

Company: Crestone Peak Resources Operating LLC

Well: Melbon Ranch 4I-17H-M265

Field: Wattenburg

County: Weld State: Colorado

Isolation Scanner  
Cement Evaluation  
Gamma Ray - CCL Log

Cement Evaluation

Gamma Ray - CCL Log

Location:		SWSW S17 T2N R65W		Elev.:	K.B.	4979.00 ft
SHL: 1215 FSL & 219 FWL		Lat/Long: 40.134687, -104.696637			G.L.	4956.00 ft
Permanent Datum:		Ground Level		Elev.:	4956.00 f	
Log Measured From:		Kelly Bushing		23.00 ft	above Perm.Datum	
Drilling Measured From:		Kelly Bushing				
API Serial No.	Section:	Township:	Range:			
05-123-47750	17	2N	65W			

Logging Date	24-Nov-2018		
Run Number	One		
Depth Driller	12139.00 ft		
Schlumberger Depth	12139.00 ft		
Bottom Log Interval	6840.00 ft		
Top Log Interval	89.00 ft		
Casing Fluid Type	WBM		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	89.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.50 in		
From	2409.00 ft		
To	12139.00 ft		
Casing/Tubing Size	5.5 in		
Weight	20 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	12139.00 ft		
Max Recorded Temperatures	158 degF	197	
Logger on Bottom	24-Nov-2018	08:18:00	
Unit Number	Location:	Time	
Recorded By	9102	C. Stiles/L. Lewis	Fort Morgan
Witnessed By	Keith Kershnik		

Disclaimer

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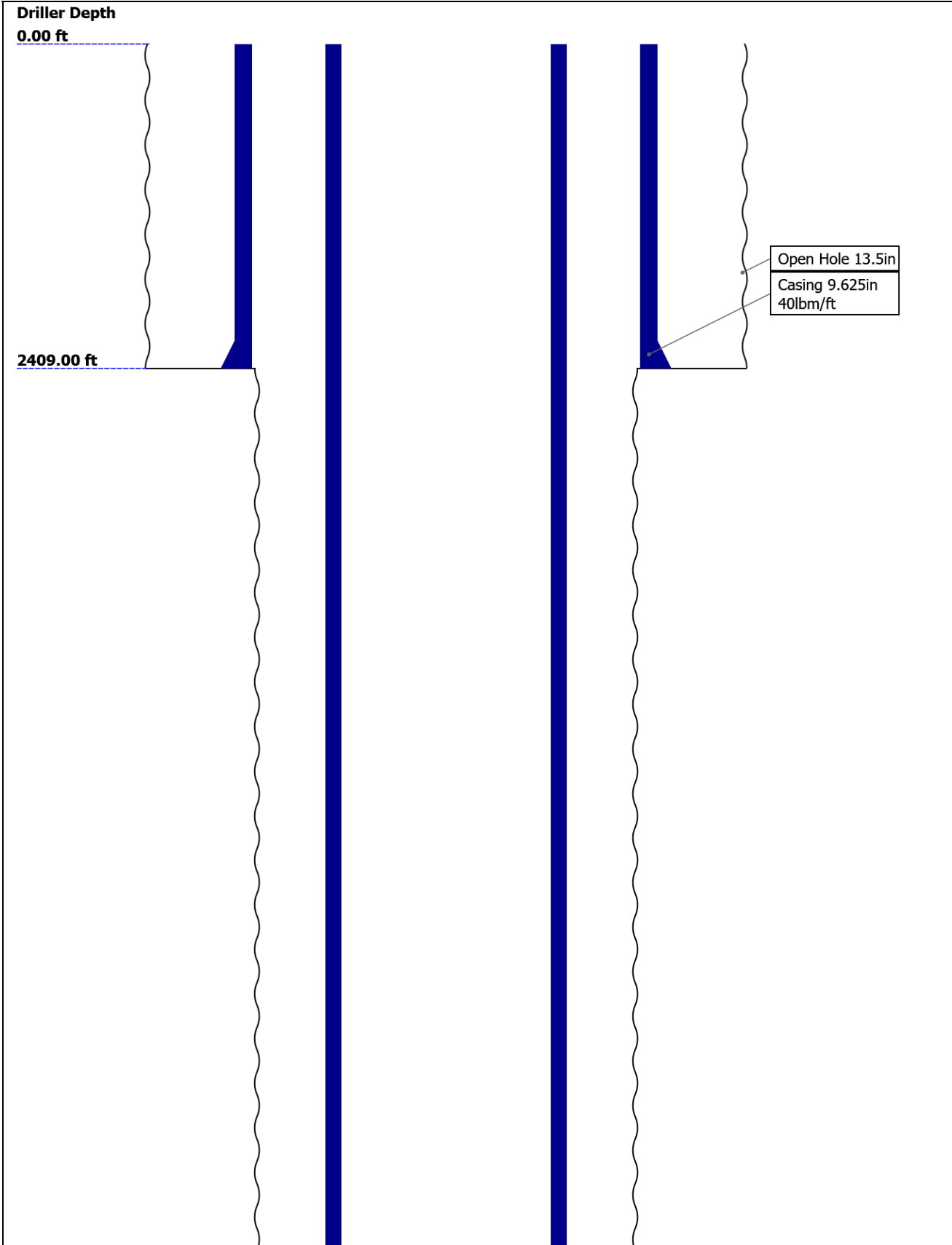
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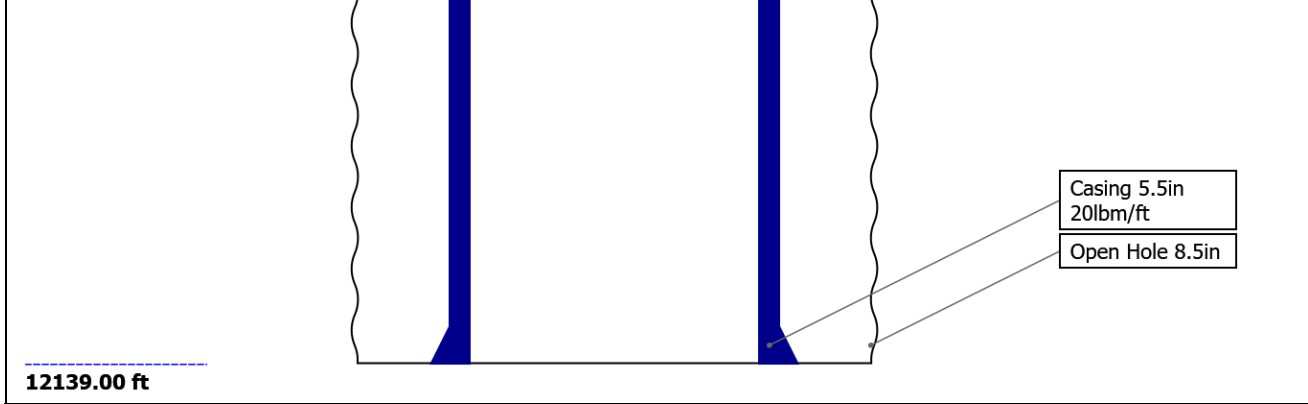
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Well Sketch



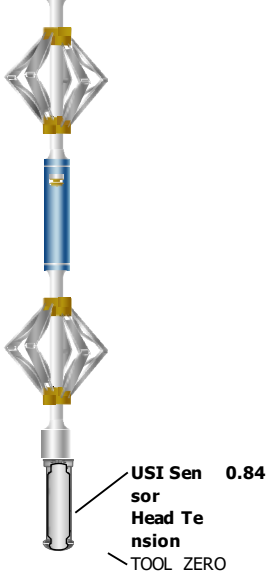


Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.5	8.5				
Top Driller ( ft )	0	2409				
Top Logger ( ft )	0	2409				
Bottom Driller ( ft )	2409	12139				
Bottom Logger ( ft )	2409	12139				
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 ) ( ft )	0	0				
Bottom Driller ( ft )	2409	12139				
Bottom Logger ( ft )	2409	12139				

Remarks and Equipment Summary

One: Toolstring			One: Remarks		
<div><div><div>Equip nameLength</div><div>LEH-QT:230.73</div><div>493</div><div>LEH-QT:2493</div><div>EDTC-B:827.24</div><div>424</div><div>EDTH-B:8432</div><div>EDTG-A:77303</div><div>EDTC-B:8424</div><div>AH-184[2]20.74</div><div>AH-184[1]18.74</div><div>USIT-E:1716.74</div><div>25</div><div>ECH-MFA:1991</div><div>USAC-A:1725</div><div>USIT-A:27</div></div><div><div><div>CTEM23.74</div><div>ACCZ0.00</div><div>HV0.00</div><div>Gamma21.87</div><div>Ray</div><div>TelStatu20.74</div><div>s</div></div></div></div>	MP nameOffset		Toolstring ran as per tool sketch and client logging program.		
			Tool centralized with 5.25" Gemcos, inline centralizers w/ small hole and Houma kit.		
			Lead: 12.5 ppg Tail: 13.5 ppg Spacer: 12 ppg		
			High deviation (22 deg) near KOP affects local data quality.		
			Thank you for choosing Schlumberger!		

USLS-A:27 83 USSC-B:87 2 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	 <p>USI Sen 0.84 sor Head Te nsion TOOL_ZERO</p> <p>Lengths are in ft Maximum Outer Diameter = 6.250 in Line: Sensor Location, Value: Gating Offset All measurements are relative to TOOL_ZERO</p>	
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Depth Summary			
	One		
Depth Measuring Device			
Type	IDW-B		
Serial Number	5822		
Calibration Date	14-Oct-2018		
Calibrator Serial Number	57		
Calibration Cable Type	7-46A XS		
Wheel Correction 1	-2		
Wheel Correction 2	-2		
Tension Device			
Type	CMTD-B/A		
Serial Number	1106		
Calibration Date	19-Oct-2018		
Calibrator Serial Number	78135A		
Number of Calibration Points	10		
Calibration Root Mean Square Error	69		
Calibration Peak Error	116		
Logging Cable			
Type	7-46A-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		
One:Depth Control Parameters		Depth Control Remarks	
Log Sequence	First Log In the Well	All Schlumberger depth control procedures followed.	
Rig Up Length At Surface		IDW used as primary depth control method.	
Rig Up Length At Bottom		Z-chart used as secondary method.	
Rig Up Length Correction			

Stretch Correction7.60 ft

Tool Zero Check At Surface

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Log[3]:Up	6841.97	55.52

Fluid Velocity = "Automatic".  
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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Mud Impedance = "FreePipe Norm."  
Free Pipe normalization zone is : 201.84m(662.21ft) to 207.18m(679.71ft)  
MUD\_N\_FRP = 1.19  
DFD = 1.01g/cm3(8.40lbm/gal)  
CZMD median computed in free pipe normalization interval = 1.68 MRayl

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 SP2	8.2.104493.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	55.52 ft	6841.97 ft	24-Nov-2018 8:18:22 AM	24-Nov-2018 9:55:53 AM	ON	7.60 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources Operating LLC	Well:Melbon Ranch 4I-17H-M265
	One: Log[3]:Up:S017	

Description: USI IBC SLG    Format: Log ( IBC SLG )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 27-Nov-2018 00:25:56

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 ] - :

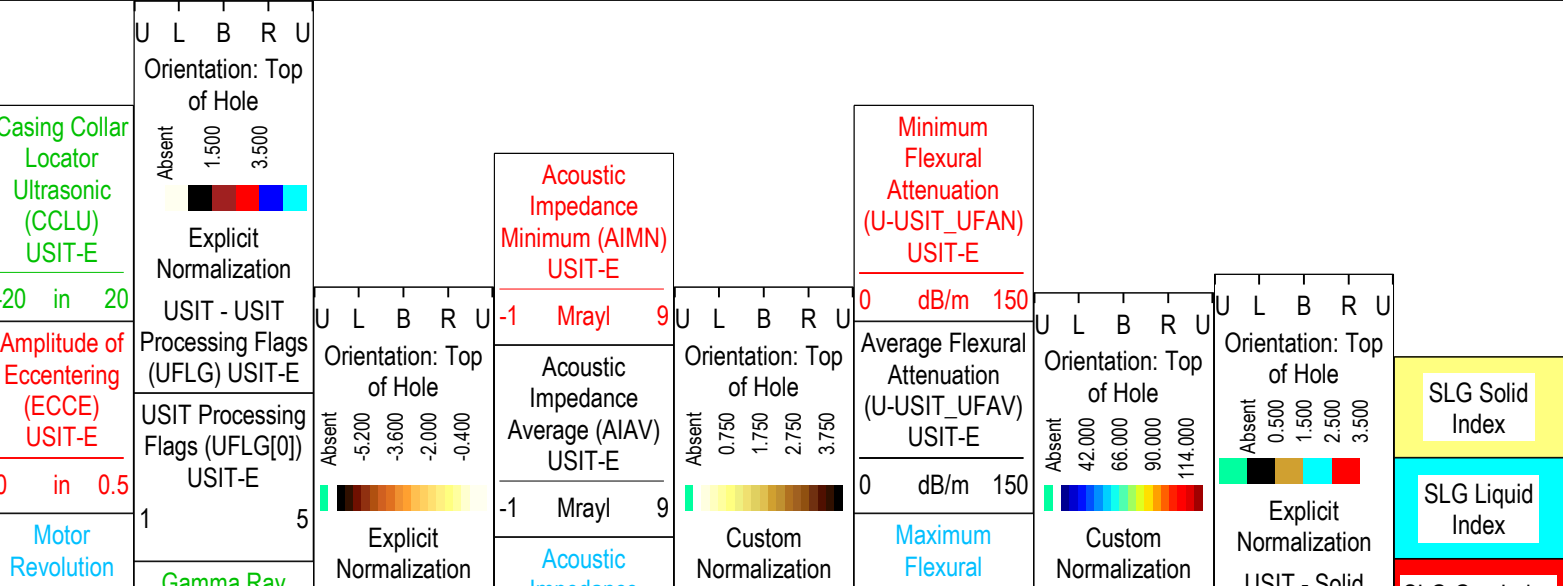
UTIM Error

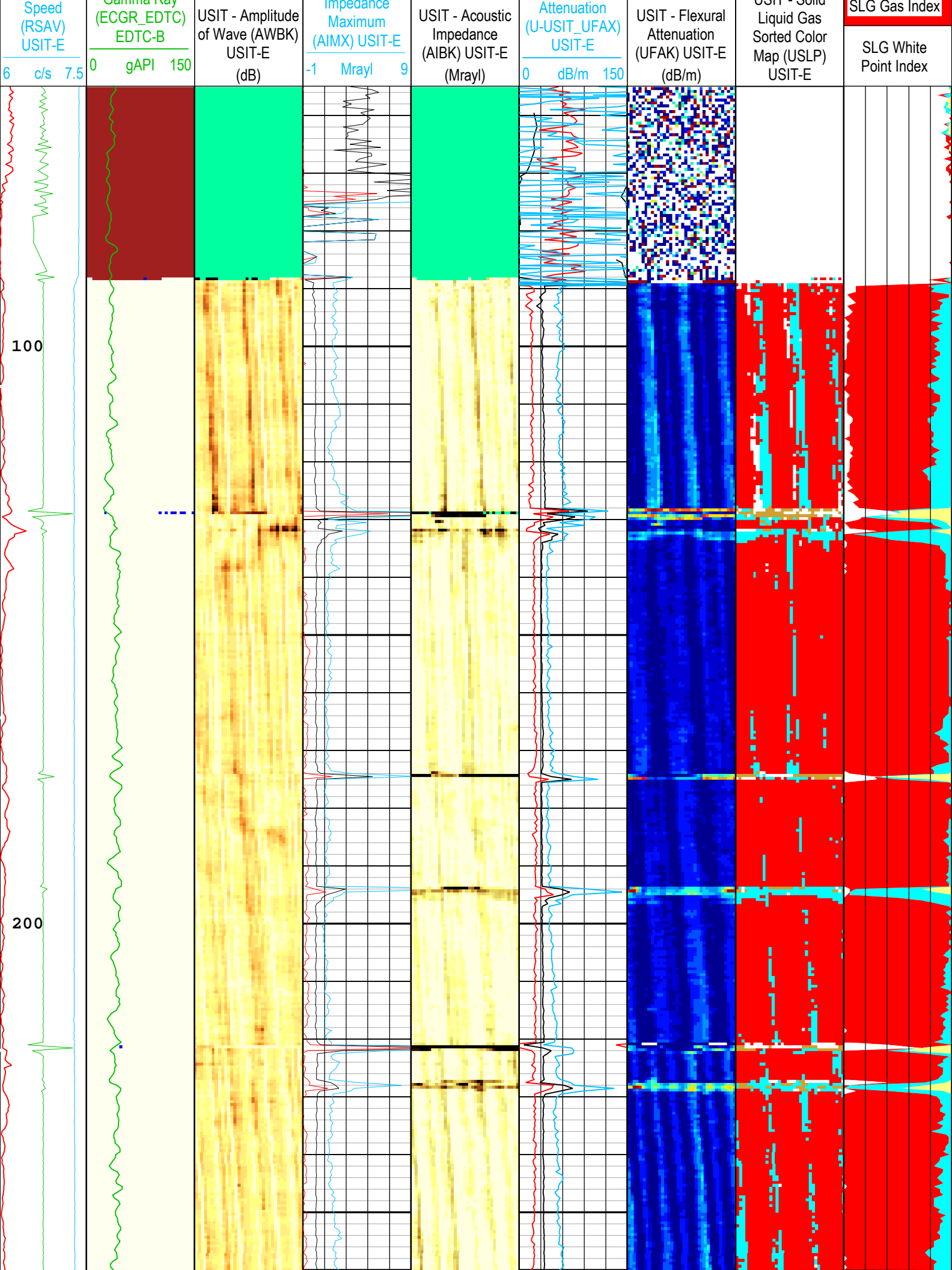
Pulse Origin Not Detected

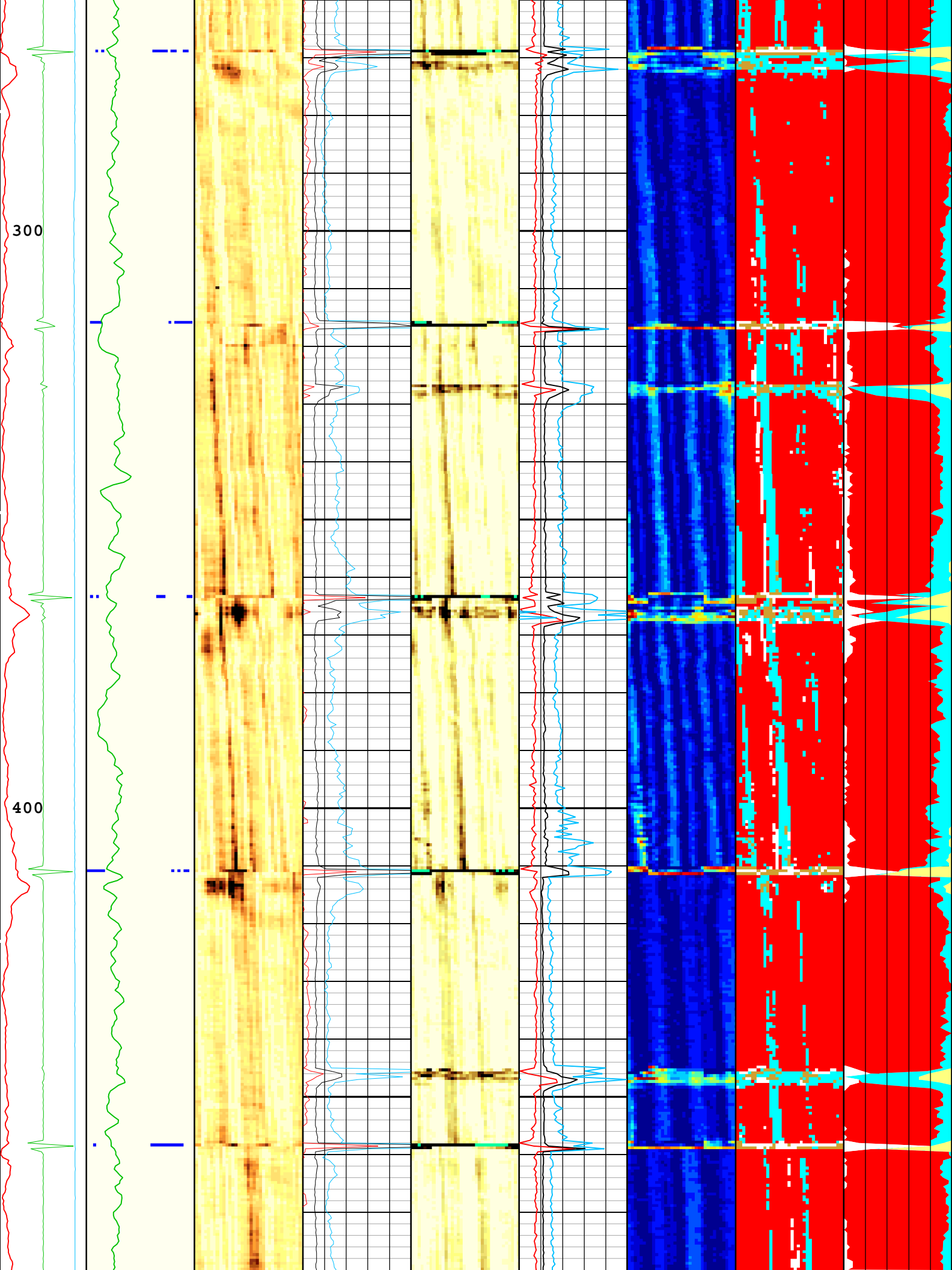
WINLEN Error

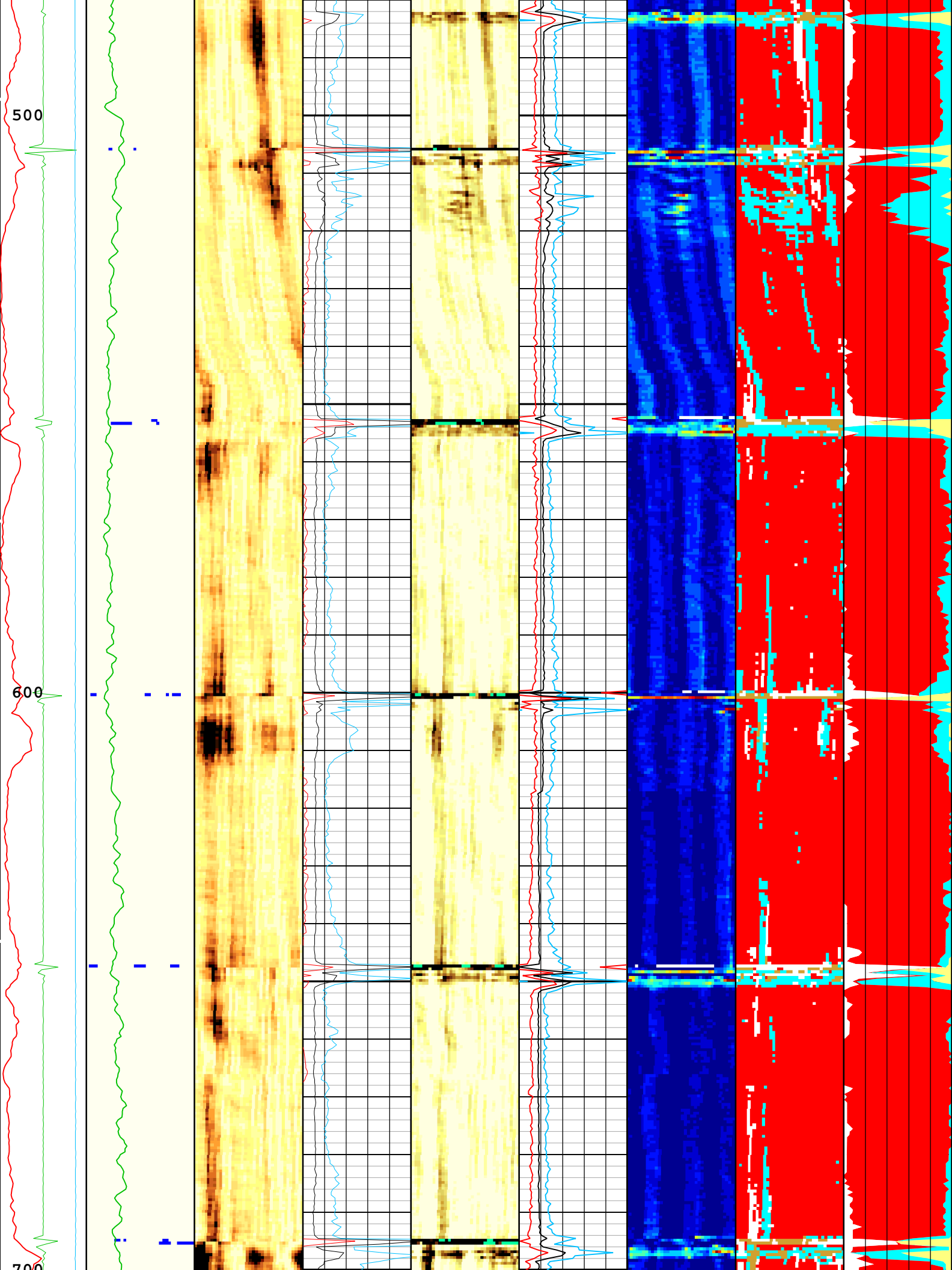
Casing Thickness Error

Loop Processing Error

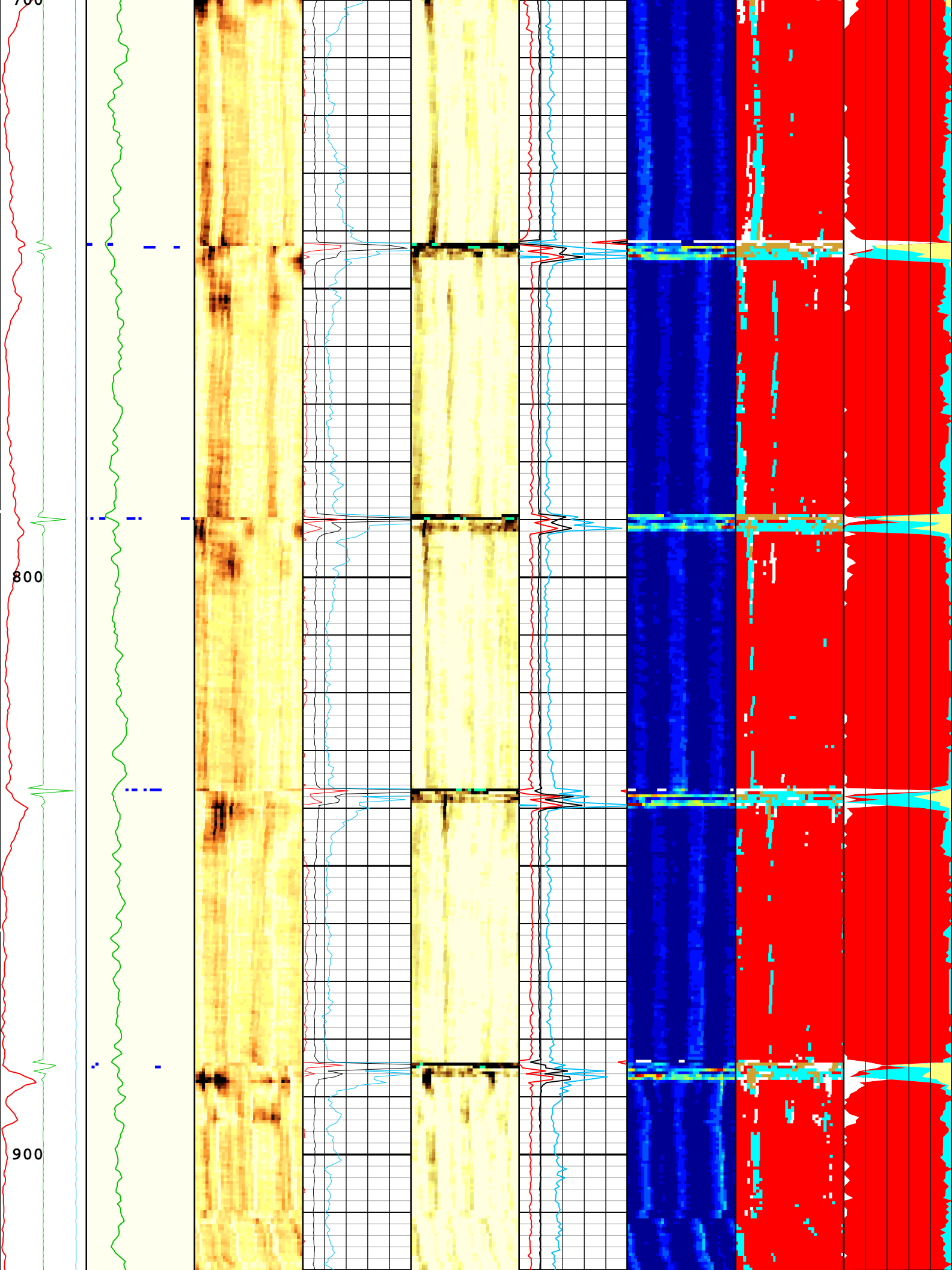


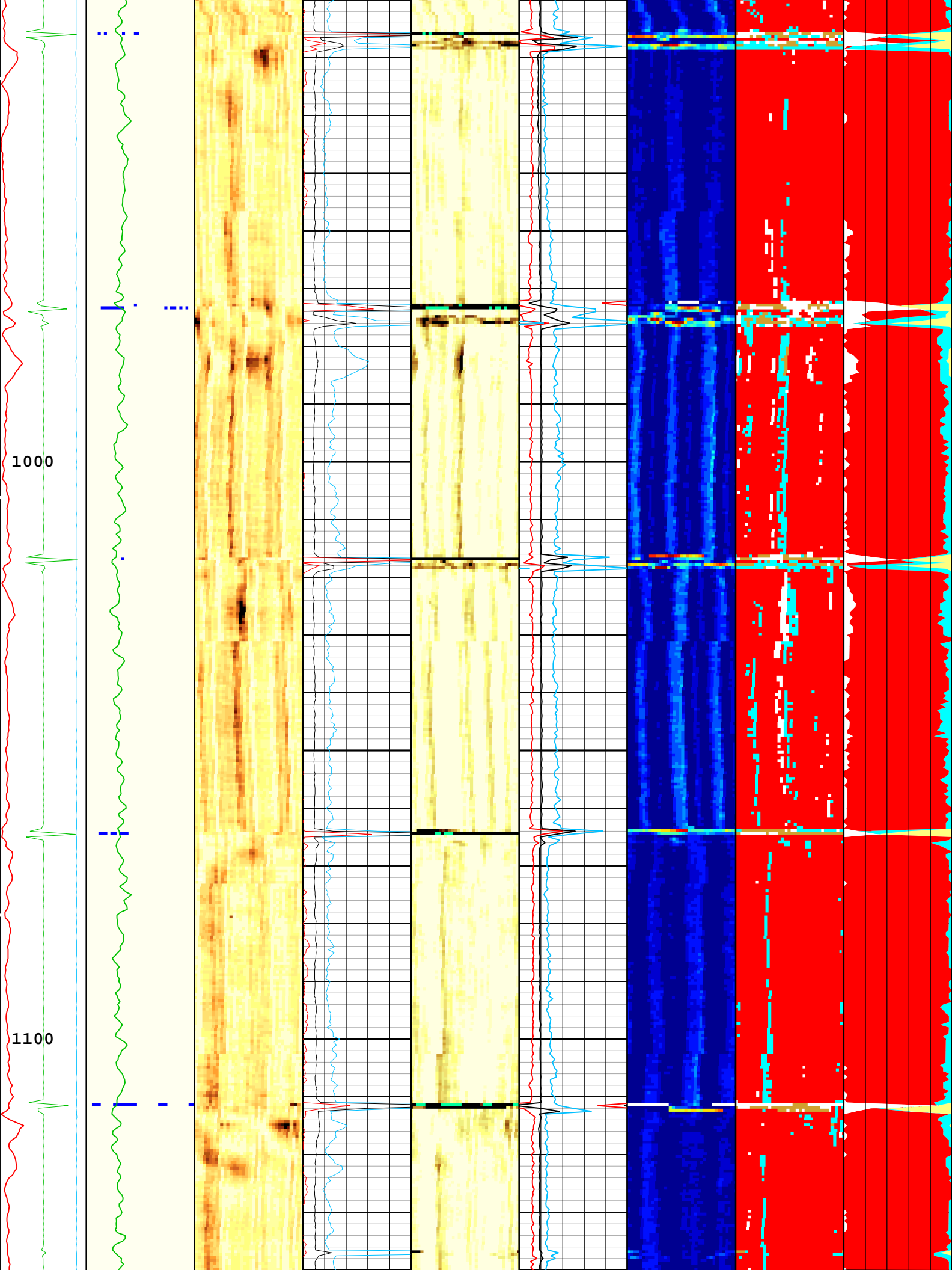


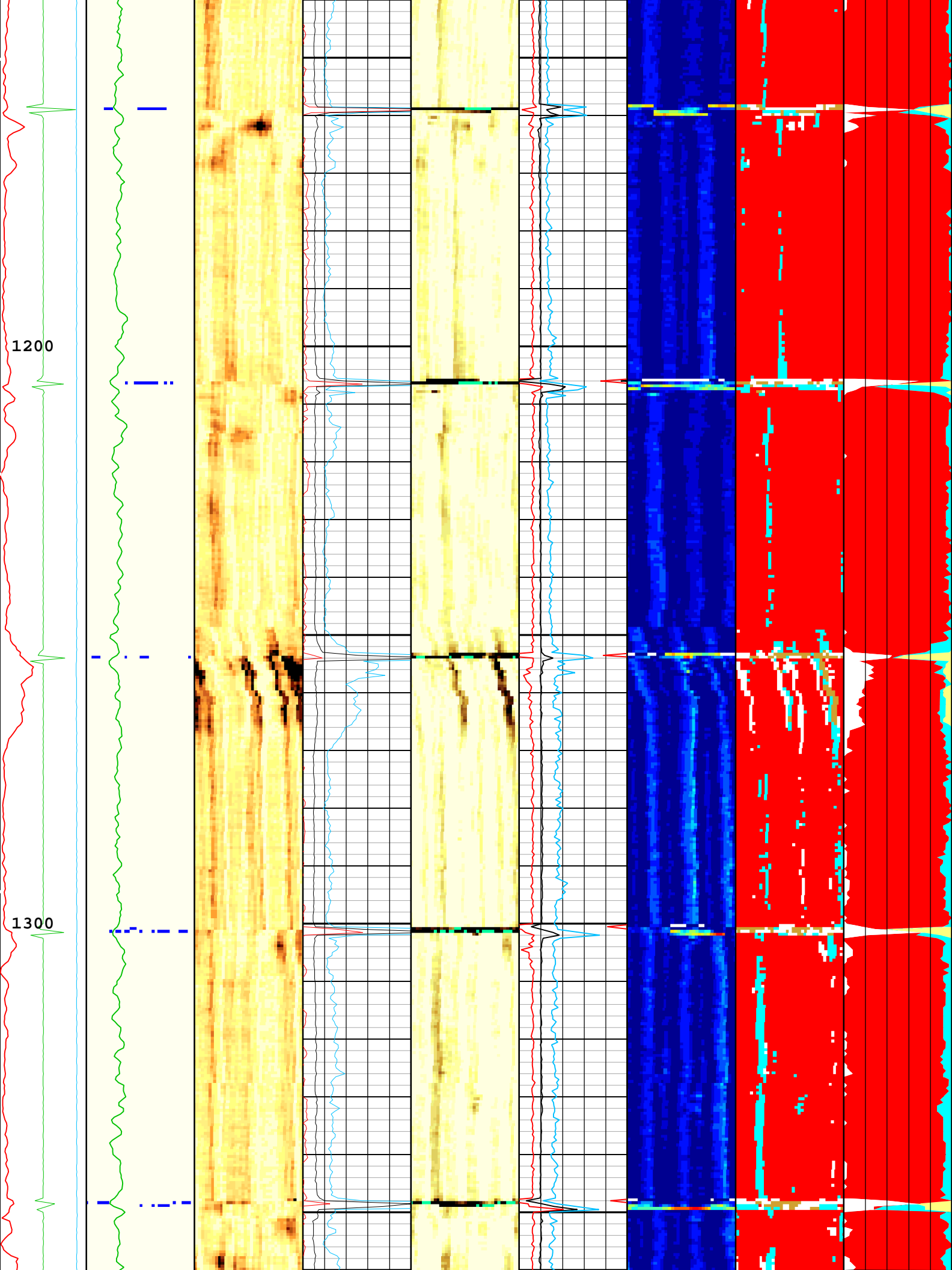


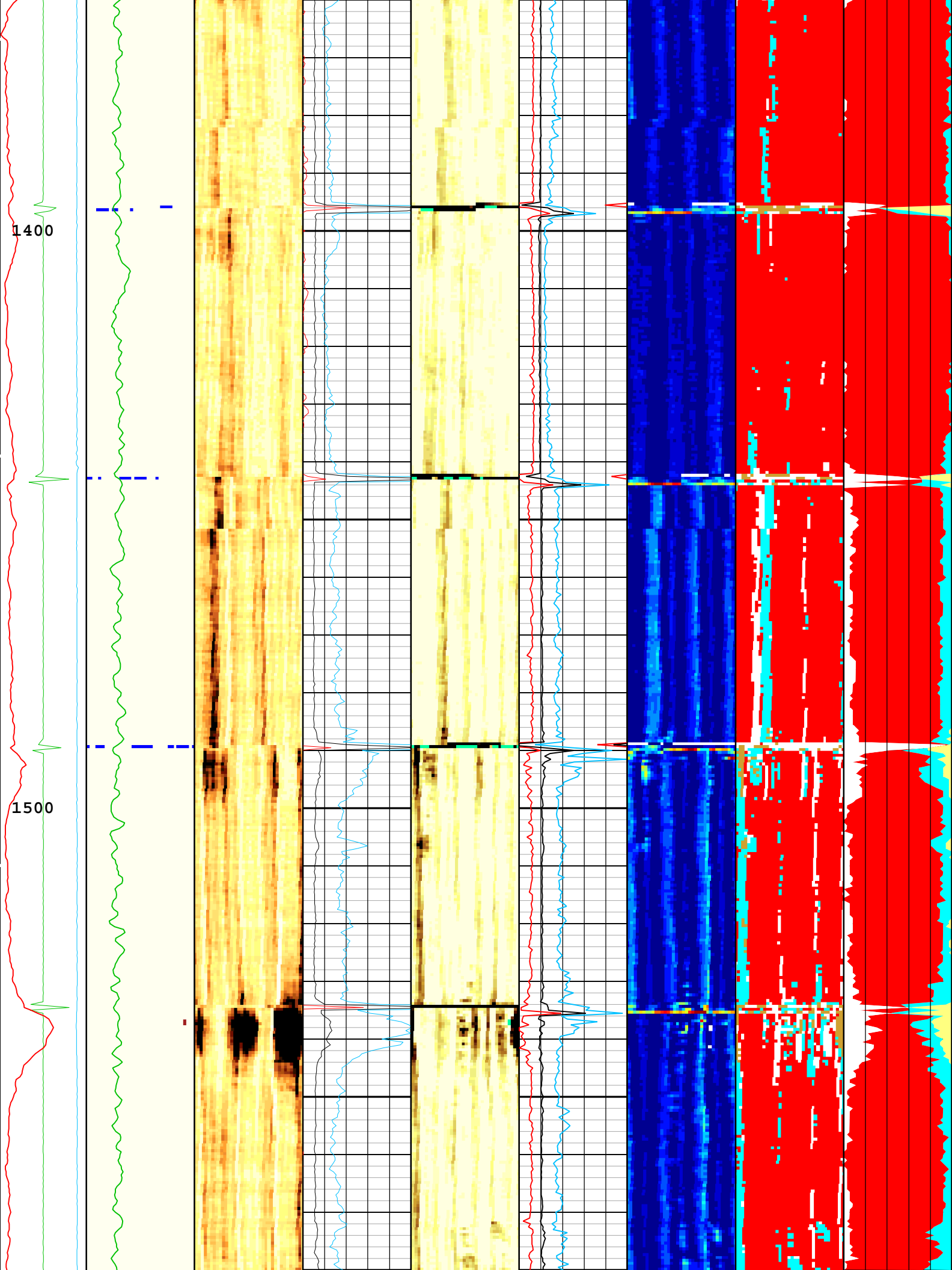


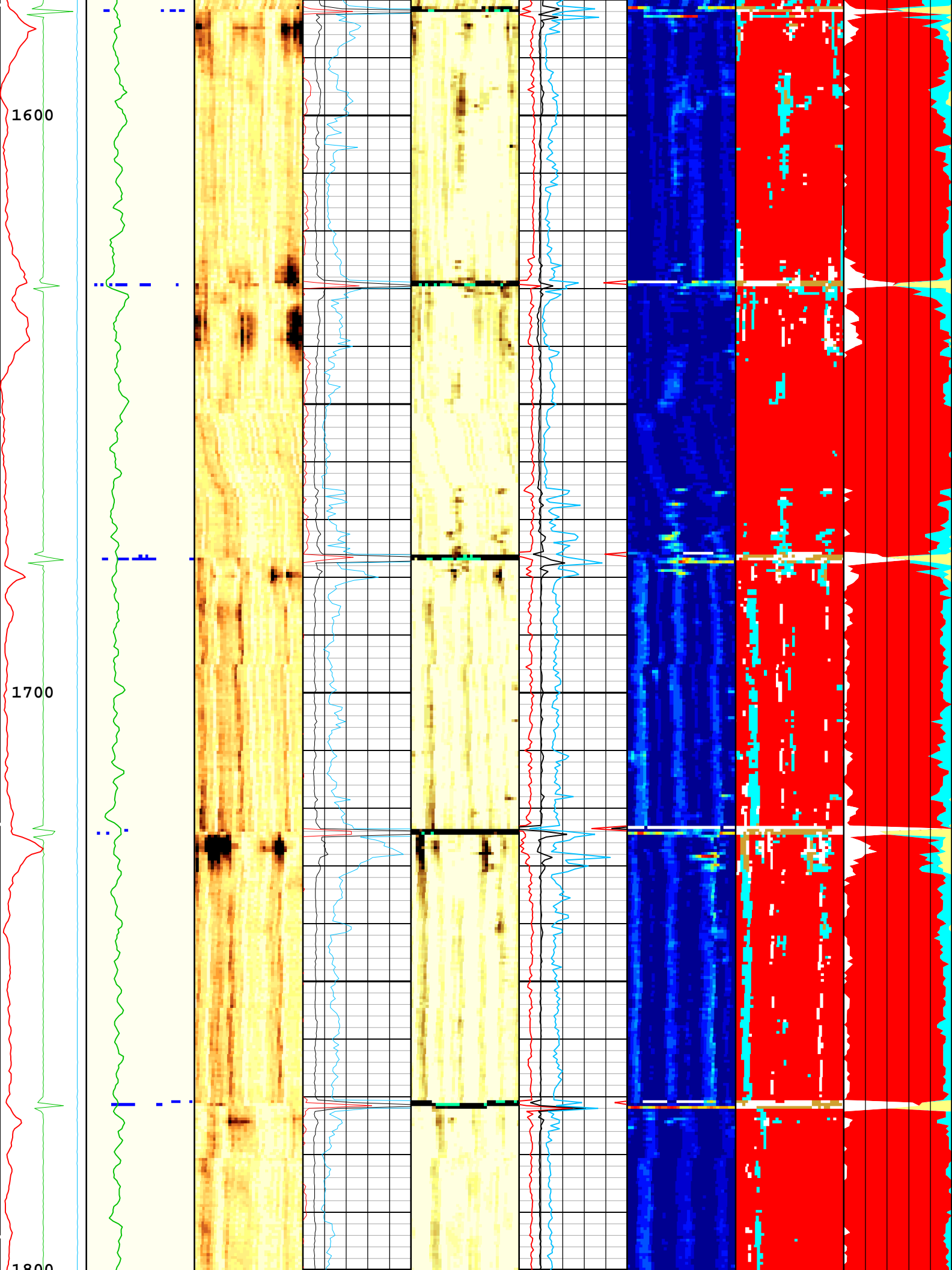


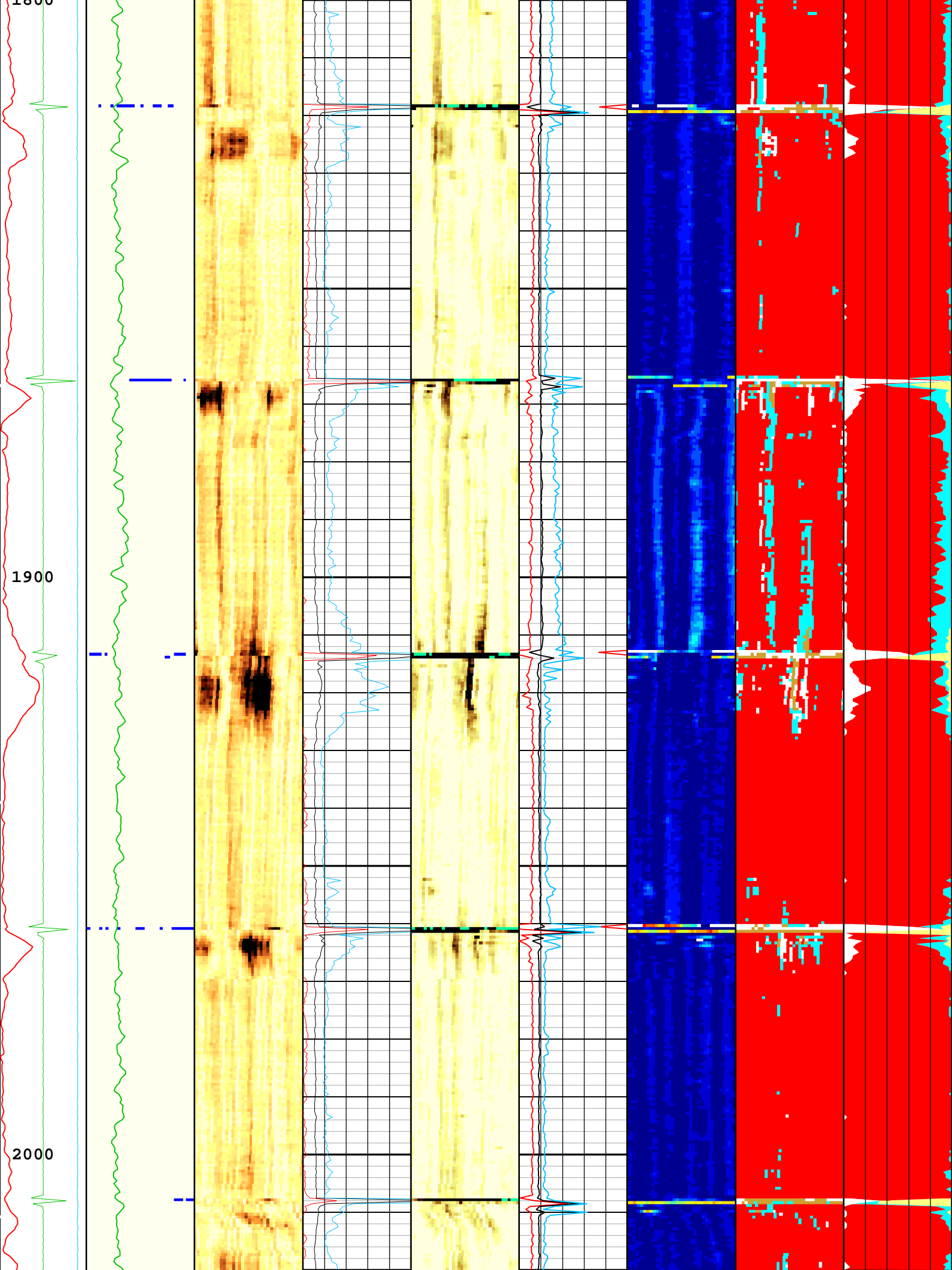


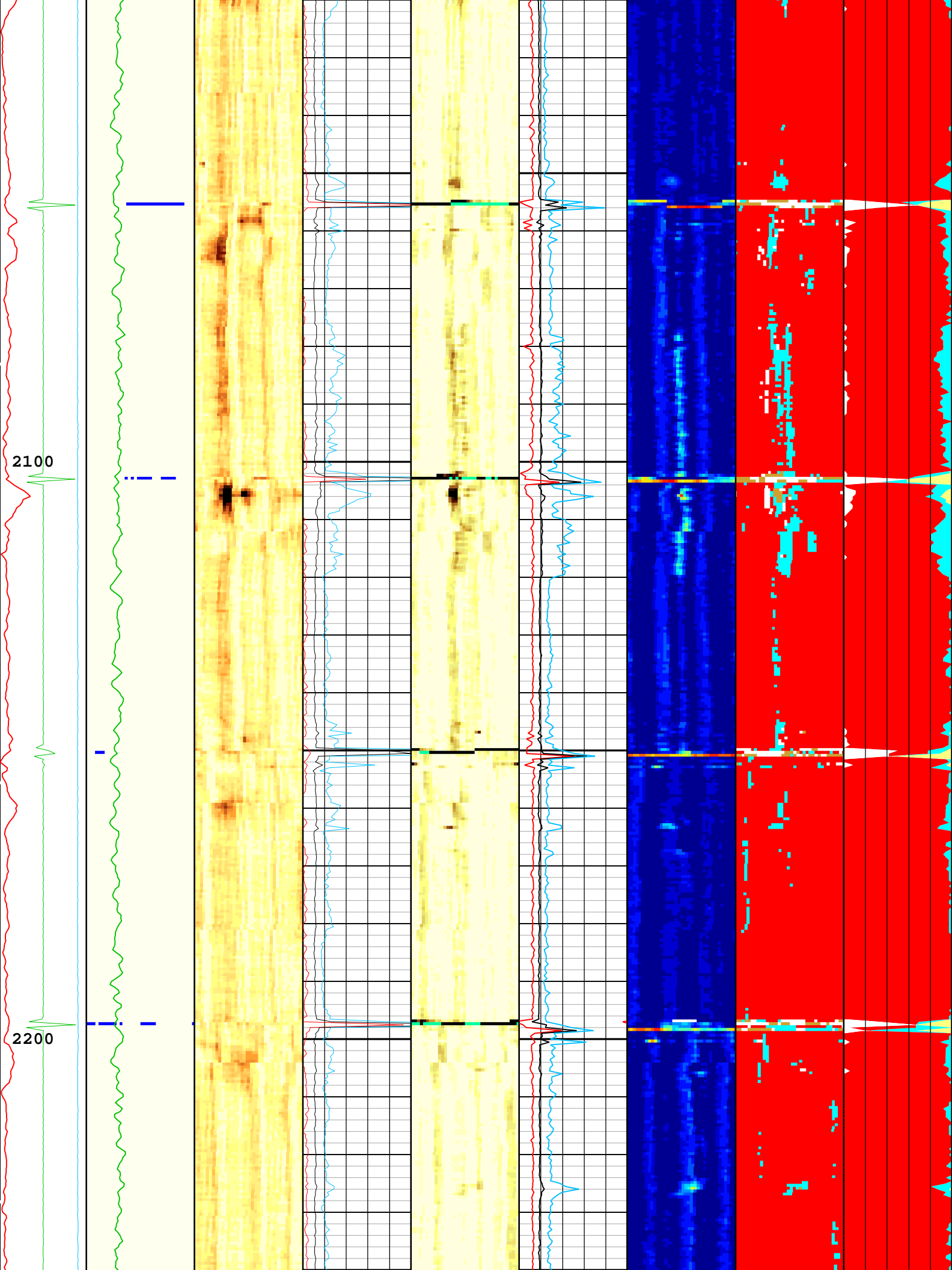




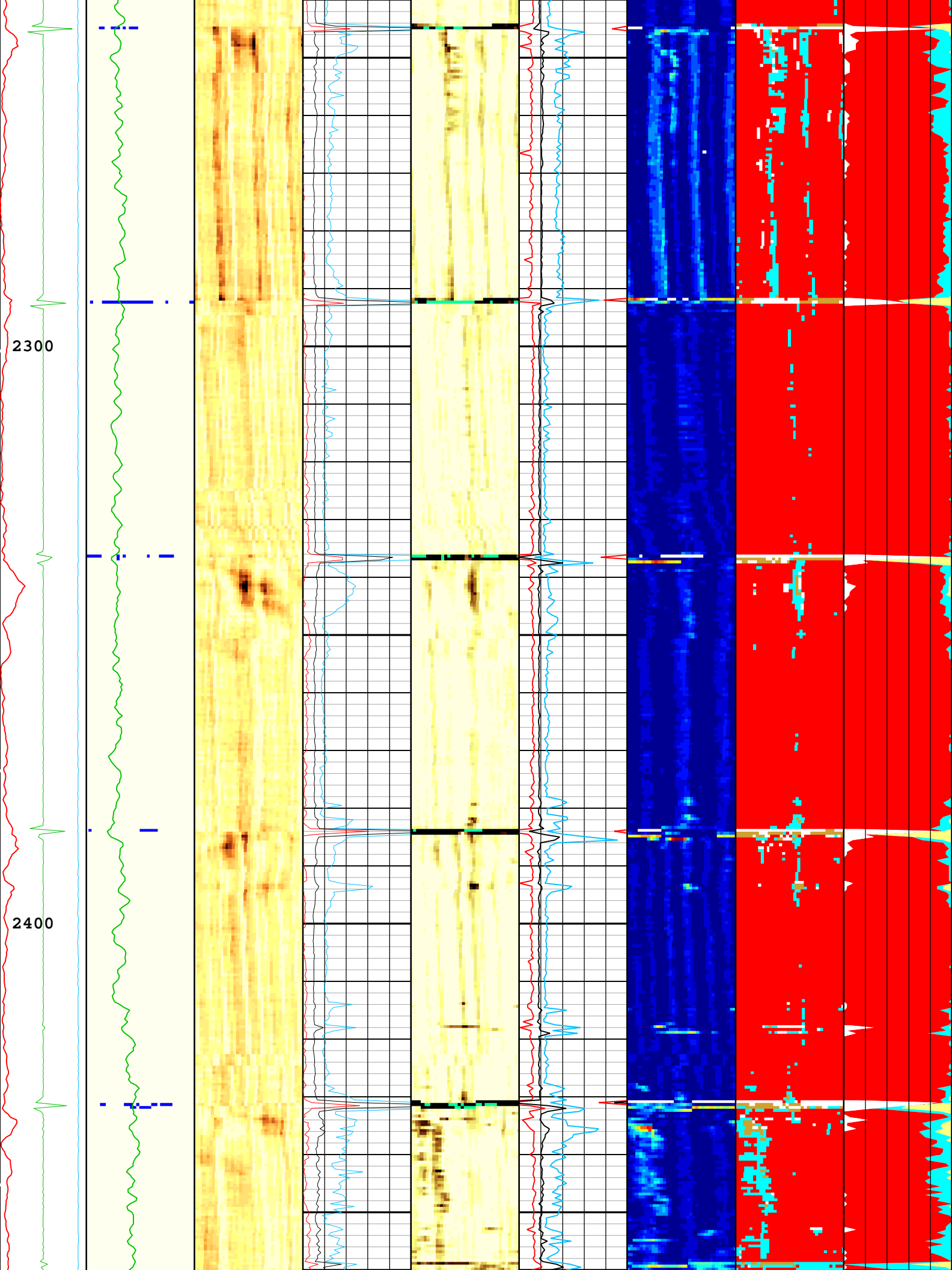




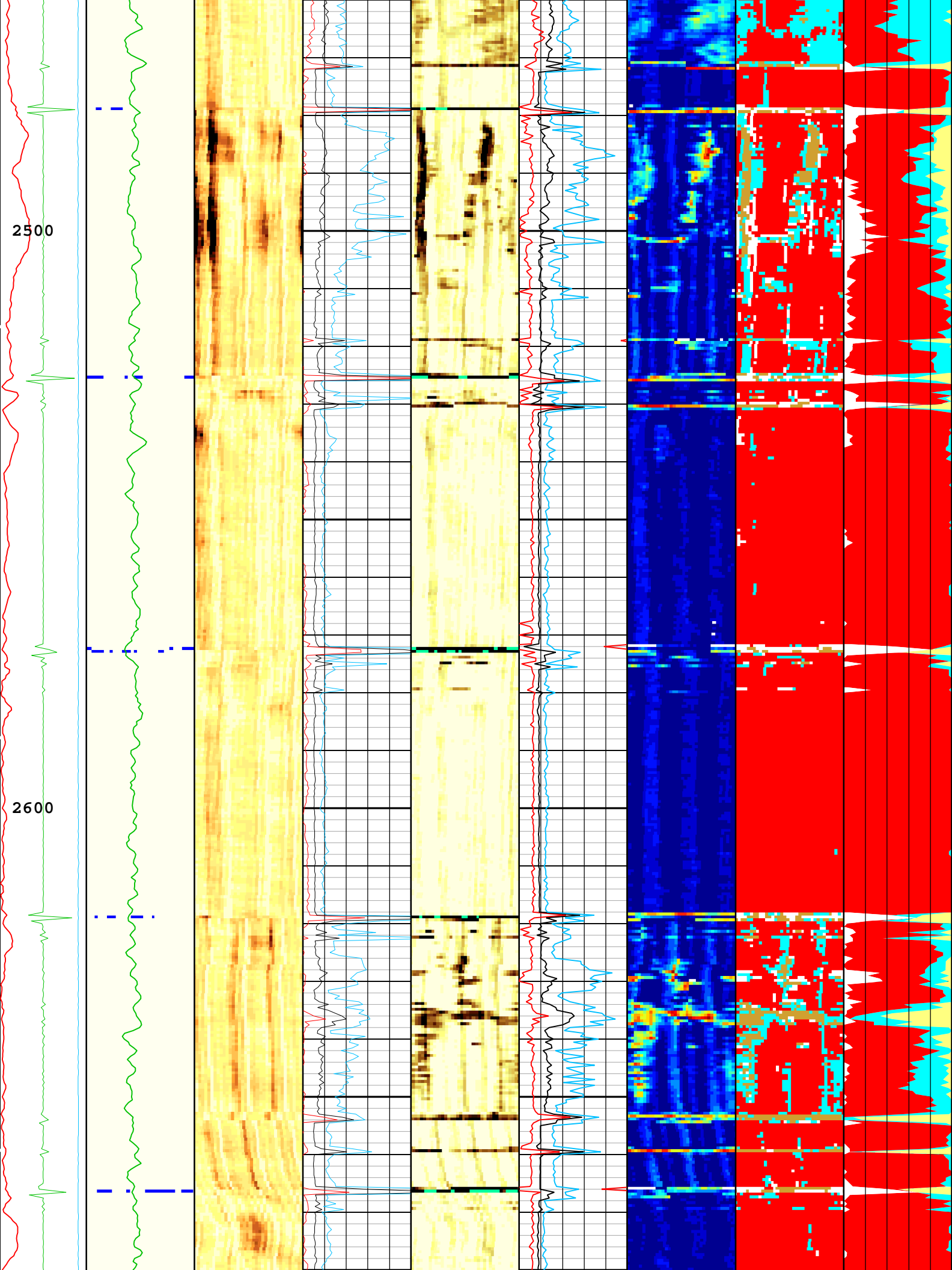


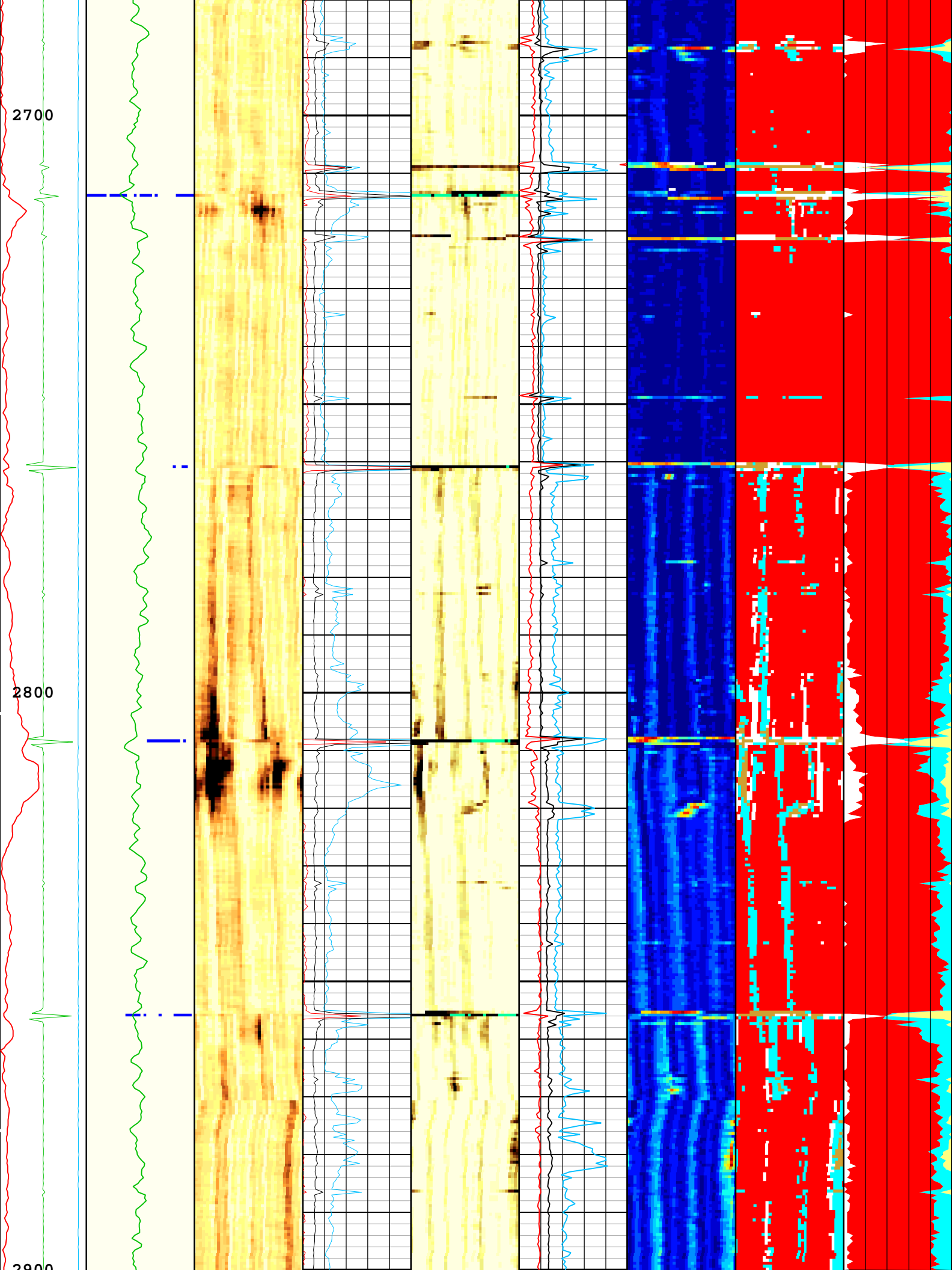


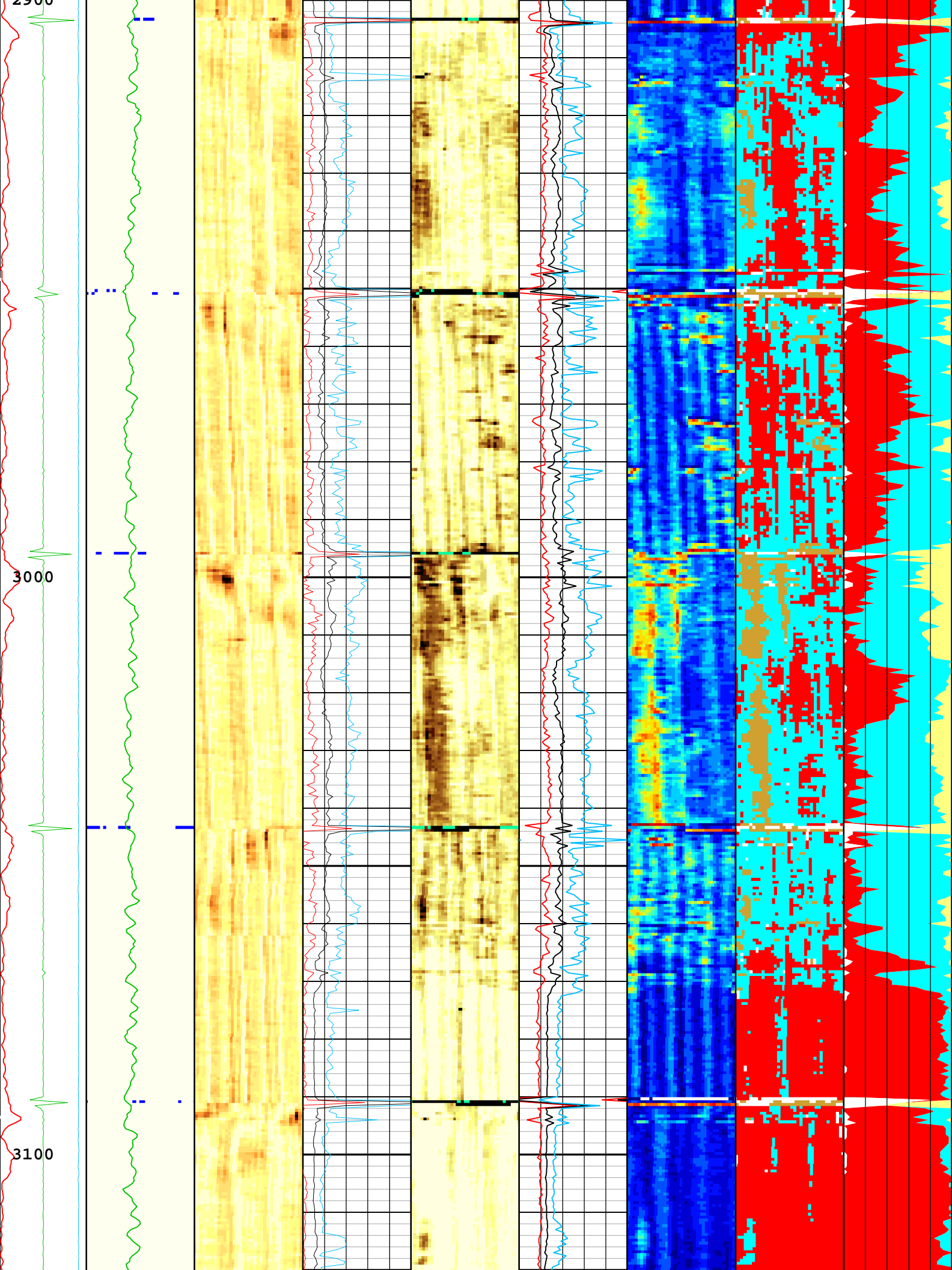


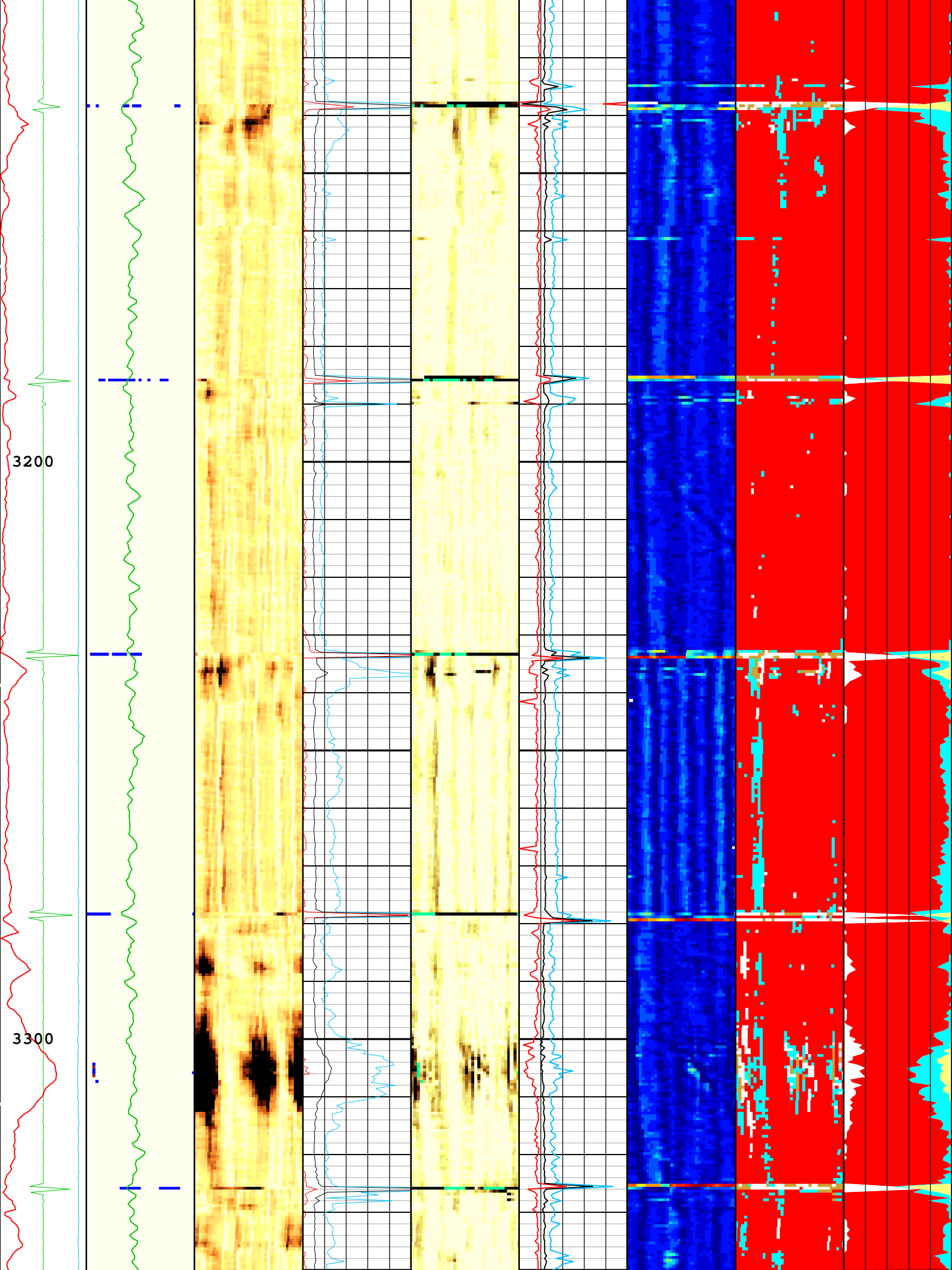


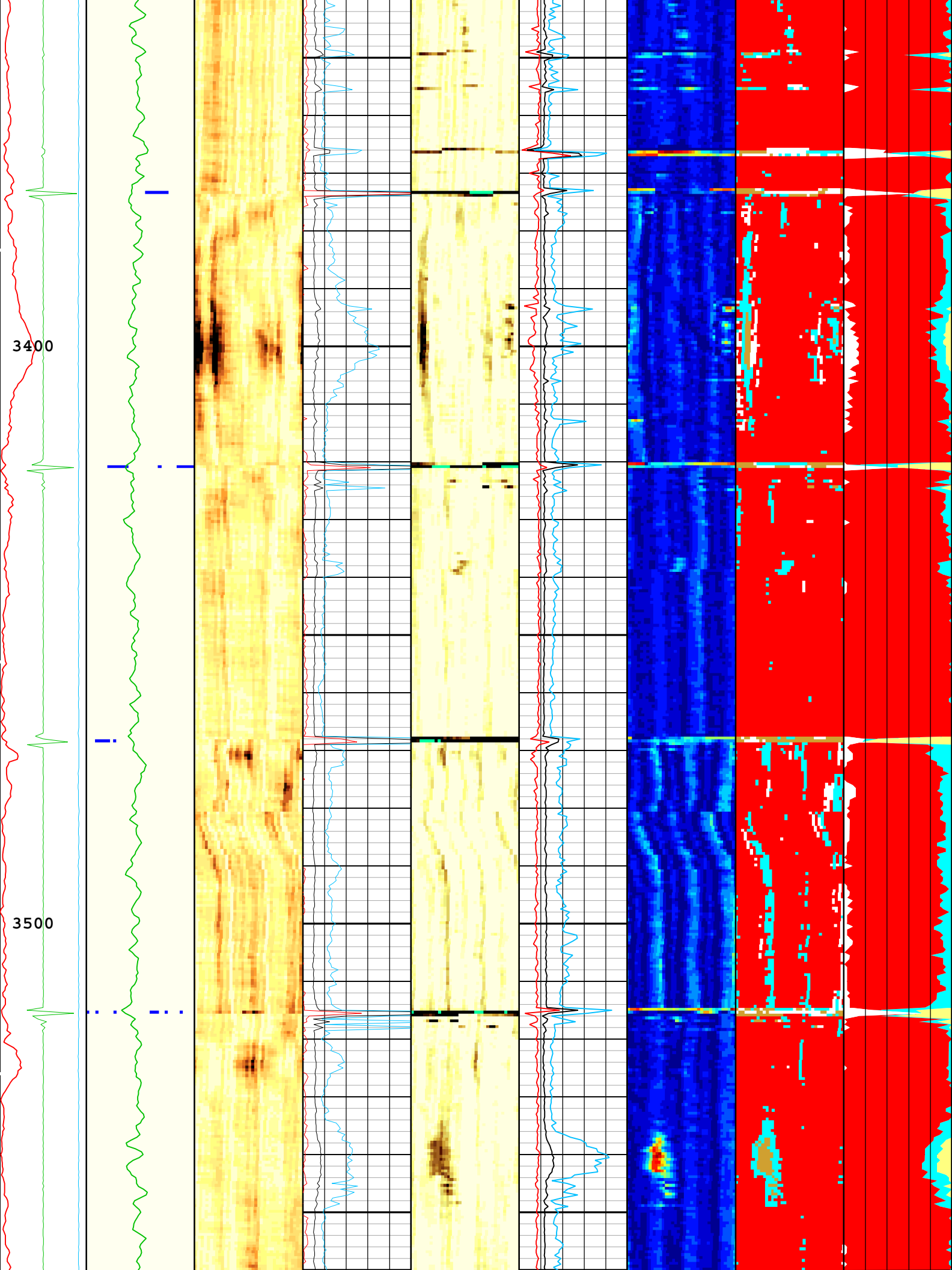


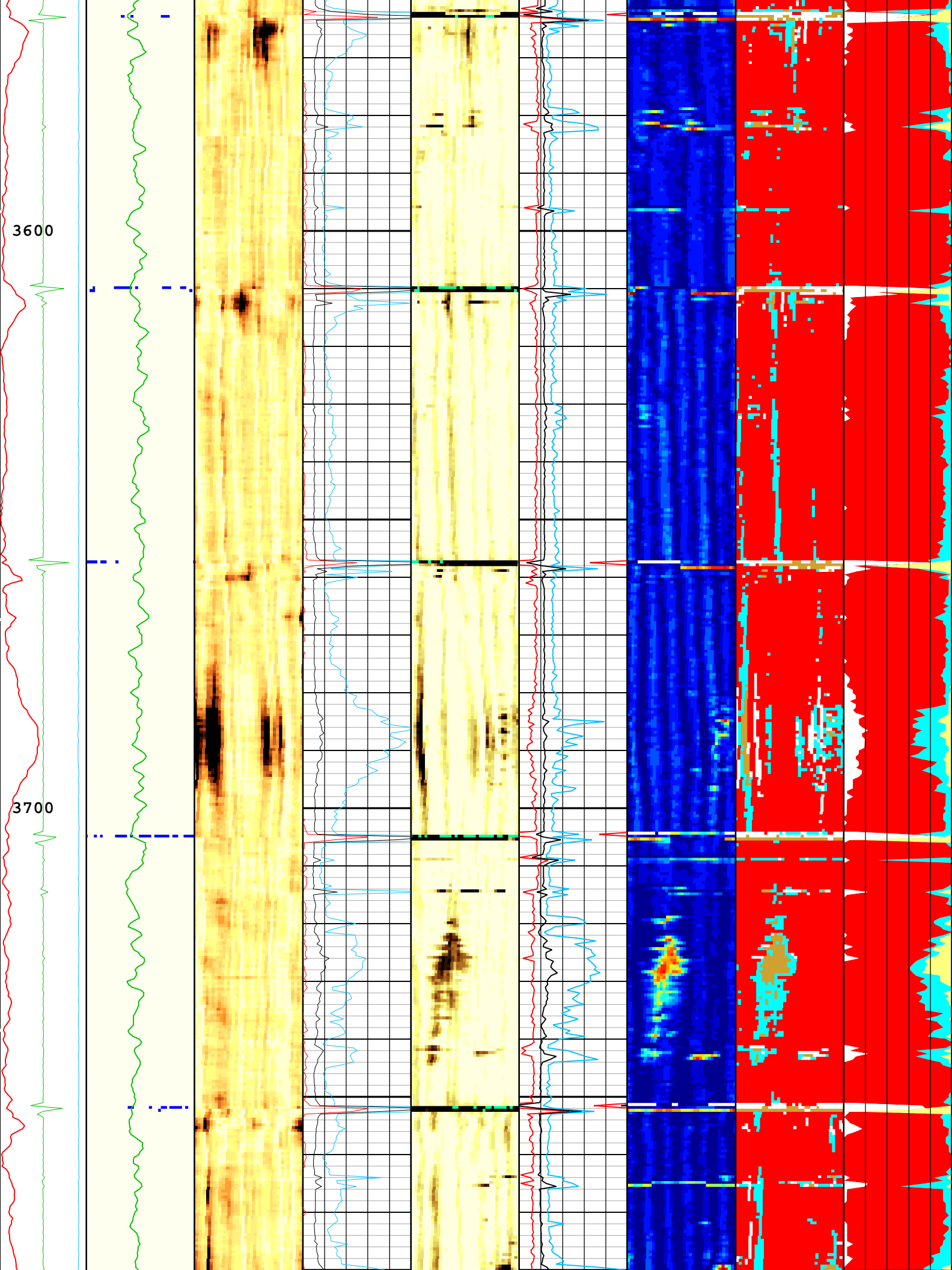




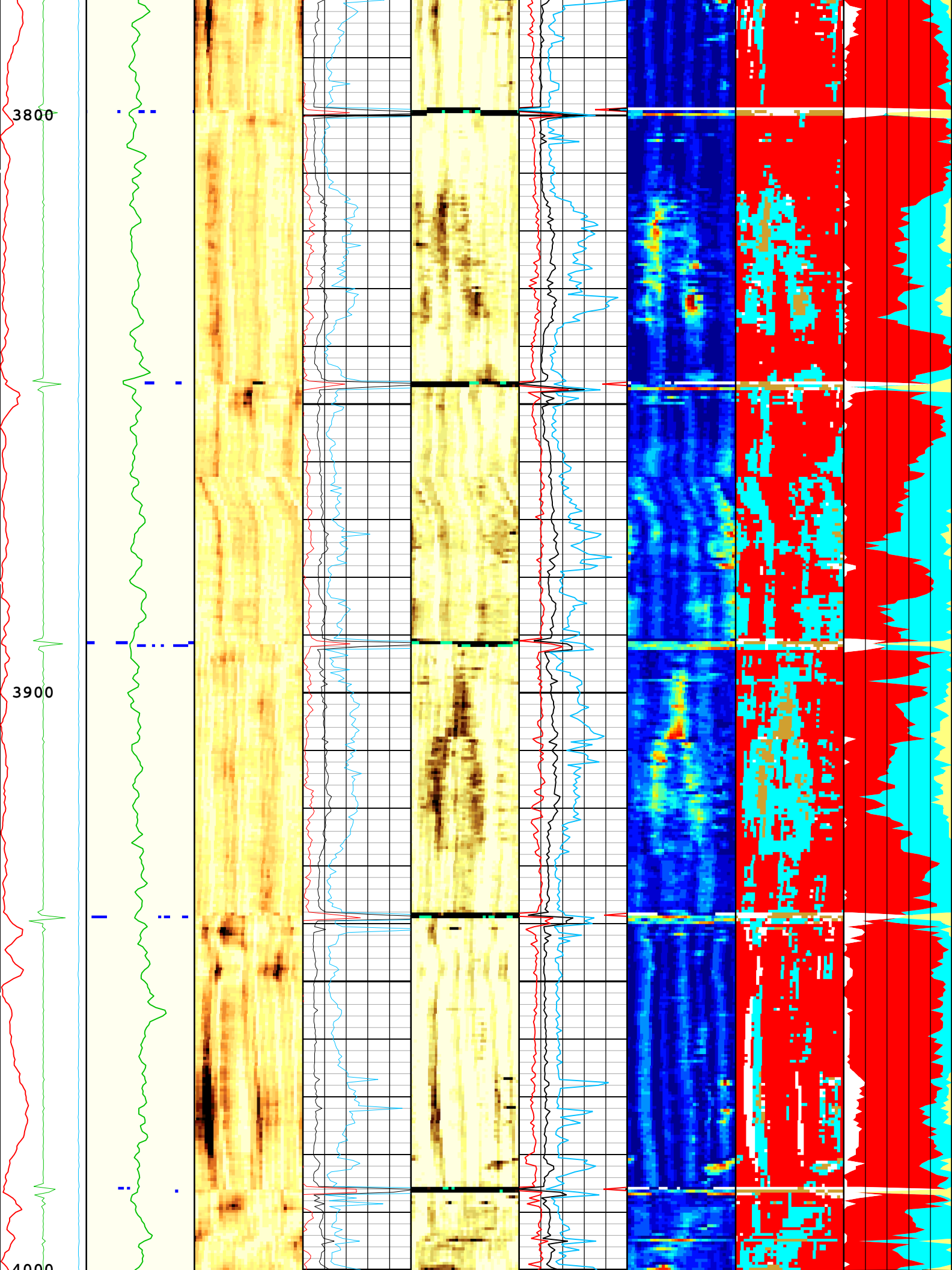


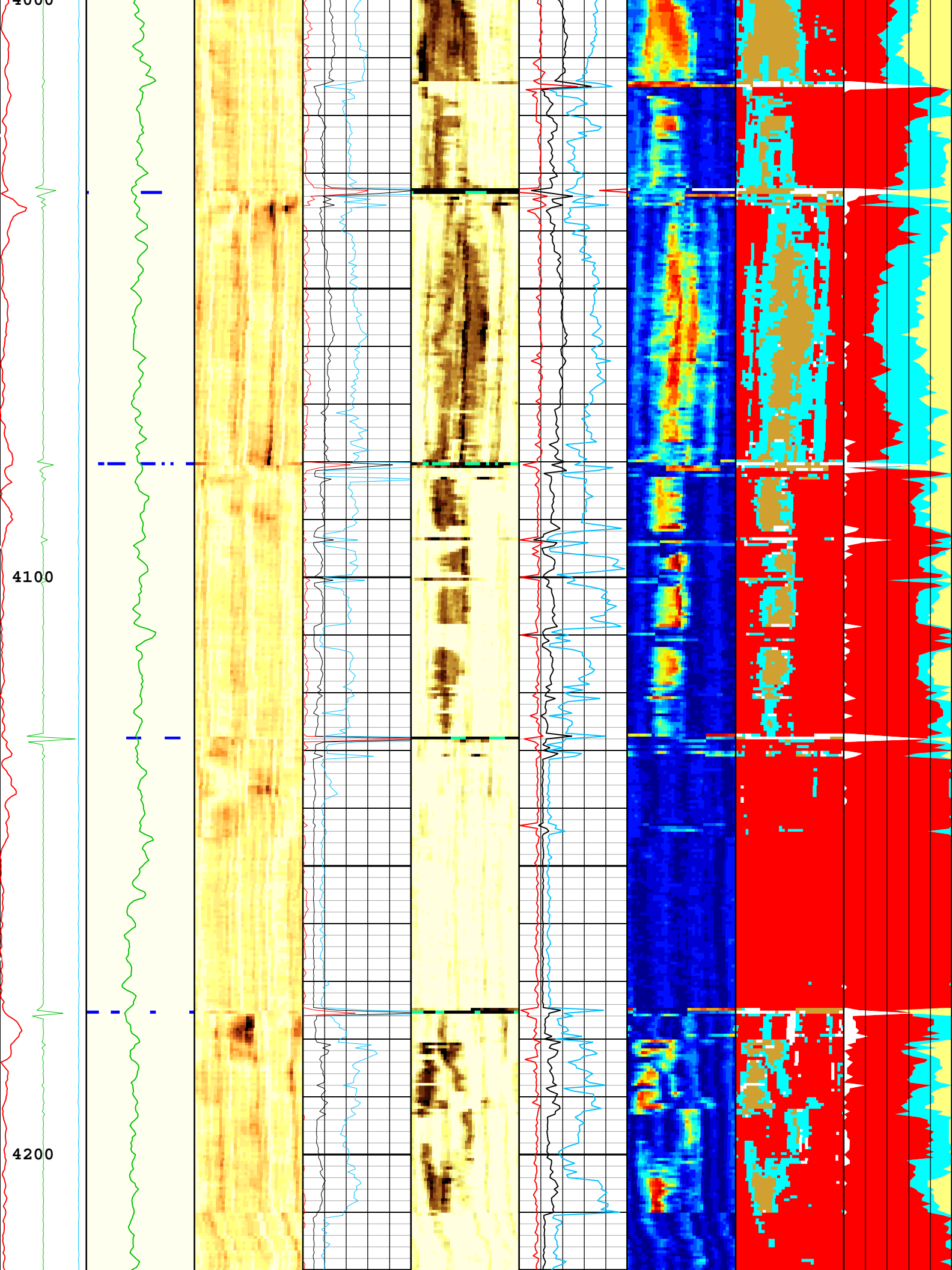




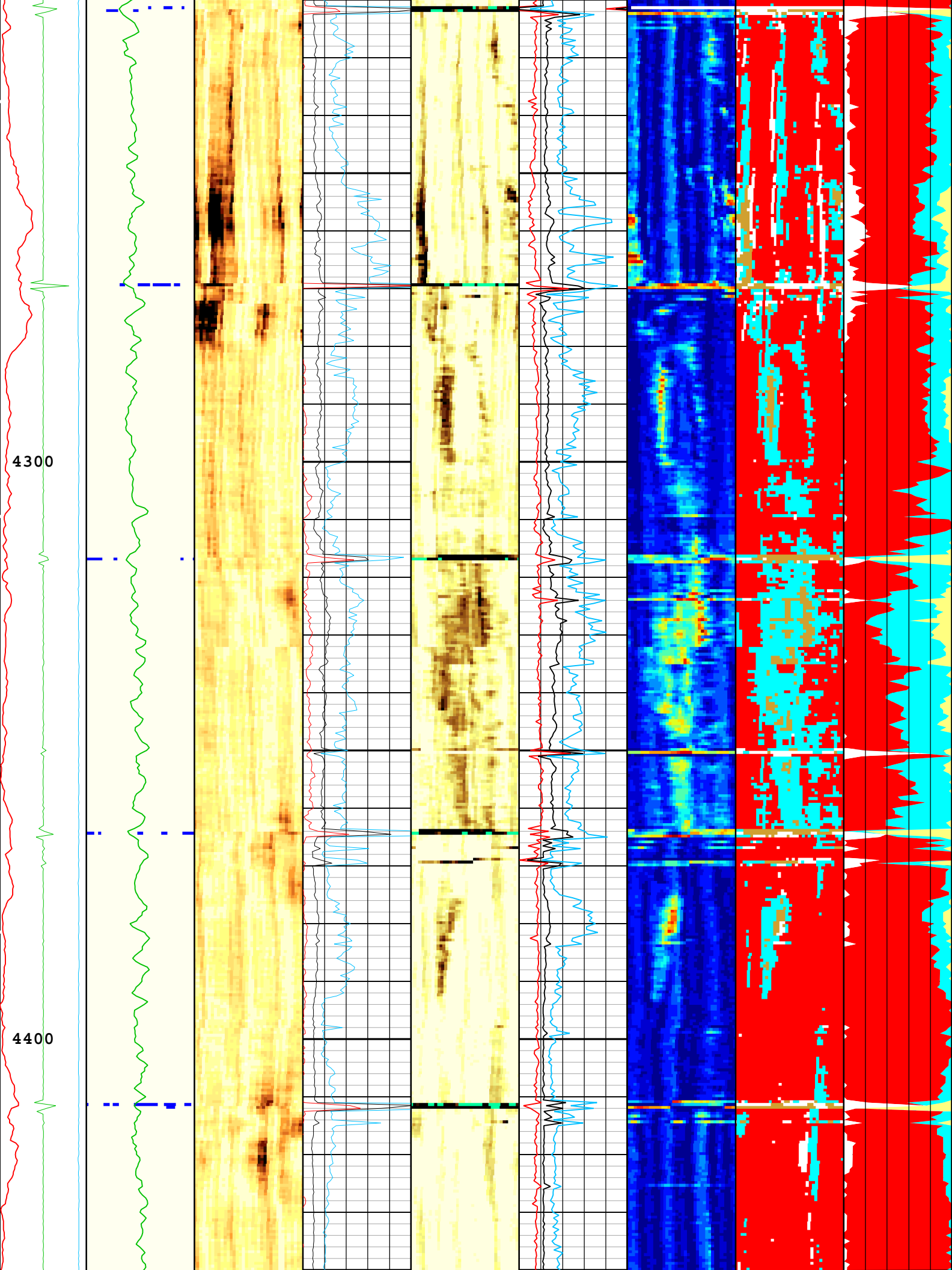


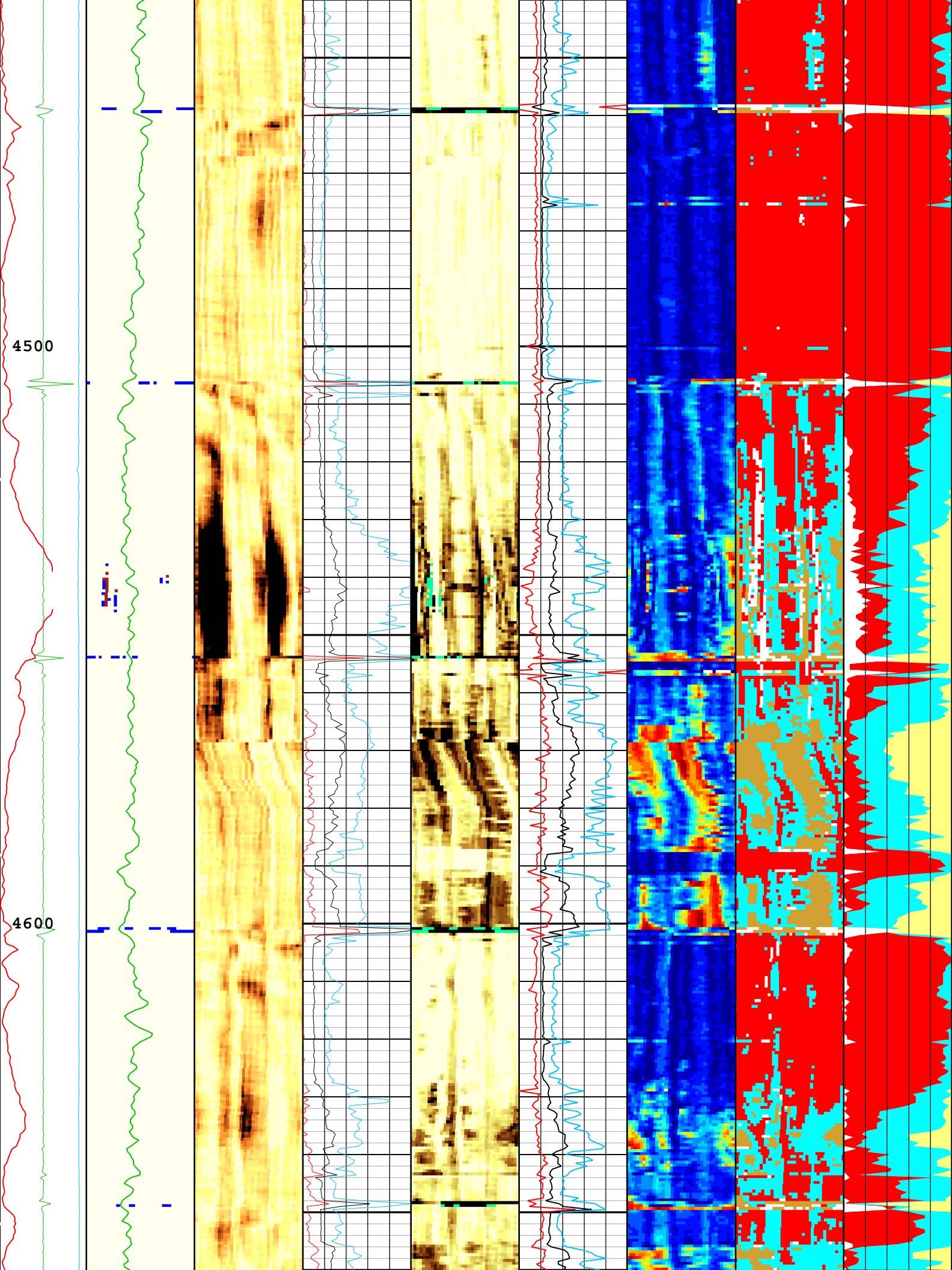


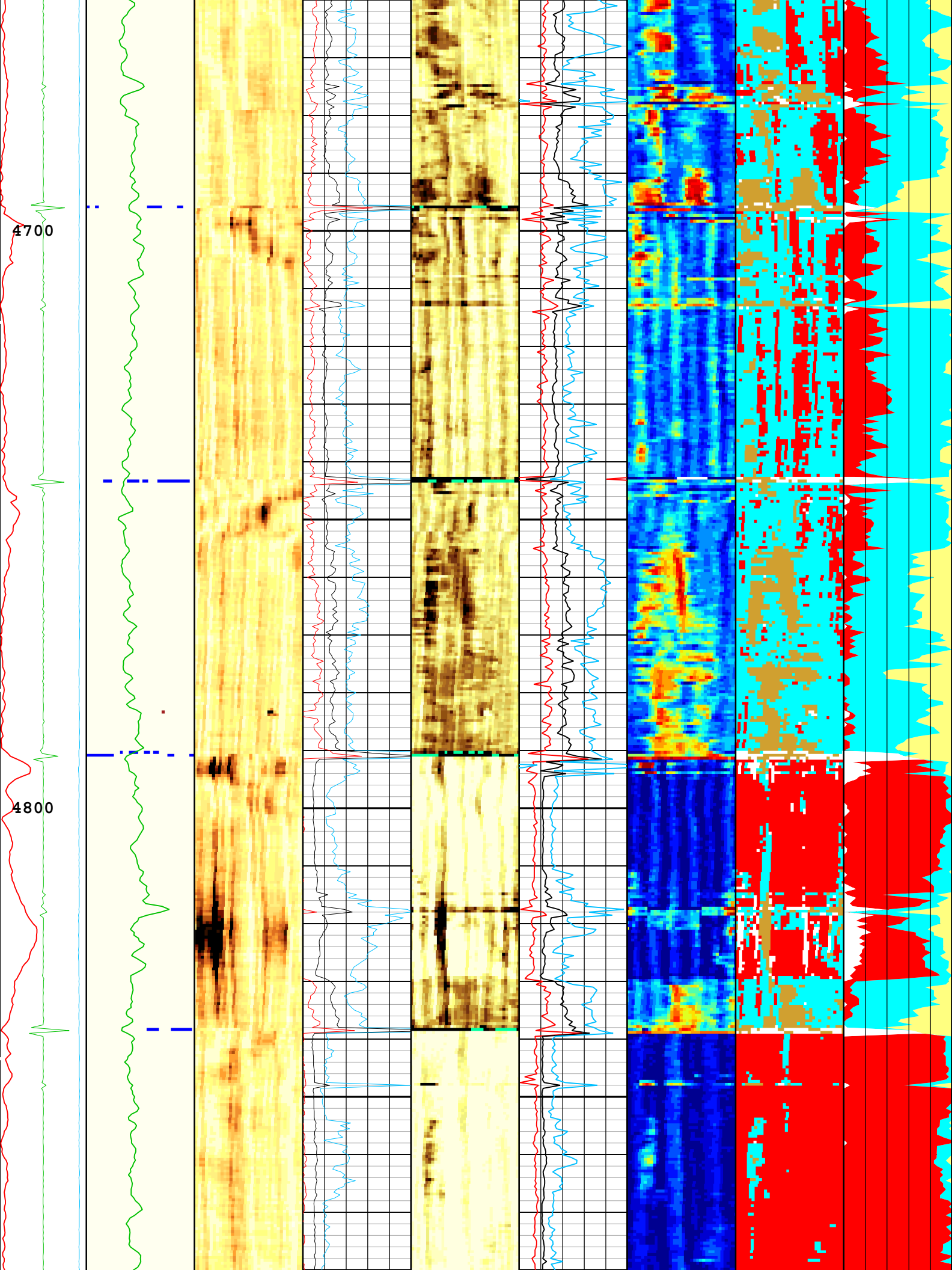


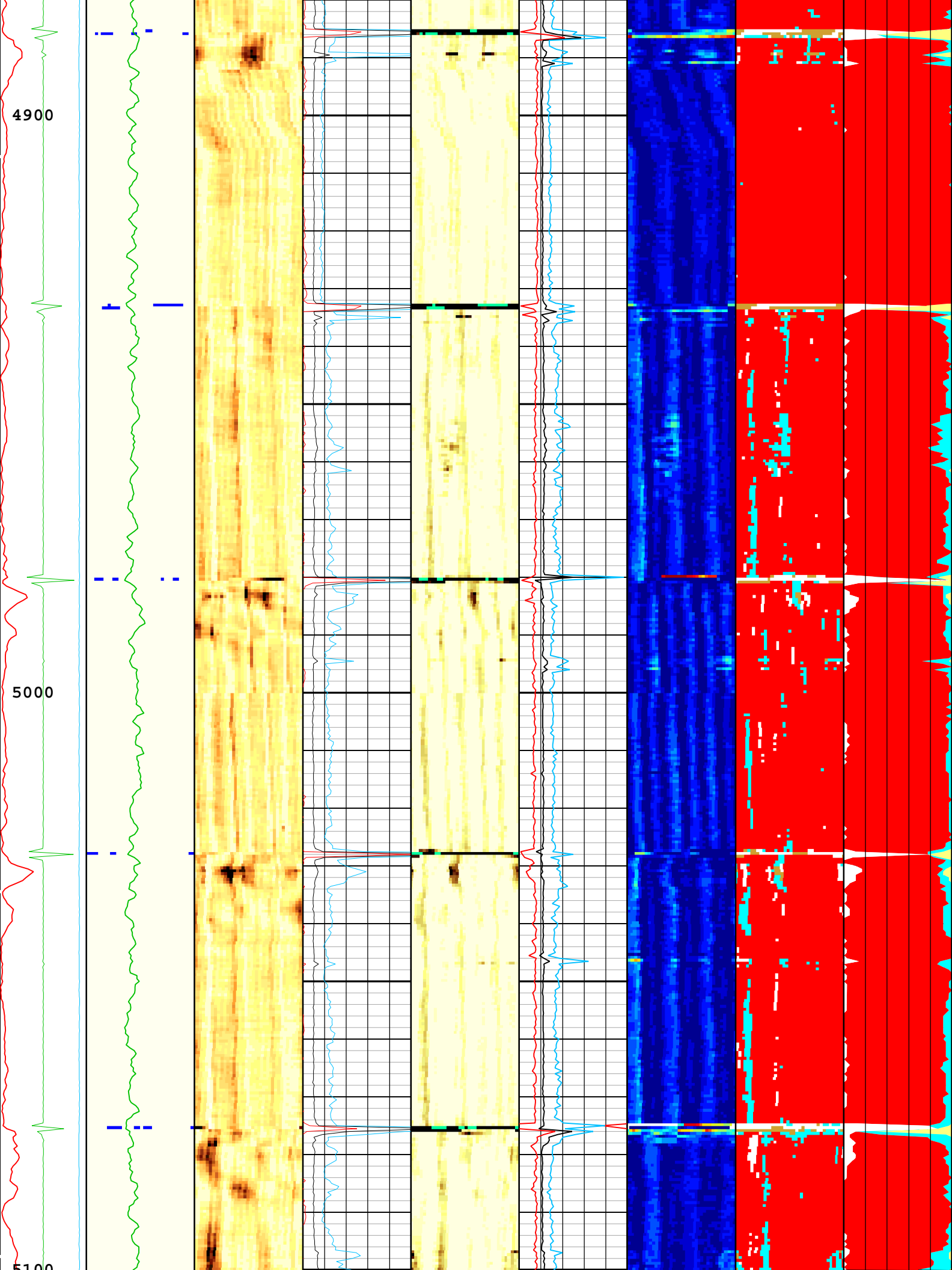


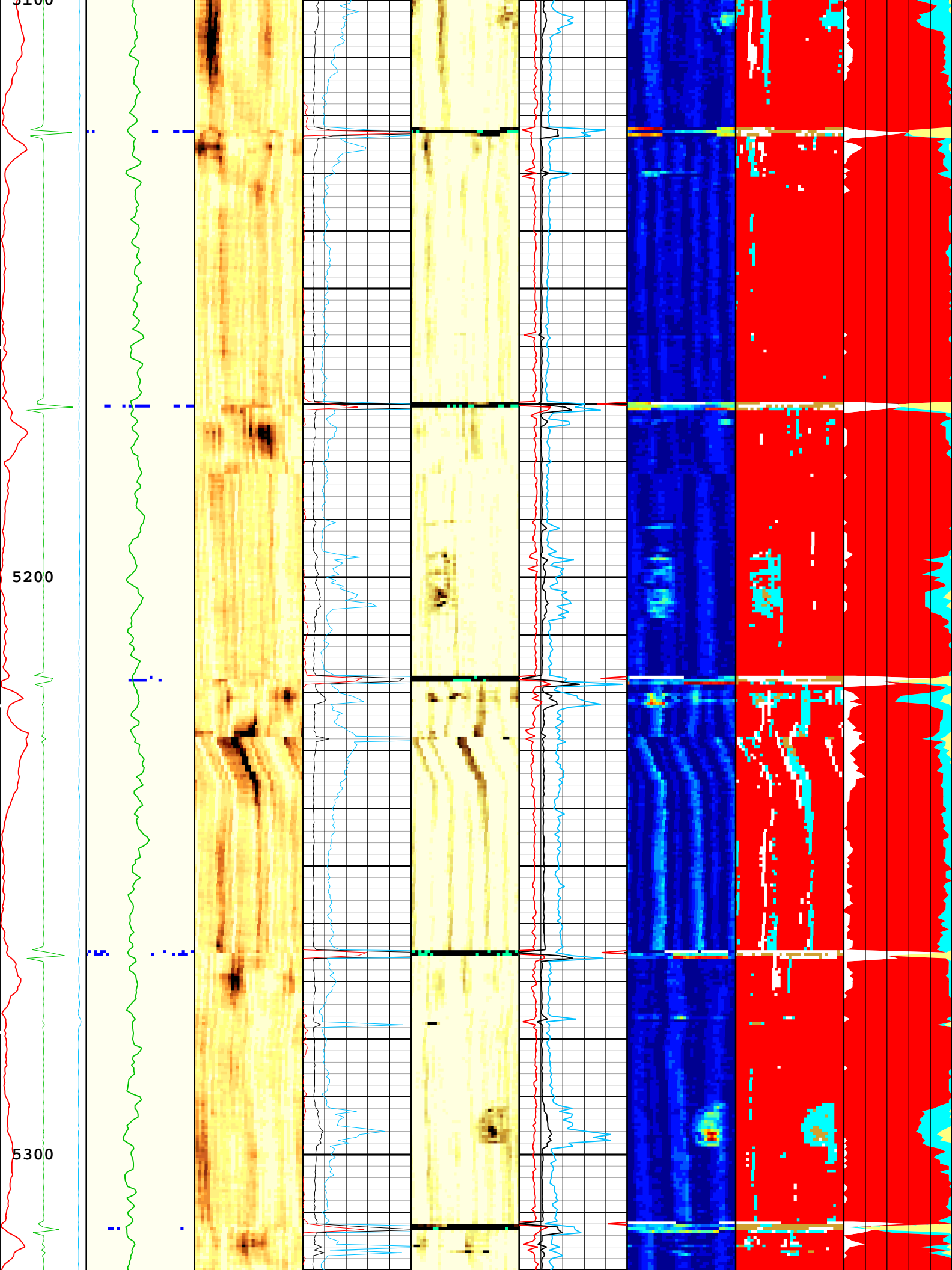


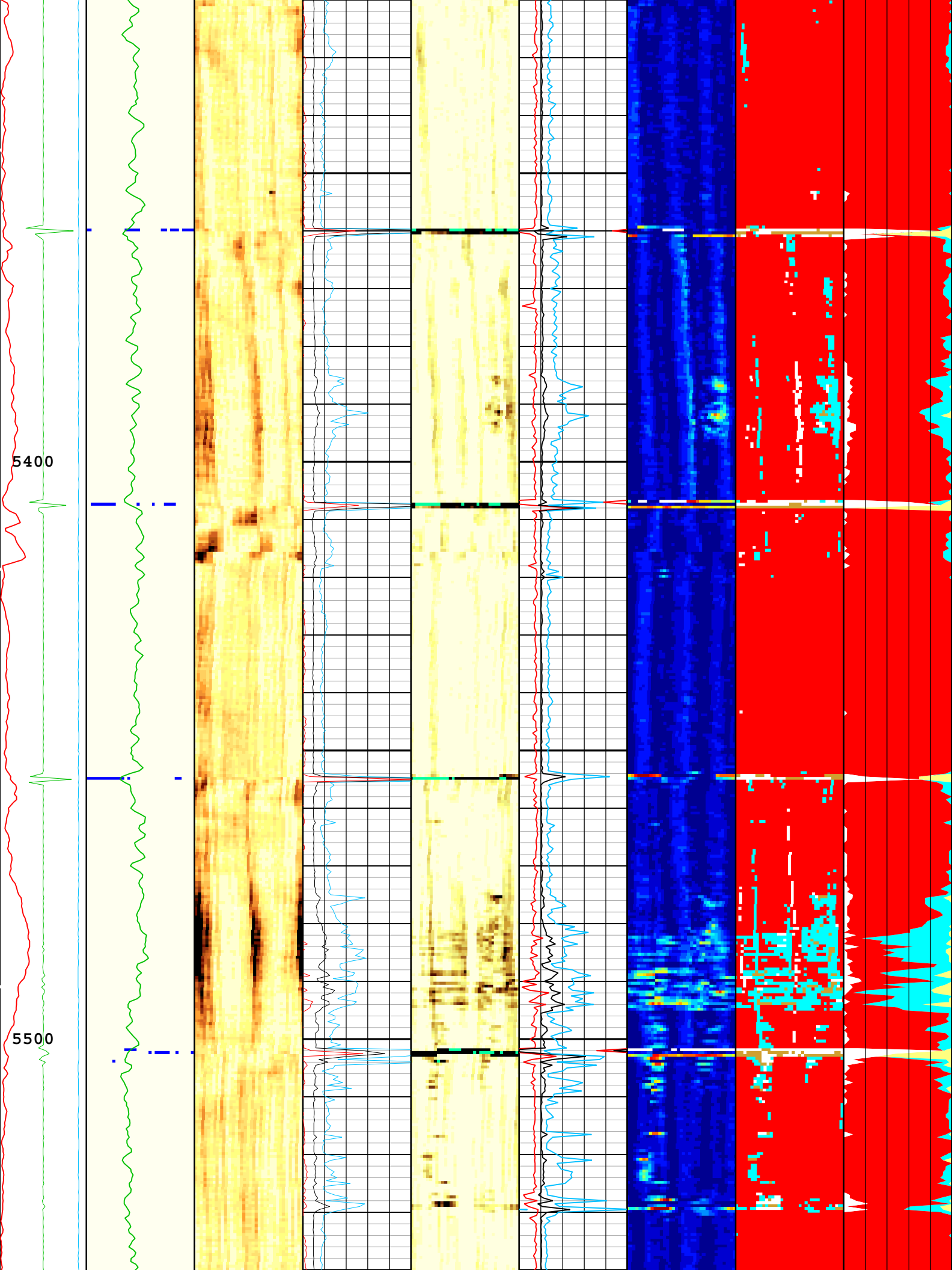




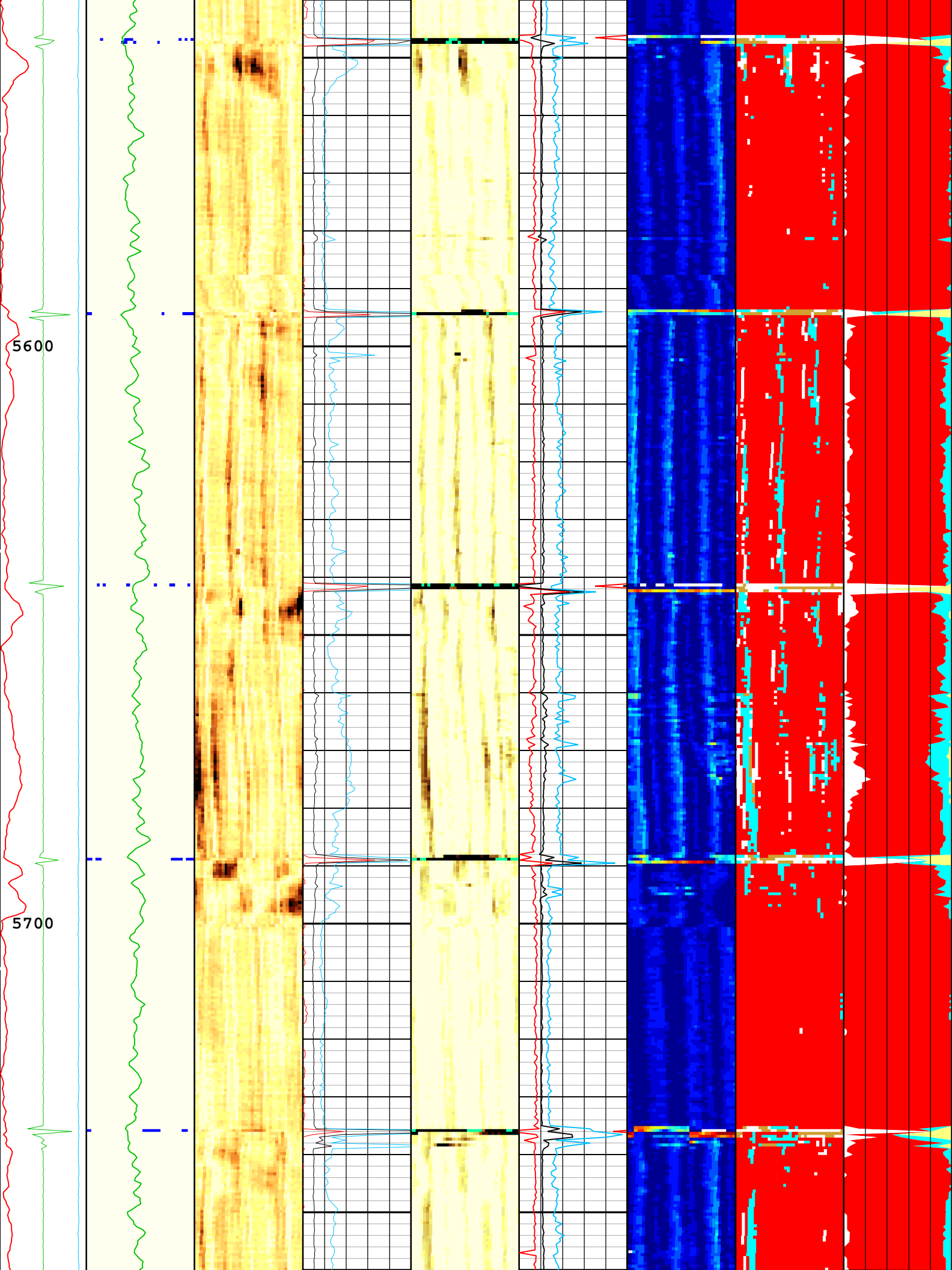


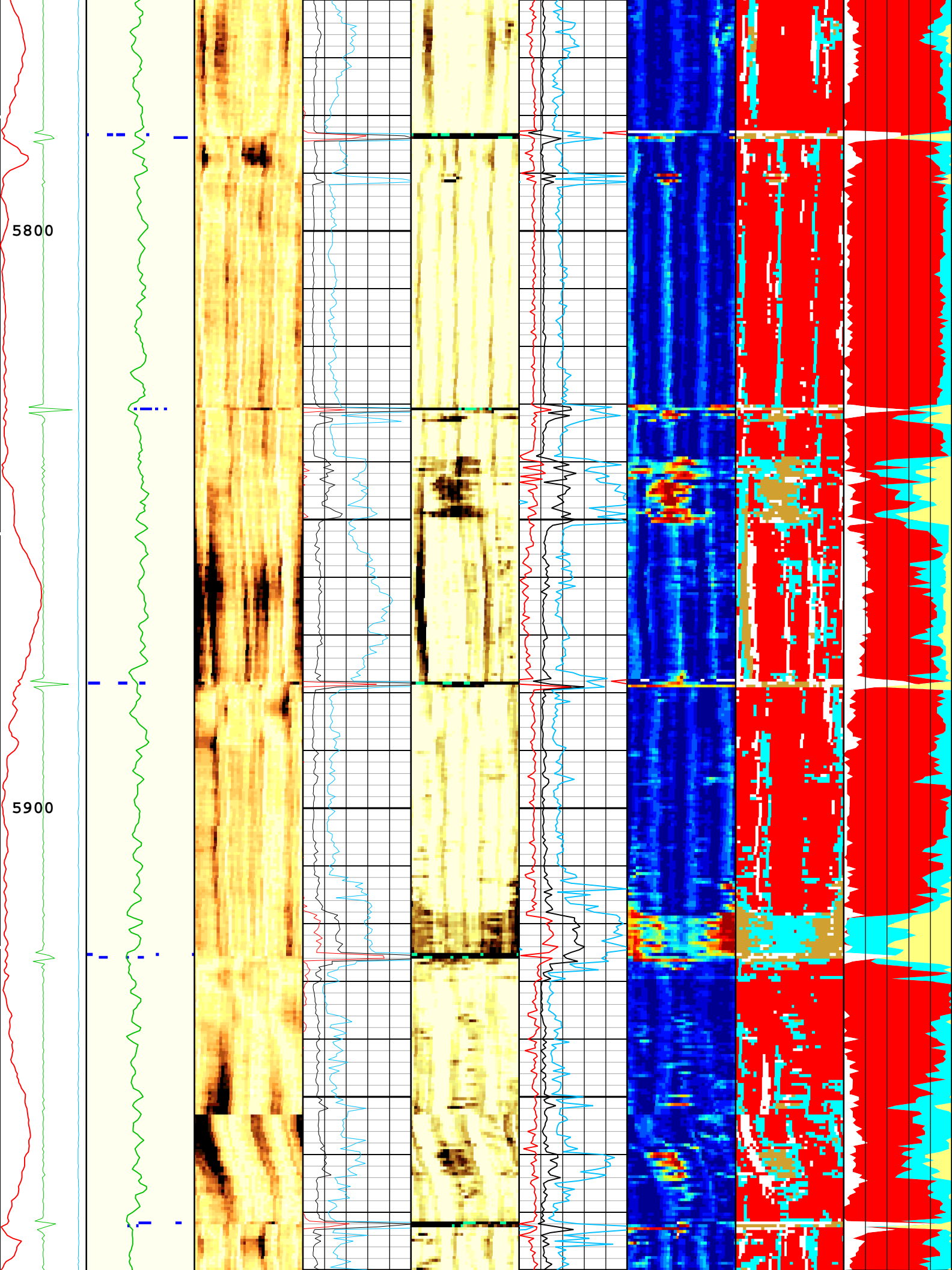




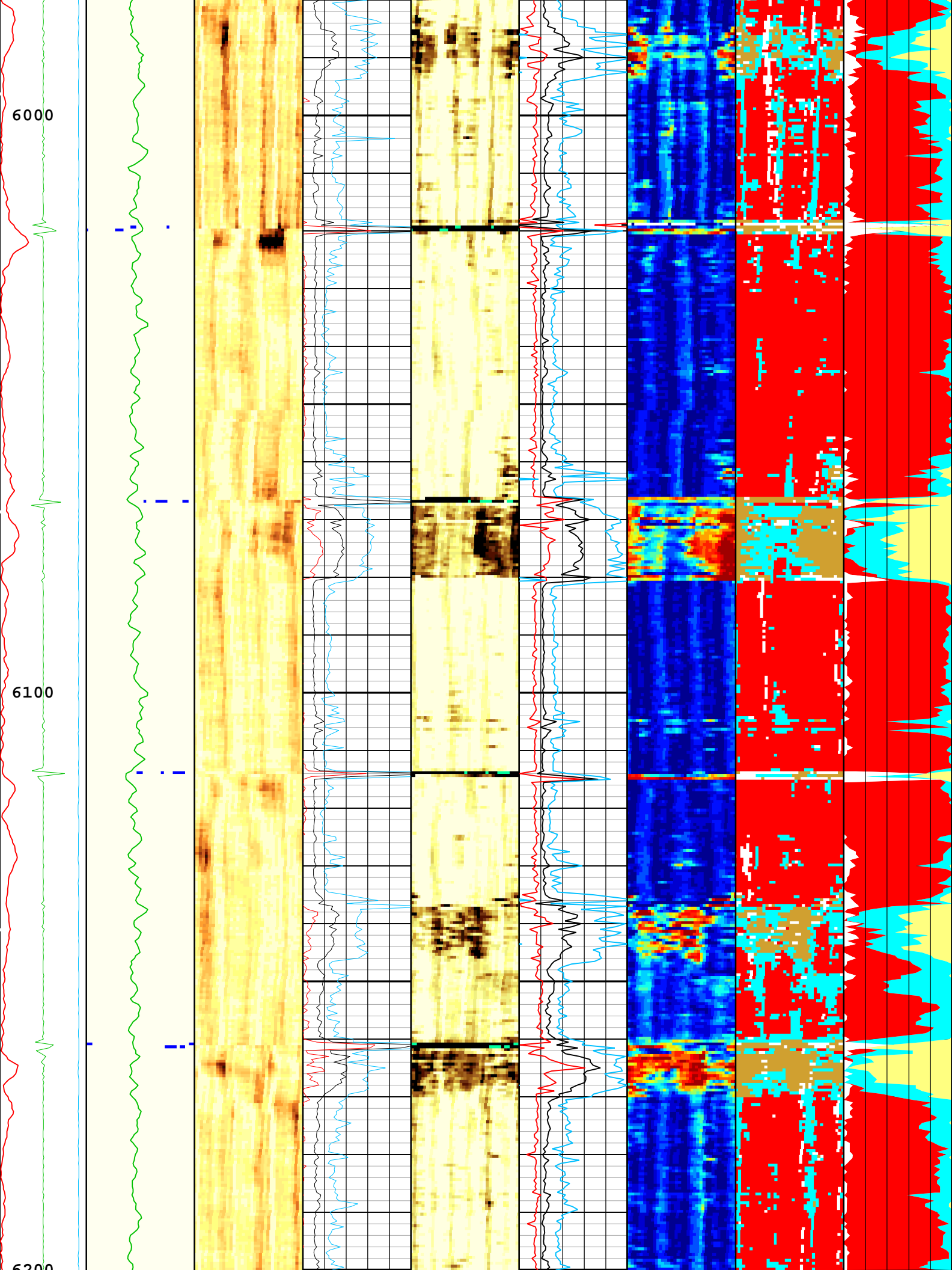


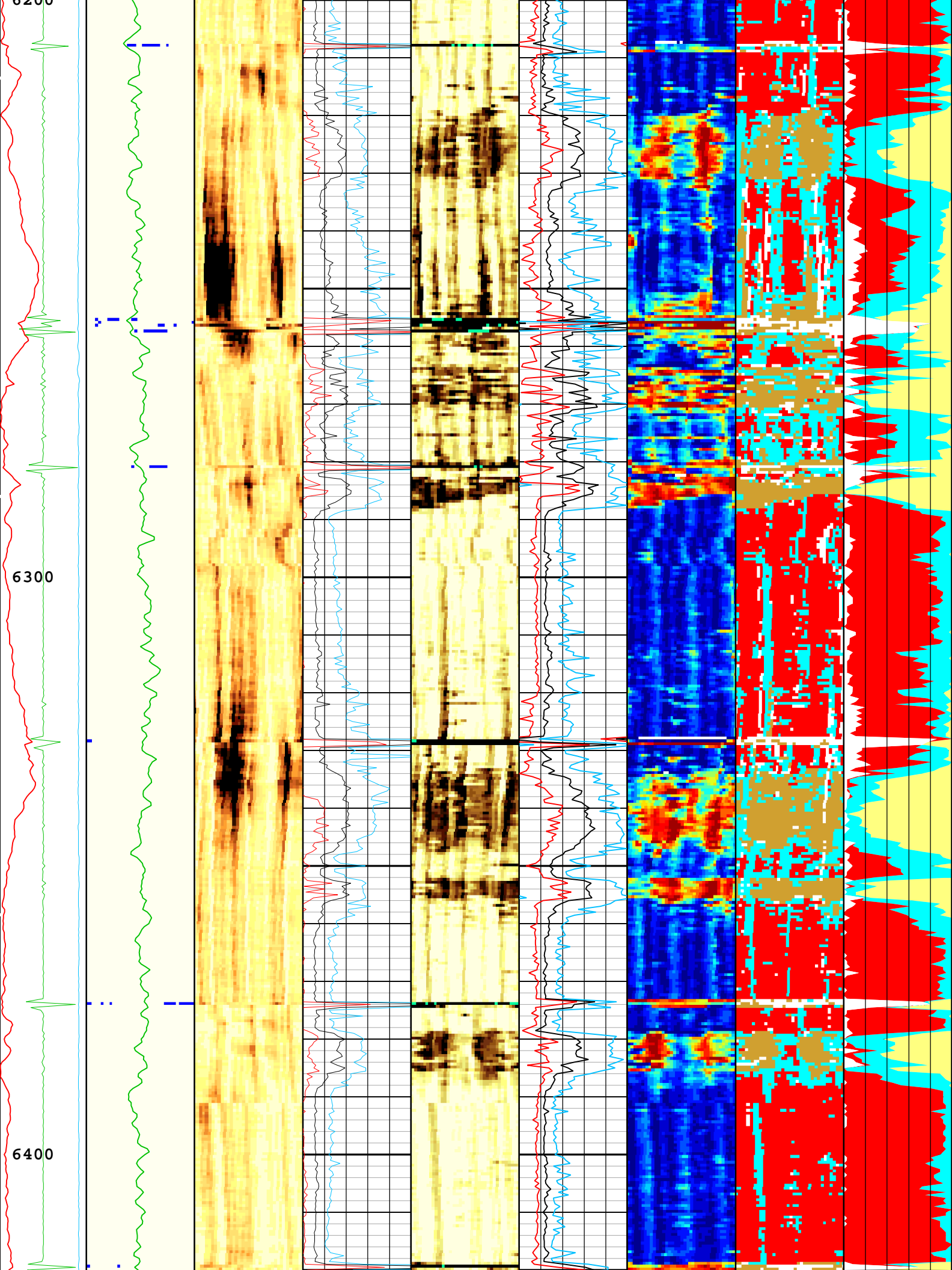


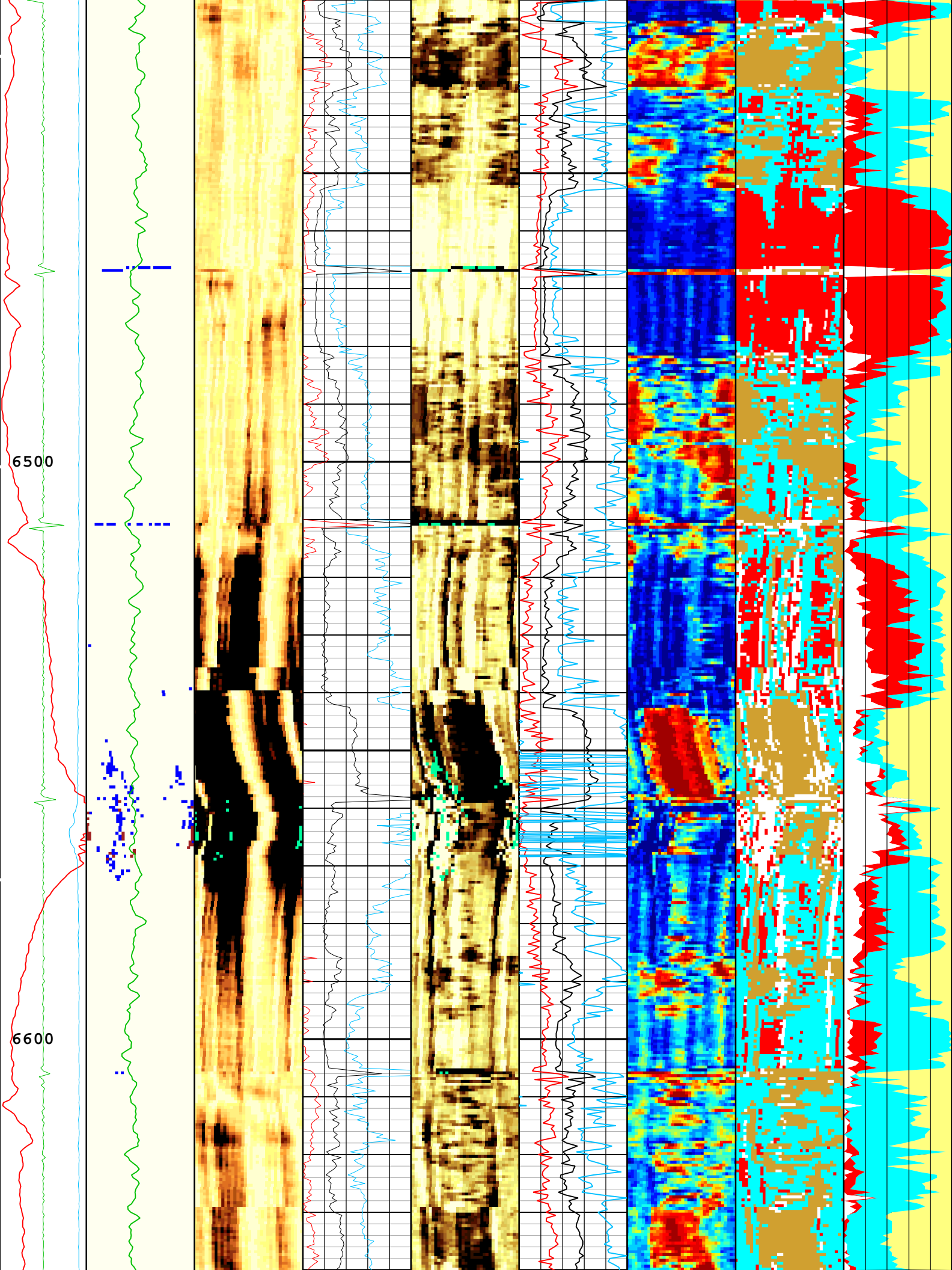


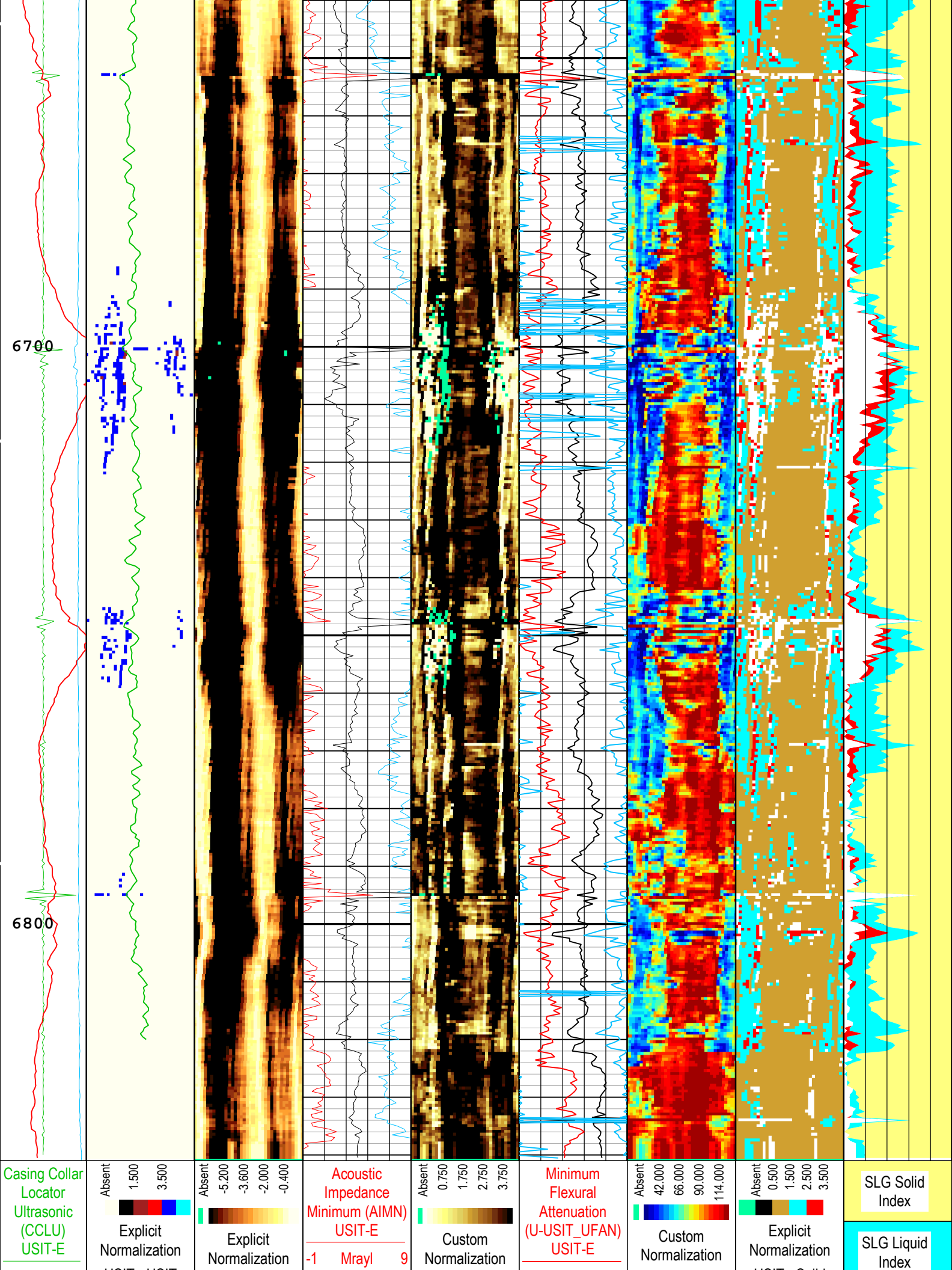












USIT - USIT Amplitude of Eccentering (ECCE) USIT-E 0 in 0.5	Processing Flags (UFLG) USIT-E Orientation: Top of Hole U L B R U	USIT - Amplitude of Wave (AWBK) USIT-E (dB) Orientation: Top of Hole U L B R U	Acoustic Impedance Average (AIAV) USIT-E -1 Mrayl 9	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl) Orientation: Top of Hole U L B R U	0 dB/m 150 Average Flexural Attenuation (U-USIT_UFAV) USIT-E 0 dB/m 150	USIT - Flexural Attenuation (UFAK) USIT-E (dB/m) Orientation: Top of Hole U L B R U	USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E Orientation: Top of Hole U L B R U	SLG Gas Index SLG White Point Index
Motor Revolution Speed (RSAV) USIT-E 6 c/s 7.5	USIT Processing Flags (UFLG[0]) USIT-E 1 5		Acoustic Impedance Maximum (AIMX) USIT-E -1 Mrayl 9		Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E 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: 27-Nov-2018 00:25:56								

Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BAR(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	12139	ft
CDEN	Cement Density	USIT-E	12	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	204	us/ft
FD	Fluid Density	USIT-E	10.7	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	-1.18	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	FreePipe Norm.	
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_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
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	1.75	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-6.69	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	1.75	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	13.5	55	2409
BS	8.5	2409	6841
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	100	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	
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	119.48	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	75.4	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	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
VRES
WINB
WINE

## Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
U-USIT_UFWE	189.89	24-Nov-2018 08:18:22	24-Nov-2018 08:21:01	6841.97	6715.02
U-USIT_UFWE	204.62	24-Nov-2018 08:21:01	24-Nov-2018 09:55:53	6715.02	55.52
U-USIT_UNWE	165.57	24-Nov-2018 08:18:22	24-Nov-2018 08:20:58	6841.97	6718.22
U-USIT_UNWE	170.69	24-Nov-2018 08:20:58	24-Nov-2018 09:55:53	6718.22	55.52
WINB	31.37	24-Nov-2018 08:18:22	24-Nov-2018 08:20:55	6841.97	6722.42
WINB	27.54	24-Nov-2018 08:20:55	24-Nov-2018 09:55:53	6722.42	55.52
WINE	87.62	24-Nov-2018 08:18:22	24-Nov-2018 08:19:16	6841.97	6835.13
WINE	81.52	24-Nov-2018 08:19:16	24-Nov-2018 09:55:53	6835.13	55.52

All depth are at tool zero.

# One

## IBC SLG Composite

## Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	55.52 ft	6841.97 ft	24-Nov-2018 8:18:22 AM	24-Nov-2018 9:55:53 AM	ON	7.60 ft	Yes

All depths are referenced to toolstring zero

## Log






Company:Crestone Peak Resources Operating LLC      Well:Melbon Ranch 4I-17H-M265

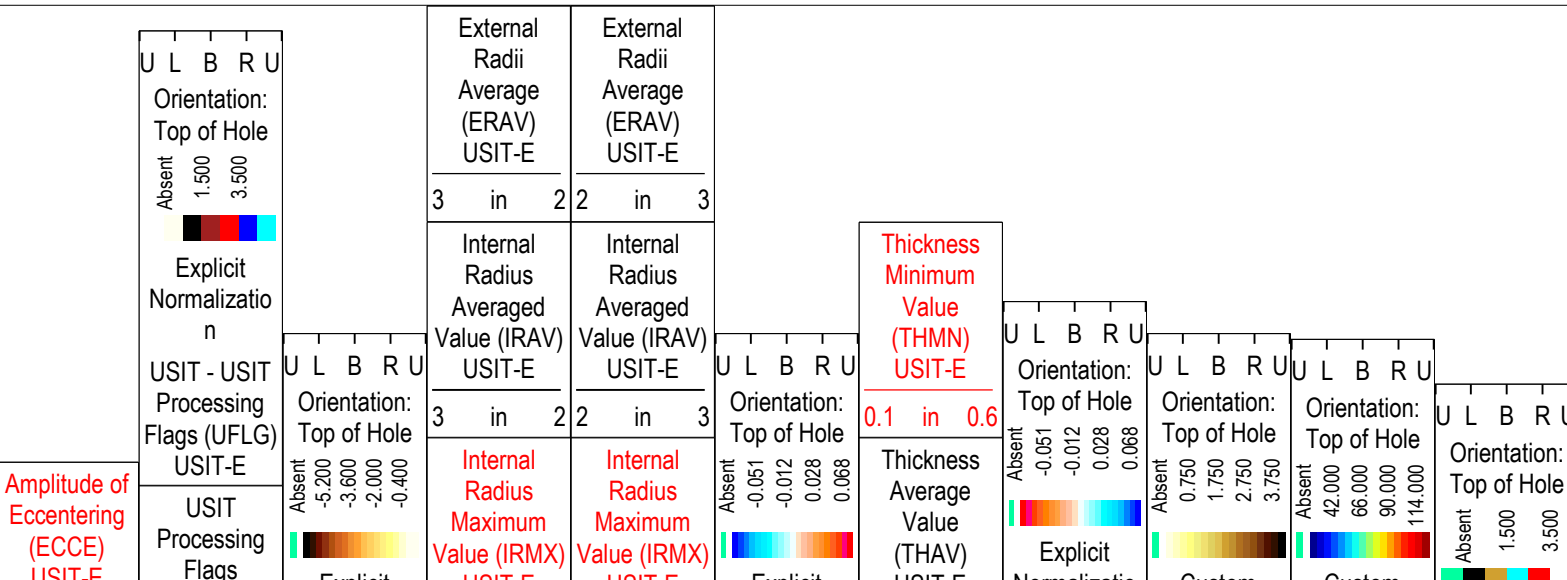
One: Log[3]:Up:S017

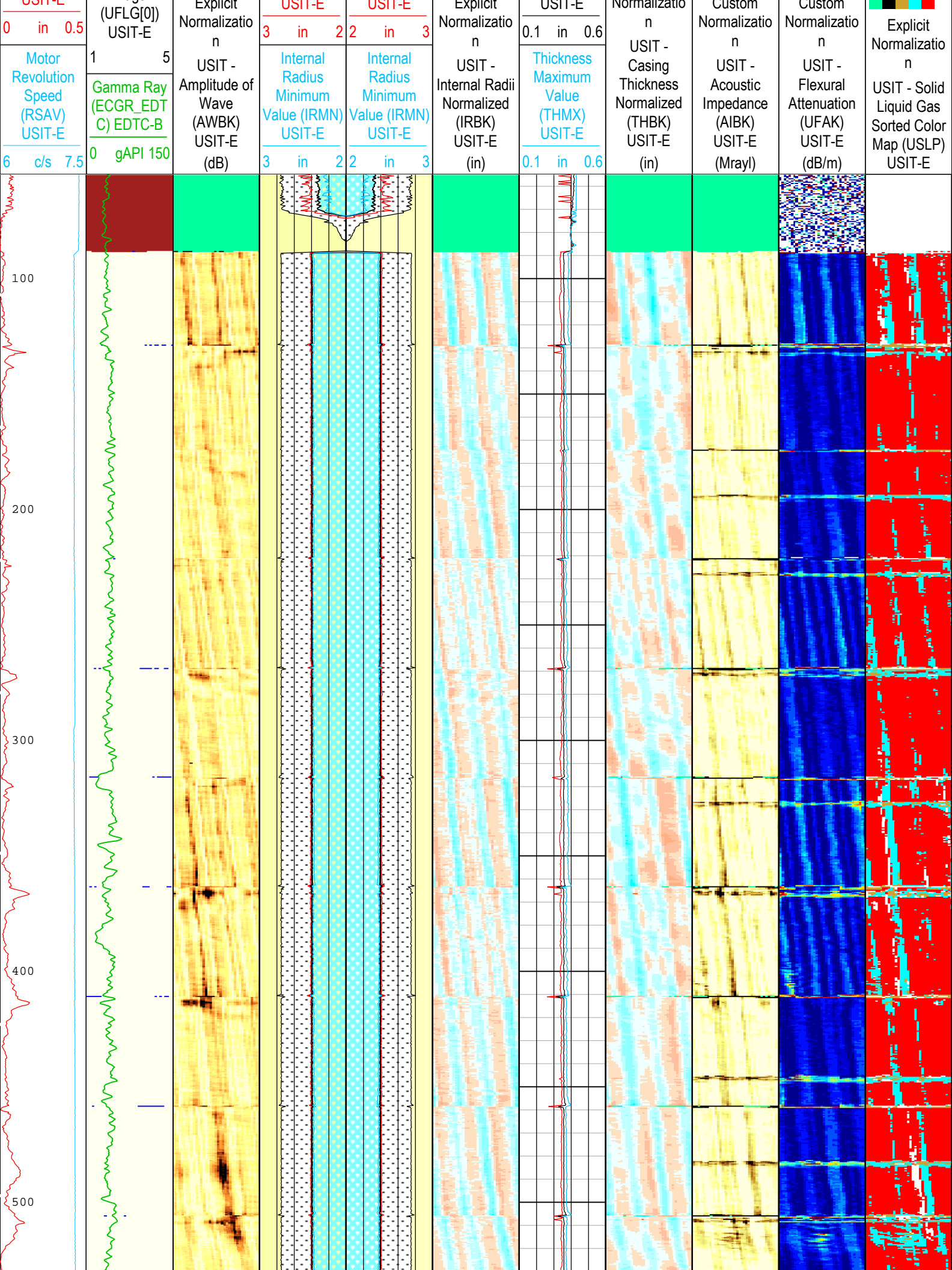
Description: USI IBC SLG Composite    Format: Log ( IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 27-Nov-2018 00:26:09

TIME\_1900 - Time Marked every 60.00 (s)

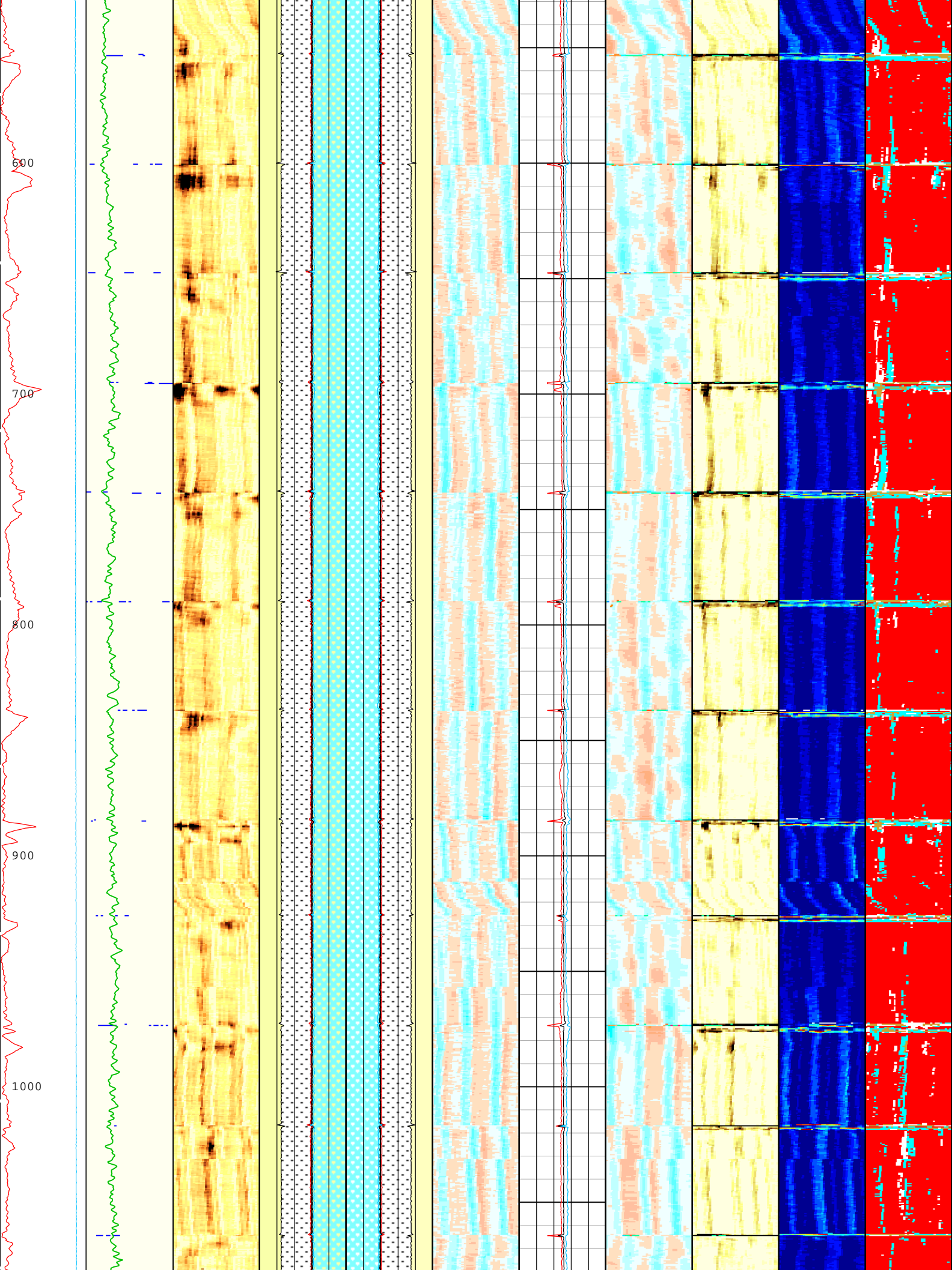
USIT Processing Flags (UFLG[0]) USIT-E

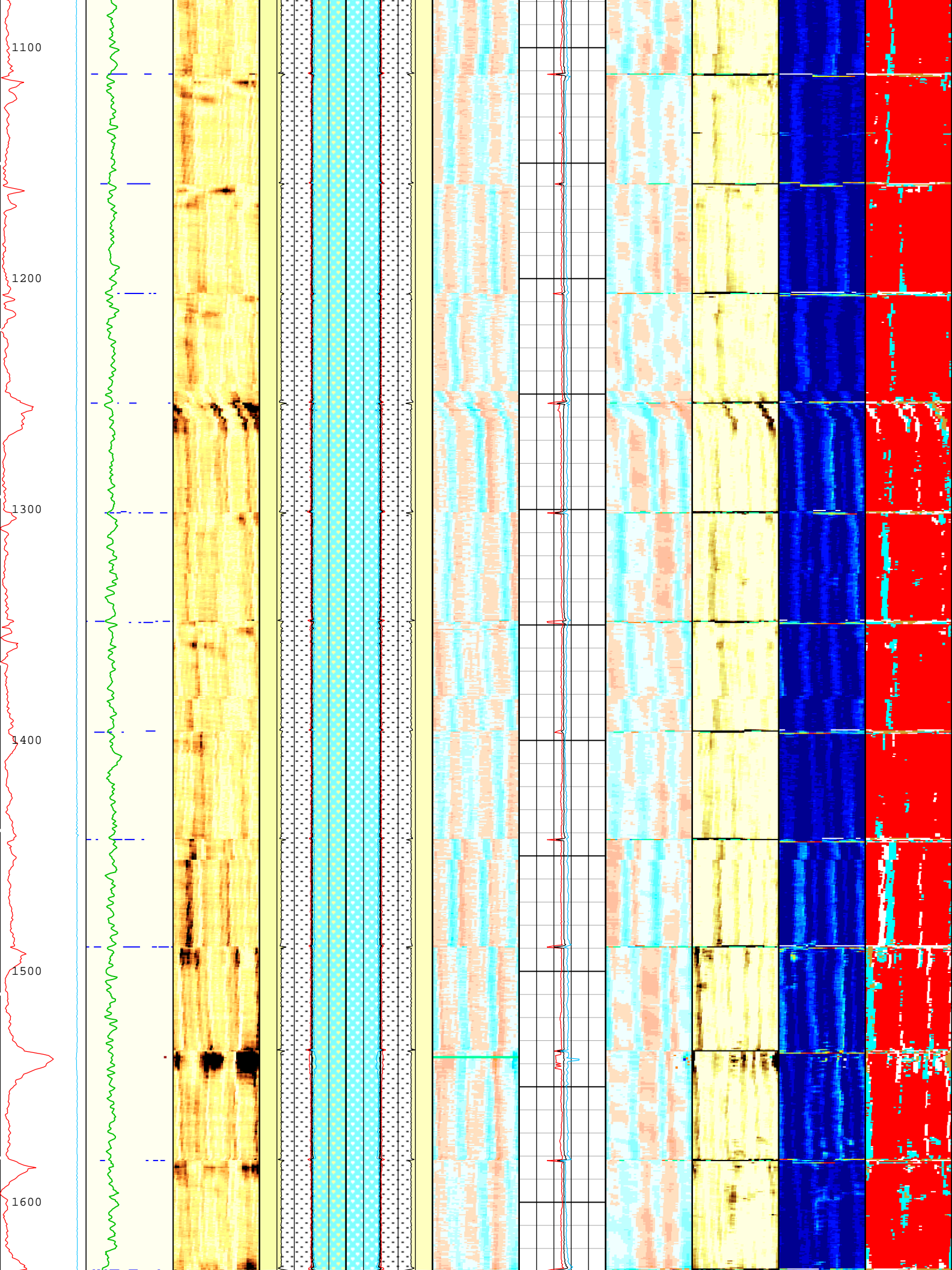
- |                                                       |                                                                                                               |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 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     |

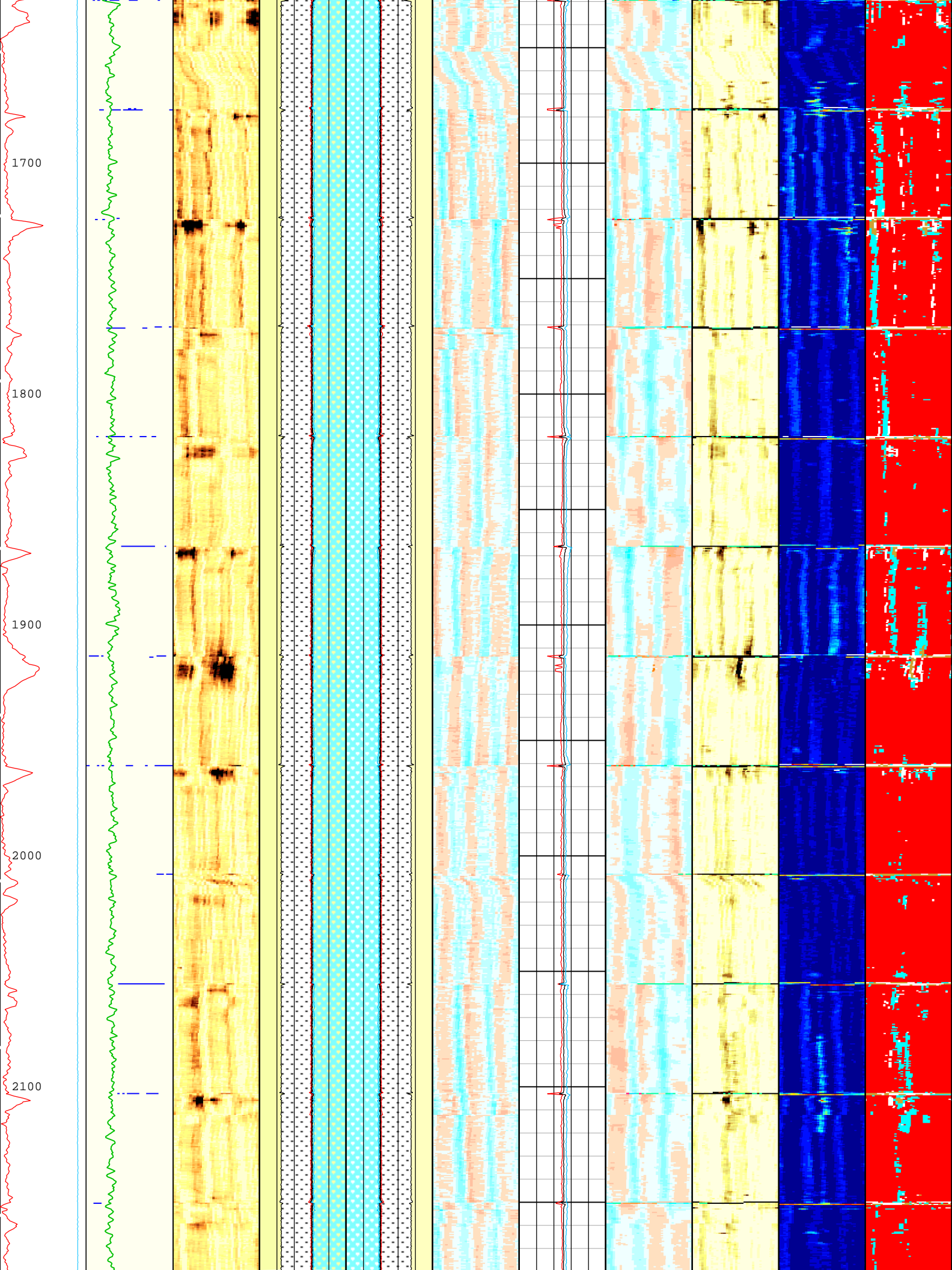




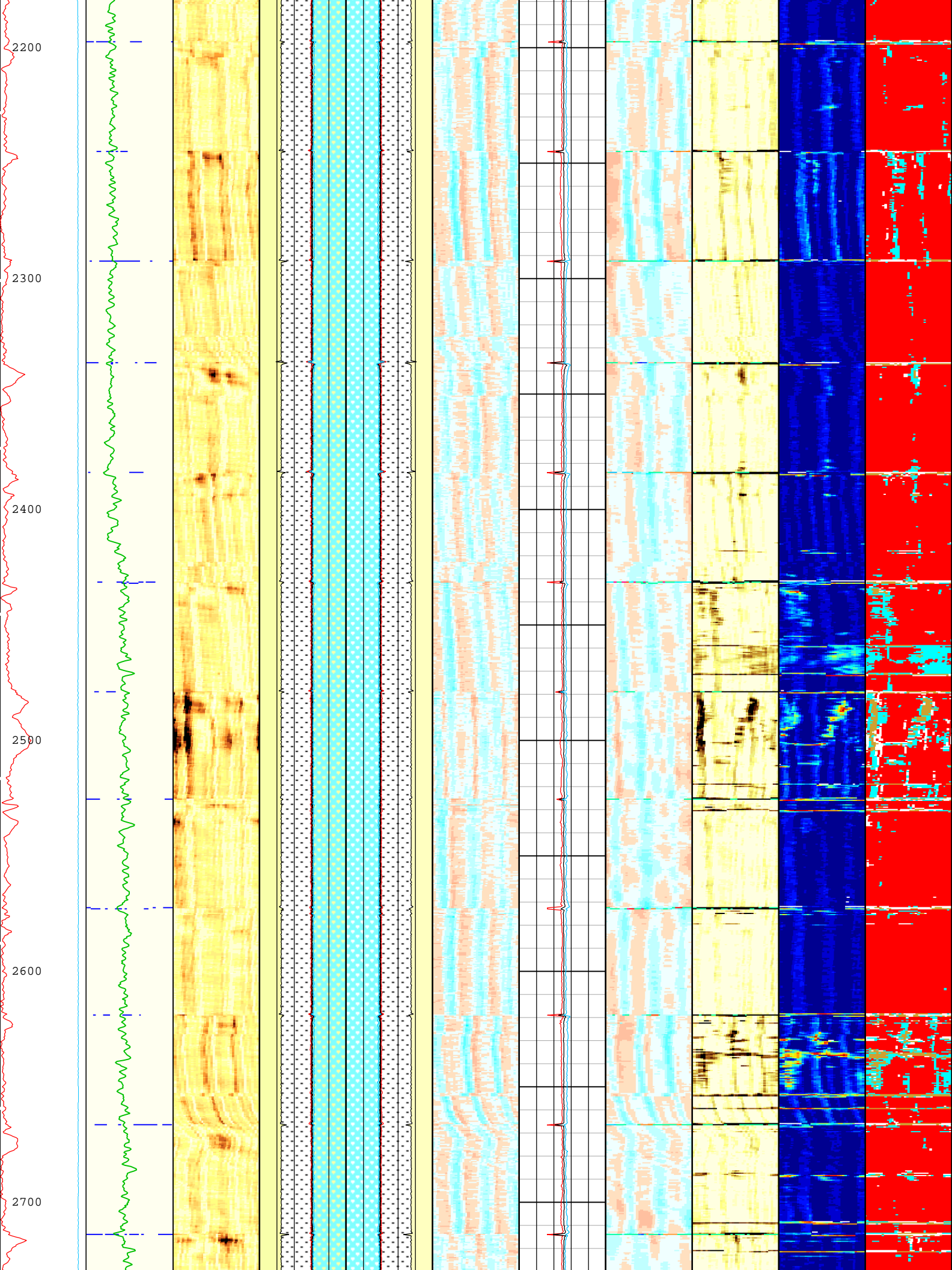


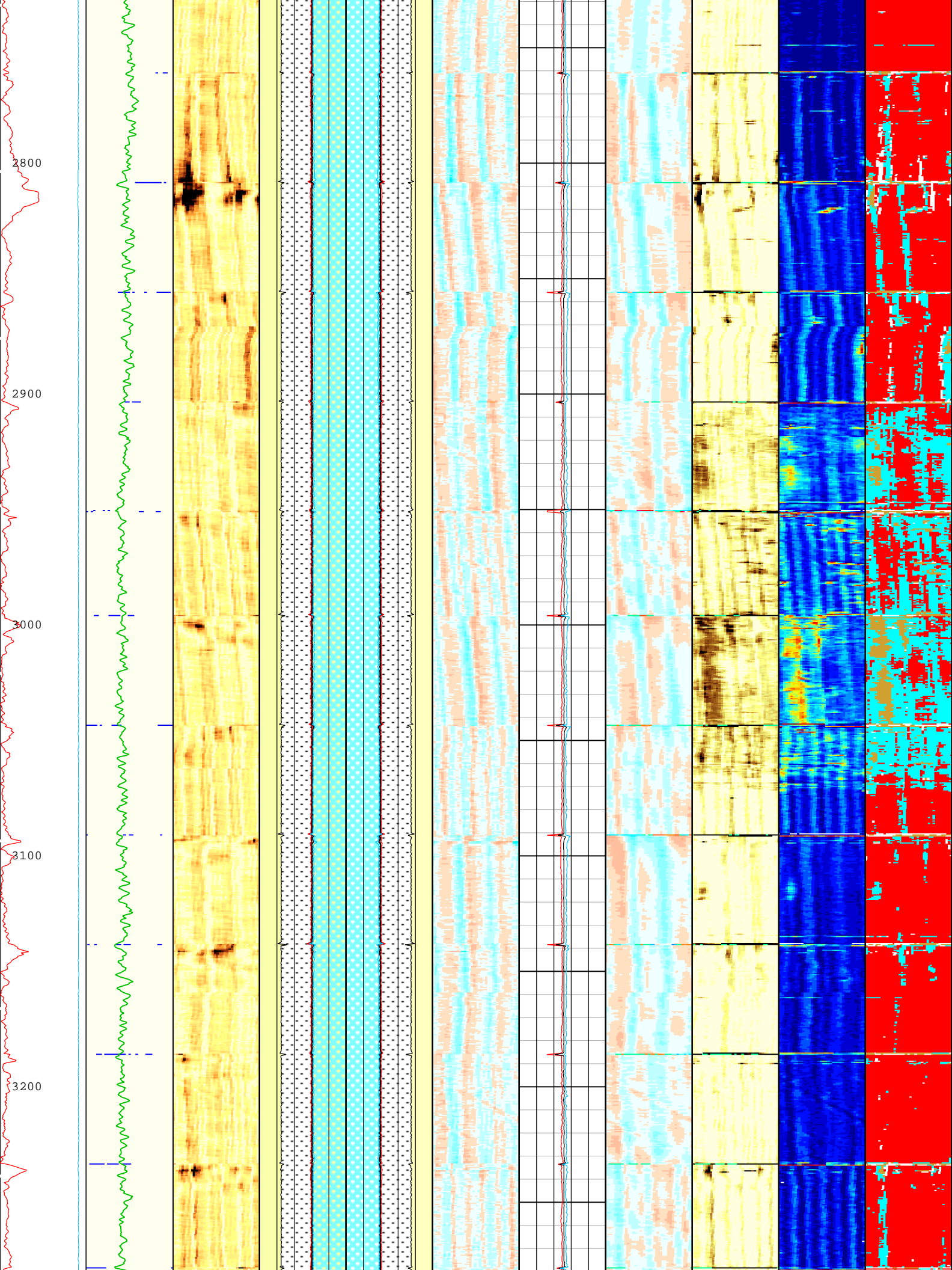


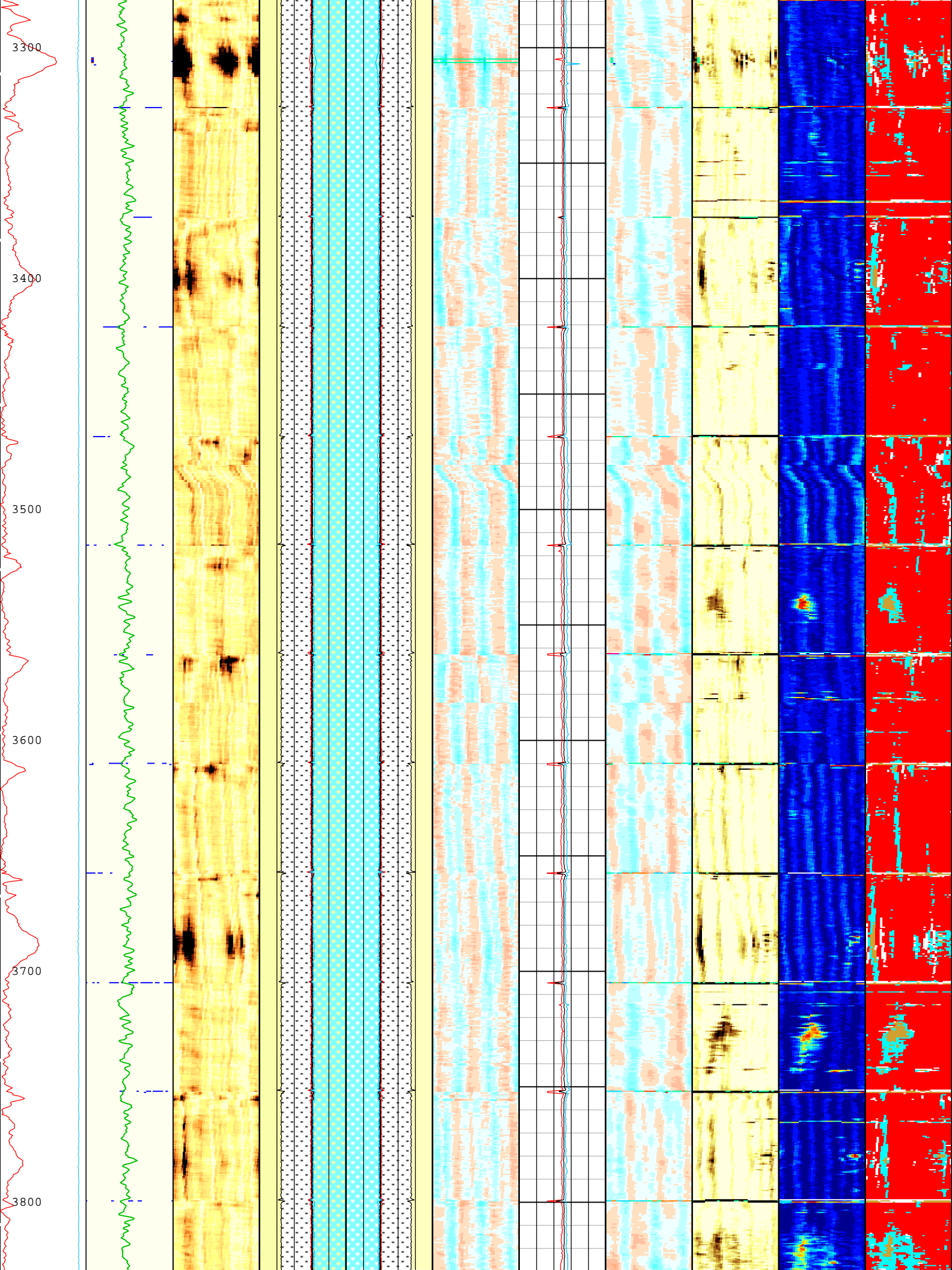




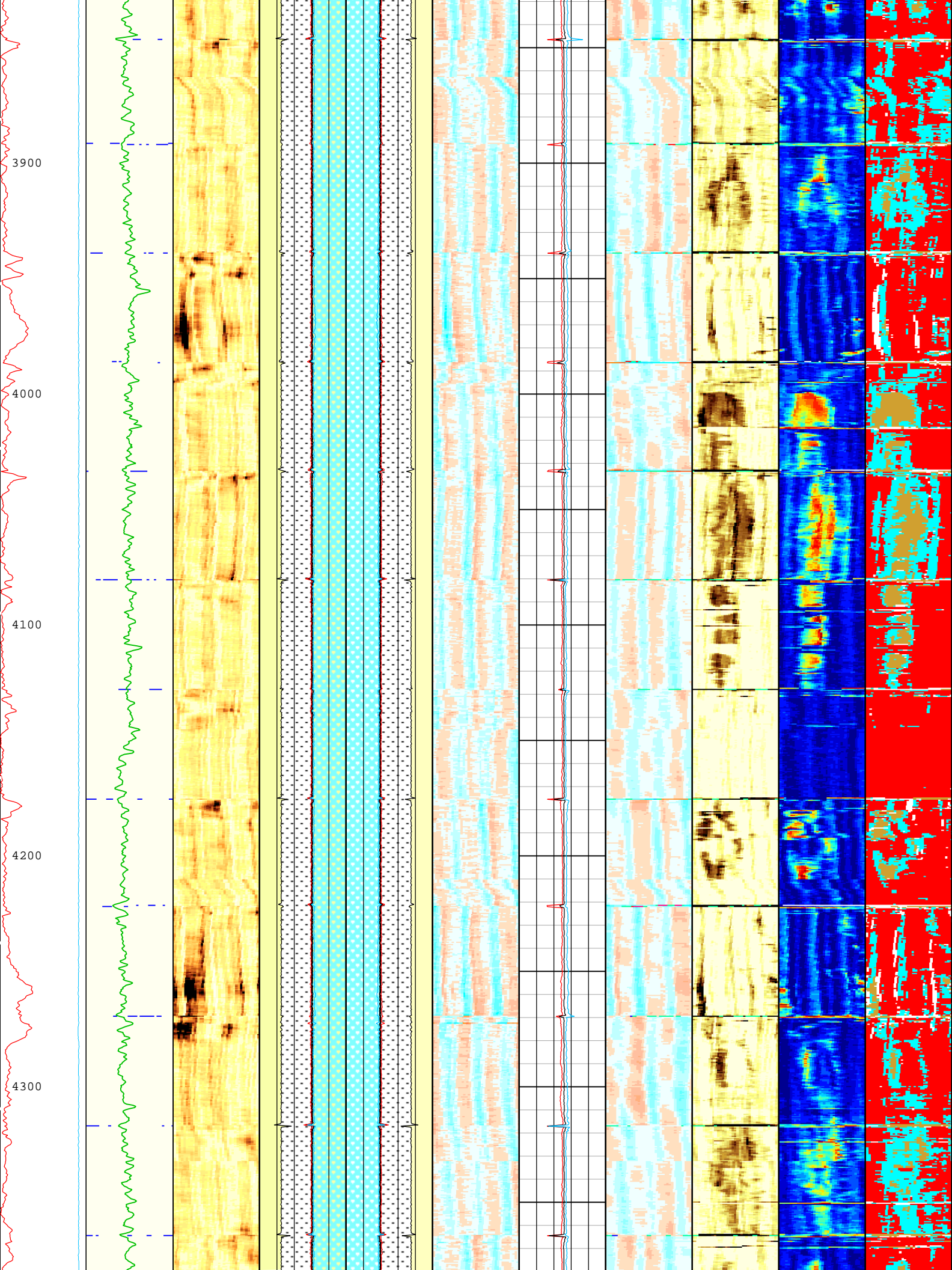




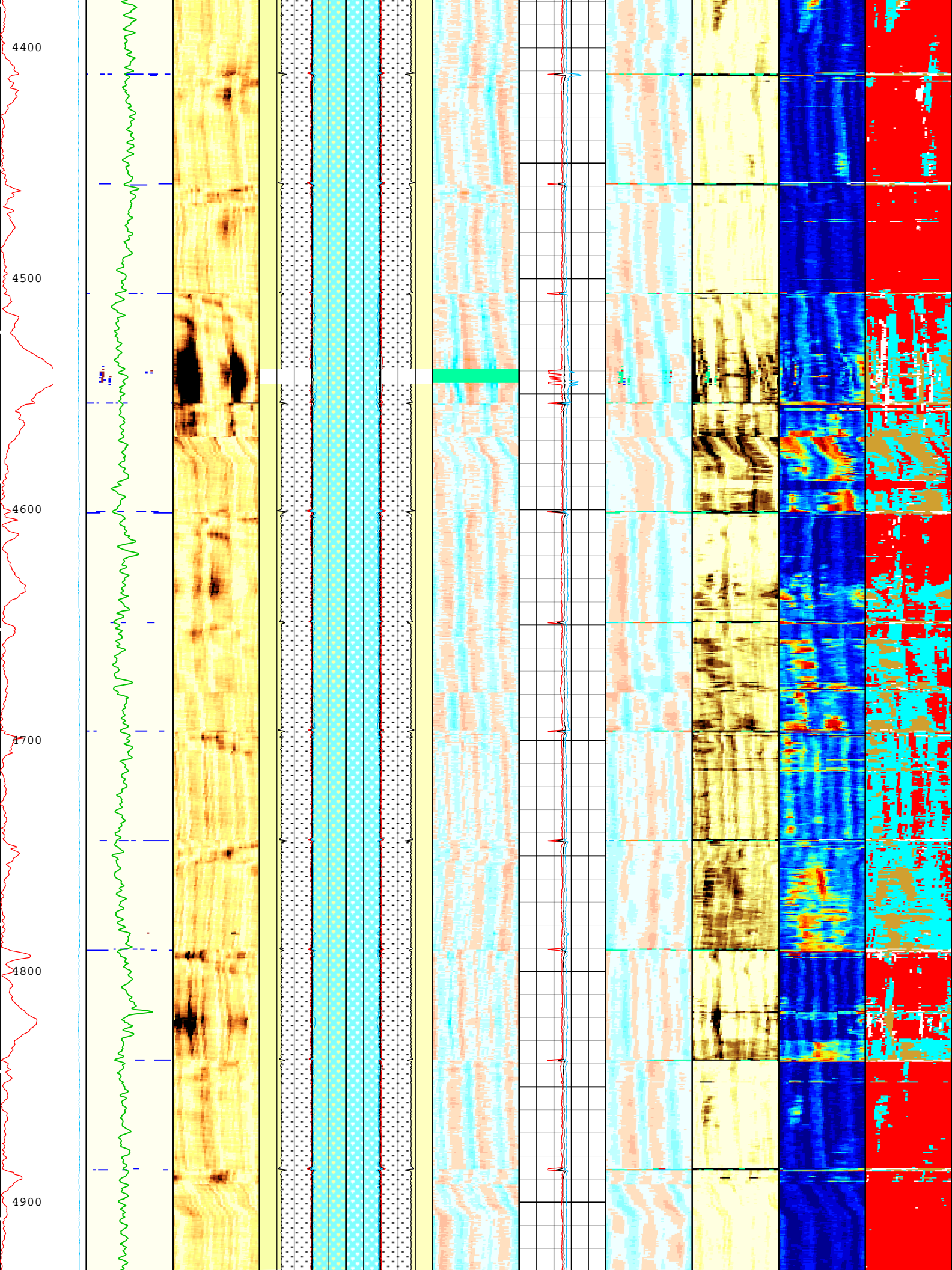


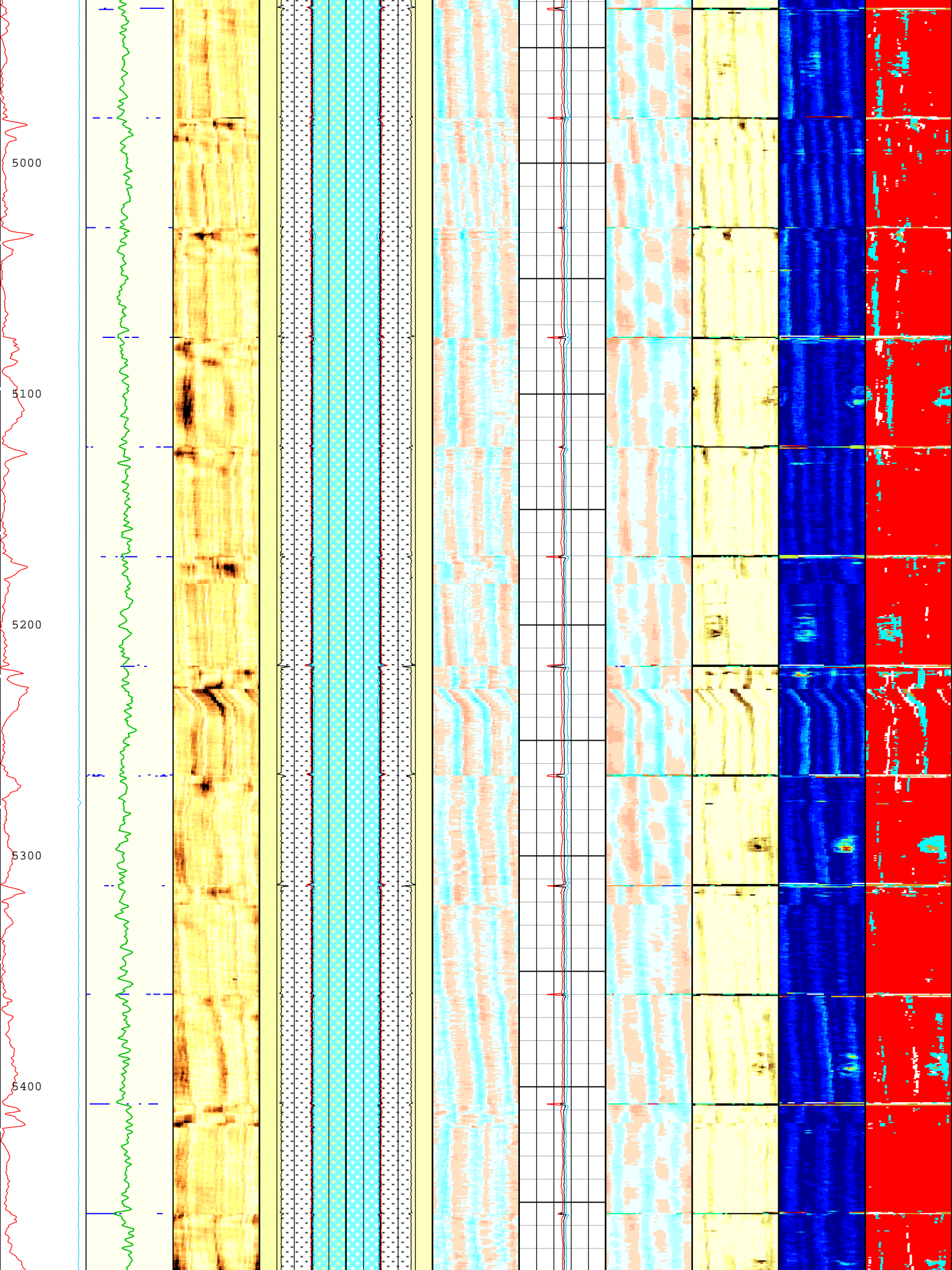


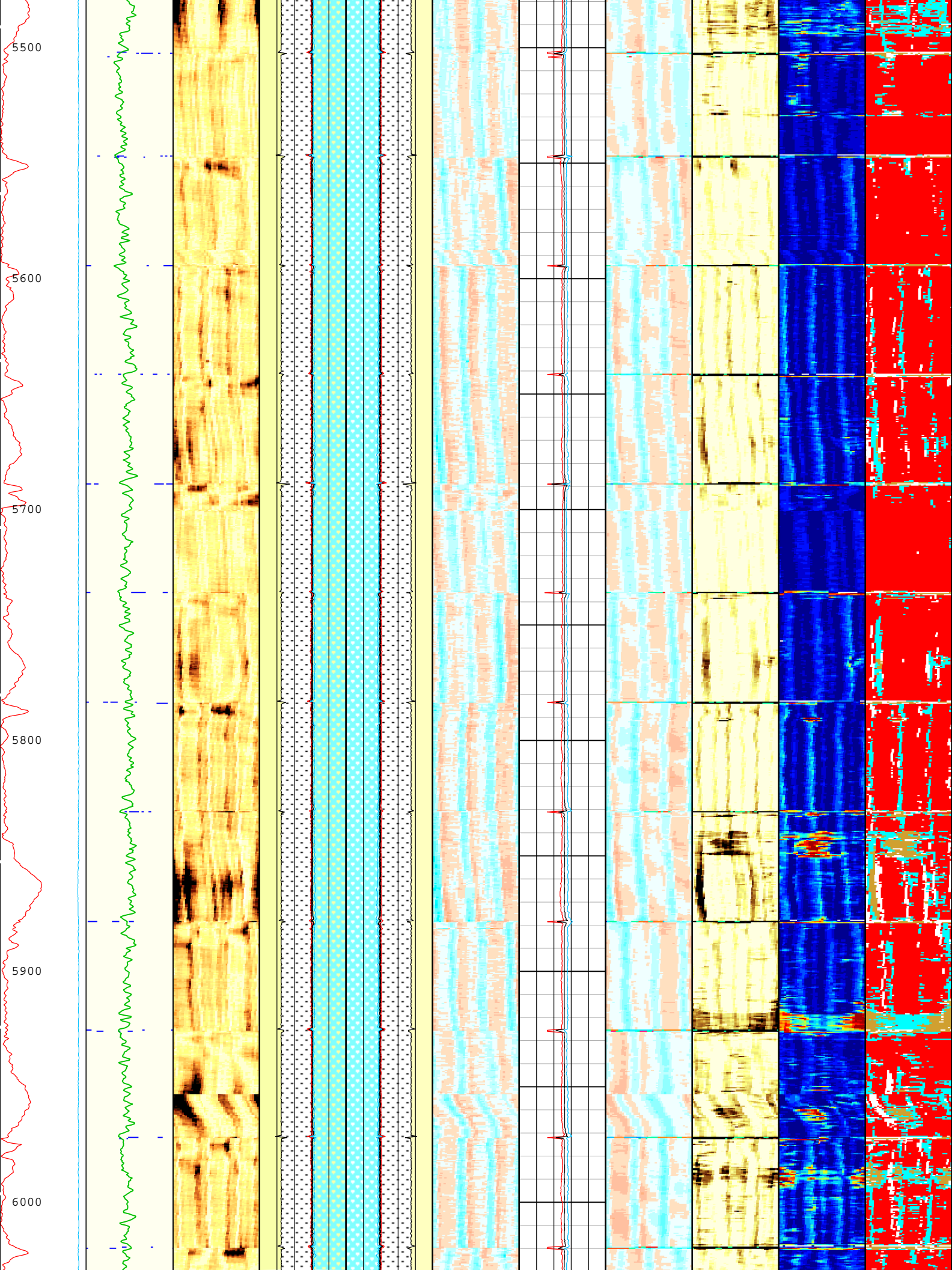




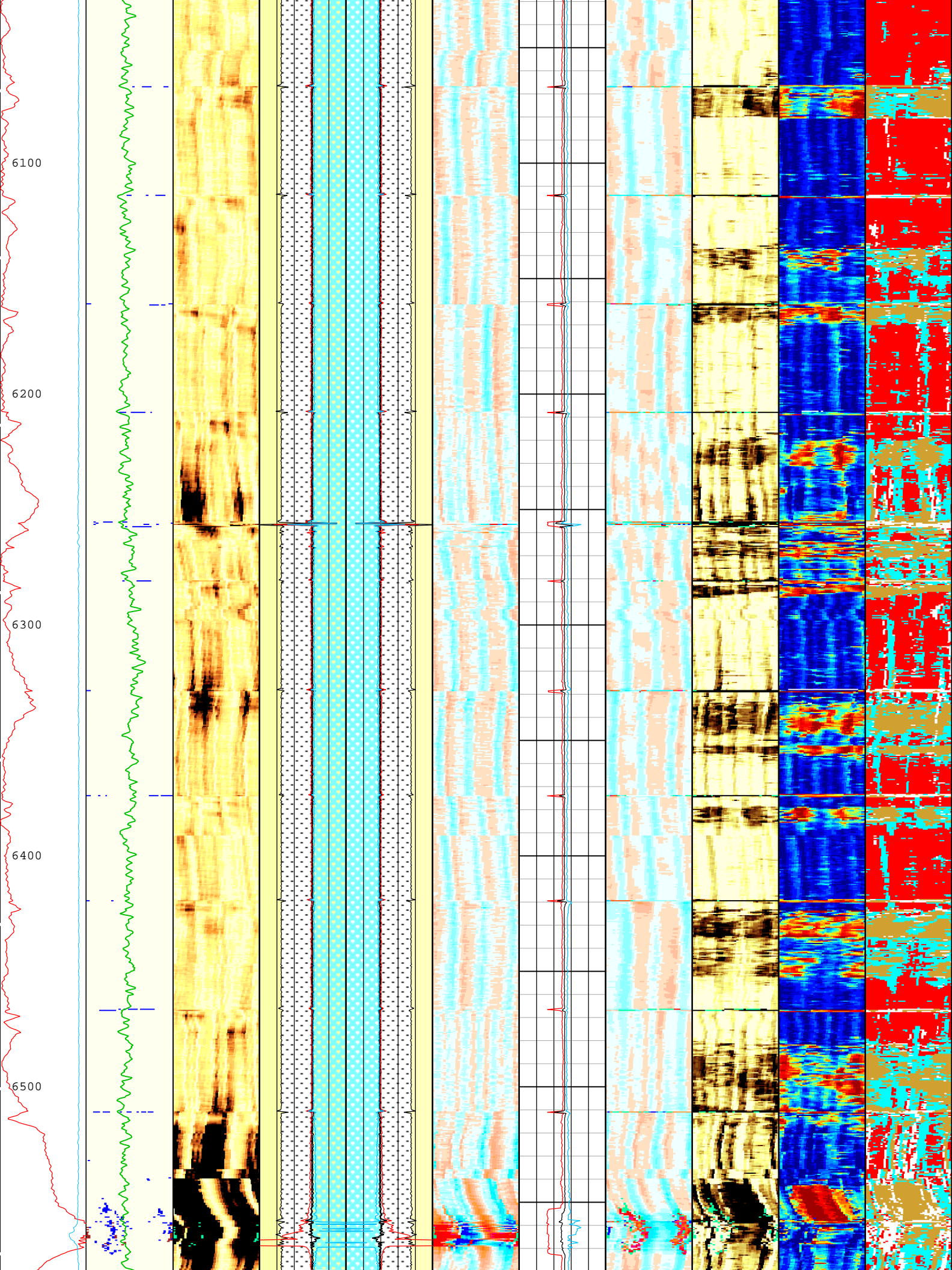


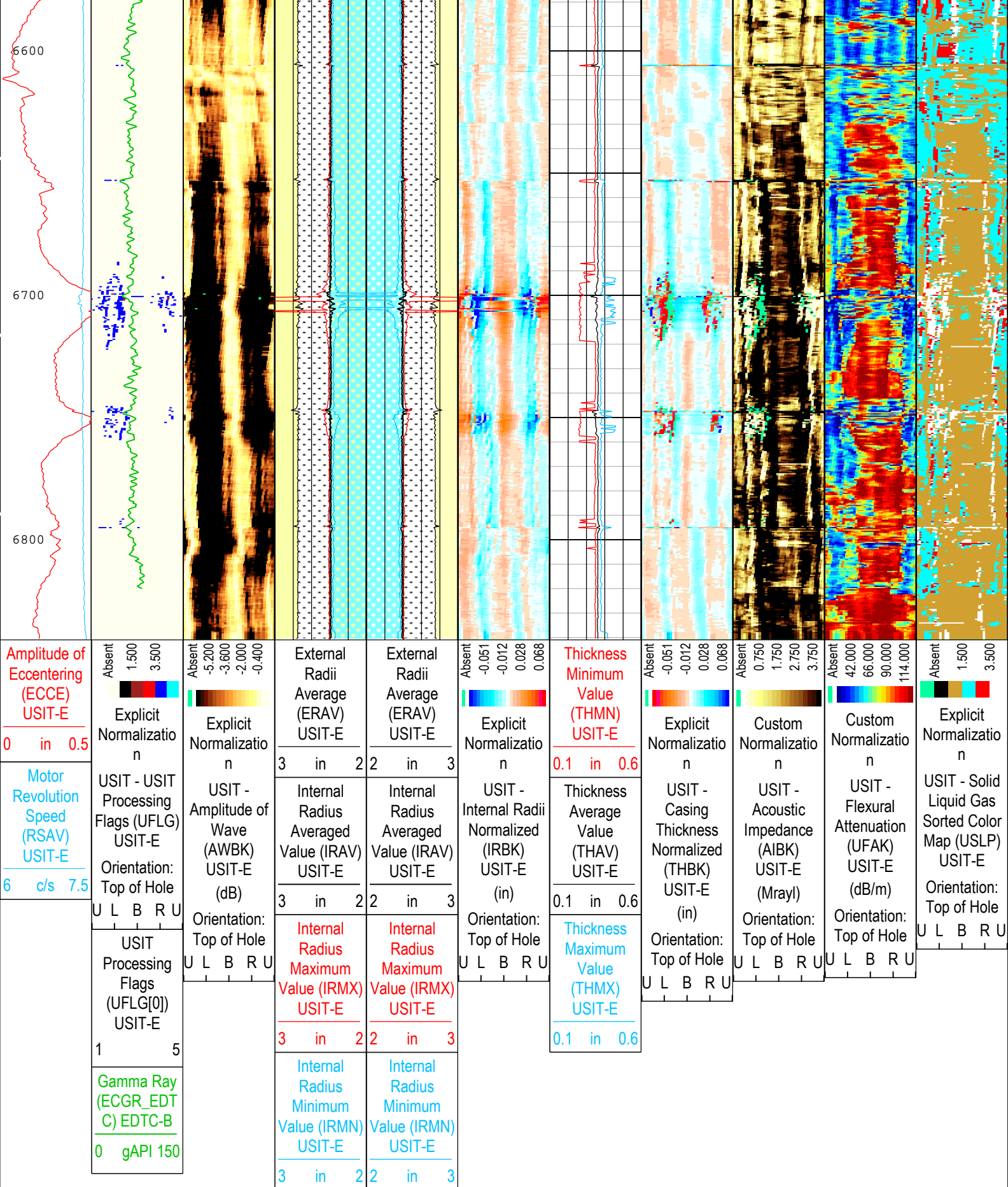












USIT Processing Flags (UFLG[0]) USIT-E

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

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
BARI(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	12139	ft
CDEN	Cement Density	USIT-E	12	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	204	us/ft
FD	Fluid Density	USIT-E	10.7	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_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-1.18	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	FreePipe Norm.	
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_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-6.69	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.75	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	13.5	55	2409
BS	8.5	2409	6841

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	100	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	

U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	119.48	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	75.4	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	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	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
U-USIT_UFWE	189.89	24-Nov-2018 08:18:22	24-Nov-2018 08:21:01	6841.97	6715.02
U-USIT_UFWE	204.62	24-Nov-2018 08:21:01	24-Nov-2018 09:55:53	6715.02	55.52
U-USIT_UNWE	165.57	24-Nov-2018 08:18:22	24-Nov-2018 08:20:58	6841.97	6718.22
U-USIT_UNWE	170.69	24-Nov-2018 08:20:58	24-Nov-2018 09:55:53	6718.22	55.52
WINB	31.37	24-Nov-2018 08:18:22	24-Nov-2018 08:20:55	6841.97	6722.42
WINB	27.54	24-Nov-2018 08:20:55	24-Nov-2018 09:55:53	6722.42	55.52
WINE	87.62	24-Nov-2018 08:18:22	24-Nov-2018 08:19:16	6841.97	6835.13
WINE	81.52	24-Nov-2018 08:19:16	24-Nov-2018 09:55:53	6835.13	55.52

All depth are at tool zero.

One

IBC Goodwin Compressed

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	55.52 ft	6841.97 ft	24-Nov-2018 8:18:22 AM	24-Nov-2018 9:55:53 AM	ON	7.60 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating LLCWell:Melbon Ranch 4I-17H-M265One: Log[3]:Up:S017

Description: USI Goodwin    Format: Log ( IBC Goodwin )    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 27-Nov-2018 00:26:20

TIME\_1900 - Time Marked every 60.00 (s)

Gamma Ray (ECGR\_E DTC) EDTC-B

0150 gAPI

Amplitude of Eccentering (ECCE) USIT-E

0in0.5

Maximum Flexural Attenuation (U-USIT\_UFAX) USIT-E

40140 dB/m

Average Flexural Attenuation (U-USIT\_UF AV) USIT-E

40140 dB/m

Minimum

Acoustic Impedance Minimum (AIMN) USIT-E

-1Mrayl9

Acoustic Impedance Maximum (AIMX) USIT-E

-1Mrayl9

Orientation: Top of Hole

ULBRU

0.00048.00072.00096.000120.000

Custom Normalization

Orientation: Top of Hole

ULBRU

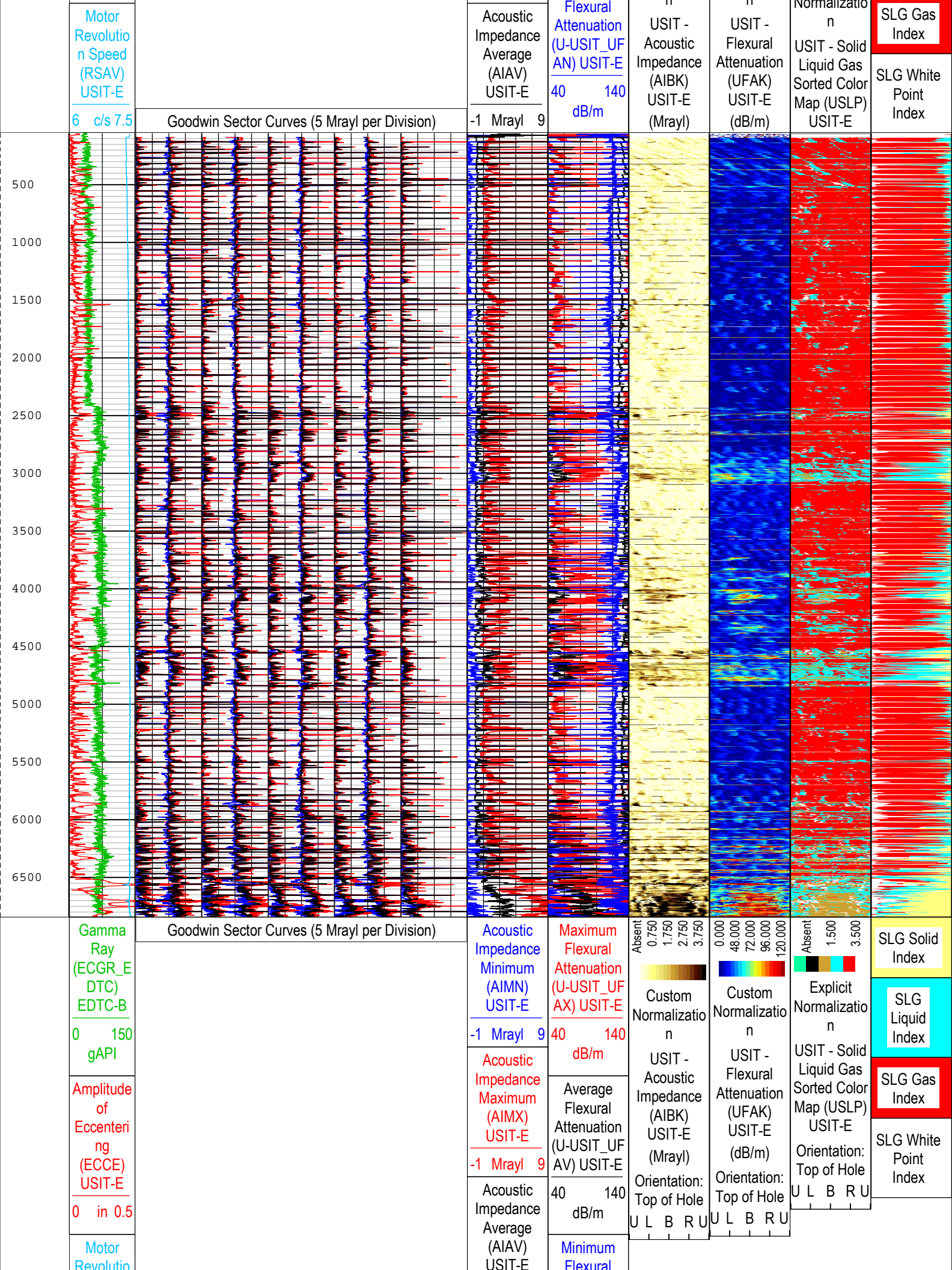
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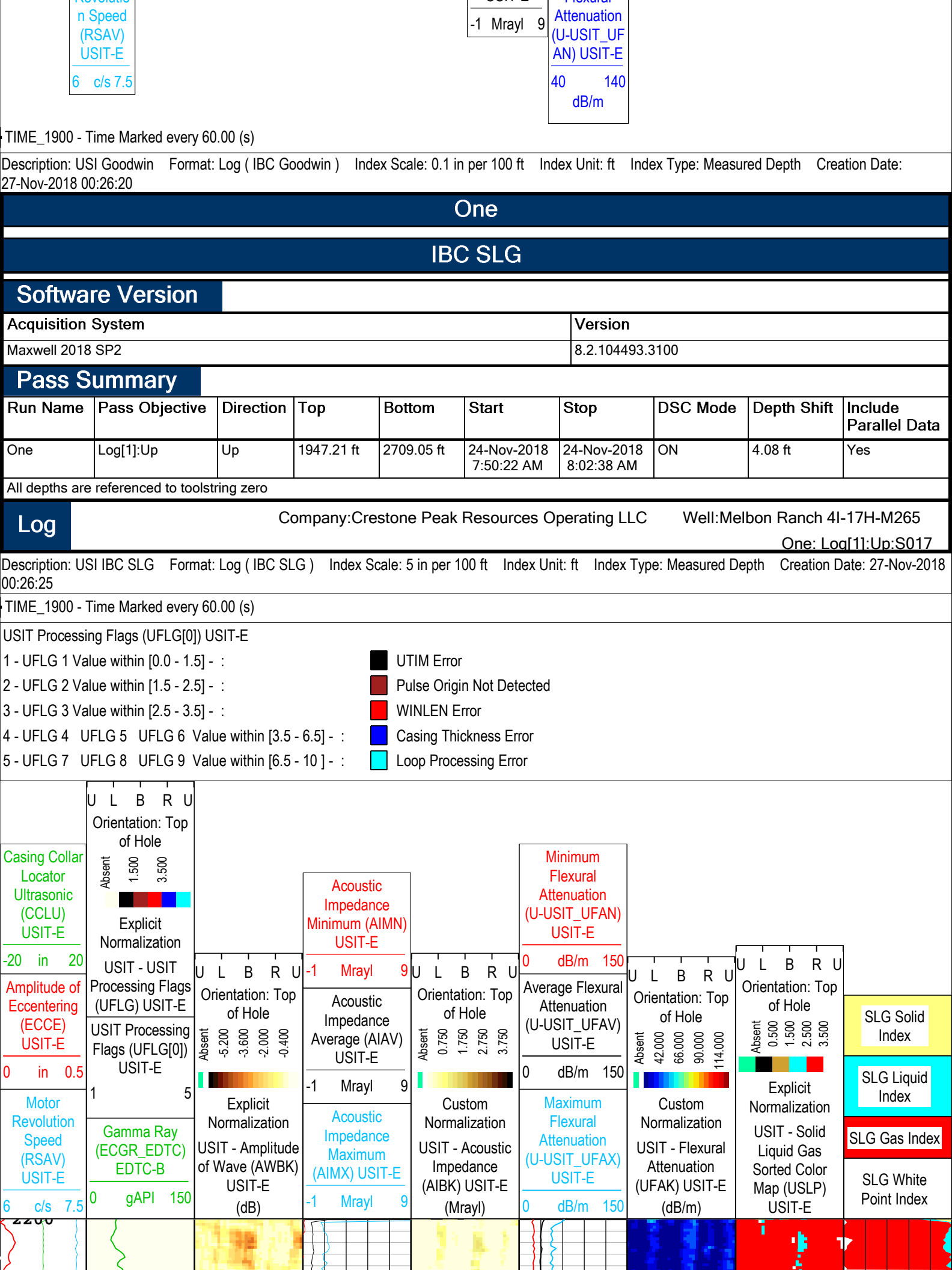
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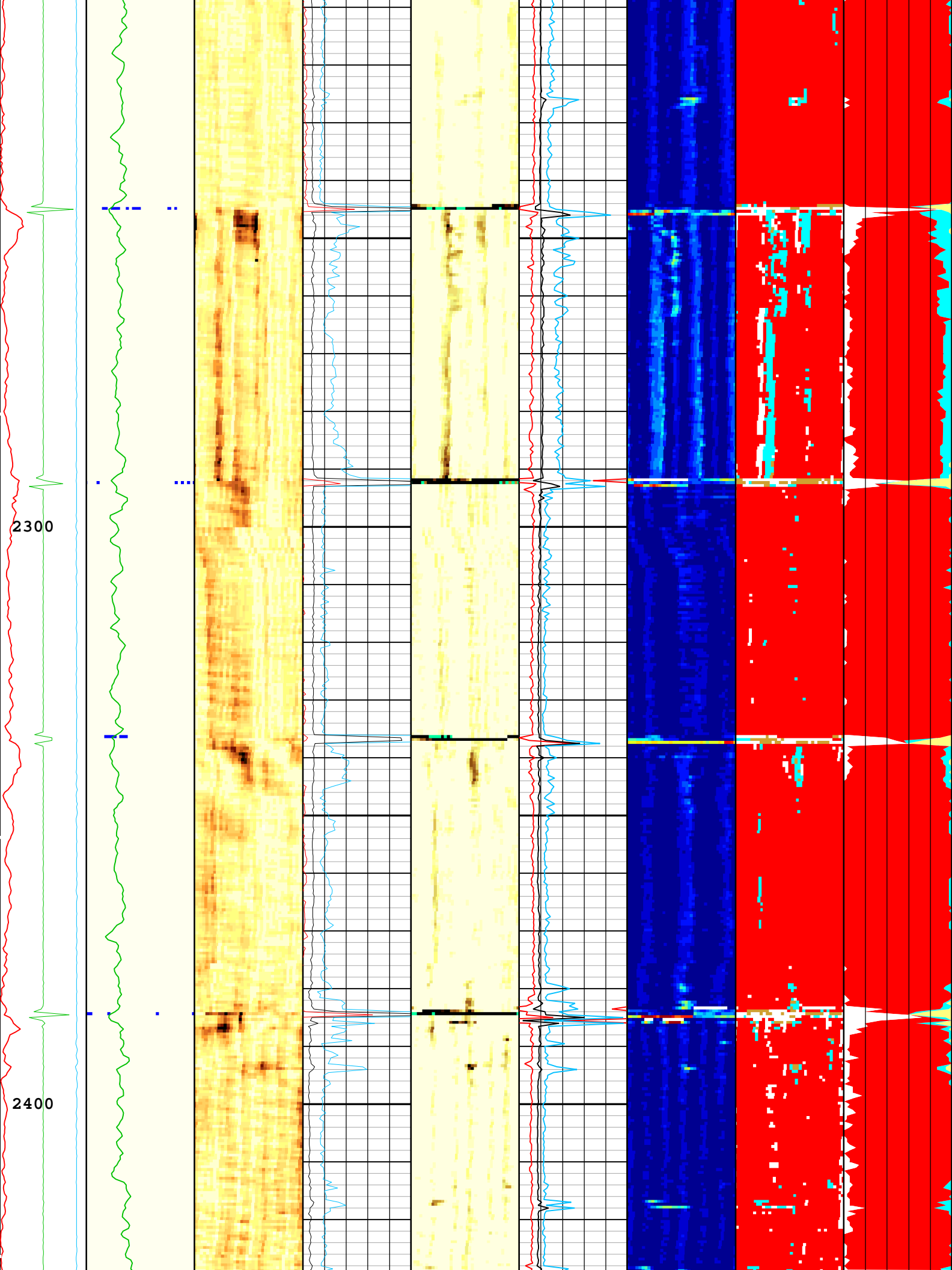
SLG Solid Index

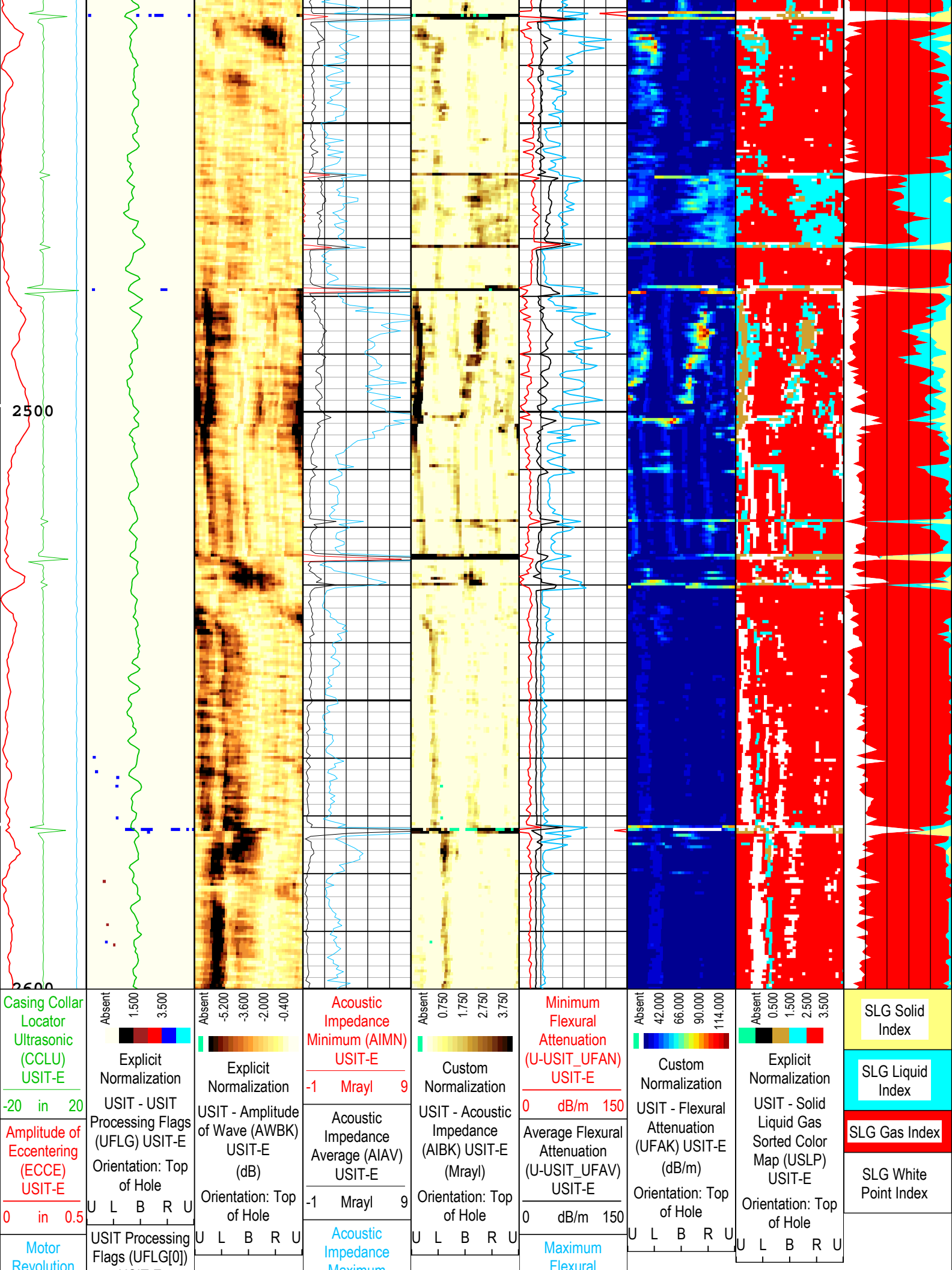
SLG Liquid Index













Parameter	Description	Tool	Value	Unit
BAR1(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	12139	ft
CDEN	Cement Density	USIT-E	12	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	204	us/ft
FD	Fluid Density	USIT-E	10.7	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	-1.18	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	FreePipe Norm.	
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_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
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	1.75	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-6.69	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	1.75	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	13.5	2200	2409
BS	8.5	2409	2600
All depth are actual.			

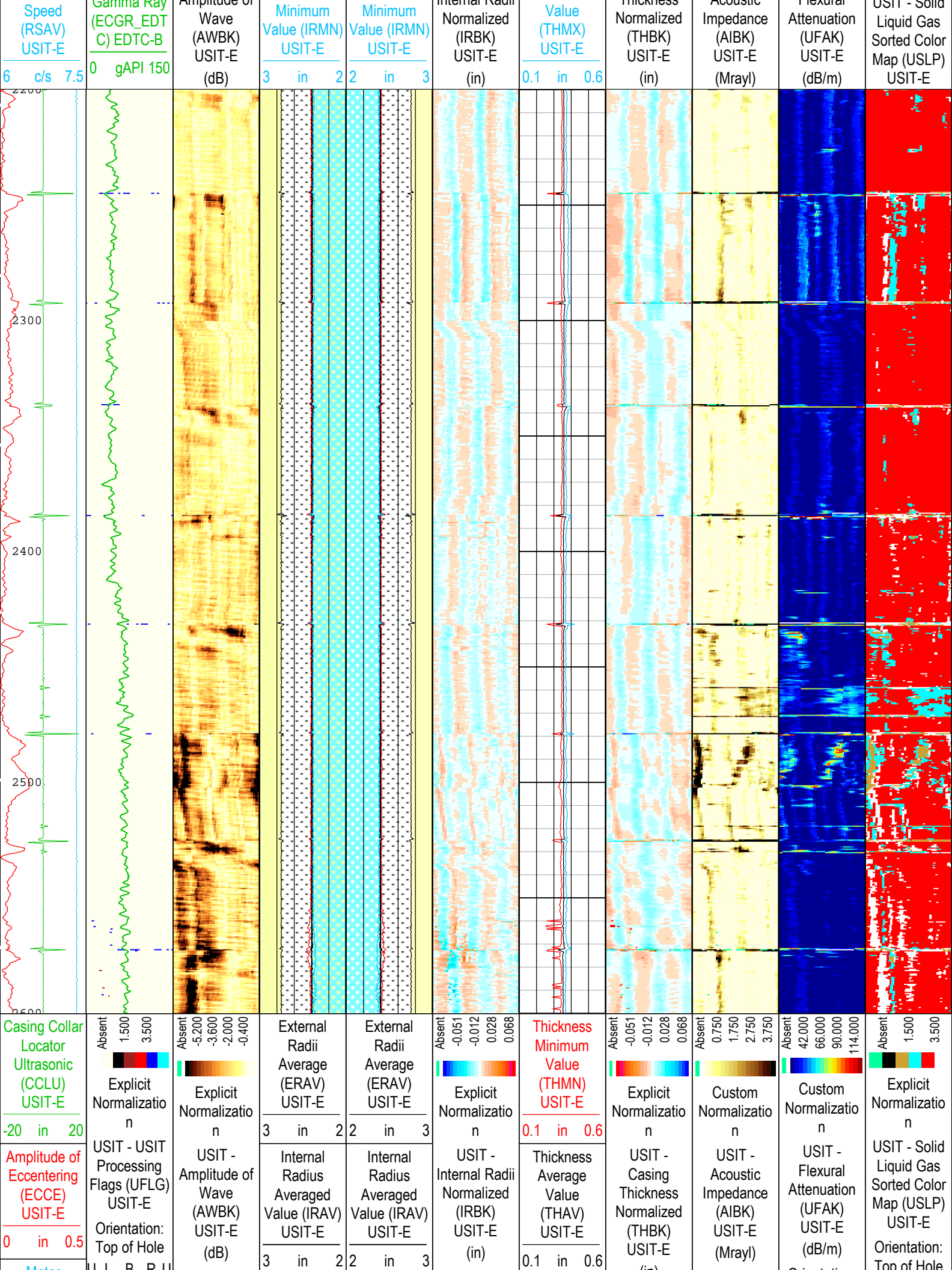
Tool Control Parameters				
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One: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	100	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	
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	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	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	31.37	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )







Motor Revolution Speed (RSAV) USIT-E	U L B R U	Orientation: Top of Hole	Internal Radius Maximum Value (IRMX) USIT-E	Internal Radius Maximum Value (IRMX) USIT-E	Orientation: Top of Hole	Thickness Maximum Value (THMX) USIT-E	Orientation: Top of Hole	Orientation: Top of Hole	U L B R U	U L B R U	U L B R U	U L B R U
6 c/s 7.5	1 5		3 in 2	2 in 3		0.1 in 0.6						
	Gamma Ray (ECGR_EDT C) EDTC-B		Internal Radius Minimum Value (IRMN) USIT-E	Internal Radius Minimum Value (IRMN) USIT-E								
	0 gAPI 150		3 in 2	2 in 3								

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 Composite    Format: Log ( IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 27-Nov-2018 00:26:30

Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(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	12139	ft
CDEN	Cement Density	USIT-E	12	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	204	us/ft
FD	Fluid Density	USIT-E	10.7	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_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-1.18	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	FreePipe Norm.	
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_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.19	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-6.69	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.75	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl

ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl
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Depth Zone Parameters				
Parameter	Value	Start ( ft )		Stop ( ft )
BS	13.5	2200		2409
BS	8.5	2409		2600

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	100	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	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	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	31.37	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
U-USIT_UFWB	136	24-Nov-2018 07:50:22	24-Nov-2018 07:52:19	2709.05	2694.41
U-USIT_UFWB	119.48	24-Nov-2018 07:52:19	24-Nov-2018 08:02:38	2694.41	1947.21
U-USIT_UFWE	176	24-Nov-2018 07:50:22	24-Nov-2018 07:52:21	2709.05	2691.48
U-USIT_UFWE	189.89	24-Nov-2018 07:52:21	24-Nov-2018 08:02:38	2691.48	1947.21
U-USIT_UNWB	105	24-Nov-2018 07:50:22	24-Nov-2018 07:52:15	2709.05	2698.68
U-USIT_UNWB	97.08	24-Nov-2018 07:52:15	24-Nov-2018 07:53:34	2698.68	2602.42
U-USIT_UNWB	75.4	24-Nov-2018 07:53:34	24-Nov-2018 08:02:38	2602.42	1947.21
U-USIT_UNWE	145	24-Nov-2018 07:50:22	24-Nov-2018 07:52:12	2709.05	2701.3
U-USIT_UNWE	165.57	24-Nov-2018 07:52:12	24-Nov-2018 08:02:38	2701.3	1947.21
WINE	71.37	24-Nov-2018 07:50:22	24-Nov-2018 07:52:09	2709.05	2704.05
WINE	87.62	24-Nov-2018 07:52:09	24-Nov-2018 08:02:38	2704.05	1947.21

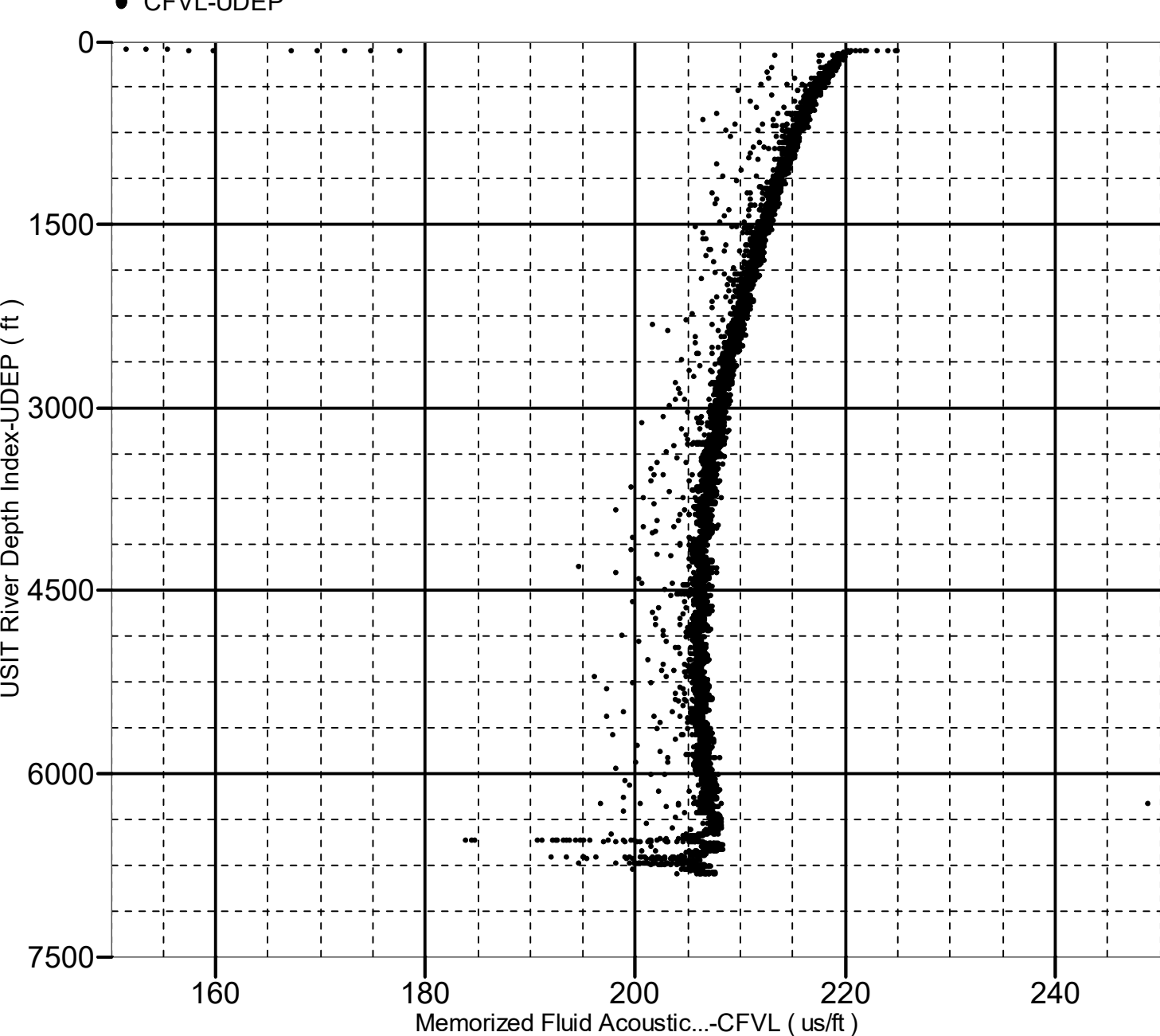
All depth are at tool zero.

XYZ	Company:Crestone Peak Resources Operating LLC Well:Melbon Ranch 4I-17H-M265 One: Log[3]:Up:S017
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Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6841.00 to 55.00 ft

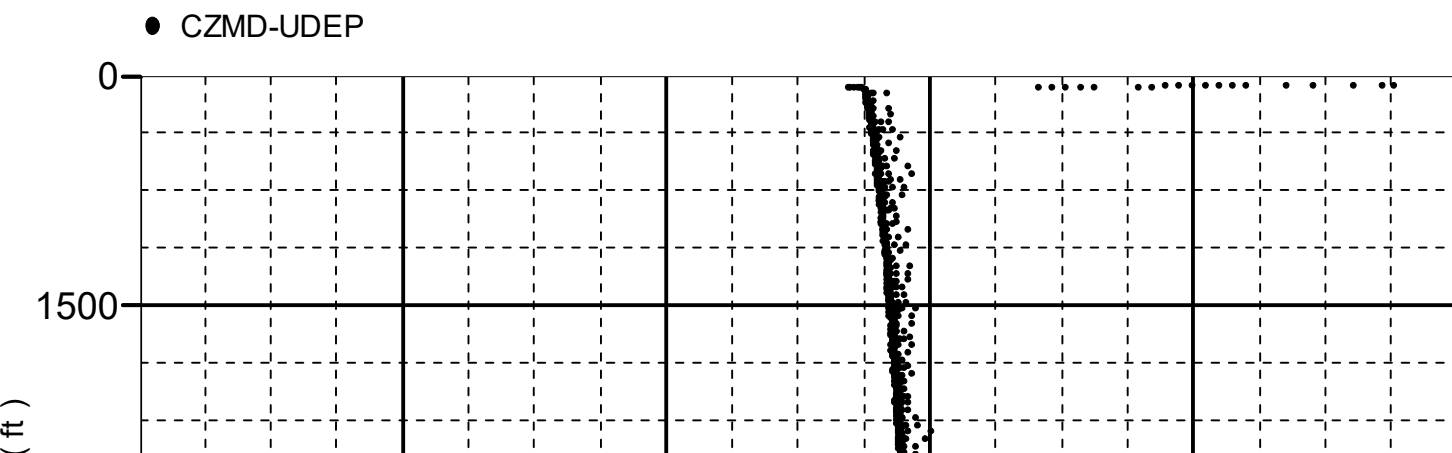


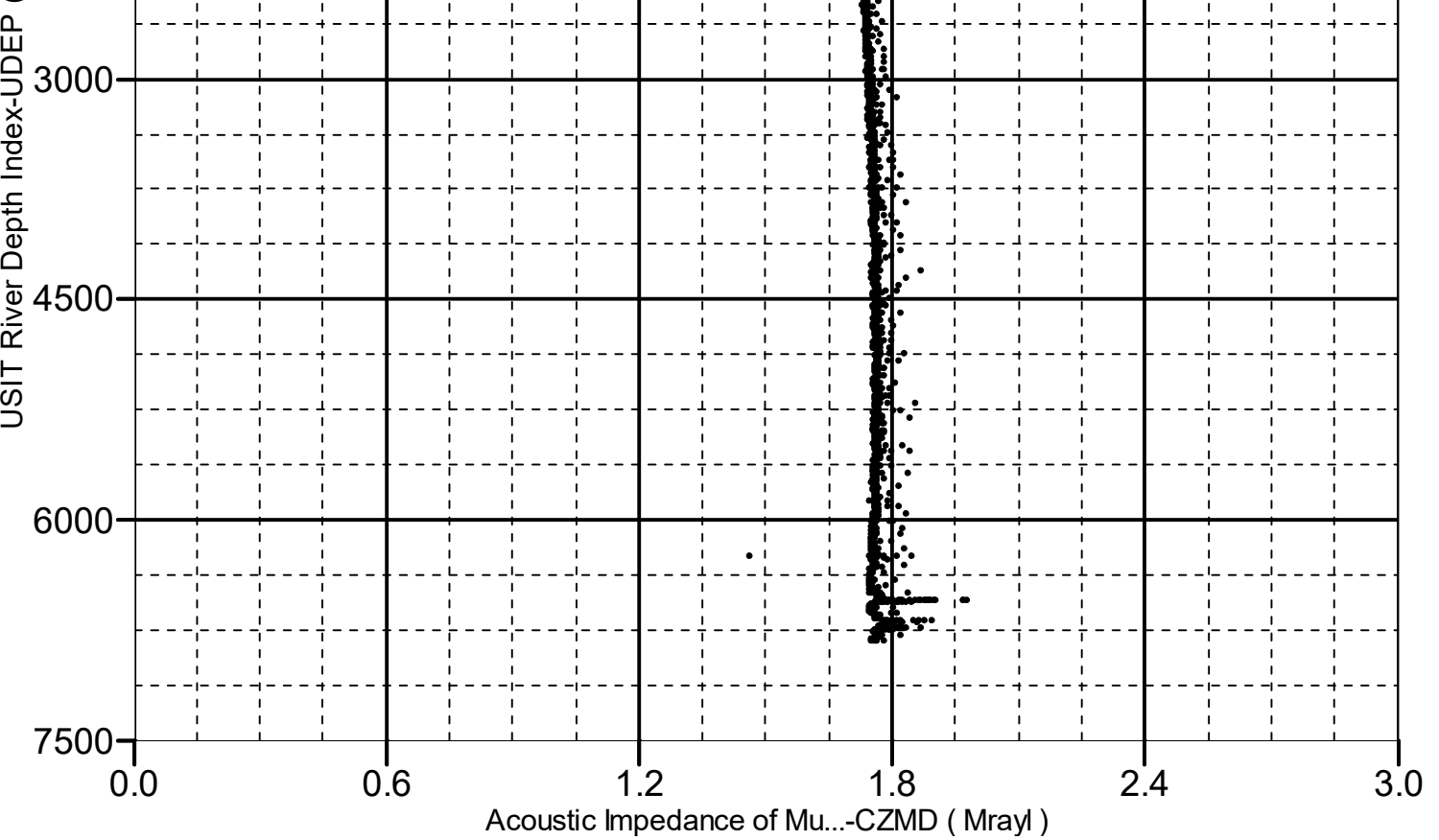
XYZ Company:Crestone Peak Resources Operating LLC Well:Melbon Ranch 4I-17H-M265 One: Log[3]:Up:S017

## Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6841.00 to 55.00 ft





Company: Crestone Peak Resources Operating LLC

**Schlumberger**

Well: Melbon Ranch 4I-17H-M265

Field: Wattenburg

County: Weld

State: Colorado

Isolation Scanner

Cement Evaluation

Gamma Ray - CCL Log