

Company: Crestone Peak Resources Operating, LLC

Well: Cosslett 1C-22H-B168

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner
Cement Evaluation
Gamma Ray - CCL Log

Cement Evaluation

Gamma Ray - CCL Log

Location:		NWNE Sec. 22, T1N, R68W		Elev.:	K.B.	5197.00 ft
		SHL: 925' FNL & 2230' FEL			G.L.	5174.00 ft
					D.F.	5197.00 ft
Permanent Datum:		Ground Level		Elev.: 5174.00 f		
Log Measured From:		Kelly Bushing		23.00 ft		
Drilling Measured From:		Kelly Bushing		above Perm.Datum		
API Serial No.	Section:	Township:		Range:		
05-123-47671	22	1N		68W		

Run Number	ONE
Depth Driller	17471.00 ft
Schlumberger Depth	17471.00 ft
Bottom Log Interval	7367.00 ft
Top Log Interval	90.00 ft
Casing Fluid Type	Water
Salinity	
Density	8.4 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	8.75 in
From	2515.00 ft
To	17471.00 ft
Casing/Tubing Size	5.5 in
Weight	20 lbm/ft
Grade	N/A
From	0.00 ft
To	17459.00 ft
Max Recorded Temperatures	213 degF
Logger on Bottom	08-Mar-2019
Unit Number	9115
Recorded By	A. Blochowicz
Witnessed By	Garet Wood

Disclaimer

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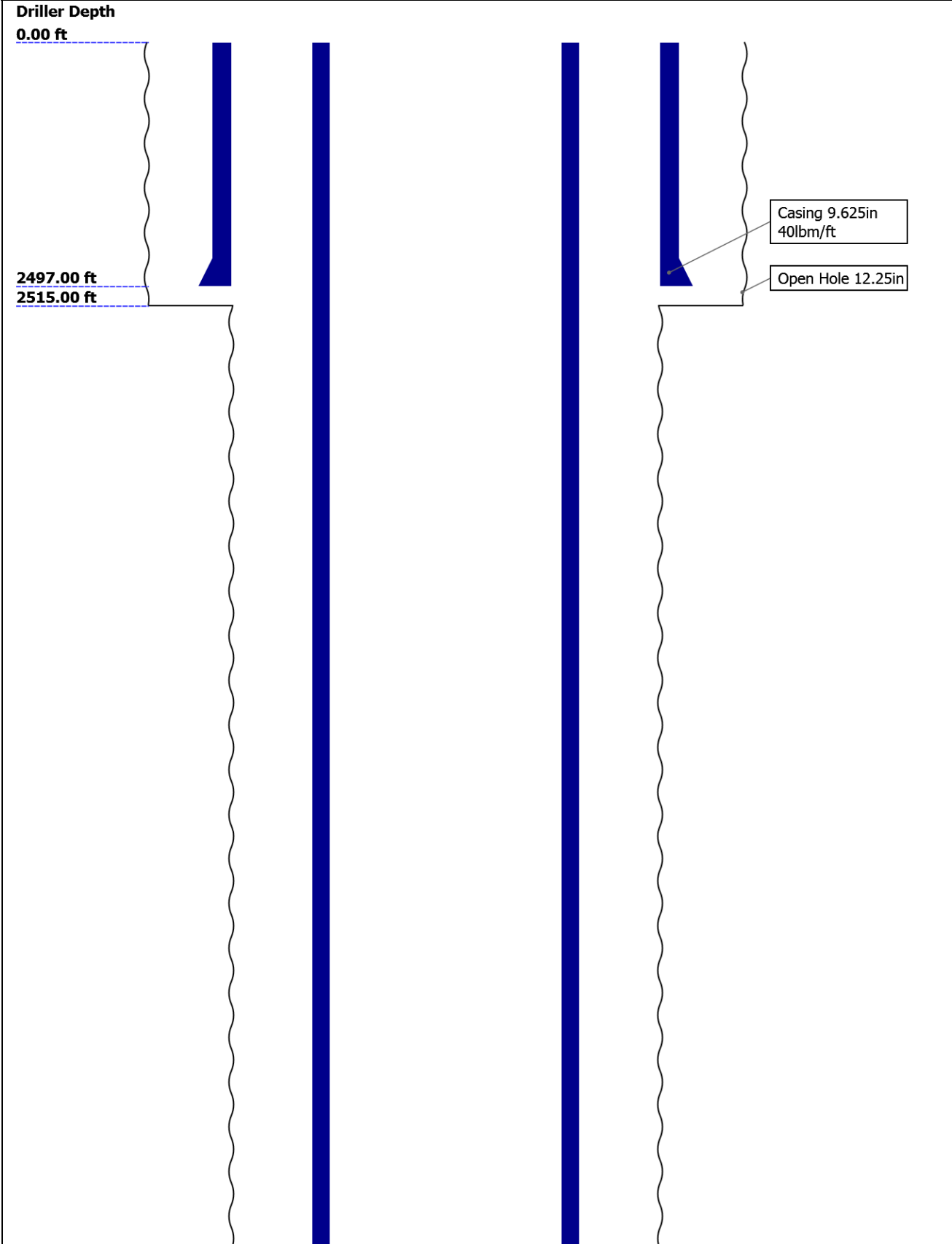
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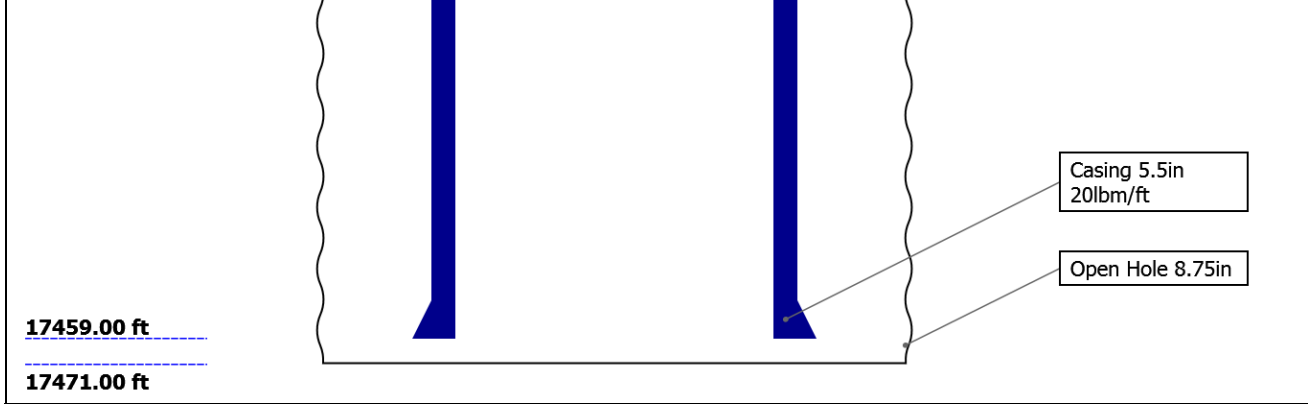
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Well Sketch





Borehole Size/Casing/Tubing Record

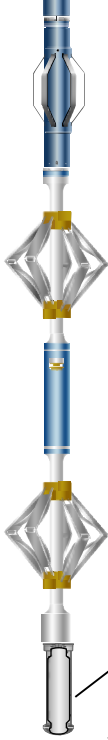
Bit						
Bit Size (in)	12.25	8.75				
Top Driller (ft)	0	2515				
Top Logger (ft)	0	2515				
Bottom Driller (ft)	2515	17471				
Bottom Logger (ft)	2515	17471				
Casing						
Size (in)	9.625	5.5				
Weight (lbm/ft)	40	20				
Inner Diameter (in)	8.835	4.778				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	2497	17459				
Bottom Logger (ft)	2497	17459				

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks		
Equip name	Length	MP name	Offset	Thank you for choosing Schlumberger!		
LEH-QT:1	34.23			Toolstring run as per tool sketch and client logging program		
LEH-QT:10	0			5" gemco and in-line centralizers with small hole kit and booster/houma kit used for centrali		
CAL-YA	30.74			All passes run at 0 psi		
CAL-YA		CCL	29.95	High deviation and dogleg severity impacted tool centralization and data within well		
EDTC-B:9	27.24			Lead: 12.5 ppg Tail: 13.5 ppg Spacer: 11 ppg		
EDTH-B:90	46					
EDTG-A:7	9215	CTEM	23.74			
EDTC-B:90	38	ACCZ	0.00			
		HV	0.00			
		Gamma	21.87			
		Ray				
		TelStatu	20.74			
		s				
AH-184[2]:5941	20.74					
AH-184[1]:3709	18.74					

USIT-E:90 16.74

ECH-MFA:
1818
USAC-A:9
00
USIS-A:18
20
USSC-B:74
5
IBCS-A:80
0
FAR-SENS
OR:4561
IBC-TX
NEAR-SEN
SOR:2115
IBC-TX
USI-SENS
OR:3172
IBC-TX
EMITTER-
SENSOR:4
215
IBC-TX



USI Sen 0.84
sor
Head Te
nsion
TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 5.000 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Log[3]:Up	7372.88	75.49

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
-----------------	----------------	--------------------	------------------

Mud Impedance = "Theoretical".
CZMD uses theoretical results.
MUD_N_THE=1.12
DFD=1.01g/cm3(8.40lbm/gal)

Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
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ONE

IBC SLG

Software Version	
Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100
Application Patch	Wireline_NPD-SNGI-2018SP1_8.1.100441
	Wireline_Testkit-CMR-NG-2018SP1_8.1.102925

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	75.49 ft	7372.88 ft	08-Mar-2019 10:33:12 AM	08-Mar-2019 12:14:46 PM	ON	4.56 ft	No

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources Operating, LLC	Well:Cosslett 1C-22H-B168
	ONE: Log[3]:Up:S003	

Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 08-Mar-2019 13:43:34






TIME_1900 - Time Marked every 60.00 (s)

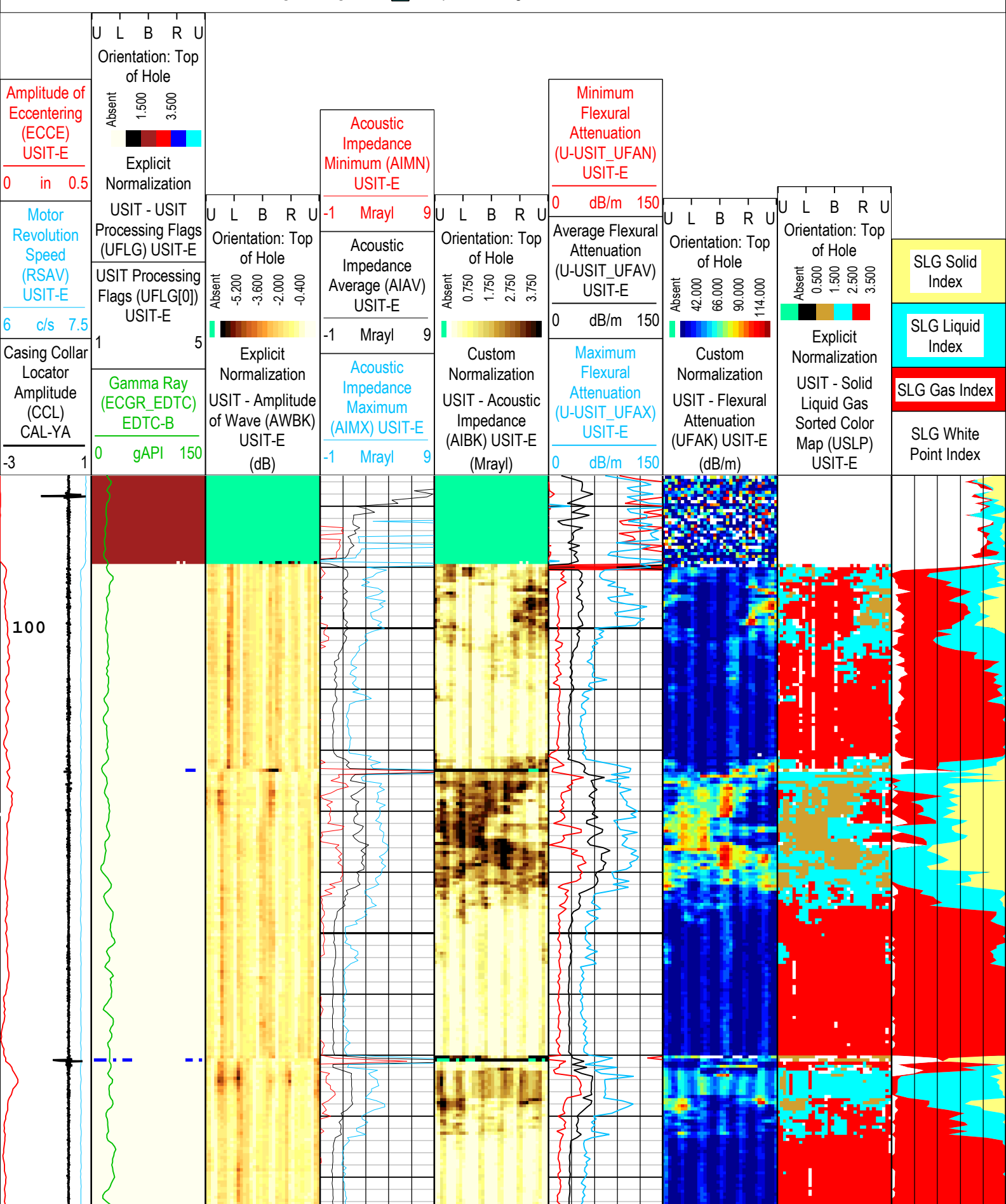
USIT Processing Flags (I I E I G I O I) USIT-F

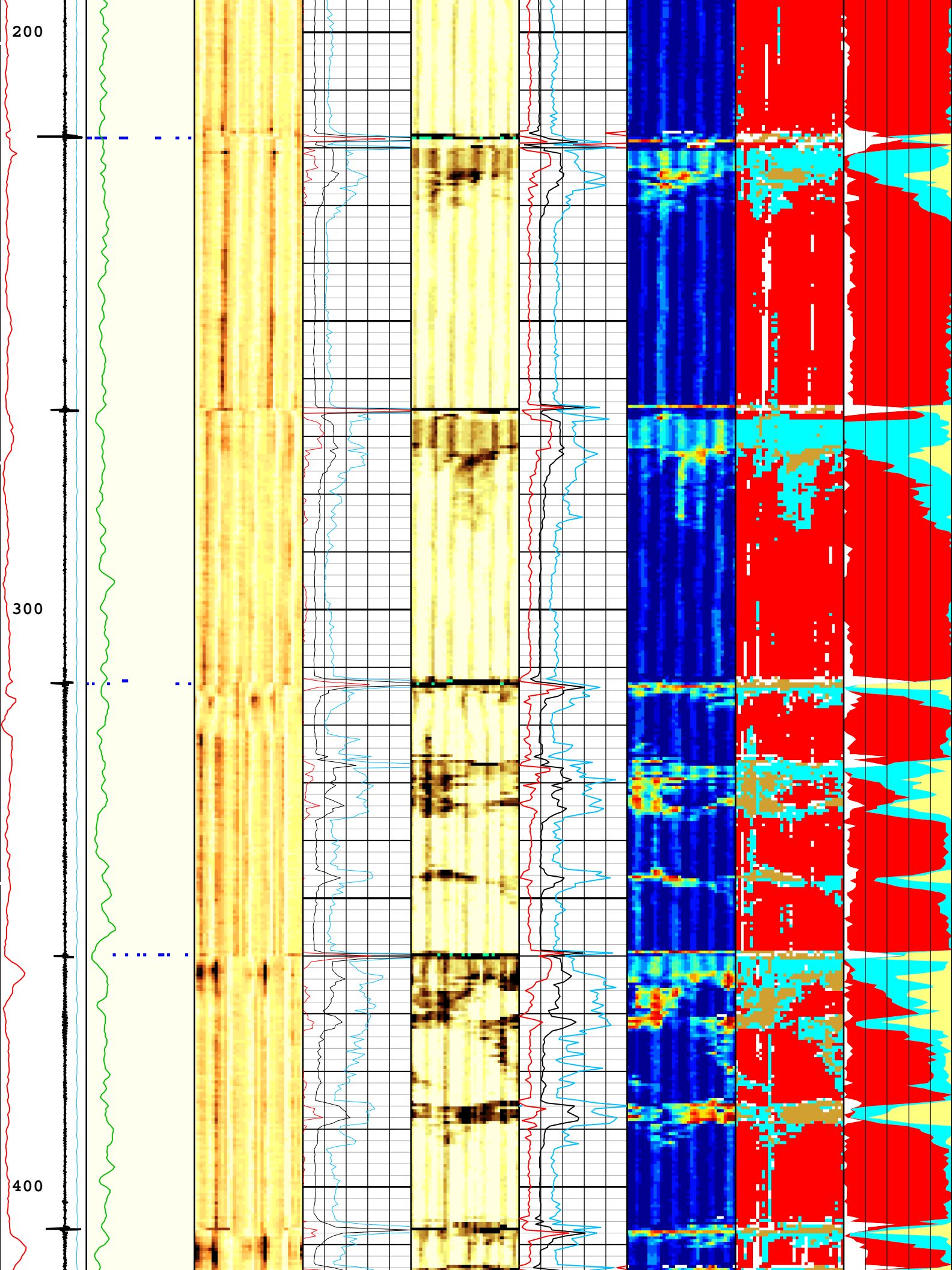
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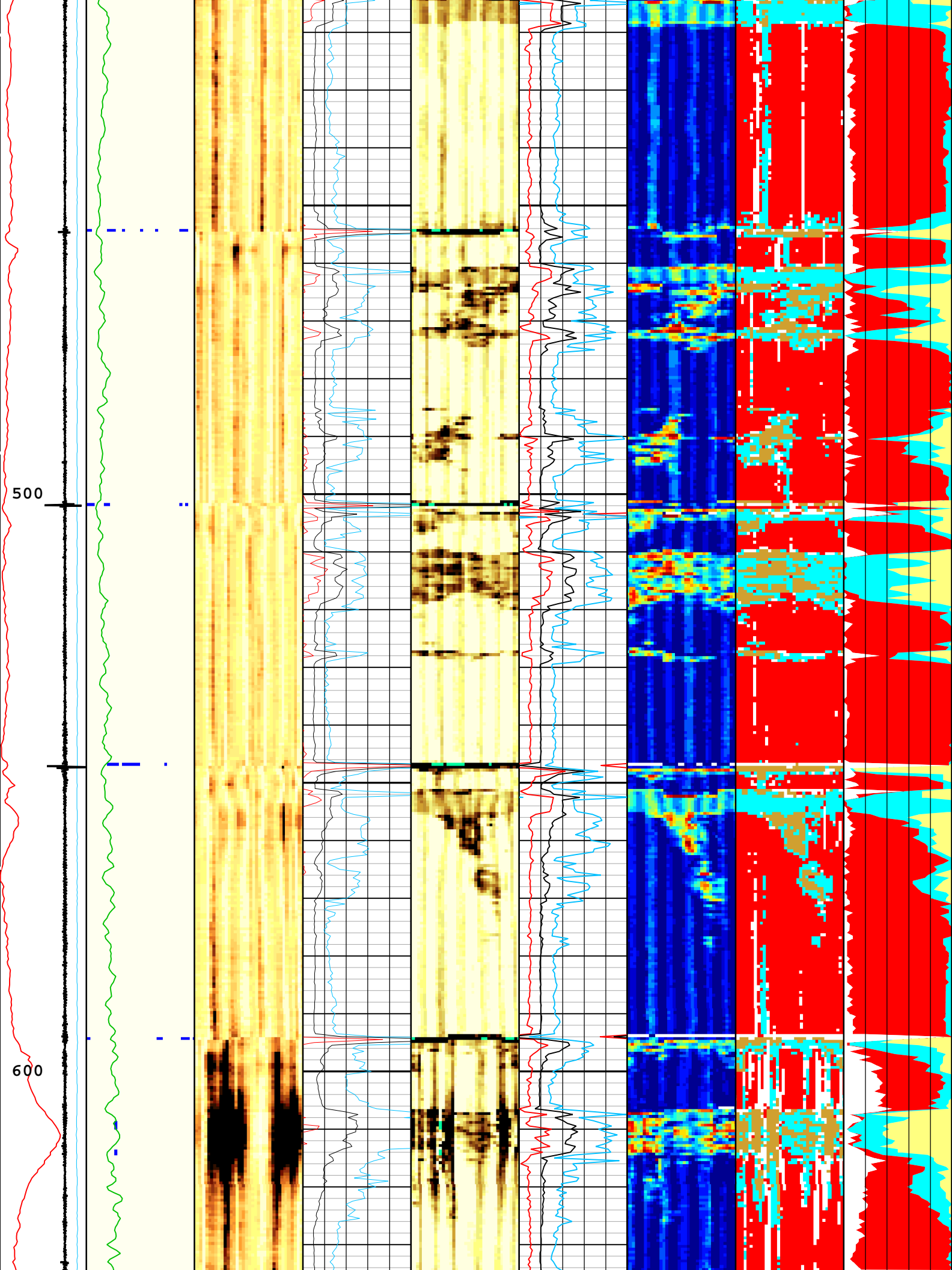
1 - UFLG 1 Value within [0.0 - 1.5] : -
2 - UFLG 2 Value within [1.5 - 2.5] : -
3 - UFLG 3 Value within [2.5 - 3.5] : -
4 - UFLG 4   UFLG 5   UFLG 6 Value
5 - UFLG 7   UFLG 8   UFLG 9 Value

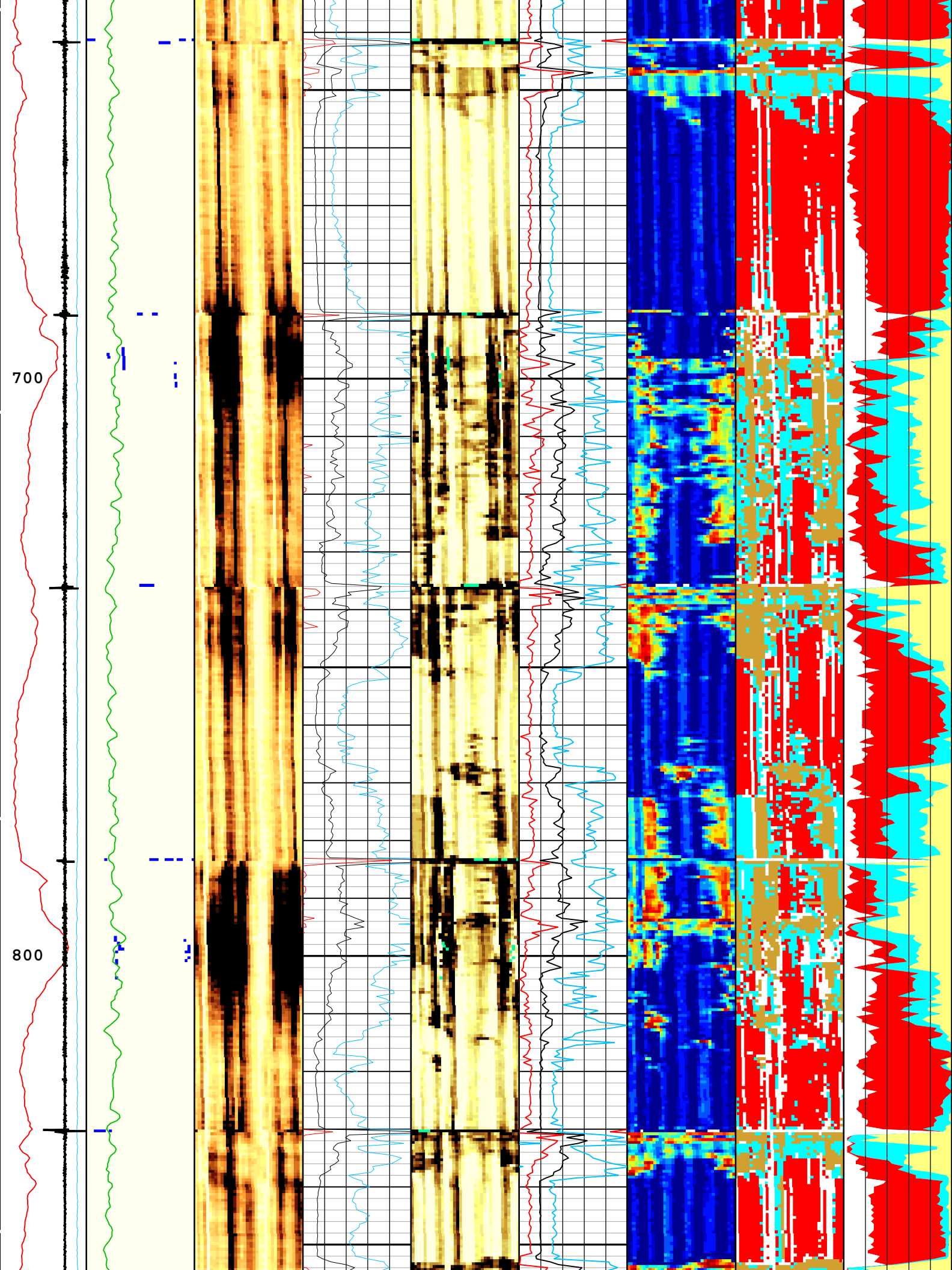
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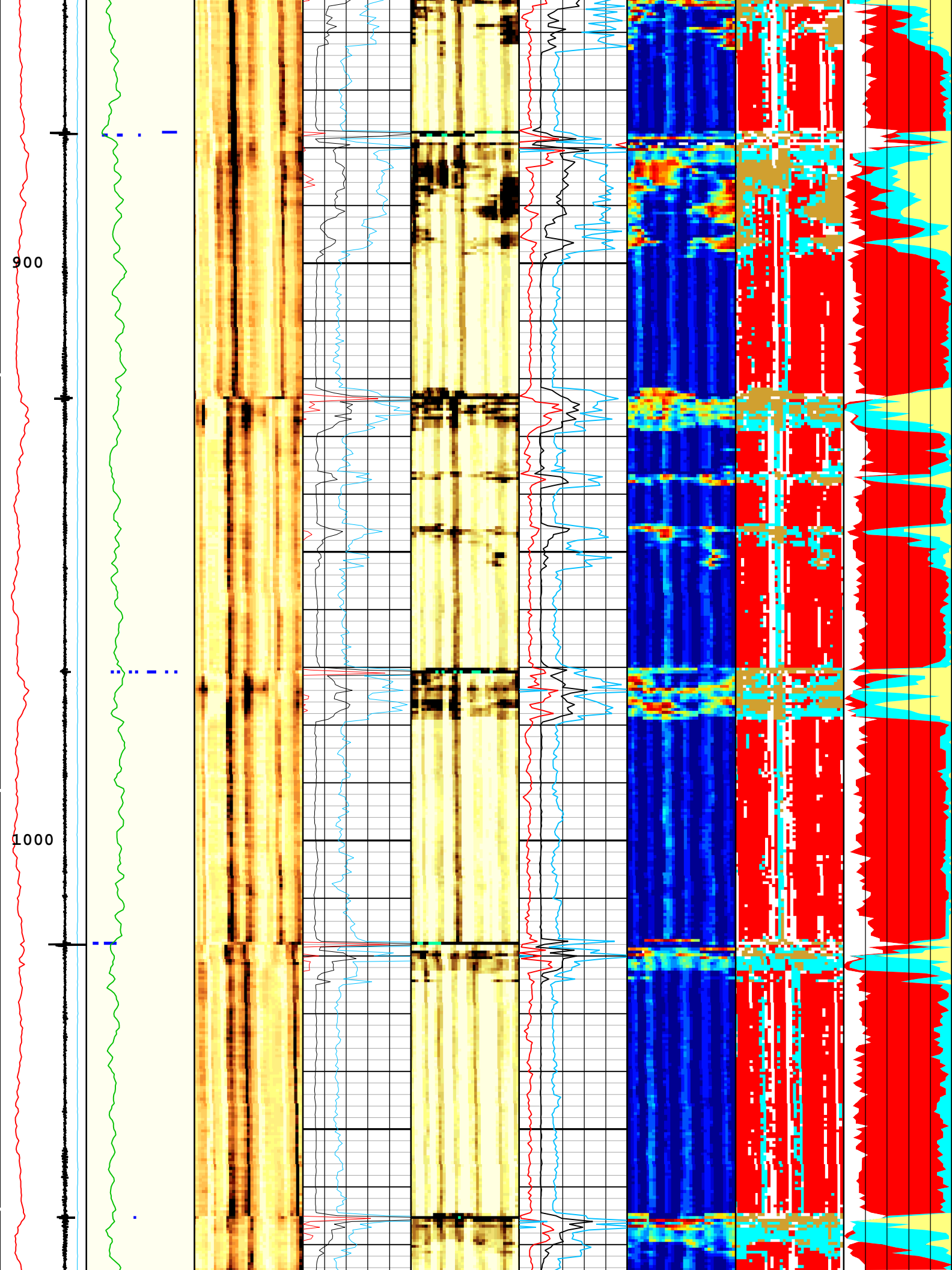
-  UTIM Error
-  Pulse Origin Not Detected
-  WINLEN Error
-  Casing Thickness Error
-  Loop Processing Error

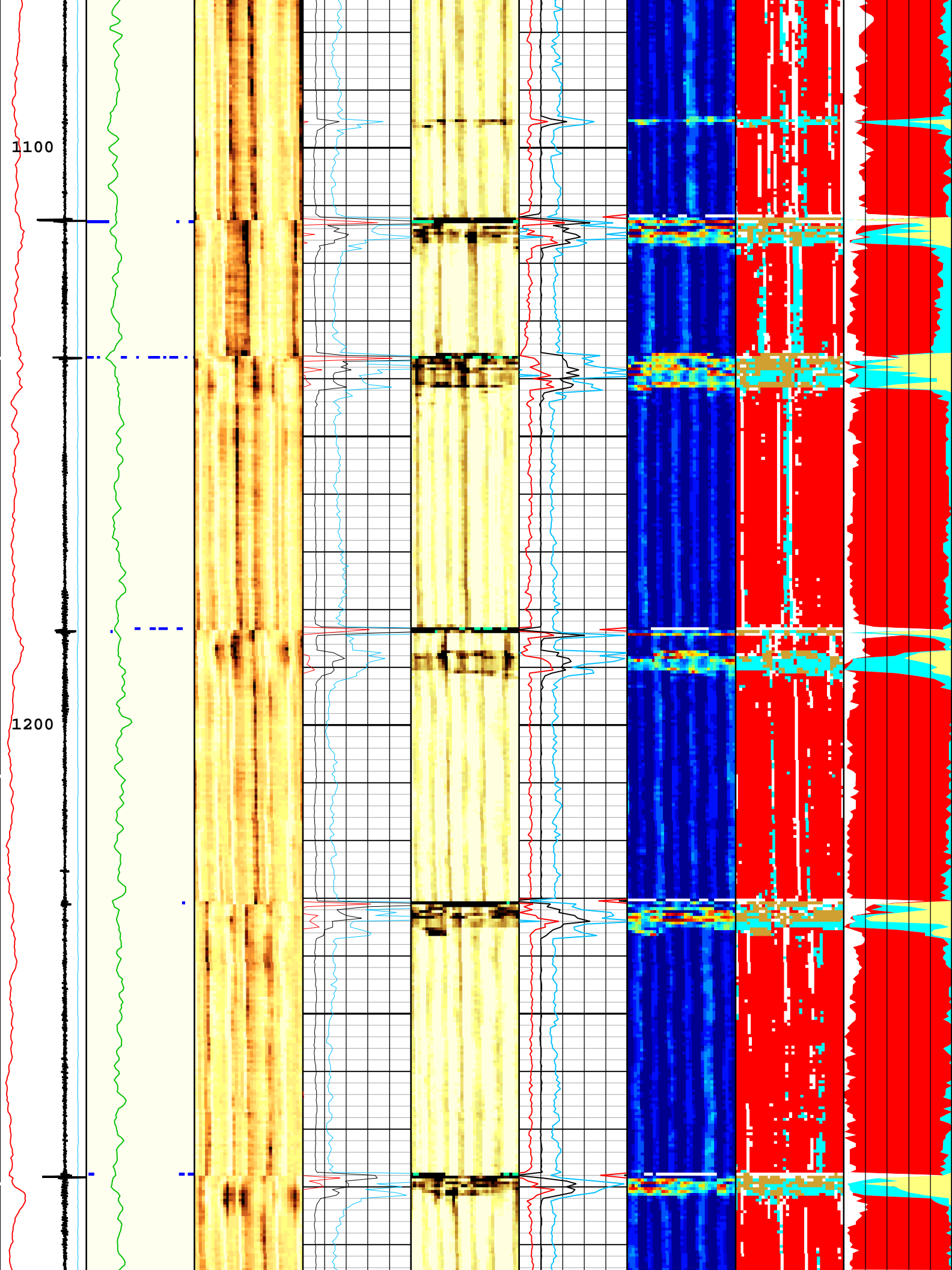


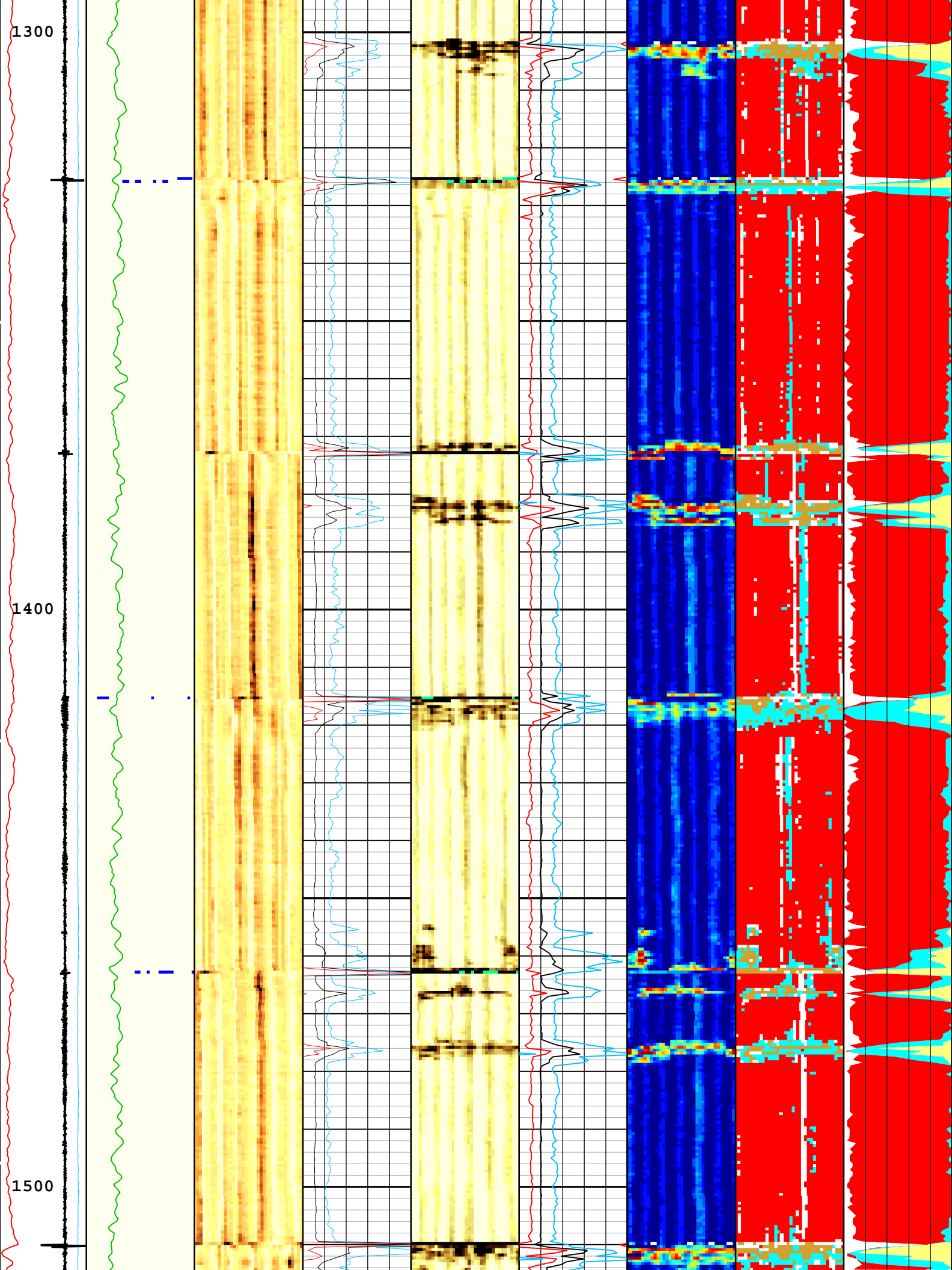


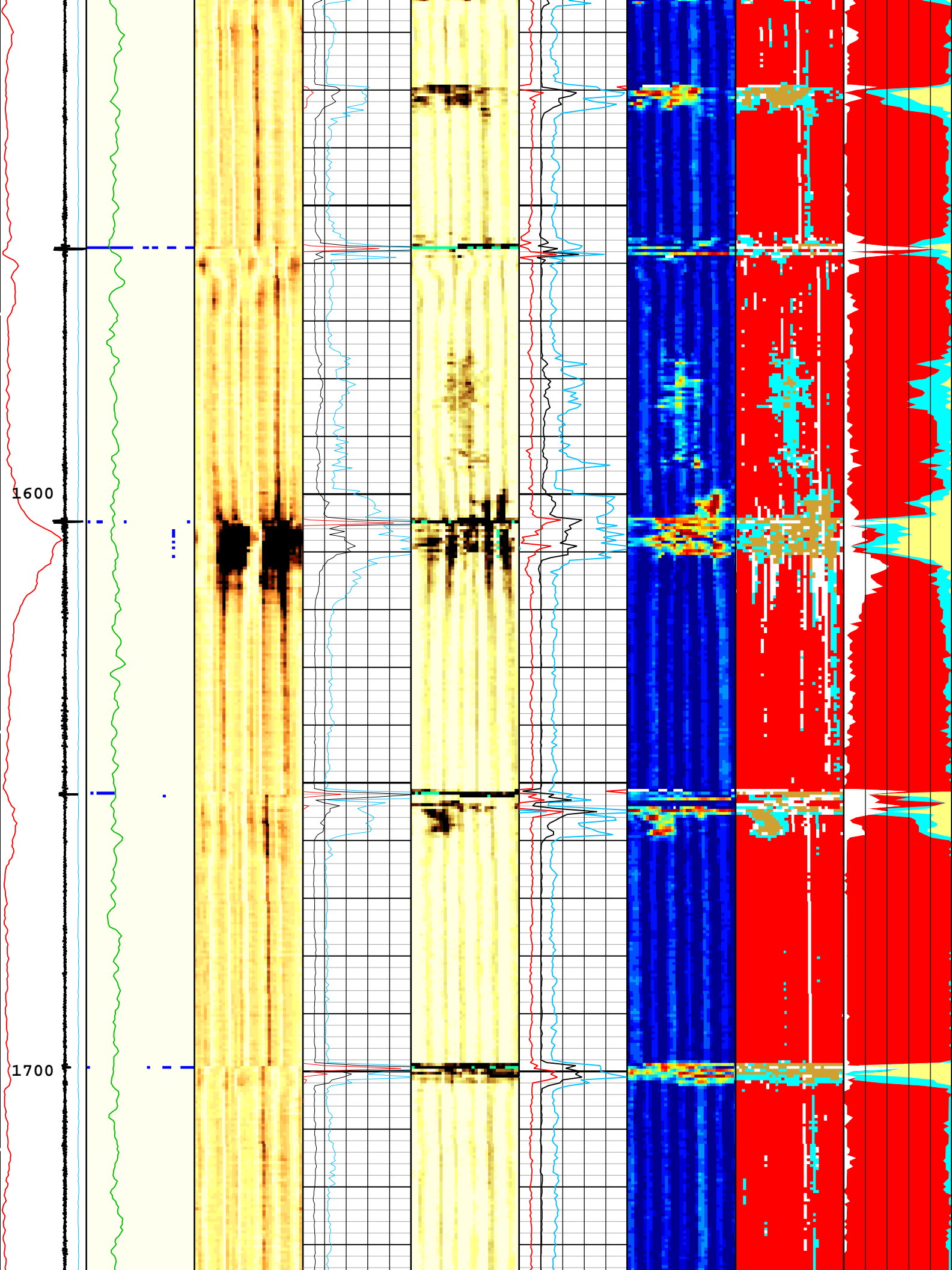


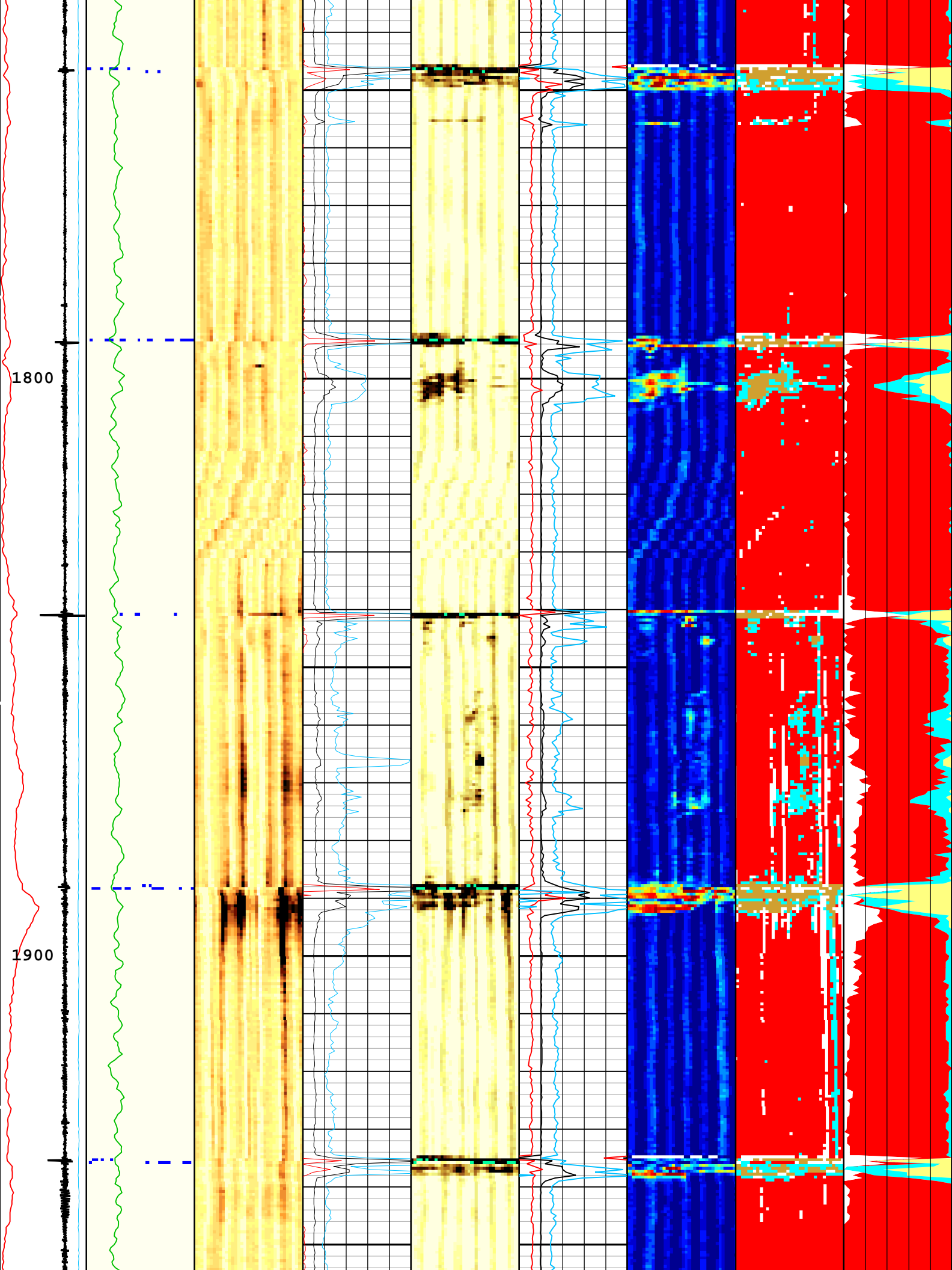


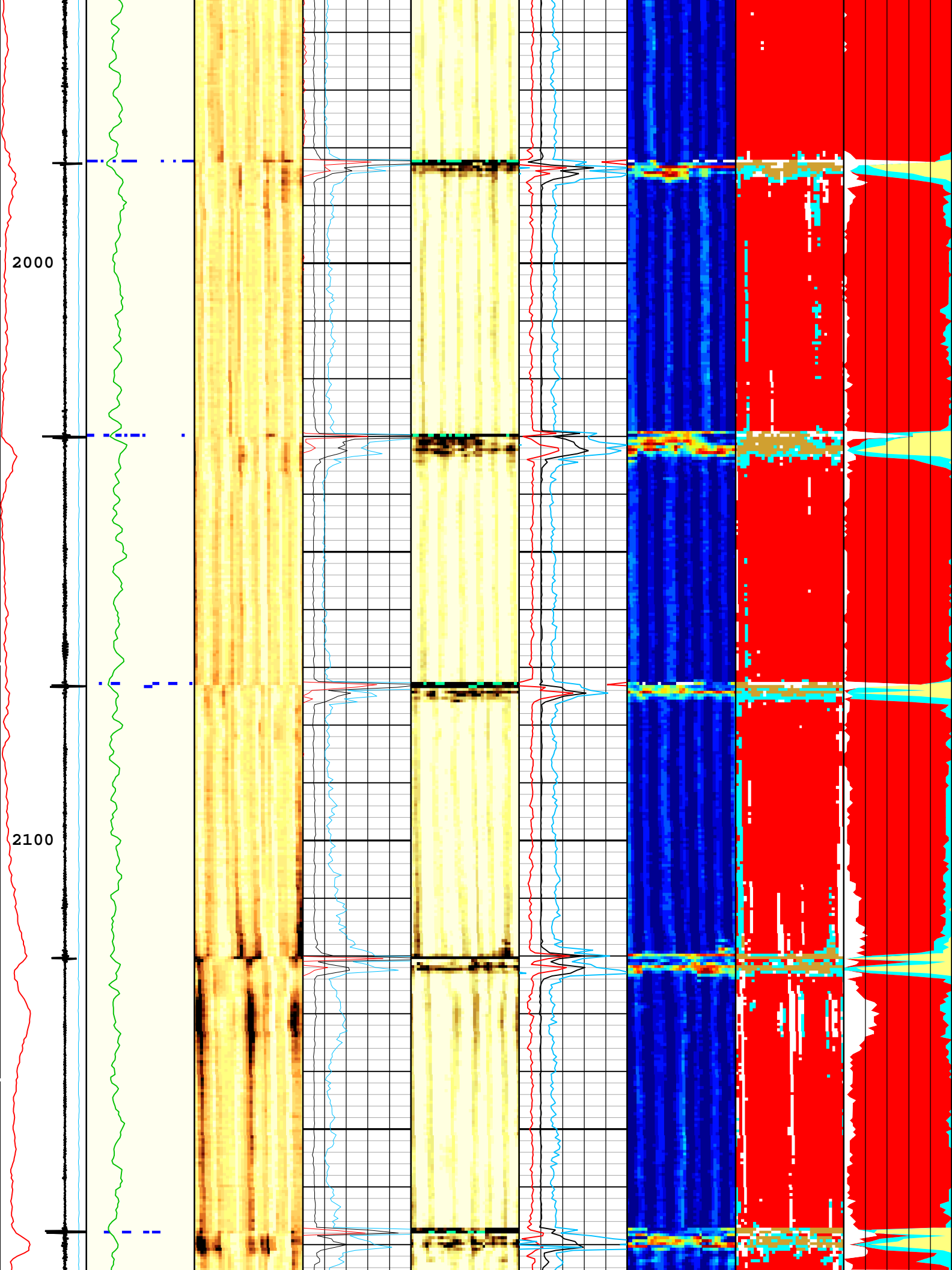


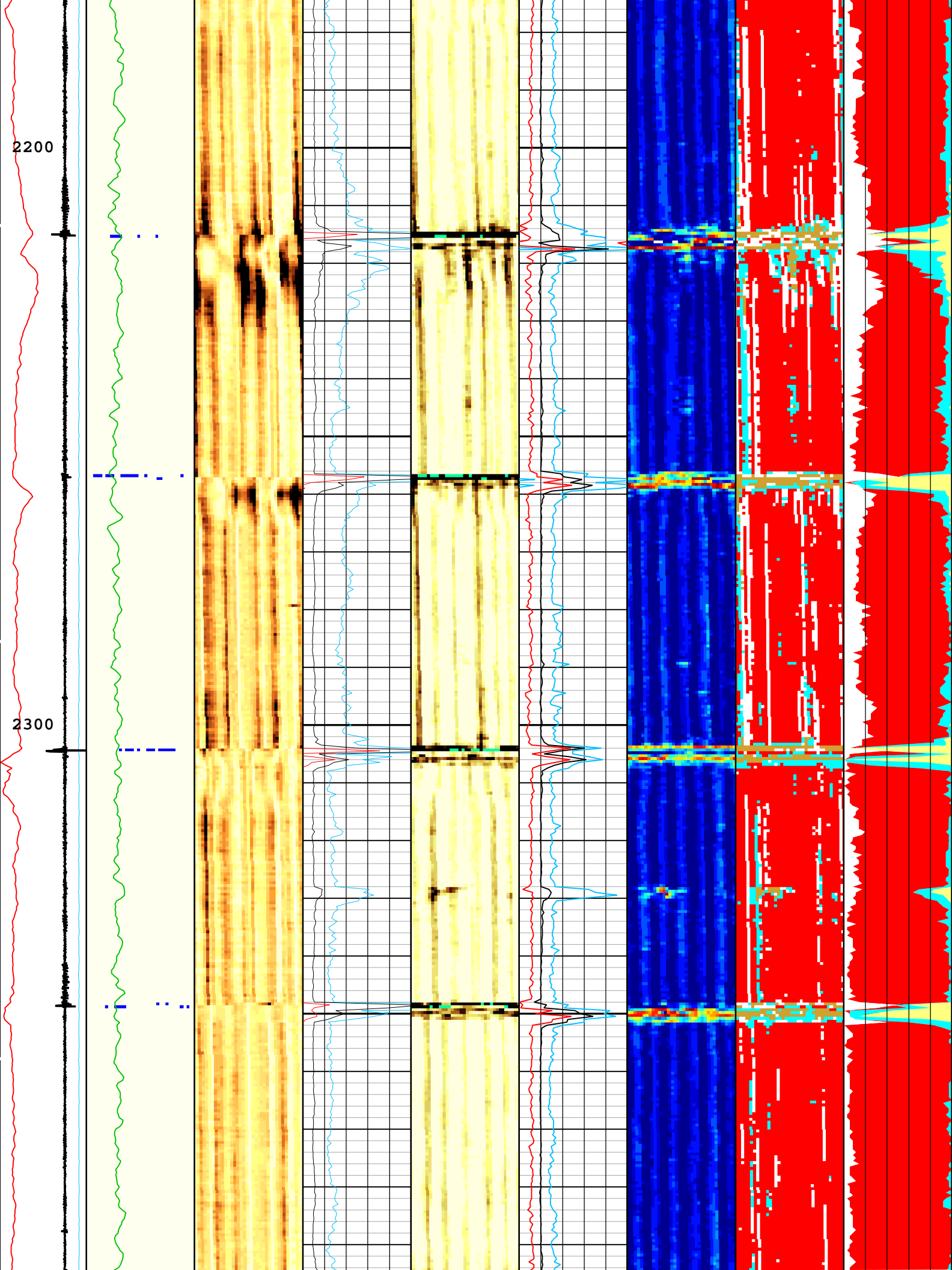


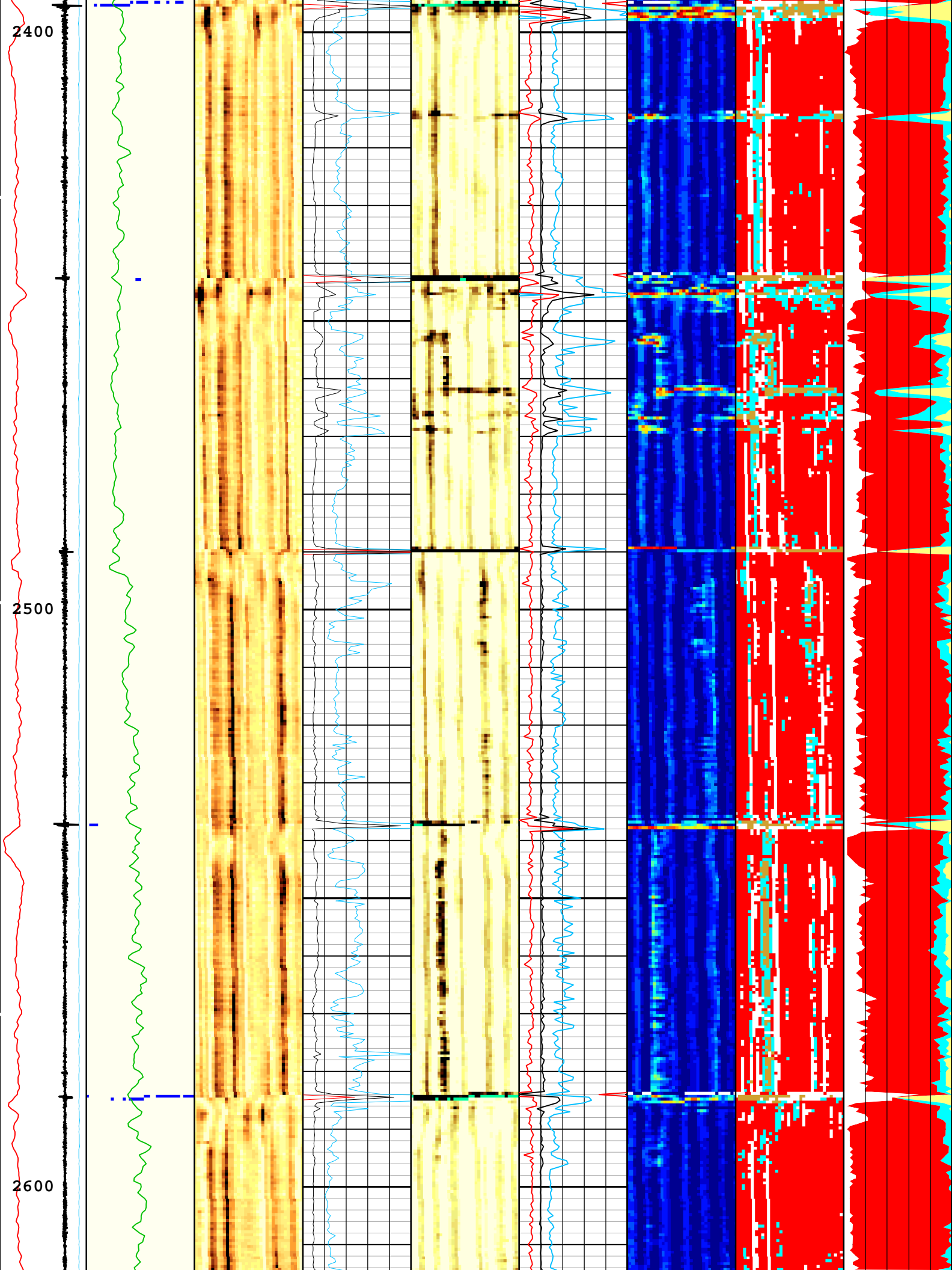


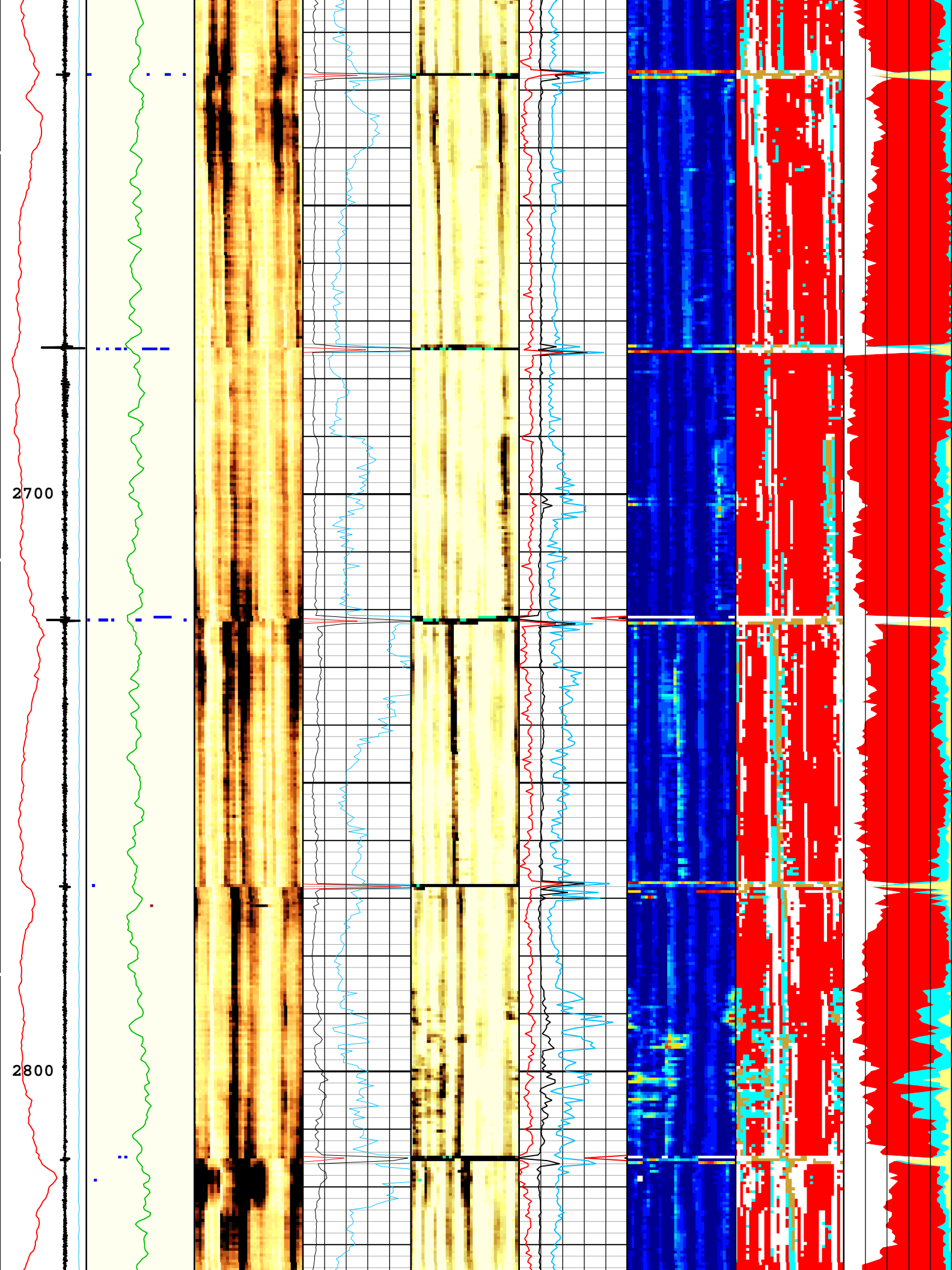


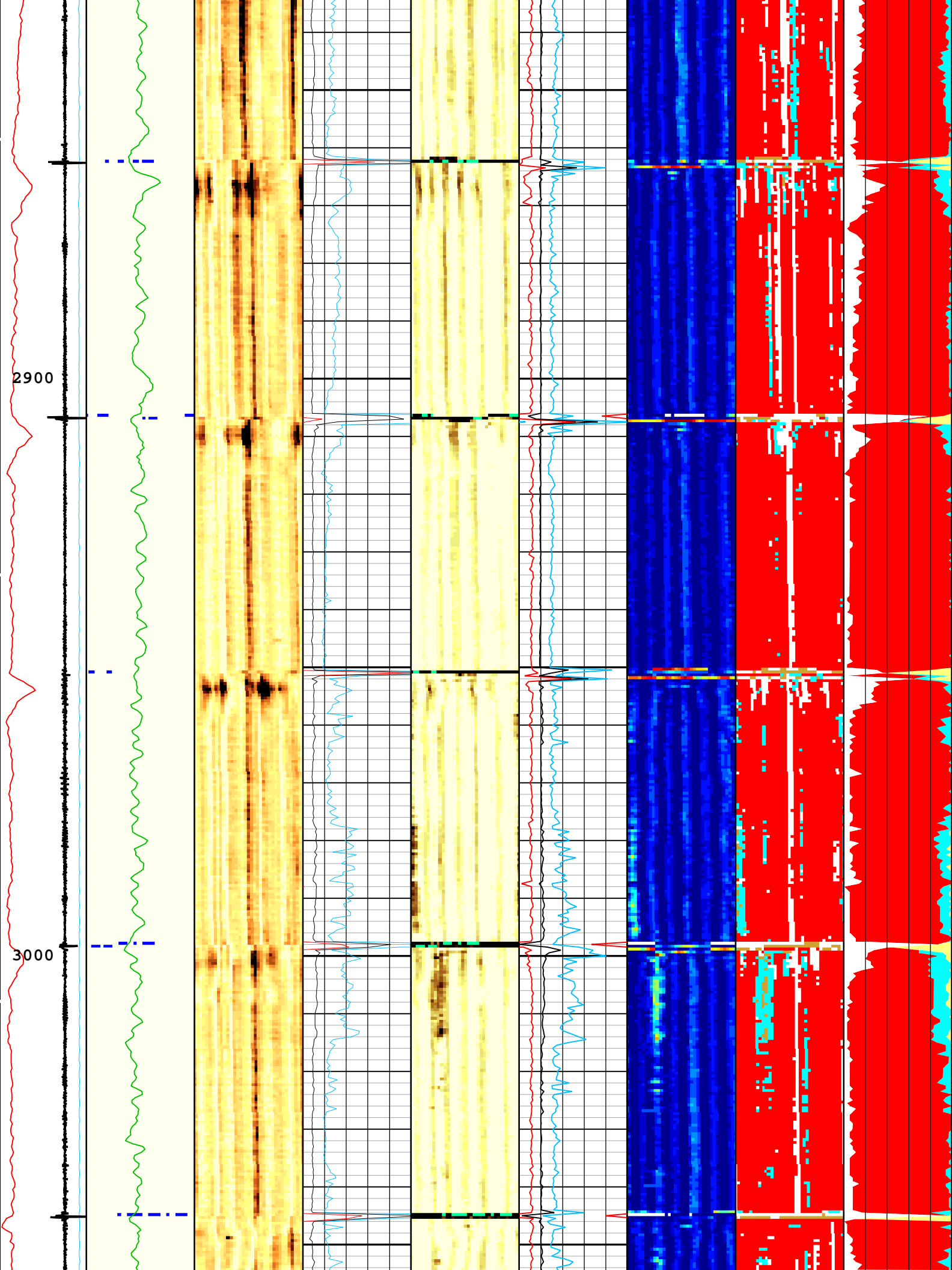


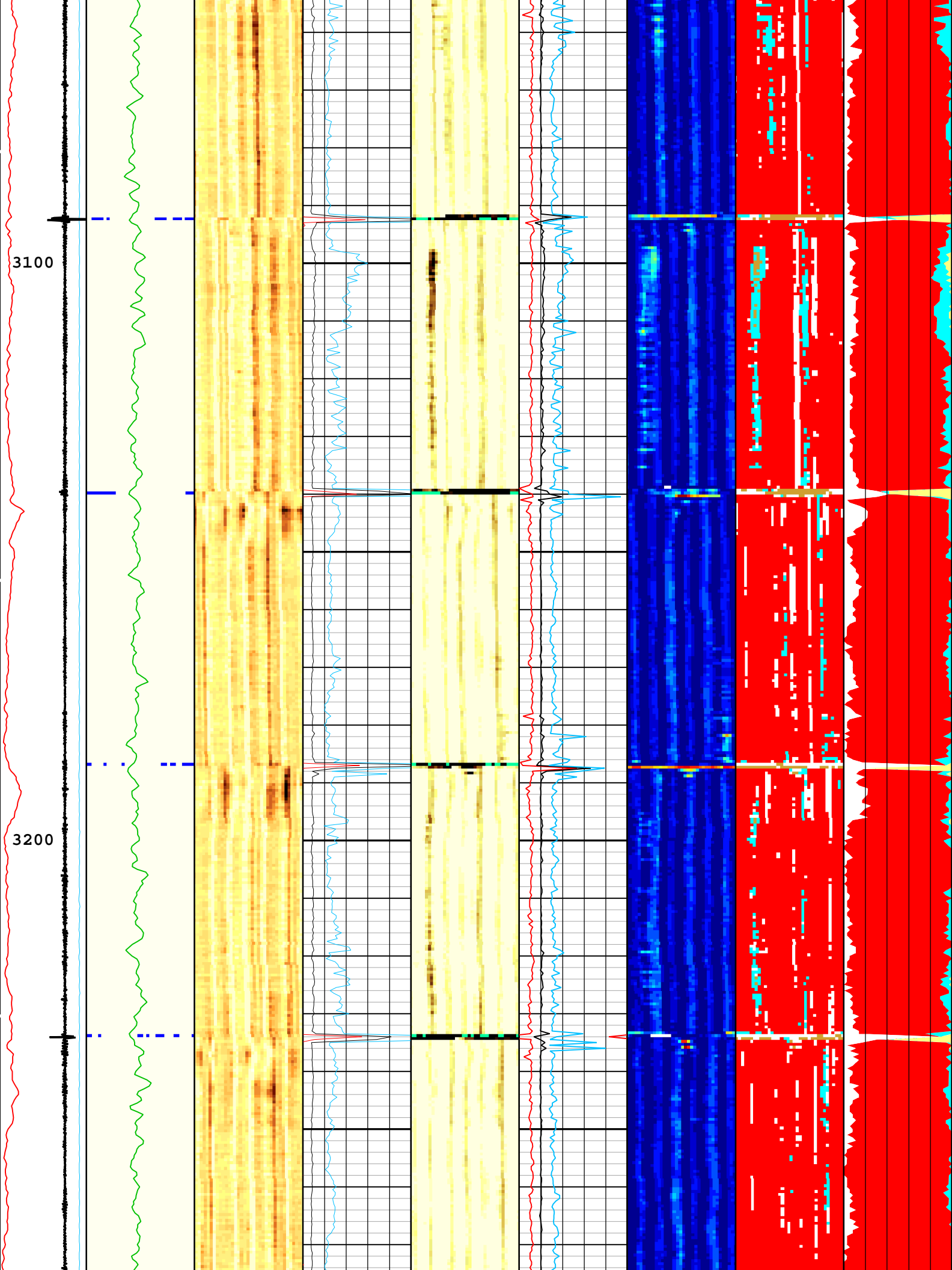


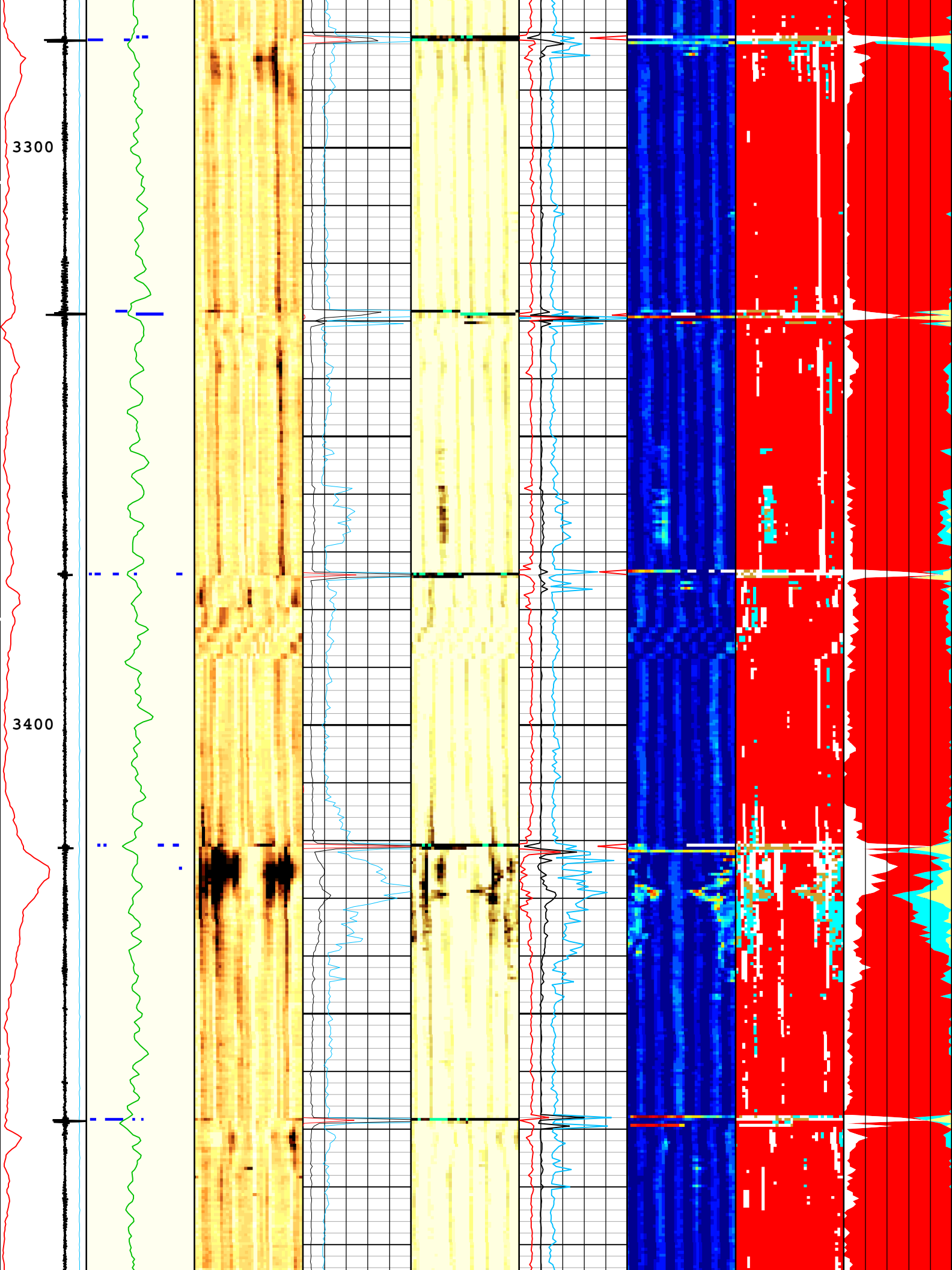


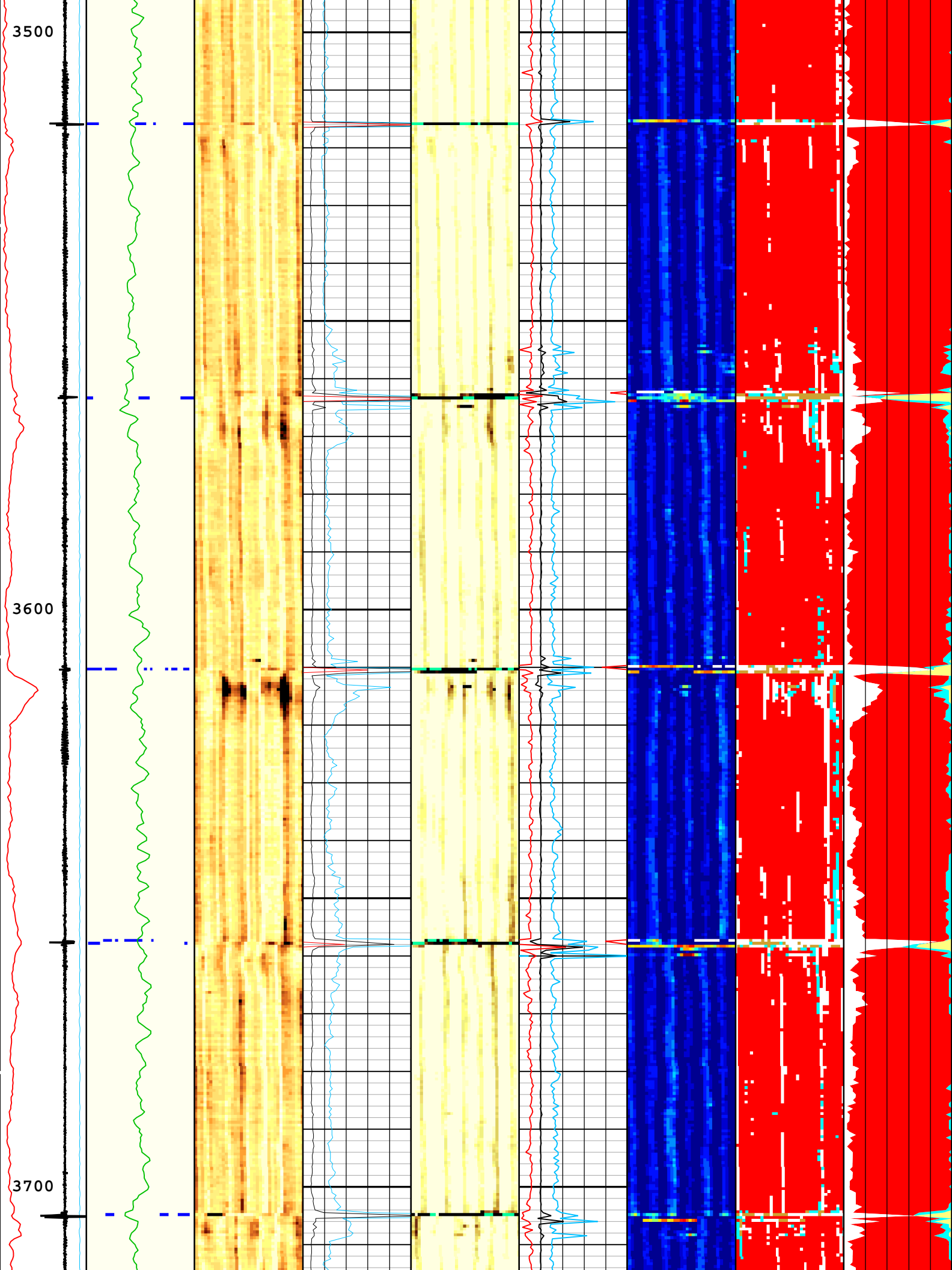


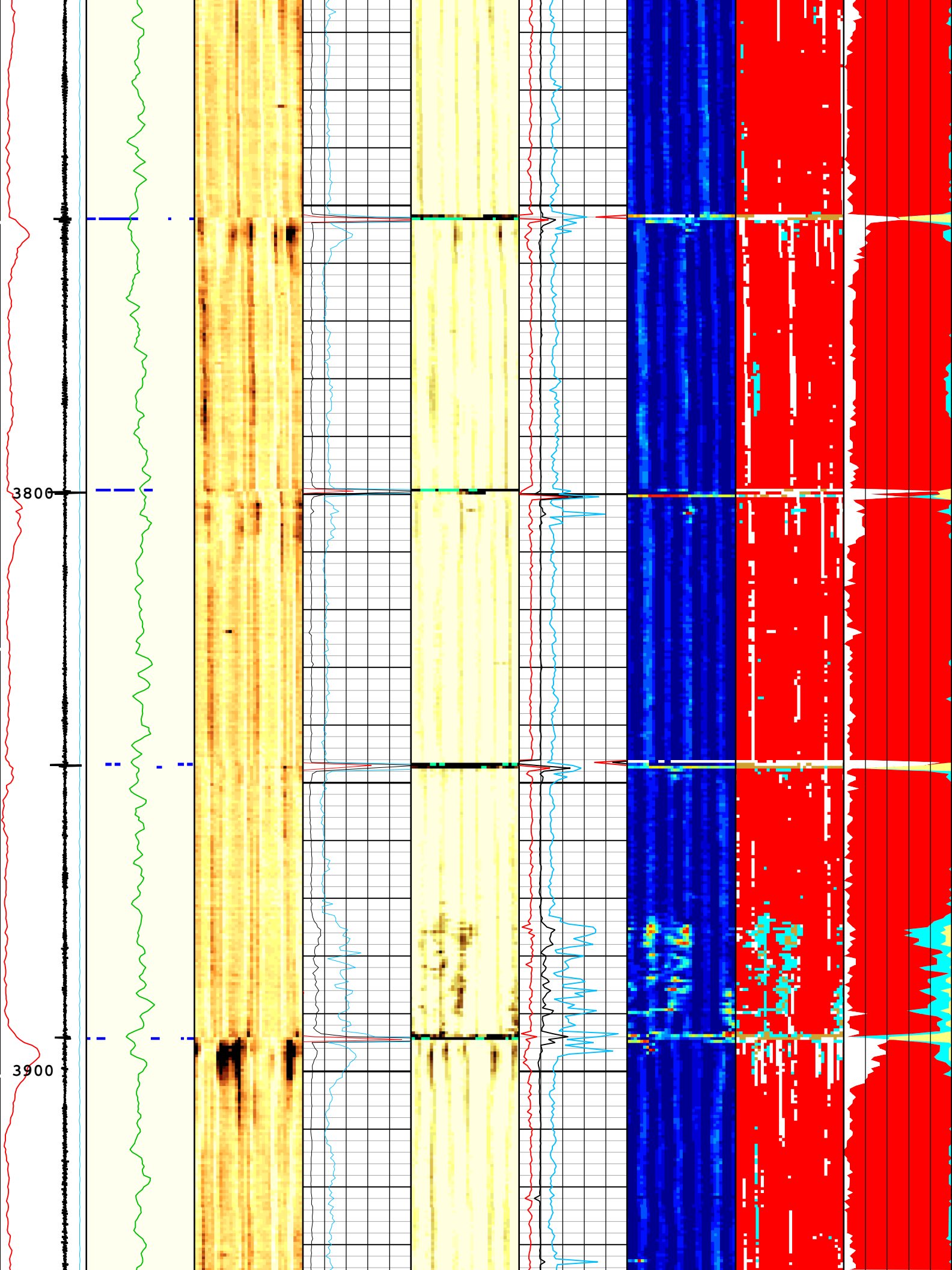


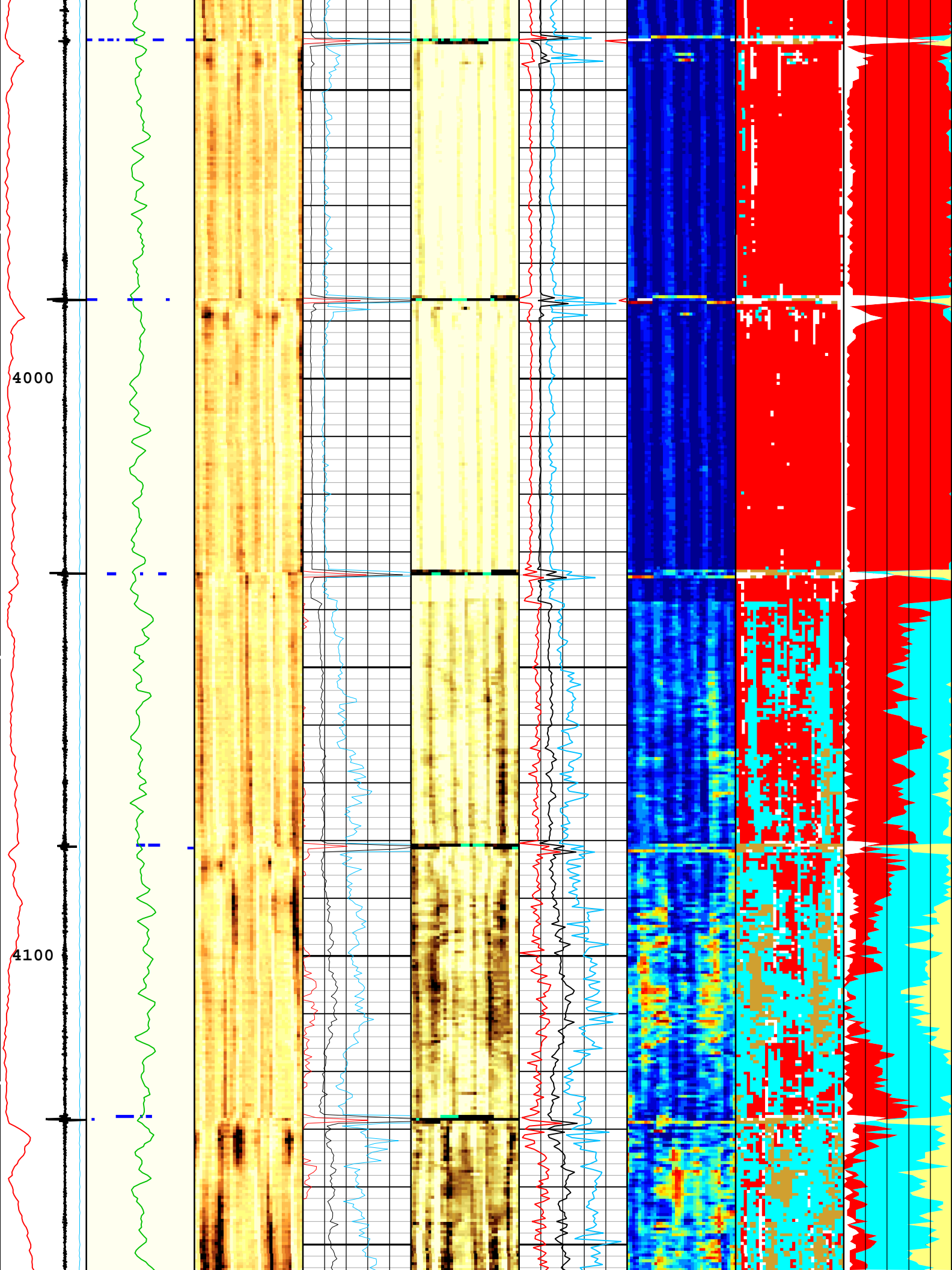


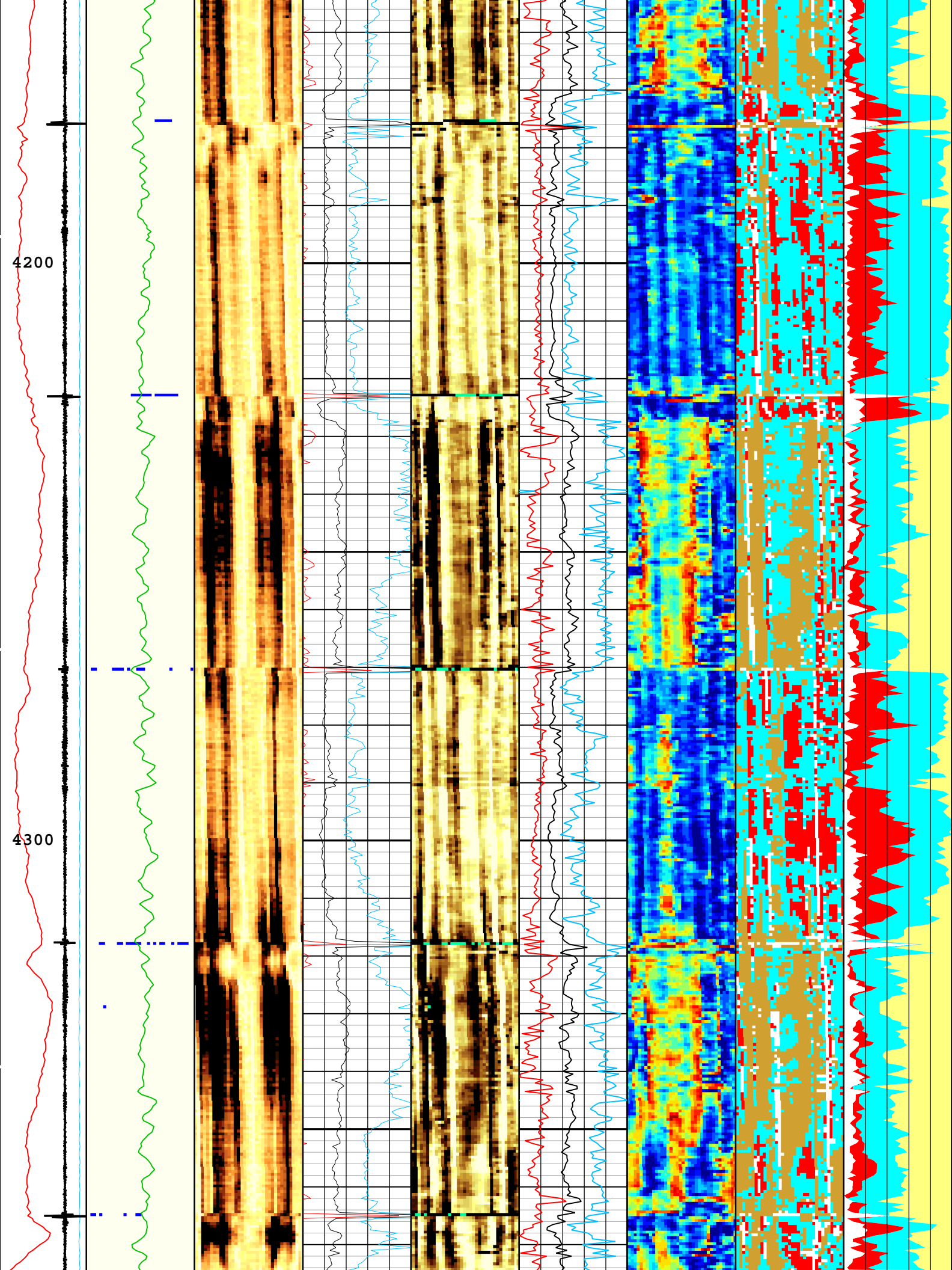


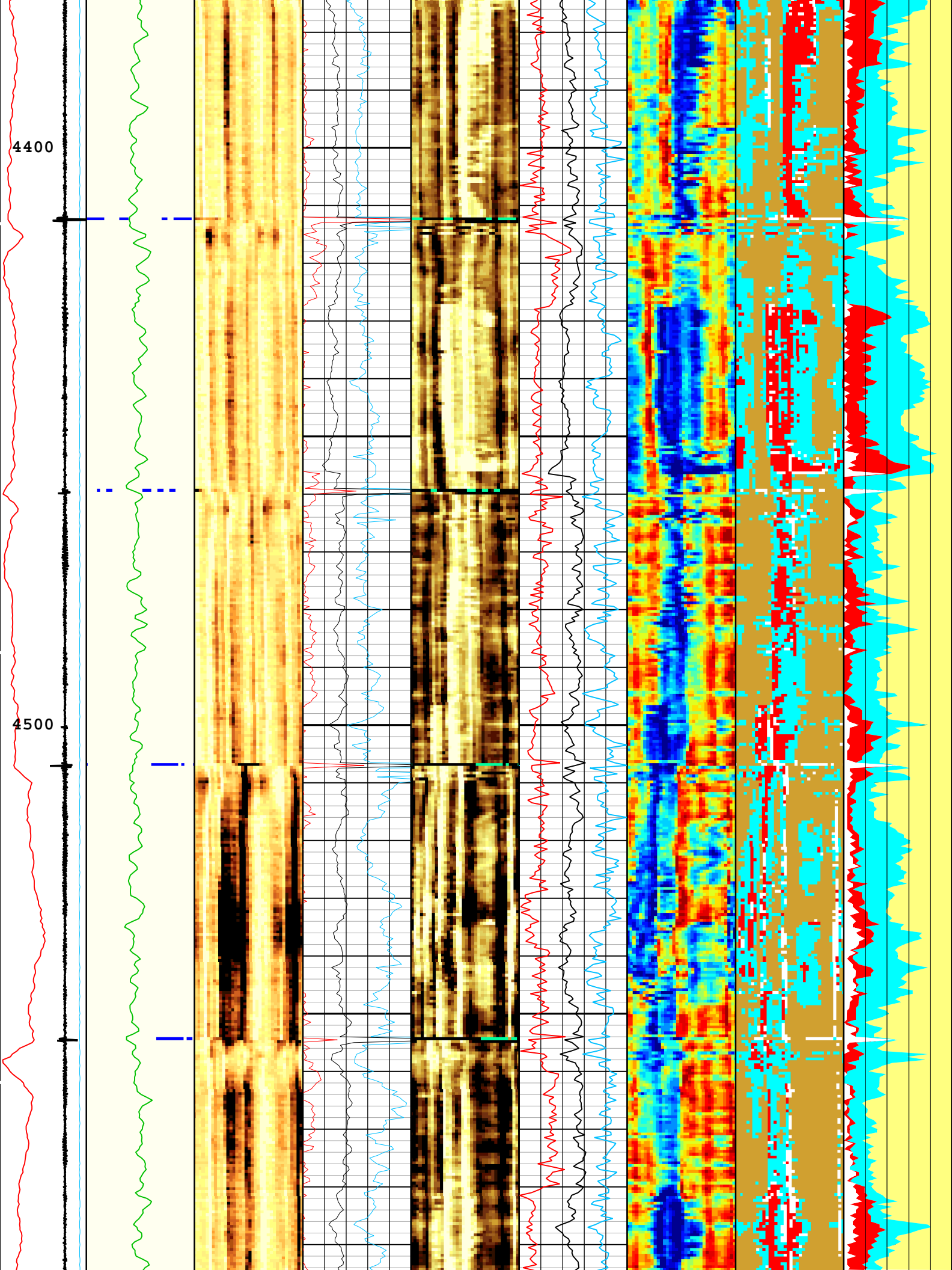


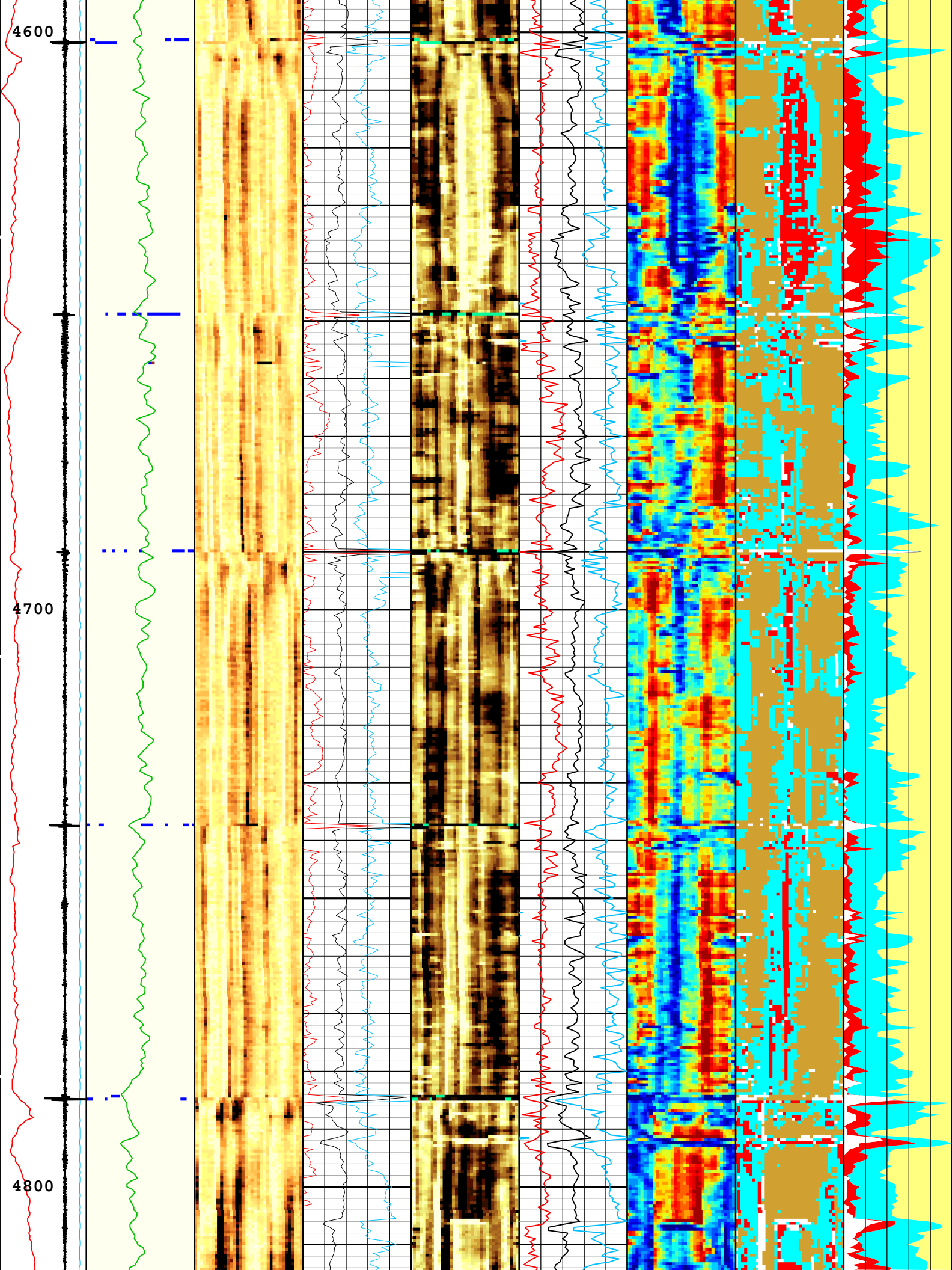


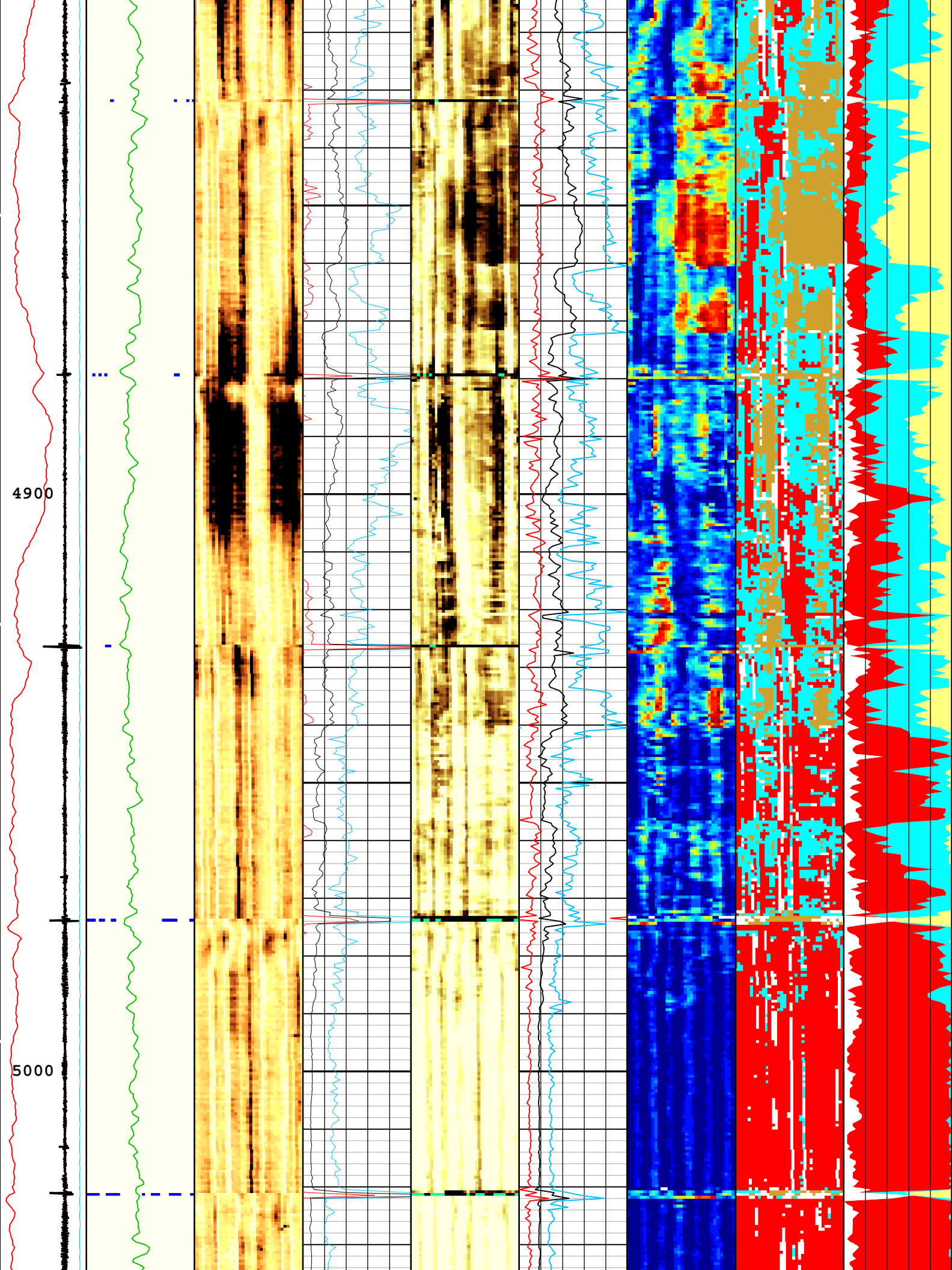


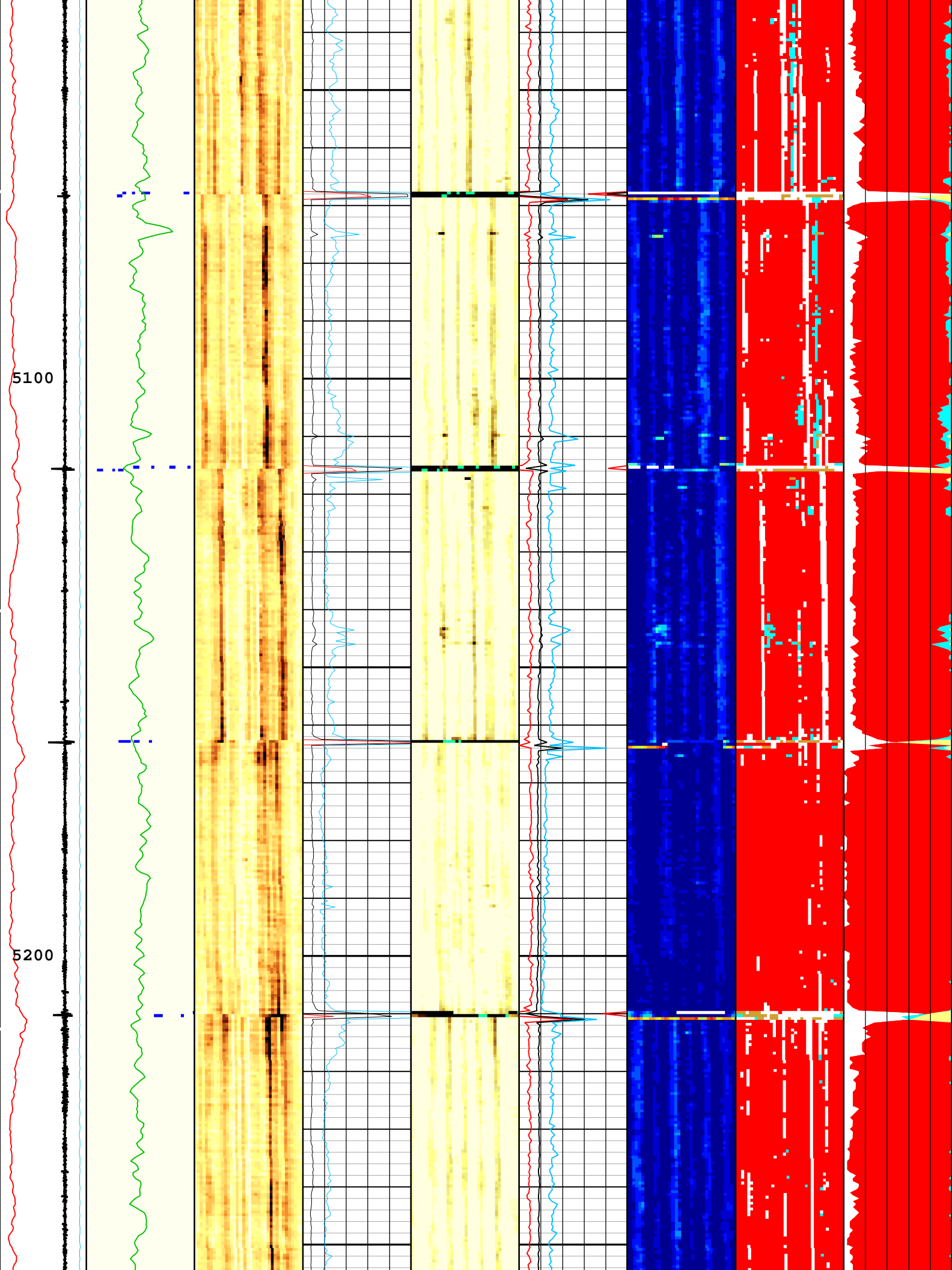


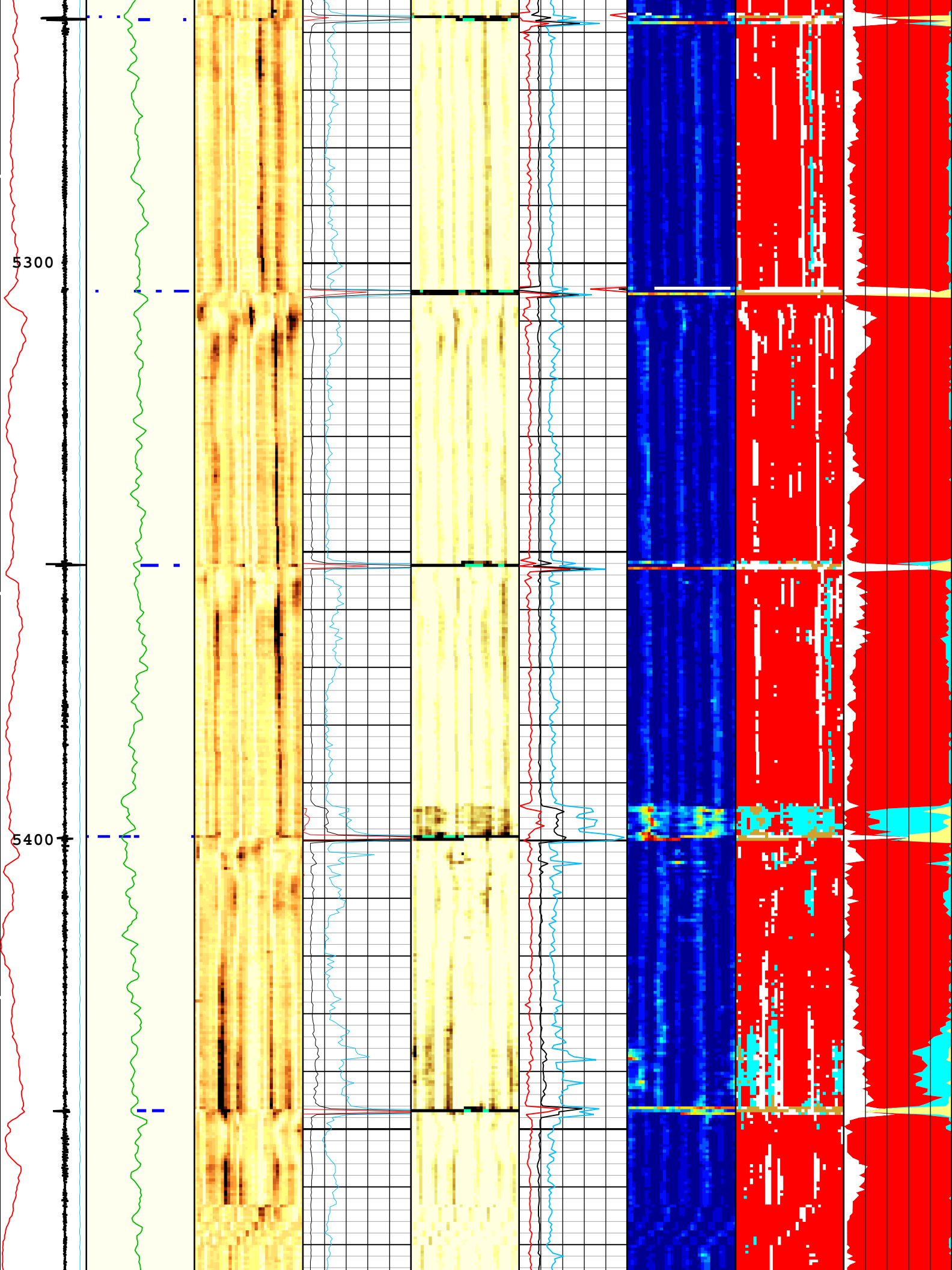


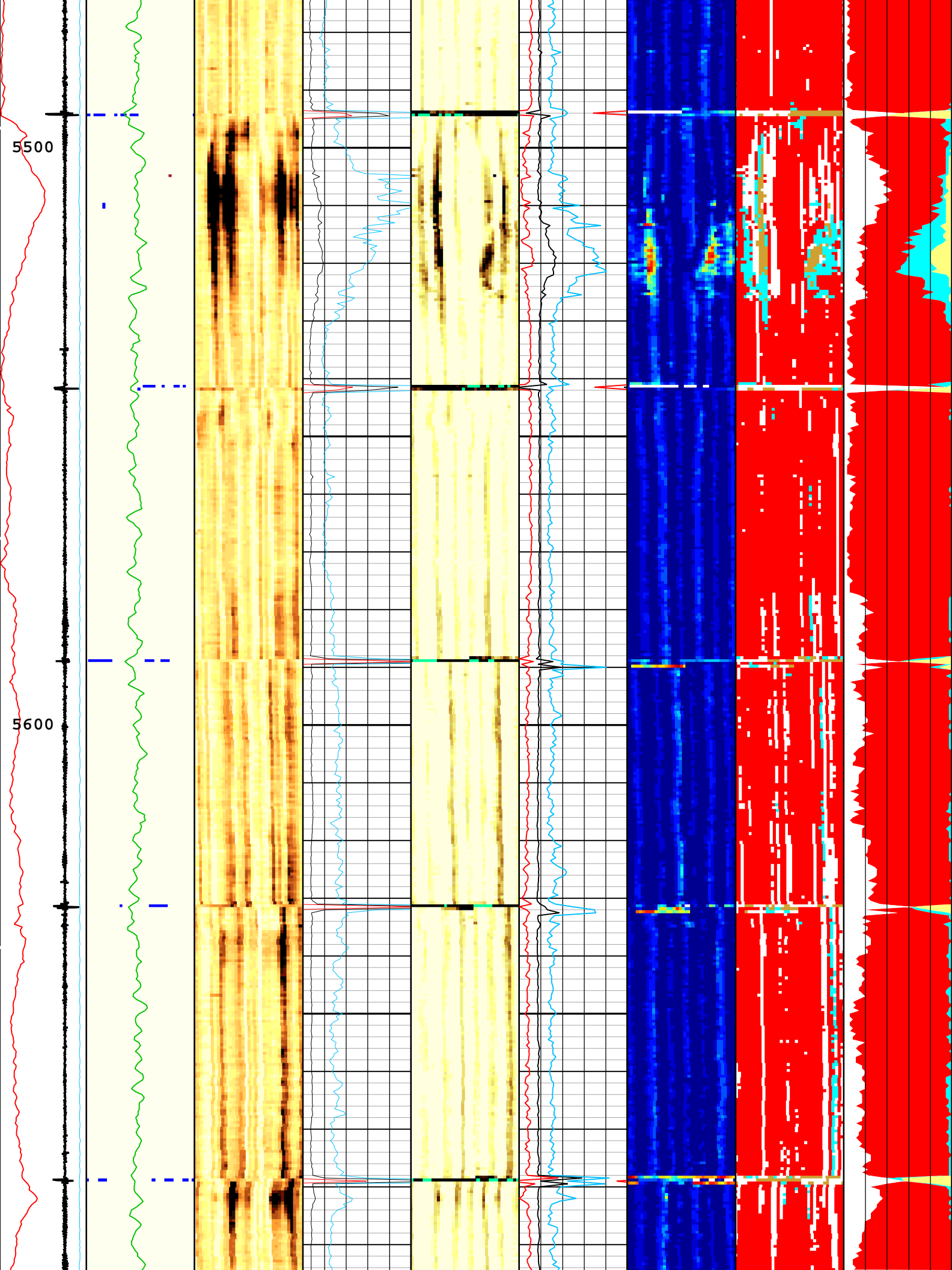


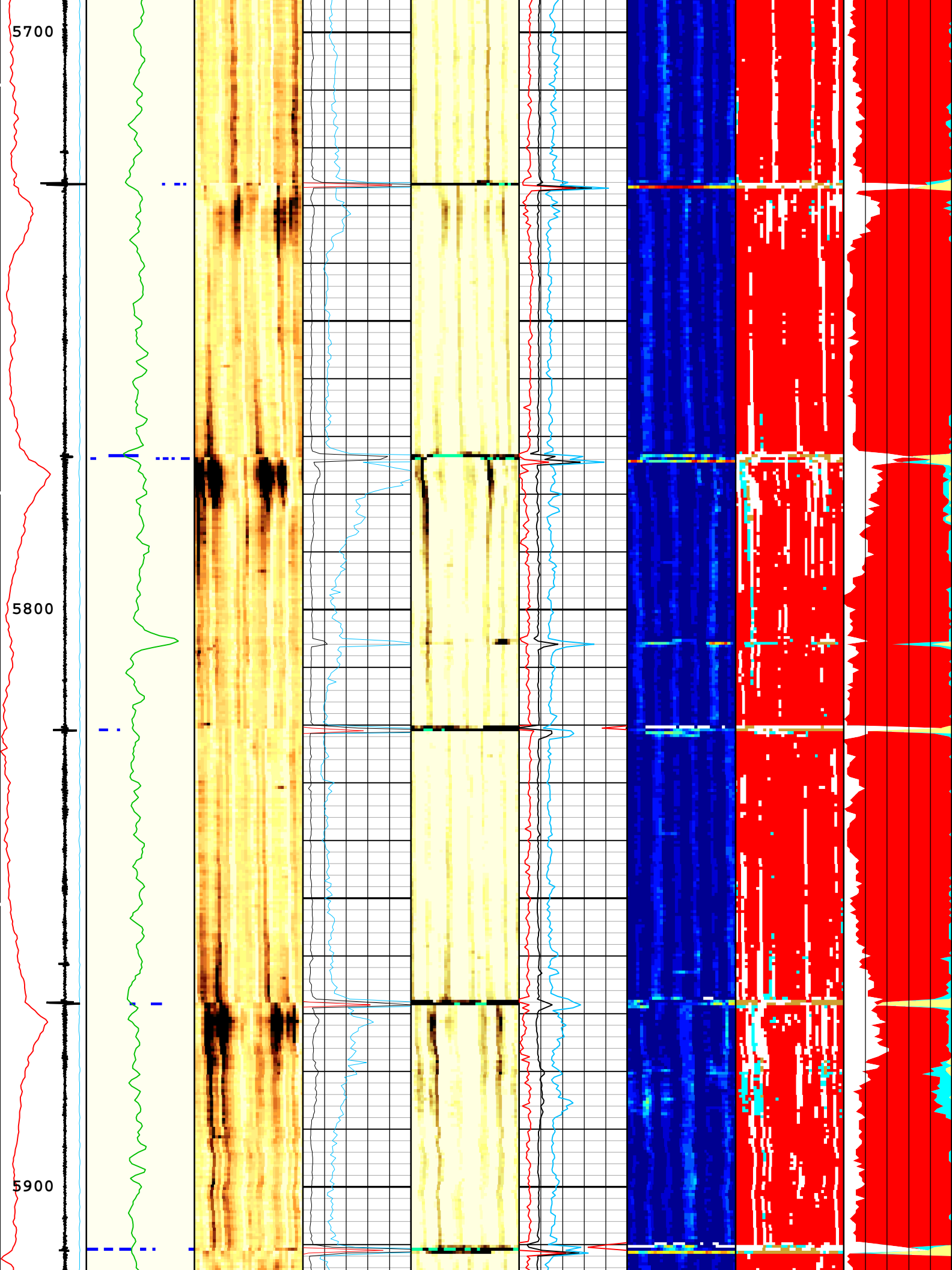


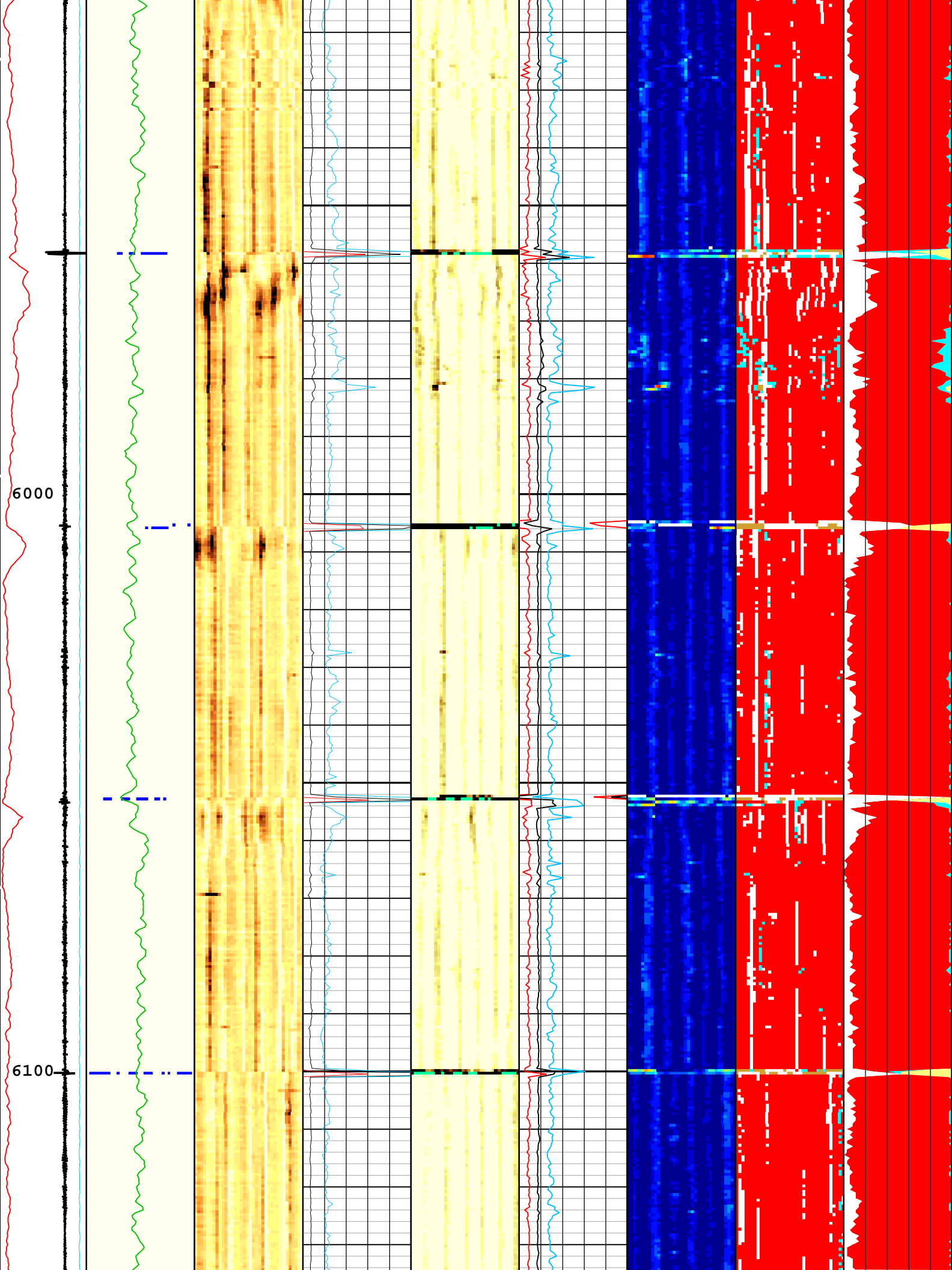


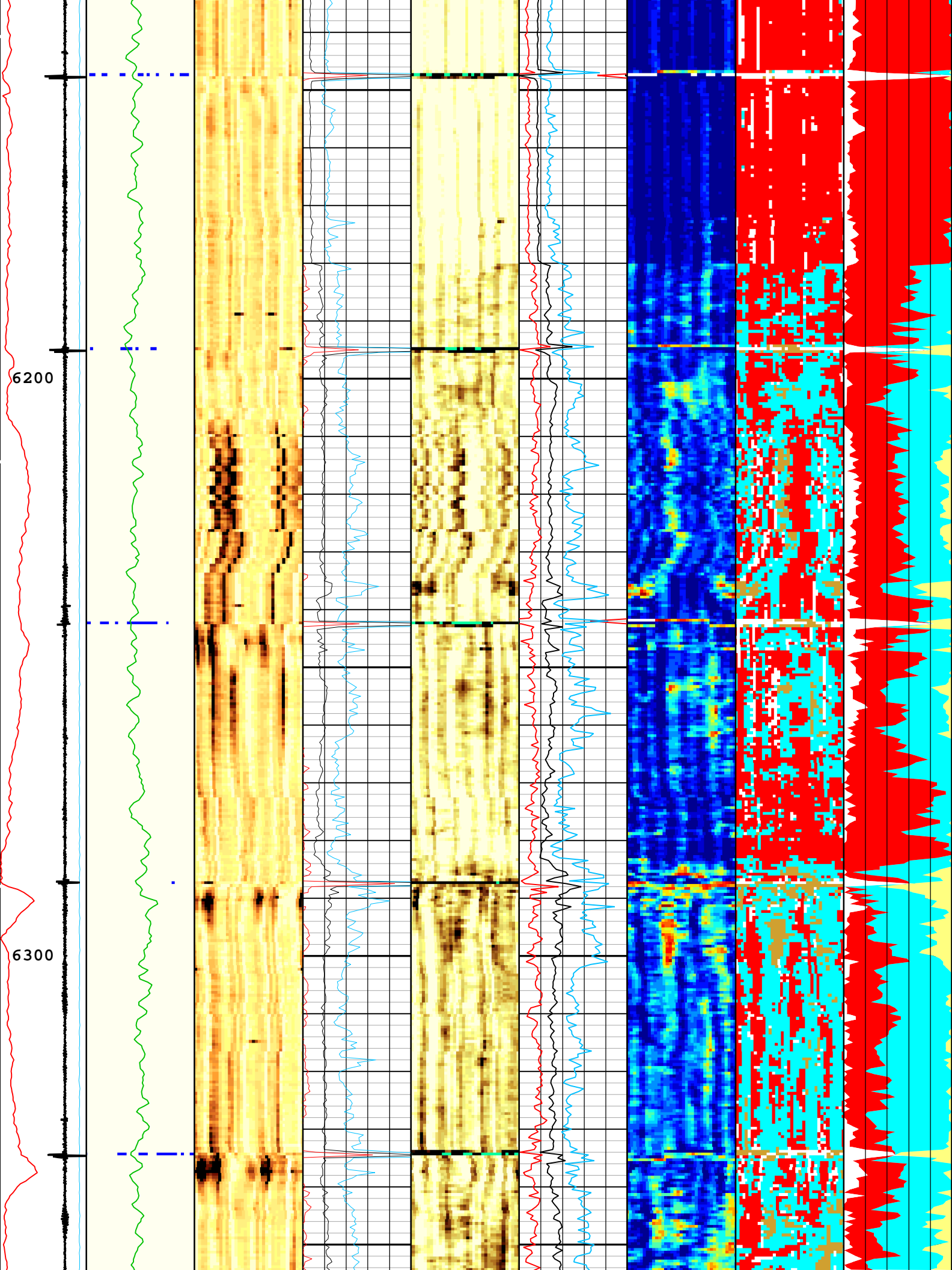


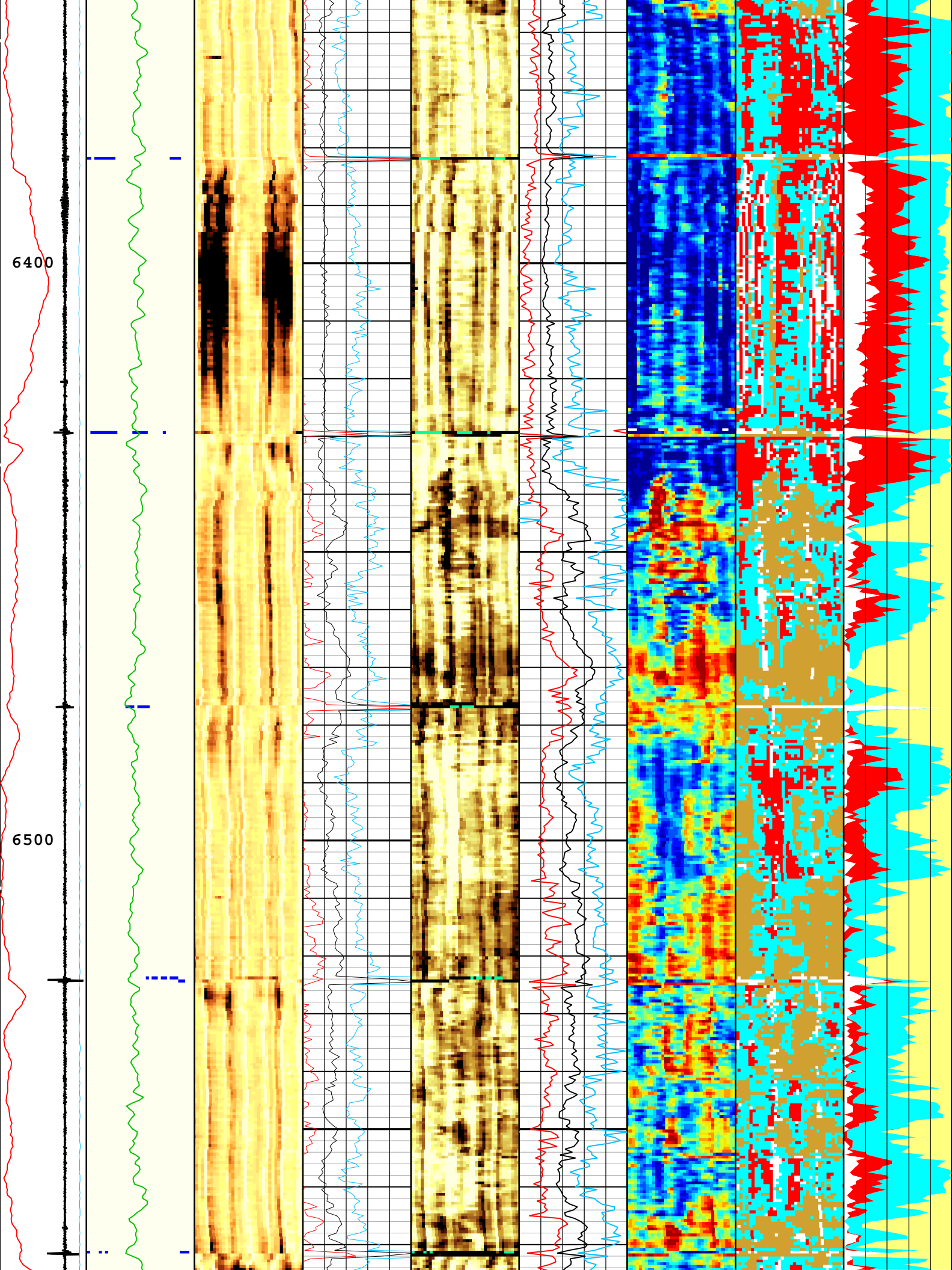


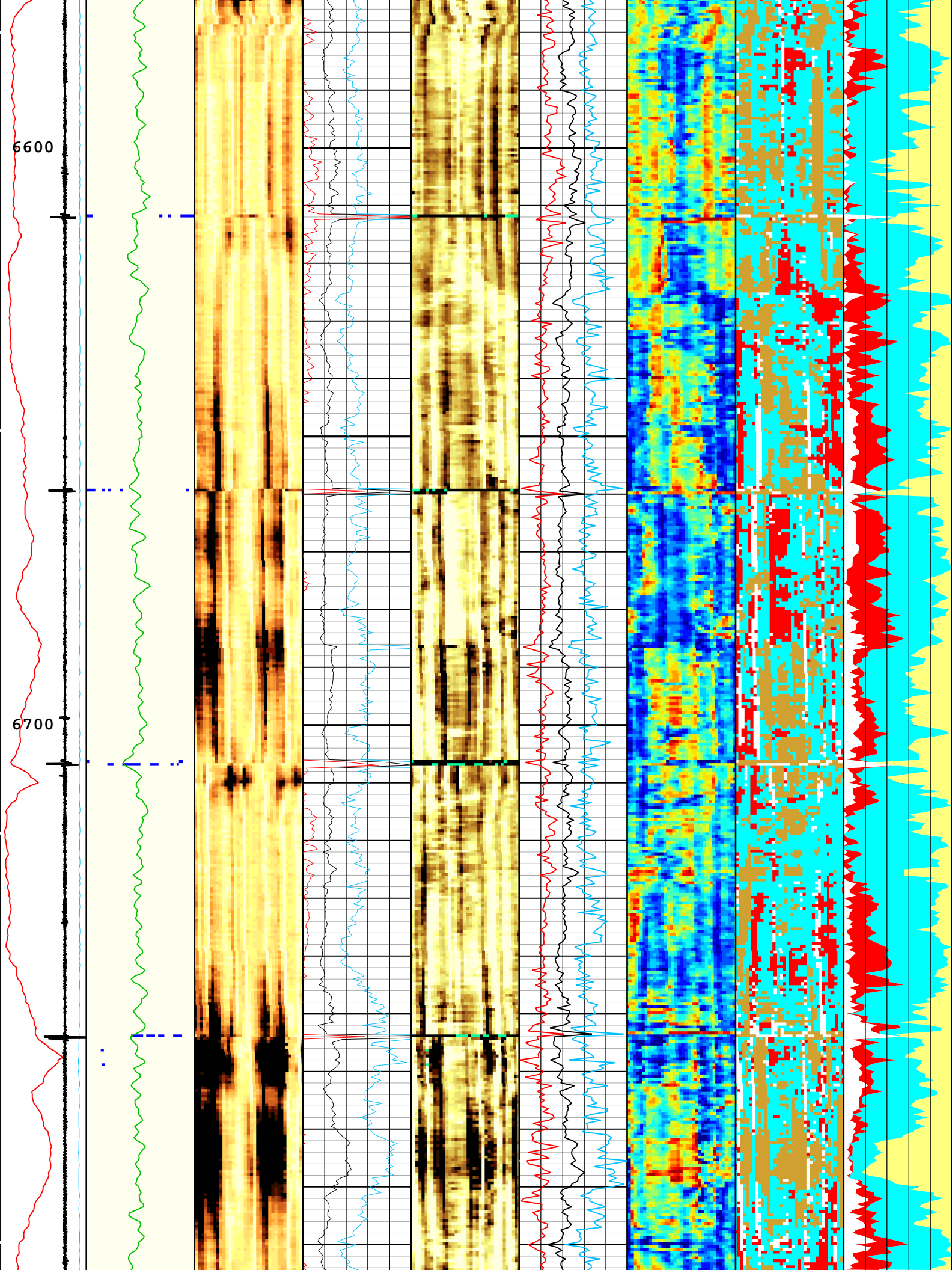


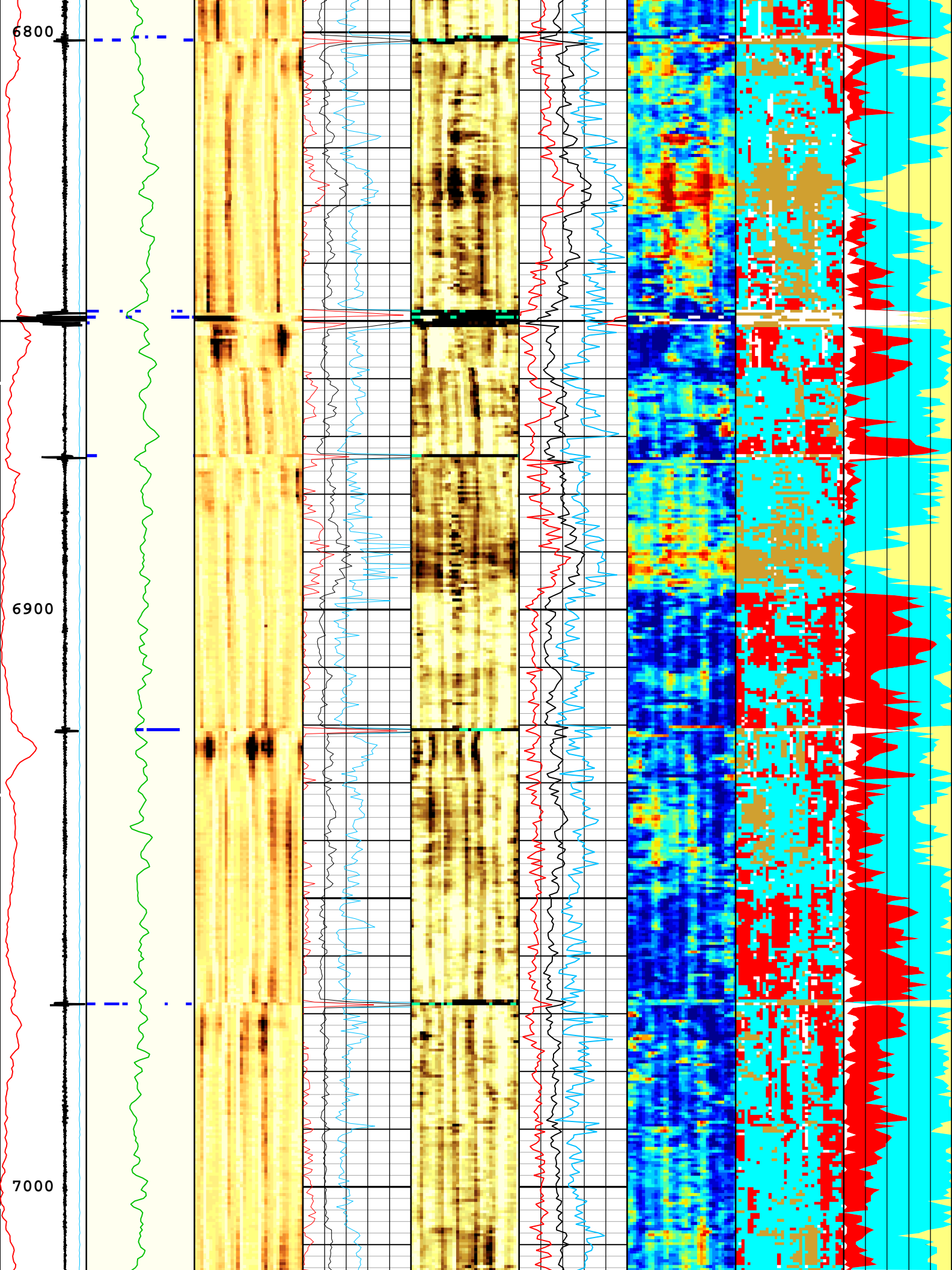


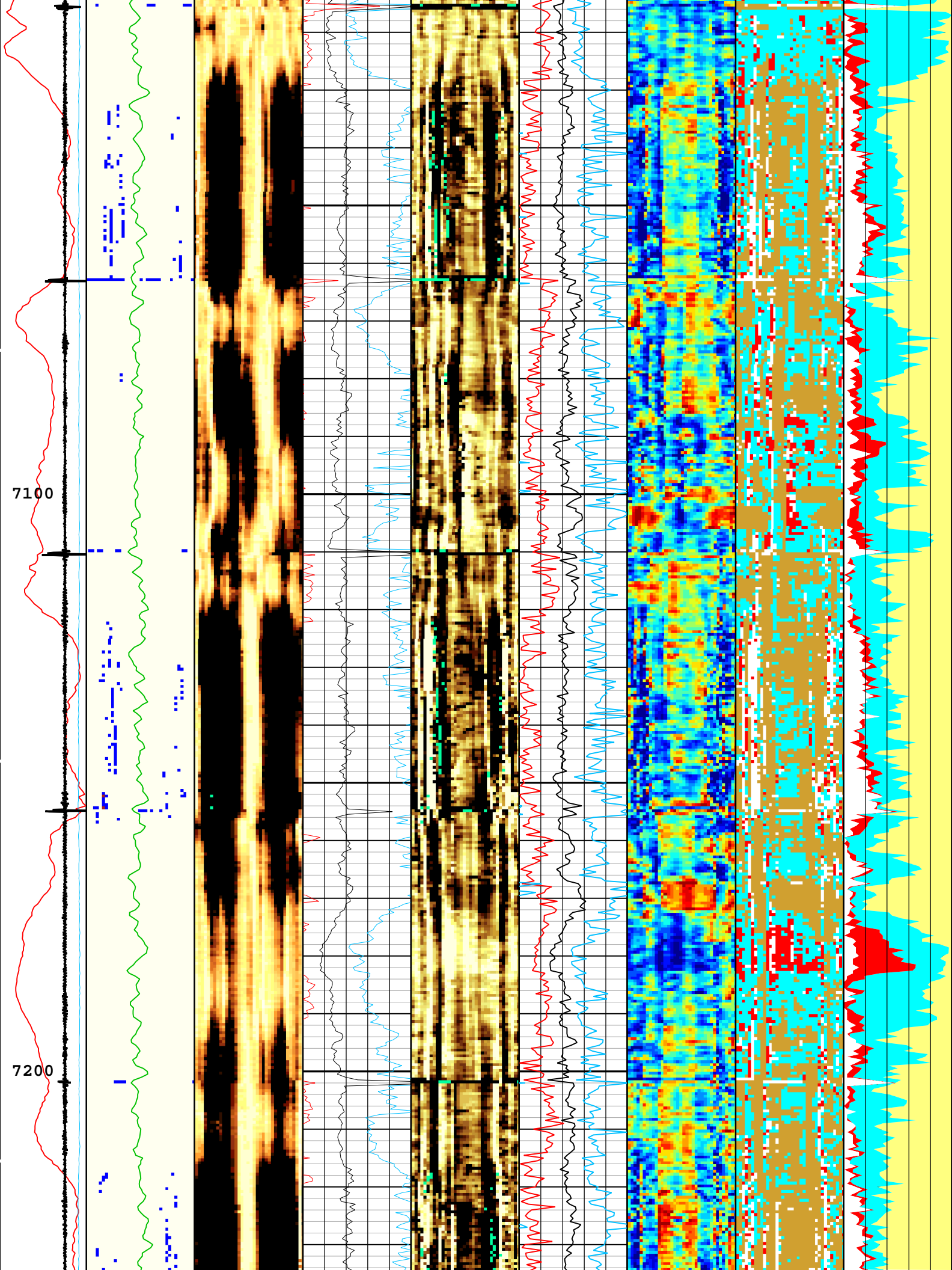


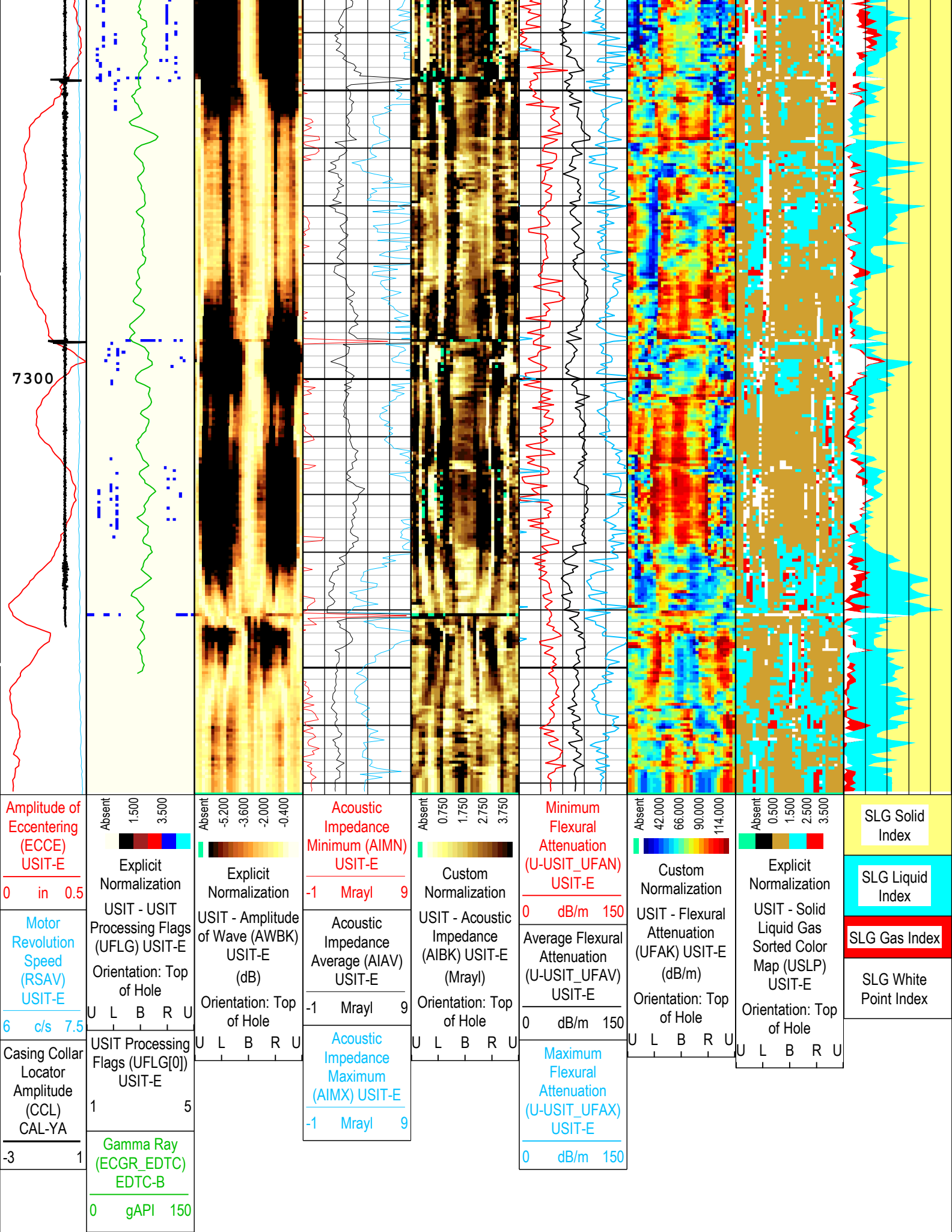















USIT Processing Flags (UFLG[0]) USIT-E


1 UFLG[0] Value within [0.0, 1.5]


UTIM Error

1 - UFLG 1 Value within [0.0 - 1.5] - : 

2 - UFLG 2 Value within [1.5 - 2.5] - : 

3 - UFLG 3 Value within [2.5 - 3.5] - : 

4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : 

5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : 

UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 08-Mar-2019 13:43:35

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	17459	ft
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	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)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	0	dB/m
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	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
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
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-5.28	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
USI_RPLUS	Ultrasonic R+ Processing	USIT-E	No	

THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.6	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	75	2515
BS	8.75	2515	7372

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
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
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4408.8	ft/h
MOTOR_PROTECT	Motor Protection	USIT-E	On	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
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	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
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	31.88	us
WINE	Window End Time	USIT-E	71.88	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	70	08-Mar-2019 10:33:12	08-Mar-2019 10:38:44	7372.88	7021.48
EMXV	85	08-Mar-2019 10:38:44	08-Mar-2019 12:06:37	7021.48	662.82
EMXV	70	08-Mar-2019 12:06:37	08-Mar-2019 12:14:46	662.82	75.49

All depth are at tool zero.

ONE

IBC SLC Composite

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	75.49 ft	7372.88 ft	08-Mar-2019 10:33:12 AM	08-Mar-2019 12:14:46 PM	ON	4.56 ft	No

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating, LLC

Well:Cosslett 1C-22H-B168

ONE: Log[3]:Up:S003

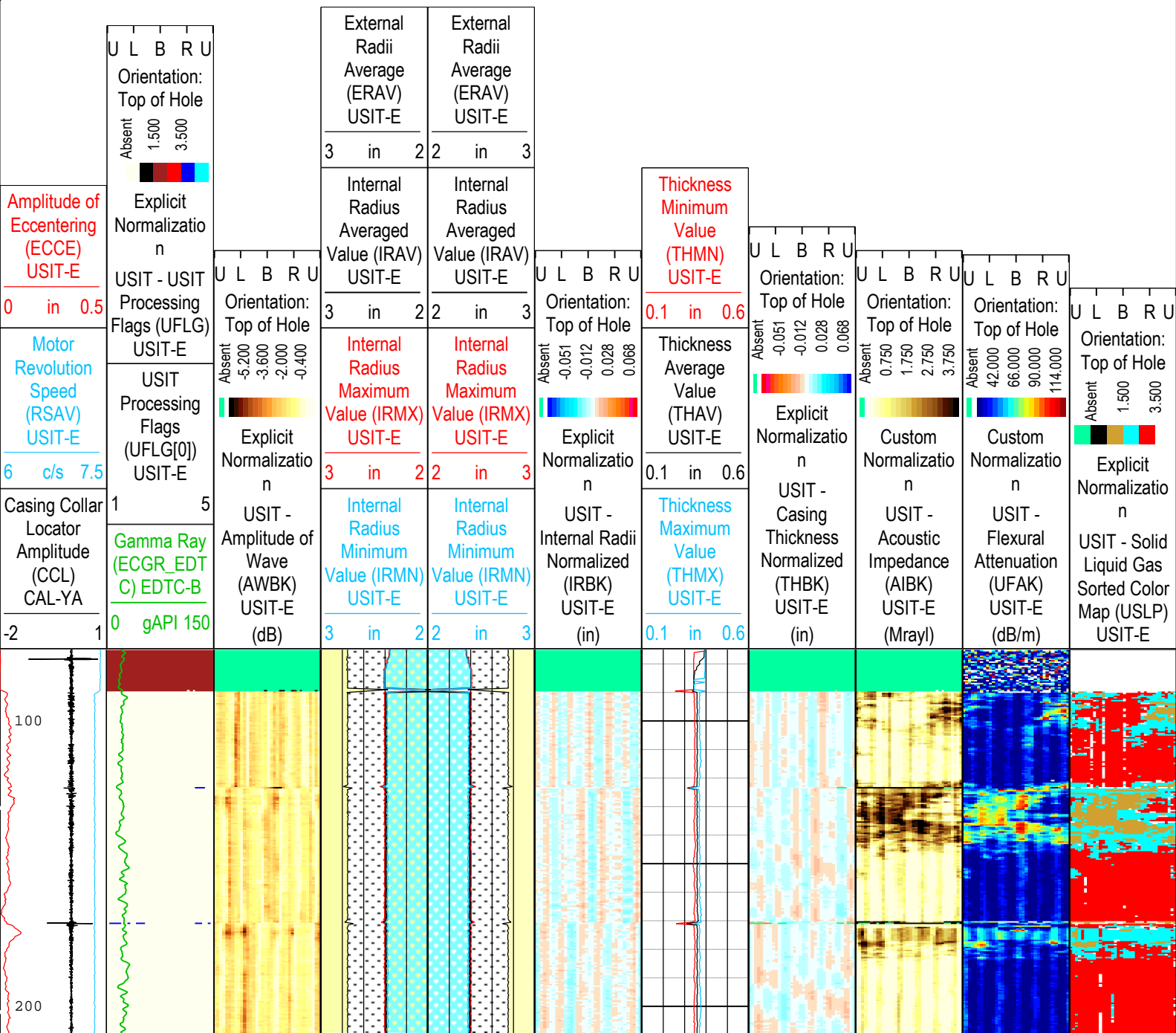
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth

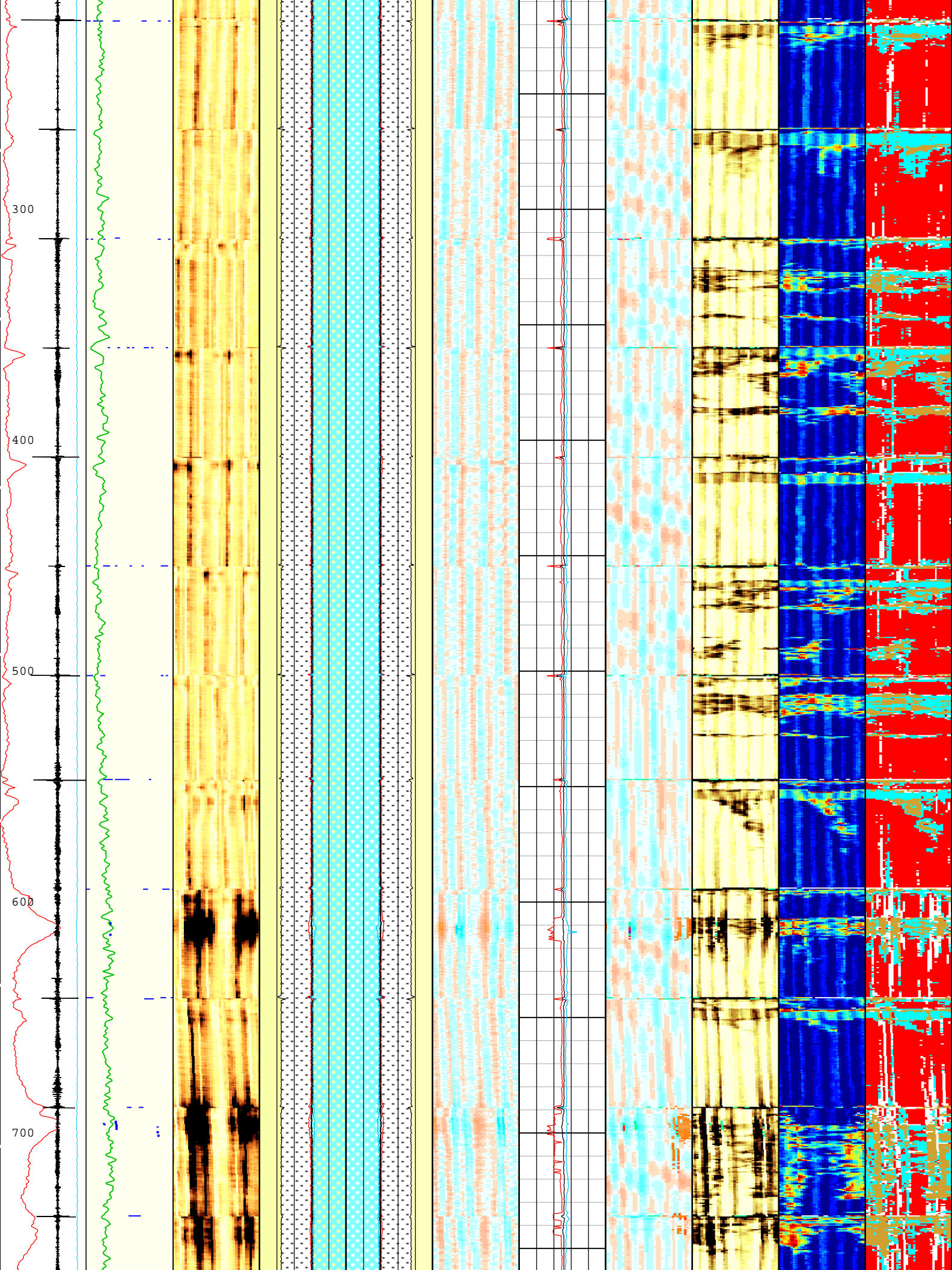
Creation Date: 08-Mar-2019 13:43:49

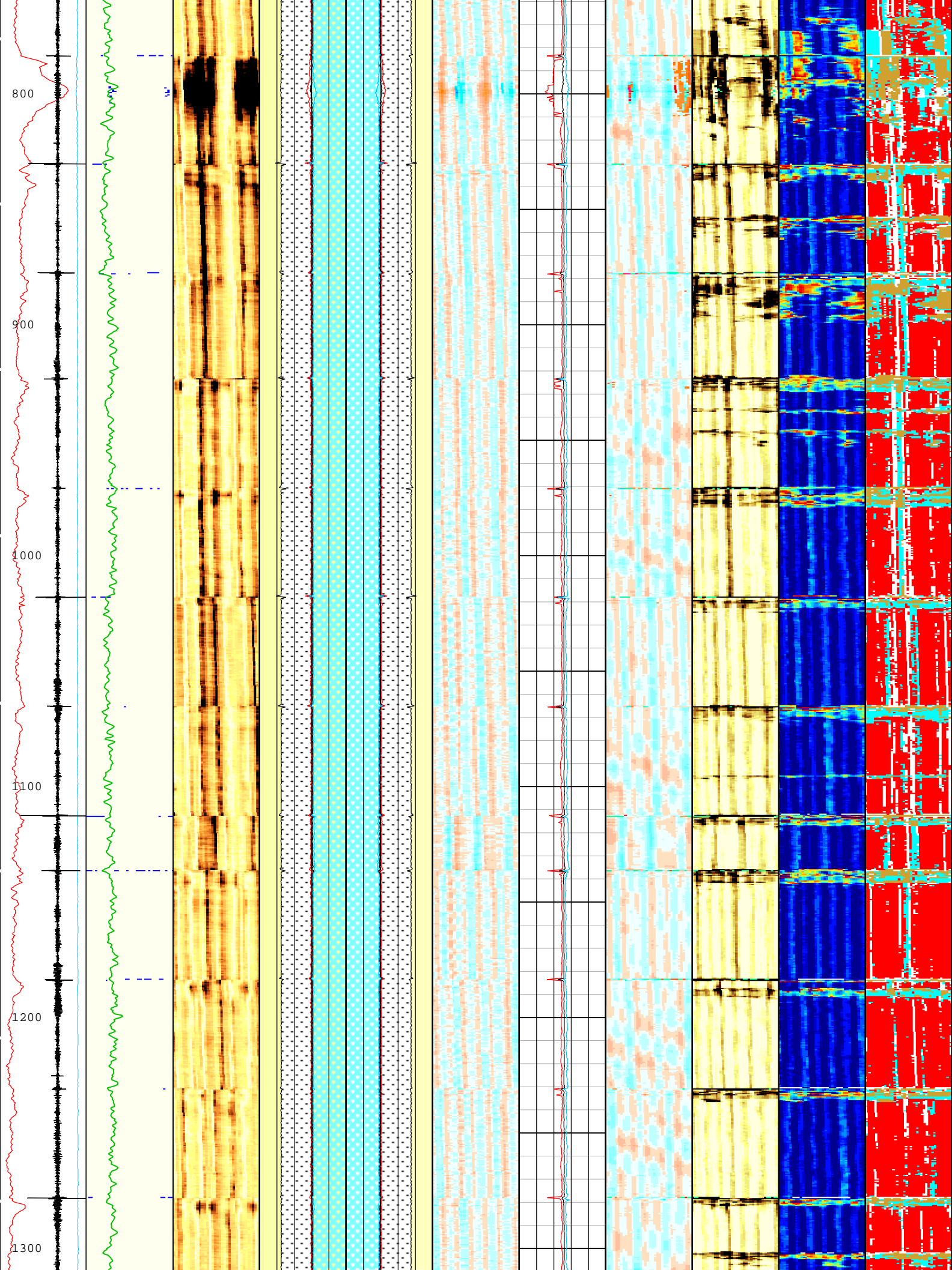
USIT Processing Flags (UFLG[0]) USIT-E

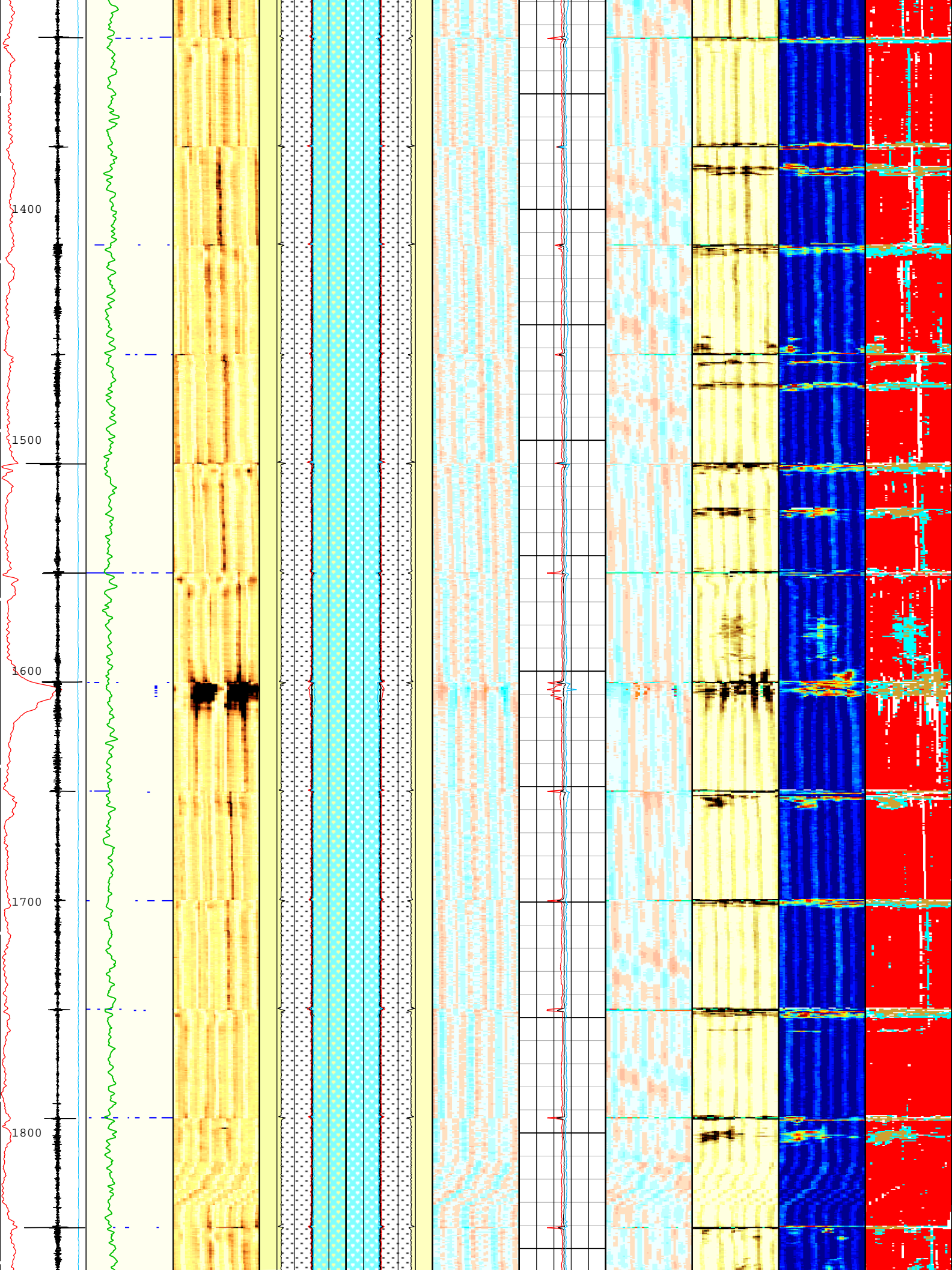
- | | |
|-------------------------------------------------------|-----------------------------|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | ■ UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.5] - : | ■ Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - : | ■ WINLEN Error |
| 4 - UFLG 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 |

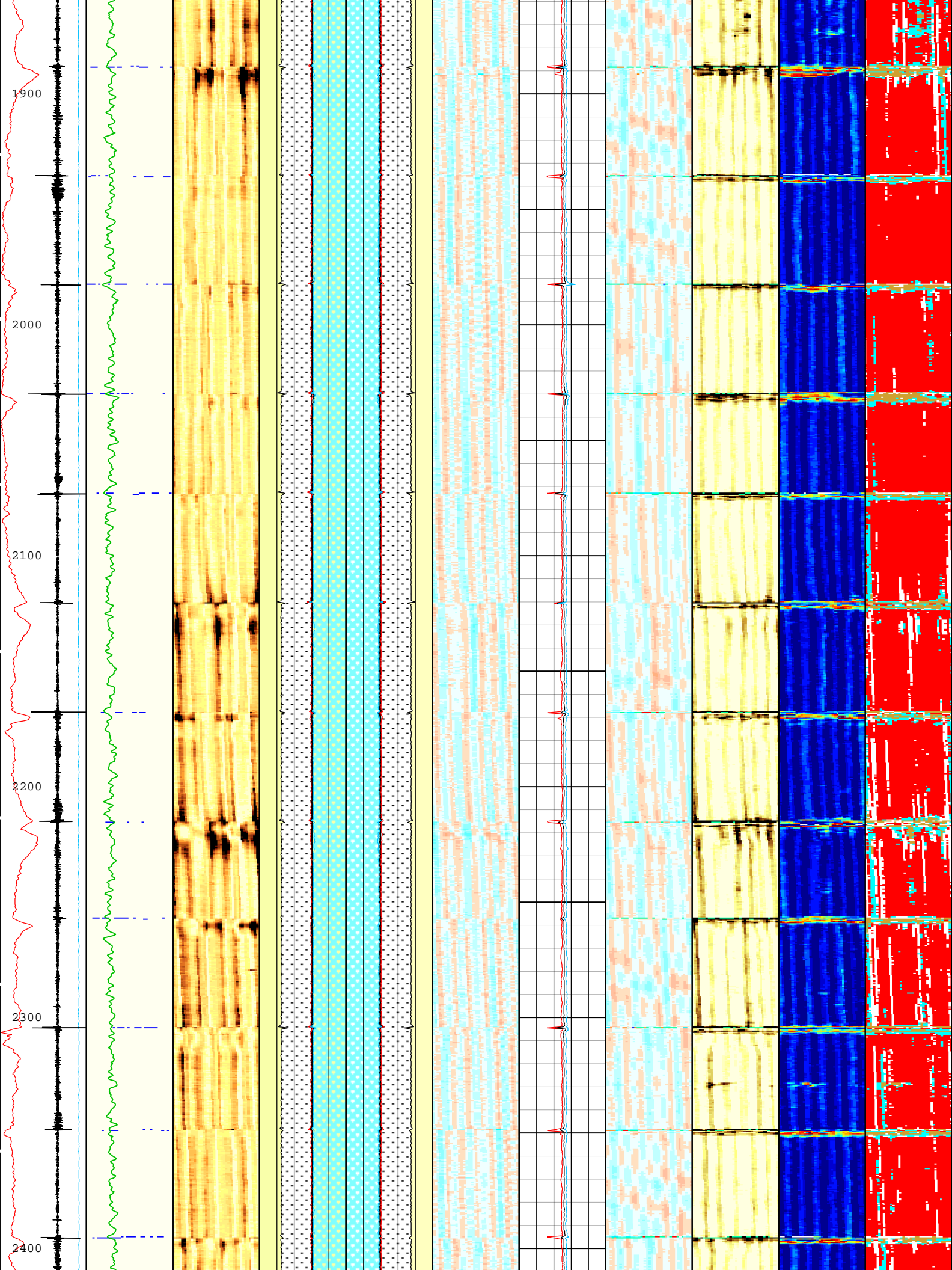
TIME_1900 - Time Marked every 60.00 (s)

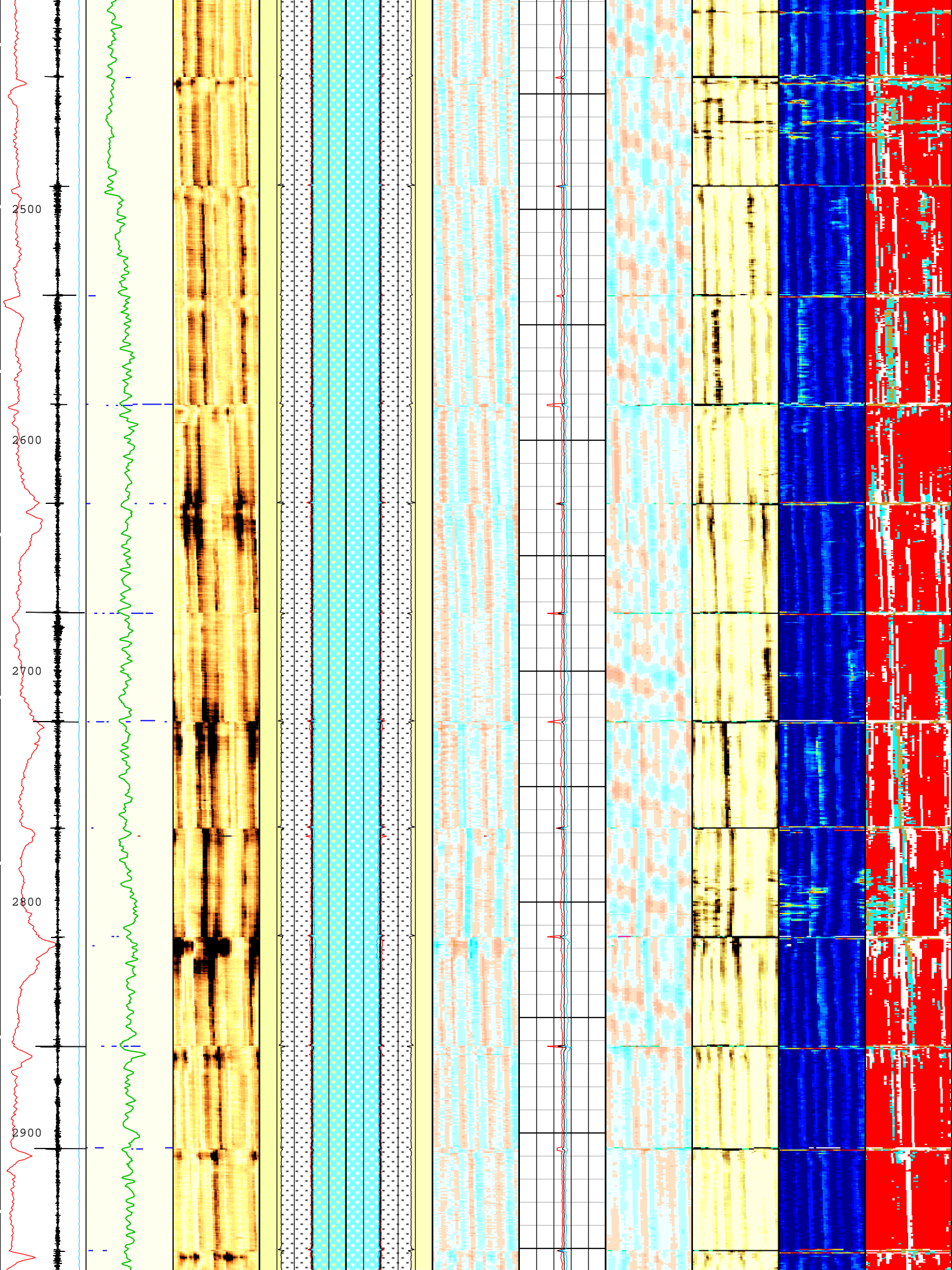


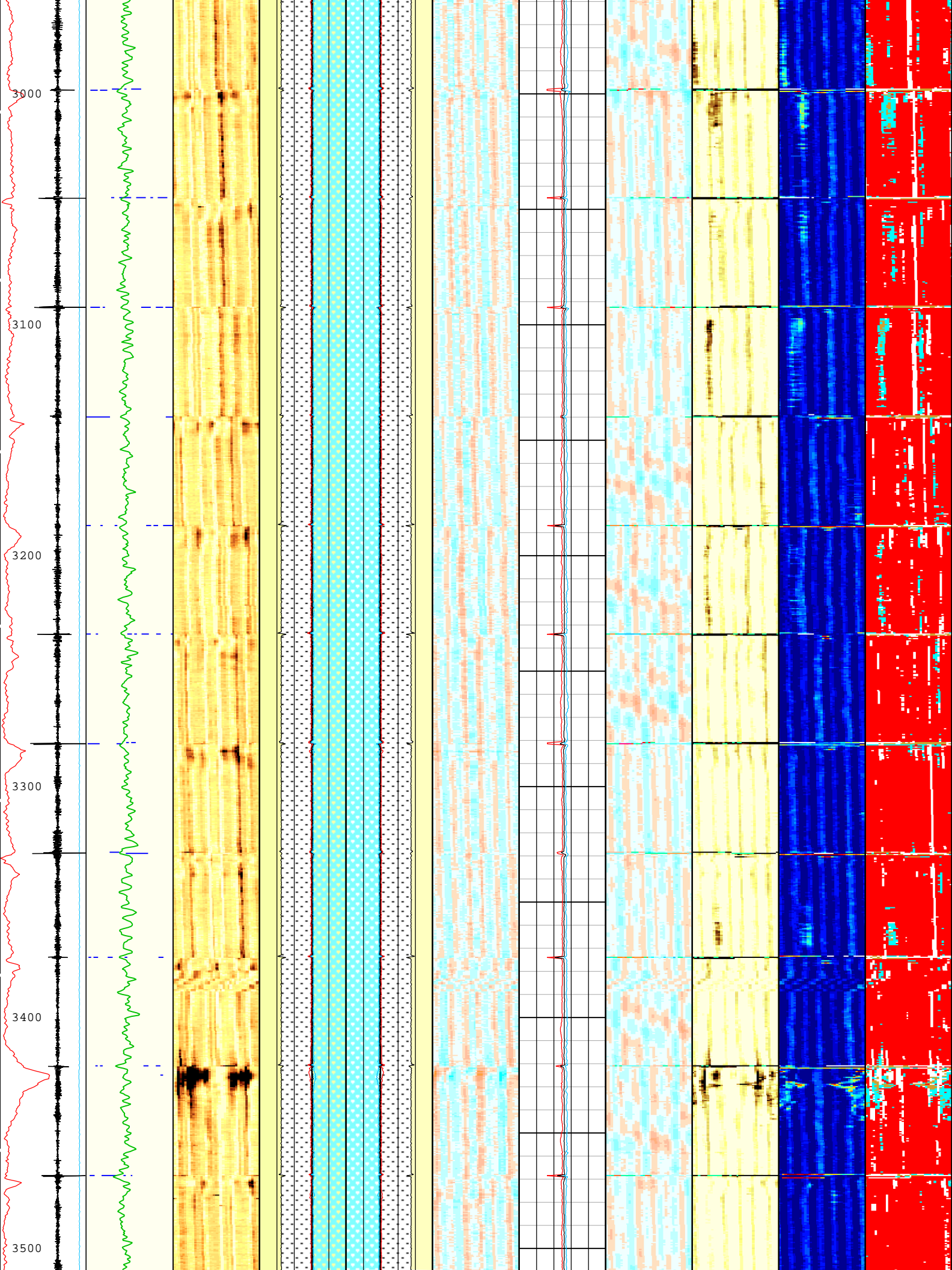


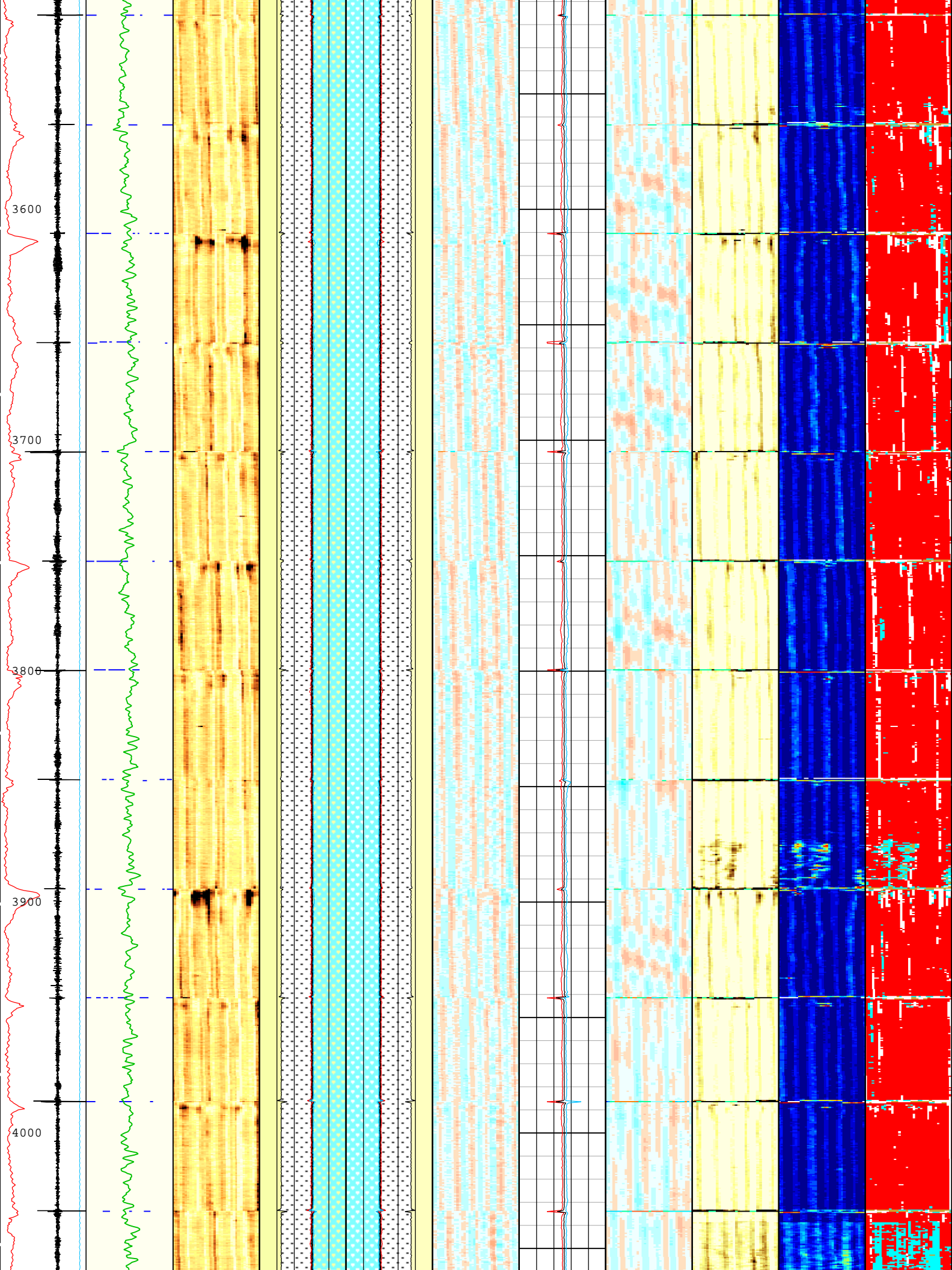


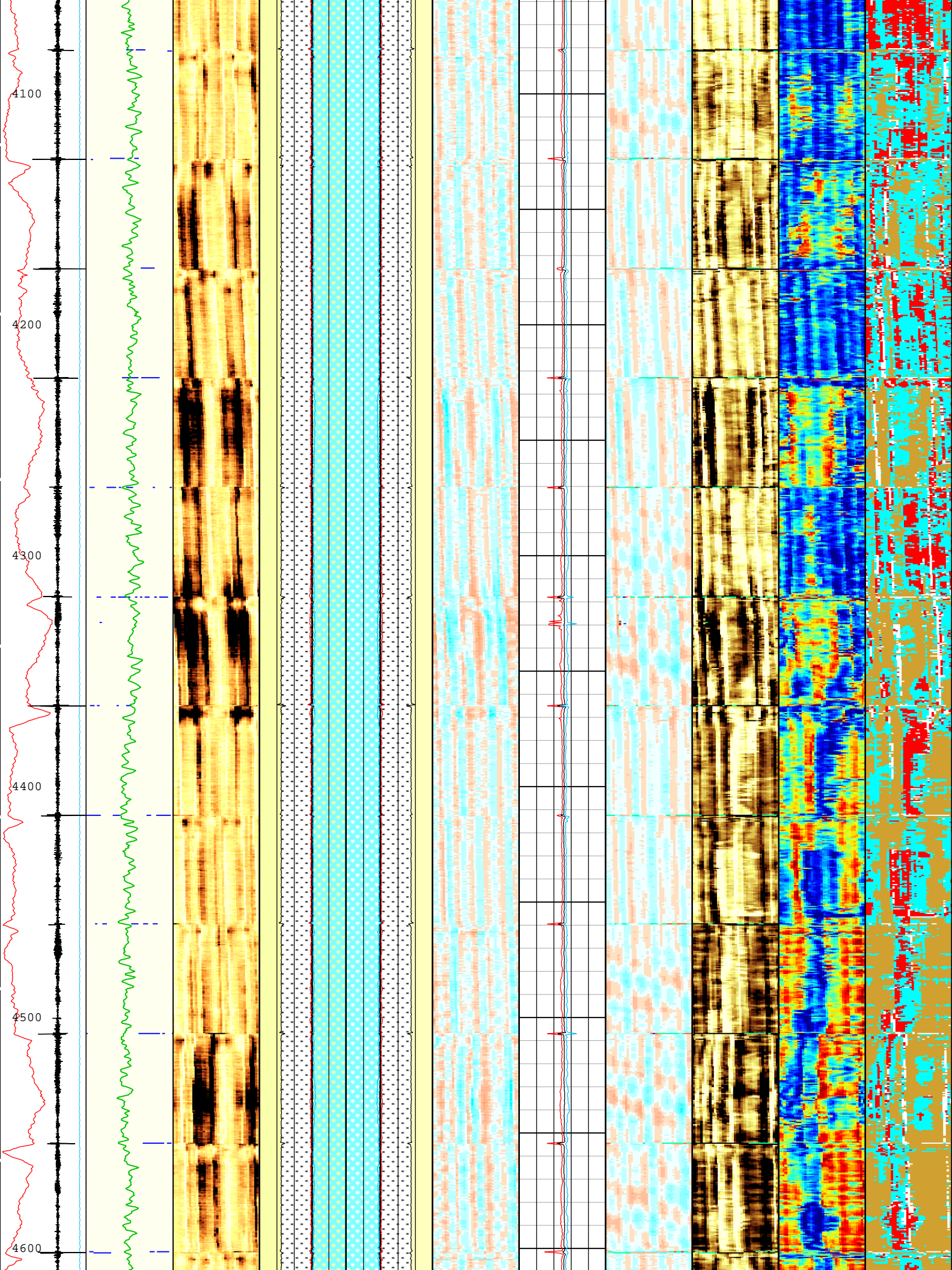


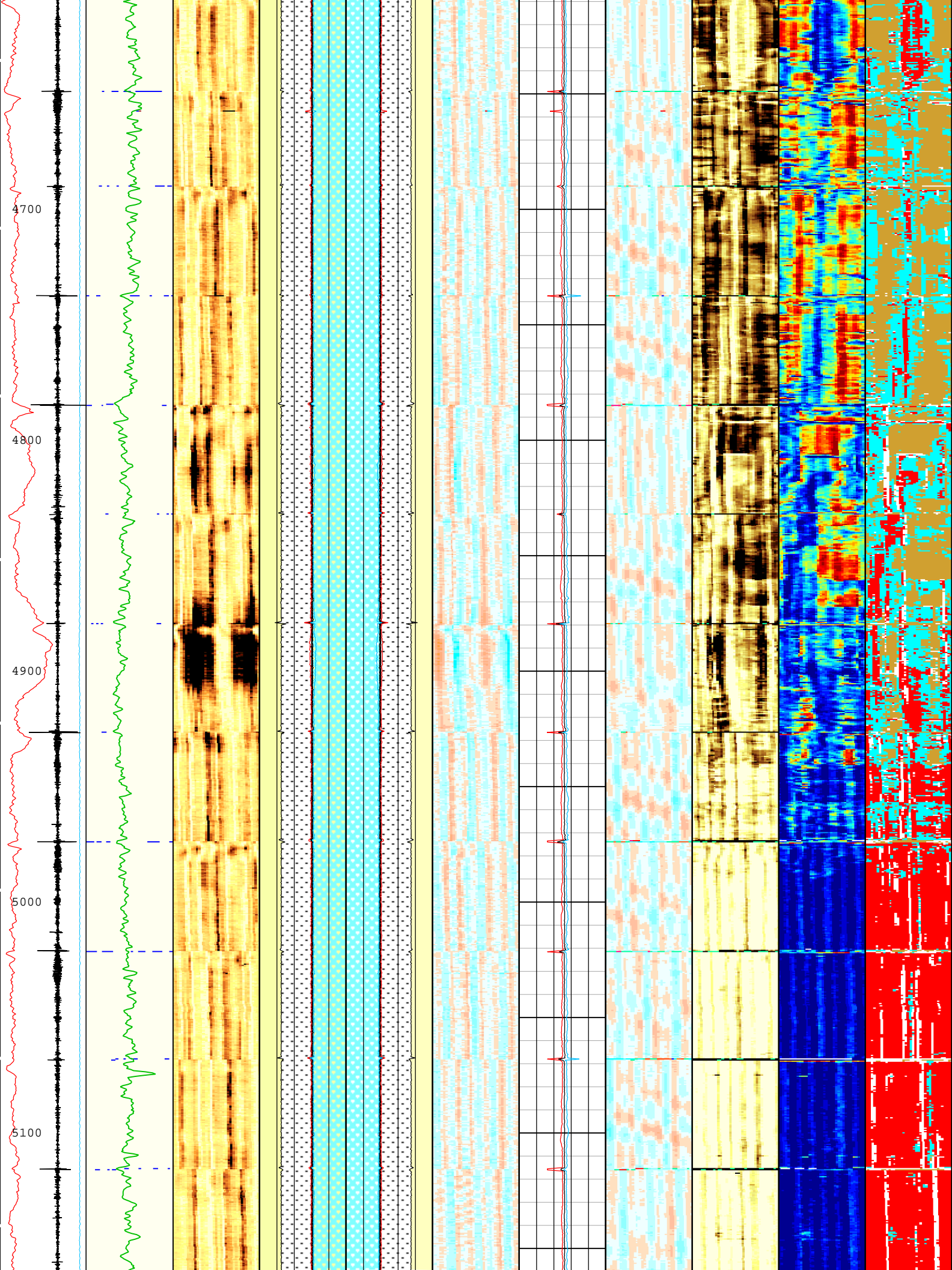


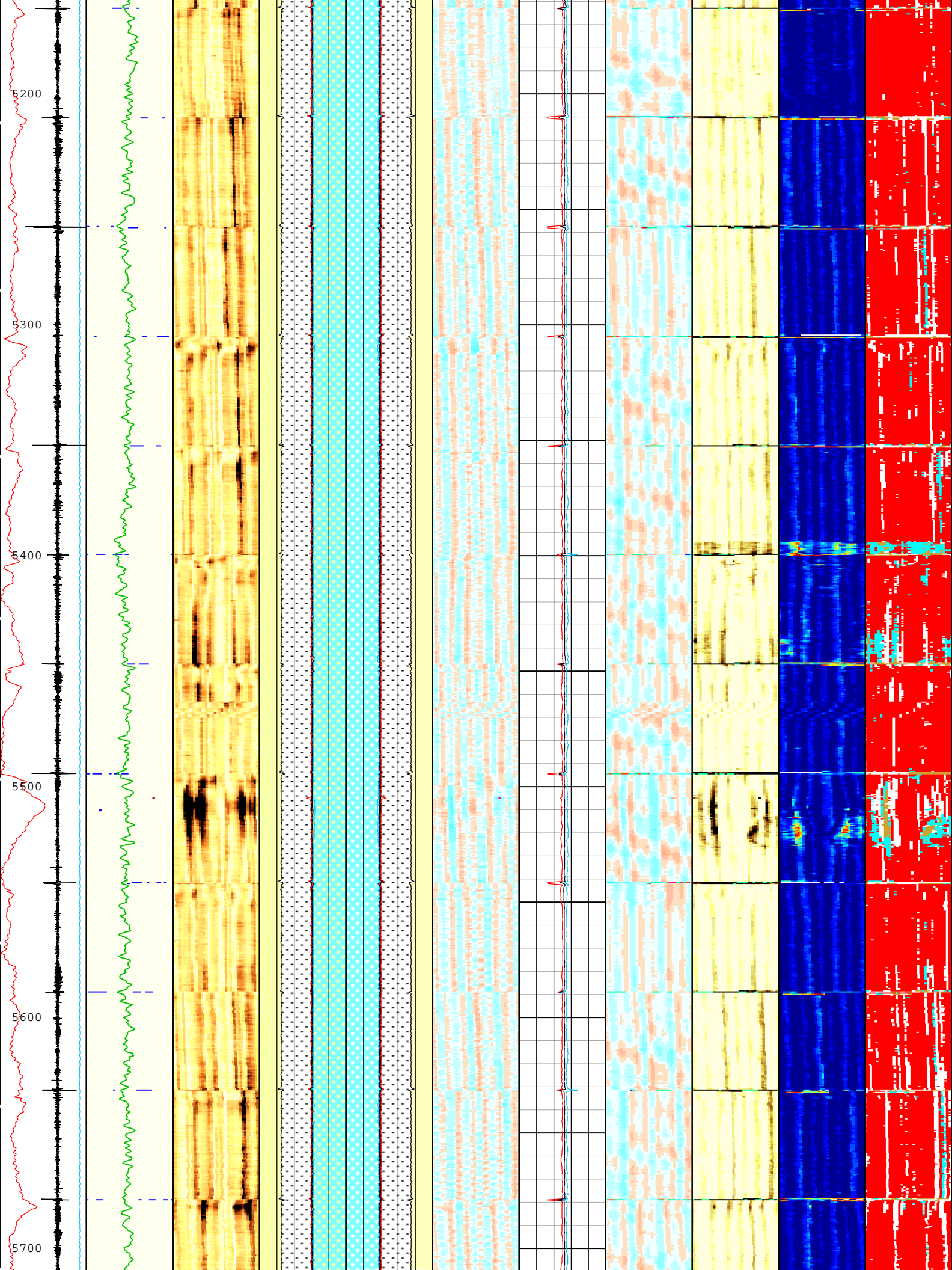


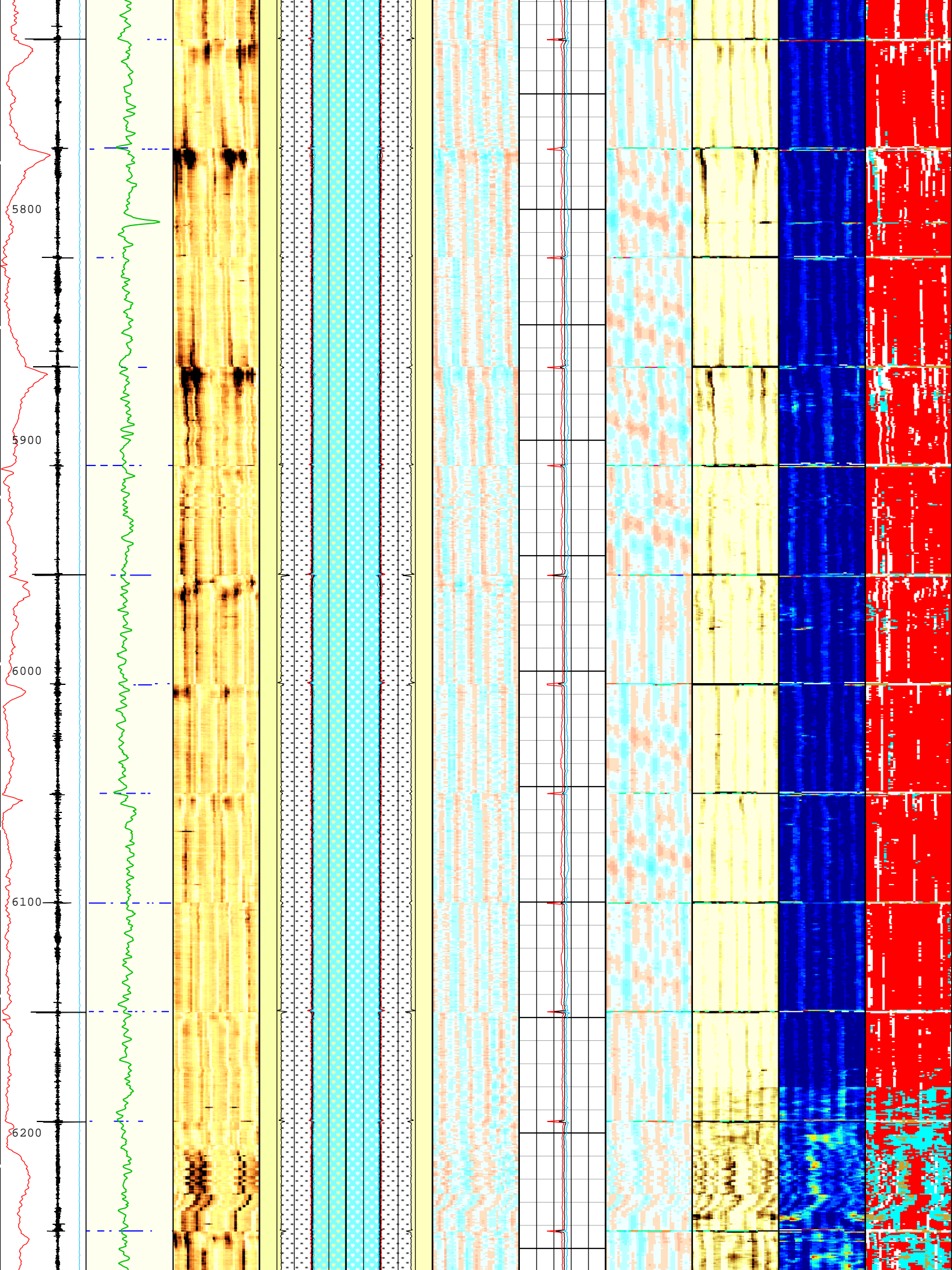


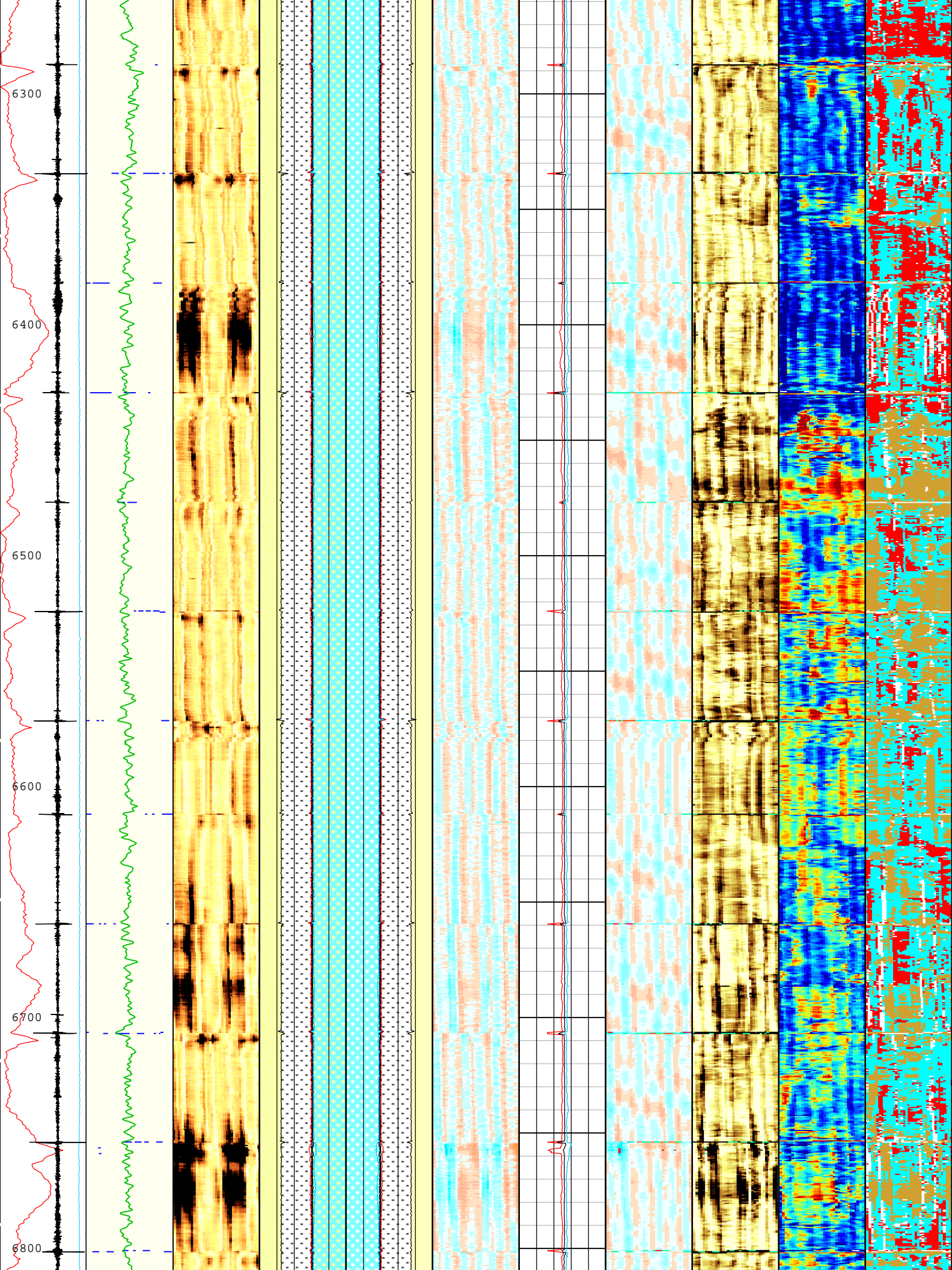


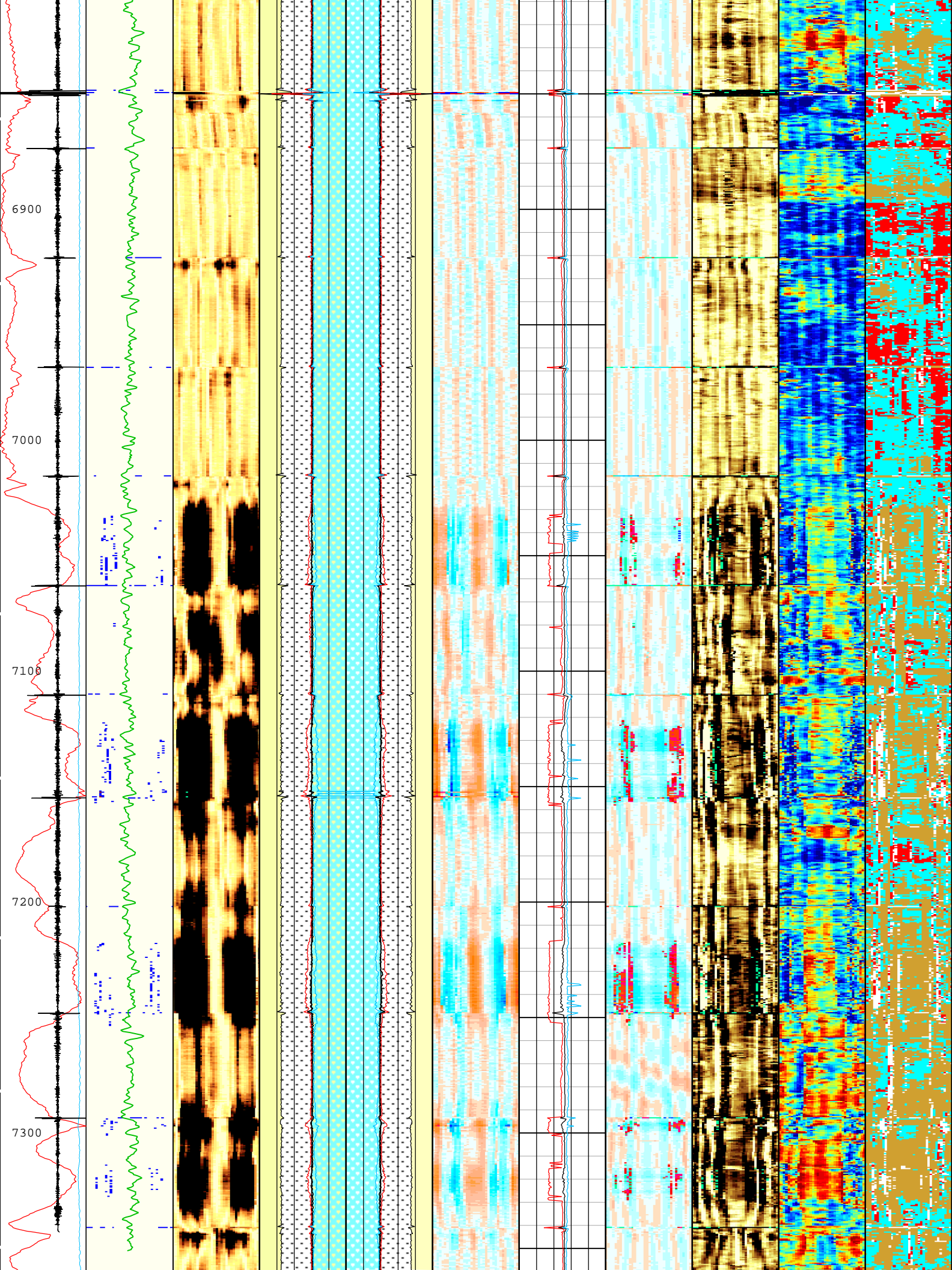












<div> <div>Amplitude of Eccentering (ECCE) USIT-E</div> <div>0 in 0.5</div> <div>Motor Revolution Speed (RSAV) USIT-E</div> <div>6 c/s 7.5</div> <div>Casing Collar Locator Amplitude (CCL) CAL-YA</div> <div>-2 1</div> <div>Gamma Ray (ECGR_EDT C) EDTC-B</div> <div>0 gAPI 150</div> </div>	<div> <div>Absent 1.500 3.500</div> <div>Explicit Normalization</div> <div>USIT - USIT Processing Flags (UFLG) USIT-E</div> <div>Orientation: Top of Hole</div> <div>U L B R U</div> <div>USIT Processing Flags (UFLG[0]) USIT-E</div> <div>1 5</div> <div>Gamma Ray (ECGR_EDT C) EDTC-B</div> <div>0 gAPI 150</div> </div>	<div> <div>Absent -5.200 -3.600 -2.000 -0.400</div> <div>Explicit Normalization</div> <div>USIT - Amplitude of Wave (AWBK) USIT-E (dB)</div> <div>Orientation: Top of Hole</div> <div>U L B R U</div> </div>	<div> <div>External Radii Average (ERAV) USIT-E</div> <div>3 in 2</div> <div>Internal Radius Averaged Value (IRAV) USIT-E</div> <div>3 in 2</div> <div>Internal Radius Maximum Value (IRMX) USIT-E</div> <div>3 in 2</div> <div>Internal Radius Minimum Value (IRMN) USIT-E</div> <div>3 in 2</div> </div>	<div> <div>External Radii Average (ERAV) USIT-E</div> <div>2 in 3</div> <div>Internal Radius Averaged Value (IRAV) USIT-E</div> <div>2 in 3</div> <div>Internal Radius Maximum Value (IRMX) USIT-E</div> <div>2 in 3</div> <div>Internal Radius Minimum Value (IRMN) USIT-E</div> <div>2 in 3</div> </div>	<div> <div>Absent -0.051 -0.012 0.028 0.068</div> <div>Explicit Normalization</div> <div>USIT - Internal Radii Normalized (IRBK) USIT-E (in)</div> <div>Orientation: Top of Hole</div> <div>U L B R U</div> </div>	<div> <div>Thickness Minimum Value (THMN) USIT-E</div> <div>0.1 in 0.6</div> <div>Thickness Average Value (THAV) USIT-E</div> <div>0.1 in 0.6</div> <div>Thickness Maximum Value (THMX) USIT-E</div> <div>0.1 in 0.6</div> </div>	<div> <div>Absent -0.051 -0.012 0.028 0.068</div> <div>Explicit Normalization</div> <div>USIT - Casing Thickness Normalized (THBK) USIT-E (in)</div> <div>Orientation: Top of Hole</div> <div>U L B R U</div> </div>	<div> <div>Absent 0.750 1.750 2.750 3.750</div> <div>Custom Normalization</div> <div>USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)</div> <div>Orientation: Top of Hole</div> <div>U L B R U</div> </div>	<div> <div>Absent 42.000 66.000 90.000 114.000</div> <div>Custom Normalization</div> <div>USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)</div> <div>Orientation: Top of Hole</div> <div>U L B R U</div> </div>	<div> <div>Absent 1.500 3.500</div> <div>Explicit Normalization</div> <div>USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E</div> <div>Orientation: Top of Hole</div> <div>U L B R U</div> </div>

TIME_1900 - Time Marked every 60.00 (s)

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

- 1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :

5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :
- UTIM Error

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 08-Mar-2019 13:43:49

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	17459	ft
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
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)	
HEMA	Hematite Presence Flag	Borehole	No	
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	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-5.28	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.6	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	75	2515	
BS	8.75	2515	7372	
All depth are actual.				

Tool Control Parameters				
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ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4408.8	ft/h
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	70	08-Mar-2019 10:33:12	08-Mar-2019 10:38:44	7372.88	7021.48
EMXV	85	08-Mar-2019 10:38:44	08-Mar-2019 12:06:37	7021.48	662.82
EMXV	70	08-Mar-2019 12:06:37	08-Mar-2019 12:14:46	662.82	75.49
All depth are at tool zero.					

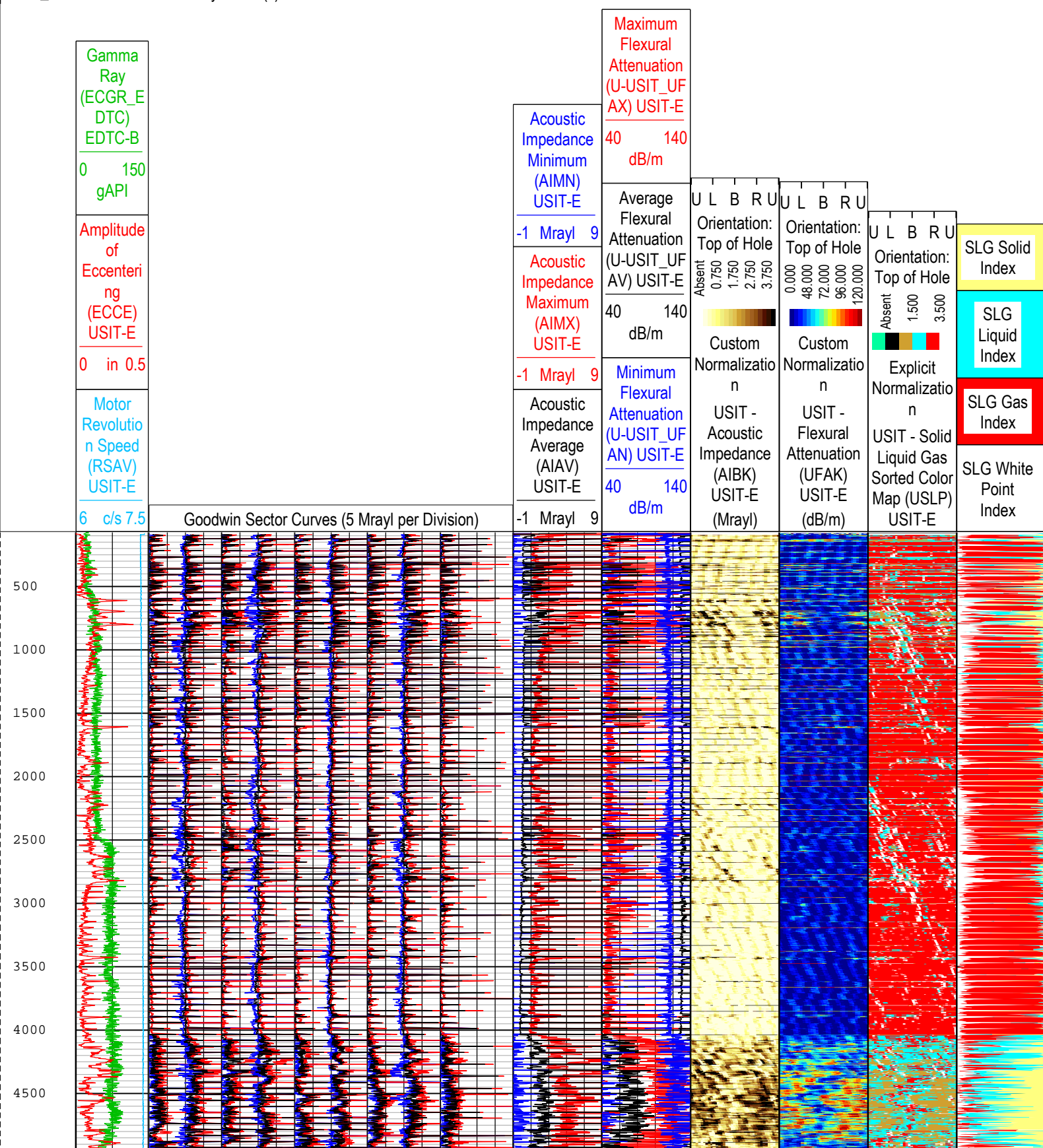
ONE				
IBC Goodwin Compressed				

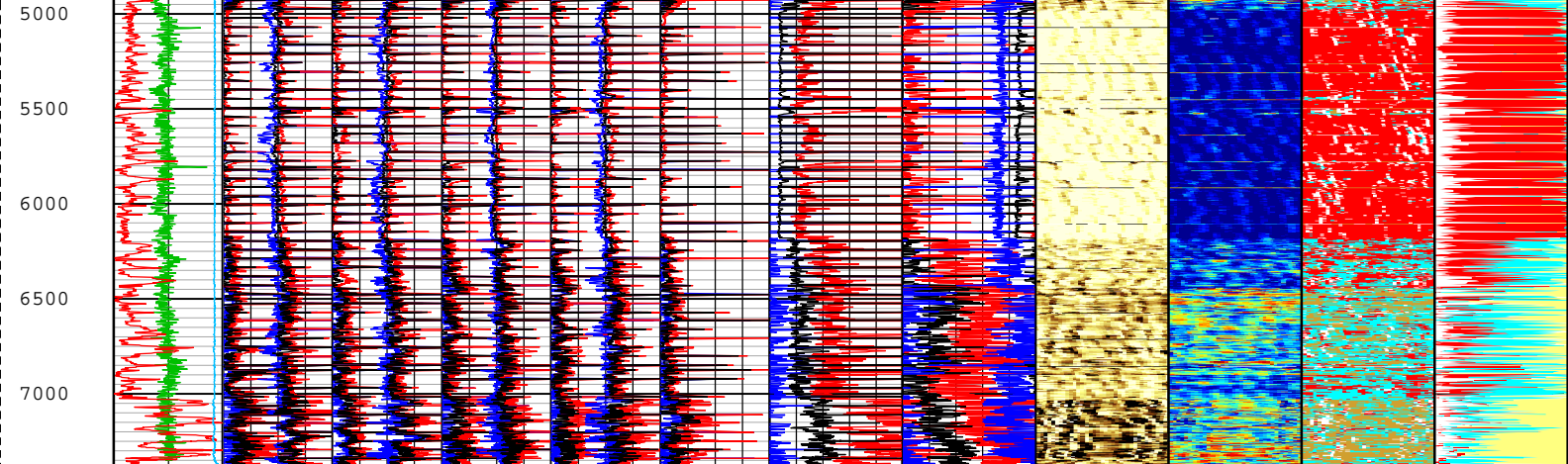
Pass Summary	
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All depths are referenced to toolstring zero

ONE: Log[3]:Up:S003

TIME_1900 - Time Marked every 60.00 (s)





Gamma Ray (ECGR_E DTC) EDTC-B
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

Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9

Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9

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

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

Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)
Orientation: Top of Hole
U L B R U

Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)
Orientation: Top of Hole
U L B R U

Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E
Orientation: Top of Hole
U L B R U

SLG Solid Index

SLG Liquid Index

SLG Gas Index

SLG White Point Index

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: 08-Mar-2019 13:44:01

ONE									
IBC SLG Repeat Pass									
Software Version									
Acquisition System						Version			
Maxwell 2018 SP1						8.1.99839.3100			
Application Patch						Wireline_NPD-SNGI-2018SP1_8.1.100441			
						Wireline_Testkit-CMR-NG-2018SP1_8.1.102925			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[1]:Up	Up	2291.13 ft	2602.41 ft	08-Mar-2019 10:11:35 AM	08-Mar-2019 10:16:31 AM	ON	1.69 ft	No
All depths are referenced to toolstring zero									
Log	Company:Crestone Peak Resources Operating, LLC				Well:Cosslett 1C-22H-B168				
ONE: Log[1]:Up:S003									

Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 08-Mar-2019 13:44:08

5.44.00
TIME_1900 - Time Marked every 60.00 (s)

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

- 1 - UFLG 1 Value within [0.0 - 1.5] - :

2 - UFLG 2 Value within [1.5 - 2.5] - :

3 - UFLG 3 Value within [2.5 - 3.5] - :

4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :

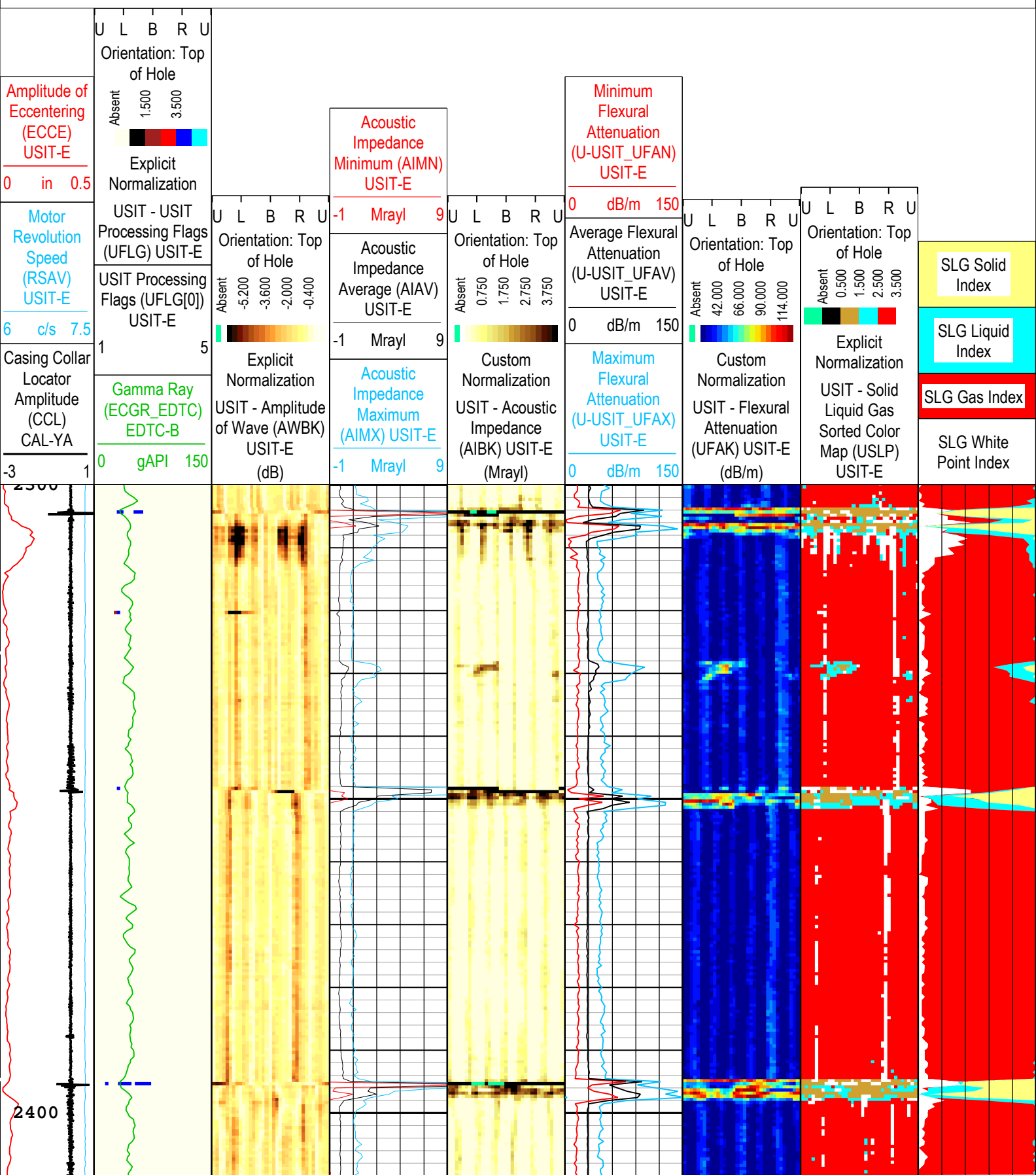
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :
- UTIM Error

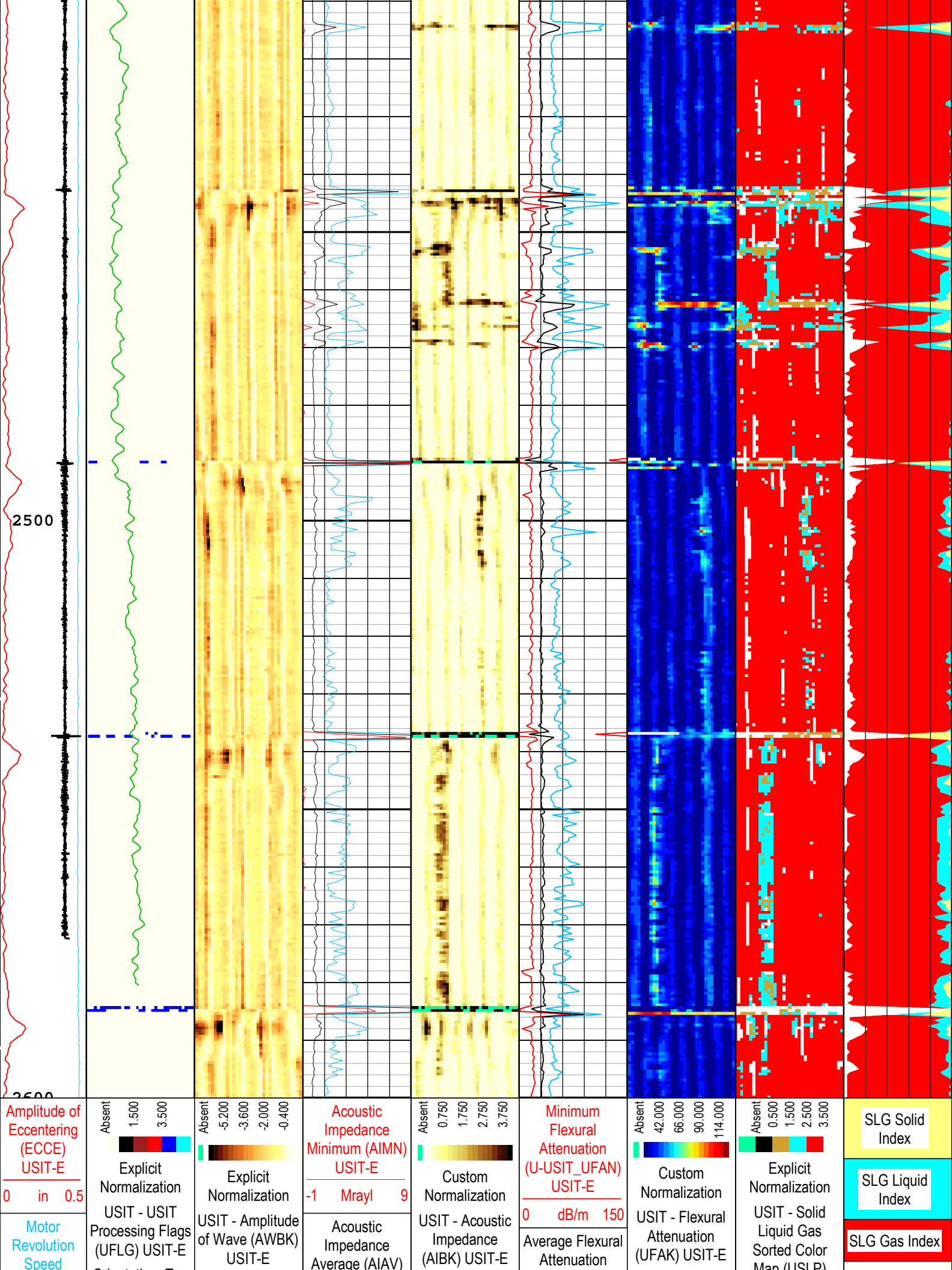
Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error






Loop Processing Error





(RSAV) USIT-E	Orientation: Top of Hole	(dB)	USIT-E	(Mrayl)	Orientation: Top of Hole	(U-USIT_UFAV) USIT-E	(dB/m)	Map (USIT) USIT-E	SLG White Point Index
6 c/s 7.5	U L B R U		-1 Mrayl 9		U L B R U	0 dB/m 150		U L B R U	
Casing Collar Locator Amplitude (CCL) CAL-YA	USIT Processing Flags (UFLG[0]) USIT-E	U L B R U	Acoustic Impedance Maximum (AIMX) USIT-E	U L B R U		Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E			
-3 1	1 5		-1 Mrayl 9			0 dB/m 150			
	Gamma Ray (ECGR_EDTC) EDTC-B								
	0 gAPI 150								

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 08-Mar-2019 13:44:08

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	17459	ft
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	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)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	0	dB/m
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	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	

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
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-5.28	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
USI_RPLUS	Ultrasonic R+ Processing	USIT-E	No	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.6	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	2300	2515
BS	8.75	2515	2600
All depth are actual.			

Tool Control Parameters

ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
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
EMXV	EMEX Voltage	USIT-E	70	V
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4408.8	ft/h
MOTOR_PROTECT	Motor Protection	USIT-E	On	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
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	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	

RES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

ONE

IBC SLG Composite Repeat Pass

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[1]:Up	Up	2291.13 ft	2602.41 ft	08-Mar-2019 10:11:35 AM	08-Mar-2019 10:16:31 AM	ON	1.69 ft	No

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating, LLC

Well:Cosslett 1C-22H-B168

ONE: Log[1]:Up:S003

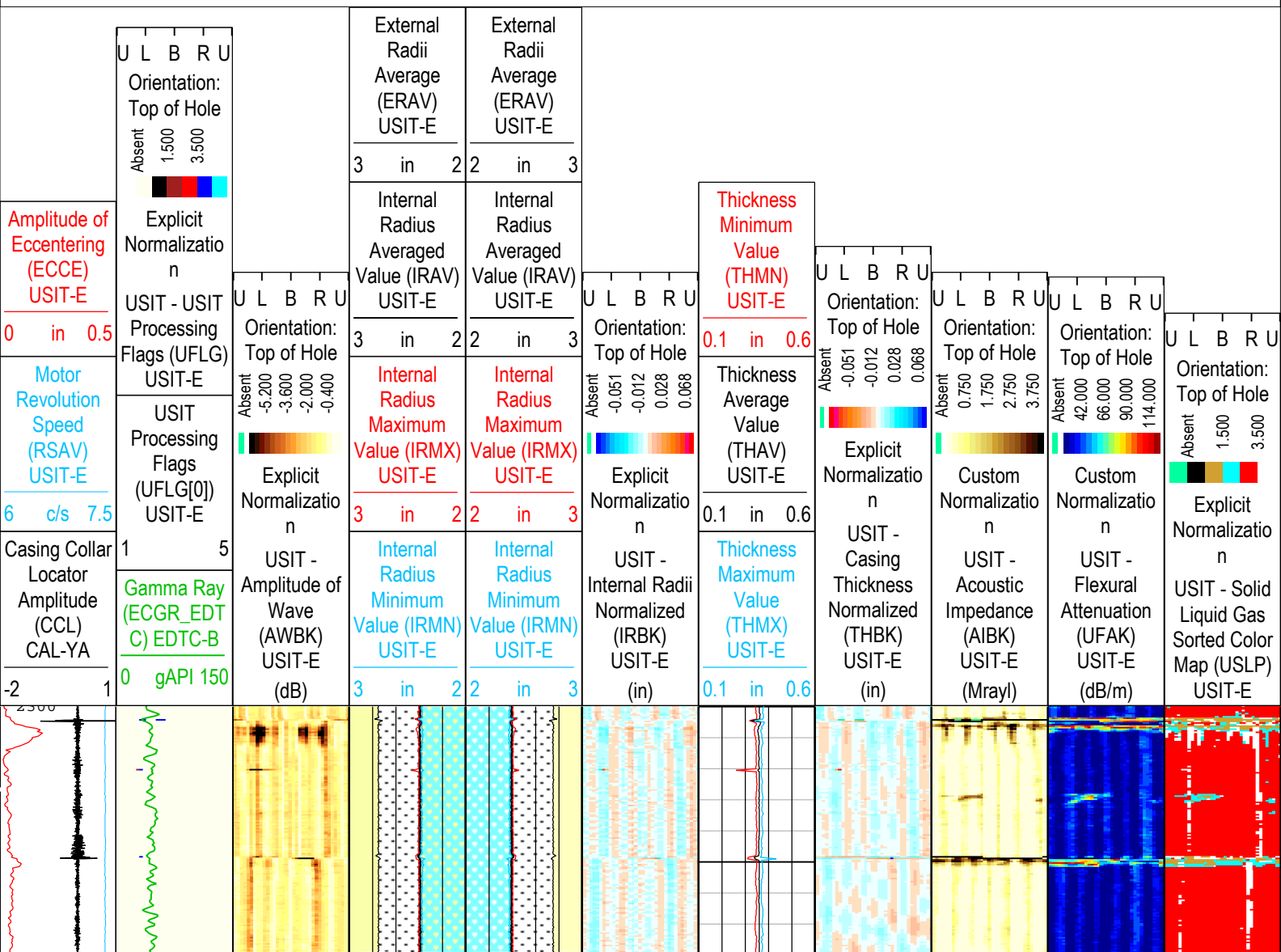
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth

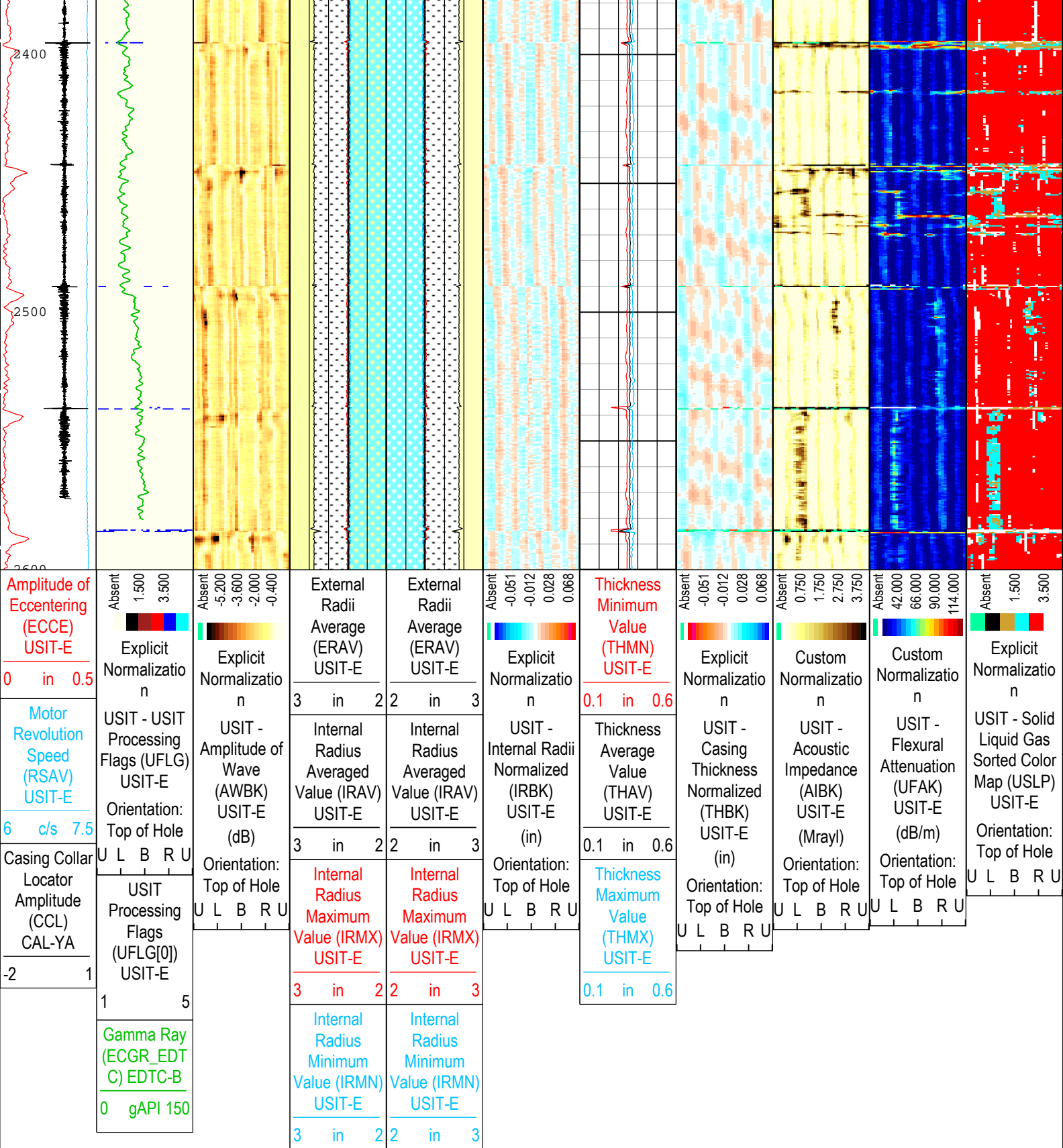
Creation Date: 08-Mar-2019 13:44:14

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 |





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

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	17459	ft
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
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)	
HEMA	Hematite Presence Flag	Borehole	No	
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	Theoretical	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.12	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-5.28	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.6	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	2300	2515
BS	8.75	2515	2600

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	70	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4408.8	ft/h
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us

U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

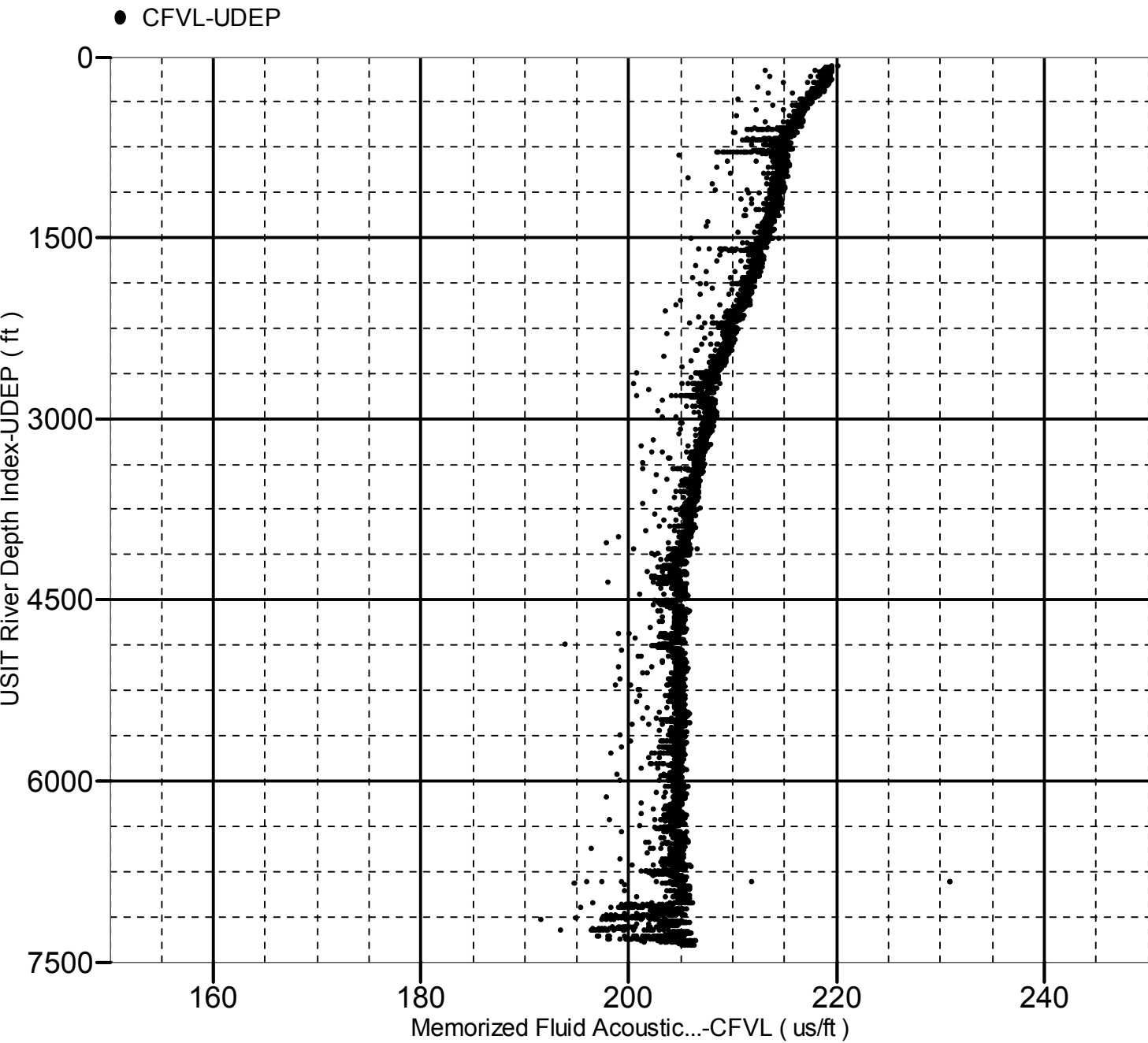
XYZ

Company:Crestone Peak Resources Operating, LLC Well:Cosslett 1C-22H-B168
ONE: Log[3]:Up:S003

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 7372.00 to 75.00 ft



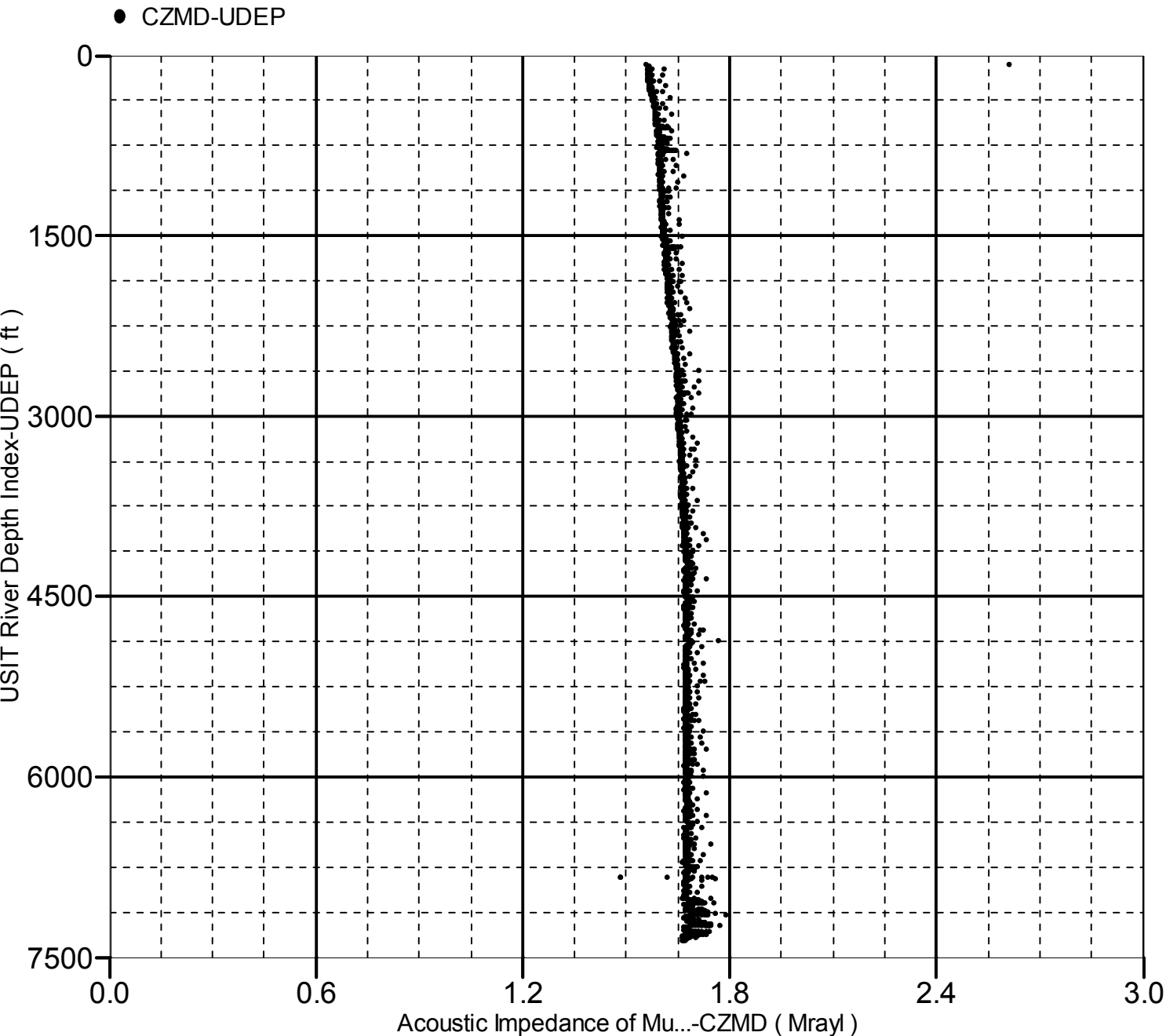
XYZ

Company:Crestone Peak Resources Operating, LLC Well:Cosslett 1C-22H-B168
ONE: Log[3]:Up:S003

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7372.00 to 75.00 ft



Company: Crestone Peak Resources Operating, LLC

Schlumberger

Well: Cosslett 1C-22H-B168

Field: Wattenberg

County:	Weld
State:	Colorado
Isolation Scanner	
Cement Evaluation	
Gamma Ray - CCL Log	