Schlumberger

Company: Occidental Petroleum Corporation

Well: Wardell 29-29

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner

Cement Bond Log

Gamma Ray - CCL

County: Weld
Field: Wattenberg
Location: SWSW
Well: Wardell 29-29
Company: Occidental Petroleum Corporation

Location: SWSW

Elev.: K.B. 4928.00 ft
G.L. 4912.00 ft
D.F. 4928.00 ft

Permanent Datum: Ground Level Elev.: 4912.00 f
Log Measured From: Kelly Bushing 16.00 ft above Perm.Datum
Drilling Measured From: Kelly Bushing

API Serial No.	Section:	Township:	Range:
05-123-24091	20	3N	65W

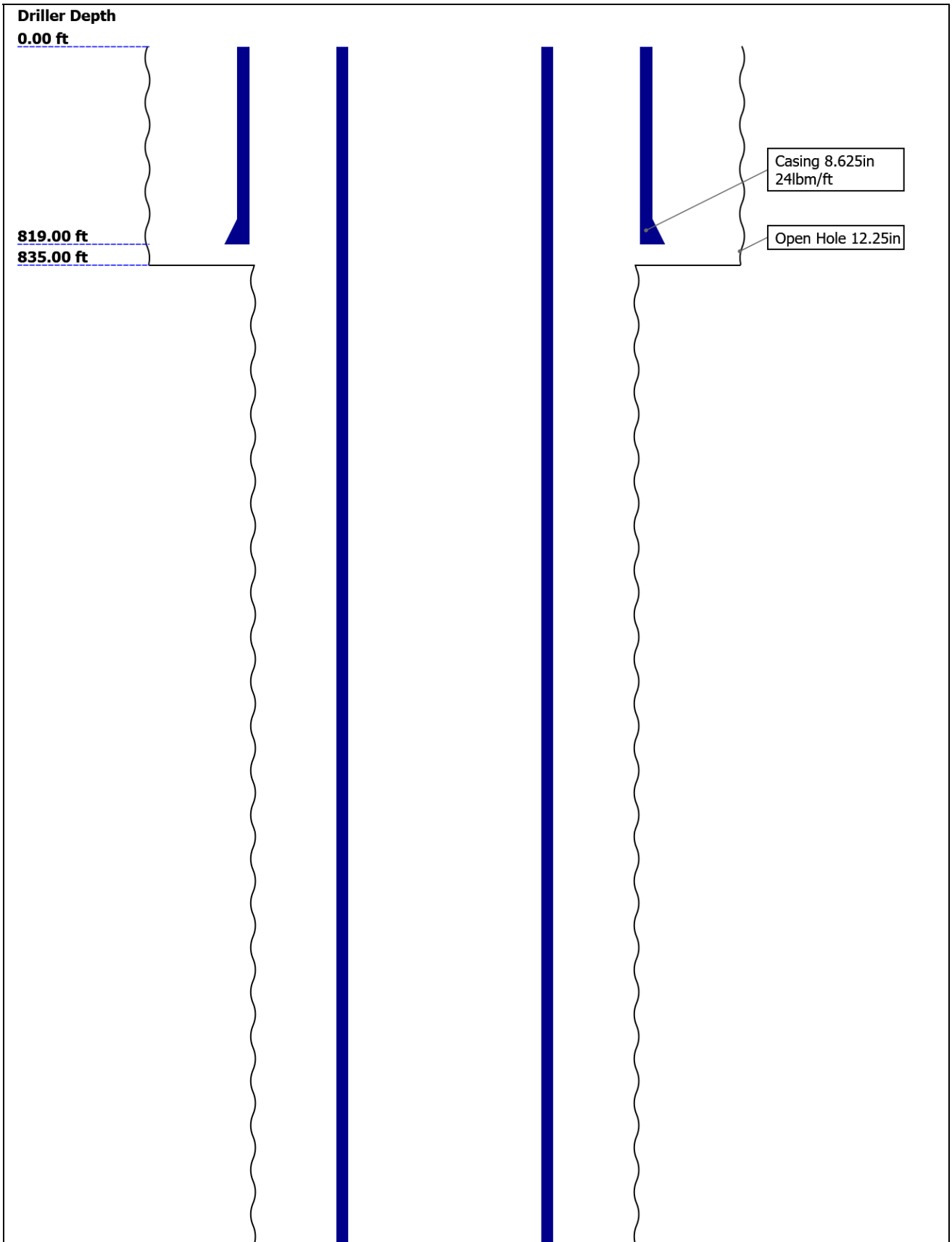
Logging Date		01-Jun-2023	
Run Number		ONE	
Depth Driller		7525.00 ft	
Schlumberger Depth		7525.00 ft	
Bottom Log Interval		4600.00 ft	
Top Log Interval		50.00 ft	
Casing Fluid Type		Water	
Salinity			
Density		8.34 lbm/gal	
Fluid Level		8.00 ft	
BIT/CASING/TUBING STRING			
Bit Size		7.88 in	
From		835.00 ft	
To		7525.00 ft	
Casing/Tubing Size		4.5 in	
Weight		11.6 lbm/ft	
Grade		L80	
From		0.00 ft	
To		7514.00 ft	
Max Recorded Temperatures		120 degF	
Logger on Bottom	Time	01-Jun-2023 12:45:00	
Unit Number	Location:	TAM Fort Morgan	
Recorded By		Danya Al	
Witnessed By		Shane Hart	

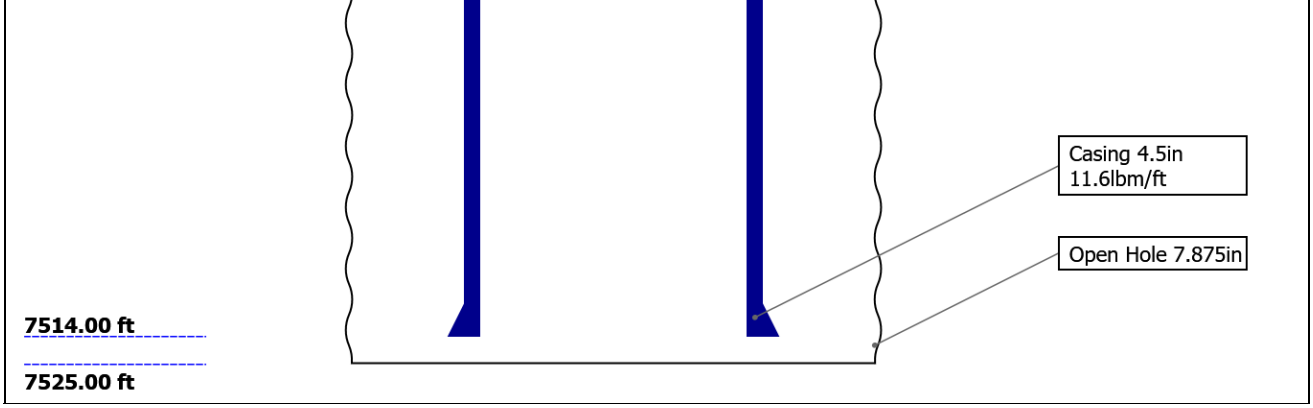
Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

Well Sketch



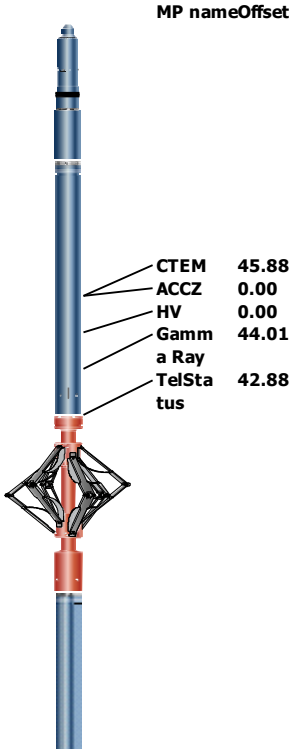


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	12.25	7.875				
Top Driller (ft)	0	835				
Top Logger (ft)	0	835				
Bottom Driller (ft)	835	7525				
Bottom Logger (ft)	835	7525				
Casing						
Size (in)	8.625	4.5				
Weight (lbm/ft)	24	11.6				
Inner Diameter (in)	8.097	4				
Grade	J55	L80				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	819	7514				
Bottom Logger (ft)	819	7514				

Remarks and Equipment Summary

ONE: Toolstring



ONE: Remarks

Thank you for choosing Schlumberger
Log run for cement and casing evaluation
IBCS-A sub used with IBC-TX
Tool was run as per tool sketch
Main pass was logged under 500 psi
Crew: Raul Ramirez

Lengths are in ft
Maximum Outer Diameter = 3.800 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

	ONE		
Depth Measuring Device			
Type	IDW-B		
Serial Number			
Calibration Date			
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	1234		
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Workover rig		

ONE:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	Schlumberger depth control procedures followed
Rig Up Length At Surface		IDW used as primary depth control system
Rig Up Length At Bottom		Z-Chart used as secondary depth control system
Rig Up Length Correction		
Stretch Correction		
Tool Zero Check At Surface		

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Log[3]:Down	801.32	4650.56

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 : 46.31m(151.94ft) to 55.96m(183.61ft)
MUD_N_FRP = 1.03
DFD = 1.00g/cm3(8.34lbm/gal)
CZMD median computed in free pipe normalization interval = 1.45 MRayl

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

Composite 1

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.222884
	Wireline_TestKit-MRSFMRHF-2022.1_12.1.219014
	Wireline_TestKit-MSCT-2022.1_12.1.221550

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	1278.18 ft	4645.43 ft	01-Jun-2023 12:21:58 PM	01-Jun-2023 1:13:09 PM	ON	4.17 ft	Yes

ONE	Log[6]:Up	Up	58.52 ft	2505.52 ft	01-Jun-2023 1:36:22 PM	01-Jun-2023 2:14:06 PM	ON	1.82 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Occidental Petroleum Corporation Well:Wardell 29-29

Composite 1:S006

Description: USI IBC SLG Format: Log (IBC SLG CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 01-Jun-2023 18:38:41

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

Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-20 in 20

Amplitude of Eccenterin g (ECCE) USIT-E[1]
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 7.5

Absent 1.500 3.500
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

Acoustic Impedance Flexural Attenuation Average (AIFAV) 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)

Minimum Flexural Attenuation (U-USIT_UFA N) USIT-E[1]
0 dB/m 150

Average Flexural Attenuation (U-USIT_UFA V) USIT-E[1]
0 dB/m 150

Maximum Flexural Attenuation (U-USIT_UFA X) USIT-E[1]
0 dB/m 150

Absent 64.000 92.000 120.000 148.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E[1] (dB/m)

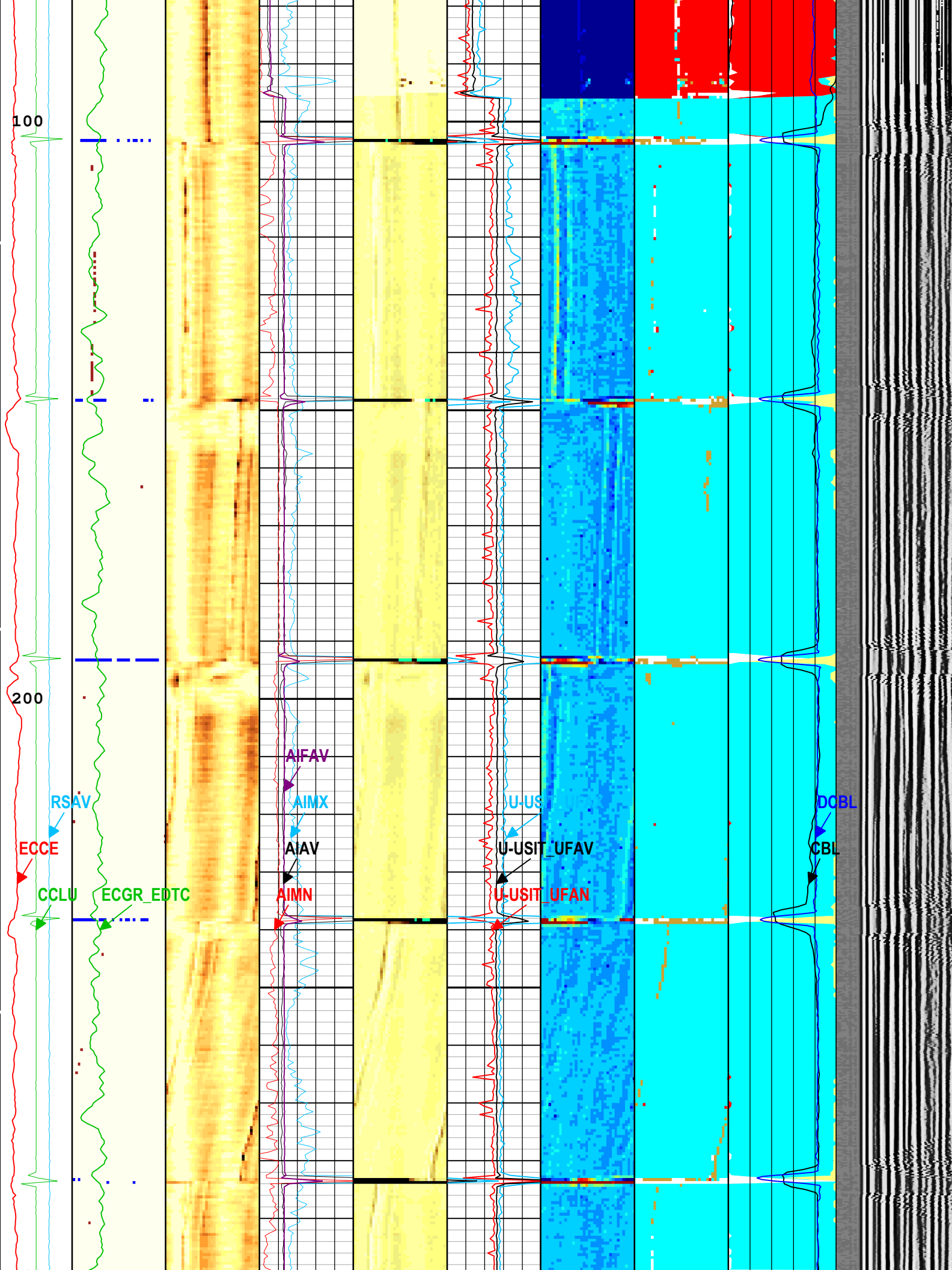
Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E[1]

SLG Solid Index
SLG Liquid Index
SLG Gas Index
SLG White Point Index

CBL Amplitude (CBL) ASLT-B[1]
0 mV 100

Synthetic CBL from Discriminated Attenuation (DCBL) ASLT-B[1]
0 mV 100

Min Amplitude Max
VDL VariableDens (VDL) ASLT-B[1]
200 us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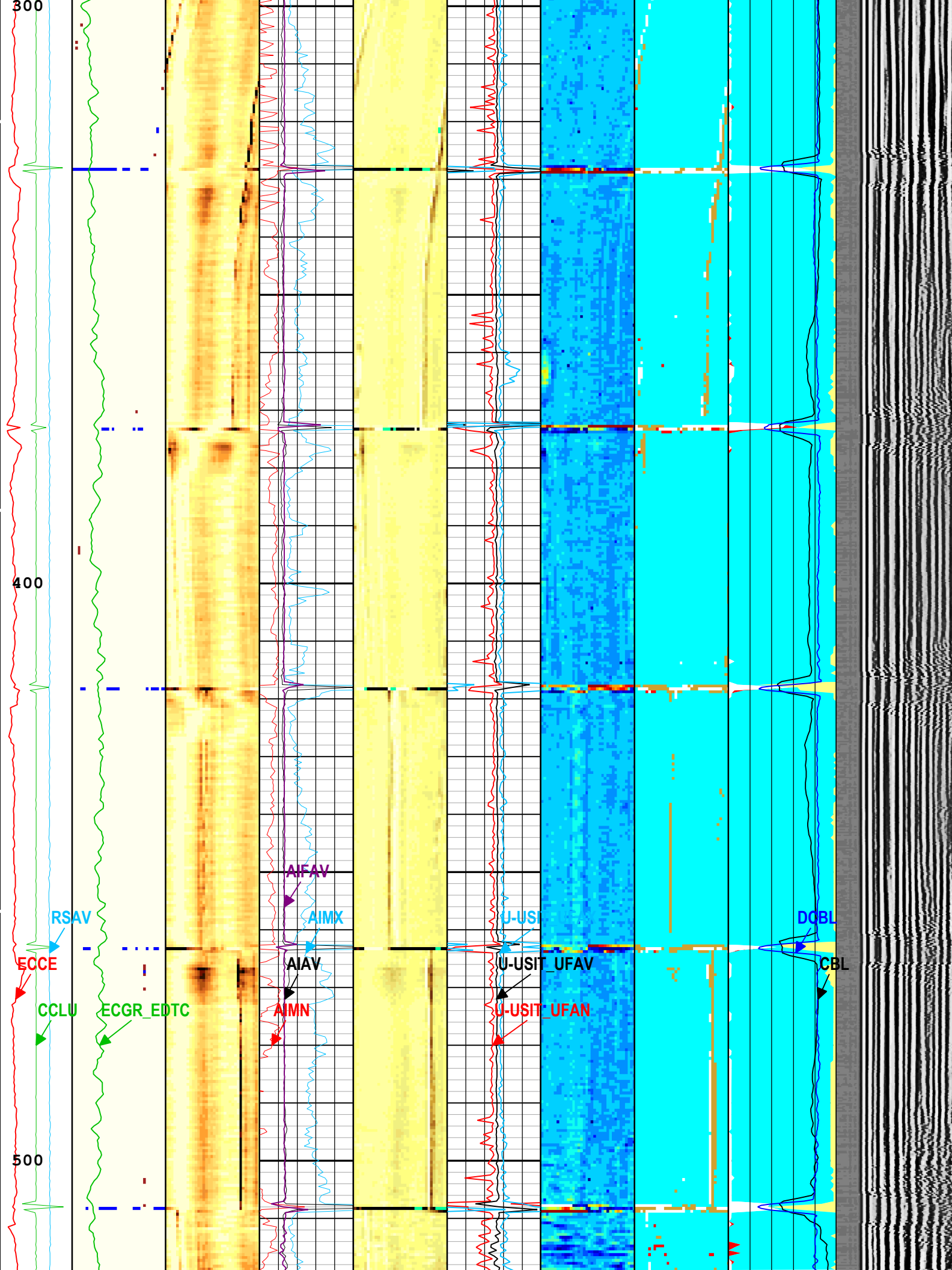
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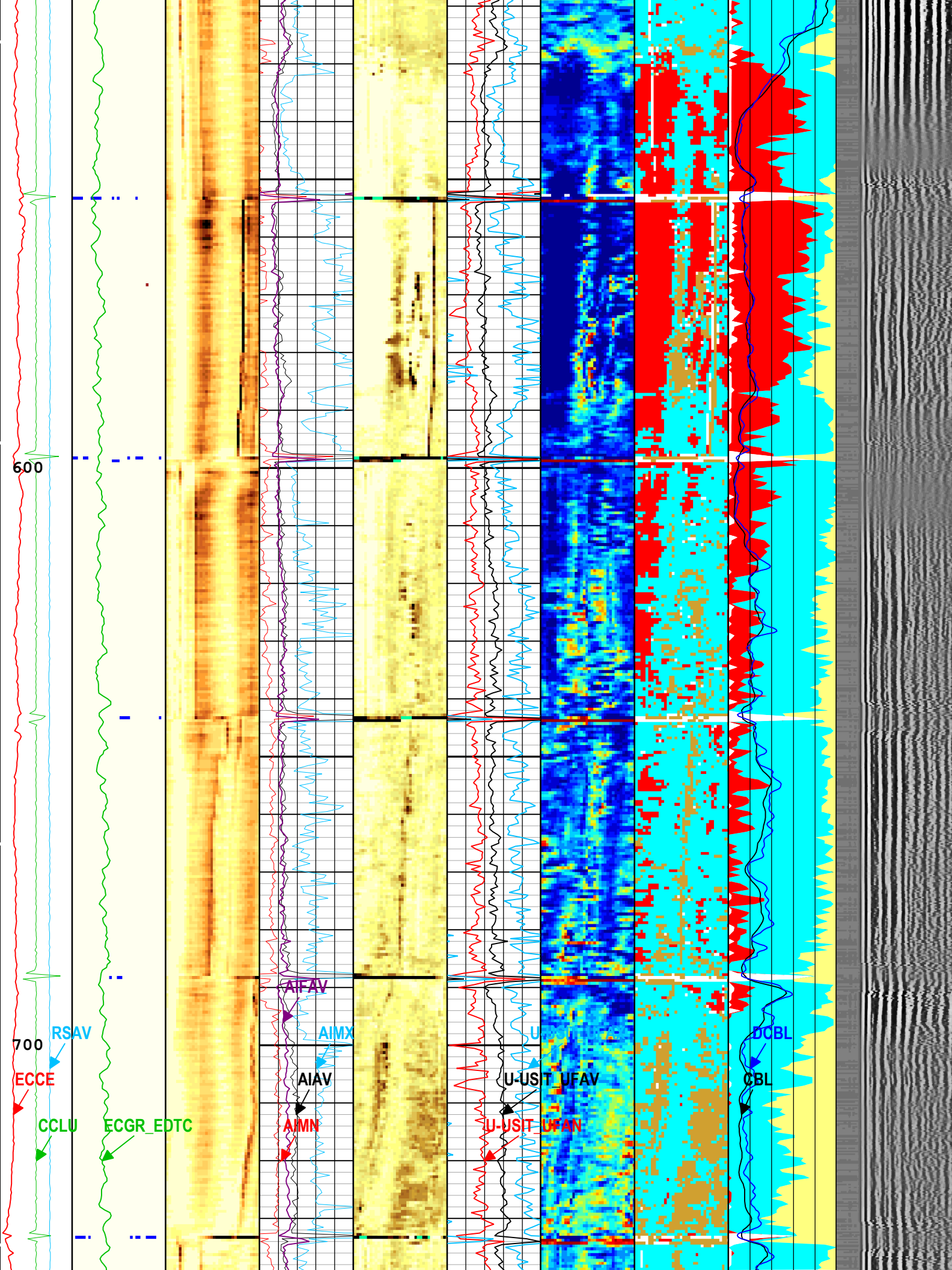
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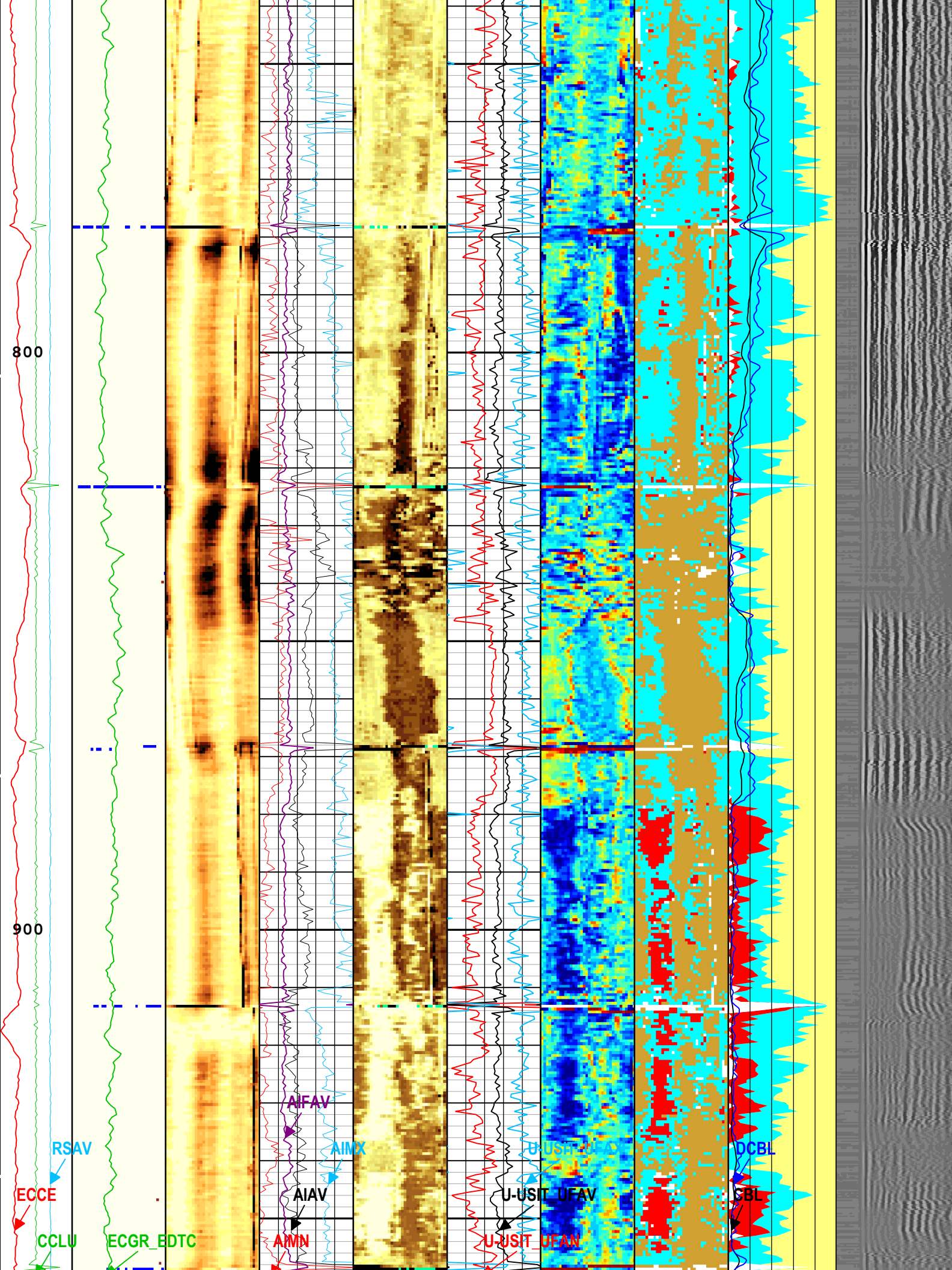
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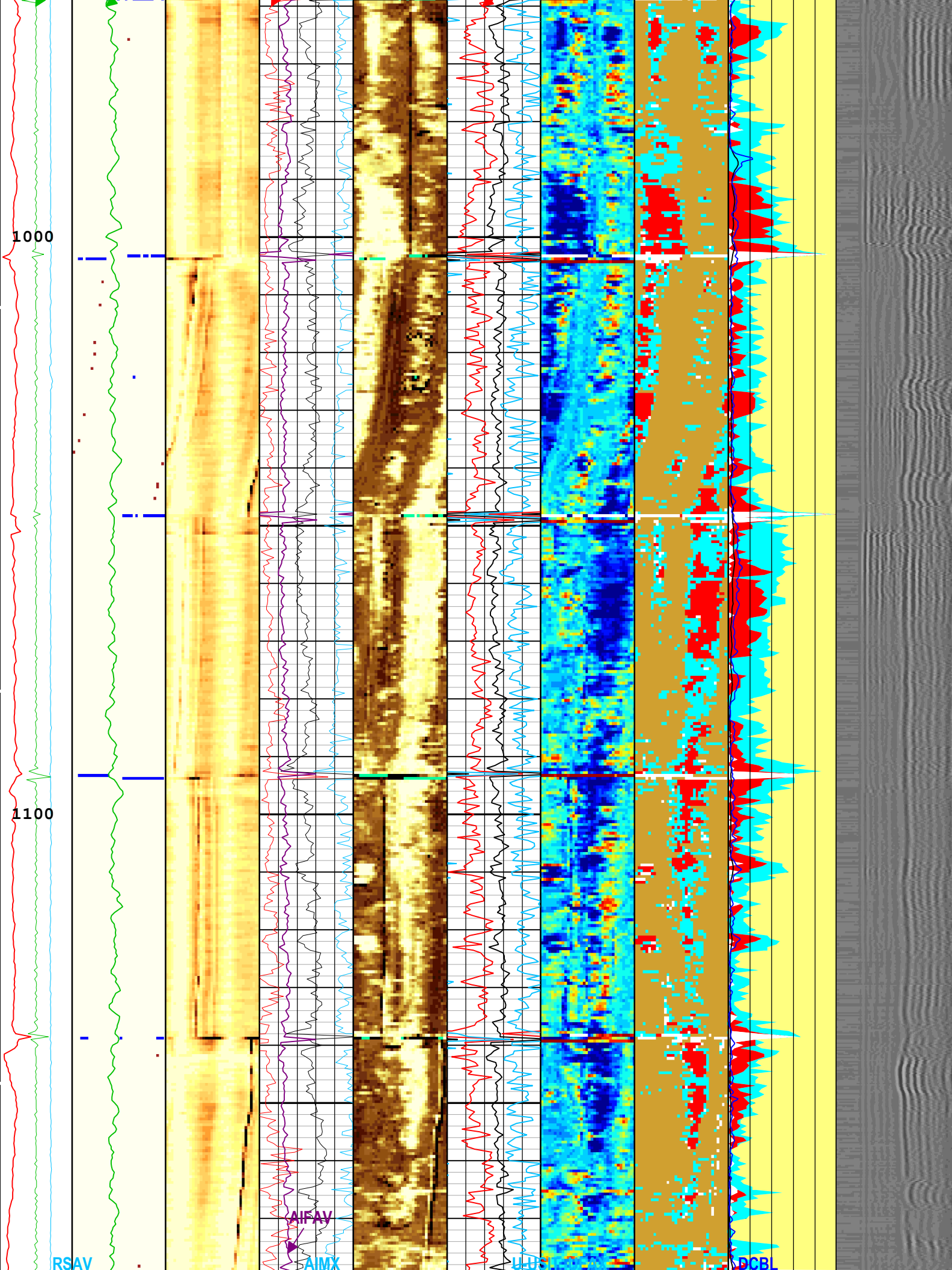
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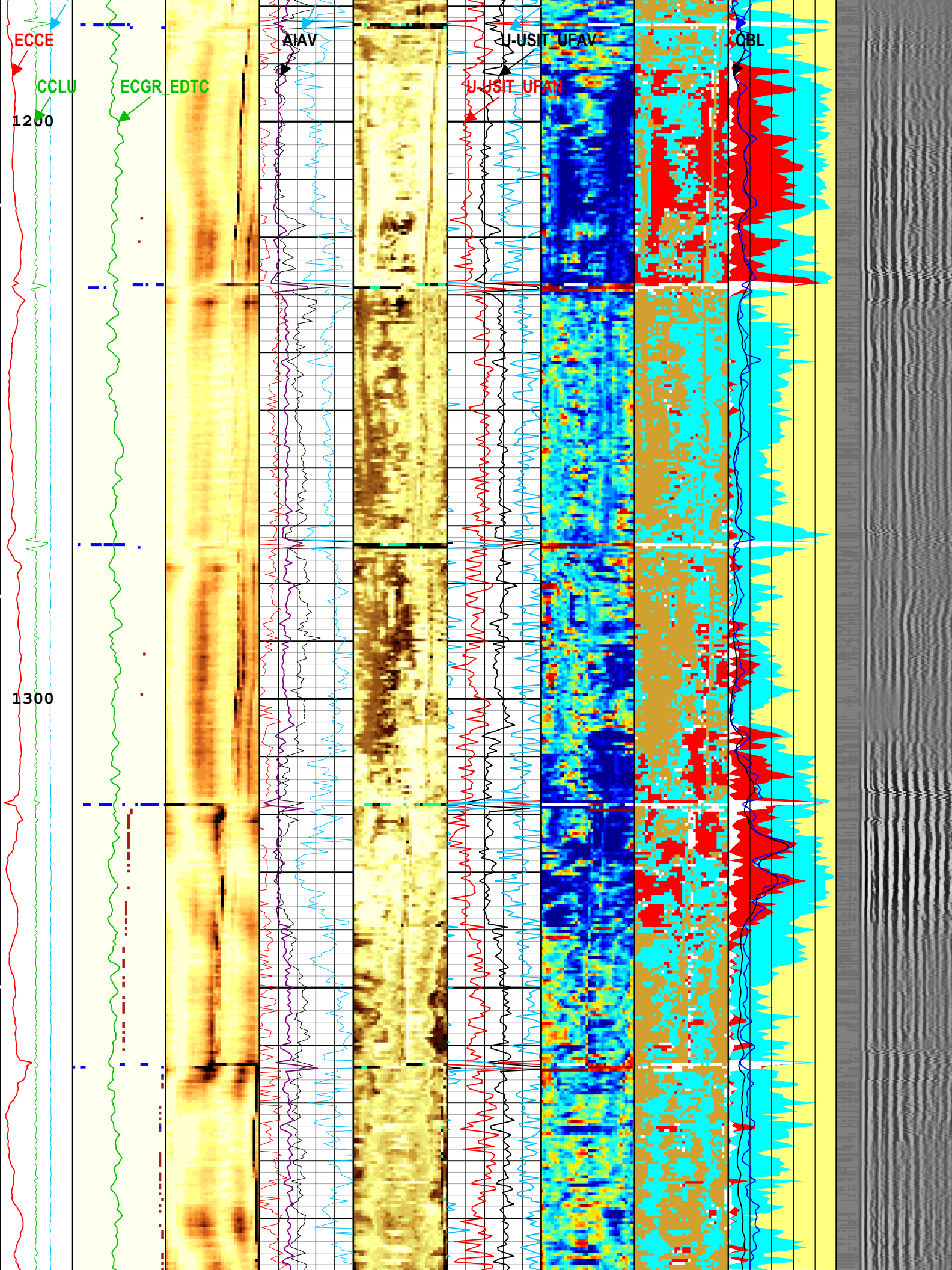
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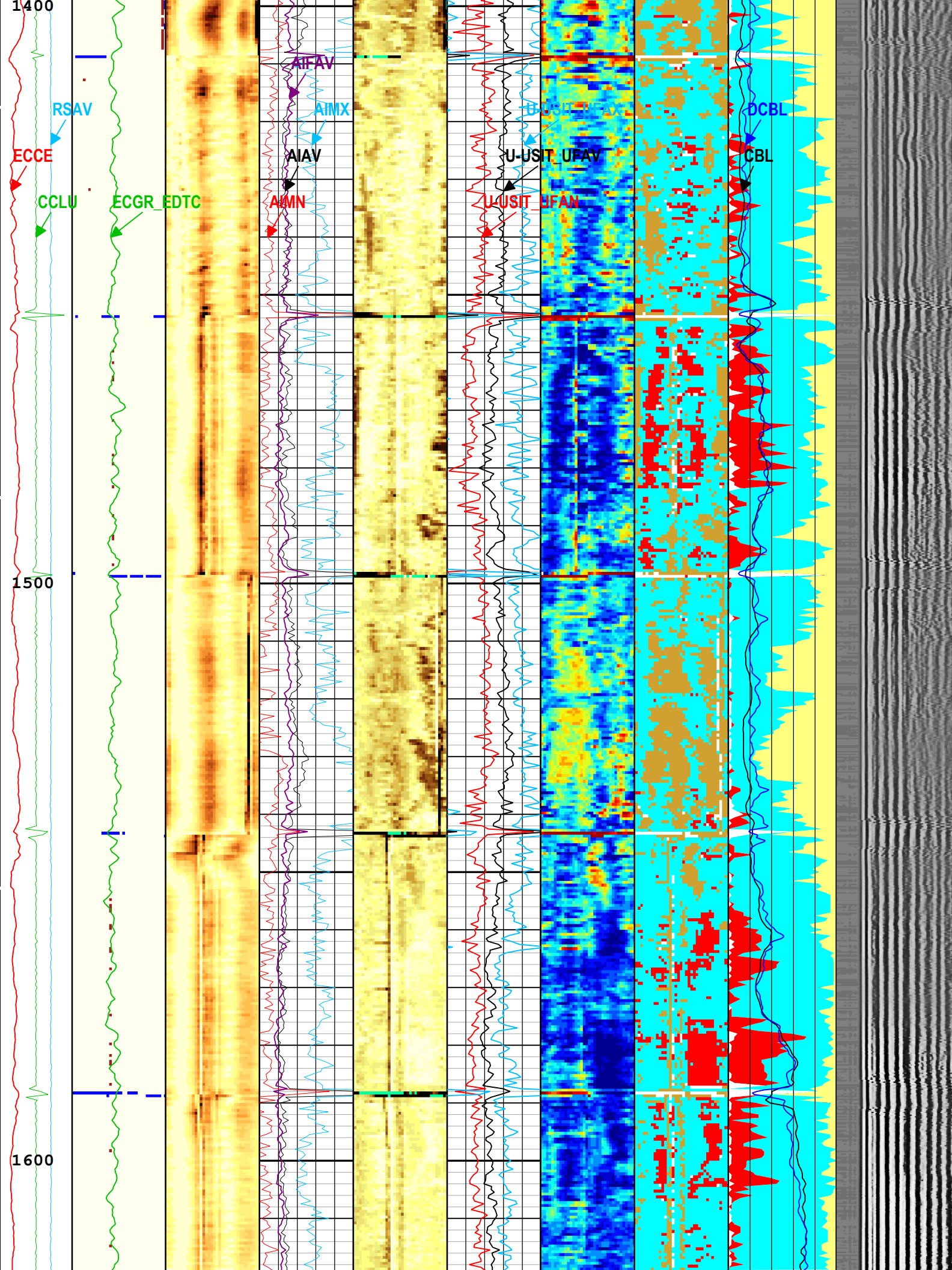
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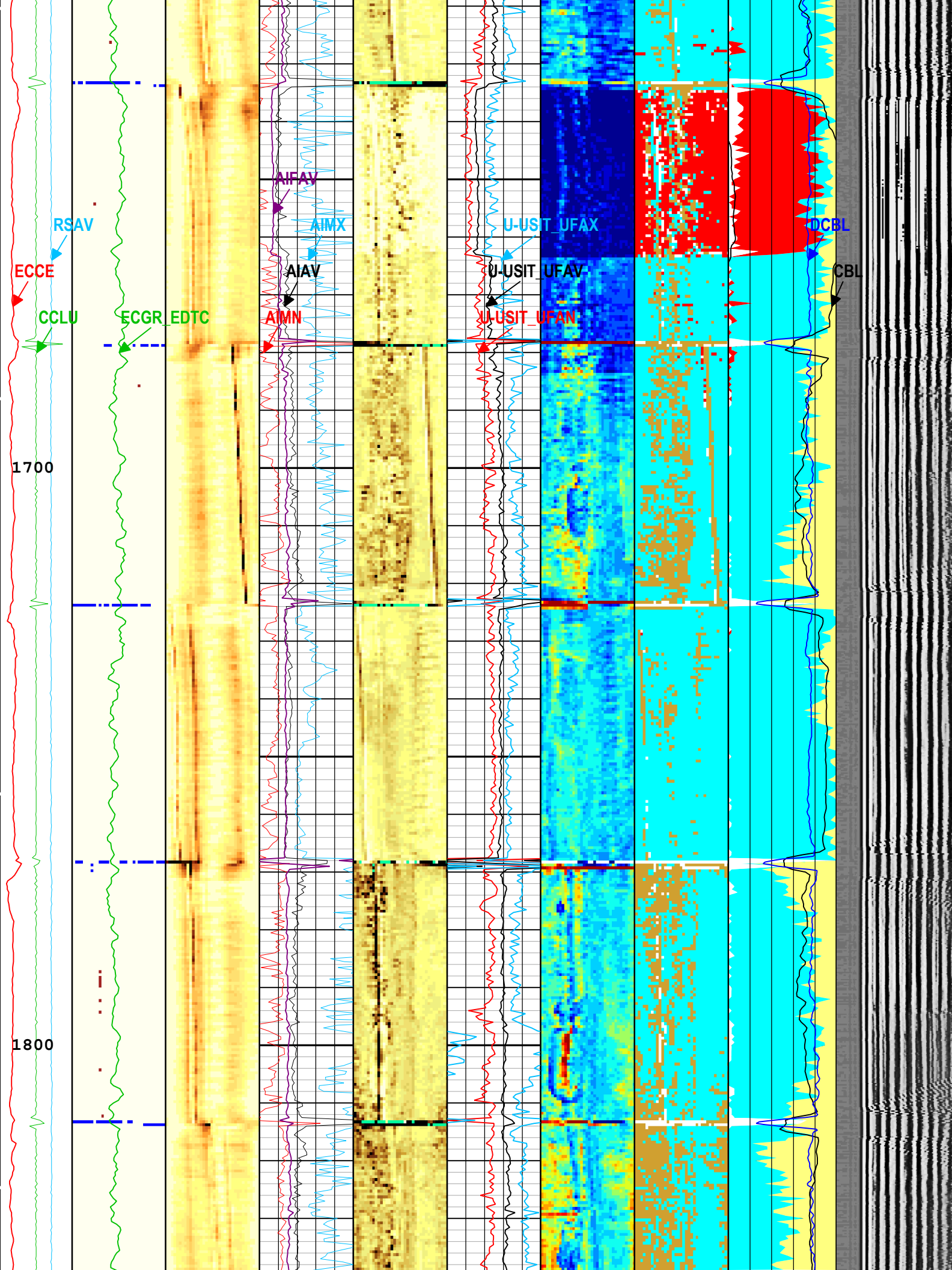
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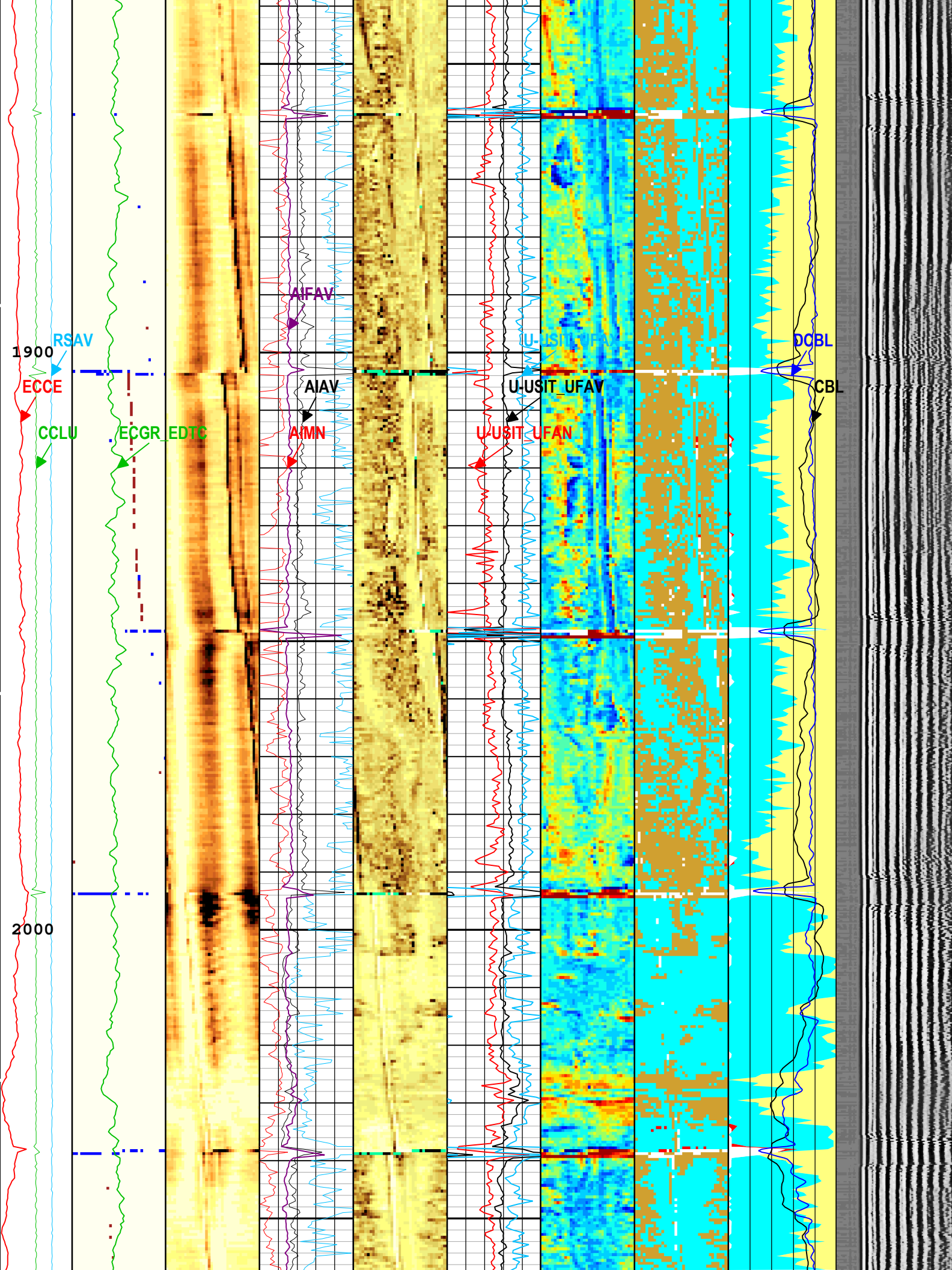
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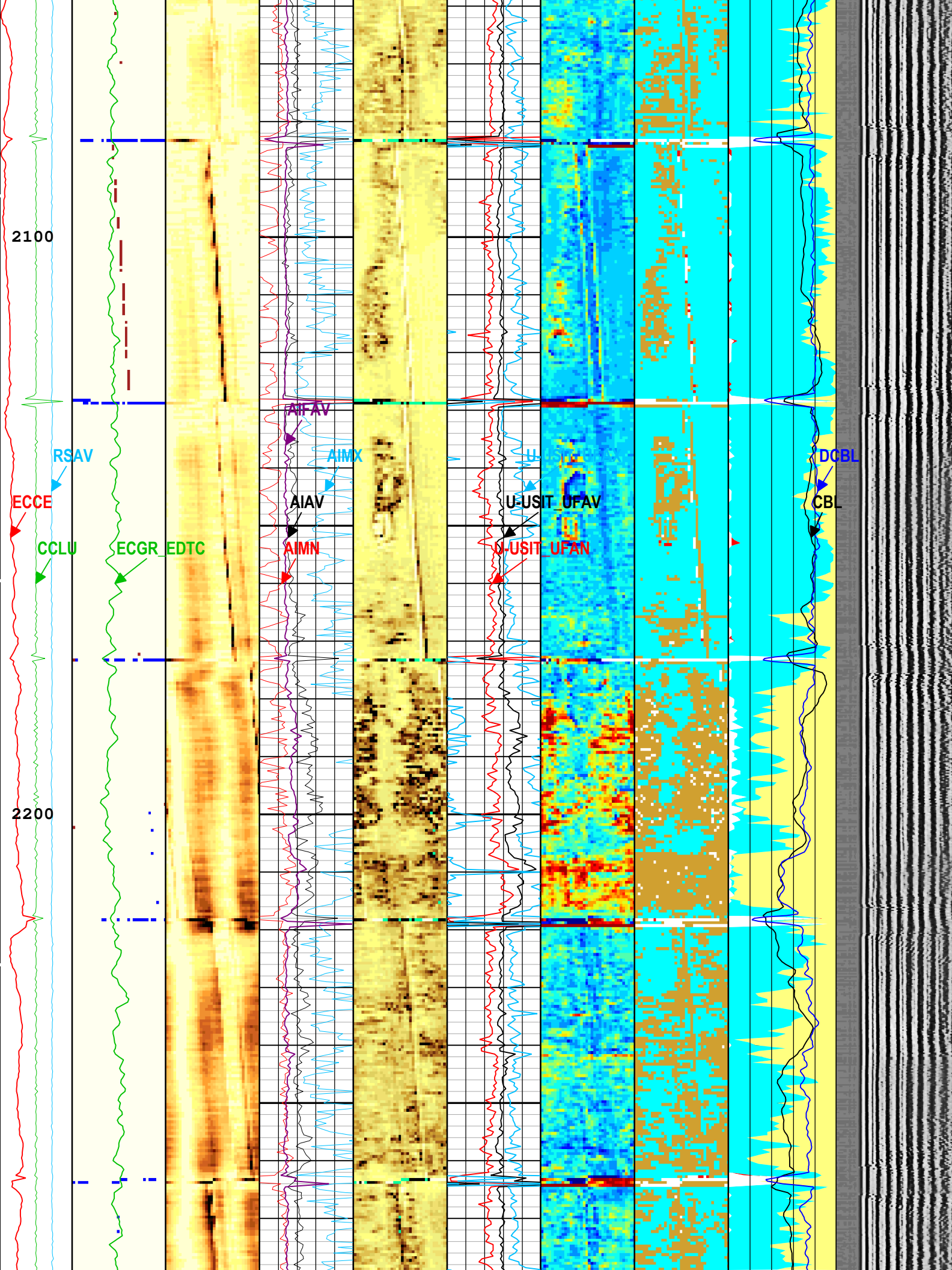
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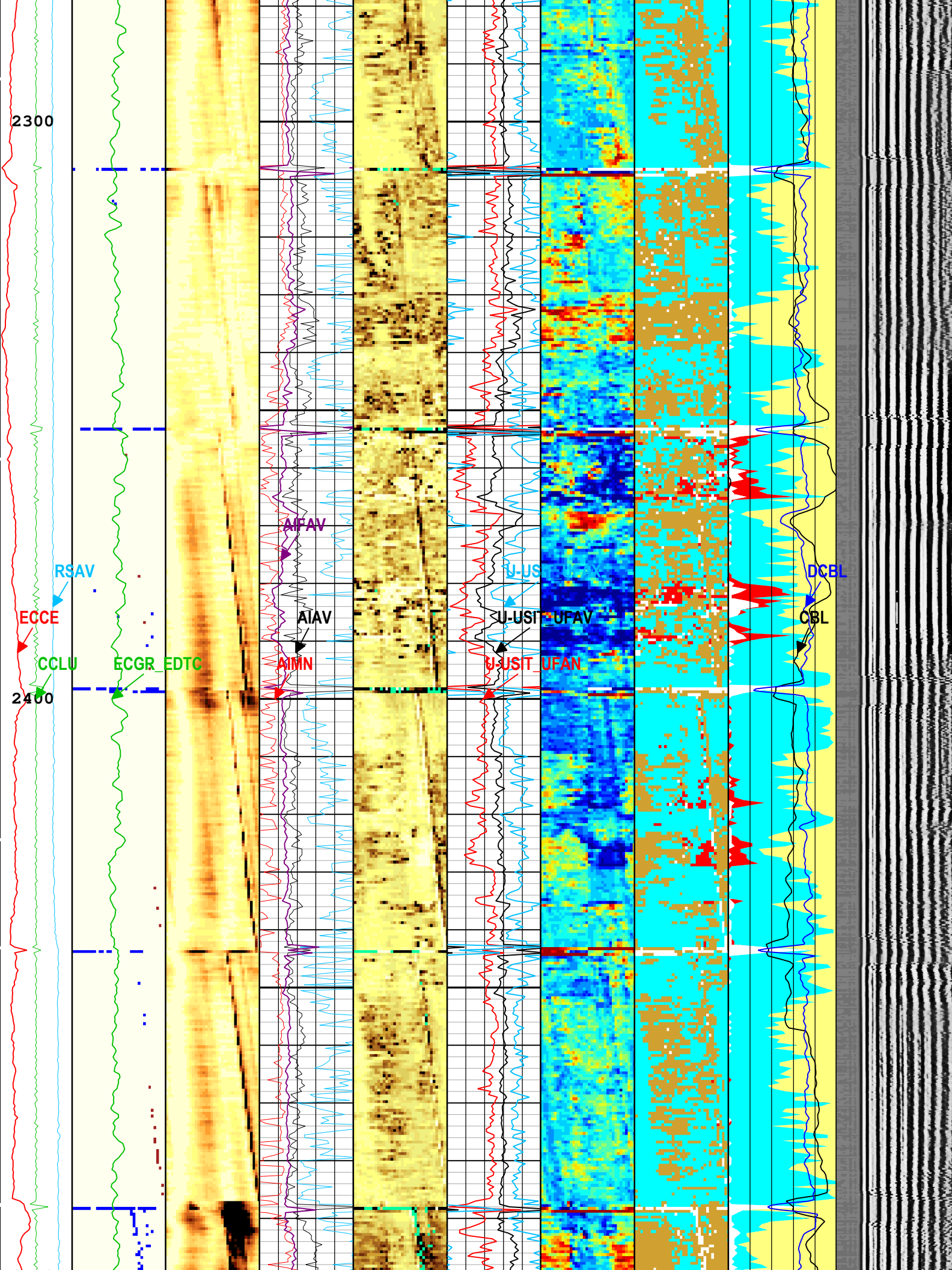
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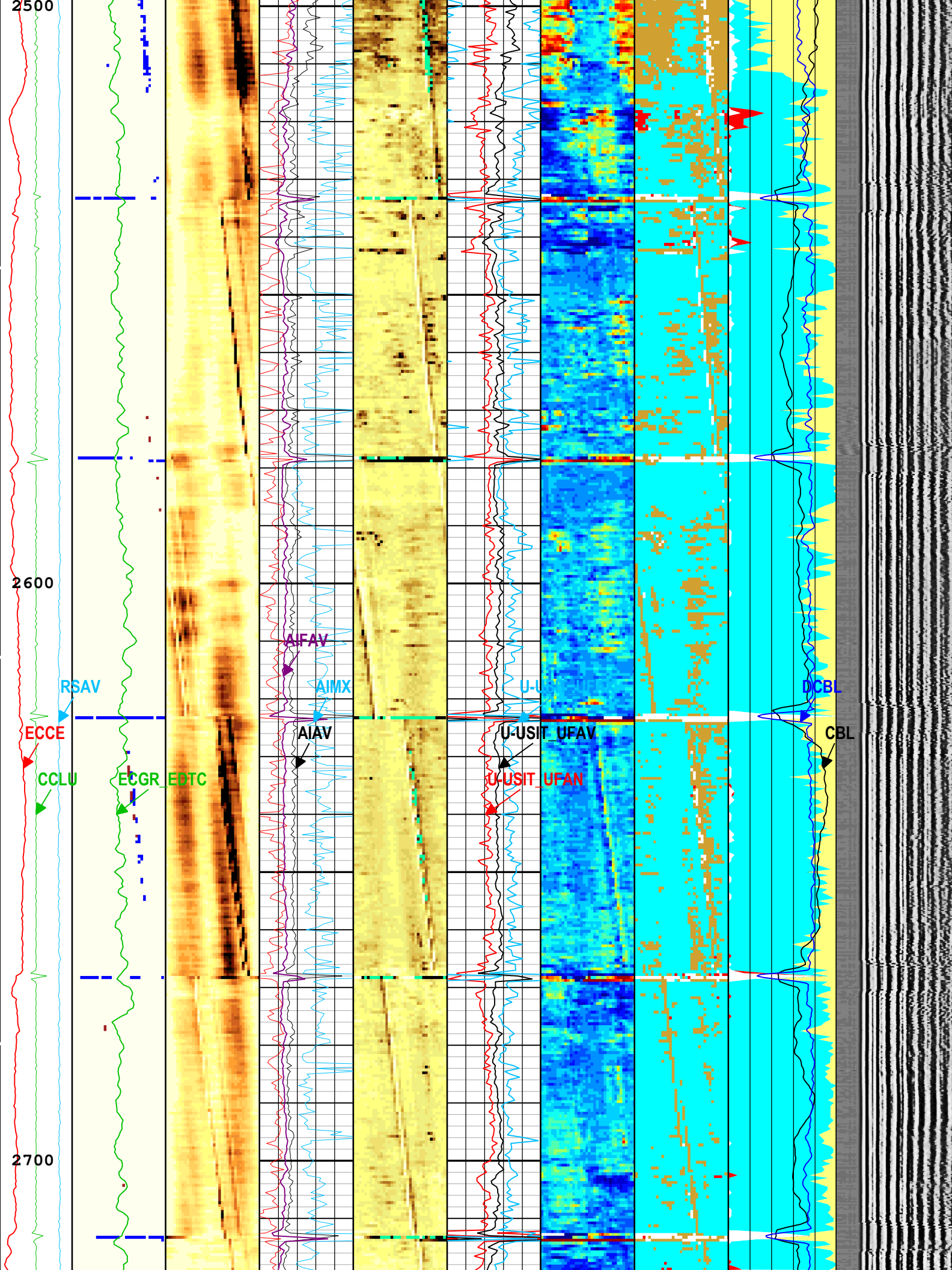
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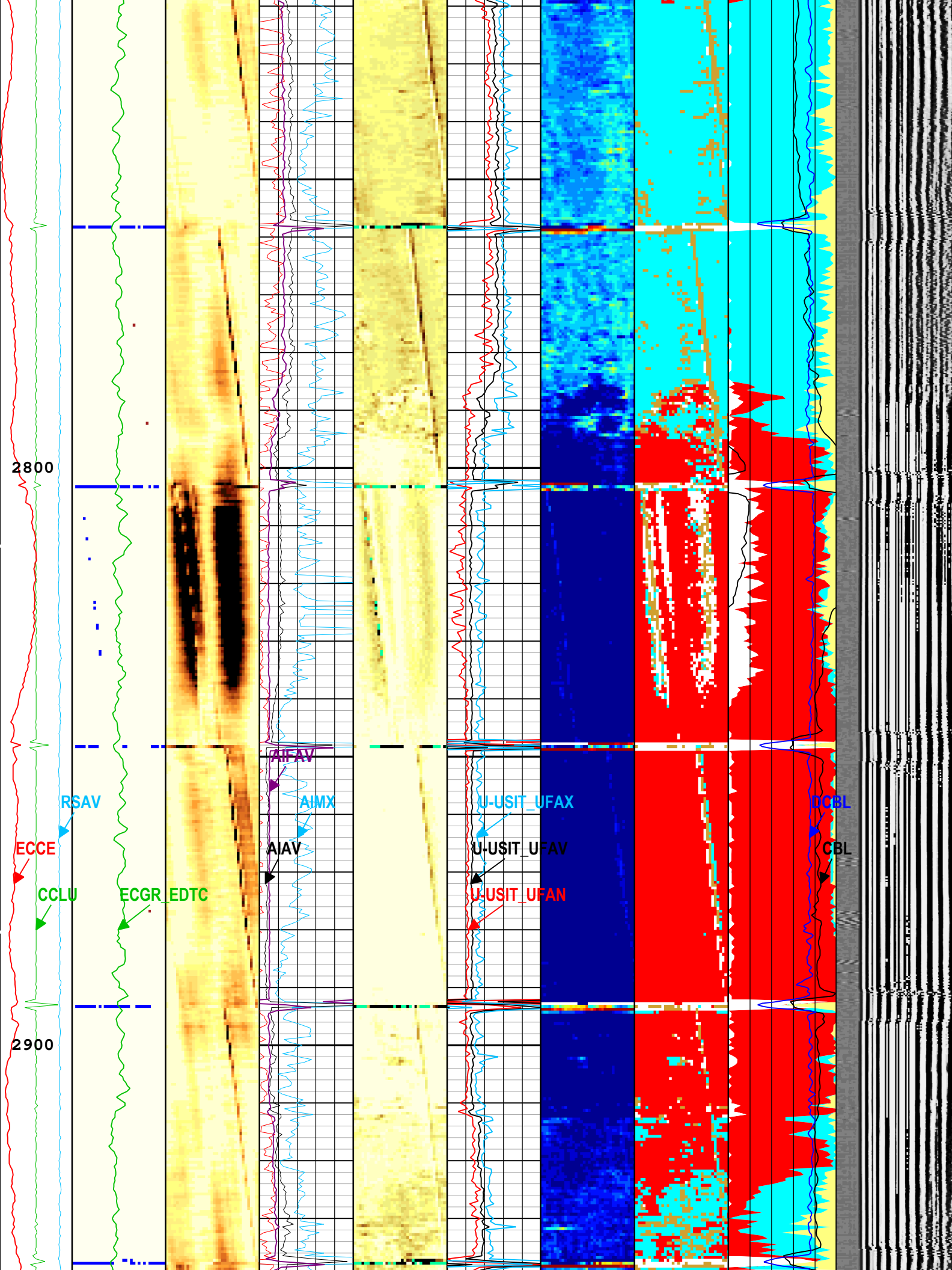
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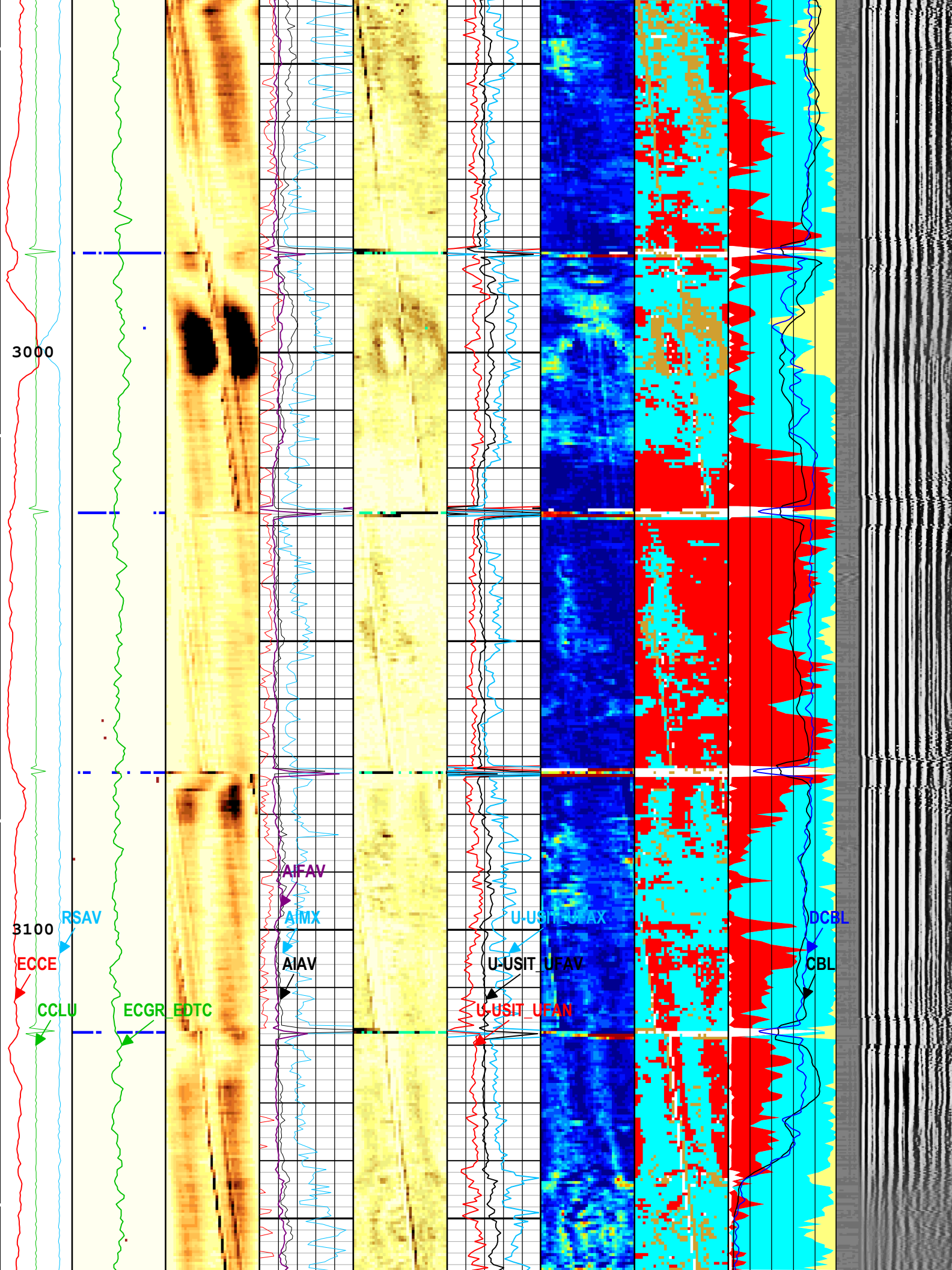
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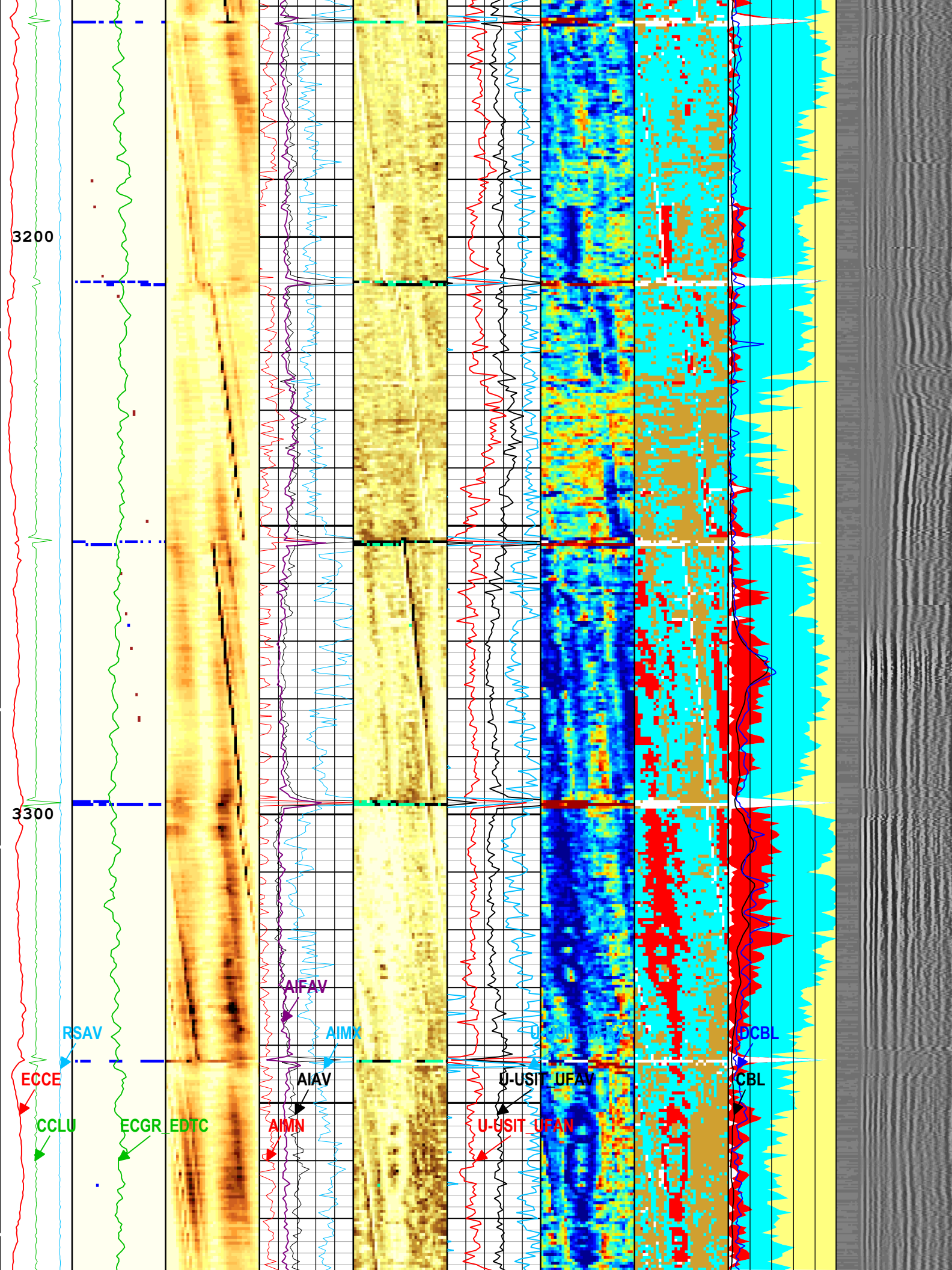
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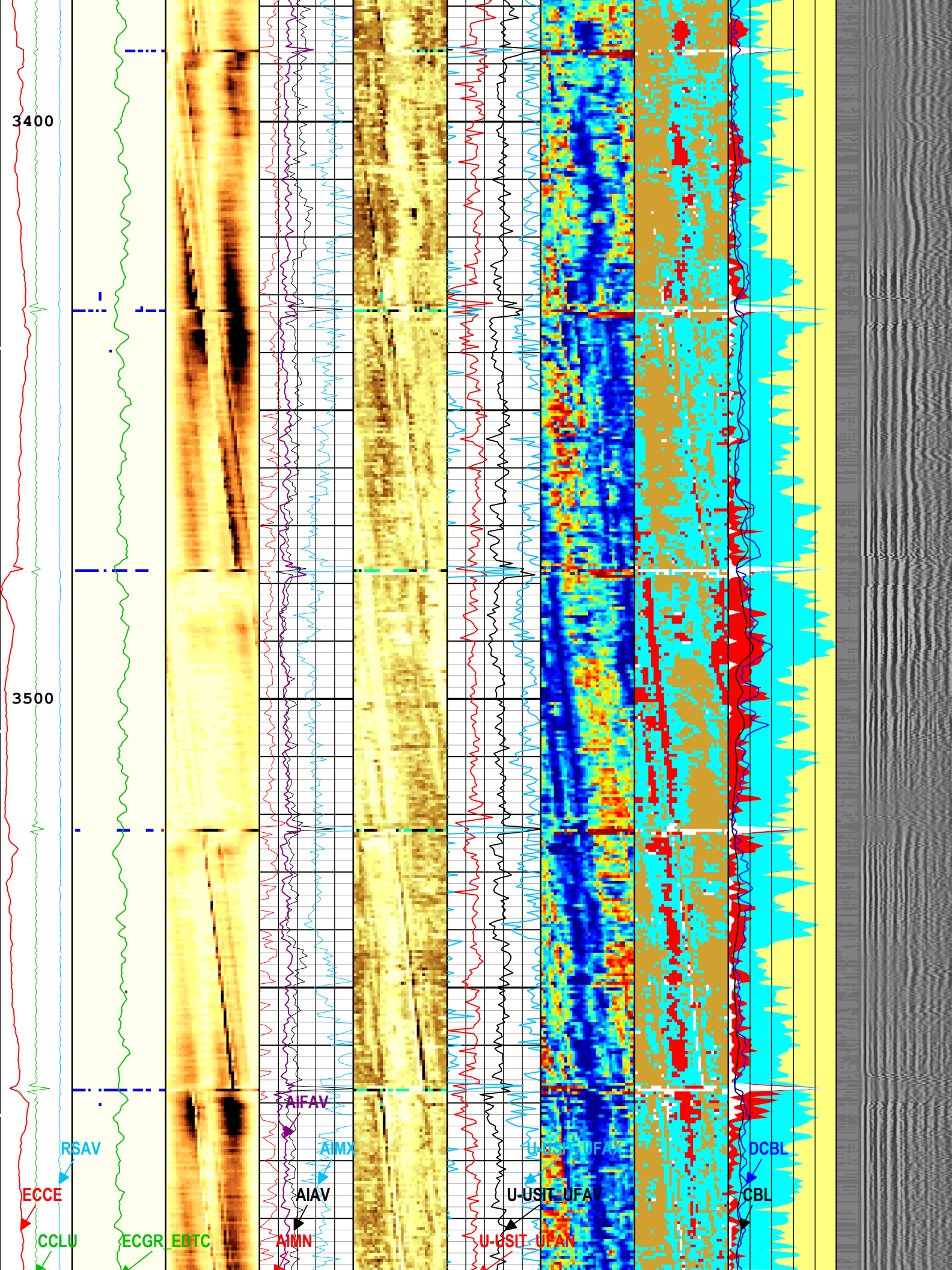
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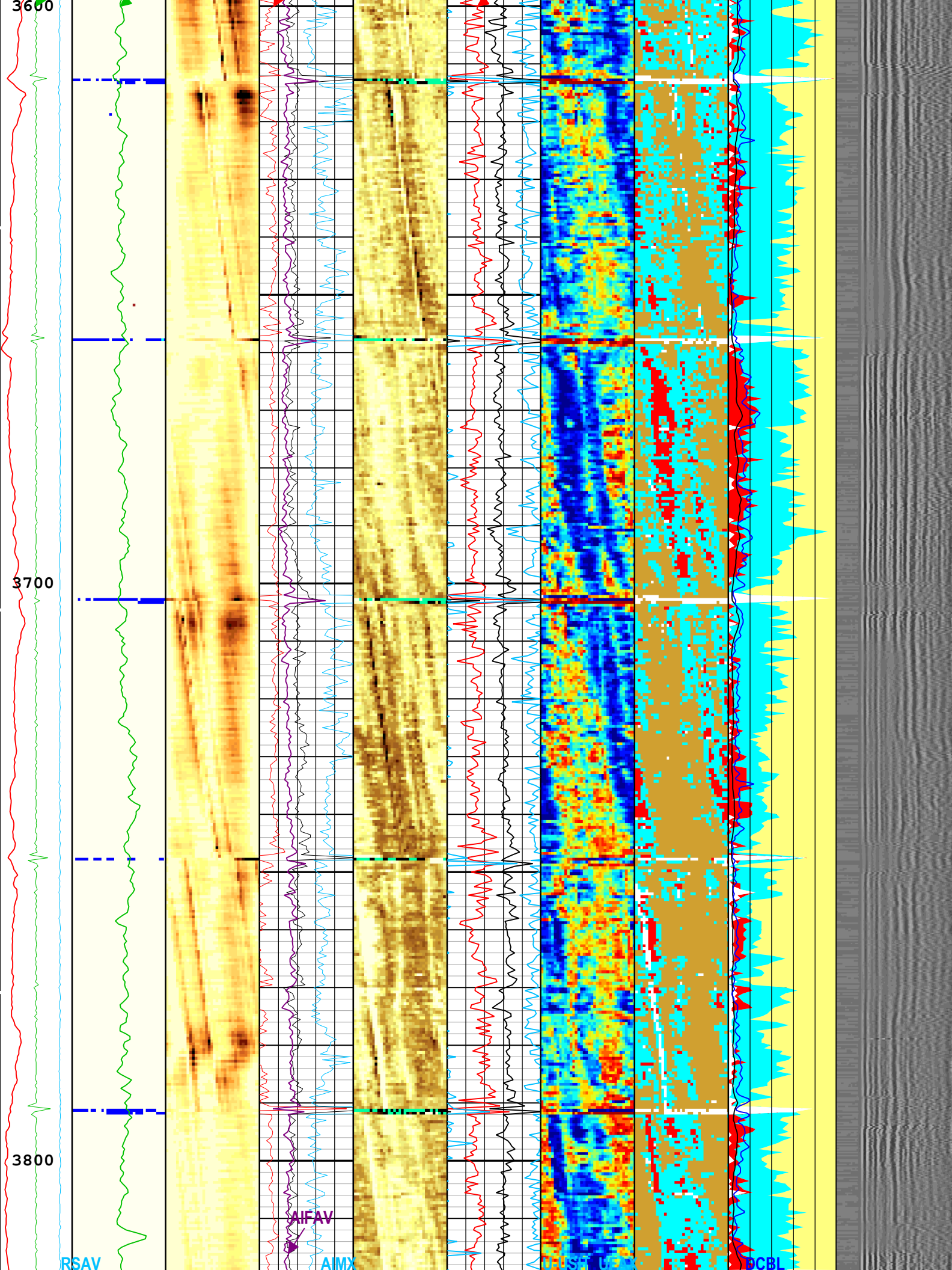
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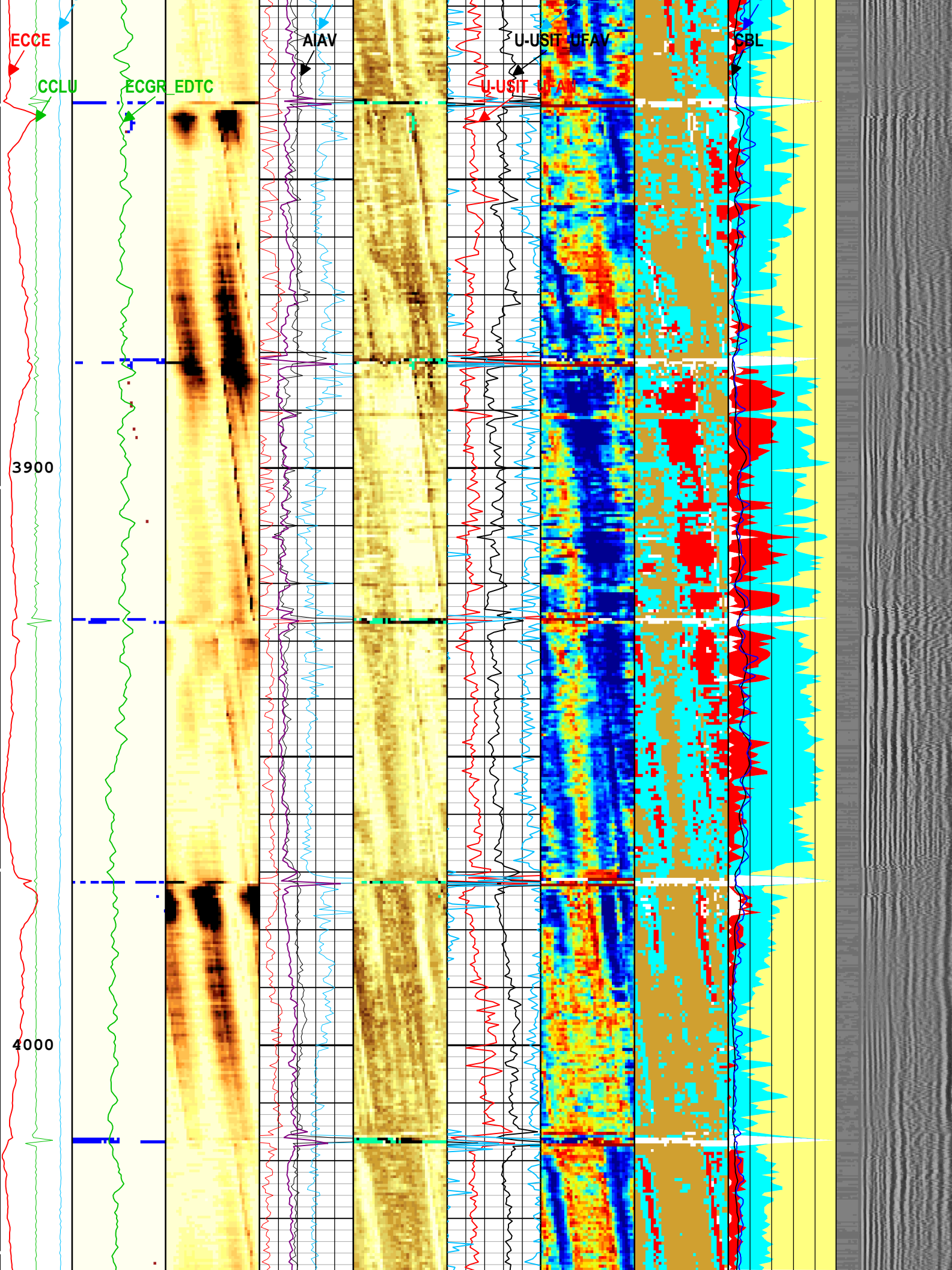
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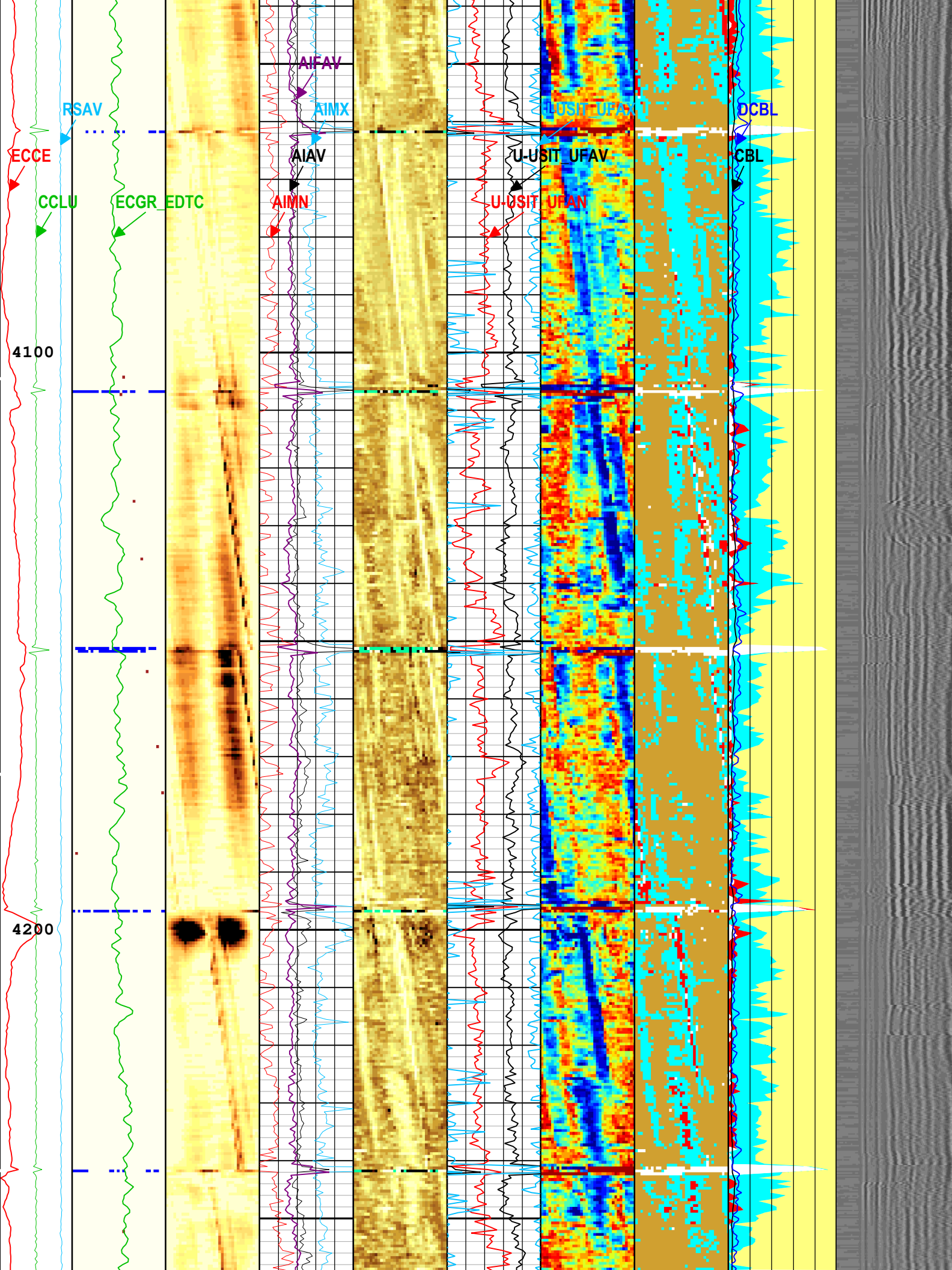
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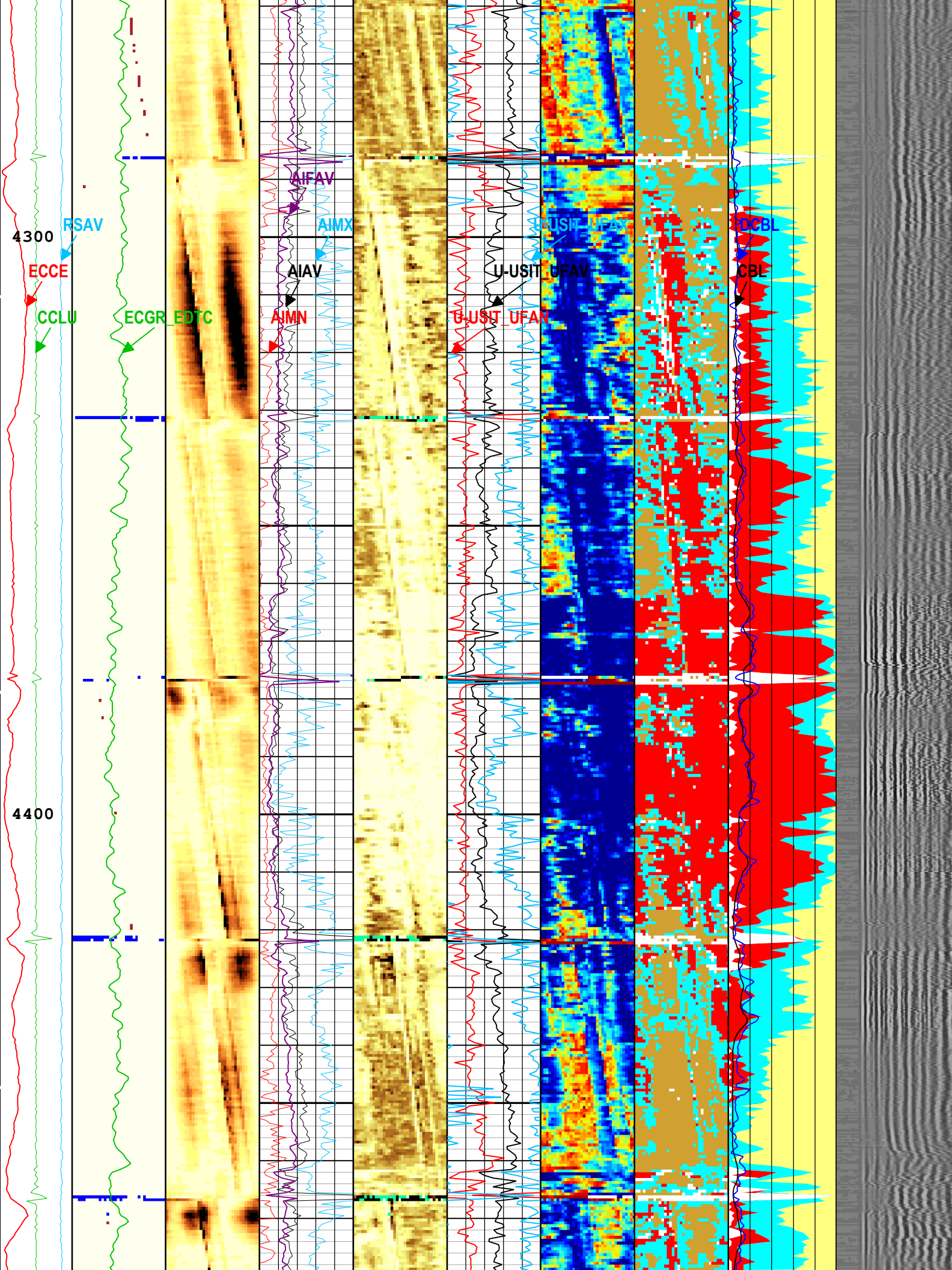
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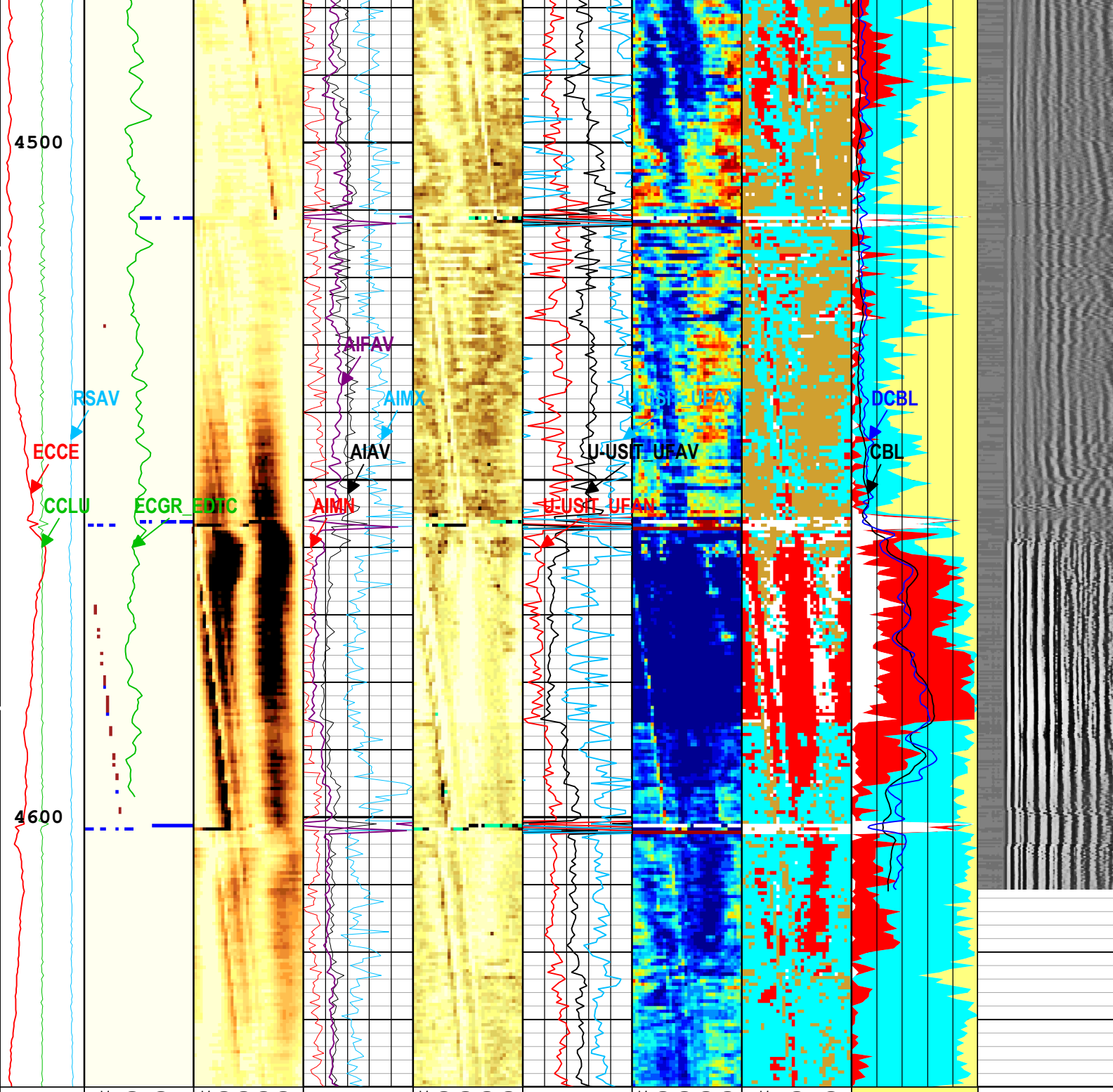


Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E[1]
0 in 0.5

Motor Revolution Speed

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]

USIT Processing Flags (UFLG[0]) USIT-E[1]
1 5

Gamma Ray

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)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)

Minimum Flexural Attenuation (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_UFA

Absent 64.000 92.000 120.000 148.000
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) ASLT-B[1]
0 mV 100

Synthetic CBL

Min Amplitude
VDL VariableDens (VDL) ASLT-B[1]
200 us

Speed (RSAV) USIT-E[1]
6 c/s 7.5

(ECGR_EDTC) EDTC-B[1]
0 gAPI 150

USIT-E[1]
-1 Mrayl 9

Acoustic Impedance Flexural Attenuation Average (AIFAV) USIT-E[1]
-1 Mrayl 9

X) USIT-E[1]
0 dB/m 150

from Discriminated Attenuation (DCBL) ASLT-B[1]
0 mV 100

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 CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 01-Jun-2023 18:38:41

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBAF_D	CBL Adjustment Factor	ASLT-B	1	
CBLO	Casing Bottom (Logger)	WLSESSION	7514	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	80	mV
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.34	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTF	Delta-T Fluid	Borehole	189	us/ft
DTMD	Borehole Fluid Slowness	Borehole	203	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO_CURR	Good Bond in Arbitrary Cement	ASLT-B	1.35	mV
HEMA	Hematite Presence Flag	Borehole	No	
IBC_CTHI_SEL	IBC Casing Thickness Selector	USIT-E	THBK+THAV	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-13.25	dB/m
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.	
IMAR	Image Rotation	USIT-E	Off	
MATT	Maximum Attenuation	ASLT-B	55.52	dB/m
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	55.52	dB/m
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us

MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	15.37	us
MSA	Minimum Sonic Amplitude	ASLT-B	0.49	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	0.49	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.03	
RUN_SNUM	Run Sequence Number	WSDRUN	2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.61	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-10	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	ThirdInterfaceEcho	
ZMUD	Acoustic Impedance of Mud	Borehole	1.52	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	12.25	15	835
BS	7.875	835	4640

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	65	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4010	ft/h
MODE	SSLT Firing Mode	ASLT-B	Attenuation	
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	28_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	

ONE

Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.222884
	Wireline_TestKit-MRSFMRHF-2022.1_12.1.219014
	Wireline_TestKit-MSCT-2022.1_12.1.221550

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[2]:Up	Up	698.71 ft	1002.48 ft	01-Jun-2023 11:59:55 AM	01-Jun-2023 12:04:44 PM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

ONE: Log[2]:Up:S006

Description: USI IBC SLG Format: Log (IBC SLG CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 01-Jun-2023 18:40:11

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

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E (dB)

Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9

Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9

Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9

Acoustic Impedance Flexural Attenuation Average (AIFAV) USIT-E
-1 Mrayl 9

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E
0 dB/m 150

Average Flexural Attenuation (U-USIT_UFAV) USIT-E
0 dB/m 150

Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E
0 dB/m 150

Absent 64.000 92.000 120.000 148.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

SLG Solid Index
SLG Liquid Index
SLG Gas Index
SLG White Point Index

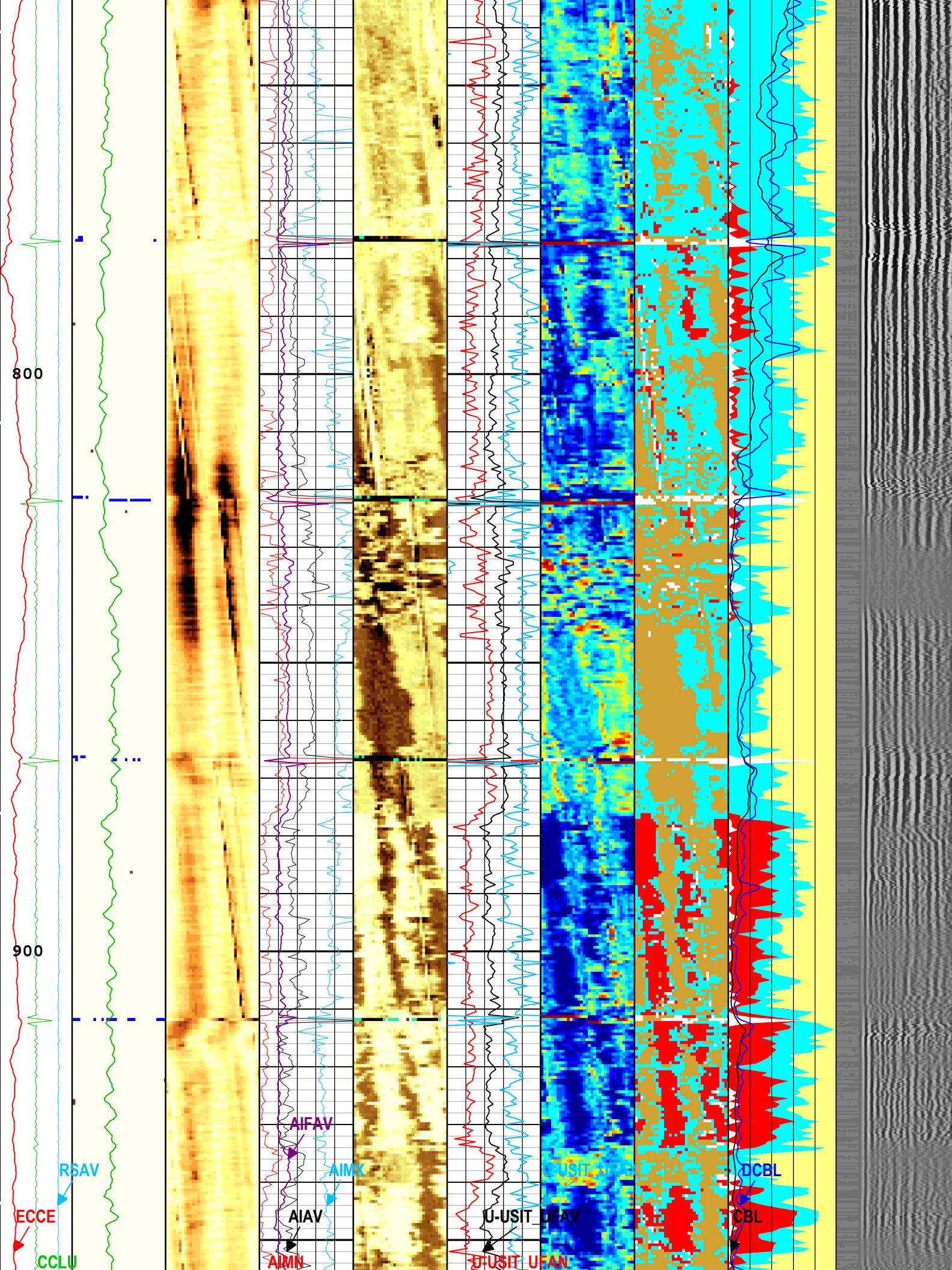
CBL Amplitude (CBL) ASLT-B
0 mV 100

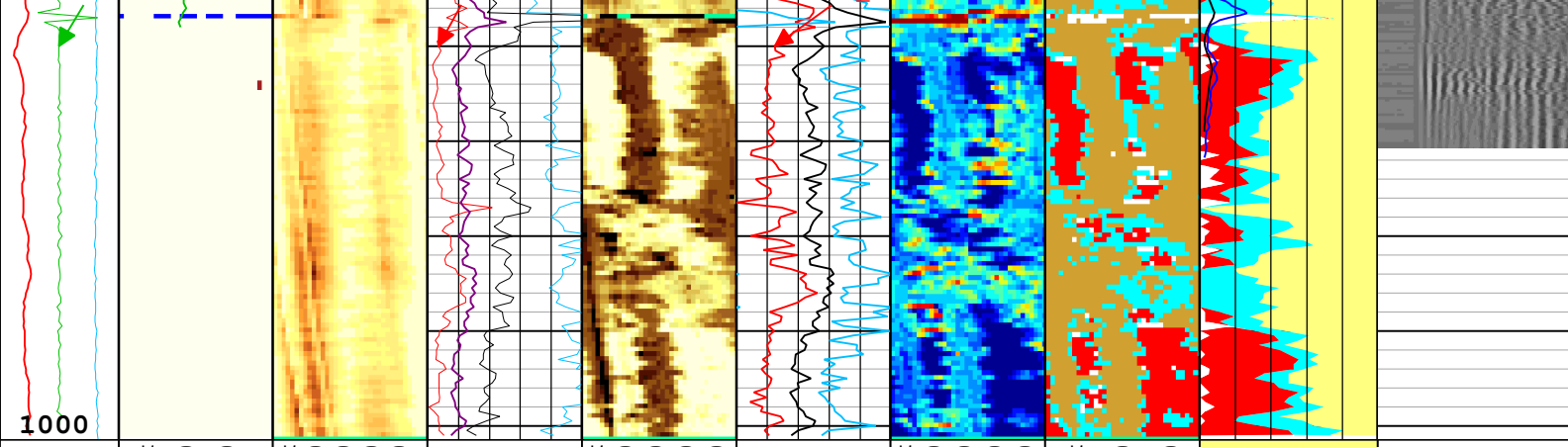
Synthetic CBL from Discriminated Attenuation (DCBL) ASLT-B
0 mV 100

Min Amplitude Max
VDL VariableDensity (VDL) ASLT-B
200 us 1200

700

RSAV
ECCE
CCLU
ECGR_EDTC
AIMX
AIAV
AIMN
U-USIT_UFAX
U-USIT_UFAV
U-USIT_UFAN
DCBL
CBL


800
900
AIFAV
RSAV
AIMX
DCBL
ECCE
AIAV
U-USIT_UFAV
CBL
CCLU
AIMN
U-USIT_UFAN



Casing Collar Locator Ultrasonic (CCLU) USIT-E
-20 in 20

Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 7.5

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Wave (AWBK) USIT-E (dB)

Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9

Acoustic Impedance Average (AIAV) USIT-E
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Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9

Acoustic Impedance Flexural Attenuation Average (AIFAV) USIT-E
-1 Mrayl 9

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E
0 dB/m 150

Average Flexural Attenuation (U-USIT_UFAV) USIT-E
0 dB/m 150

Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E
0 dB/m 150

Absent 64.000 92.000 120.000 148.000
Custom Normalization
USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)

Absent 1.500 3.500
Explicit Normalization
USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E

SLG Solid Index

SLG Liquid Index

SLG Gas Index

SLG White Point Index

CBL Amplitude (CBL) ASLT-B
0 mV 100

Synthetic CBL from Discriminated Attenuation (DCBL) ASLT-B
0 mV 100

Min Amplitude
VDL VariableDens (VDL) ASLT-B
200 us

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] - :

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DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
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DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
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FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO_CURR	Good Bond in Arbitrary Cement	ASLT-B	1.35	mV
HEMA	Hematite Presence Flag	Borehole	No	
IBC_CTHI_SEL	IBC Casing Thickness Selector	USIT-E	THBK+THAV	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-13.25	dB/m
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.	
IMAR	Image Rotation	USIT-E	Off	
MATT	Maximum Attenuation	ASLT-B	55.52	dB/m
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	55.52	dB/m
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UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	ThirdInterfaceEcho	
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ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
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Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
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BS	7.875	835	1001.5

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
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AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
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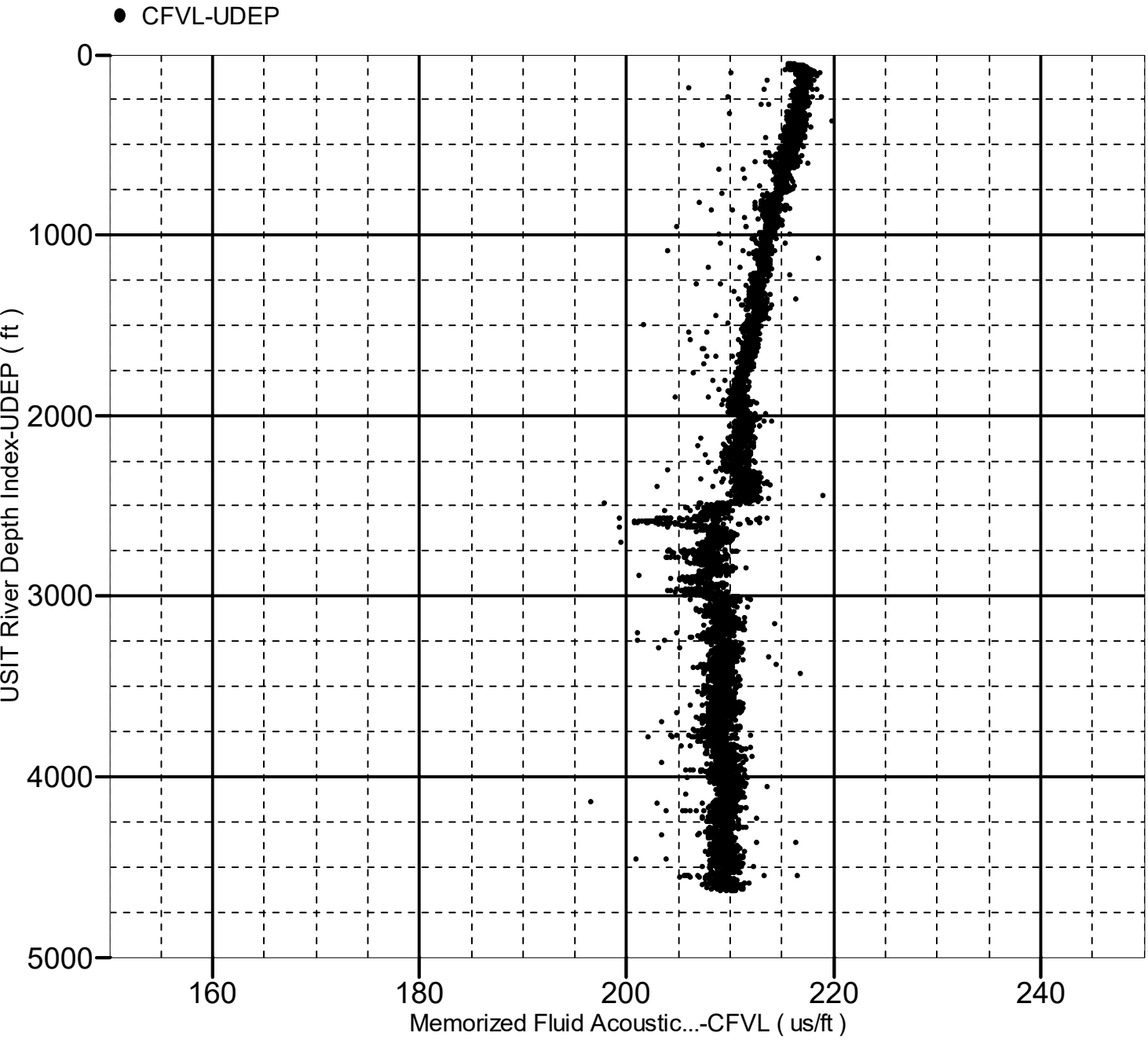
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	

MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4010	ft/h
MODE	SSLT Firing Mode	ASLT-B	Attenuation	
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	28_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 58.00 to 4640.00 ft

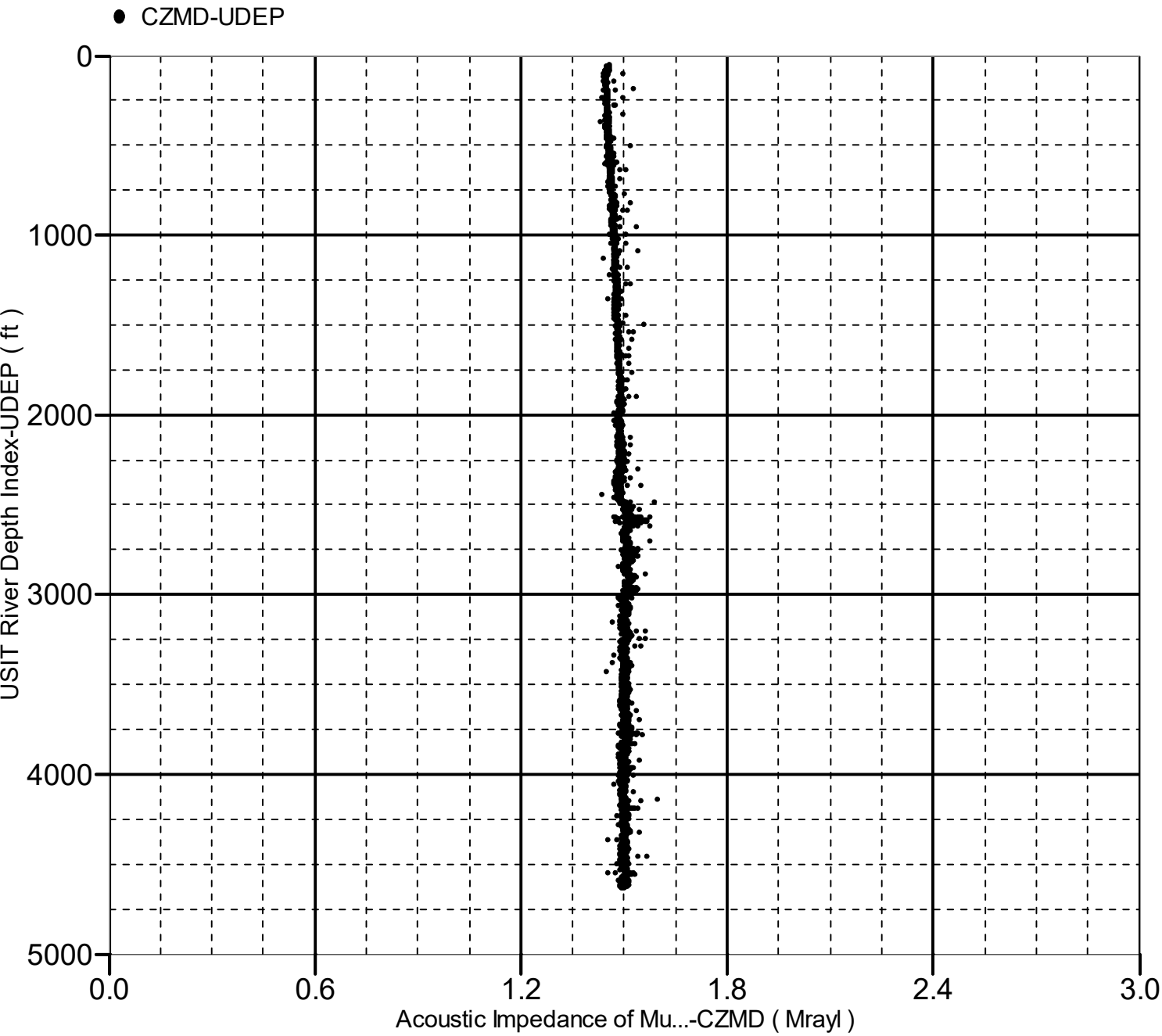


Acoustic Impedance of Mud vs Depth

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 58.00 to 4640.00 ft



Company:	Occidental Petroleum Corporation
Well:	Wardell 29-29

Schlumberger

Field:	Wattenberg
County:	Weld
State:	Colorado

Isolation Scanner

Cement Bond Log

Gamma Ray - CCL