

Company: PDC Energy Inc

Well: Vega #4N

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner
Cement Bond Log
Gamma Ray - CCL

County: Weld
Field: Wattenberg
Location: 2359' FNL & 2596' FWL
Well: Vega #4N
Company: PDC Energy Inc

Location:	2359' FNL & 2596' FWL	Elev.:	K.B.	5005.00 ft
	SENNW 6 3N65W		G.L.	4977.00 ft
Lat/Long: 40.2552/-104.70636			D.F.	5004.00 ft
Permanent Datum:	Ground Level	Elev.:	4977.00 f	
Log Measured From:	Kelly Bushing	28.00 ft	above Perm.Datum	
Drilling Measured From:	Kelly Bushing			
API Serial No.	Section:	Township:	Range:	
05-123-48461	6	3N	65W	

Logging Date	09-Apr-2022		
Run Number	1A		
Depth Driller	15563.00 ft		
Schlumberger Depth	15563.00 ft		
Bottom Log Interval	6969.00 ft		
Top Log Interval	72.00 ft		
Casing Fluid Type	Water		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.50 in		
From	1696.00 ft		
To	15563.00 ft		
Casing/Tubing Size	5.5 in		
Weight	20 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	15563.00 ft		
Max Recorded Temperatures	236.71 degF		
Logger on Bottom	09-Apr-2022	12:57:00	
Unit Number	Location:	TAM	Fort Morgan
Recorded By		E.Morrone/W. Armstrong	
Witnessed By	B. Myers		

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

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. IBC Fluid Properties Measurement
- 9. 1A
 - 9.1 Integration Summary
 - 9.2 Software Version
 - 9.3 Composite Summary
 - 9.4 Log (IBC SLG CBL DCBL-VDL)
 - 9.5 Parameter Listing
- 10. 1A
 - 10.1 Integration Summary
 - 10.2 Software Version

10.3 Composite Summary

10.4 Log (IBC SLG CBL DCBL-VDL)

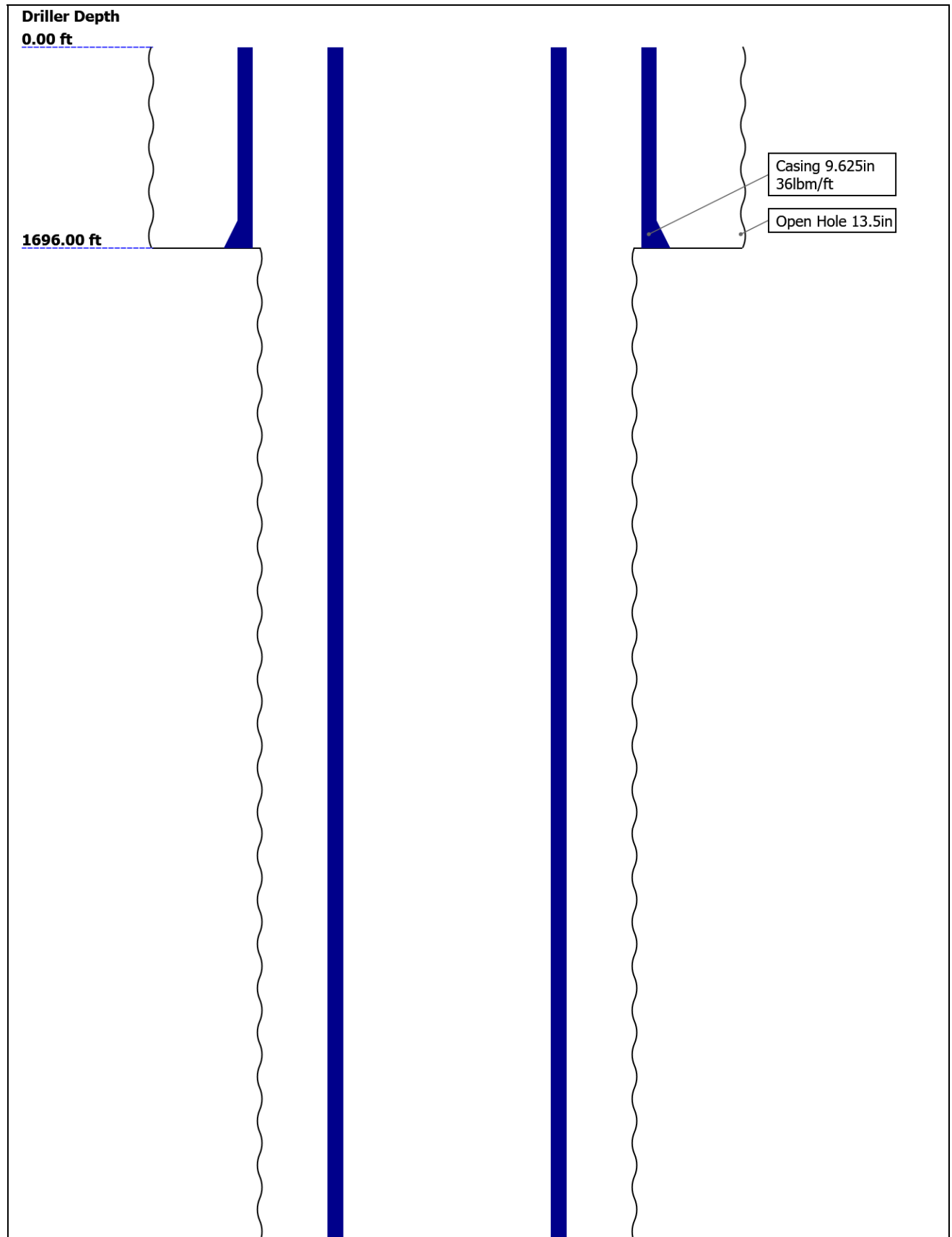
10.5 Parameter Listing

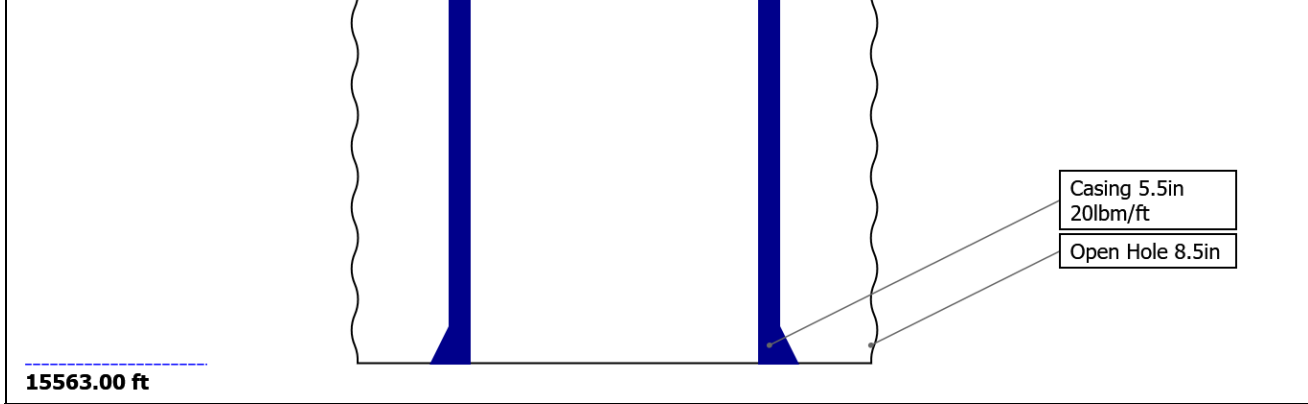
11. XYZ (IBC Fluid Acoustic Slowness vs Depth 6.0 in)

12. XYZ (IBC Acoustic Impedance of Mud vs Depth 6.0
in)

13. Tail

Well Sketch

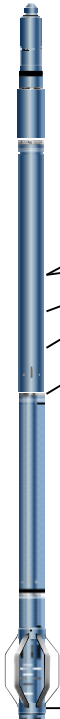


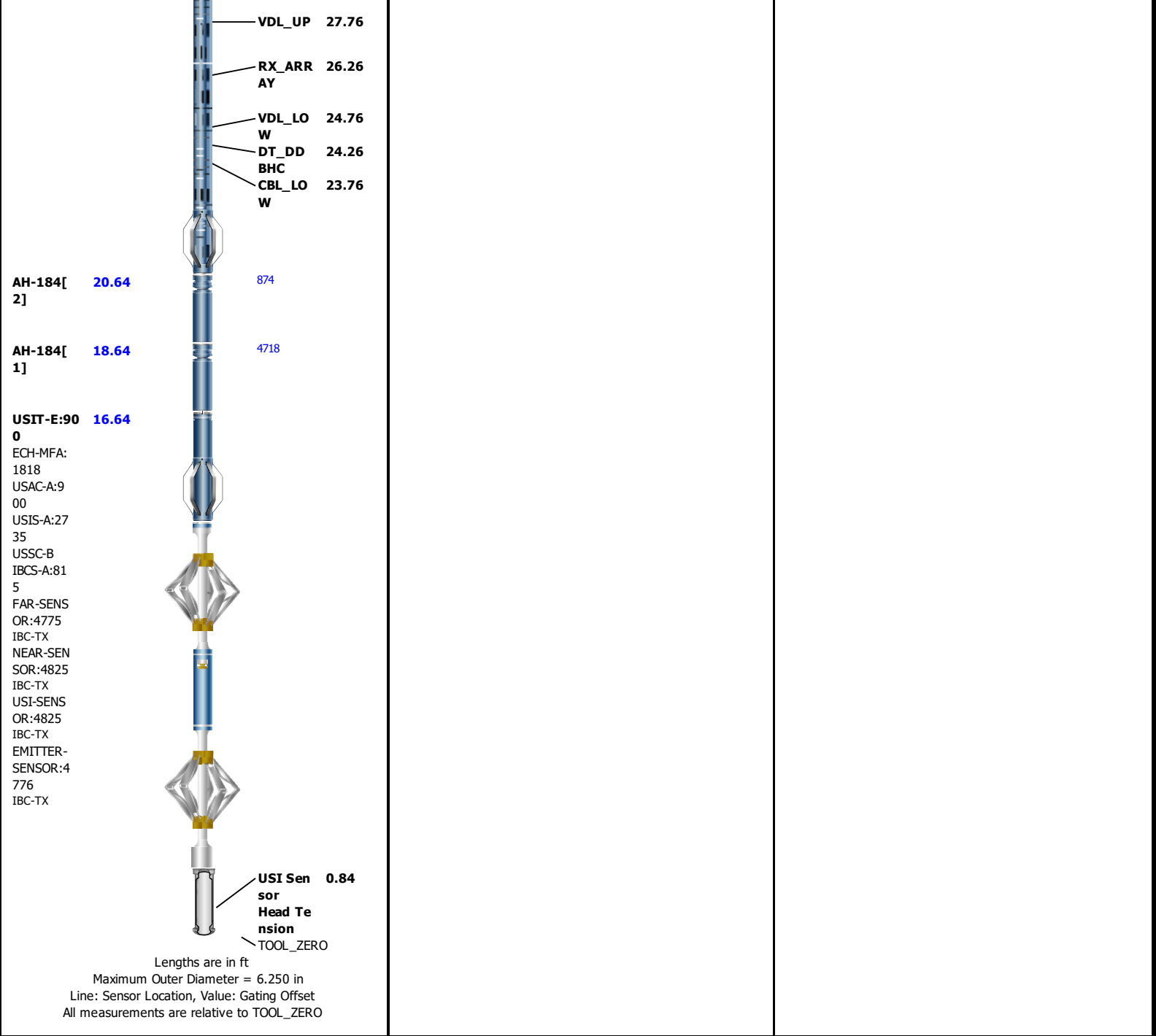


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.5				
Top Driller (ft)	0	1696				
Top Logger (ft)	0	1696				
Bottom Driller (ft)	1696	15563				
Bottom Logger (ft)	1696	15563				
Casing						
Size (in)	9.625	5.5				
Weight (lbm/ft)	36	20				
Inner Diameter (in)	8.921	4.778				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	1696	15563				
Bottom Logger (ft)	1696	15563				

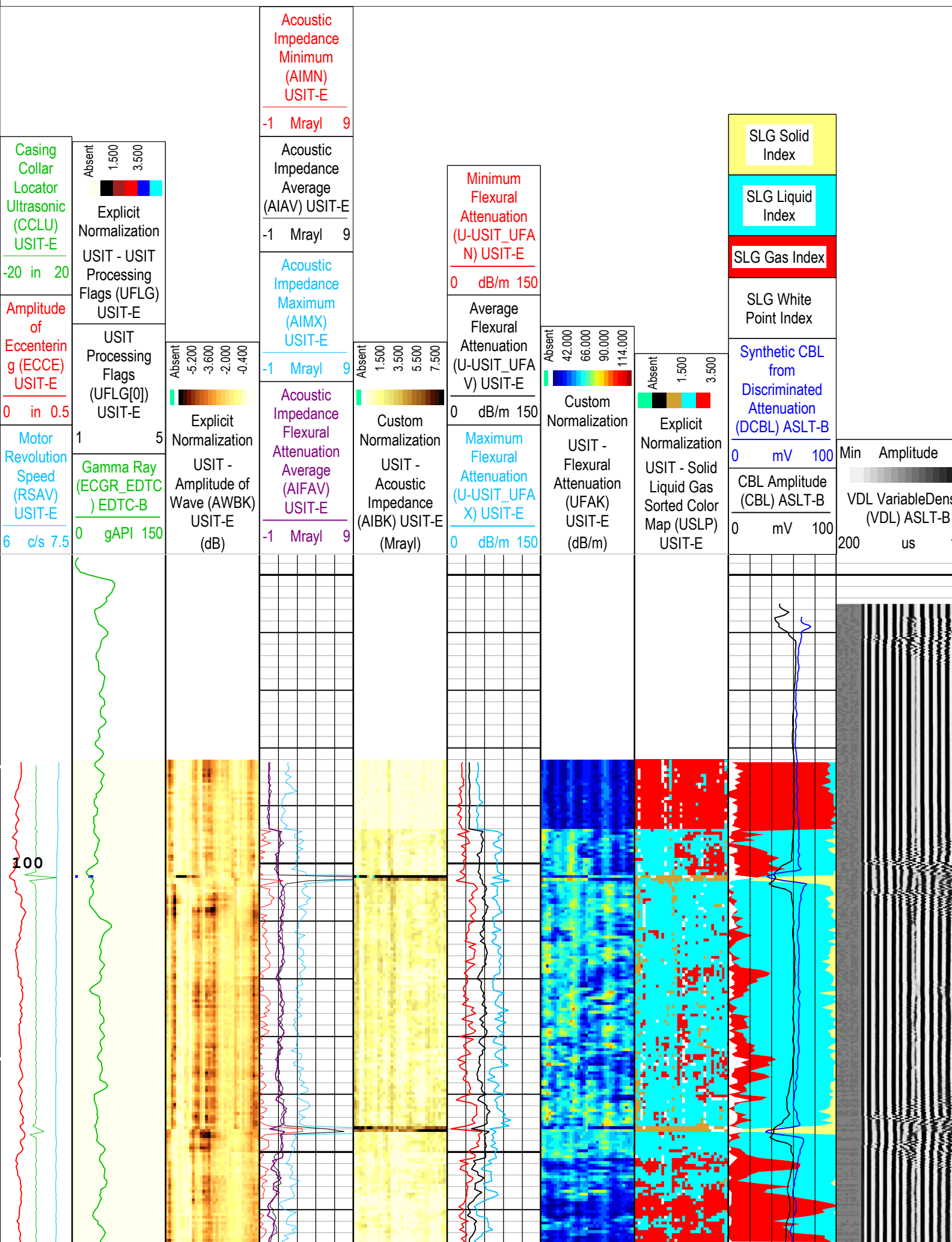
Remarks and Equipment Summary

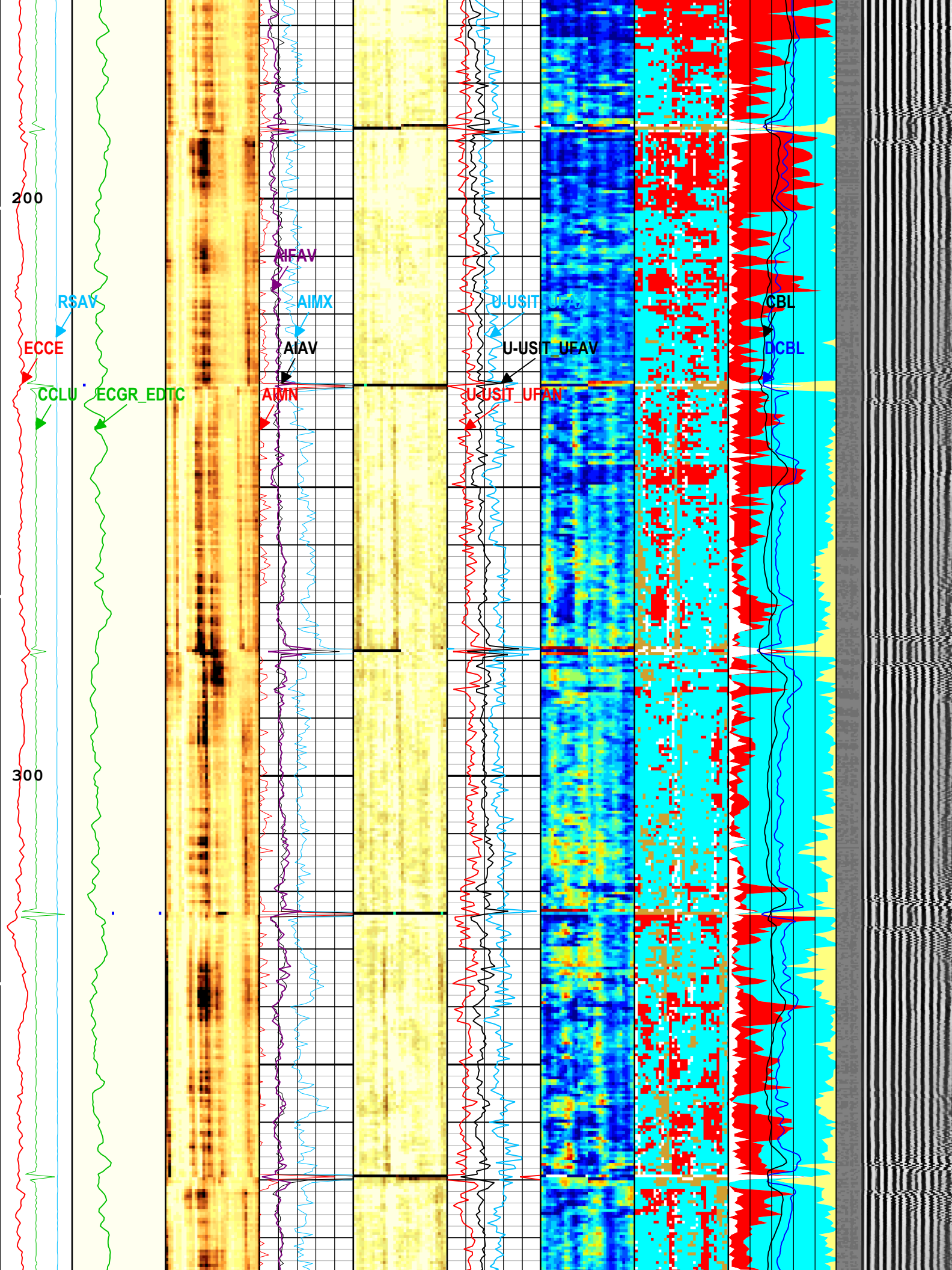
1A: Toolstring			1A: Remarks
<div><div><div><div>Equip name</div><div>Length</div></div><div>LEH-QT</div><div>45.28</div></div><div>LEH-QT</div><div><div><div>EDTC-B:9</div><div>41.79</div></div><div>100</div><div>EDTH-B:92</div><div>93</div><div>EDTG-A</div><div>EDTC-B:91</div><div>00</div></div><div><div><div>ASLT-B:8</div><div>35.29</div></div><div>073</div><div>ASLT-BB:8</div><div>073</div></div></div> <div><div><div><div>MP name</div><div>Offset</div></div><div>CTEM</div><div>38.29</div></div><div><div><div>ACCZ</div><div>0.00</div></div><div>HV</div><div>0.00</div></div><div><div><div>Gamma</div><div>36.42</div></div><div>Ray</div><div>TelStatu</div><div>s</div><div>35.29</div></div><div>CBL_UP</div><div>28.76</div></div>	<div></div>		<div>Thank you for choosing Schlumberger!</div> <div>AFE: DC 003134</div> <div>Log run for cement evaulation in 10 deg 6" resolution</div> <div>Toolstring run as per tool sketch</div> <div>IBCS-A sub with ICE-TX transducers run</div> <div>Cement Info: Lead Cement: 12.9 ppg with expected TOC at 2400 ft Tail Cement: 13.7 ppg with expected TOC at 7700 ft</div> <div>Log correlated to marker joint 6658.5 to 6669.8</div> <div>Main and repeat passes logged under 5000</div> <div>Areas with high eccentering negatively impactedlog quality</div>

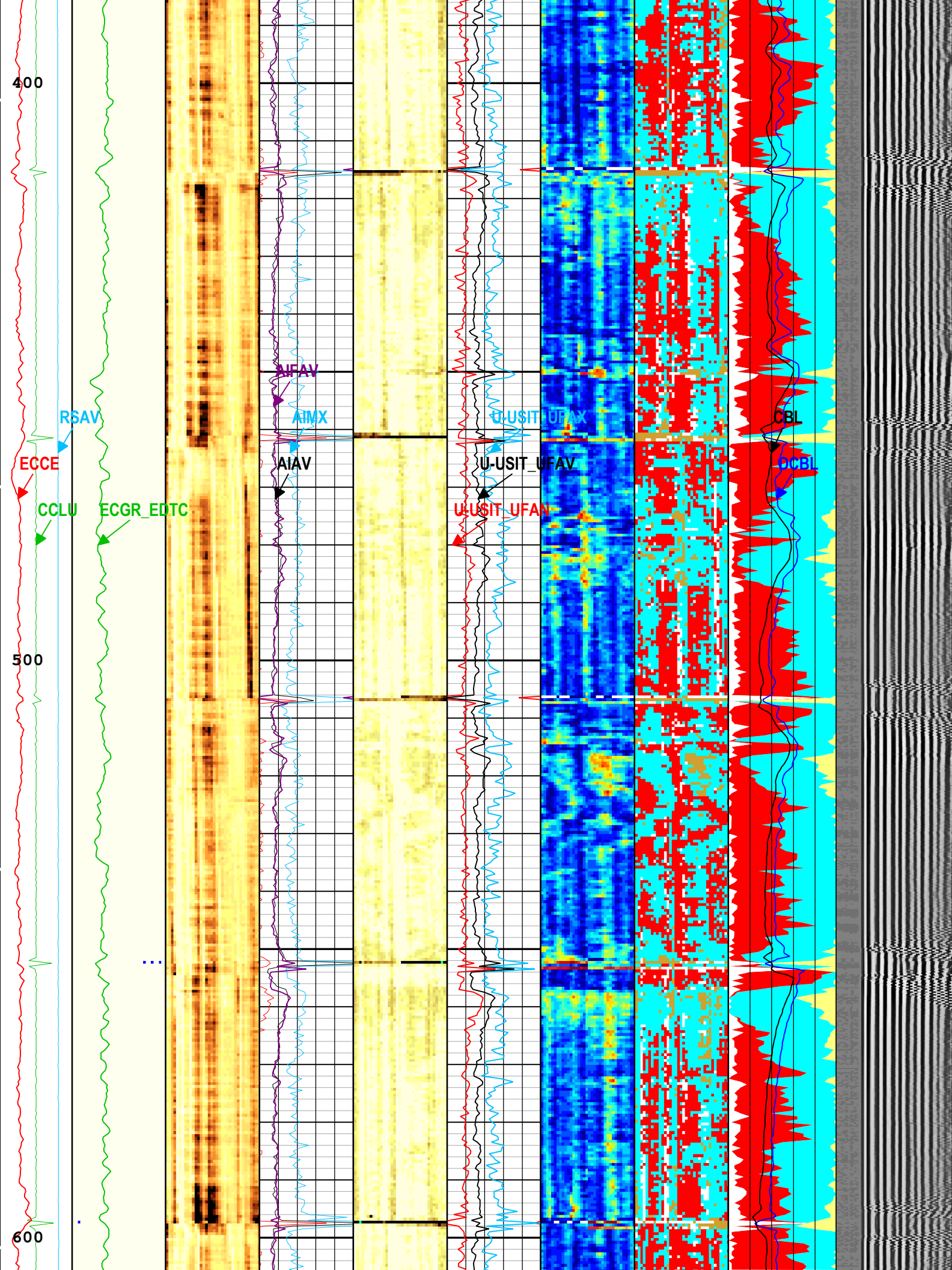


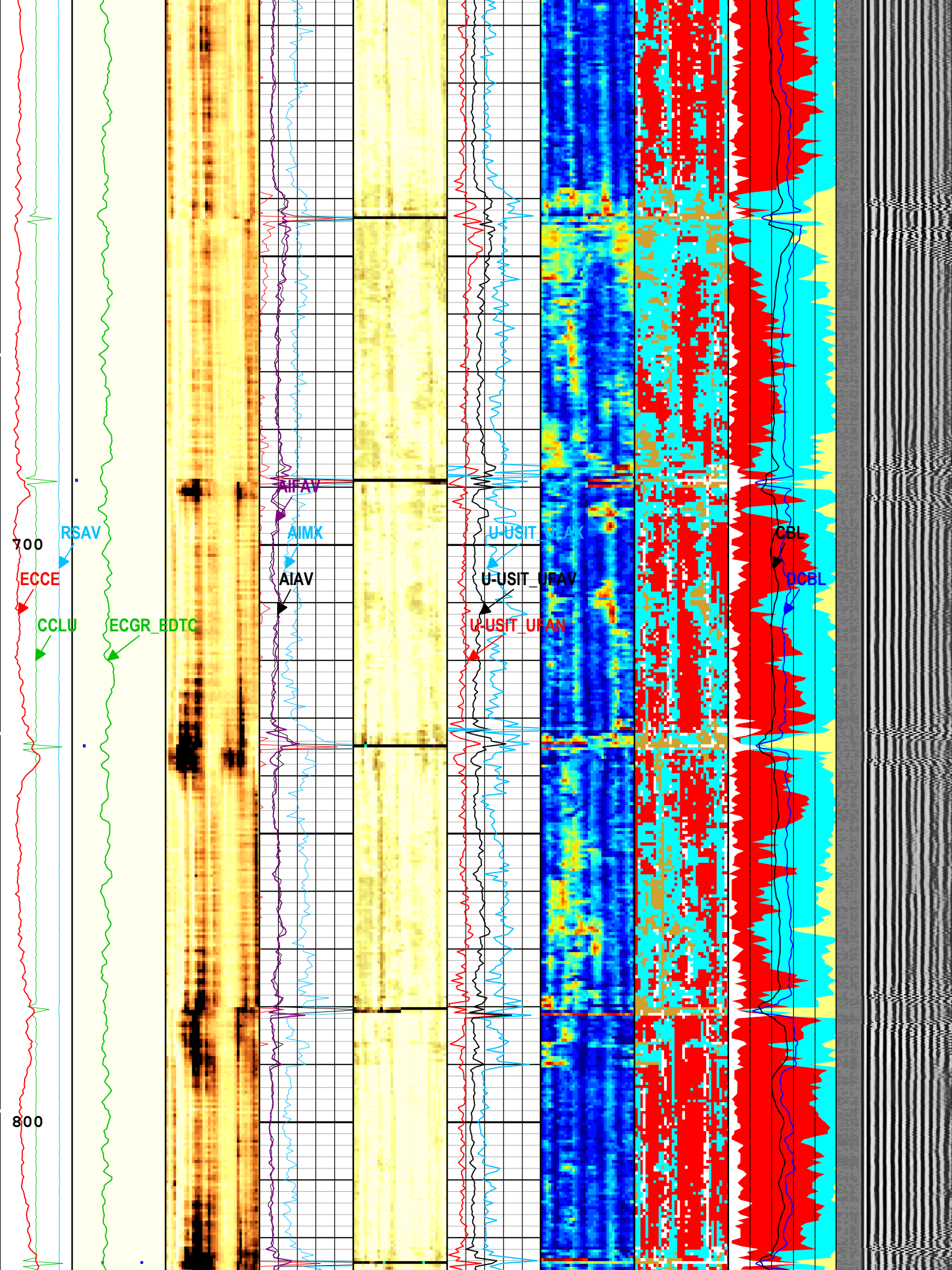
Depth Summary			
	1A		
Depth Measuring Device			
Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		
Tension Device			
Type	CMTD-B/A		
Serial Number			
Calibration Date			

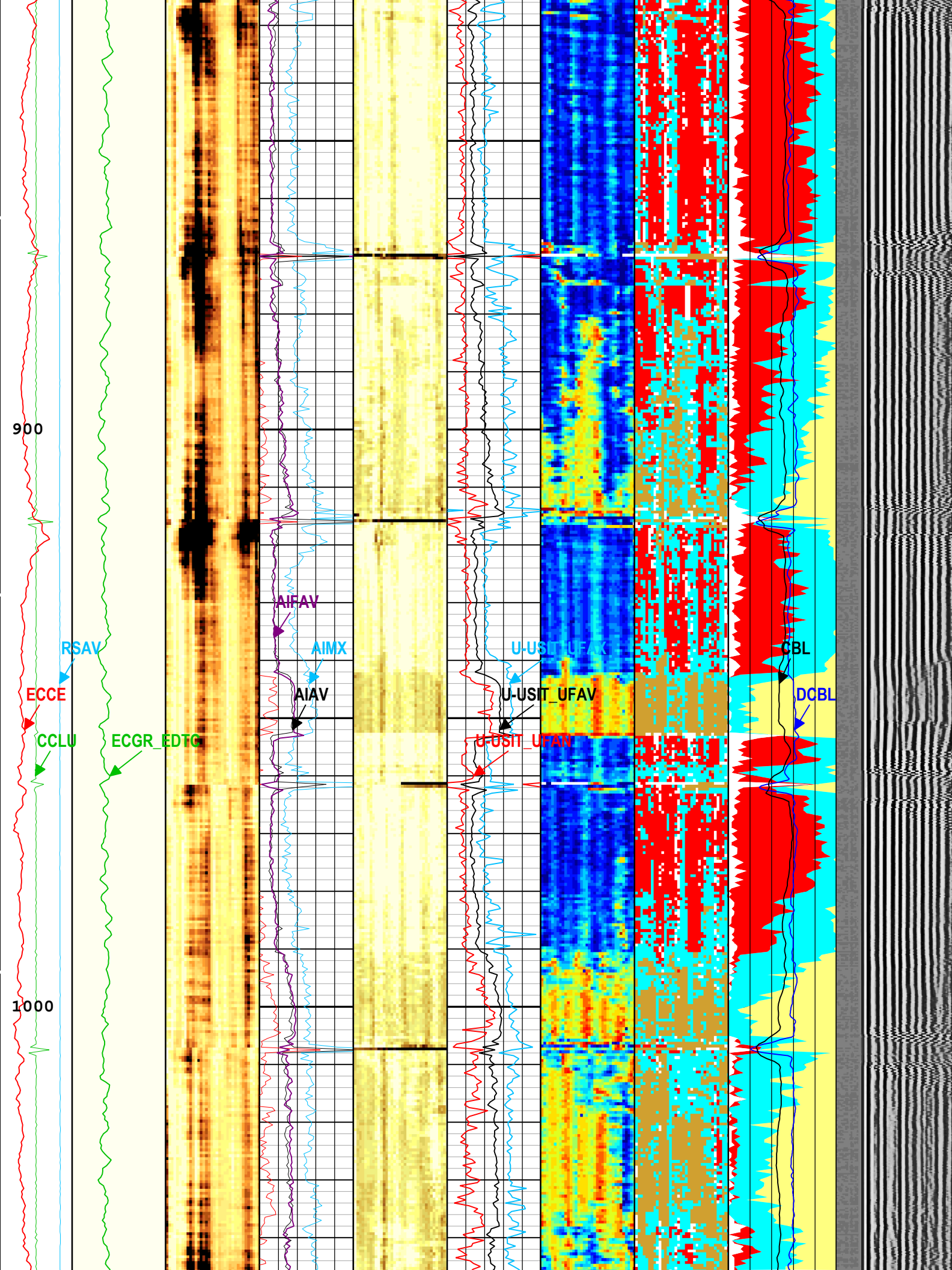
Calibrator Serial Number									
Number of Calibration Points		0							
Logging Cable									
Type		7-39PI-XXS							
Serial Number		1234							
Length		28000.00 ft							
Conveyance Type		Wireline							
Rig Type		Land							
1A:Depth Control Parameters				Depth Control Remarks					
Log Sequence		First Log In the Well		Schlumberger depth control procedures followed IDW used as primary depth control system Z-Chart used as secondary depth control system					
Rig Up Length At Surface									
Rig Up Length At Bottom									
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		Main[3]:Up		6980.58		82.68			
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 : 22.09m(72.46ft) to 25.07m(82.25ft) MUD_N_FRP = 1.32 DFD = 1.01g/cm3(8.40lbm/gal) CZMD median computed in free pipe normalization interval = 1.98 MRayl									
Start Depth(ft)		Stop Depth(ft)		Start Value(Mrayl)		End Value(Mrayl)			
1A									
Software Version									
Acquisition System				Version					
Maxwell 2022.0				12.0.215014.3100					
Application Patch				Wireline_Hotfix-Mandatory-2022.0_12.0.216515					
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Main[3]:Up	Up	82.68 ft	6980.58 ft	09-Apr-2022 12:57:05 PM	09-Apr-2022 2:39:23 PM	ON	11.01 ft	Yes
All depths are referenced to toolstring zero									
Log		Company:PDC Energy Inc Well:Vega #4N						1A: Main[3]:Up:S005	
Description: USI IBC SLG Format: Log (IBC SLG CBL DCBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:33:38									
TIME_1900 - Time Marked every 60.00 (s)									
USIT Processing Flags (UFLG[0]) USIT-E									
1 - UFLG 1 Value within [0.0 - 1.5] - :				<div><div></div>UTIM Error</div>					
2 - UFLG 2 Value within [1.5 - 2.5] - :				<div><div></div>Pulse Origin Not Detected</div>					
3 - UFLG 3 Value within [2.5 - 3.5] - :				<div><div></div>WINLEN Error</div>					
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :				<div><div></div>Casing Thickness Error</div>					

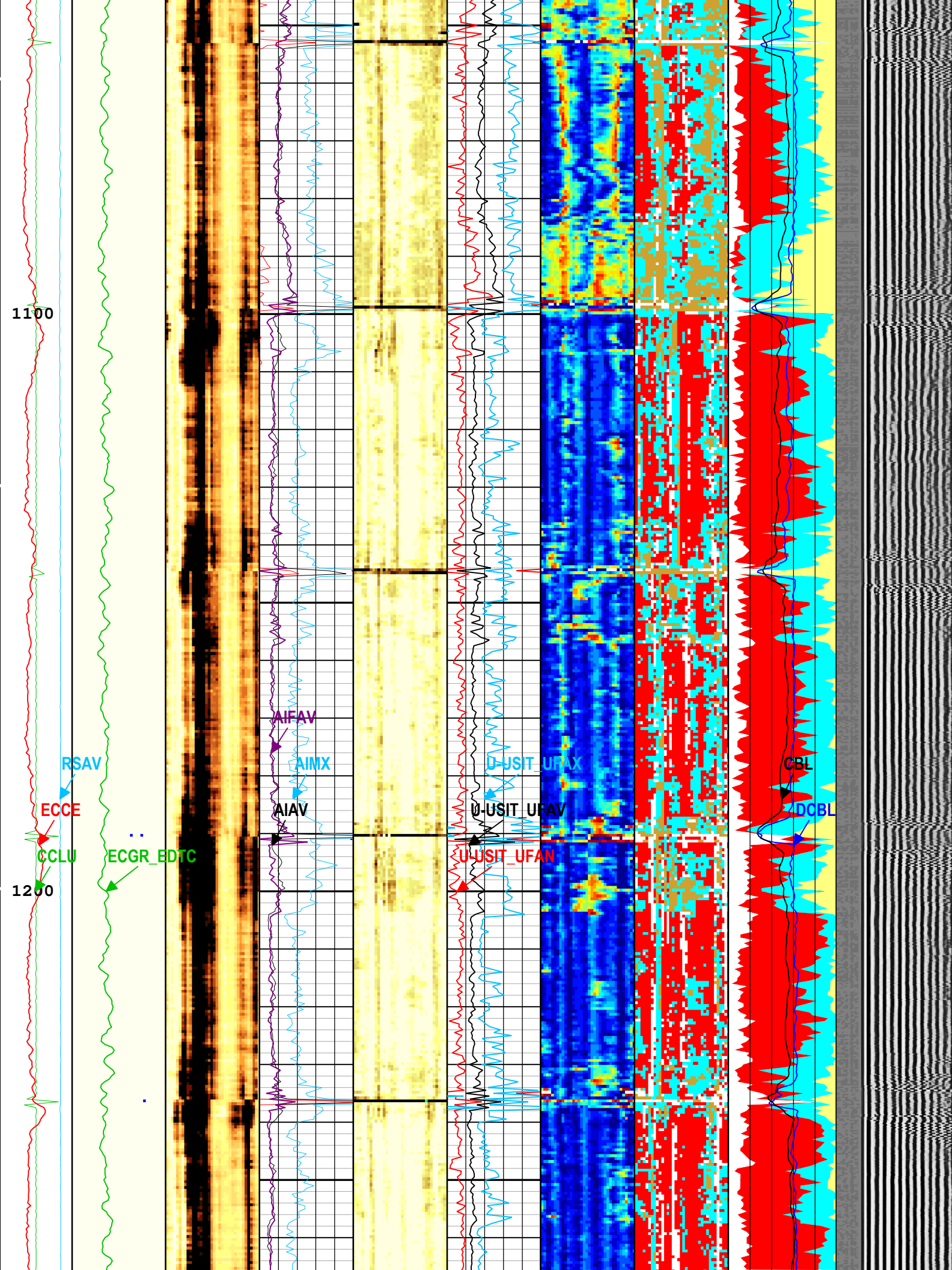


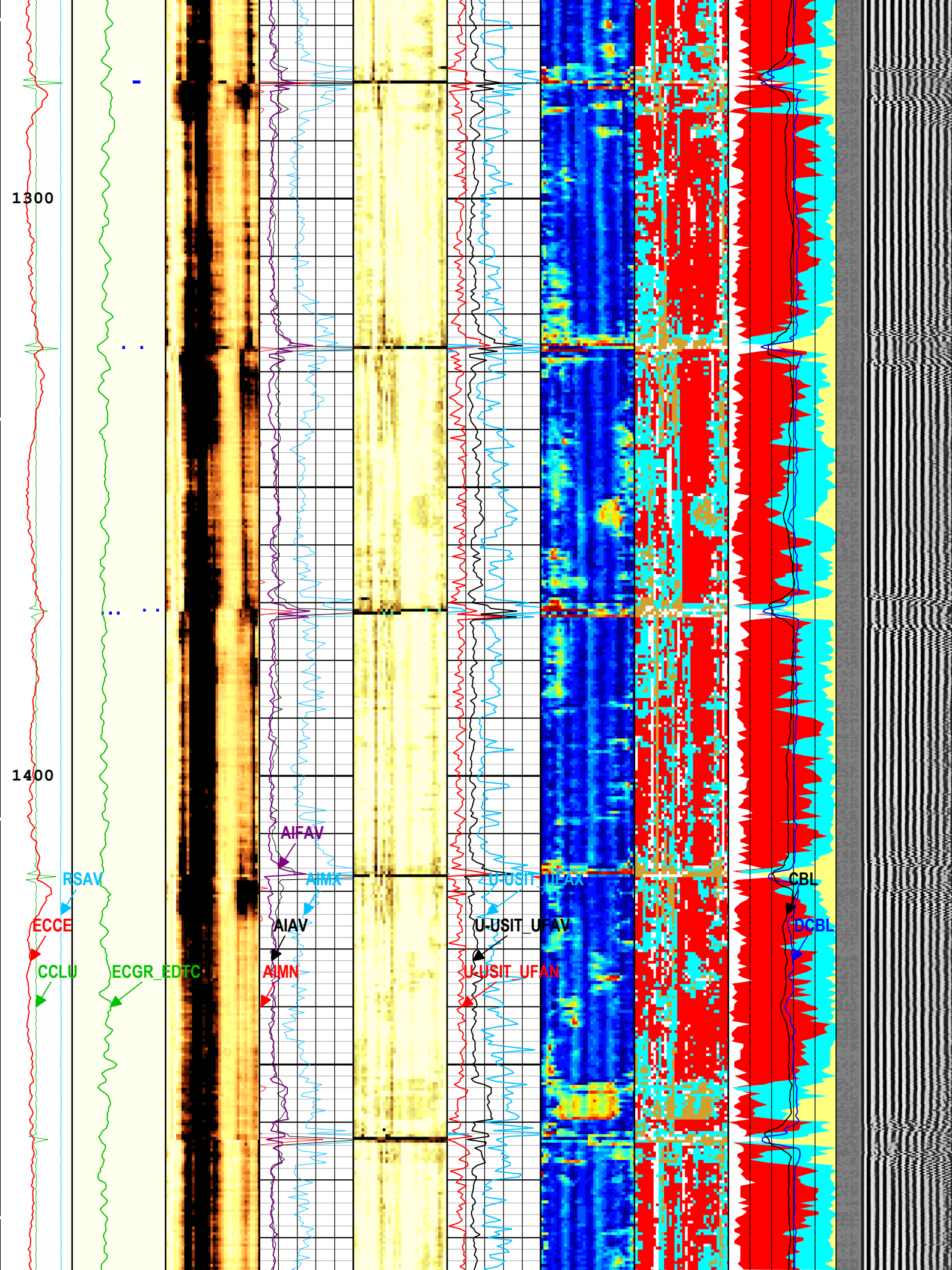


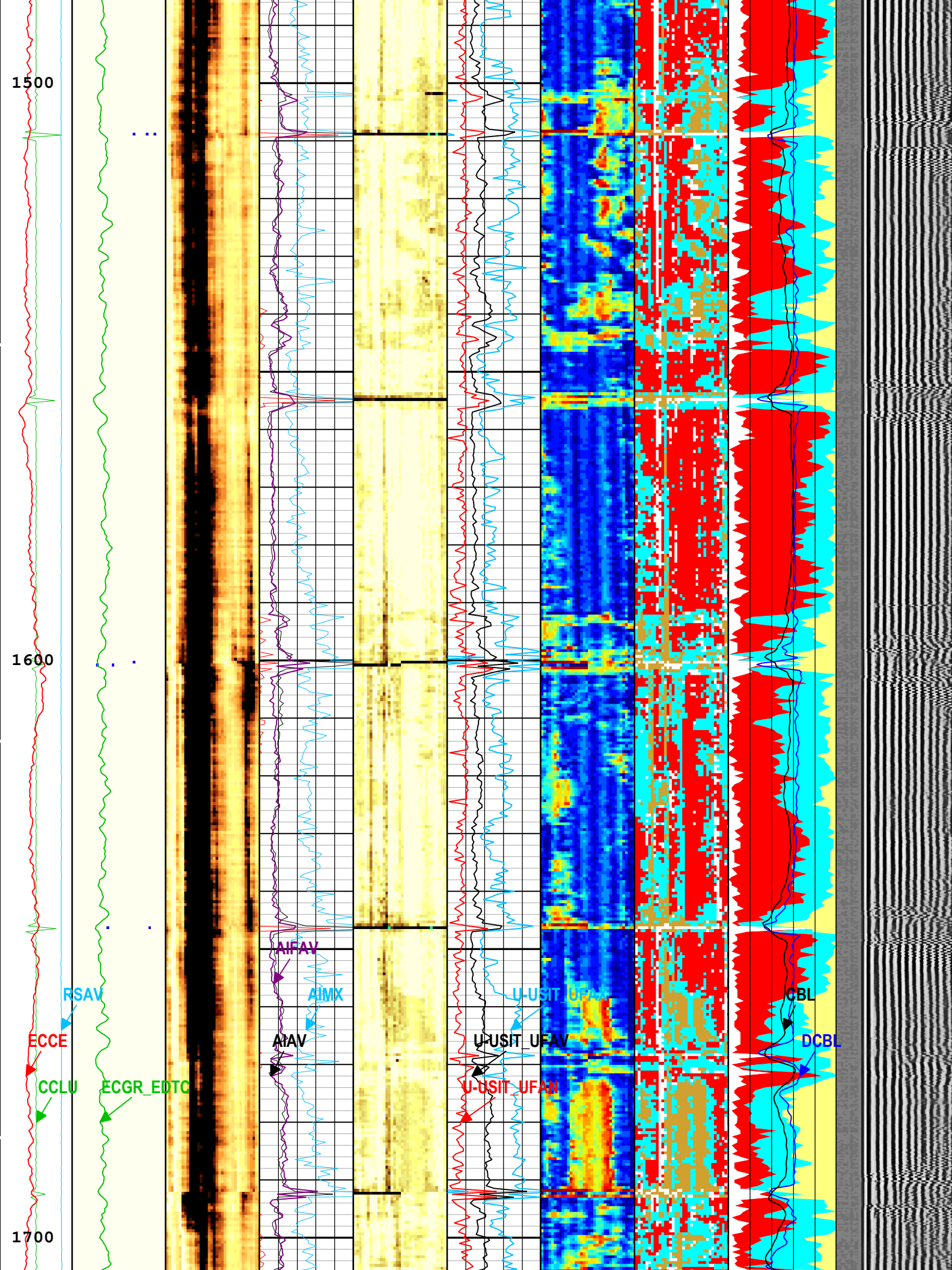


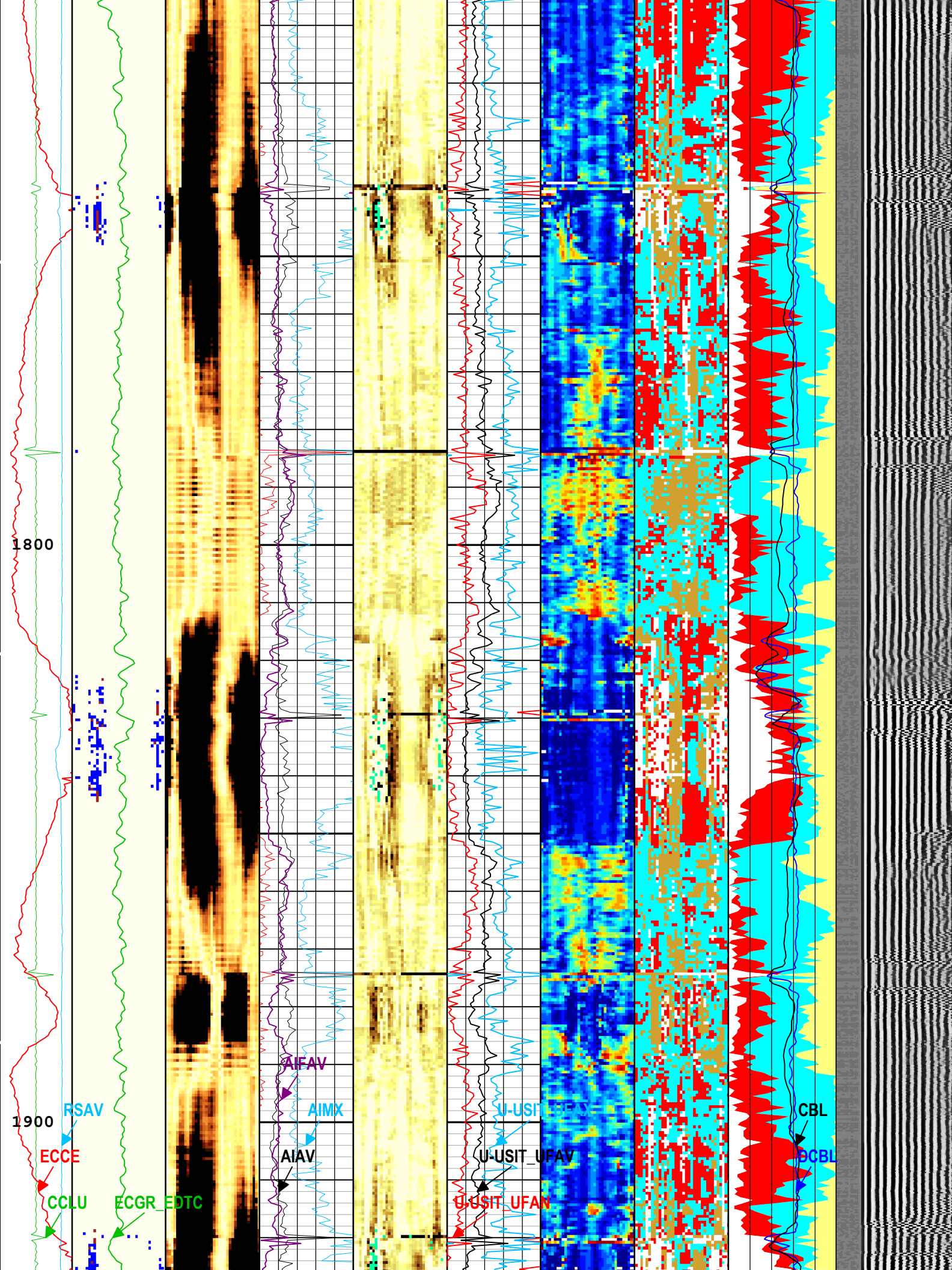


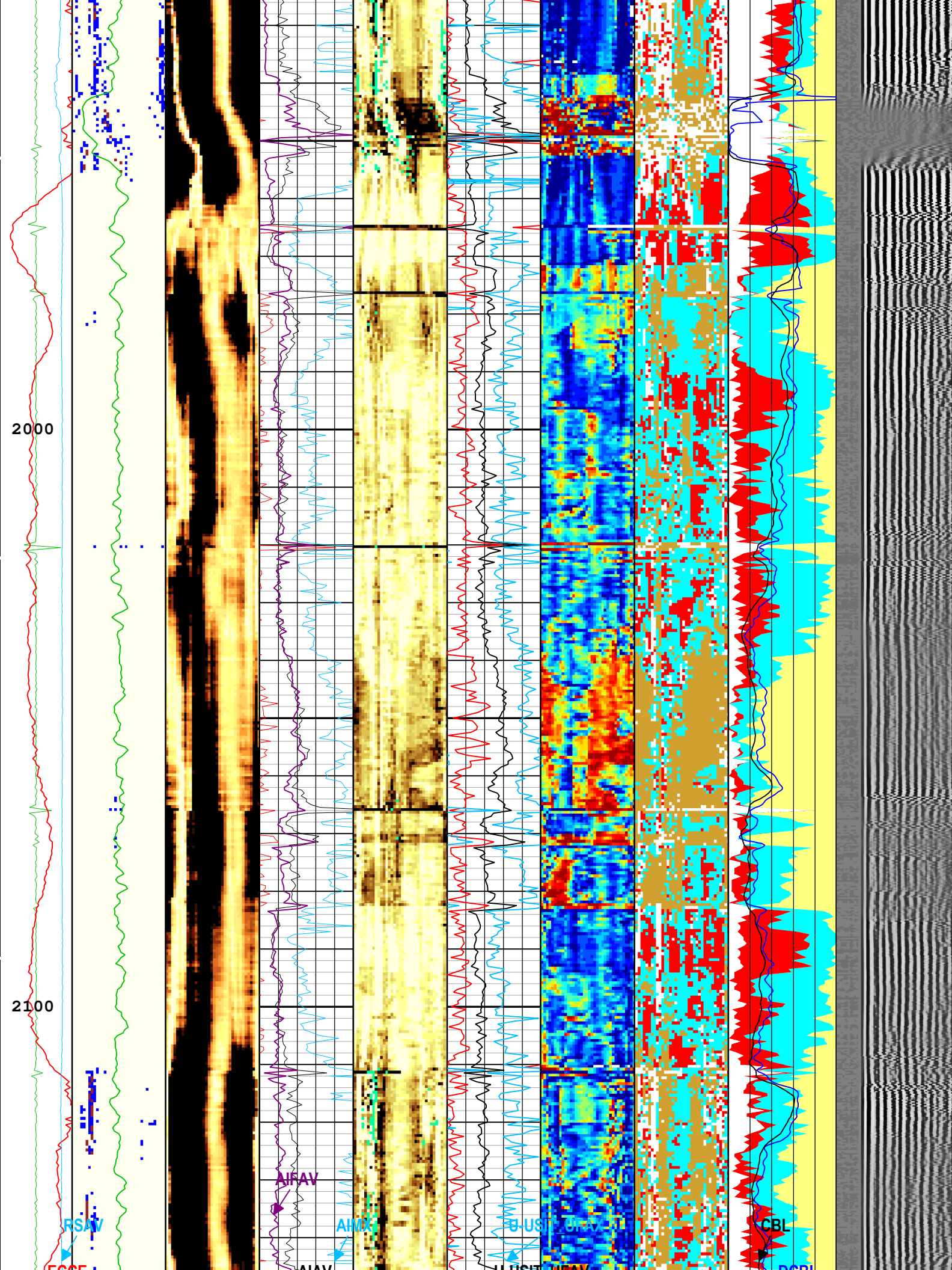


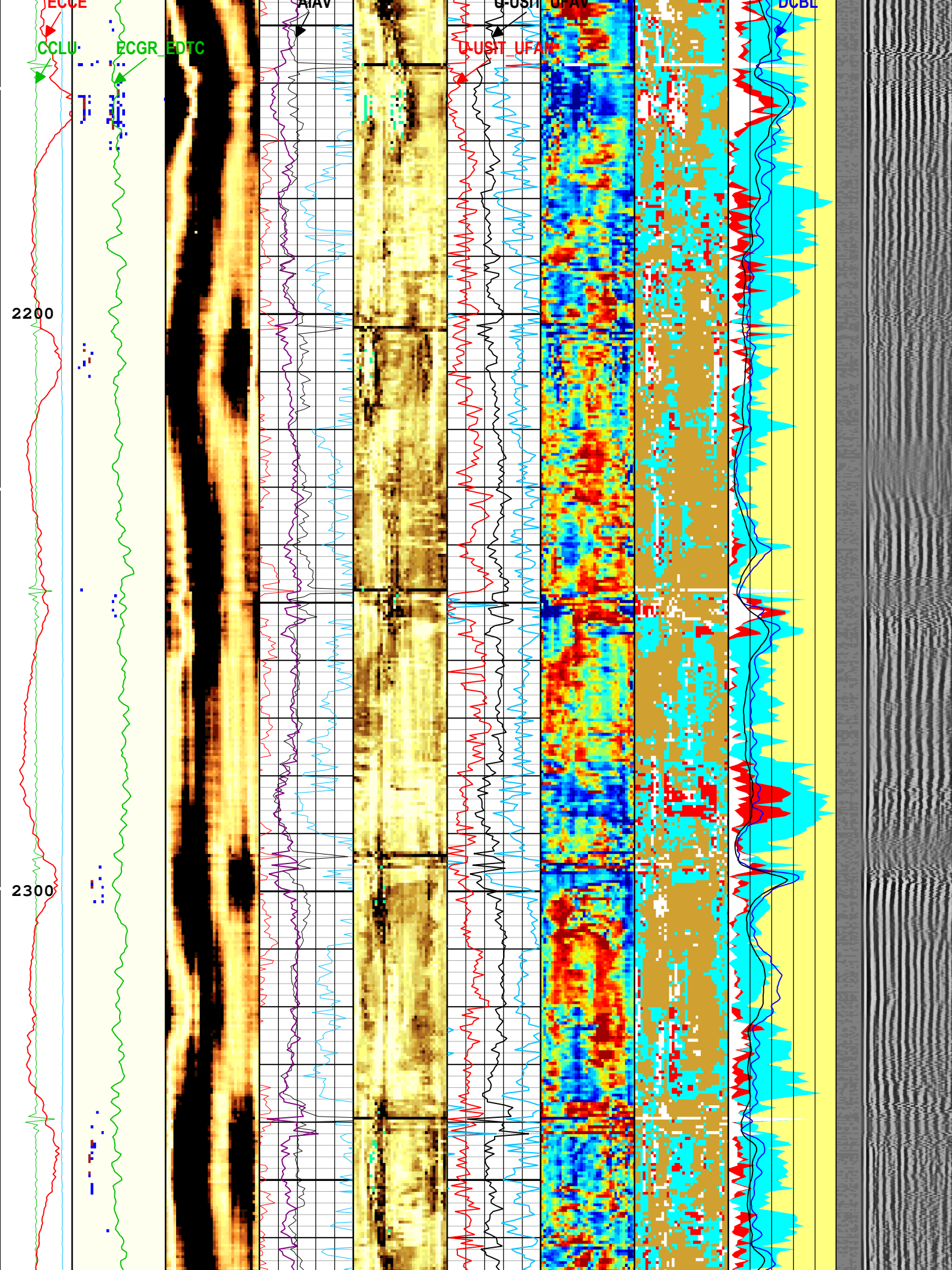


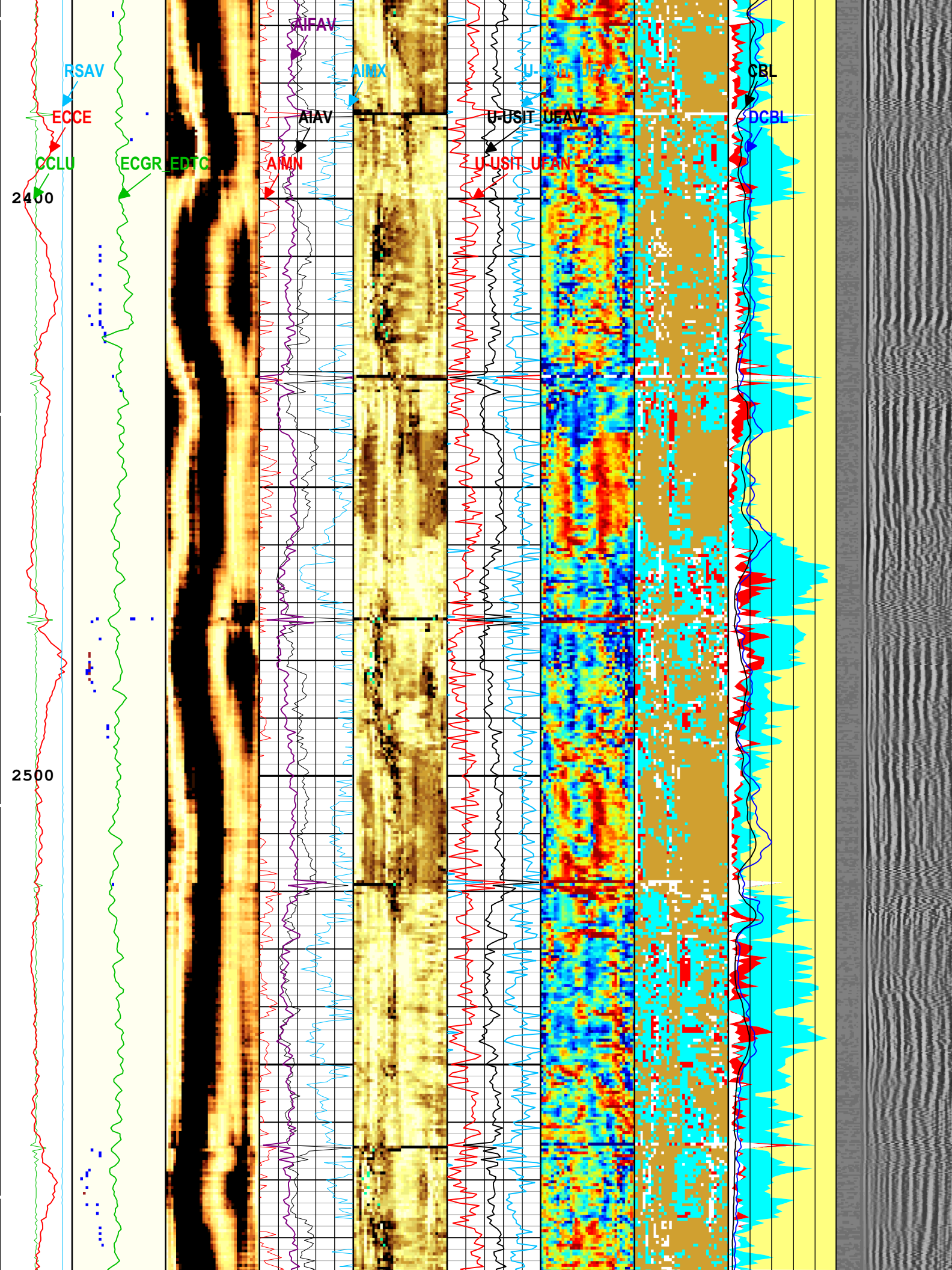


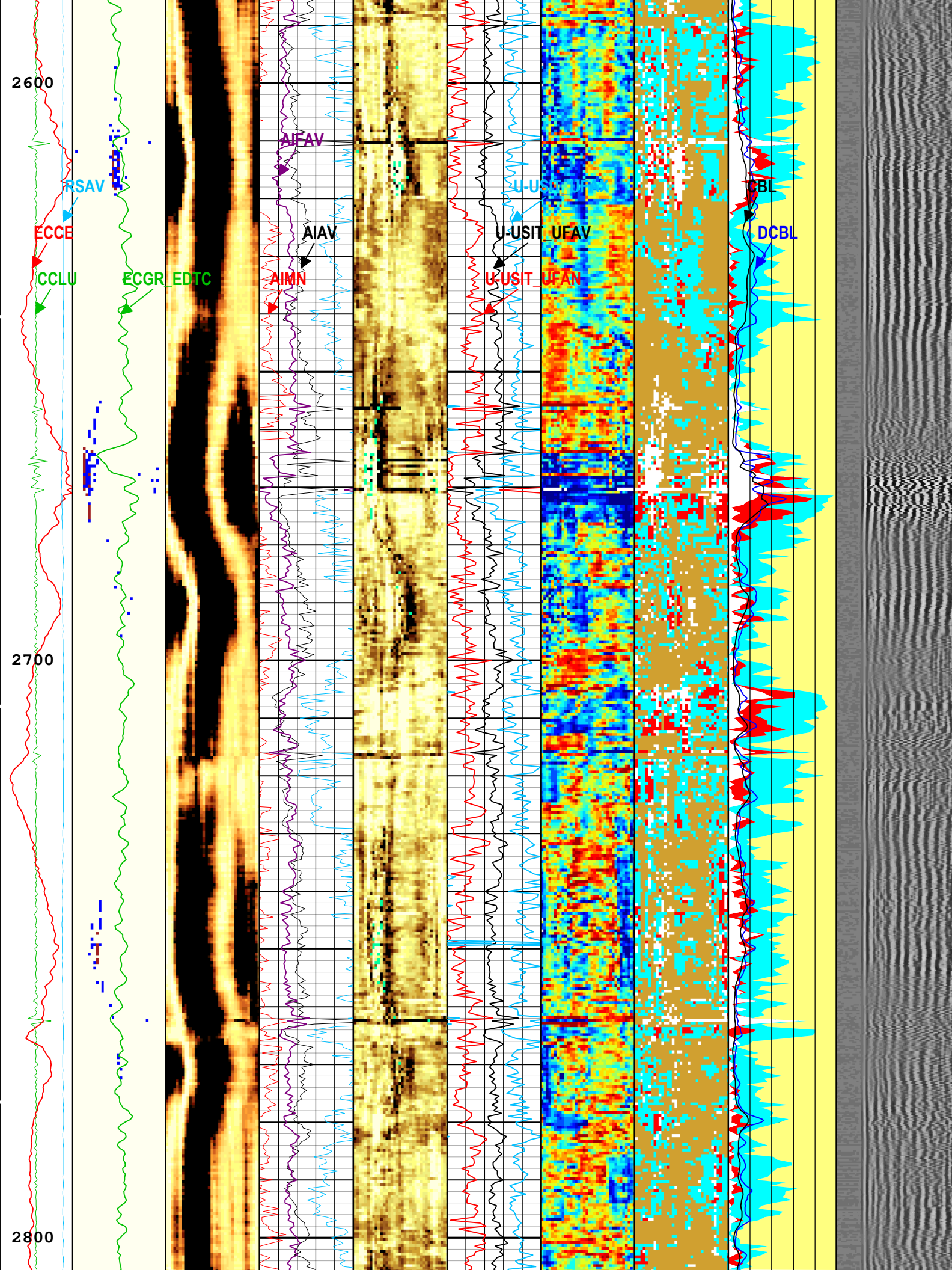


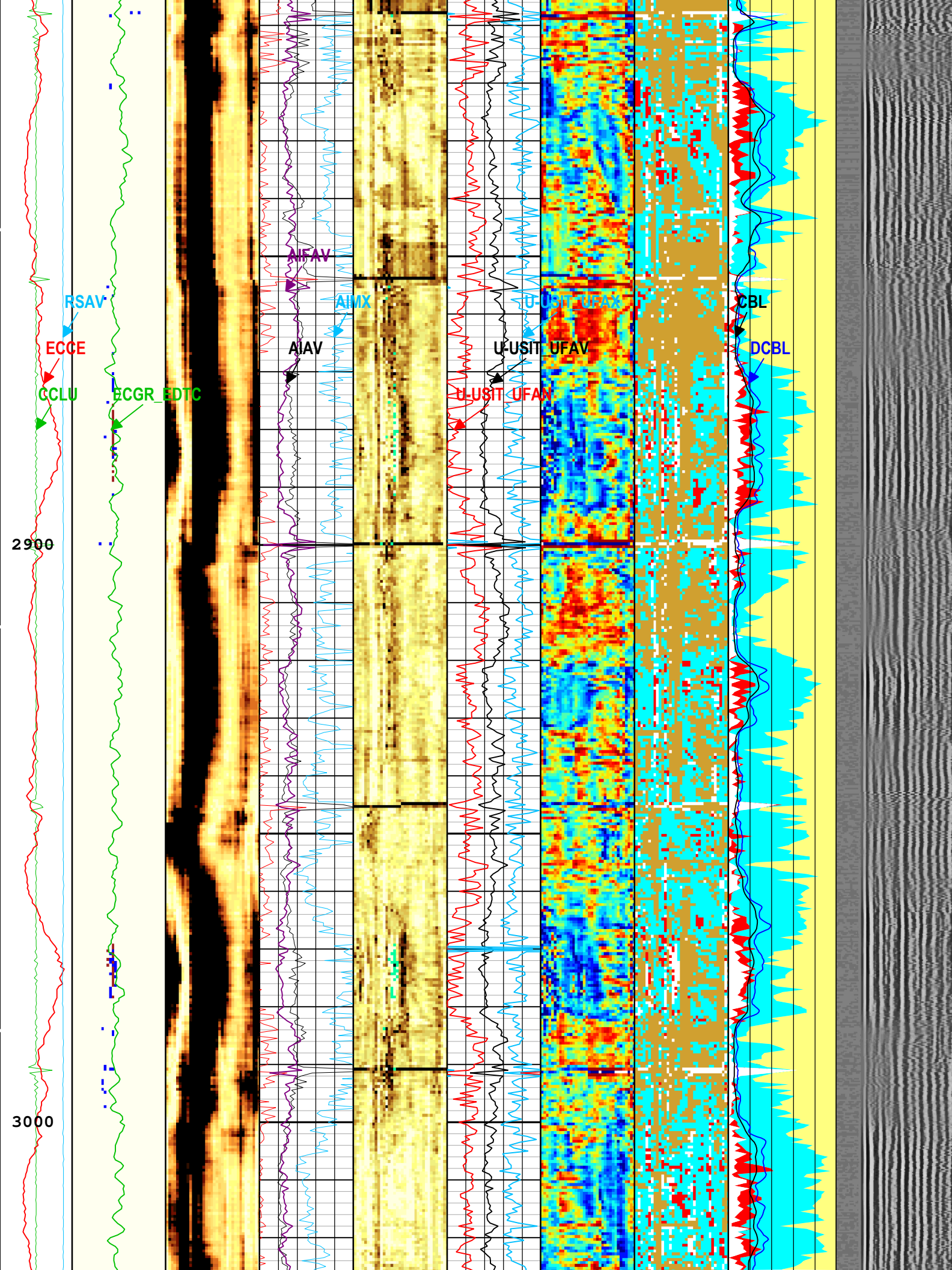


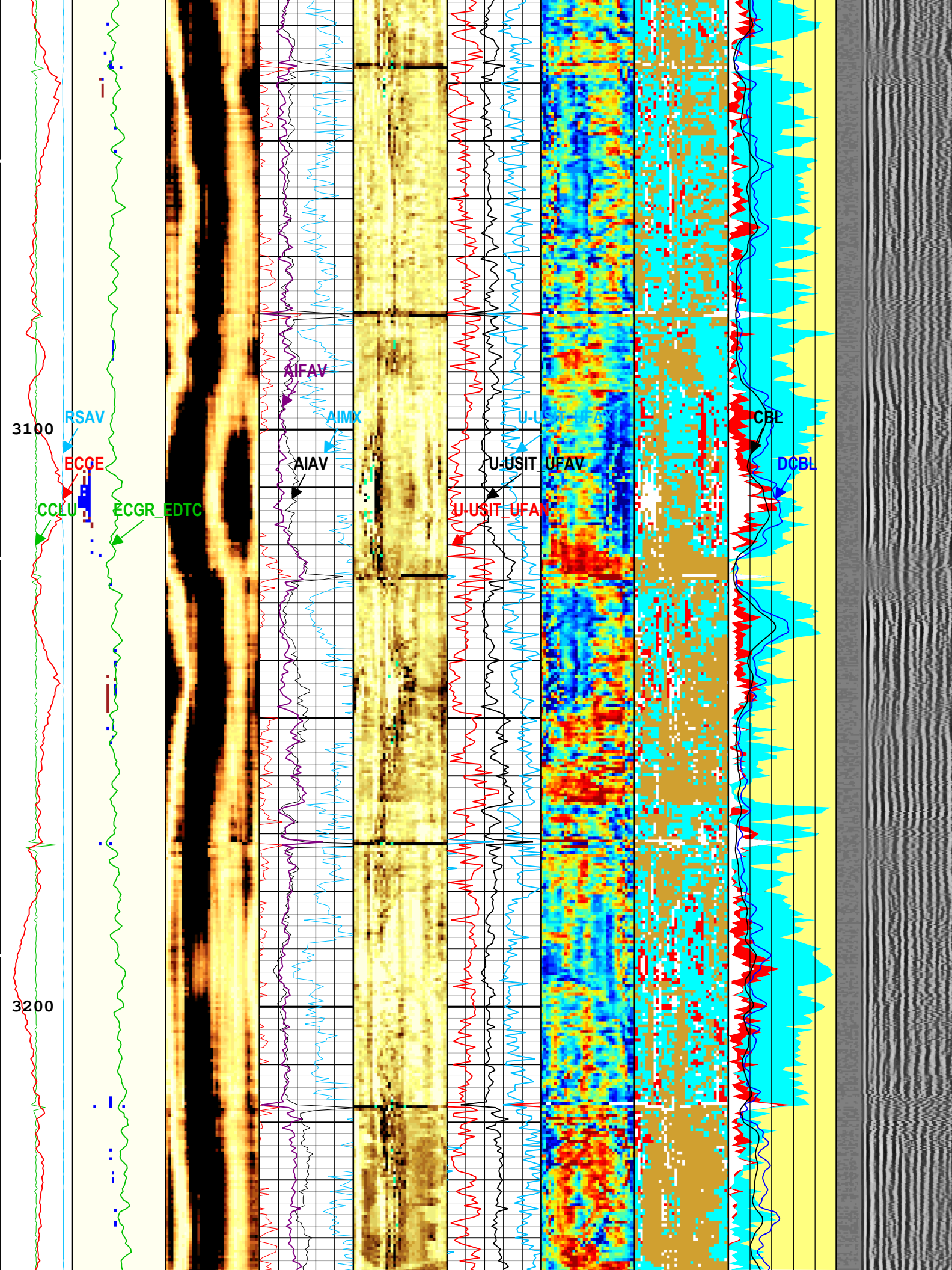


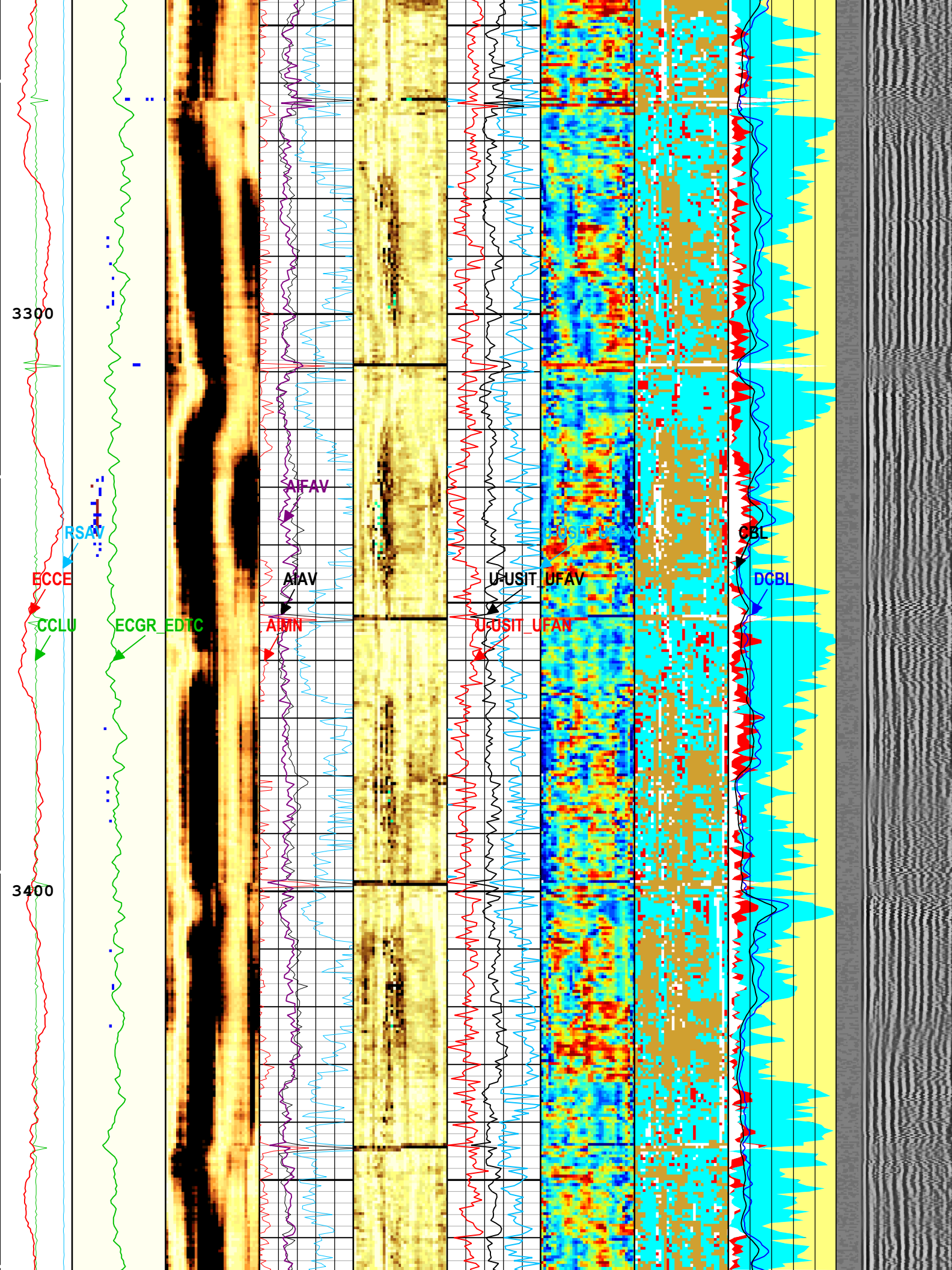


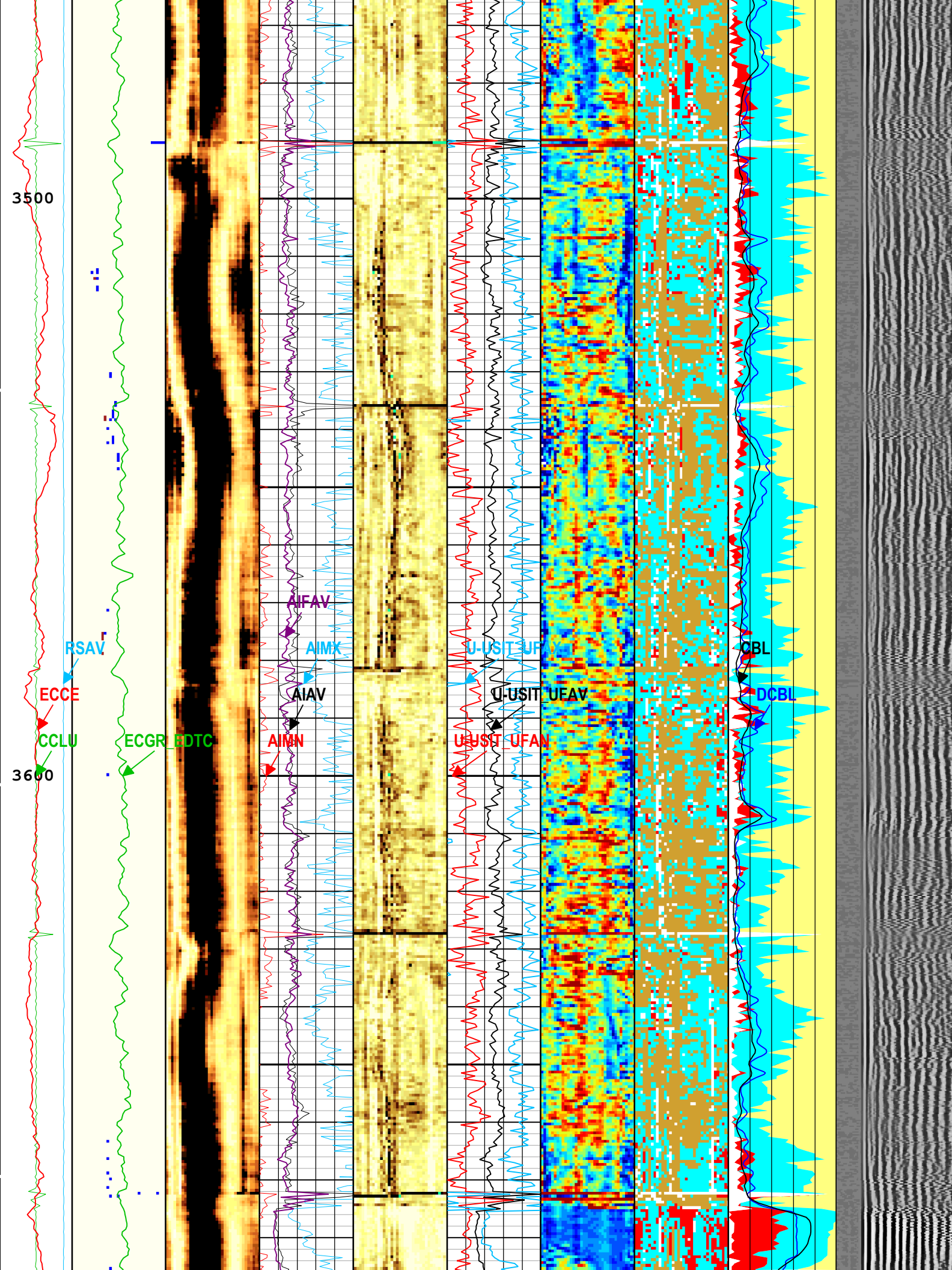


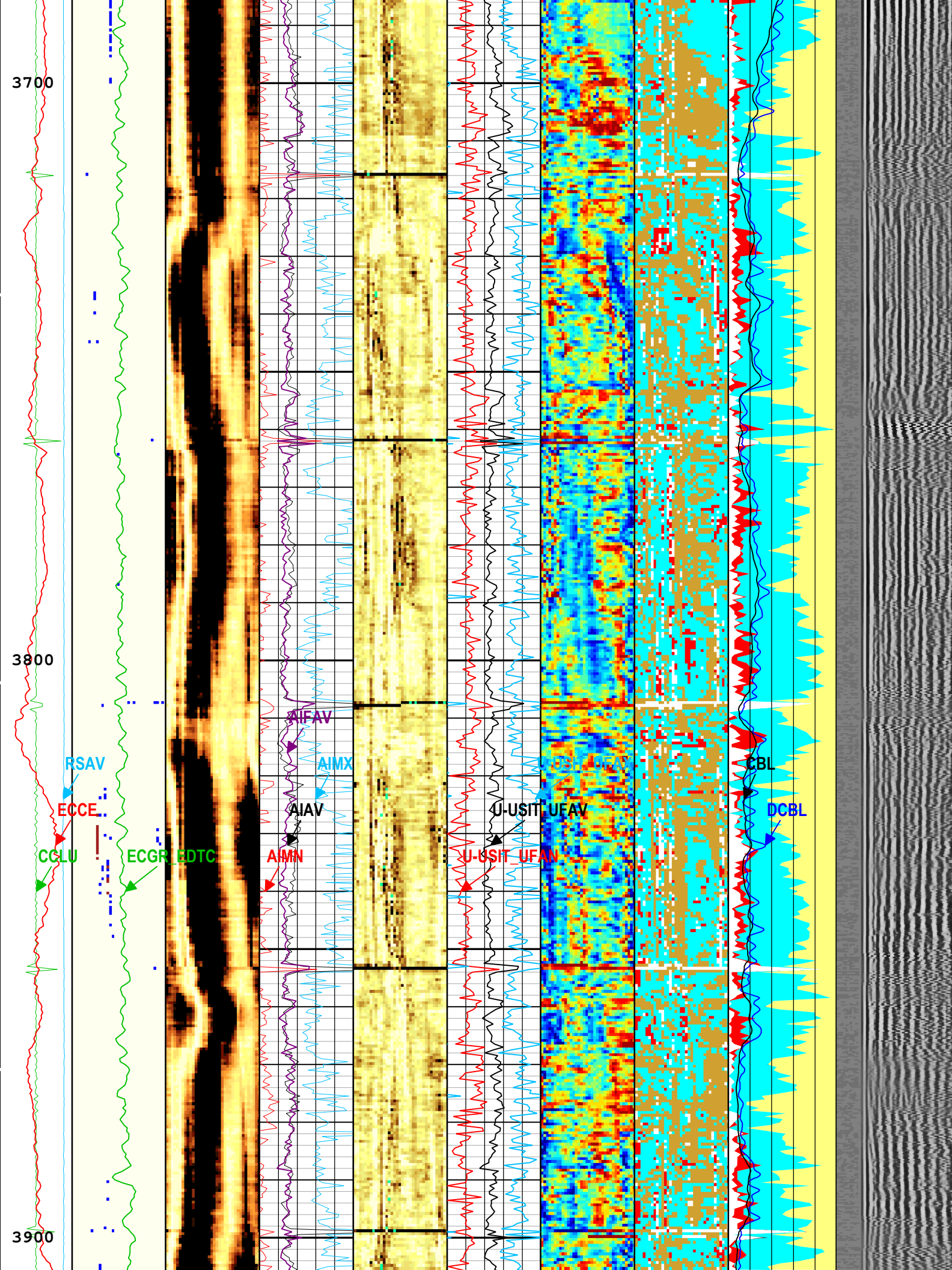


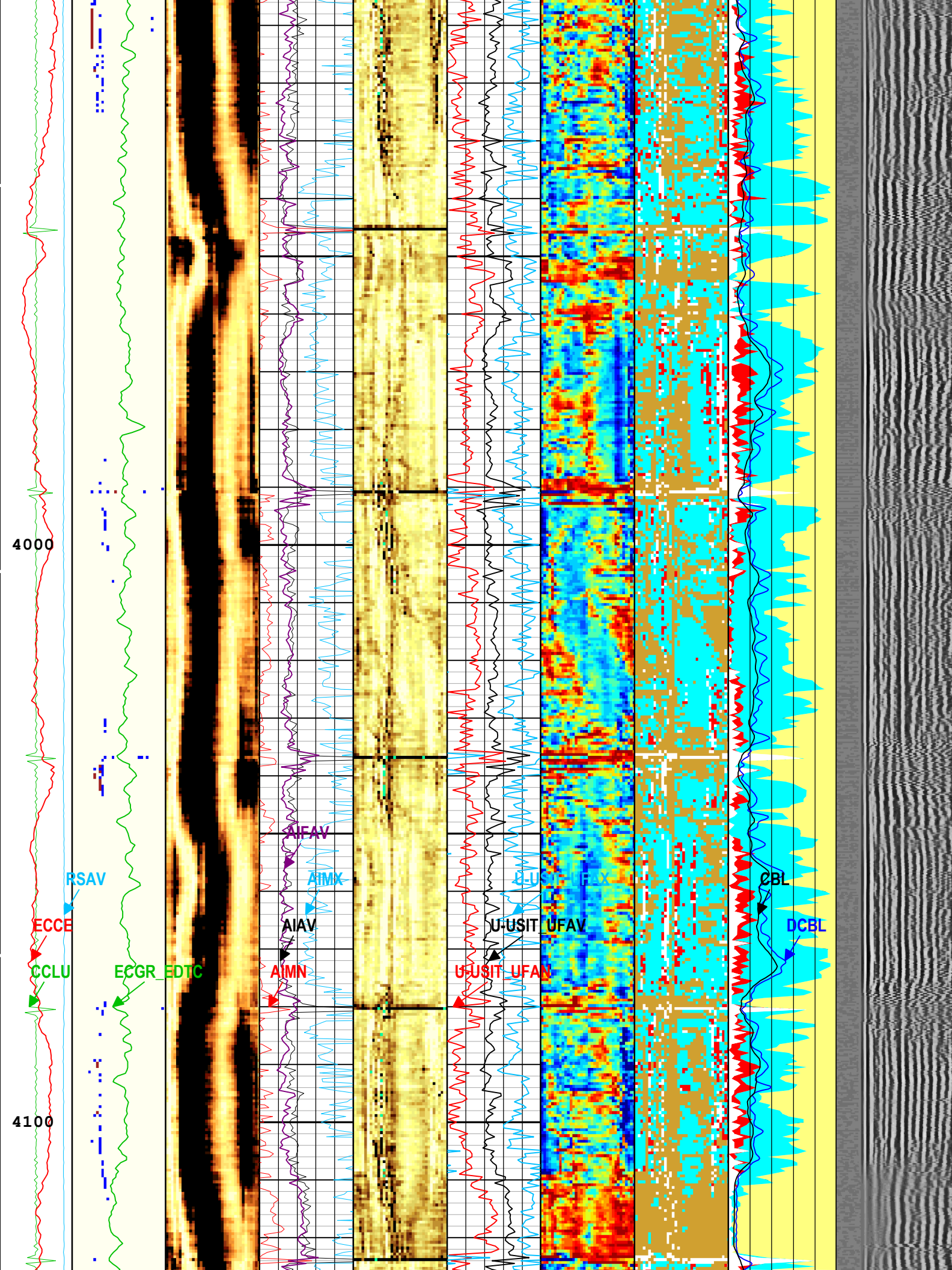


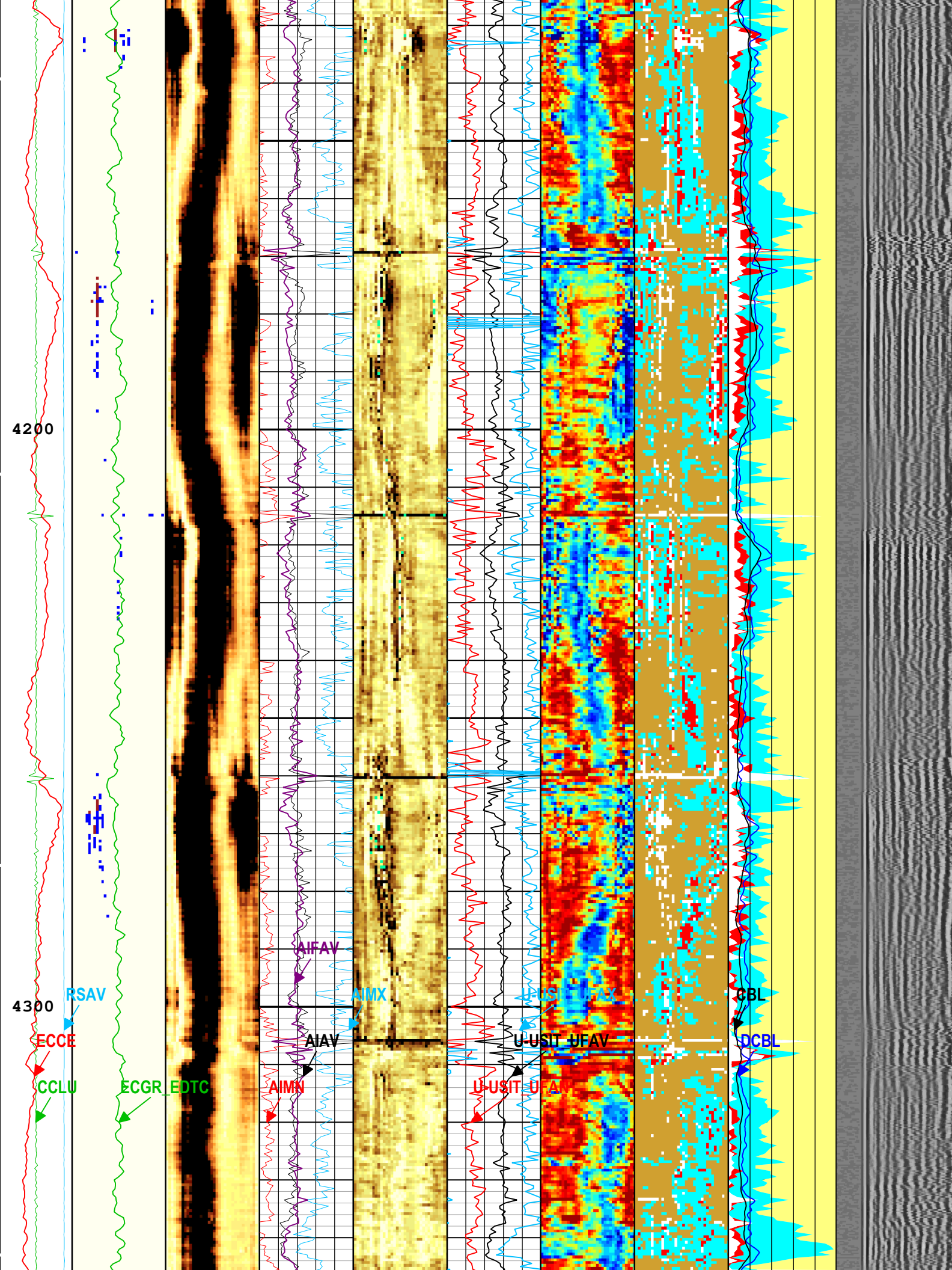


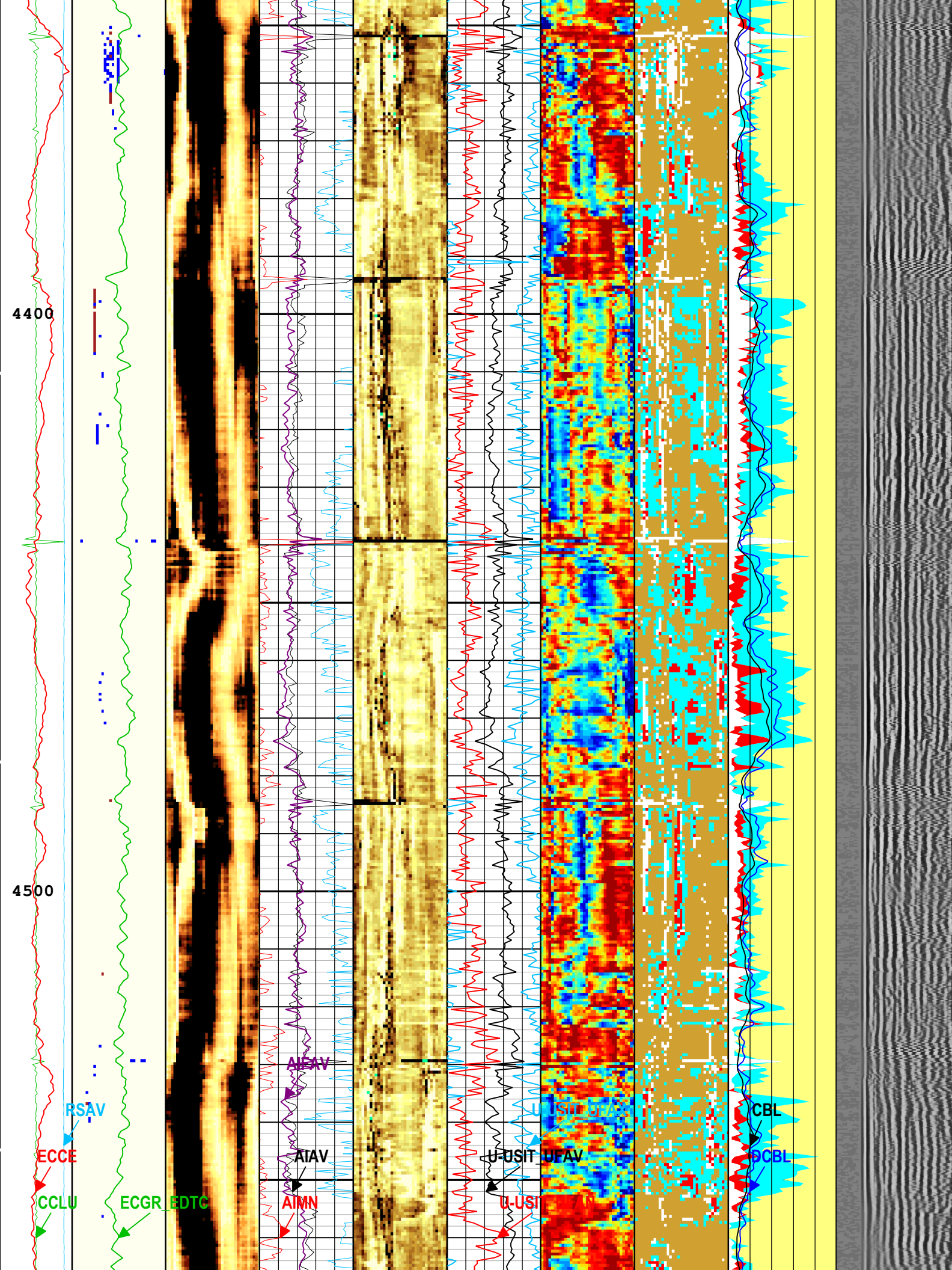


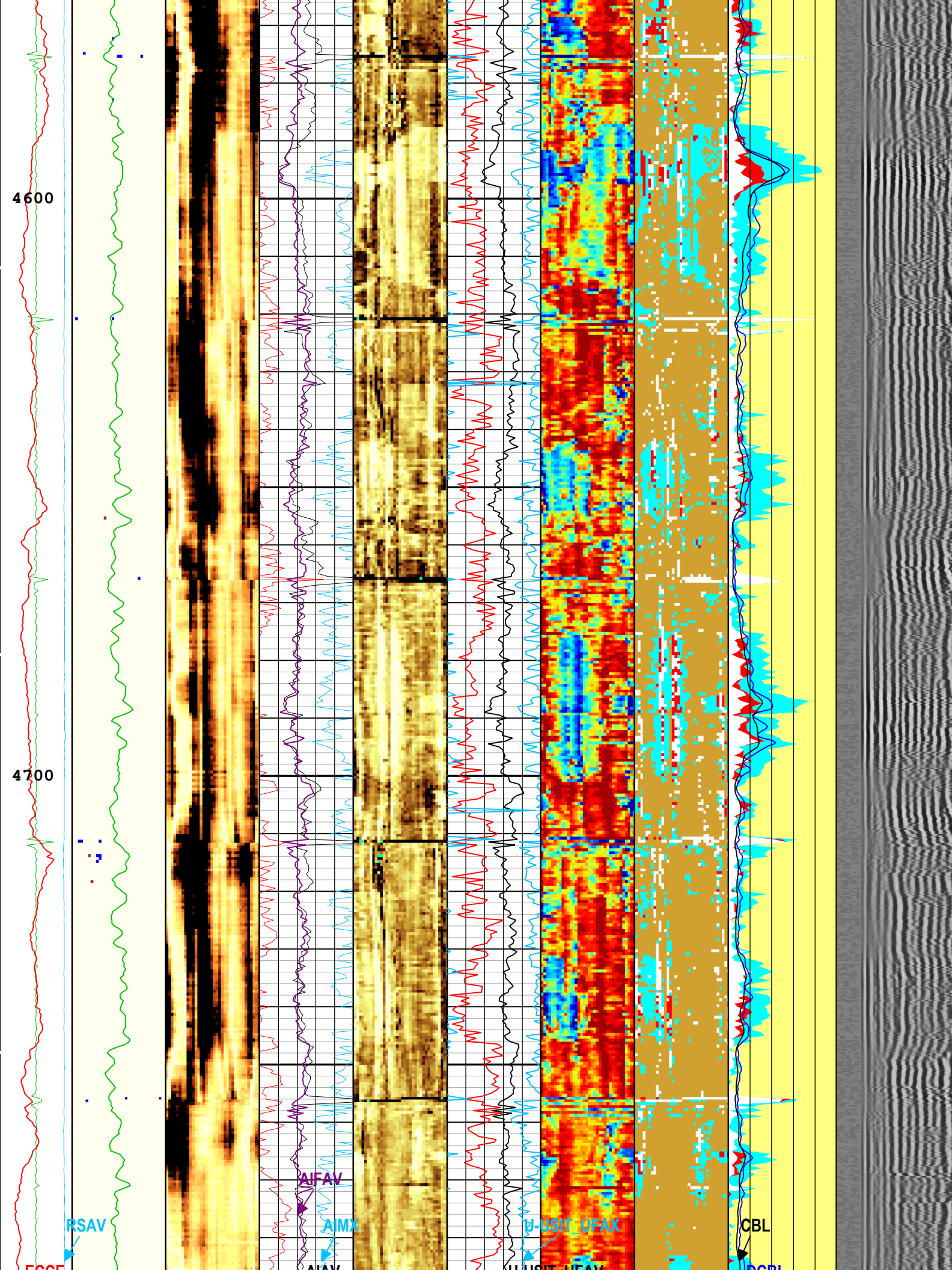


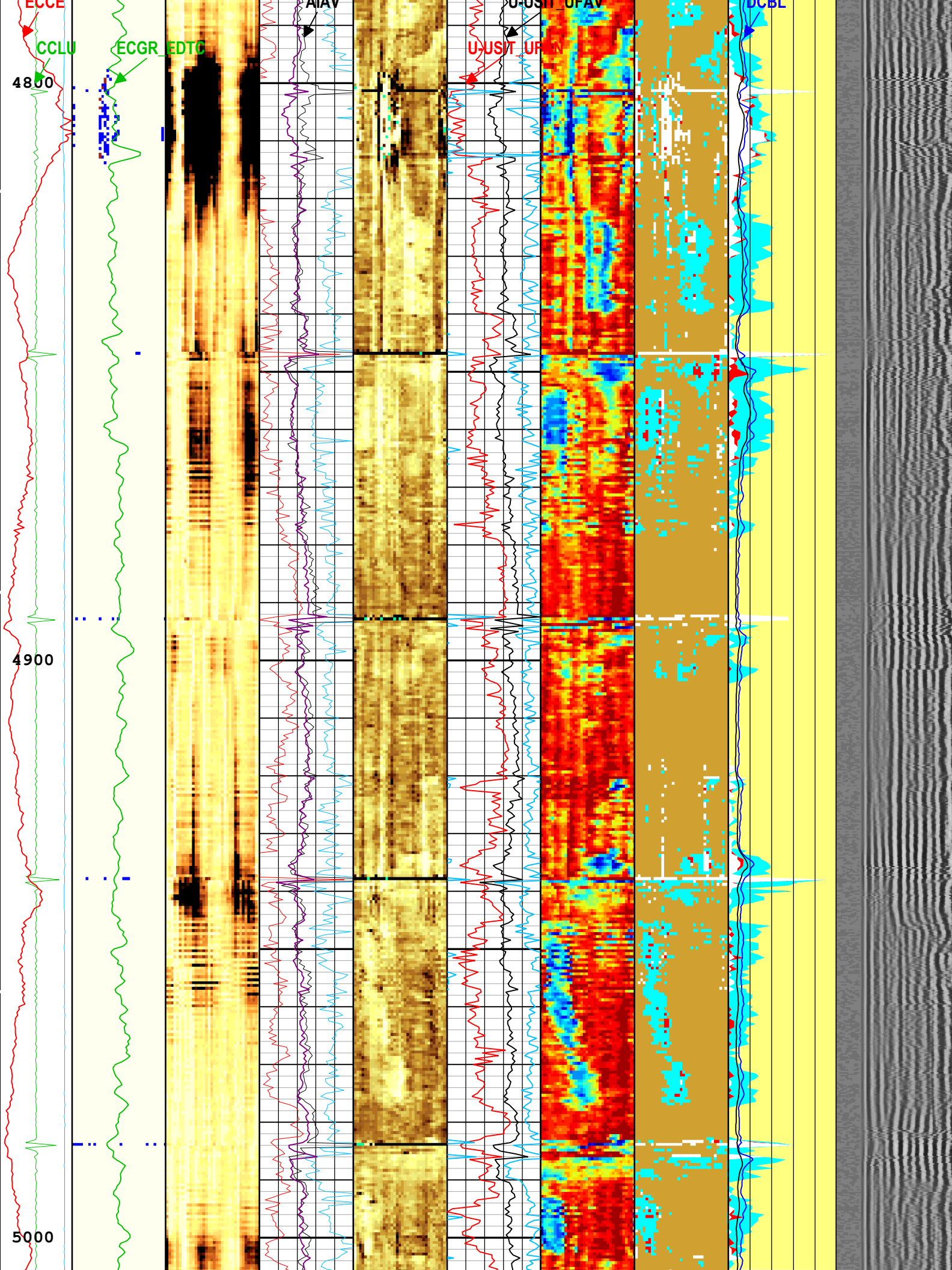


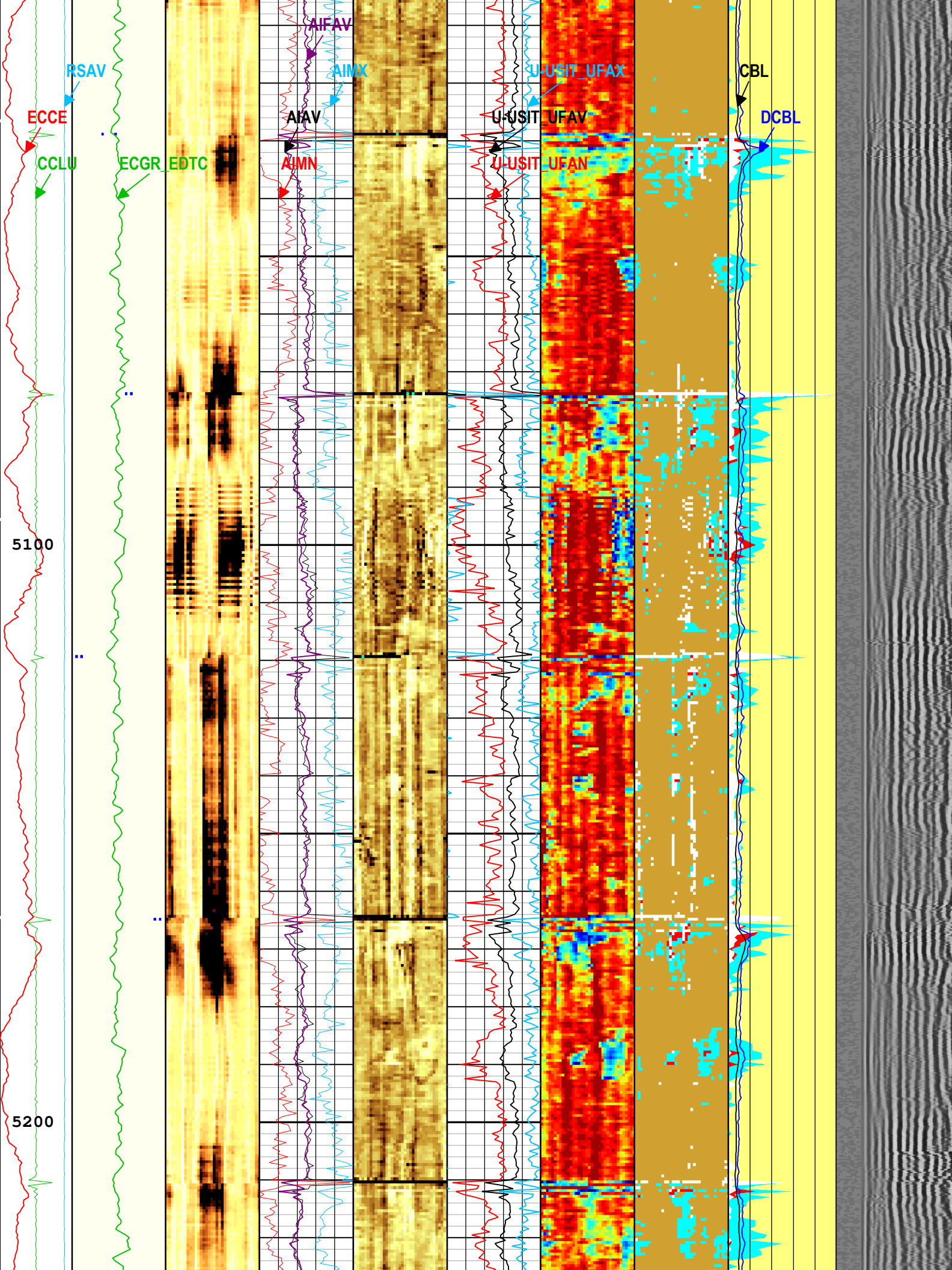


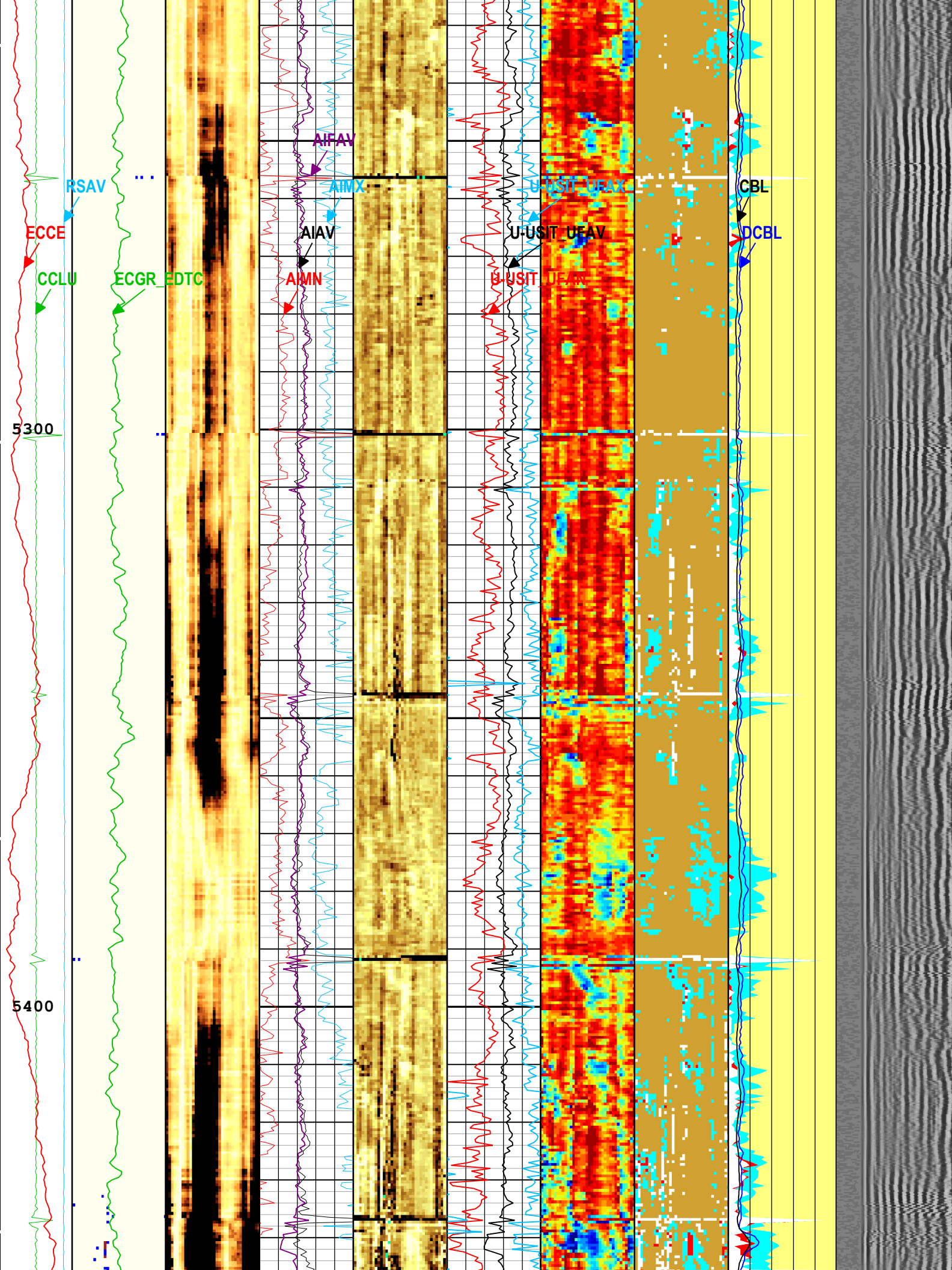


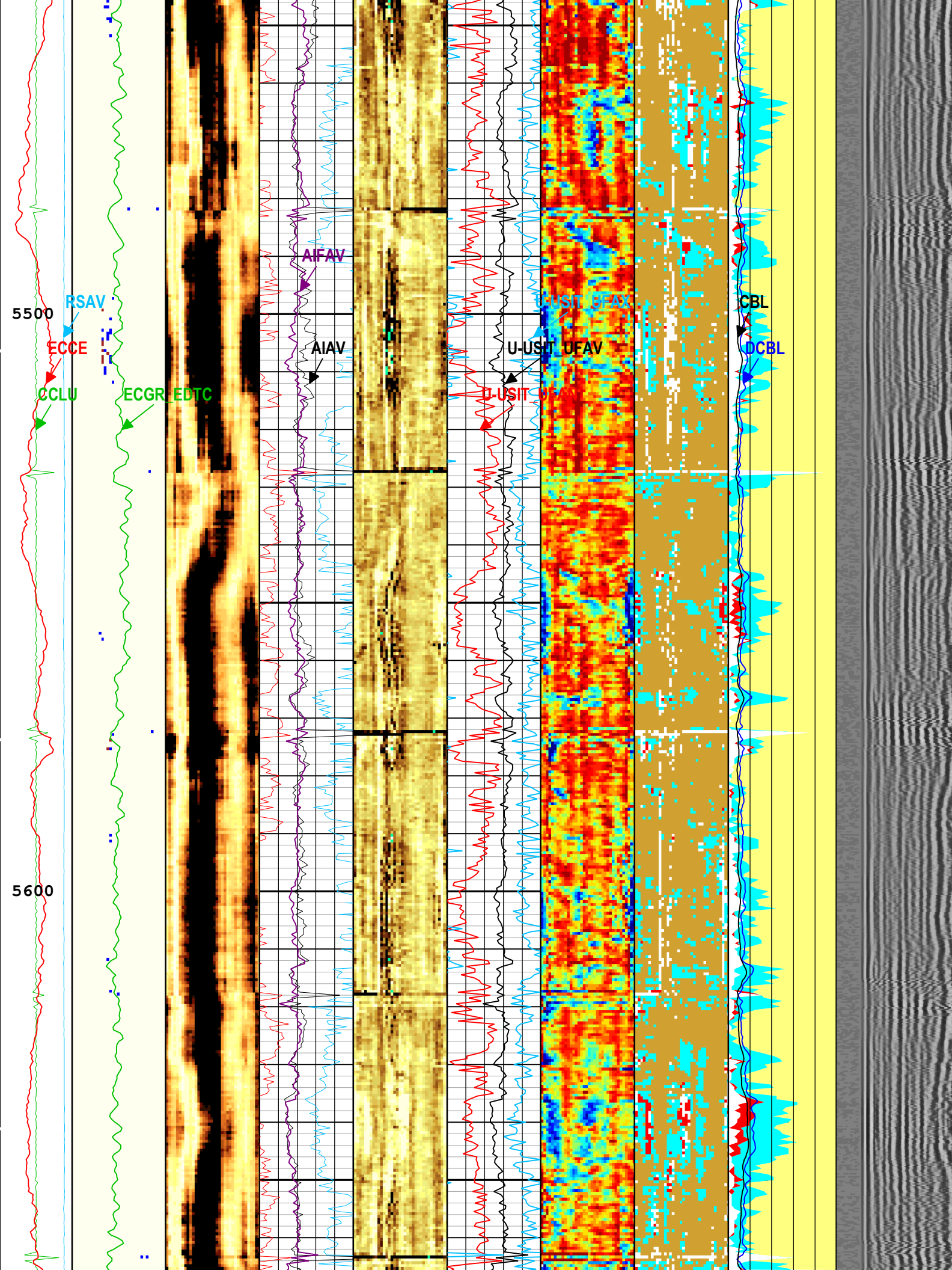


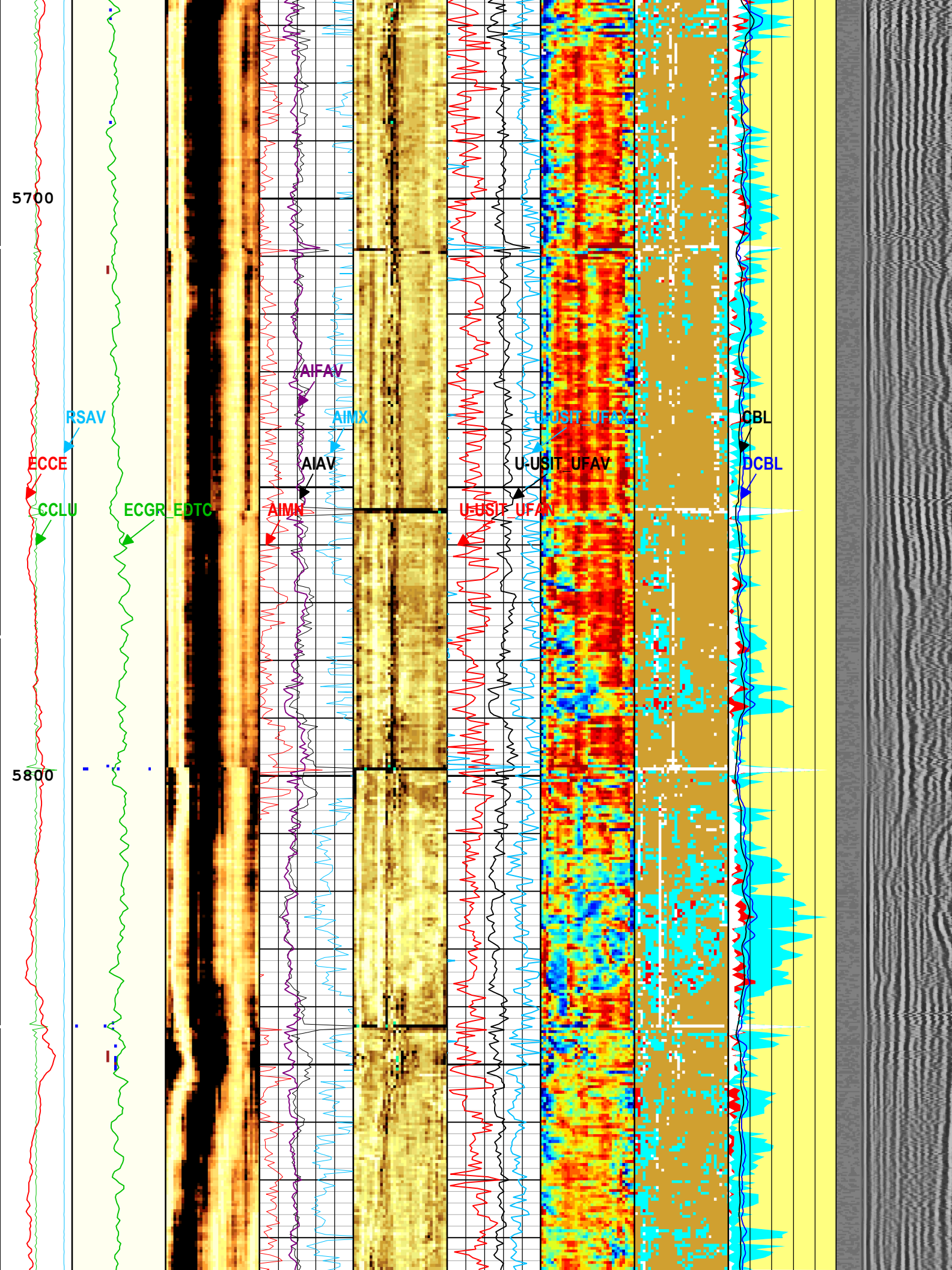


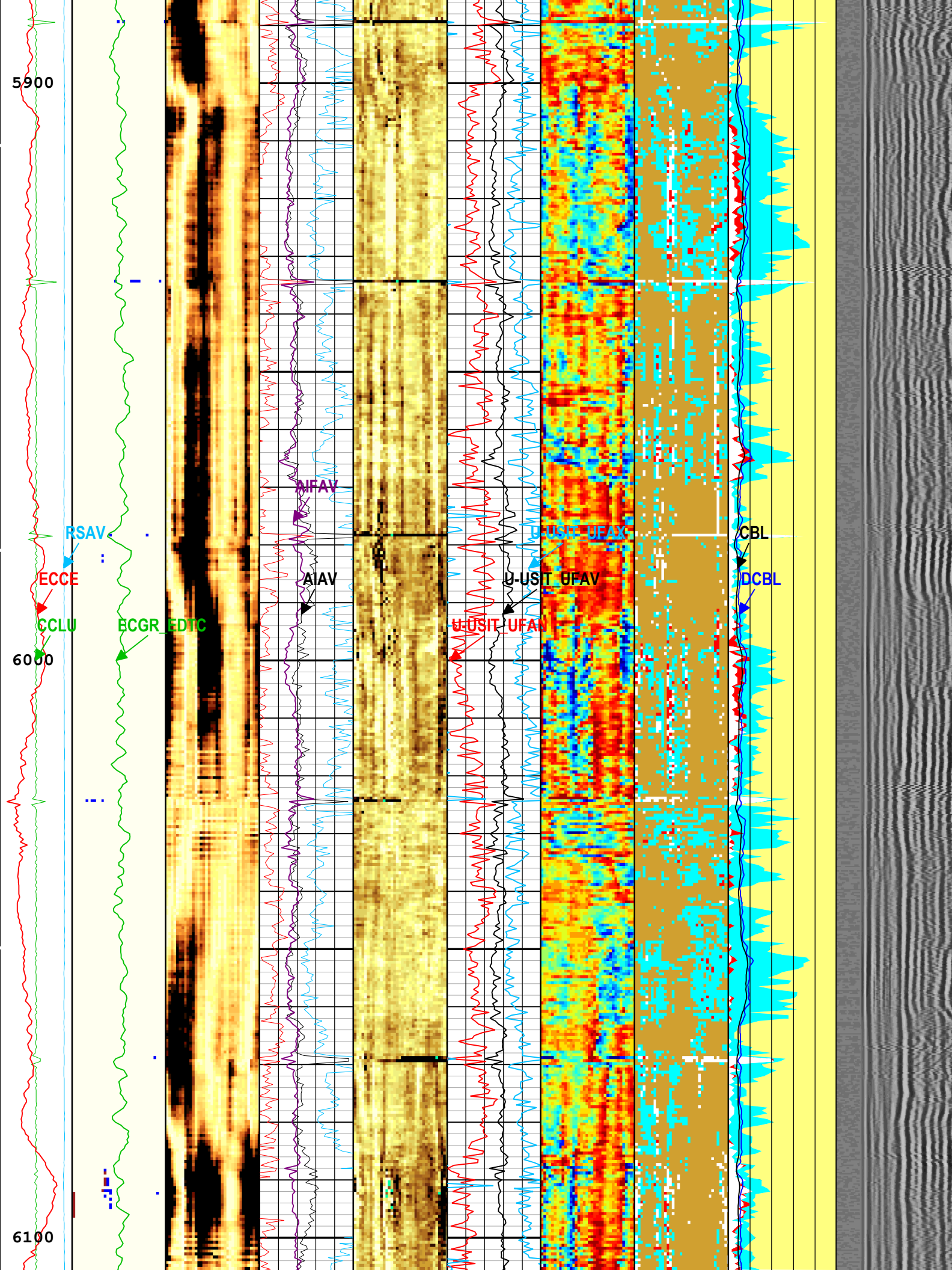


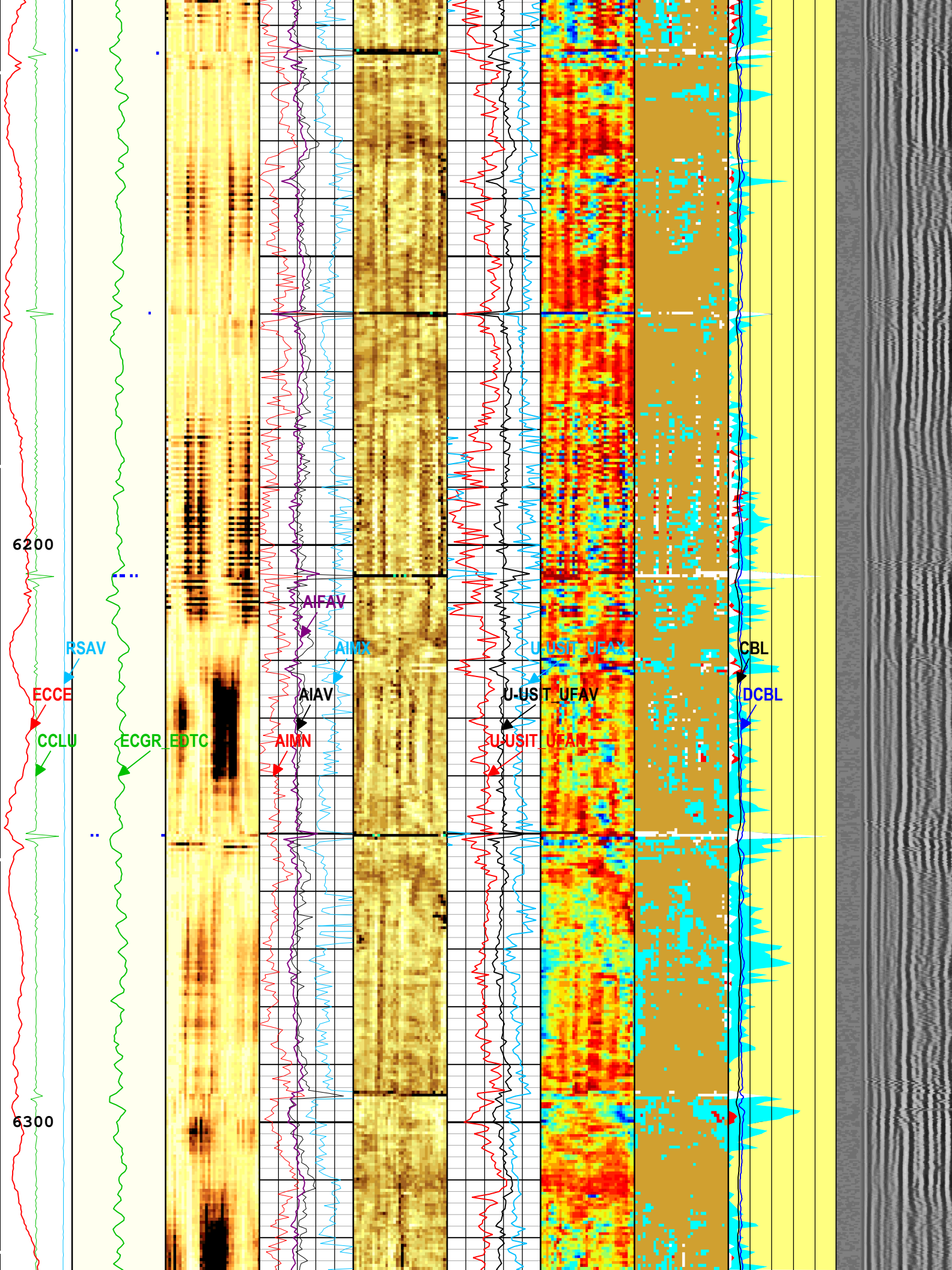


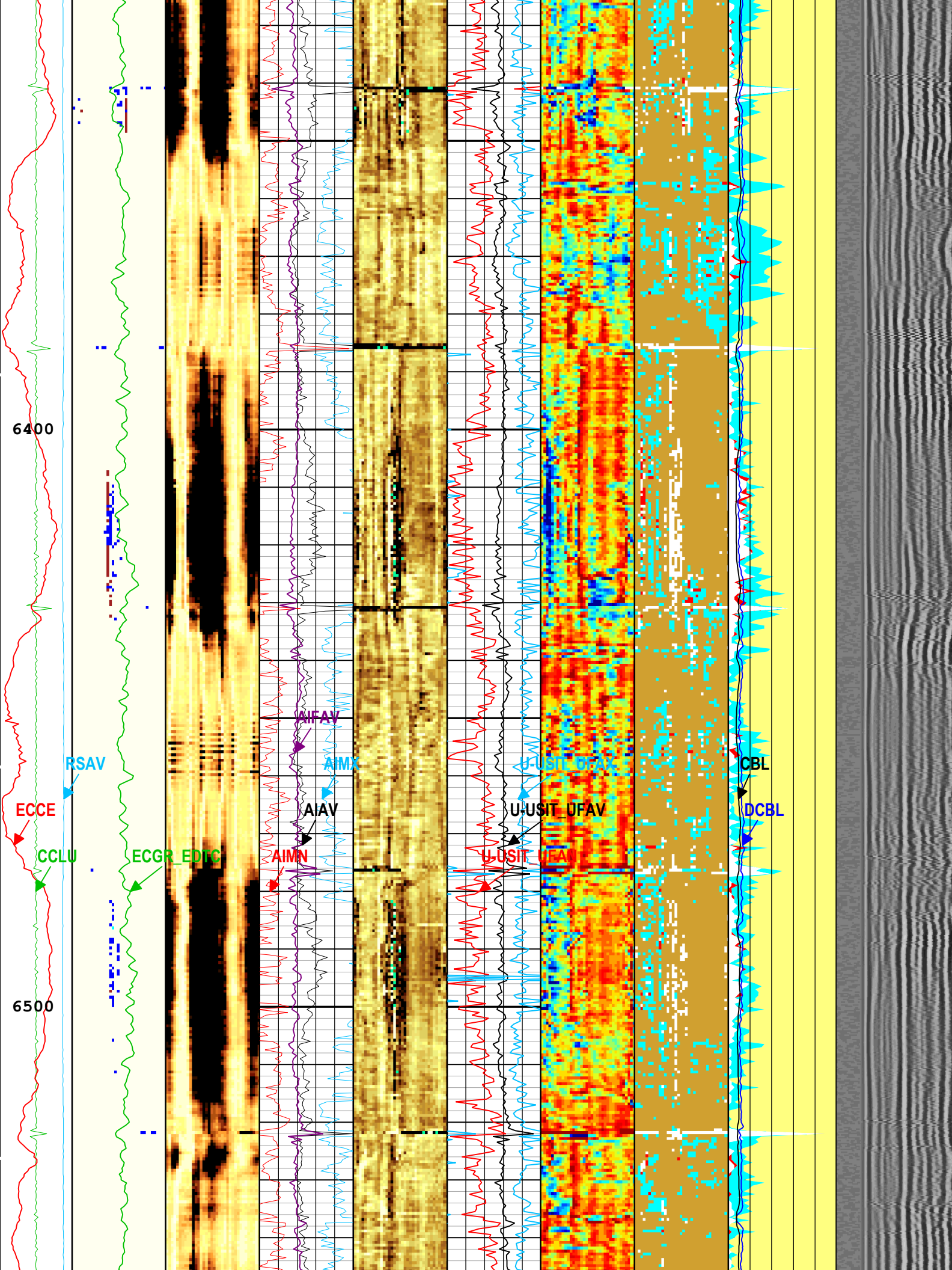


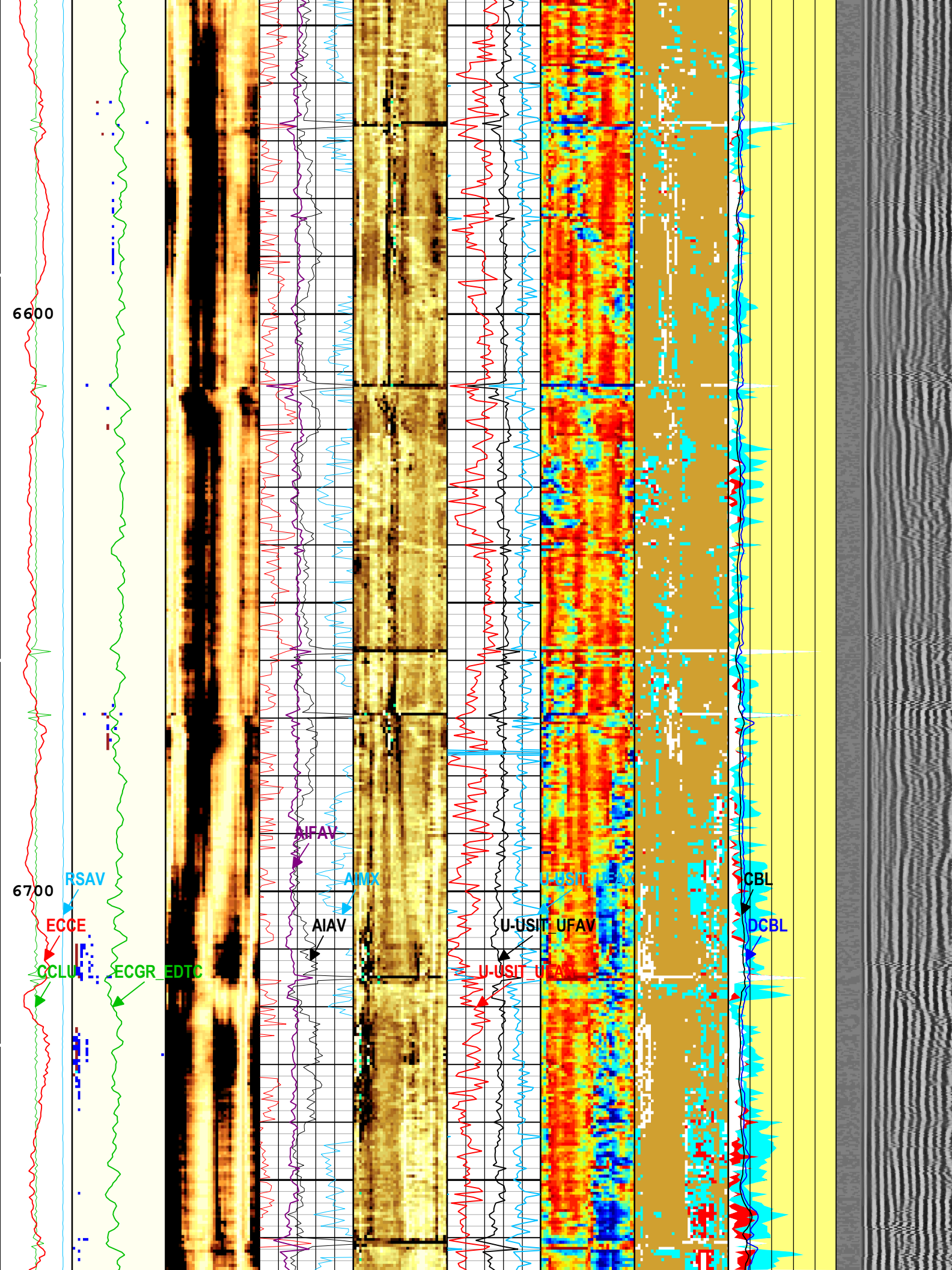


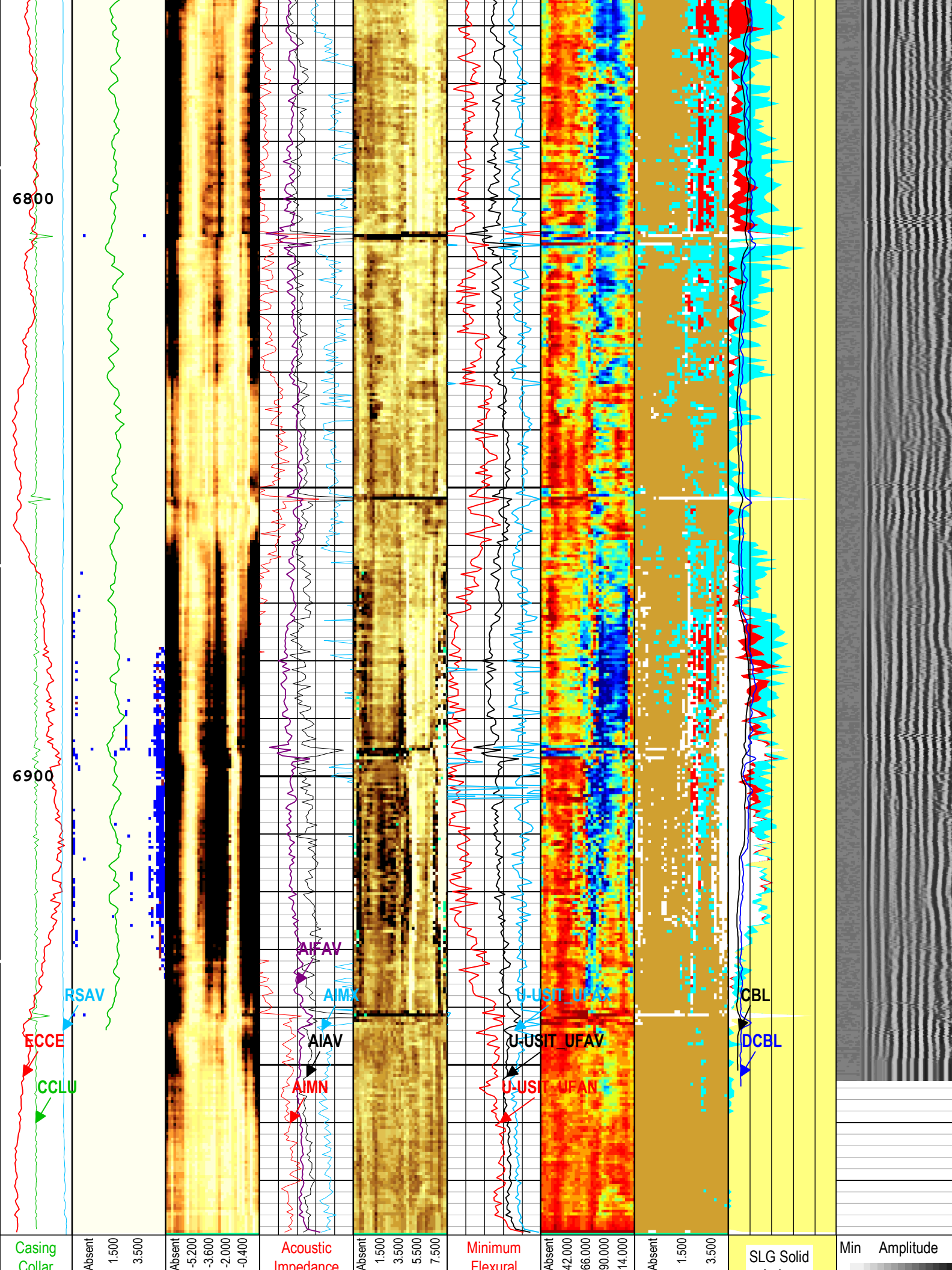












<div> <div>Locator Ultrasonic (CCLU) USIT-E</div> <div>-20 in 20</div> <div>Amplitude of Eccentering (ECCE) USIT-E</div> <div>0 in 0.5</div> <div>Motor Revolution Speed (RSAV) USIT-E</div> <div>6 c/s 7.5</div> </div>	<div> <div>Explicit Normalization</div> <div>USIT - USIT Processing Flags (UFLG) USIT-E</div> <div>USIT Processing Flags (UFLG[0]) USIT-E</div> <div>15</div> <div>Gamma Ray (ECGR_EDTC) EDTC-B</div> <div>0 gAPI 150</div> </div>	<div> <div>Explicit Normalization</div> <div>USIT - Amplitude of Wave (AWBK) USIT-E (dB)</div> <div>-1 Mrayl9</div> <div>Acoustic Impedance Average (AIAV) USIT-E</div> <div>-1 Mrayl9</div> <div>Acoustic Impedance Maximum (AIMX) USIT-E</div> <div>-1 Mrayl9</div> <div>Acoustic Impedance Flexural Attenuation Average (AIFAV) USIT-E</div> <div>-1 Mrayl9</div> </div>	<div> <div>Custom Normalization</div> <div>USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)</div> <div>0 dB/m 150</div> <div>Average Flexural Attenuation (U-USIT_UFAV) USIT-E</div> <div>0 dB/m 150</div> <div>Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E</div> <div>0 dB/m 150</div> </div>	<div> <div>Custom Normalization</div> <div>USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)</div> <div>0 dB/m 150</div> </div>	<div> <div>Explicit Normalization</div> <div>USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E</div> </div>	<div>Index</div>	<div> <div>SLG Liquid Index</div> <div>SLG Gas Index</div> <div>SLG White Point Index</div> <div>Synthetic CBL from Discriminated Attenuation (DCBL) ASLT-B</div> <div>0 mV100</div> <div>CBL Amplitude (CBL) ASLT-B</div> <div>0 mV100</div> </div>	<div> <div>VDL Variable Density (VDL) ASLT-B</div> <div>200 us</div> </div>

USIT Processing Flags (UFLG[0]) USIT-E									
1 - UFLG 1 Value within [0.0 - 1.5] - :			<div><div></div>UTIM Error</div>						
2 - UFLG 2 Value within [1.5 - 2.5] - :			<div><div></div>Pulse Origin Not Detected</div>						
3 - UFLG 3 Value within [2.5 - 3.5] - :			<div><div></div>WINLEN Error</div>						
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :			<div><div></div>Casing Thickness Error</div>						
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :			<div><div></div>Loop Processing Error</div>						
TIME_1900 - Time Marked every 60.00 (s)									
Description: USI IBC SLG Format: Log (IBC SLG CBL DCBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:33:38									

Channel Processing Parameters				
1A: 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
CBLO	Casing Bottom (Logger)	WLSESSION	15563	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	72	mV
CDEN	Cement Density	USIT-E	12.9	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	0.361	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTF	Delta-T Fluid	Borehole	189	us/ft
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	ASLT-B	1.01	
FD	Fluid Density	USIT-E	12	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	4.3	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	-5.92	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	38.88	dB/m
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	38.88	dB/m
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MSA	Minimum Sonic Amplitude	ASLT-B	2.12	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.12	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.32	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.28	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	120	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.87	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-22	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	46.5	1696
BS	8.5	1696	6979.5

All depth are actual.

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	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	
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 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	45	09-Apr-2022 12:57:05	09-Apr-2022 13:19:23	6980.58	5480.12
EMXV	40	09-Apr-2022 13:19:23	09-Apr-2022 13:40:33	5480.12	4033.68
EMXV	35	09-Apr-2022 13:40:33	09-Apr-2022 13:40:42	4033.68	4024.37
EMXV	30	09-Apr-2022 13:40:42	09-Apr-2022 14:39:23	4024.37	82.68

1A

Software Version

Requisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.216515

Pass Summary

									Parallel Data
1A	Repeat[2]:Up	Up	6607.82 ft	6981.60 ft	09-Apr-2022 12:27:01 PM	09-Apr-2022 12:48:04 PM	ON	11.53 ft	Yes

Log

Company:PDC Energy Inc Well:Vega #4N

Description: USI IBC SLG Format: Log (IBC SLG CBL DCBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:33:58

TIME_1900 - Time Marked every 60.00 (s)

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

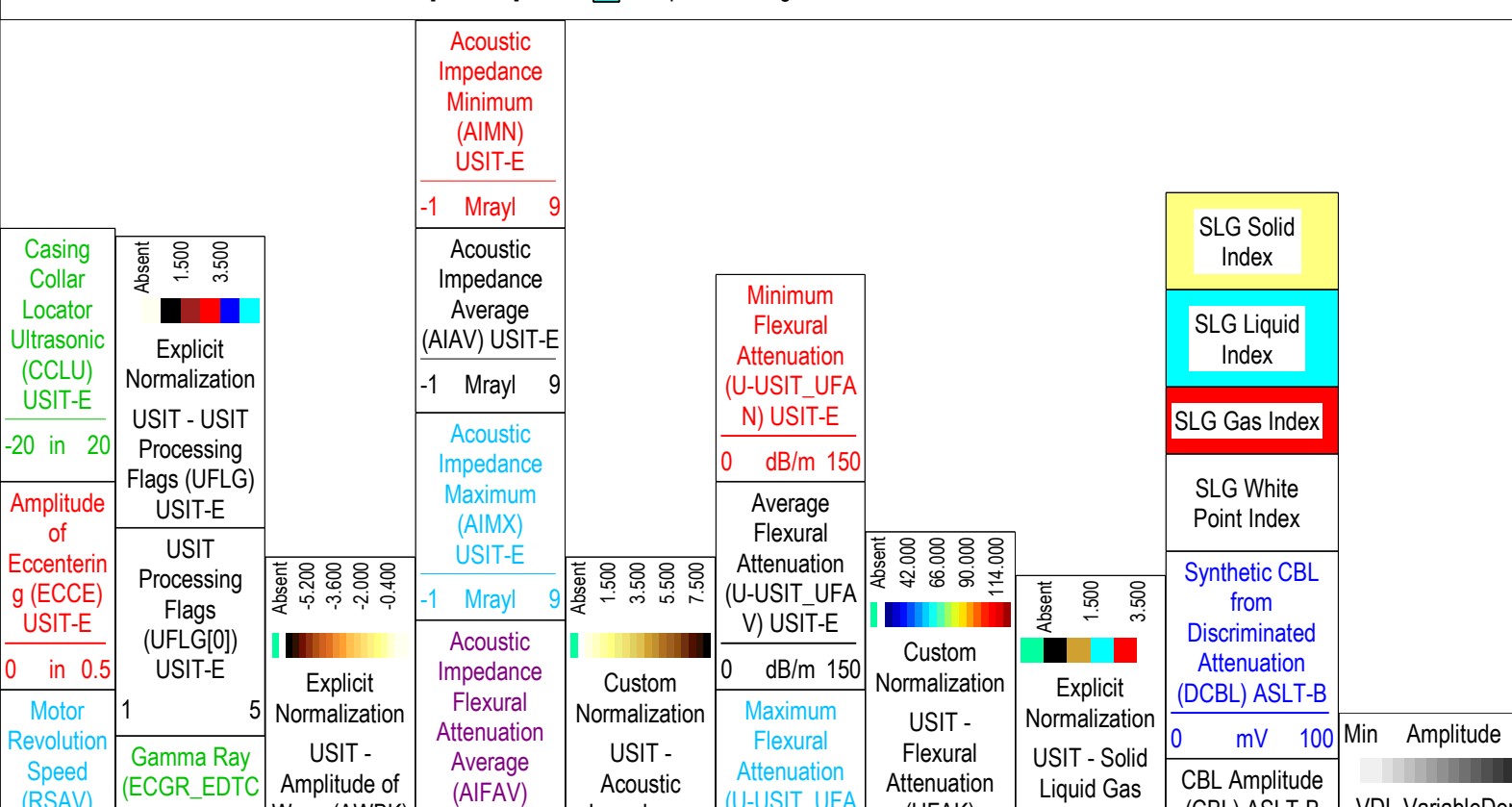
1 - UFLG 1 Value within [0.0 - 1.5] - :

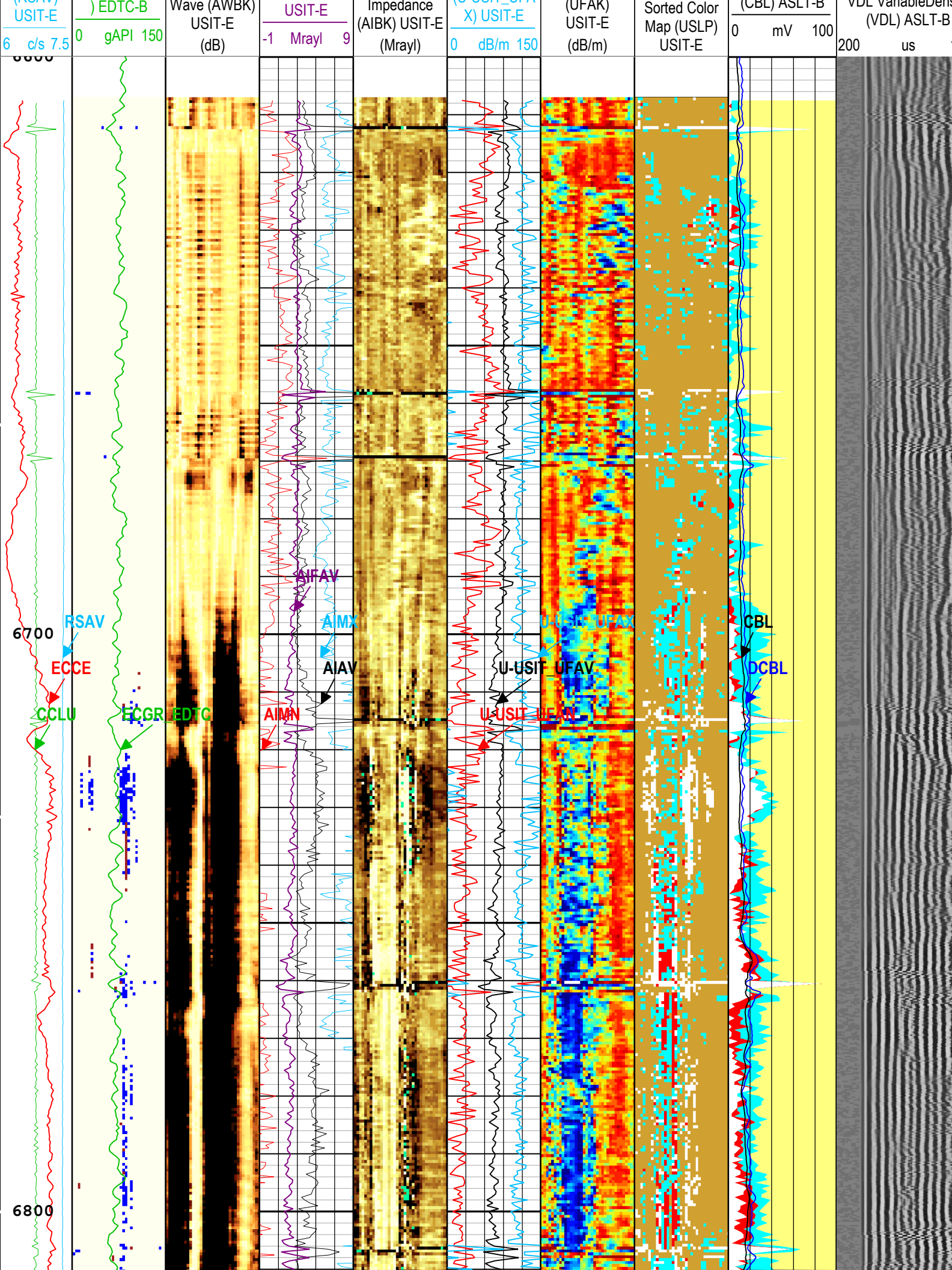
2 - UFLG 2 Value within [1.5 - 2.5] - :

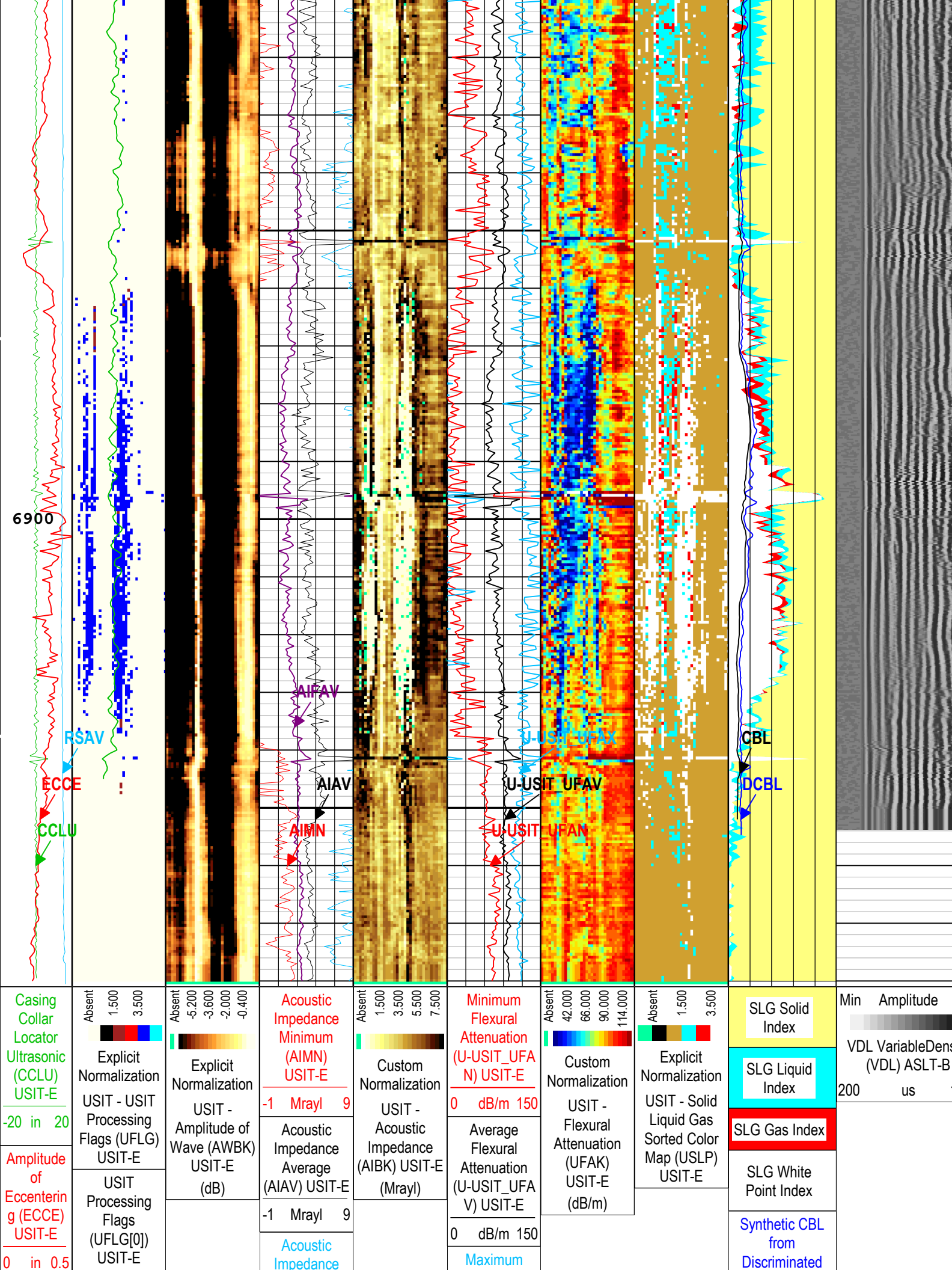
3 - UFLG 3 Value within [2.5 - 3.5] - :

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] - :







Motor Revolution Speed (RSAV) USIT-E	1	5	Maximum (AIMX) USIT-E	Flexural Attenuation (U-USIT_UFA X) USIT-E	Attenuation (DCBL) ASLT-B			
	Gamma Ray (ECGR_EDTC) EDTC-B							
	0	gAPI 150						
6	c/s	7.5	Acoustic Impedance Flexural Attenuation Average (AIFAV) USIT-E	0	dB/m 150			
			Acoustic Impedance Flexural Attenuation Average (AIFAV) USIT-E	0	dB/m 150			

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 DCBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:33:58					

Channel Processing Parameters				
1A: 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	8.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	15563	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	72	mV
CDEN	Cement Density	USIT-E	12.9	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	0.361	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTF	Delta-T Fluid	Borehole	189	us/ft
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	ASLT-B	1.01	
FD	Fluid Density	USIT-E	12	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	4.3	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	-5.92	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	38.88	dB/m

MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	38.88	dB/m
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MSA	Minimum Sonic Amplitude	ASLT-B	2.12	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.12	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.32	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.28	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	120	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.87	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-22	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	45	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 375 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	

XYZ

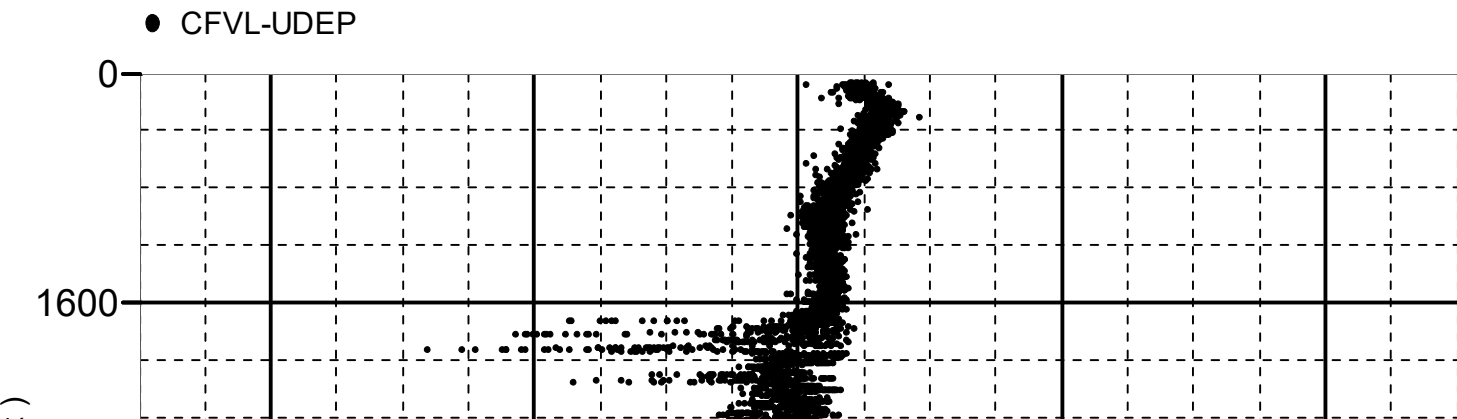
Company:PDC Energy Inc Well:Vega #4N

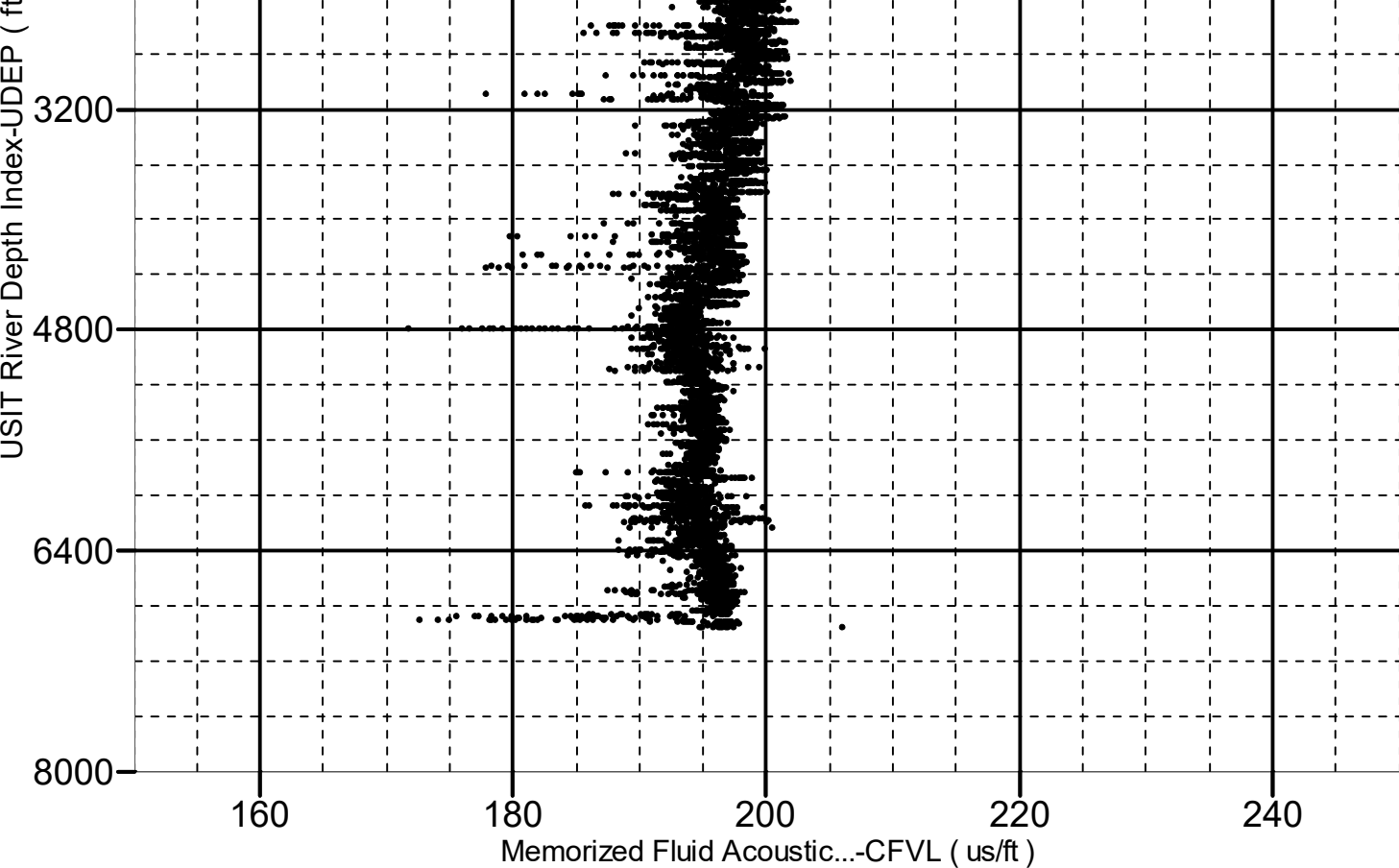
1A: Main[3]:Up:S005

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6979.50 to 82.00 ft



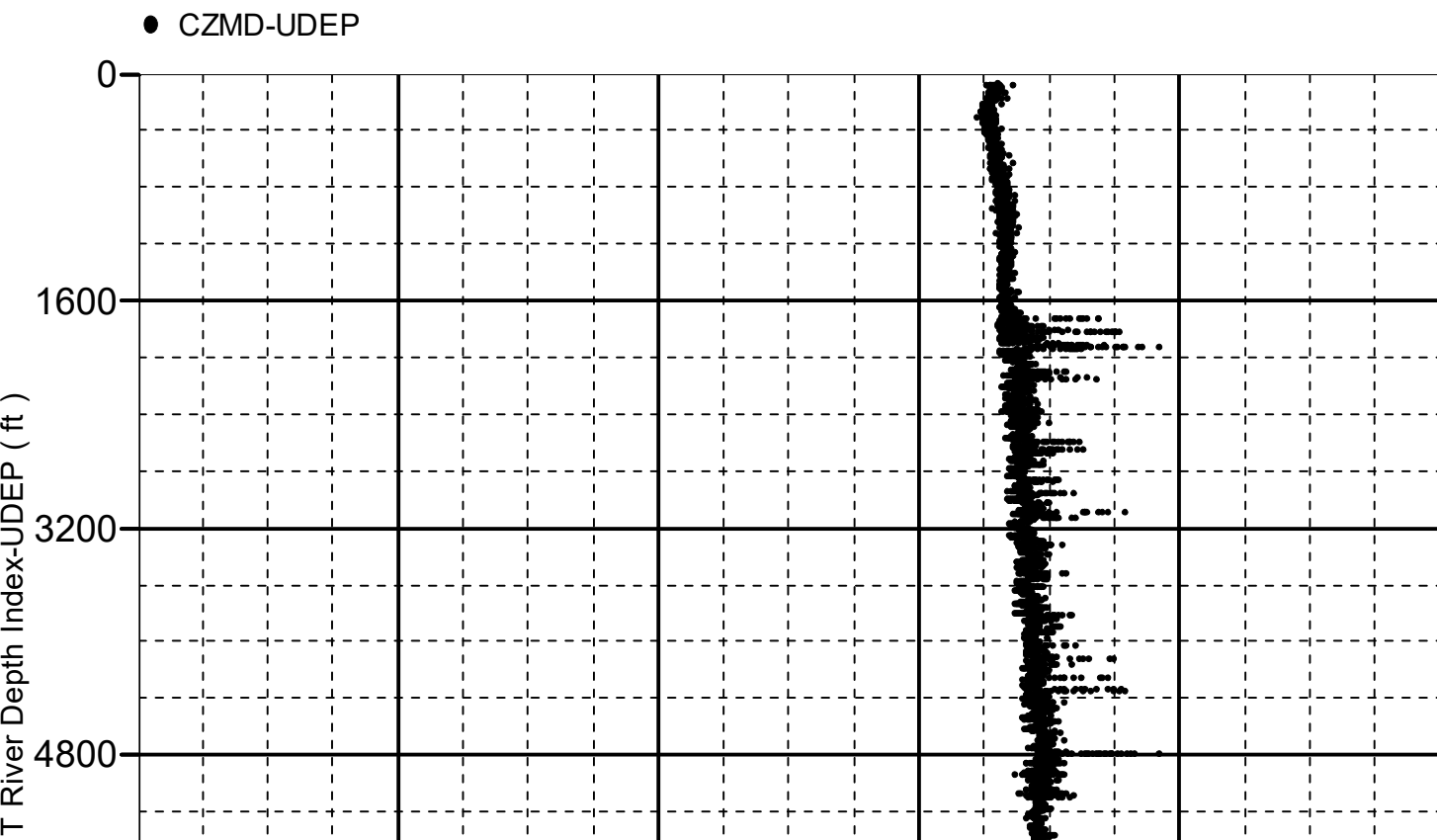


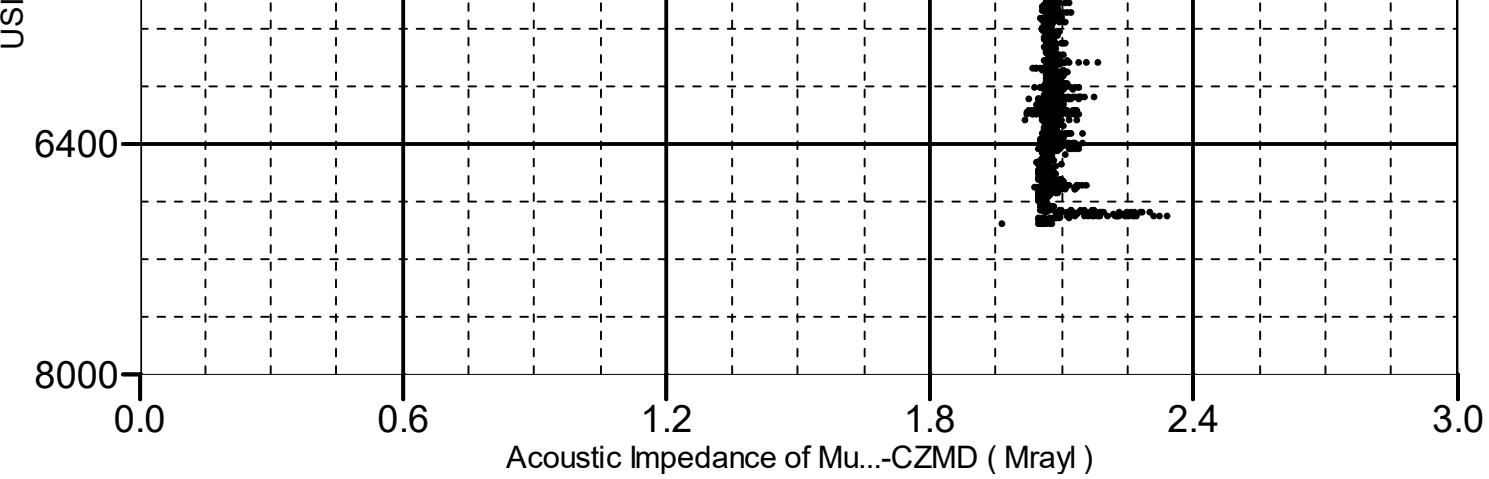
XYZ Company:PDC Energy Inc Well:Vega #4N
1A: Main[3]:Up:S005

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6979.50 to 82.00 ft





Company:	PDC Energy Inc	Schlumberger
Well:	Vega #4N	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Isolation Scanner		
Cement Bond Log		
Gamma Ray - CCL		