

Company: Crestone Peak Resources Operating LLC

Well: Davis 1L-9H-G266

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner  
Cement Evaluation  
Gamma Ray - CCL Log

County: Weld  
Field: Wattenberg  
Location: SWNE Sec. 9, T2N, R66W  
Well: Davis 1L-9H-G266  
Company: Crestone Peak Resources Operating LLC

Location:	SWNE Sec. 9, T2N, R66W	Elev.:	K.B.	4940.00 ft
	SHL: 1978' FNL & 1433' FEL		G.L.	4917.00 ft
	Lat/Long: 40.154392, -104.777928		D.F.	4940.00 ft
	Permanent Datum:	Ground Level	Elev.:	4917.00 f
Log Measured From:		Kelly Bushing	23.00 ft	above Perm.Datum
Drilling Measured From:		Kelly Bushing		
API Serial No.	Section:	Township:	Range:	
05-123-46681	9	2N	66W	

Logging Date 21-Sep-2018

Run Number ONE

Depth Driller 15558.00 ft

Schlumberger Depth 15558.00 ft

Bottom Log Interval 7332.00 ft

Top Log Interval 60.00 ft

Casing Fluid Type Water

Salinity

Density 8.4 lbm/gal

Fluid Level 0.00 ft

BIT/CASING/TUBING STRING

Bit Size 8.50 in

From 2231.00 ft

To 15558.00 ft

Casing/Tubing Size 5.5 in

Weight 20 lbm/ft

Grade N/A

From 0.00 ft

To 15558.00 ft

Max Recorded Temperatures

Logger on Bottom 21-Sep-2018 14:15:00

Unit Number 9108 Location: Fort Morgan, CO

Recorded By M. FUENMAYOR

Witnessed By DUANE DUNN

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.

Contents

1. Header

2. Disclaimer

3. Contents

4. Well Sketch

5. Borehole Size/Casing/Tubing Record

6. Remarks and Equipment Summary

7. Depth Summary

8. IBC Fluid Properties Measurement

9. ONE IBC SLG

9.1 Integration Summary

9.2 Software Version

9.3 Composite Summary

9.4 Log ( IBC SLG )

9.5 Parameter Listing

10. ONE IBC SLG Composite

10.1 Integration Summary

10.2 Composite Summary
- 12.1 Integration Summary

12.2 Software Version

12.3 Composite Summary

12.4 Log ( IBC SLG )

12.5 Parameter Listing

13. ONE IBC SLG Composite

13.1 Integration Summary

13.2 Composite Summary

13.3 Log ( IBC SLG Composite )

13.4 Parameter Listing

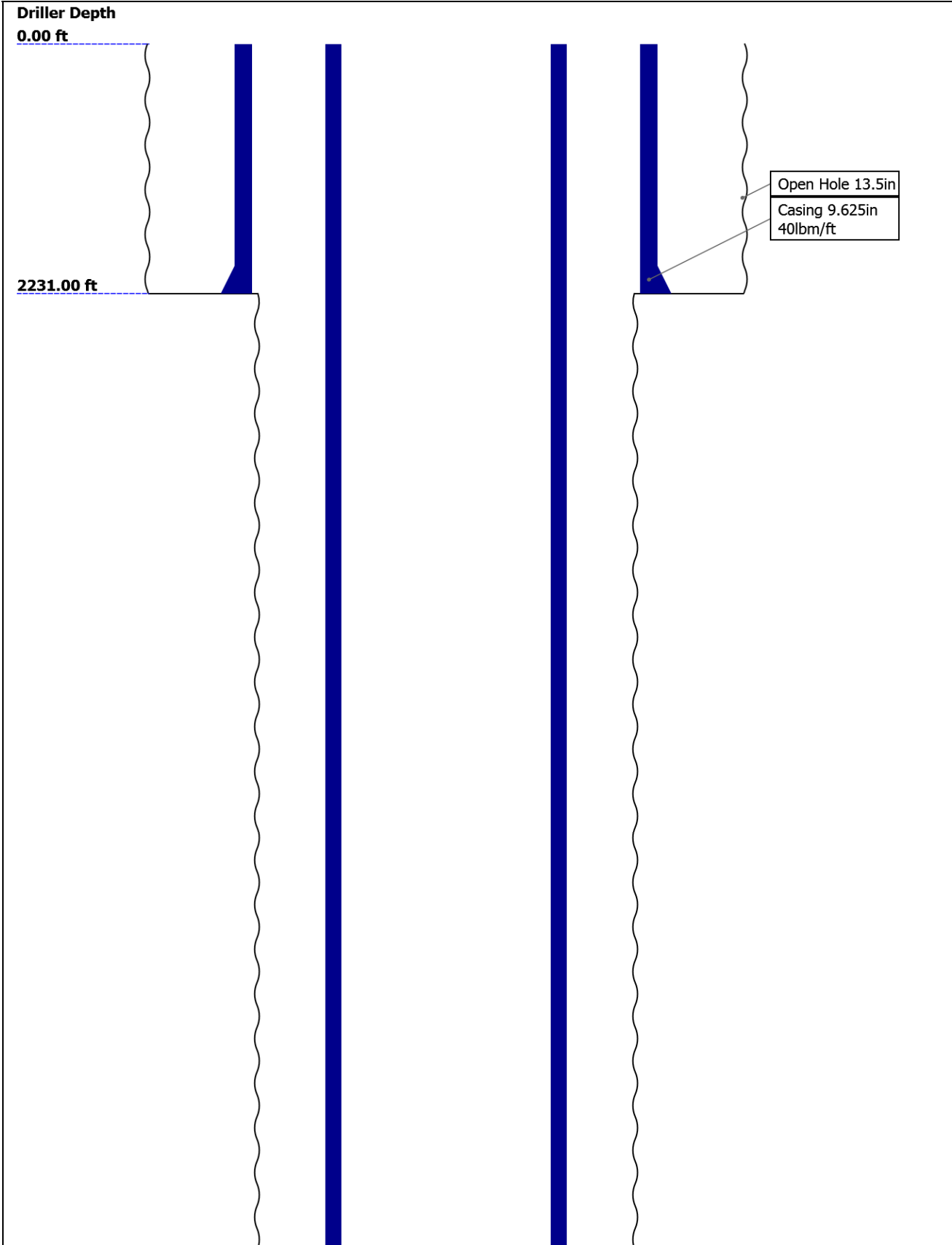
14. XYZ ( IBC Fluid Acoustic Slowness vs Depth 6.0 in )

15. XYZ ( IBC Acoustic Impedance of Mud vs Depth 6.0 in )

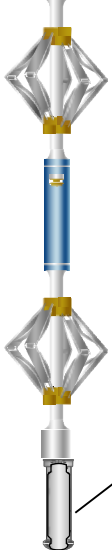
16. Tail

- 10.3 Log ( IBC SLG Composite )
- 10.4 Parameter Listing
- 11. ONE IBC Goodwin Compressed
  - 11.1 Integration Summary
  - 11.2 Composite Summary
  - 11.3 Log ( IBC Goodwin )
- 12. ONE IBC SLG

Well Sketch





USIS-A:18 32 USSC-B:17 78 IBCS-A:77 4 FAR-SENS OR:4670 IBC-TX NEAR-SEN SOR:4642 IBC-TX USI-SENS OR:1358 IBC-TX EMITTER- SENSOR:4 561 IBC-TX	 <p>USI Sen 0.84 sor Head Te nsion TOOL_ZERO</p> <p>Lengths are in ft          Maximum Outer Diameter = 5.000 in          Line: Sensor Location, Value: Gating Offset          All measurements are relative to TOOL_ZERO</p>	
---	---	--

Depth Summary			
ONE			
Depth Measuring Device			
Type	IDW-JA		
Serial Number	6455		
Calibration Date	26-JUL-2018		
Calibrator Serial Number	IDWC-C-57		
Calibration Cable Type	7-32 ASXS		
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	U718001		
Length	20000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane USA		
ONE:Depth Control Parameters		Depth Control Remarks	
Log Sequence	First Log In the Well	All Schlumberger depth control policies followed.	
Rig Up Length At Surface		IDW used as primary depth reference.	
Rig Up Length At Bottom		Z-chart used as secondary depth reference.	
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	7339.2	59.42

Fluid Velocity = "Automatic".  
CFVL equals DFSL channel

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

Mud Impedance = "FreePipe Norm."  
Free Pipe normalization zone is : 444.36m(1457.86ft) to 447.56m(1468.36ft)  
MUD\_N\_FRP = 1.18  
DFD = 1.01g/cm3(8.40lbm/gal)  
CZMD median computed in free pipe normalization interval = 1.76 MRayl

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

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[4]:Up	Up	59.43 ft	7339.20 ft	21-Sep-2018 2:16:15 PM	21-Sep-2018 4:05:06 PM	ON	9.86 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources Operating LLC      Well:Davis 1L-9H-G266 ONE: Log[4]: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: 21-Sep-2018 17:01:47

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 ] - :

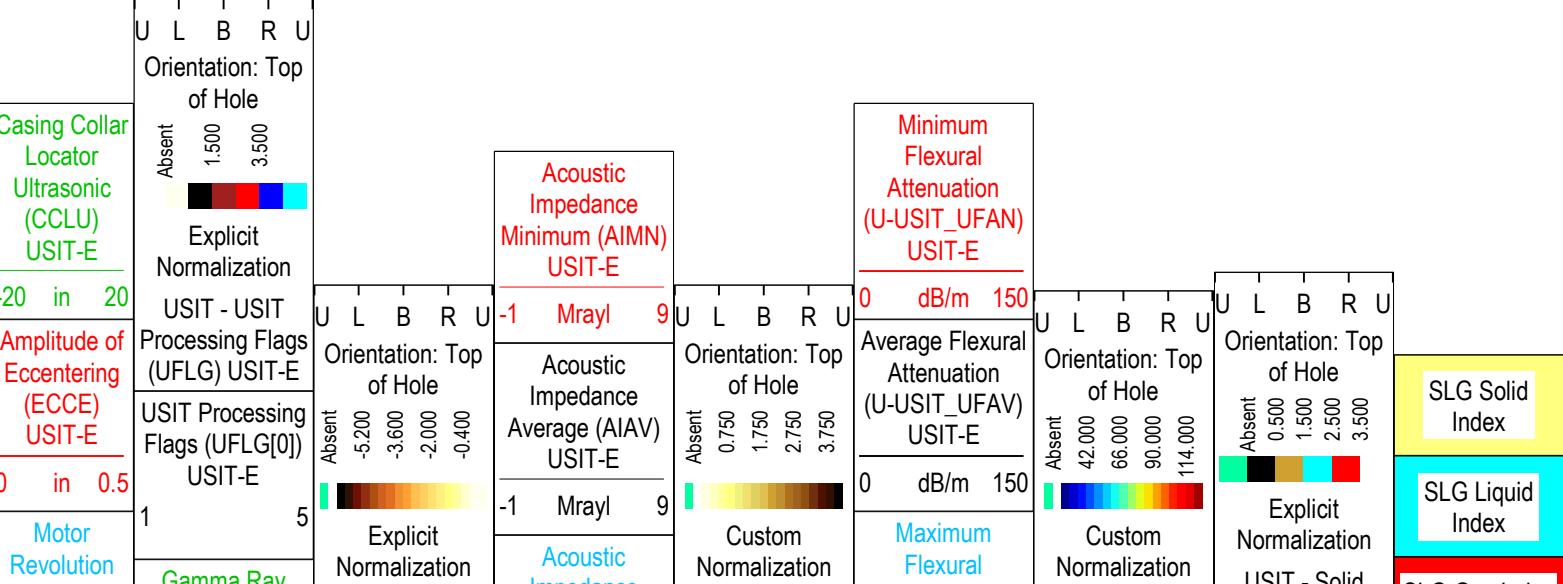
UTIM Error

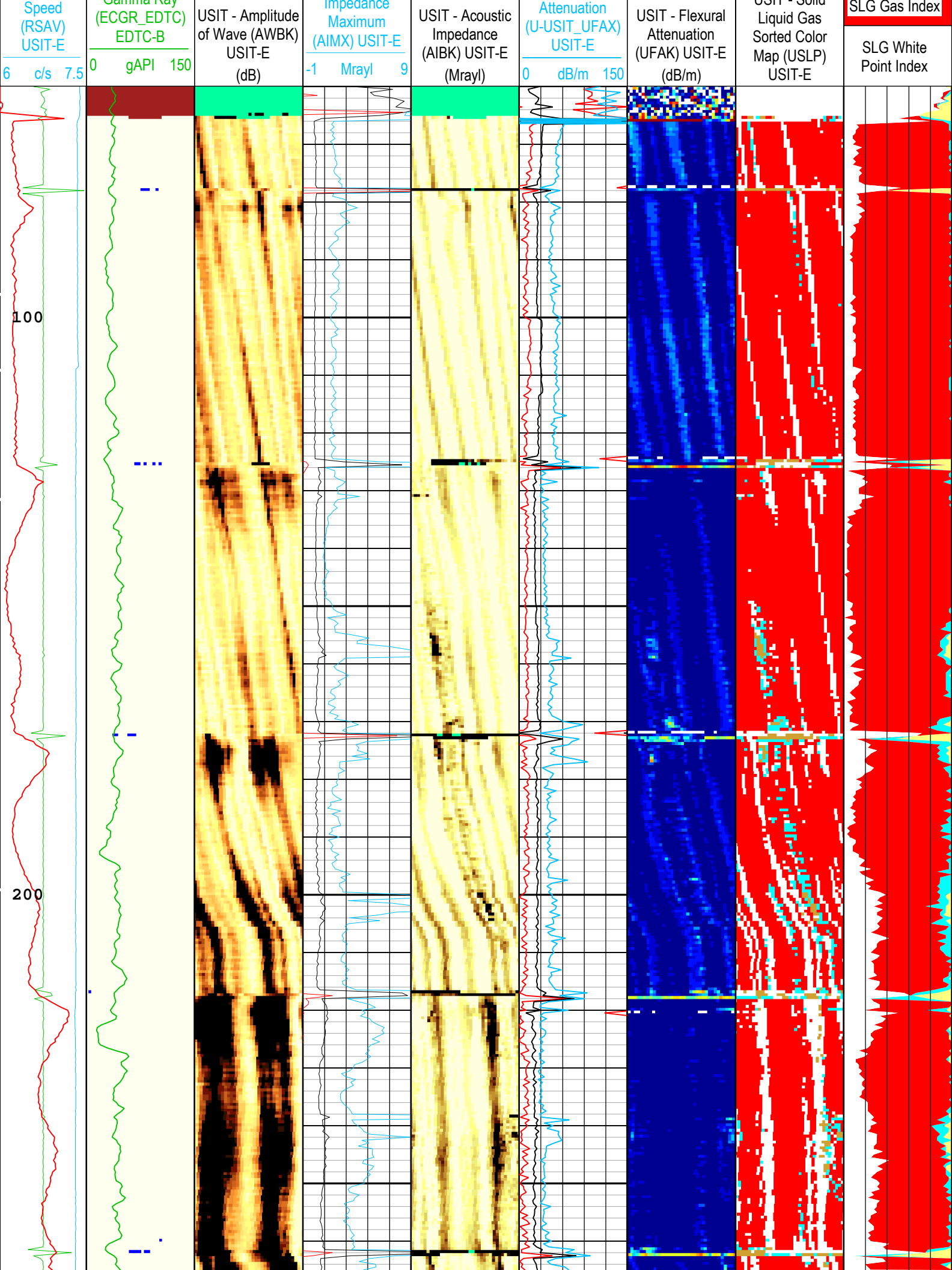
Pulse Origin Not Detected

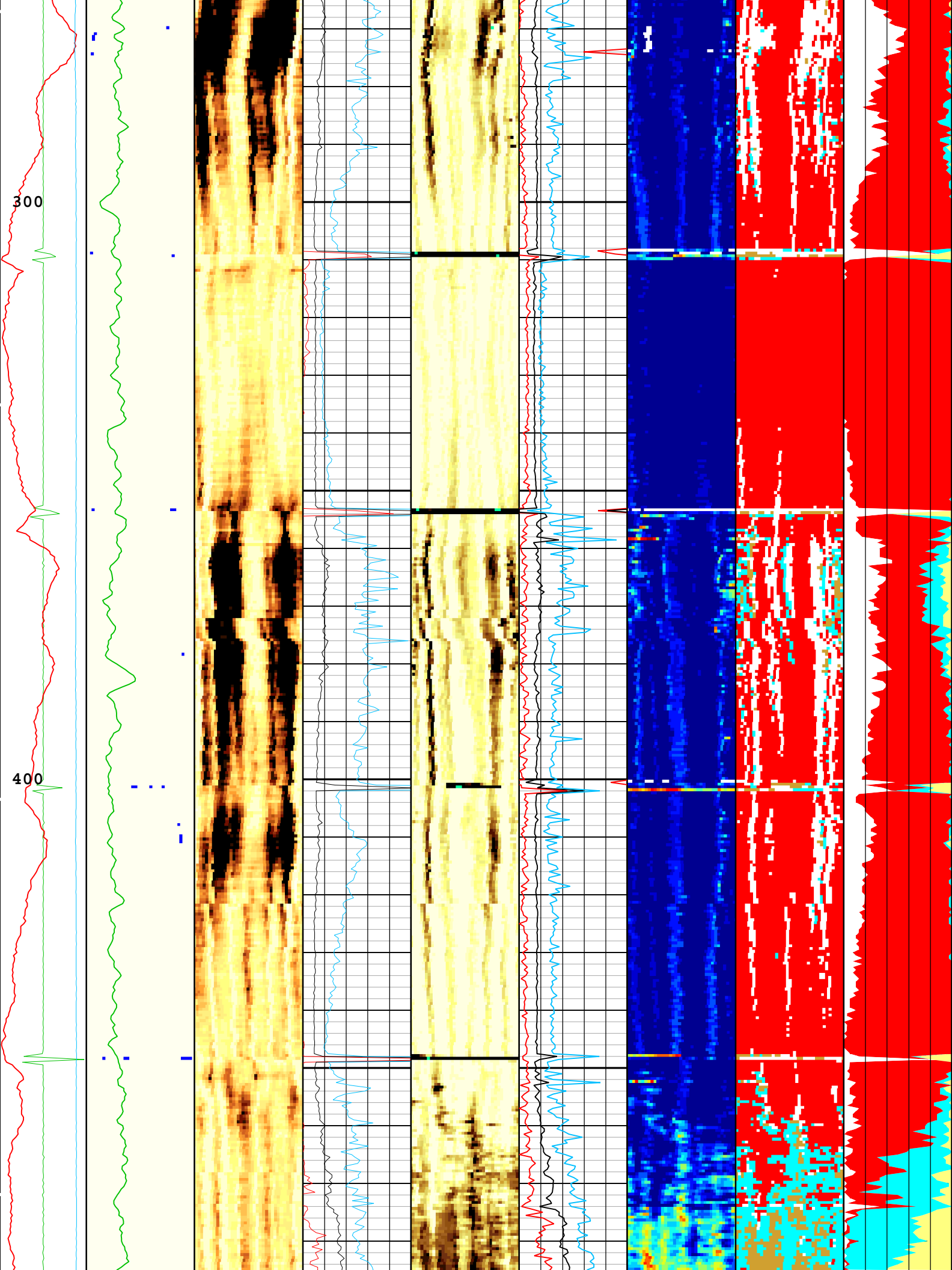
WINLEN Error

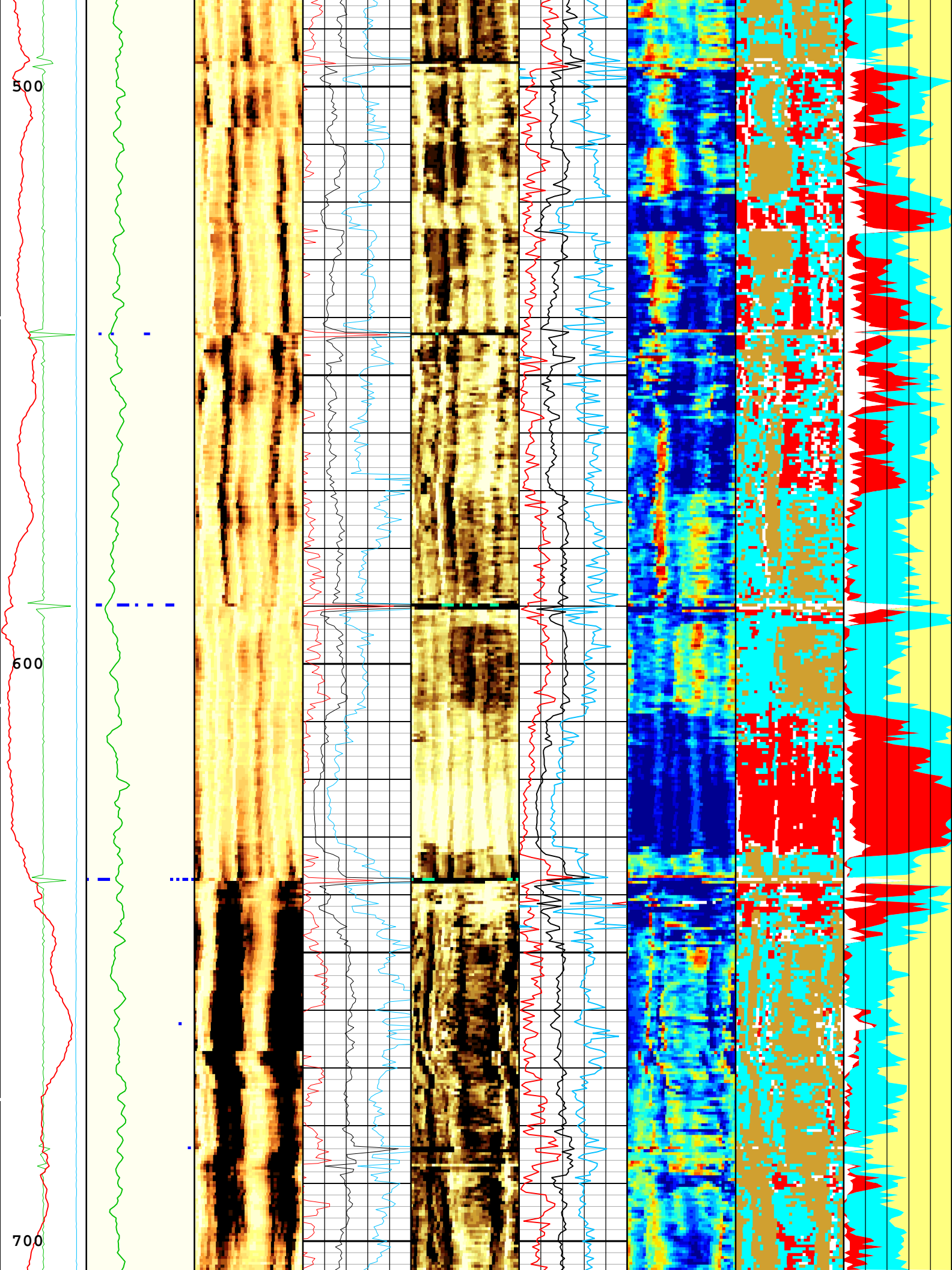
Casing Thickness Error

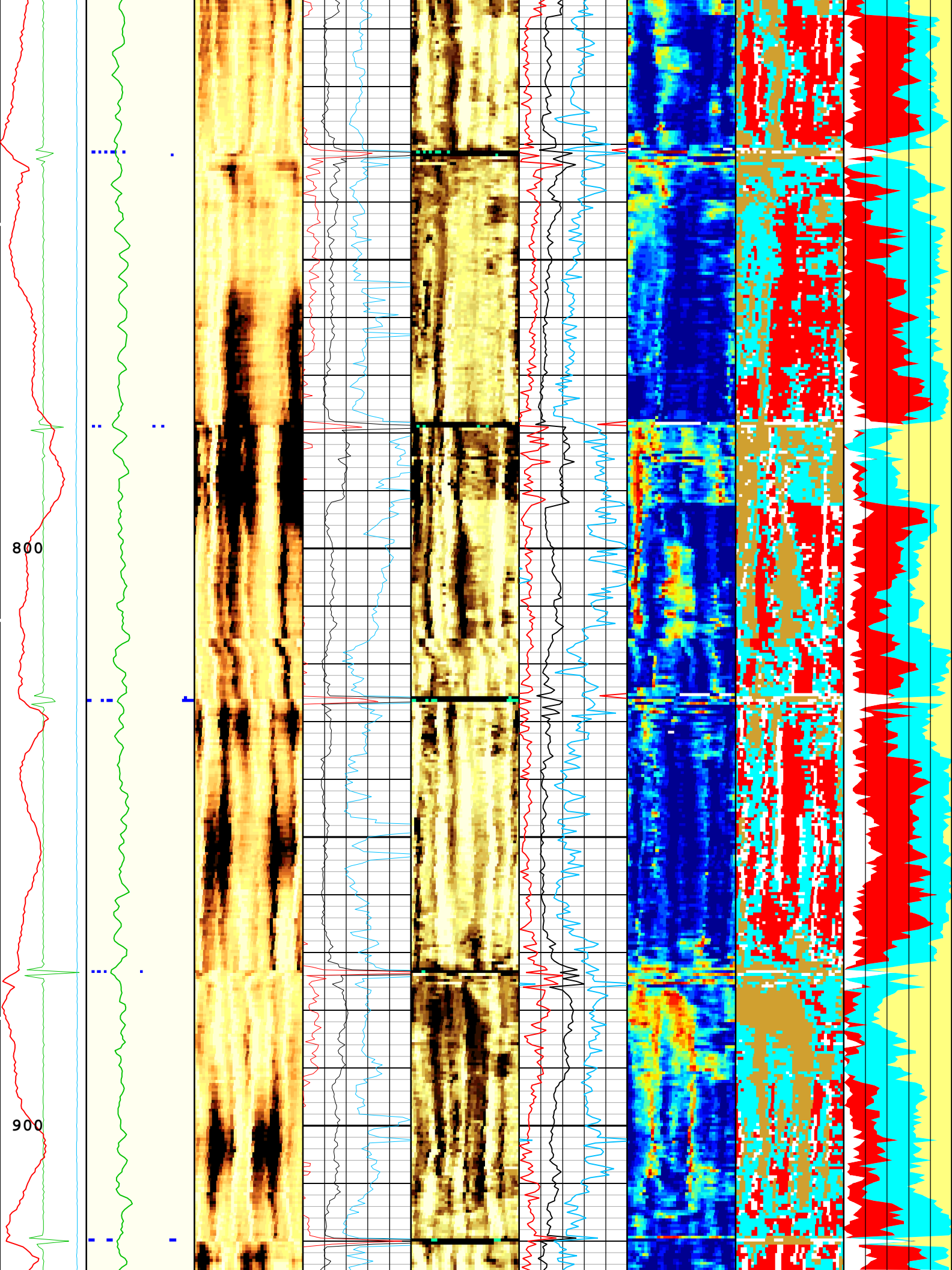
Loop Processing Error



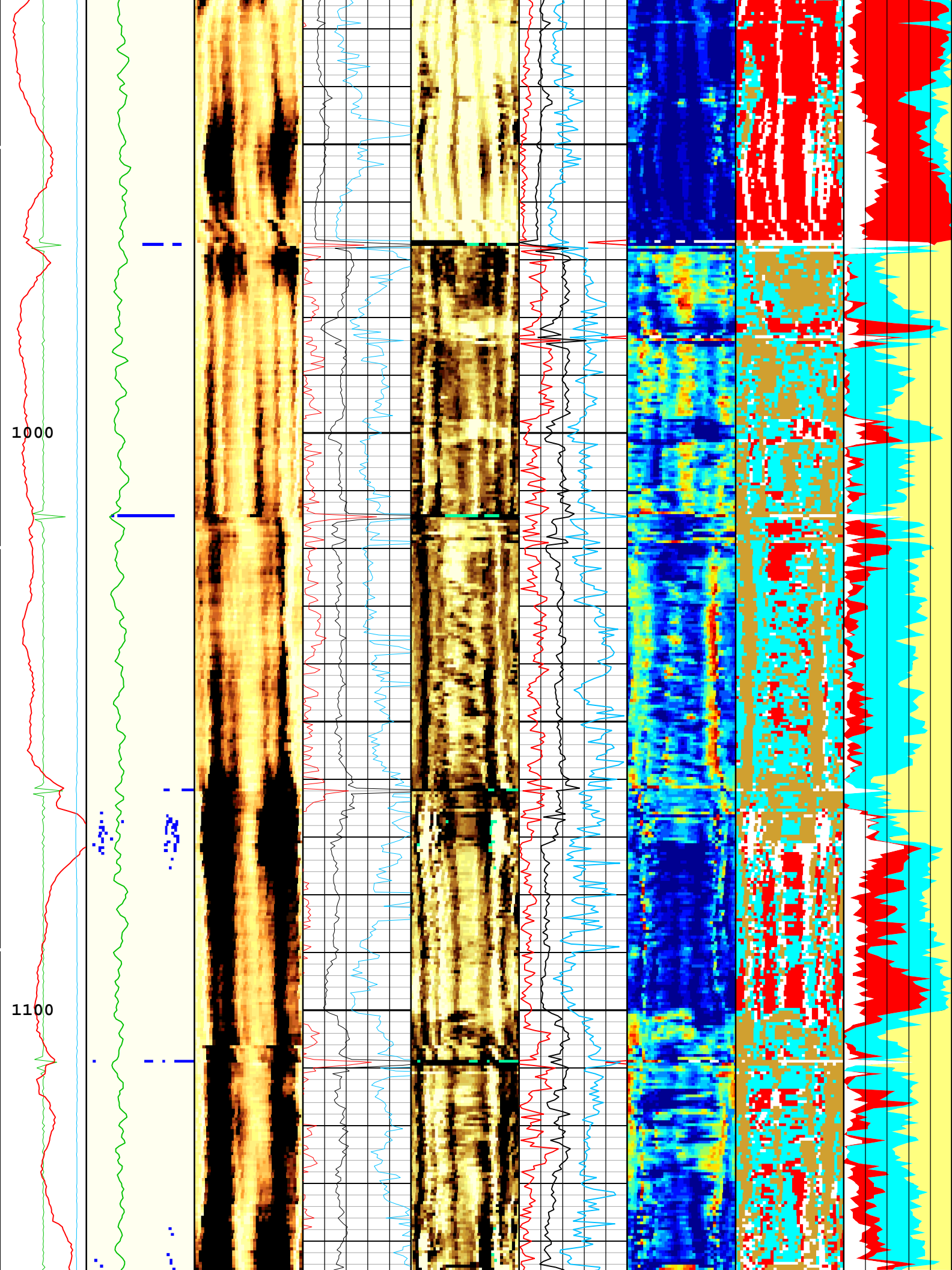


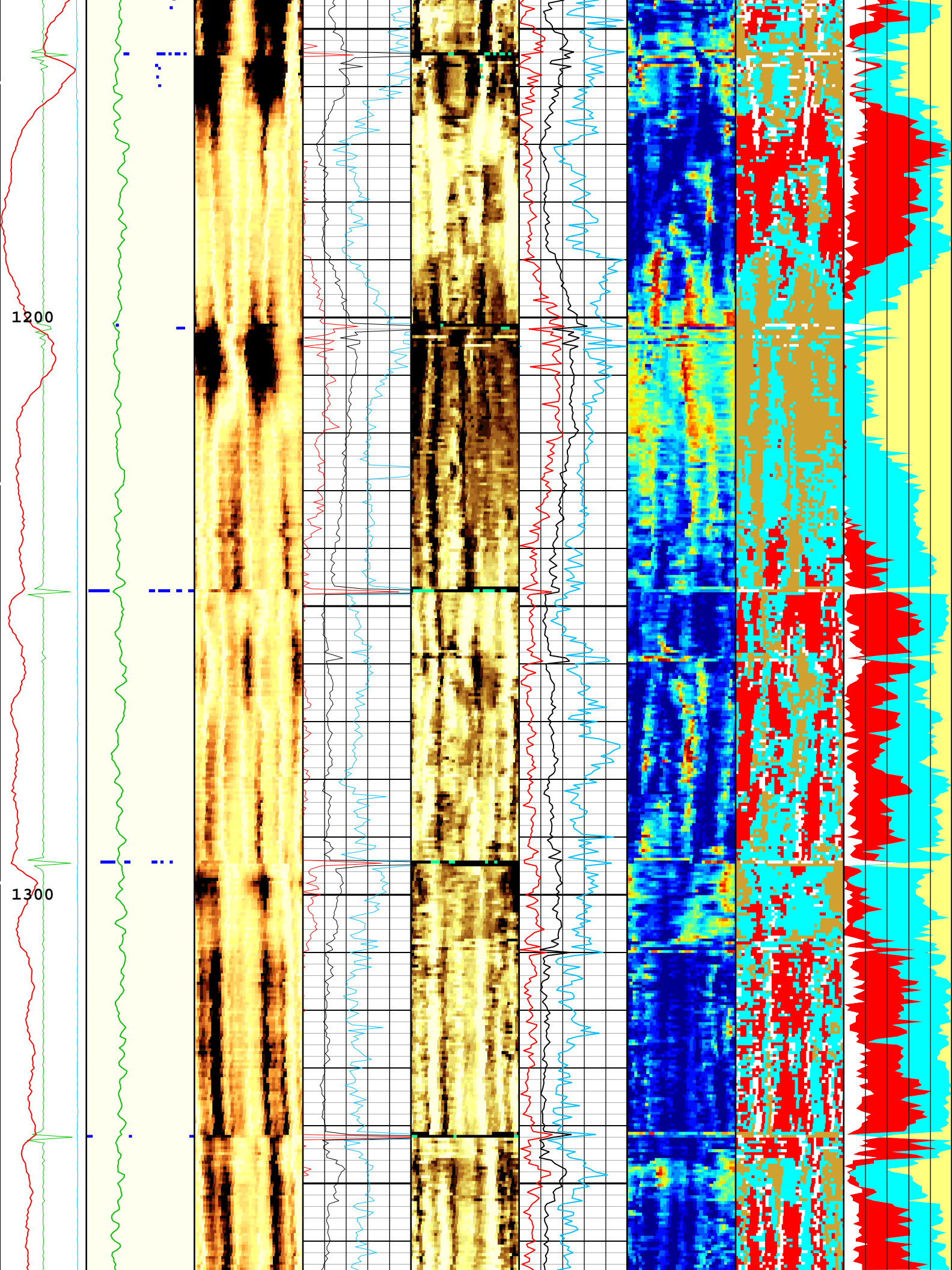


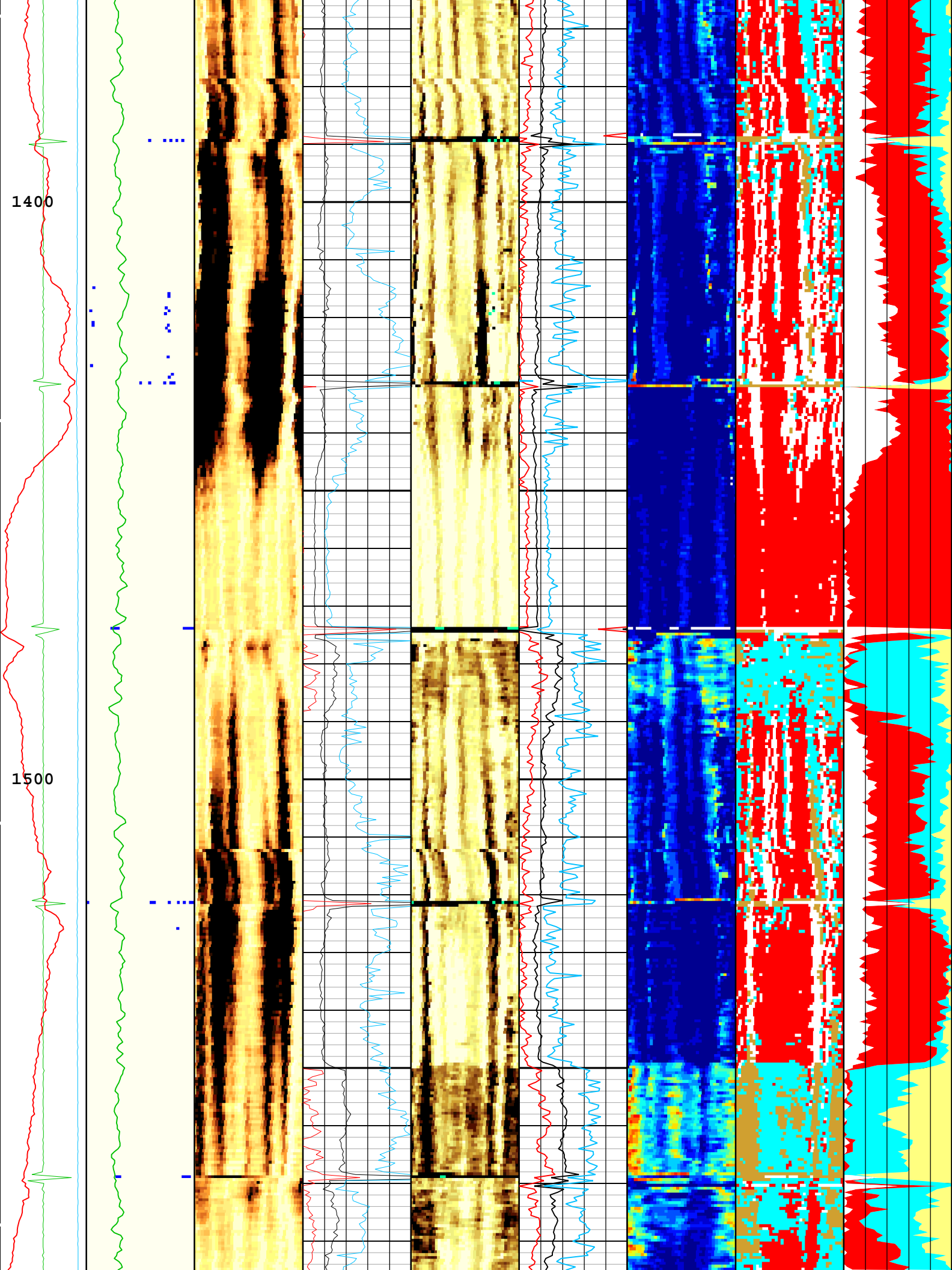




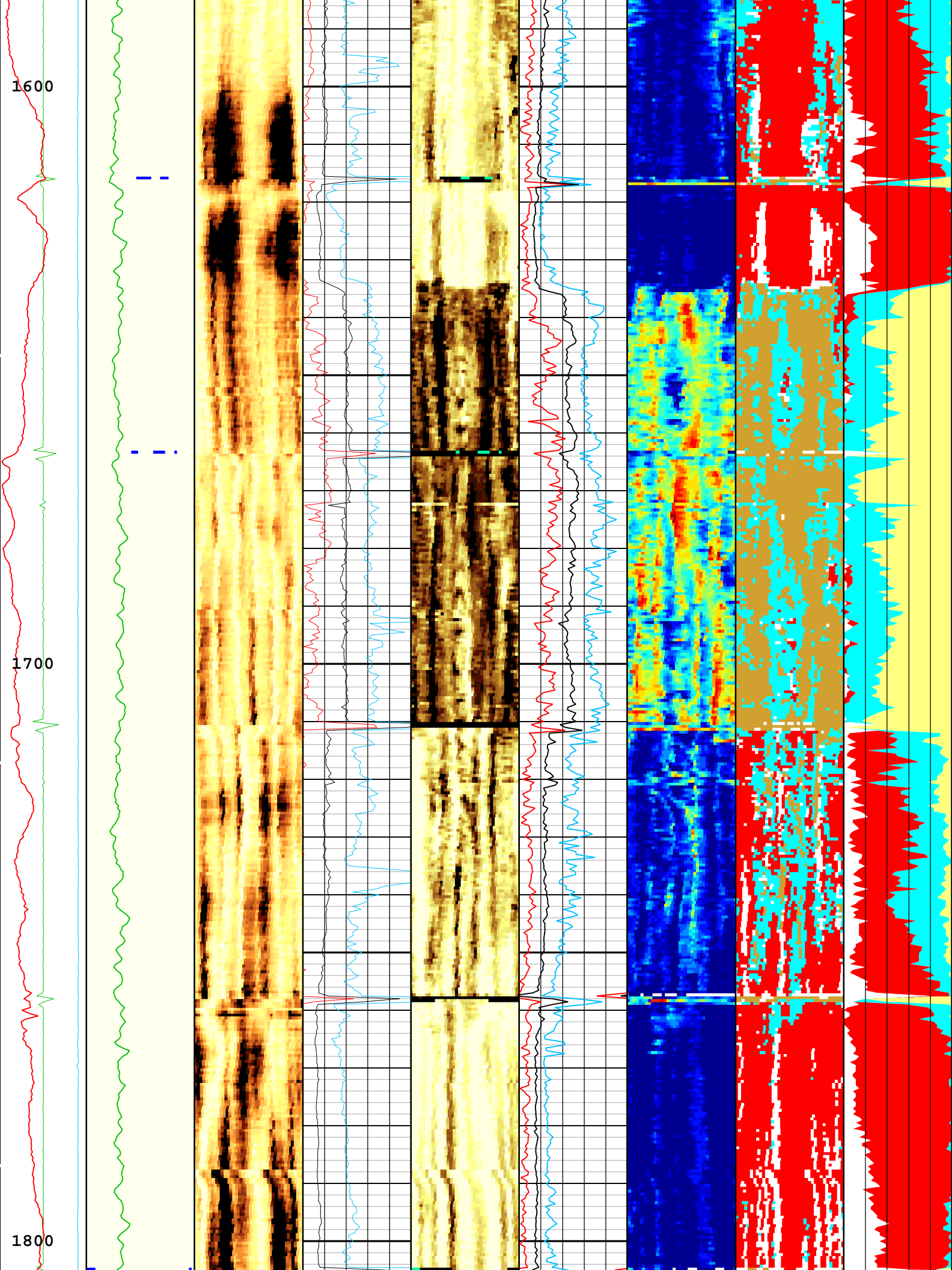


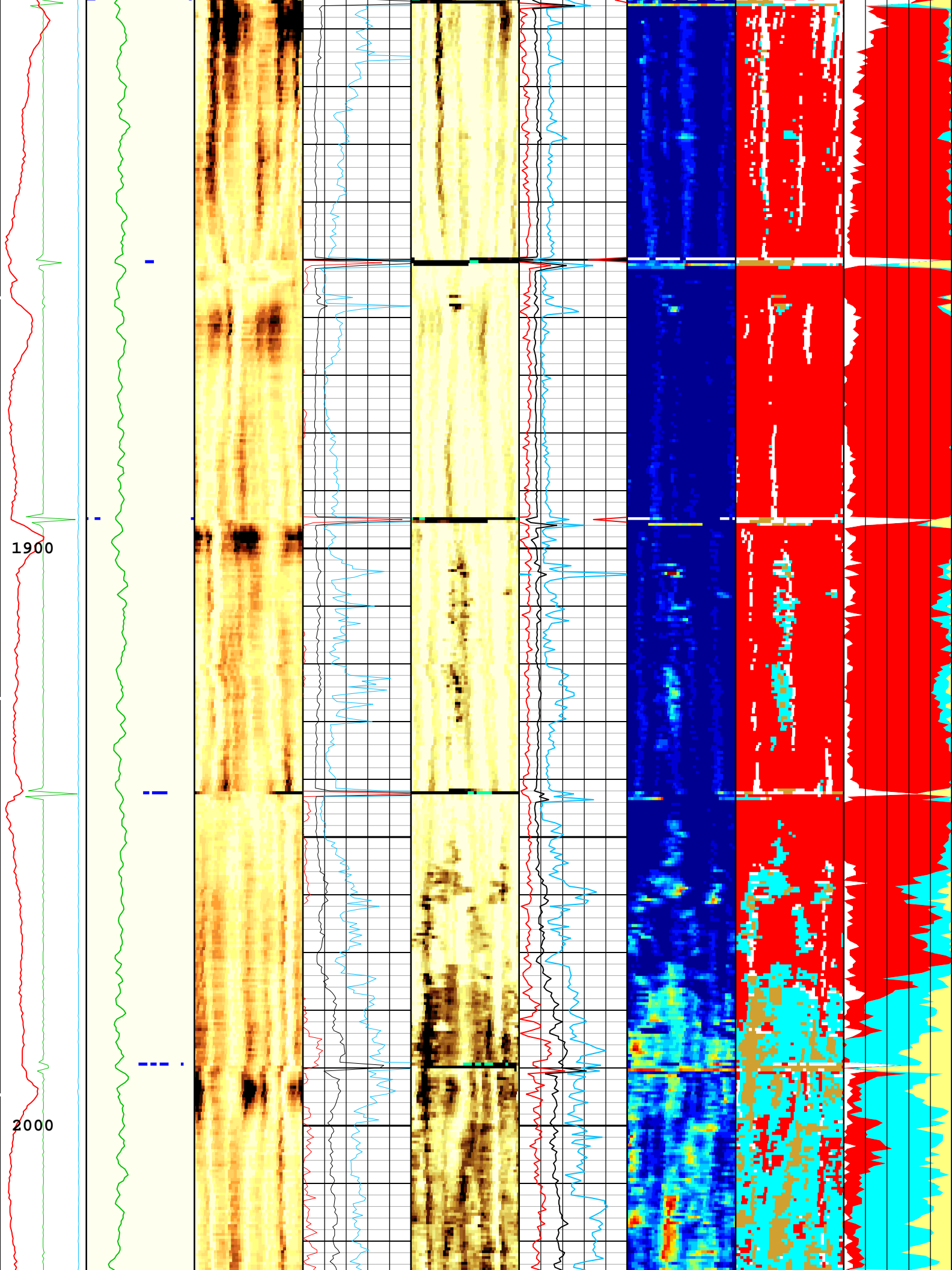


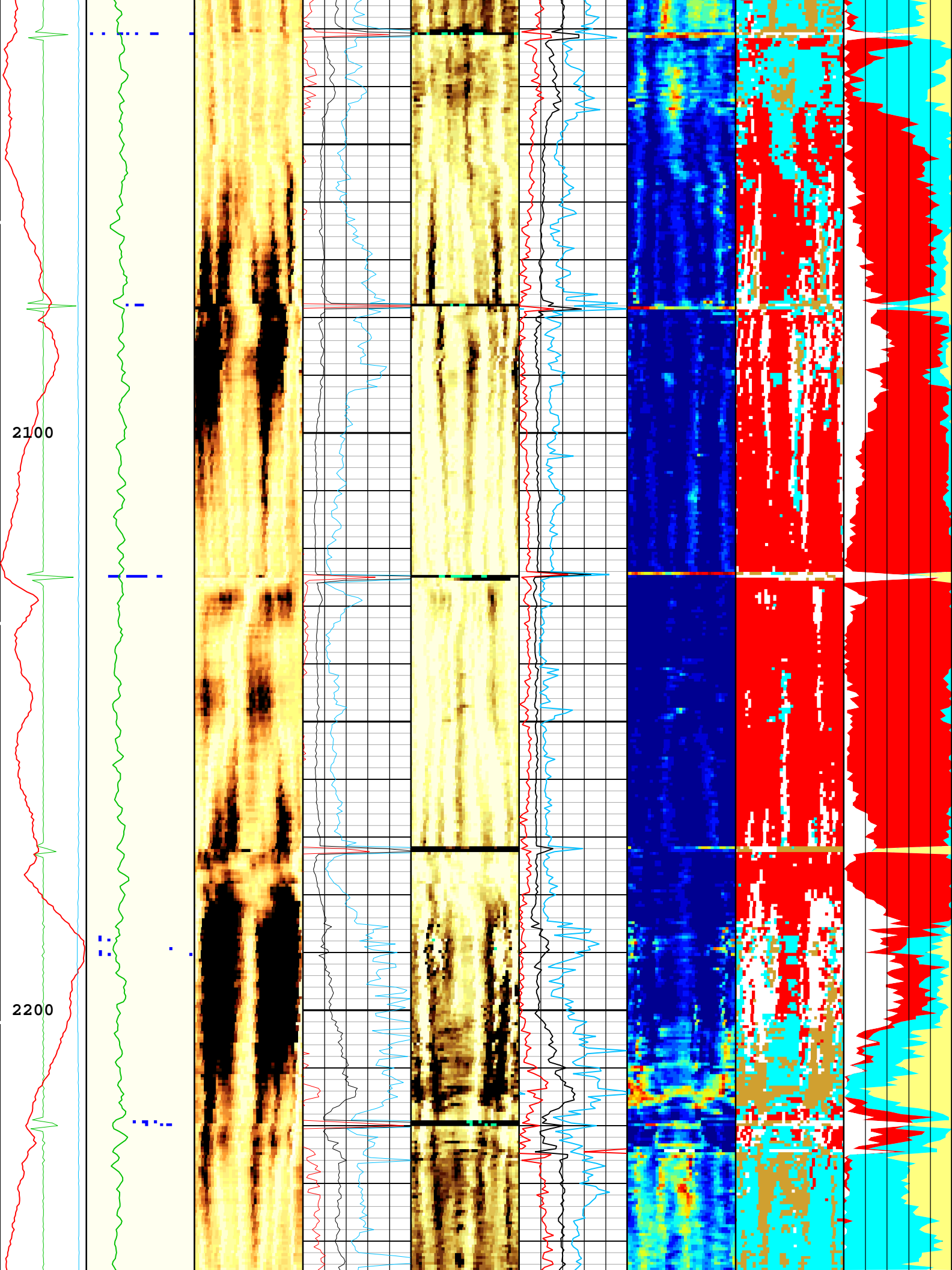


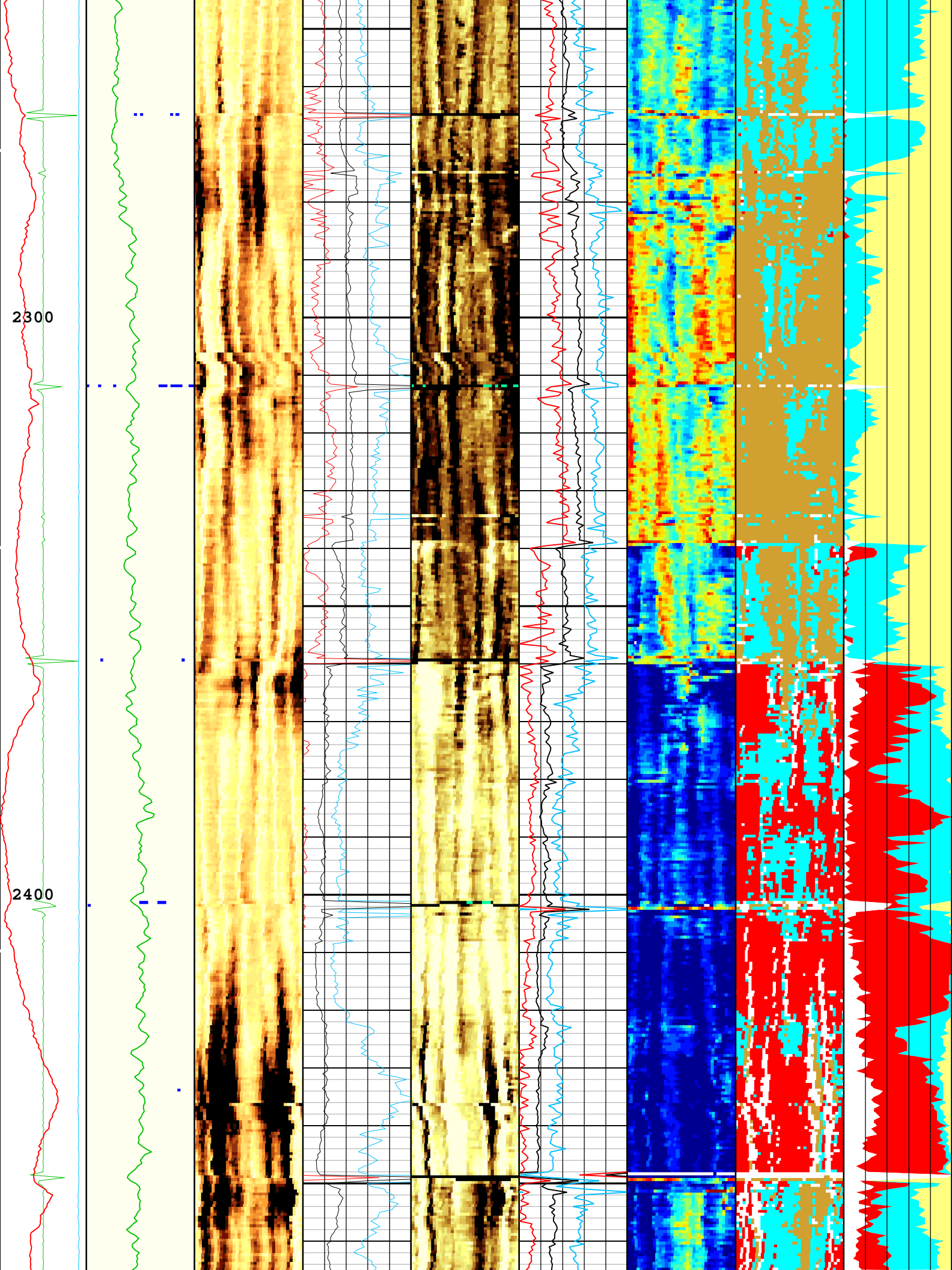


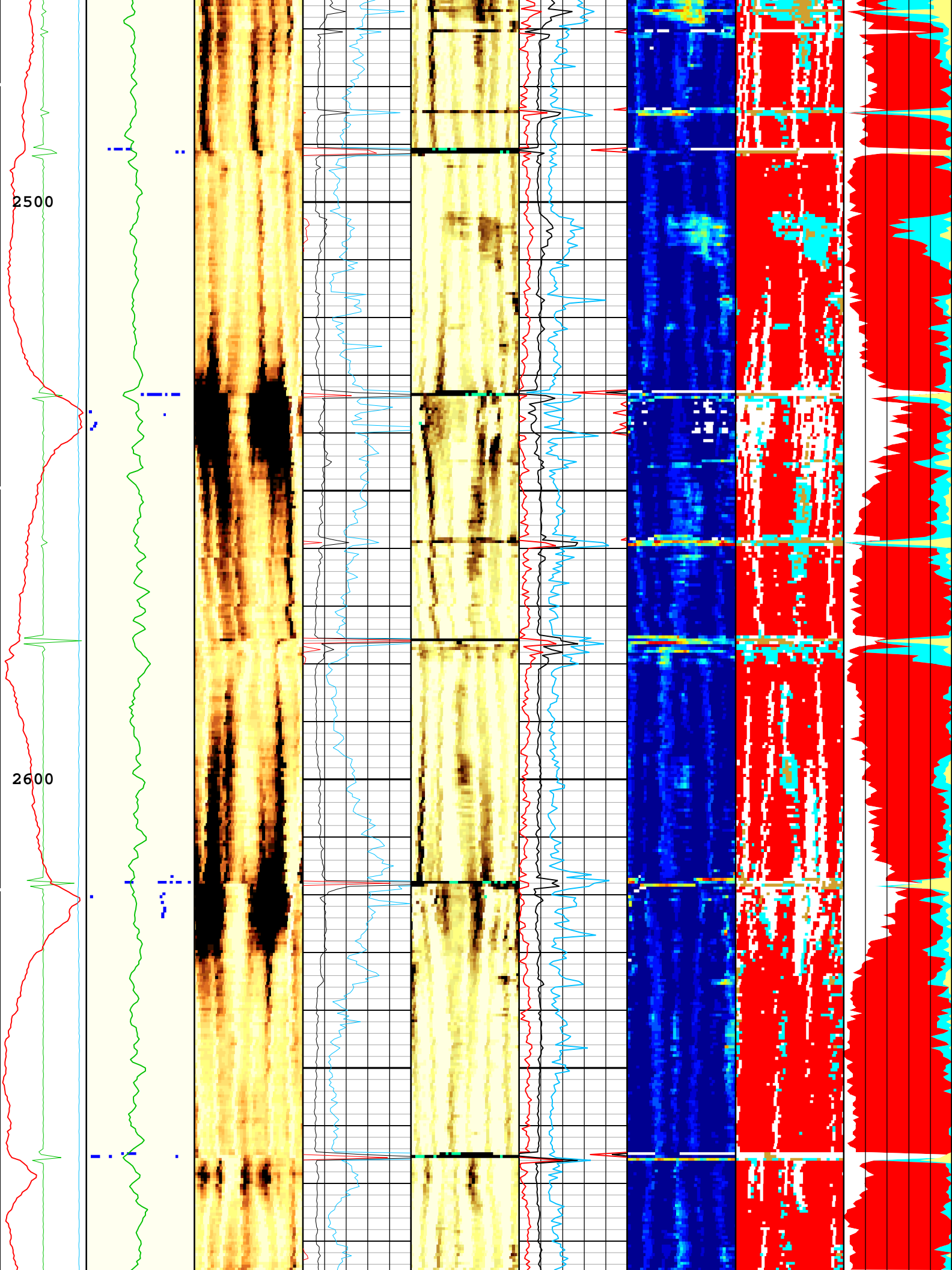




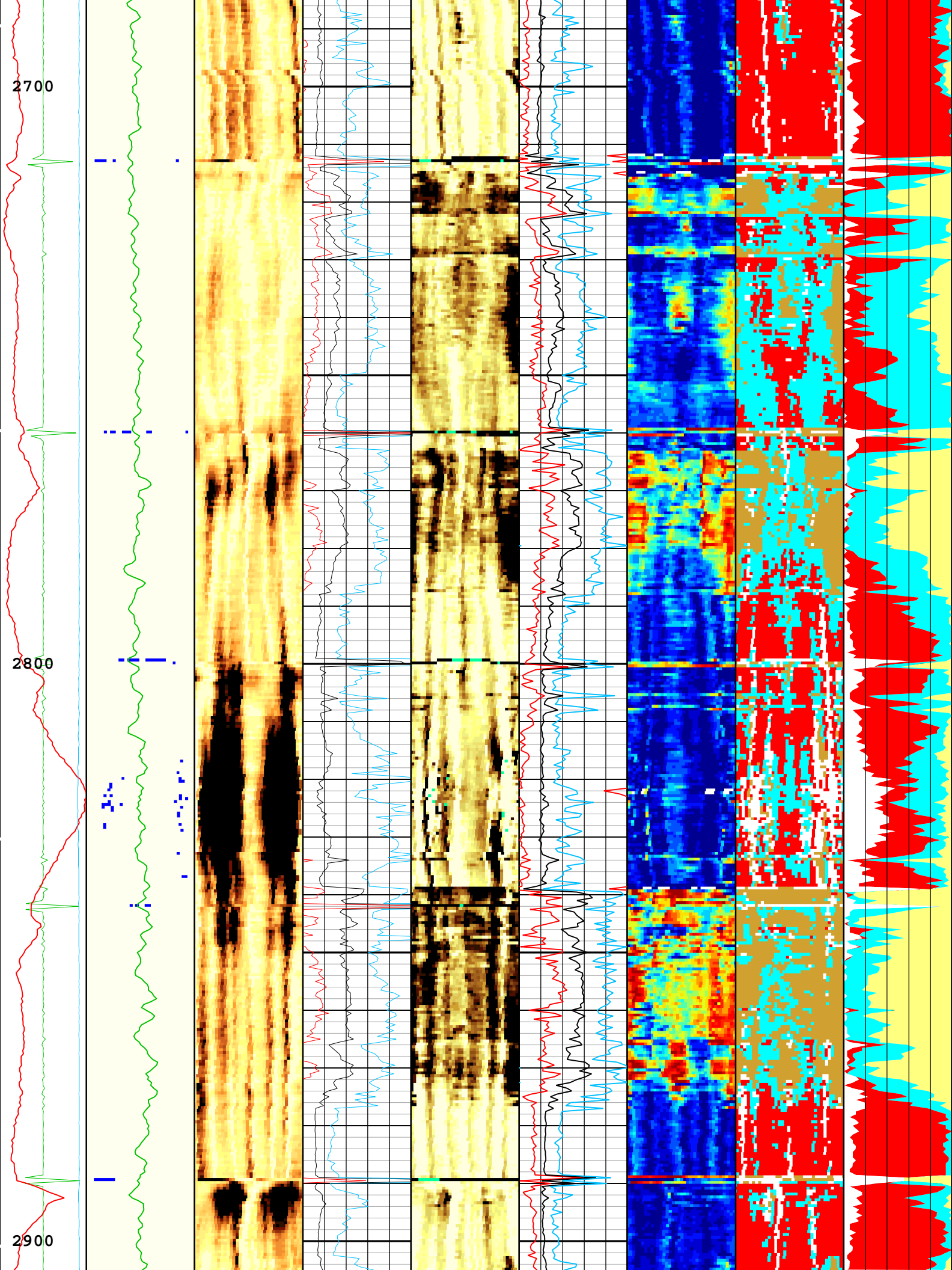


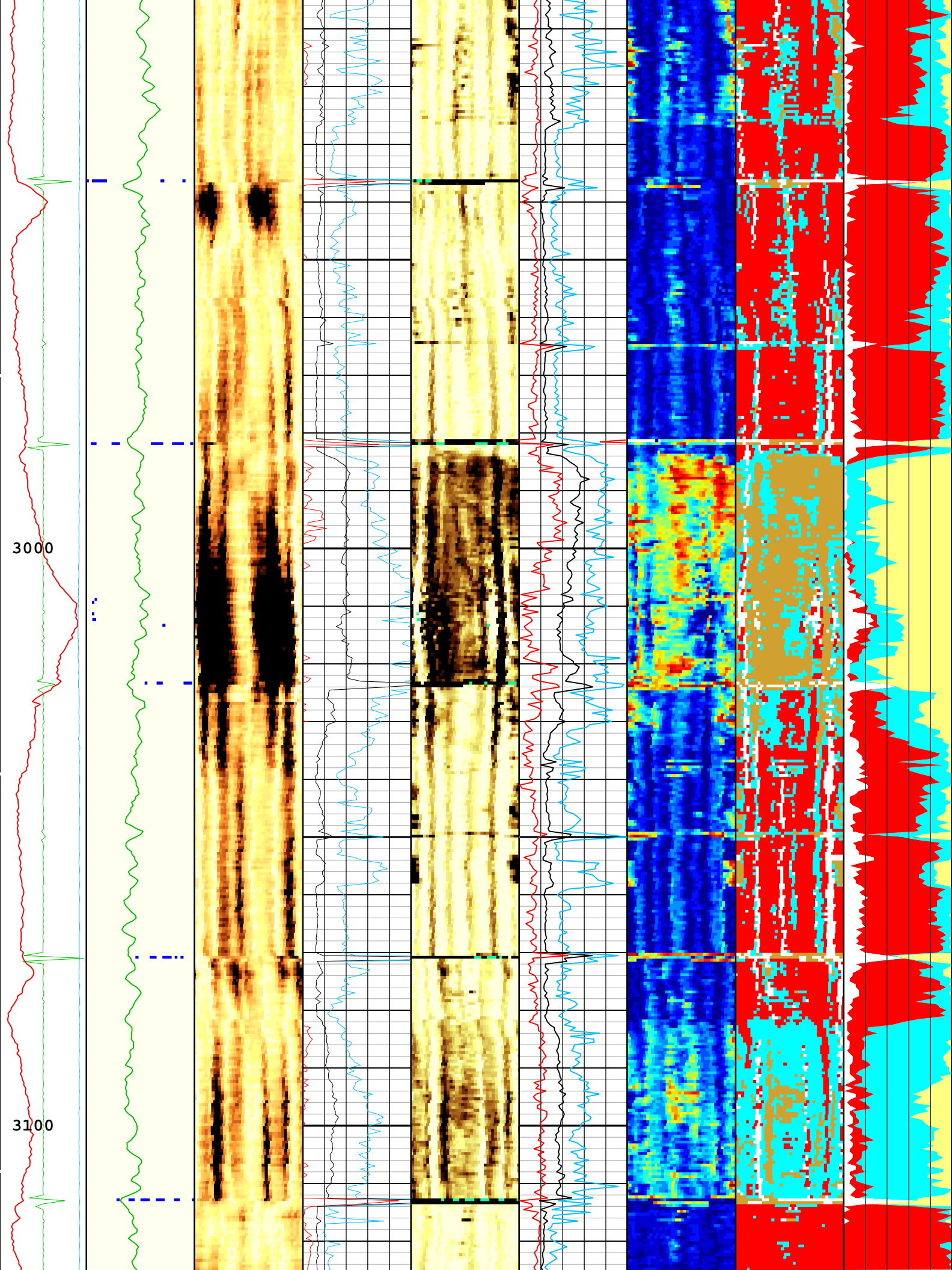


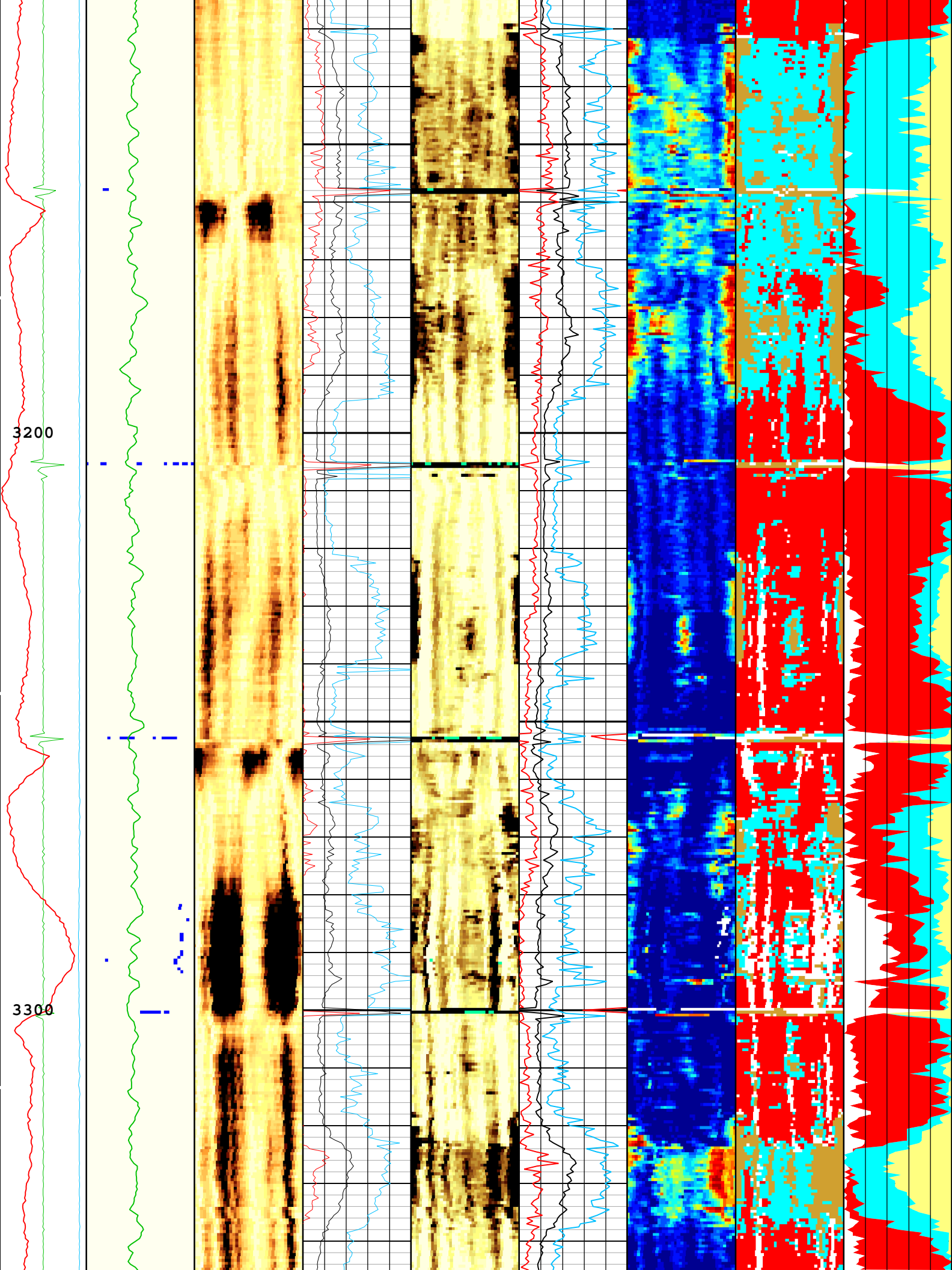




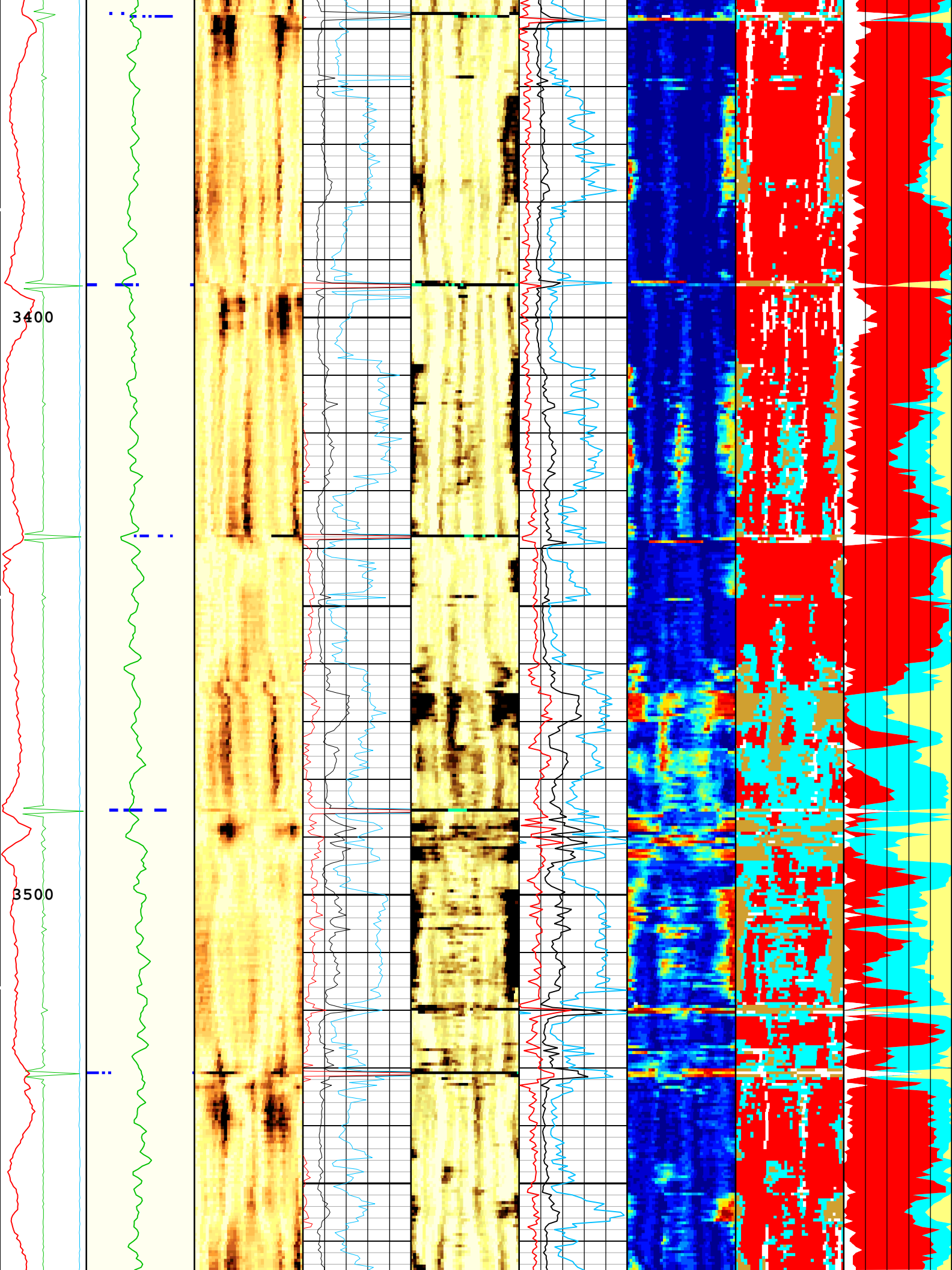


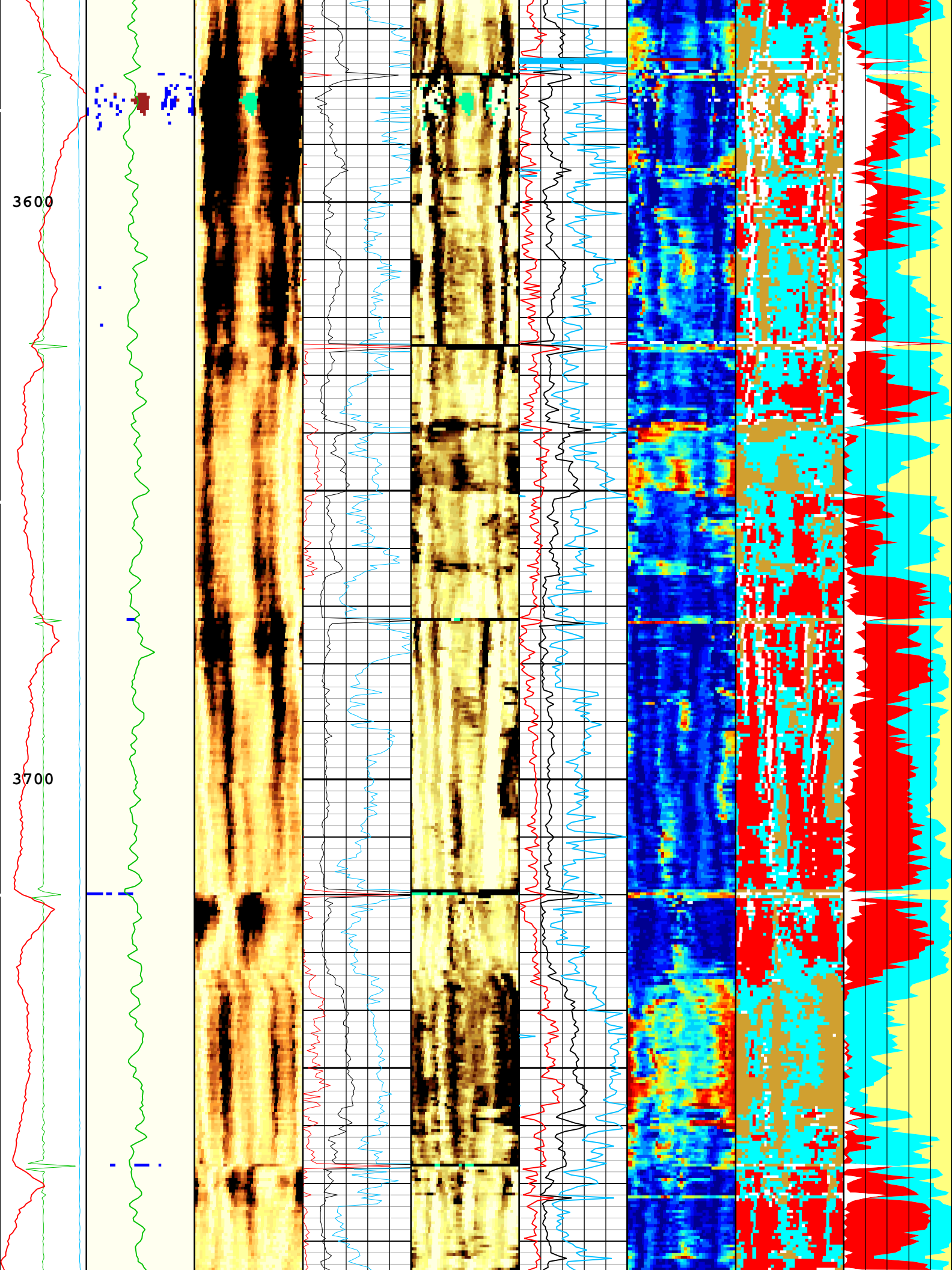


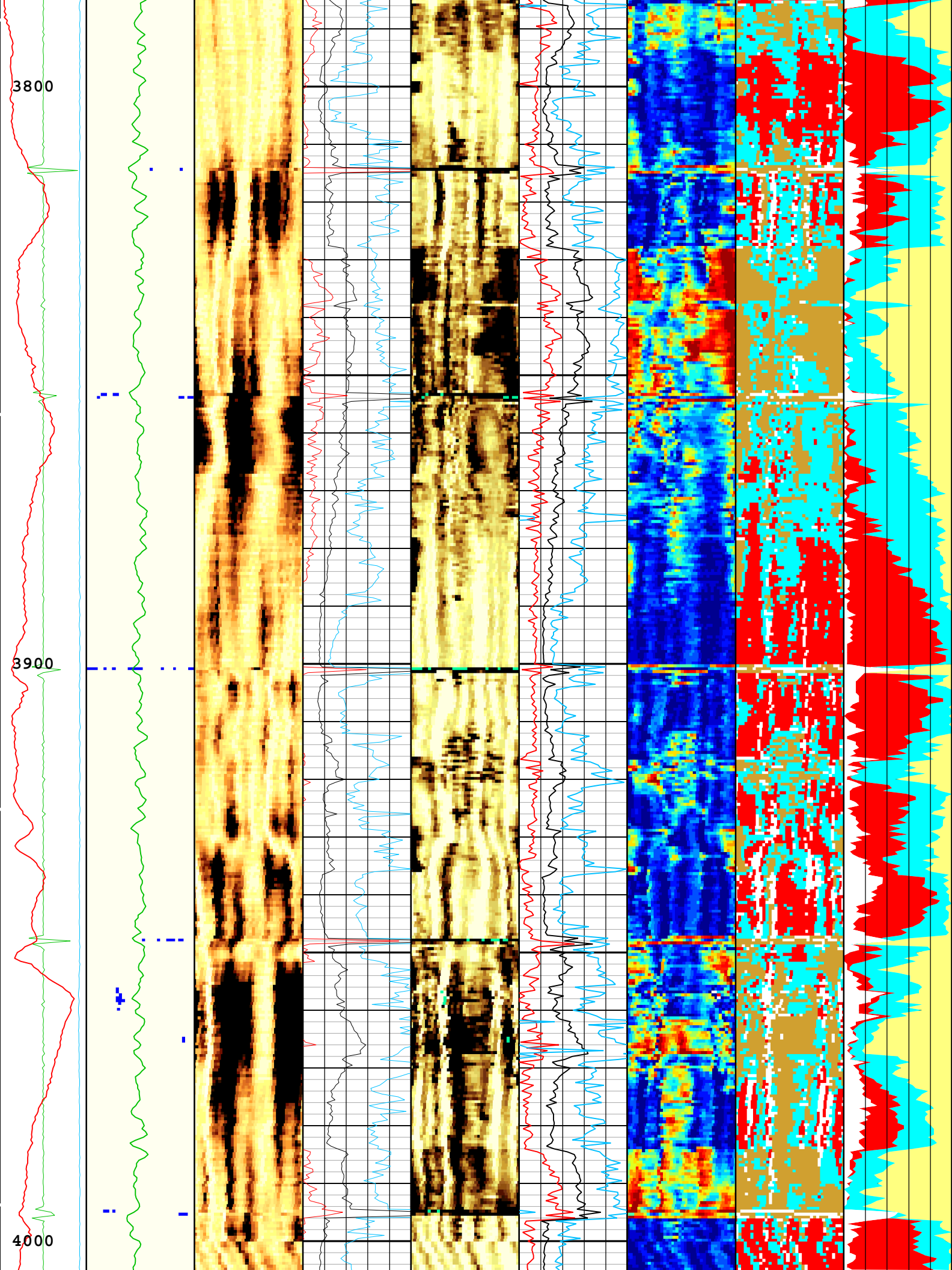


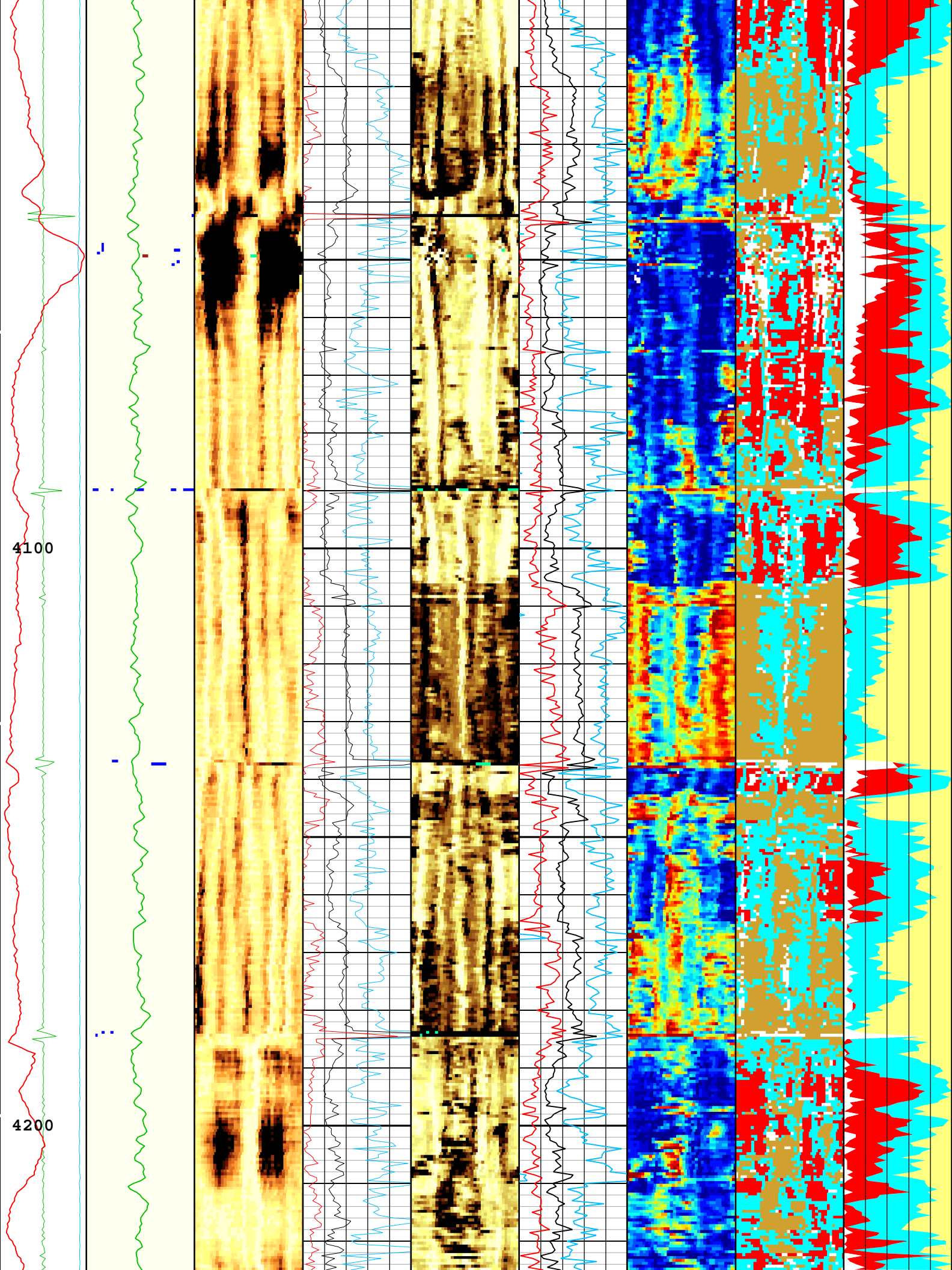




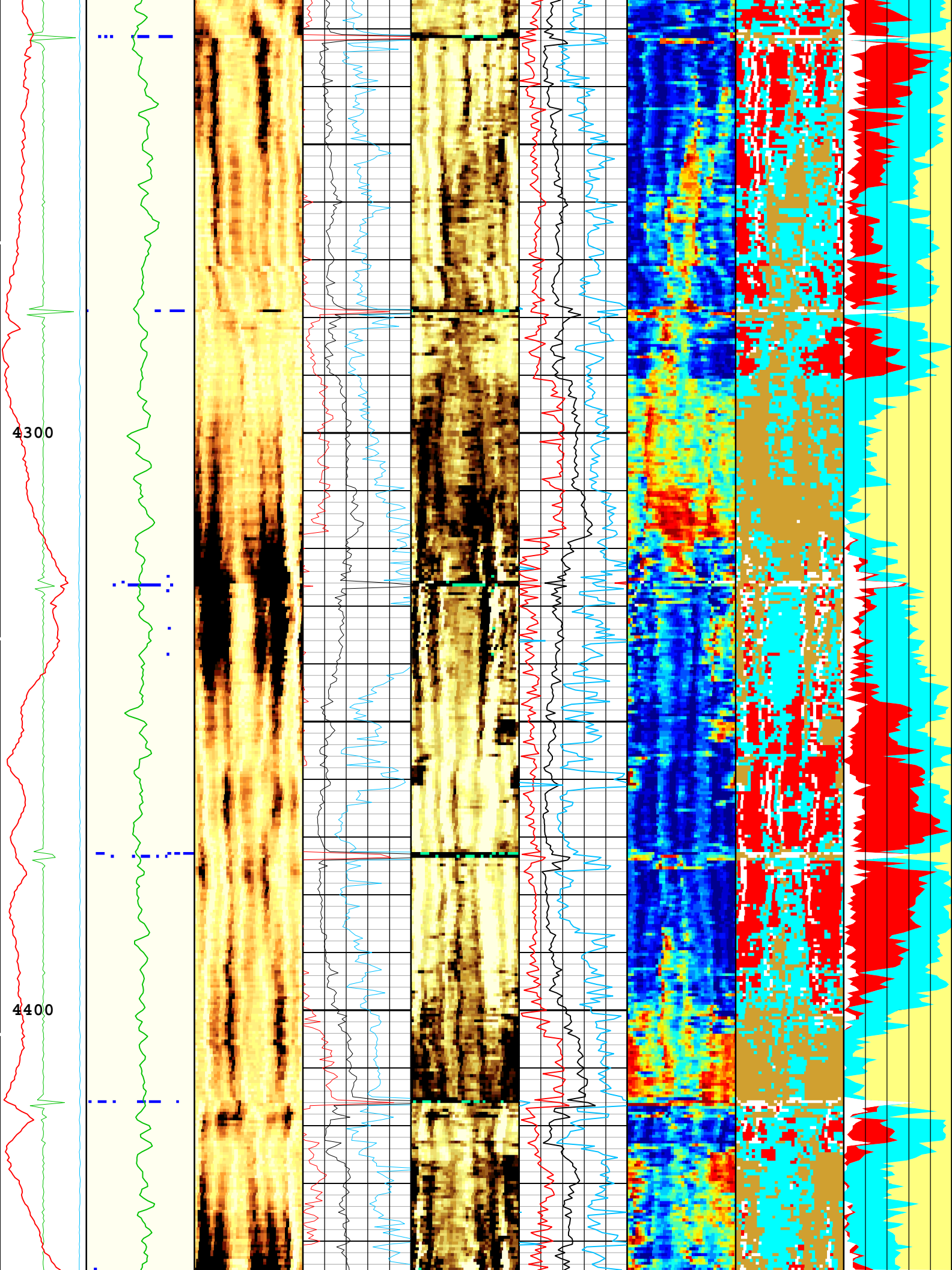


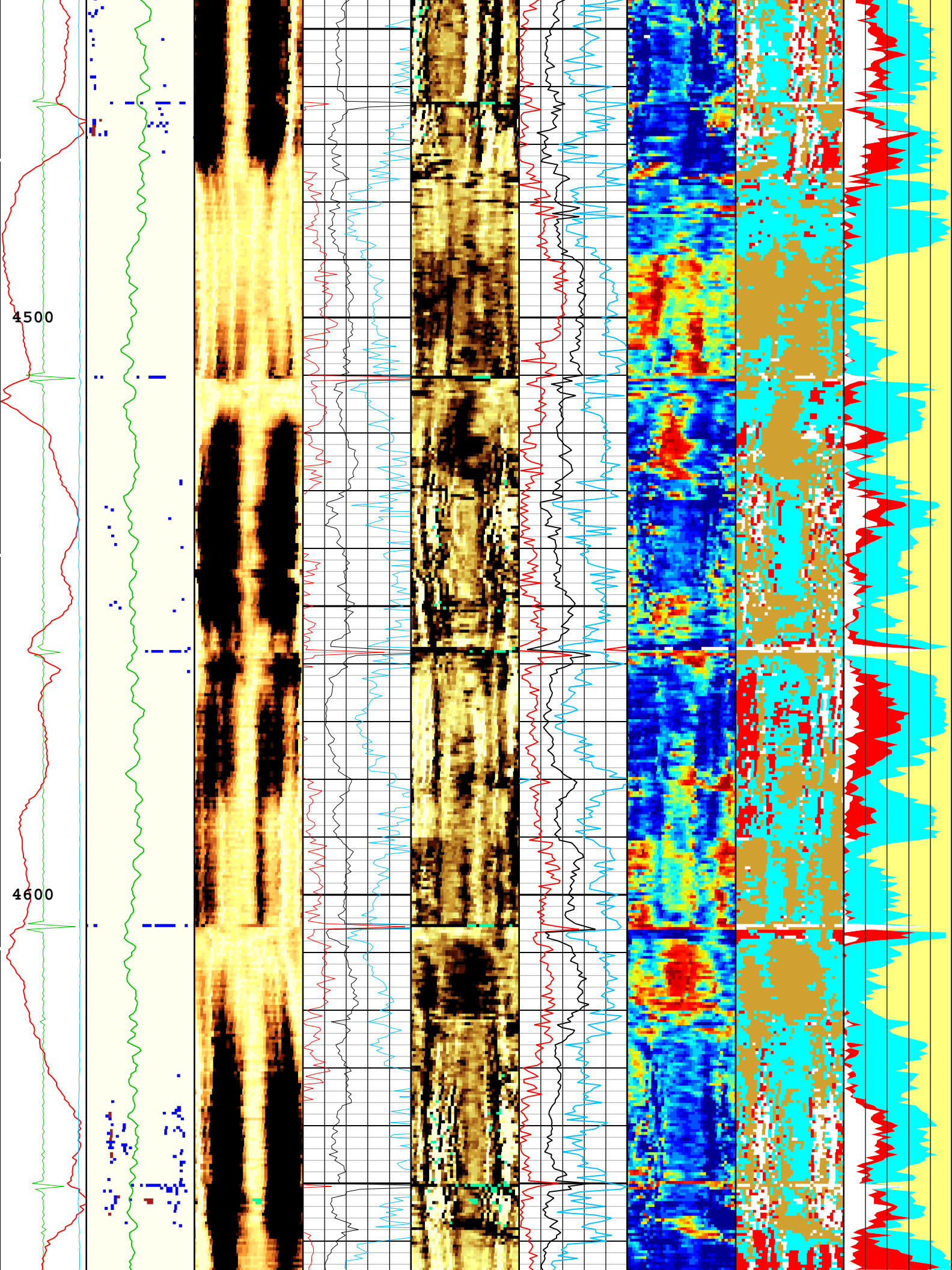


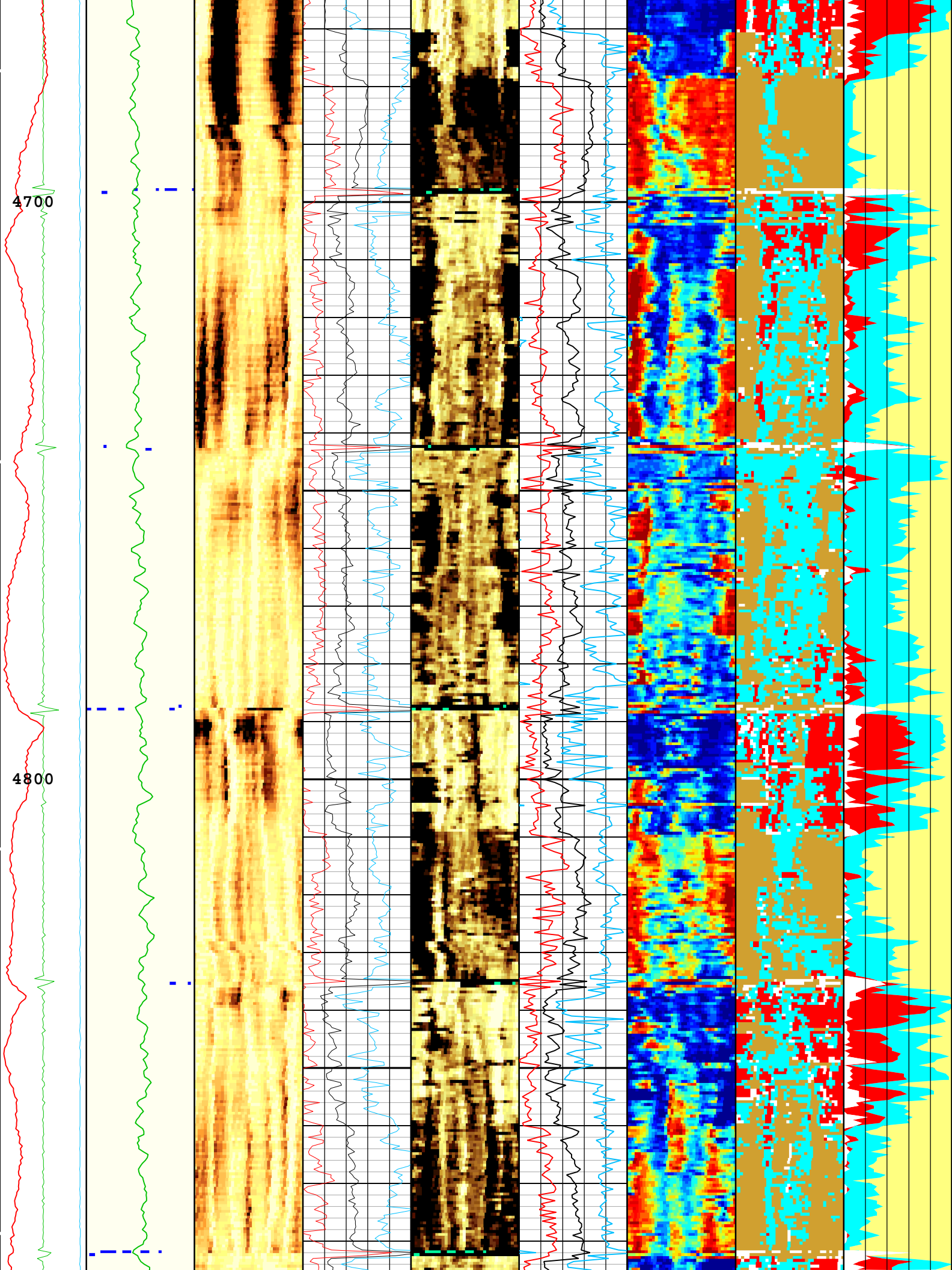


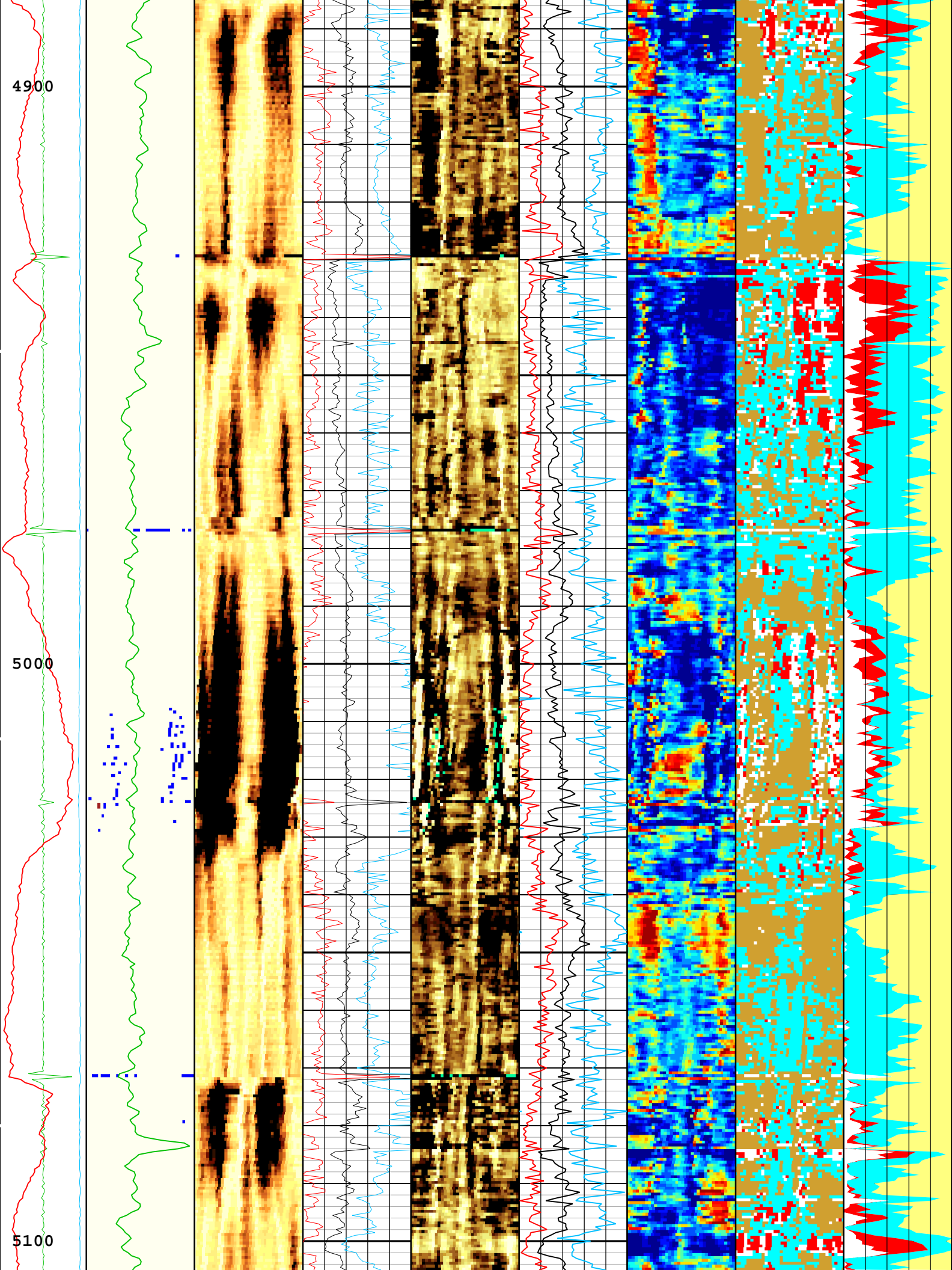




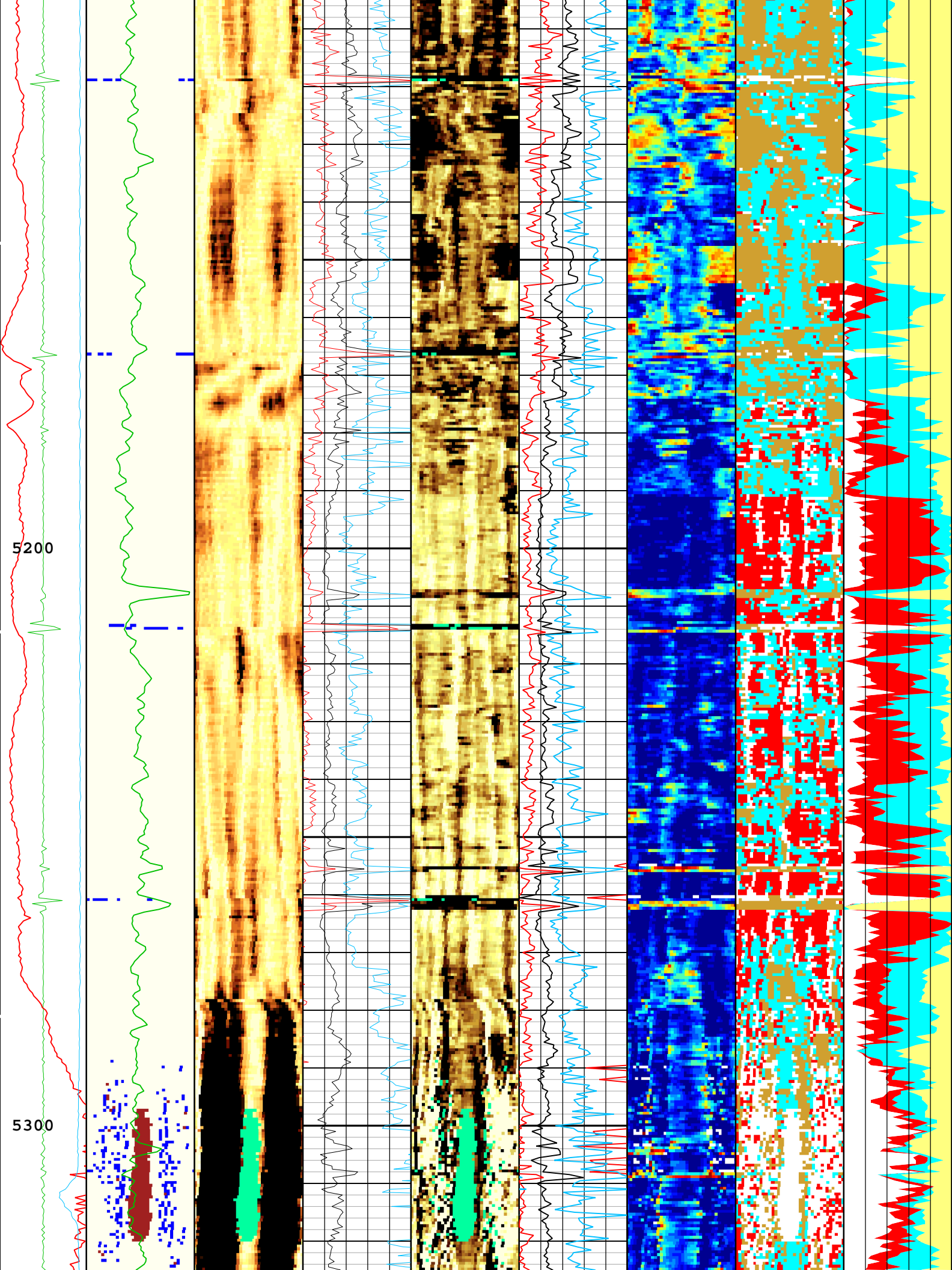


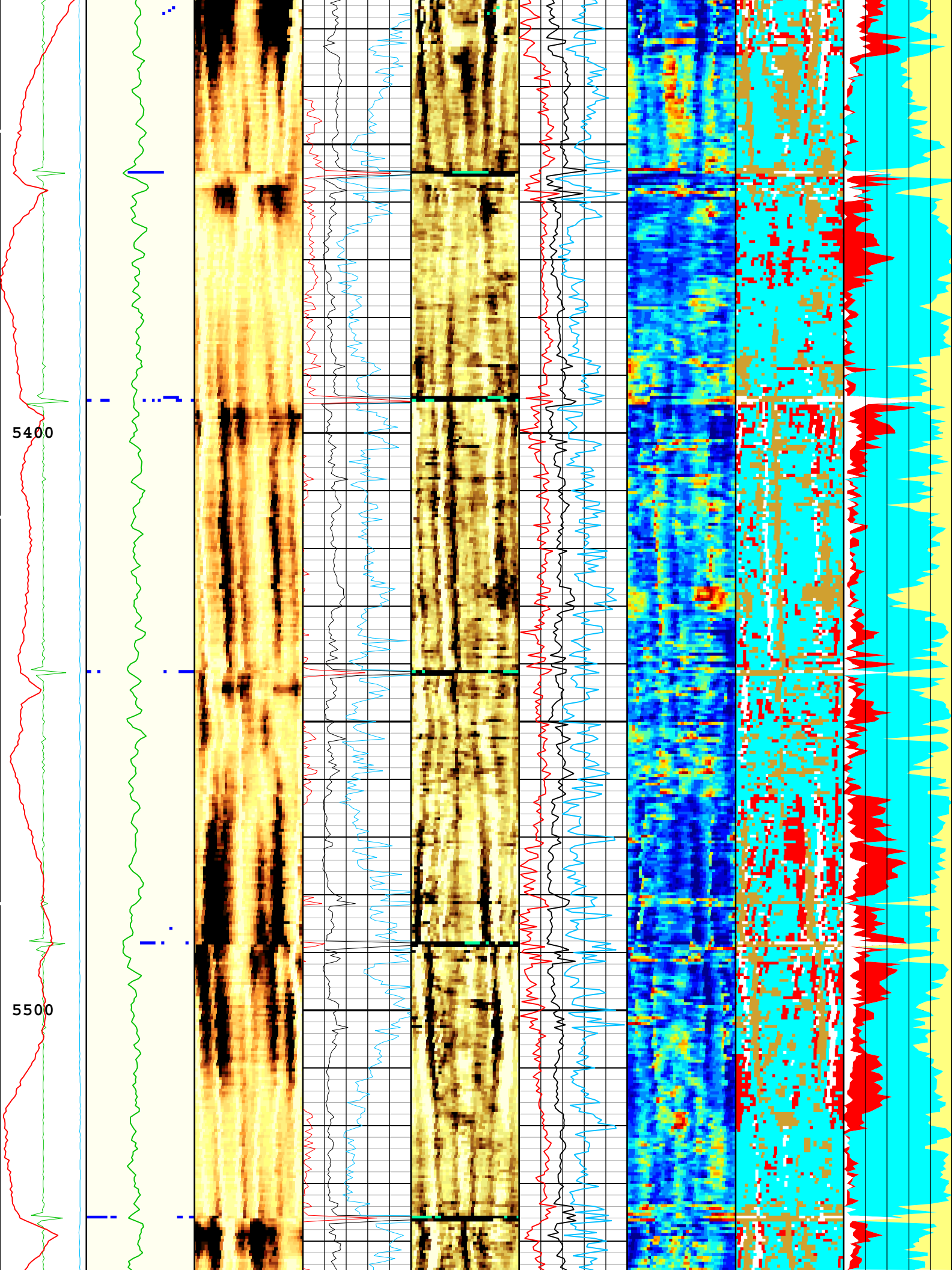


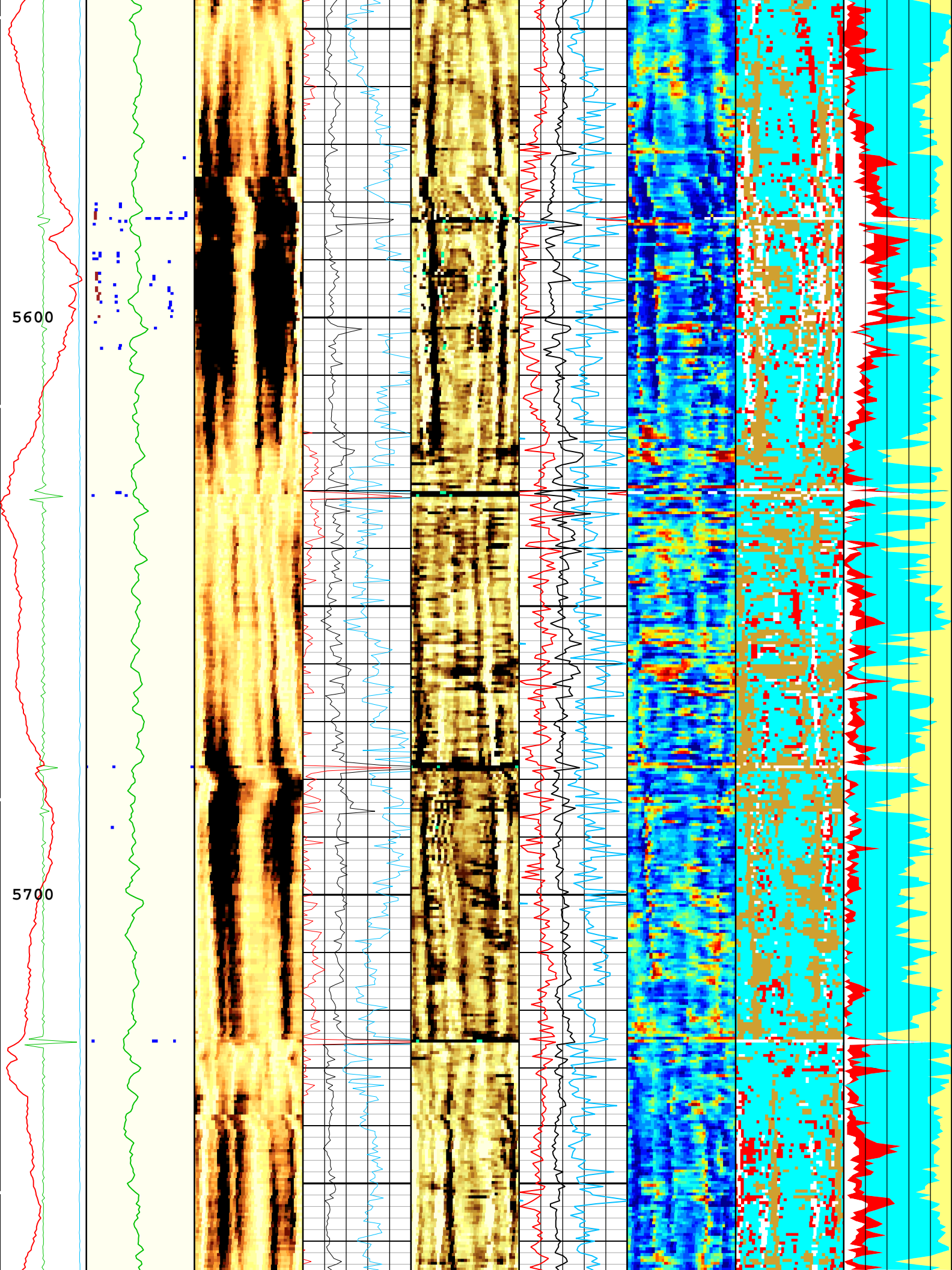


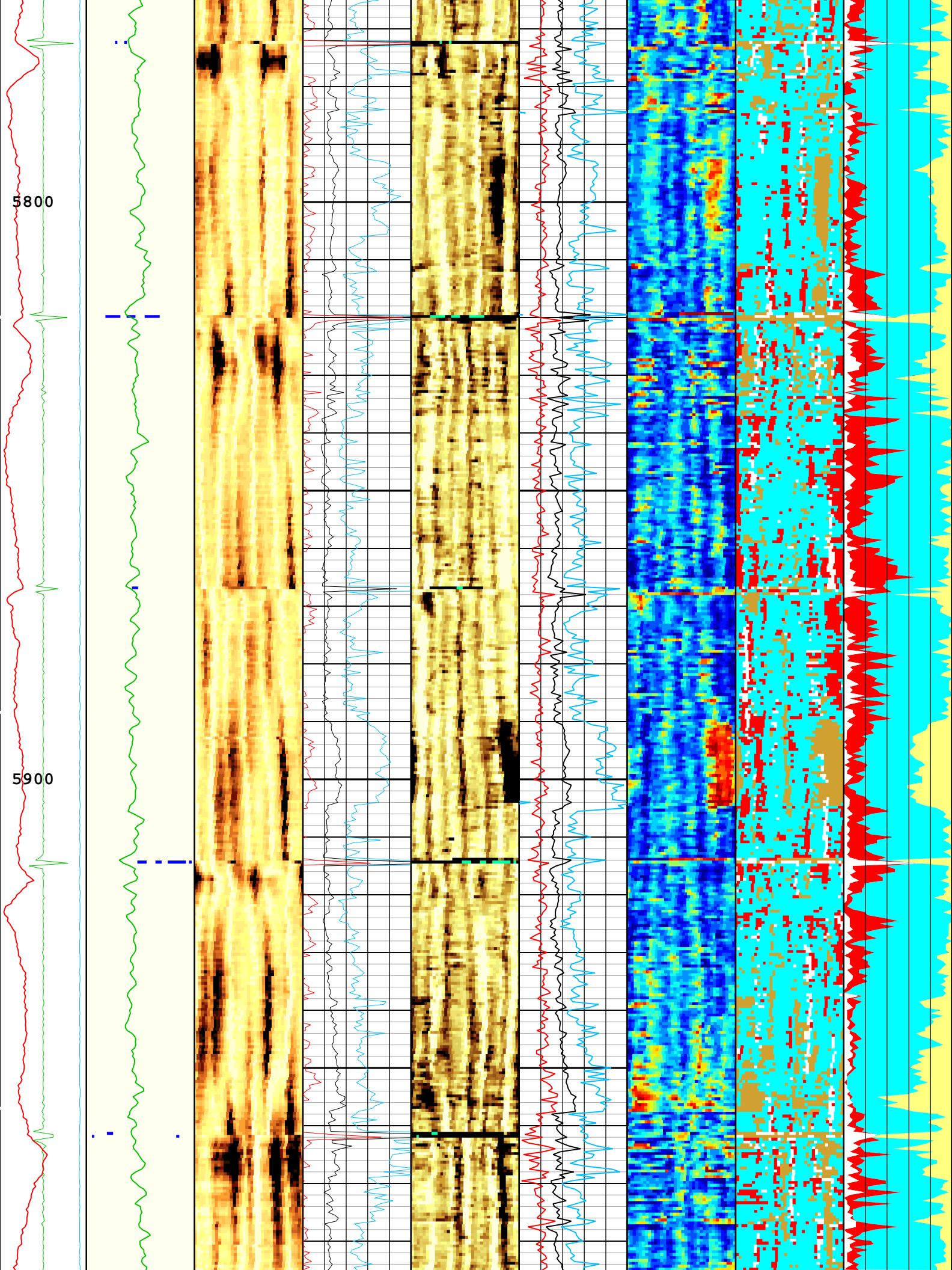




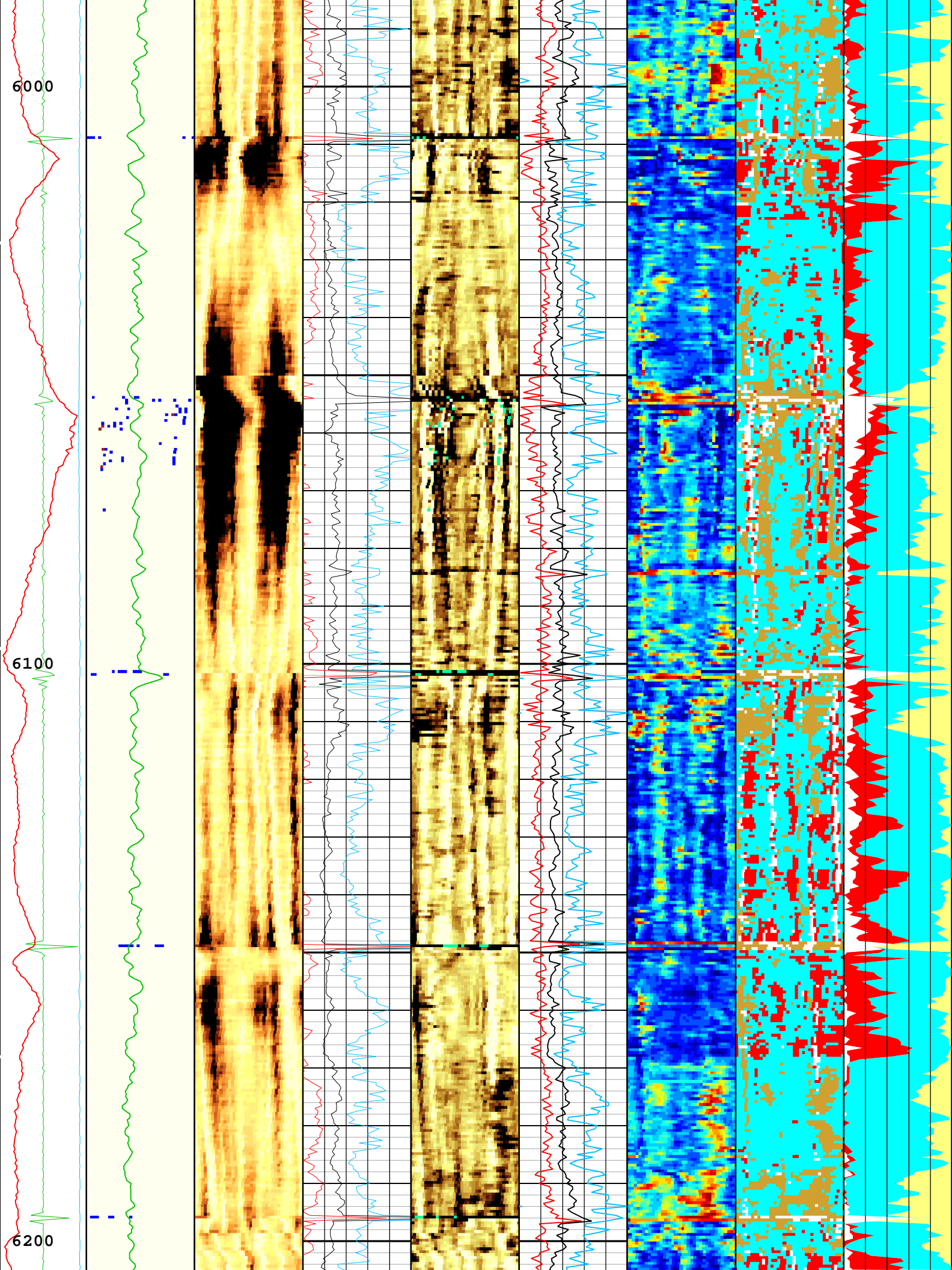


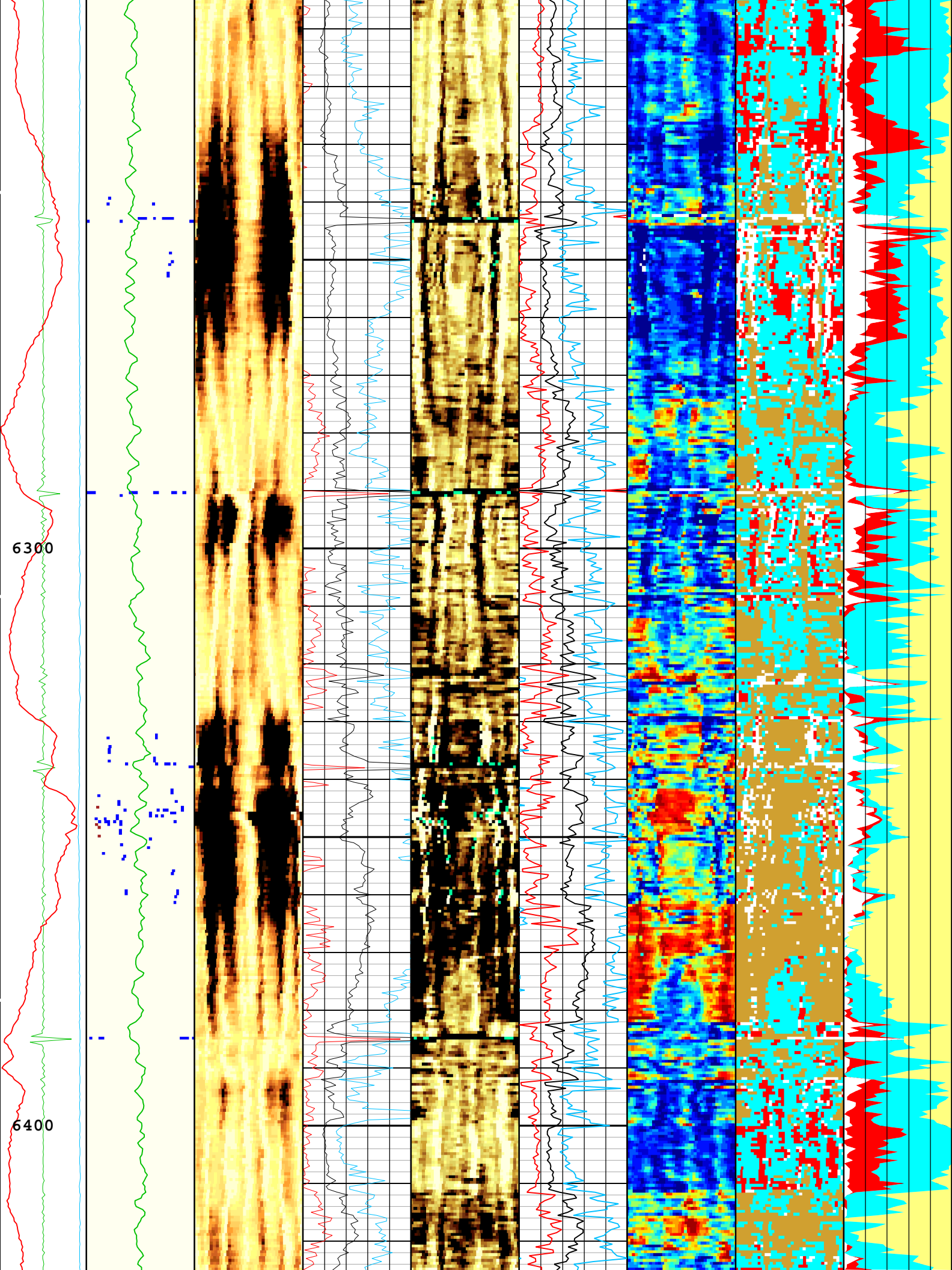


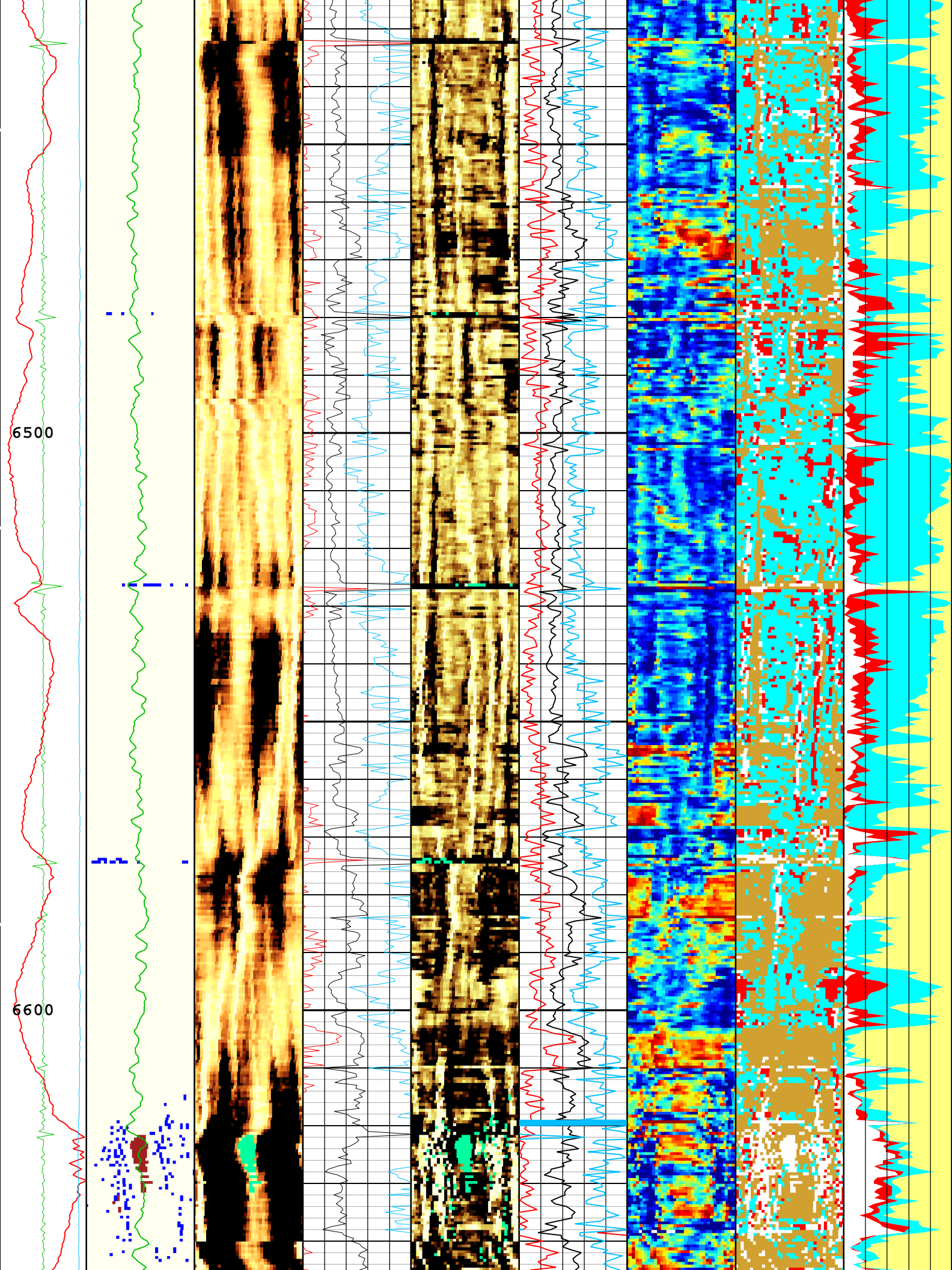


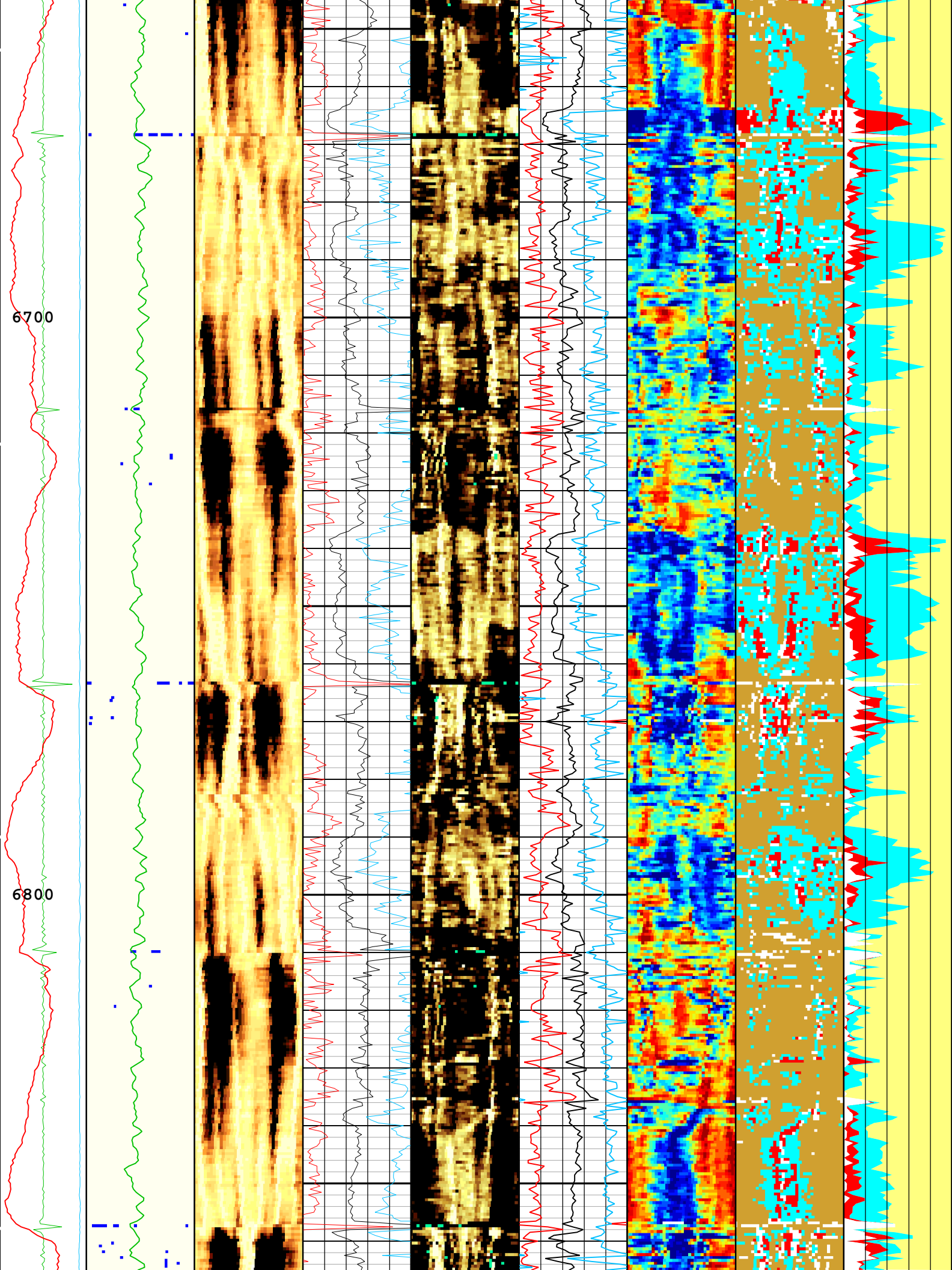




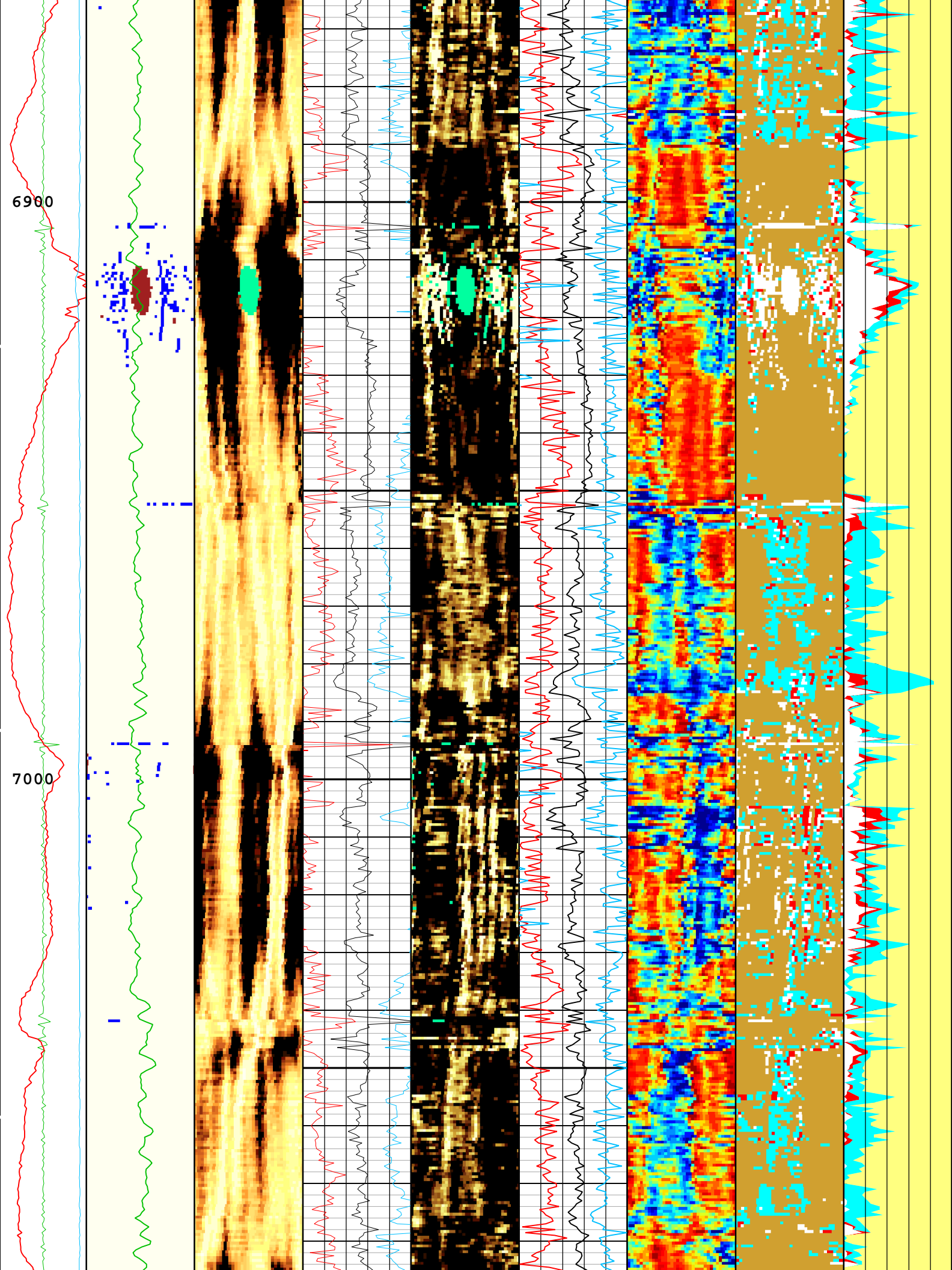


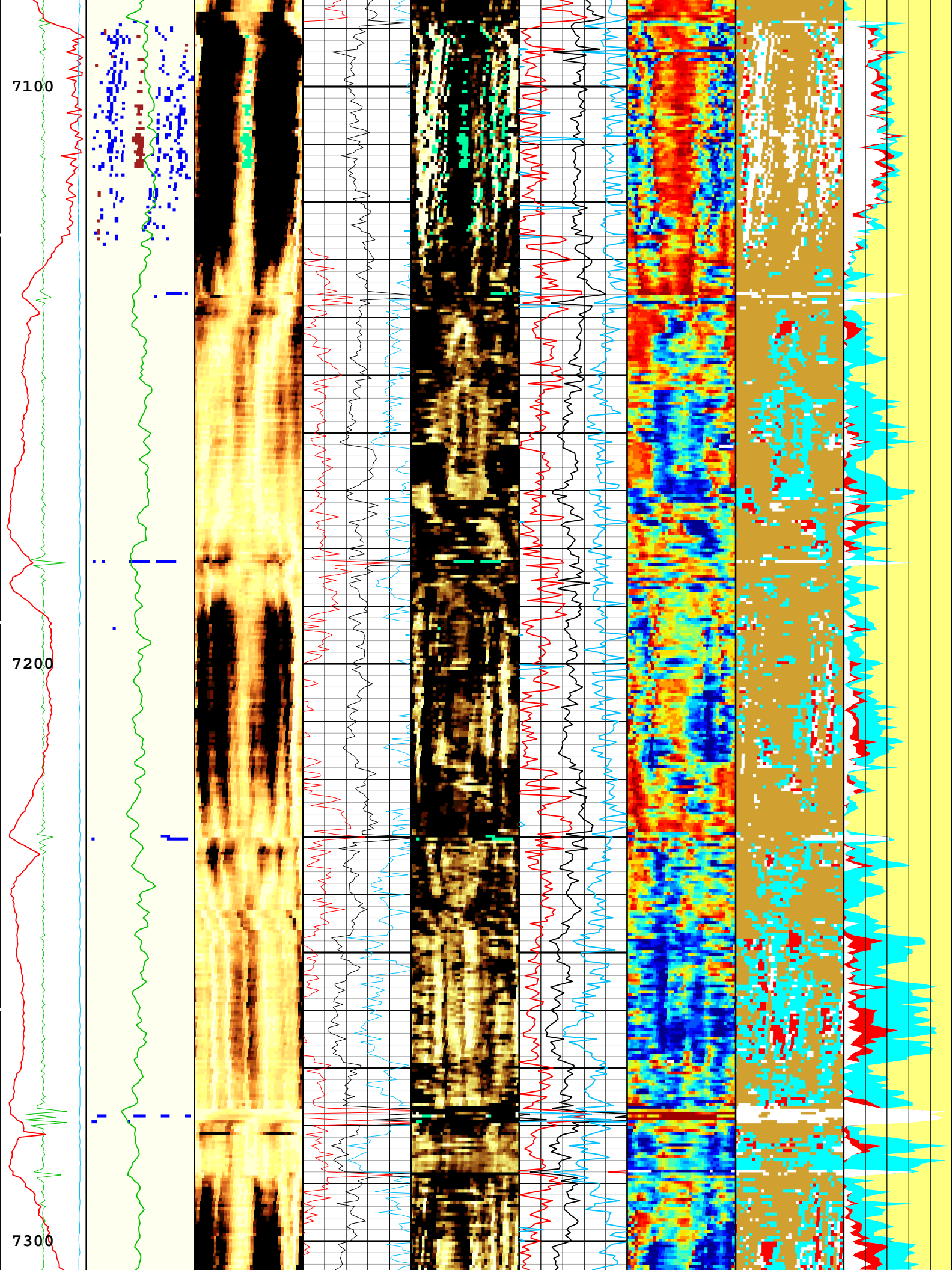


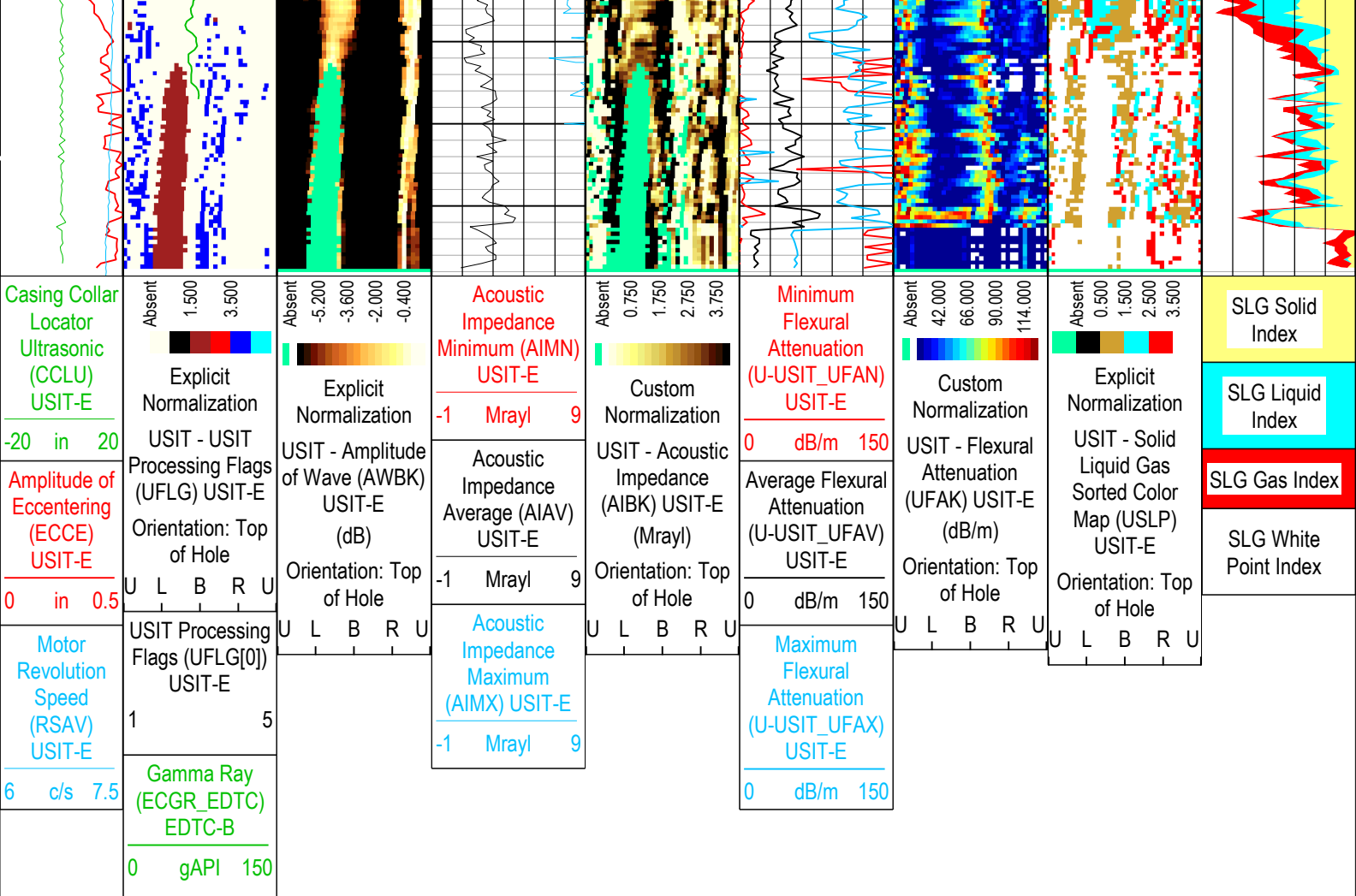

















USIT Processing Flags (UFLG[0]) USIT-E				
1 - UFLG 1 Value within [0.0 - 1.5] - :		UTIM Error		
2 - UFLG 2 Value within [1.5 - 2.5] - :		Pulse Origin Not Detected		
3 - UFLG 3 Value within [2.5 - 3.5] - :		WINLEN Error		
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :		Casing Thickness Error		
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: 21-Sep-2018 17:01:47				

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	15558	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	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
ED	Fluoride Ion	USIT-E	0.4	lbm/gal

FDI	Fluid Density	USIT-E	8.4	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	-1.62	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	1.18	
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	1.65	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-10.51	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	60	2231	
BS	8.5	2231	7338.5	
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	Time Zoned	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	80	21-Sep-2018 14:16:15	21-Sep-2018 14:19:04	7339.2	7187.24
EMXV	90	21-Sep-2018 14:19:04	21-Sep-2018 14:21:43	7187.24	7009.77
EMXV	100	21-Sep-2018 14:21:43	21-Sep-2018 15:14:11	7009.77	3435.42
EMXV	80	21-Sep-2018 15:14:11	21-Sep-2018 16:05:06	3435.42	59.43
WINE	71.88	21-Sep-2018 14:16:15	21-Sep-2018 14:23:19	7339.2	6902.71
WINE	74.95	21-Sep-2018 14:23:19	21-Sep-2018 14:27:29	6902.71	6620.58
WINE	81.09	21-Sep-2018 14:27:29	21-Sep-2018 14:27:35	6620.58	6613.4
WINE	73.41	21-Sep-2018 14:27:35	21-Sep-2018 15:12:06	6613.4	3576.58
WINE	78.02	21-Sep-2018 15:12:06	21-Sep-2018 15:12:18	3576.58	3563.39
WINE	72.64	21-Sep-2018 15:12:18	21-Sep-2018 15:48:17	3563.39	1068.68
WINE	75.71	21-Sep-2018 15:48:17	21-Sep-2018 16:05:06	1068.68	59.43
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[4]:Up	Up	59.43 ft	7339.20 ft	21-Sep-2018 2:16:15 PM	21-Sep-2018 4:05:06 PM	ON	9.86 ft	Yes

All depths are referenced to toolstring zero									
--	--	--	--	--	--	--	--	--	--



Log	Company:Crestone Peak Resources Operating LLC	Well:Davis 1L-9H-G266
	ONE: Log[4]:Up:S005	

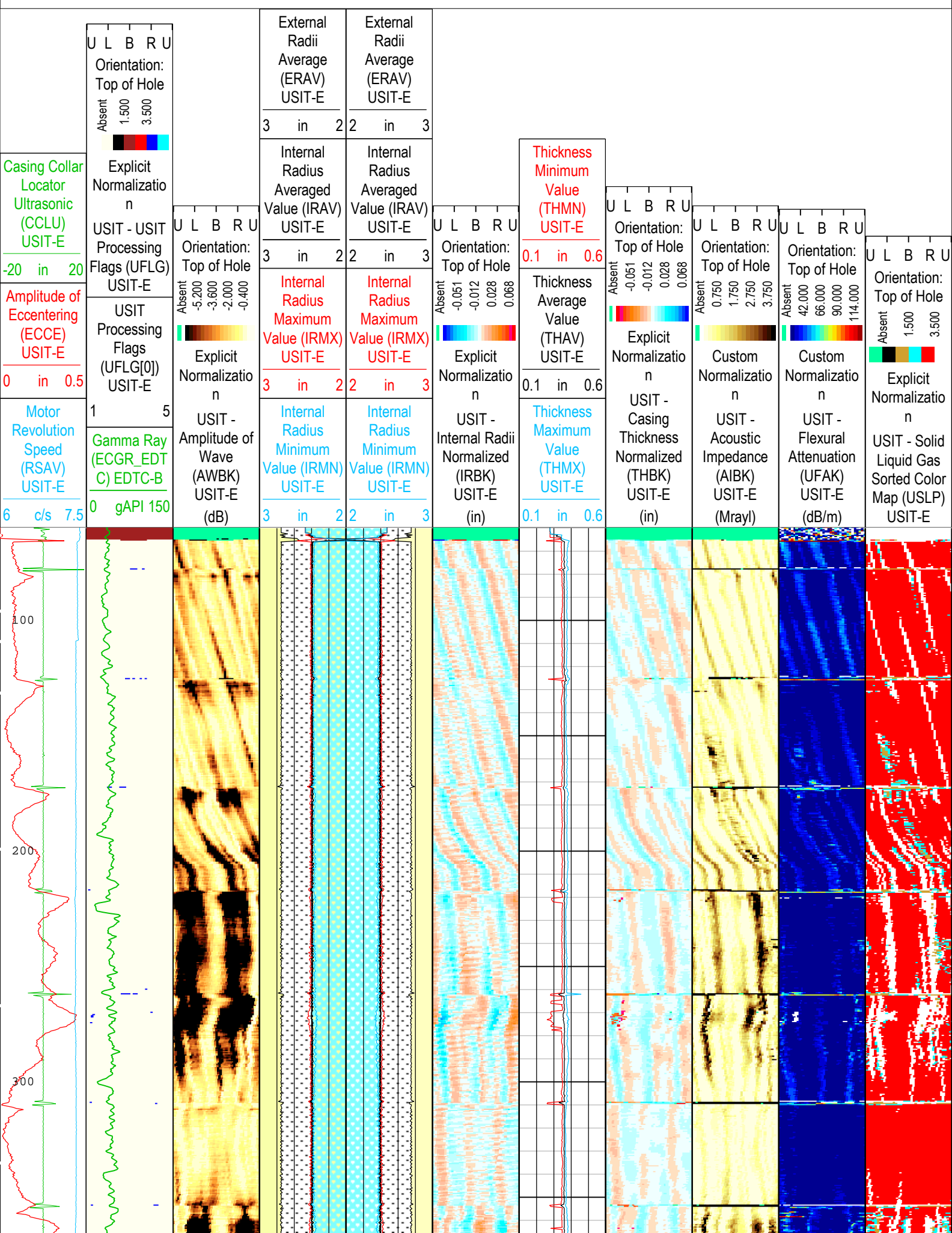
Description: USI IBC SLG Composite	Format: Log ( IBC SLG Composite )	Index Scale: 2 in per 100 ft	Index Unit: ft	Index Type: Measured Depth
Creation Date: 21-Sep-2018 17:02:59				

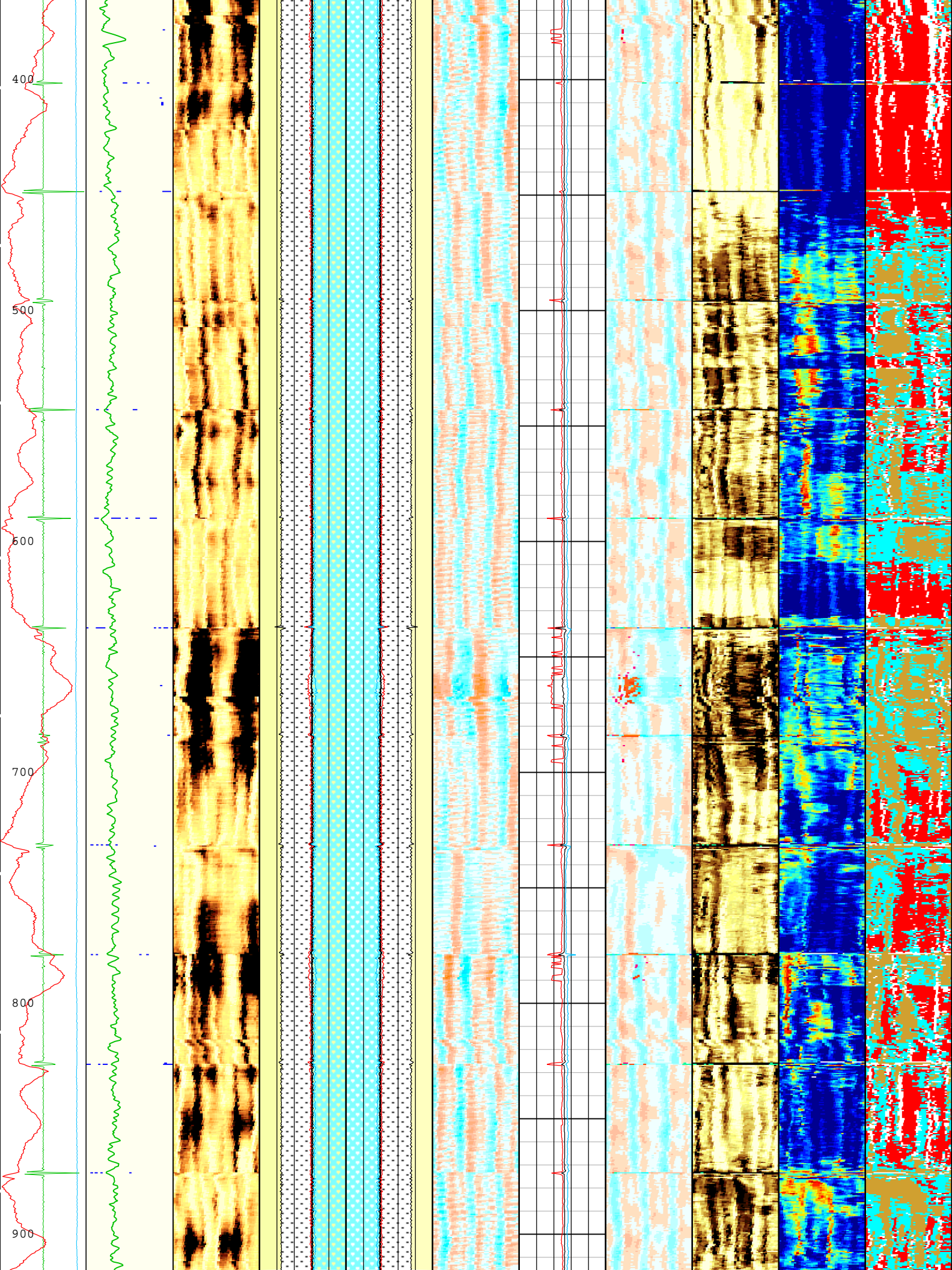
TIME_1900 - Time Marked every 60.00 (s)
---

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		

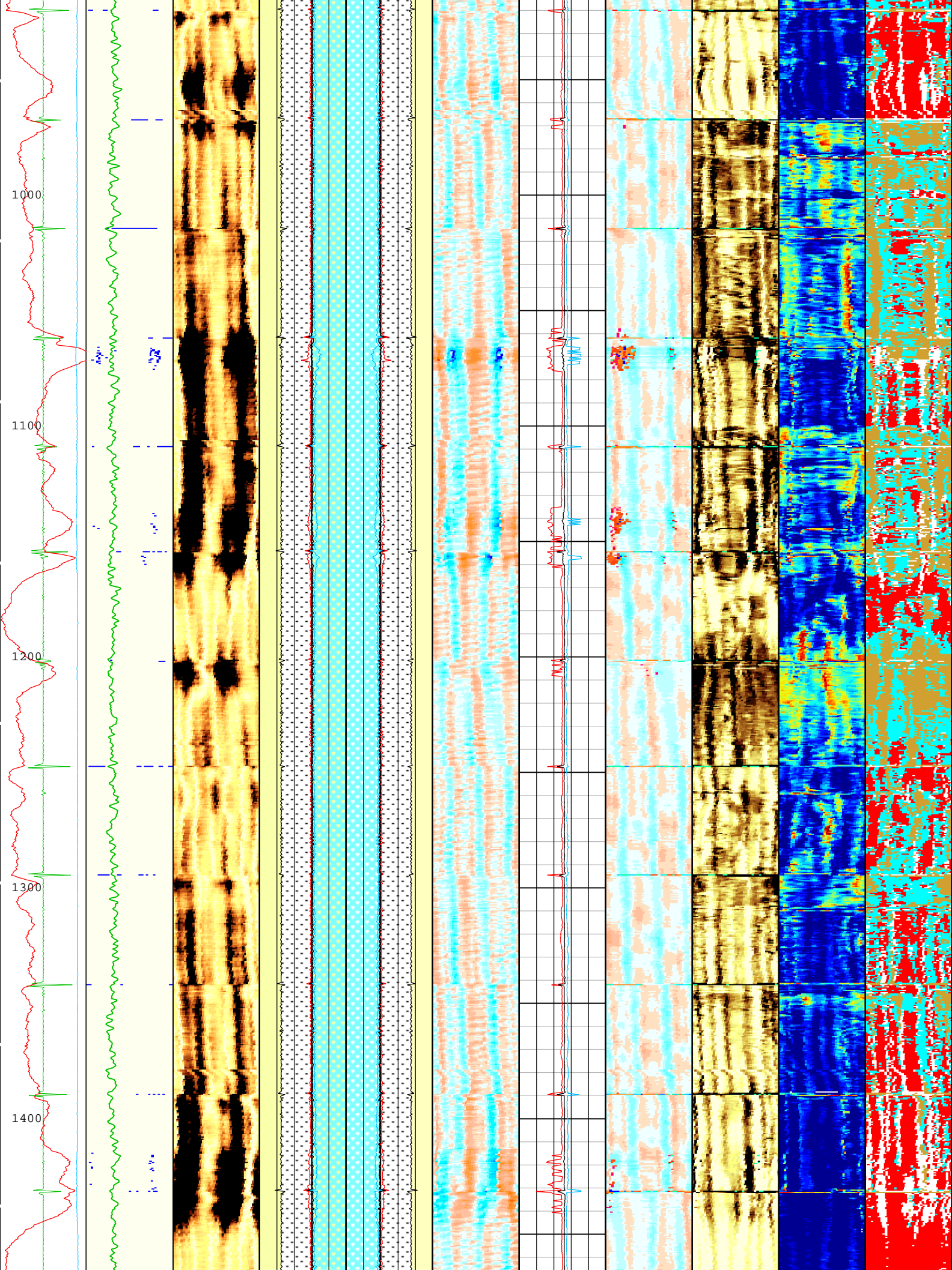


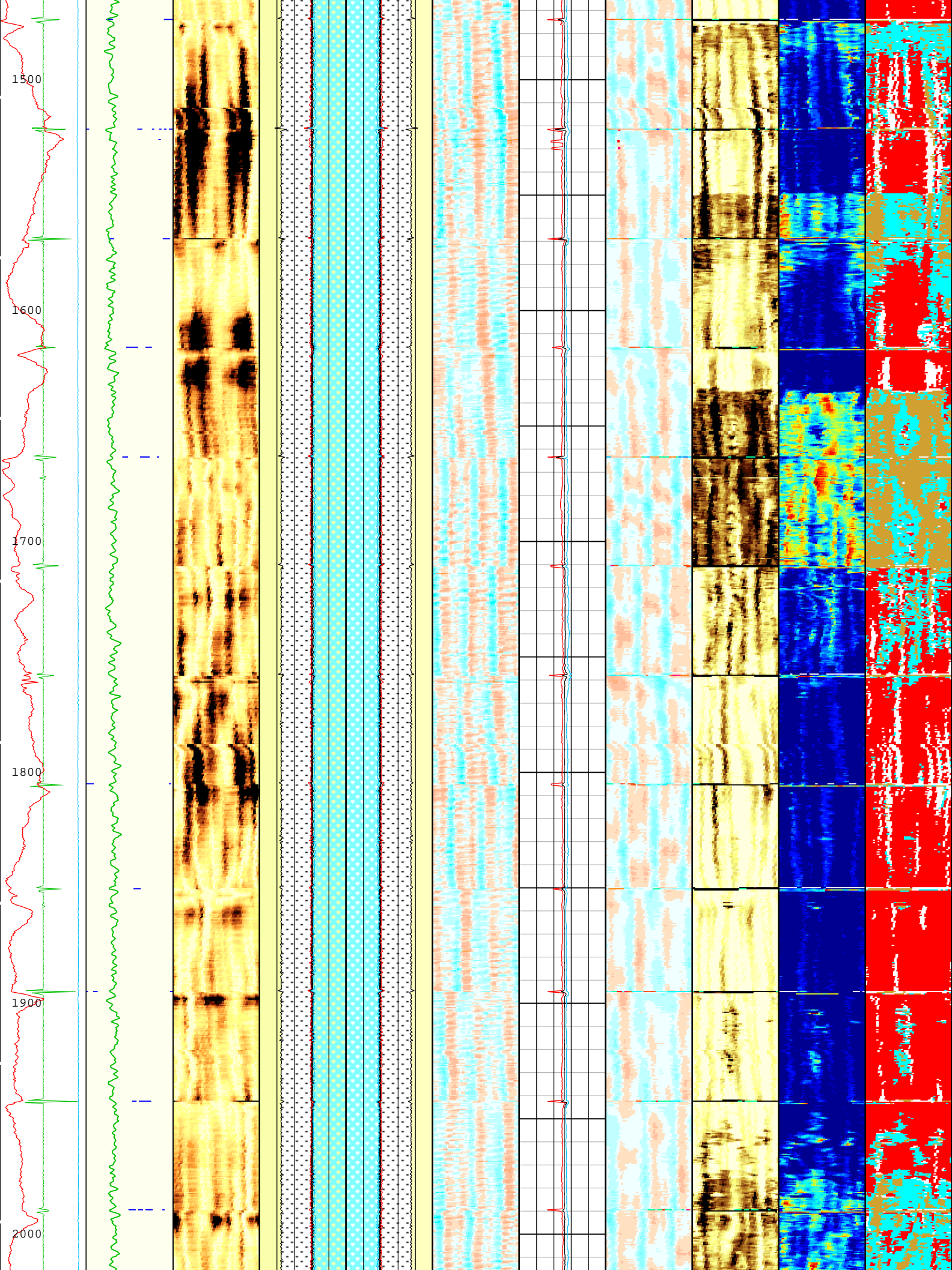
4 - UFLG 4	UFLG 5	UFLG 6	Value within [5.5 - 6.5] :-		Casing Thickness Error
5 - UFLG 7	UFLG 8	UFLG 9	Value within [6.5 - 10] :-		Loop Processing Error



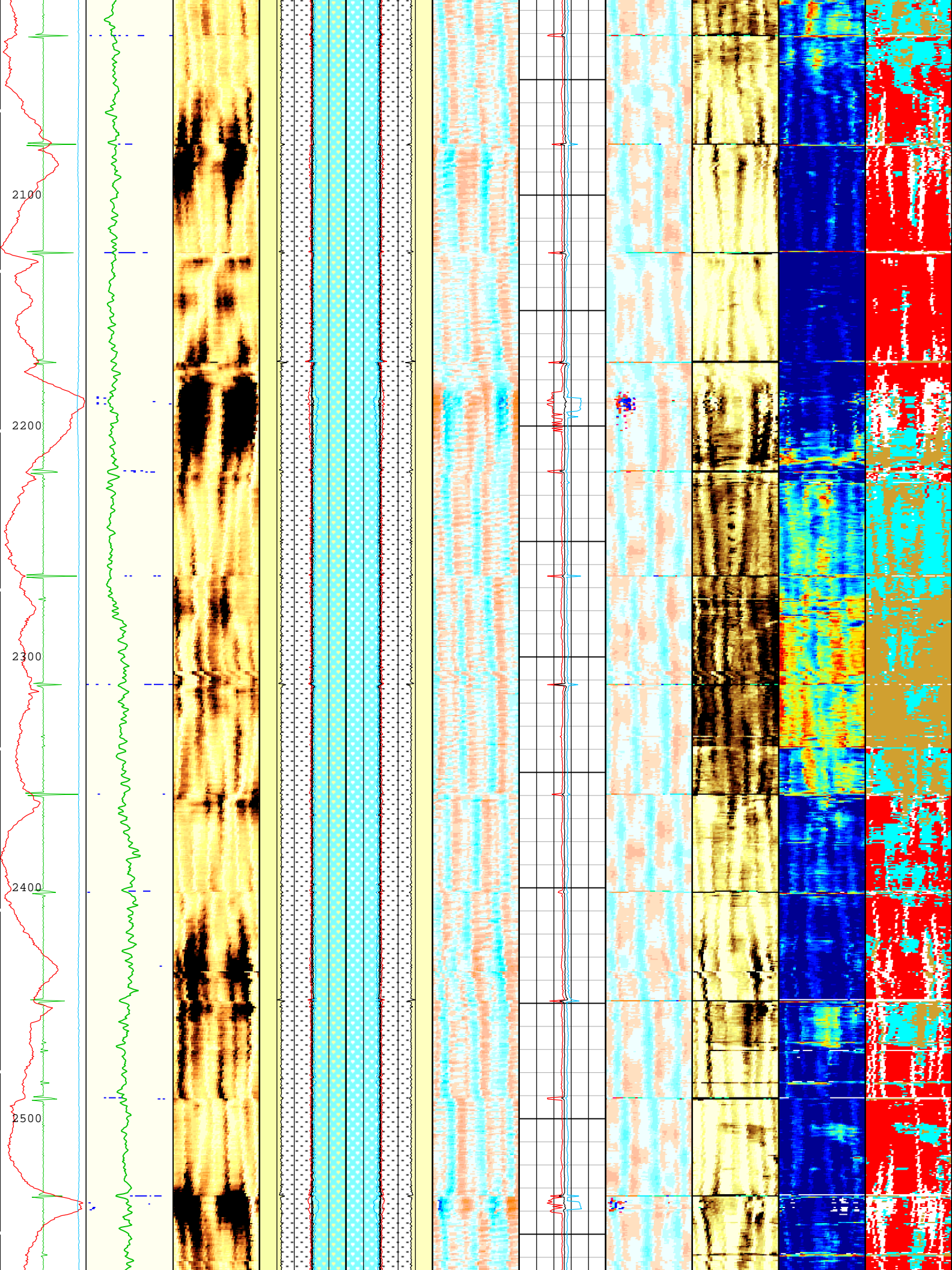


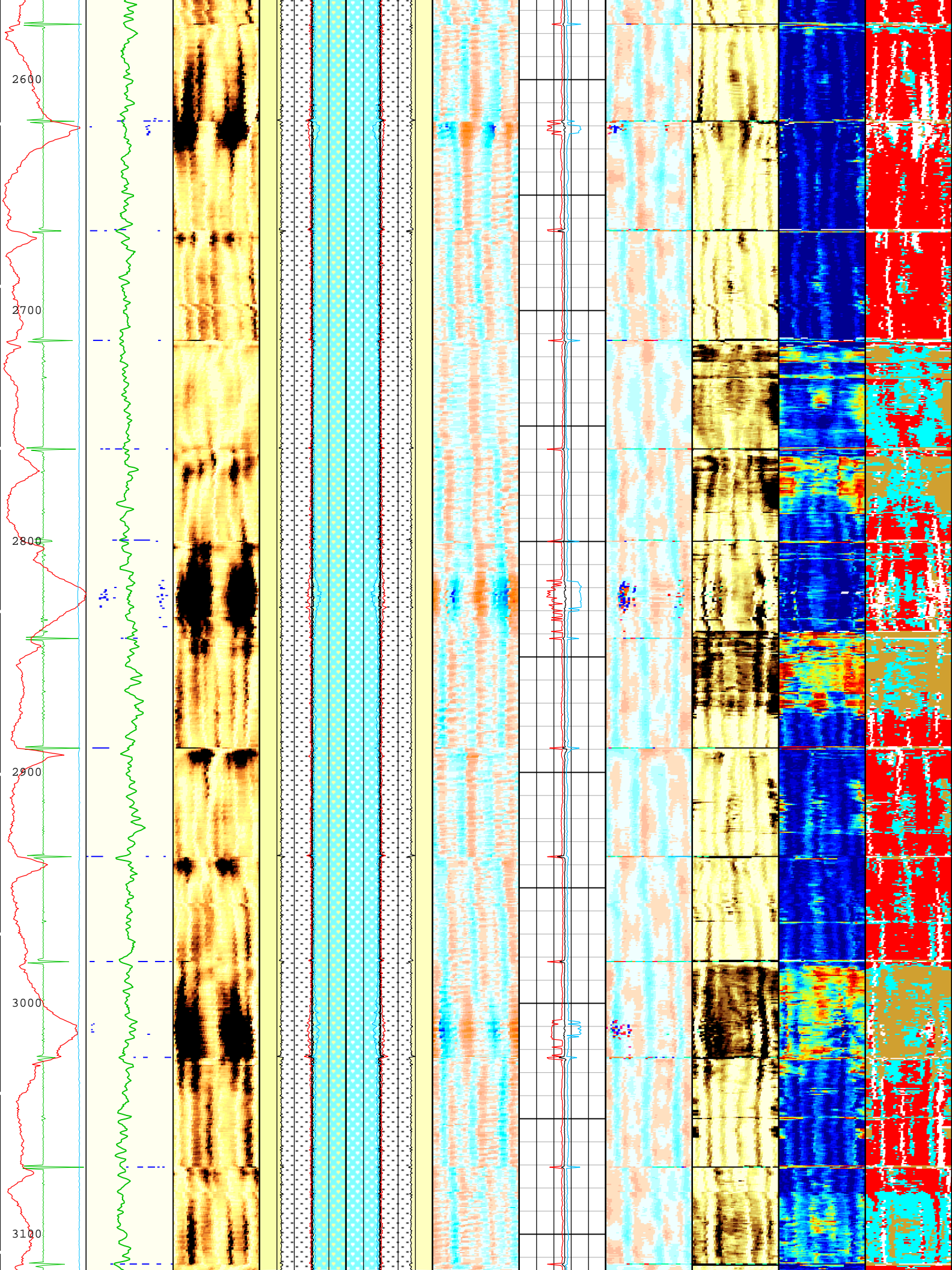




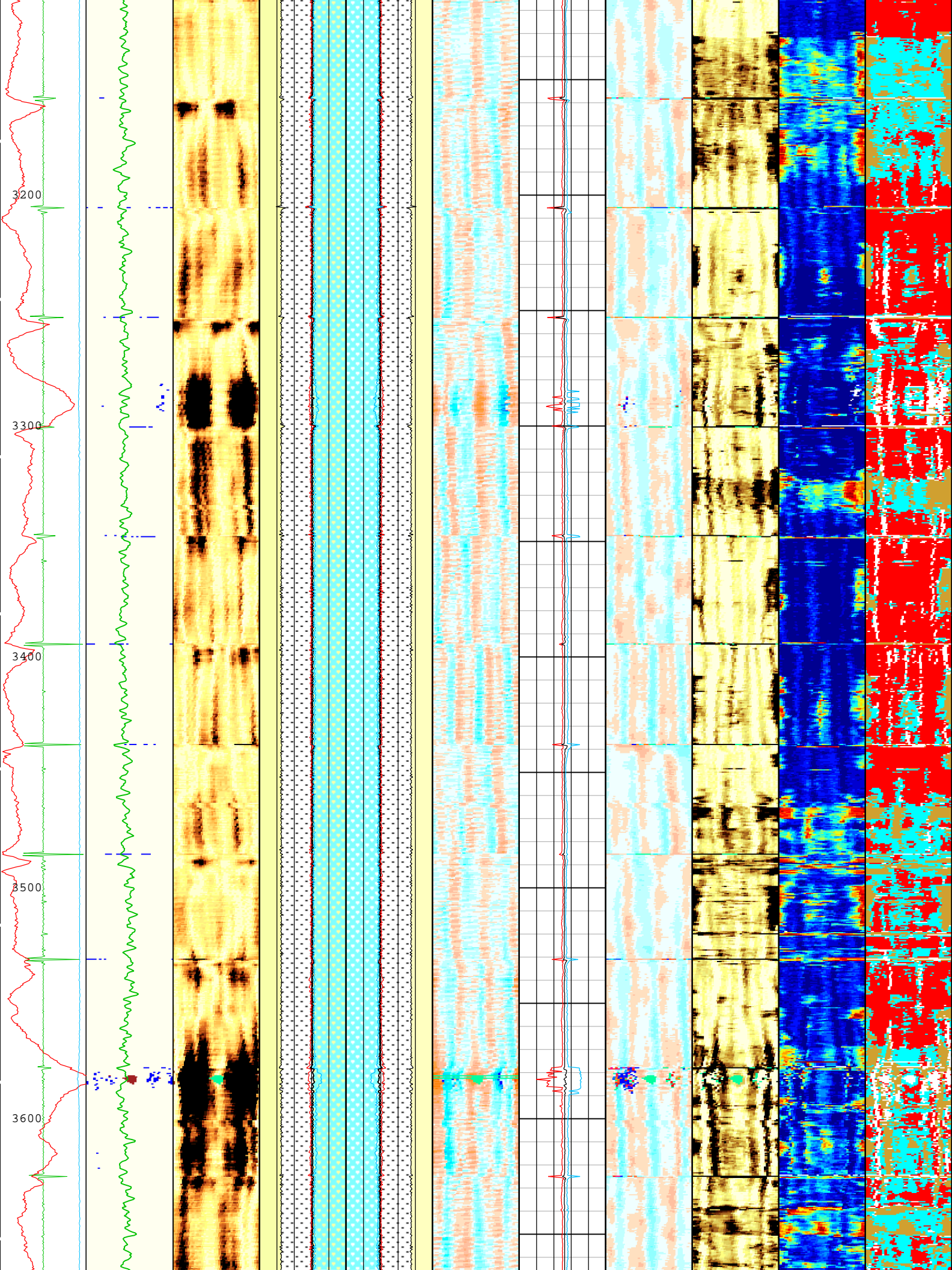


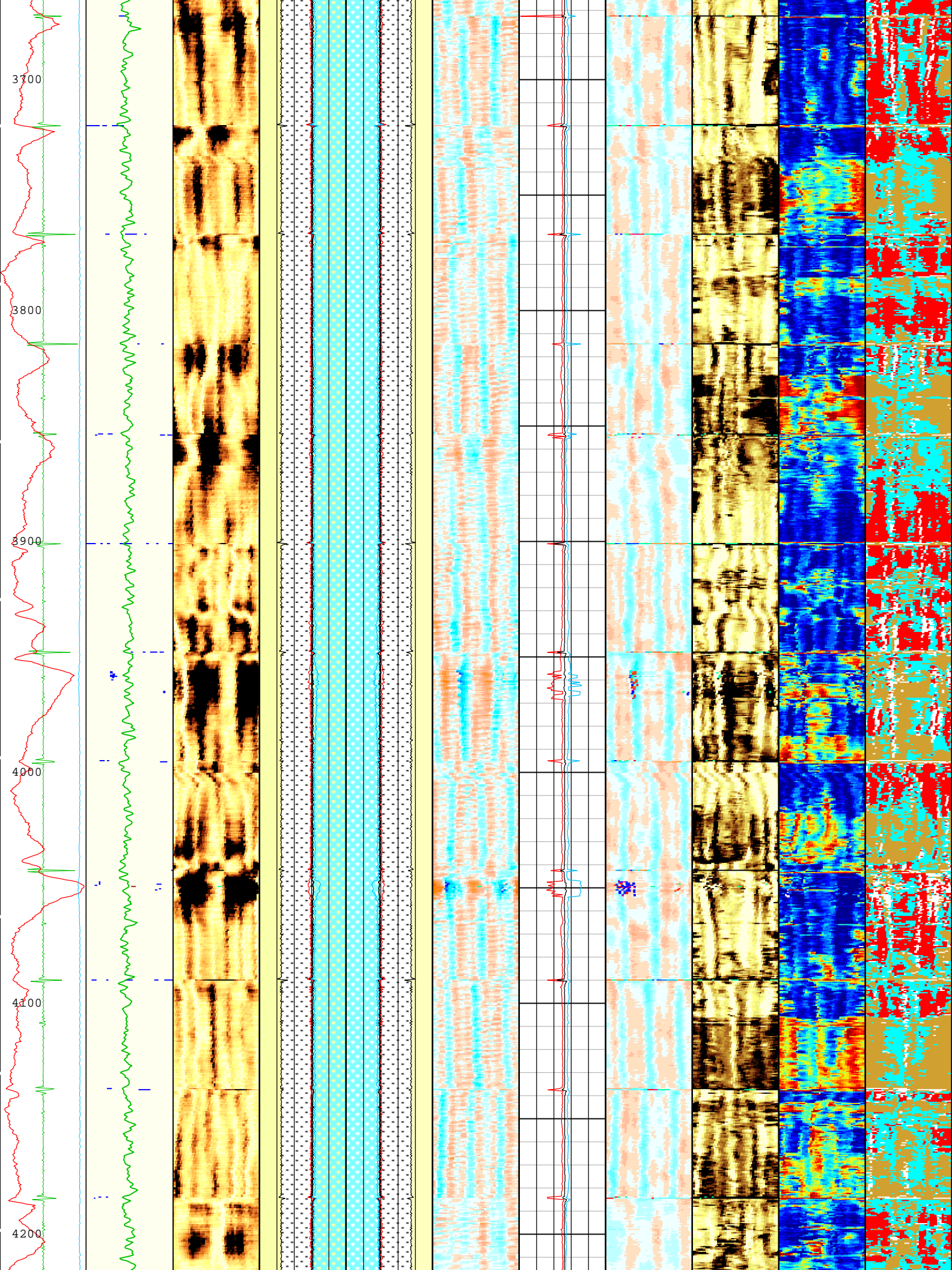




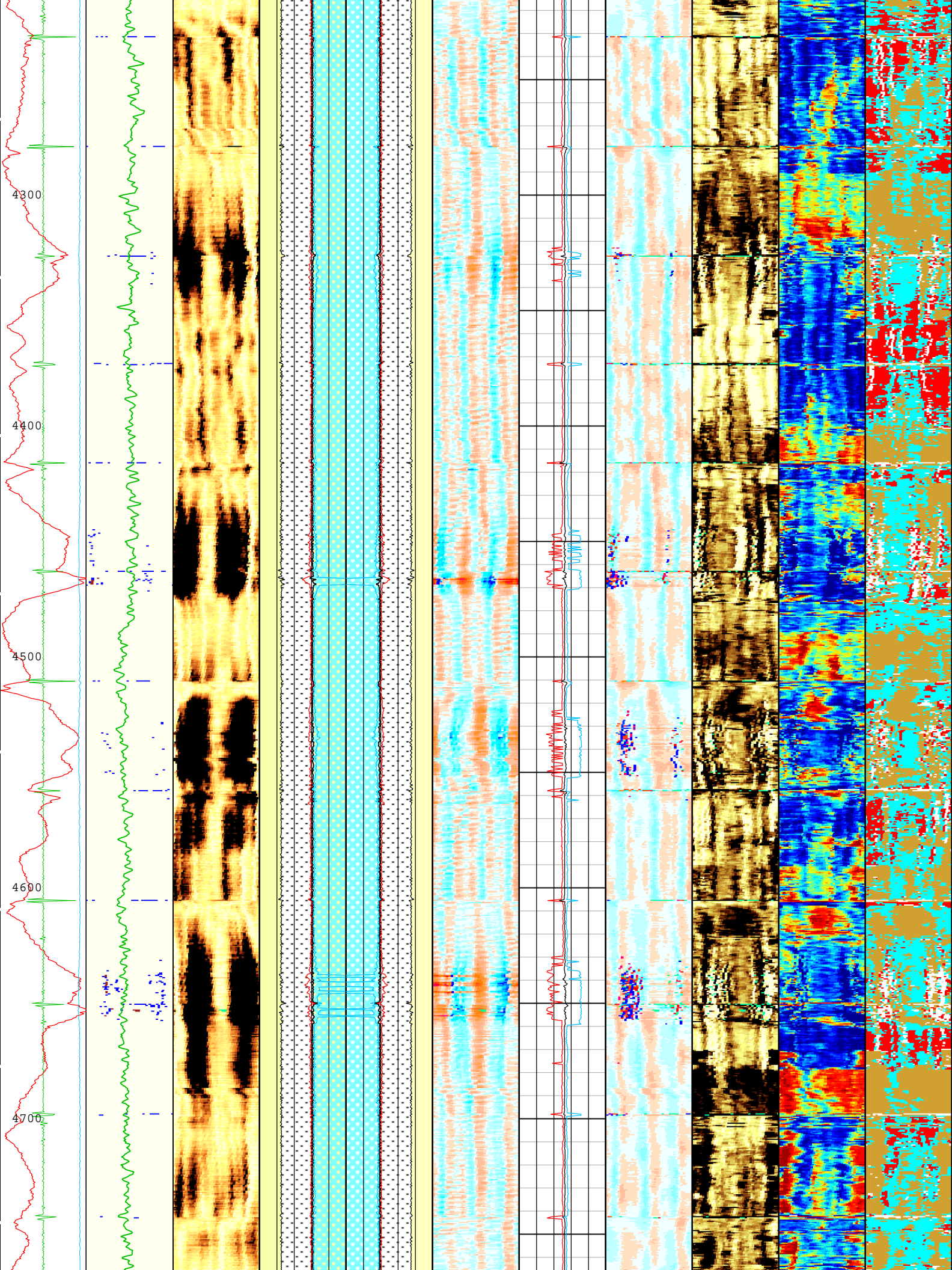




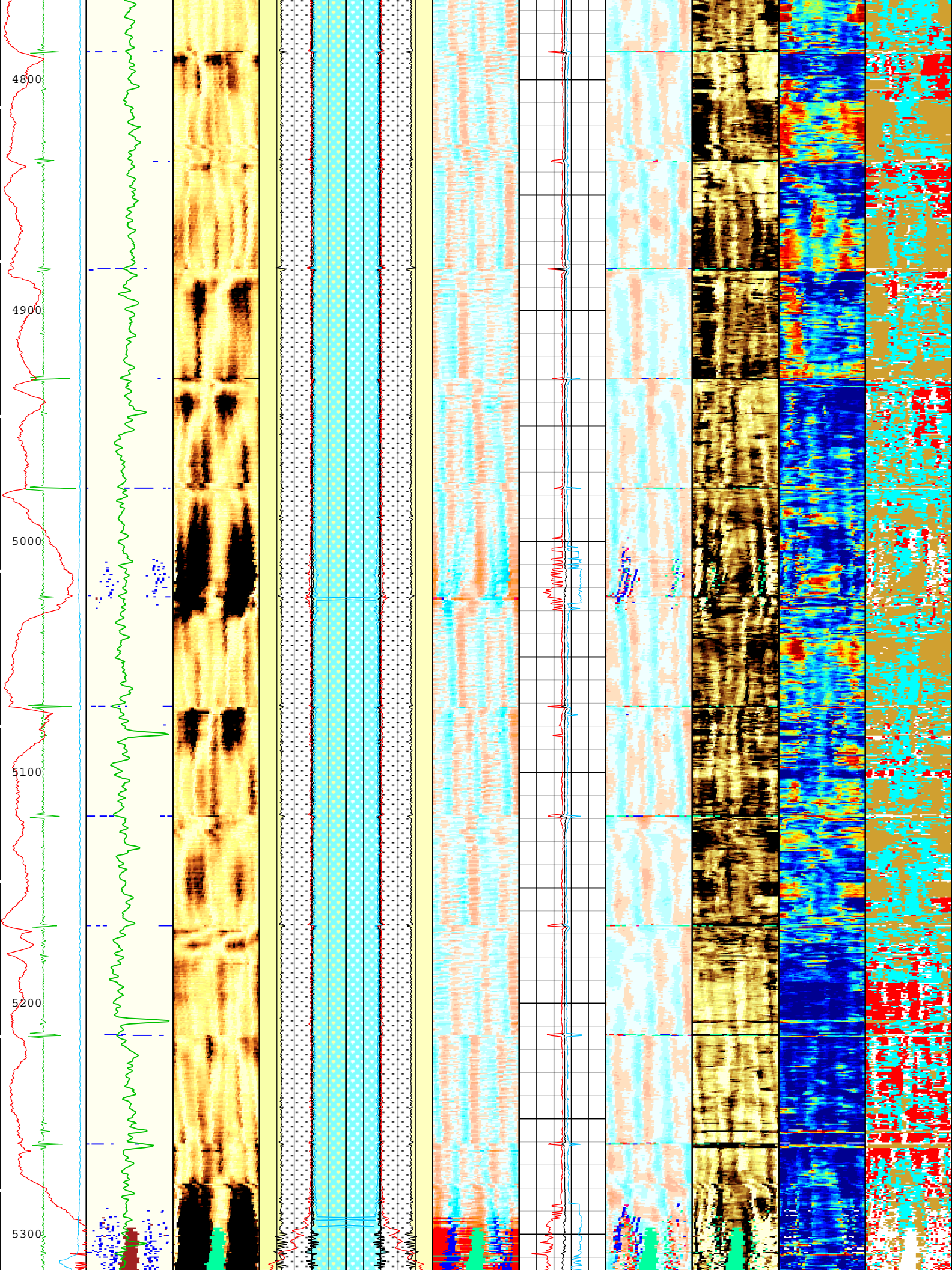




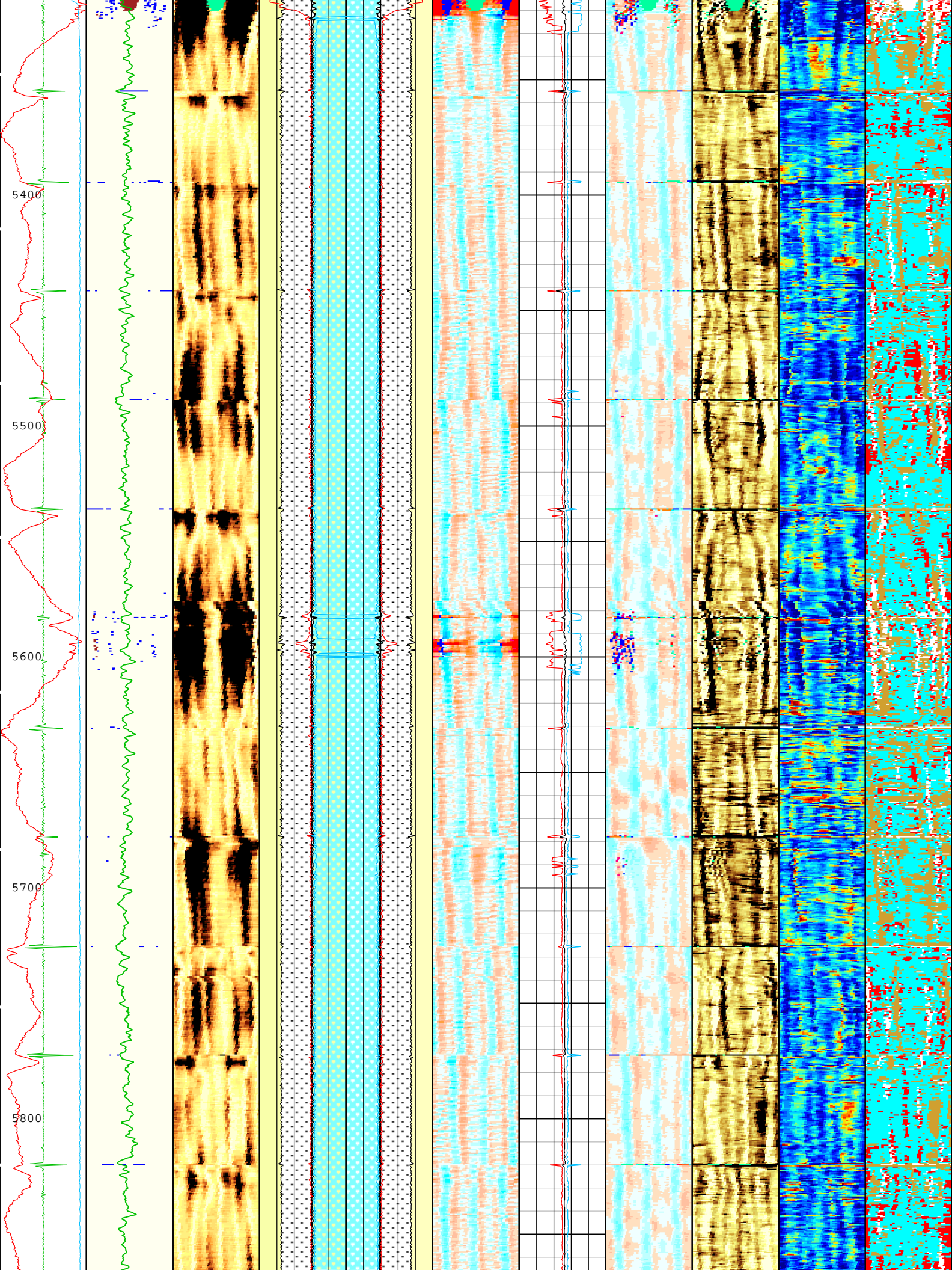




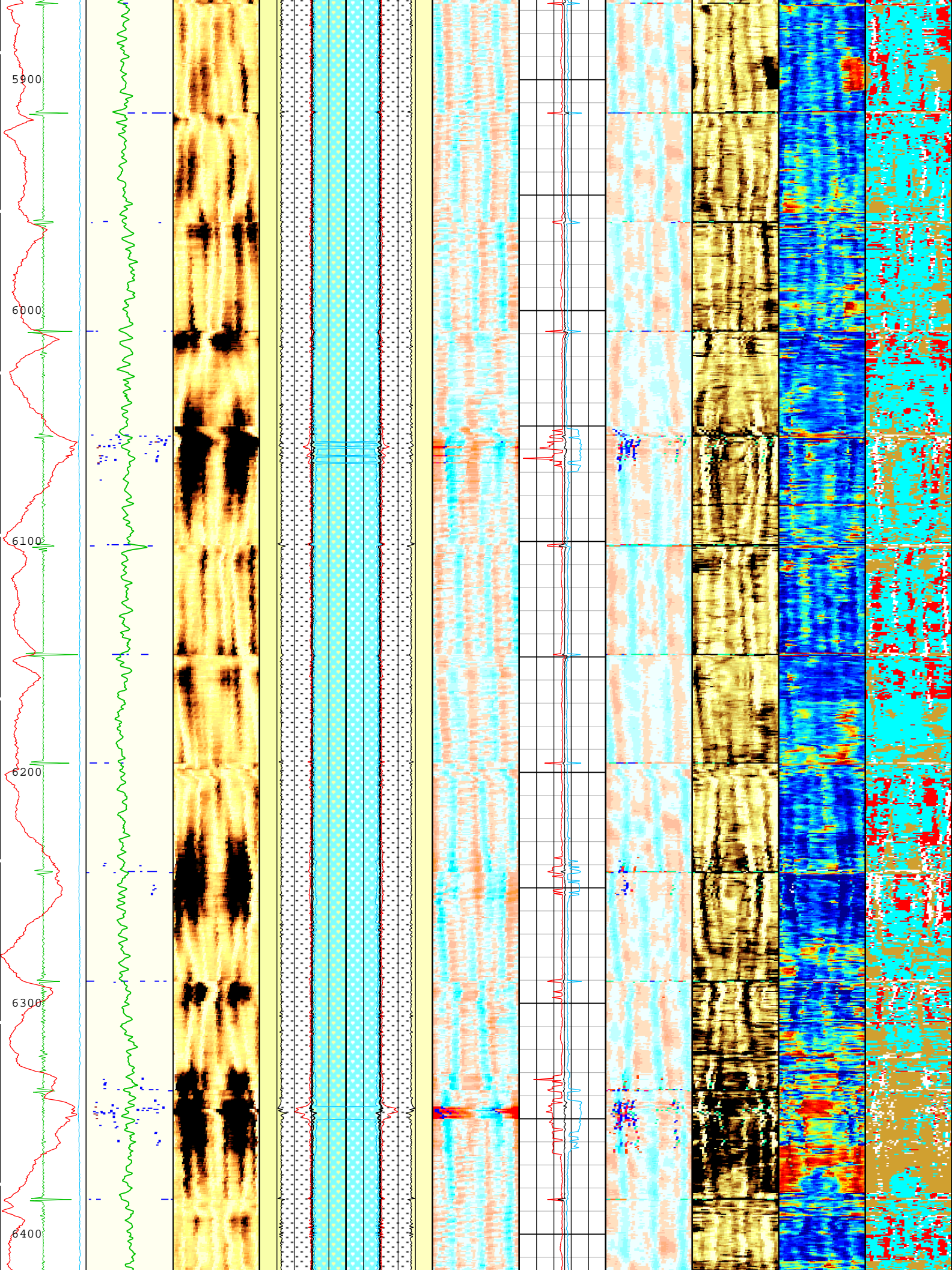




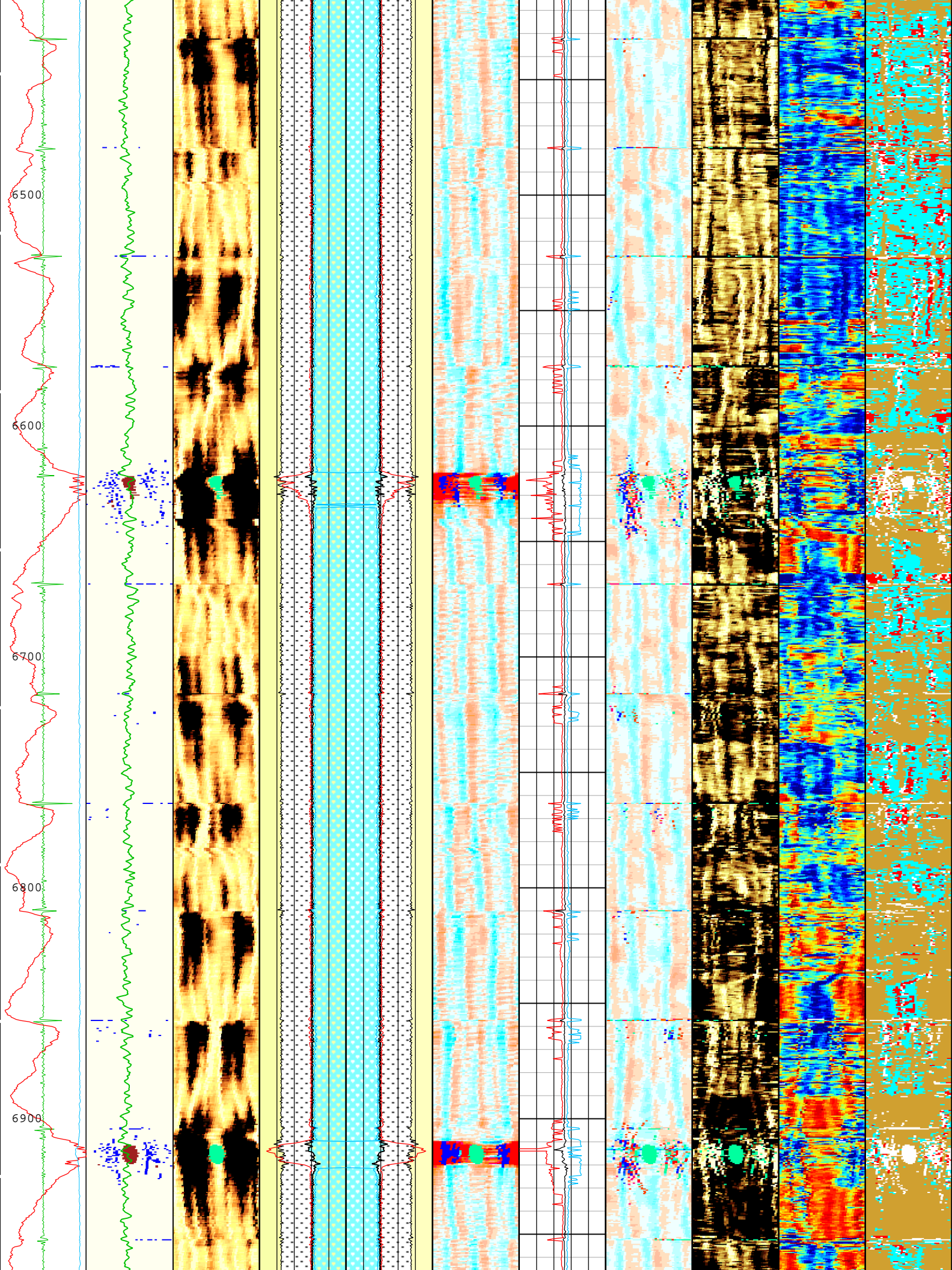


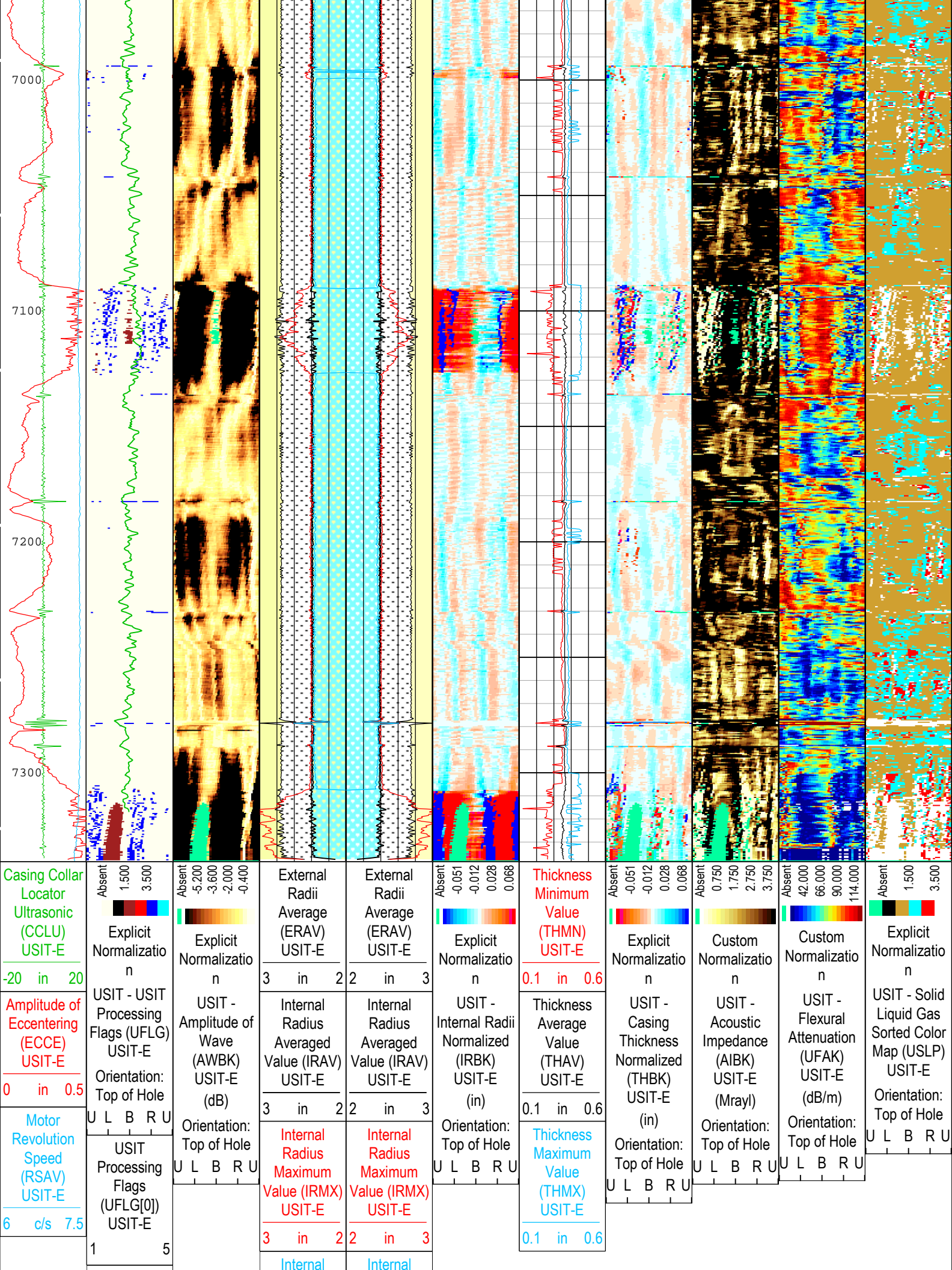














<div><div>Gamma Ray (ECGR_EDT C) EDTC-B</div><div>0 gAPI 150</div></div>	<div><div>Radius Minimum Value (IRMN) USIT-E</div><div>3 in 2</div></div>	<div><div>Radius Minimum Value (IRMN) USIT-E</div><div>2 in 3</div></div>
USIT Processing Flags (UFLG[0]) USIT-E		
1 - UFLG 1 Value within [0.0 - 1.5] - :		<div><div></div>UTIM Error</div>
2 - UFLG 2 Value within [1.5 - 2.5] - :		<div><div></div>Pulse Origin Not Detected</div>
3 - UFLG 3 Value within [2.5 - 3.5] - :		<div><div></div>WINLEN Error</div>
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :		<div><div></div>Casing Thickness Error</div>
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10 ] - :		<div><div></div>Loop Processing Error</div>
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: 21-Sep-2018 17:02:59		

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	15558	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	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	8.4	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	-1.62	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	1.18	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.65	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-10.51	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	60	2231
BS	8.5	2231	7338.5

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	Time Zoned	us

### Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	80	21-Sep-2018 14:16:15	21-Sep-2018 14:19:04	7339.2	7187.24
EMXV	90	21-Sep-2018 14:19:04	21-Sep-2018 14:21:43	7187.24	7009.77
EMXV	100	21-Sep-2018 14:21:43	21-Sep-2018 15:14:11	7009.77	3435.42
EMXV	80	21-Sep-2018 15:14:11	21-Sep-2018 16:05:06	3435.42	59.43
WINE	71.88	21-Sep-2018 14:16:15	21-Sep-2018 14:23:19	7339.2	6902.71
WINE	74.95	21-Sep-2018 14:23:19	21-Sep-2018 14:27:29	6902.71	6620.58
WINE	81.09	21-Sep-2018 14:27:29	21-Sep-2018 14:27:35	6620.58	6613.4
WINE	73.41	21-Sep-2018 14:27:35	21-Sep-2018 15:12:06	6613.4	3576.58
WINE	78.02	21-Sep-2018 15:12:06	21-Sep-2018 15:12:18	3576.58	3563.39
WINE	72.64	21-Sep-2018 15:12:18	21-Sep-2018 15:48:17	3563.39	1068.68
WINE	75.71	21-Sep-2018 15:48:17	21-Sep-2018 16:05:06	1068.68	59.43

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	59.43 ft	7339.20 ft	21-Sep-2018 2:16:15 PM	21-Sep-2018 4:05:06 PM	ON	9.86 ft	Yes

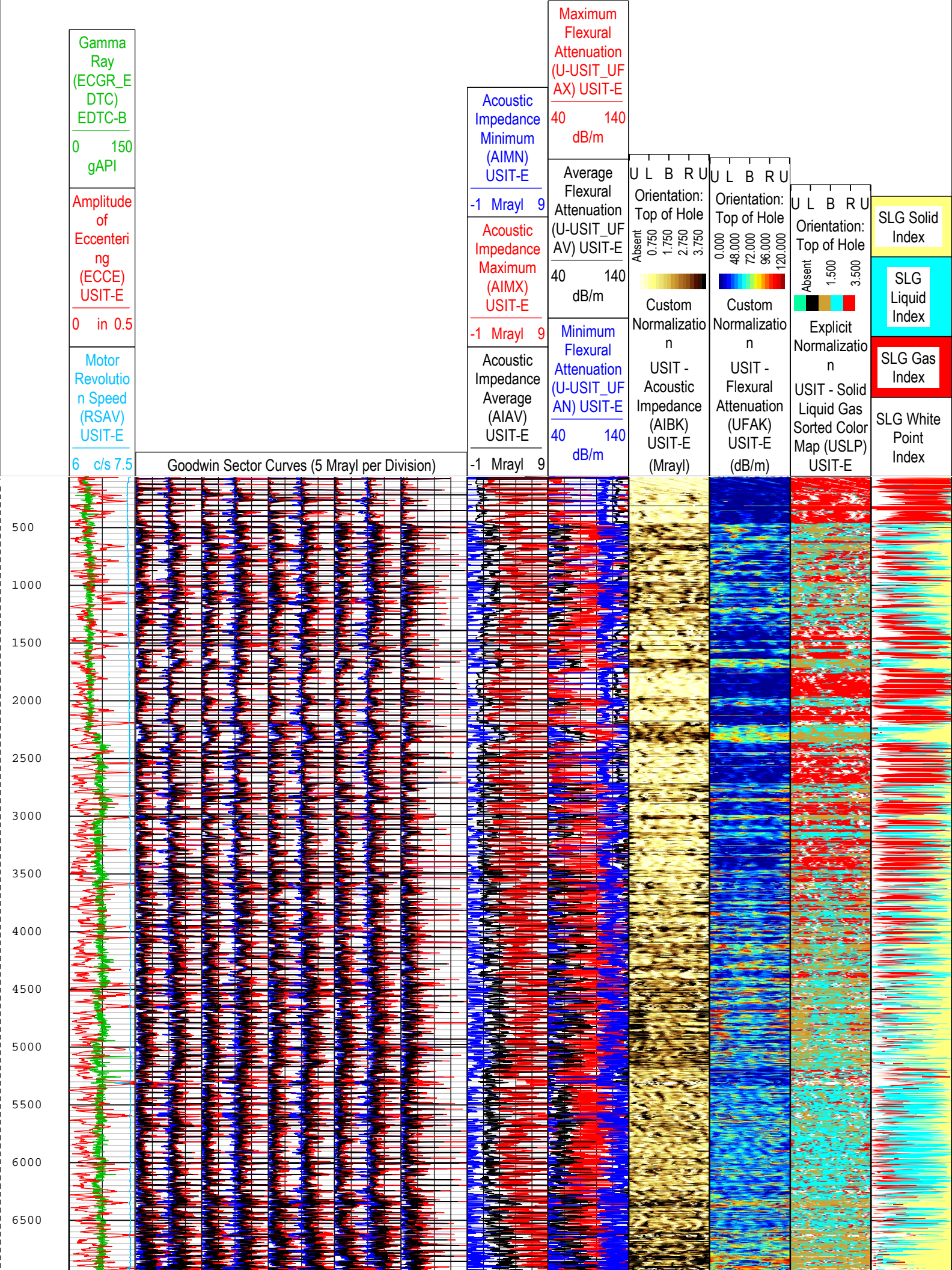
All depths are referenced to toolstring zero

## Log

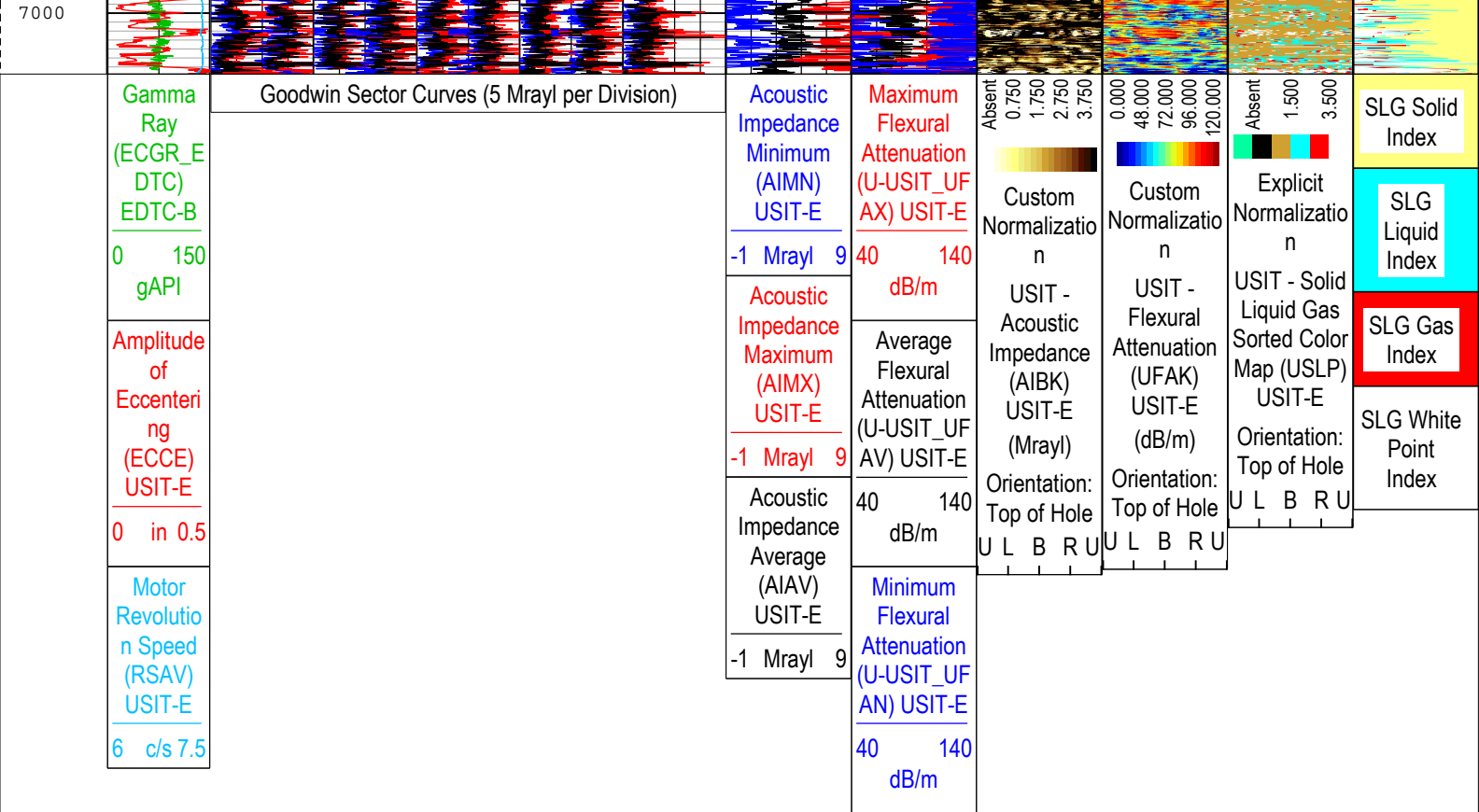
Company:Crestone Peak Resources Operating LLCWell:Davis 1L-9H-G266  
ONE: Log[4]:Up:S005

Description: USI Goodwin Format: Log ( IBC Goodwin ) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Sep-2018 17:03:37

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: 21-Sep-2018 17:03:37

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[2]:Up	Up	1989.73 ft	2313.84 ft	21-Sep-2018 1:39:03 PM	21-Sep-2018 1:44:23 PM	ON	1.83 ft	Yes
All depths are referenced to toolstring zero									
Log	Company:Crestone Peak Resources Operating LLC						Well:Davis 1L-9H-G266		
	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: 21-Sep-2018 17:03:50

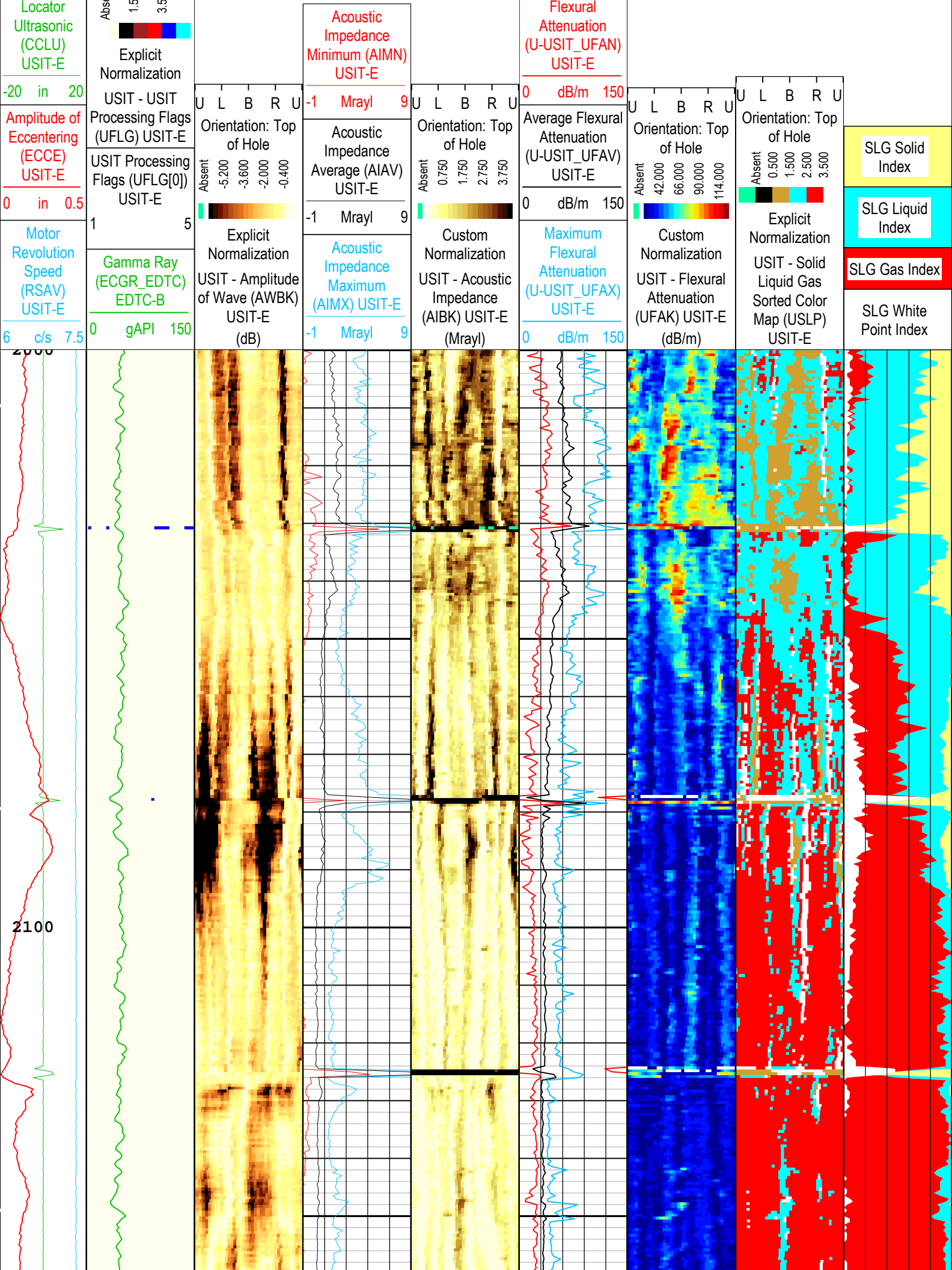
TIME\_1900 - Time Marked every 60.00 (s)

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

	U	L	B	R	U
	Orientation: Top of Hole				
Casing Collar	ent	00	00		

Minimum





1 - UFLG 1 Value within [0.0 - 1.5] - : <div>UTIM Error</div>				
2 - UFLG 2 Value within [1.5 - 2.5] - : <div>Pulse Origin Not Detected</div>				
3 - UFLG 3 Value within [2.5 - 3.5] - : <div>WINLEN Error</div>				
4 - UFLG 4   UFLG 5   UFLG 6 Value within [3.5 - 6.5] - : <div>Casing Thickness Error</div>				
5 - UFLG 7   UFLG 8   UFLG 9 Value within [6.5 - 10 ] - : <div>Loop Processing Error</div>				
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: 21-Sep-2018 17:03:50				
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	15558	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	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	8.4	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	-1.62	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	1.18	
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	1.65	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-10.51	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	2000	2231
BS	8.5	2231	2300
All depth are actual.			

Tool Control Parameters	
-------------------------	--

ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	70	V
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
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
-------------------

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[2]:Up	Up	1989.73 ft	2313.84 ft	21-Sep-2018 1:39:03 PM	21-Sep-2018 1:44:23 PM	ON	1.83 ft	Yes

All depths are referenced to toolstring zero									
--	--	--	--	--	--	--	--	--	--

Log	Company:Crestone Peak Resources Operating LLC							Well:Davis 1L-9H-G266	
-----	---	--	--	--	--	--	--	-----------------------	--

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: 21-Sep-2018 17:04:01

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 ] - :

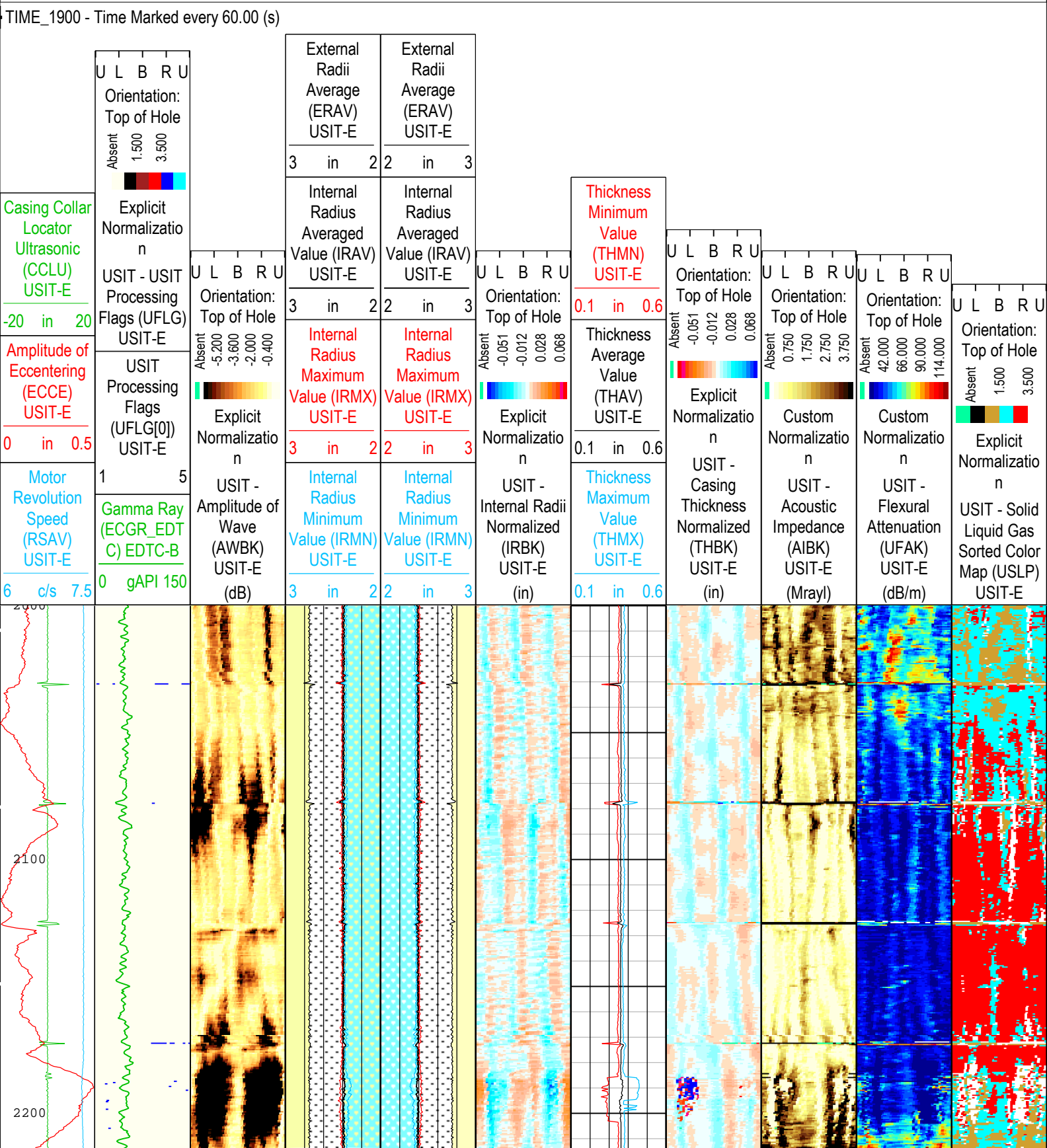
■ UTIM Error

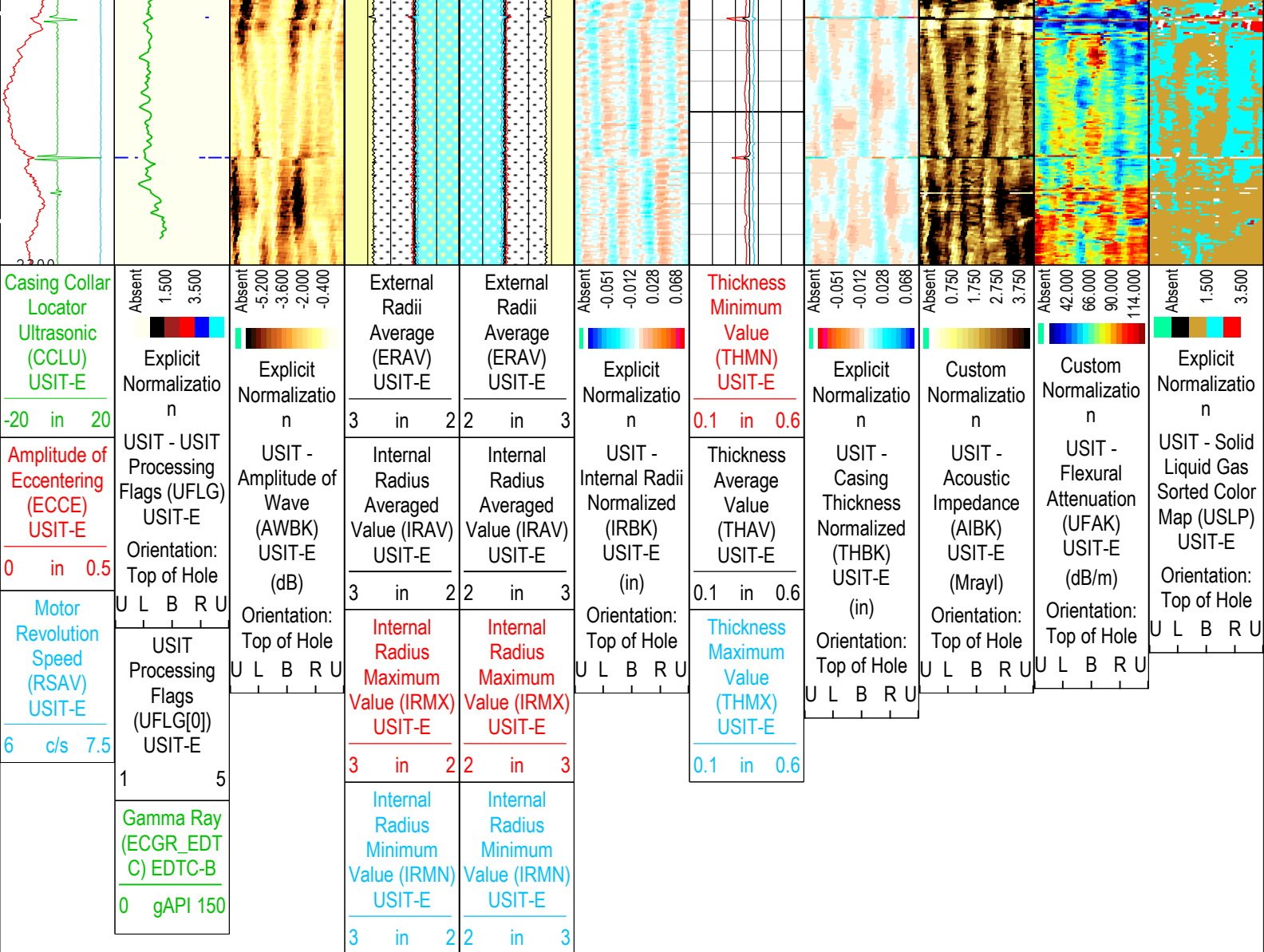
■ Pulse Origin Not Detected

■ WINLEN Error

■ Casing Thickness Error

■ Loop Processing Error





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 ) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth  
Creation Date: 21-Sep-2018 17:04:01

## 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	15558	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	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	8.4	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	-1.62	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	1.18	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.65	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-10.51	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	2000	2231	
BS	8.5	2231	2300	
All depth are actual.				

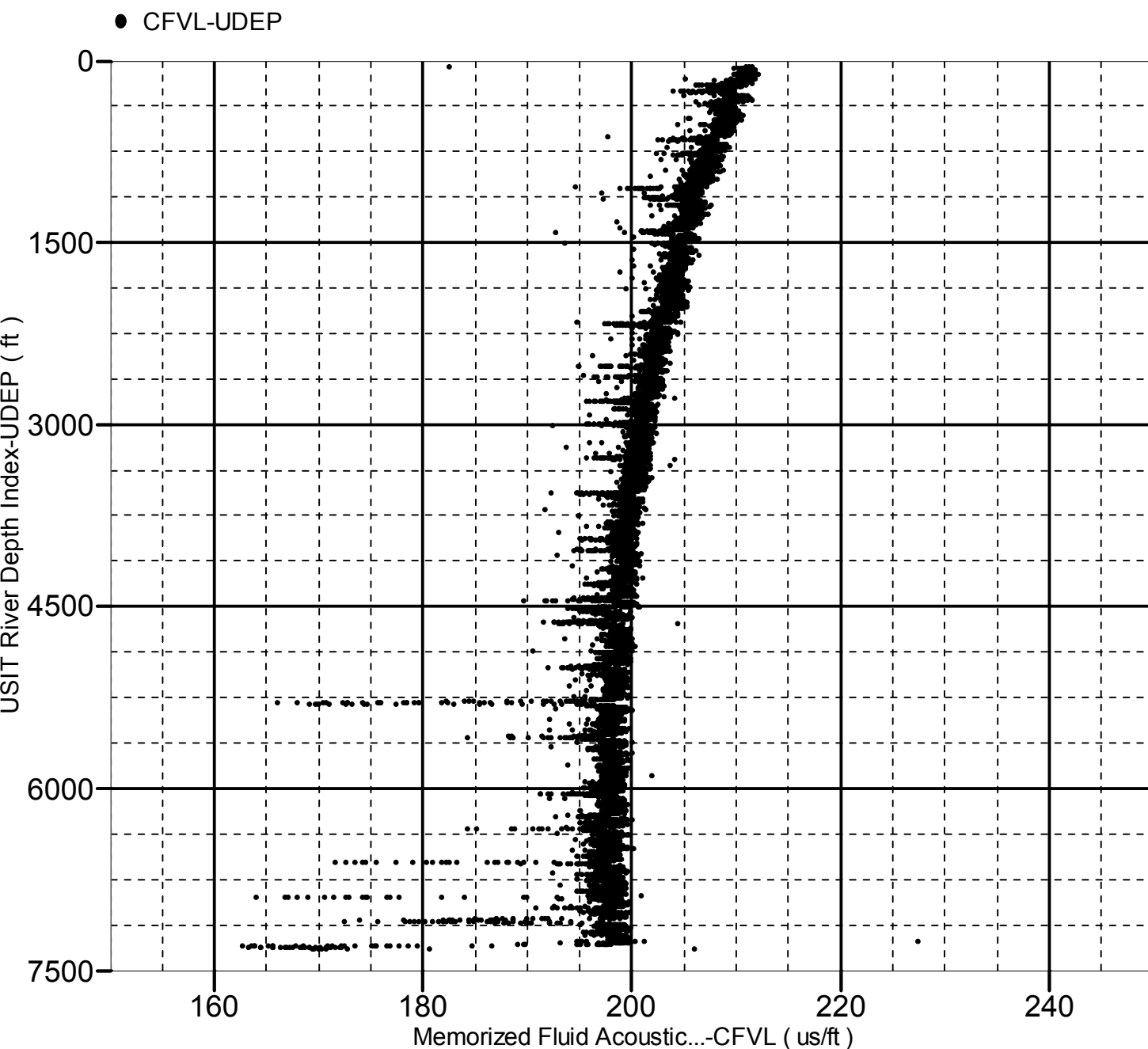
Tool Control Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	70	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	137	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	177	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	106	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	146	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

XYZ	Company:Crestone Peak Resources Operating LLC Well:Davis 1L-9H-G266 ONE: Log[4]:Up:S005
-----	--

# Fluid Acoustic Slowness vs Depth

## 2D Cross Plot

Index Range: From 7338.50 to 59.00 ft



XYZ

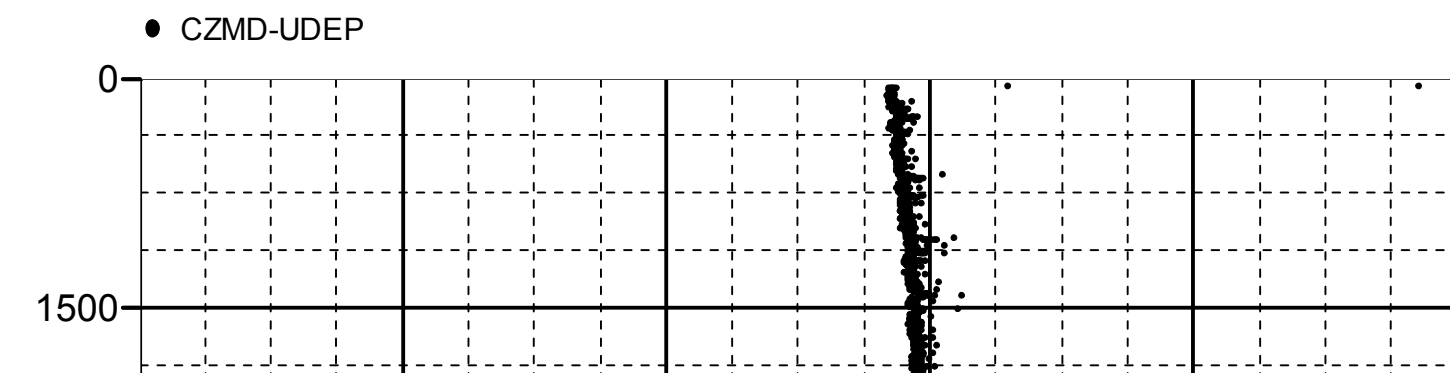
Company:Crestone Peak Resources Operating LLC Well:Davis 1L-9H-G266

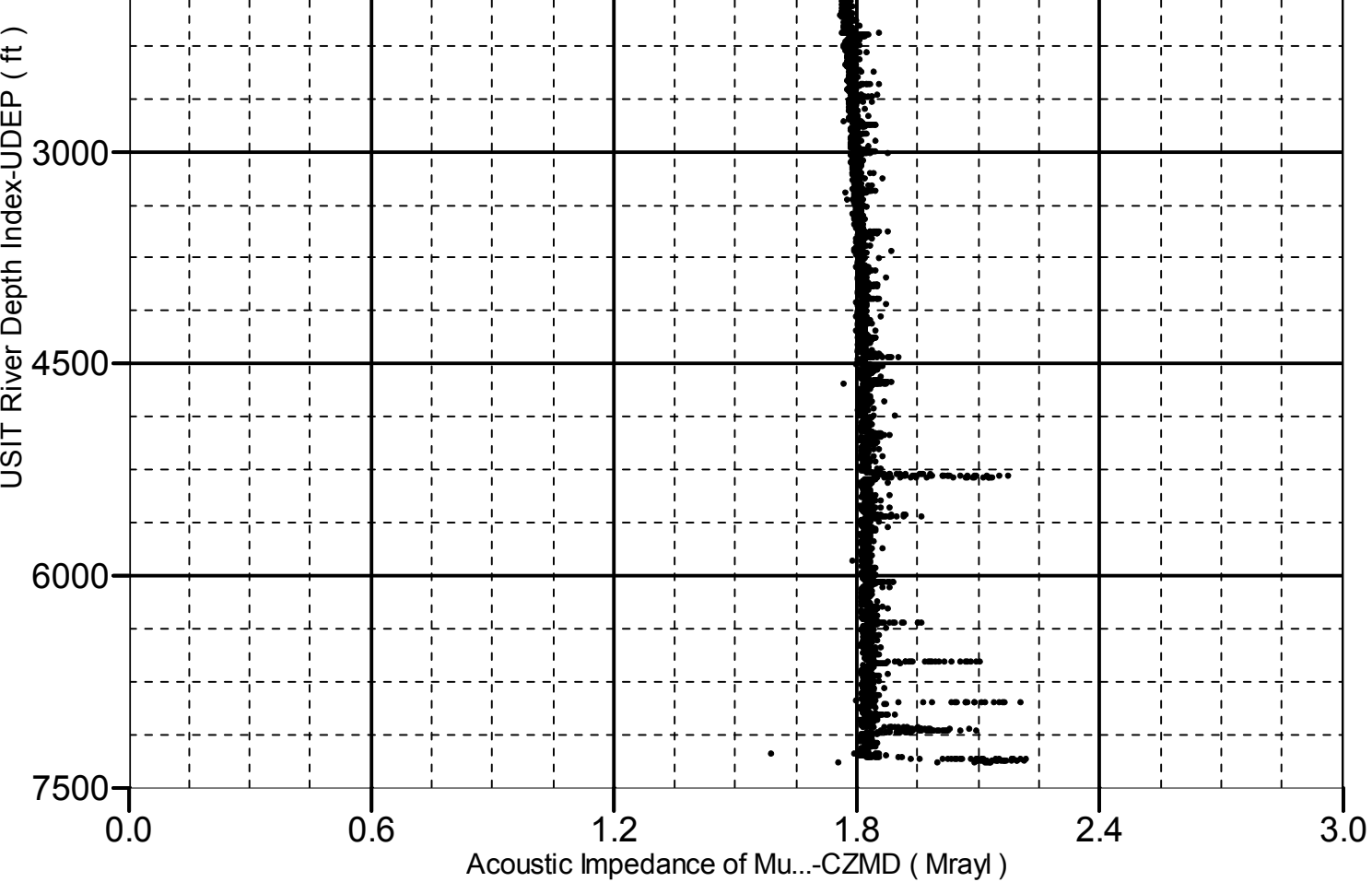
ONE: Log[4]:Up:S005

## Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7338.50 to 59.00 ft





Company: Crestone Peak Resources Operating LLC

**Schlumberger**

Well: Davis 1L-9H-G266

Field: Wattenberg

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