

Company: Occidental Petroleum Corporation

Well: Mead Place 12-22

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner  
Cement Bond Log  
Gamma Ray - CCL

County: Weld  
Field: Wattenberg  
Location: NESW  
Well: Mead Place 12-22  
Company: Occidental Petroleum Corporation

NESW	Permanent Datum:	Ground Level	Elev.:	K.B.	4991.00 ft
	Log Measured From:	Kelly Bushing	10.00 ft	G.L.	4981.00 ft
API Serial No. 05-123-30072	Drilling Measured From:	Kelly Bushing		D.F.	4991.00 ft
	Section:	22	Township:	3N	Range: 68W

Logging Date	15-Sep-2022
Run Number	One
Depth Driller	7565.00 ft
Schlumberger Depth	7565.00 ft
Bottom Log Interval	6800.00 ft
Top Log Interval	60.00 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	540.00 ft
To	7565.00 ft
Casing/Tubing Size	4.5 in
Weight	11.6 lbm/ft
Grade	N/A
From	0.00 ft
To	7553.00 ft
Max Recorded Temperatures	205 degF
Logger on Bottom	Time
Unit Number	Location:
Recorded By	D. Hassan
Witnessed By	Travis Rothe

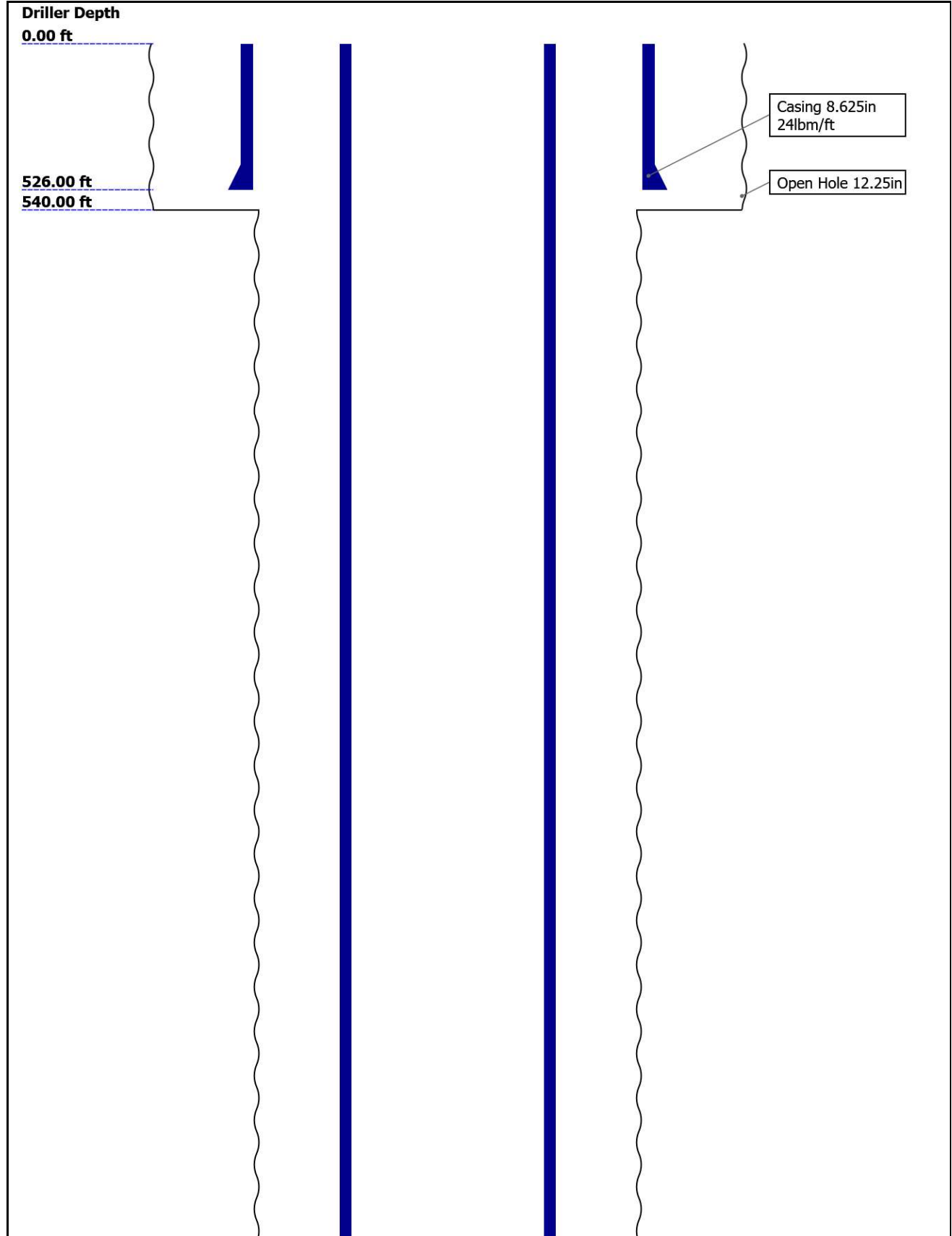
## Disclaimer

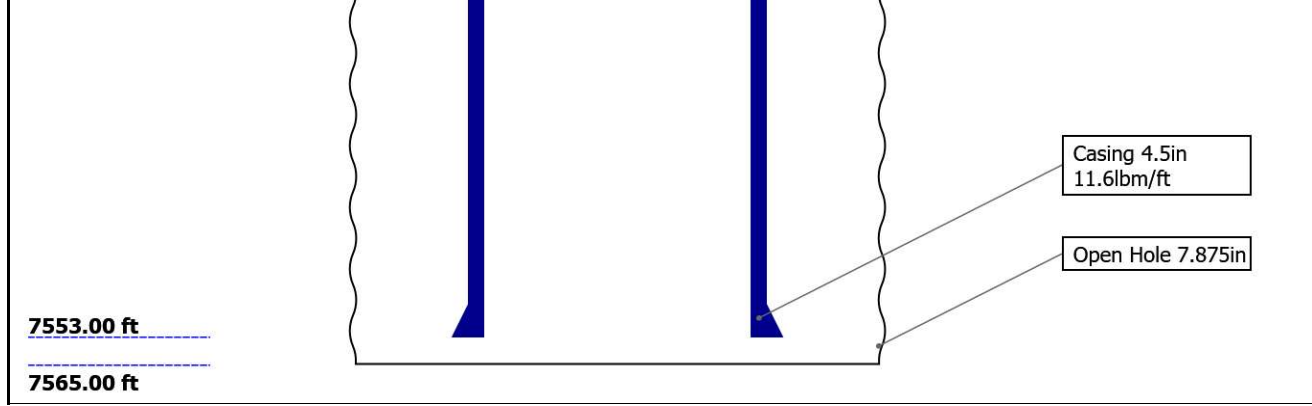
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# Well Sketch





## Borehole Size/Casing/Tubing Record

Bit					
Bit Size ( in )	12.25	7.875			
Top Driller ( ft )	0	540			
Top Logger ( ft )	0	540			
Bottom Driller ( ft )	540	7565			
Bottom Logger ( ft )	540	7565			
Casing					
Size ( in )	8.625	4.5			
Weight ( lbm/ft )	24	11.6			
Inner Diameter ( in )	8.097	4			
Grade	J55	N/A			
Top Driller ( ft )	0	0			
Top Logger ( ft )	0	0			
Bottom Driller ( ft )	526	7553			
Bottom Logger ( ft )	526	7553			

## Remarks and Equipment Summary

### One: Toolstring

### One: Remarks

Equip name length  
**LEH-QT 49.07**  
 LEH-QT

MP name Offset



**EDTC-B: 45.58**  
**8624**  
 EDTH-B  
 EDTG-A  
 EDTC-B:  
 8624

CTEM 42.08  
 ACCZ 0.00  
 HV 0.00  
 Gamma 40.21  
 a Ray  
 TelSta 39.08  
 tus

**ASLT-B: 39.08**  
**8073**  
 ASLT-BB  
 :8073

CBL\_U 32.55  
 P

Thank you for choosing Schlumberger

Log run for cement and casing evaluation

IBCS-A sub used with ICE-GB

Tool was run as per tool sketch

Log run under 500 psi

Crew: Jesse Medrano, Andrew Rothleitner



**CME-AF 24.43**

**AH-184 [2] 20.64**

**AH-184 [1] 18.64**

**USIT-E 16.64**

ECH-MFA  
:1964  
USAC-A  
USIS-A:1  
832  
USSC-B  
IBCS-A:7  
98  
FAR-SEN  
SOR:1750  
ICE-BB  
NEAR-SE  
NSOR:17  
66  
ICE-BB  
USI-SEN  
SOR:1727  
ICE-GB  
EMITTER  
-SENSOR  
:1758  
ICE-BB

**USI Se nsor Head Tension 0.84**  
TOOL\_ZERO

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		

<b>Logging Cable</b>			
Type	7-46ZVI-XS		
Serial Number	1234		
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Workover rig		

<b>One:Depth Control Parameters</b>		<b>Depth Control Remarks</b>
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 1	Log[2]:Down	629.48	6098.67

**Fluid Velocity = "Automatic".**  
**CFVL equals DFSL channel**

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
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**Mud Impedance = "Theoretical".**  
**CZMD uses theoretical results.**  
**MUD\_N\_THE=1.20**  
**DFD=1.00g/cm3(8.34lbm/gal)**

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

### Software Version

Acquisition System	Version
Maxwell 2022.1	12.1.217729.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.1_12.1.220287 Wireline_NPD-ThruBit-2022.1_12.1.219291

### Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[6]:Up	Up	73.05 ft	6813.94 ft	15-Sep-2022 11:50:25 AM	15-Sep-2022 1:36:36 PM	ON	13.02 ft	No

All depths are referenced to toolstring zero

**Log** Company:Occidental Petroleum Corporation Well:Mead Place 12-22  
 One: Log[6]:Up:S010

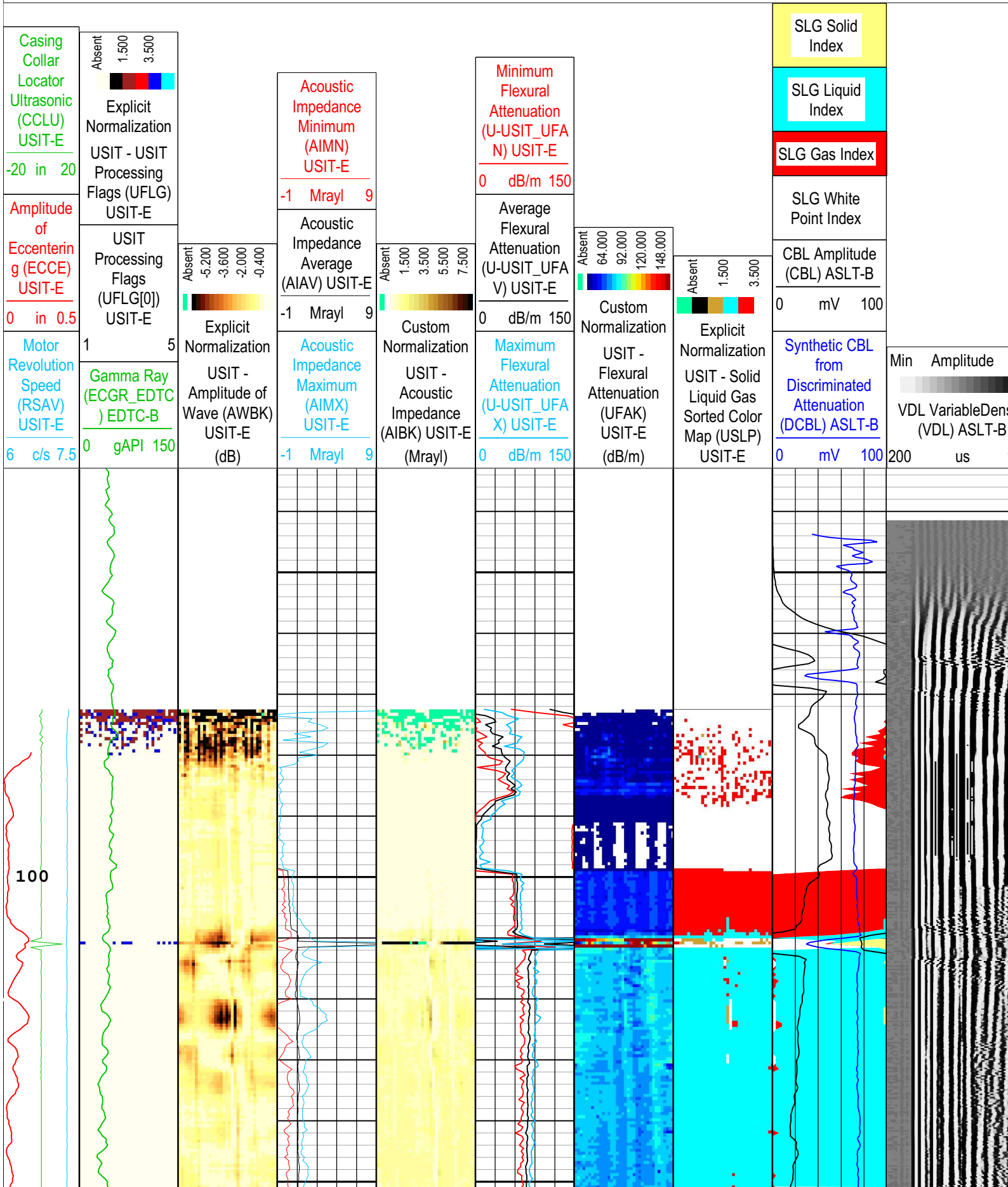
Description: USI IBC SLG Format: Log ( IBC SLG CBL-VDL ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Sep-2022 03:00:25

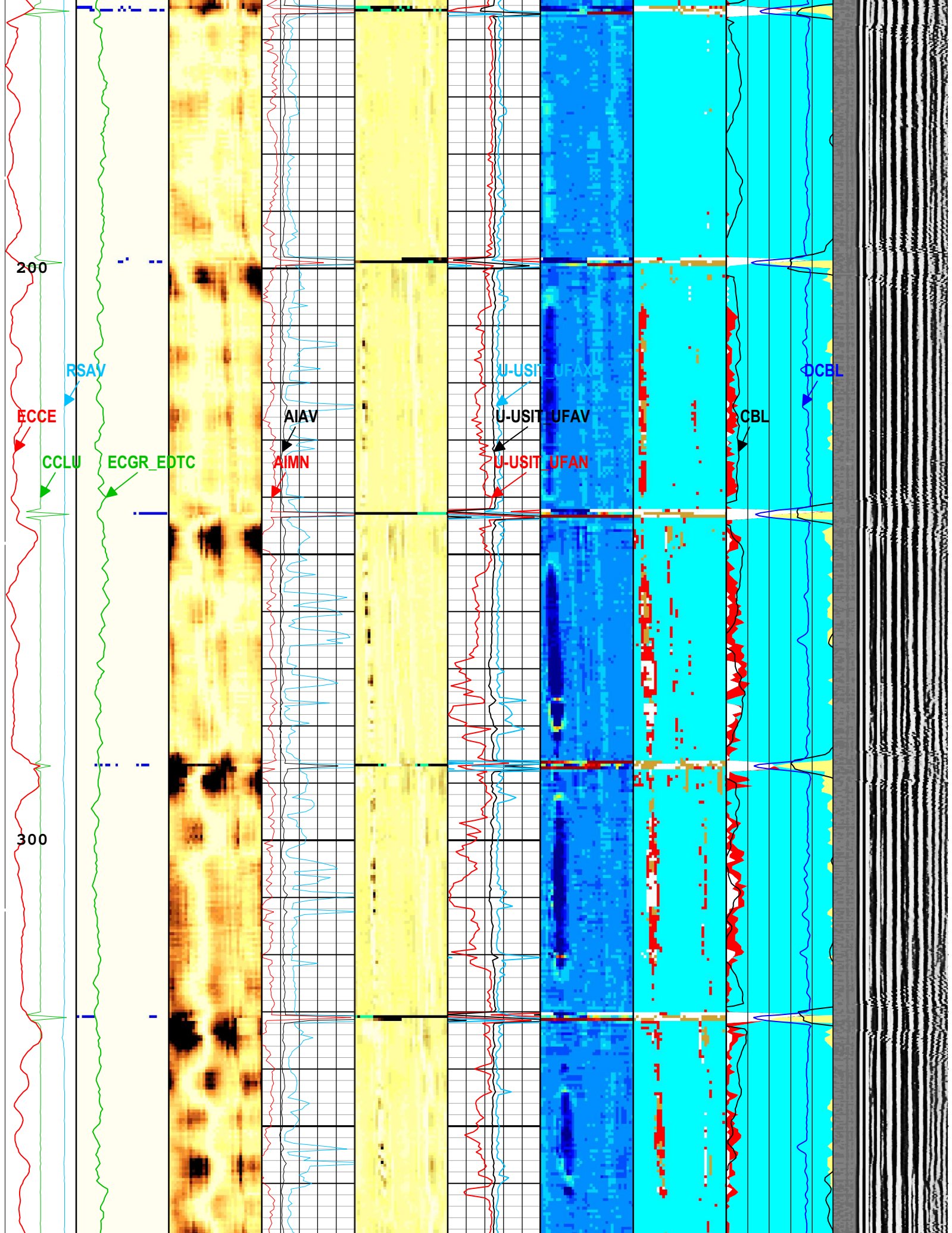
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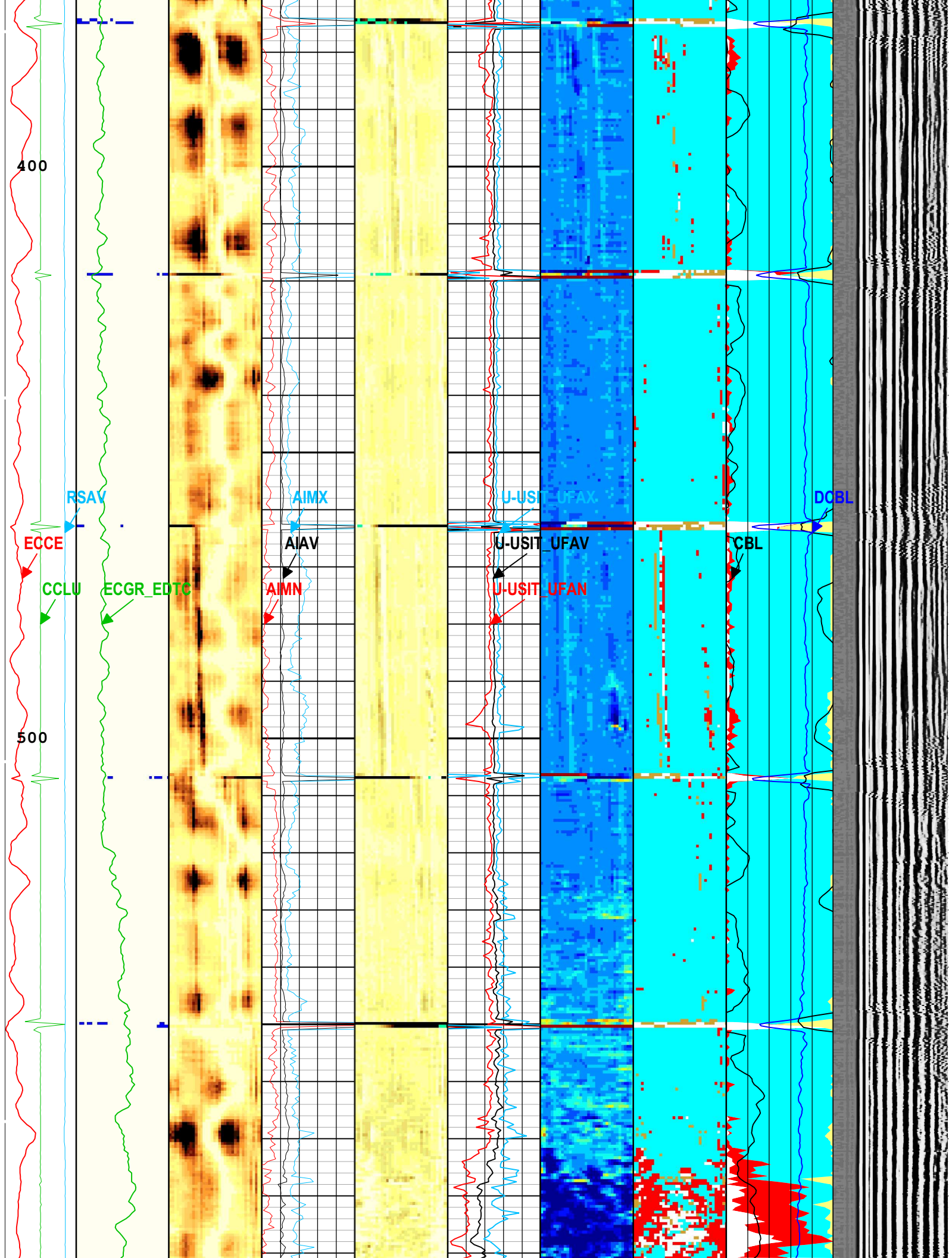
USIT Processing Flow (USIT01) USIT.F

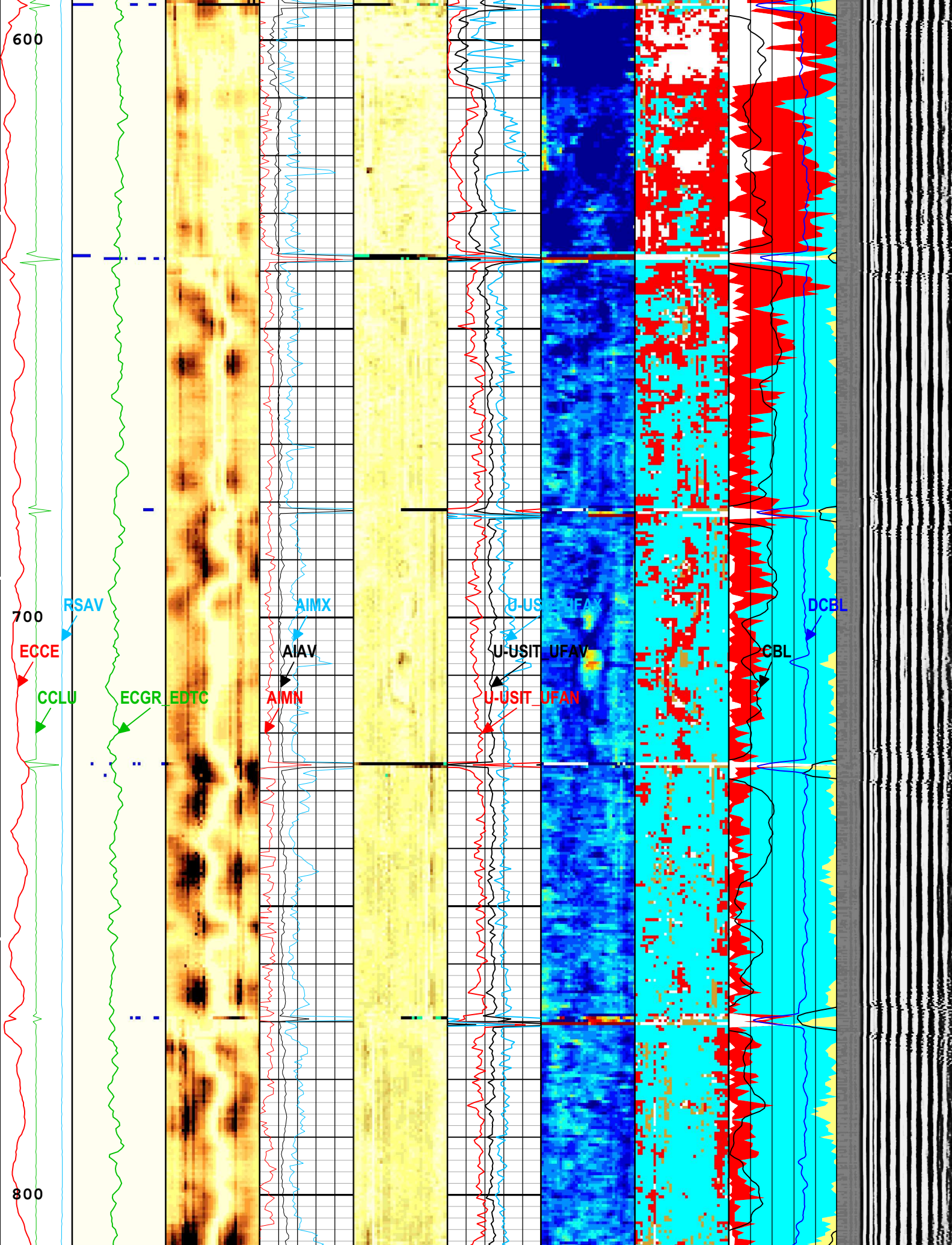
USIT Processing Flags (UFLG[0]) USIT-E  
 1 - UFLG 1 Value within [0.0 - 1.5] - :  
 2 - UFLG 2 Value within [1.5 - 2.5] - :  
 3 - UFLG 3 Value within [2.5 - 3.5] - :  
 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  
 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

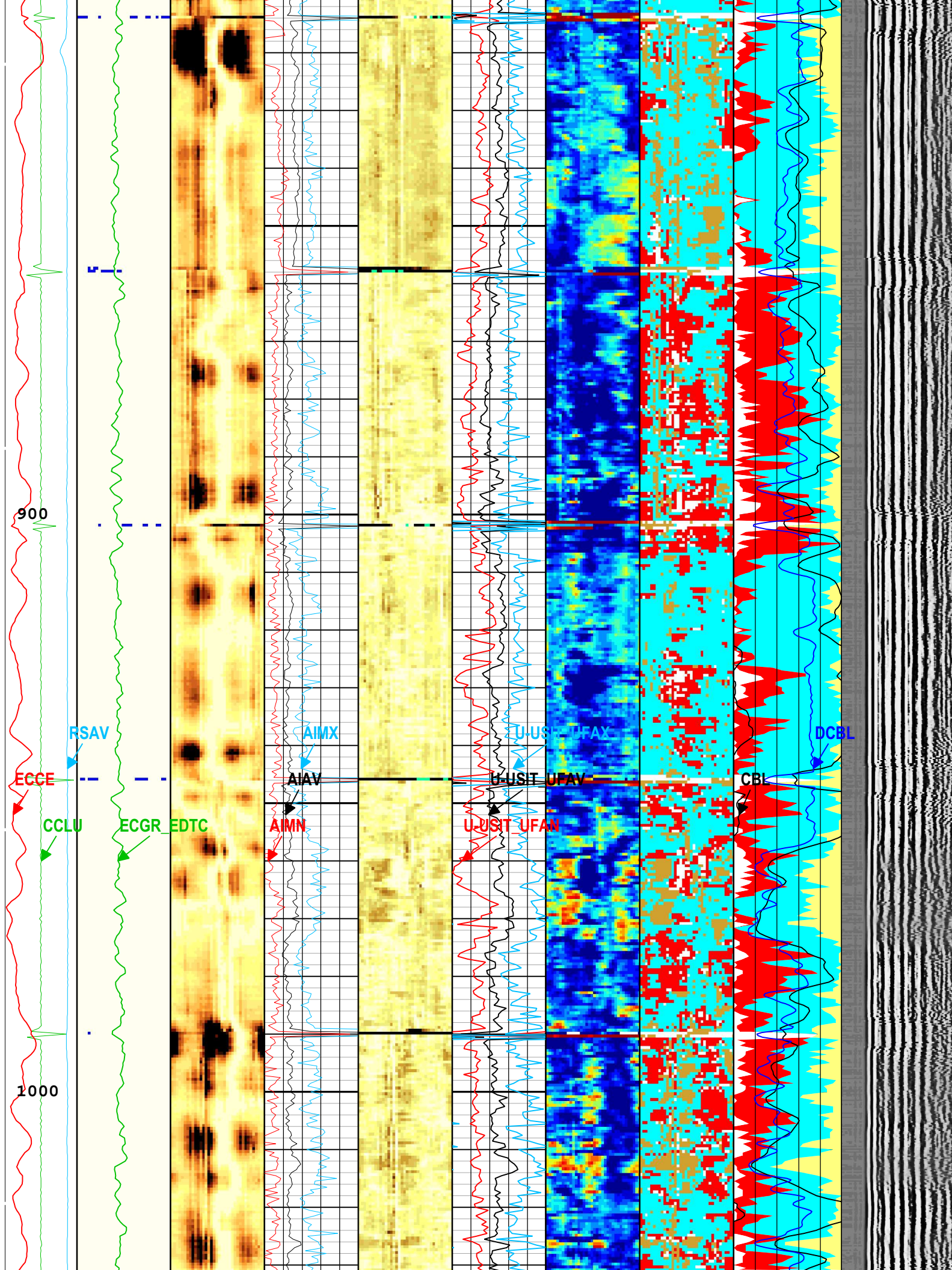
- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

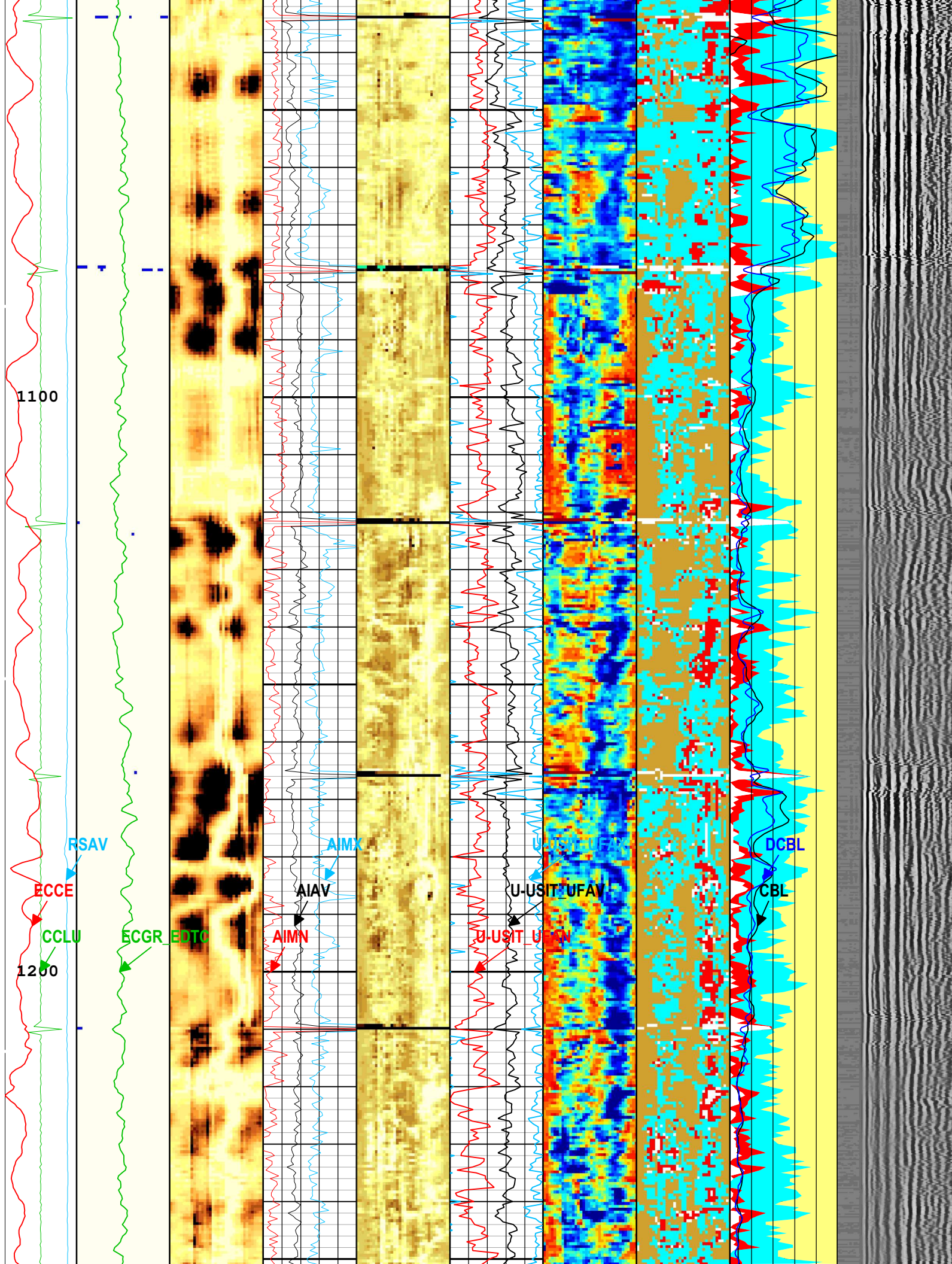


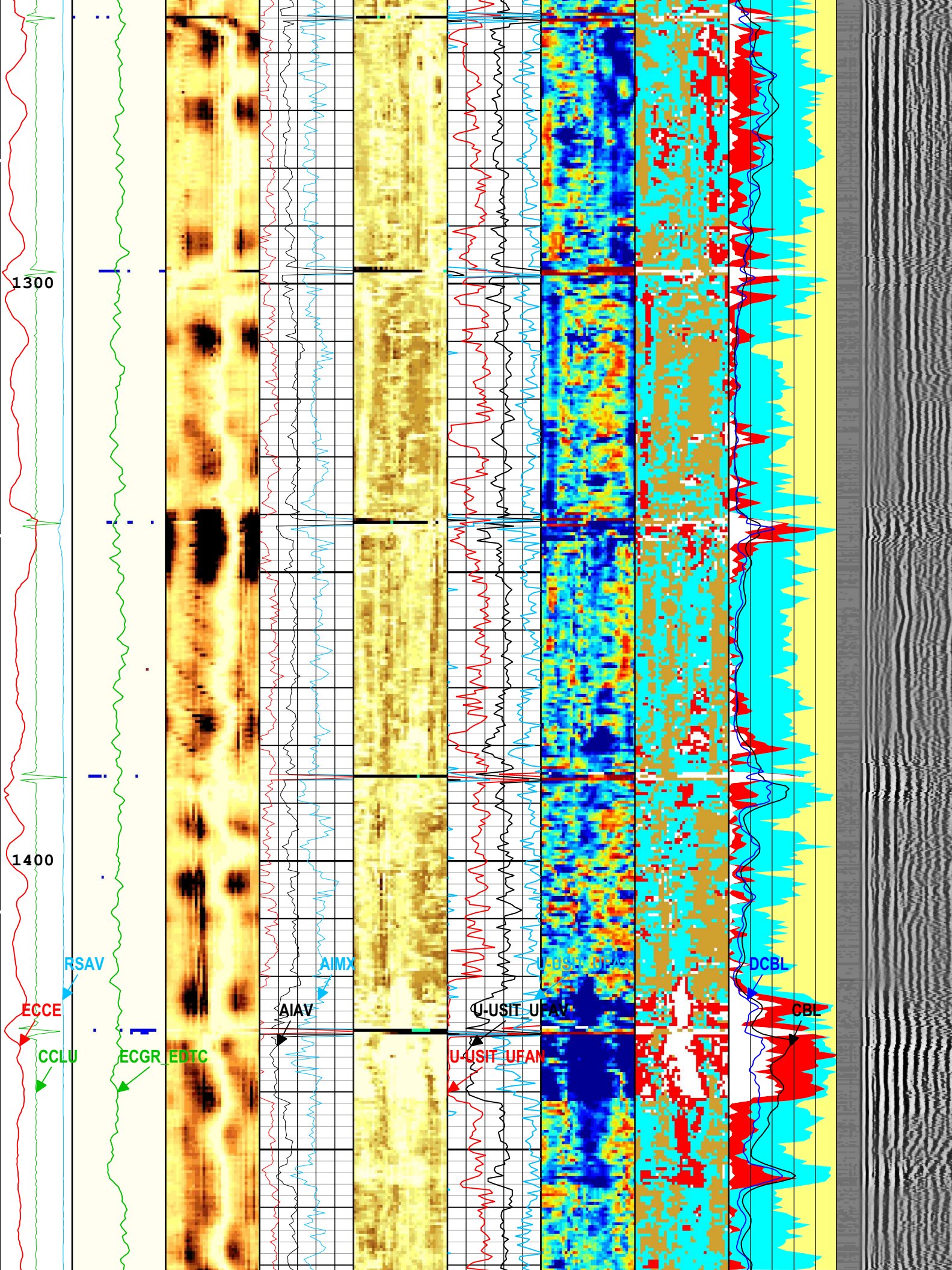




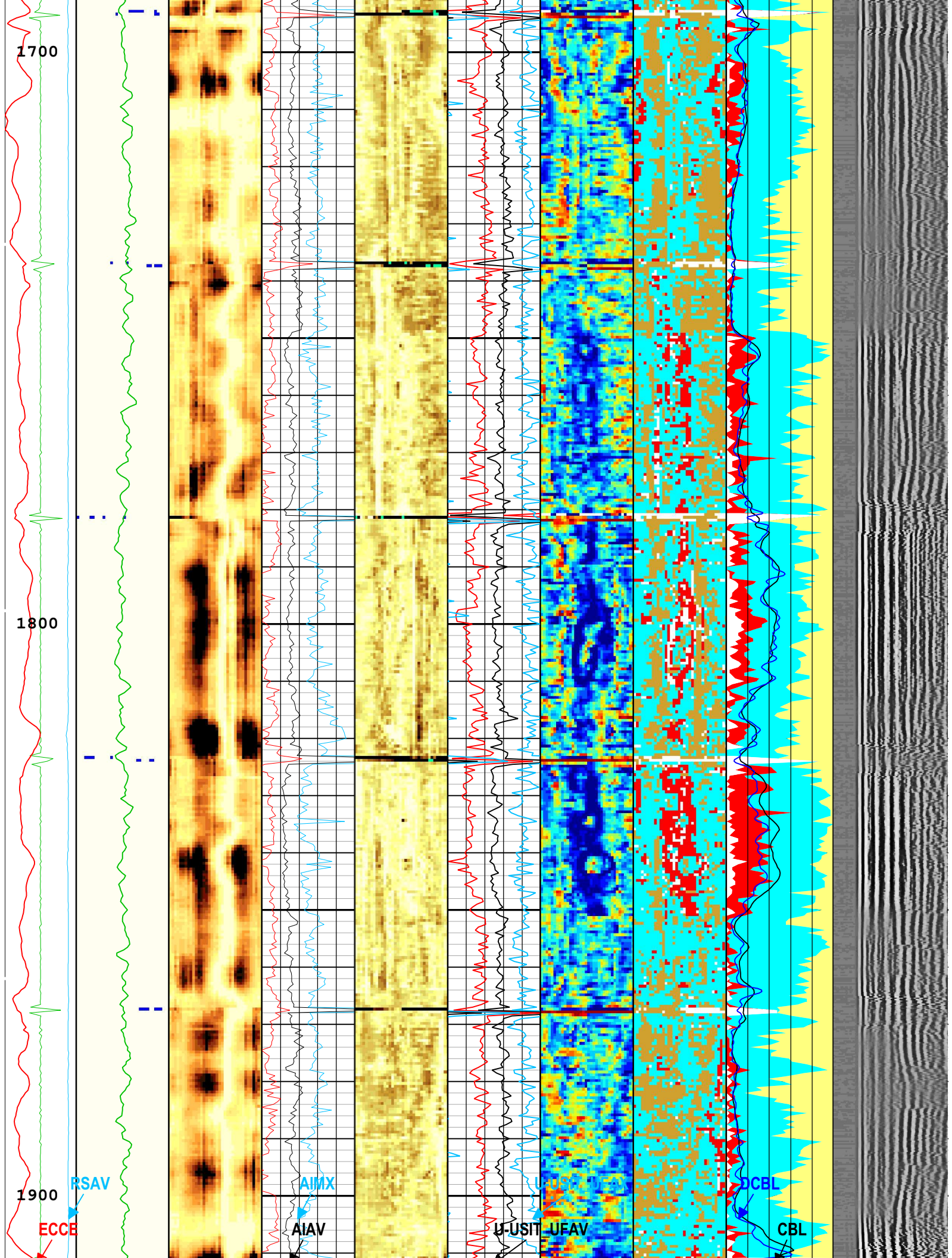


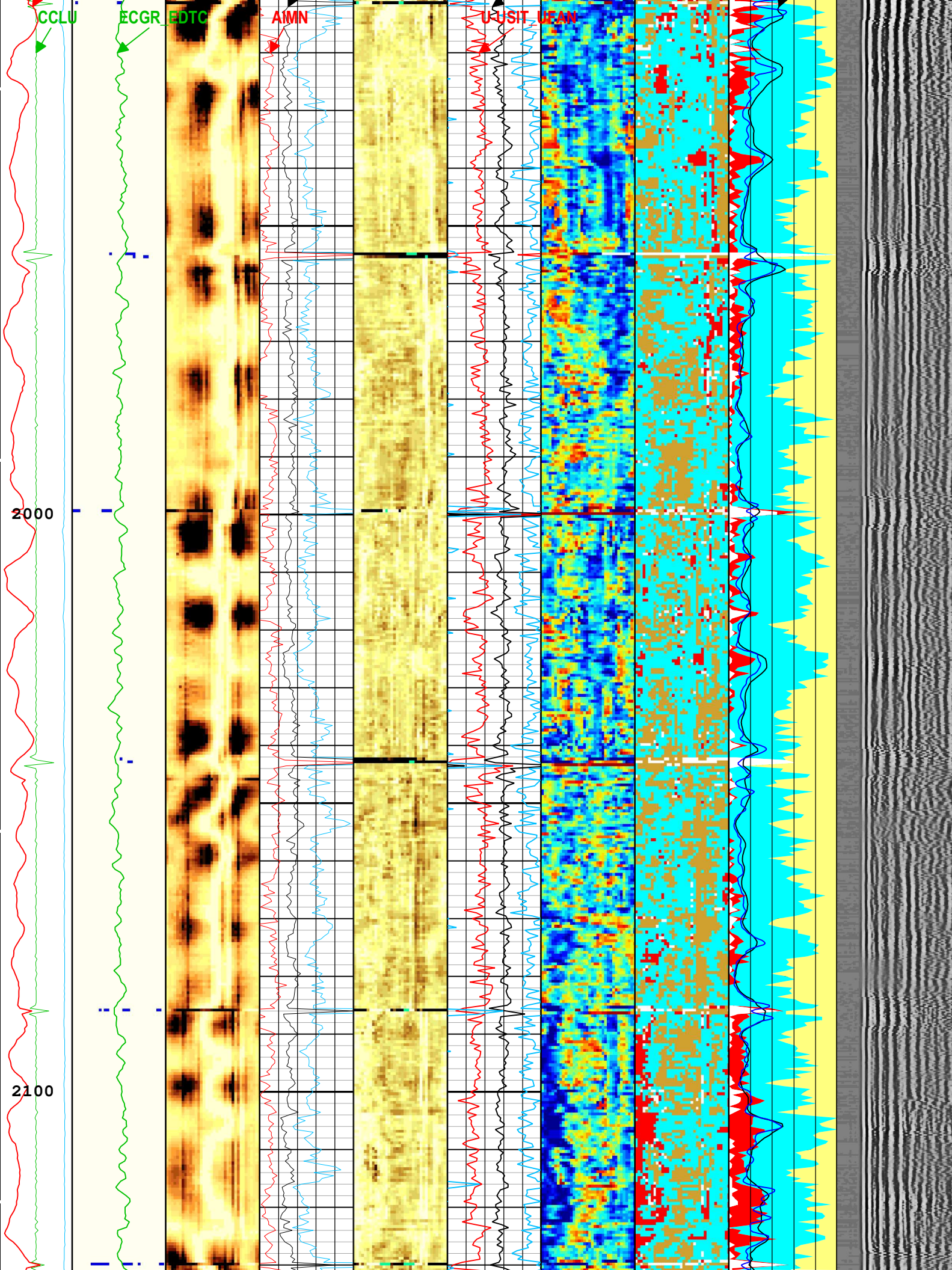


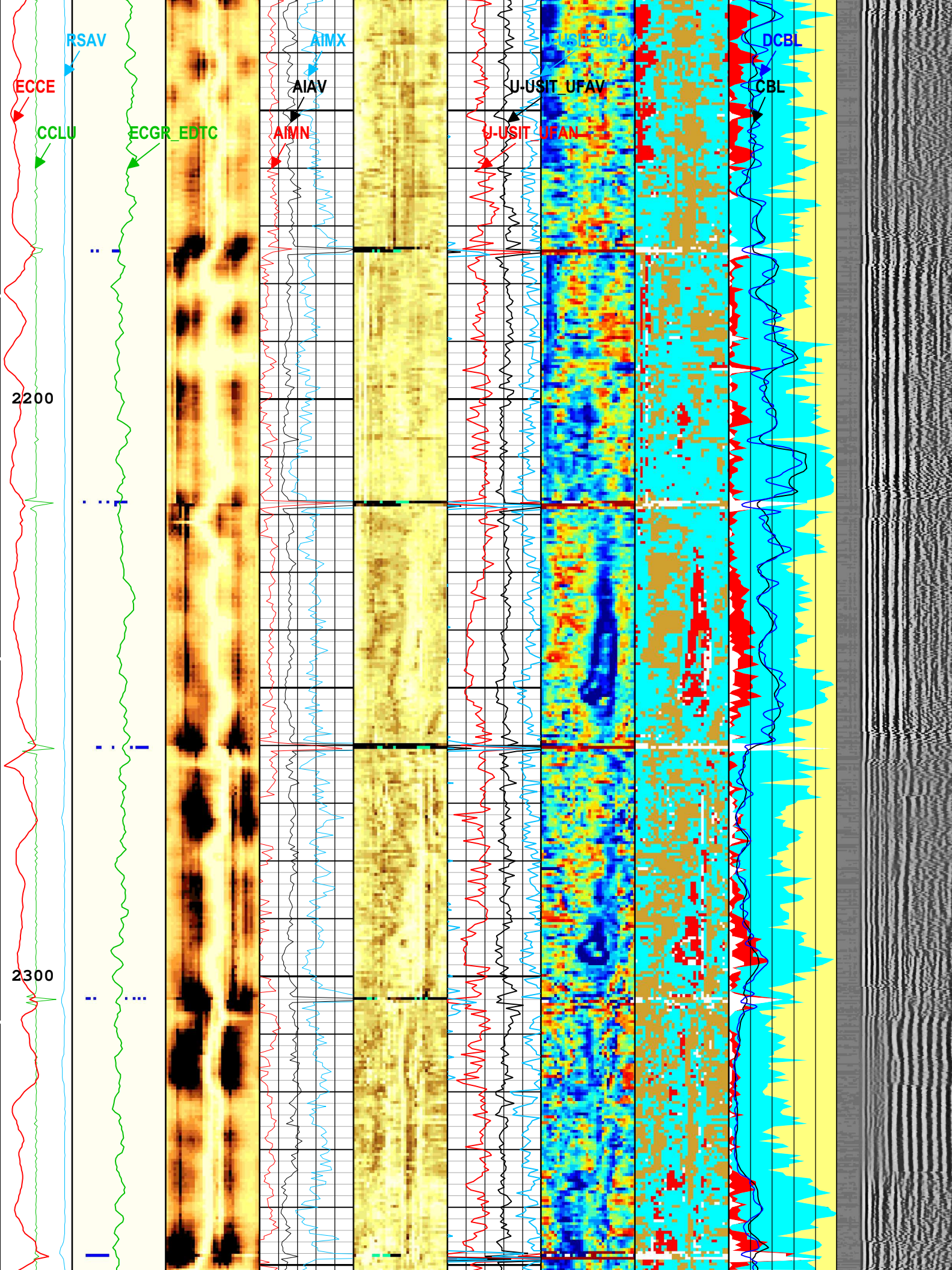


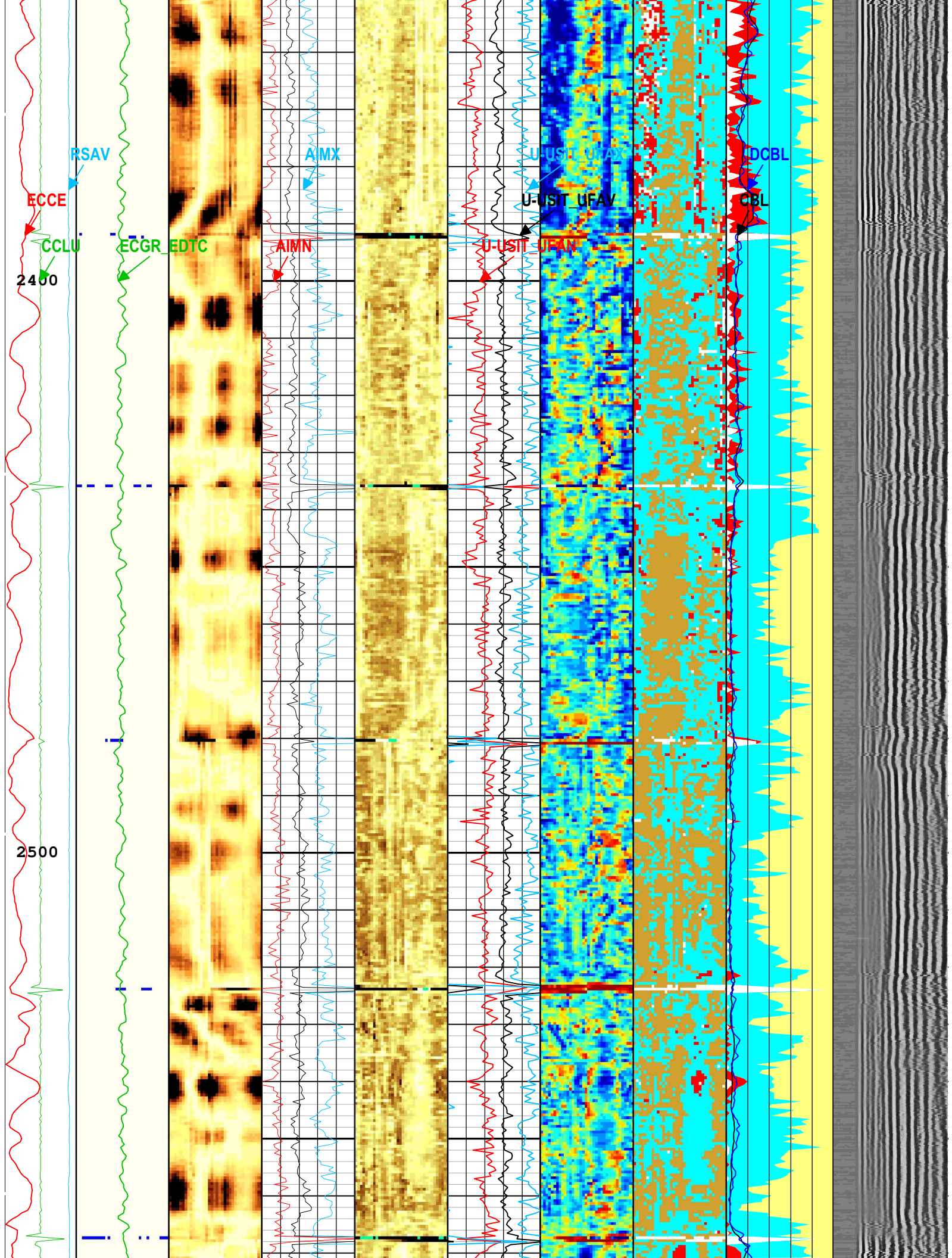


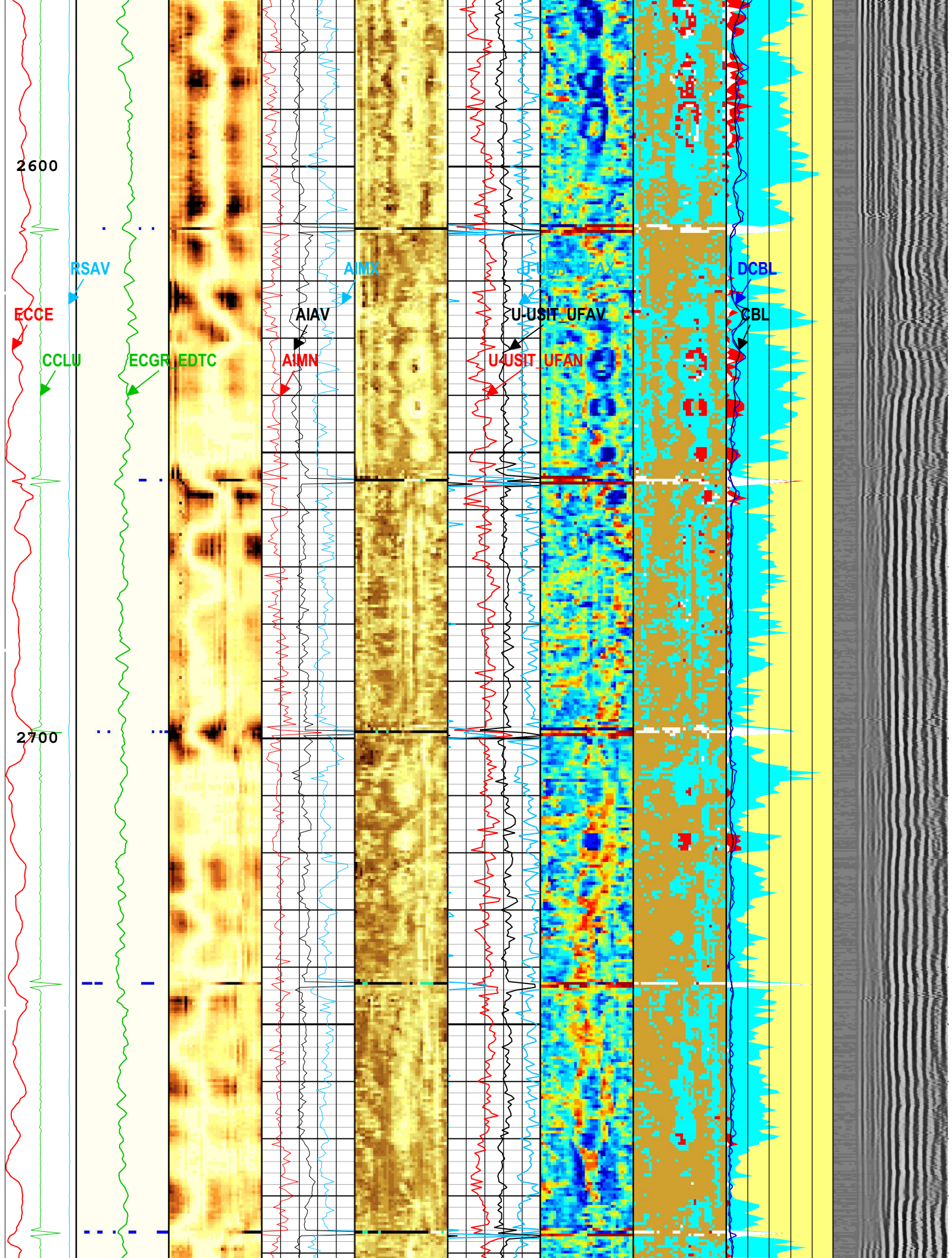


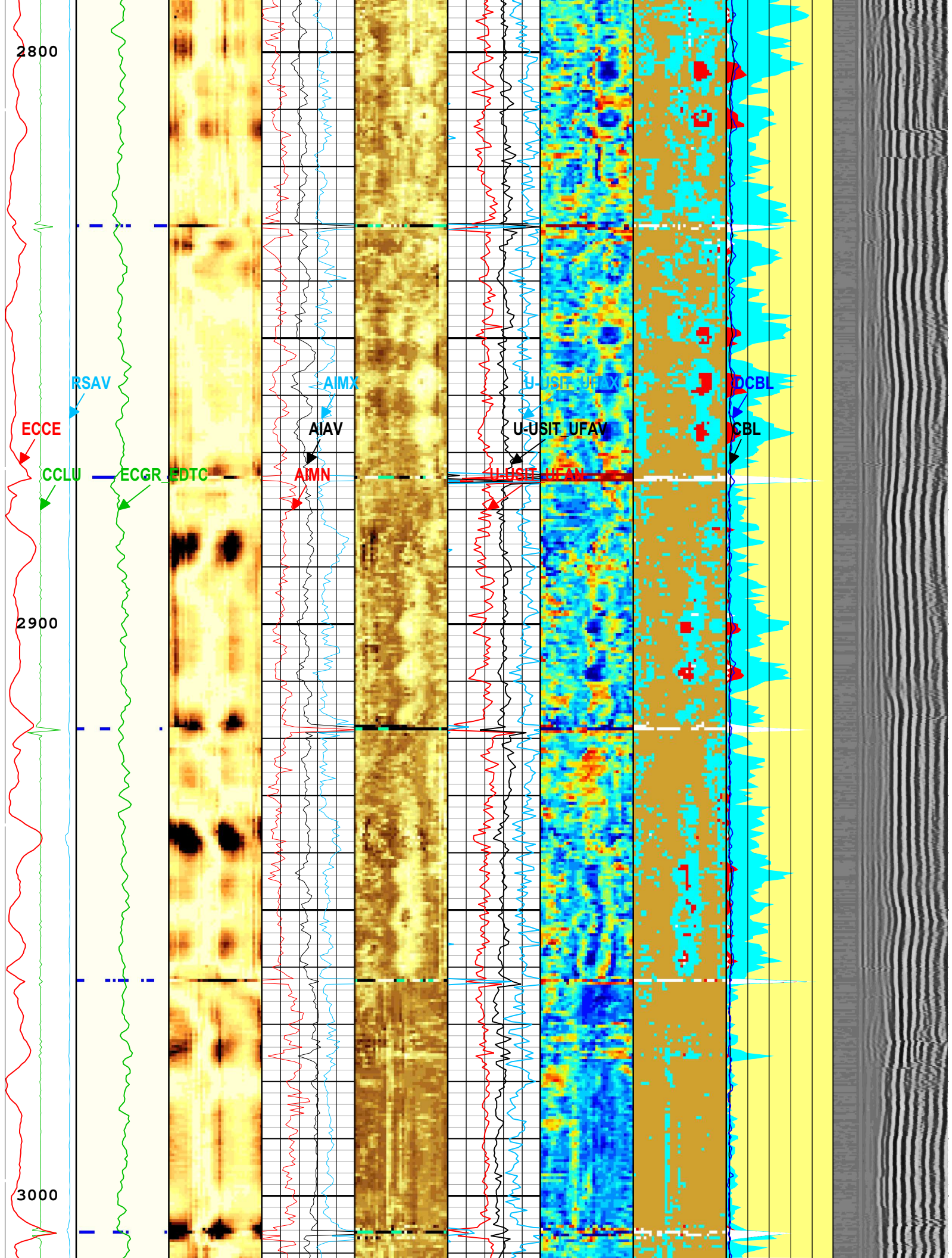


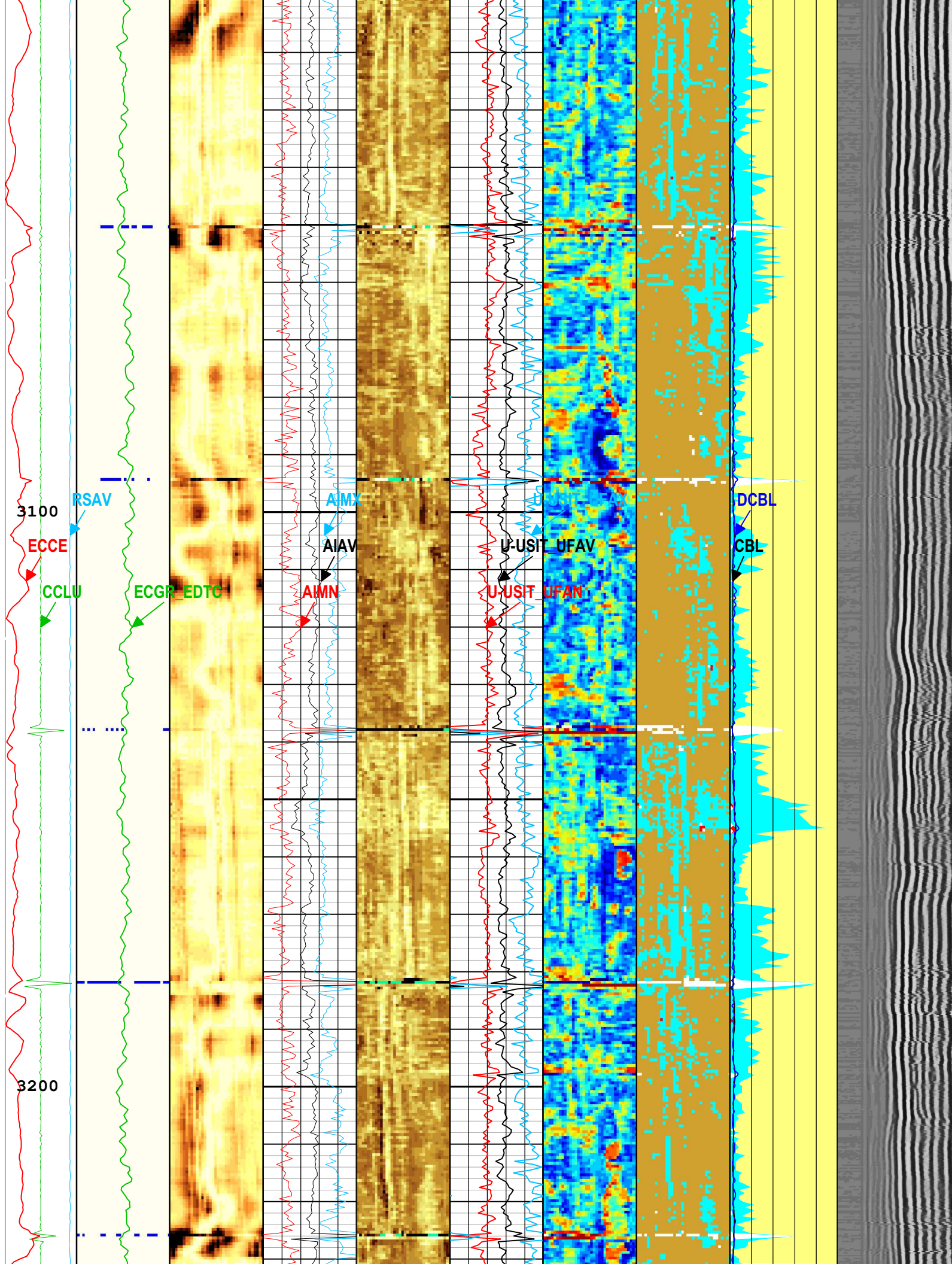












3100

RSAV

ECCE

CCLU

ECGR

EDTC

AIMX

AIAV

AMN

U-USIT\_UFAN

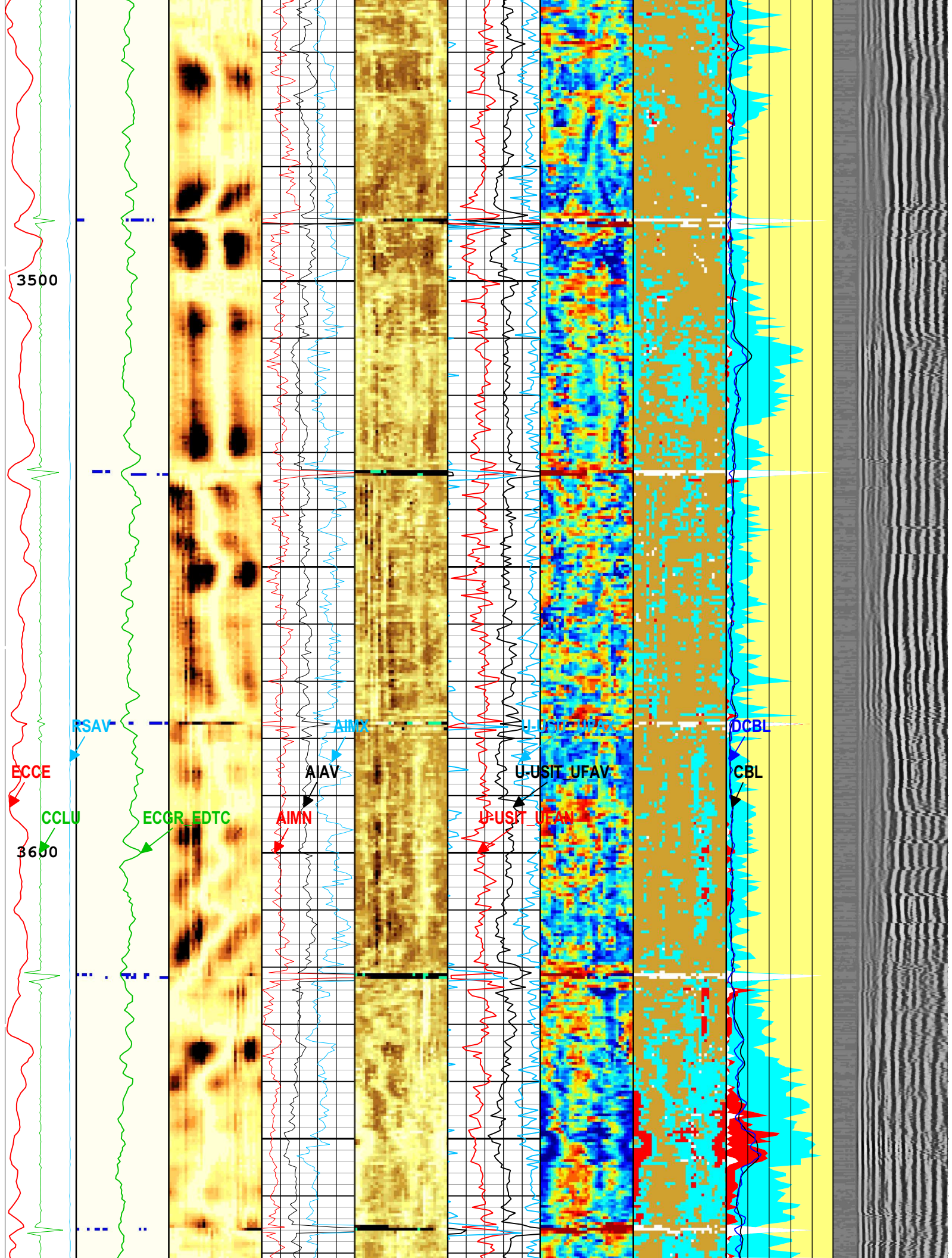
U-USIT\_UFAV

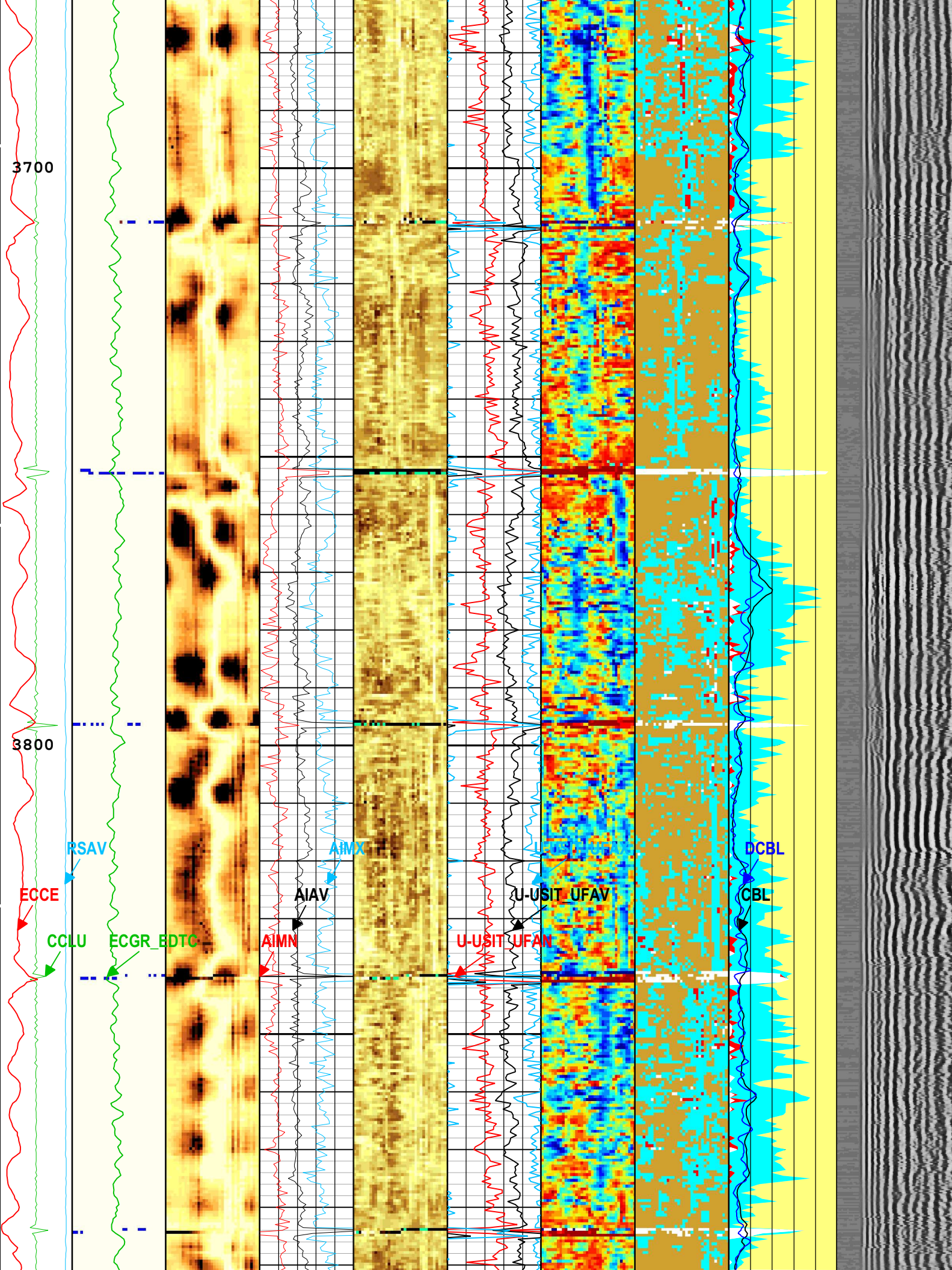
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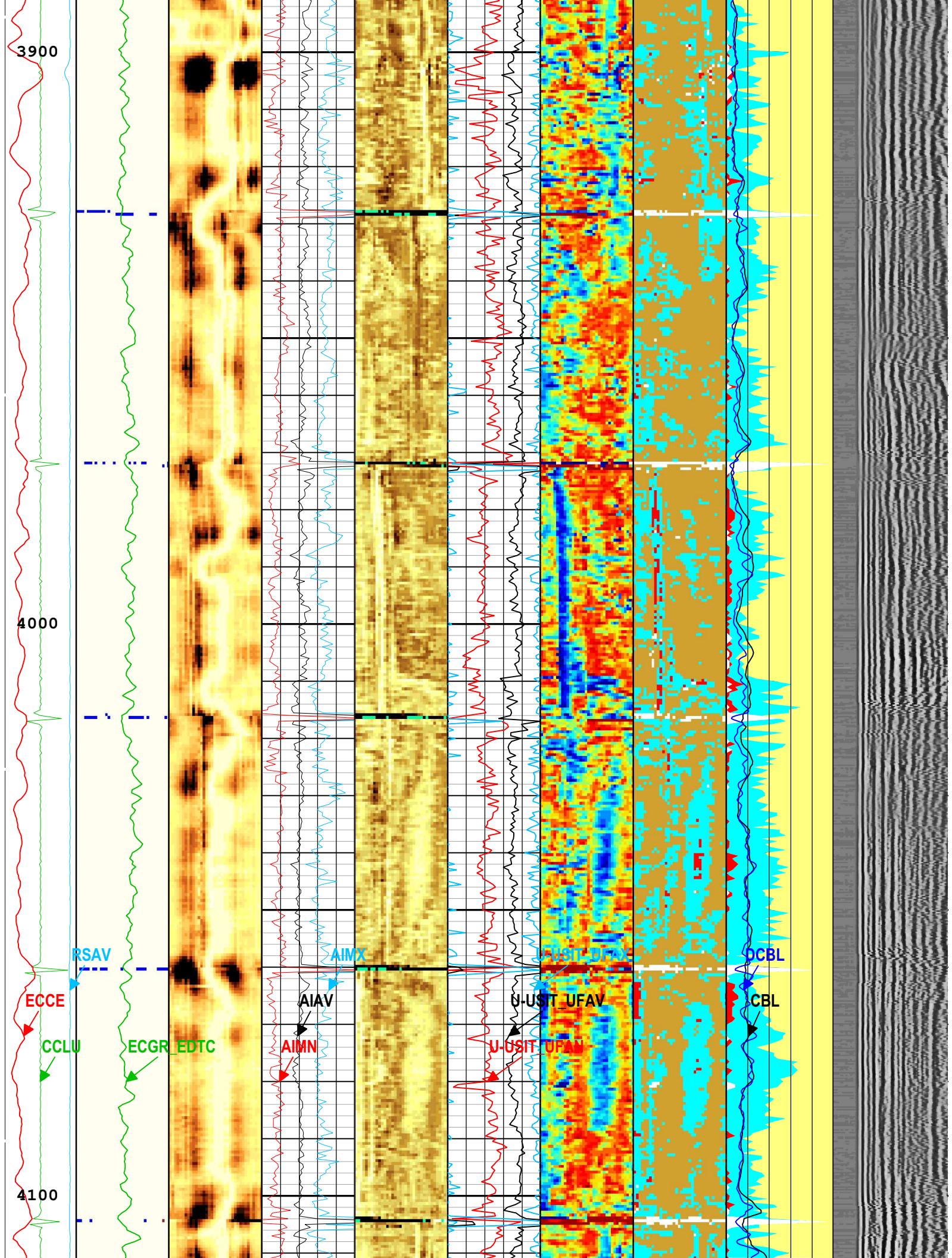
CBL

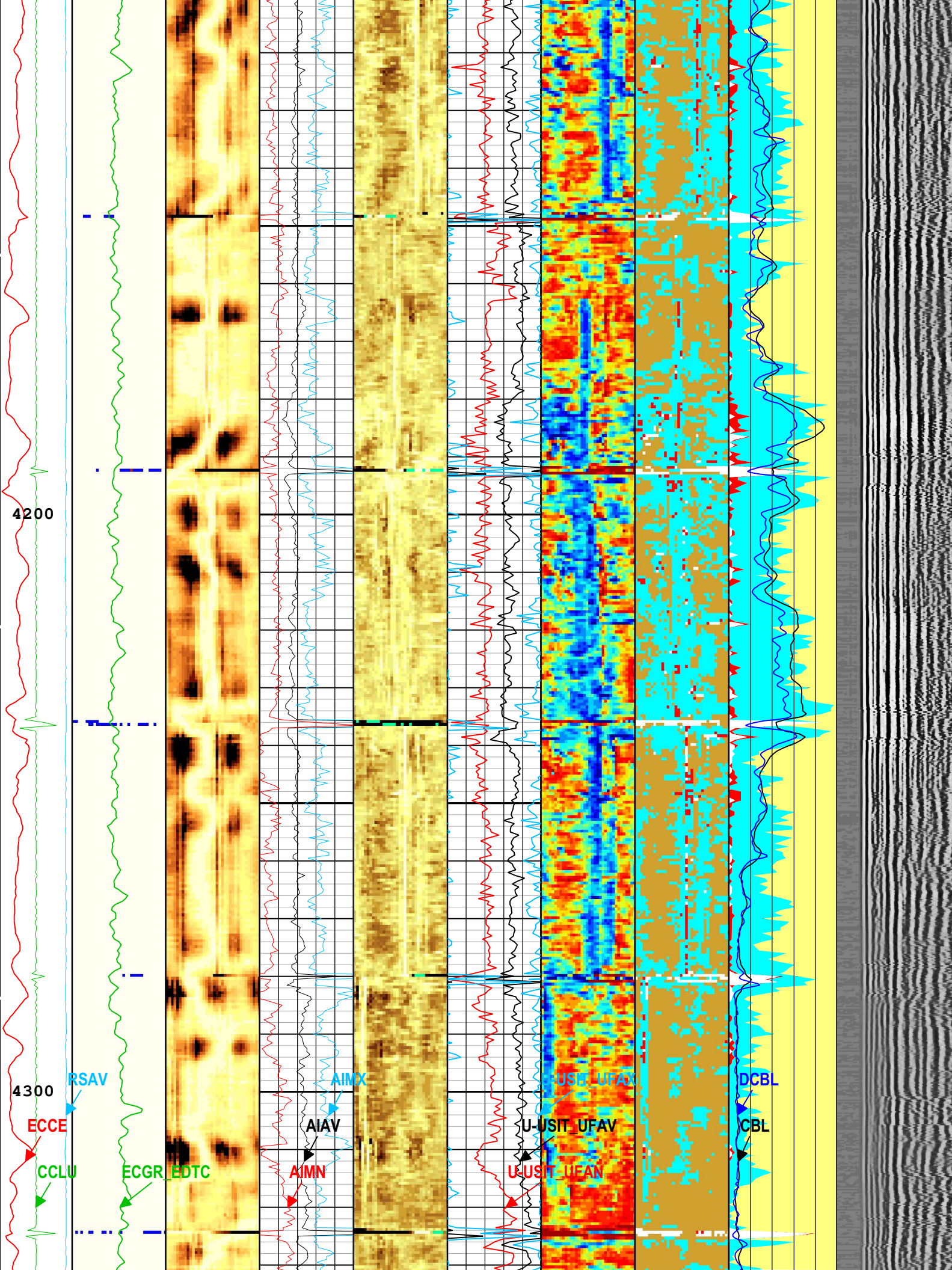
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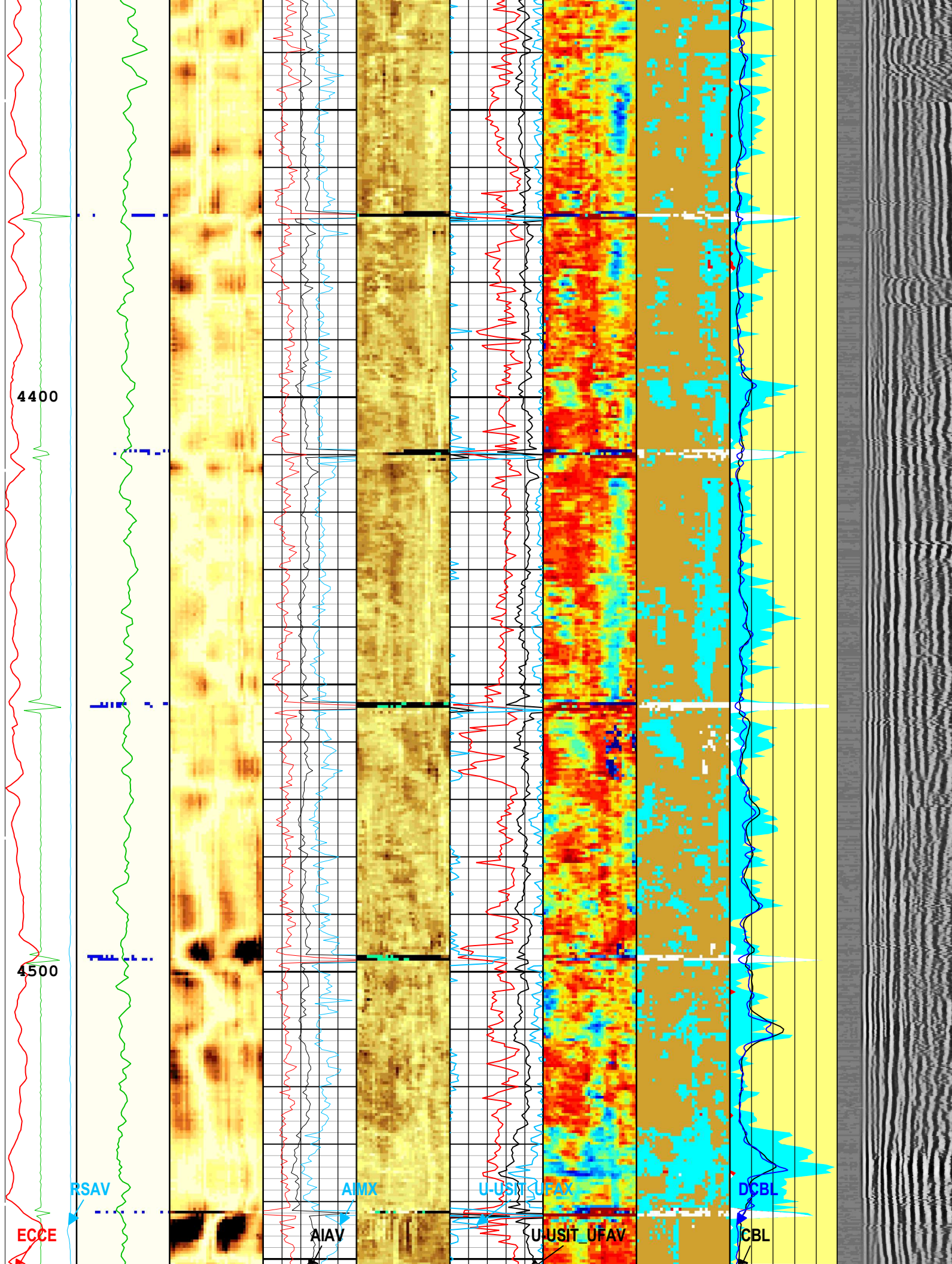






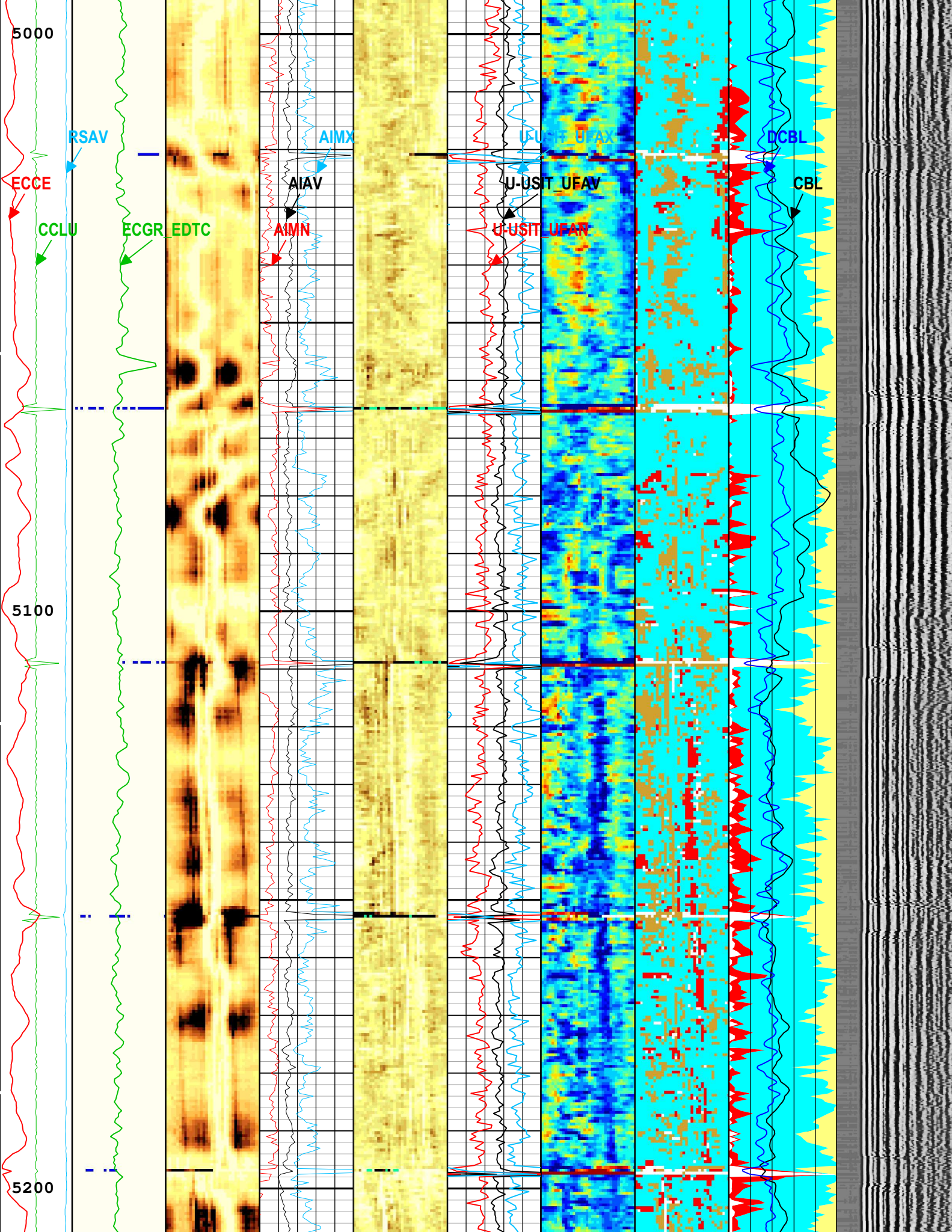


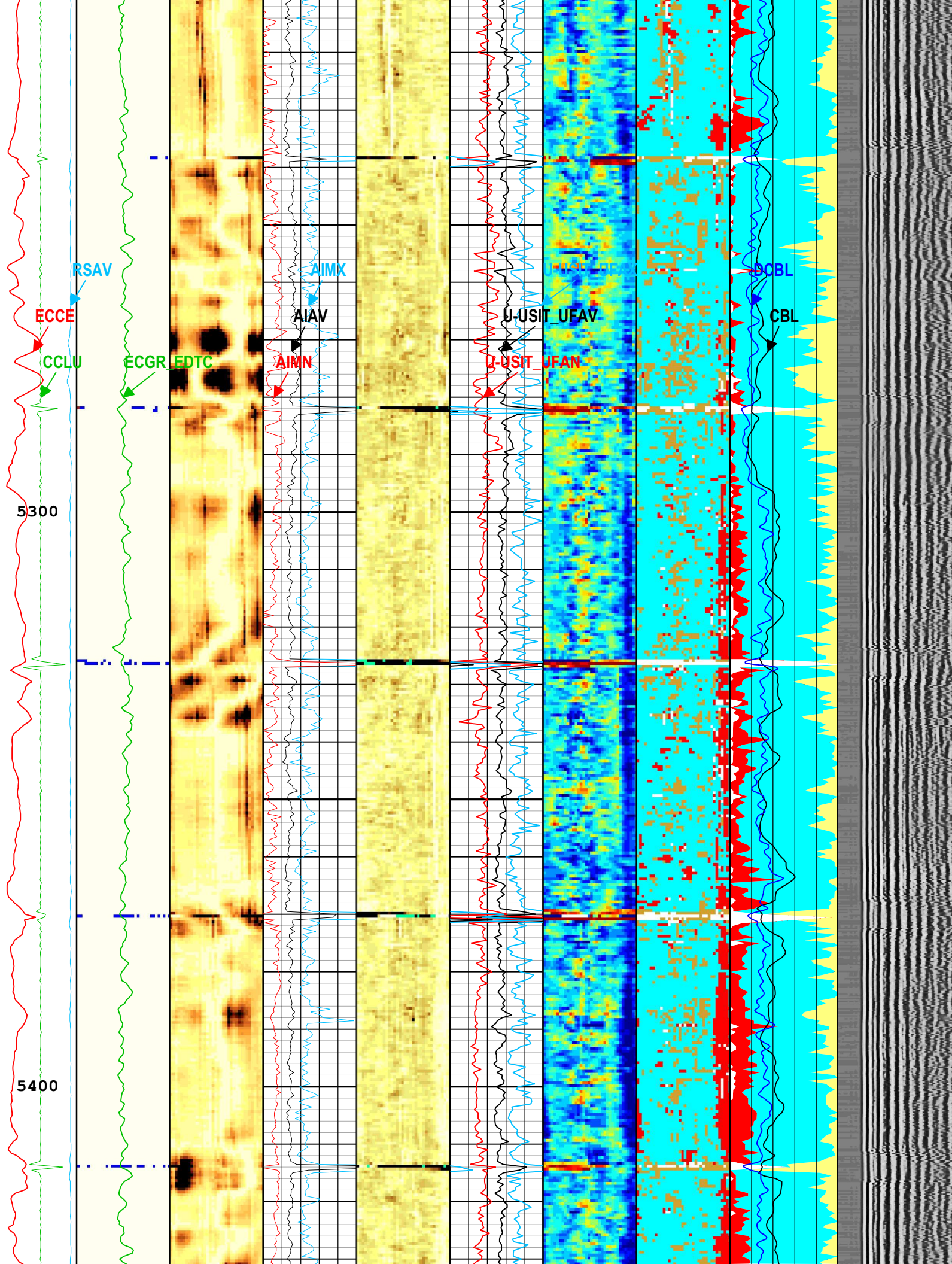


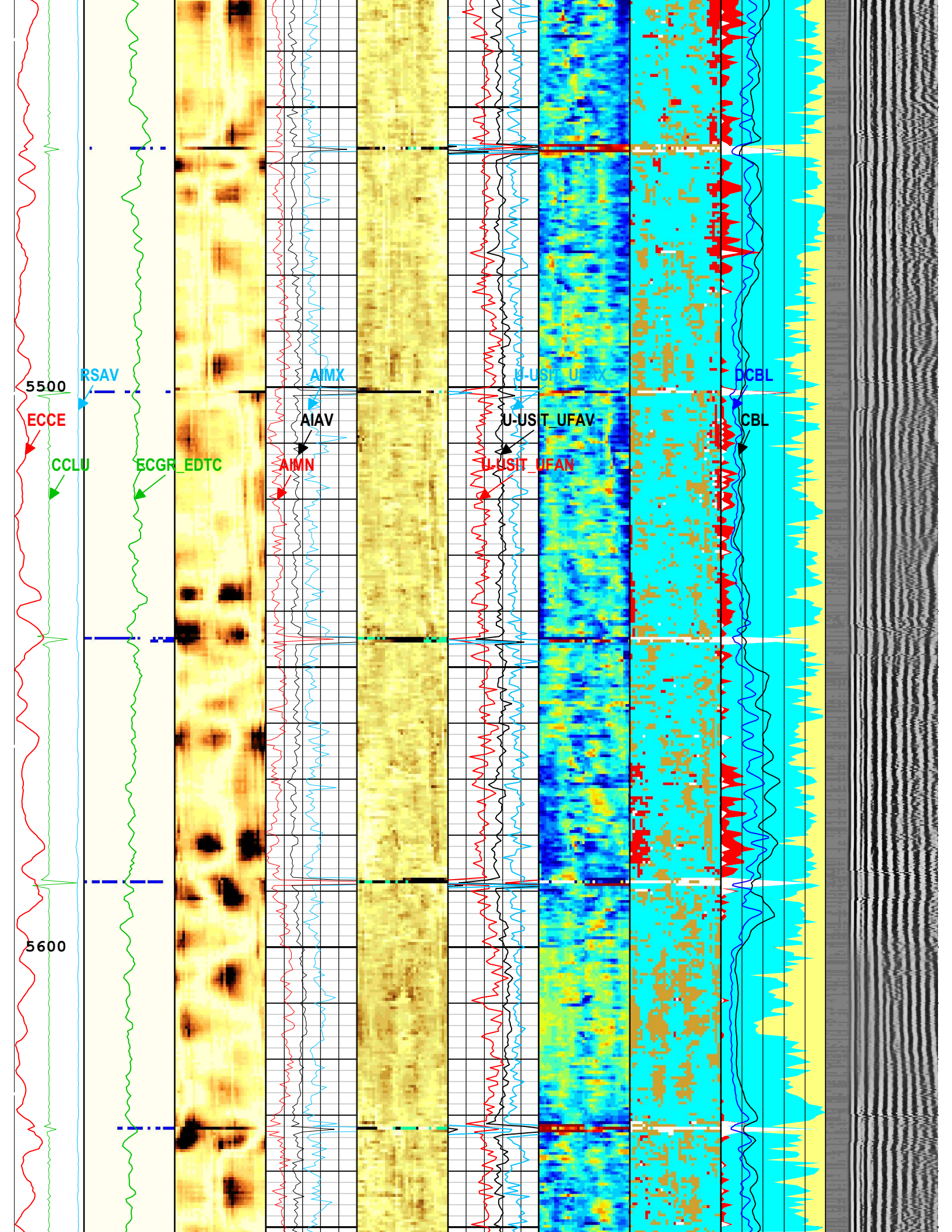


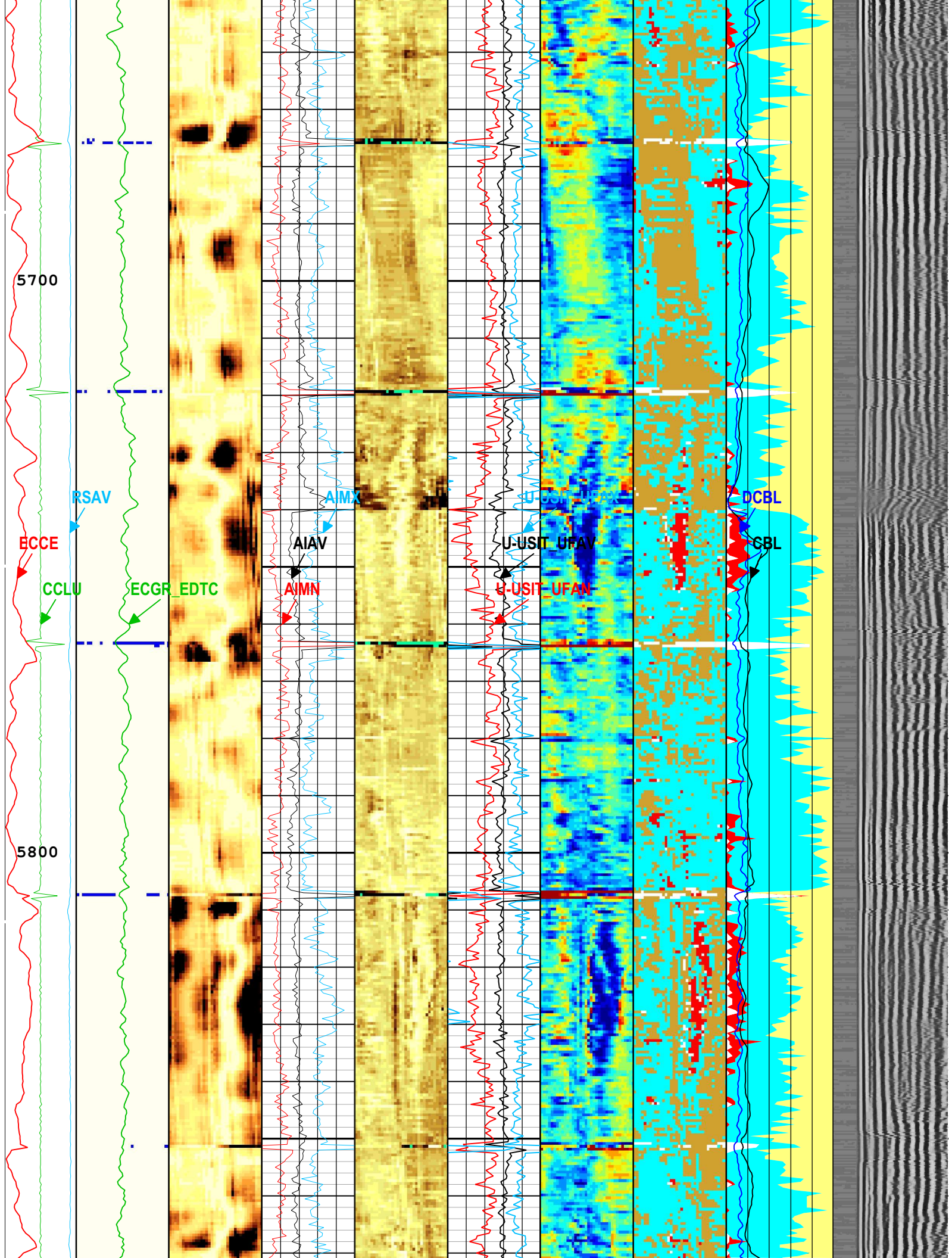


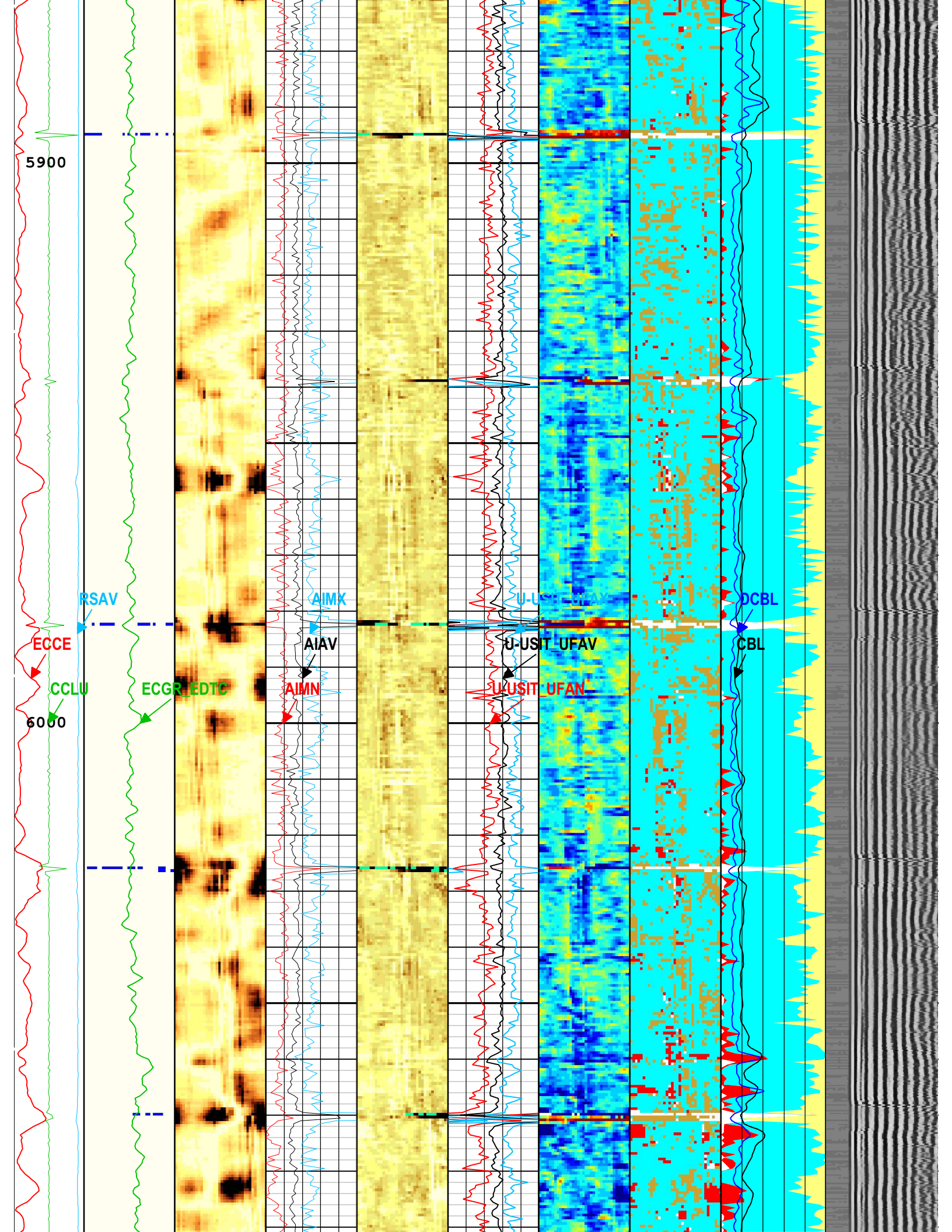


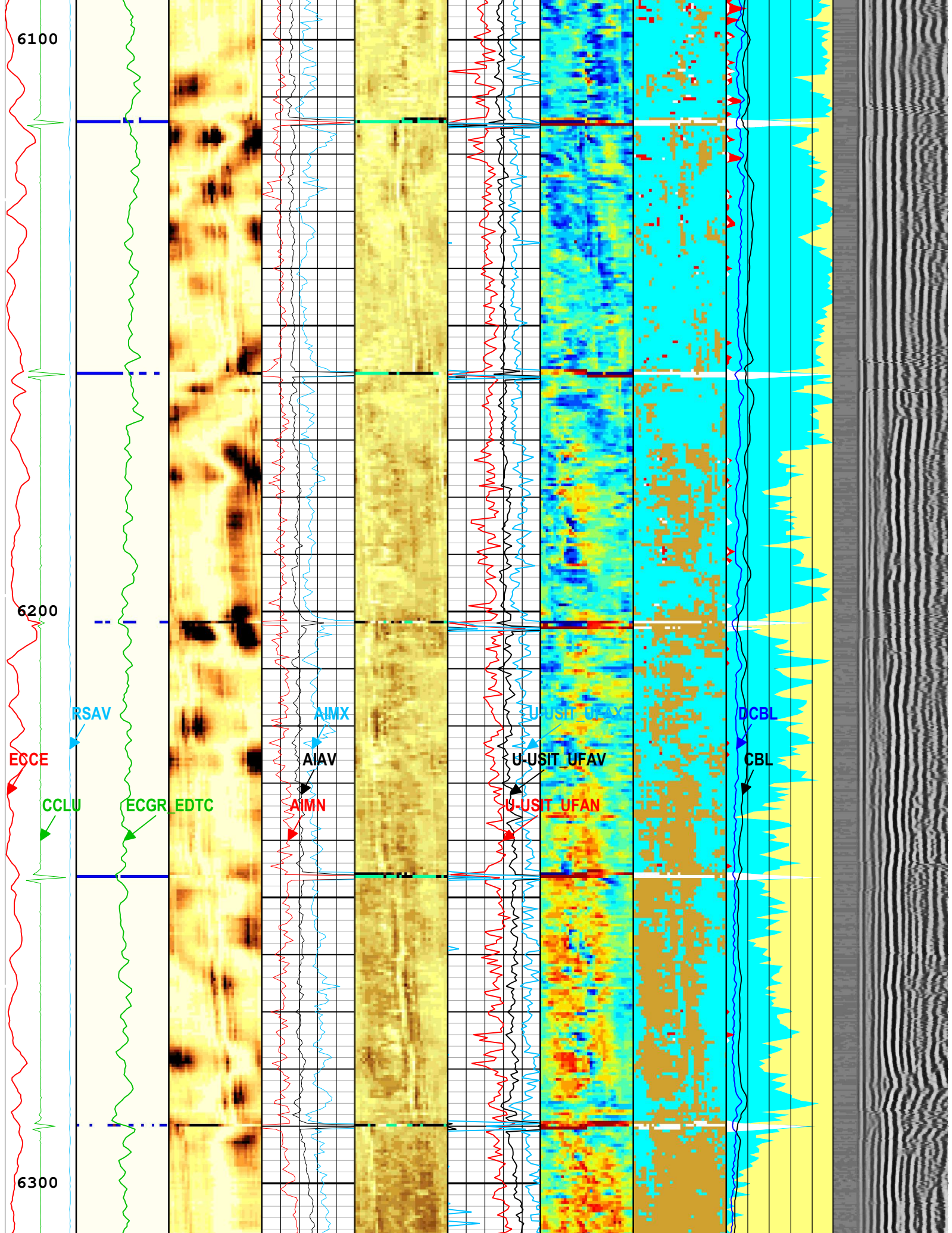


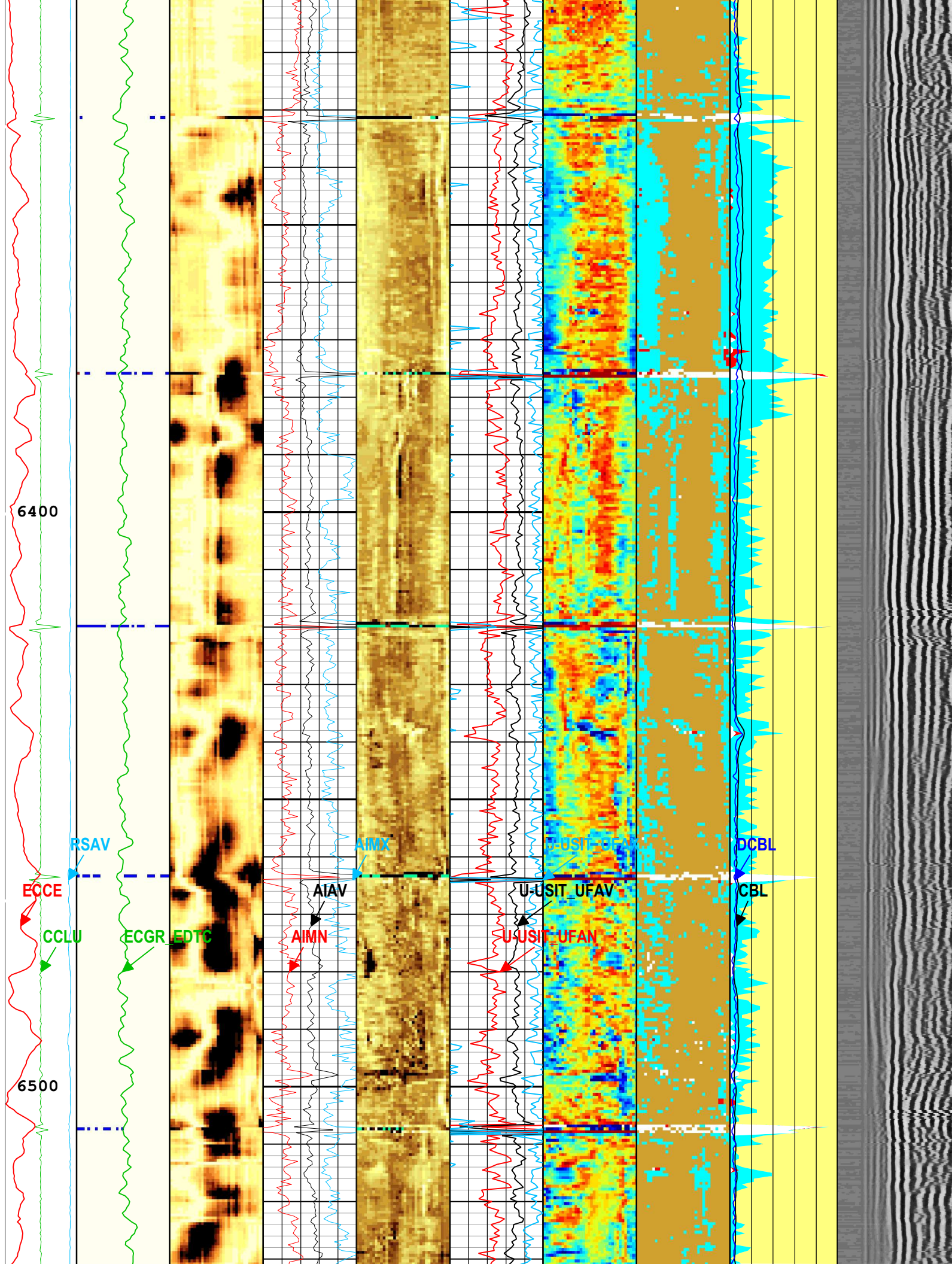


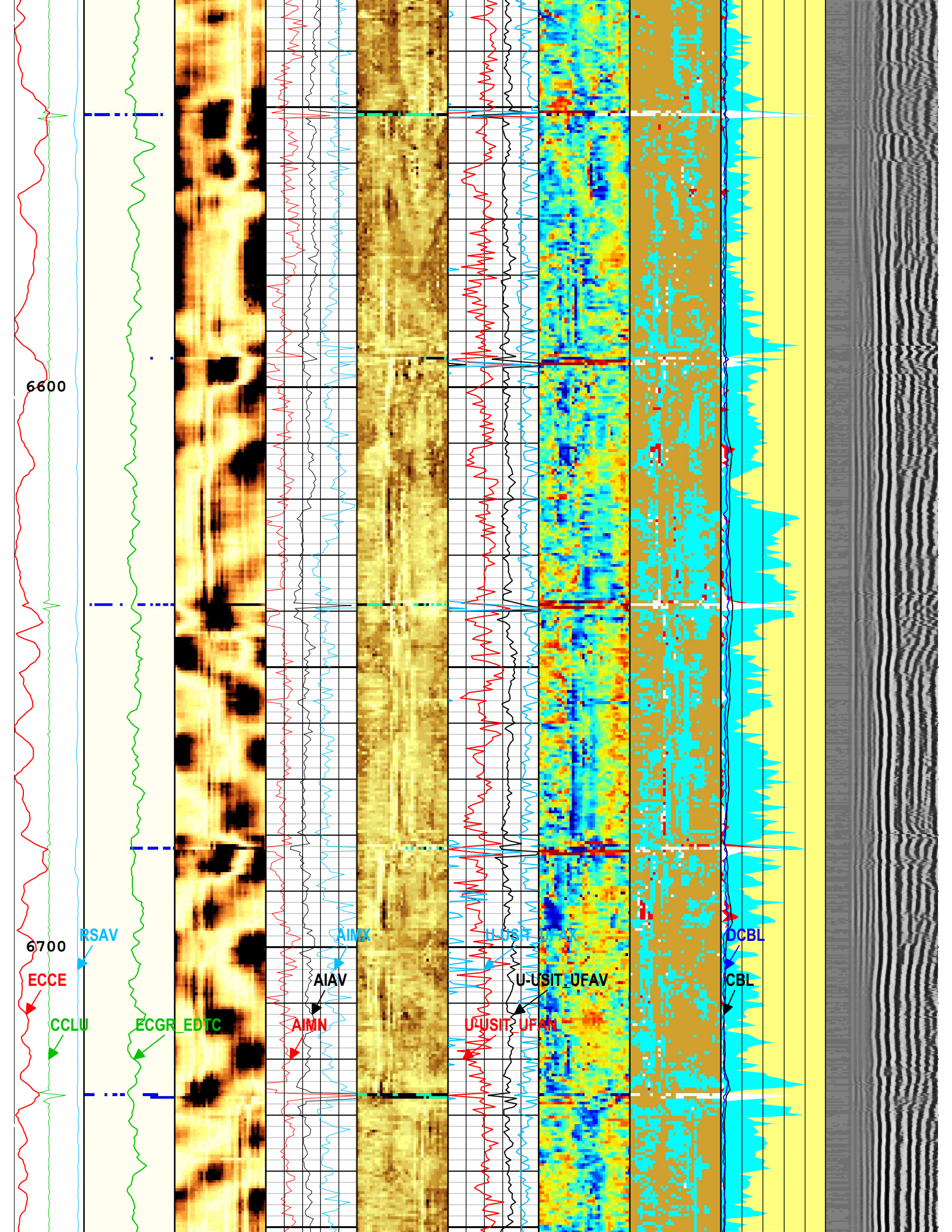


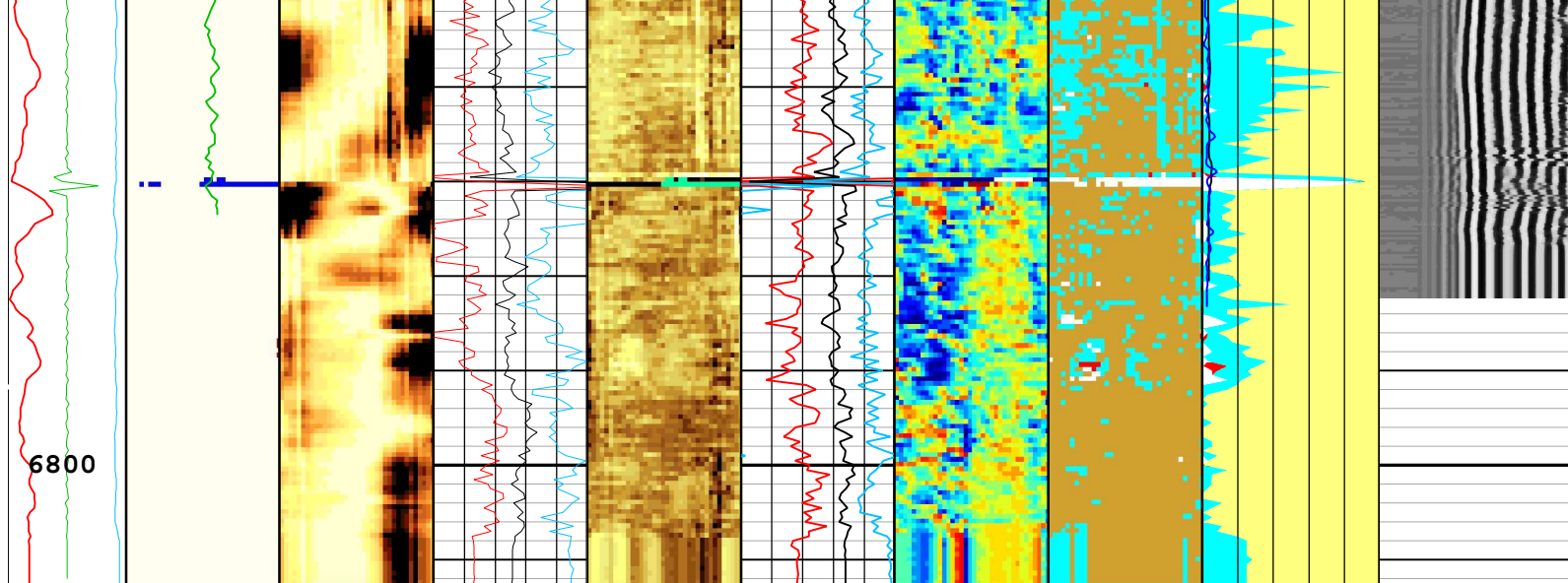












<b>Casing Collar Locator Ultrasonic (CCLU) USIT-E</b> Absent 1,500 3,500 Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E <b>Amplitude of Eccentricity (ECCE) USIT-E</b> 0 in 0.5 <b>Motor Revolution Speed (RSAV) USIT-E</b> 6 c/s 7.5	Absent 1,500 3,500 Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E USIT Processing Flags (UFLG[0]) USIT-E 1 5 <b>Gamma Ray (ECGR_EDTC) EDTC-B</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 Average (AIAV) USIT-E -1 Mrayl 9 <b>Acoustic Impedance Maximum (AIMX) USIT-E</b> -1 Mrayl 9	Absent 1,500 3,500 5,500 7,500 Custom Normalization USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl) Acoustic Impedance Average (AIAV) USIT-E -1 Mrayl 9 <b>Acoustic Impedance Maximum (AIMX) USIT-E</b> -1 Mrayl 9	<b>Acoustic Impedance Minimum (AIMN) USIT-E</b> -1 Mrayl 9 Average Flexural Attenuation (U-USIT_UFA V) USIT-E 0 dB/m 150 <b>Maximum Flexural Attenuation (U-USIT_UFA X) USIT-E</b> 0 dB/m 150	Absent 64,000 92,000 120,000 148,000 Custom Normalization USIT - Flexural Attenuation (UFAK) USIT-E (dB/m) Average Flexural Attenuation (U-USIT_UFA V) USIT-E 0 dB/m 150 <b>Maximum Flexural Attenuation (U-USIT_UFA X) USIT-E</b> 0 dB/m 150	Absent 1,500 3,500 Explicit Normalization USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E SLG Solid Index SLG Liquid Index <b>SLG Gas Index</b> 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] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  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: 16-Sep-2022 03:00:25

## 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	7553	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_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-49.03	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Theoretical	
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
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	1.05	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.2	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.2	
NFPI_L5	Near Free Pipe Sonic Amplitude for Lower Transmitter - Receiver 5	ASLT-B	0	
NFPI_U1	Near Free Pipe Sonic Amplitude for Upper Transmitter - Receiver 1	ASLT-B	0	
R42R	R4 to R2 Sensitivity Ratio	ASLT-B	0	dB/m
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SFPI	Short Free Pipe Sonic Amplitude for Lower Transmitter - Receiver 6	ASLT-B	0	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.67	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-15	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	1.5	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	33	540
BS	7.875	540	6813

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	Time Zoned	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	
RATE	Firing Rate	ASLT-B	8.93	Hz
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	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	

### Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	8	15-Sep-2022 11:50:25	15-Sep-2022 11:51:01	6813.94	6790.25
EMXV	9	15-Sep-2022 11:51:01	15-Sep-2022 13:36:36	6790.25	73.05

All depth are at tool zero.

XYZ

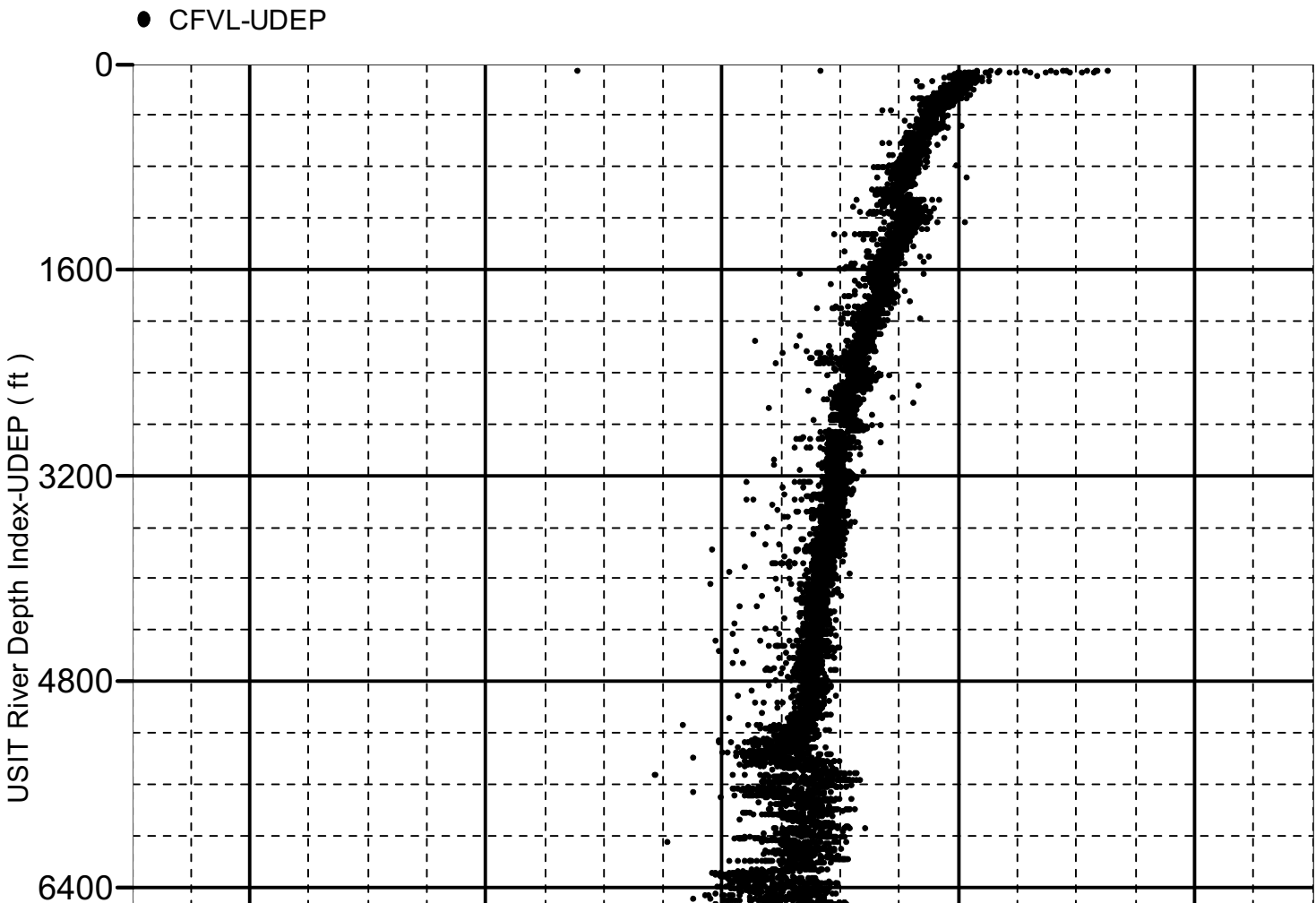
Company:Occidental Petroleum Corporation Well:Mead Place 12-22

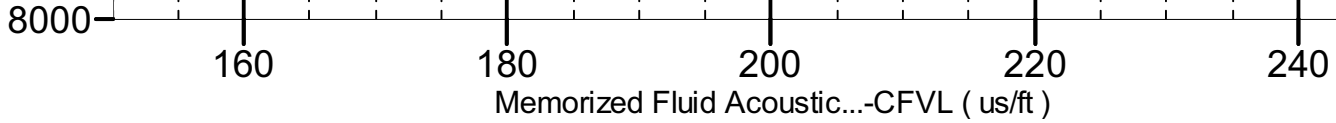
One: Log[6]:Up:S010

# Fluid Acoustic Slowness vs Depth

## 2D Cross Plot

Index Range: From 6813.00 to 72.50 ft





XYZ

Company:Occidental Petroleum Corporation Well:Mead Place 12-22

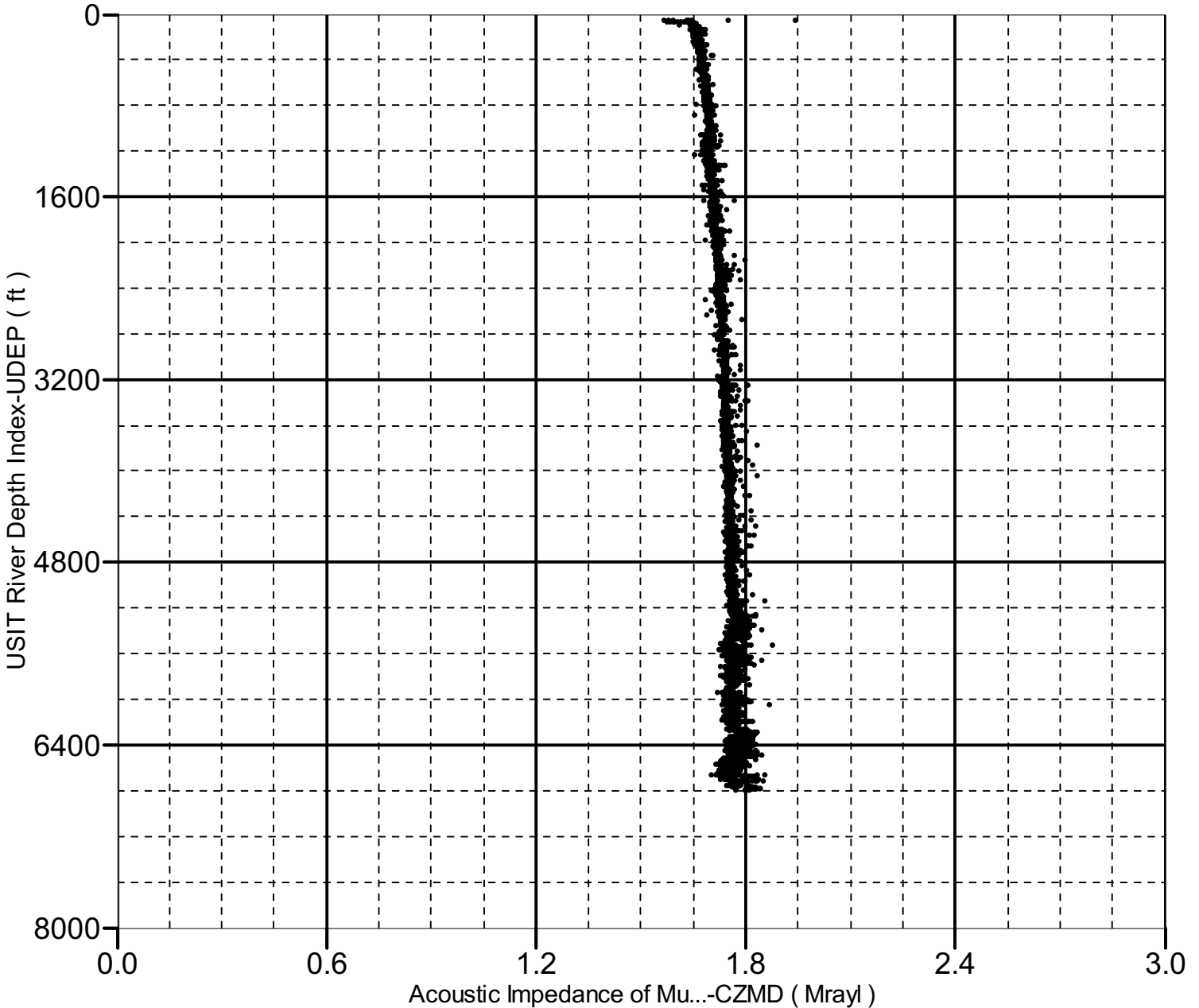
One: Log[6]:Up:S010

# Acoustic Impedance of Mud vs Depth

## 2D Cross Plot

Index Range: From 6813.00 to 72.50 ft

● CZMD-UDEP



Company: Occidental Petroleum Corporation

**Schlumberger**

Well: Mead Place 12-22

Field: Wattenberg

County: Weld

State: Colorado

Isolation Scanner

Cement Bond Log

Gamma Ray - CCL