

Company: Crestone Peak Resources Operating LLC

Well: Sam 30-25H-M166

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner
Cement Evaluation

County:	Weld			
Field:	Wattenberg			
Location:	NWSW Sec. 25, T1N, R66W			
Well:	Sam 30-25H-M166			
Company:	Crestone Peak Resources Operating LLC			
Location:				
NWSW Sec. 25, T1N, R66W			Elev.:	K.B. 5103.00 ft
SHL: 1273' FSL & 309' FWL				G.L. 5080.00 ft
Lat/Long: 40.01851 / -104.733857				D.F. 5103.00 ft
Permanent Datum:		Ground Level	Elev.:	5080.00 f
Log Measured From:		Kelly Bushing	23.00 ft	above Perm.Datum
Drilling Measured From:		Kelly Bushing		
API Serial No.		Section:	Township:	Range:
05-123-46133		25	1N	66W
Logging Date	19-Oct-2018			

Run Number	ONE		
Depth Driller	11892.00 ft		
Schlumberger Depth	11892.00 ft		
Bottom Log Interval	6650.00 ft		
Top Log Interval	50.00 ft		
Casing Fluid Type	Fresh Water		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.50 in		
From	2421.00 ft		
To	11892.00 ft		
Casing/Tubing Size	5.5 in		
Weight	20 lbm/ft		
Grade	J55		
From	0.00 ft		
To	11886.00 ft		
Max Recorded Temperatures	179 degF		
Logger on Bottom	19-Oct-2018	15:15:00	
Unit Number	9108	Fort Morgan, CO	
Recorded By	Richard Woods		
Witnessed By	Keith Kershnik		

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.

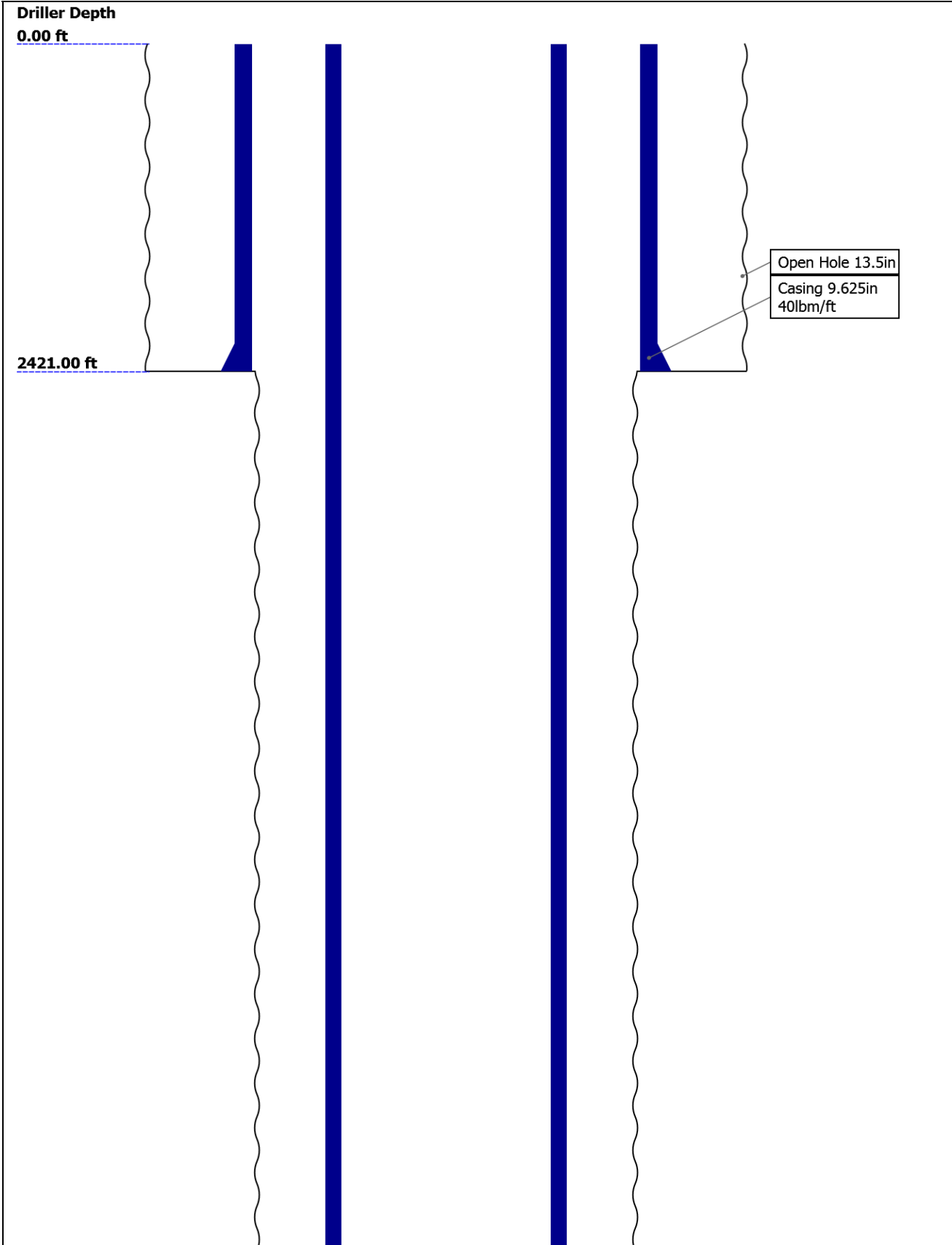
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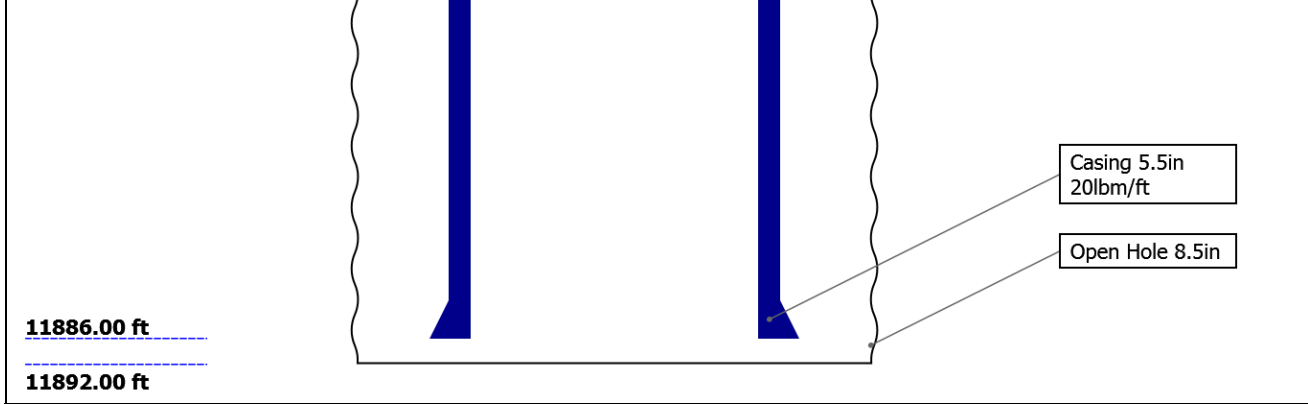
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Well Sketch






11886.00 ft
11892.00 ft

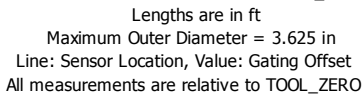
Casing 5.5in
20lbm/ft
Open Hole 8.5in

Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.5				
Top Driller (ft)	0	2421				
Top Logger (ft)	0	2421				
Bottom Driller (ft)	2421	11892				
Bottom Logger (ft)	2421	11892				
Casing						
Size (in)	9.625	5.5				
Weight (lbm/ft)	40	20				
Inner Diameter (in)	8.835	4.778				
Grade	J55	J55				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	2421	11886				
Bottom Logger (ft)	2421	11886				

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks	
<div><div><div>Equip nameLengthMP nameOffset</div><div>LEH-QT30.73LEH-QT</div><div>EDTC-B27.24EDTH-BEDTG-AEDTC-B</div><div>AH-184[2]20.74</div><div>AH-184[1]18.74</div><div>USIT-E16.74ECH-MFAUSAC-AUSIS-AUSSC-BIBCS-AEAB-CENG</div></div><div><div>CTEM23.74ACCZ0.00HV0.00Gamma Ray21.87TelStatu s20.74</div></div></div>				Thank you for choosing Schlumberger!	
				Tool string run as per tool sketch and client logging program.	
				5" Gemcos and in-line centralizers with small hole kit used for centralization.	
				All passes run under 0 PSI.	
				Lead: 12.5 ppg Tail: 13.5 ppg Spacer: 12 ppg	



Depth Summary

ONE

Depth Measuring Device

Type	IDW-B
Serial Number	6455
Calibration Date	27-Jul-2018
Calibrator Serial Number	57
Calibration Cable Type	7-32ASXS
Wheel Correction 1	-1
Wheel Correction 2	1

Tension Device

Type	CMTD-B/A
Serial Number	1703
Calibration Date	29-Jul-2018
Calibrator Serial Number	88310A
Number of Calibration Points	10
Calibration Root Mean Square Error	6
Calibration Peak Error	9

Logging Cable

Type	7-32AS-XS
Serial Number	
Length	21111.00 ft
Conveyance Type	Wireline
Rig Type	Crane USA

ONE:Depth Control Parameters

Log Sequence	First Log In the Well
Rig Up Length At Surface	
Rig Up Length At Bottom	
Rig Up Length Correction	

Depth Control Remarks

All Schlumberger depth control procedures followed.
IDW used for primary depth control.
Zchart used for secondary depth control.
Logs correlated to down log.

Stretch Correction
Tool Zero Check At Surface

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[3]:Up	6554.74	41.07

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 : 335.09m(1099.39ft) to 340.68m(1117.72ft)
MUD_N_FRP = 1.18
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.70 MRayl

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

IBC SLG 0 PSI

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	41.07 ft	6554.74 ft	19-Oct-2018 2:45:13 PM	19-Oct-2018 4:23:09 PM	ON	3.94 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources Operating LLC Well:Sam 30-25H-M166 ONE: Log[3]:Up:S003
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Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 17:35:14

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

Casing Collar Locator Ultrasonic (CCLU) USIT-E

-20 in 20

Amplitude of Eccentering (ECCE) USIT-E

0 in 0.5

Motor Revolution Speed (RSAV) USIT-E

Absent 1.500 3.500

Explicit Normalization

USIT - USIT

Processing Flags (UFLG) USIT-E

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

1 5

Gamma Ray (ECGR_EDTC) EDTC-B

Absent 0.750 1.750 2.750 3.750

Custom Normalization

USIT - Amplitude of Wave (AWBK) USIT-E

USIT - Acoustic Impedance (AIBK) USIT-E

Absent 0.500 1.500 2.500 3.500

Explicit Normalization

USIT - Solid Liquid Gas Sorted Color Map (USLP)

Acoustic Impedance Minimum (AIMN) USIT-E

-1 Mrayl 9

Acoustic Impedance Average (AIAV) USIT-E

-1 Mrayl 9

Acoustic Impedance Maximum (AIMX) USIT-E

Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E

0 dB/m 150

Average Flexural Attenuation (U-USIT_UFAV) USIT-E

0 dB/m 150

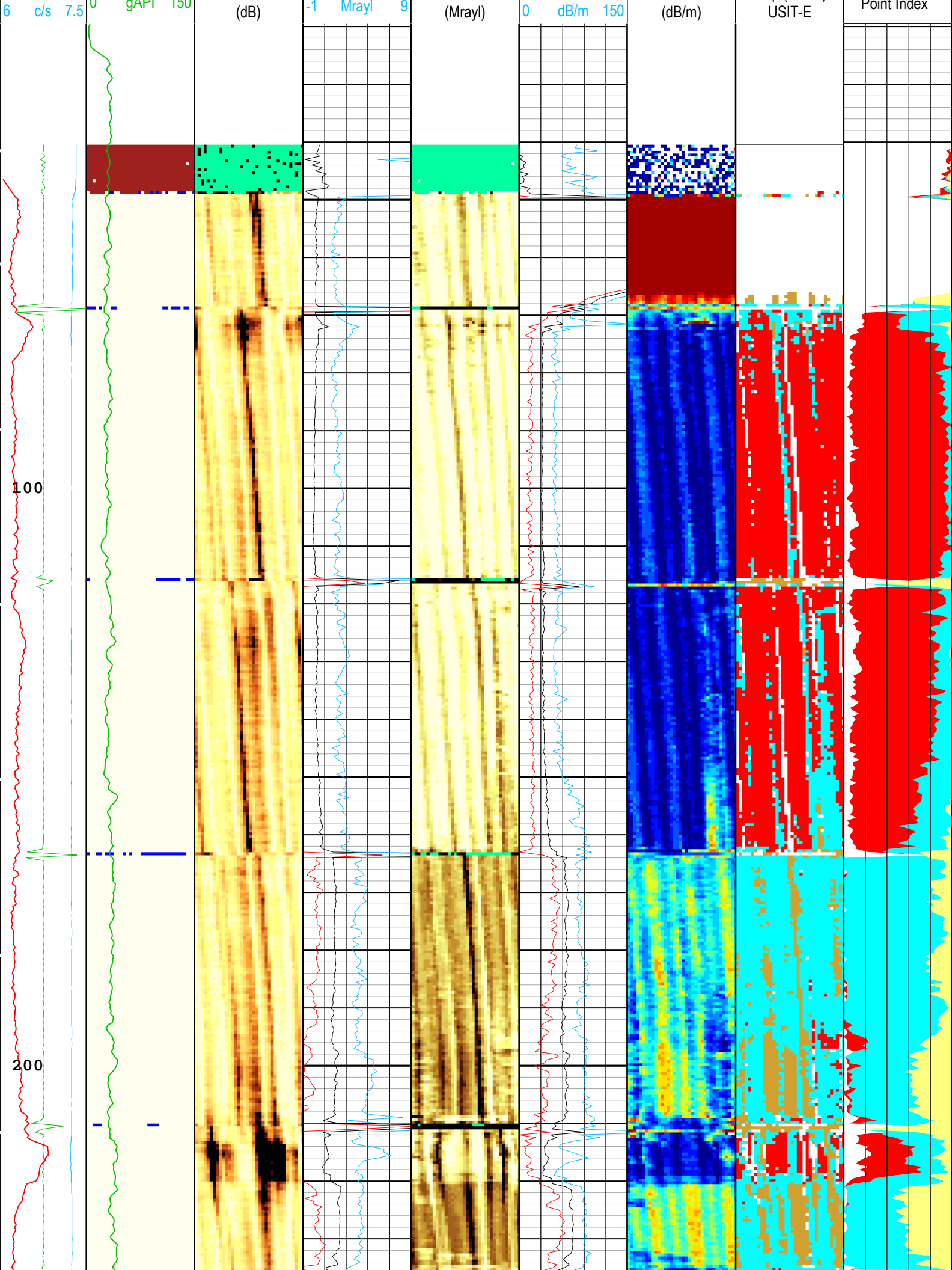
Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E

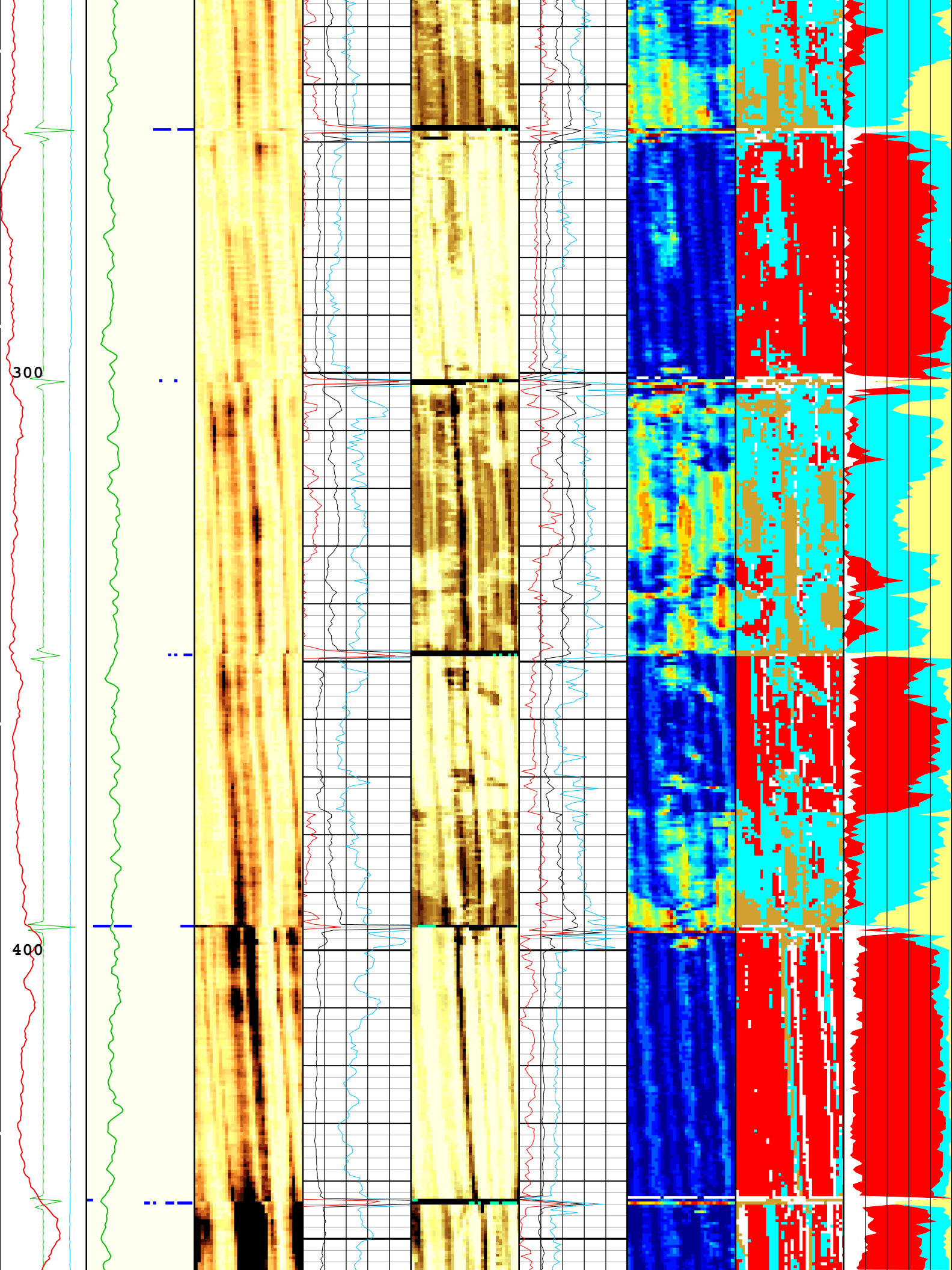
SLG Solid Index

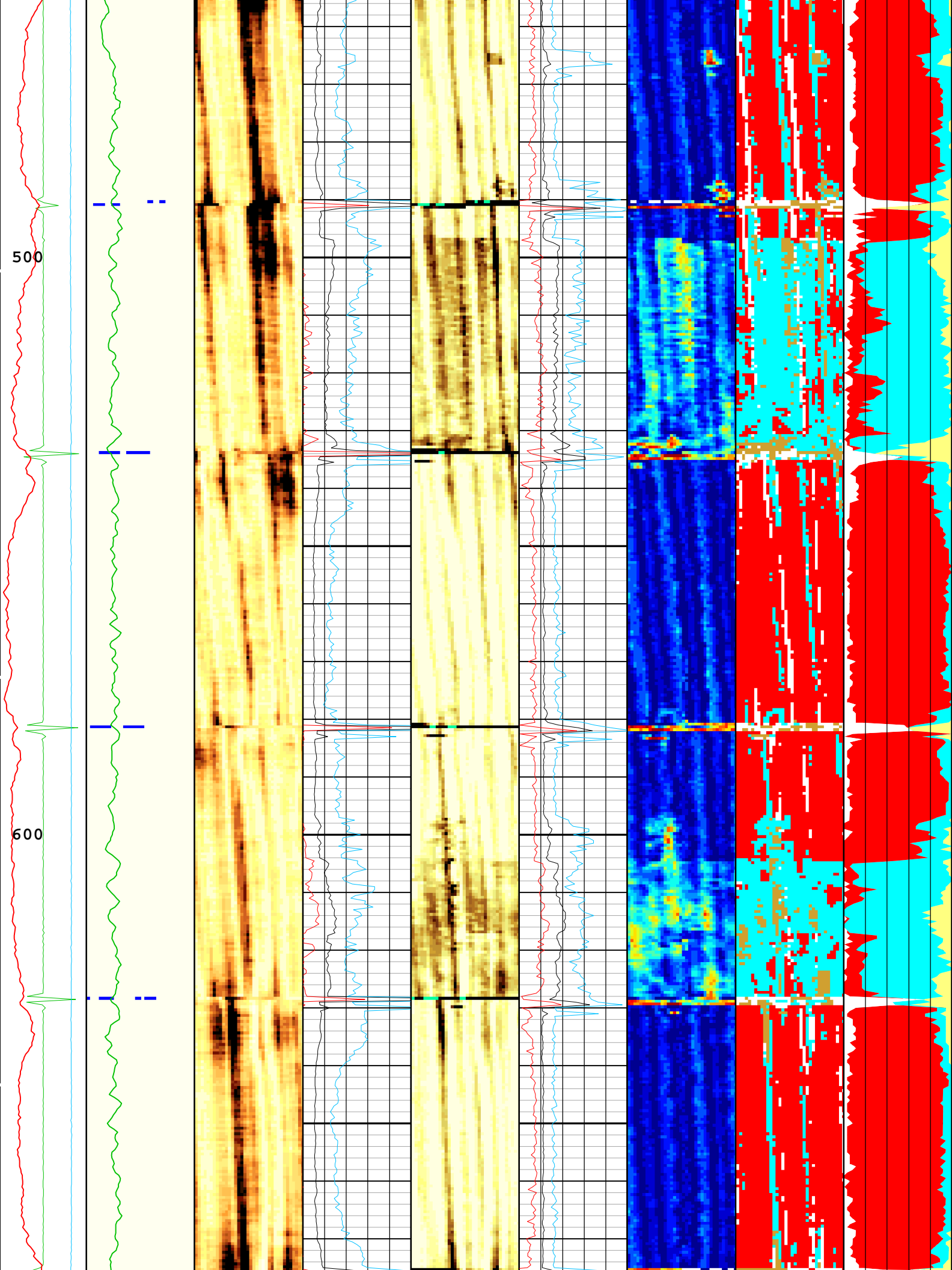
SLG Liquid Index

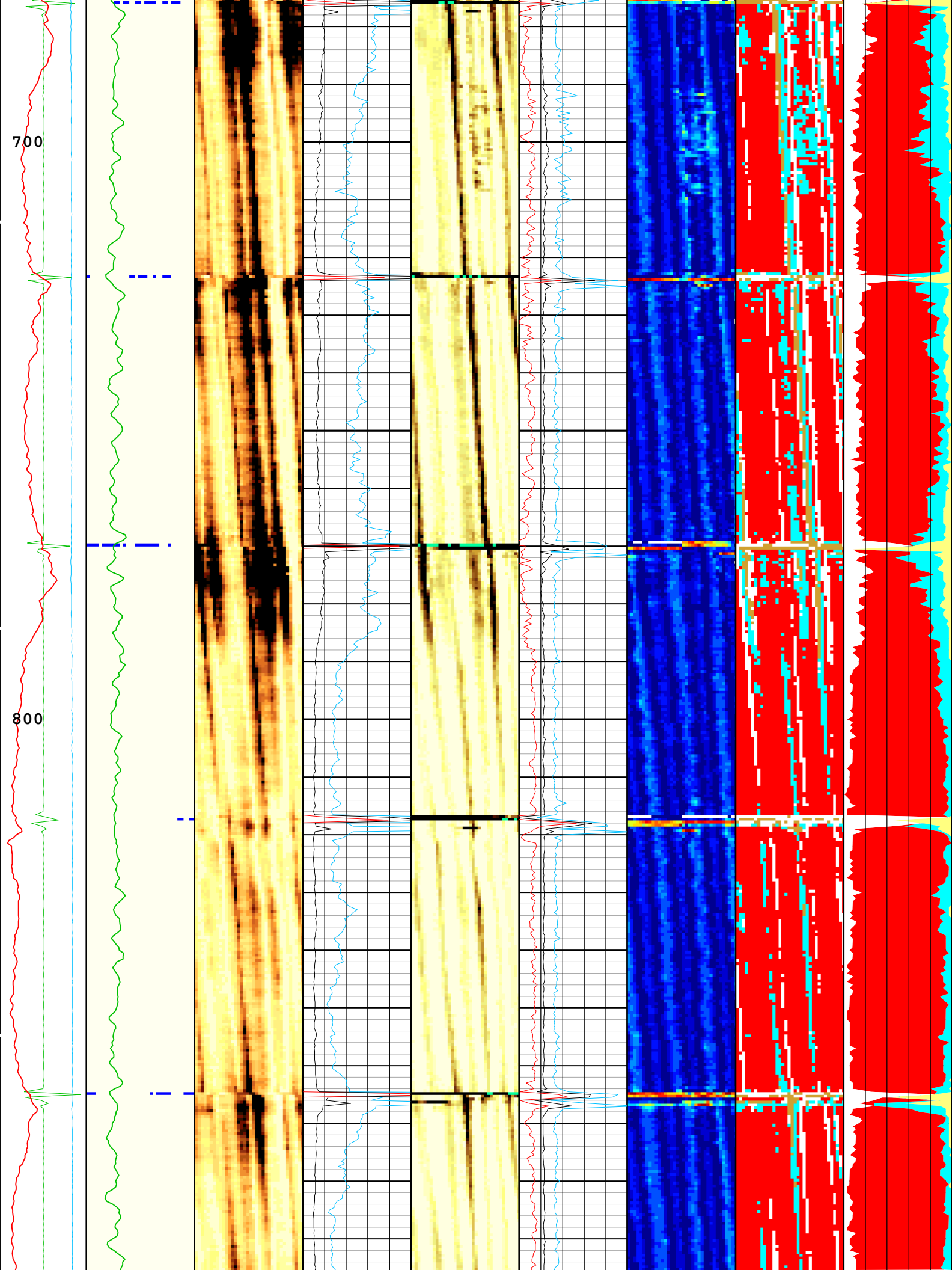
SLG Gas Index

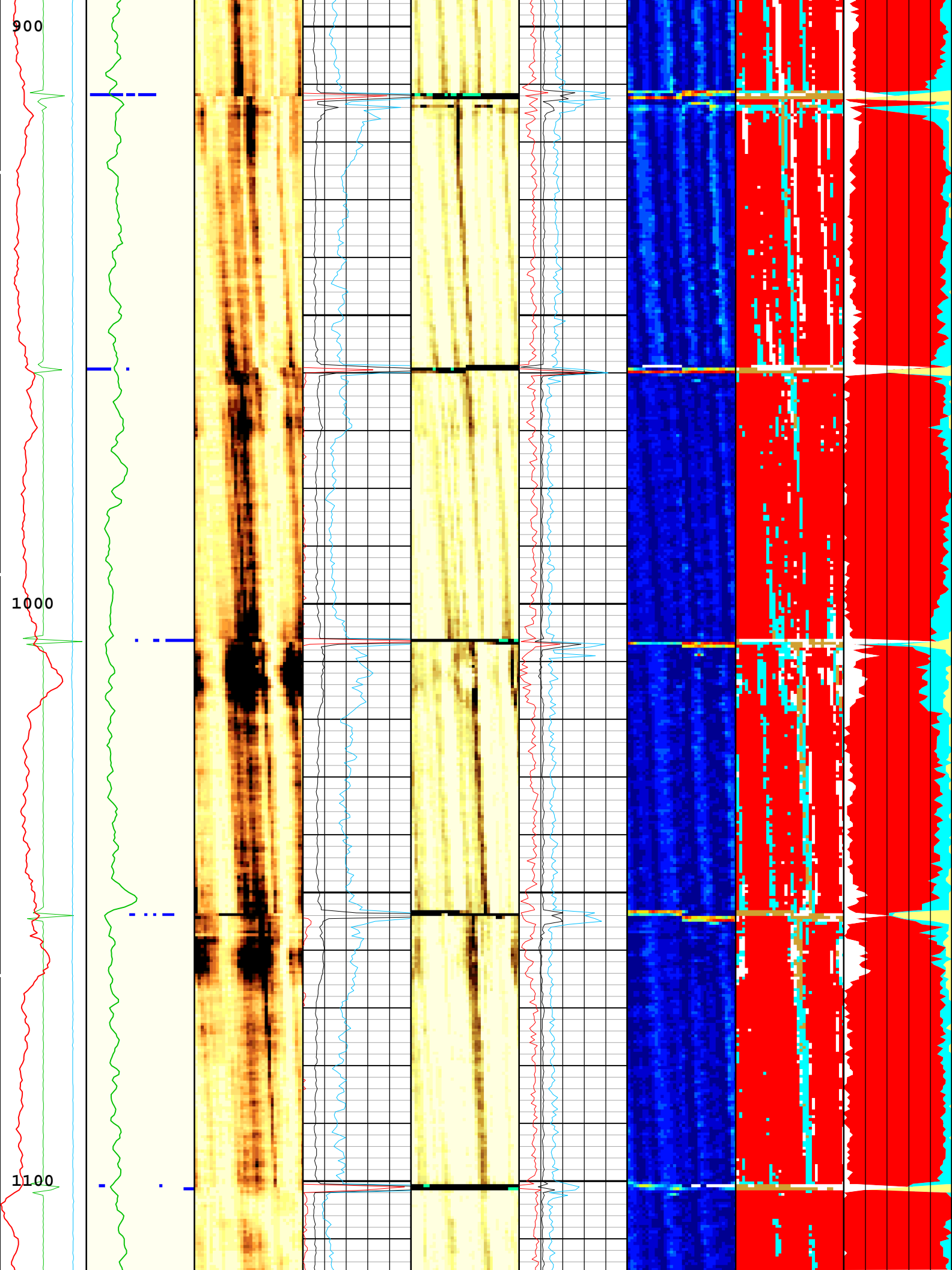
SLG White

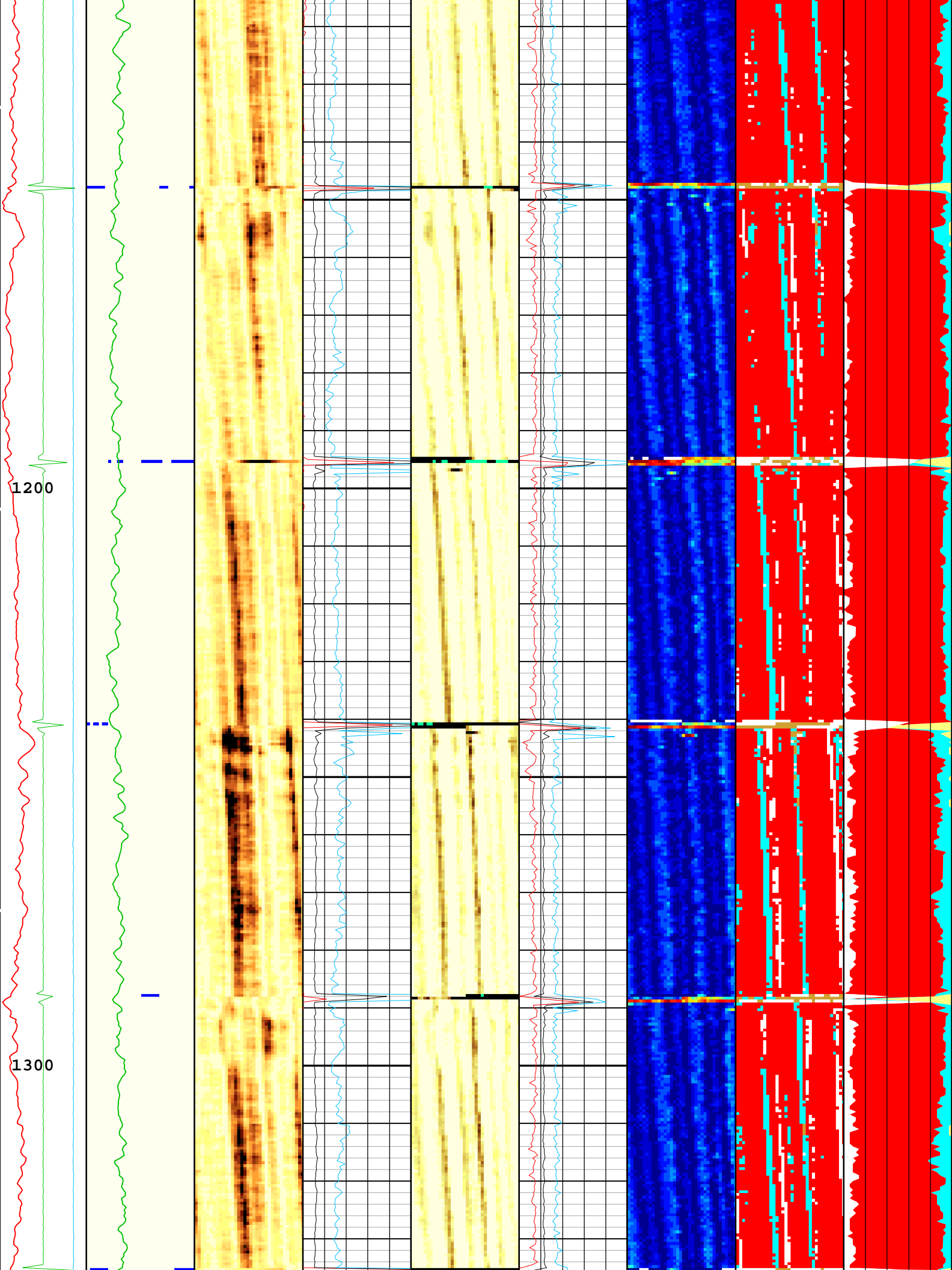


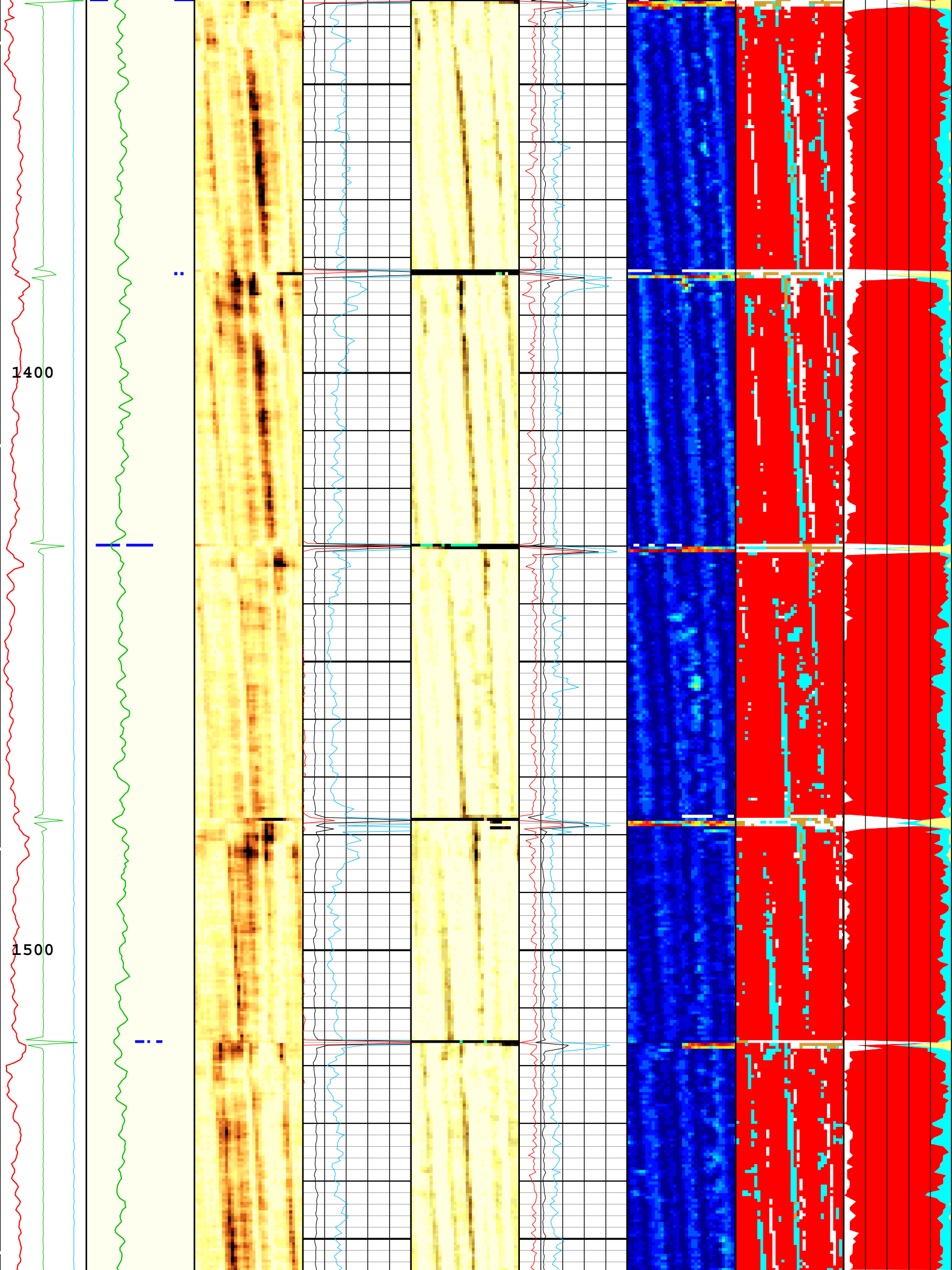


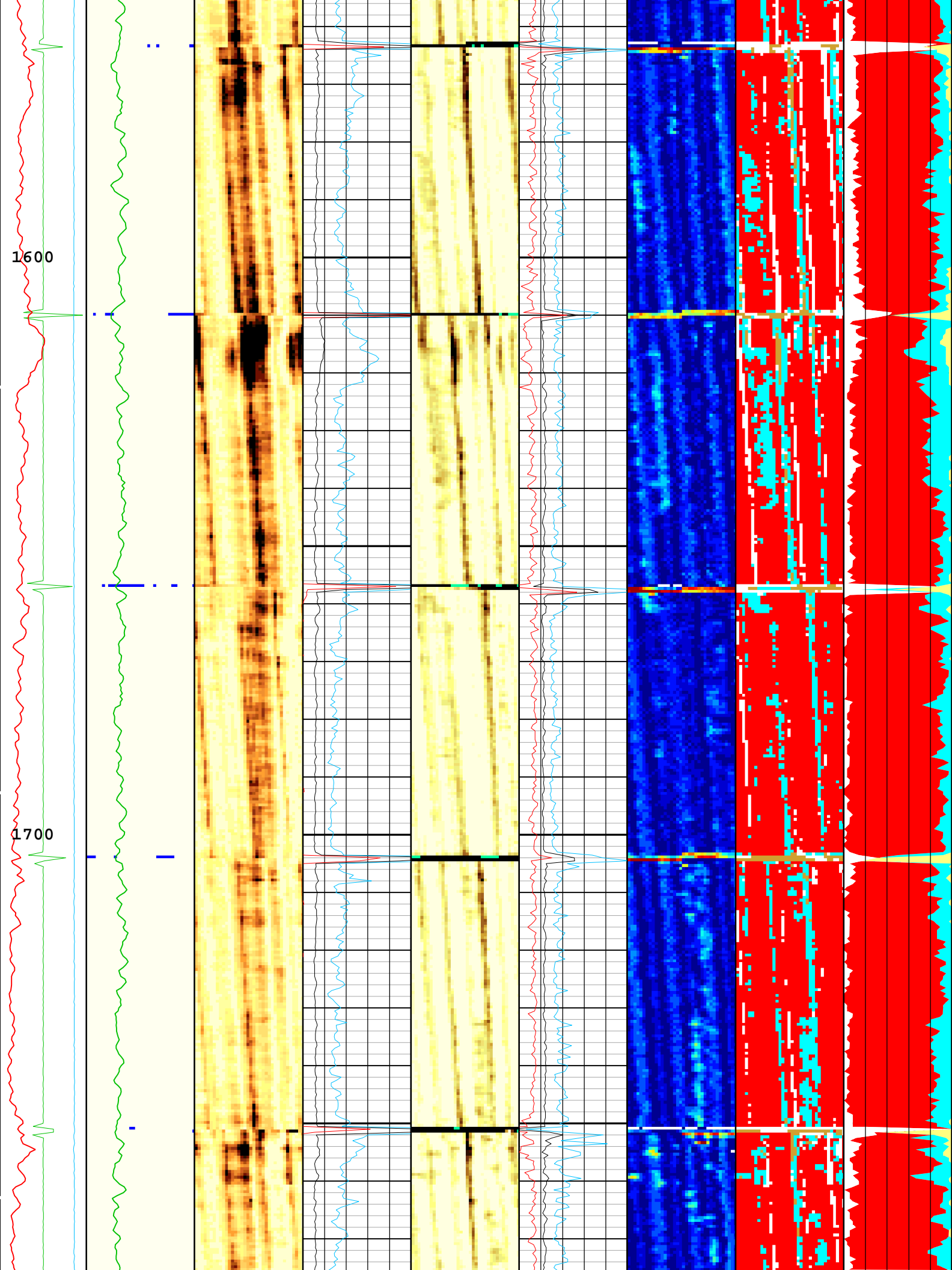


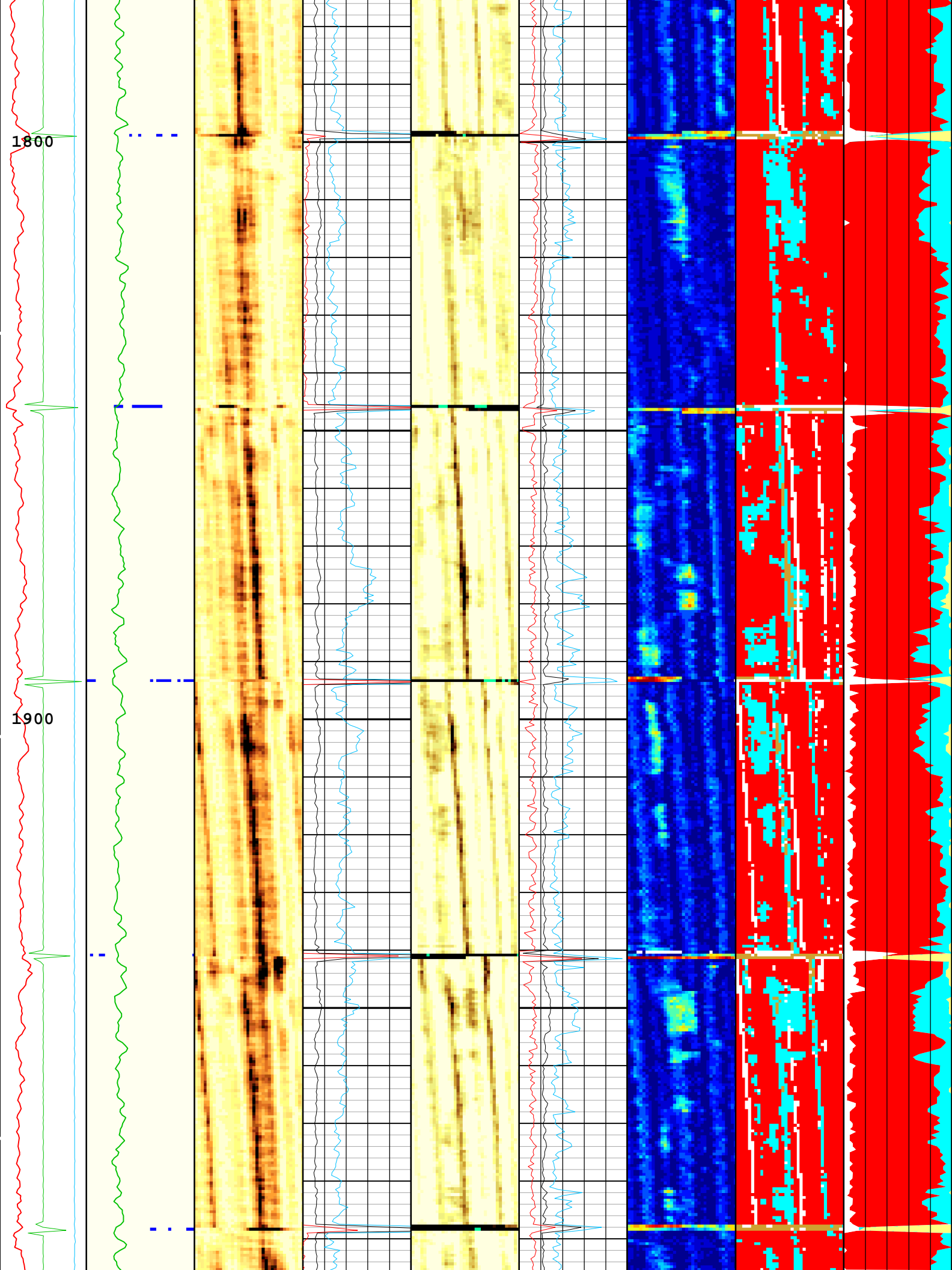


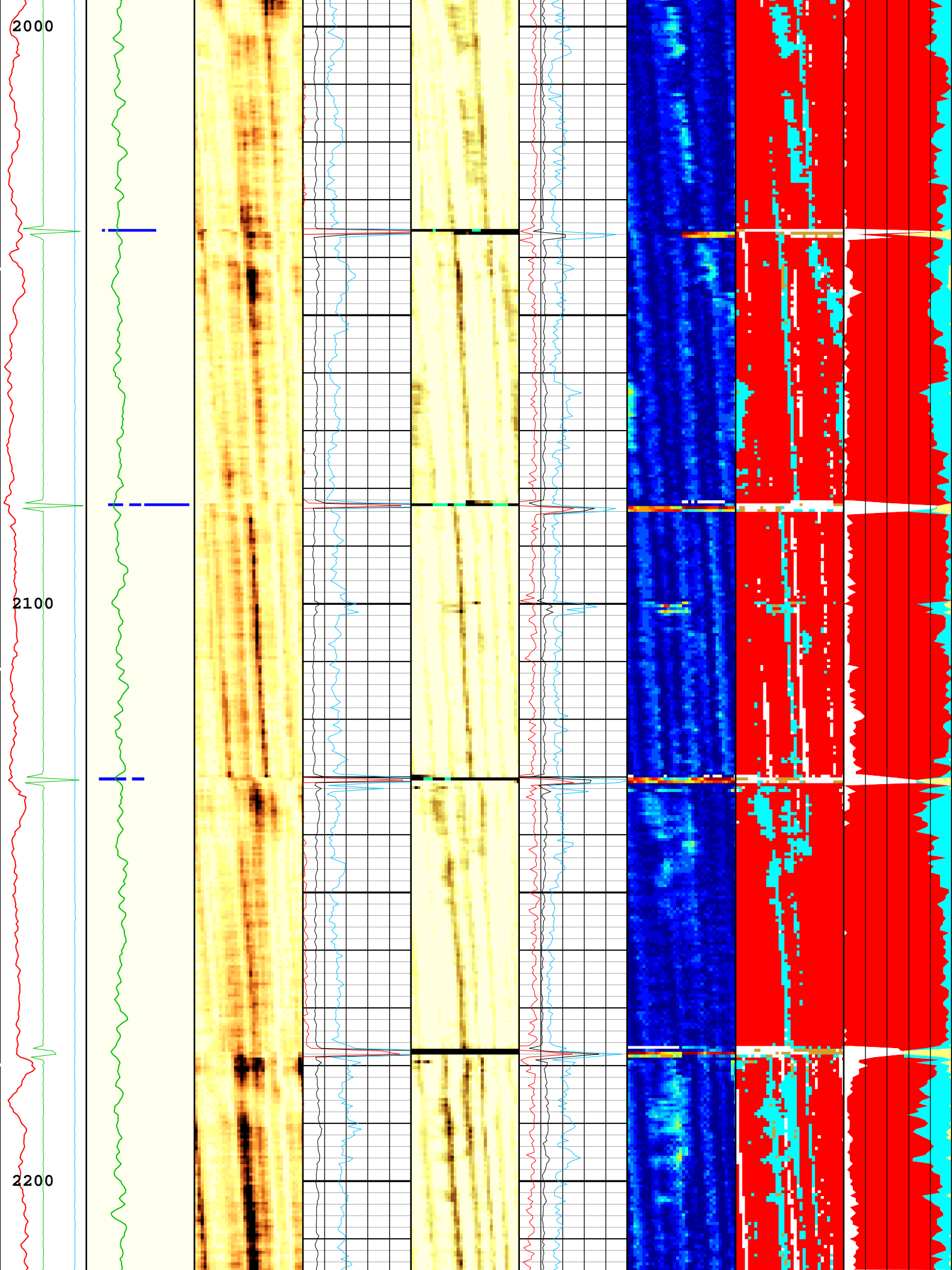


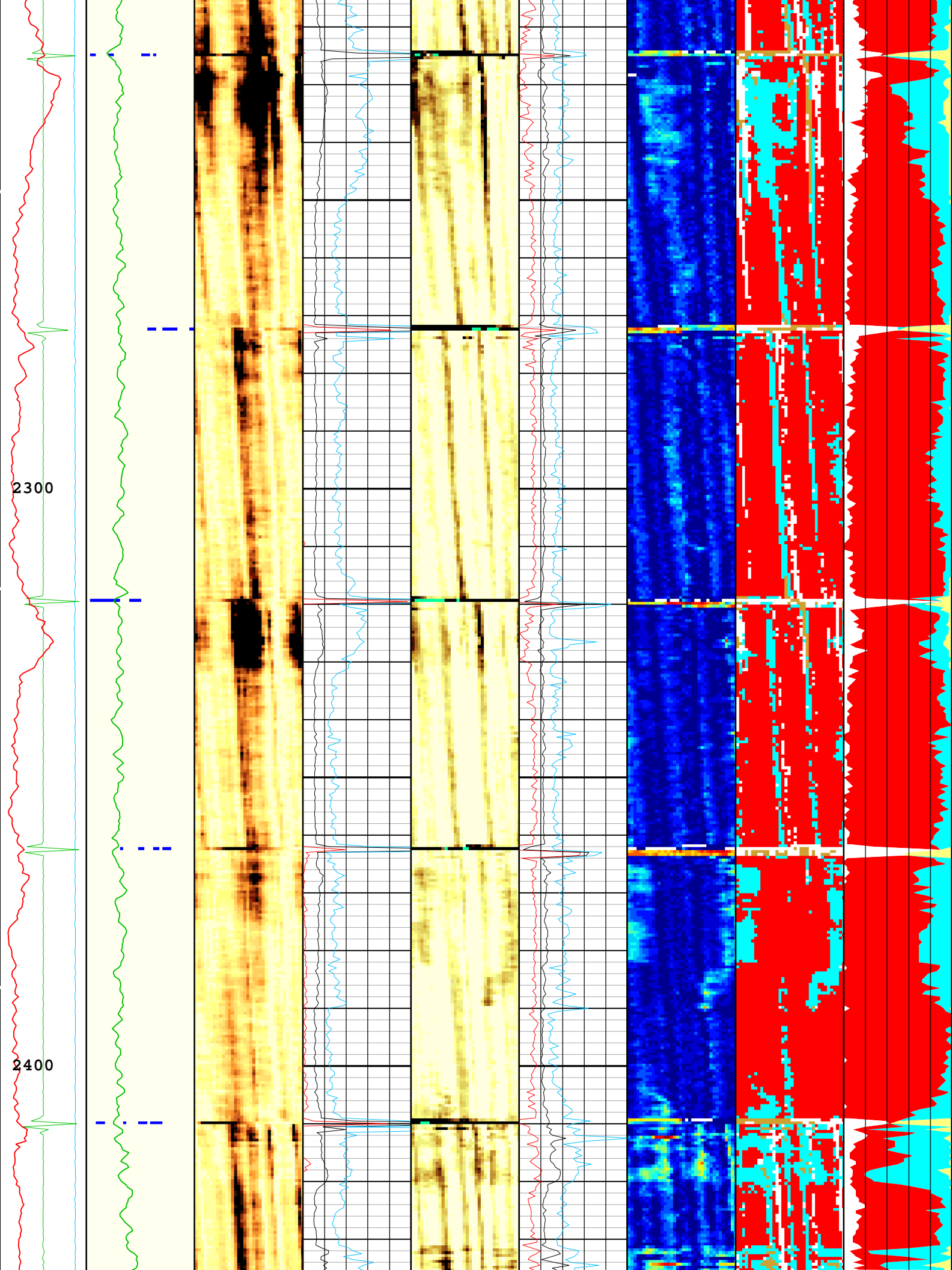


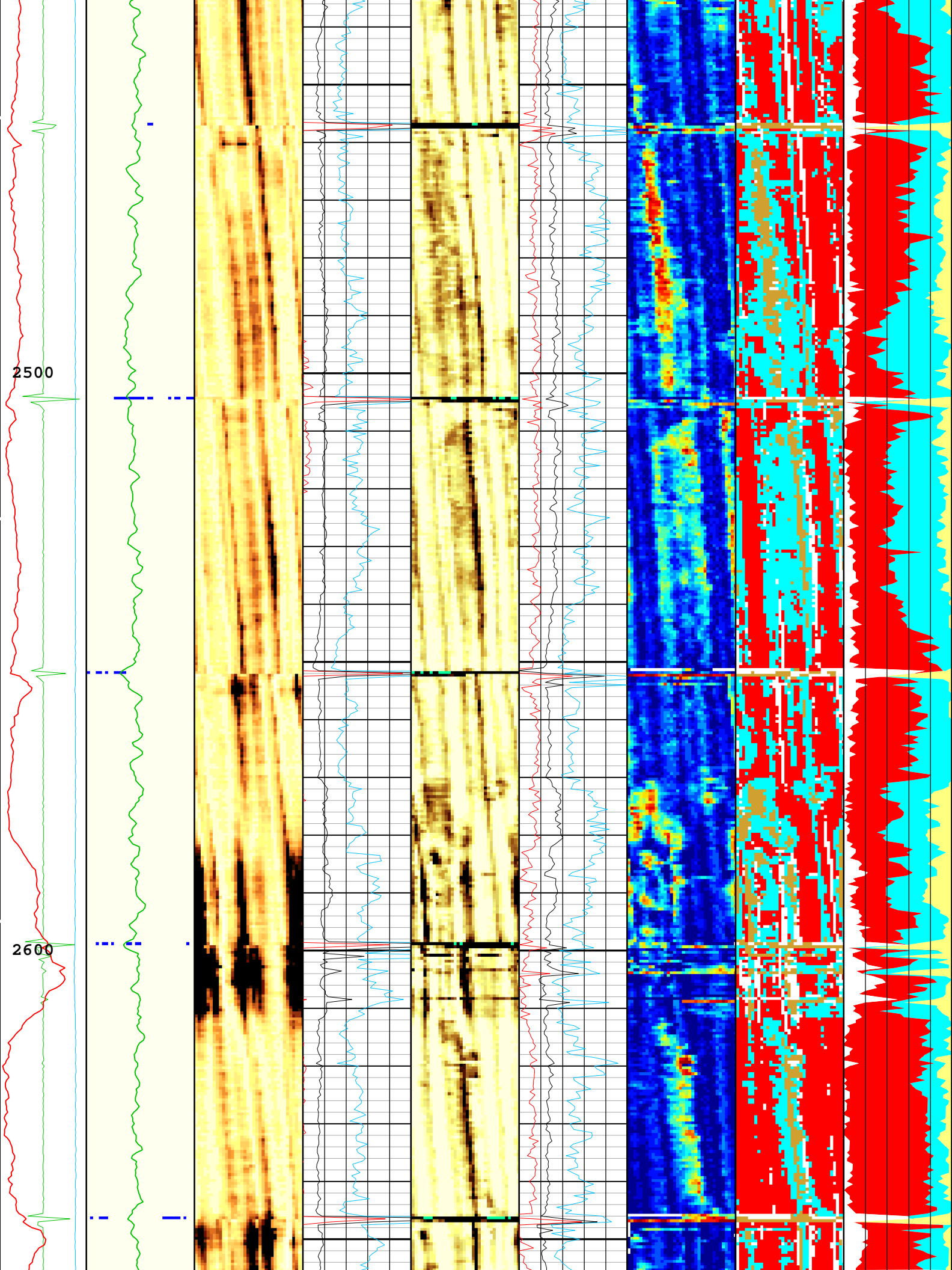


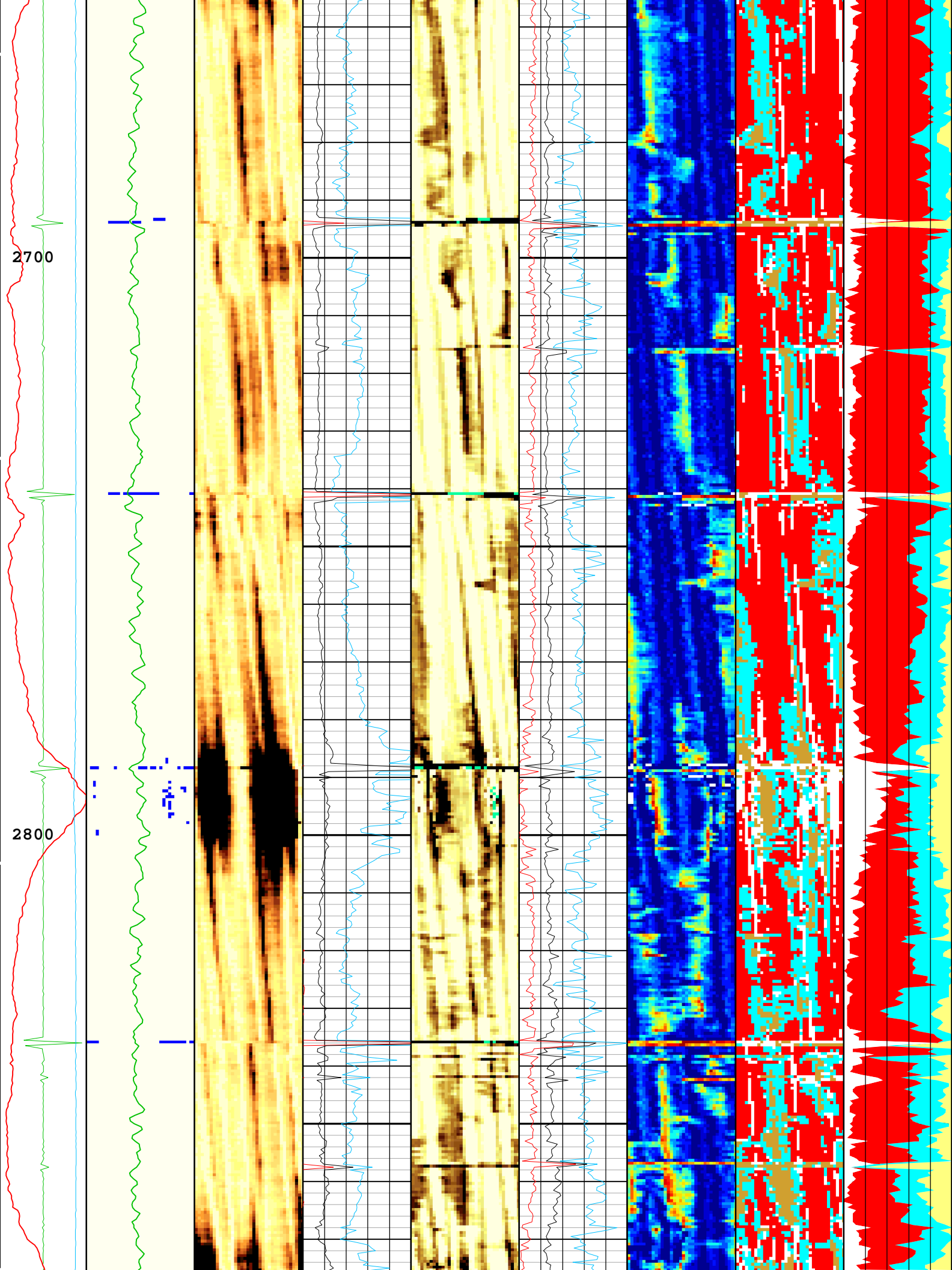


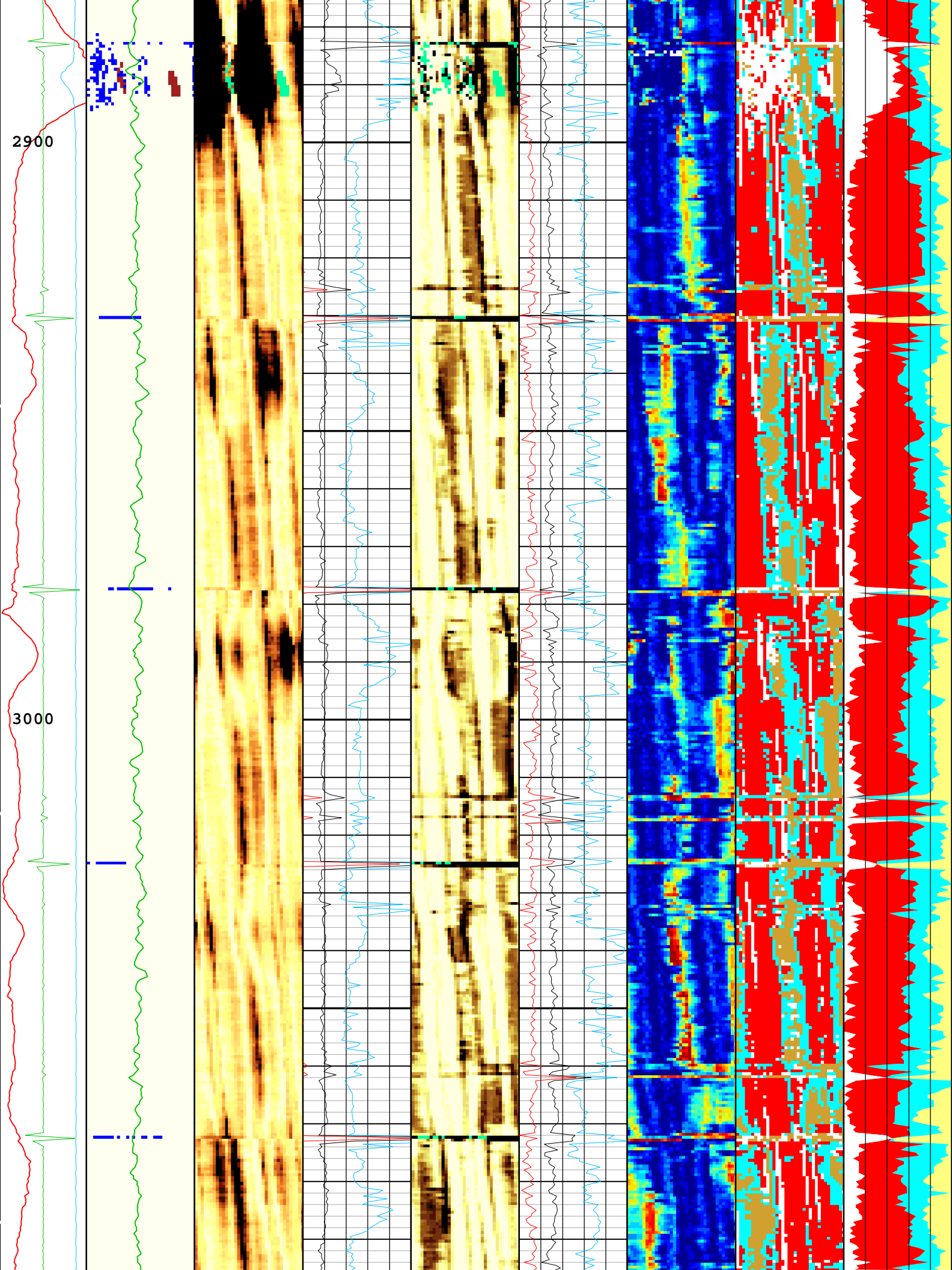


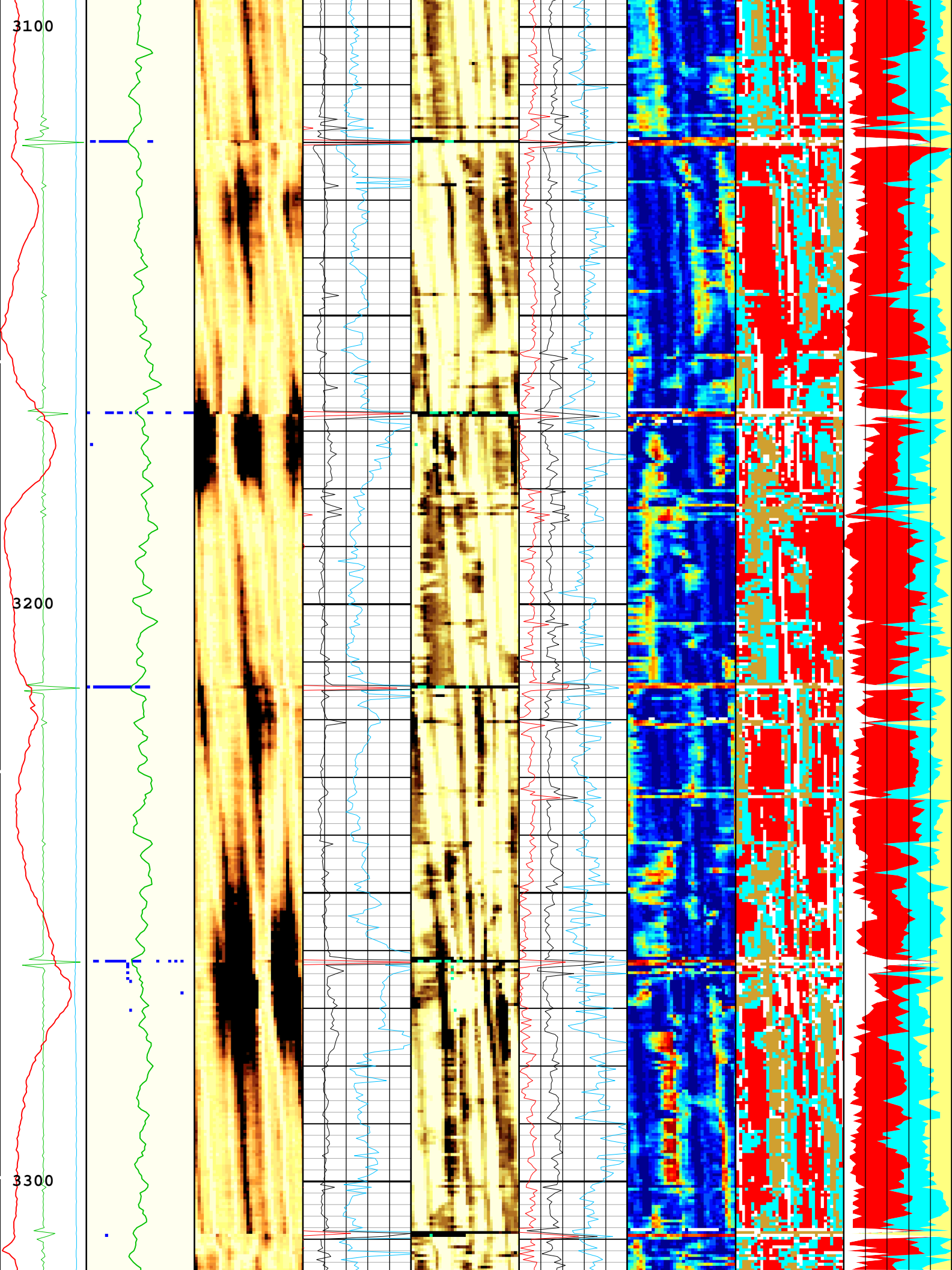


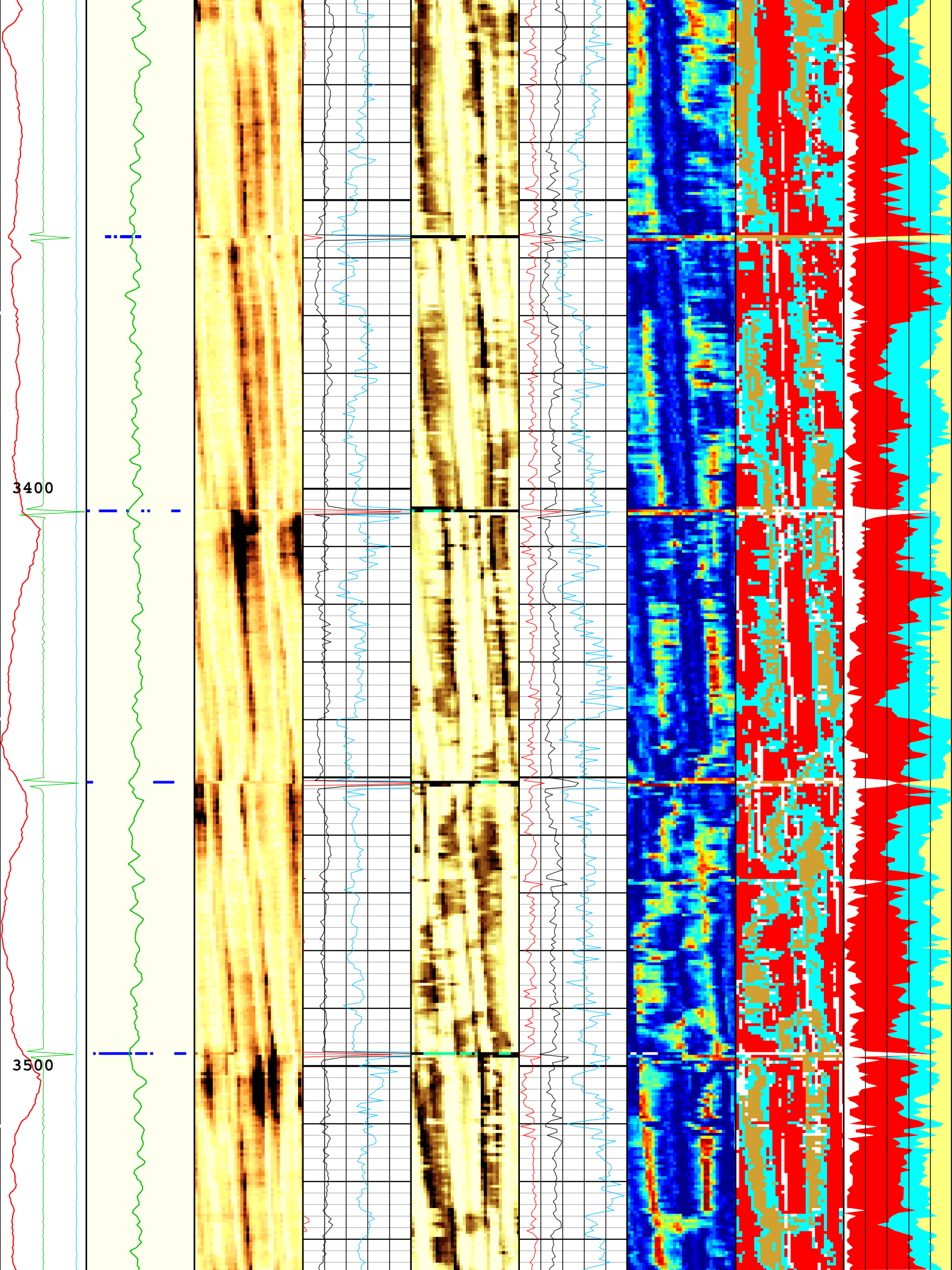


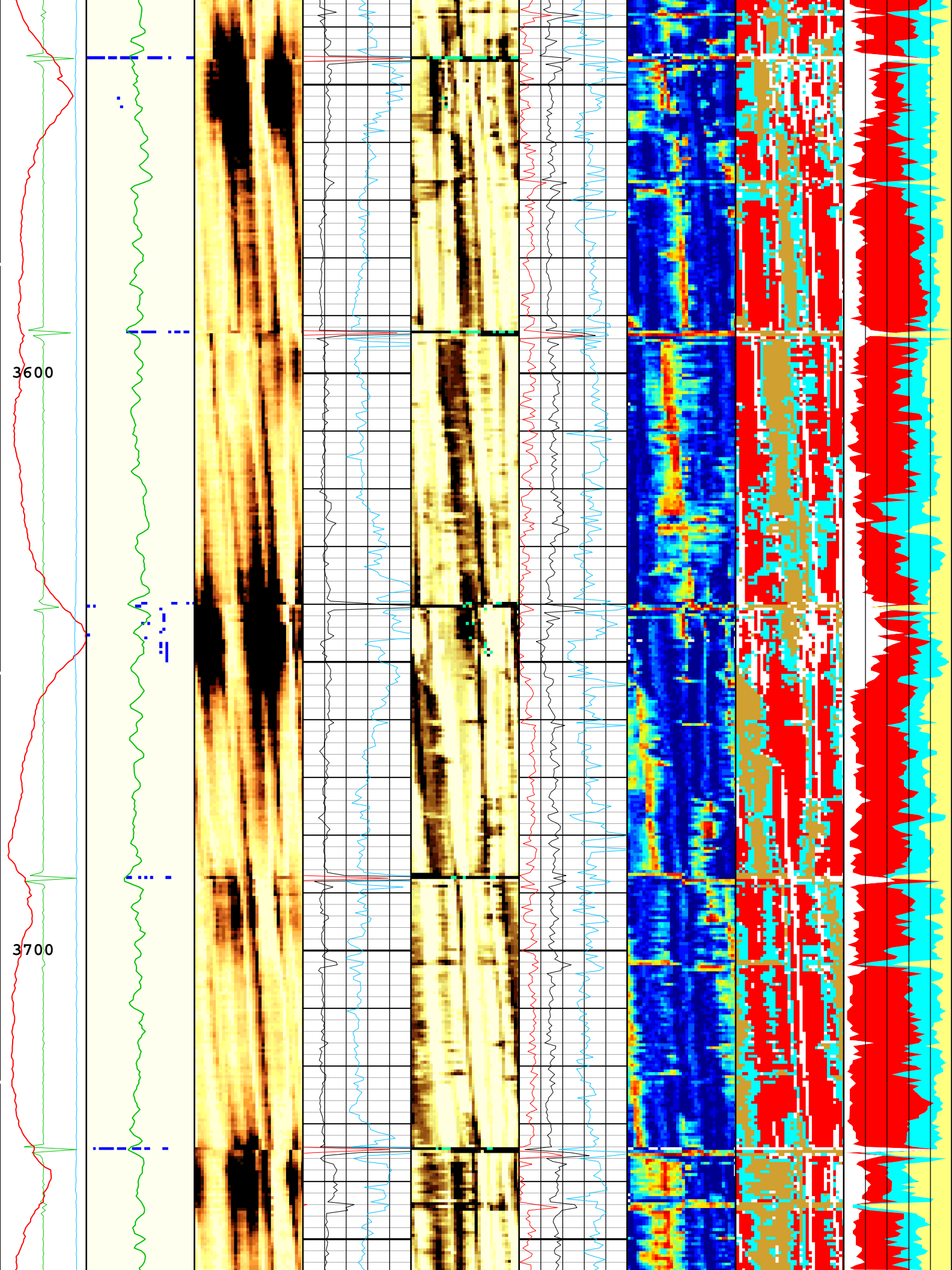


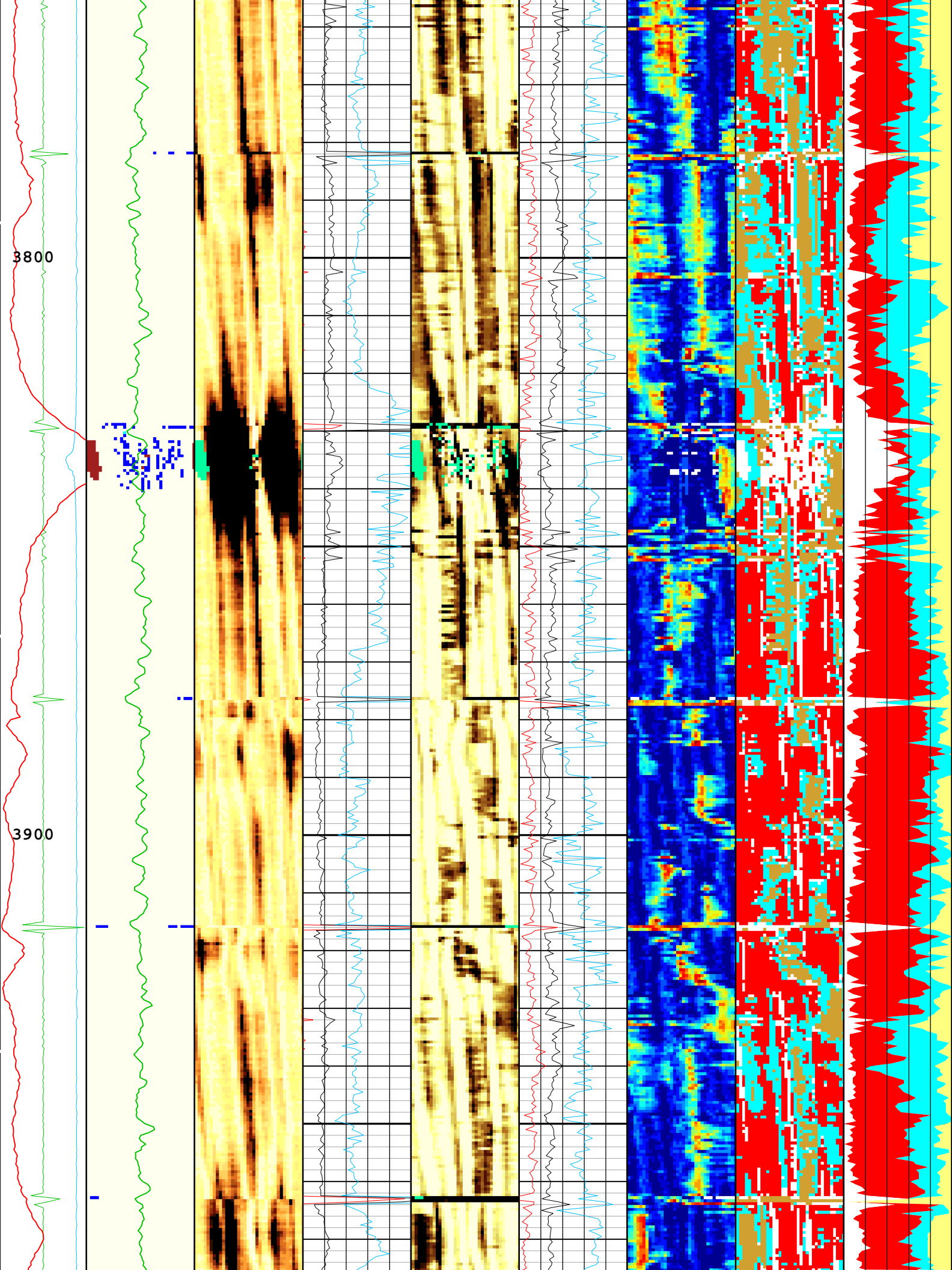


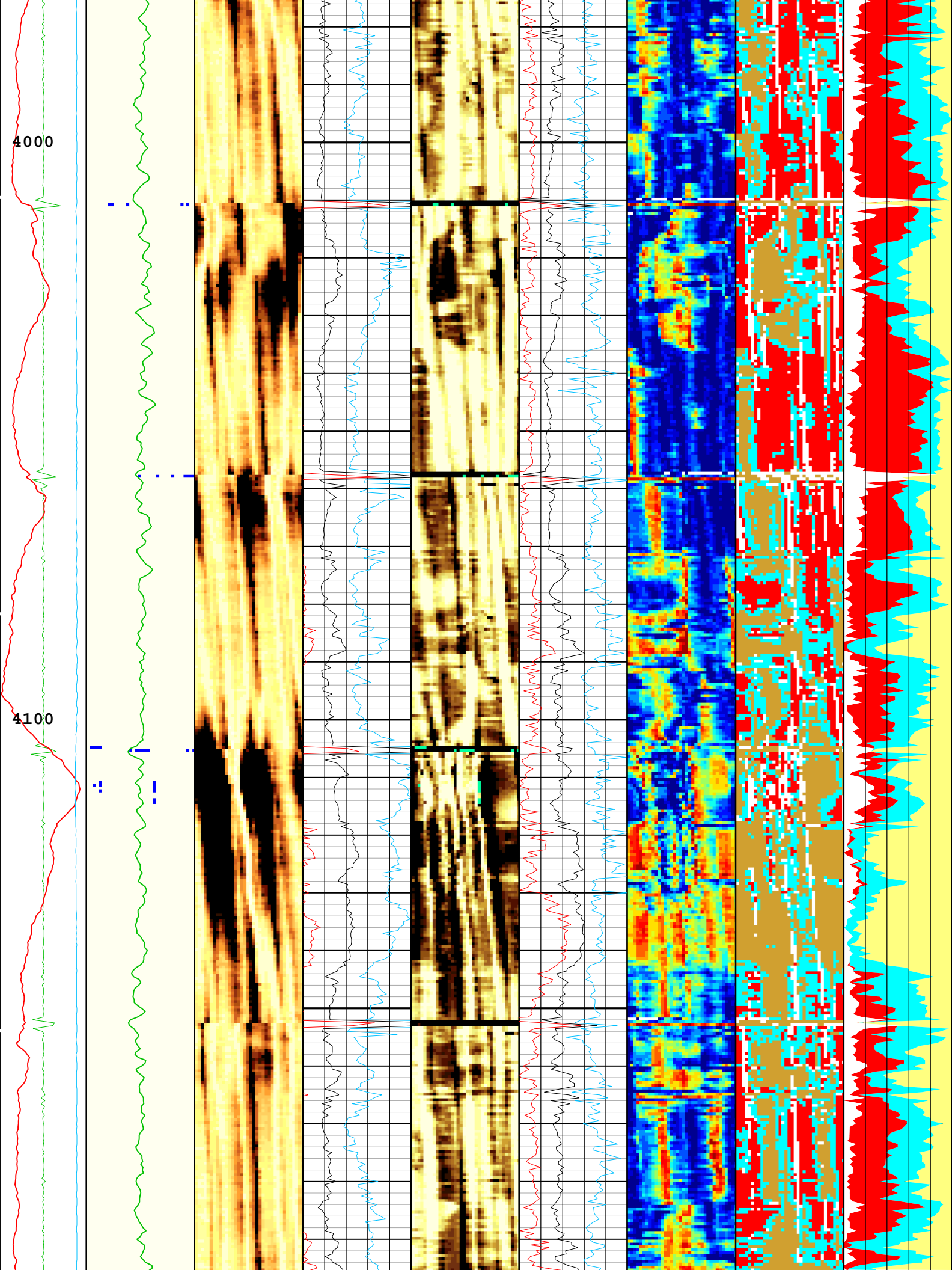


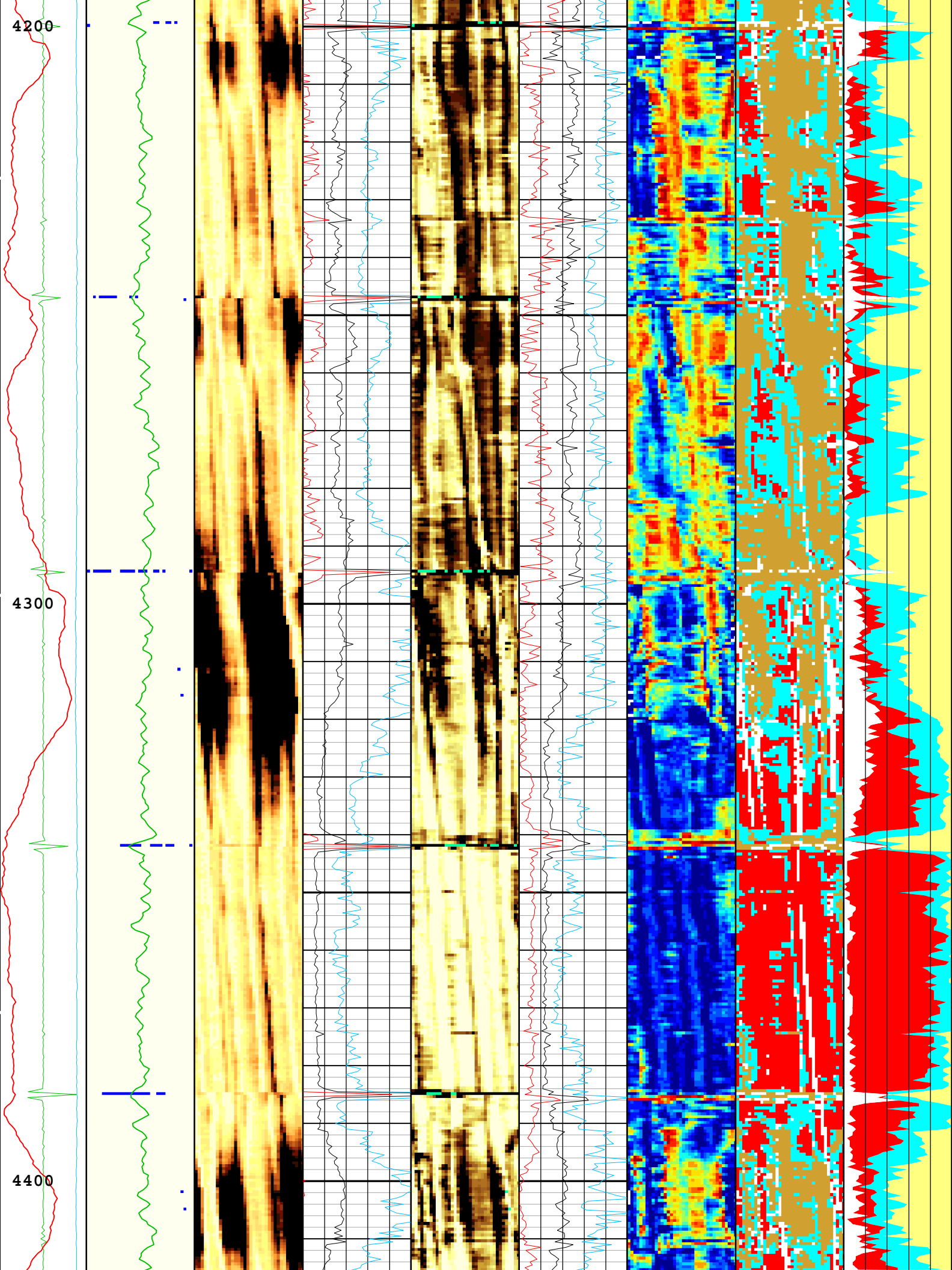


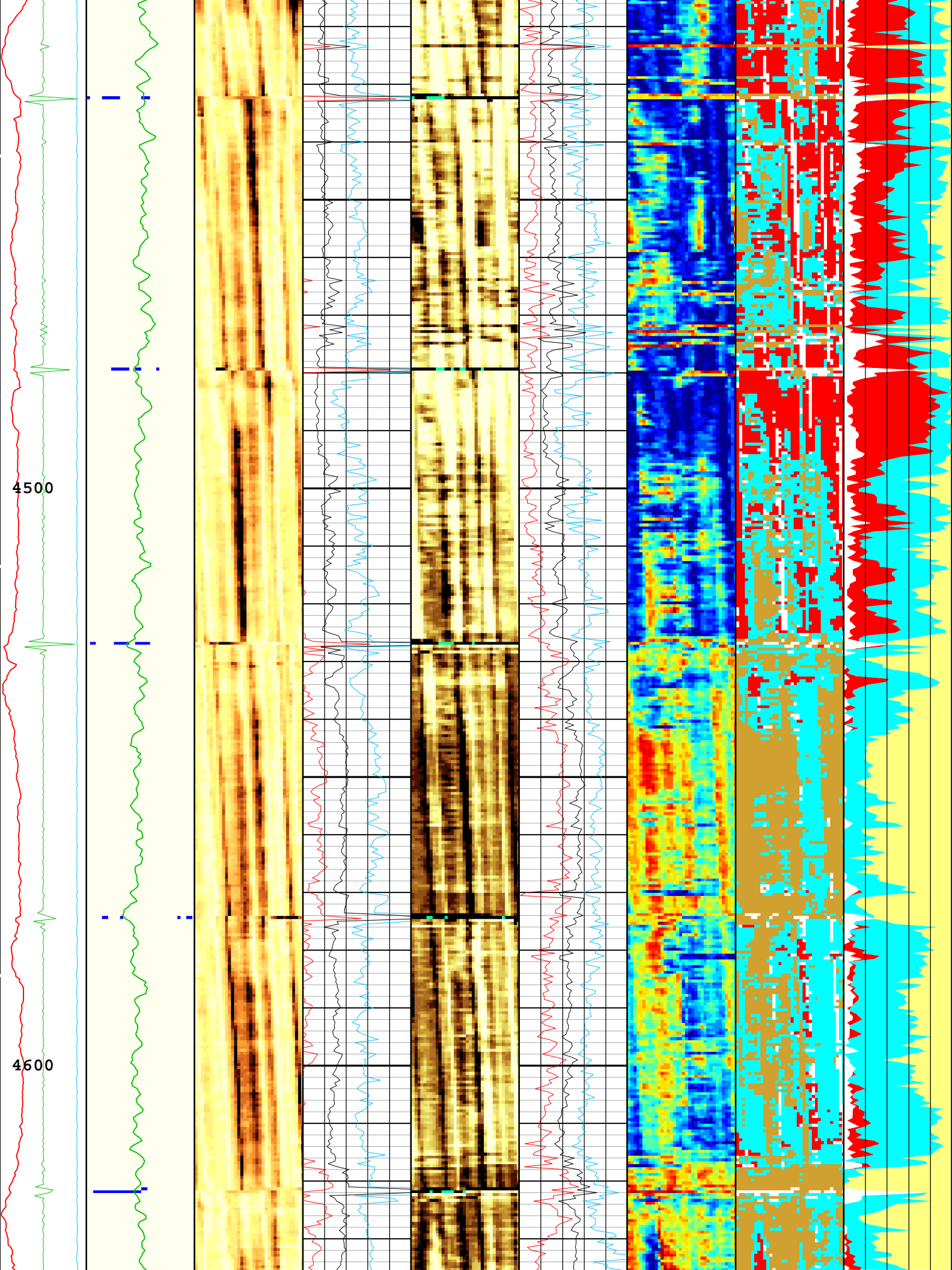


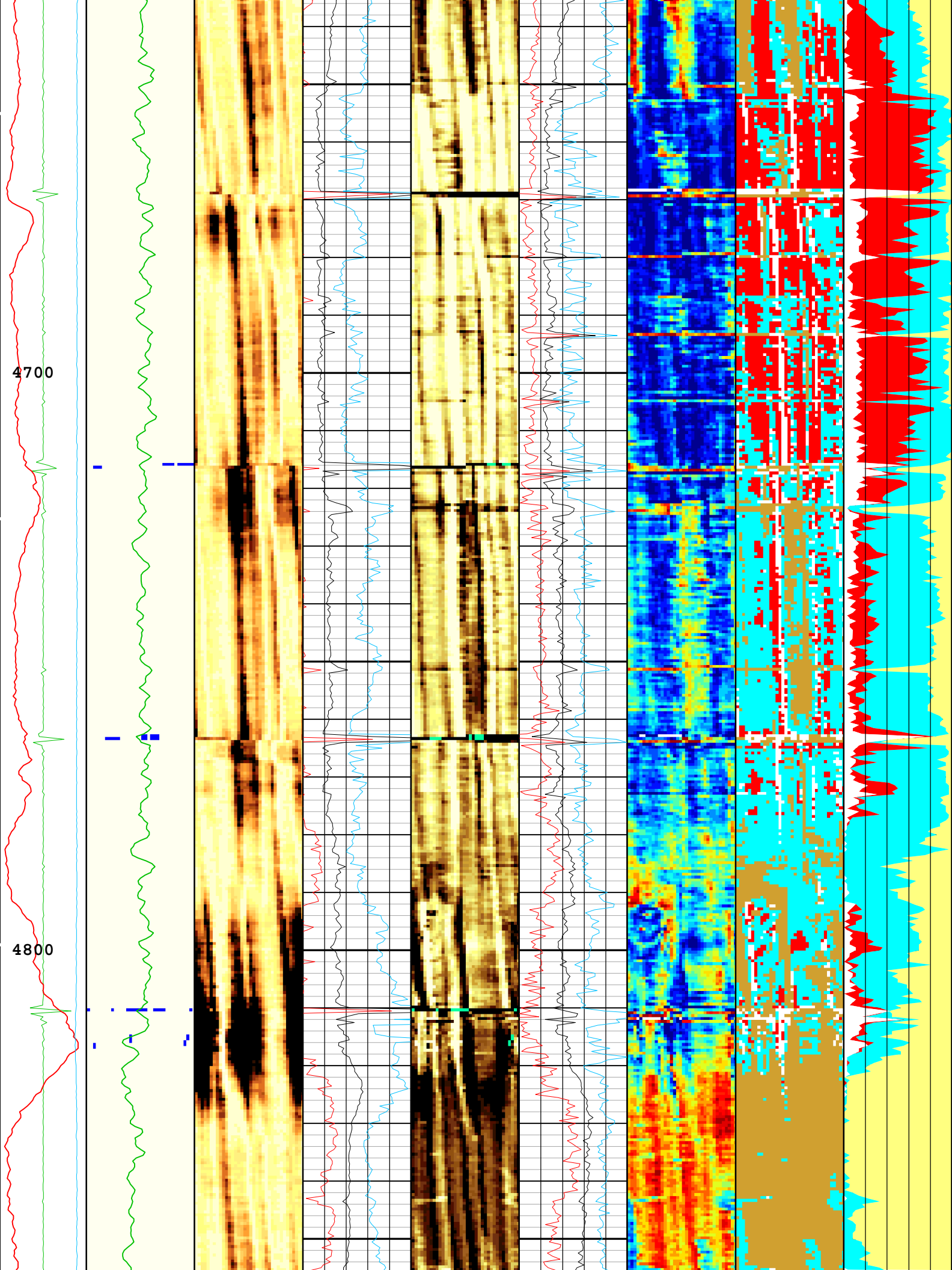


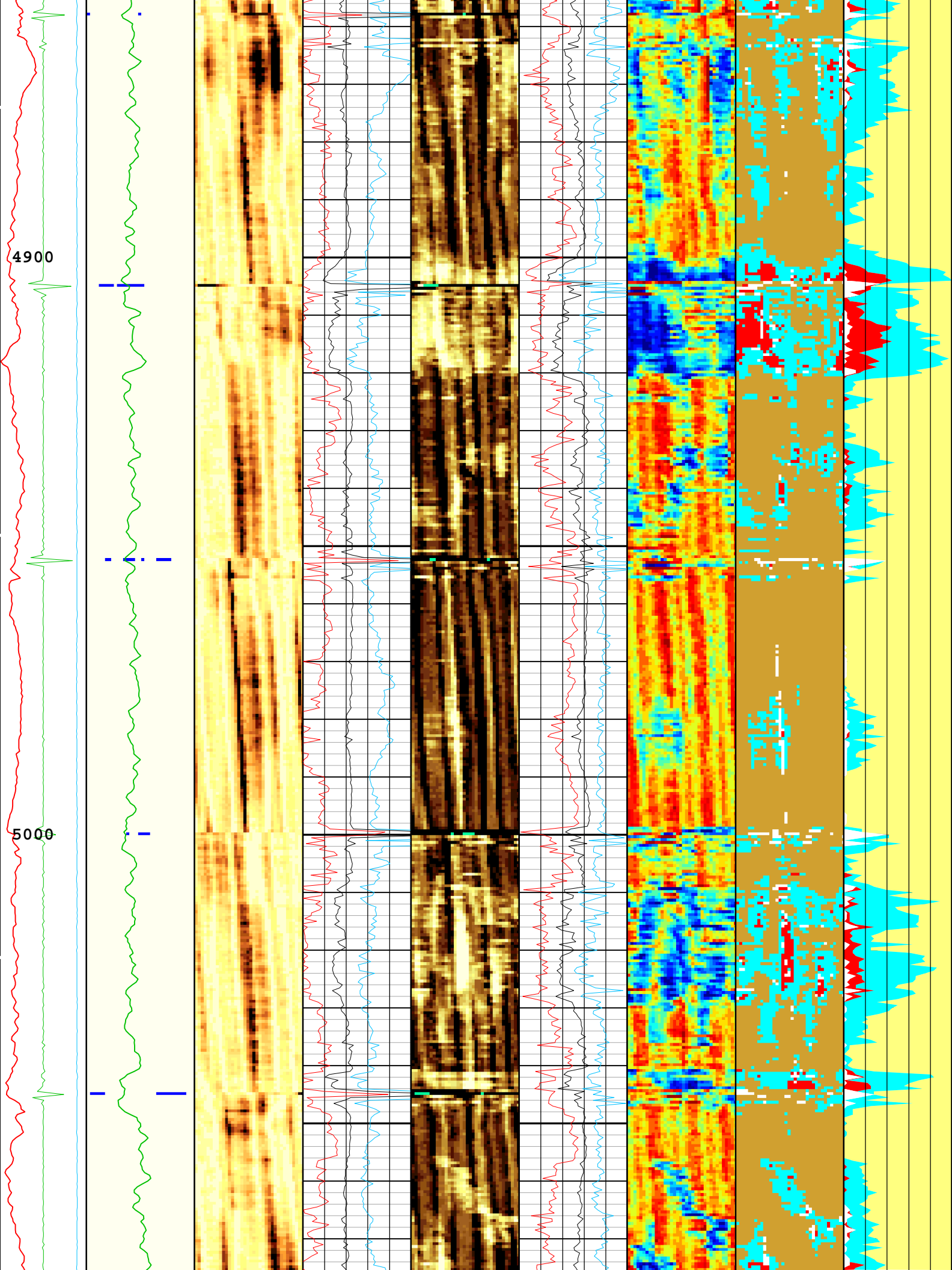


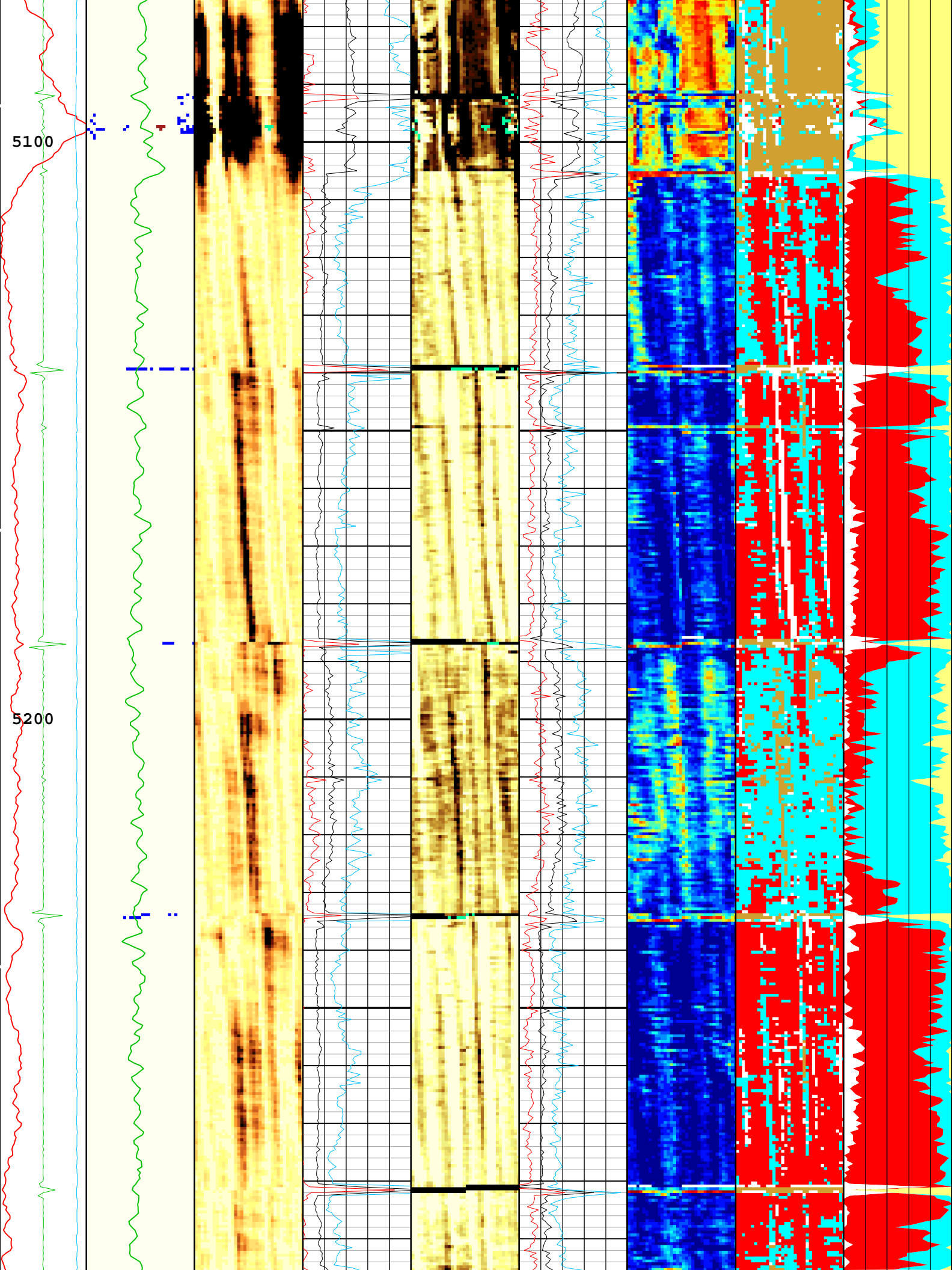


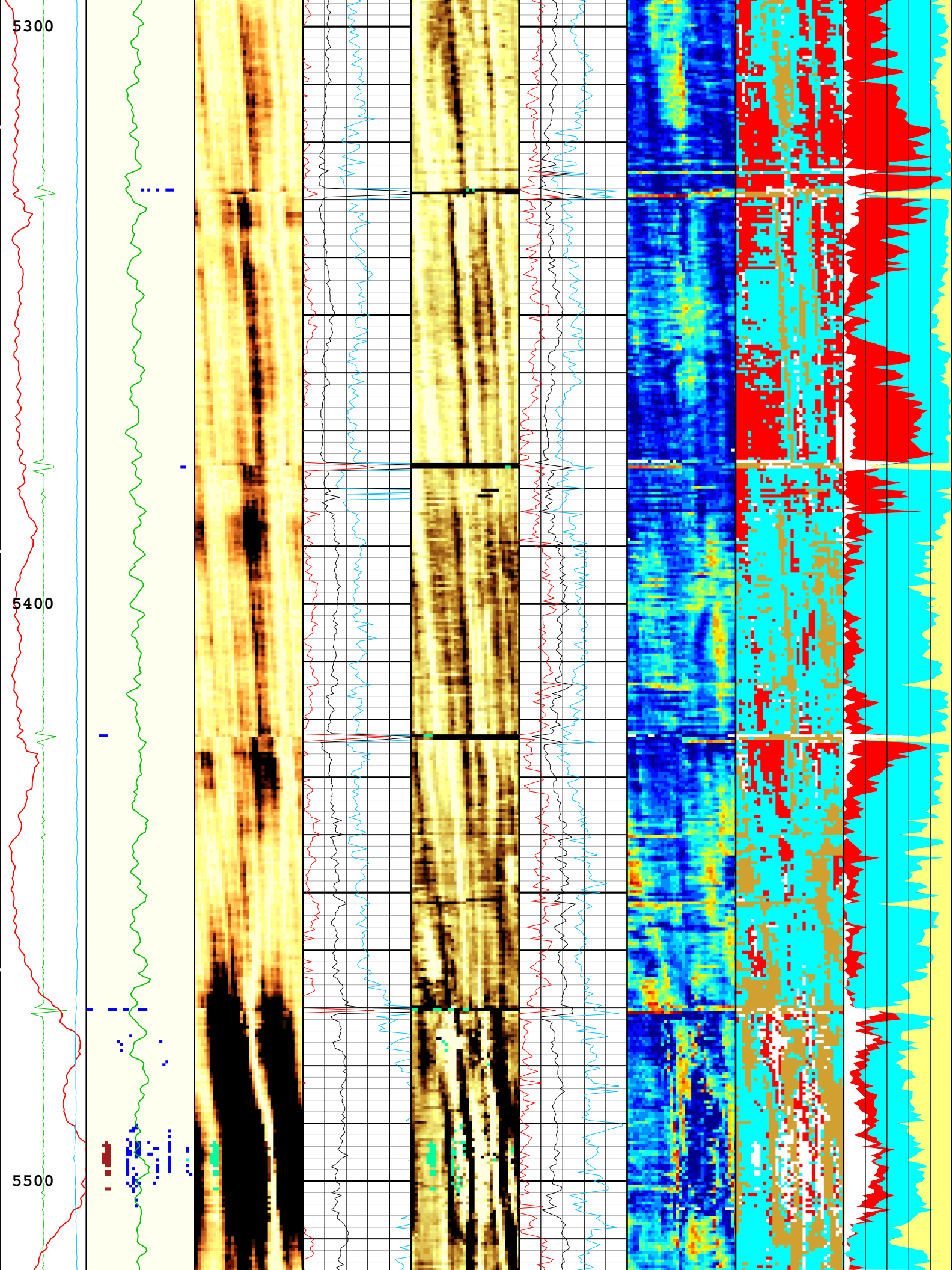


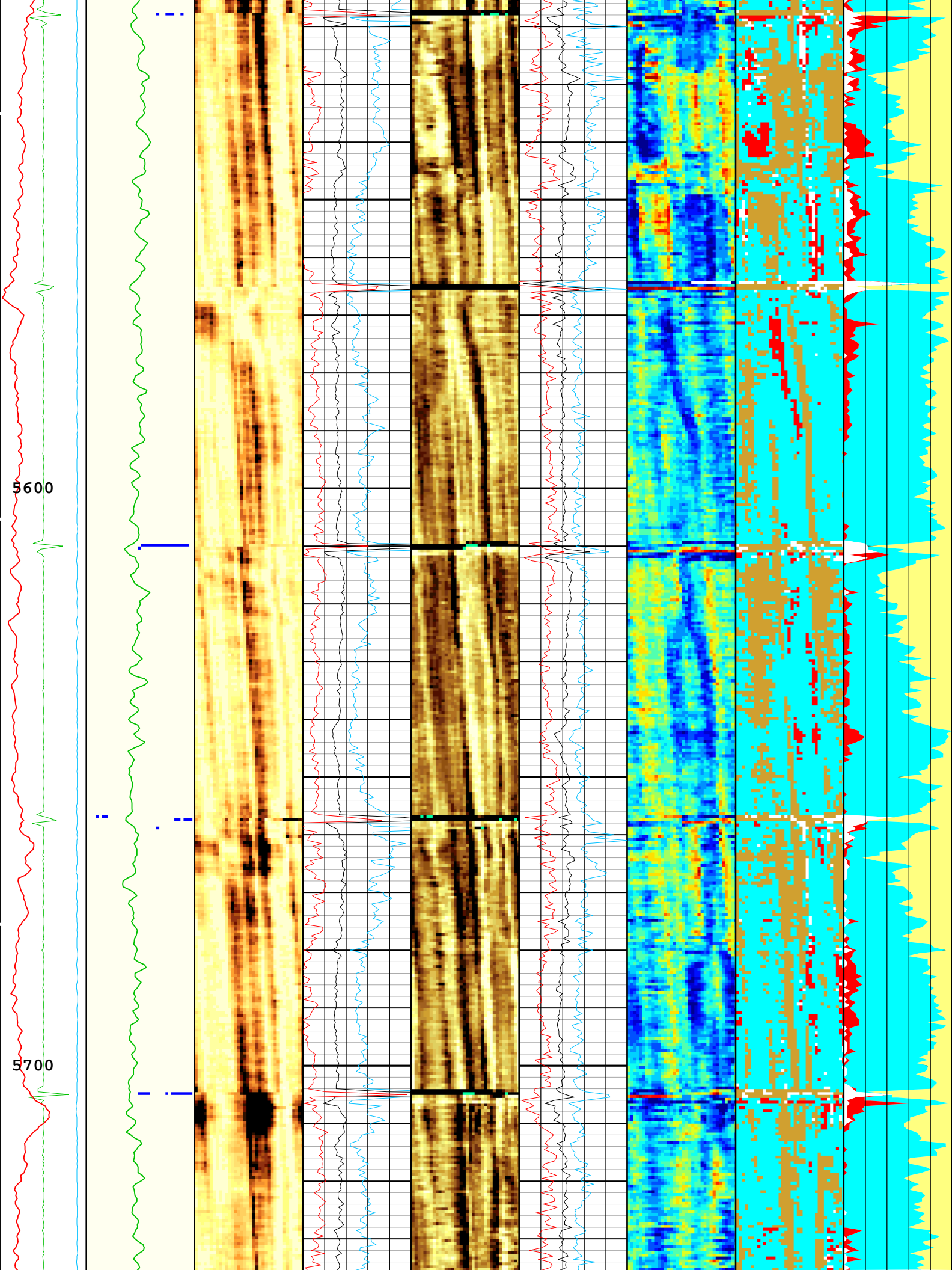


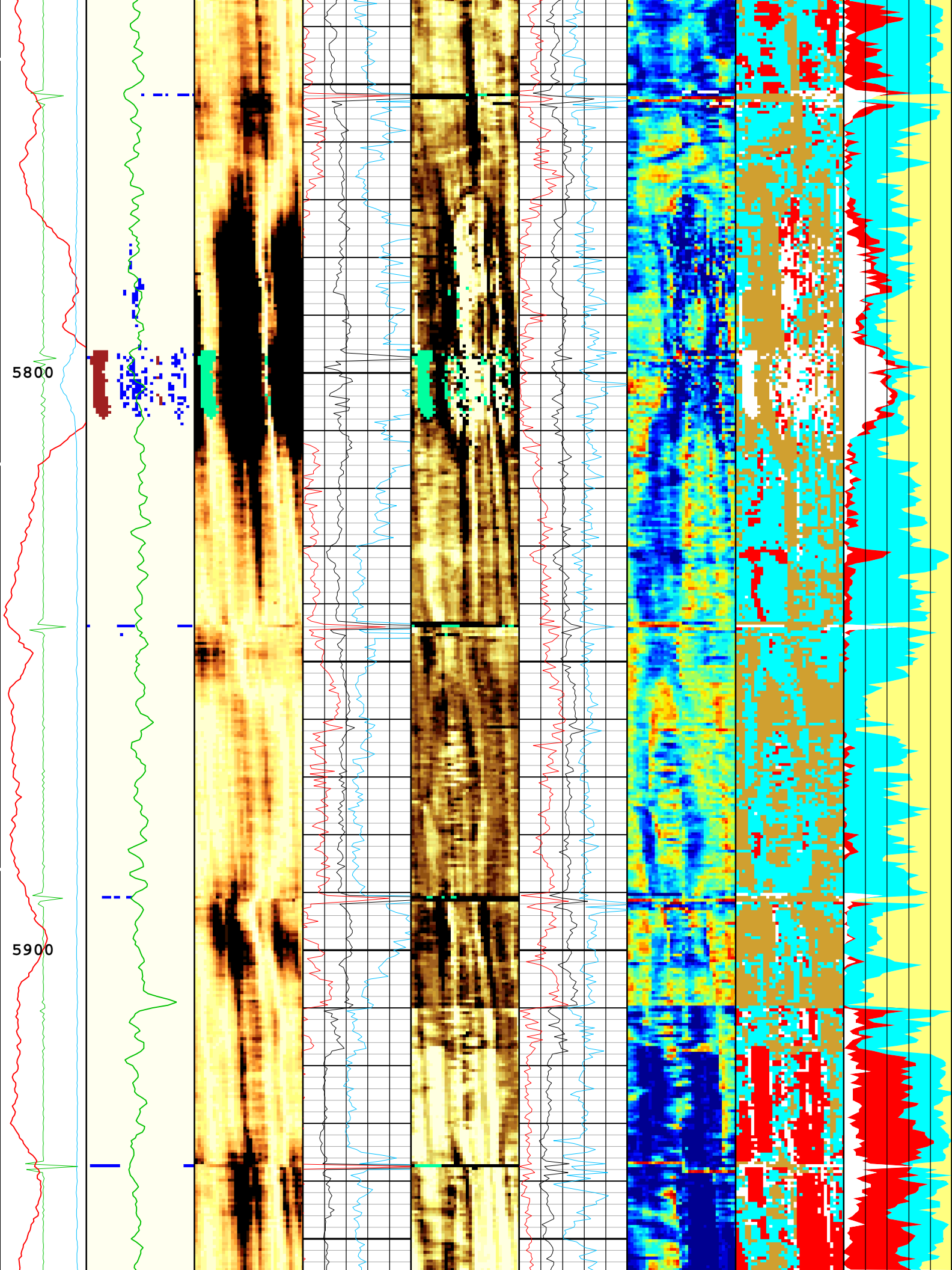


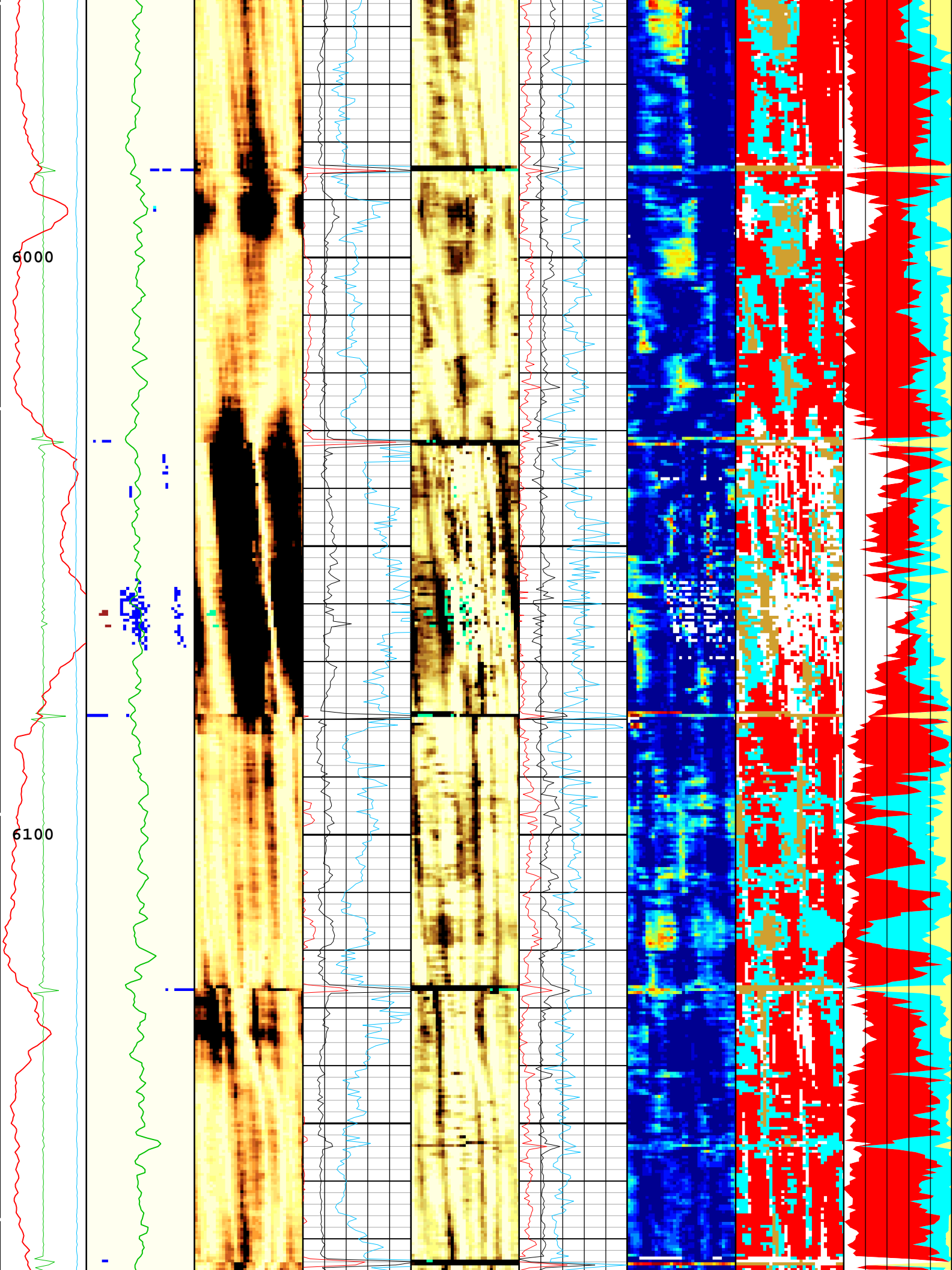


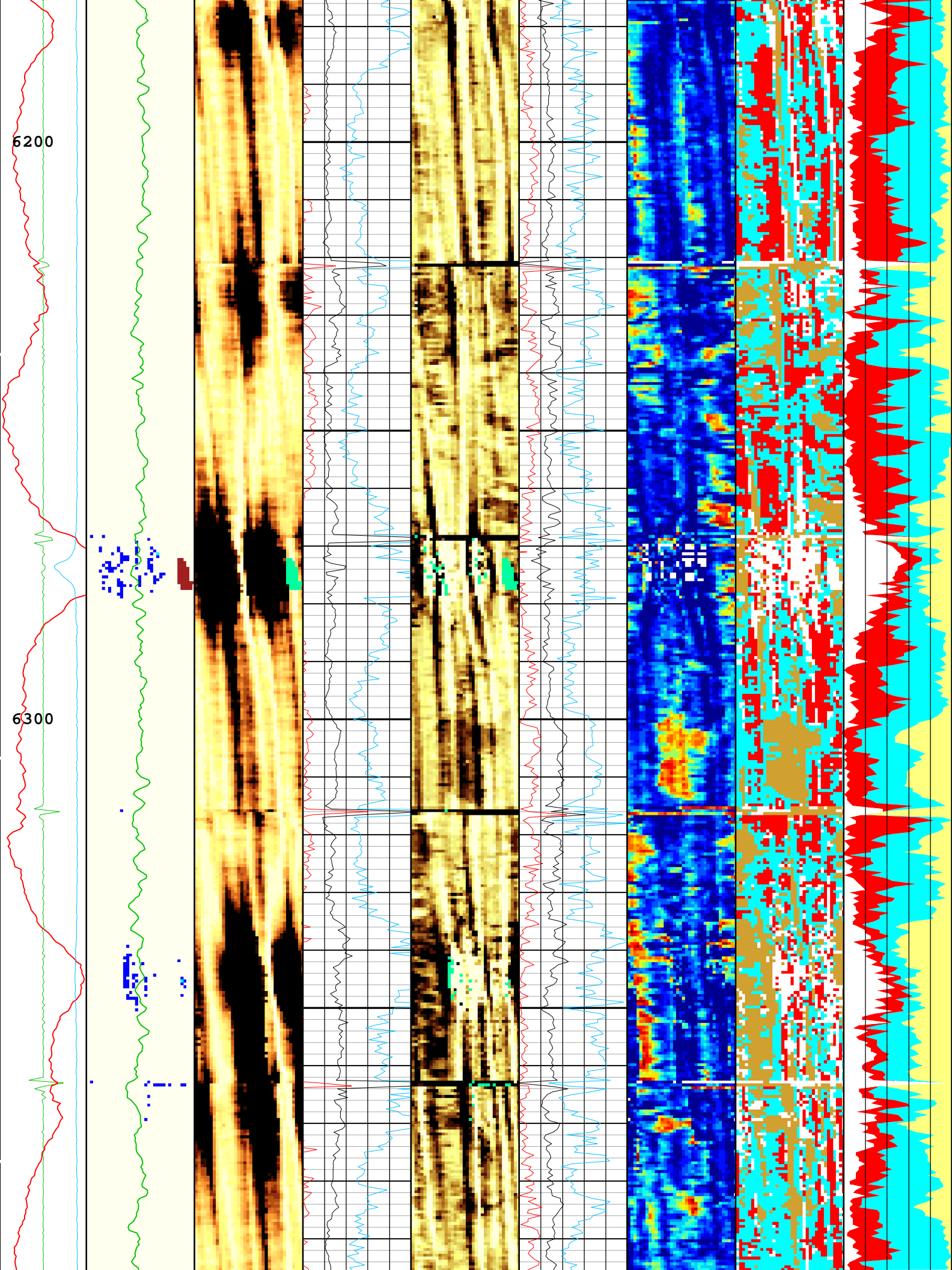


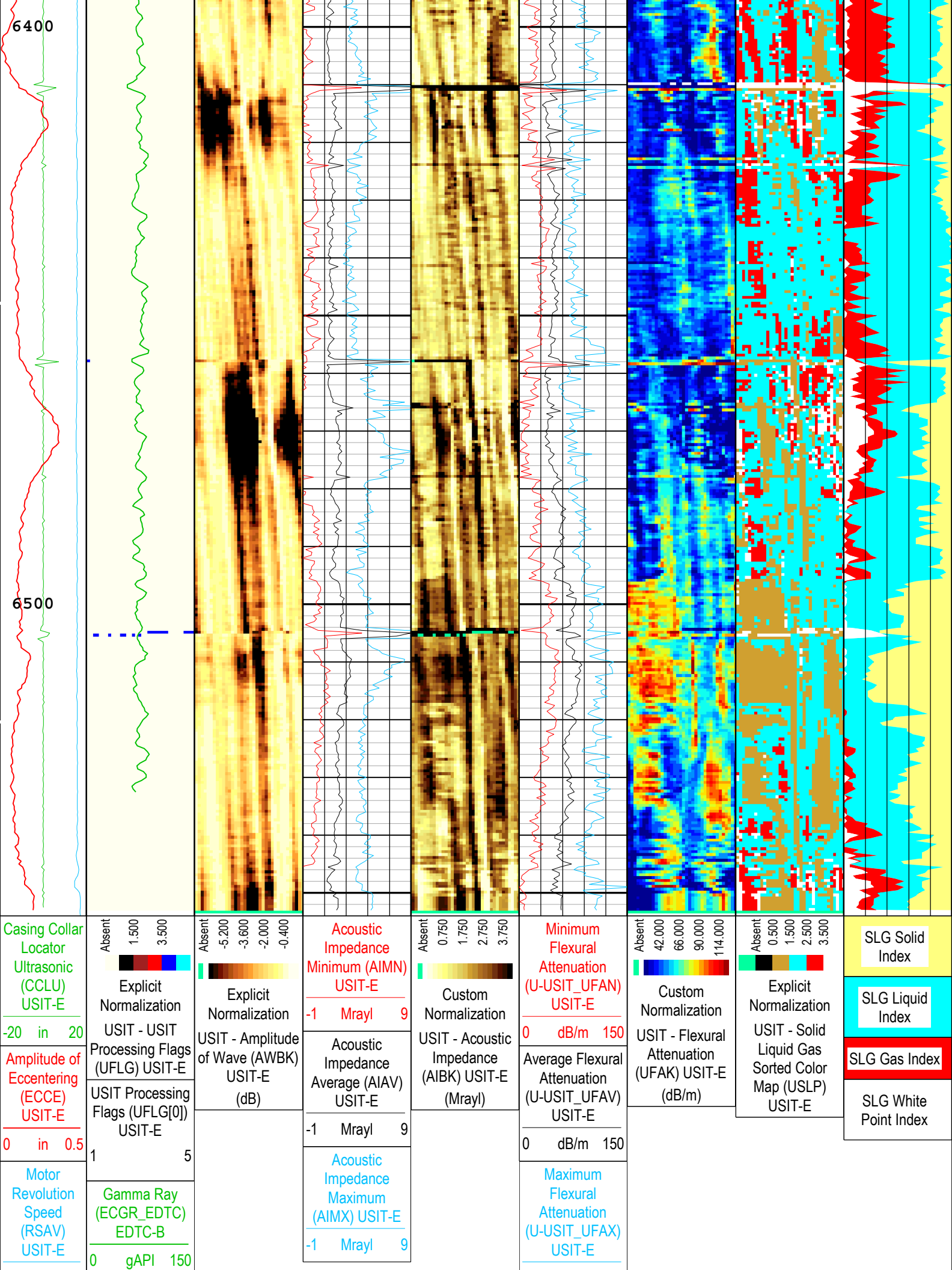












6	c/s	7.5		0	dB/m	150
USIT Processing Flags (UFLG[0]) USIT-E						
1 - UFLG 1 Value within [0.0 - 1.5] - :						UTIM Error
2 - UFLG 2 Value within [1.5 - 2.5] - :						Pulse Origin Not Detected
3 - UFLG 3 Value within [2.5 - 3.5] - :						WINLEN Error
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :						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: 19-Oct-2018 17:35:14						

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	11886	ft
CDEN	Cement Density	USIT-E	12.52	lbm/gal
CDEN	Cement Density	EDTC-B	12.52	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	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	-4.66	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.15	
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_HFAO	IBC Flexural Attenuation Offset	USIT-E	22	dB/m

U-USIT_UFAO	STI Flexural Attenuation Onset	USIT-E	-33	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	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters				
Parameter	Value	Start (ft)	Stop (ft)	
BS	13.5	19.5	2421	
BS	8.5	2421	6554	
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	
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	19-Oct-2018 14:45:13	19-Oct-2018 15:30:58	6554.74	3301.42
EMXV	60	19-Oct-2018 15:30:58	19-Oct-2018 15:31:50	3301.42	3239.73
EMXV	55	19-Oct-2018 15:31:50	19-Oct-2018 16:23:09	3239.73	41.07
All depth are at tool zero.					

IBC SLG Composite 0 PSI

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	41.07 ft	6554.74 ft	19-Oct-2018 2:45:13 PM	19-Oct-2018 4:23:09 PM	ON	3.94 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating LLC






Well:Sam 3O-25H-M166

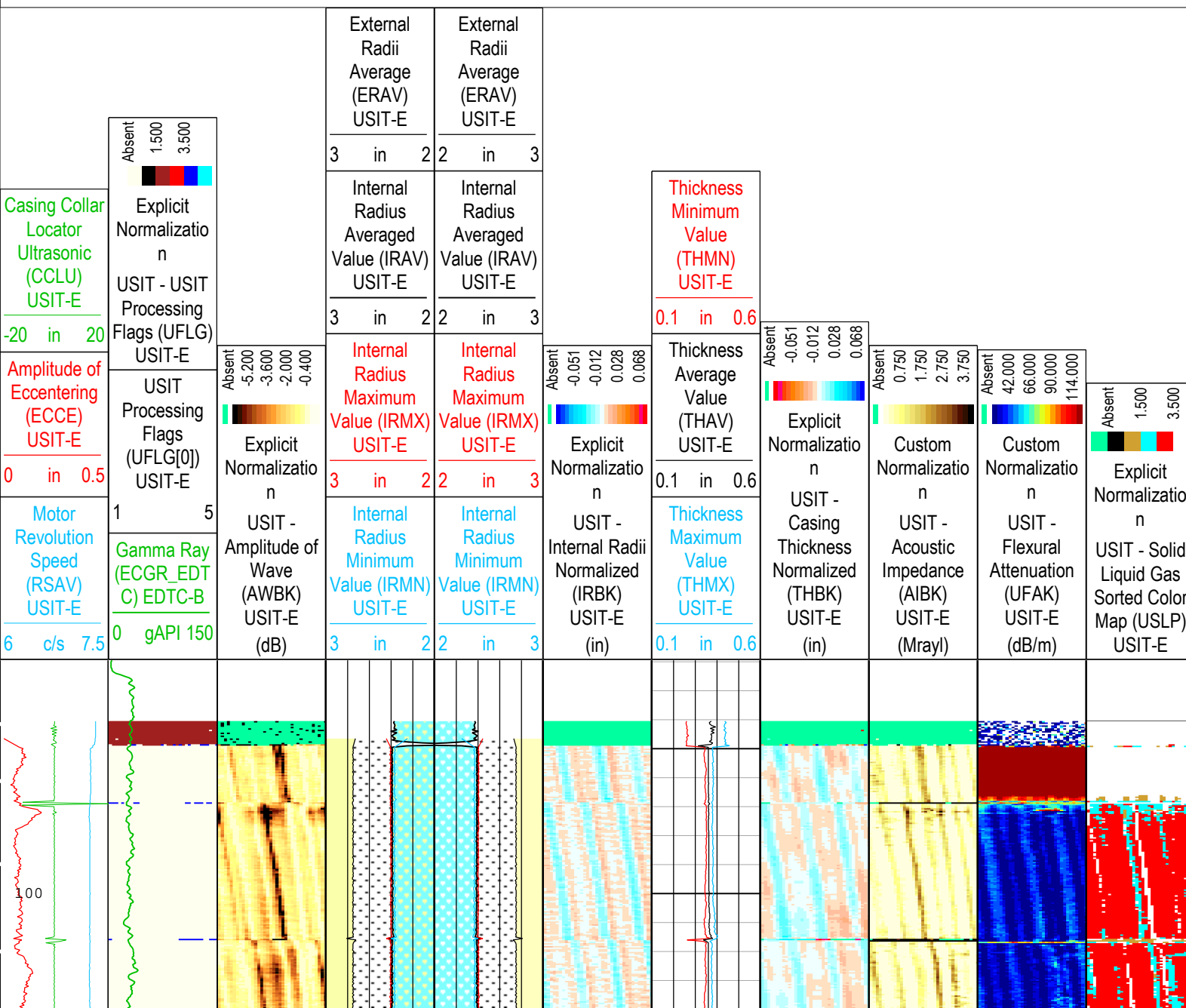
ONE: Log[3]:Up:S003

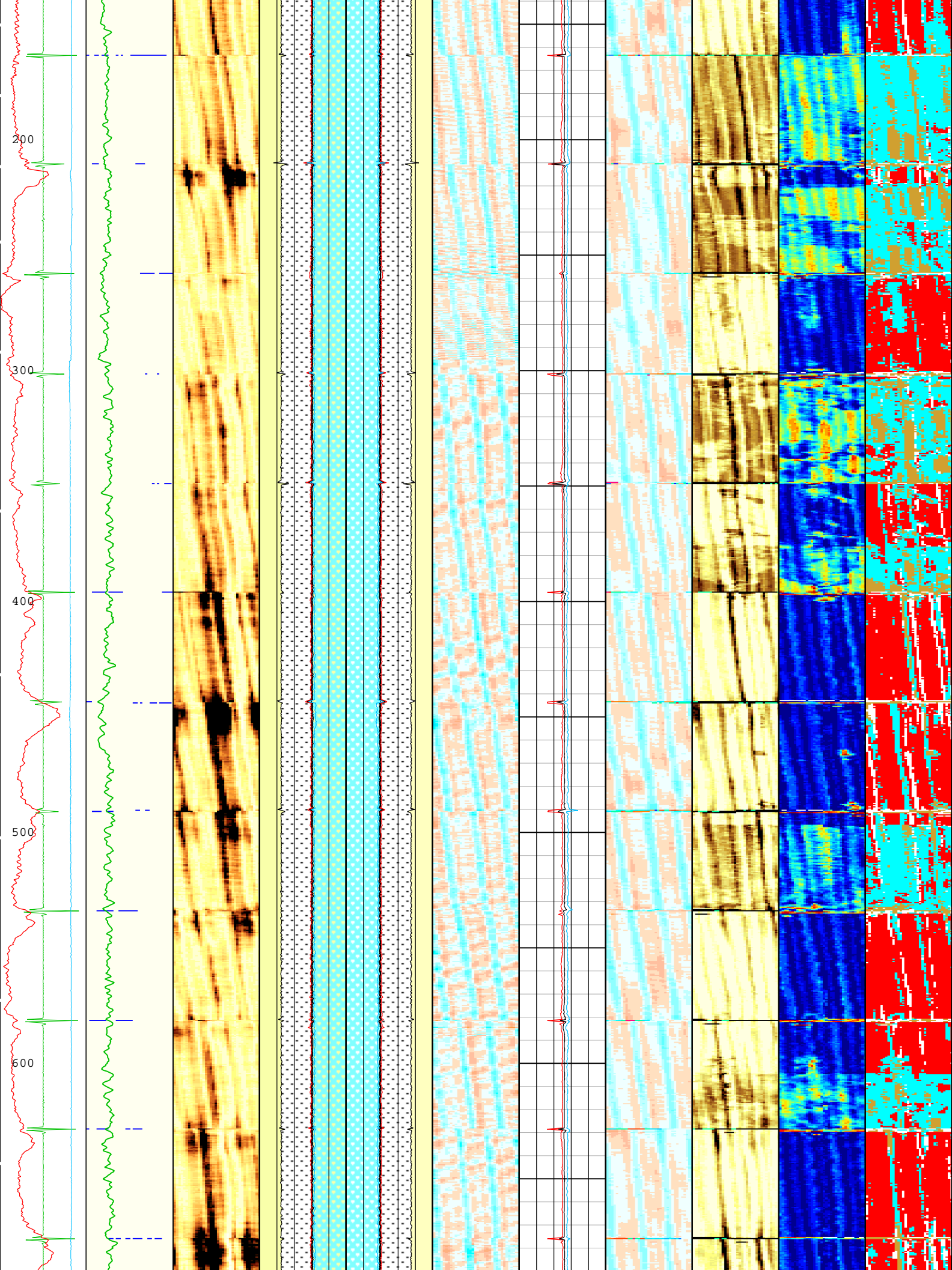
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 19-Oct-2018 17:35:36

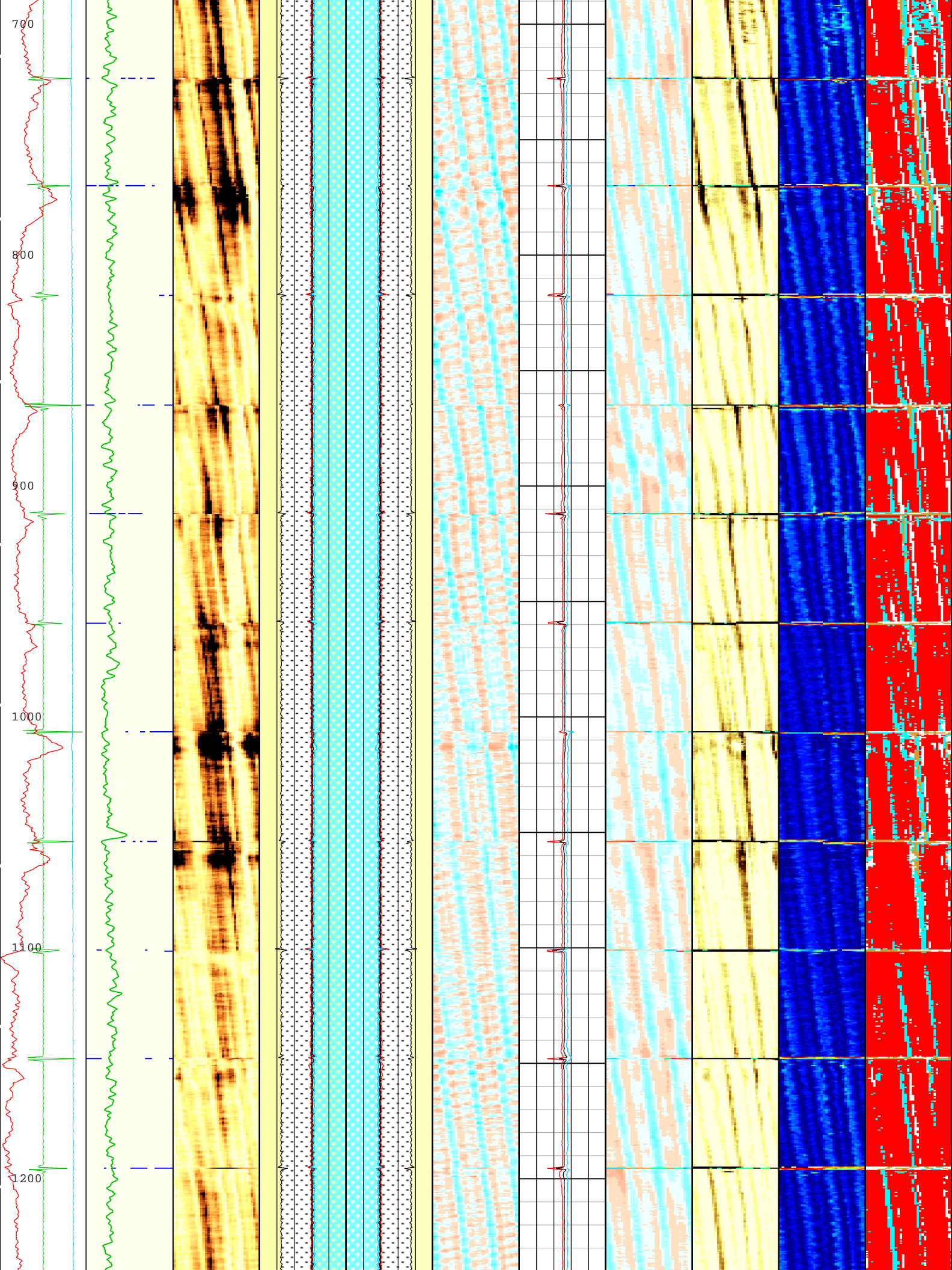
TIME_1900 - Time Marked every 60.00 (s)

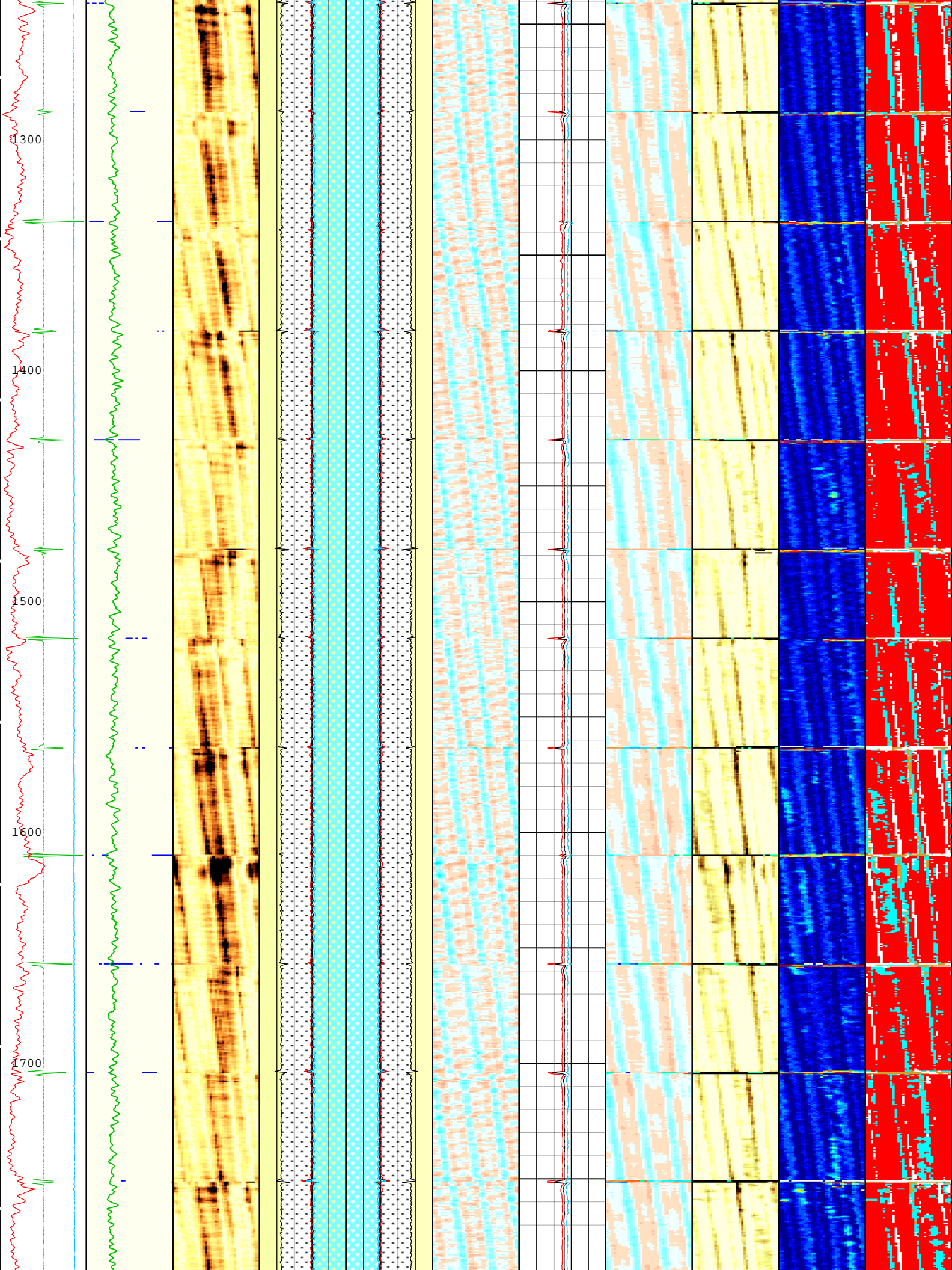
USIT Processing Flags (UFLG[0]) USIT-E

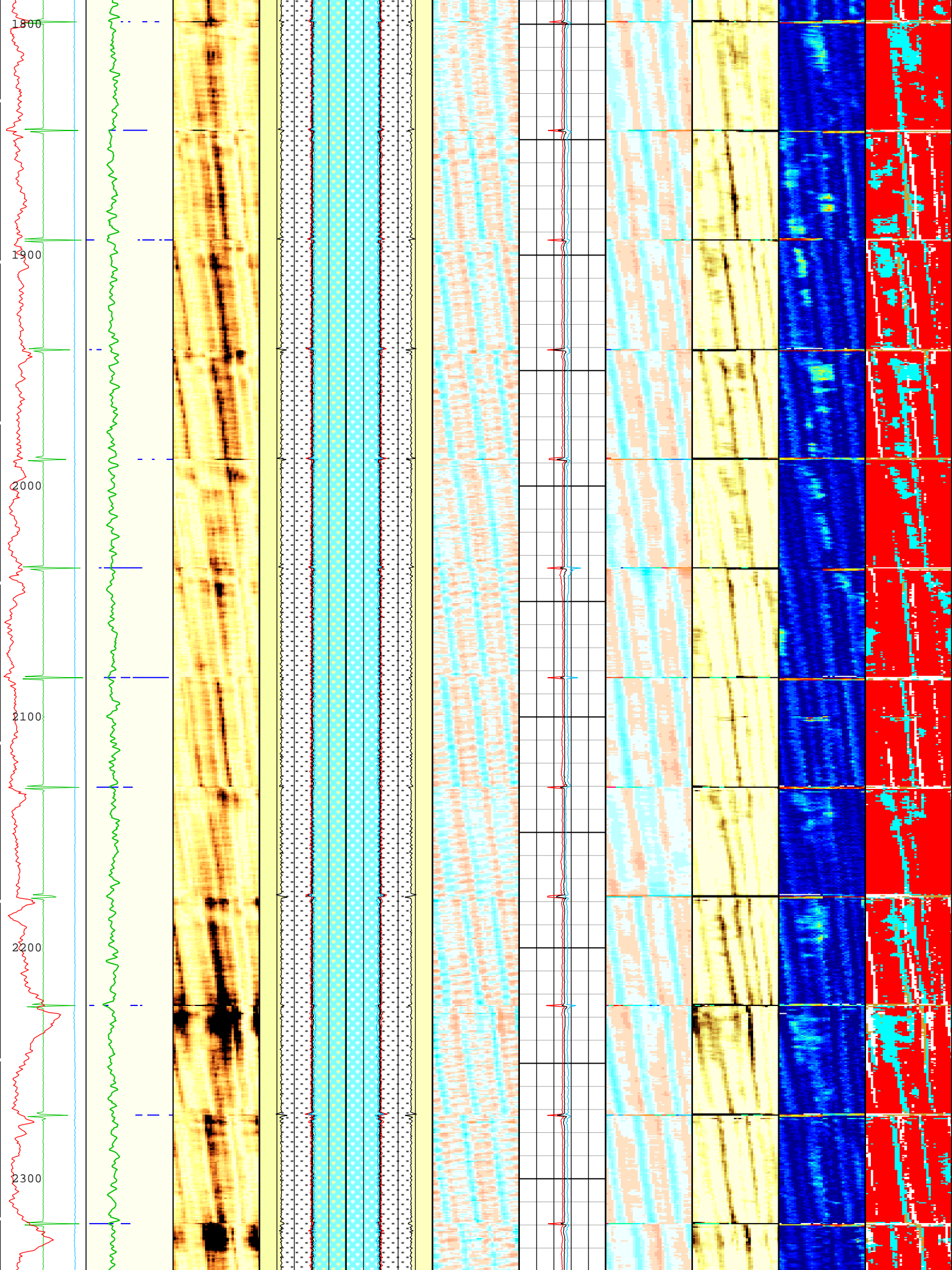
- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10]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

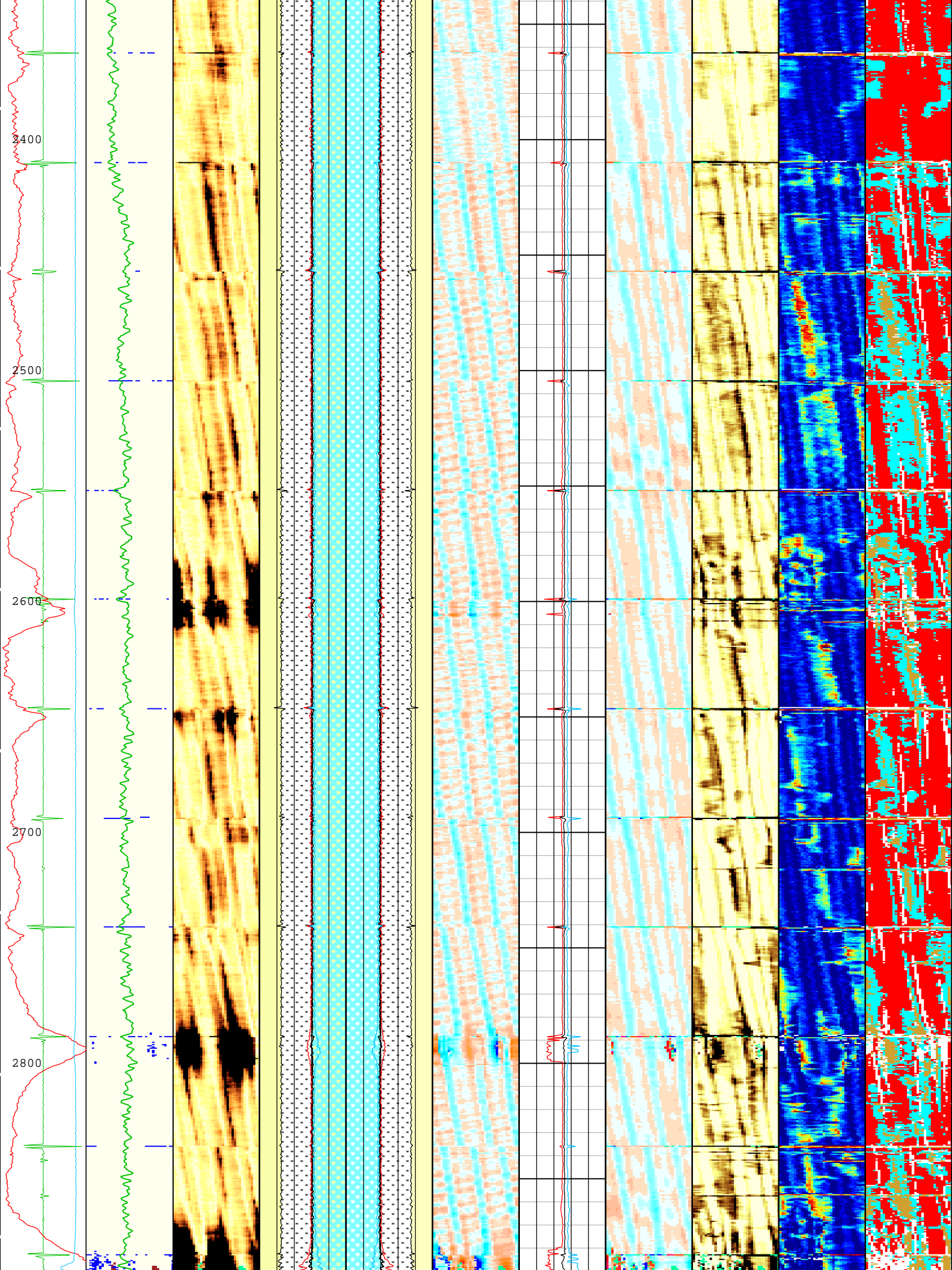


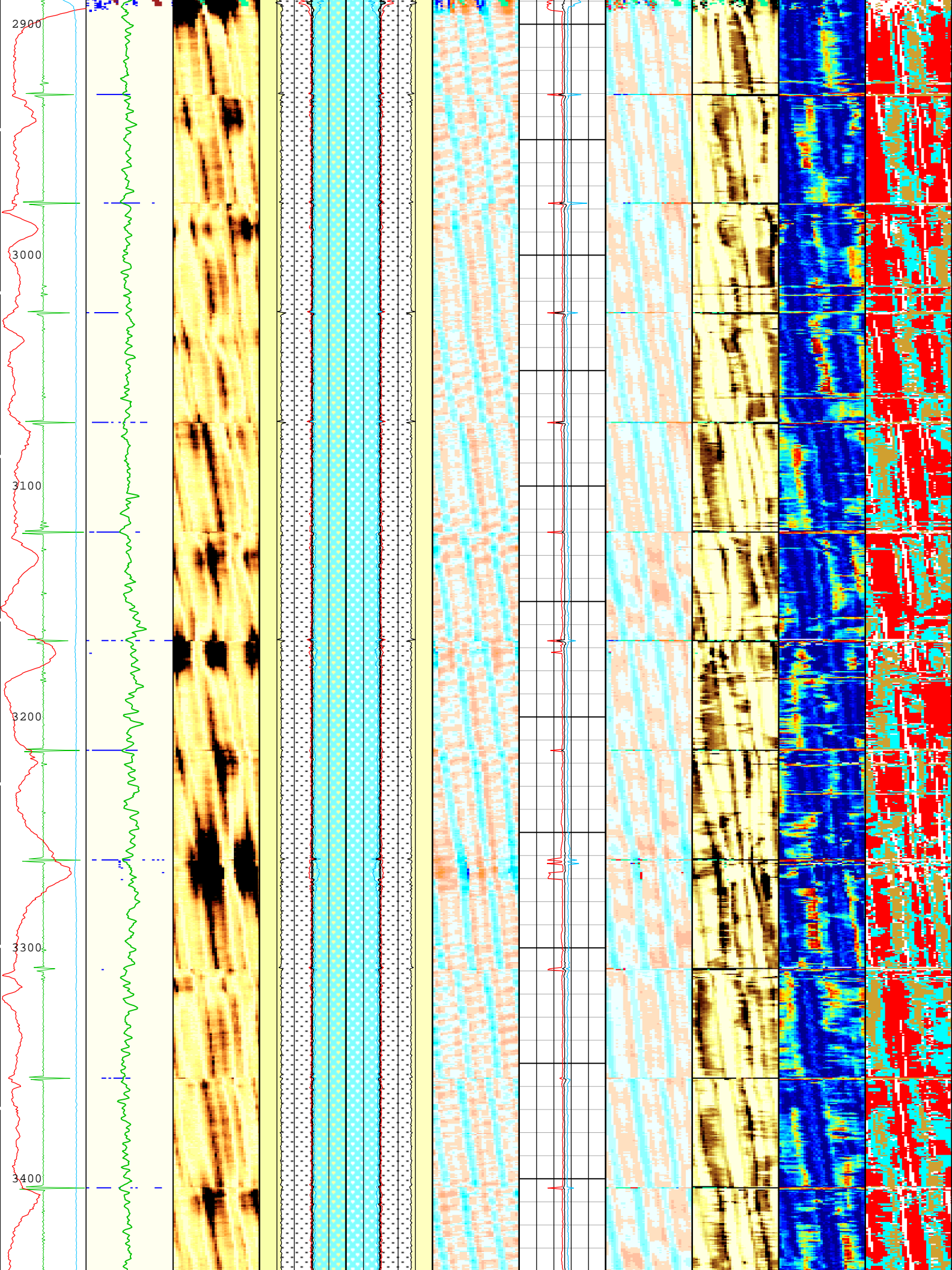


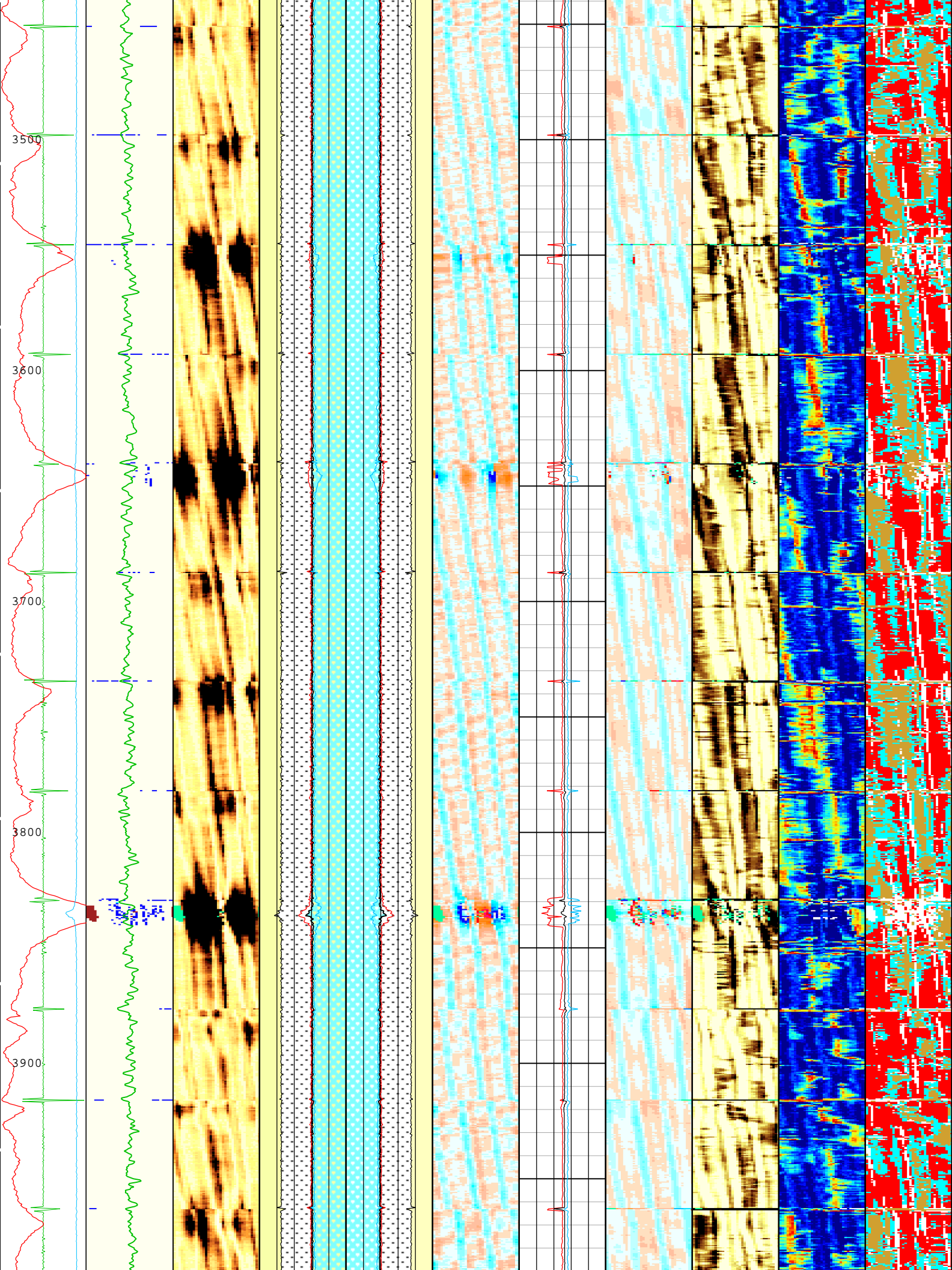


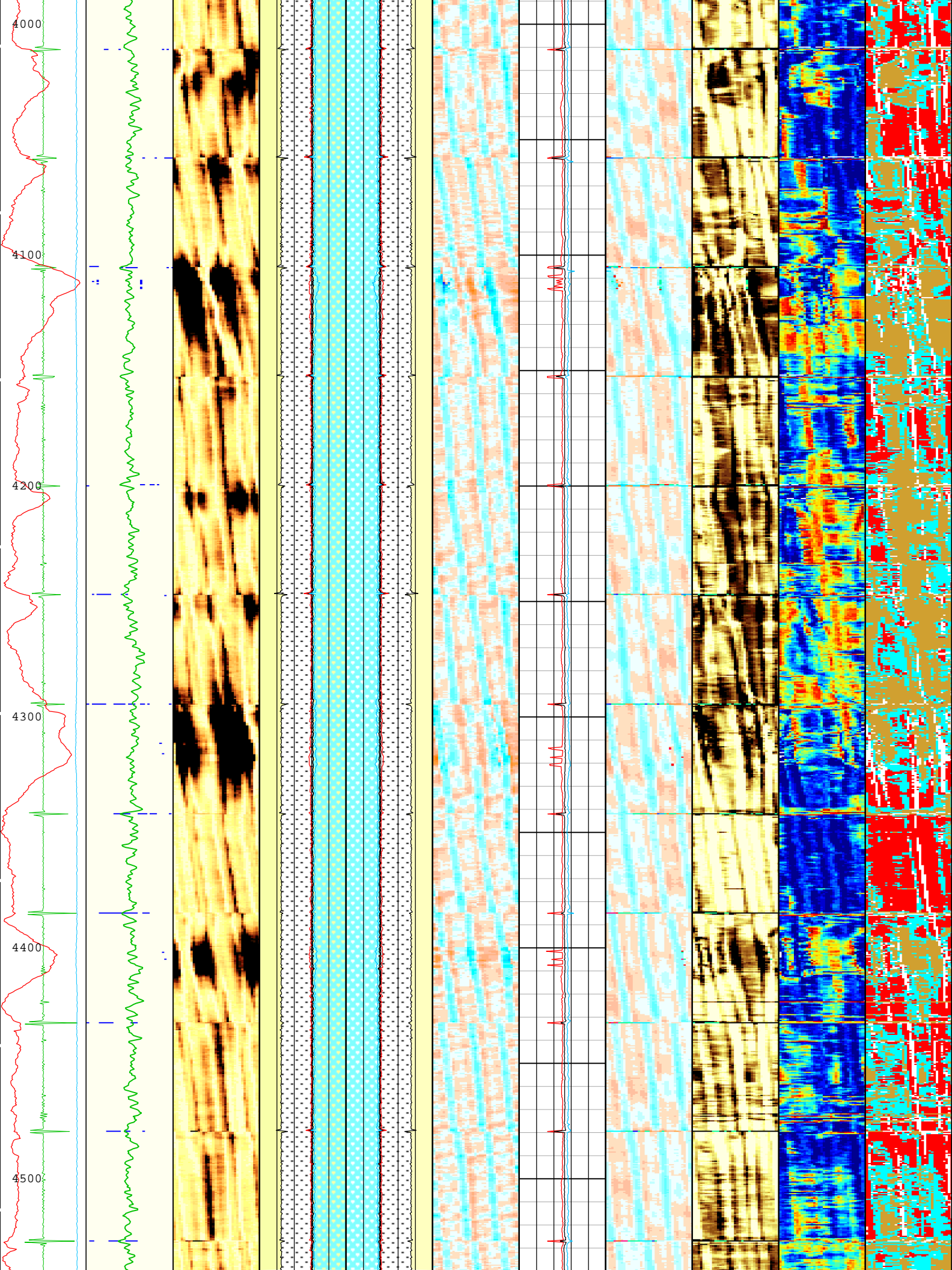


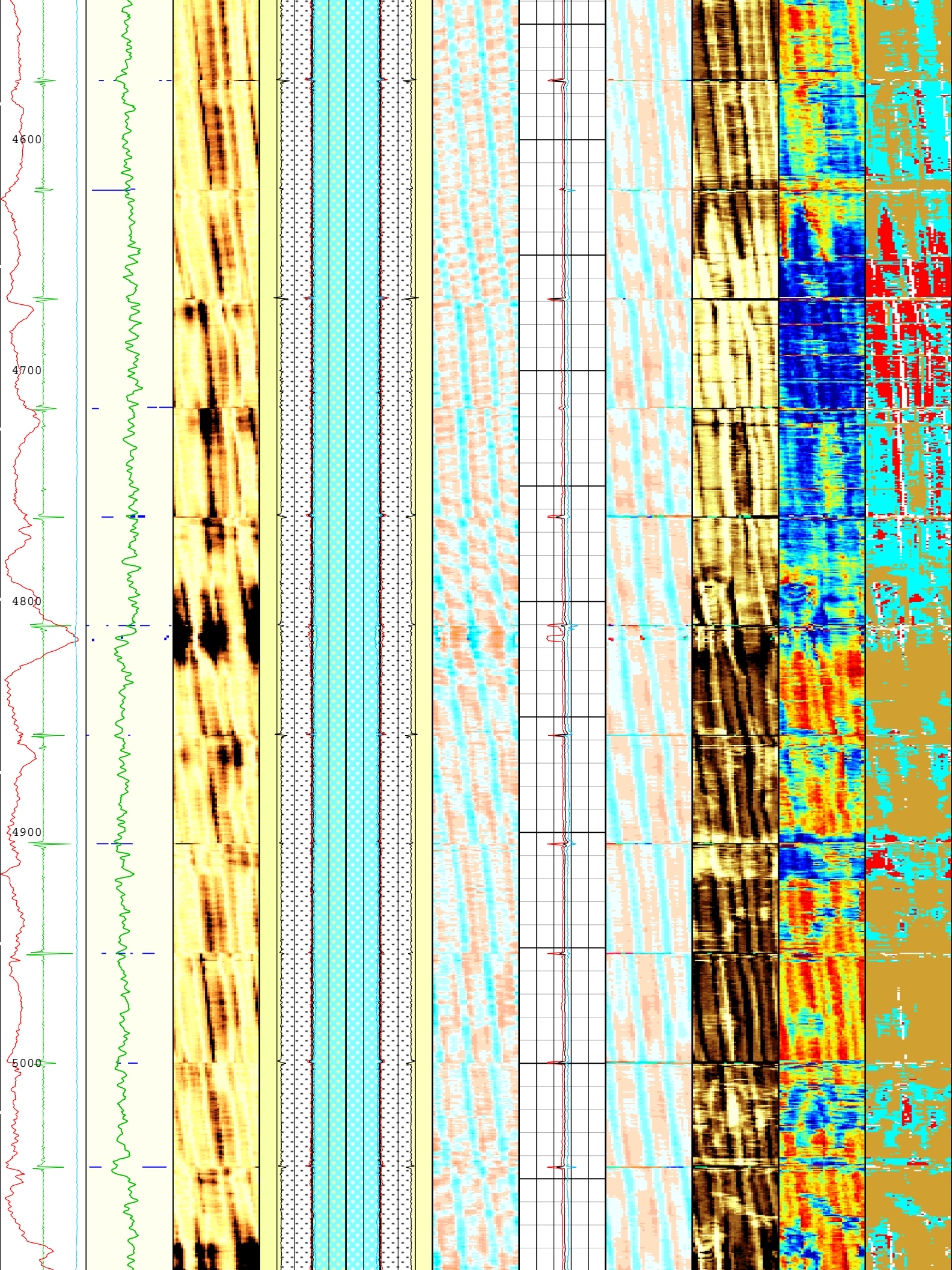


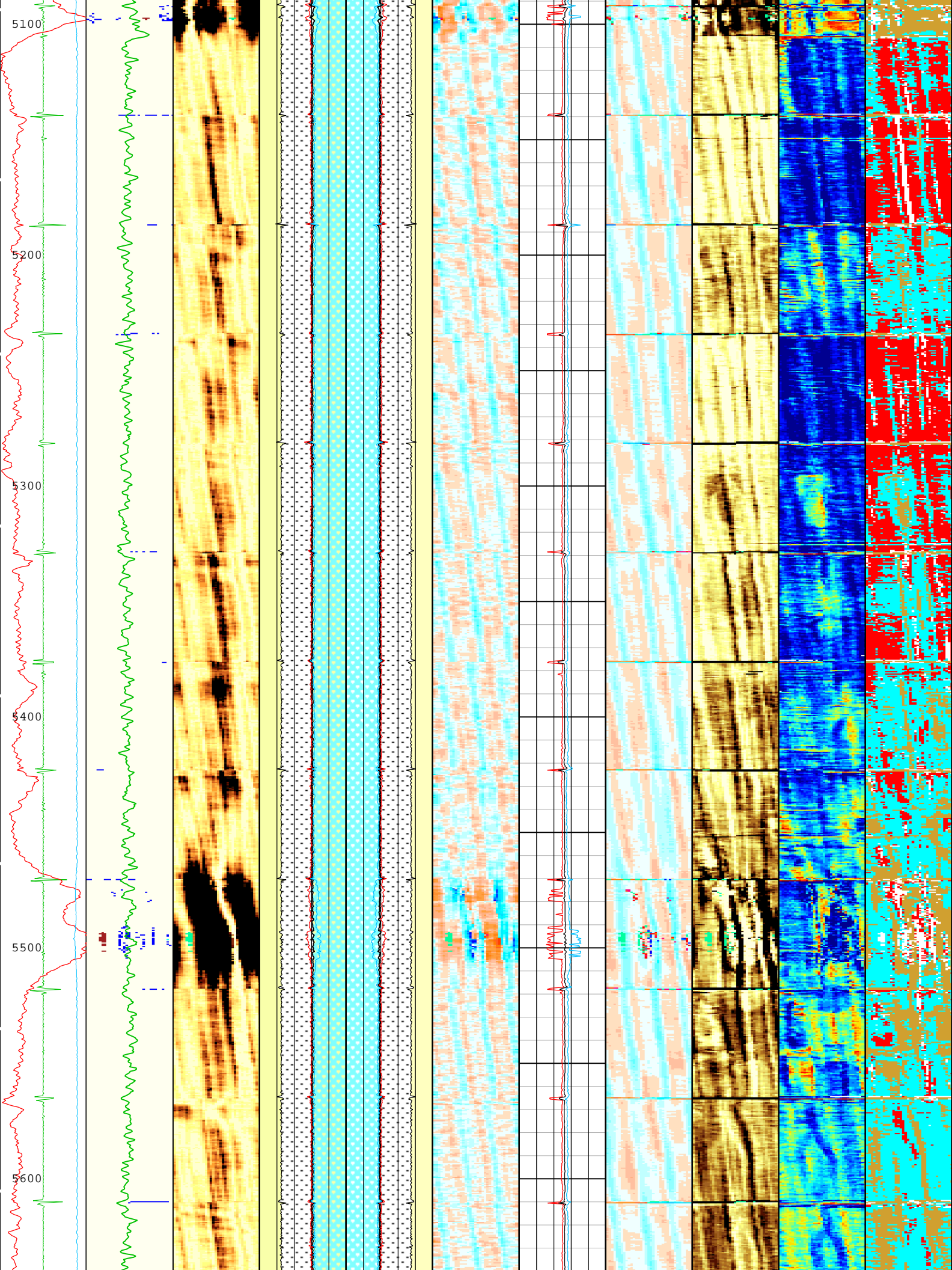


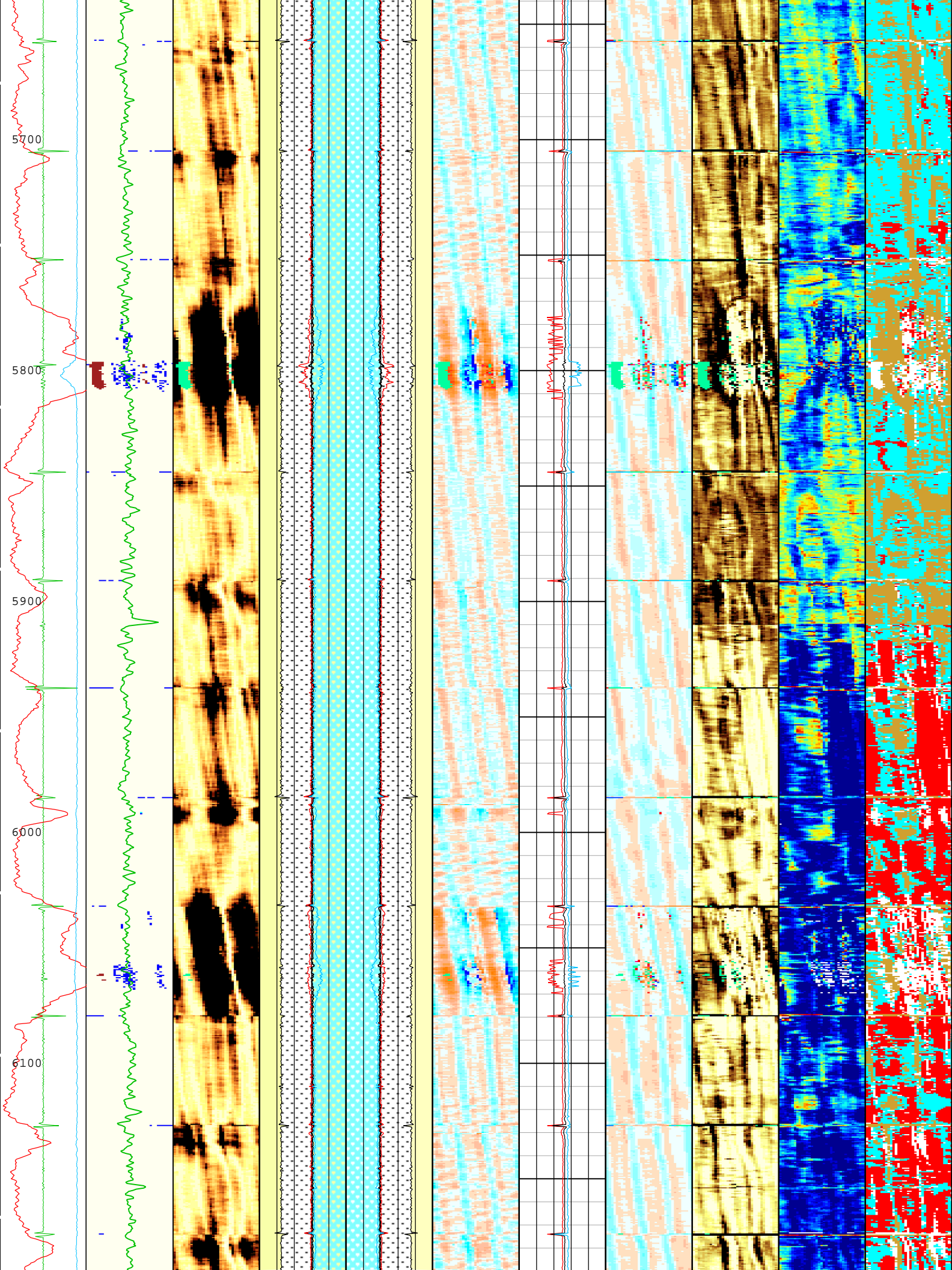


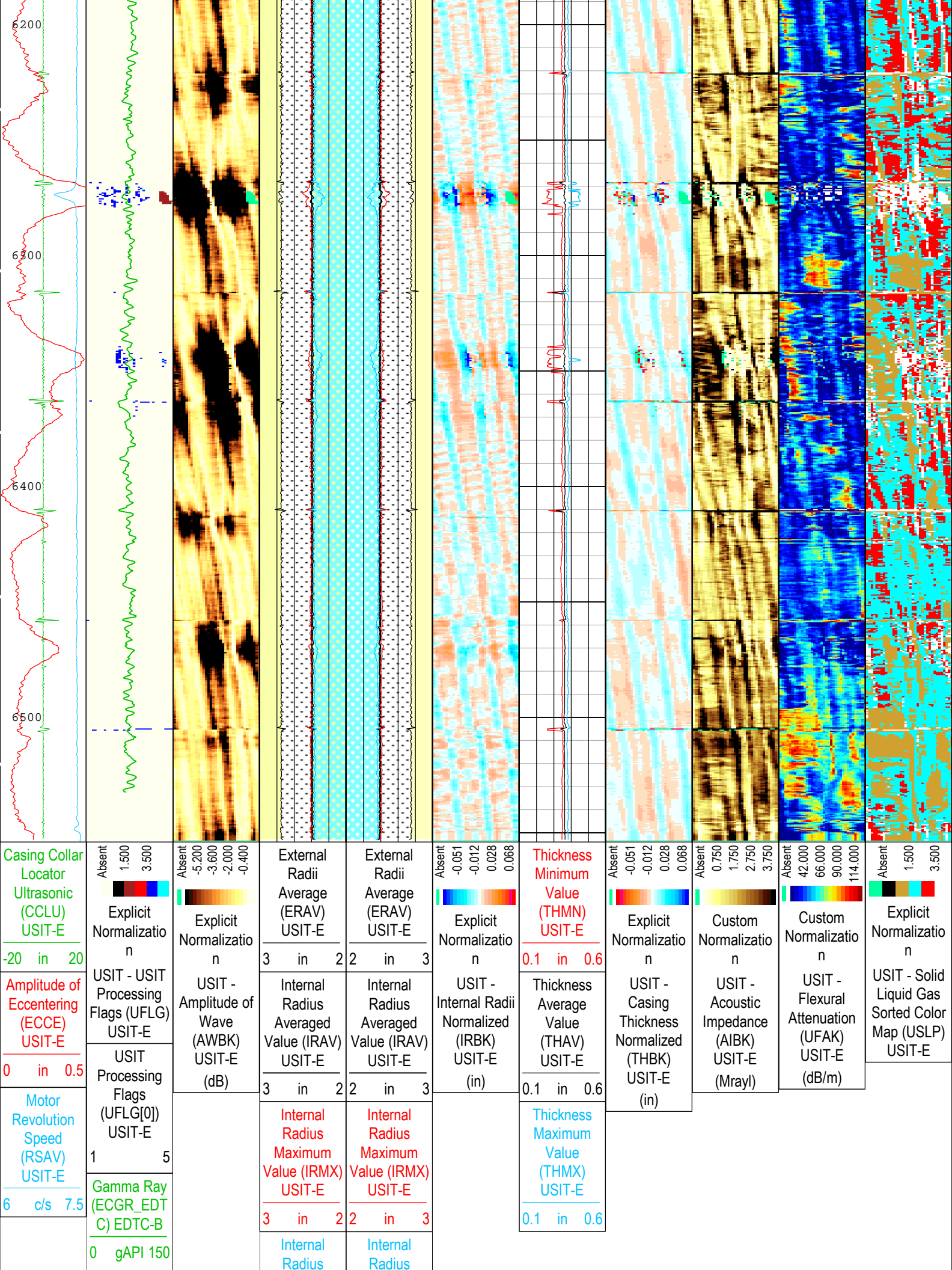












Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	19.5	2421
BS	8.5	2421	6554

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	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	
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	19-Oct-2018 14:45:13	19-Oct-2018 15:30:58	6554.74	3301.42
EMXV	60	19-Oct-2018 15:30:58	19-Oct-2018 15:31:50	3301.42	3239.73
EMXV	55	19-Oct-2018 15:31:50	19-Oct-2018 16:23:09	3239.73	41.07

All depth are at tool zero.

ONE

IBC Goodwin Compressed 0 PSI

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	41.07 ft	6554.74 ft	19-Oct-2018 2:45:13 PM	19-Oct-2018 4:23:09 PM	ON	3.94 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating LLC

Well:Sam 30-25H-M166

ONE: Log[3]:Up:S003

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 17:35:53

TIME_1900 - Time Marked every 60.00 (s)

Gamma Ray
(ECGR_E DTC)
EDTC-B
0 150
gAPI

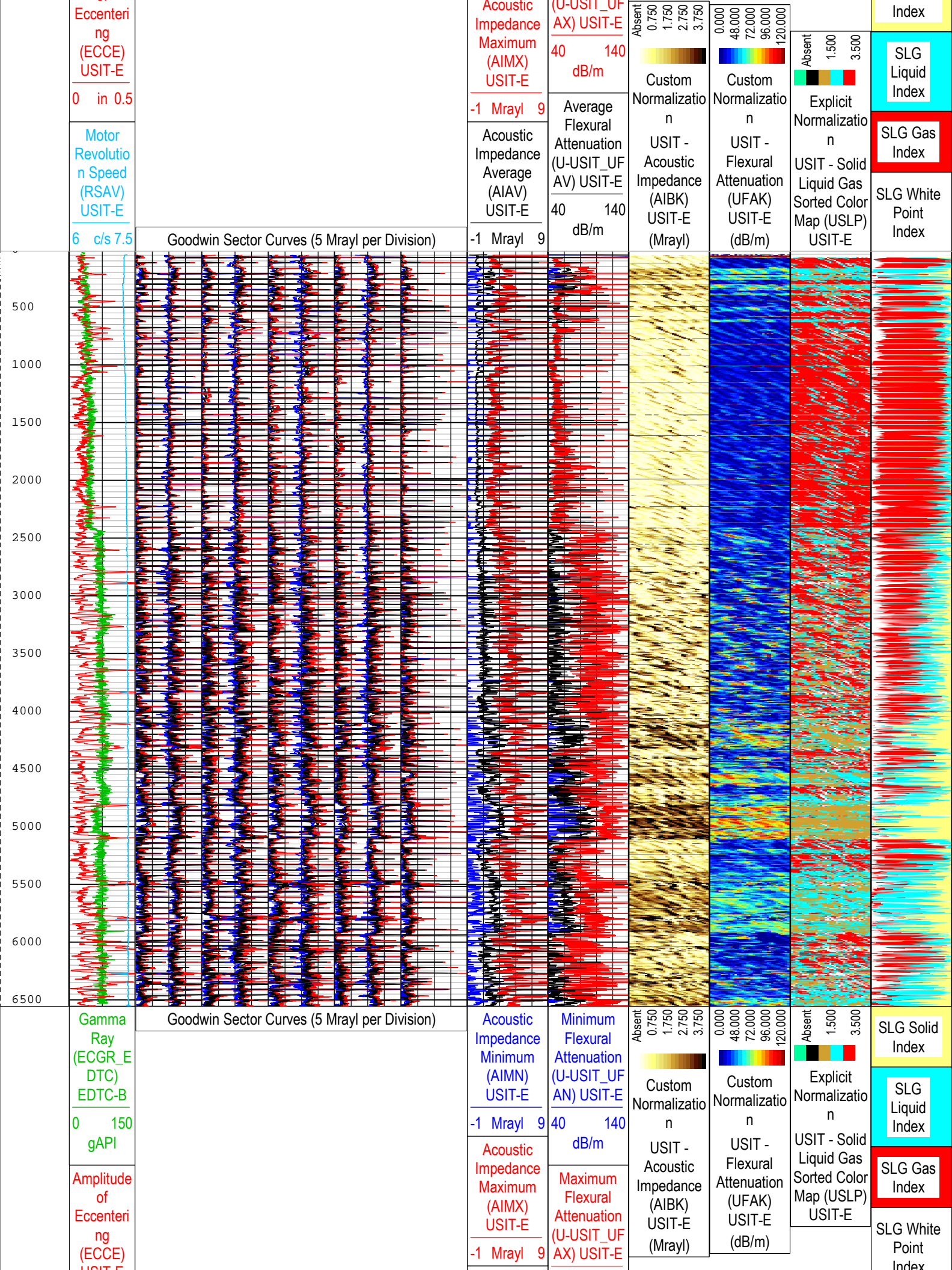
Amplitude
of

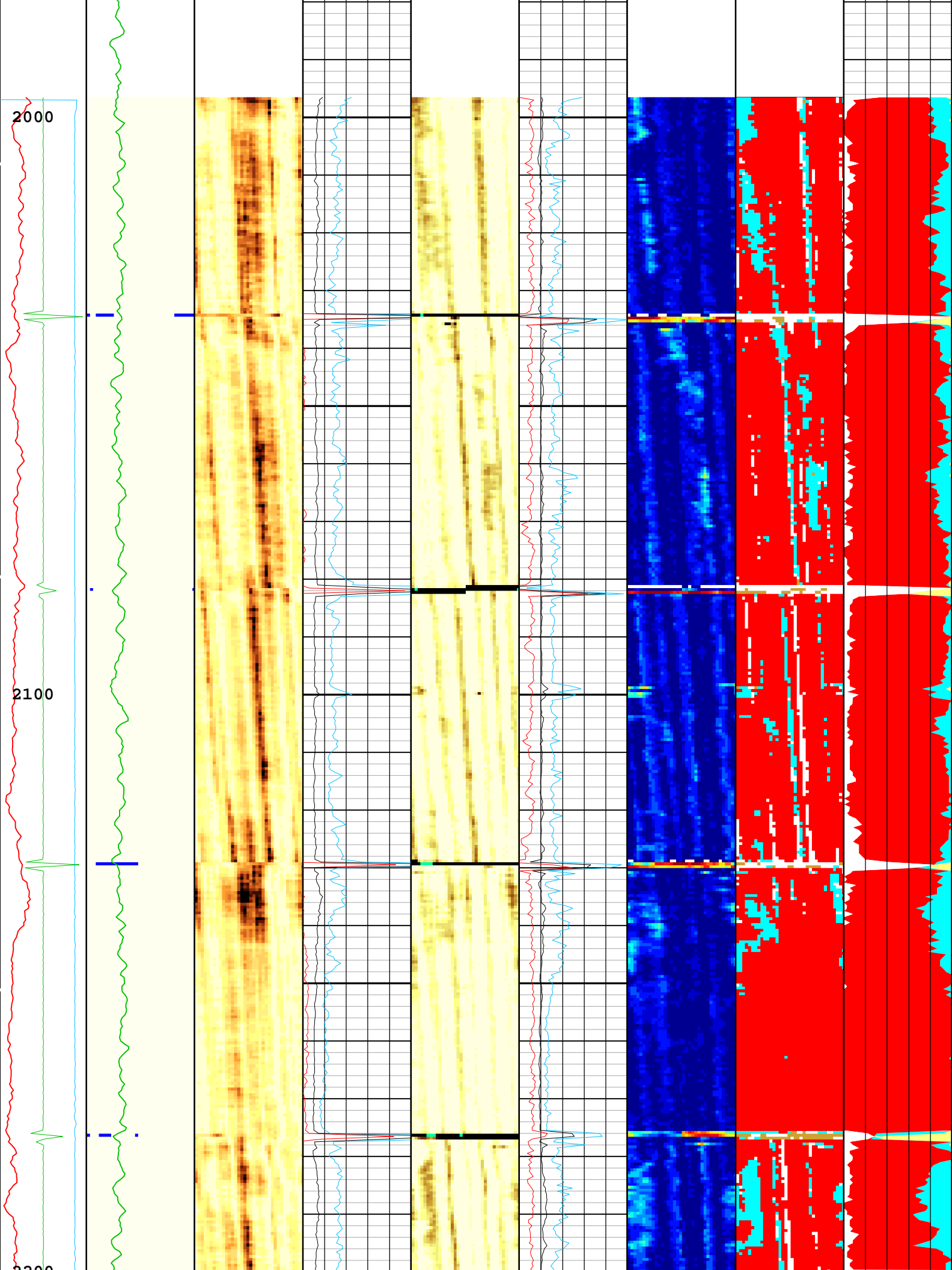
Acoustic
Impedance
Minimum
(AIMN)
USIT-E
-1 Mrayl 9

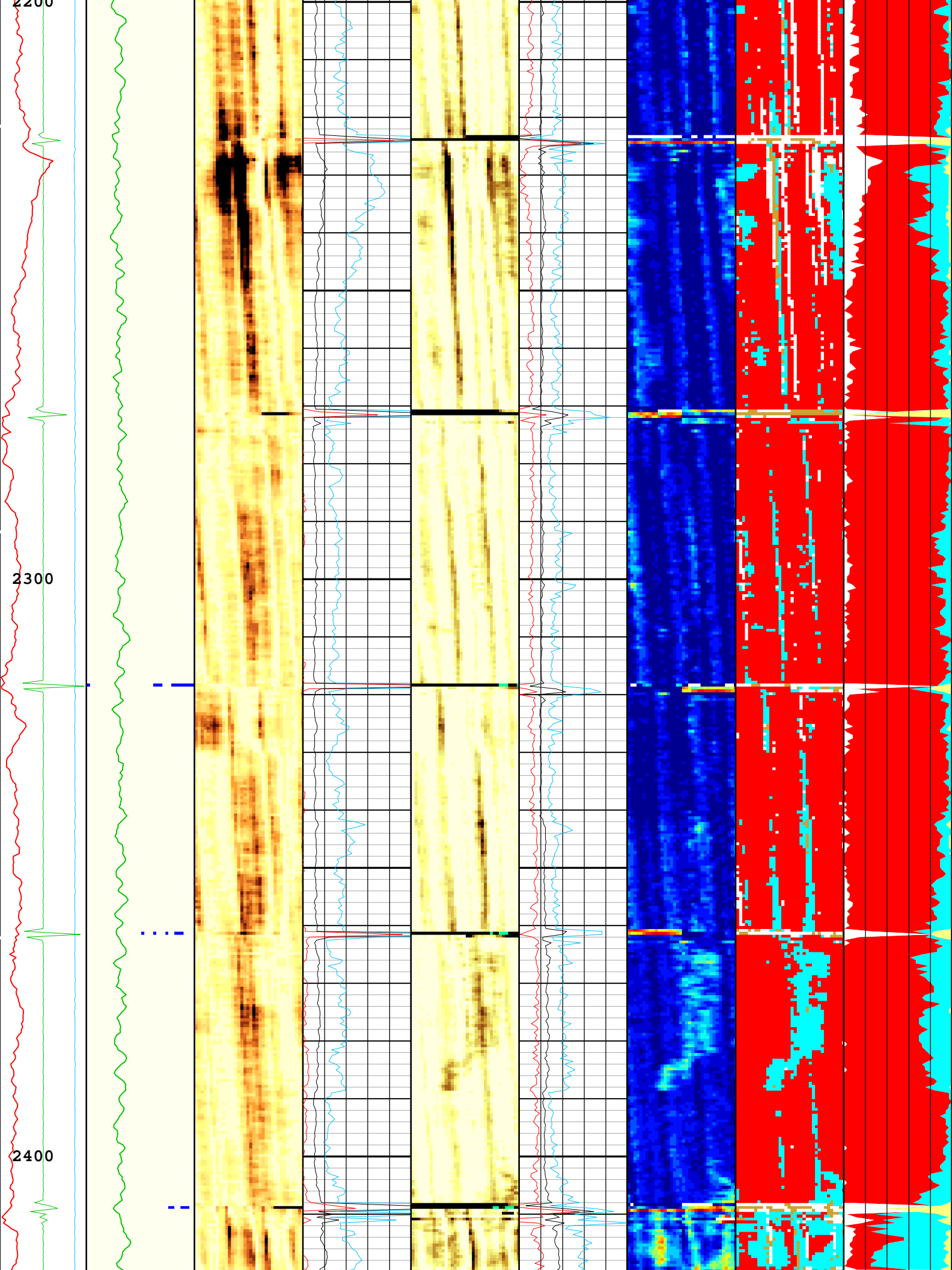
Minimum
Flexural
Attenuation
(U-USIT_UF
AN) USIT-E
40 140
dB/m

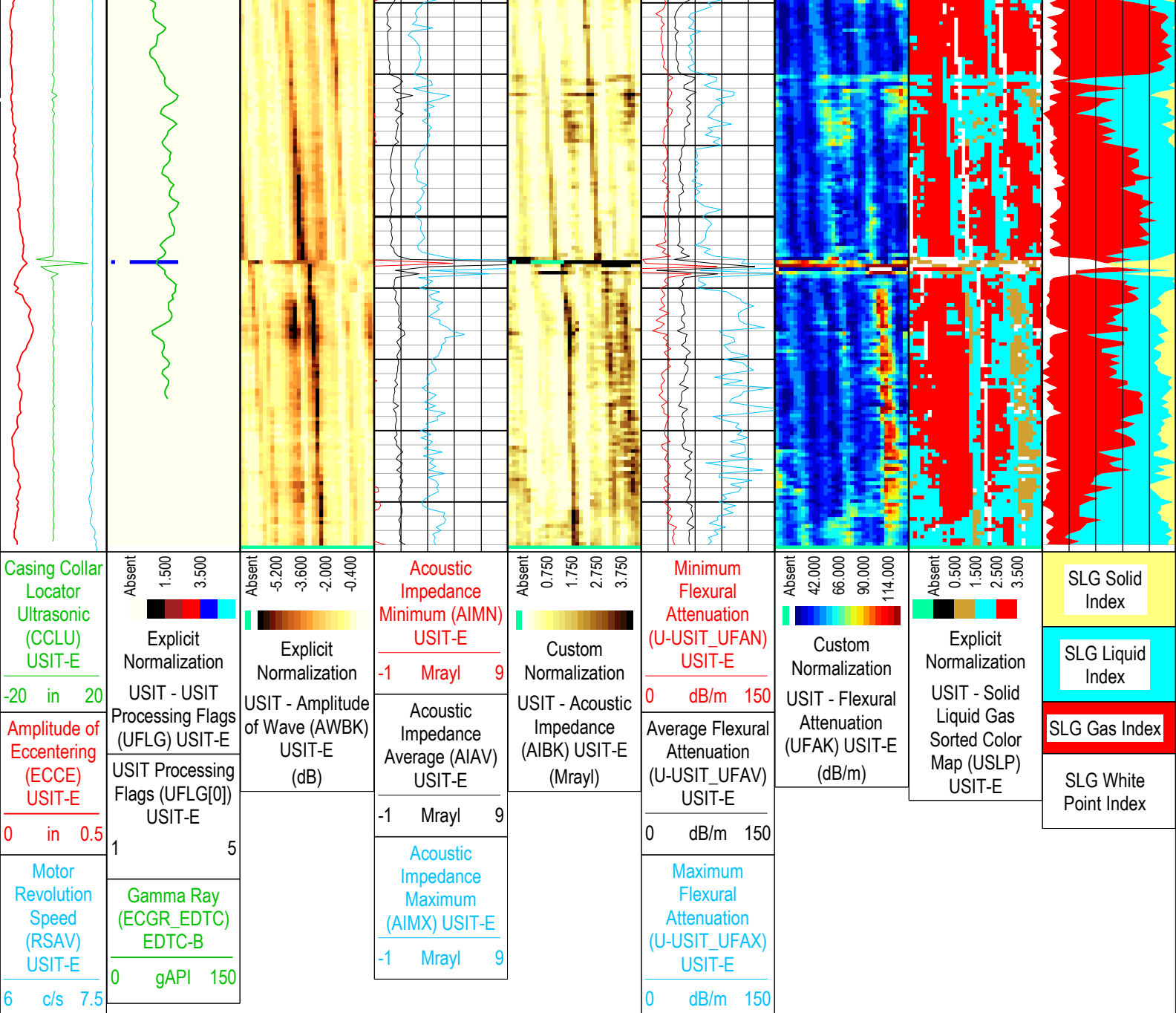
Maximum
Flexural
Attenuation
(U-USIT_UF
AN) USIT-E

SLG Solid









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) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Oct-2018 17:35:59

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(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	11886	ft
CDEN	Cement Density	USIT-E	12.52	lbm/gal
CDEN	Cement Density	EDTC-B	12.52	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	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	-4.66	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.15	
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	-33	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	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	1975.5	2421
BS	8.5	2421	2497
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	60	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	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

ONE

IBC SLG Composite 0 PSI

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[1]:Up	Up	1997.20 ft	2497.78 ft	19-Oct-2018 2:04:05 PM	19-Oct-2018 2:13:05 PM	ON	-2.28 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating LLC

Well:Sam 30-25H-M166

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: 19-Oct-2018 17:36:05

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

Casing Collar

Explicit

External Radii Average (ERAV) USIT-E

3 in 2

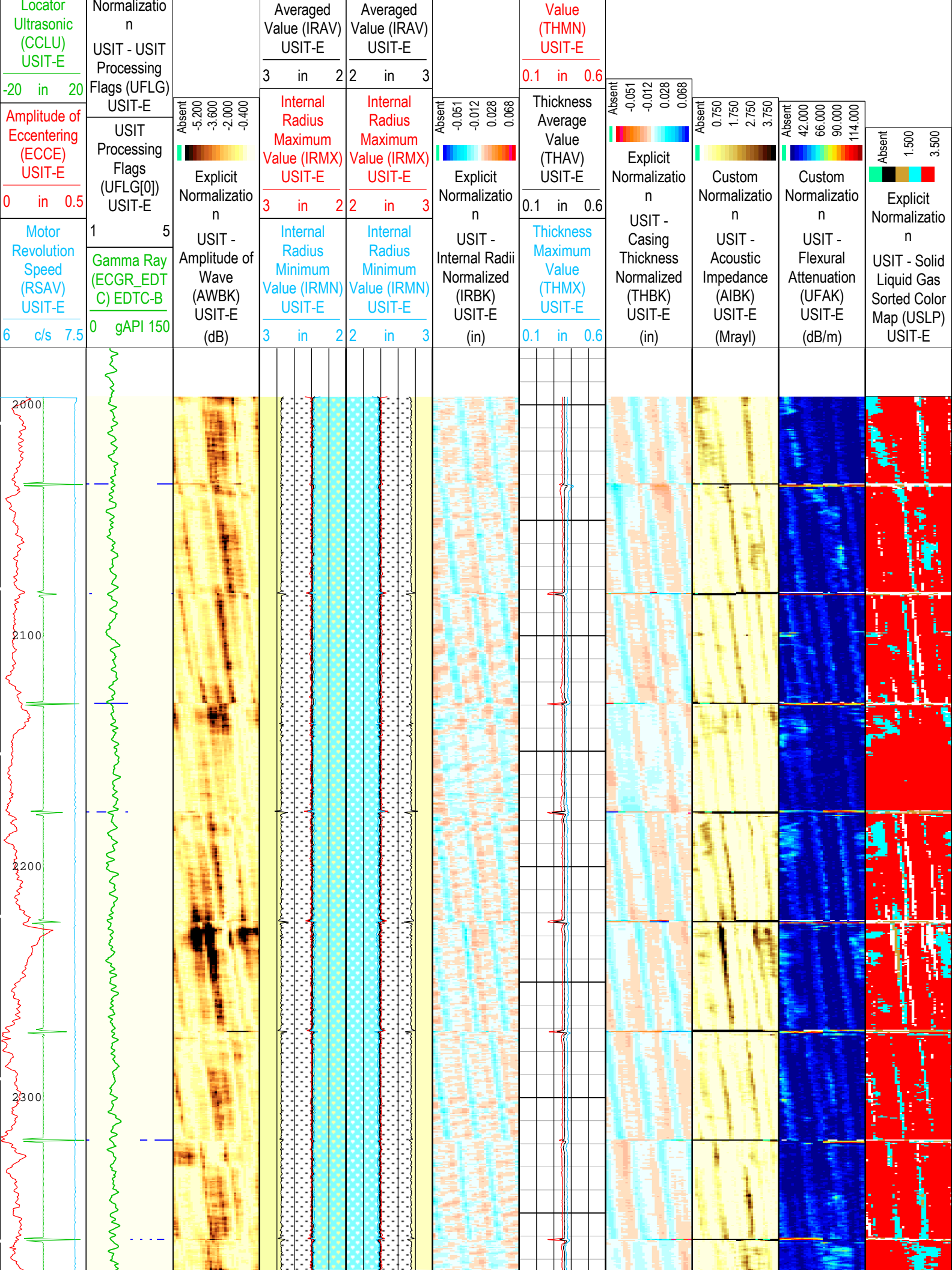
Internal Radius

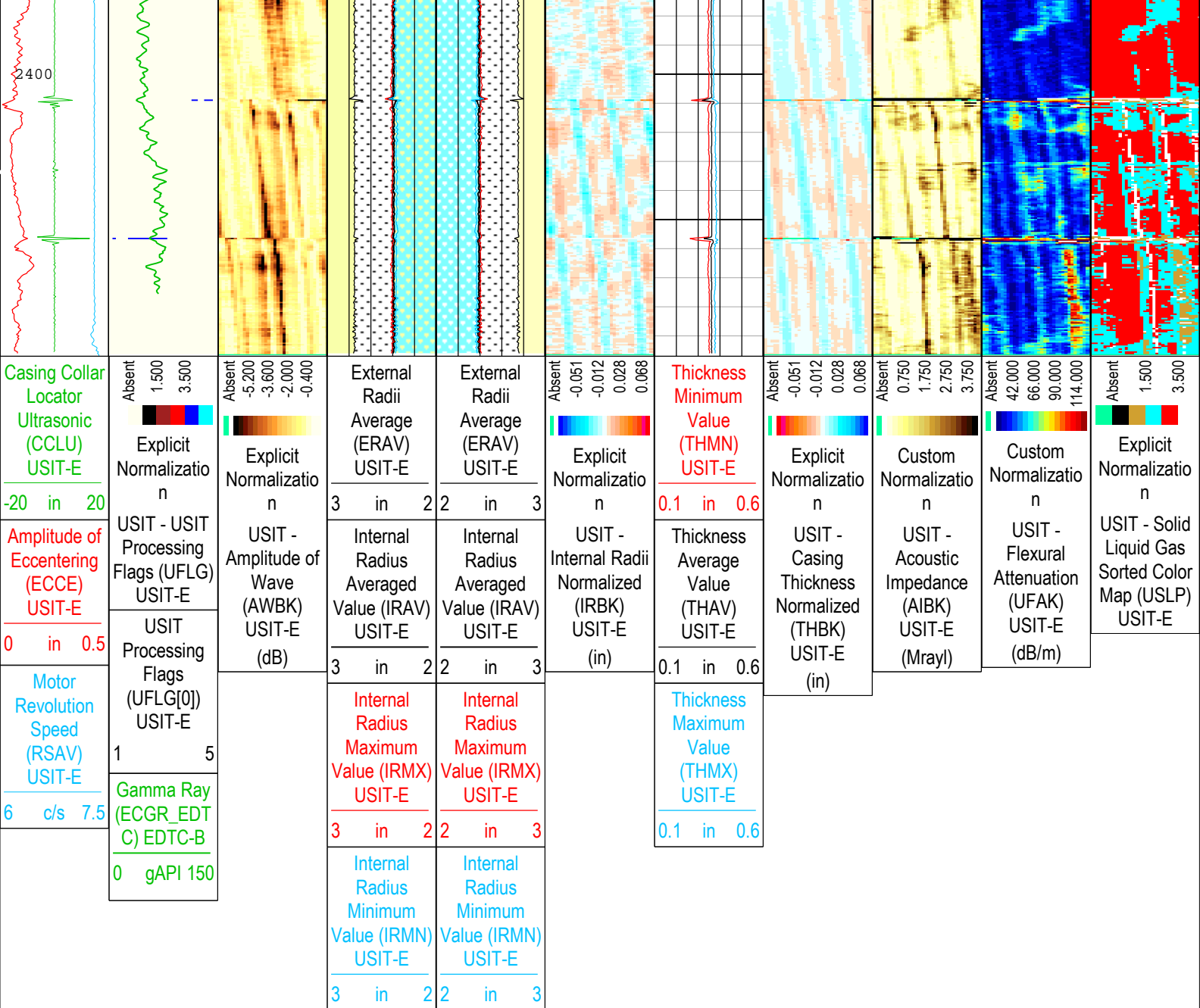
External Radii Average (ERAV) USIT-E

2 in 3


Internal Radius


Thickness Minimum








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: 19-Oct-2018 17:36:05

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	11886	ft
CDEN	Cement Density	USIT-E	12.52	lbm/gal
CDEN	Cement Density	EDTC-B	12.52	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	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	-4.66	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.15	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.75	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-33	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	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	1975.5	2421
BS	8.5	2421	2497

All depth are actual.

Tool Control Parameters

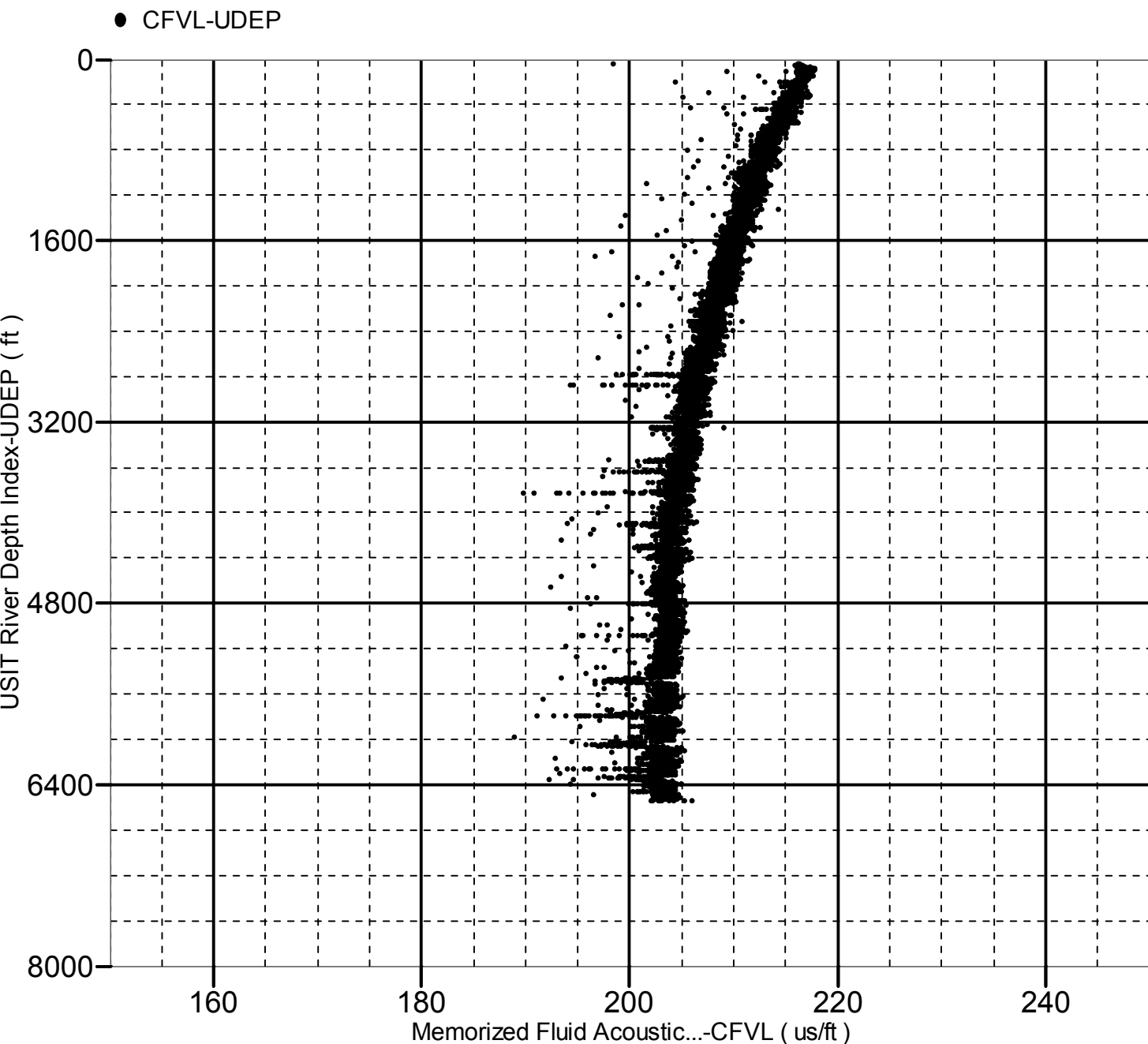
ONE: Parameters

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	60	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	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

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6554.00 to 40.50 ft



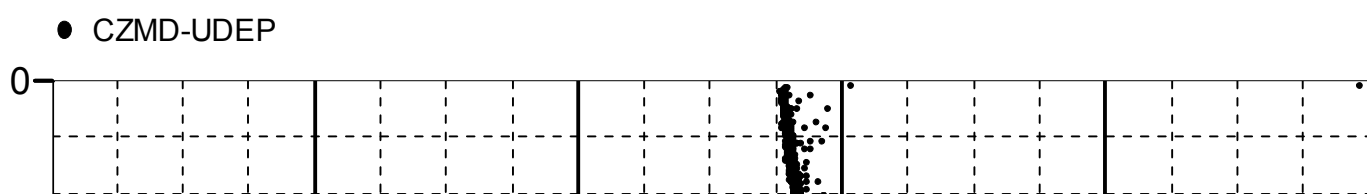
Company:Crestone Peak Resources Operating LLC Well:Sam 3O-25H-M166

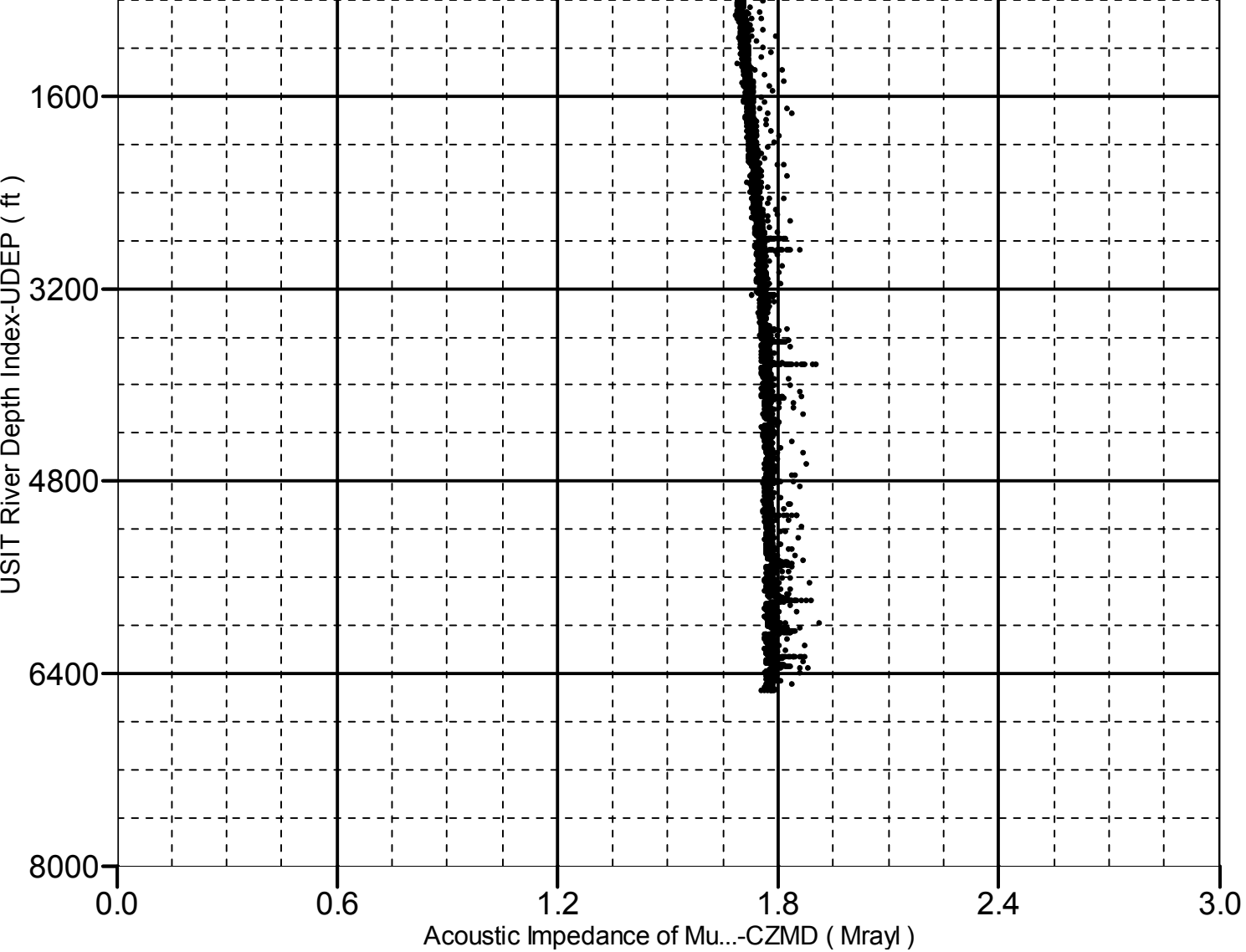
ONE: Log[3]:Up:S003

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6554.00 to 40.50 ft





Company:	Crestone Peak Resources Operating LLC	Schlumberger
Well:	Sam 3O-25H-M166	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Isolation Scanner Cement Evaluation		