County: RIO BLANCO

Field: PICEANCE CREEK

Location: NWSW 1716' FSL & 132' FWL

Witness
Record
Unit Nu
Logger
Maximu
To
From
Grade
Weight
Casing/
To
From
Bit Size
BIT/C
Fluid Le
Density
Salinity
Casing
Top Log
Bottom
Schlum
Depth D
Run Nu
Logging

Schlumberger

npany: **EXXONMOBIL PRODUCTION CO.**

l: **PCU 197−34A3**

d: **PICEANCE CREEK**

nty: **RIO BLANCO** State: **CO**

IMAGING BEHIND CASING

GAMMA RAY

CCLU

Location: NWSW 1716' FSL & 132' FWL

Well: PCU 197−34A3

Company: EXXONMOBIL PRODUCTION C

LOCATION

NWSW 1716' FSL & 132' FWL

Elev.: K.B. 6521.20 ft
G.L. 6491.00 ft
D.F. 6520.20 ft

Permanent Datum: GROUND LEVEL Elev.: 6491.00 ft
Log Measured From: KELLY BUSHING 30.20 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	Section	Township	Range
05−103−11542	34	1S	97W

	Run 1	Run 2	Run 3
PVT DATA: Oil Density			
PVT DATA: Water Salinity			
PVT DATA: Gas Gravity			
PVT DATA: Bo			
PVT DATA: Bw			
PVT DATA: 1/Bg			
PVT DATA: Bubble Point Pressure			
PVT DATA: Bubble Point Temperature			
PVT DATA: Solution GOR			
Maximum Deviation	20 deg		
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 / Time			
Unit Number / Location			
Recorded By			
Witnessed By			

g Date	27−Jun−2010
mber	1
Driller	8646 ft
berger Depth	8546 ft
Log Interval	8546 ft
g Interval	3150 ft
Fluid Type	WBM
	8.4 lbm/gal
evel	10 ft
ASING/TUBING STRING	
	9.875 in
	3353 ft
	8646 ft
Tubing Size	7.000 in
	26 lbm/ft
	0 ft
	8646 ft
m Recorded Temperatures	206 degF
On Bottom / Time	27−Jun−2010 12:05
mber / Location	2379 VERNAL
ed By	RYAN STEWART
sed By	JOSH LOVE

Run 4

DEPTH SUMMARY LISTING

Date Created: 27−JUN−2010 16:53:04

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−46P
Serial Number:	6214	Serial Number:	8093	Serial Number:	709025
Calibration Date:	1−JAN−10	Calibration Date:	03−JUN−10	Length:	24000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	100518		
Calibration Cable Type:	7−46P	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−8	Calibration RMS:	34	Rig Type:	LAND
Wheel Correction 2:	−9	Calibration Peak Error:	62		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	230.90 FT
Rig Up Length At Bottom:	230.60 FT
Rig Up Length Correction:	0.30 FT
Stretch Correction:	7.00 FT
Tool Zero Check At Surface:	0.20 FT

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH POLICIES FOLLOWED
2. IDW USED AS PRIMARY METHOD OF DEPTH CONTROL
3. Z−CHART USED AS SECONDARY METHOD OF DEPTH CONTROI
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1:	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
TOOL RAN AS PER TOOL SKETCH	
TOOL CENTERED USING 2 X ILC AND 2 X GEMCO	
UFAO = −12 DB/M	
EXPECTED CASING THICKNESS 0.362 INCH	
EXPECTED CASING ID 6.276 INCH	
CEMENT: SINGLE SLURRY 11LB/G	
LOG CORRELATED TO DOWNLOG AT 8300 FT	
HORIZONTAL RESOLUTION: 5 DEG	
VERTICLE RESOLUTION : 6 INCH	

RUN 1		
SERVICE ORDER #:	BADQ−00024	
PROGRAM VERSION:	17C0−154	
FLUID LEVEL:	10 ft	
LOGGED INTERVAL	START	STOP

RUN 2		
SERVICE ORDER #:		
PROGRAM VERSION:		
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

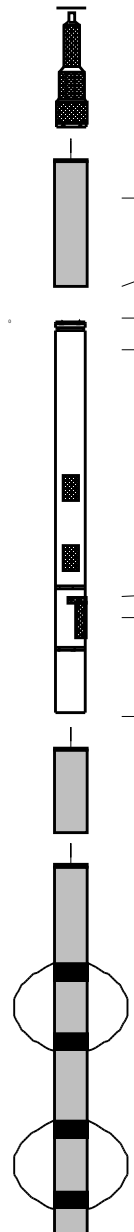
RUN 1

SURFACE EQUIPMENT

GSR−U/Y
NCT−B
CNB−AB
NCS−VB

WITM (DTS)−A

DOWNHOLE EQUIPMENT



LEH−QT — 39.1
LEH−QT

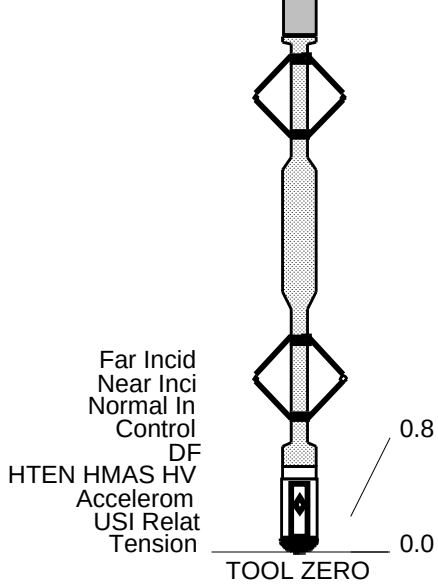
DTC−H — 36.1
ECH−KC
DTCH0−A
DTCH1−A

HILTH−FTB — 33.1
HGNSD−H
HMCA−H
HGNH
NLS−KL
NSR−F 5138
HACCZ−H 3577
HCNT−H
HGR
NPV−N

AH−107 — 23.7
AH−107

USIT−D — 21.7
ECH−MRA
USIC−D
USIS−A
USSC−B
IBCS_A−100158201
Top Transducer
Middle Top Transducer
Middle Bottom Transducer
Bottom Transducer

RUN 2



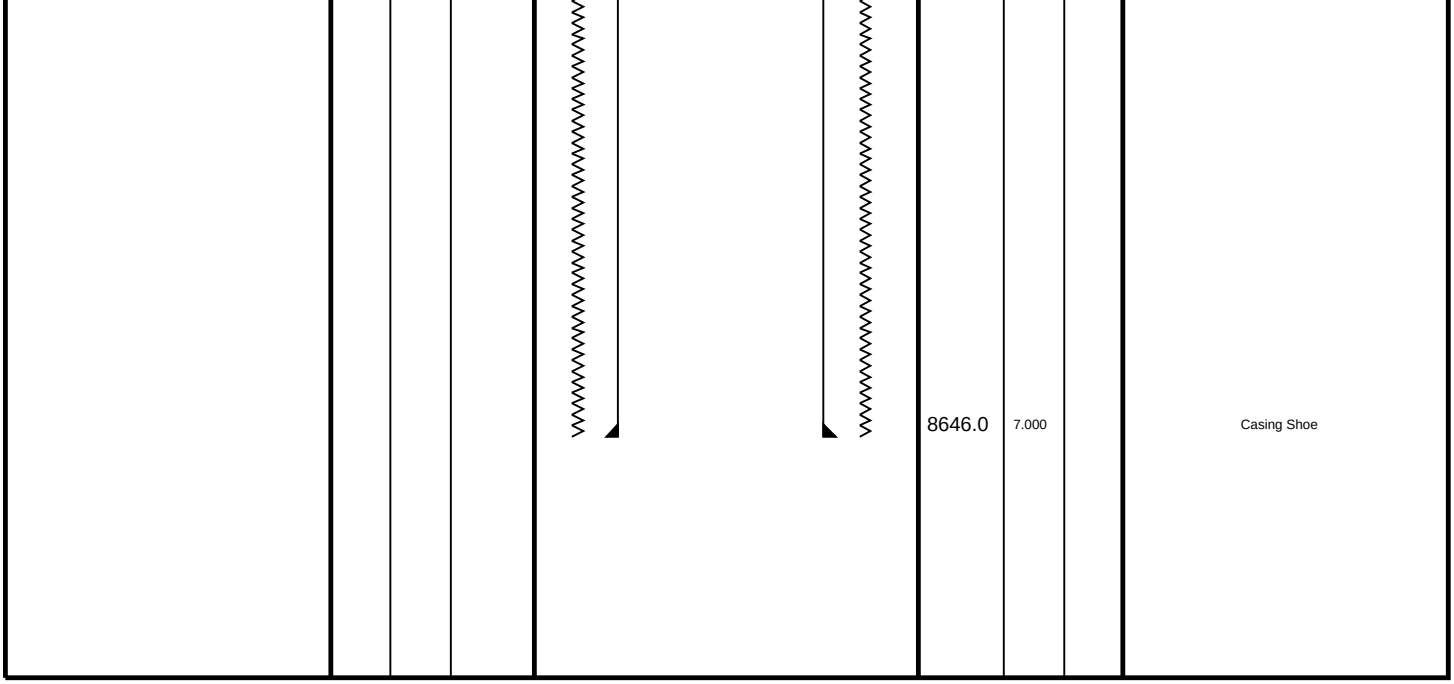
MAXIMUM STRING DIAMETER 7.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Client: EXXONMOBIL PRODUCTION CO.
Well: PCU 197−34A3
Field: PICEANCE CREEK
State: CO
Country: USA

Drawing Date: 6/27/2010
API #: 05−103−11542

Rig Name: MAST
Reference Datum: GROUND LEVEL
Elevation: 6491.0 ft

Production String	(in) OD	(in) ID	(ft) MD	Well Schematic	(ft) MD	(in) OD	(in) ID	Casing String
					0.0	7.000		Casing String
					3353.0	9.875		Borehole Segment



Schlumberger

IBC SLG COMPOSITE

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. **Well: PCU 197−34A3**

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35

OP System Version: 17C0−154

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

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
ZMUD	1.7 MRAY	1.8 MRAY	5501.5 16:40:36

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)
0 150

CCL (CCLU) (----
−20 20

RSAV (RSAV) (RPS)
6 7.5

CCL (CCLU) (----
−20 20

Eccent. (ECCE)
0 (IN) 0.5

0.5000
1.5000
2.5000
3.5000
6.5000

Process. flags (UFLG) (----

−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

Amplitude of echo minus Max (AWBK) (DB)

Min of Internal radius (IRMN) (IN)
3.7 2.7

Internal radius Maximum (IRMX) (IN)
3.7 2.7

Internal radius Average (IRAV) (IN)
3.7 2.7

External radius Average (ERAV) (IN)
3.7 2.7

Min of Internal radius (IRMN) (IN)
2.7 3.7

Internal radius Maximum (IRMX) (IN)
2.7 3.7

Internal radius Average (IRAV) (IN)
2.7 3.7

External radius Average (ERAV) (IN)
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

Internal radii minus Ave (IRBK) (IN)

Maximum of Thickness (THMX) (IN)
0.1 0.6

Average of Thickness (THAV) (IN)
0.1 0.6

Min of Thickness (THMN) (IN)
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

Thickness minus Ave (THBK) (IN)

−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

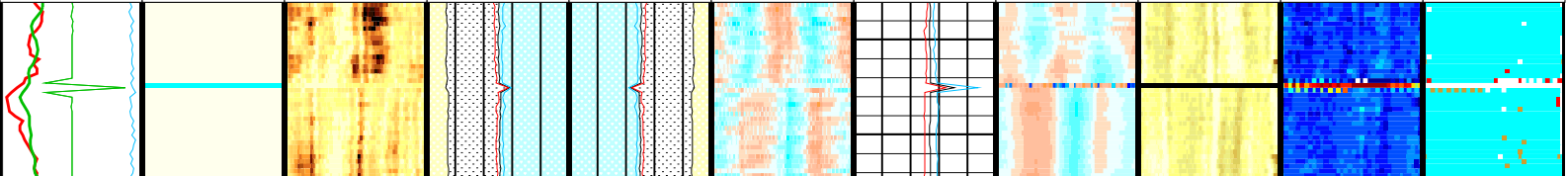
Raw Acoustic Imped. (AIBK) (MRAY)

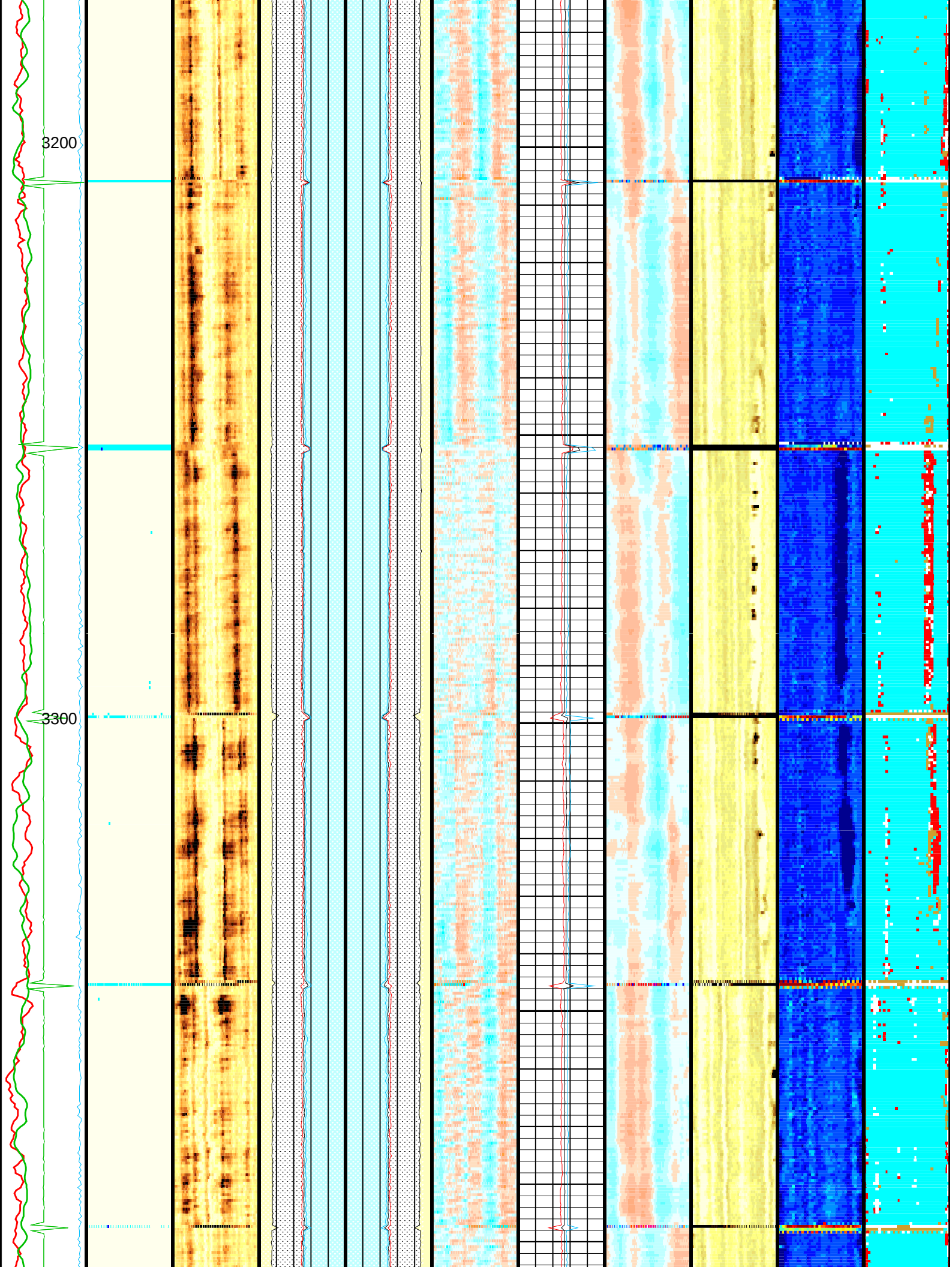
0.0000
50.0000
57.0000
64.0000
71.0000
78.0000
85.0000
92.0000
99.0000
106.0000
113.0000
120.0000
127.0000
134.0000
141.0000
148.0000
155.0000

Flexural Attenuation (U−USIT_UFAK) (DB/M)

0.5000
1.5000
2.5000
3.5000

Solid Liquid Gas Map (U−USIT_USLP) (----

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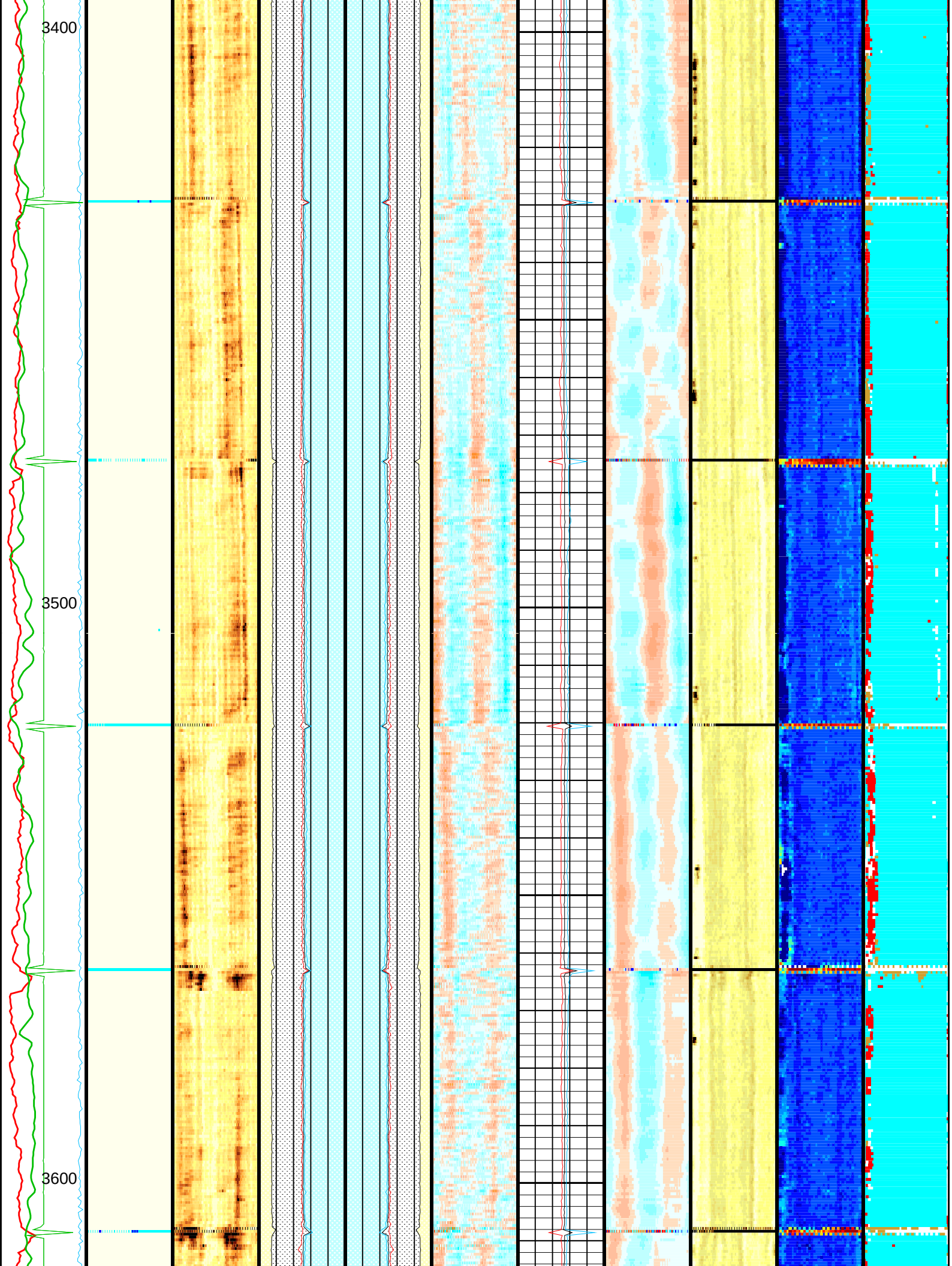
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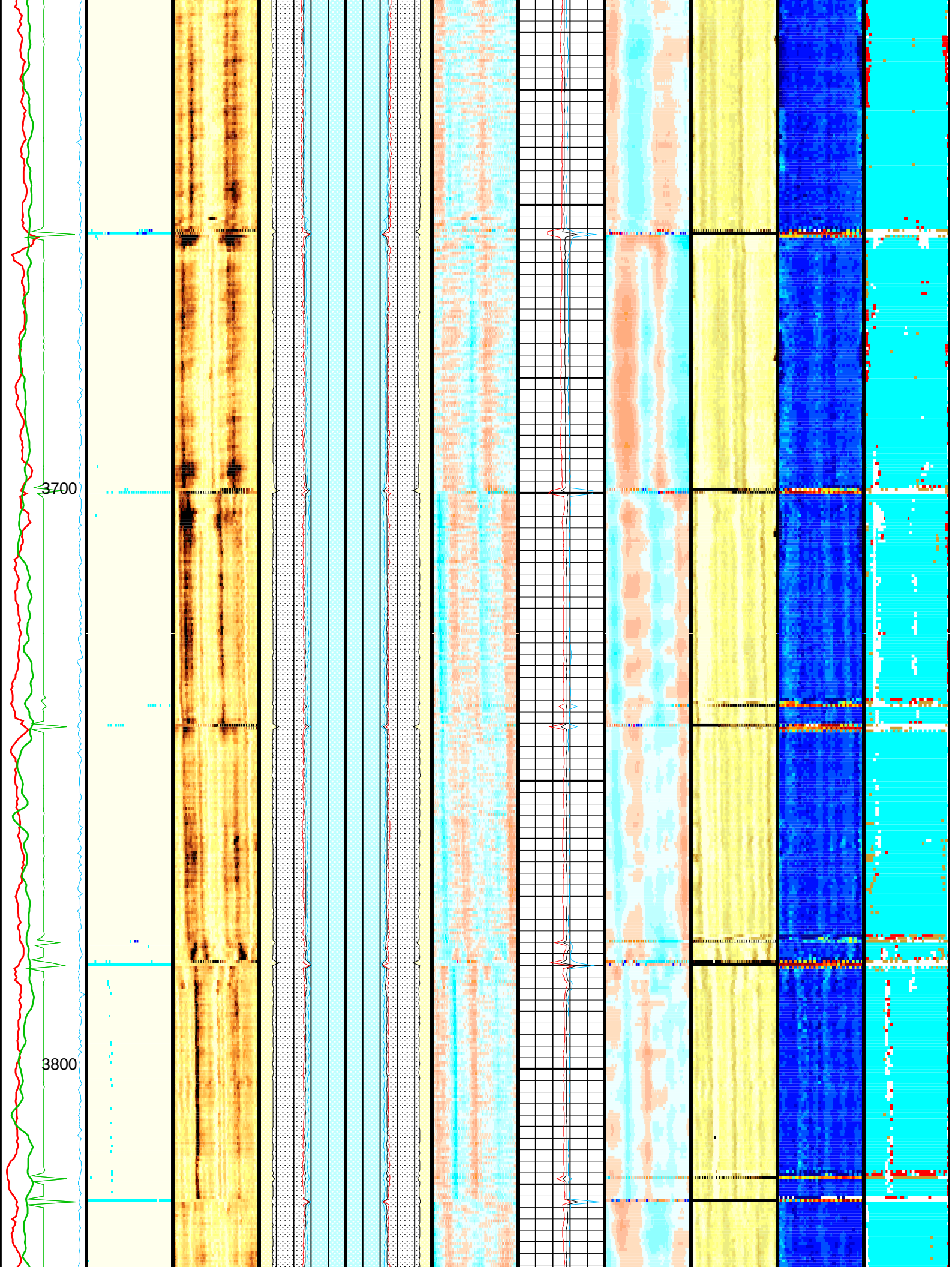
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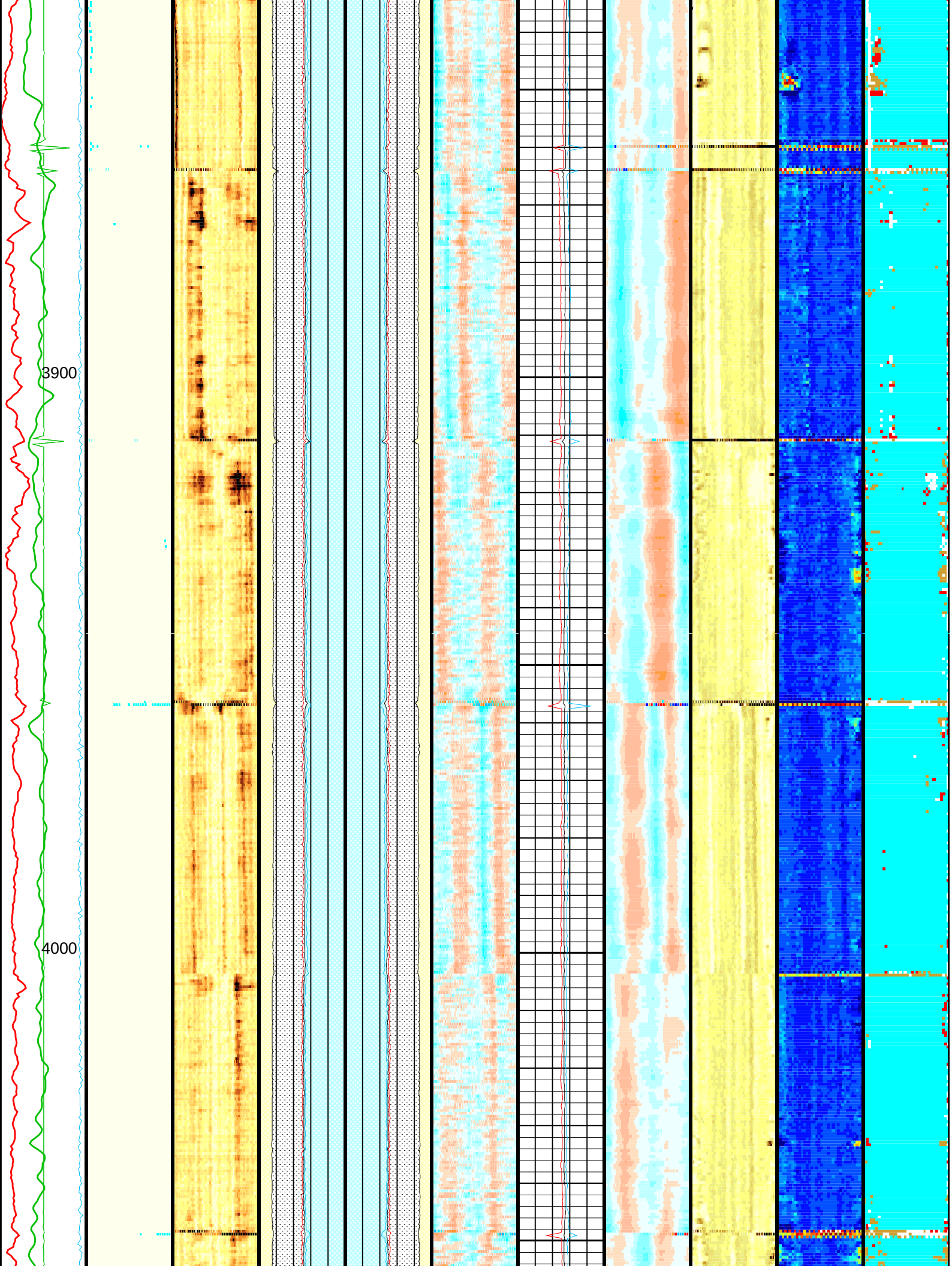
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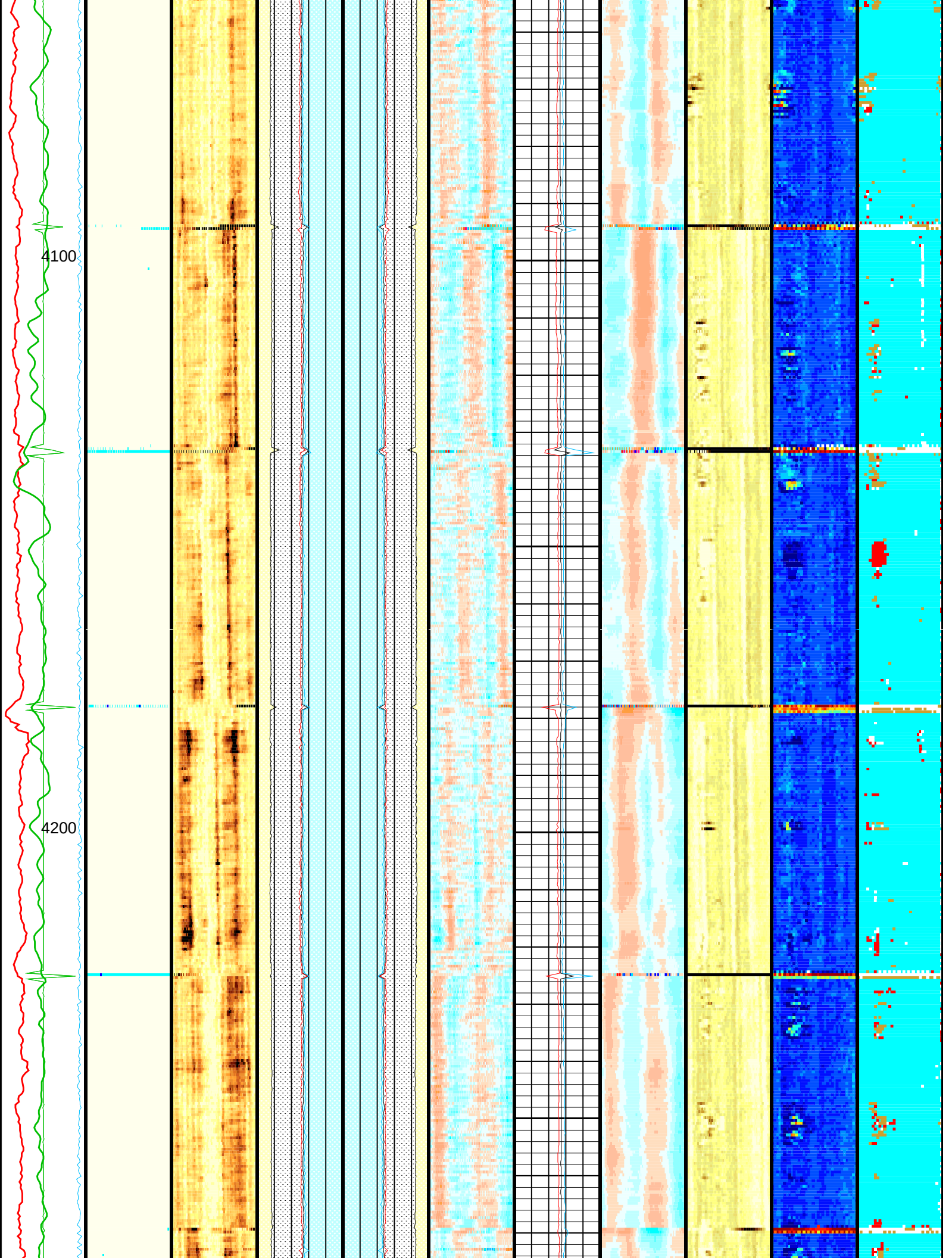
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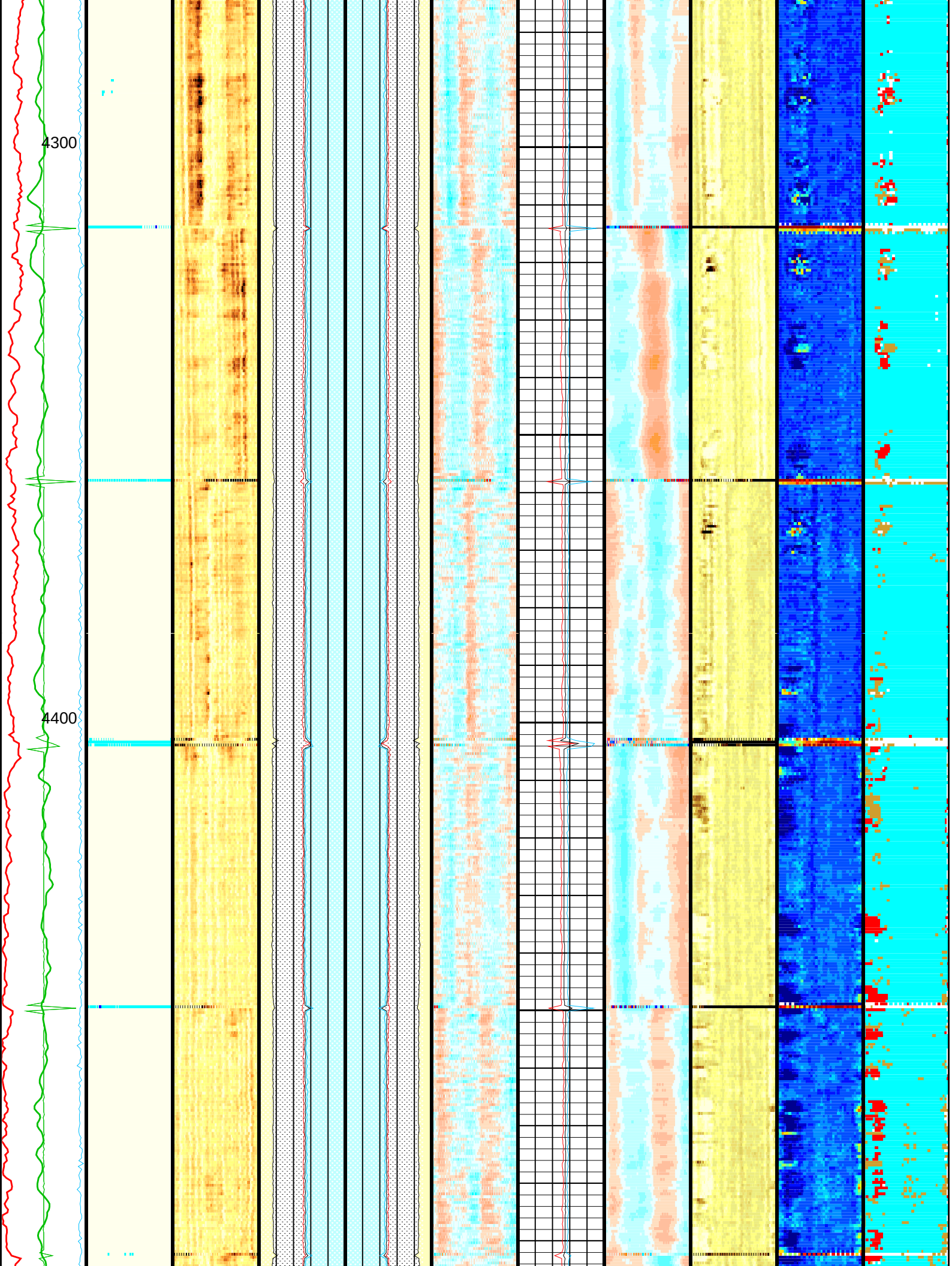
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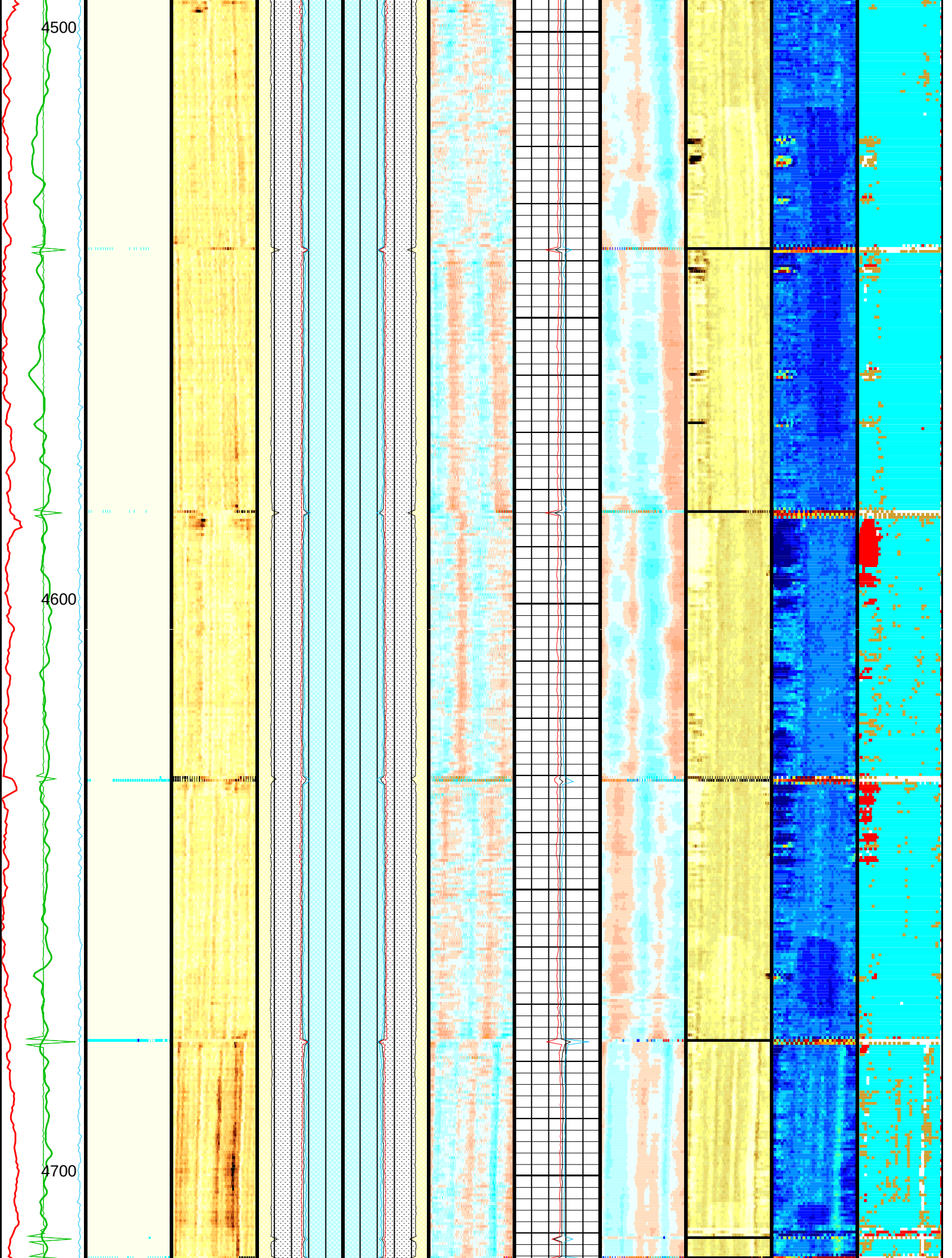
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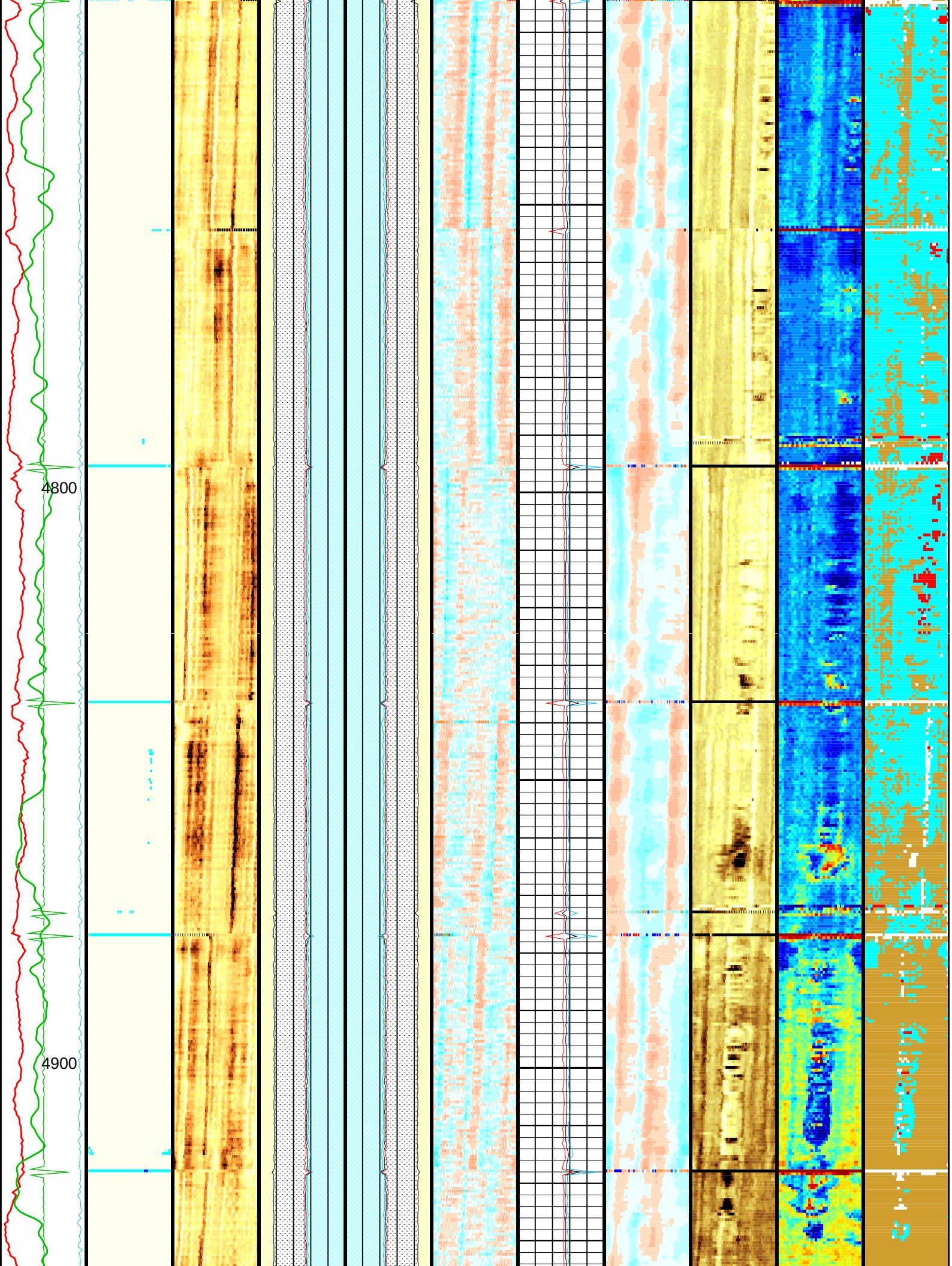
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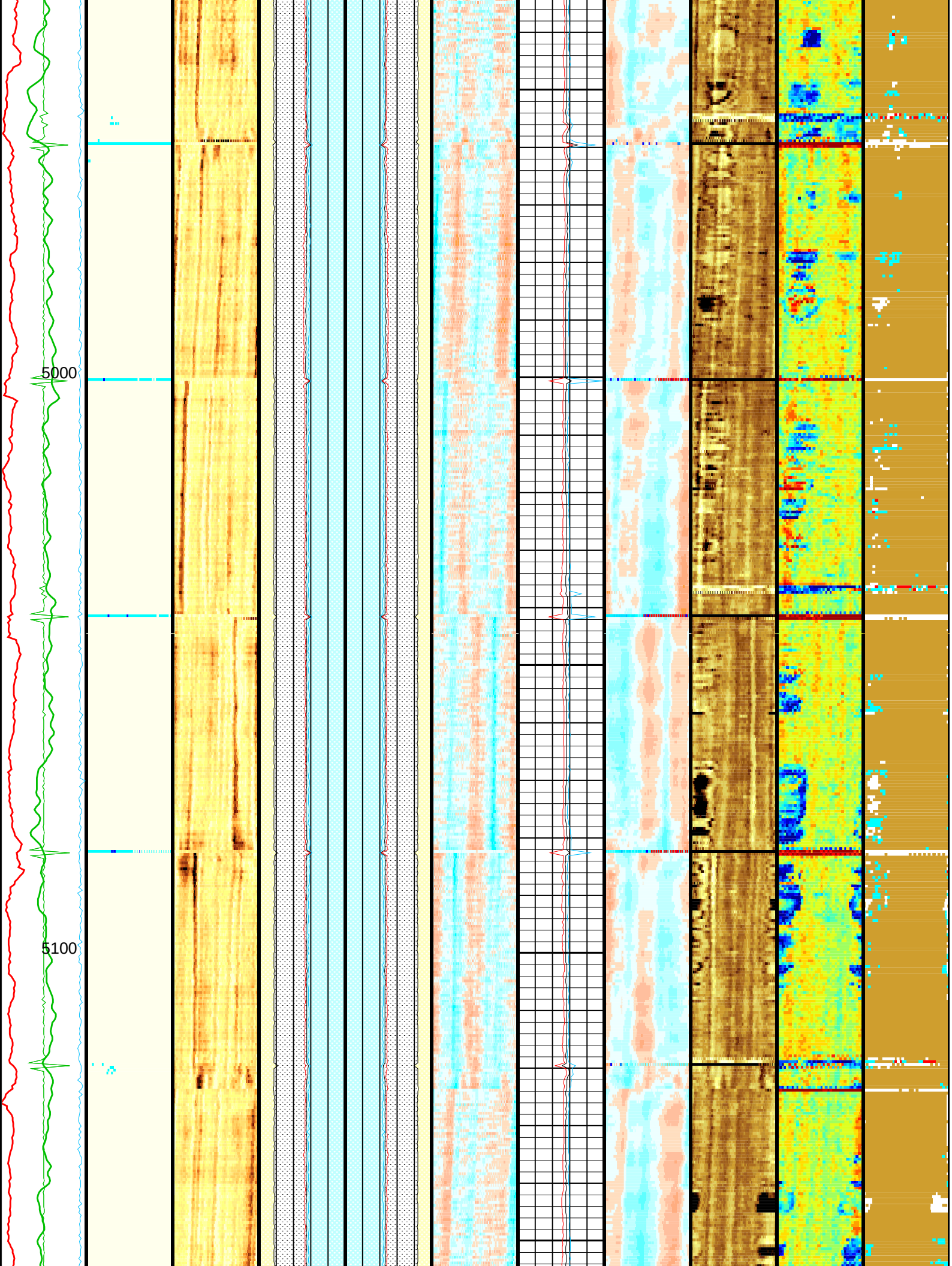
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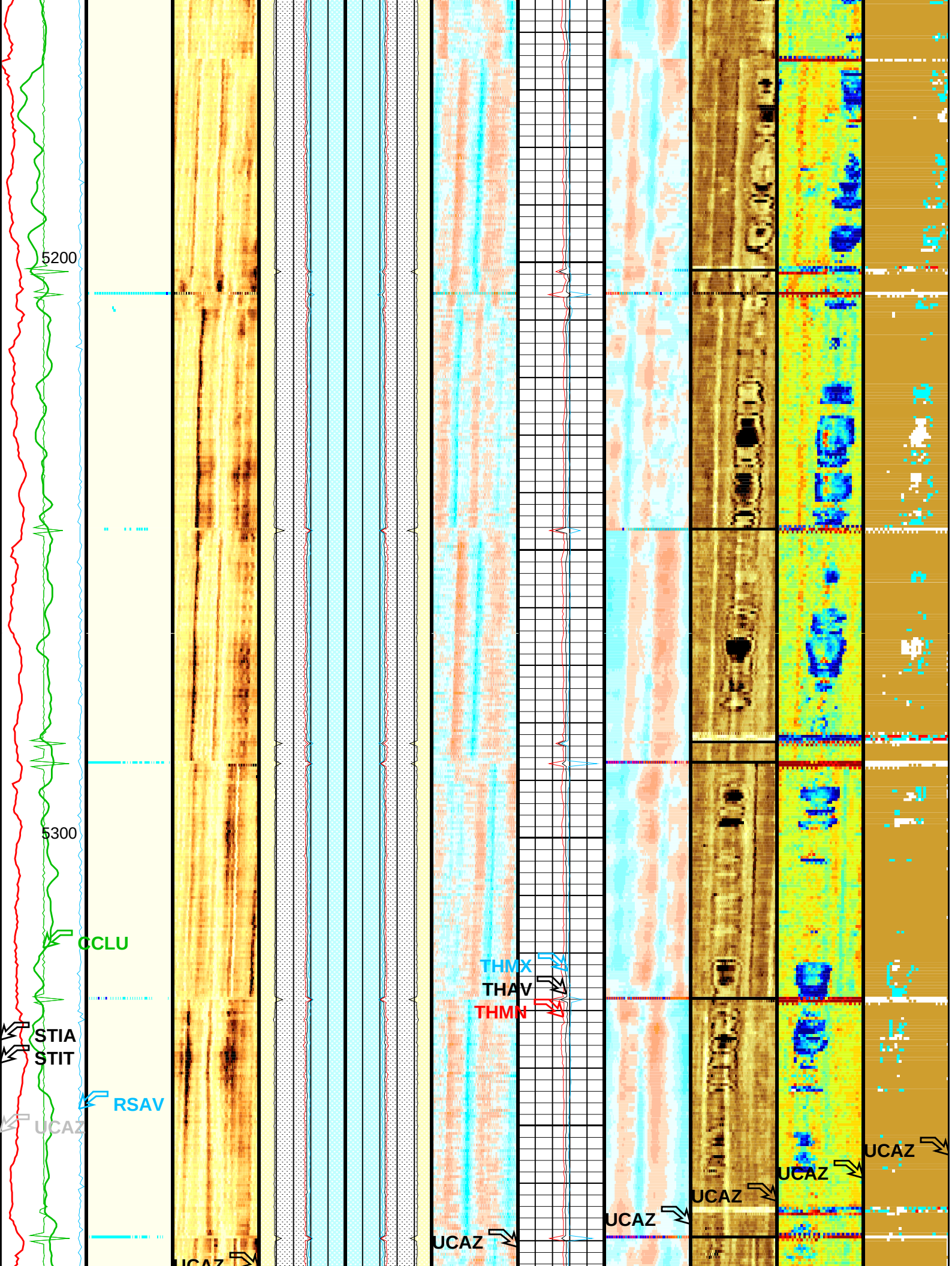
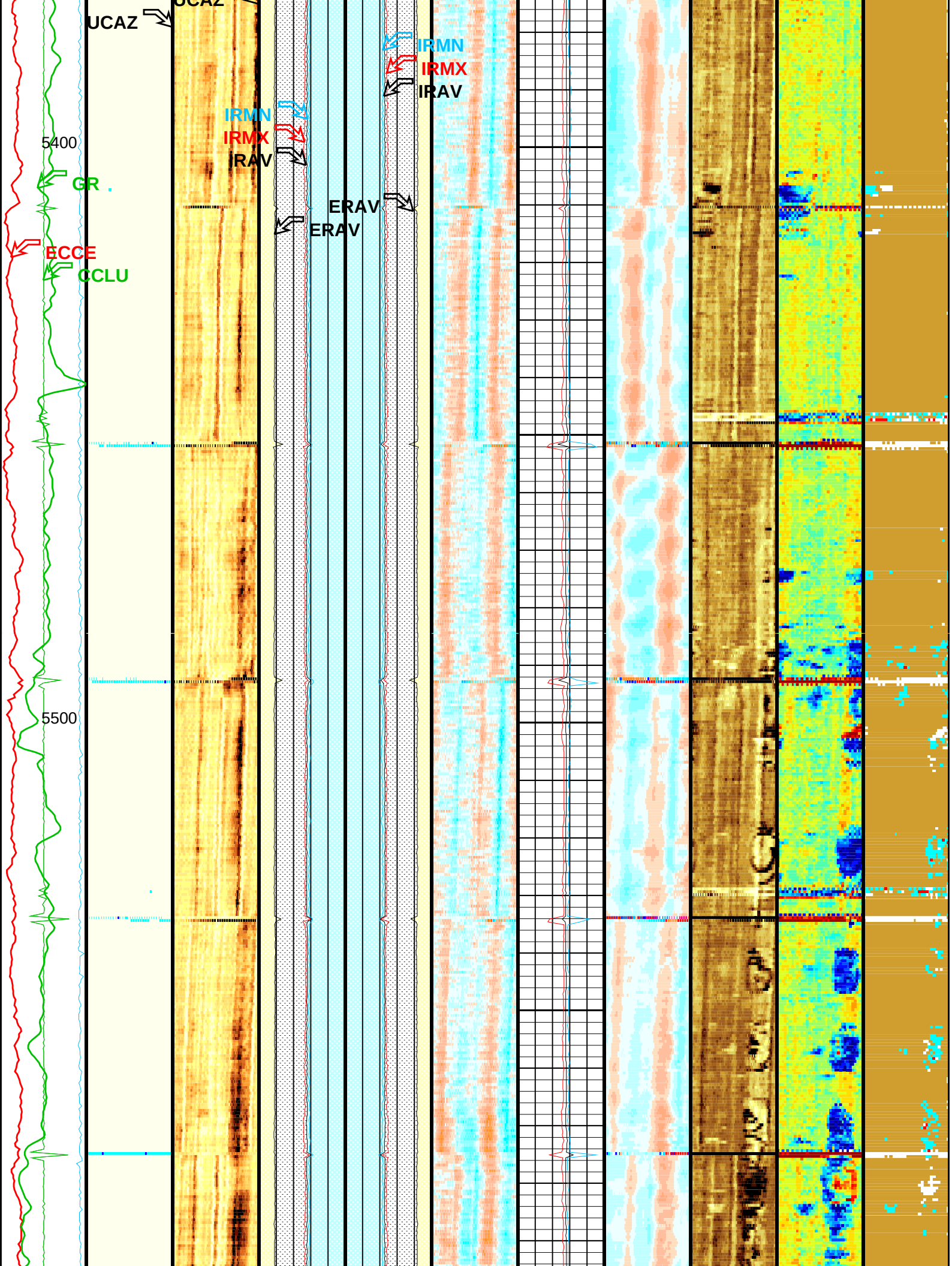
5100


5200
5300
CCLU
STIA
STIT
RSAV
UCAZ
THMX
THAV
THMN
UCAZ
UCAZ
UCAZ
UCAZ
UCAZ
UCAZ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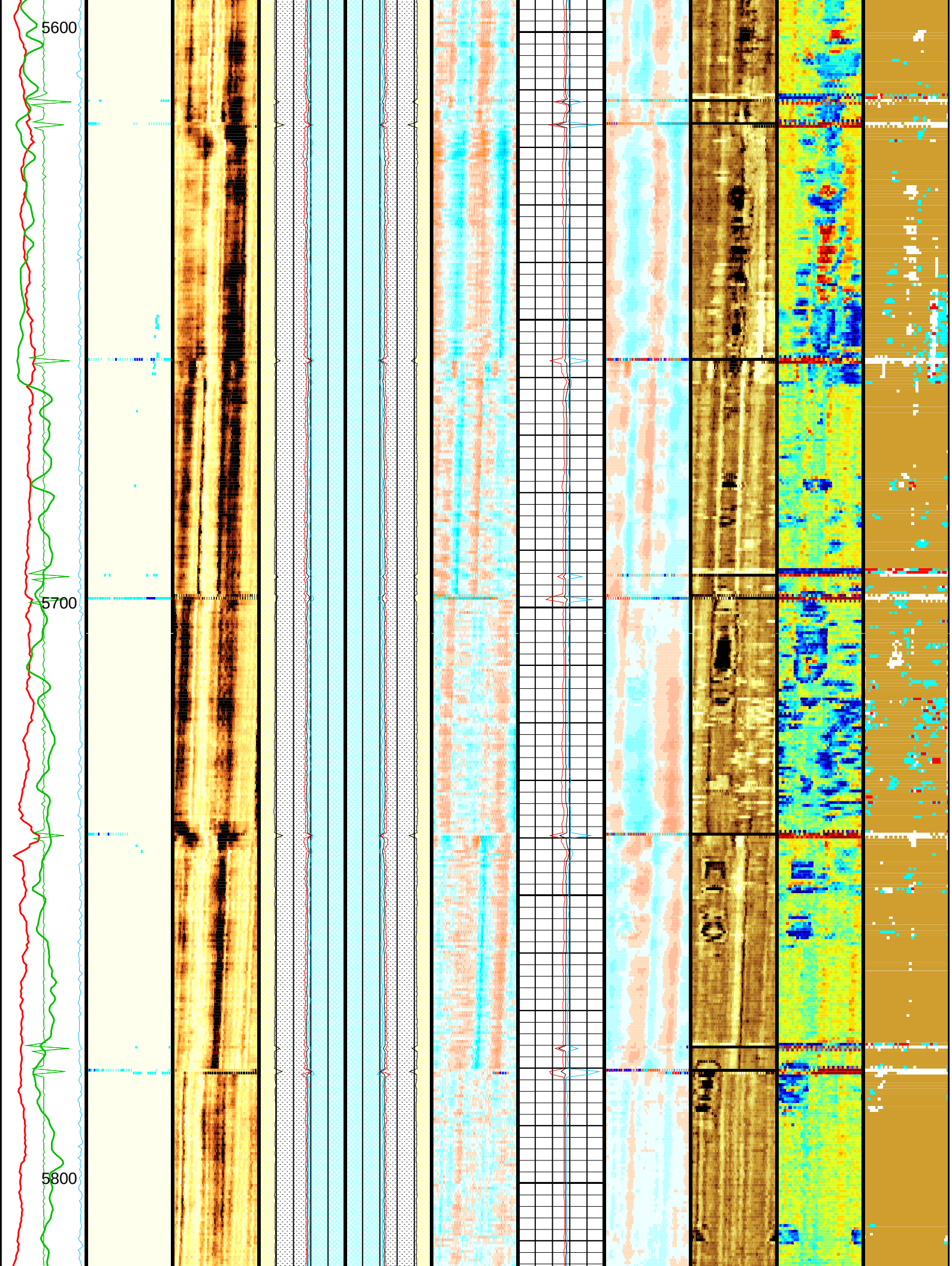
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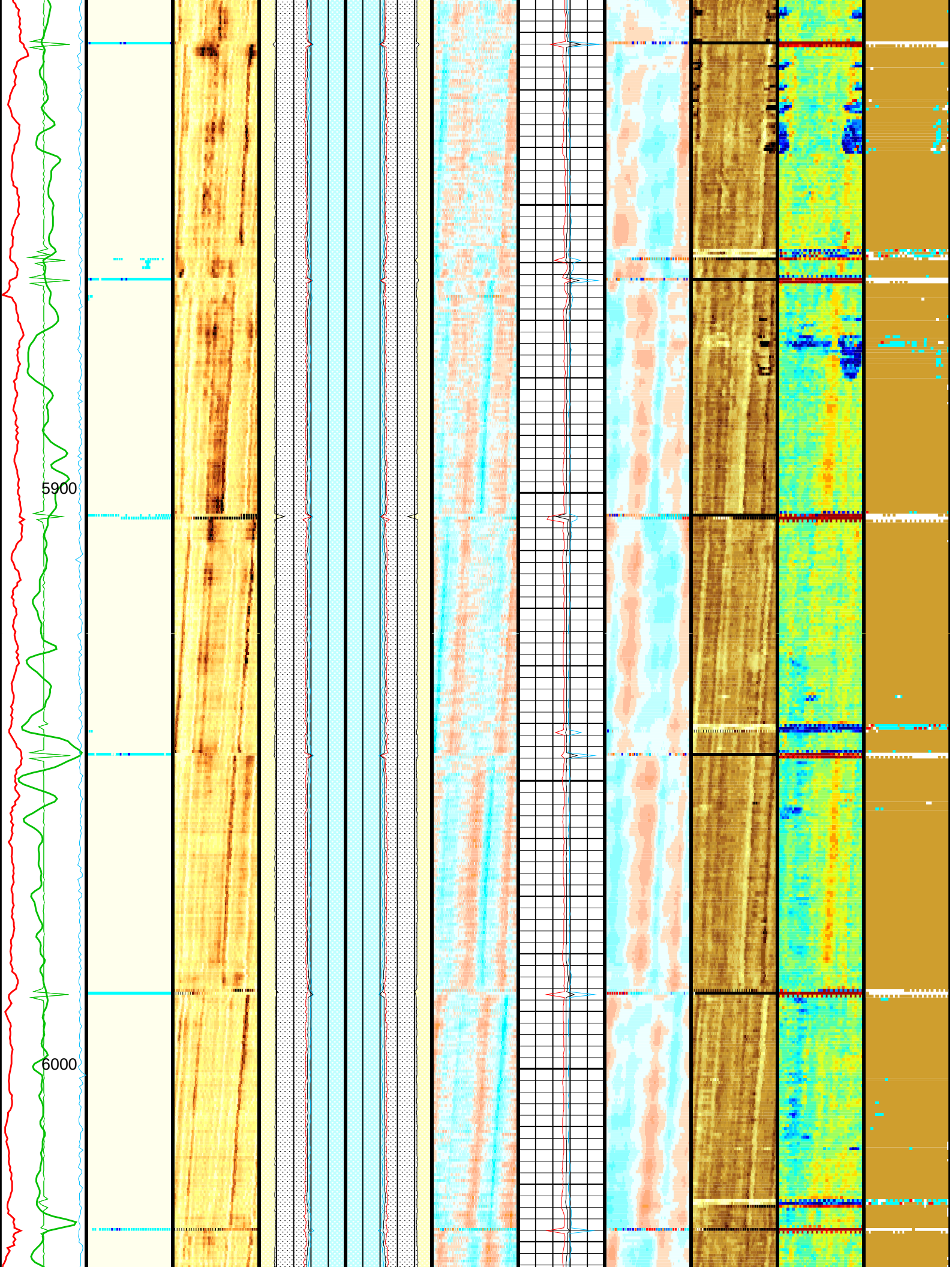
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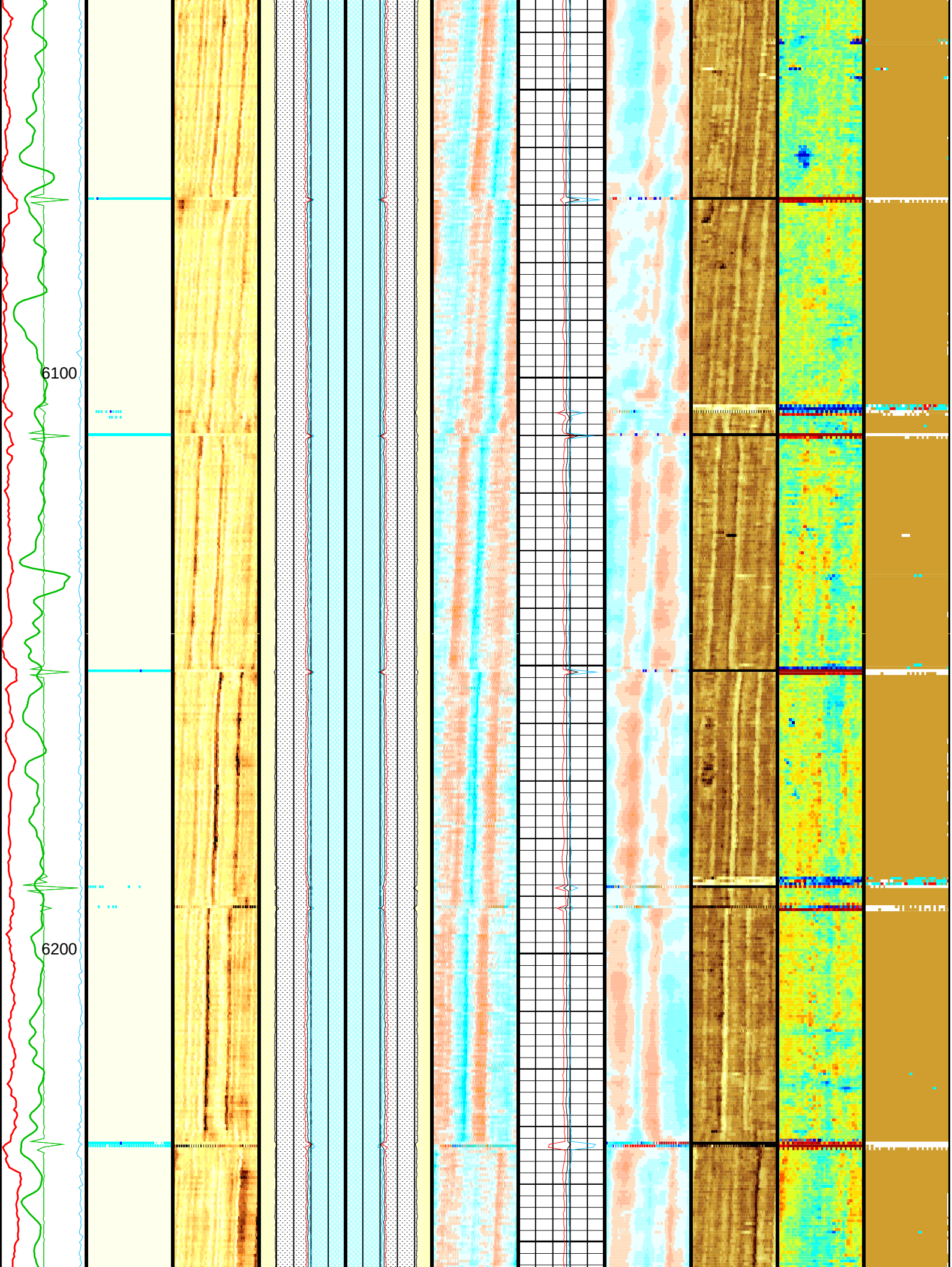
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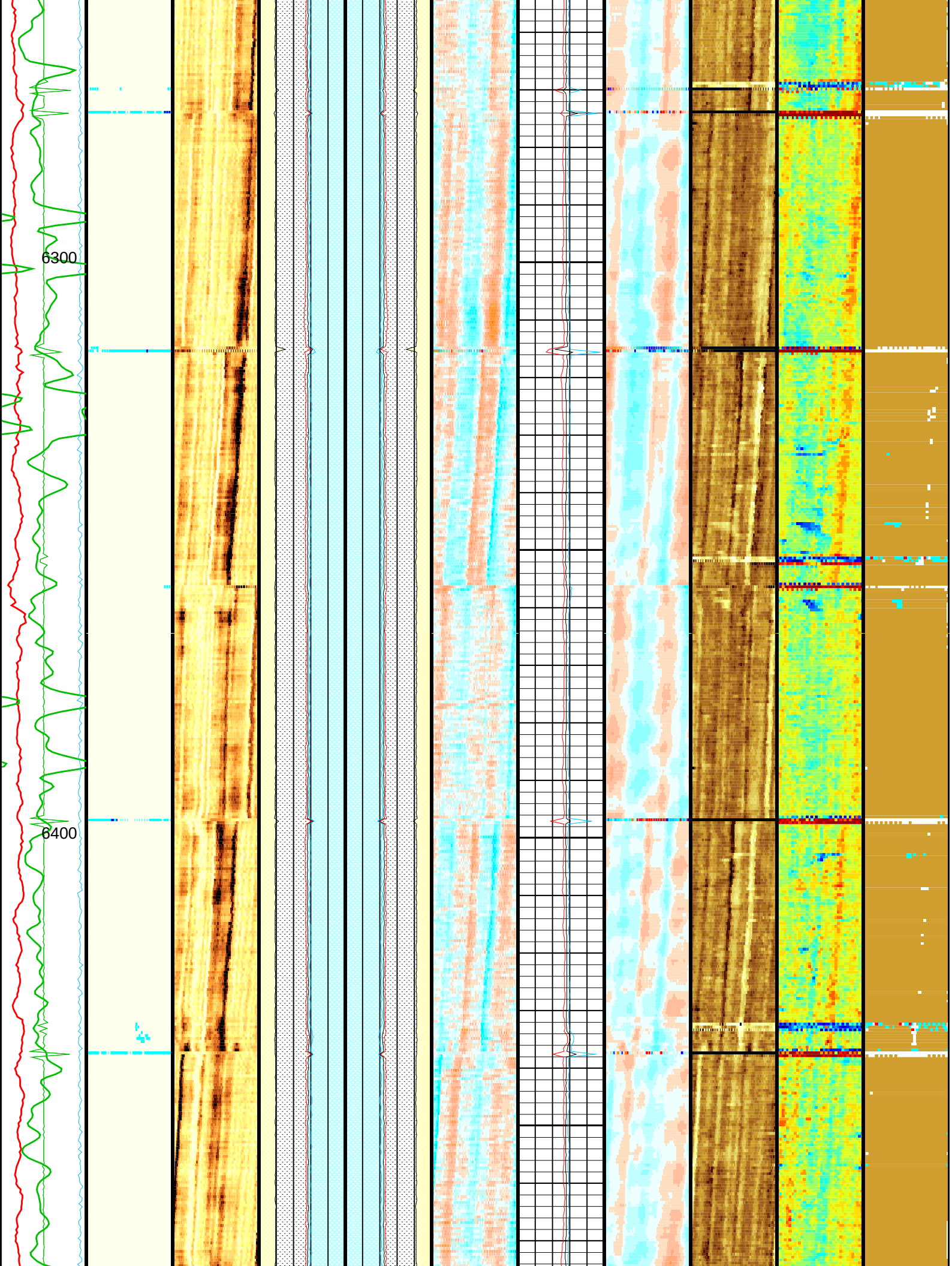
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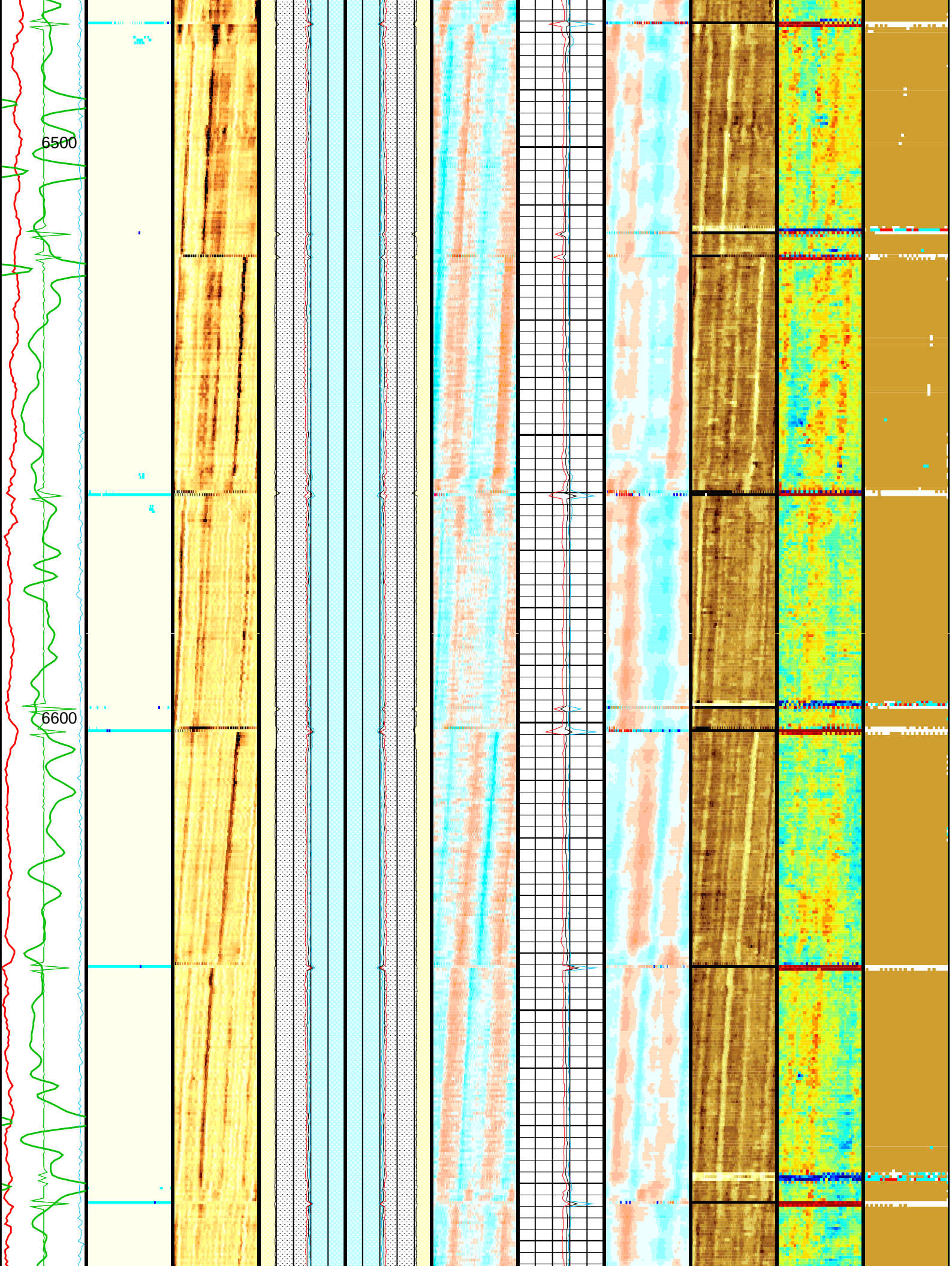
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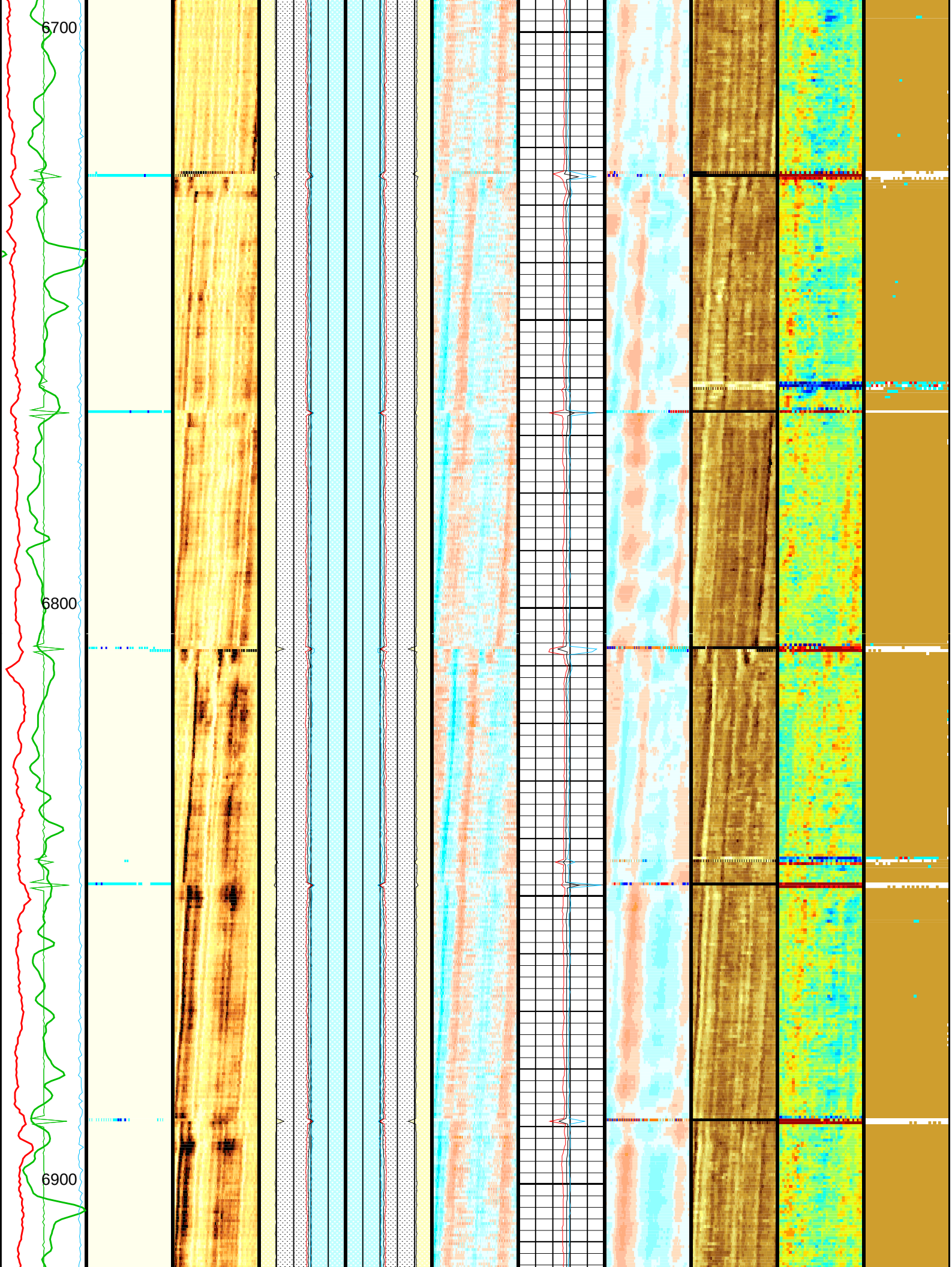
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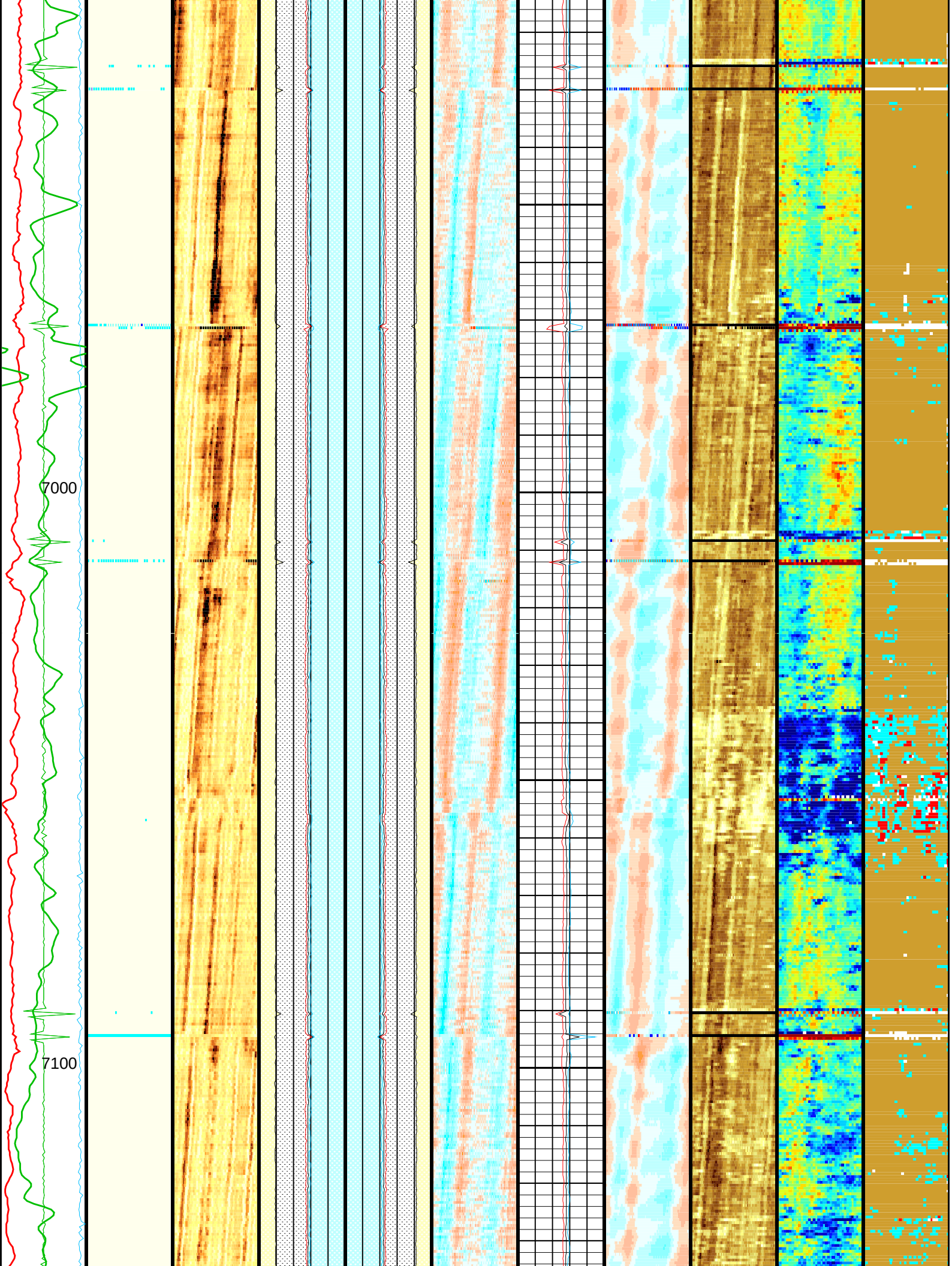
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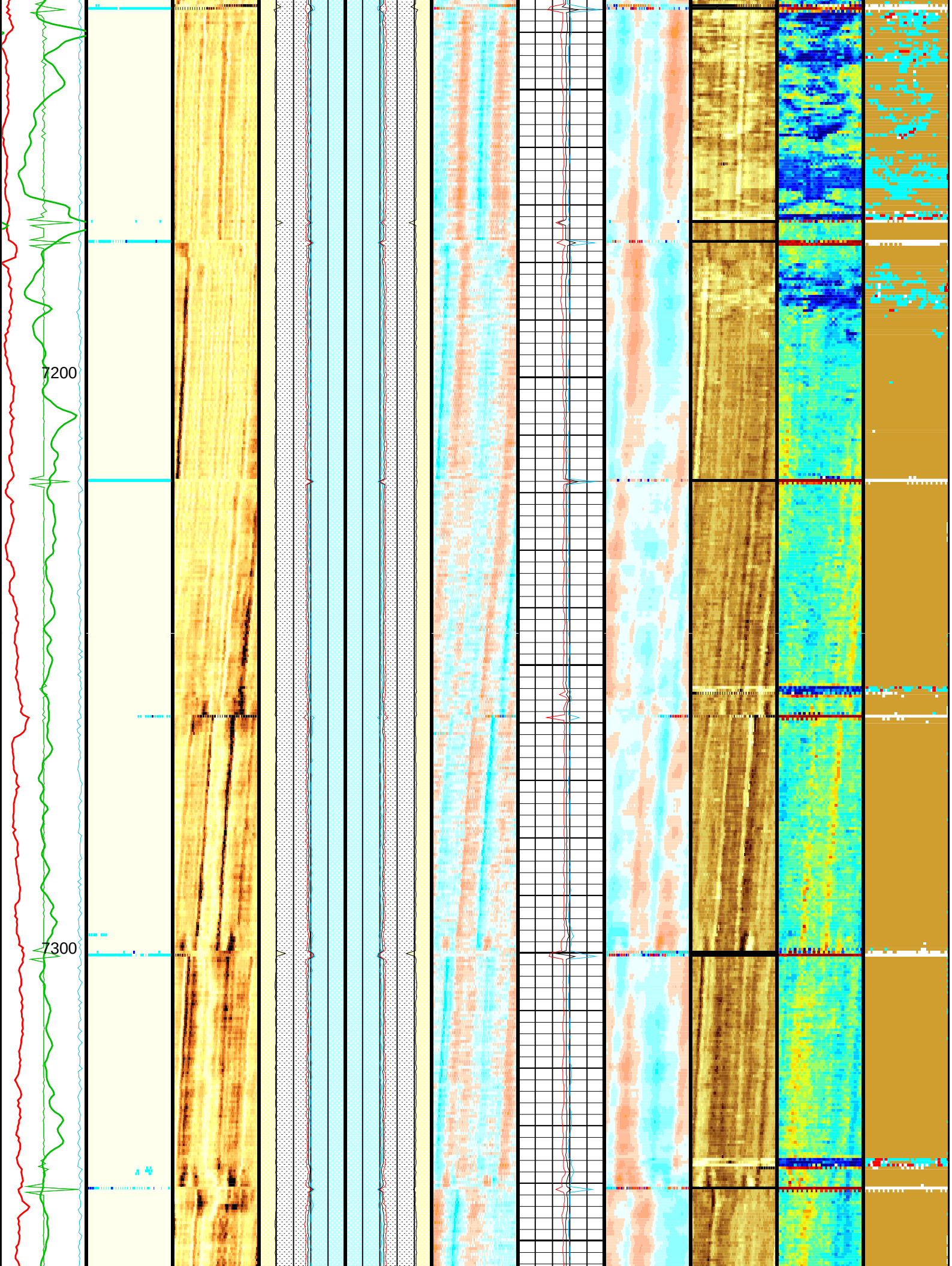
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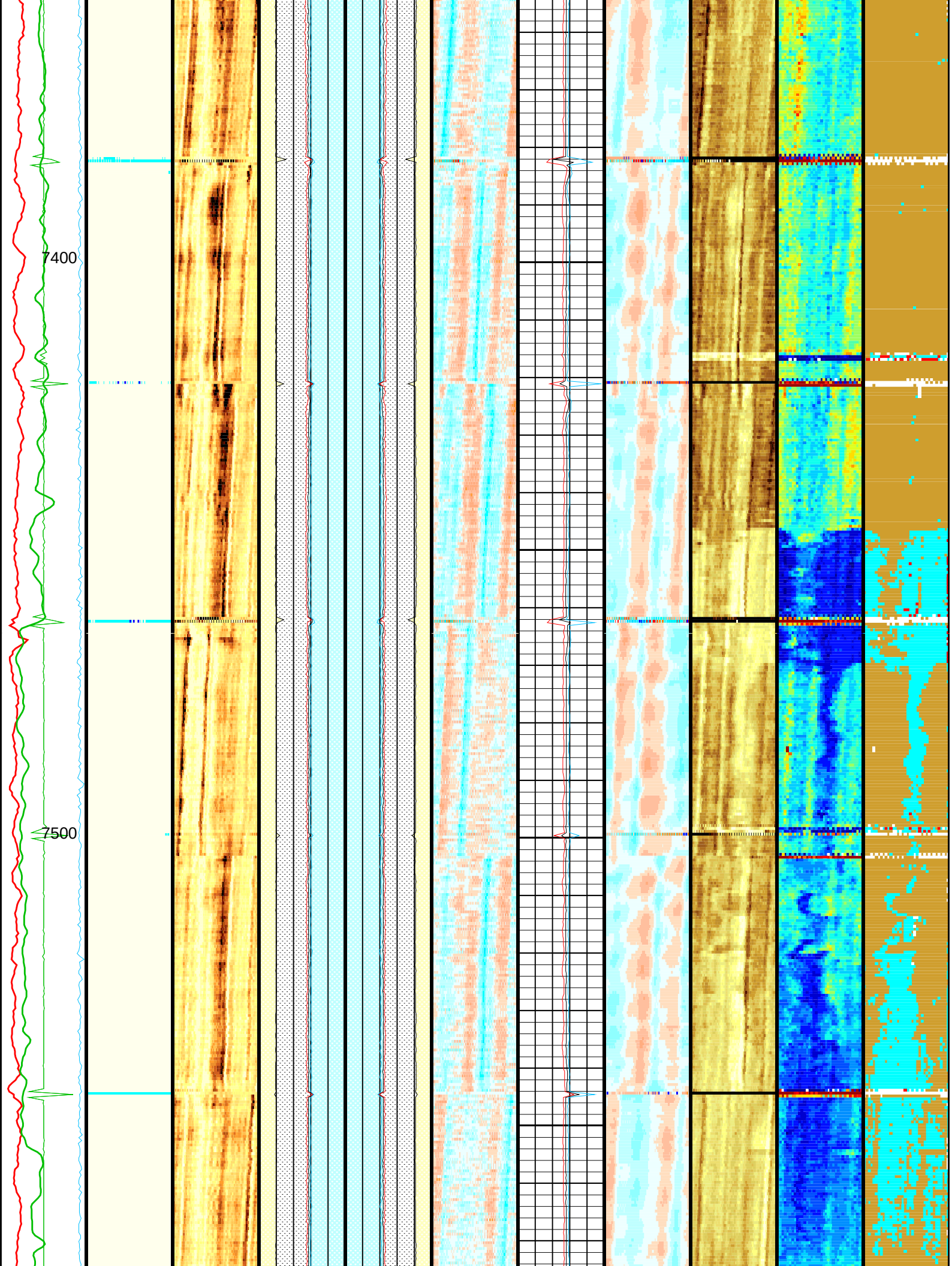
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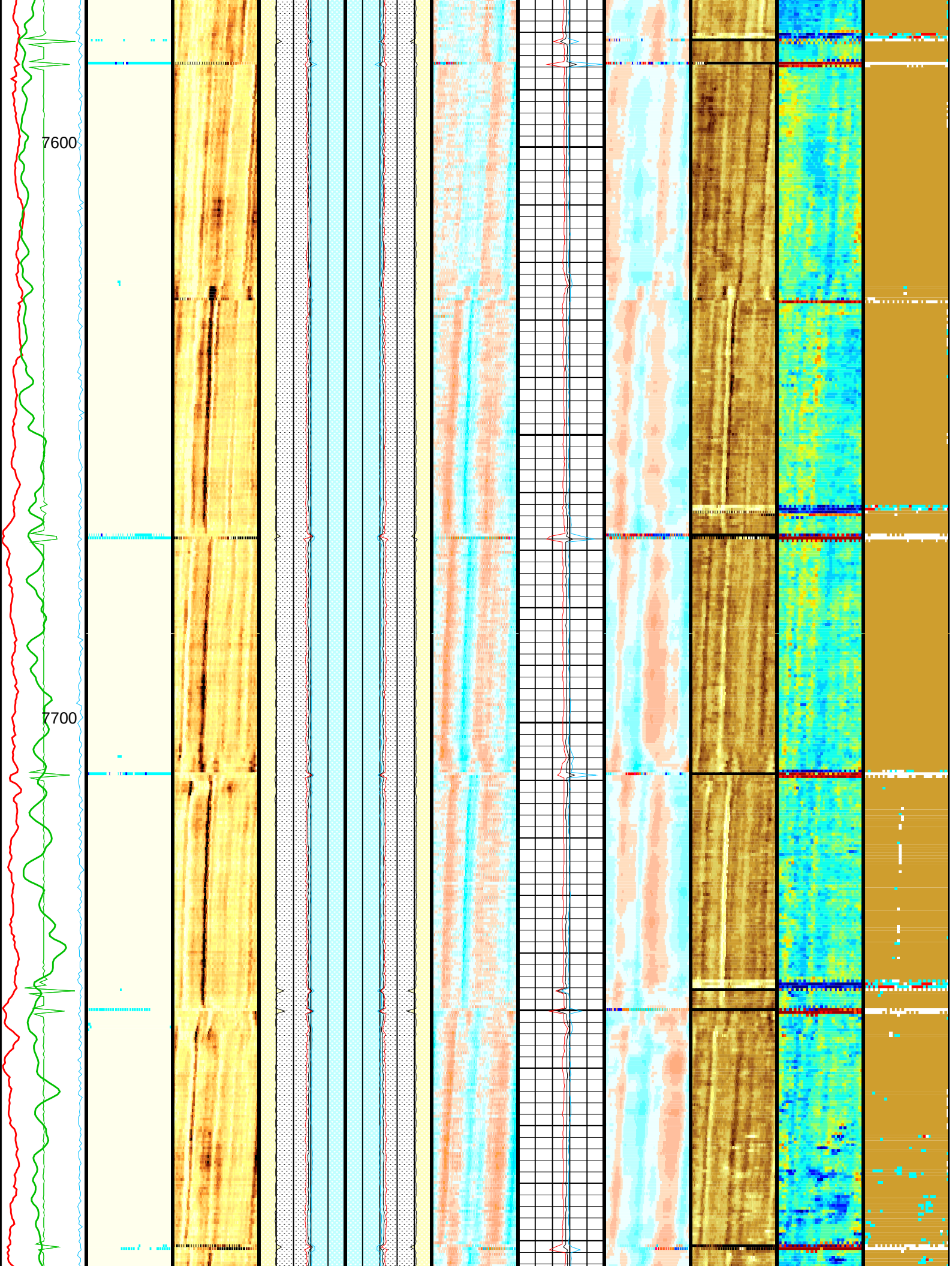
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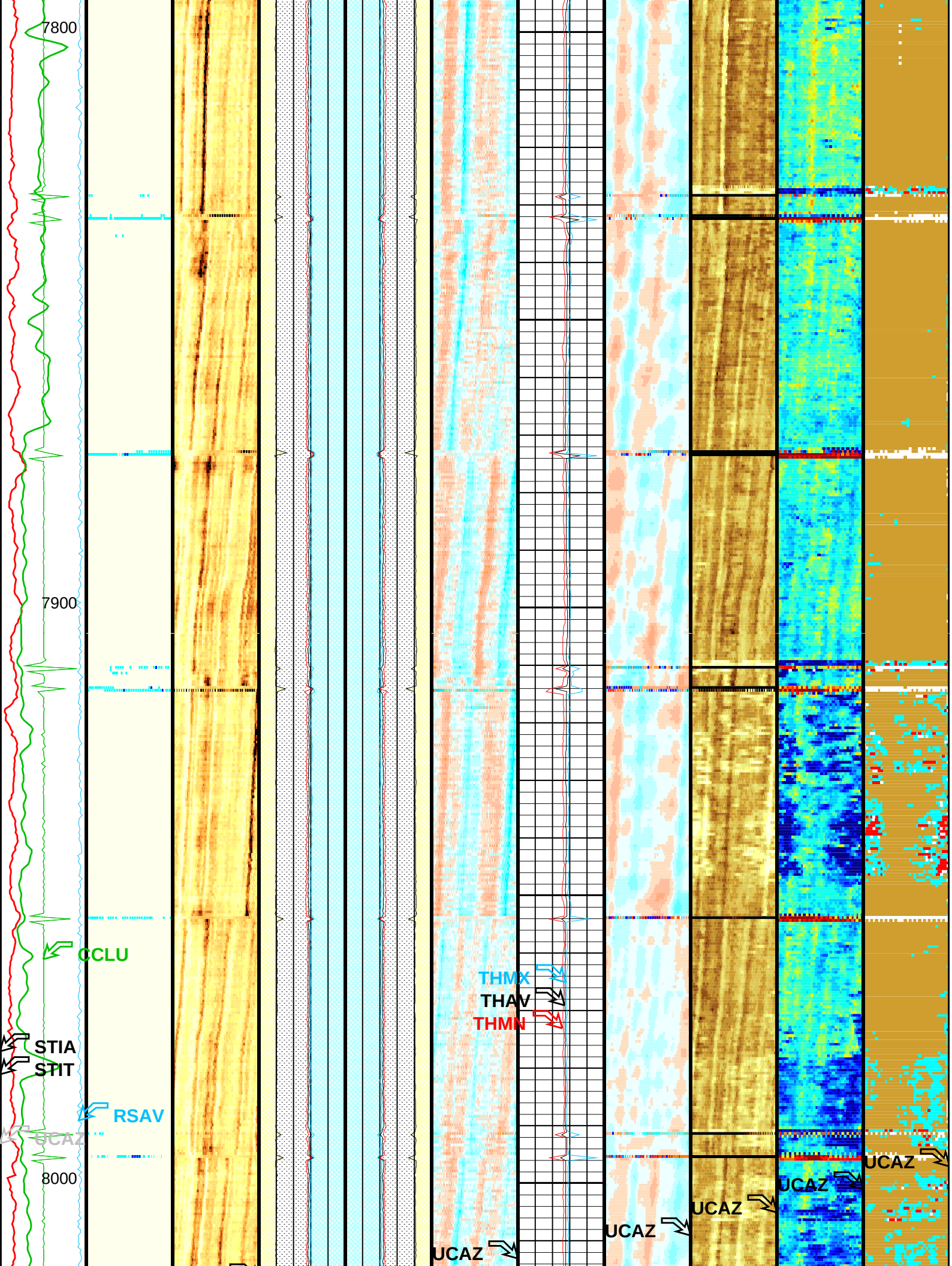
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8000
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STIA
STIT
RSAV
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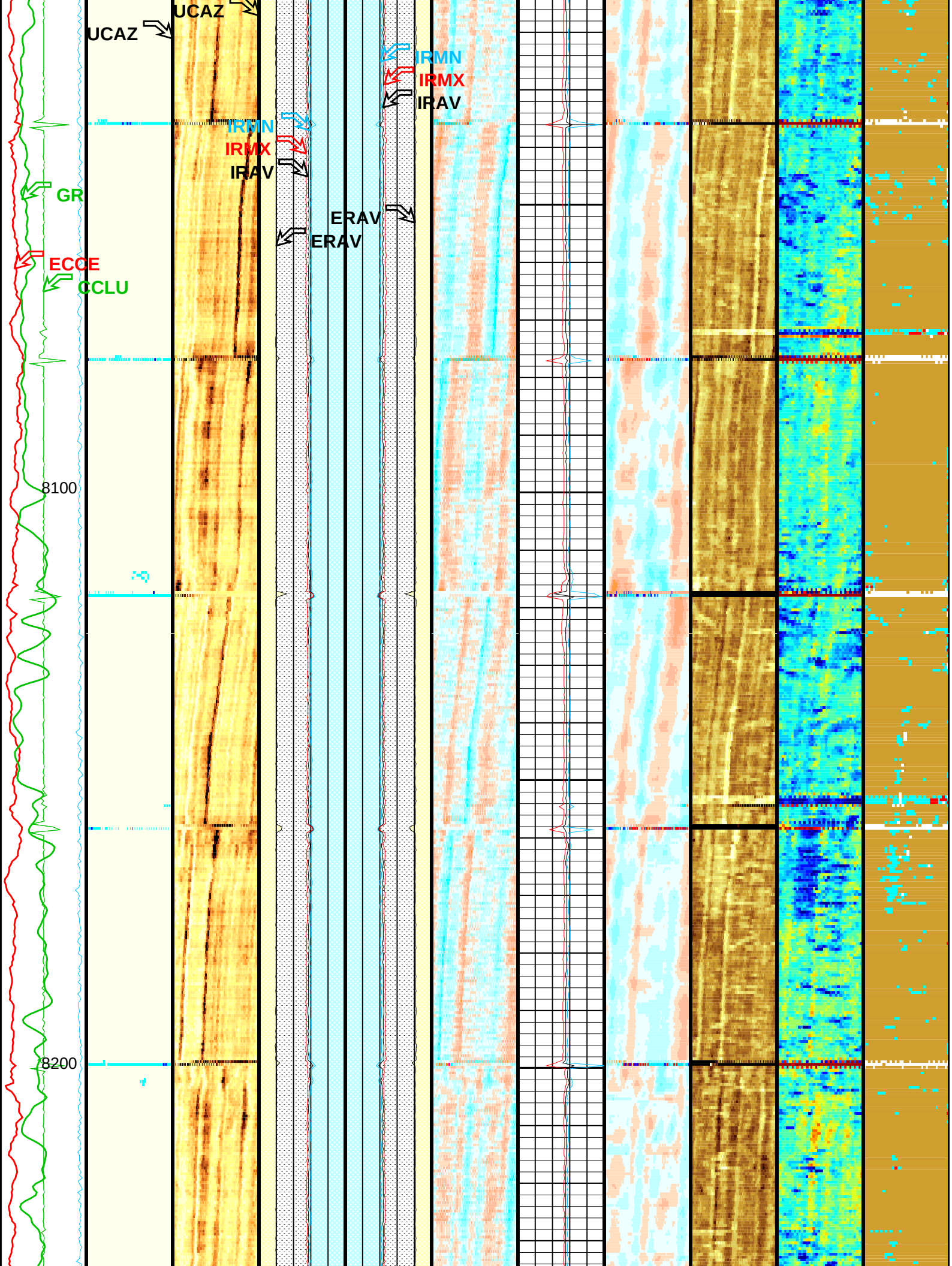
THMX
THAV
THMN
UCAZ
UCAZ
UCAZ
UCAZ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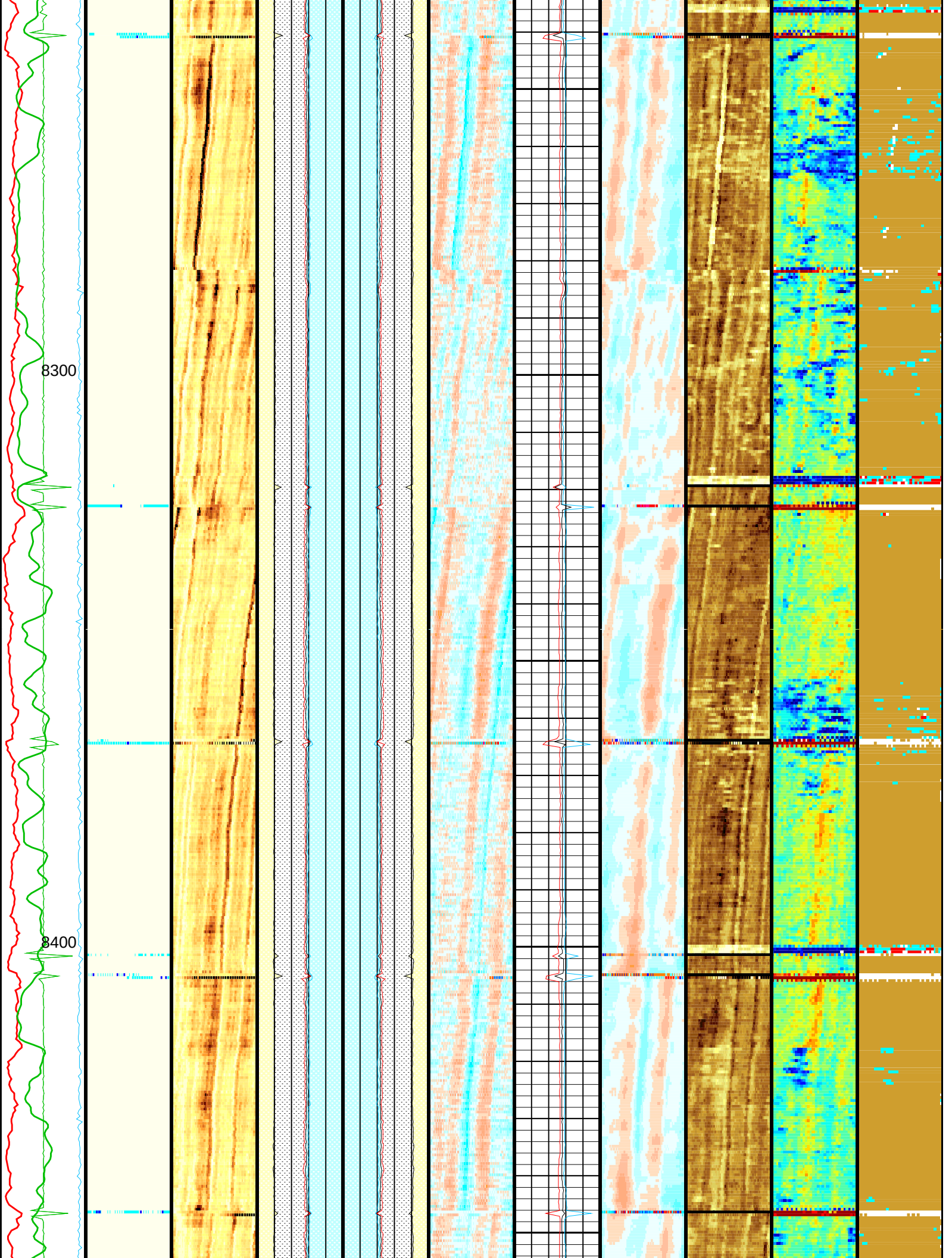
8100
8200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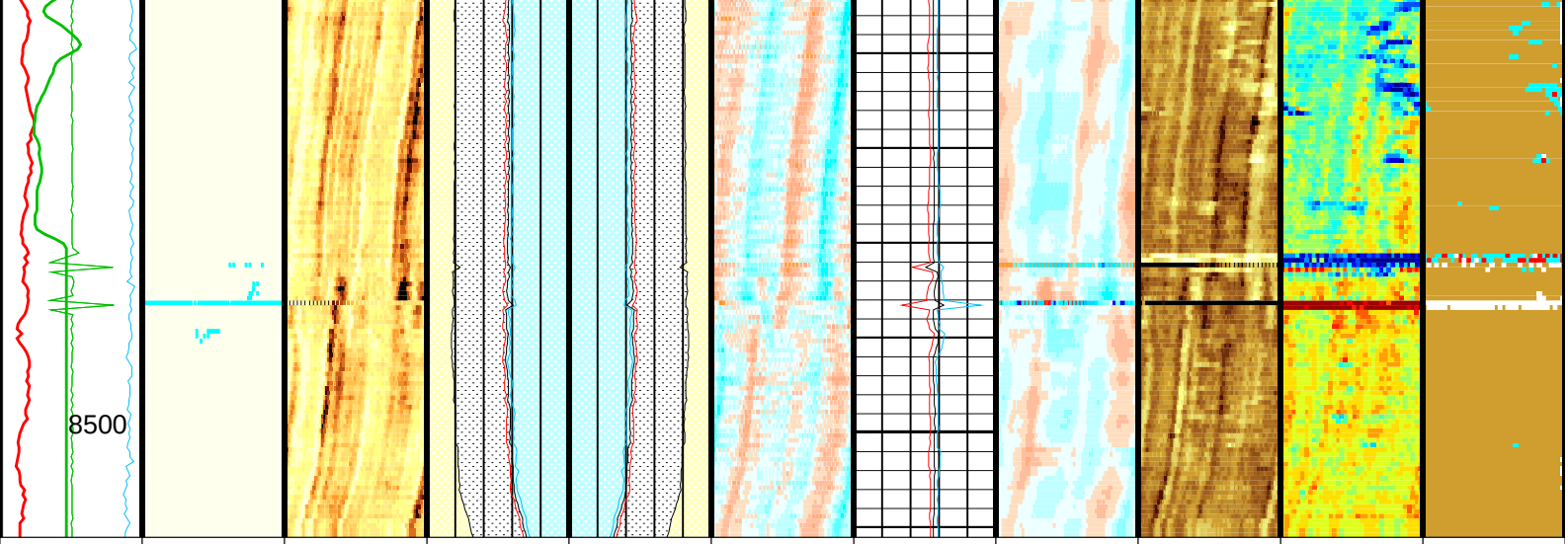


Eccent. (ECCE)	Process. flags (UFLG)	Amplitude of echo minus Max (AWBK) (DB)	External radius Average (ERAV) (IN)	External radius Average (ERAV) (IN)	Internal radii minus Ave (IRBK) (IN)	Min of Thickness (THMN) (IN)	Thickness minus Ave (THBK) (IN)	Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (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	−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
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				
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) (−−−−			Min of Internal radius (IRMN) (IN)	Min of Internal radius (IRMN) (IN)						
−20 20			3.7 2.7	2.7 3.7						
Gamma Ray (GR) (GAPI)										
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

Format: USI_IBC_SLG_Composite Vertical Scale: 5" per 100' Graphics File Created: 27−Jun−2010 16:35

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	206	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	65	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	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	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	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	−12	DB/M
U−USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U−USIT_UIST	Ultrasonic IBC Sonde Type	Sub_Ibcs_A	
U−USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	−10	DEG
USTO	Ultrasonic Time Offset	2	US

USTO	Ultrasonic Time Offset	−2	US
USUB	Ultrasonic Subassembly Identifier	Sub_5_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	1.8	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	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	8646.00	FT
TDL	Total Depth − Logger	8546.00	FT
System and Miscellaneous			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	7.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35		

Schlumberger

GOODWIN 0.1 INCH

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. Well: PCU 197−34A3

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

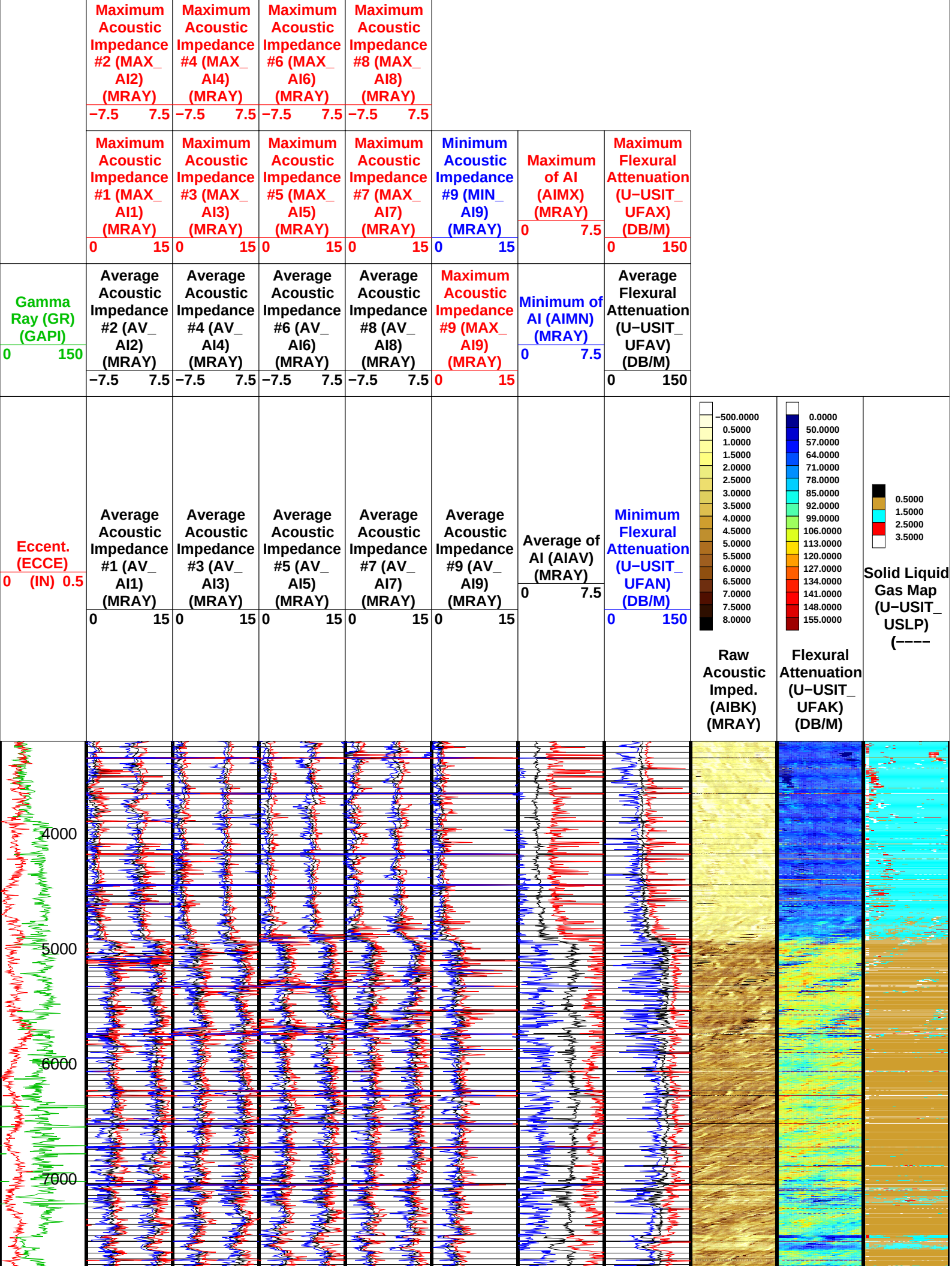
Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35		

OP System Version: 17C0−154

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

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
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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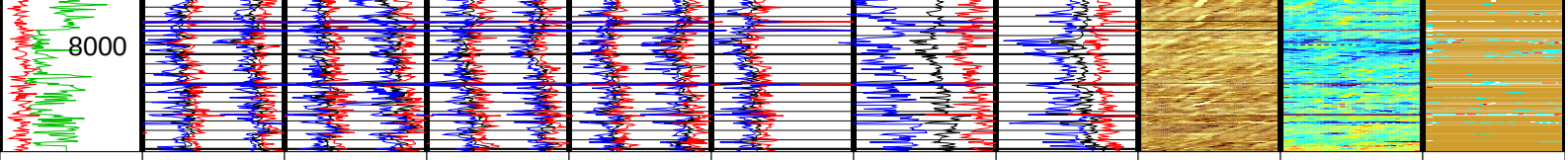
−7.5 7.5
Maximum Acoustic Impedance #6 (MAX_AI6) (MRAY)
−7.5 7.5
Maximum Acoustic Impedance #8 (MAX_AI8) (MRAY)
−7.5 7.5
Maximum Acoustic Impedance #1 (MAX_AI1) (MRAY)
0 15
Maximum Acoustic Impedance #3 (MAX_AI3) (MRAY)
0 15
Maximum Acoustic Impedance #5 (MAX_AI5) (MRAY)
0 15
Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)
0 15
Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)
0 15
Maximum of AI (AIMX) (MRAY)
0 7.5
Maximum Flexural Attenuation (U−USIT_UFAX) (DB/M)
0 150
Gamma Ray (GR) (GAPI)
0 150
Average Acoustic Impedance #2 (AV_AI2) (MRAY)
−7.5 7.5
Average Acoustic Impedance #4 (AV_AI4) (MRAY)
−7.5 7.5
Average Acoustic Impedance #6 (AV_AI6) (MRAY)
−7.5 7.5
Average Acoustic Impedance #8 (AV_AI8) (MRAY)
−7.5 7.5
Maximum Acoustic Impedance #9 (MAX_AI9) (MRAY)
0 15
Minimum of AI (AIMN) (MRAY)
0 7.5
Average Flexural Attenuation (U−USIT_UFAV) (DB/M)
0 150
Eccent. (ECCE)
0 (IN) 0.5
Average Acoustic Impedance #1 (AV_AI1) (MRAY)
0 15
Average Acoustic Impedance #3 (AV_AI3) (MRAY)
0 15
Average Acoustic Impedance #5 (AV_AI5) (MRAY)
0 15
Average Acoustic Impedance #7 (AV_AI7) (MRAY)
0 15
Average Acoustic Impedance #9 (AV_AI9) (MRAY)
0 15
Average of AI (AIAV) (MRAY)
0 7.5
Minimum Flexural Attenuation (U−USIT_UFAN) (DB/M)
0 150
−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
Raw Acoustic Imped. (AIBK) (MRAY)
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
Flexural Attenuation (U−USIT_UFAK) (DB/M)
0.5000
1.5000
2.5000
3.5000
Solid Liquid Gas Map (U−USIT_USLP) (−−−−
4000
5000
6000
7000



Eccent. (ECCE) 0 (IN) 0.5	Average Acoustic Impedance #1 (AV_ AI1) (MRAY) 0 15	Average Acoustic Impedance #3 (AV_ AI3) (MRAY) 0 15	Average Acoustic Impedance #5 (AV_ AI5) (MRAY) 0 15	Average Acoustic Impedance #7 (AV_ AI7) (MRAY) 0 15	Average Acoustic Impedance #9 (AV_ AI9) (MRAY) 0 15	Average of AI (AIAV) (MRAY) 0 7.5	Minimum Flexural Attenuation (U−USIT_ UFAN) (DB/M) 0 150	−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 Raw Acoustic Imped. (AIBK) (MRAY)	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 Flexural Attenuation (U−USIT_ UFAK) (DB/M)	0.5000 1.5000 2.5000 3.5000 Solid Liquid Gas Map (U−USIT_ USLP) (−−−−
Gamma Ray (GR) (GAPI) 0 150	Average Acoustic Impedance #2 (AV_ AI2) (MRAY) −7.5 7.5	Average Acoustic Impedance #4 (AV_ AI4) (MRAY) −7.5 7.5	Average Acoustic Impedance #6 (AV_ AI6) (MRAY) −7.5 7.5	Average Acoustic Impedance #8 (AV_ AI8) (MRAY) −7.5 7.5	Maximum Acoustic Impedance #9 (MAX_ AI9) (MRAY) 0 15	Minimum of AI (AIMN) (MRAY) 0 7.5	Average Flexural Attenuation (U−USIT_ UFAV) (DB/M) 0 150			
	Maximum Acoustic Impedance #1 (MAX_ AI1) (MRAY) 0 15	Maximum Acoustic Impedance #3 (MAX_ AI3) (MRAY) 0 15	Maximum Acoustic Impedance #5 (MAX_ AI5) (MRAY) 0 15	Maximum Acoustic Impedance #7 (MAX_ AI7) (MRAY) 0 15	Minimum Acoustic Impedance #9 (MIN_ AI9) (MRAY) 0 15	Maximum of AI (AIMX) (MRAY) 0 7.5	Maximum Flexural Attenuation (U−USIT_ UFAX) (DB/M) 0 150			
	Maximum Acoustic Impedance #2 (MAX_ AI2) (MRAY) −7.5 7.5	Maximum Acoustic Impedance #4 (MAX_ AI4) (MRAY) −7.5 7.5	Maximum Acoustic Impedance #6 (MAX_ AI6) (MRAY) −7.5 7.5	Maximum Acoustic Impedance #8 (MAX_ AI8) (MRAY) −7.5 7.5						
	Minimum Acoustic Impedance #1 (MIN_ AI1) (MRAY) 0 15	Minimum Acoustic Impedance #3 (MIN_ AI3) (MRAY) 0 15	Minimum Acoustic Impedance #5 (MIN_ AI5) (MRAY) 0 15	Minimum Acoustic Impedance #7 (MIN_ AI7) (MRAY) 0 15						
	Minimum Acoustic Impedance #2 (MIN_ AI2) (MRAY) −7.5 7.5	Minimum Acoustic Impedance #4 (MIN_ AI4) (MRAY) −7.5 7.5	Minimum Acoustic Impedance #6 (MIN_ AI6) (MRAY) −7.5 7.5	Minimum Acoustic Impedance #8 (MIN_ AI8) (MRAY) −7.5 7.5						

Format: M_Goodwin_Compressed Vertical Scale: 0.1" per 100' Graphics File Created: 27−Jun−2010 16:35

OP System Version: 17C0−154

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

All USI Images are outside views

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_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35		

Schlumberger

GOODWIN 5 INCH

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. Well: PCU 197−34A3

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

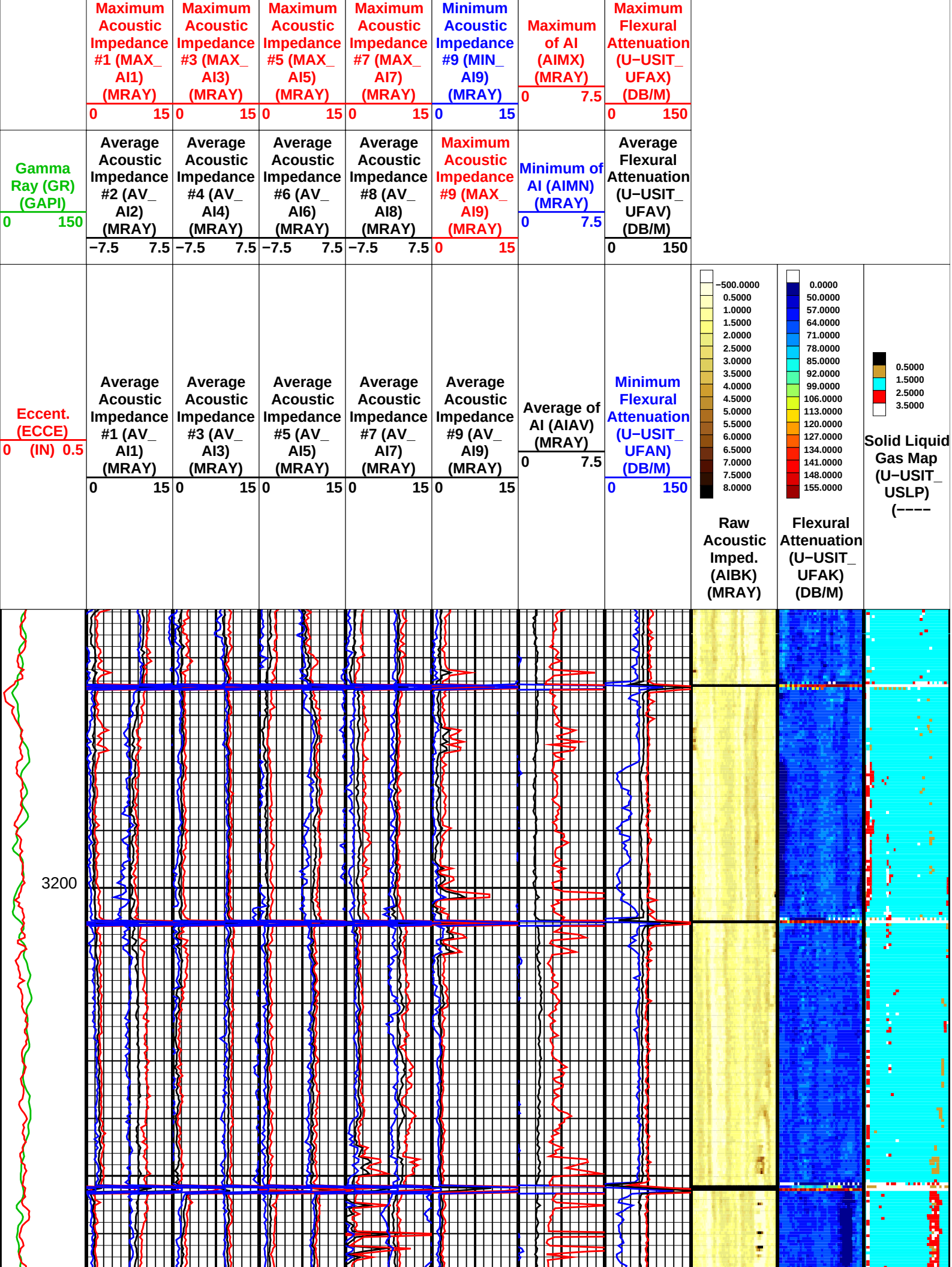
Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35		

OP System Version: 17C0−154

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

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
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
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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0 15
Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)
0 15
Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)
0 15
Maximum of AI (AIMX) (MRAY)
0 7.5
Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
0 150
Gamma Ray (GR) (GAPI)
0 150
Average Acoustic Impedance #2 (AV_AI2) (MRAY)
-7.5 7.5
Average Acoustic Impedance #4 (AV_AI4) (MRAY)
-7.5 7.5
Average Acoustic Impedance #6 (AV_AI6) (MRAY)
-7.5 7.5
Average Acoustic Impedance #8 (AV_AI8) (MRAY)
-7.5 7.5
Maximum Acoustic Impedance #9 (MAX_AI9) (MRAY)
0 15
Minimum of AI (AIMN) (MRAY)
0 7.5
Average Flexural Attenuation (U-USIT_UFAV) (DB/M)
0 150
Eccent. (ECCE)
0 (IN) 0.5
Average Acoustic Impedance #1 (AV_AI1) (MRAY)
0 15
Average Acoustic Impedance #3 (AV_AI3) (MRAY)
0 15
Average Acoustic Impedance #5 (AV_AI5) (MRAY)
0 15
Average Acoustic Impedance #7 (AV_AI7) (MRAY)
0 15
Average Acoustic Impedance #9 (AV_AI9) (MRAY)
0 15
Average of AI (AIAV) (MRAY)
0 7.5
Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)
0 150
-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
Raw Acoustic Imped. (AIBK) (MRAY)
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
Flexural Attenuation (U-USIT_UFAK) (DB/M)
0.5000
1.5000
2.5000
3.5000
Solid Liquid Gas Map (U-USIT_USLP) (----
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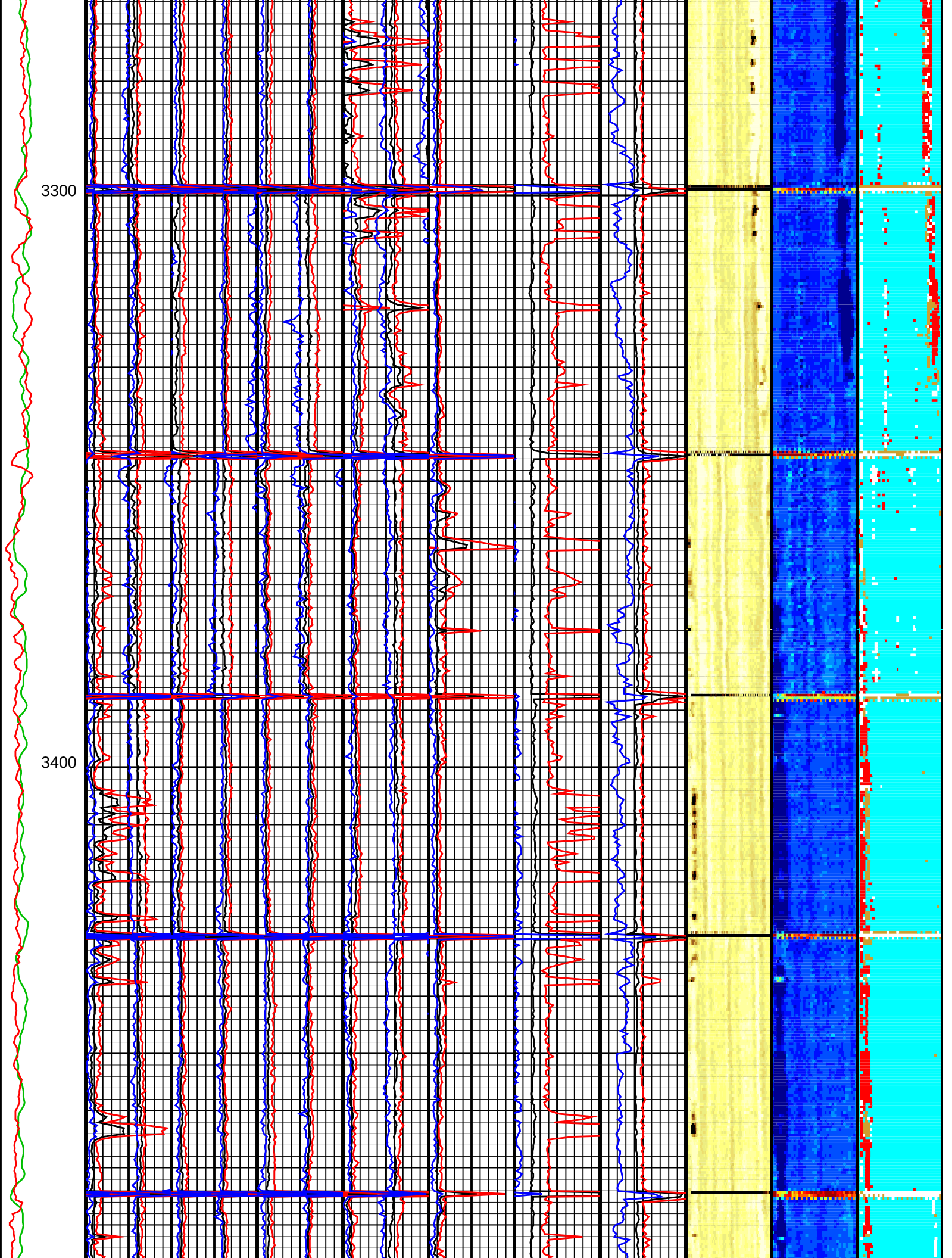
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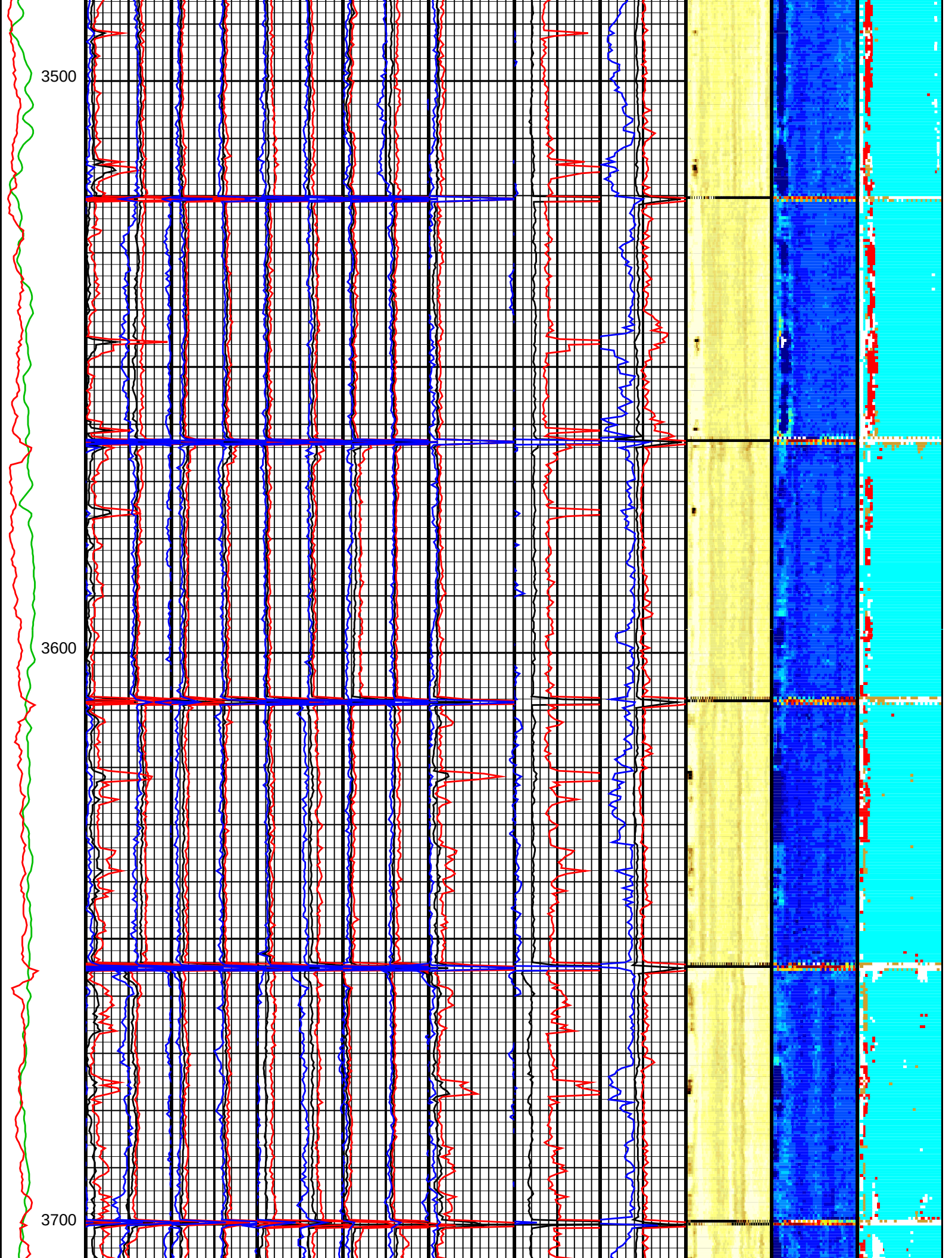
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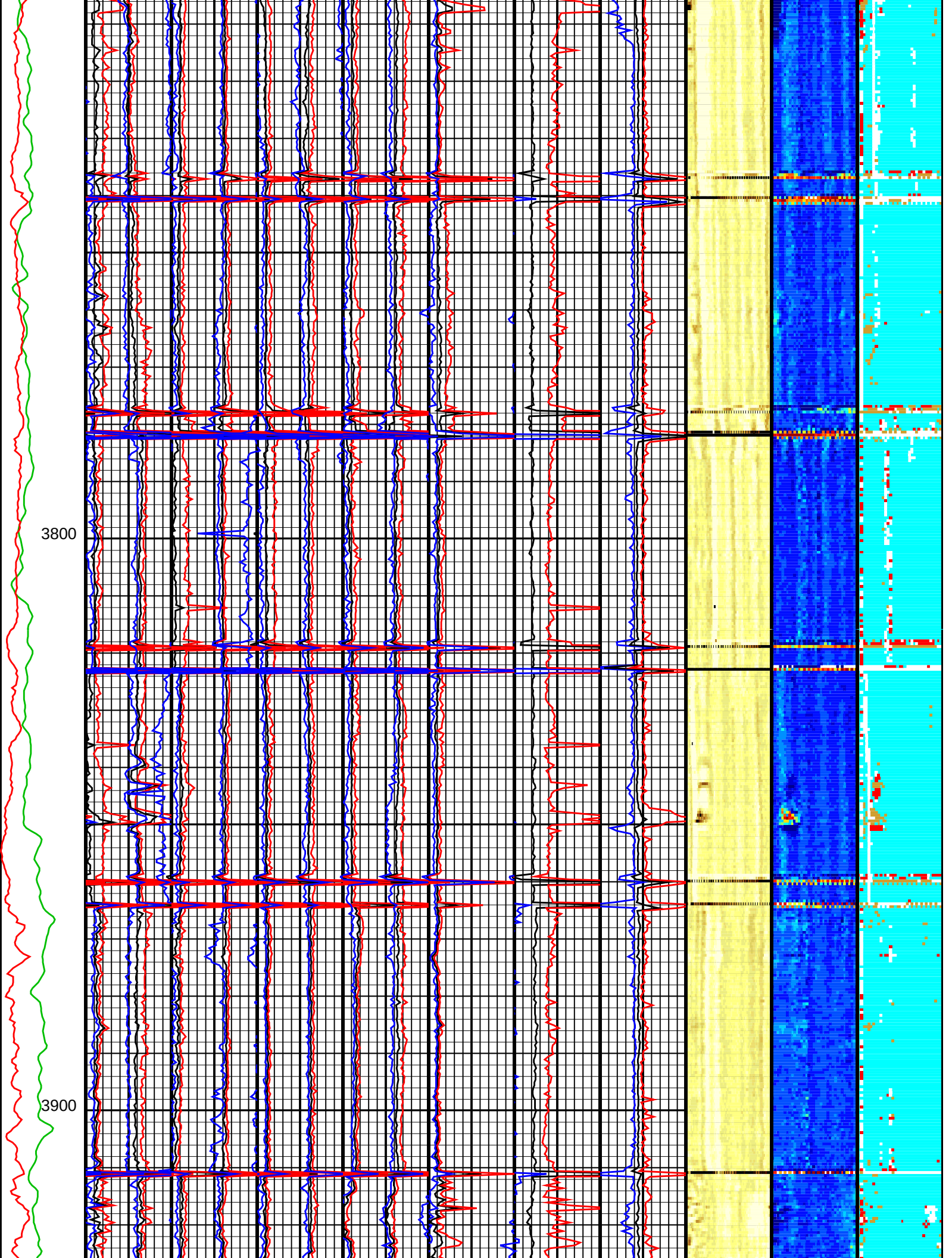
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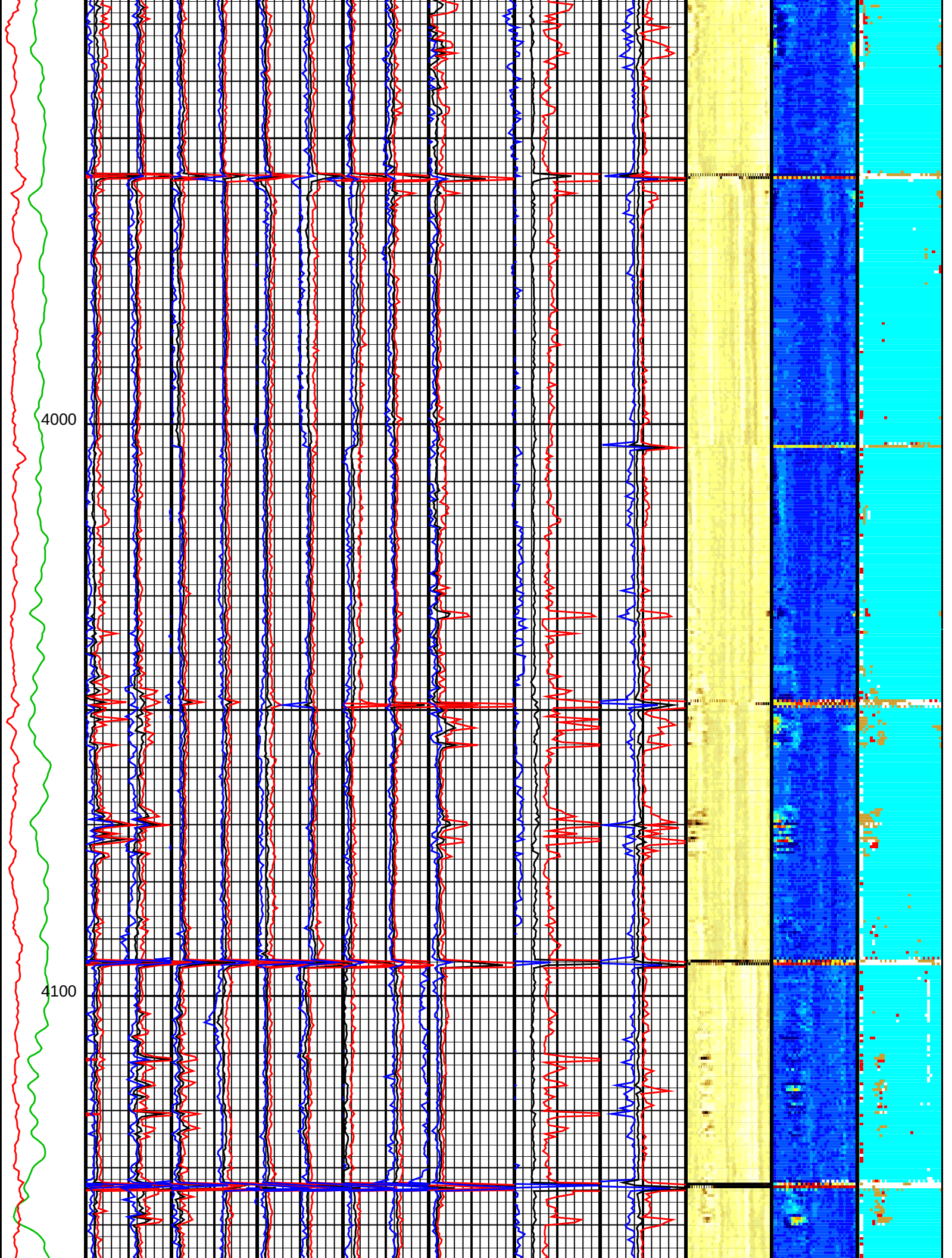
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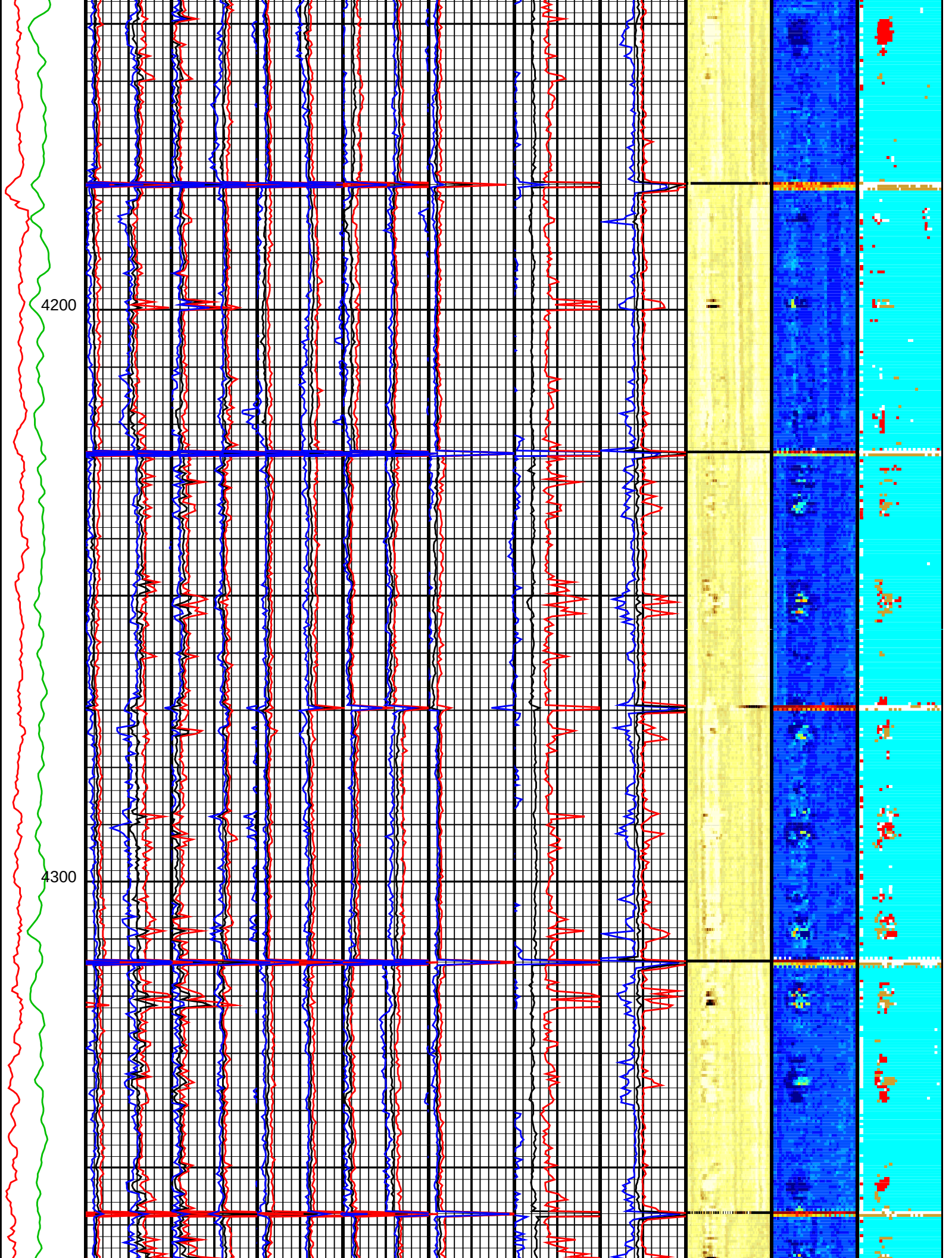
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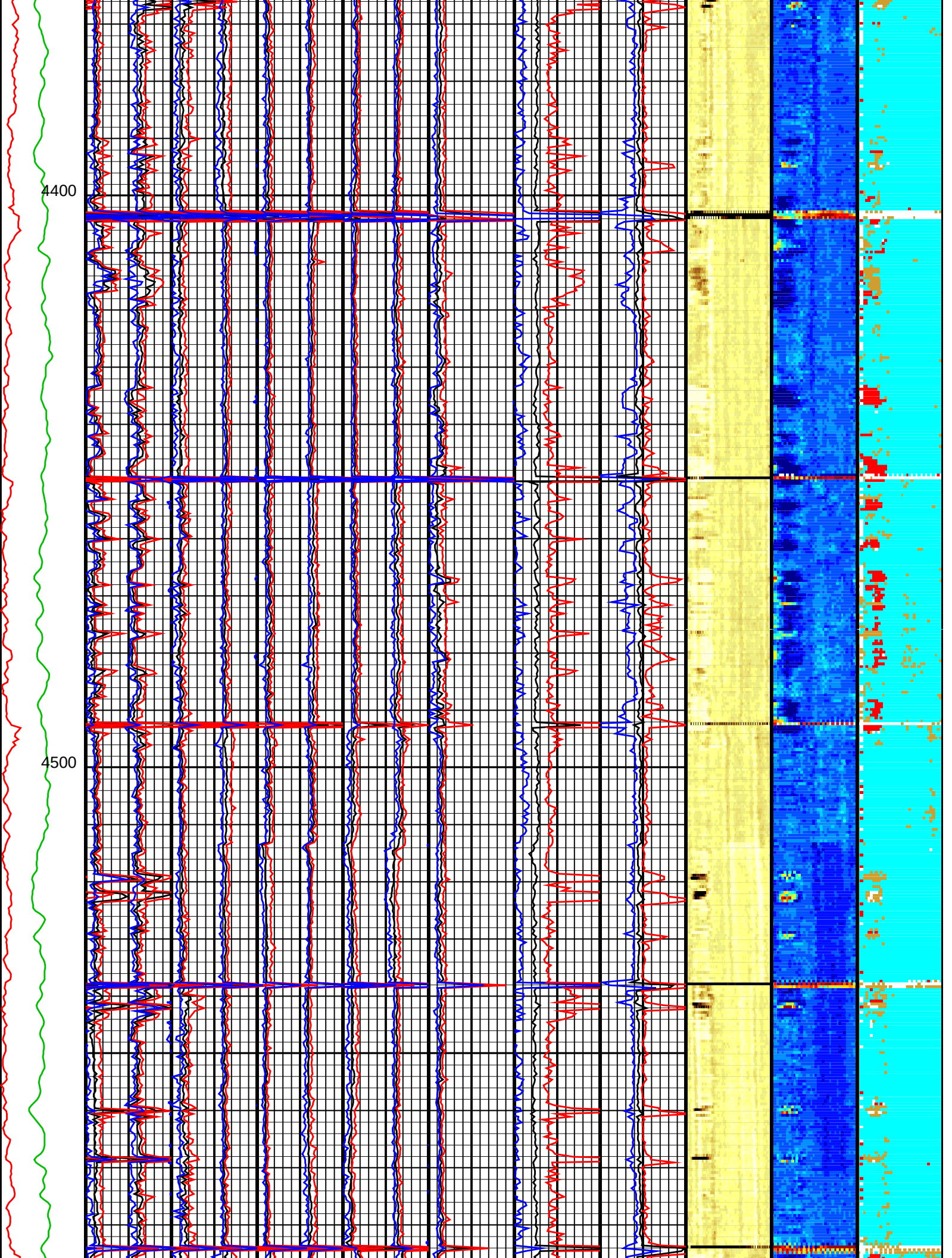
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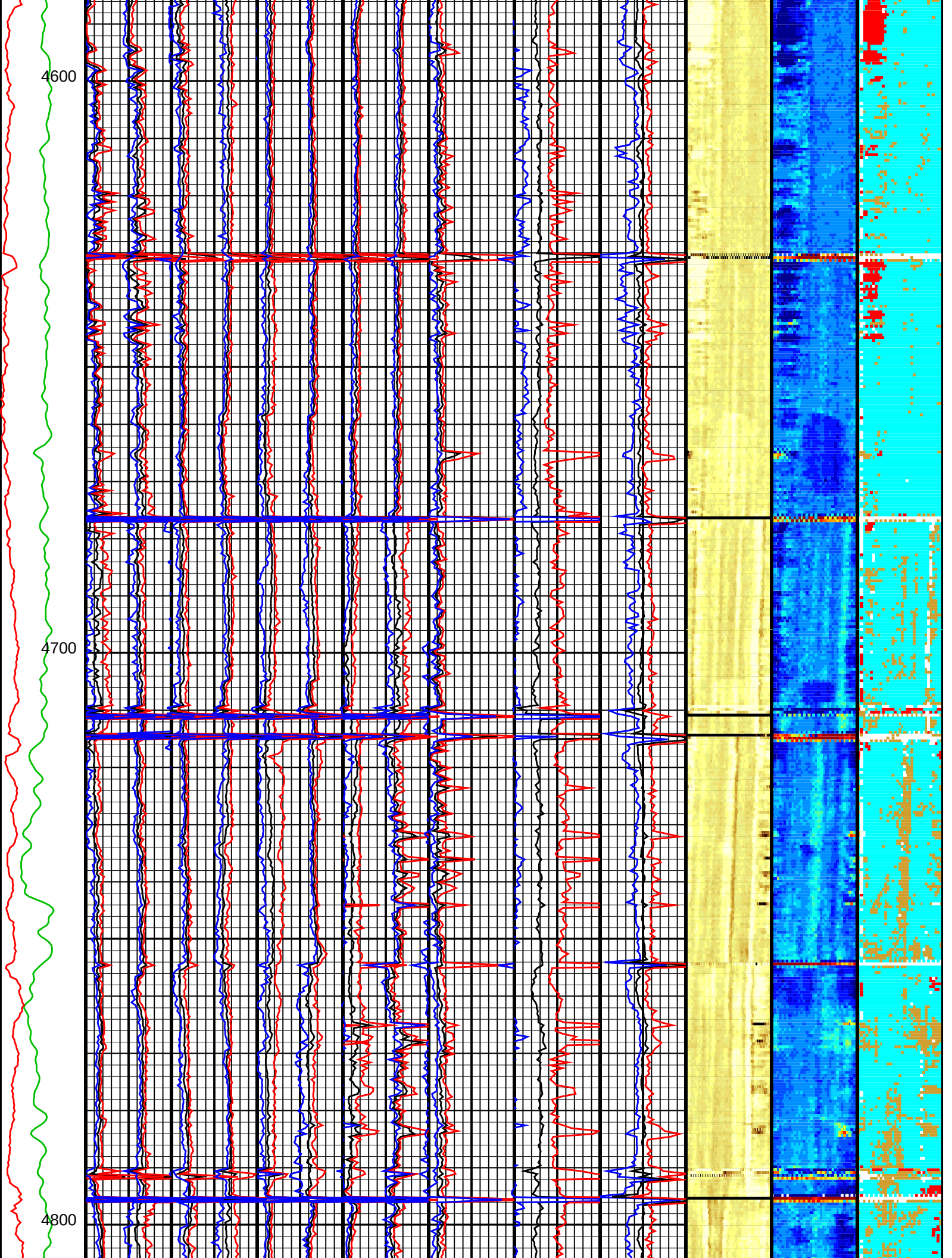
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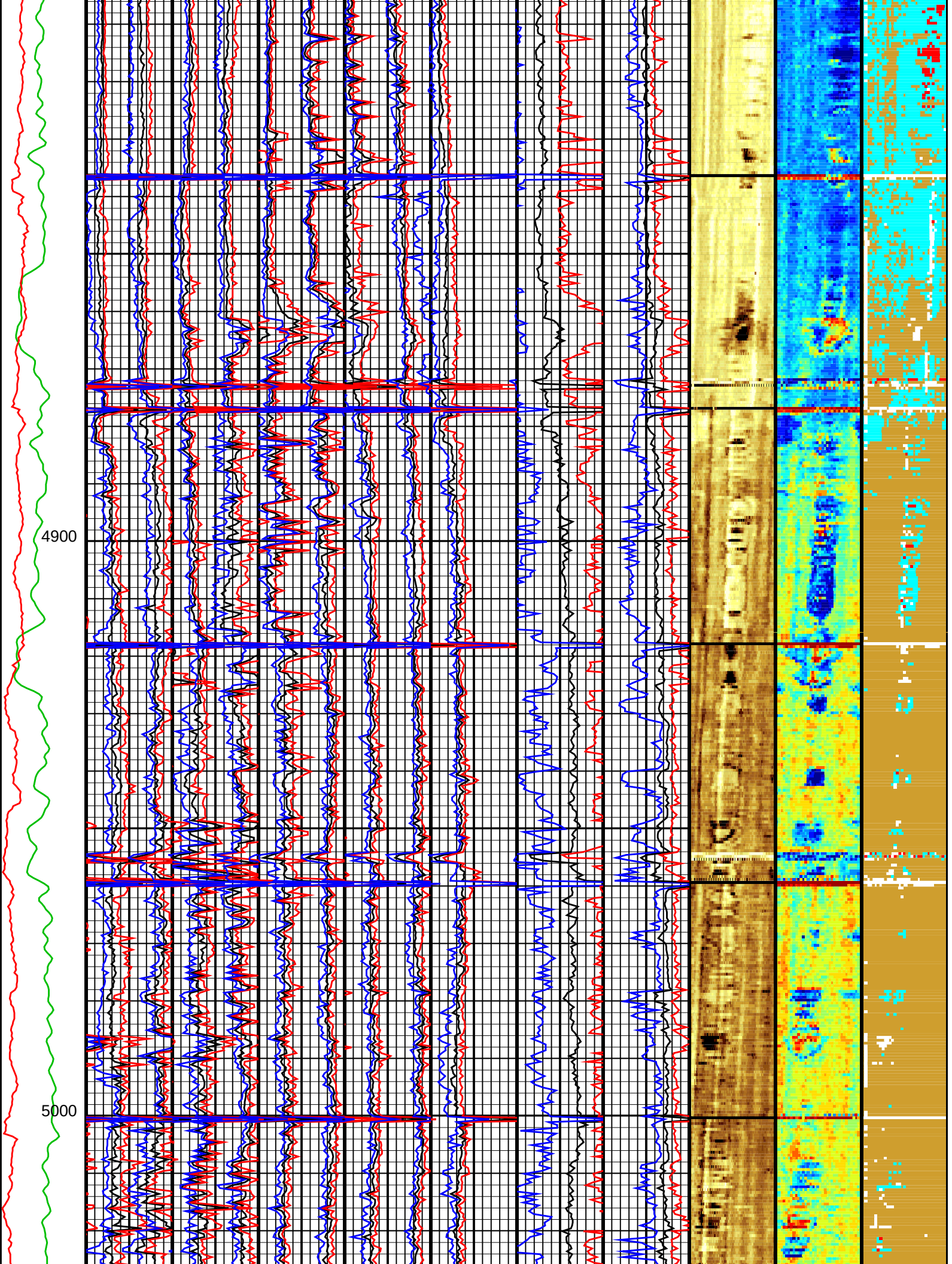
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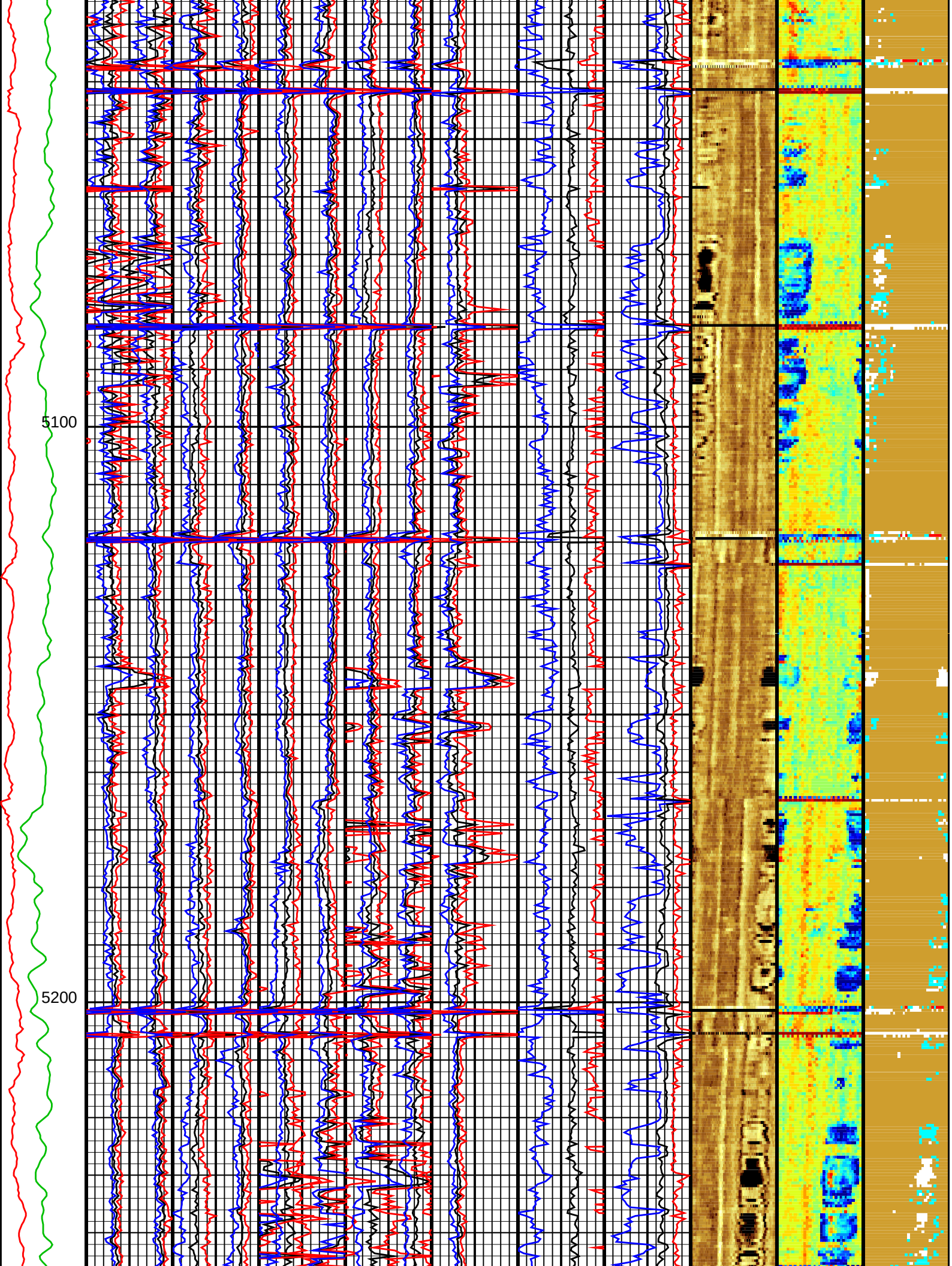
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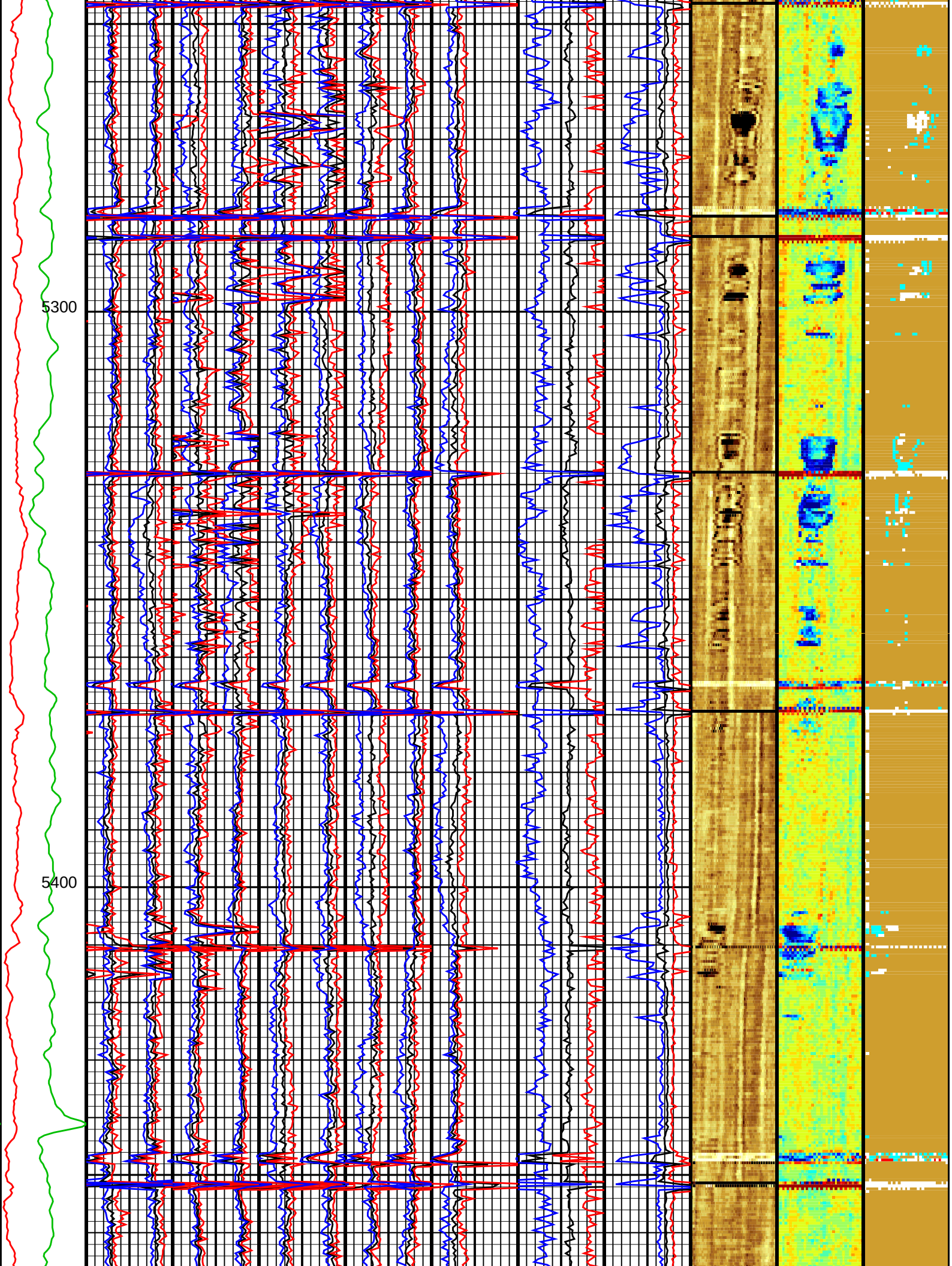
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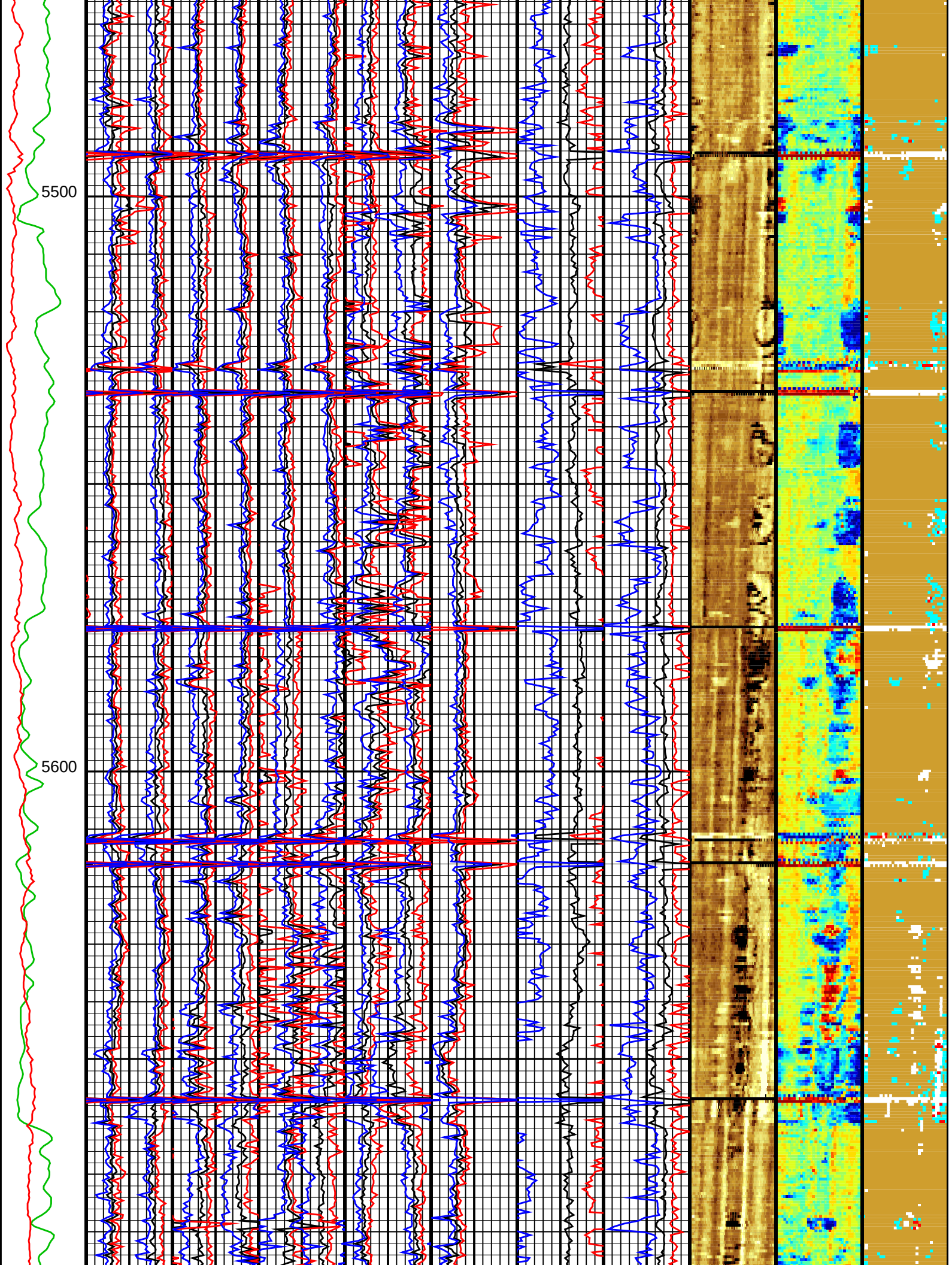
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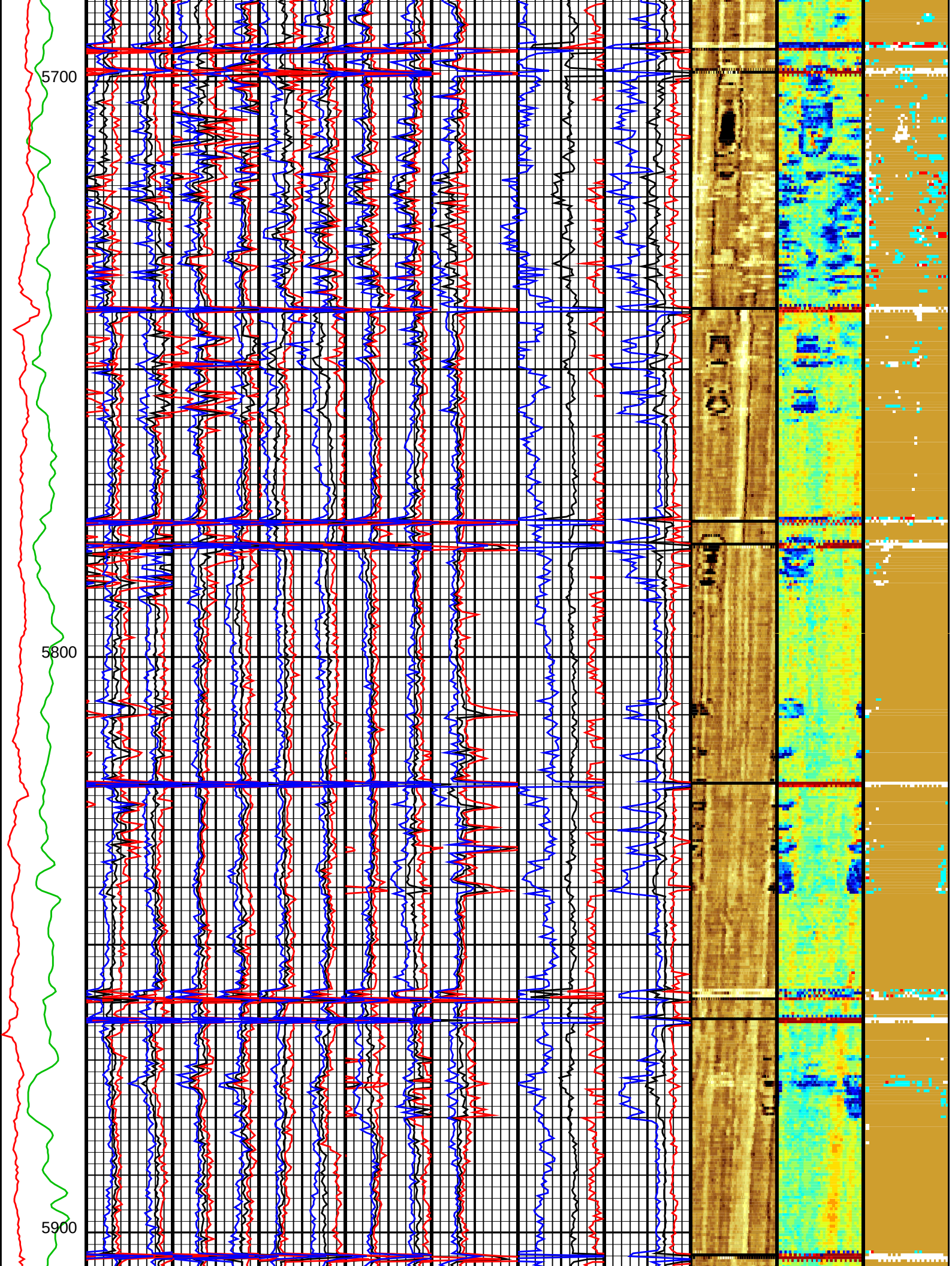
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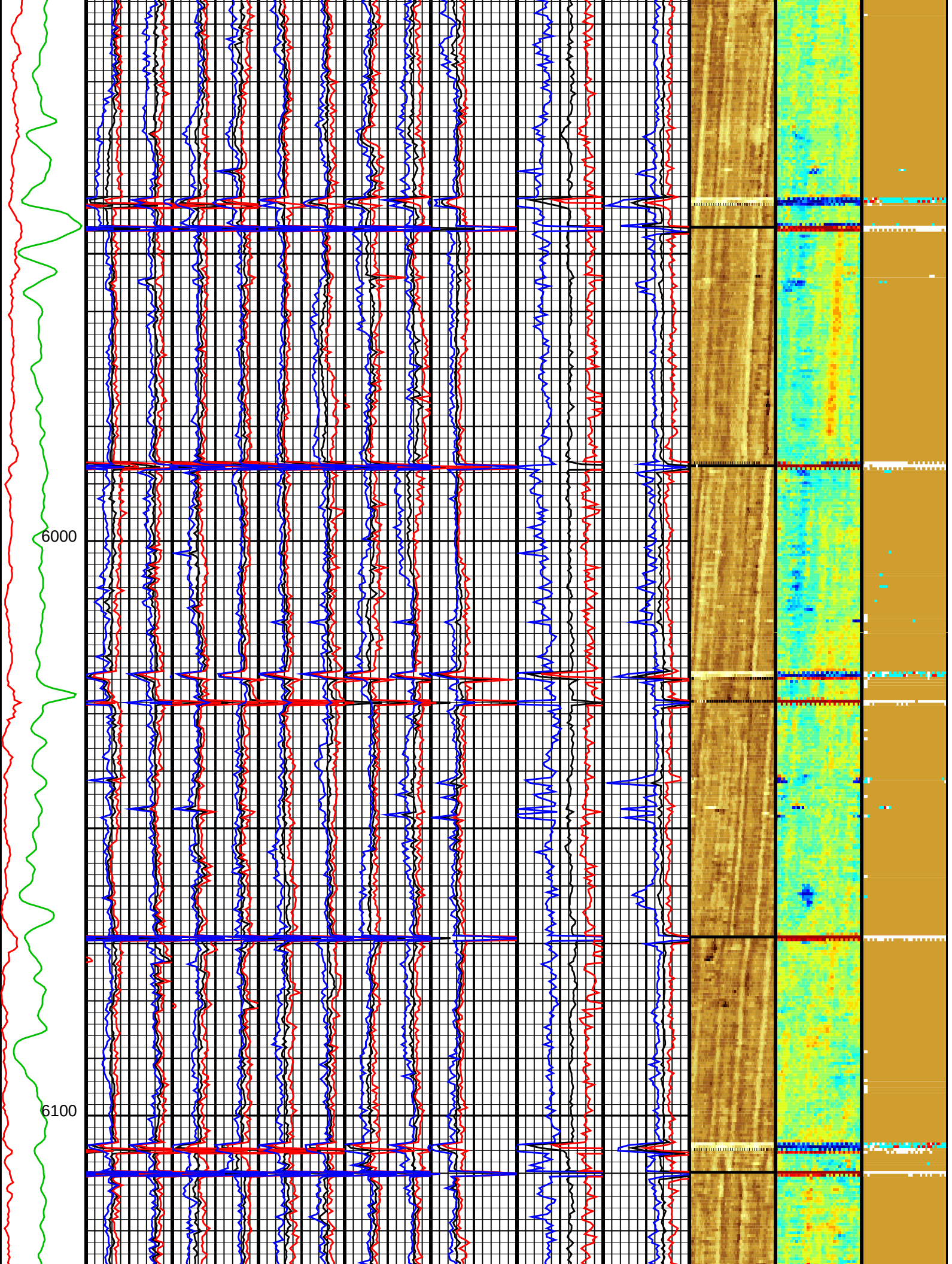
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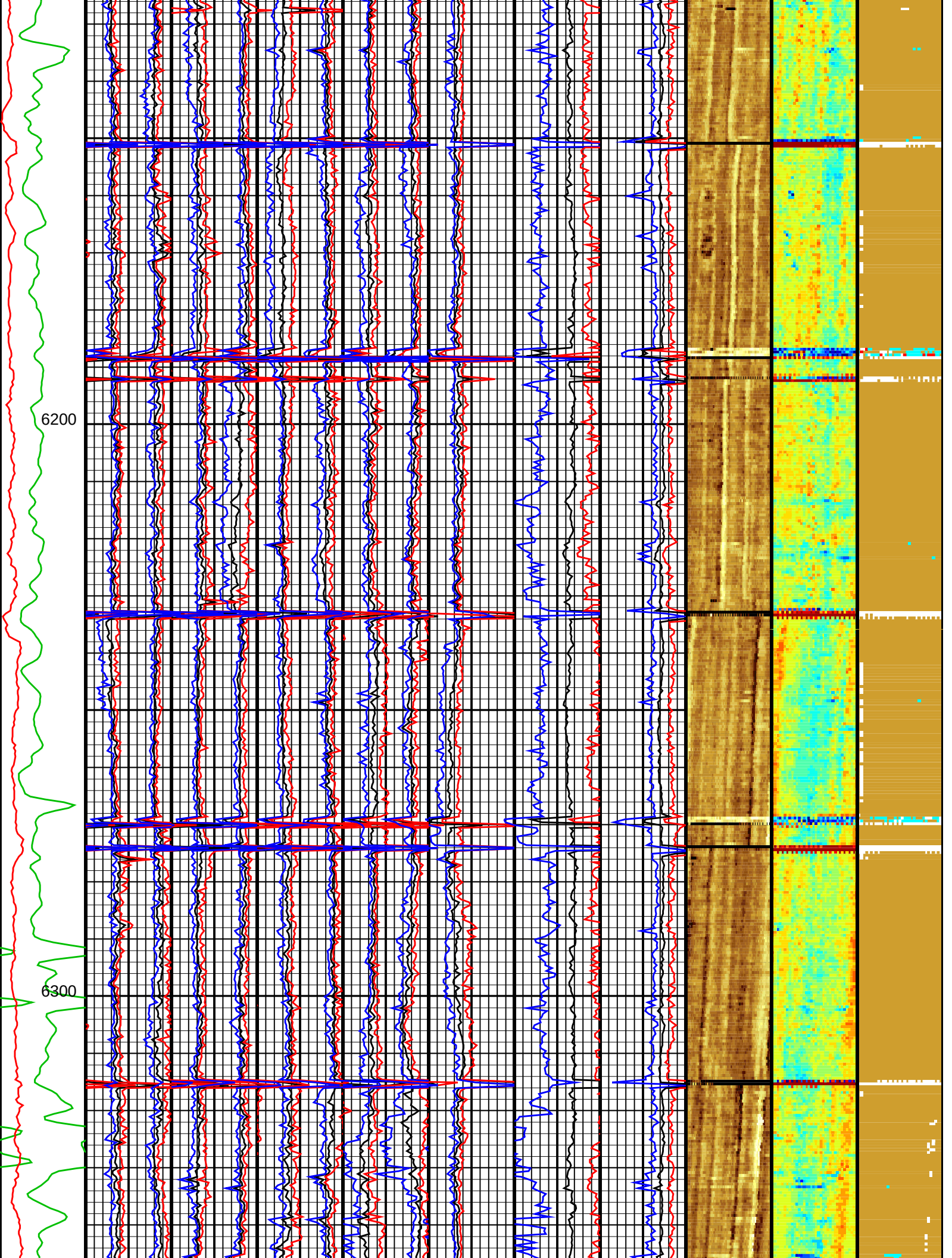
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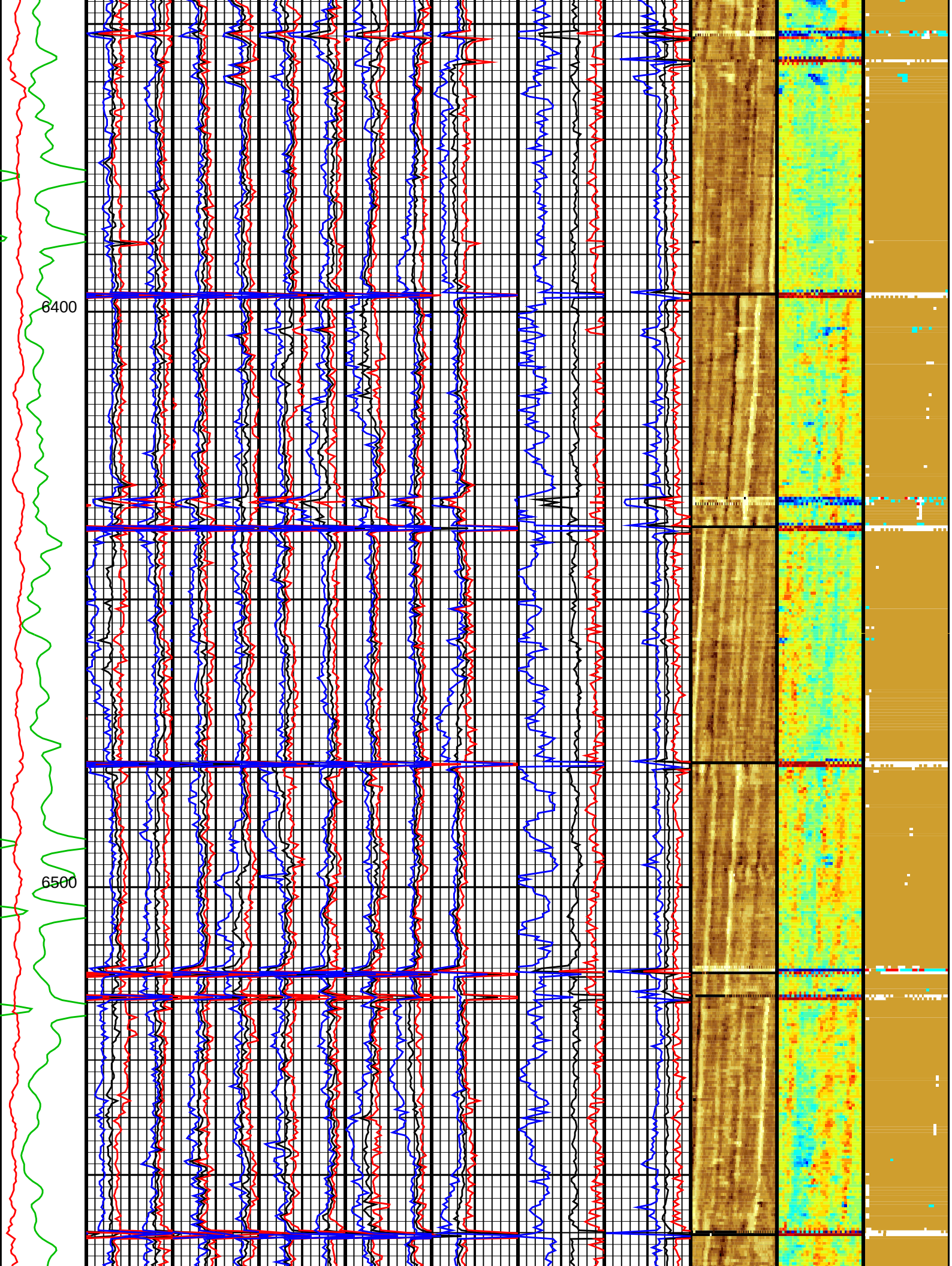
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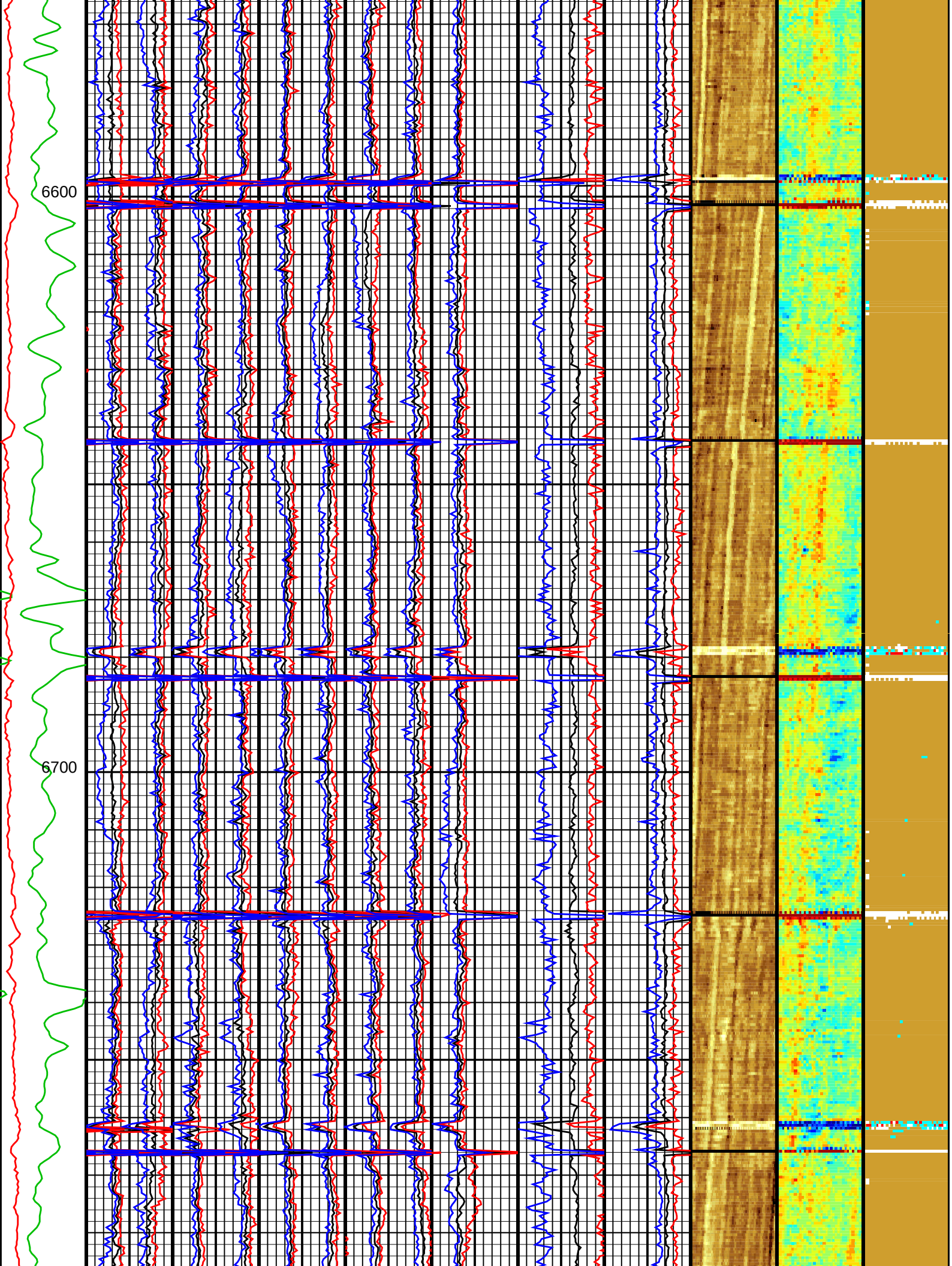
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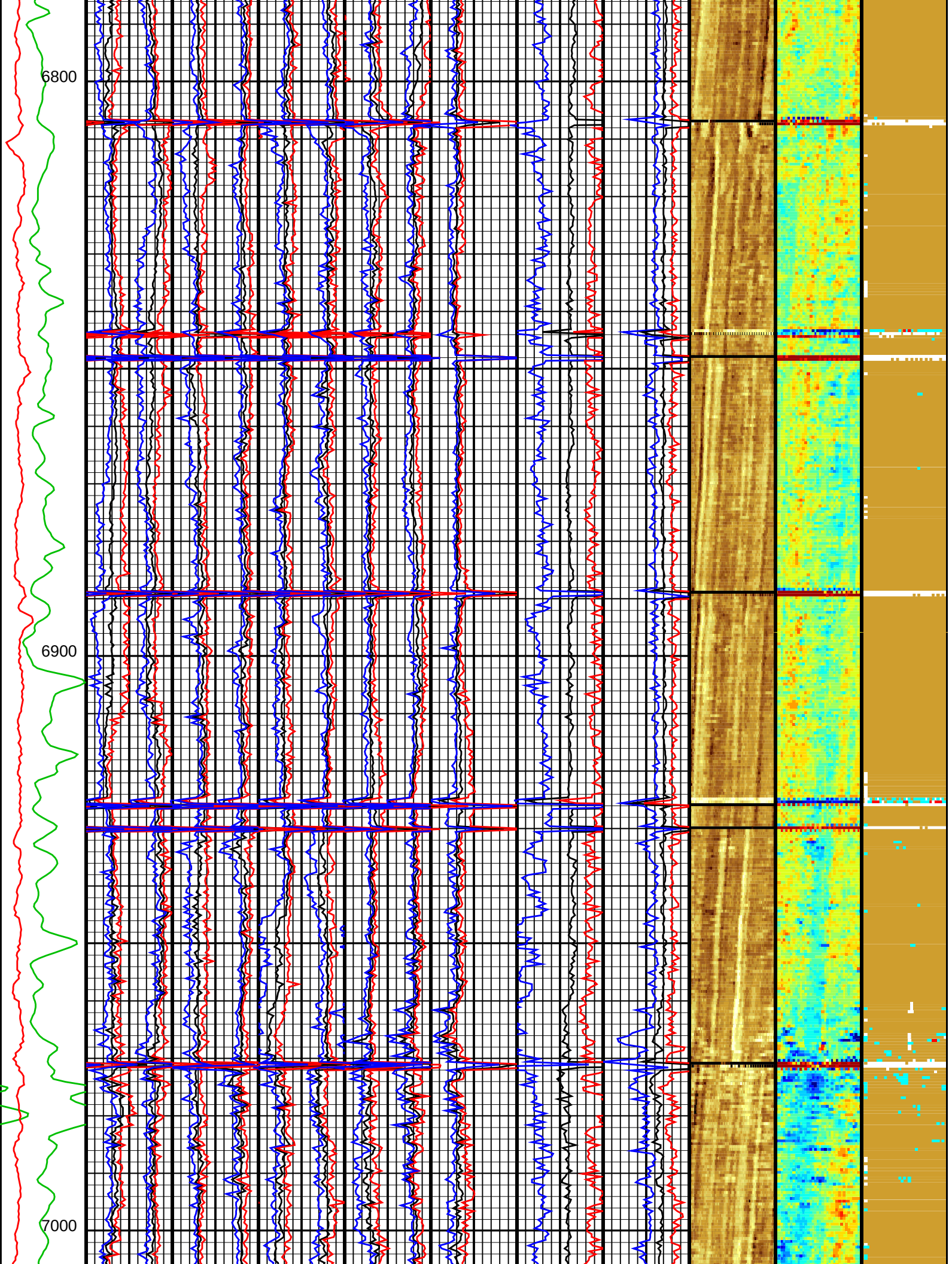
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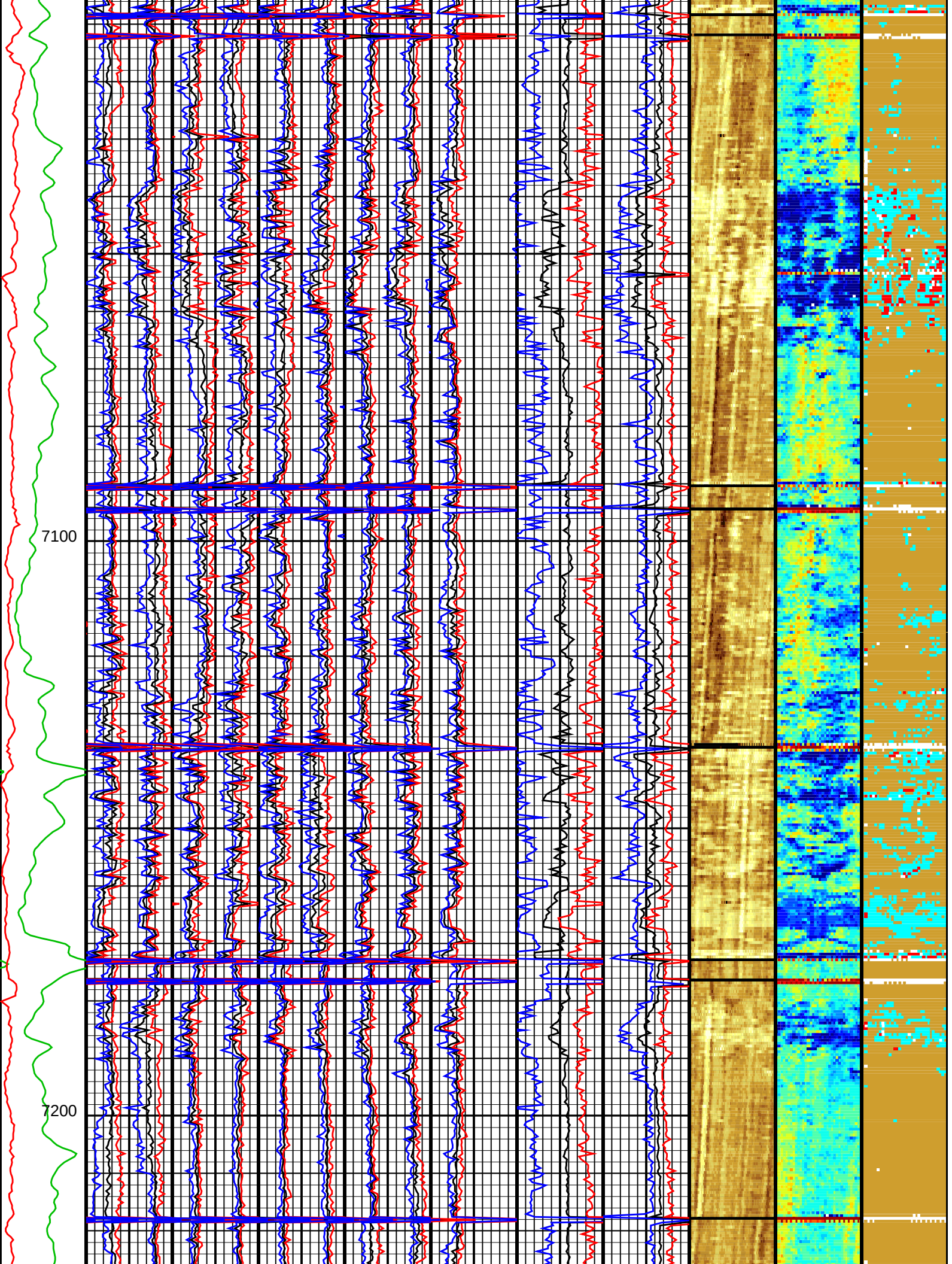
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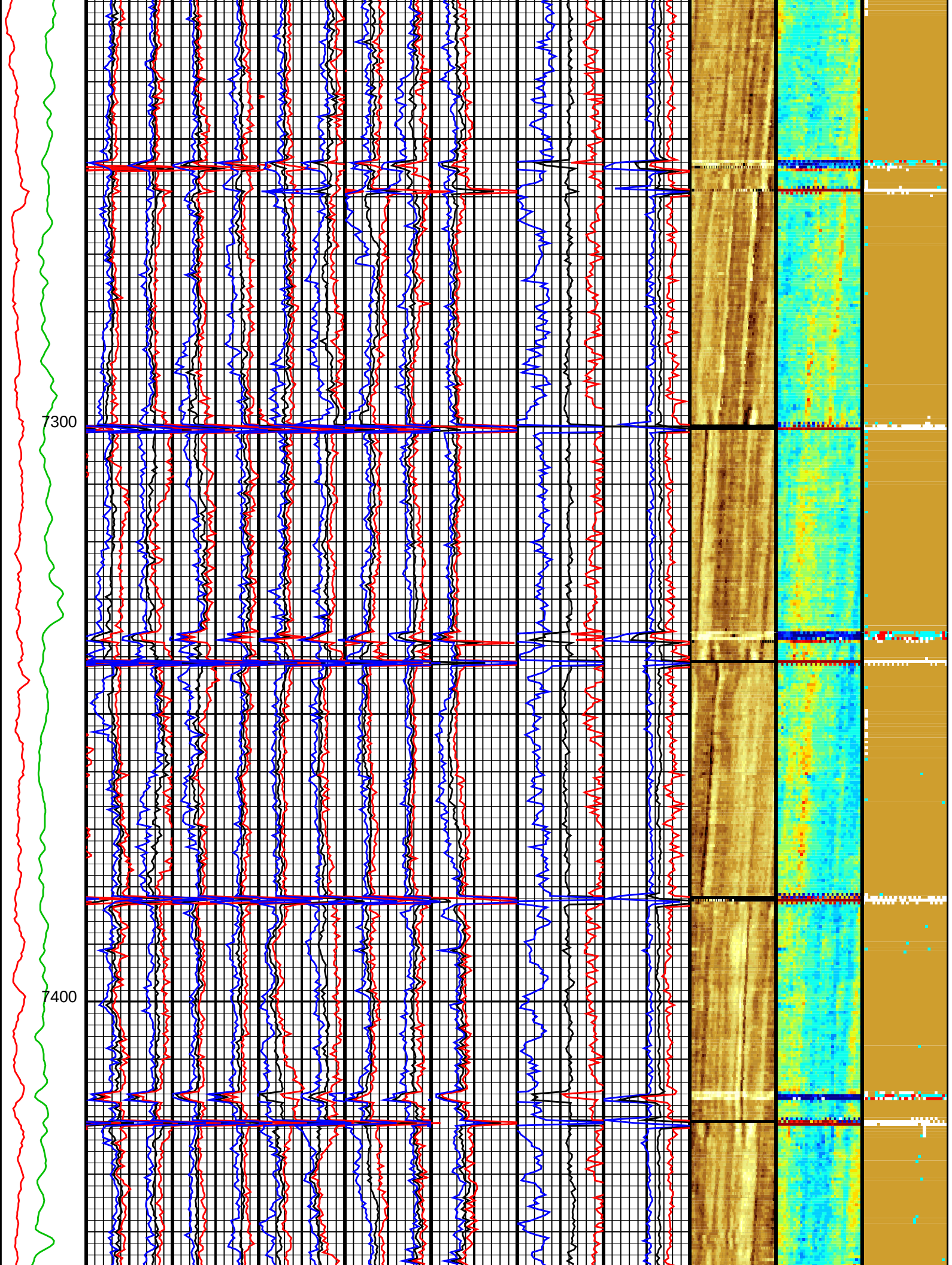
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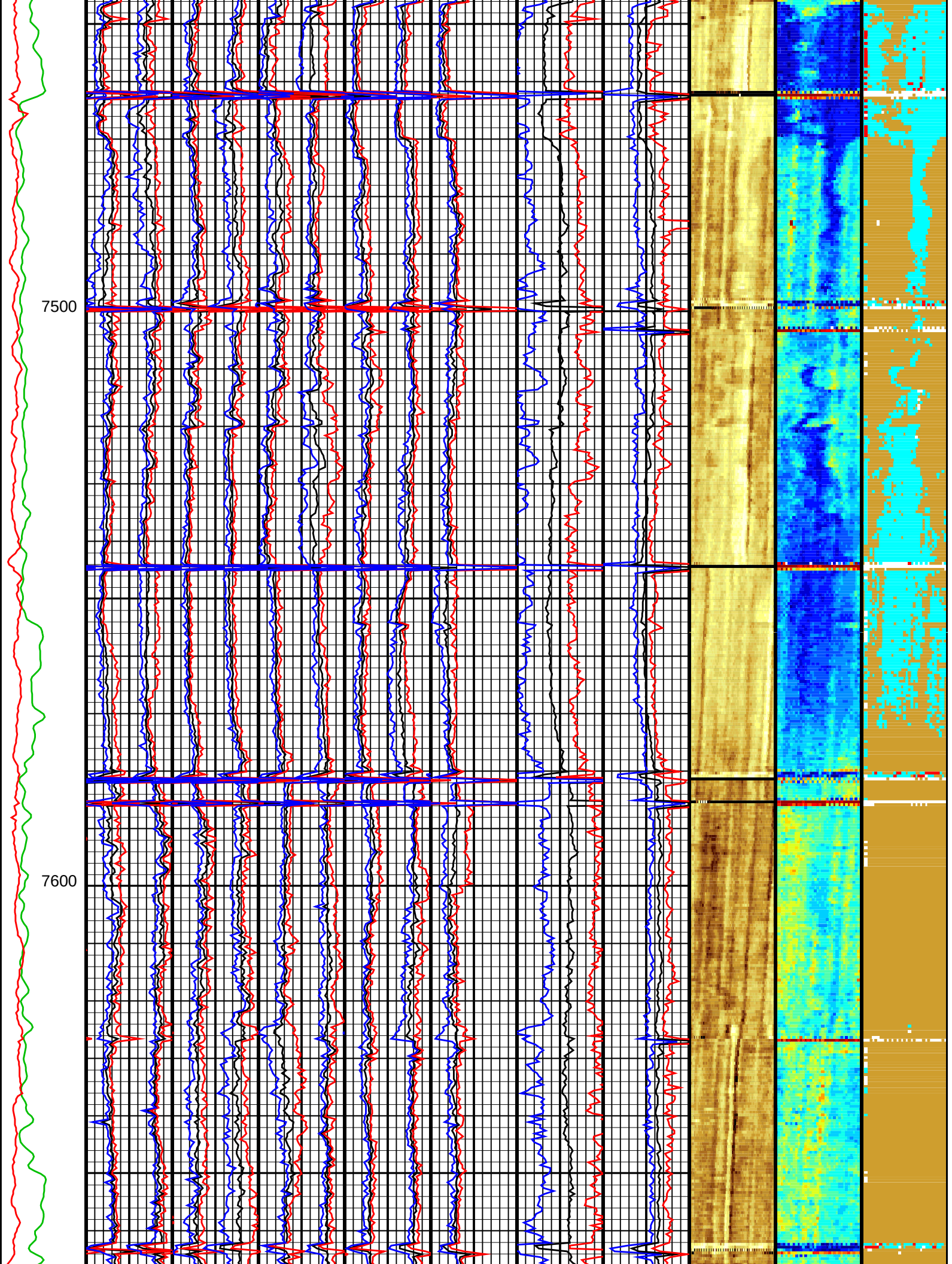
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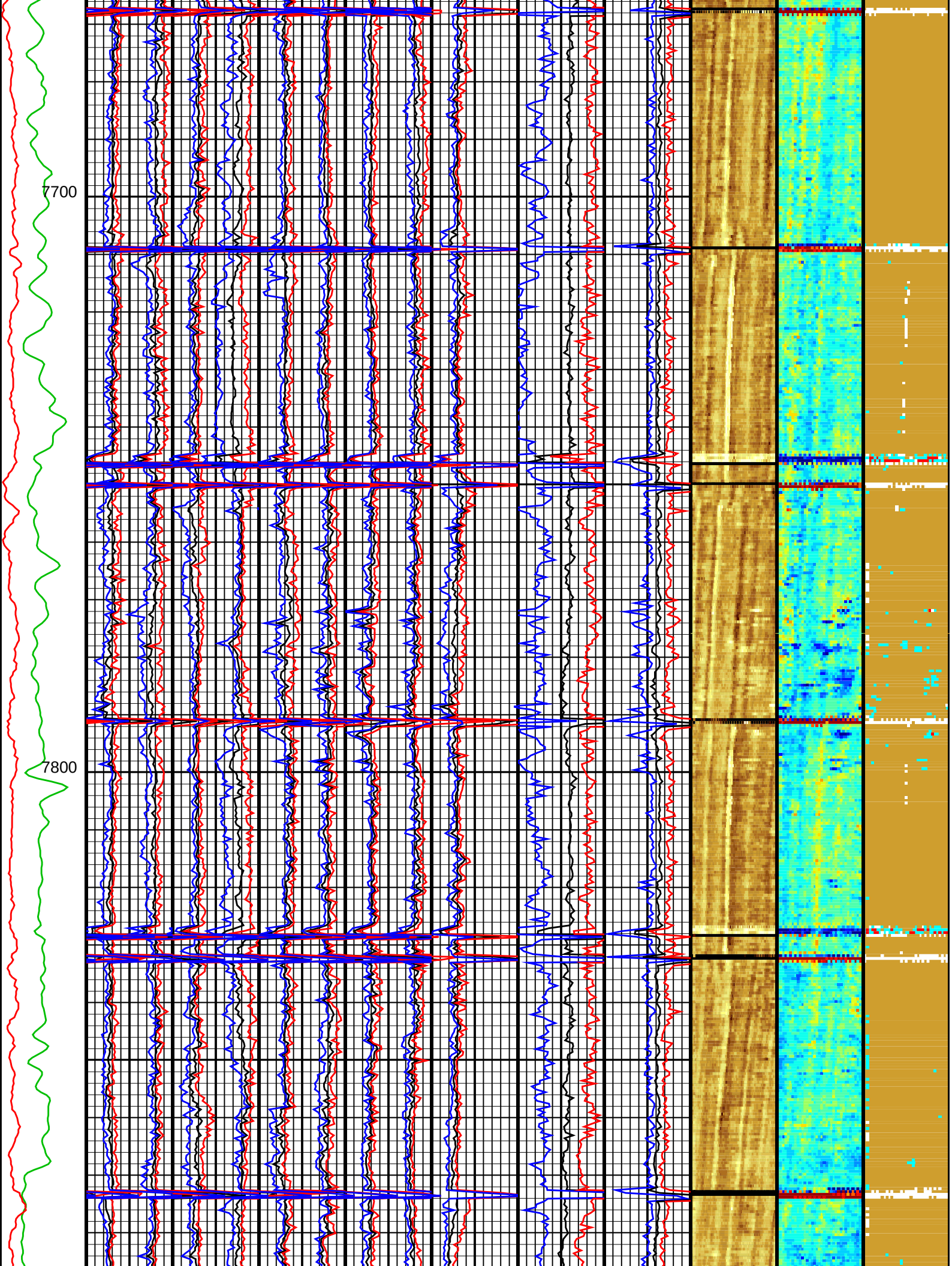
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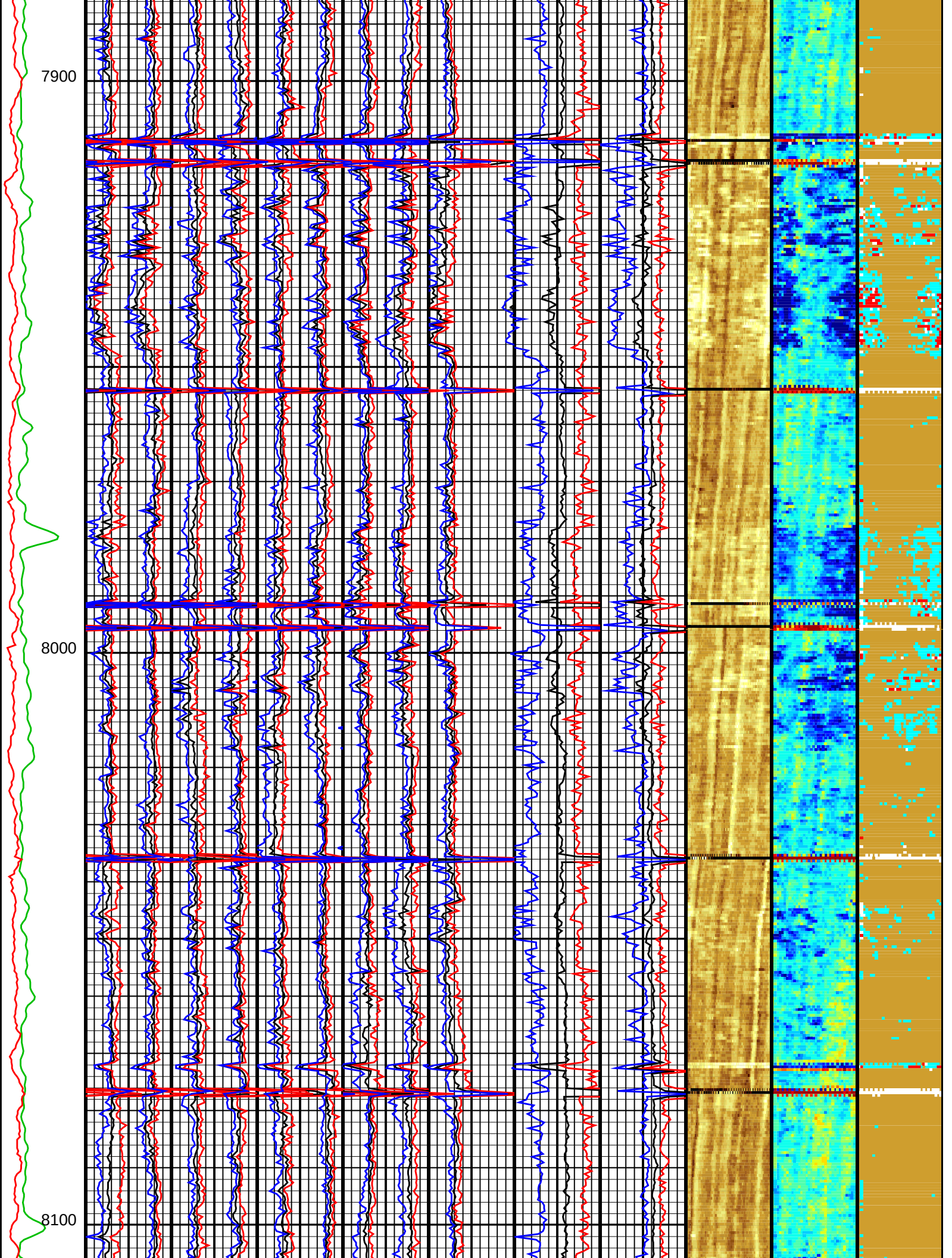
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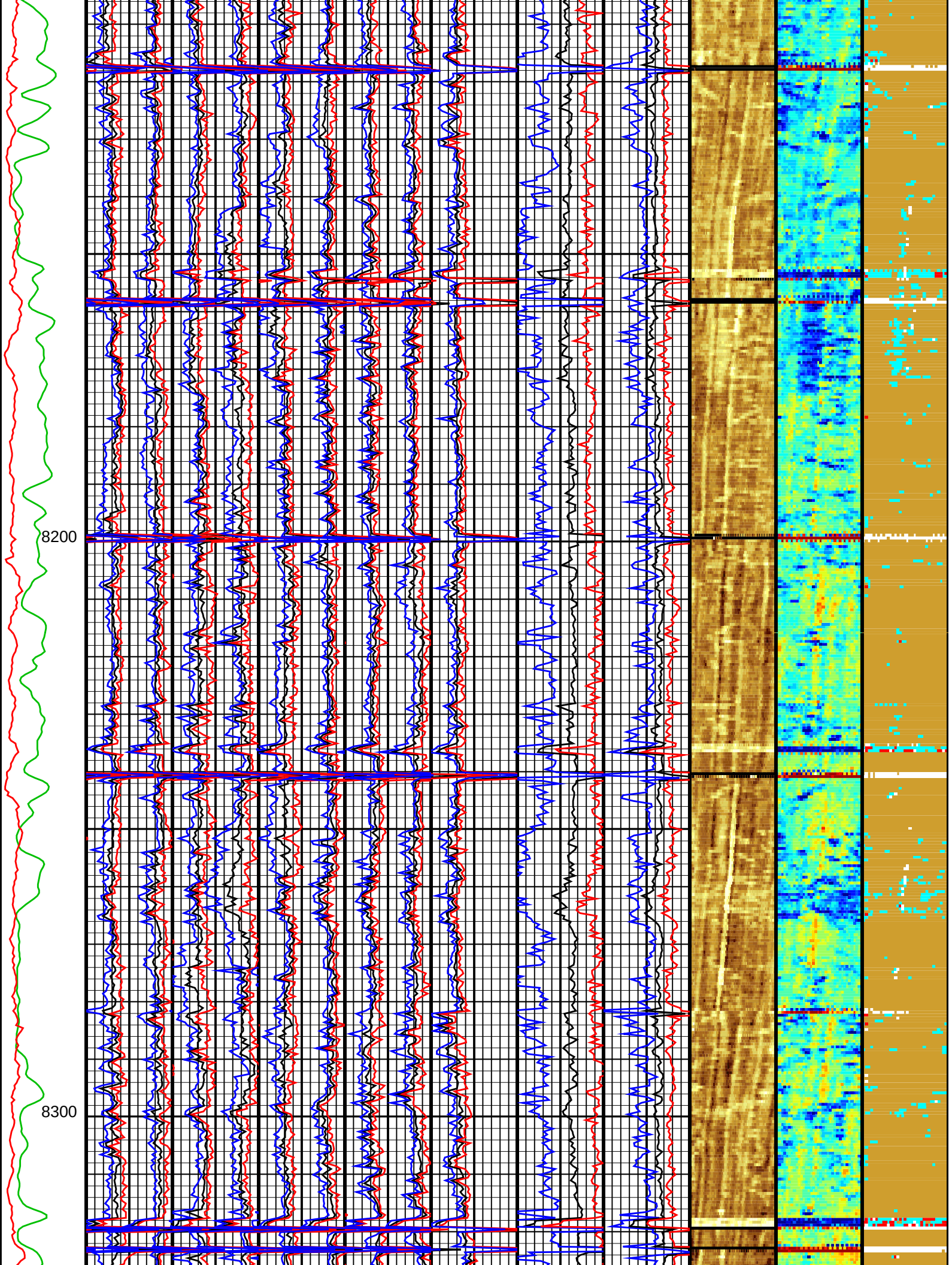
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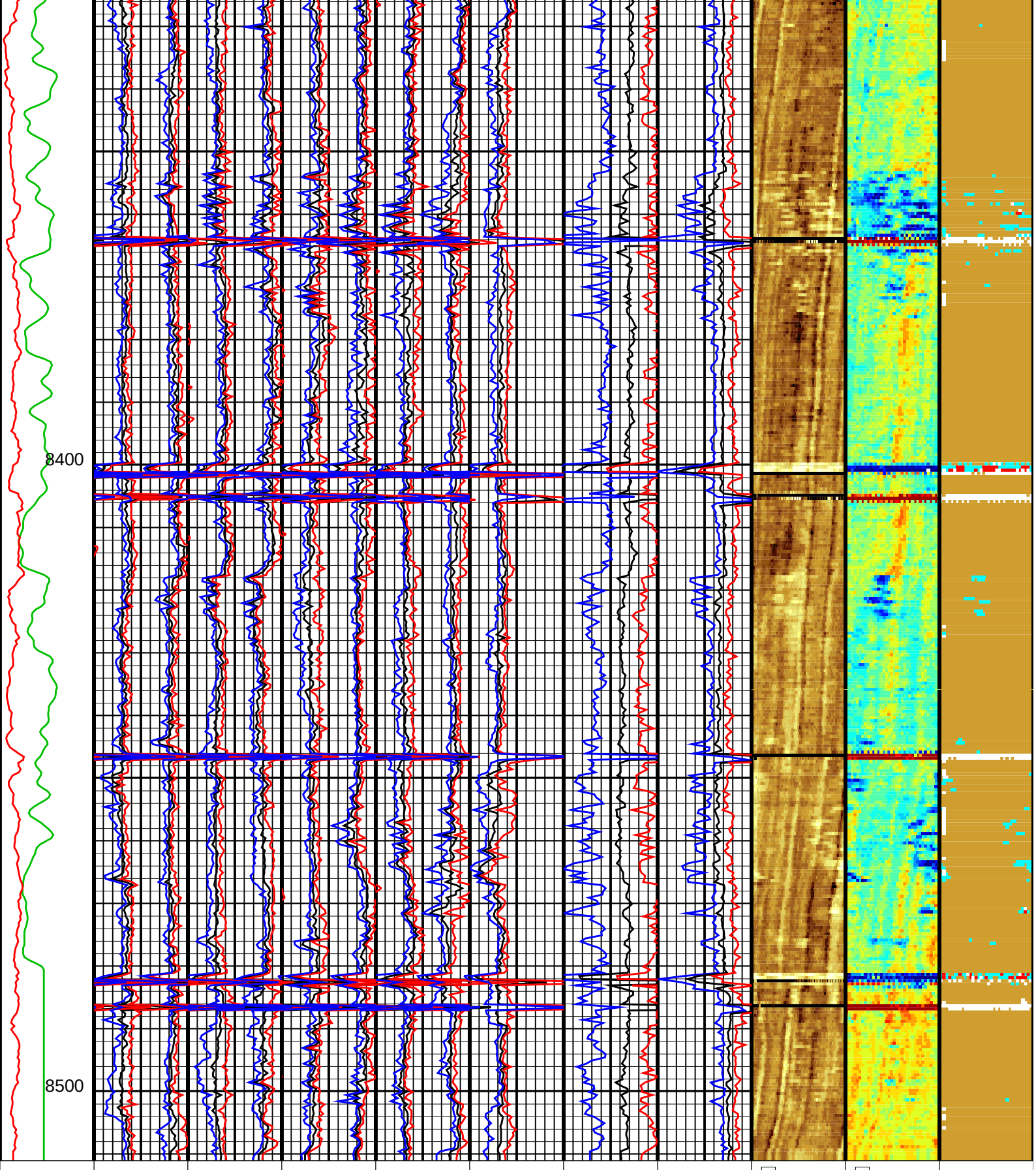


Eccent. (ECCE)
0 (IN) 0.5

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)
0 7.5

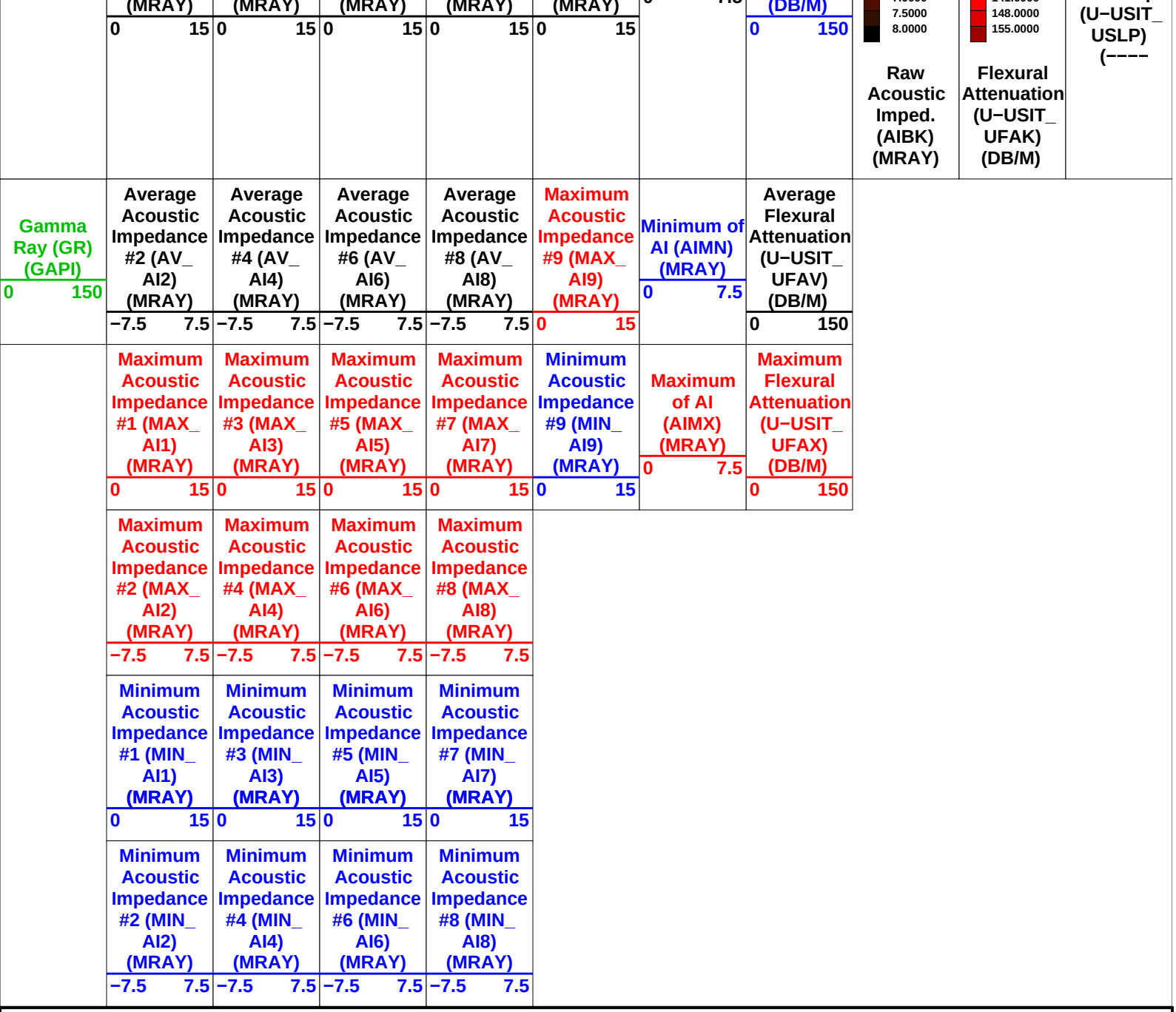
Minimum Flexural Attenuation (U−USIT_UFAN) (DB/M)

−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

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

0.5000
1.5000
2.5000
3.5000

Solid Liquid Gas Map



Format: M_Goodwin **Vertical Scale: 5" per 100'** **Graphics File Created: 27−Jun−2010 16:35**

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_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35	

Schlumberger

VDL WIDE

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. Well: PCU 197−34A3

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35

OP System Version: 17C0−154

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

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
ZMUD	1.7 MRAY	1.8 MRAY	5501.5 16:40:36

Tool/Tot. Drag From D4T to STIA

Cable Drag From D4T to STIT

Stuck Stretch (STIT)

0 (F) 50

Gamma Ray (GR) (GAPI)

0 150

CCL (CCLU) (−−−−

−20 20

−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

0.5000
1.5000
2.5000
3.5000

Solid Liquid Gas Map (U−USIT_USLP)

Min Amplitude Max

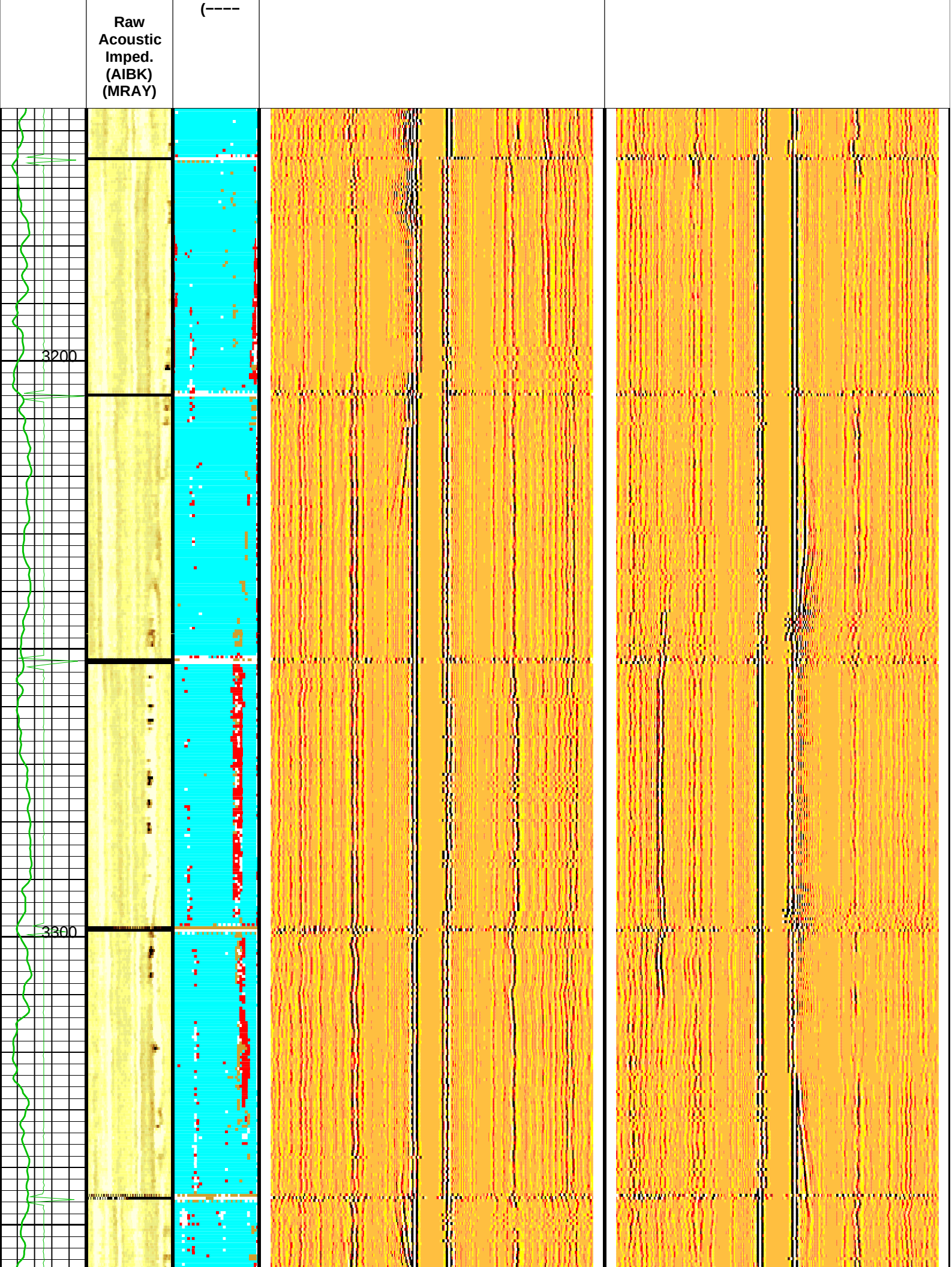
Far at 0 and 180 deg (U−USIT_VDWFF000)

−150 (US) 150

Min Amplitude Max

Far at 90 and 270 deg (U−USIT_VDWFF090)

−150 (US) 150


Raw
Acoustic
Imped.
(AIBK)
(MRAY)
(----
3200
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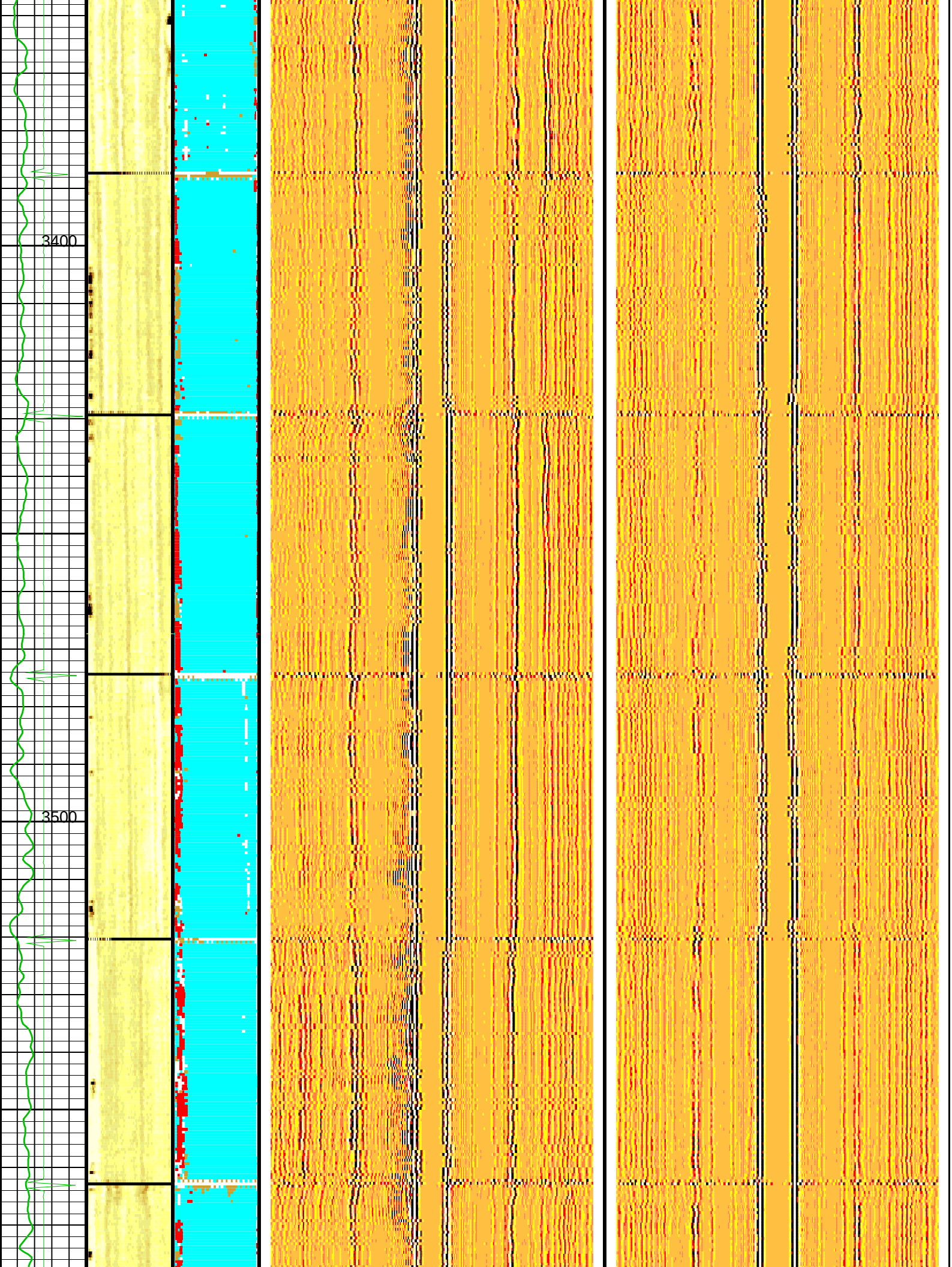
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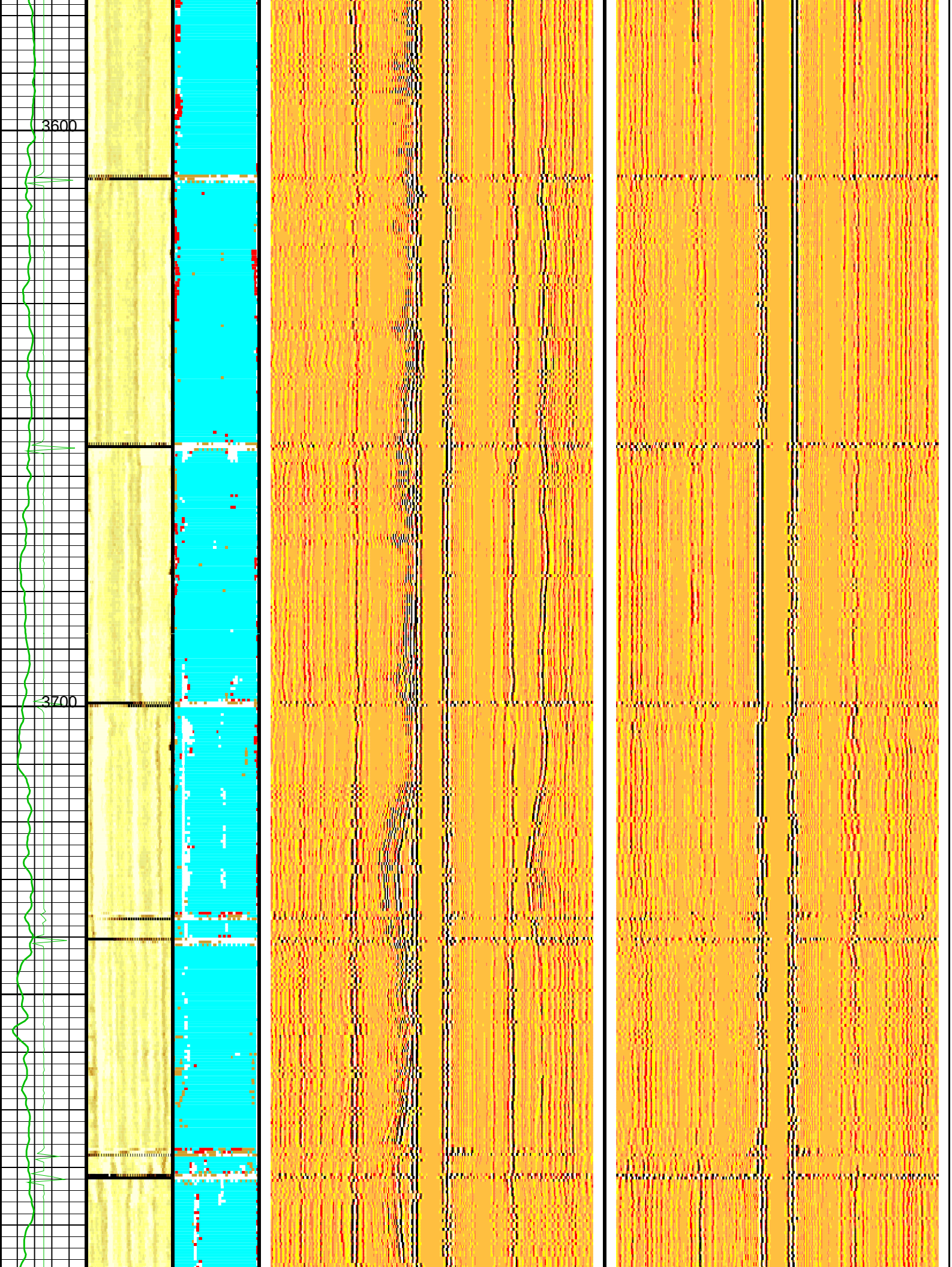
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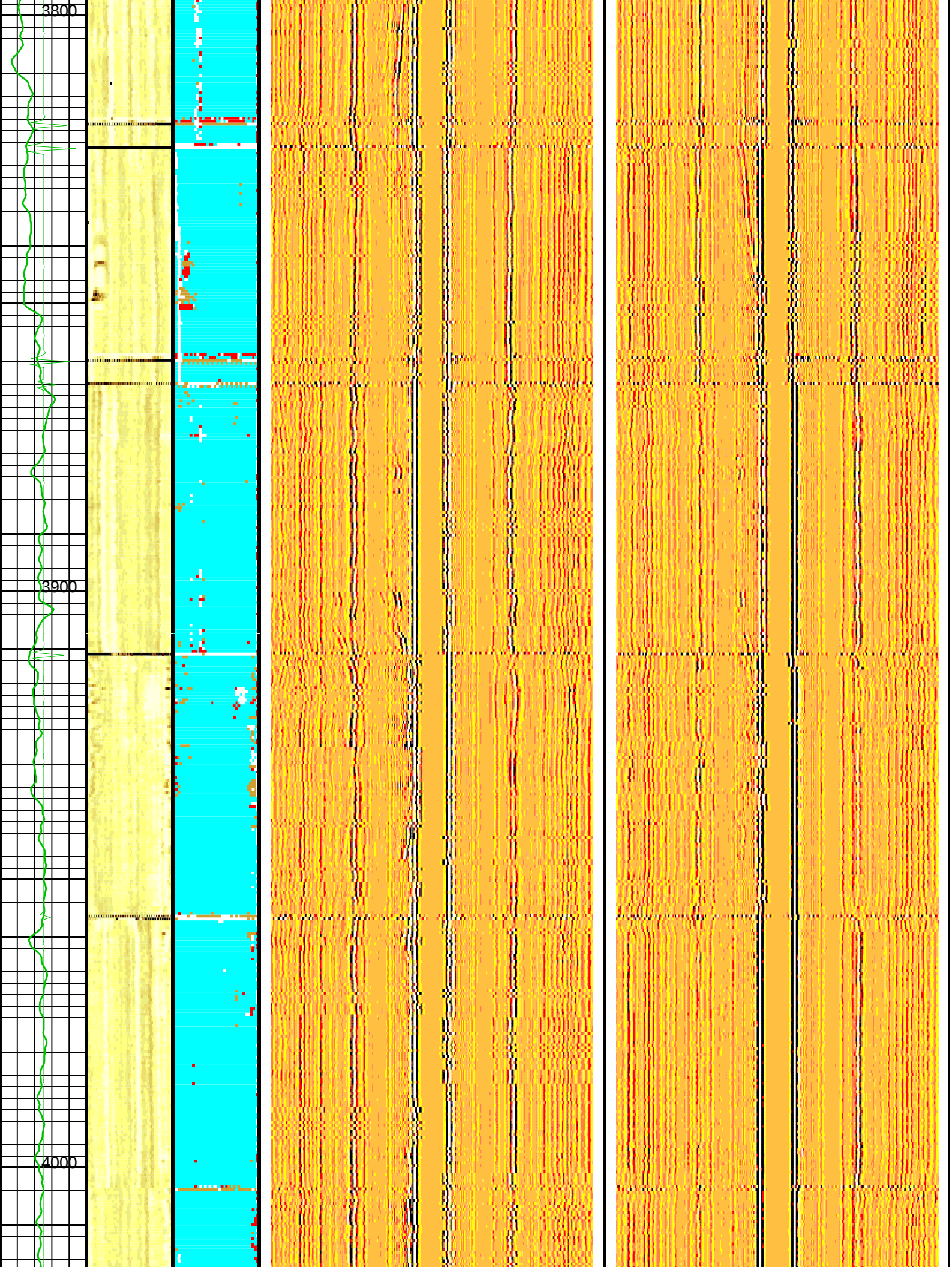
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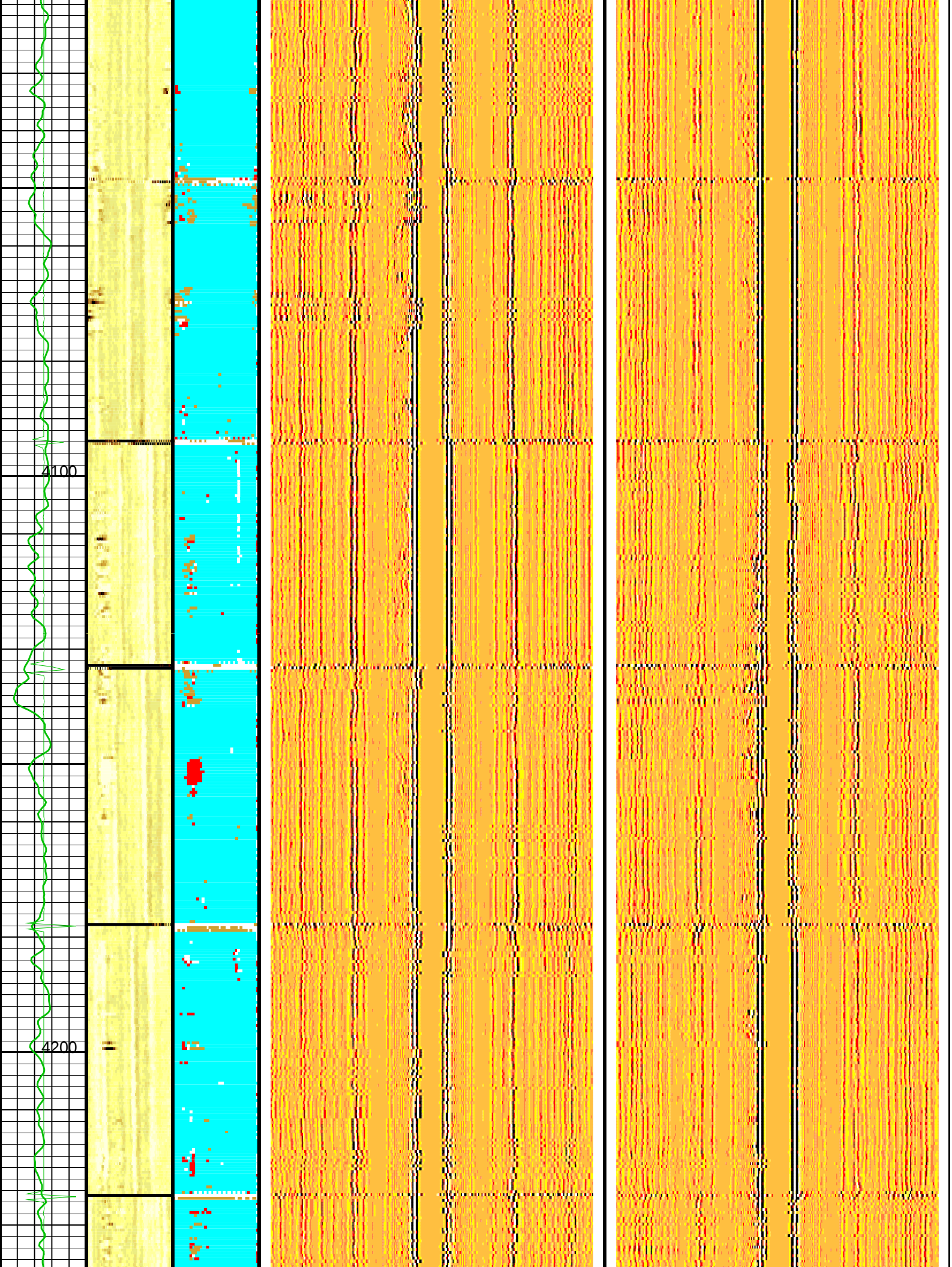
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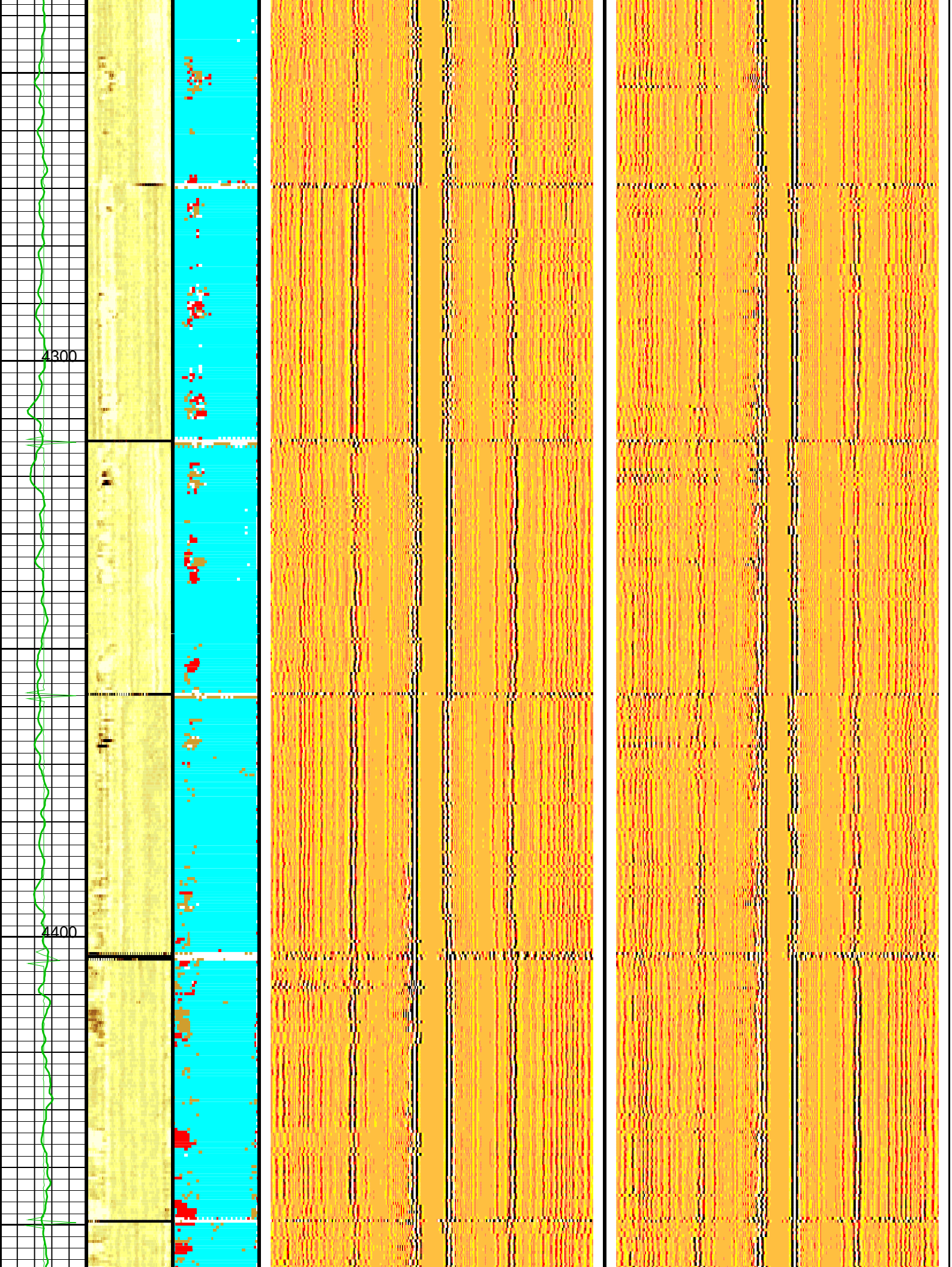
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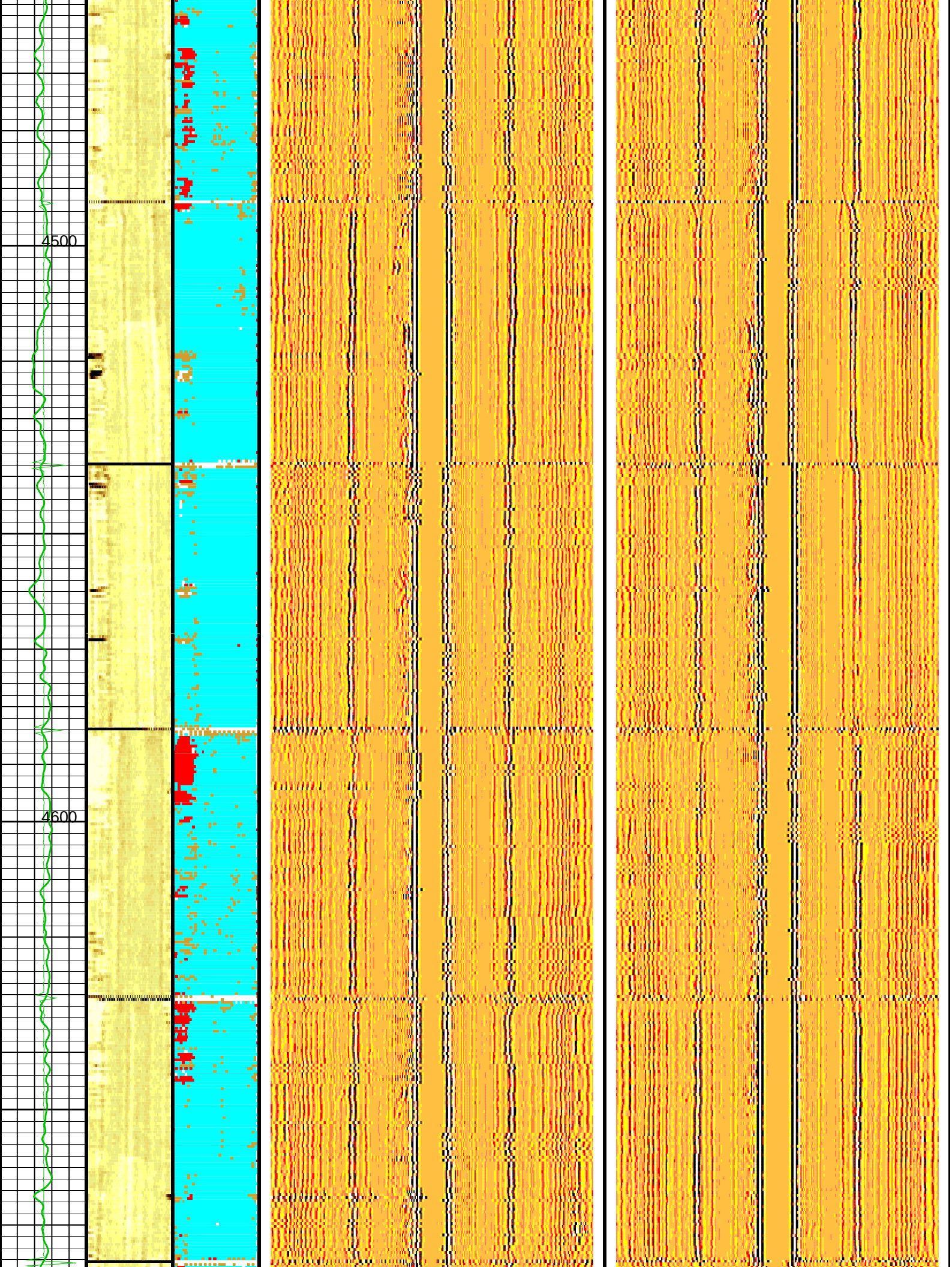
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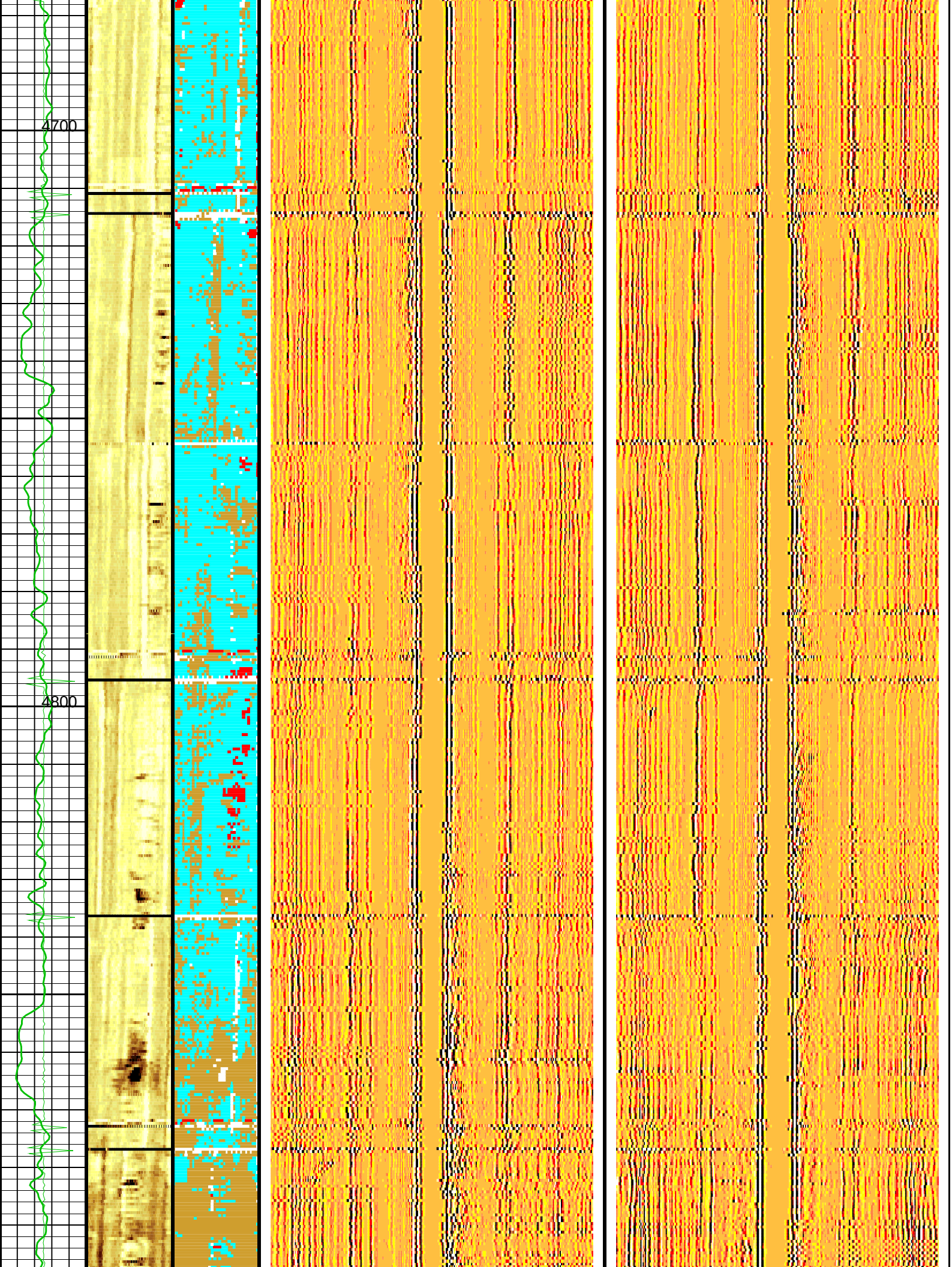
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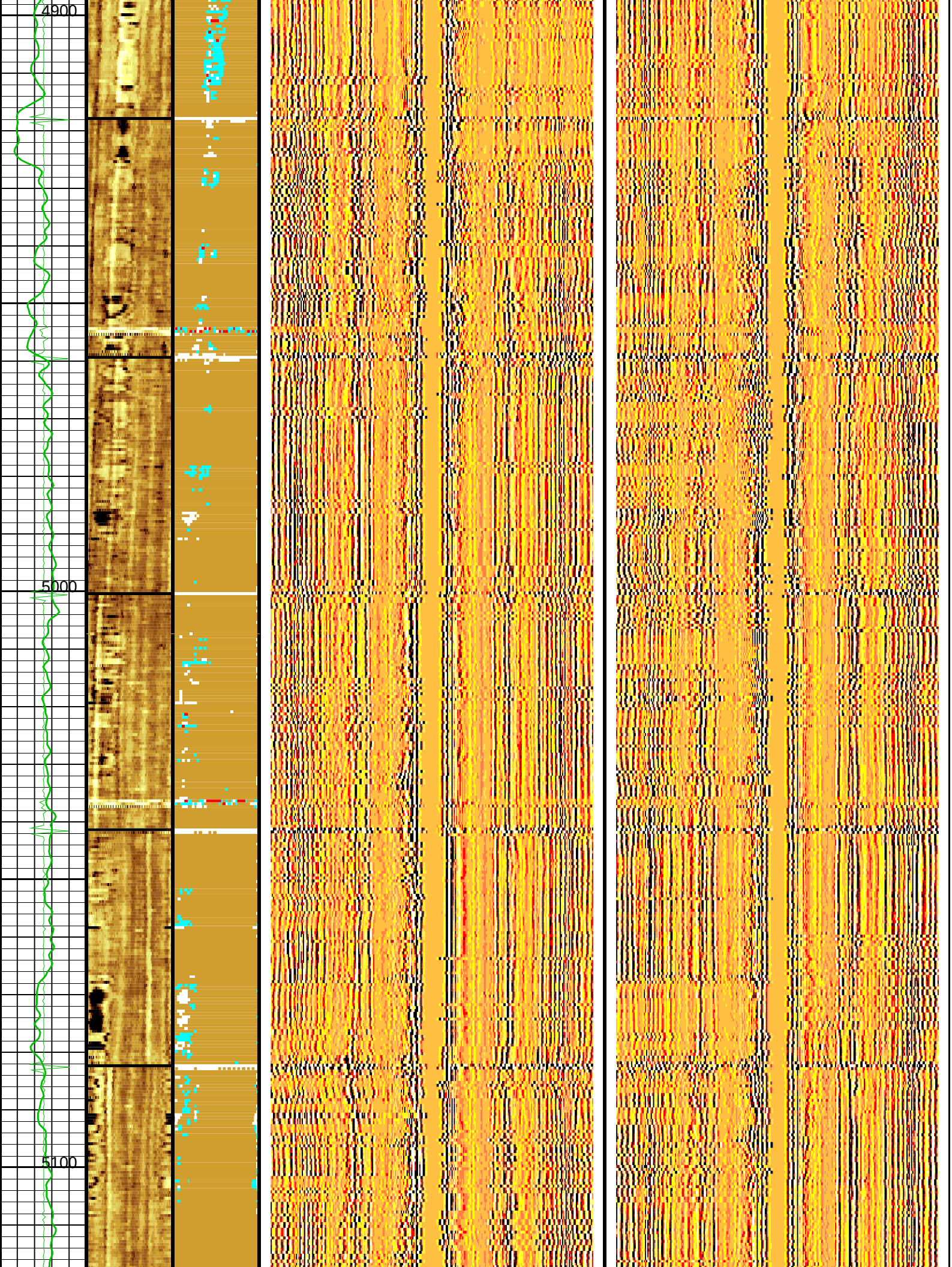
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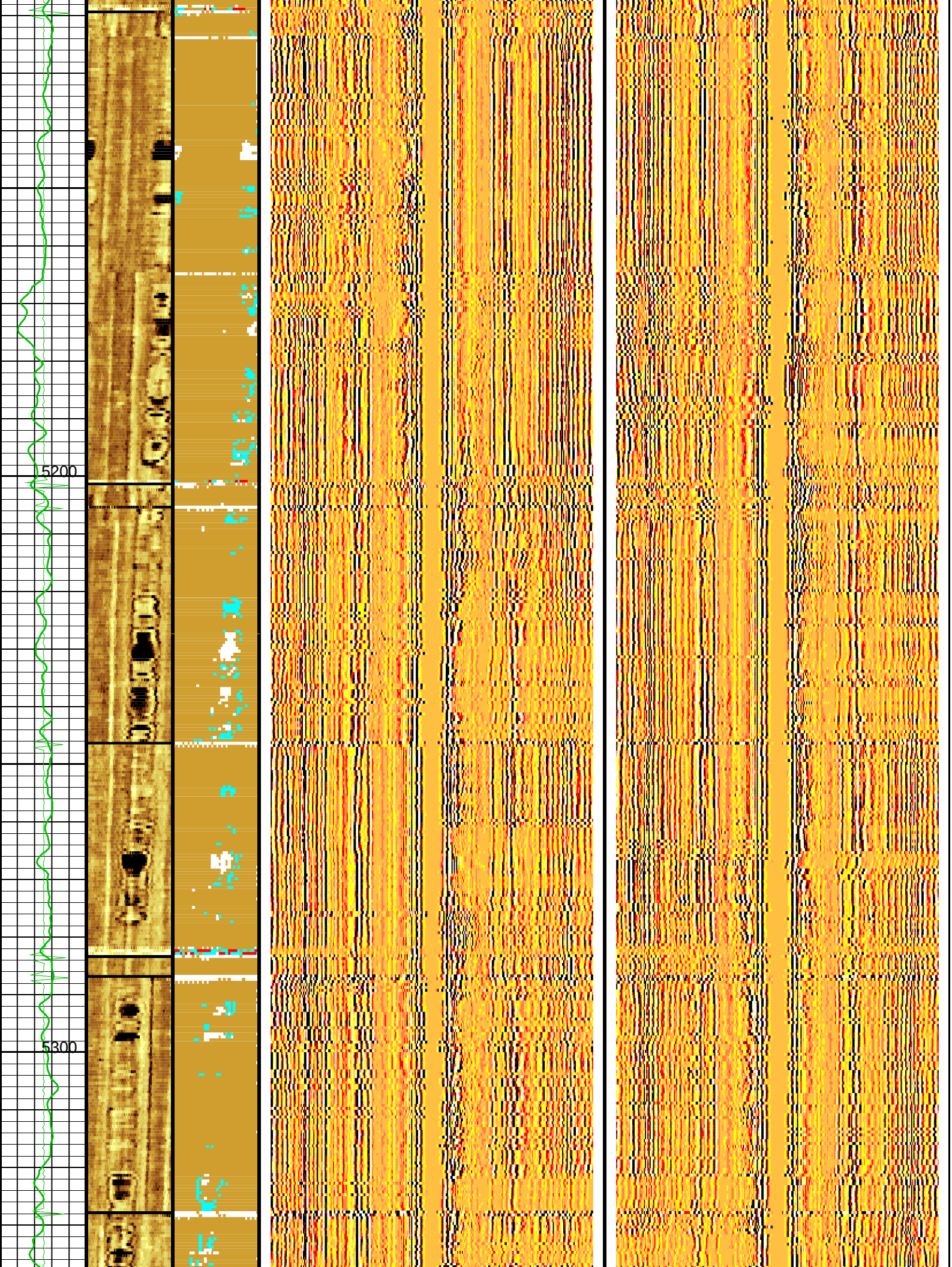
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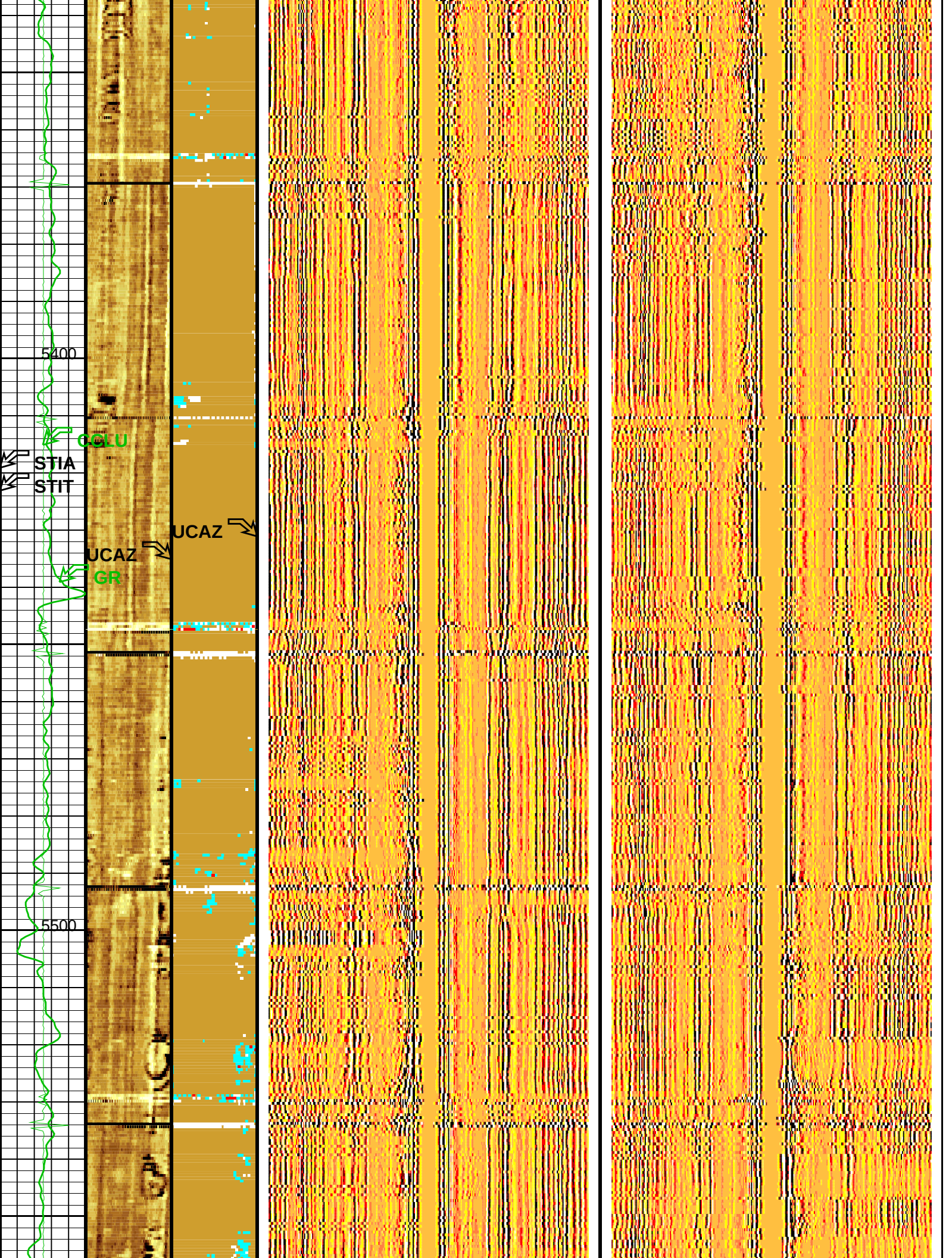
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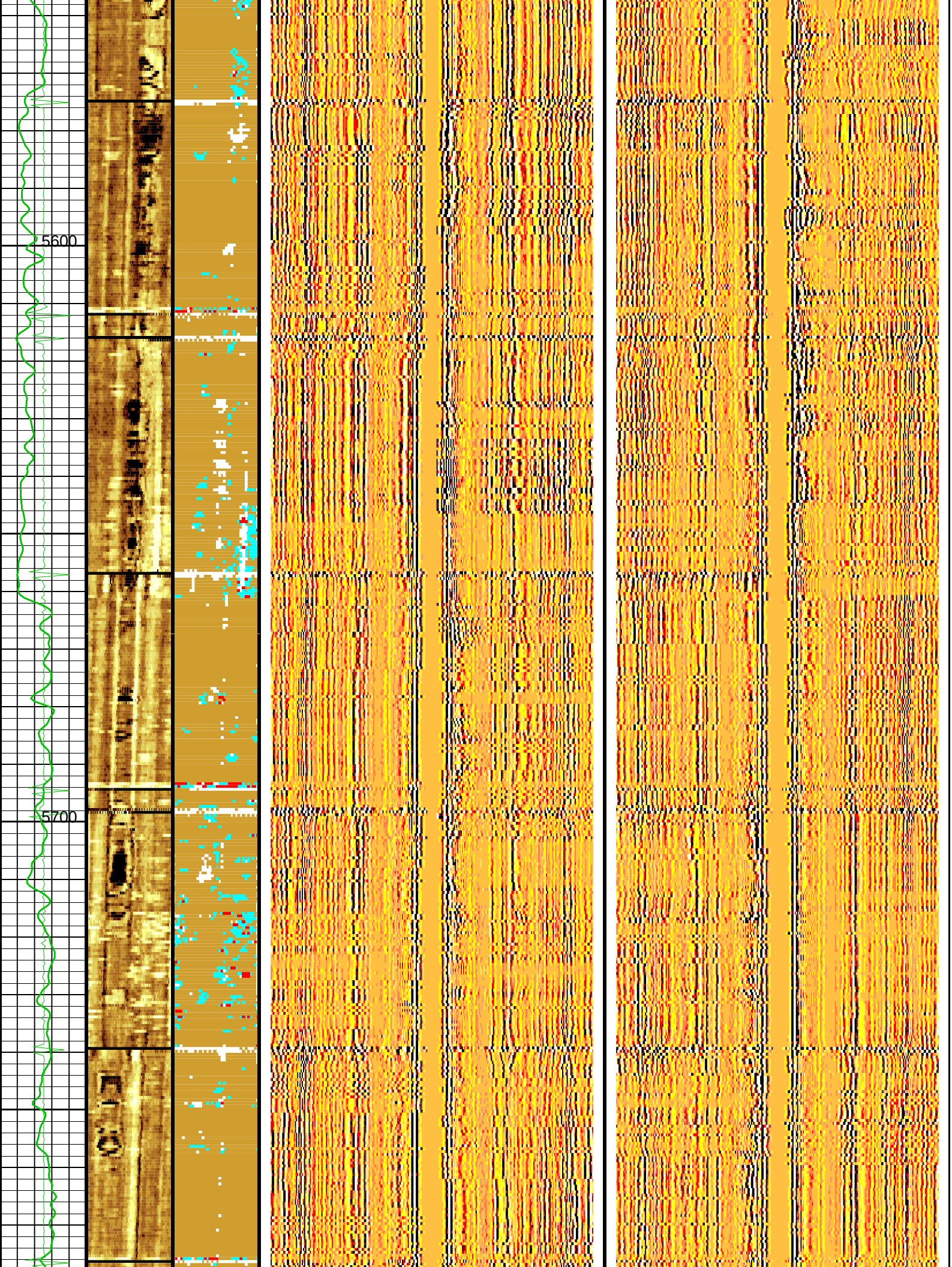
5500
CCLU
STIA
STIT
UCAZ
UCAZ
GR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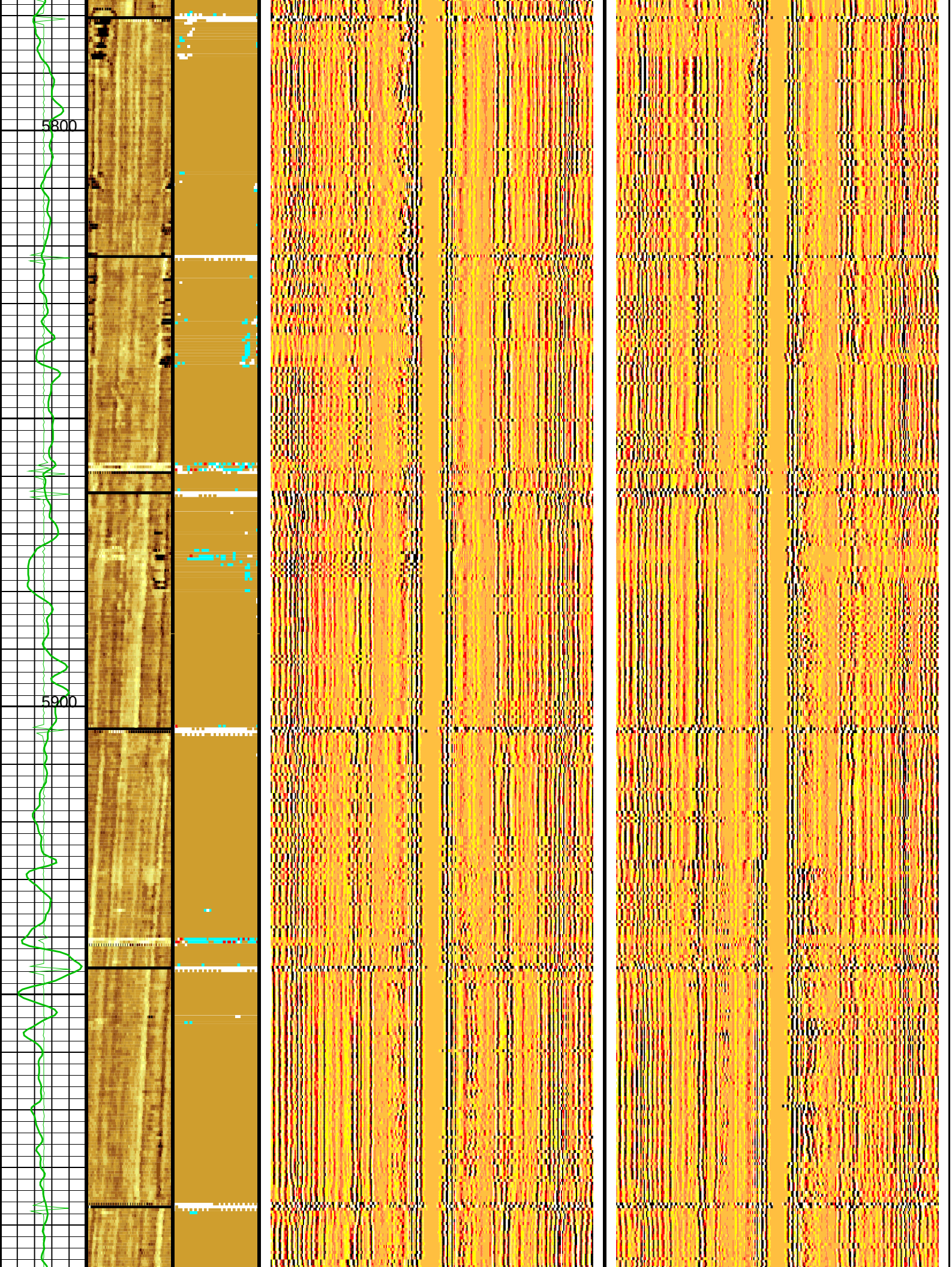
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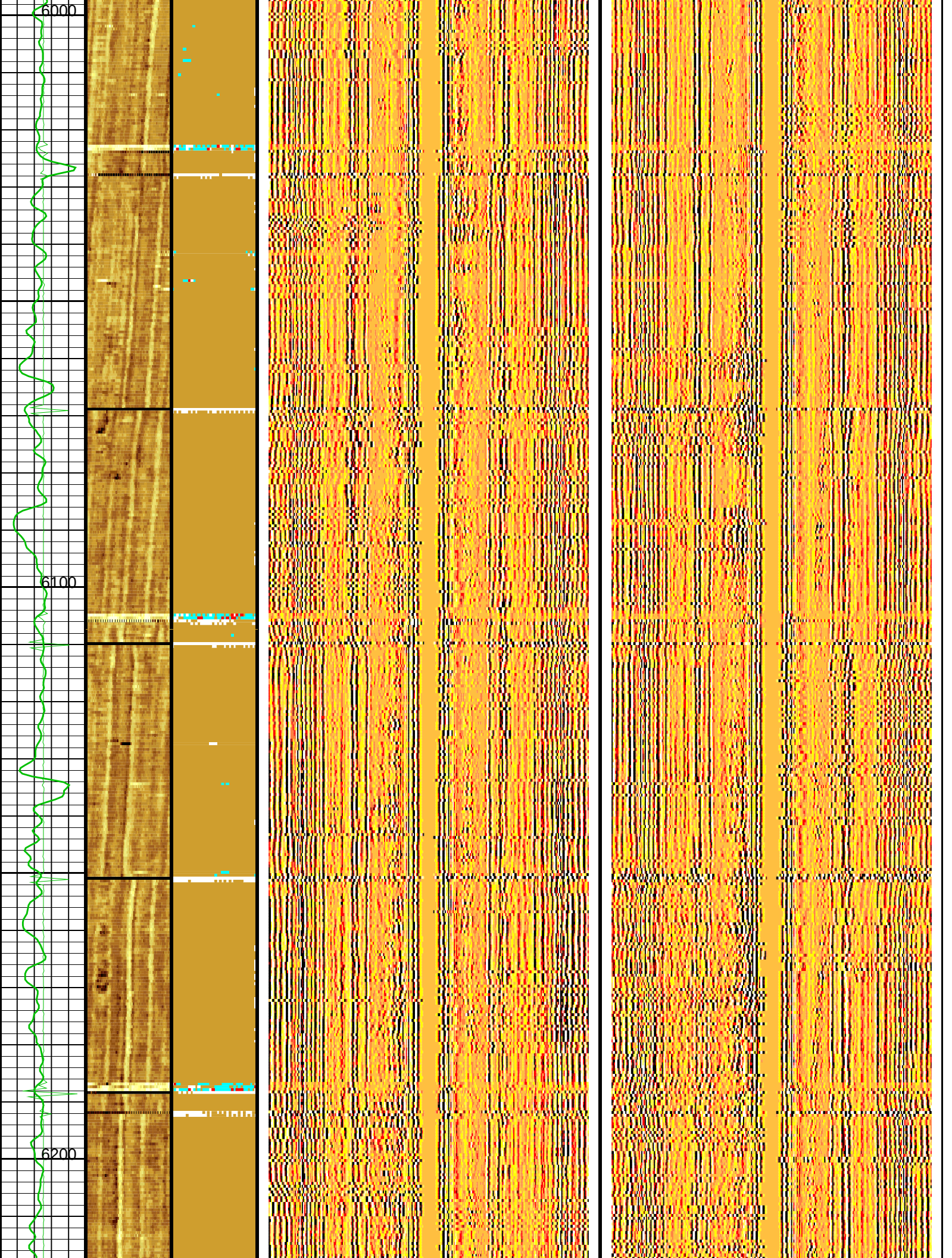
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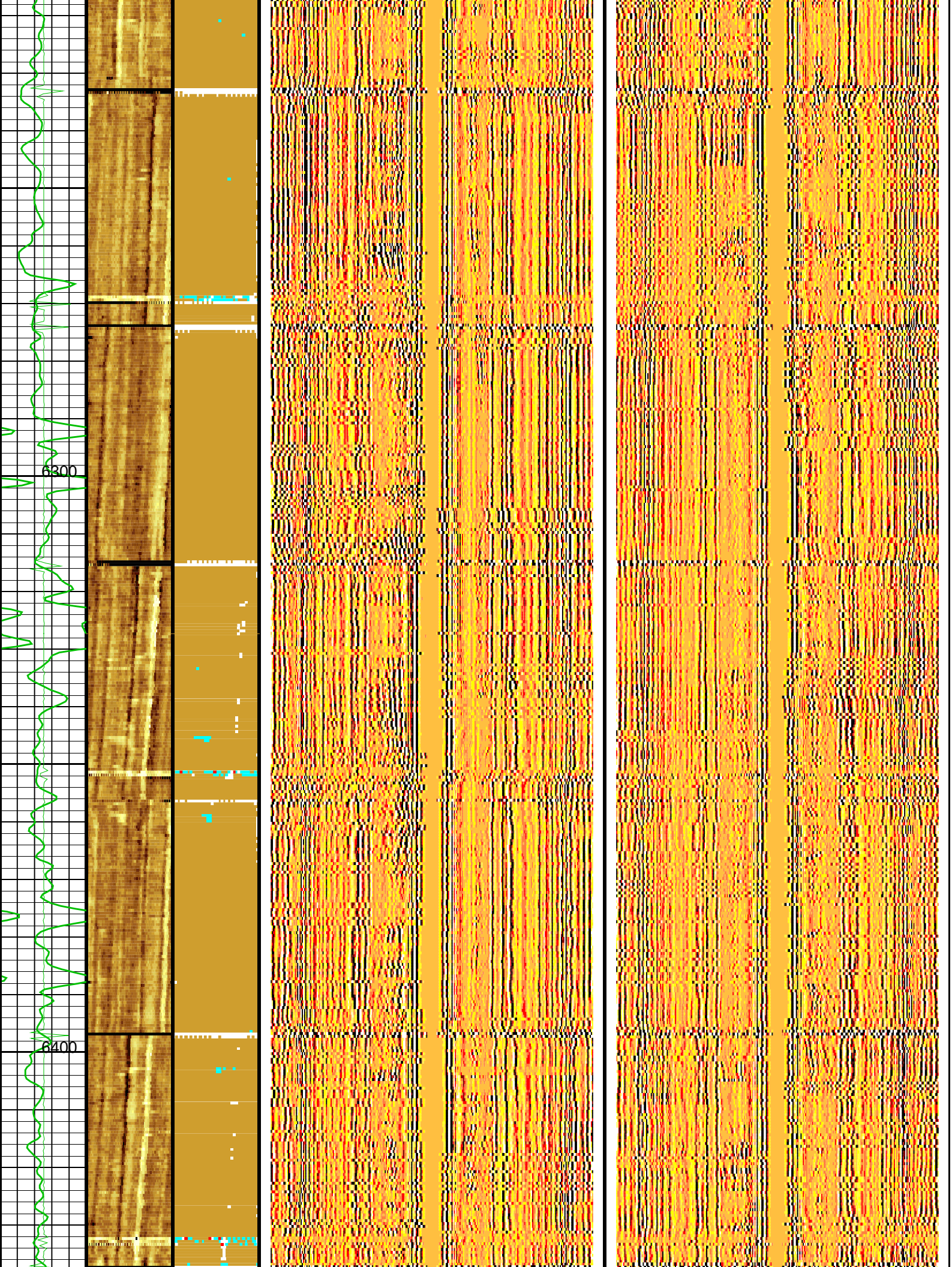
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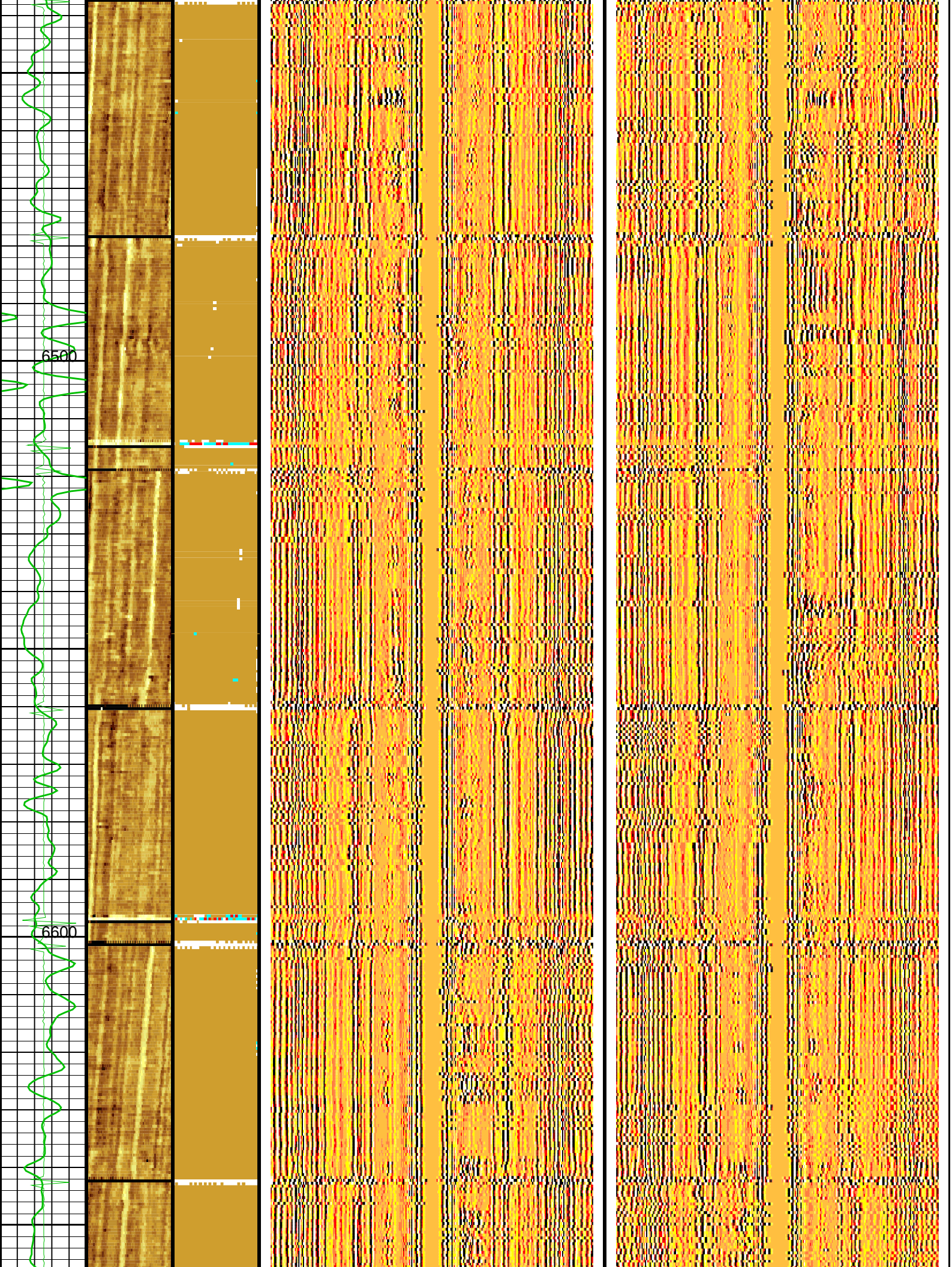
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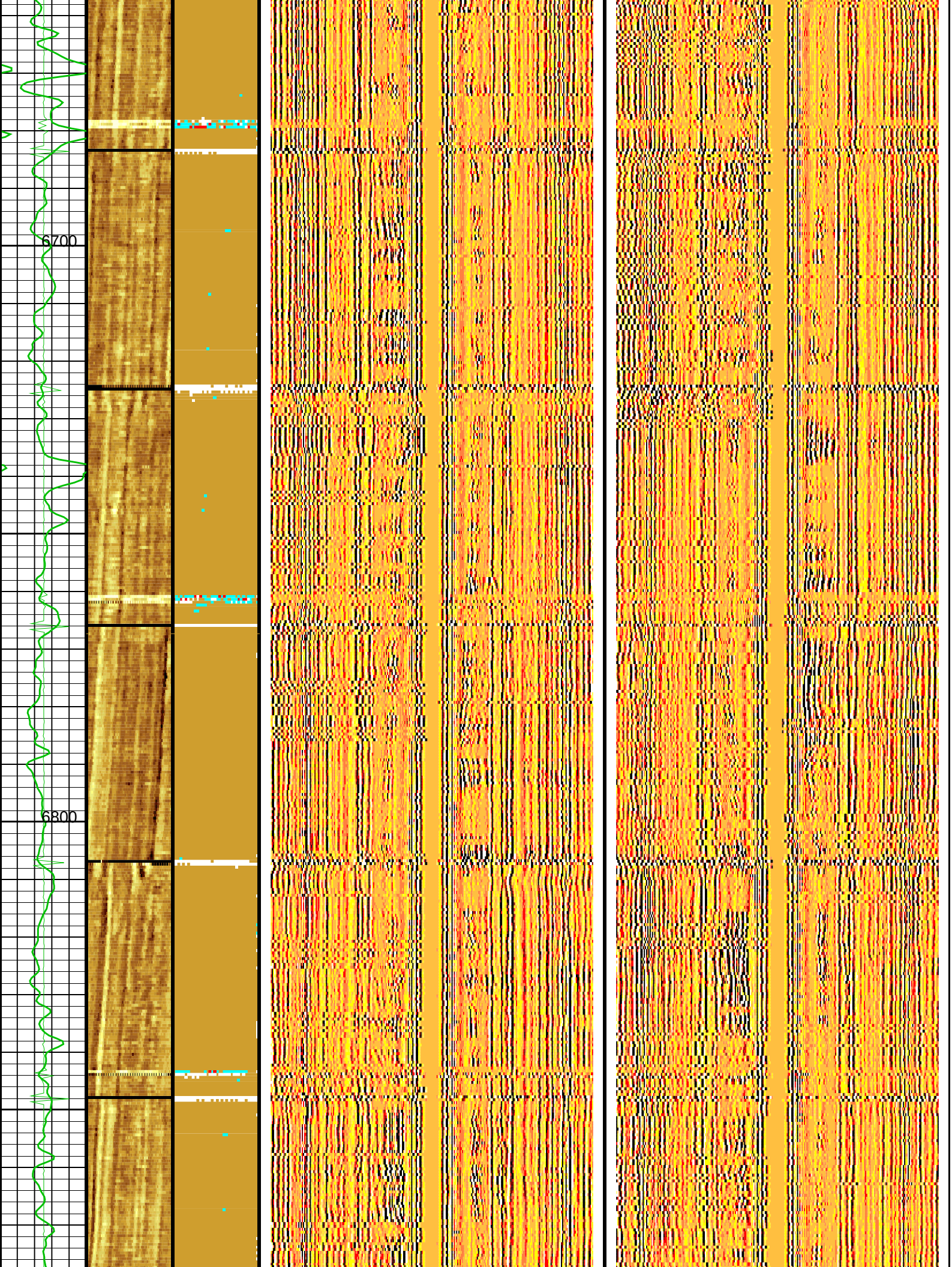
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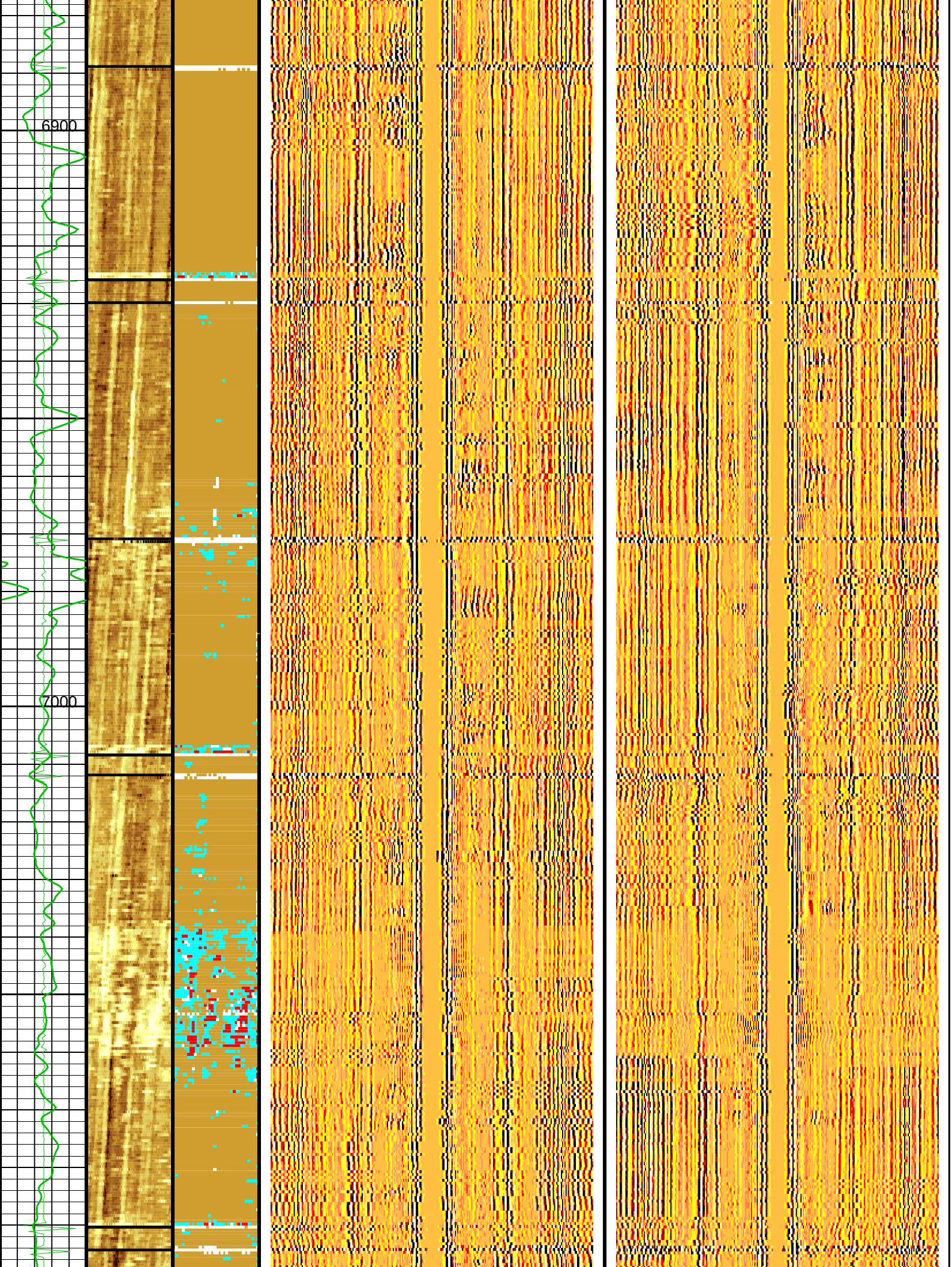
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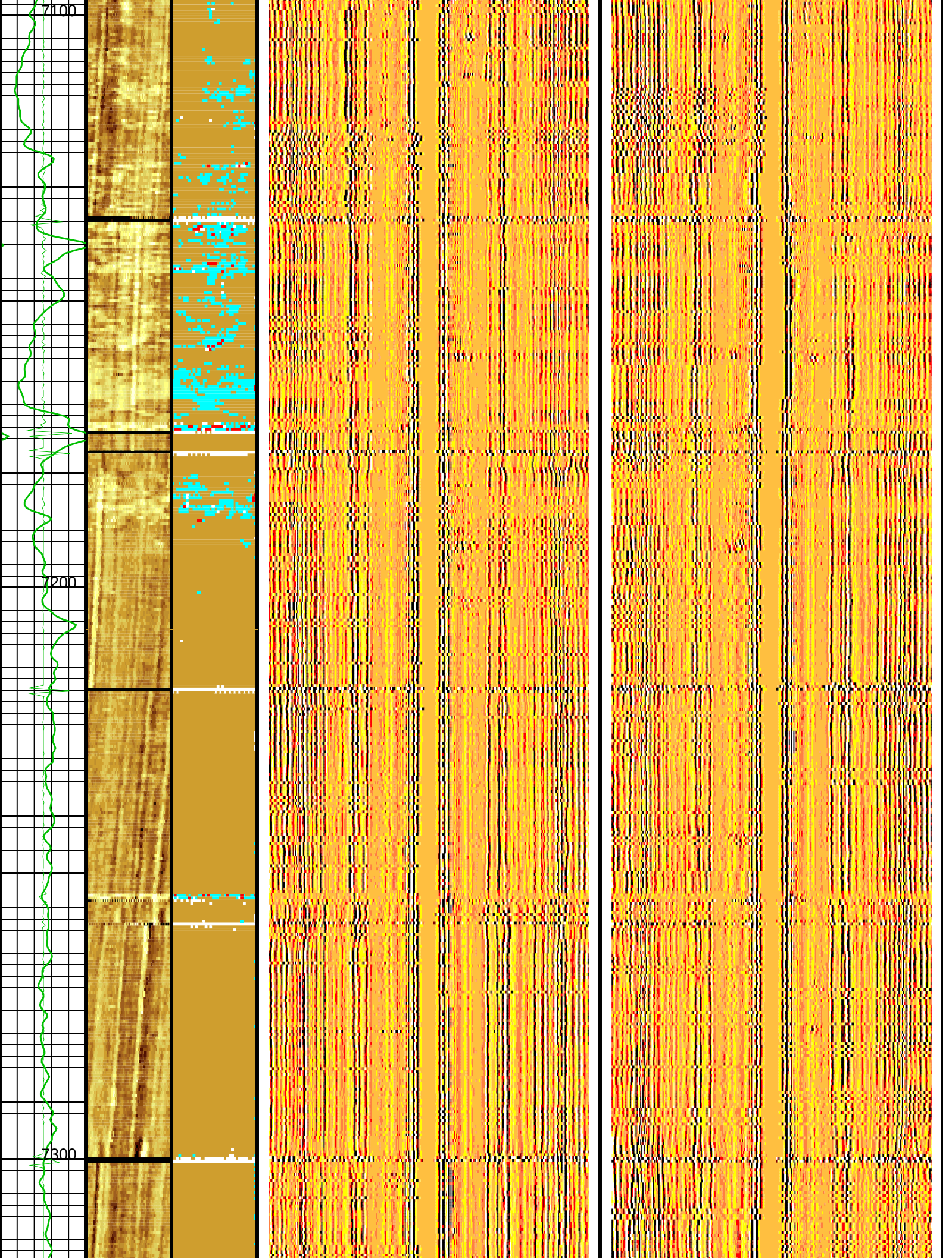
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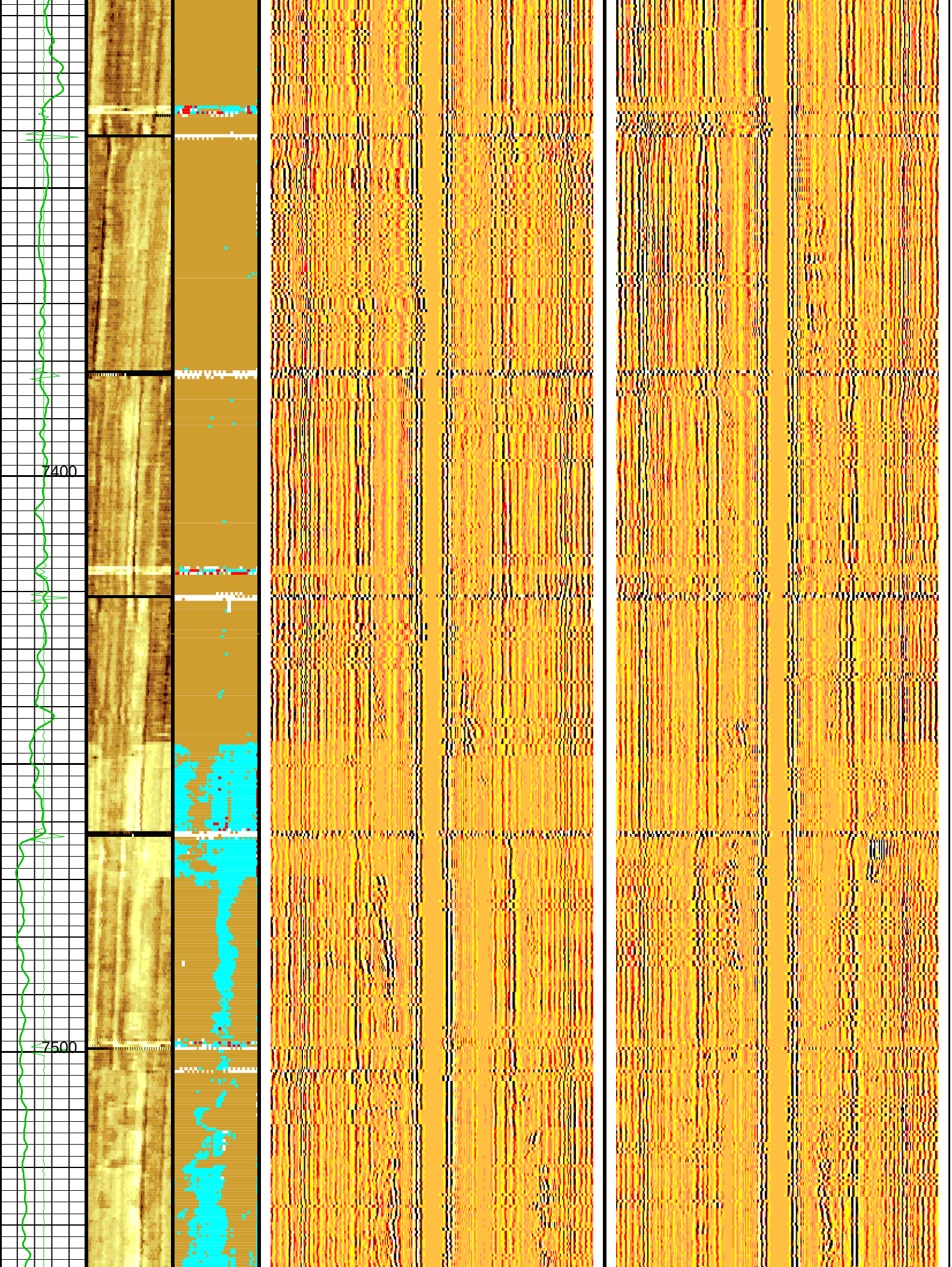
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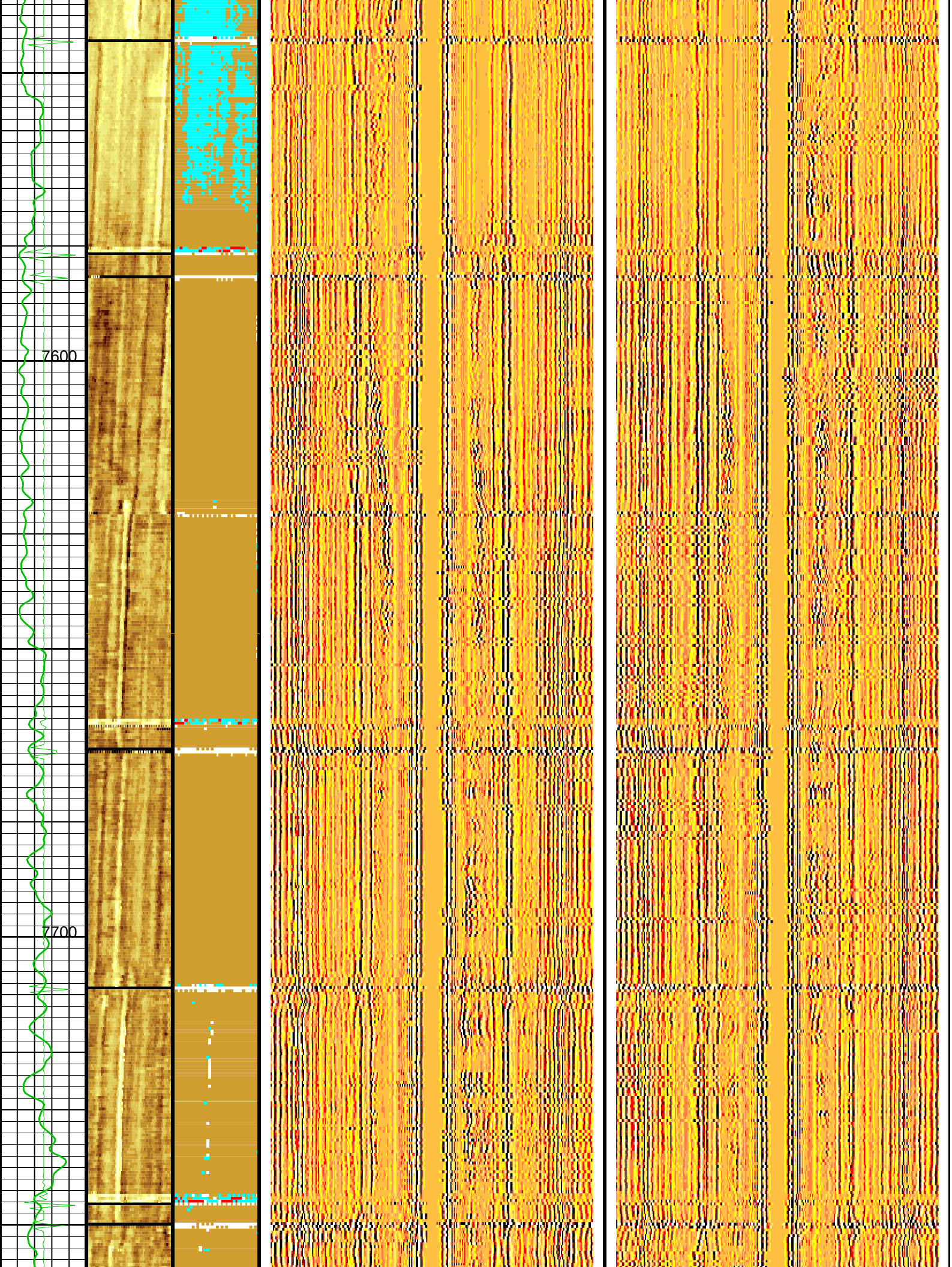
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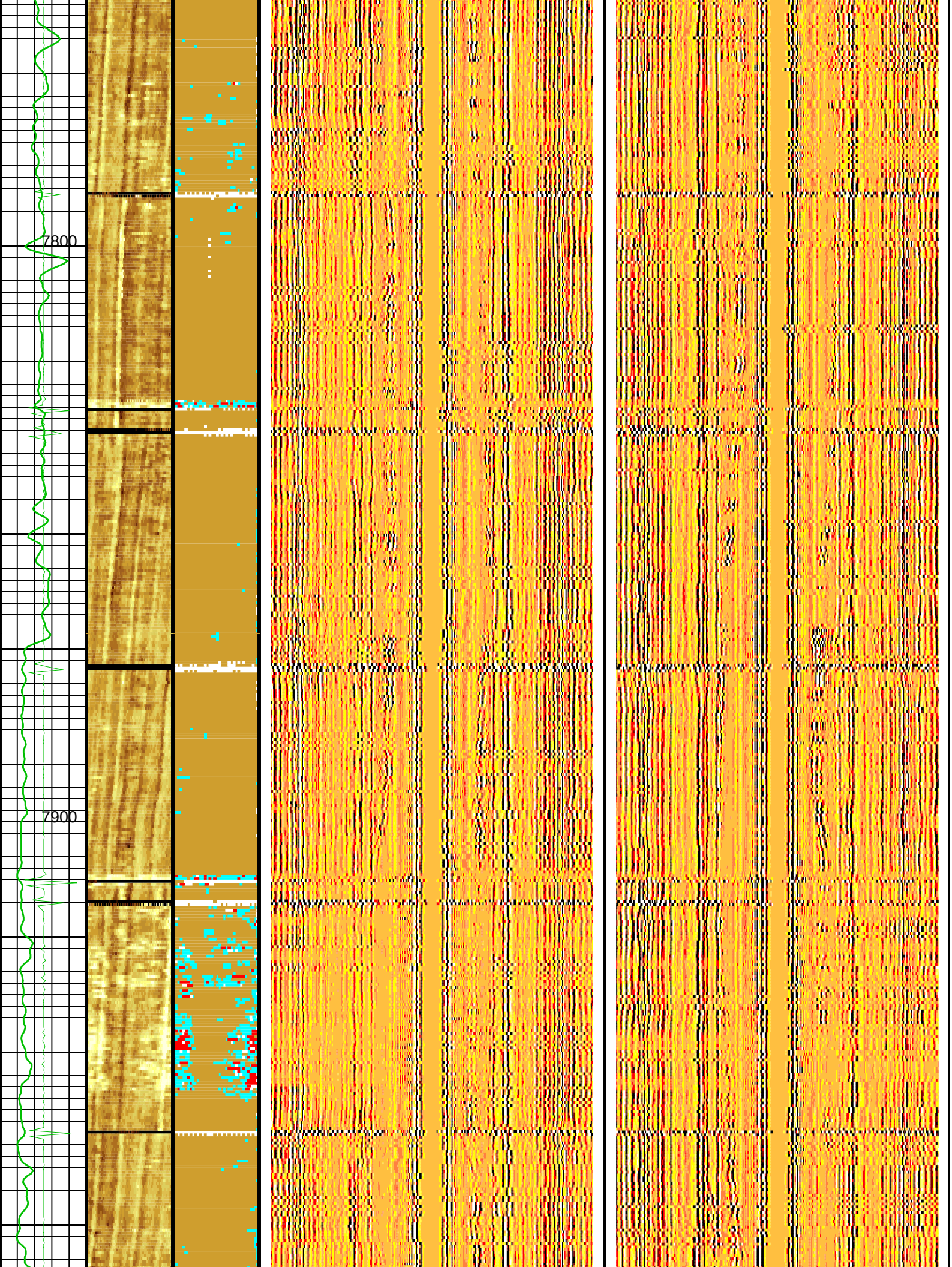
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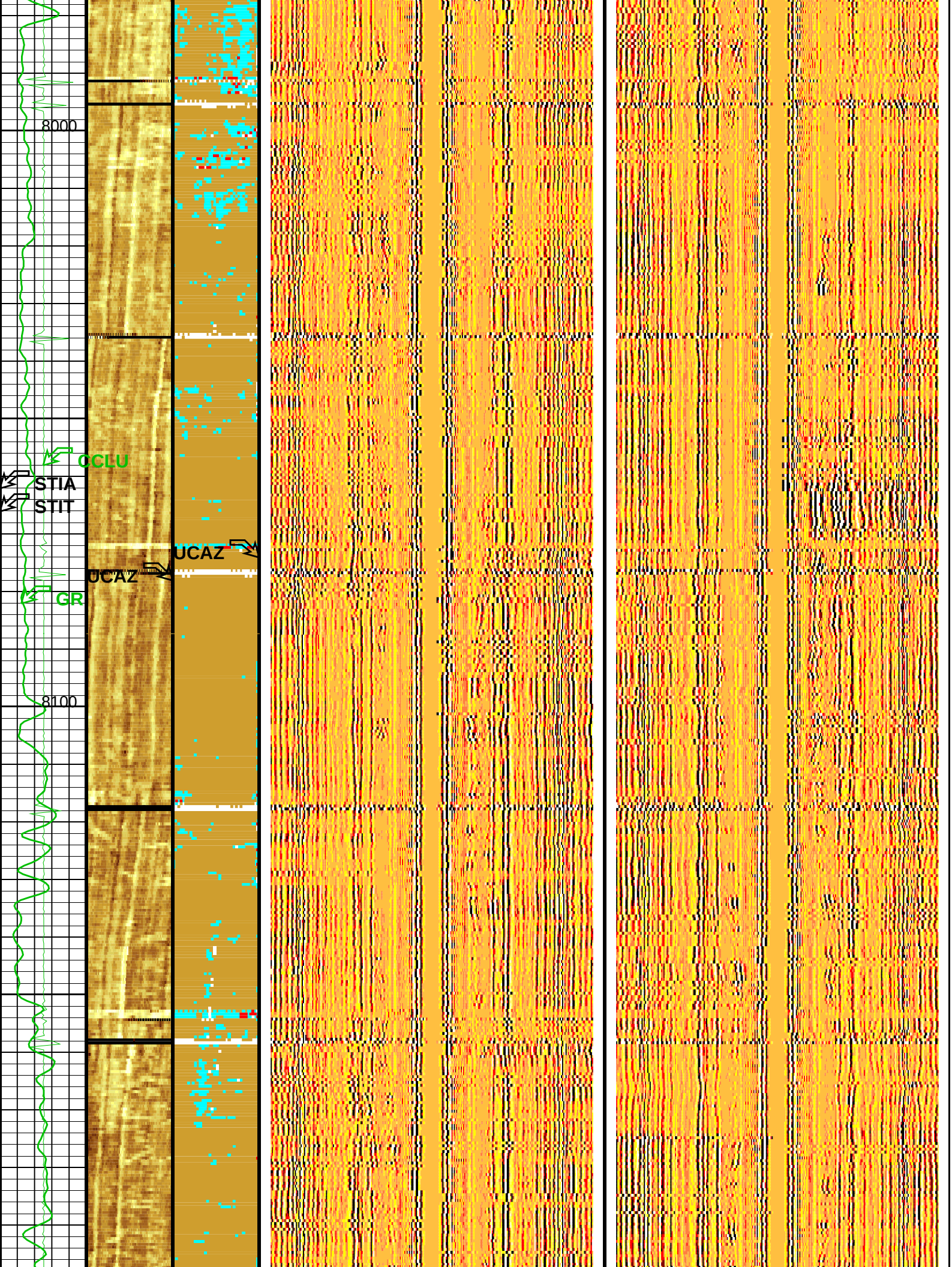
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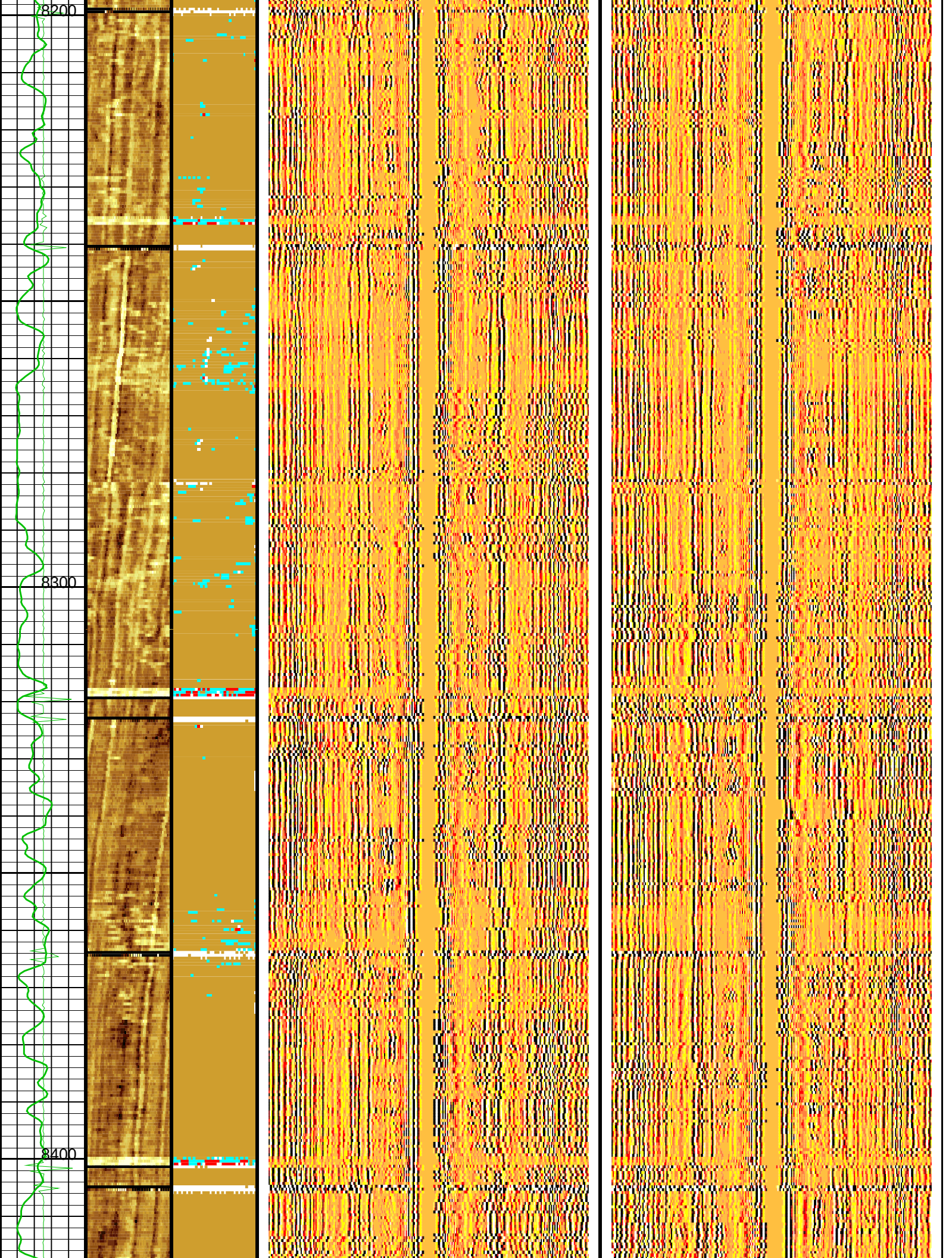
CCLU
STIA
STIT
UCAZ
UCAZ
GR
8100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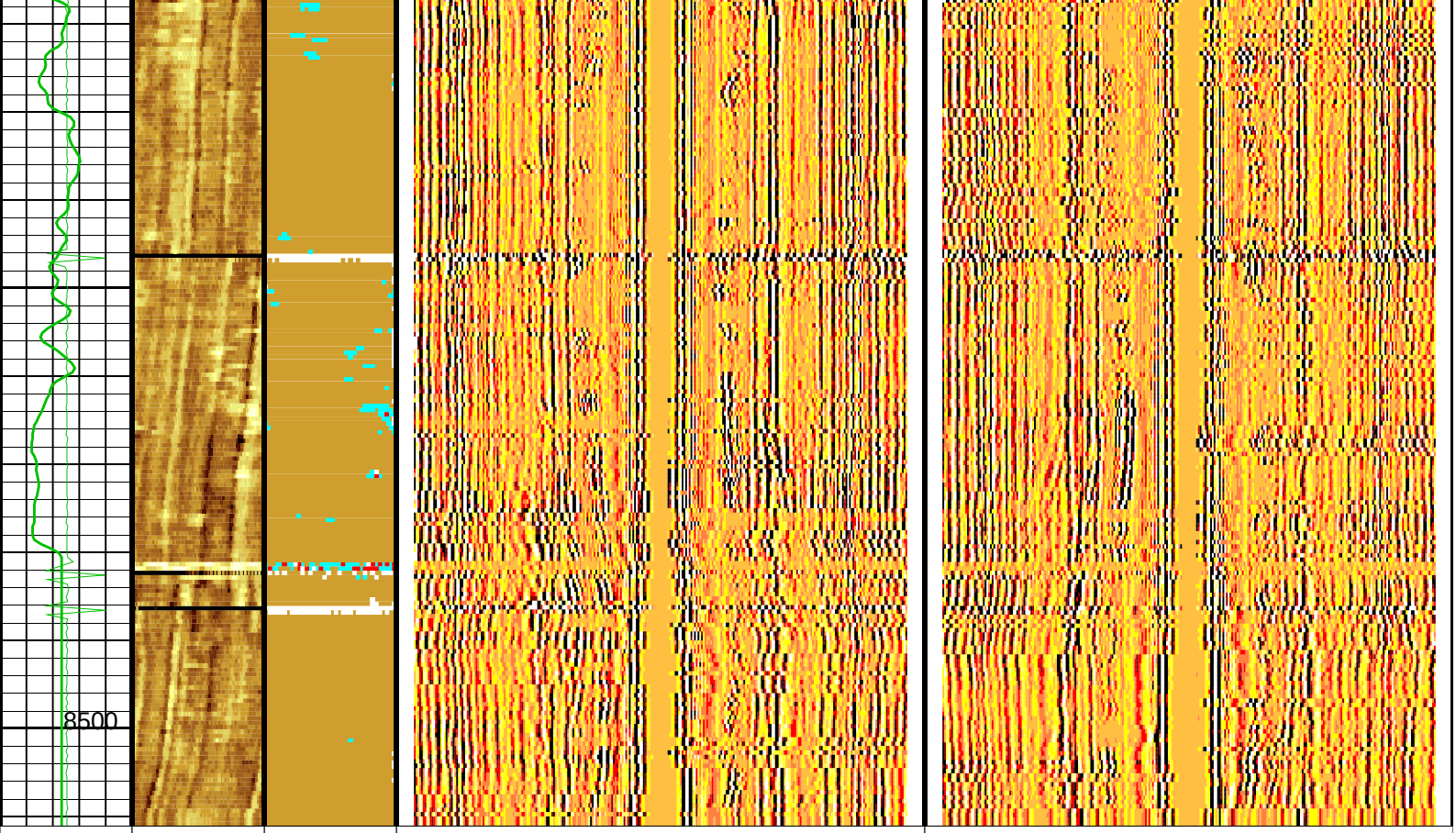


CCL (CCLU) (----
−20 20

−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

Raw Acoustic Imped. (AIBK) (MRAY)

0.5000
1.5000
2.5000
3.5000

Solid Liquid Gas Map (U−USIT_USLP) (----

Min Amplitude Max
Far at 0 and 180 deg (U−USIT_VDWFF000)
−150 (US) 150

Min Amplitude Max
Far at 90 and 270 deg (U−USIT_VDWFF090)
−150 (US) 150

Gamma Ray (GR) (GAPI)
0 150

Stuck Stretch (STIT)
0 (F) 50

Cable Drag From D4T to STIT

Tool/Tot. Drag From D4T to STIA

Parameters

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	206	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	65	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	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	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	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	−12	DB/M
U−USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U−USIT_UIST	Ultrasonic IBC Sonde Type	Sub_Ibcs_A	
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_5_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	1.8	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	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	8646.00	FT
TDL	Total Depth − Logger	8546.00	FT
	System and Miscellaneous		
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	7.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	

Format: USI_IBC_VDL_WIDE **Vertical Scale: 5" per 100'** **Graphics File Created: 27−Jun−2010 16:35**

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_004LUP	FN:3	PRODUCER	27−Jun−2010 12:38	8504.0 FT	57.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 16:35

Schlumberger

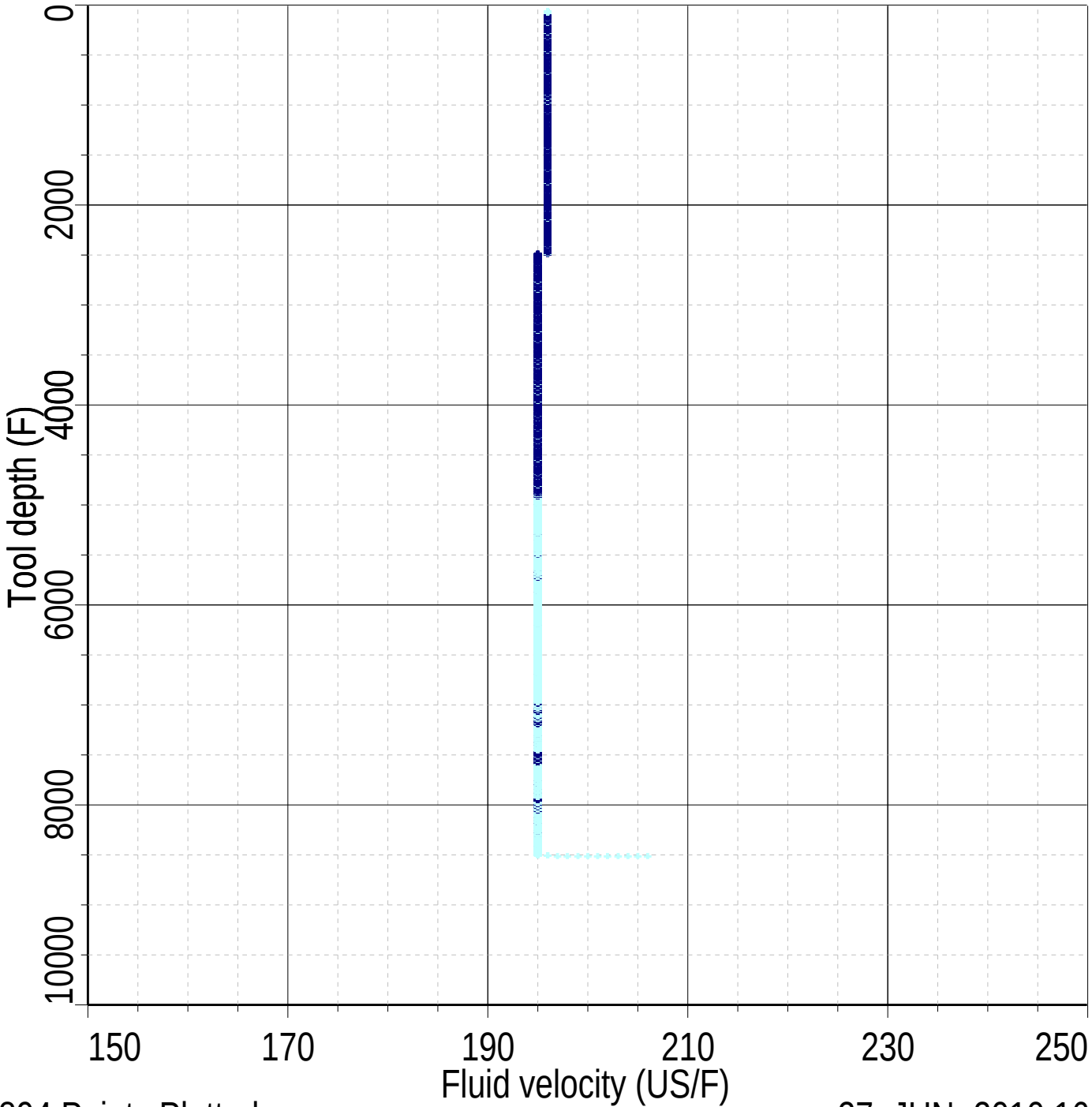
FLUID PROPERTIES

MAXIS Field Log

IBC Inv. Fluid Z QC (----

Index: 8511.0 - 64.5 FT

0. 0.5



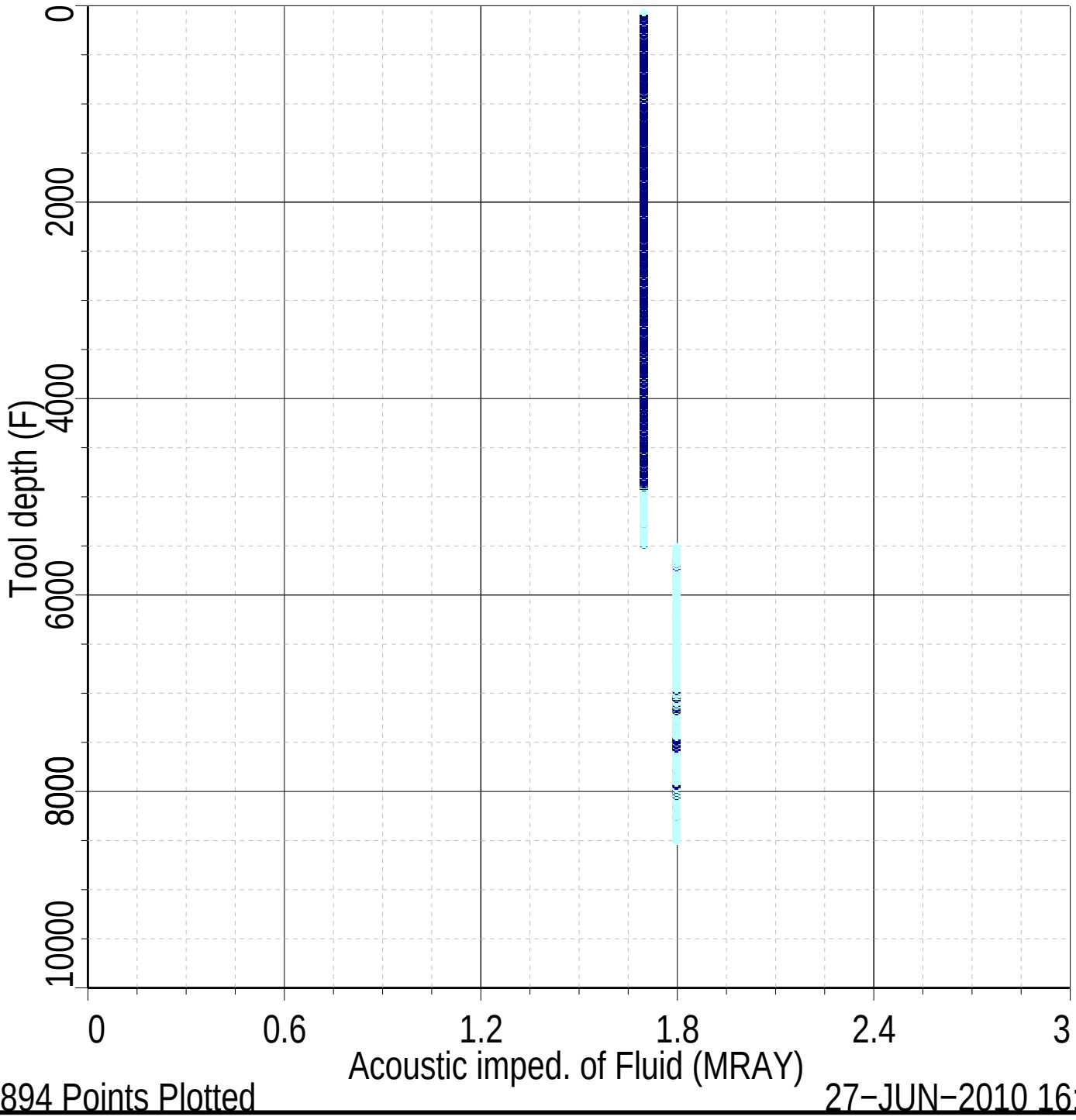
16894 Points Plotted

27-JUN-2010 16:51

IBC Inv. Fluid Z QC (----

Index: 8511.0 - 64.5 FT

0. 0.5



16894 Points Plotted

27−JUN−2010 16:51

Schlumberger

REPEAT PASS

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. **Well: PCU 197−34A3**

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_003LUP	FN:2	PRODUCER	27−Jun−2010 12:21	8491.0 FT	8174.6 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_005PUP	FN:4	PRODUCER	27−Jun−2010 16:28	8497.5 FT	8181.5 FT

DEFAULT USI_TLD_MCPL_CNL_005PSP FN:4 PRODUCER 27 Jun 2016 10:28 8497.5 FT 8181.5 FT

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)
0 150

CCL (CCLU) (−−−−
−20 20

RSAV (RSAV) (RPS)
6 7.5

CCL (CCLU) (−−−−
−20 20

Eccent. (ECCE)
0 (IN) 0.5

0.5000
1.5000
2.5000
3.5000
6.5000
Process. flags (UFLG) (−−−−

−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
Amplitude of echo minus Max (AWBK)

Min of Internal radius (IRMN) (IN)
3.7 2.7

Internal radius Maximum (IRMX) (IN)
3.7 2.7

Internal radius Average (IRAV) (IN)
3.7 2.7

External radius Average (ERAV) (IN)
3.7 2.7

Min of Internal radius (IRMN) (IN)
2.7 3.7

Internal radius Maximum (IRMX) (IN)
2.7 3.7

Internal radius Average (IRAV) (IN)
2.7 3.7

External radius Average (ERAV) (IN)
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
Internal radii minus Ave (IRBK)

Maximum of Thickness (THMX) (IN)
0.1 0.6

Average of Thickness (THAV) (IN)
0.1 0.6

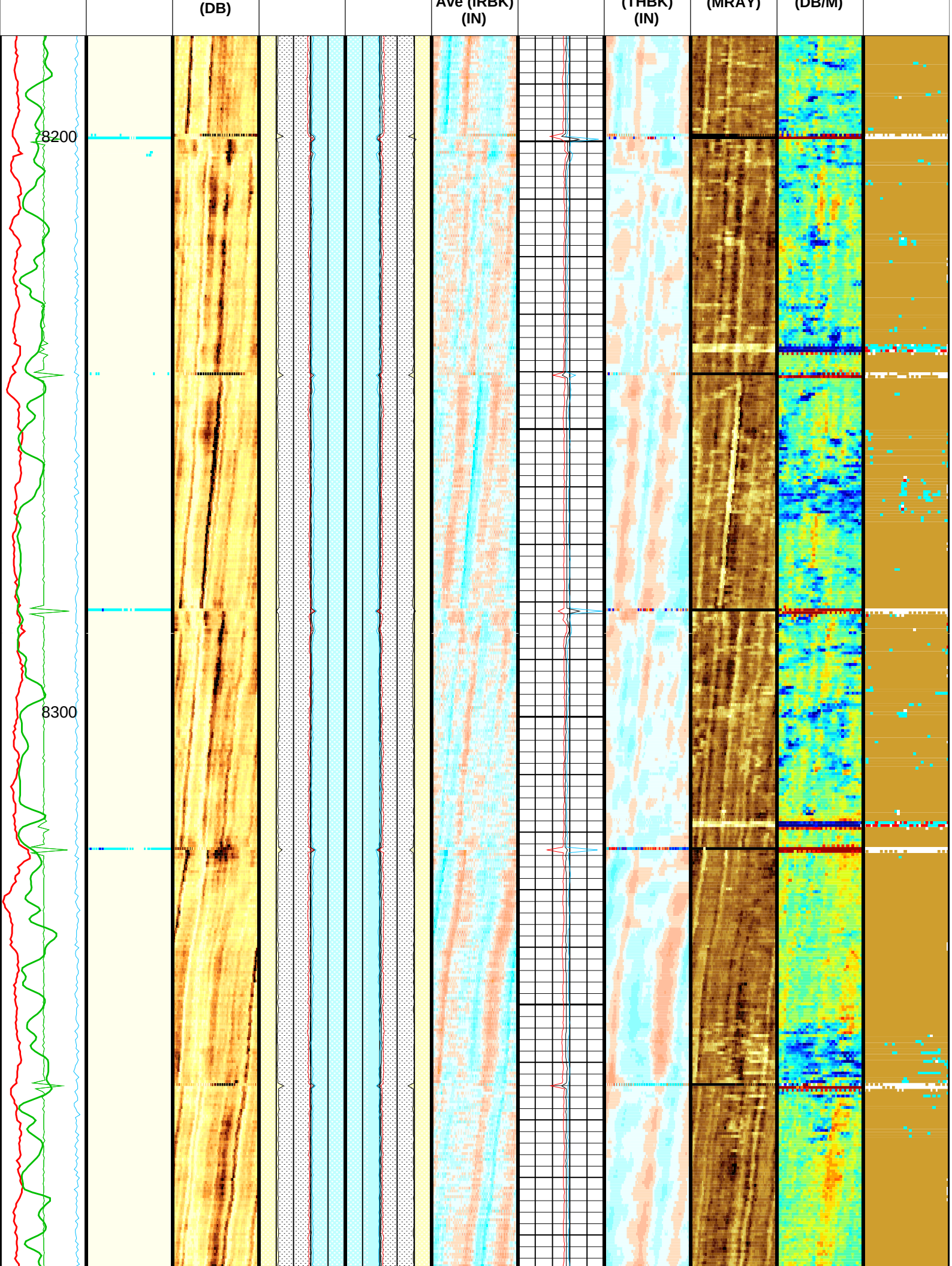
Min of Thickness (THMN) (IN)
0.1 0.6

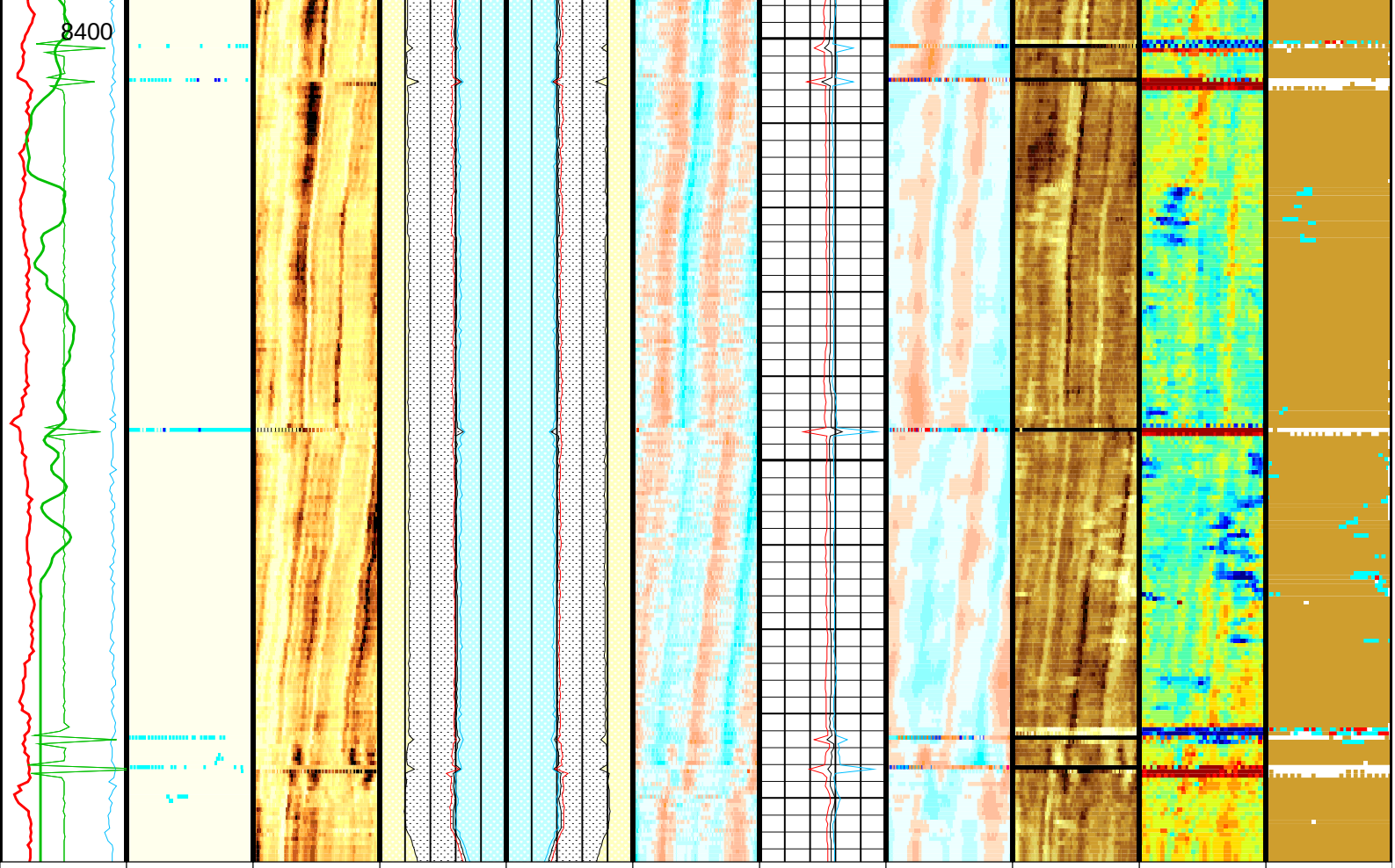
−500.0000
−0.0760
−0.0680
−0.0600
−0.0520
−0.0440
−0.0360
−0.0280
−0.0200
−0.0120
−0.0040
0.0040
0.0120
0.0200
0.0280
0.0360
0.0440
0.0520
0.0600
0.0680
0.0760
Thickness minus Ave (THBK)

−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
Raw Acoustic Imped. (AIBK) (MRAY)

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
Flexural Attenuation (U−USIT_UFAK) (DB/M)

0.5000
1.5000
2.5000
3.5000
Solid Liquid Gas Map (U−USIT_USLP) (−−−−


(DB)
Ave (IRBK) (IN)
(THBK) (IN)
(MRAY)
(DB/M)
8200
8300



Eccent. (ECCE) 0 (IN) 0.5	Process. flags (UFLG) (-----	Amplitude of echo minus Max (AWBK) (DB)	External radius Average (ERAV) (IN) 3.7 2.7	External radius Average (ERAV) (IN) 2.7 3.7	Internal radii minus Ave (IRBK) (IN)	Min of Thickness (THMN) (IN) 0.1 0.6	Thickness minus Ave (THBK) (IN)	Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (U-USIT_ UFAK) (DB/M)	Solid Liquid Gas Map (U-USIT_ USLP) (-----
CCL (CCLU) (----- −20 20			Internal radius Average (IRAV) (IN) 3.7 2.7	Internal radius Average (IRAV) (IN) 2.7 3.7		Average of Thickness (THAV) (IN) 0.1 0.6				
RSAV (RSAV) (RPS) 6 7.5			Internal radius Maximum (IRMX) (IN) 3.7 2.7	Internal radius Maximum (IRMX) (IN) 2.7 3.7		Maximum of Thickness (THMX) (IN) 0.1 0.6				
CCL (CCLU) (-----			Min of Internal radius (IRMN)	Min of Internal radius (IRMN)						

−20	20

Gamma Ray (GR) (GAPI)	
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: 27−Jun−2010 16:29**

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	206	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	65	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI	
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	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	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	−12	DB/M
U−USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U−USIT_UIST	Ultrasonic IBC Sonde Type	Sub_Ibcs_A	
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_5_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	1.8	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	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	8646.00	FT
TDL	Total Depth − Logger	8546.00	FT
System and Miscellaneous			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	6.3	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_003LUP	FN:2	PRODUCER	27−Jun−2010 12:21	8491.0 FT	8174.6 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_005PUP	FN:4	PRODUCER	27−Jun−2010 16:28

Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Detector Calibration							
Before: 23−Jun−2010 14:06							
Gamma Ray Background	30.00	N/A	29.00	N/A	N/A	N/A	GAPI
Gamma Ray (Jig − Bkg)	168.1	N/A	168.1	N/A	N/A	15.28	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Zero Measurement							
Master: 19−May−2010 12:23 Before: 23−Jun−2010 14:07							
CNTC Background	27.64	27.64	27.27	N/A	N/A	4.146	CPS
CFTC Background	28.93	28.93	27.90	N/A	N/A	4.340	CPS
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Ratio Measurement							

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Ratio Measurement

Master: 19−May−2010 12:23

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	

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Accelerometer Calibration

Before: 26−Jun−2010 11:48

Z−Axis Acceleration	32.19	N/A	32.14	N/A	N/A	N/A	F/S2

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

NCT−B Water Temperature	61.8	DEGF.
Thermal Housing Size	3.374	IN.
NSR−F serial number	5138	

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	5138
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		29.00	Before		168.1	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			152.8 (Minimum) 168.1 (Nominal) 183.4 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 23−Jun−2010 14:06

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		27.64	Master		28.93
Before		27.27	Before		27.90
	5.000 (Minimum) 27.64 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 28.93 (Nominal) 40.00 (Maximum)	

Master: 19−May−2010 12:23 Before: 23−Jun−2010 14:07

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−May−2010 12:23

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Accelerometer Calibration

Phase	Z−Axis Acceleration F/S2	Value
Before		32.14
	31.53 (Minimum) 32.19 (Nominal) 32.84 (Maximum)	

Before: 26−Jun−2010 11:48

High resolution Integrated Logging Tool−DTS Master Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		27.64	Master		28.93
	5.000 (Minimum) 27.64 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 28.93 (Nominal) 40.00 (Maximum)	

Master: 19−May−2010 12:23

High resolution Integrated Logging Tool−DTS Master Calibration

Tank 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−May−2010 12:23

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: **EXXONMOBIL PRODUCTION CO.**

Schlumberger

Well: **PCU 197−34A3**
Field: **PICEANCE CREEK**
County: **RIO BLANCO**
State: **CO**

IMAGING BEHIND CASING
GAMMA RAY
CCLU