

Company: Crestone Peak Resources and Operating LLC

Well: Echeverria 2G-2H-D267

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner
Cement Evaluation
Gamma Ray - CCL Log

County:	Weld			
Field:	Wattenberg			
Location:	NWNW Sec. 2, T2N, R67W			
Well:	Echeverria 2G-2H-D267			
Company:	Crestone Peak Resources and Operating LLC			
Location:				
NWNW Sec. 2, T2N, R67W			Elev.:	K.B. 4905.00 ft
SHL: 898' FNL & 619' FWL				G.L. 4882.00 ft
Lat/Long: 40.172031 \ -104.864756				D.F. 4905.00 ft
Permanent Datum:		Ground Level	Elev.:	4882.00 f
Log Measured From:		Kelly Bushing	23.00 ft	above Perm.Datum
Drilling Measured From:		Kelly Bushing		
API Serial No.		Section:	Township:	Range:
05-123-48745		2	2N	67W
Logging Date	18-May-2019			

Run Number	ONE	
Depth Driller	12151.00 ft	
Schlumberger Depth	7034.00 ft	
Bottom Log Interval	7030.00 ft	
Top Log Interval	90.00 ft	
Casing Fluid Type	Brine	
Salinity		
Density	8.4 lbm/gal	
Fluid Level	8.00 ft	
BIT/CASING/TUBING STRING		
Bit Size	8.50 in	
From	2329.00 ft	
To	7034.00 ft	
Casing/Tubing Size	5.5 in	
Weight	20 lbm/ft	
Grade	P110	
From	0.00 ft	
To	7034.00 ft	
Max Recorded Temperatures	197.18 degF	
Logger on Bottom	18-May-2019	14:12:00
Unit Number	9111	Fort Morgan
Recorded By	A.Blochowicz/A.Atkind	
Witnessed By	John Ansbor	

Disclaimer

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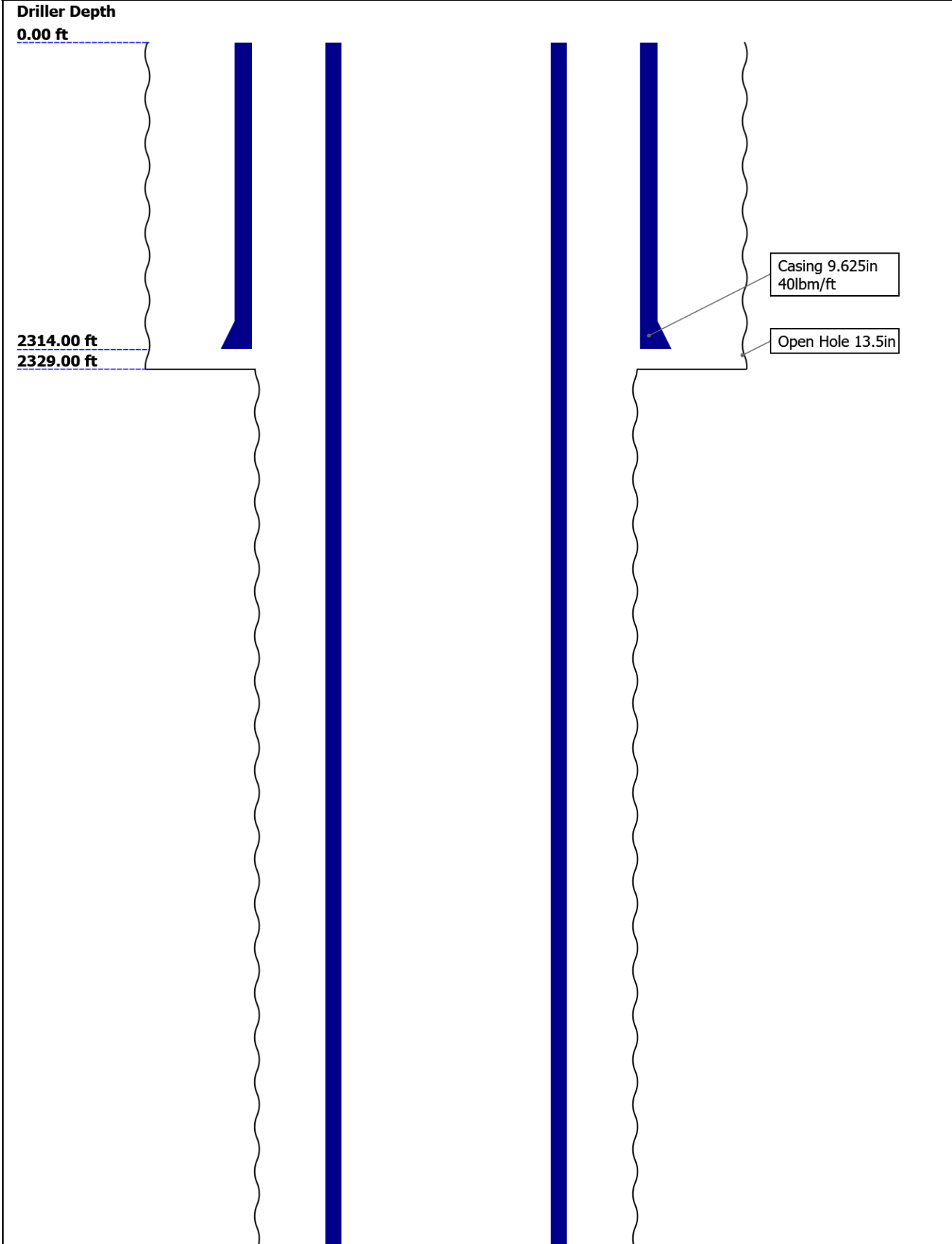
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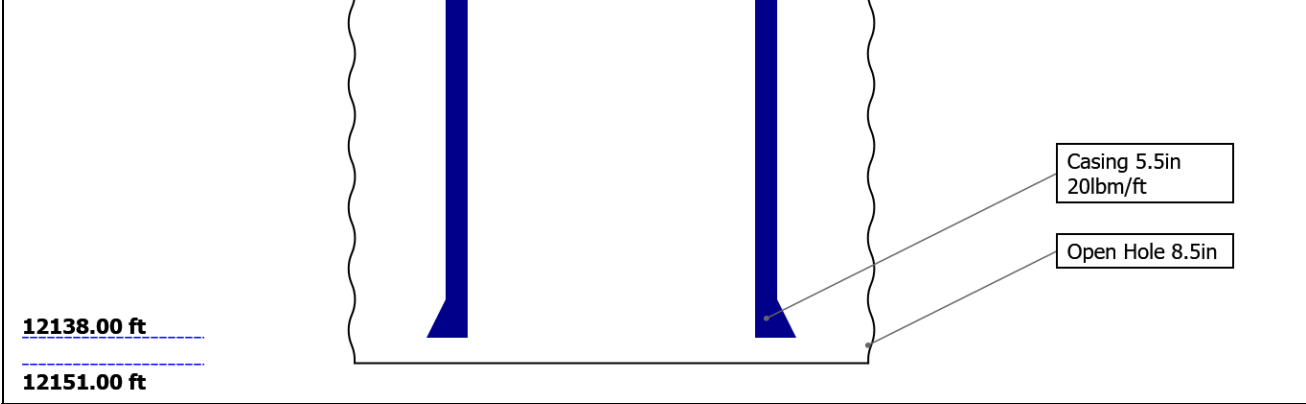
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Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.5				
Top Driller (ft)	0	2329				
Top Logger (ft)	0	2329				
Bottom Driller (ft)	2329	12151				
Bottom Logger (ft)	2329	7034				
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)	2314	12138				
Bottom Logger (ft)	2314	7034				

Operational Run Summary

Parameter (unit)	ONE					
Date Log Started	18-May-2019					
Time Log Started	13:20:17					
Date Log Finished	18-May-2019					
Time Log Finished	15:56:30					
Top Log Interval (ft)	90.00					
Bottom Log Interval (ft)	7030.00					
Total Depth (ft)						
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.500					
Logging Unit Number	9111					
Logging Unit Location	Fort Morgan					
Recorded By	A.Blochowicz/A. Alkindi					

Remarks and Equipment Summary

Depth Summary

Tension Device

Channel Device

Type	CMTD-B/A		
Serial Number	161		
Calibration Date	13-May-2019		
Calibrator Serial Number	1148		
Number of Calibration Points	10		
Calibration Root Mean Square Error	6		
Calibration Peak Error	10		

Logging Cable			
Type	7-46P-XS		
Serial Number	U712020		
Length	23245.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		

ONE:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	All Schlumberger depth control procedures were followed
Rig Up Length At Surface		IDW used as primary depth control.
Rig Up Length At Bottom		Z-chart used as secondary depth control
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[3]:Up	7036.02	80.46

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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Mud Impedance = "FreePipe Norm."
Free Pipe normalization zone is : 41.28m(135.44ft) to 42.59m(139.73ft)
MUD_N_FRP = 1.18
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.66 MRayl

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

IBC SLG

Software Version

Acquisition System	Version
Maxwell 2019	9.0.106845.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	80.46 ft	7036.03 ft	18-May-2019 2:12:21 PM	18-May-2019 3:55:38 PM	ON	5.59 ft	Yes

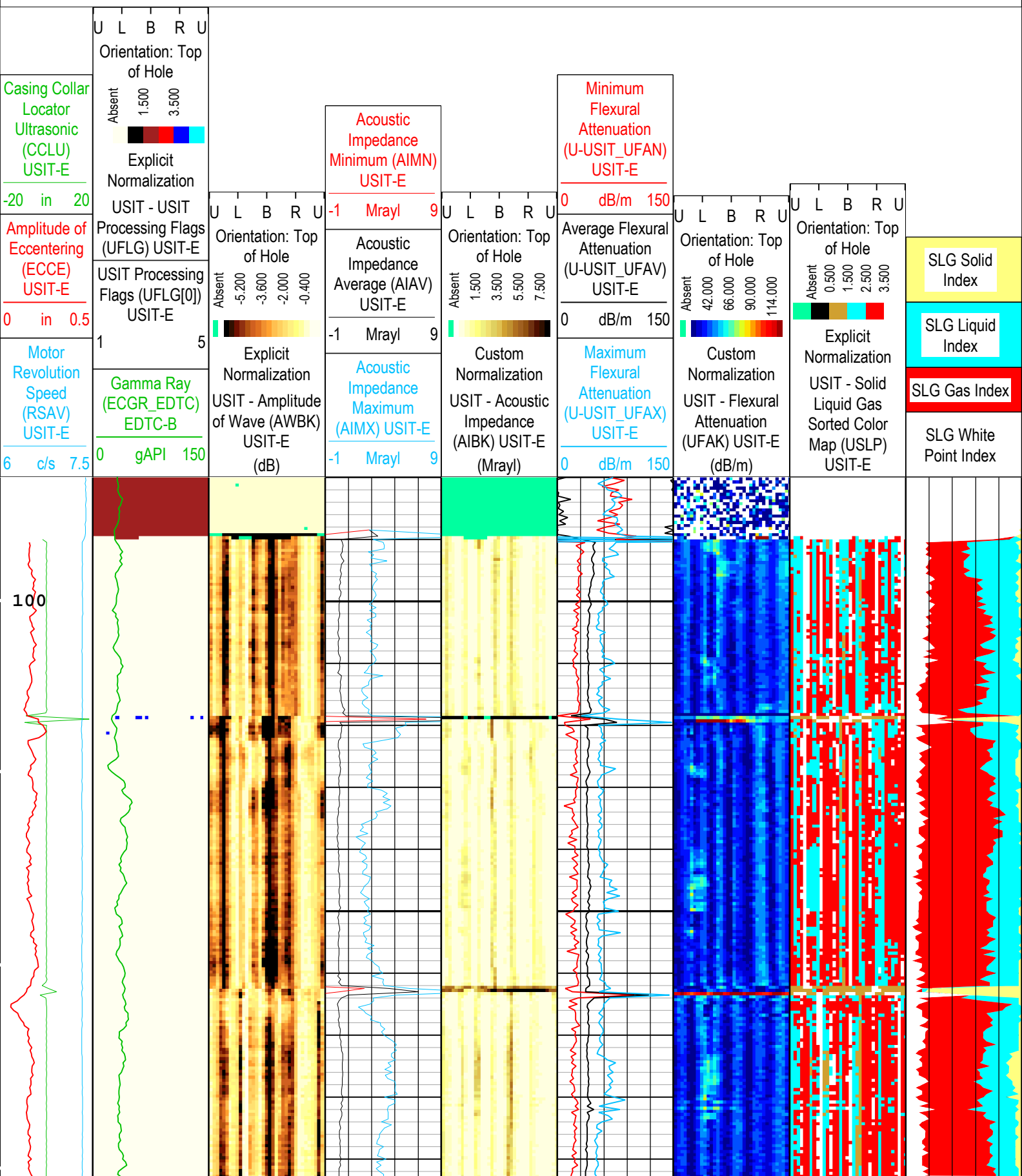
All depths are referenced to toolstring zero

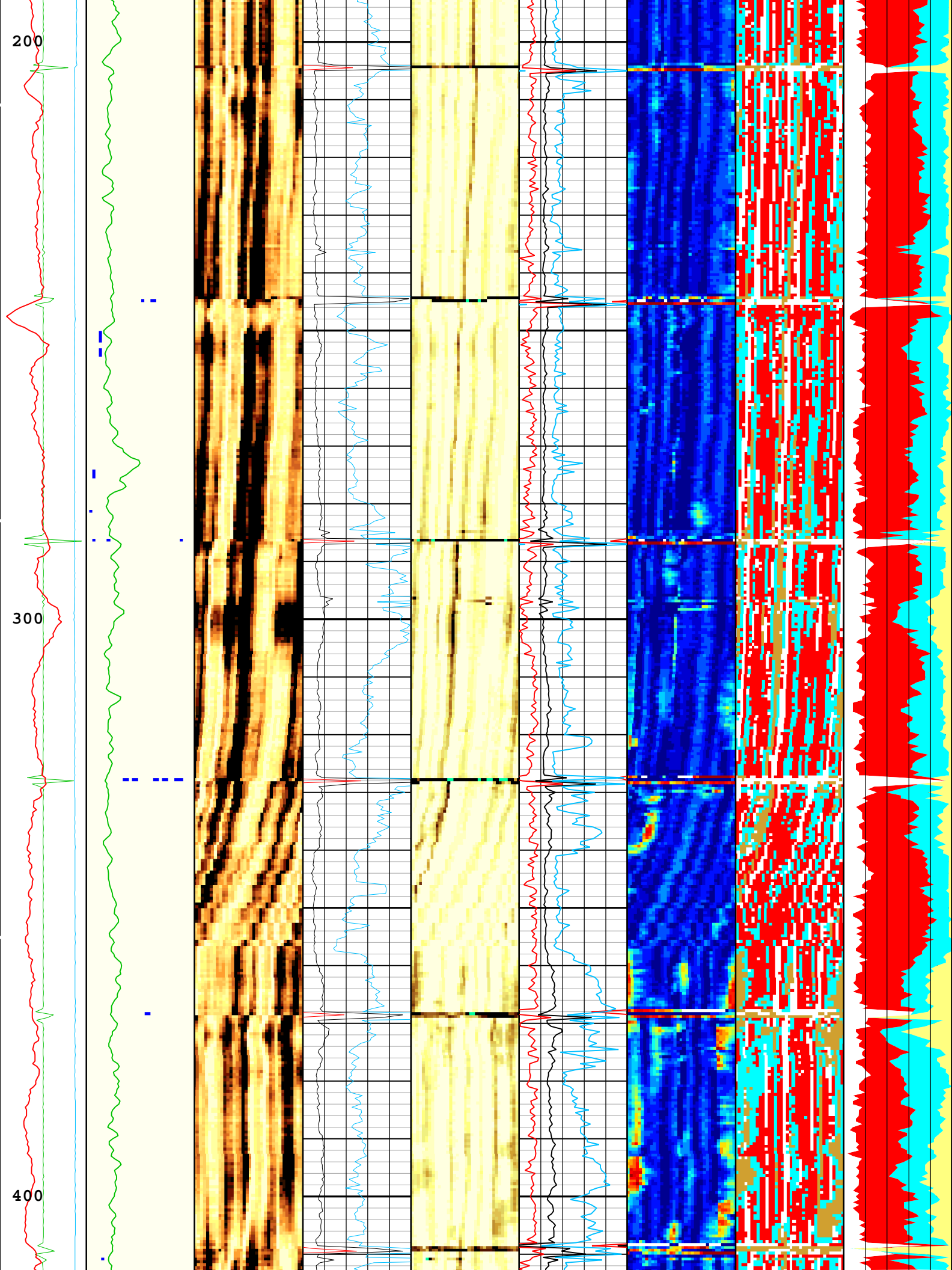
Log	Company:Crestone Peak Resources and Operating LLC	Well:Echeverria 2G-2H-D267
		ONE: Log[3]:Up:S011

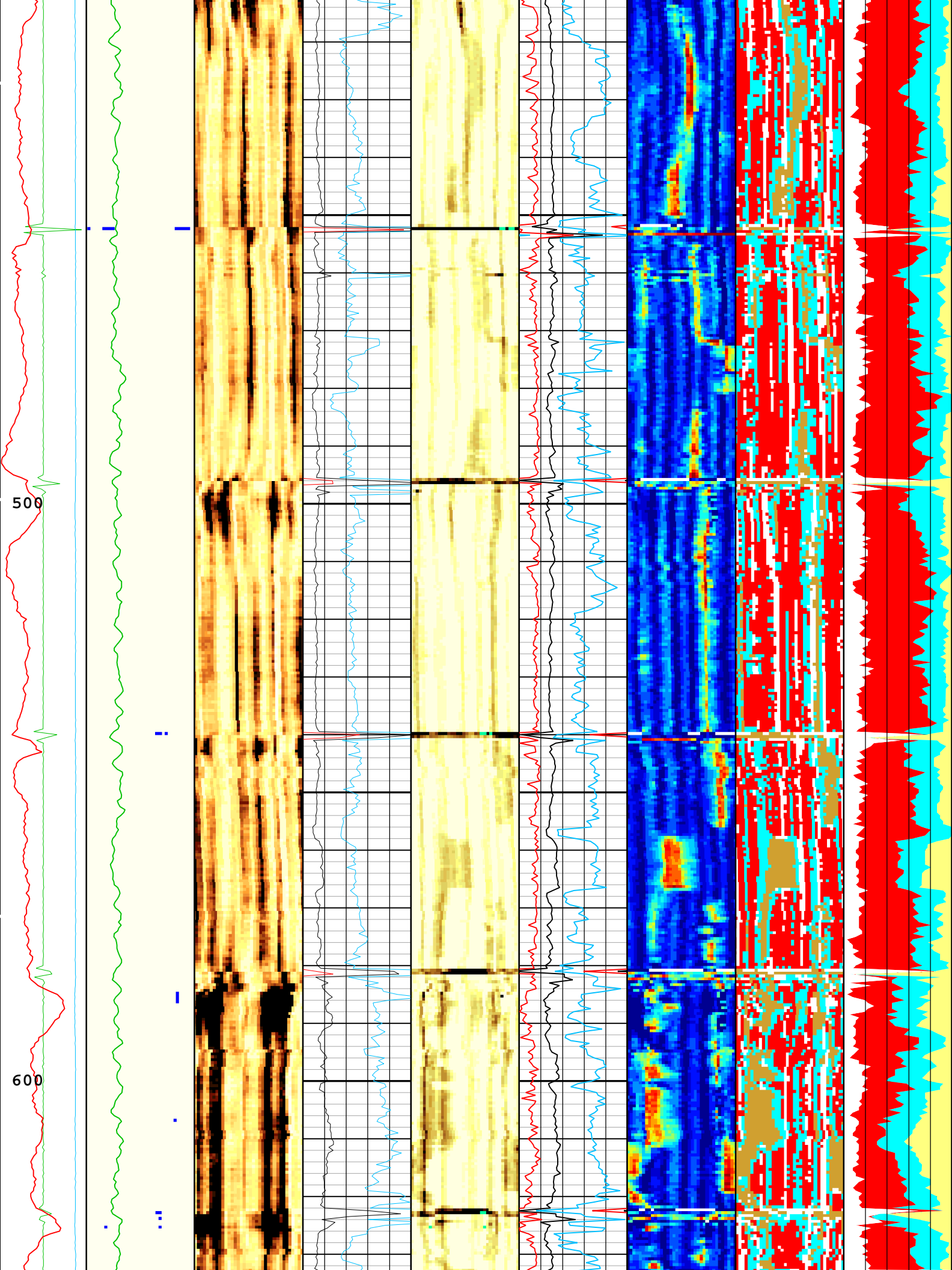
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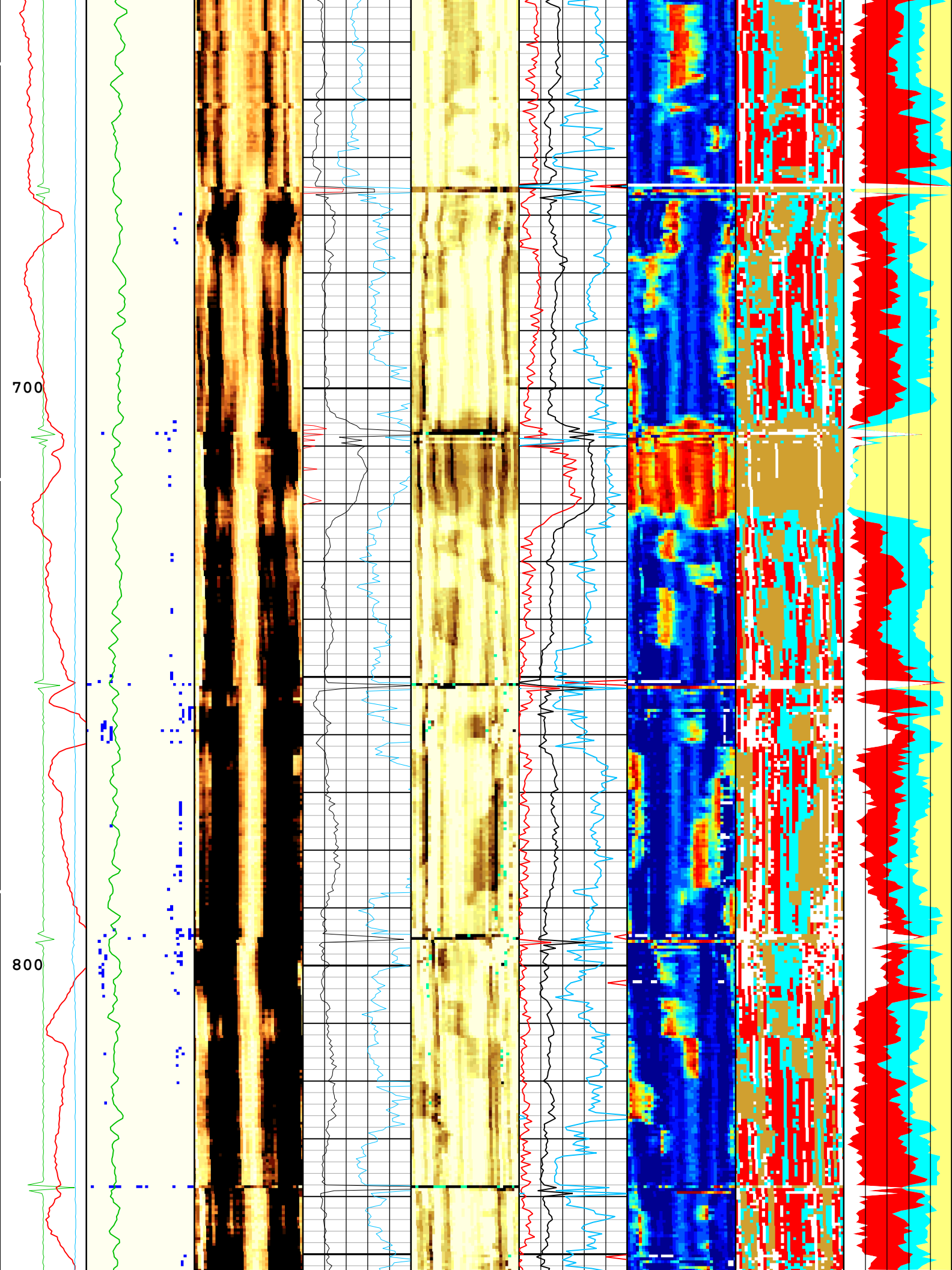
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

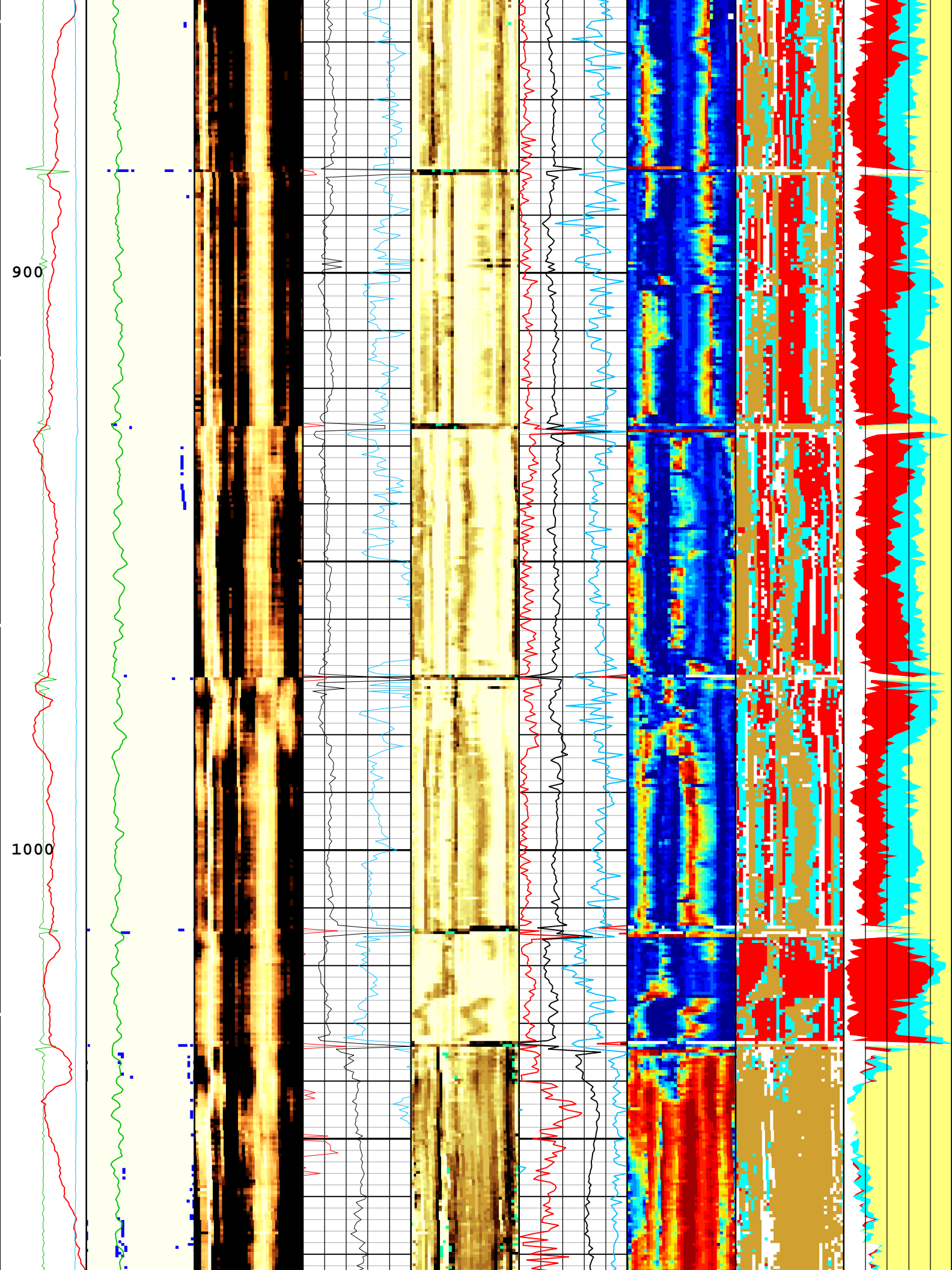
 Loop Processing Error

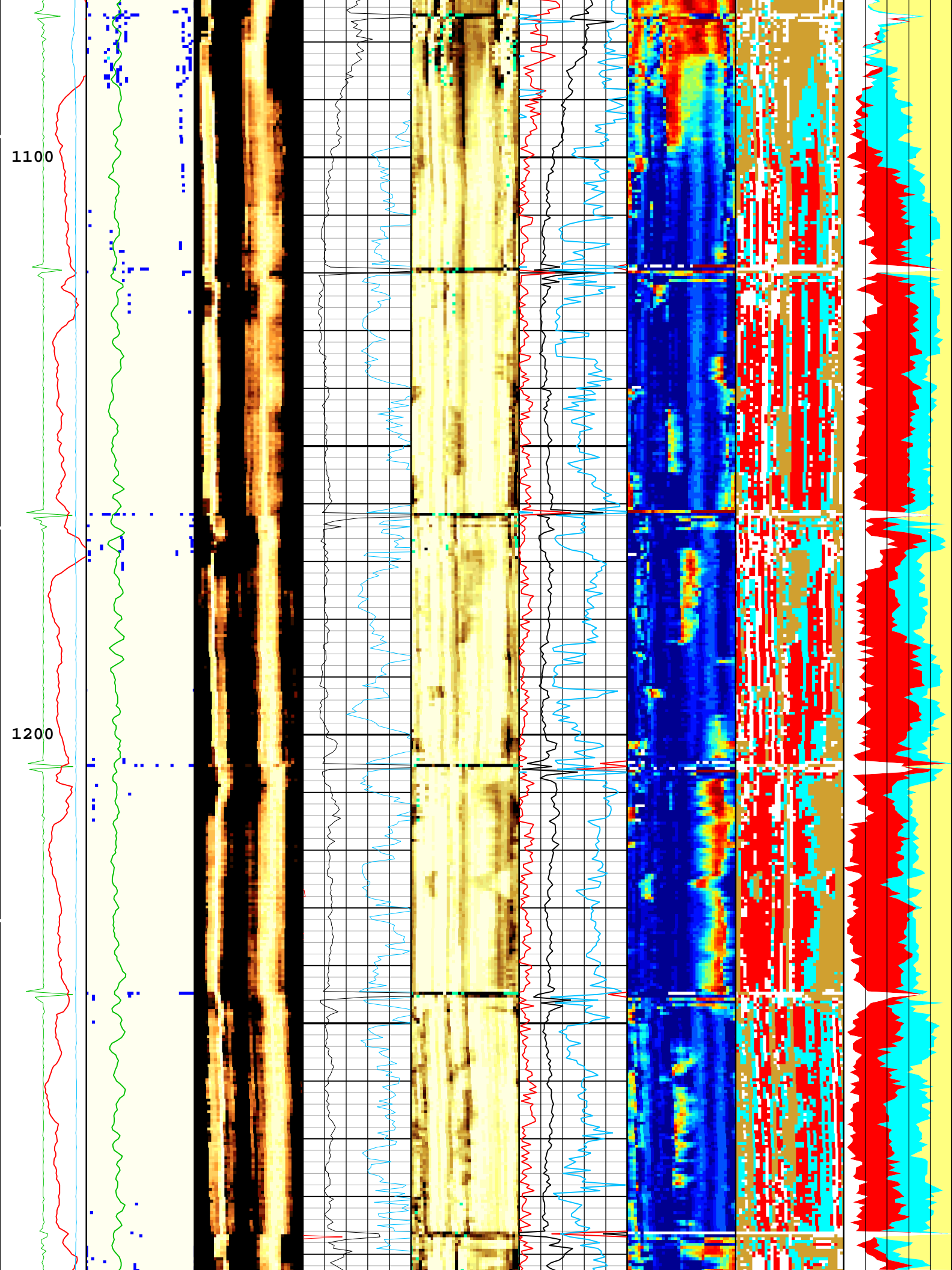


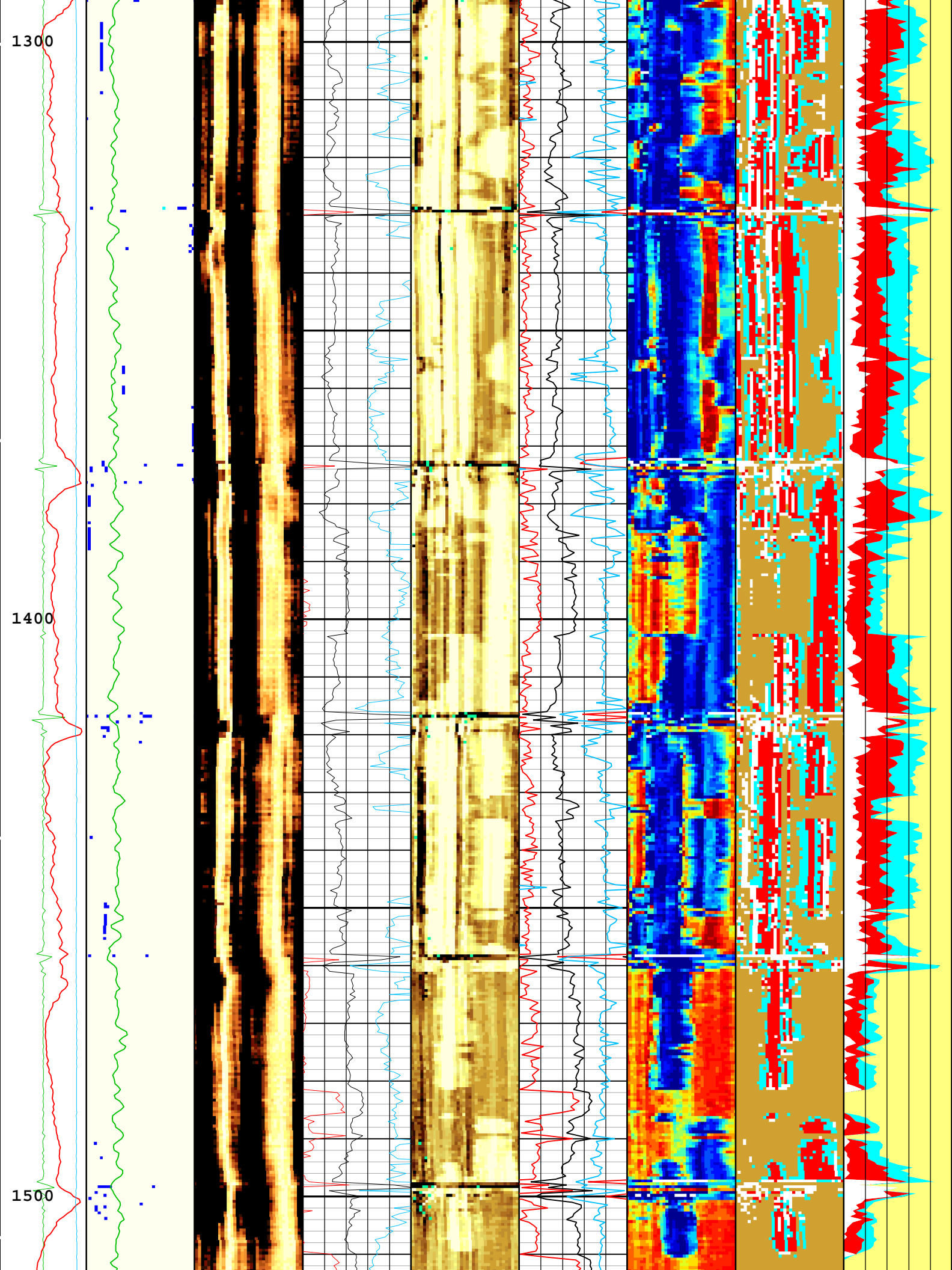


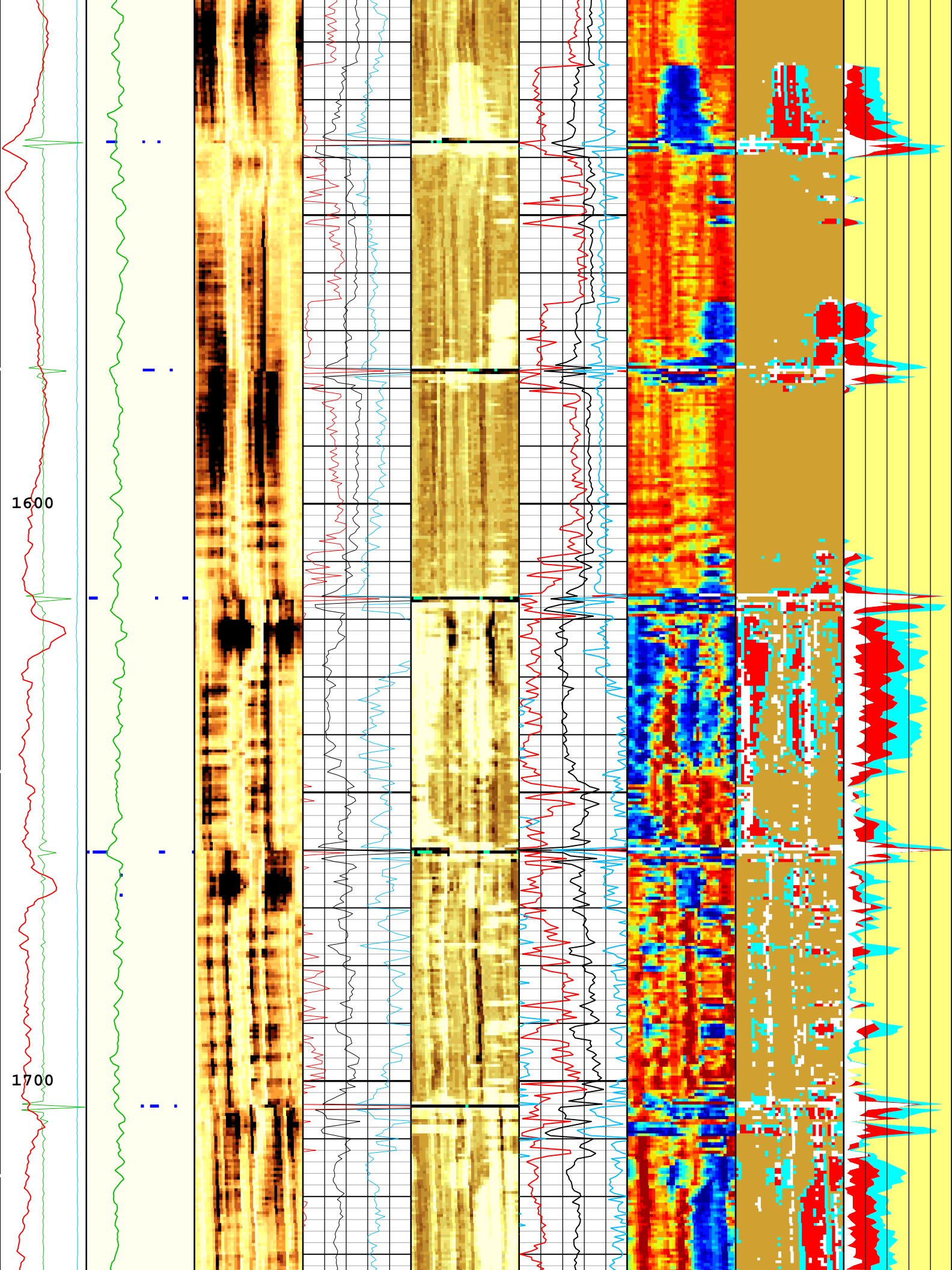


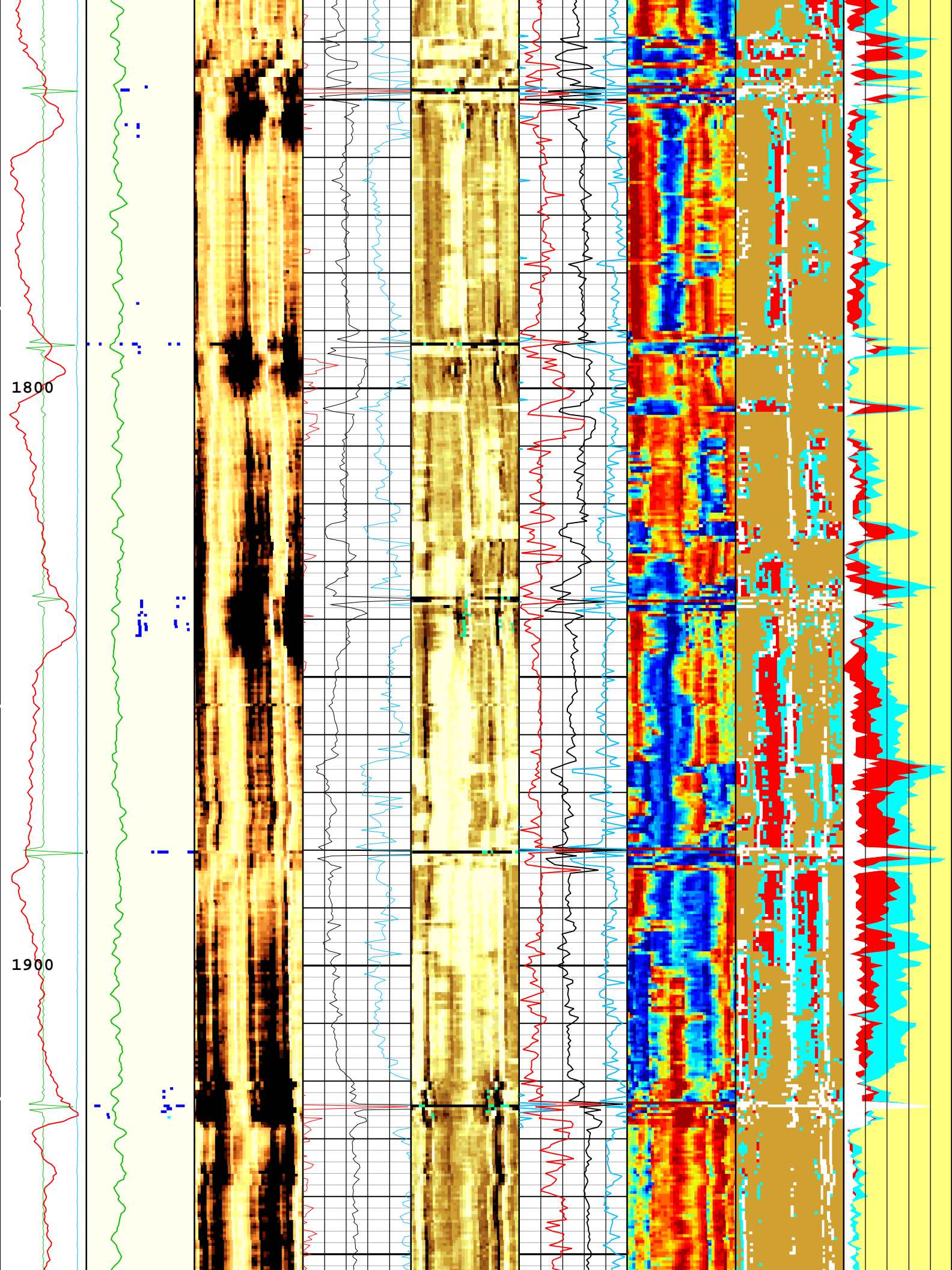


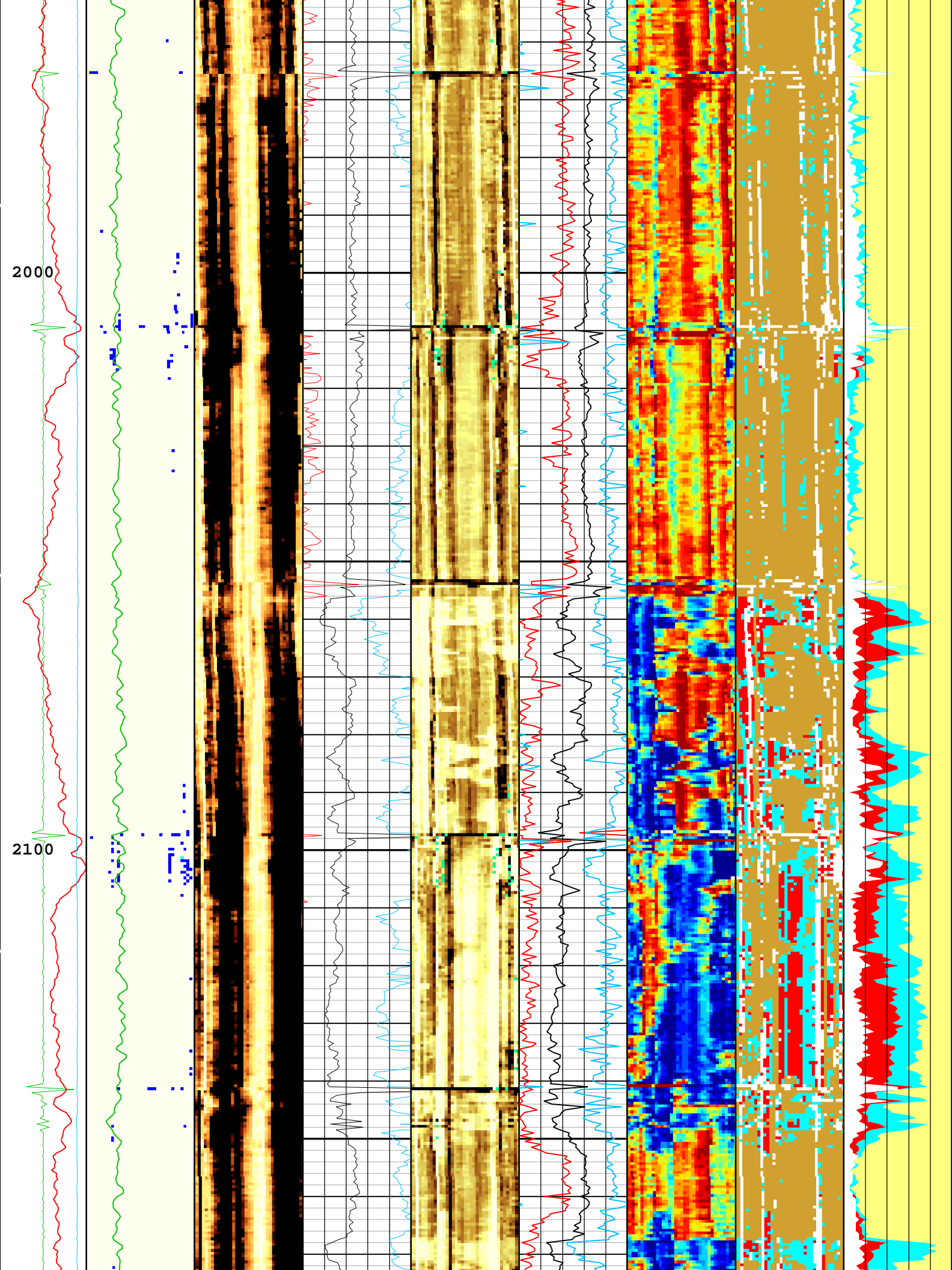


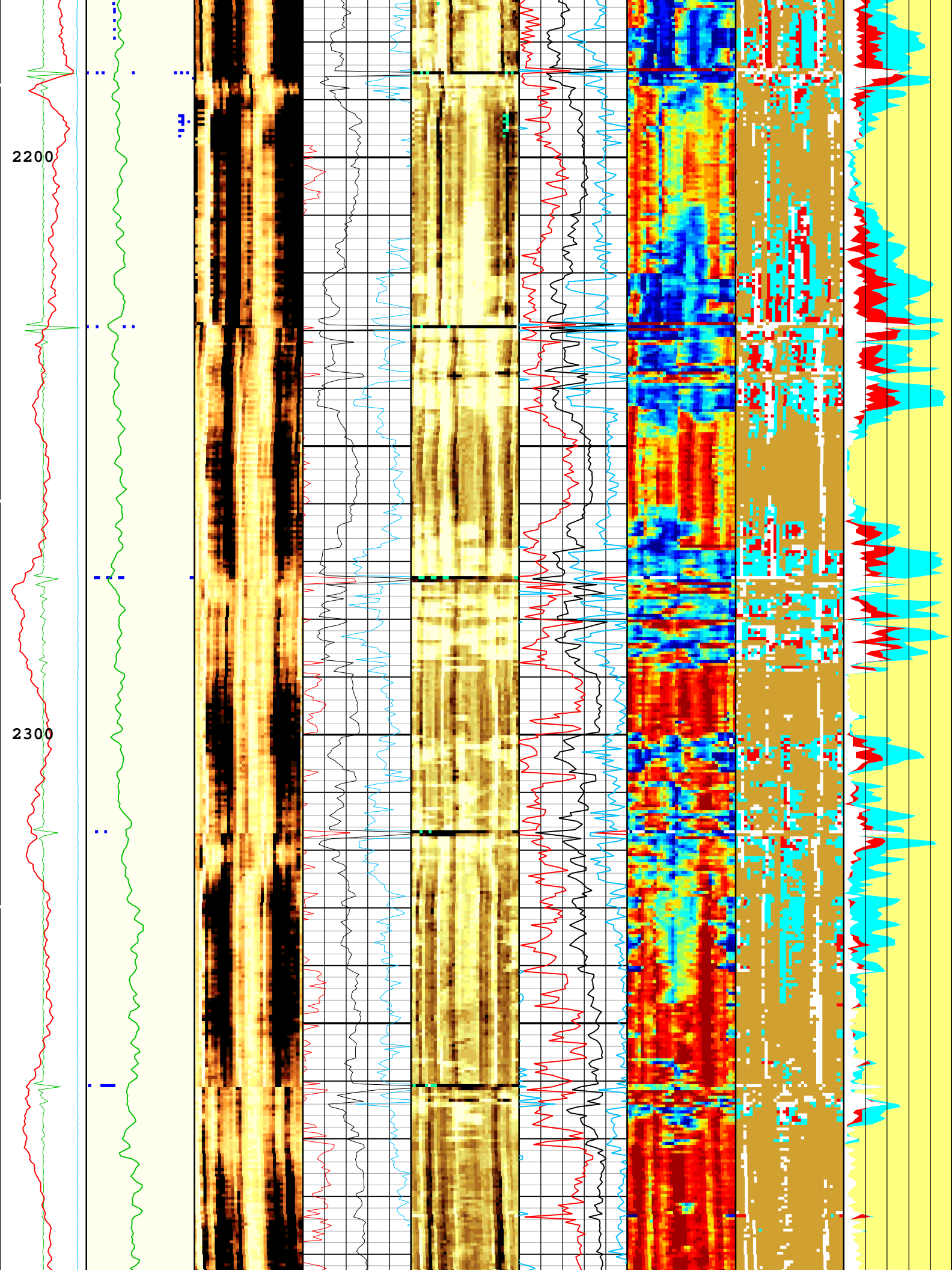


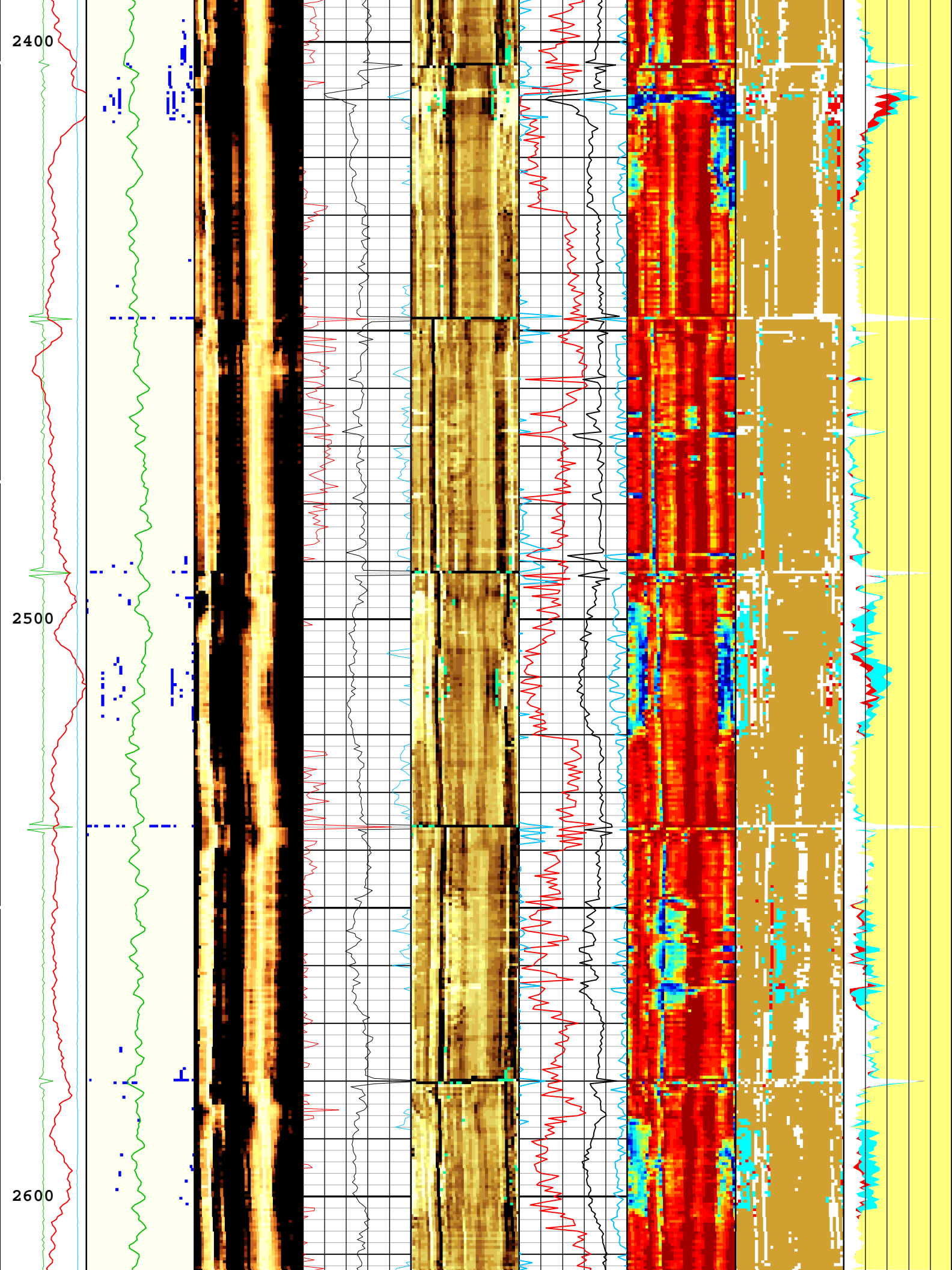


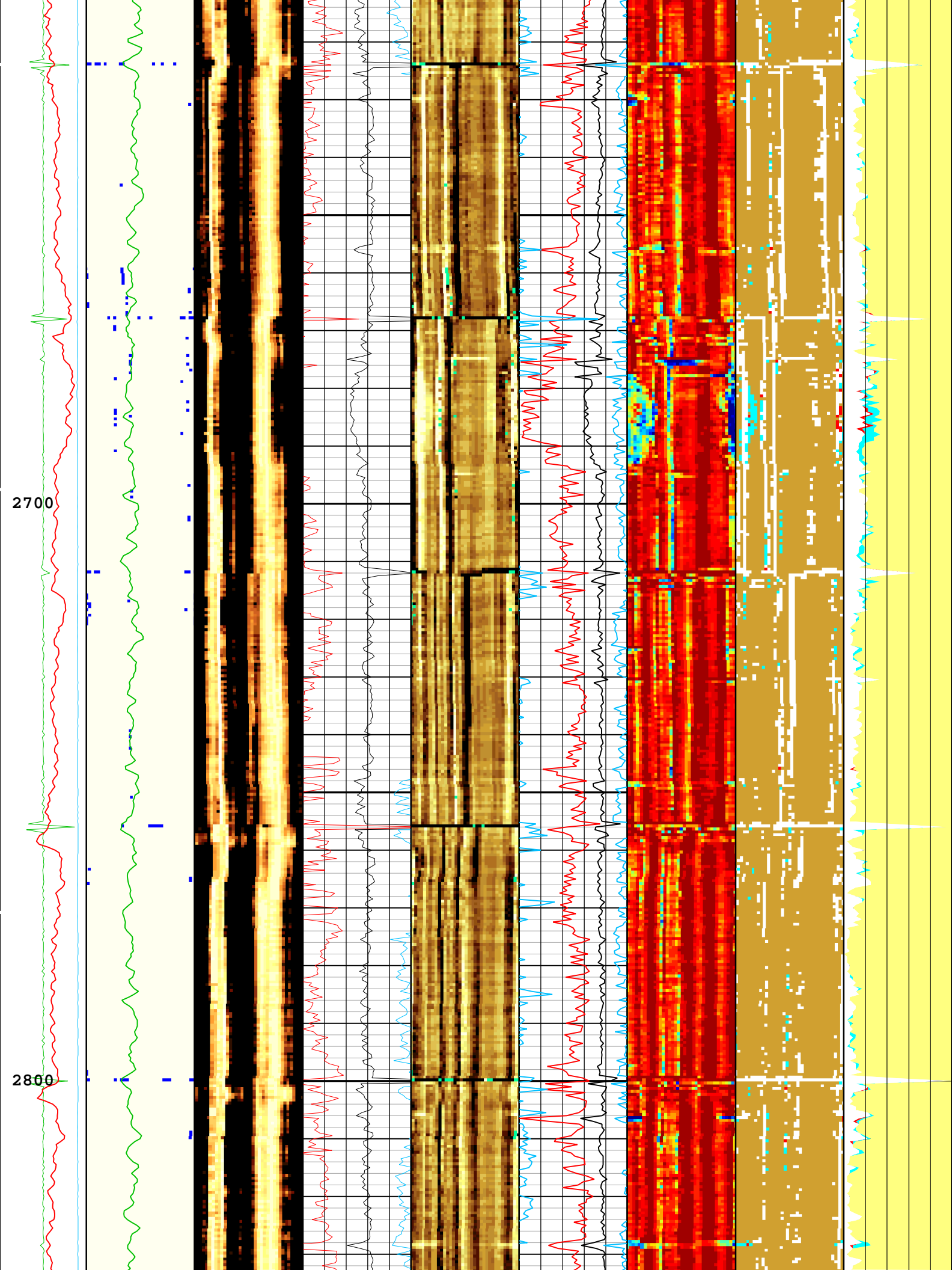


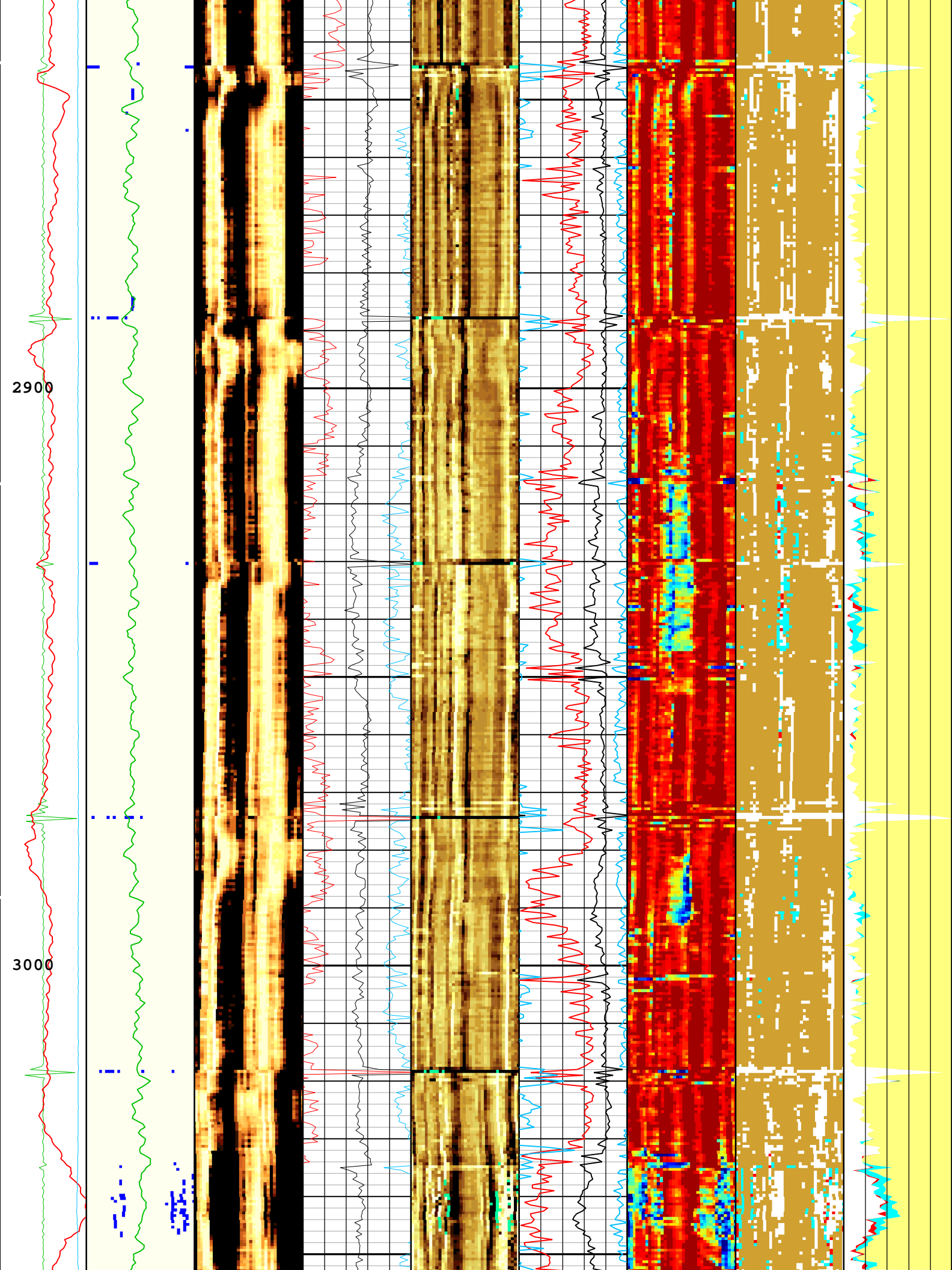


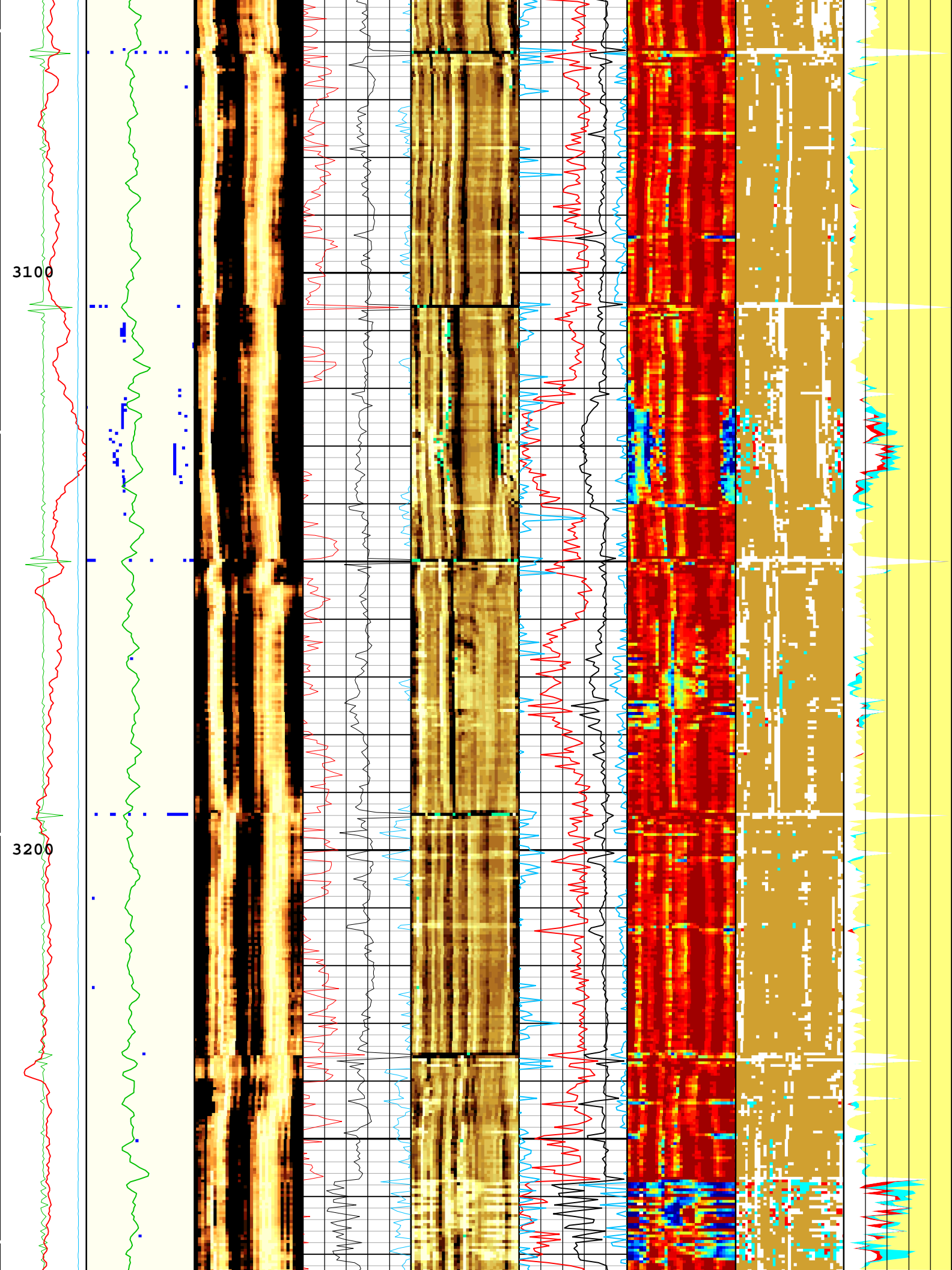


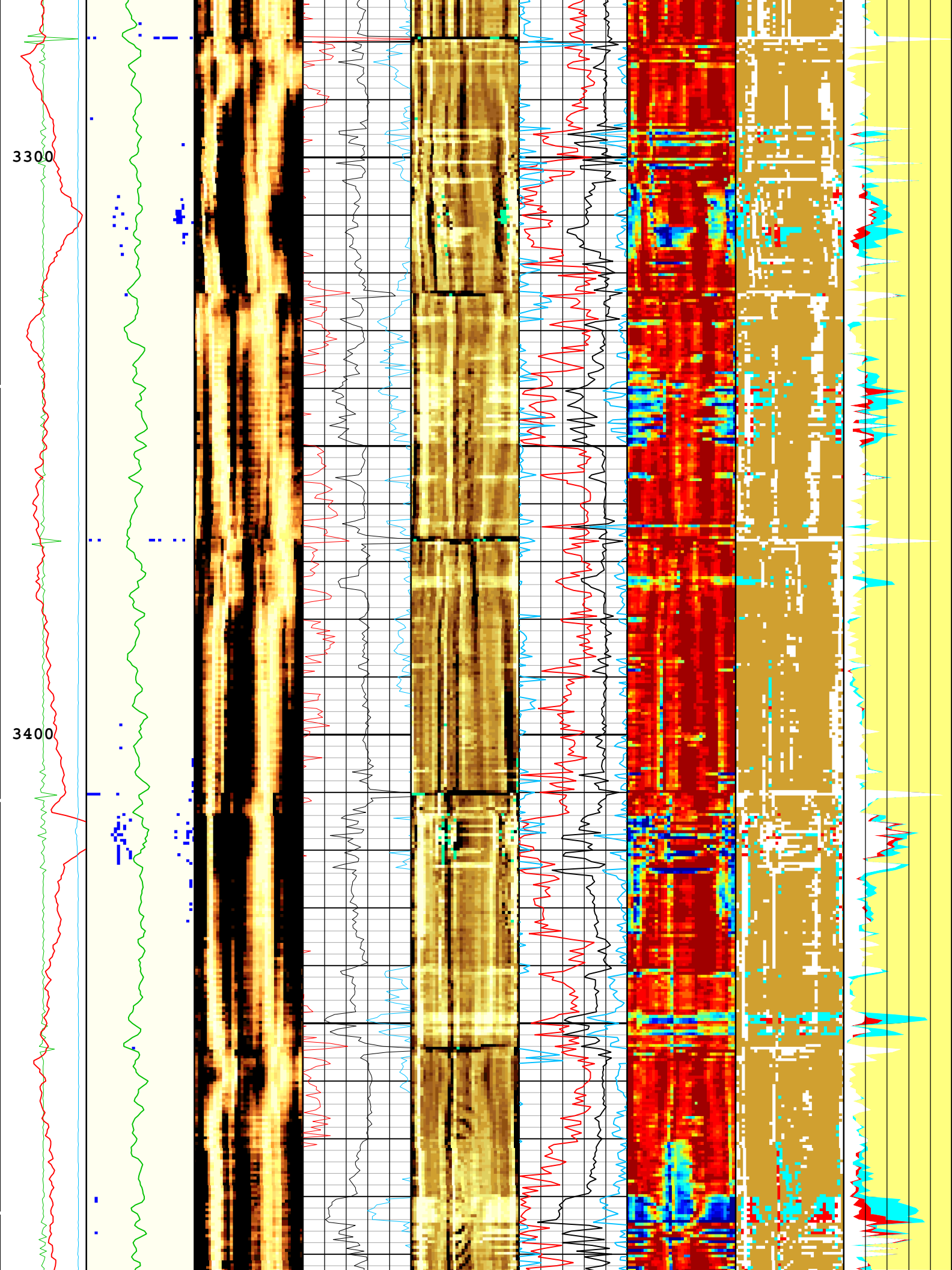


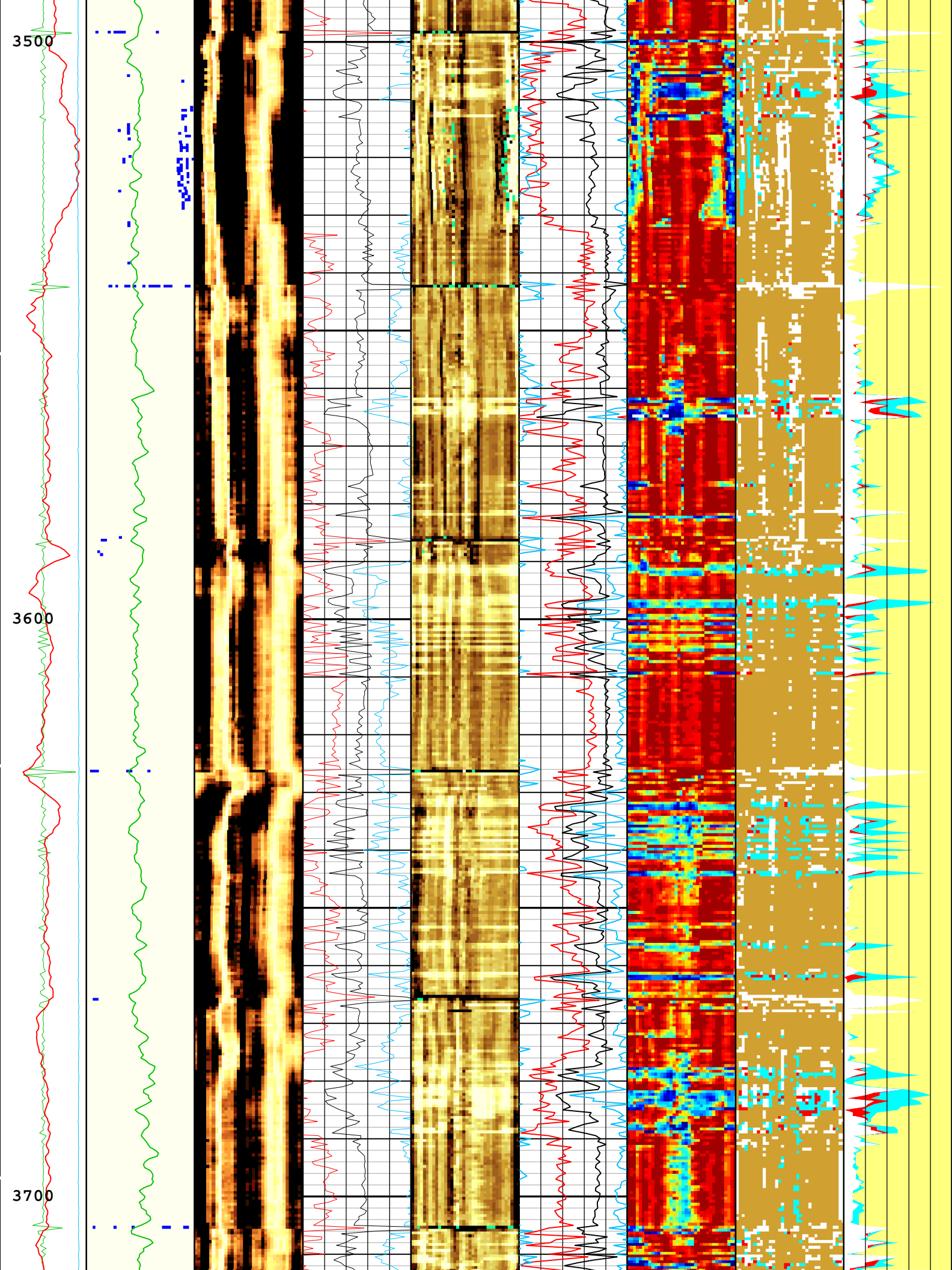


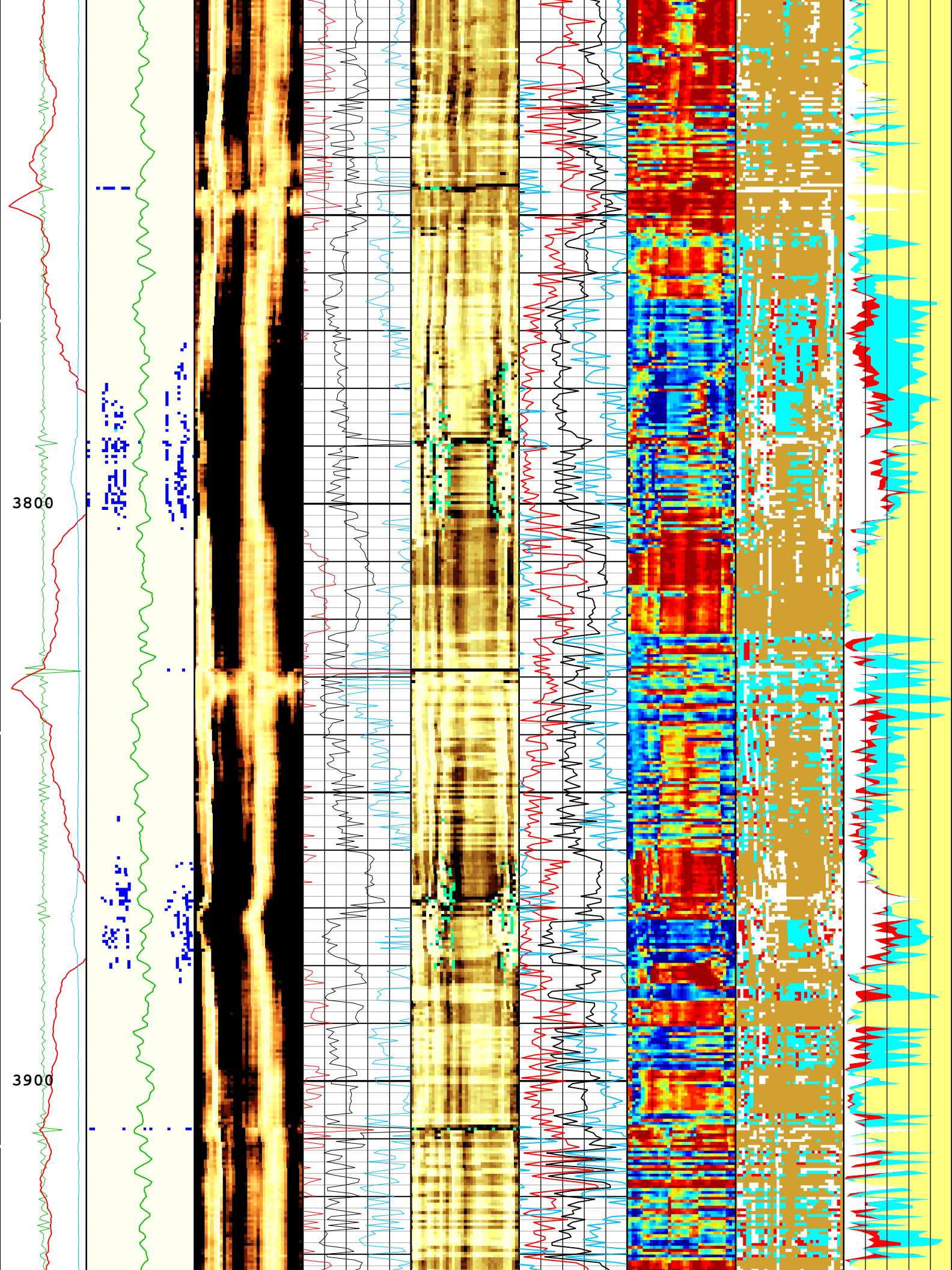


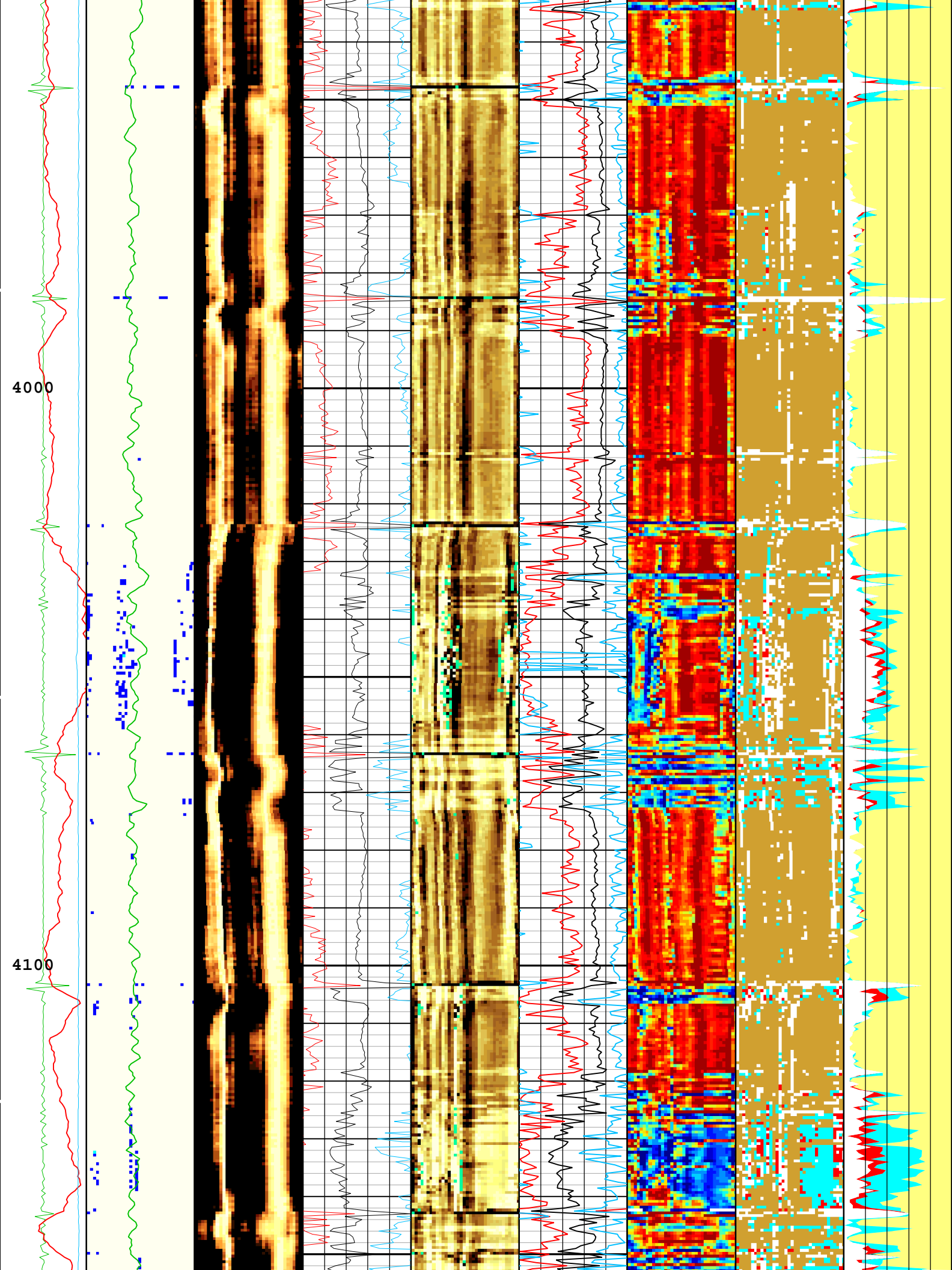


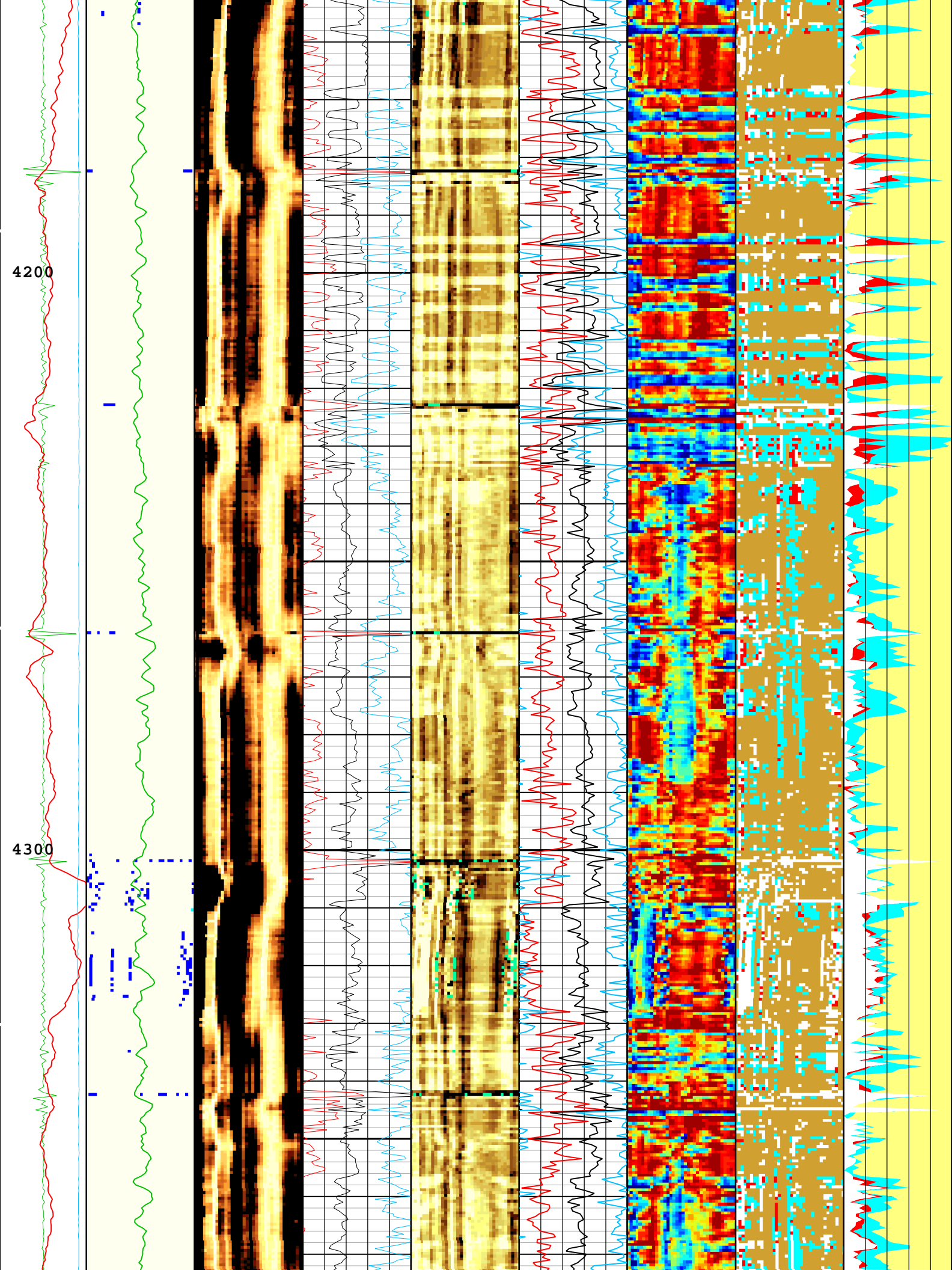


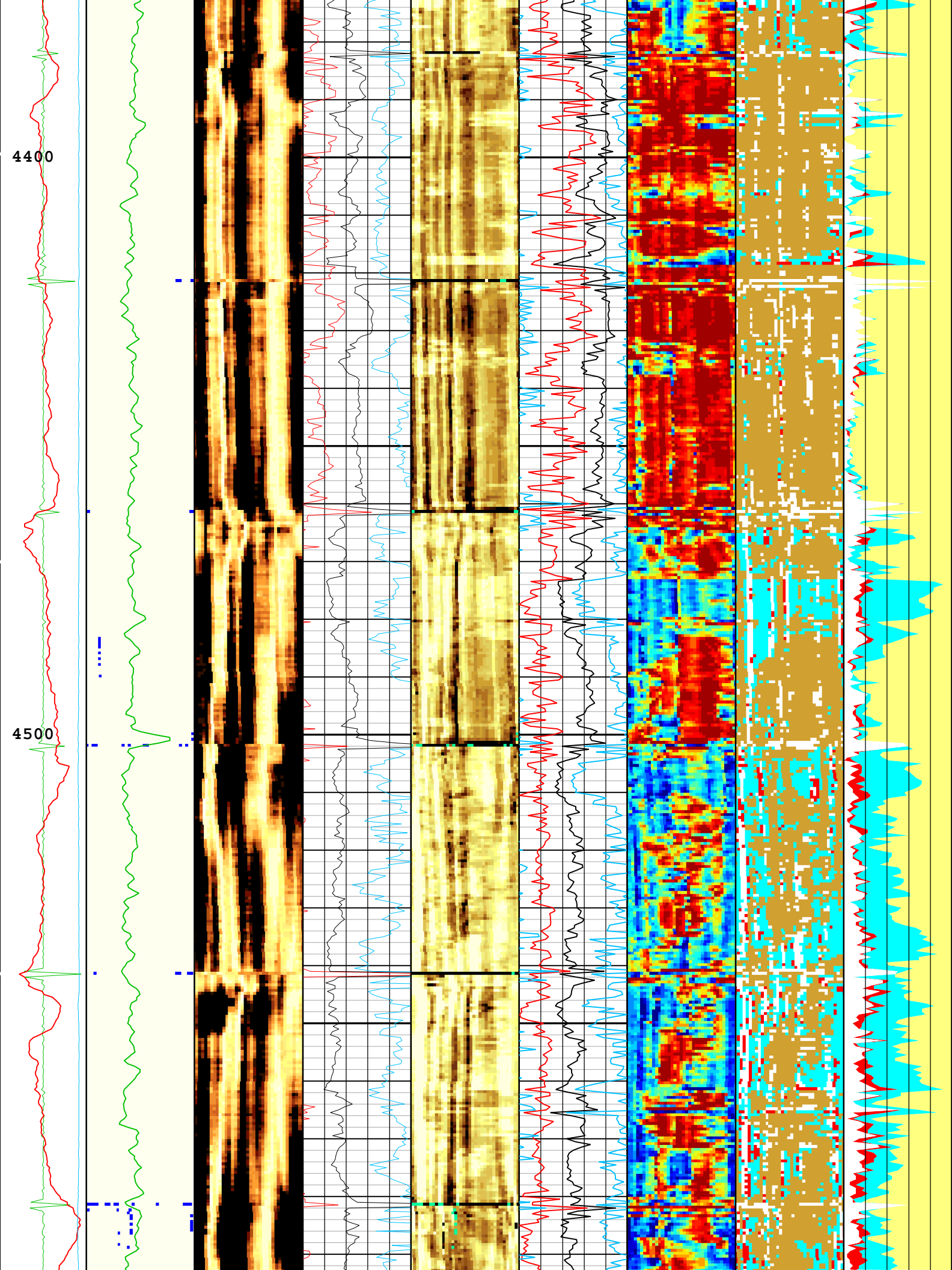


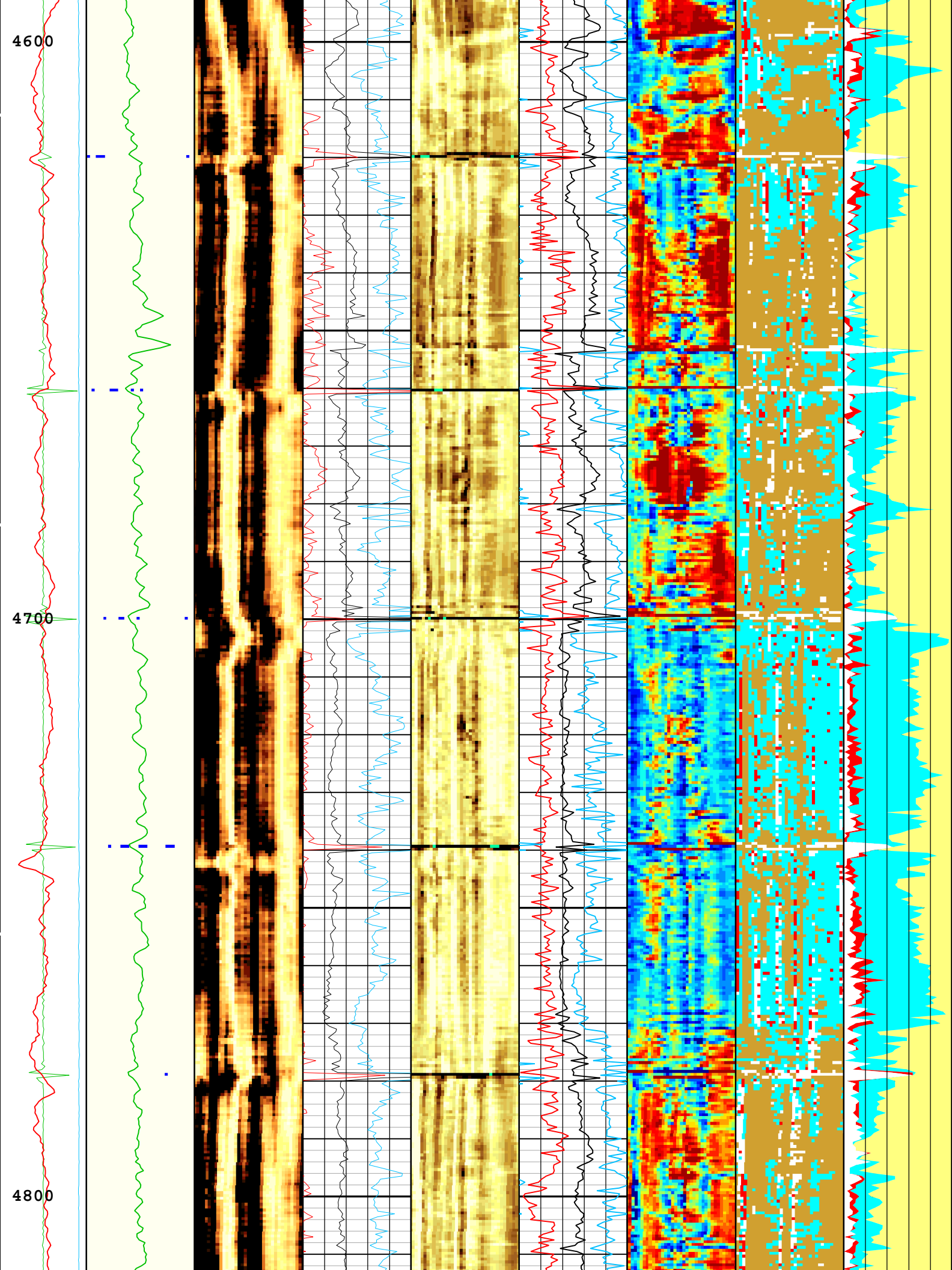


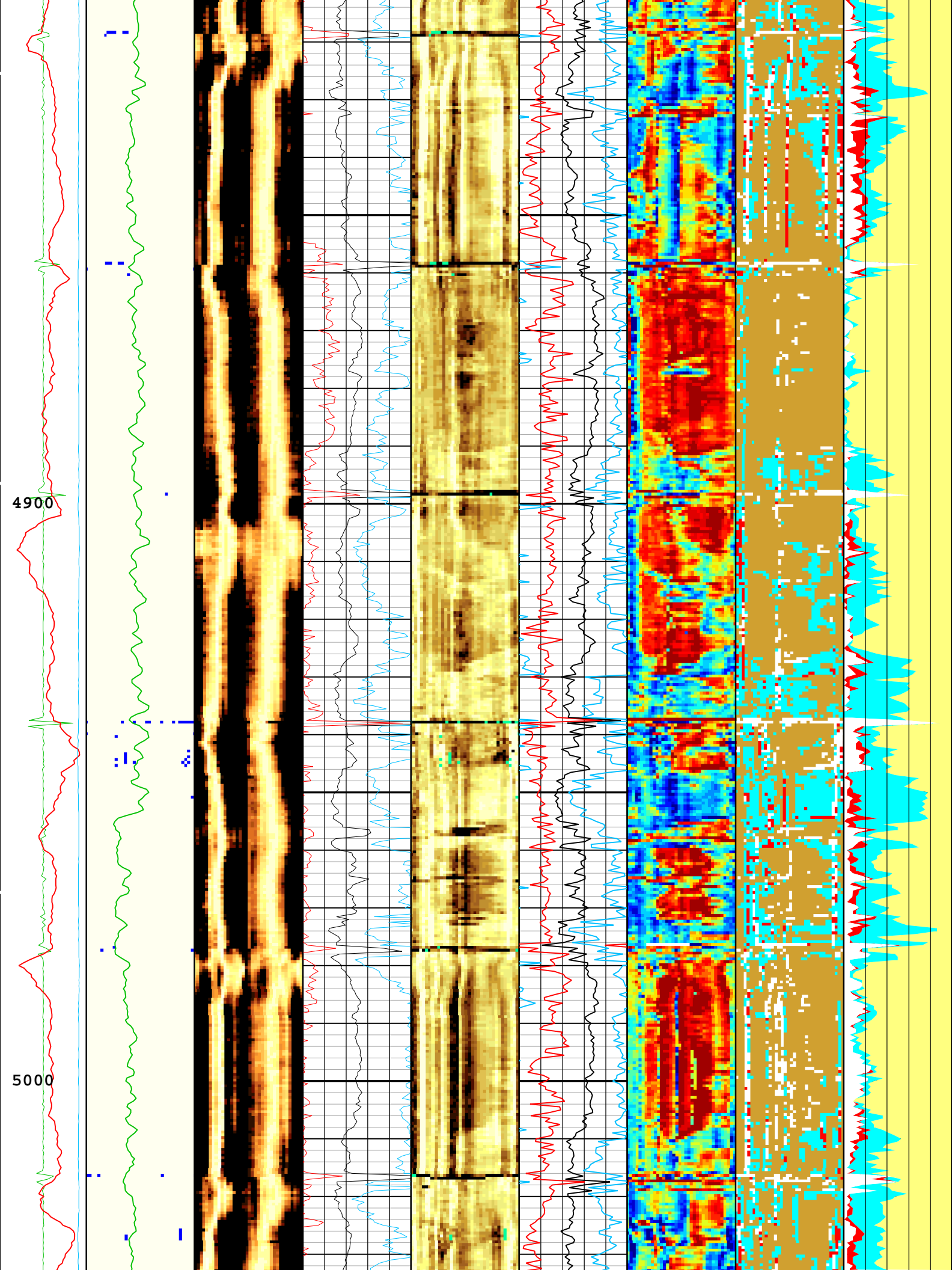


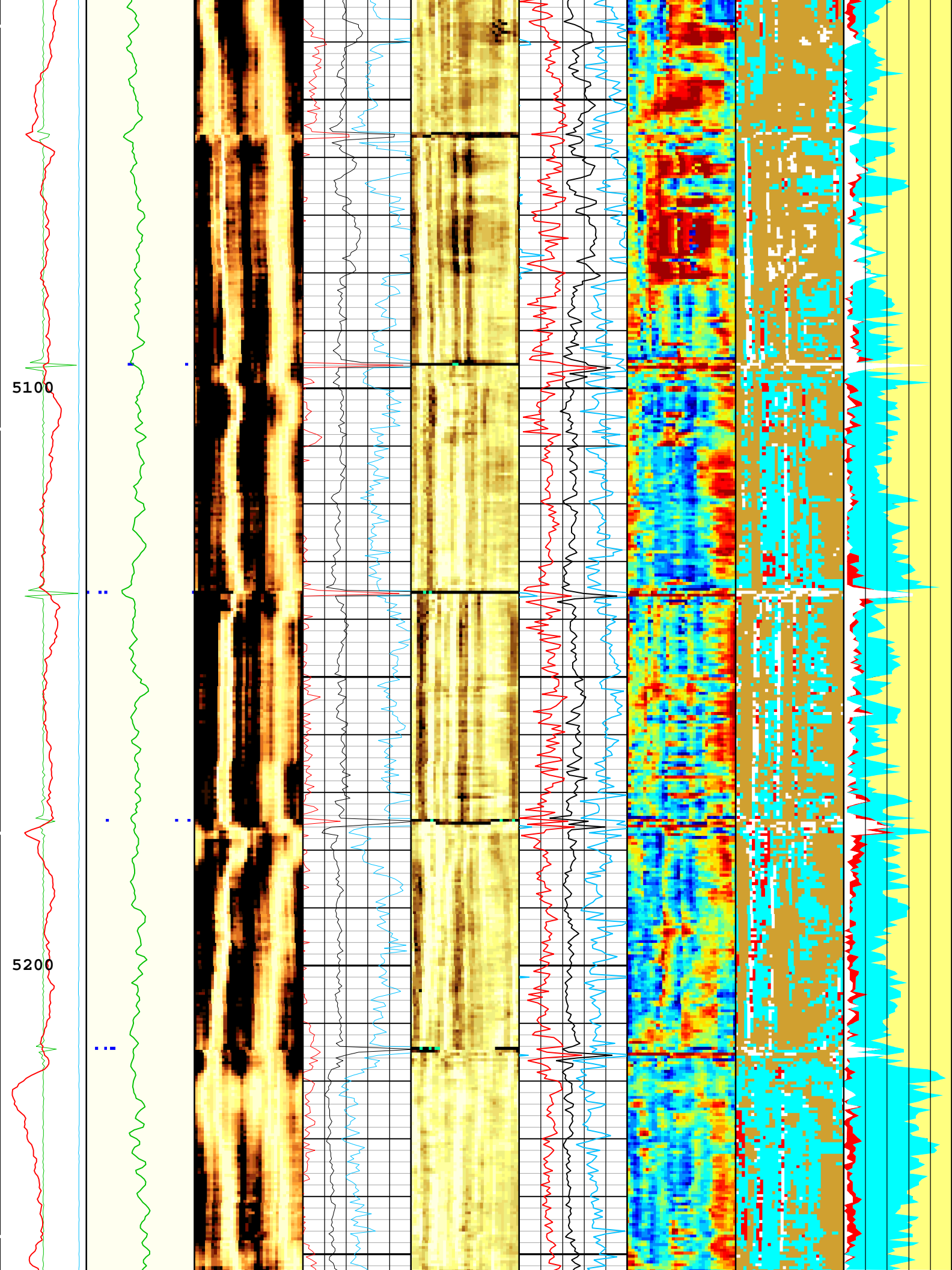


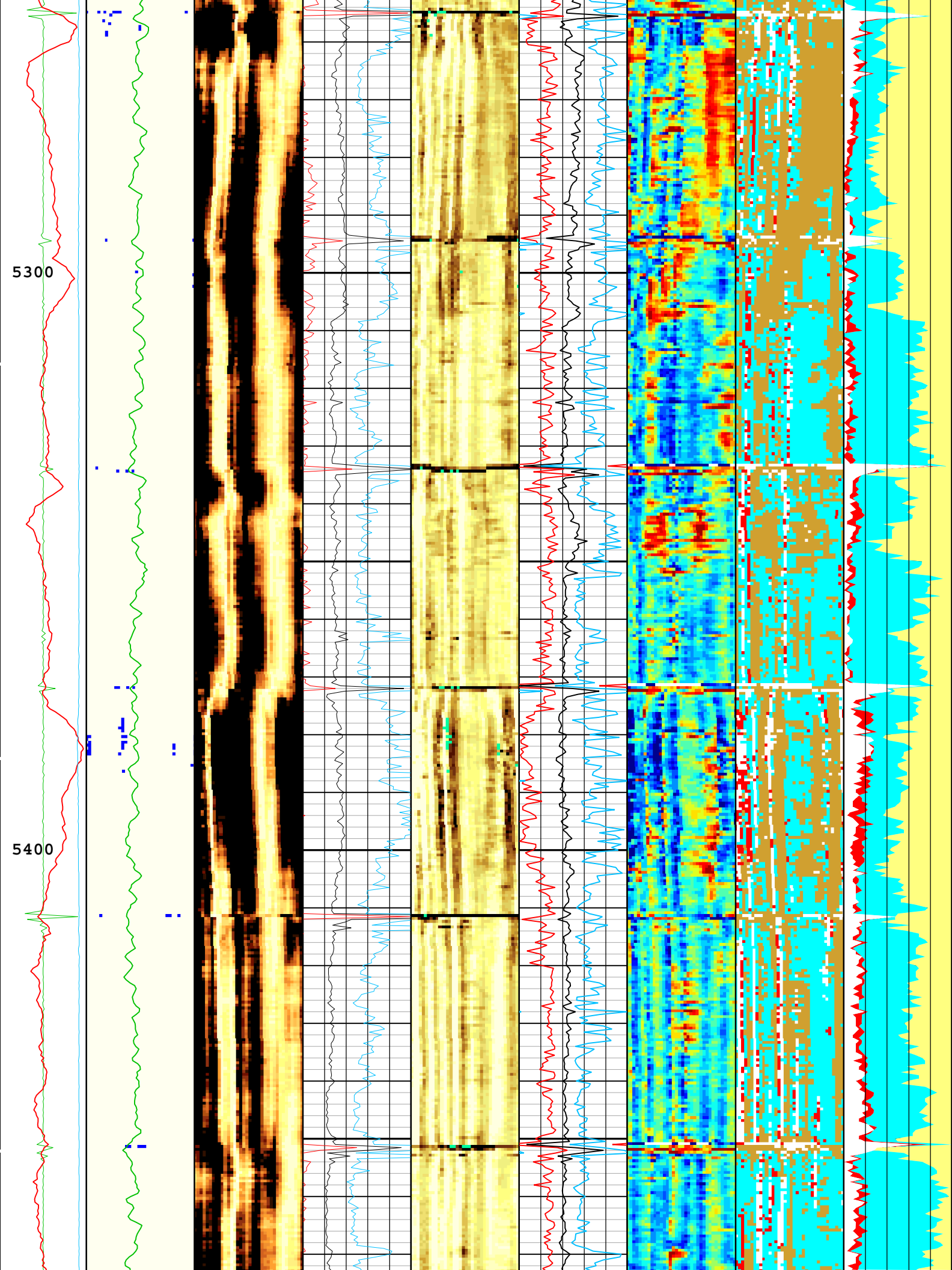


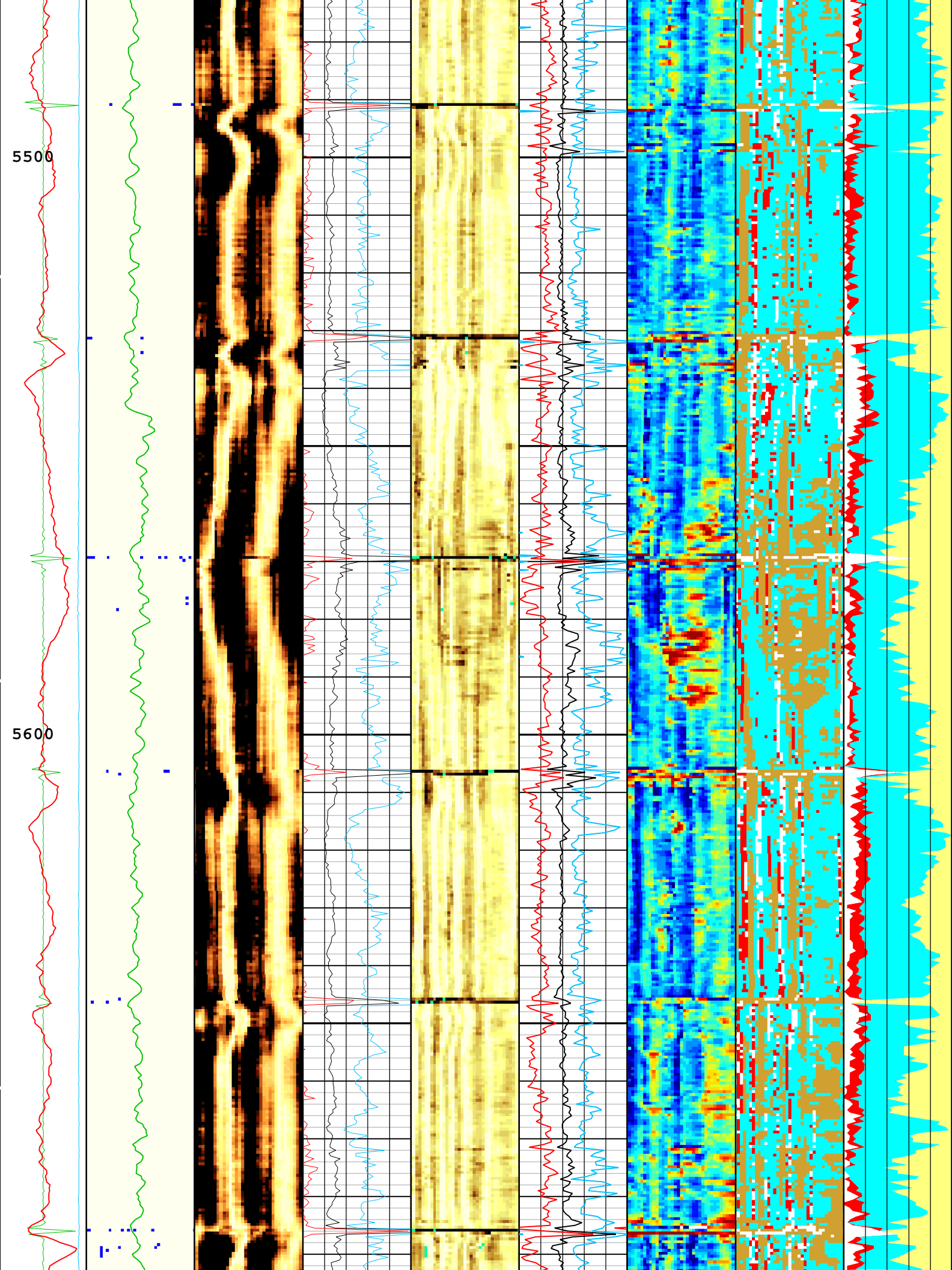


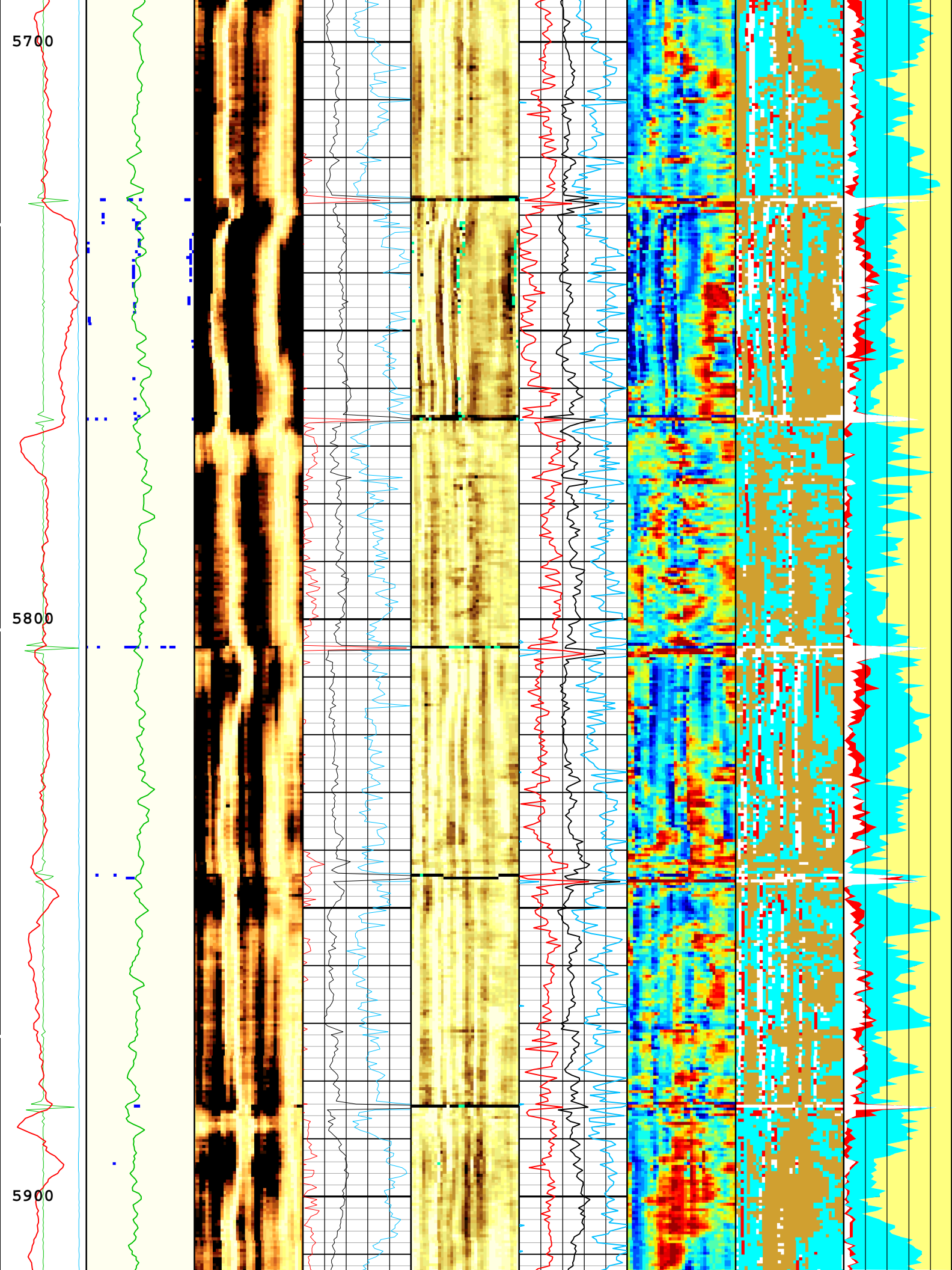


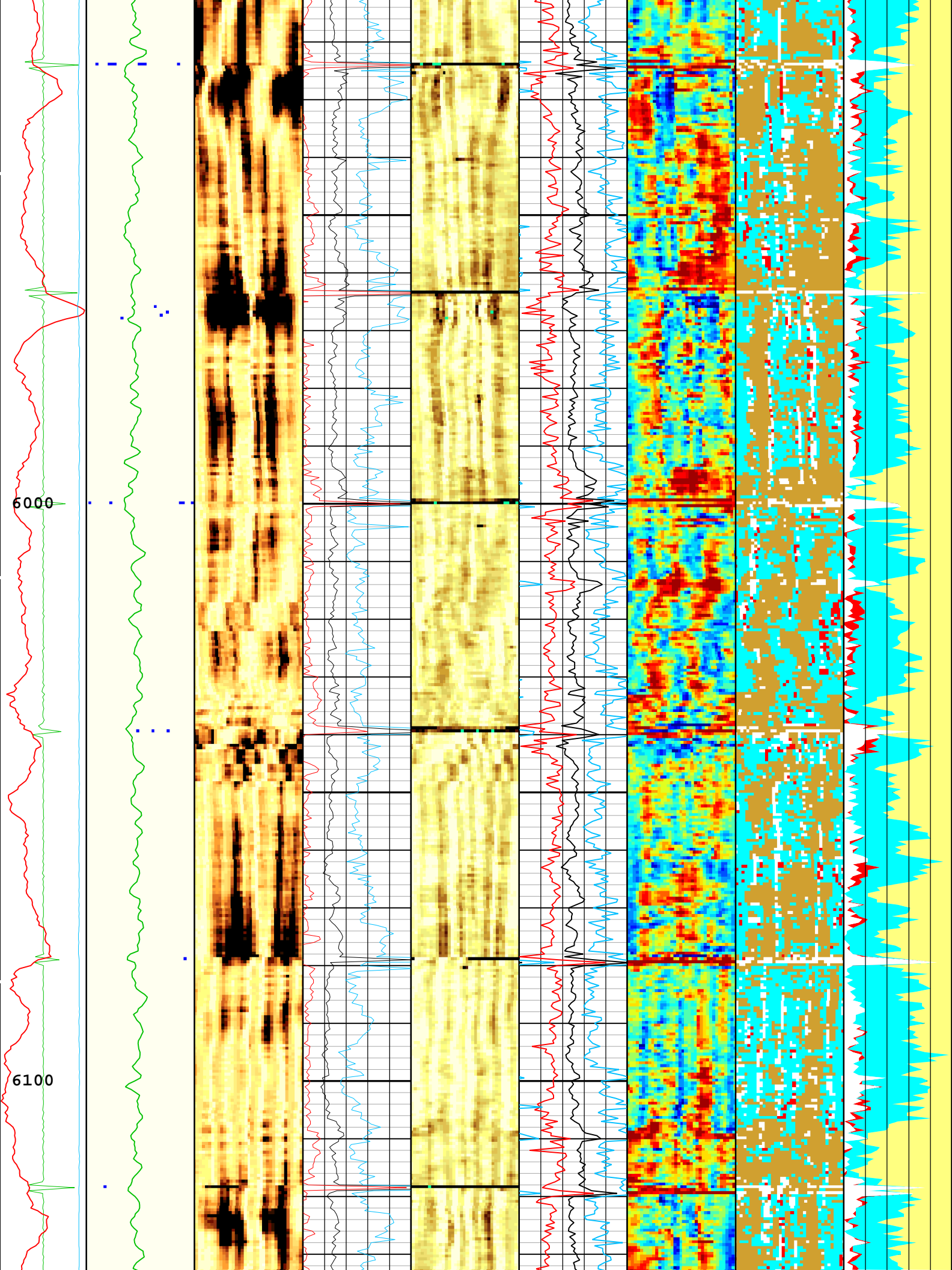


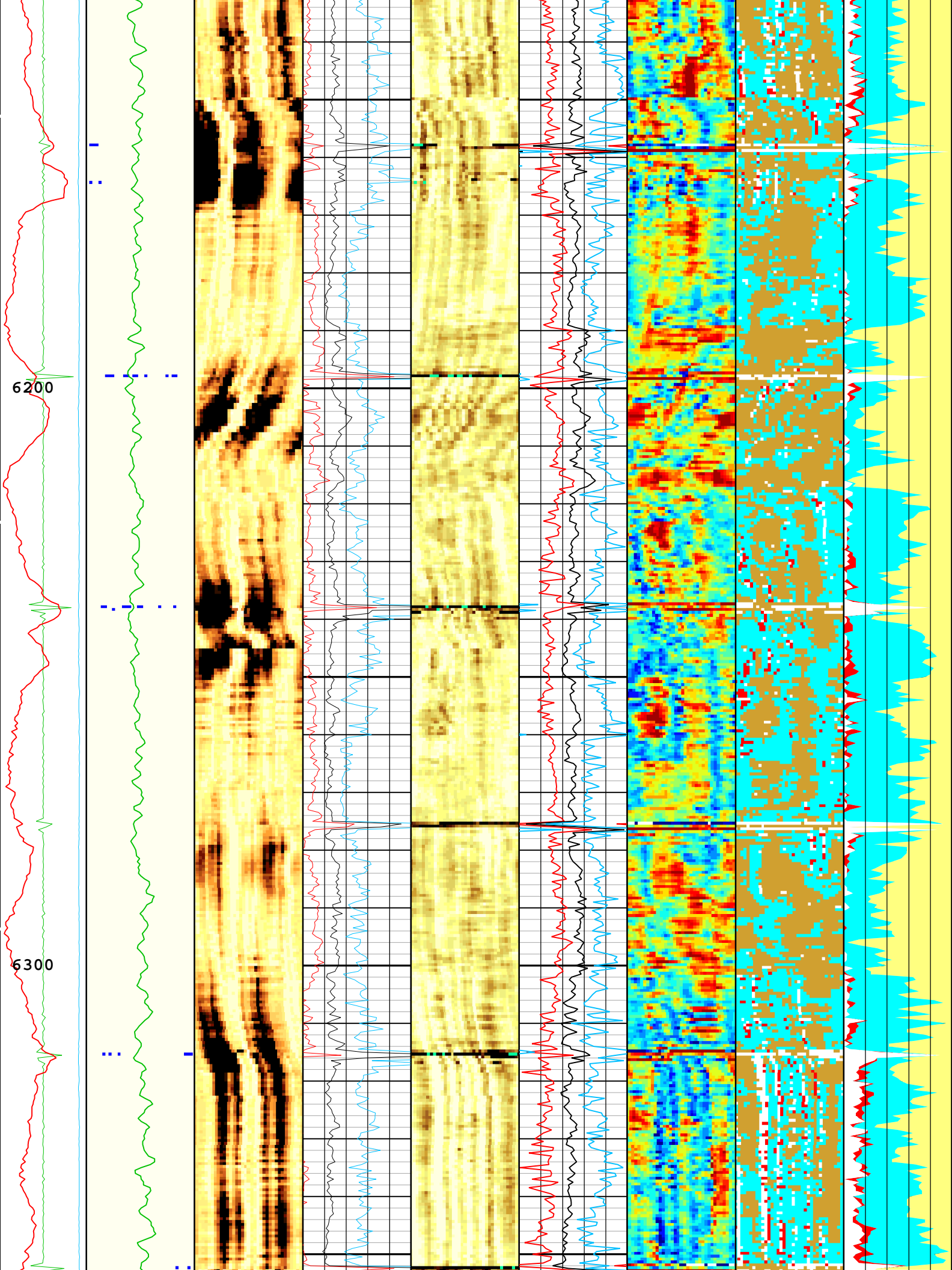


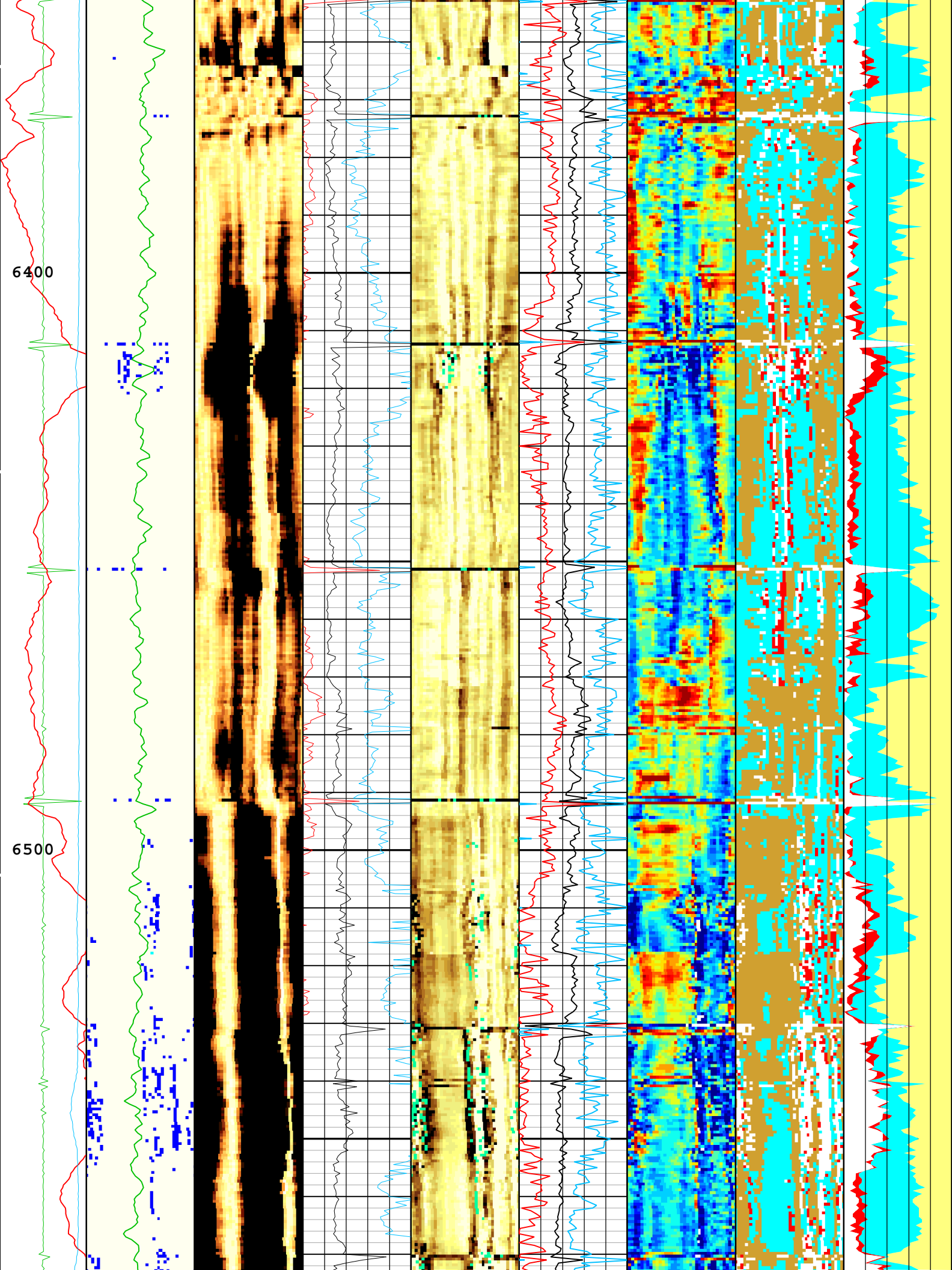


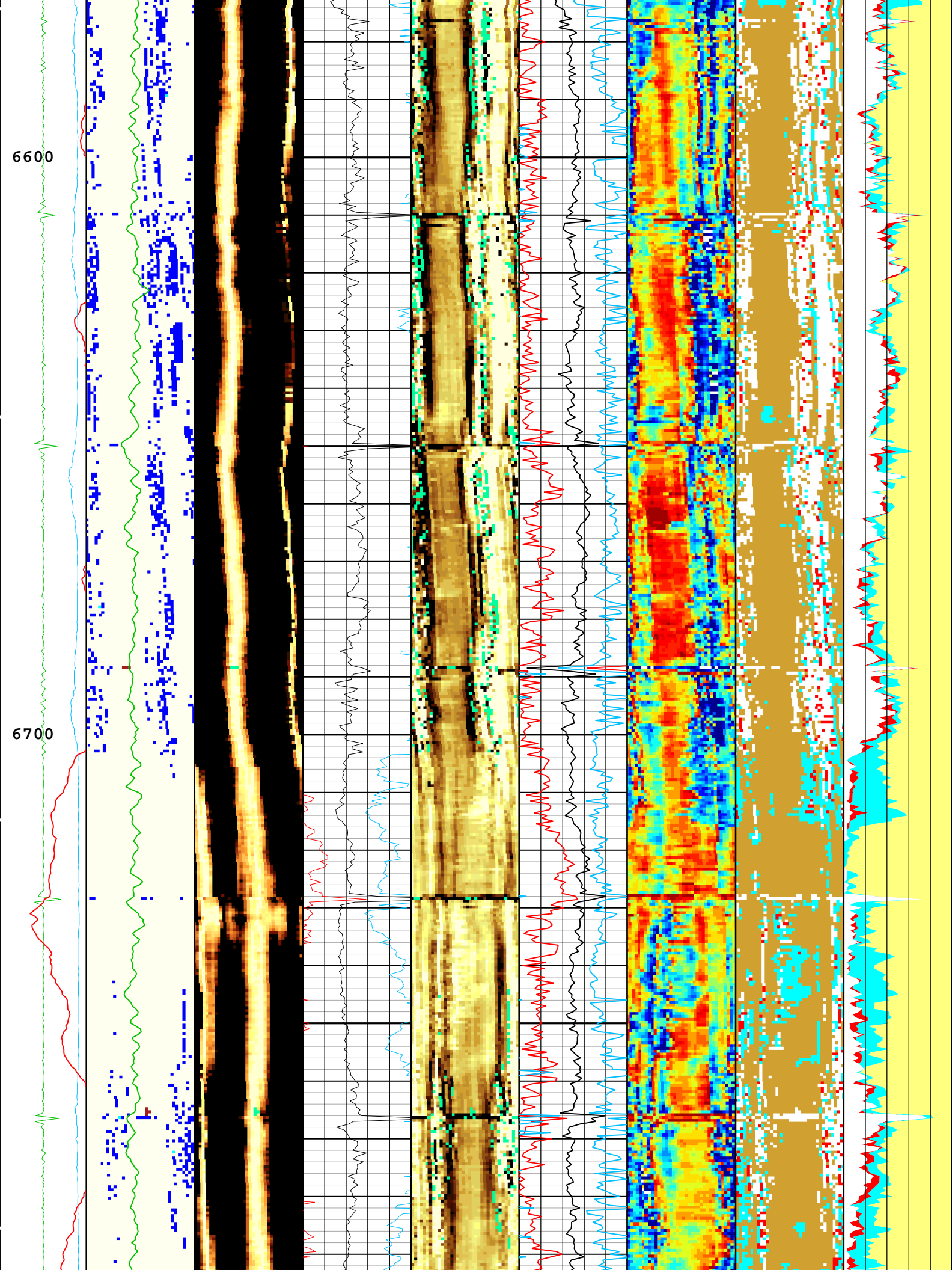


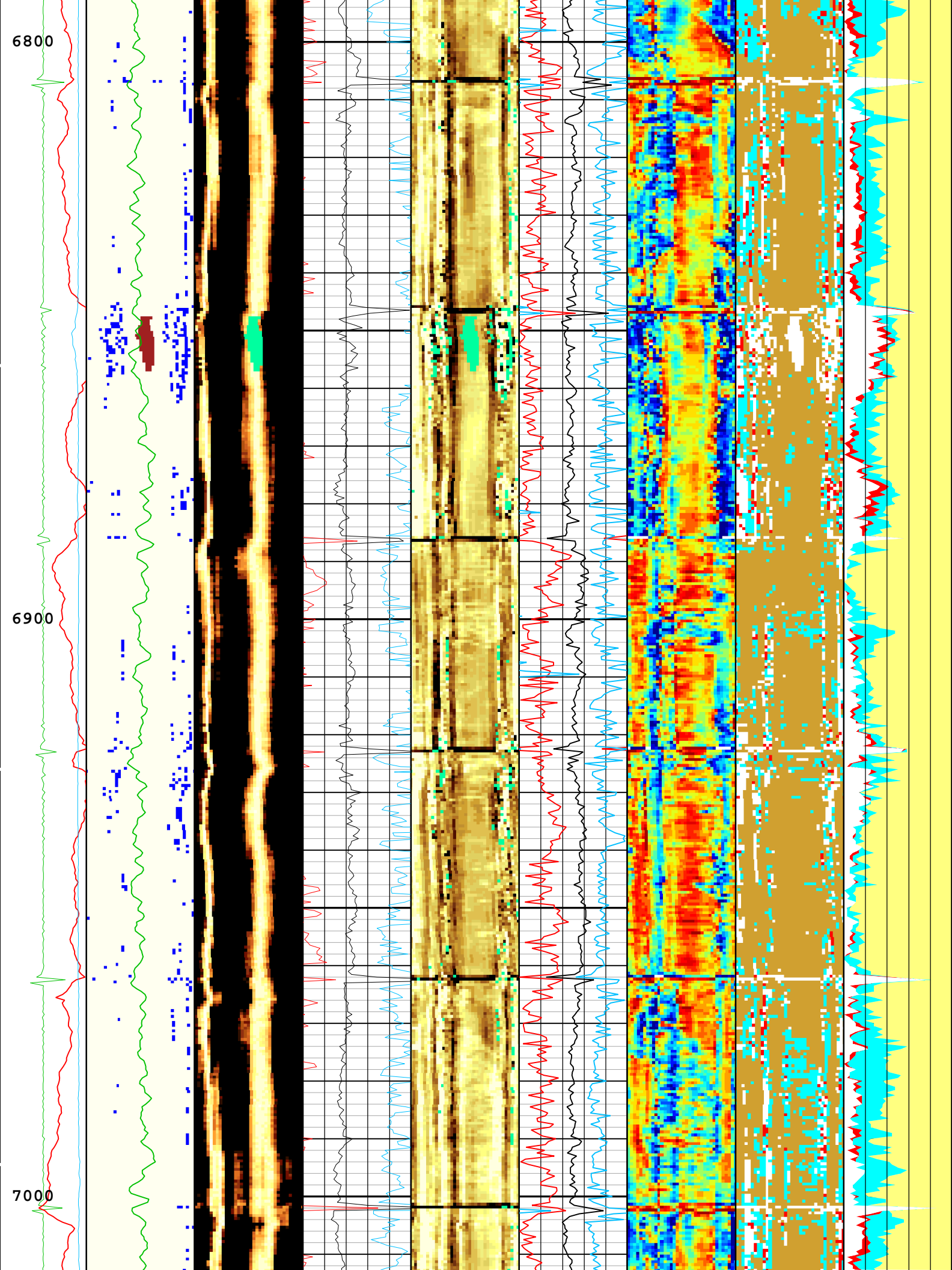


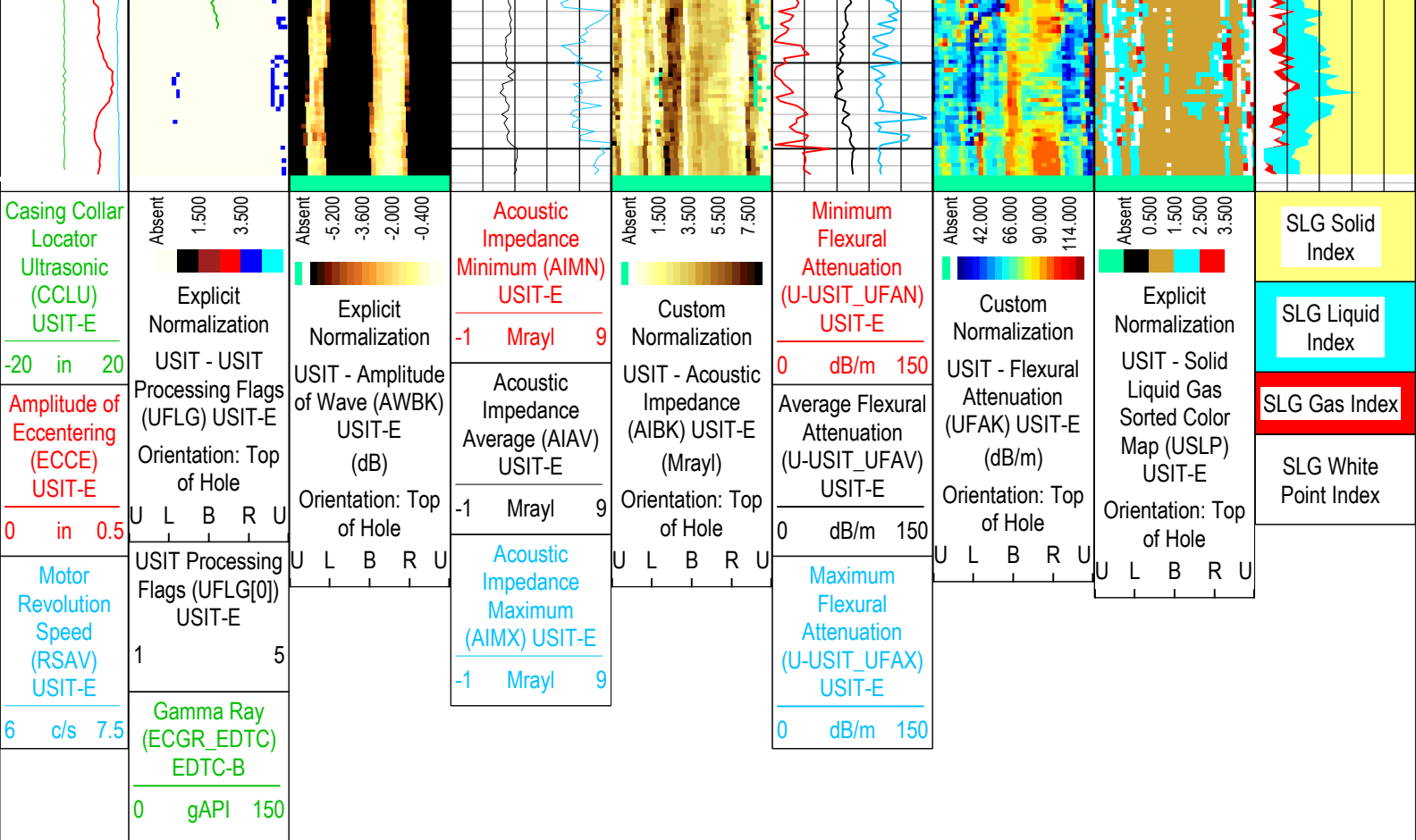












USIT Processing Flags (UFLG[0]) USIT-E

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: 19-May-2019 17:12:21

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	7034	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	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	-49.91	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	Depth Zoned	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.15	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in
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	-42.56	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	1.78	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	80	2329
BS	8.5	2329	7034
MEAS_WLEN	22.44	80	7034
MEAS_WLEN	20	7034	7035
All depth are actual.			

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

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	120	18-May-2019 14:12:21	18-May-2019 14:25:46	7036.02	6168.25
EMXV	110	18-May-2019 14:25:46	18-May-2019 14:38:27	6168.25	5283.86
EMXV	120	18-May-2019 14:38:27	18-May-2019 15:20:44	5283.86	2277.28
EMXV	110	18-May-2019 15:20:44	18-May-2019 15:31:19	2277.28	1554.33
EMXV	100	18-May-2019 15:31:19	18-May-2019 15:37:48	1554.33	1109.88
EMXV	80	18-May-2019 15:37:48	18-May-2019 15:39:50	1109.88	971.72
EMXV	60	18-May-2019 15:39:50	18-May-2019 15:40:43	971.72	922.62
EMXV	120	18-May-2019 15:40:43	18-May-2019 15:41:08	922.62	908.7
EMXV	100	18-May-2019 15:41:08	18-May-2019 15:43:31	908.7	749.87
EMXV	120	18-May-2019 15:43:31	18-May-2019 15:55:38	749.87	80.46
WINB	31.88	18-May-2019 14:12:21	18-May-2019 14:17:26	7036.02	6754.3
WINB	29.84	18-May-2019 14:17:26	18-May-2019 15:55:38	6754.3	80.46
WINE	78.22	18-May-2019 14:12:21	18-May-2019 14:13:12	7036.02	7029.48
WINE	78.07	18-May-2019 14:13:12	18-May-2019 14:13:22	7029.48	7026.41
WINE	77.06	18-May-2019 14:13:22	18-May-2019 15:55:38	7026.41	80.46

All depth are at tool zero.

ONE

IBC SLG Composite

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	80.46 ft	7036.03 ft	18-May-2019 2:12:21 PM	18-May-2019 3:55:38 PM	ON	5.59 ft	Yes

All depths are referenced to toolstring zero





Log

Company:Crestone Peak Resources and Operating LLC

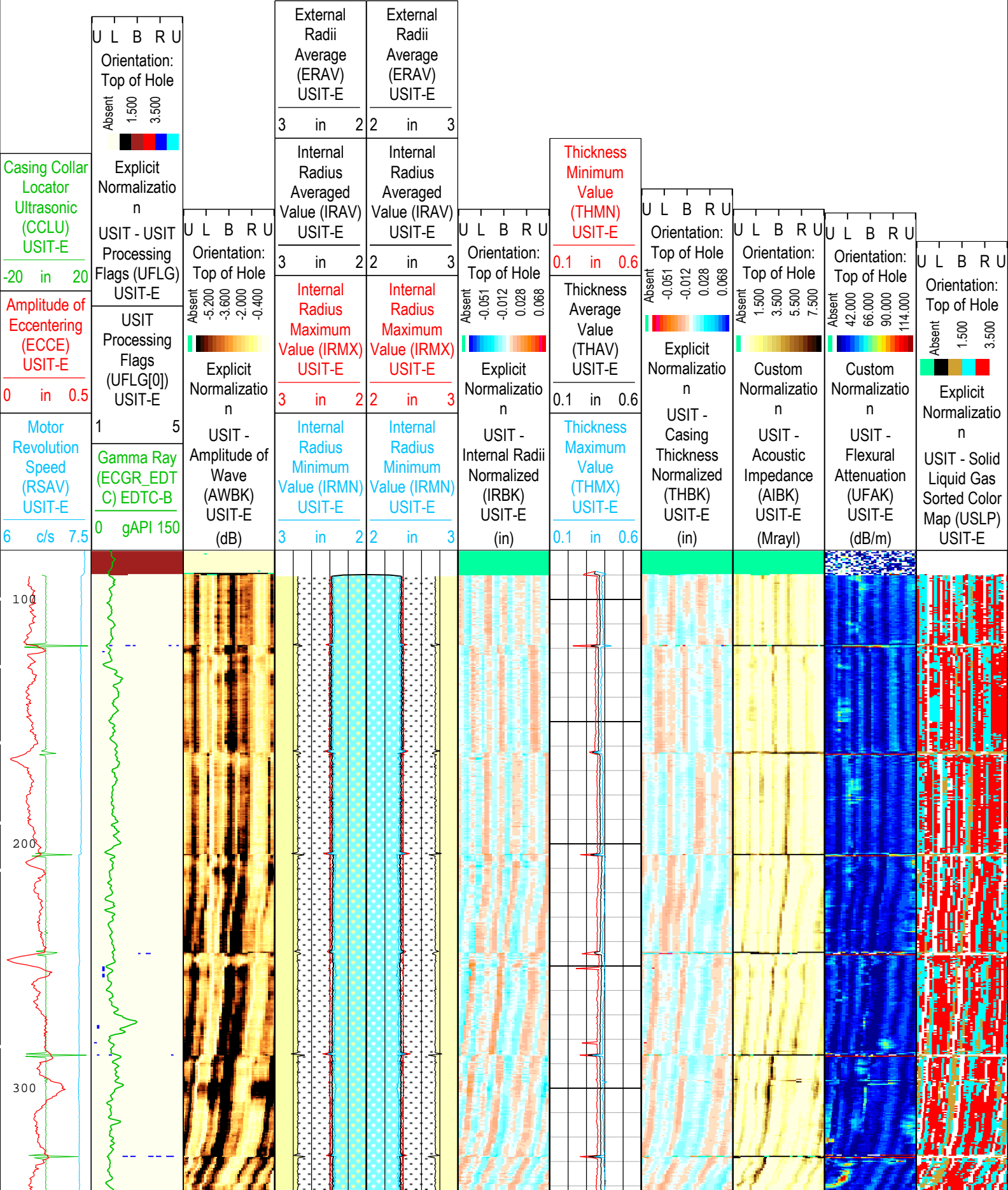
Well:Echeverria 2G-2H-D267

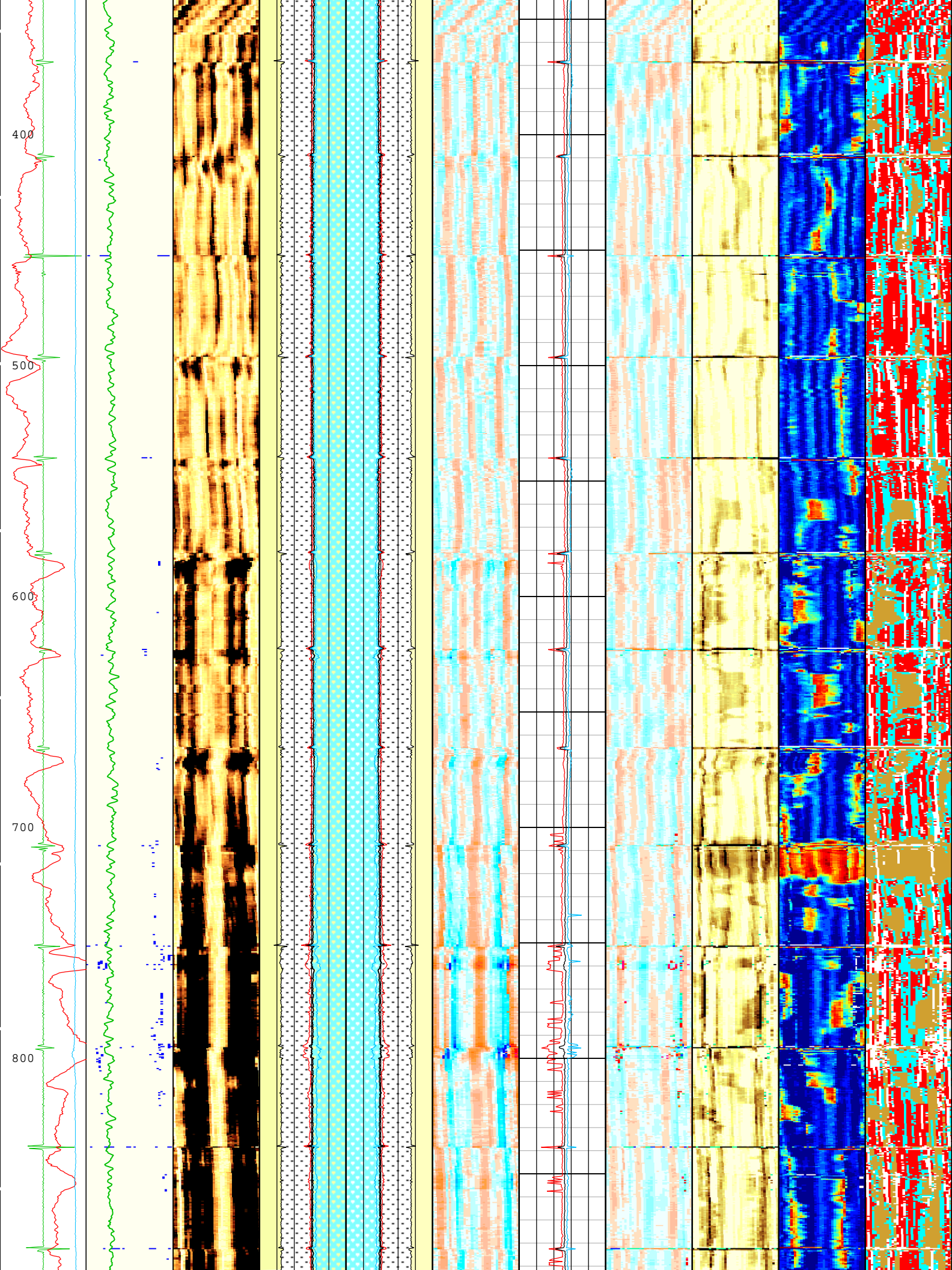
ONE: Log[3]:Up:S011

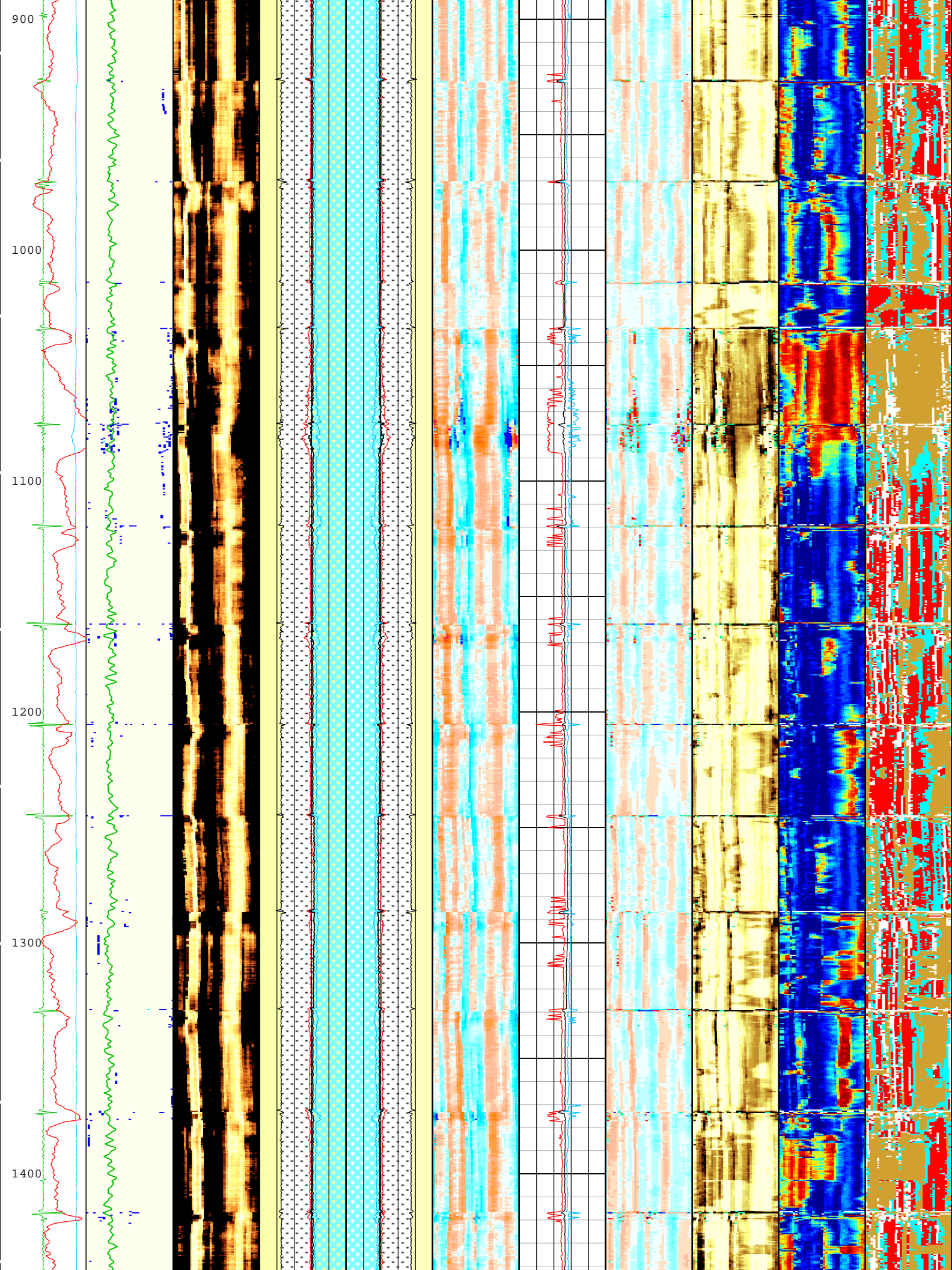
Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 19-May-2019 17:12:34

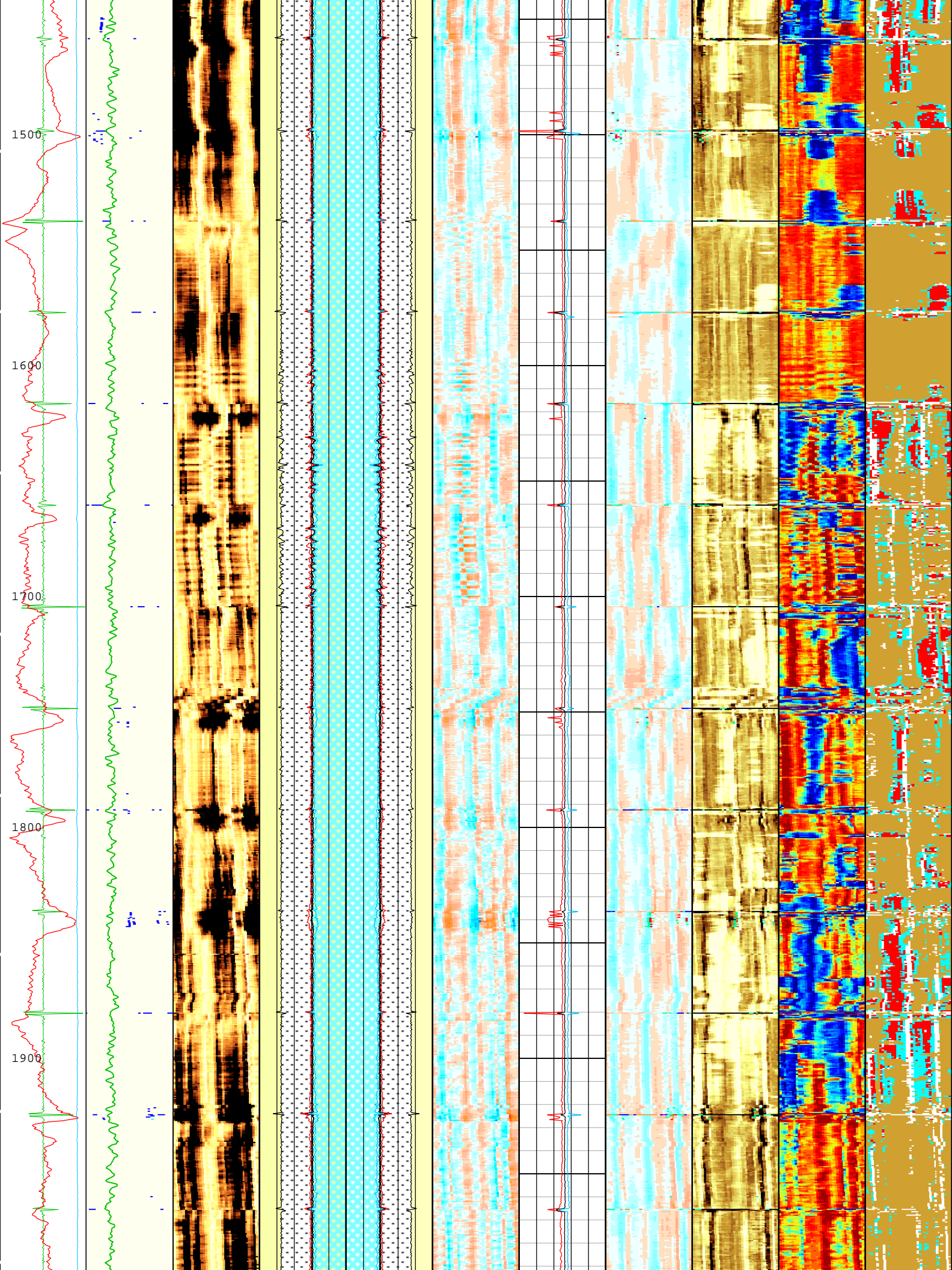
- UFLG 1 Value within [0.0 - 1.0] - :  Pulse Origin Not Detected
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  WINLEN Error
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  Casing Thickness Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Loop Processing Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

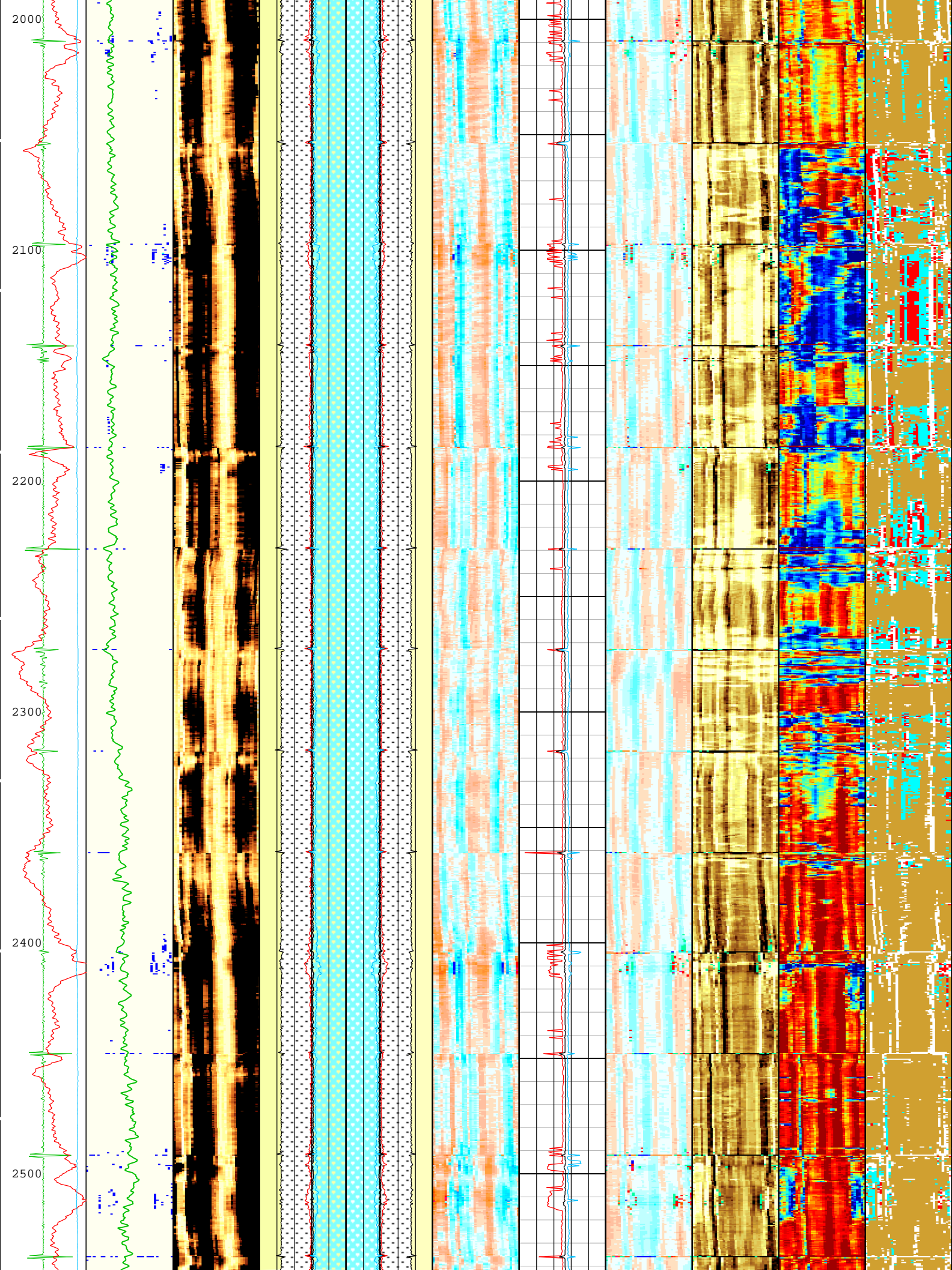
TIME_1900 - Time Marked every 60.00 (s)

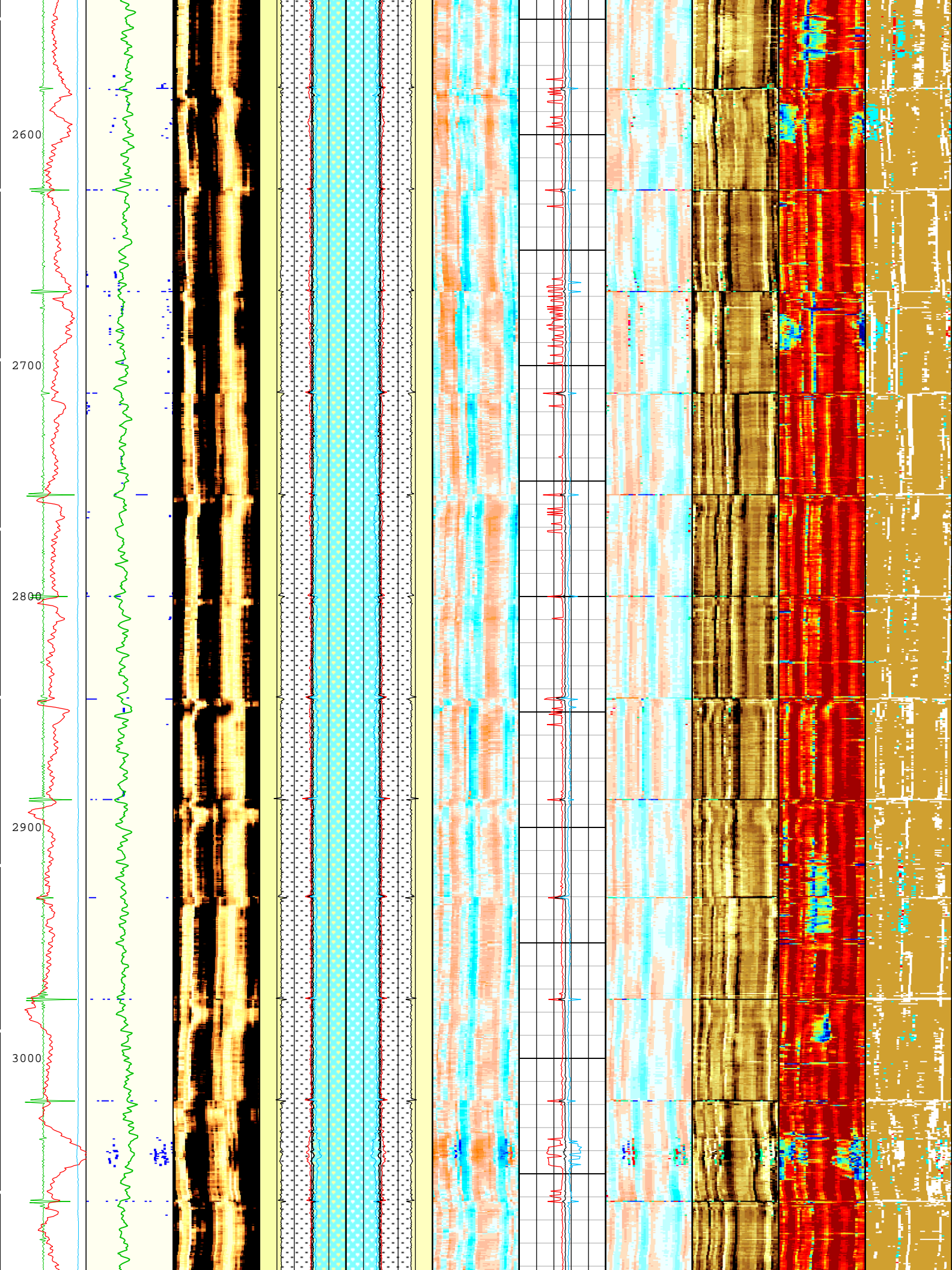


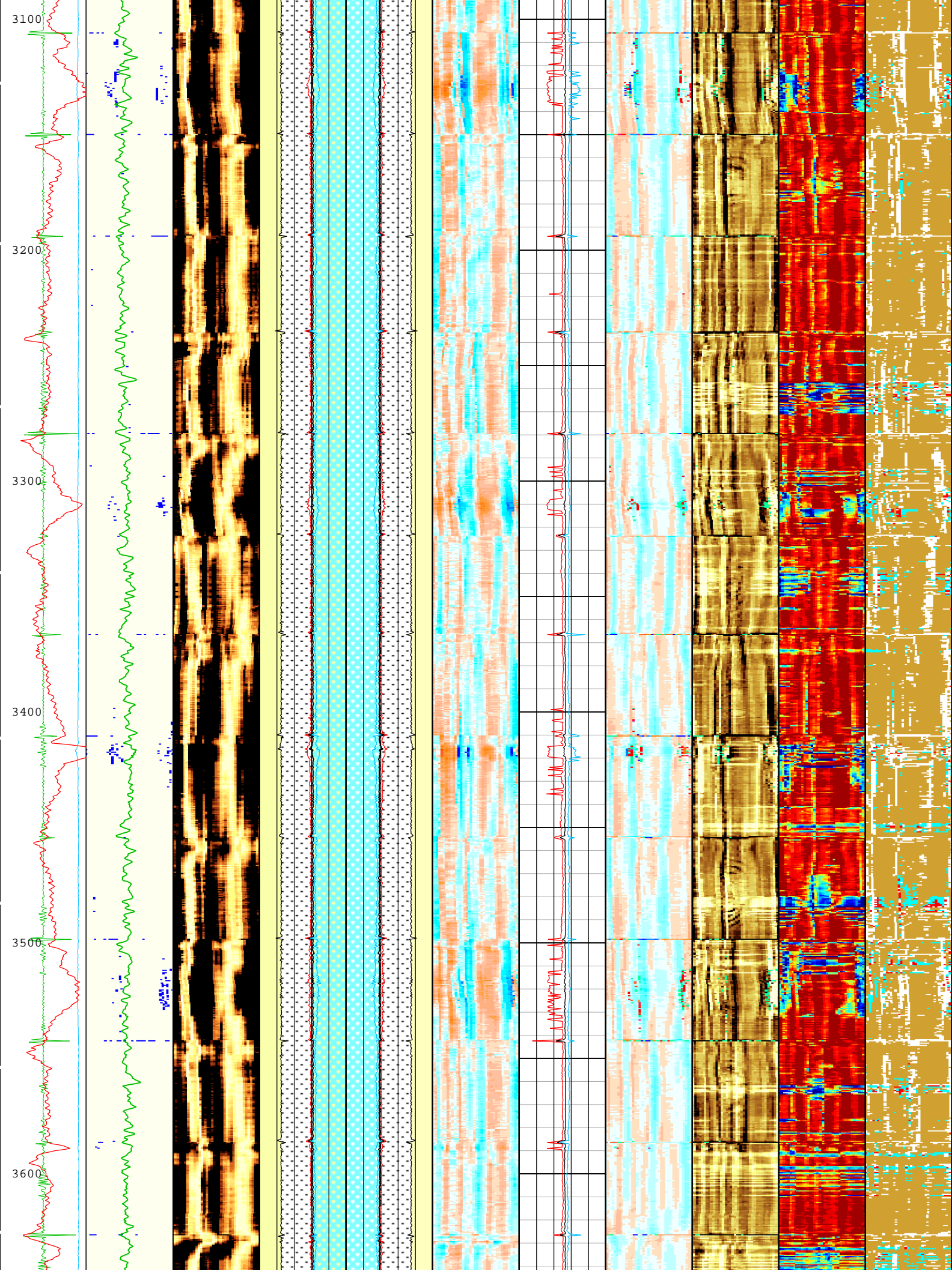


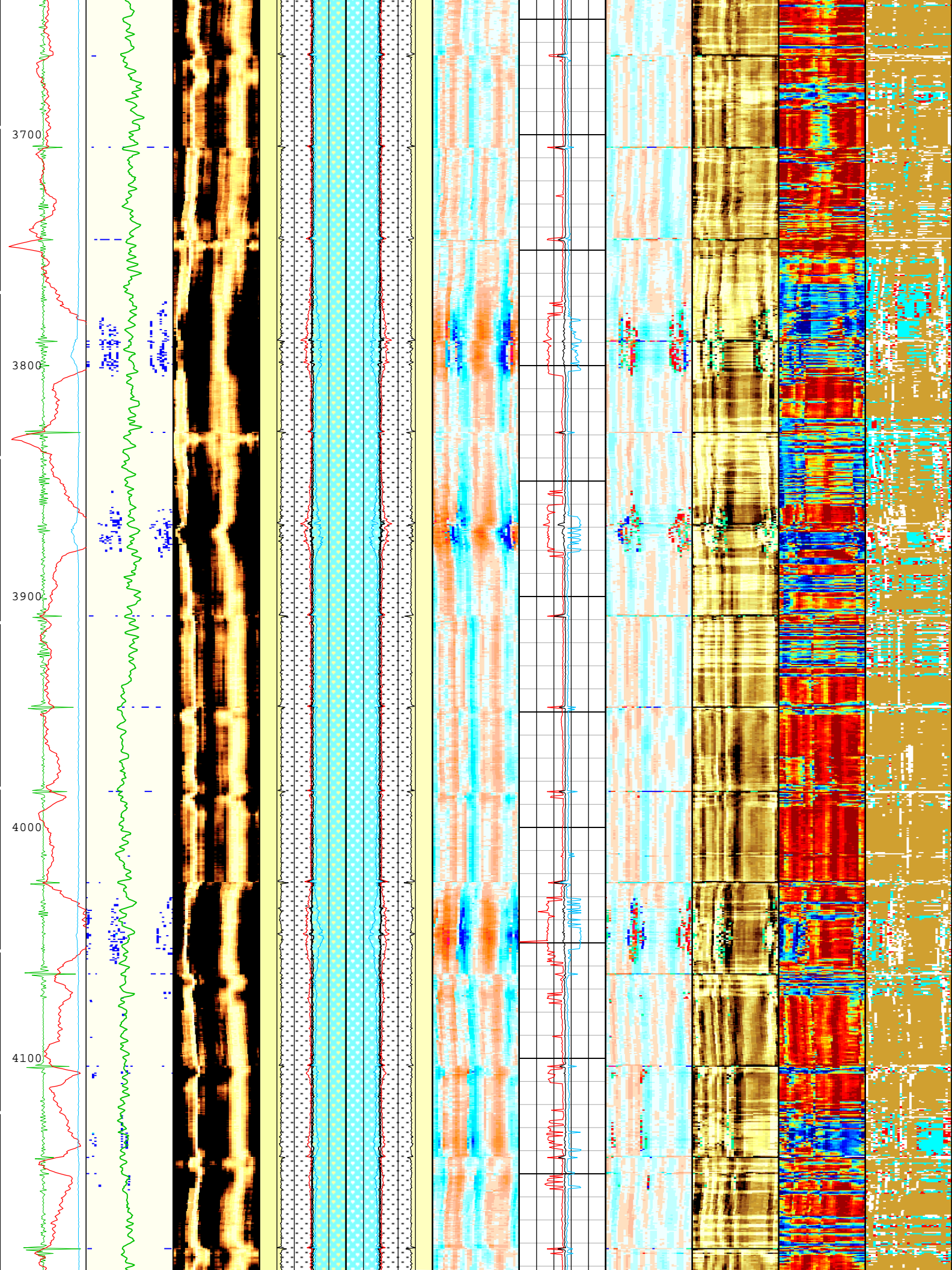


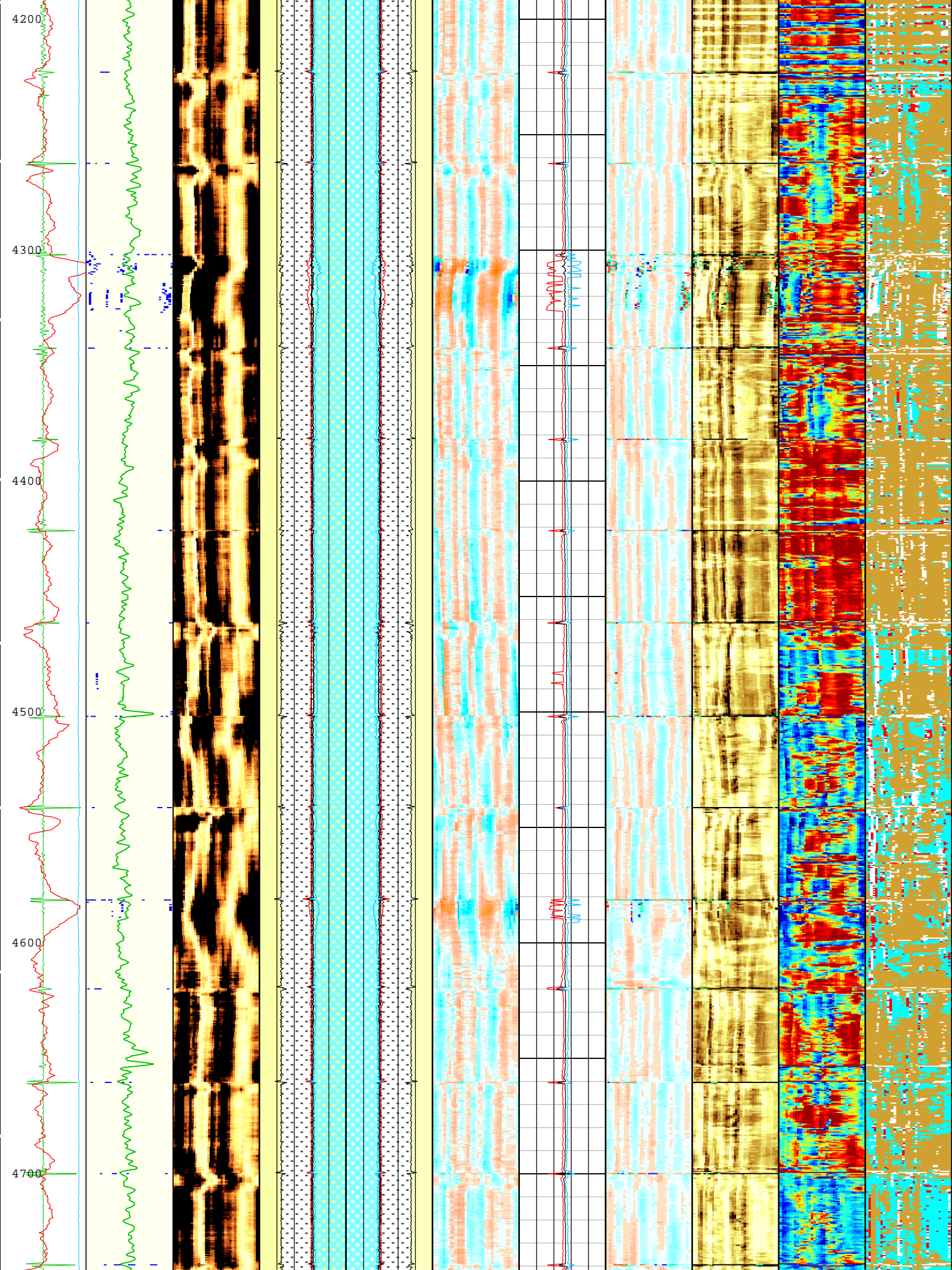


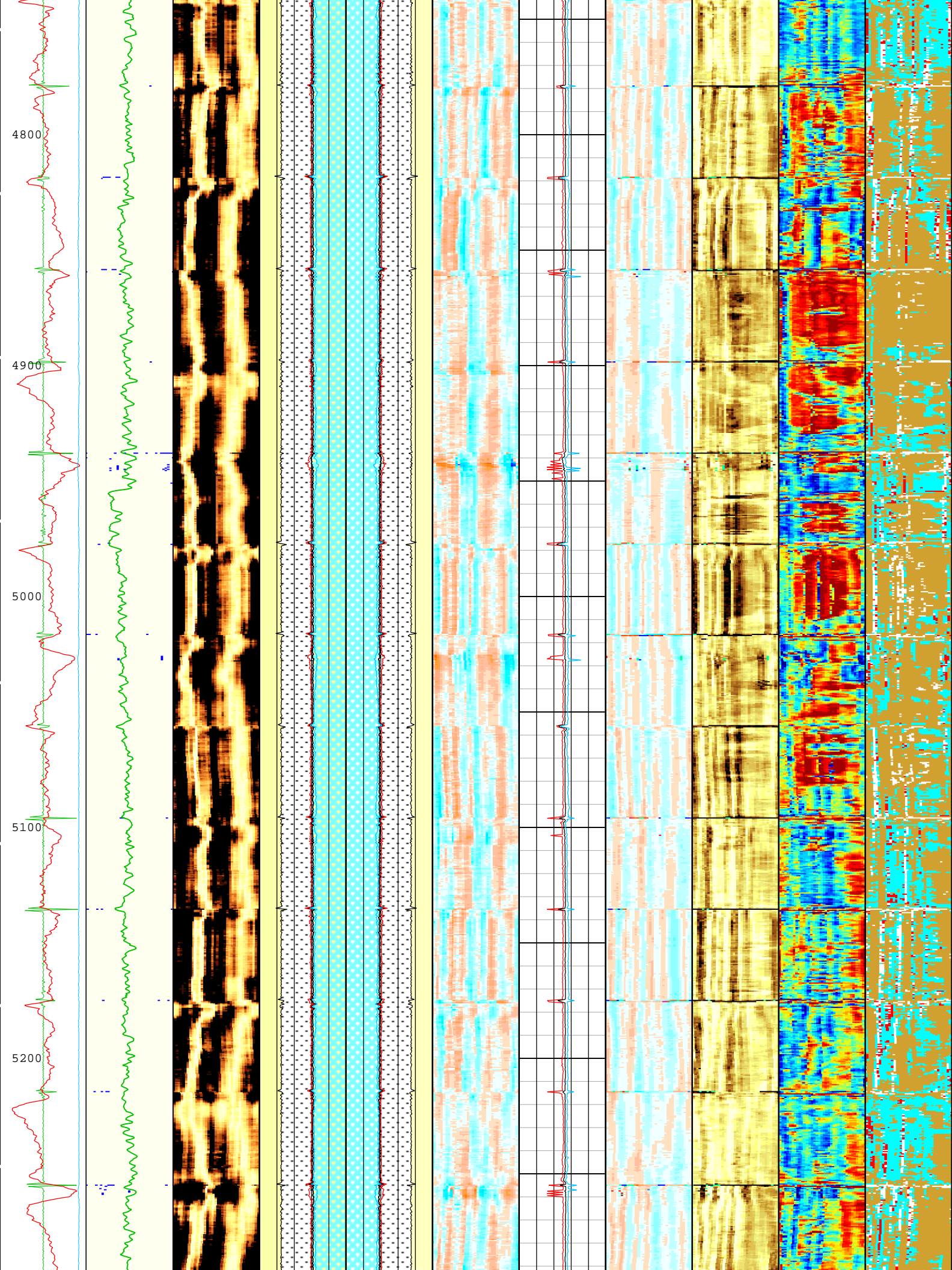


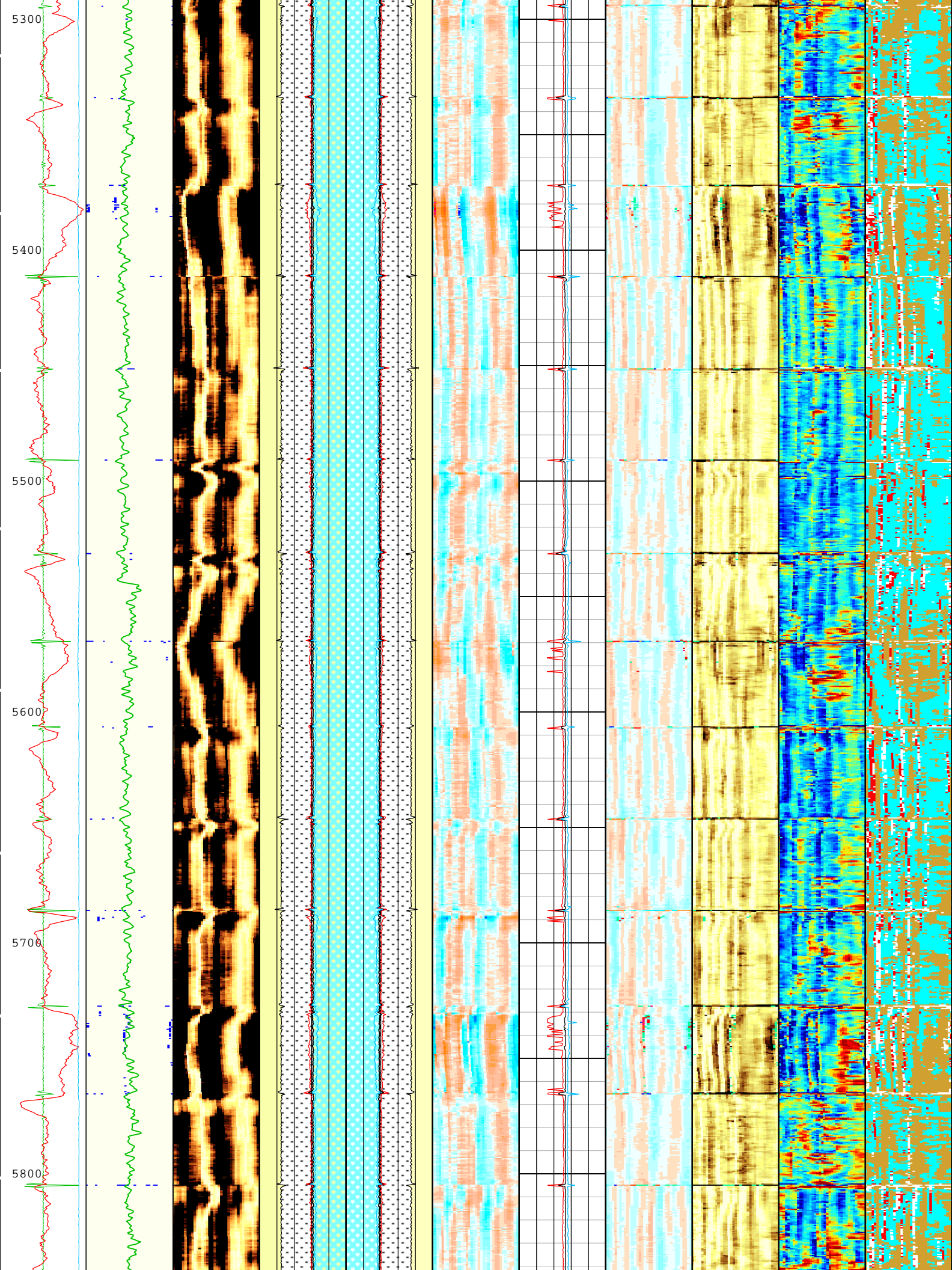


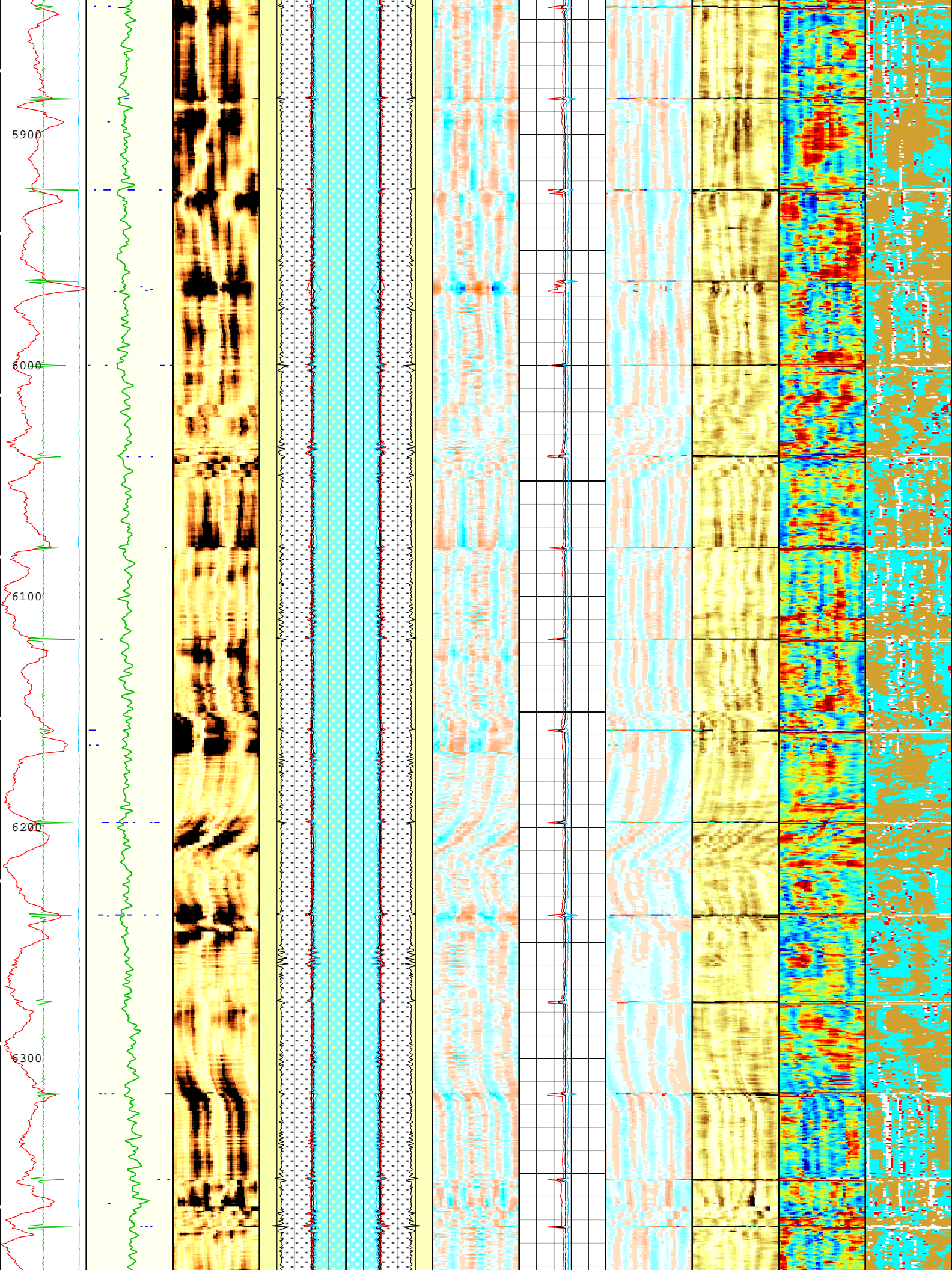


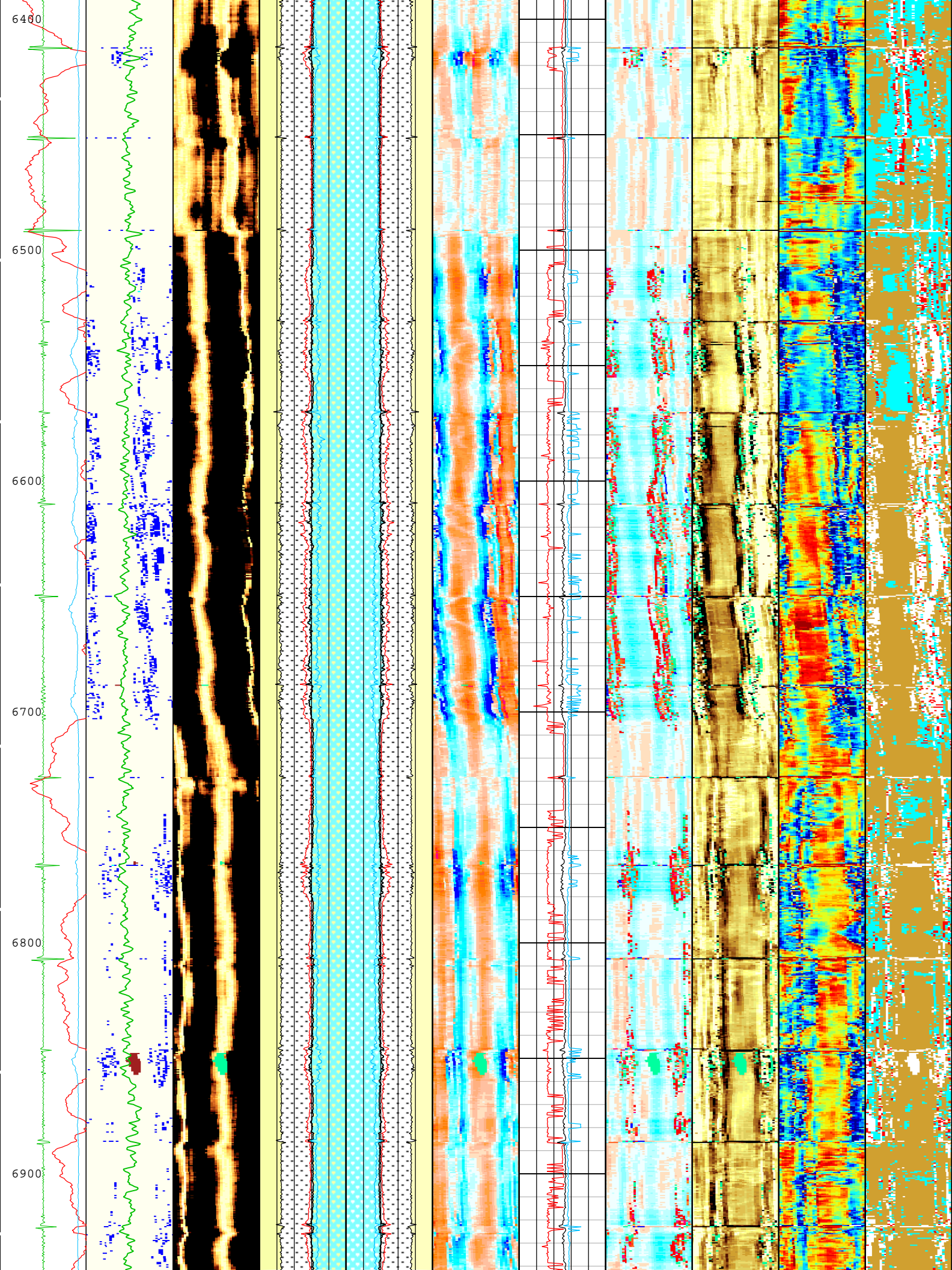


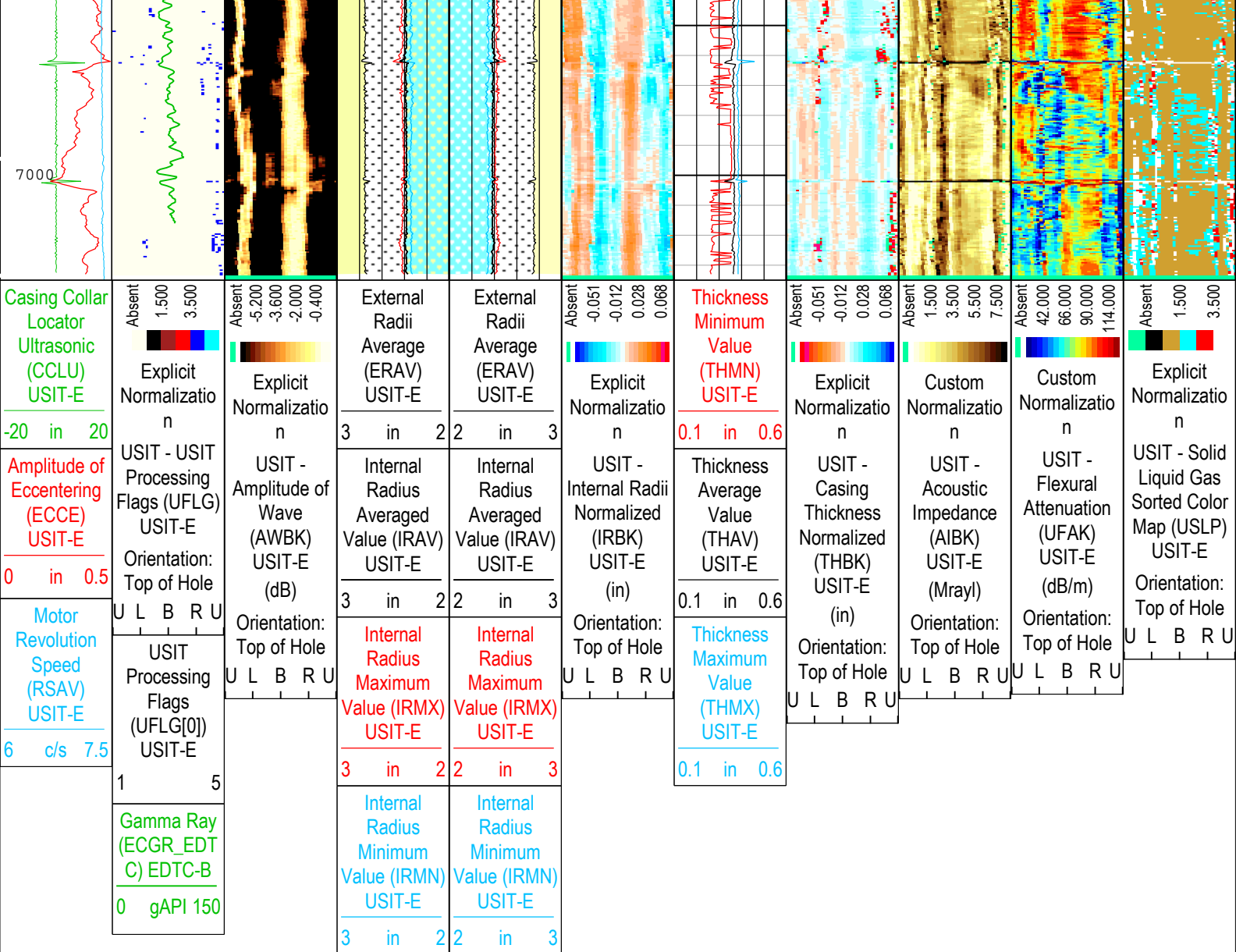












TIME_1900 - Time Marked every 60.00 (s)

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 Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 19-May-2019 17:12:34

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	7034	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	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
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	-49.91	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	Depth Zoned	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.18	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.15	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-42.56	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	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	80	2329
BS	8.5	2329	7034
MEAS_WLEN	22.44	80	7034
MEAS_WLEN	20	7034	7035

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	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

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

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	120	18-May-2019 14:12:21	18-May-2019 14:25:46	7036.02	6168.25
EMXV	110	18-May-2019 14:25:46	18-May-2019 14:38:27	6168.25	5283.86
EMXV	120	18-May-2019 14:38:27	18-May-2019 15:20:44	5283.86	2277.28
EMXV	110	18-May-2019 15:20:44	18-May-2019 15:31:19	2277.28	1554.33
EMXV	100	18-May-2019 15:31:19	18-May-2019 15:37:48	1554.33	1109.88
EMXV	80	18-May-2019 15:37:48	18-May-2019 15:39:50	1109.88	971.72
EMXV	60	18-May-2019 15:39:50	18-May-2019 15:40:43	971.72	922.62
EMXV	120	18-May-2019 15:40:43	18-May-2019 15:41:08	922.62	908.7
EMXV	100	18-May-2019 15:41:08	18-May-2019 15:43:31	908.7	749.87
EMXV	120	18-May-2019 15:43:31	18-May-2019 15:55:38	749.87	80.46
WINB	31.88	18-May-2019 14:12:21	18-May-2019 14:17:26	7036.02	6754.3
WINB	29.84	18-May-2019 14:17:26	18-May-2019 15:55:38	6754.3	80.46
WINE	78.22	18-May-2019 14:12:21	18-May-2019 14:13:12	7036.02	7029.48
WINE	78.07	18-May-2019 14:13:12	18-May-2019 14:13:22	7029.48	7026.41
WINE	77.06	18-May-2019 14:13:22	18-May-2019 15:55:38	7026.41	80.46

All depth are at tool zero.

ONE

IBC Goodwin Compressed

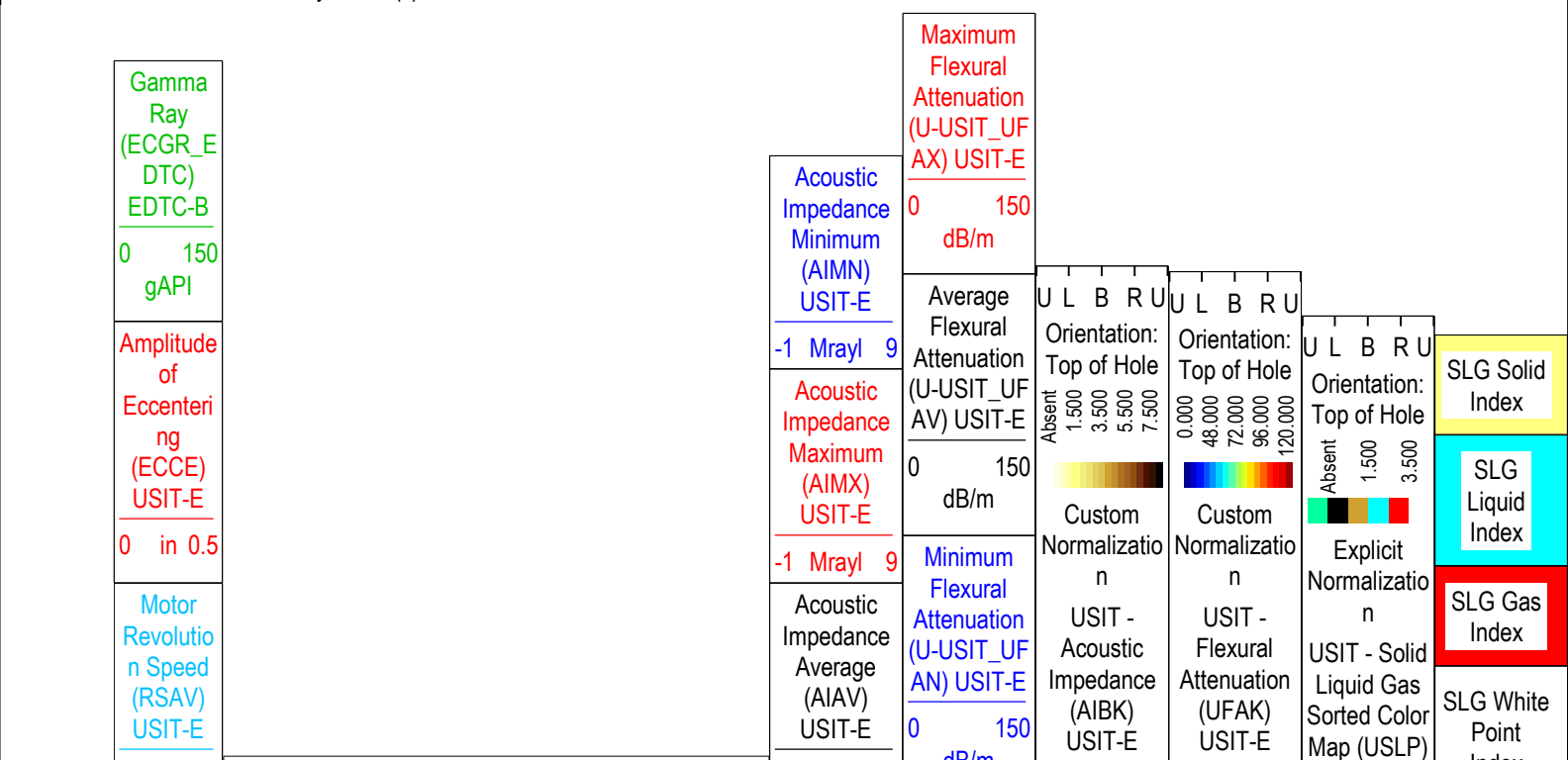
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	80.46 ft	7036.03 ft	18-May-2019 2:12:21 PM	18-May-2019 3:55:38 PM	ON	5.59 ft	Yes

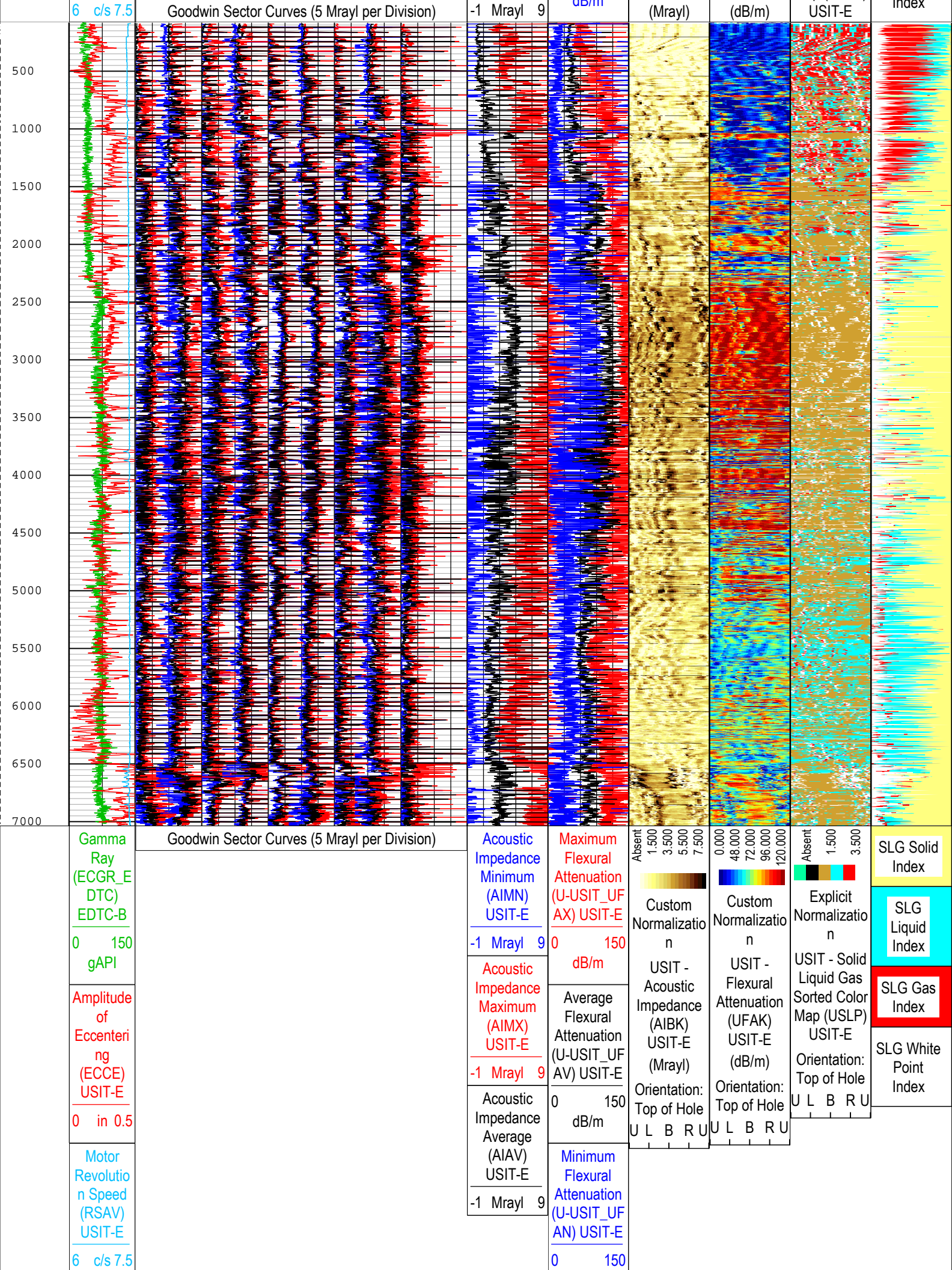
All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2G-2H-D267 ONE: Log[3]:Up:S011								
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Description: USI Goodwin Format: Log (IBC Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-May-2019 17:12:44

TIME_1900 - Time Marked every 60.00 (s)





dB/m

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: 19-May-2019 17:12:44

ONE

IBC SLG

Software Version

Acquisition System

Maxwell 2019

Version

9.0.106845.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[1]:Up	Up	2130.18 ft	2414.57 ft	18-May-2019 1:41:52 PM	18-May-2019 1:46:09 PM	ON	2.90 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Crestone Peak Resources and Operating LLC






Well:Echeverria 2G-2H-D267

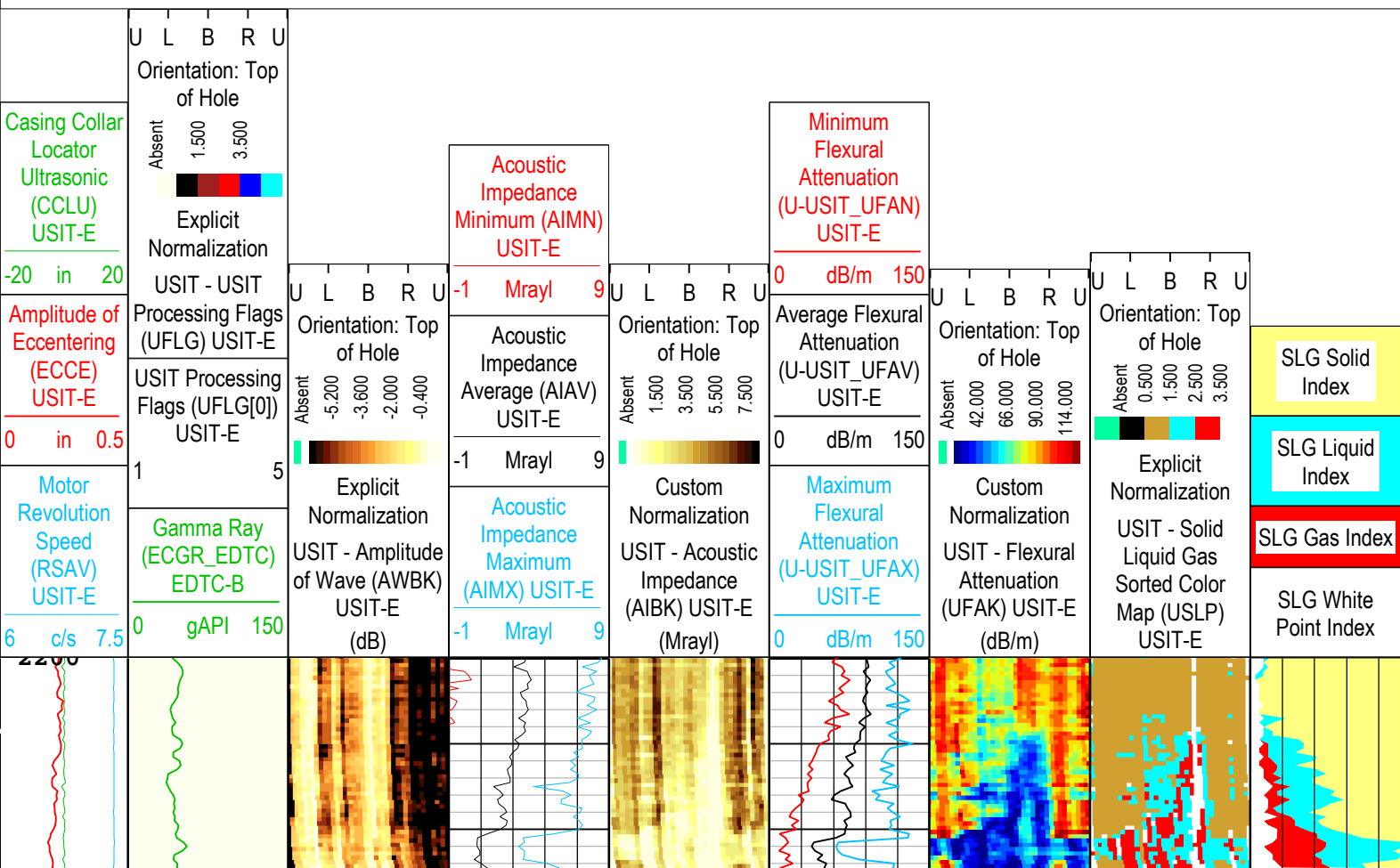
ONE: Log[1]:Up:S011

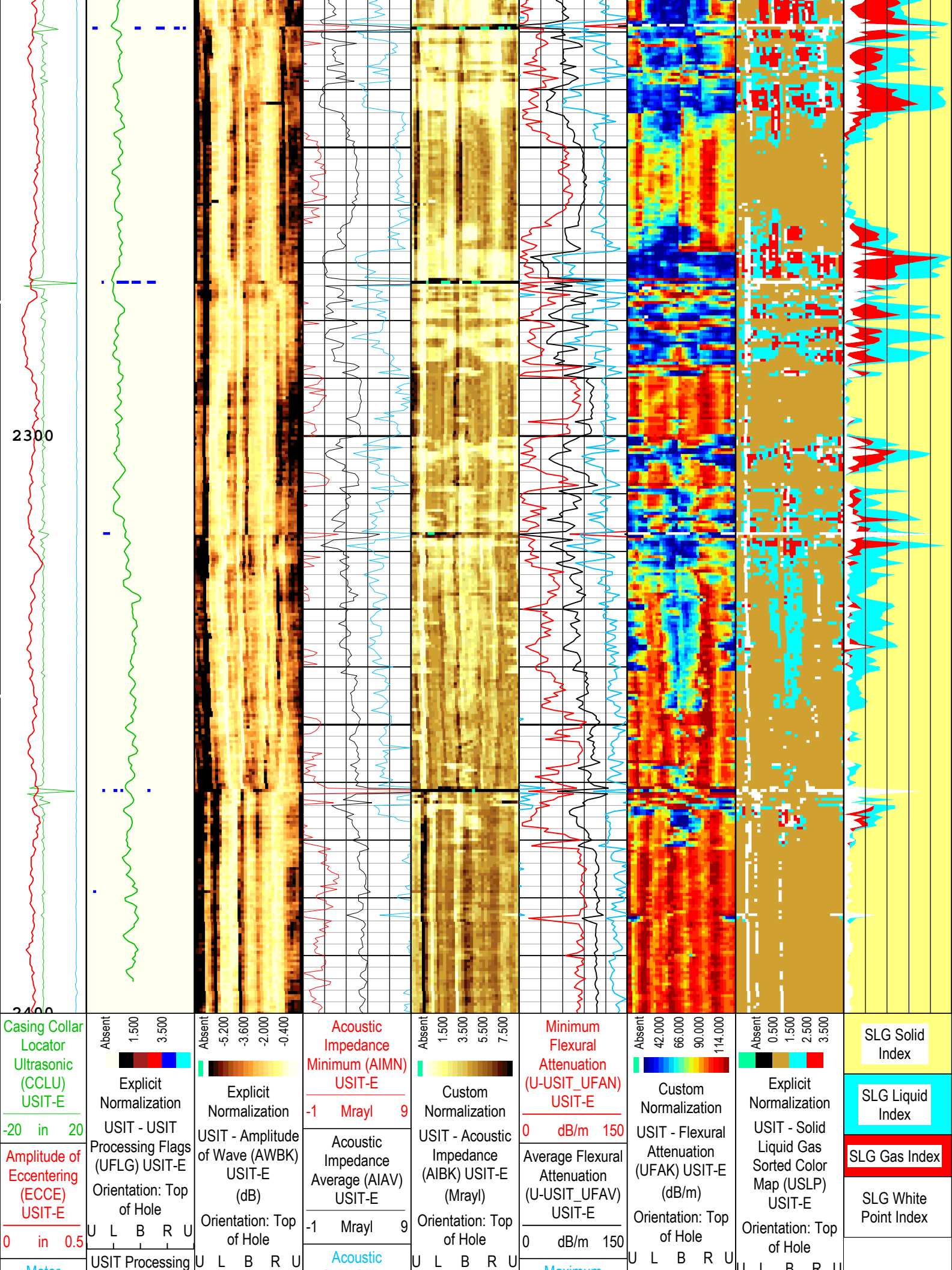
Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-May-2019 17:12:49

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





Motor Revolution Speed (RSAV) USIT-E	Flags (UFLG[0]) USIT-E		Impedance Maximum (AIMX) USIT-E		Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E		U L B K U	
6 c/s 7.5	1	5	-1 Mrayl 9		0 dB/m 150			
	Gamma Ray (ECGR_EDTC) EDTC-B							
	0	gAPI 150						

USIT Processing Flags (UFLG[0]) USIT-E								
1 - UFLG 1 Value within [0.0 - 1.5] - :			 UTIM Error					
2 - UFLG 2 Value within [1.5 - 2.5] - :			 Pulse Origin Not Detected					
3 - UFLG 3 Value within [2.5 - 3.5] - :			 WINLEN Error					
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :			 Casing Thickness Error					
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :			 Loop Processing Error					

TIME_1900 - Time Marked every 60.00 (s)								
Description: USI IBC SLG Format: Log (IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-May-2019 17:12:49								

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	7034	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	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	-49.91	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	1.15	
RCOD	Reference Calibrator Outer Diameter	USIT-E	4.5	in
RCSO	Reference Calibrator Standoff	USIT-E	0.842	in
RCTH	Reference Calibrator Thickness	USIT-E	0.216	in

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	-42.56	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	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	2200	2329
BS	8.5	2329	2400
All depth are actual.			

Tool Control Parameters	
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ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	1.756	in
EMXV	EMEX Voltage	USIT-E	120	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)

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
WINE	71.88	18-May-2019 13:41:52	18-May-2019 13:42:50	2414.57	2355.98
WINE	78.22	18-May-2019 13:42:50	18-May-2019 13:46:09	2355.98	2130.18

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[1]:Up	Up	2130.18 ft	2414.57 ft	18-May-2019 1:41:52 PM	18-May-2019 1:46:09 PM	ON	2.90 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources and Operating LLC	Well:Echeverria 2G-2H-D267
	ONE: Log[1]:Up:S011	

Description: USI IBC SLG Composite Format: Log (IBC SLG Composite) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 19-May-2019 17:12:53

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

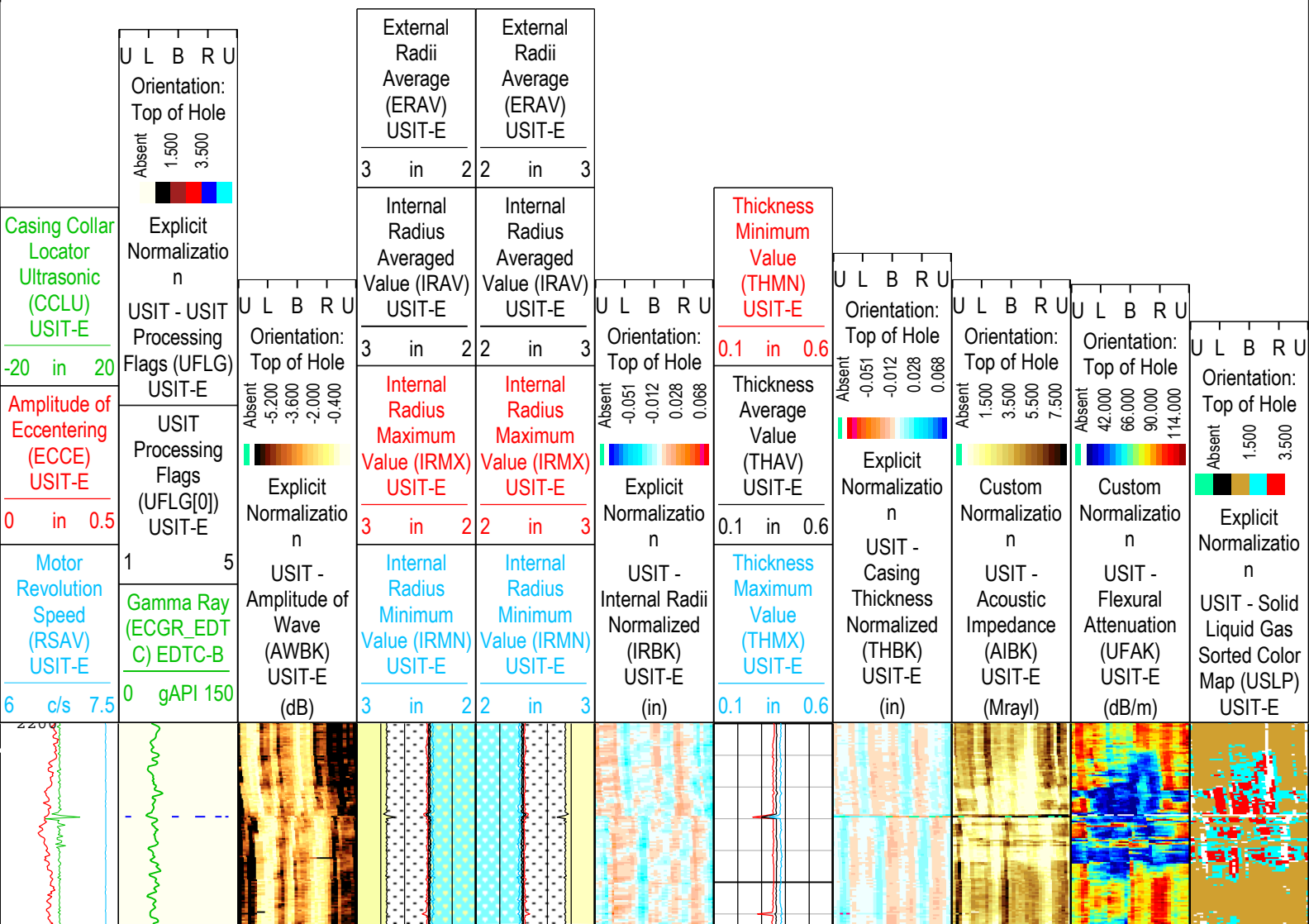
Pulse Origin Not Detected

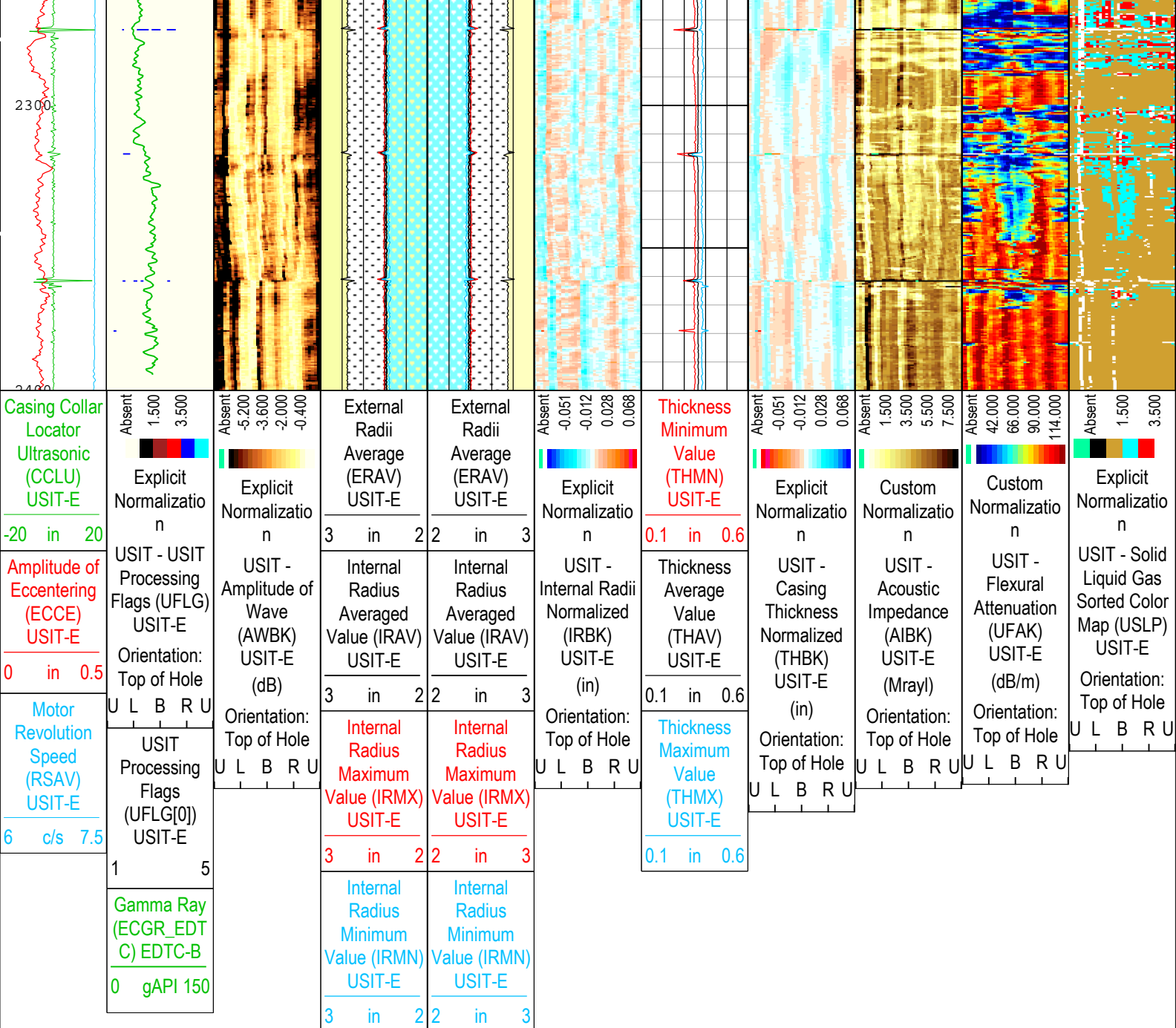
WINLEN Error

Casing Thickness Error

Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)





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: 19-May-2019 17:12:53

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	7034	ft

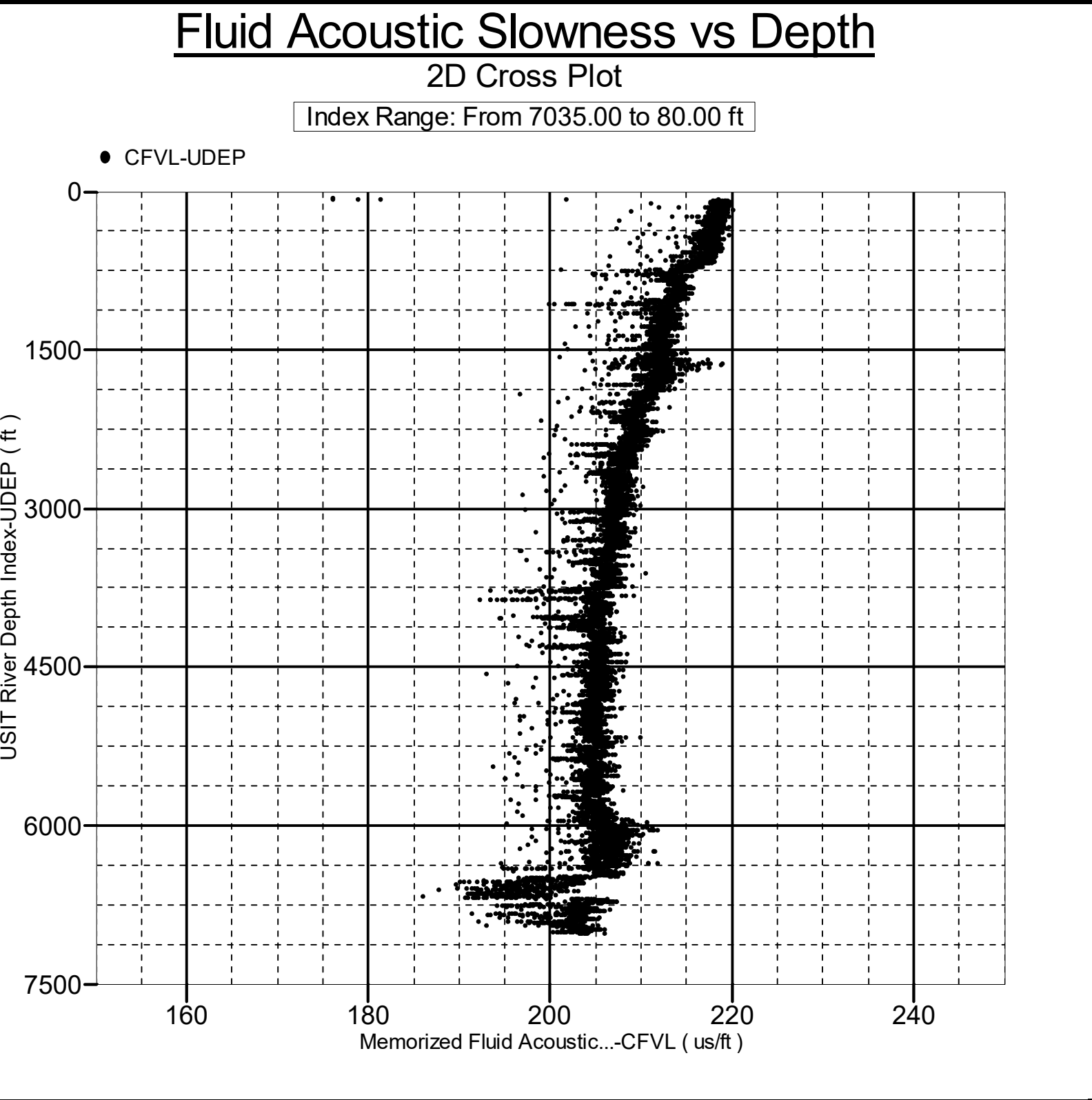
CDEN	Cement Density	USIT-E	12.5	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10.5	lbm/gal
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	-49.91	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	1.15	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.68	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-42.56	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.78	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	2200	2329
BS	8.5	2329	2400
All depth are actual.			

Tool Control Parameters	
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ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	120	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)
WINE	71.88	18-May-2019 13:41:52	18-May-2019 13:42:50	2414.57	2355.98
WINE	78.22	18-May-2019 13:42:50	18-May-2019 13:46:09	2355.98	2130.18
All depth are at tool zero.					
XYZ	Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2G-2H-D267 ONE: Log[3]:Up:S011				

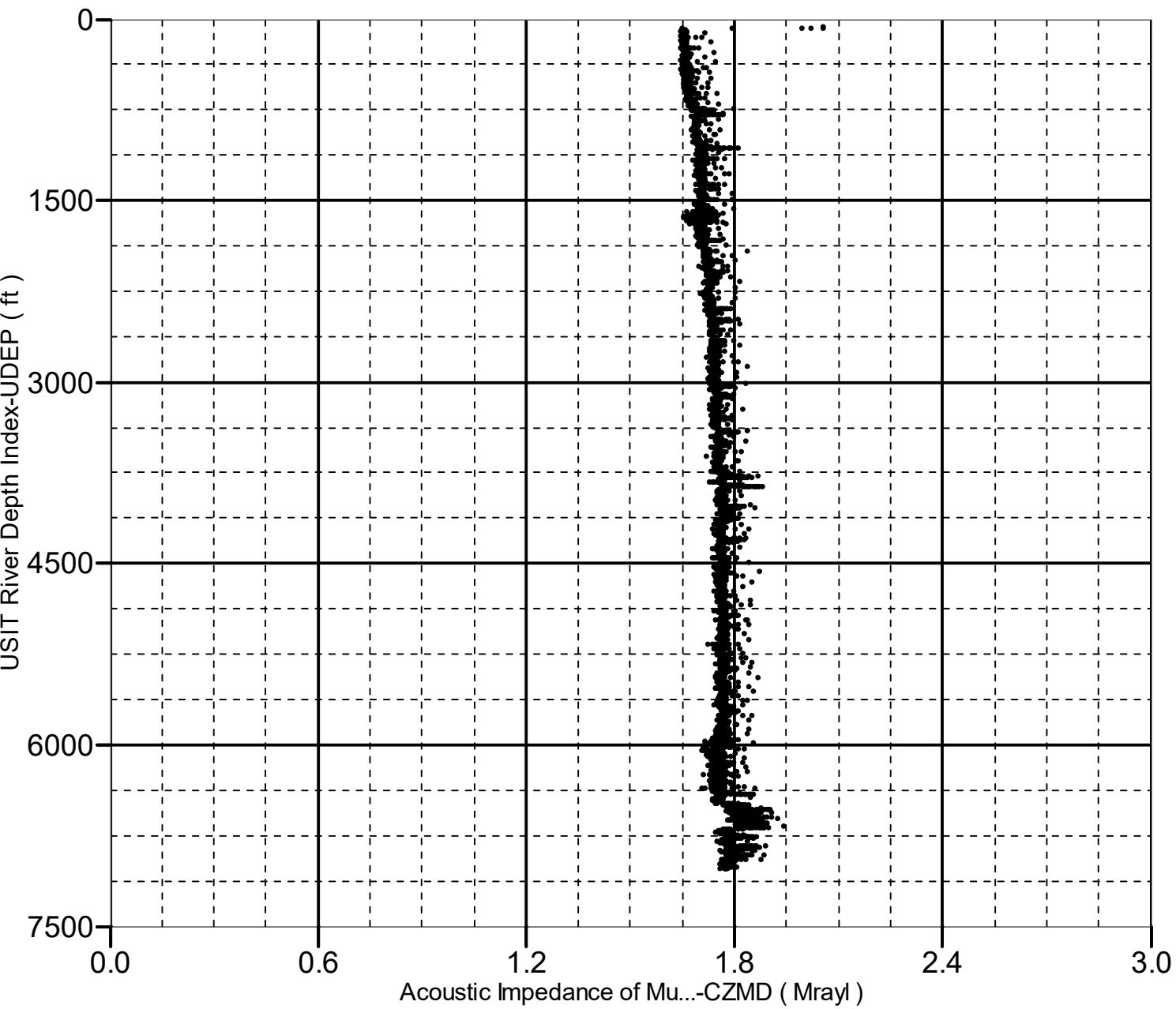


XYZ	Company:Crestone Peak Resources and Operating LLC Well:Echeverria 2G-2H-D267 ONE: Log[3]:Up:S011
Acoustic Impedance of Mud vs Depth	

2D Cross Plot

Index Range: From 7035.00 to 80.00 ft

● CZMD-UDEP



Company:	Crestone Peak Resources and Operating LLC	Schlumberger
Well:	Echeverria 2G-2H-D267	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	

Isolation Scanner
Cement Evaluation

