Schlumberger

Company: University of Utah

Well: MU-ESW1

Field: None

County: Beaver State: Utah

Isolation Scanner - CBL VDL

Cement Evaluation

Gamma Ray - CCL Log

County: Beaver
Field: None
Location: Sec. 32, T26S, R9W
Well: MU-ESW1
Company: University of Utah

Location:			
Sec. 32, T26S, R9W		Elev.: K.B.	5557.50 ft
304 FNL, 522 FEL		G.L.	5536.00 ft
Lat: 38.500562 / Long: -112.887025		D.F.	5556.50 ft
Permanent Datum:	Ground Level	Elev.:	5536.00 f
Log Measured From:	Kelly Bushing	21.50 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	Section:	Township:	Range:
1771001M00	32	26S	9W

Logging Date	19-Sep-2017		
Run Number	One		
Depth Driller	7536.00 ft		
Schlumberger Depth	7350.00 ft		
Bottom Log Interval	7350.00 ft		
Top Log Interval	200.00 ft		
Casing Fluid Type	Water		
Salinity	500 ppm		
Density	8.4 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.75 in		
From	2172.00 ft		
To	7536.00 ft		
Casing/Tubing Size	7 in		
Weight	29 lbm/ft		
Grade	N80		
From	0.00 ft		
To	7374.00 ft		
Max Recorded Temperatures	288 degF		
Logger on Bottom Time	19-Sep-2017	21:38:00	
Unit Number Location:	9108	Fort Morgan	
Recorded By	Brandon Makinson		
Witnessed By	Randy Baldwin		

Disclaimer

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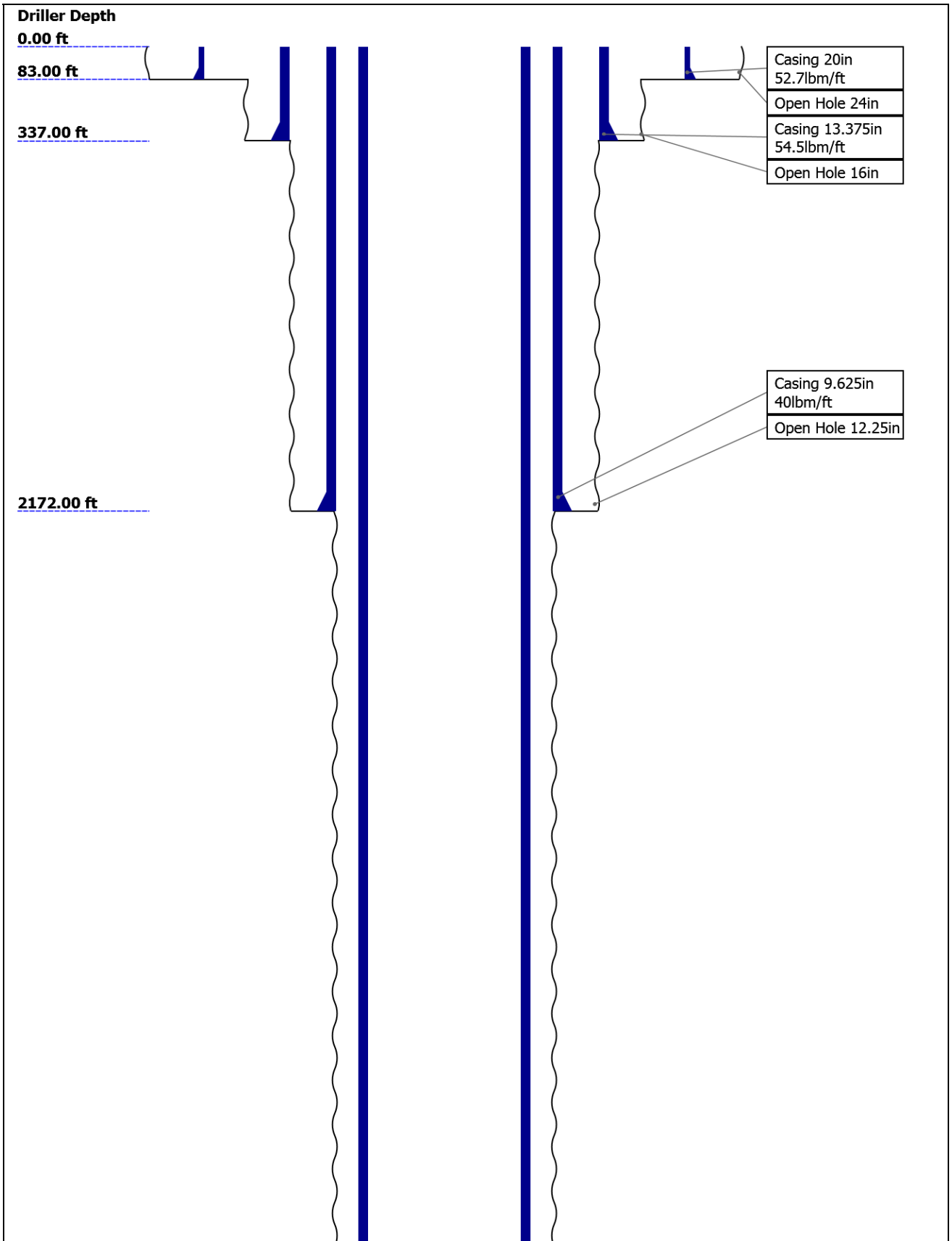
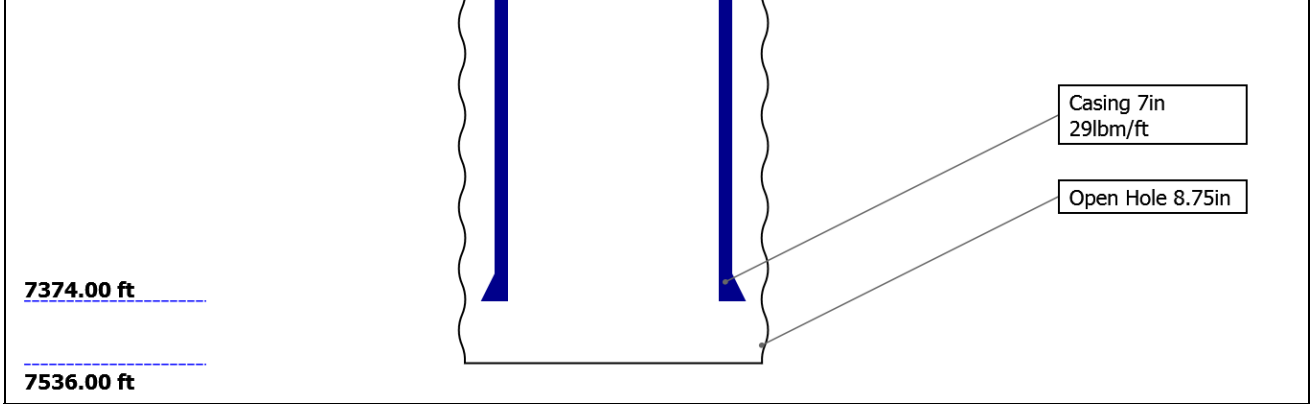
12.1 Integration Summary
12.2 Software Version
12.3 Composite Summary
12.4 Log (IBC SLG VDLCBL)
12.5 Parameter Listing
13. Xyz (Import of IBC Fluid Acoustic Slowness vs Depth 6.0 in)

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	24	16	12.25	8.75		
Top Driller (ft)	0	83	337	2172		
Top Logger (ft)	0	83	337	2172		
Bottom Driller (ft)	83	337	2172	7536		
Bottom Logger (ft)	83	337	2172	7536		
Casing						
Size (in)	20	13.375	9.625	7		
Weight (lbm/ft)	52.7	54.5	40	29		
Inner Diameter (in)	19.512	12.615	8.835	6.184		
Grade	N/A	N/A	N/A	N80		
Top Driller (ft)	0	0	0	0		
Top Logger (ft)	0	0	0	0		
Bottom Driller (ft)	83	337	2172	7374		
Bottom Logger (ft)	83	337	2172	7374		

Operational Run Summary

Parameter (unit)	One					
Date Log Started	19-Sep-2017					
Time Log Started	20:52:24					
Date Log Finished	20-Sep-2017					
Time Log Finished	03:34:54					
Top Log Interval (ft)	200.00					
Bottom Log Interval (ft)	7350.00					
Total Depth (ft)	7350.00					
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.750					
Logging Unit Number	9108					
Logging Unit Location	Fort Morgan					
Recorded By	Brandon Makinson					

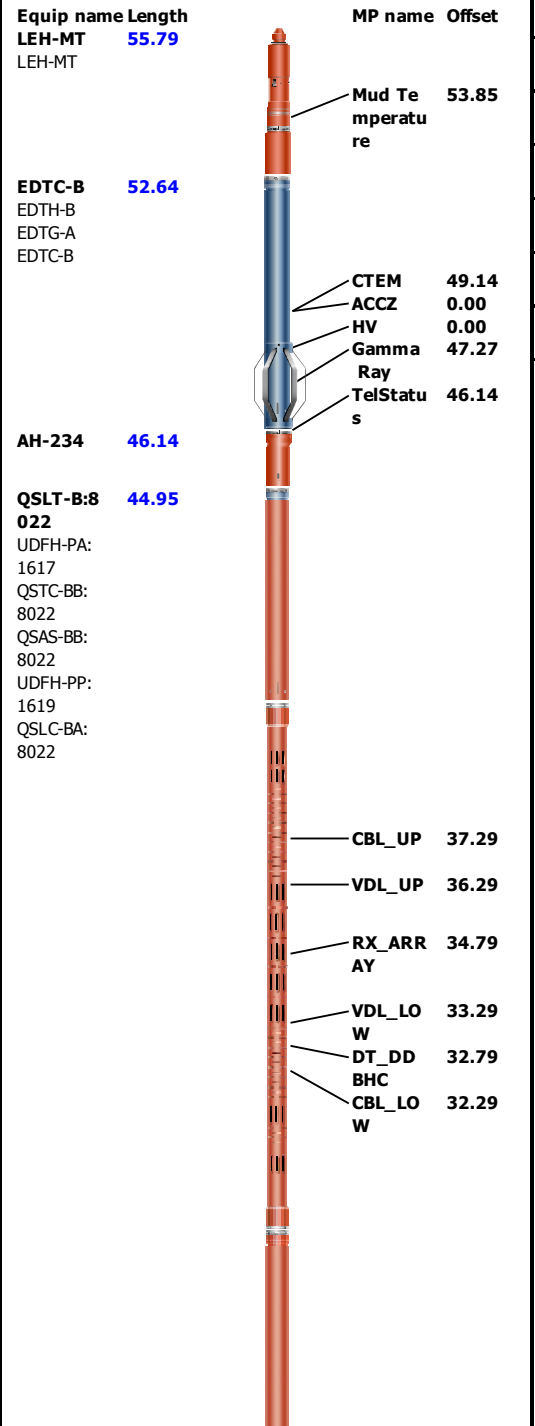
Witnessed By	Randy Baldwin					
Service Order Number						

Borehole Fluids

Parameter(unit)	One					
Fluid Type	Water					
Max Recorded Temperatures (degF)	288					
Salinity (ppm)	500					
Density (lbm/gal)	8.4					
Date Logger on Bottom	19-Sep-2017					
Time Logger on Bottom	21:38:00					
Total Solid (%)						
High Gravity Solids (%)						

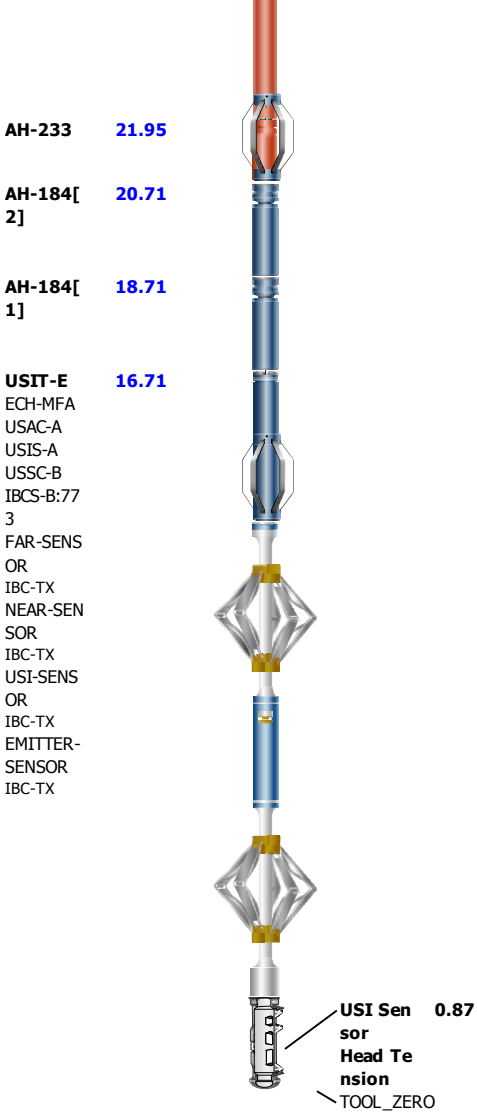
Remarks and Equipment Summary

One: Toolstring



One: Remarks

Toolstring run as per tool sketch.
13.5 ppg lead, 15 ppg tail
IBC resolution - 10 deg, 6 inch
0 psi repeat, 1000 psi main
BHT 288 deg F
Estimated TOC 3000 ft
CBL Amplitude inconsistent above 2400 ft.



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

Depth Summary

	One		
Depth Measuring Device			
Type	IDW-JA		
Serial Number	6433		
Calibration Date	14-Sep-2016		
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		
Tension Device			
Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		
Logging Cable			
Type	7-39AI-XXS		

Serial Number			
Length	22150.00 ft		
Conveyance Type	Wireline		
Rig Type	Triple		

One:Depth Control Parameters		Depth Control Remarks
Log Sequence	Subsequent Trip To the Well	All Schlumberger depth control procedures followed.
Reference Log Name	Triple Combo	IDW used as primary depth control.
Reference Log Run Number	One	Z-Chart used as secondary depth control.
Reference Log Date	15-Sep-2017	Correlated to GR peak at 6710 ft.
Subsequent Trip Down Log Correction		

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[3]:Up	7351.16	2389.7

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)

Mud Impedance = "FreePipe Norm.".
Free Pipe normalization zone is : 627.12m(2057.49ft) to 635.38m(2084.58ft)
MUD_N_FRP = 1.23
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.81 MRayl

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

Main

IBC SLG CBL VDL

Software Version

Acquisition System	Version
Maxwell 2017 SP1	7.1.82245.3100
Application Patch	Wireline_NPD-ICE2-2017SP1_7.1.87324

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	2389.70 ft	7351.16 ft	19-Sep-2017 9:49:27 PM	20-Sep-2017 12:32:18 AM	ON	1.08 ft	Yes
One	Log[10]:Up	Up	198.63 ft	2425.21 ft	20-Sep-2017 2:23:57 AM	20-Sep-2017 3:34:06 AM	ON	2.08 ft	Yes

All depths are referenced to toolstring zero

Log

Company:University of Utah Well:MU-ESW1 Main:S036

Description: USI IBC SLG Format: Log (IBC SLG VDLCBL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Sep-2017 12:22:57

TIME_1900 - Time Marked every 60.00 (s)

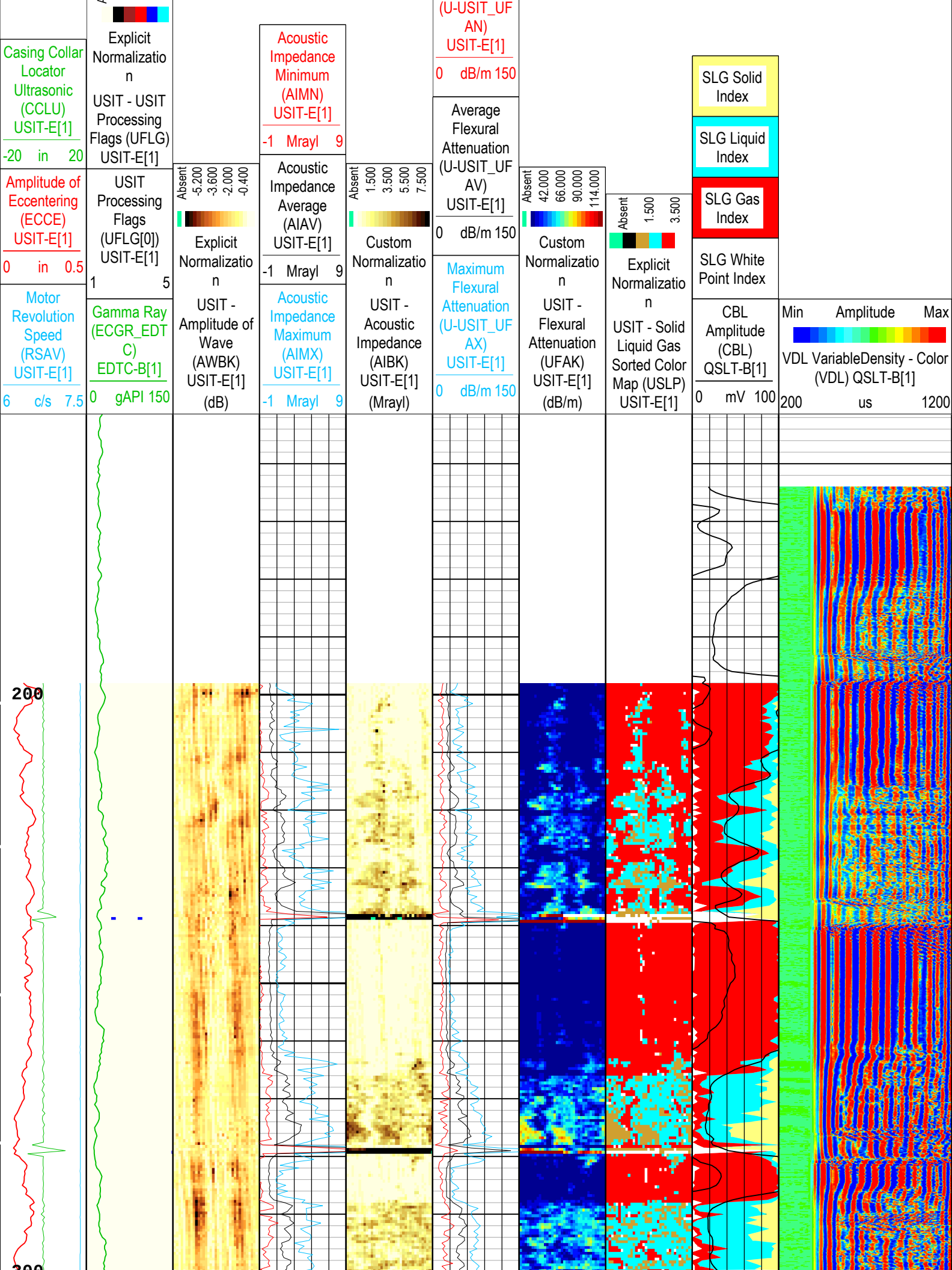
USIT Processing Flags (UFLG[0]) USIT-E[1]

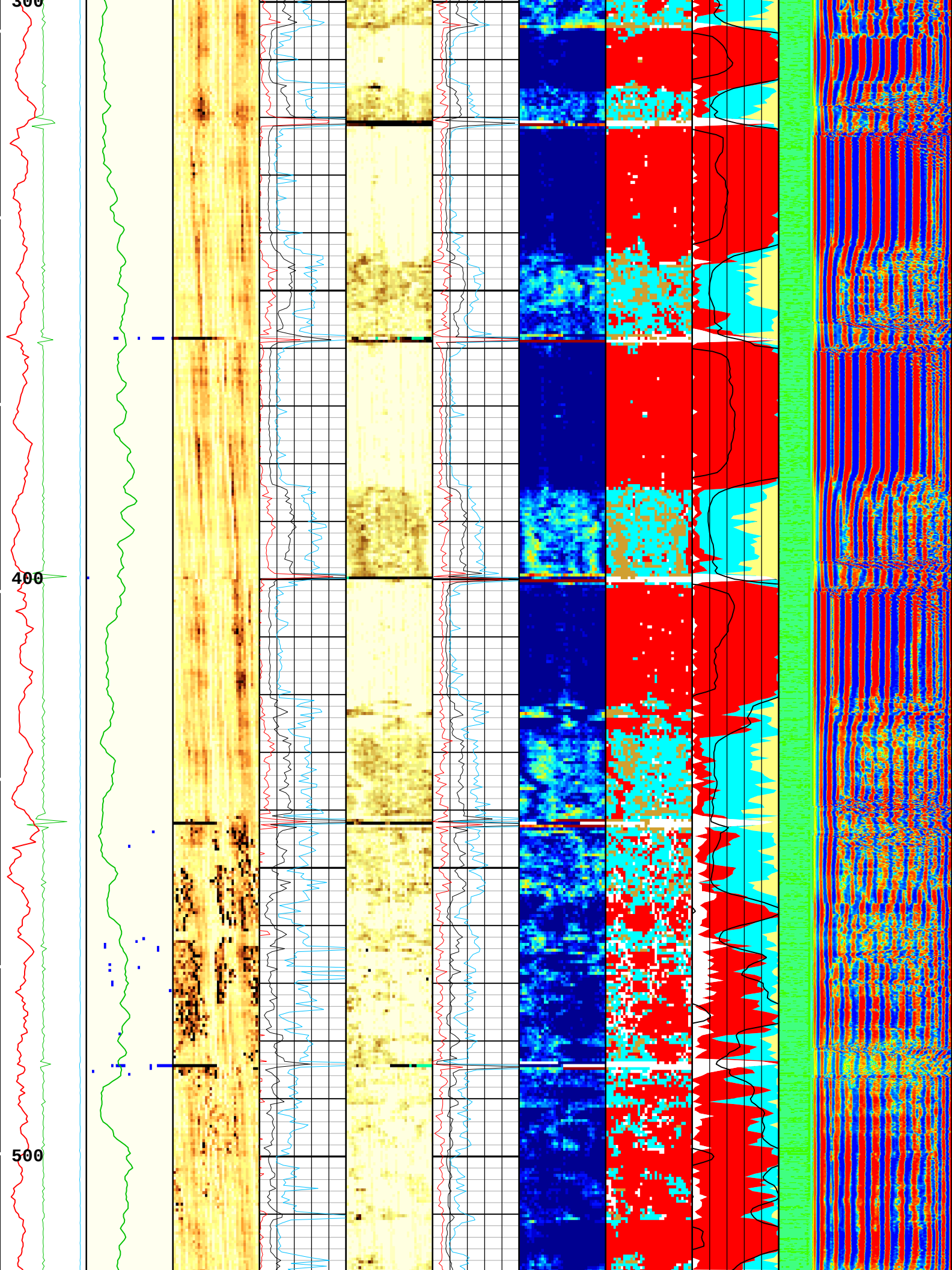
1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

Absent
1.500
3.500

Minimum Flexural Attenuation


Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-20 in 20
Amplitude of Eccentering (ECCE) USIT-E[1]
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 7.5
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]
USIT Processing Flags (UFLG[0]) USIT-E[1]
1 5
Gamma Ray (ECGR_EDTC) EDTC-B[1]
0 gAPI 150
Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E[1] (dB)
Acoustic Impedance Minimum (AIMN) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Maximum (AIMX) USIT-E[1]
-1 Mrayl 9
Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)
(U-USIT_UFAN) USIT-E[1]
0 dB/m 150
Average Flexural Attenuation (U-USIT_UFAV) USIT-E[1]
0 dB/m 150
Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E[1]
0 dB/m 150
Absent 42.000 66.000 90.000 114.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E[1] (dB/m)
Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E[1]
SLG Solid Index
SLG Liquid Index
SLG Gas Index
SLG White Point Index
CBL Amplitude (CBL) QSLT-B[1]
0 mV 100
Min Amplitude Max
VDL VariableDensity - Color (VDL) QSLT-B[1]
200 us 1200
200
300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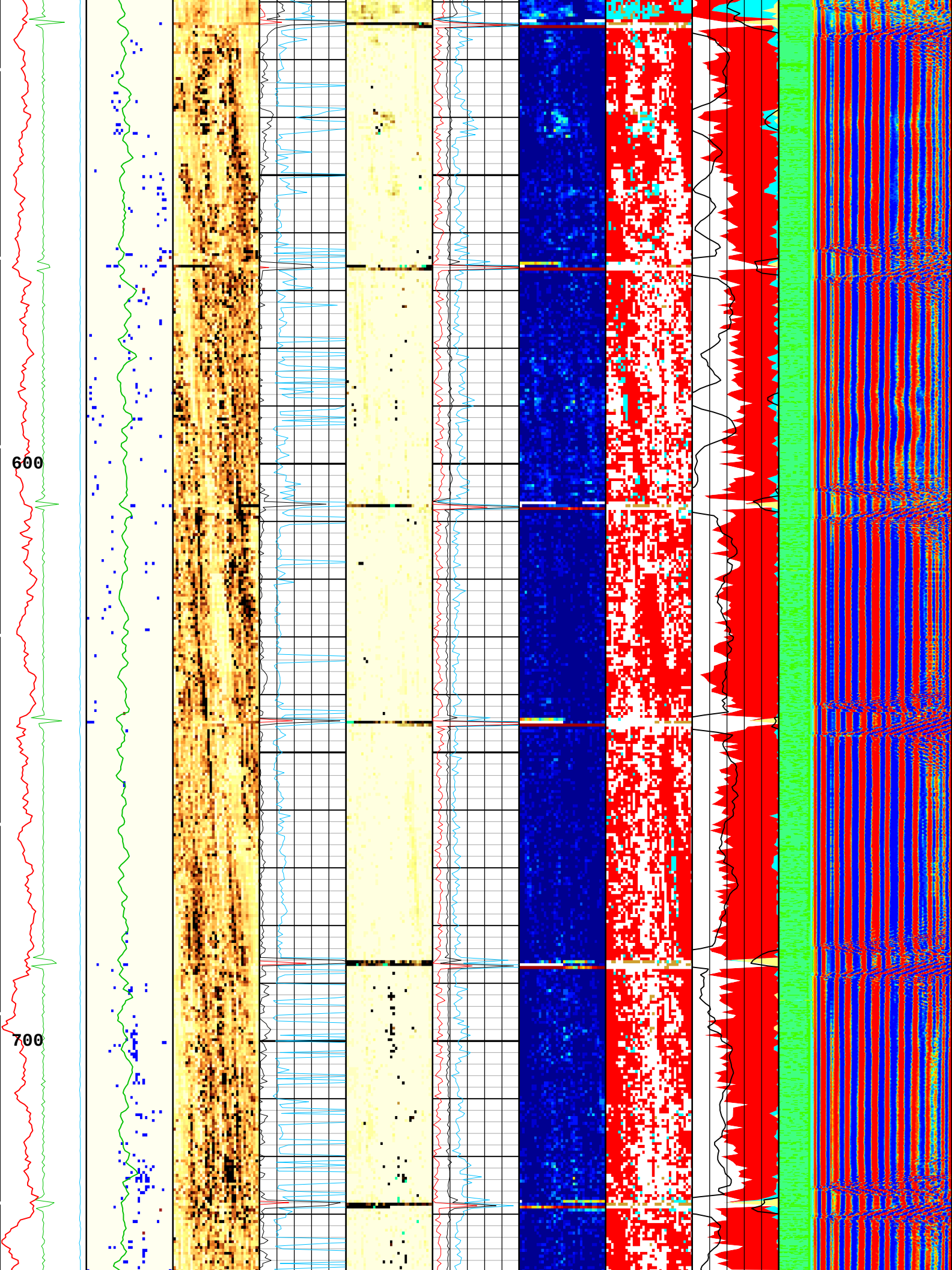
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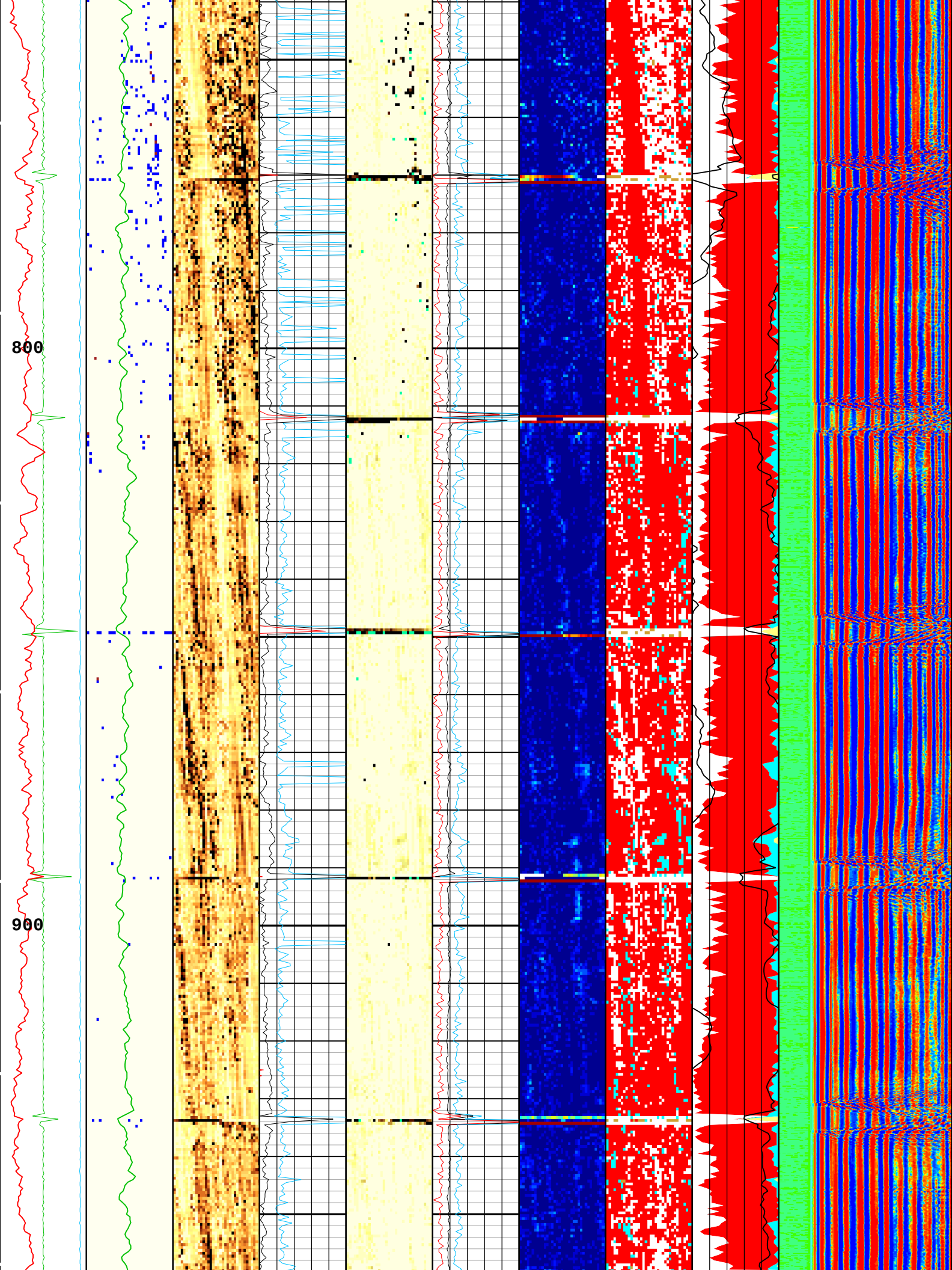
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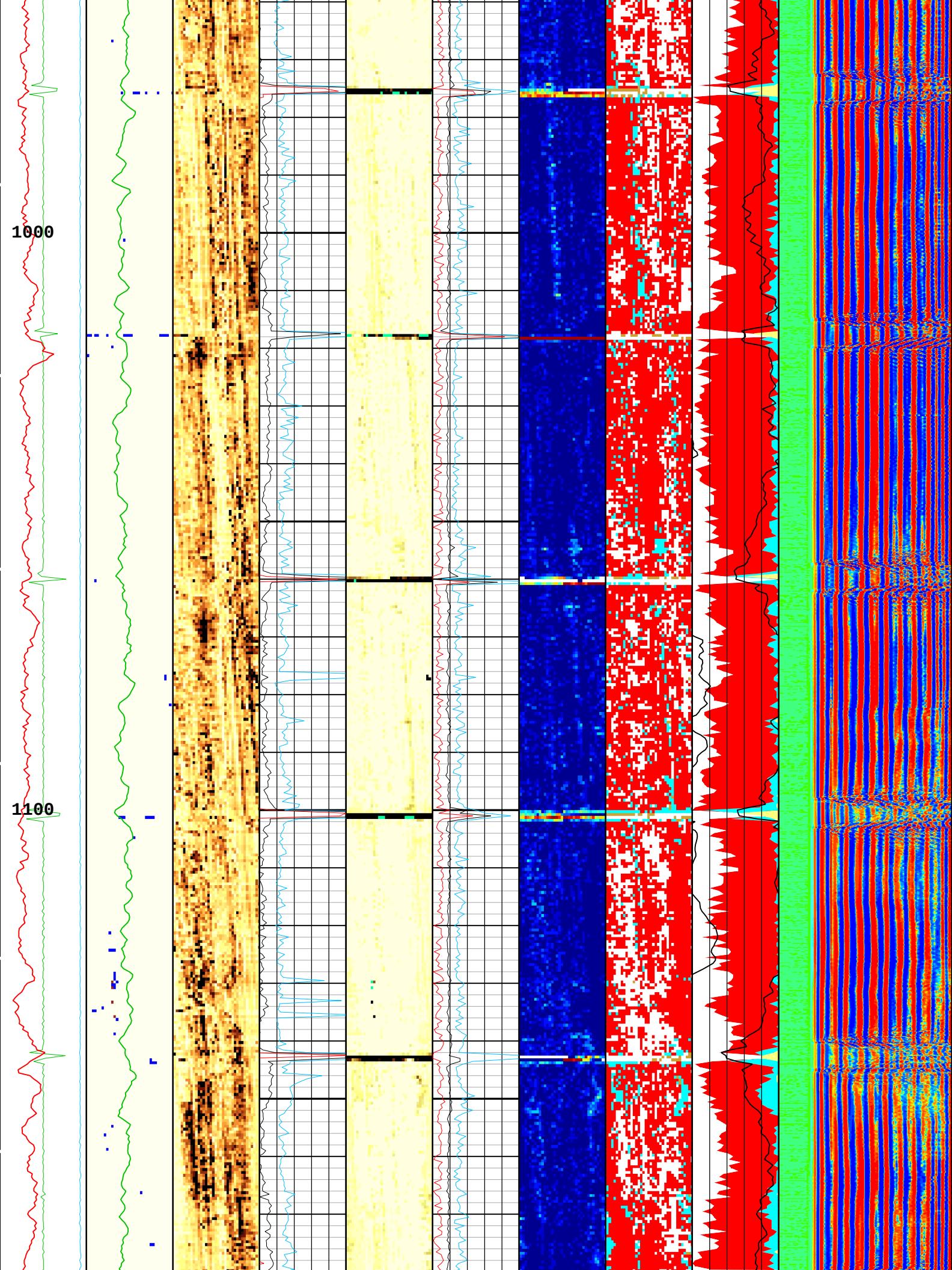
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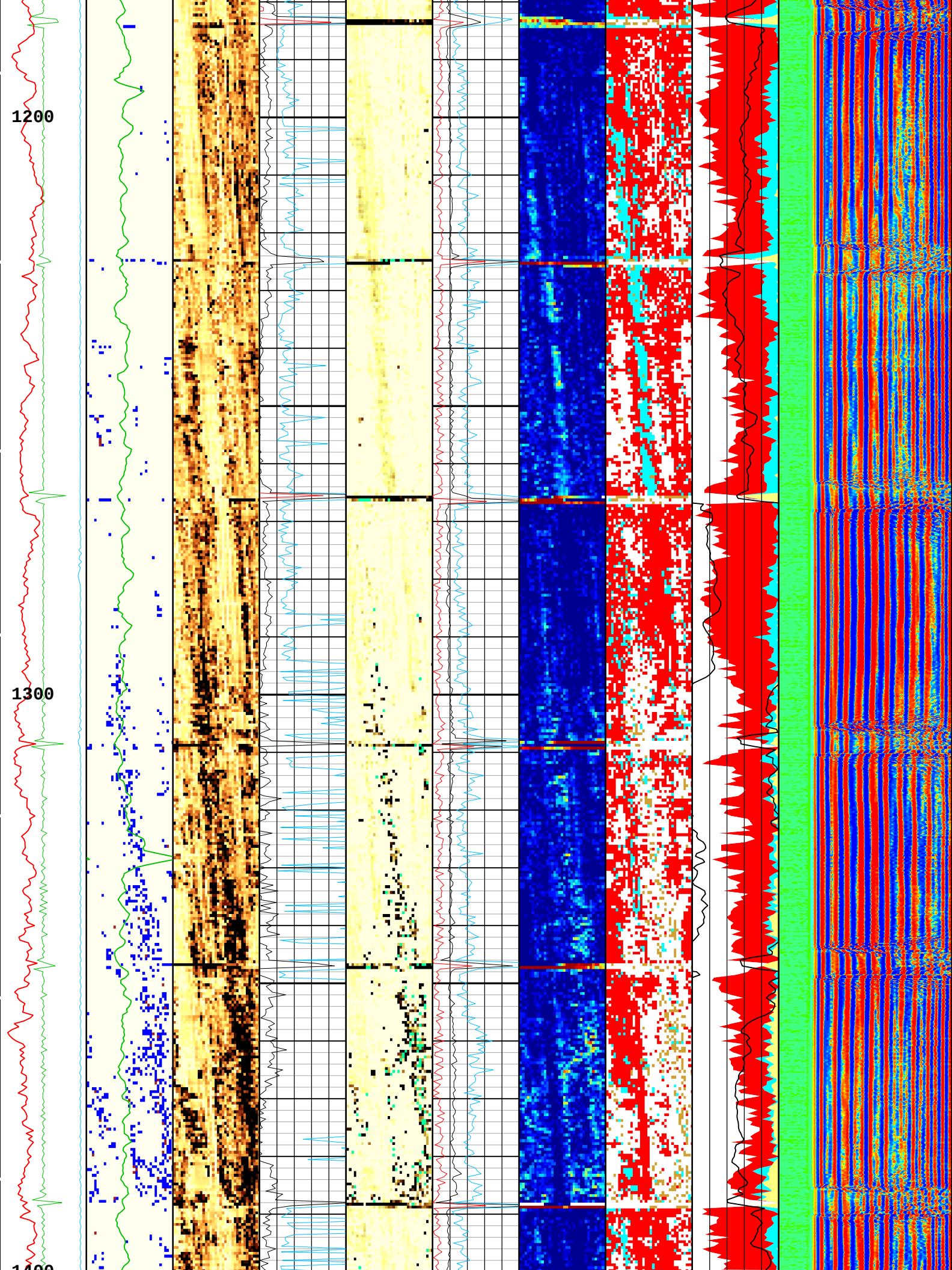
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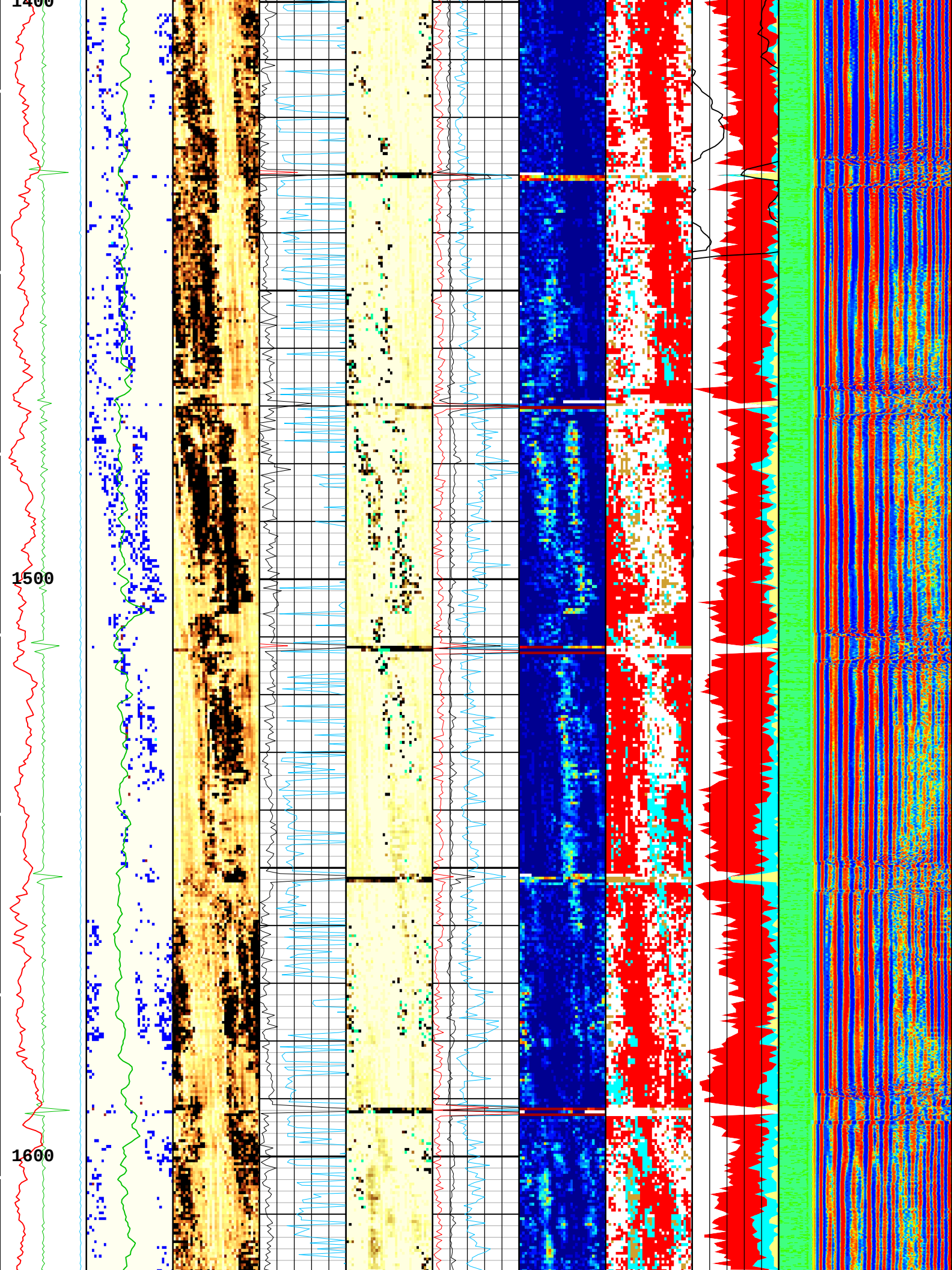
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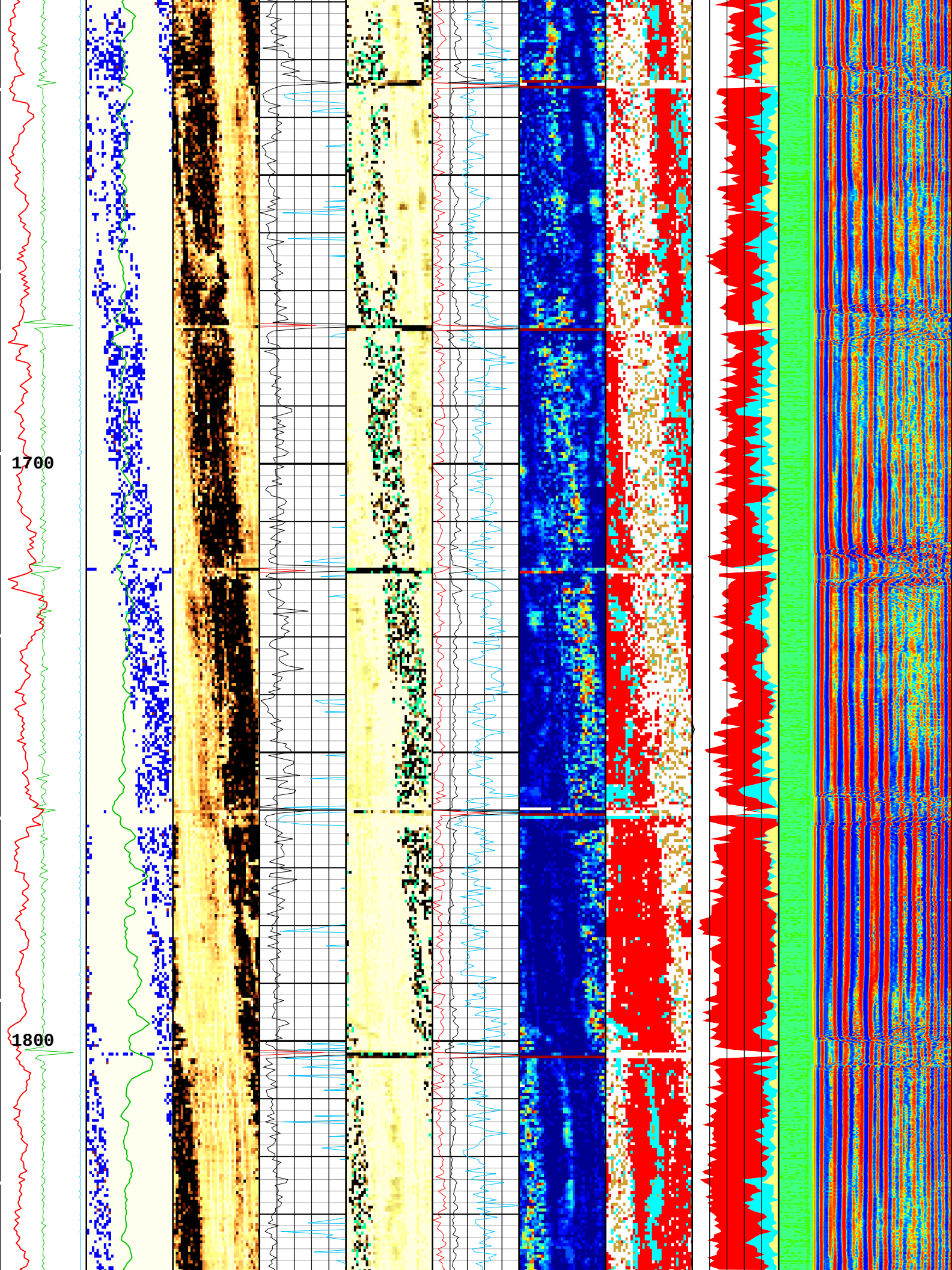
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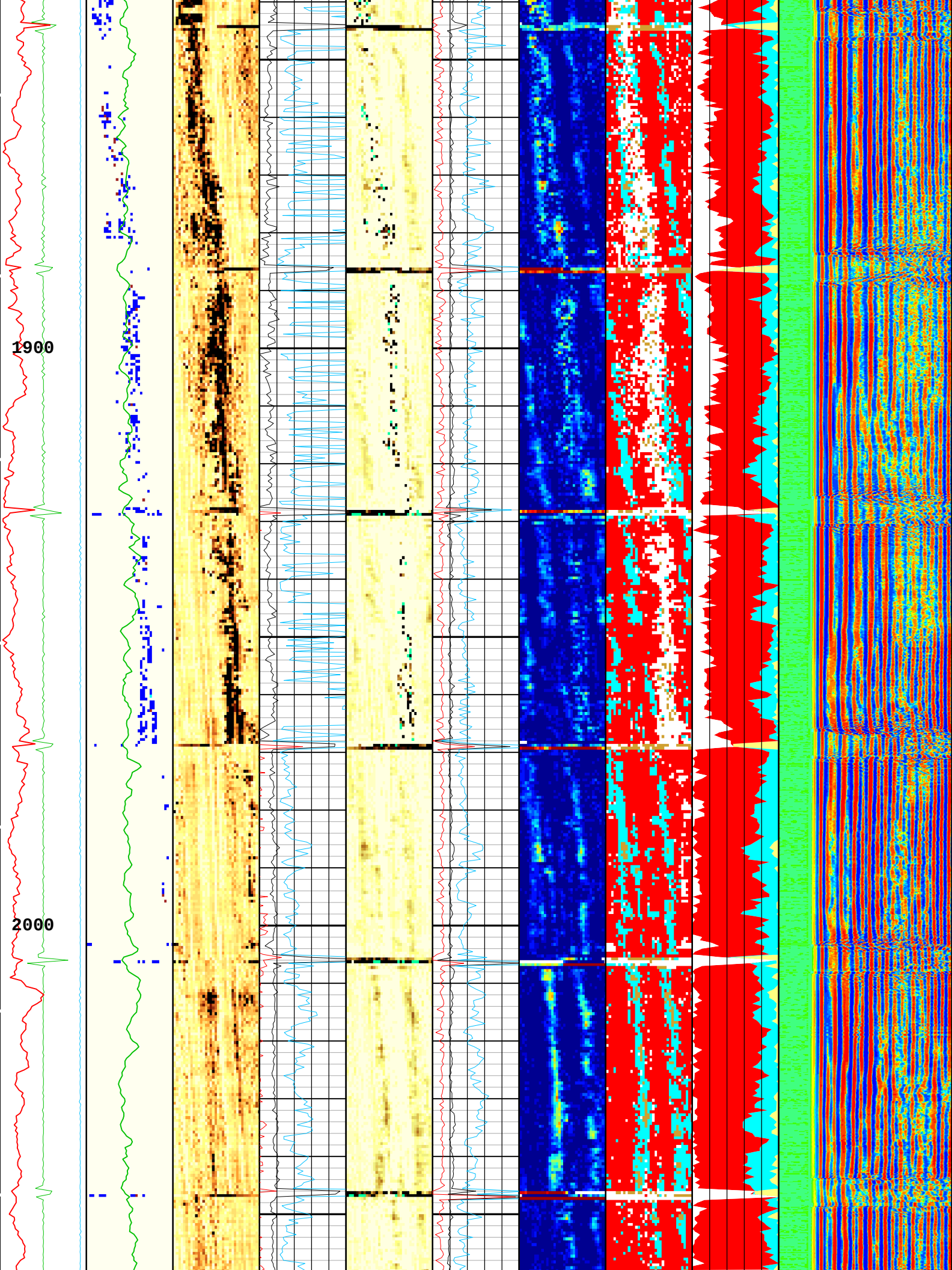
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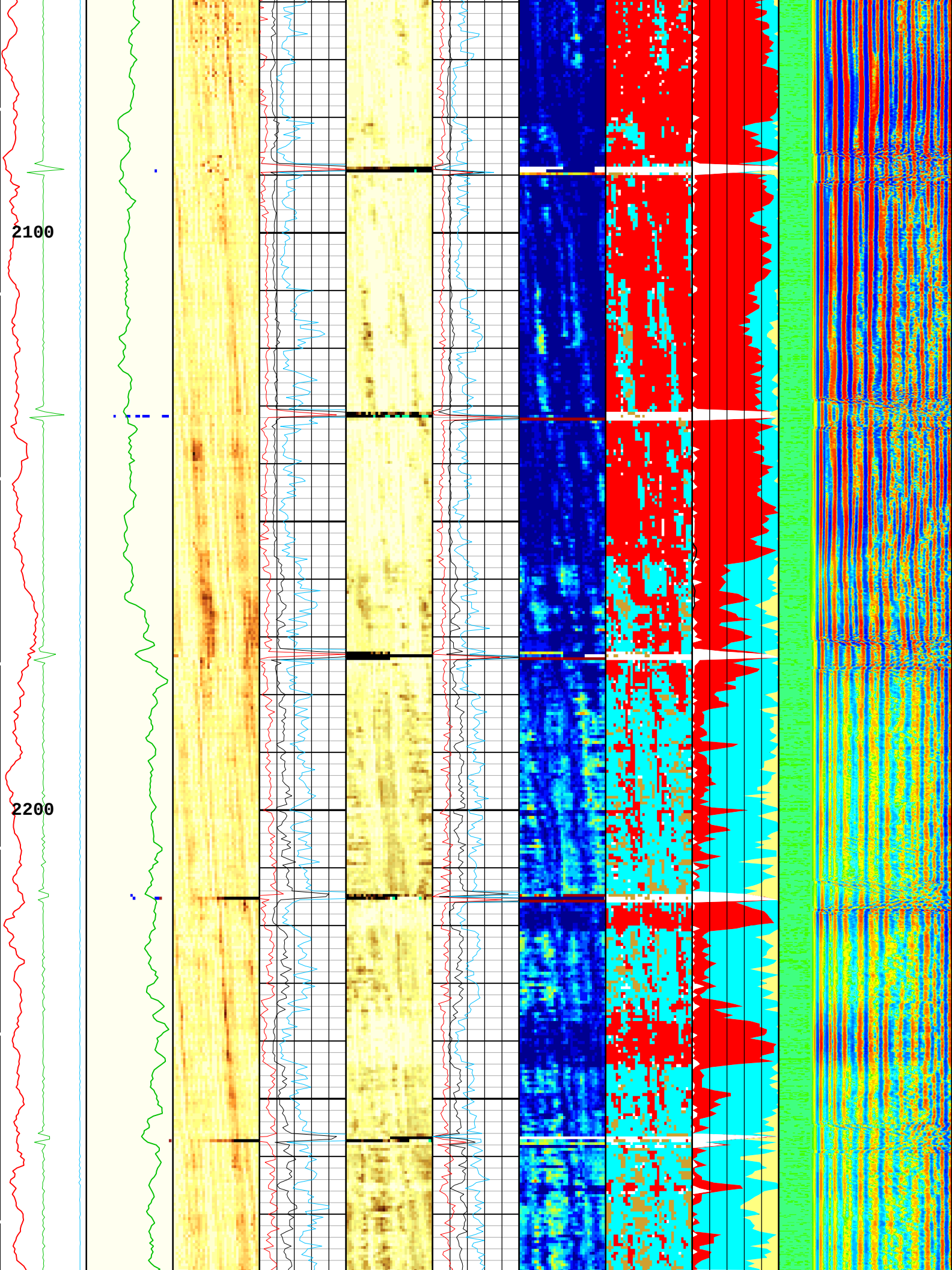
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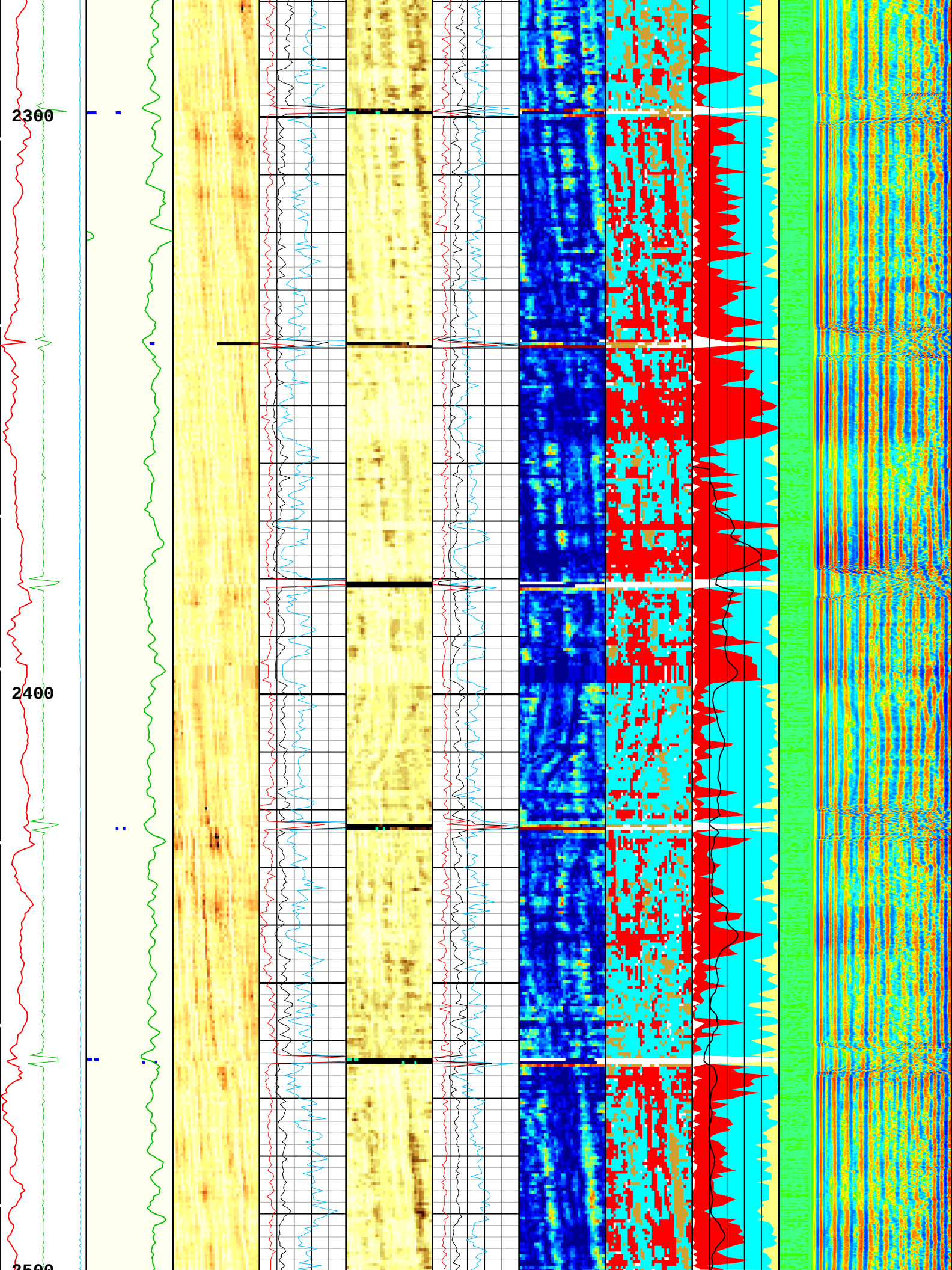
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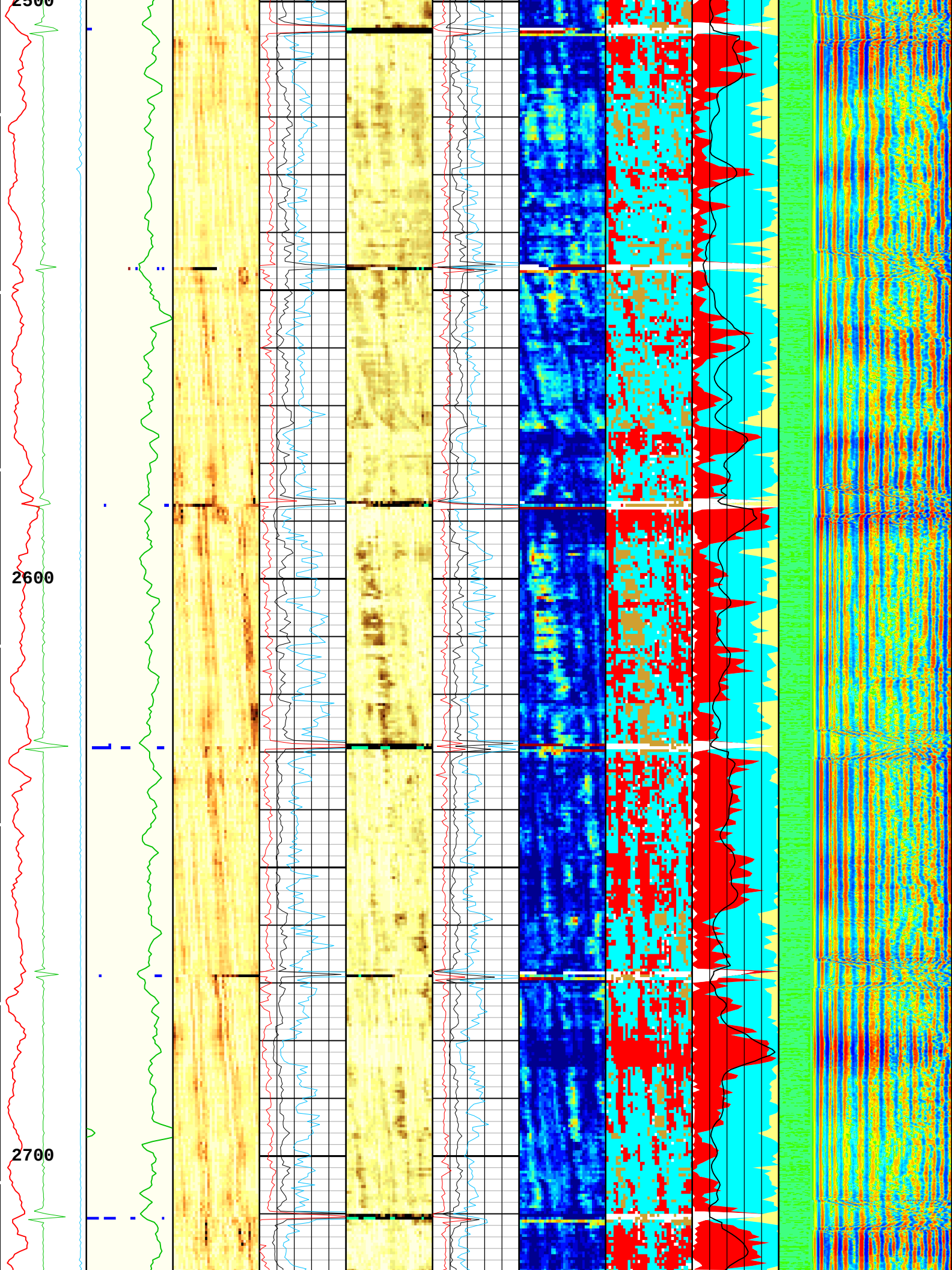
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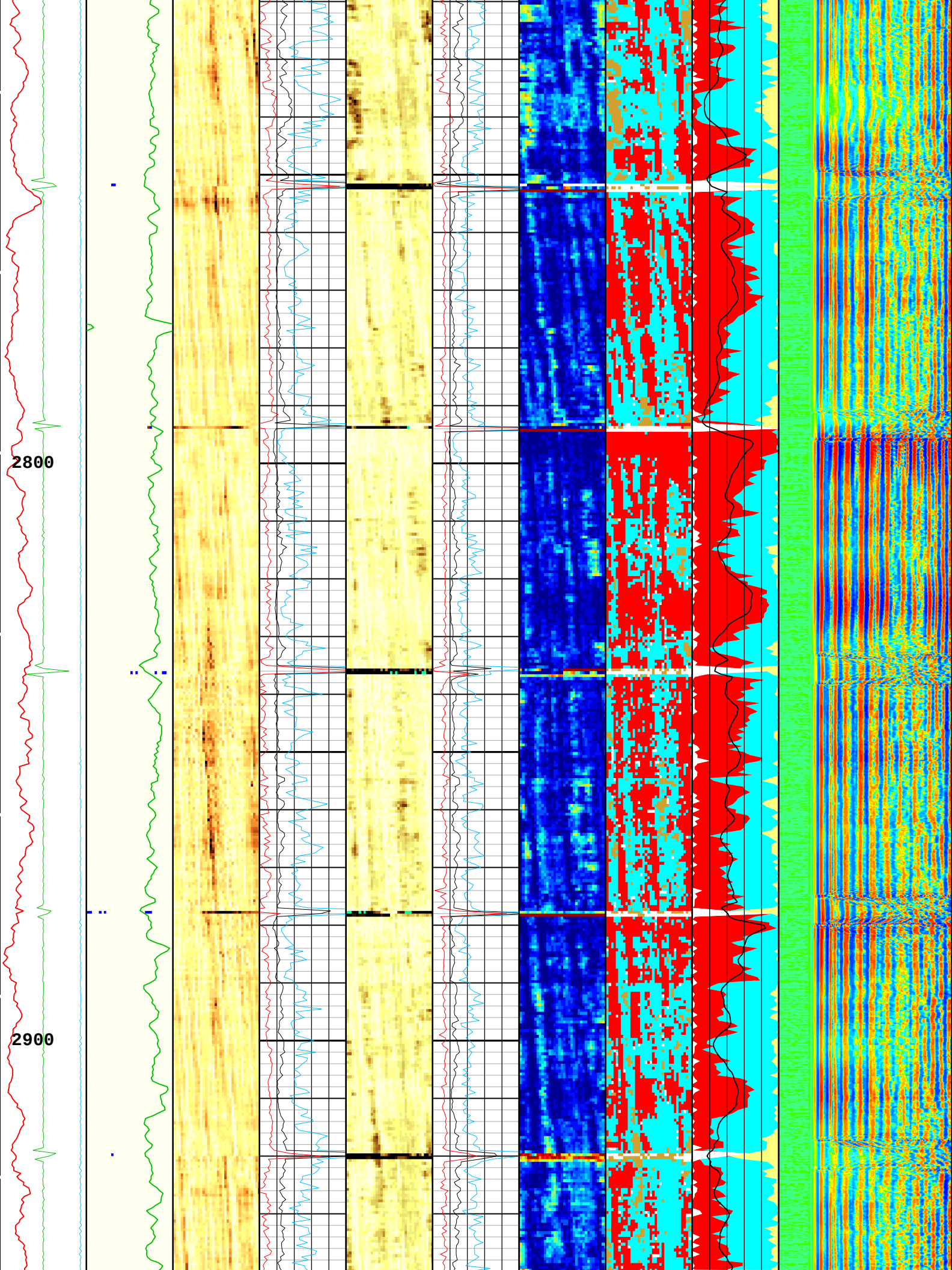
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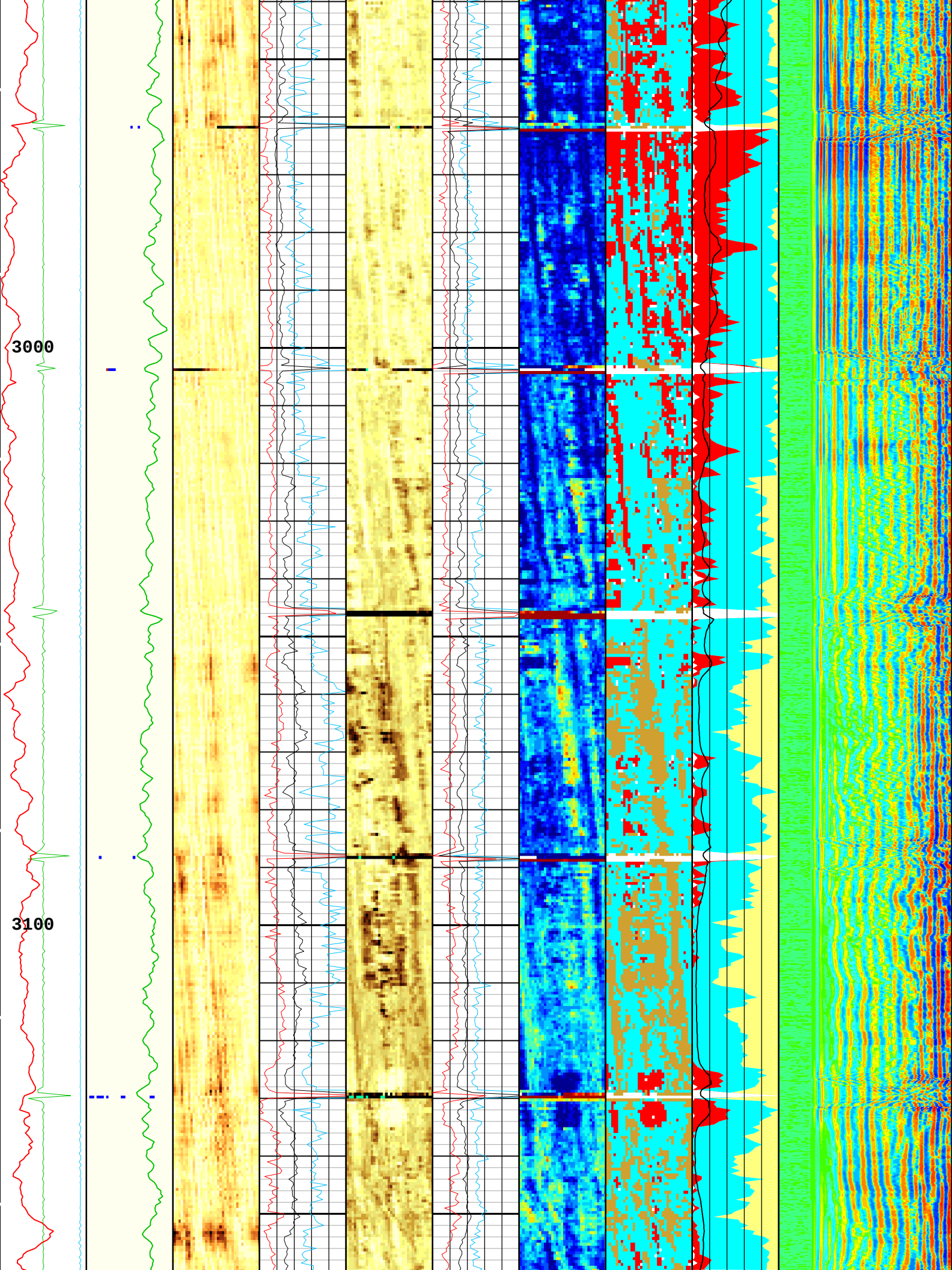
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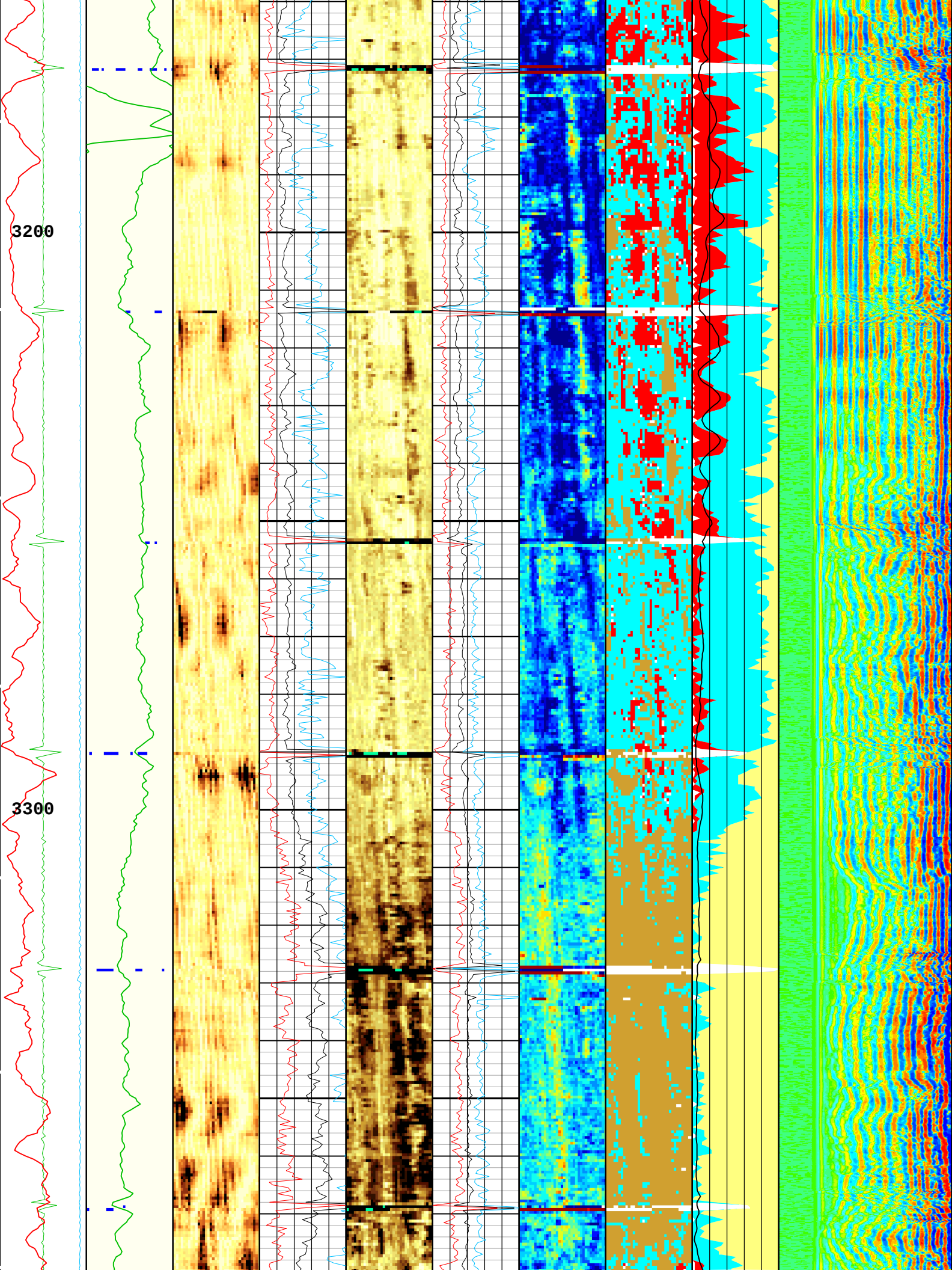
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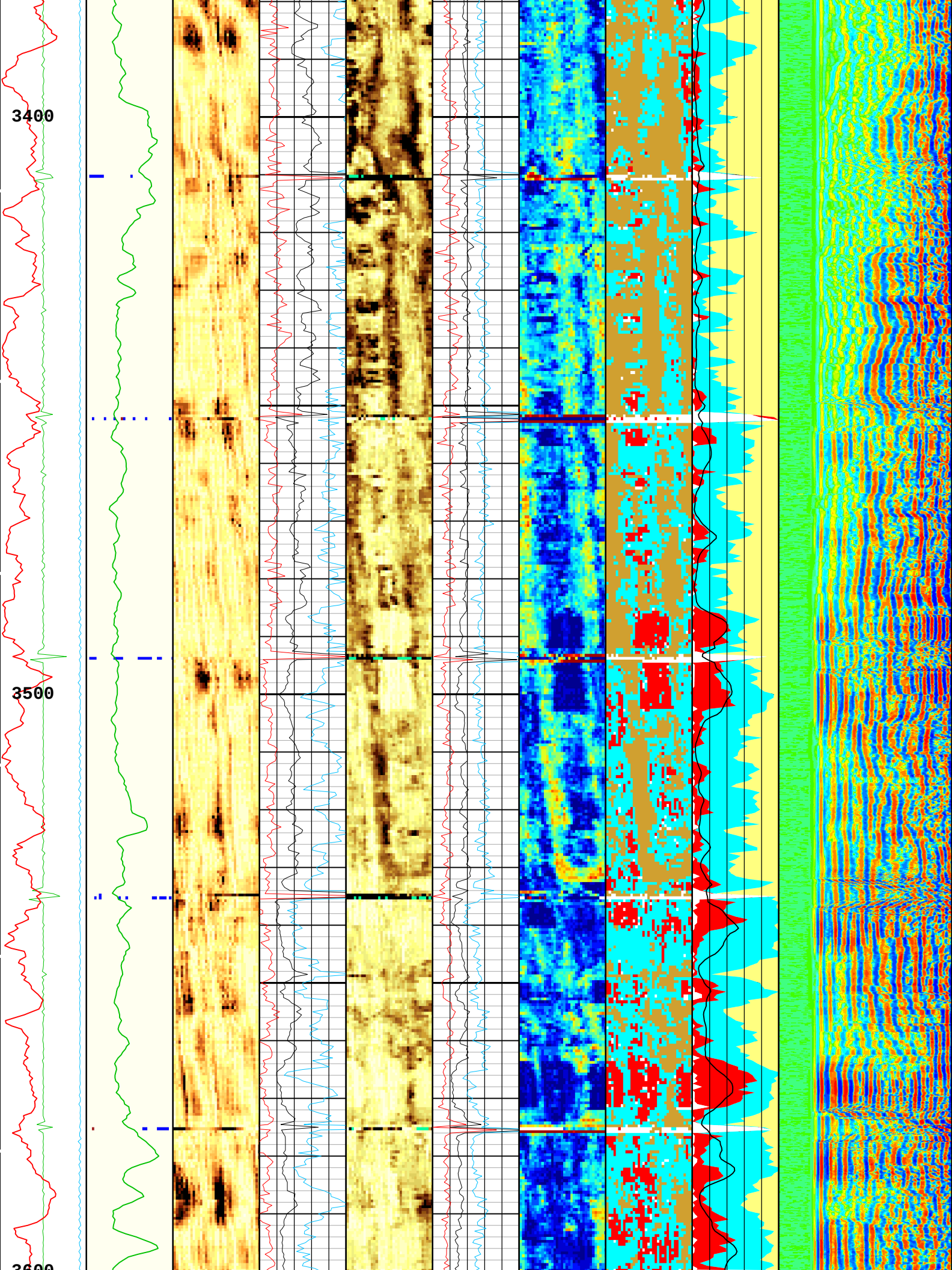
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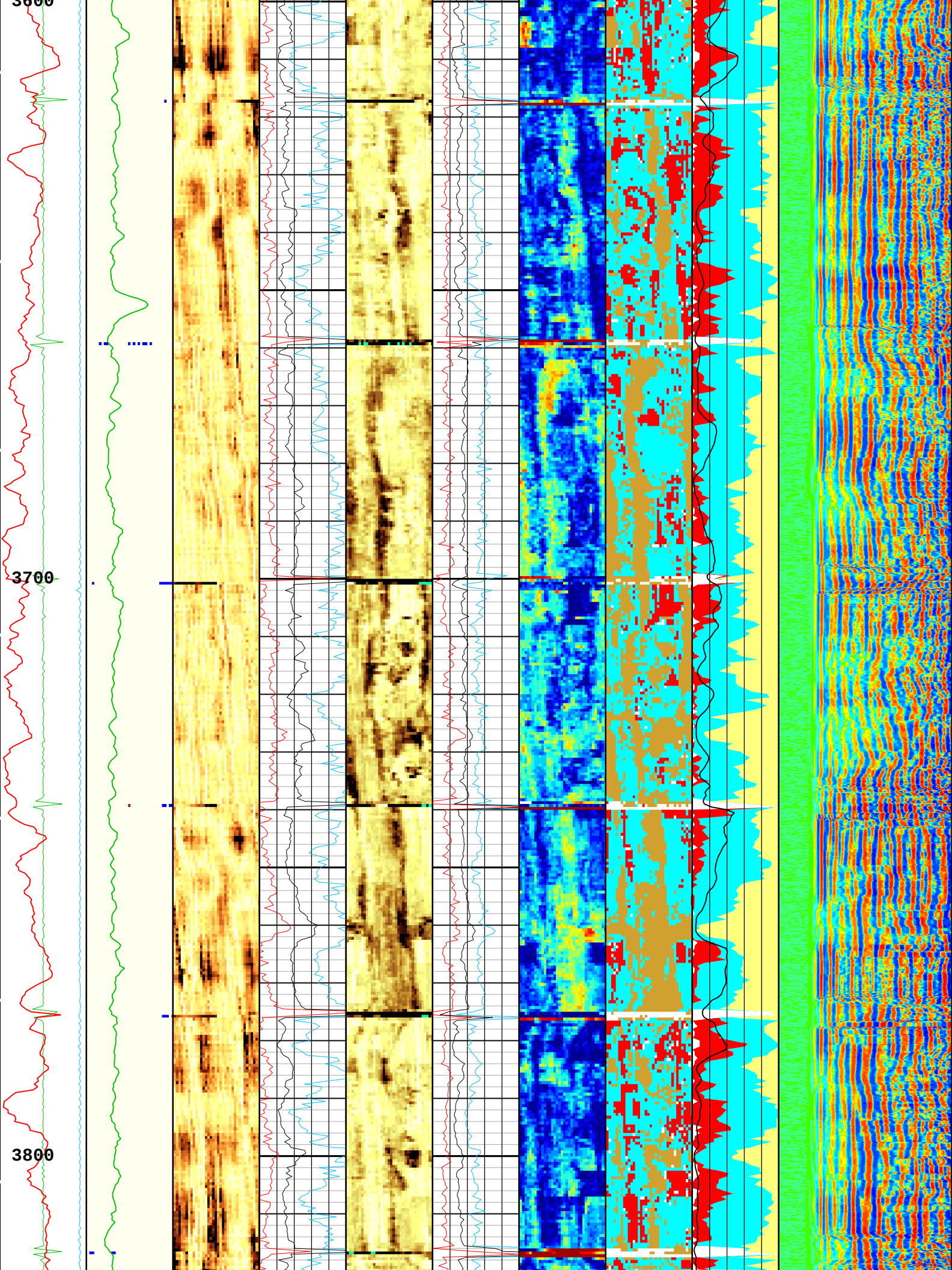
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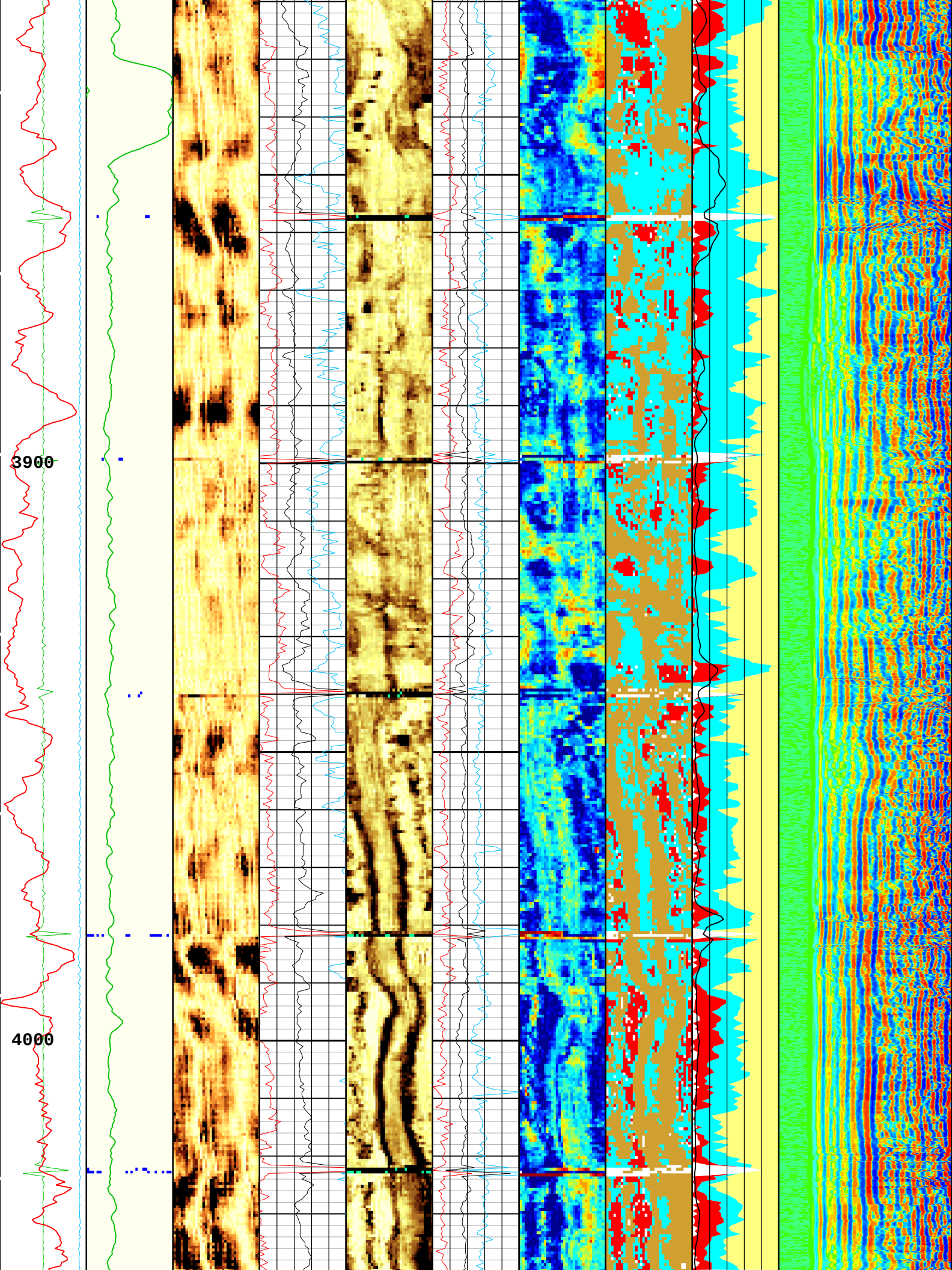
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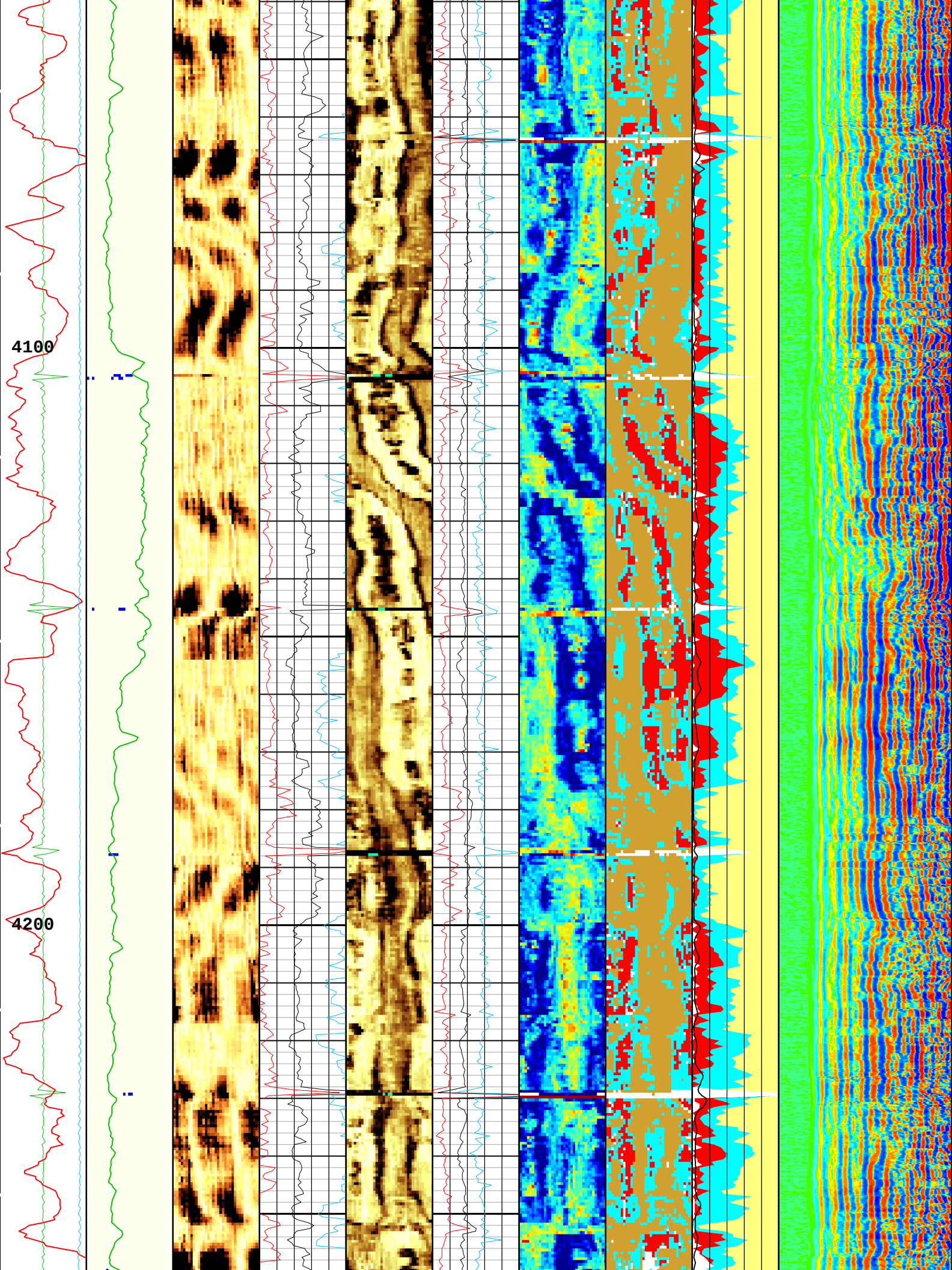
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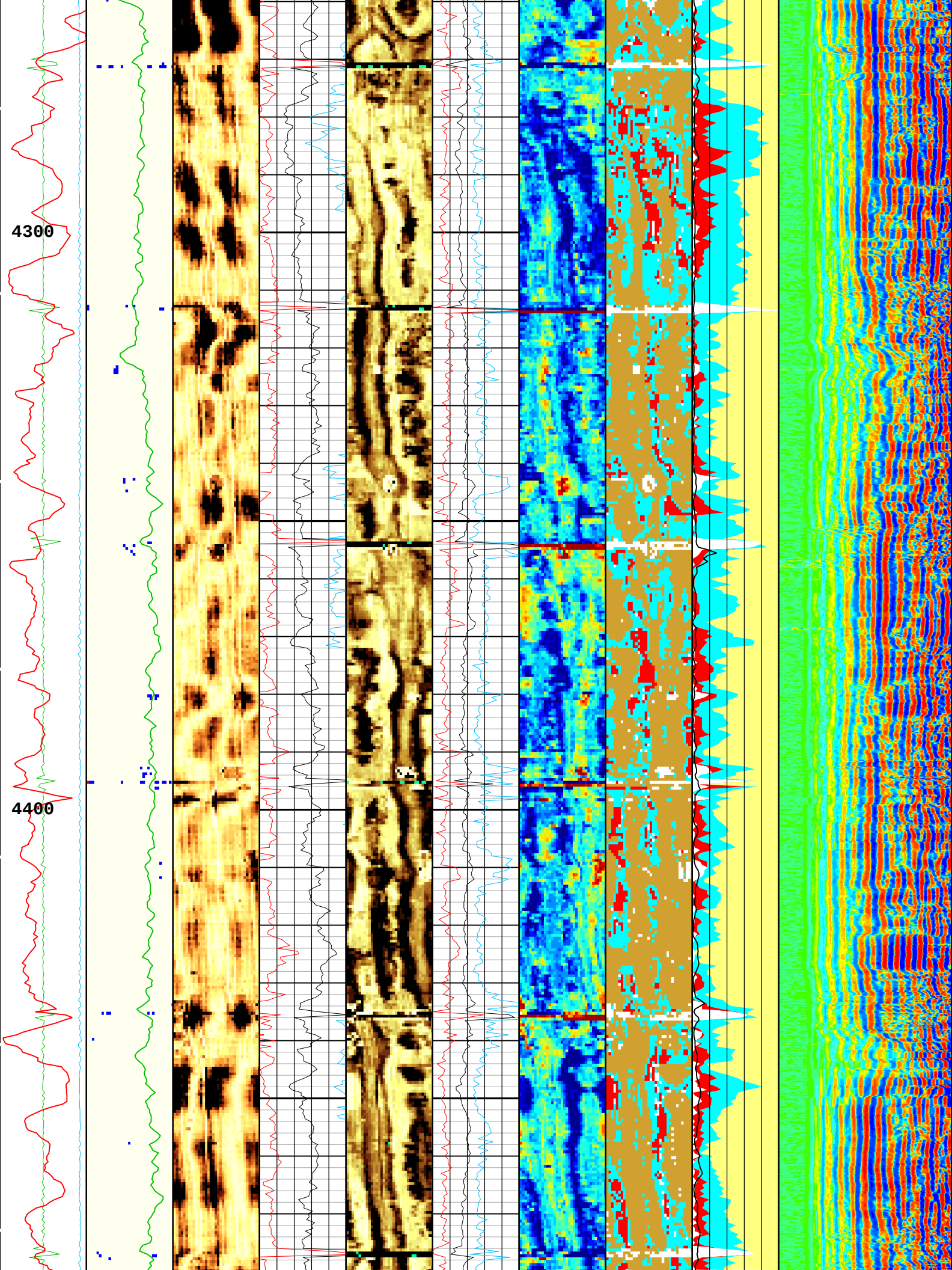
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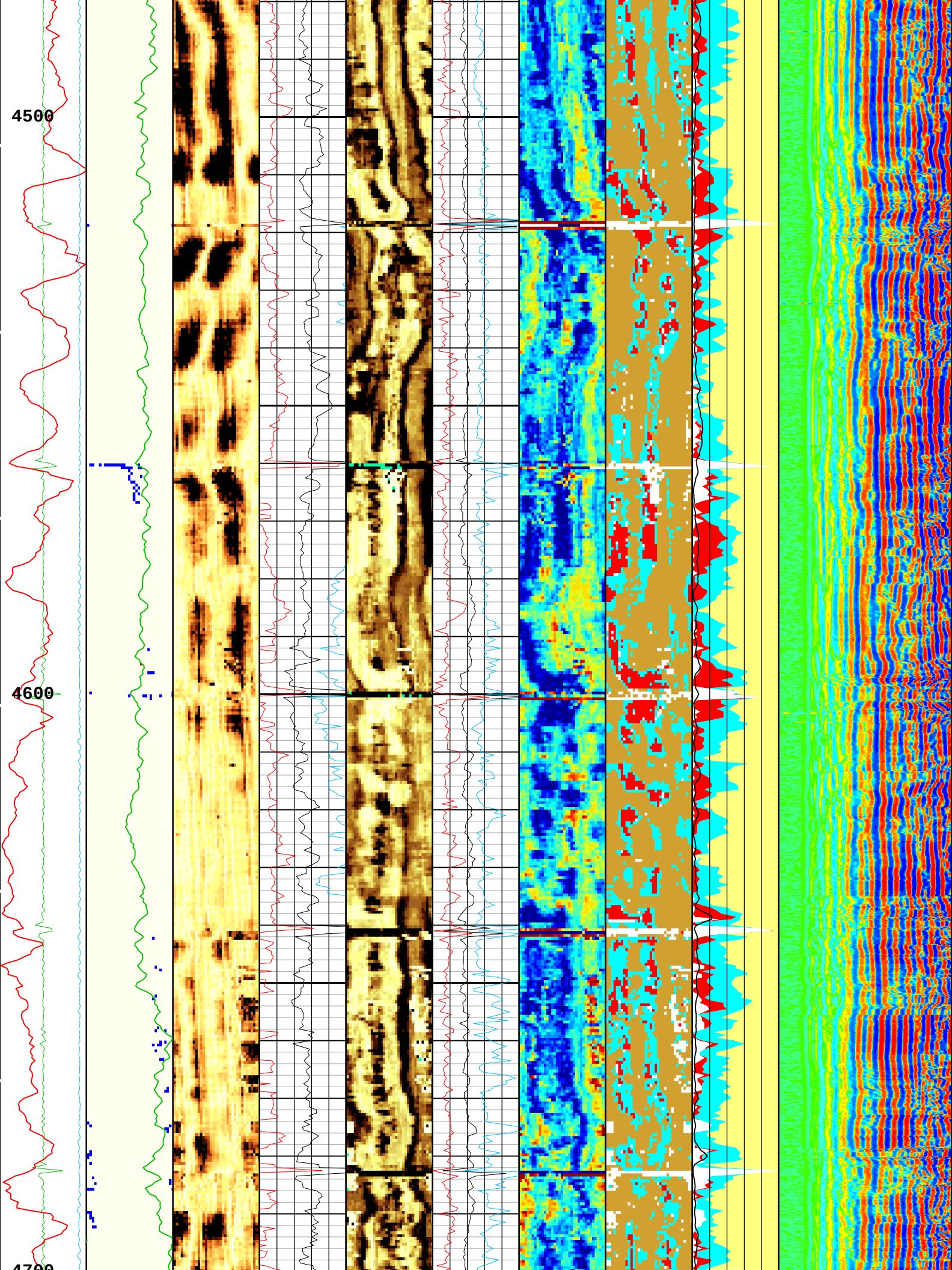
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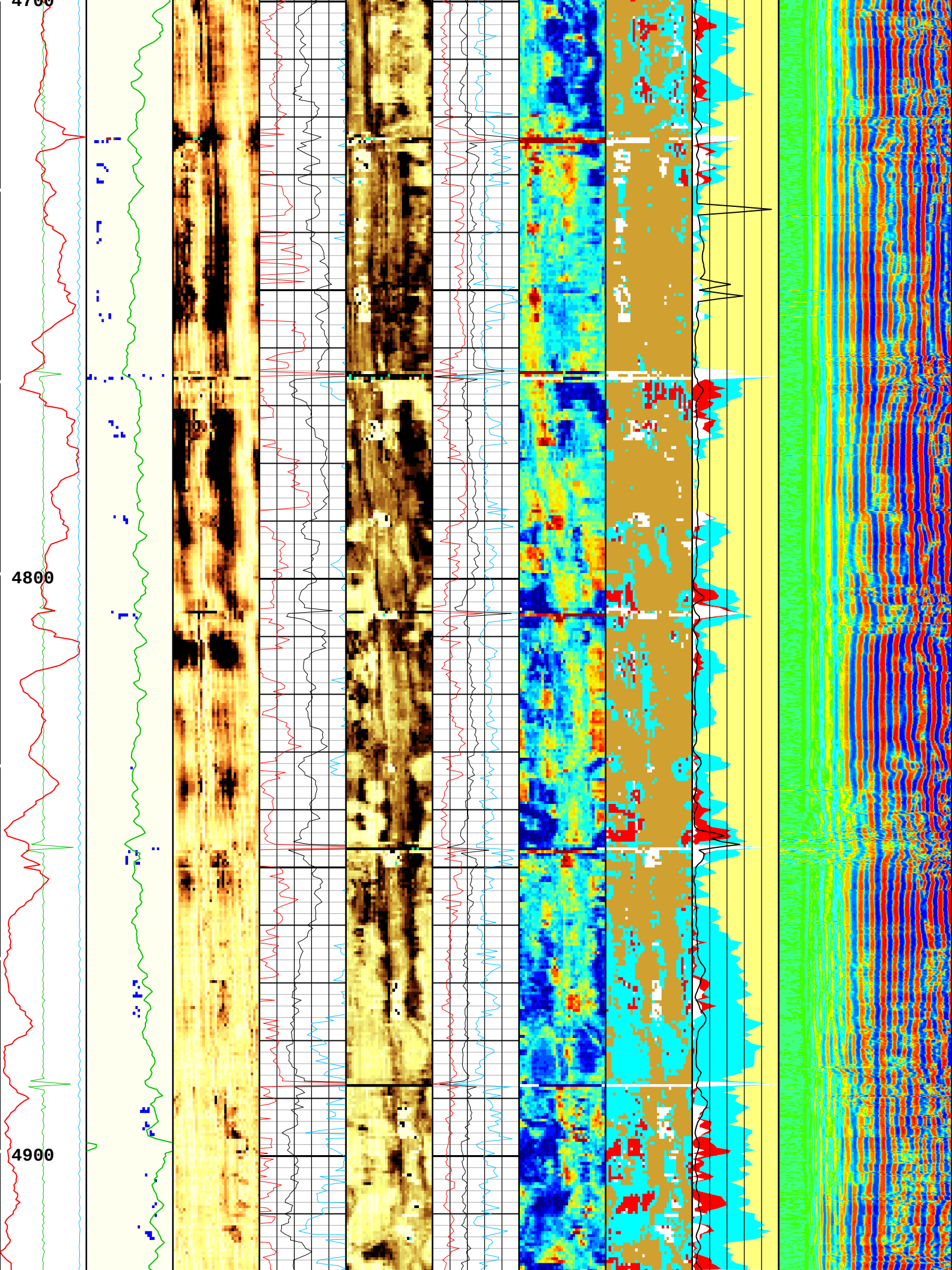
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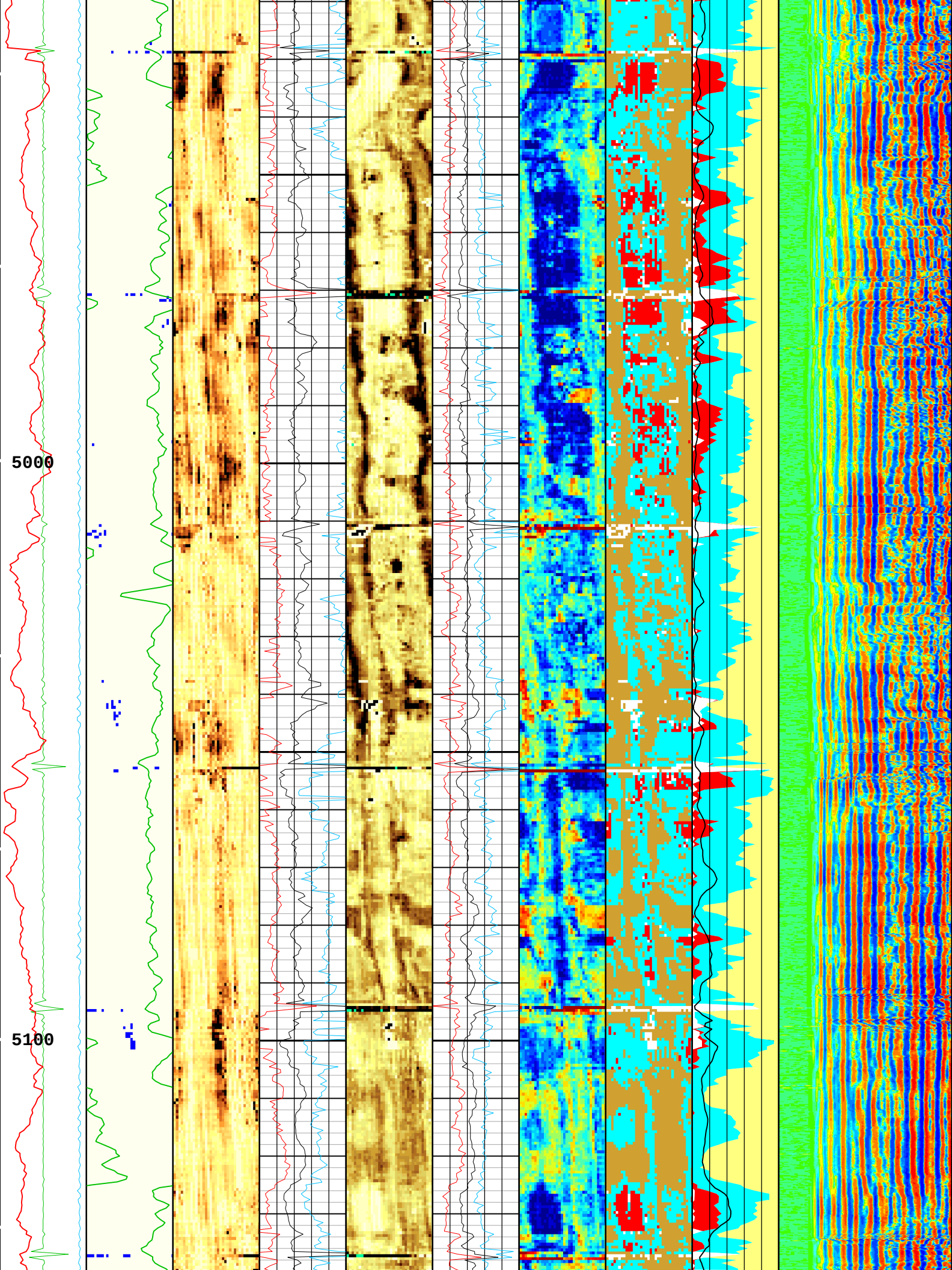
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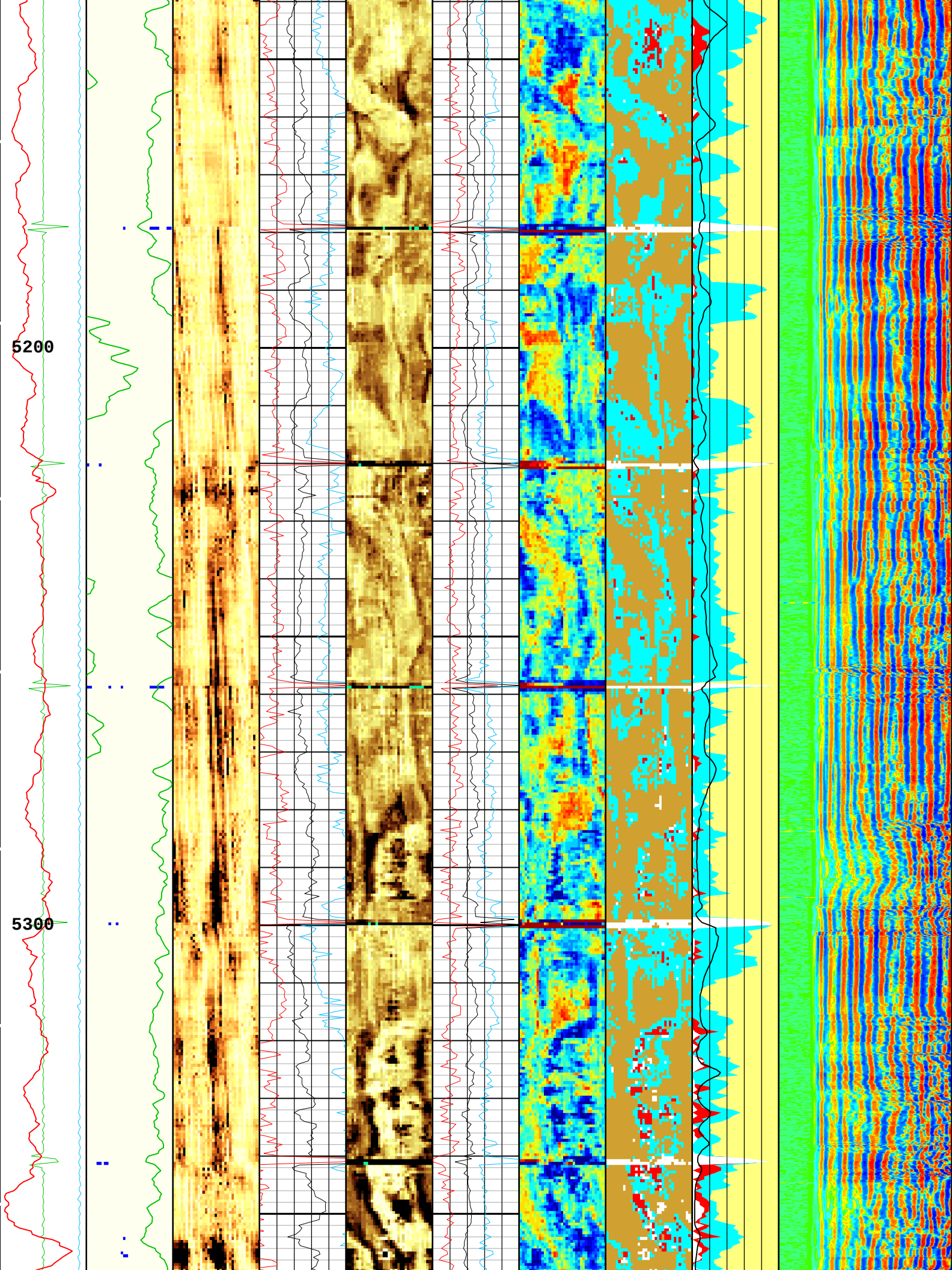
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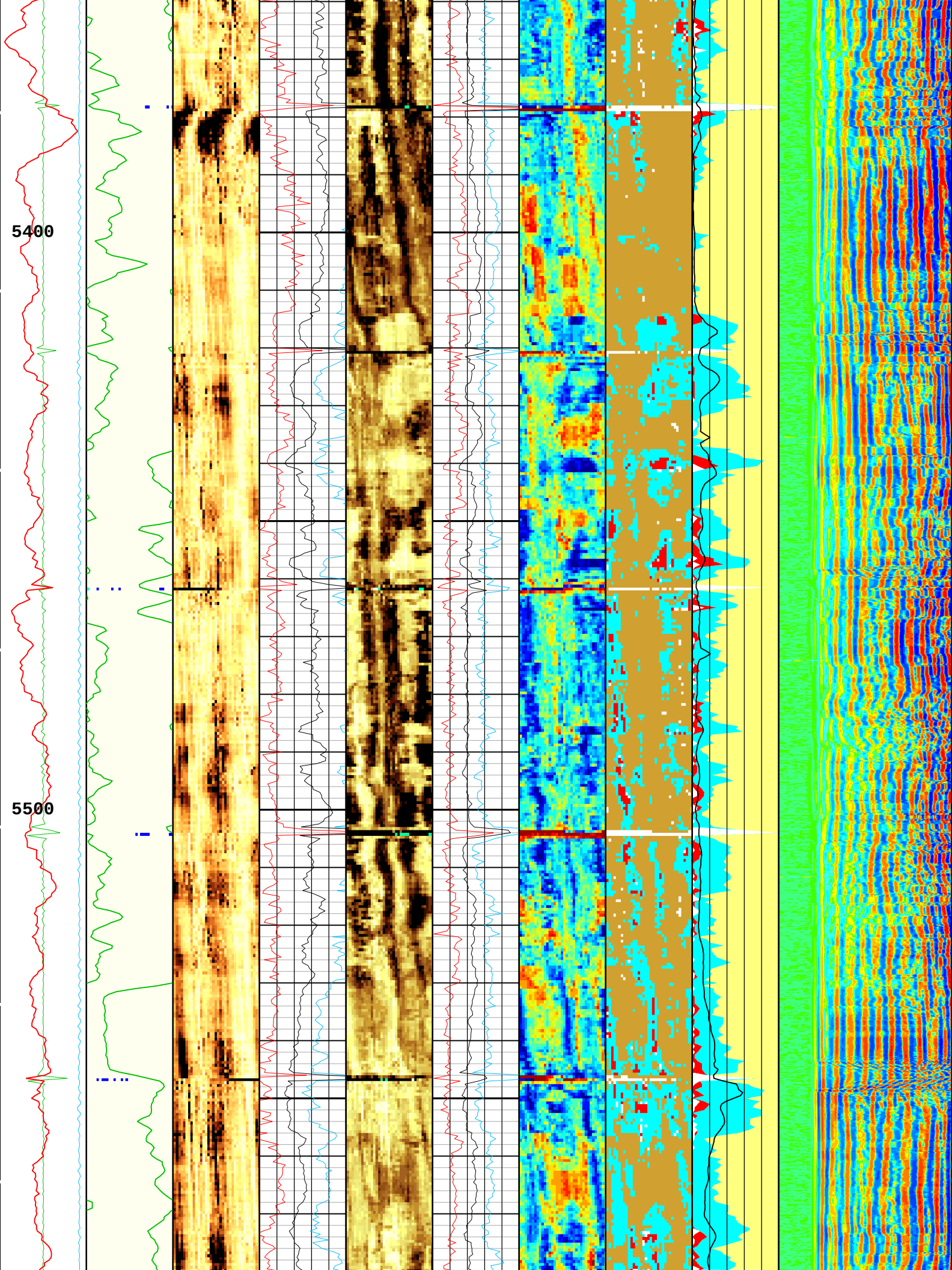
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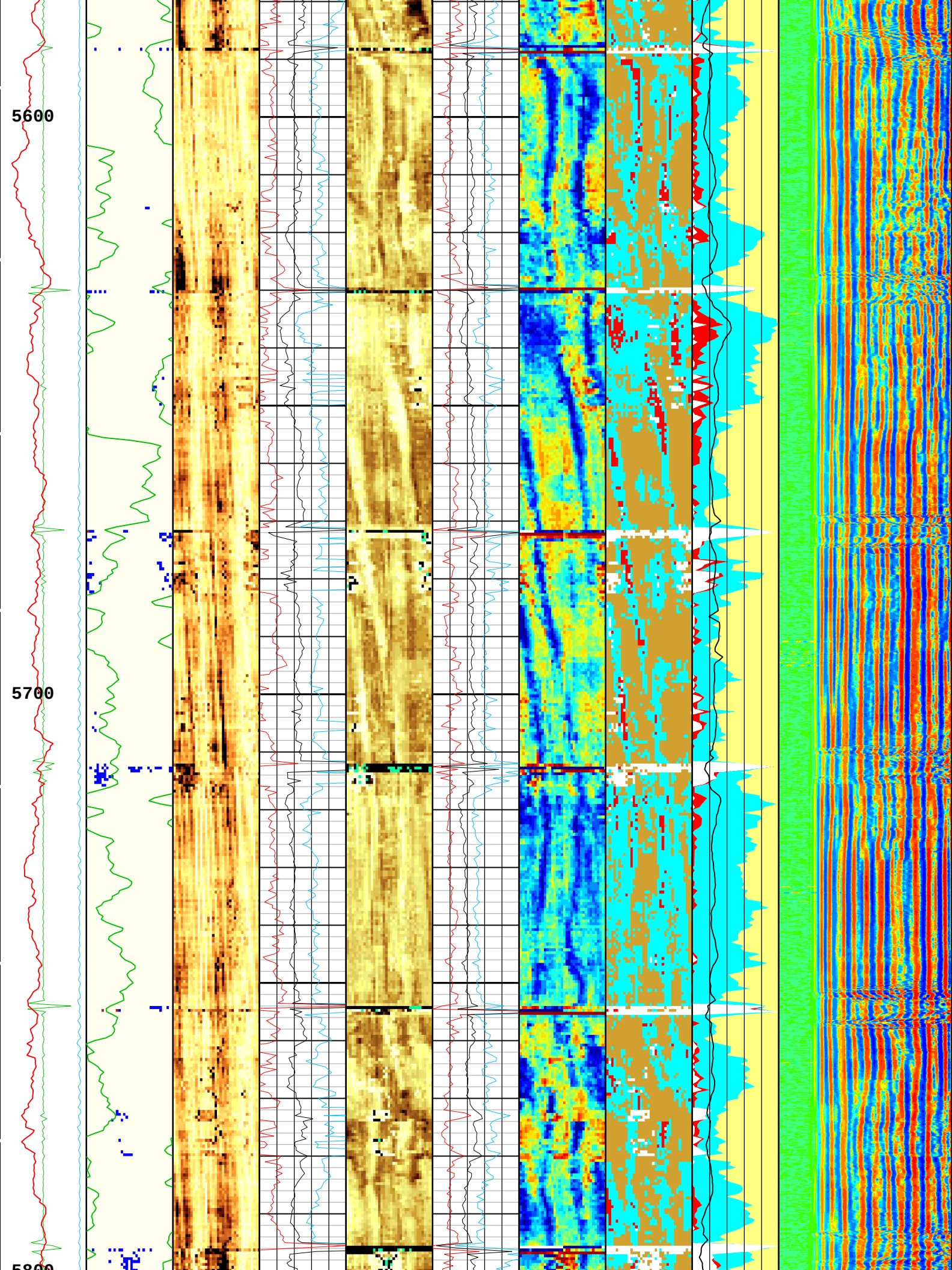
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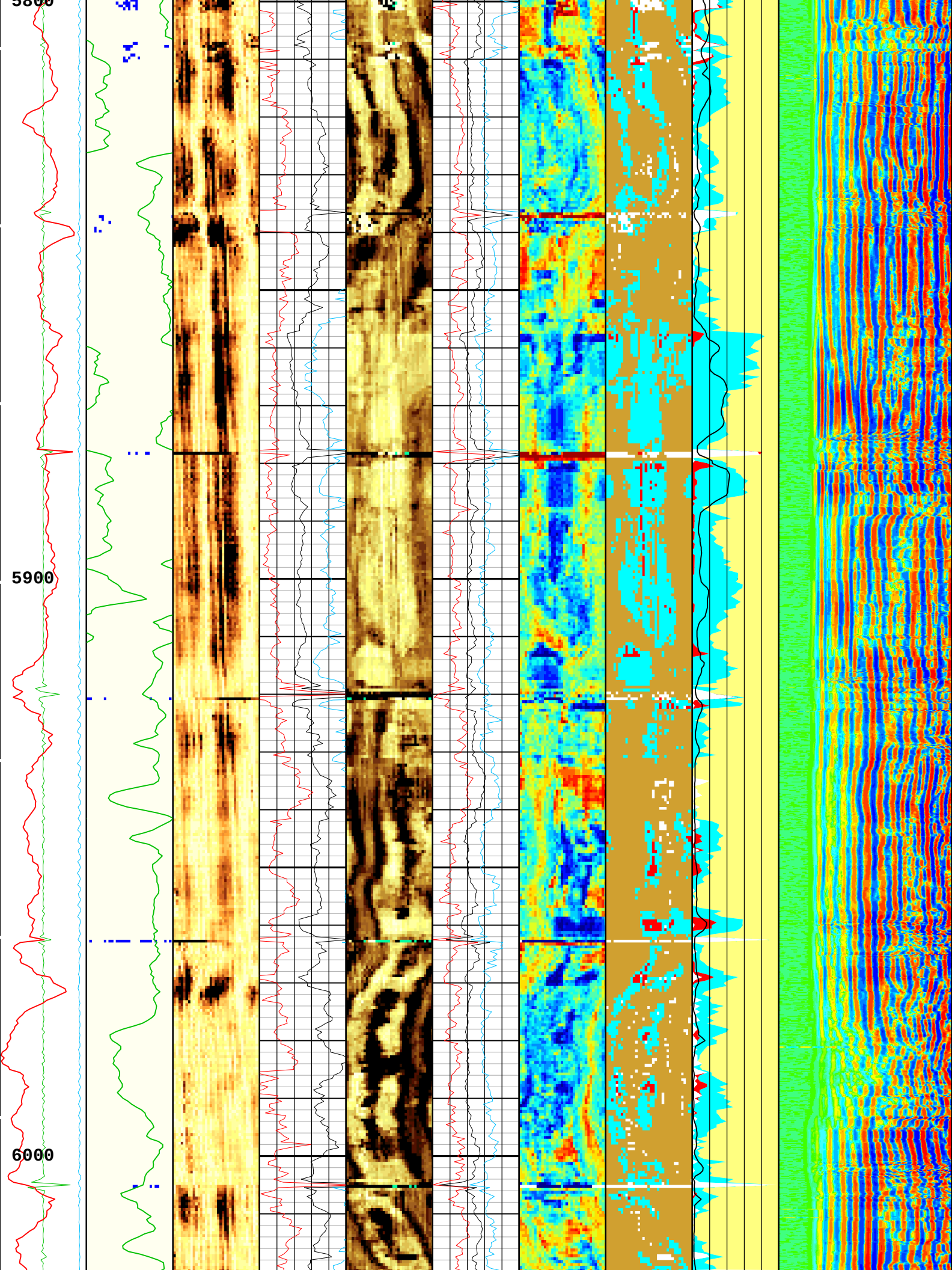
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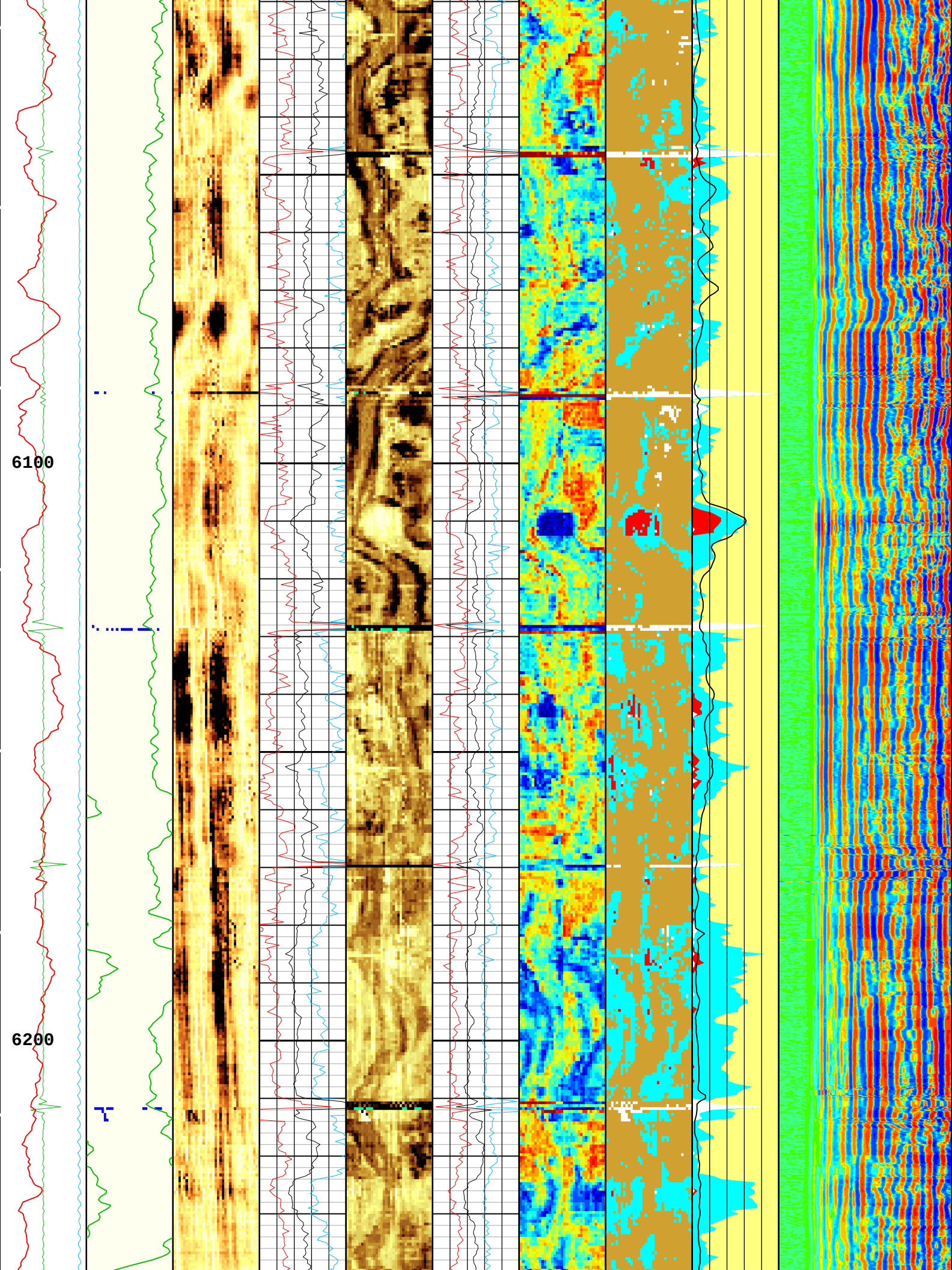
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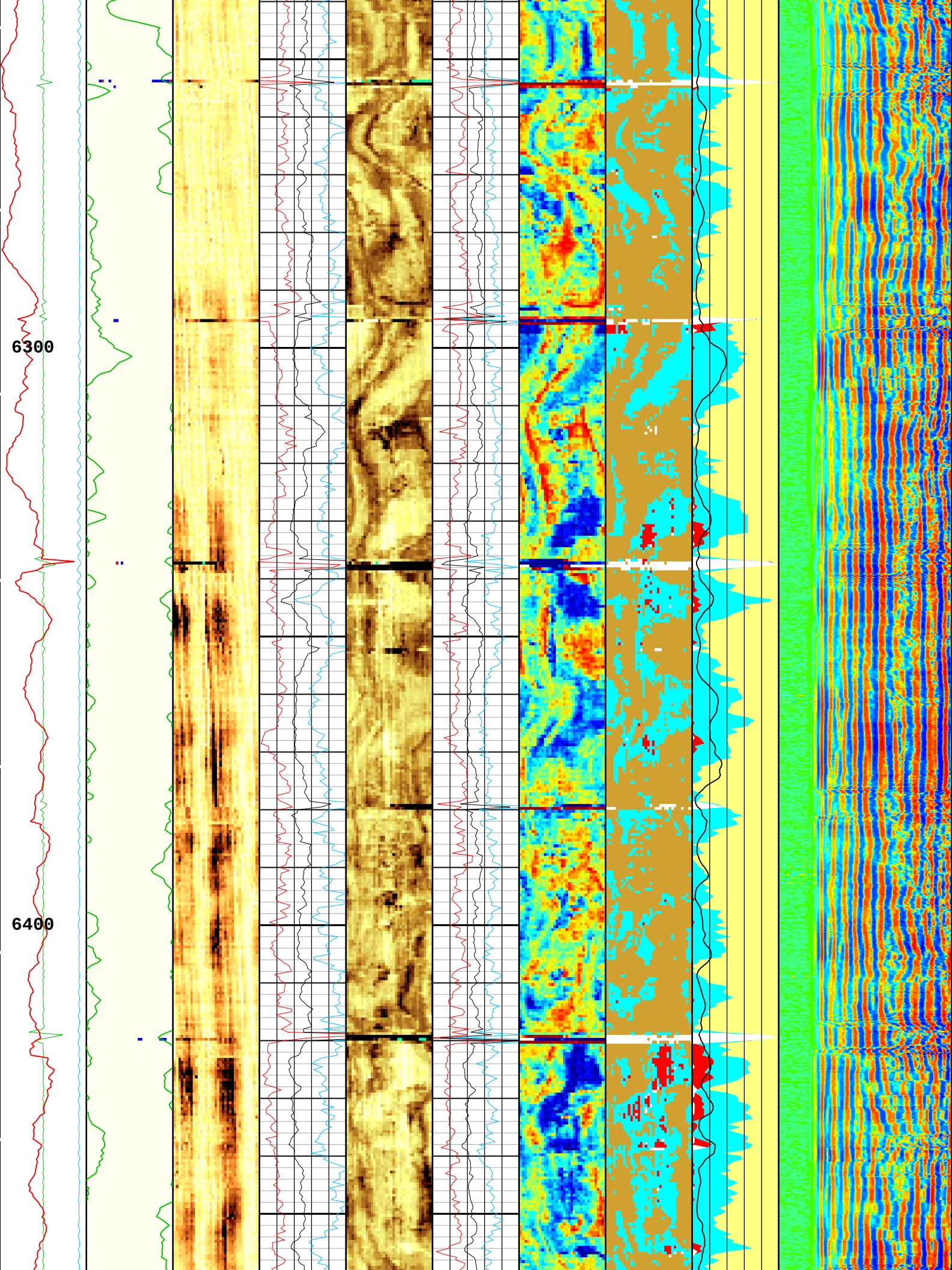
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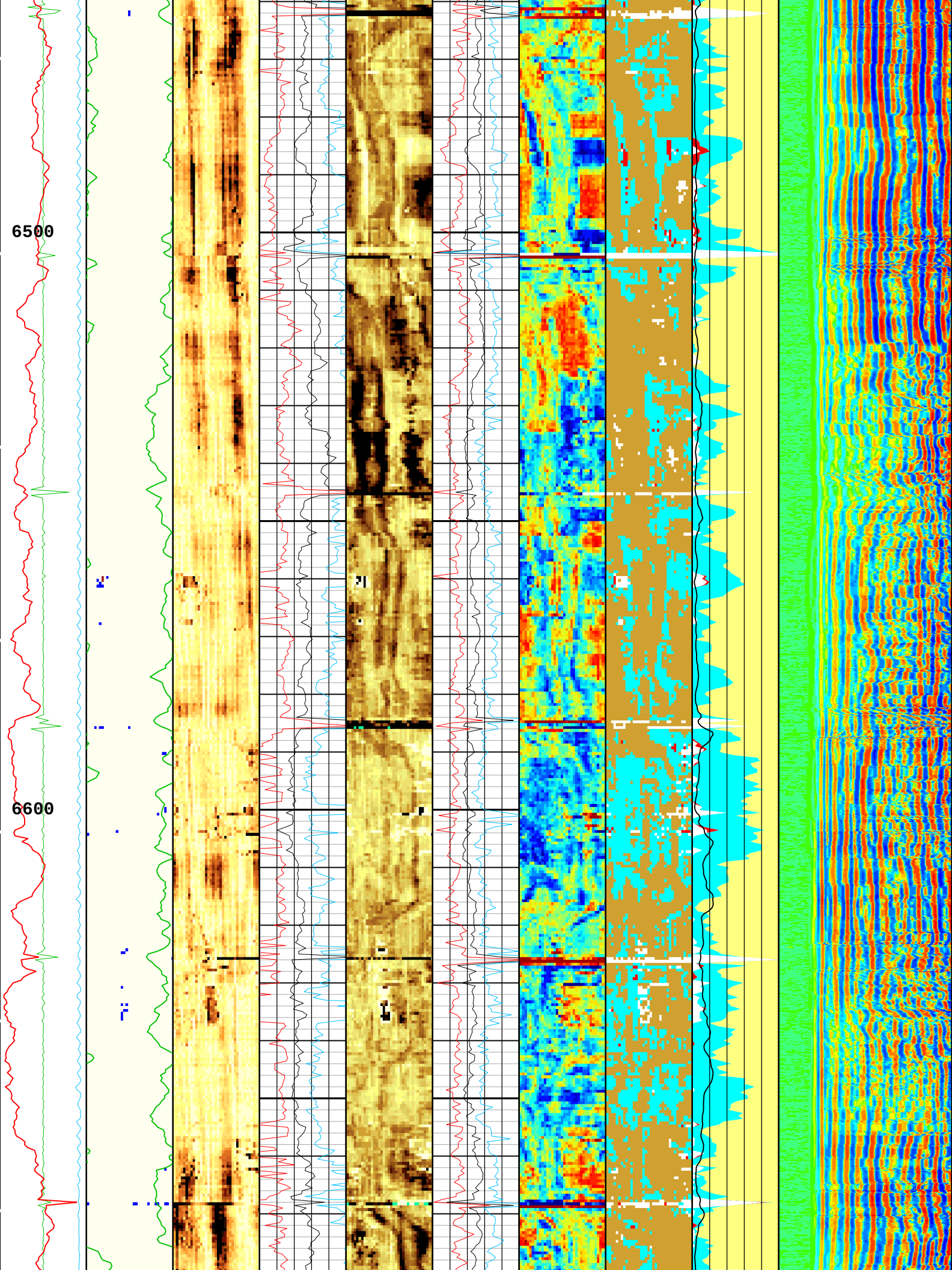
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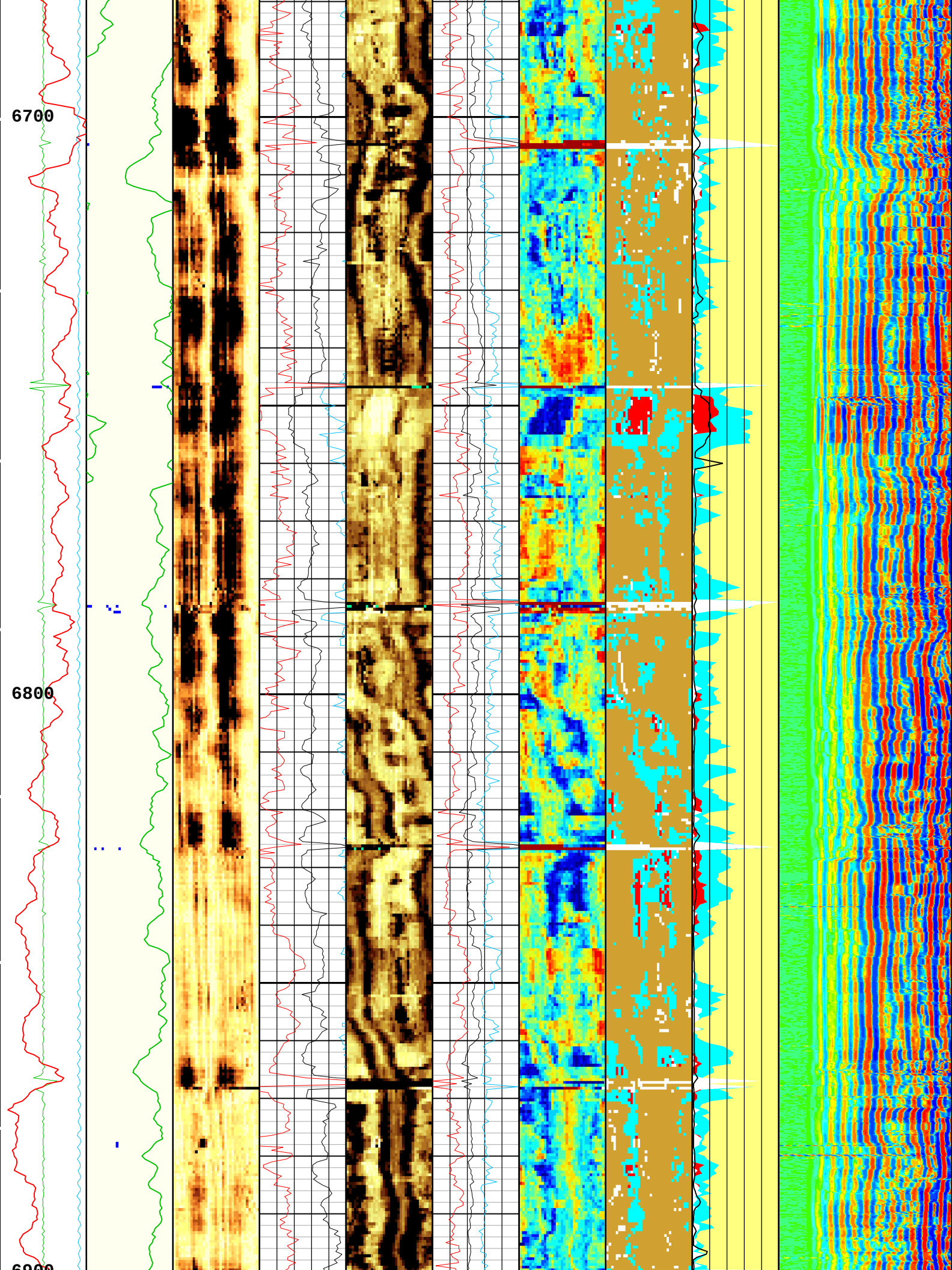
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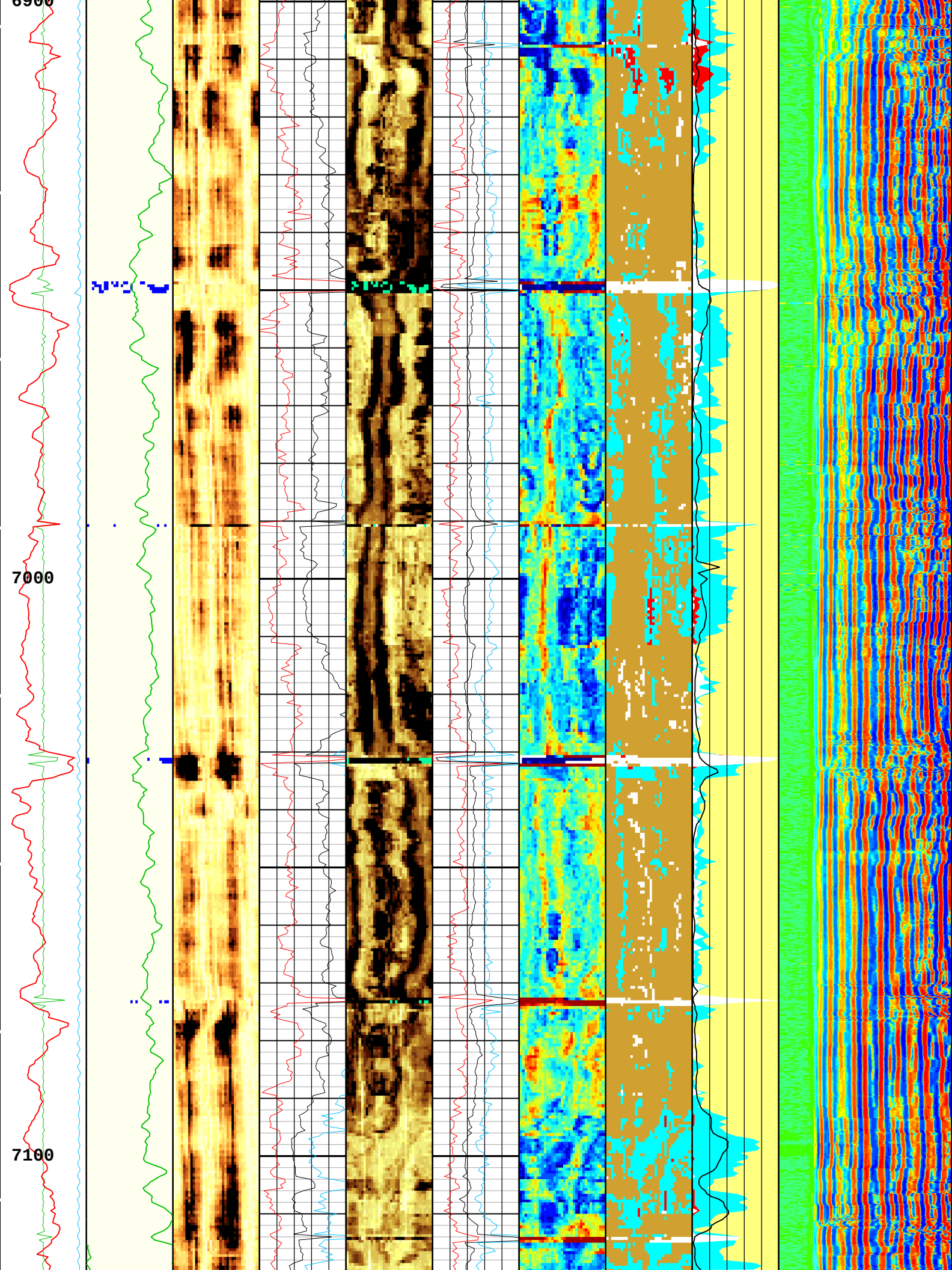
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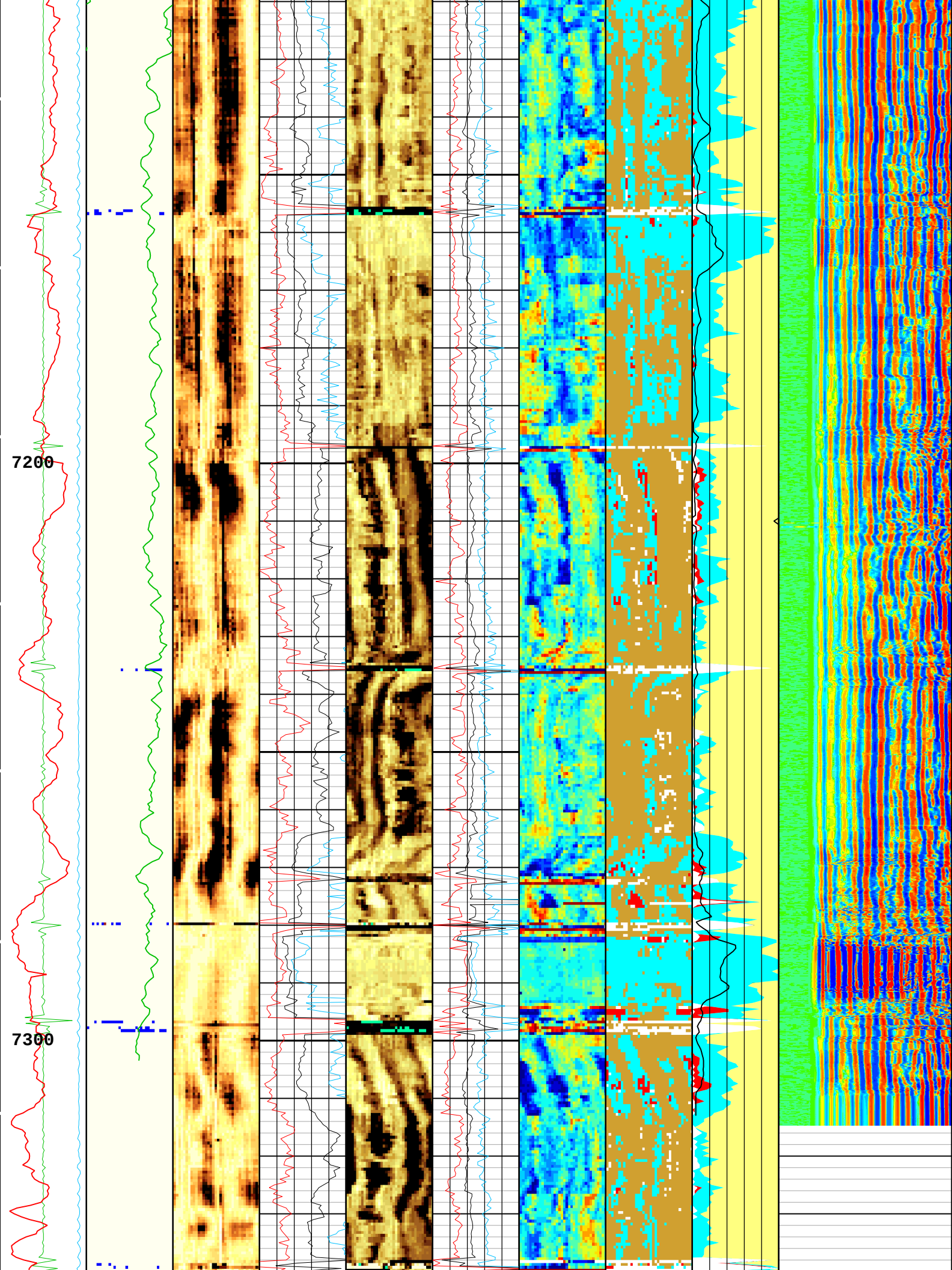
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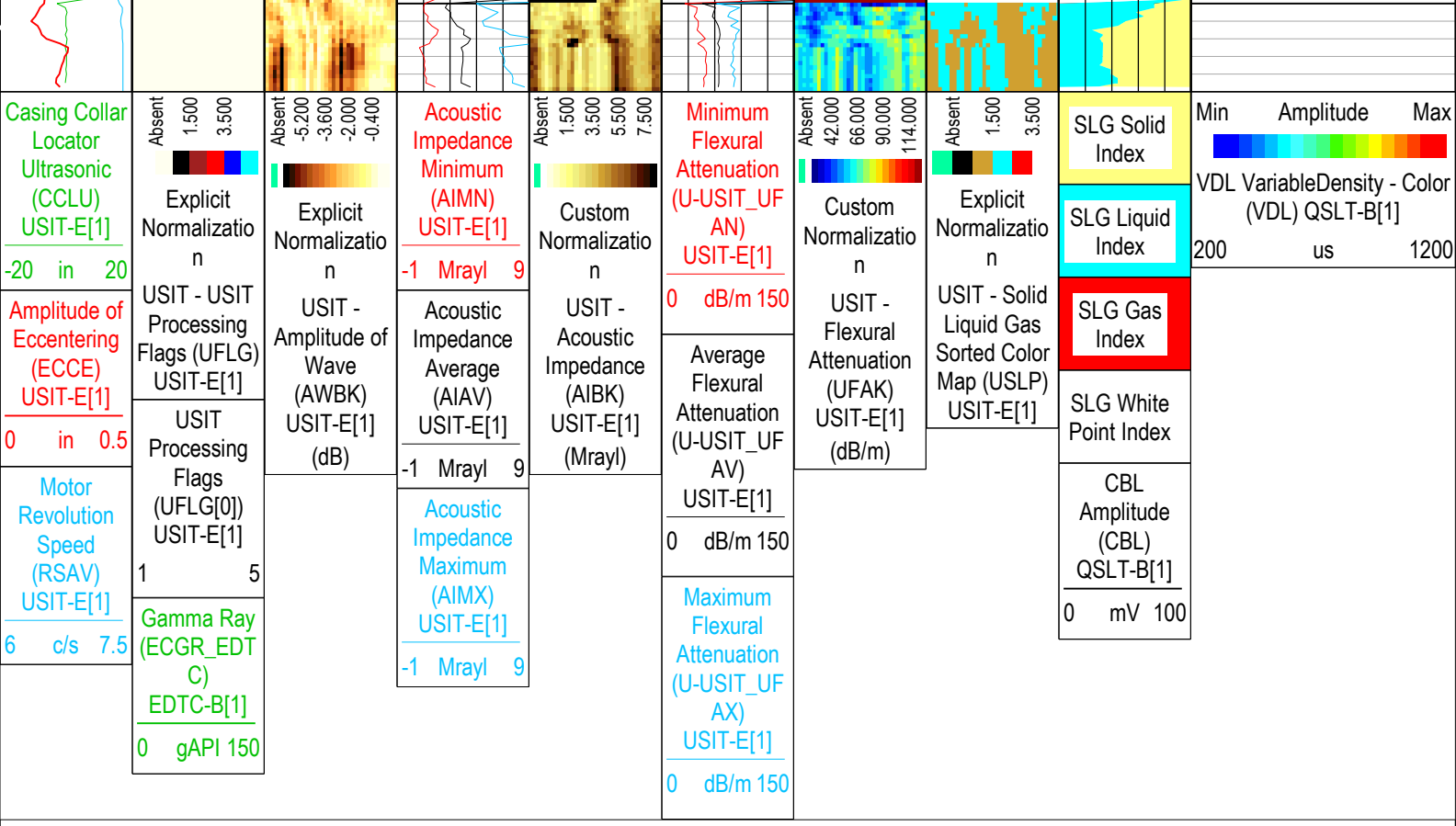


USIT Processing Flags (UFLG[0]) USIT-E[1]

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log (IBC SLG VDLCBL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Sep-2017 12:22:58

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	7374	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	QSLT-B	63	mV
CDEN	Cement Density	USIT-E	15	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMCF	CBL Cement Type Compensation Factor	QSLT-B	1	
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.408	in
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	201	us/ft
FCF	CBL Fluid Compensation Factor	QSLT-B	0.98	

FD	Fluid Density	USIT-E	8.4	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	10.39	dB/m
FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	25.48	us
MSA	Minimum Sonic Amplitude	QSLT-B	2.68	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.23	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
TCUB	T^3 Processing Level	USIT-E	Loop	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.8	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	5.47	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
VDLG	VDL Manual Gain	QSLT-B	5	
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.83	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

OneDepth Zoned Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	16	151.5	337
BS	12.25	337	2172
BS	8.75	2172	7350

All depth are actual

All depth are actual.

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
ACSS	Attenuation Mode CBL Source Switch	QSLT-B	CBL	
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
DDE1	Digitizing Delay 1	QSLT-B	40	us
DDE2	Digitizing Delay 2	QSLT-B	40	us
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	2.874	in
DSIN	Digitizer Sample Interval	QSLT-B	10	us
DWCO	Digitizer Word Count	QSLT-B	256	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
GAI1	SSLT Manual Gain 1	QSLT-B	High	
GAI2	SSLT Manual Gain 2	QSLT-B	High	
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
MODE	SSLT Firing Mode	QSLT-B	Attenuation	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
RATE	Firing Rate	QSLT-B	Time Zoned	Hz
SDTH	Switch Down Threshold	QSLT-B	29490	
SUTH	Switch Up Threshold	QSLT-B	3276	
TMUC	Type of Mud	USIT-E	BRI	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	132	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	172	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	500000	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	101	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	141	us
UPLIHT	Ultrasonic Pulse Echo Large Inhibit Time	USIT-E	Off	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	7300	ft
USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	QSLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	76.05	us

OneTime Zoned Parameters

Pass Log[3]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	110	19-Sep-2017 21:49:27	19-Sep-2017 23:43:39	7350.77	3940.15
EMXV	120	19-Sep-2017 23:43:39	20-Sep-2017 00:32:18	3940.15	2395.67
RATE	12.5	19-Sep-2017 21:54:37	20-Sep-2017 00:32:18	7350.77	2395.67

WINB	36.05	19-Sep-2017 21:49:27	19-Sep-2017 21:56:47	7350.77	7289.3
WINB	34	19-Sep-2017 21:56:47	19-Sep-2017 21:57:11	7289.3	7276.99
WINB	32	19-Sep-2017 21:57:11	20-Sep-2017 00:32:18	7276.99	2395.67

Pass Log[10]:Up

EMXV	120	20-Sep-2017 02:24:54	20-Sep-2017 03:34:06	2405.04	198.77
RATE	8.93	20-Sep-2017 02:24:54	20-Sep-2017 03:34:06	2405.04	198.77
WINB	36.05	20-Sep-2017 02:23:57	20-Sep-2017 02:46:14	2405.04	1722.18
WINB	32	20-Sep-2017 02:46:14	20-Sep-2017 03:34:06	1722.18	198.77

All depth are at tool zero.

One

IBC SLG CBL VDL 0 PSI Repeat

Software Version

Acquisition System	Version
Maxwell 2017 SP1	7.1.82245.3100
Application Patch	Wireline_NPD-ICE2-2017SP1_7.1.87324

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[1]:Up	Up	1948.84 ft	2391.78 ft	19-Sep-2017 9:05:28 PM	19-Sep-2017 9:19:46 PM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

Company:University of Utah Well:MU-ESW1

One: Log[1]:Up:S036

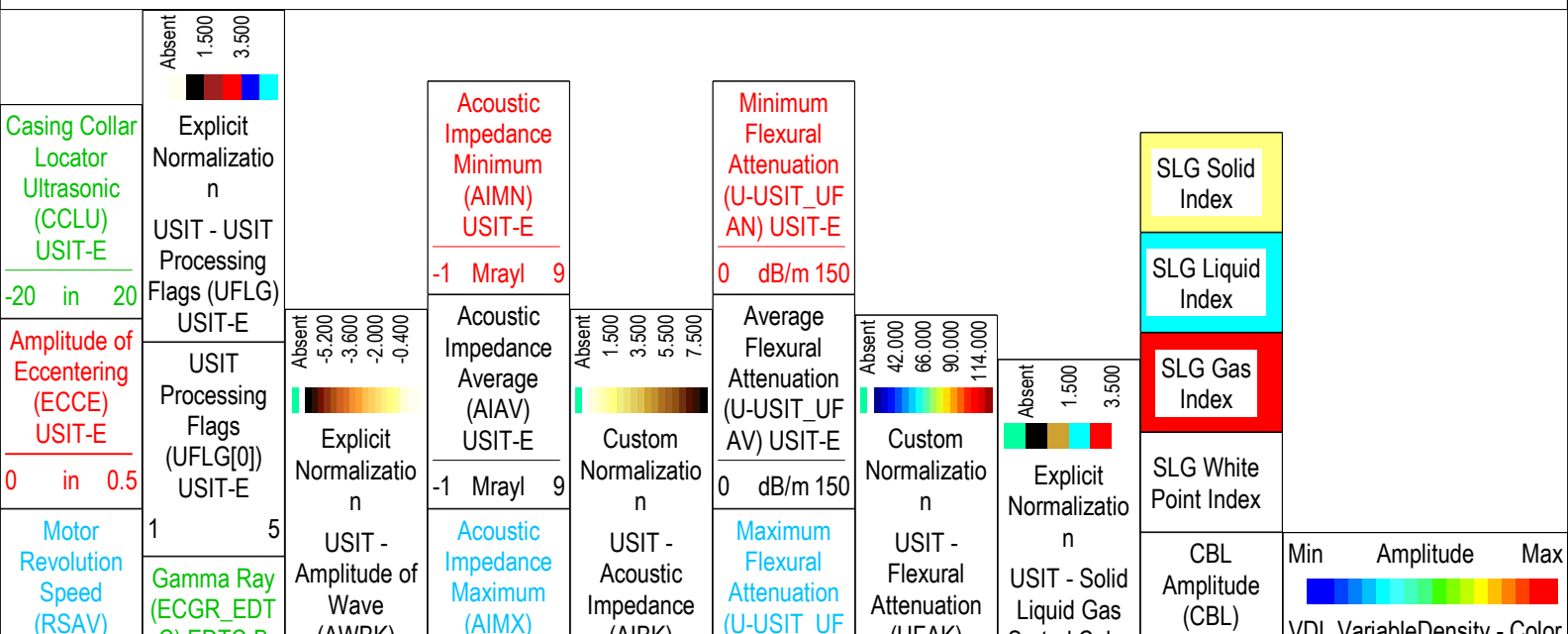
Description: USI IBC SLG Format: Log (IBC SLG VDLCBL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Sep-2017 12:23:14

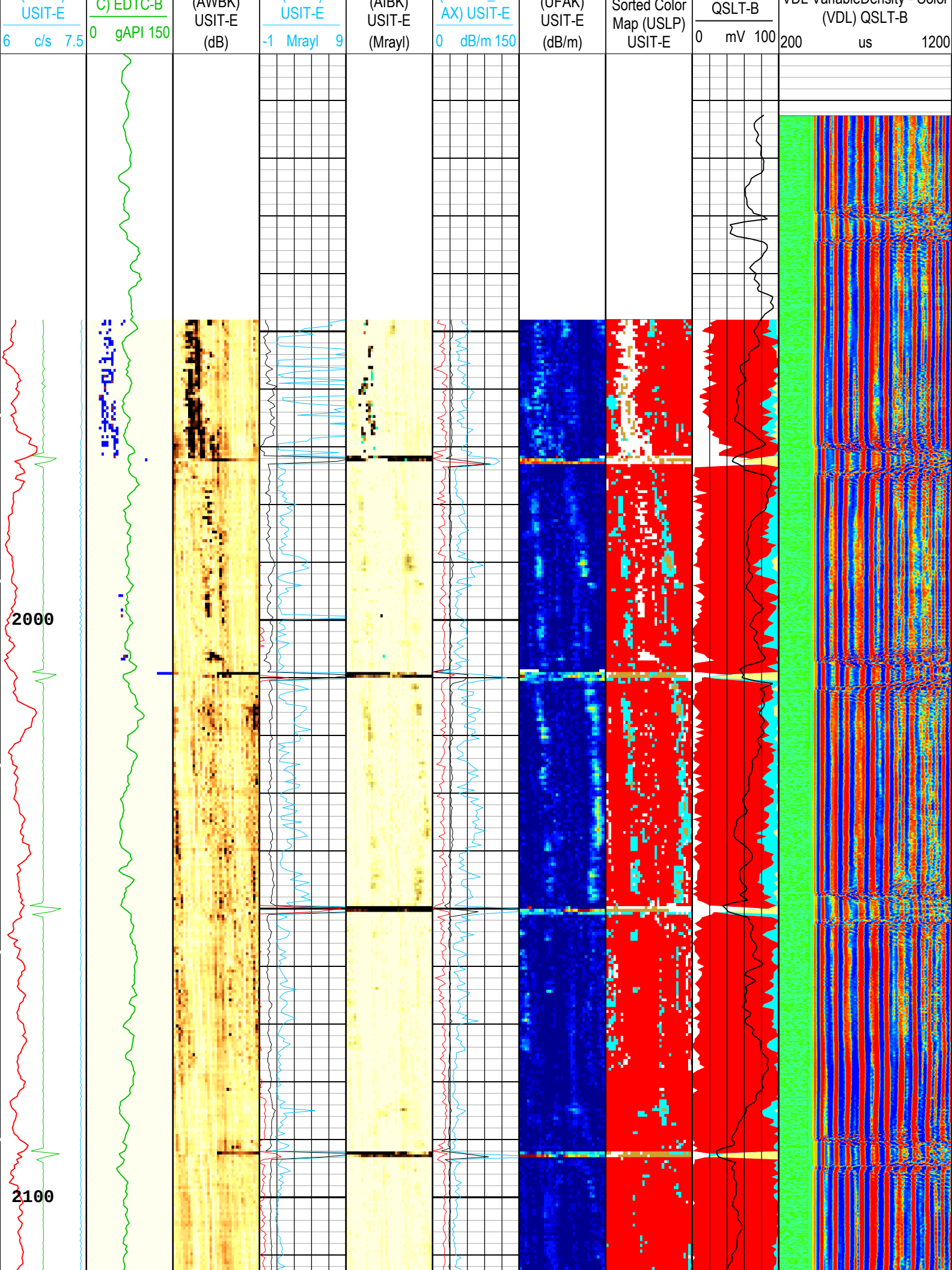
TIME_1900 - Time Marked every 60.00 (s)

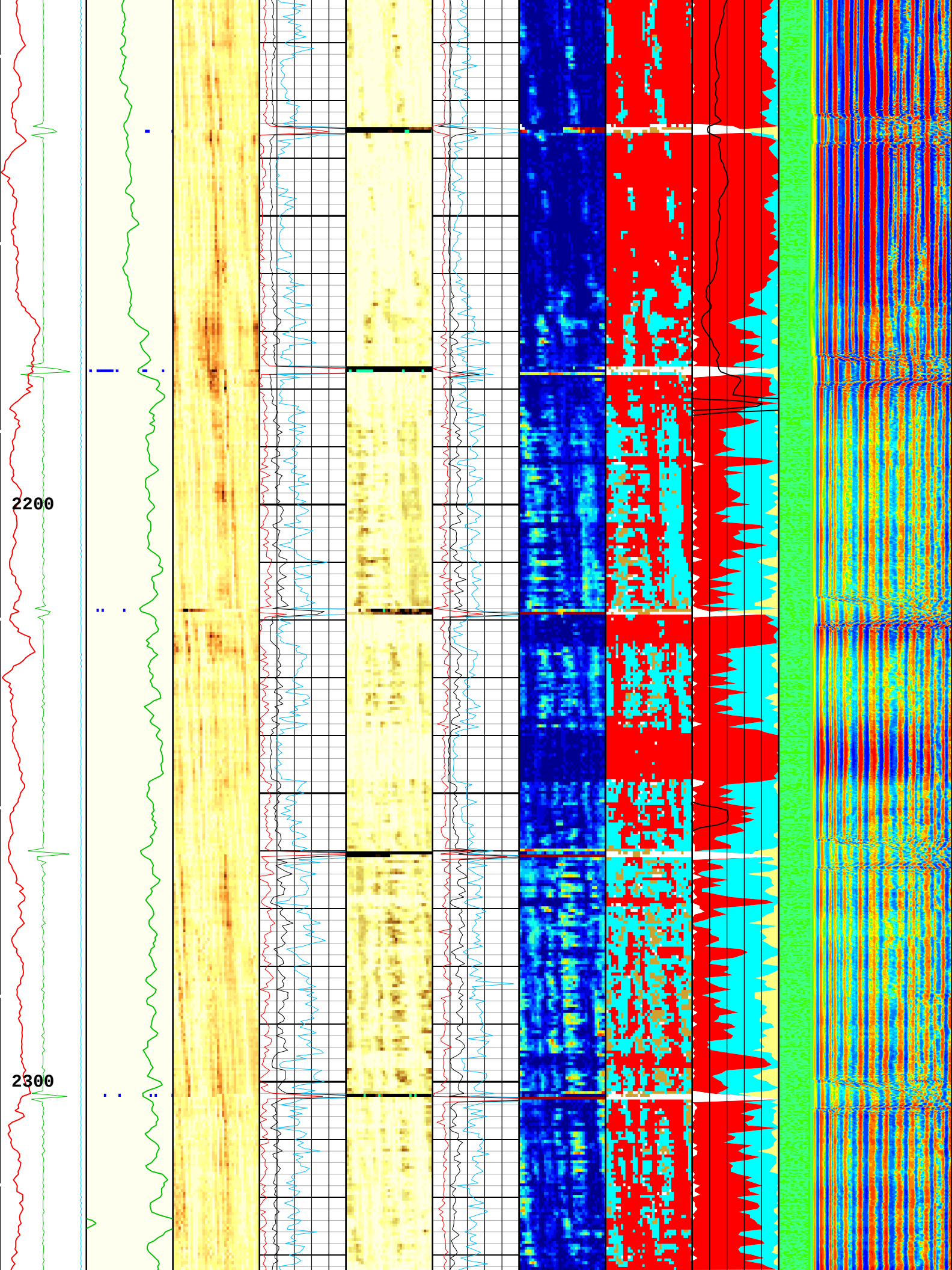
USIT Processing Flags (UFLG[0]) USIT-E

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error




USIT-E
6 c/s 7.5
C) EDTC-B
0 gAPI 150
(AWBK)
USIT-E
(dB)
USIT-E
-1 Mrayl 9
(AIBK)
USIT-E
(Mrayl)
AX) USIT-E
0 dB/m 150
(UFAK)
USIT-E
(dB/m)
Sorted Color
Map (USLP)
USIT-E
QSLT-B
0 mV 100
(VDL) QSLT-B
200 us 1200
2000
2100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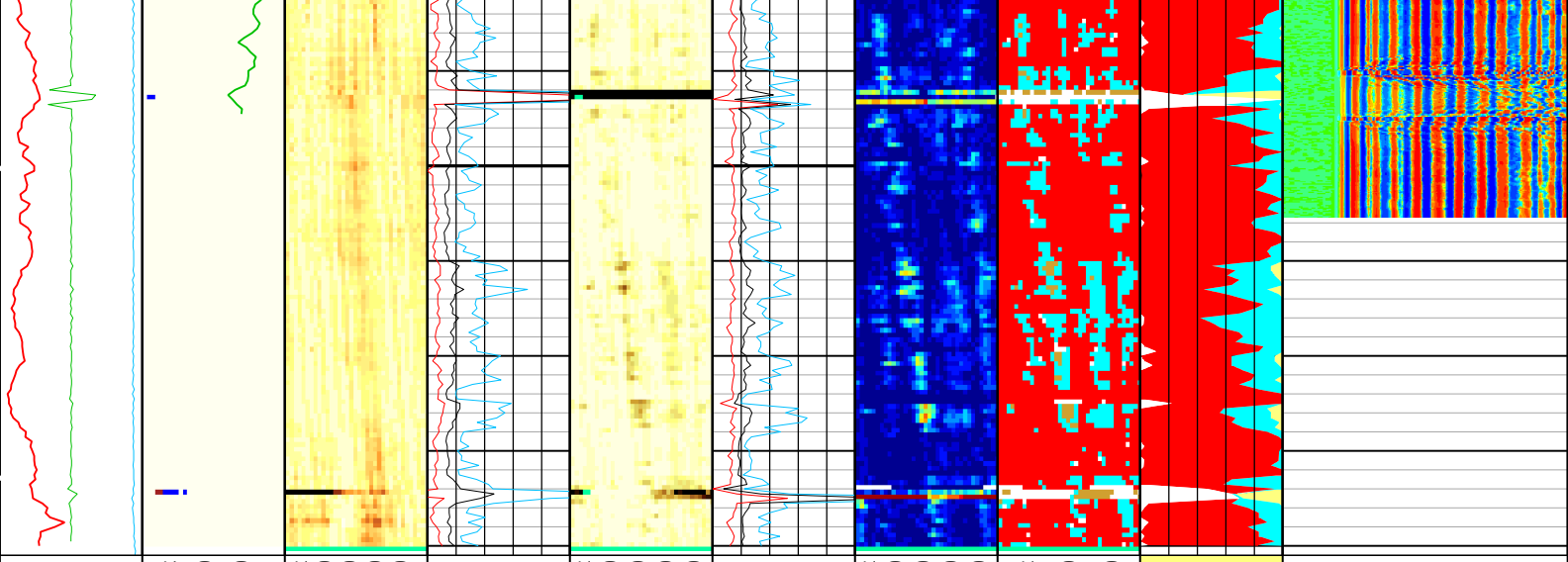


USIT Processing Flags (UFLG[0]) USIT-E

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log (IBC SLG VDLCBL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 21-Sep-2017 12:23:14

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	7374	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	QSLT-B	63	mV

CDEN	Cement Density	USIT-E	15	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMCF	CBL Cement Type Compensation Factor	QSLT-B	1	
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.408	in
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	201	us/ft
FCF	CBL Fluid Compensation Factor	QSLT-B	0.98	
FD	Fluid Density	USIT-E	8.4	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	10.39	dB/m
FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	25.48	us
MSA	Minimum Sonic Amplitude	QSLT-B	2.68	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.23	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.181	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	in
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
TCUB	T^3 Processing Level	USIT-E	Loop	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.8	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	5.47	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
THDP	Thickness Detection Policy	USIT-E	Fundamental	
VCAS	Ultrasonic Transversal Velocity in Casing	USIT-E	51.4	us/ft
VDLG	VDL Manual Gain	QSLT-B	5	
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl

ZMUD	Acoustic Impedance of Mud	Borehole	1.83	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	12.25	1902	2172
BS	8.75	2172	2391

All depth are actual.

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
ACSS	Attenuation Mode CBL Source Switch	QSLT-B	CBL	
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
DDE1	Digitizing Delay 1	QSLT-B	40	us
DDE2	Digitizing Delay 2	QSLT-B	40	us
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	2.874	in
DSIN	Digitizer Sample Interval	QSLT-B	10	us
DWCO	Digitizer Word Count	QSLT-B	256	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
GAI1	SSLT Manual Gain 1	QSLT-B	High	
GAI2	SSLT Manual Gain 2	QSLT-B	High	
HRES	Horizontal Resolution	USIT-E	10 deg	
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
MODE	SSLT Firing Mode	QSLT-B	Attenuation	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
RATE	Firing Rate	QSLT-B	12.5	Hz
SDTH	Switch Down Threshold	QSLT-B	29490	
SUTH	Switch Up Threshold	QSLT-B	3276	
TMUC	Type of Mud	USIT-E	BRI	
UACLV_PERM	Ultrasonic ACLV Permanent	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	132	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	172	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	500000	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	101	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	141	us
UPLIHT	Ultrasonic Pulse Echo Large Inhibit Time	USIT-E	Off	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	2300	ft
USSP	Ultrasonic Service	USIT-E	IBC	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	QSLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	36.05	us

WIND	Window Begin Time	USIT-E	30.05	us
WINE	Window End Time	USIT-E	76.05	us

Time Zone Parameters

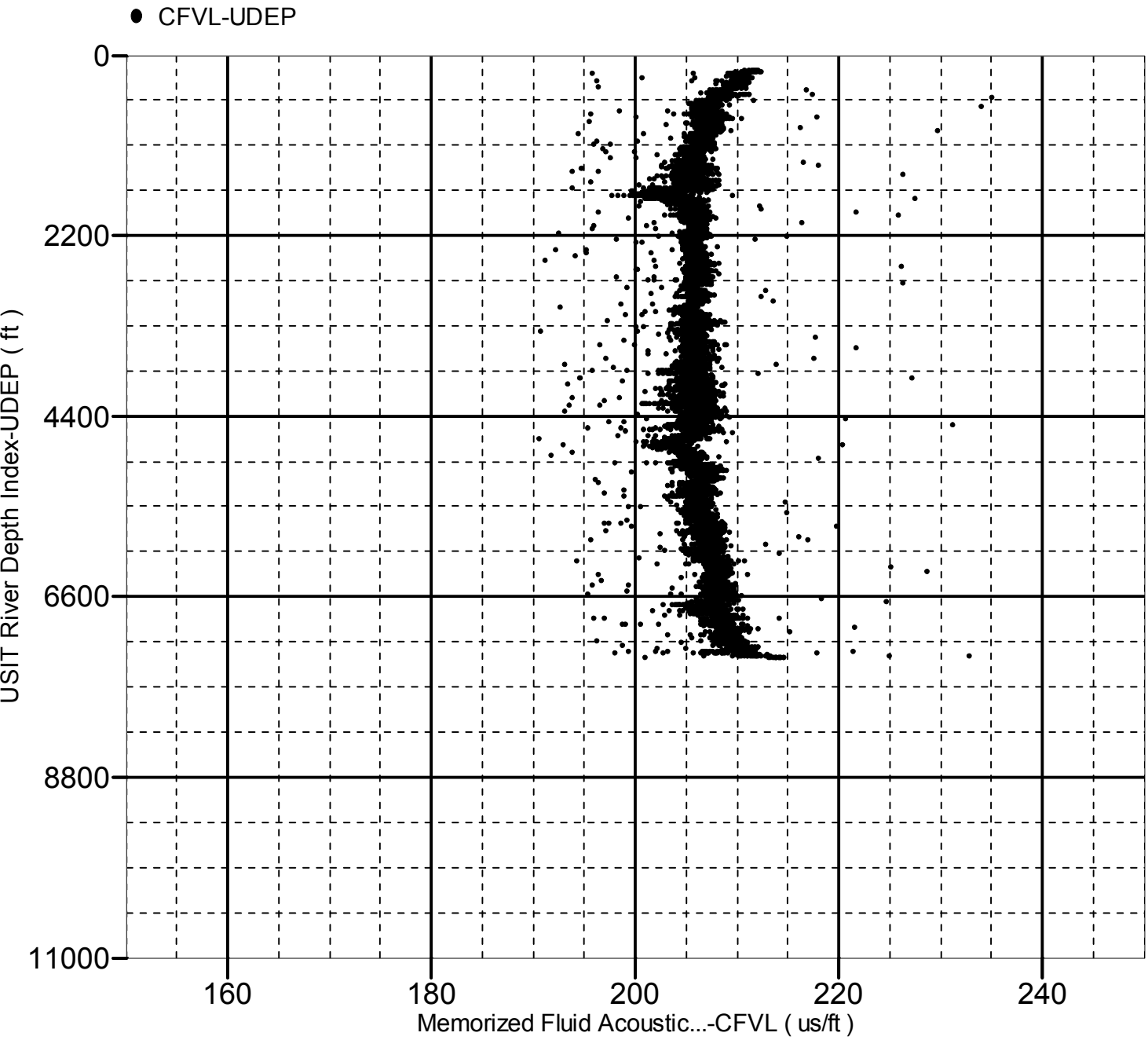
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	50	19-Sep-2017 21:05:28	19-Sep-2017 21:12:15	2391.78	2178.7
EMXV	70	19-Sep-2017 21:12:15	19-Sep-2017 21:19:46	2178.7	1948.84

All depth are at tool zero.

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 198.00 to 7350.00 ft

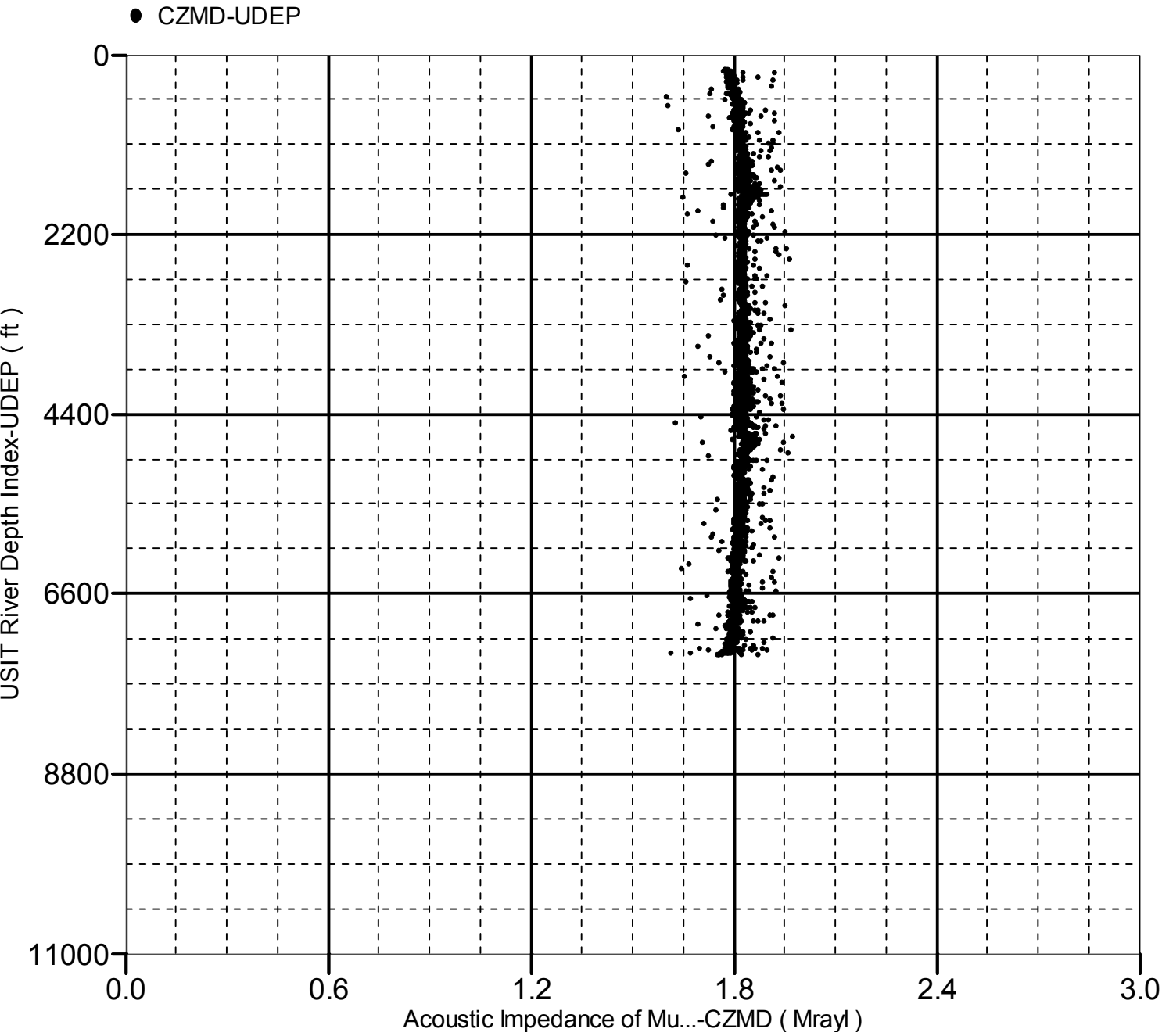


XYZ
Company:University of Utah Well:MU-ESW1
Main:S036

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 198.00 to 7350.00 ft



Company:	University of Utah
Well:	MU-ESW1
Field:	None
County:	Beaver

Schlumberger

State:	Utah

Isolation Scanner - CBL VDL

Cement Evaluation

Gamma Ray - CCL Log