

Company: Crestone Peak Resources and Operating LLC

Well: File #3B-32H-K268

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner  
Cement Evaluation  
Gamma Ray - CCL Log

County: Weld

Field: Wattenberg

Location: NESW Sec. 32, T2N, R68W

Well: File #3B-32H-K268

Company: Crestone Peak Resources and Operating LLC

Isolation Scanner

Cement Evaluation

Gamma Ray - CCL Log

Location:			
NESW Sec. 32, T2N, R68W		Elev.:	K.B.
SHL: 1550' FSL & 363' FWL			G.L.
Lat/Long: 40.092575 / -105.031182			D.F.
Permanent Datum:	Ground Level	Elev.:	4970.00 f
Log Measured From:	Kelly Bushing	23.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section:	Township:	Range:
05-123-45832	32	2N	68W

Logging Date	01-Mar-2018
Run Number	ONE
Depth Driller	14209.00 ft
Schlumberger Depth	14209.00 ft
Bottom Log Interval	6950.00 ft
Top Log Interval	100.00 ft
Casing Fluid Type	Water
Salinity	
Density	8.4 lbm/gal
Fluid Level	0.00 ft
BIT/CASING/TUBING STRING	
Bit Size	8.75 in
From	1925.00 ft
To	14209.00 ft
Casing/Tubing Size	5.5 in
Weight	20 lbm/ft
Grade	P110
From	0.00 ft
To	14209.00 ft
Max Recorded Temperatures	181.32 degF
Logger on Bottom	01-Mar-2018
Unit Number	9108
Recorded By	Ashley Rosacker
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.

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

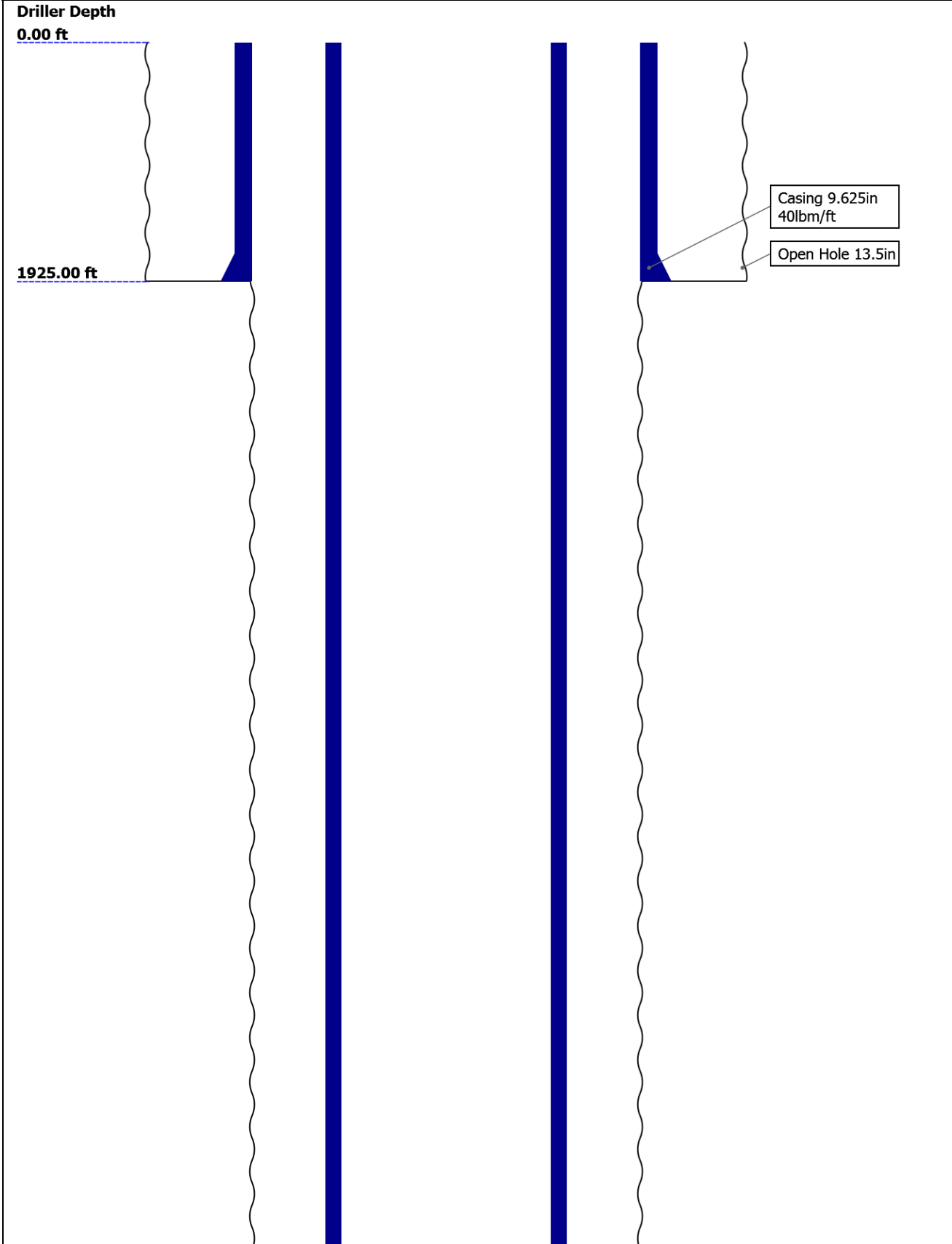
14. XYZ ( IBC Fluid Acoustic Slowness vs Depth 6.0 in )

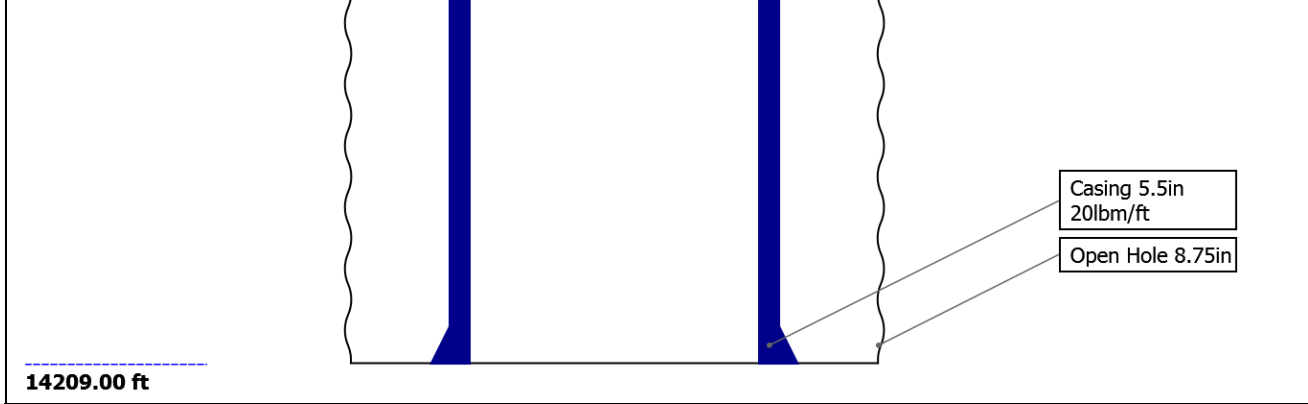
15. XYZ ( IBC Acoustic Impedance of Mud vs Depth 6.0 in )

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





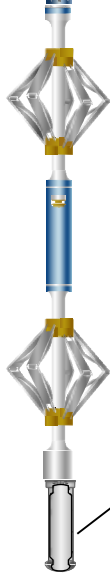
## Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.5	8.75				
Top Driller ( ft )	0	1925				
Top Logger ( ft )	0	1925				
Bottom Driller ( ft )	1925	14209				
Bottom Logger ( ft )	1925	14209				
Casing						
Size ( in )	9.625	5.5				
Weight ( lbm/ft )	40	20				
Inner Diameter ( in )	8.835	4.778				
Grade	J55	P110				
Top Driller ( ft )	0	0				
Top Logger ( ft )	0	0				
Bottom Driller ( ft )	1925	14209				
Bottom Logger ( ft )	1925	14209				

## Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks	
<b>Equip name</b>	<b>Length</b>	<b>MP name</b>	<b>Offset</b>	Thank you for choosing Schlumberger!	
LEH-QT:H 701315A M	30.16			Tool string run as per tool sketch and client logging program.	
LEH-QT:H 701315AM				Gemcos and in-line centralizers used for centralization.	
EDTC-B:8 424	27.24			All passes run under 0 psi.	
EDTH-B:84 32				Lead: 11 ppg Tail: 13.5 ppg Spacer: 10.5 ppg	
EDTG-A:7 7303					
EDTC-B:84 24					
AH-184[ 2]:2765	20.74				
AH-184[ 1]:2826	18.74				
USIT-E:94 1	16.74				
ECH-MFA USAC-A:9 41					
USIS-A:98 2					

USSC-B:96  
1  
IBCS-A:83  
5  
FAR-SENS  
OR:4771  
IBC-TX  
NEAR-SEN  
SOR:4548  
IBC-TX  
USI-SENS  
OR:3467  
IBC-TX  
EMITTER-  
SENSOR:3  
890  
IBC-TX



USI Sensor Head Tension  
0.84  
TOOL\_ZERO

Lengths are in ft  
Maximum Outer Diameter = 6.250 in  
Line: Sensor Location, Value: Gating Offset  
All measurements are relative to TOOL\_ZERO

Depth Summary

ONE

Depth Measuring Device

Type			
Serial Number			
Calibration Date	28-Sep-2017		
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		

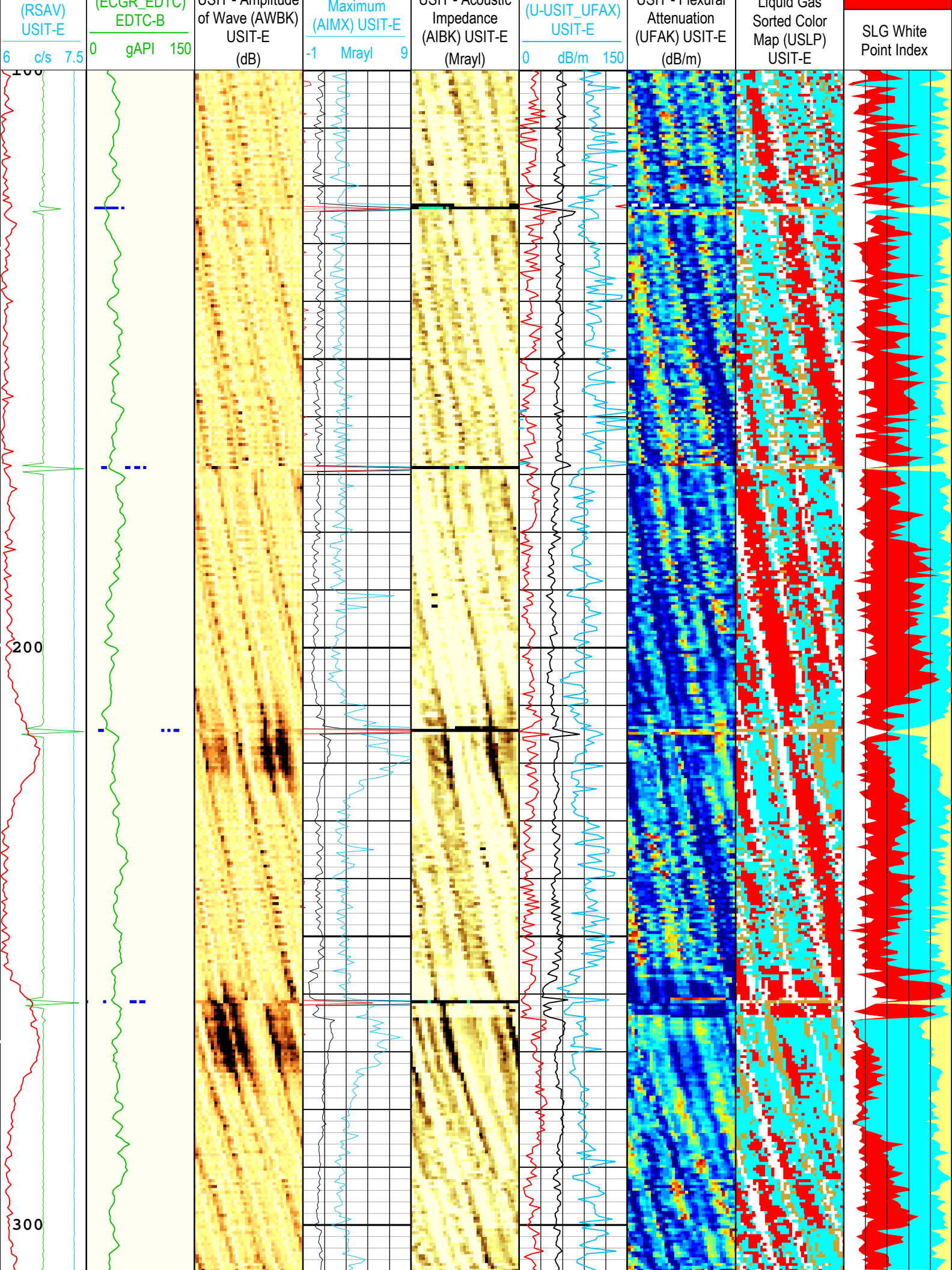
Logging Cable

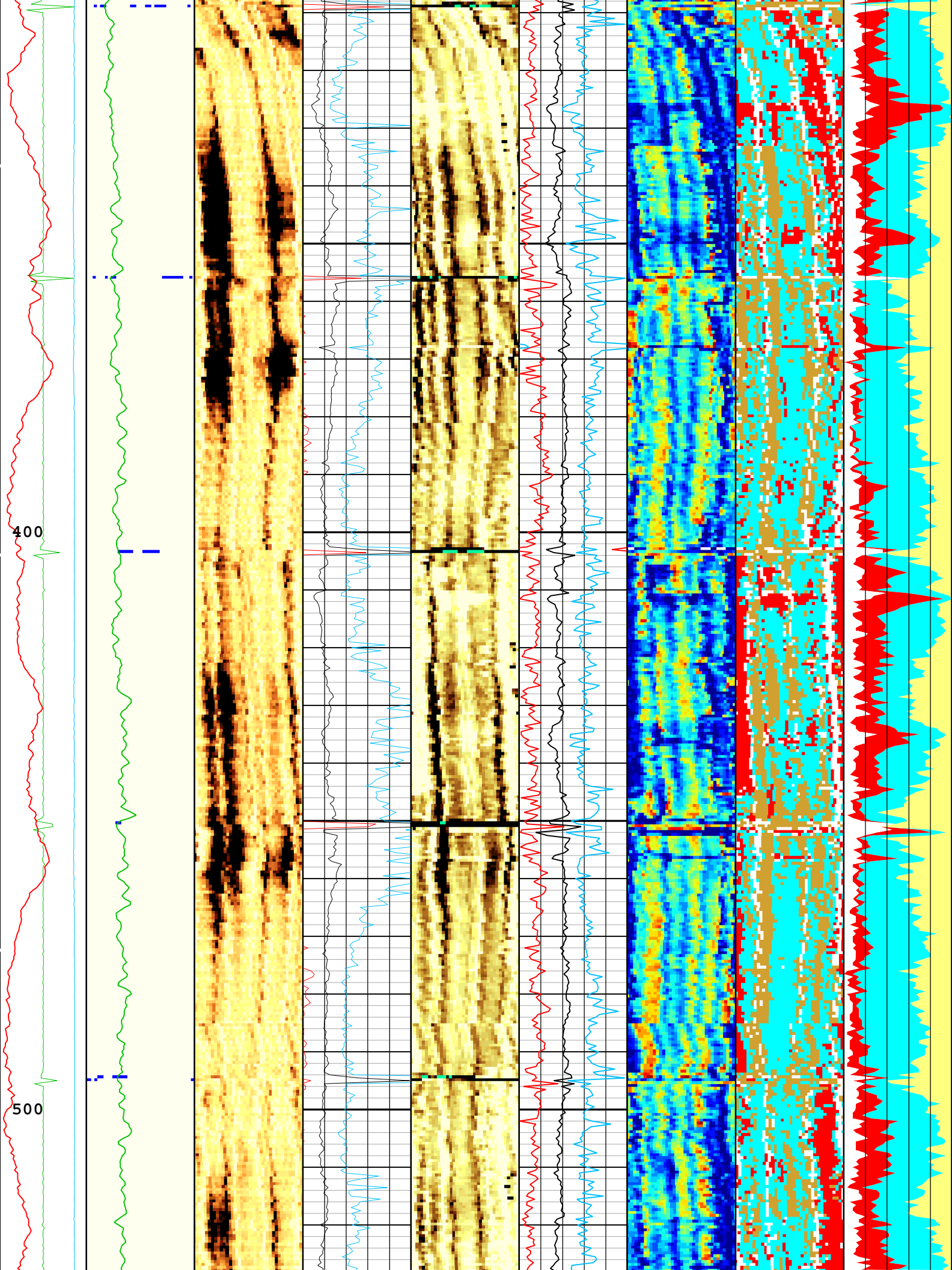
Type	7-46NT-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		

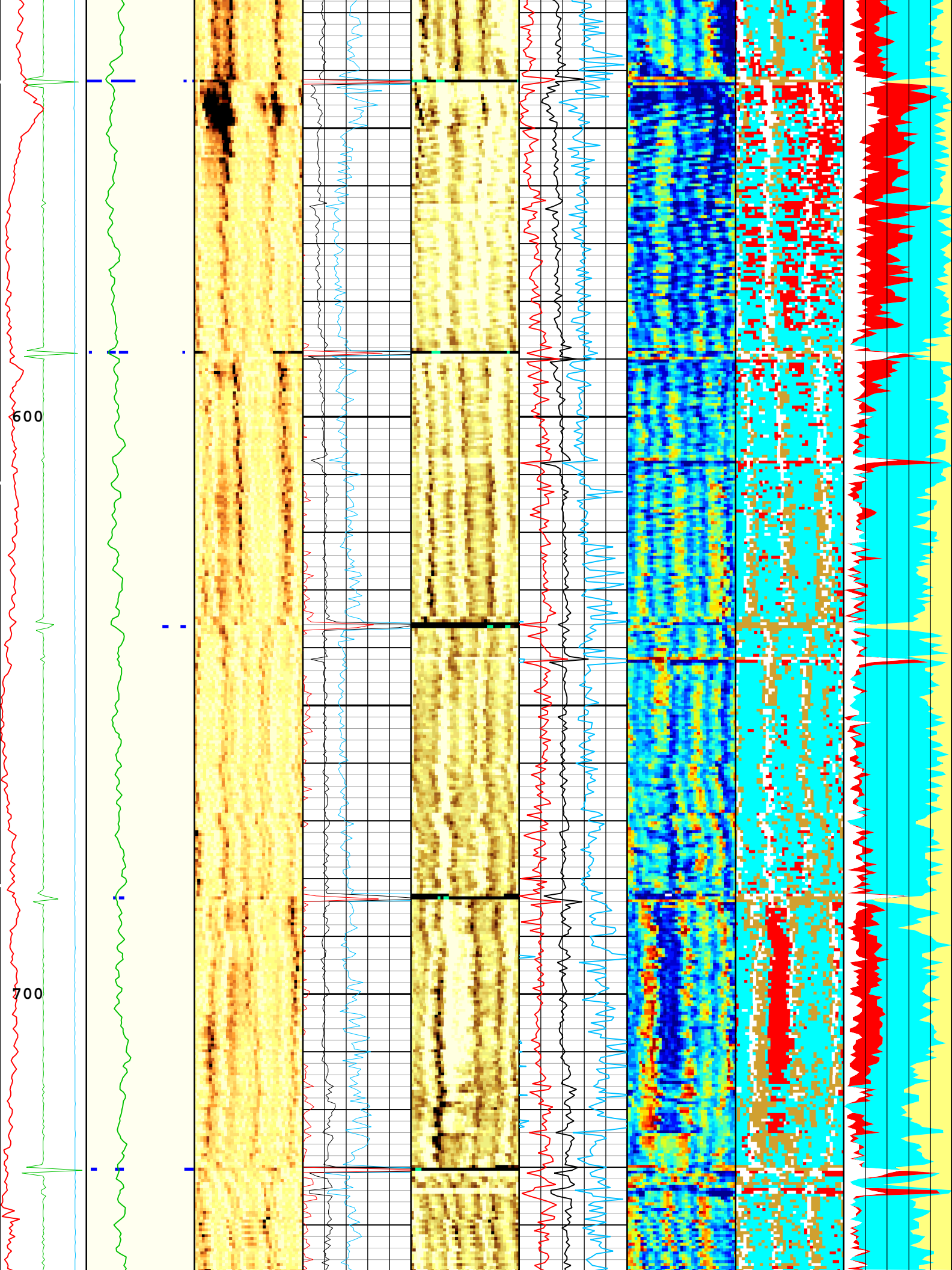
ONE:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	All Schlumberger depth control policies followed.
Rig Up Length At Surface		IDW used as primary depth reference.
Rig Up Length At Bottom		Z-chart used as secondary depth reference.
Rig Up Length Correction		
Stretch Correction		
Tool Zero Check At Surface		



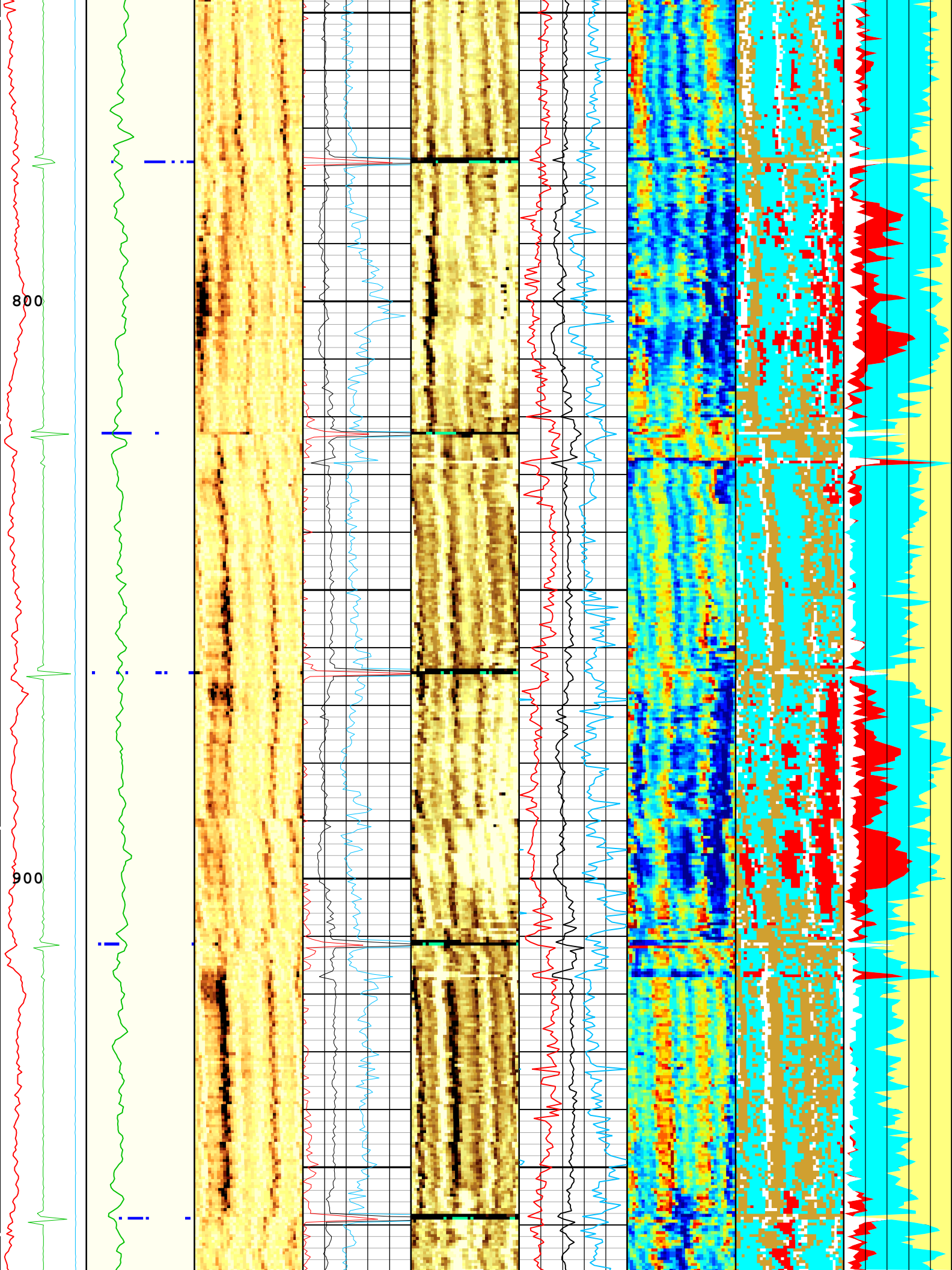


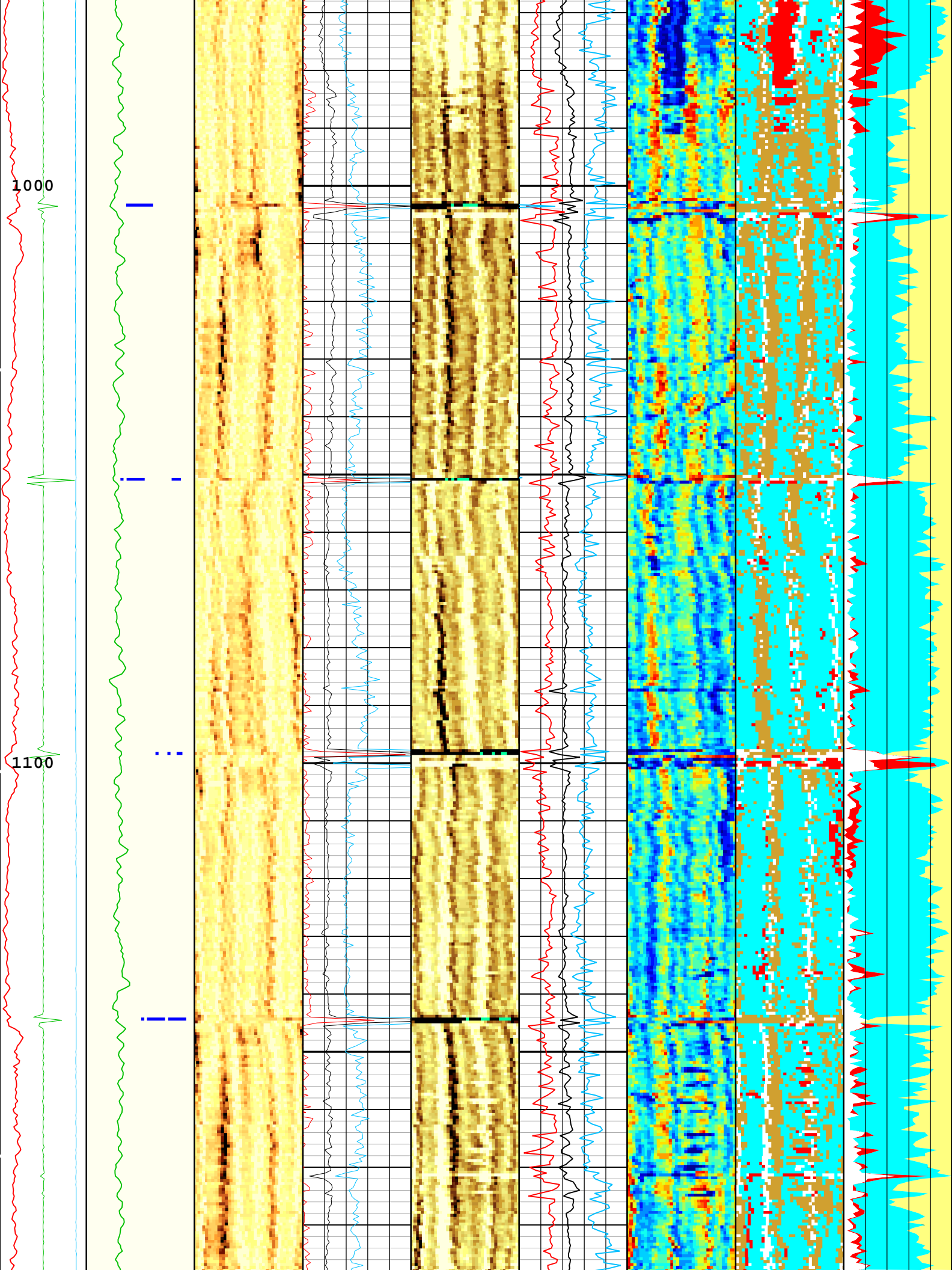


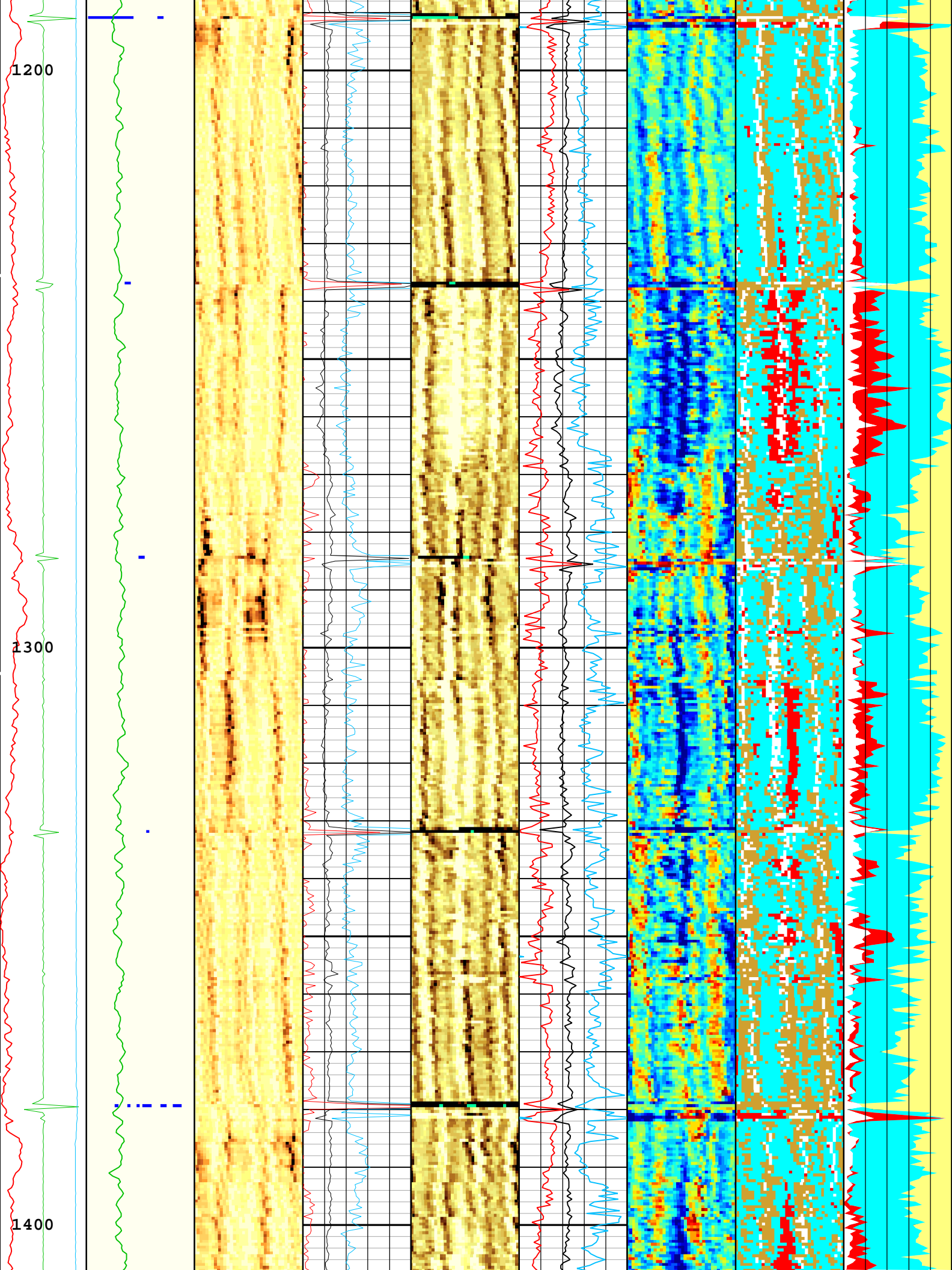


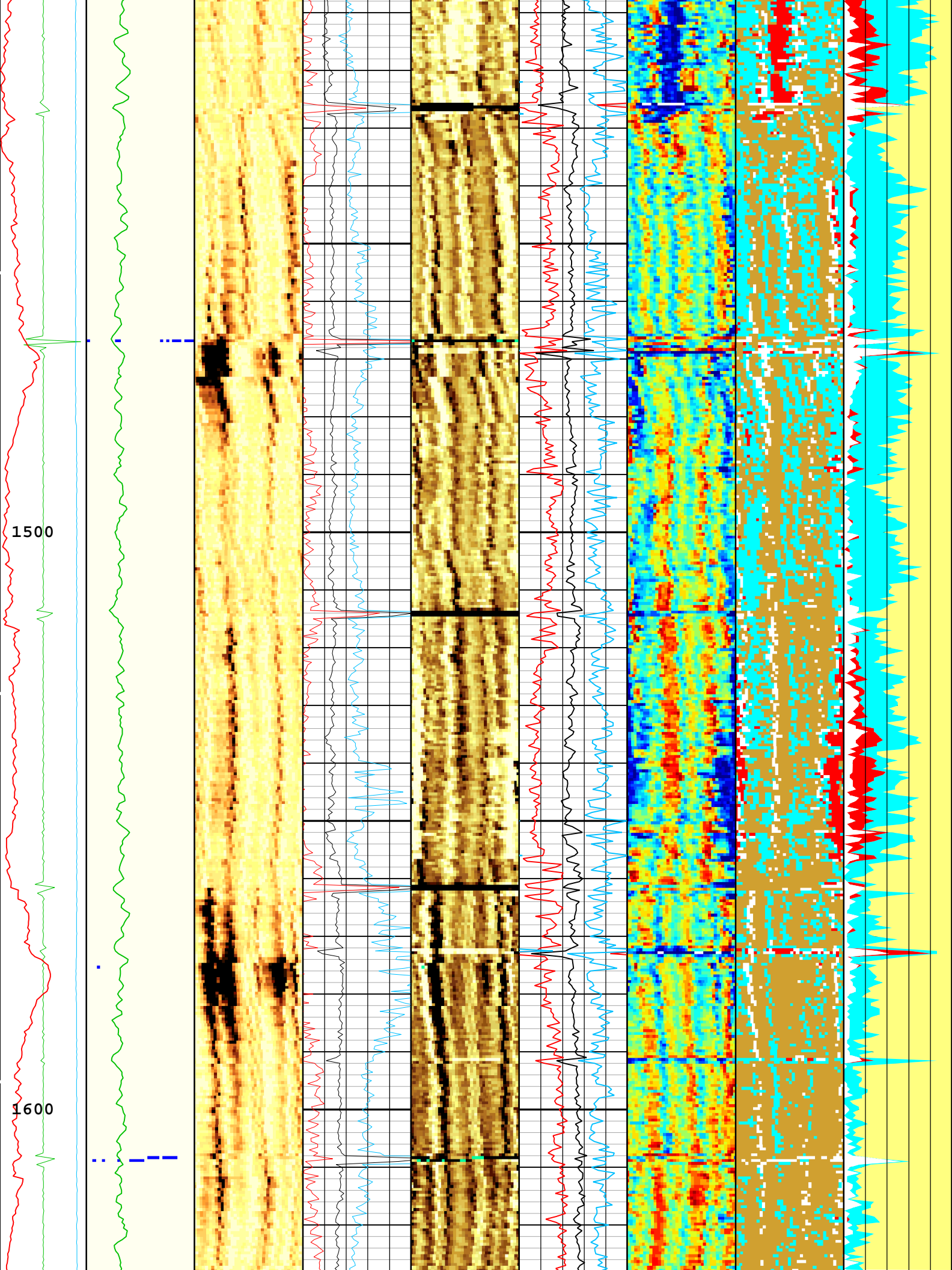




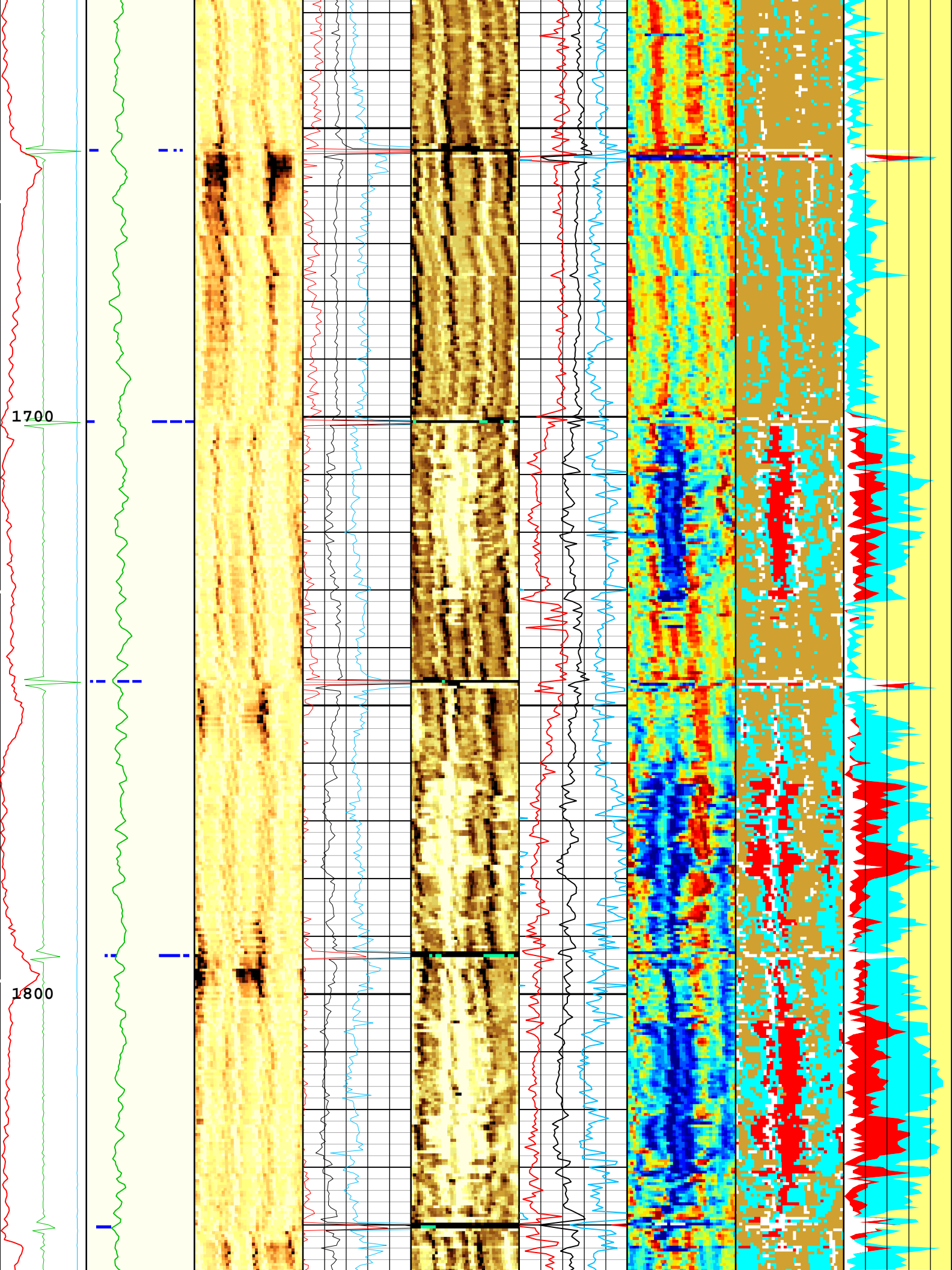


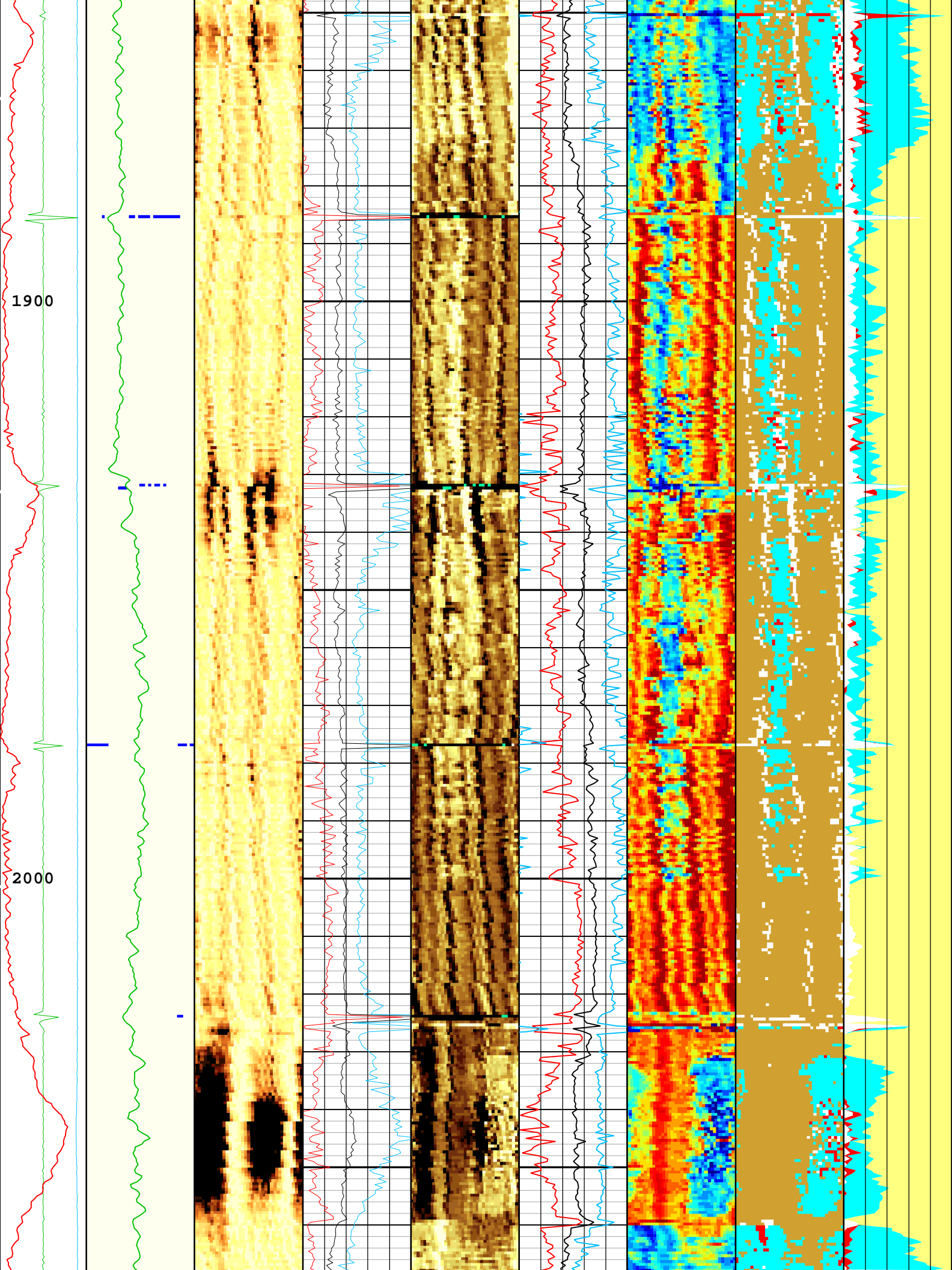


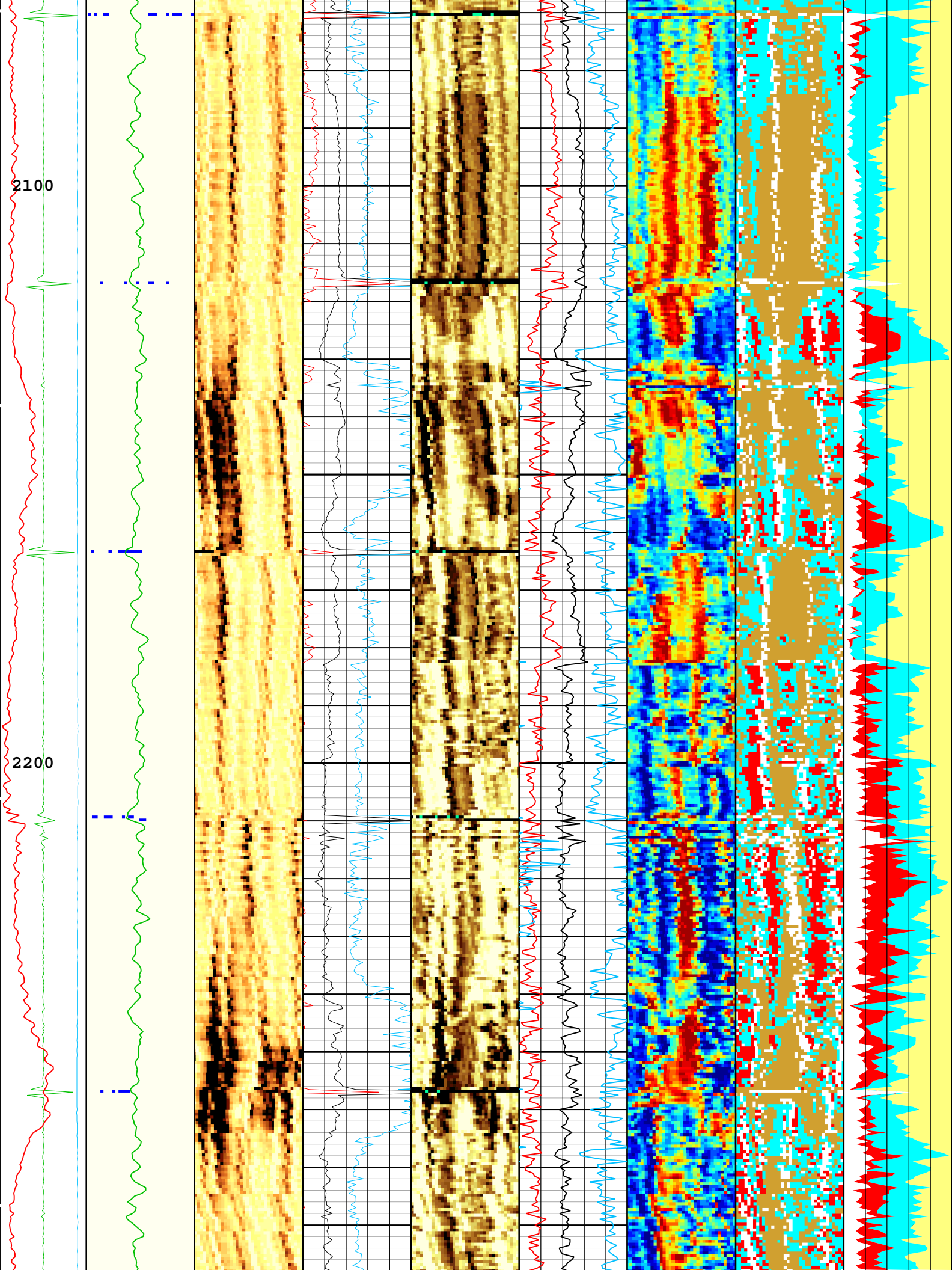


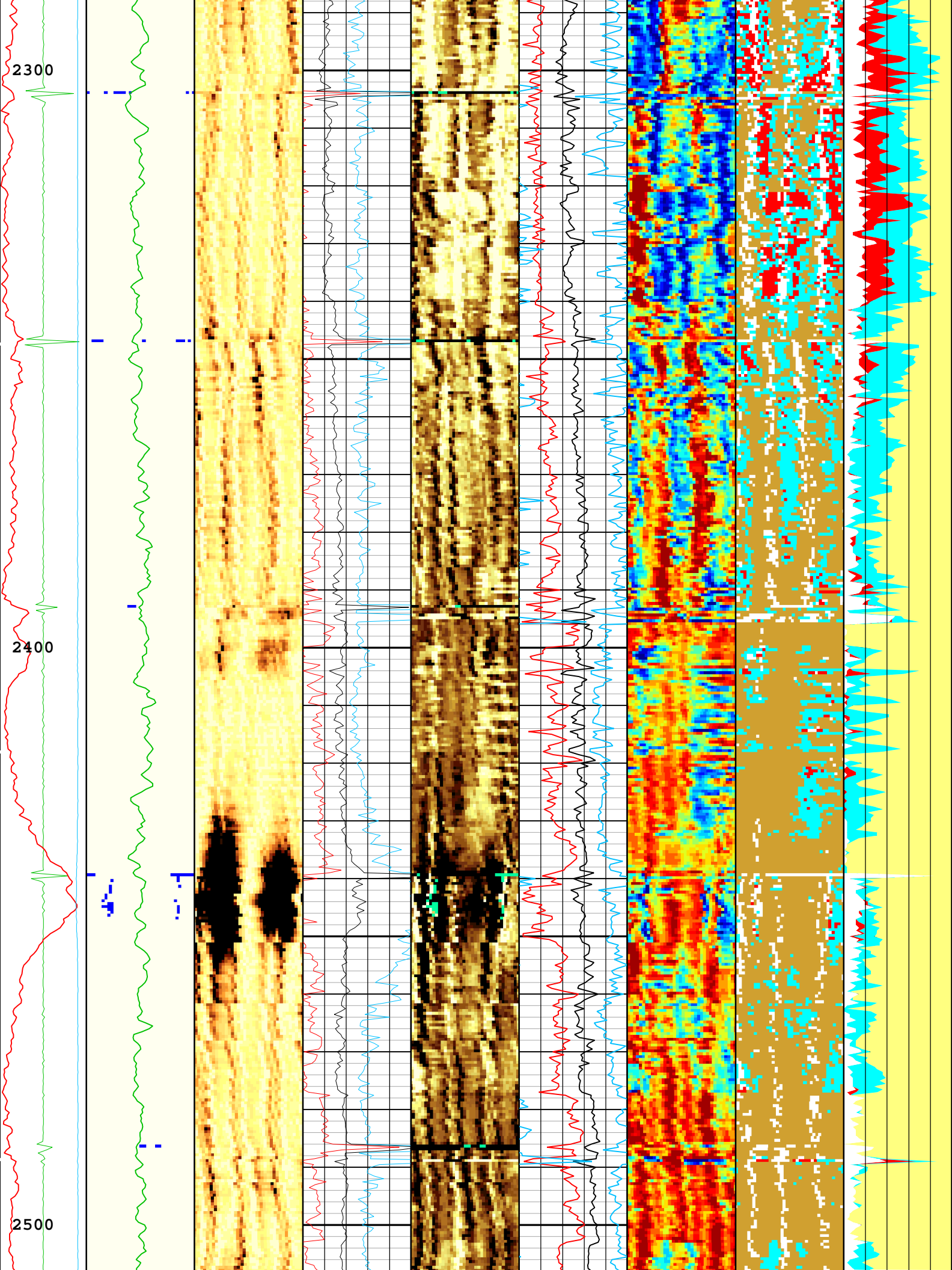




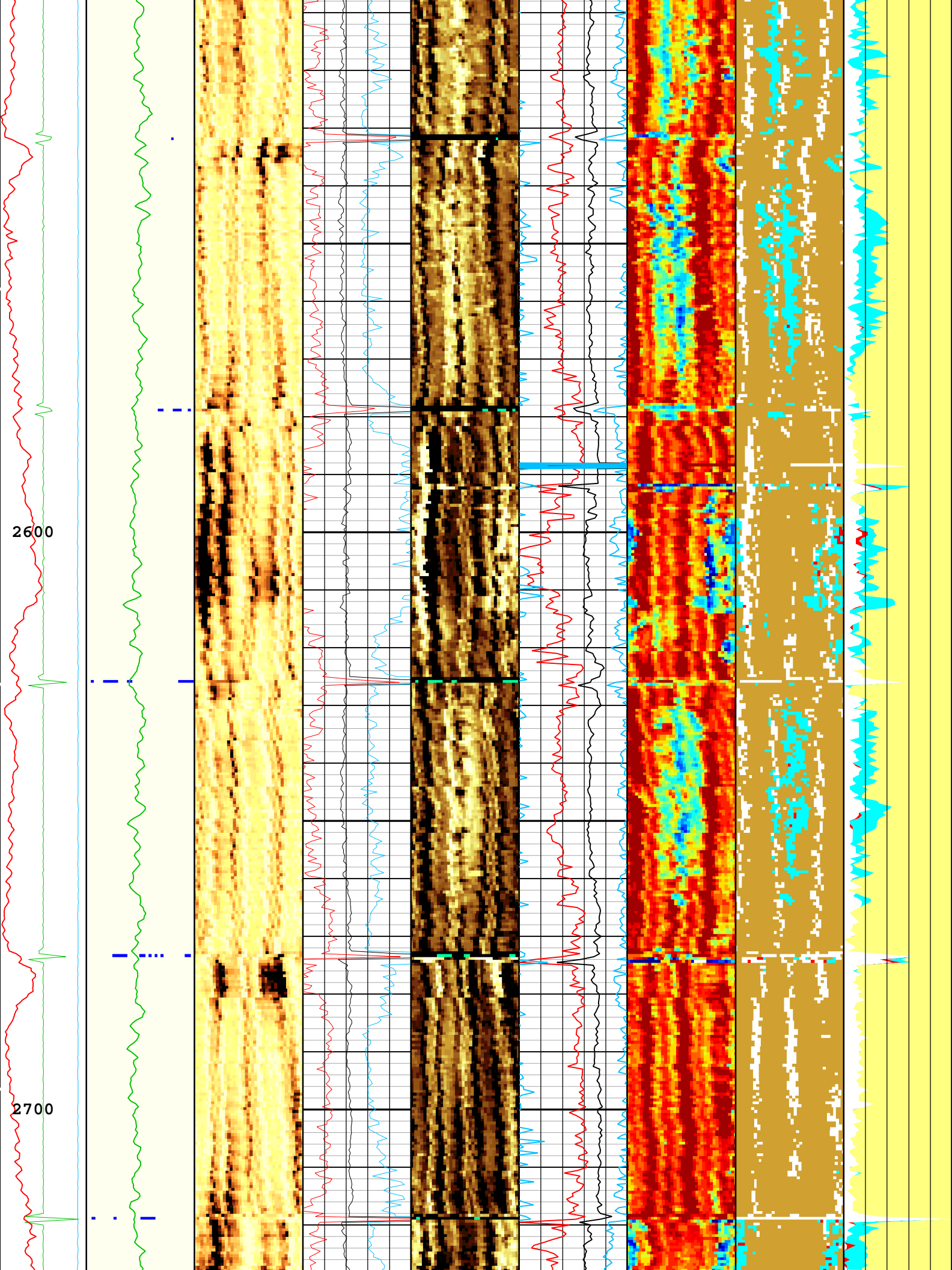


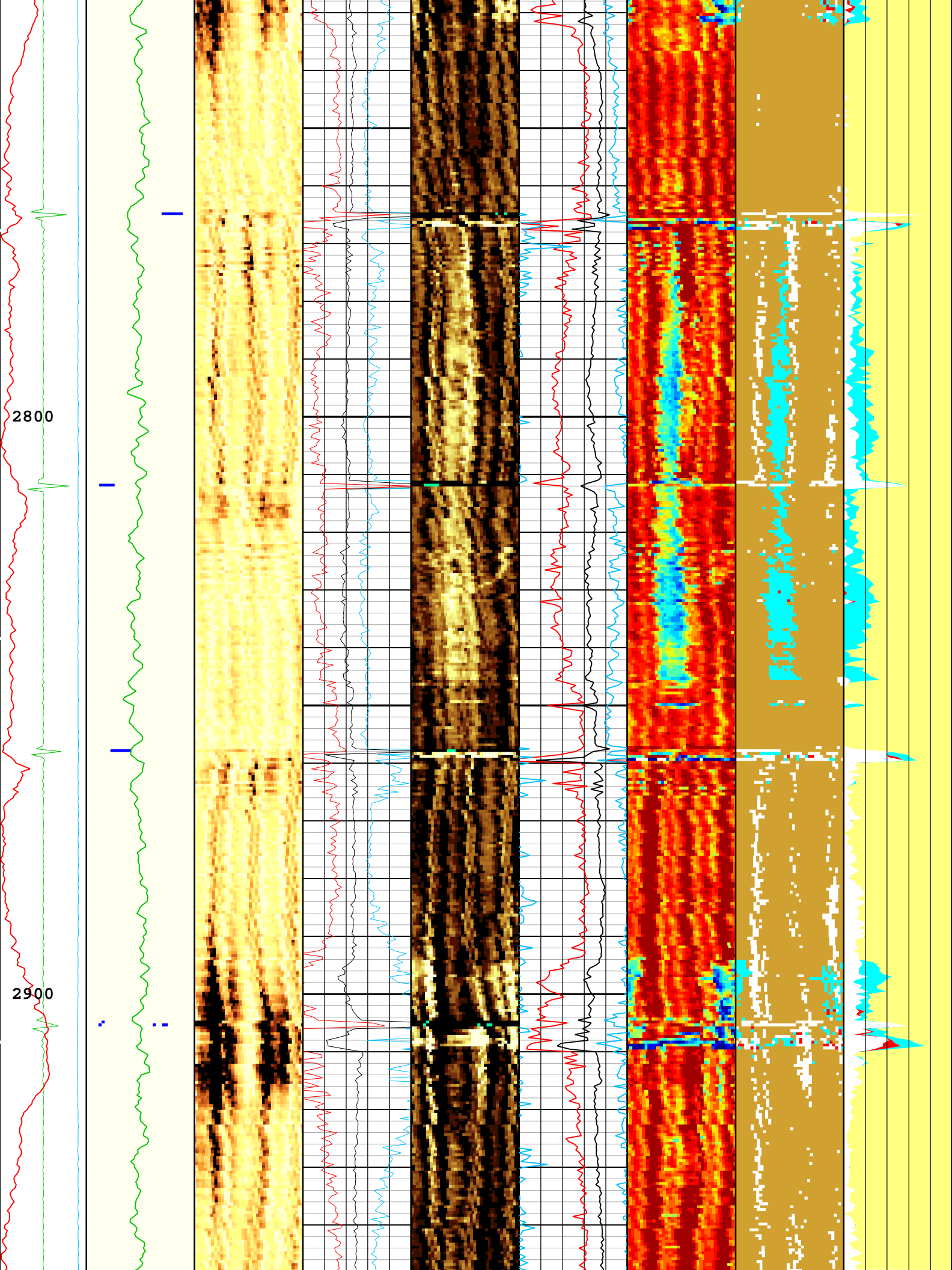


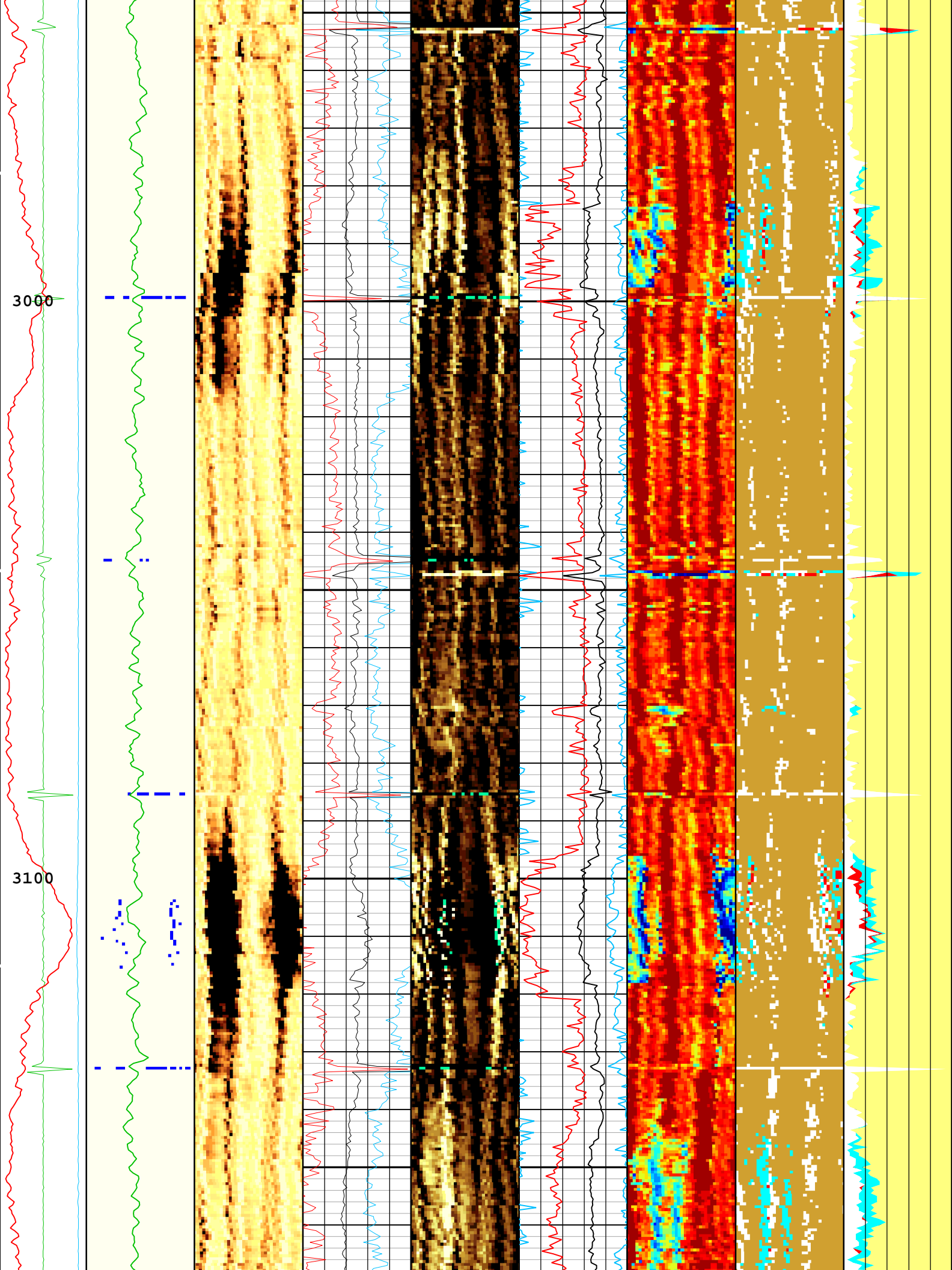


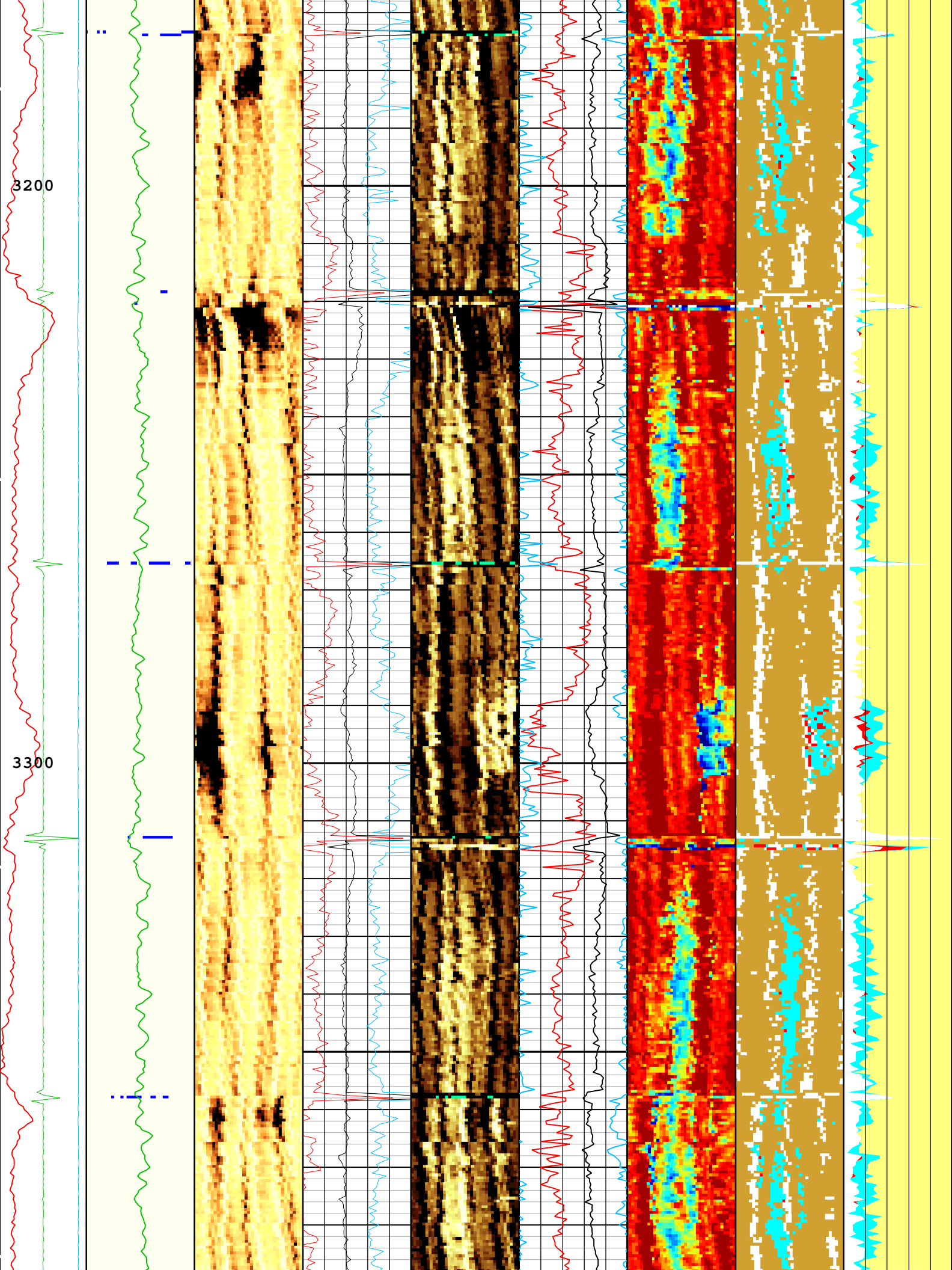




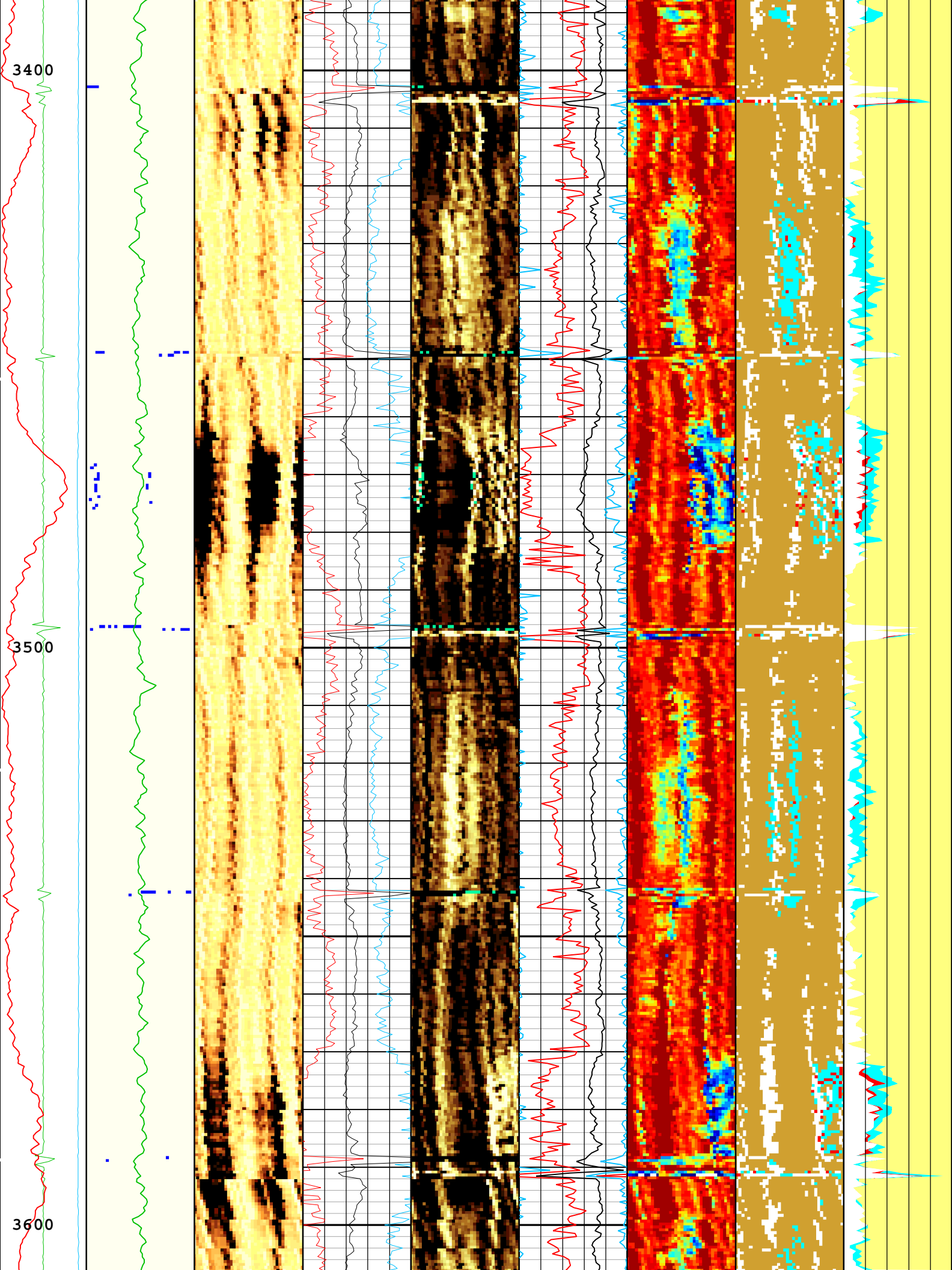


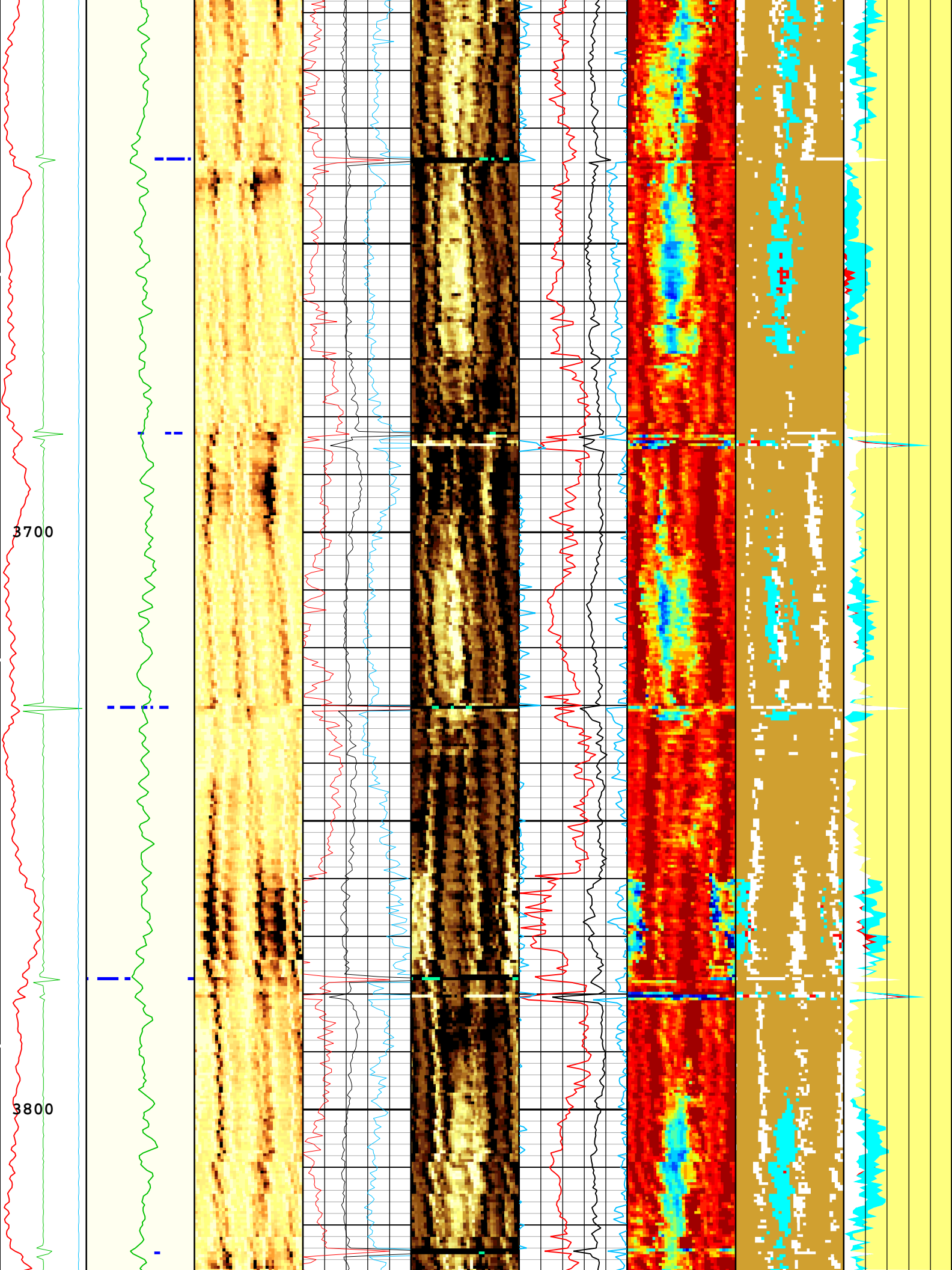


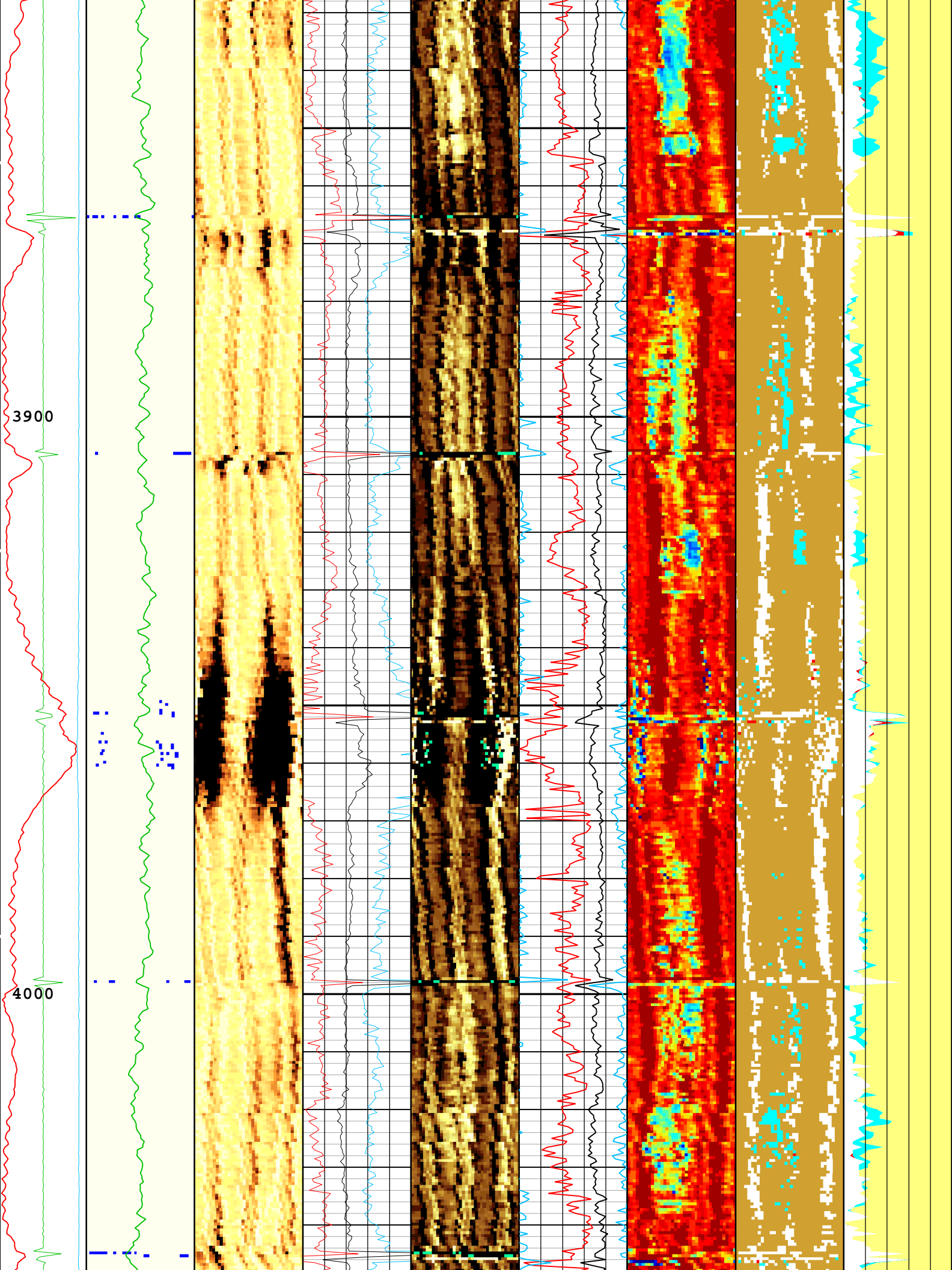


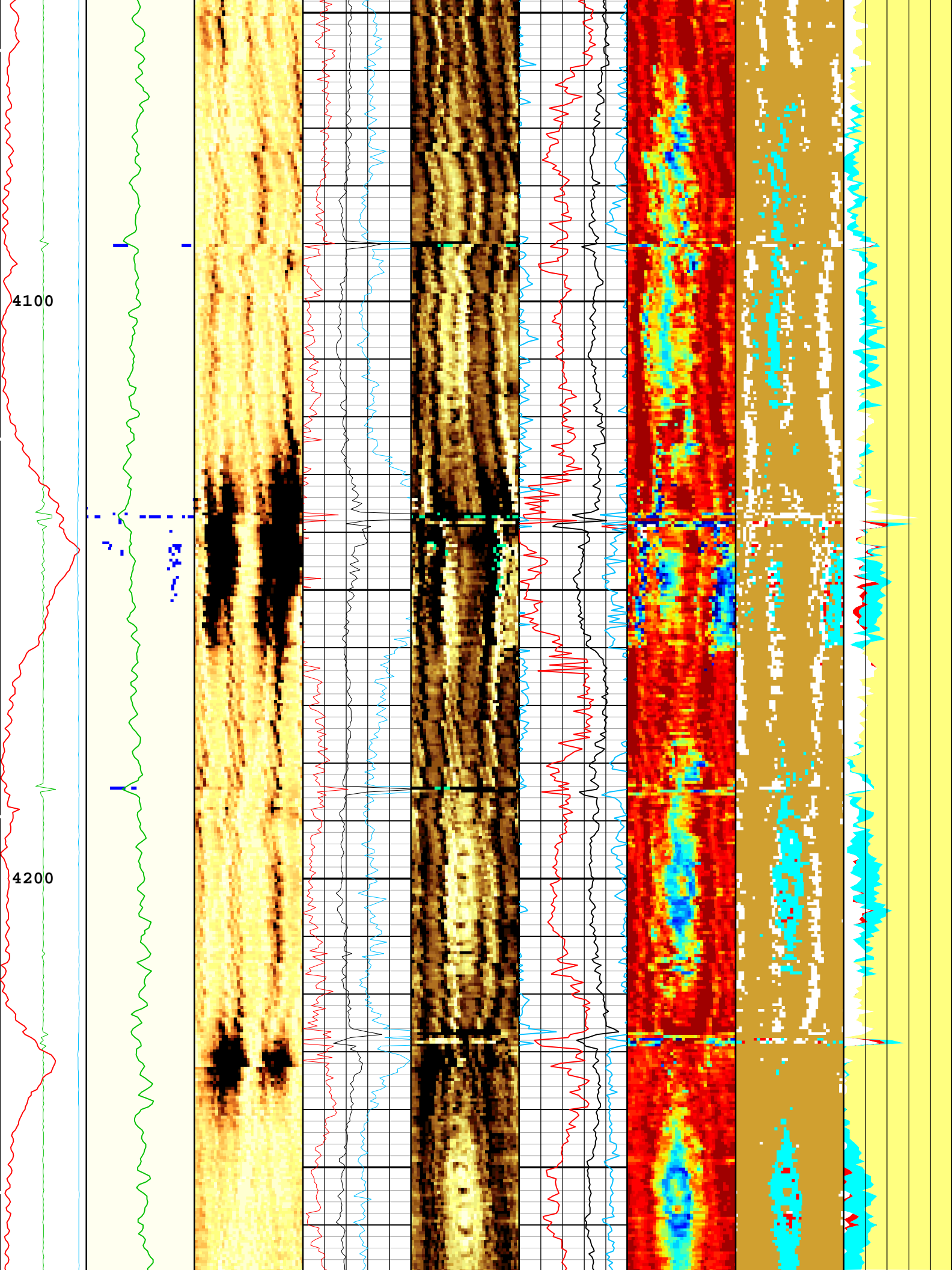




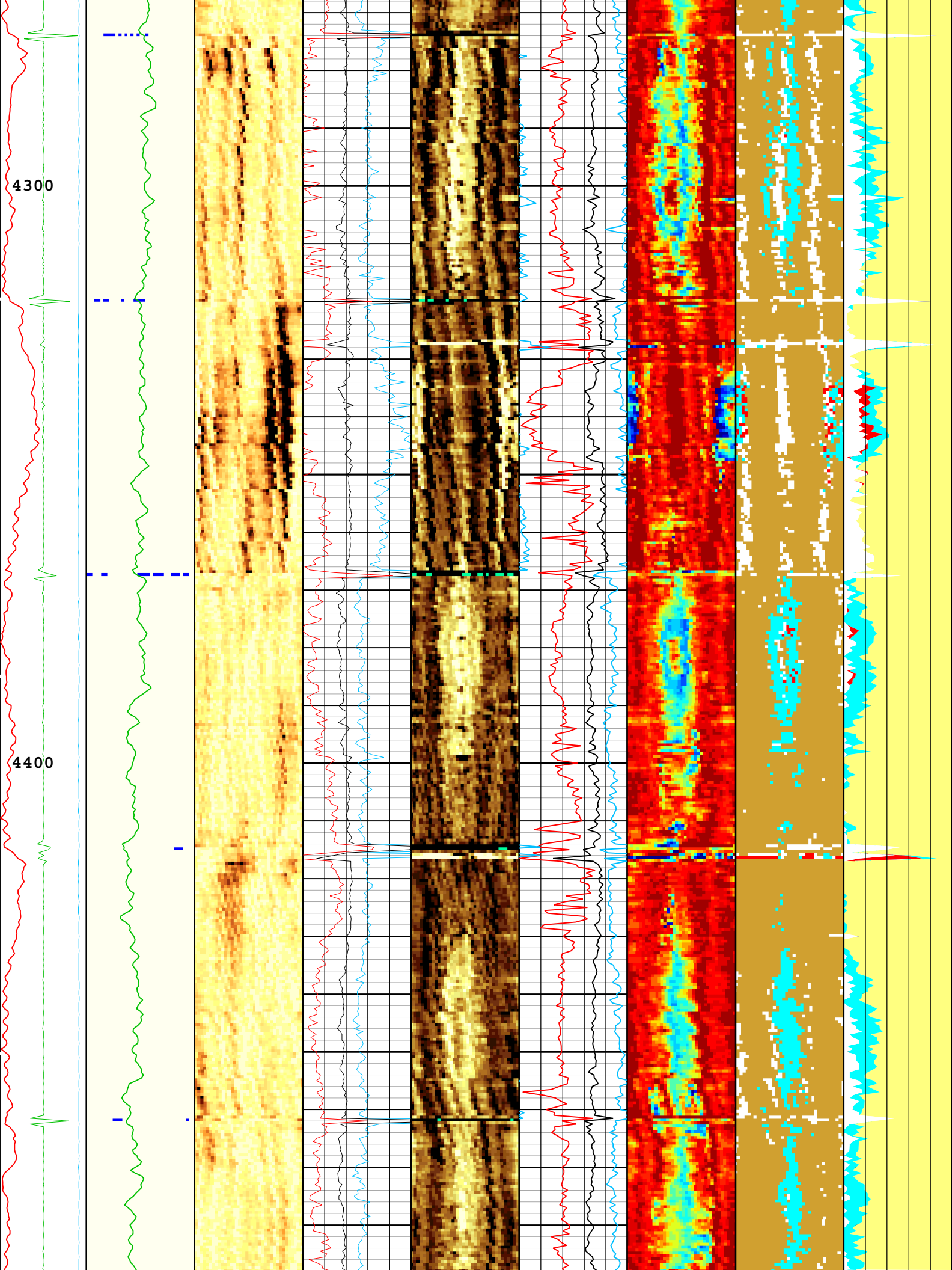


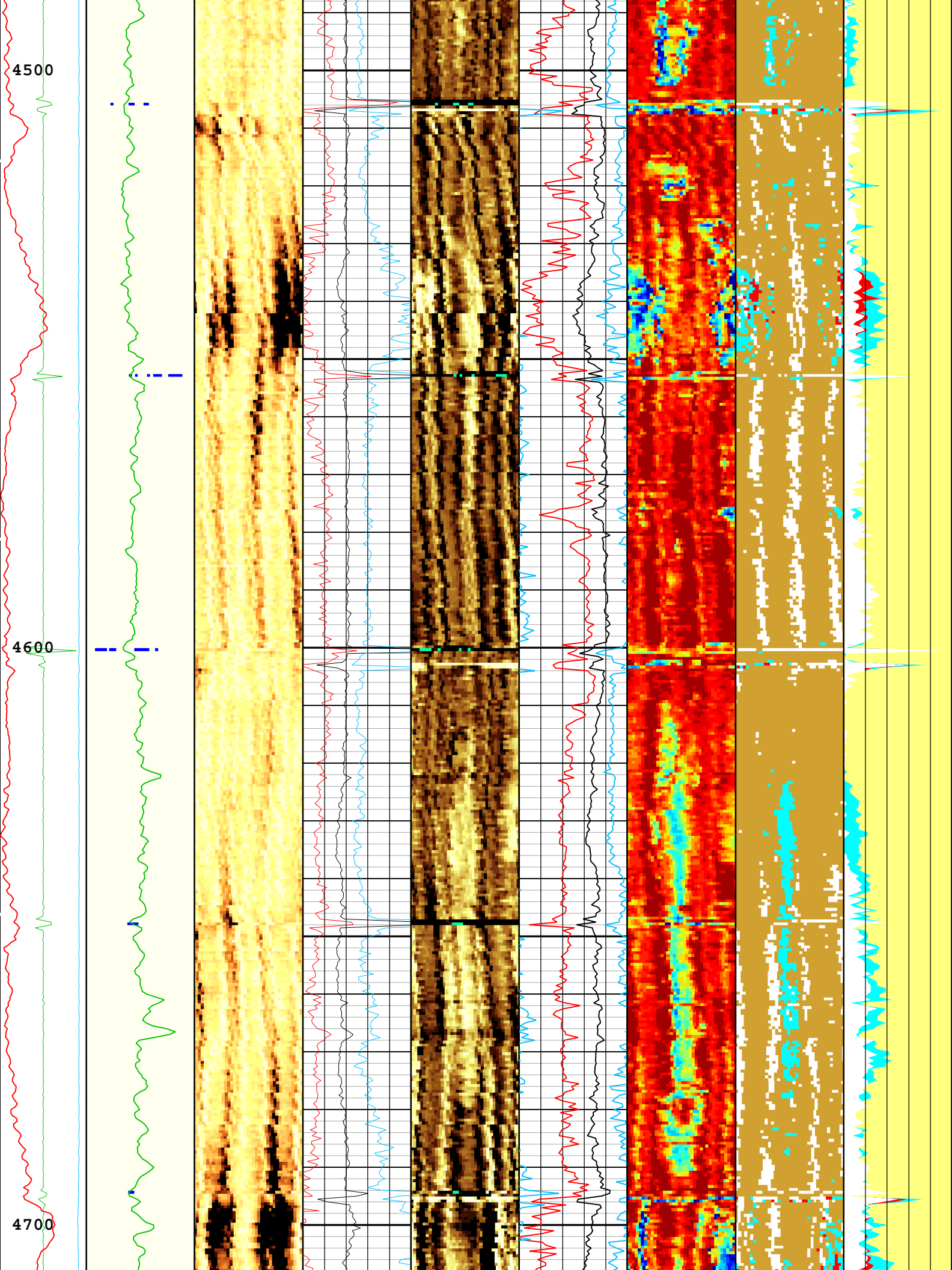


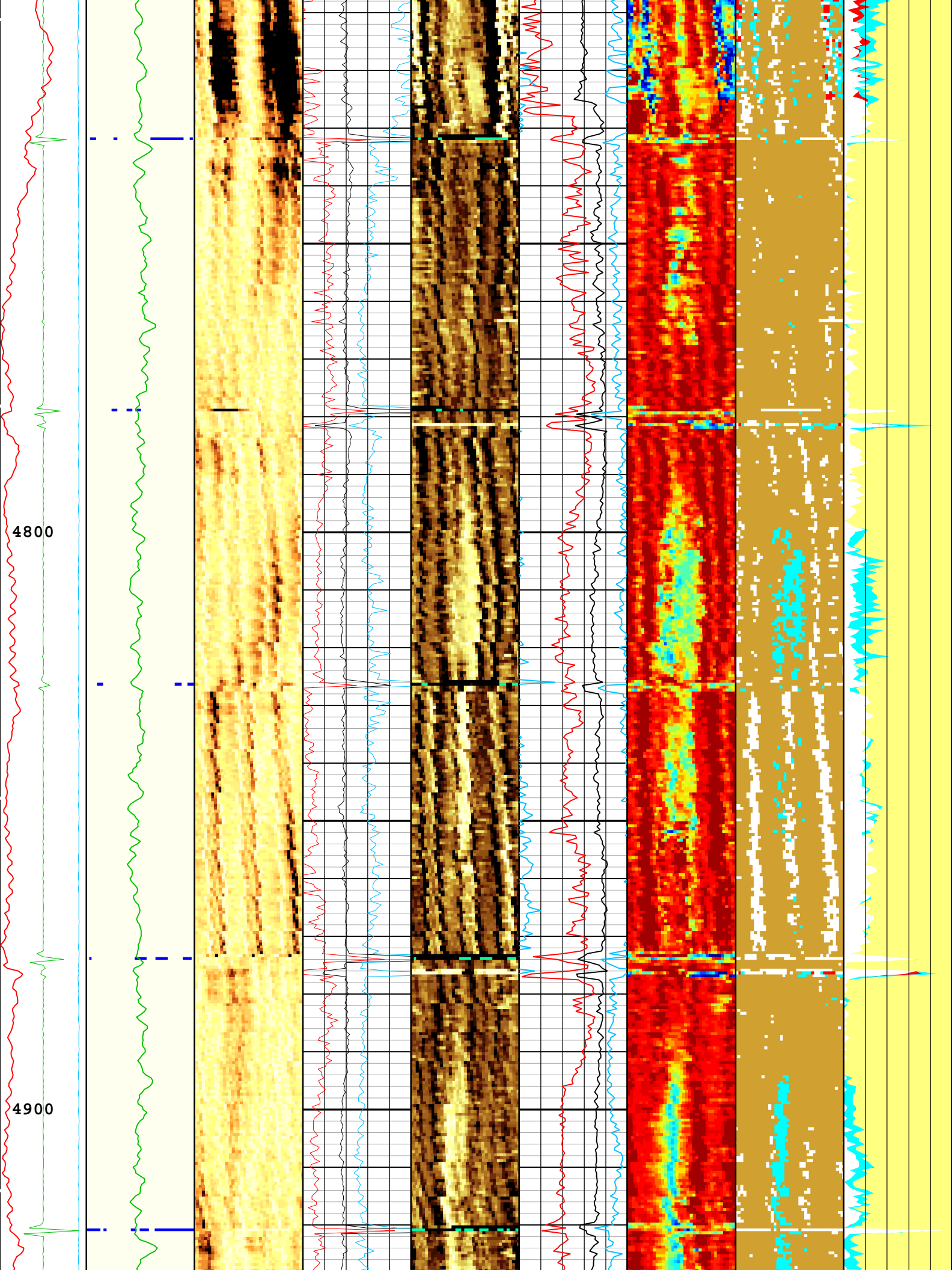


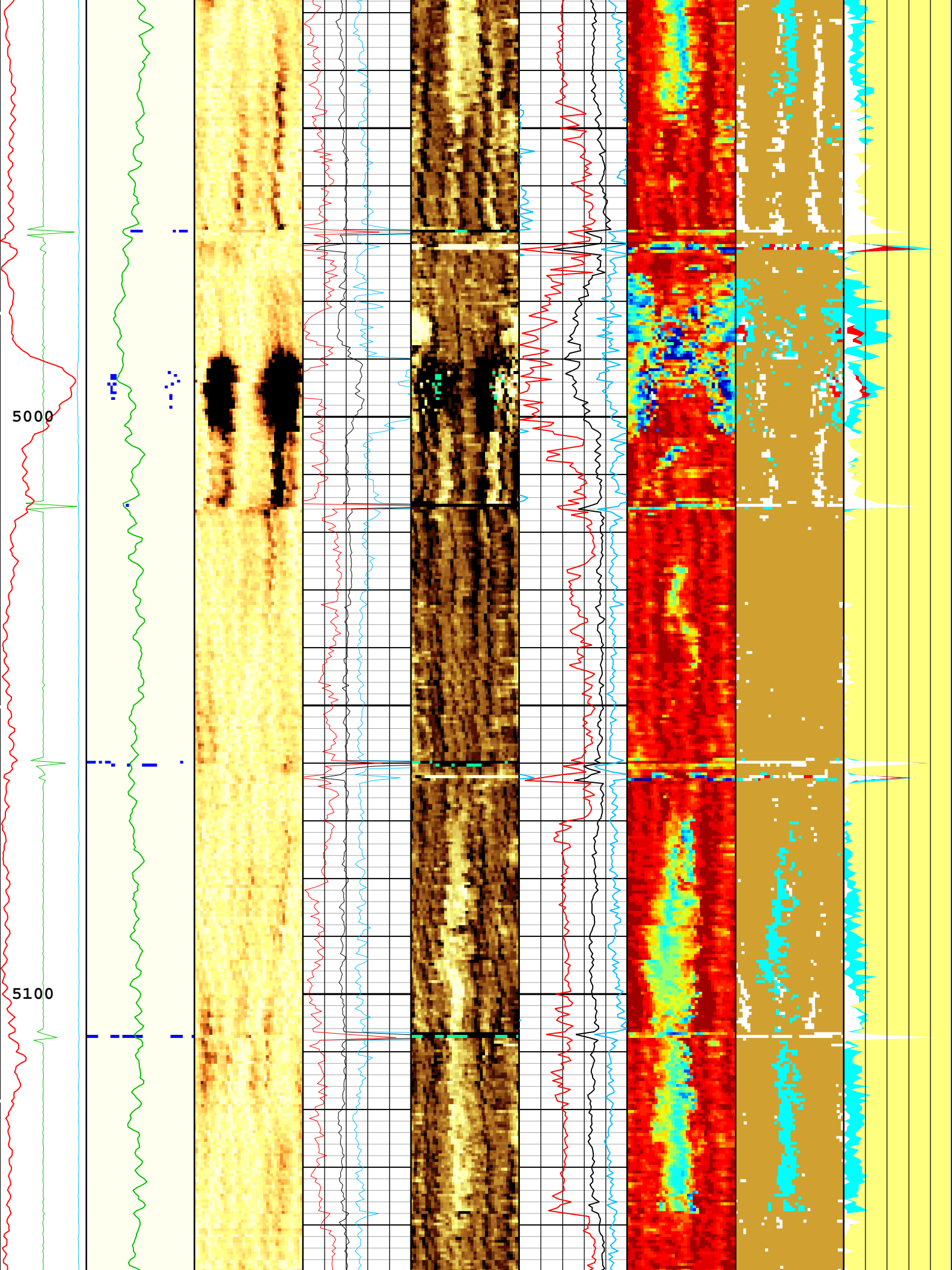




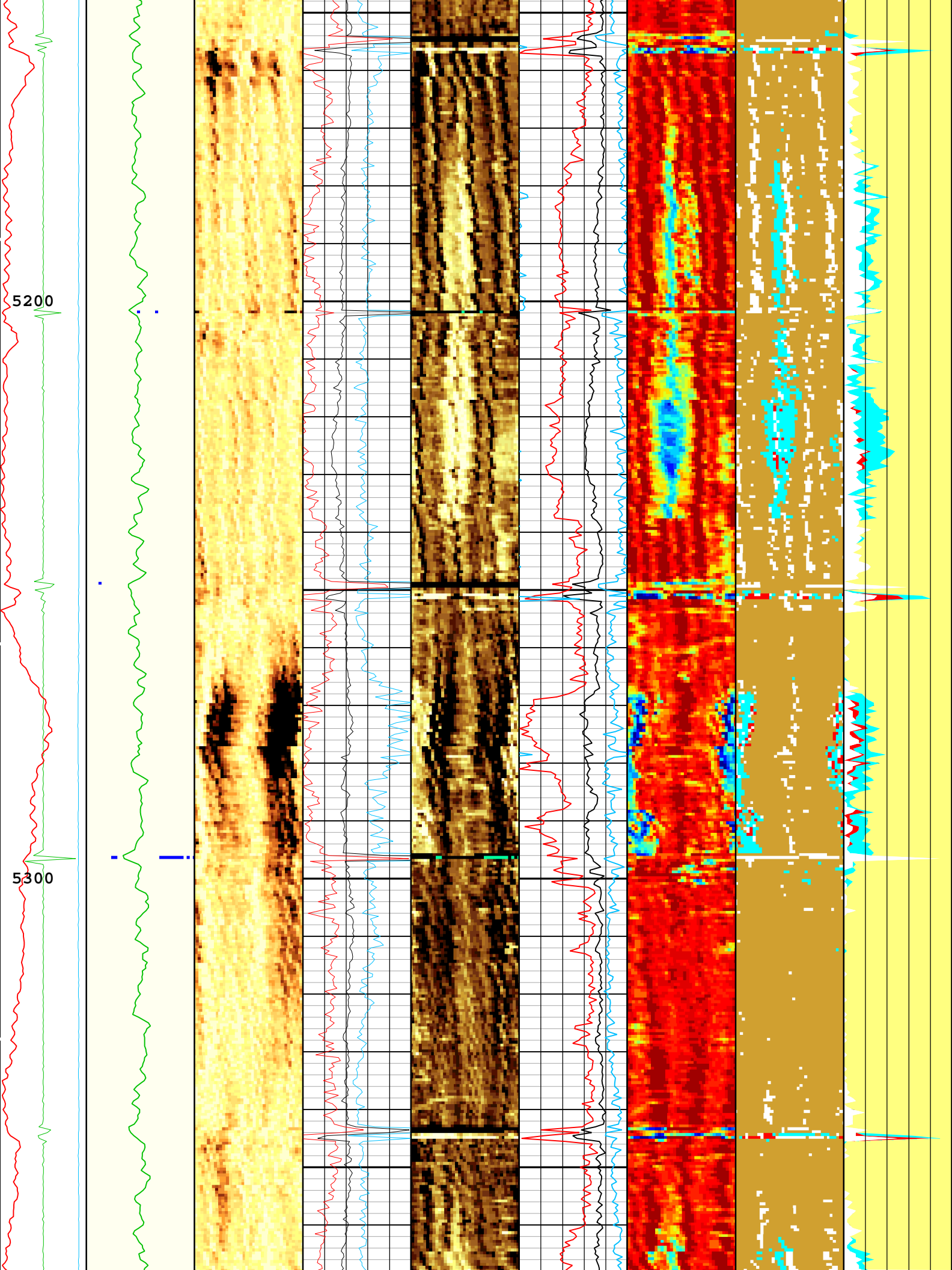


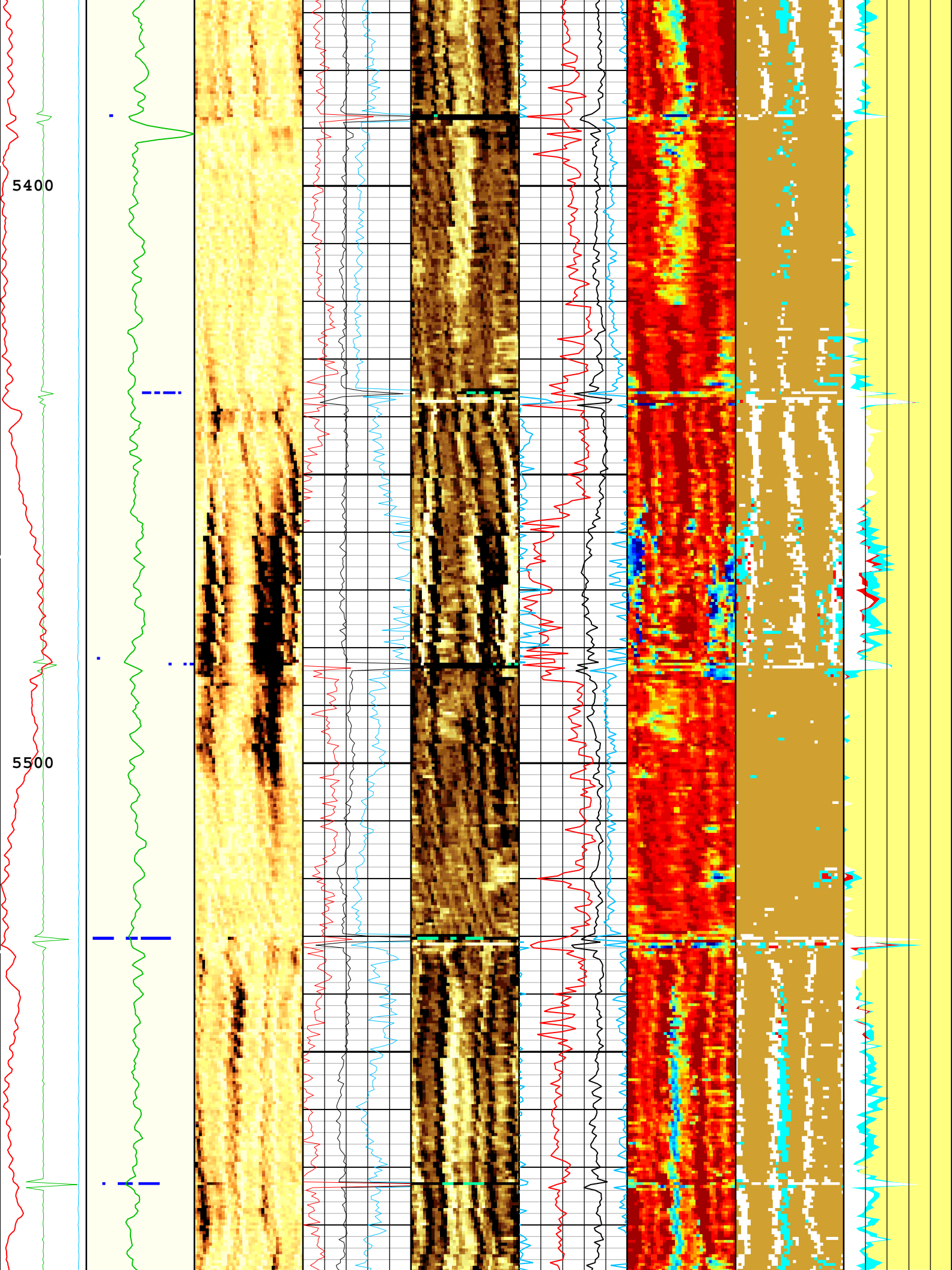


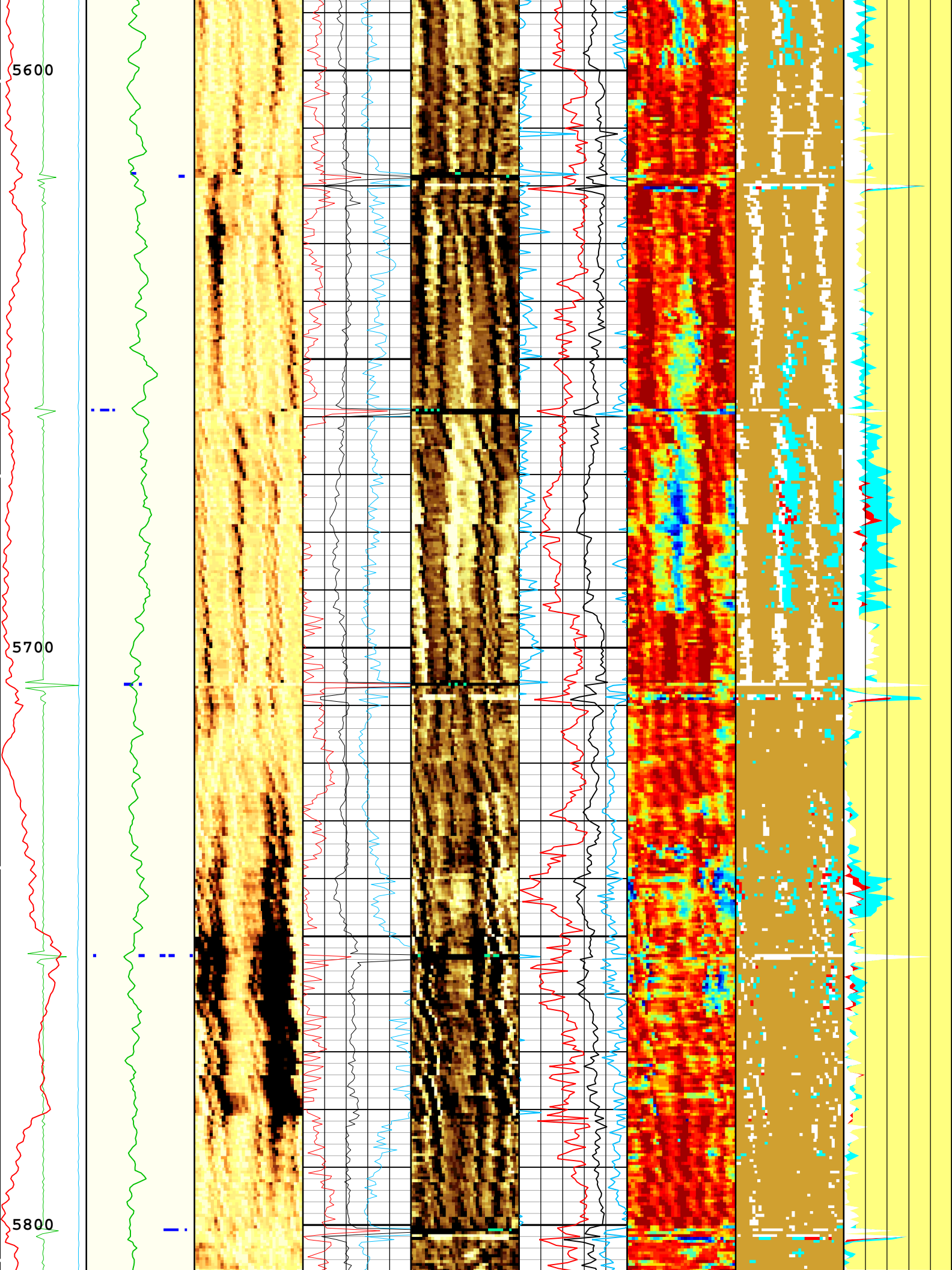


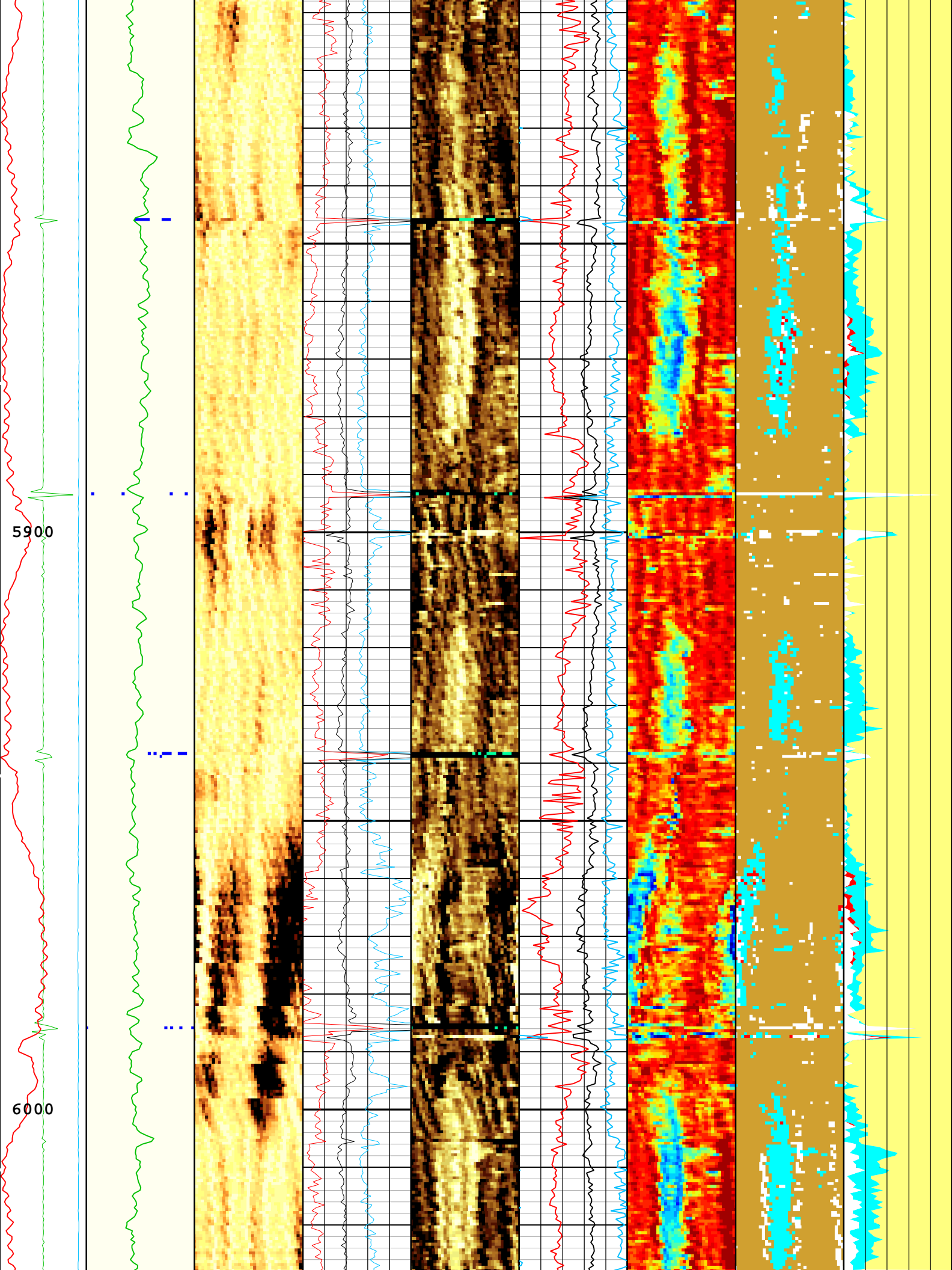




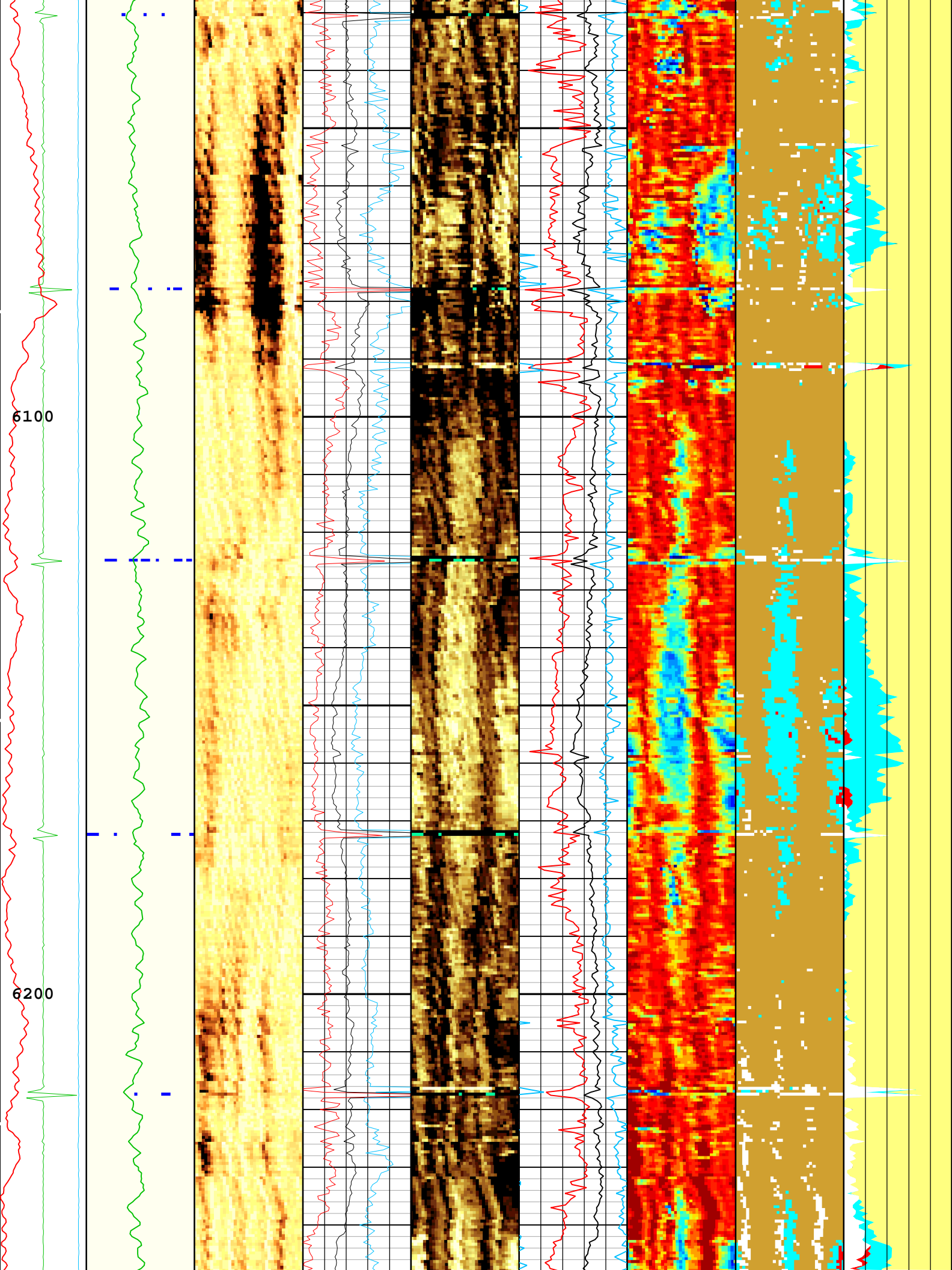


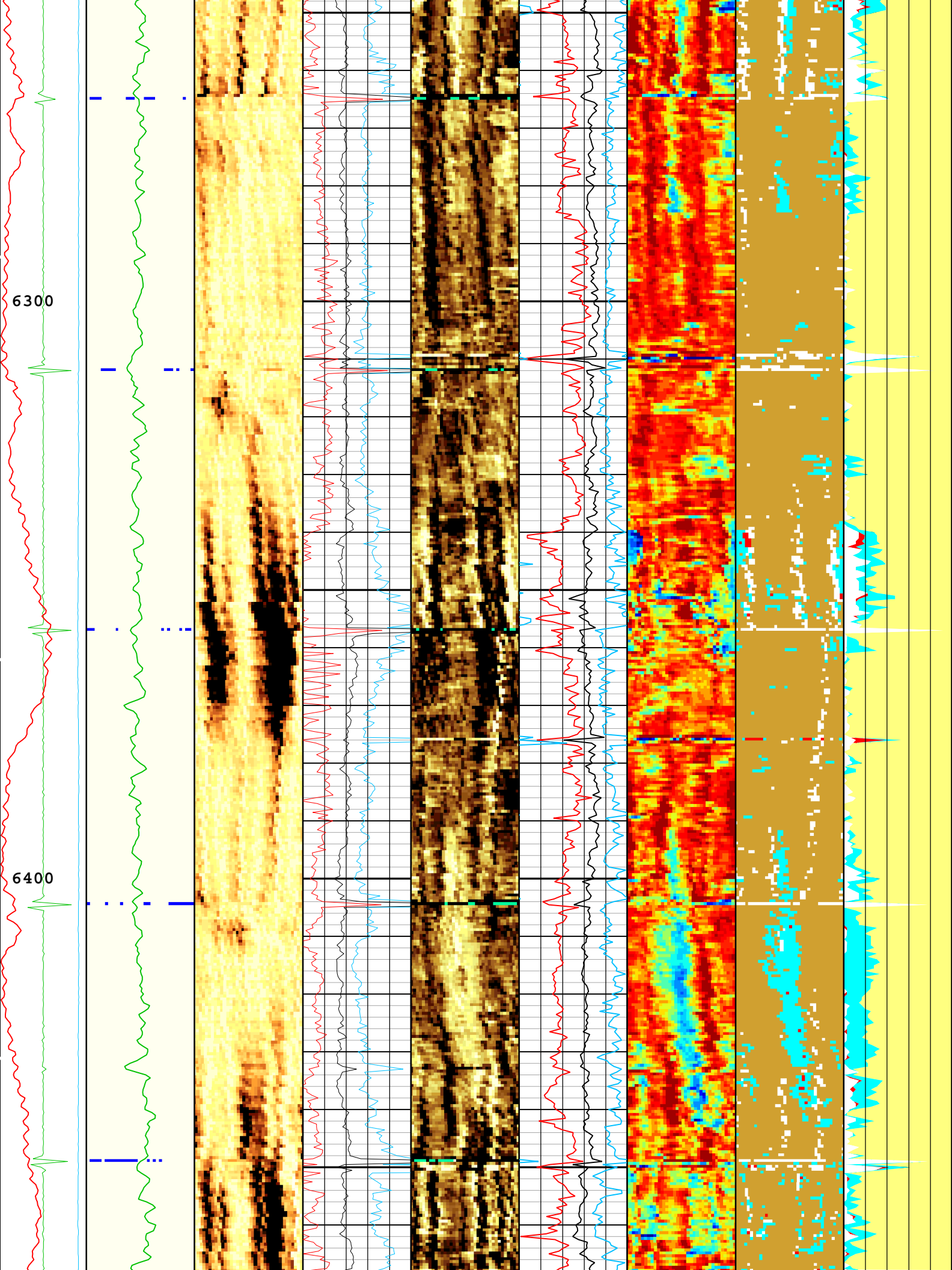


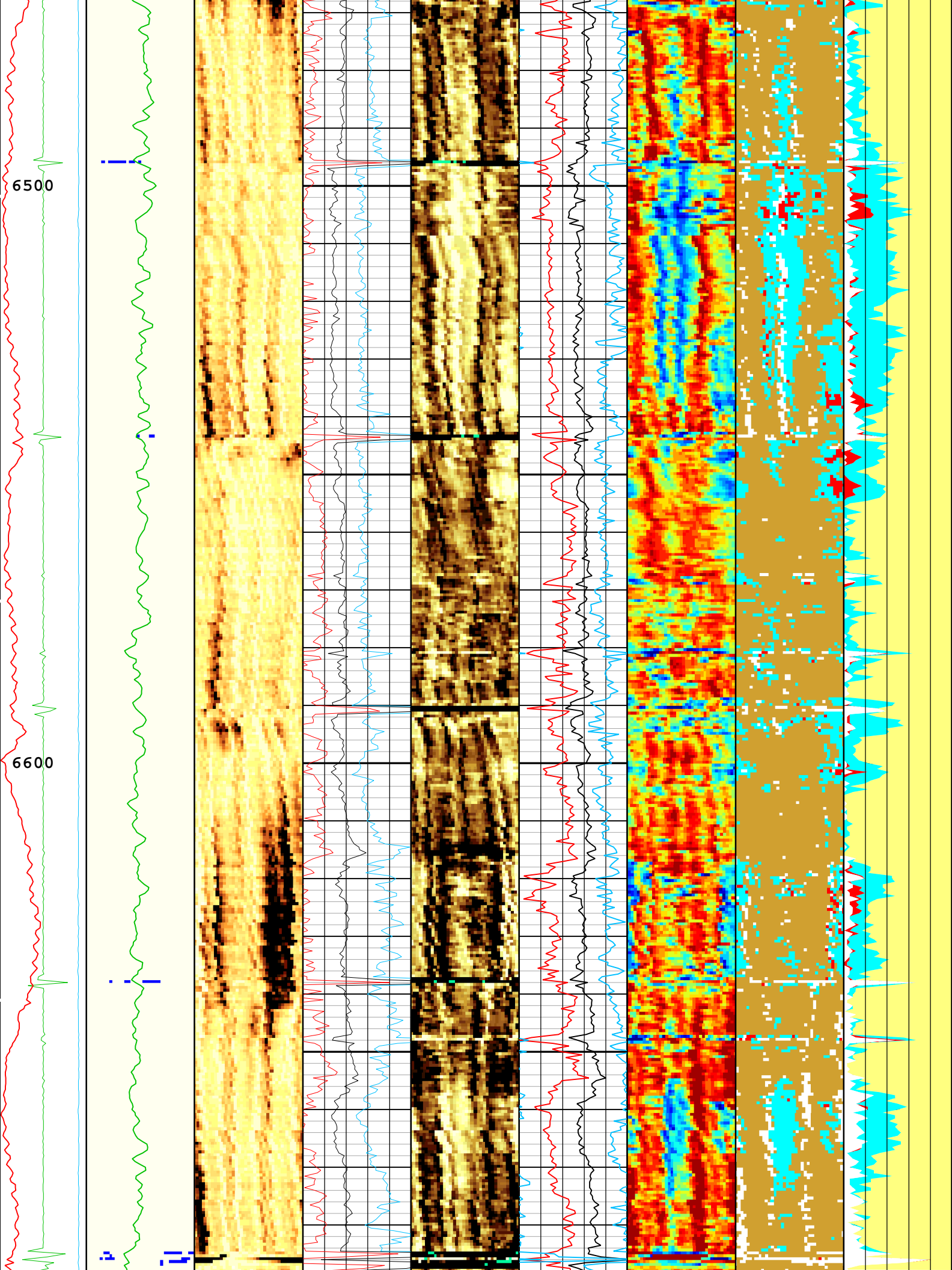


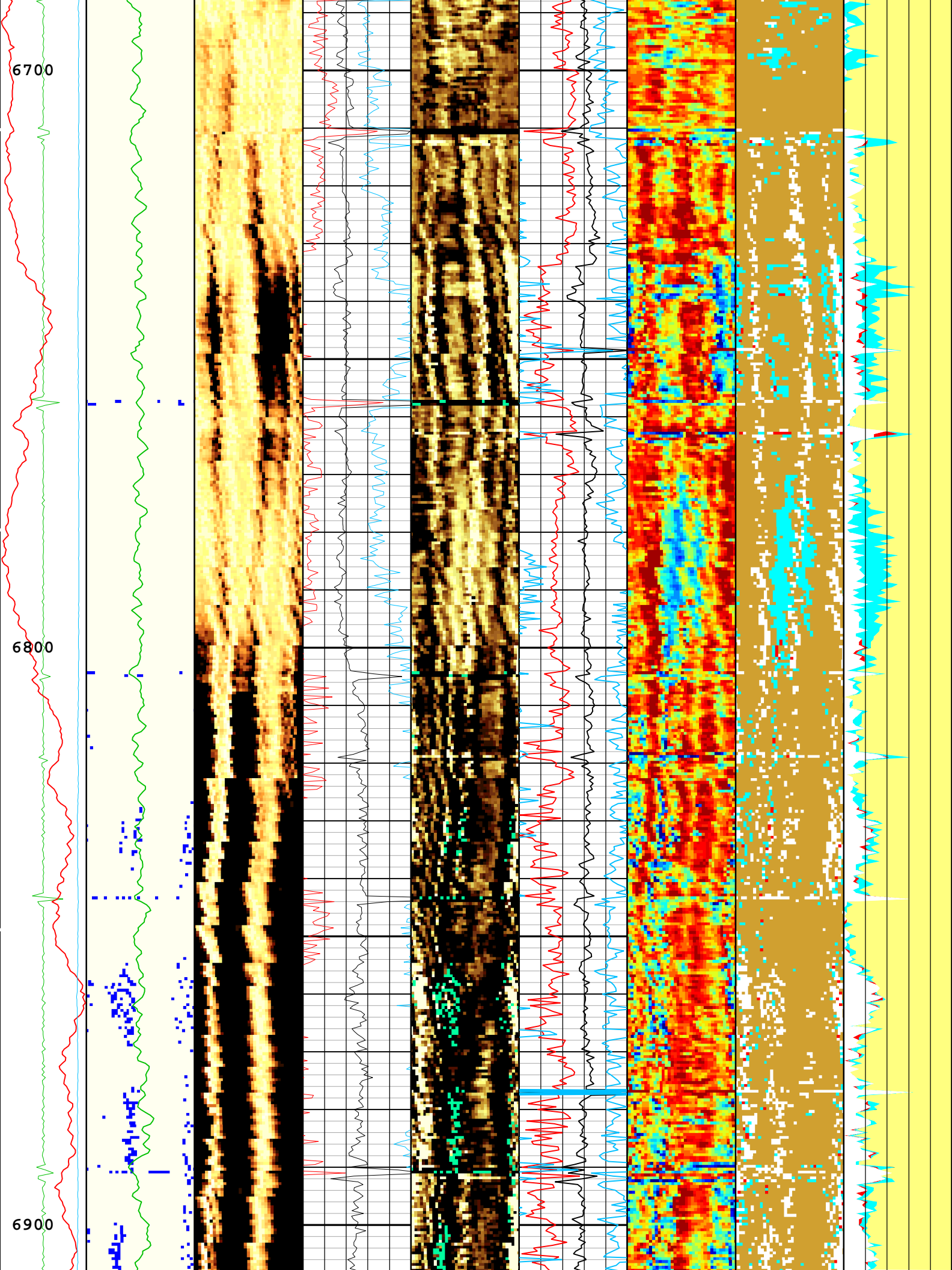




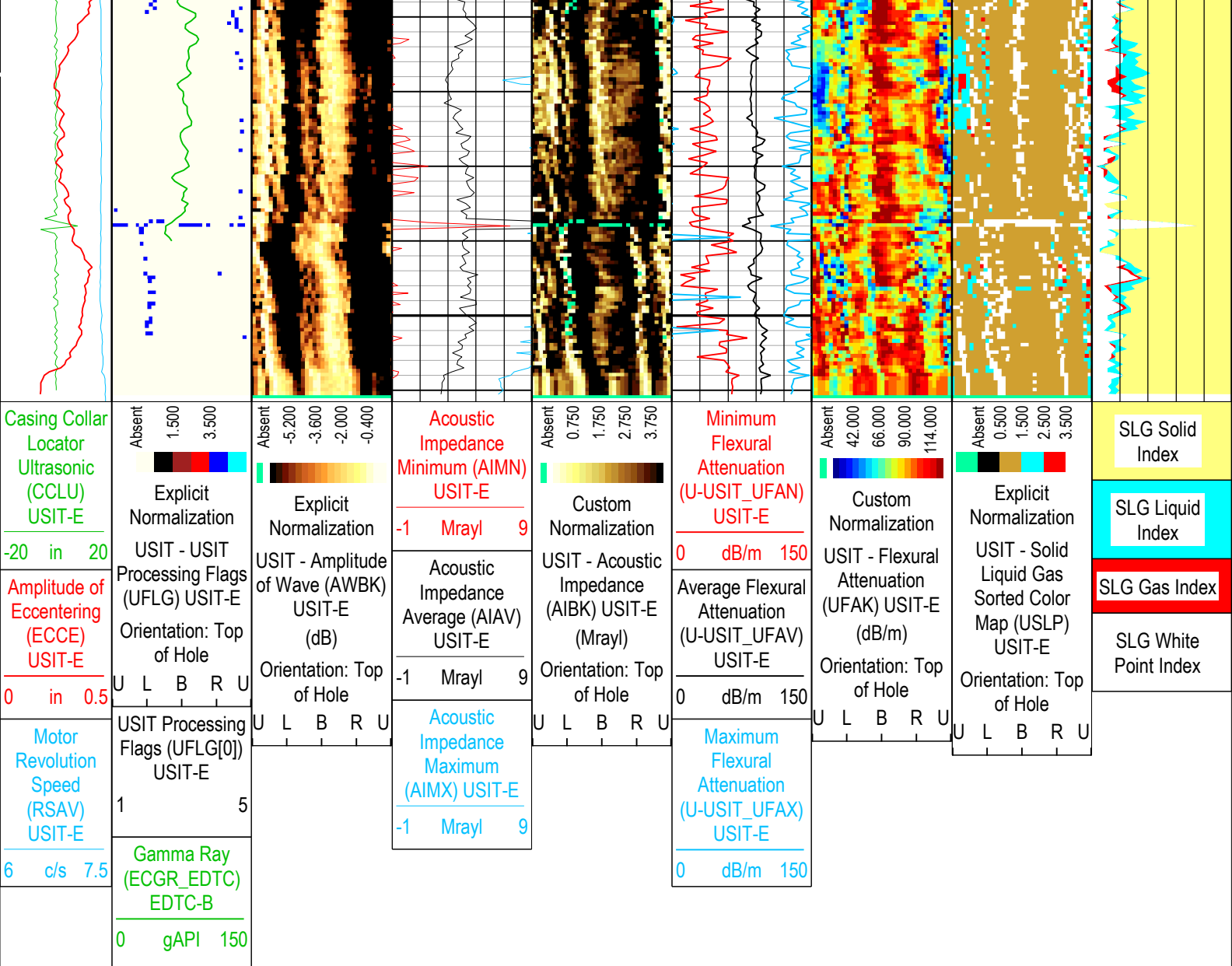












USIT Processing Flags (UFLG[0]) USIT-E

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: 01-Mar-2018 20:46:25

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	14209	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal

CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-46.77	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	Inversion 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	1.12	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.17	
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
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	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-26.2	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	1.75	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	100	1925
BS	8.75	1925	6961.5

All depth are actual.

## Tool Control Parameters

### ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
ACMX	Maximum Gain of Cartridge	USIT-E	48	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
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	136	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	176	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	105	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	145	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	31.17	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	01-Mar-2018 11:42:10	01-Mar-2018 11:43:30	6962.23	6883.27
EMXV	100	01-Mar-2018 11:43:30	01-Mar-2018 11:53:59	6883.27	6153.66
EMXV	80	01-Mar-2018 11:53:59	01-Mar-2018 12:01:46	6153.66	5617.16
EMXV	90	01-Mar-2018 12:01:46	01-Mar-2018 12:20:21	5617.16	4361.69
EMXV	80	01-Mar-2018 12:20:21	01-Mar-2018 12:26:45	4361.69	3939.64
EMXV	100	01-Mar-2018 12:26:45	01-Mar-2018 13:08:38	3939.64	1057.41
EMXV	80	01-Mar-2018 13:08:38	01-Mar-2018 13:22:53	1057.41	70.16
WINE	71.17	01-Mar-2018 11:42:10	01-Mar-2018 11:43:34	6962.23	6878.36
WINE	80.13	01-Mar-2018 11:43:34	01-Mar-2018 11:44:06	6878.36	6840.88
WINE	70.82	01-Mar-2018 11:44:06	01-Mar-2018 11:45:25	6840.88	6749.66
WINE	72.33	01-Mar-2018 11:45:25	01-Mar-2018 12:01:50	6749.66	5612.24
WINE	76.62	01-Mar-2018 12:01:50	01-Mar-2018 12:30:36	5612.24	3681.87
WINE	74.67	01-Mar-2018 12:30:36	01-Mar-2018 12:46:31	3681.87	2589.85
WINE	77.79	01-Mar-2018 12:46:31	01-Mar-2018 13:22:53	2589.85	70.16

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[6]:Up	Up	70.16 ft	6962.23 ft	01-Mar-2018 11:42:10 AM	01-Mar-2018 1:22:53 PM	ON	12.24 ft	Yes

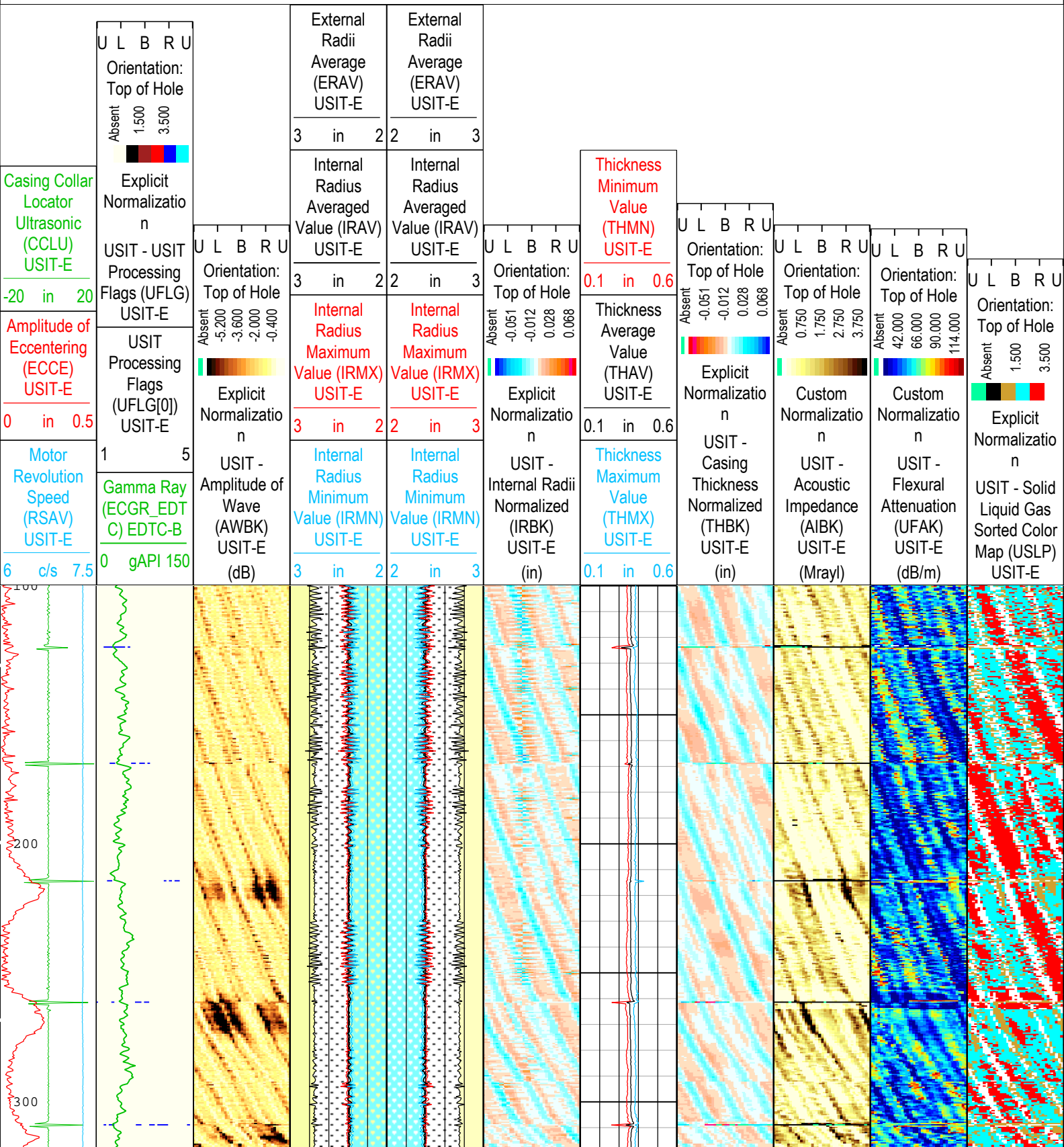
All depths are referenced to toolstring zero

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: 01-Mar-2018 20:46:36

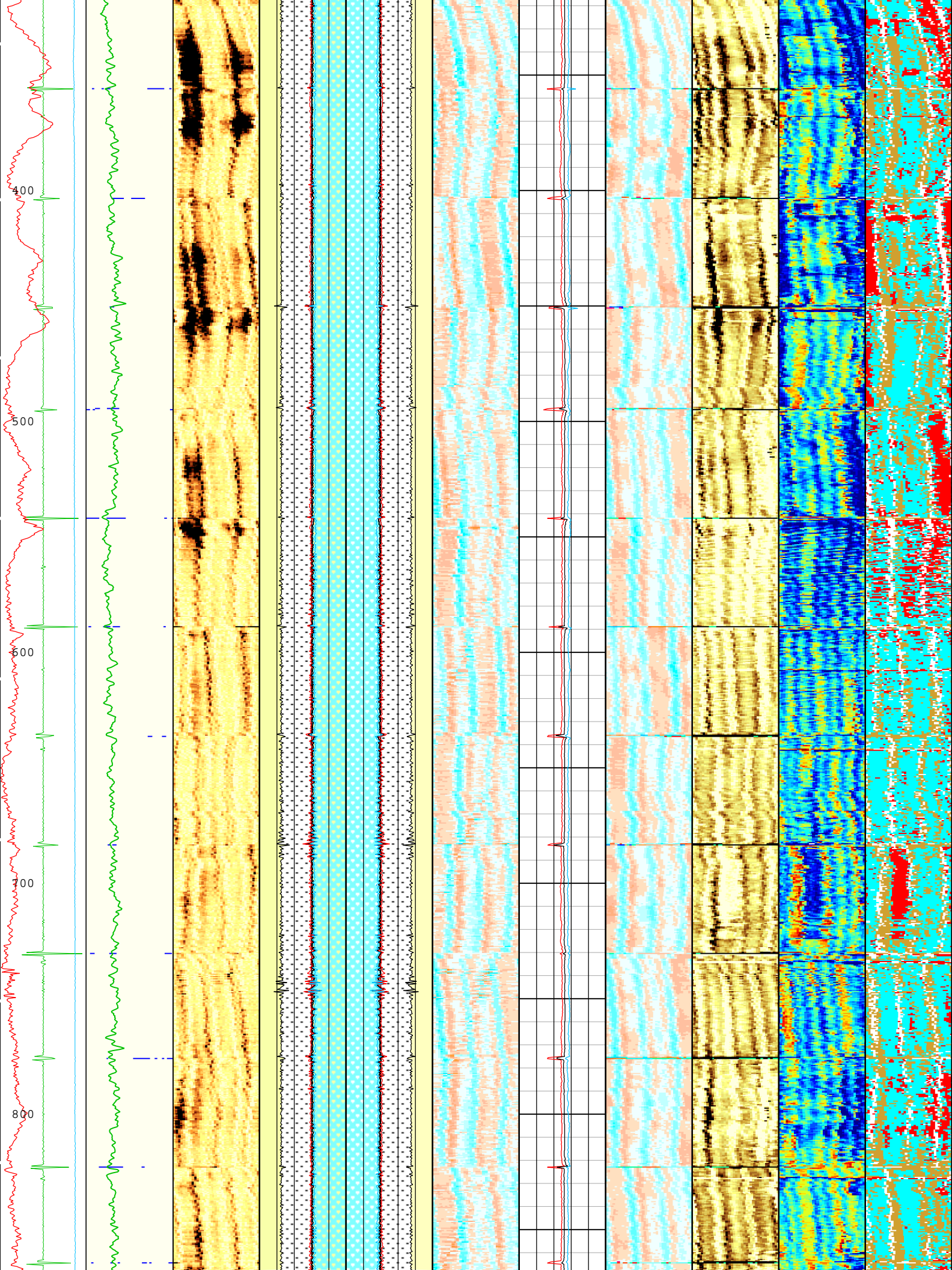
TIME\_1900 - Time Marked every 60.00 (s)

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

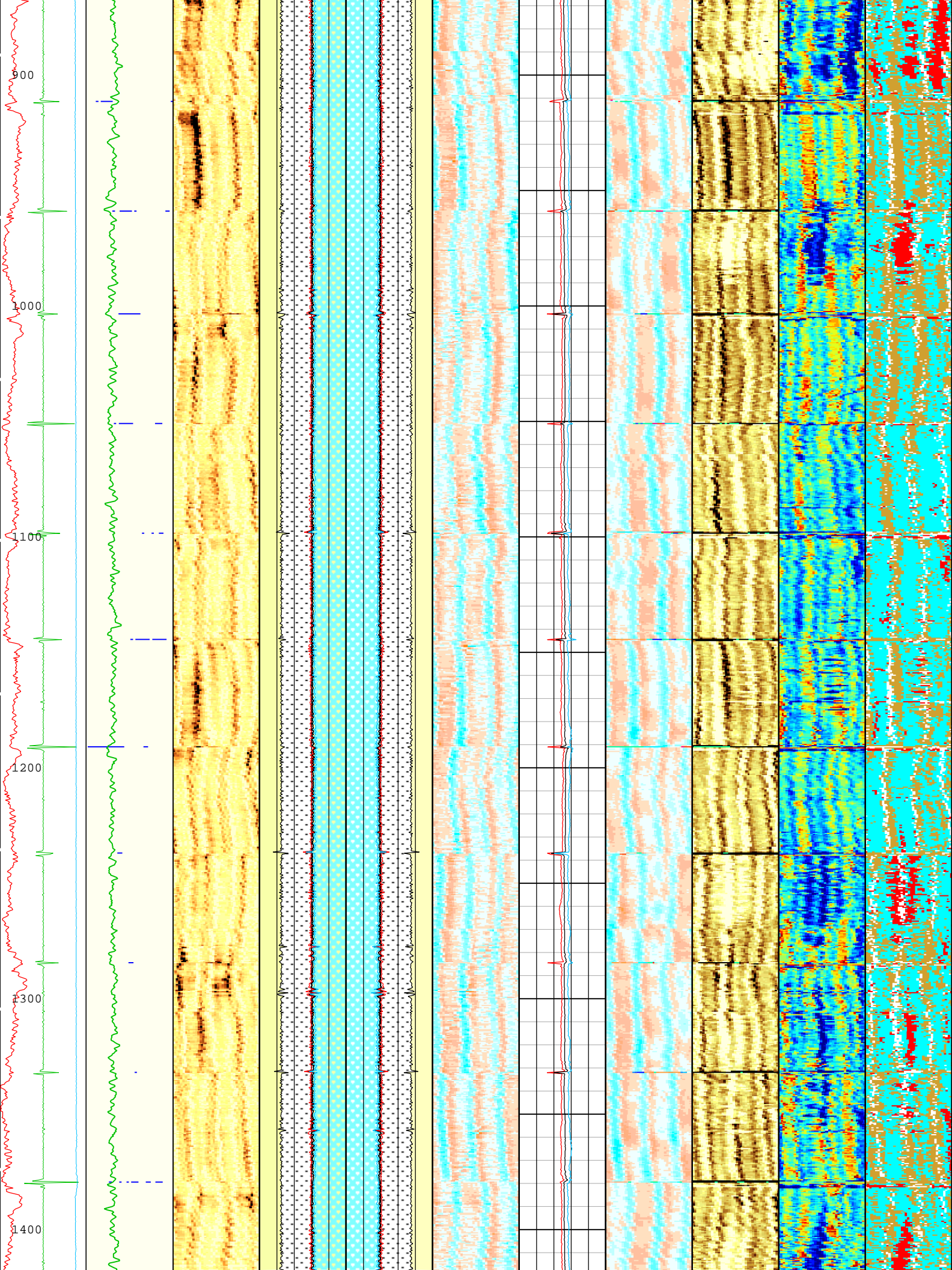
- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error  
 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected  
 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error  
 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error  
 5 - UFLG 7 UFLG 8 UFLG 9 Value within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



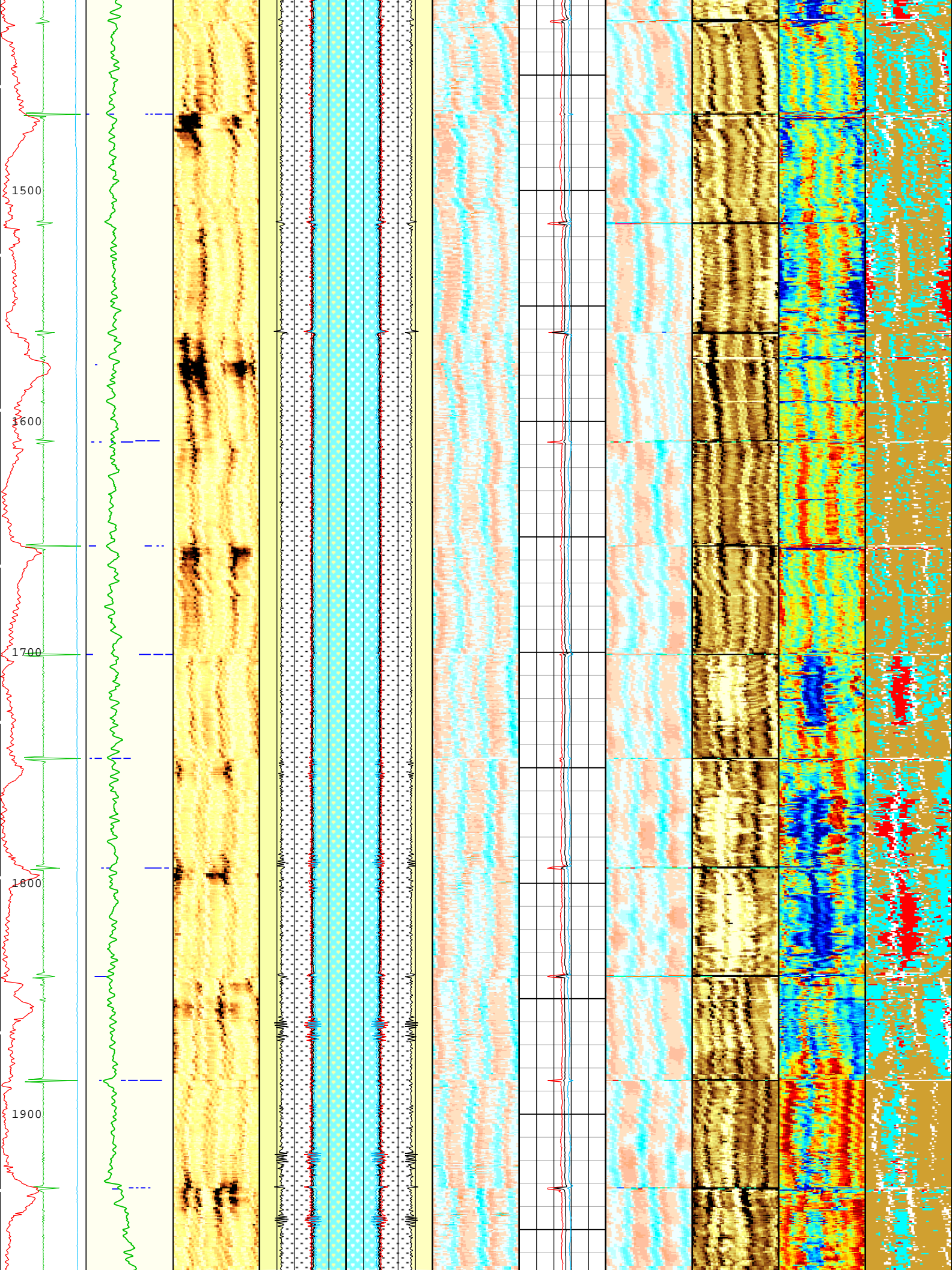




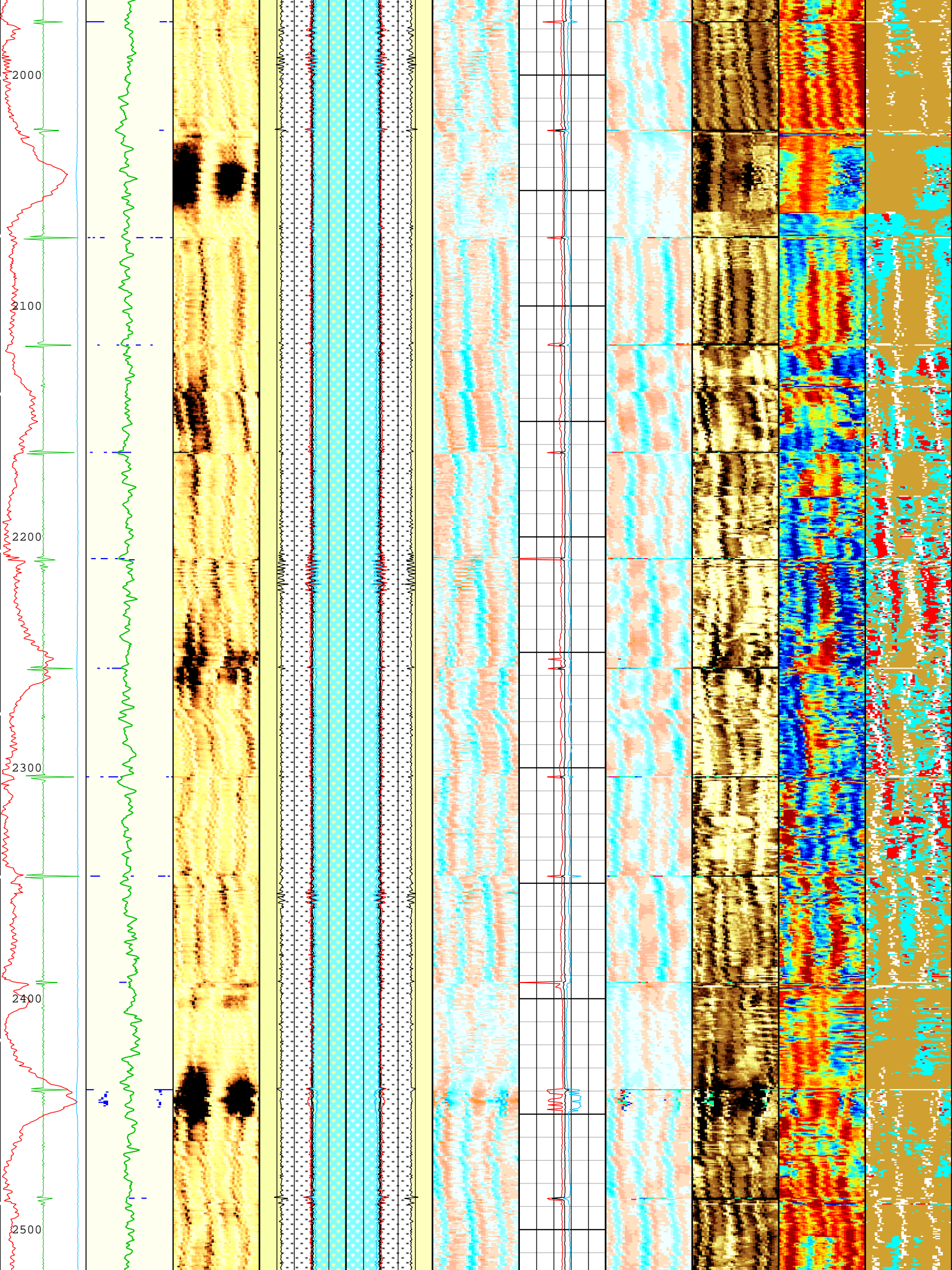


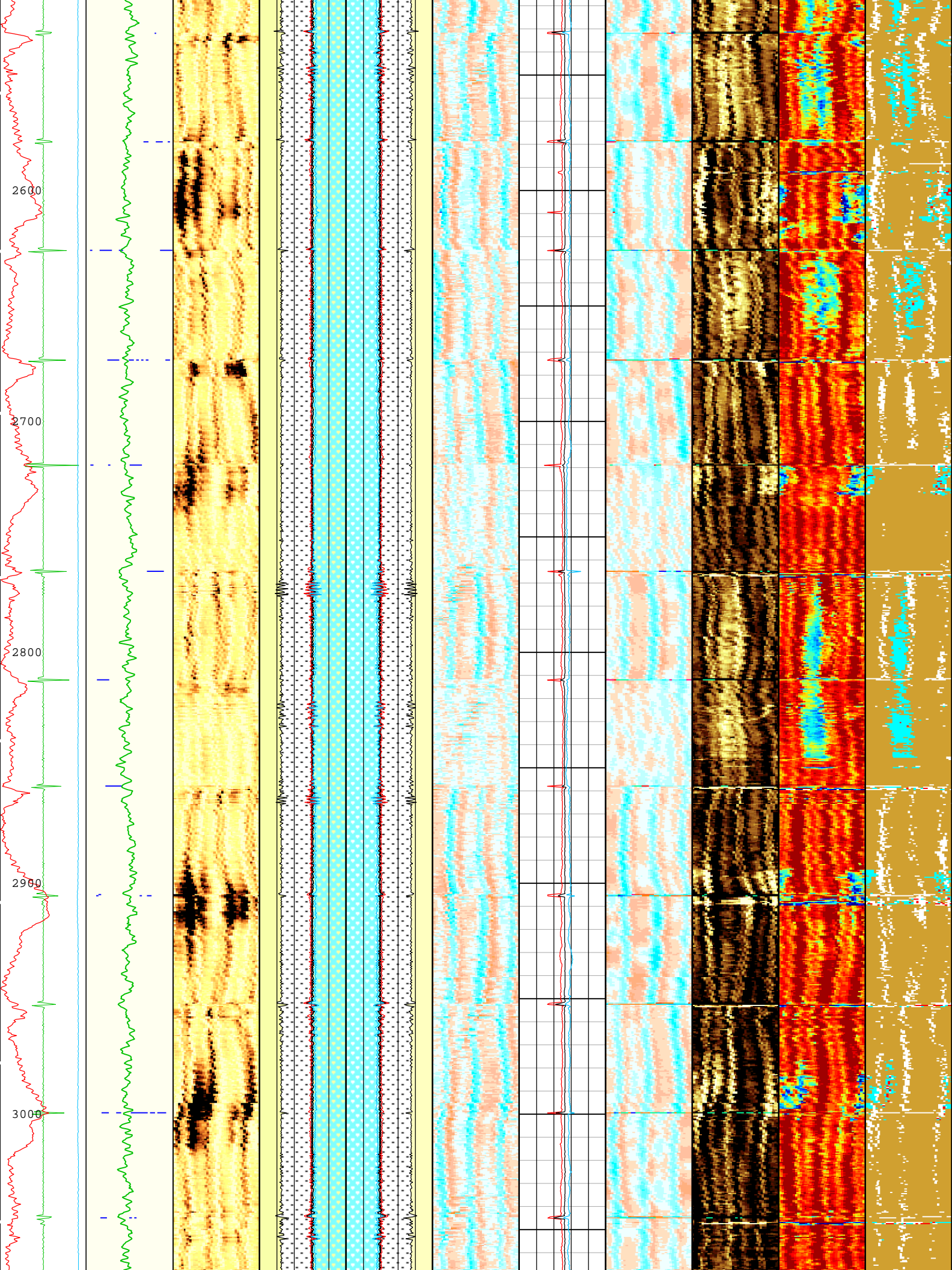




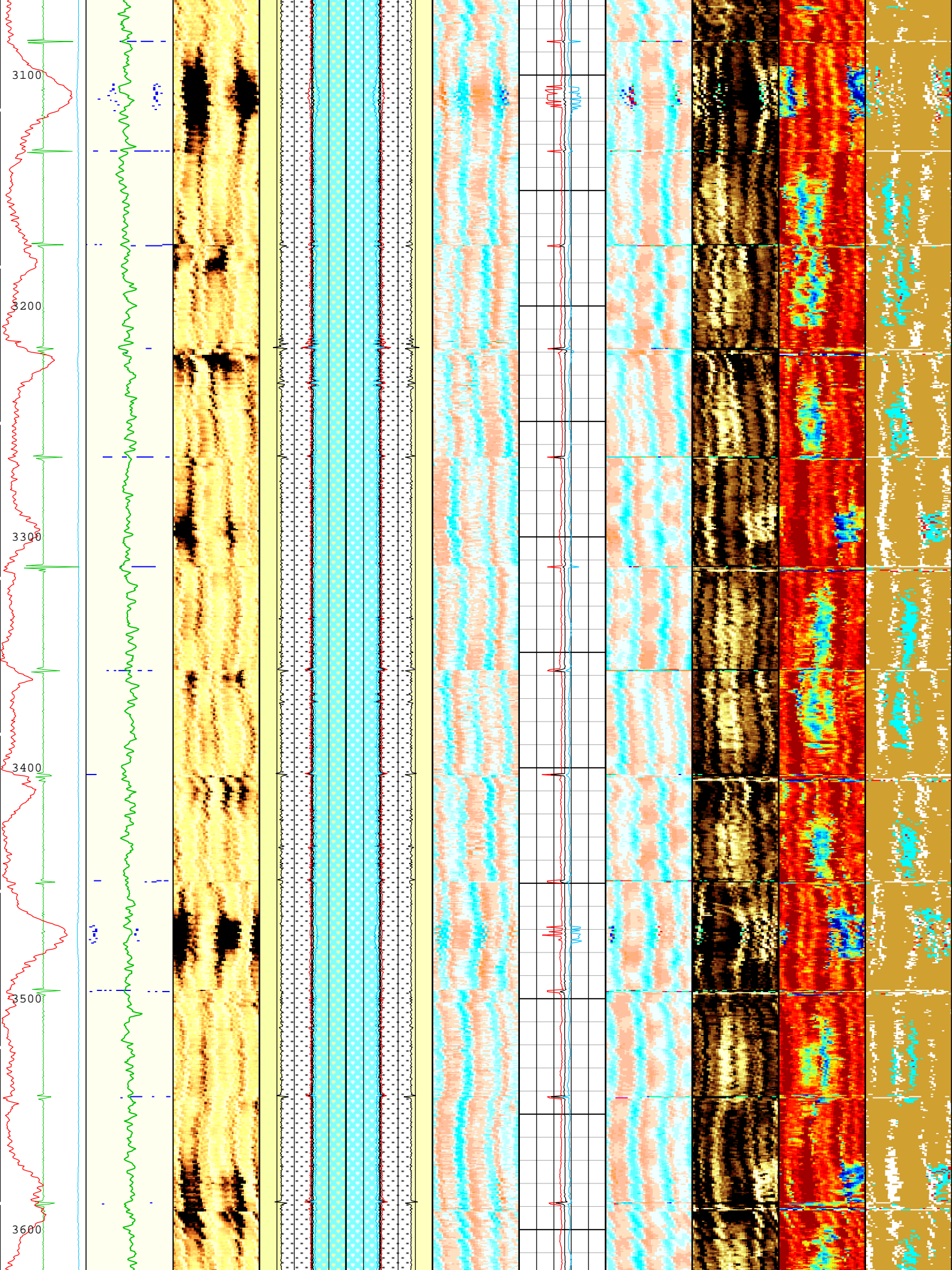




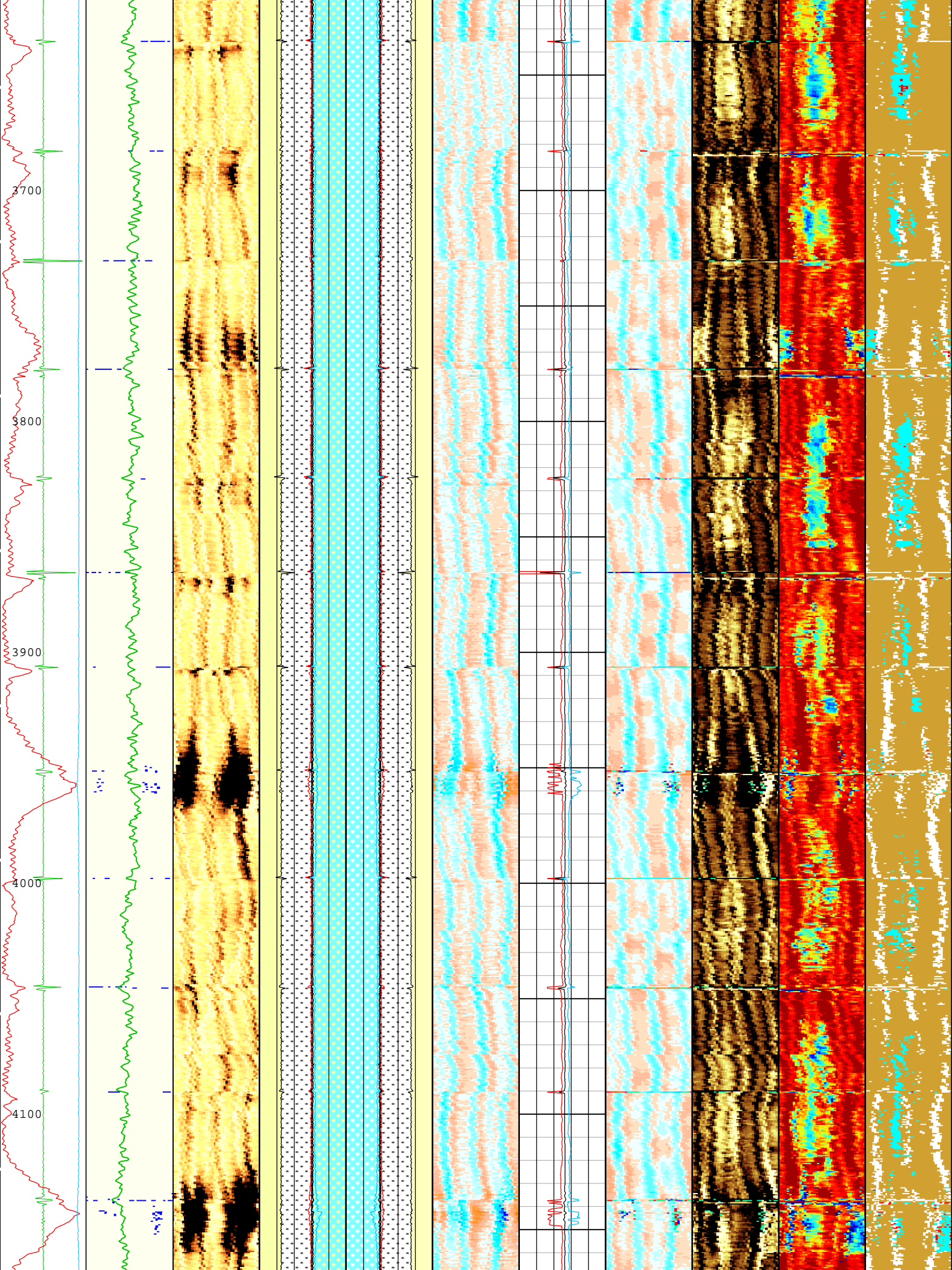


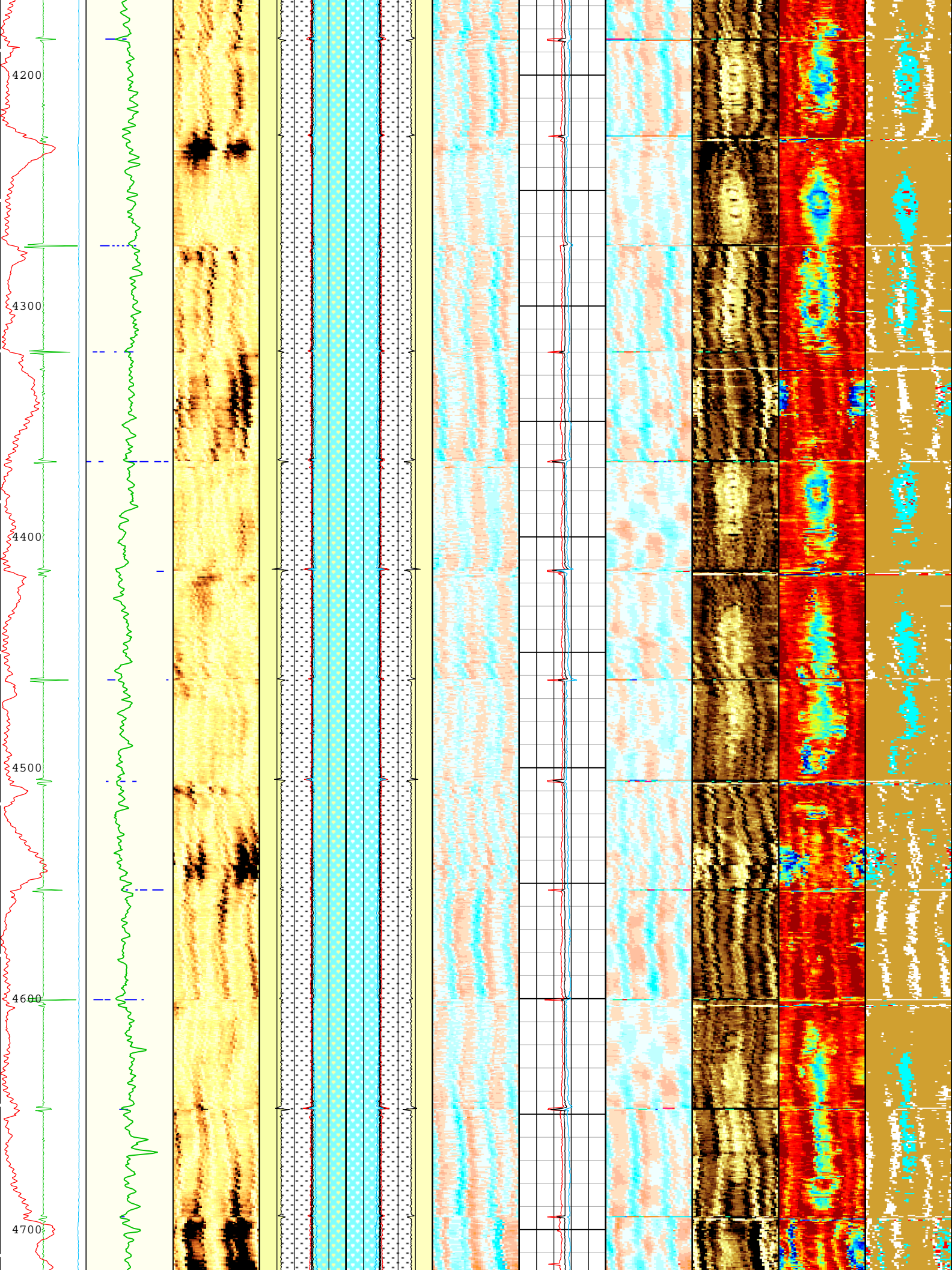




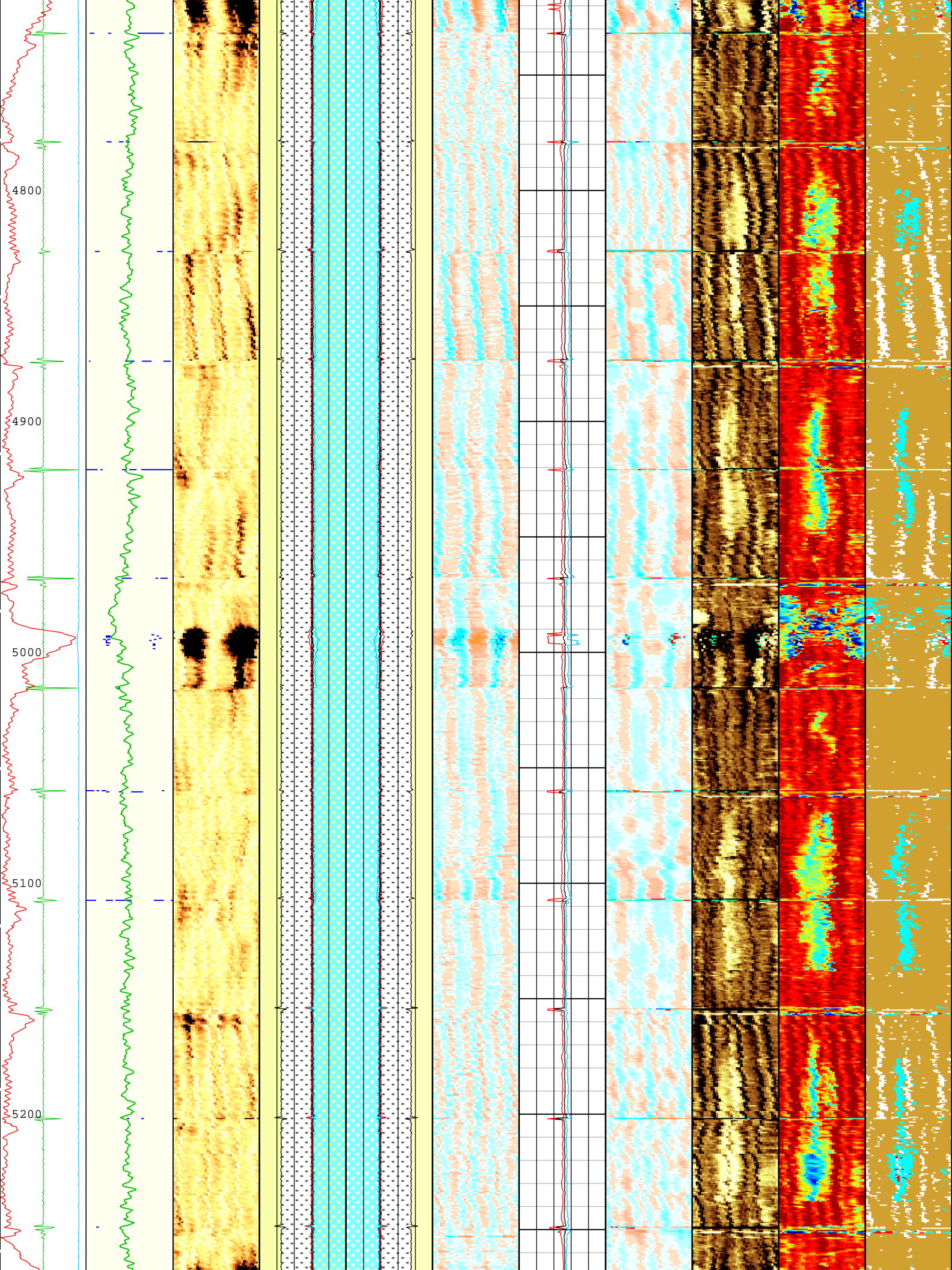


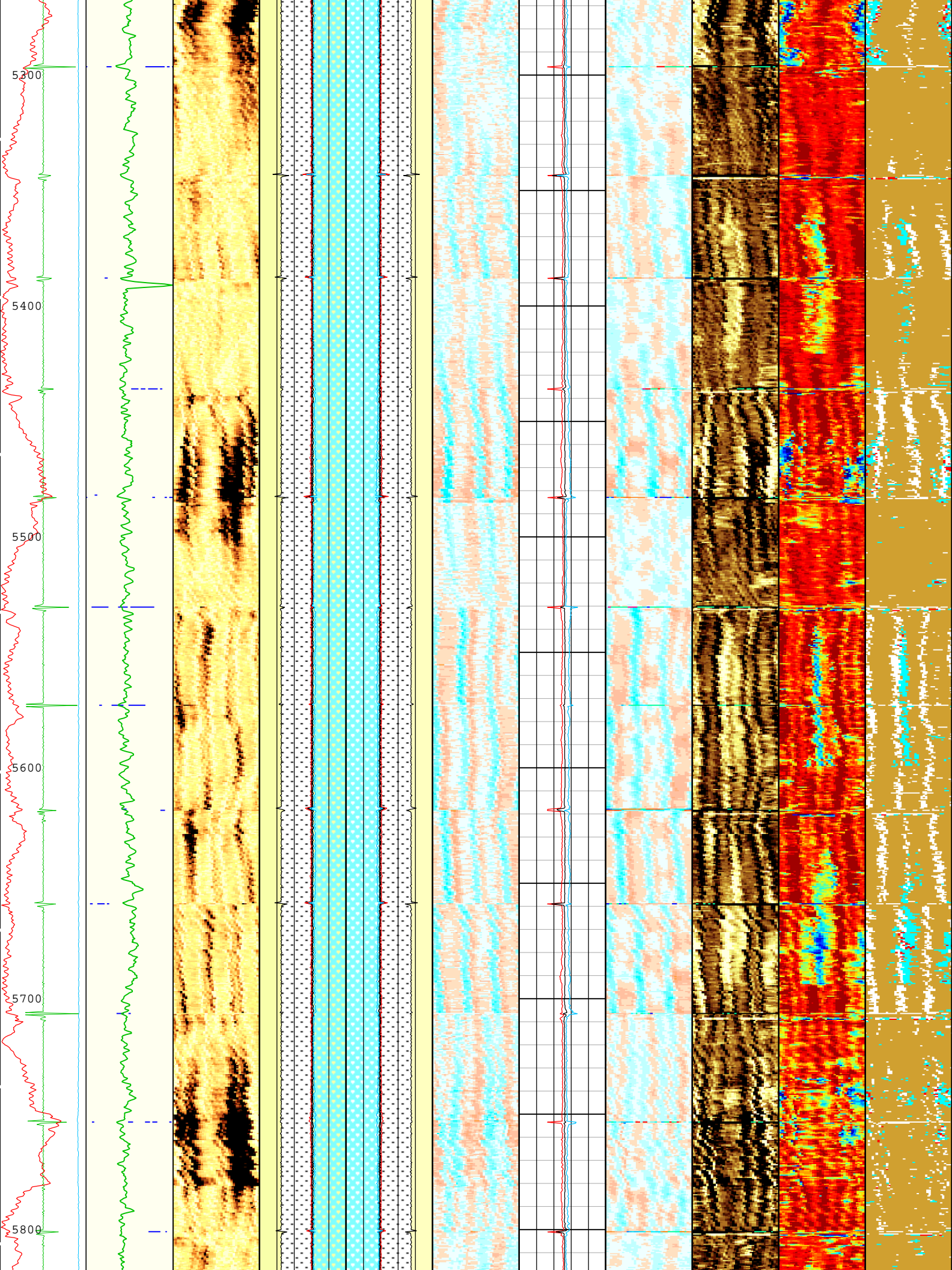




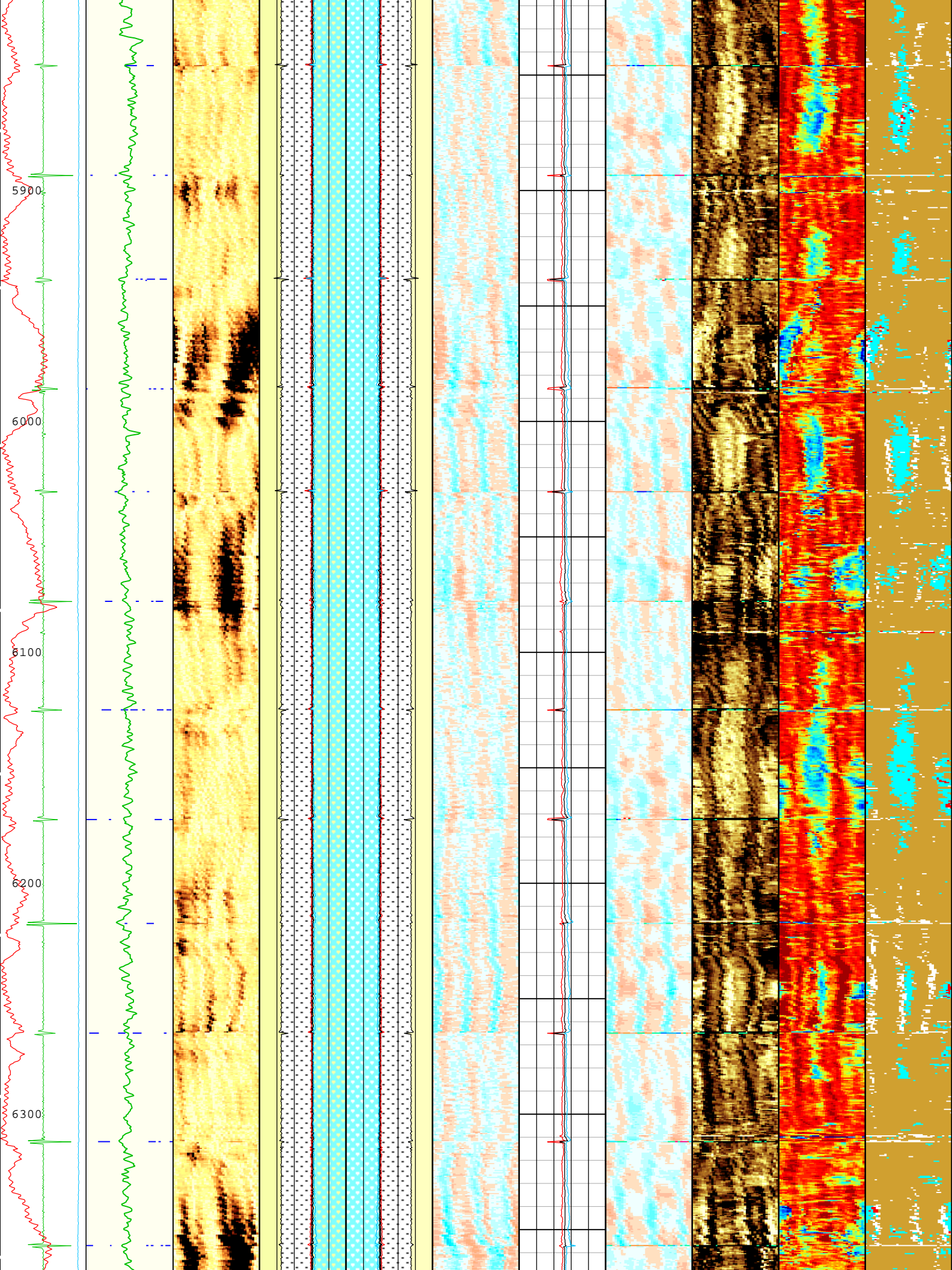




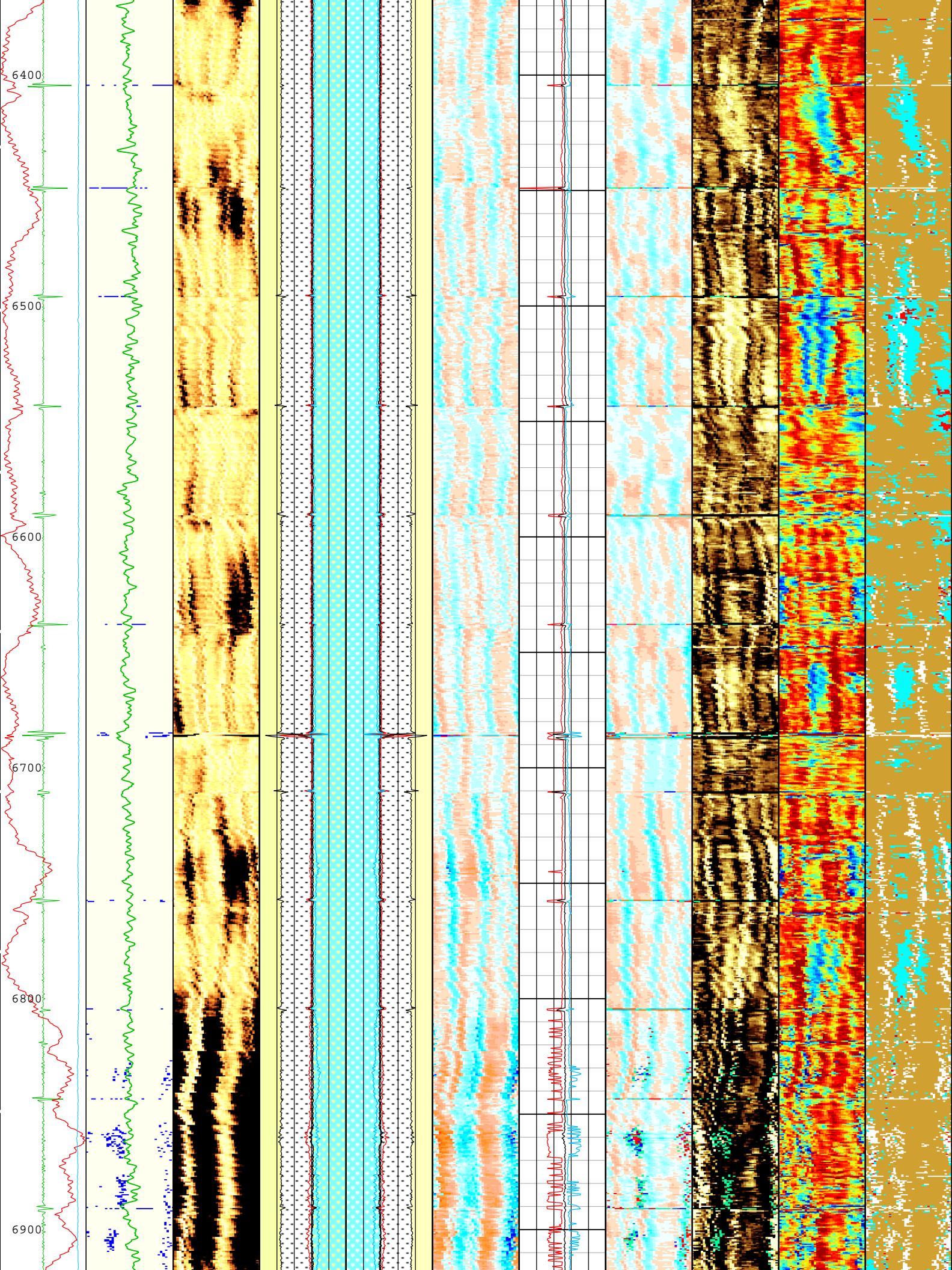


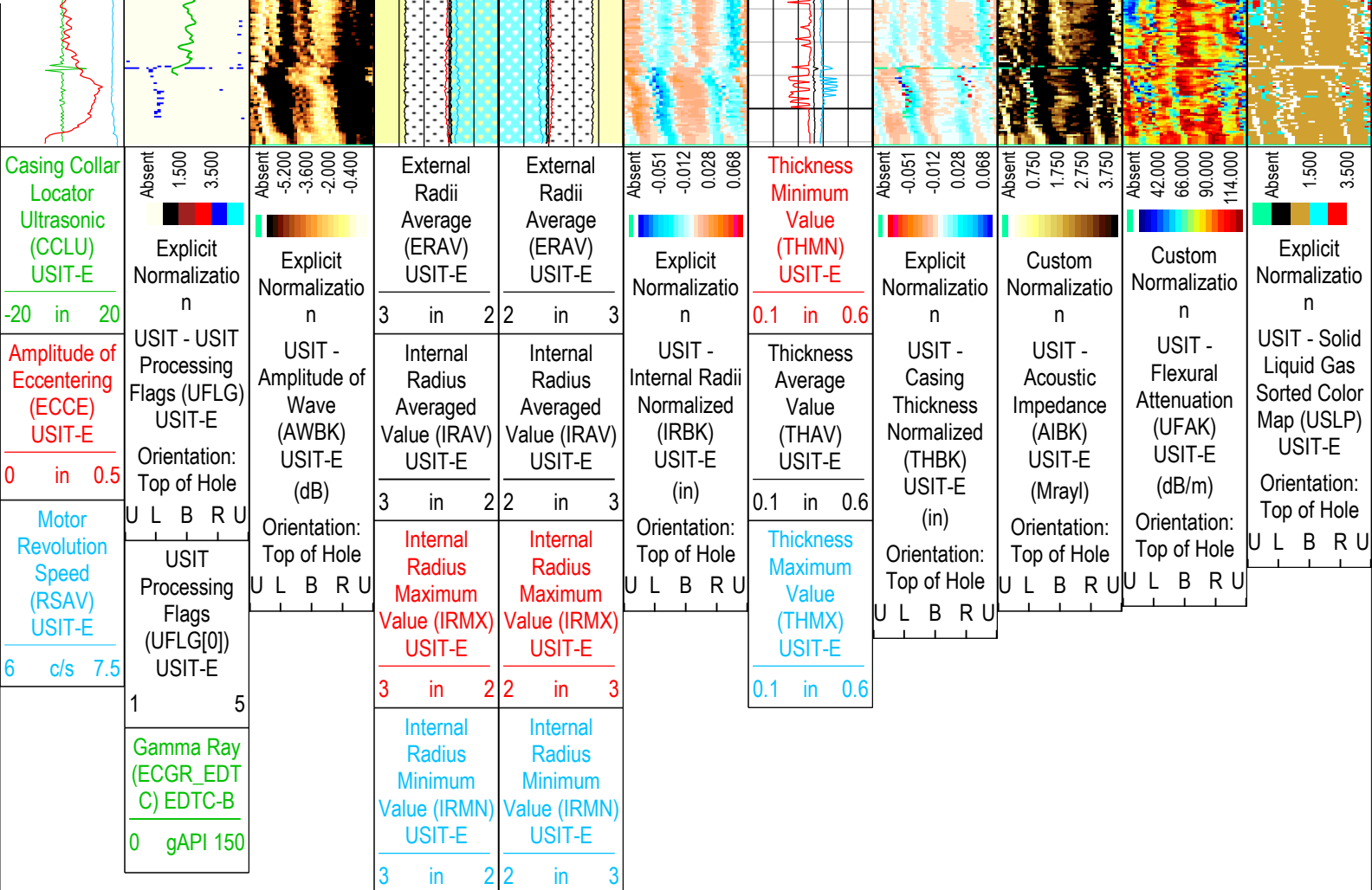

















USIT Processing Flags (UFLG[0]) USIT-E

- 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: 01-Mar-2018 20:46:36

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	14209	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	

GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-46.77	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	Inversion Norm.	
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	1.12	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.17	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-26.2	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	100	1925	
BS	8.75	1925	6961.5	
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
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	136	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	176	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	105	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	145	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	31.17	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	01-Mar-2018 11:42:10	01-Mar-2018 11:43:30	6962.23	6883.27
EMXV	100	01-Mar-2018 11:43:30	01-Mar-2018 11:53:59	6883.27	6153.66
EMXV	80	01-Mar-2018 11:53:59	01-Mar-2018 12:01:46	6153.66	5617.16
EMXV	90	01-Mar-2018 12:01:46	01-Mar-2018 12:20:21	5617.16	4361.69
EMXV	80	01-Mar-2018 12:20:21	01-Mar-2018 12:26:45	4361.69	3939.64
EMXV	100	01-Mar-2018 12:26:45	01-Mar-2018 13:08:38	3939.64	1057.41

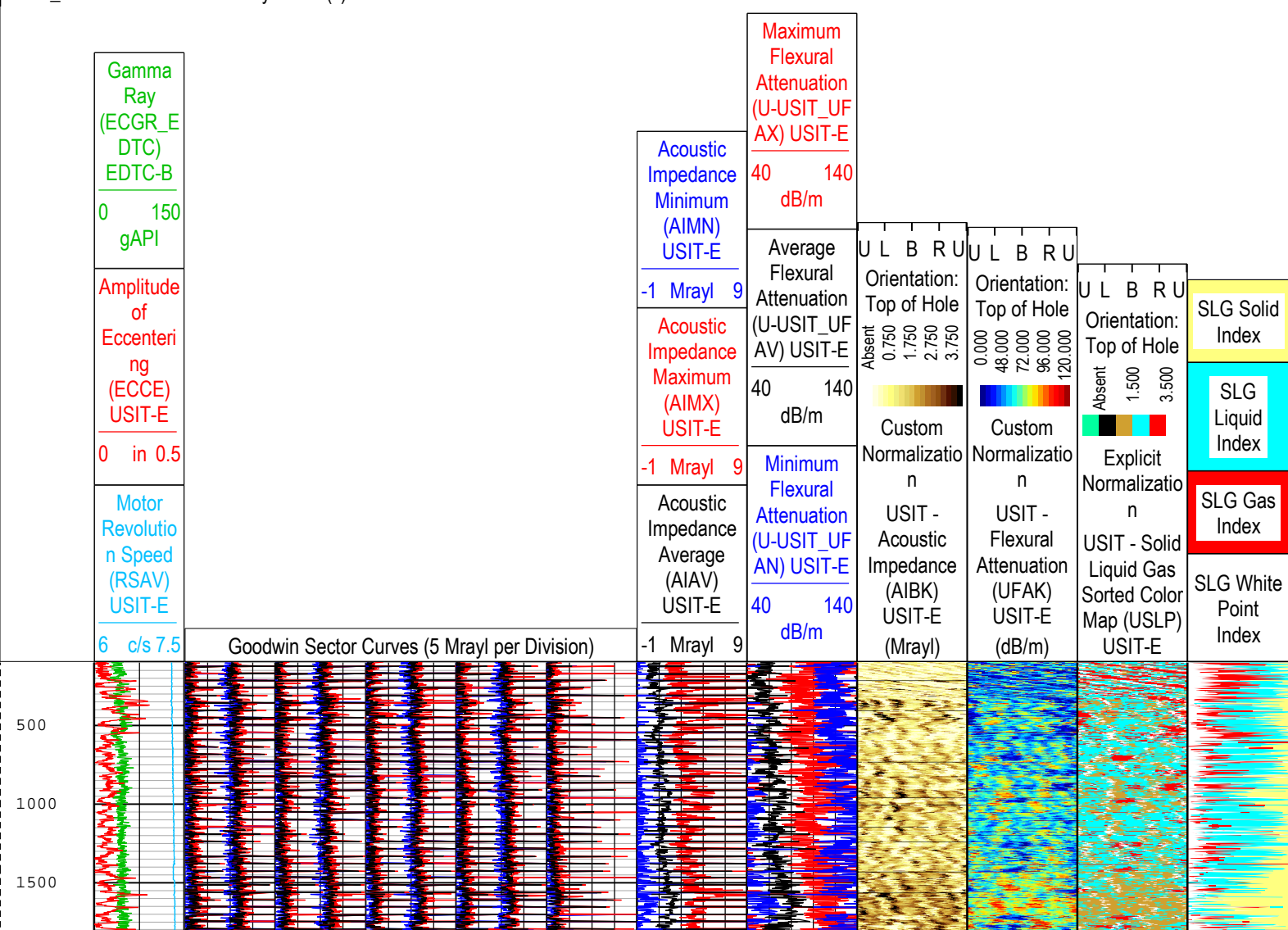
EMXV	80	01-Mar-2018 13:08:38	01-Mar-2018 13:22:53	1057.41	70.16
WINE	71.17	01-Mar-2018 11:42:10	01-Mar-2018 11:43:34	6962.23	6878.36
WINE	80.13	01-Mar-2018 11:43:34	01-Mar-2018 11:44:06	6878.36	6840.88
WINE	70.82	01-Mar-2018 11:44:06	01-Mar-2018 11:45:25	6840.88	6749.66
WINE	72.33	01-Mar-2018 11:45:25	01-Mar-2018 12:01:50	6749.66	5612.24
WINE	76.62	01-Mar-2018 12:01:50	01-Mar-2018 12:30:36	5612.24	3681.87
WINE	74.67	01-Mar-2018 12:30:36	01-Mar-2018 12:46:31	3681.87	2589.85
WINE	77.79	01-Mar-2018 12:46:31	01-Mar-2018 13:22:53	2589.85	70.16

# ONE

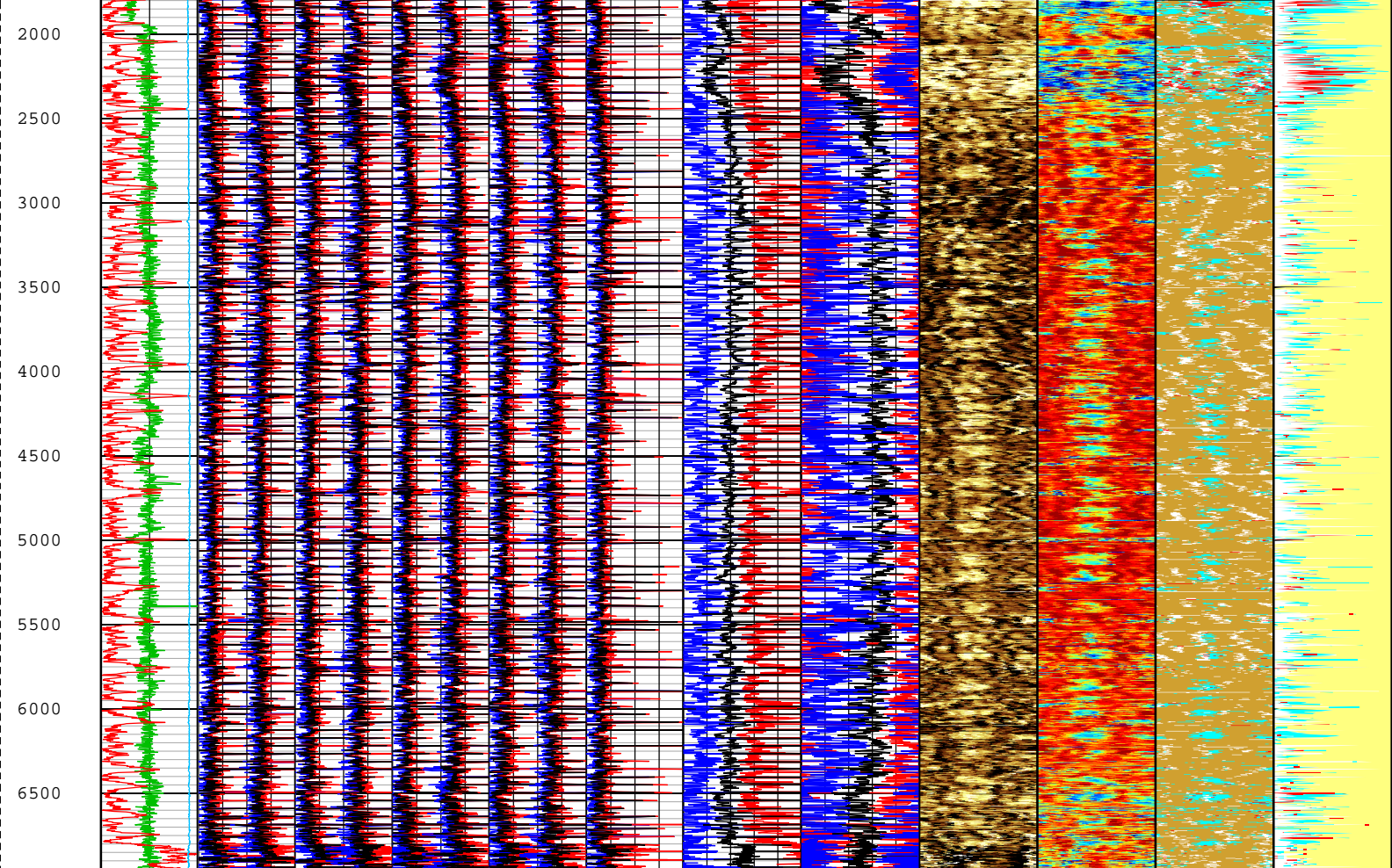
## Pass Summary

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: 01-Mar-2018 20:46:45







Gamma Ray  
(ECGR\_E  
DTC)  
EDTC-B  
0 150  
gAPI

Amplitude  
of  
Eccenteri  
ng  
(ECCE)  
USIT-E  
0 in 0.5

Motor  
Revolutio  
n Speed  
(RSAV)  
USIT-E  
6 c/s 7.5

Goodwin Sector Curves (5 Mrayl per Division)

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

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

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

Maximum  
Flexural  
Attenuation  
(U-USIT\_UF  
AX) USIT-E  
40 140  
dB/m

Average  
Flexural  
Attenuation  
(U-USIT\_UF  
AV) USIT-E  
40 140  
dB/m

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

Absent  
0.750  
1.750  
2.750  
3.750  
Custom  
Normalizatio  
n  
USIT -  
Acoustic  
Impedance  
(AIBK)  
USIT-E  
(Mrayl)  
Orientation:  
Top of Hole  
U L B R U

0.000  
48.000  
72.000  
96.000  
120.000  
Custom  
Normalizatio  
n  
USIT -  
Flexural  
Attenuation  
(UFAK)  
USIT-E  
(dB/m)  
Orientation:  
Top of Hole  
U L B R U

Absent  
1.500  
3.500  
Explicit  
Normalizatio  
n  
USIT - Solid  
Liquid Gas  
Sorted Color  
Map (USLP)  
USIT-E  
Orientation:  
Top of Hole  
U L B R U

SLG Solid  
Index

SLG  
Liquid  
Index

SLG Gas  
Index

SLG White  
Point  
Index

TIME\_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log ( IBC Goodwin ) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 01-Mar-2018 20:46:45



Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100
Application Patch	Wireline_NPD-ICE2-2017SP3_7.3.93033
	Wireline_NPD-ThruBit-2017SP3_7.3.97190

## Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	1801.27 ft	2106.10 ft	01-Mar-2018 11:22:06 AM	01-Mar-2018 11:26:36 AM	ON	1.89 ft	Yes

All depths are referenced to toolstring zero

## Log

Company:Crestone Peak Resources and Operating LLC

Well:File #3B-32H-K268

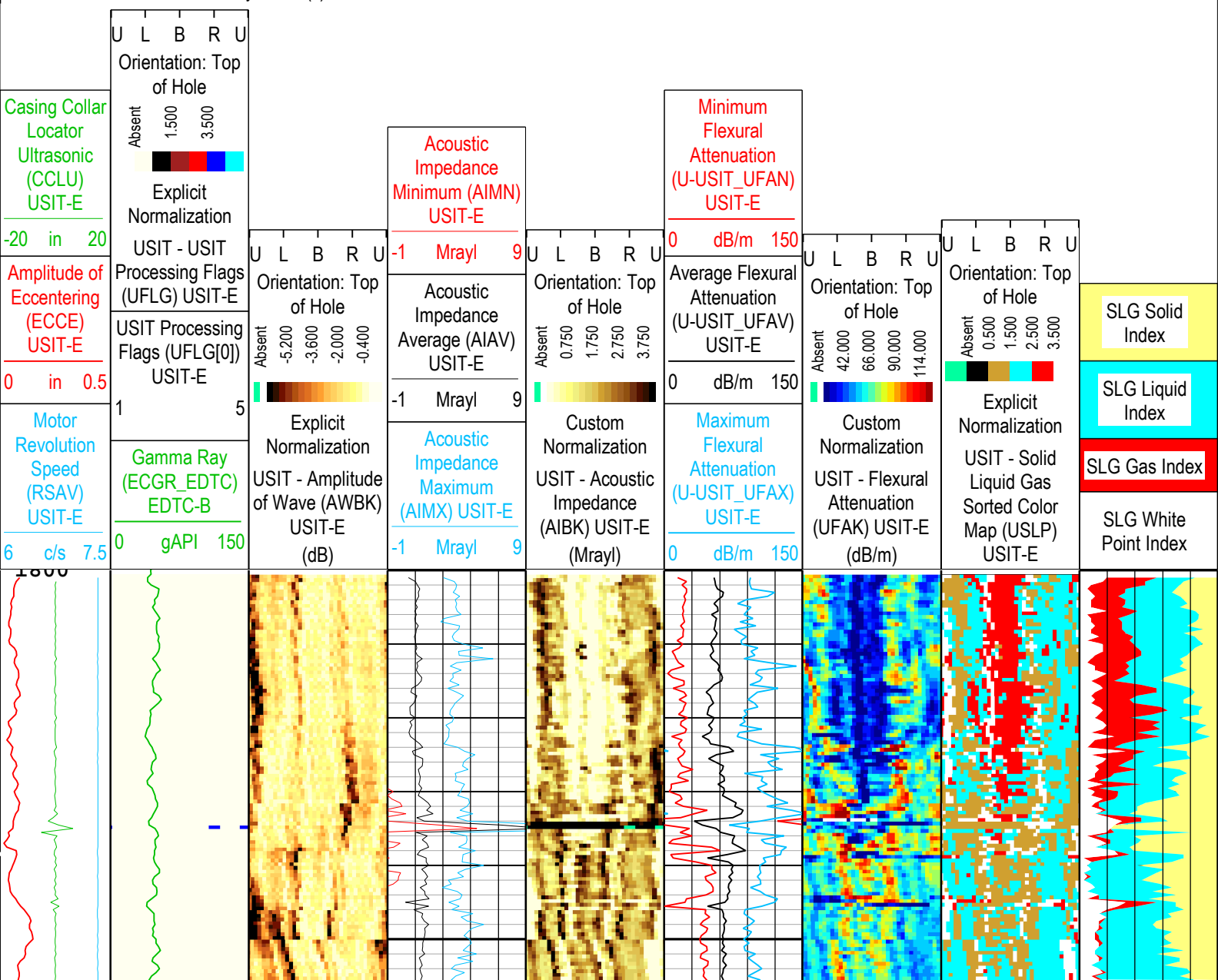
ONE: Log[4]:Up:S005

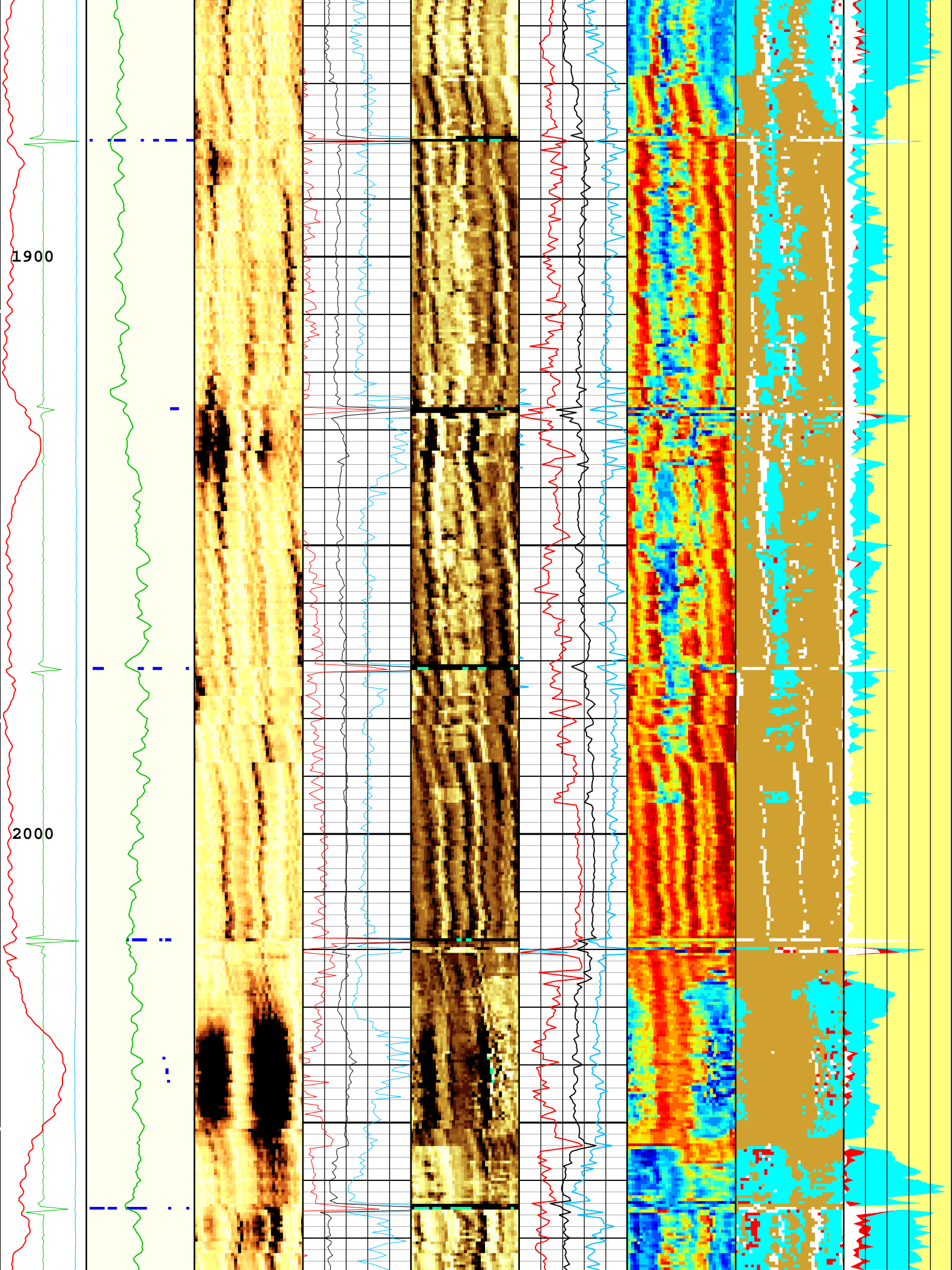
Description: USI IBC SLG Format: Log ( IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 01-Mar-2018 20:46:50

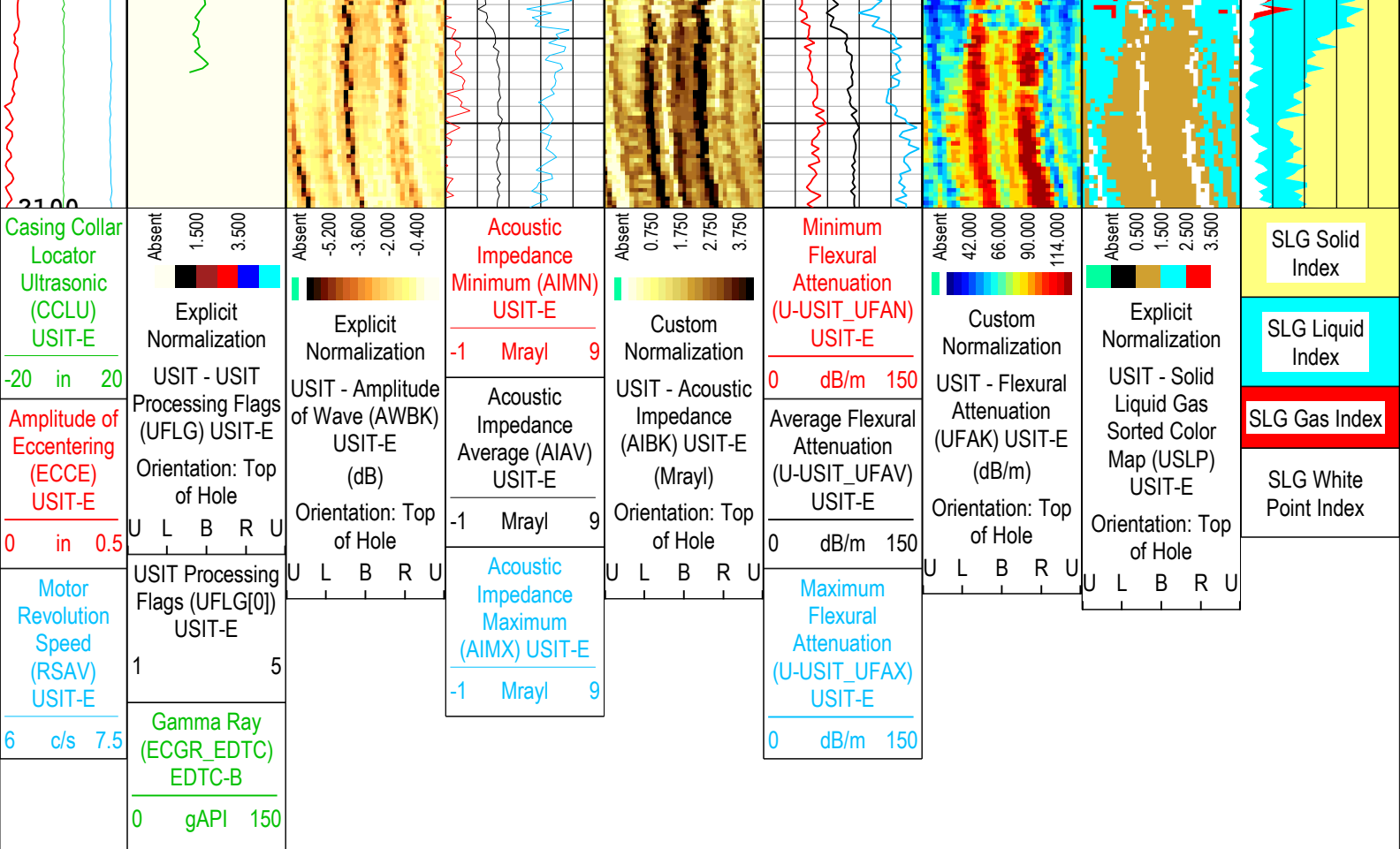
USIT Processing Flags (UFLG[0]) USIT-E

- 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)







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: 01-Mar-2018 20:46:50

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	14209	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWNPASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	PS/DT	

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	-46.77	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	Inversion 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	1.12	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.17	
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
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	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-26.2	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	1.75	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

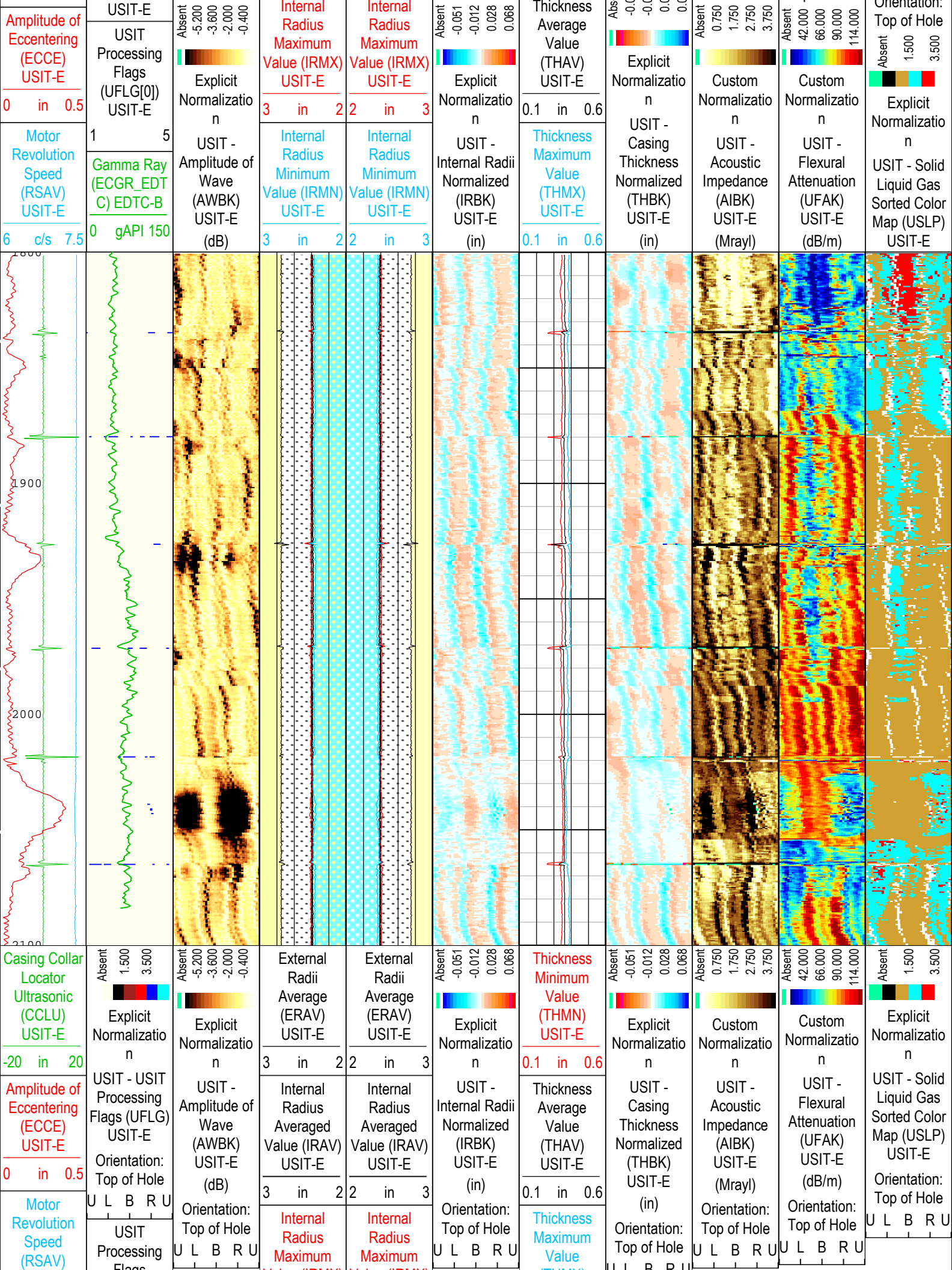
Depth Zone Parameters			
Parameter	Value	Start ( ft )	Stop ( ft )
BS	13.5	1800	1925
BS	8.75	1925	2100
All depth are actual.			

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







USIT-E			Flags (UFLG[0]) USIT-E		Value (IRMX) USIT-E			Value (IRMX) USIT-E			(THMX) USIT-E			C L B R U		
6	c/s	7.5	1	5	3	in	2	2	in	3	0.1	in	0.6			
			Gamma Ray (ECGR_EDT C) EDTC-B		Internal Radius Minimum Value (IRMN) USIT-E			Internal Radius Minimum Value (IRMN) USIT-E								
			0 gAPI 150		3	in	2	2	in	3						

TIME\_1900 - Time Marked every 60.00 (s)

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

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

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

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

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

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

Pulse Origin Not Detected

WINLEN Error

Casing Thickness Error

Loop Processing Error

Description: USI IBC SLG Composite    Format: Log ( IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 01-Mar-2018 20:46:55

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	14209	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-46.77	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	Inversion Norm.	
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	1.12	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.17	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.64	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-26.2	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	1800	1925
BS	8.75	1925	2100

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
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	136	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	176	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	105	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	145	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	31.17	us
WINE	Window End Time	USIT-E	71.17	us

### Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	40	01-Mar-2018 11:22:06	01-Mar-2018 11:24:47	2106.1	1924.62
EMXV	80	01-Mar-2018 11:24:47	01-Mar-2018 11:26:36	1924.62	1801.27

All depth are at tool zero.

XYZ

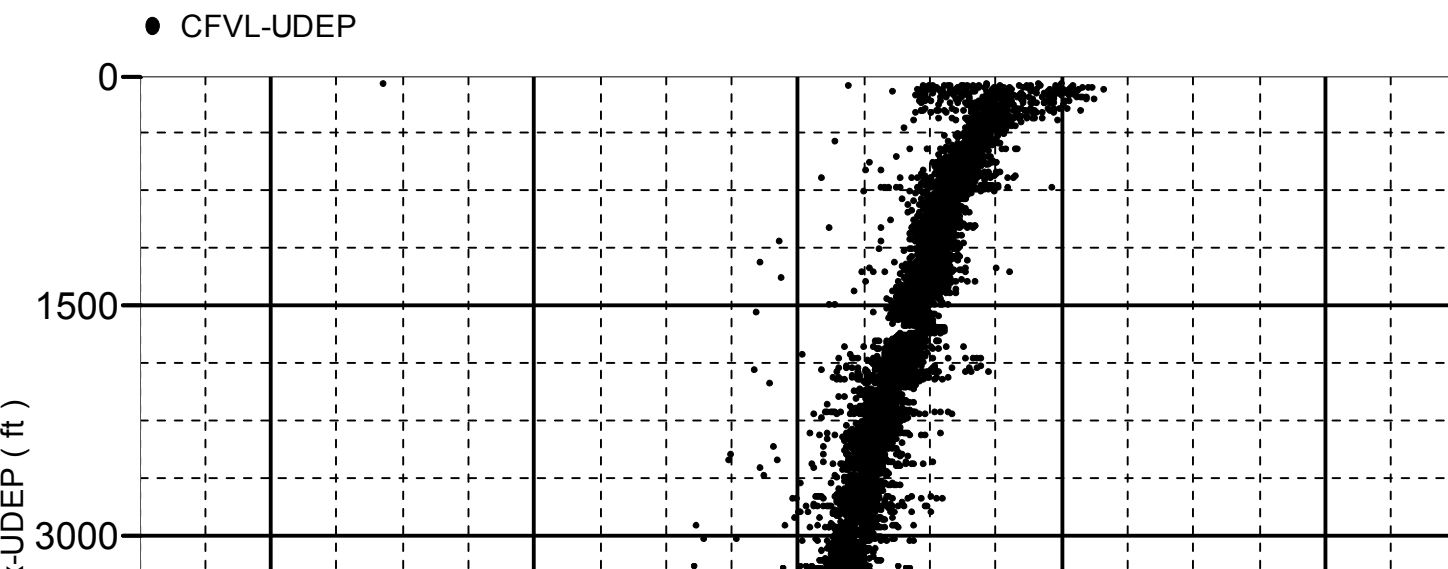
Company:Crestone Peak Resources and Operating LLC Well:File #3B-32H-K268

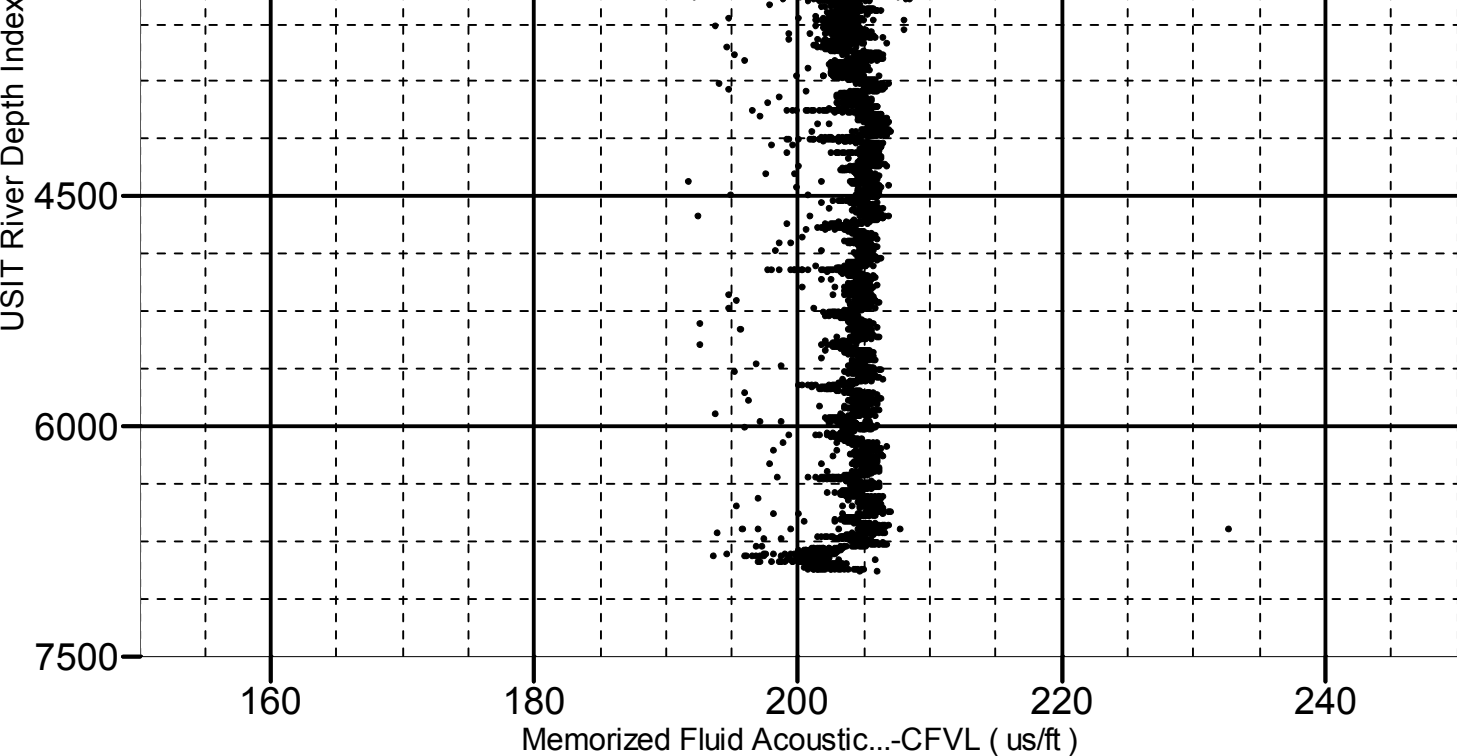
ONE: Log[6]:Up:S005

## Fluid Acoustic Slowness vs Depth

### 2D Cross Plot

Index Range: From 6961.50 to 69.50 ft

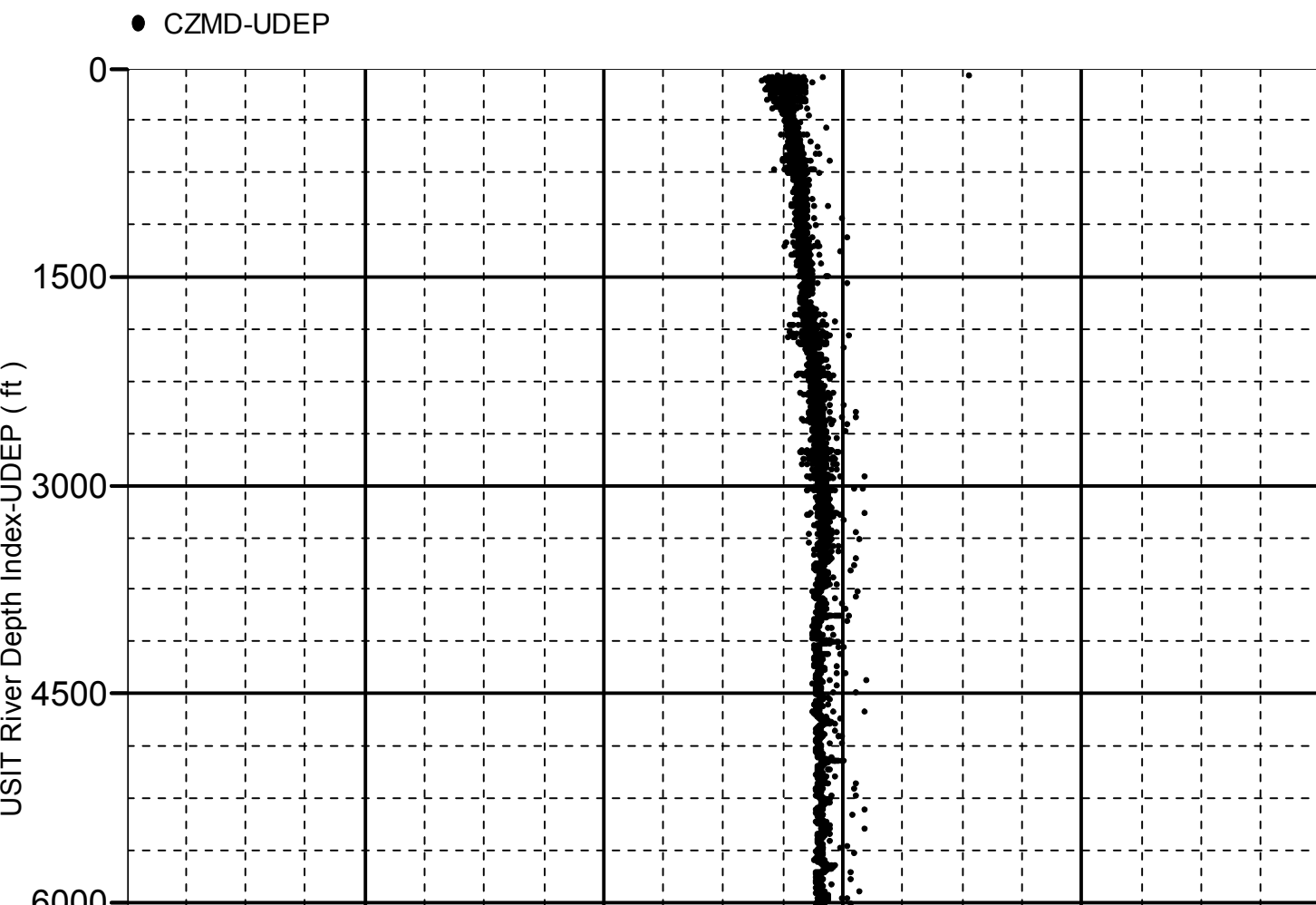


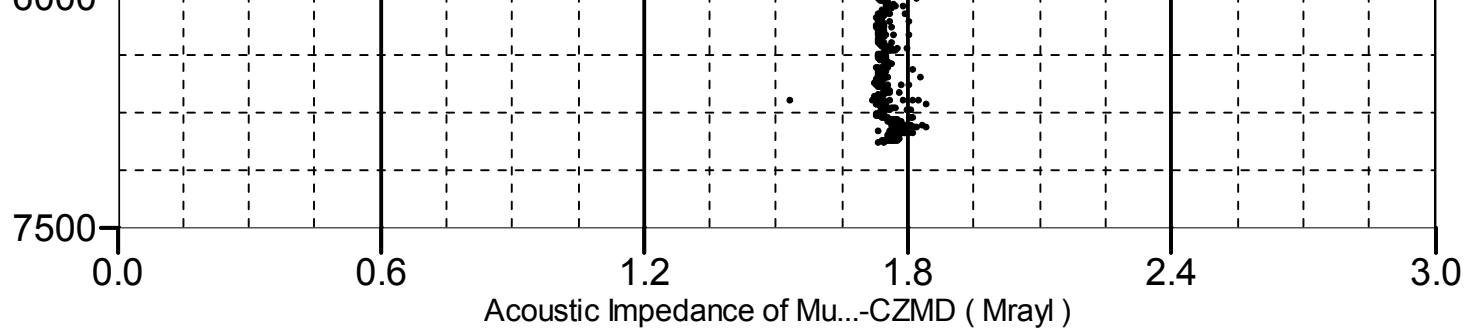


## Acoustic Impedance of Mud vs Depth

### 2D Cross Plot

Index Range: From 6961.50 to 69.50 ft





Company:	Crestone Peak Resources and Operating LLC	<b>Schlumberger</b>
Well:	File #3B-32H-K268	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Isolation Scanner		
Cement Evaluation		
Gamma Ray - CCL Log		