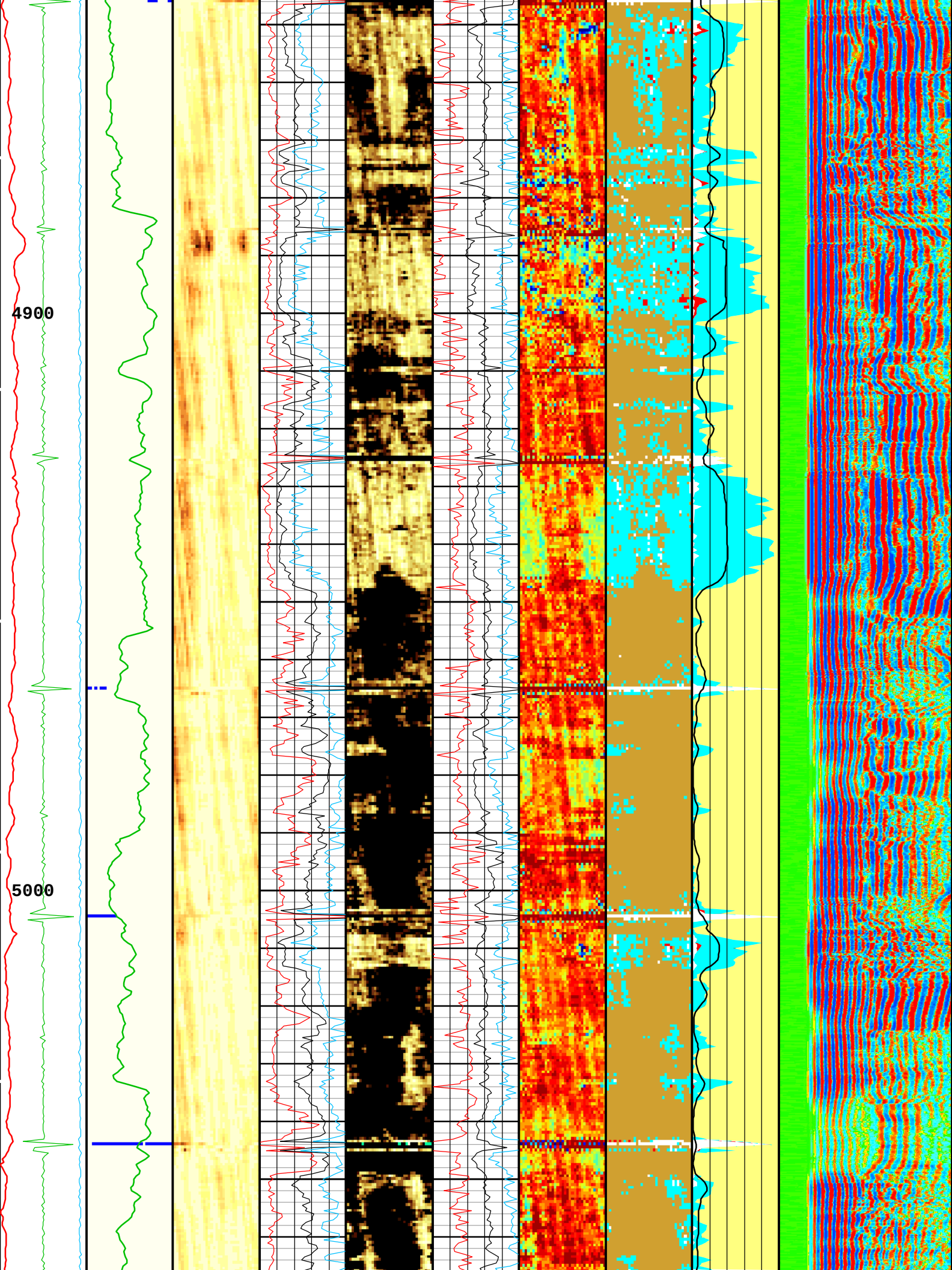


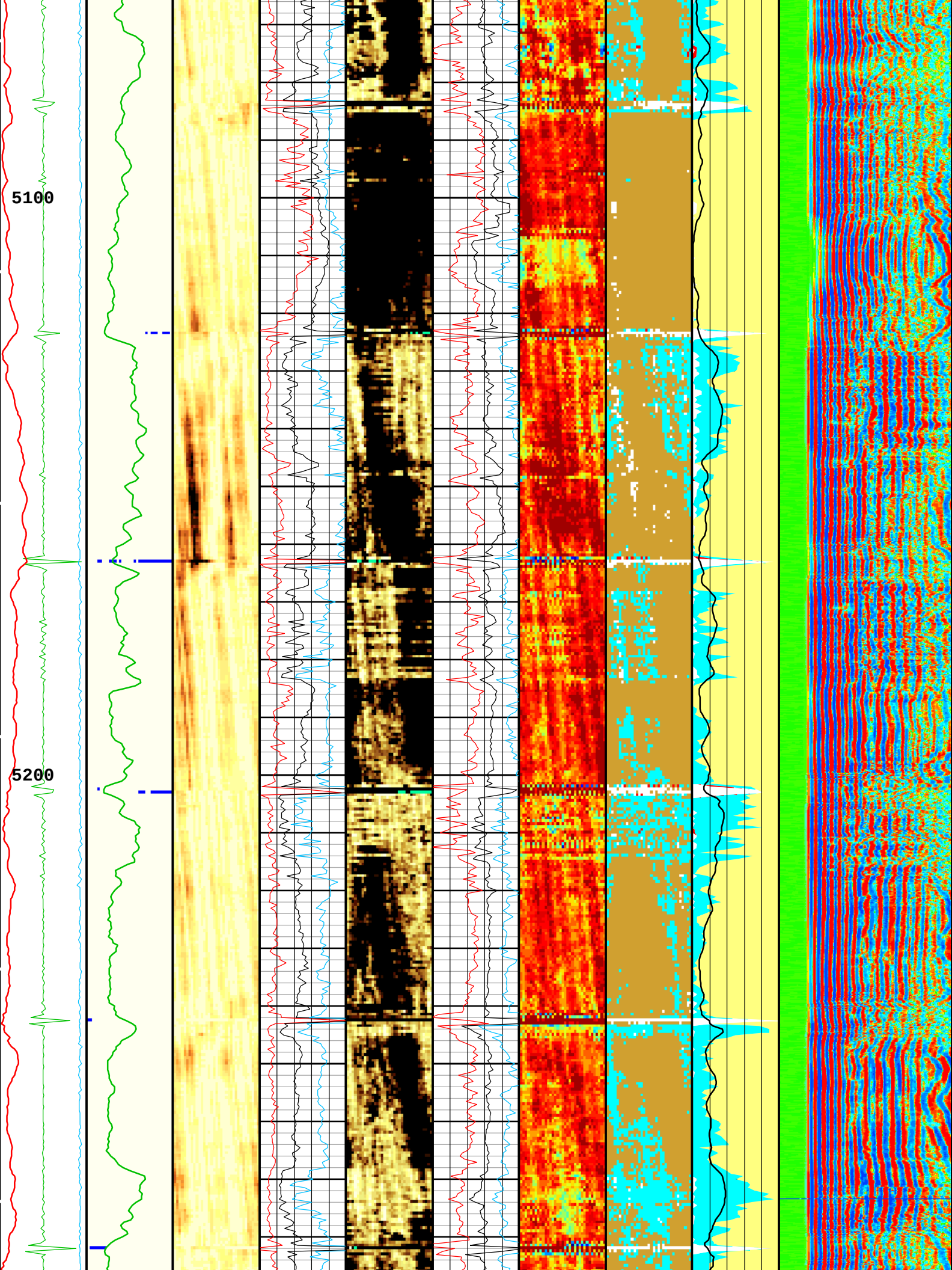


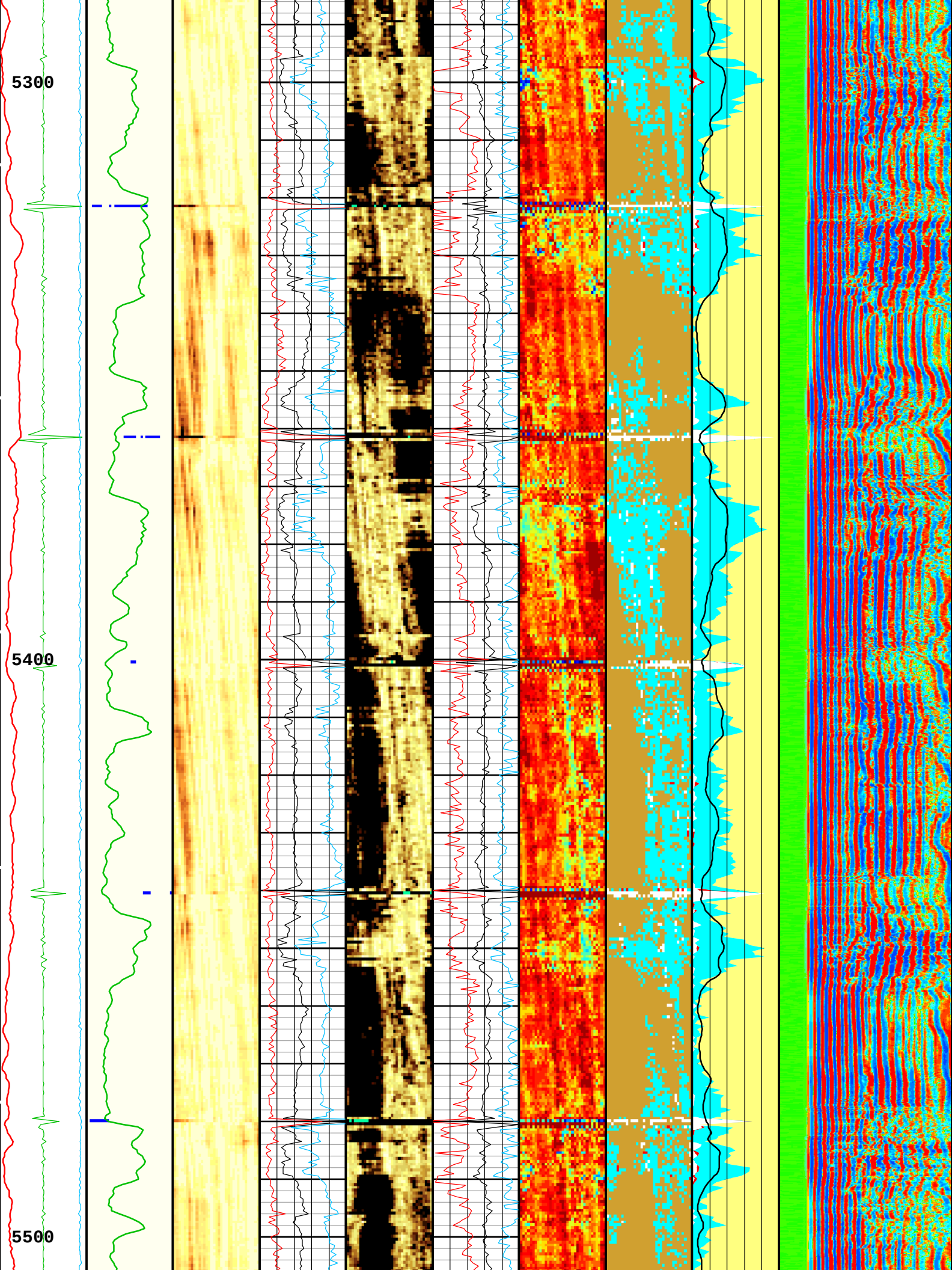


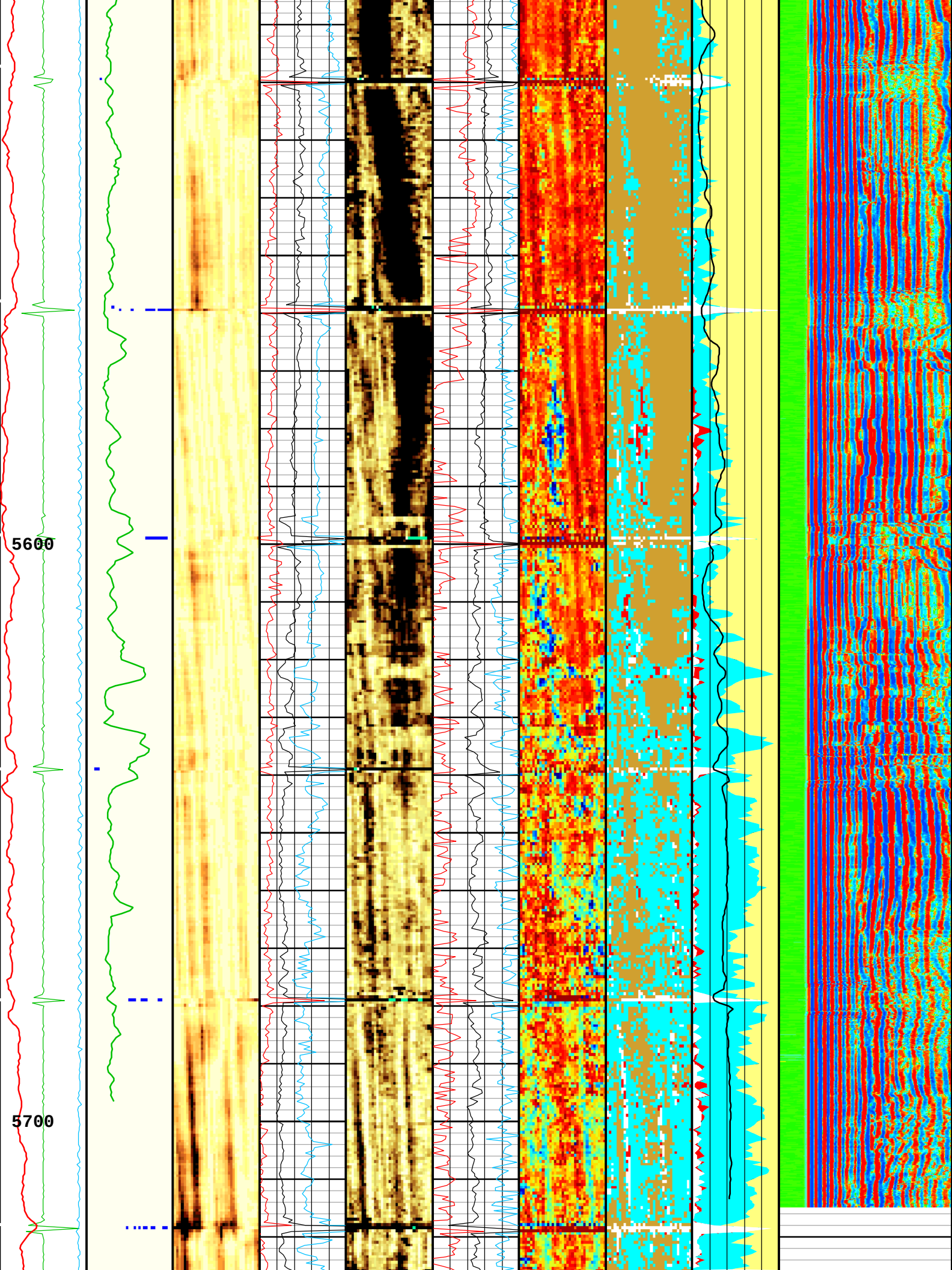


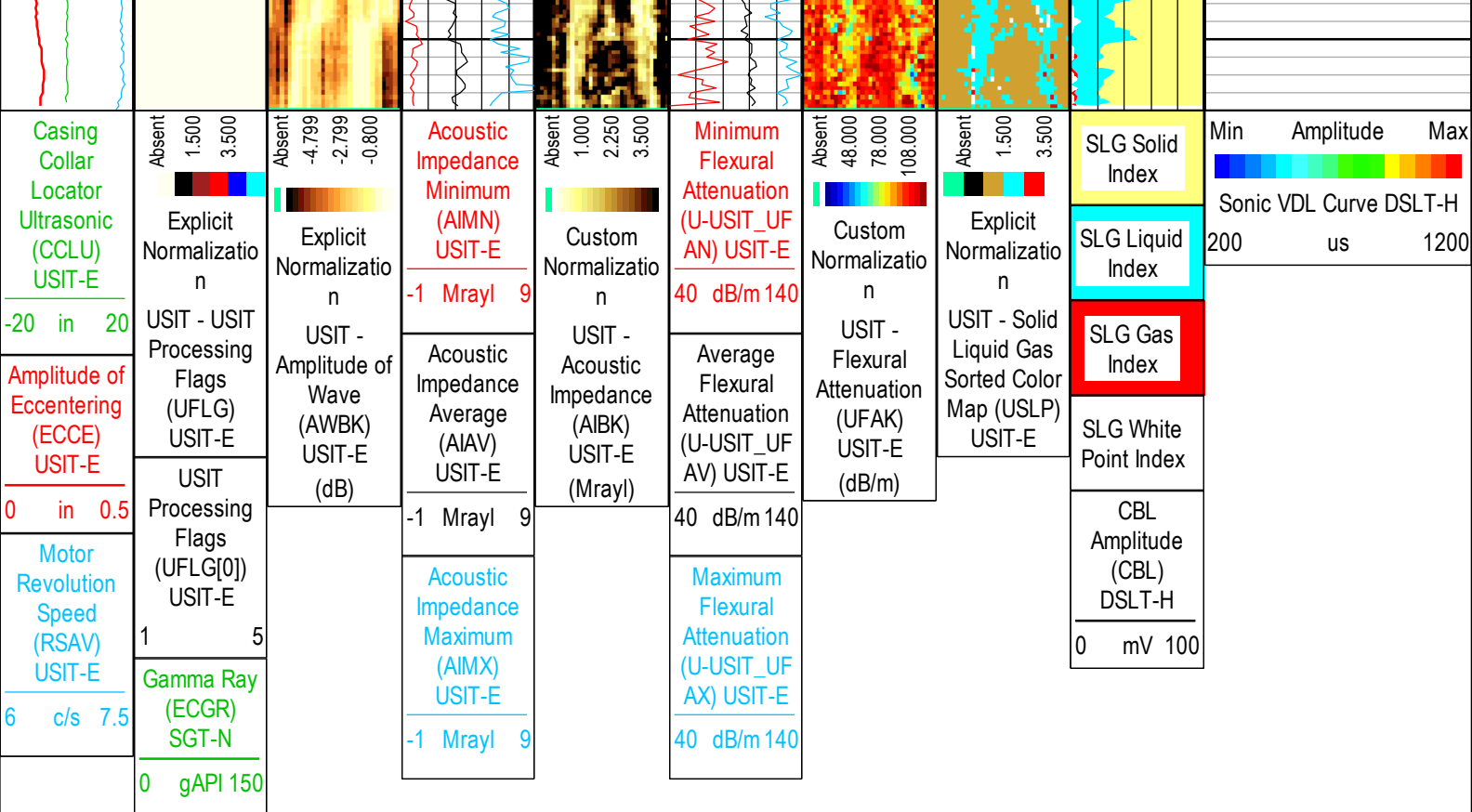












TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  Loop Processing Error

Description: USI IBC SLG Format: Log (IBC SLG VDL CBL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Aug-2017 16:39:17

Channel Processing Parameters				
Trip 3 Run 1: Parameters				
Parameter	Description	Tool	Value	Unit
AMSG	Auxiliary Minimum Sliding Gate	DSLTH	140	us
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BILI	Bond Index Level for Zone Isolation	DSLTH	0.8	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLG	CBL Gate Width	DSLTH	45	us
CBLO	Casing Bottom (Logger)	WLSESSION	5871	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLTH	71	mV
CDEN	Cement Density	USIT-E	12.69	lbm/gal
CDEN	Cement Density	SGT-N	16.69	lbm/gal
CMCF	CBL Cement Type Compensation Factor	DSLTH	1	
CMTY(U-USIT_CENT)	Cement Type	USIT-E	Light Cement	
DETE	Delta-T Detection	DSLTH	E1	
DFD	Drilling Fluid Density	Borehole	8.34	lbm/gal
DET_CATEGORY	Drilling Fluid Type	Borehole	Water	

DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DFT_OIL	Drilling Fluid Oil Type	Borehole	Fresh Water	
DTMD	Borehole Fluid Slowness	Borehole	203	us/ft
FCF	CBL Fluid Compensation Factor	DSLT-H	1	
FD	Fluid Density	USIT-E	9.43	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO_CURR	Good Bond in Arbitrary Cement	DSLT-H	1.89	mV
GR_MULTIPLIER	Gamma Ray Multiplier	SGT-N	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-29.29	dB/m
FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MAHTR	Manual High Threshold Reference for first arrival detection	DSLT-H	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLT-H	45.74	dB/m
MCI	Minimum Cemented Interval for Isolation	DSLT-H	Depth Zoned	ft
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	18.79	us
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLT-H	100	
MSA	Minimum Sonic Amplitude	DSLT-H	0.76	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	0.76	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.2	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
NMSG	Near Minimum Sliding Gate	DSLT-H	245	us
NMXG	Near Maximum Sliding Gate	DSLT-H	950	us
NUMP	Number of Detection Passes	DSLT-H	2	
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
SFAF	Sonic Formation Attenuation Factor	DSLT-H	10.66	dB/m
SGAD	Sliding Gate Status	DSLT-H	Off	
SGCL	Sliding Gate Closing Delta-T	DSLT-H	130	us/ft
SGCW	Sliding Gate Closing Width	DSLT-H	25	us
SGDT	Sliding Gate Delta-T	DSLT-H	57	us/ft
SGW	Sliding Gate Width	DSLT-H	110	us
SLEV	Signal Level for AGC	DSLT-H	5000	mV
SOGR	Standoff Distance of the Gamma Ray Tool	SGT-N	0	in
TCUB	T^3 Processing Level	USIT-E	Loop	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS	Tool Position: Centered or Eccentered	SGT-N	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.69	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-29.8	dB/m
U-ODE	Ultrasonic Density	USIT-E	16.87	lbm/cu ft

UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
VDLG	VDL Manual Gain	DSLT-H	5	
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZCMT	Acoustic Impedance of Cement	DSLT-H	6.8	Mrayl
ZCMT_NEAT	Acoustic Impedance of Cement in Neat Cement	DSLT-H	6.8	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters				
Parameter	Value	Start (ft)	Stop (ft)	
BS	12.25	0	2489	
BS	8.5	2489	5738	
MCI	14.81	0	2489	
MCI	4.75	2489	5738	
All depth are actual.				

Tool Control Parameters	
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Trip 3 Run 1: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
DDEL	Digitizing Delay	DSLT-H	0	us
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
MODE	DSLT Acquisition Mode	DSLT-H	CBL	
RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
DWCO	Digitizer Word Count	DSLT-H	250	
EMXV	EMEX Voltage	USIT-E	40	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
SDTH	Switch Down Threshold	DSLT-H	20000	
SGAI	Selectable Acquisition Gain	DSLT-H	x1	
SUTH	Switch Up Threshold	DSLT-H	1000	
TMUC	Type of Mud	USIT-E	BRI	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	No	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 500 KHz	

UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	5742	ft
USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	33.1	us
WINE	Window End Time	USIT-E	73.1	us
WMOD	Waveform Firing Mode	DSLT-H	Full	

Trip 3 Run 1

IBC Goodwin Compressed

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Trip 3 Run 1	Log[4]:Up	Up	39.35 ft	5738.87 ft	04-Aug-2017 12:47:11 PM	04-Aug-2017 3:10:50 PM	ON	1.00 ft	Yes

All depths are referenced to toolstring zero

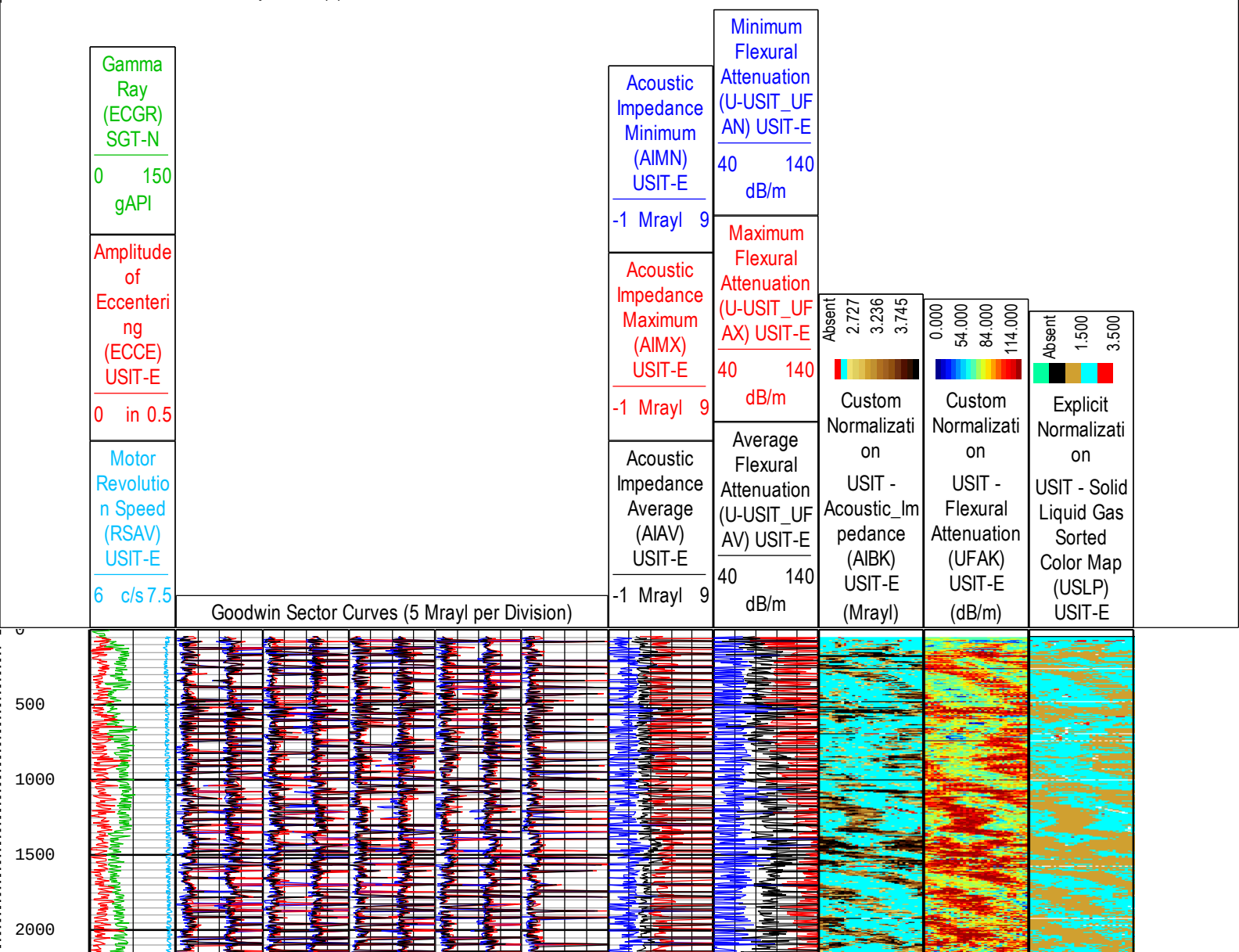
Log

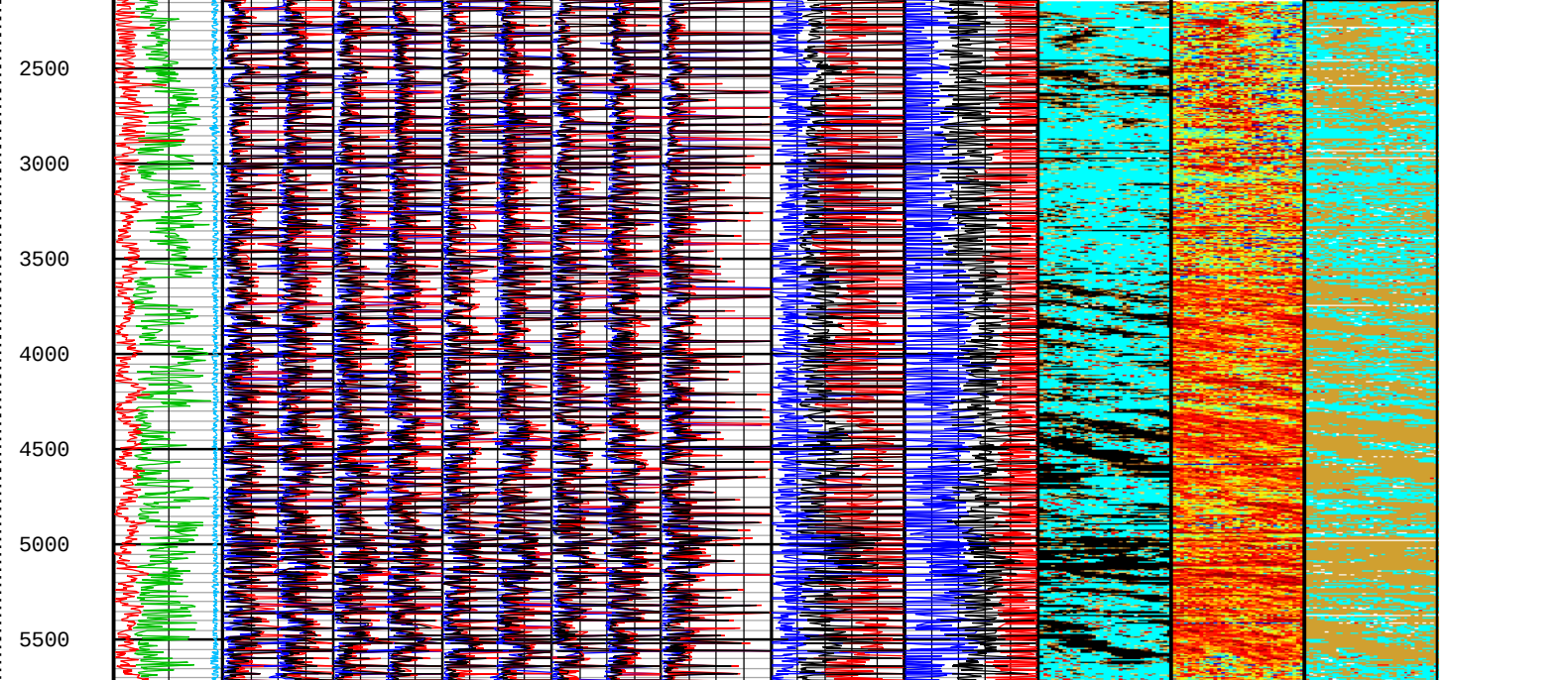
Company:Mississippi Power Company Well:MPC 26-5 #1

Trip 3 Run 1: Log[4]:Up:S010

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Aug-2017 16:39:27

TIME_1900 - Time Marked every 60.00 (s)





Gamma Ray (ECGR) SGT-N
0 150 gAPI

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Goodwin Sector Curves (5 Mrayl per Division)

Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9 40 140 dB/m

Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9 40 140 dB/m

Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9 40 140 dB/m

Minimum Flexural Attenuation (U-USIT_UF AN) USIT-E
40 140 dB/m

Maximum Flexural Attenuation (U-USIT_UF AX) USIT-E
40 140 dB/m

Average Flexural Attenuation (U-USIT_UF AV) USIT-E
40 140 dB/m

Absent 2.727 3.236 3.745
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

0.000 54.000 84.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Aug-2017 16:39:27

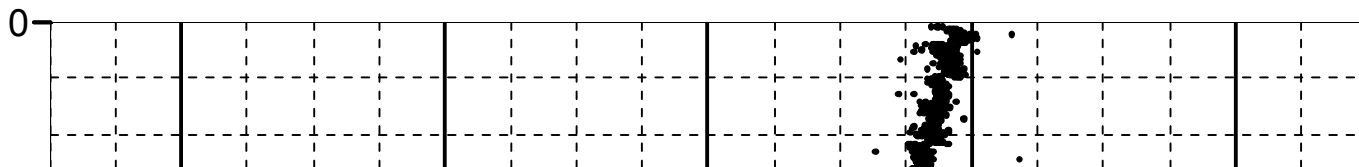
XYZ Company: Mississippi Power Company Well: MPC 26-5 #1 Trip 3 Run 1: Log[4]:Up:S010

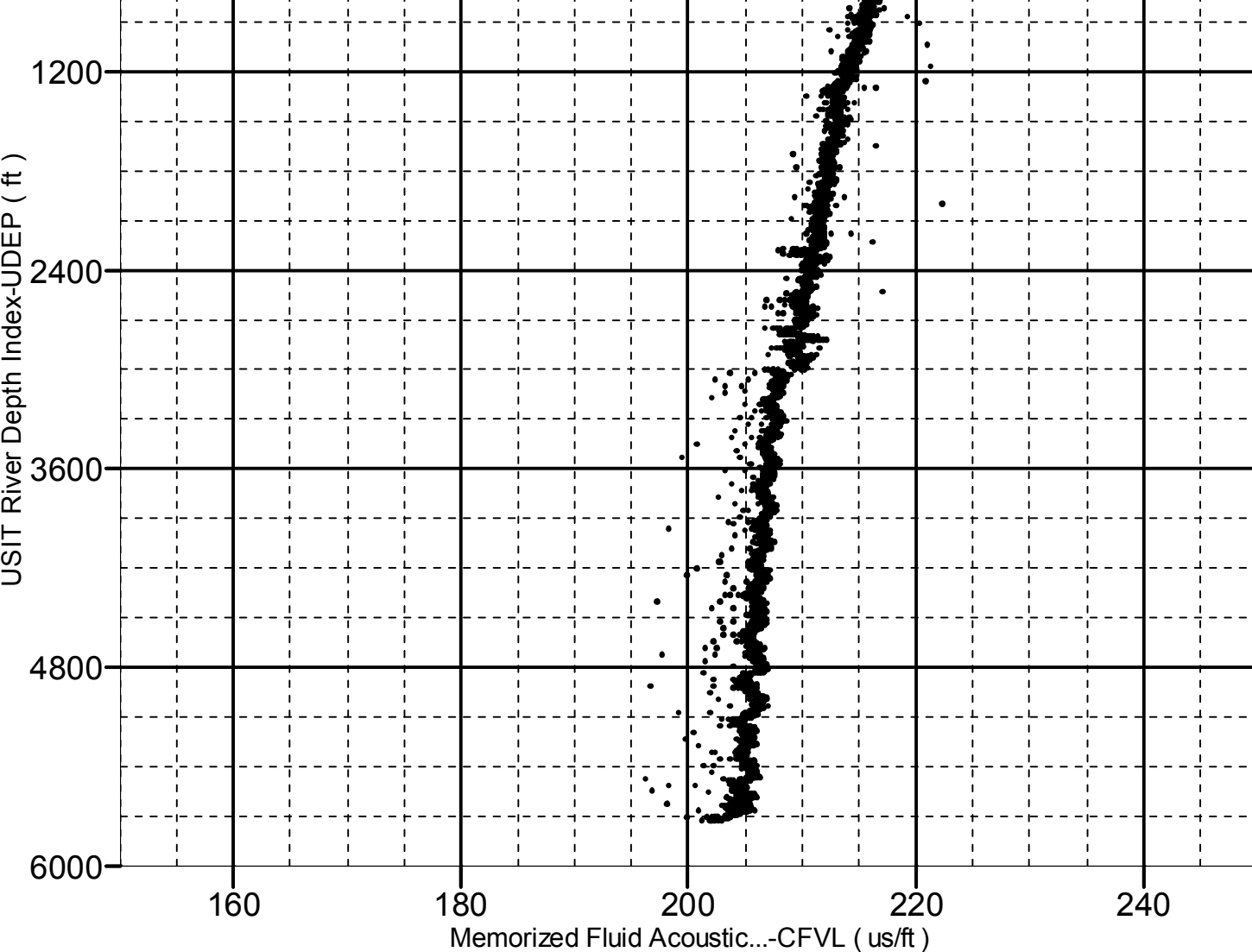
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 5738.00 to 39.00 ft

● CFVL-UDEP

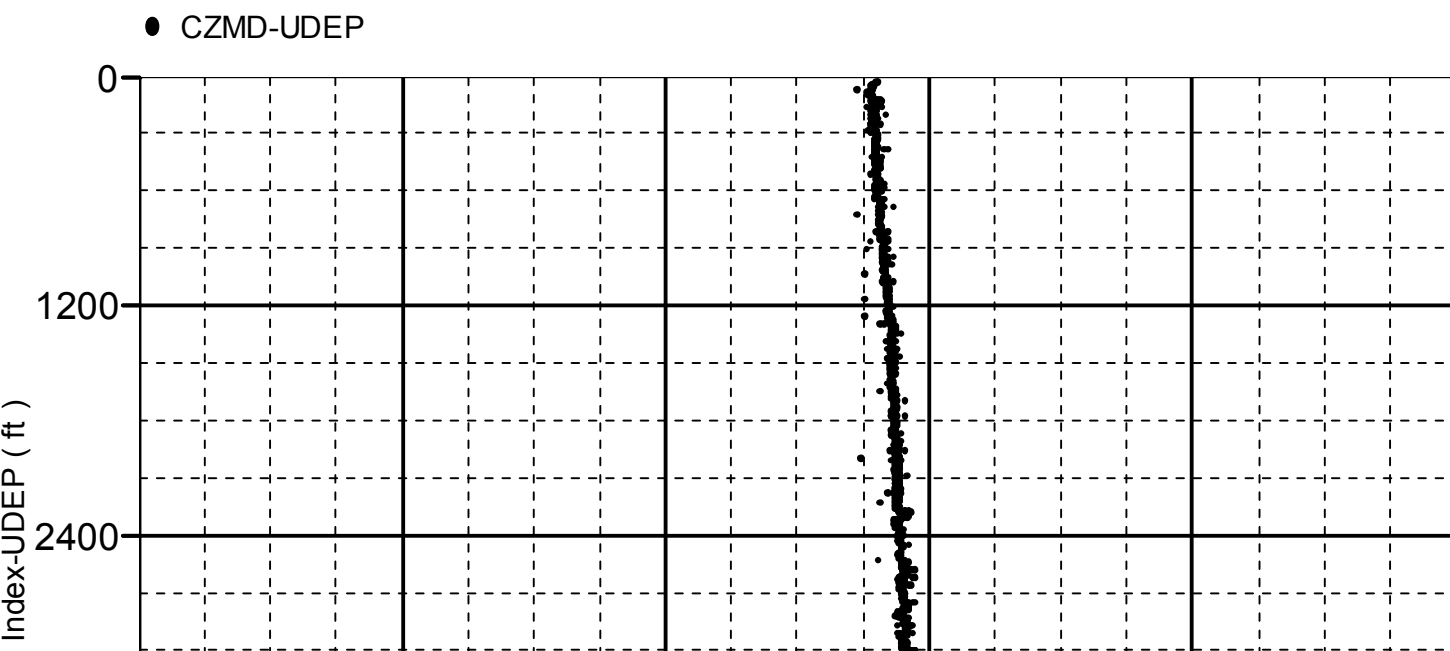


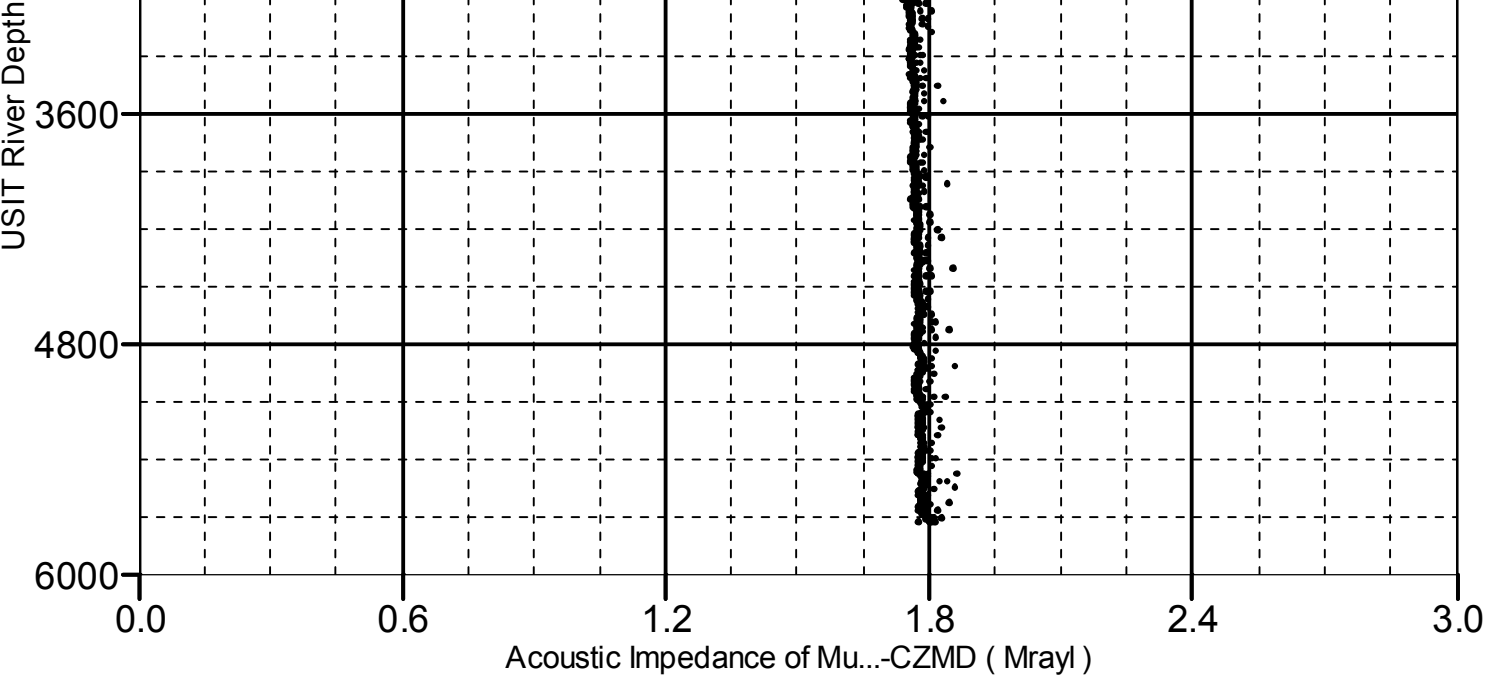


Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 5738.00 to 39.00 ft





Company:	Mississippi Power Company	Schlumberger
Well:	MPC 26-5 #1	
Field:	Wildcat	
County:	Kemper	
State:	Mississippi	
500 psi Isolation Scanner - CBL VDL Cement Evaluation Gamma Ray - CCL Log		