

Company: Bonanza Creek Energy

Well: State Antelope X44-D14-13 HNC

Field: Wattenberg

County: Weld State: Colorado

UltraSonic Summary Print

County:		Weld	
Field:		Wattenberg	
Location:		SENE Sec. 13, T5N-R62W	
Well:		State Antelope X44-D14-13 HNC	
Company:		Bonanza Creek Energy	
Location:		SENE Sec. 13, T5N-R62W	
		2667' FNL 510' FEL	
		Elev.: K.B. 4590.00 ft	
		G.L. 4573.00 ft	
		D.F. 4590.00 ft	
Permanent Datum:		Ground Level	
Log Measured From:		Kelly Bushing	
Drilling Measured From:		Kelly Bushing	
API Serial No.		Section:	
05-123-50292		13	
		Township:	
		5N	
		Range:	
		62W	

Run Number	1	
Depth Driller	11564.00 ft	
Schlumberger Depth	11564.00 ft	
Bottom Log Interval	6460.00 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	11564.00 ft	
Casing/Tubing Size	5.5 in	
Weight	20 lbm/ft	
Grade	N/A	
From	0.00 ft	
To	11564.00 ft	
Max Recorded Temperatures	165.55 degF	
Logger on Bottom	24-Feb-2020	14:42:00
Unit Number	Location:	
Recorded By	Alan Tolentino	Fort Morgan
Witnessed By	Kurt Dodge	

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.

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10. 1 MAIN COMPRESSED

10.1 Integration Summary

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11. 1 MAIN

11.1 Integration Summary

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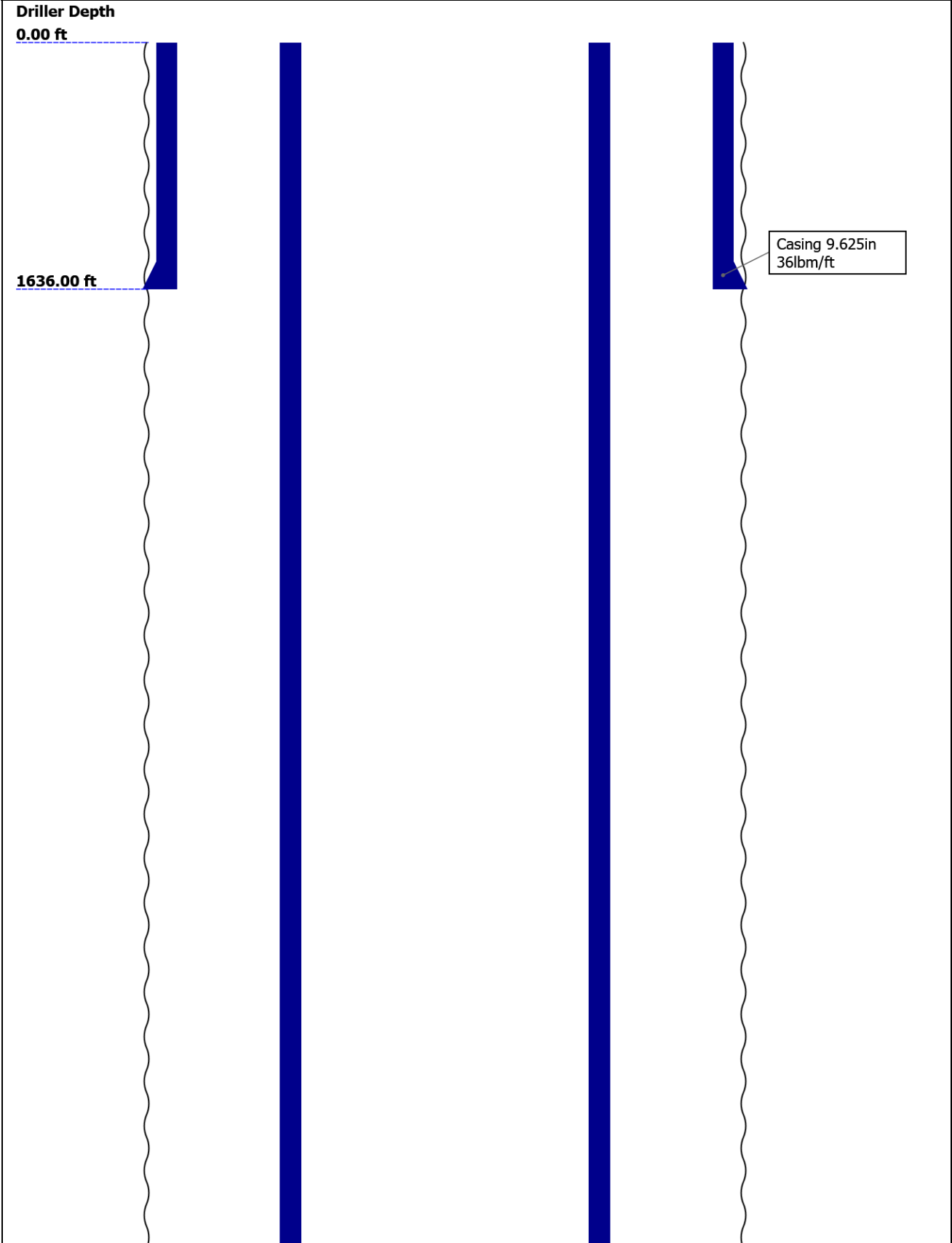
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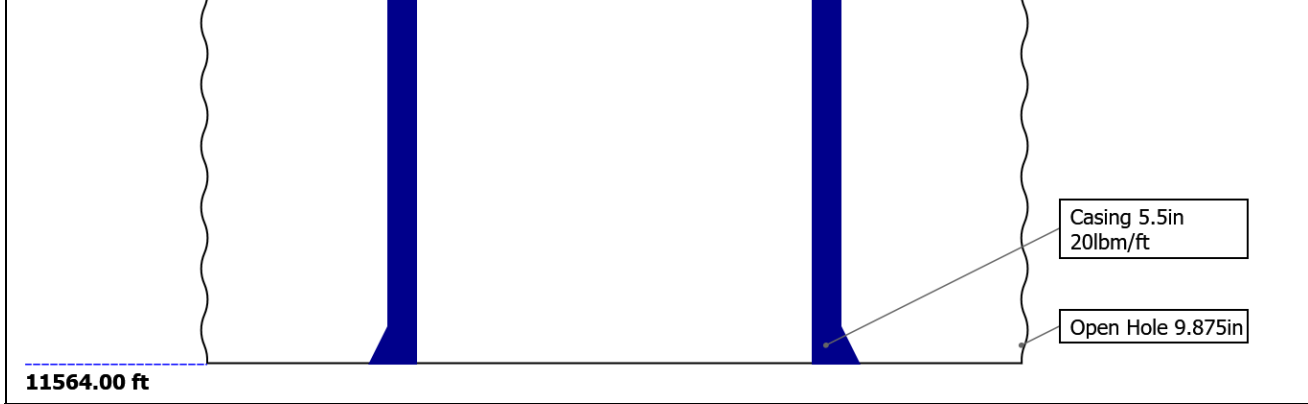
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15. Tail

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  - 12.1 Integration Summary
  - 12.2 Composite Summary
  - 12.3 Log ( USI Lvl 1 )
  - 12.4 Parameter Listing

Well Sketch




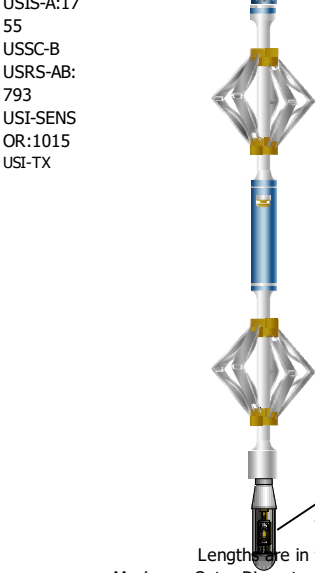


Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	9.875					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	11564					
Bottom Logger ( ft )	11564					
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 )	1636	11564				
Bottom Logger ( ft )	1636	11564				

Remarks and Equipment Summary

1: Toolstring			1: Remarks
<div><div><div>Equip nameLengthMP nameOffset</div><div>LEH-QT29.44LEH-QT</div><div>EDTC-B25.96EDTH-BEDTG-AEDTC-B</div><div>AH-184[2]19.46</div><div>AH-184[1]17.46</div><div>USIT-E:184315.46ECH-MFA:2828USAC-A:1843USIT-A:17</div></div><div></div><div><div>CTEM22.46</div><div>ACCZ0.00</div><div>HV0.00</div><div>Gamma20.59</div><div>Ray</div><div>TelStatu19.46</div><div>s</div></div></div>	Logging objective: Casing and cement evaluation.		
	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.		



USI Sen 0.37  
sor  
TOOL\_ZERO  
Head Te  
nsion  
Lengths are in ft  
Maximum Outer Diameter = 3.625 in  
Line: Sensor Location, Value: Gating Offset  
All measurements are relative to TOOL\_ZERO

## 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

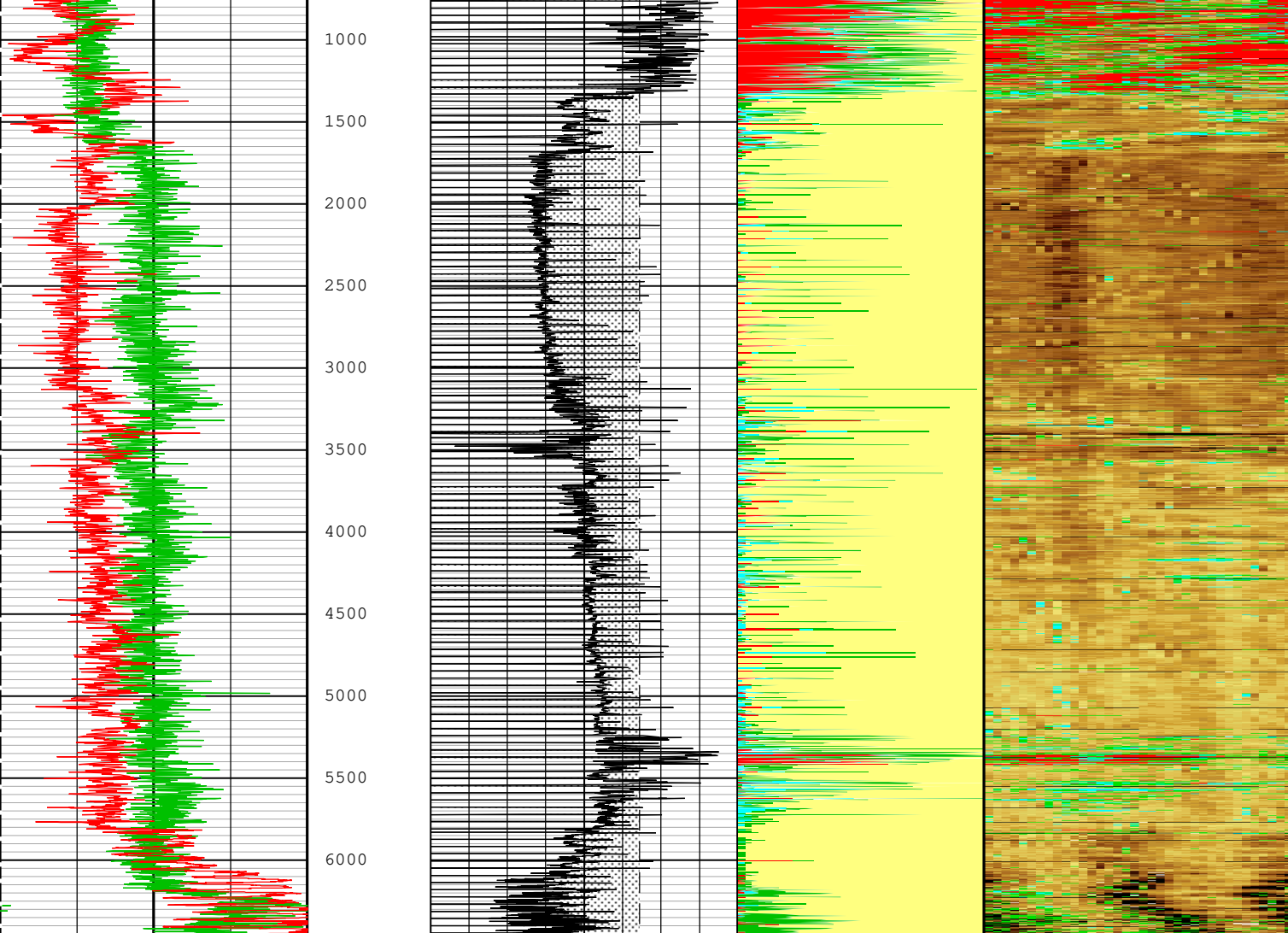
Log Sequence	First Log In the Well
Rig Up Length At Surface	
Rig Up Length At Bottom	
Rig Up Length Correction	
Stretch Correction	
Tool Zero Check At Surface	

### Depth Control Remarks

Schlumberger depth control procedures followed.
IDW used as primary depth control system.
Z-chart used as secondary depth control system.

## Survey Record





Gamma Ray (ECGR_EDTC) EDTC-B		
0	gAPI	150
Amplitude of Eccentering (ECCE) USIT-E		
0	in	0.5

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

Bonded
Gas
Liquid
Micro-debonding

Absent	-500.000	2.200	3.254	4.309	5.363	6.418	7.472
Custom Normalization							
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)							

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 12:27:41

1

MAIN

## Software Version

Acquisition System	Version
Maxwell 2019.2	9.2.113335.3100

## Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1	Log[3]:Up	Up	46.51 ft	6469.98 ft	24-Feb-2020 2:02:35 PM	24-Feb-2020 2:42:32 PM	ON	4.69 ft	No

All depths are referenced to toolstring zero

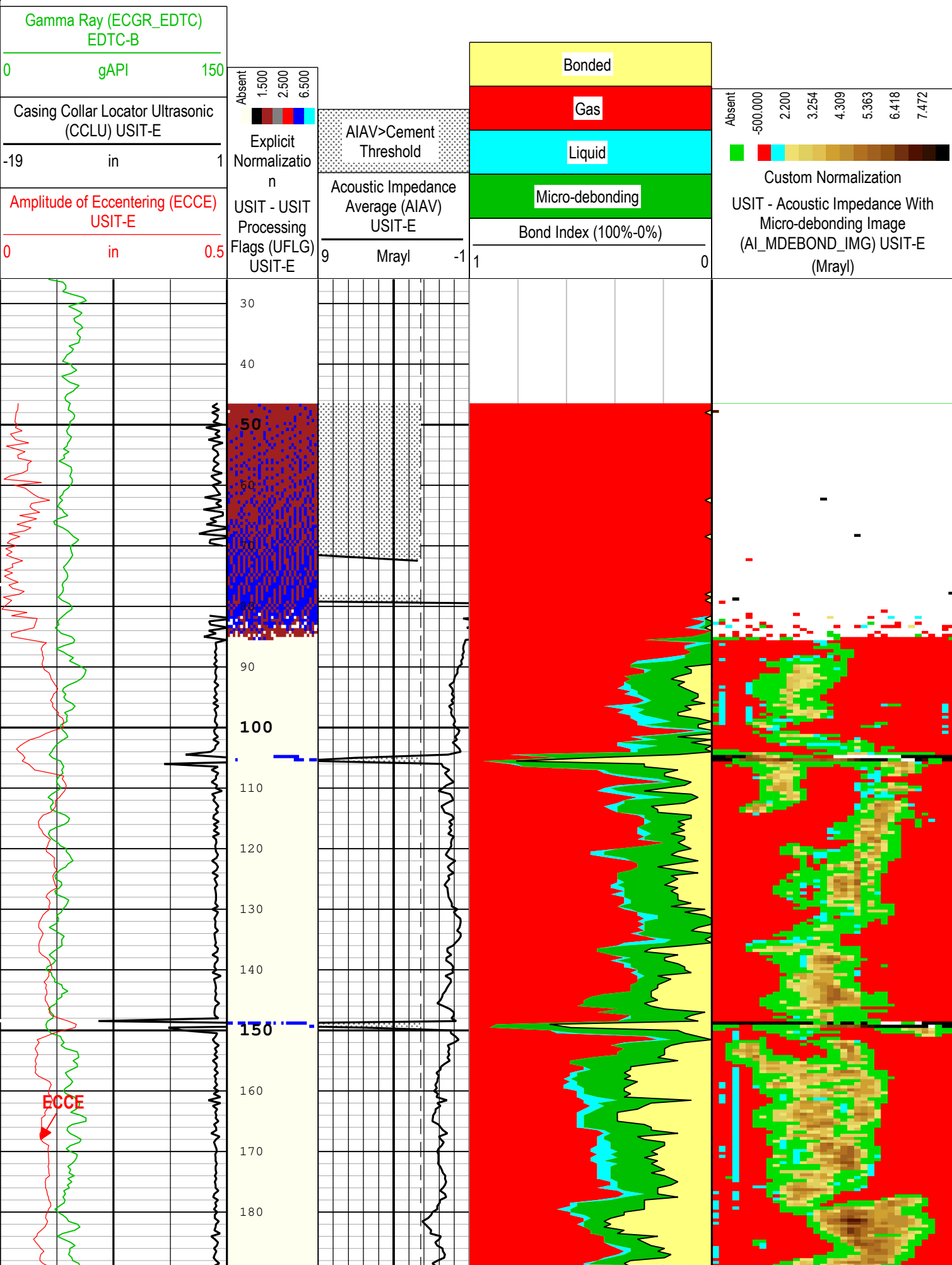
Log

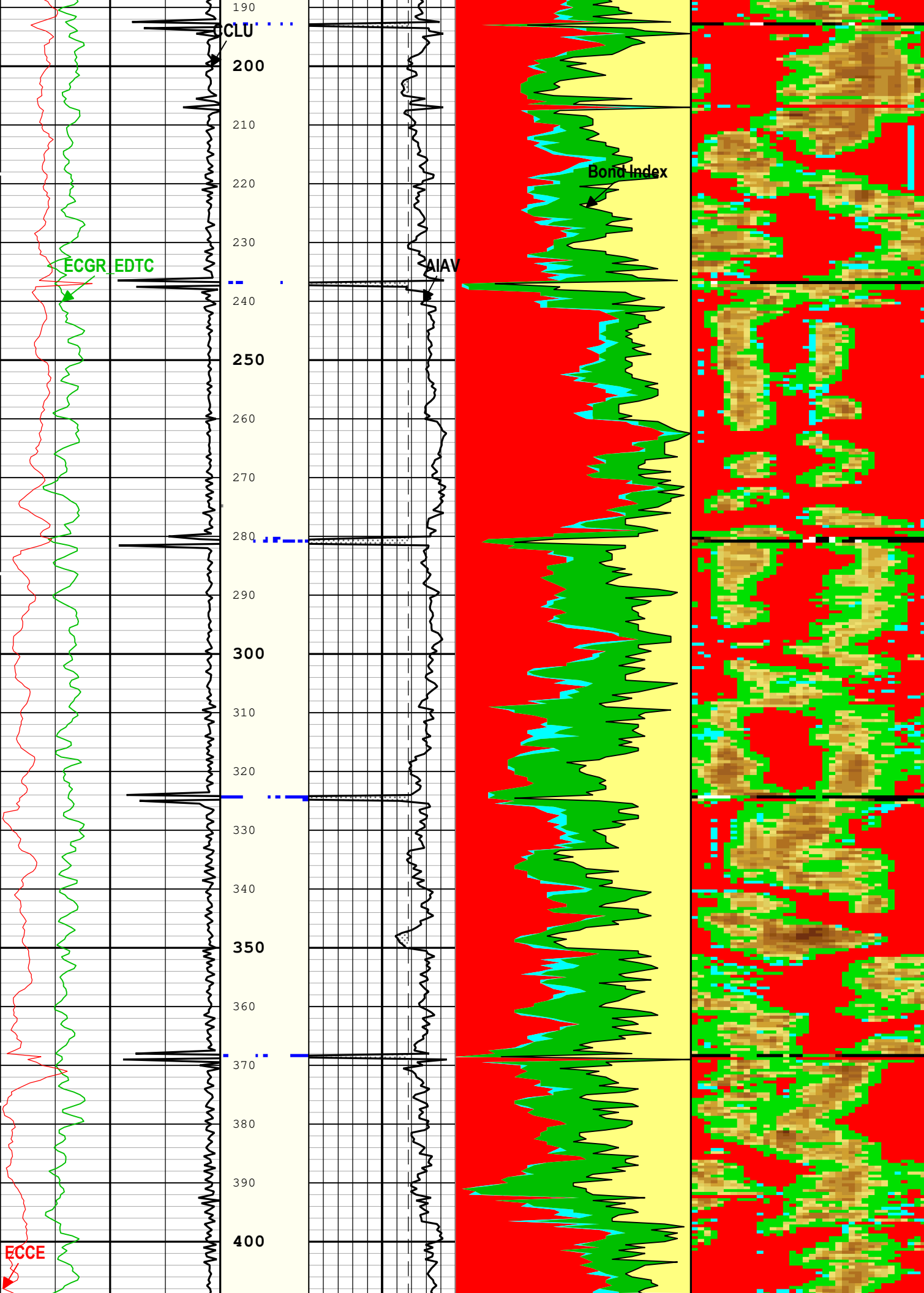
Company: Bonanza Creek Energy

Well: State Antelope X44-D14-13 HNC

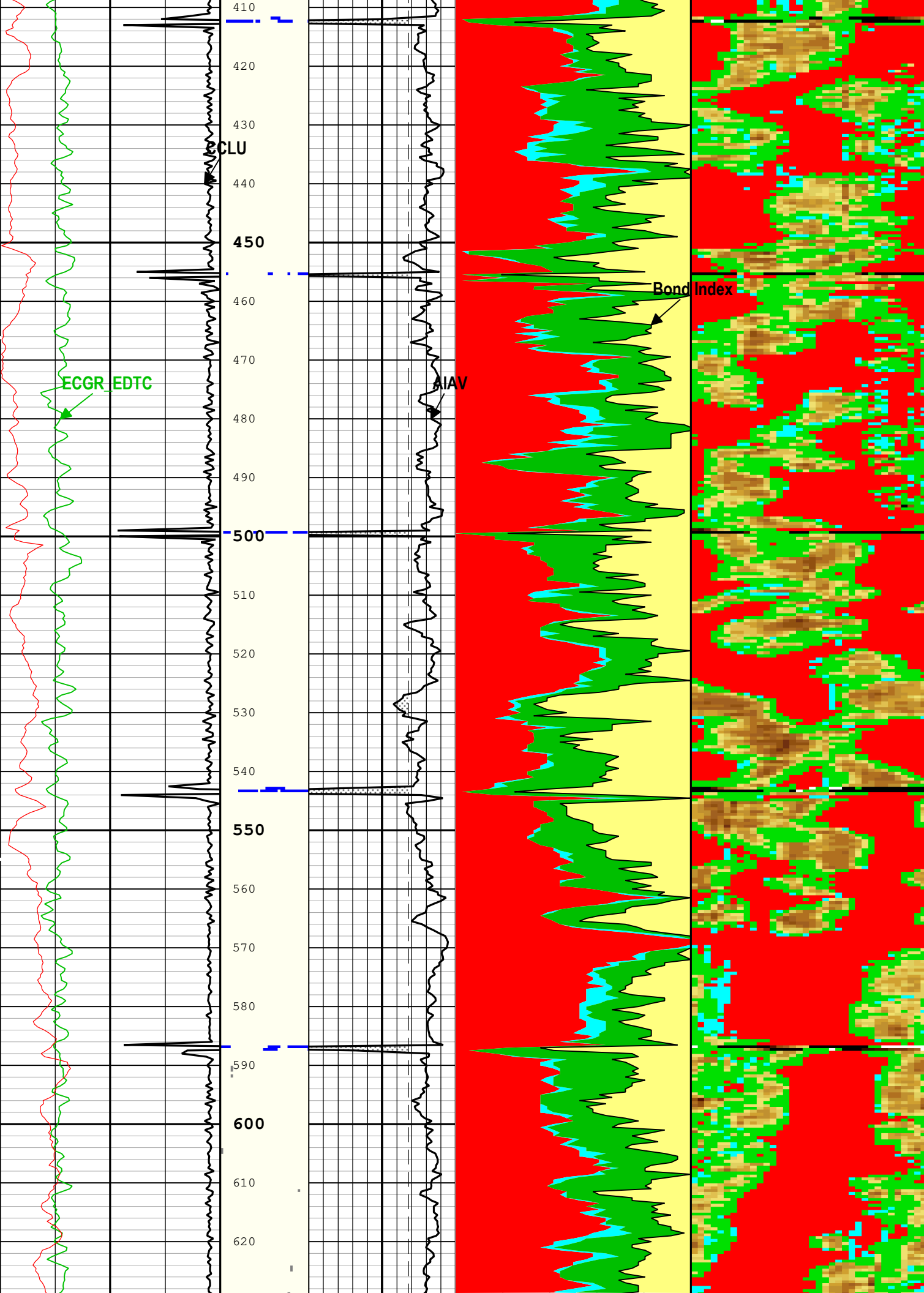
1: Log[3]:Up:S003

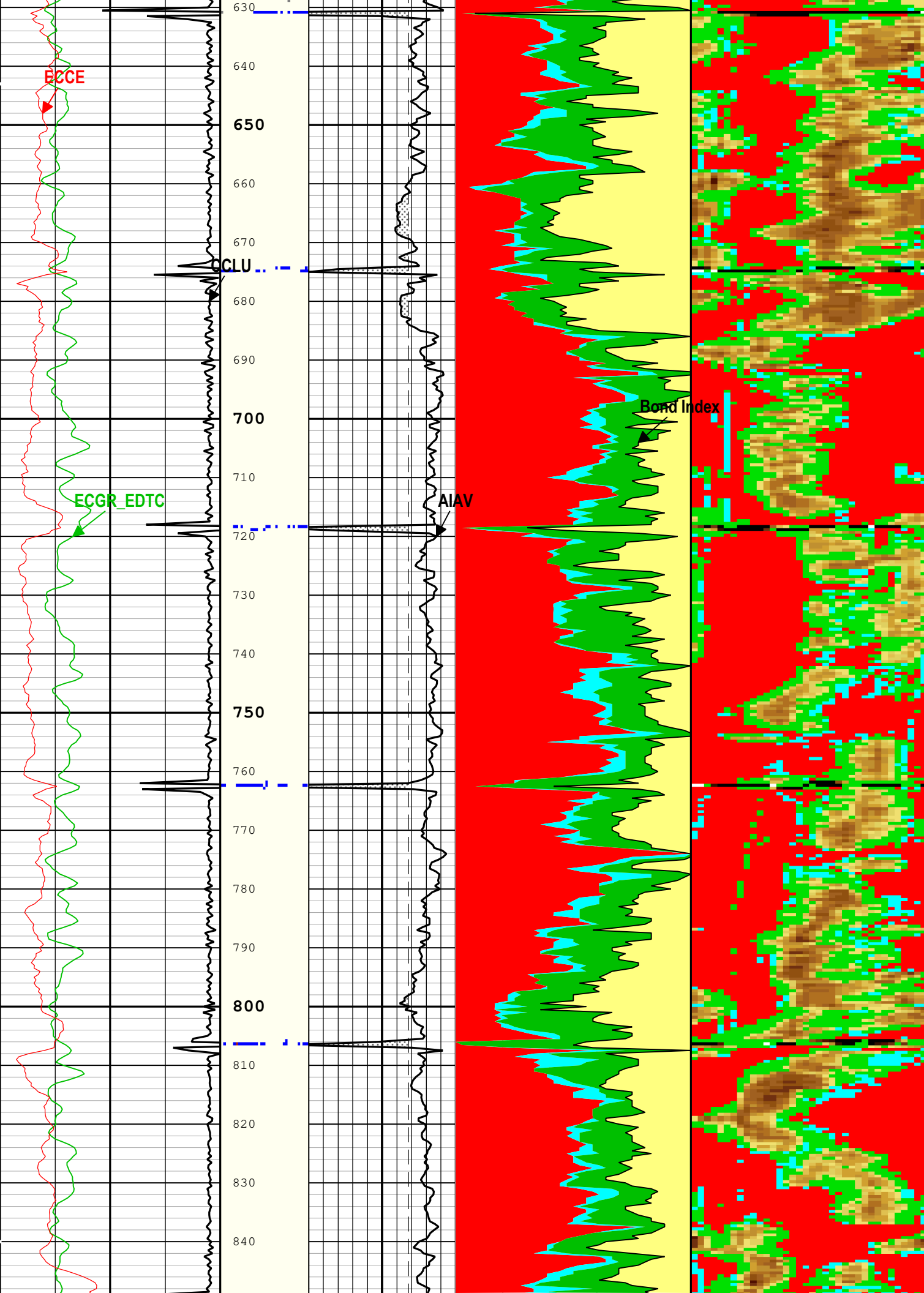
TIME\_1900 - Time Marked every 60.00 (s)

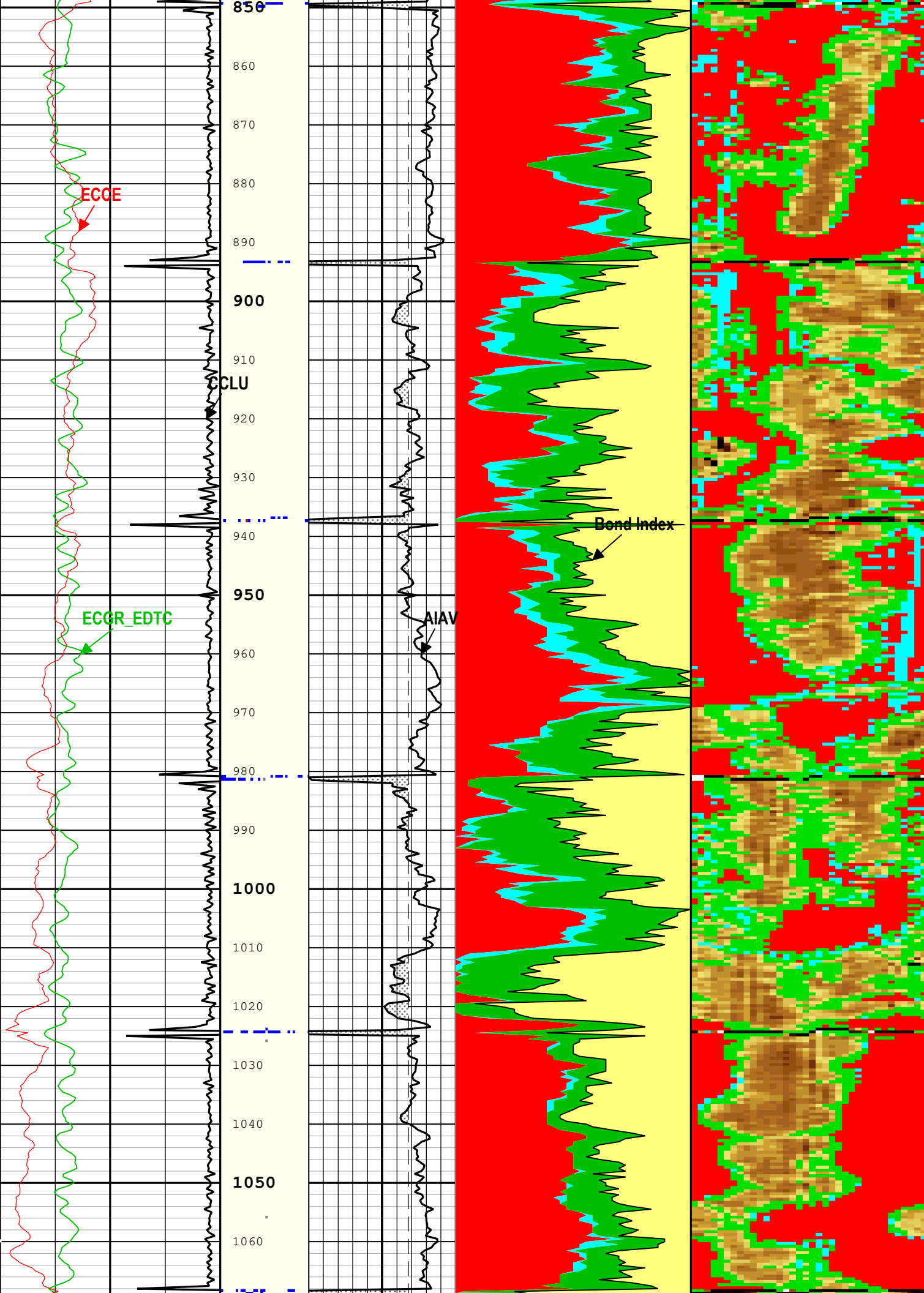


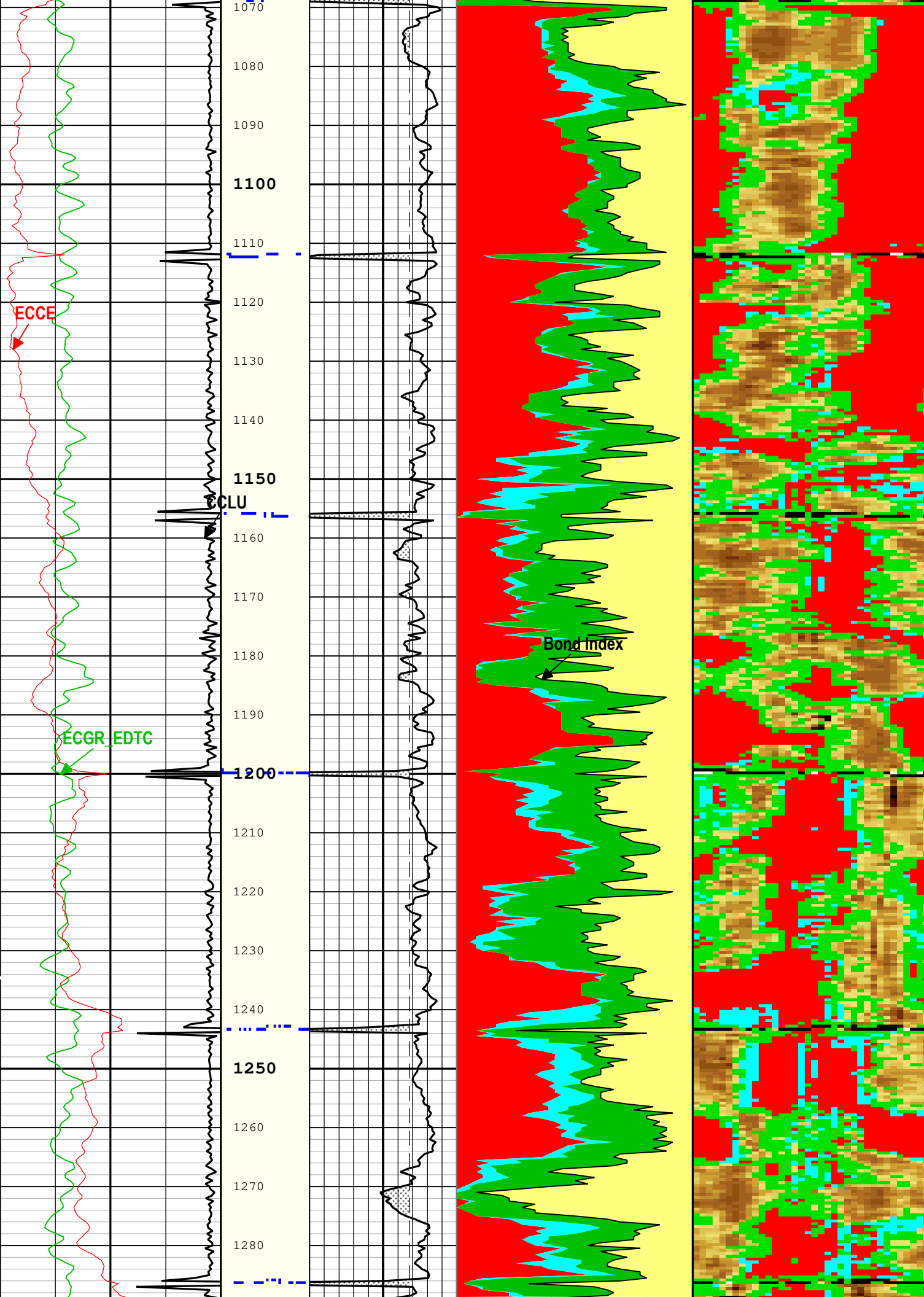


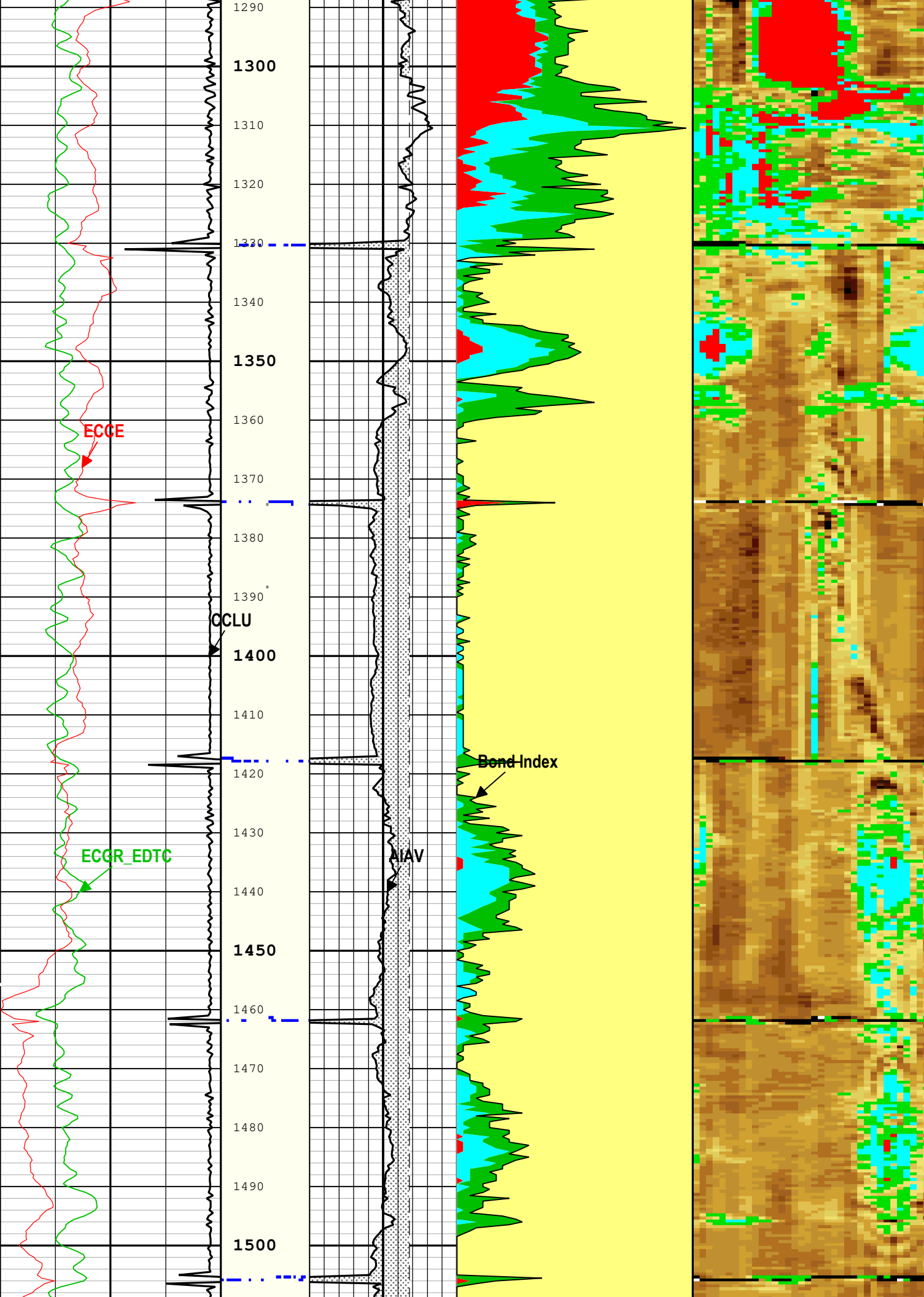


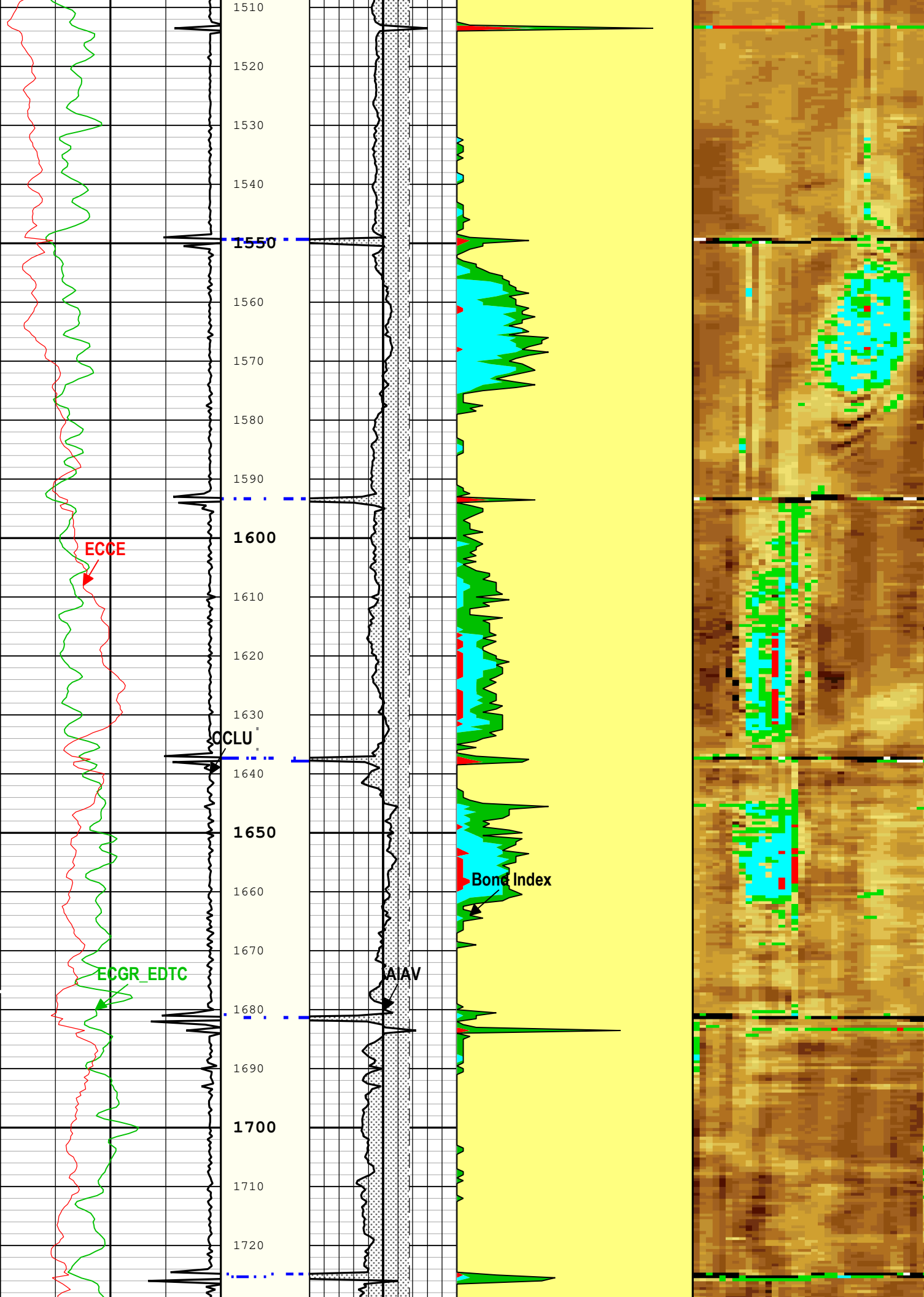


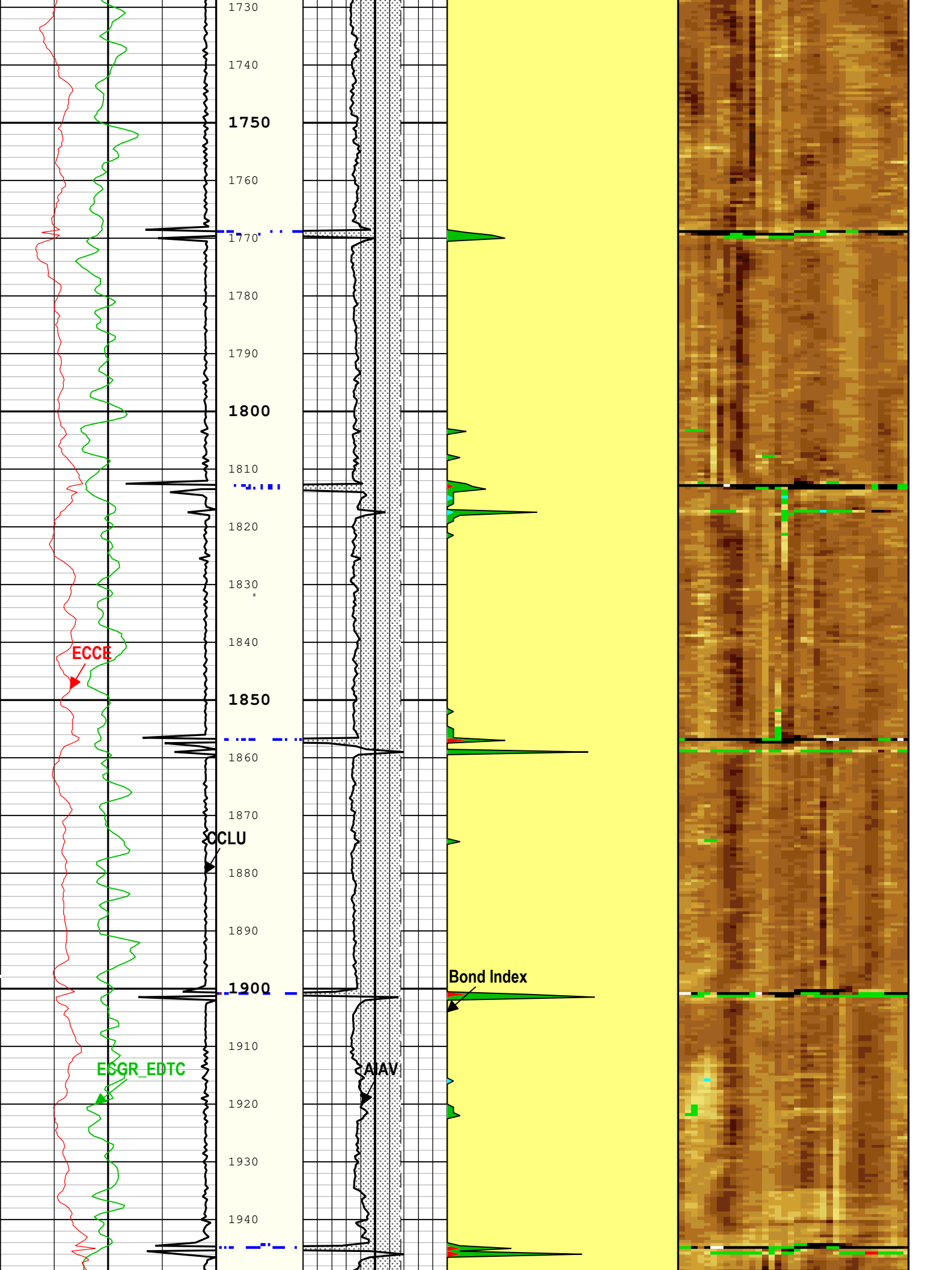


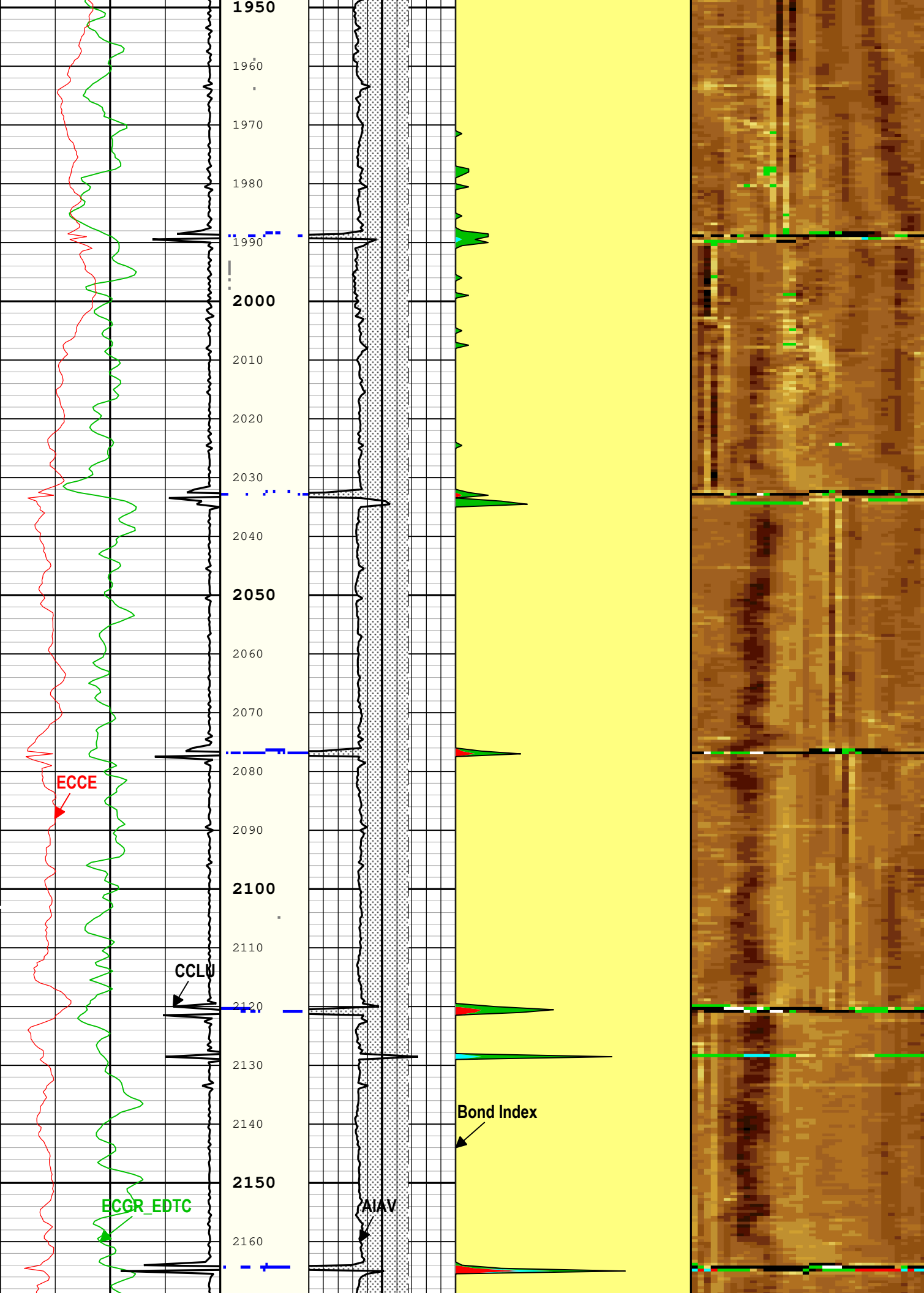




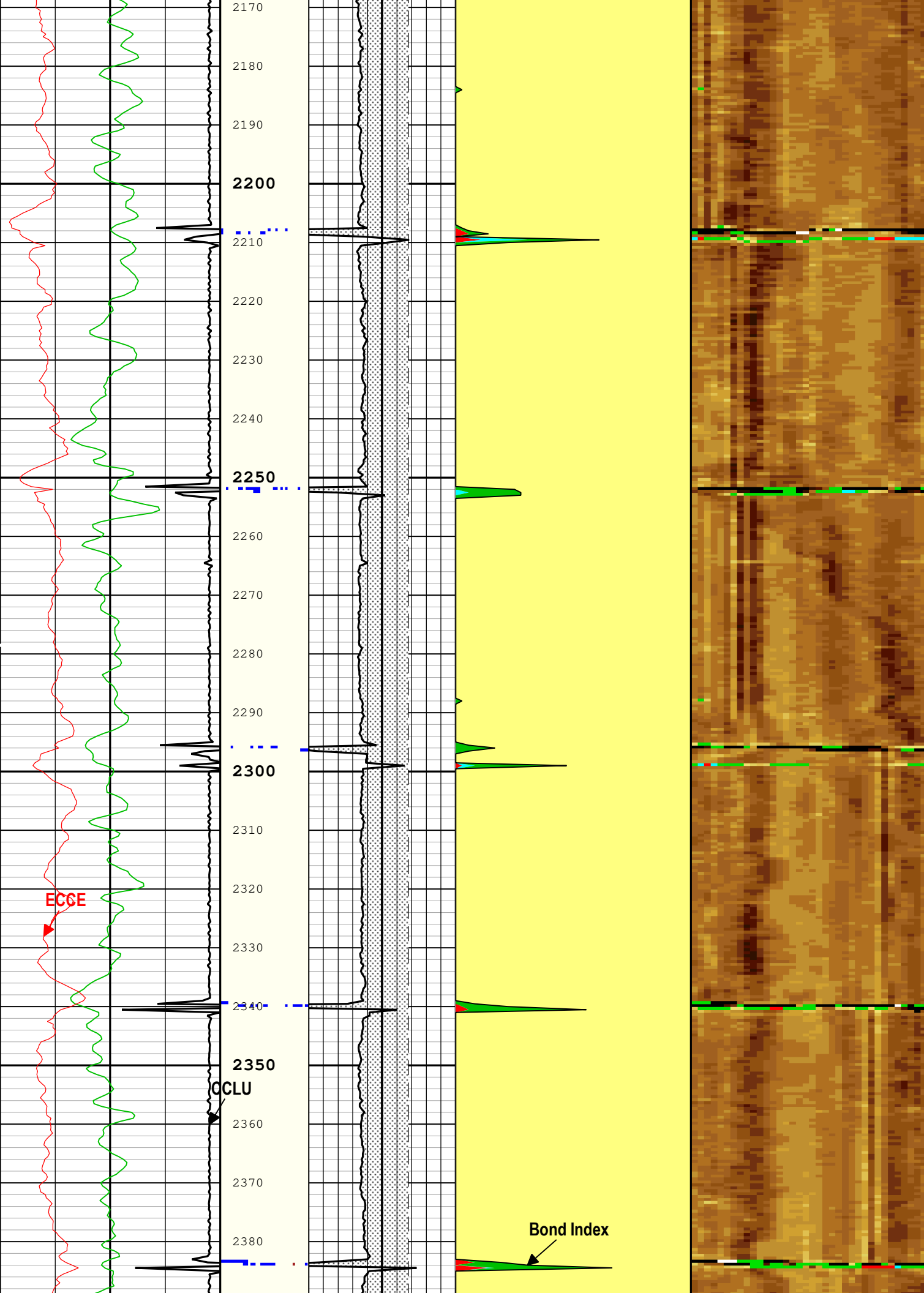


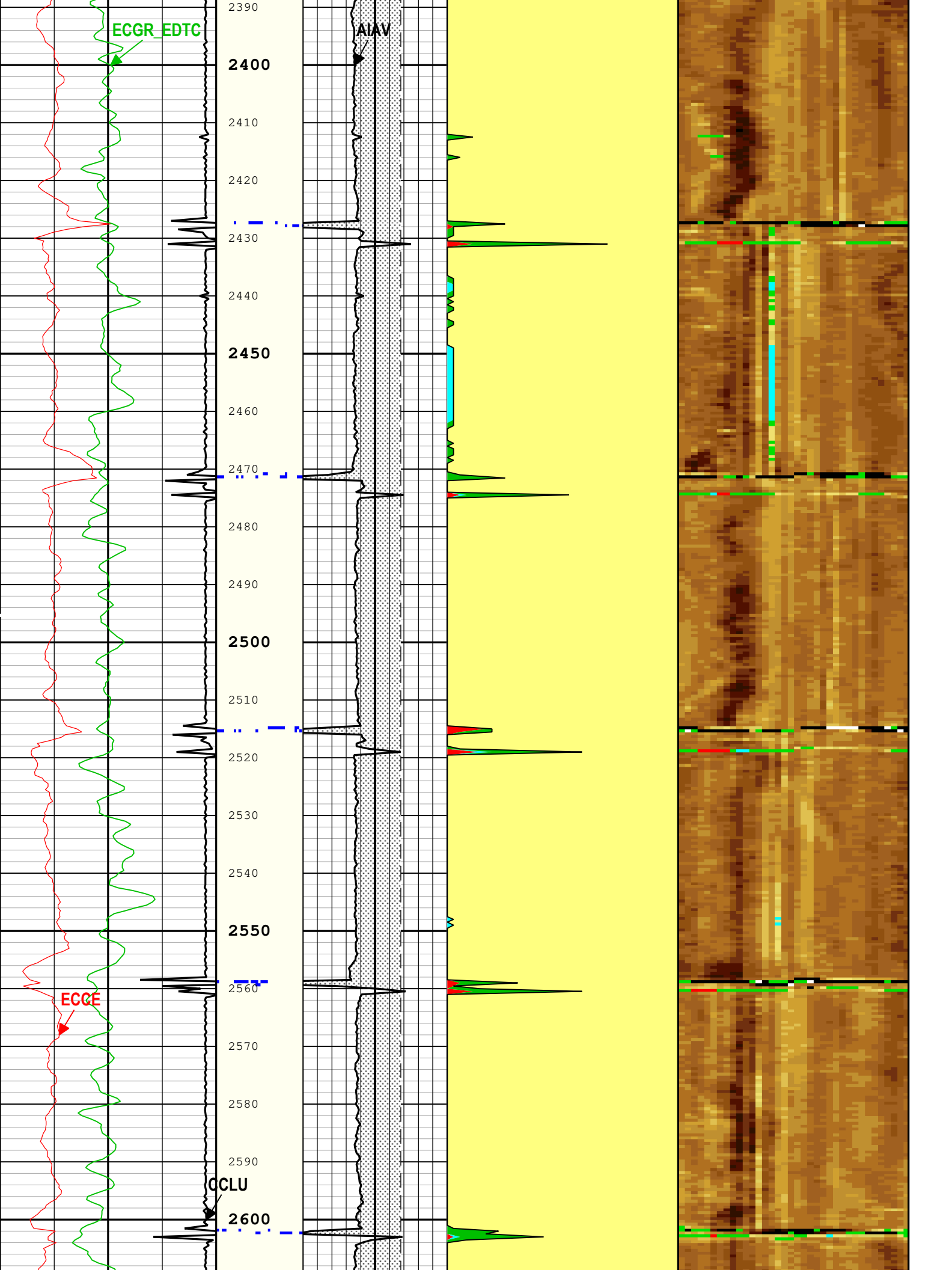


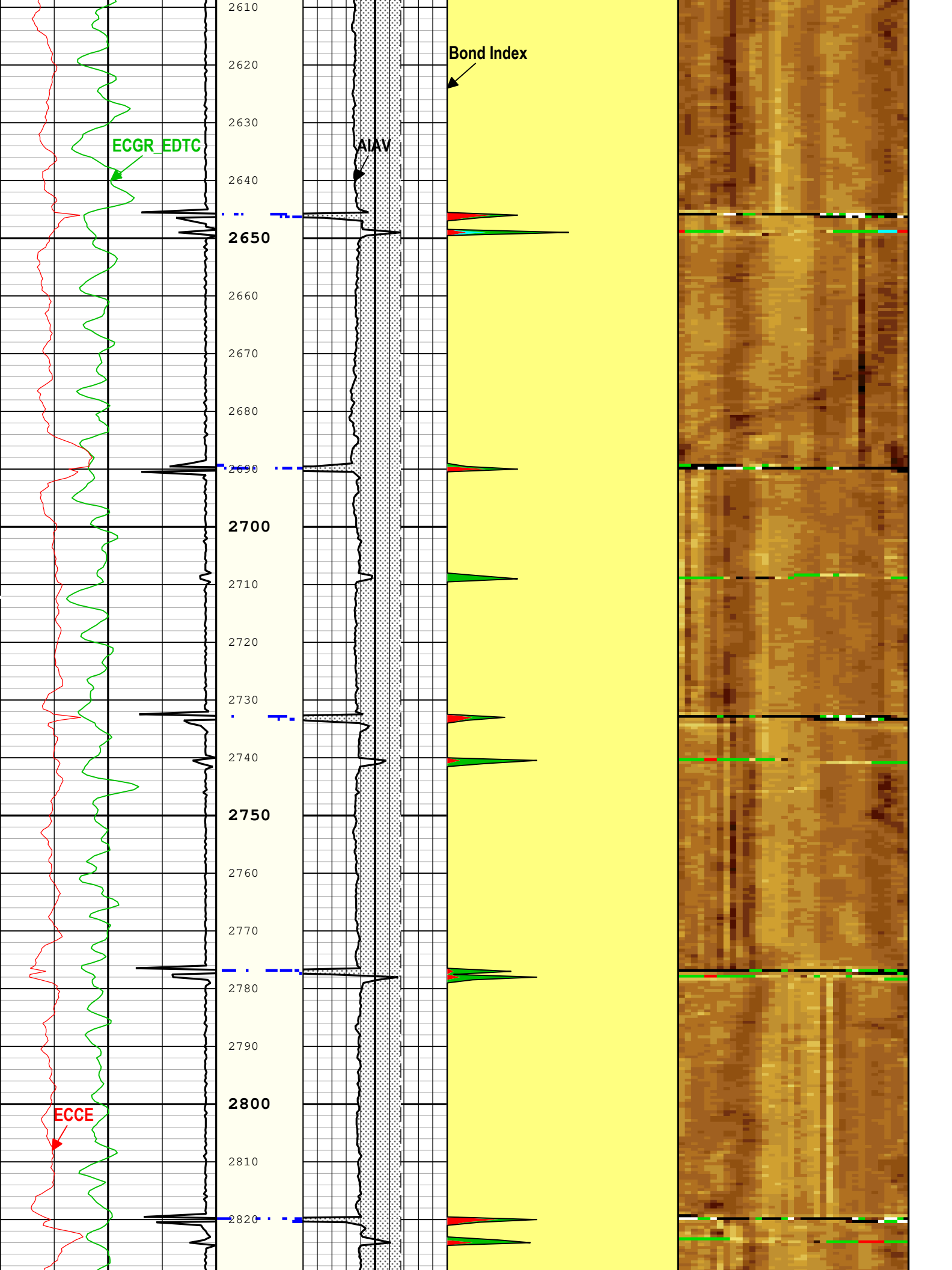


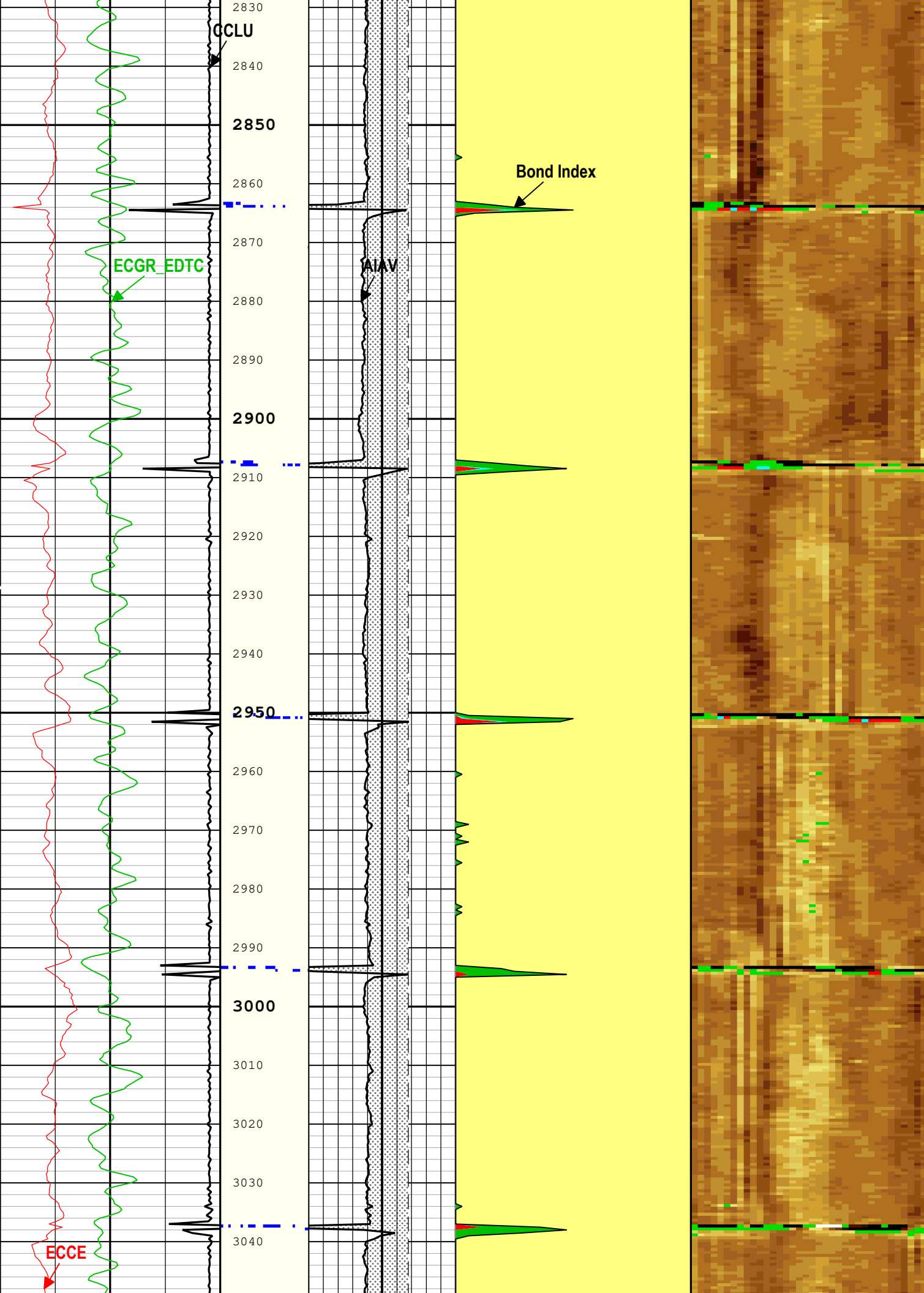


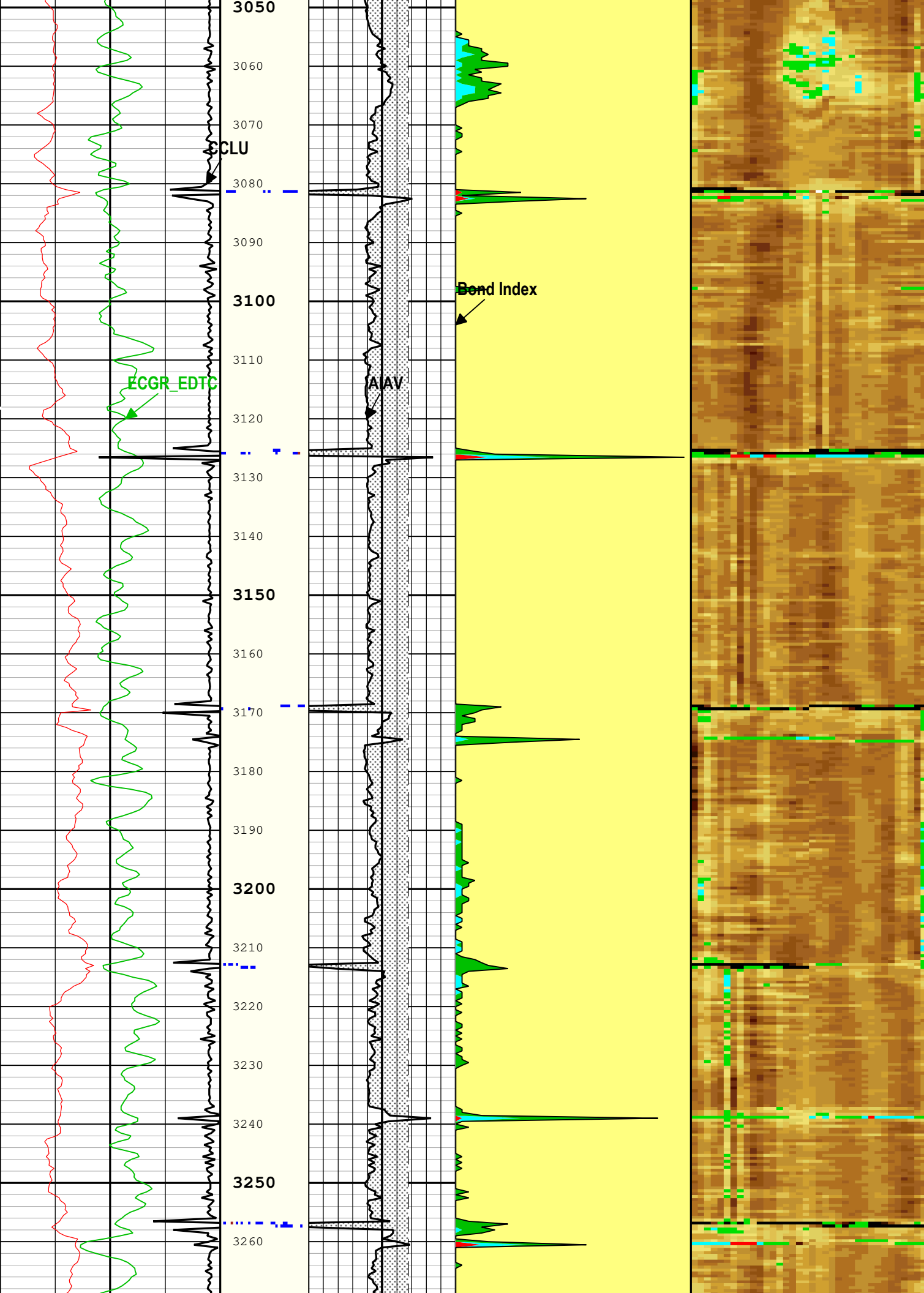


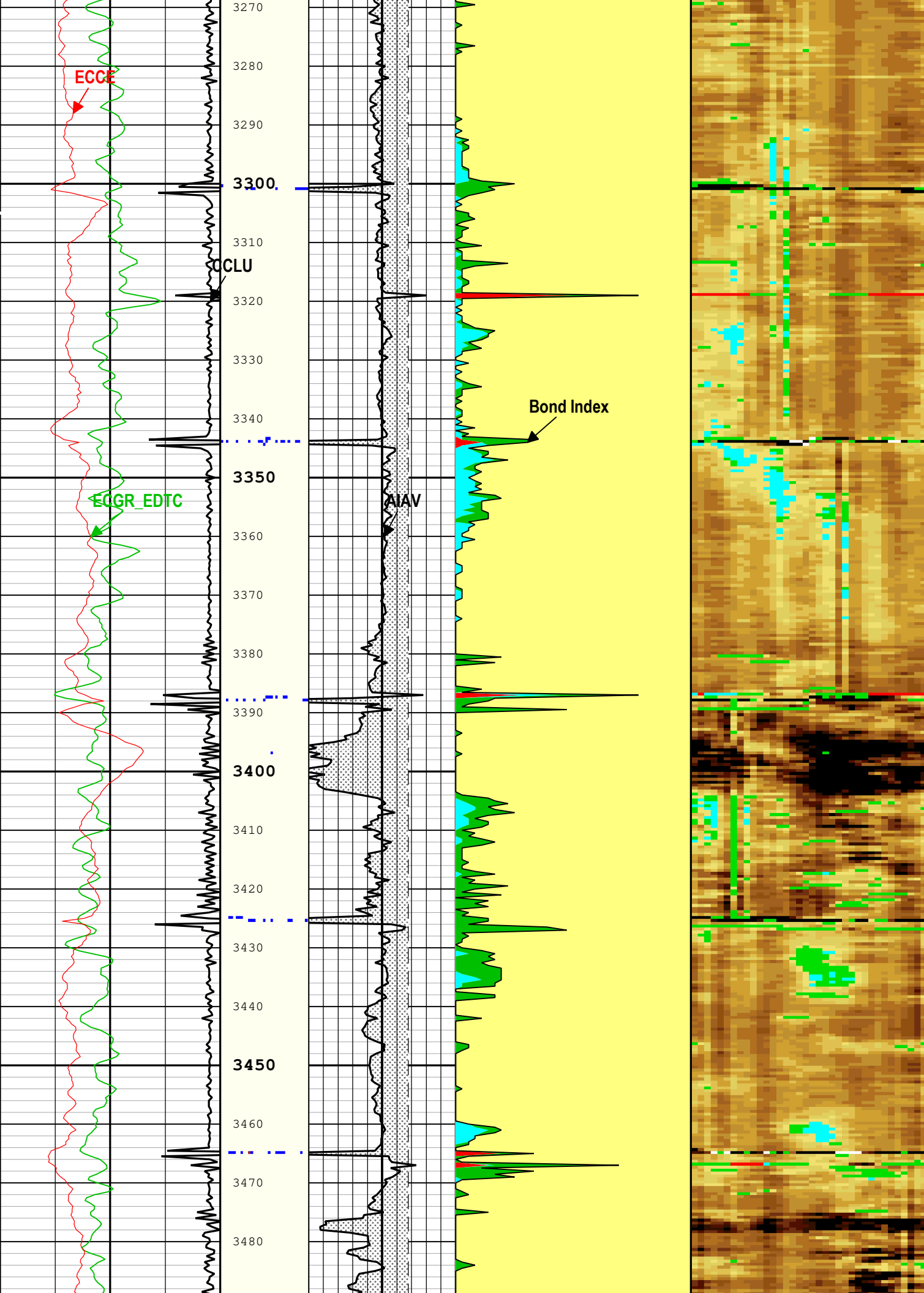


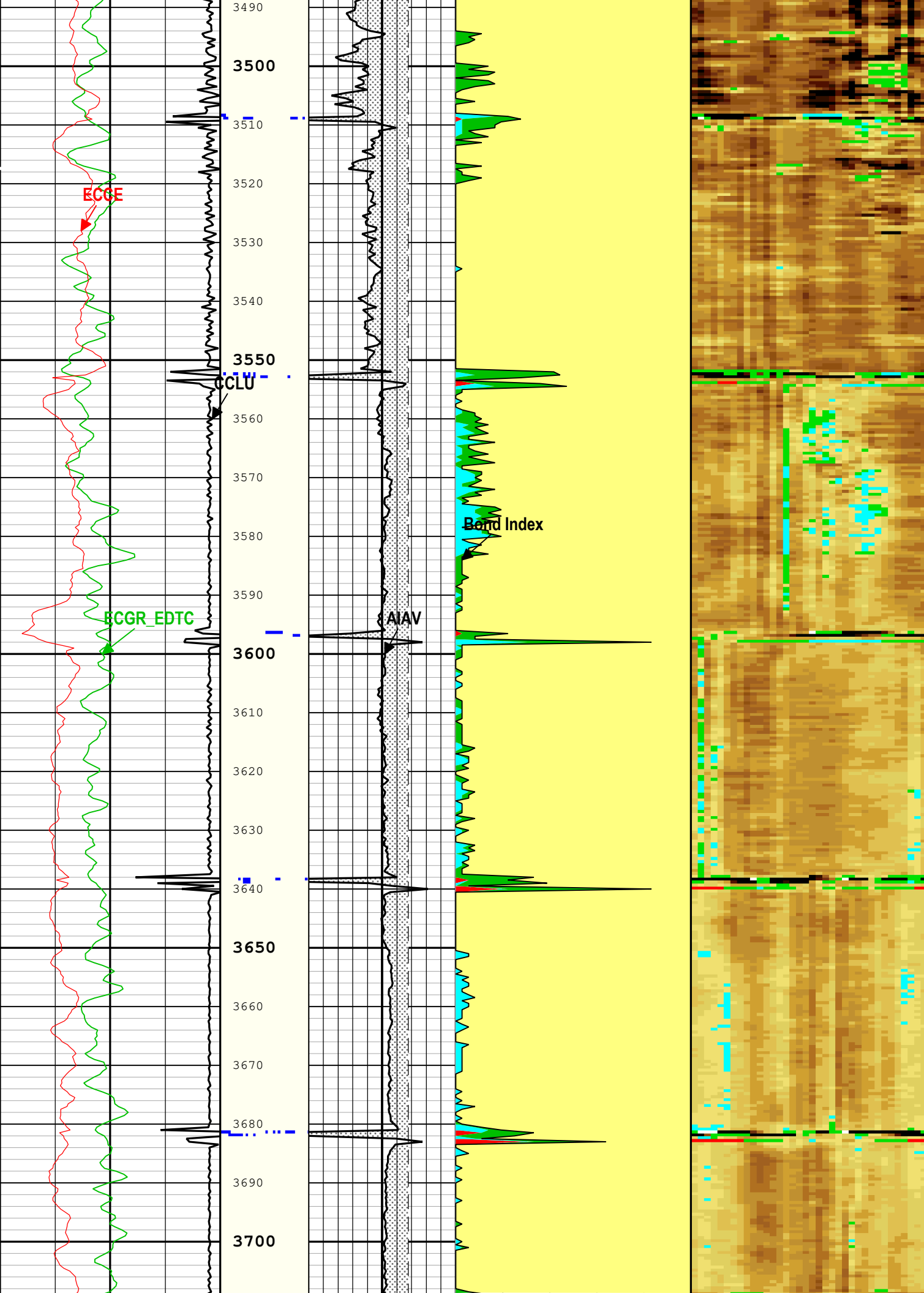


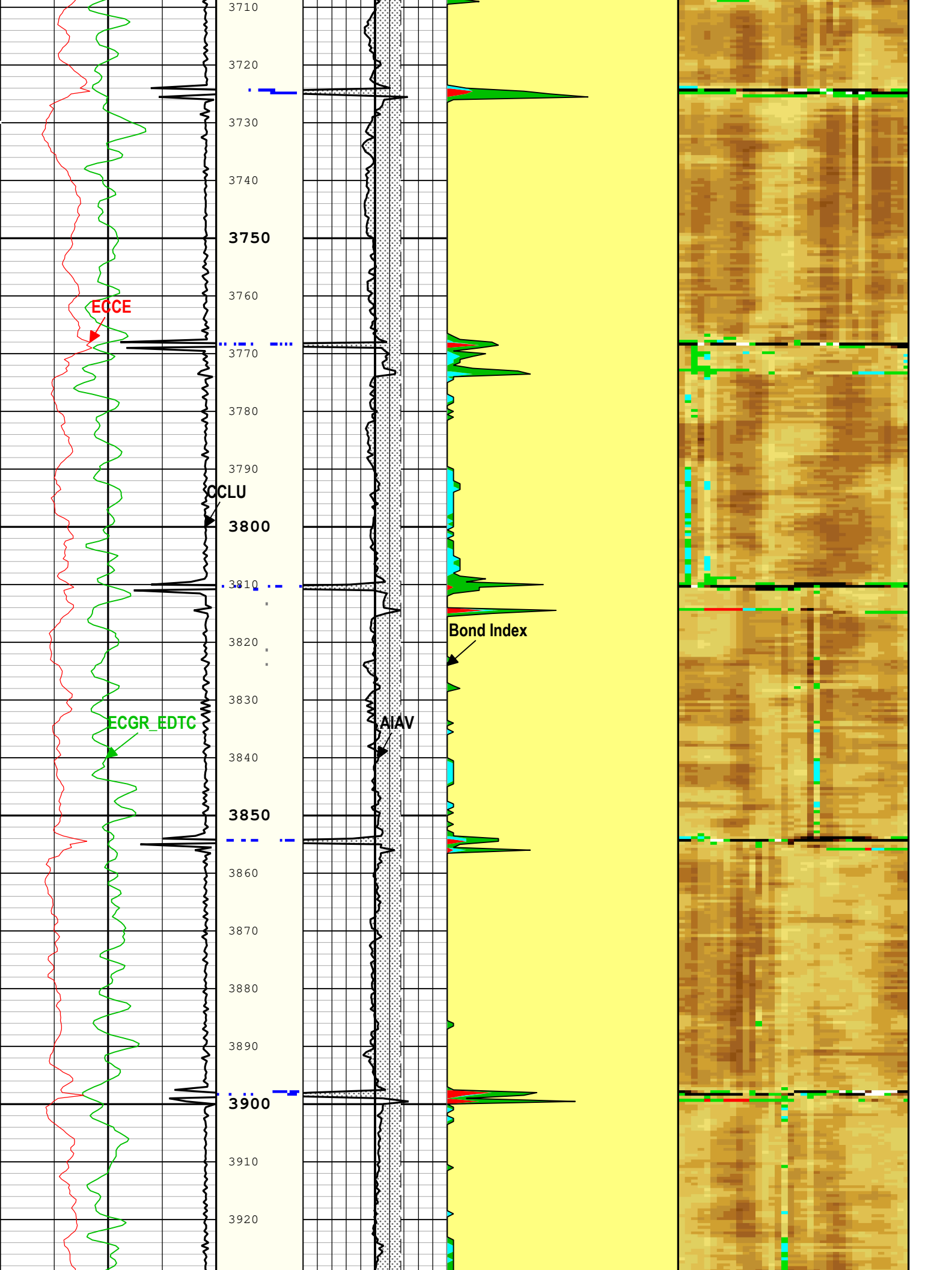




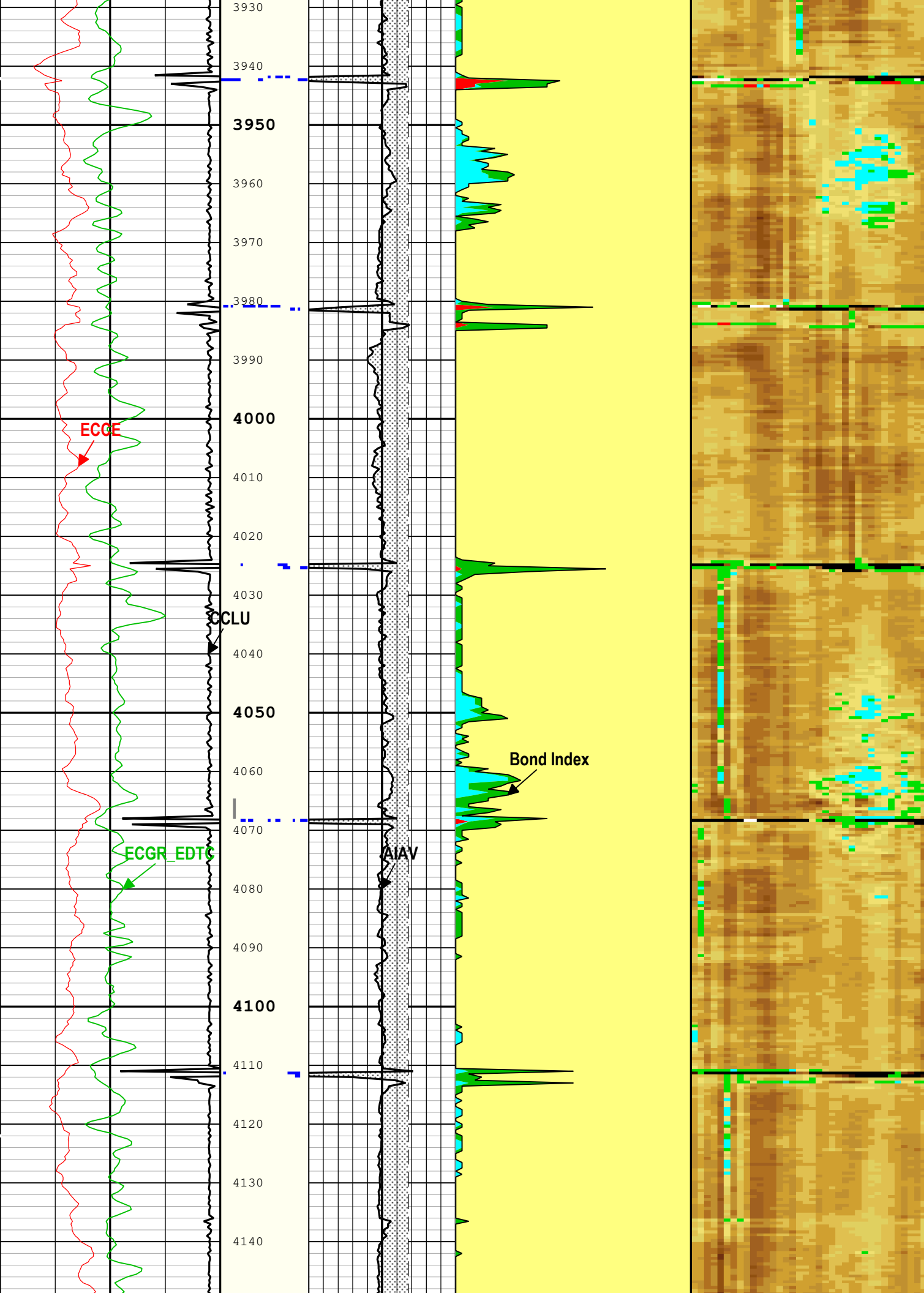


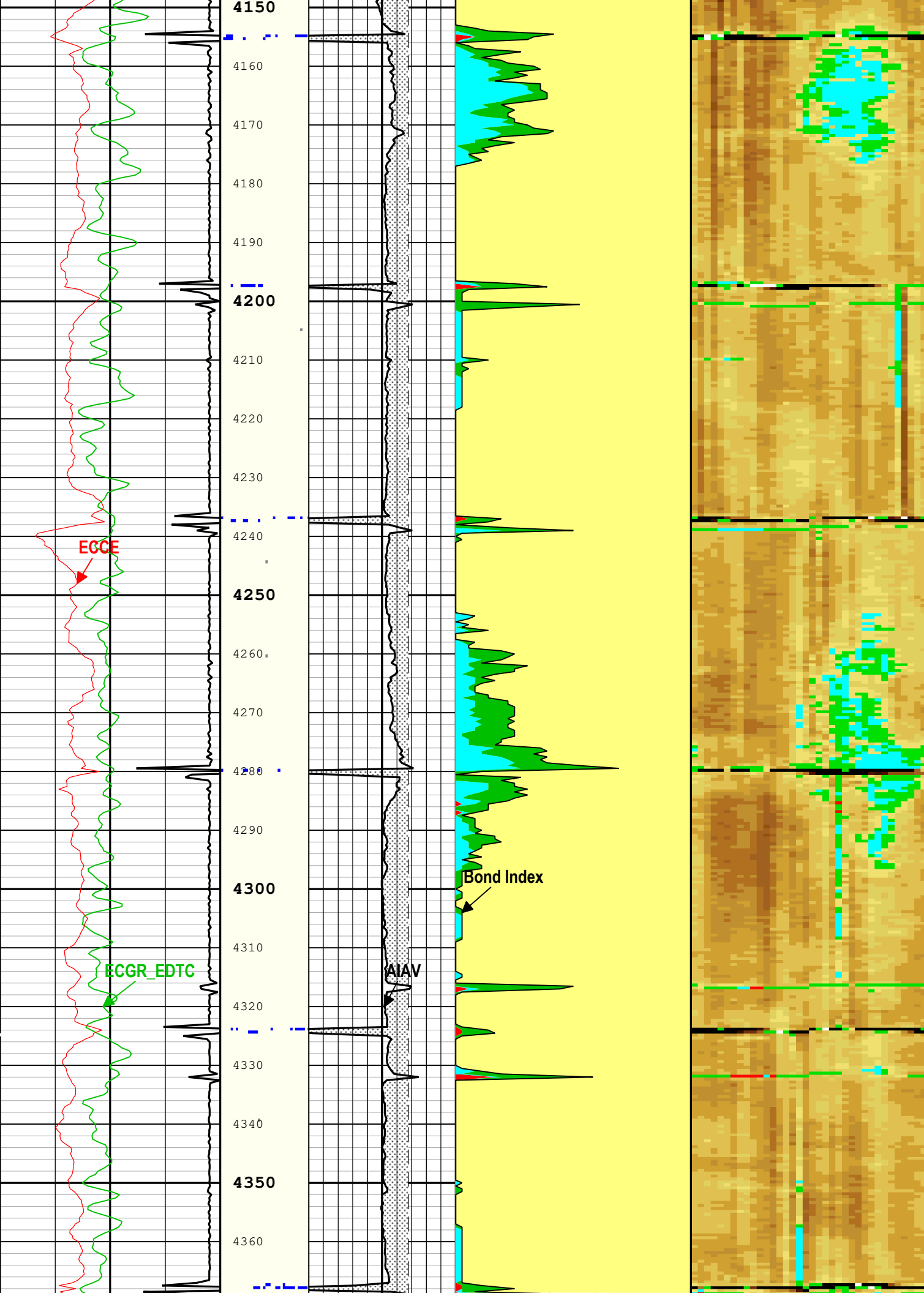


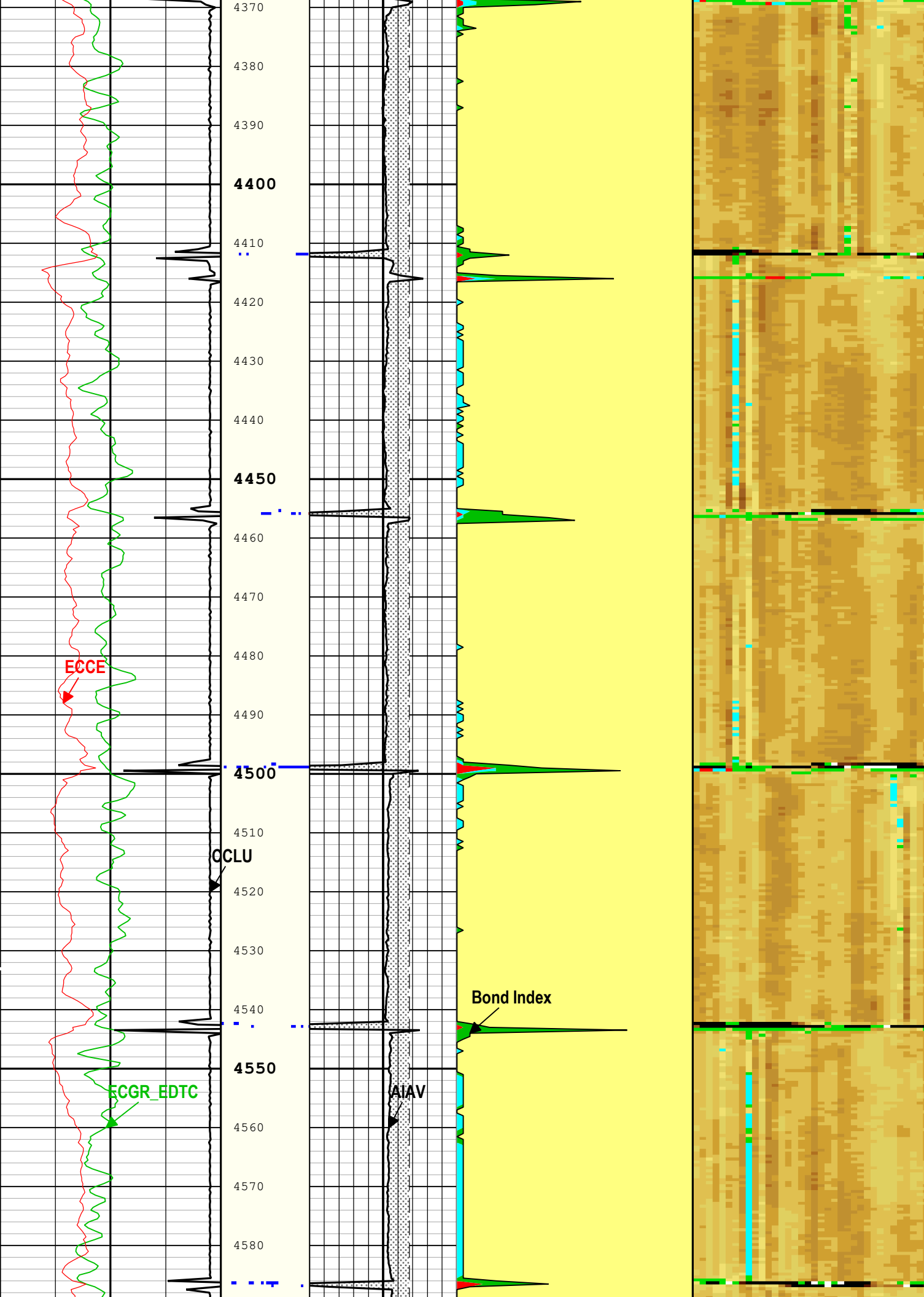


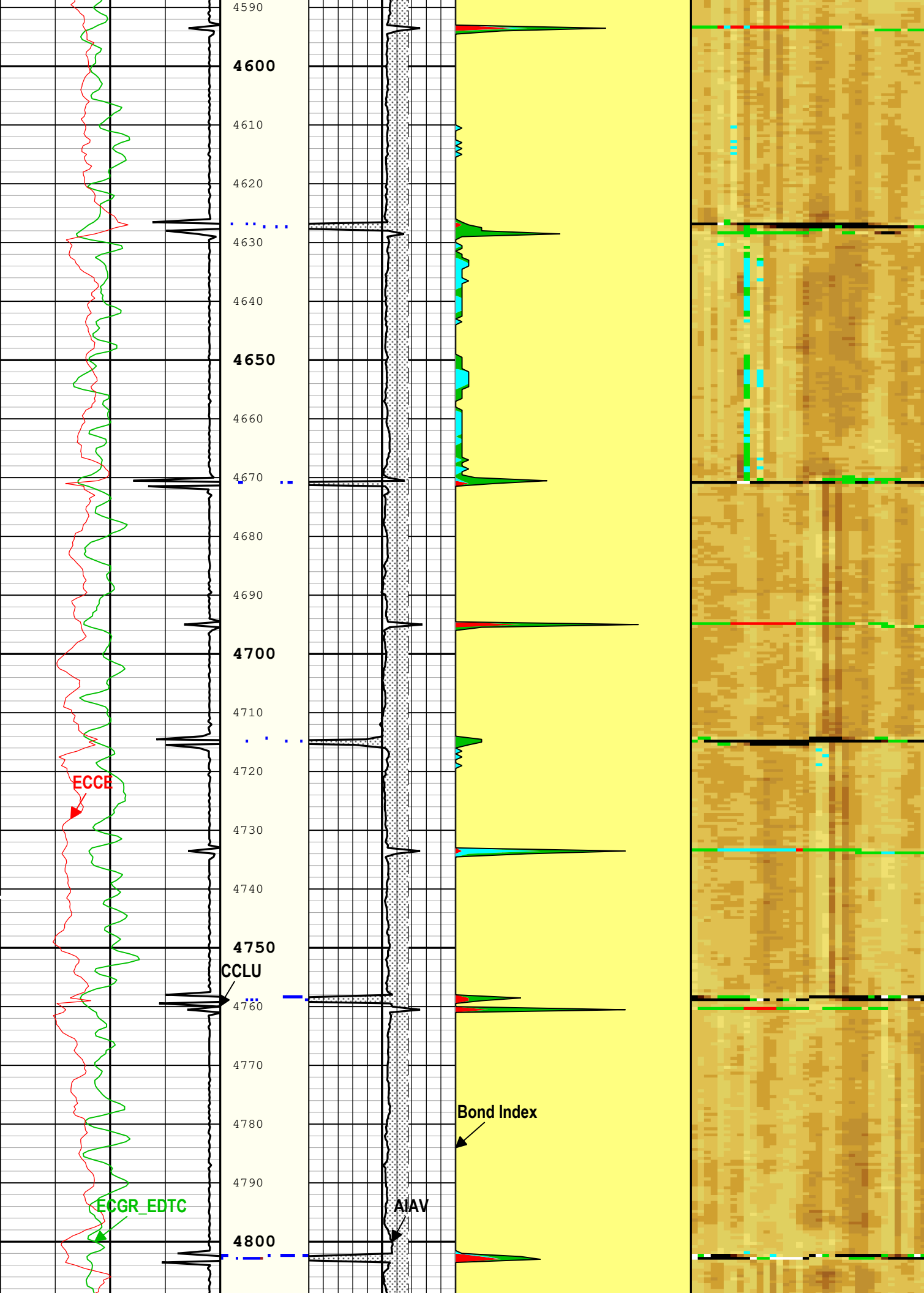


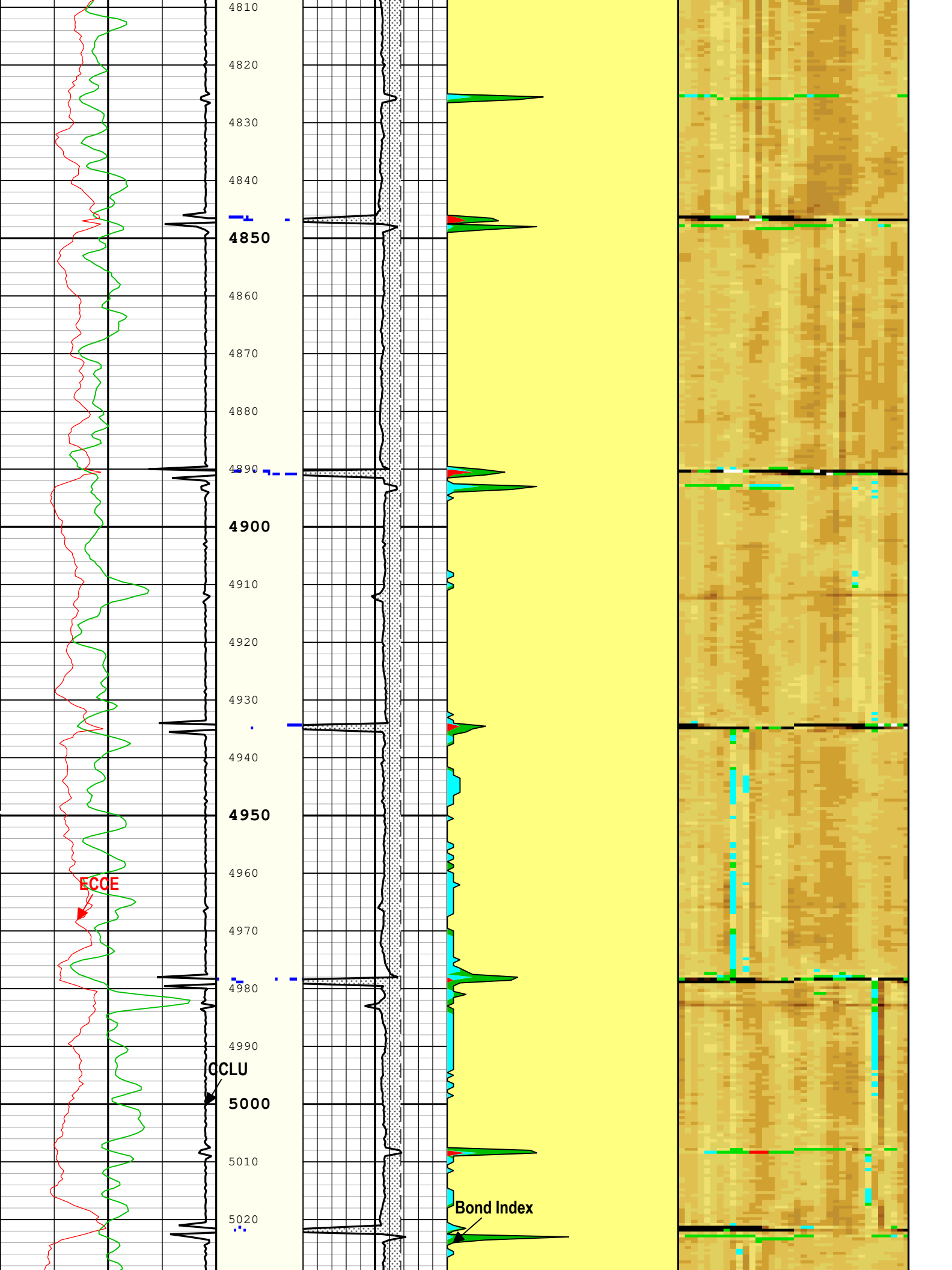


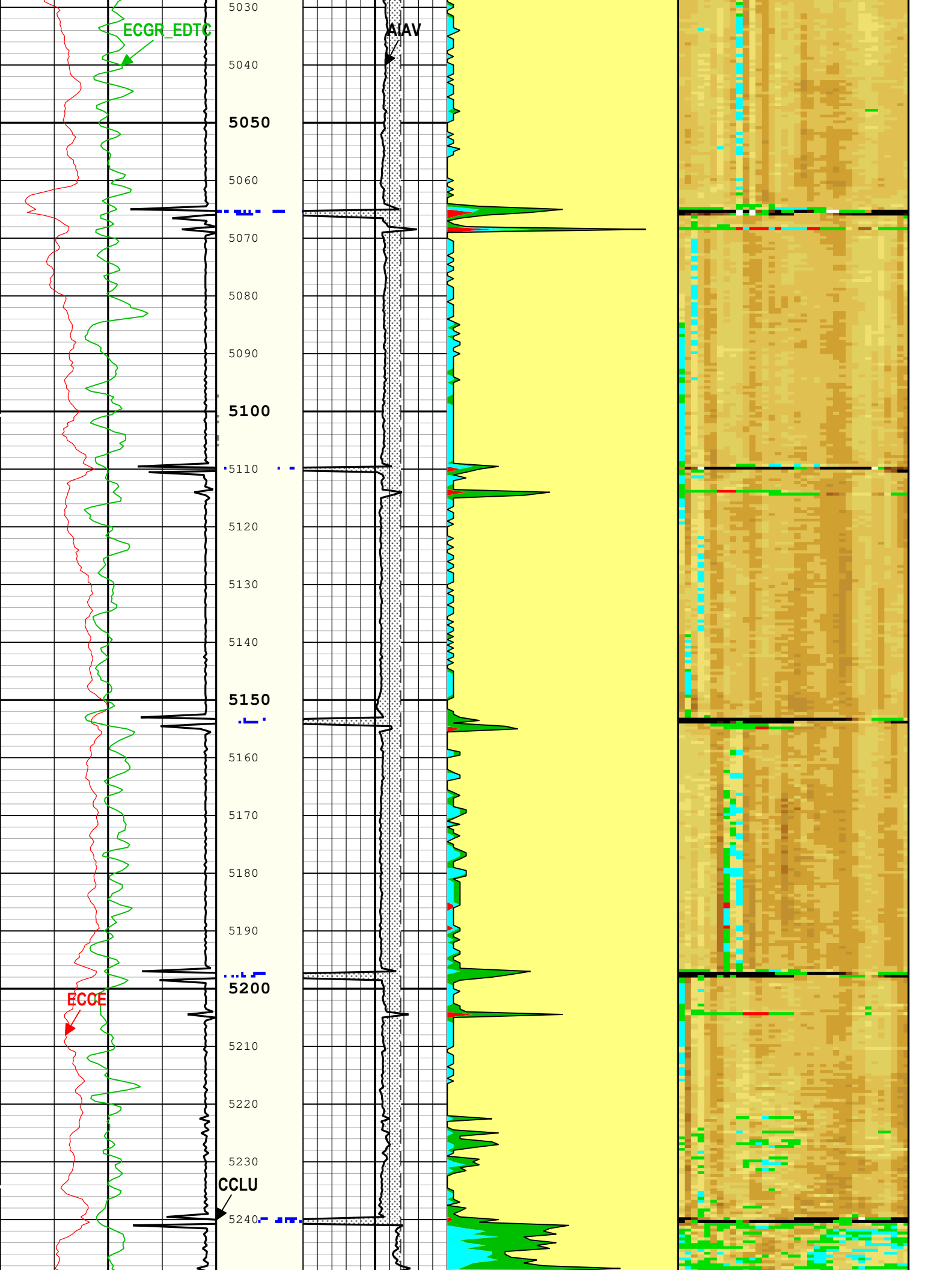


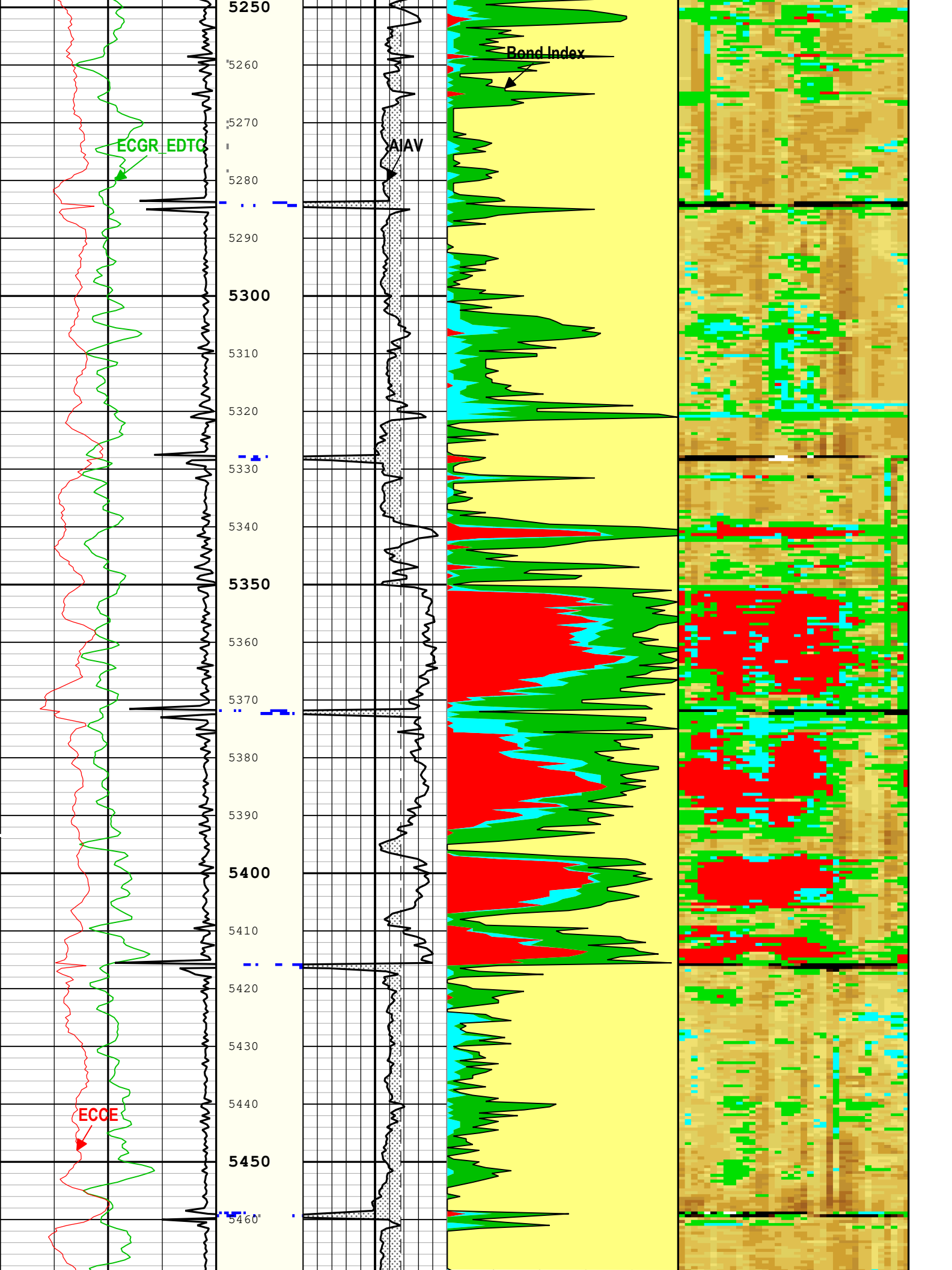


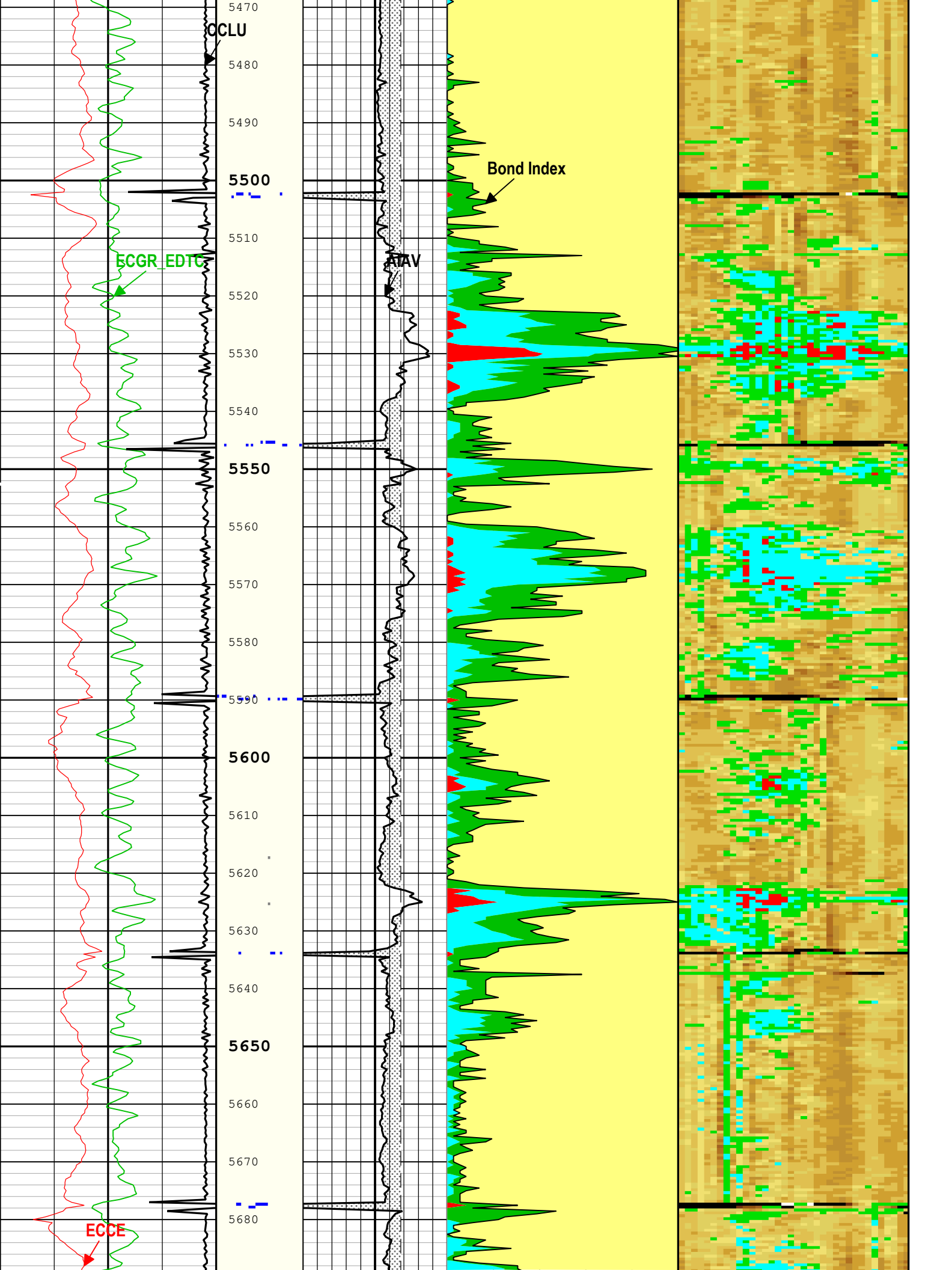




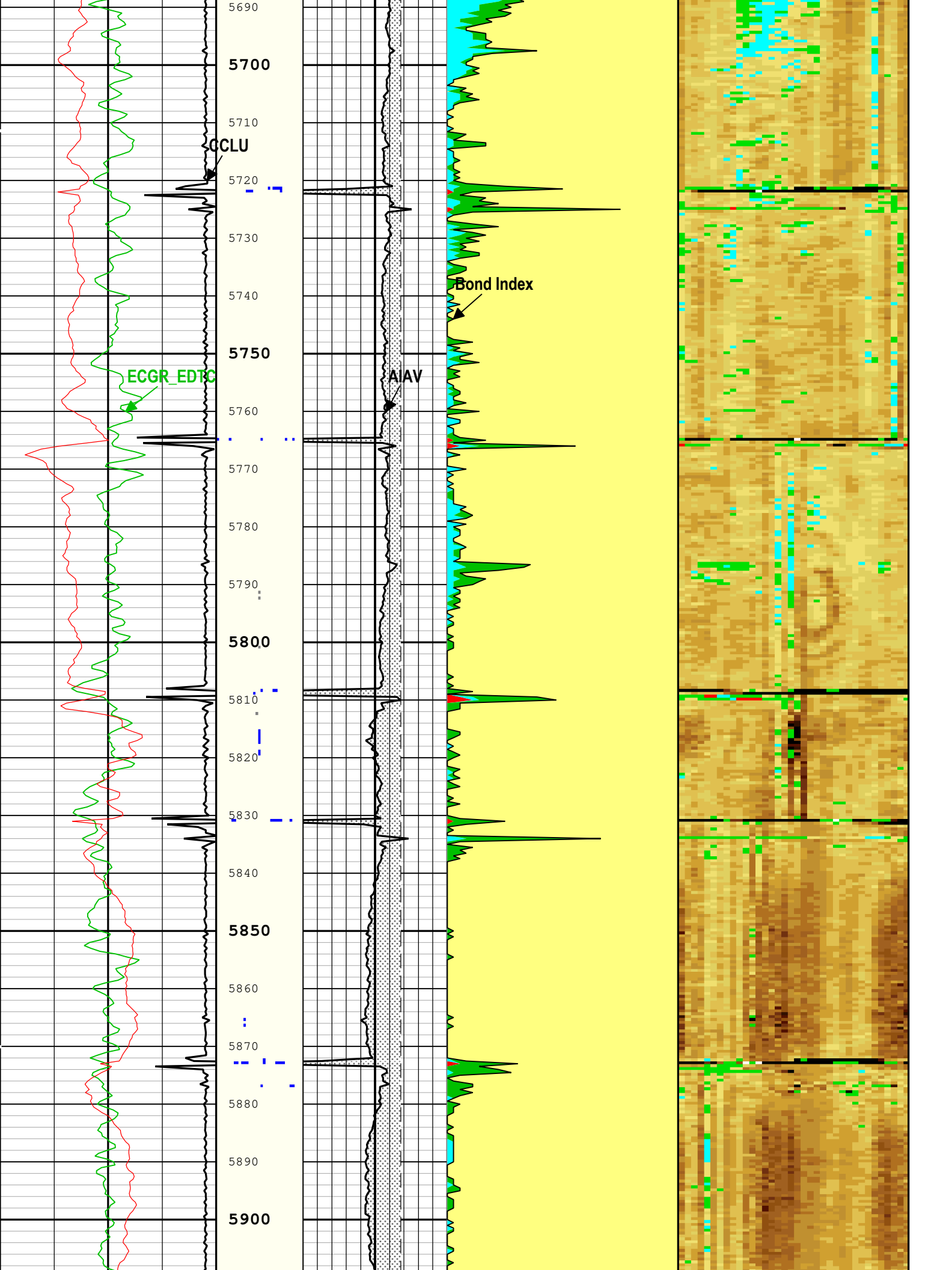


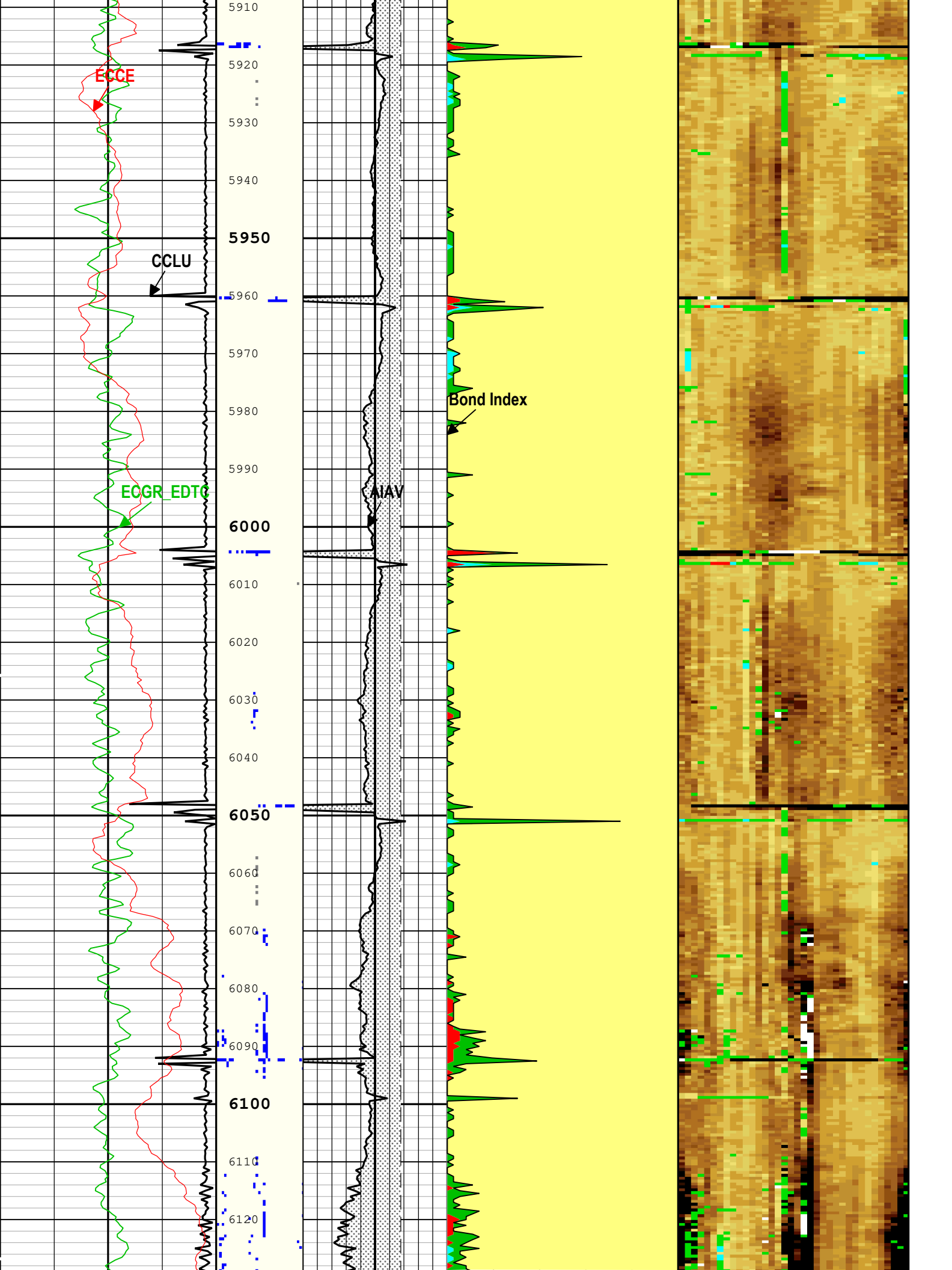


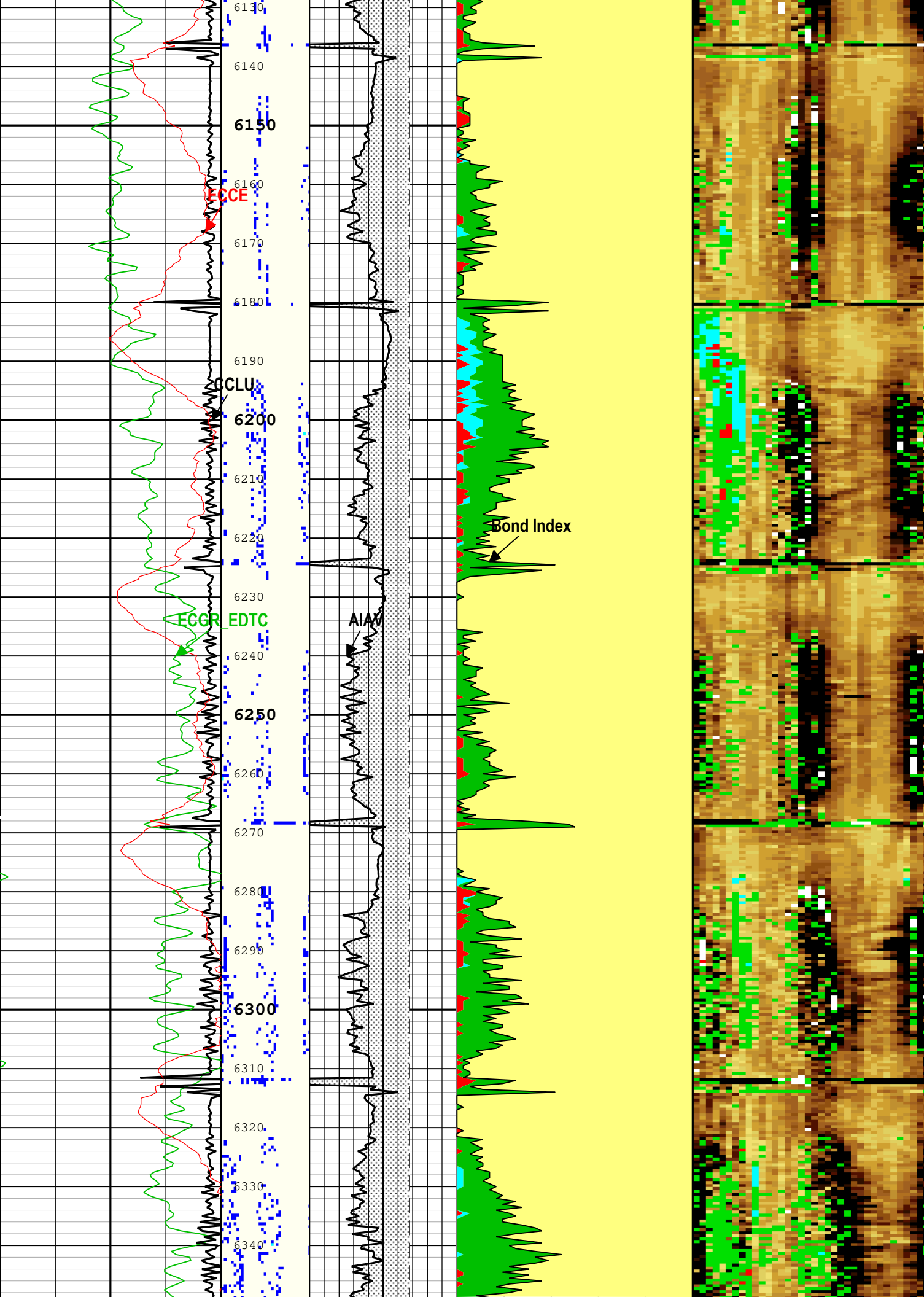


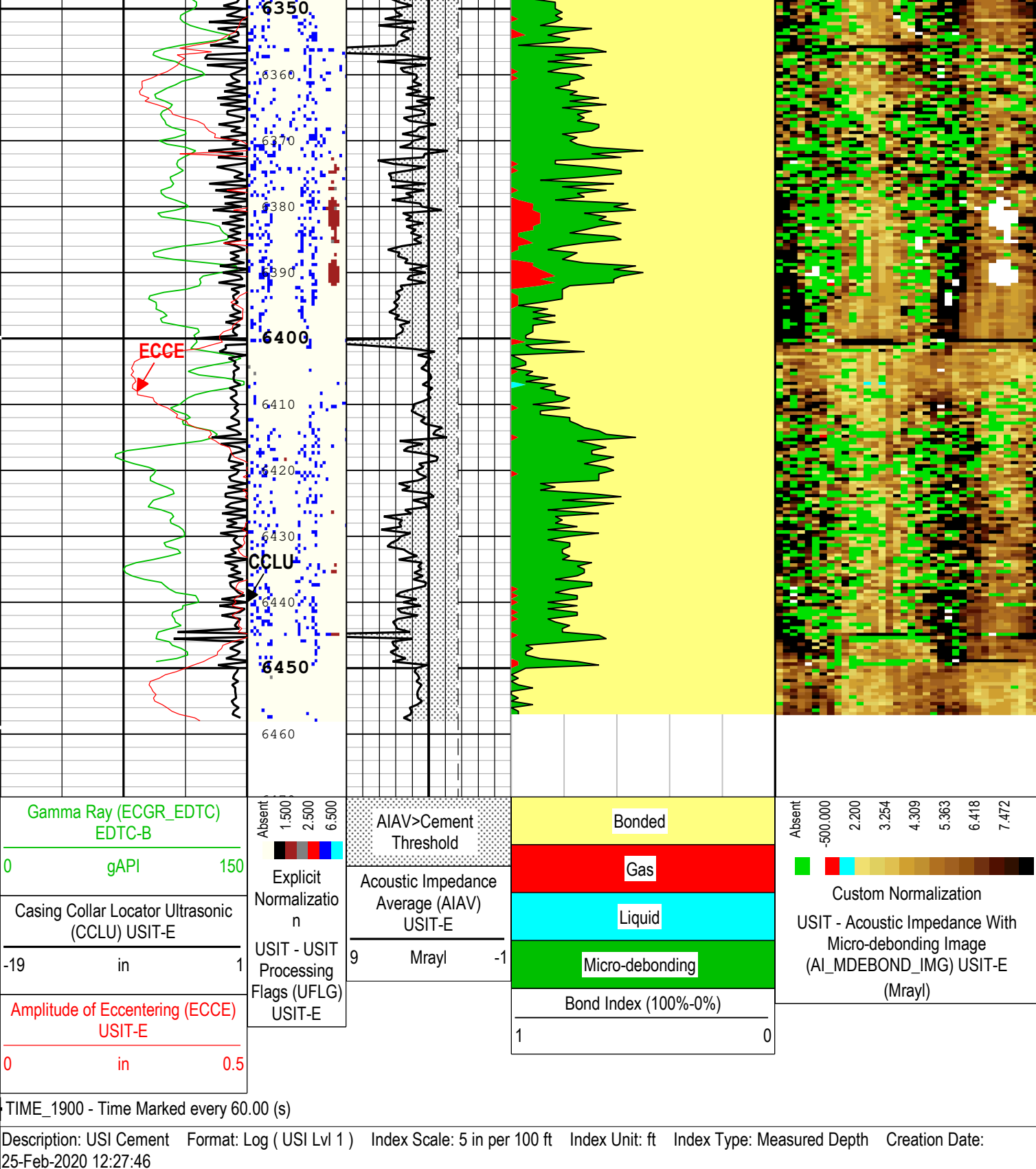












## Channel Processing Parameters

### 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	11564	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	
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	1.07	
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 14:02:35	24-Feb-2020 14:04:44	6469.98	6302.31
EMXV	120	24-Feb-2020 14:04:44	24-Feb-2020 14:08:53	6302.31	5728.78
EMXV	50	24-Feb-2020 14:08:53	24-Feb-2020 14:42:32	5728.78	46.51
WINB	31.88	24-Feb-2020 14:02:35	24-Feb-2020 14:04:17	6469.98	6360.44
WINB	21.23	24-Feb-2020 14:04:17	24-Feb-2020 14:09:09	6360.44	5684.89
WINB	25.83	24-Feb-2020 14:09:09	24-Feb-2020 14:42:32	5684.89	46.51
WINE	71.88	24-Feb-2020 14:02:35	24-Feb-2020 14:03:54	6469.98	6411.76
WINE	84.16	24-Feb-2020 14:03:54	24-Feb-2020 14:09:03	6411.76	5701.52
WINE	74.18	24-Feb-2020 14:09:03	24-Feb-2020 14:42:32	5701.52	46.51

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
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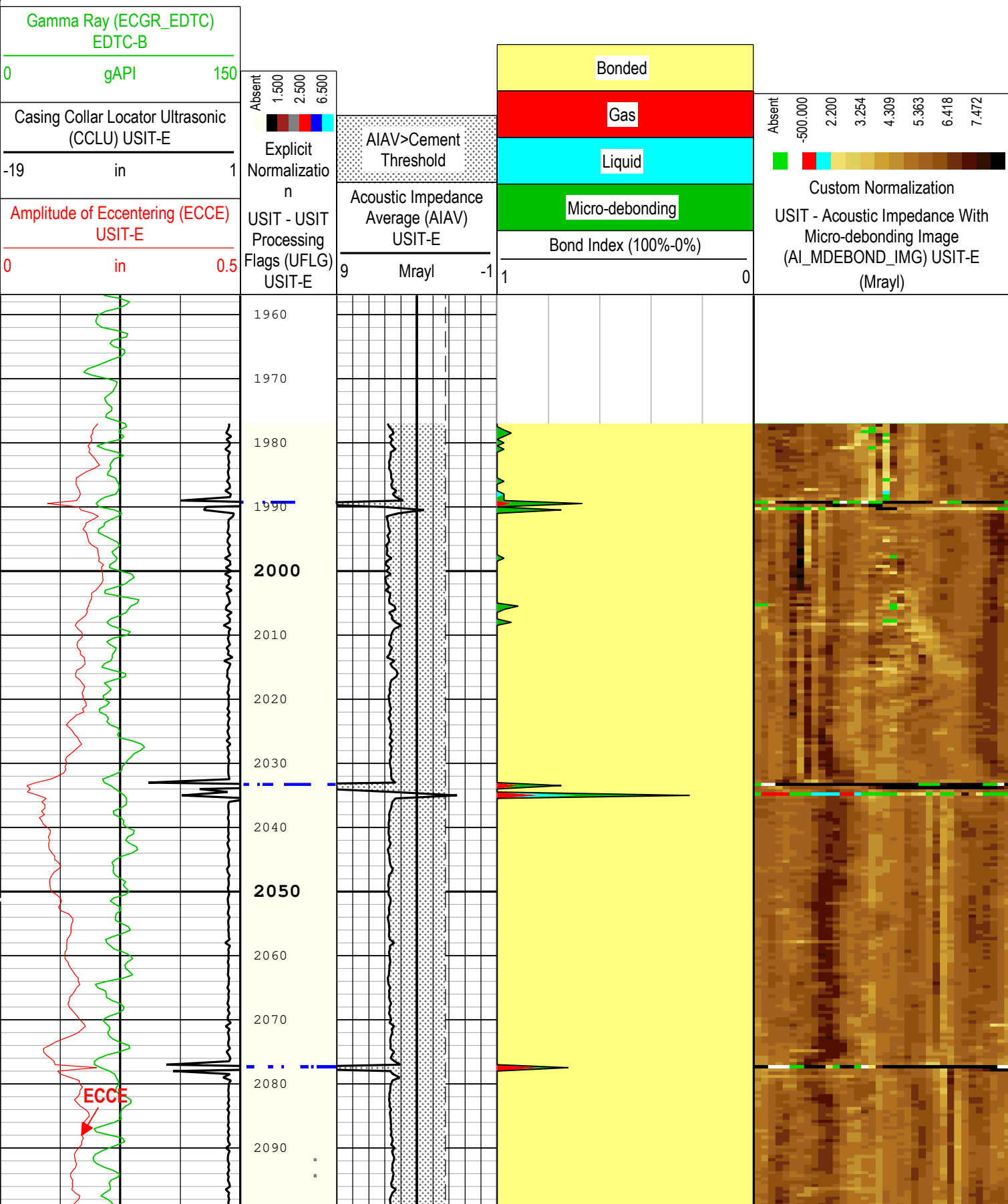
1	Log[1]:Up	Up	1977.15 ft	2553.83 ft	24-Feb-2020 1:33:19 PM	24-Feb-2020 1:37:45 PM	ON	2.08 ft	No
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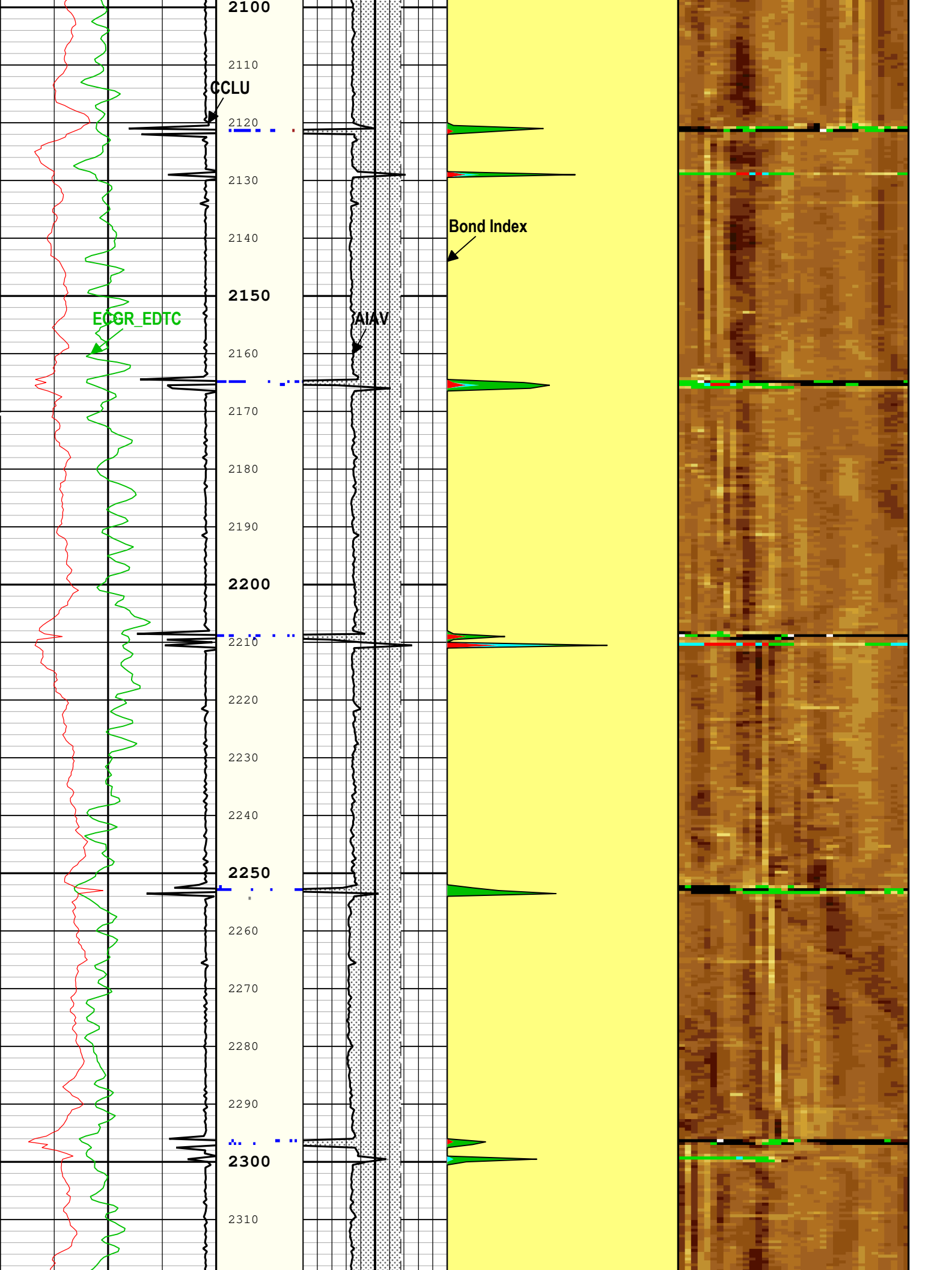
All depths are referenced to toolstring zero

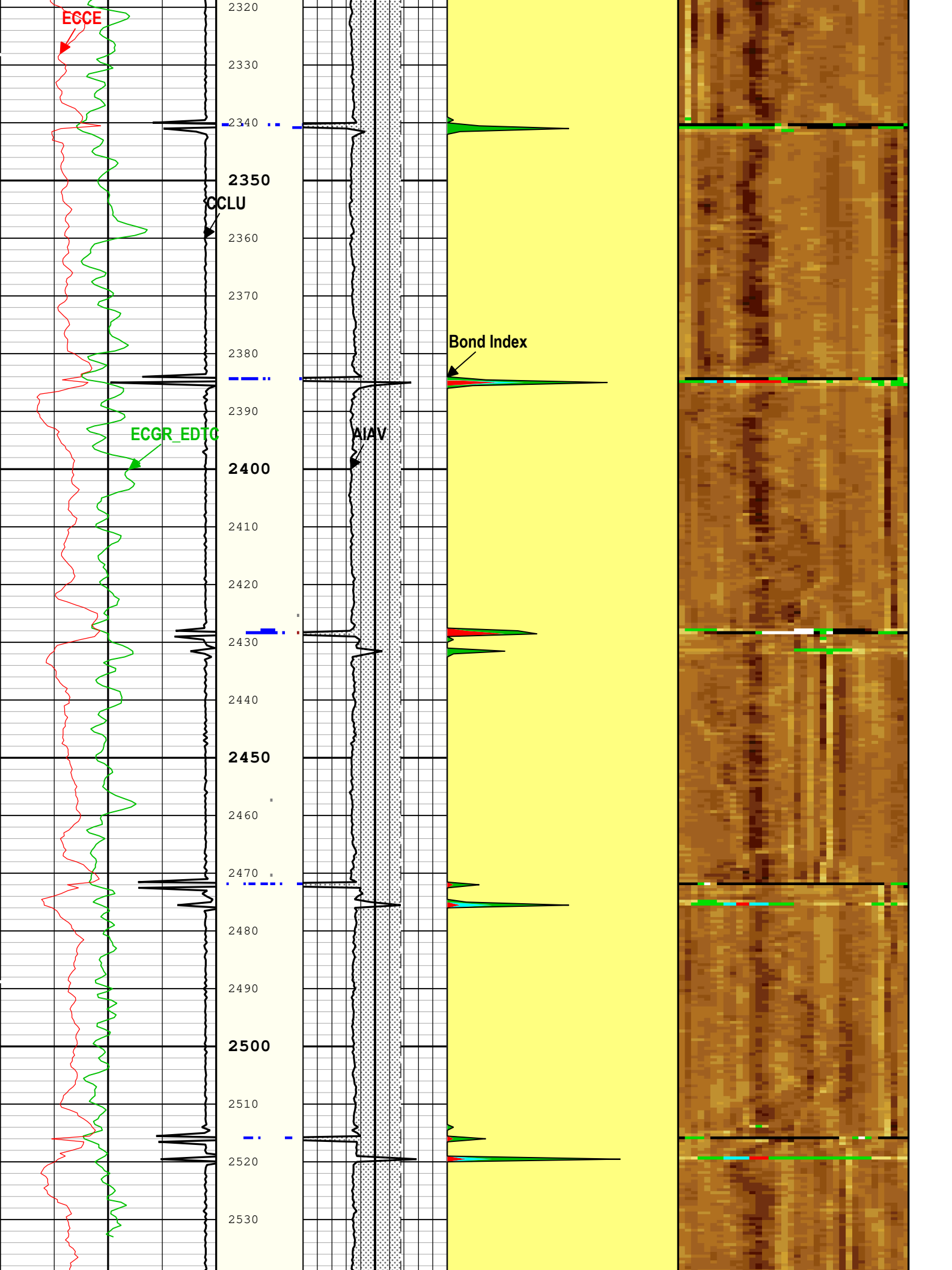
Log	Company:Bonanza Creek Energy	Well:State Antelope X44-D14-13 HNC	1: Log[1]:Up:S003
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Description: USI Cement    Format: Log ( USI Lvl 1 )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 25-Feb-2020 12:28:03

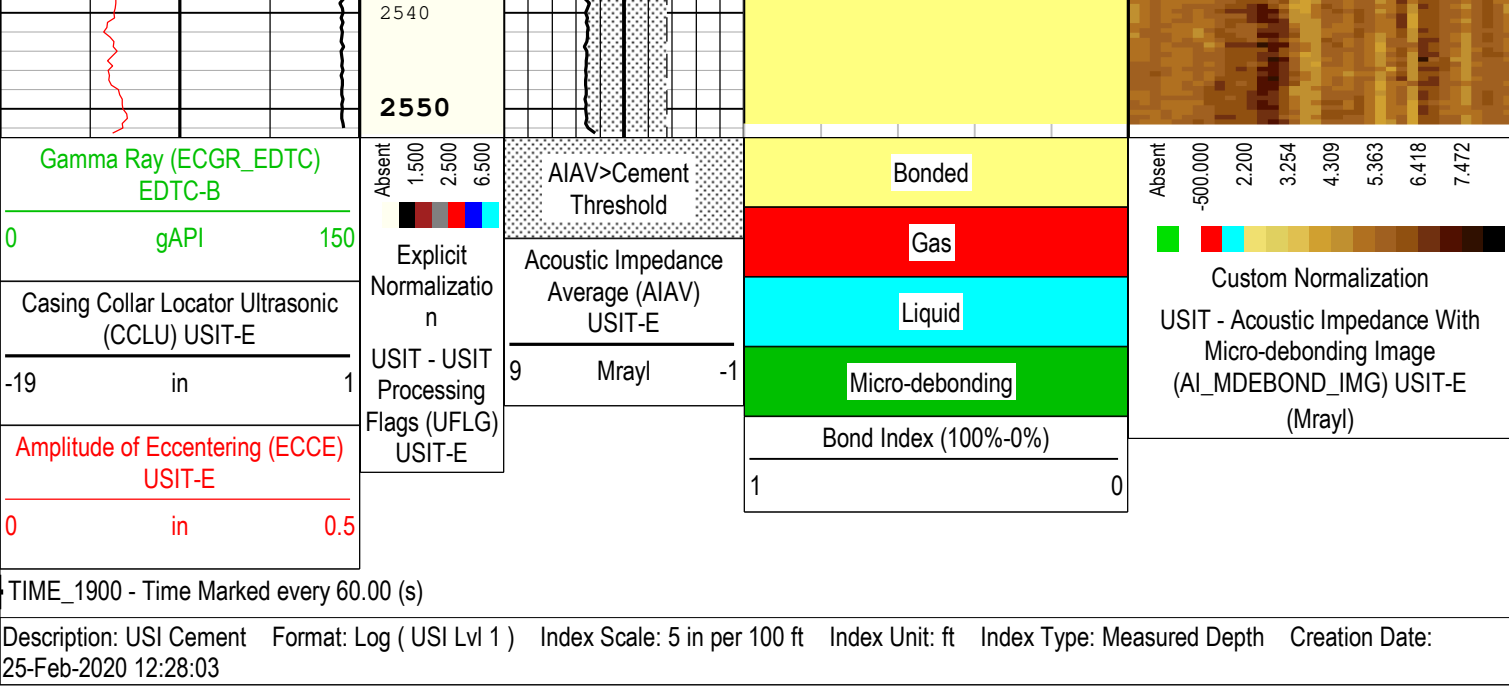
TIME\_1900 - Time Marked every 60.00 (s)











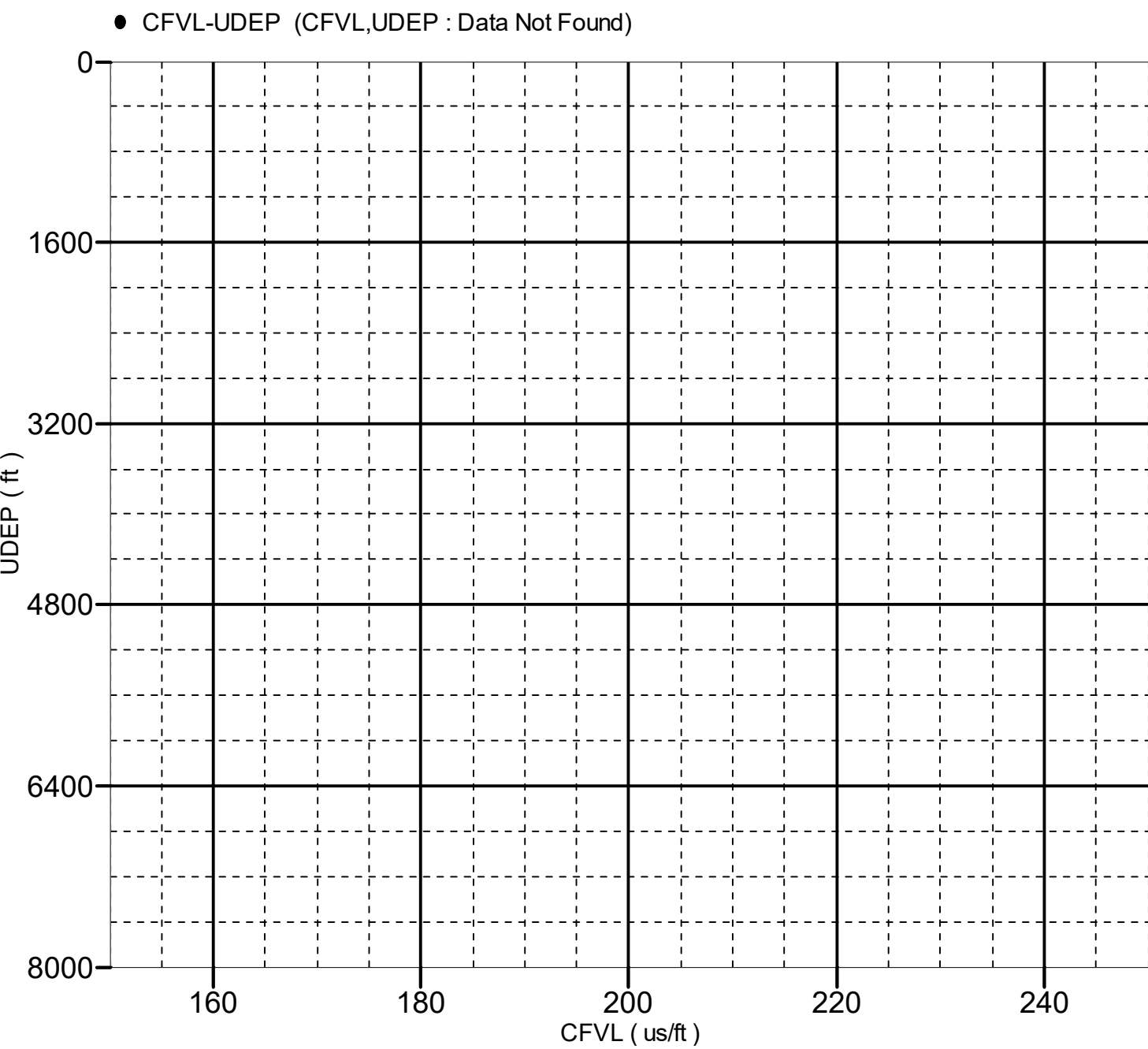
ULOG	Logging Objective	USIT-E	MEASUREMENT	
USFR	Ultrasonic Sampling Frequency	USIT-E	666667	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 6.0 in	
WINB	Window Begin Time	USIT-E	31.88	us
WINE	Window End Time	USIT-E	71.88	us

XYZ	Company:Bonanza Creek Energy Well:State Antelope X44-D14-13 HNC
	1: Log[3]:Up:S003

# Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From    to    ft



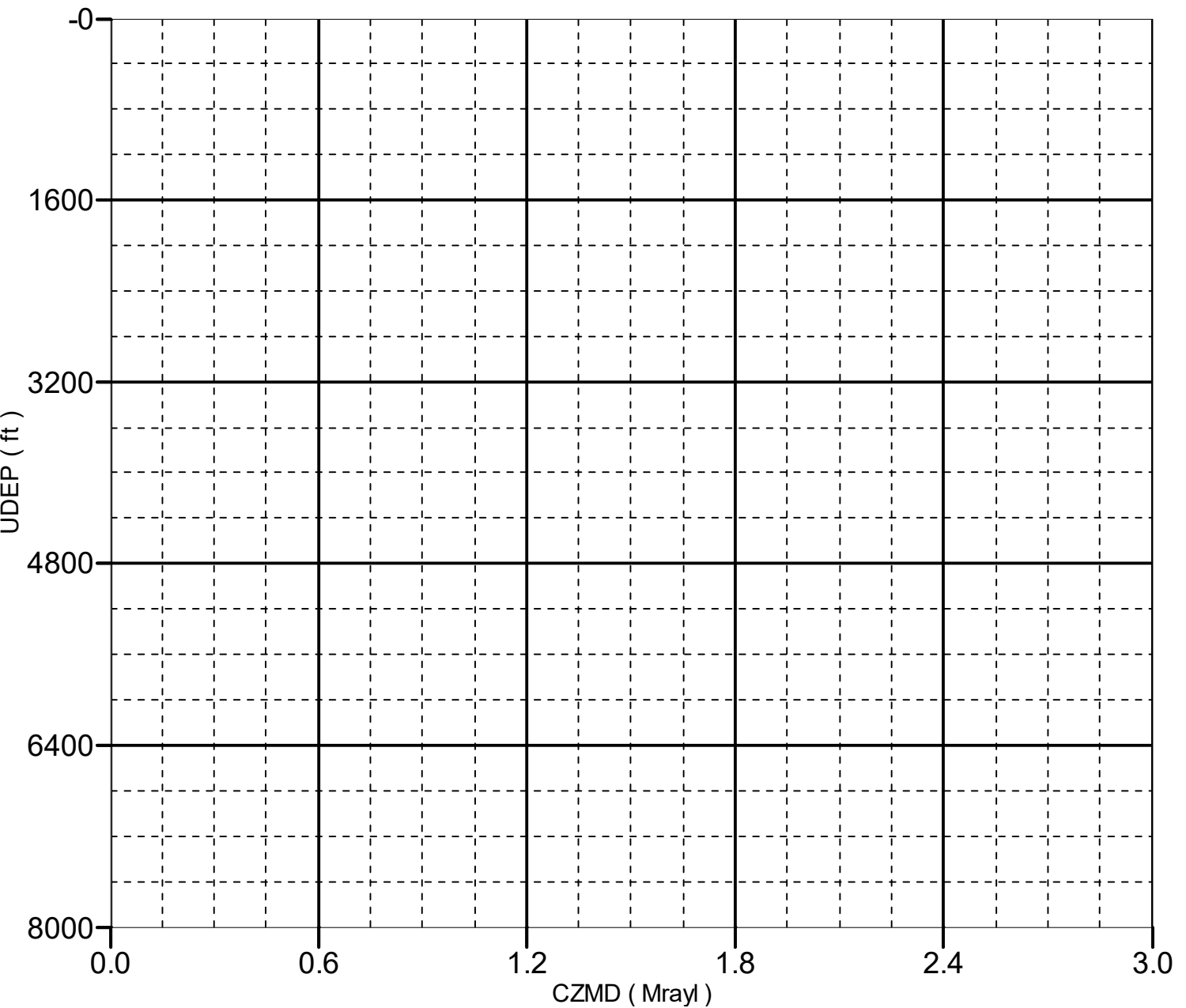
XYZ	Company:Bonanza Creek Energy Well:State Antelope X44-D14-13 HNC
	1: Log[3]:Up:S003

# Acoustic Impedance of Mud vs Depth

# 2D CrossPlot

Index Range: From to ft

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



County:	Weld
State:	Colorado
UltraSonic Summary Print	