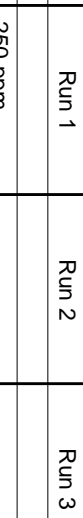


County: Rio Blanco  
Field: Piceance Creek

Loggin
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Bottom
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From
To
Maxim
Logge
Unit N
Recor
With



Company: **ExxonMobil Production Corp**

Well: **PCU 297-11C3**

Location: **998' FNL & 900' FWL**

Well: **PCU 297-11C3**

Company: **ExxonMobil Production Corp**

County: **Rio Blanco** State: **Colorado**

IMAGING BEHIND CASING  
ULTRASONIC TOOL  
CCL / GAMMA RAY

998' FNL & 900' FWL

Elev.: K.B. 6993.20 ft  
G.L. 6960.00 ft  
D.F. 6992.20 ft

Permanent Datum: GROUND LEVEL Elev.: 6960.00 ft  
Log Measured From: KELLY BUSHING 33.20 ft above Perm. Datum  
Drilling Measured From: KELLY BUSHING

API Serial No. 05-103-11473-0C Section 11 Township 2S Range 97W

Logging Date 29-Apr-2010

Driller 1  
Schlumberger Depth 8719 ft  
Bottom Log Interval 8502 ft  
Top Log Interval 8501 ft  
Casing Fluid Type 4000 ft  
Salinity FRESH WATER  
Density 250 ppm  
Fluid Level 8.4 lbm/gal  
BIT/CASING/TUBING STRING 15 ft  
Casing/Tubing Size 9.875 in  
Weight 0 ft  
Grade 8719 ft  
From 0 ft  
To 8719 ft

Maximum Recorded Temperatures 206 degF  
Logger On Bottom 29-Apr-2010 Time 0:59  
Unit Number 2276 Location VERNAL  
Recorded By KATIE WALSH  
Witnessed By JOHN WOOD

PVT DATA			
Oil Density		Run 1	Run 2
Water Salinity	250 ppm		
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation			
CEMENTING DATA			
Primary/Squeeze	Primary		
Casing String No			
Lead Cement Type			
Volume			
Density	11 lbm/gal		
Water Loss			
Additives			
Tail Cement Type			
Volume			
Density			
Water Loss			
Additives			
Expected Cement Top			
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Fluid Type			
Salinity			
Density			
Fluid Level			
BIT/CASING/TUBING STRING			
Bit Size			
From			
To			
Casing/Tubing Size			
Weight			
Grade			
From			
To			
Maximum Recorded Temperatures			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

## DEPTH SUMMARY LISTING

Date Created: 28-APR-2010 14:35:56

### Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 6195 Calibration Date: 12-APR-201C Calibrator Serial Number: 33 Calibration Cable Type: 7-46P Wheel Correction 1: -9 Wheel Correction 2: -8	Type: CMTD-B/A Serial Number: 2527 Calibration Date: 11-APR-201 Calibrator Serial Number: 100518 Number of Calibration Points: 10 Calibration RMS: 18 Calibration Peak Error: 27	Type: 7-46A XS Serial Number: 7232 Length: 20090 FT Conveyance Method: Wireline Rig Type: LAND

### Depth Control Parameters

Log Sequence: First Log In the Well
Rig Up Length At Surface: 105.90 FT
Rig Up Length At Bottom: 105.60 FT
Rig Up Length Correction: 0.30 FT
Stretch Correction: 4.00 FT
Tool Zero Check At Surface: 0.30 FT

### Depth Control Remarks

1. This is the first run in hole and therefore the reference for all subsequent logs
2. IDW used as primary depth control; Z-chart used as secondary
3. All Schlumberger depth control policies followed
4.
5.
6.

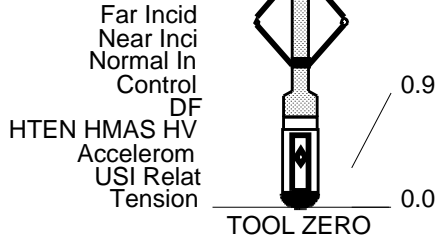
#### DISCLAIMER

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 OF 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.

OTHER SERVICES1	OTHER SERVICES2
OS1: NONE	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Tool run as per tool sketch	
Tool run centralized using 2x GEMCO's and 2x in-line centralizers	
Neutron run for GR only	
UFAO = -1	
Logged at 1800'/hr max	
Expected casing thickness = 0.362" / Observed = 0.369"	
Expected internal radius = 3.13" / Observed = 3.18"	
Expected flexural attenuation in free pipe = 55dB / Observed = 55.5 dB	
Log monitored by real-time virtual SQC	





MAXIMUM STRING DIAMETER 7.50 IN  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN FEET

**Schlumberger**

**IBC SLG COMPOSITE**

MAXIS Field Log

Company: ExxonMobil Production Corp Well: PCU 297-11C3

**Input DLIS Files**

DEFAULT      USI\_TLD\_MCFL\_CNL\_013LUP      FN:12      PRODUCER      29-Apr-2010 00:59      8505.5 FT      100.0 FT

**Output DLIS Files**

DEFAULT      USI\_TLD\_MCFL\_CNL\_022PUP      FN:21      PRODUCER      29-Apr-2010 04:44

**OP System Version: 17C0-154**

USIT-D      17C0-154      HILTH-FTB      17C0-154  
 DTC-H      17C0-154

Image rotation (UCAZ) (DEG)

0      360

Tool/Tot. Drag From D4T to STIA

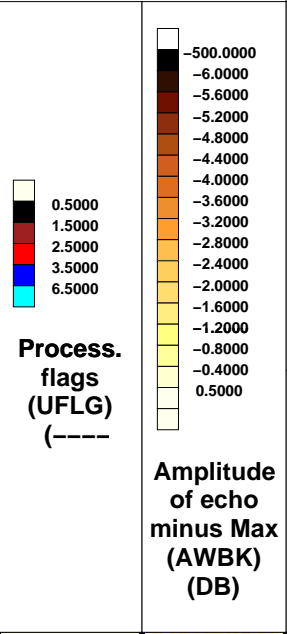
Cable Drag From D4T to STIT

<b>Stuck Stretch (STIT)</b>
0 (F) 50
<b>Gamma Ray (GR) (GAPI)</b>
0 150
<b>RSAV (RSBV) (RPS)</b>
6 7.5
<b>CCL (CCLU) (----)</b>
-20 20

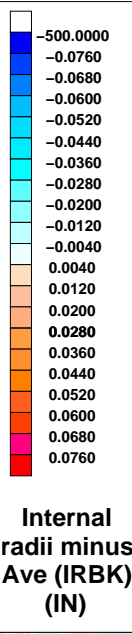
<b>Min of Internal radius (IRMN) (IN)</b>	<b>Min of Internal radius (IRMN) (IN)</b>
3.7 2.7	2.7 3.7
<b>Internal radius Maximum (IRMX) (IN)</b>	<b>Internal radius Maximum (IRMX) (IN)</b>
3.7 2.7	2.7 3.7
<b>Internal radius Average (IRAV) (IN)</b>	<b>Internal radius Average (IRAV) (IN)</b>
3.7 2.7	2.7 3.7

<b>Maximum of Thickness (THMX) (IN)</b>
0.1 0.6
<b>Average of Thickness (THAV) (IN)</b>
0.1 0.6

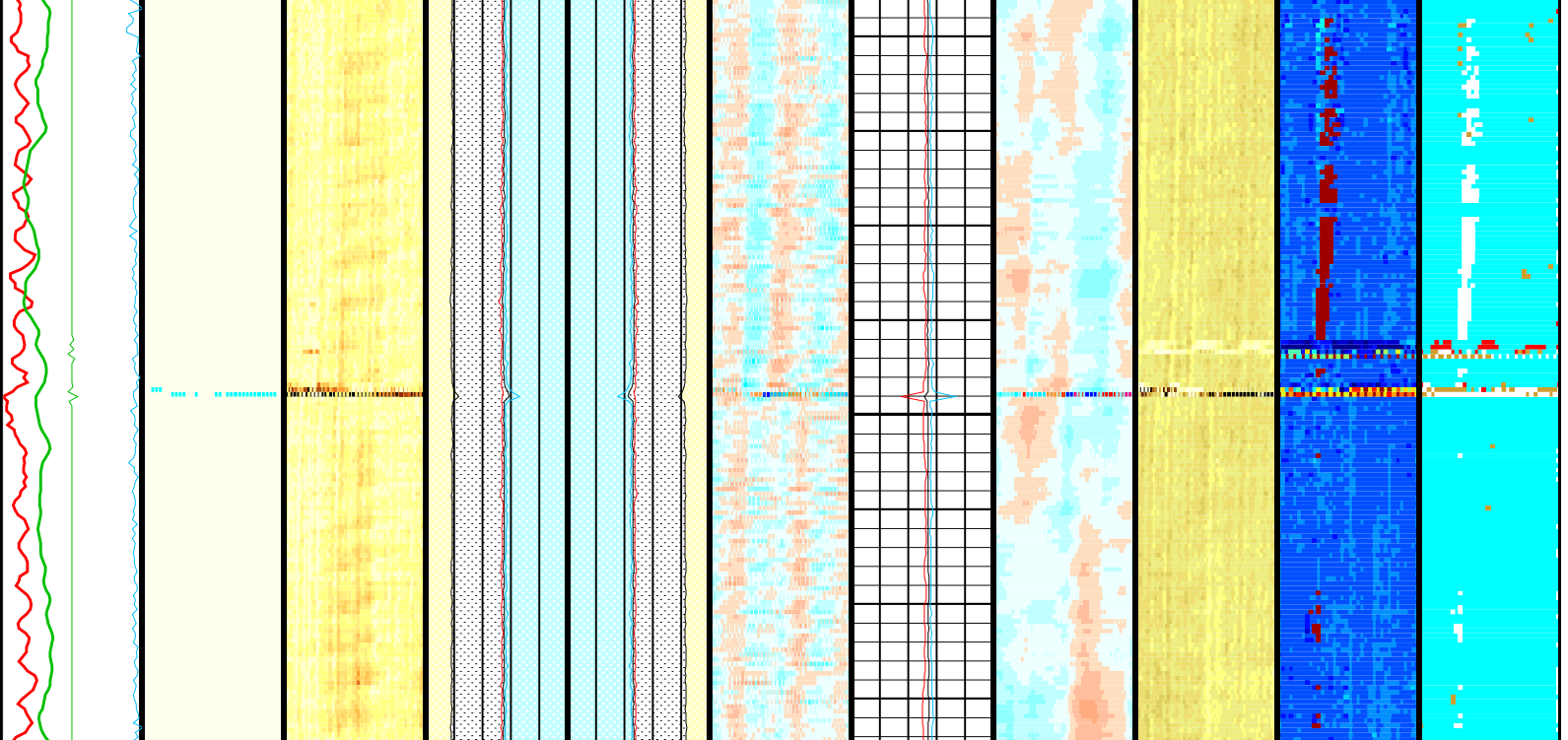
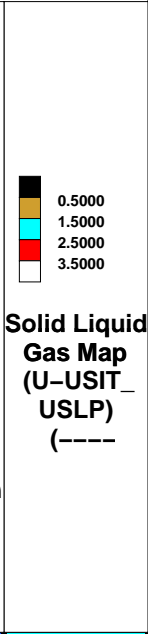
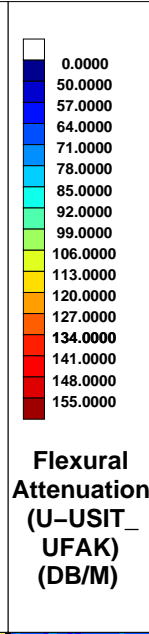
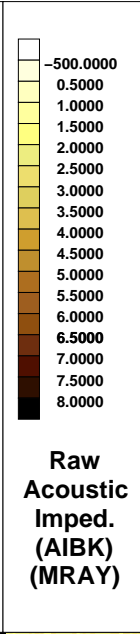
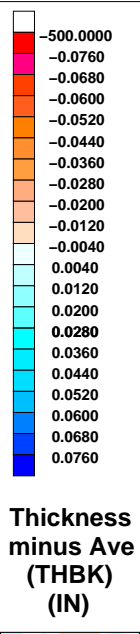
<b>Eccent. (ECCE) (IN) 0.5</b>
0 0.5

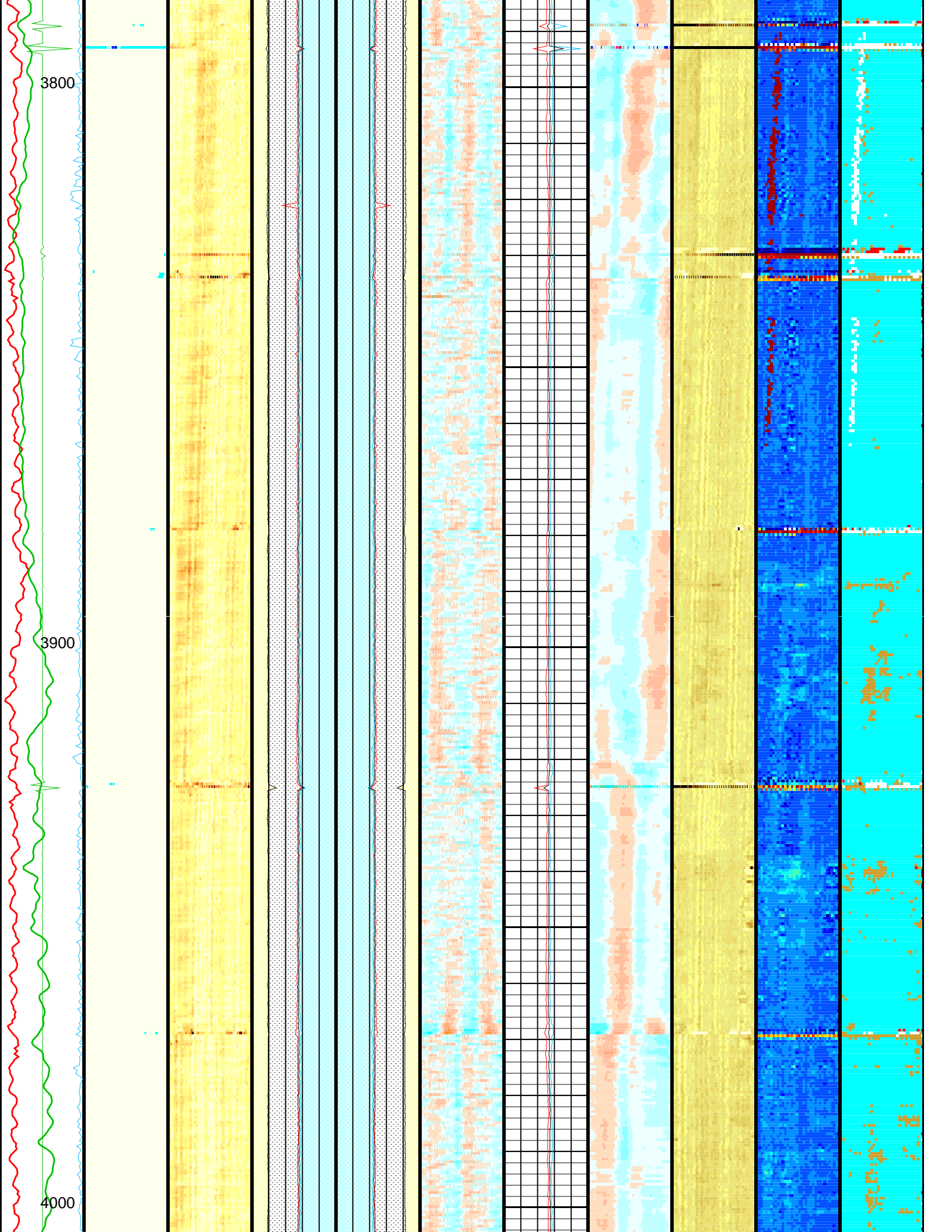


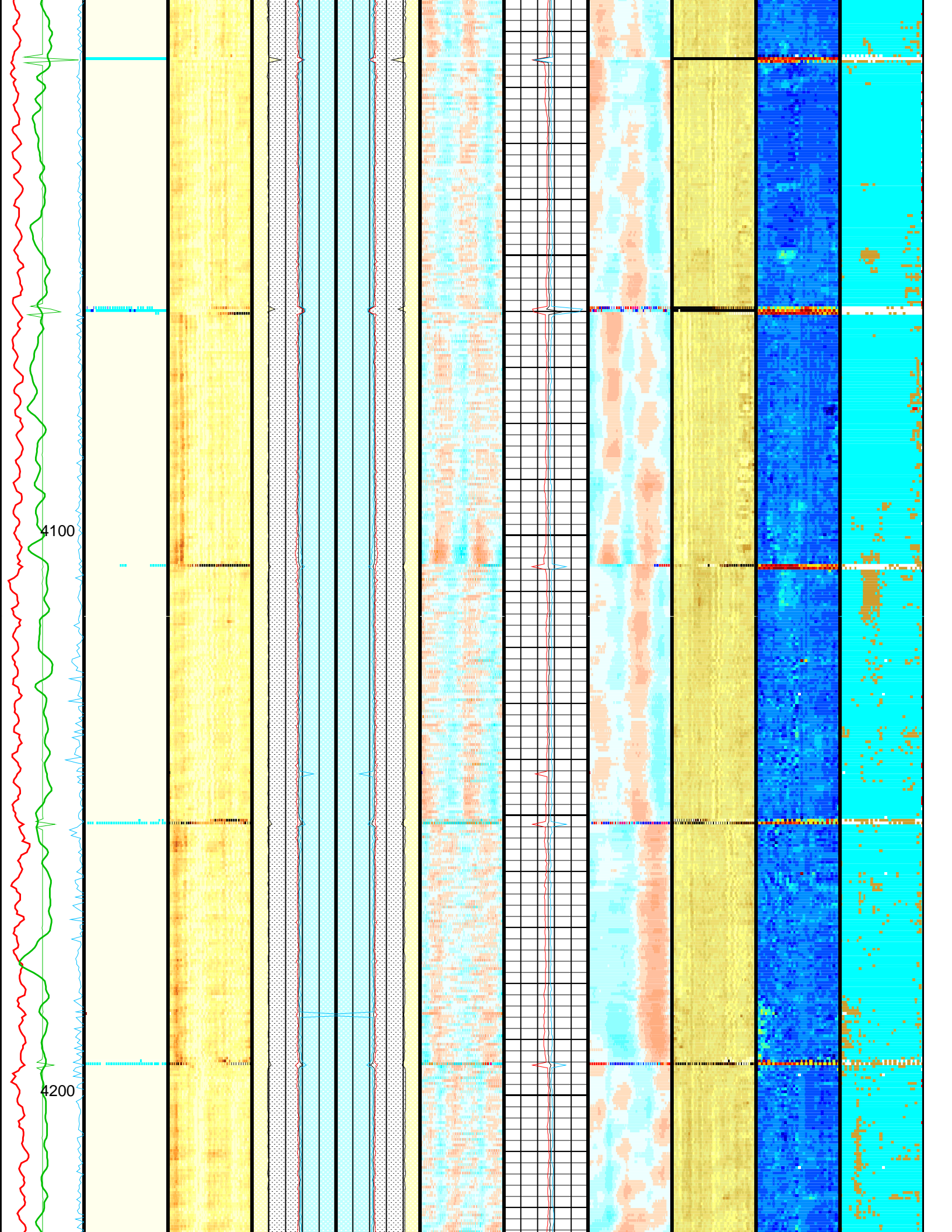
<b>External radius Average (ERAV) (IN)</b>	<b>External radius Average (ERAV) (IN)</b>
3.7 2.7	2.7 3.7

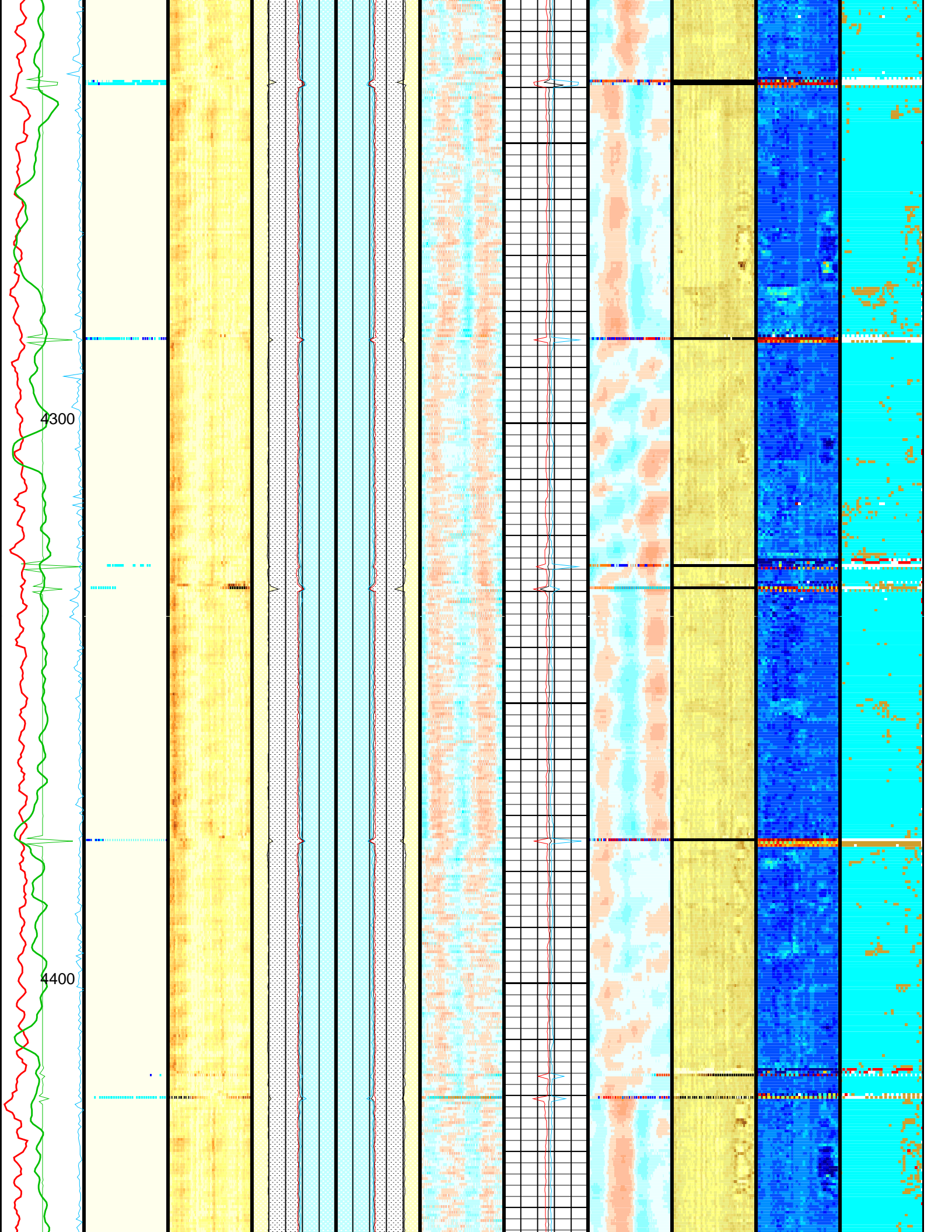


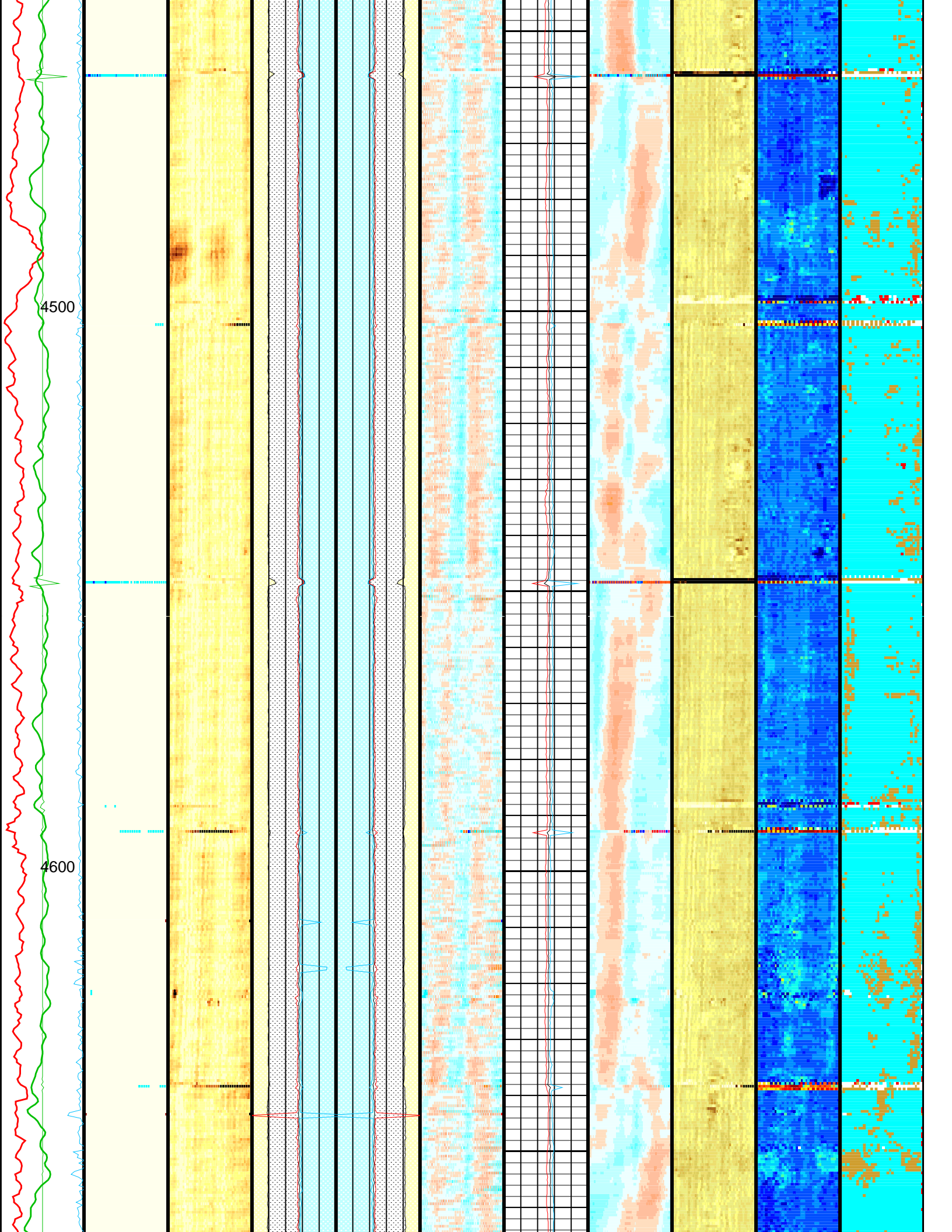
<b>Min of Thickness (THMN) (IN) 0.1 0.6</b>
0.1 0.6

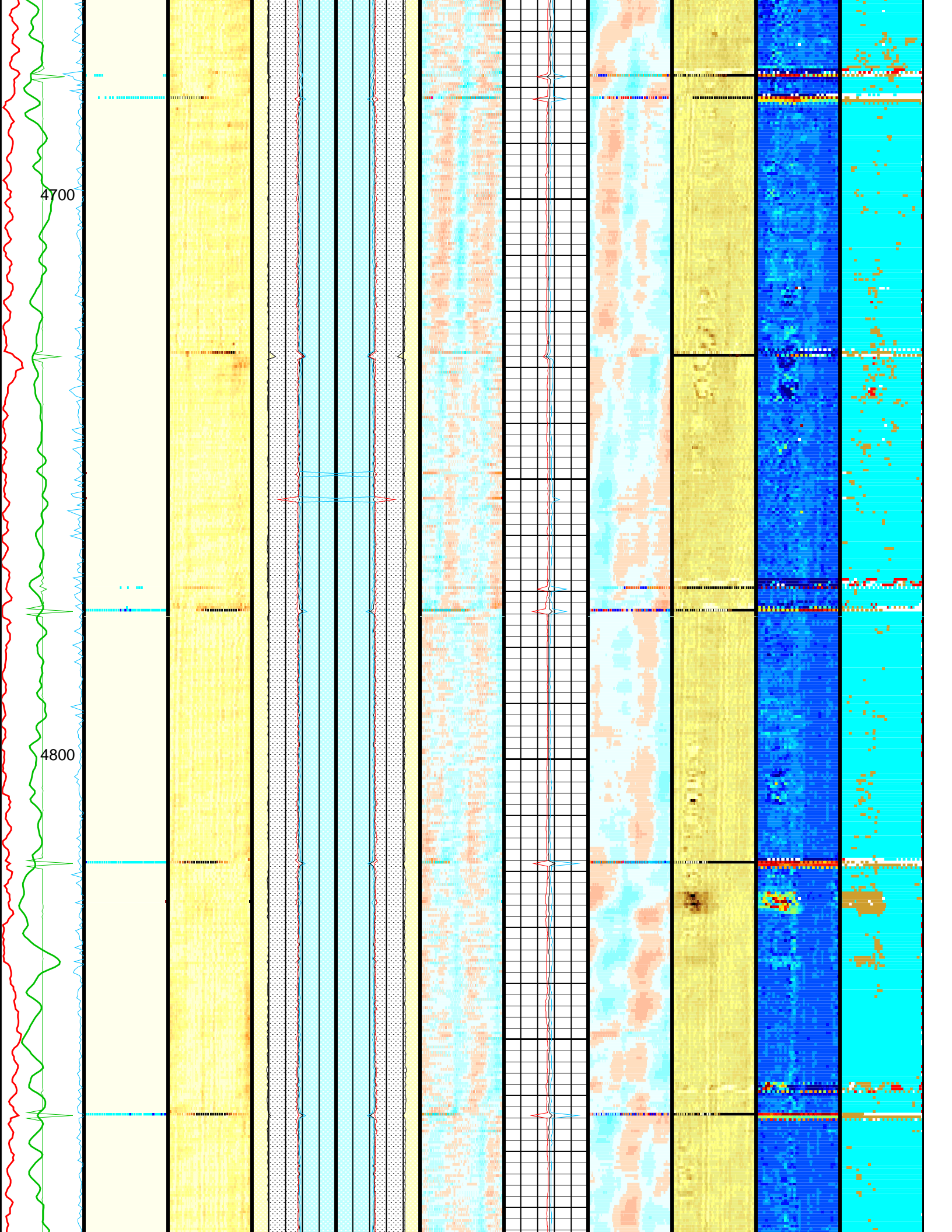


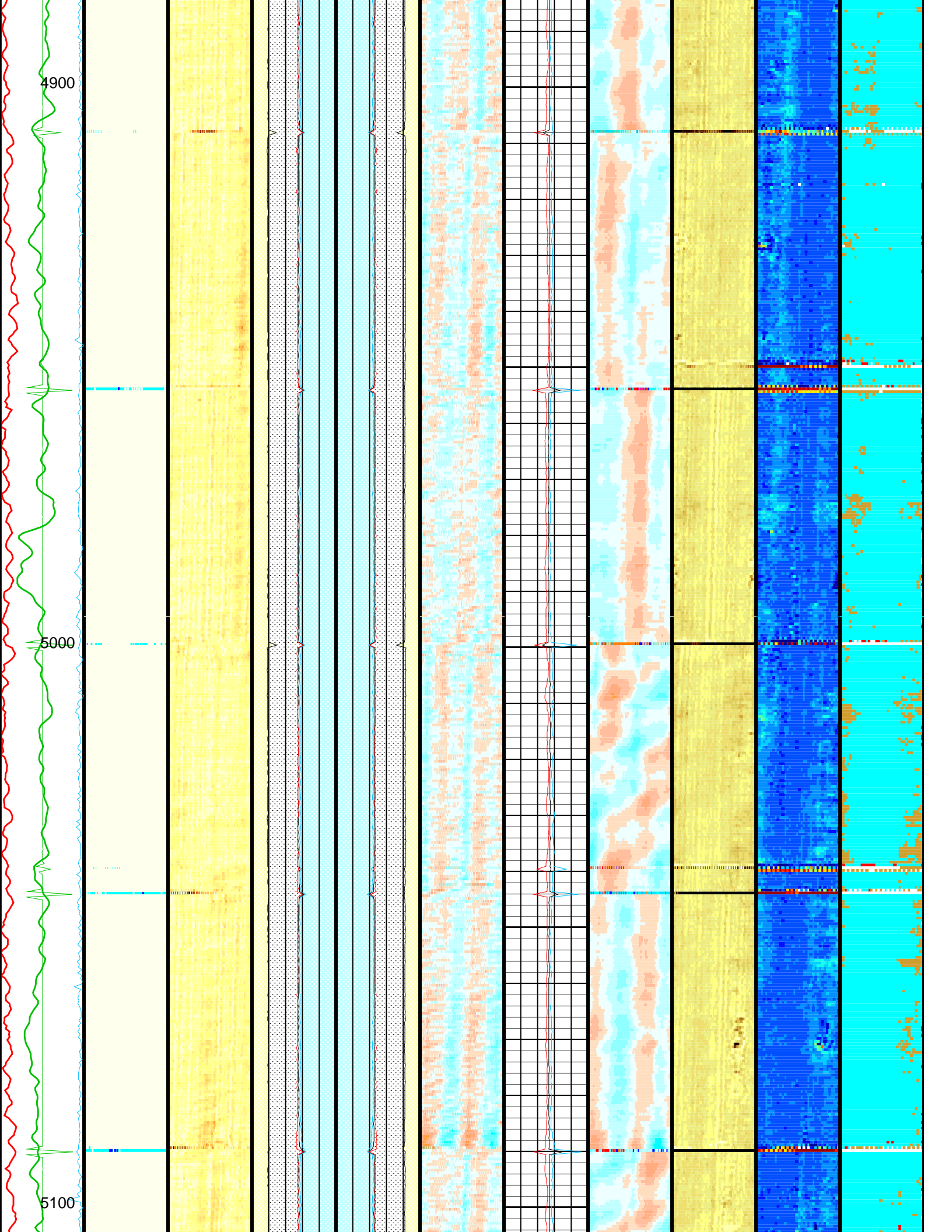


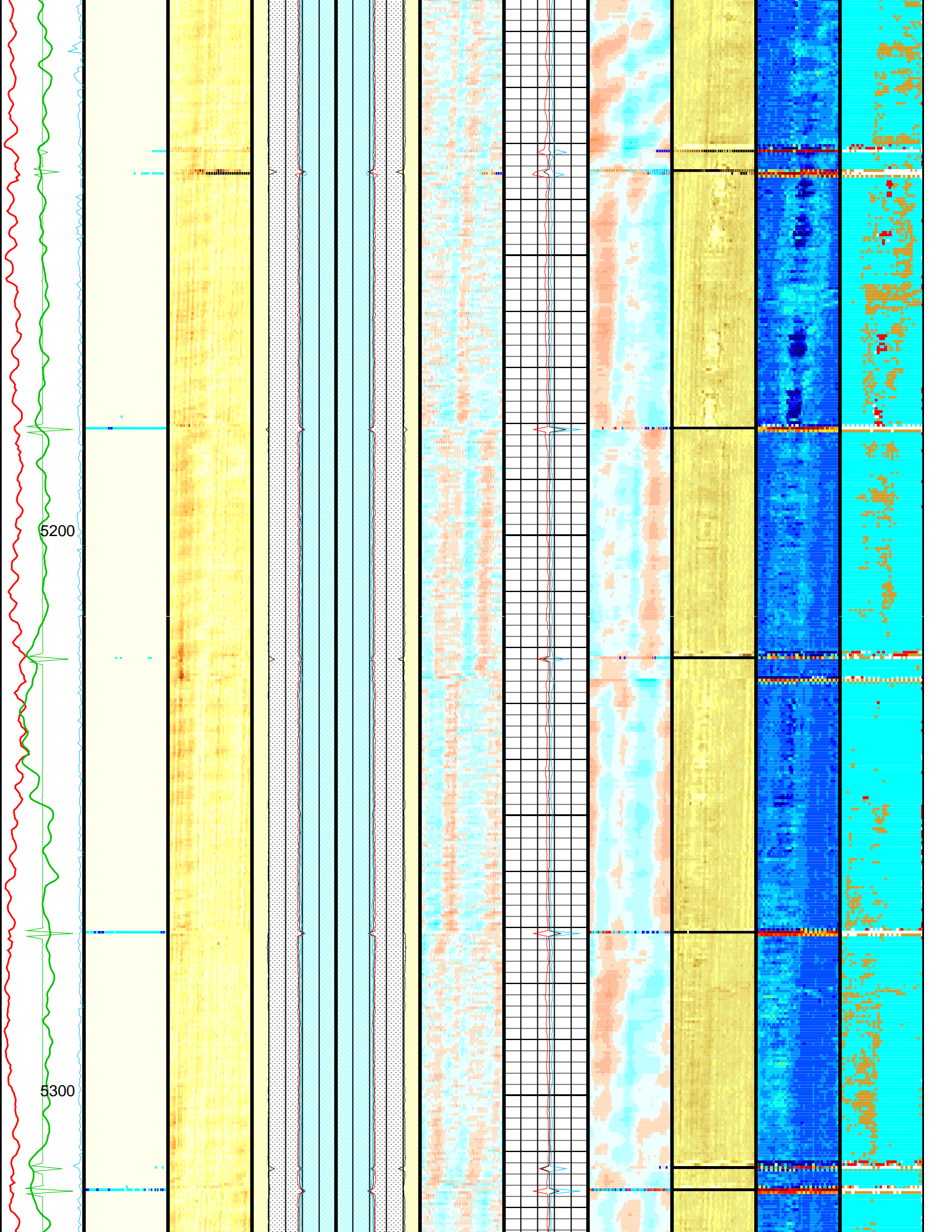




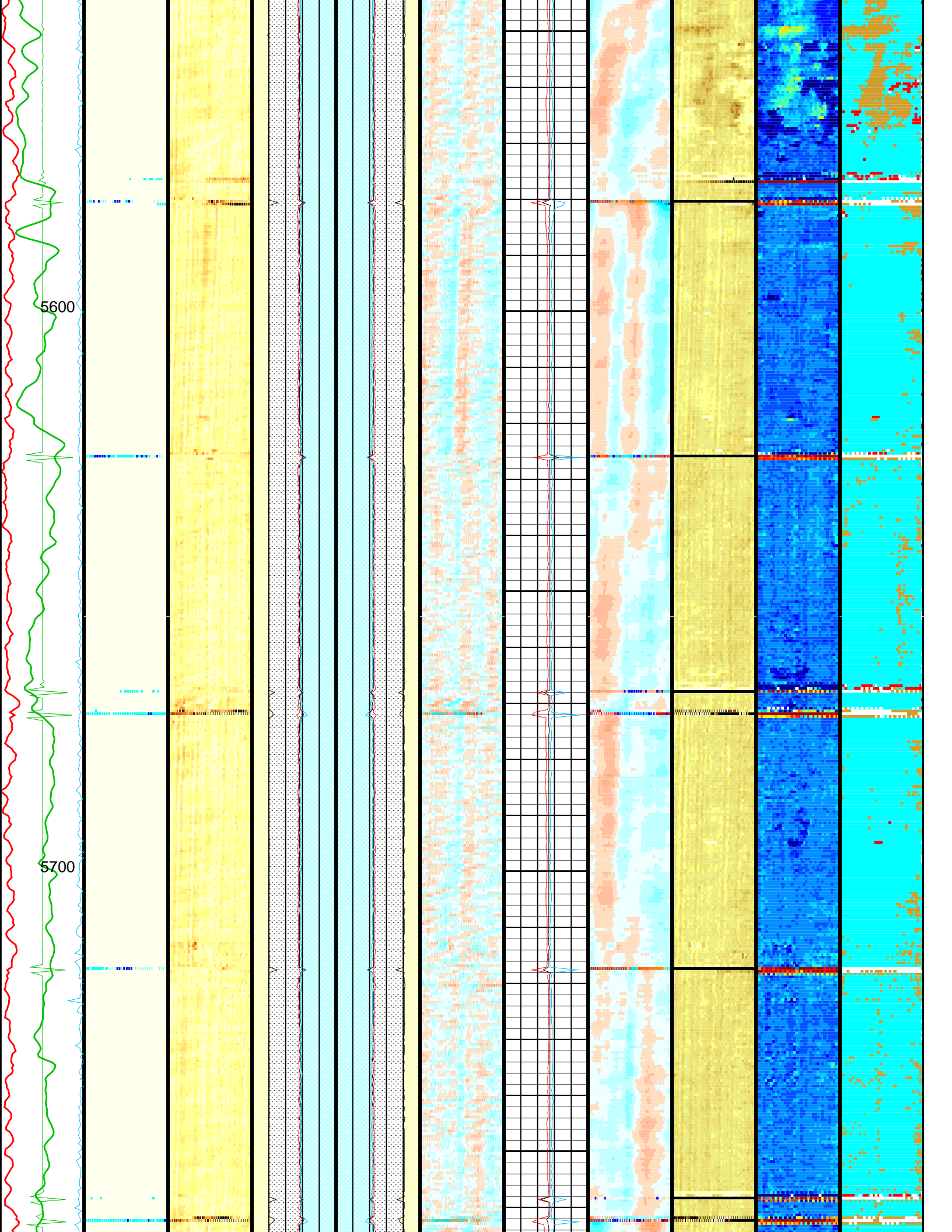


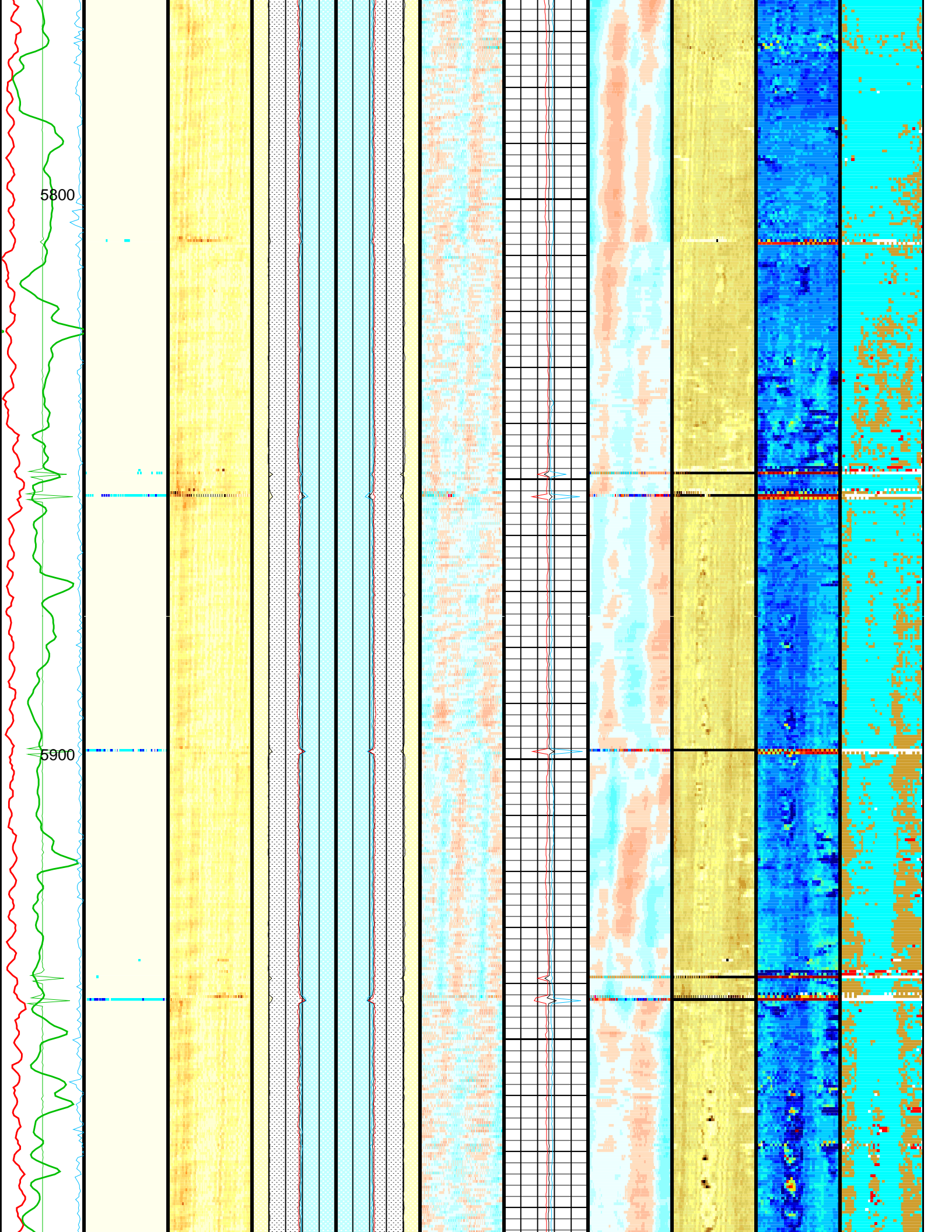






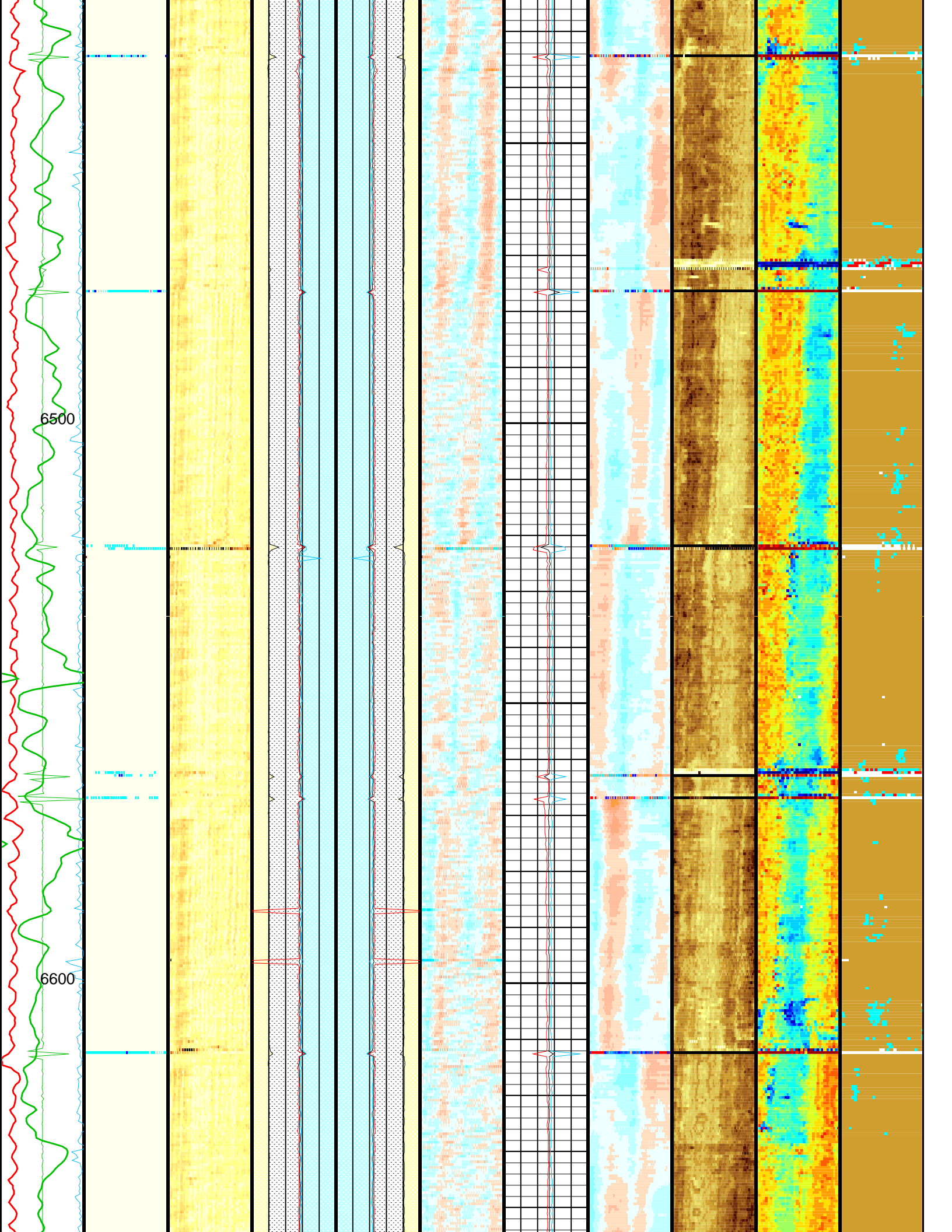


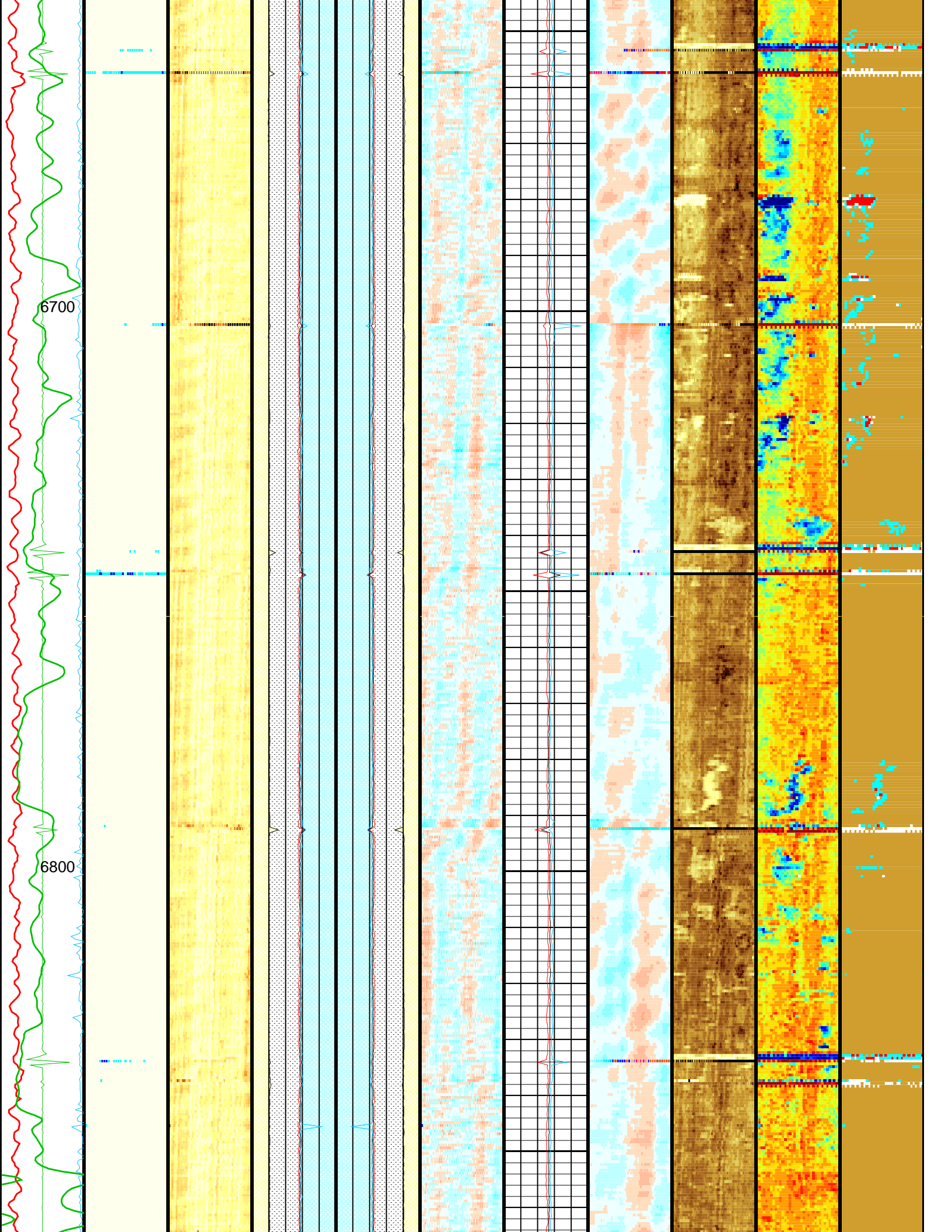


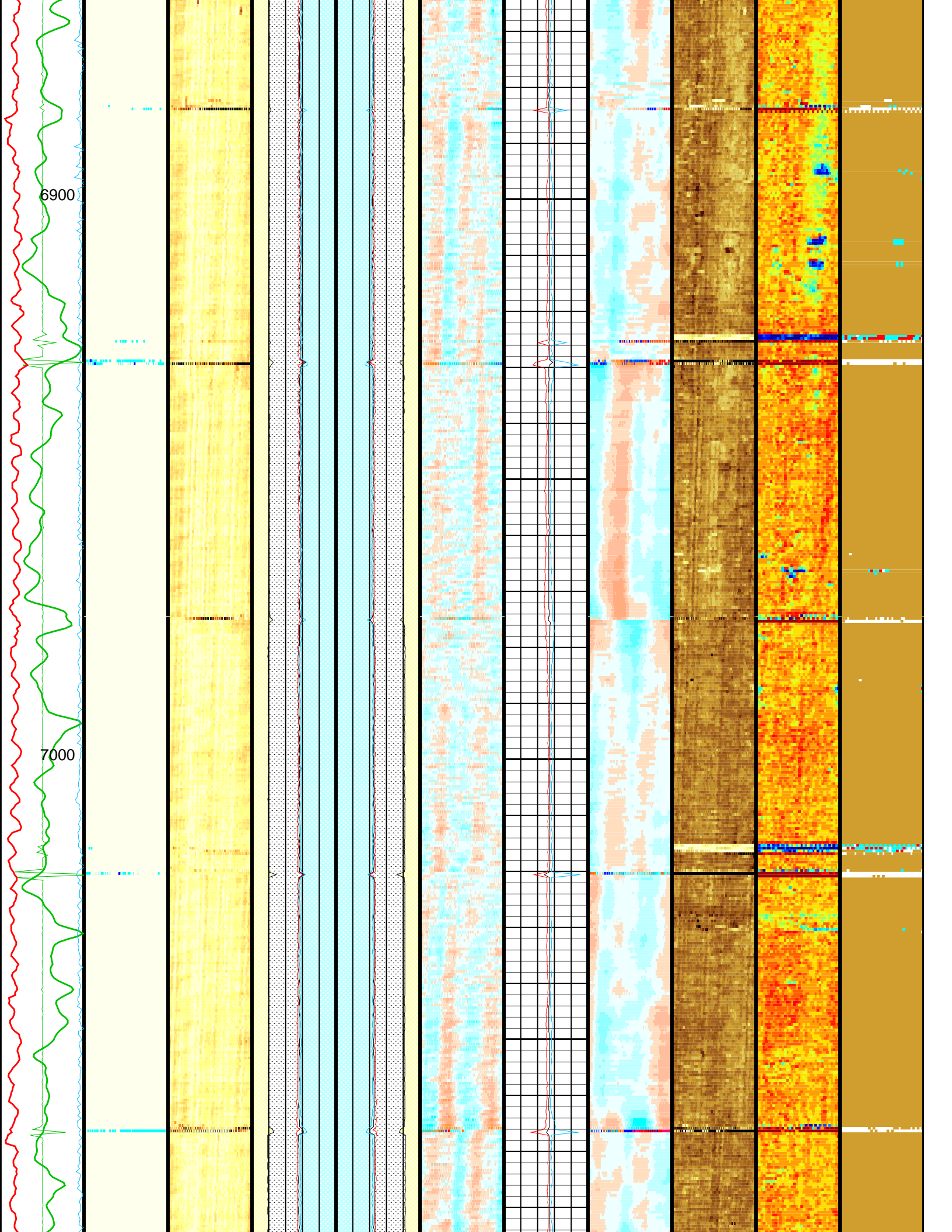


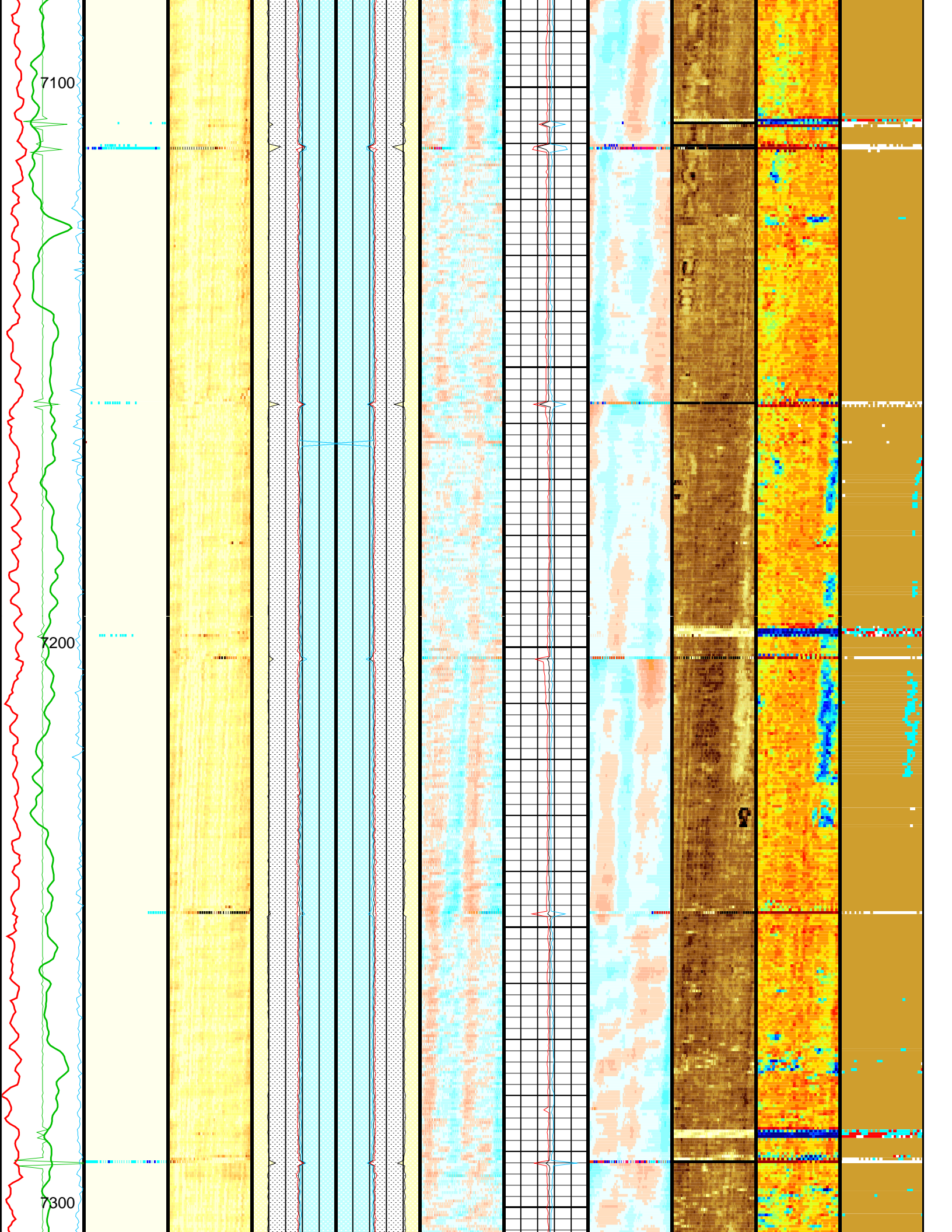


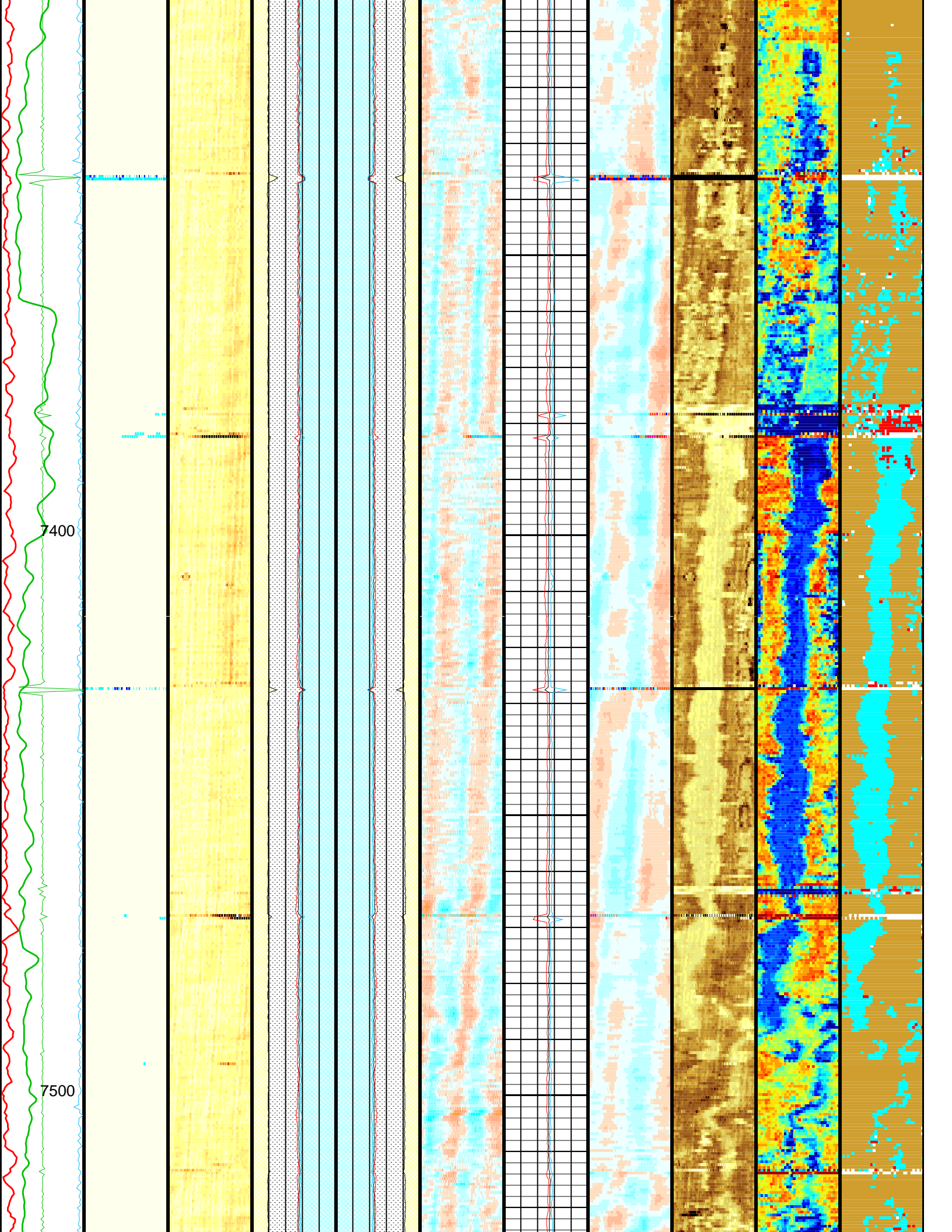


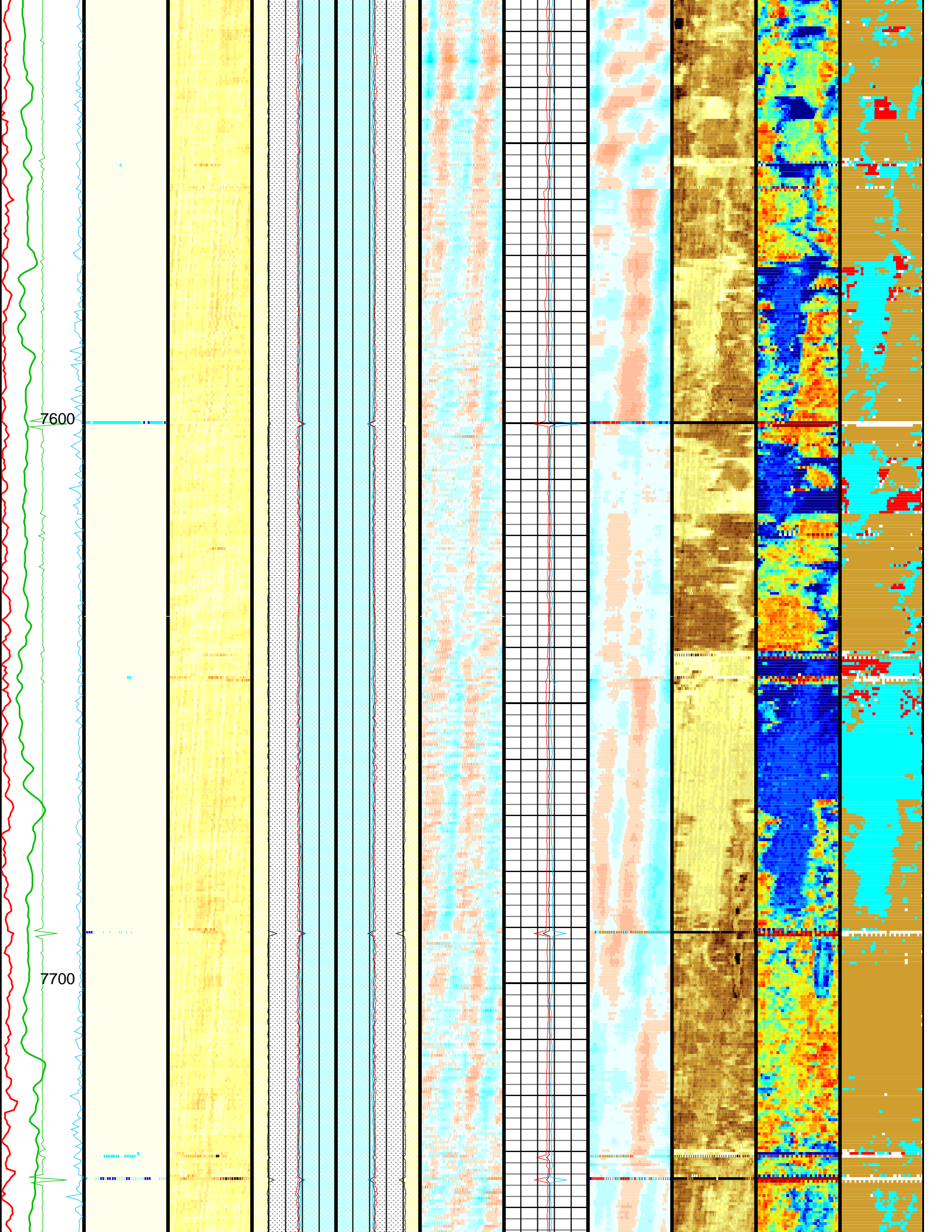


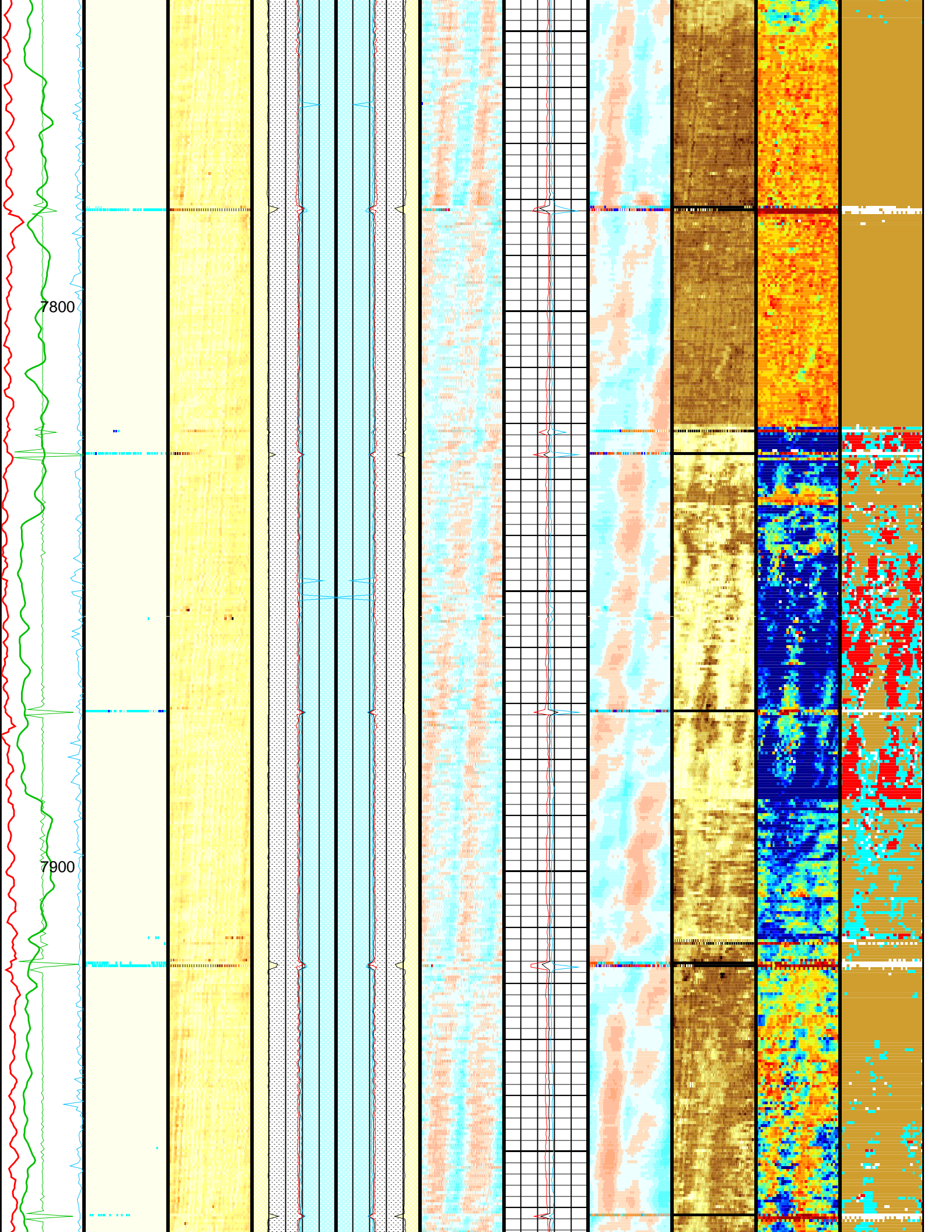


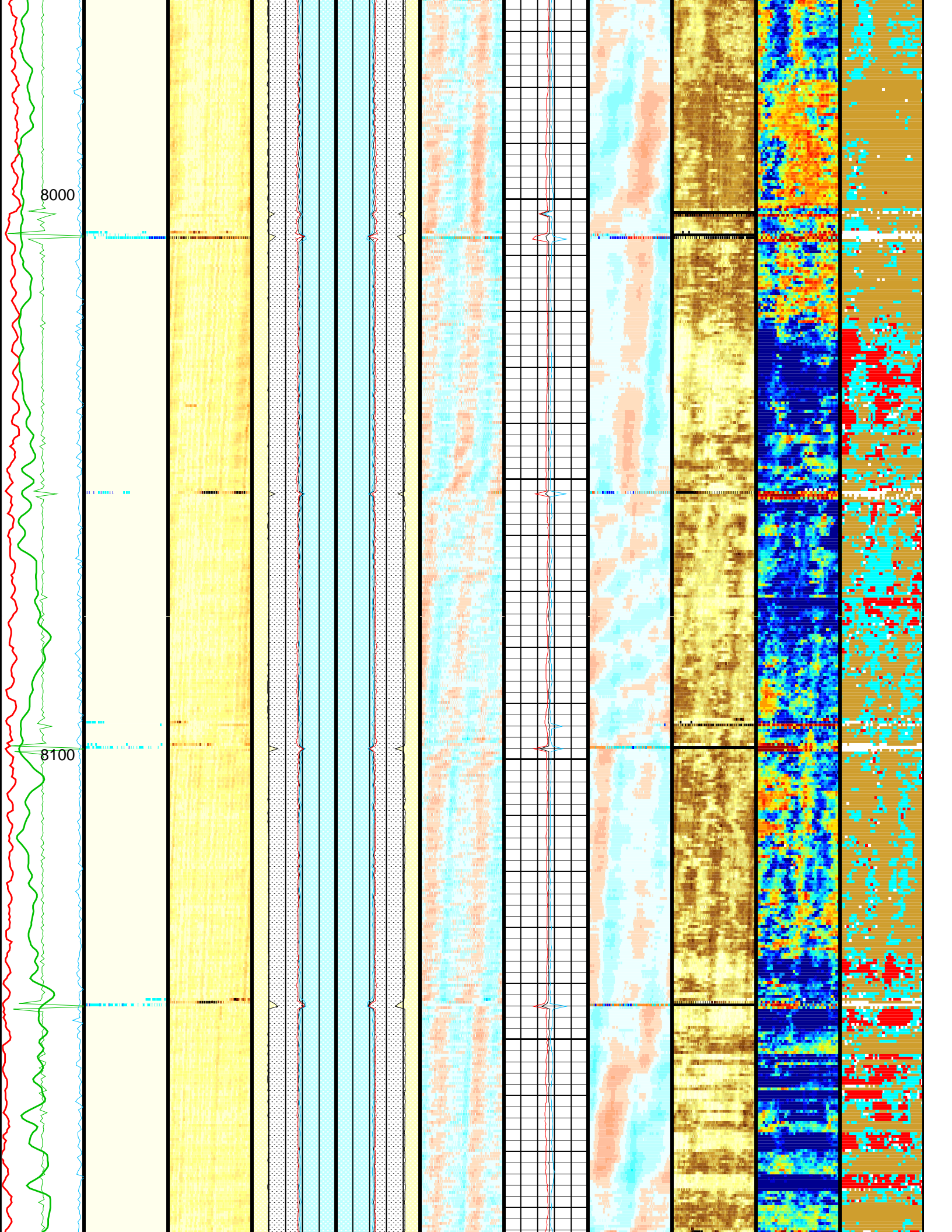


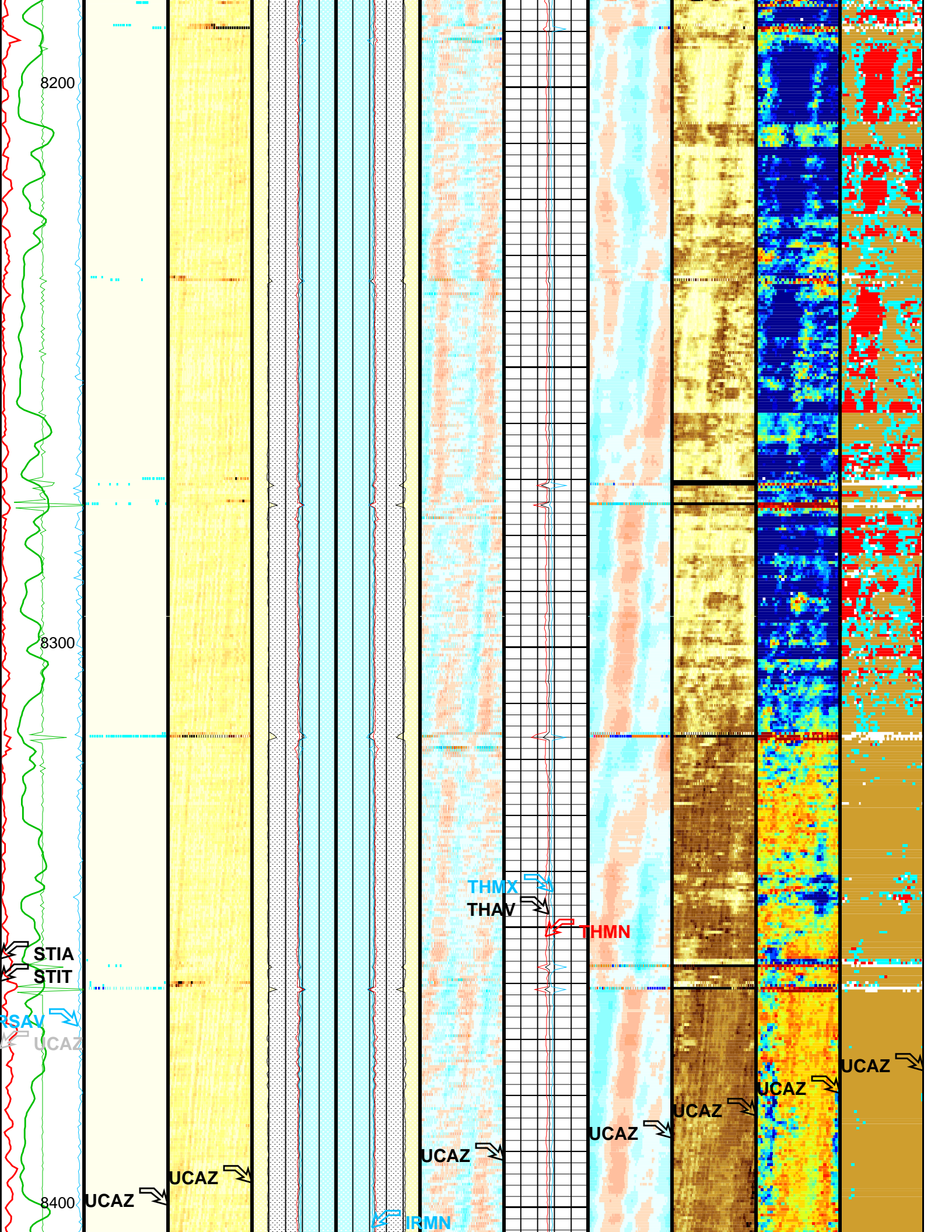


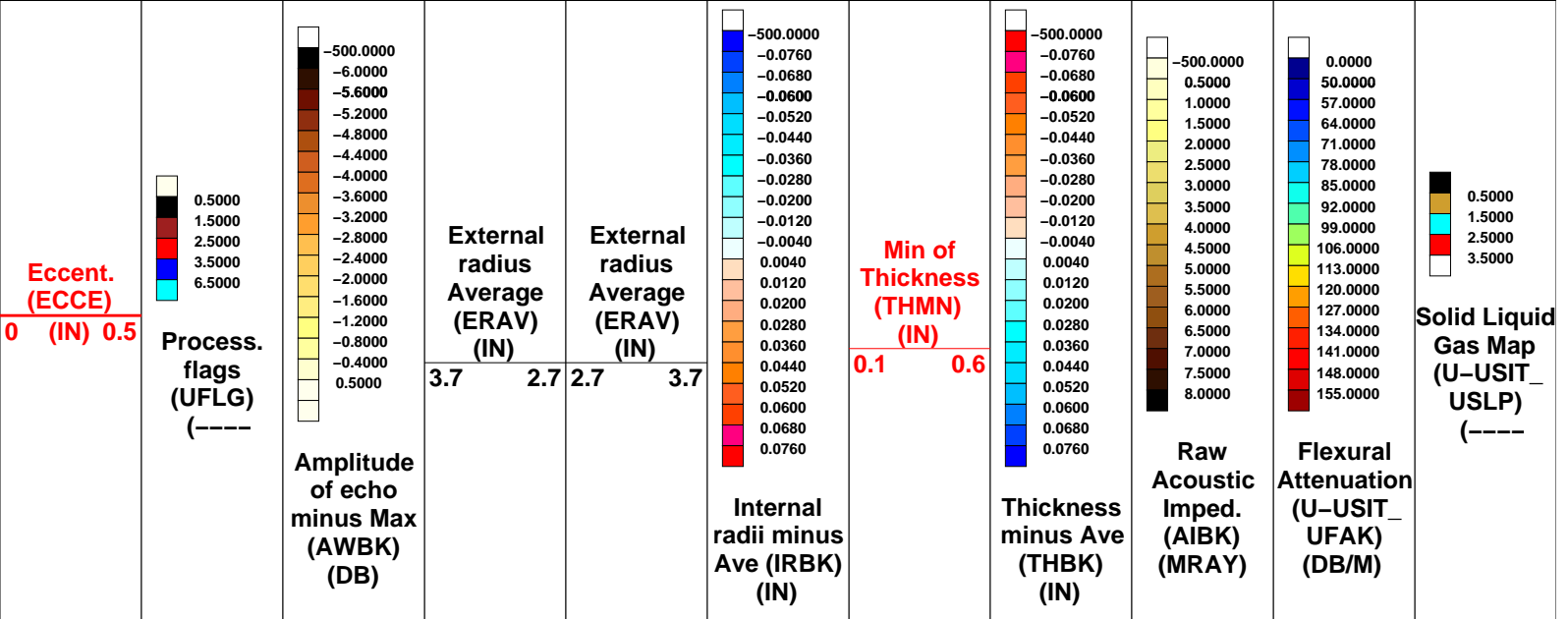
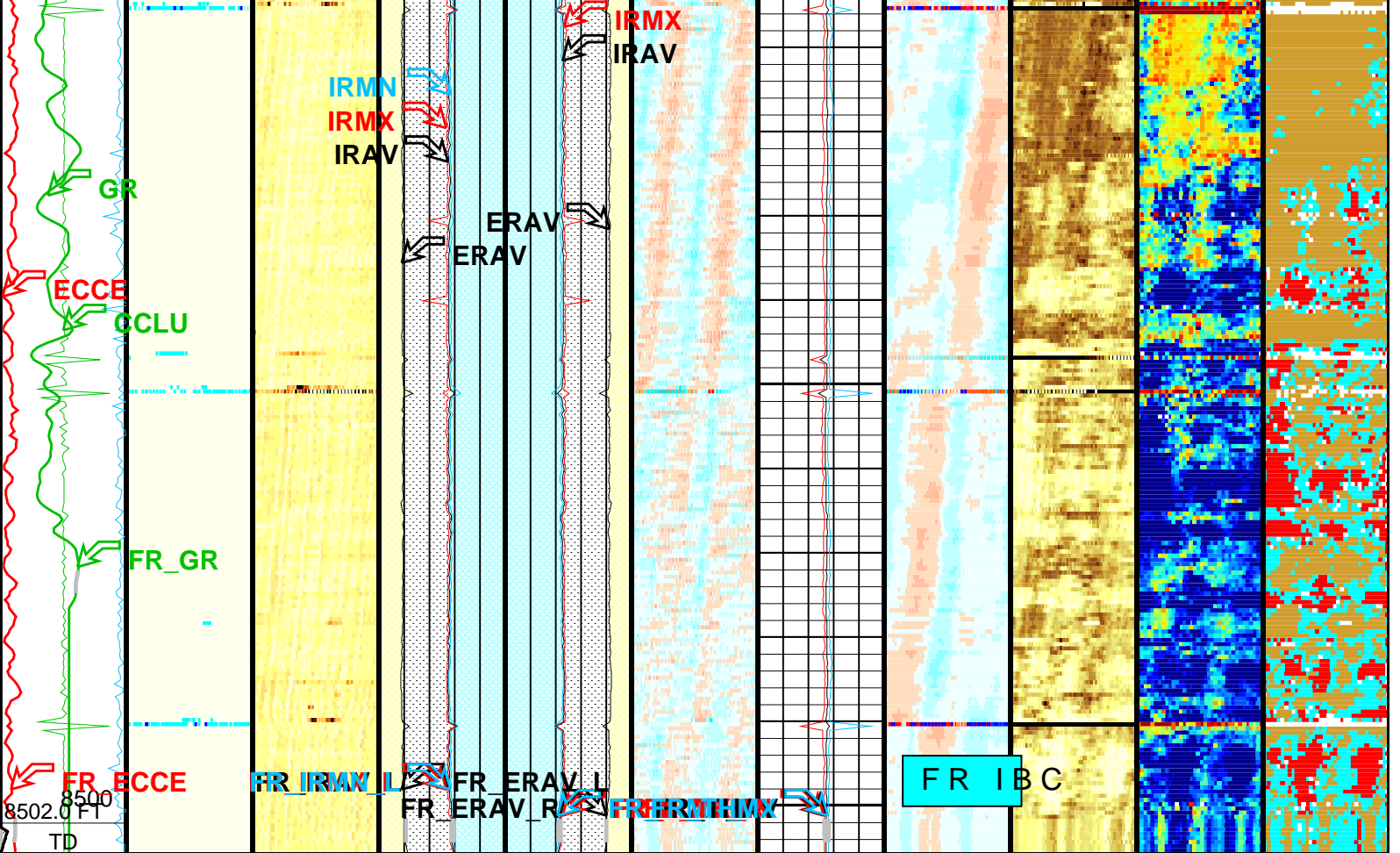












<p>CCL (CCLU) (----)</p> <p>-20 20</p>		<p>Internal radius Average (IRAV) (IN)</p> <p>3.7 2.7 2.7 3.7</p>	<p>Internal radius Average (IRAV) (IN)</p> <p>3.7 2.7 2.7 3.7</p>		<p>Average of Thickness (THAV) (IN)</p> <p>0.1 0.6</p>				
<p>RSV (RSV) (RPS)</p> <p>6 7.5</p>		<p>Internal radius Maximum (IRMX) (IN)</p> <p>3.7 2.7 2.7 3.7</p>	<p>Internal radius Maximum (IRMX) (IN)</p> <p>3.7 2.7 2.7 3.7</p>		<p>Maximum of Thickness (THMX) (IN)</p> <p>0.1 0.6</p>				
<p>Gamma Ray (GR) (GAPI)</p>		<p>Min of Internal radius (IRMN)</p>	<p>Min of Internal radius (IRMN)</p>						

0	150
Stuck Stretch (STIT)	
0	(F) 50
Cable Drag From D4T to STIT	
Tool/Tot. Drag From D4T to STIA	
Image rotation (UCAZ) (DEG)	
0	360

(IN)	(IN)
3.7	2.7
2.7	3.7

Format: USI\_IBC\_SLG\_Composite      Vertical Scale: 5" per 100'      Graphics File Created: 29-Apr-2010 04:44

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.  
 Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

### Parameters

DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	195 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	50 V
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD
IMAR	Image Rotation	OFF
MW	Mud Weight	8.4 LB/G
RCOD	Reference Calibrator Outer Diameter	7 IN
RCSO	Reference Calibrator Standoff	1.1811 IN
RCTH	Reference Calibrator Thickness	0.2952 IN
TCUB	T^3 Processing Level	Vax_Loop
THDH	Maximum Search Thickness (percentage of nominal)	130
THDL	Minimum Search Thickness (percentage of nominal)	70
THDP	Thickness Detection Policy	Fundamental
THNO	Nominal Thickness of Casing	0.362 IN
U-USIT_CEMT	USIT Cement Type	ULTRA_LIGHT
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0 MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY
U-USIT_OCDI	USIT Outer Casing Diameter	0 IN
U-USIT_OCSH	USIT Outer Casing Shoe	0 FT
U-USIT_OCWE	USIT Outer Casing Weight	0 LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES

U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	-1	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_B	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.88	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.45	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
<b>STI: Stuck Tool Indicator</b>			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	8708.00	FT
TDL	Total Depth - Logger	8502.00	FT
<b>System and Miscellaneous</b>			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

### Input DLIS Files

DEFAULT      USI\_TLD\_MCFL\_CNL\_013LUP      FN:12    PRODUCER    29-Apr-2010 00:59    8505.5 FT    100.0 FT

### Output DLIS Files

DEFAULT      USI\_TLD\_MCFL\_CNL\_022PUP      FN:21    PRODUCER    29-Apr-2010 04:44



**VDL WIDE**

MAXIS Field Log

Company: ExxonMobil Production Corp      Well: PCU 297-11C3

### Input DLIS Files

DEFAULT      USI\_TLD\_MCFL\_CNL\_013LUP      FN:12    PRODUCER    29-Apr-2010 00:59    8505.5 FT    100.0 FT

### Output DLIS Files

DEFAULT      USI\_TLD\_MCFL\_CNL\_022PUP      FN:21    PRODUCER    29-Apr-2010 04:44

### OP System Version: 17C0-154

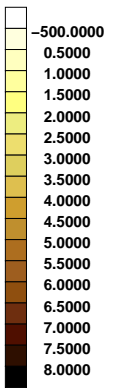
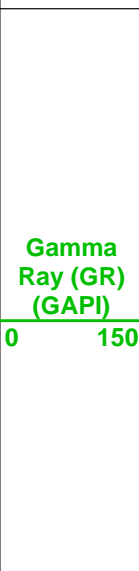
USIT-D      17C0-154      HILTH-FTB      17C0-154  
DTC-H      17C0-154

Tool/Tot.  
Drag  
From D4T  
to STIA  
Cable

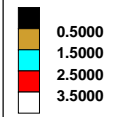
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Stuck Stretch (STIT)

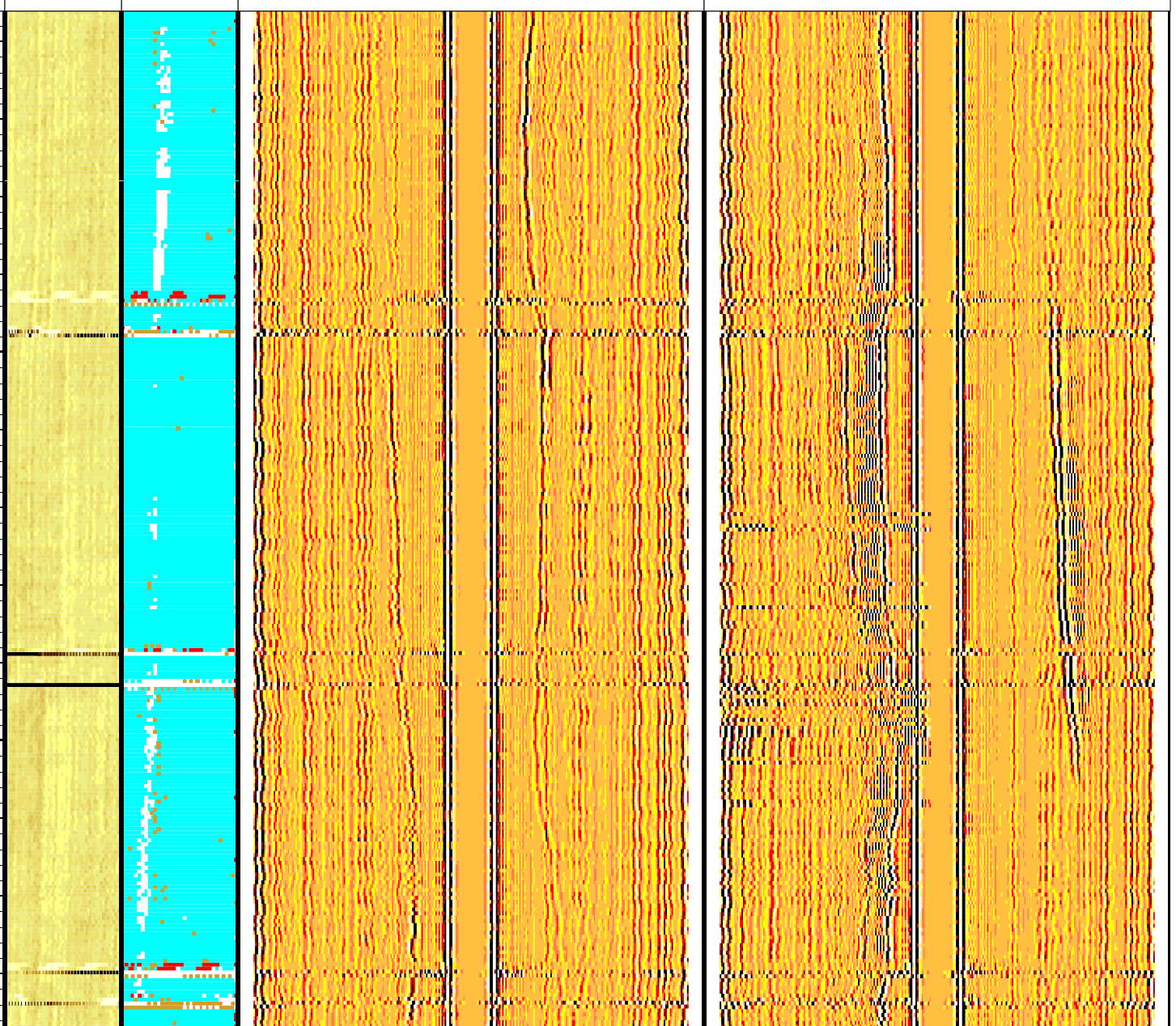
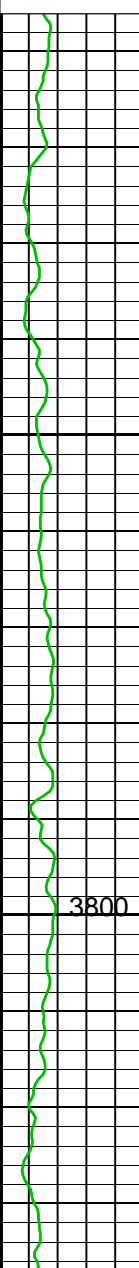
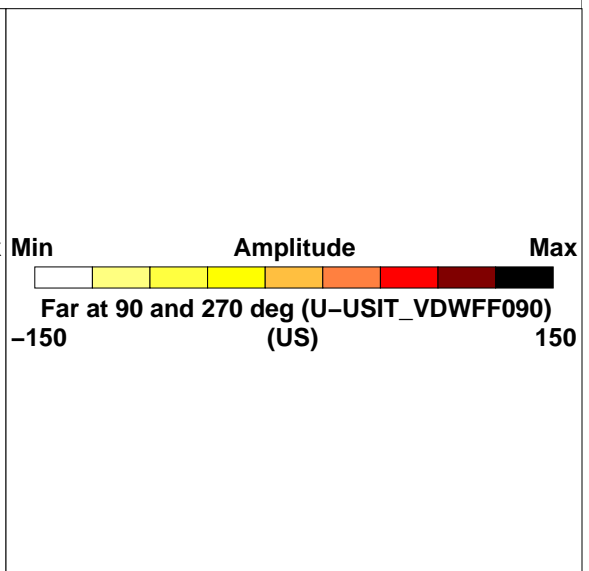
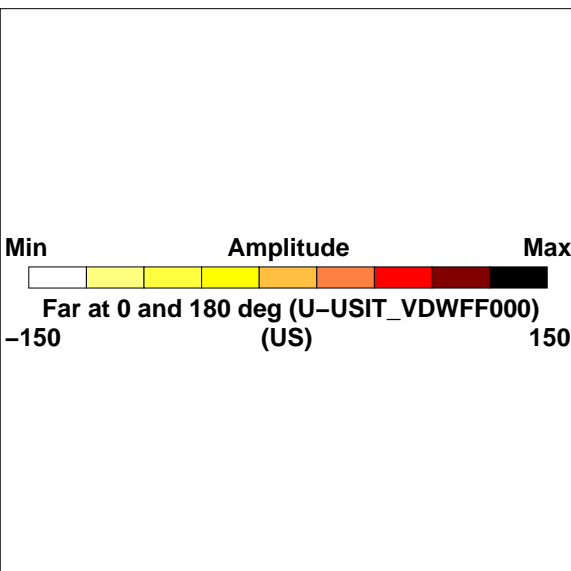
0 (F) 50

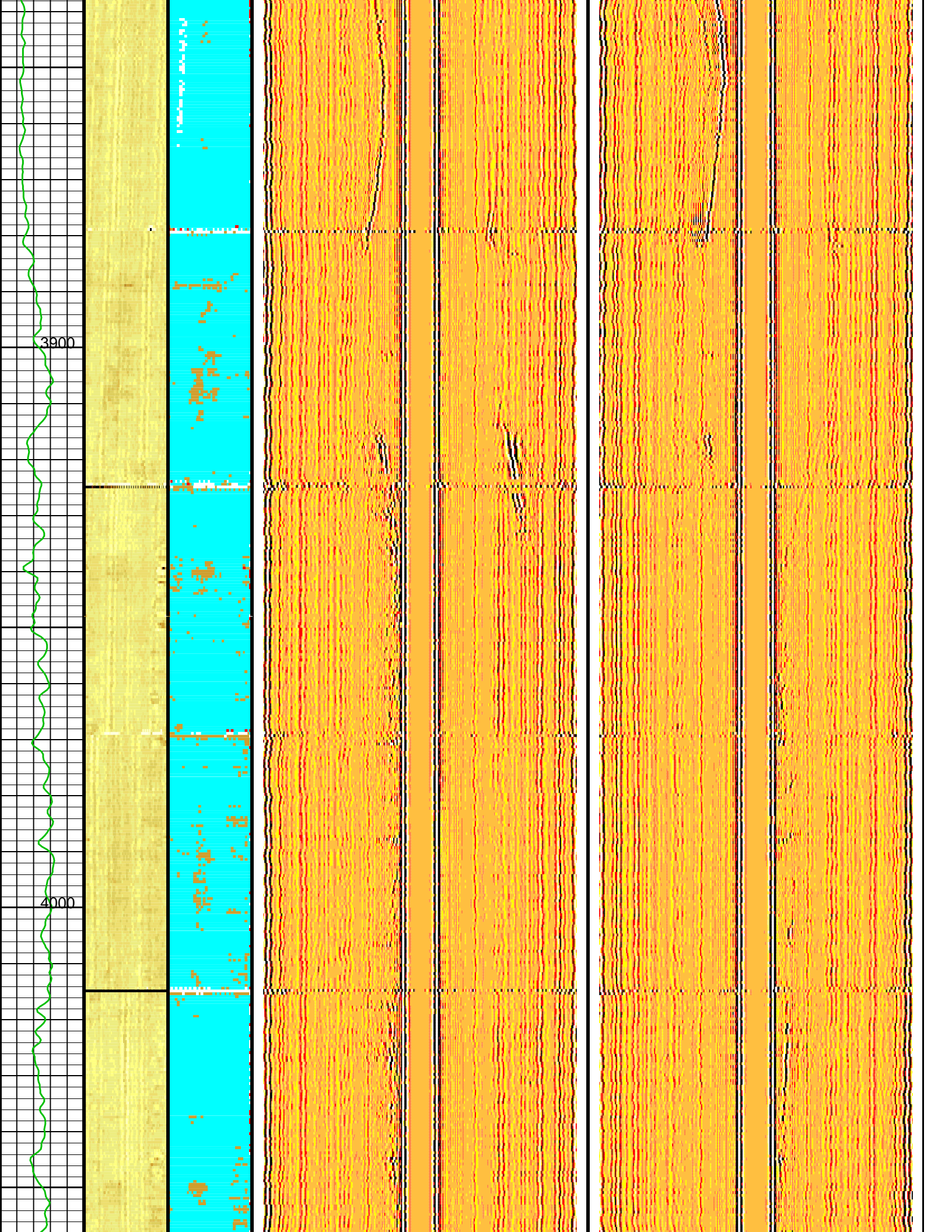


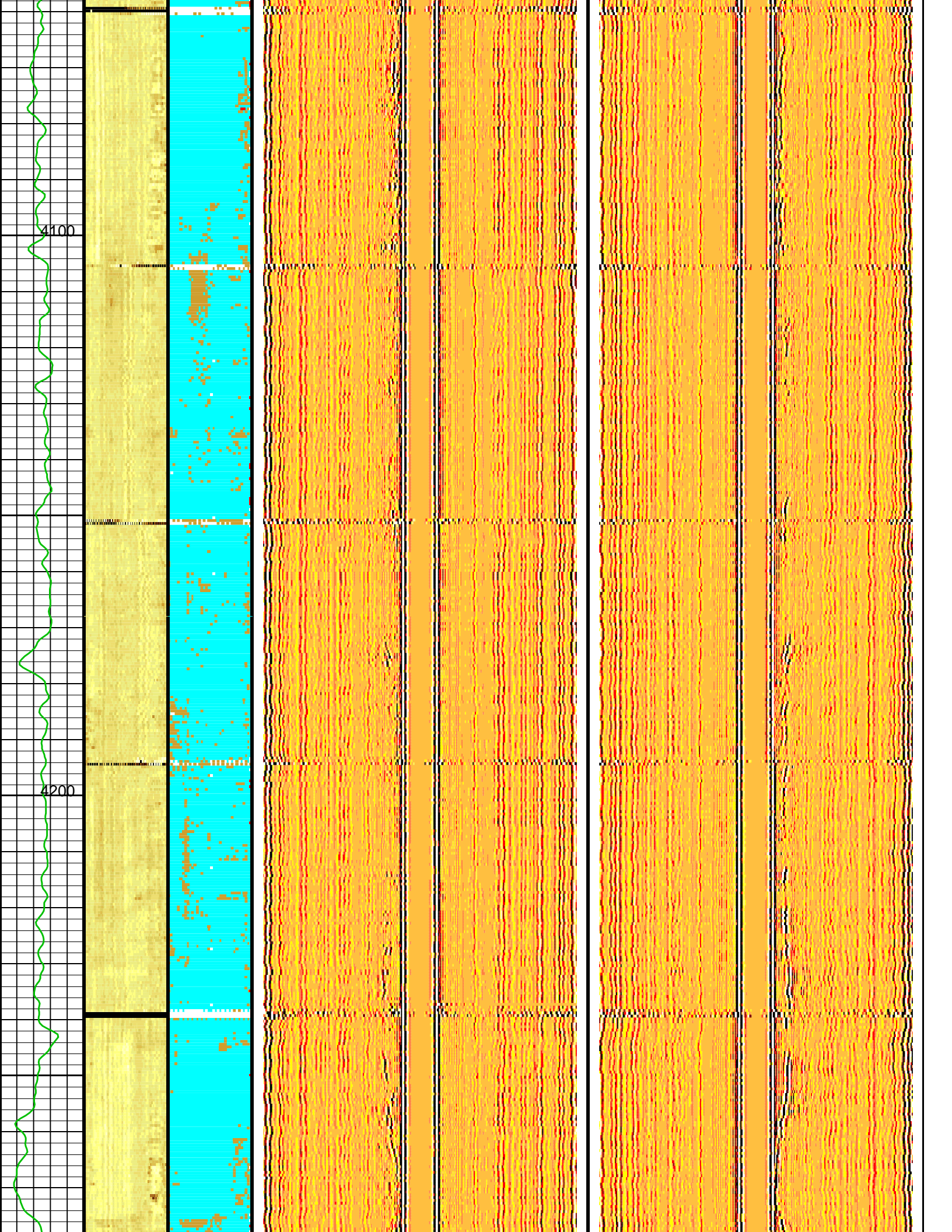
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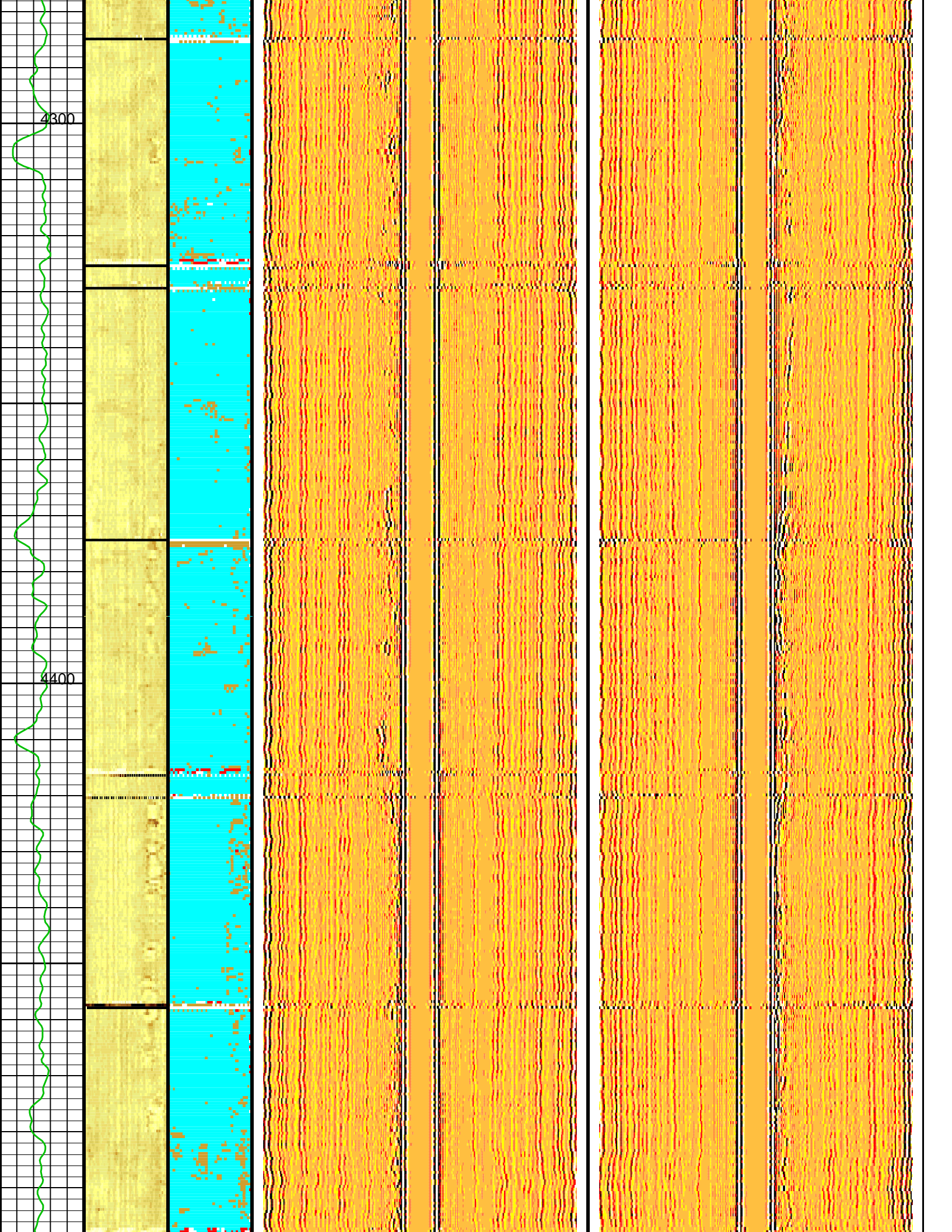


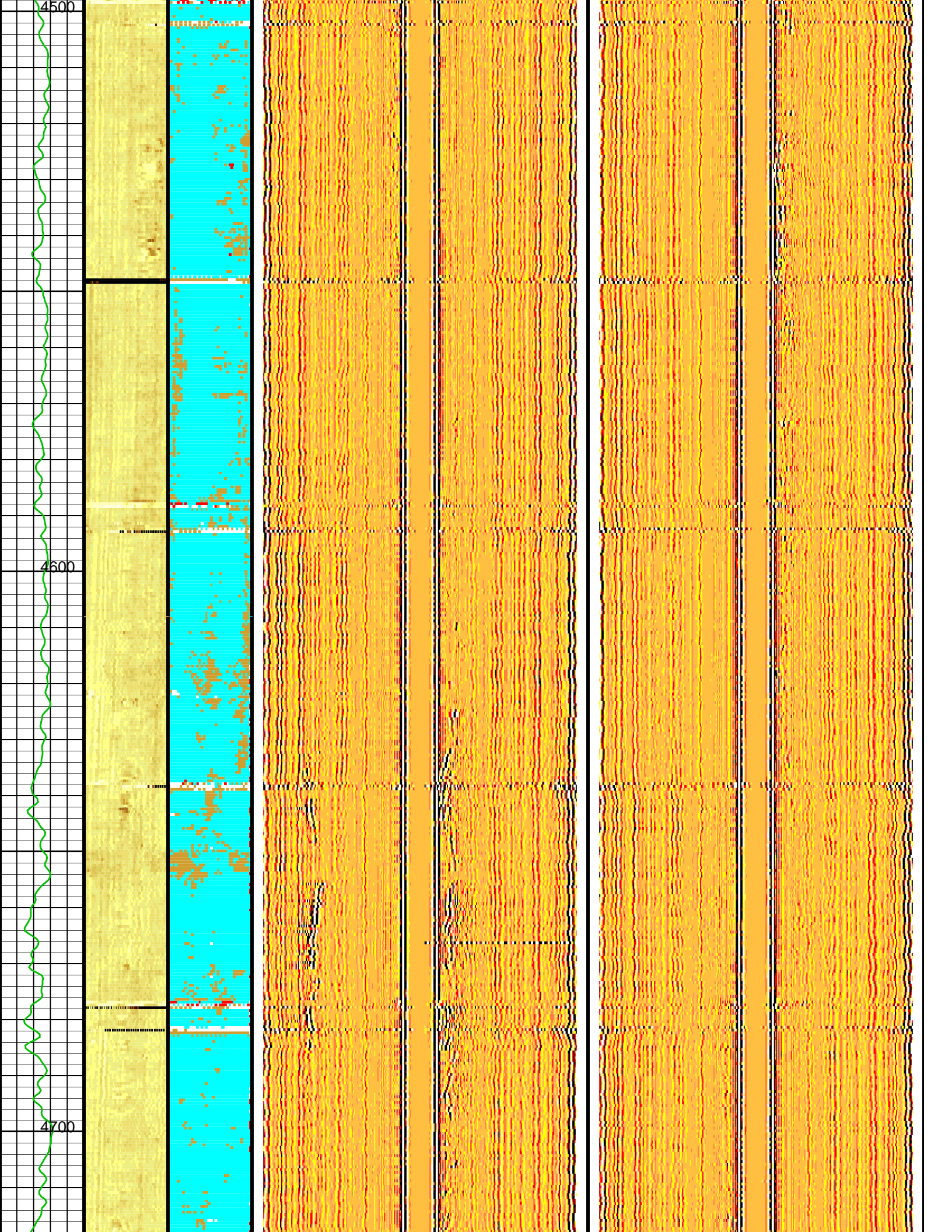
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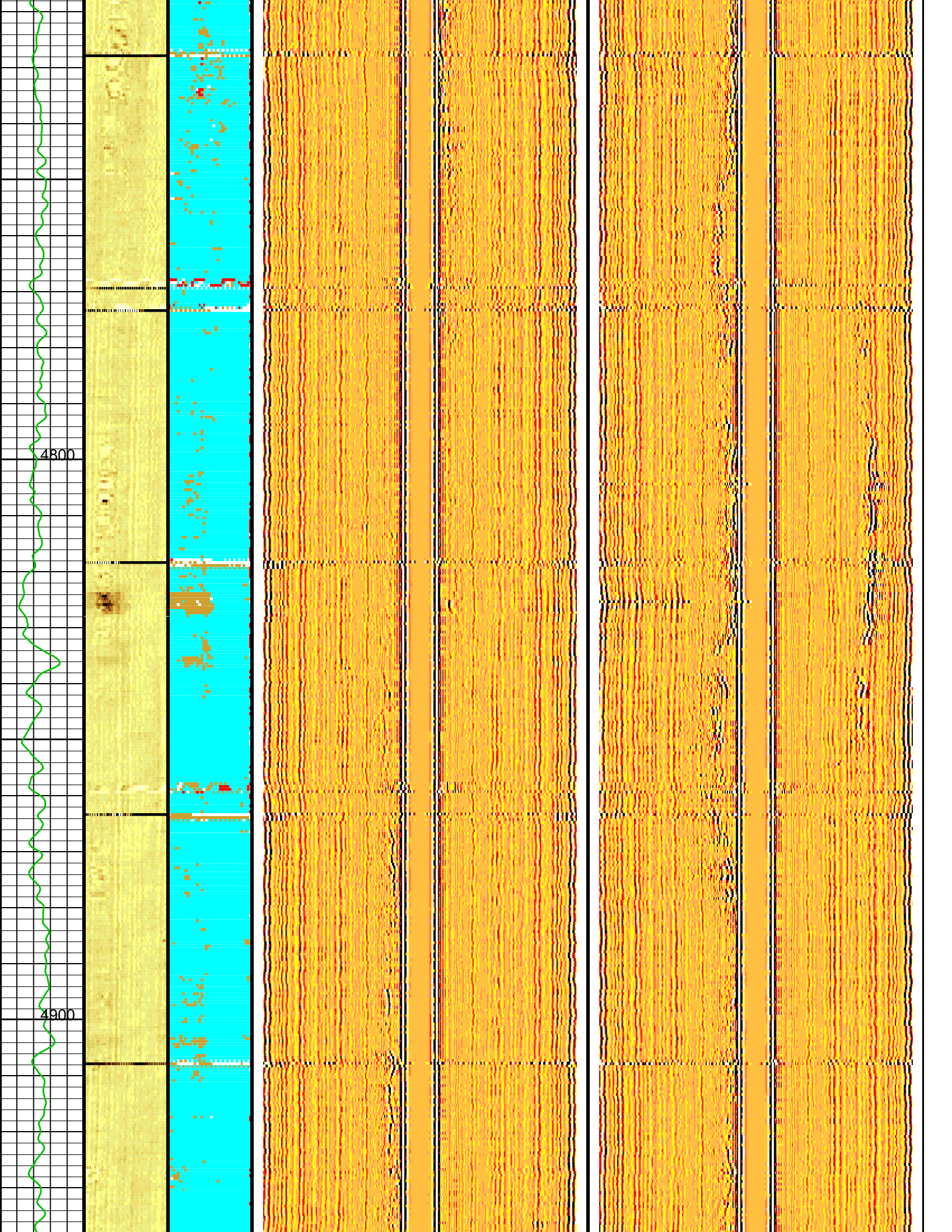


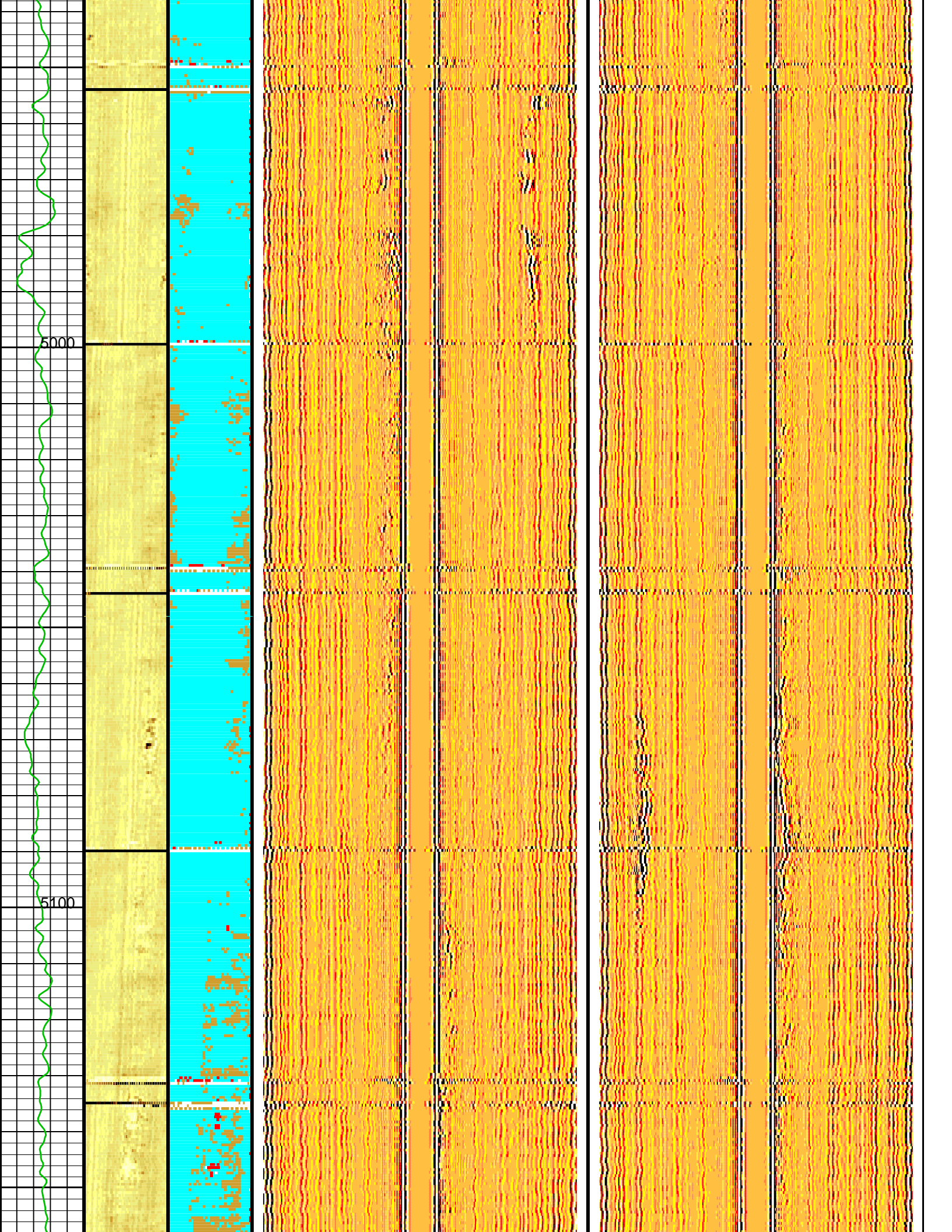


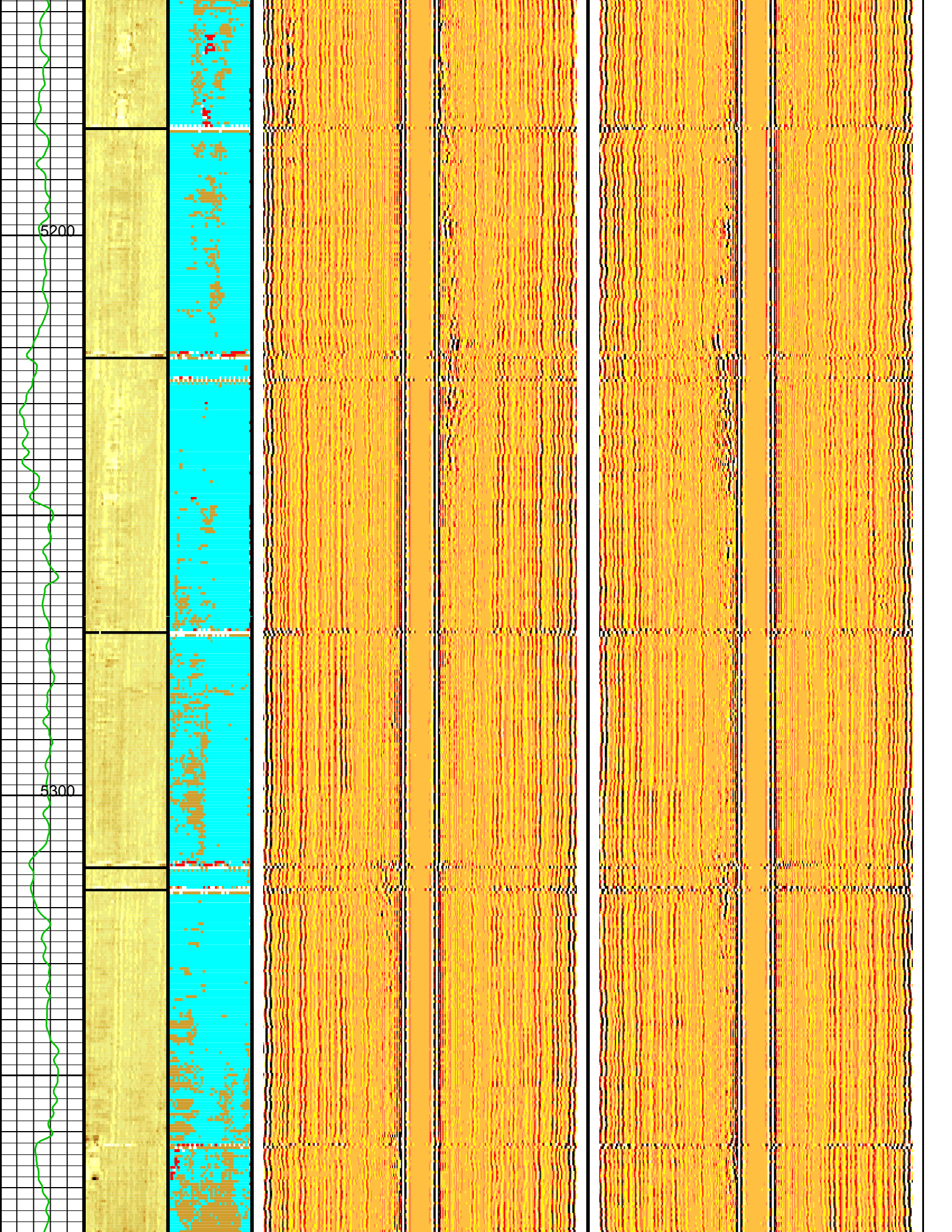


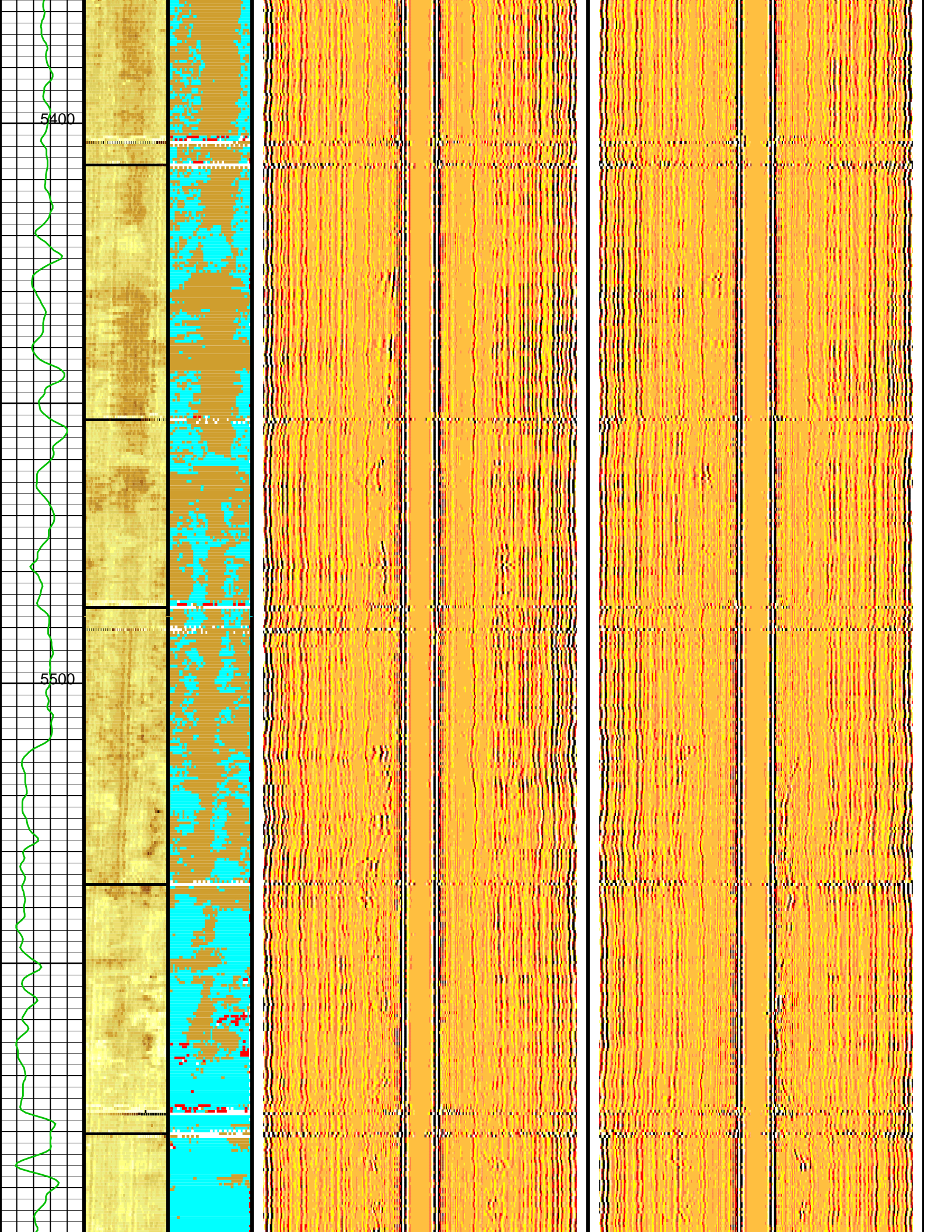


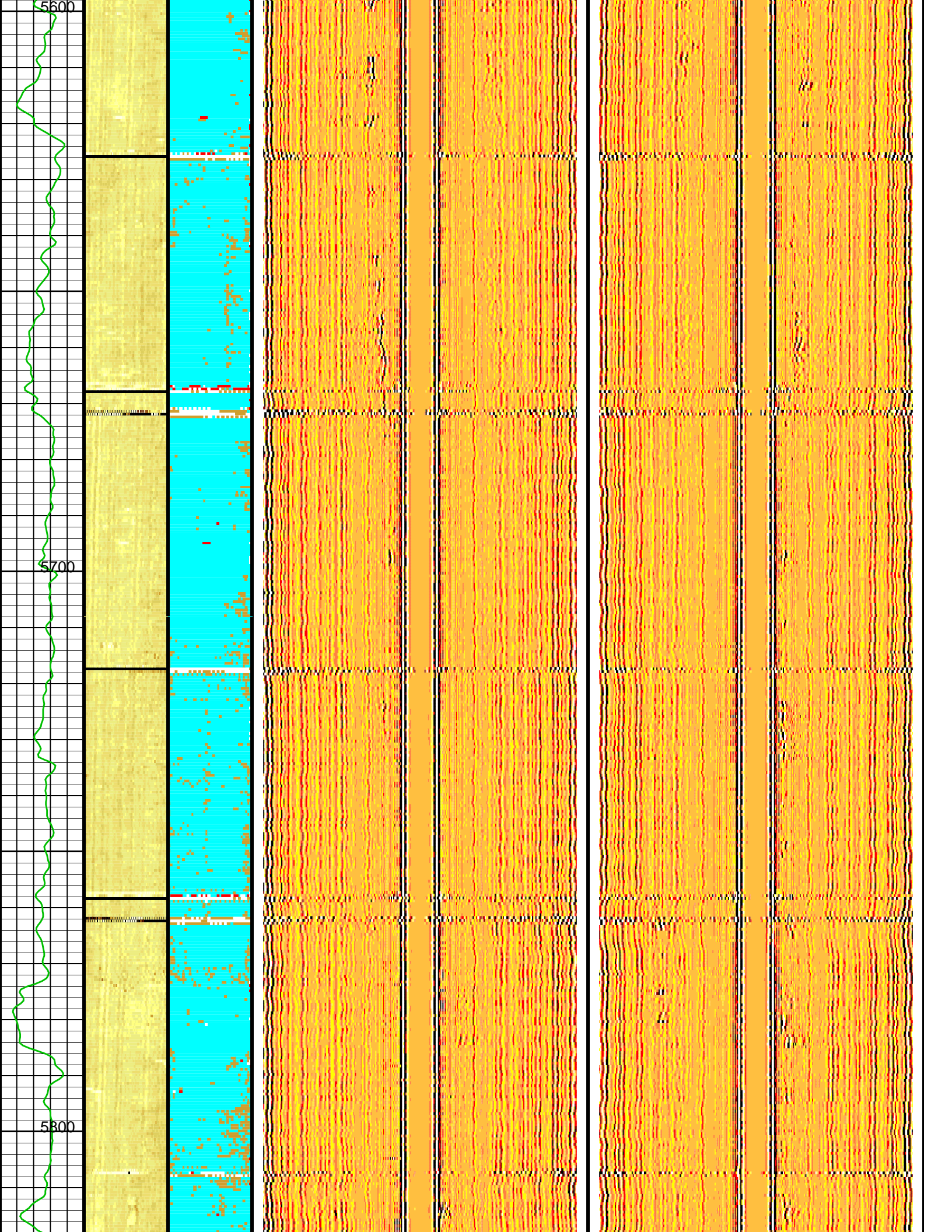


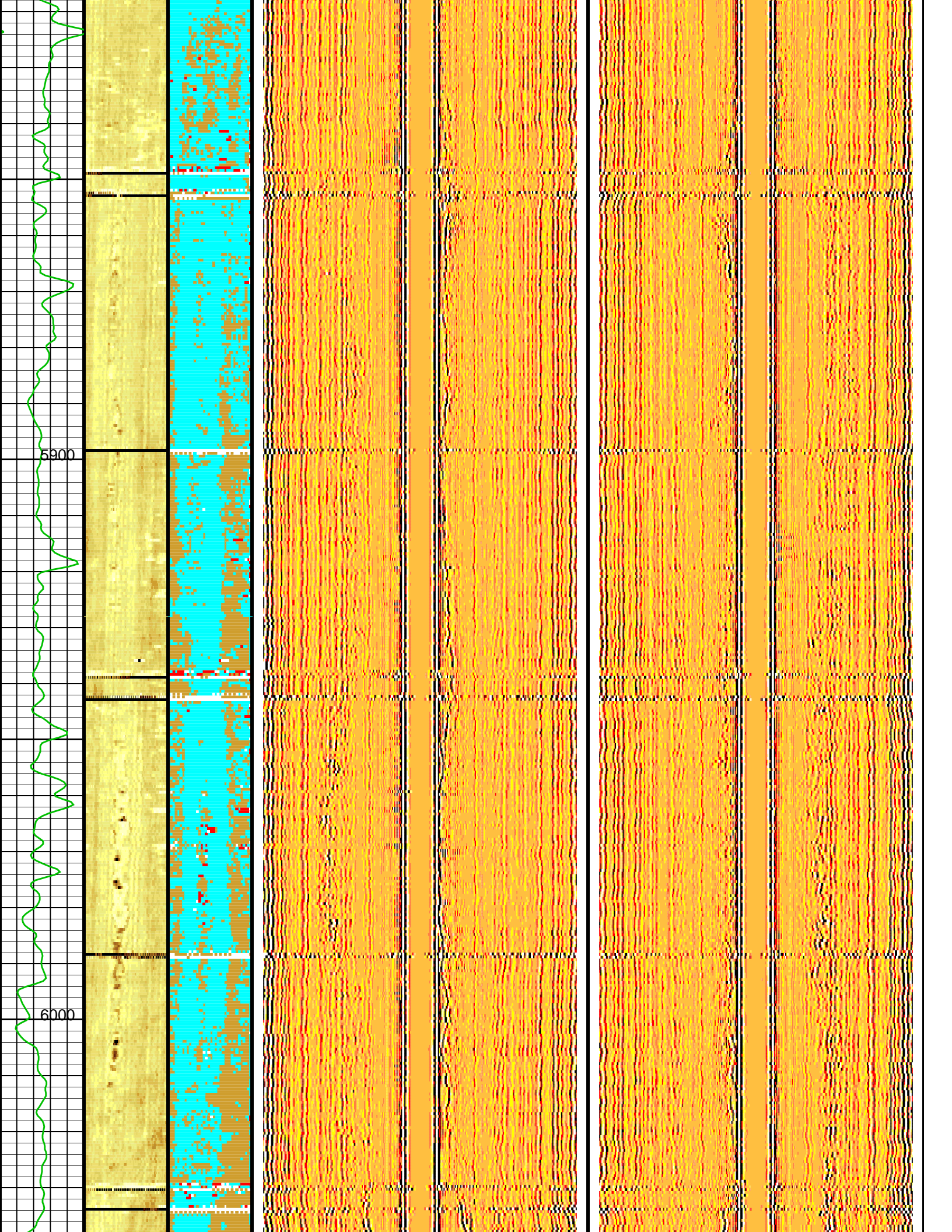


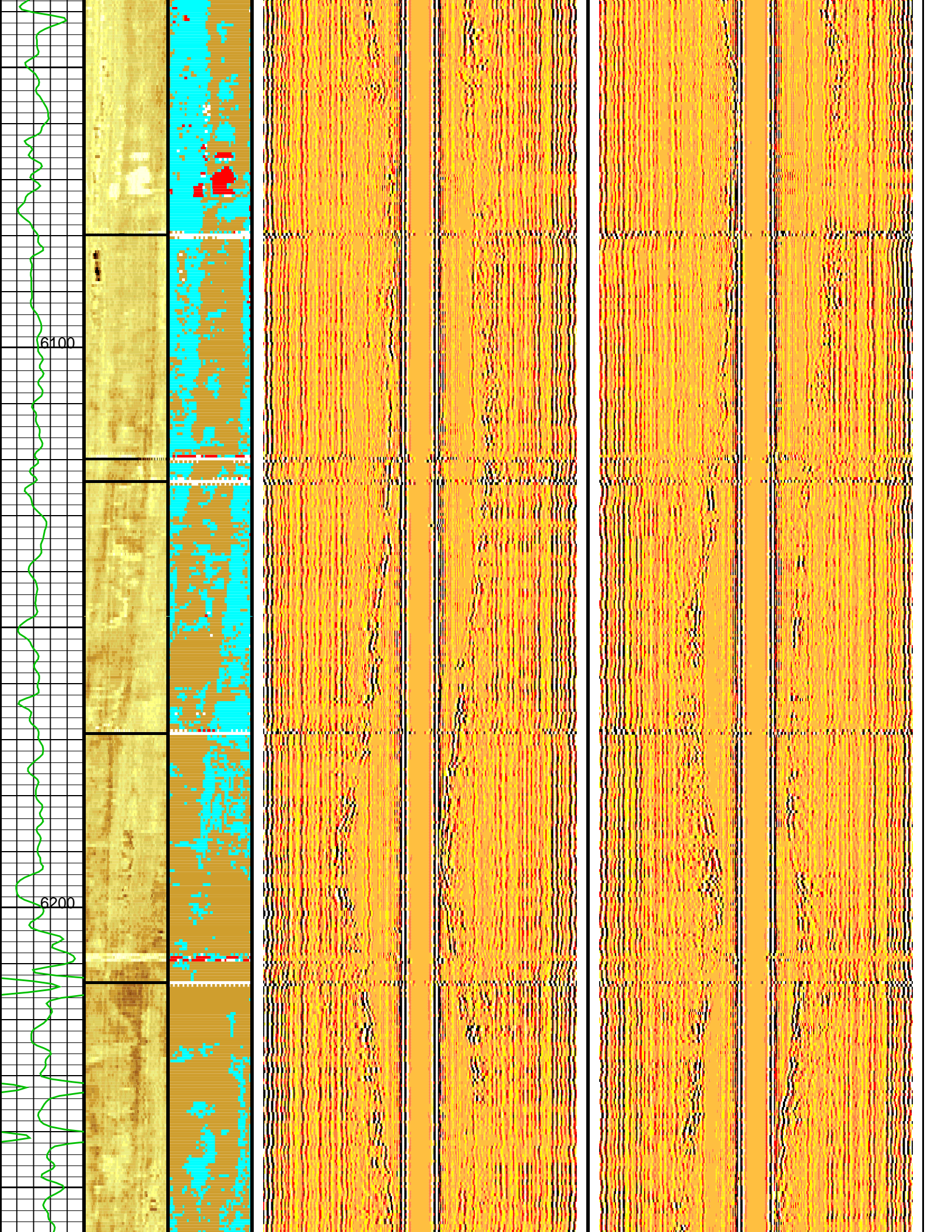


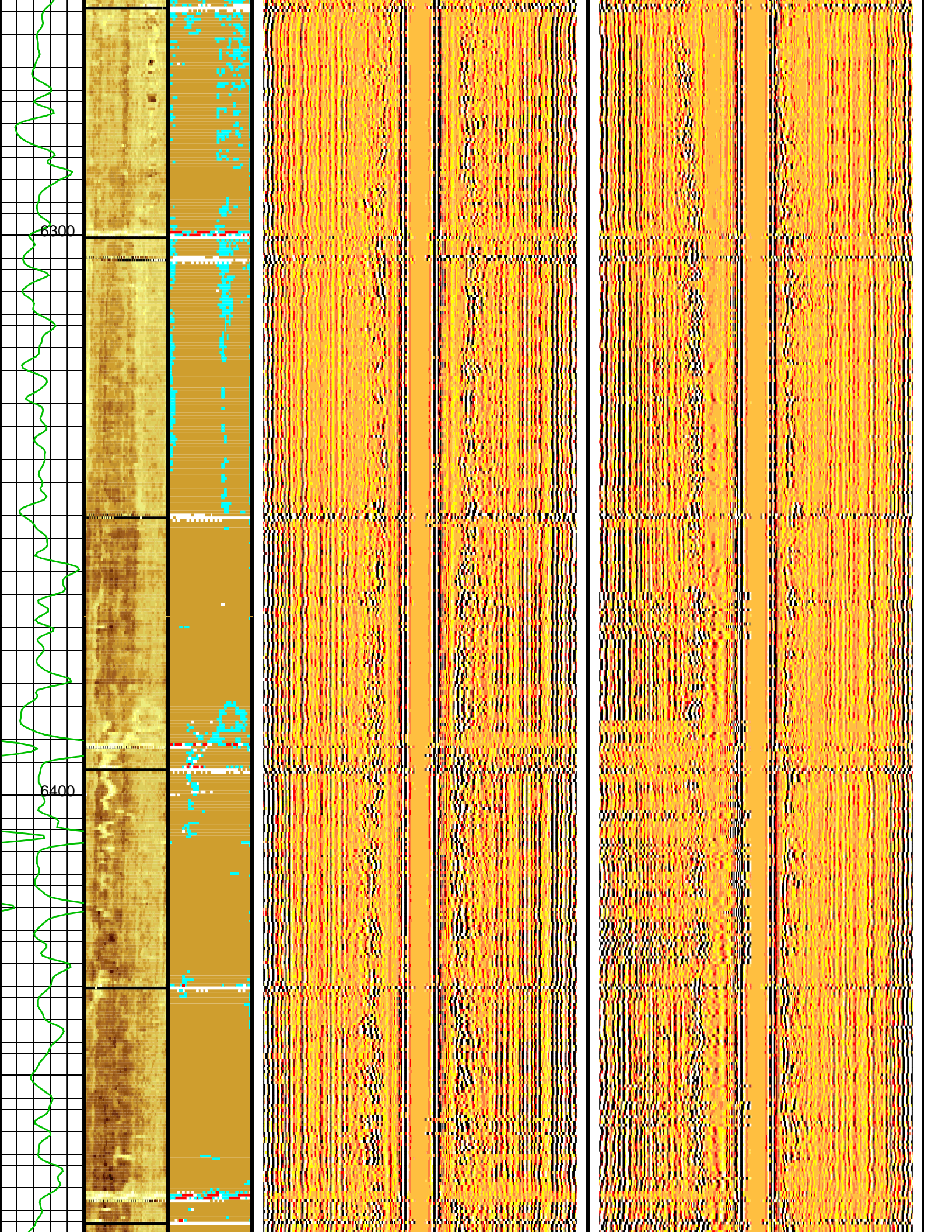


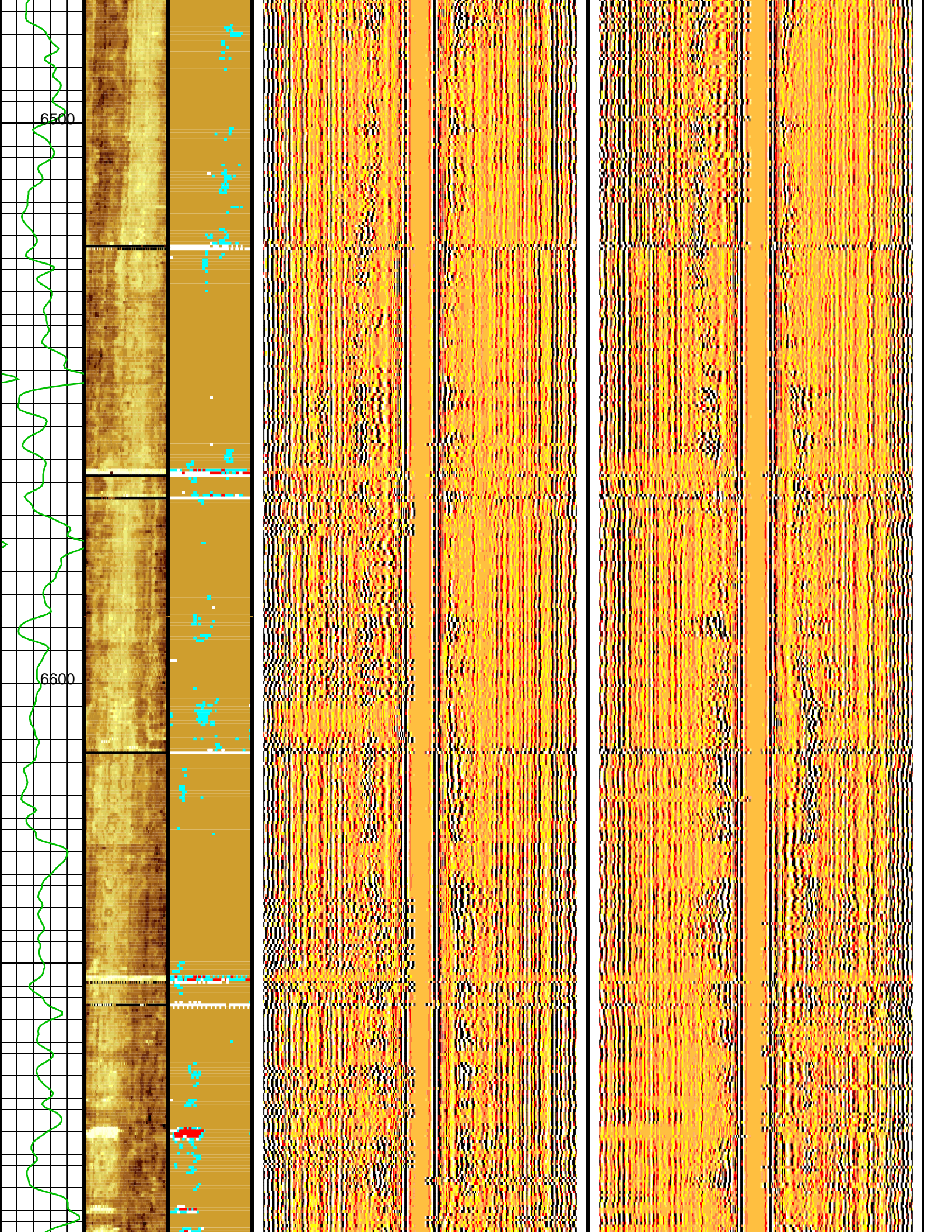


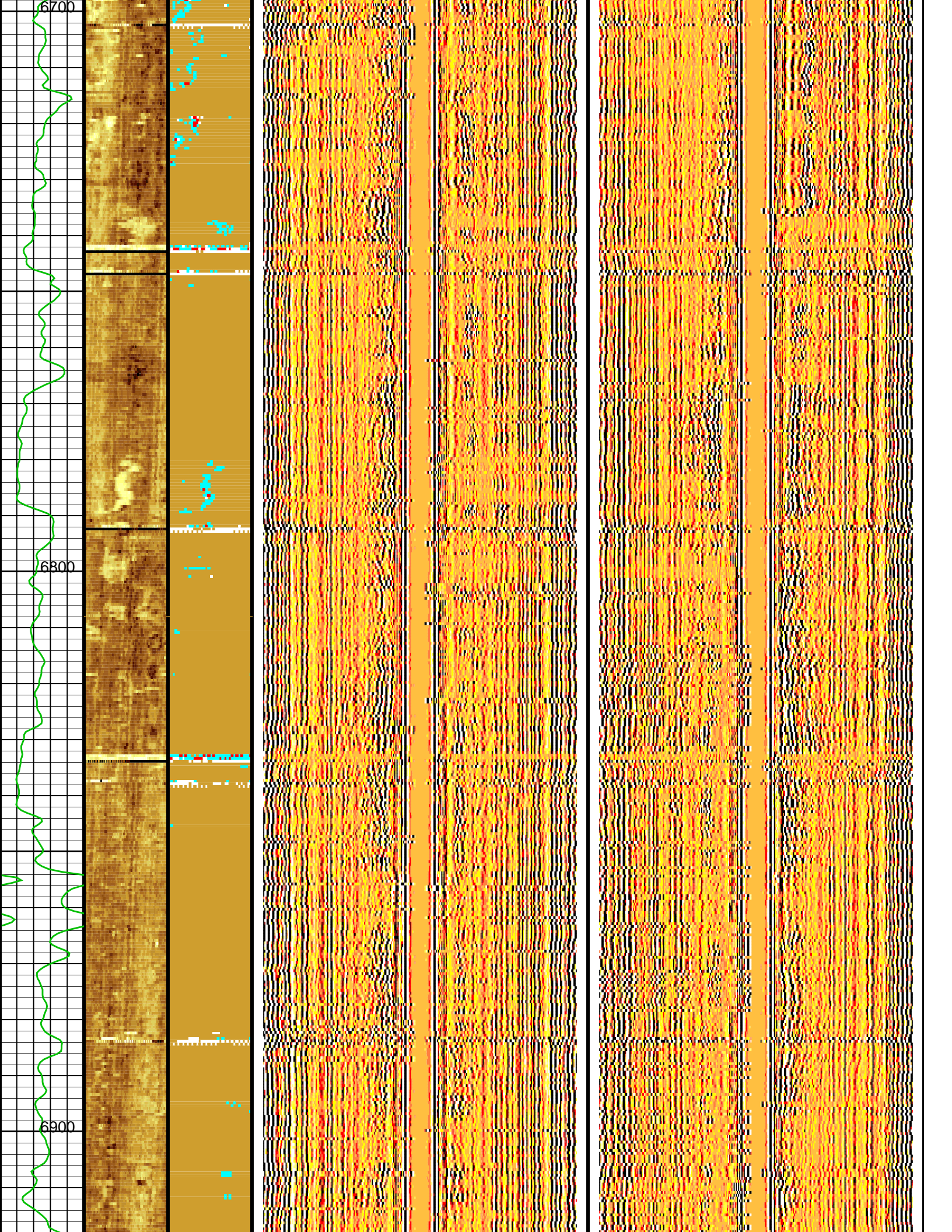


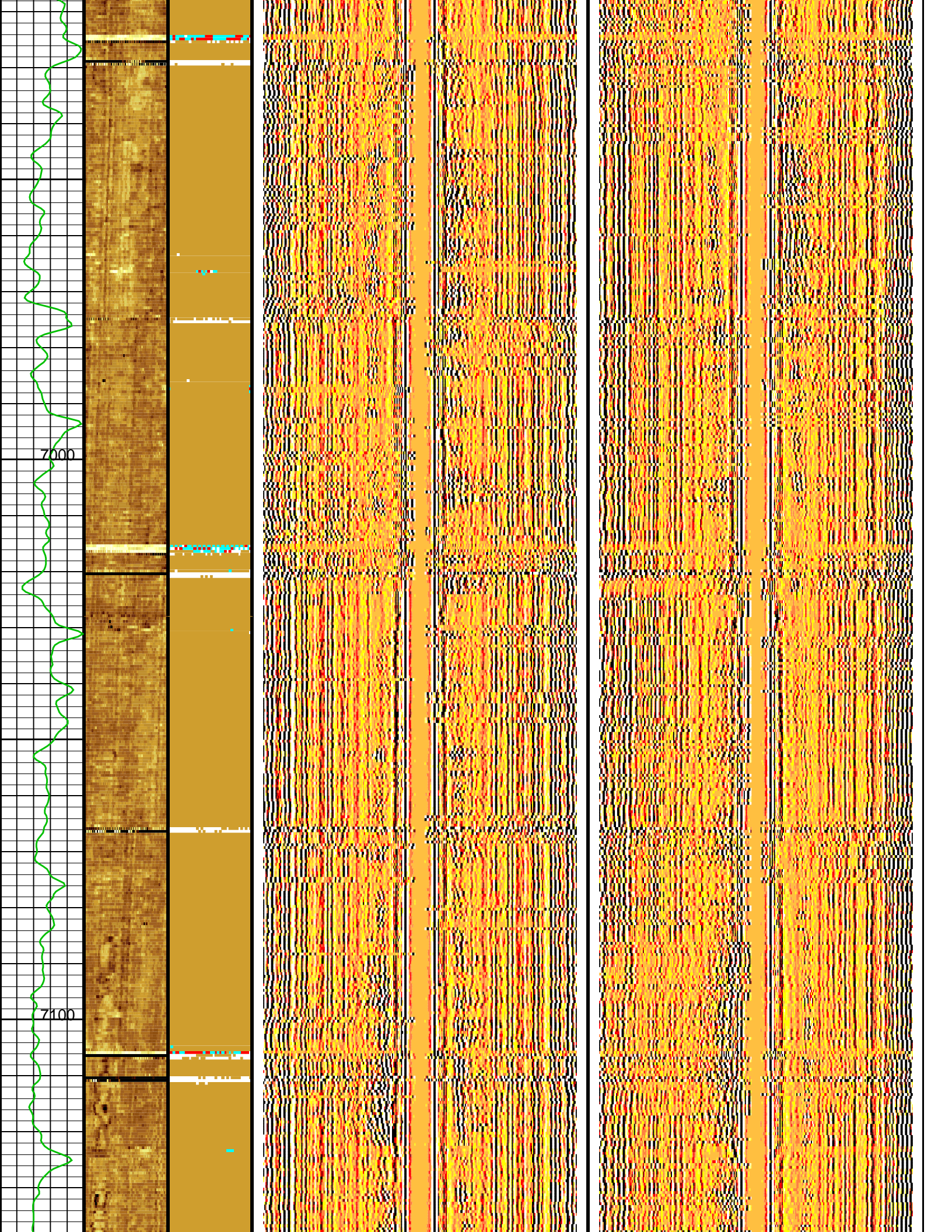


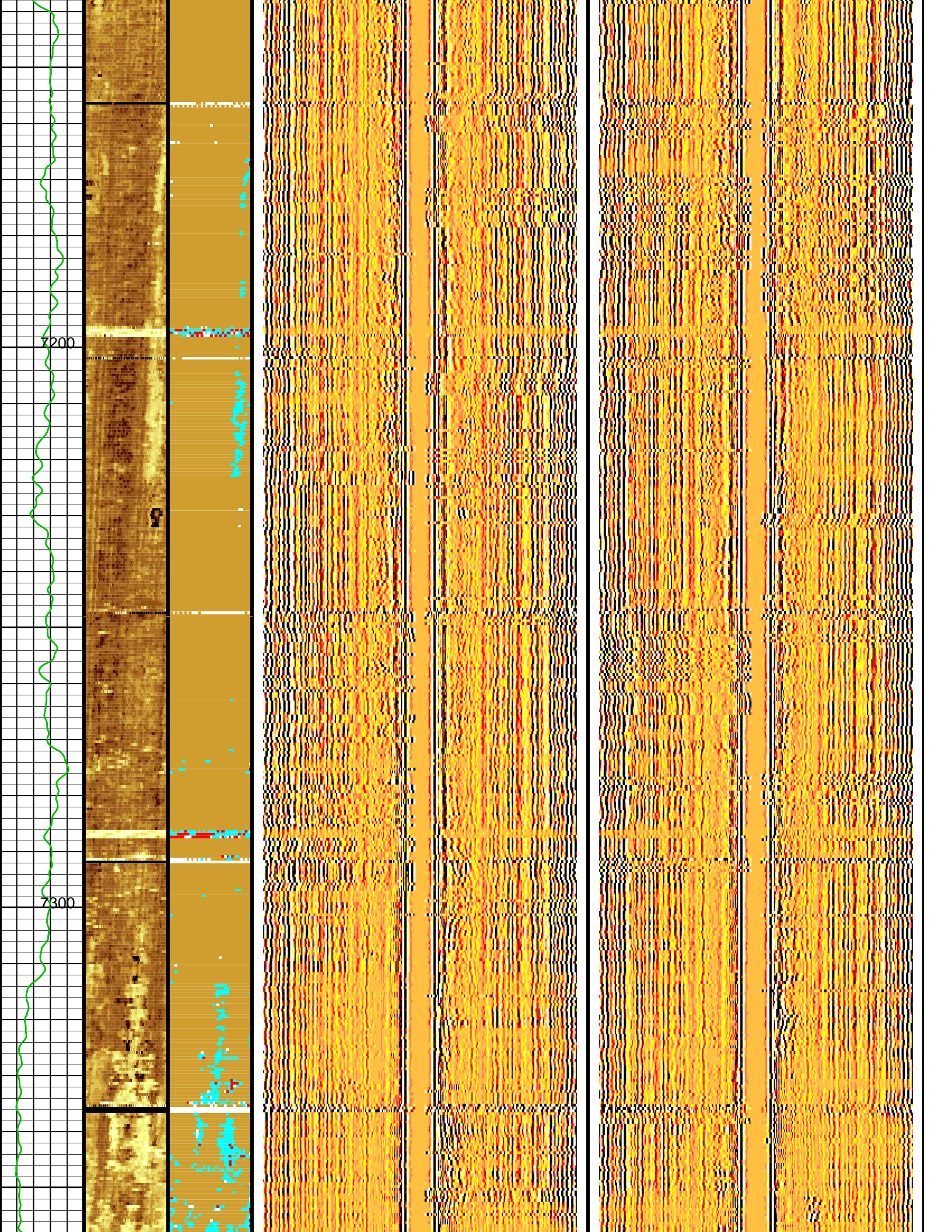


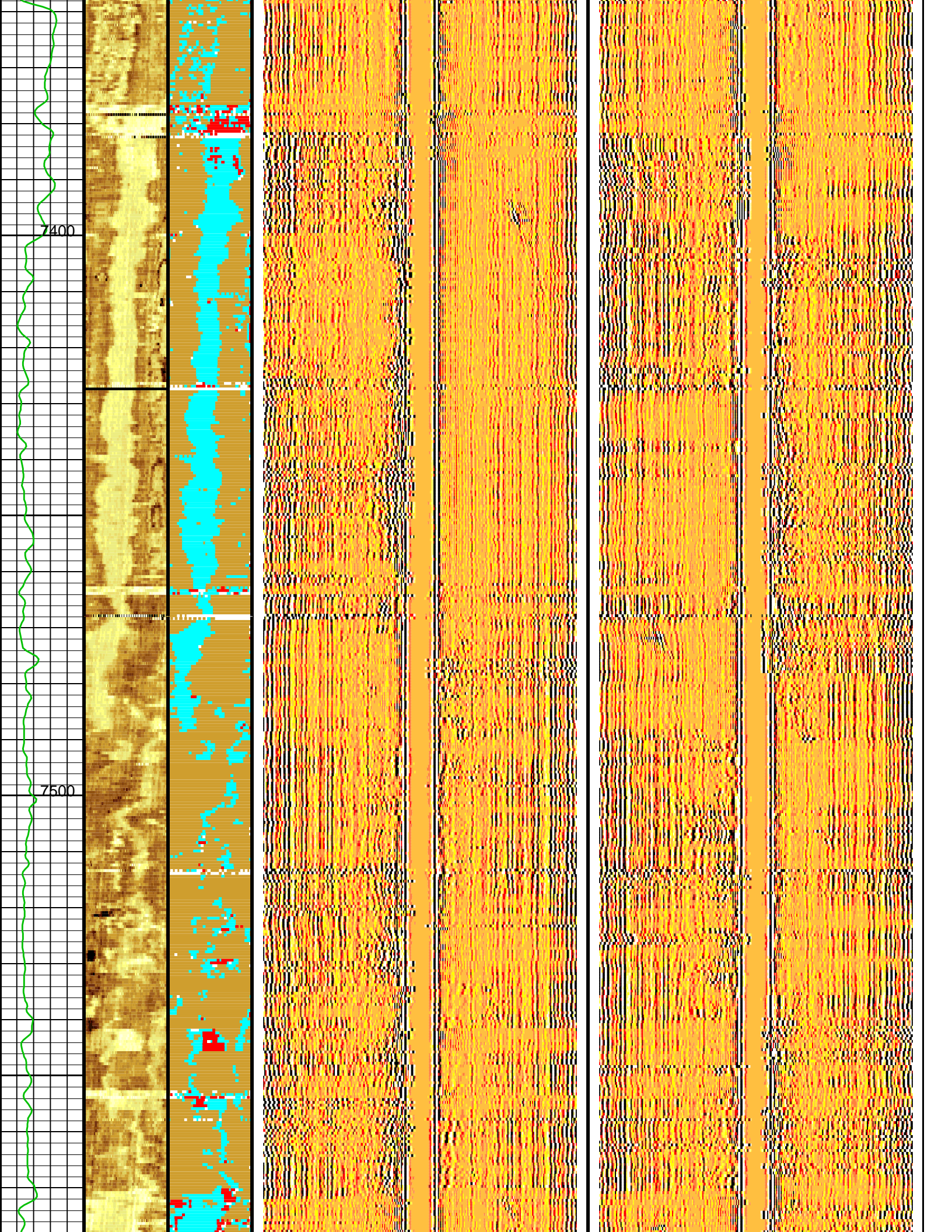


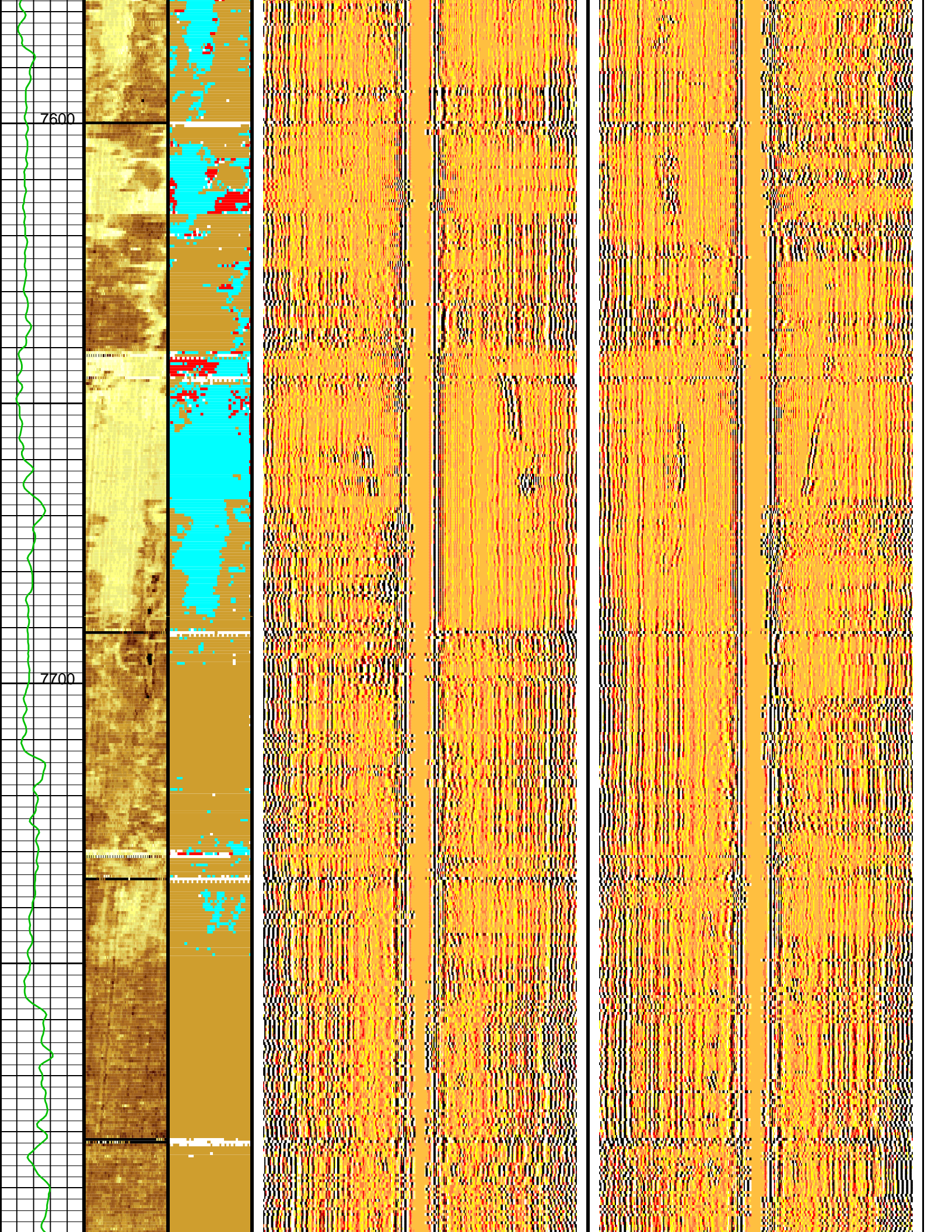


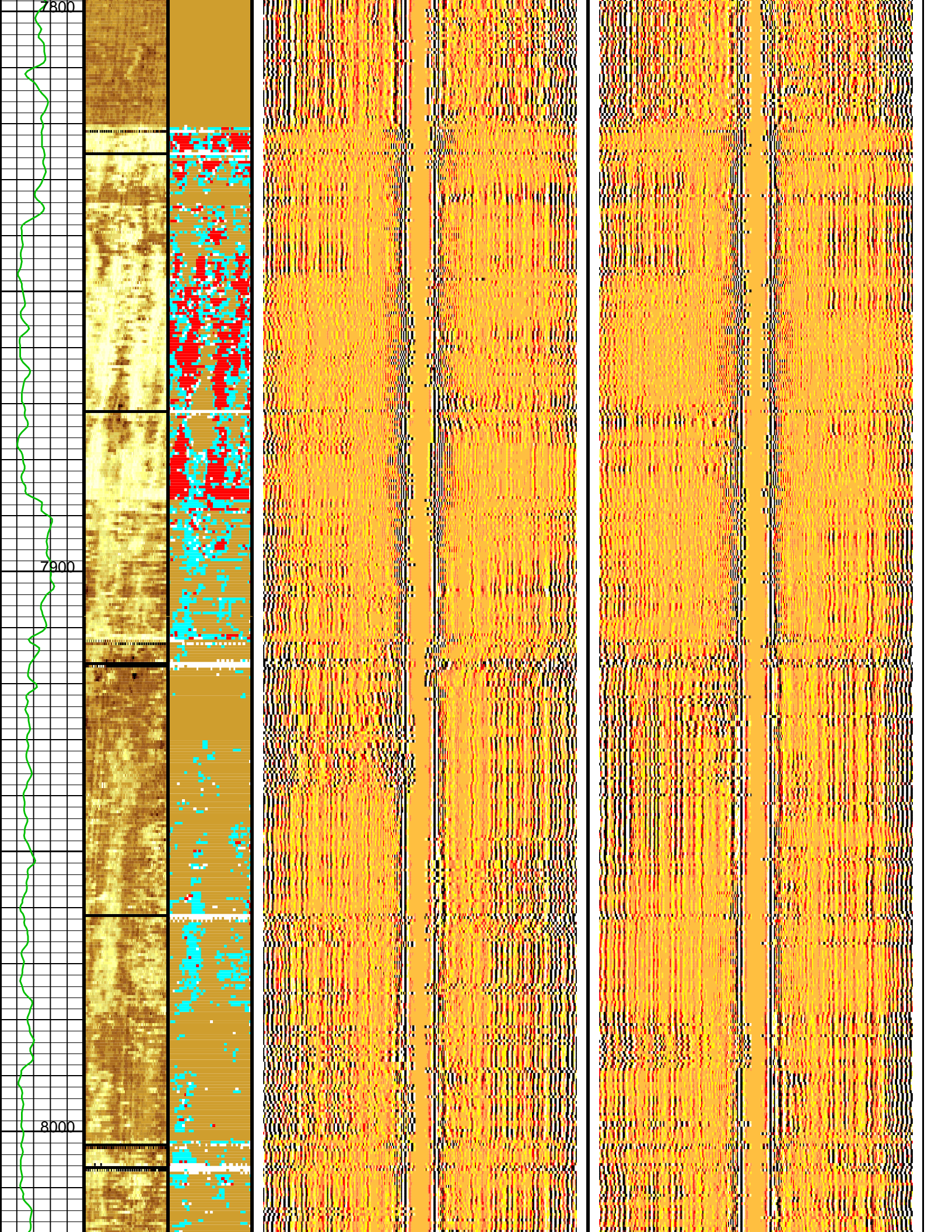


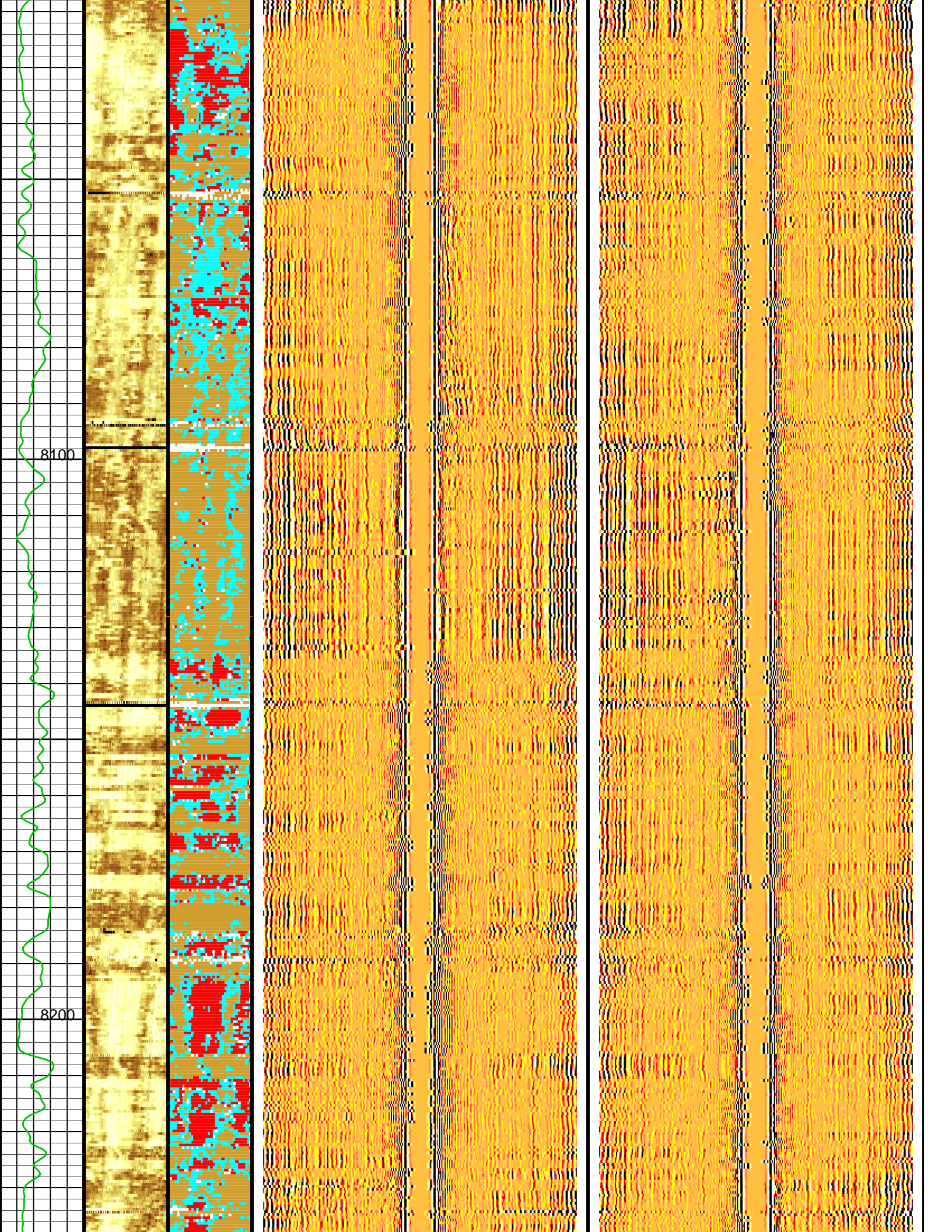


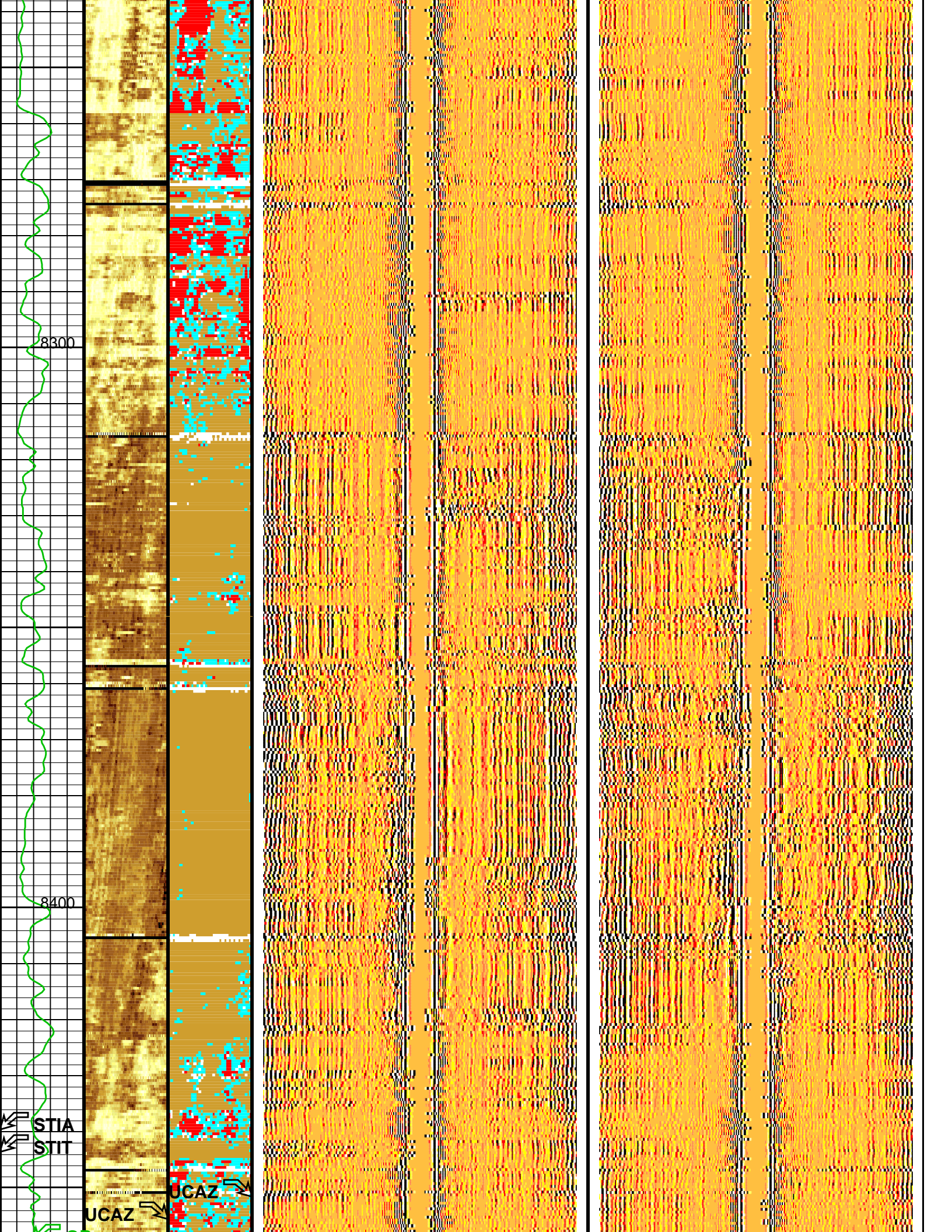


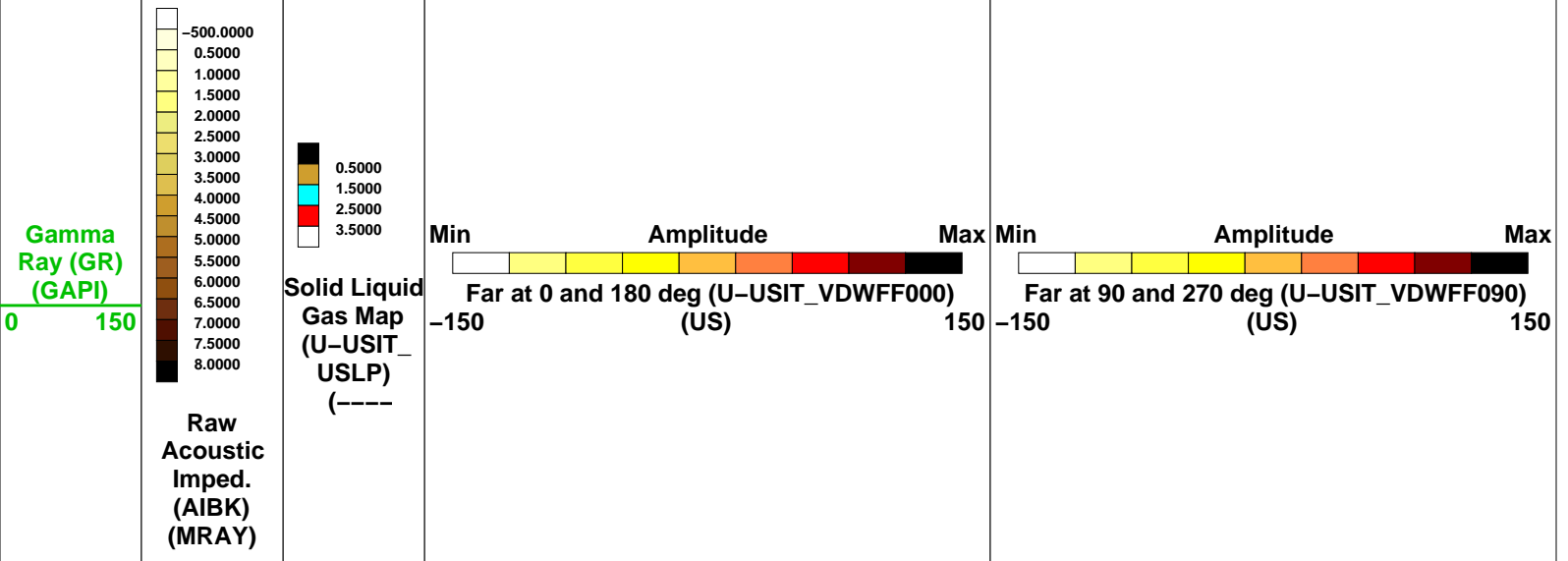
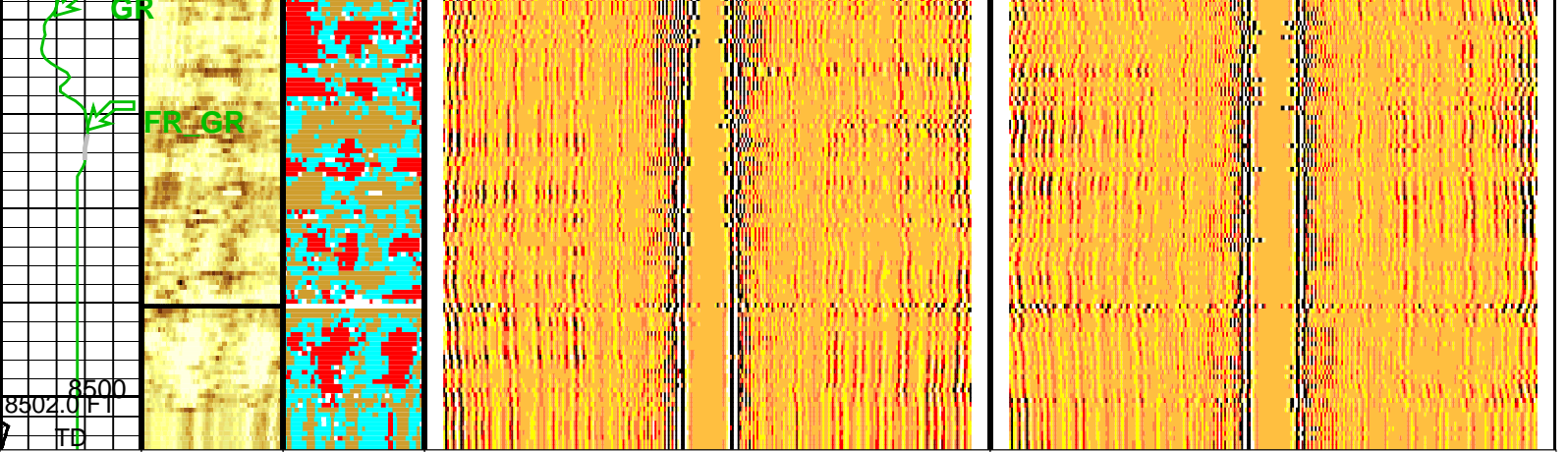












<b>Stuck Stretch (STIT)</b>	0 (F) 50
<b>Cable Drag From D4T to STIT</b>	
<b>Tool/Tot. Drag From D4T to STIA</b>	

### Parameters

DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	195 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	50 V
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD
IMAR	Image Rotation	OFF
MW	Mud Weight	8.4 LB/G
RCOD	Reference Calibrator Outer Diameter	7 IN
RCSO	Reference Calibrator Standoff	1.1811 IN
RCTH	Reference Calibrator Thickness	0.2952 IN
TCUB	T^3 Processing Level	Vax_Loop
THDH	Maximum Search Thickness (percentage of nominal)	130
THDL	Minimum Search Thickness (percentage of nominal)	70
THDP	Thickness Detection Delay	Fundamental

THDP	Thickness Detection Policy	Fundamental	0.362	IN
THNO	Nominal Thickness of Casing	ULTRA_LIGHT	0	MRAY
U-USIT_CEMT	USIT Cement Type			
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance			
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT		
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY		
U-USIT_OCDI	USIT Outer Casing Diameter		0	IN
U-USIT_OCSH	USIT Outer Casing Shoe		0	FT
U-USIT_OCWE	USIT Outer Casing Weight		0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing		YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning		NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking		NO	
U-USIT_TIEP	IBC Third Interface Echo Policy		BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers		BOTH	
U-USIT_U3WE	Third Interface Echo Window End		110	US
U-USIT_UBTP	USIT Bottom Transducer Position		UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset		-1	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap		
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_B		
U-USIT_UTAN	USIT Transducer Angles	33_DEG		
UMAO	USIT Measurement Angular Offset		-10	DEG
USTO	Ultrasonic Time Offset		-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch		
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF		
VCAS	Ultrasonic Transversal Velocity in Casing		51.4	US/F
WLEN	T^3 Processing Length		21.7078	US
ZCAS	Acoustic Impedance of Casing		46.25	MRAY
ZINI	Initial Estimate of Cement Impedance		-1	MRAY
ZMUD	Acoustic Impedance of Mud		1.88	MRAY
ZTCM	Acoustic Impedance Threshold for Cement		2.45	MRAY
ZTGS	Acoustic Impedance Threshold for Gas		0.3	MRAY
	STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label		TDL	
STKT	STI Stuck Threshold		2.5	FT
TDD	Total Depth - Driller		8708.00	FT
TDL	Total Depth - Logger		8502.00	FT
	System and Miscellaneous			
BS	Bit Size		9.875	IN
CWEI	Casing Weight		26.00	LB/F
DO	Depth Offset for Playback		0.0	FT
PP	Playback Processing		RECOMPUTE	

Format: USI\_IBC\_VDL\_WIDE Vertical Scale: 5" per 100' Graphics File Created: 29-Apr-2010 04:44

**OP System Version: 17C0-154**

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

**Input DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_013LUP	FN:12	PRODUCER	29-Apr-2010 00:59	8505.5 FT	100.0 FT
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**Output DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_022PUP	FN:21	PRODUCER	29-Apr-2010 04:44		
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MAXIS Field Log

Company: ExxonMobil Production Corp Well: PCU 297-11C3

**Input DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_013LUP	FN:12	PRODUCER	29-Apr-2010 00:59	8505.5 FT	100.0 FT
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OP System Version: 17C0-154

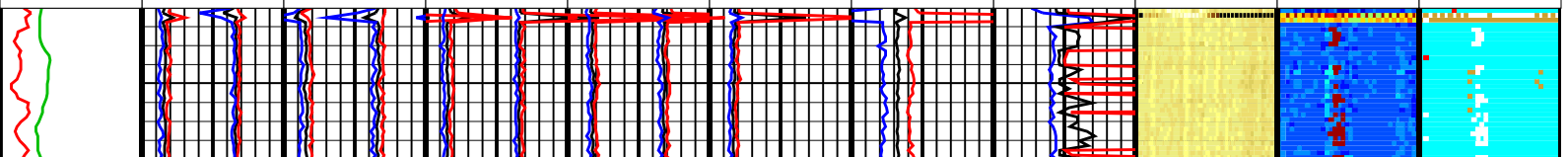
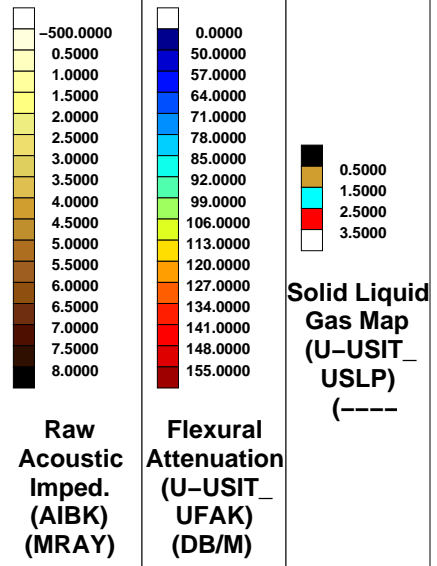
USIT-D  
DTC-H

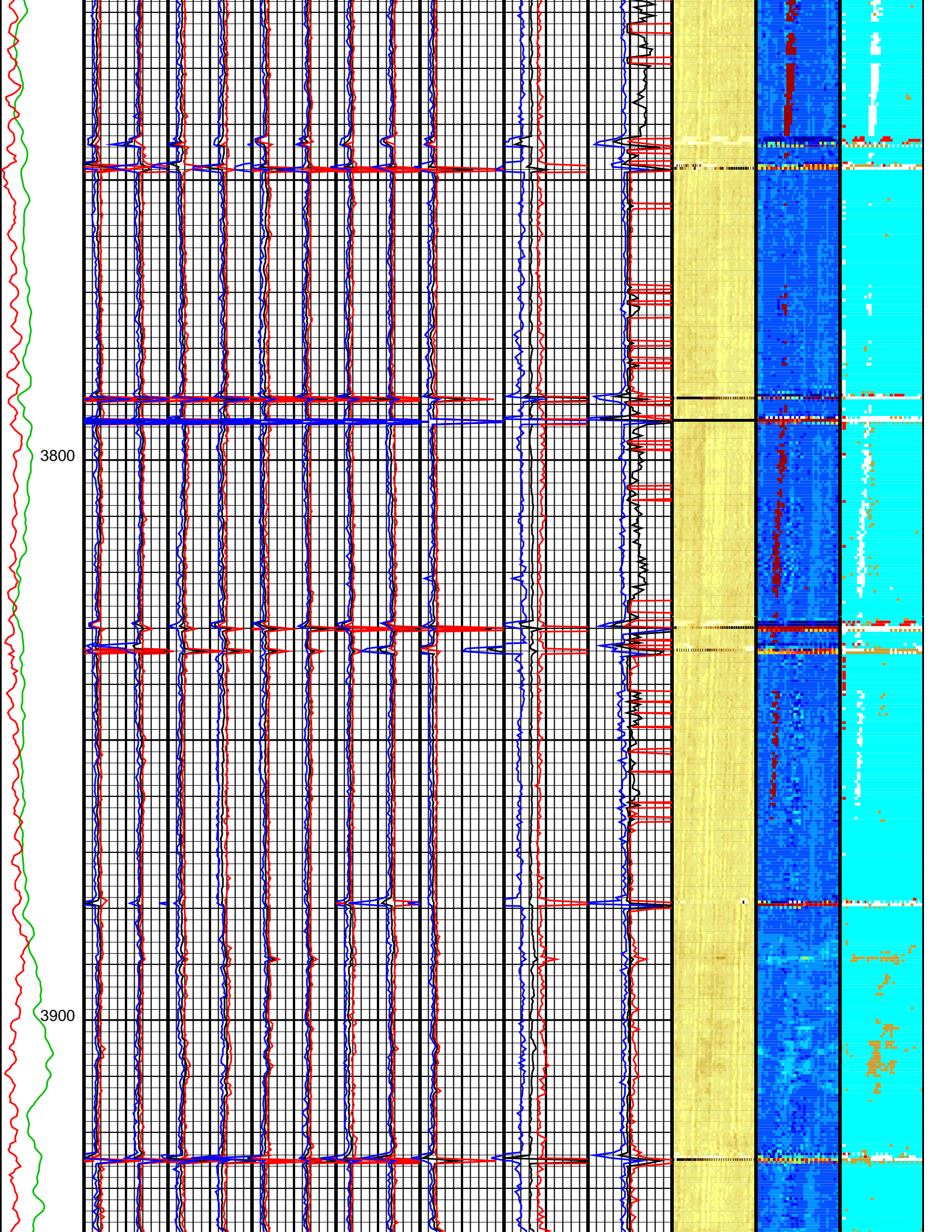
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17C0-154

HILTH-FTB

17C0-154

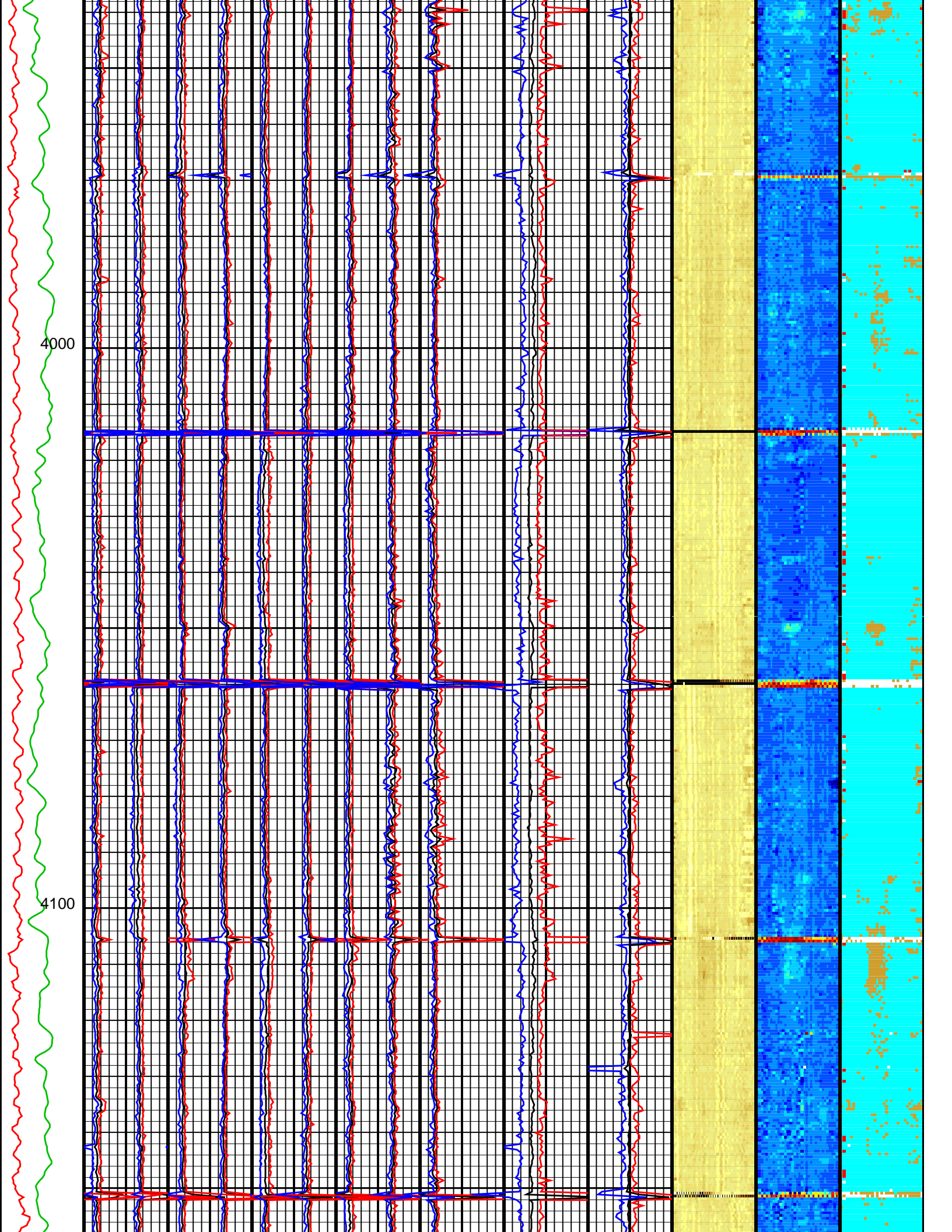
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	Minimum Acoustic Impedance #1 (MIN_AI1) (MRAY)	Minimum Acoustic Impedance #3 (MIN_AI3) (MRAY)	Minimum Acoustic Impedance #5 (MIN_AI5) (MRAY)	Minimum Acoustic Impedance #7 (MIN_AI7) (MRAY)			
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	Maximum Acoustic Impedance #2 (MAX_AI2) (MRAY)	Maximum Acoustic Impedance #4 (MAX_AI4) (MRAY)	Maximum Acoustic Impedance #6 (MAX_AI6) (MRAY)	Maximum Acoustic Impedance #8 (MAX_AI8) (MRAY)			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
	Maximum Acoustic Impedance #1 (MAX_AI1) (MRAY)	Maximum Acoustic Impedance #3 (MAX_AI3) (MRAY)	Maximum Acoustic Impedance #5 (MAX_AI5) (MRAY)	Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)	Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)	Maximum of AI (AIMX) (MRAY)	Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150
Gamma Ray (GR) (GAPI)	Average Acoustic Impedance #2 (AV_AI2) (MRAY)	Average Acoustic Impedance #4 (AV_AI4) (MRAY)	Average Acoustic Impedance #6 (AV_AI6) (MRAY)	Average Acoustic Impedance #8 (AV_AI8) (MRAY)	Maximum Acoustic Impedance #9 (MAX_AI9) (MRAY)	Minimum of AI (AIMN) (MRAY)	Average Flexural Attenuation (U-USIT_UFAV) (DB/M)
0 150	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15	0 7.5	0 150
Eccent. (ECCE) (IN) 0.5	Average Acoustic Impedance #1 (AV_AI1) (MRAY)	Average Acoustic Impedance #3 (AV_AI3) (MRAY)	Average Acoustic Impedance #5 (AV_AI5) (MRAY)	Average Acoustic Impedance #7 (AV_AI7) (MRAY)	Average Acoustic Impedance #9 (AV_AI9) (MRAY)	Average of AI (AIAV) (MRAY)	Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)
0 150	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150

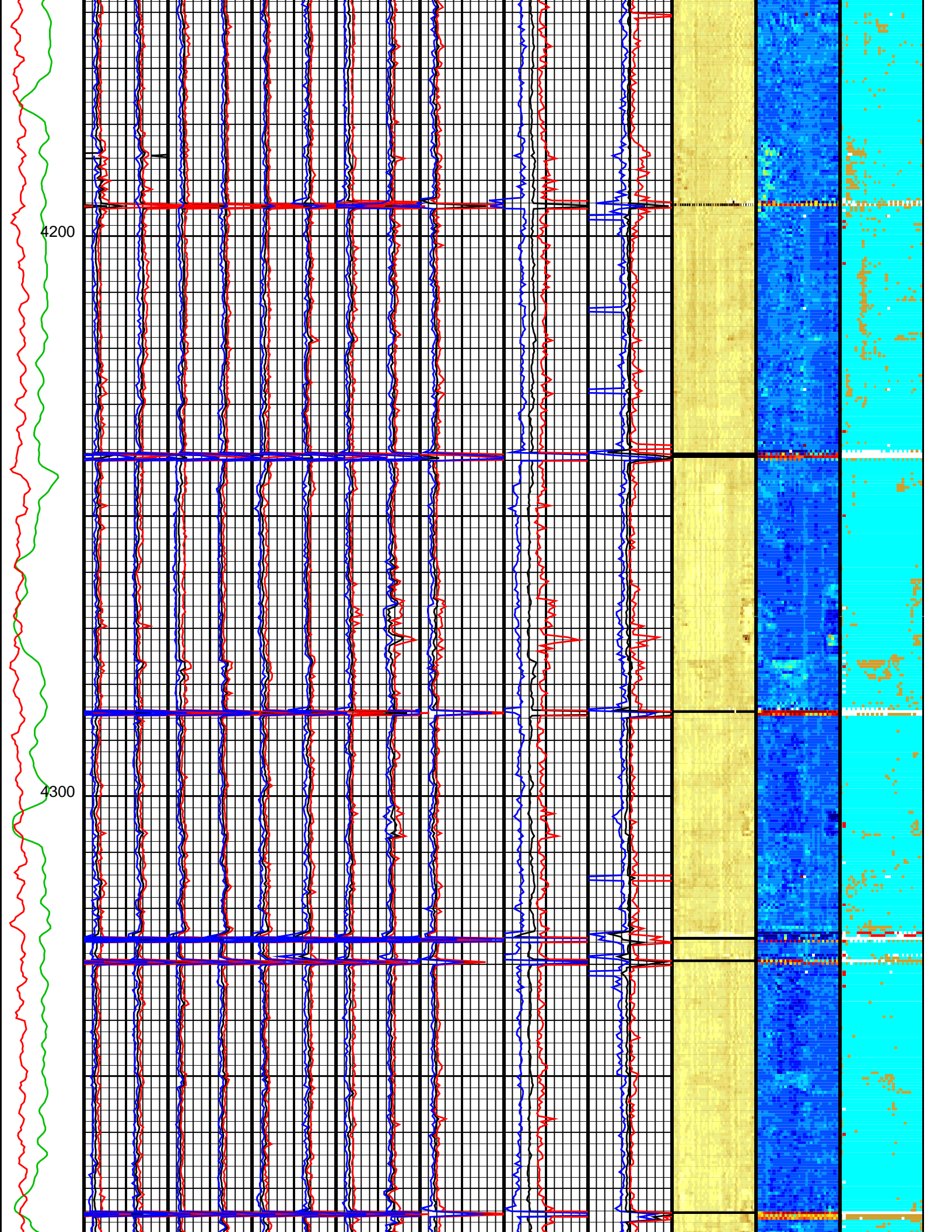


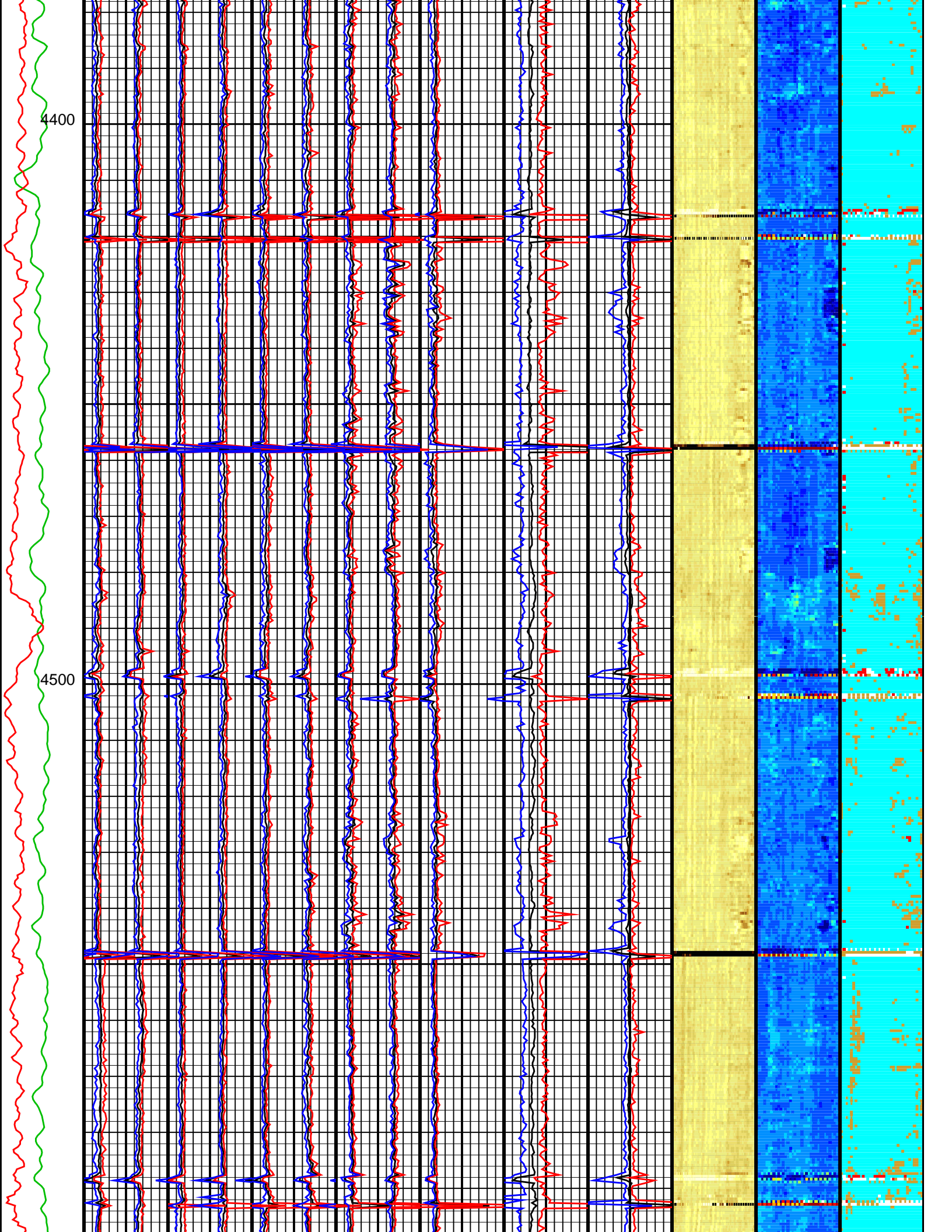


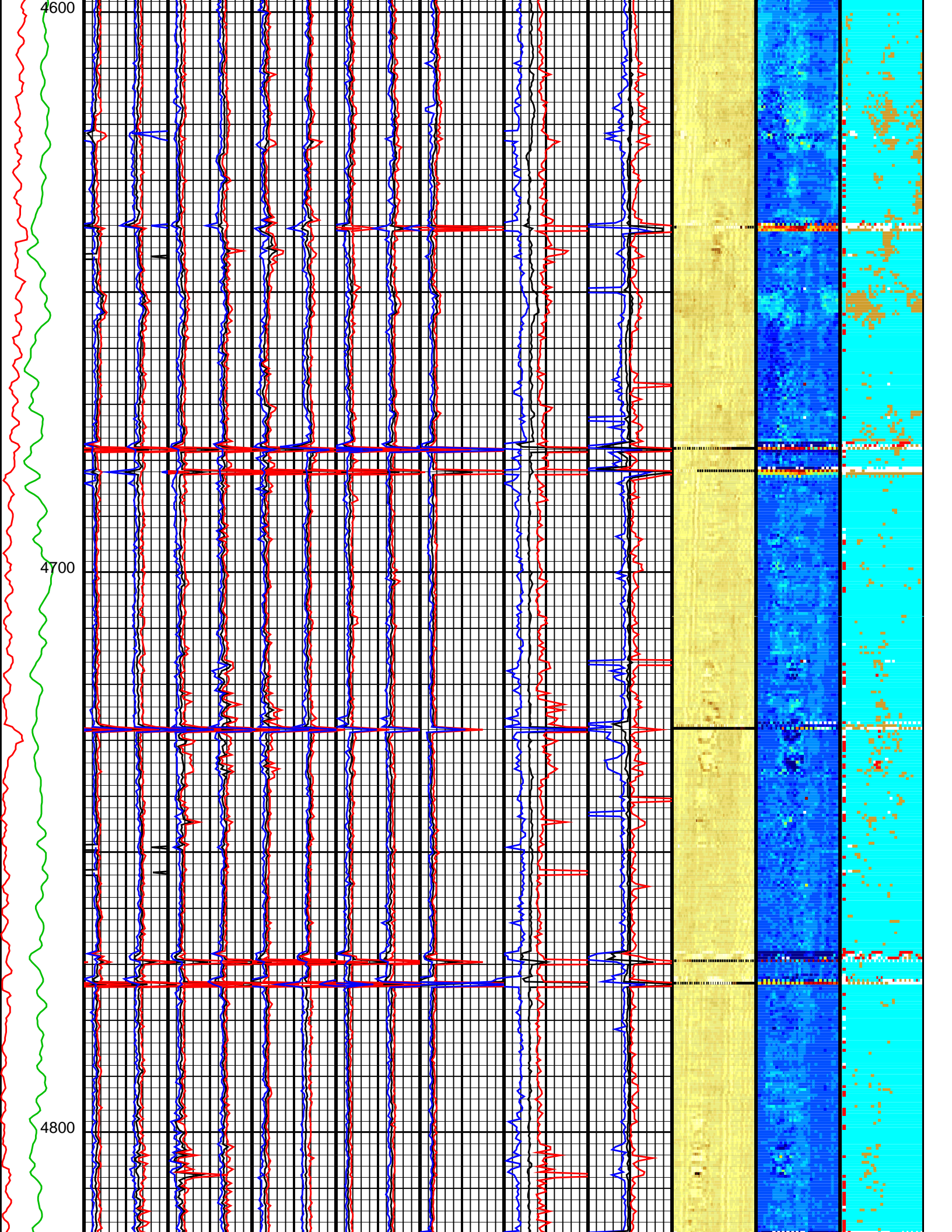
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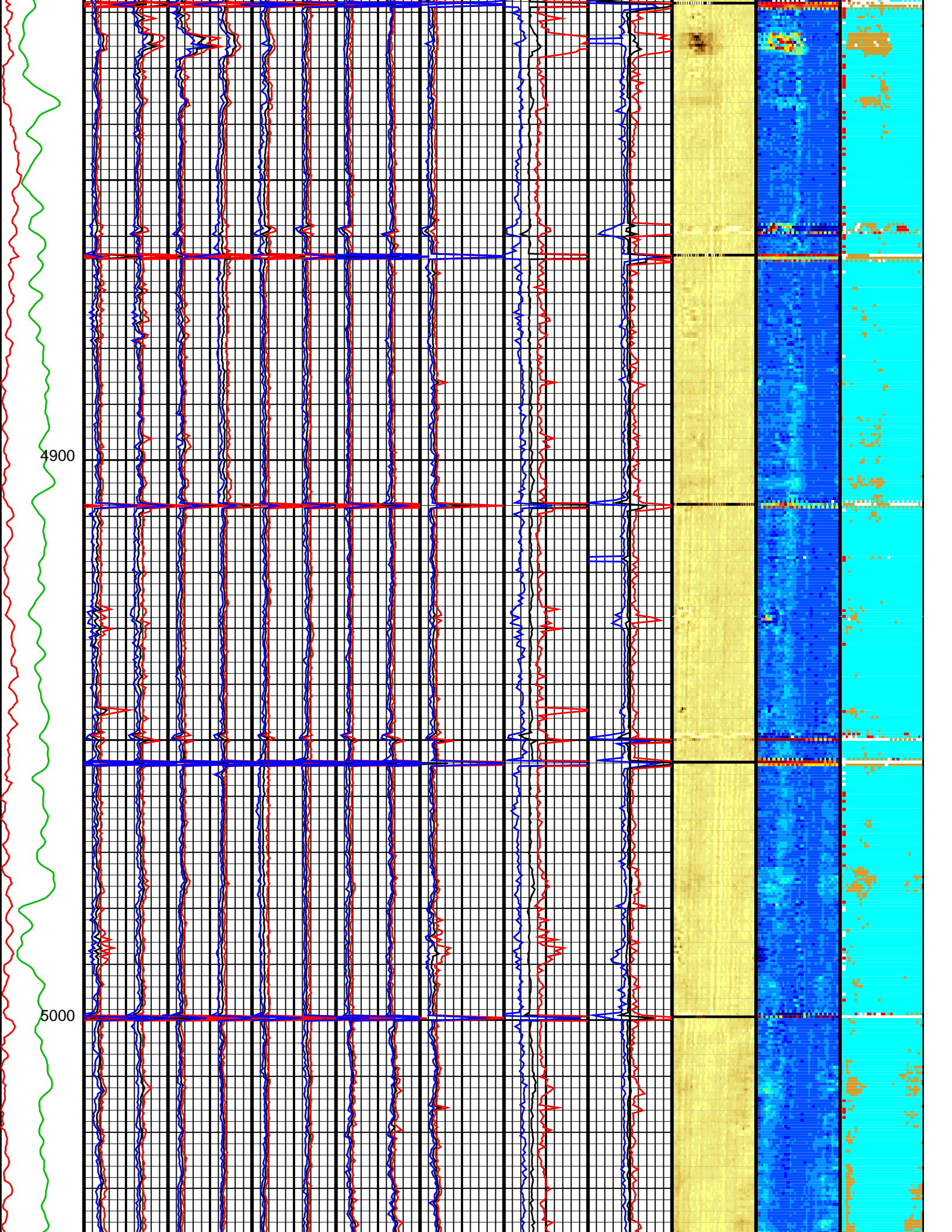
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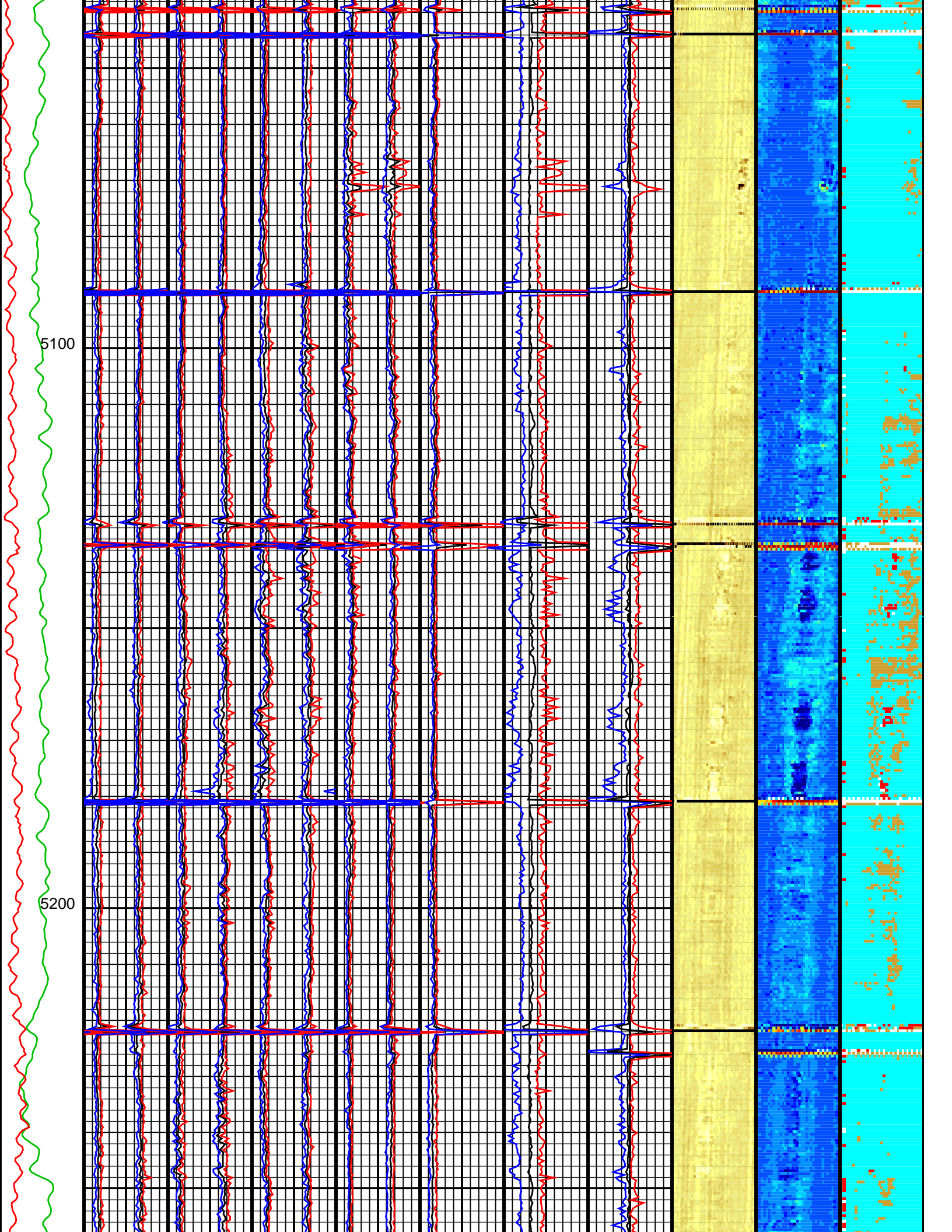


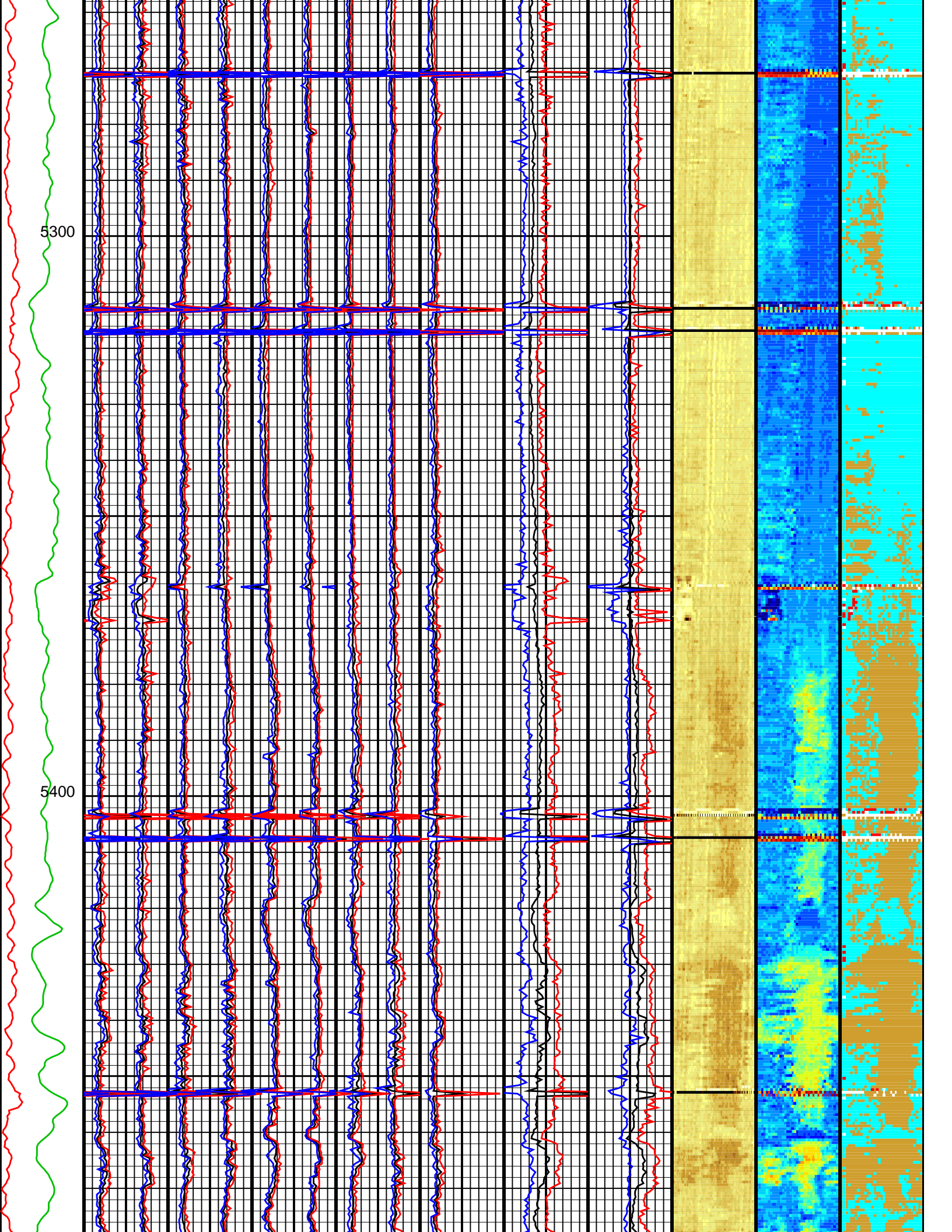


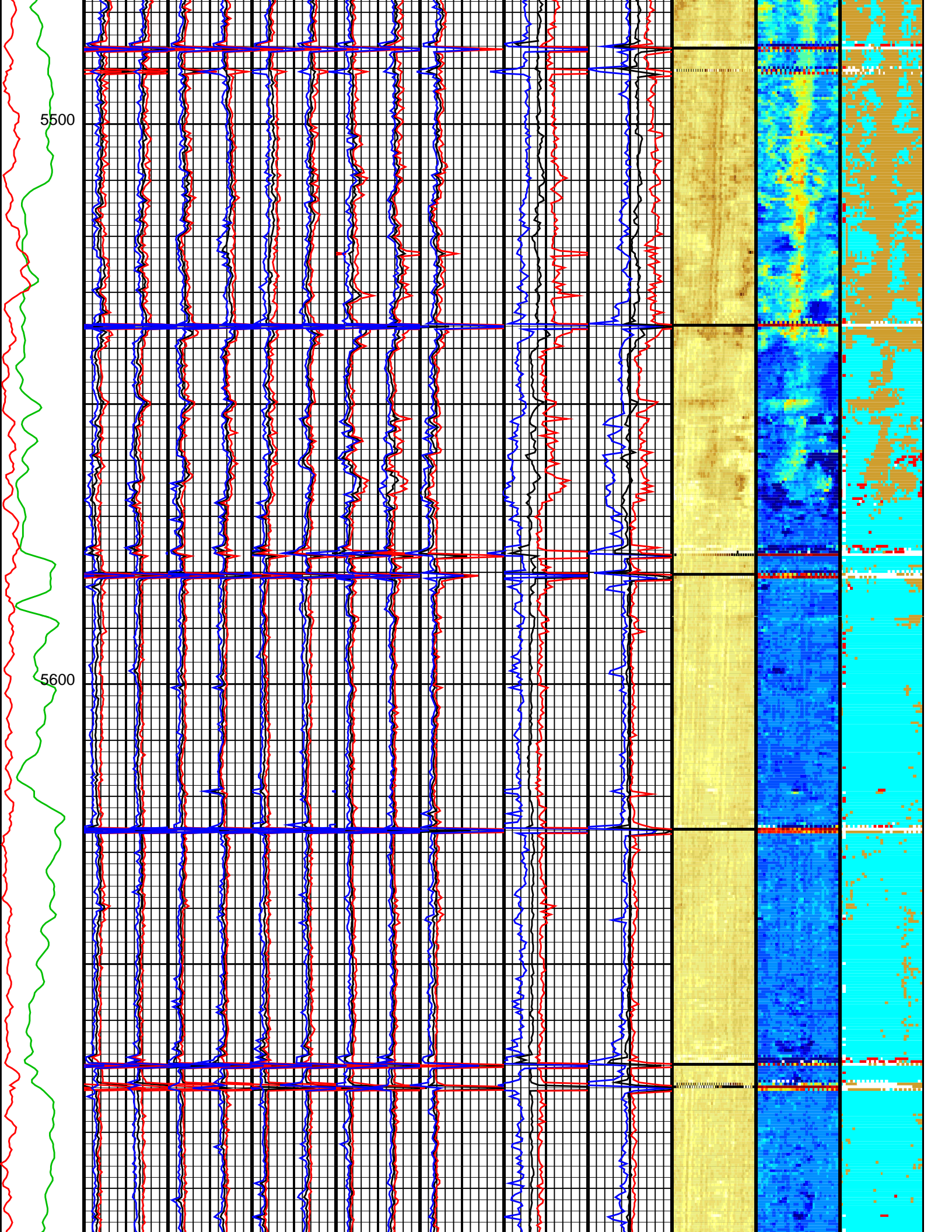


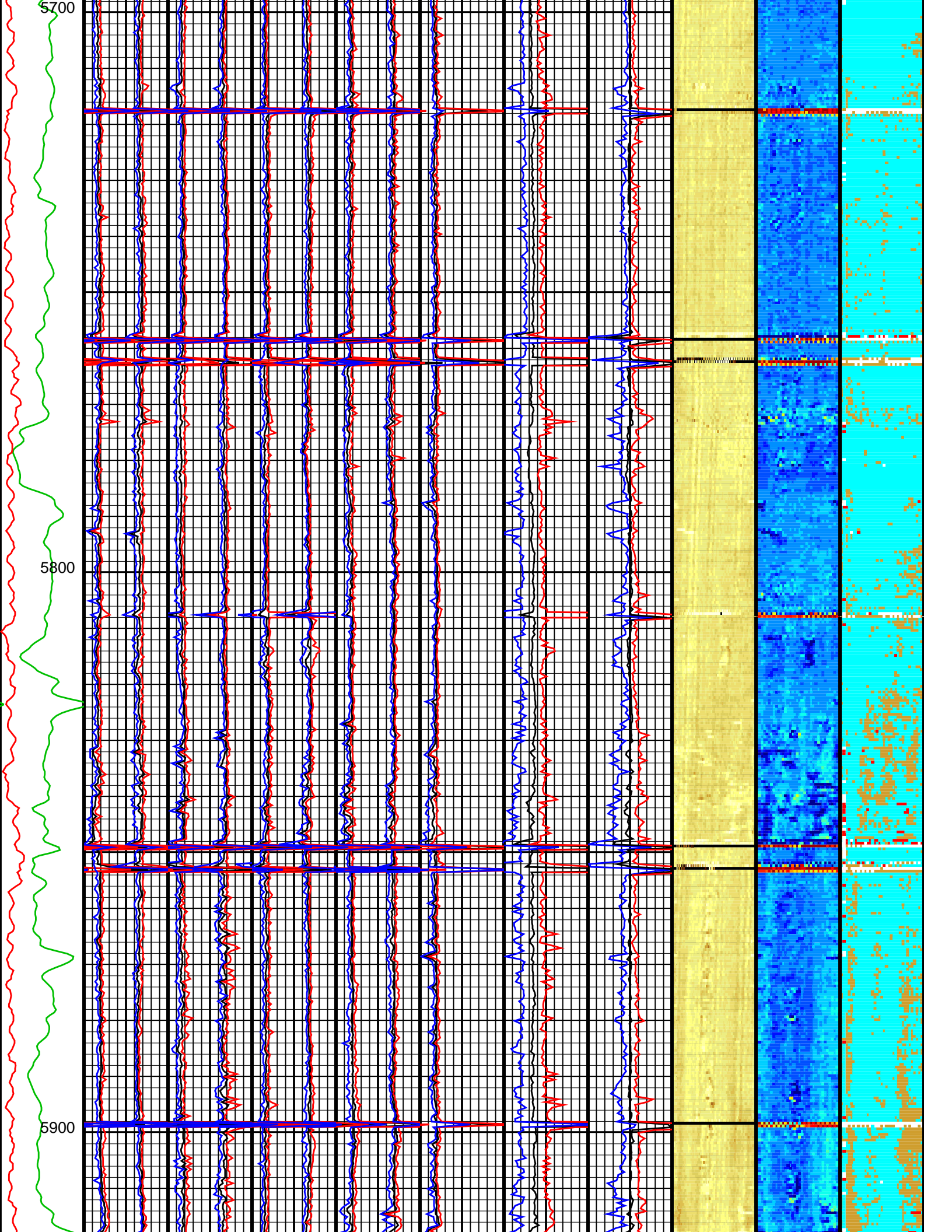


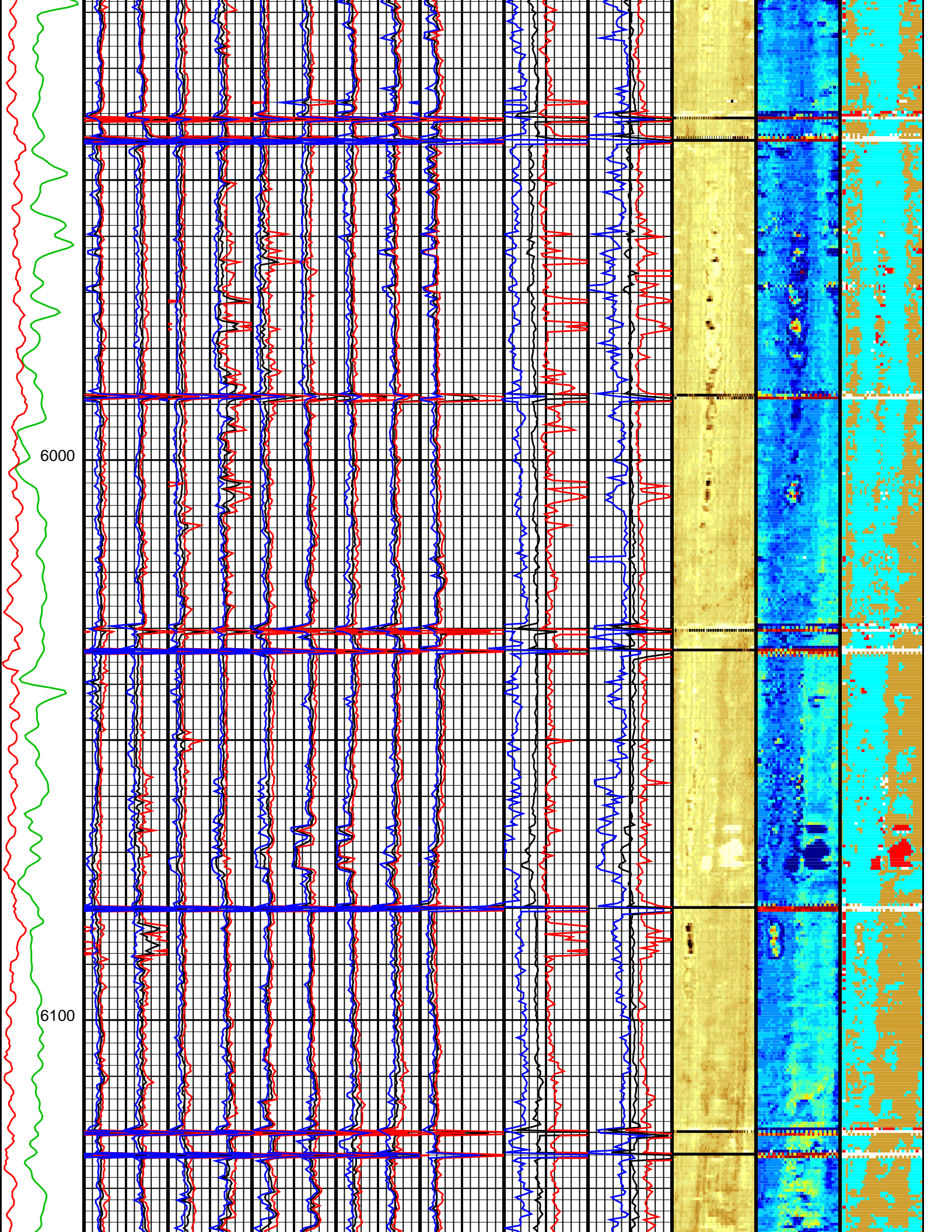


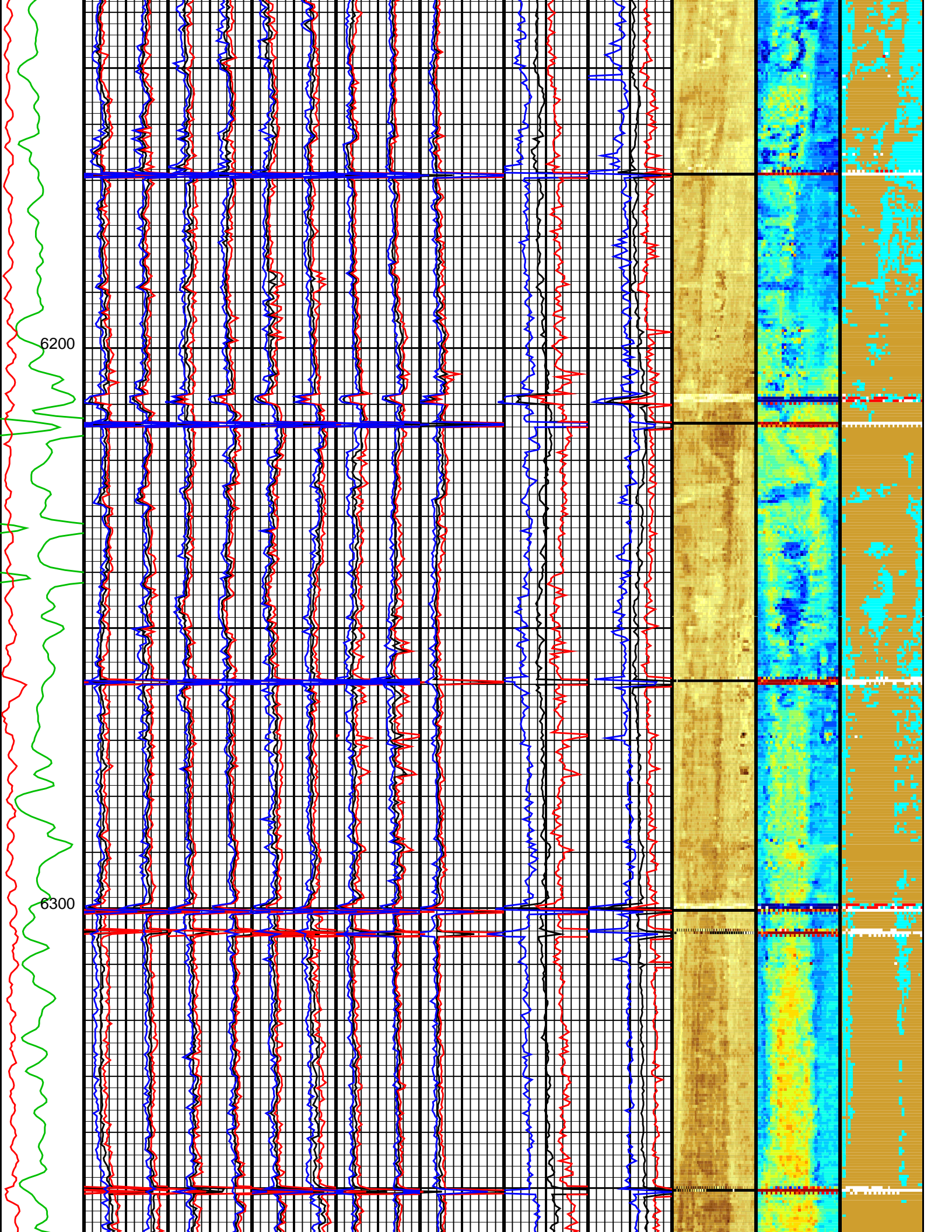


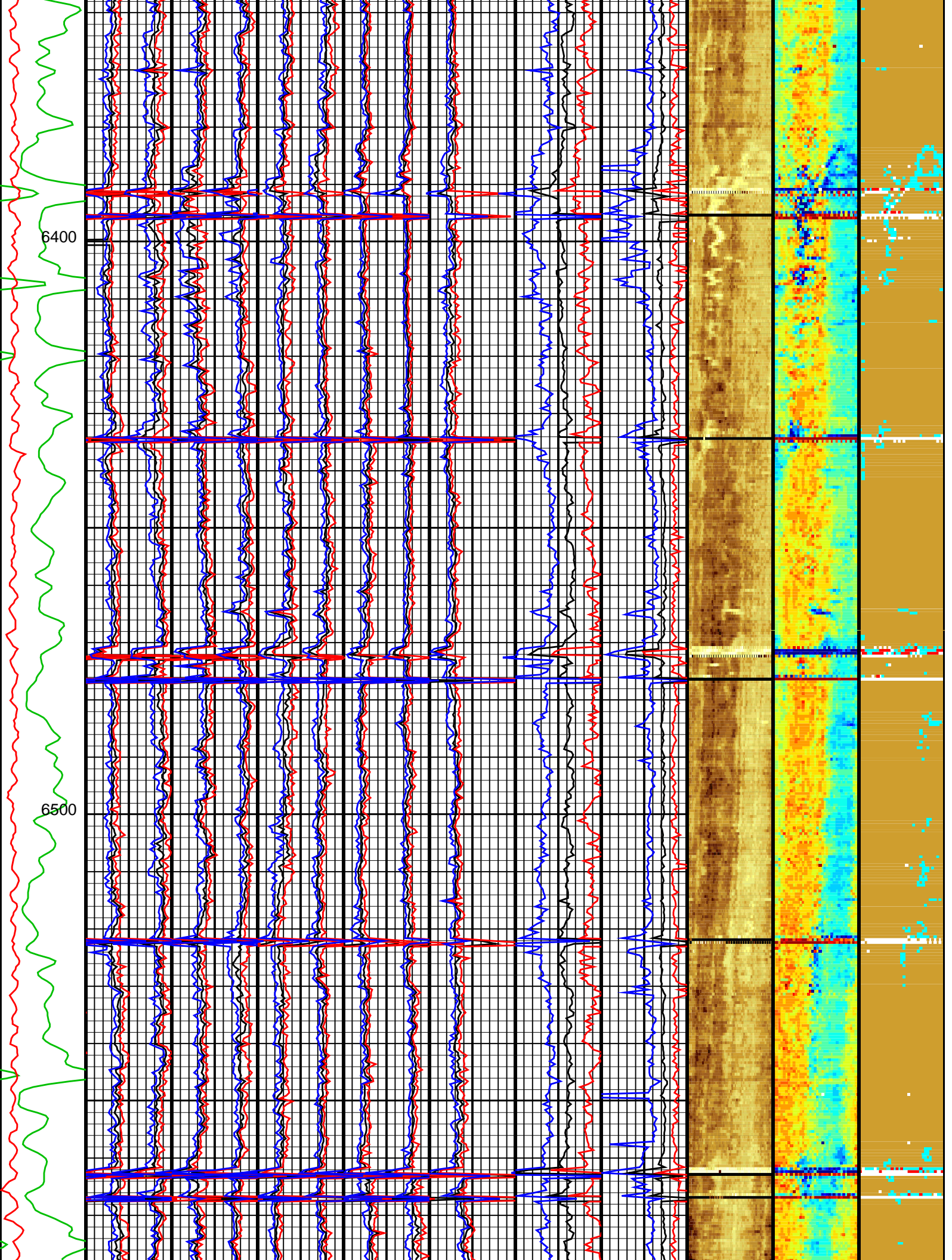


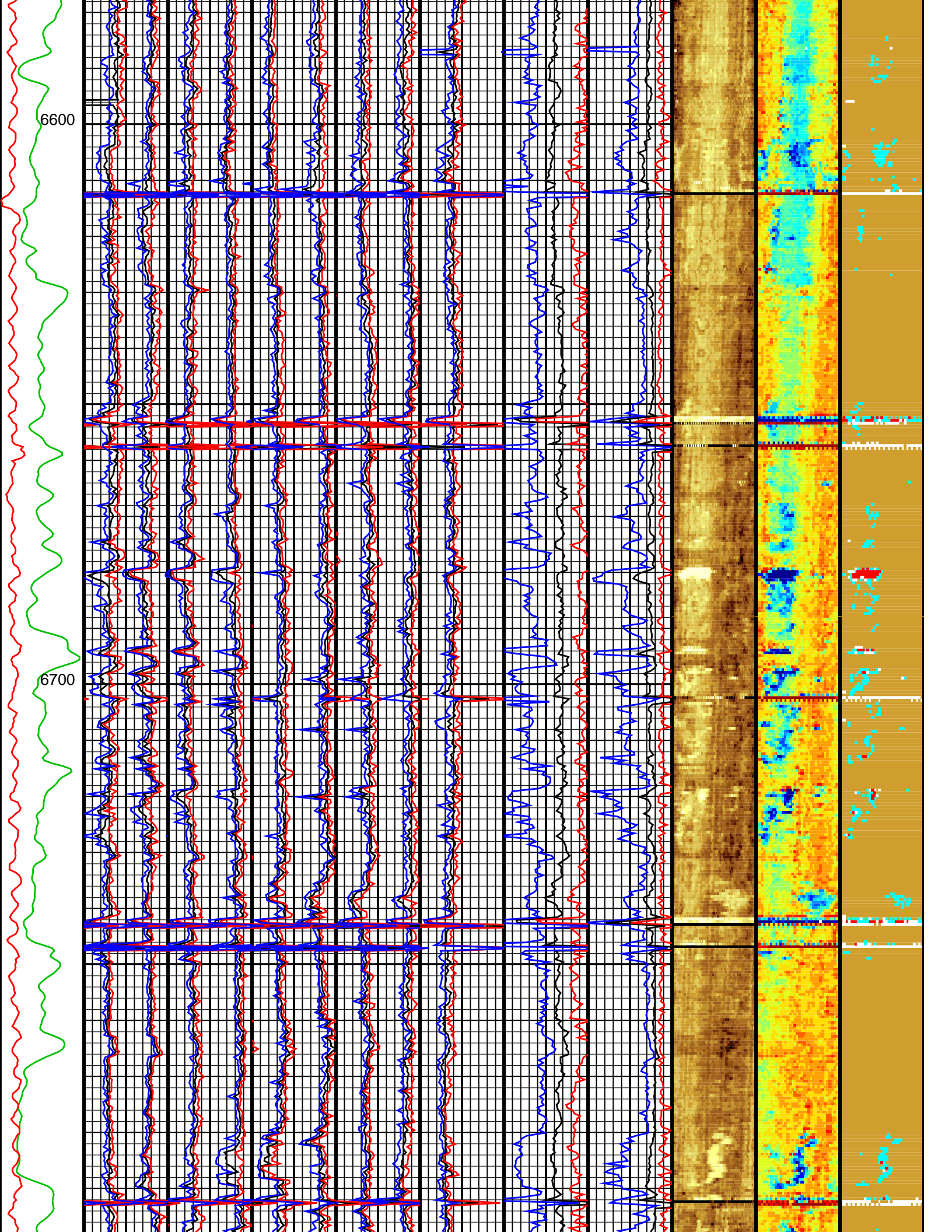


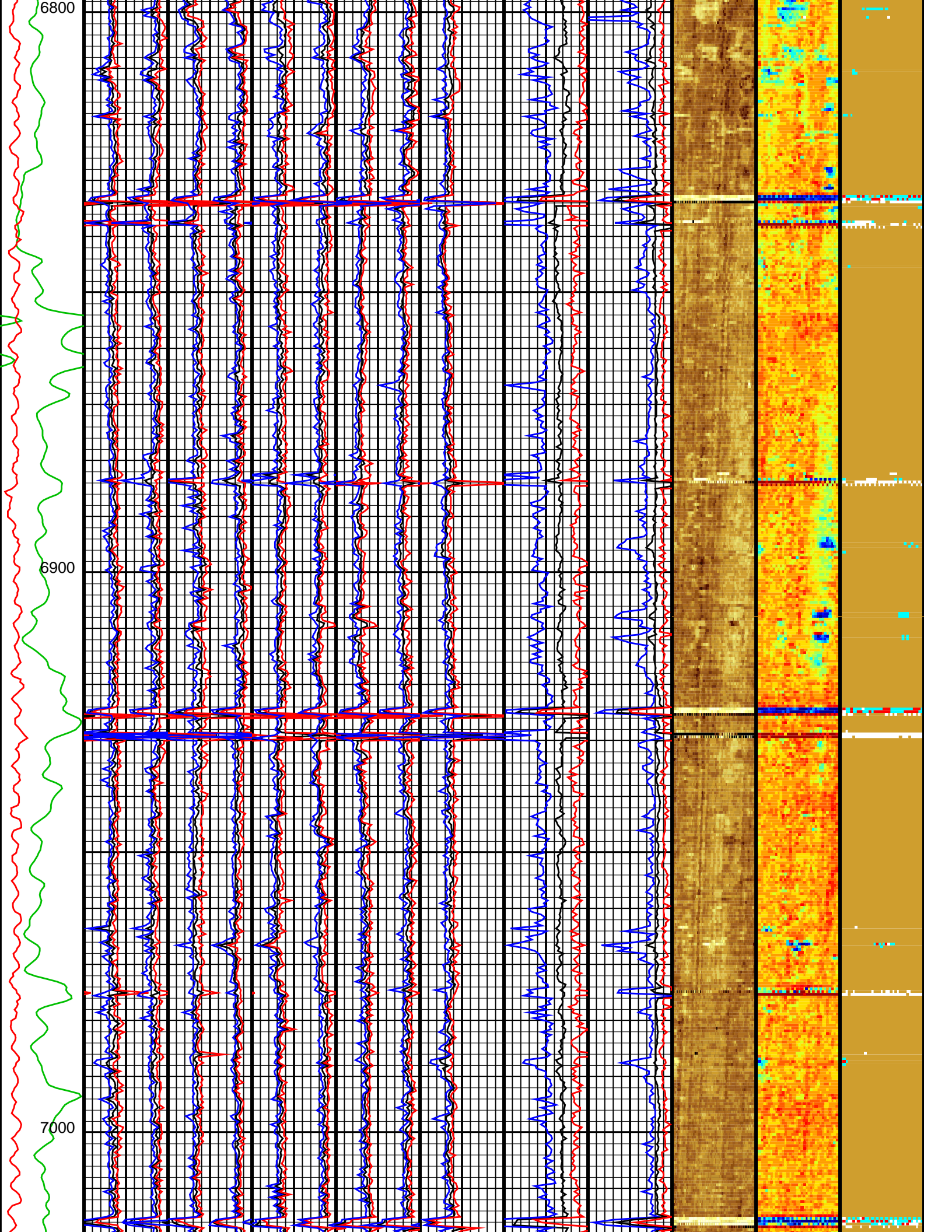


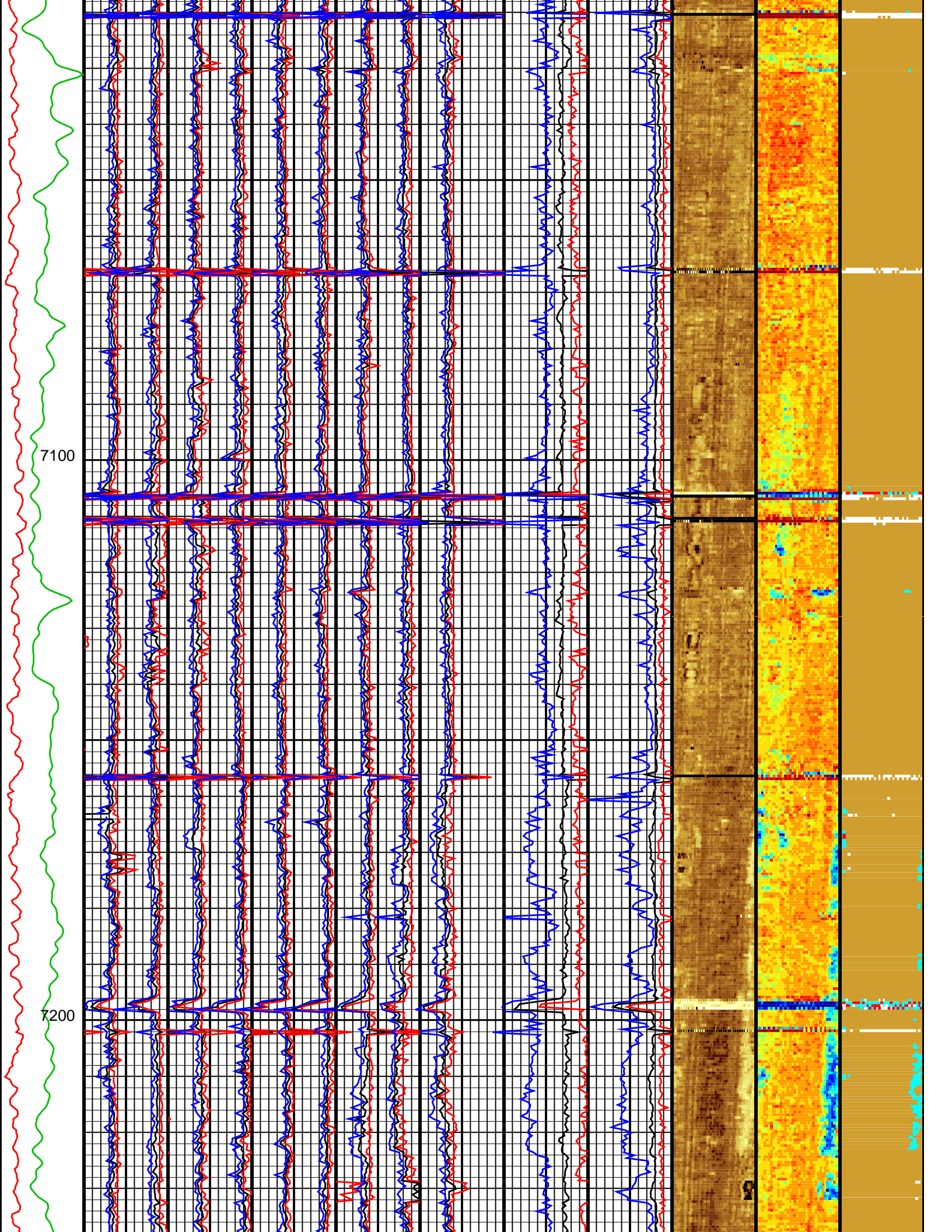






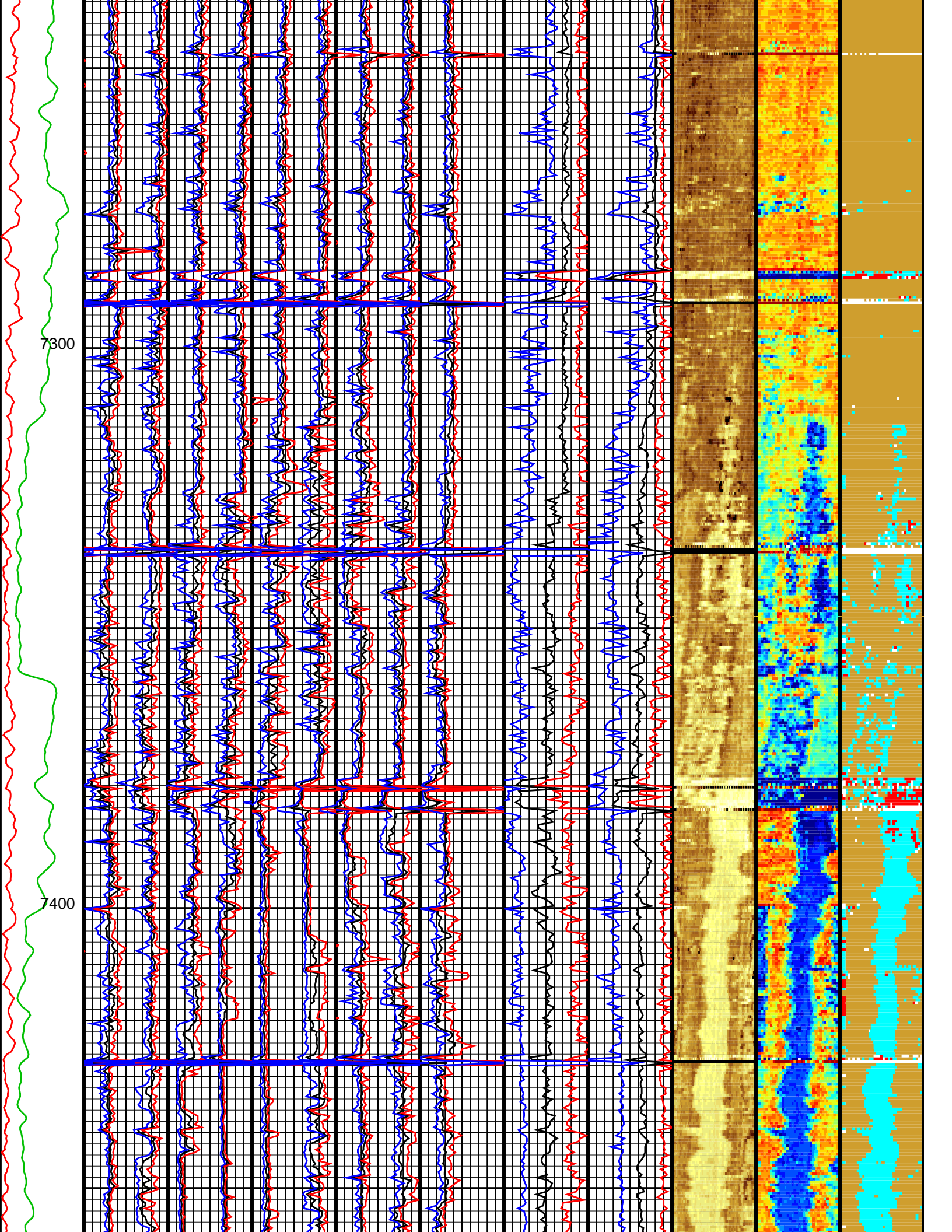


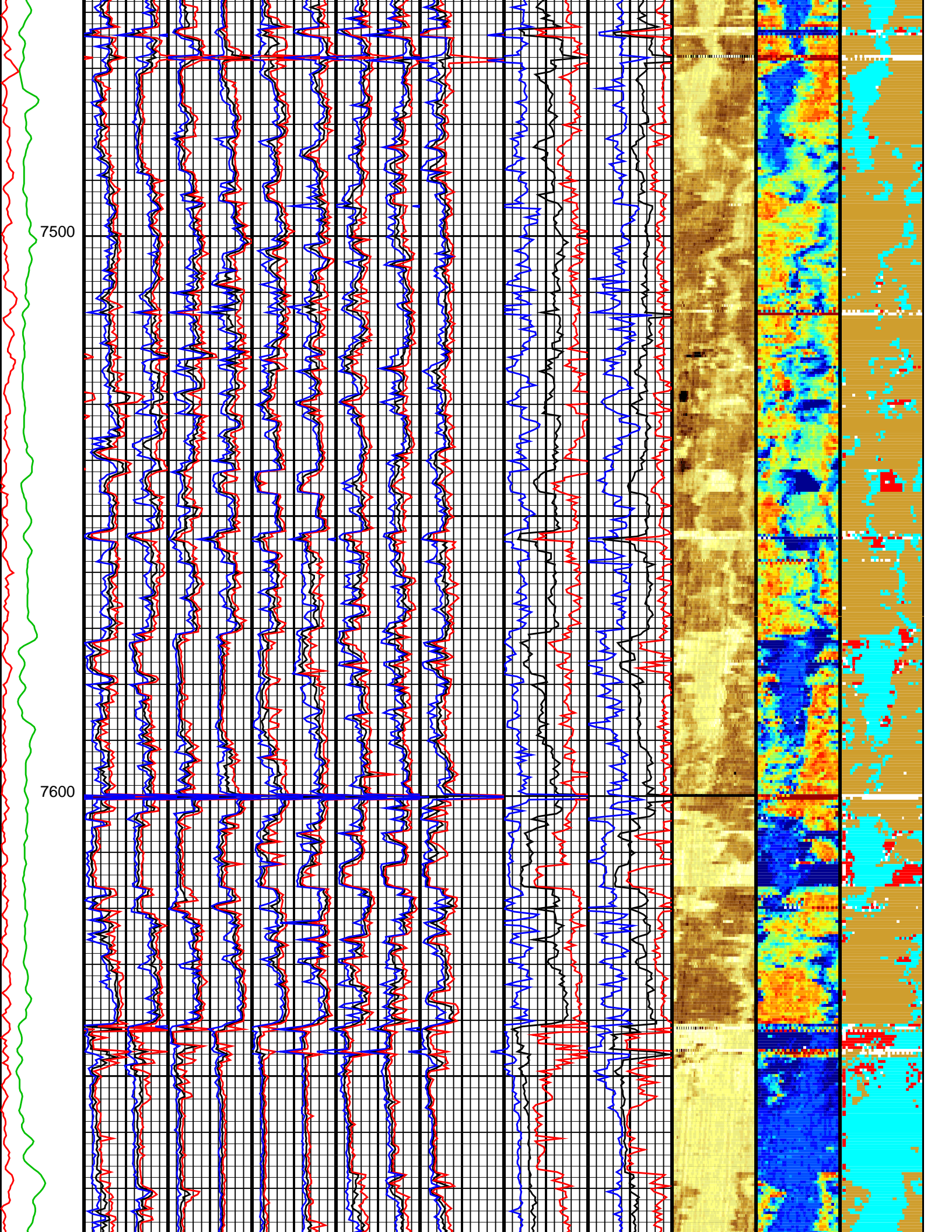


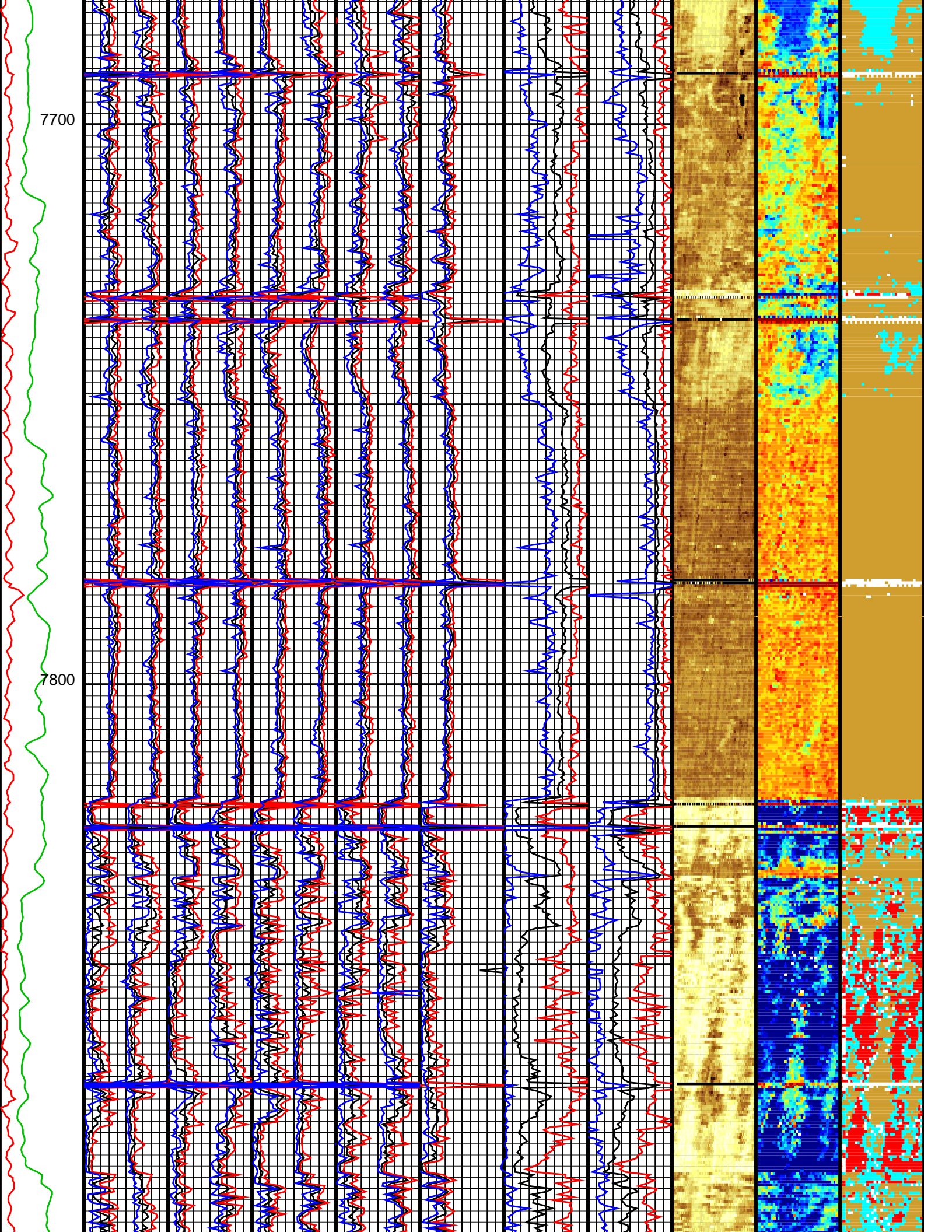


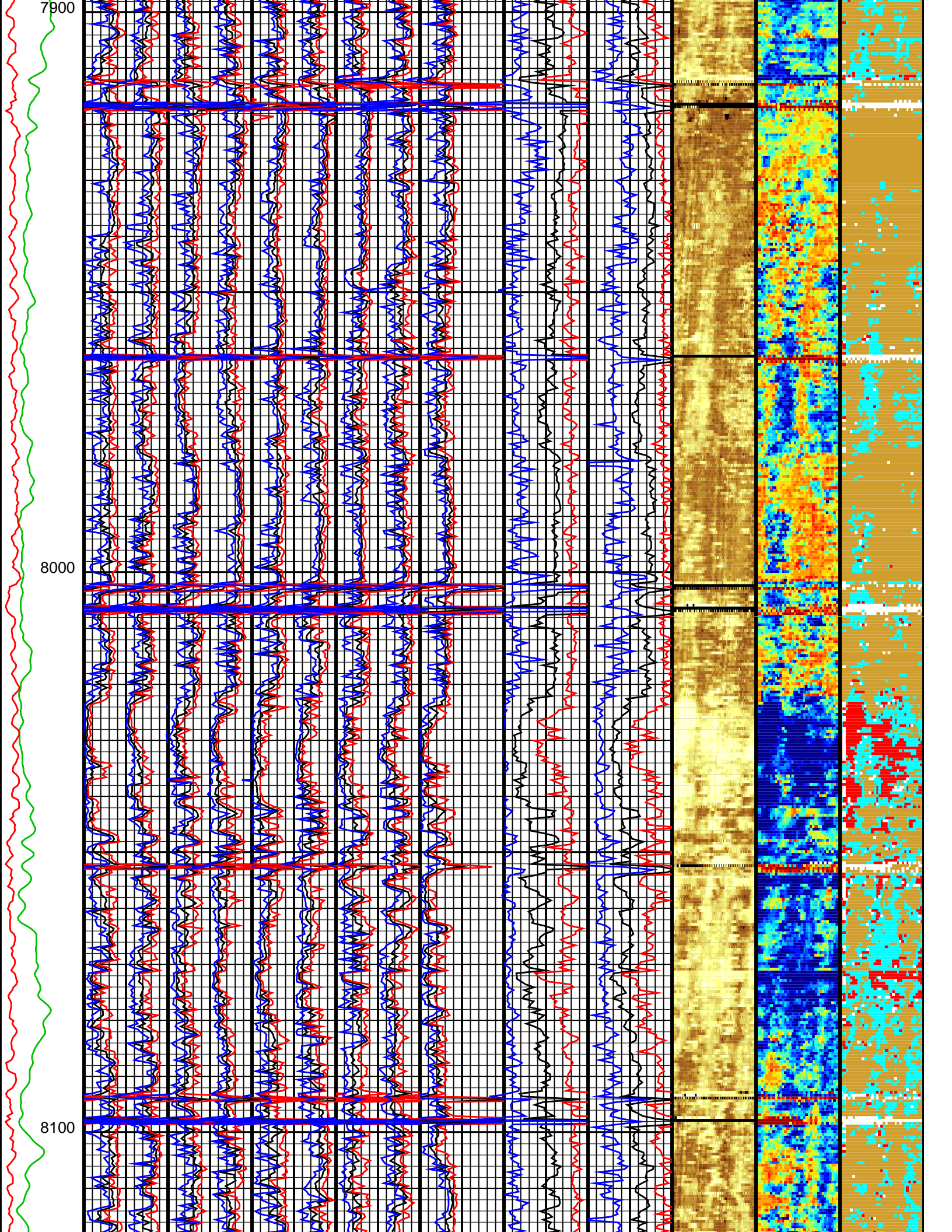
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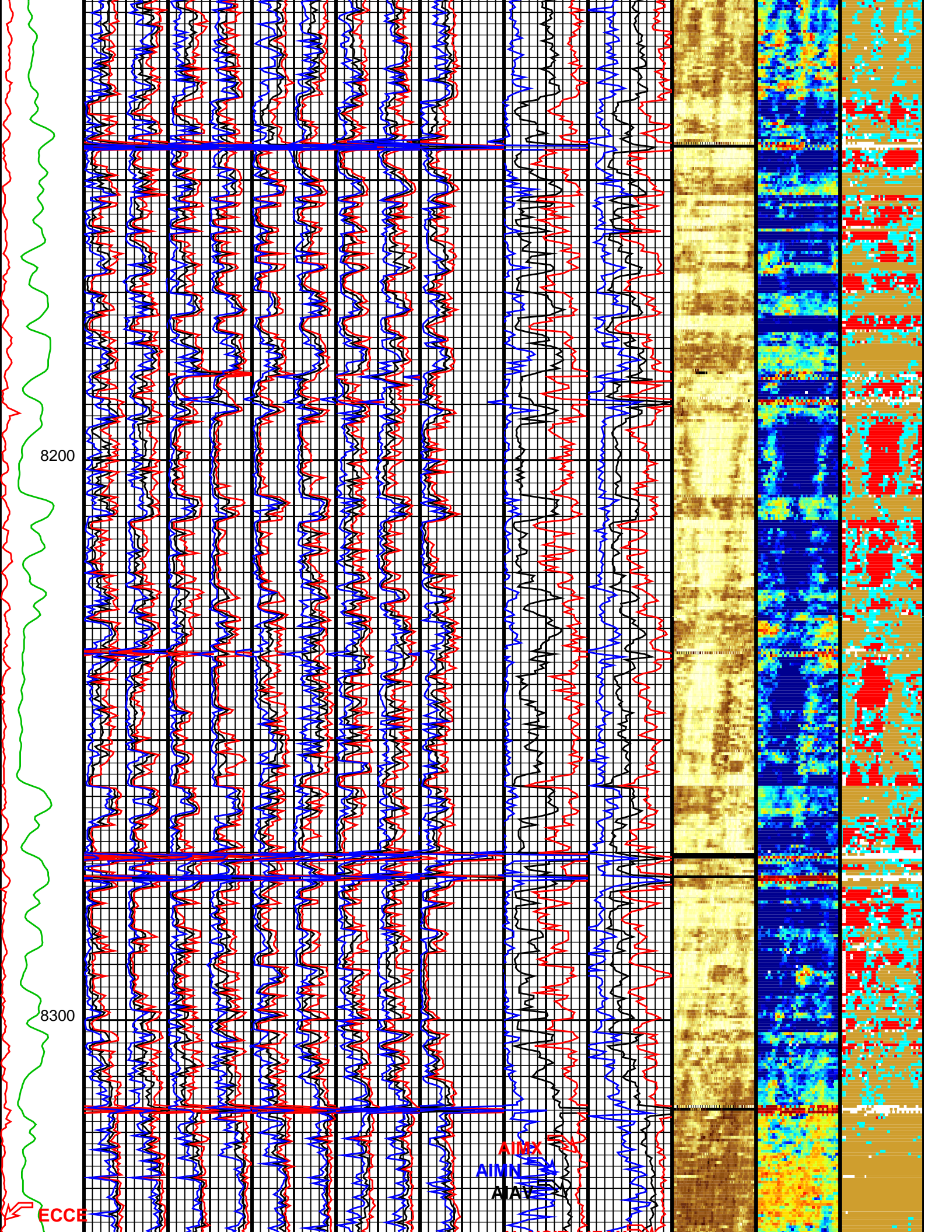
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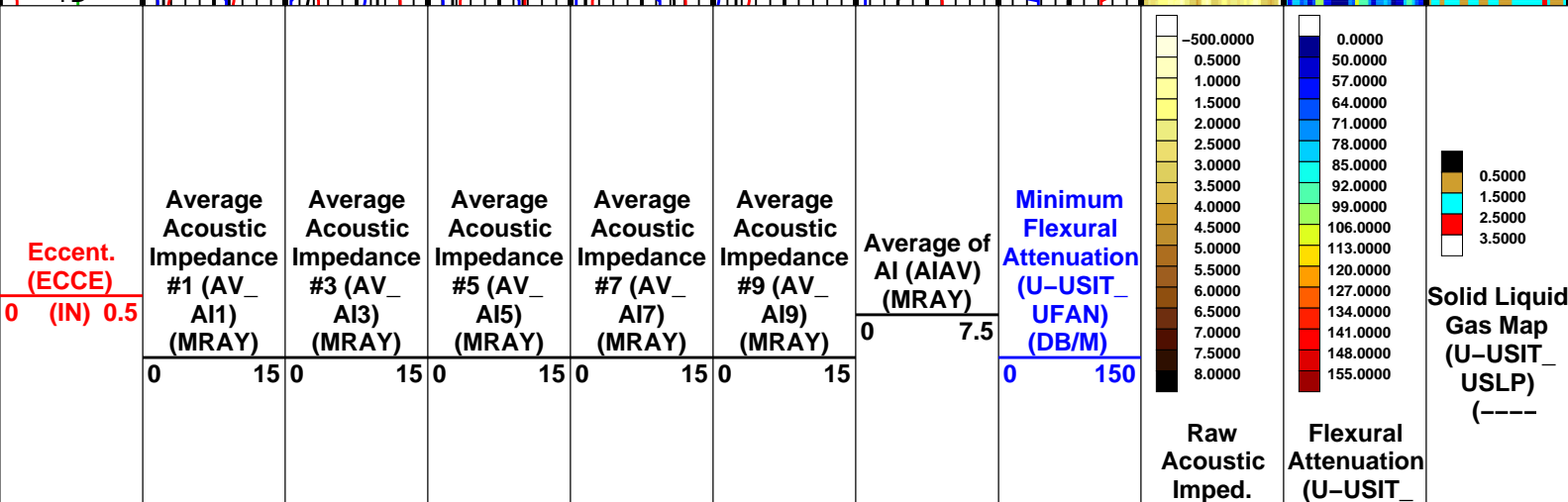
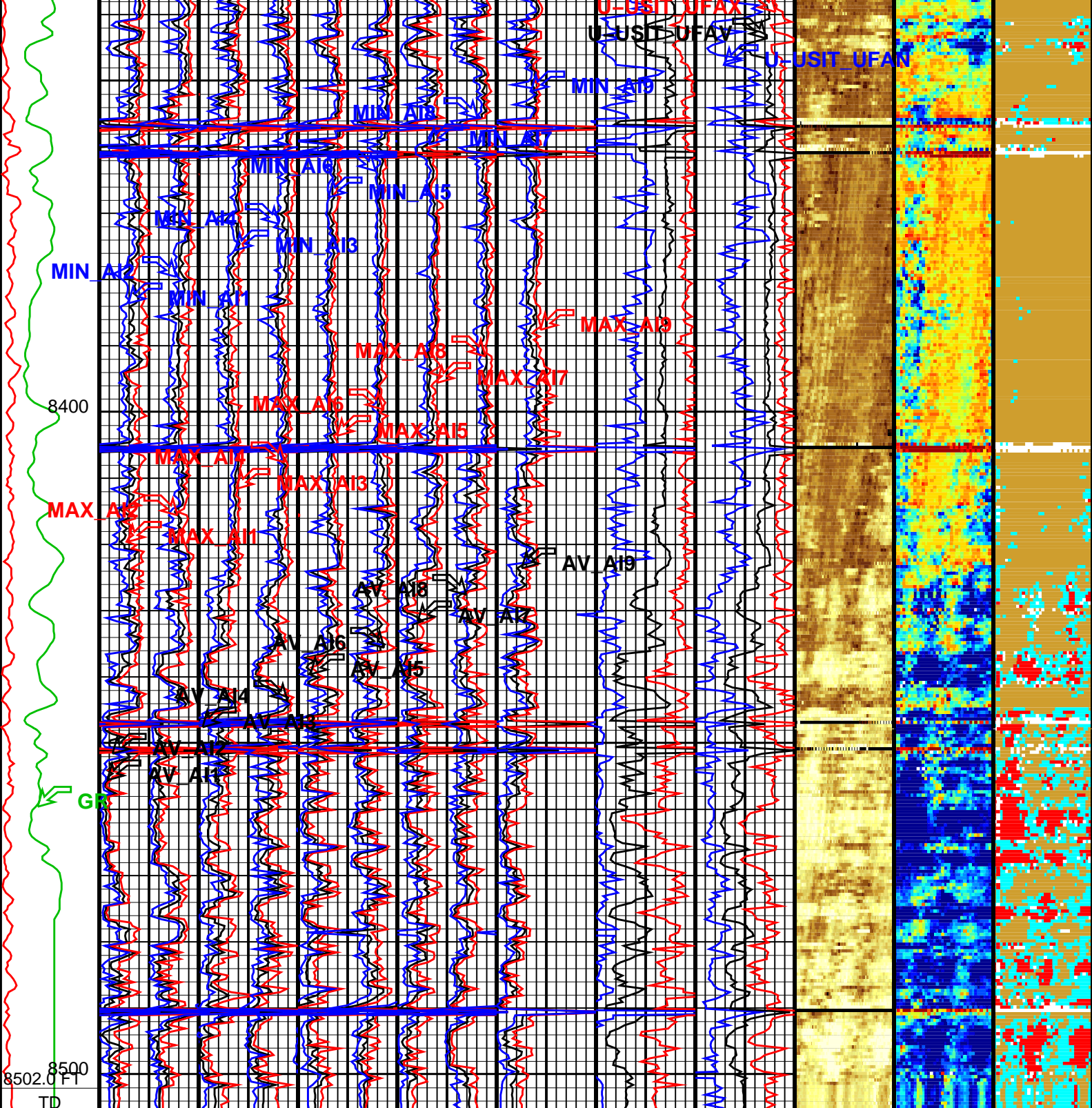


8200

8300

ECCE

AIMEX  
AIMEX  
AIMEX



								(AIBK) (MRAY)	UFAK) (DB/M)
<b>Gamma Ray (GR) (GAPI)</b>	Average Acoustic Impedance #2 (AV_AI2) (MRAY)	Average Acoustic Impedance #4 (AV_AI4) (MRAY)	Average Acoustic Impedance #6 (AV_AI6) (MRAY)	Average Acoustic Impedance #8 (AV_AI8) (MRAY)	Maximum Acoustic Impedance #9 (MAX_AI9) (MRAY)	Minimum of AI (AIMN) (MRAY)	Average Flexural Attenuation (U-USIT_UFAV) (DB/M)		
	0 150					0 7.5			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15		0 150		
	Maximum Acoustic Impedance #1 (MAX_AI1) (MRAY)	Maximum Acoustic Impedance #3 (MAX_AI3) (MRAY)	Maximum Acoustic Impedance #5 (MAX_AI5) (MRAY)	Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)	Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)	Maximum of AI (AIMX) (MRAY)	Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)		
	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150		
	Maximum Acoustic Impedance #2 (MAX_AI2) (MRAY)	Maximum Acoustic Impedance #4 (MAX_AI4) (MRAY)	Maximum Acoustic Impedance #6 (MAX_AI6) (MRAY)	Maximum Acoustic Impedance #8 (MAX_AI8) (MRAY)					
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5					
	Minimum Acoustic Impedance #1 (MIN_AI1) (MRAY)	Minimum Acoustic Impedance #3 (MIN_AI3) (MRAY)	Minimum Acoustic Impedance #5 (MIN_AI5) (MRAY)	Minimum Acoustic Impedance #7 (MIN_AI7) (MRAY)					
	0 15	0 15	0 15	0 15					
	Minimum Acoustic Impedance #2 (MIN_AI2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_AI4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_AI6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_AI8) (MRAY)					
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5					

Format: M\_Goodwin Vertical Scale: 5" per 100' Graphics File Created: 29-Apr-2010 04:44

### OP System Version: 17C0-154

USIT-D 17C0-154 HILTH-FTB 17C0-154  
DTC-H 17C0-154

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.  
Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

#### Input DLIS Files

DEFAULT USI\_TLD\_MCFL\_CNL\_013LUP FN:12 PRODUCER 29-Apr-2010 00:59 8505.5 FT 100.0 FT

#### Output DLIS Files

DEFAULT USI\_TLD\_MCFL\_CNL\_022PUP FN:21 PRODUCER 29-Apr-2010 04:44

Company: ExxonMobil Production Corp Well: PCU 297-11C3

Input DLIS Files

DEFAULT USI\_TLD\_MCFL\_CNL\_013LUP FN:12 PRODUCER 29-Apr-2010 00:59 8505.5 FT 100.0 FT

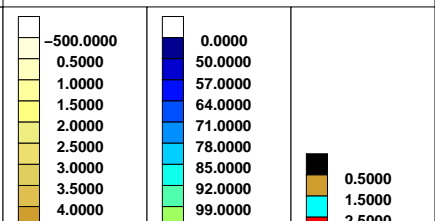
Output DLIS Files

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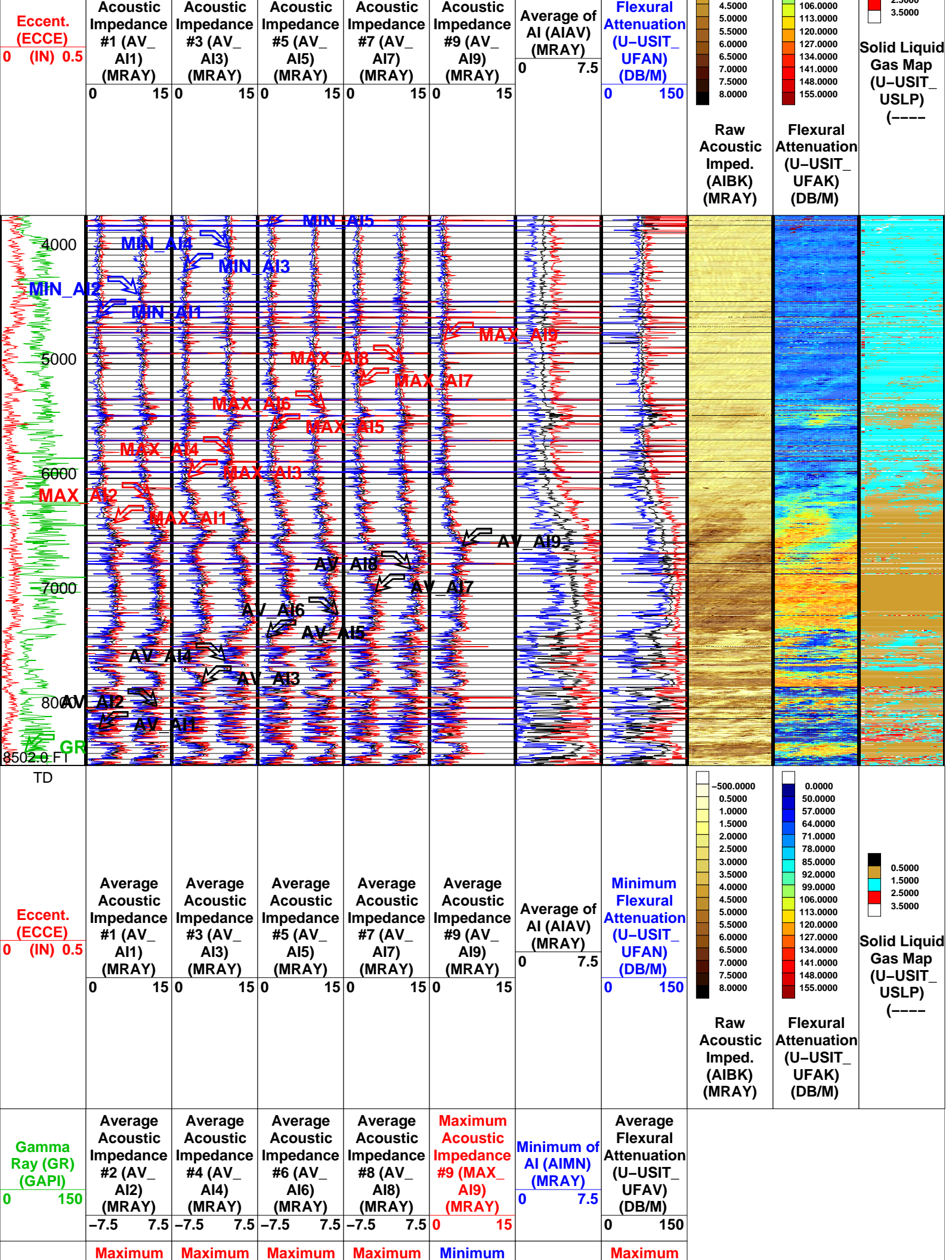
OP System Version: 17C0-154

USIT-D 17C0-154 HILTH-FTB 17C0-154  
DTC-H 17C0-154

	Minimum Acoustic Impedance #2 (MIN_A12) (MRAY)	Minimum Acoustic Impedance #4 (MIN_A14) (MRAY)	Minimum Acoustic Impedance #6 (MIN_A16) (MRAY)	Minimum Acoustic Impedance #8 (MIN_A18) (MRAY)			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
	Minimum Acoustic Impedance #1 (MIN_A11) (MRAY)	Minimum Acoustic Impedance #3 (MIN_A13) (MRAY)	Minimum Acoustic Impedance #5 (MIN_A15) (MRAY)	Minimum Acoustic Impedance #7 (MIN_A17) (MRAY)			
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	Maximum Acoustic Impedance #2 (MAX_A12) (MRAY)	Maximum Acoustic Impedance #4 (MAX_A14) (MRAY)	Maximum Acoustic Impedance #6 (MAX_A16) (MRAY)	Maximum Acoustic Impedance #8 (MAX_A18) (MRAY)			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
	Maximum Acoustic Impedance #1 (MAX_A11) (MRAY)	Maximum Acoustic Impedance #3 (MAX_A13) (MRAY)	Maximum Acoustic Impedance #5 (MAX_A15) (MRAY)	Maximum Acoustic Impedance #7 (MAX_A17) (MRAY)	Minimum Acoustic Impedance #9 (MIN_A19) (MRAY)	Maximum of AI (AIMX) (MRAY)	Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150
Gamma Ray (GR) (GAPI)	Average Acoustic Impedance #2 (AV_A12) (MRAY)	Average Acoustic Impedance #4 (AV_A14) (MRAY)	Average Acoustic Impedance #6 (AV_A16) (MRAY)	Average Acoustic Impedance #8 (AV_A18) (MRAY)	Maximum Acoustic Impedance #9 (MAX_A19) (MRAY)	Minimum of AI (AIMN) (MRAY)	Average Flexural Attenuation (U-USIT_UFAV) (DB/M)
0 150	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15	0 7.5	0 150



Average Average Average Average Average Minimum



Acoustic Impedance #1 (MAX_A1) (MRAY)	Acoustic Impedance #3 (MAX_A3) (MRAY)	Acoustic Impedance #5 (MAX_A5) (MRAY)	Acoustic Impedance #7 (MAX_A7) (MRAY)	Acoustic Impedance #9 (MIN_A9) (MRAY)	Maximum of AI (AIMX) (MRAY)	Flexural Attenuation (U-USIT_UFAX) (DB/M)
0 15	0 15	0 15	0 15	0 15	0 7.5	0 150
Maximum Acoustic Impedance #2 (MAX_A2) (MRAY)	Maximum Acoustic Impedance #4 (MAX_A4) (MRAY)	Maximum Acoustic Impedance #6 (MAX_A6) (MRAY)	Maximum Acoustic Impedance #8 (MAX_A8) (MRAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
Minimum Acoustic Impedance #1 (MIN_A1) (MRAY)	Minimum Acoustic Impedance #3 (MIN_A3) (MRAY)	Minimum Acoustic Impedance #5 (MIN_A5) (MRAY)	Minimum Acoustic Impedance #7 (MIN_A7) (MRAY)			
0 15	0 15	0 15	0 15			
Minimum Acoustic Impedance #2 (MIN_A2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_A4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_A6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_A8) (MRAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			

Format: M\_Goodwin\_Compressed      Vertical Scale: 0.1" per 100'      Graphics File Created: 29-Apr-2010 04:44

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.  
 Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

### Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_013LUP	FN:12	PRODUCER	29-Apr-2010 00:59	8505.5 FT	100.0 FT
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### Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_022PUP	FN:21	PRODUCER	29-Apr-2010 04:44		
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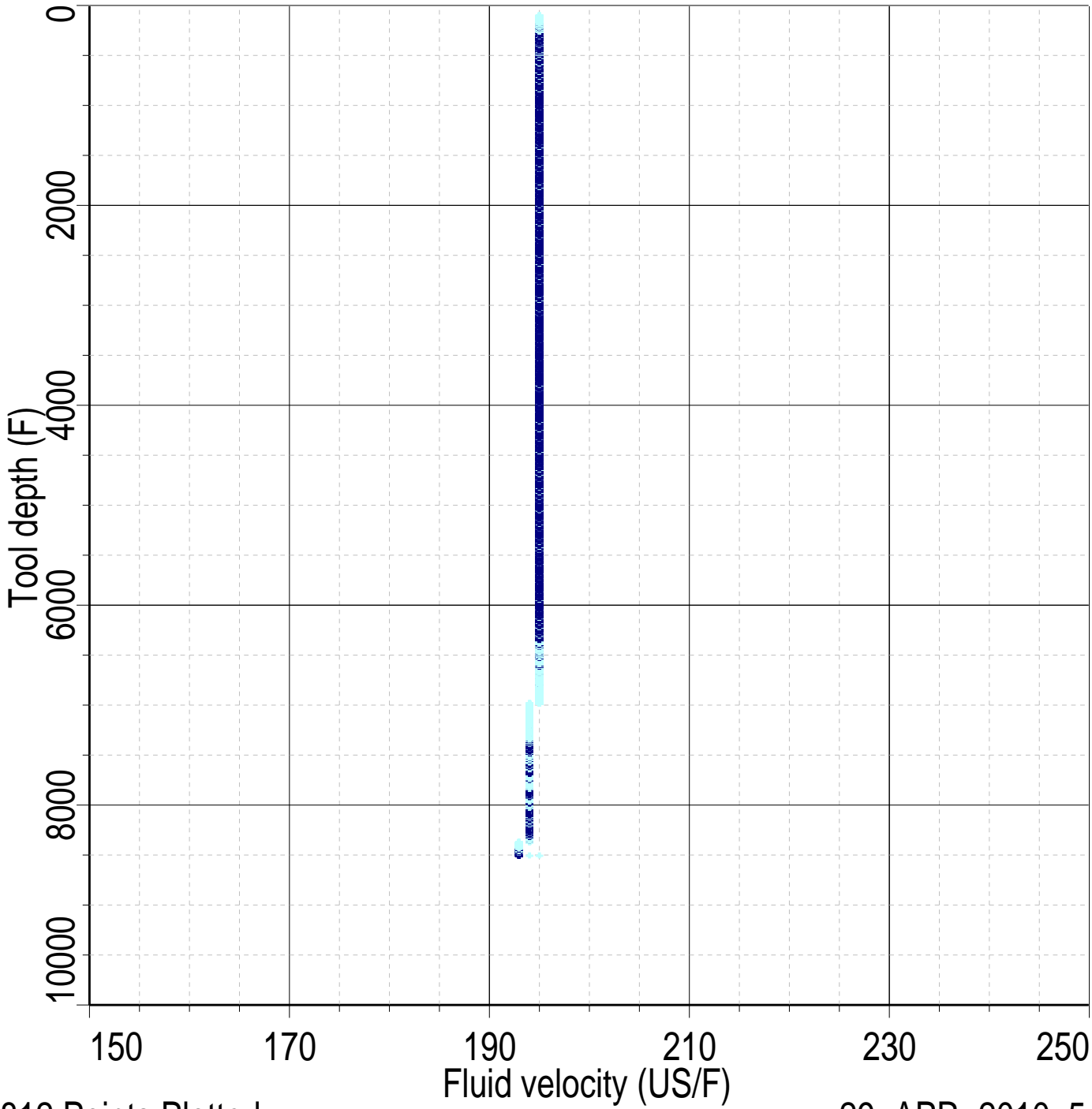


FVEL

MAXIS Field Log

Index: 8505.5 - 100.0 FT

0. IBC Inv. Fluid Z QC (-----) 0.5



16812 Points Plotted

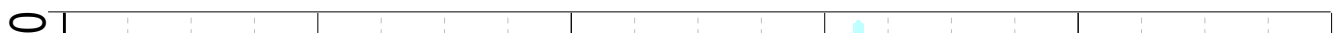
29-APR-2010 5:01

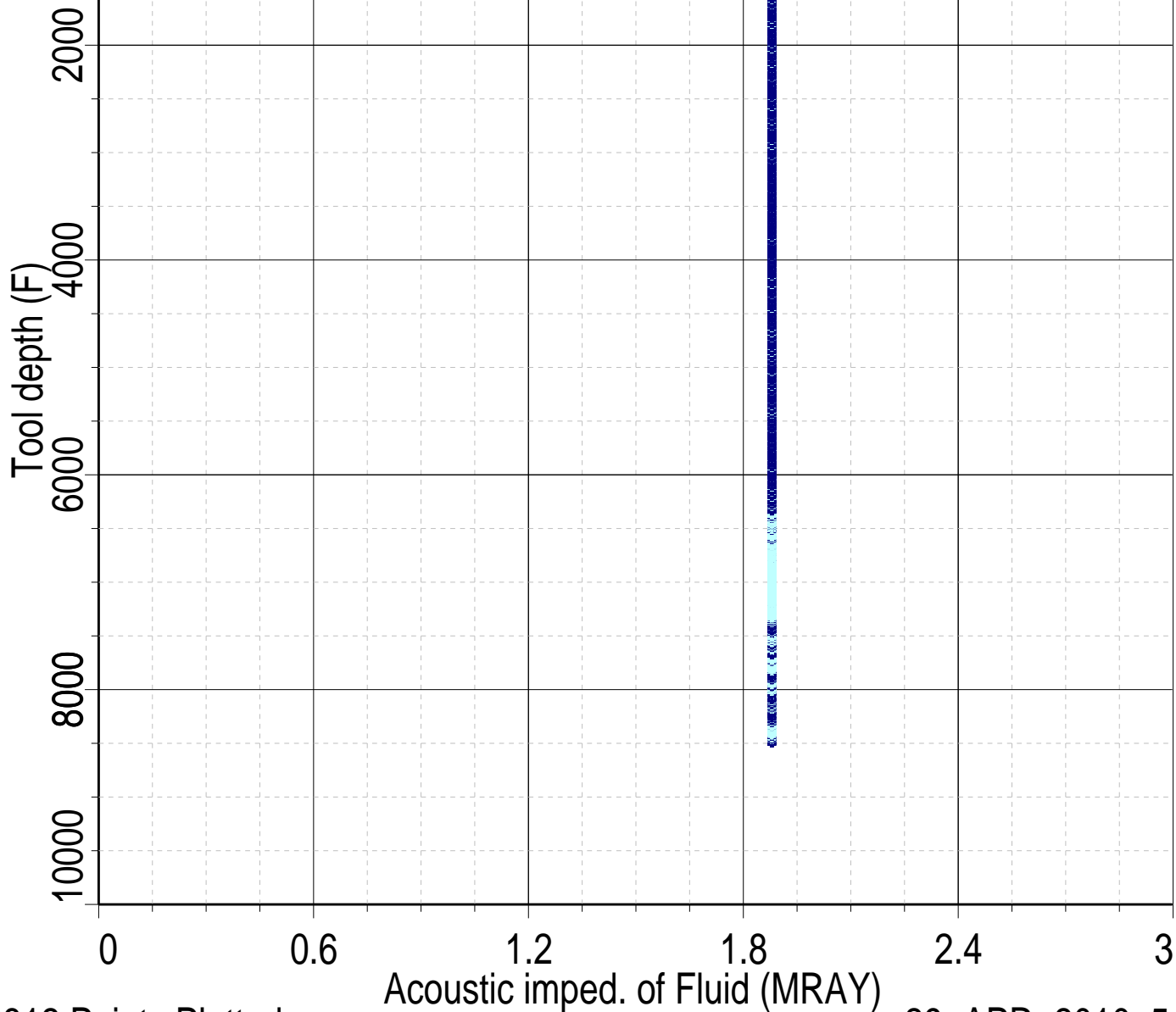


MAXIS Field Log

Index: 8505.5 - 100.0 FT

0. IBC Inv. Fluid Z QC (-----) 0.5





16812 Points Plotted

29-APR-2010 5:01



**REPEAT PASS**

MAXIS Field Log

Company: ExxonMobil Production Corp

Well: PCU 297-11C3

**Input DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_010LUP	FN:9	PRODUCER	29-Apr-2010 00:46	8489.0 FT	8265.1 FT
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**Output DLIS Files**

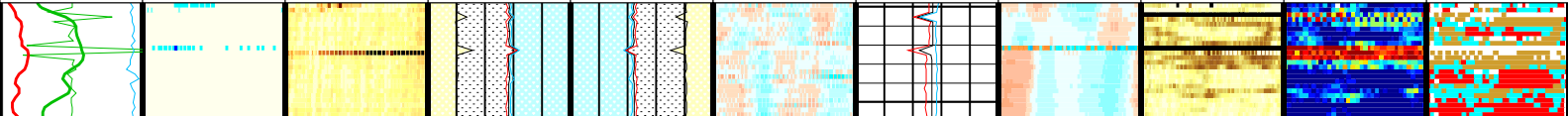
DEFAULT	USI_TLD_MCFL_CNL_023PUP	FN:22	PRODUCER	29-Apr-2010 05:10	8493.0 FT	8269.5 FT
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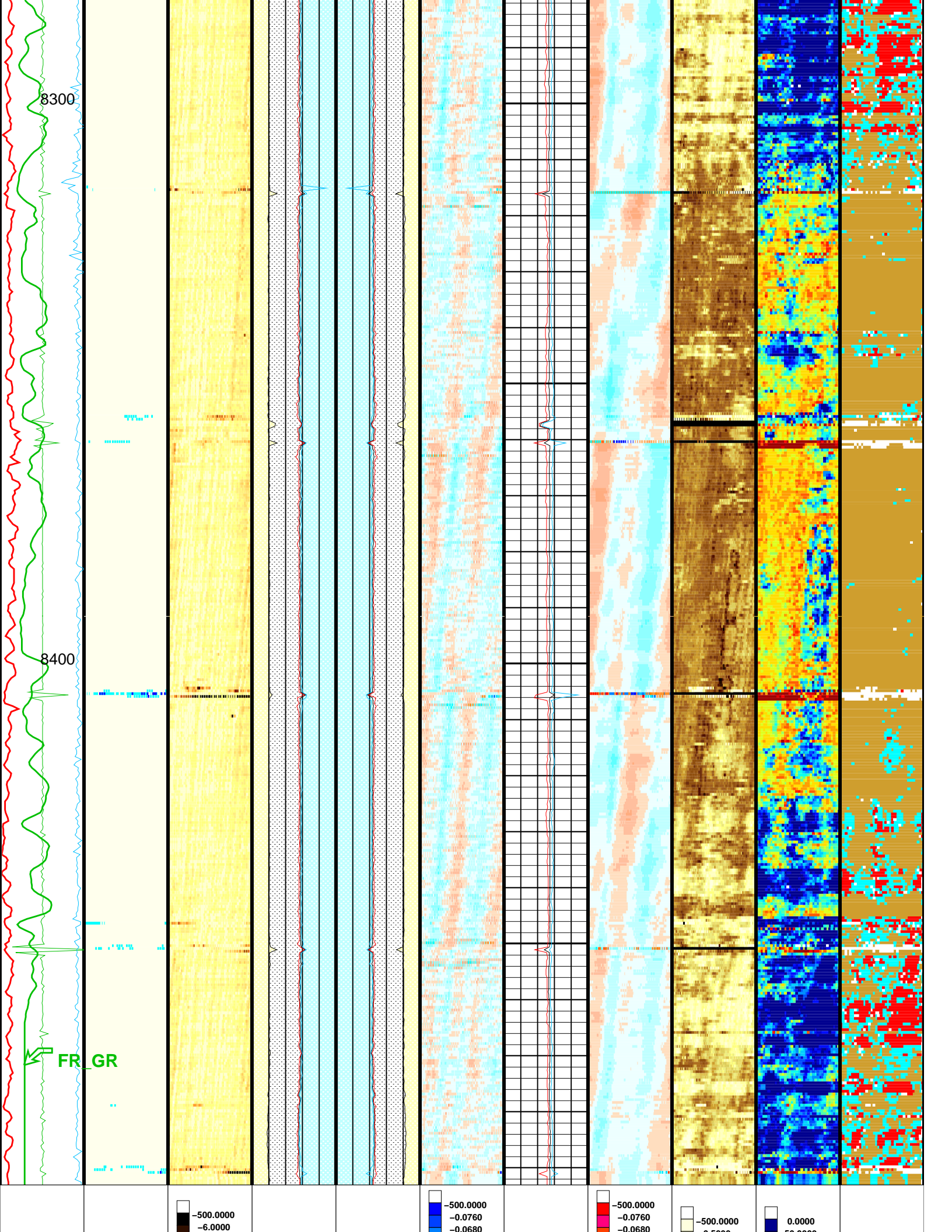
# OP System Version: 17C0-154

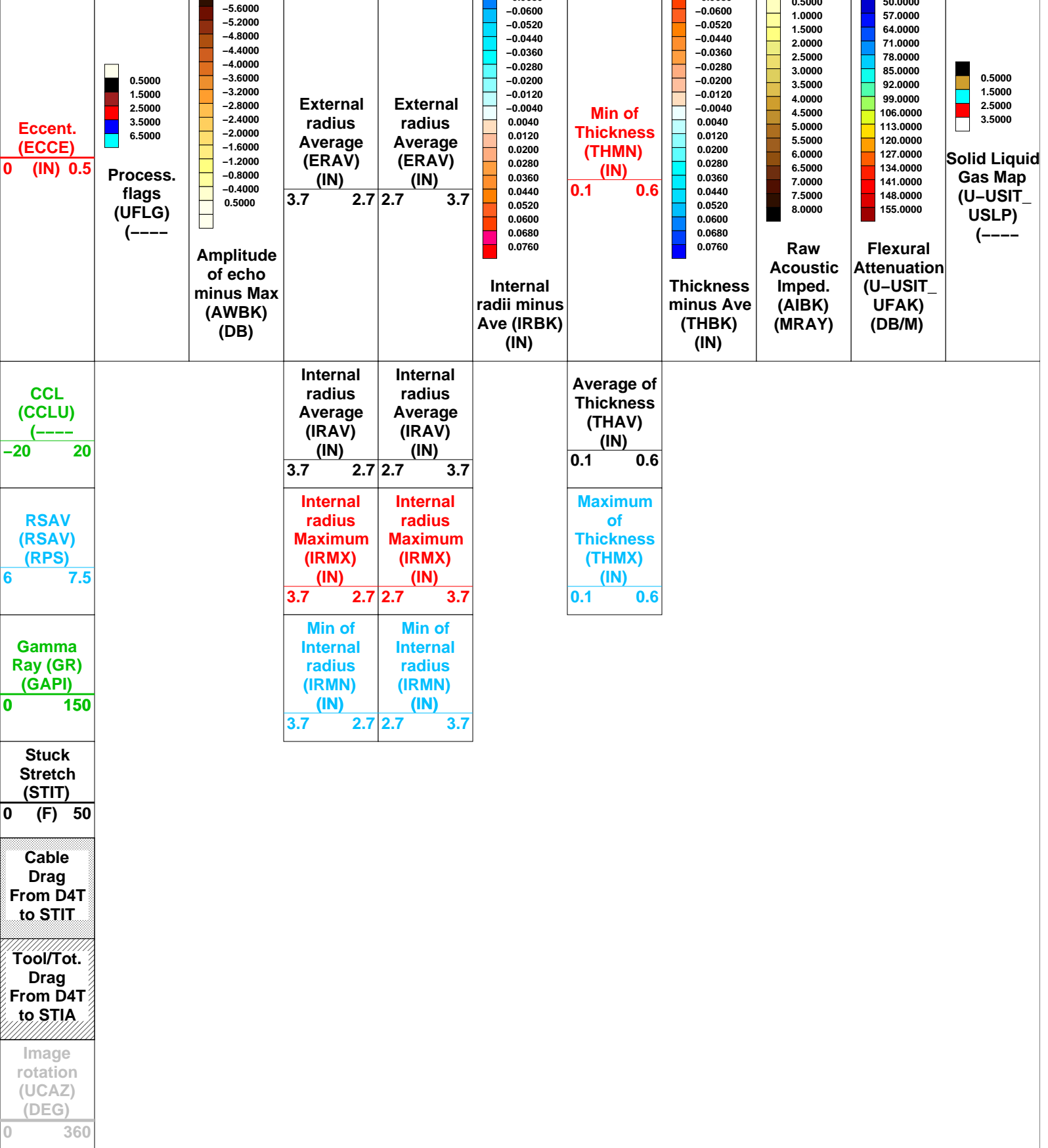
USIT-D 17C0-154 HILTH-FTB 17C0-154  
 DTC-H 17C0-154

Image rotation (UCAZ) (DEG)										
0 360										
Tool/Tot. Drag From D4T to STIA										
Cable Drag From D4T to STIT										
Stuck Stretch (STIT)										
0 (F) 50										
Gamma Ray (GR) (GAPI)	Min of Internal radius (IRMN) (IN)		Min of Internal radius (IRMN) (IN)							
0 150	3.7	2.7	2.7	3.7						
RSAV (RSAV) (RPS)	Internal radius Maximum (IRMX) (IN)		Internal radius Maximum (IRMX) (IN)		Maximum of Thickness (THMX) (IN)					
6 7.5	3.7	2.7	2.7	3.7	0.1	0.6				
CCL (CCLU) (----)	Internal radius Average (IRAV) (IN)		Internal radius Average (IRAV) (IN)		Average of Thickness (THAV) (IN)					
-20 20	3.7	2.7	2.7	3.7	0.1	0.6				

Eccent. (ECCE)	Process. flags (UFLG) (----)	Amplitude of echo minus Max (AWBK) (DB)	External radius Average (ERAV) (IN)		Internal radii minus Ave (IRBK) (IN)	Min of Thickness (THMN) (IN)	Thickness minus Ave (THBK) (IN)	Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (U-USIT_UFAK) (DB/M)	Solid Liquid Gas Map (U-USIT_USLP) (----)
0 (IN) 0.5	0.5000 1.5000 2.5000 3.5000 6.5000	-500.0000 -6.0000 -5.6000 -5.2000 -4.8000 -4.4000 -4.0000 -3.6000 -3.2000 -2.8000 -2.4000 -2.0000 -1.6000 -1.2000 -0.8000 -0.4000 0.5000	3.7 2.7 2.7 3.7	3.7 2.7 2.7 3.7	-500.0000 -0.0760 -0.0680 -0.0600 -0.0520 -0.0440 -0.0360 -0.0280 -0.0200 -0.0120 -0.0040 0.0040 0.0120 0.0200 0.0280 0.0360 0.0440 0.0520 0.0600 0.0680 0.0760	0.1 0.6	-500.0000 -0.0760 -0.0680 -0.0600 -0.0520 -0.0440 -0.0360 -0.0280 -0.0200 -0.0120 -0.0040 0.0040 0.0120 0.0200 0.0280 0.0360 0.0440 0.0520 0.0600 0.0680 0.0760	-500.0000 0.5000 1.0000 1.5000 2.0000 2.5000 3.0000 3.5000 4.0000 4.5000 5.0000 5.5000 6.0000 6.5000 7.0000 7.5000 8.0000	0.0000 50.0000 57.0000 64.0000 71.0000 78.0000 85.0000 92.0000 99.0000 106.0000 113.0000 120.0000 127.0000 134.0000 141.0000 148.0000 155.0000	0.5000 1.5000 2.5000 3.5000







Format: USI\_IBC\_SLG\_Composite      Vertical Scale: 5" per 100'      Graphics File Created: 29-Apr-2010 05:10

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

## Parameters

DLIS Name	Description	Value	
<b>USIT-D: Ultrasonic Imaging - D</b>			
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	195	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	50	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	5_UFSL_N_ZMUD	
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
U-USIT_CENT	USIT Cement Type	ULTRA_LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	-1	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_B	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.88	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.45	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
<b>STI: Stuck Tool Indicator</b>			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	8708.00	FT
TDL	Total Depth - Logger	8502.00	FT
<b>System and Miscellaneous</b>			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	4.0	FT
PP	Playback Processing	RECOMPUTE	

### Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_010LUP	FN:9	PRODUCER	29-Apr-2010 00:46	8489.0 FT	8265.1 FT
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### Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_023PUP	FN:22	PRODUCER	29-Apr-2010 05:10		
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## MAXIS Field Log

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
<b>High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration</b>							
Before: 28–Apr–2010 5:57							
Gamma Ray Background	30.00	N/A	34.48	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	165.1	N/A	165.1	N/A	N/A	15.01	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
<b>High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement</b>							
Master: 19–Feb–2010 14:58 Before: Calibration not done							
CNTC Background	26.67	26.67	N/A	N/A	N/A	4.001	CPS
CFTC Background	29.55	29.55	N/A	N/A	N/A	4.432	CPS
<b>High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement</b>							
Master: 19–Feb–2010 14:58							
Thermal Near Corr. (Tank)	5800	5258	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2175	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.417	N/A	N/A	N/A	N/A	
<b>High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration</b>							
Before: 28–Apr–2010 11:45							
Z–Axis Acceleration	32.19	N/A	32.15	N/A	N/A	N/A	F/S2

The HGNS Neutron Master Calibration was done with the following parameters :

NCT–B Water Temperature    59.4    DEGF.  
 Thermal Housing Size        3.374    IN.  
 NSR–F serial number         0

### High resolution Integrated Logging Tool–DTS / Equipment Identification

**Primary Equipment:**

HILT Gamma–Ray Neutron Sonde–DTS	HGNS – H	
HGNS Gamma–Ray Device	HGR –	
HGNS Neutron Detector with Alpha Source	HCNT – H	
Z–Axis Accelerometer	HACC – H	3577
Neutron Logging Source	NLS – KL	
Neutron Source Radioactive	NSR – F	
Compensated Neutron Box	CNB – AB	
HTBC Communication Assembly DTS Mode	HMCA – H	

**Auxiliary Equipment:**

Neutron Calibration Tank	NCT – B
Gamma Source Radioactive	GSR – U/Y
HGNS Housing	HGNH –

### High resolution Integrated Logging Tool–DTS Wellsite Calibration

#### Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig – Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		34.48	Before		165.1	Before		165.0
	0      30.00      120.0			150.1      165.1      180.1			150.0      165.0      180.0	

High resolution Integrated Logging Tool-DTS Wellsite Calibration						
Zero Measurement						
Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value	
Master		26.67	Master		29.55	
Before	NOT DONE	N/A	Before	NOT DONE	N/A	
	5.000 (Minimum)	26.67 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	29.55 (Nominal)	40.00 (Maximum)

Master: 19-Feb-2010 14:58

Before: Calibration not done

High resolution Integrated Logging Tool-DTS Wellsite Calibration									
Ratio Measurement									
Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value	
Master		5258	Master		2175	Master		2.417	
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)	2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 19-Feb-2010 14:58

High resolution Integrated Logging Tool-DTS Wellsite Calibration			
Accelerometer Calibration			
Phase	Z-Axis Acceleration F/S2	Value	
Before		32.15	
	31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)

Before: 28-Apr-2010 11:45

DTS Telemetry Tool / Equipment Identification	
Primary Equipment:	
DTC-H Auxiliary Cartridge	DTCH - A
DTC-H Telemetry Cartridge	DTCH - A
Auxiliary Equipment:	
DTCH Telemetry Cartridge Housing	ECH - KC

Company:	<b>ExxonMobil Production Corp</b>	
Well:	<b>PCU 297-11C3</b>	
Field:	<b>Piceance Creek</b>	
County:	<b>Rio Blanco</b>	
State:	<b>Colorado</b>	
IMAGING BEHIND CASING ULTRASONIC TOOL CCL / GAMMA RAY		