Schlumberger

Company: Bonanza Creek Energy

Well: State Antelope W42-C12-13 HNB

Field: Wattenberg

County: Weld State: Colorado

UltraSonic Summary Print

County: Weld
Field: Wattenberg
Location: SENE Sec. 13, T5N-R62W
Well: State Antelope W42-C12-13 HNB
Company: Bonanza Creek Energy

Location: SENE Sec. 13, T5N-R62W
2647' FNL 510' FEL

Elev.: K.B. 4590.00 ft
G.L. 4573.00 ft
D.F. 4590.00 ft

Permanent Datum: Ground Level Elev.: 4573.00 f
Log Measured From: Kelly Bushing 17.00 ft above Perm.Datum
Drilling Measured From: Kelly Bushing

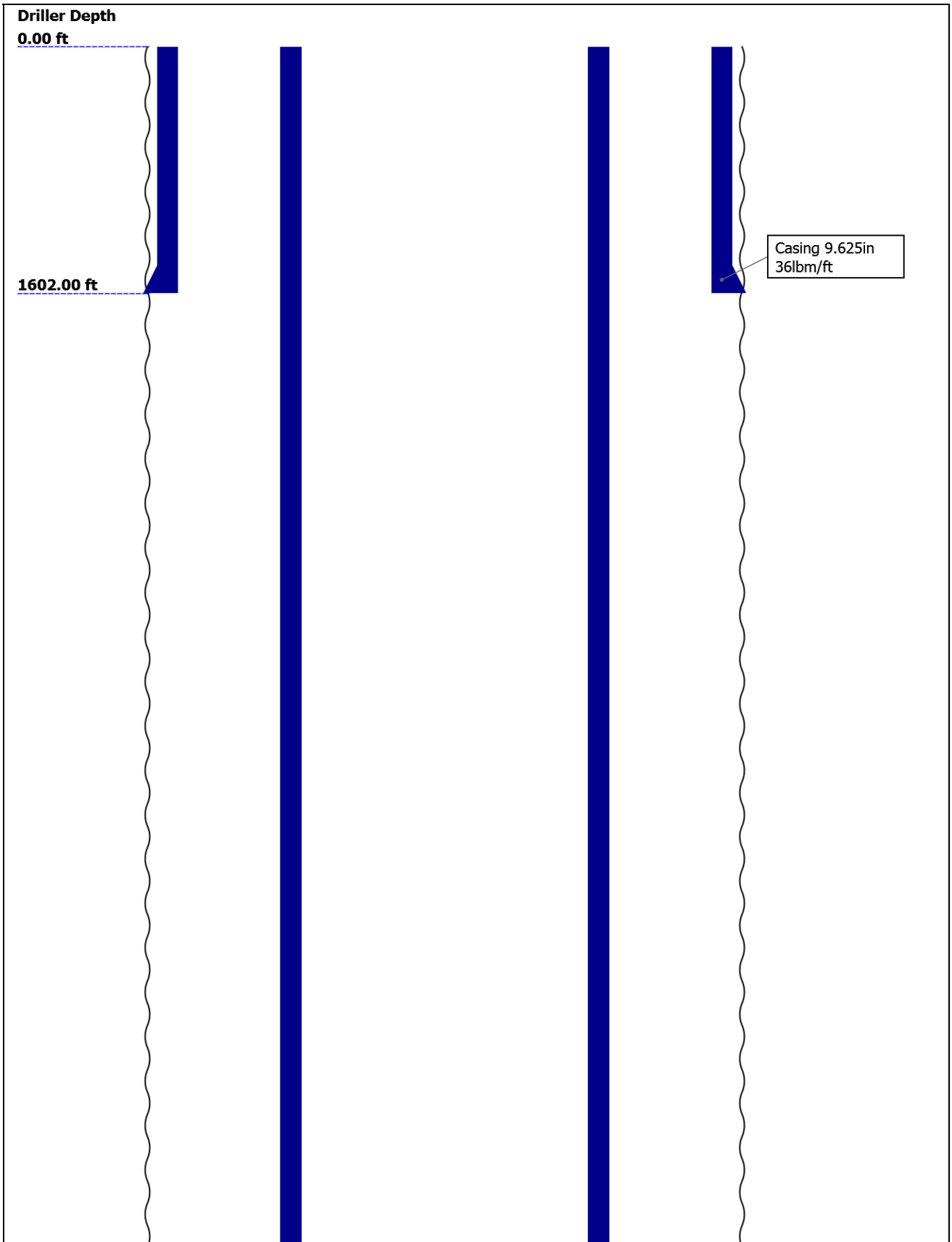
API Serial No.	Section:	Township:	Range:
05-123-50293	13	5N	62W

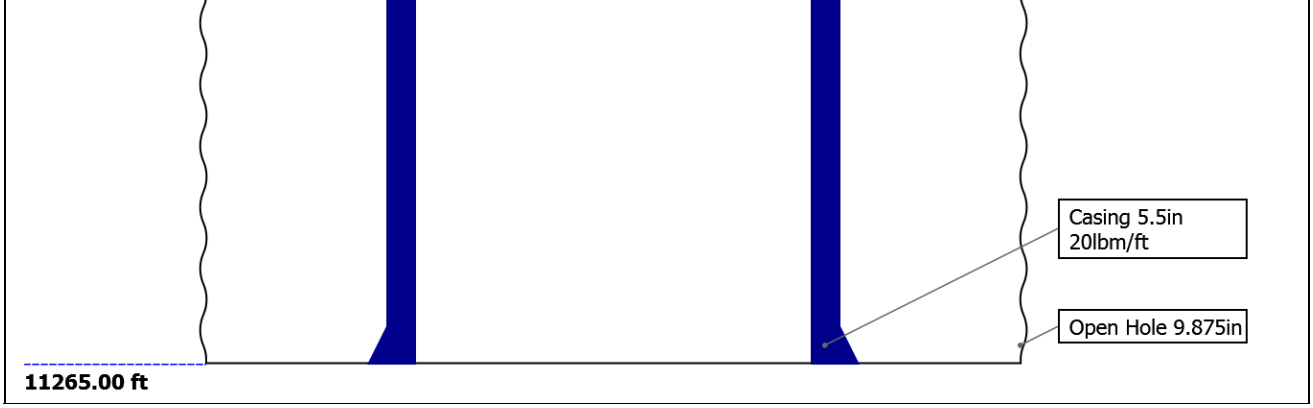
Logging Date		24-Feb-2020			
Run Number		1			
Depth Driller		11265.00 ft			
Schlumberger Depth		11265.00 ft			
Bottom Log Interval		6220.00 ft			
Top Log Interval		100.00 ft			
Casing Fluid Type		Water			
Salinity					
Density		8.4 lbm/gal			
Fluid Level		8.00 ft			
BIT/CASING/TUBING STRING					
Bit Size		9.88 in			
From		0.00 ft			
To		11265.00 ft			
Casing/Tubing Size		5.5 in			
Weight		20 lbm/ft			
Grade		N/A			
From		0.00 ft			
To		11265.00 ft			
Max Recorded Temperatures		147.76 degF			
Logger on Bottom	Time	24-Feb-2020	16:25:00		
Unit Number	Location:	2801	Fort Morgan		
Recorded By		Alan Tolentino			
Witnessed By		Kurt Dodge			

Disclaimer

Contents

Well Sketch



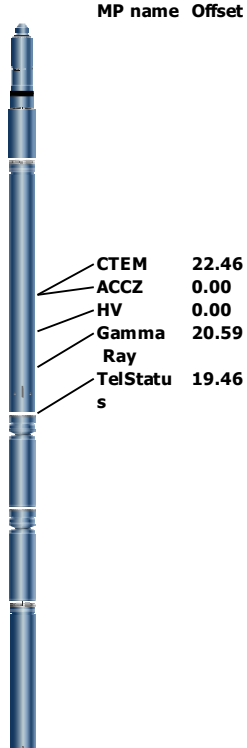


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	9.875					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	11265					
Bottom Logger (ft)	11265					
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)	1602	11265				
Bottom Logger (ft)	1602	11265				

Remarks and Equipment Summary

1: Toolstring



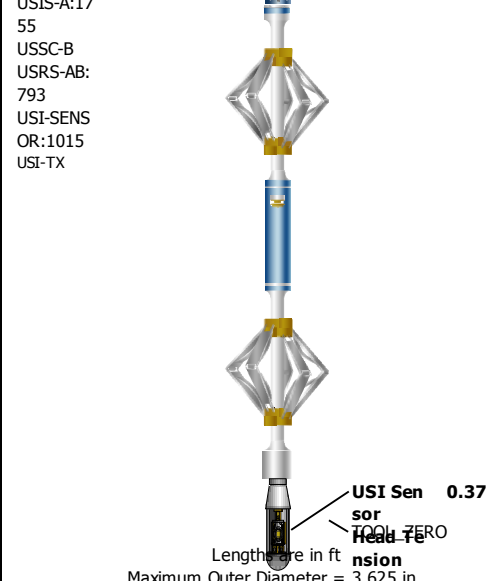
1: Remarks

Logging objective: Casing and cement

Tool was run as per tool sketch.

All logging intervals as per client request.

USIT ran on 10deg 6" resolution for main and repeat passes.



Depth Summary

	1		
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	7-46NT-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type			

1: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 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[3]:Up	6225.02	60

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 : 204.23m(670.03ft) to 207.08m(679.41ft)
MUD_N_FRP = 1.12
DFD = 1.01g/cm3(8.40lbm/gal)
CZMD median computed in free pipe normalization interval = 1.63 MRayl

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

1

MAIN COMPRESSED

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1	Log[3]:Up	Up	60.00 ft	6225.03 ft	24-Feb-2020 4:24:06 PM	24-Feb-2020 5:01:29 PM	ON	3.65 ft	No

All depths are referenced to toolstring zero

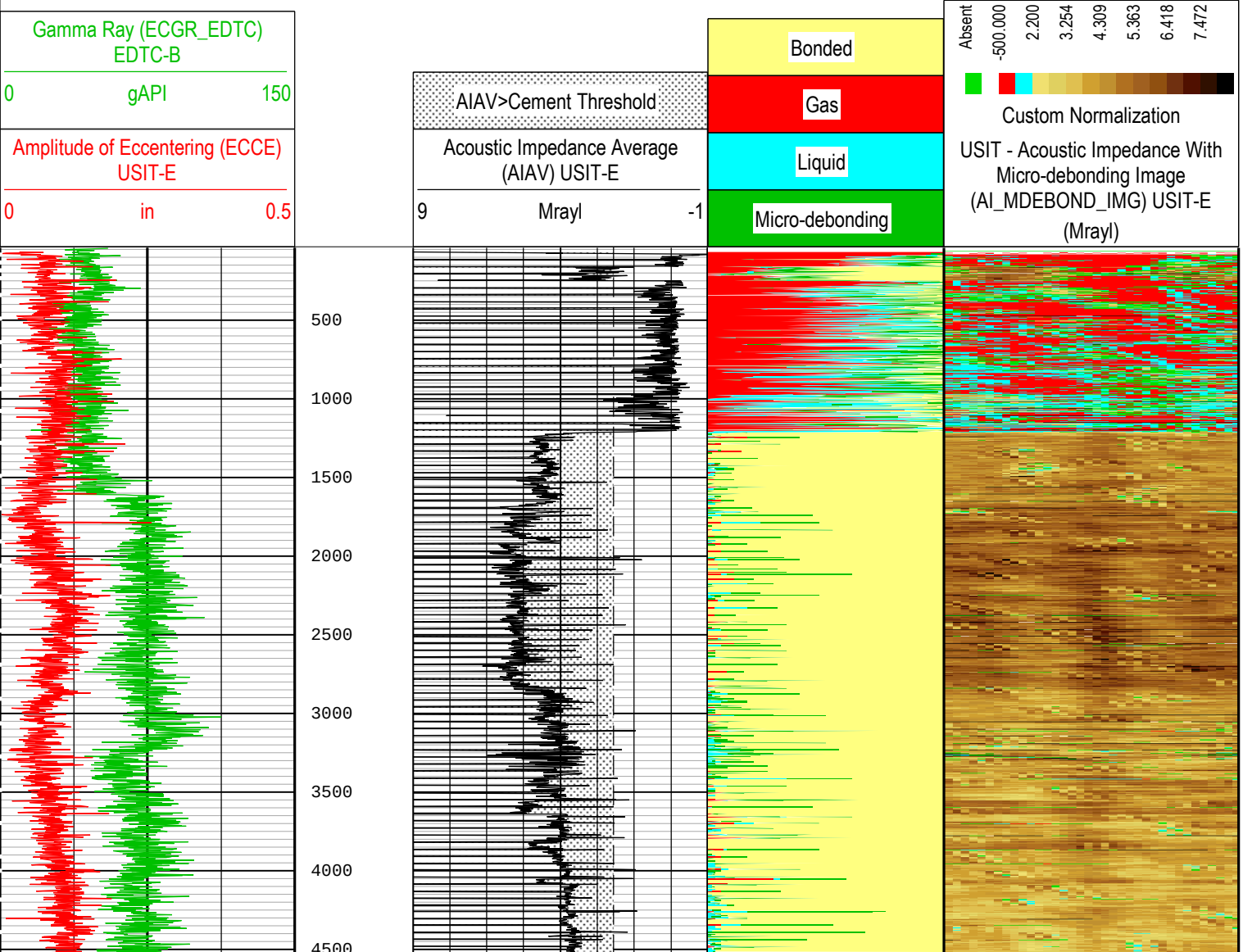
Log

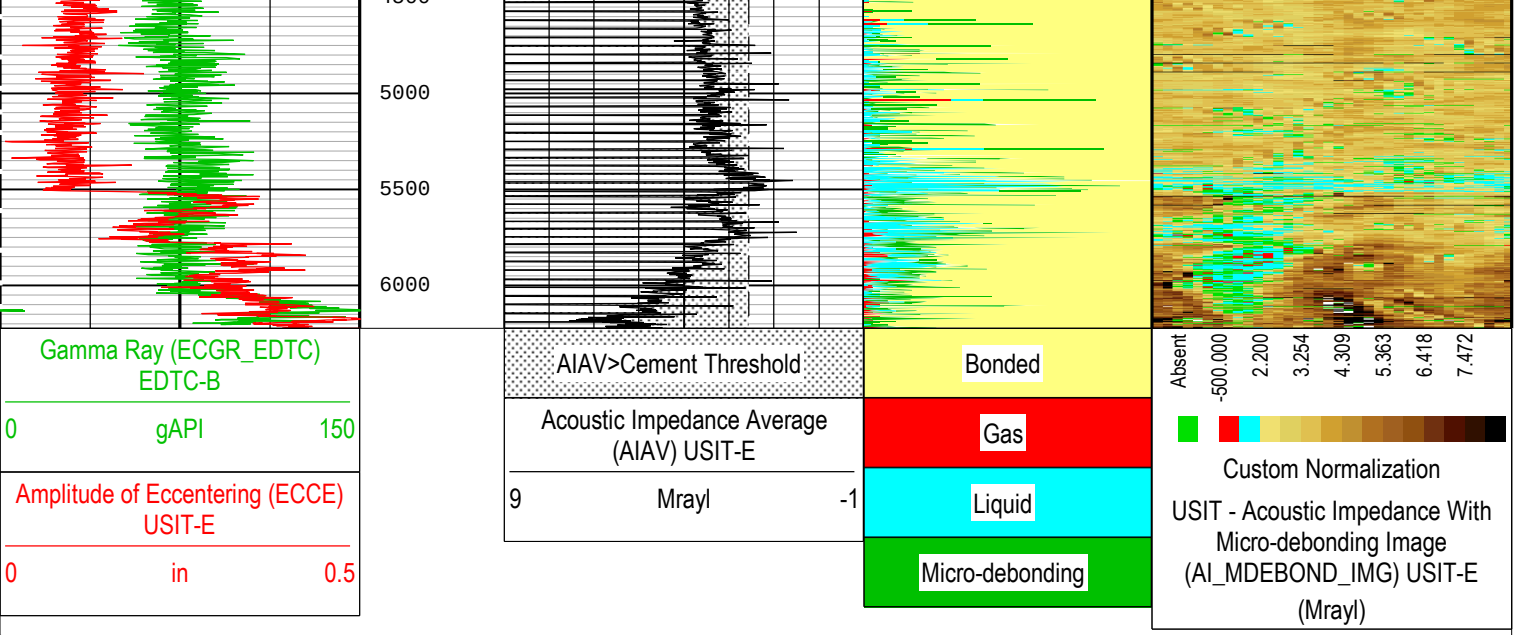
Company:Bonanza Creek Energy Well:State Antelope W42-C12-13 HNB

1: Log[3]:Up:S002

Description: USI Cement Format: Log (USI Lvl 1 Compressed) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 25-Feb-2020 13:41:12

TIME_1900 - Time Marked every 60.00 (s)





TIME_1900 - Time Marked every 60.00 (s)

Description: USI Cement Format: Log (USI Lvl 1 Compressed) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 25-Feb-2020 13:41:12

1

MAIN

Software Version

Acquisition System	Version
Maxwell 2019	9.0.106845.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1	Log[3]:Up	Up	60.00 ft	6225.03 ft	24-Feb-2020 4:24:06 PM	24-Feb-2020 5:01:29 PM	ON	3.65 ft	No

All depths are referenced to toolstring zero

Log

Company:Bonanza Creek Energy Well:State Antelope W42-C12-13 HNB
1: Log[3]:Up:S002

Description: USI Cement Format: Log (USI Lvl 1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 25-Feb-2020 13:41:17

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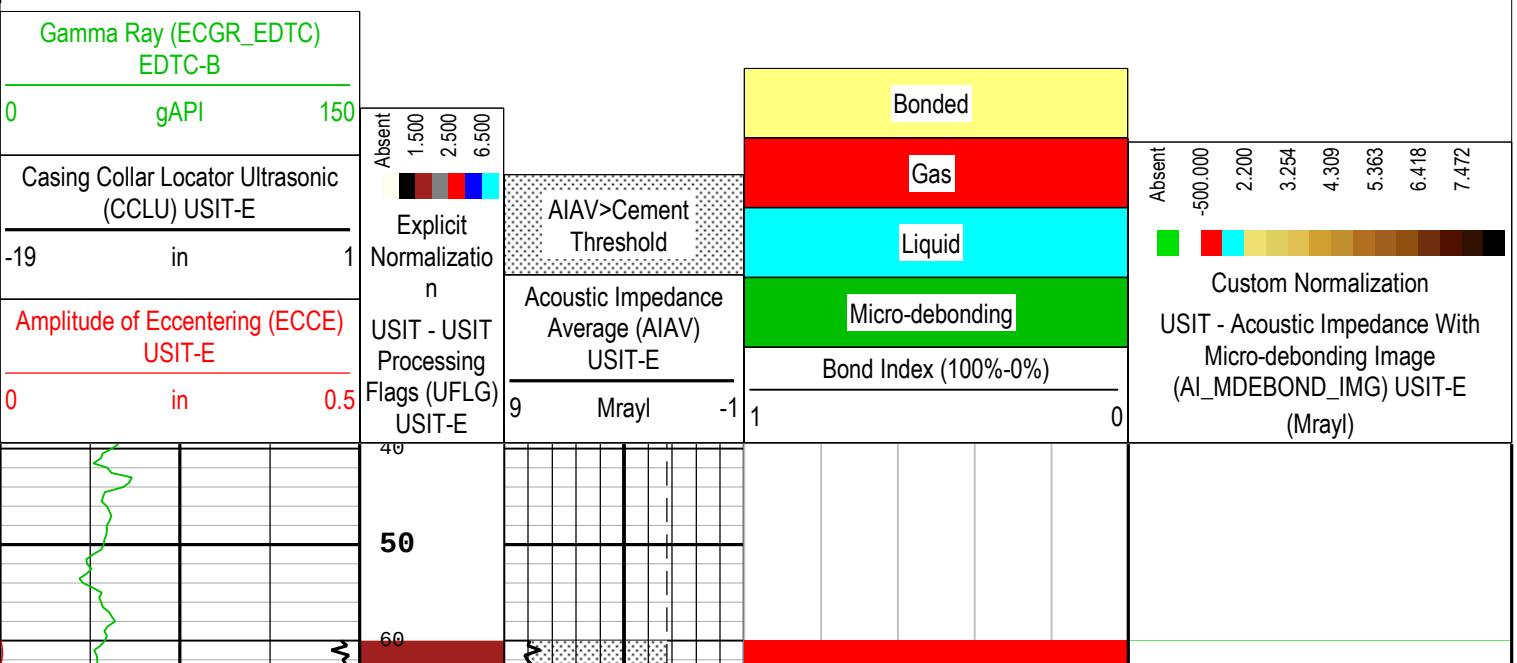

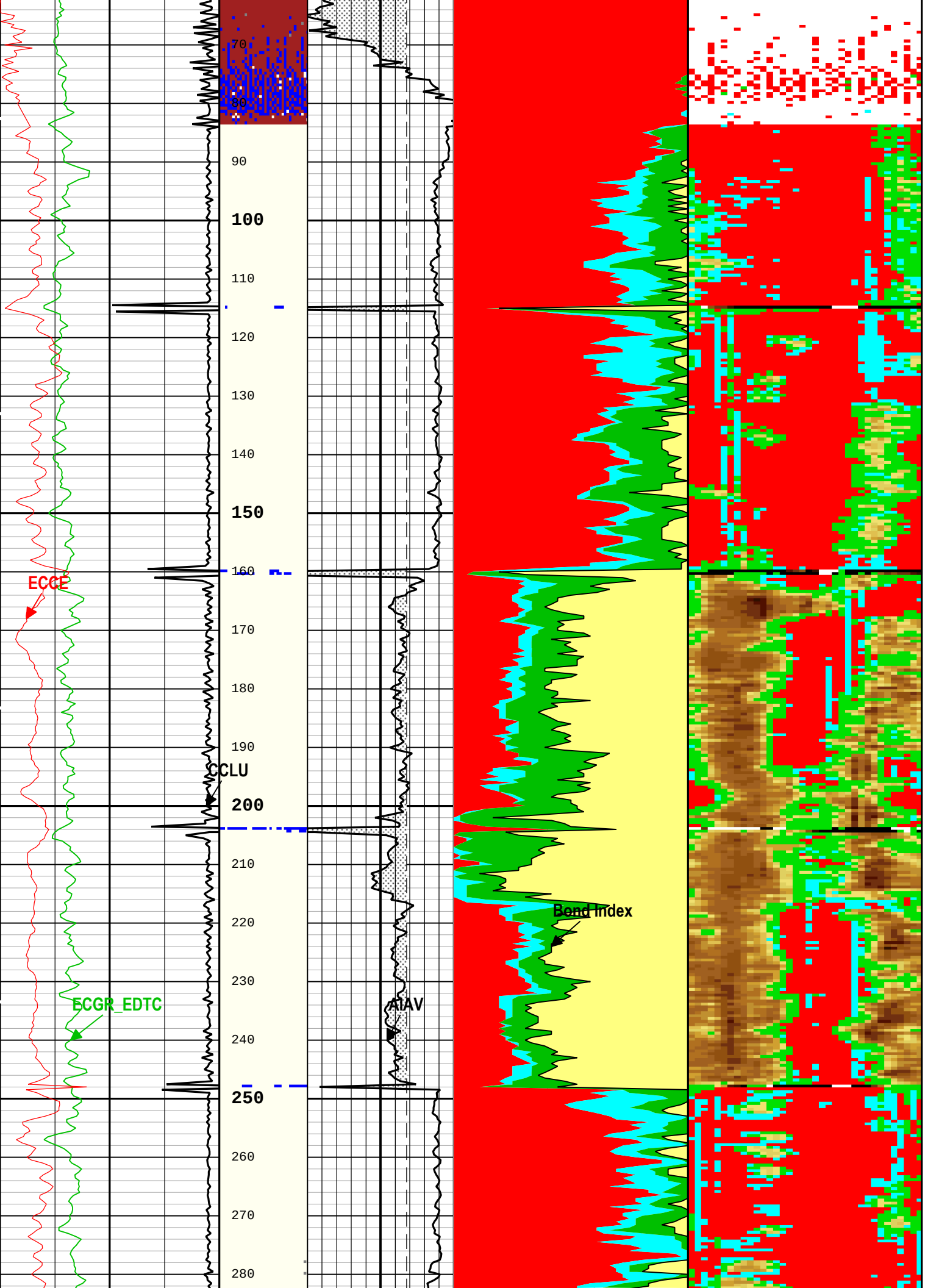
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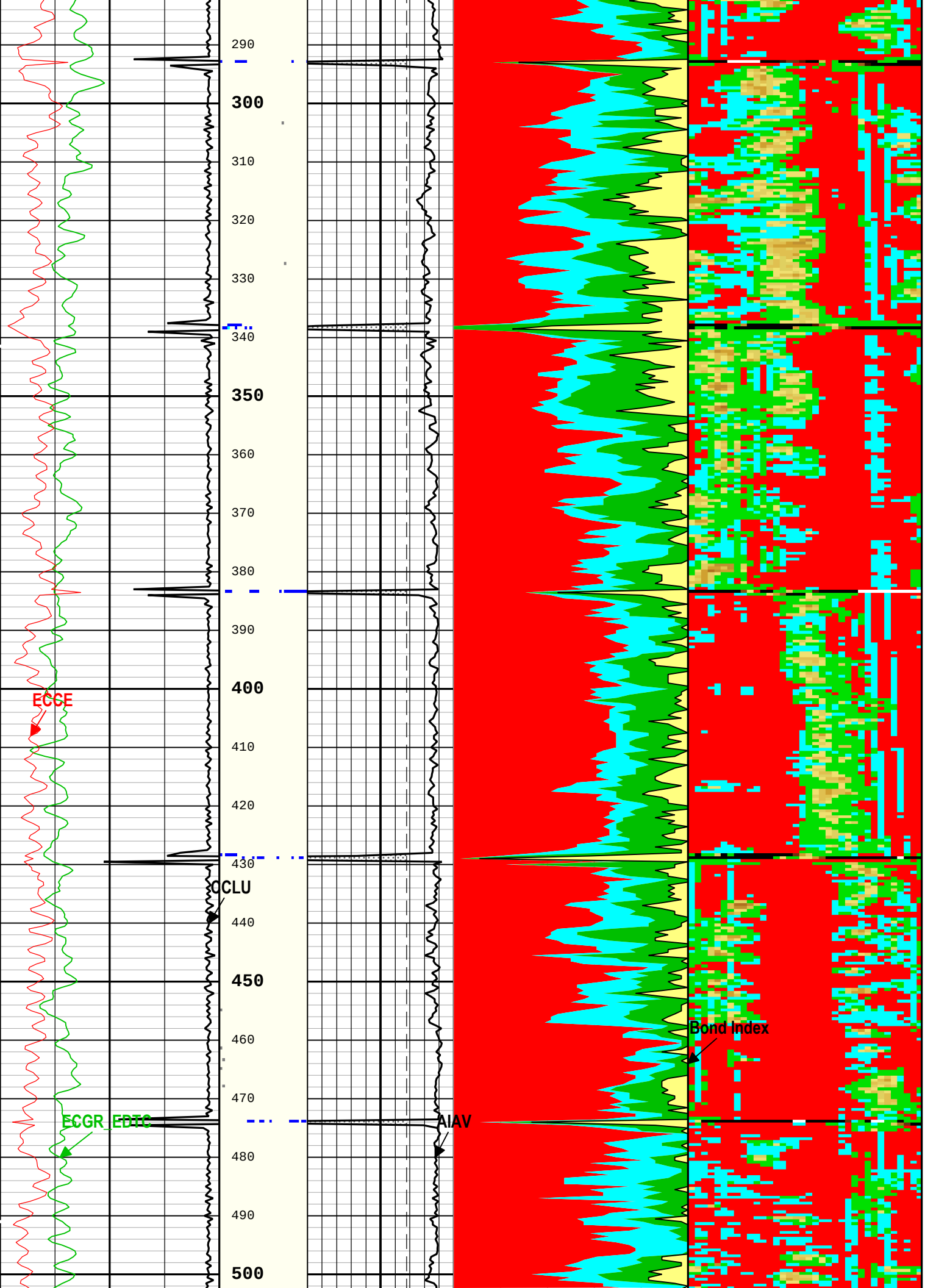
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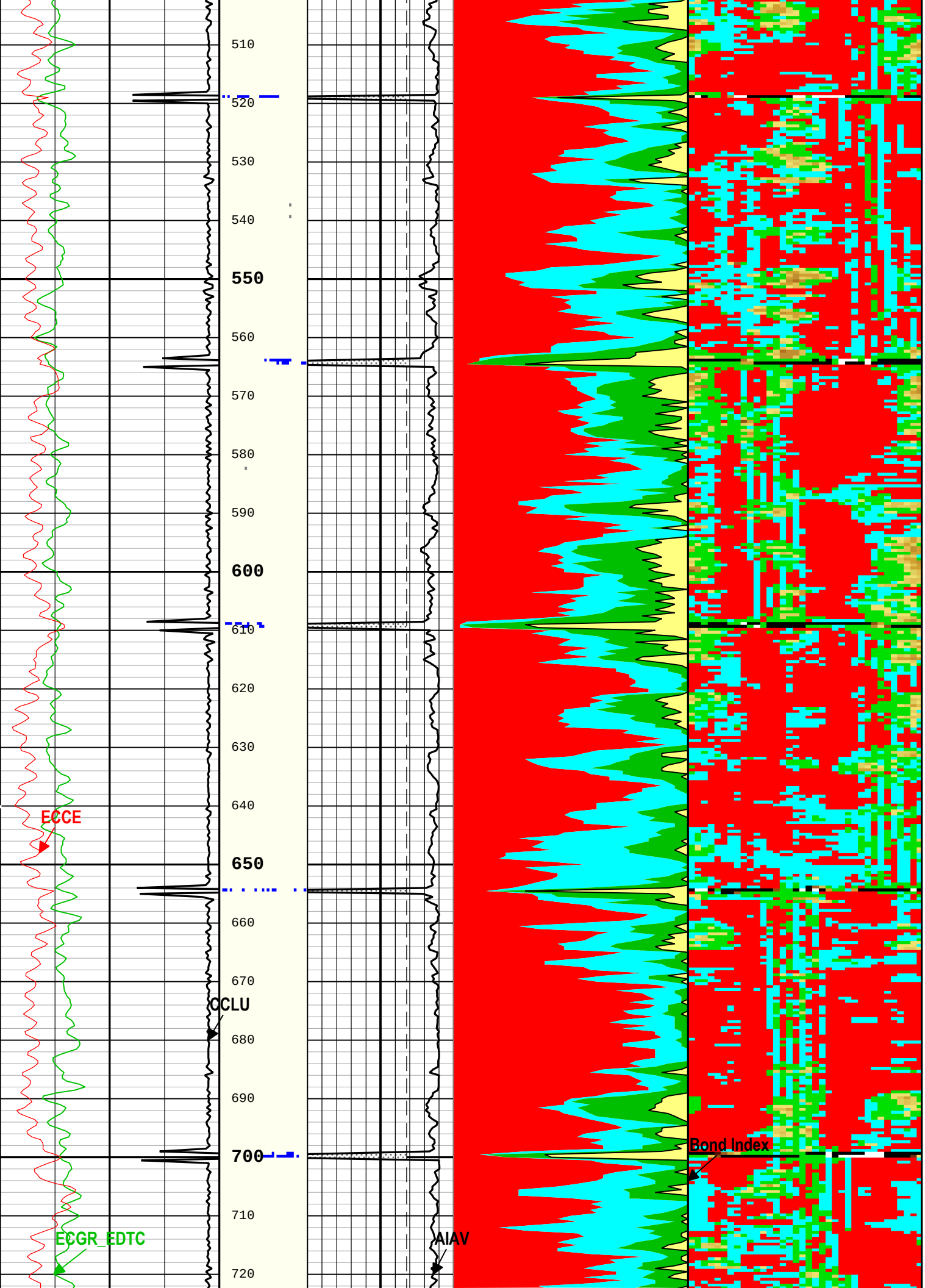
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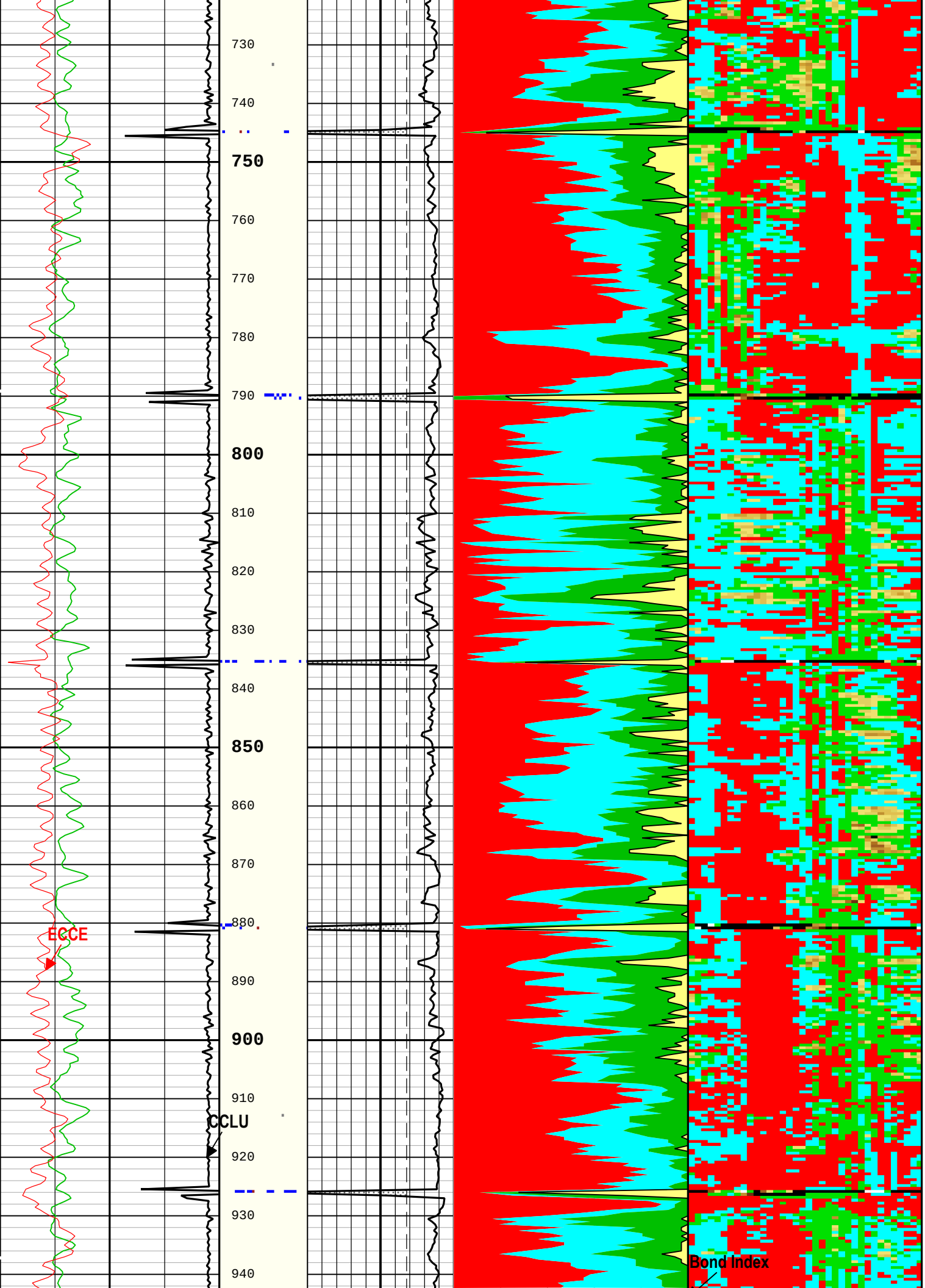
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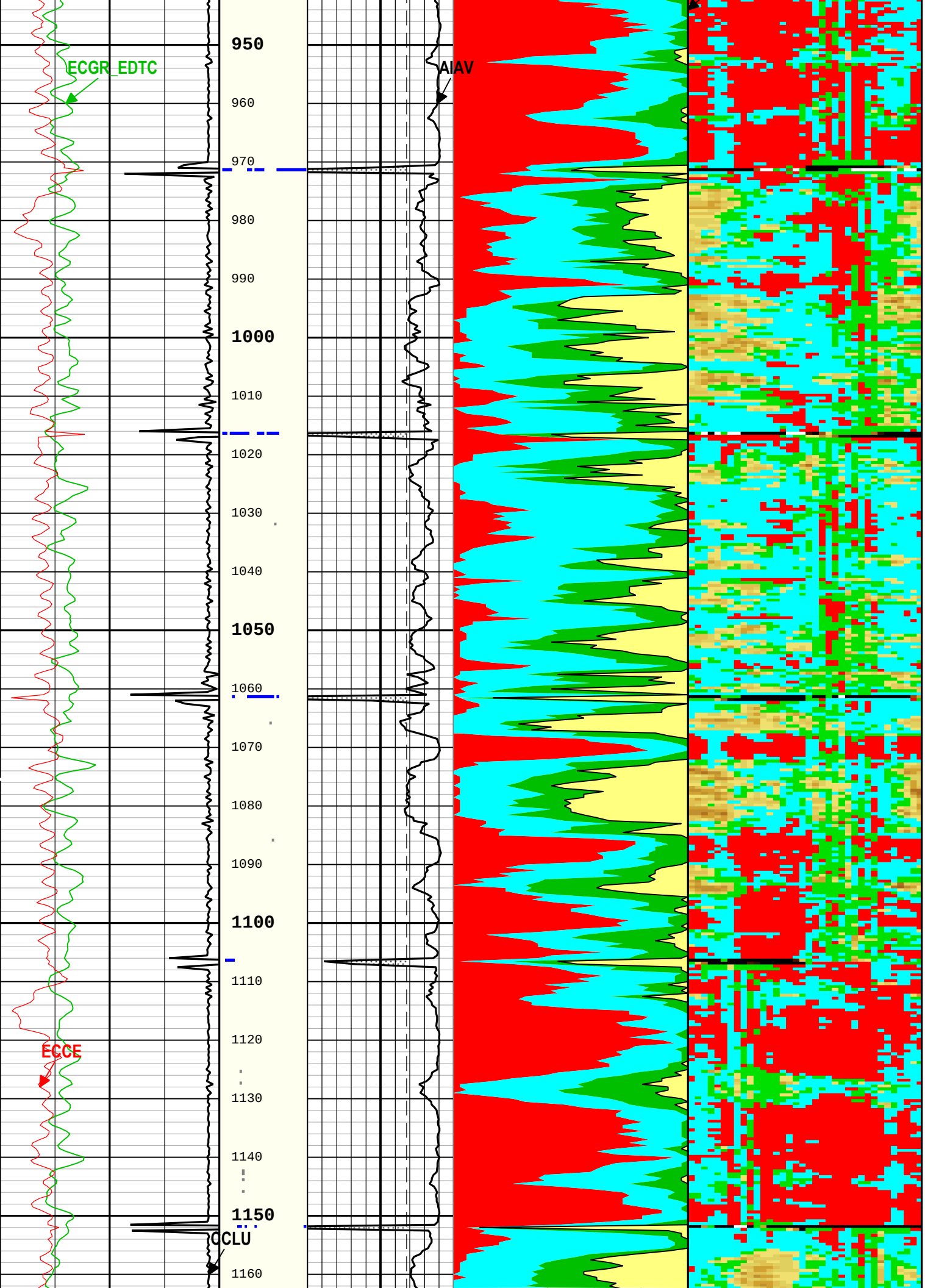
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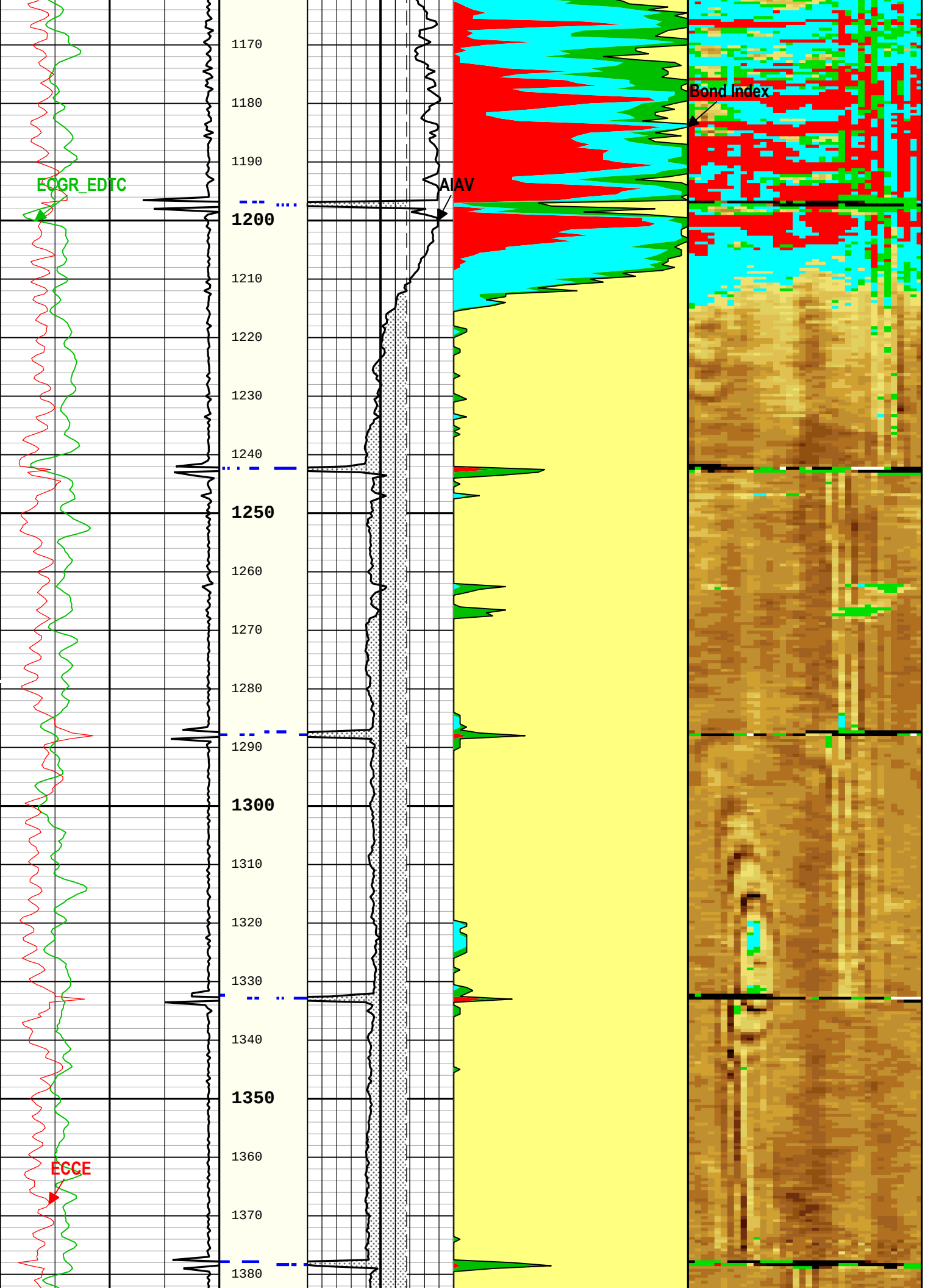
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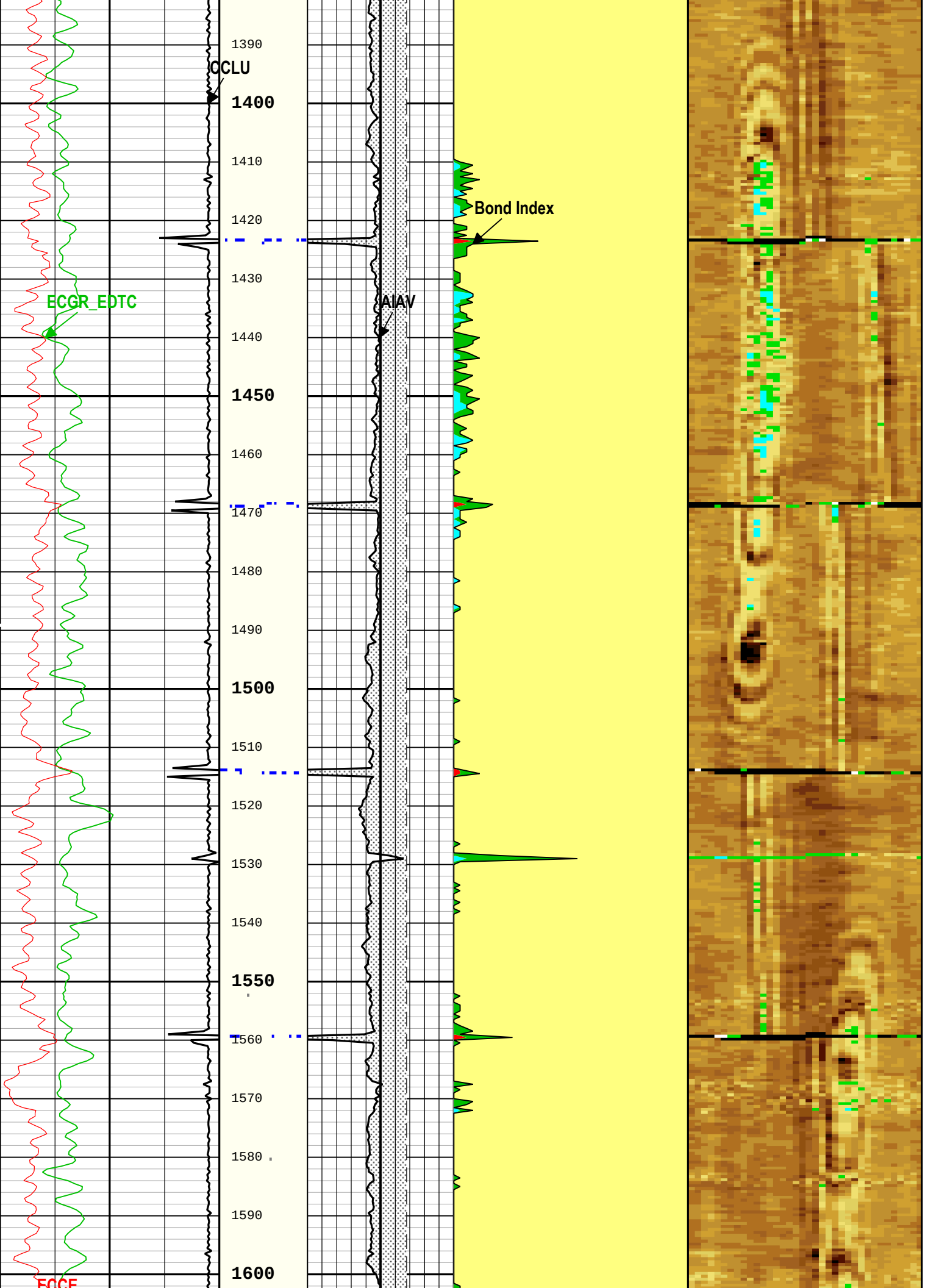
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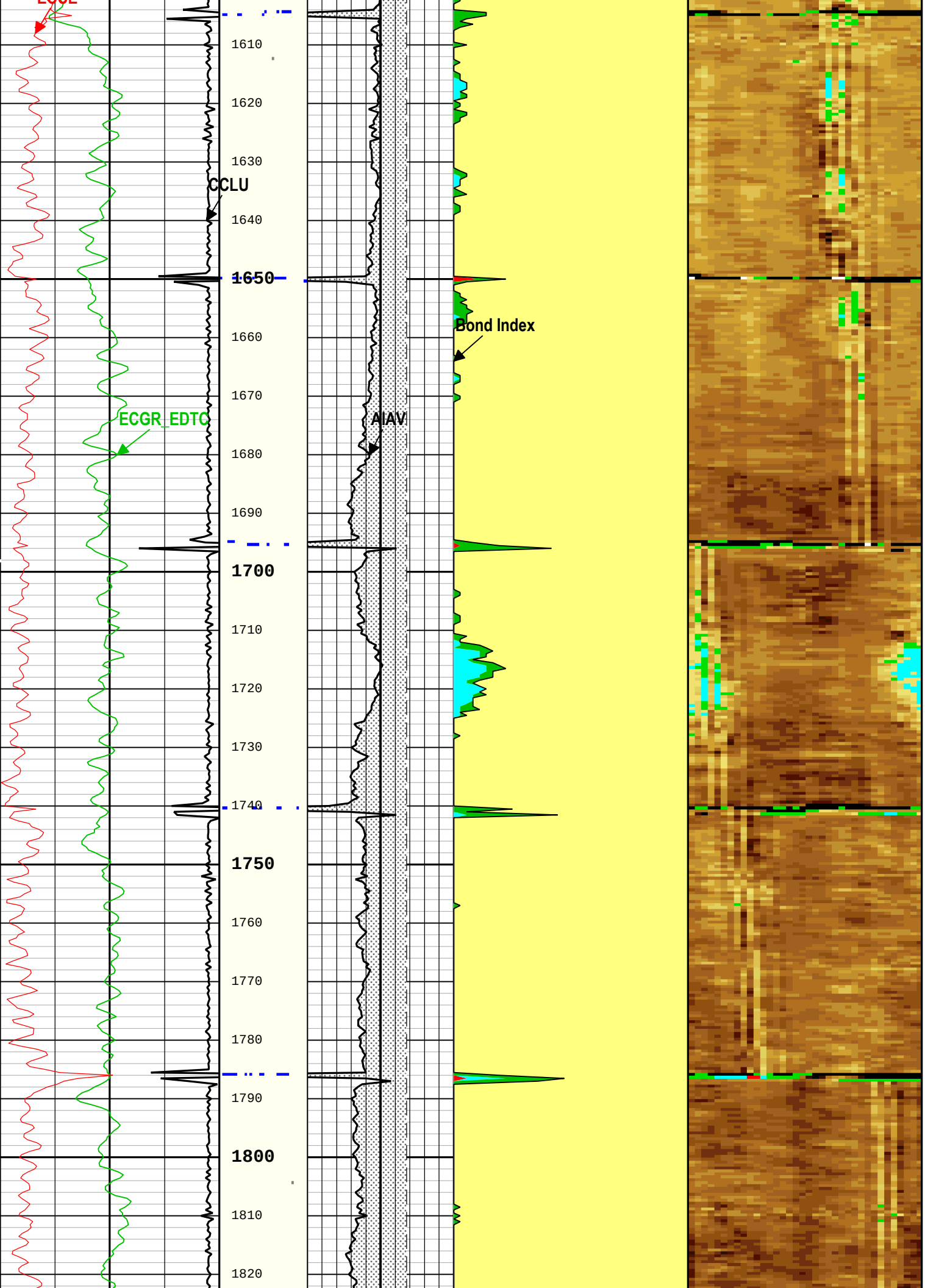
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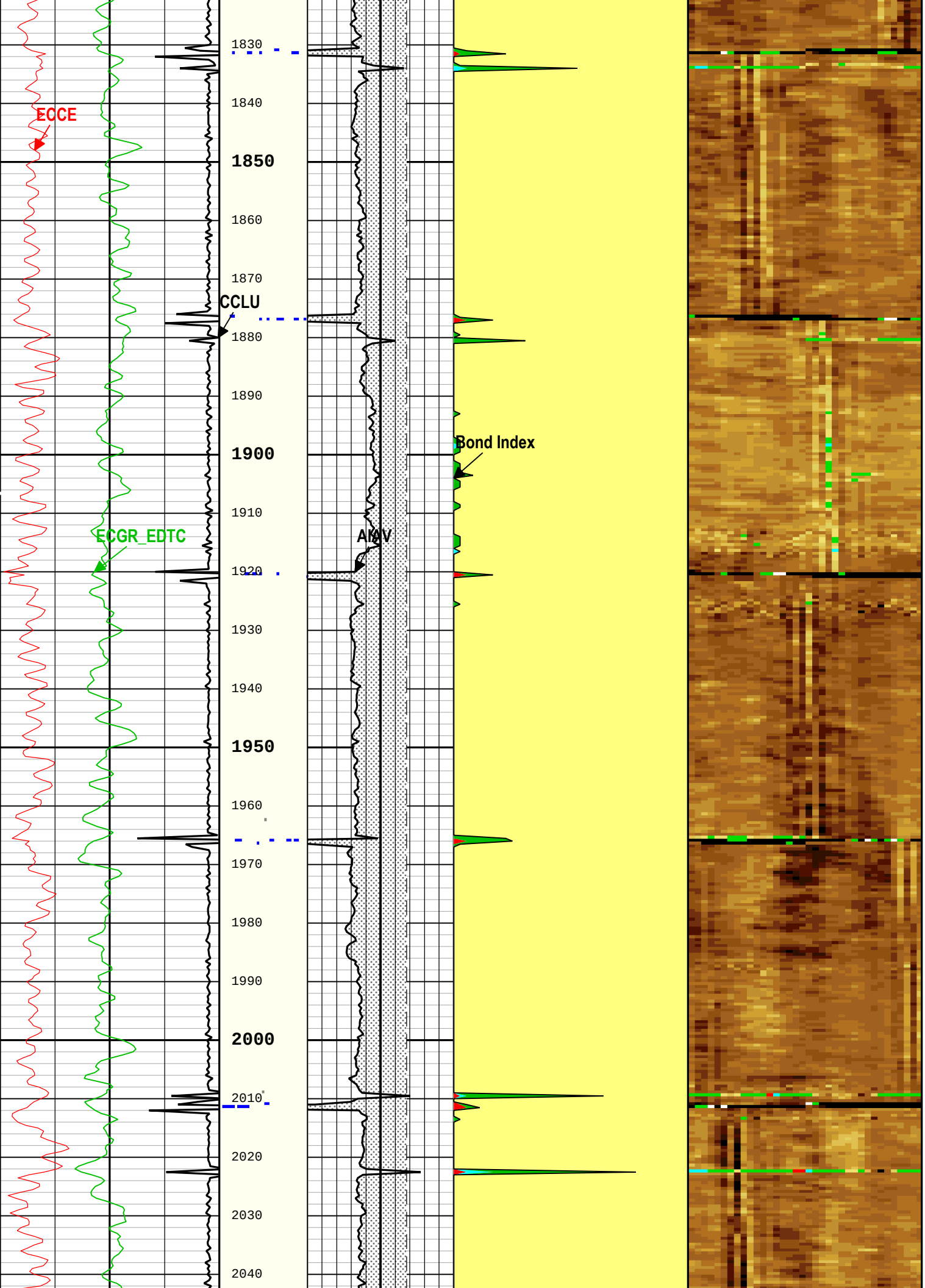
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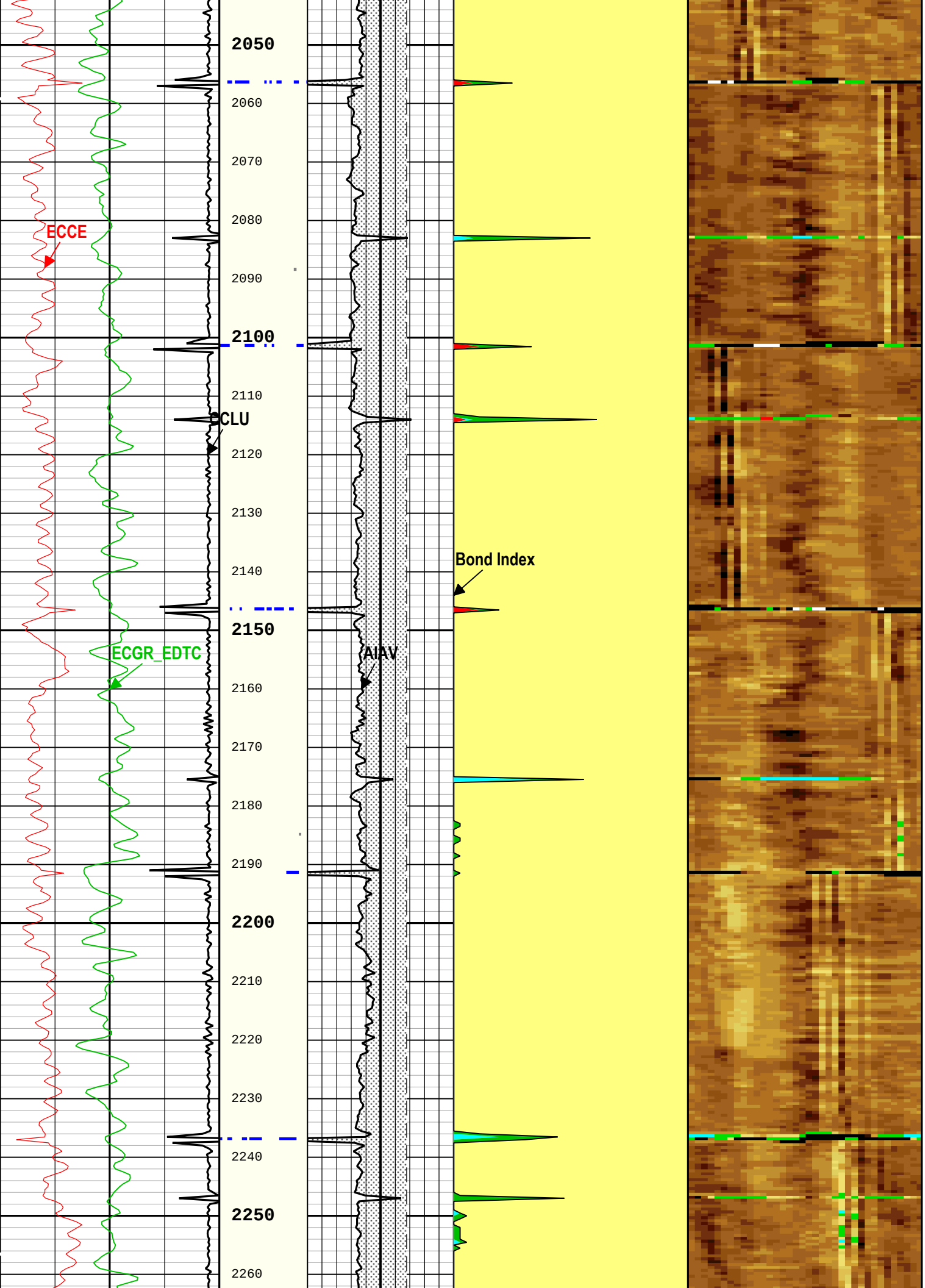
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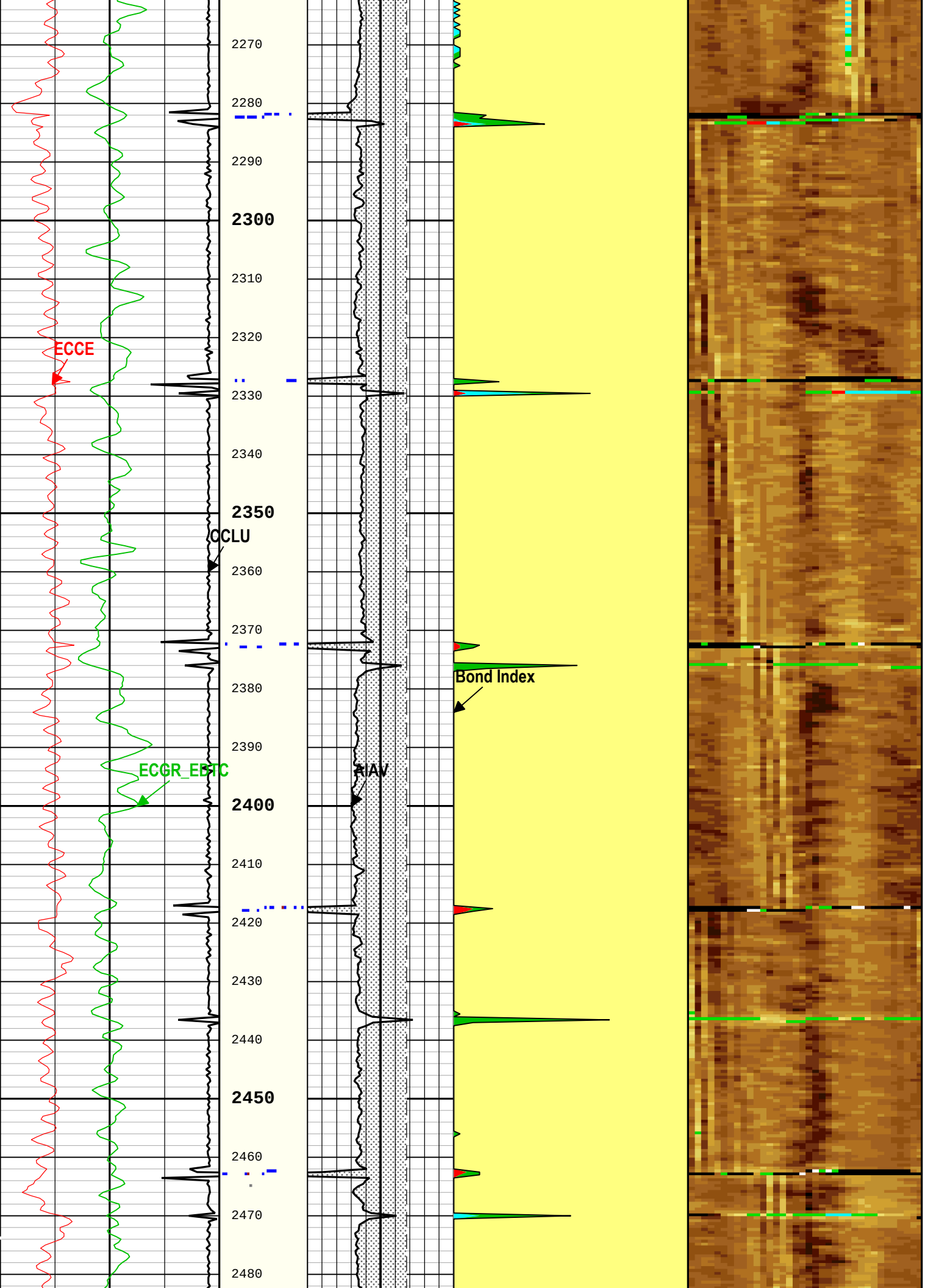
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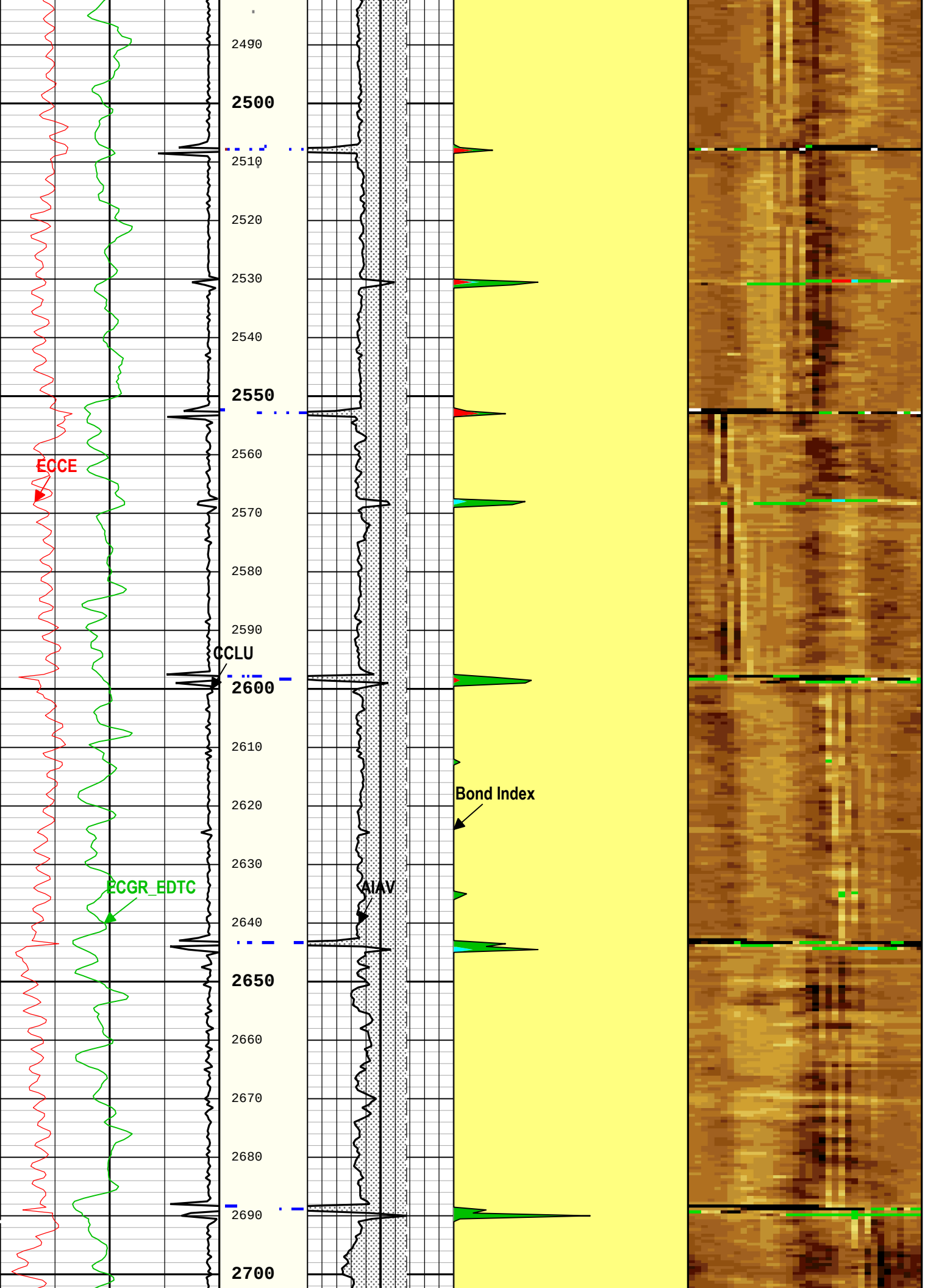
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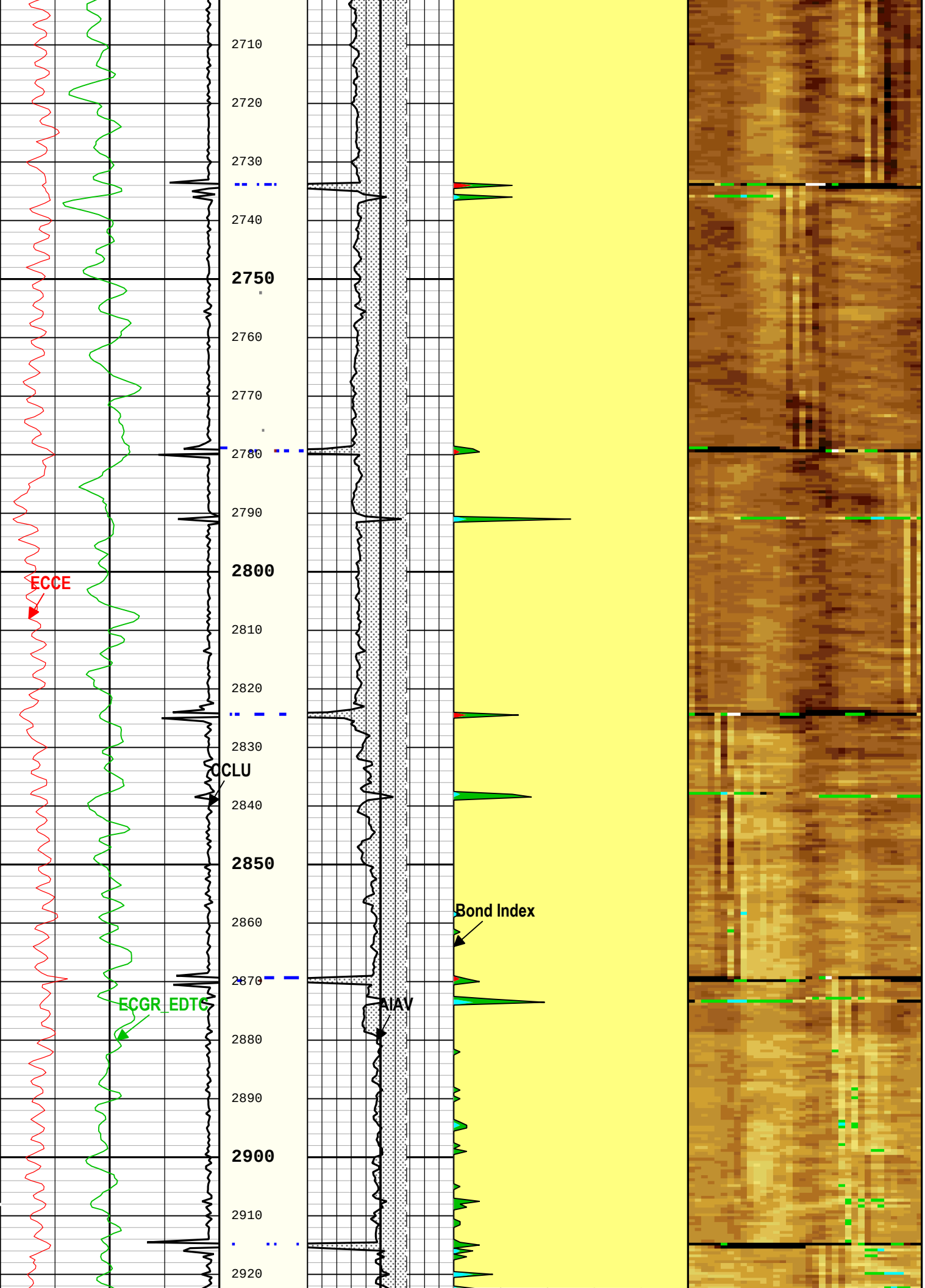
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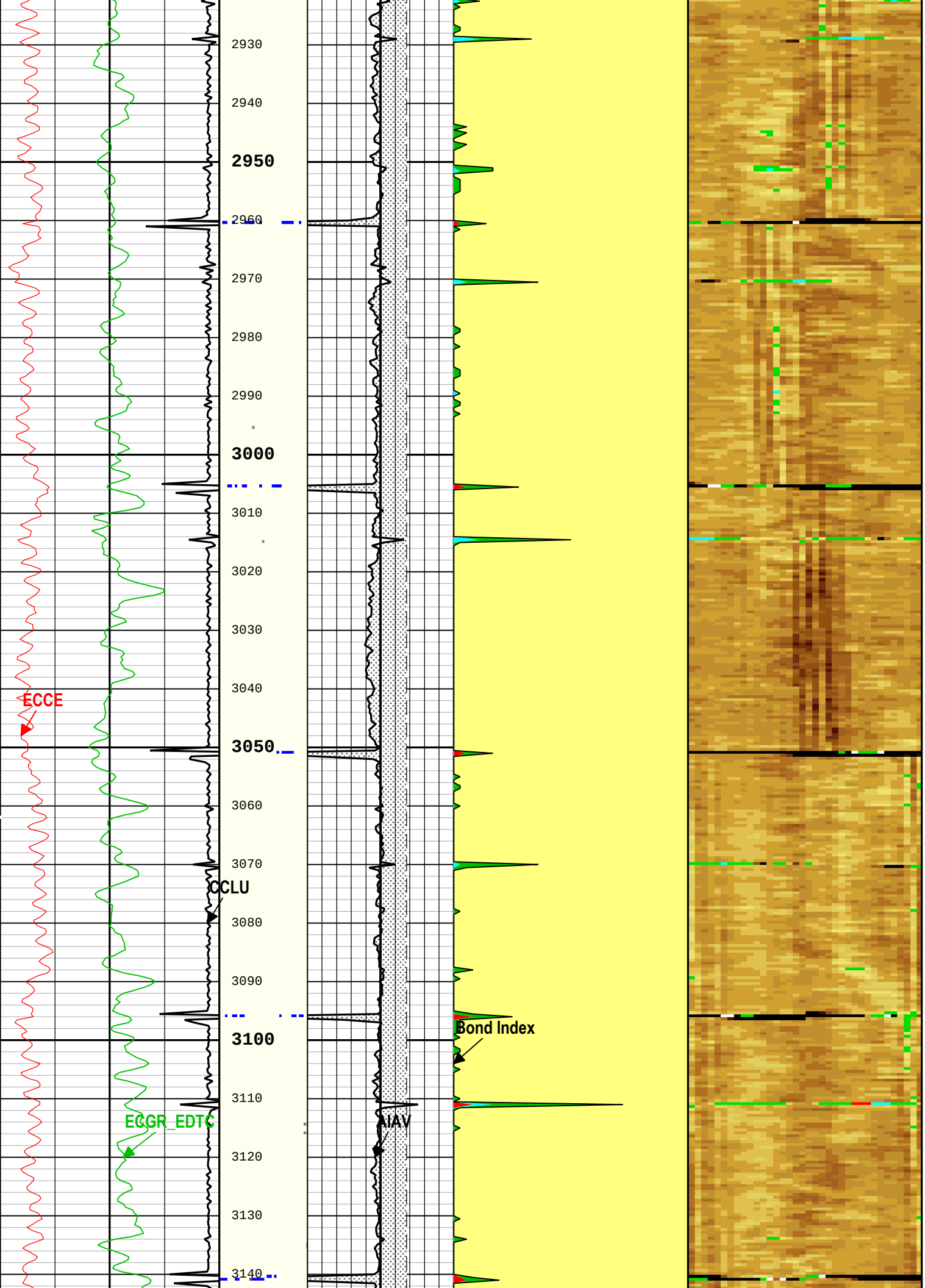
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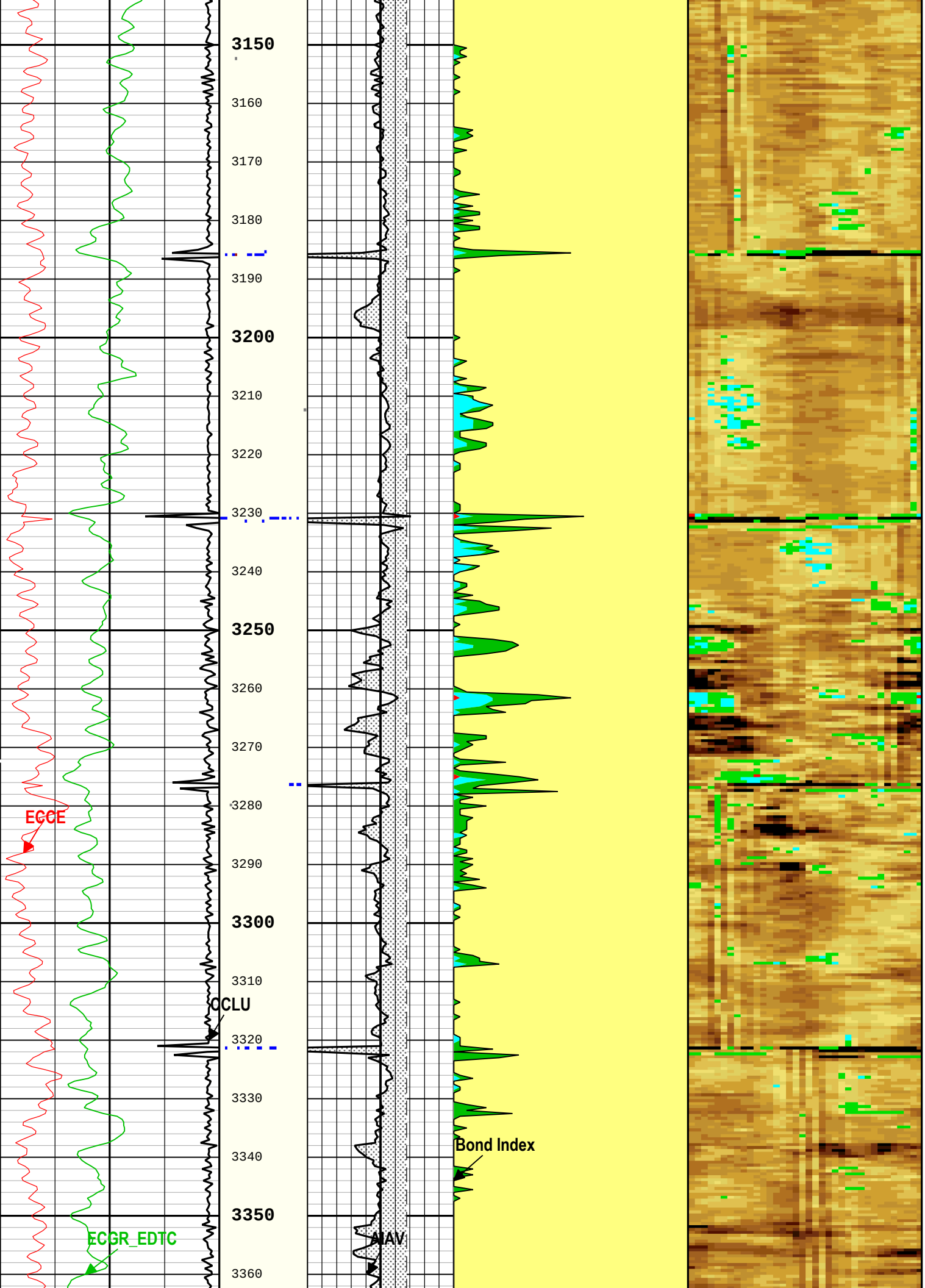
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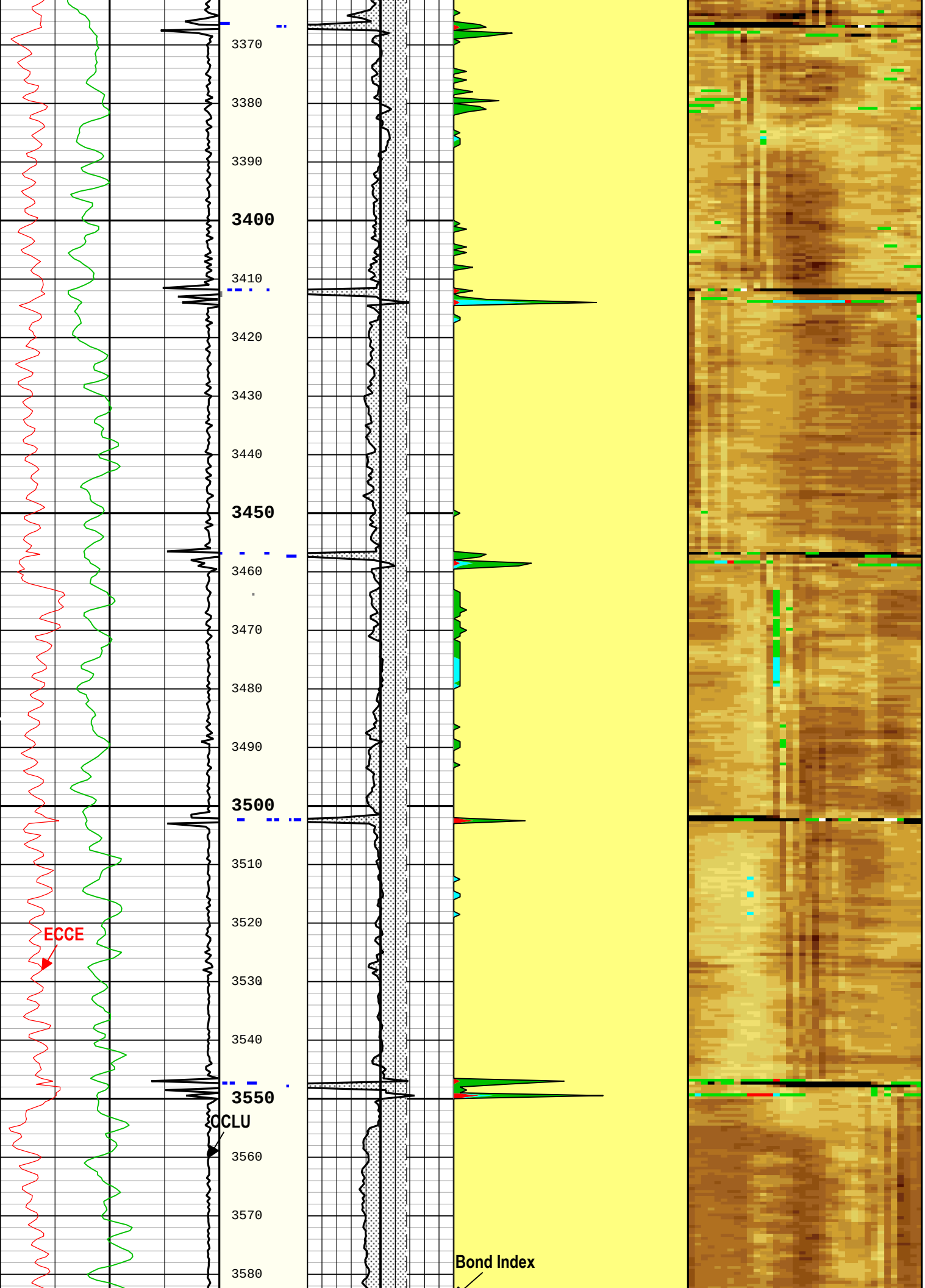
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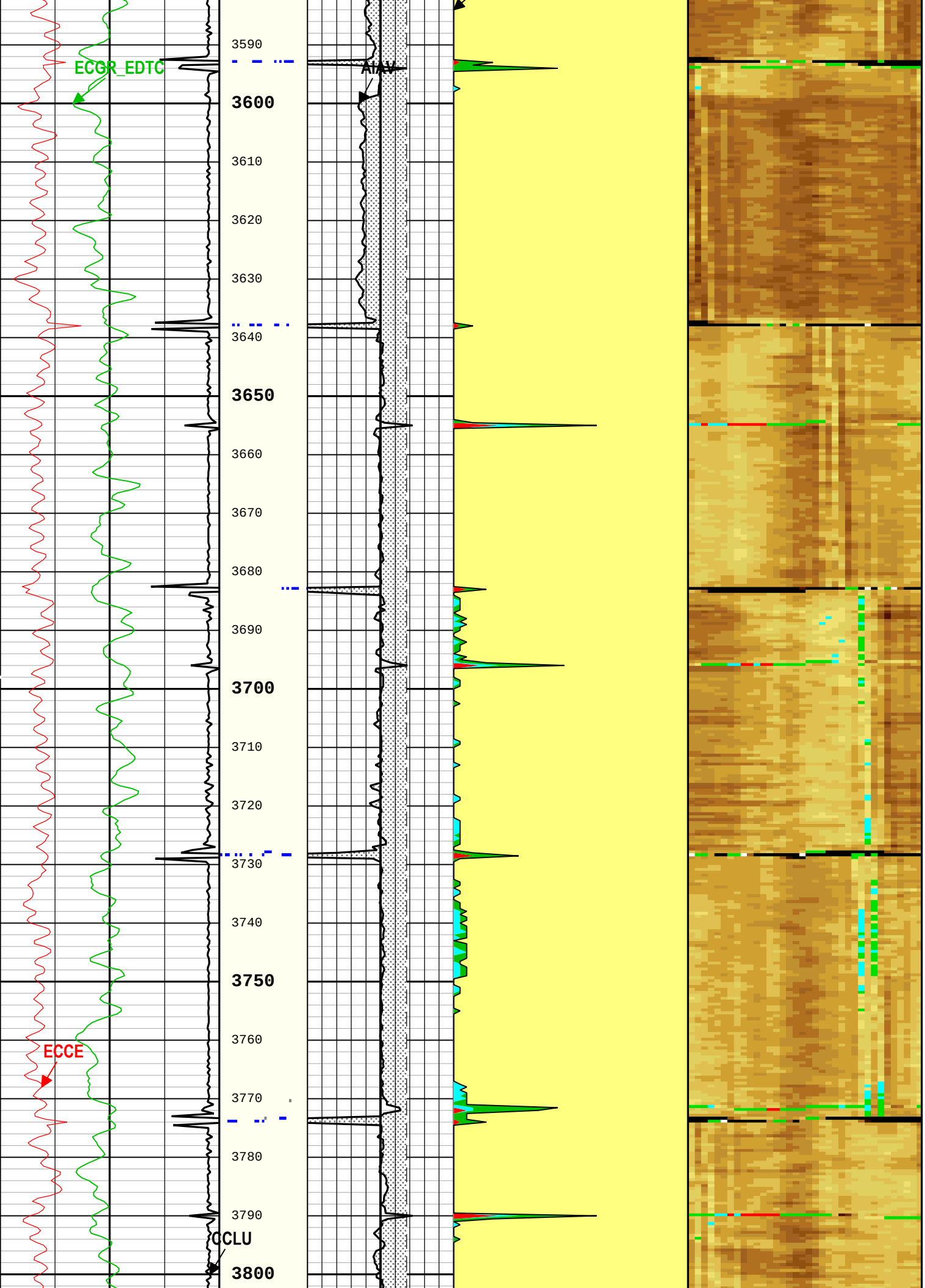
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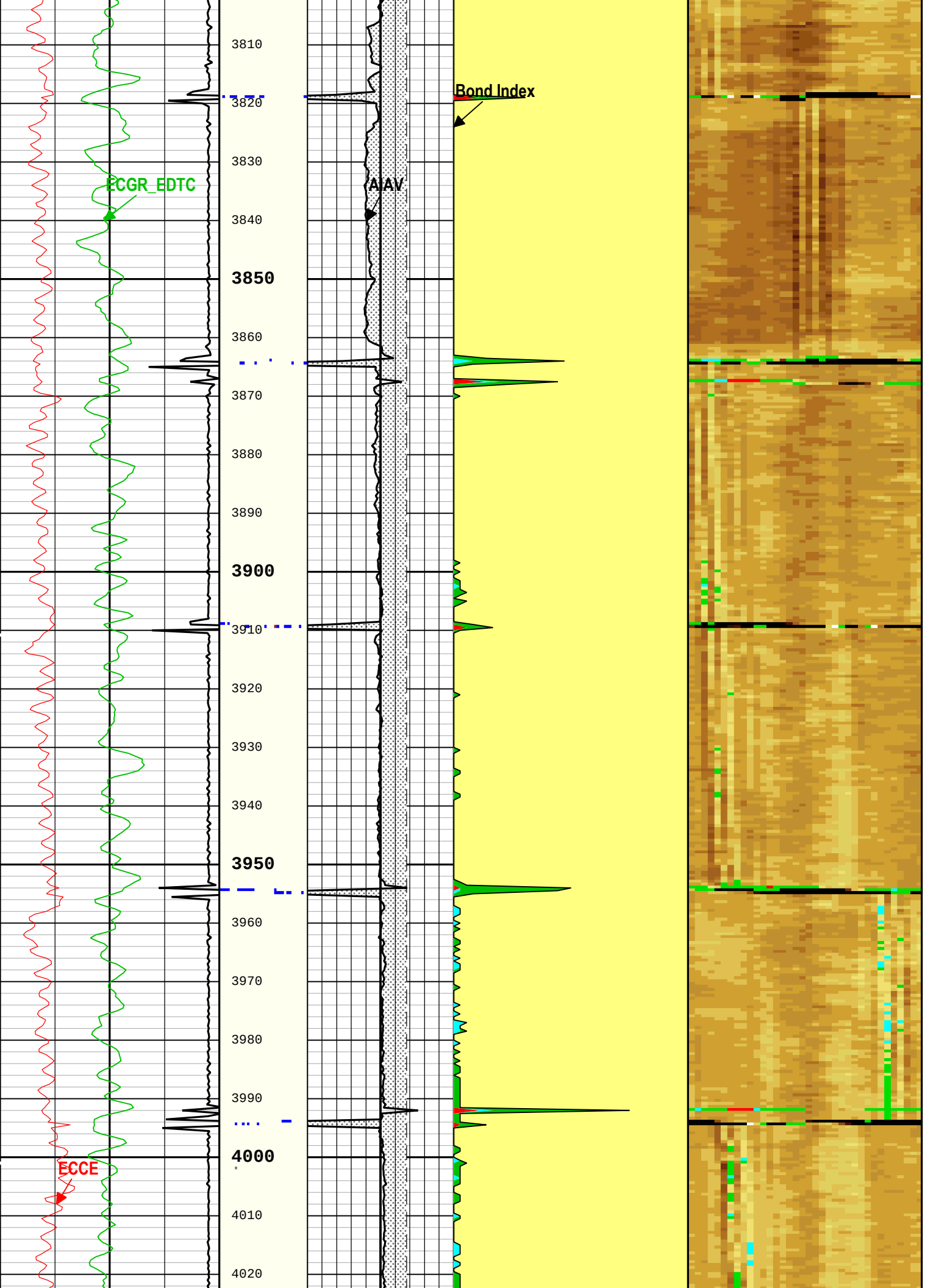
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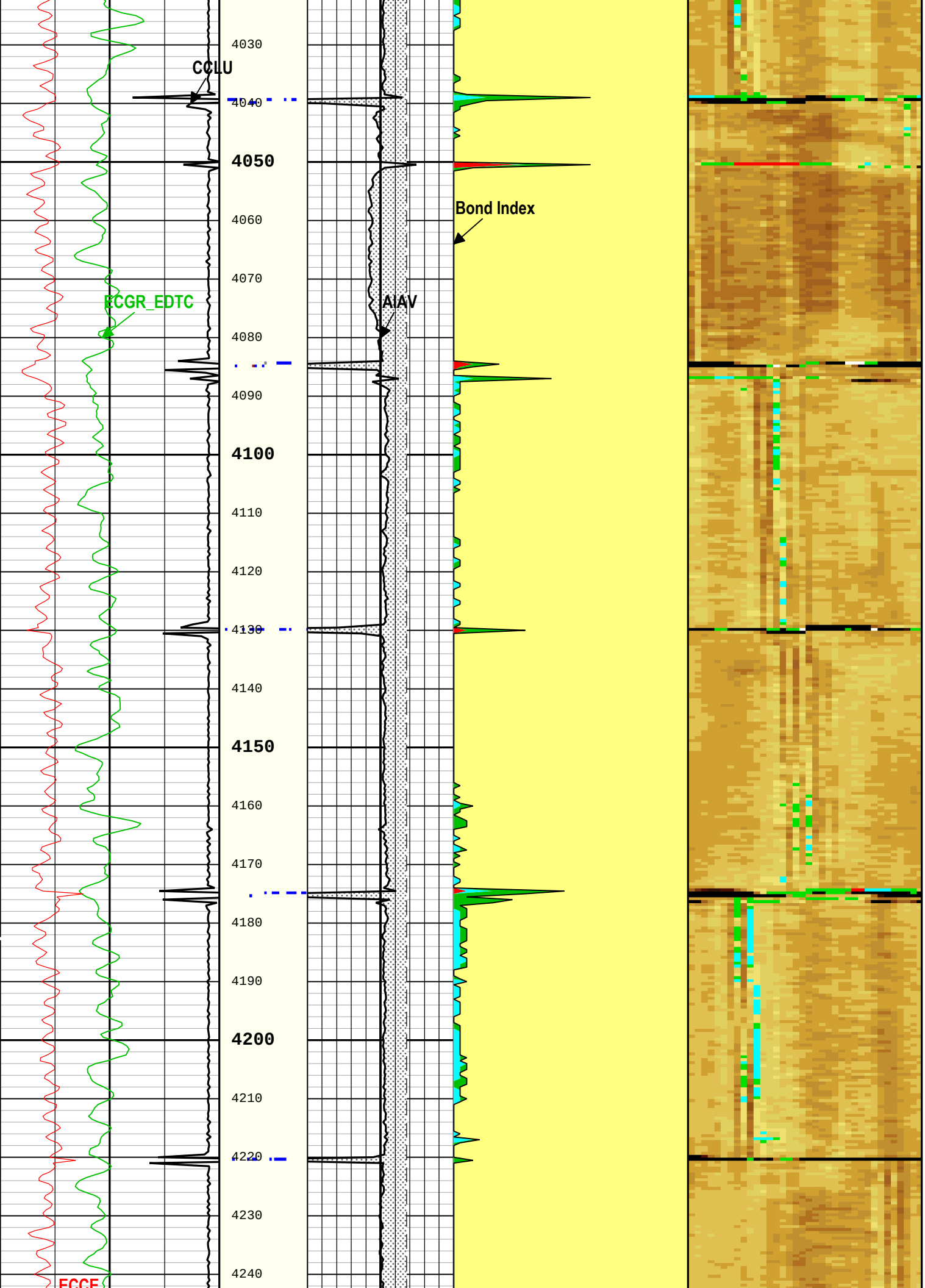
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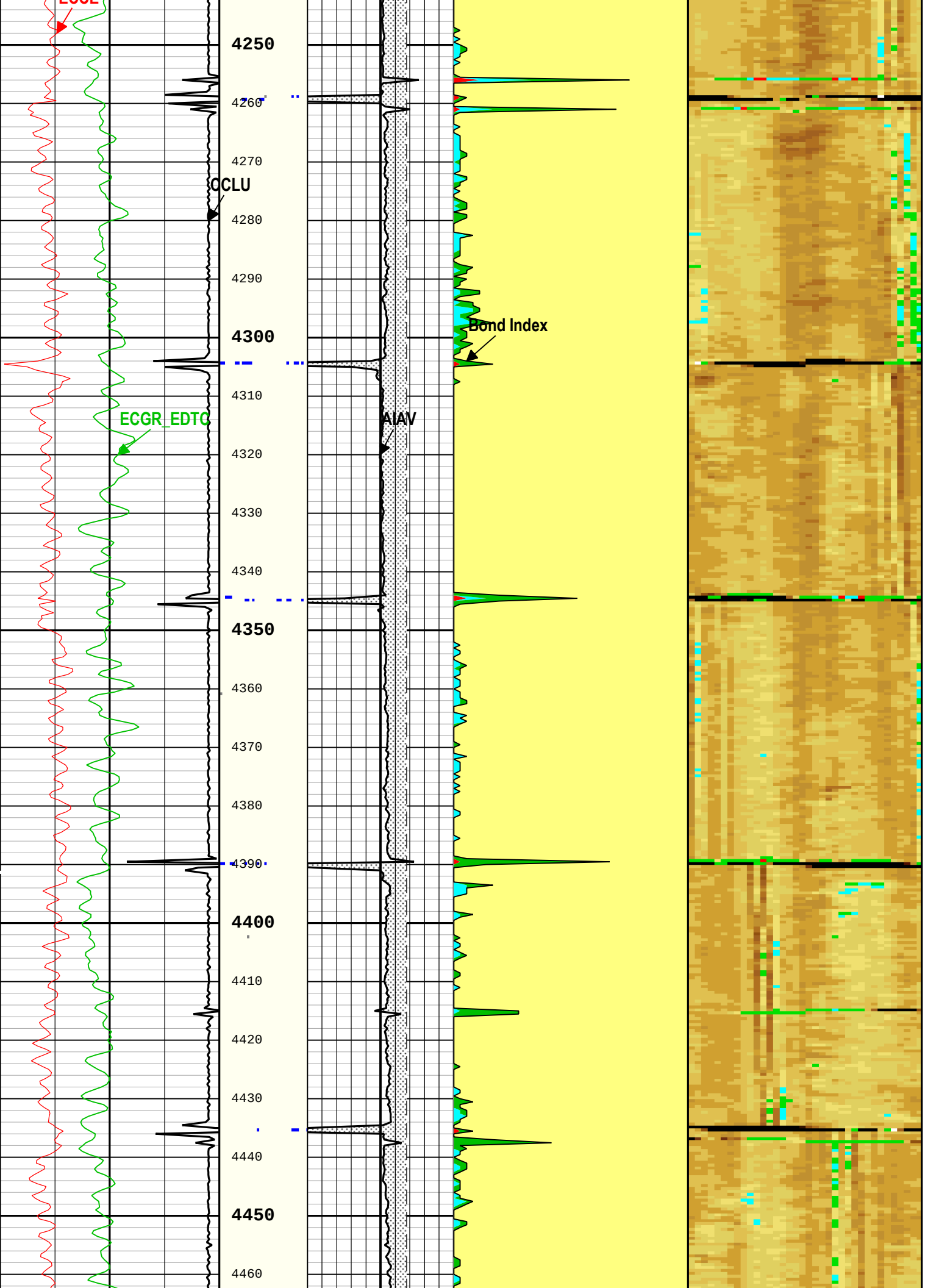
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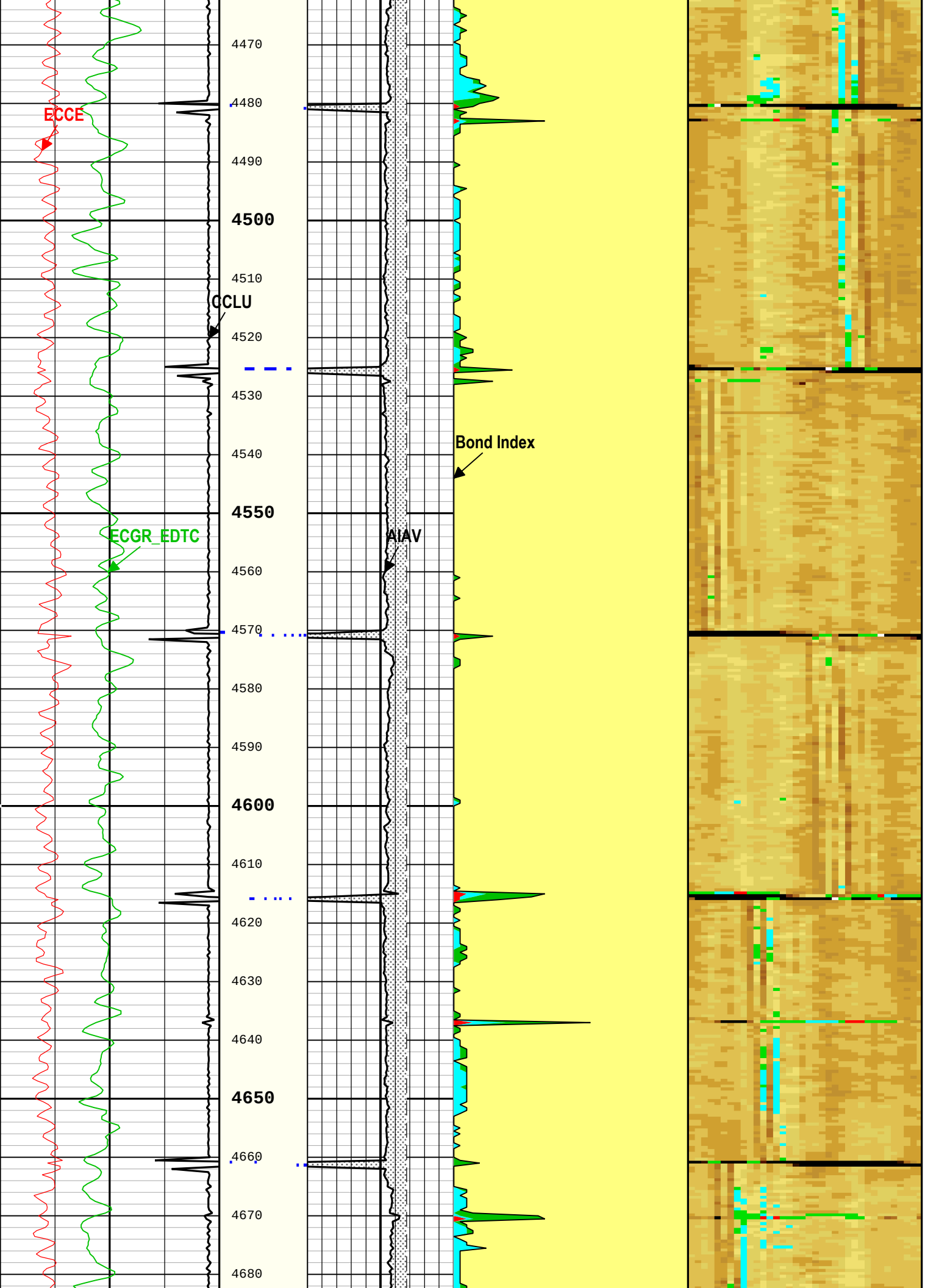
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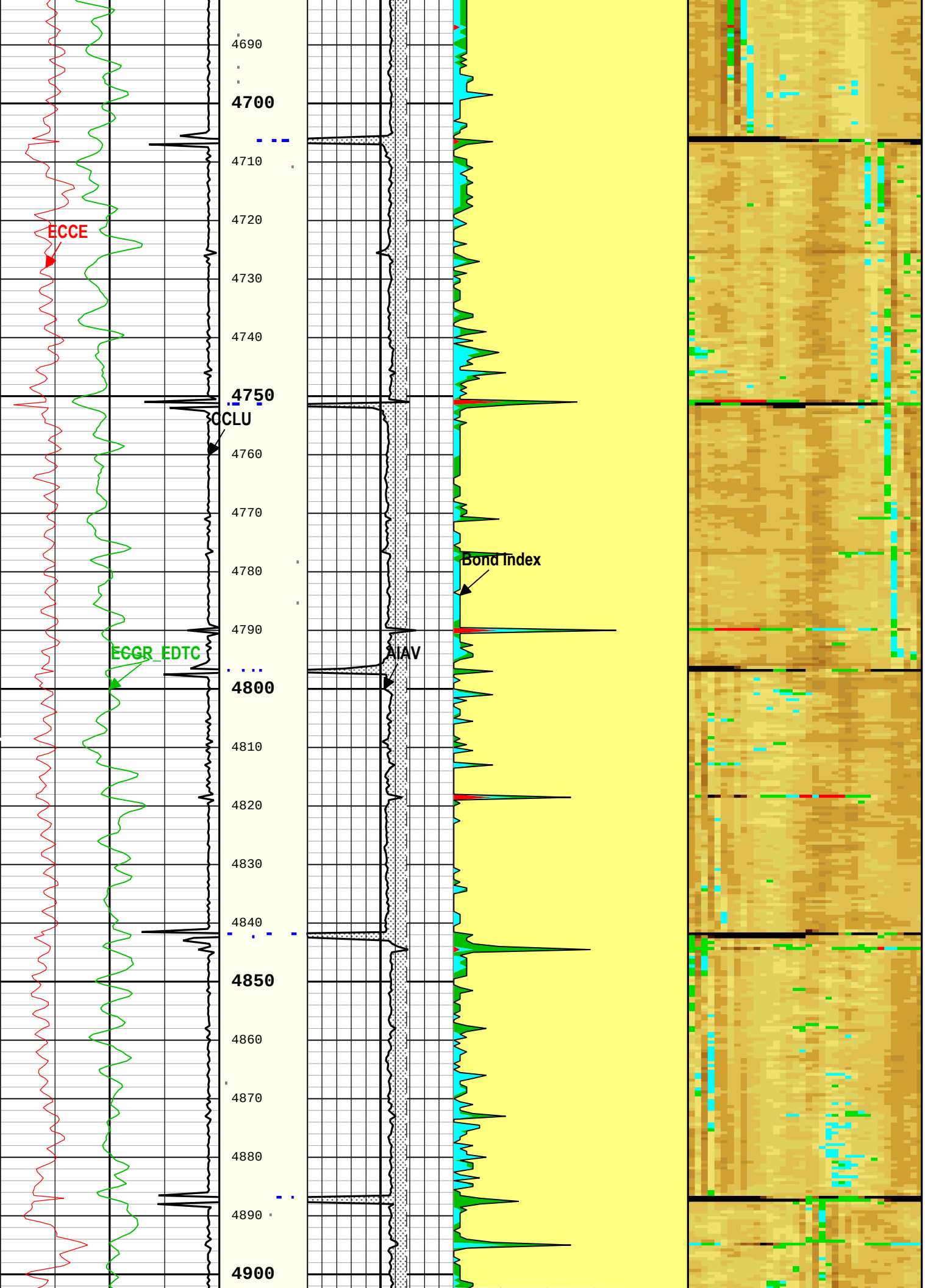
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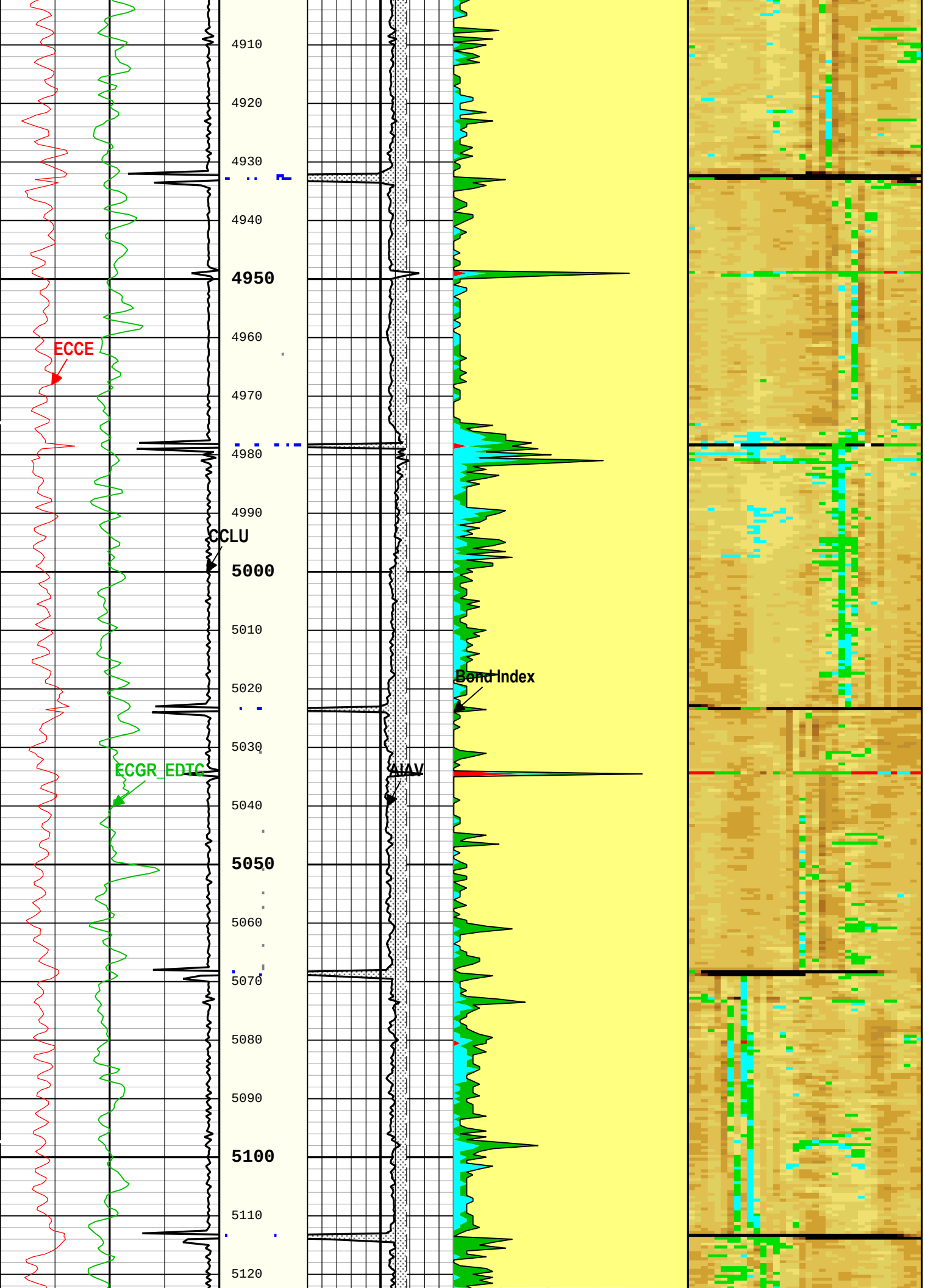
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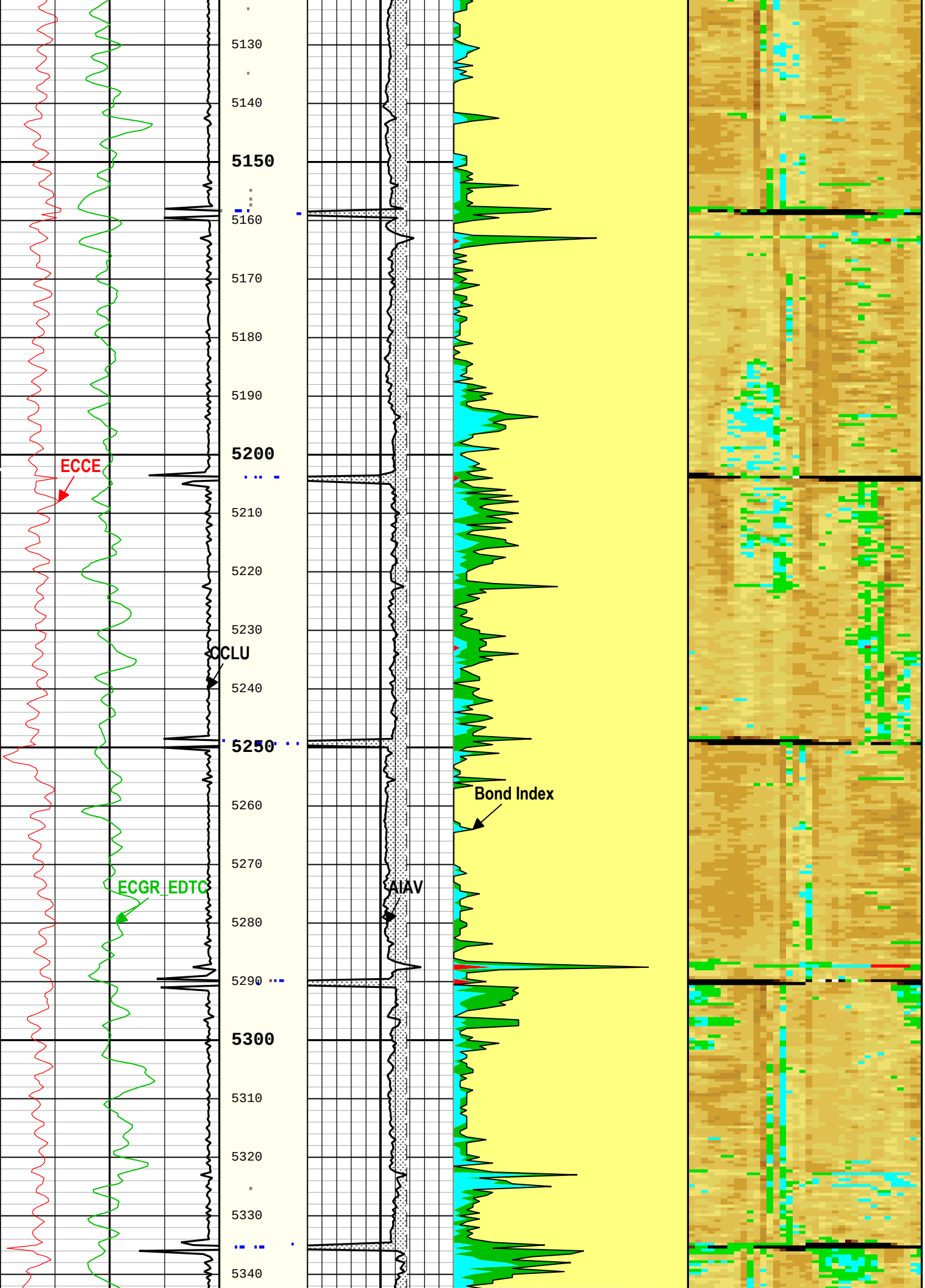
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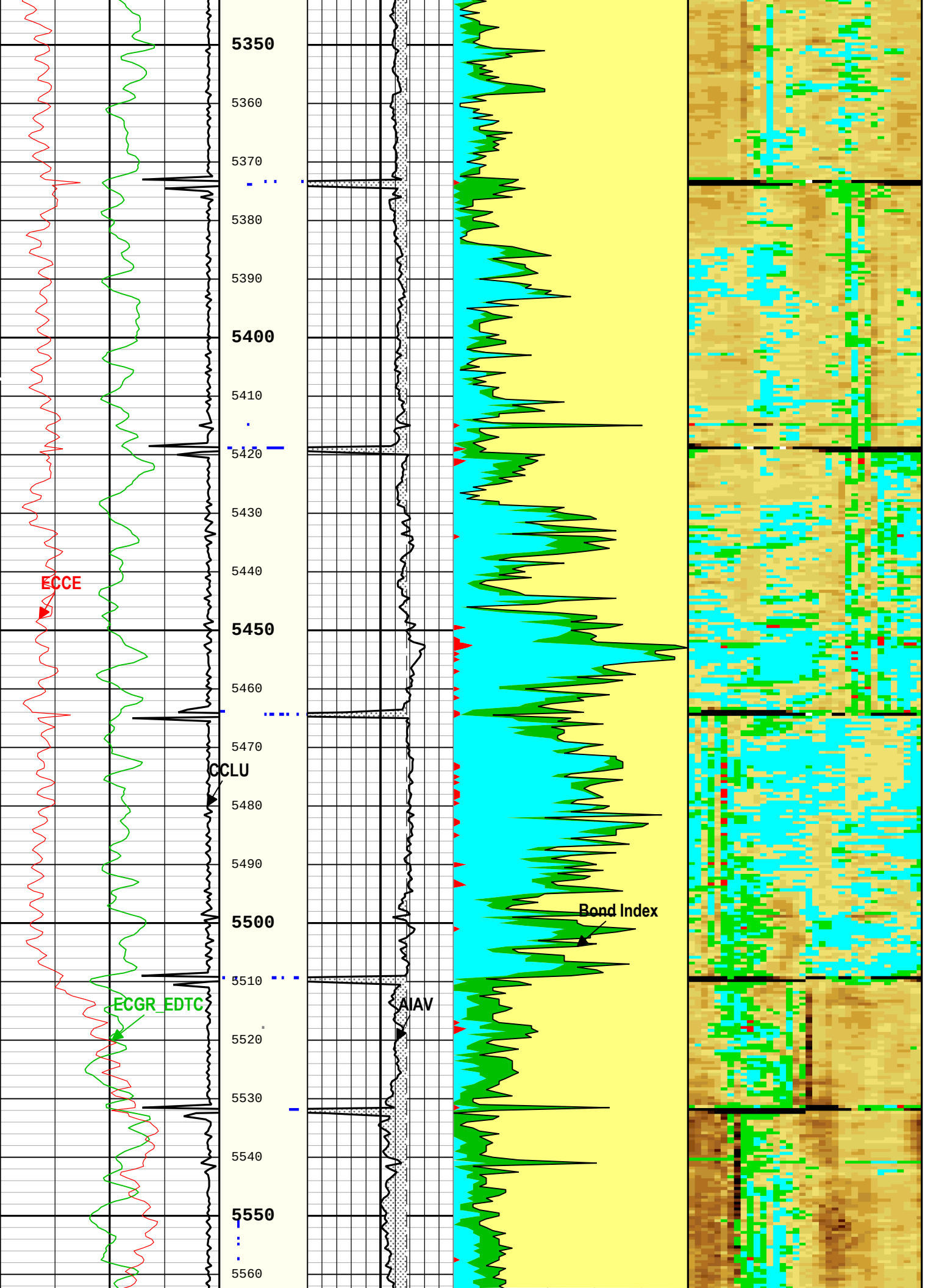
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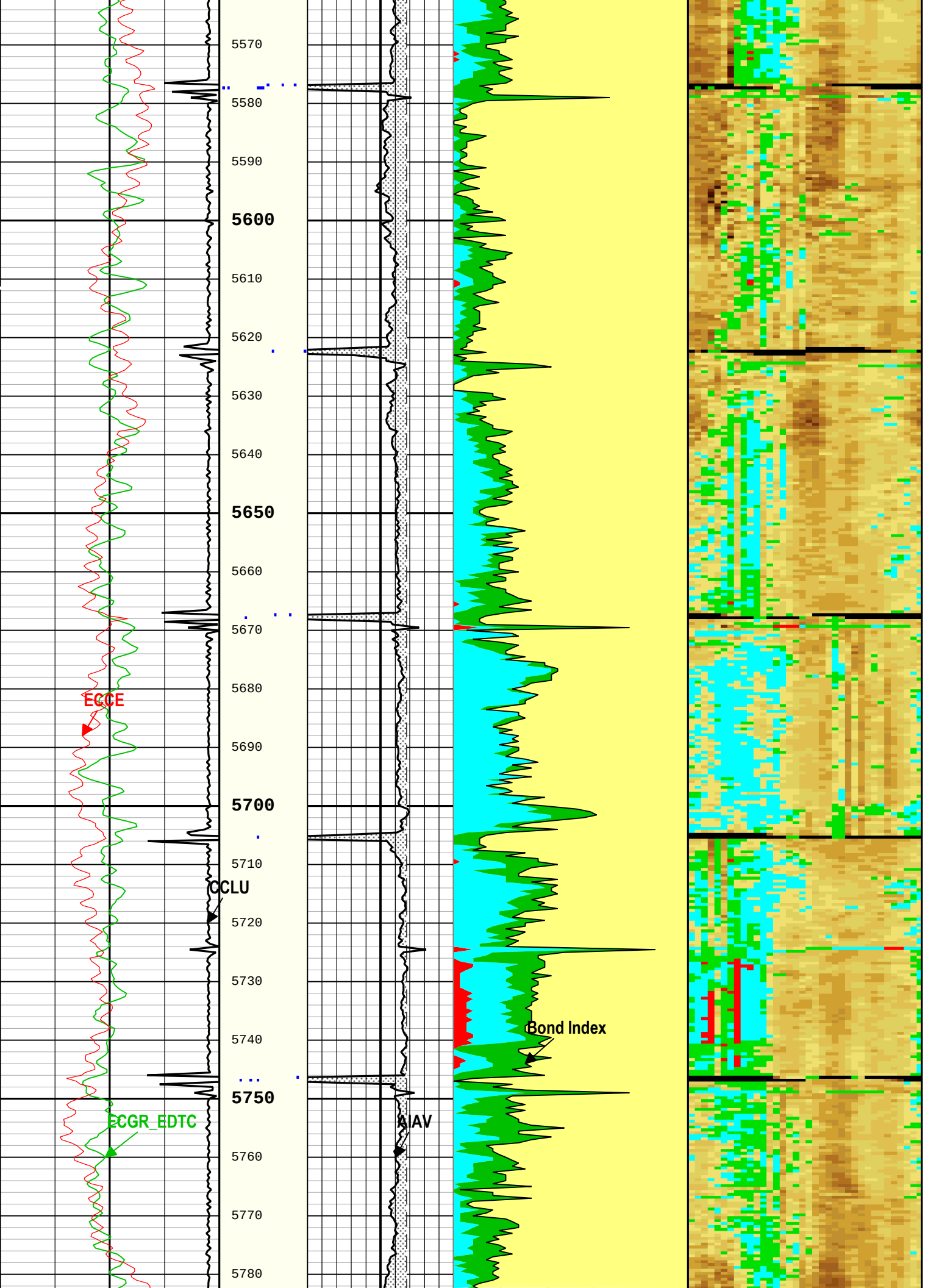
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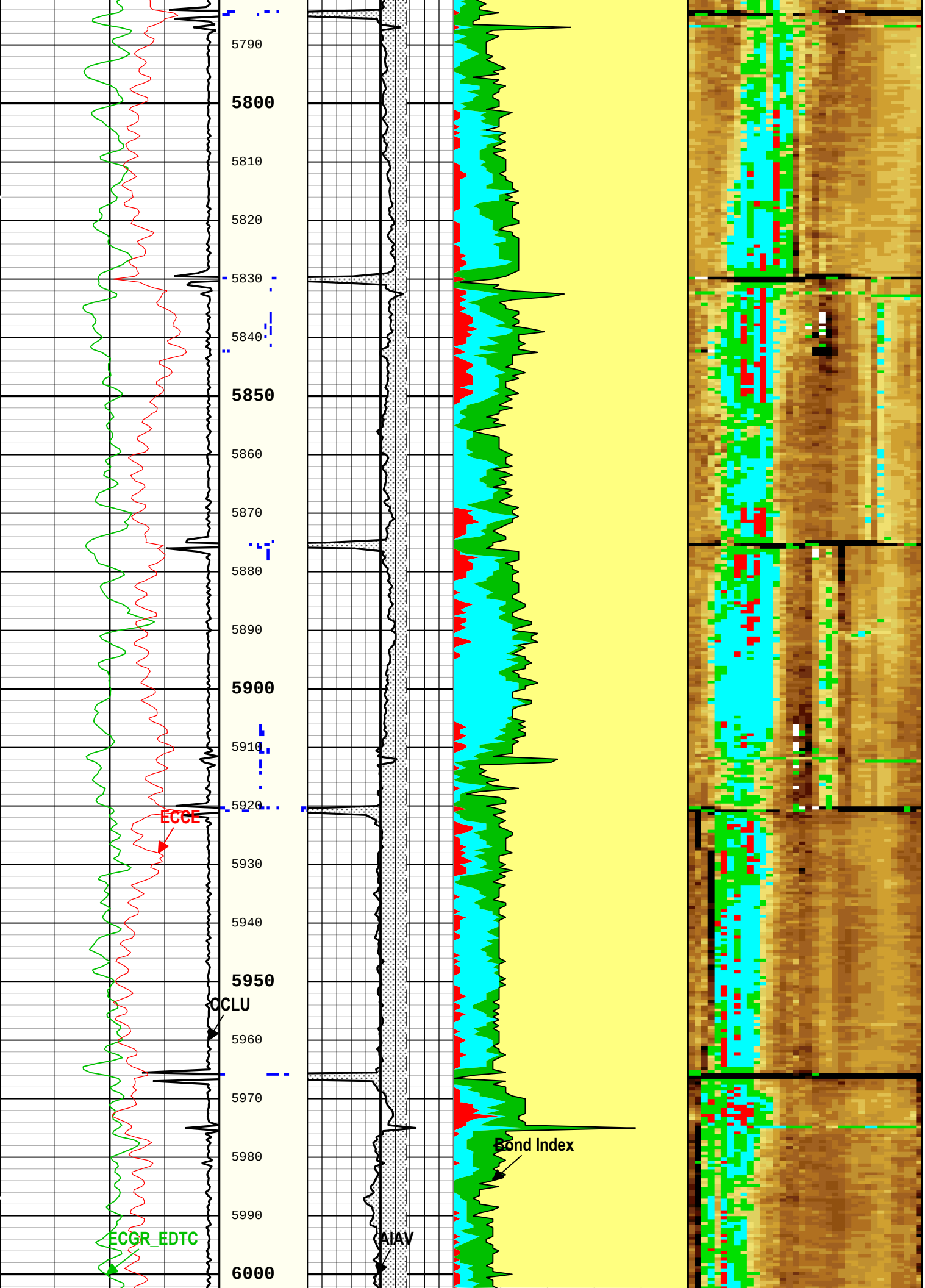
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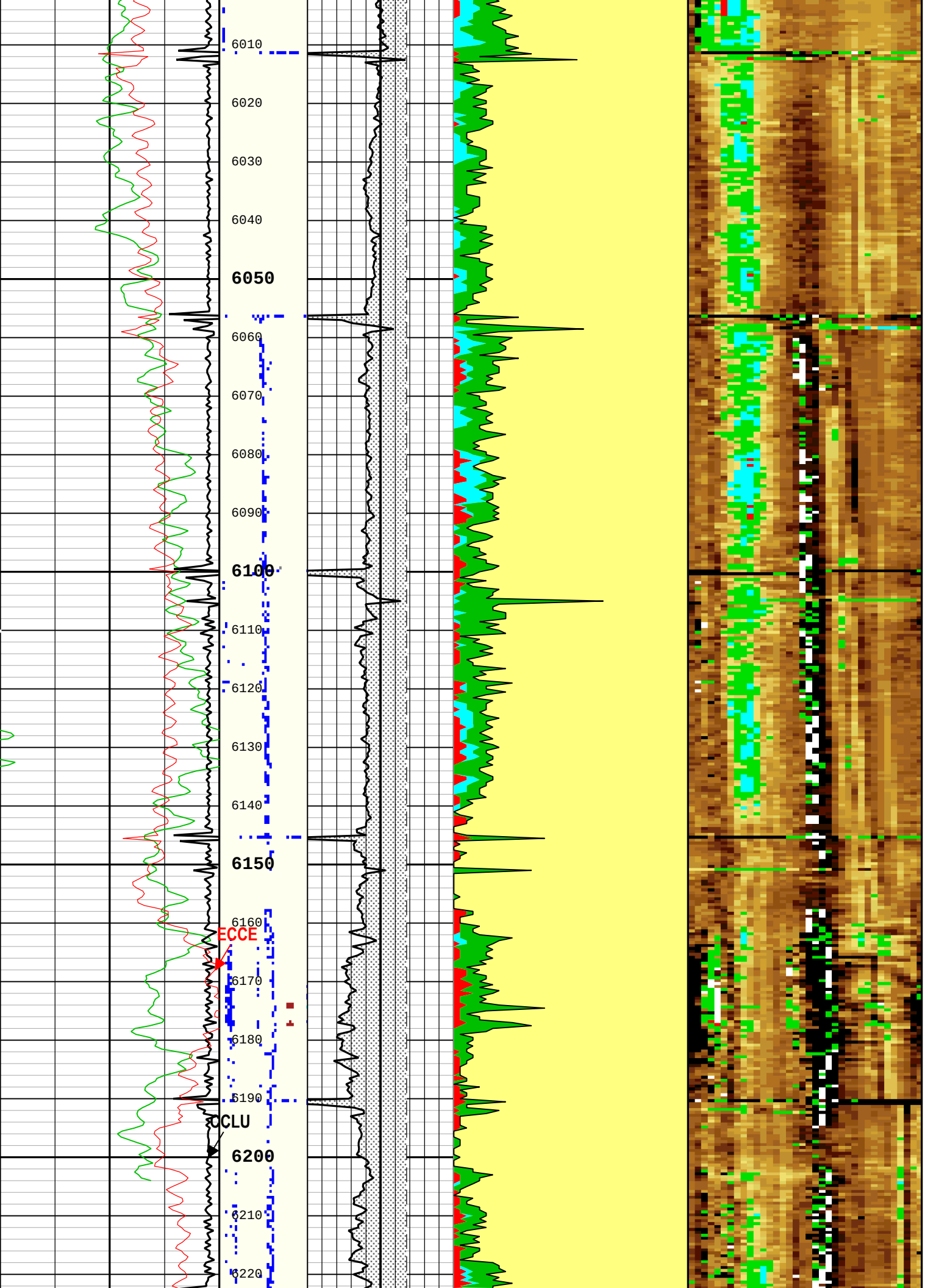
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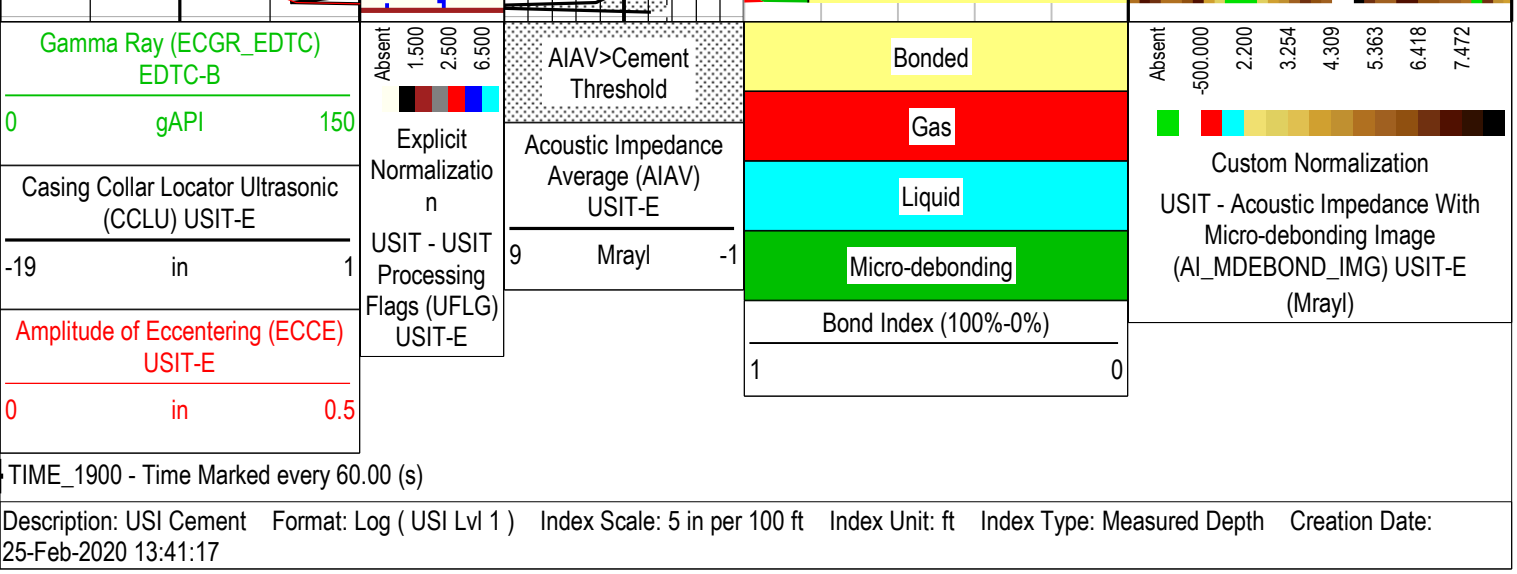


Description: USI Cement Format: Log (USI Lvl 1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 25-Feb-2020 13:41:17

Channel Processing Parameters

1: 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	9.875	in
CBLO	Casing Bottom (Logger)	WLSESSION	11265	ft
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/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)	
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.12	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.61	Mrayl
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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

1: 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
HRES	Horizontal Resolution	USIT-E	10 deg	
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz

UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 6.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	100	24-Feb-2020 16:24:06	24-Feb-2020 16:39:50	6225.02	3520.08
EMXV	50	24-Feb-2020 16:39:50	24-Feb-2020 17:01:29	3520.08	60
WINB	31.88	24-Feb-2020 16:24:06	24-Feb-2020 16:24:56	6225.02	6117.93
WINB	24.88	24-Feb-2020 16:24:56	24-Feb-2020 17:01:29	6117.93	60
WINE	71.88	24-Feb-2020 16:24:06	24-Feb-2020 16:24:58	6225.02	6112.43
WINE	76.96	24-Feb-2020 16:24:58	24-Feb-2020 16:25:03	6112.43	6101.88
WINE	80.56	24-Feb-2020 16:25:03	24-Feb-2020 17:01:29	6101.88	60

All depth are at tool zero.

1

REPEAT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1	Log[1]:Up	Up	1974.86 ft	2508.93 ft	24-Feb-2020 3:59:45 PM	24-Feb-2020 4:03:07 PM	ON	1.56 ft	No

All depths are referenced to toolstring zero

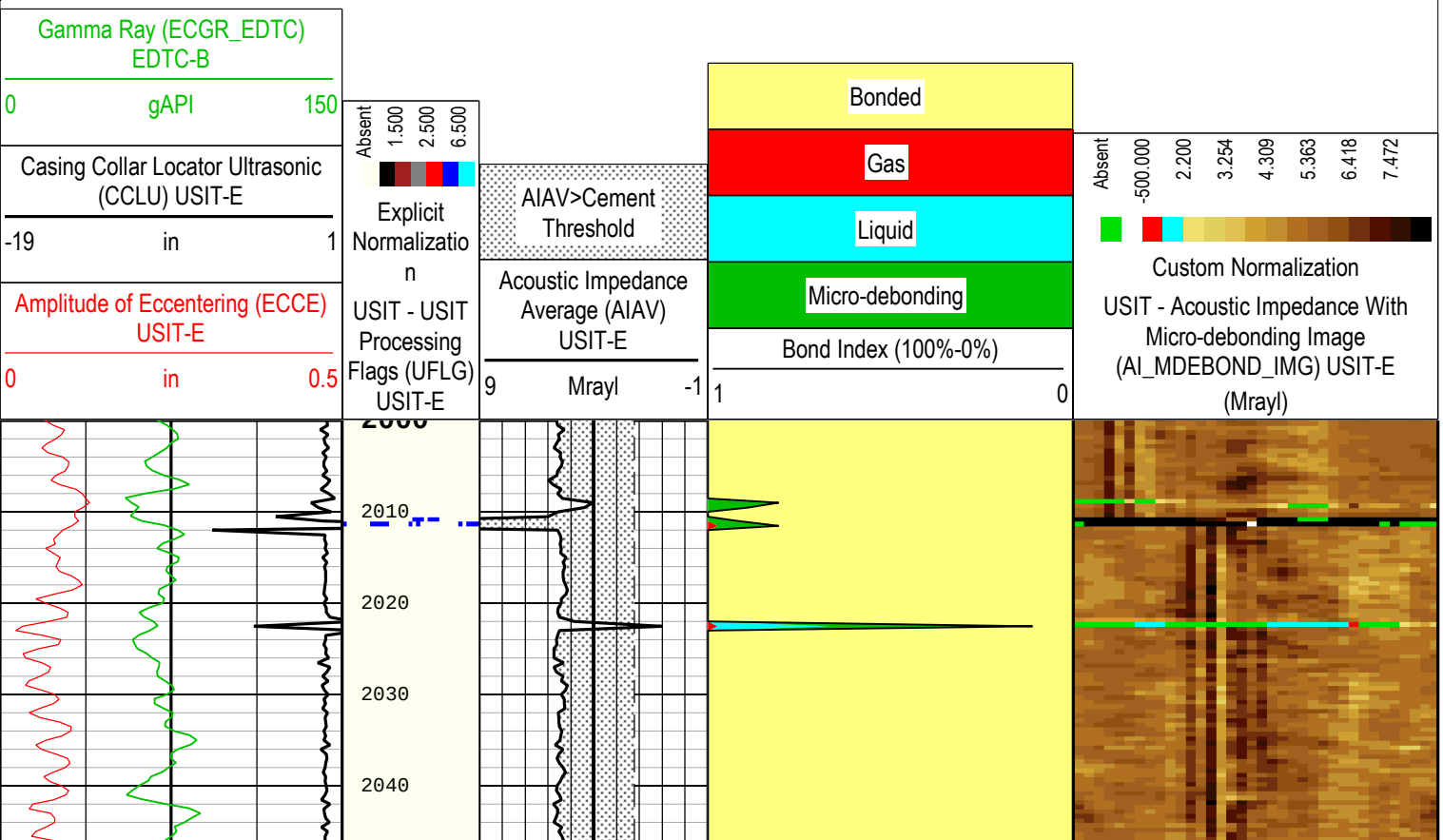
Log

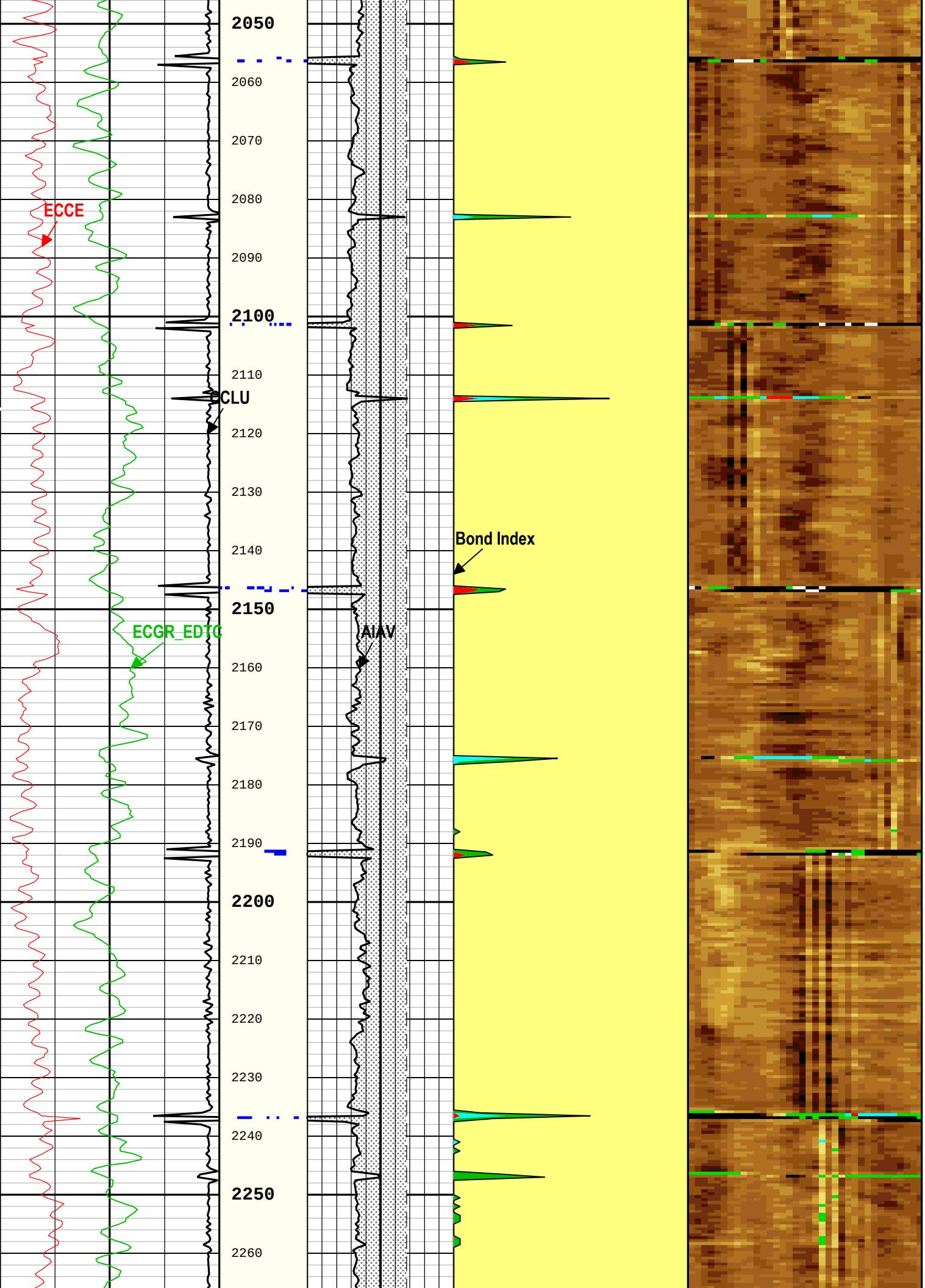
Company:Bonanza Creek Energy Well:State Antelope W42-C12-13 HNB

1: Log[1]:Up:S002

Description: USI Cement Format: Log (USI Lvl 1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 25-Feb-2020 13:41:33

TIME_1900 - Time Marked every 60.00 (s)

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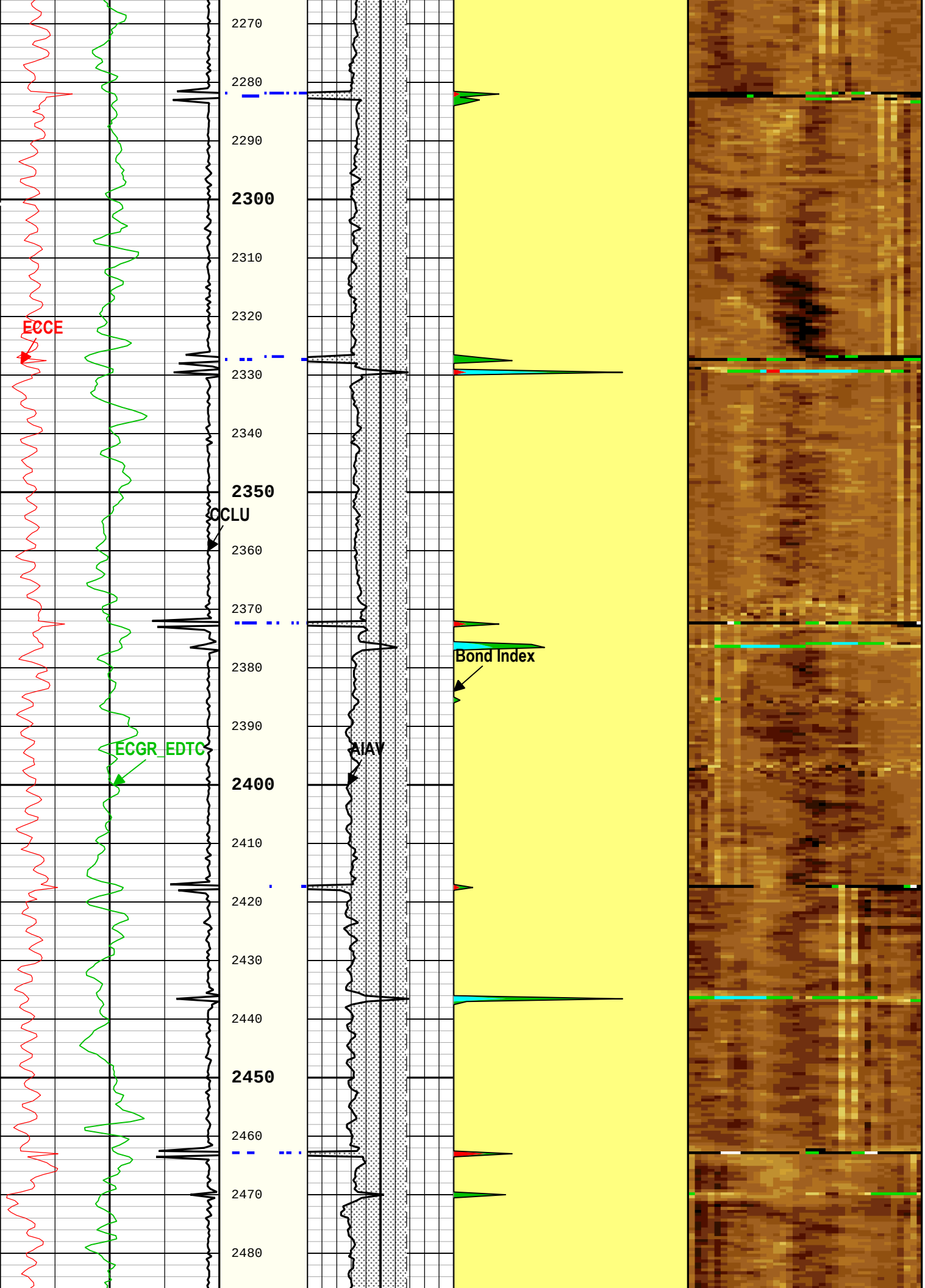
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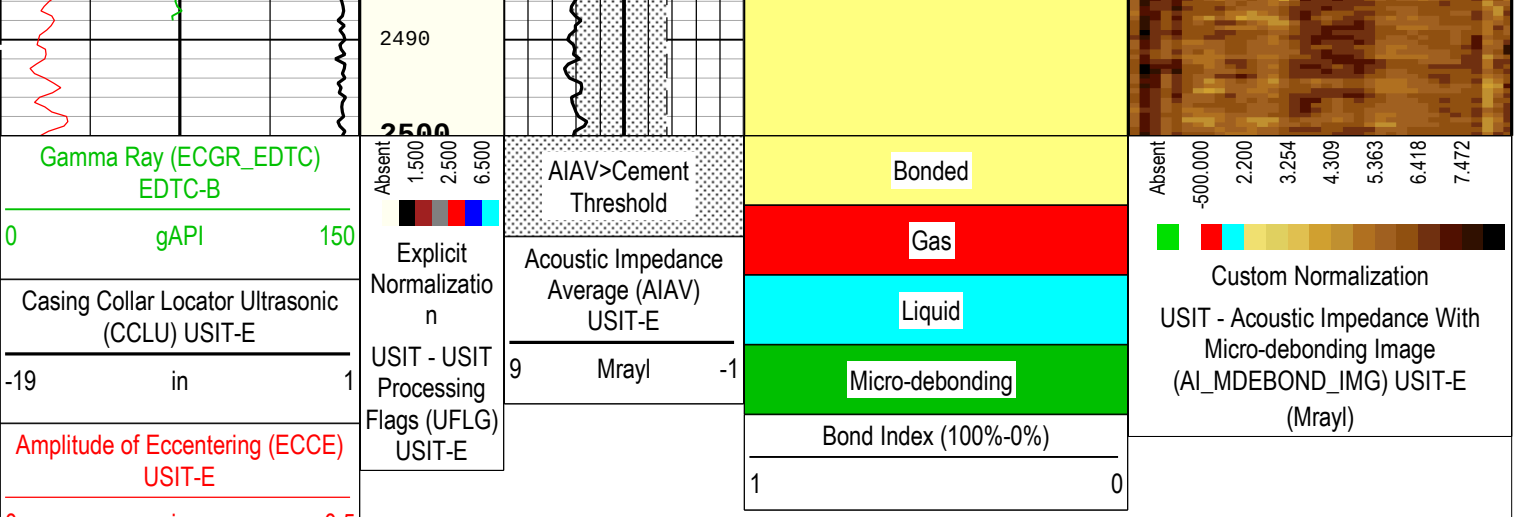

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Cement Format: Log (USI Lvl 1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 25-Feb-2020 13:41:33

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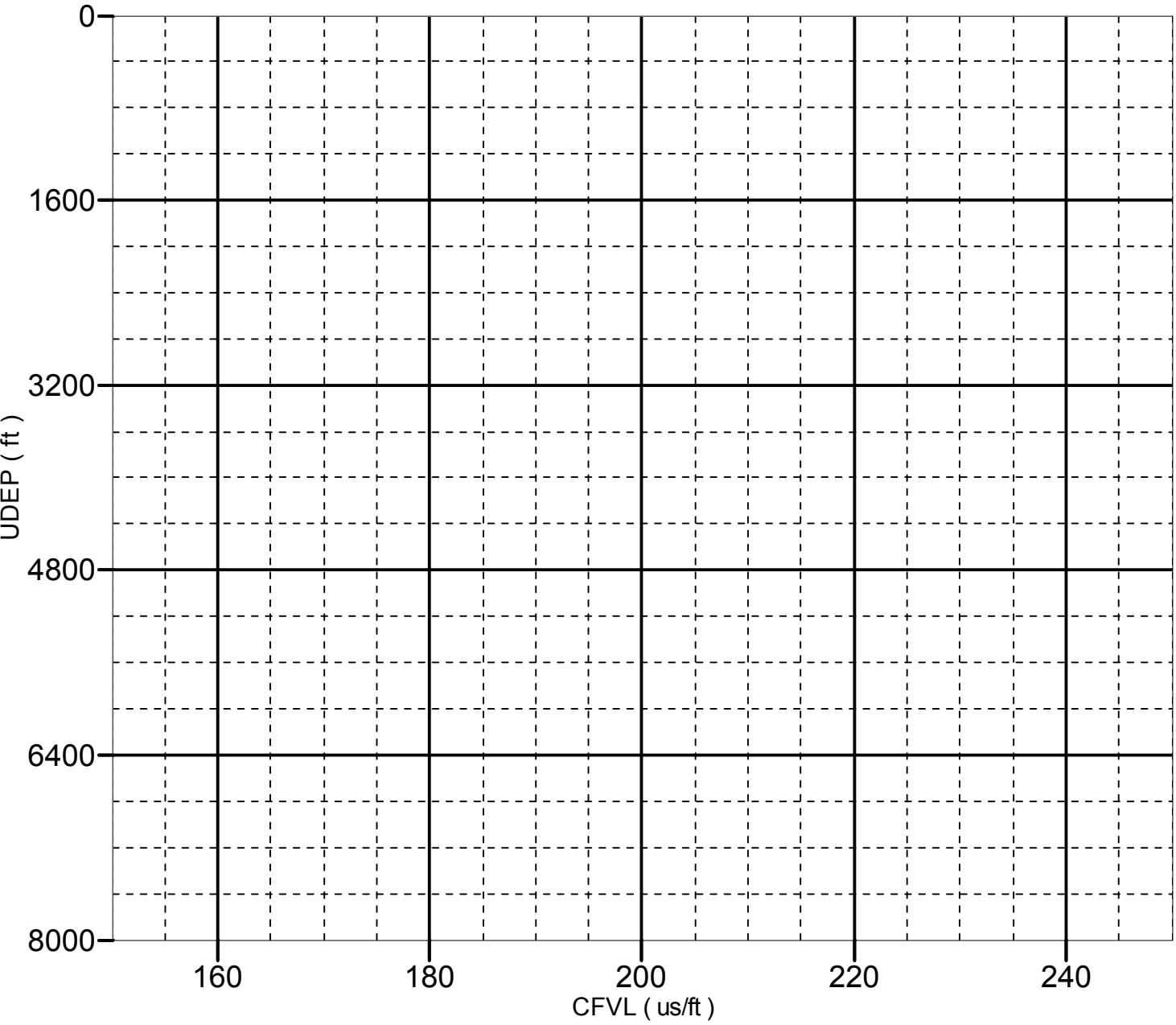
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From to ft

● CFVL-UDEP (CFVL,UDEP : Data Not Found)



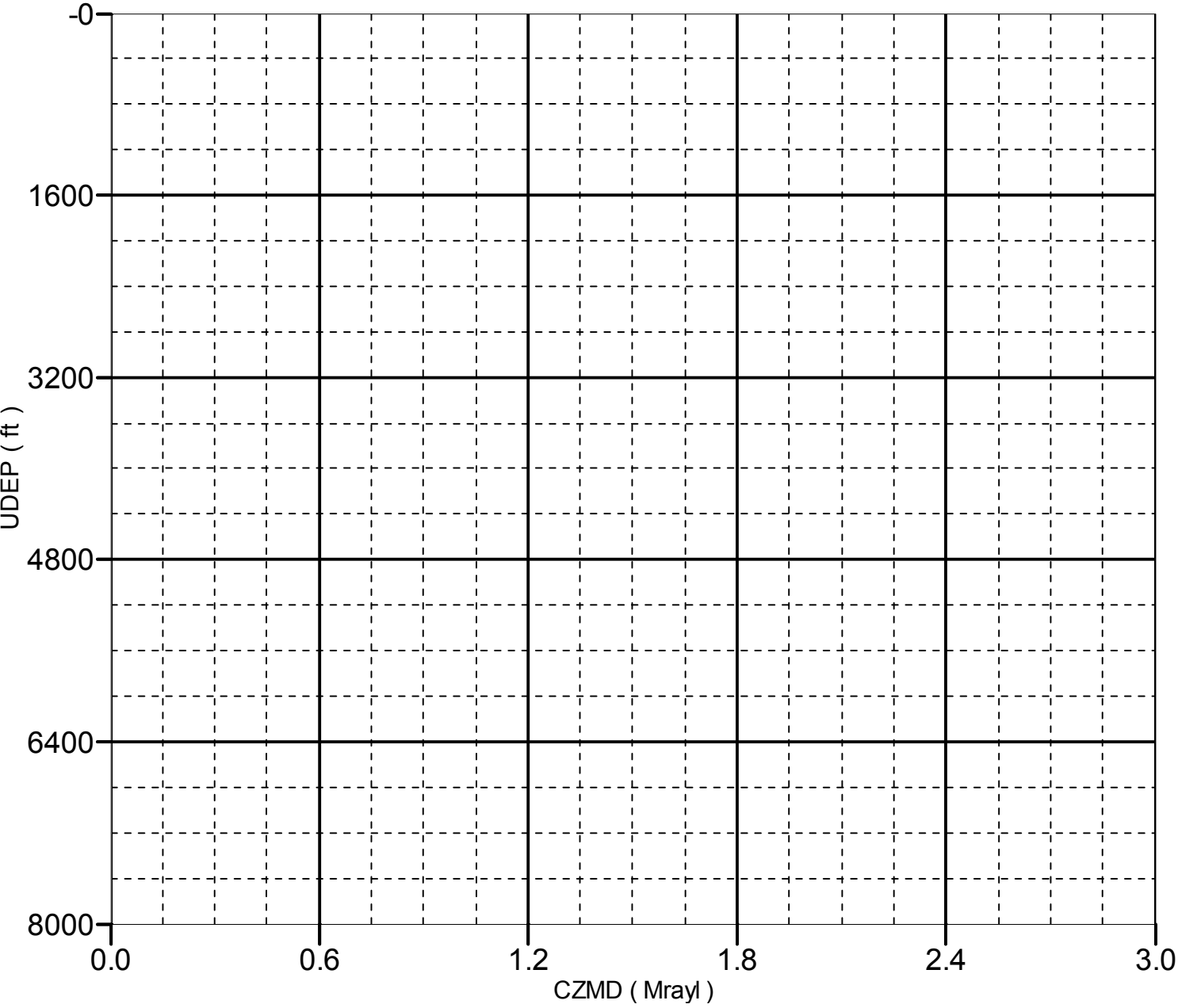
Acoustic Impedance of Mud vs Depth

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From to ft

● CZMD-UDEP (CZMD,UDEP : Data Not Found)



Company:	Bonanza Creek Energy
Well:	State Antelope W42-C12-13 HNB
Field:	Wattenberg
County:	Weld
State:	Colorado

Schlumberger

UltraSonic Summary Print