

Company: Crestone Peak Resources Operating LLC

Well: King 3-65 28-29 3CH

Field: WILDCAT

County: ADAMS State: Colorado

Isolation Scanner
Cement Evaluation
Gamma Ray - CCL

County: ADAMS
Field: WILDCAT
Location: 1554' FSL 435' FEL
Well: King 3-65 28-29 3CH
Company: Crestone Peak Resources Operating LLC

Location:	1554' FSL 435' FEL	Elev.:	K.B.	5612.00 ft
	Sec: 28 Twp: 3S Rng: 65W		G.L.	5585.30 ft
	Lat/Long: 39.758763,-104.660993		D.F.	5612.00 ft
	Permanent Datum:	Ground Level	Elev.:	5585.30 f
Log Measured From:		Kelly Bushing		26.70 ft
Drilling Measured From:		Kelly Bushing		above Perm.Datum
API Serial No.	Section:	Township:	Range:	
05-001-10225	28	3S	65W	

Logging Date 10-Mar-2020

Run Number ONE

Depth Driller

Schlumberger Depth

Bottom Log Interval 7663.00 ft

Top Log Interval 77.00 ft

Casing Fluid Type Water

Salinity

Density 9.5 lbm/gal

Fluid Level 77.00 ft

BIT/CASING/TUBING STRING

Bit Size

From

To

Casing/Tubing Size 5.5 in

Weight 20 lbm/ft

Grade N/A

From 0.00 ft

To 18012.00 ft

Max Recorded Temperatures 203.11 degF

Logger on Bottom 10-Mar-2020

Unit Number 9108

Recorded By Ziad Aboulmouna

Witnessed By Keith Kerstchick

Disclaimer

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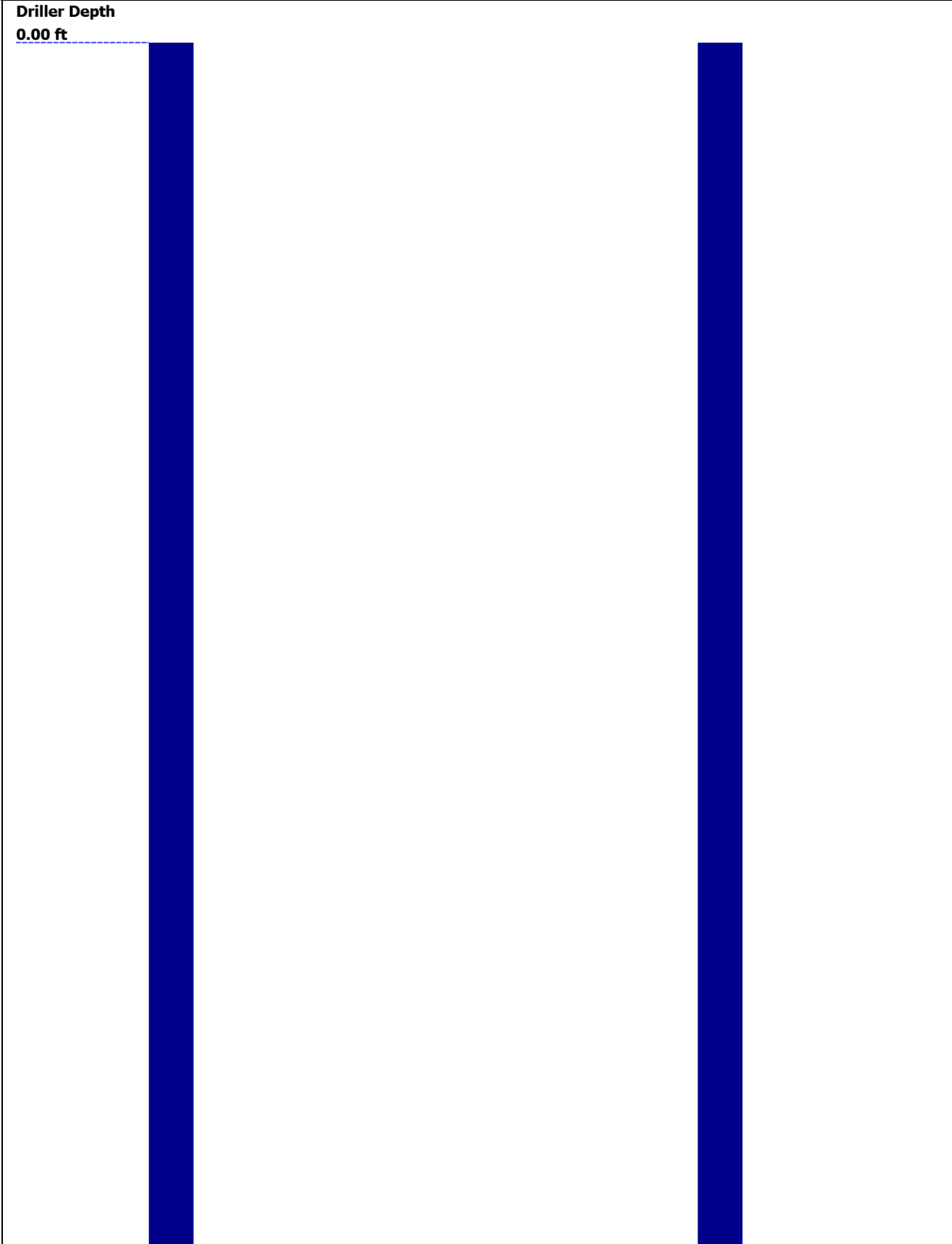
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Well Sketch





USI Sen 0.84
sor
Head Te
nsion
TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 3.625 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

Depth Summary

ONE

Depth Measuring Device

Type

IDW-B

Serial Number

Calibration Date

Calibrator Serial Number

Calibration Cable Type

Wheel Correction 1

0

Wheel Correction 2

0

Tension Device

Type

CMTD-B/A

Serial Number

Calibration Date

Calibrator Serial Number

Number of Calibration Points

0

Logging Cable

Type

7-46NT-XS

Serial Number

Length

24000.00 ft

Conveyance Type

Wireline

Rig Type

Land

ONE:Depth Control Parameters

Depth Control Remarks

Log Sequence

First Log In the Well

Rig Up Length At Surface

Rig Up Length At Bottom

Rig Up Length Correction

Stretch Correction

Tool Zero Check At Surface

USIT - Fluid Properties Measurement

Run Name

Pass Name

Start Depth(ft)

Stop Depth(ft)

Run 1

Log[4]:Up

7668.58

33.20

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

C2MMD uses theoretical results
MUD_N_THE=1.06
DFD=1.14g/cm3(9.50lbm/gal)

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

IBC SLG Main Log

Software Version

Acquisition System	Version
Maxwell 2019.2	9.2.113335.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	33.20 ft	7668.58 ft	10-Mar-2020 1:02:36 PM	10-Mar-2020 2:54:22 PM	ON	3.55 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources Operating LLC Well:King 3-65 28-29 3CH

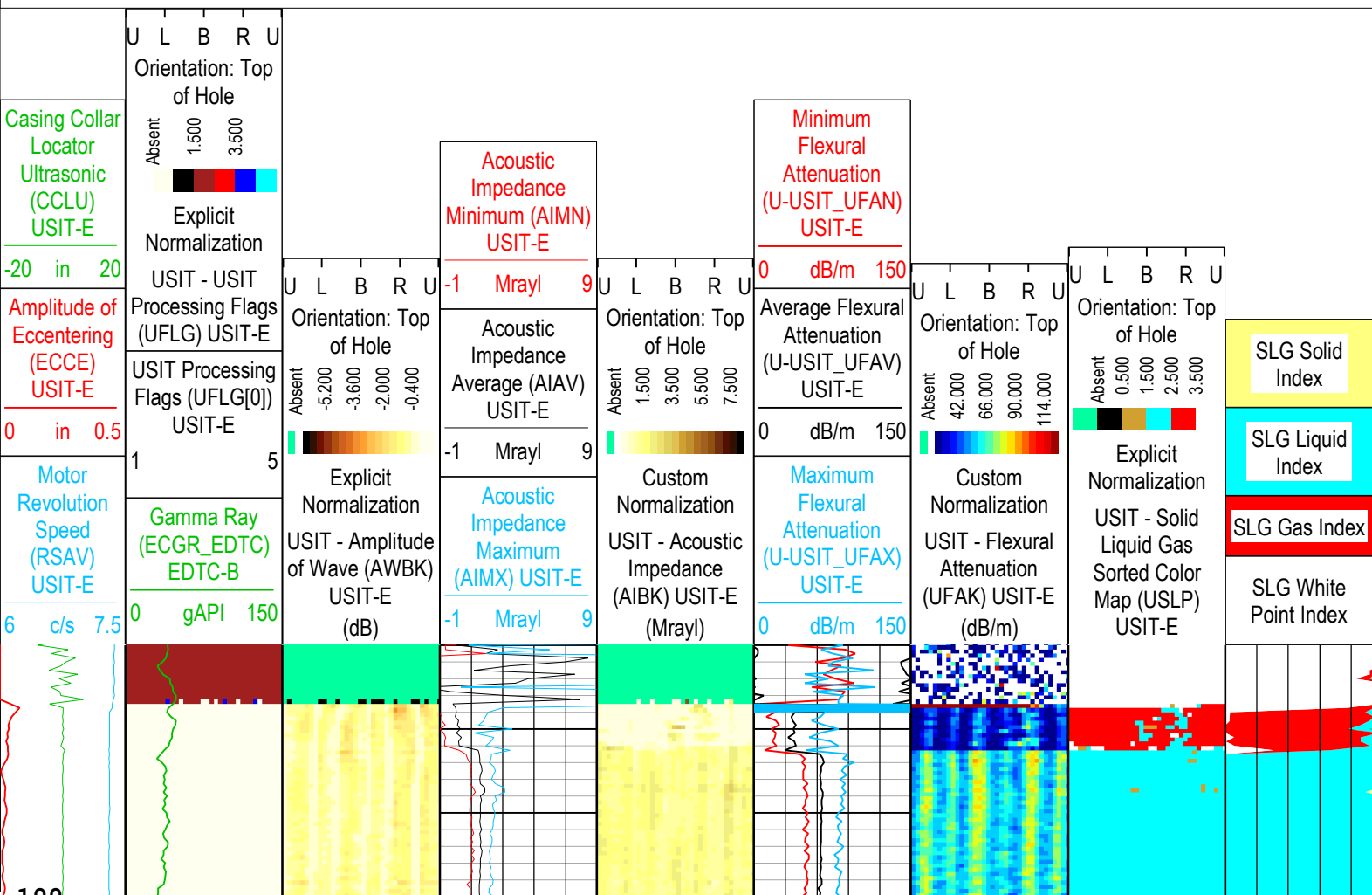
ONE: Log[4]:Up:S005

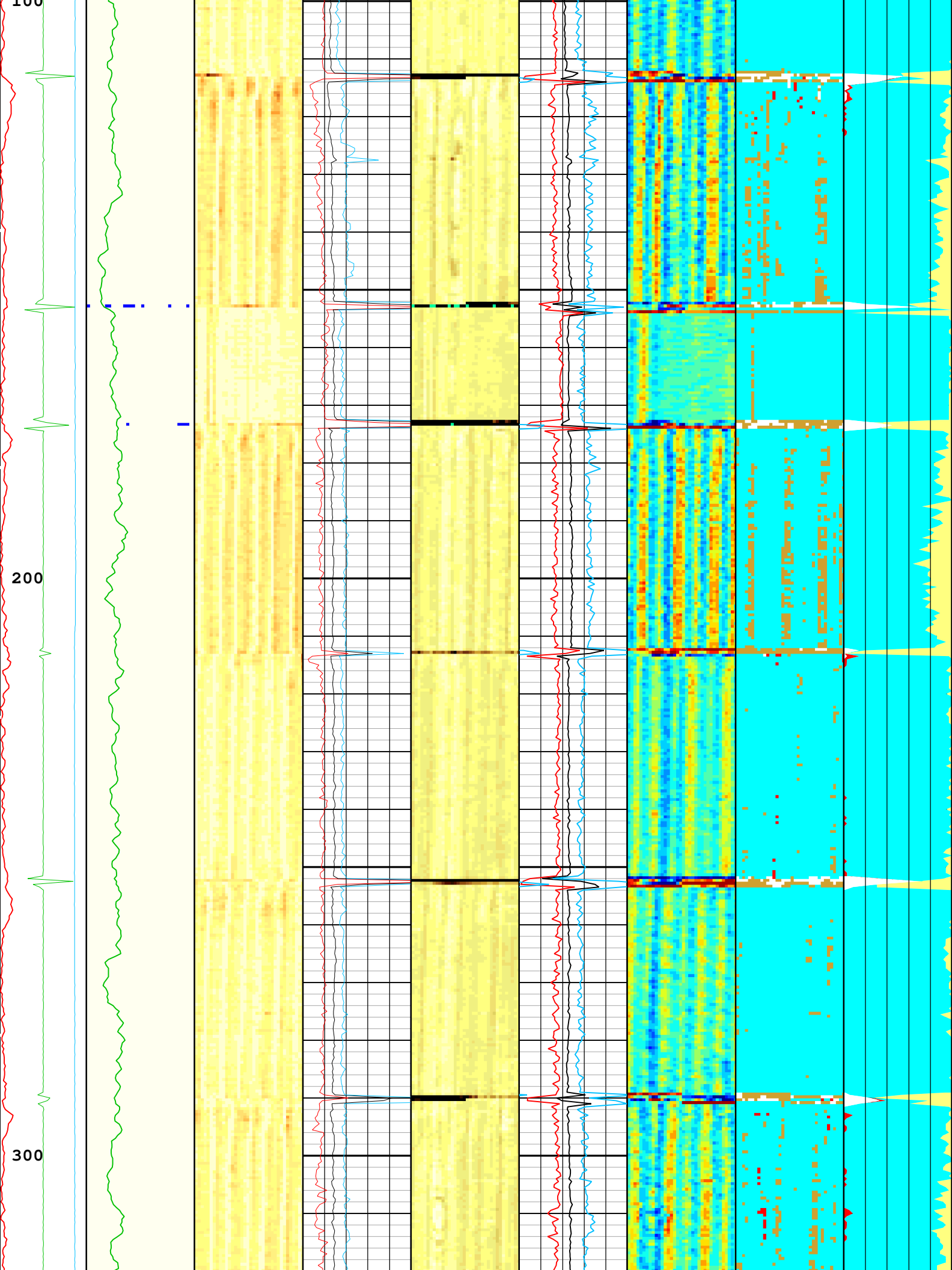
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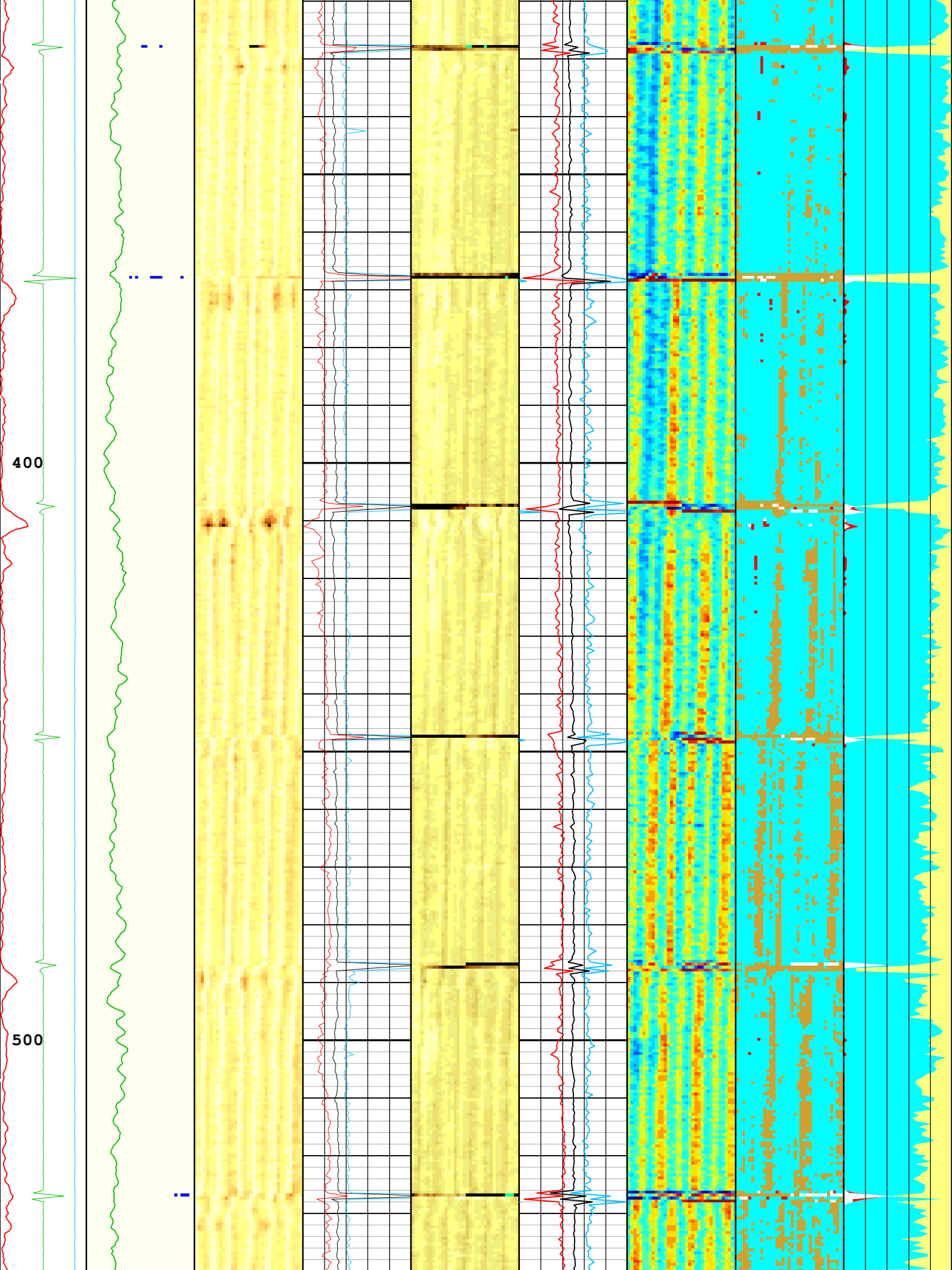
TIME_1900 - Time Marked every 60.00 (s)

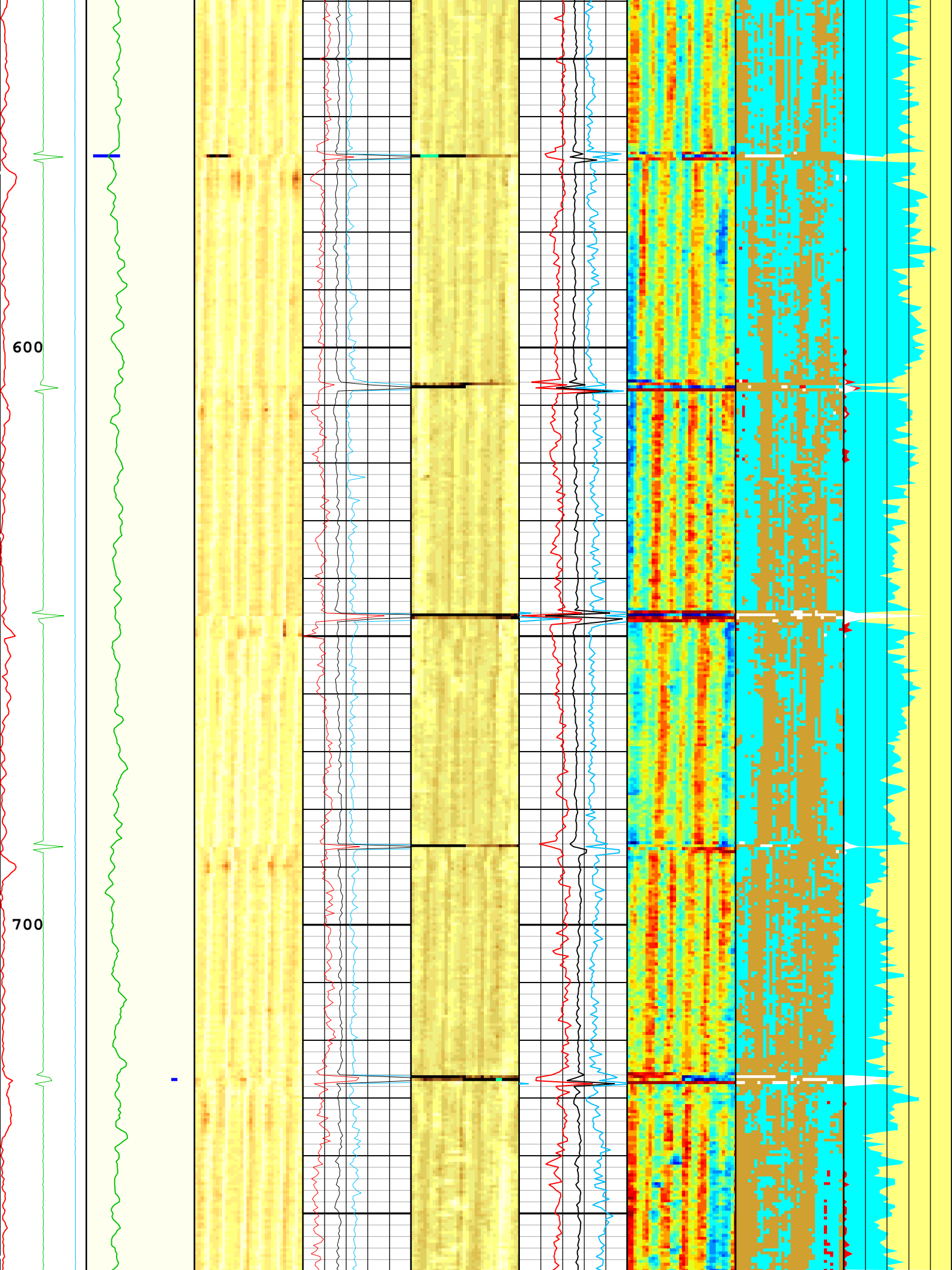
USIT Processing Flags (UFLG[0]) USIT-E

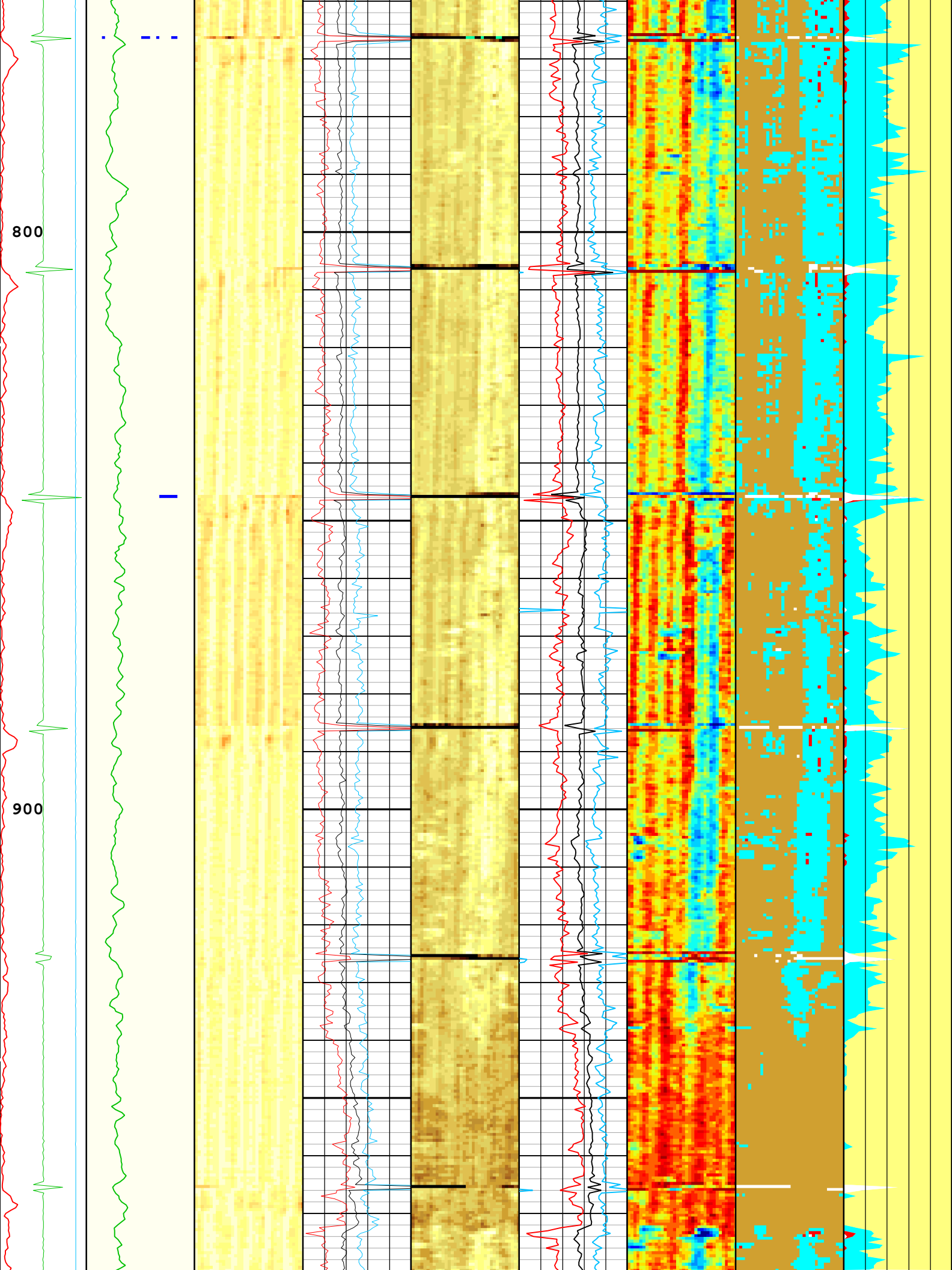
- | | |
|-------------------------------------------------------|-----------------------------|
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| 2 - UFLG 2 Value within [1.5 - 2.5] - : | ■ Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - : | ■ WINLEN Error |
| 4 - UFLG 4 UFLG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

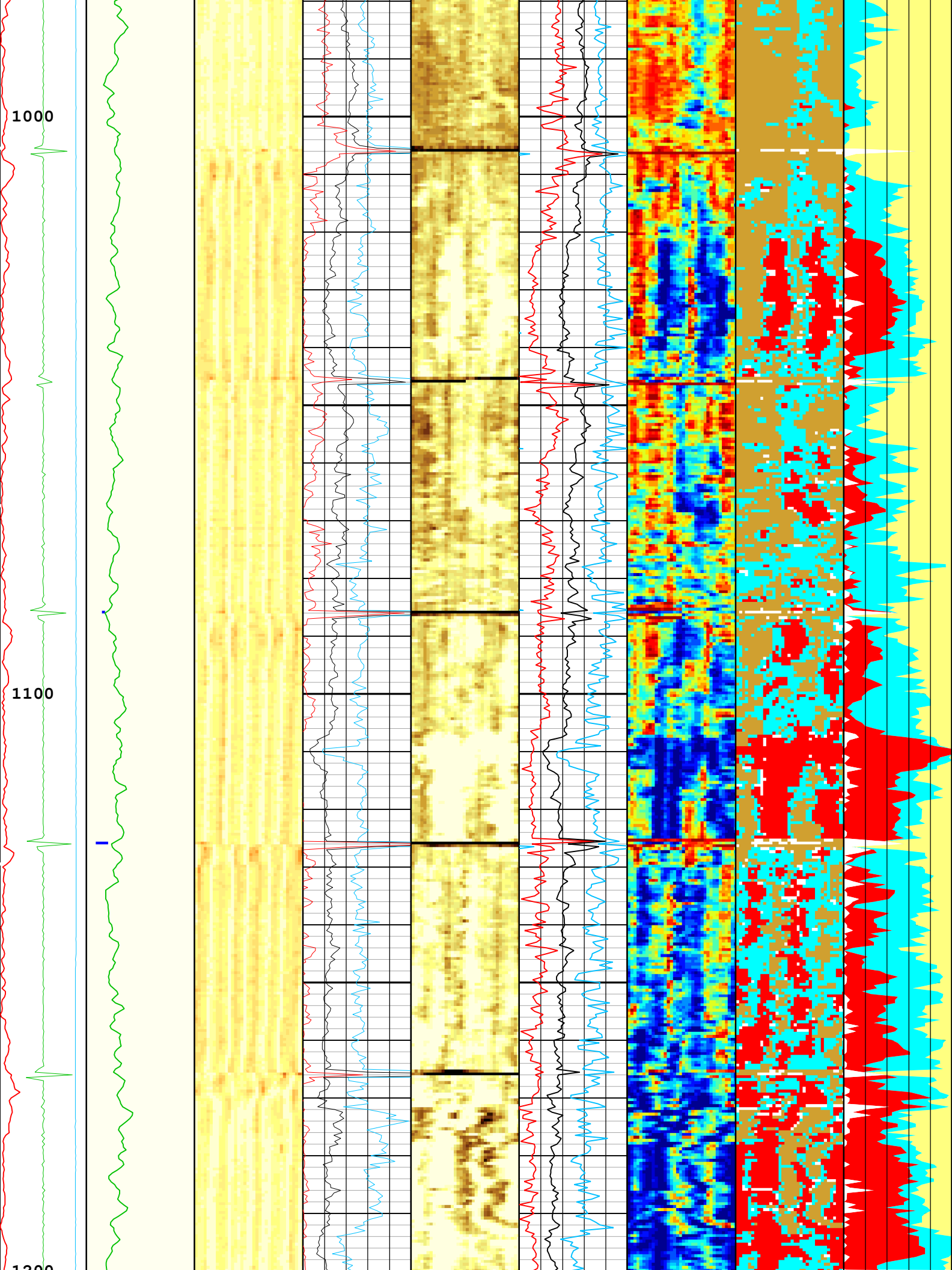


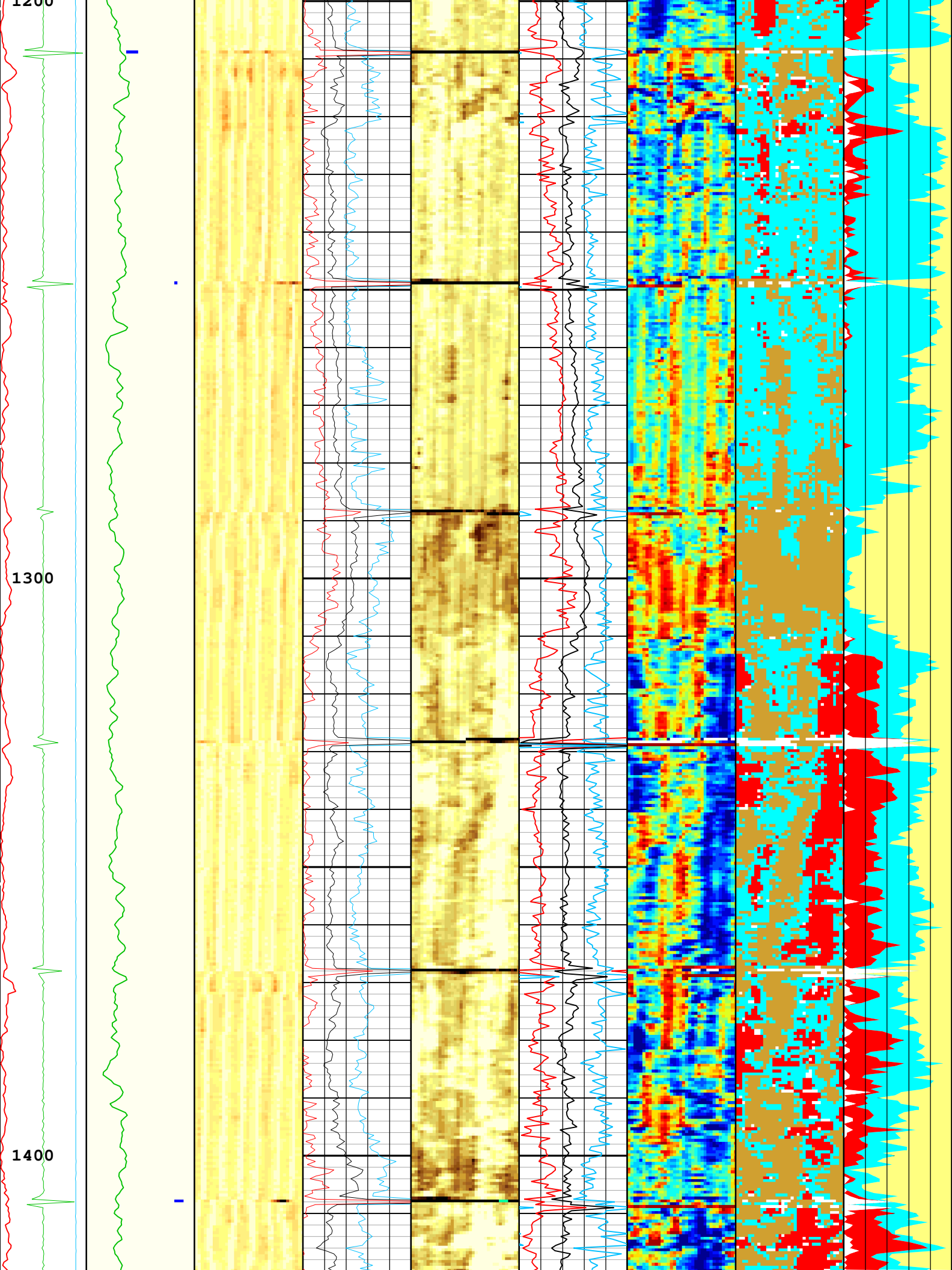


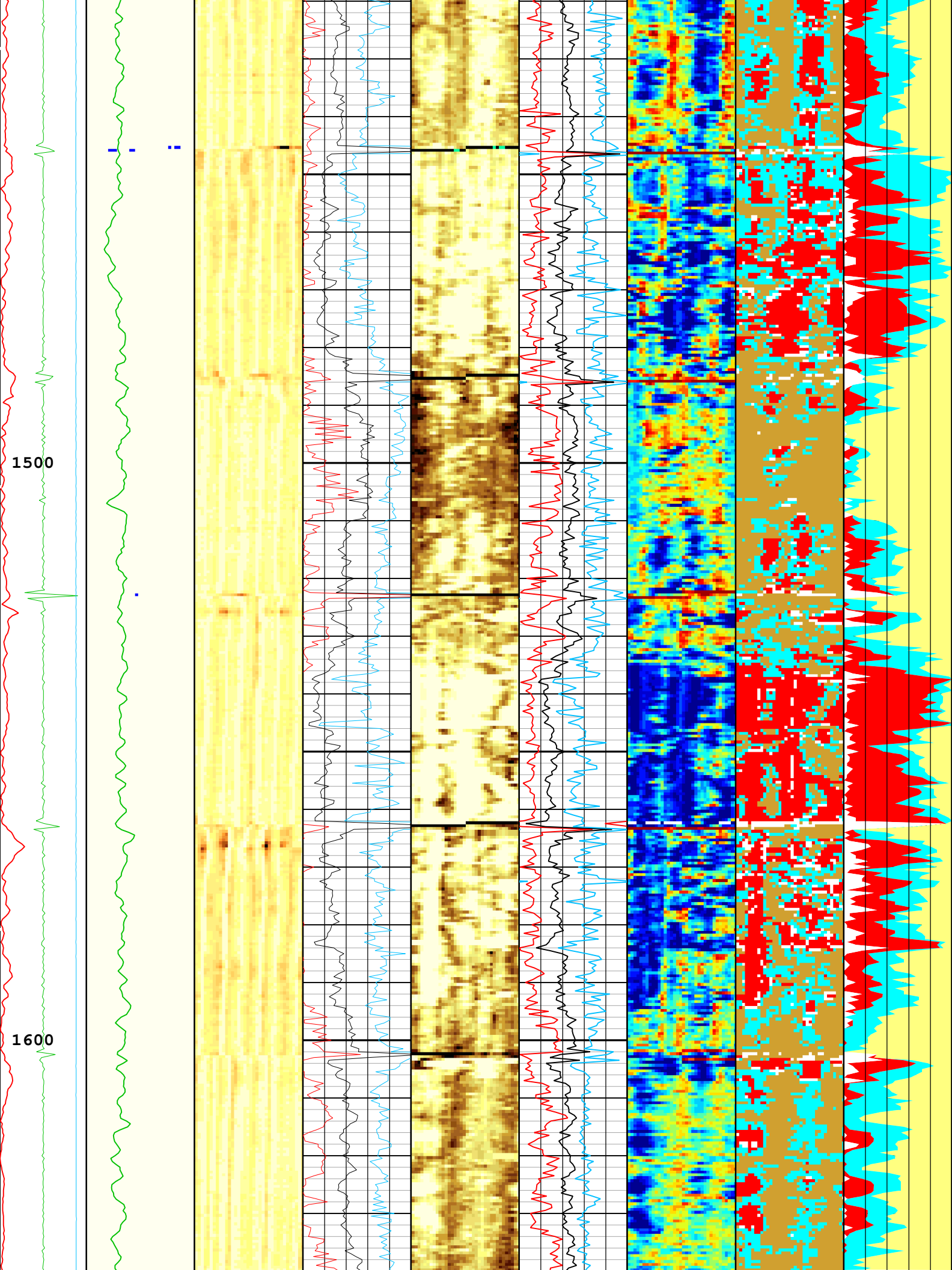


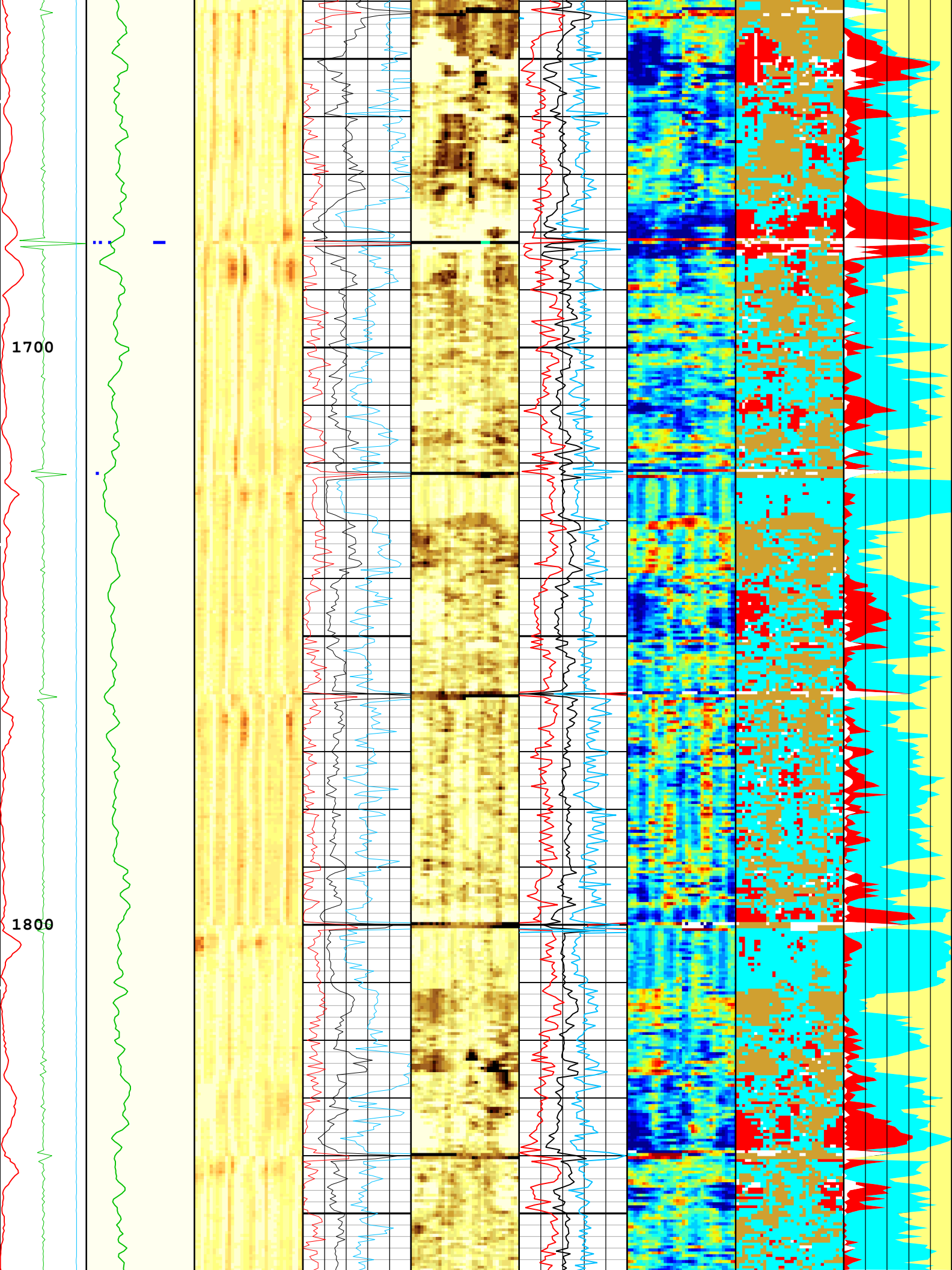


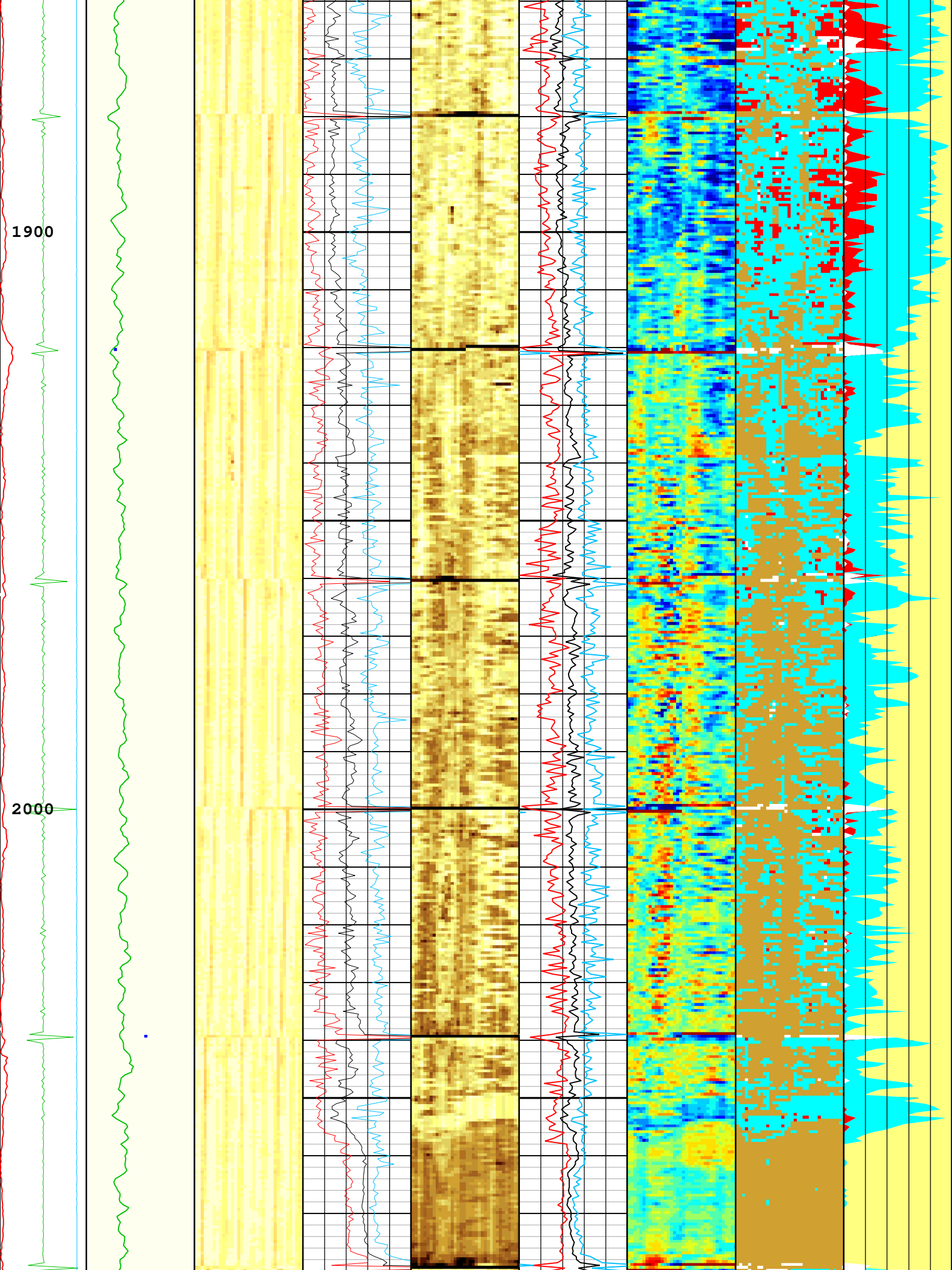


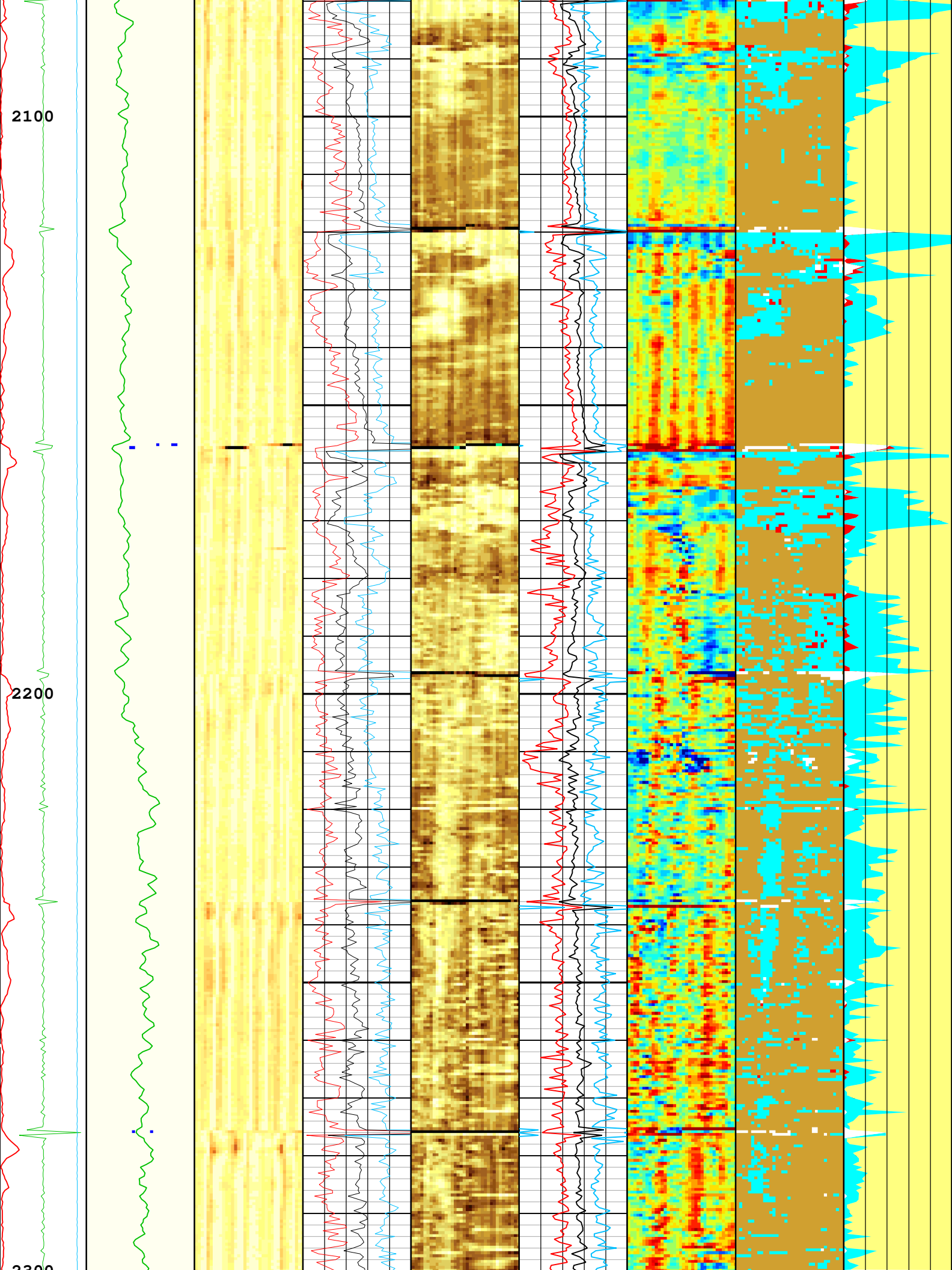


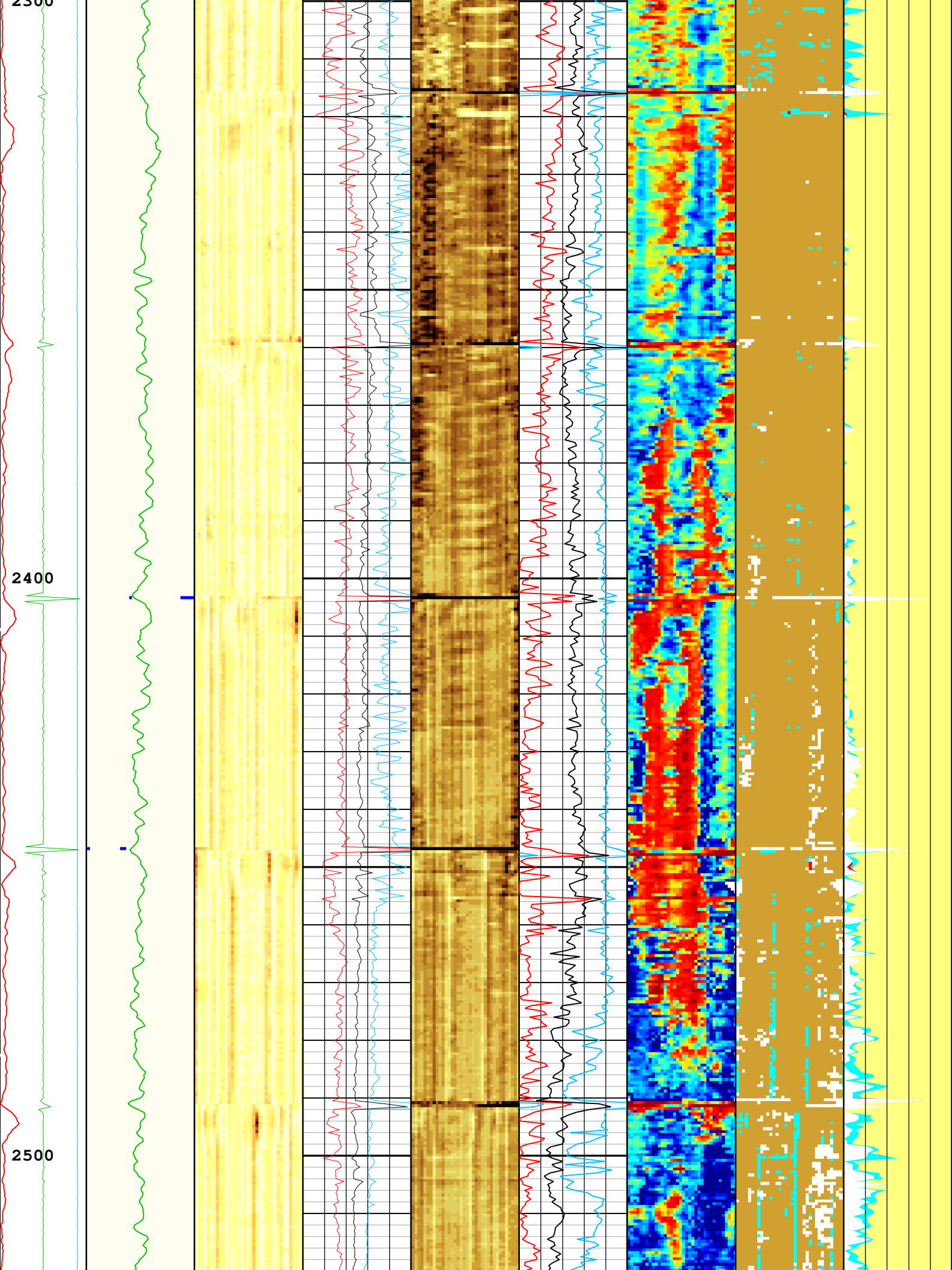


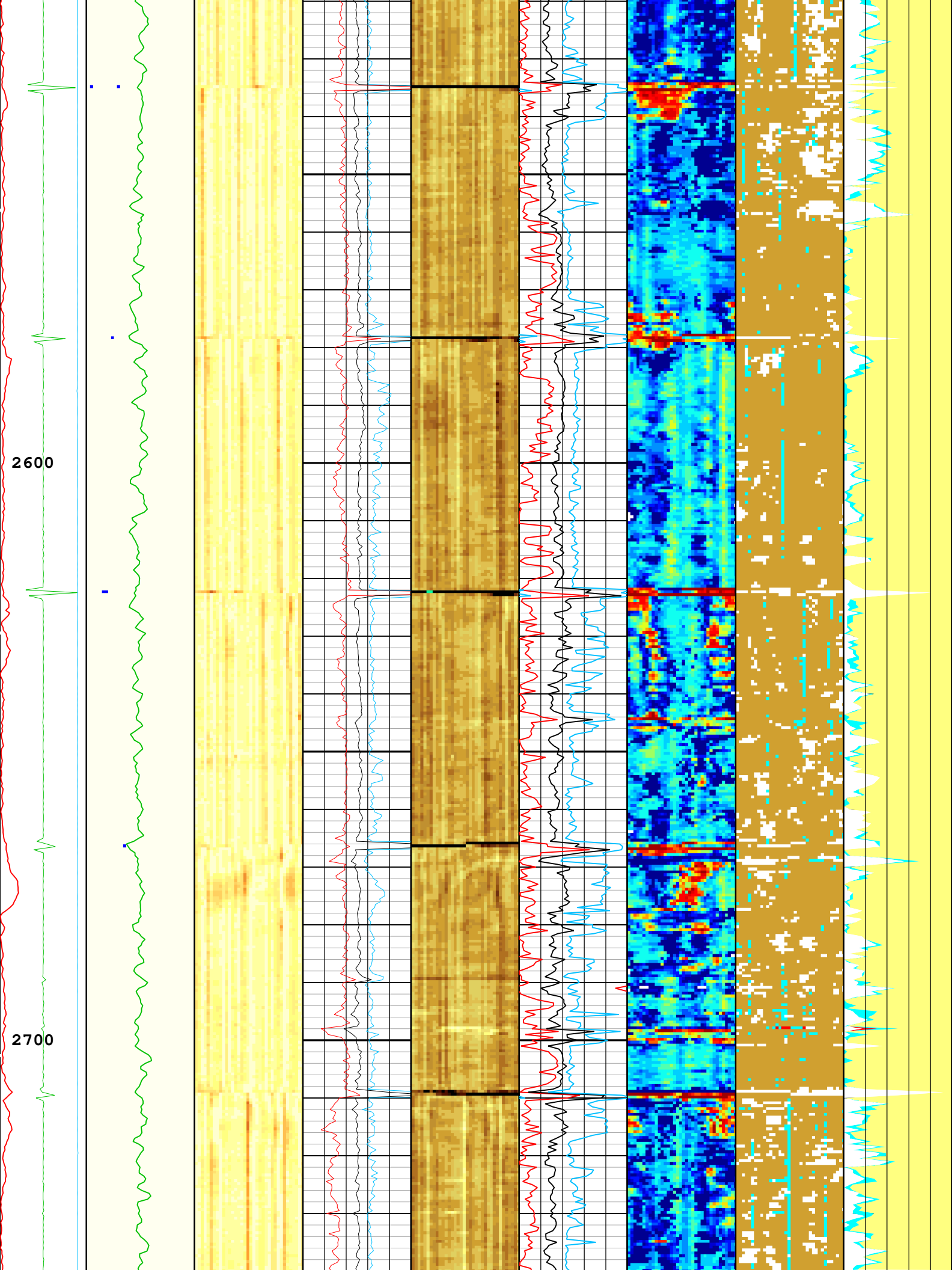


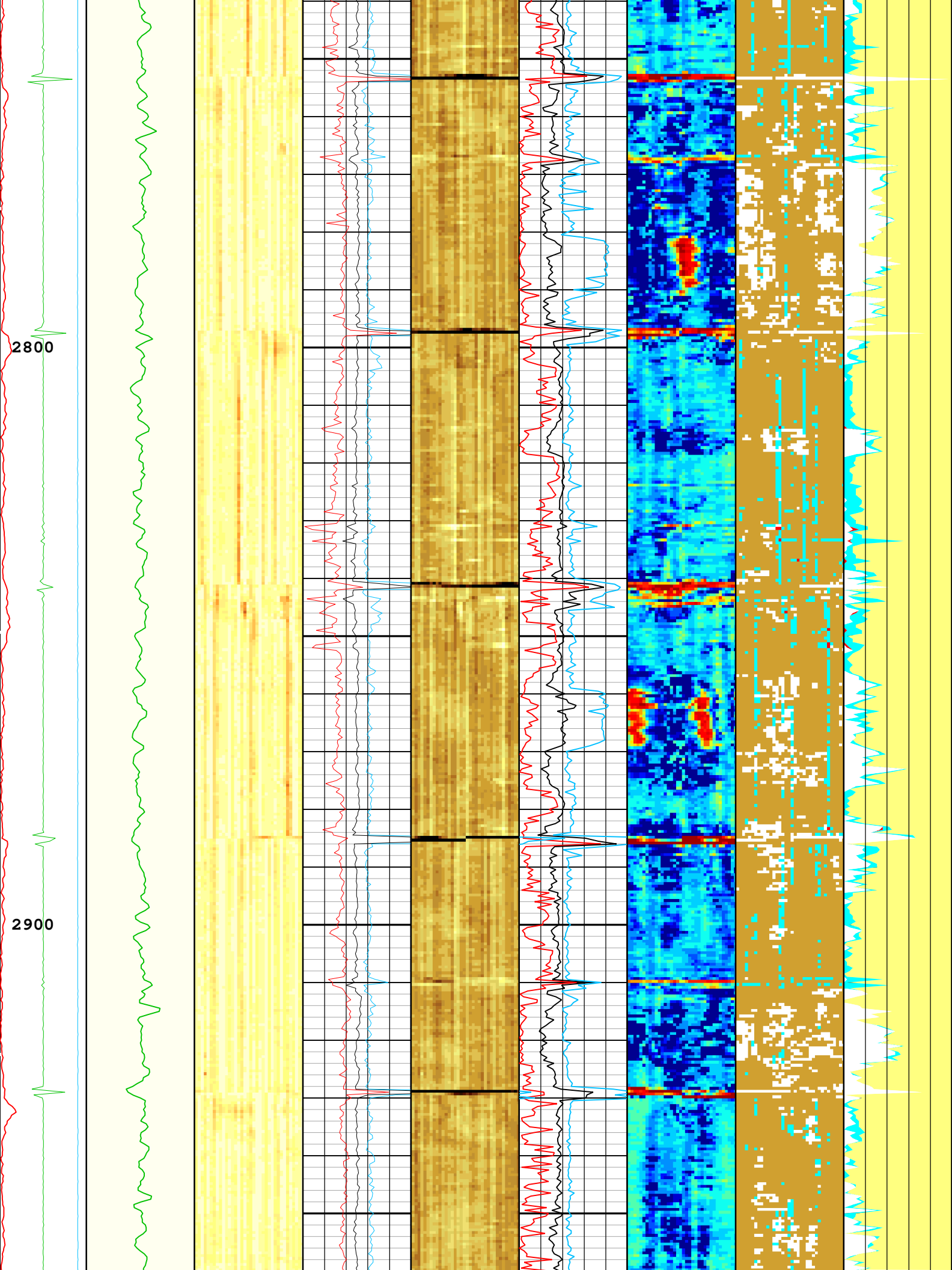


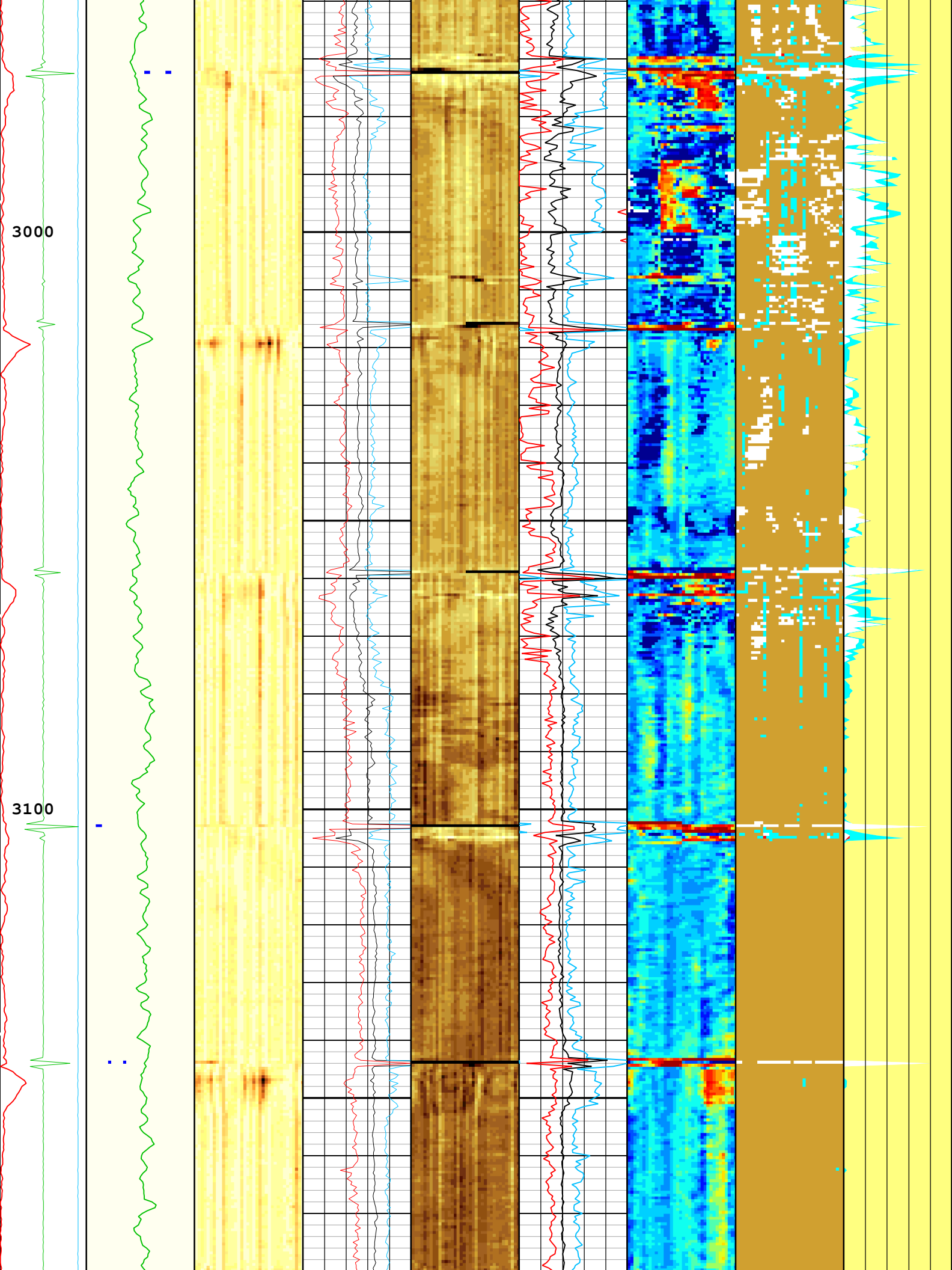


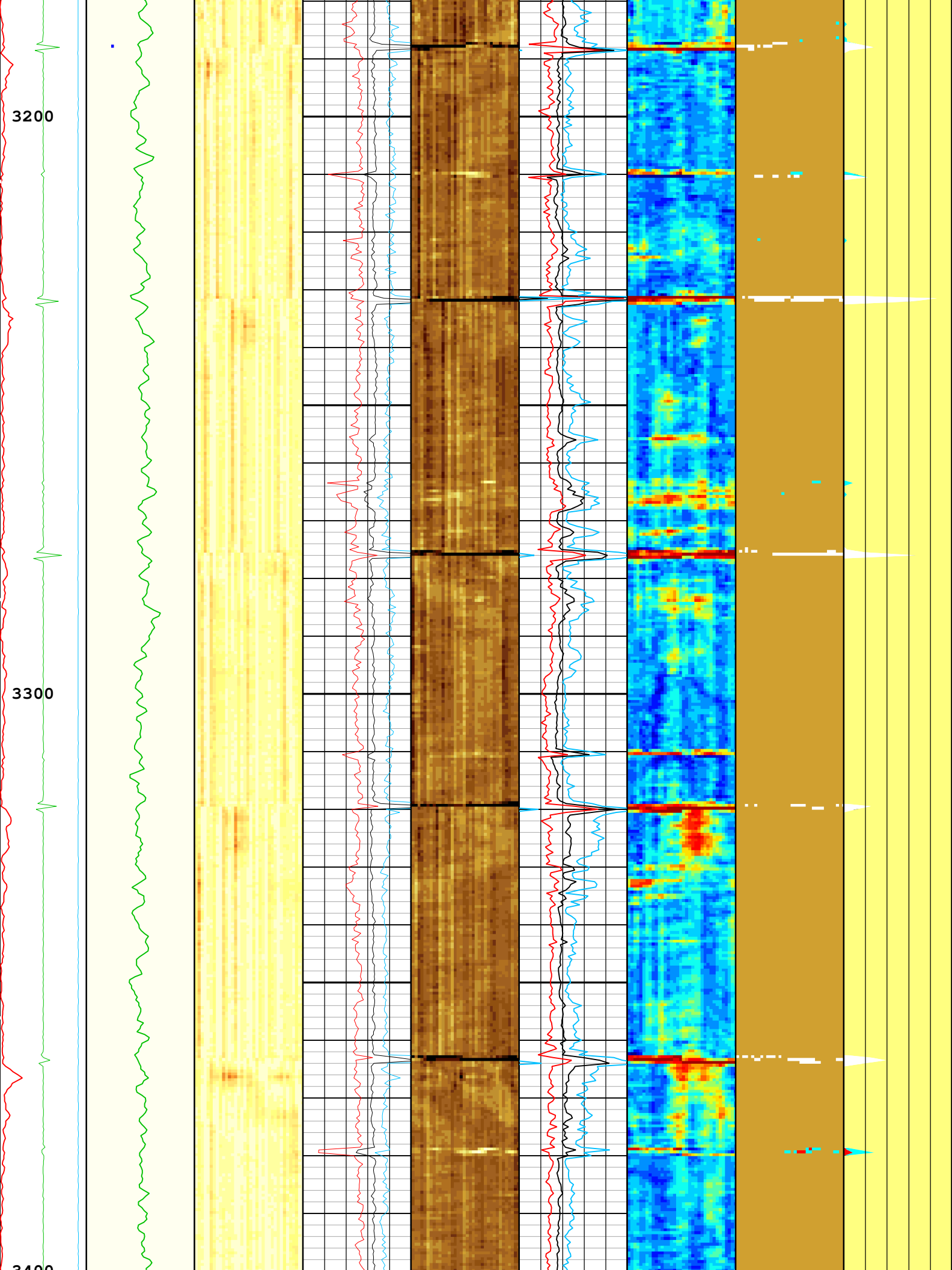


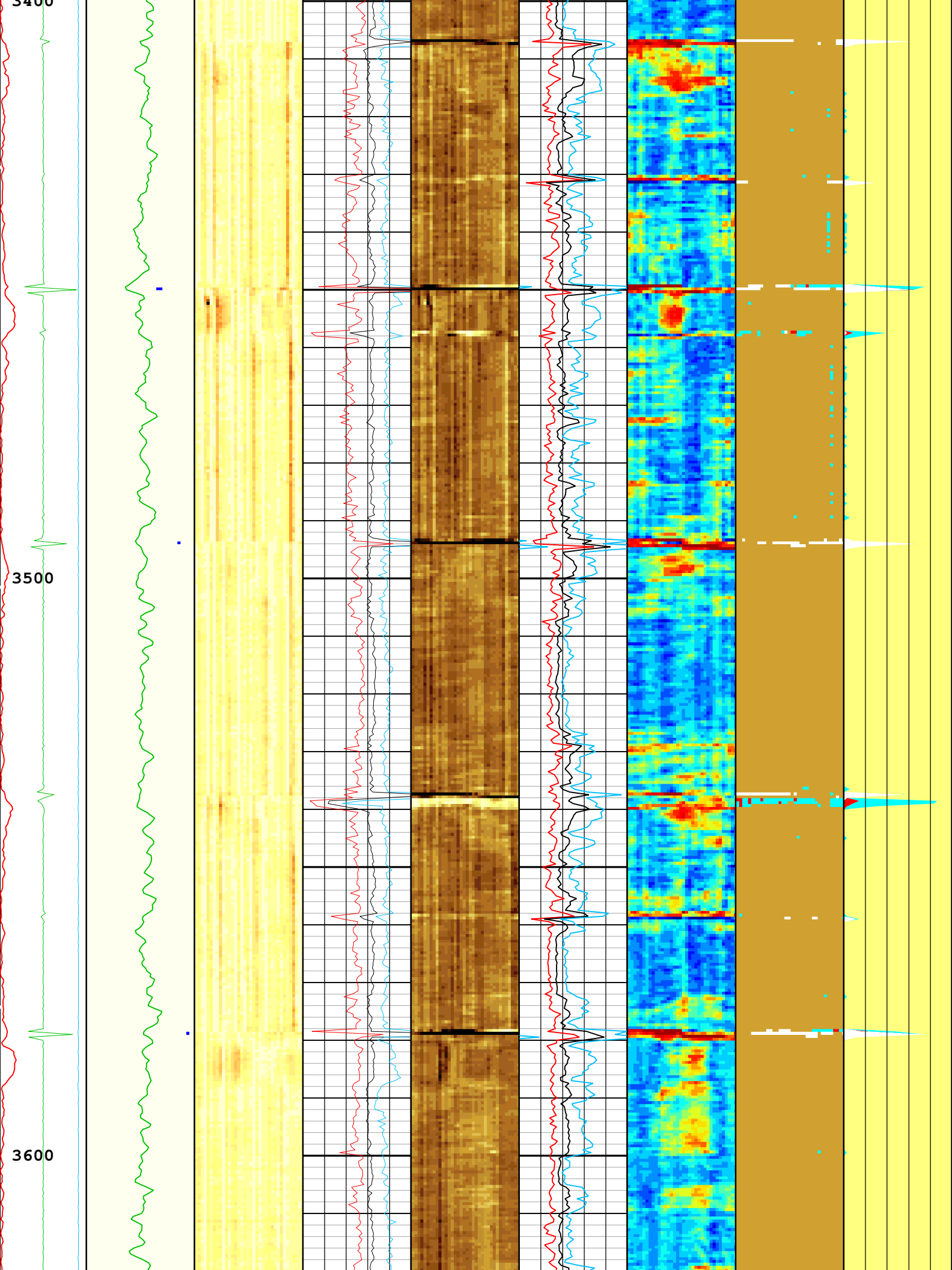


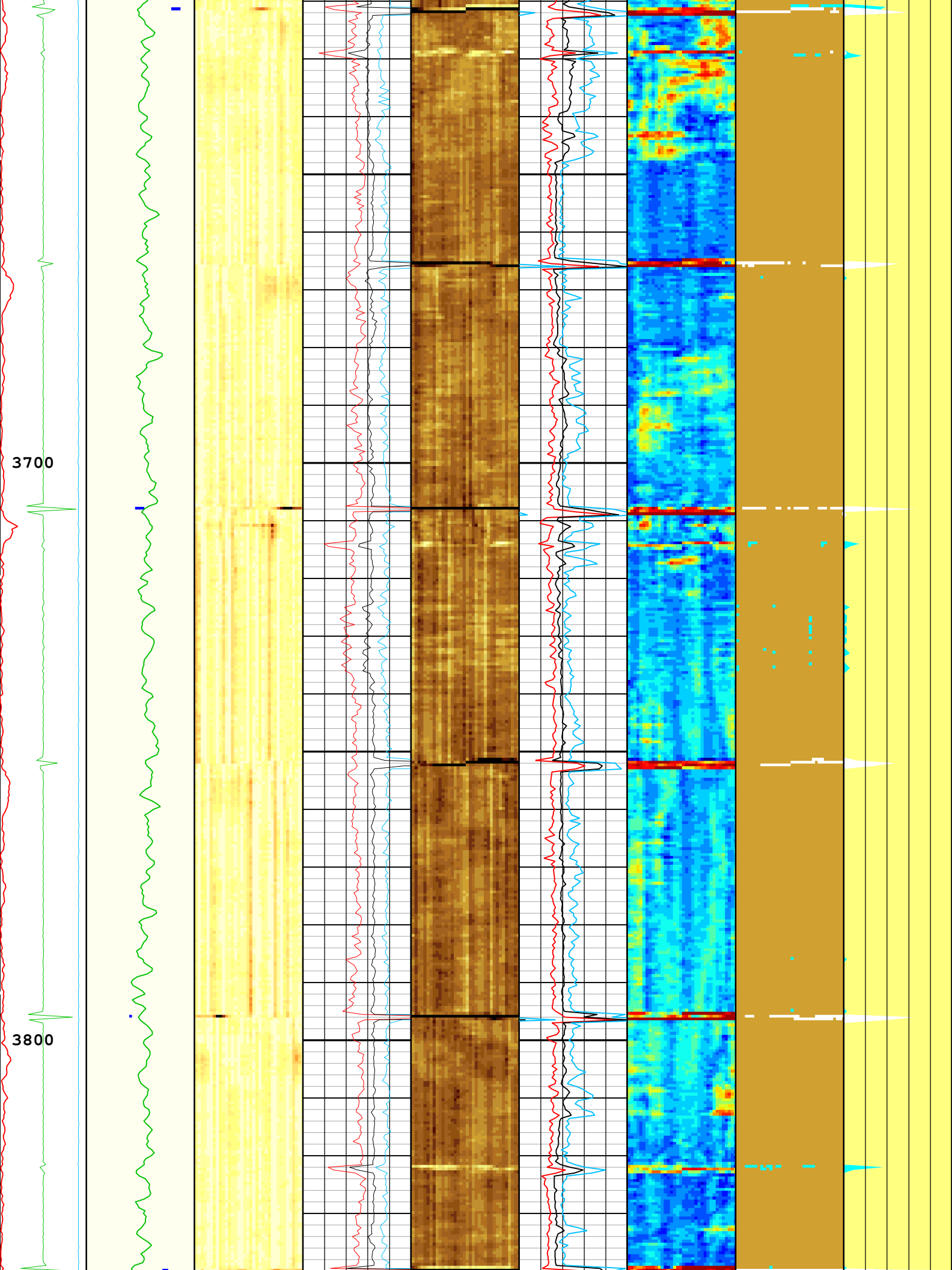


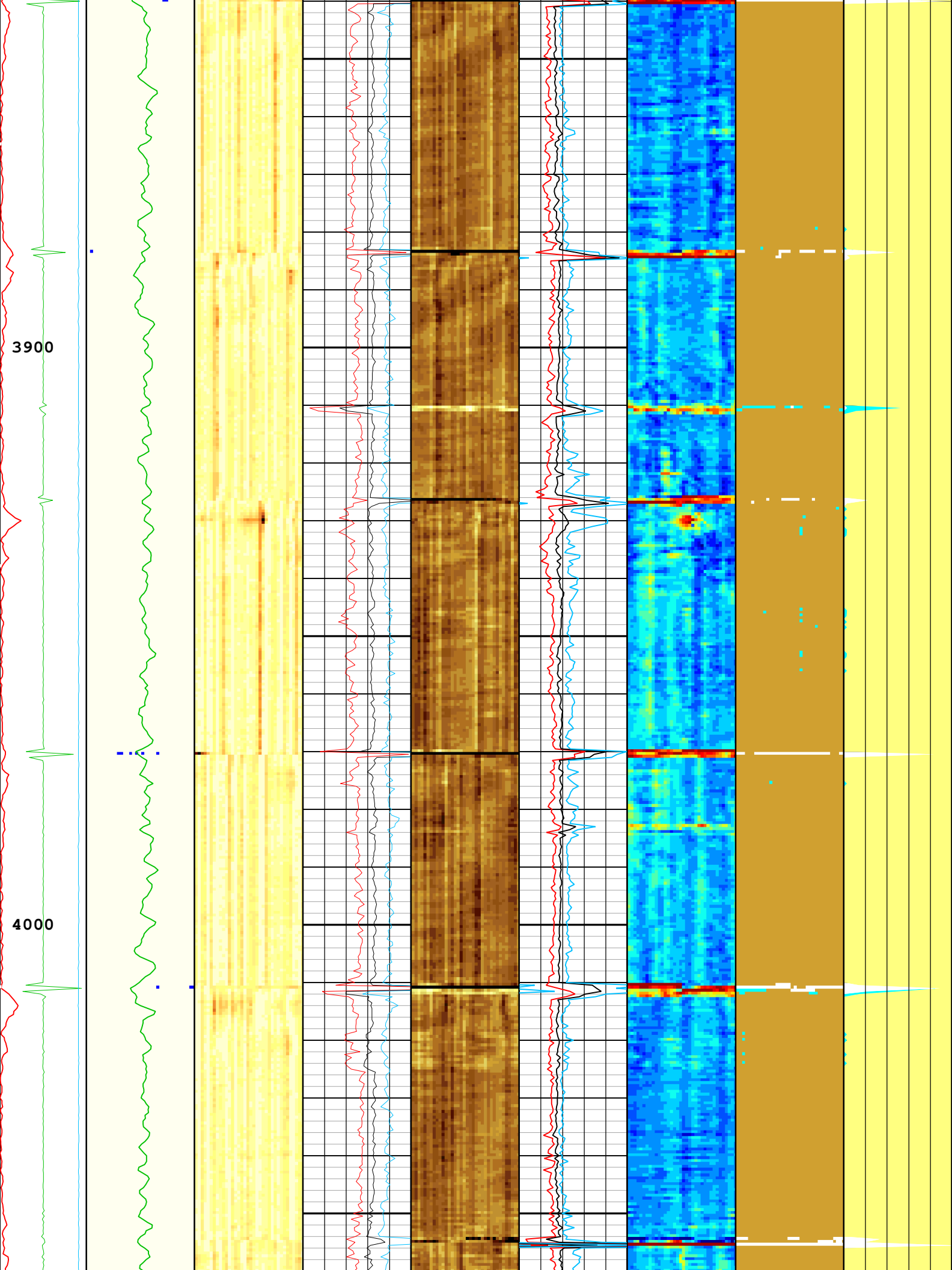


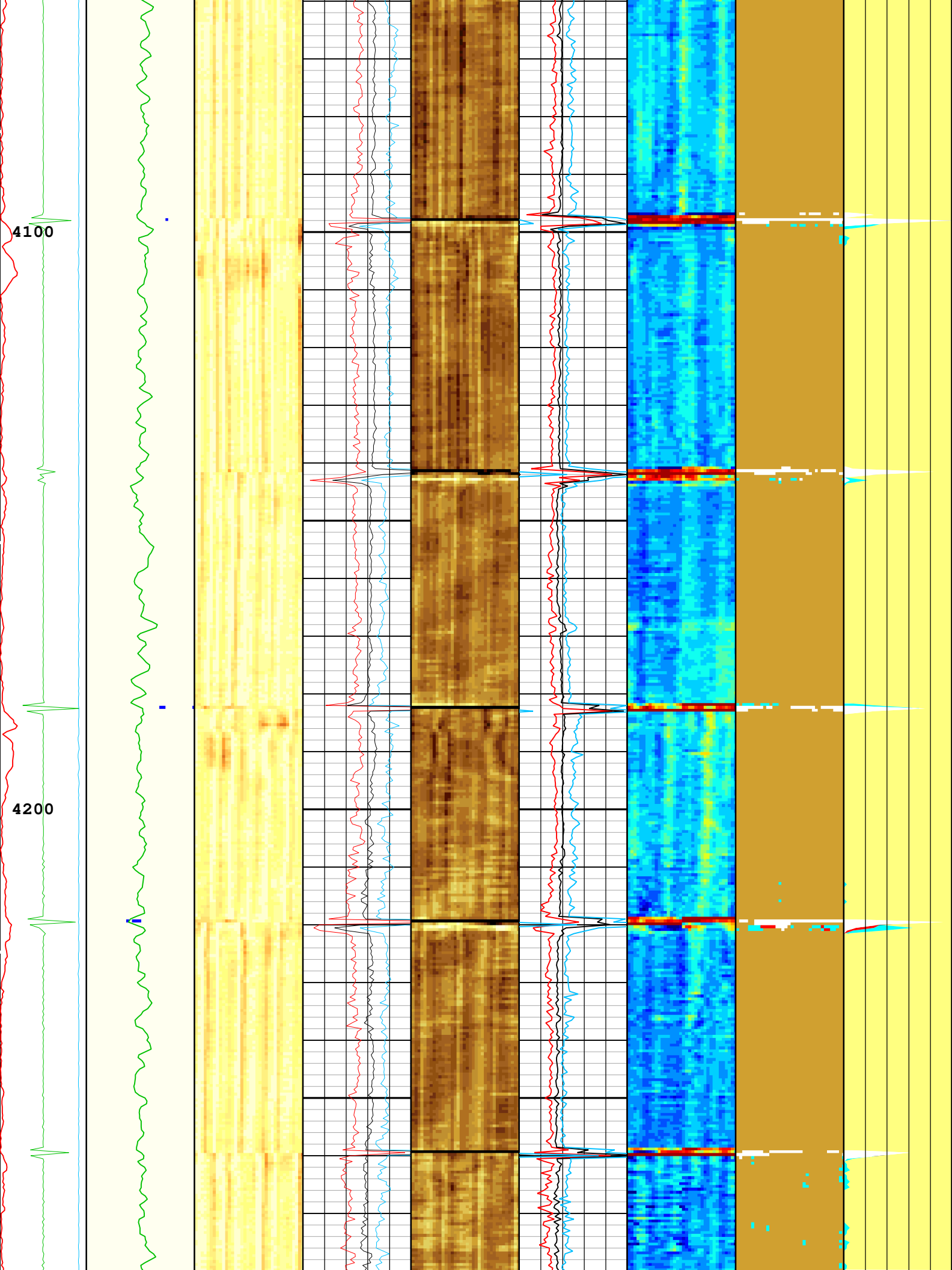


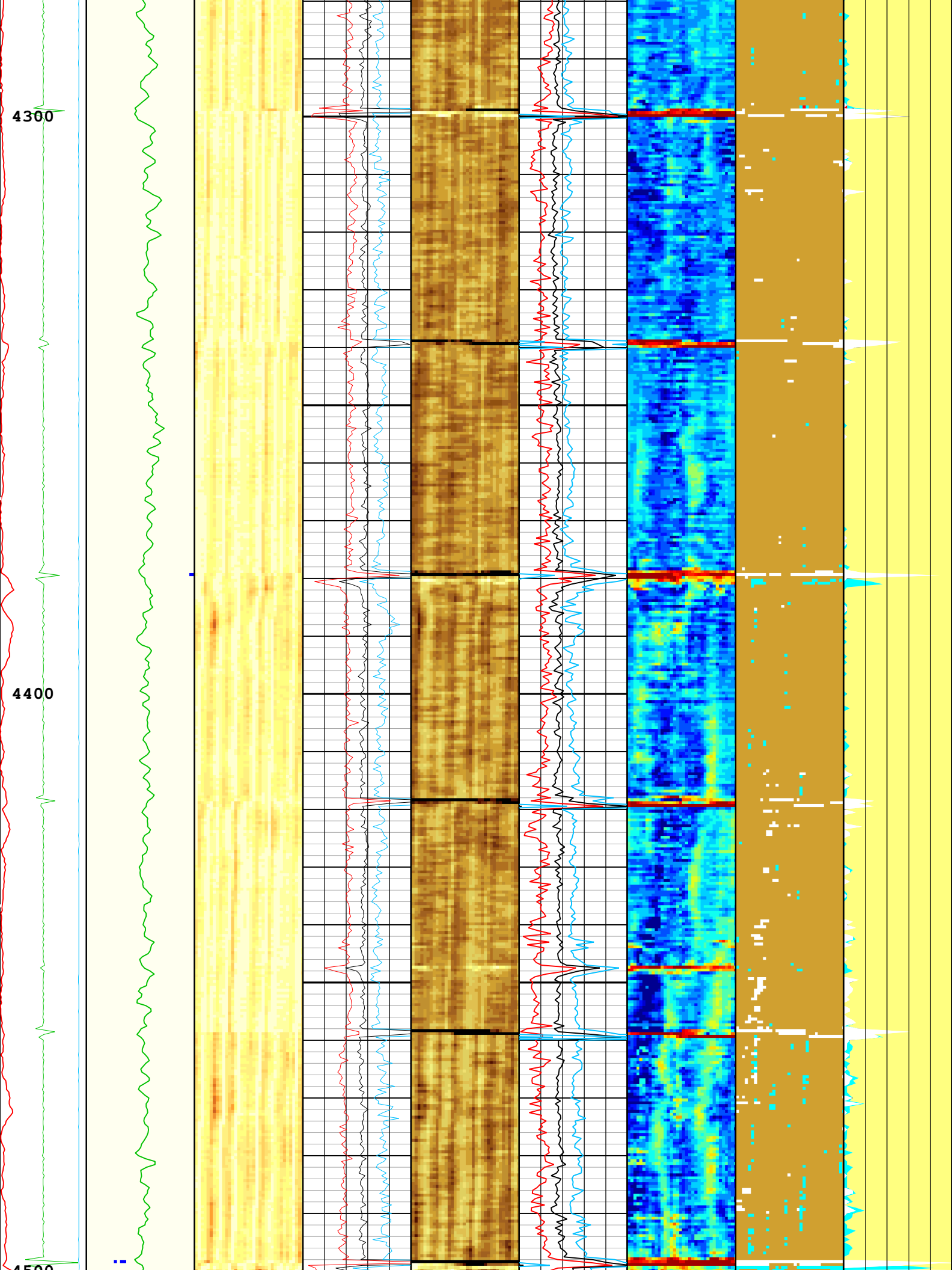


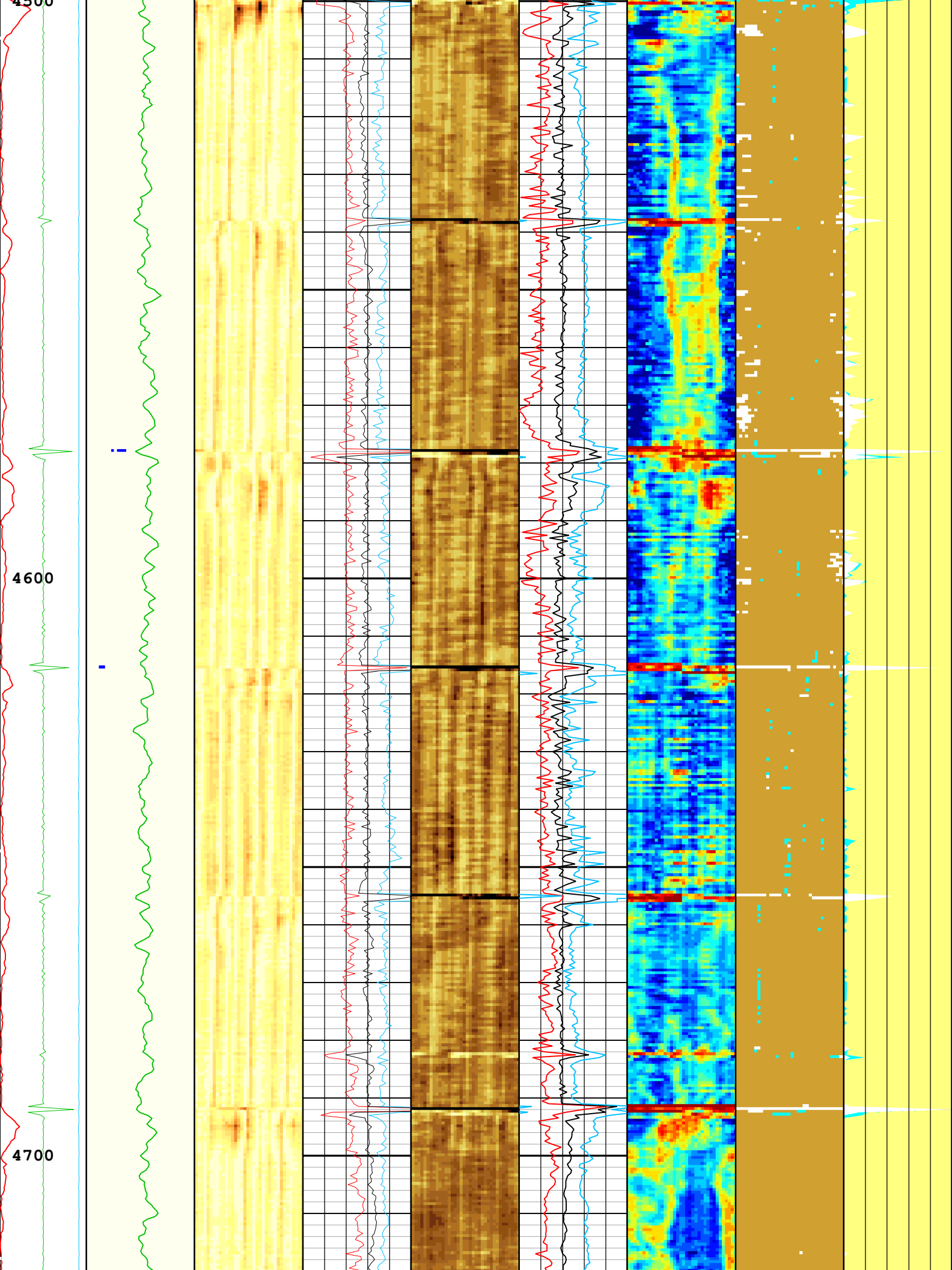


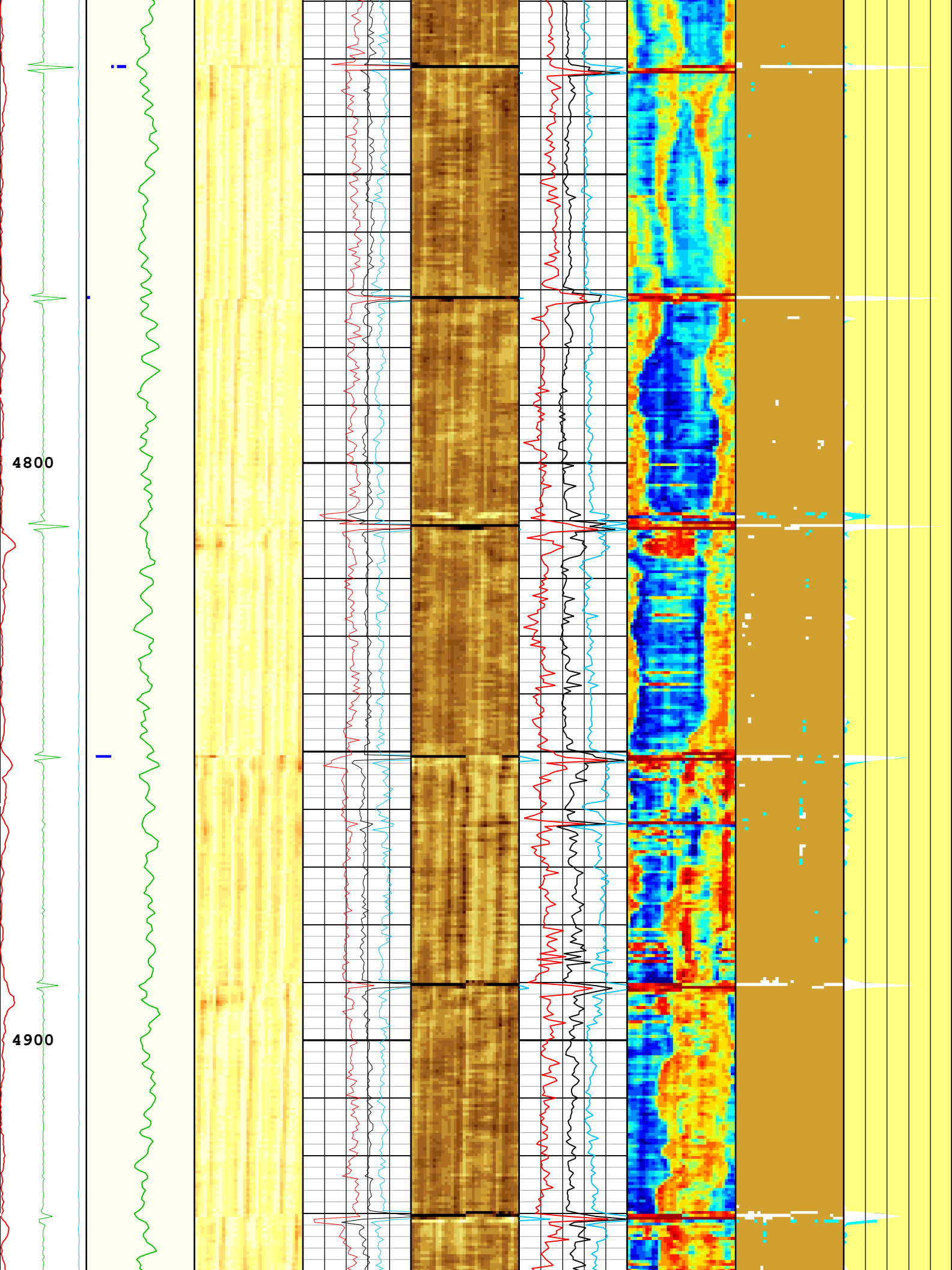


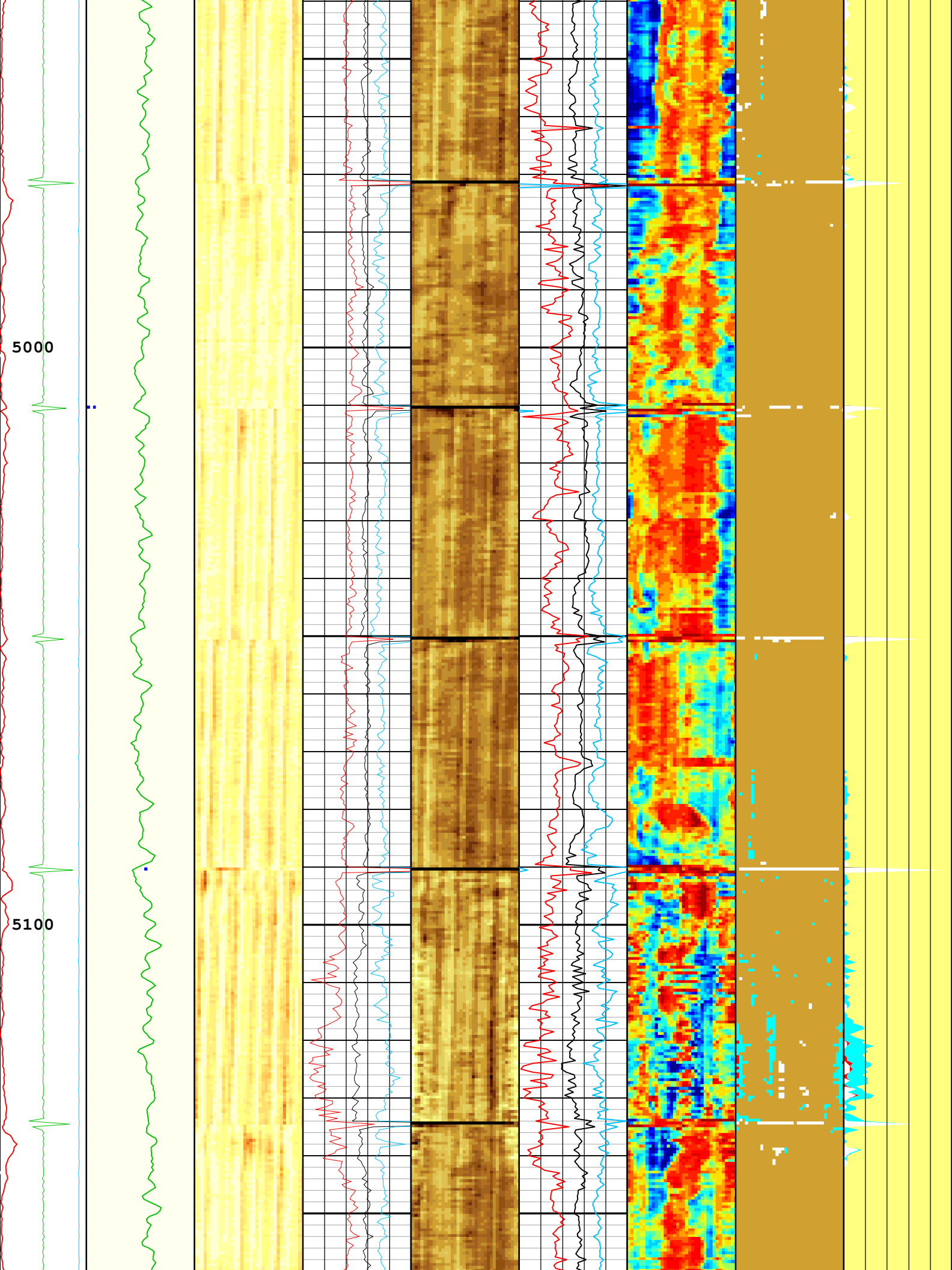


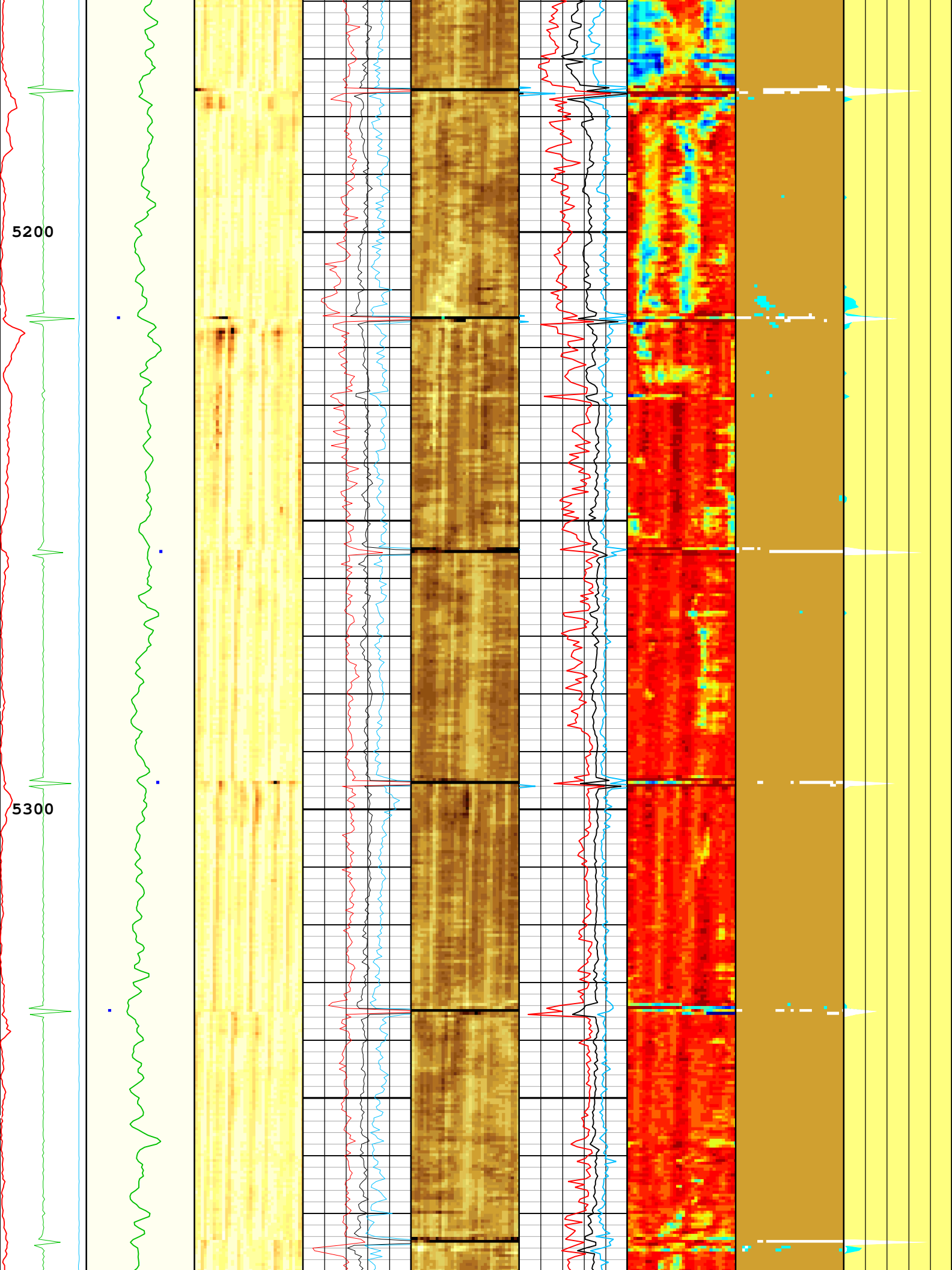


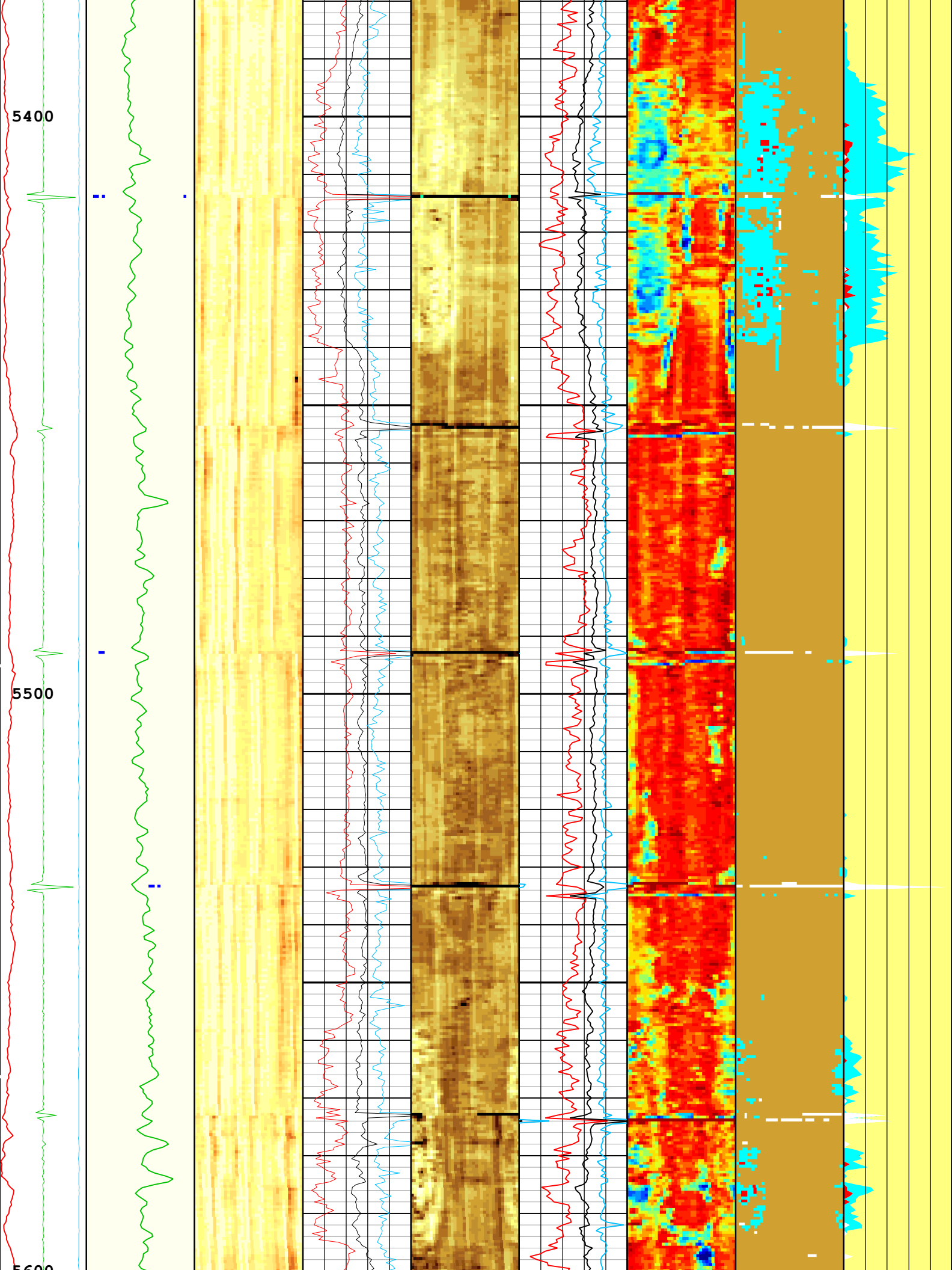


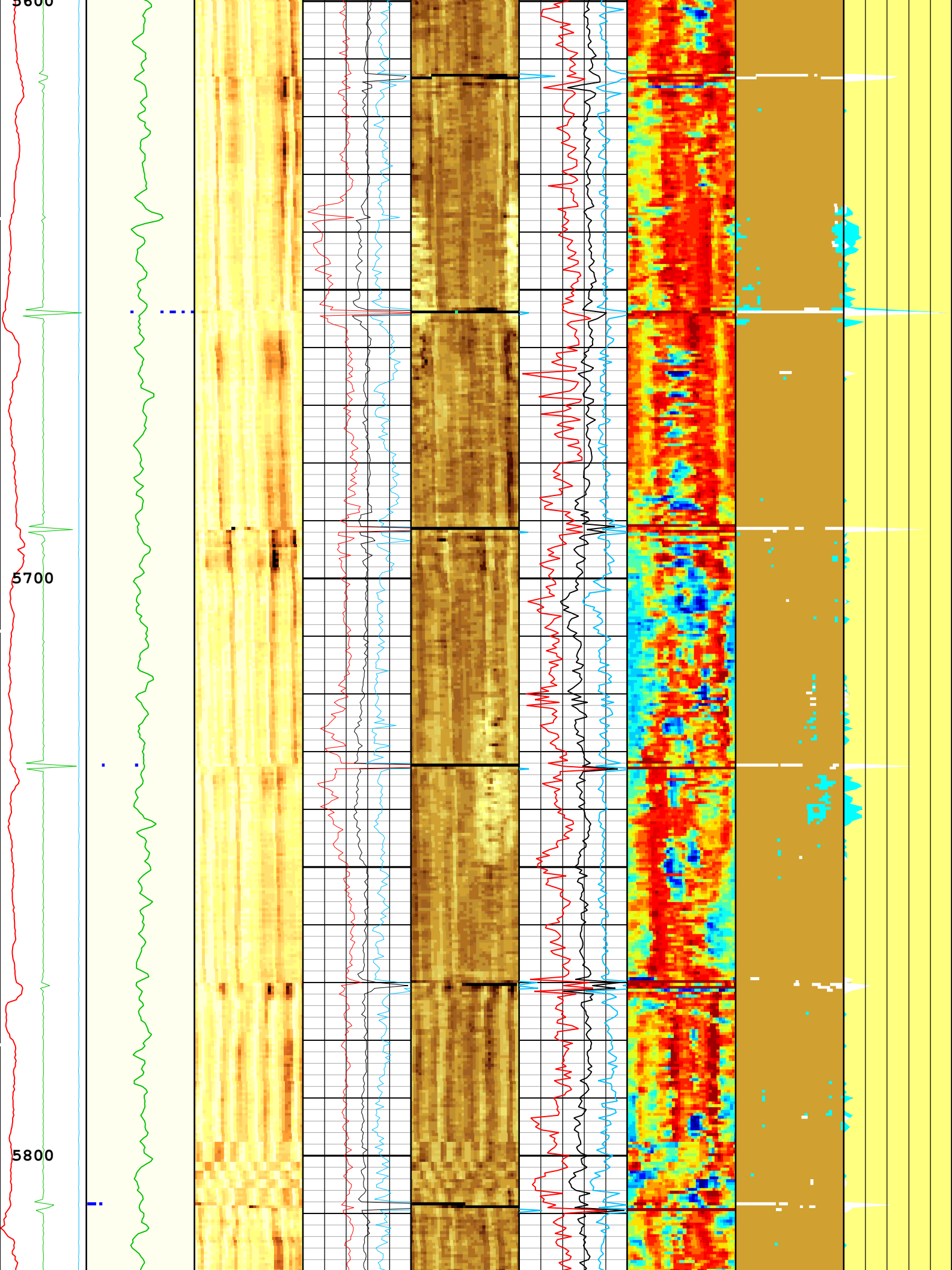


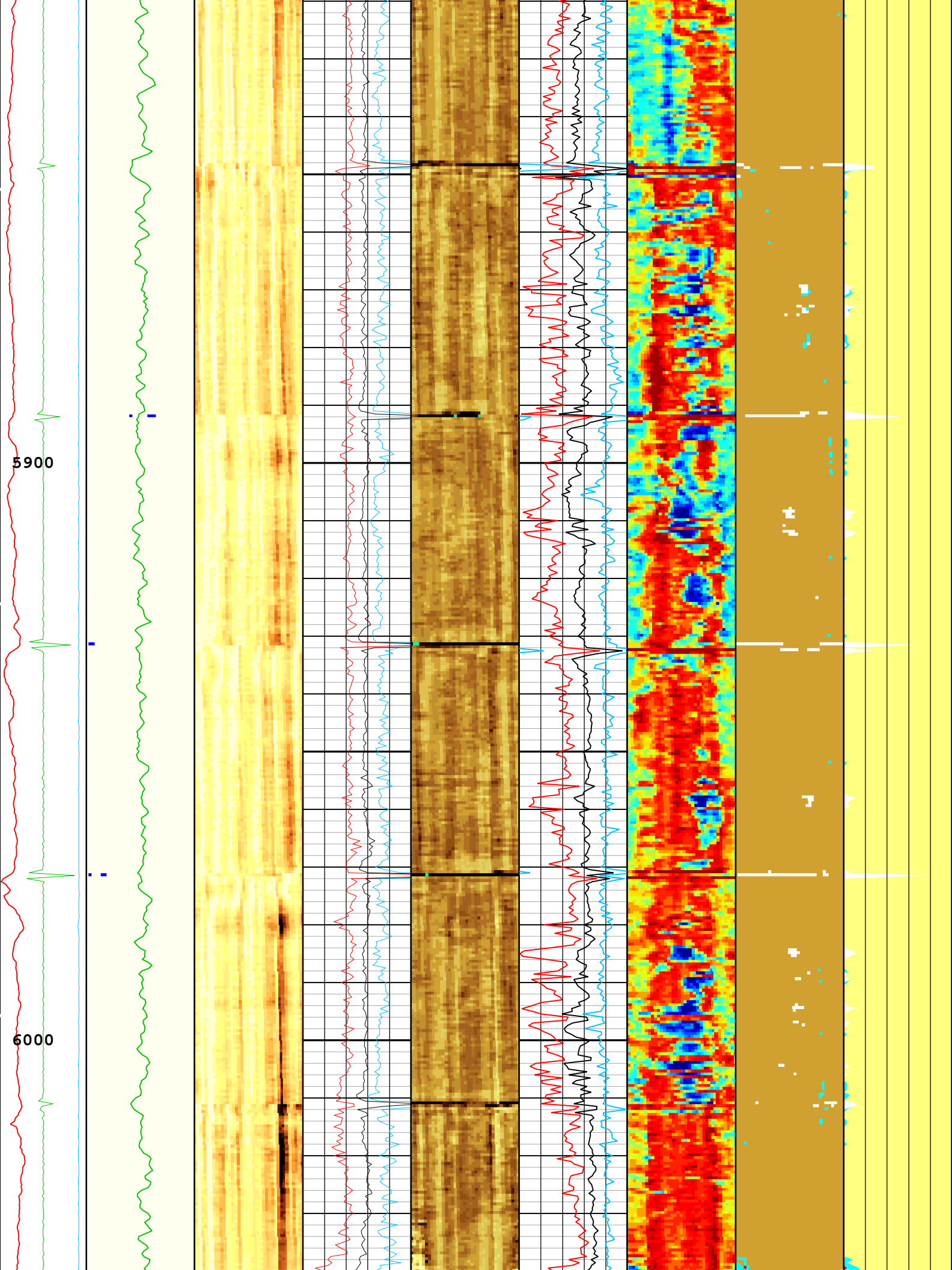


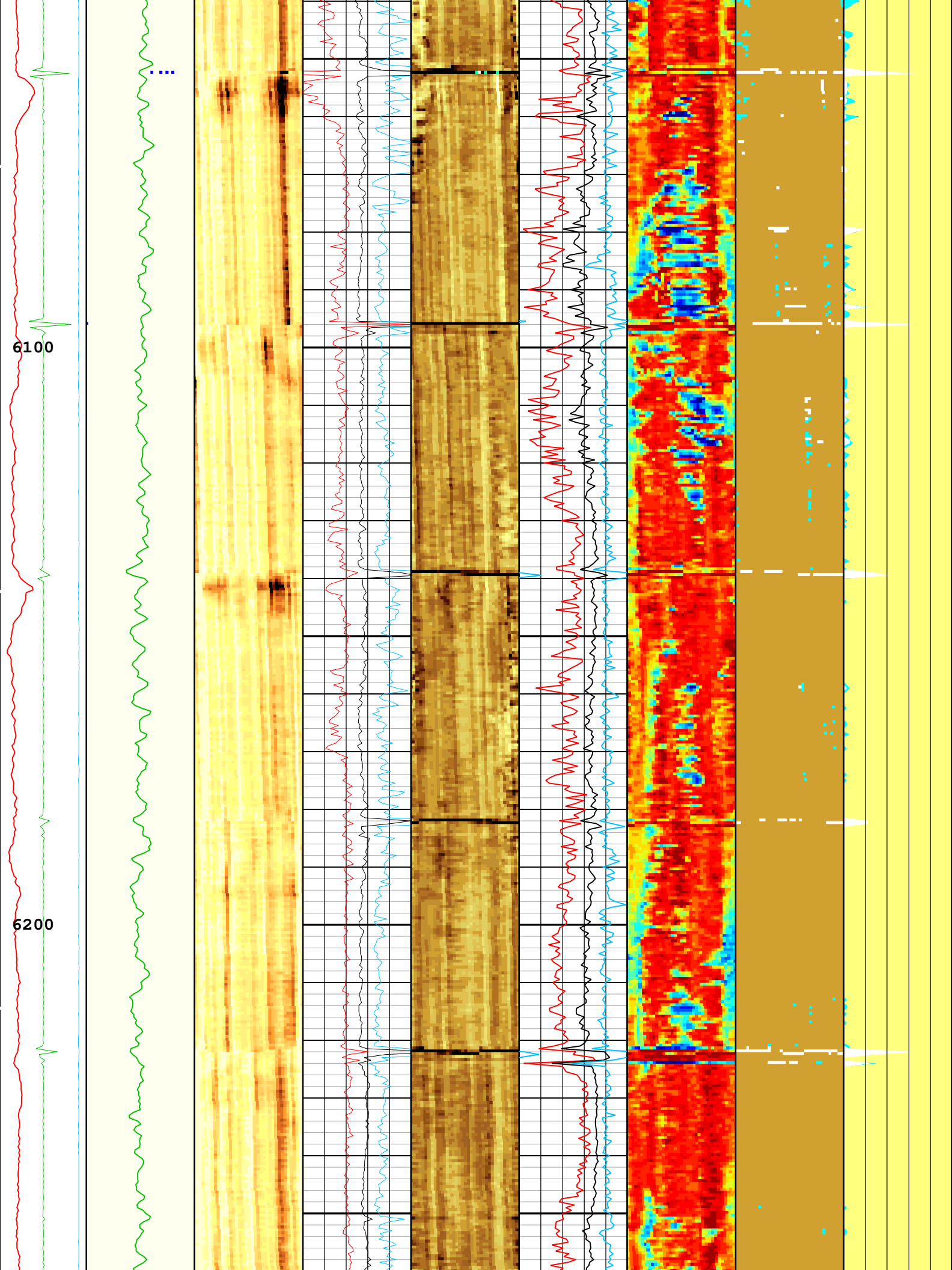


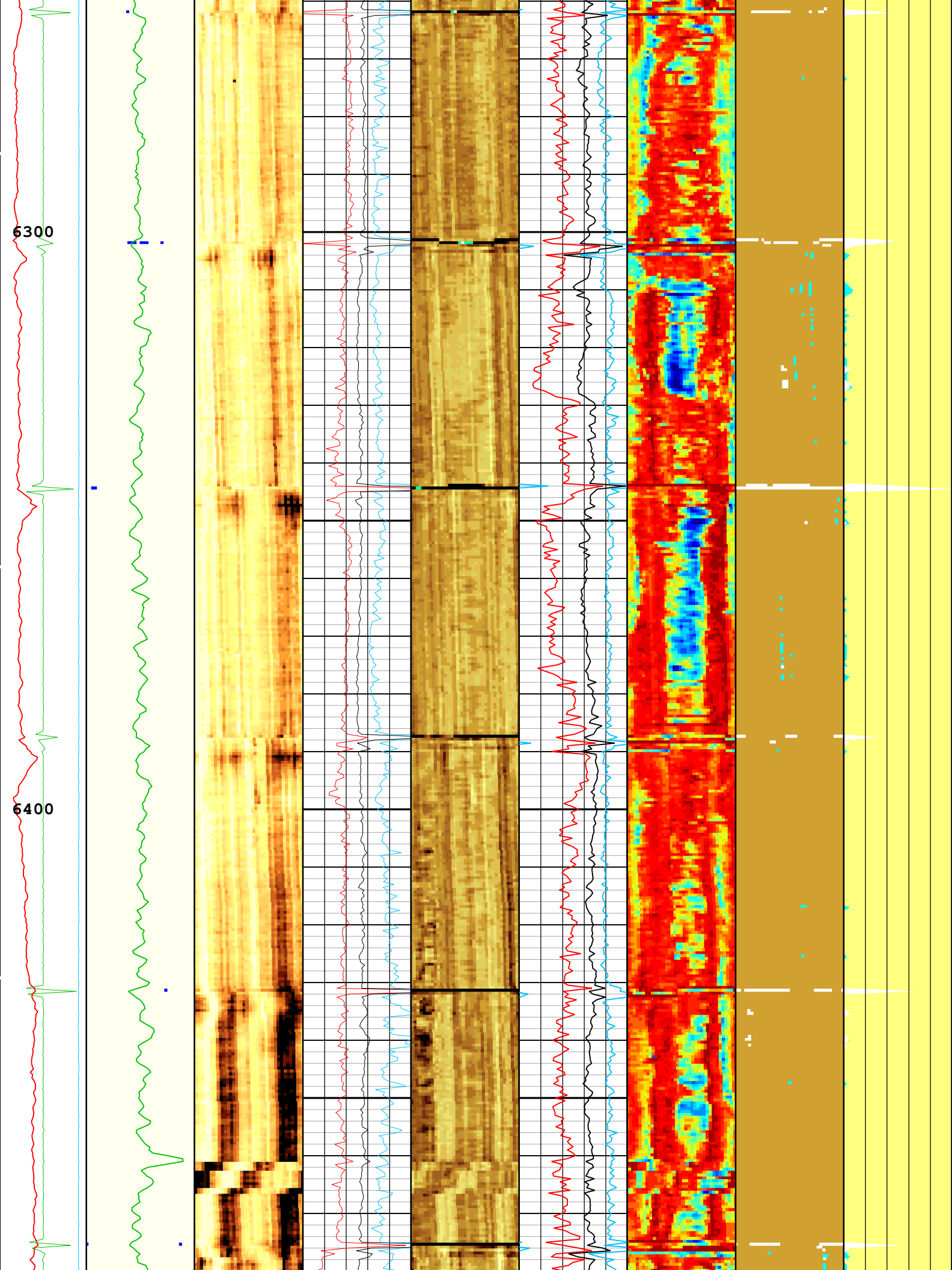


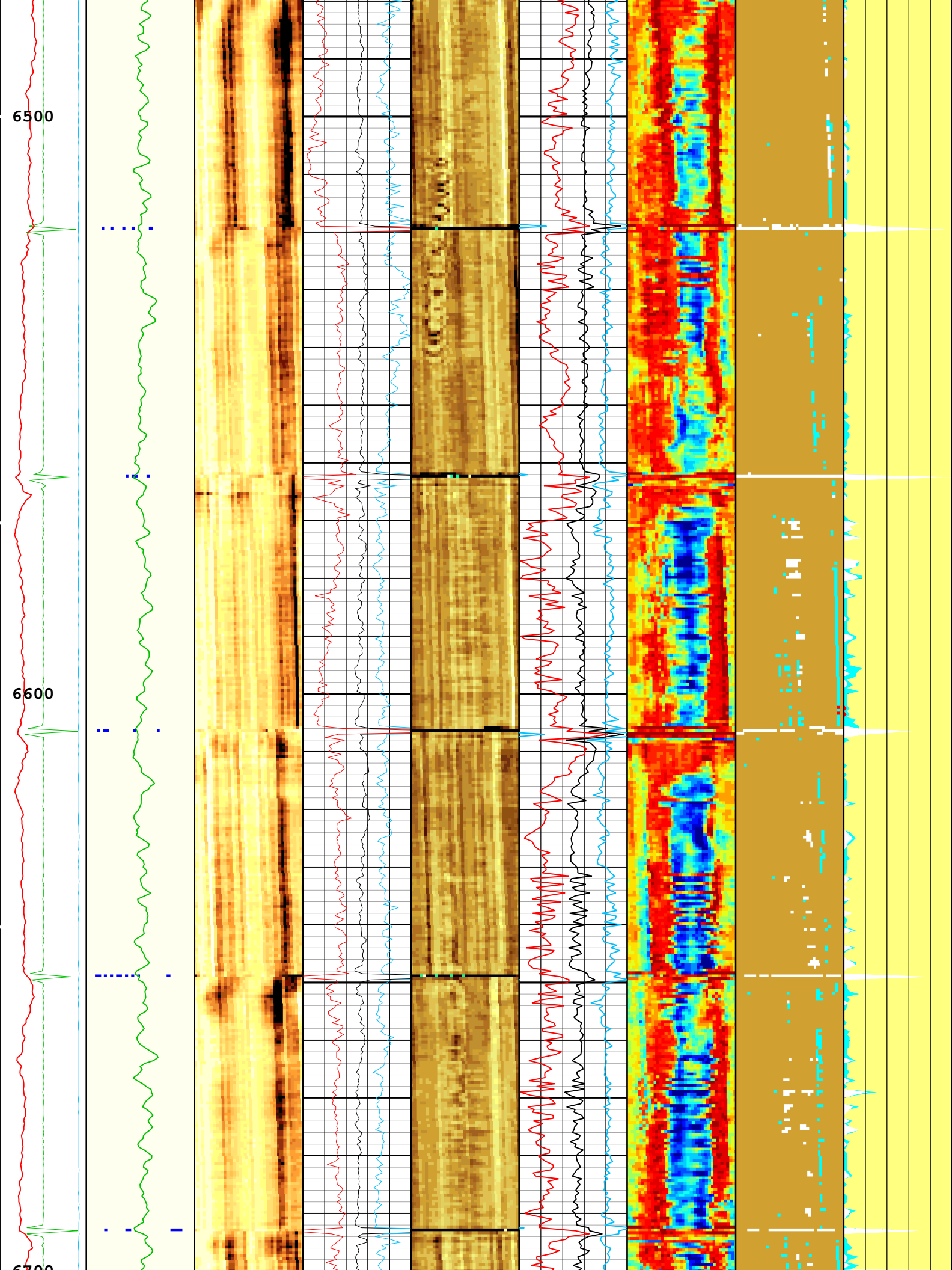


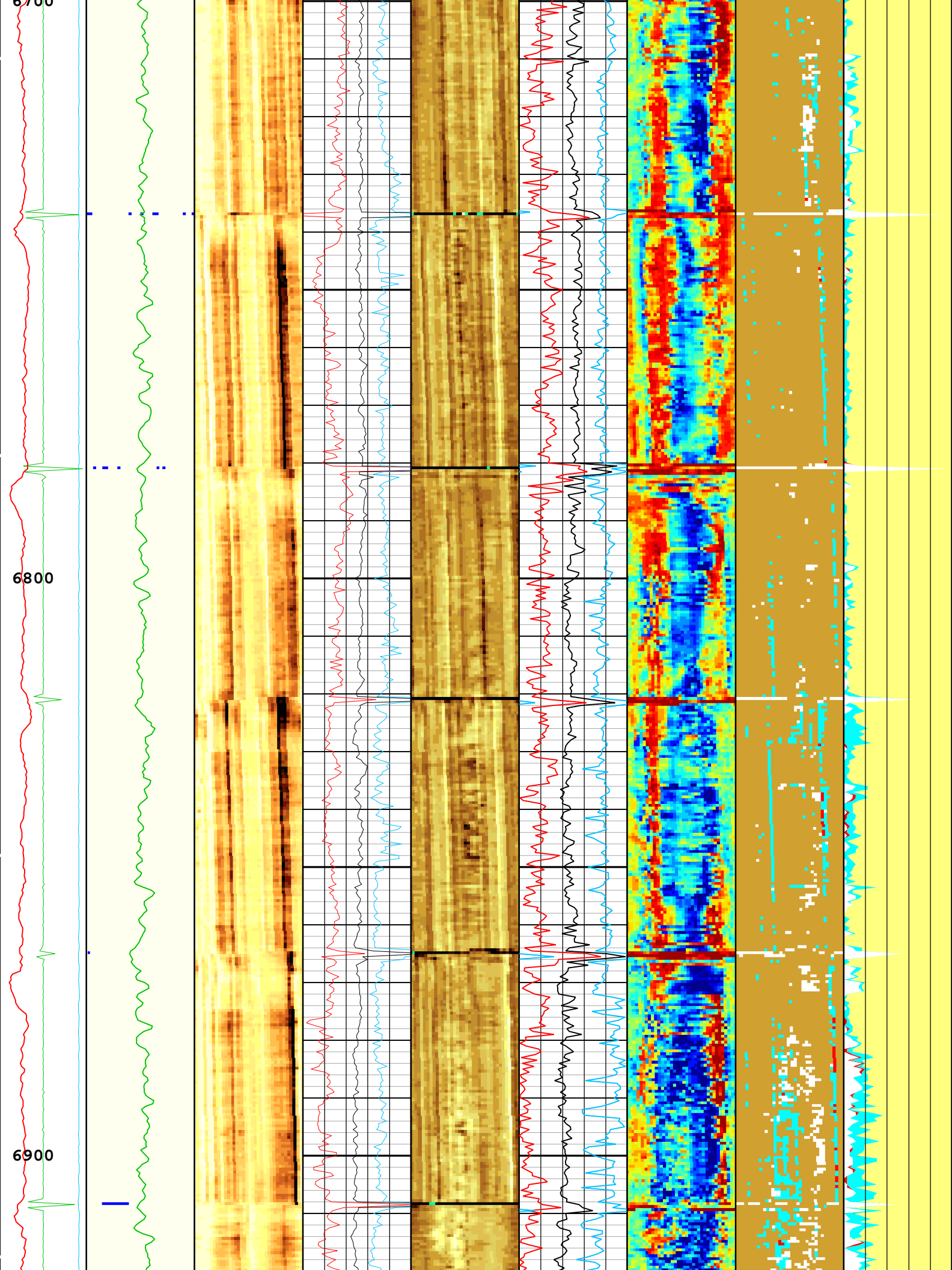


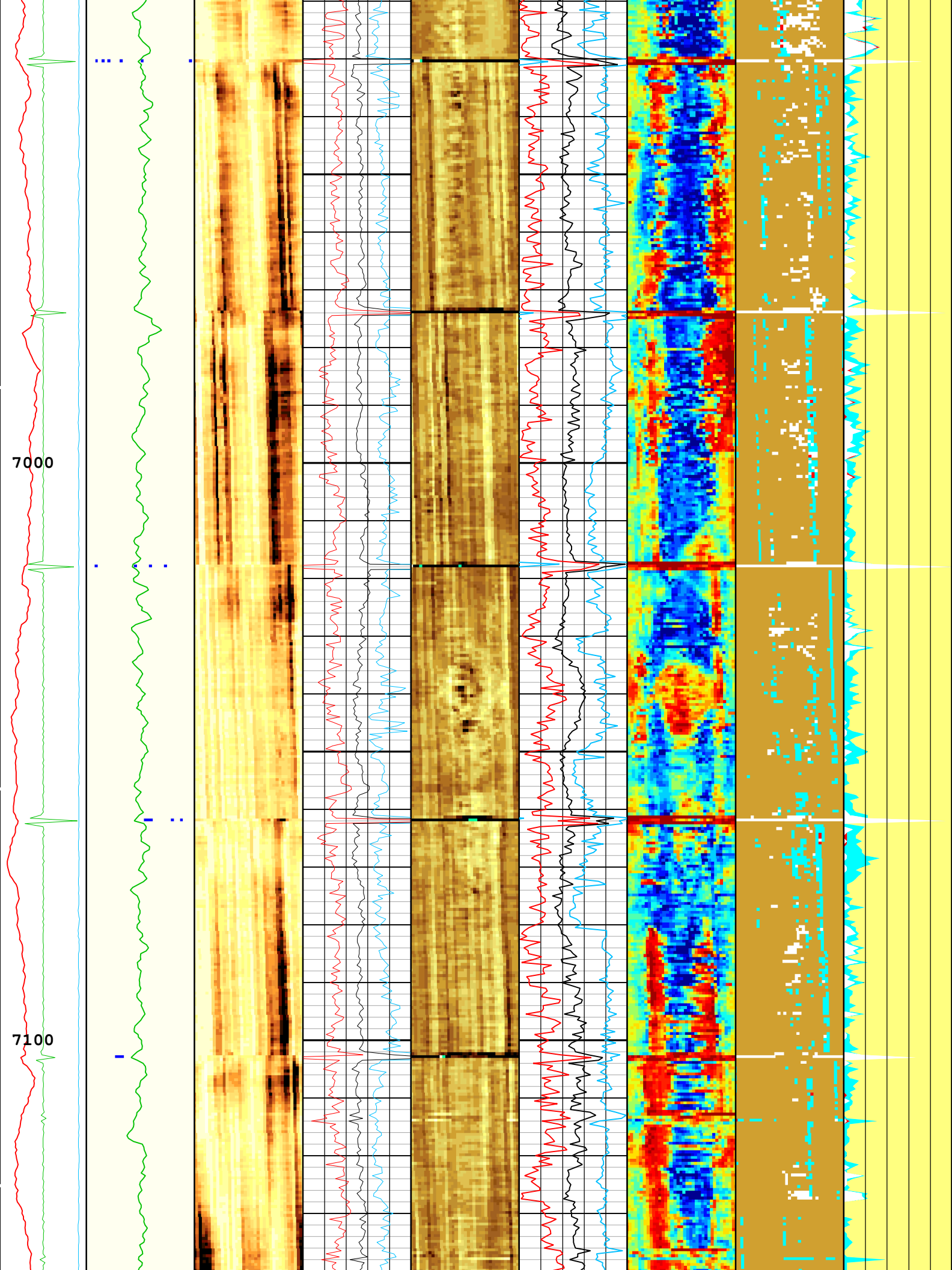


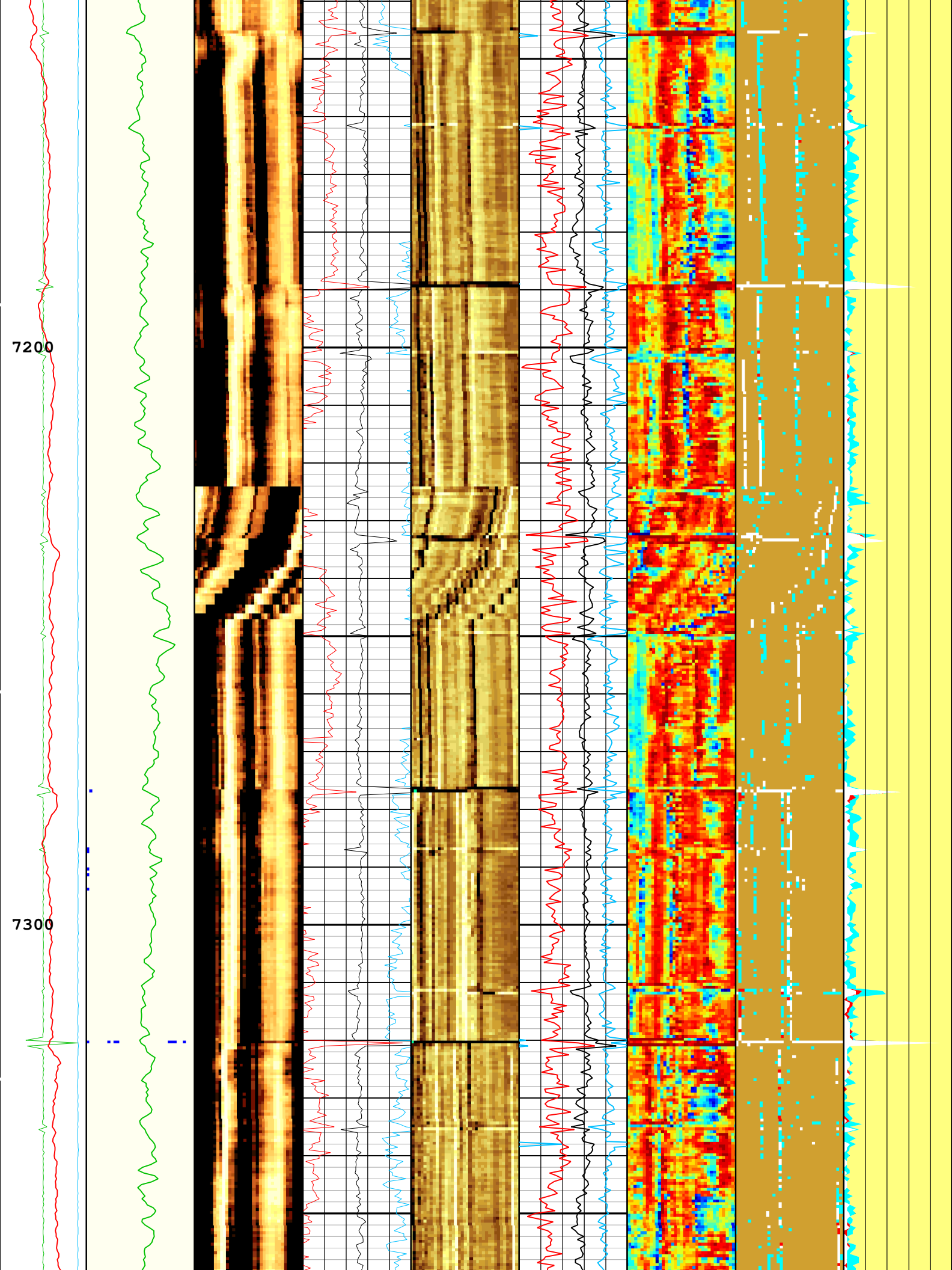


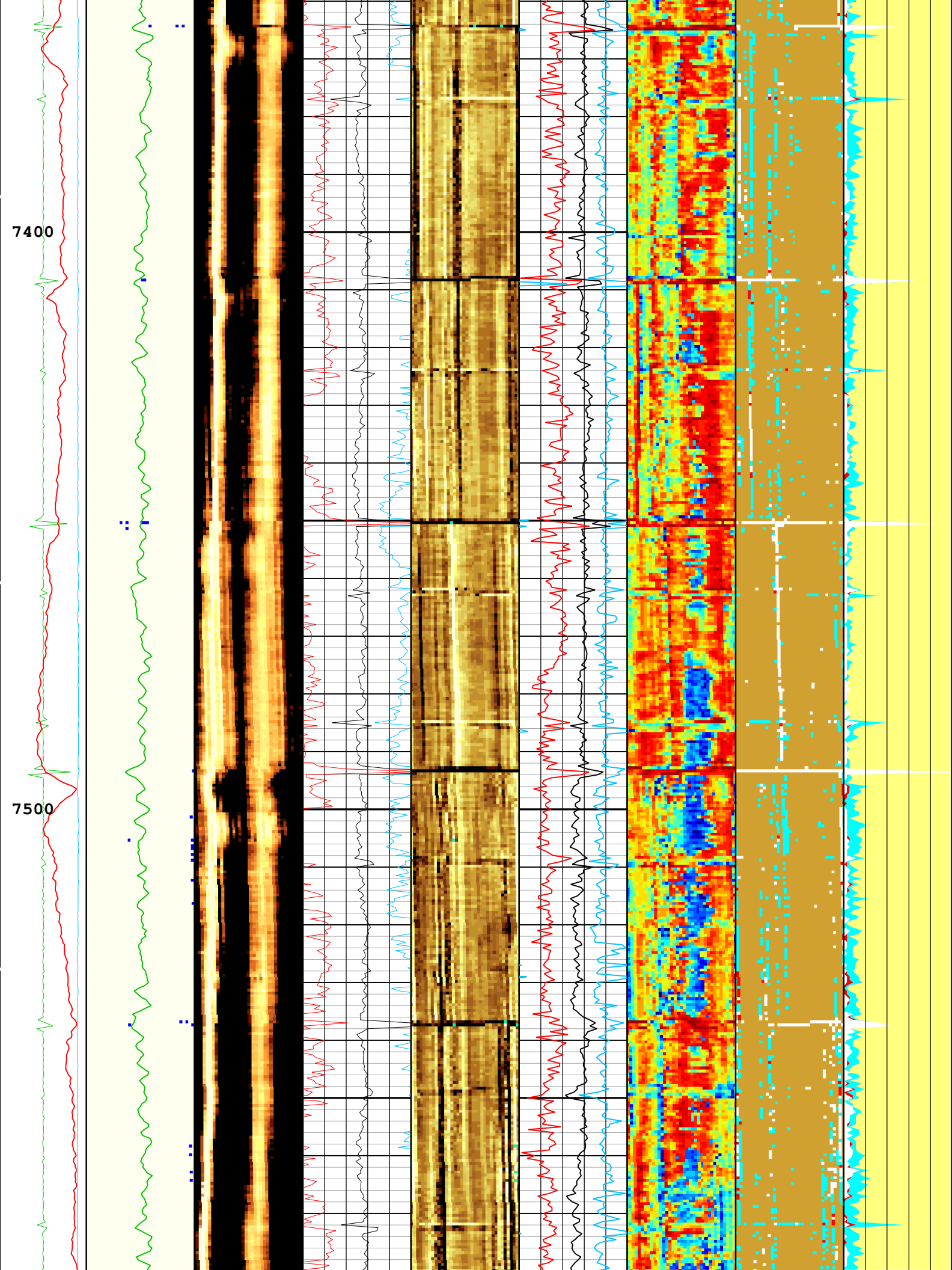


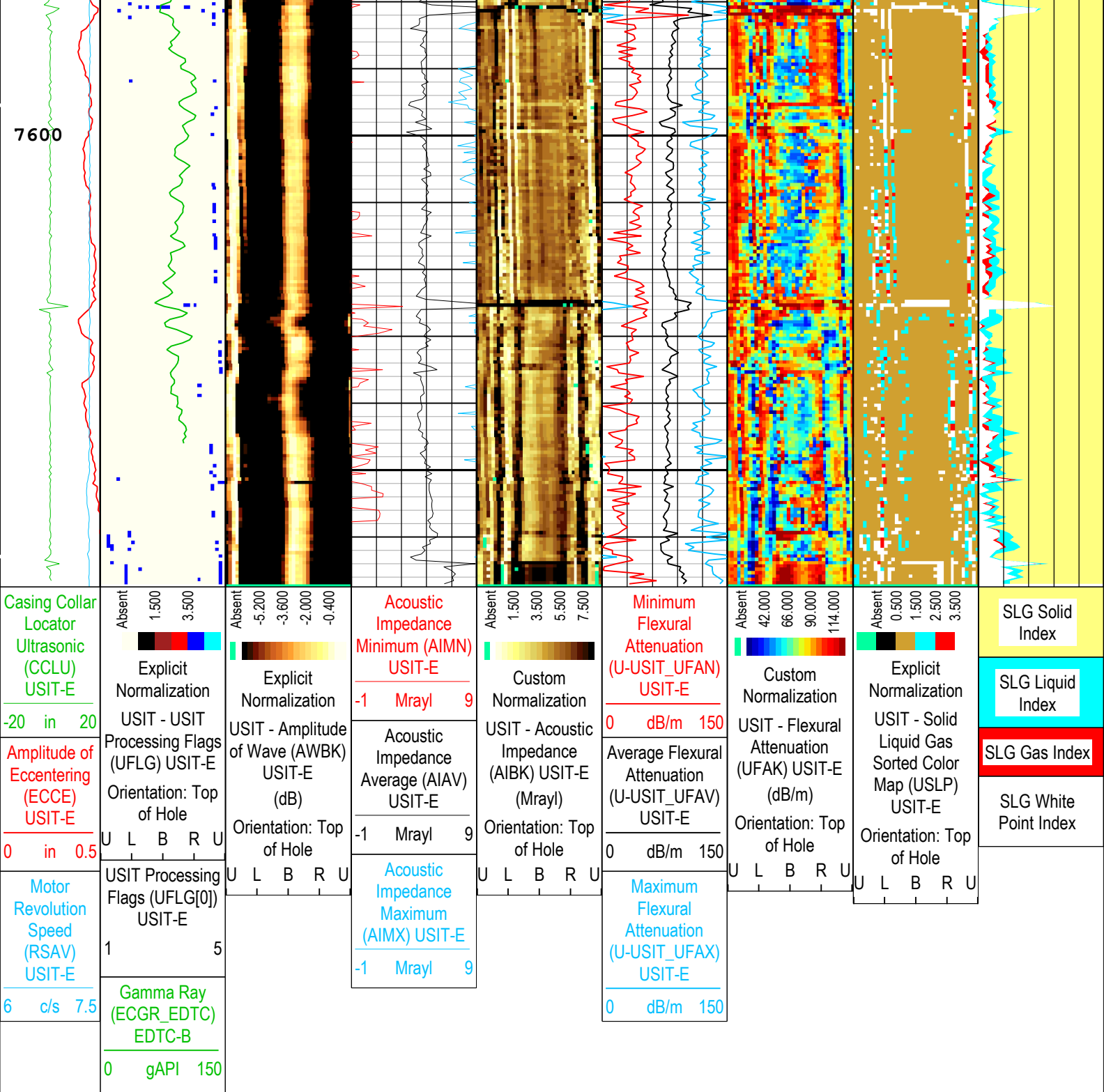












USIT Processing Flags (UFLG[0]) USIT-E

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

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: 12-Mar-2020 11:03:46

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
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BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	18012	ft
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	Regular Cement	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	201	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	25.94	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.06	
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
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
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	-14.35	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
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	1.8	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

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	134	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	174	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	103	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	143	us
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 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	38_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	28.81	us
WINE	Window End Time	USIT-E	68.81	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	7	10-Mar-2020 13:02:36	10-Mar-2020 13:23:06	7668.58	6278.24
EMXV	8	10-Mar-2020 13:23:06	10-Mar-2020 14:54:22	6278.24	33.2

All depth are at tool zero.

ONE

IBC SLG Composite Main Log

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	33.20 ft	7668.58 ft	10-Mar-2020 1:02:36 PM	10-Mar-2020 2:54:22 PM	ON	3.55 ft	Yes

All depths are referenced to toolstring zero

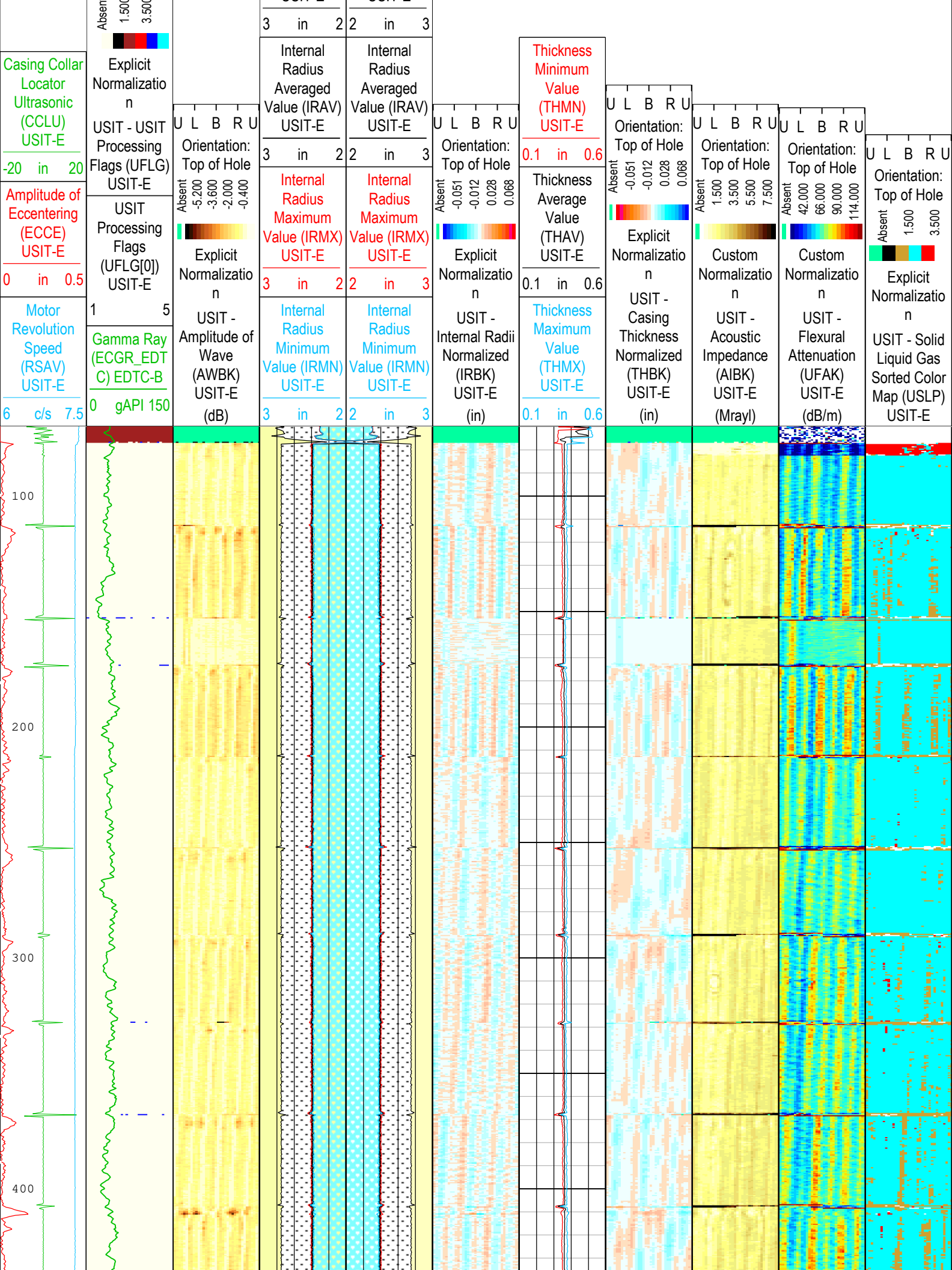
Log	Company:Crestone Peak Resources Operating LLC Well:King 3-65 28-29 3CH ONE: Log[4]:Up:S005
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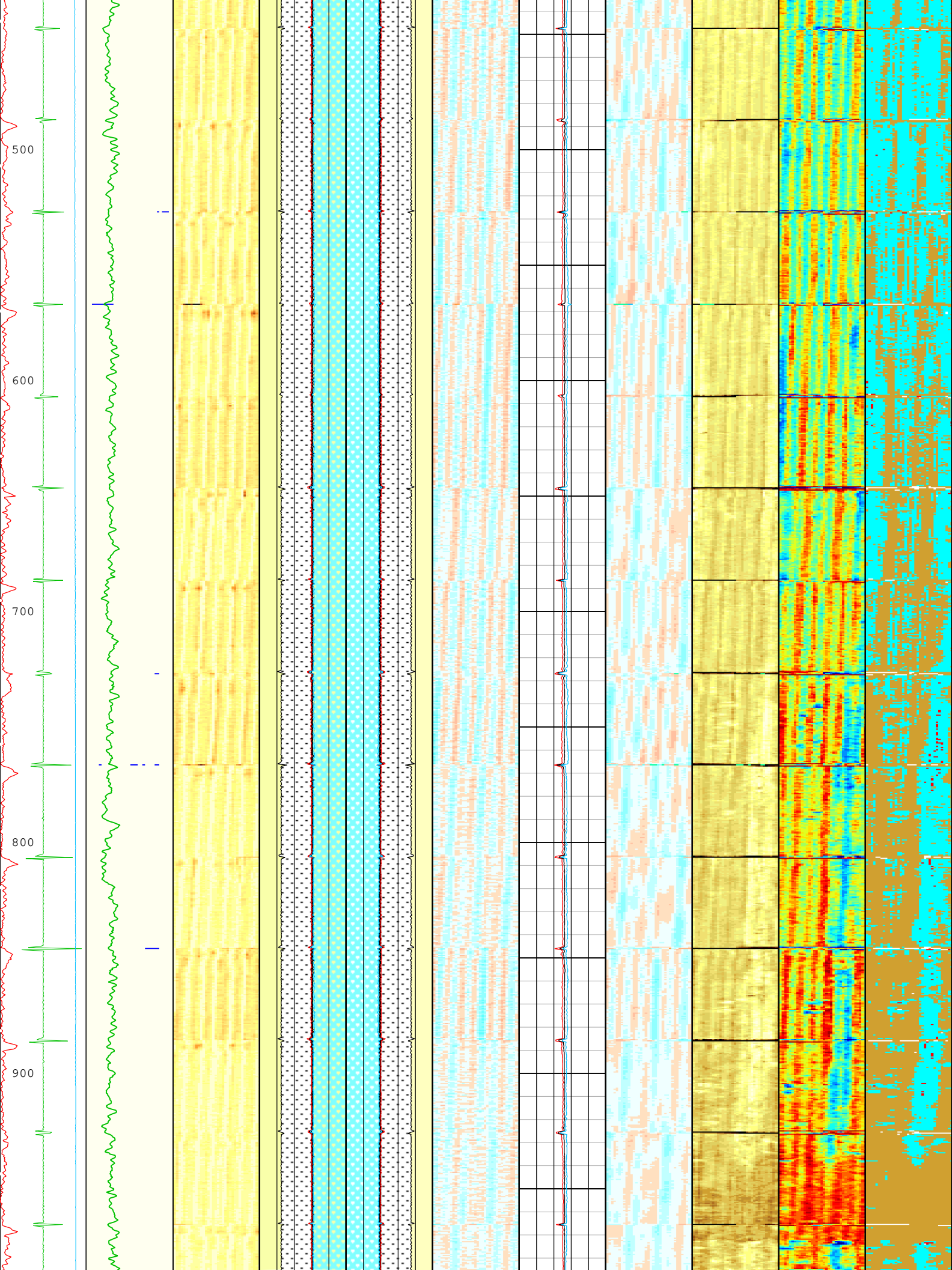
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite 5.5IN) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Mar-2020 11:04:07

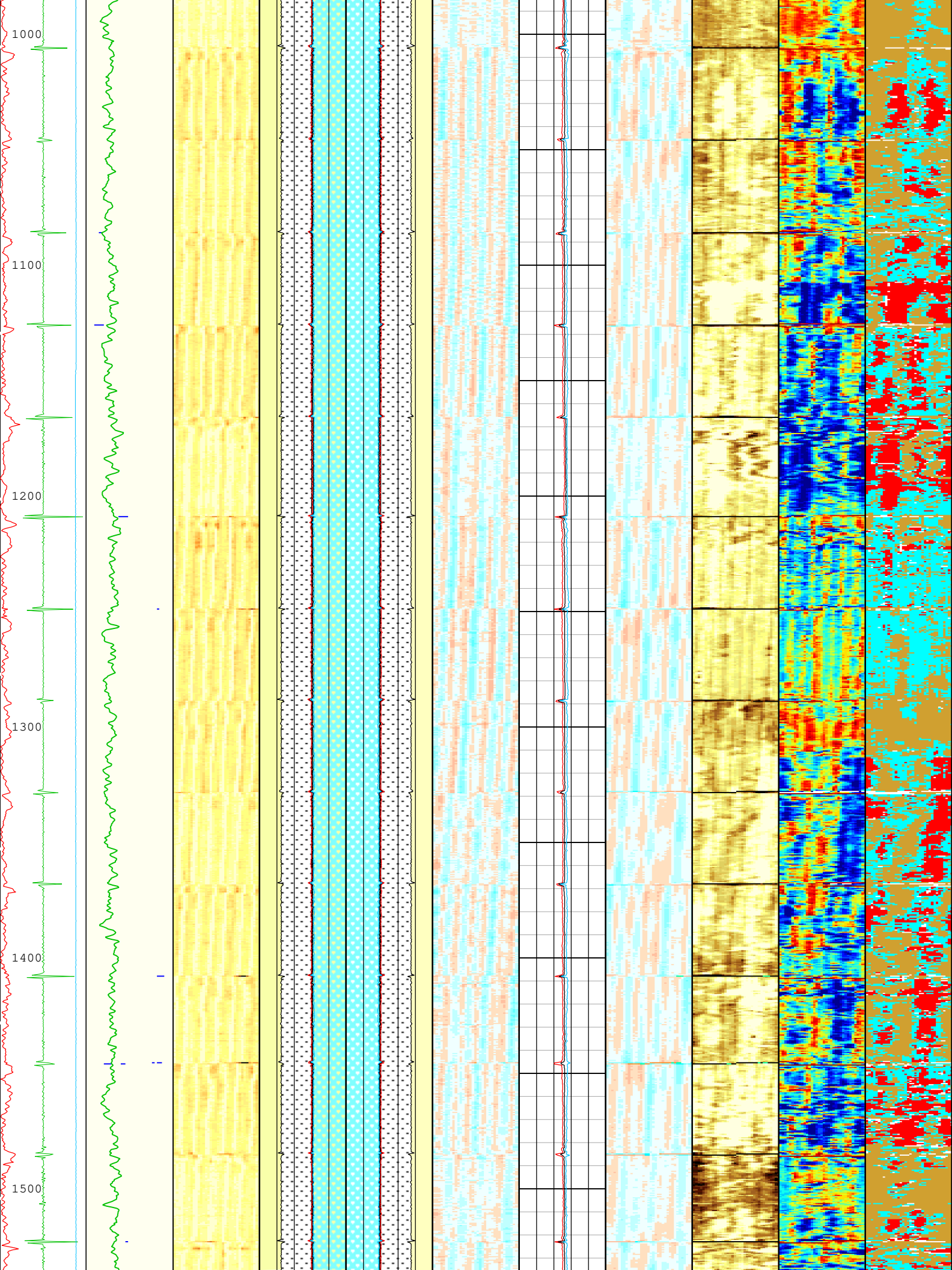
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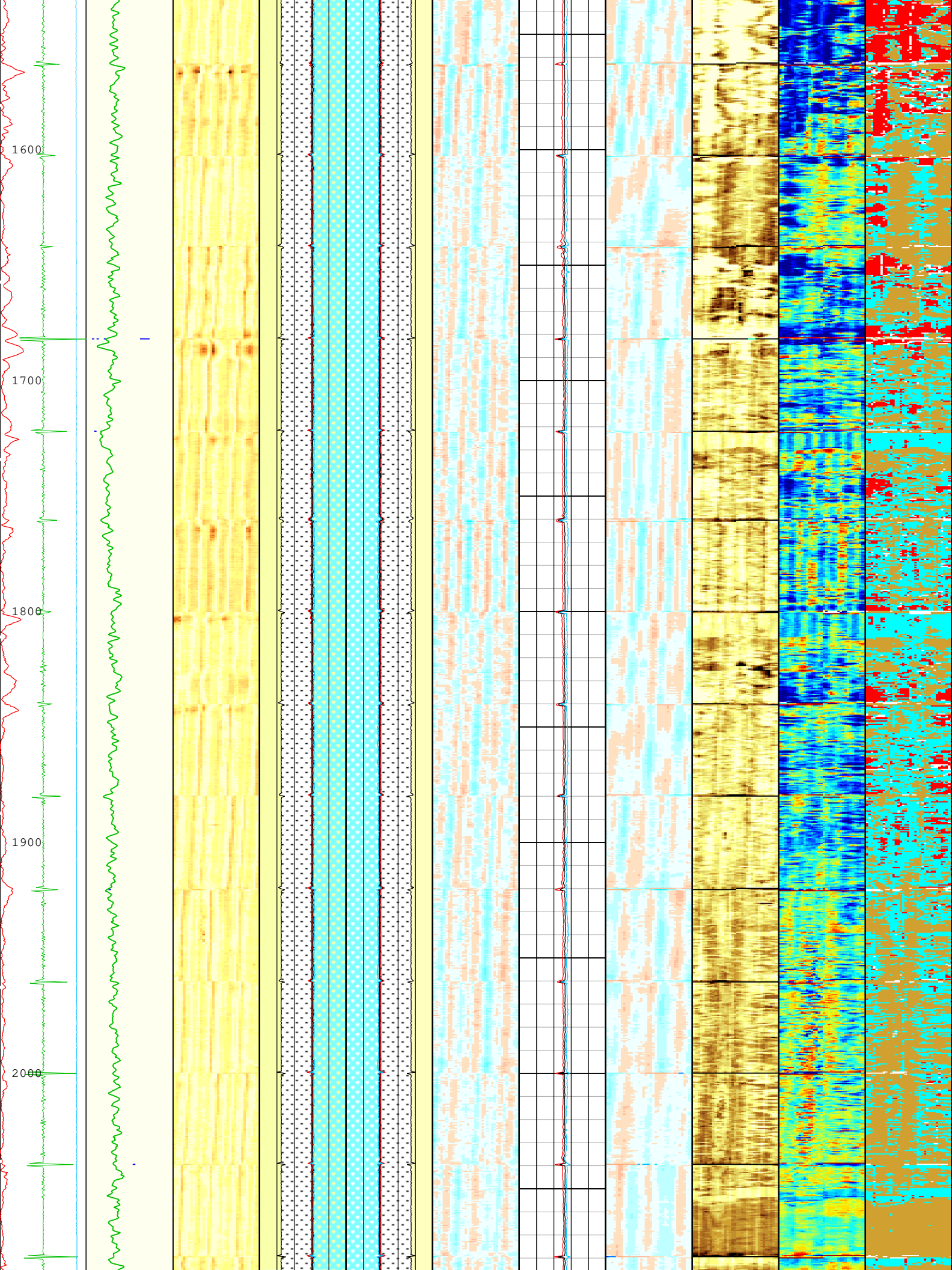
TIME_1900 - Time Marked every 60.00 (s)

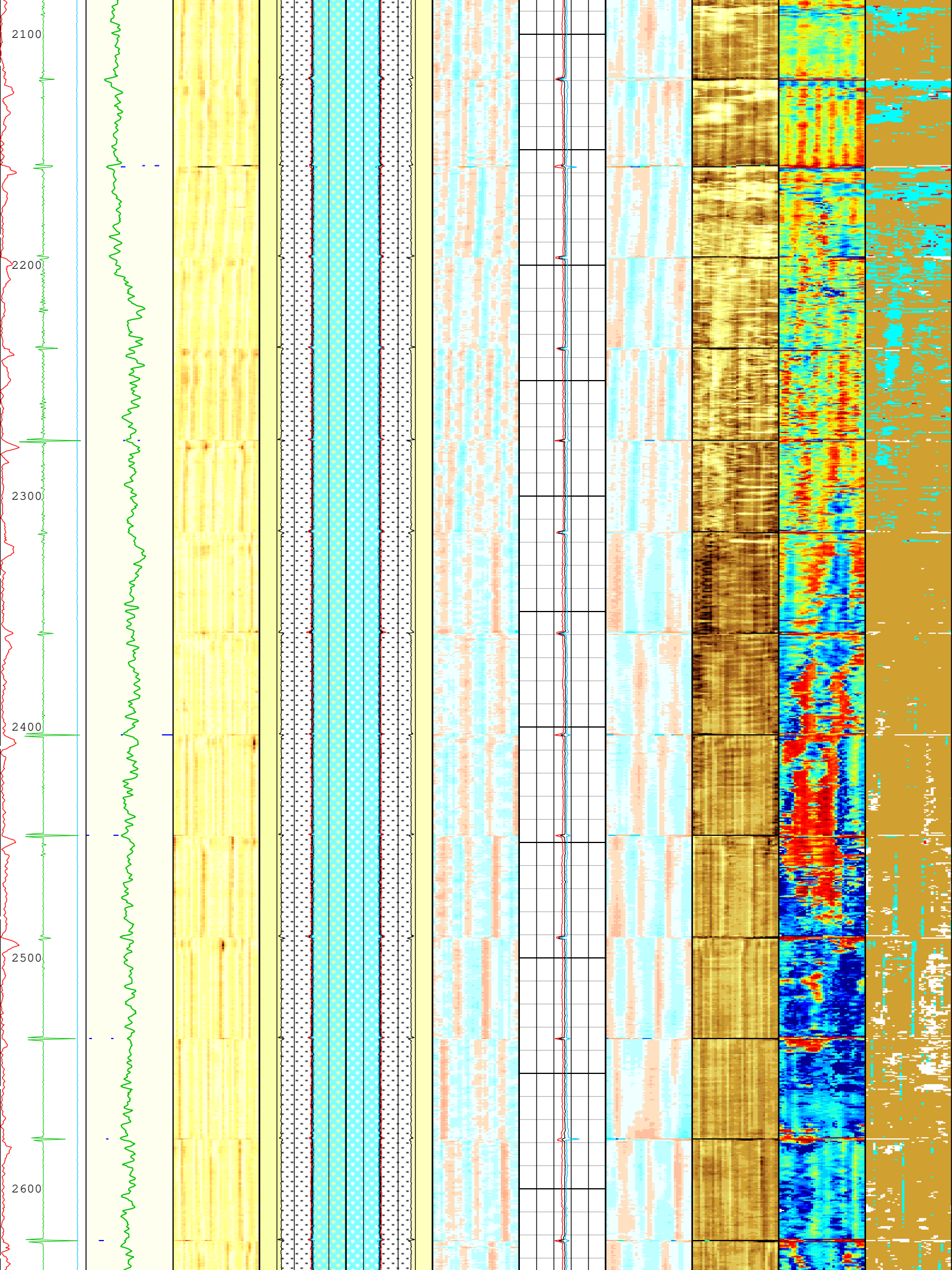
<div> <div>U L B R U</div> <div>Orientation:</div> <div>Top of Hole</div> <div>USIT-E</div> </div>	<div> <div>External Radii</div> <div>Average (ERAV)</div> <div>USIT-E</div> </div>	<div> <div>External Radii</div> <div>Average (ERAV)</div> <div>USIT-E</div> </div>
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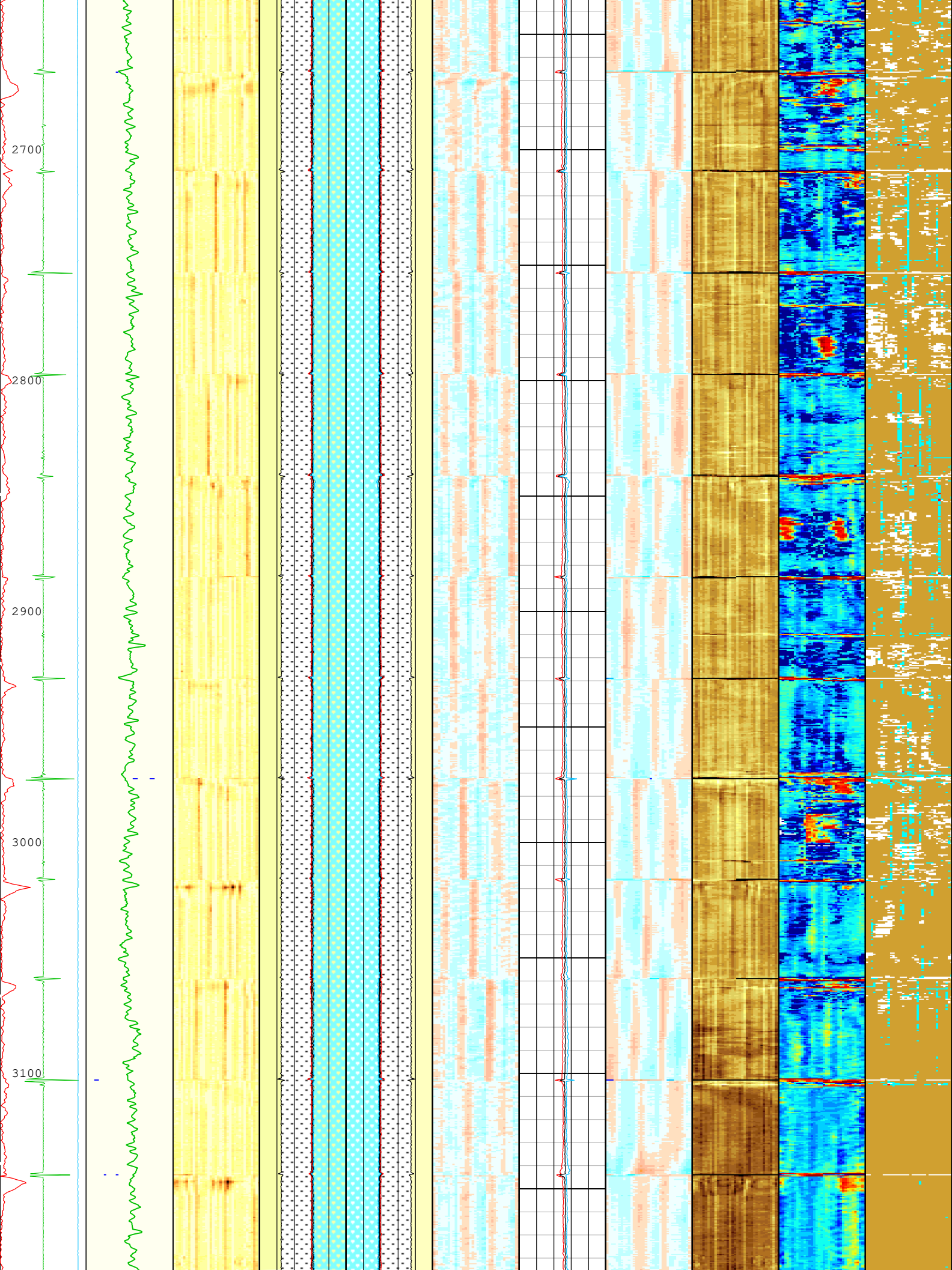


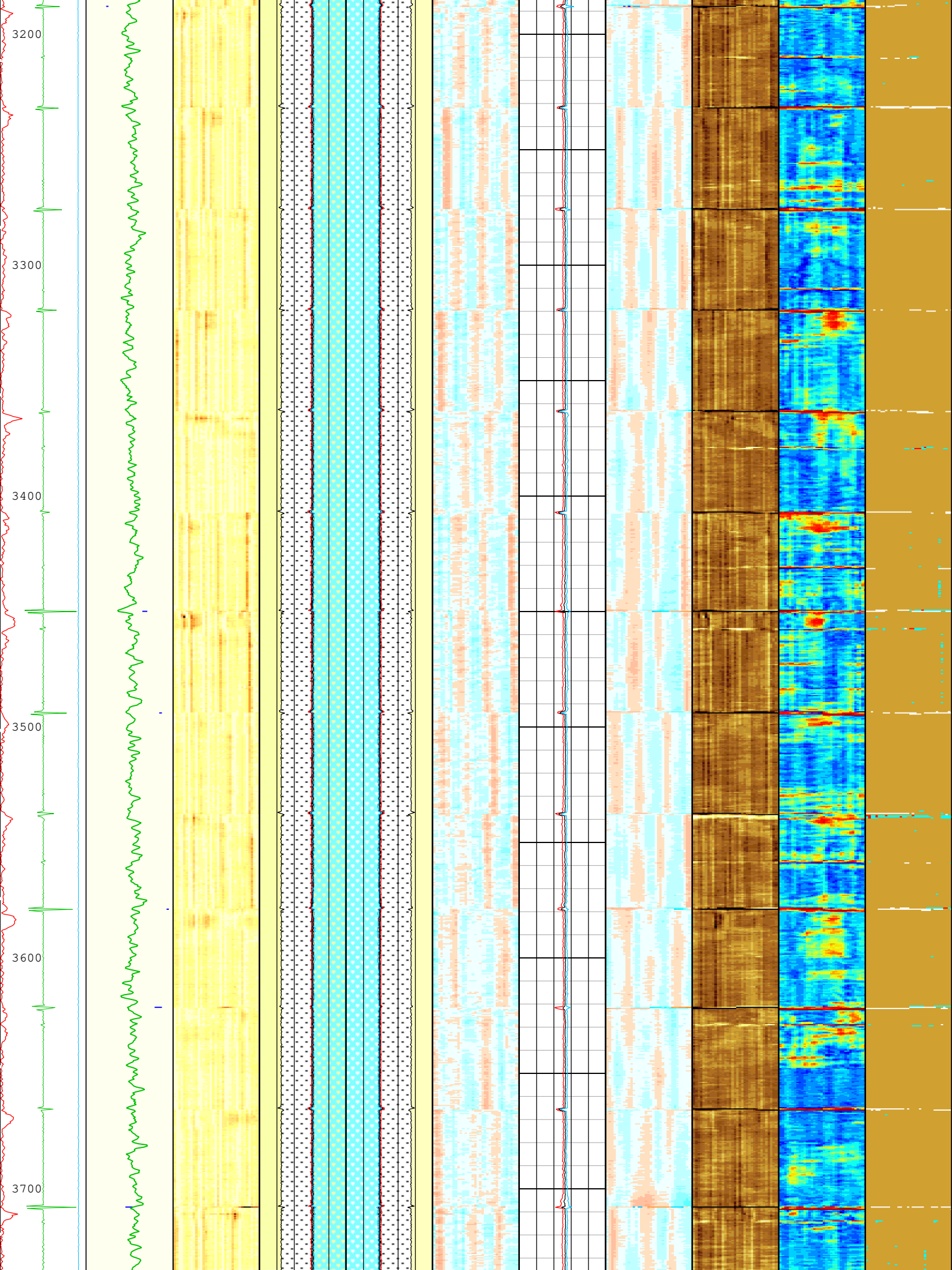


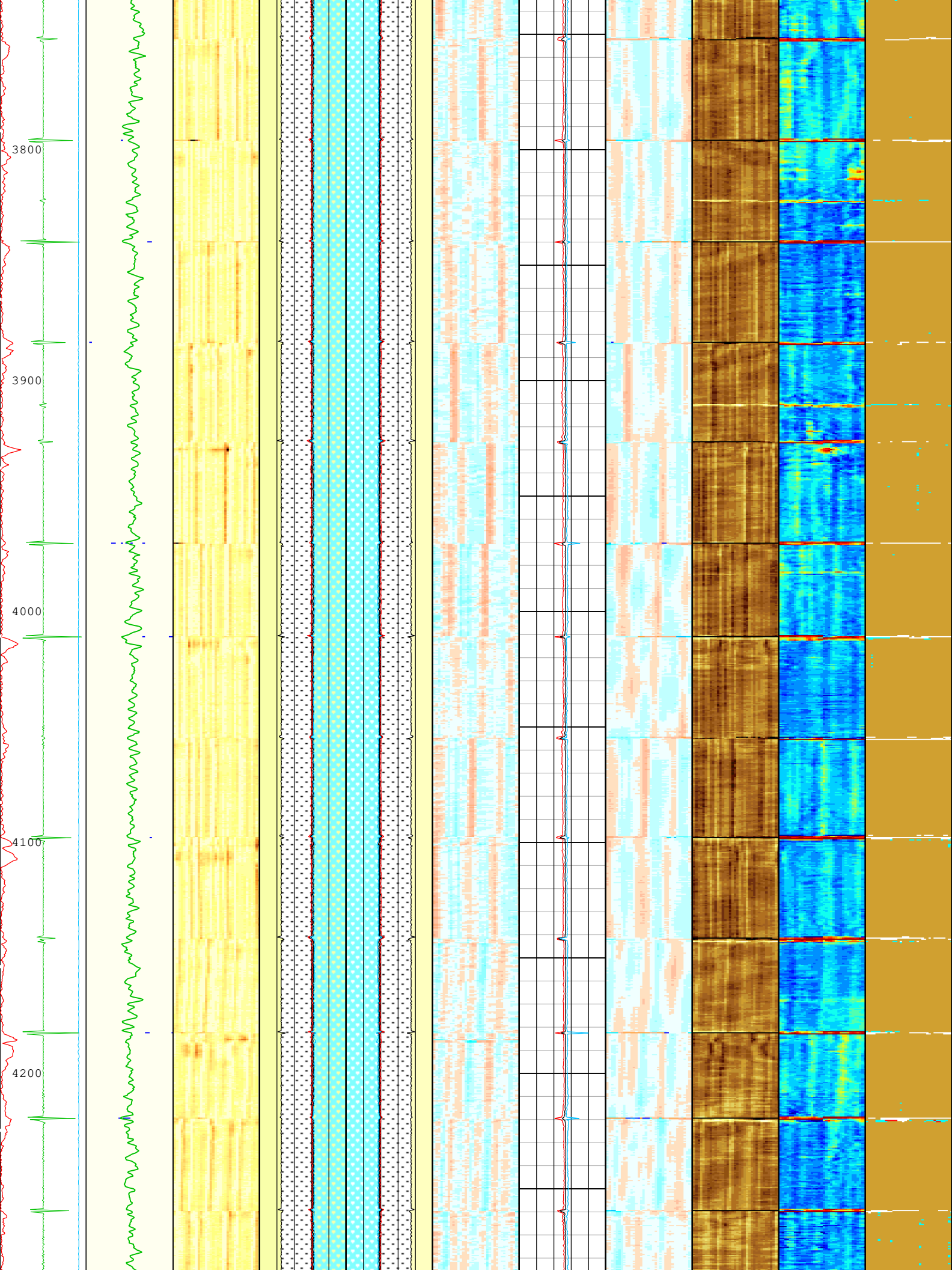


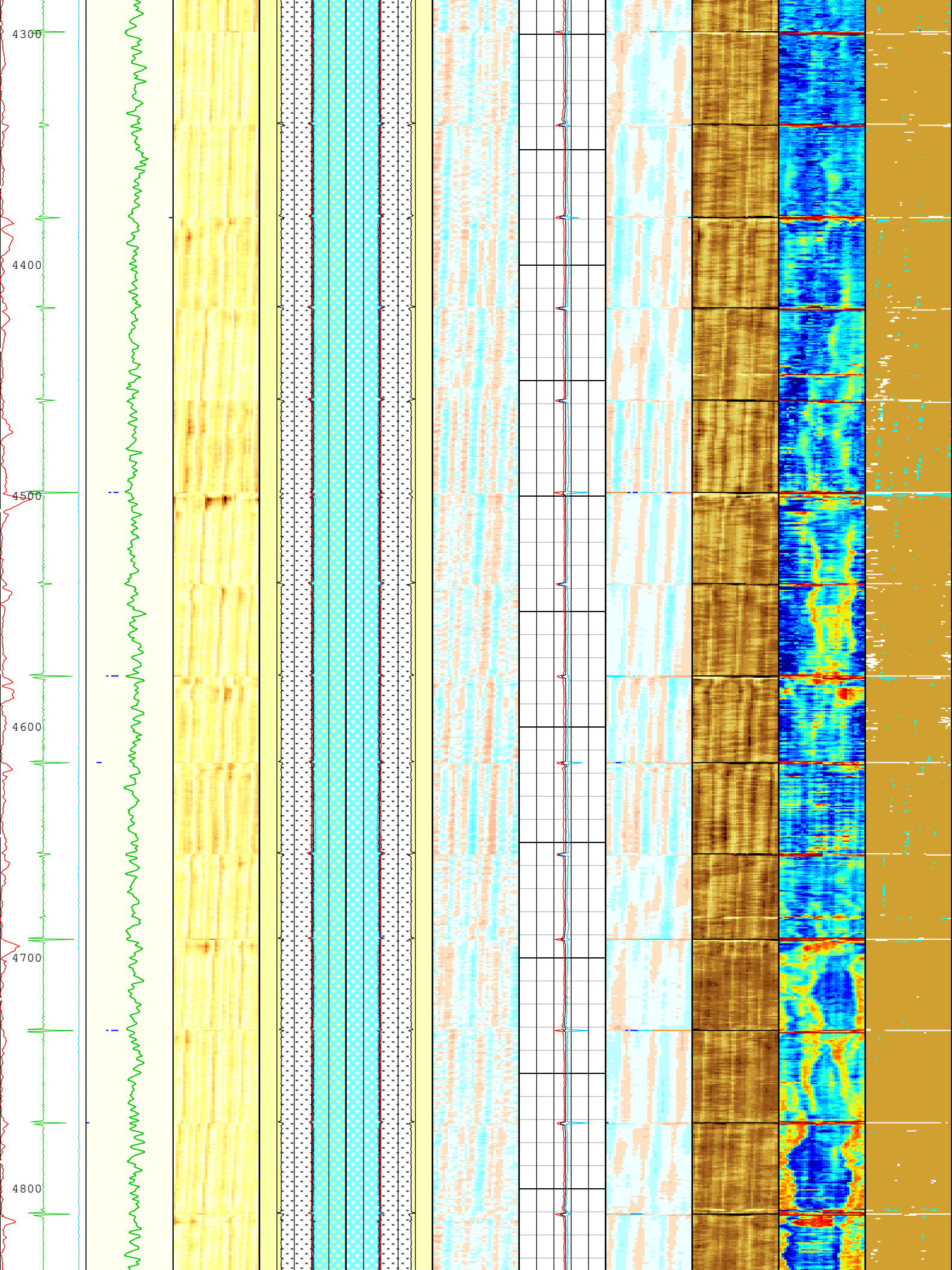


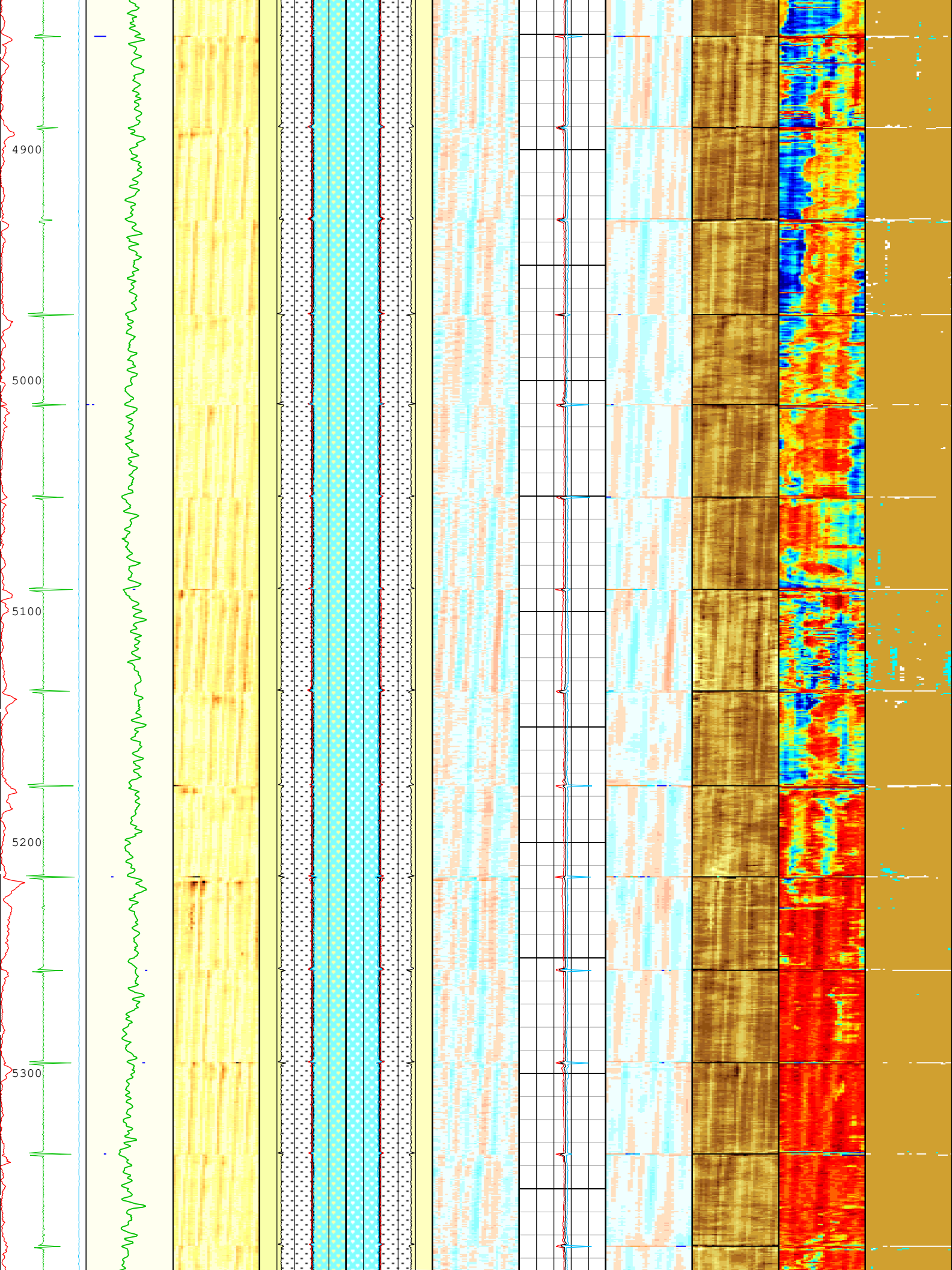


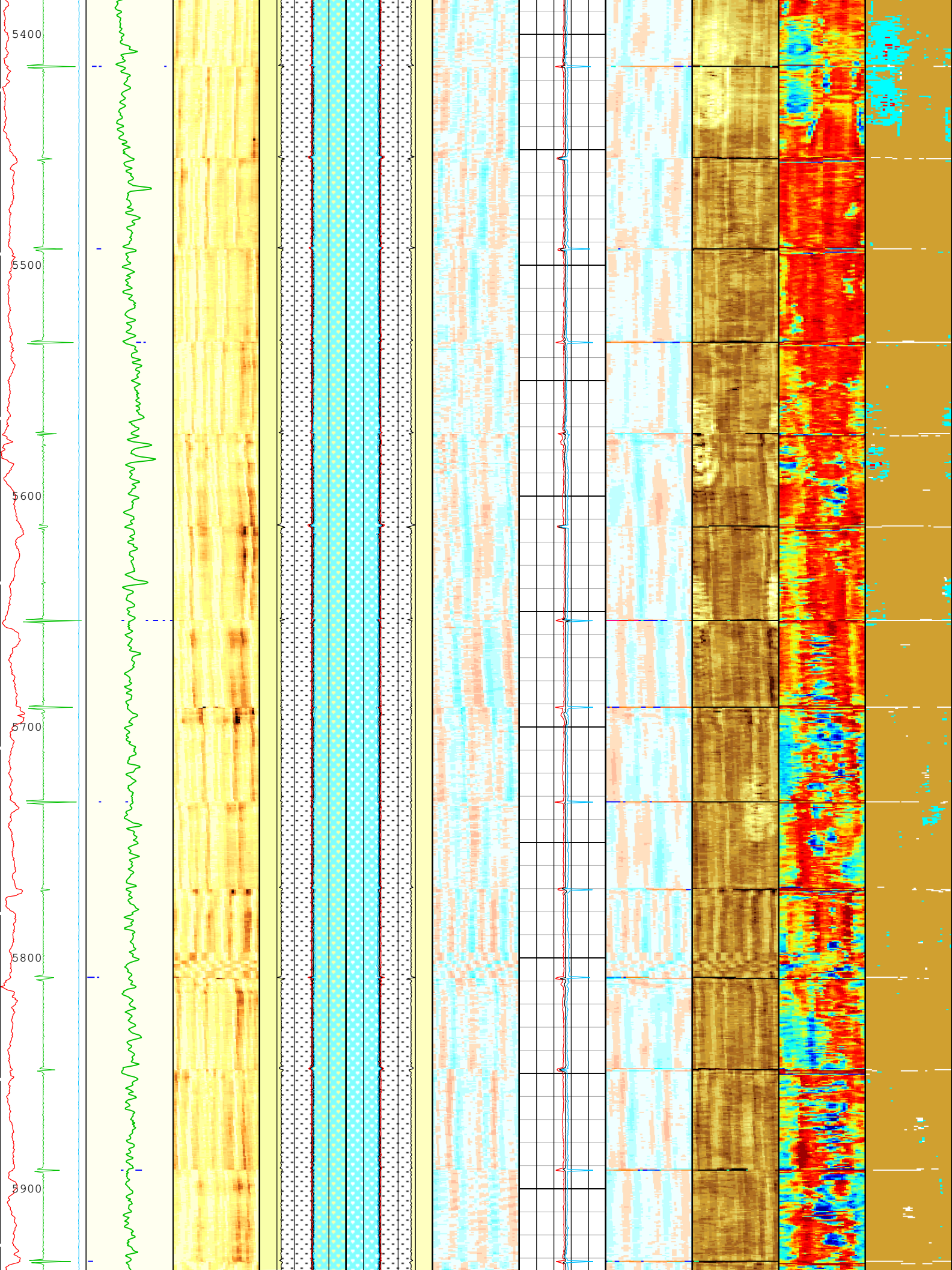


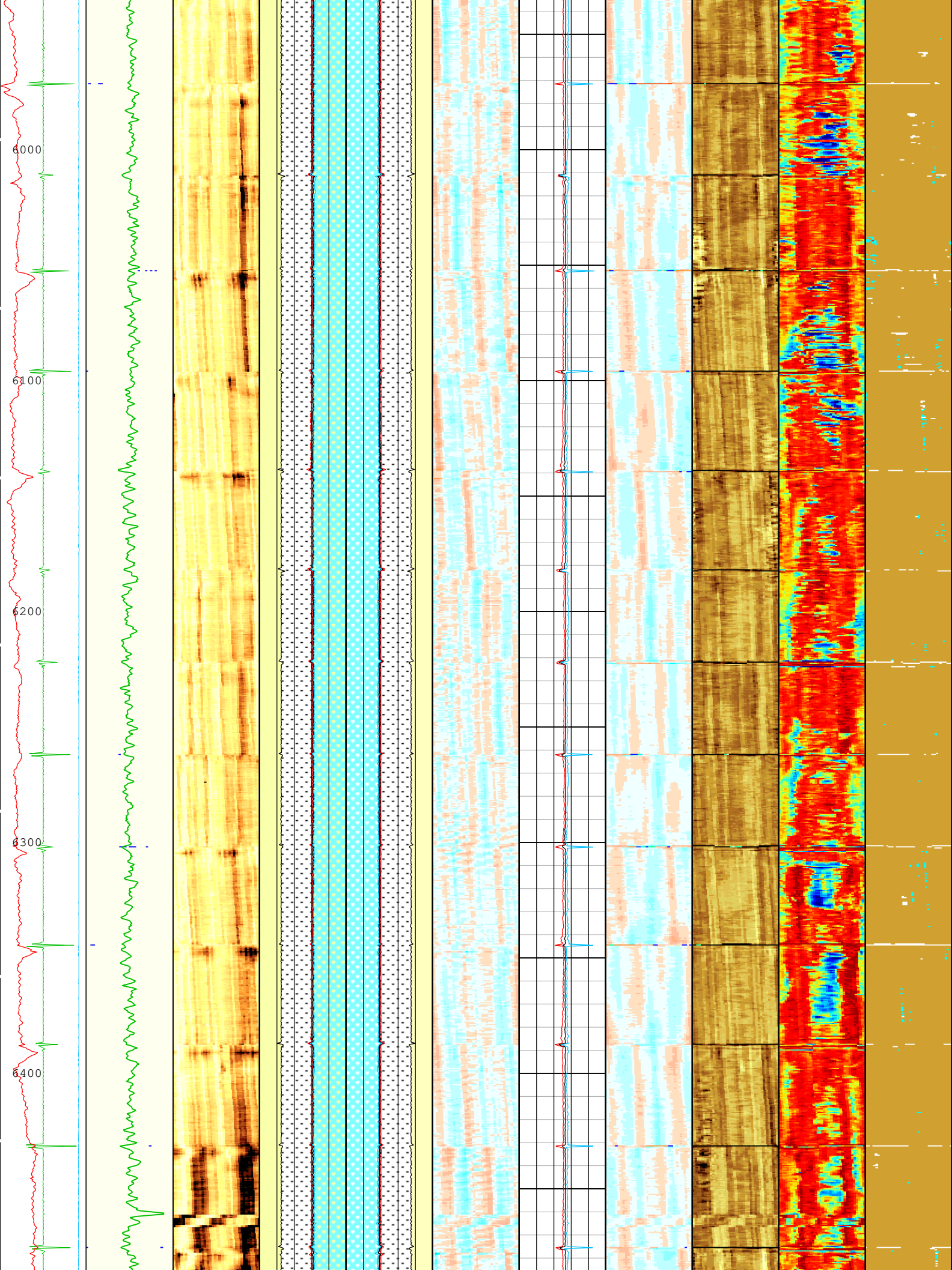


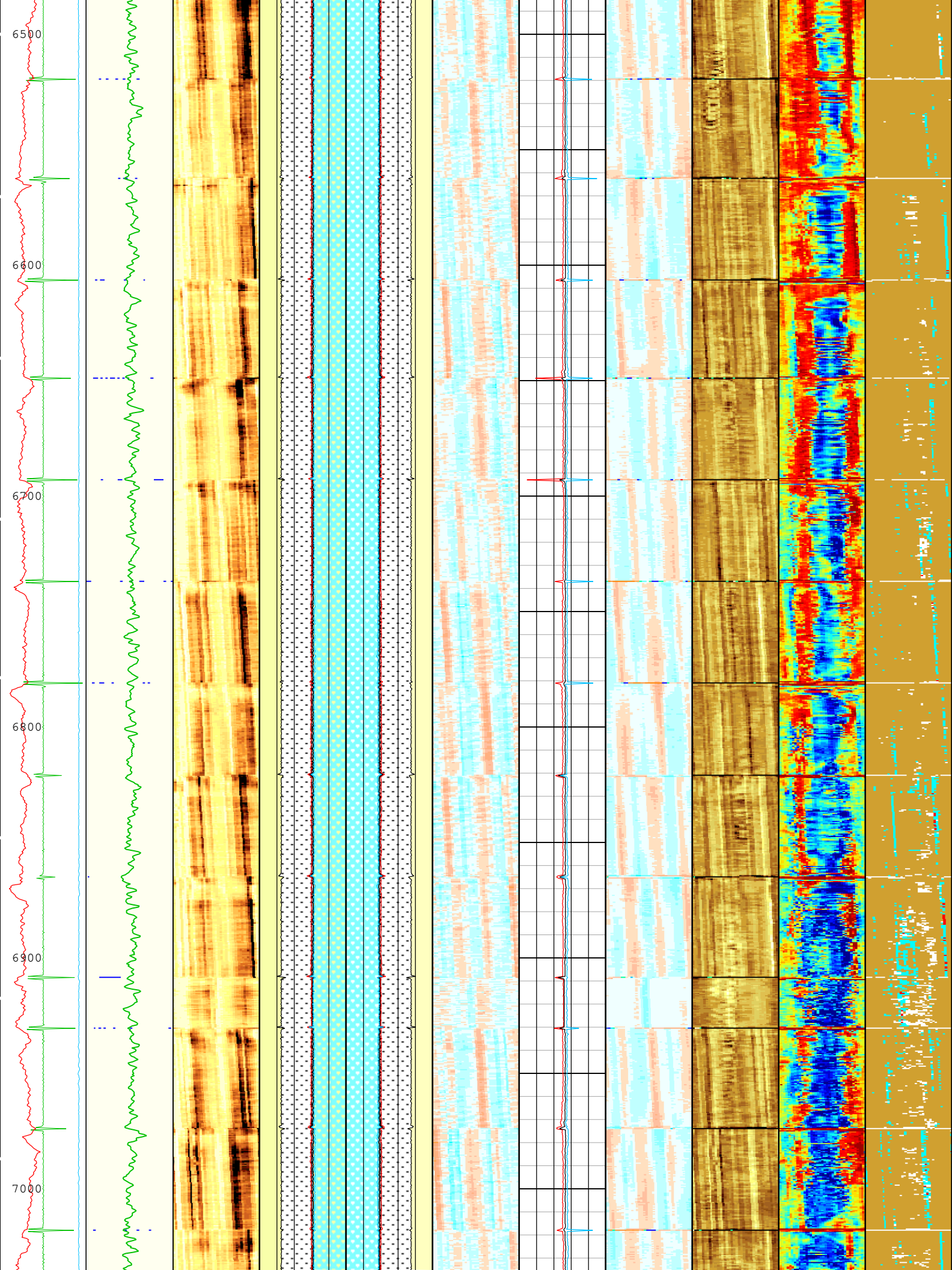


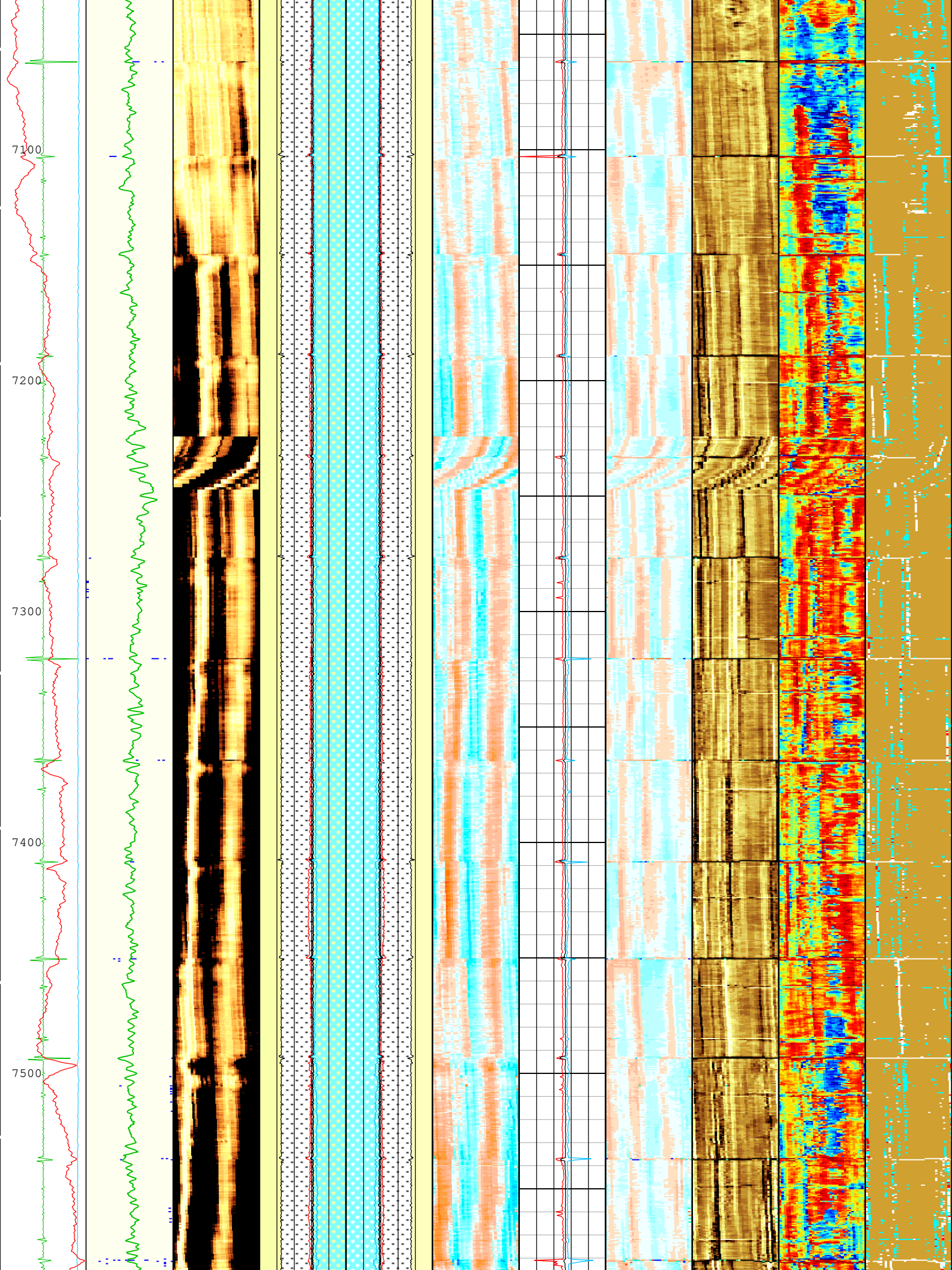


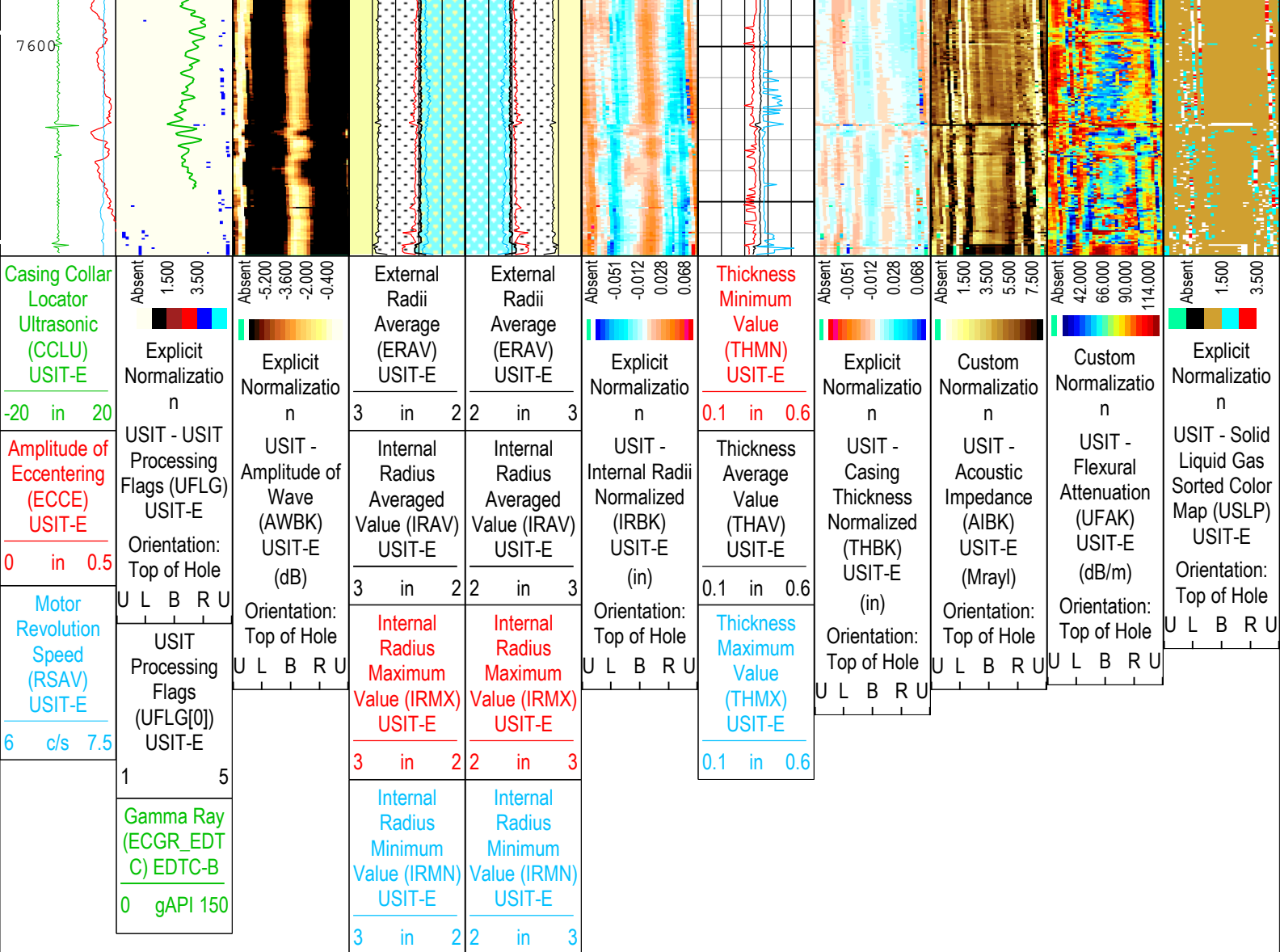












TIME_1900 - Time Marked every 60.00 (s)

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

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

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite 5.5IN) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Mar-2020 11:04:07

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	
CBLO	Casing Bottom (Logger)	WLSESSION	18012	ft
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	Regular Cement	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	201	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	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	25.94	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.06	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.35	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.8	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

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	134	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	174	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	103	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	143	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	28.81	us
WINE	Window End Time	USIT-E	68.81	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	7	10-Mar-2020 13:02:36	10-Mar-2020 13:23:06	7668.58	6278.24
EMXV	8	10-Mar-2020 13:23:06	10-Mar-2020 14:54:22	6278.24	33.2

All depth are at tool zero.

ONE

IBC Goodwin Compressed

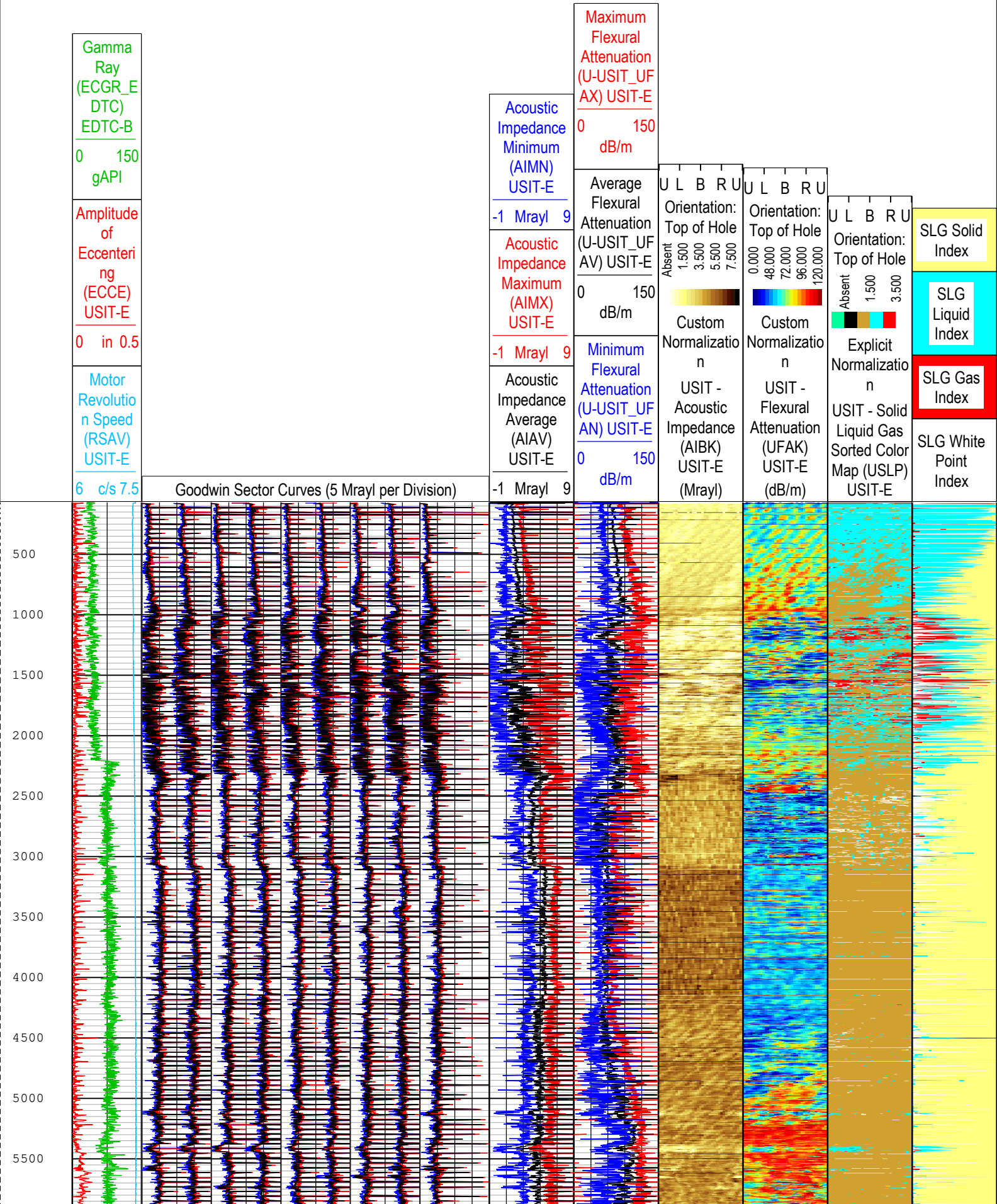
Pass Summary

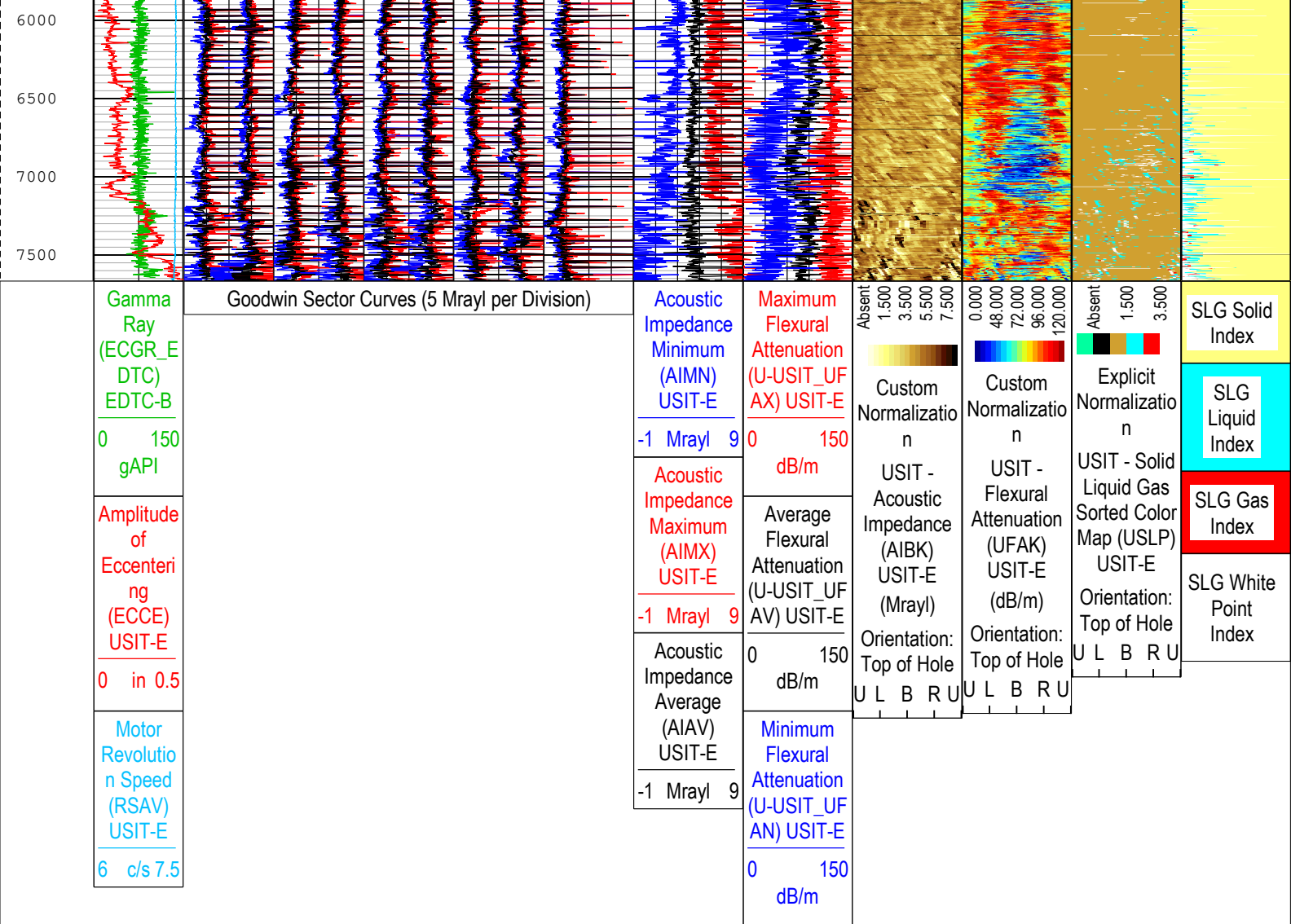
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	33.20 ft	7668.58 ft	10-Mar-2020 1:02:36 PM	10-Mar-2020 2:54:22 PM	ON	3.55 ft	Yes




All depths are referenced to toolstring zero

Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Mar-2020 11:04:24

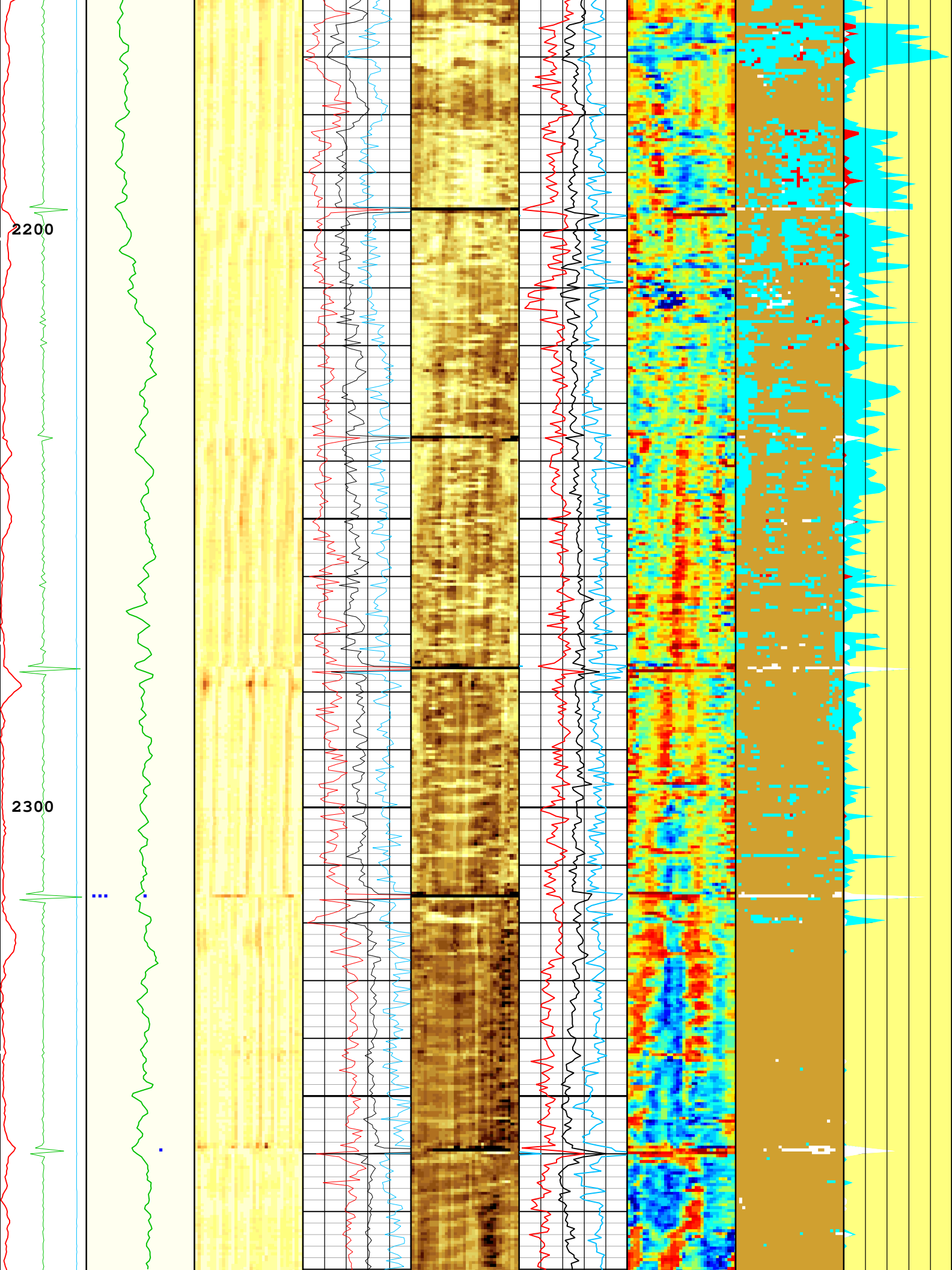
TIME_1900 - Time Marked every 60.00 (s)

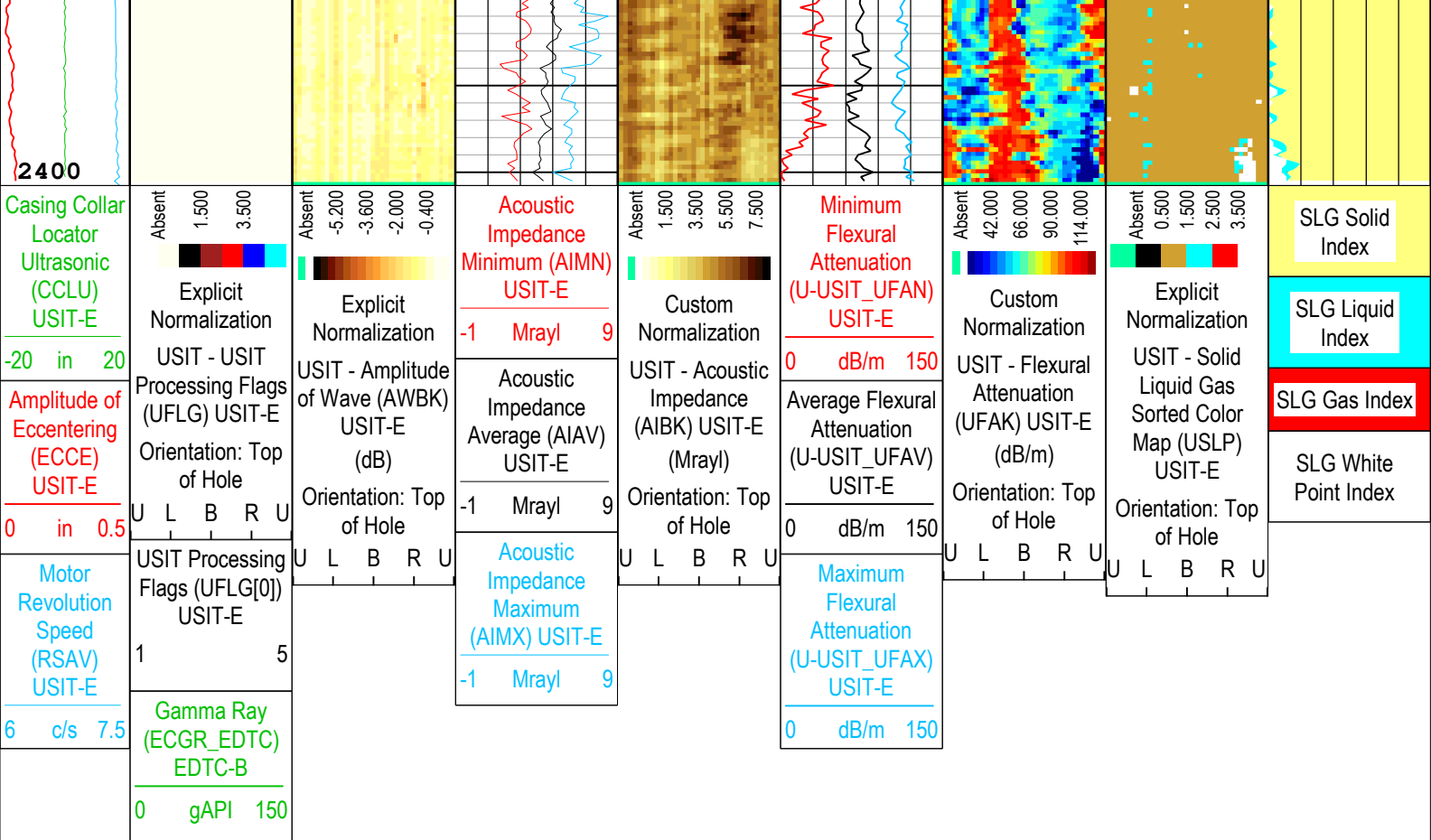




TIME_1900 - Time Marked every 60.00 (s)									
Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Mar-2020 11:04:24									
ONE									
IBC SLG Repeat Pass									
Software Version									
Acquisition System						Version			
Maxwell 2019.2						9.2.113335.3100			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[2]:Up	Up	2050.13 ft	2402.48 ft	10-Mar-2020 12:30:22 PM	10-Mar-2020 12:36:40 PM	ON	1.04 ft	Yes
All depths are referenced to toolstring zero									
Log	Company:Crestone Peak Resources Operating LLC						Well:King 3-65 28-29 3CH		
ONE: Log[2]:Up:S005									
Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Mar-2020 11:04:32									
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					

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

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: 12-Mar-2020 11:04:32

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	
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	18012	ft
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	Regular Cement	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	201	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	25.94	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.06	
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
RPLUS_PROCESS	Ultrasonic R+ Processing	USIT-E	No	
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	-14.35	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
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	1.8	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

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	134	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	174	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	103	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	143	us
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 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	38_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	28.81	us
WINE	Window End Time	USIT-E	68.81	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	5	10-Mar-2020 12:30:22	10-Mar-2020 12:35:23	2402.48	2104.38
EMXV	6	10-Mar-2020 12:35:23	10-Mar-2020 12:35:38	2104.38	2087.2
EMXV	7	10-Mar-2020 12:35:38	10-Mar-2020 12:36:40	2087.2	2050.12

All depths are at tool zero.

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[2]:Up	Up	2050.13 ft	2402.48 ft	10-Mar-2020 12:30:22 PM	10-Mar-2020 12:36:40 PM	ON	1.04 ft	Yes

All depths are referenced to toolstring zero

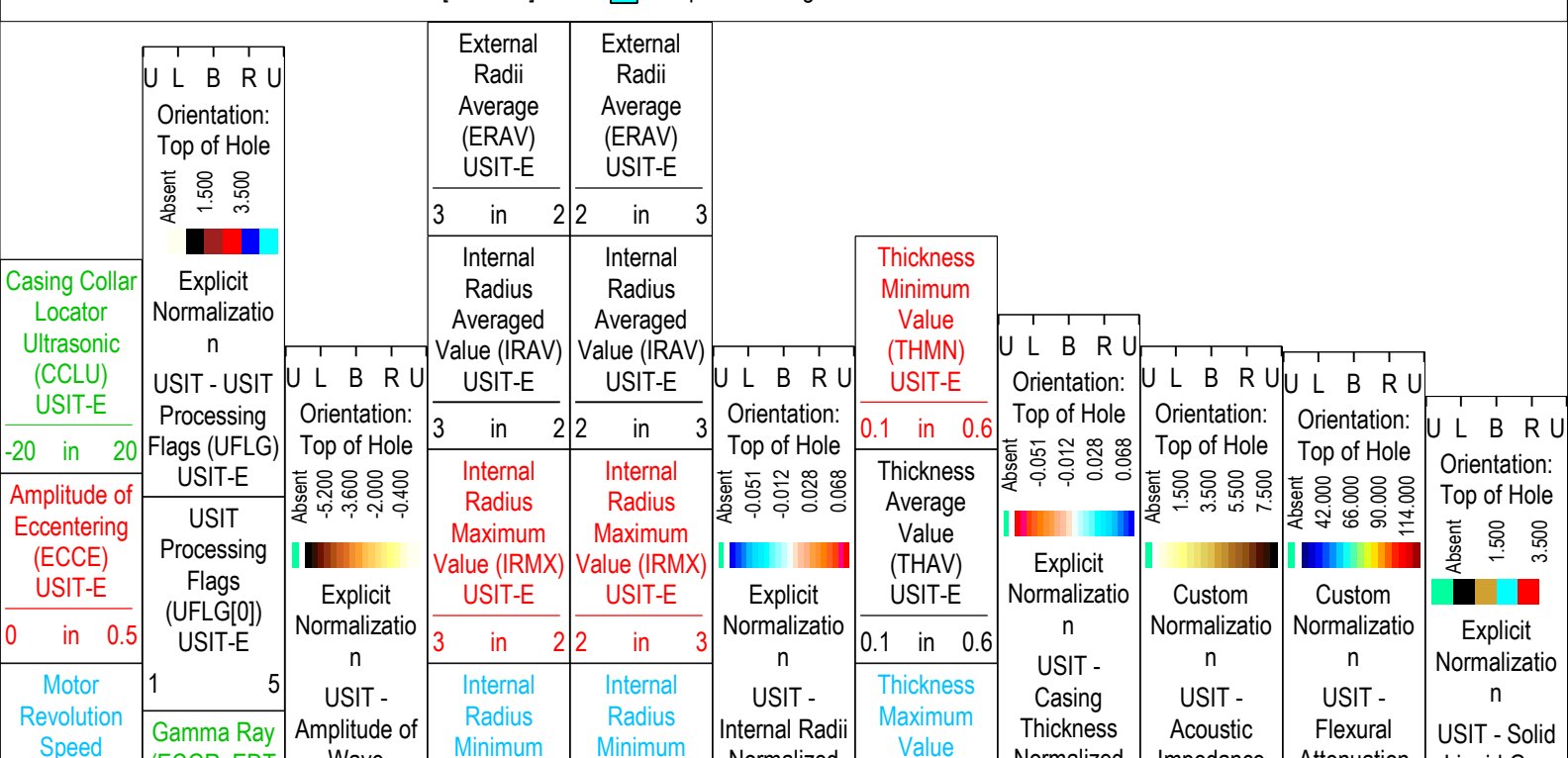
Log	Company:Crestone Peak Resources Operating LLC	Well:King 3-65 28-29 3CH	ONE: Log[2]:Up:S005
-----	-----------------------------------------------	--------------------------	---------------------

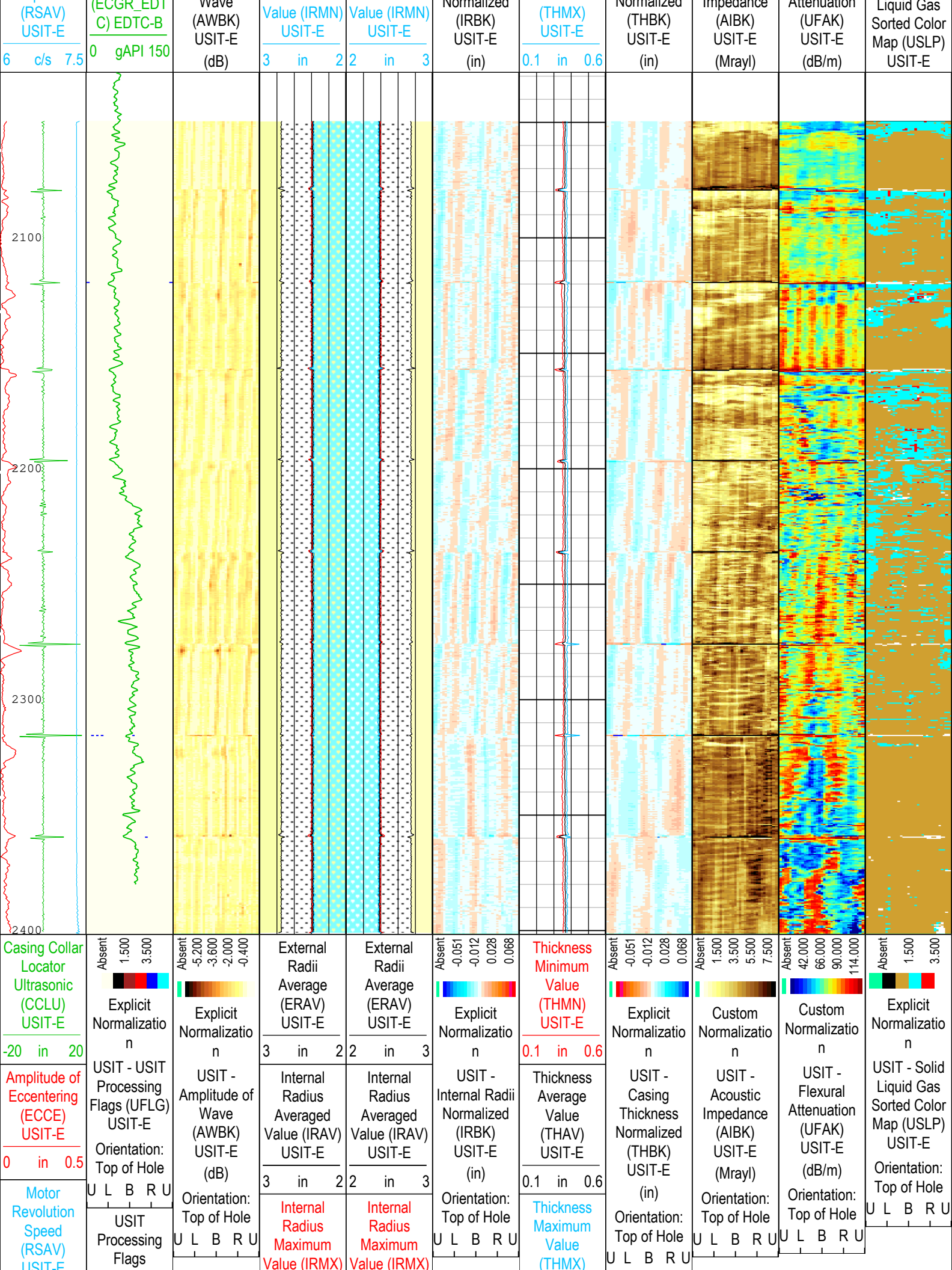
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite 5.5IN) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-Mar-2020 11:04:40

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-E	(UFLG[0]) USIT-E	USIT-E	USIT-E	USIT-E
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 5.5IN) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth				
Creation Date: 12-Mar-2020 11:04:40				

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	
CBLO	Casing Bottom (Logger)	WLSESSION	18012	ft
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	Regular Cement	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	201	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	
IMAR	Image Rotation	USIT-E	RB	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	25.94	us
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.06	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.35	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.8	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

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	134	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	174	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	103	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	143	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	28.81	us
WINE	Window End Time	USIT-E	68.81	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	5	10-Mar-2020 12:30:22	10-Mar-2020 12:35:23	2402.48	2104.38
EMXV	6	10-Mar-2020 12:35:23	10-Mar-2020 12:35:38	2104.38	2087.2
EMXV	7	10-Mar-2020 12:35:38	10-Mar-2020 12:36:40	2087.2	2050.12
All depth are at tool zero.					

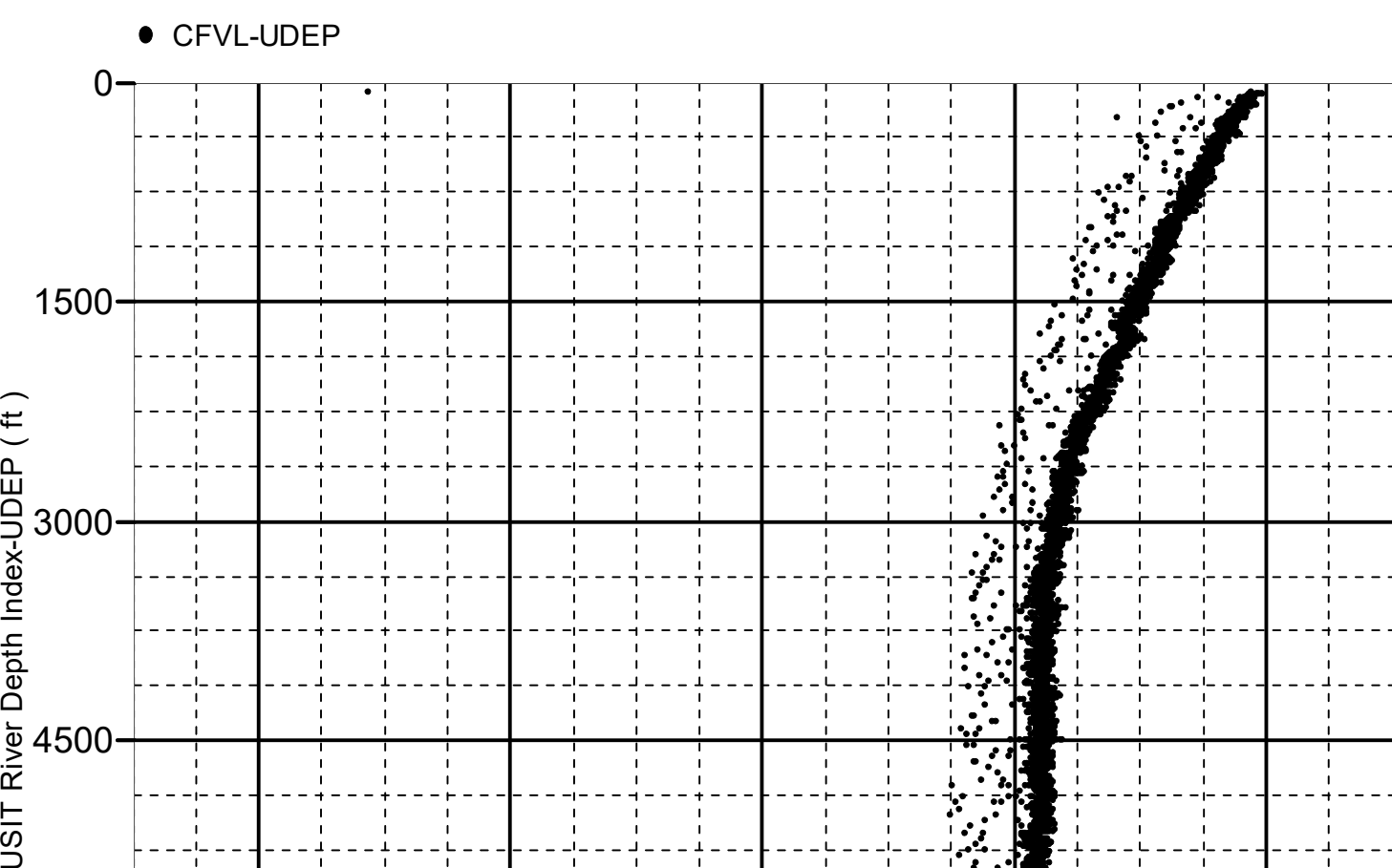
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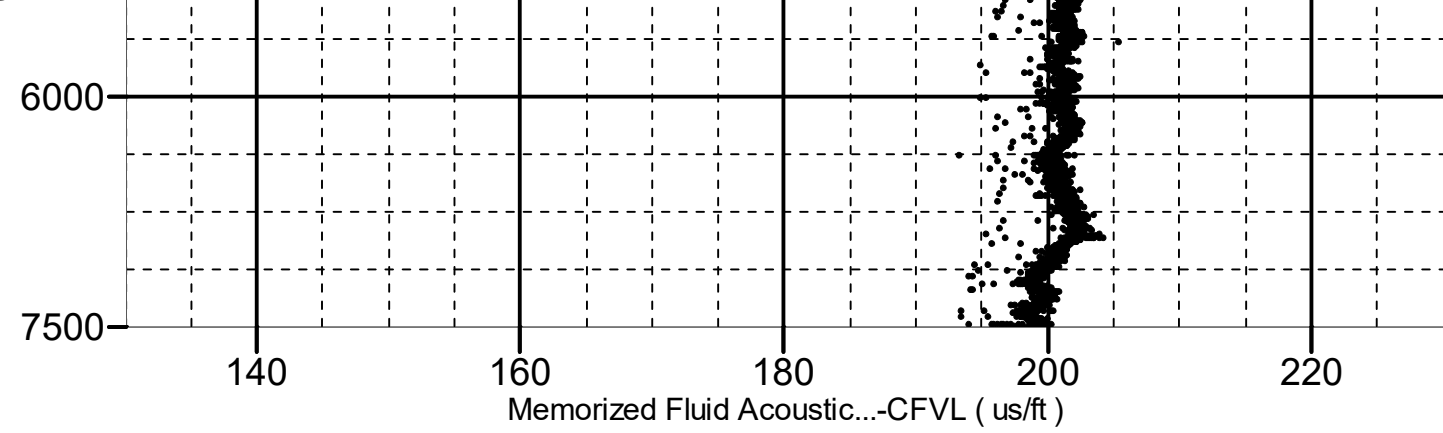
Company:Crestone Peak Resources Operating LLC Well:King 3-65 28-29 3CH
ONE: Log[4]:Up:S005

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 7667.50 to 32.50 ft

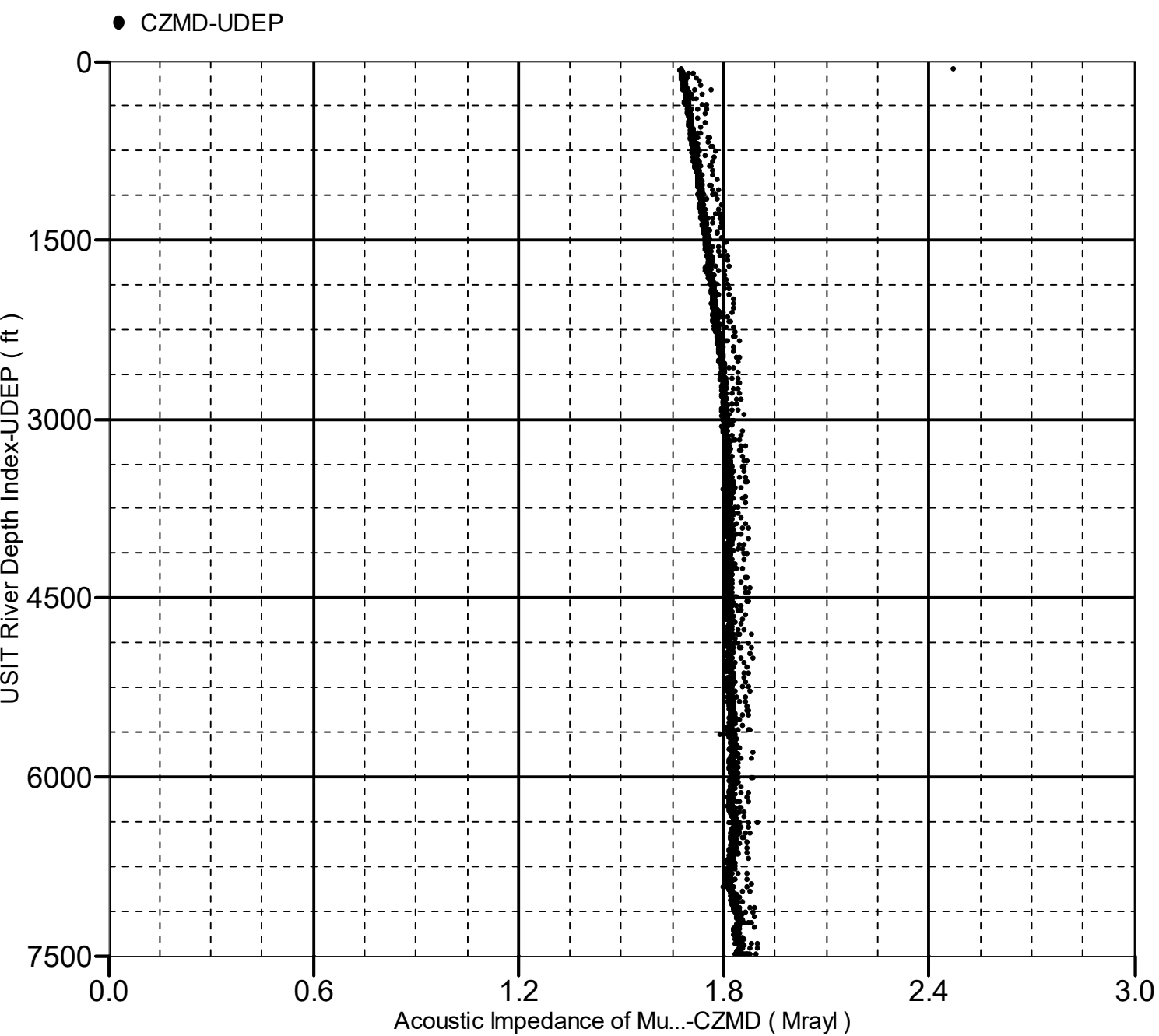




Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7667.50 to 32.50 ft



Calibration Report

EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run ONE

Primary Equipment :	EDTC-B	EDTC-B
Calibration Parameter :	Plus Reference	

EDTC-B Accelerometer Calibration - EDTC-B Accelerometer Calibration

Before (Measured):		07:01:20 09-Mar-2020 Expired by 1 days					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.19	31.53	32.04	32.84	

EDTC-B Memory Data - EDTC-B Memory Data

Master (EEPROM):		12:09:32 10-Mar-2020					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Initial PMT HV	V	Master			1365.000		
Accelerometer Serial Number		Master			1558		
Accelerometer Coefficients - 0		Master	----	----	2.965E+000	----	
Accelerometer Coefficients - 1		Master	----	----	1.965E-004	----	
Accelerometer Coefficients - 2		Master	----	----	8.076E-007	----	
Accelerometer Coefficients - 3		Master	----	----	-1.506E-008	----	
Accelerometer Coefficients - 4		Master	----	----	4.055E-010	----	
Accelerometer Coefficients - 5		Master	----	----	-3.061E-012	----	
Accelerometer Coefficients - 6		Master	----	----	7.859E-015	----	
Accelerometer Coefficients - 7		Master	----	----	-2.621E-003	----	
Accelerometer Coefficients - 8		Master	----	----	5.277E-005	----	
Accelerometer Coefficients - 9		Master	----	----	-3.015E-008	----	
Accelerometer Coefficients - 10		Master	----	----	-2.099E-010	----	
Accelerometer Coefficients - 11		Master	----	----	4.133E-013	----	
Gamma-Ray Detector Serial Number		Master			79500		

EDTC-B Gamma-Ray Calibration - Gamma Ray Coefficients

Before:		After:					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Gain		Before	1.000	0.900	NOT DONE	1.100	
		After	----	----	----	----	
		After-Before	----	----	----	----	

EDTC-B Gamma-Ray Calibration - Gamma Ray Accumulations

Before:		After:					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
RGR Plus Measurement	gAPI	Before			NOT DONE		
		After			NOT DONE		
		After-Before	----	----	----	----	

LEH-QT (Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor) Calibration - Run ONE

Primary Equipment :	Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor	LEH-QT
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HTEN Master Calibration - HTEN Master Calibration

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HTEN Shop Gain		Master	1.000	0.800	NOT DONE	4.500	
HTEN Shop Offset	lbf	Master	0	-1000.000	NOT DONE	1000.000	

HTEN Before Calibration - HTEN Before Calibration

Before:								
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
RHTE Zero Measurement - 0	lbf	Before	-----	-----	-----	-----		
RHTE Plus Measurement - 0	lbf	Before	-----	-----	-----	-----		
HTEN Gain - 0		Before	-----	-----	-----	-----		
HTEN Offset - 0	lbf	Before	-----	-----	-----	-----		

Company:	Crestone Peak Resources Operating LLC	Schlumberger
Well:	King 3-65 28-29 3CH	
Field:	WILDCAT	
County:	ADAMS	
State:	Colorado	
Isolation Scanner		
Cement Evaluation		
Gamma Ray - CCL		