Compensated Density Log
Well
Field
County

County:	RIO BLANCO
Field:	PICEANCE CREEK
Location:	NWSW 1731' FSL & 102' FWL

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Driller Size @ Depth	
Salinity	
Density	
Fluid Level	
BIT/CASING	
Bit Size	
From	
To	
Casing Size	
Weight	
Grade	
From	
To	
Maximum Recorded Temperature	
Logger On Bottom	
Unit Number	
Recorded By	
Witnessed By	

Schlumberger

mpany: **EXXONMOBIL PRODUCTION CO.**

ll: **PCU 197−34A9**

d: **PICEANCE CREEK**

unty: **RIO BLANCO** State: **CO**

Location: NWSW 1731' FSL & 102' FWL
Well: PCU 197−34A9
Company: EXXONMOBIL PRODUCTION C

IMAGING BEHIND CASING
GAMMA RAY
CCLU

LOCATION

NWSW 1731' FSL & 102' FWL

Elev.: K.B. 6519.20 ft
G.L. 6489.00 ft
D.F. 6518.20 ft

Permanent Datum: GROUND LEVEL Elev.: 6489.00 ft
Log Measured From: KELLY BUSHING 30.20 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	Section	Township	Range
05−103−11536	34	1S	97W

g Date	26−Jun−2010					Logging Date	
umber	1					Run Number	
Driller	8421 ft					Depth Driller	
nberger Depth	8310 ft					Schlumberger Depth	
Log Interval	8310 ft					Bottom Log Interval	
g Interval	3150 ft					Top Log Interval	
Fluid Type	WBM					Casing Fluid Type	
y						Salinity	
y	8.4 lbm/gal					Density	
evel	10 ft					Fluid Level	
CASING/TUBING STRING						BIT/CASING/TUBING STRING	
e	9.875 in					Bit Size	
	3650 ft					From	
	8421 ft					To	
/Tubing Size	7.000 in					Casing/Tubing Size	
	26 lbm/ft					Weight	
						Grade	
	0 ft					From	
	8421 ft					To	
um Recorded Temperatures	209 degF					Maximum Recorded Temperatures	
On Bottom Time	26−Jun−2010	23:30				Logger On Bottom Time	
umber Location	2379 VERNAL					Unit Number Location	
ded By	RYAN STEWART					Recorded By	
ssed By	JOSH LOVE					Witnessed By	

		Run 1	Run 2	Run 3
PVT DATA	Oil Density			
	Water Salinity			
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
	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			

DEPTH SUMMARY LISTING

Date Created: 27−JUN−2010 3:51:40

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:	227.80 FT
Rig Up Length At Bottom:	227.50 FT
Rig Up Length Correction:	0.30 FT
Stretch Correction:	6.70 FT
Tool Zero Check At Surface:	0.60 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 8200 FT	
HORIZONTAL RESOLUTION: 5 DEG	
VERTICLE RESOLUTION : 6 INCH	
TD NOT TAGGED	
DATA SPLICE AT 2800 FT	

DATA SPLICE AT 3800 FT

RUN 1		RUN 2	
SERVICE ORDER #:	BADQ−00022	SERVICE ORDER #:	
PROGRAM VERSION:	17C0−154	PROGRAM VERSION:	
FLUID LEVEL:	10 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP

LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

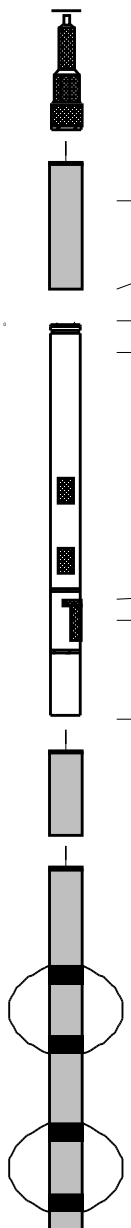
RUN 1

SURFACE EQUIPMENT

GSR−U/Y
NCT−B
CNB−AB
NCS−VB

WITM (DTS)−A

DOWNHOLE EQUIPMENT



LEH−QT 39.1
LEH−QT

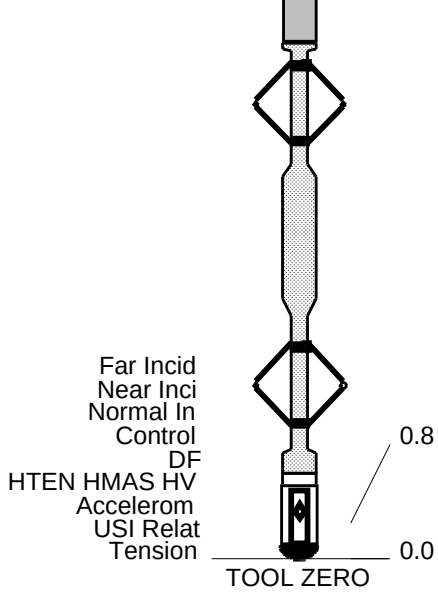
DTC−H 36.1
ECH−KC
DTCH0−A
DTCH1−A

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



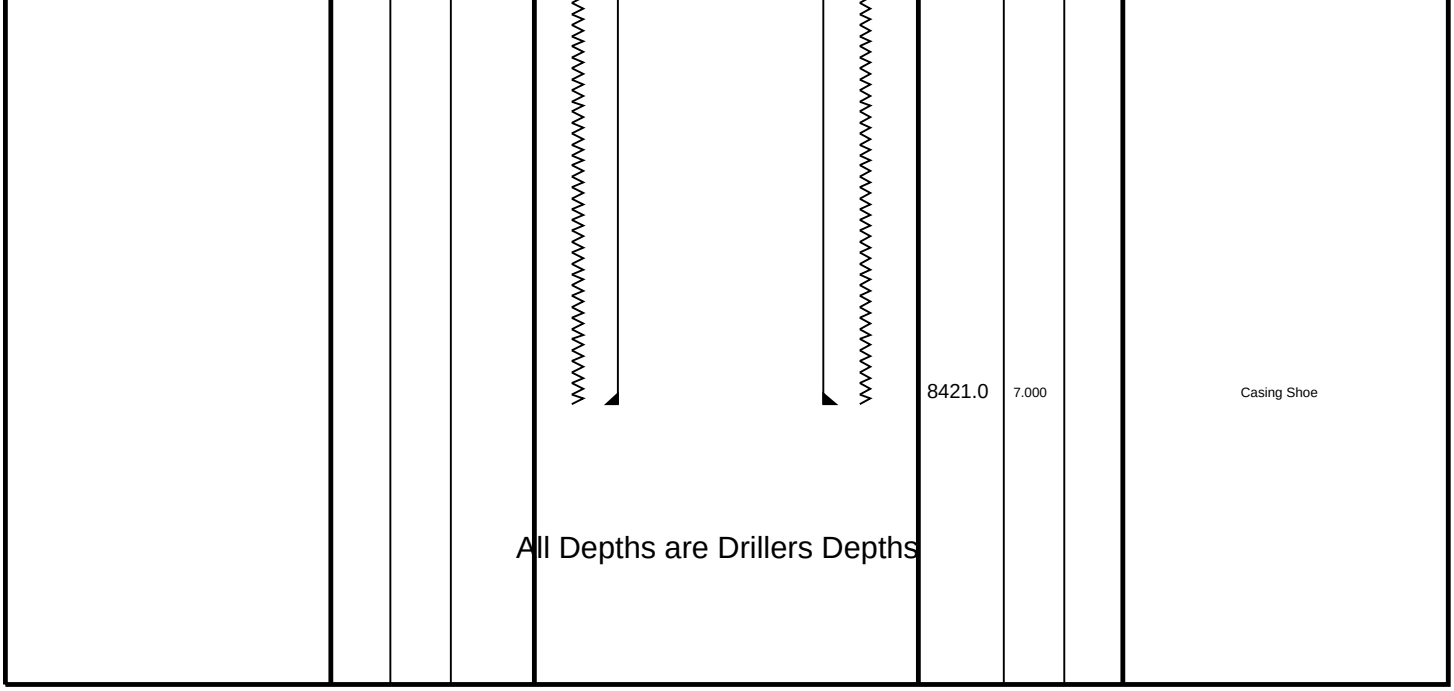
MAXIMUM STRING DIAMETER 7.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Client: EXXONMOBIL PRODUCTION CO.
Well: PCU 197−34A9
Field: PICEANCE CREEK
State: CO
Country: USA

Rig Name: MAST
Reference Datum: GROUND LEVEL
Elevation: 6489.0 ft

Drawing Date: 6/27/2010
API #: 05−103−11536

Production String	(in) OD	(in) ID	(ft) MD	Well Schematic	(ft) MD	(in) OD	(in) ID	Casing String
					0.0	7.000		Casing String
					3650.0	9.875		Borehole Segment



All Depths are Drillers Depths

Schlumberger

IBC SLG COMPOSITE

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. **Well: PCU 197−34A9**

Input DLIS Files

DEFAULT	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33

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	1.75 MRAY	6501.5 04:36:23
	1.65 MRAY	1.7 MRAY	5501.5 04:38:25

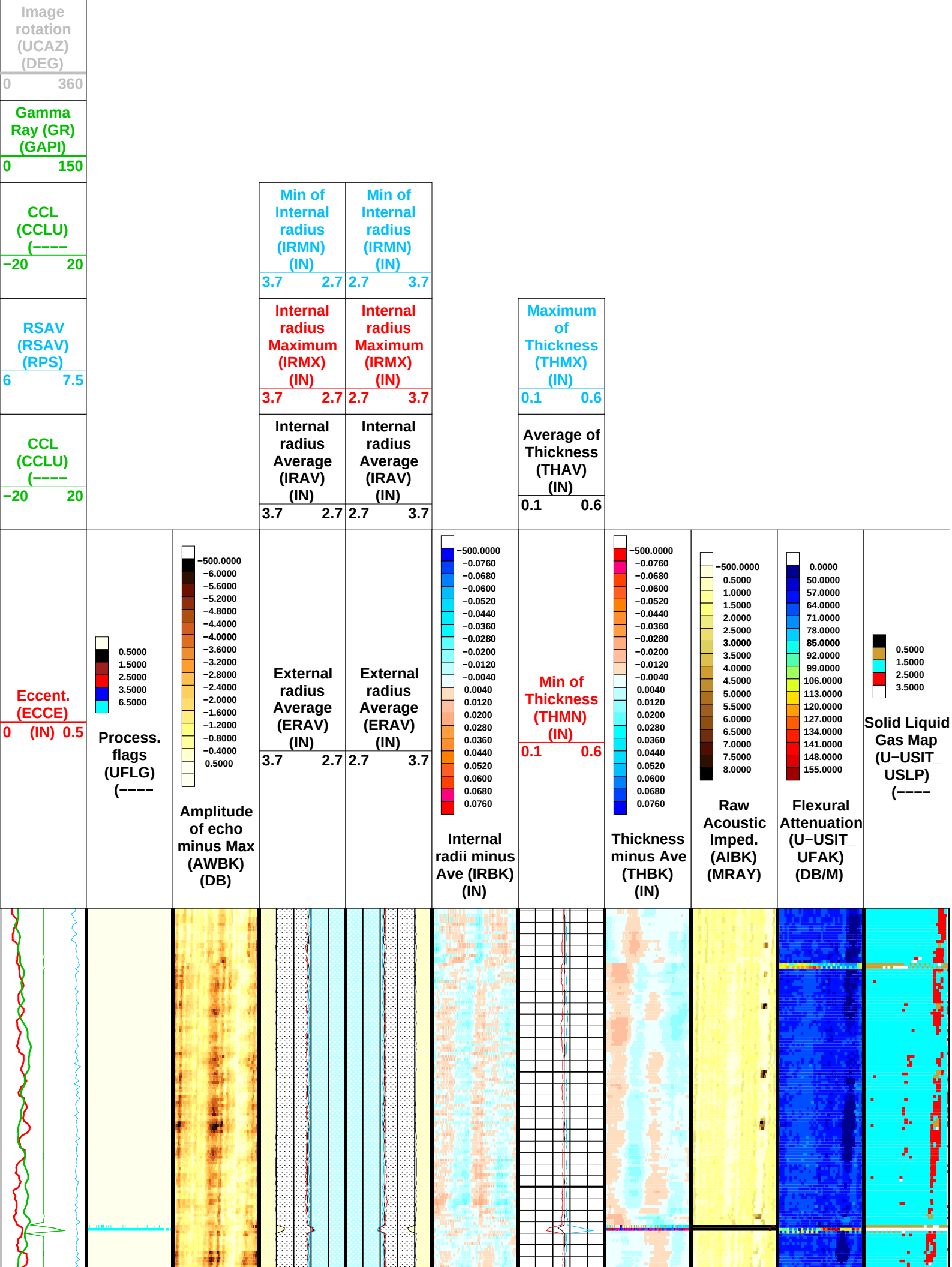
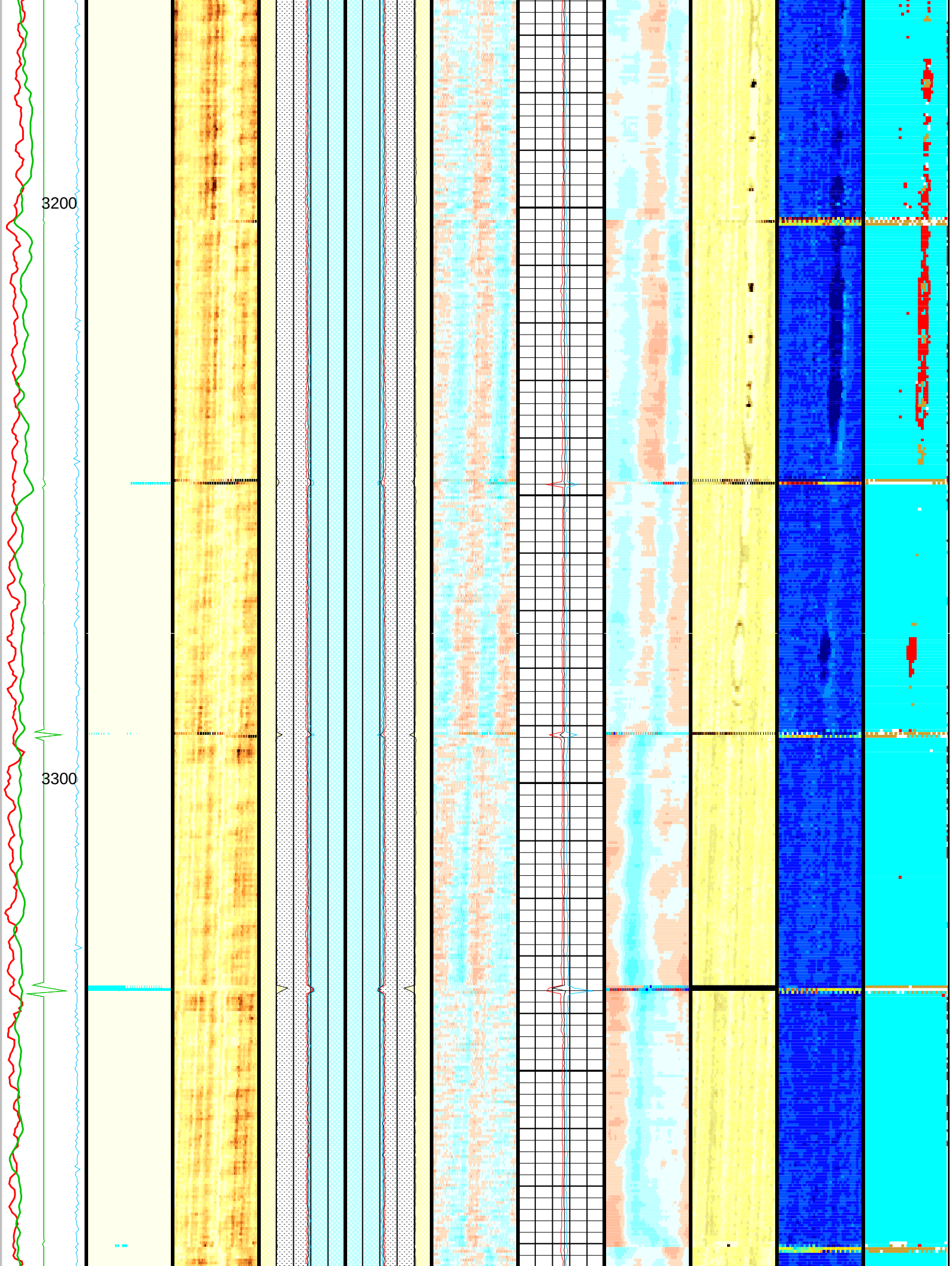


Image rotation (UCAZ) (DEG)
0 360
Gamma Ray (GR) (GAPI)
0 150
CCL (CCLU) (----
−20 20
RSAV (RSAV) (RPS)
6 7.5
CCL (CCLU) (----
−20 20
Eccent. (ECCE)
0 (IN) 0.5
0.5000
1.5000
2.5000
3.5000
6.5000
Process. flags (UFLG) (----
−500.0000
−6.0000
−5.6000
−5.2000
−4.8000
−4.4000
−4.0000
−3.6000
−3.2000
−2.8000
−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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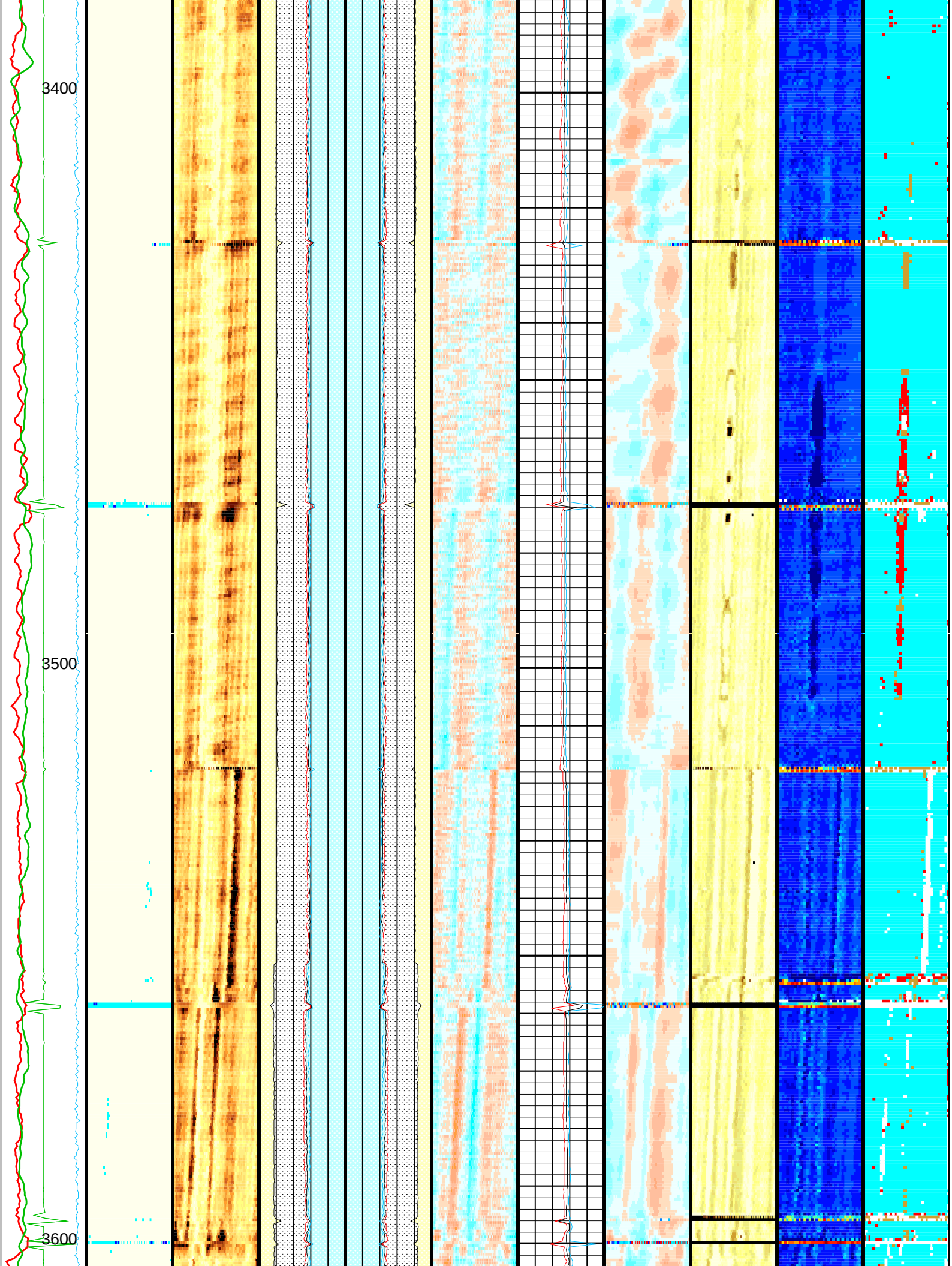
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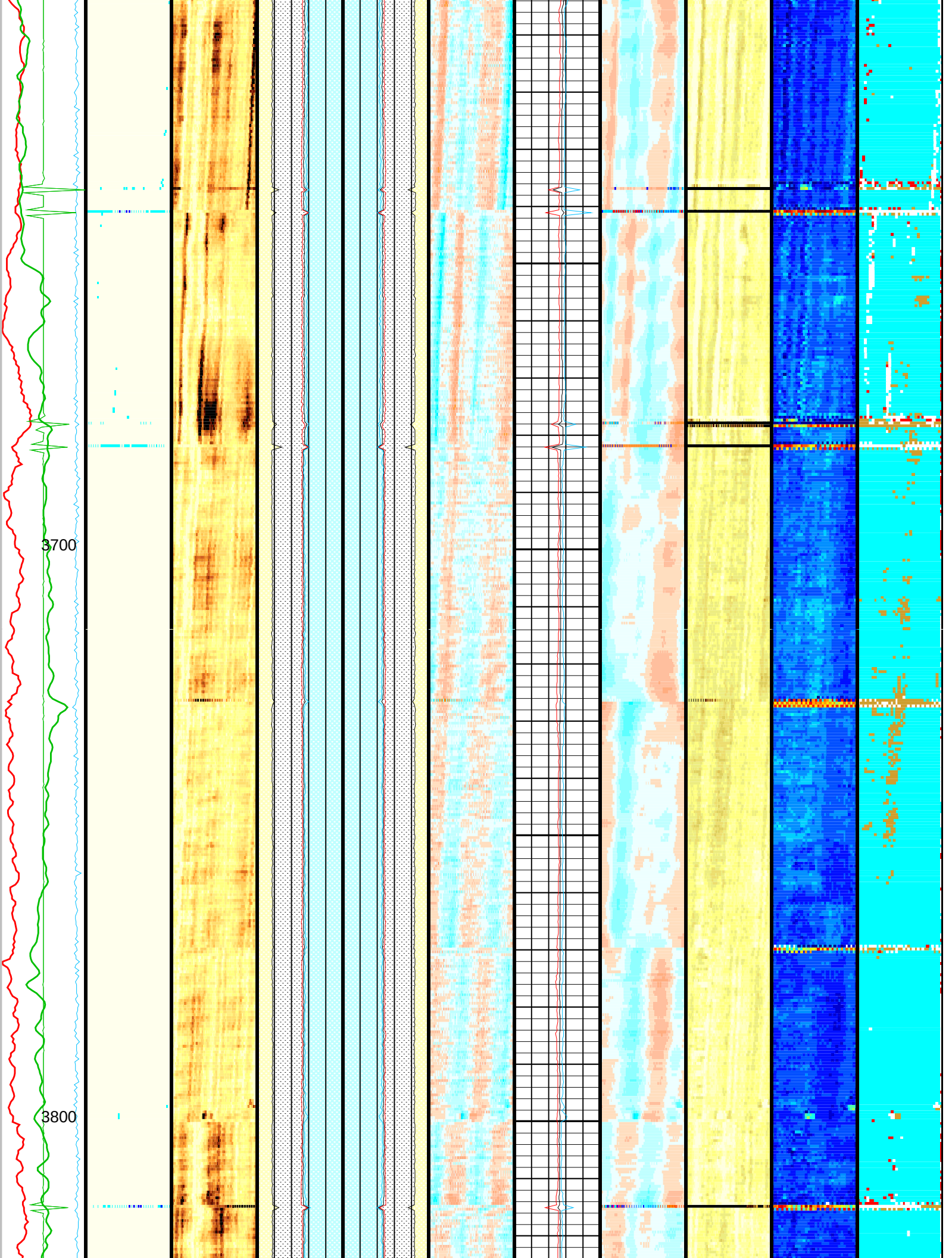
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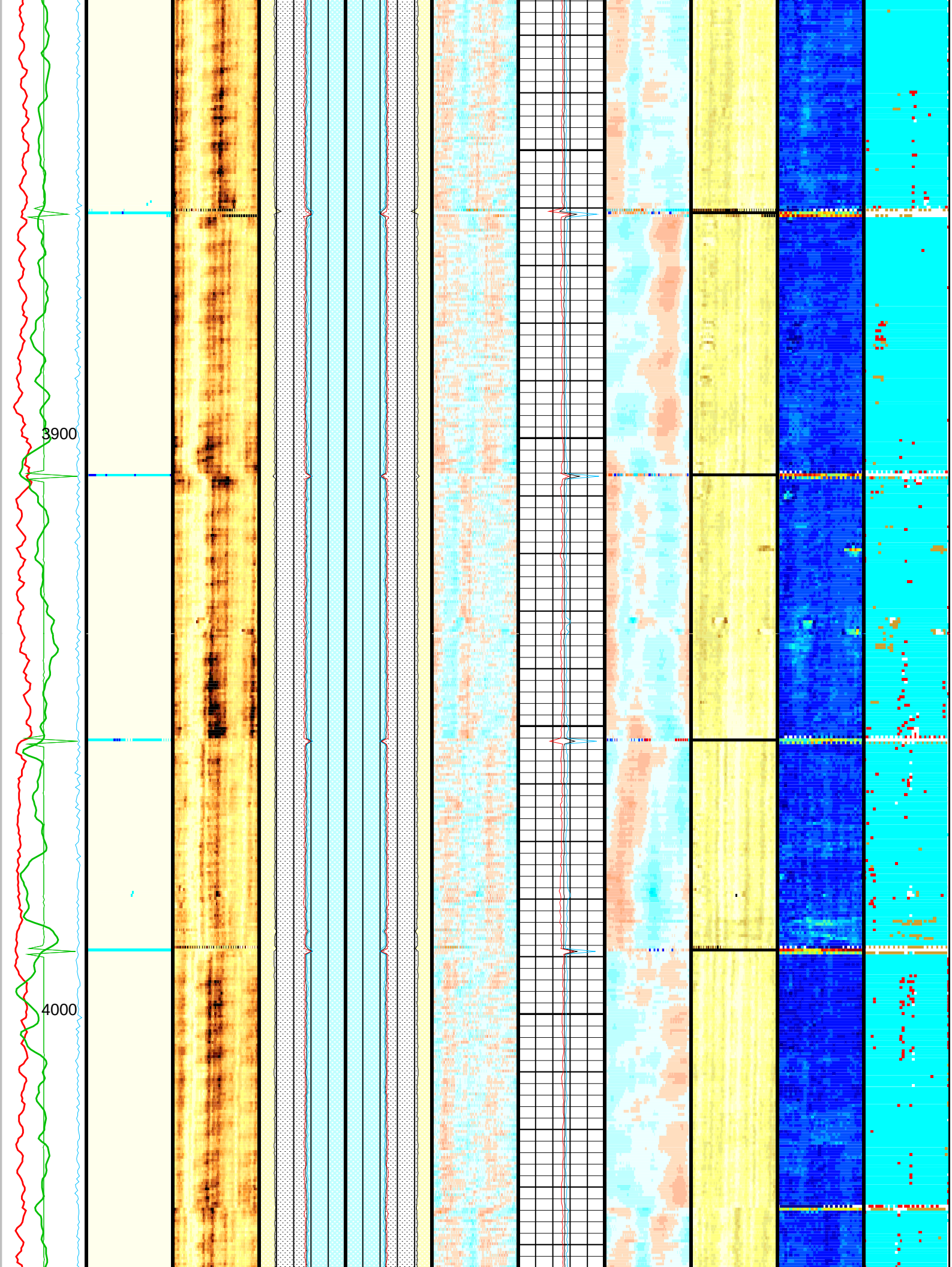
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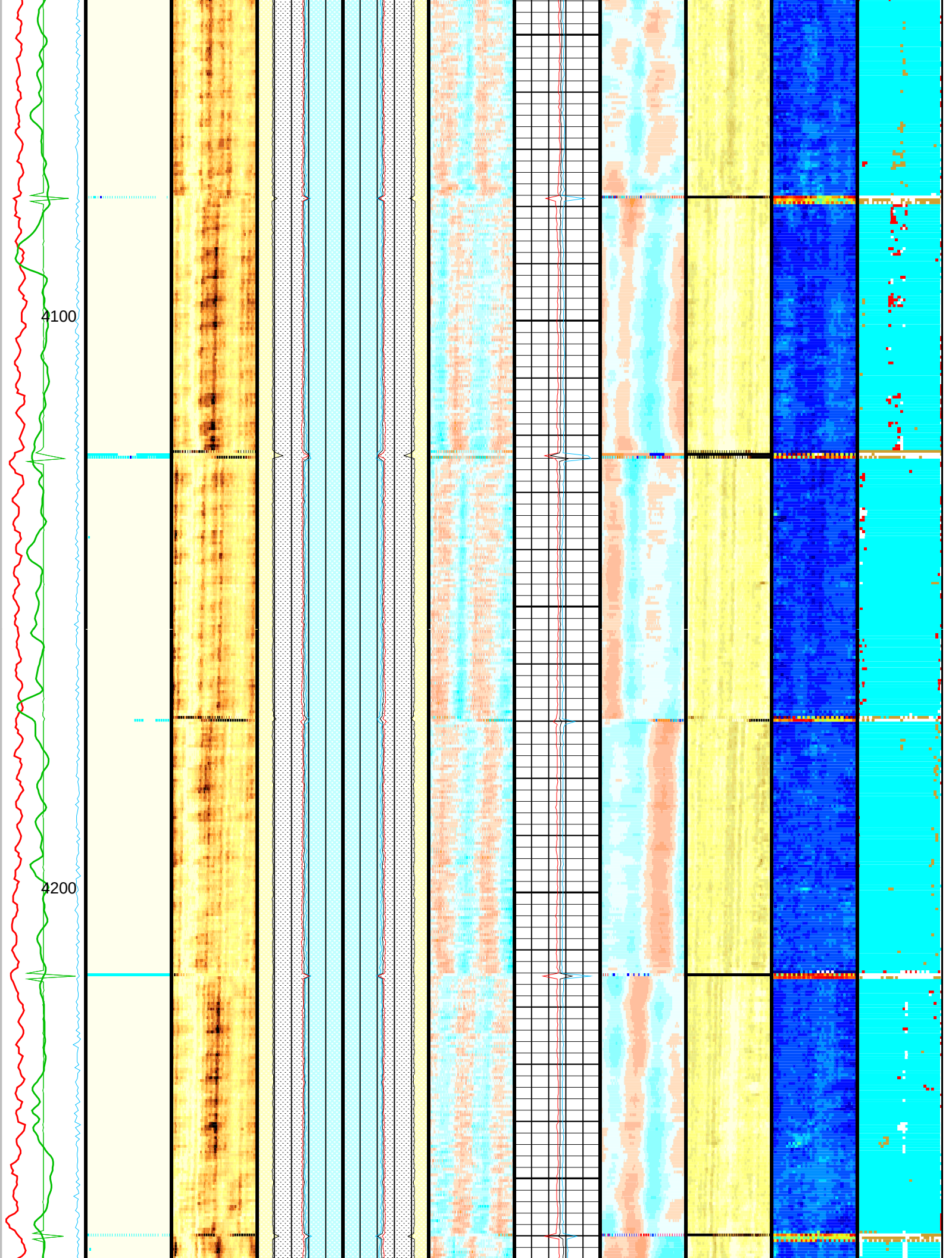
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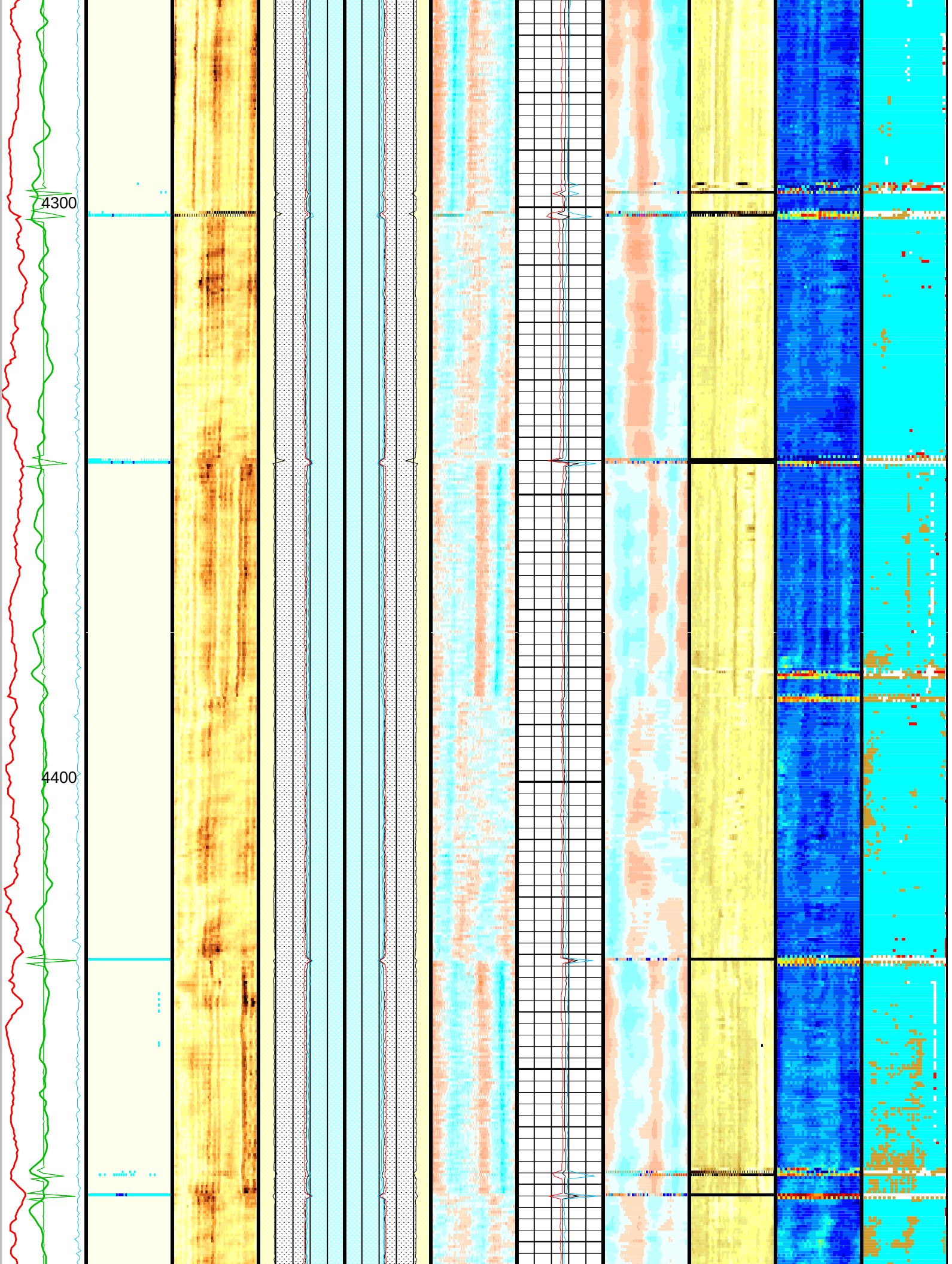
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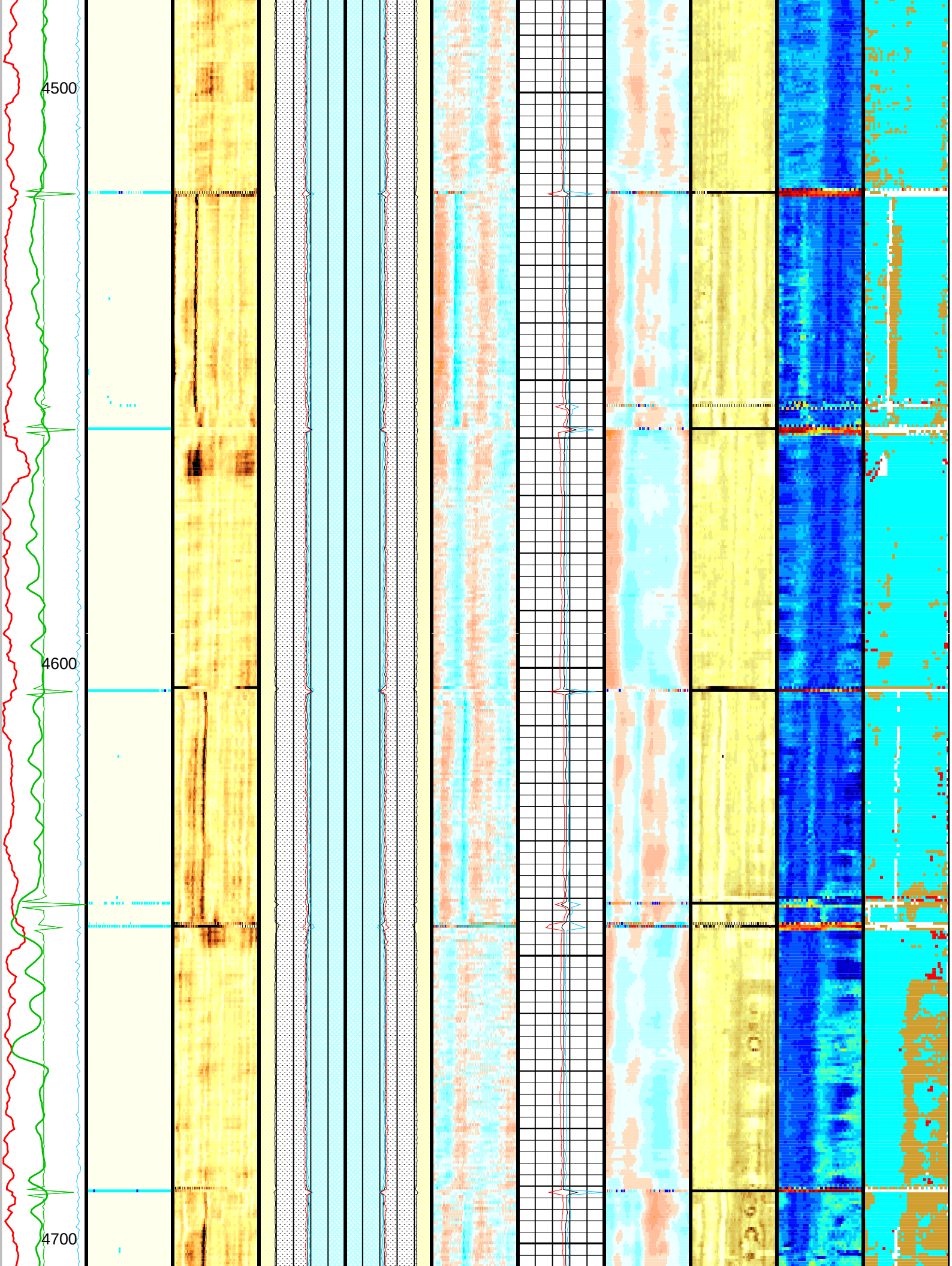
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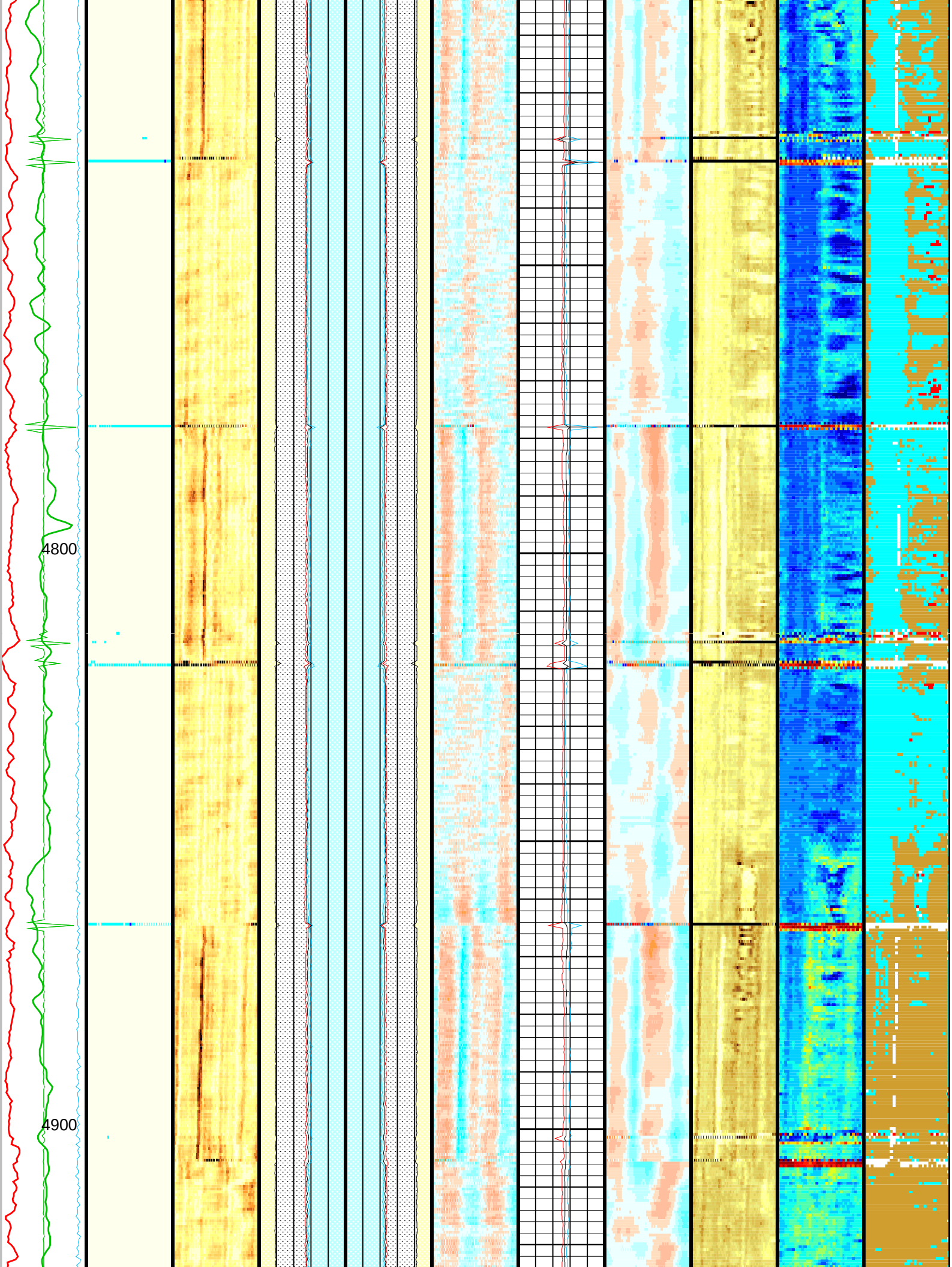
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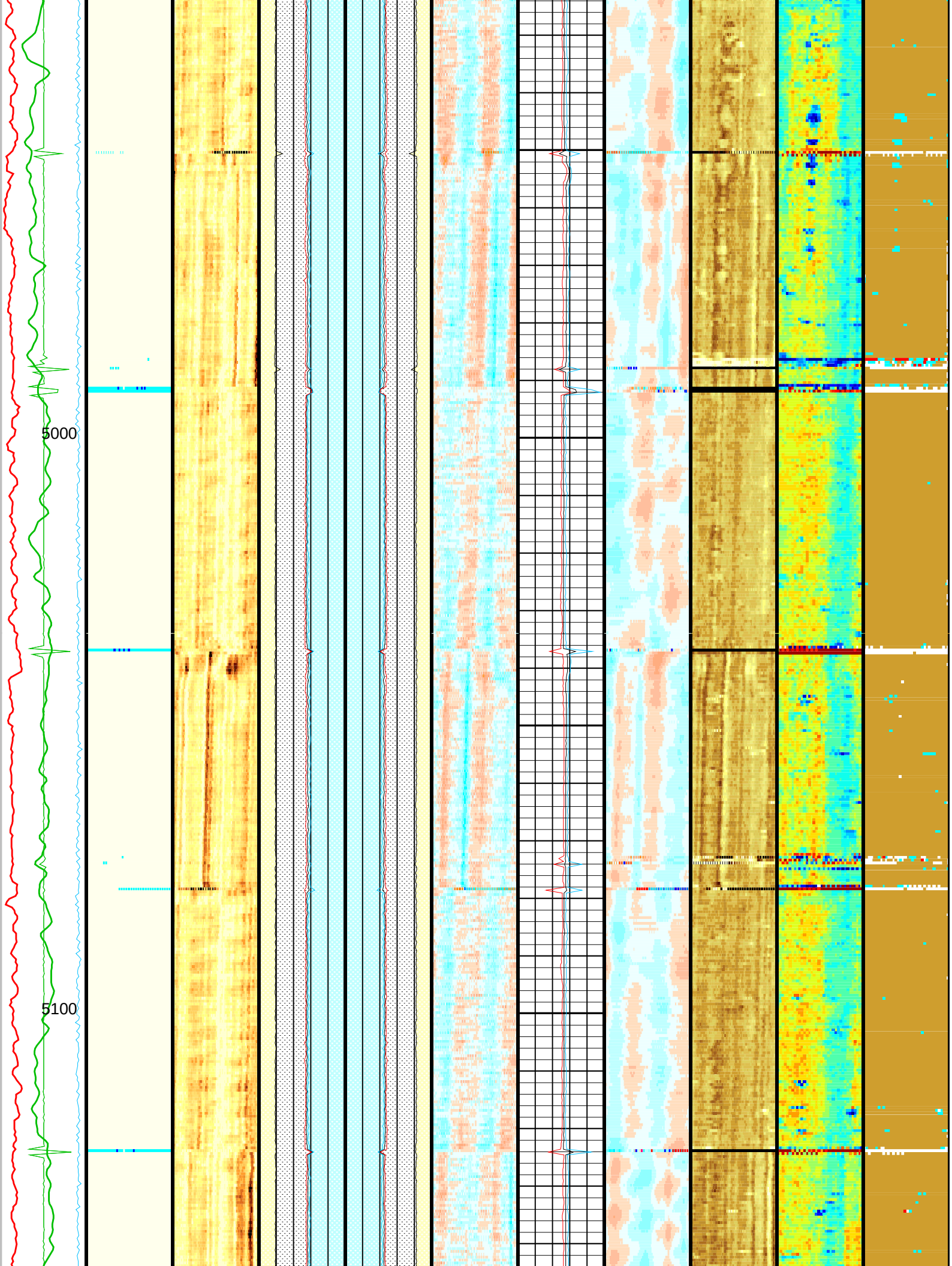
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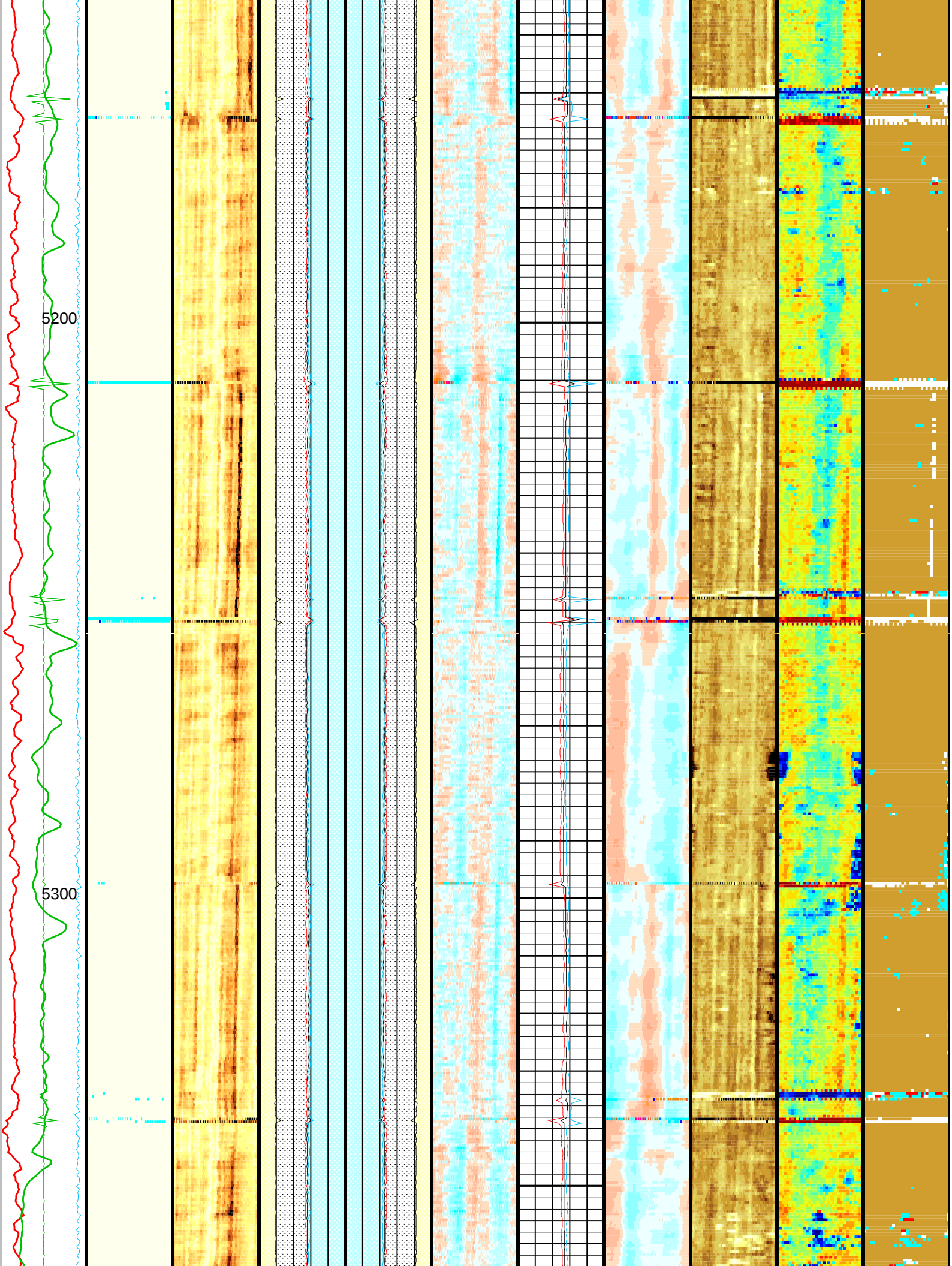
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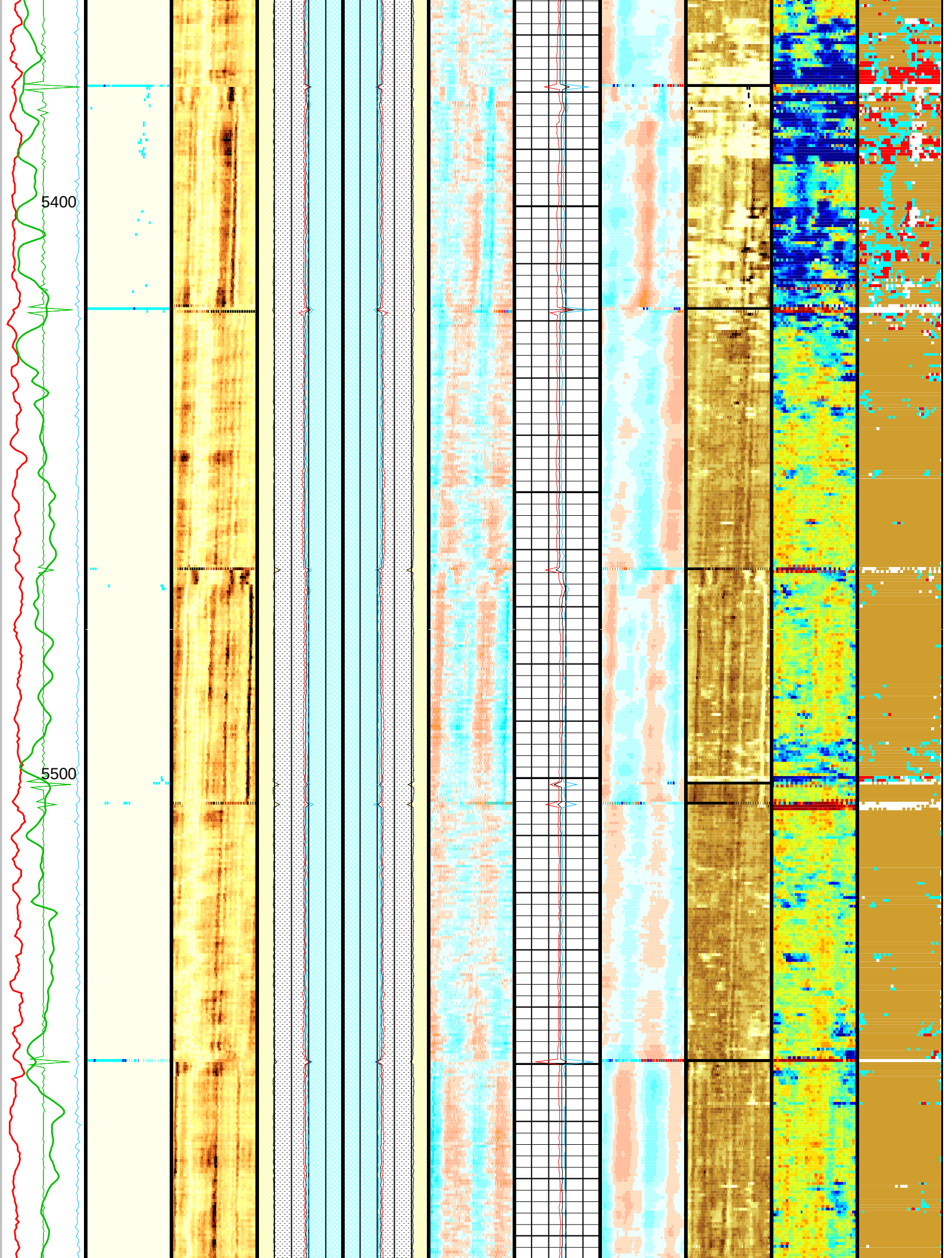
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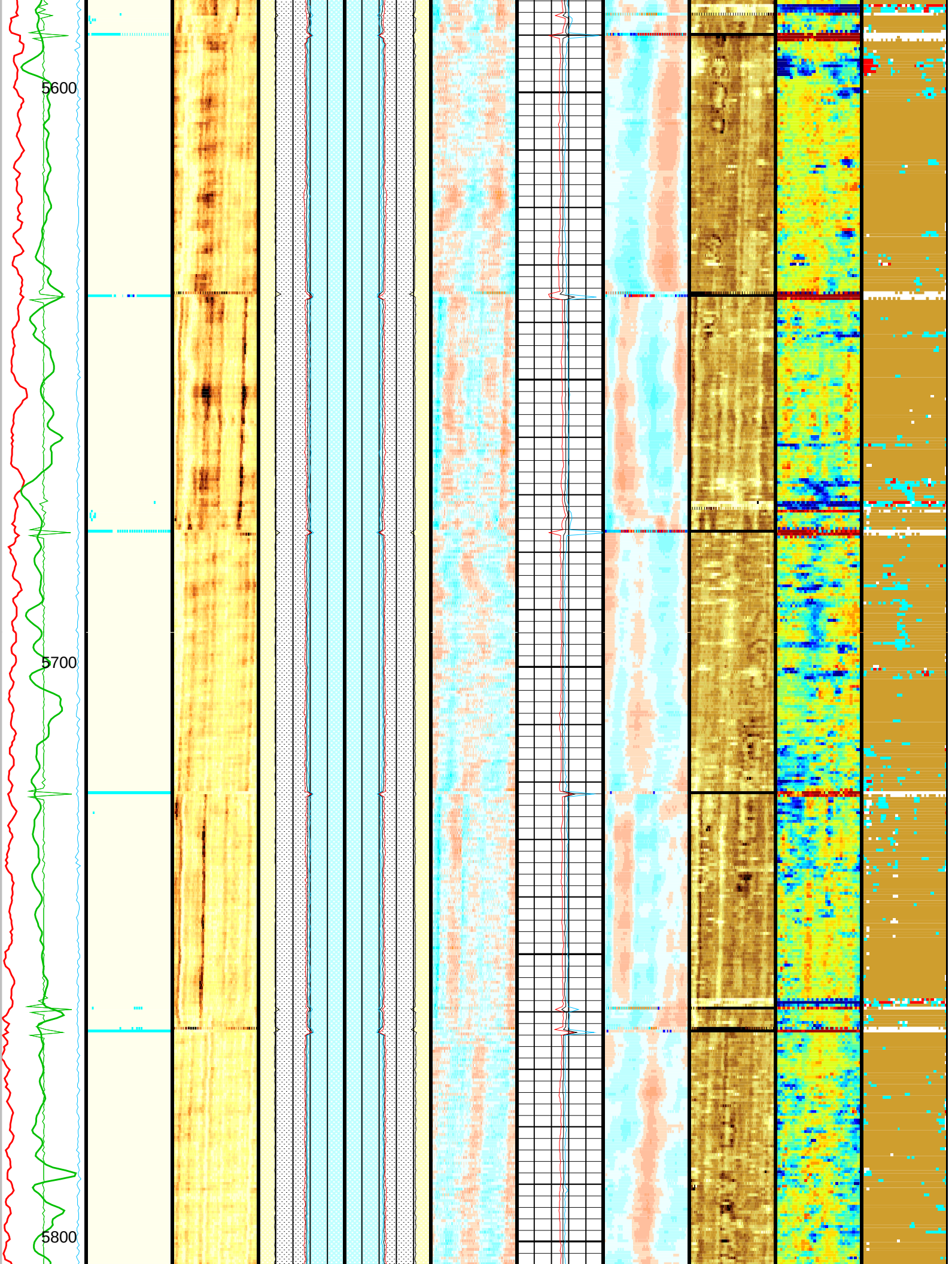
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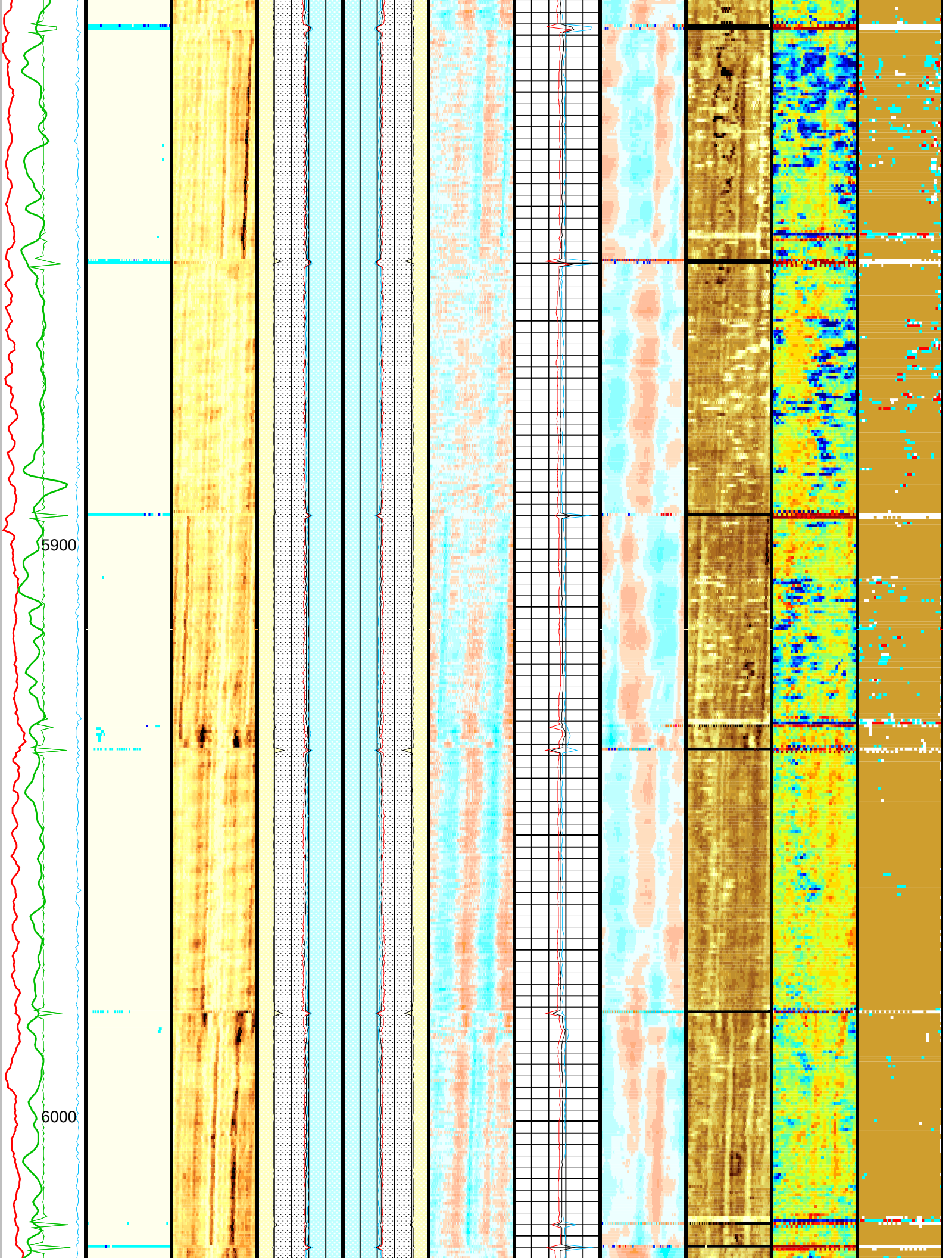
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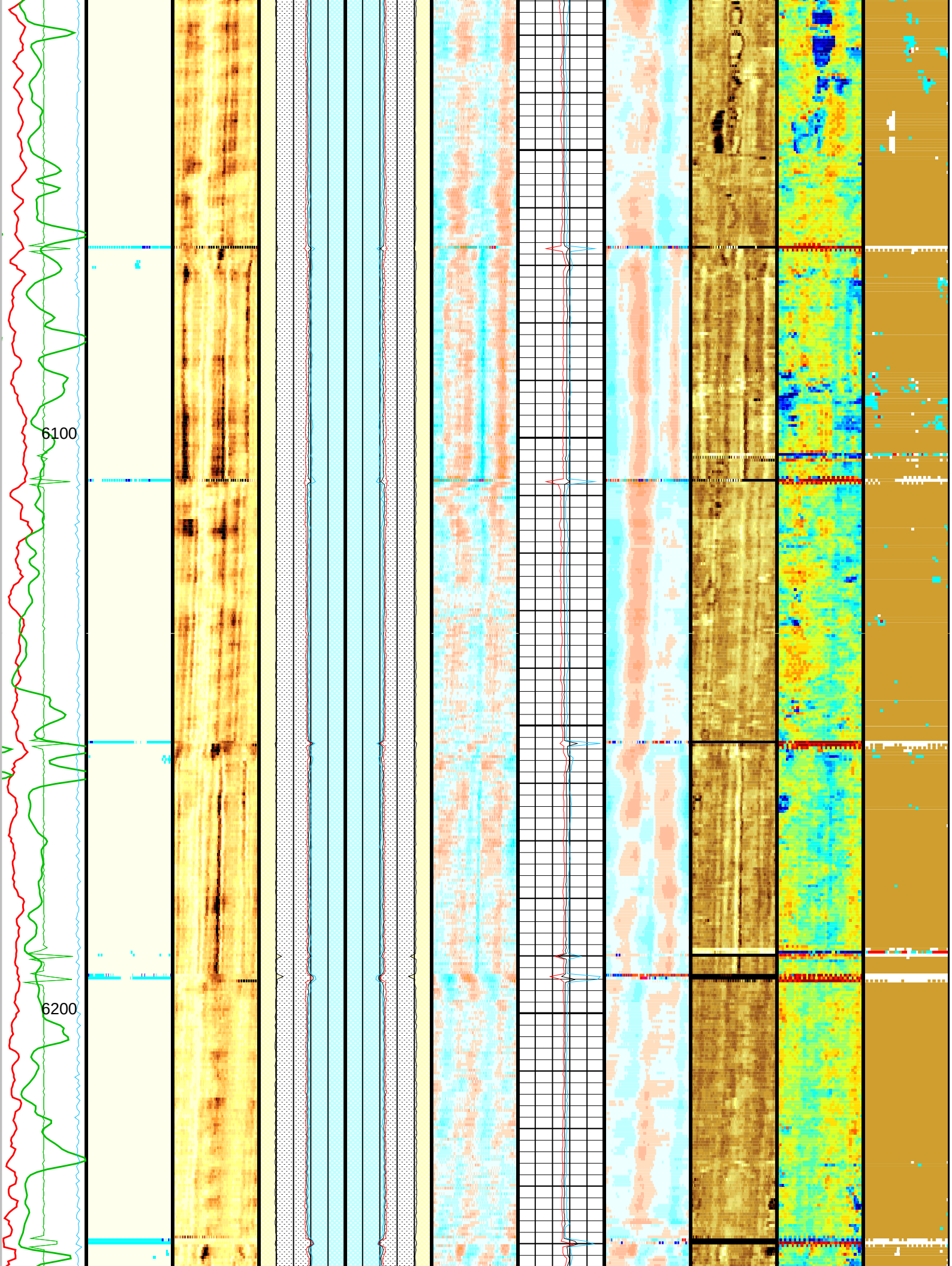
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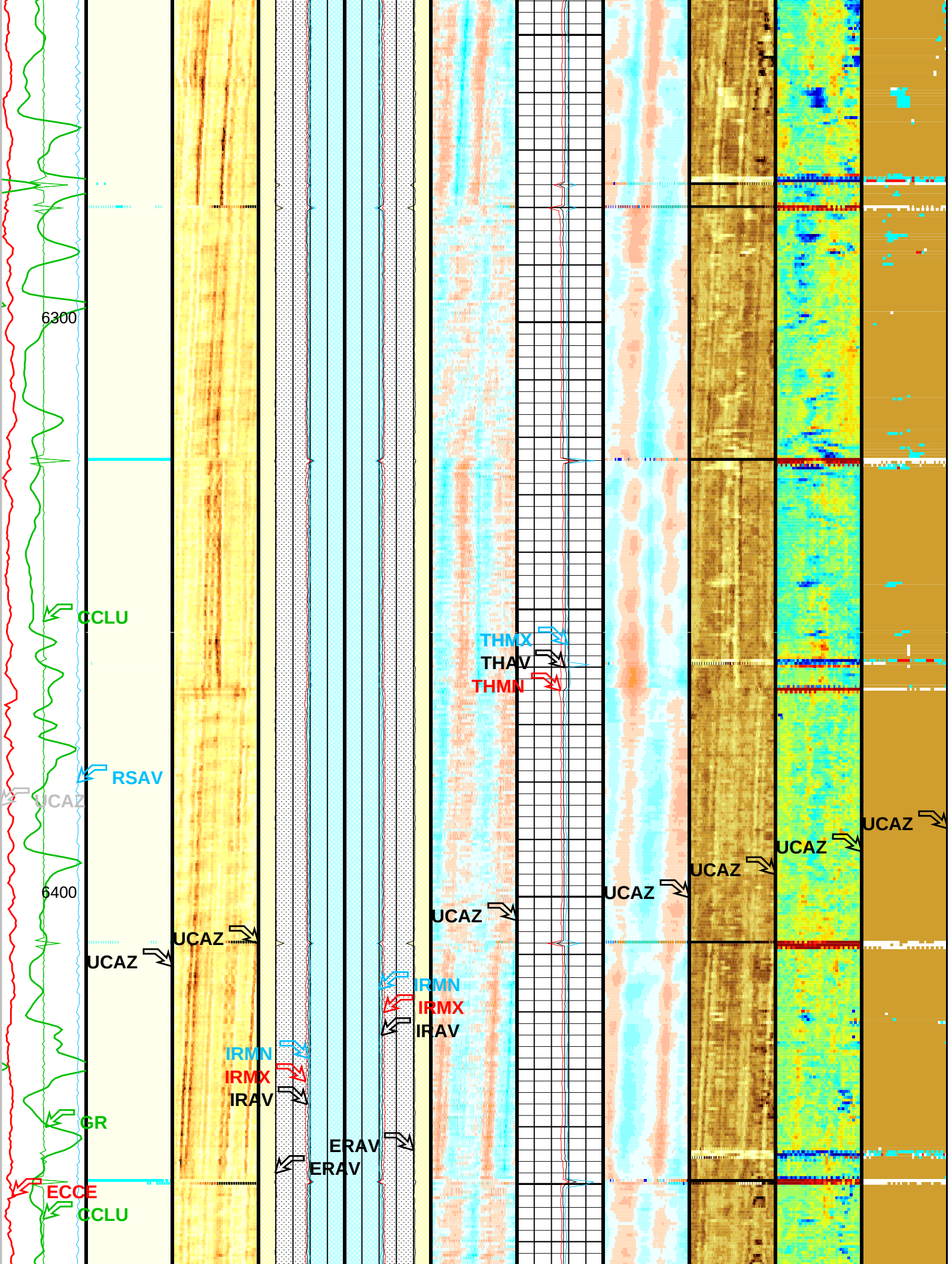
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RSAV
UCAZ
GR
ECCE
CCLU
THMX
THAV
THMN
UCAZ
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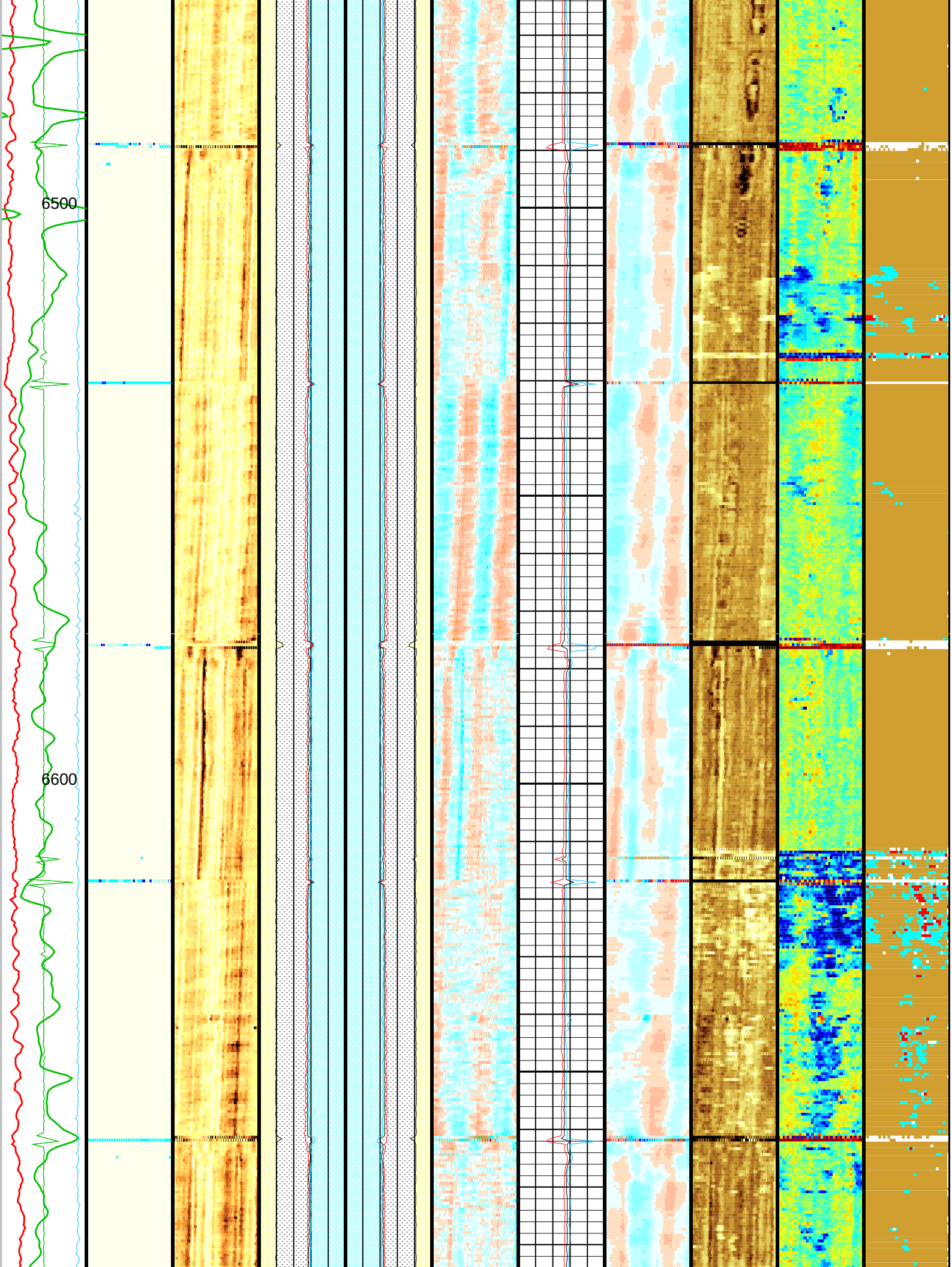
IRMX
IRAV
ERAV
ERAV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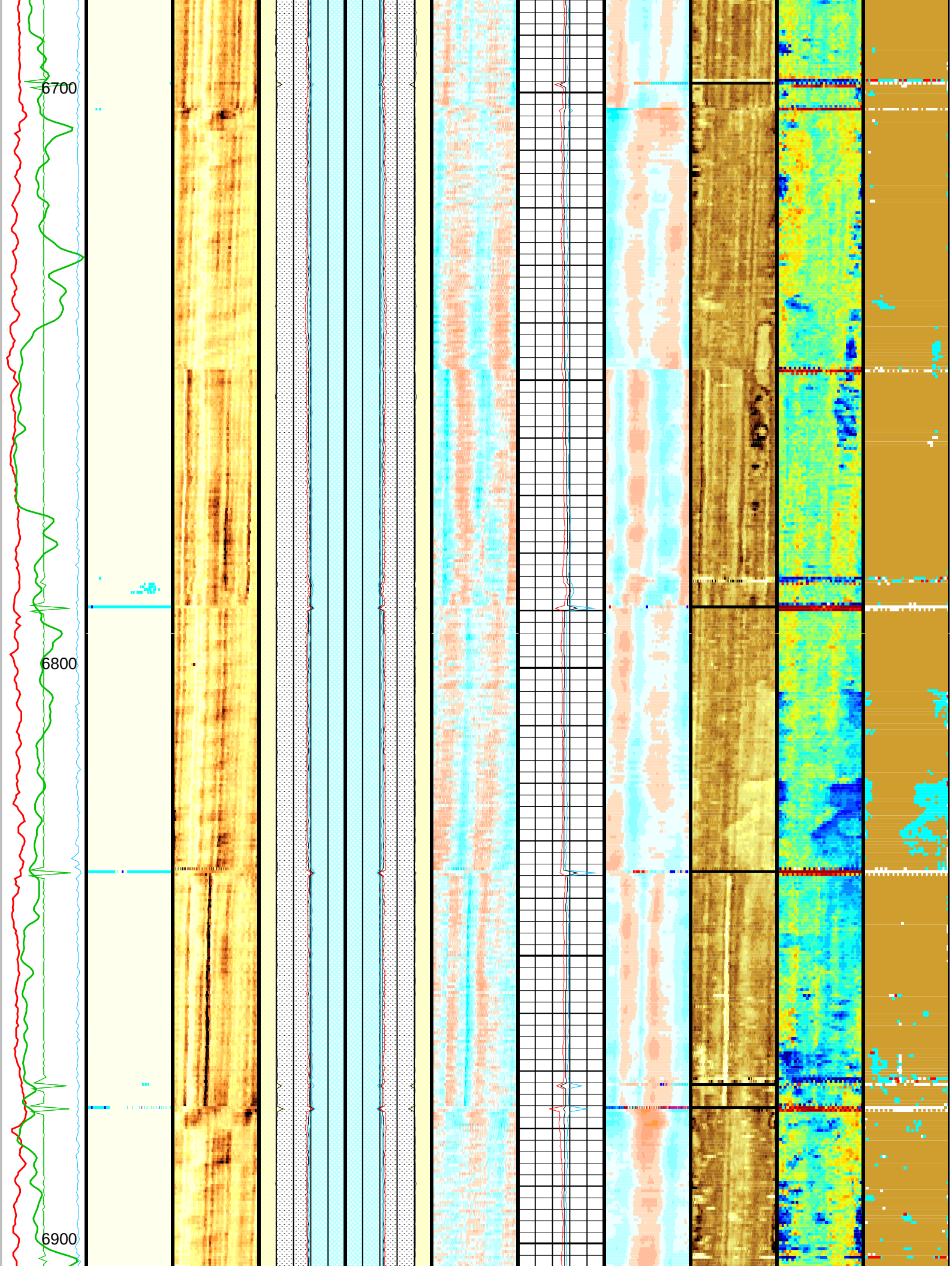
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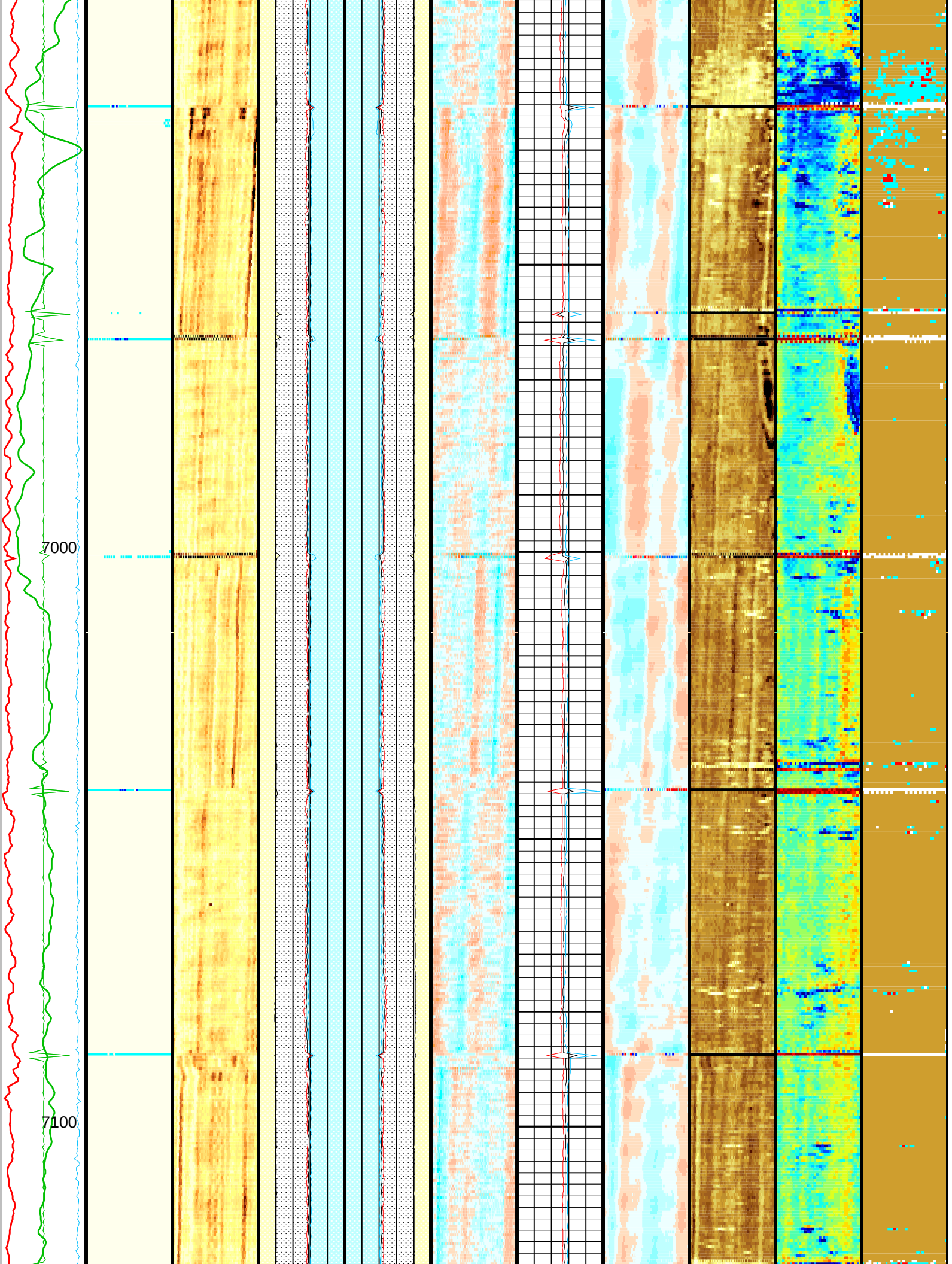
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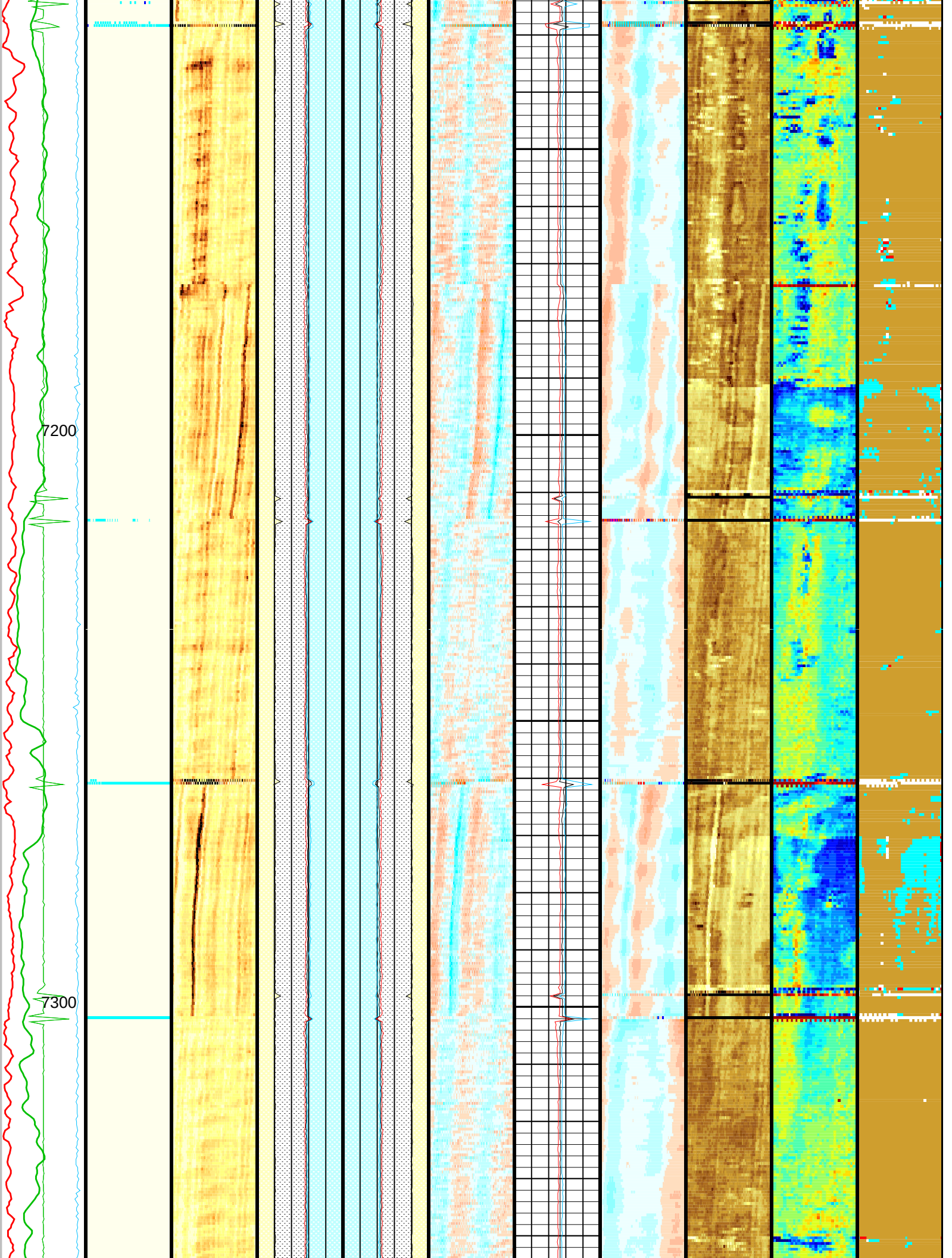
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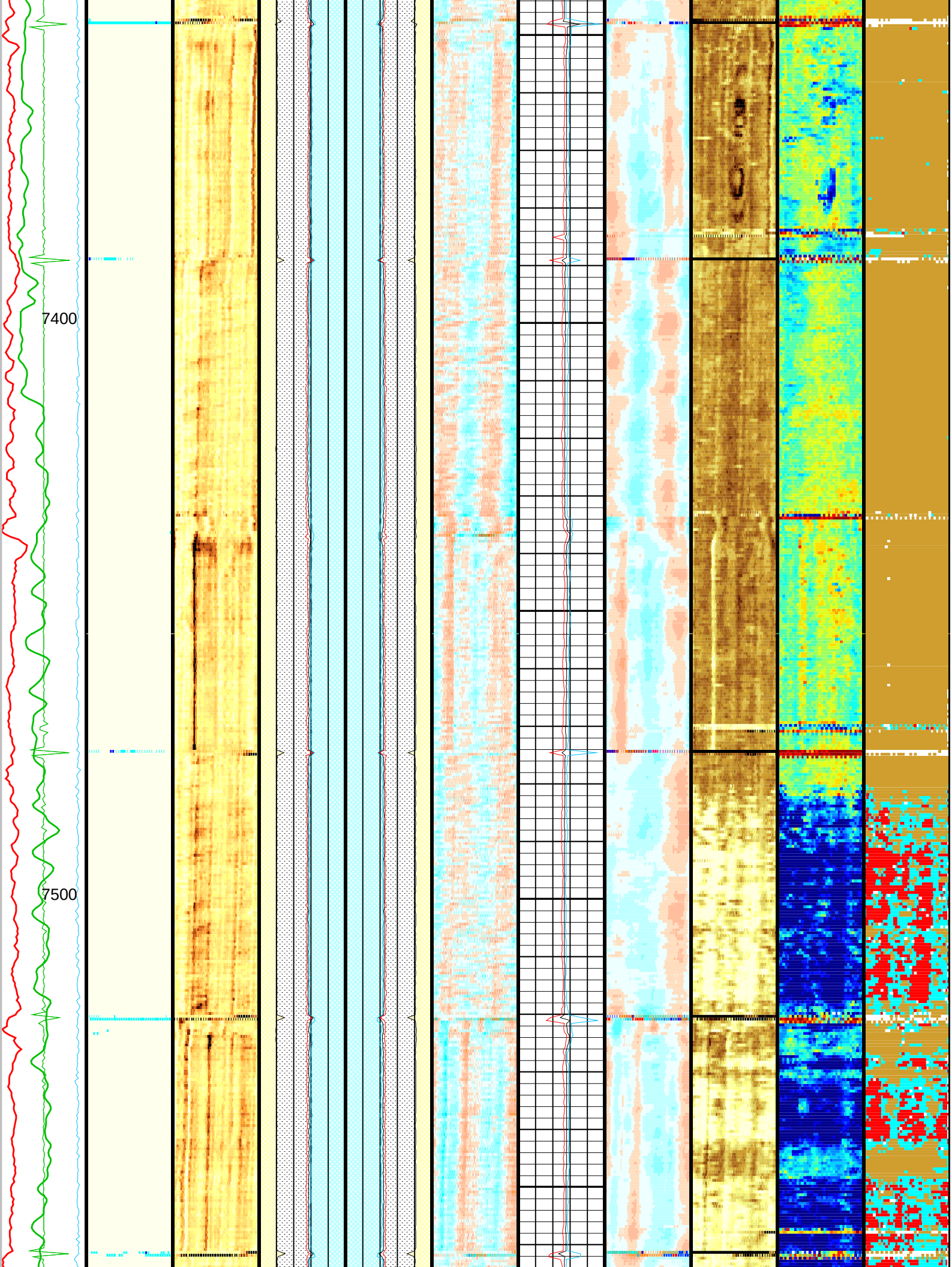
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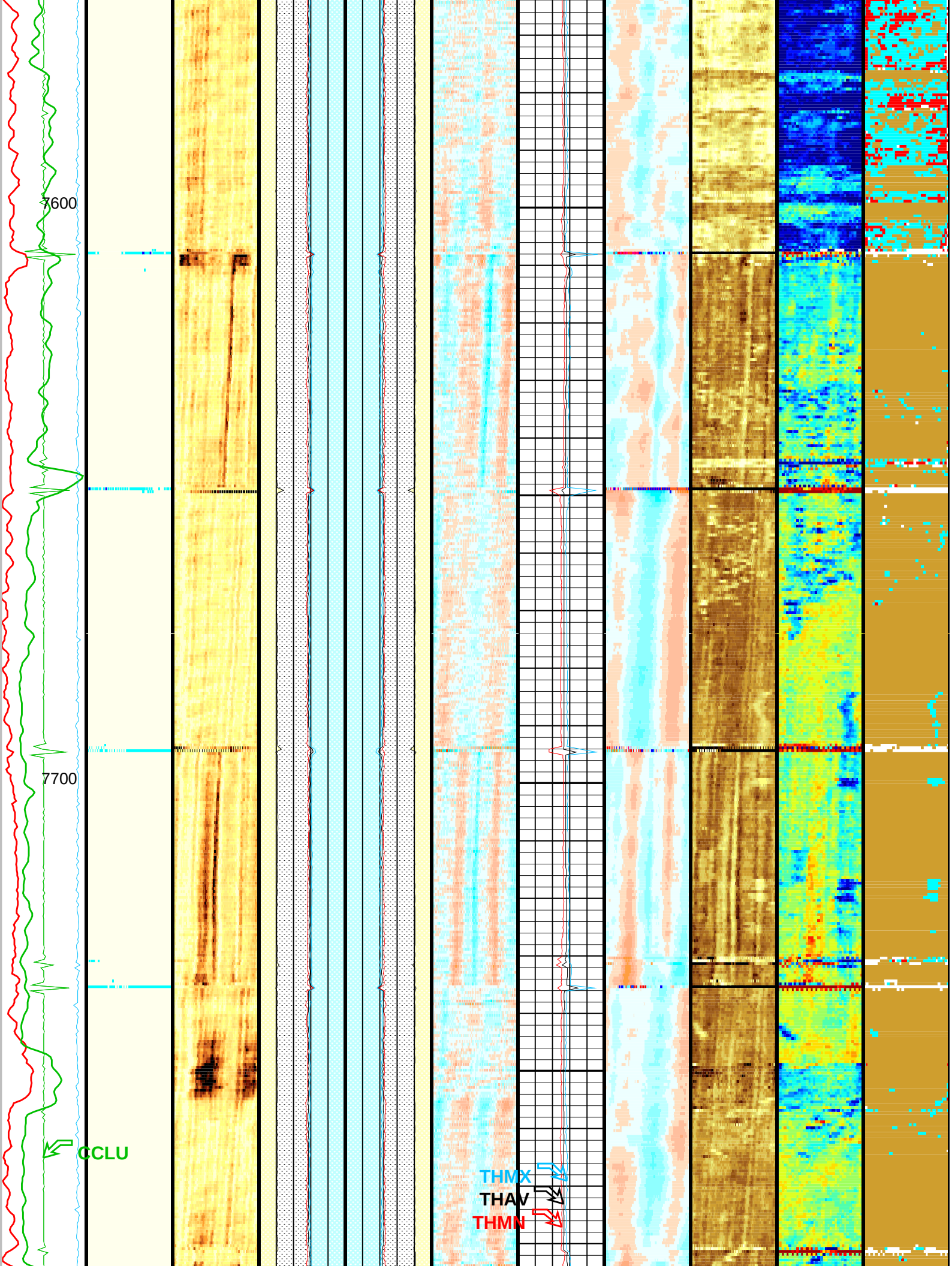
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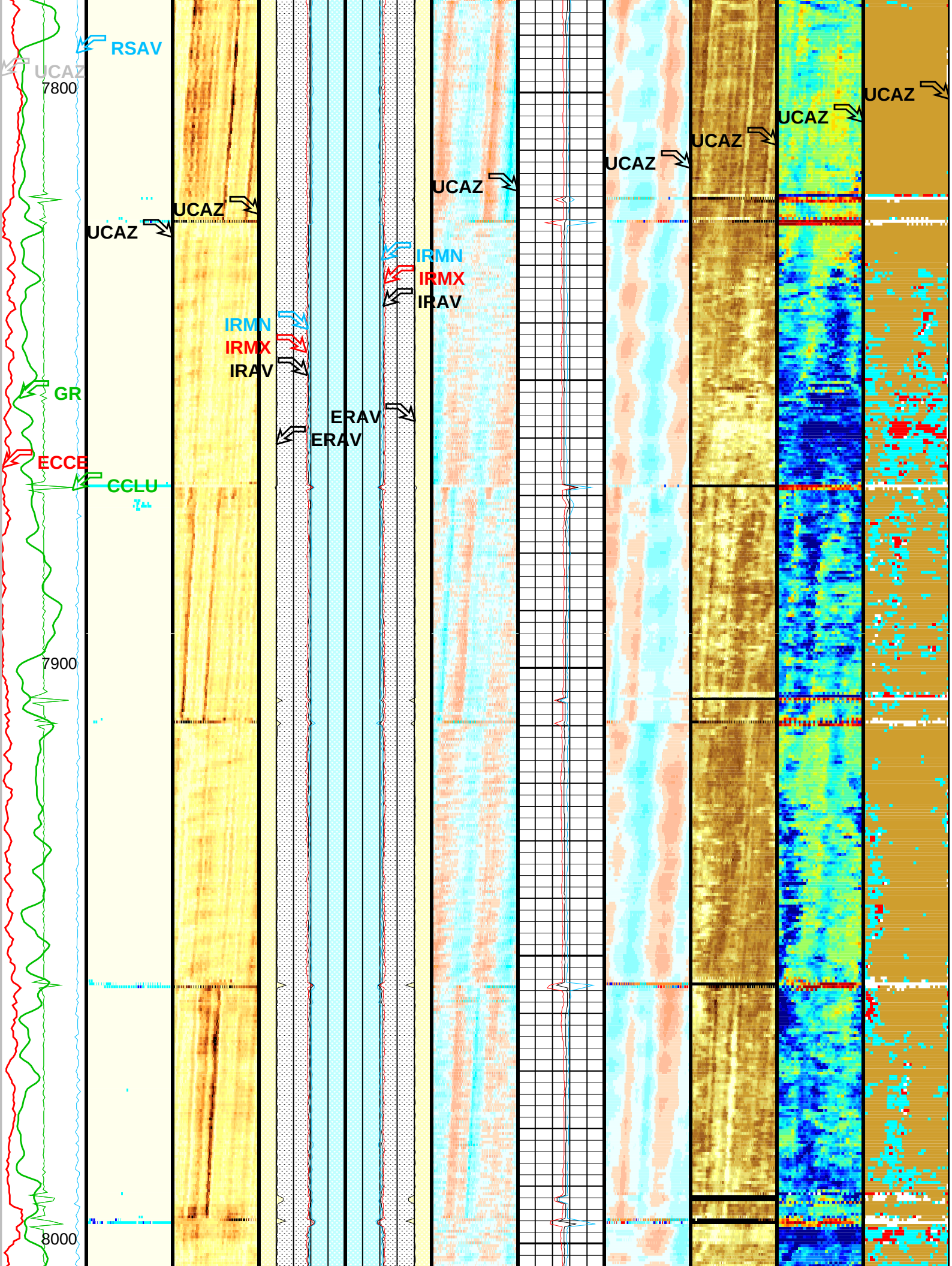
THAV
THMN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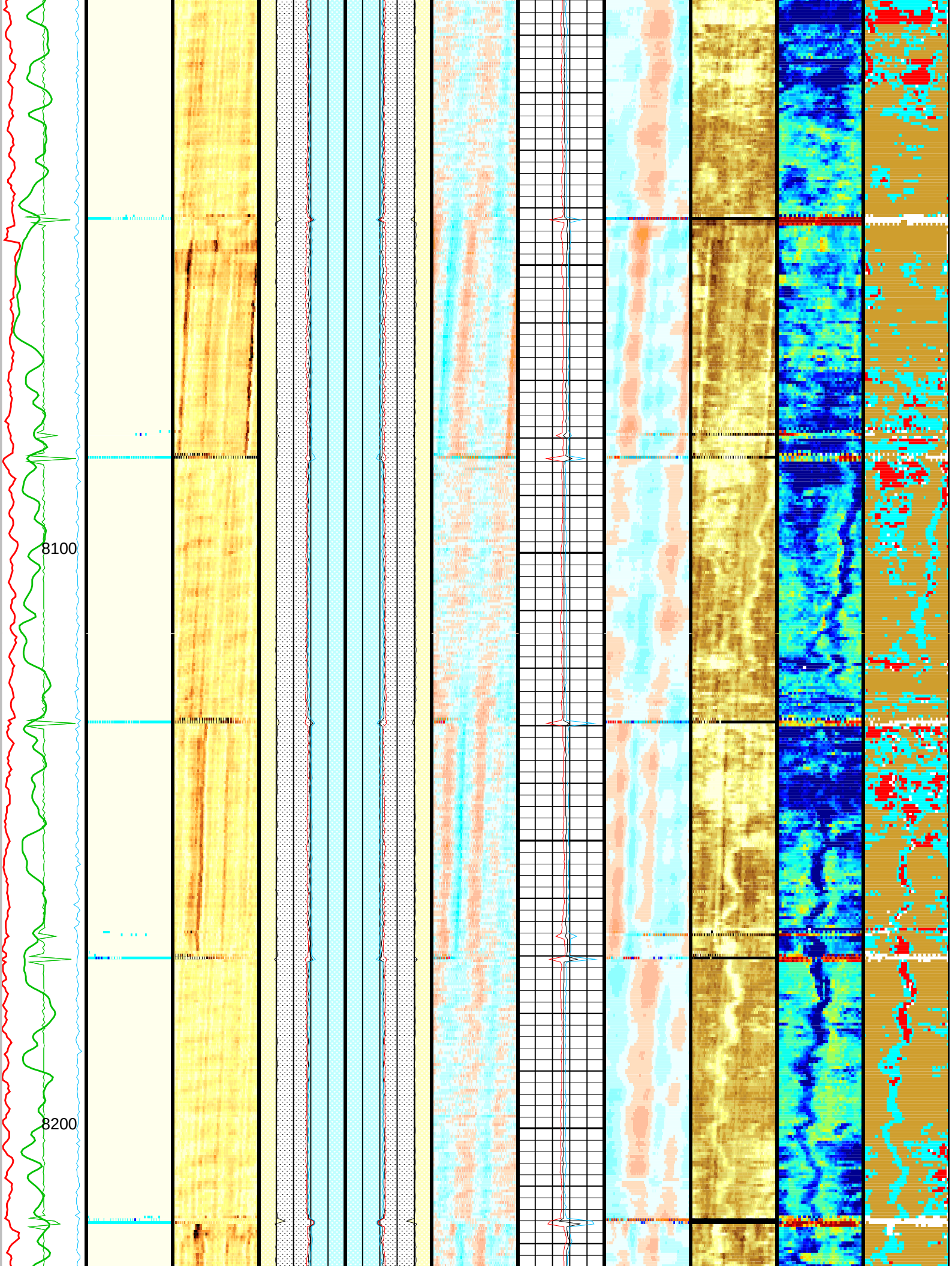
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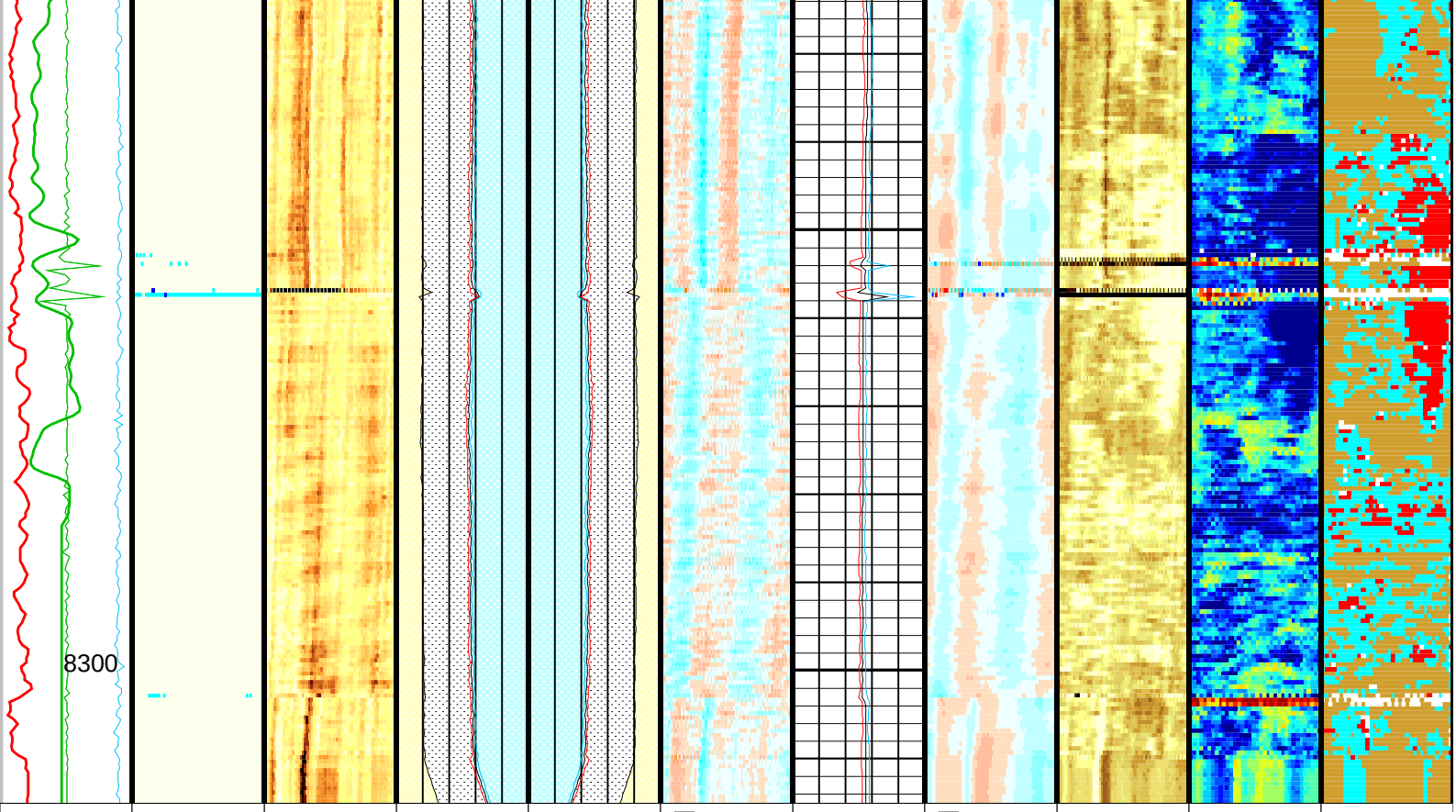


Eccent. (ECCE) 0 (IN) 0.5	Process. flags (UFLG) (---- 0.5000 1.5000 2.5000 3.5000 6.5000	Amplitude of echo minus Max (AWBK) (DB) −500.0000 −6.0000 −5.6000 −5.2000 −4.8000 −4.4000 −4.0000 −3.6000 −3.2000 −2.8000 −2.4000 −2.0000 −1.6000 −1.2000 −0.8000 −0.4000 0.5000	External radius Average (ERAV) (IN) 3.7 2.7	External radius Average (ERAV) (IN) 2.7 3.7	Internal radii minus Ave (IRBK) (IN) −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	Min of Thickness (THMN) (IN) 0.1 0.6	Thickness minus Ave (THBK) (IN) −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	Raw Acoustic Imped. (AIBK) (MRAY) −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	Flexural Attenuation (U−USIT_ UFAK) (DB/M) 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	Solid Liquid Gas Map (U−USIT_ USLP) (---- 0.5000 1.5000 2.5000 3.5000
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) (---- −20 20			Min of Internal radius (IRMN) (IN) 3.7 2.7	Min of Internal radius (IRMN) (IN) 2.7 3.7						
Gamma										

Gamma Ray (GR) (GAPI)
0 150

Image rotation (UCAZ) (DEG)
0 360

Format: USI_IBC_SLG_Composite Vertical Scale: 5" per 100' Graphics File Created: 27−Jun−2010 04:33

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	80	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	1.75	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33	

Schlumberger

GOODWIN 0.1 INCH

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. Well: PCU 197−34A9

Input DLIS Files

DEFAULT	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

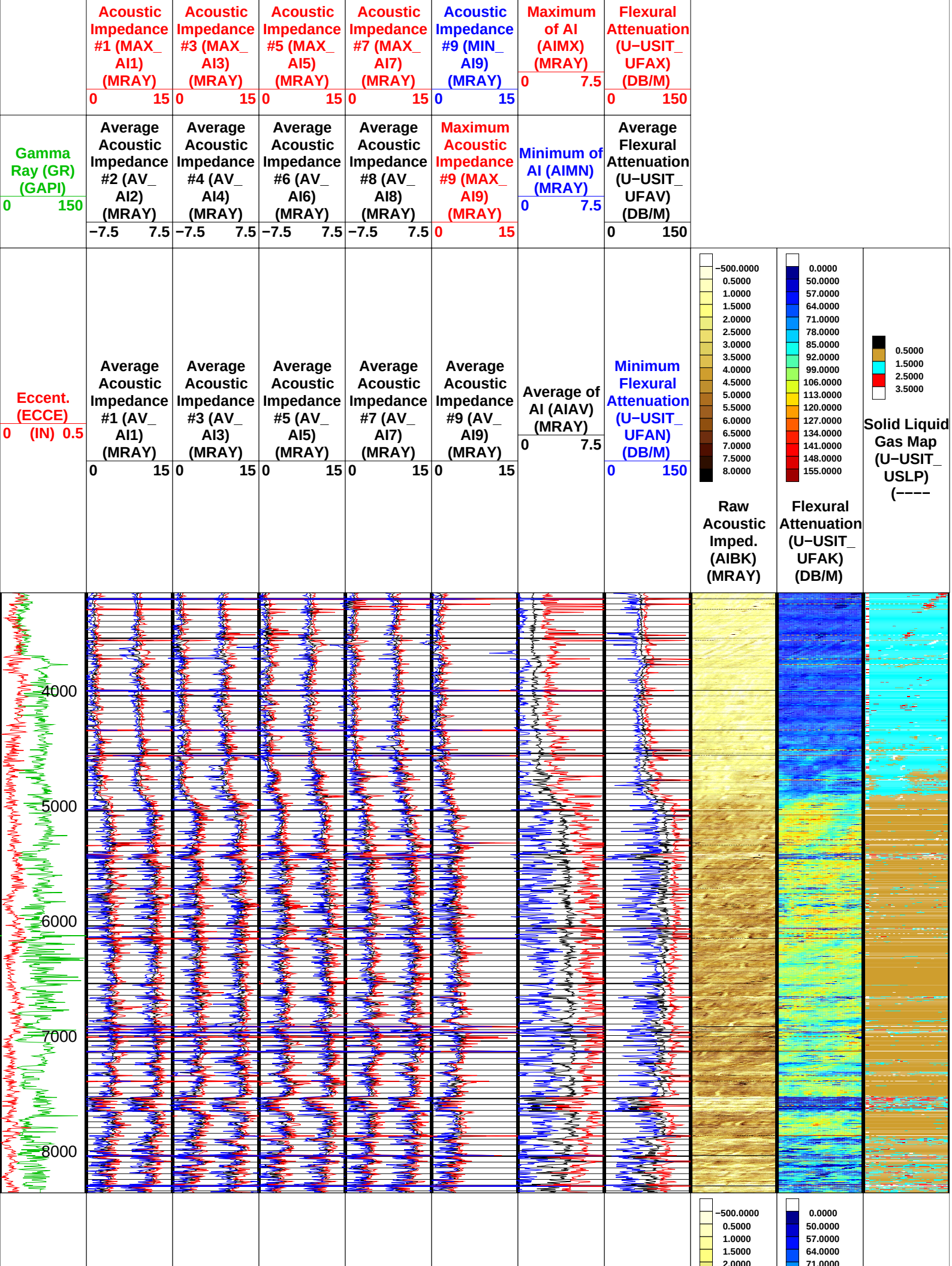
DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33	

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

Maximum	Maximum	Maximum	Maximum	Minimum		Maximum


Acoustic Impedance #1 (MAX_AI1) (MRAY)
0 15
Acoustic Impedance #3 (MAX_AI3) (MRAY)
0 15
Acoustic Impedance #5 (MAX_AI5) (MRAY)
0 15
Acoustic Impedance #7 (MAX_AI7) (MRAY)
0 15
Acoustic Impedance #9 (MIN_AI9) (MRAY)
0 15
Maximum of AI (AIMX) (MRAY)
0 7.5
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
8000
−500.0000
0.5000
1.0000
1.5000
2.0000
0.0000
50.0000
57.0000
64.0000
71.0000

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	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)	72.0000 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 04:33**

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	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33		

Schlumberger

GOODWIN 5 INCH

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. **Well: PCU 197−34A9**

Input DLIS Files

DEFAULT	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33		

OP System Version: 17C0−154

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

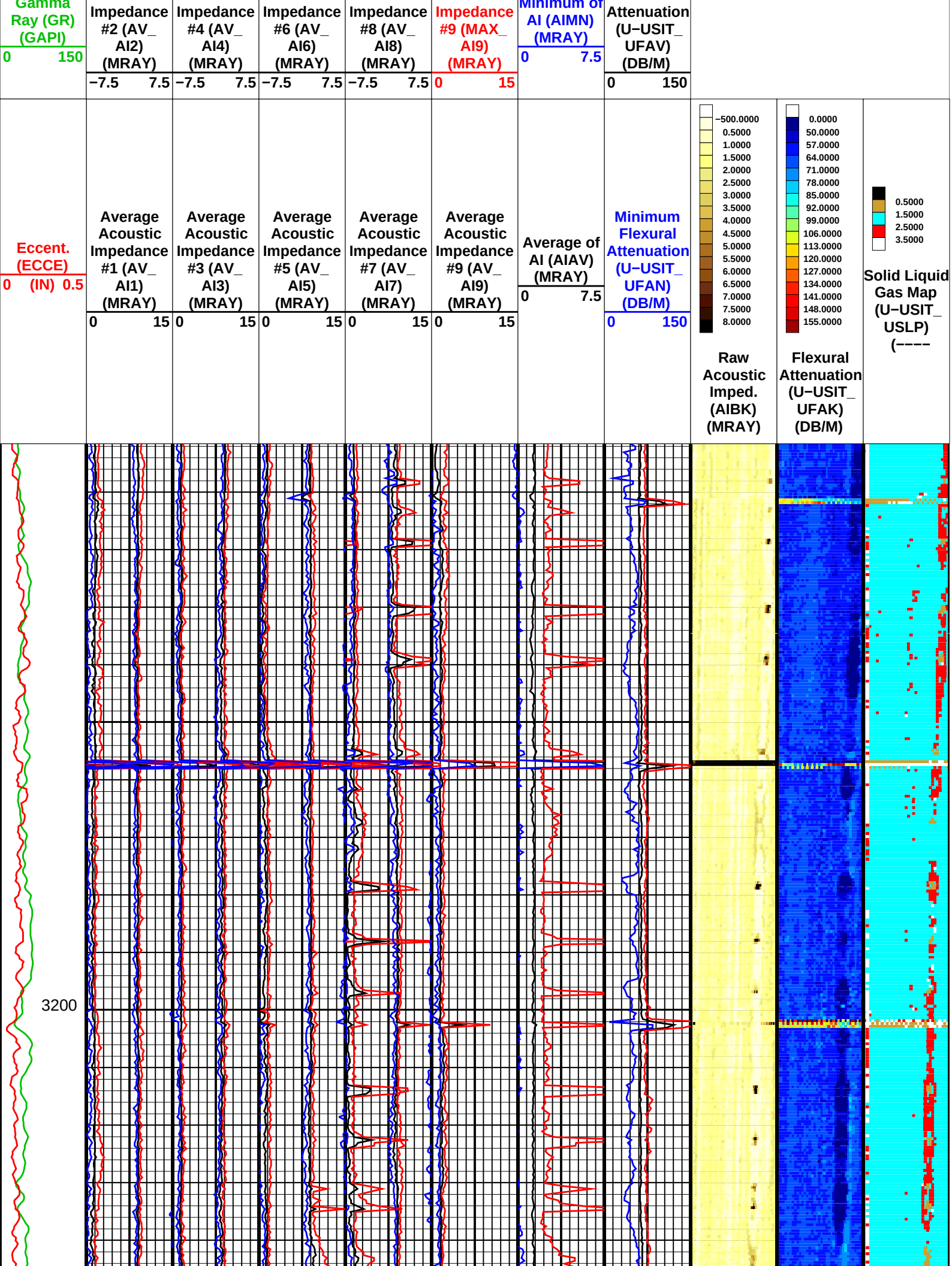
Minimum Acoustic Impedance #2 (MIN_AI2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_AI4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_AI6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_AI8) (MRAY)
−7.5 7.5	−7.5 7.5	−7.5 7.5	−7.5 7.5

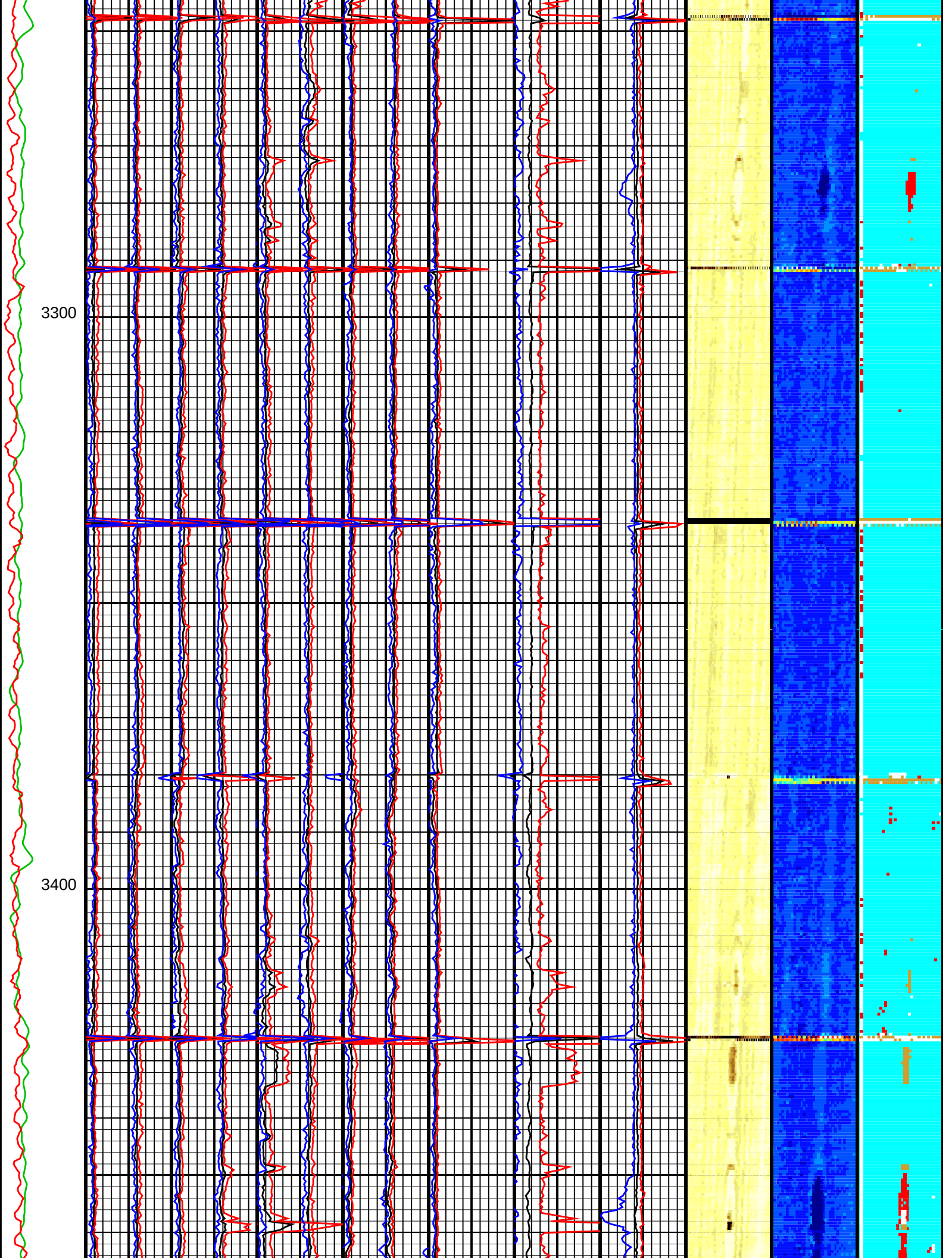
Minimum Acoustic Impedance #1 (MIN_AI1) (MRAY)	Minimum Acoustic Impedance #3 (MIN_AI3) (MRAY)	Minimum Acoustic Impedance #5 (MIN_AI5) (MRAY)	Minimum Acoustic Impedance #7 (MIN_AI7) (MRAY)
0 15	0 15	0 15	0 15

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

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	Average Acoustic	Average Acoustic	Average Acoustic	Average Acoustic	Maximum Acoustic	Minimum of	Average Flexural


Gamma Ray (GR) (GAPI)
0 150
Impedance #2 (AV_ AI2) (MRAY)
−7.5 7.5
Impedance #4 (AV_ AI4) (MRAY)
−7.5 7.5
Impedance #6 (AV_ AI6) (MRAY)
−7.5 7.5
Impedance #8 (AV_ AI8) (MRAY)
−7.5 7.5
Impedance #9 (MAX_ AI9) (MRAY)
0 15
Minimum of AI (AIMN) (MRAY)
0 7.5
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) (−−−−
3200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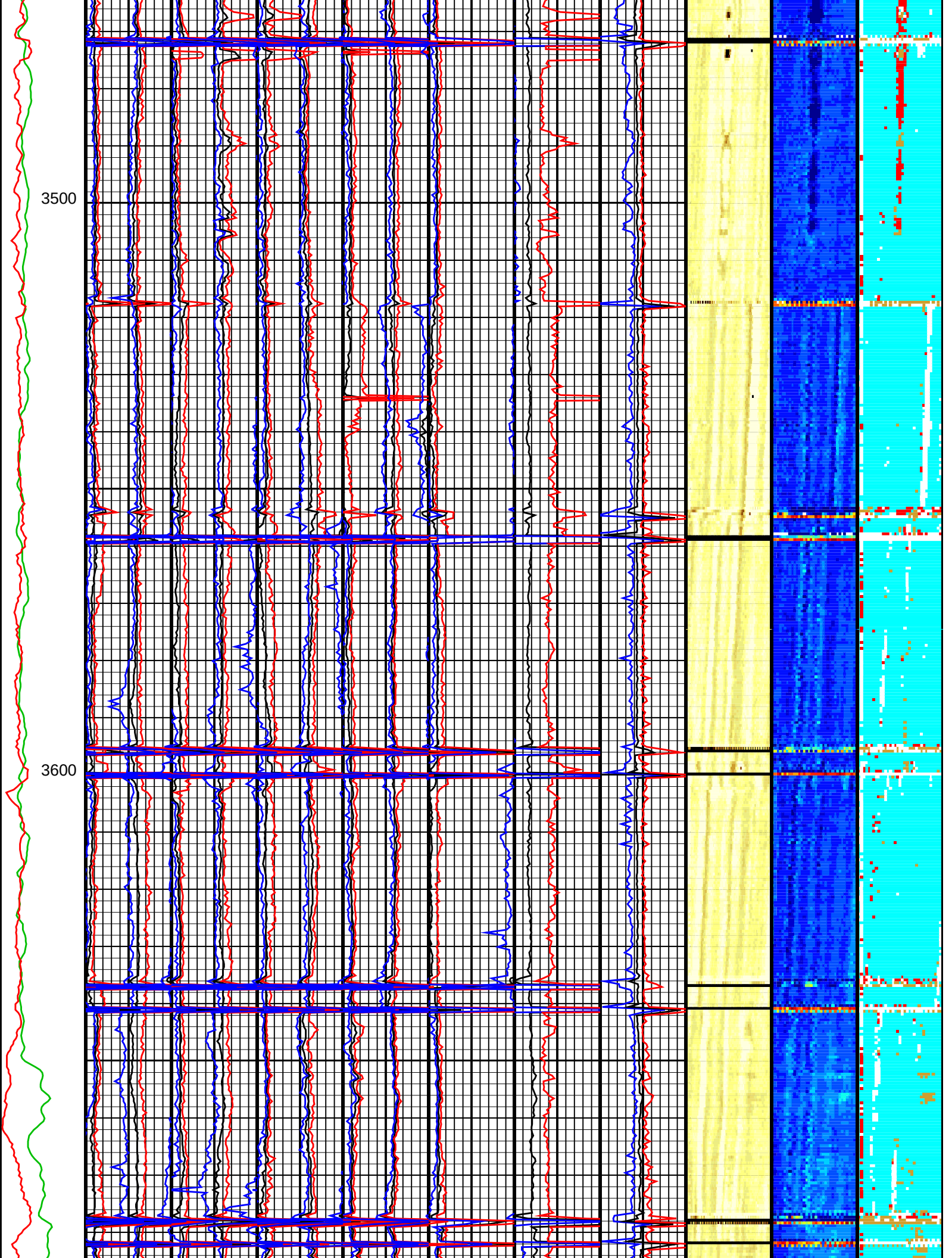
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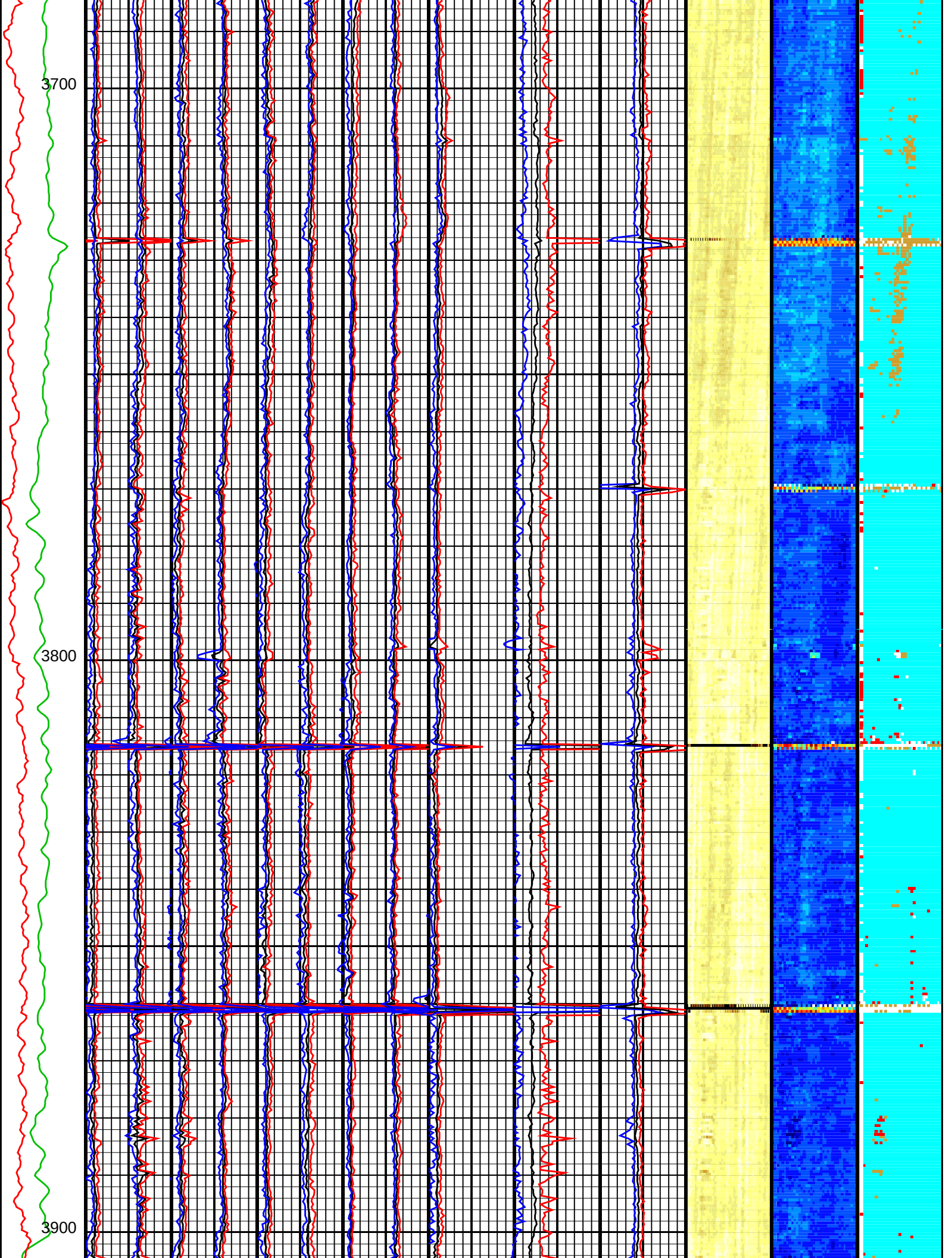
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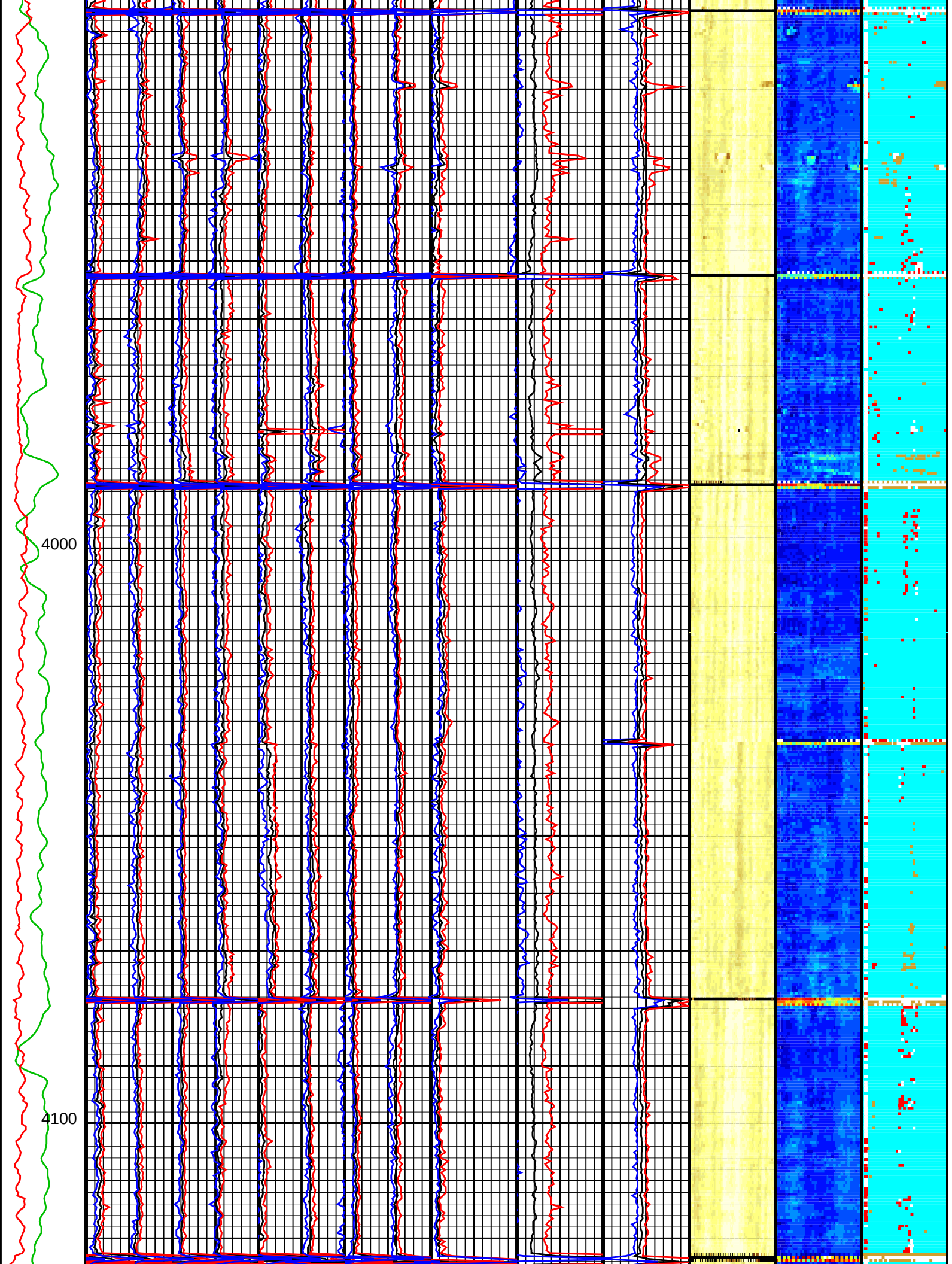
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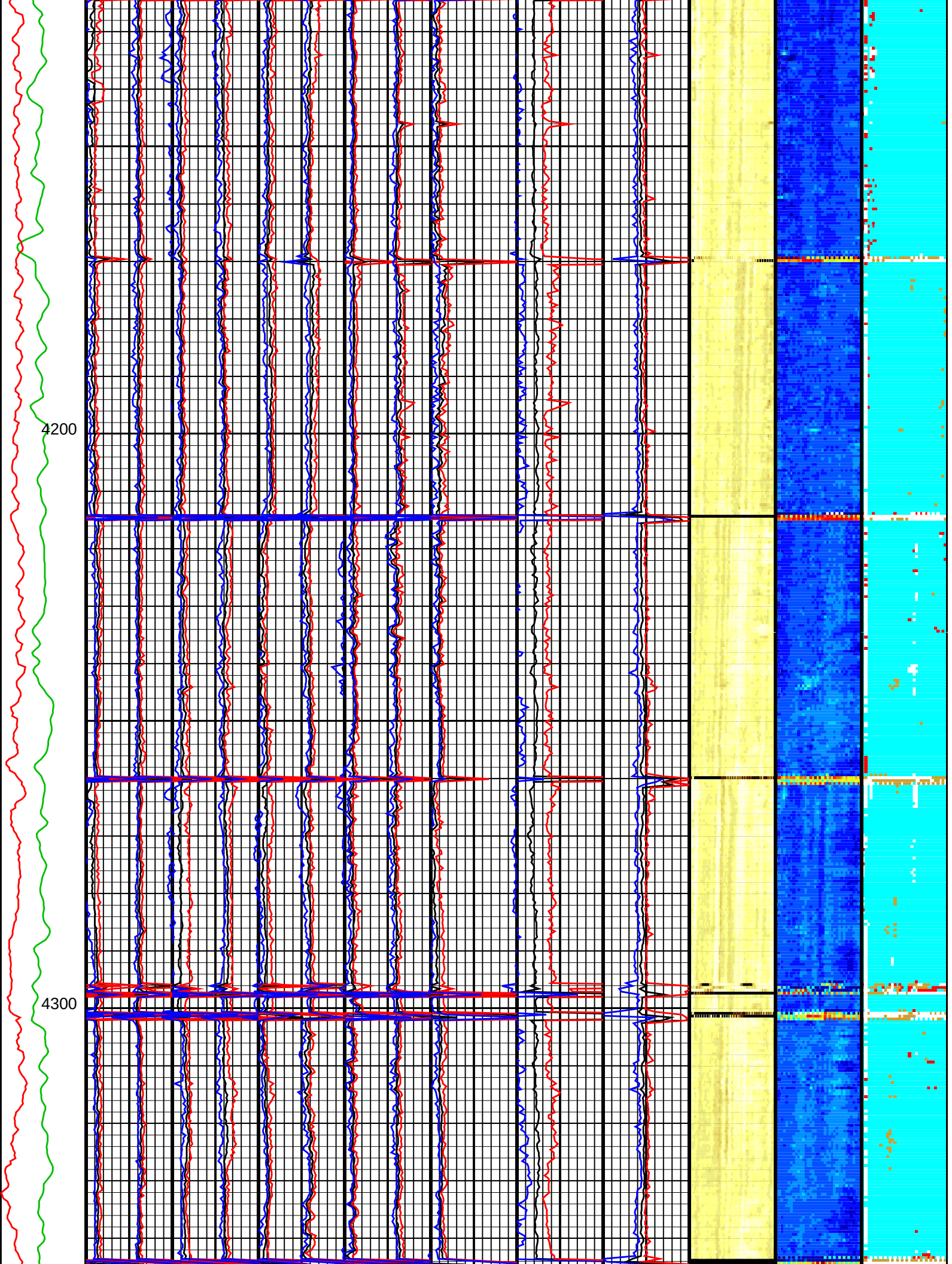
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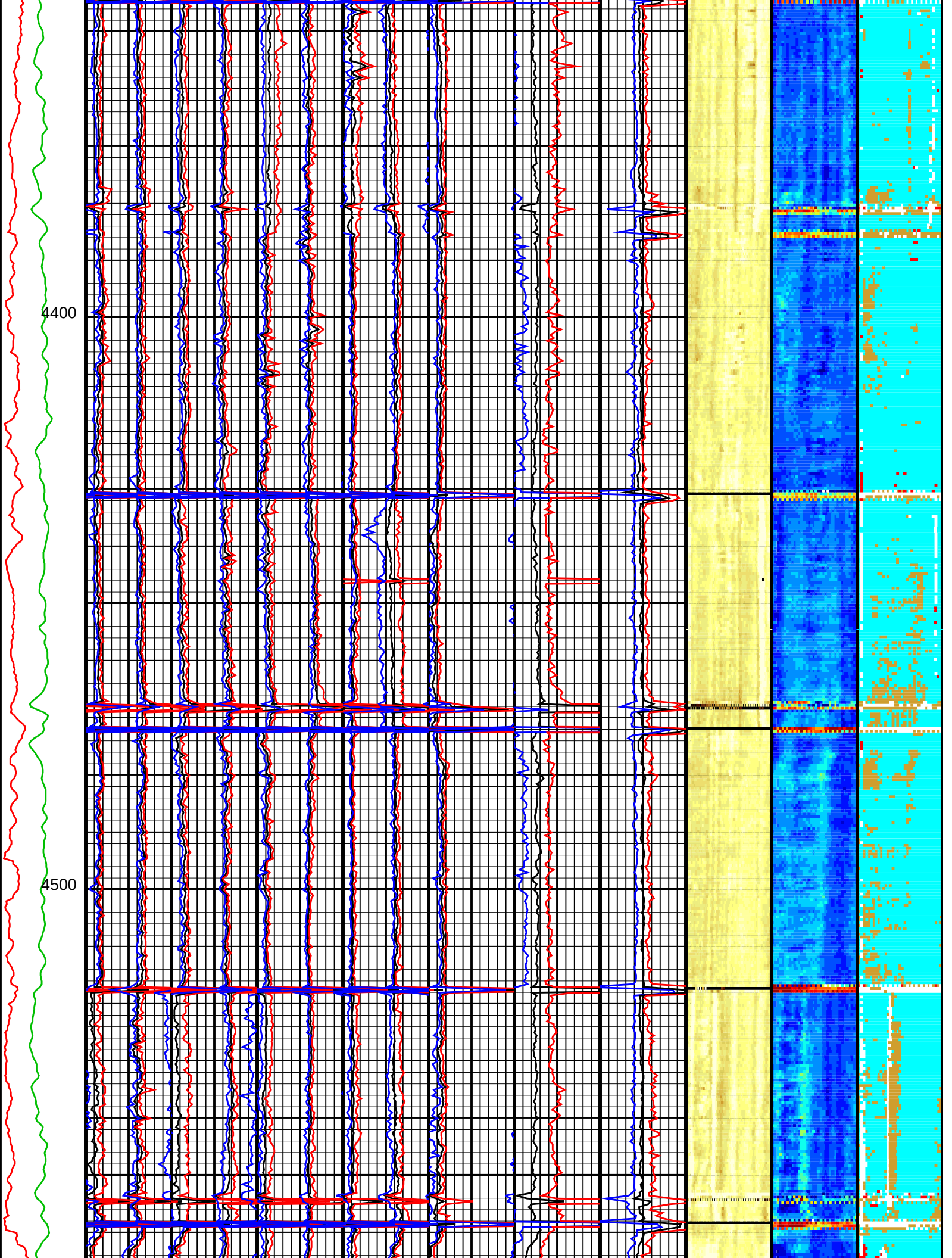
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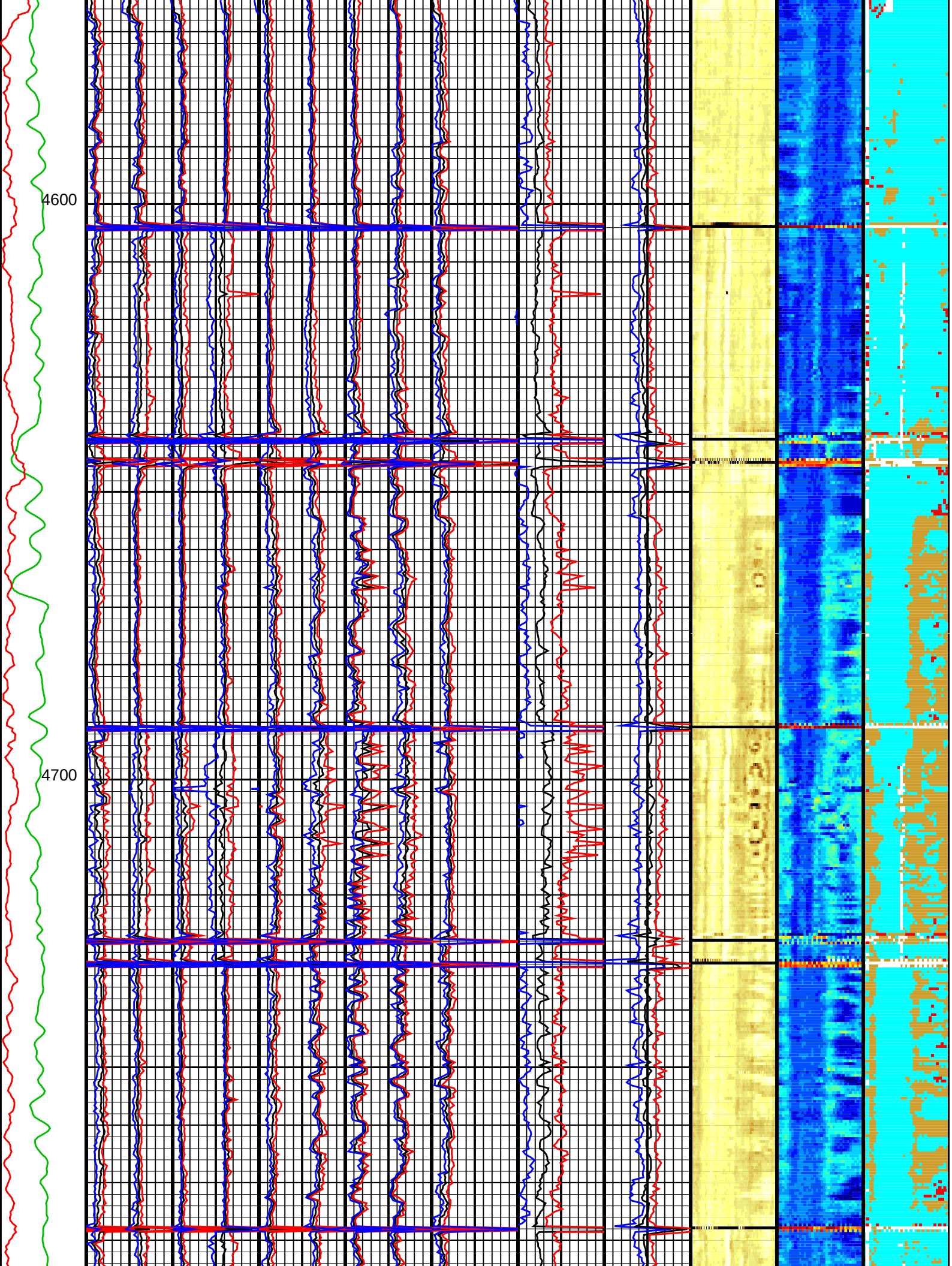
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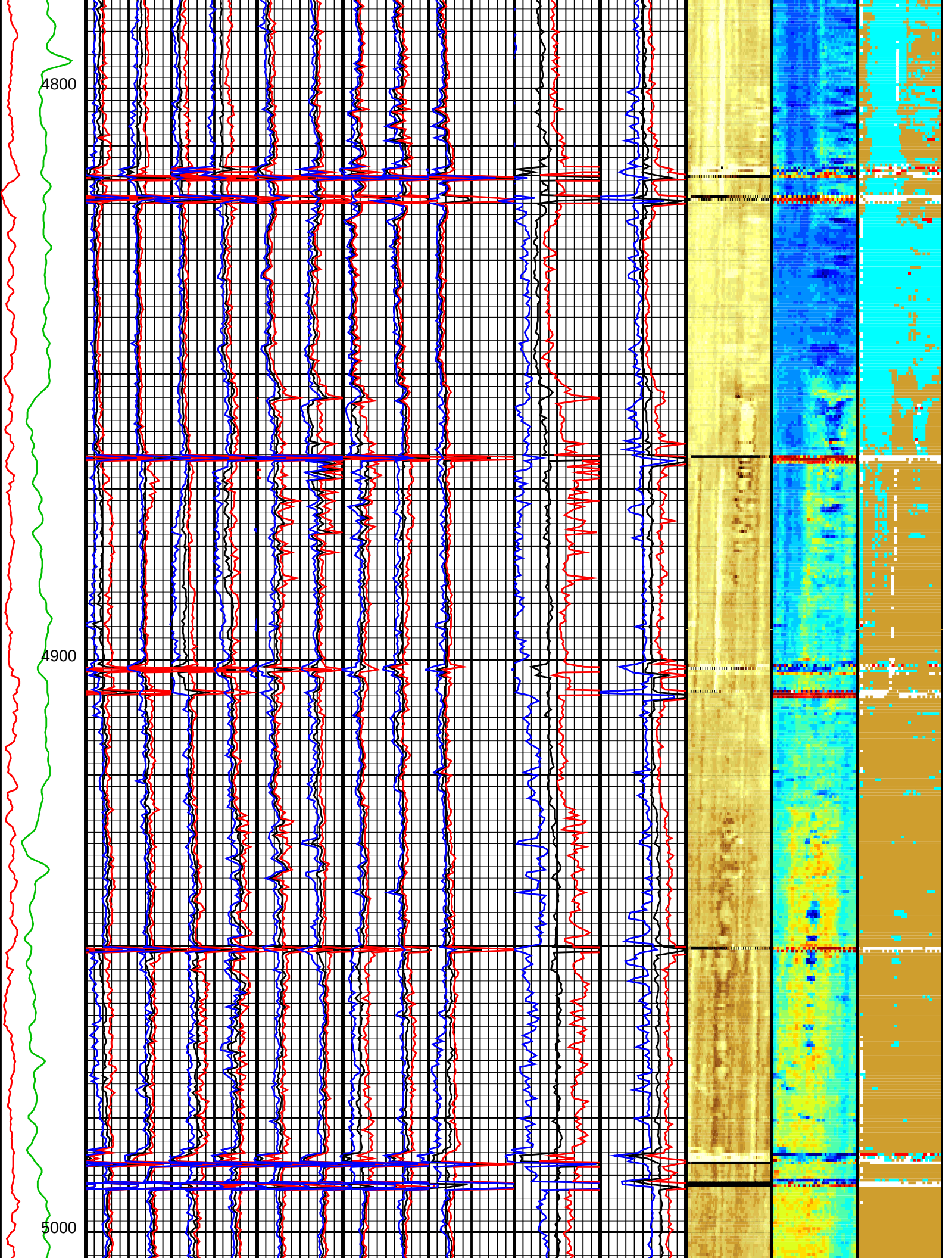
4700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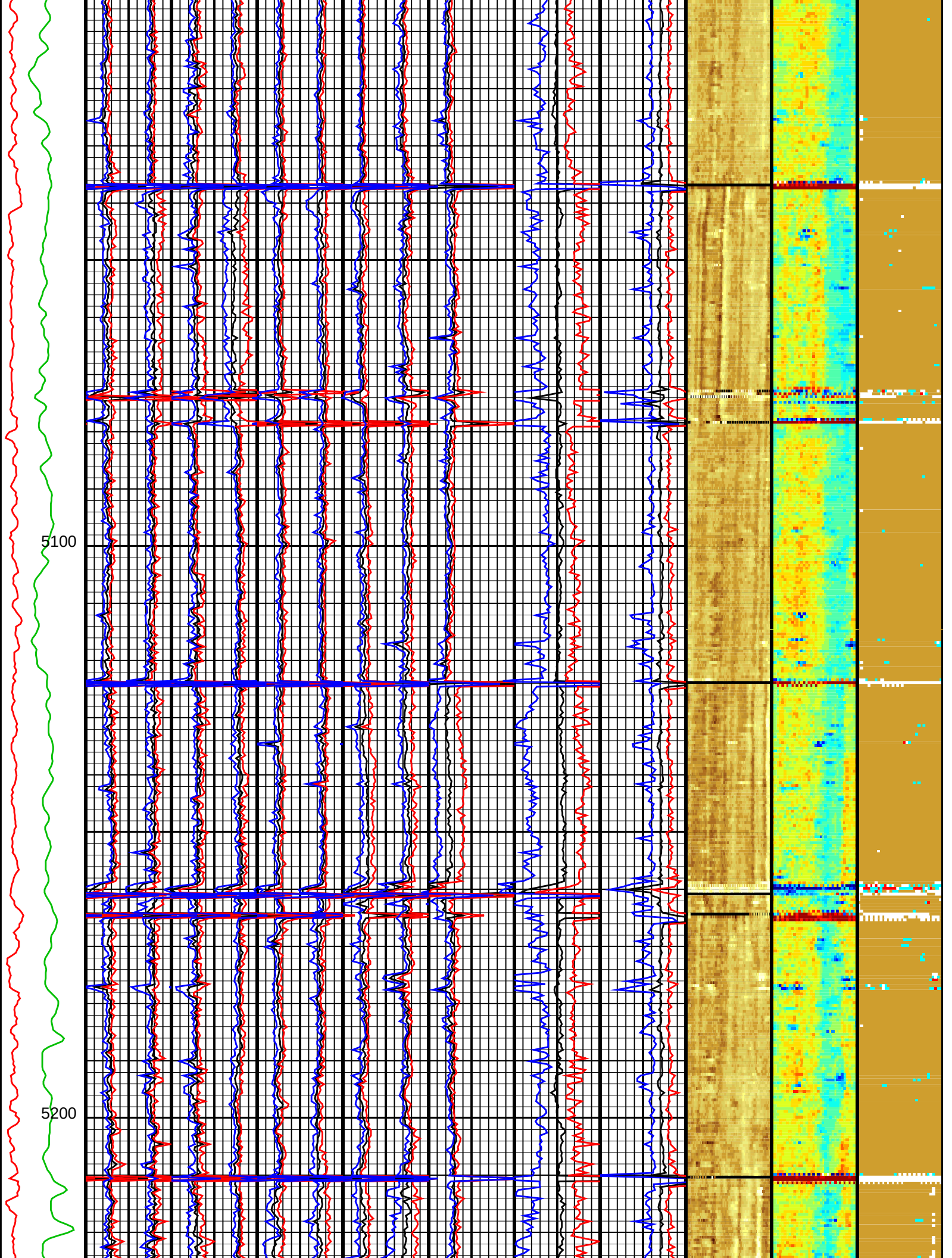
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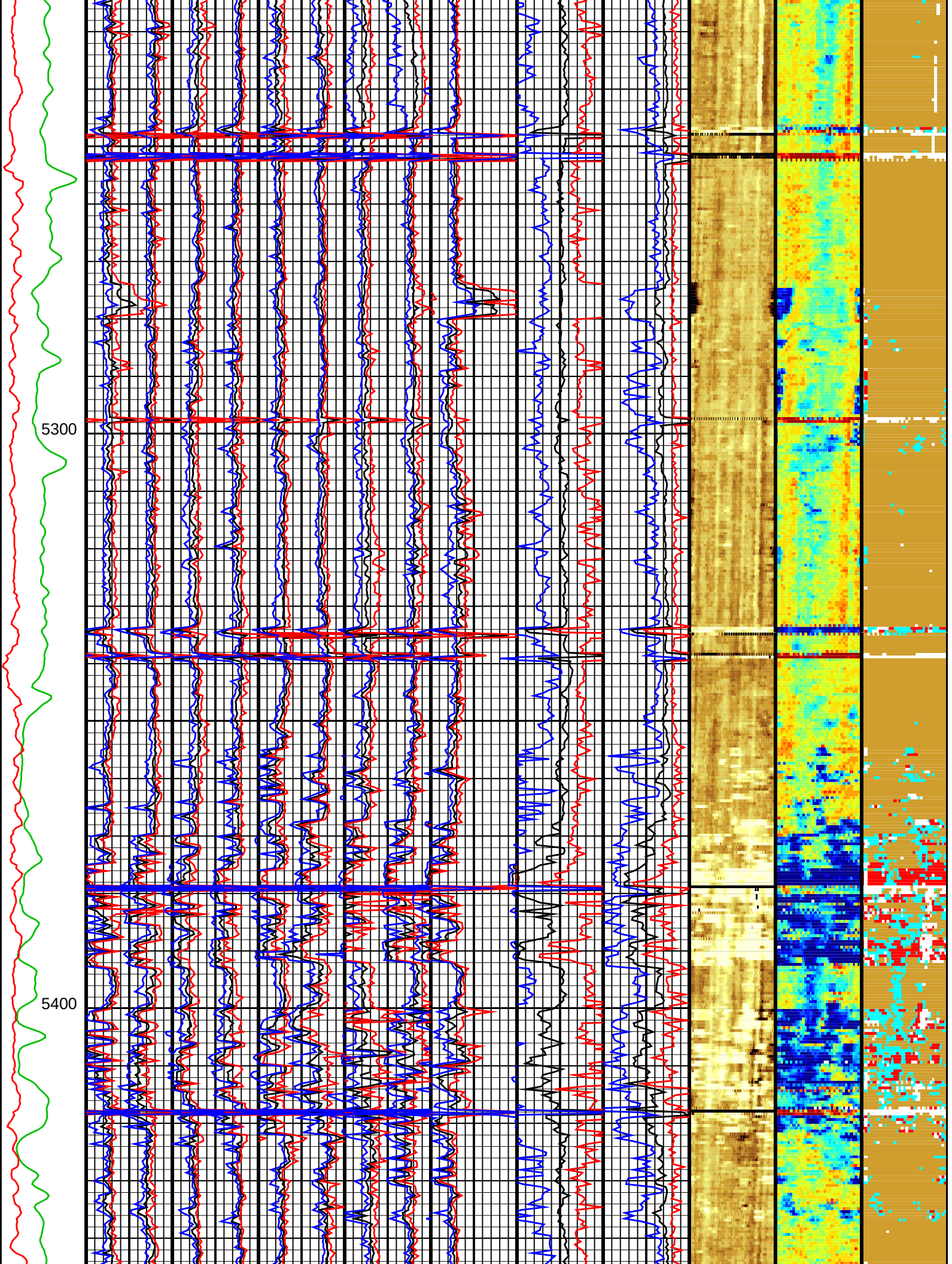
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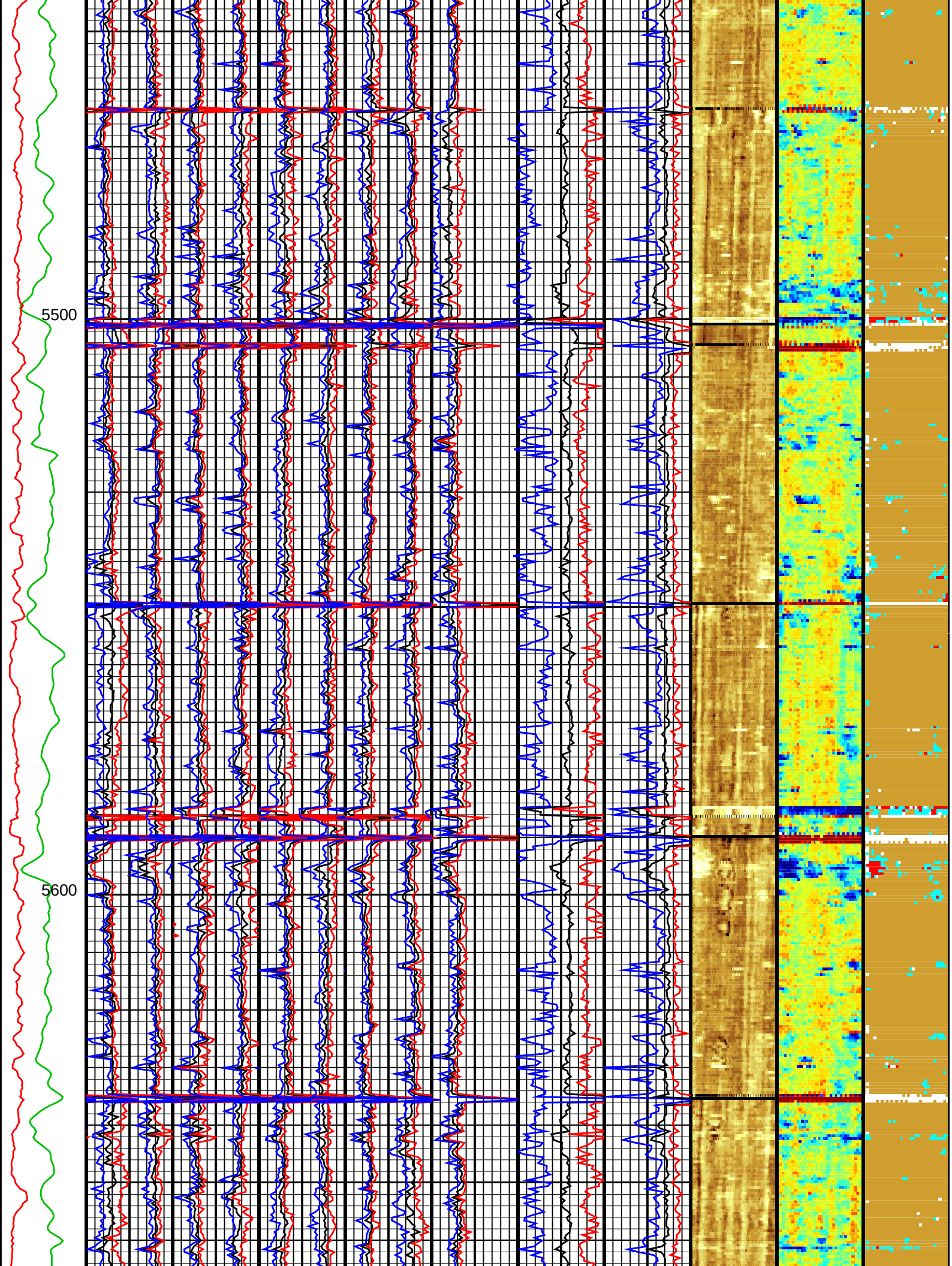
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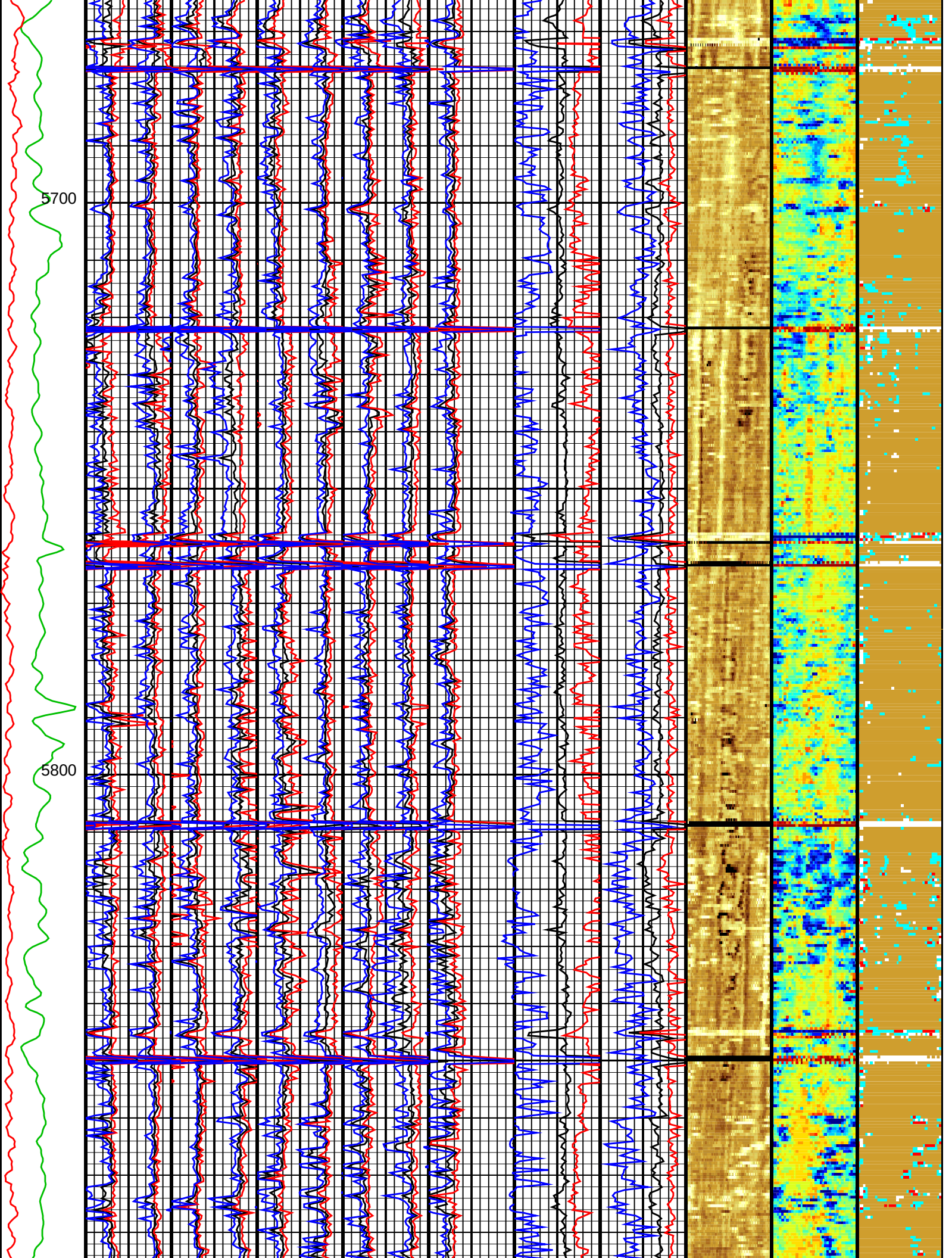
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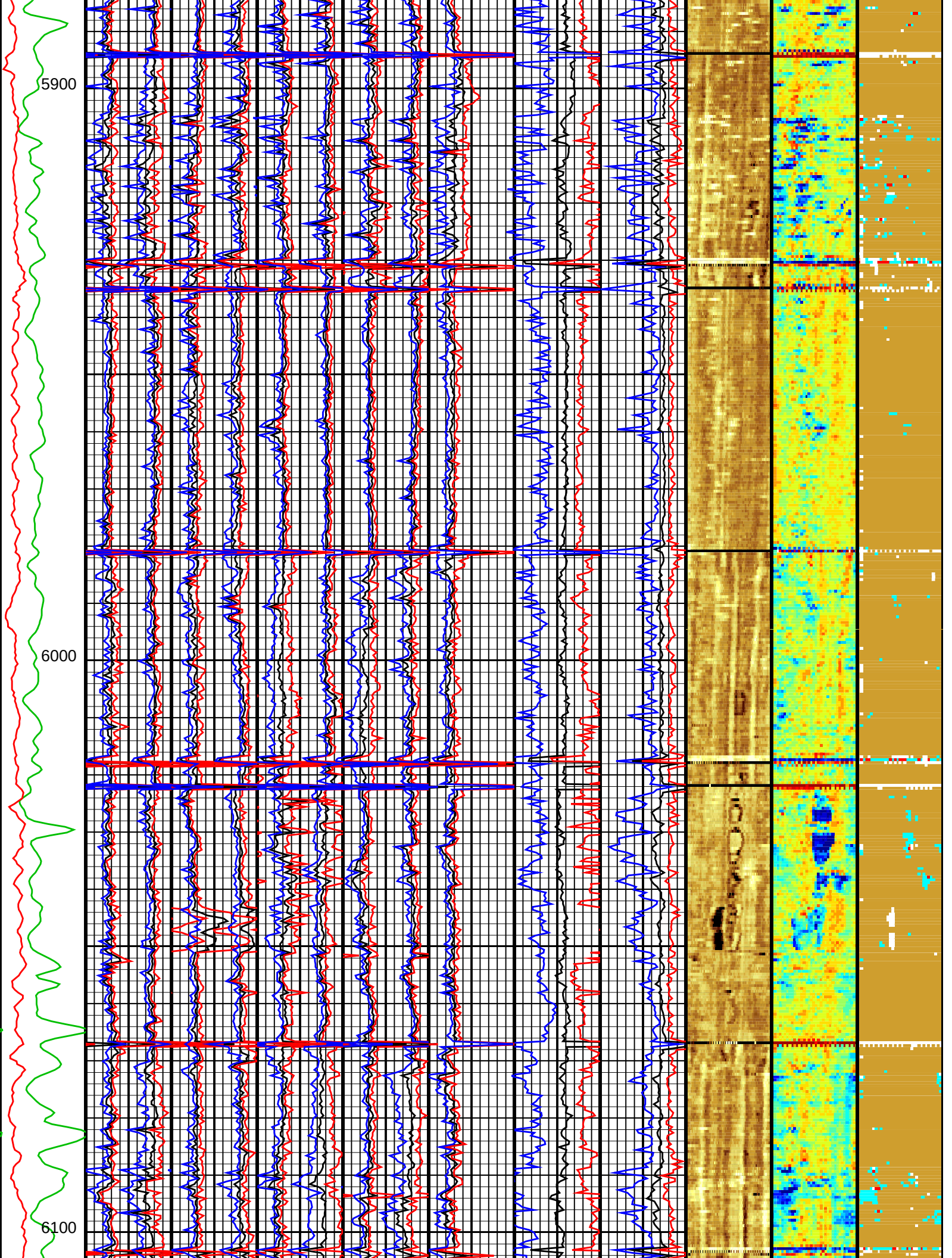
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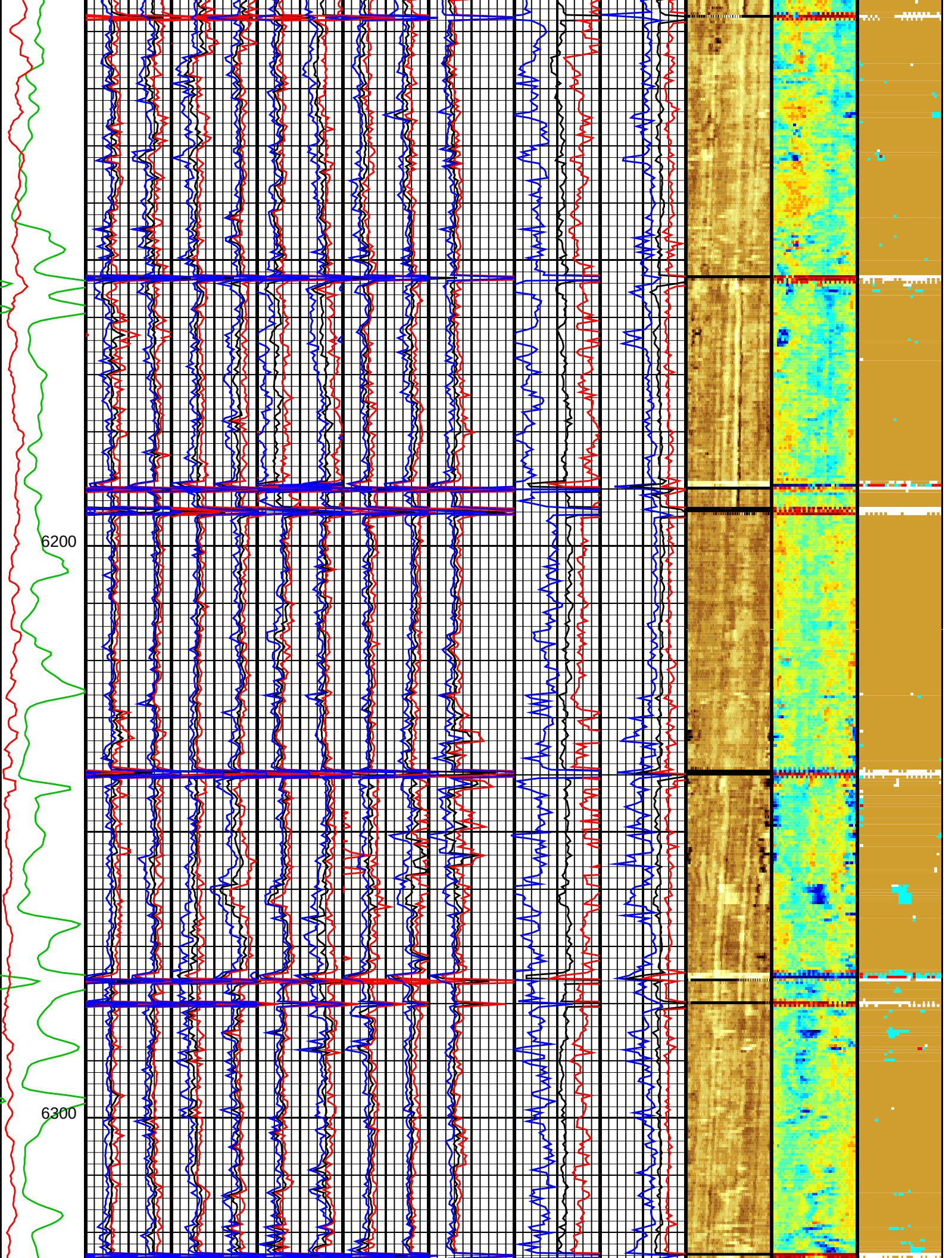
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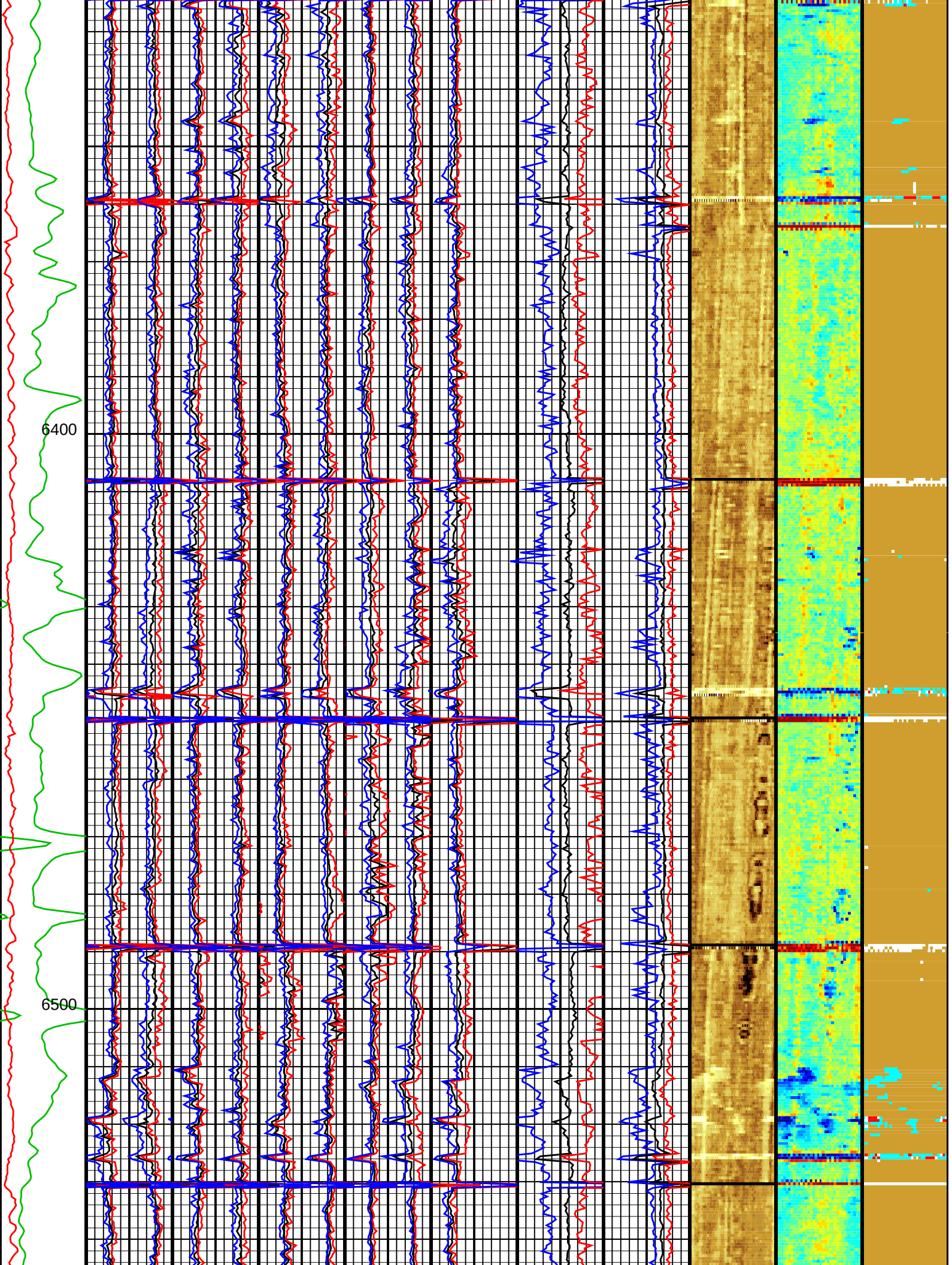
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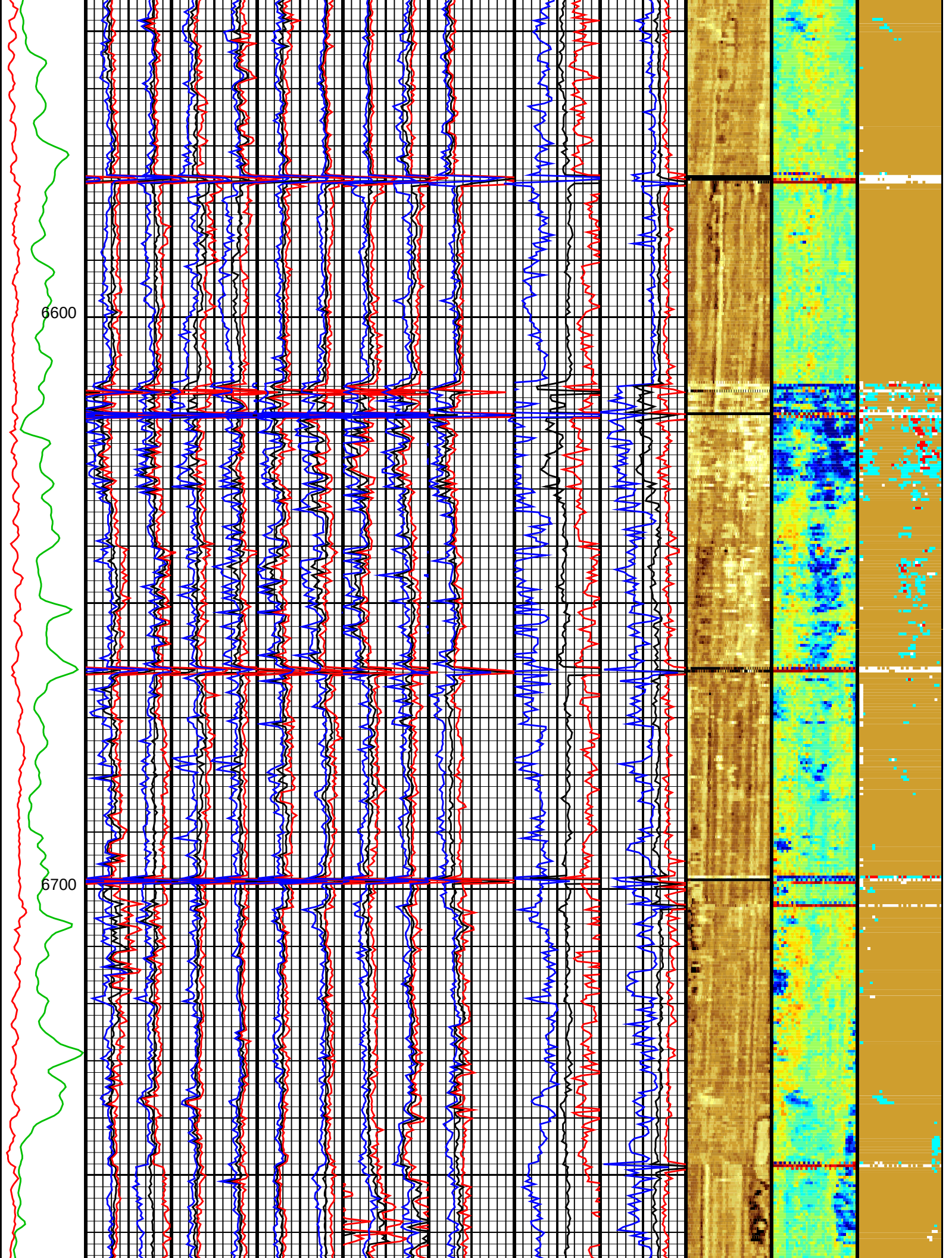
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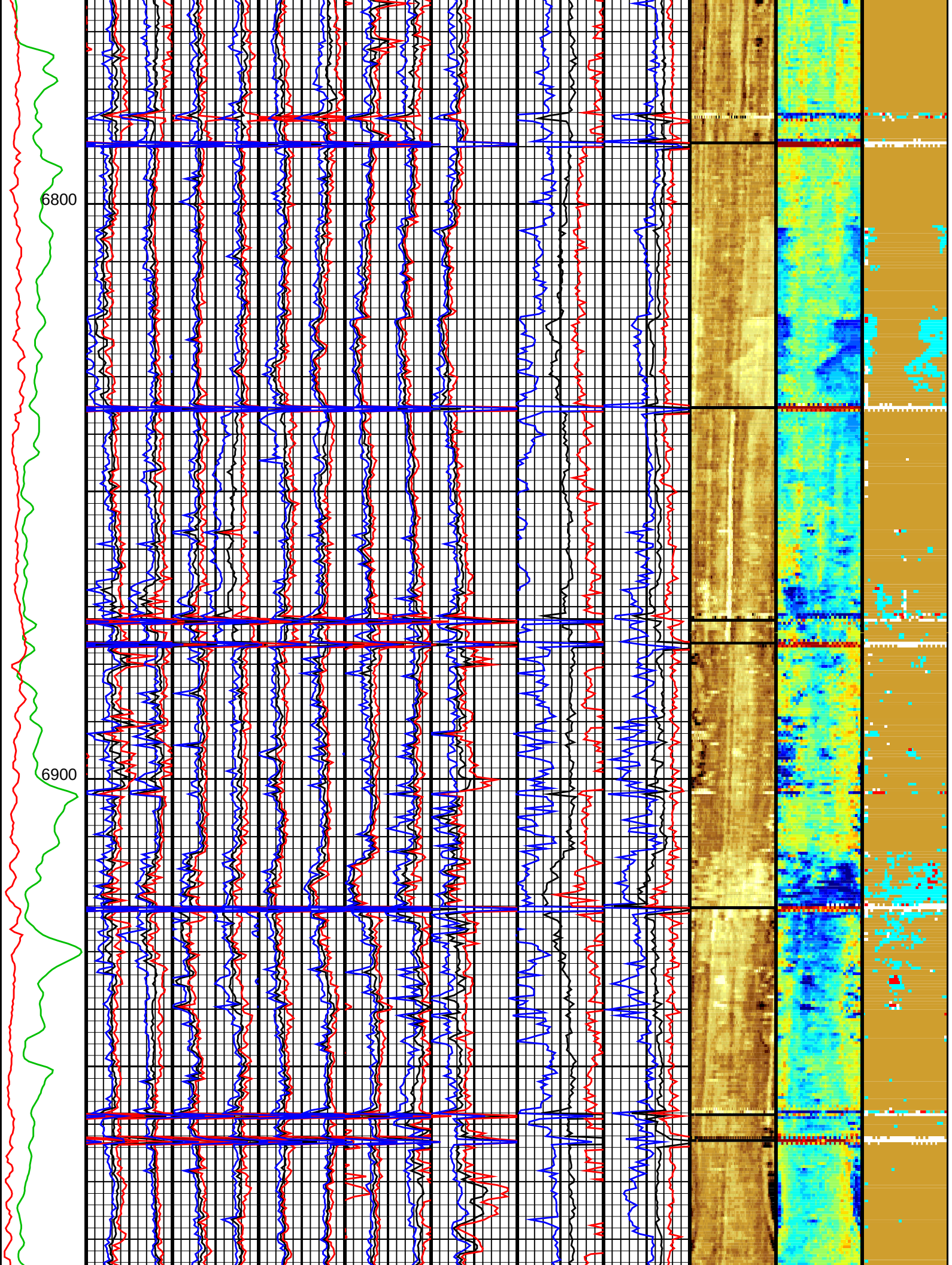
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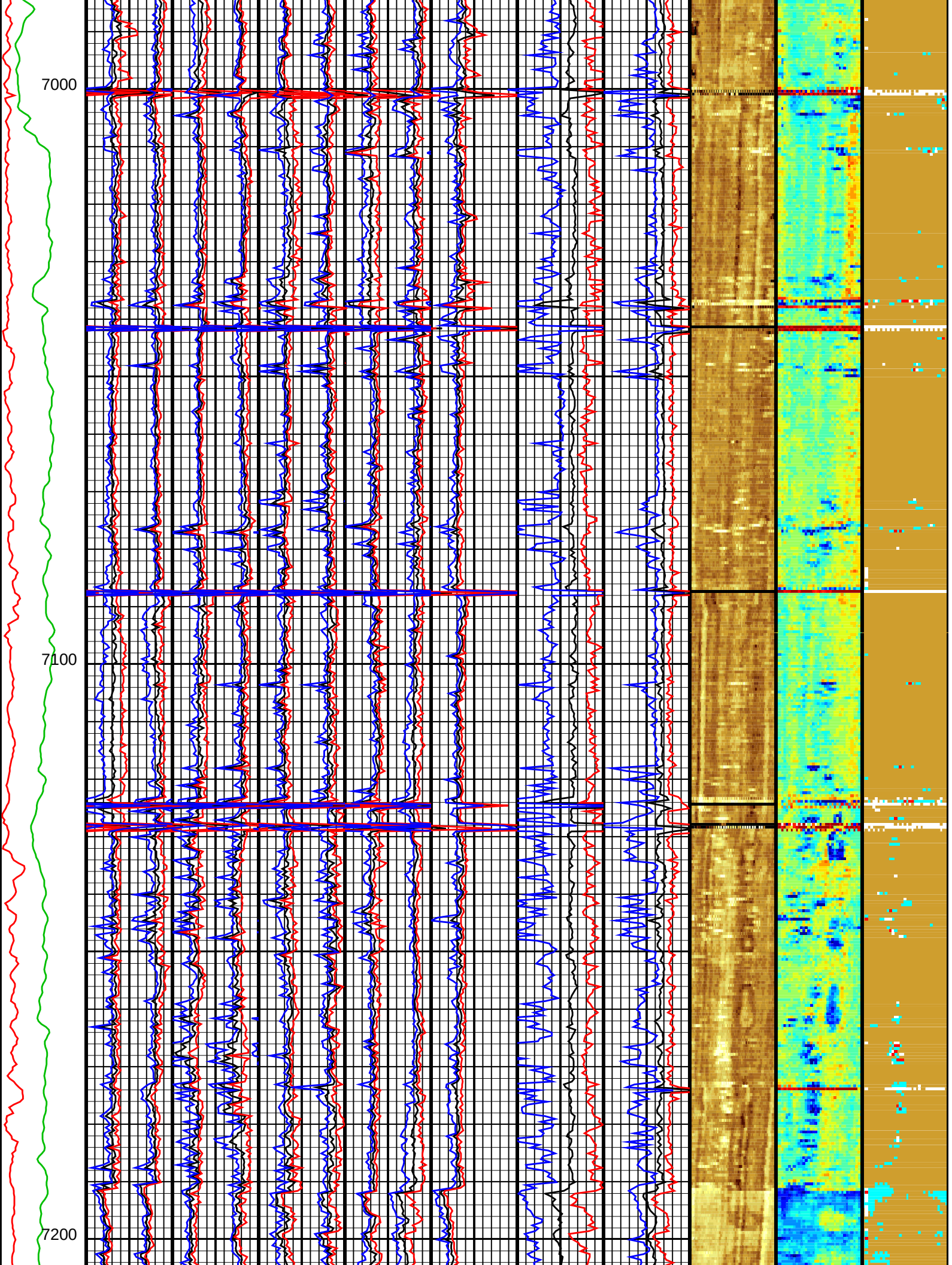
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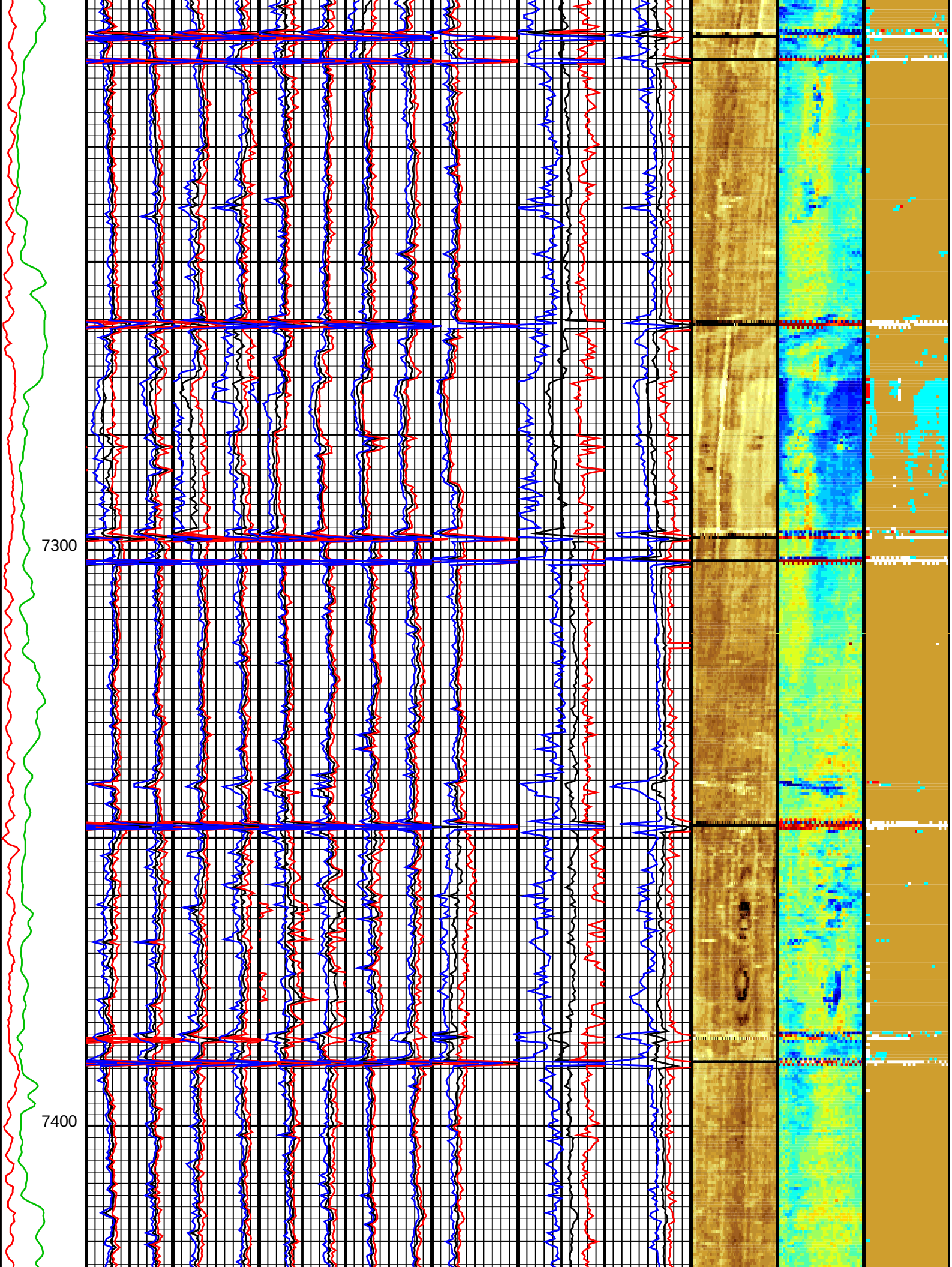
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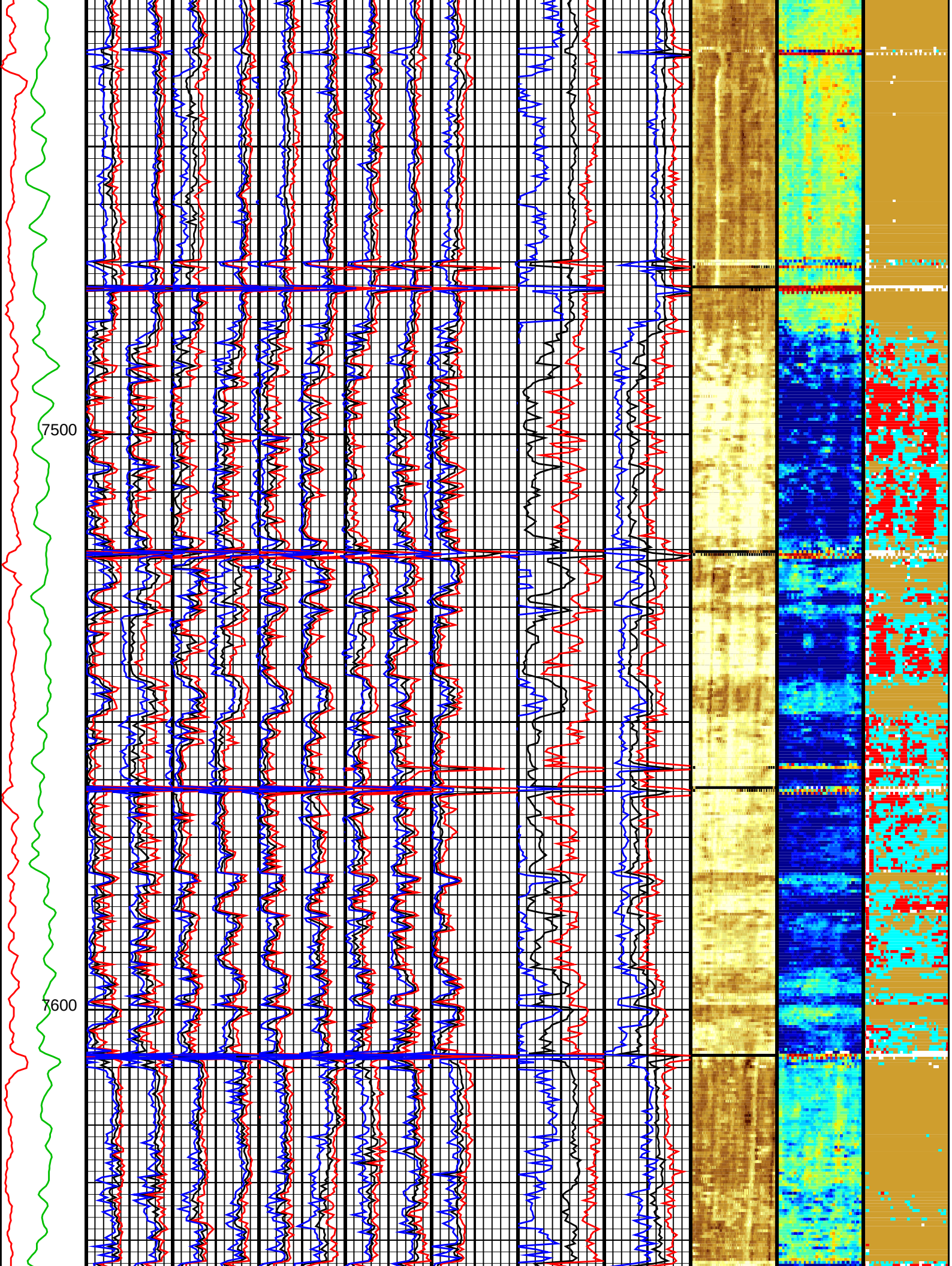
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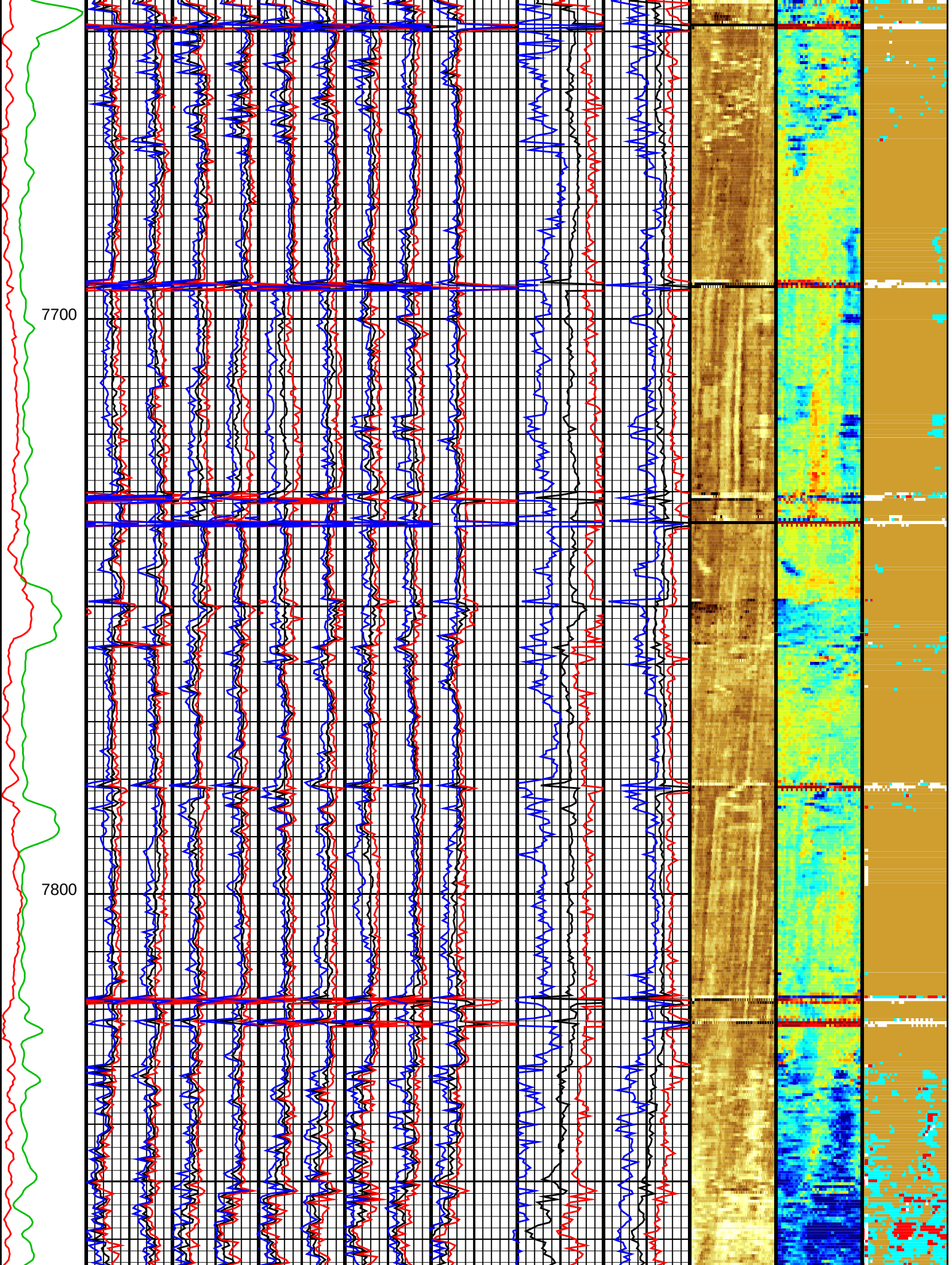
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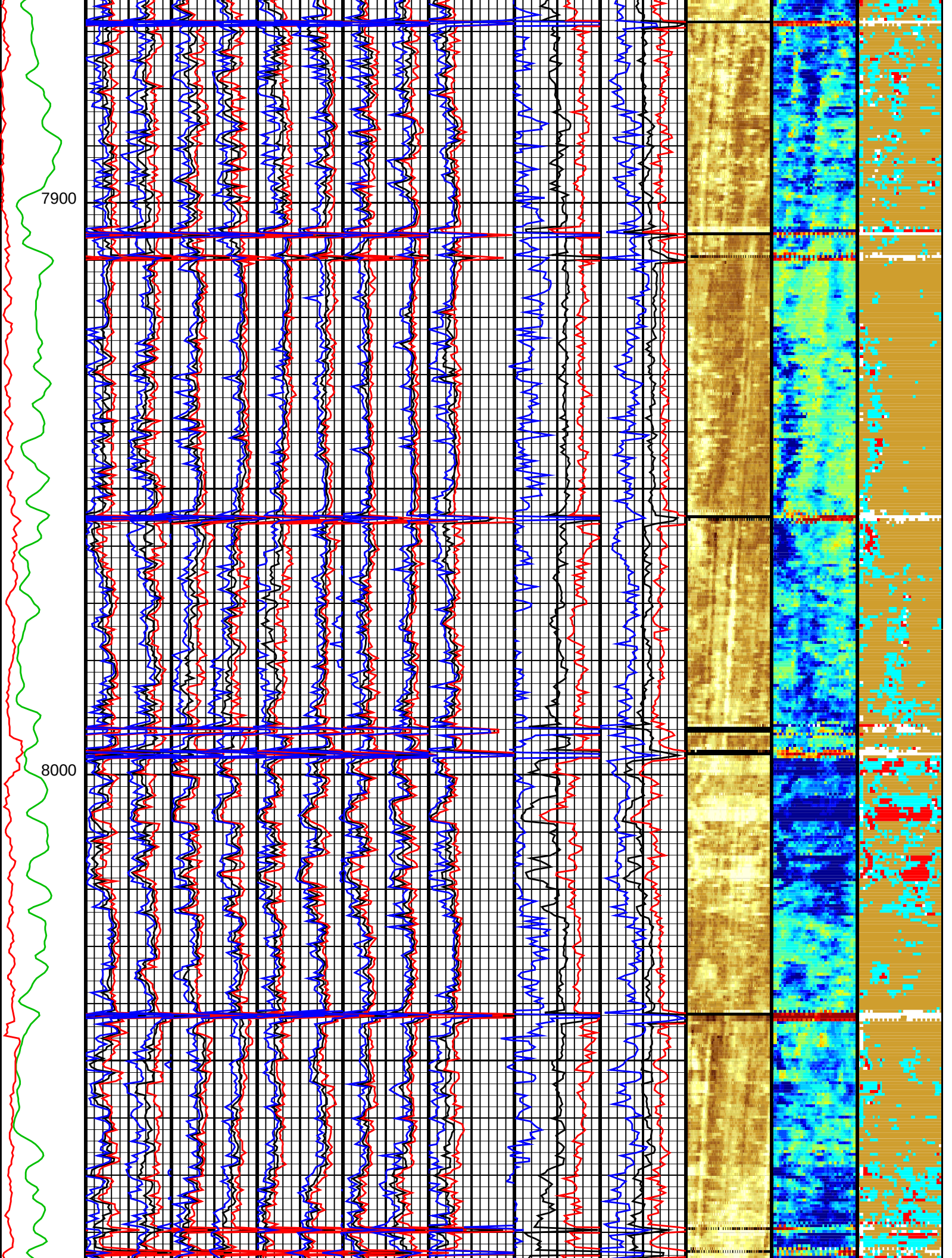
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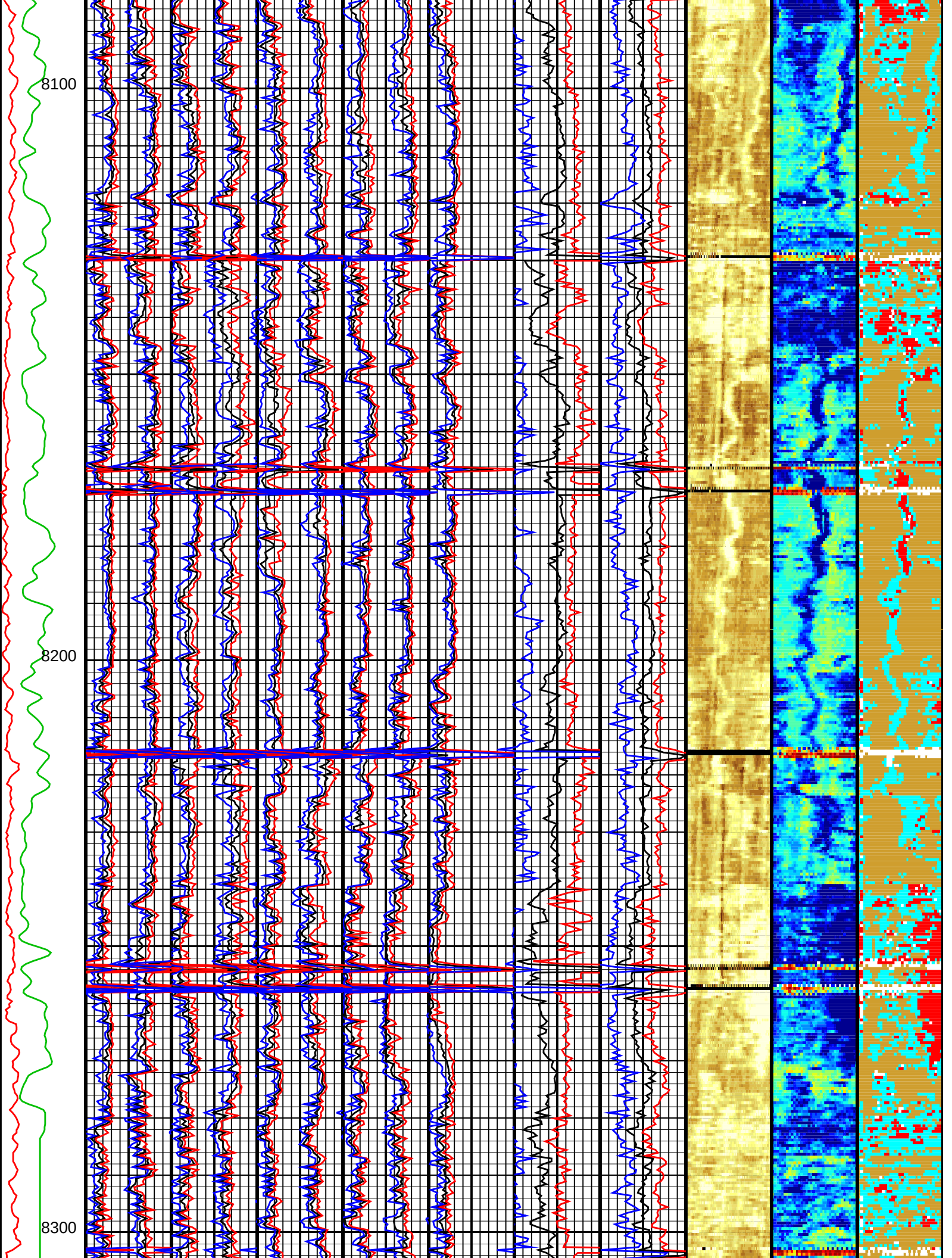
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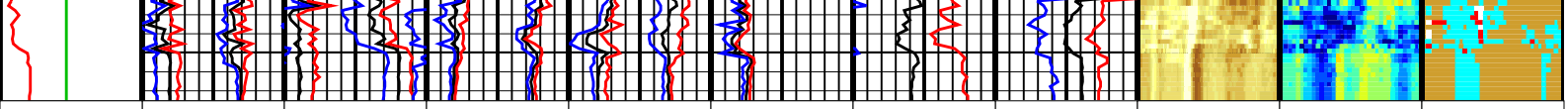

Eccent. (ECCE) 0 (IN) 0.5	Average Acoustic Impedance #1 (AV_ AI1) (MRAY) 0 15	Average Acoustic Impedance #3 (AV_ AI3) (MRAY) 0 15	Average Acoustic Impedance #5 (AV_ AI5) (MRAY) 0 15	Average Acoustic Impedance #7 (AV_ AI7) (MRAY) 0 15	Average Acoustic Impedance #9 (AV_ AI9) (MRAY) 0 15	Average of AI (AIAV) (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 Vertical Scale: 5" per 100' Graphics File Created: 27−Jun−2010 04:33

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	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33

Schlumberger

VDL WIDE

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. **Well: PCU 197−34A9**

Input DLIS Files

DEFAULT	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33

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
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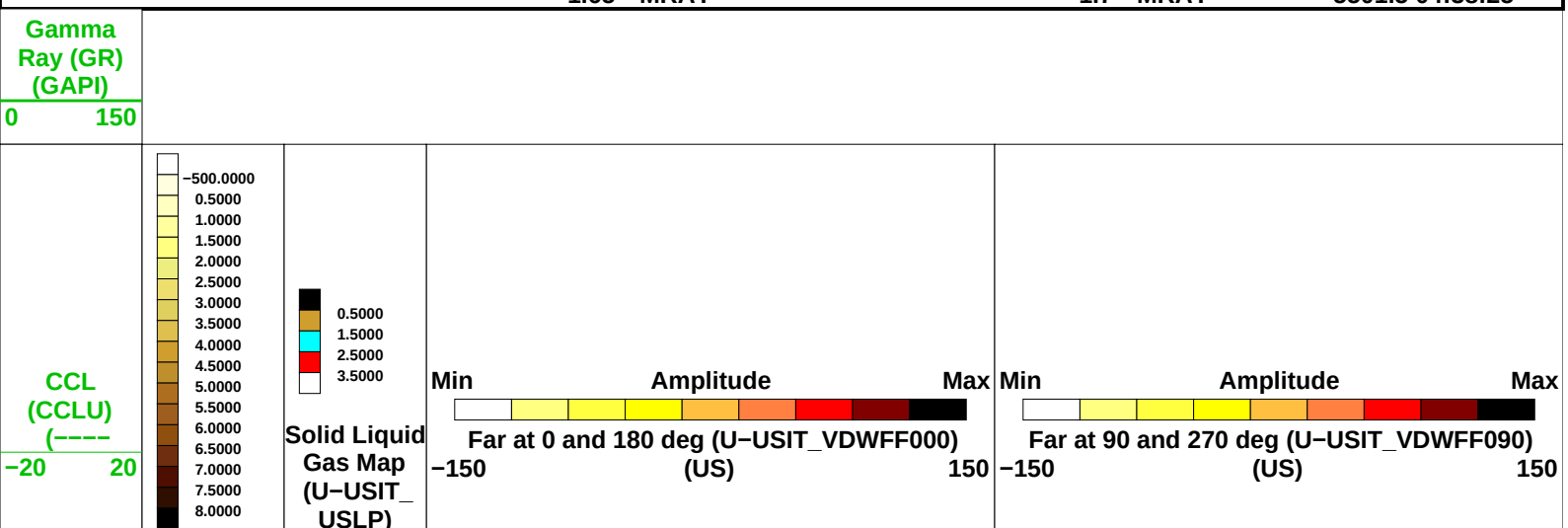
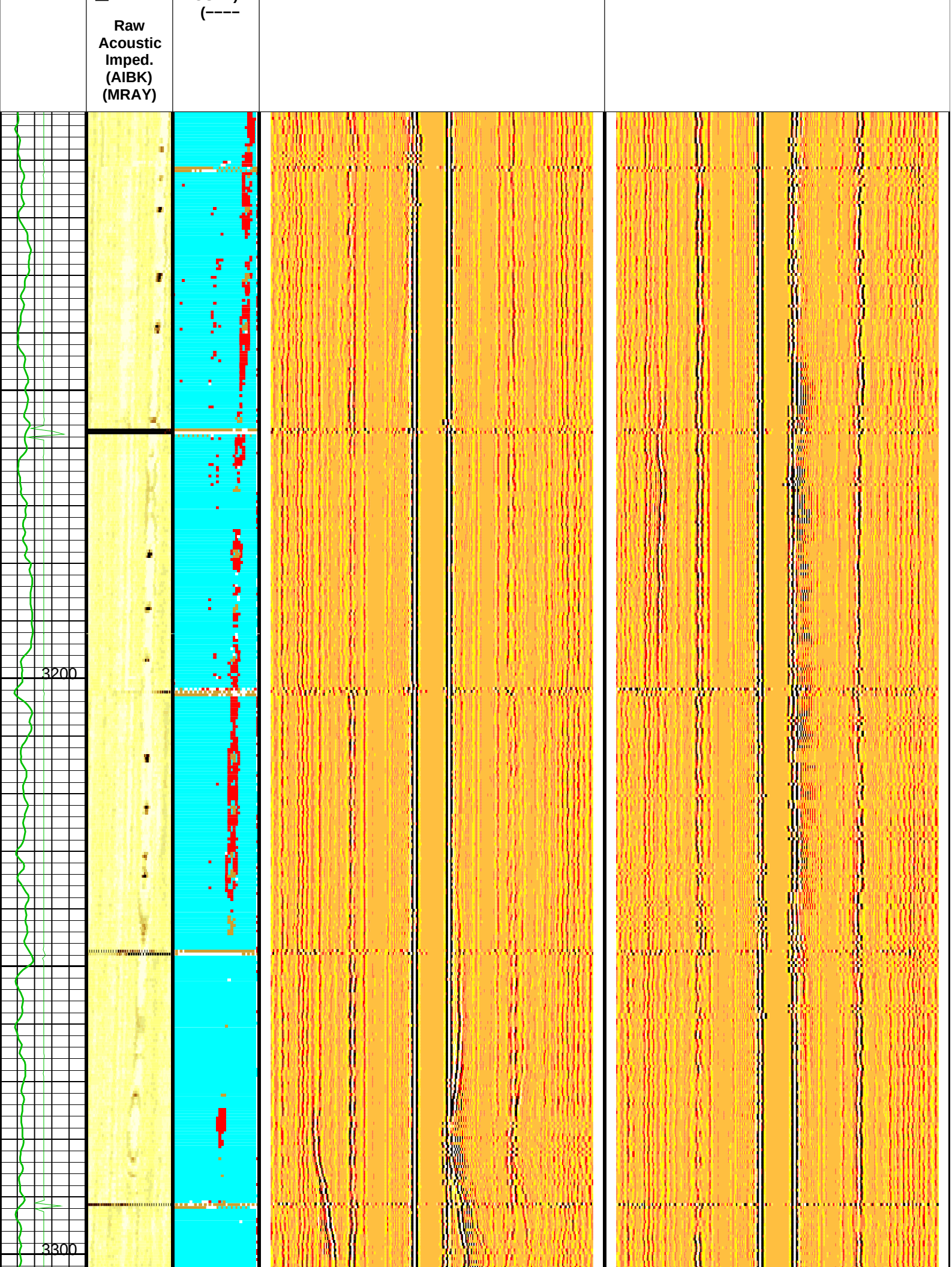
	1.65 MRAY	1.7 MRAY	5501.5 04:38:25




Raw
Acoustic
Imped.
(AIBK)
(MRAY)
(----
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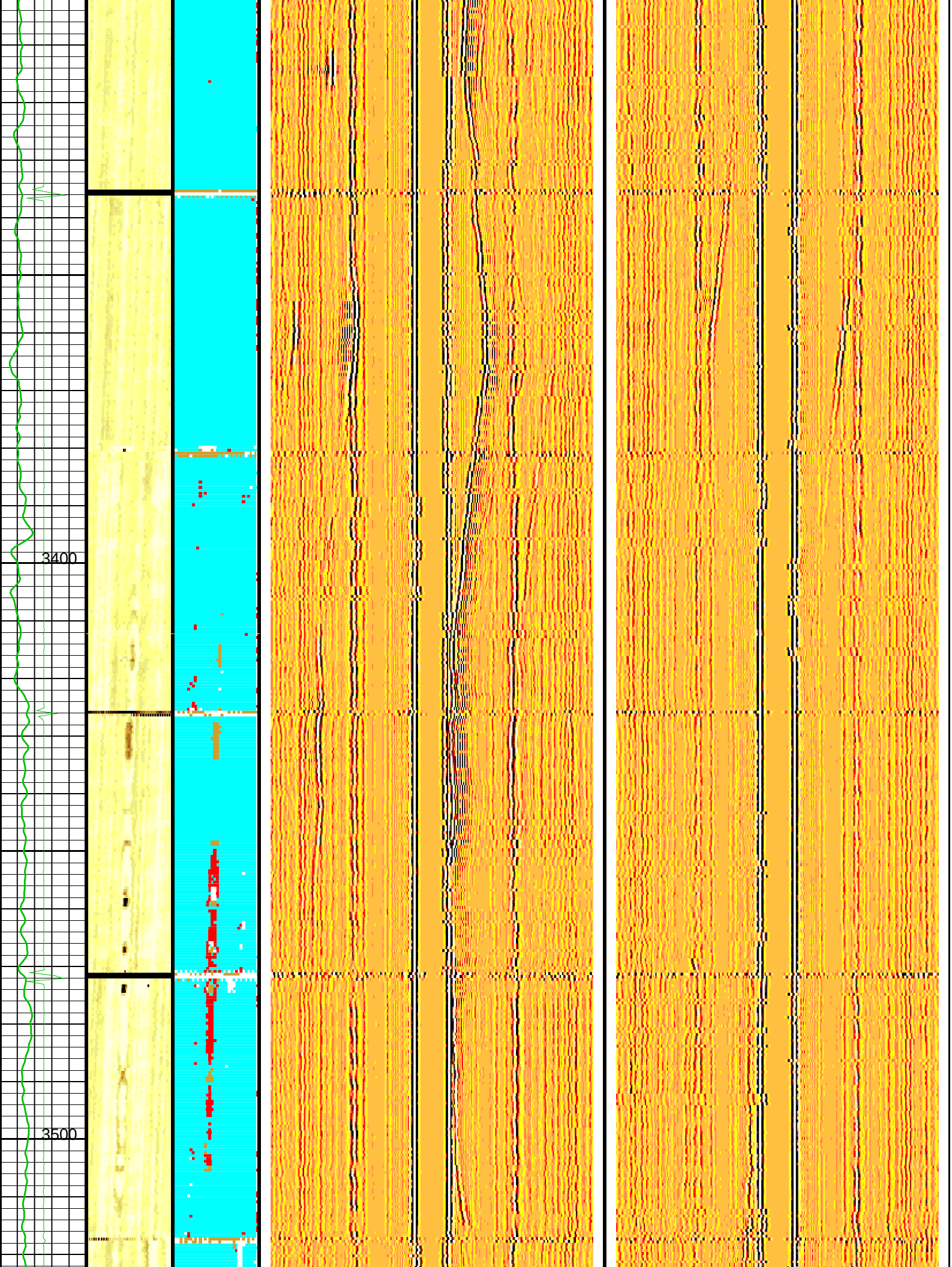
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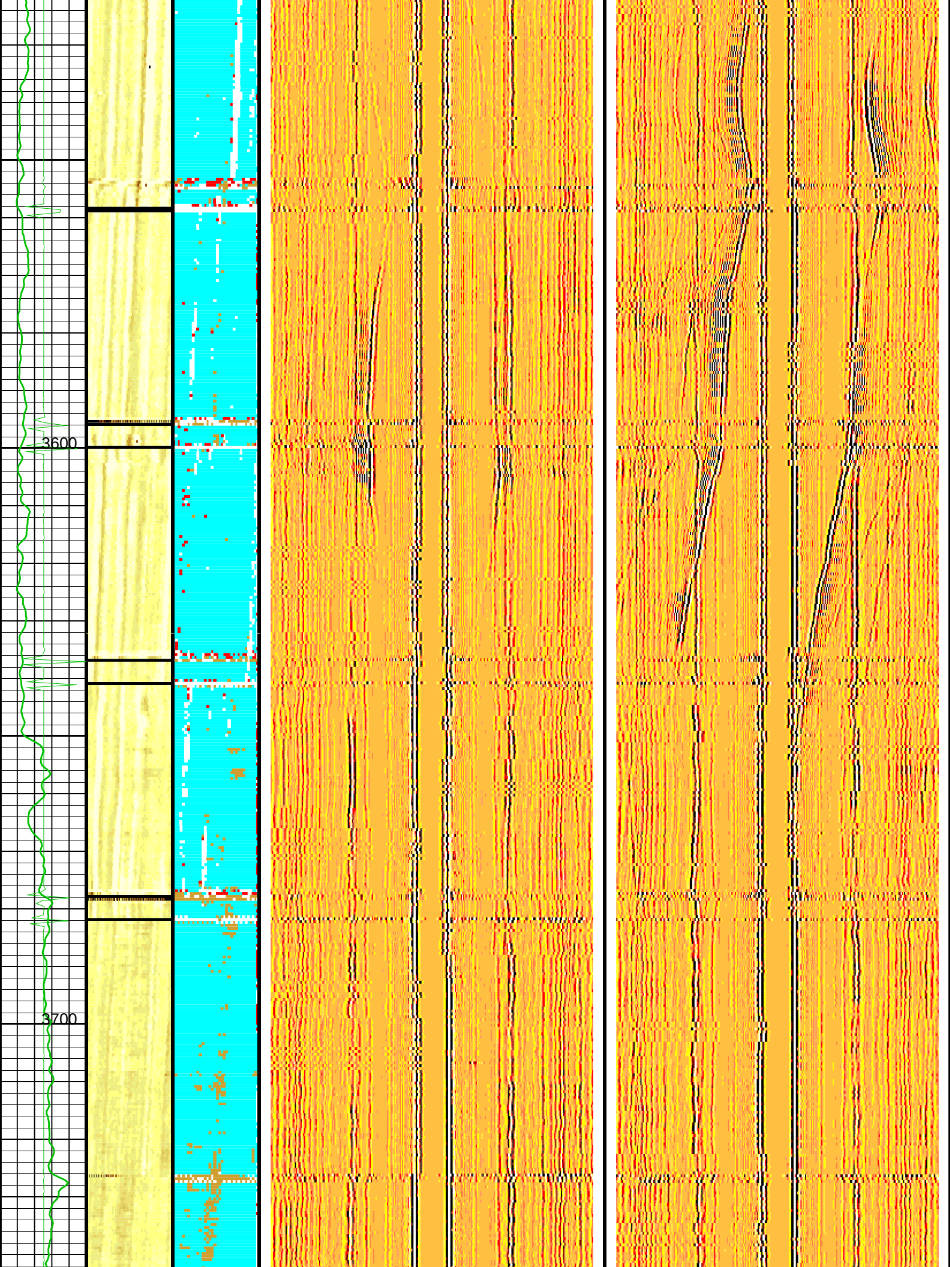
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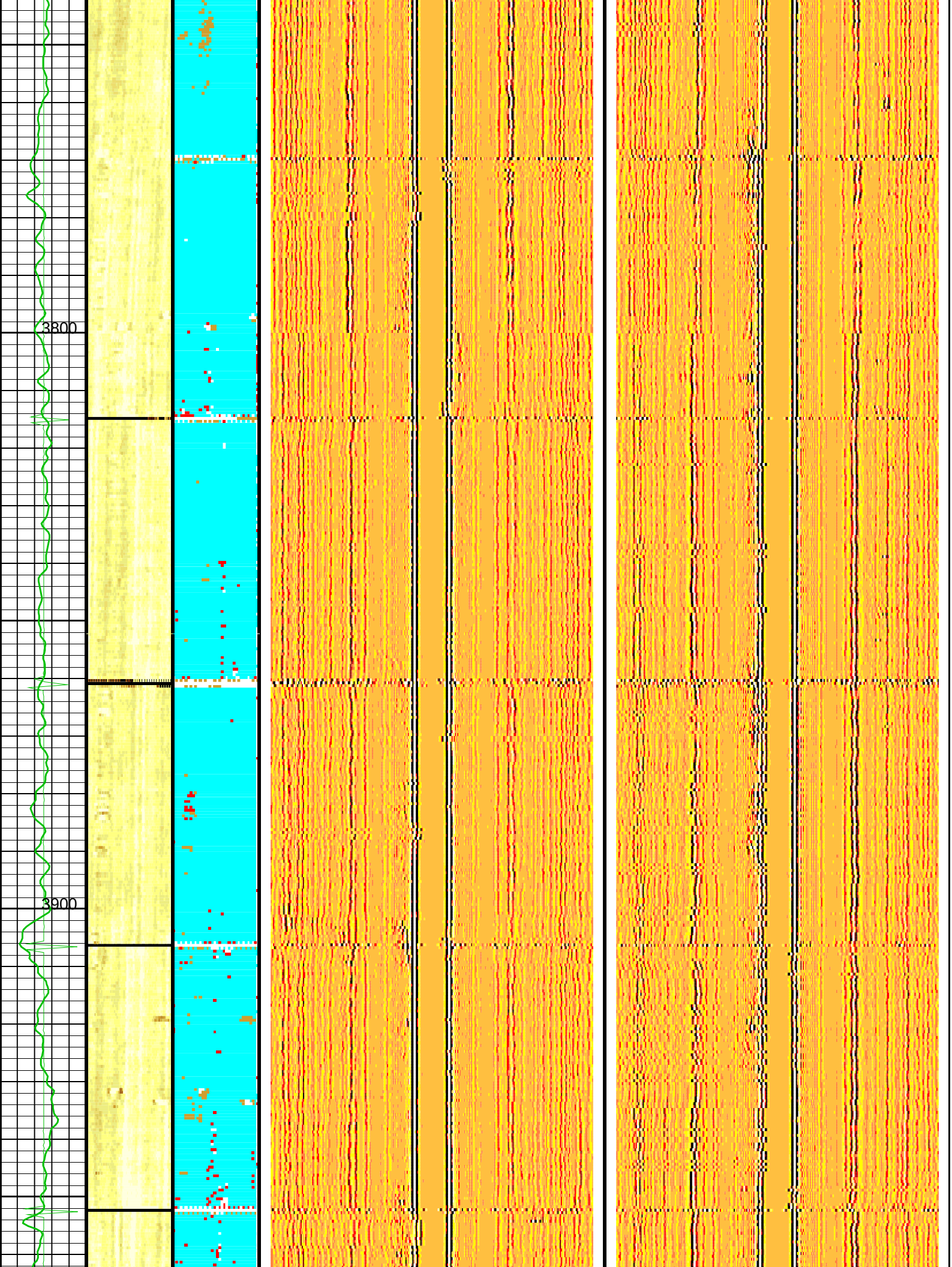
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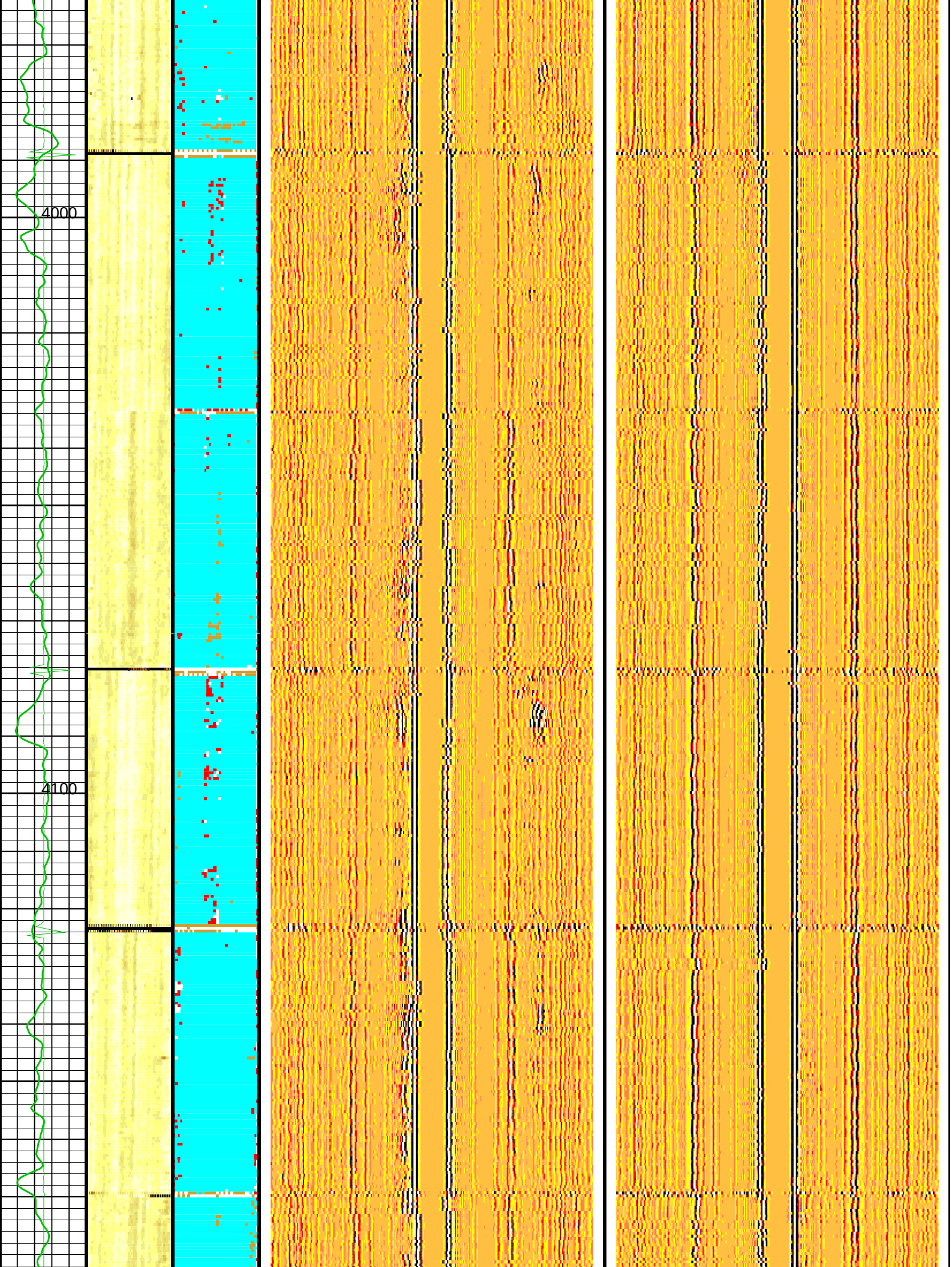
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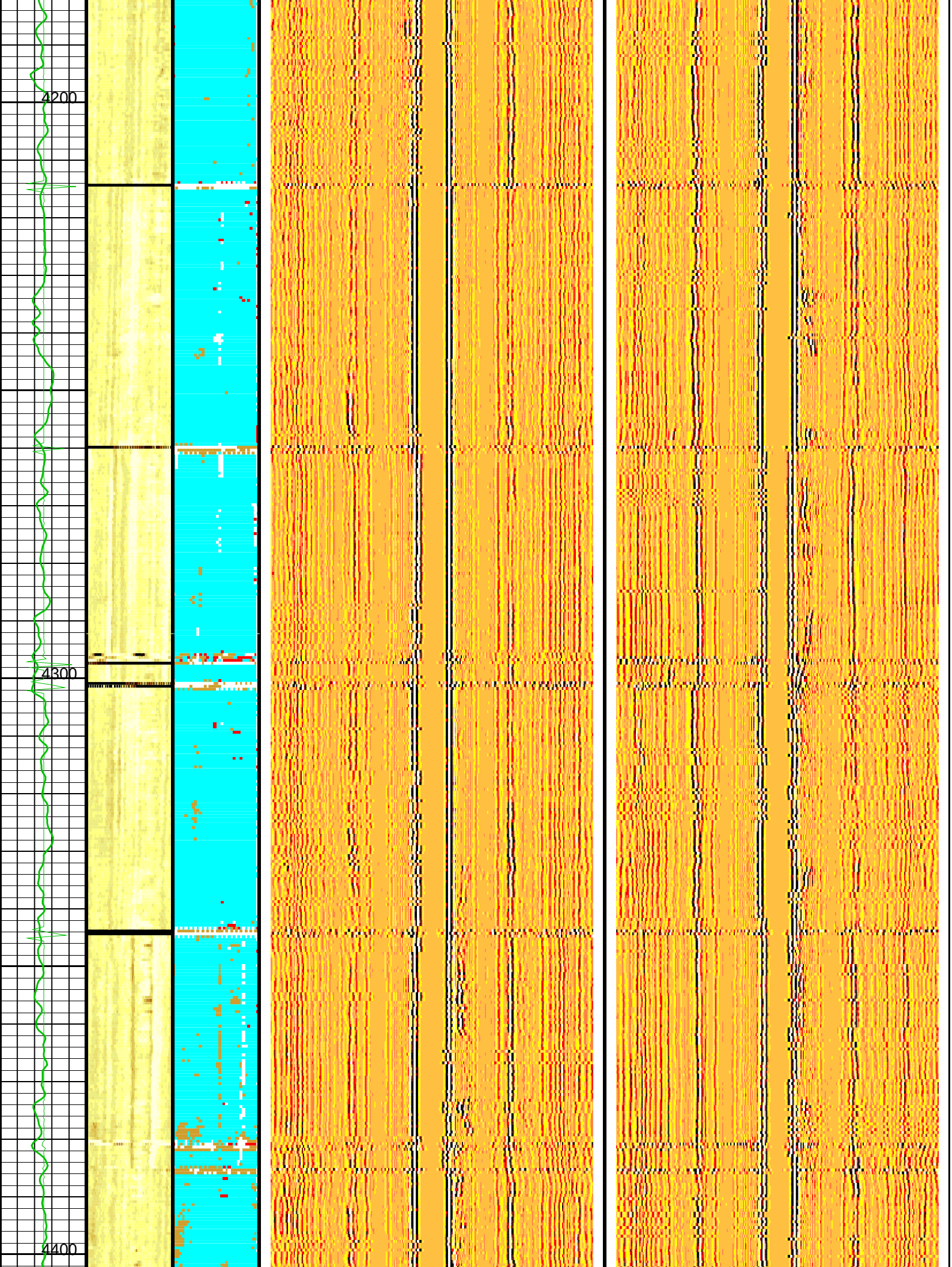
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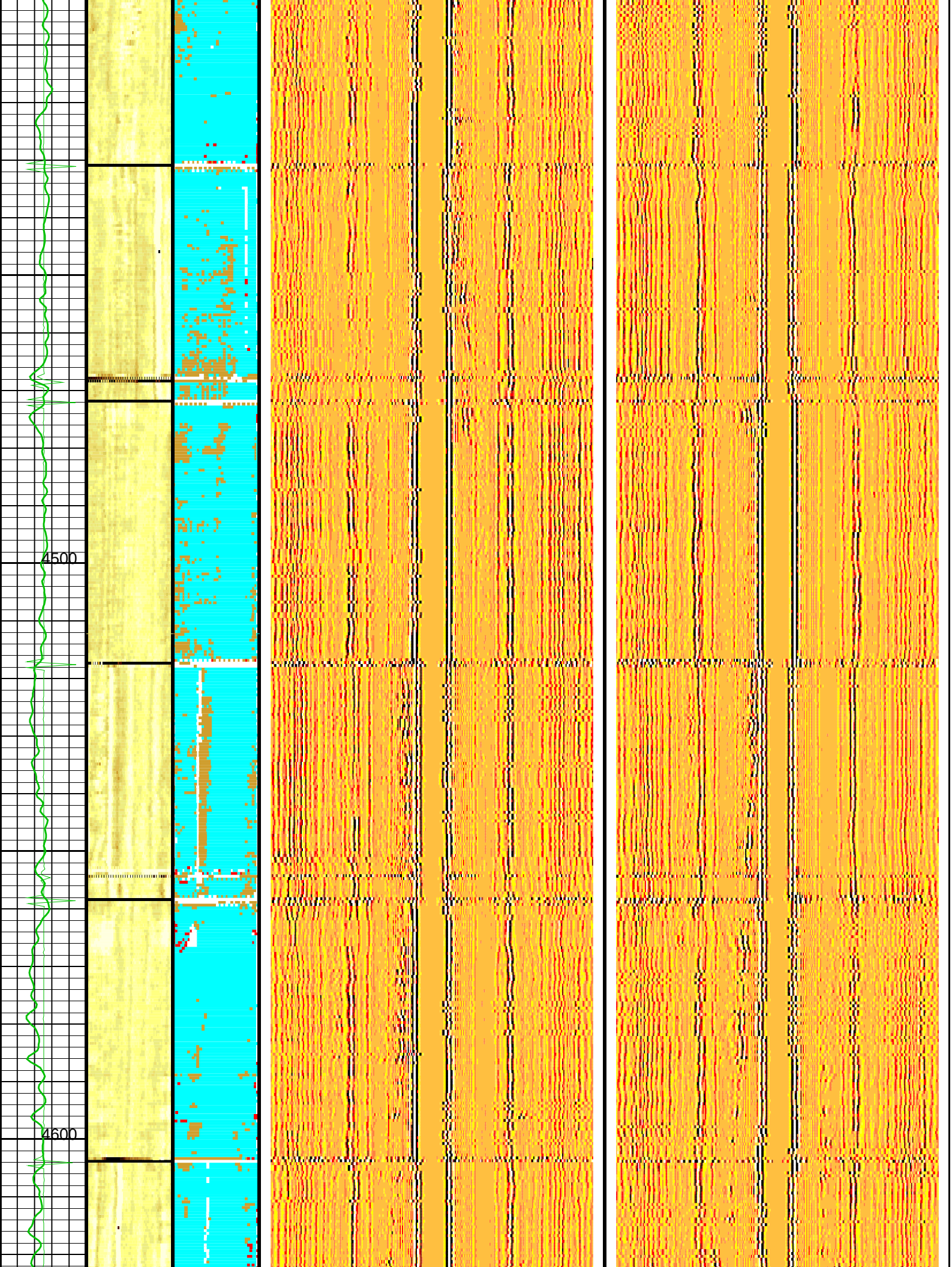
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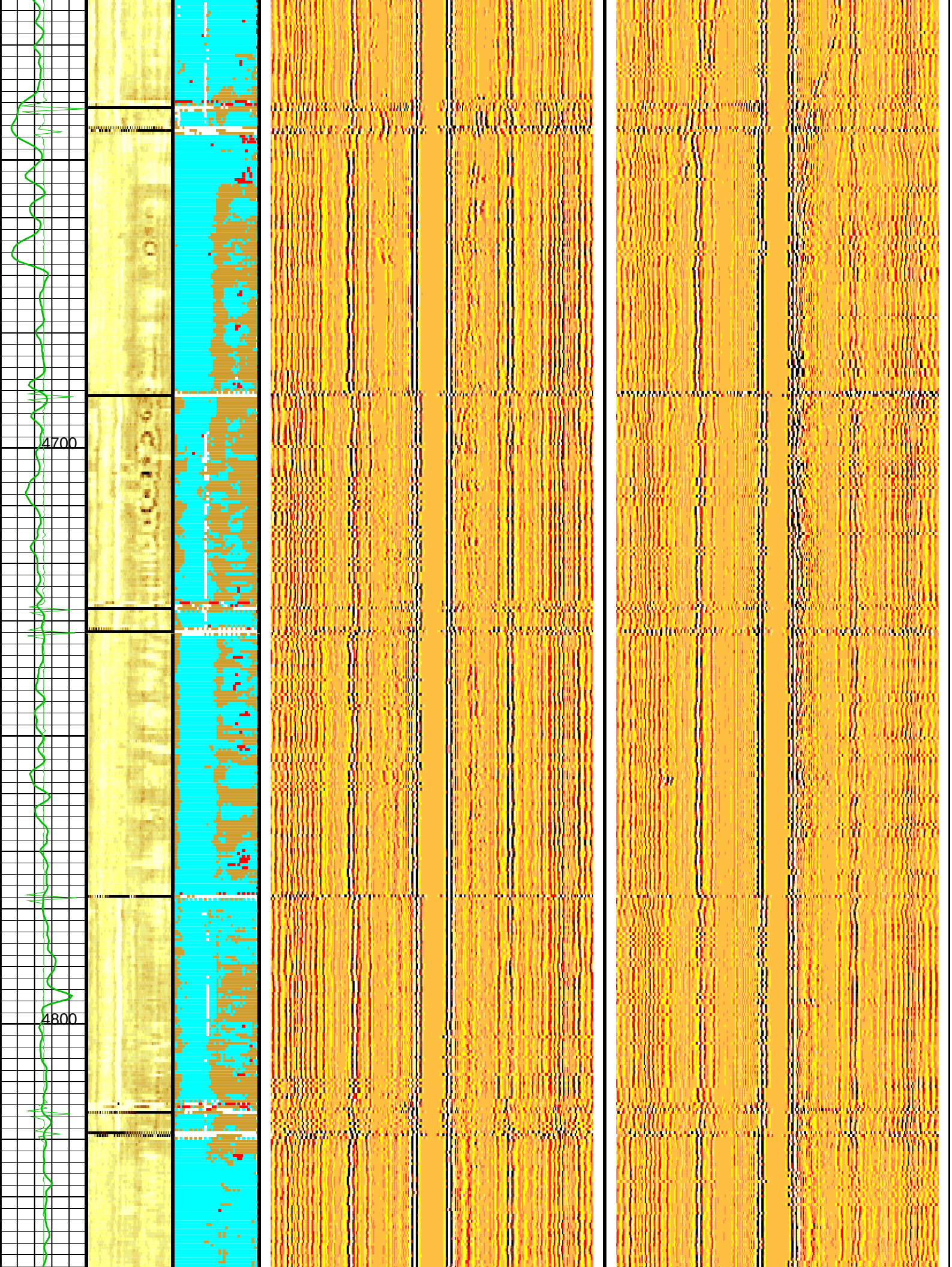
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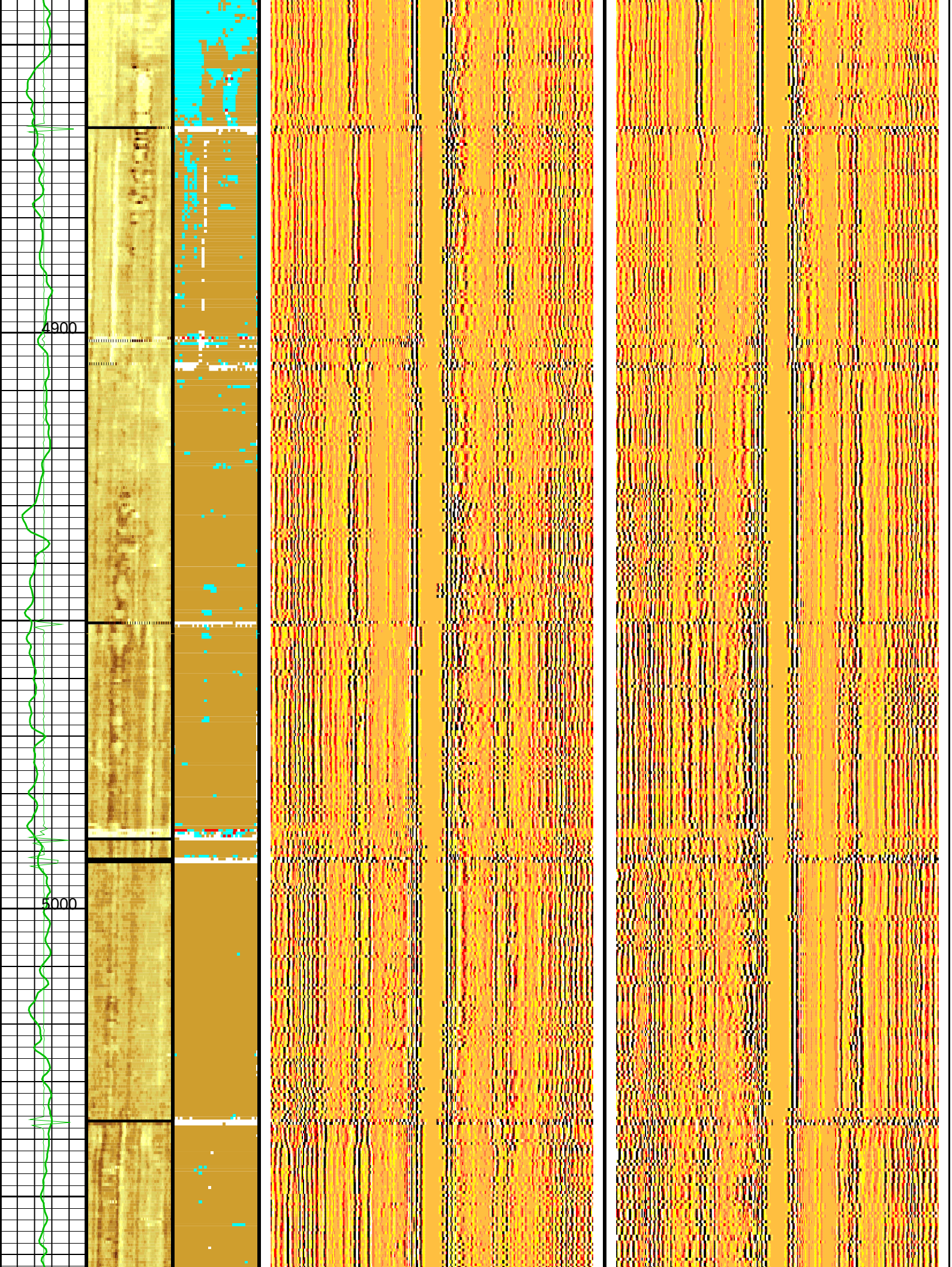
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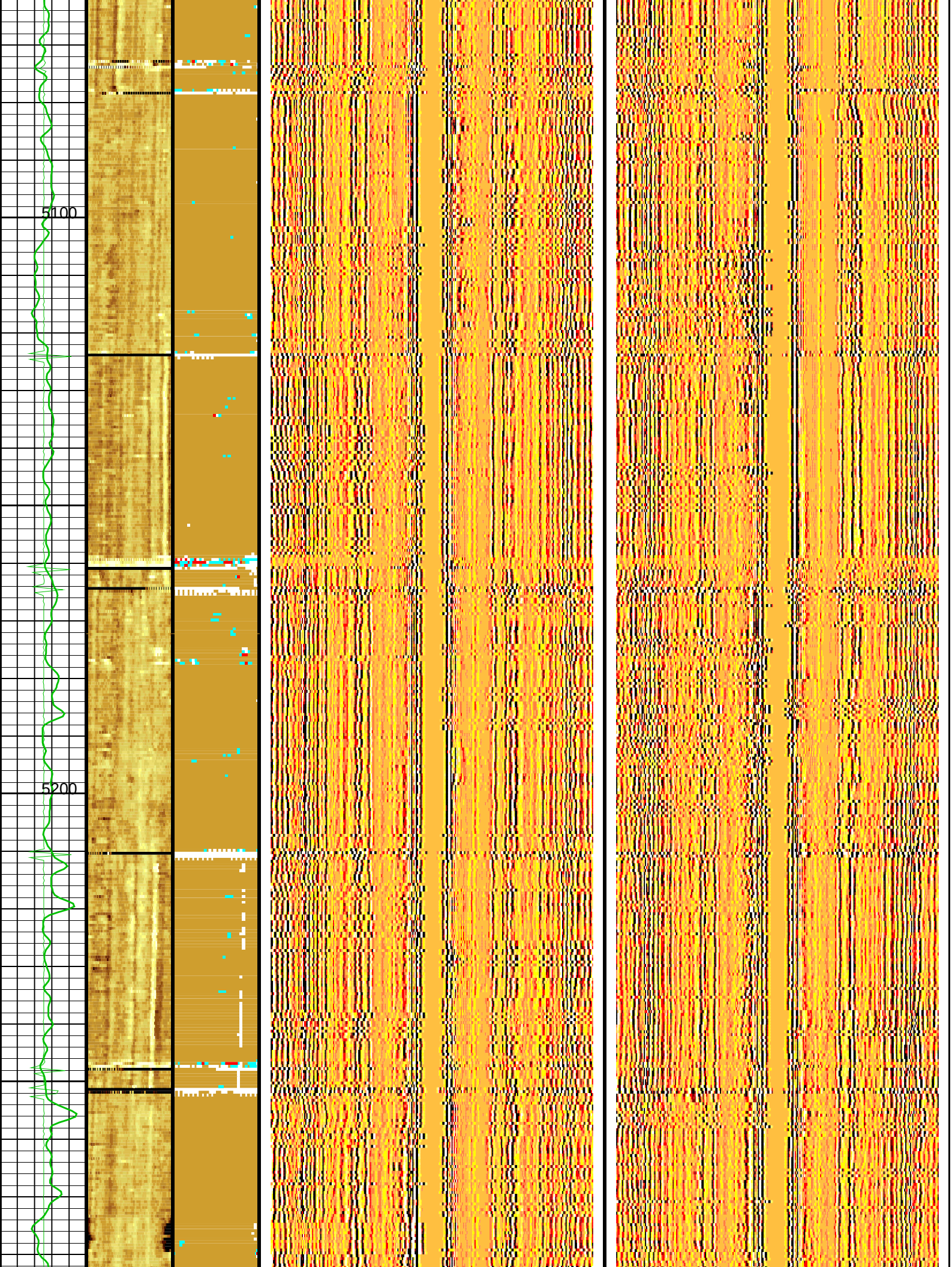
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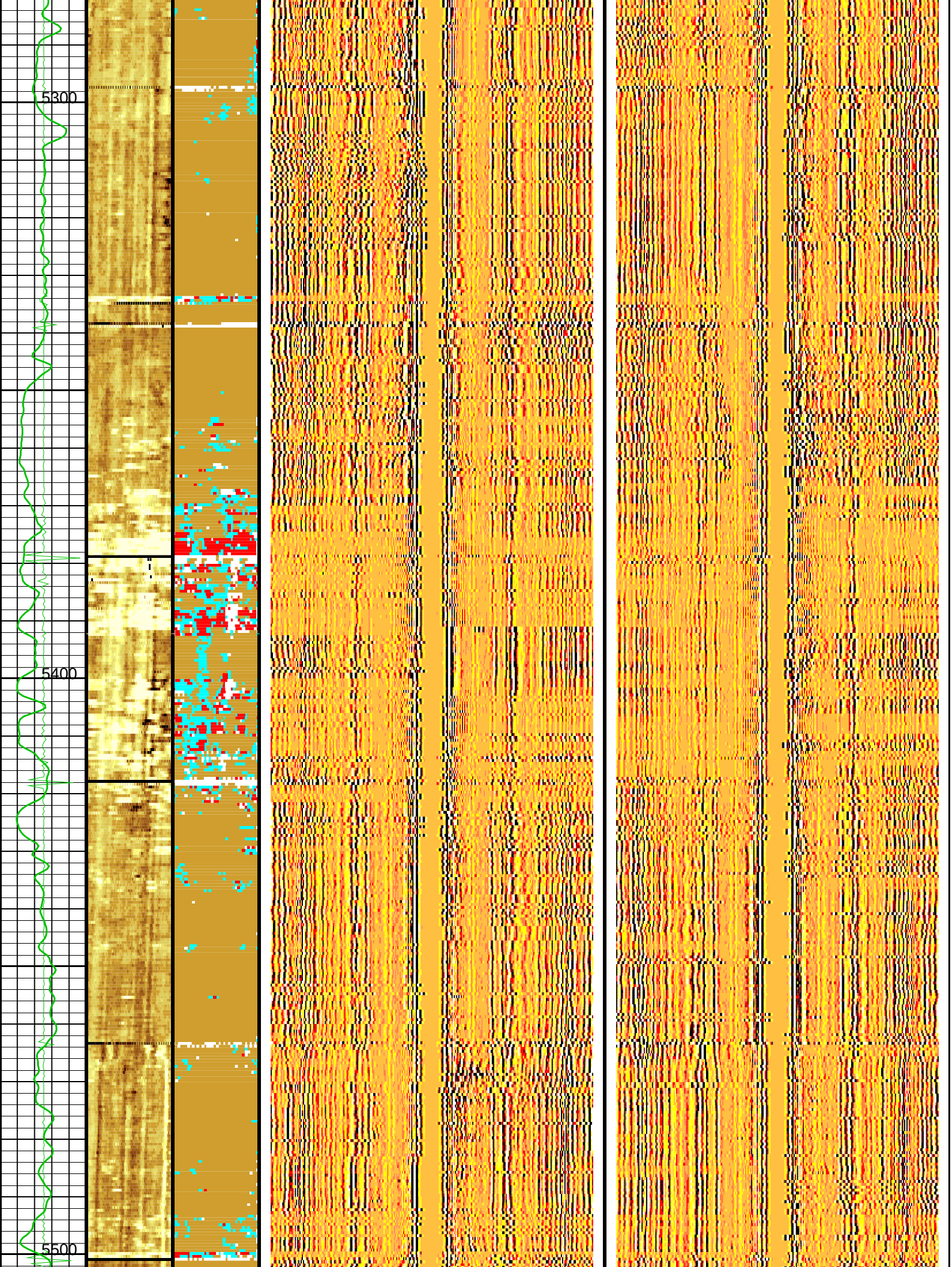
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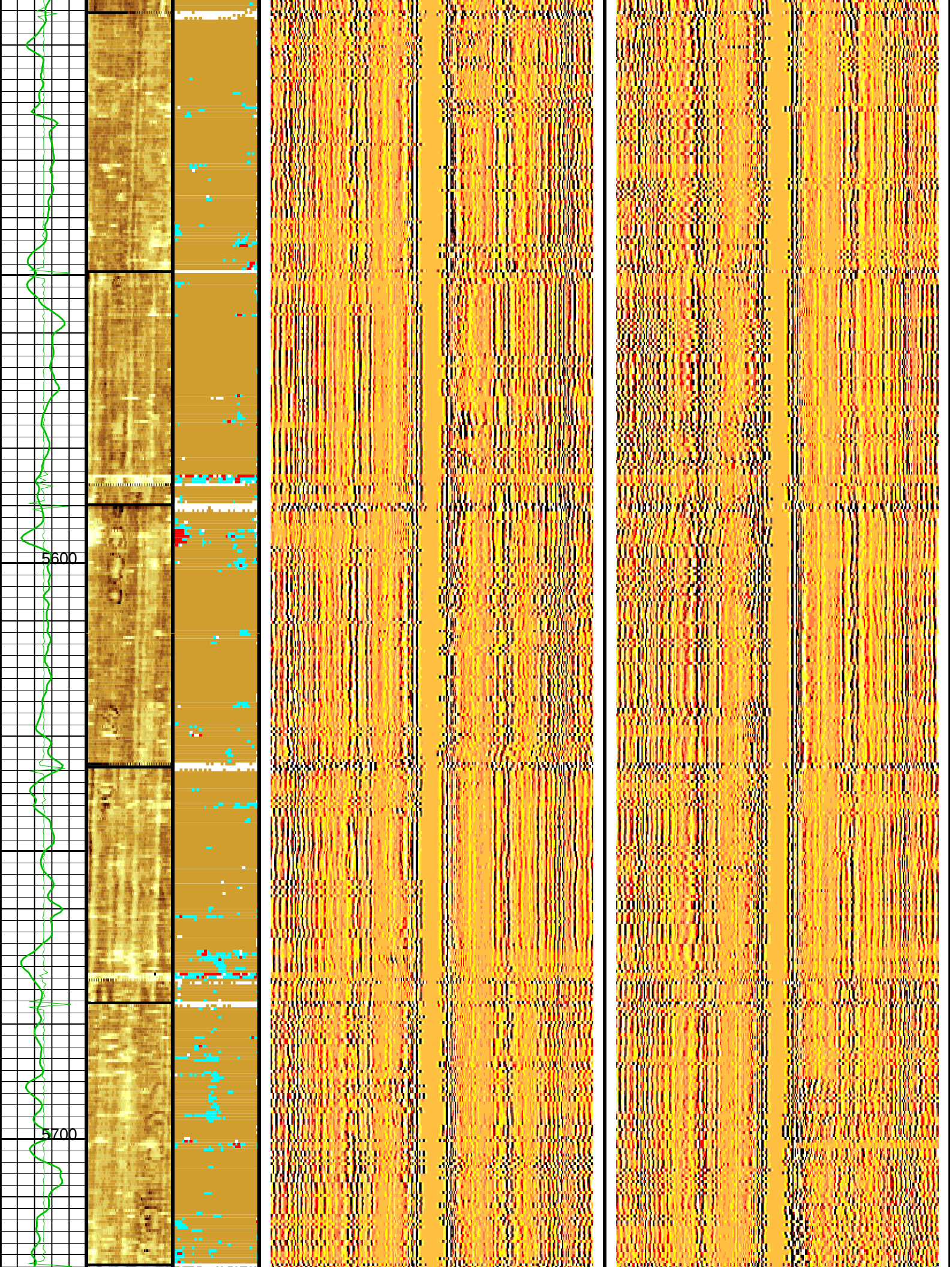
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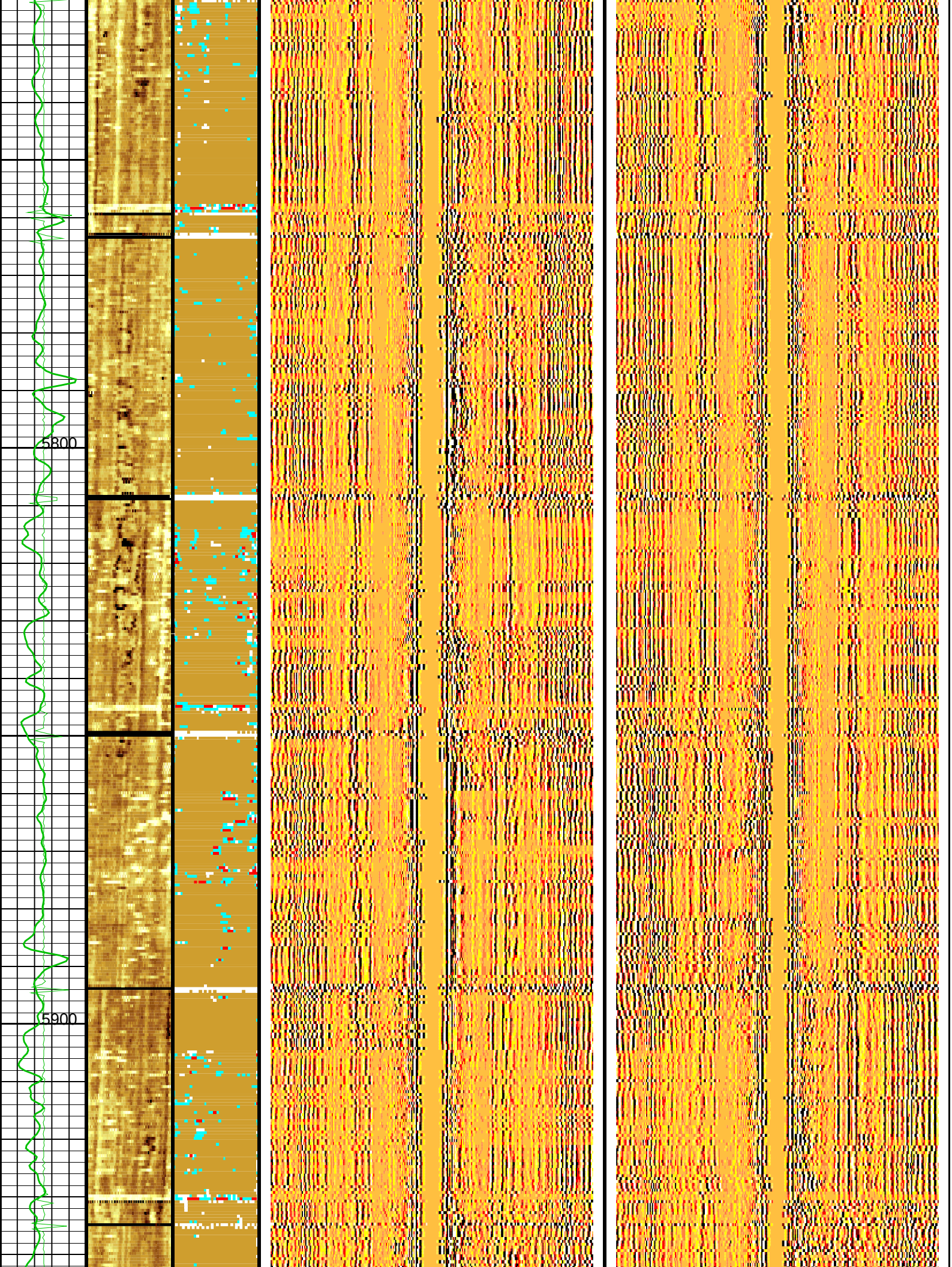
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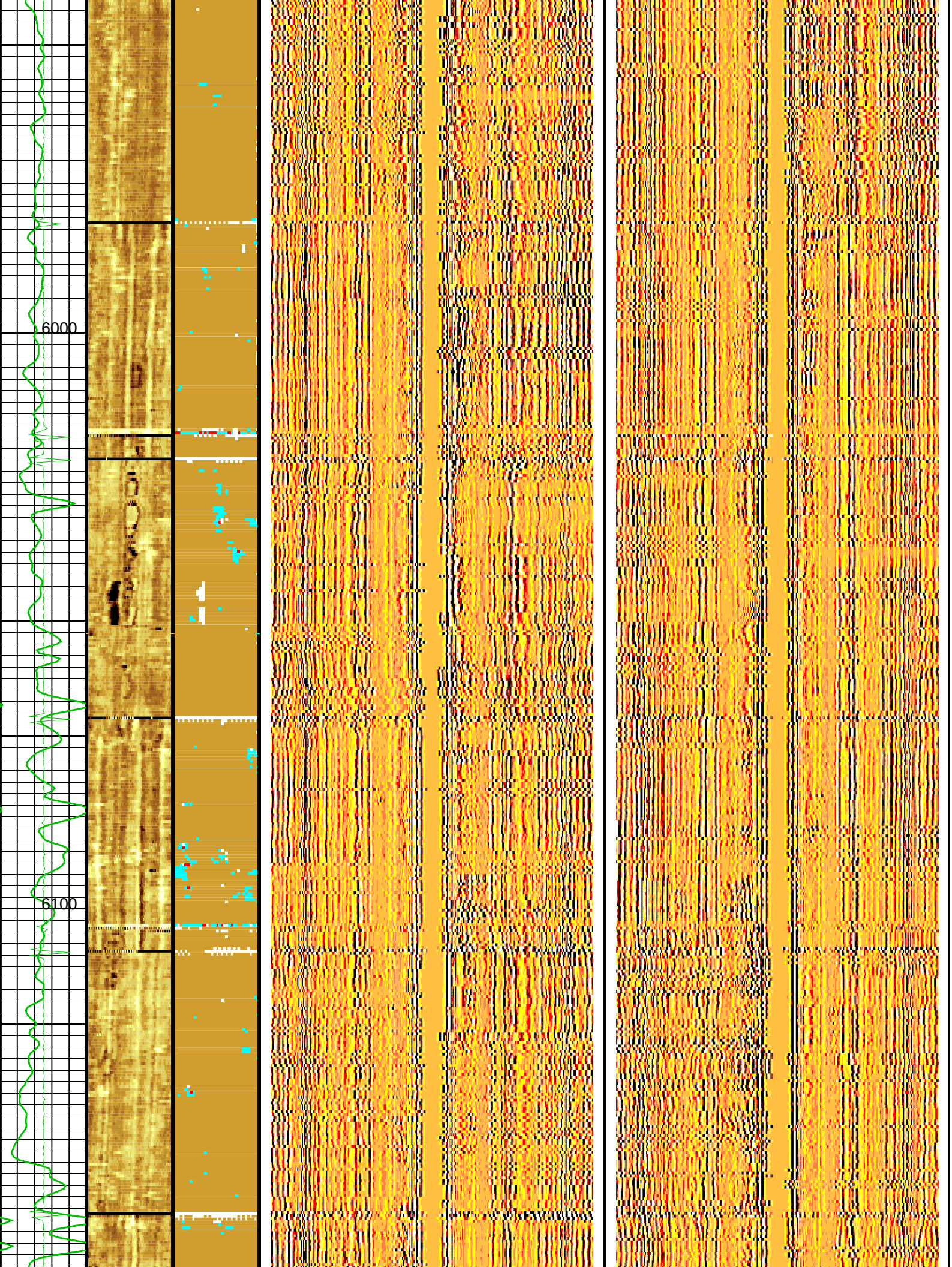
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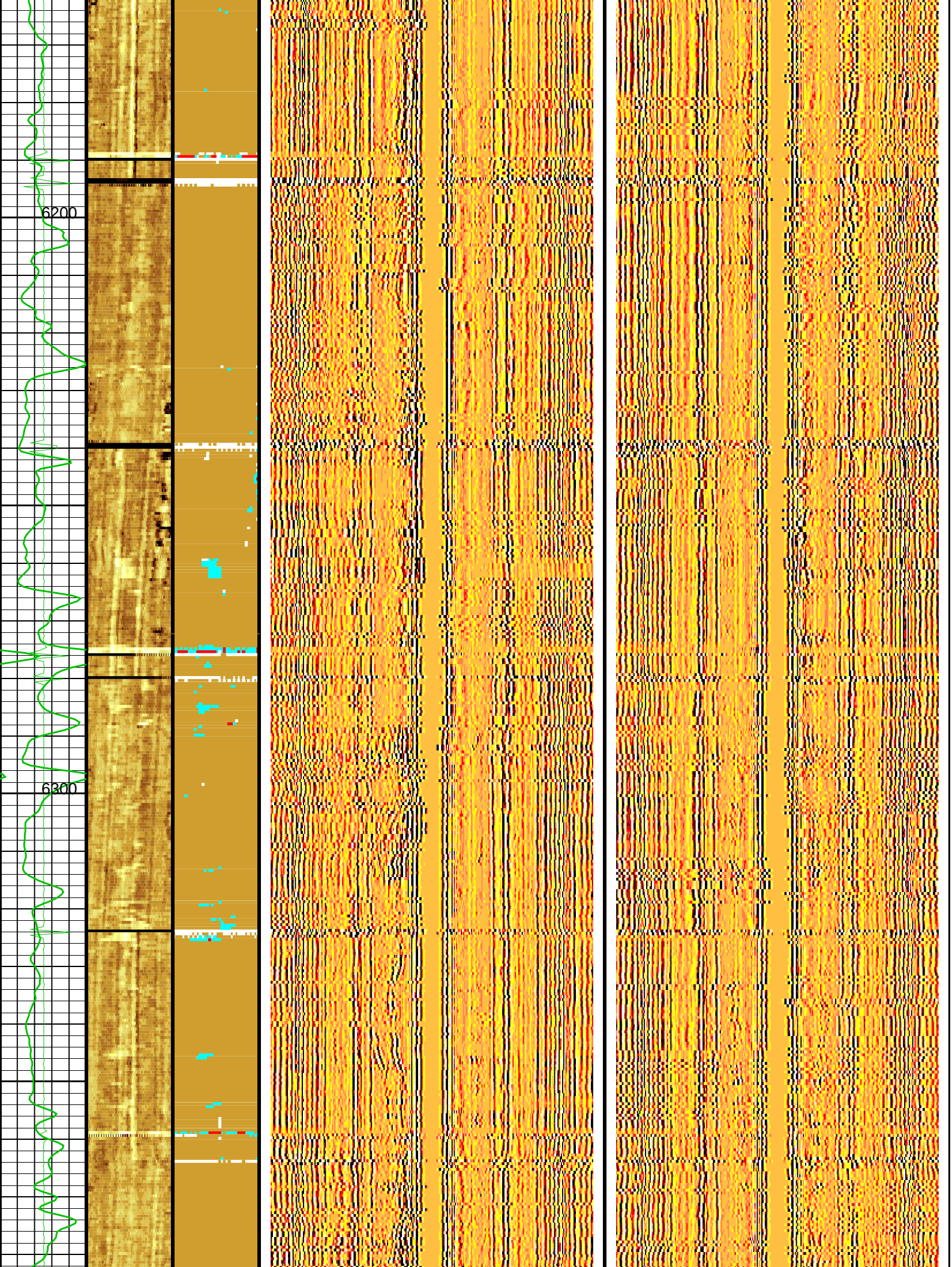
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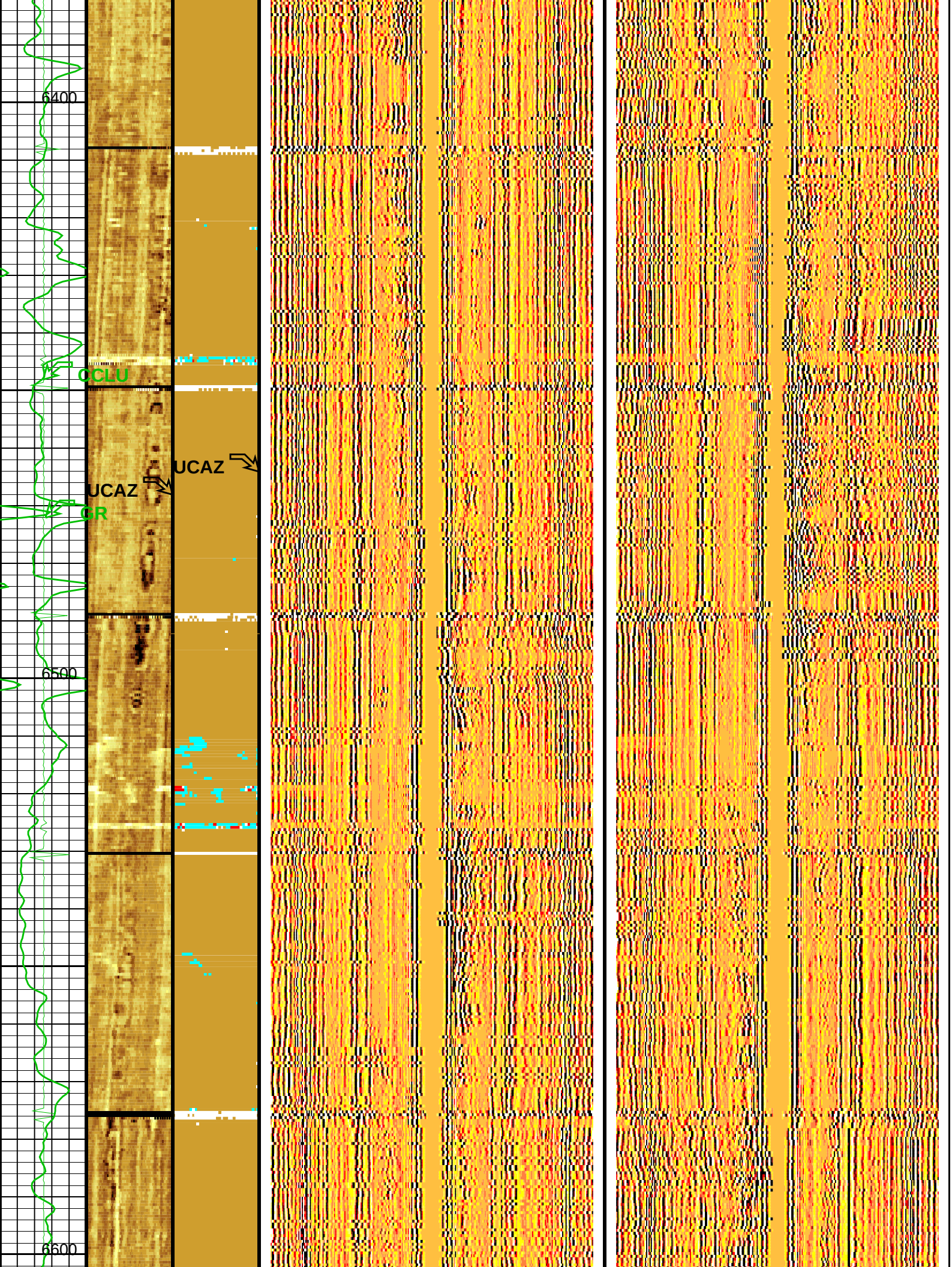
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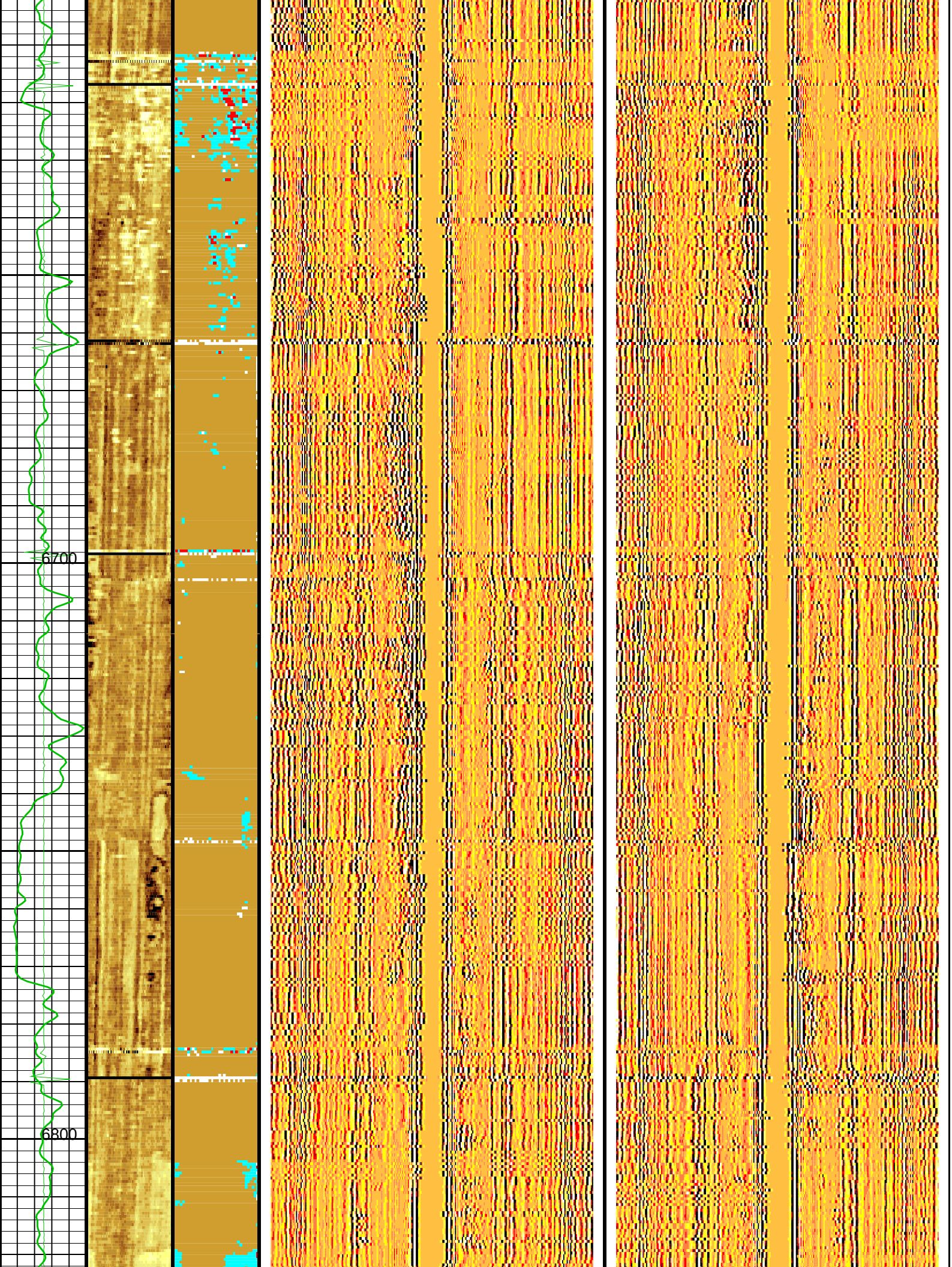
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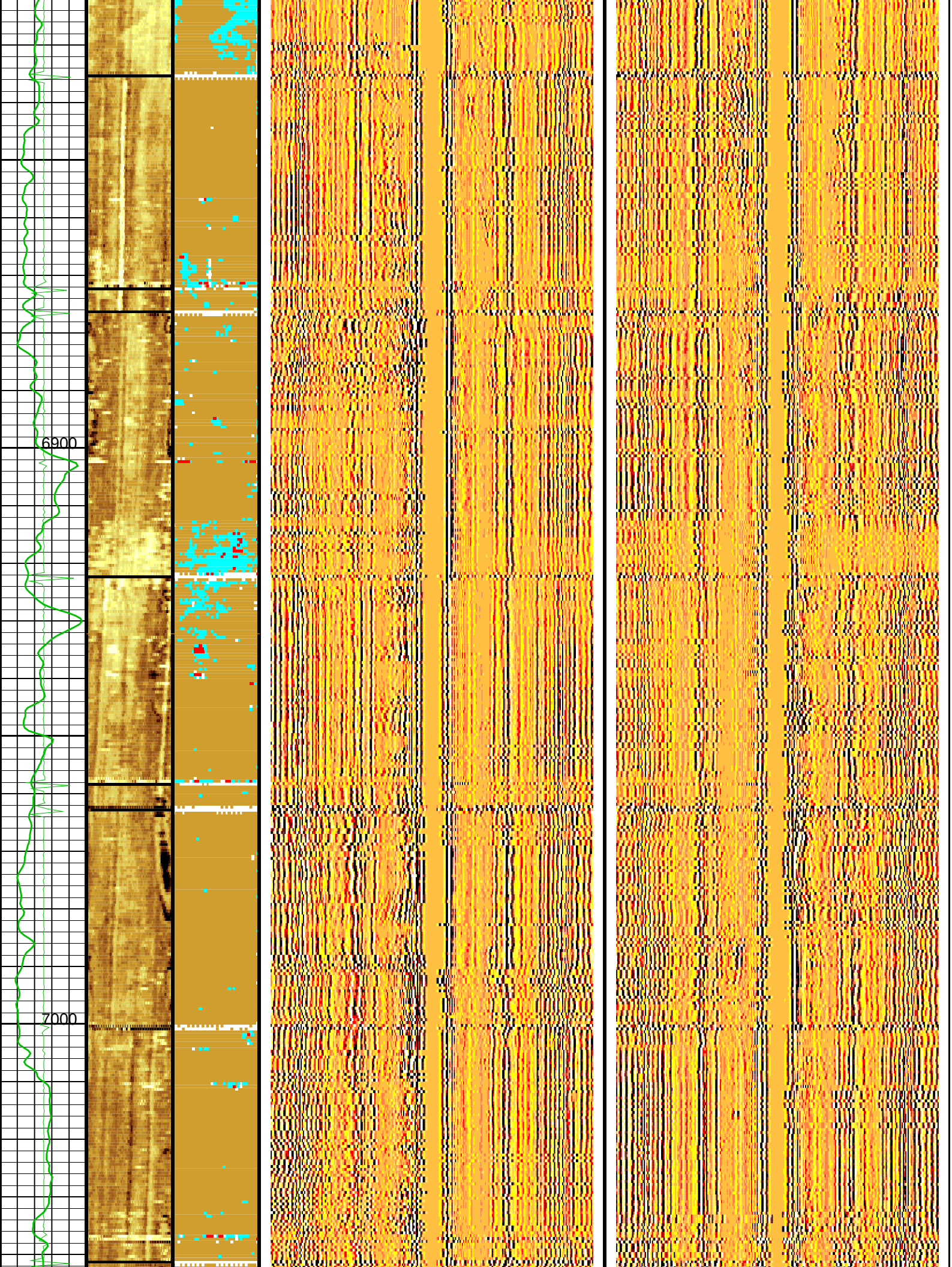
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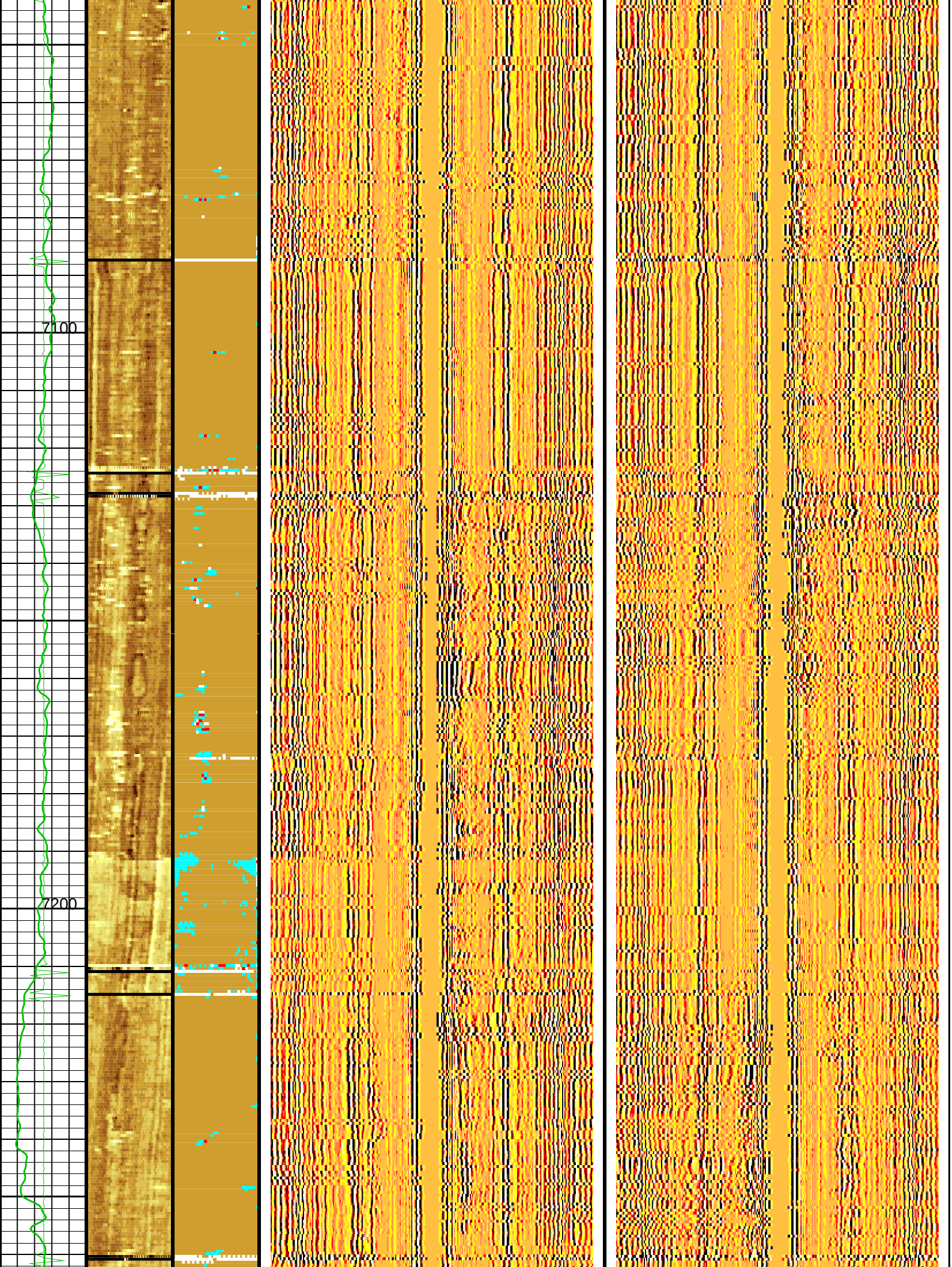
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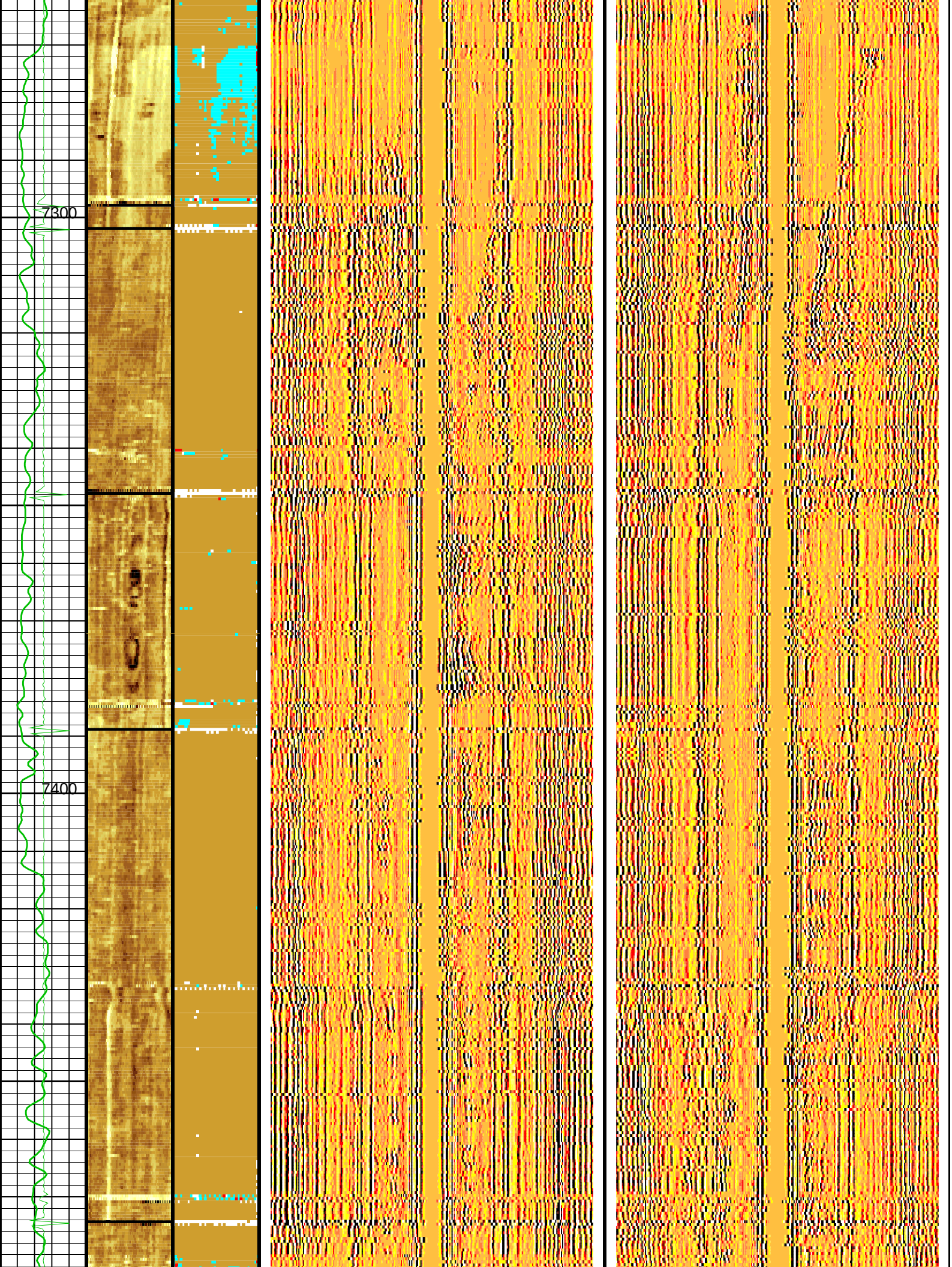
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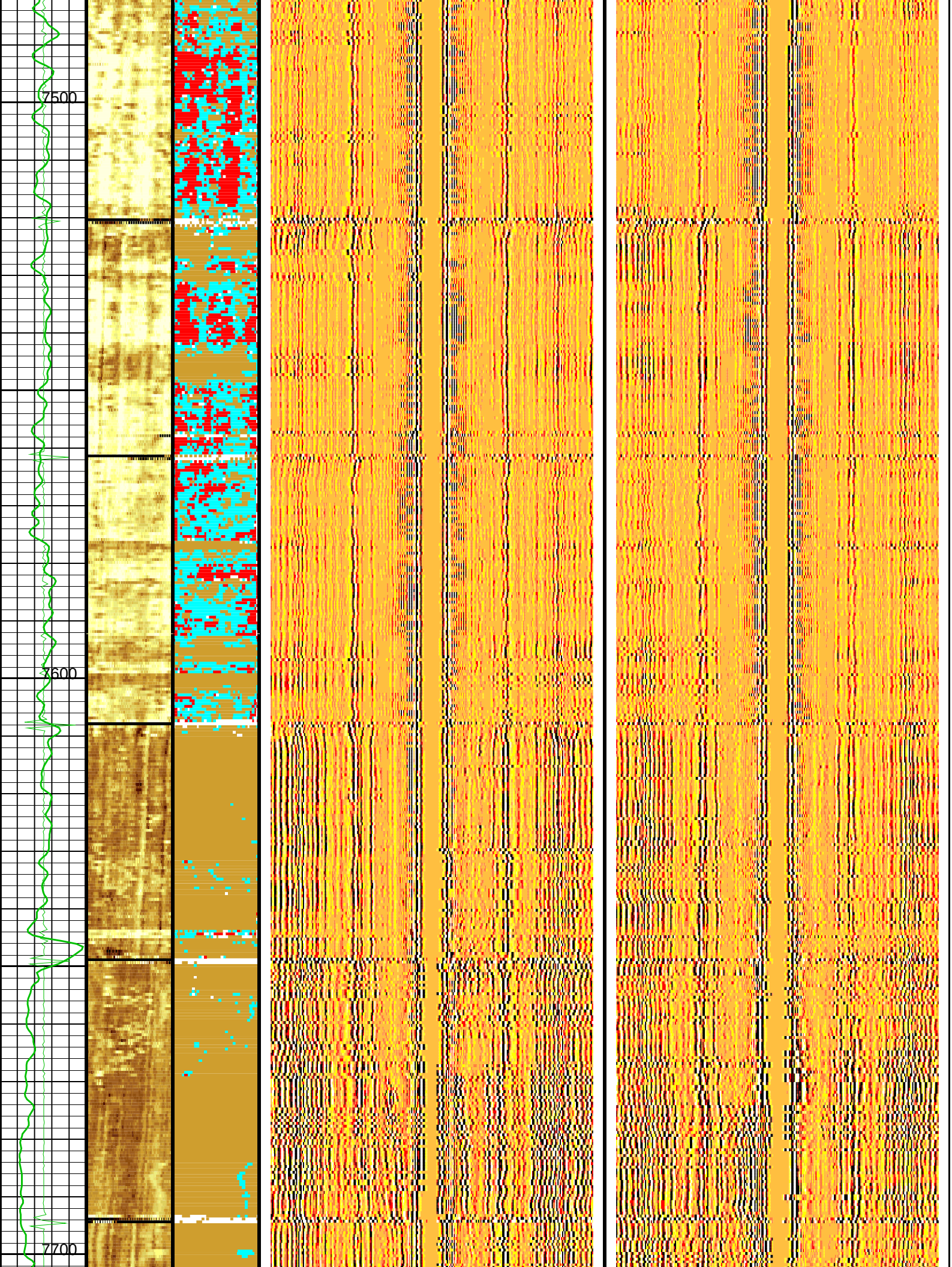
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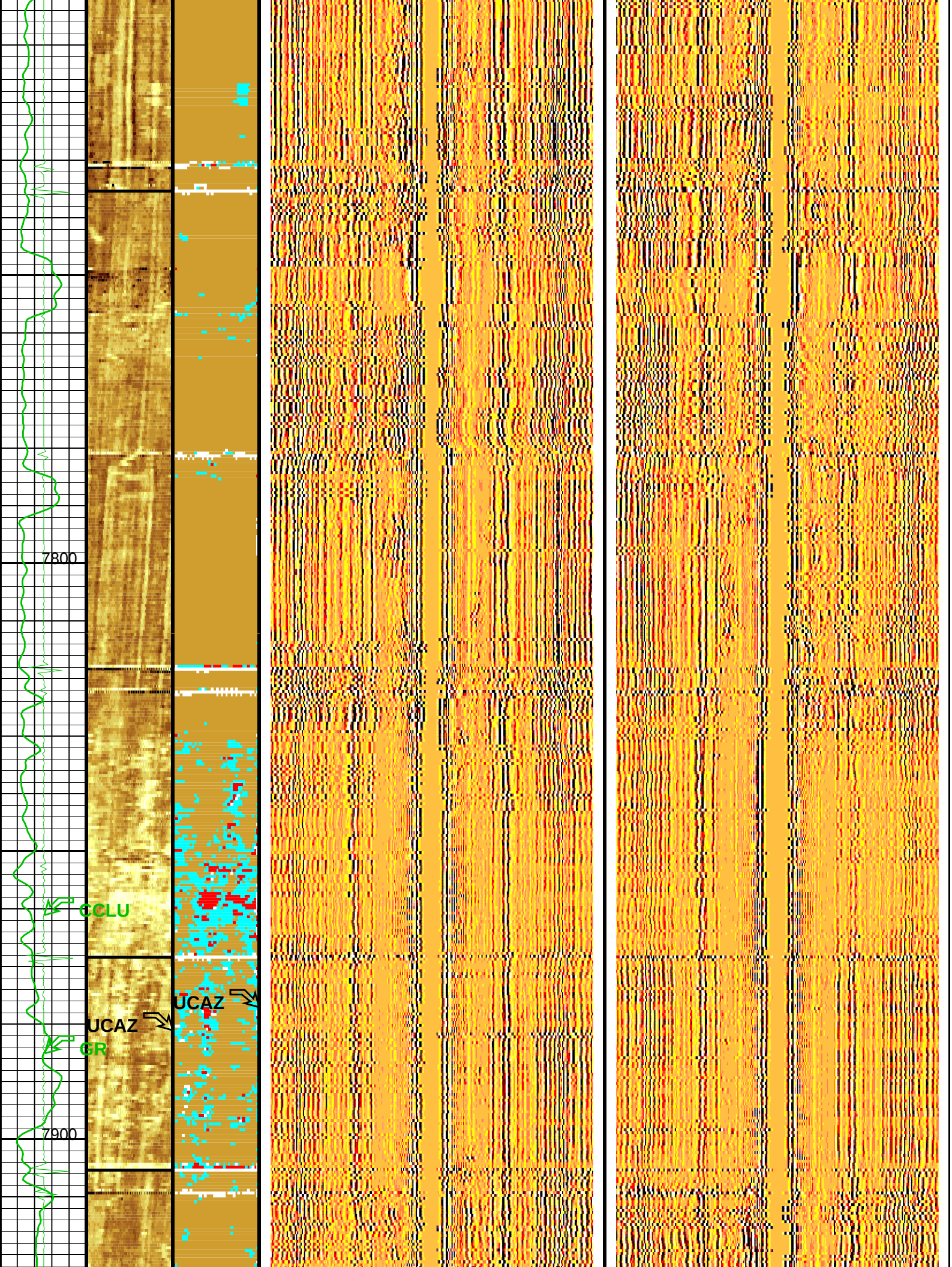
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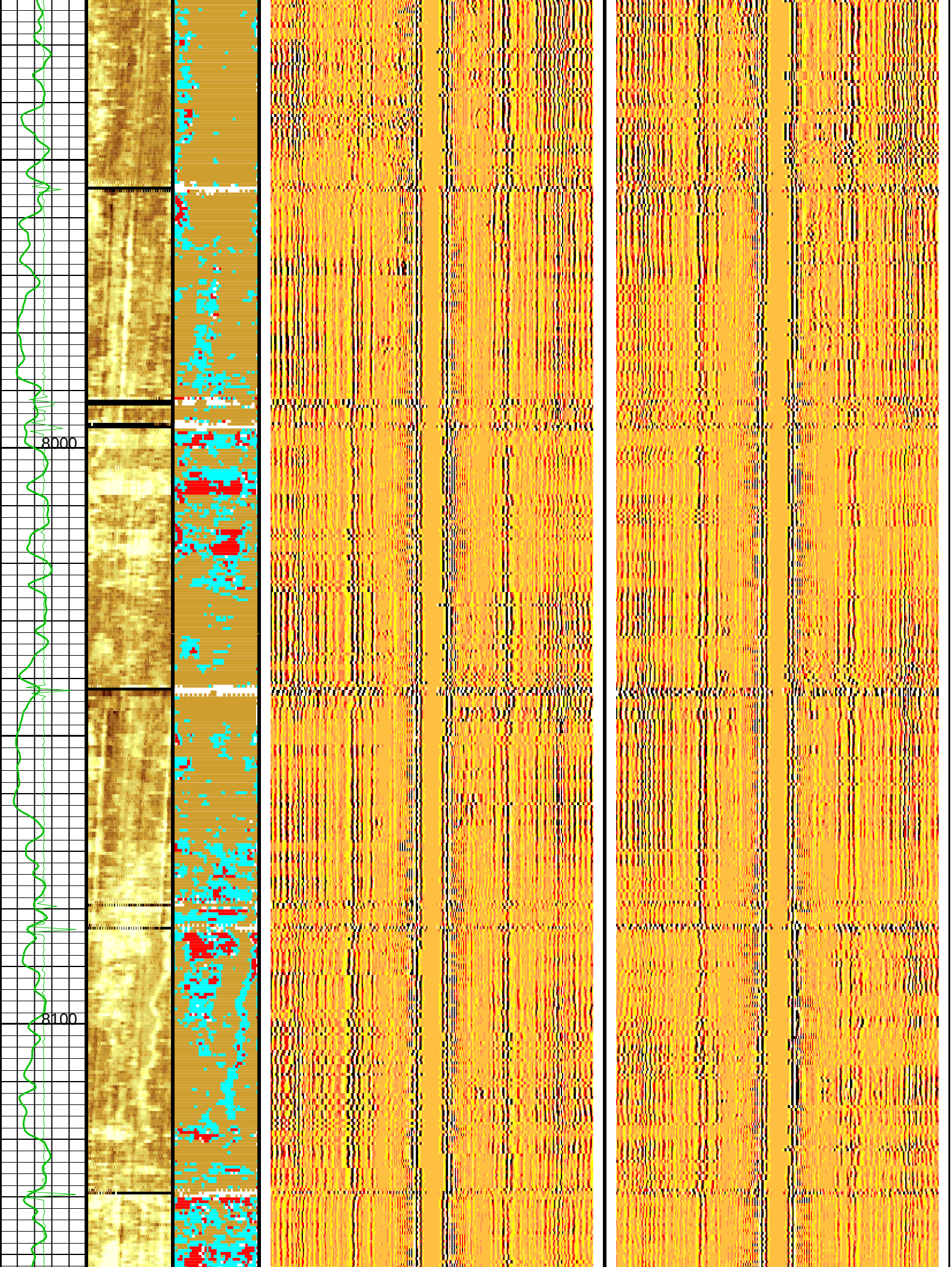
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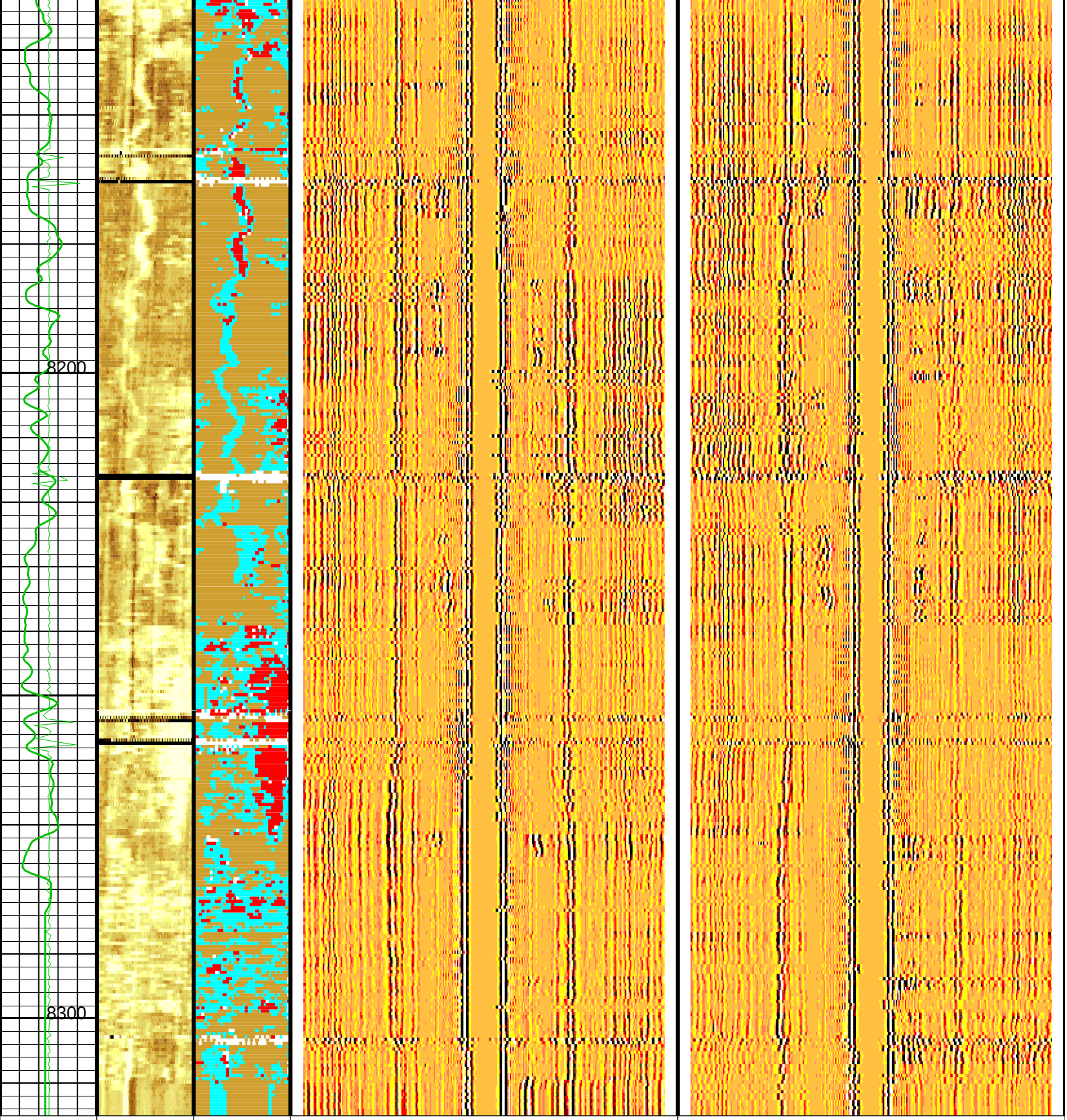

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7.5000
8.0000

Raw

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

	Acoustic Imped. (AIBK) (MRAY)			

Gamma Ray (GR) (GAPI)
0 150

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	80	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	1.75	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
	System and Miscellaneous		
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	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 04:33**

OP System Version: 17C0−154

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

Input DLIS Files

DEFAULT	SPLICE_USI_TLD_MCFL_009	FN:1	PRODUCER	27−Jun−2010 04:26	8315.0 FT	203.5 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:10	PRODUCER	27−Jun−2010 04:33

Schlumberger

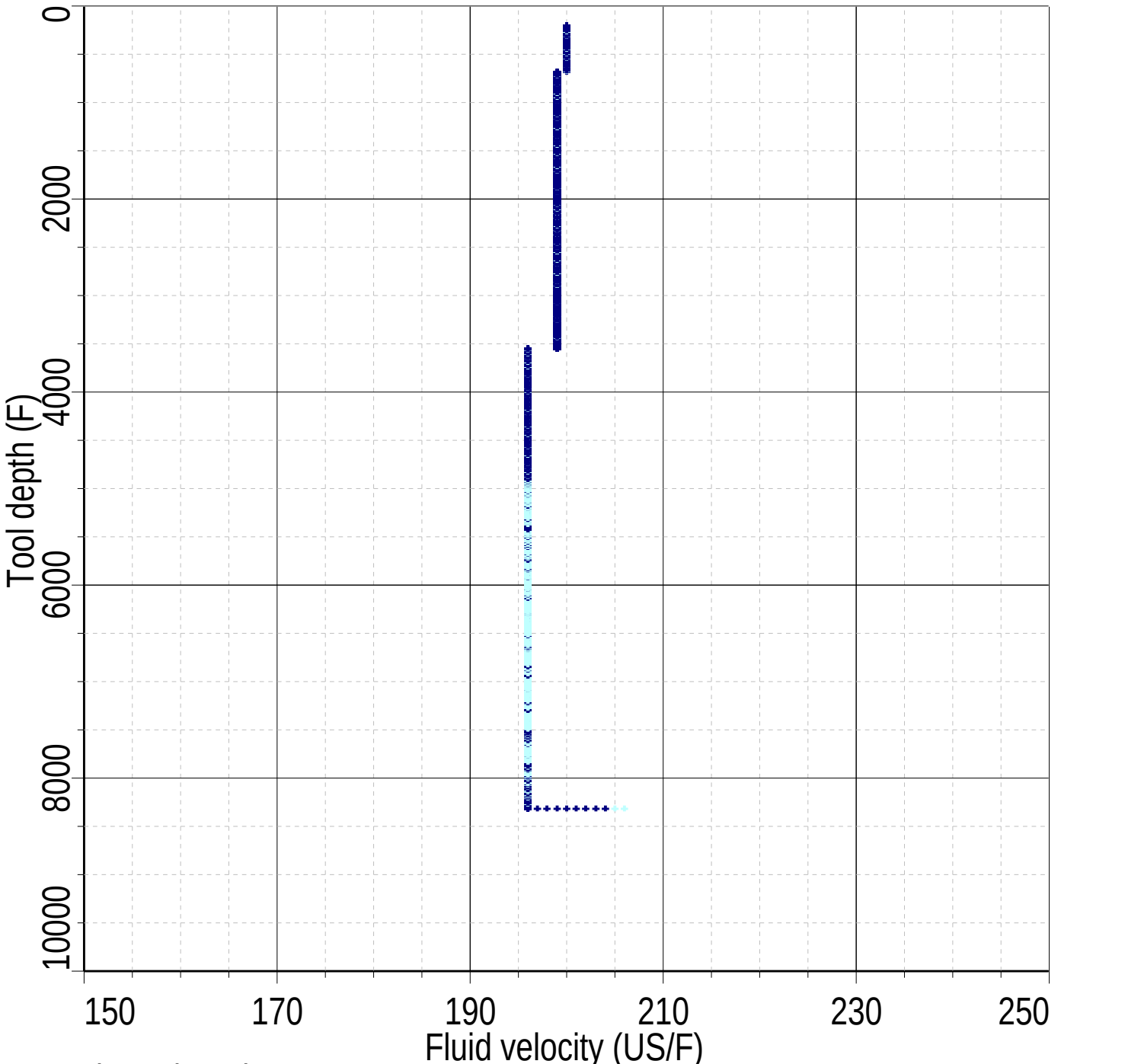
FLUID PROPERTIES

MAXIS Field Log

IBC Inv. Fluid Z QC (−−−−

Index: 8315.0 − 203.5 FT

0. 0.5



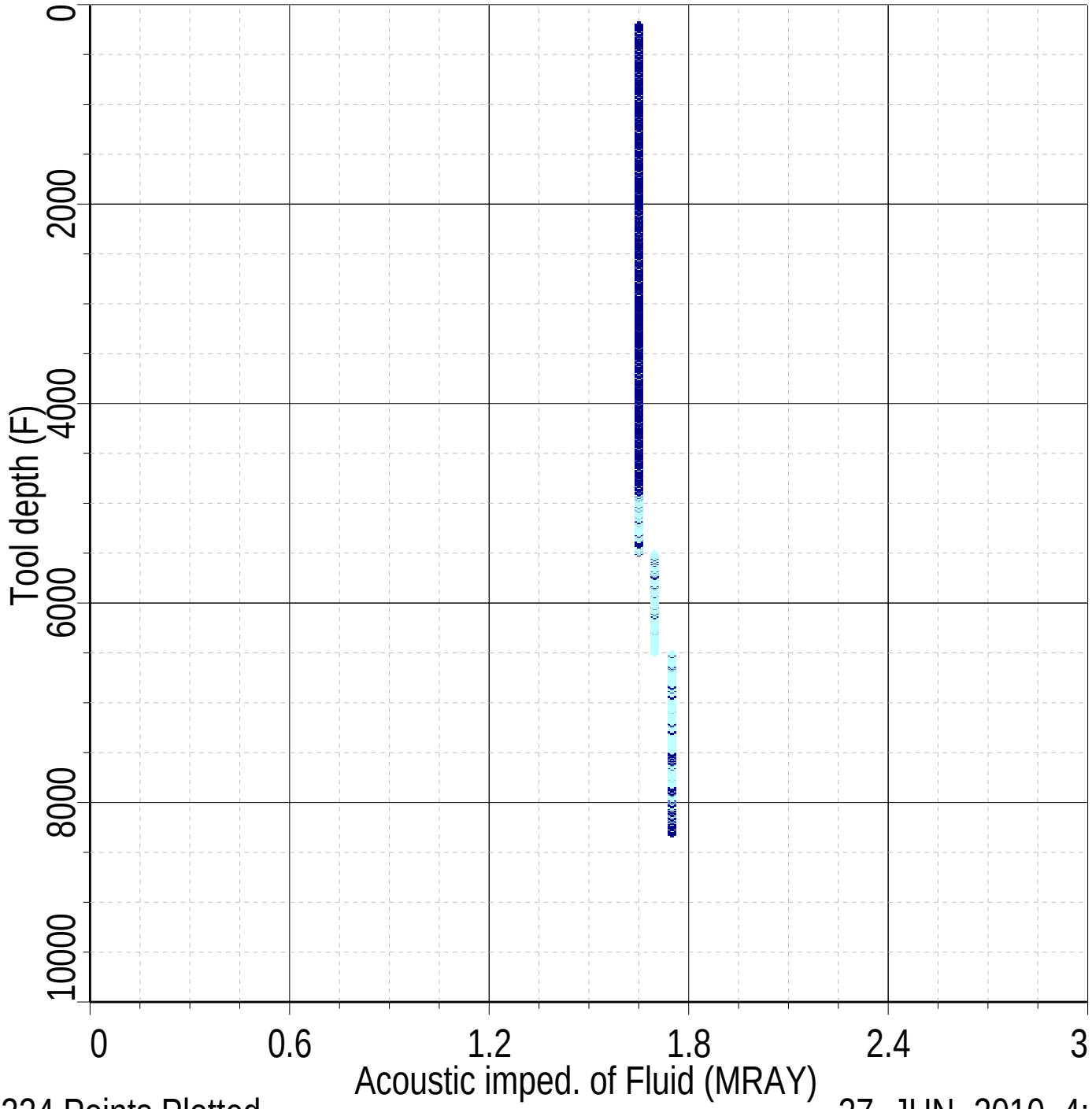
16224 Points Plotted

27−JUN−2010 4:49

IBC Inv. Fluid Z QC (−−−−

Index: 8315.0 − 203.5 FT

0. 0.5



16224 Points Plotted

27−JUN−2010 4:49

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REPEAT PASS

MAXIS Field Log

Company: EXXONMOBIL PRODUCTION CO. **Well: PCU 197−34A9**

Input DLIS Files

Input DLIS Files

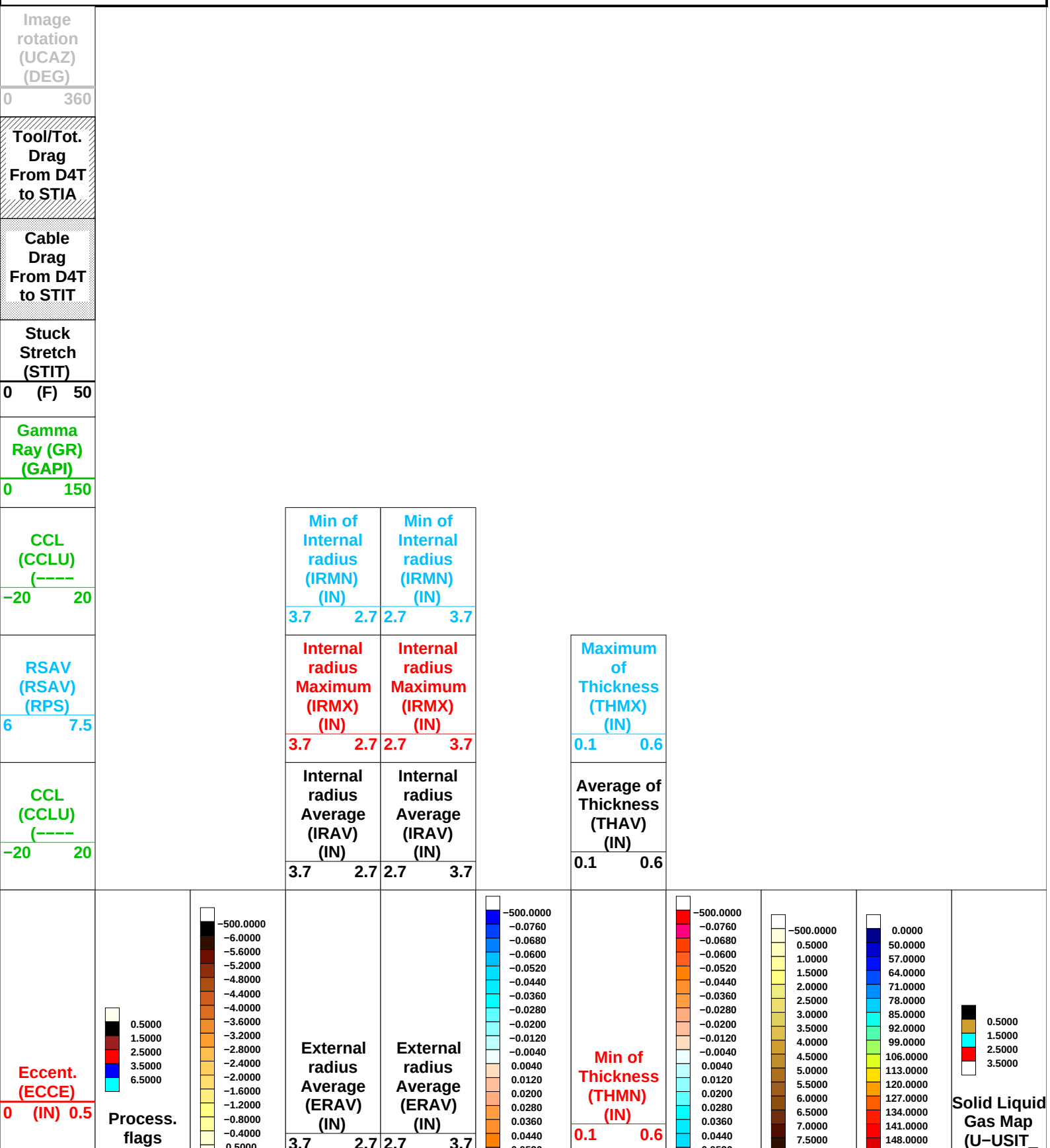
DEFAULT	USI_TLD_MCFL_CNL_003LUP	FN:2	PRODUCER	26−Jun−2010 23:28	8312.5 FT	7993.0 FT

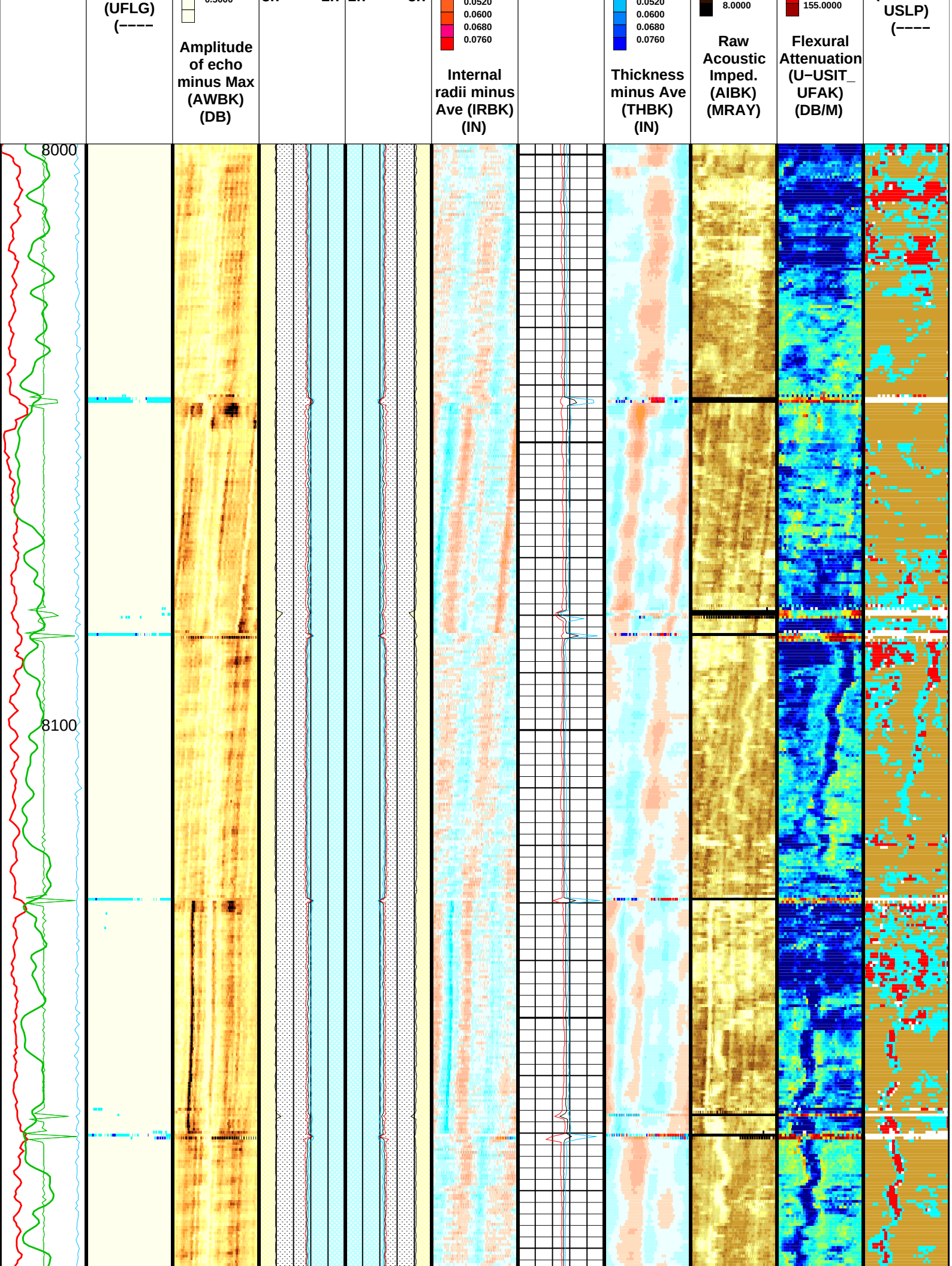
Output DLIS Files

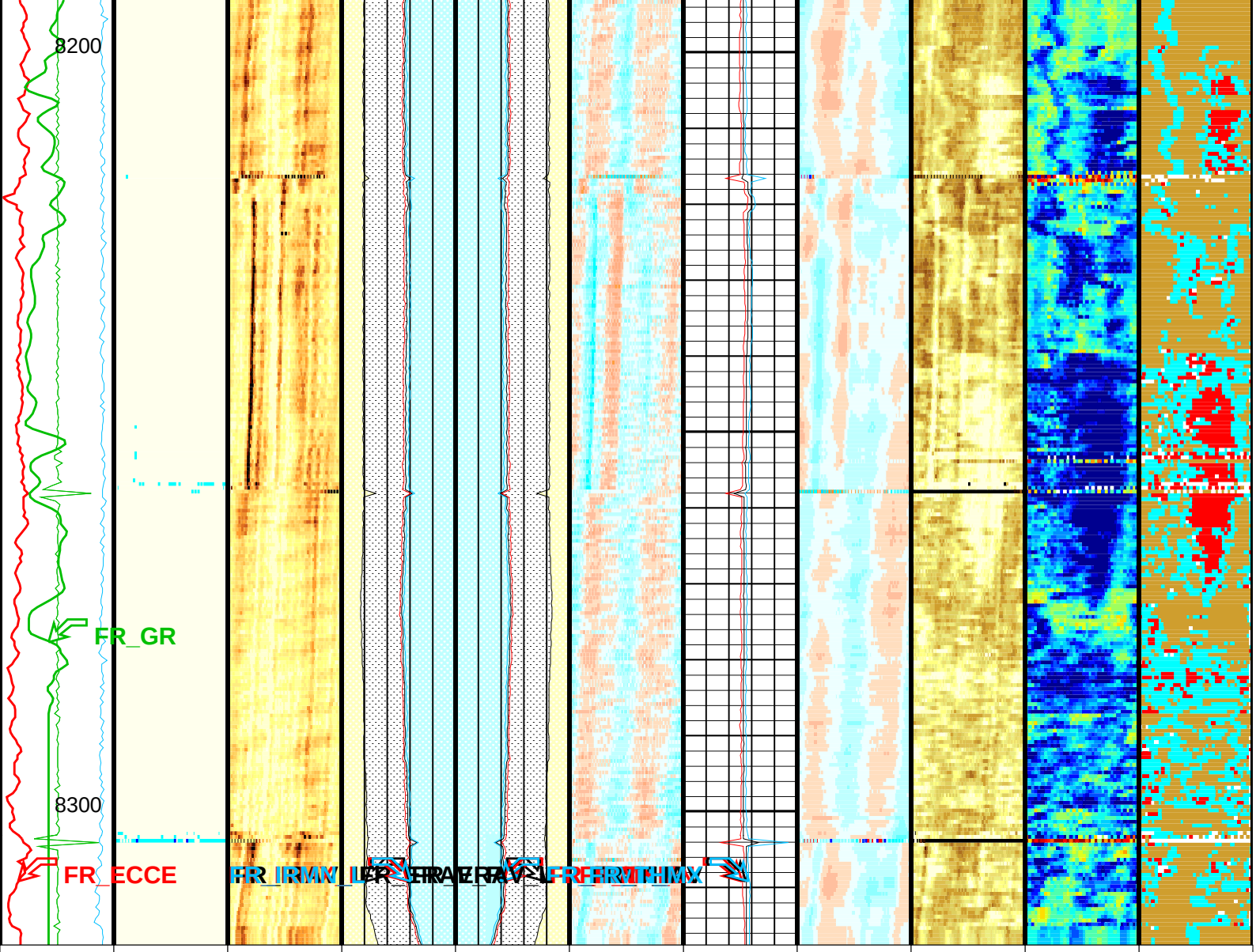
DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 04:17	8317.5 FT	7998.0 FT

OP System Version: 17C0−154

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




(UFLG)
(----
Amplitude of echo minus Max (AWBK) (DB)
0.0520
0.0600
0.0680
0.0760
Internal radii minus Ave (IRBK) (IN)
0.0520
0.0600
0.0680
0.0760
Thickness minus Ave (THBK) (IN)
8.0000
Raw Acoustic Imped. (AIBK) (MRAY)
155.0000
Flexural Attenuation (U-USIT_ UFAK) (DB/M)
USLP)
(----
8000
8100



Eccent. (ECCE) 0 (IN) 0.5	Process. flags (UFLG) (---- 0.5000 1.5000 2.5000 3.5000 6.5000	Amplitude of echo minus Max (AWBK) (DB) −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	External radius Average (ERAV) (IN) 3.7 2.7	External radius Average (ERAV) (IN) 2.7 3.7	Internal radii minus Ave (IRBK) (IN) −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	Min of Thickness (THMN) (IN) 0.1 0.6	Thickness minus Ave (THBK) (IN) −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	Raw Acoustic Imped. (AIBK) (MRAY) −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	Flexural Attenuation (U−USIT_ UFAK) (DB/M) 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	Solid Liquid Gas Map (U−USIT_ USLP) (---- 0.5000 1.5000 2.5000 3.5000
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)			Internal radius Maximum	Internal radius Maximum		Maximum of Thickness				

(RPS)	
6	7.5

CCL (CCLU) (-----	
−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

(IRMX) (IN)	
3.7	2.7

(IRMX) (IN)	
2.7	3.7

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

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

(THMX) (IN)	
0.1	0.6

Format: USI_IBC_SLG_Composite **Vertical Scale: 5" per 100'** **Graphics File Created: 27−Jun−2010 04:17**

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	80	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	1.75	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	8421.00	FT
TDL	Total Depth − Logger	8310.00	FT
	System and Miscellaneous		
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	5.0	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_003LUP	FN:2	PRODUCER	26−Jun−2010 23:28	8312.5 FT	7993.0 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	27−Jun−2010 04:17

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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							
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

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 197−34A9**
Field: **PICEANCE CREEK**
County: **RIO BLANCO**
State: **CO**

IMAGING BEHIND CASING
GAMMA RAY
CCLU