

**Company: ExxonMobil Production Corp**

**Well: PCU 297-11B8**

**Field: Piceance Creek**

**County: Rio Blanco**

**State: CO**

**IMAGING BEHIND CASING TOOL  
ULTRASONIC LOG  
CCL / GAMMA RAY**

392' FSL 480' FEL		Ele
Permanent Datum:	GROUND LEVEL	Ele
Log Measured From:	KELLY BUSHING	26
Drilling Measured From:	KELLY BUSHING	
API Serial No.	05-103-11371-00-X	Section 11

County: Rio Blanco  
Field: Piceance Creek  
Location: 392' FSL 480' FEL  
Well: PCU 297-11B8  
Company: ExxonMobil Production Corp

Logging Date	2-Dec-2009	
Run Number	ONE	
Depth Driller	8626 ft	
Schlumberger Depth	8575 ft	
Bottom Log Interval	8575 ft	
Top Log Interval	5000 ft	
Casing Fluid Type	WBM	
Salinity		
Density	9.6 lbm/gal	
Fluid Level	10 ft	
BIT/CASING/TUBING STRING		
Bit Size	9.875 in	
From		
To		
Casing/Tubing Size	7.000 in	
Weight	26 lbm/ft	
Grade		
From	0 ft	
To	8626 ft	
Maximum Recorded Temperatures	0 degF	
Logger On Bottom	2-Dec-2009	17:50
Unit Number	2276	Vernal
Recorded By	JASON EDWARDS	
Witnessed By	JOHN WOOD	

K.B. 7153.10 ft  
 G.L. 7127.00 ft  
 D.F. 7152.00 ft

10 ft above Perm. Datum  
 7127.00 ft

Township 2S  
 Range 97W

PVT DATA			
Oil Density		Run 1	Run 2
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation	2.5 deg		
CEMENTING DATA			
Primary/Squeeze	Primary		
Casing String No			
Lead Cement Type			
Volume			
Density	11 lbm/gal		
Water Loss			
Additives			
Tail Cement Type			
Volume			
Density			
Water Loss			
Additives			
Expected Cement Top	5200 ft		
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Fluid Type			
Salinity			
Density			
Fluid Level			
BIT/CASING/TUBING STRING			
Bit Size			
From			
To			
Casing/Tubing Size			
Weight			
Grade			
From			
To			
Maximum Recorded Temperatures			
Logger On Bottom	Time		
Unit Number	Location		
Recorded By			
Witnessed By			

### DEPTH SUMMARY LISTING

Date Created: 2-DEC-2009 14:52:34

#### Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: Calibration Date: 1-MARCH-2000 Calibrator Serial Number: 1 Calibration Cable Type: 7-42P Wheel Correction 1: -9 Wheel Correction 2: -8	Type: CMTD-B/A Serial Number: Calibration Date: Calibrator Serial Number: Number of Calibration Points: 10 Calibration RMS: 36 Calibration Peak Error: 63	Type: 7-46A XS Serial Number: Length: 22690 FT Conveyance Method: Wireline Rig Type: LAND

#### Depth Control Parameters

## Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	227.40 FT
Rig Up Length At Bottom:	225.60 FT
Rig Up Length Correction:	1.80 FT
Stretch Correction:	6.00 FT
Tool Zero Check At Surface:	0.70 FT

### Depth Control Remarks

1. All current Schlumberger depth control policies followed
2. IDW used as primary depth reference, z-chart used as secondary reference
- 3.
- 4.
- 5.
- 6.

#### 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 OF 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.

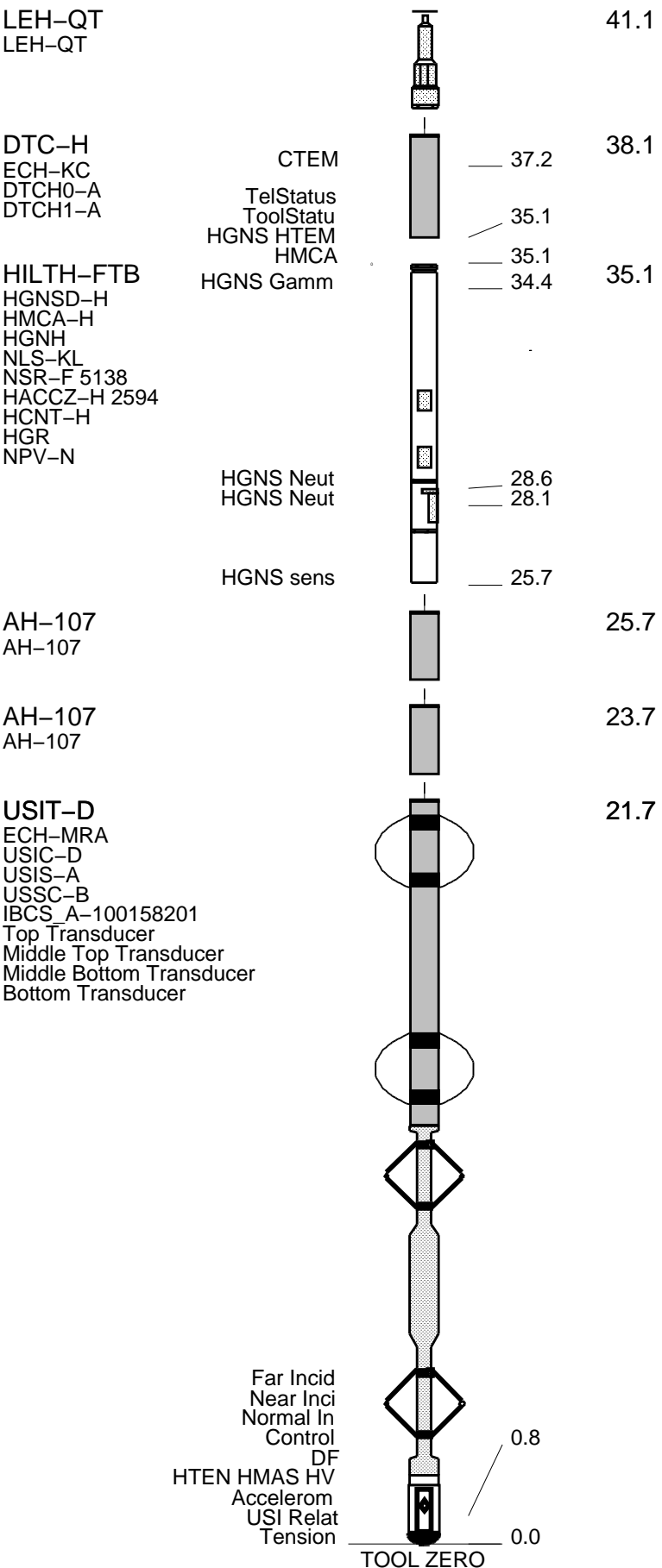
OTHER SERVICES1 OS1: None OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
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REMARKS: RUN NUMBER 1 Tool ran as per tool sketch Tool eccentered with 2 GEMCOs UFAO = 2 Neutron tool ran for gamma ray only Logged at 1800 FT/HR BHT - 166 DEGF BHP - 4270 Expected casing thickness = .362 Expected casing ID = 6.276  MUD WEIGHT WAS 11 PPG UP TO APPROX 7100 FT ABOVE 7100 FT MUD WEIGHT BECAME 9.6 PPG MUD INFORMATION WAS PROVIDED BY THE CLIENT  THANK YOU FOR CHOOSING SCHLUMBERGER WIRELINE YOUR SCHLUMBERGER CREW: J. EDWARDS, T. JACKSON, W. BARBER	REMARKS: RUN NUMBER 2
---	-----------------------

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:	17C0-154		PROGRAM VERSION:		
FLUID LEVEL:	10 ft		FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

### EQUIPMENT DESCRIPTION

RUN 1	RUN 2
SURFACE EQUIPMENT GSR-U/Y NCT-B CNB-AB NCS-VB  WITM (DTS)-A  DOWNHOLE EQUIPMENT	



MAXIMUM STRING DIAMETER 7.50 IN  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN FEET



# SLG COMPOSITE

MAXIS Field Log

Company: ExxonMobil Production Corp

Well: PCU 297-11B8

## Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_007LUP	FN:10	PRODUCER	02-Dec-2009 17:55	8575.5 FT	191.5 FT
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## Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:17	PRODUCER	02-Dec-2009 20:51	8575.5 FT	4991.5 FT
BACKUP	USI_TLD_MCFL_CNL_012PUP	FN:18	PRODUCER	02-Dec-2009 20:51	8575.5 FT	4991.5 FT

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

## Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MW	9.6 LB/G	11 LB/G	7101.5 20:54:26

Image rotation (UCAZ) (DEG)

0 360

Tool/Tot. Drag From D4T to STIA

Cable Drag From D4T to STIT

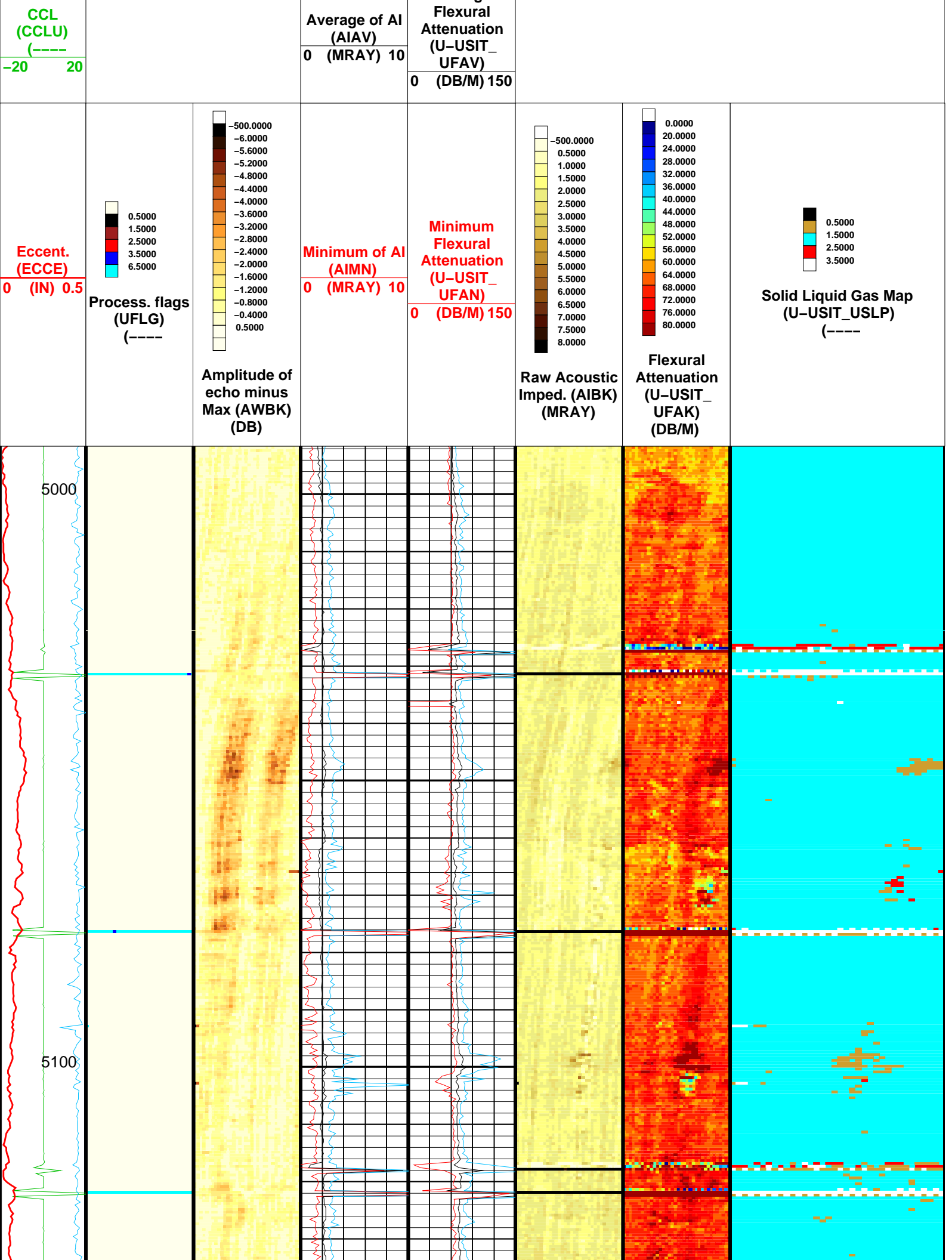
Stuck Stretch (STIT)

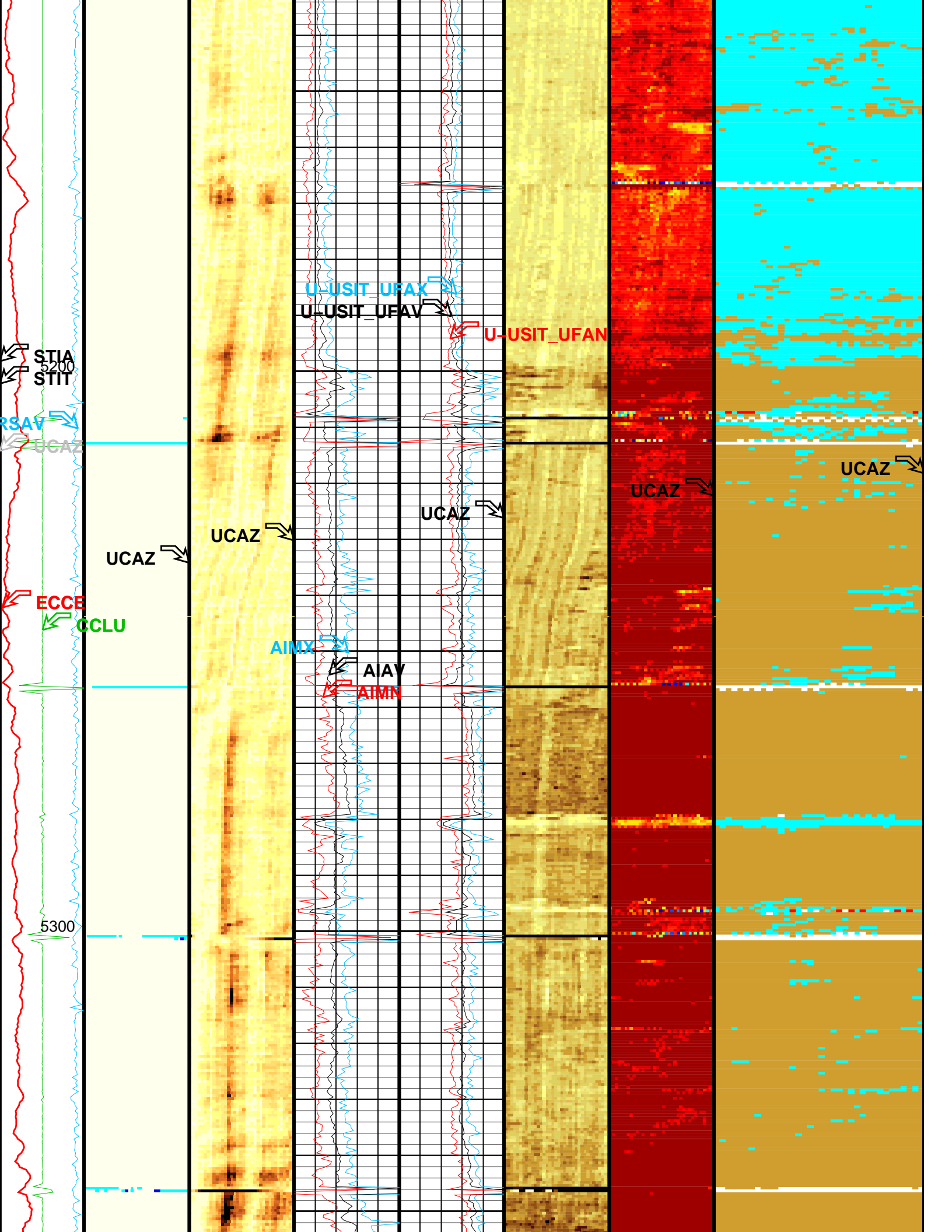
0 (F) 50

RSAV (RSAV) (RPS)

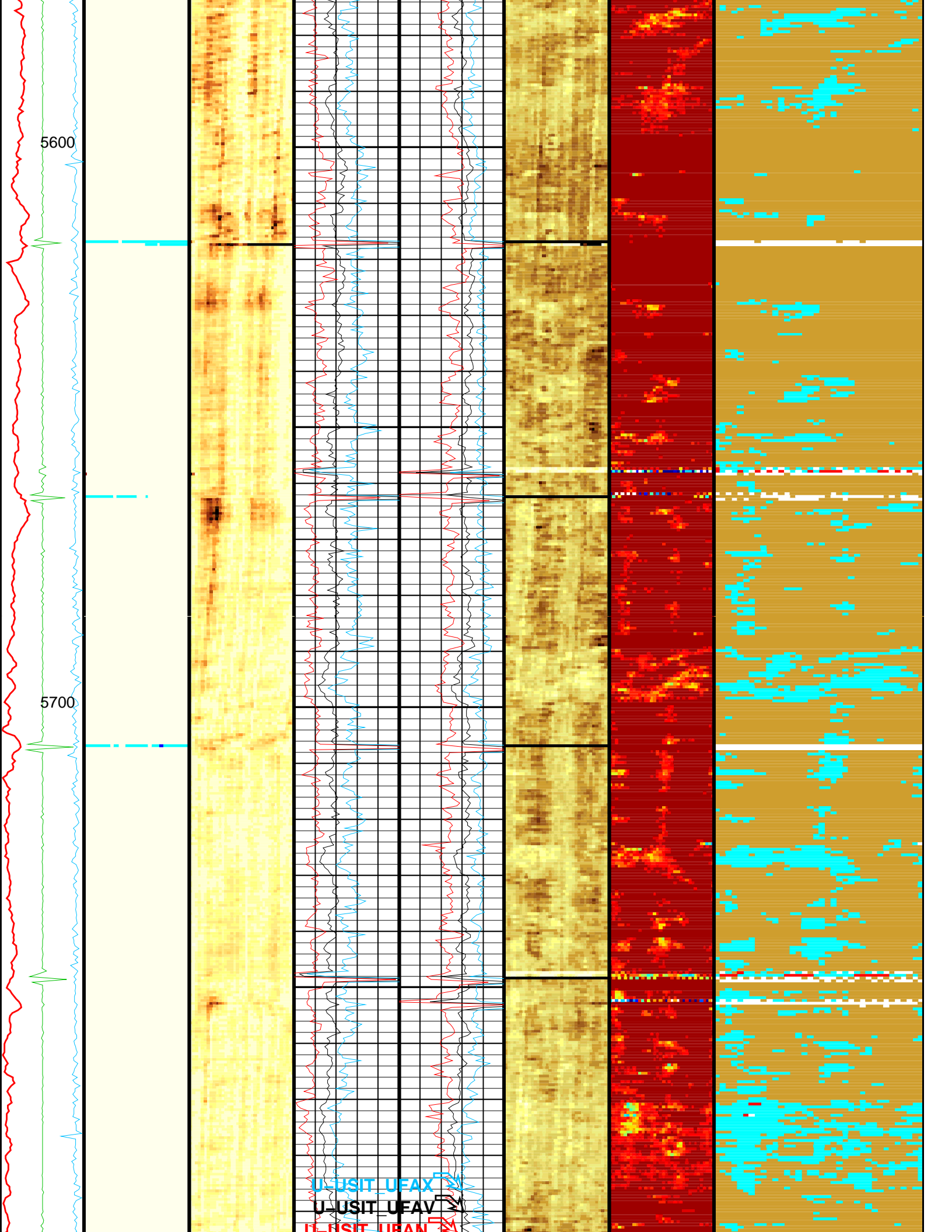
6 7.5

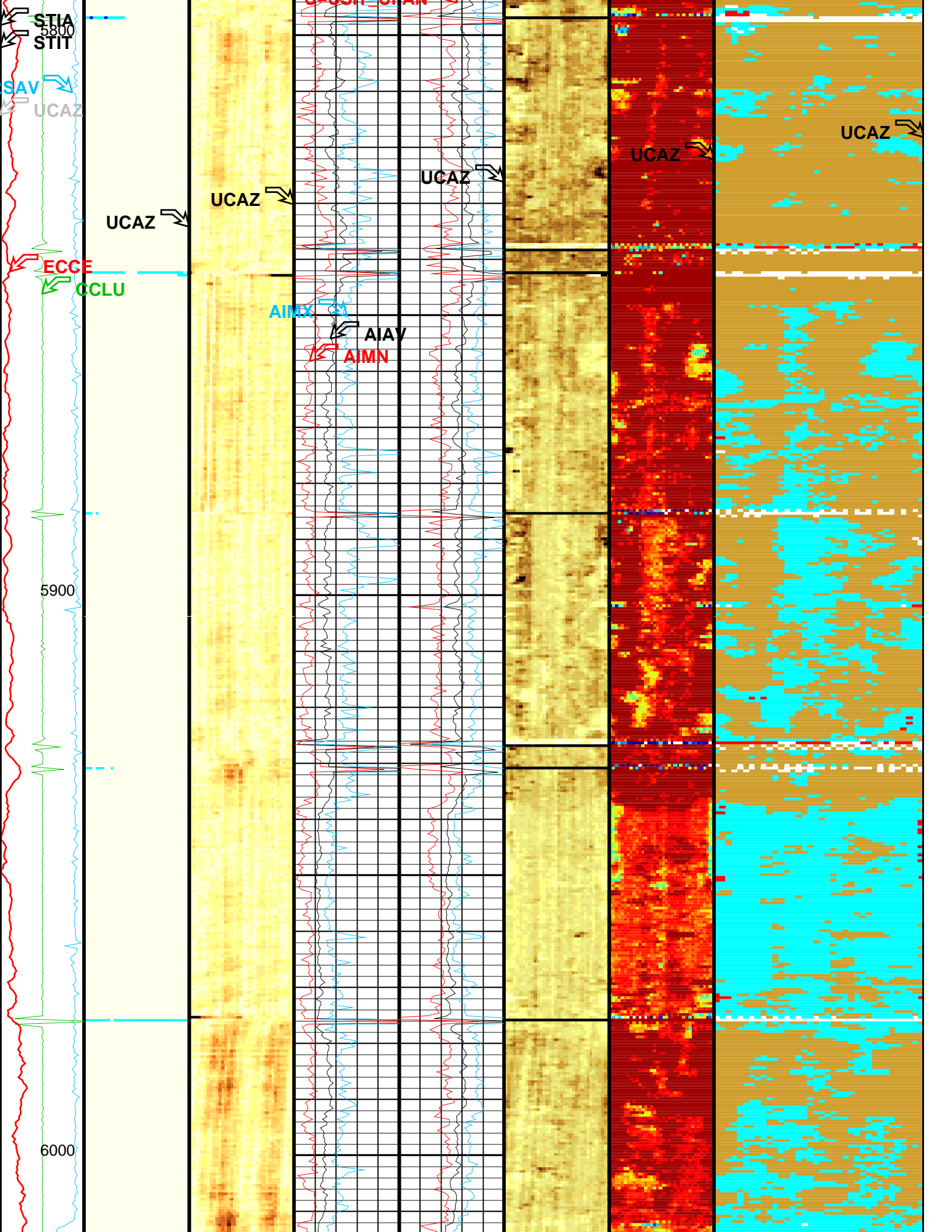
Maximum of AI (AIMX)	Maximum Flexural Attenuation (U-USIT_UFAX)
0 (MRAY) 10	0 (DB/M) 150
Average	





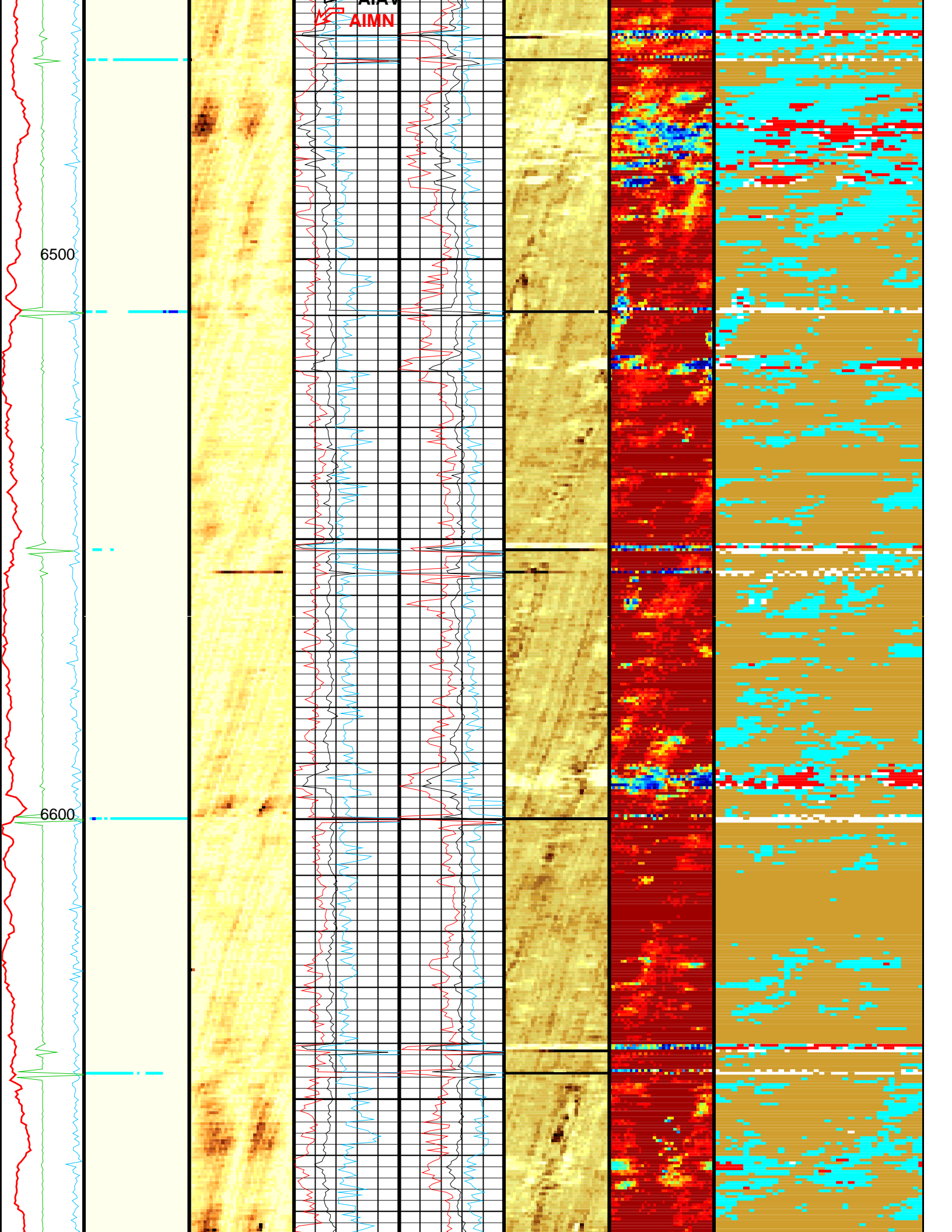


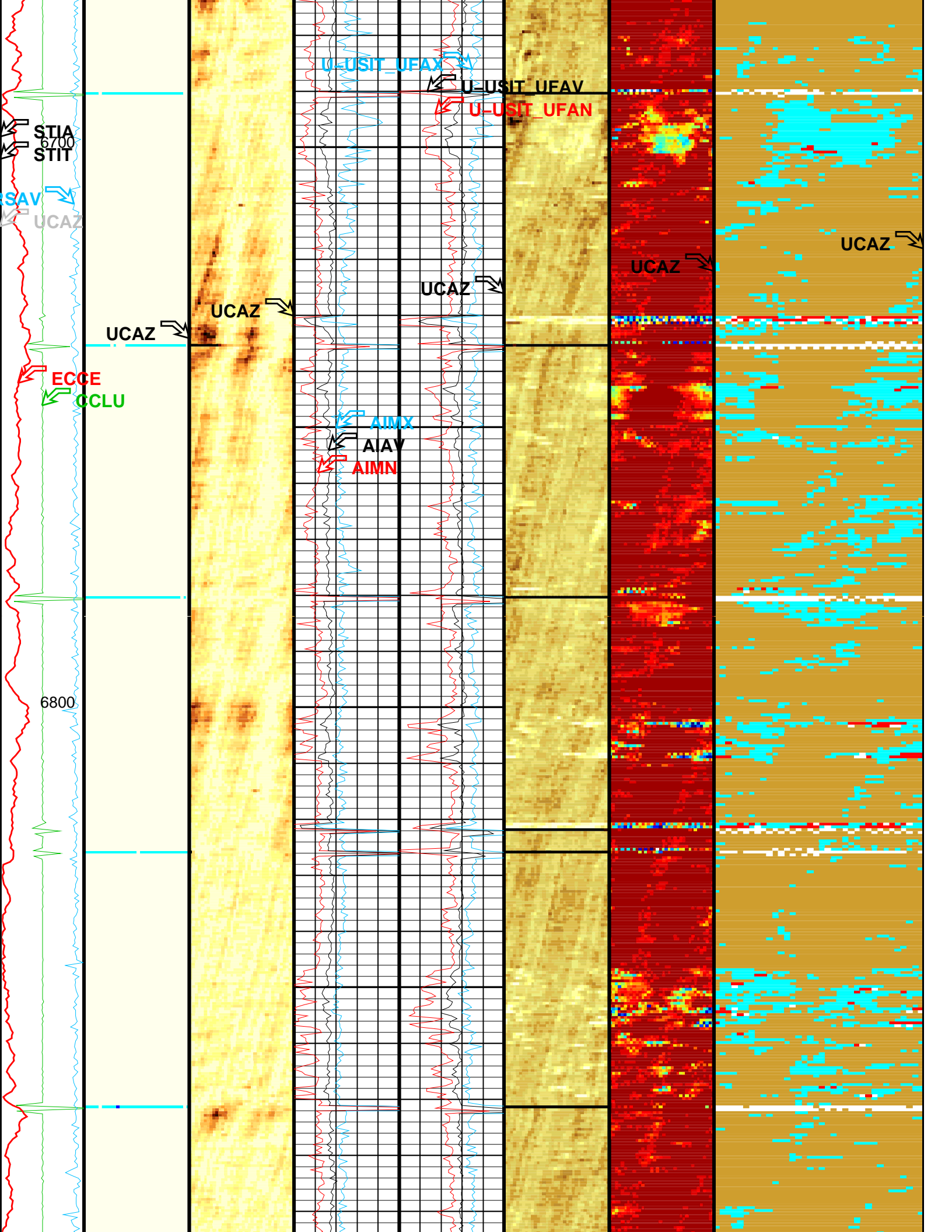


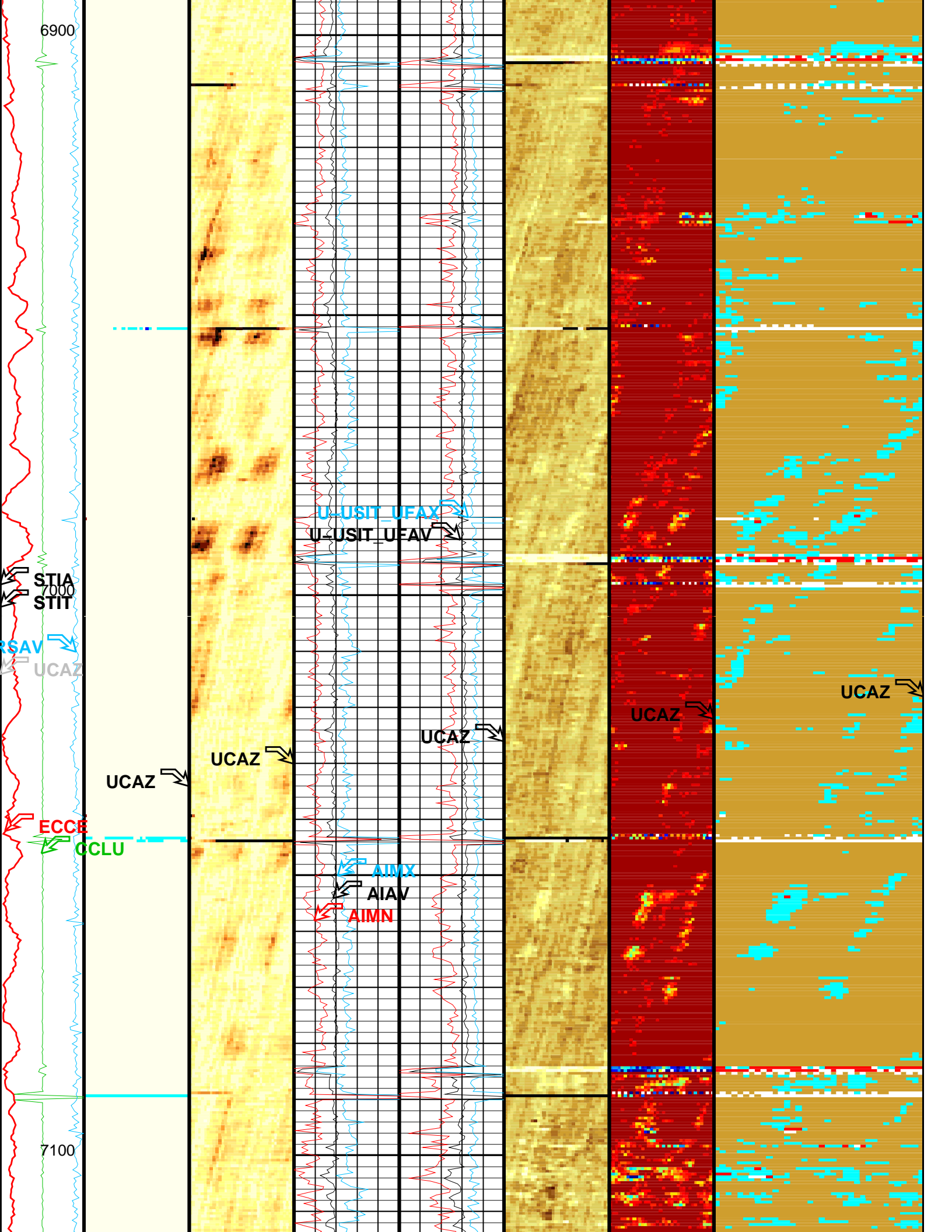






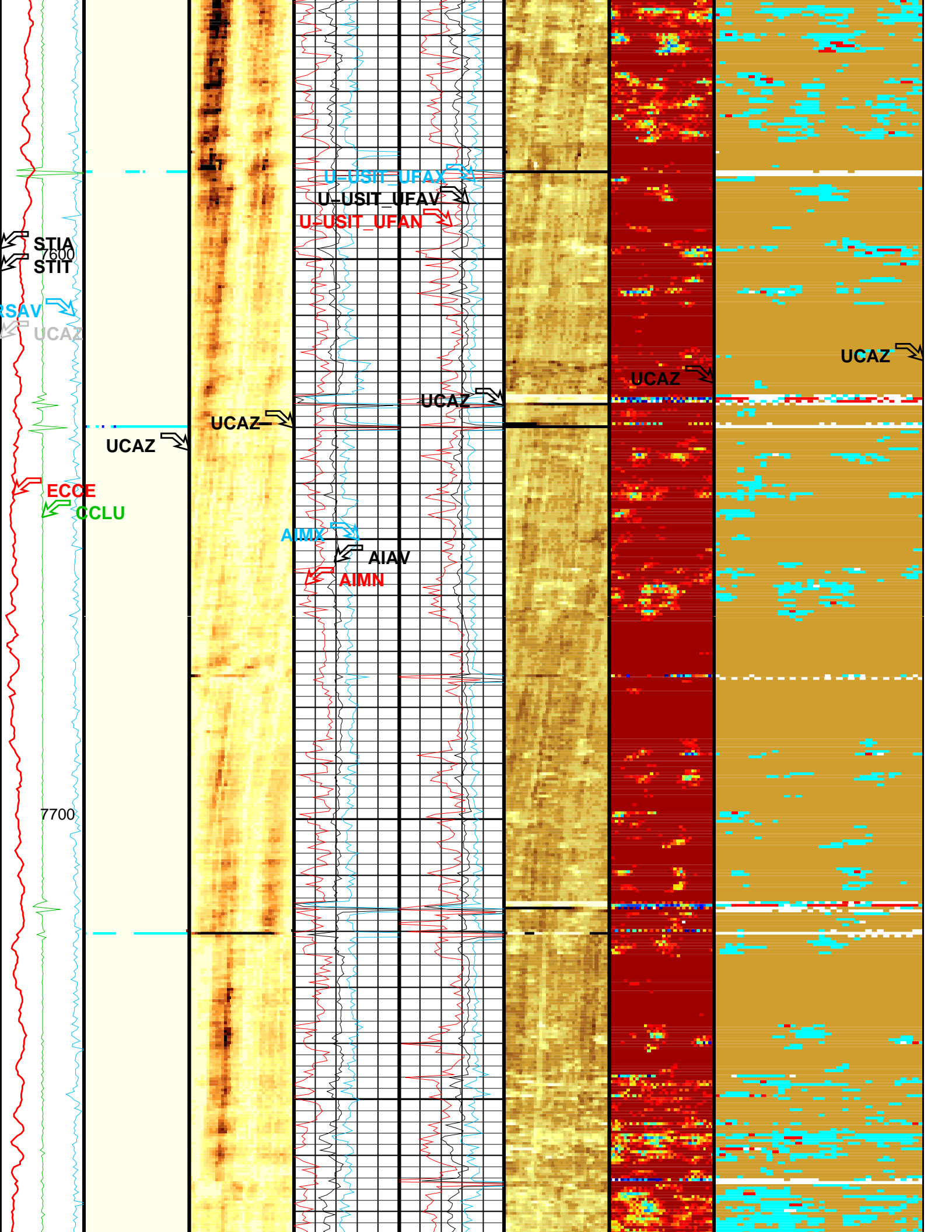


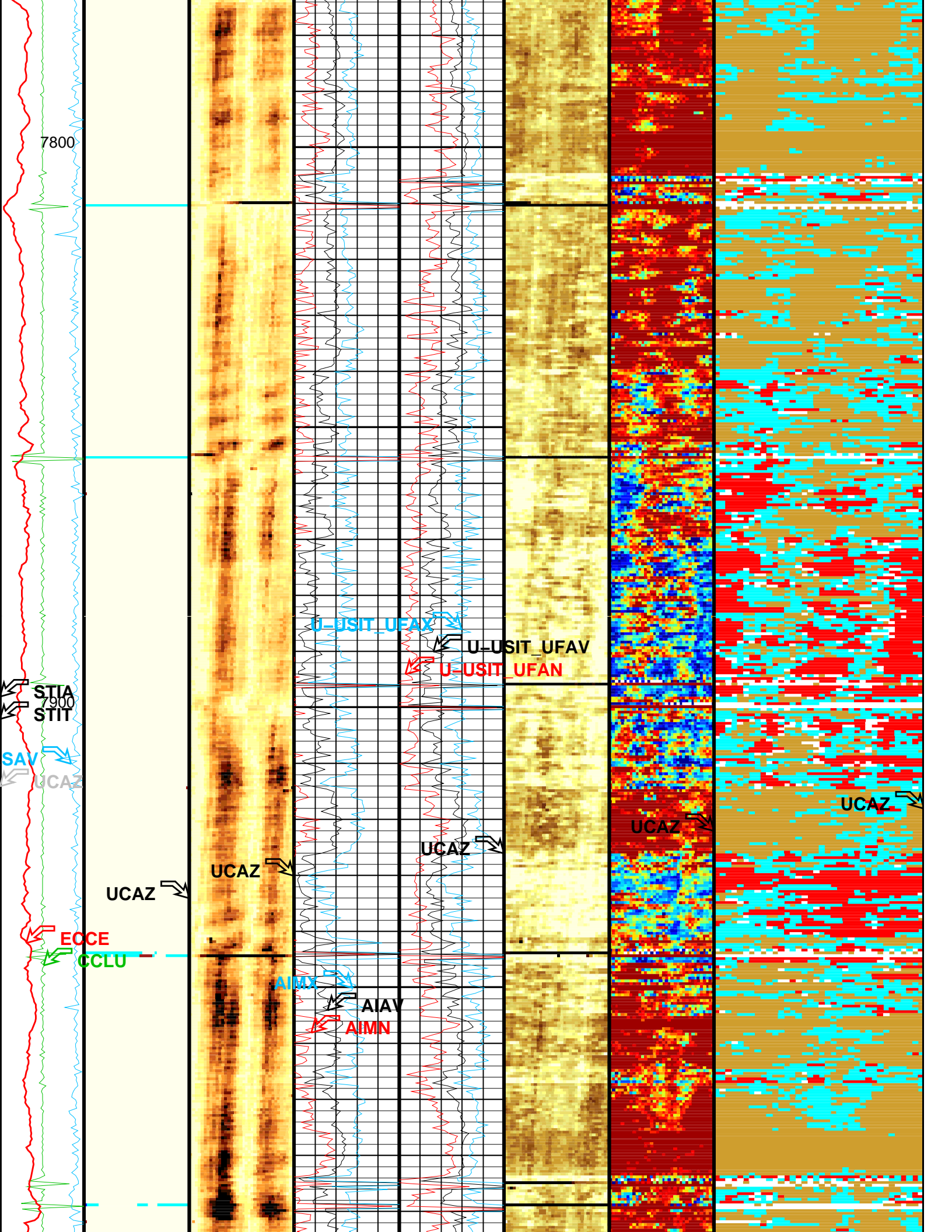


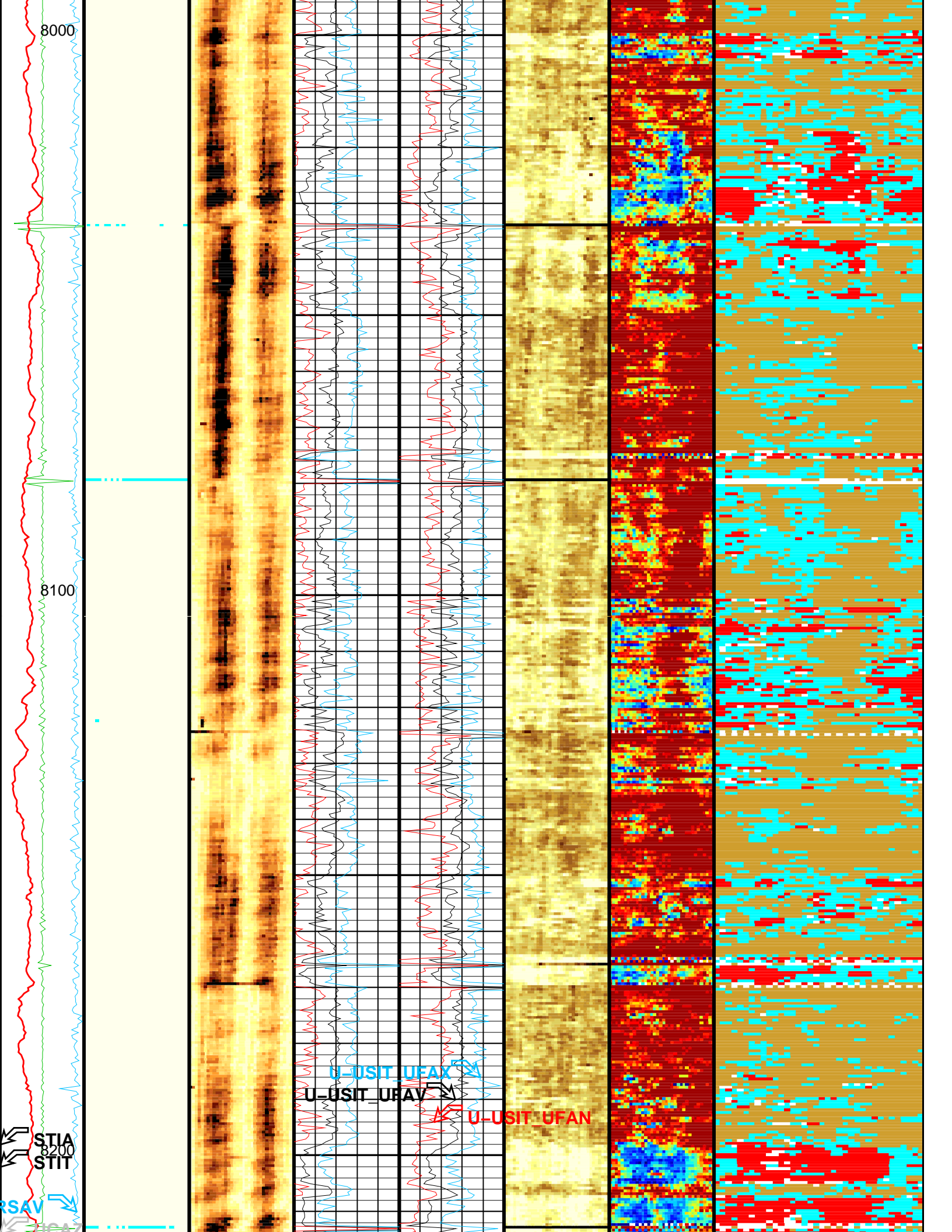




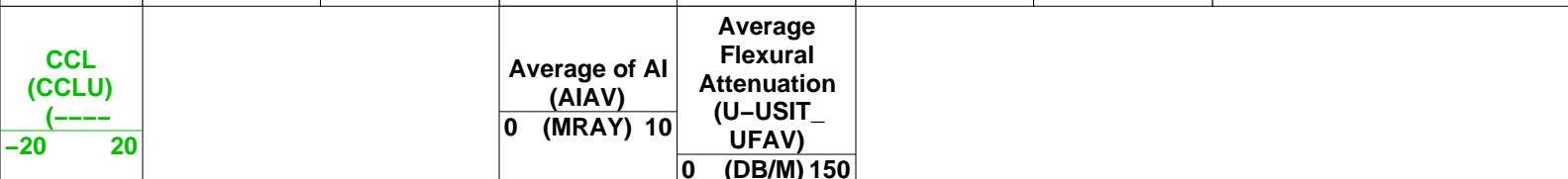
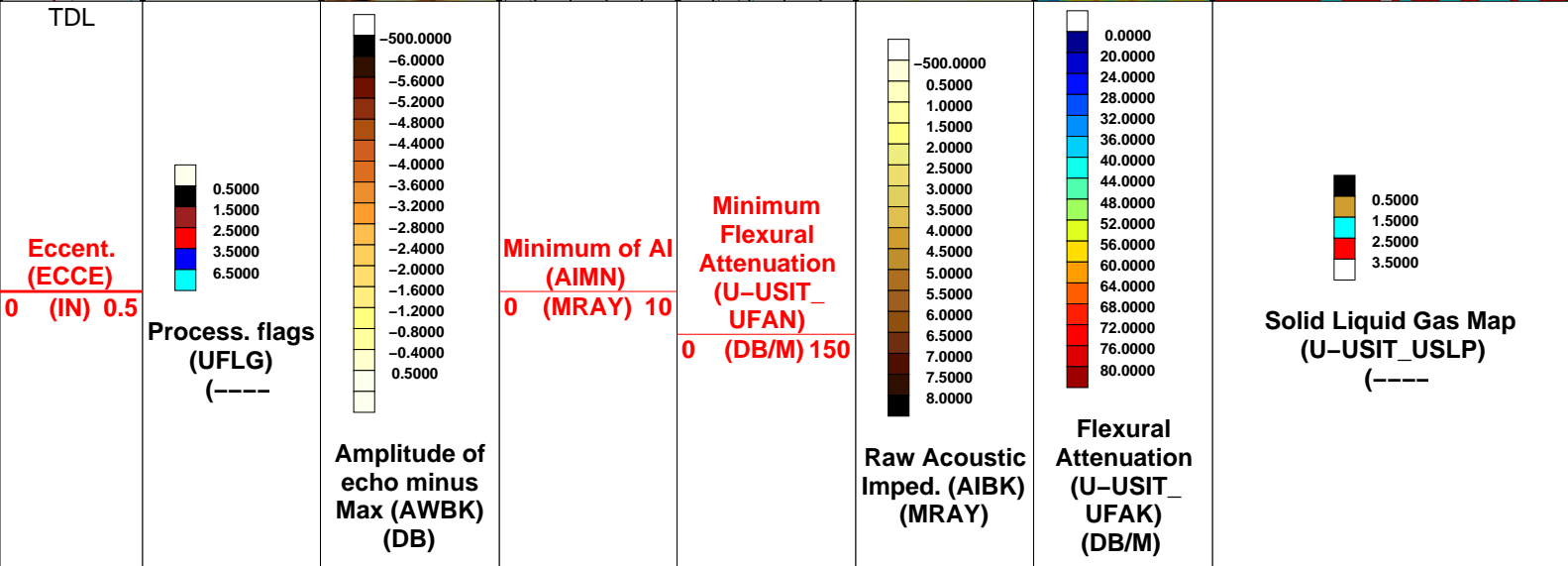
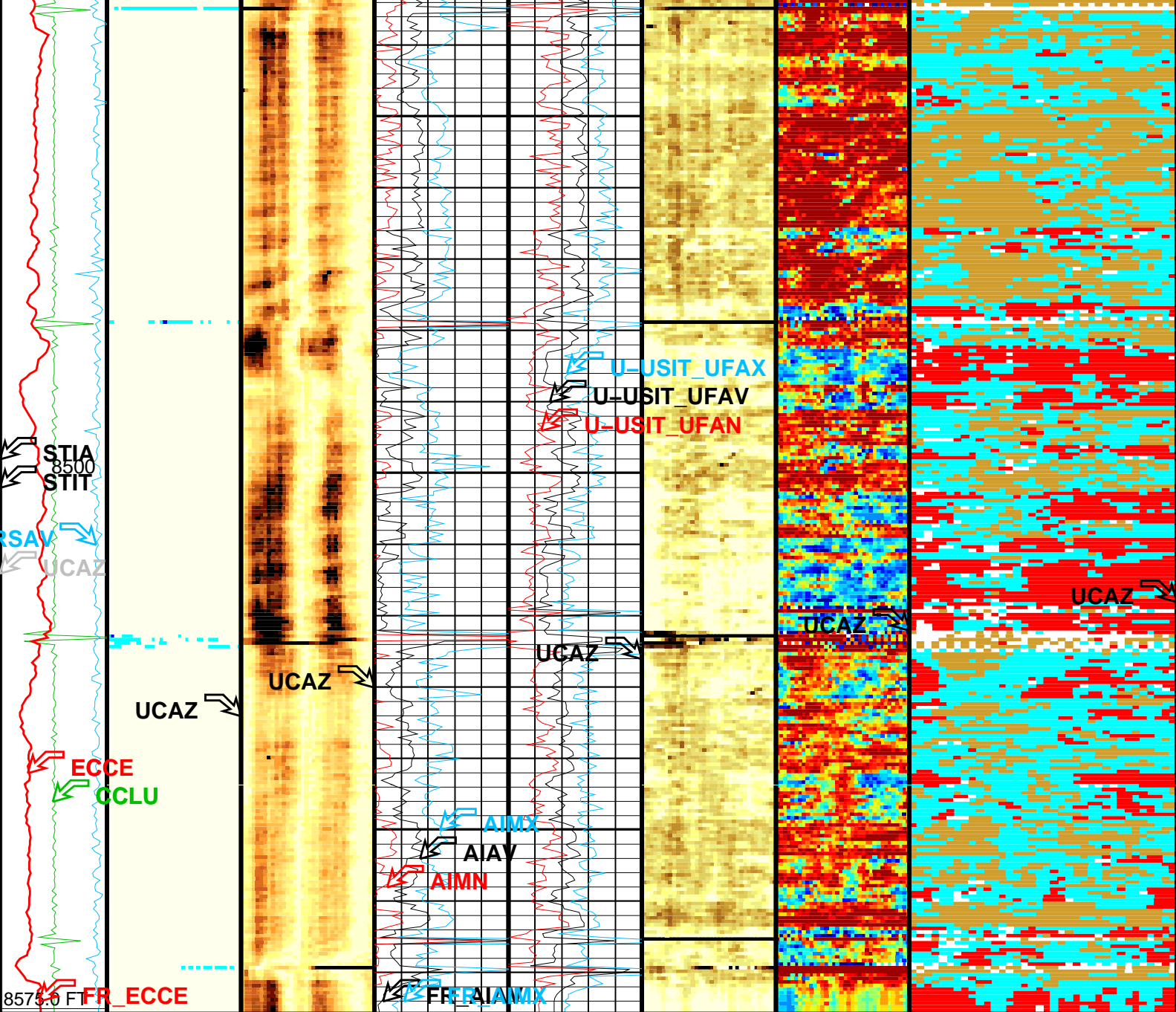












<b>RSAV (RSAV) (RPS)</b> 6      7.5
<b>Stuck Stretch (STIT)</b> 0 (F) 50
<b>Cable Drag From D4T to STIT</b>
<b>Tool/Tot. Drag From D4T to STIA</b>
<b>Image rotation (UCAZ) (DEG)</b> 0      360

<b>Maximum of AI (AIMX)</b> 0 (MRAY) 10	<b>Maximum Flexural Attenuation (U-USIT_ UFAX)</b> 0 (DB/M) 150
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Format: USI\_IBC\_SLG      Vertical Scale: 5" per 100'      Graphics File Created: 02-Dec-2009 20:51

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.  
 Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

### Parameters

DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	192 US/F
DOT	Diameter of Transducer Sensor	1.756 IN
EMXV	EMEX Voltage	110 V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI
IMAR	Image Rotation	OFF
MW	Mud Weight	11 LB/G
RCOD	Reference Calibrator Outer Diameter	4.5 IN
RCSO	Reference Calibrator Standoff	0.8425 IN
RCTH	Reference Calibrator Thickness	0.2165 IN
TCUB	T^3 Processing Level	Vax_Loop
THDH	Maximum Search Thickness (percentage of nominal)	130
THDL	Minimum Search Thickness (percentage of nominal)	70
THDP	Thickness Detection Policy	Fundamental
THNO	Nominal Thickness of Casing	0.362 IN
U-USIT_CEMT	USIT Cement Type	LIGHT

U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0	
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	MRAY
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	2	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_A	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_5_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.2537	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.86	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
<b>STI: Stuck Tool Indicator</b>			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	5	FT
TDD	Total Depth - Driller	8626.00	FT
TDL	Total Depth - Logger	8575.00	FT
<b>System and Miscellaneous</b>			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	

### Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_007LUP	FN:10	PRODUCER	02-Dec-2009 17:55	8575.5 FT	191.5 FT
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### Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:17	PRODUCER	02-Dec-2009 20:51		
BACKUP	USI_TLD_MCFL_CNL_012PUP	FN:18	PRODUCER	02-Dec-2009 20:51		

# COMPOSITE

MAXIS Field Log

Company: ExxonMobil Production Corp

Well: PCU 297-11B8

### Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_007LUP	FN:10	PRODUCER	02-Dec-2009 17:55	8575.5 FT	191.5 FT
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### Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:17	PRODUCER	02-Dec-2009 20:51	8575.5 FT	4991.5 FT
BACKUP	USI_TLD_MCFL_CNL_012PUP	FN:18	PRODUCER	02-Dec-2009 20:51	8575.5 FT	4991.5 FT

OP System Version: 17C0-154

## Changed Parameter Summary

**DLIS Name**

**New Value**

**Previous Value**

**Depth & Time**

MW

9.6 LB/G

11 LB/G

7101.5 20:54:26

Image rotation (UCAZ) (DEG)	0	360
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Tool/Tot. Drag From D4T to STIA		
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Cable Drag From D4T to STIT		
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Stuck Stretch (STIT)	0 (F)	50
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Gamma Ray (GR) (GAPI)	0	150
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CCL (CCLU) (----)	-20	20
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RSAV (RSAP) (RPS)	6	7.5
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CCL (CCLU) (----)	-20	20
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Min of Internal radius (IRMN) (IN)	3.7	2.7	2.7	3.7
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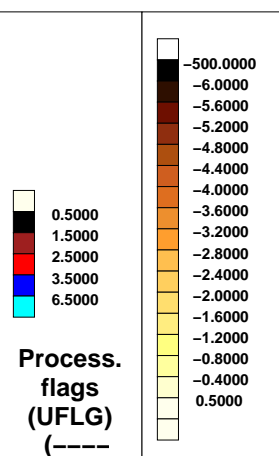
Internal radius Maximum (IRMX) (IN)	3.7	2.7	2.7	3.7
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Internal radius Average (IRAV) (IN)	3.7	2.7	2.7	3.7
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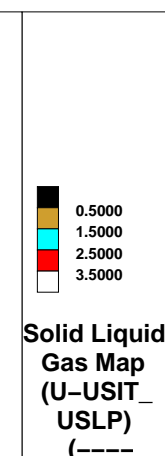
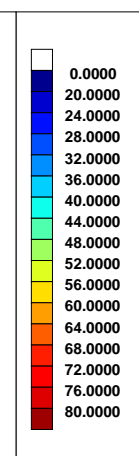
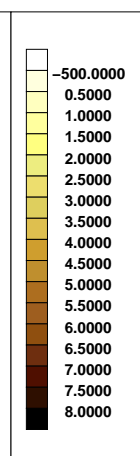
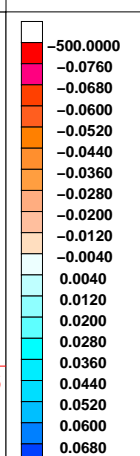
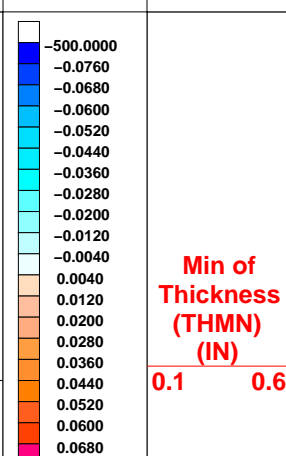
Maximum of Thickness (THMX) (IN)	0.1	0.6
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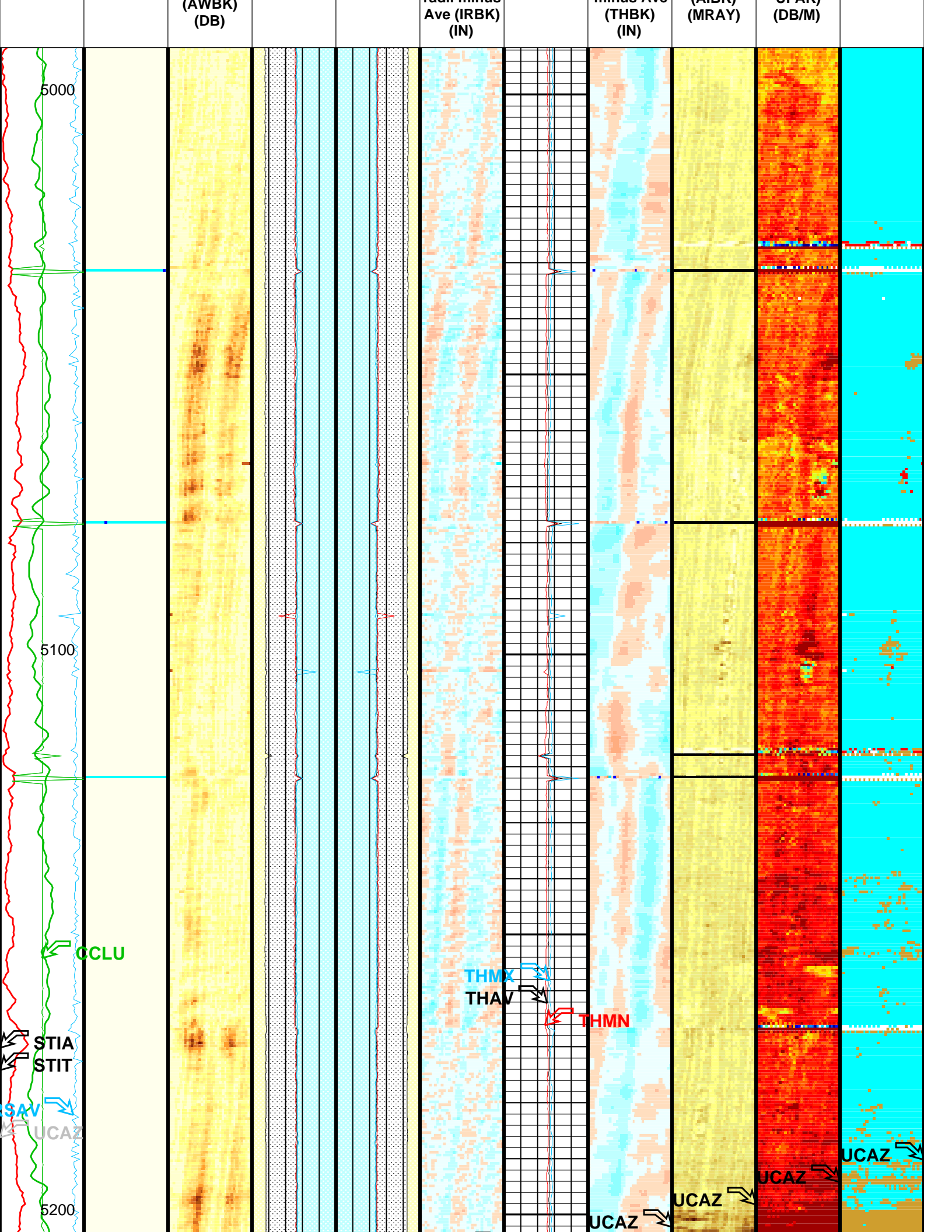
Average of Thickness (THAV) (IN)	0.1	0.6
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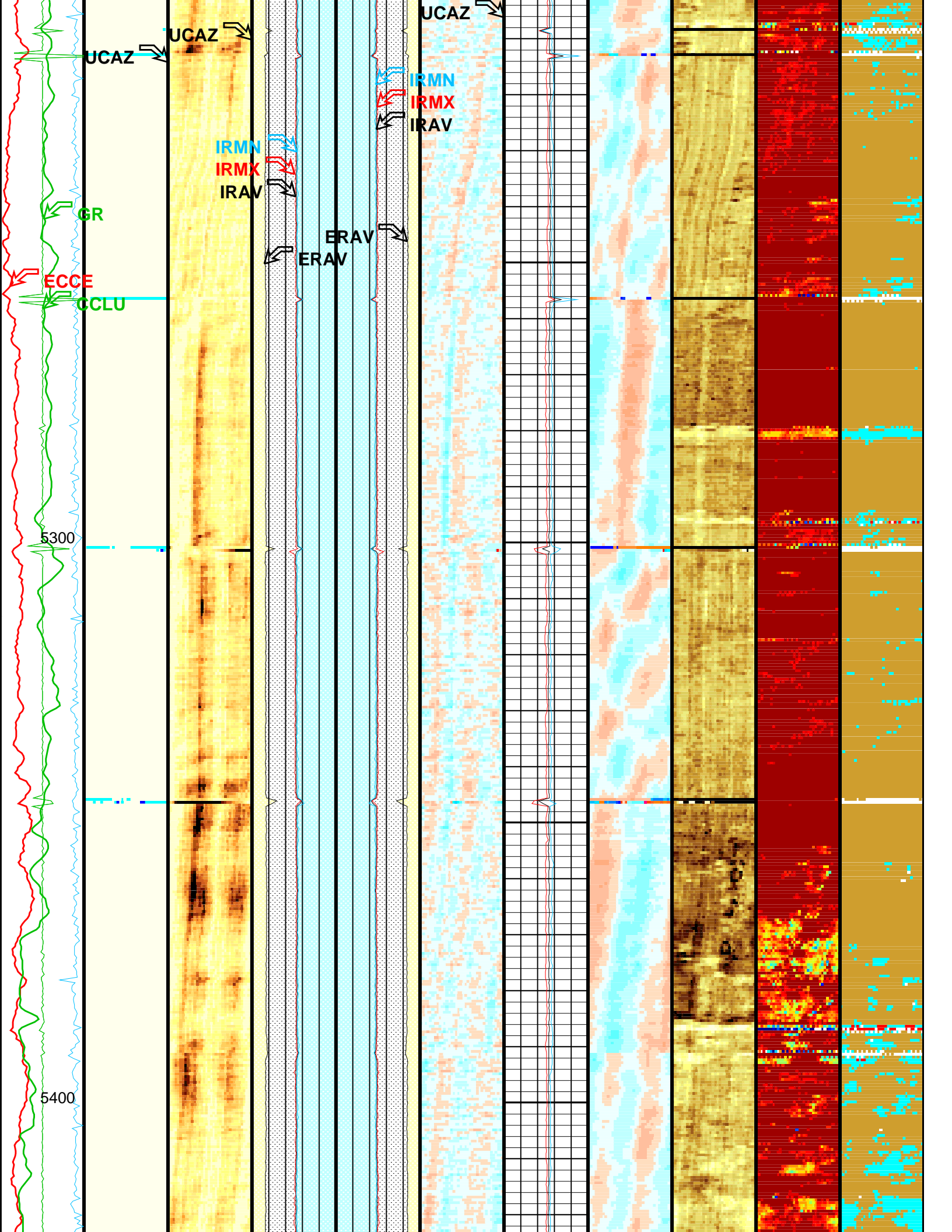
Eccent. (ECCE) (IN)	0	0.5
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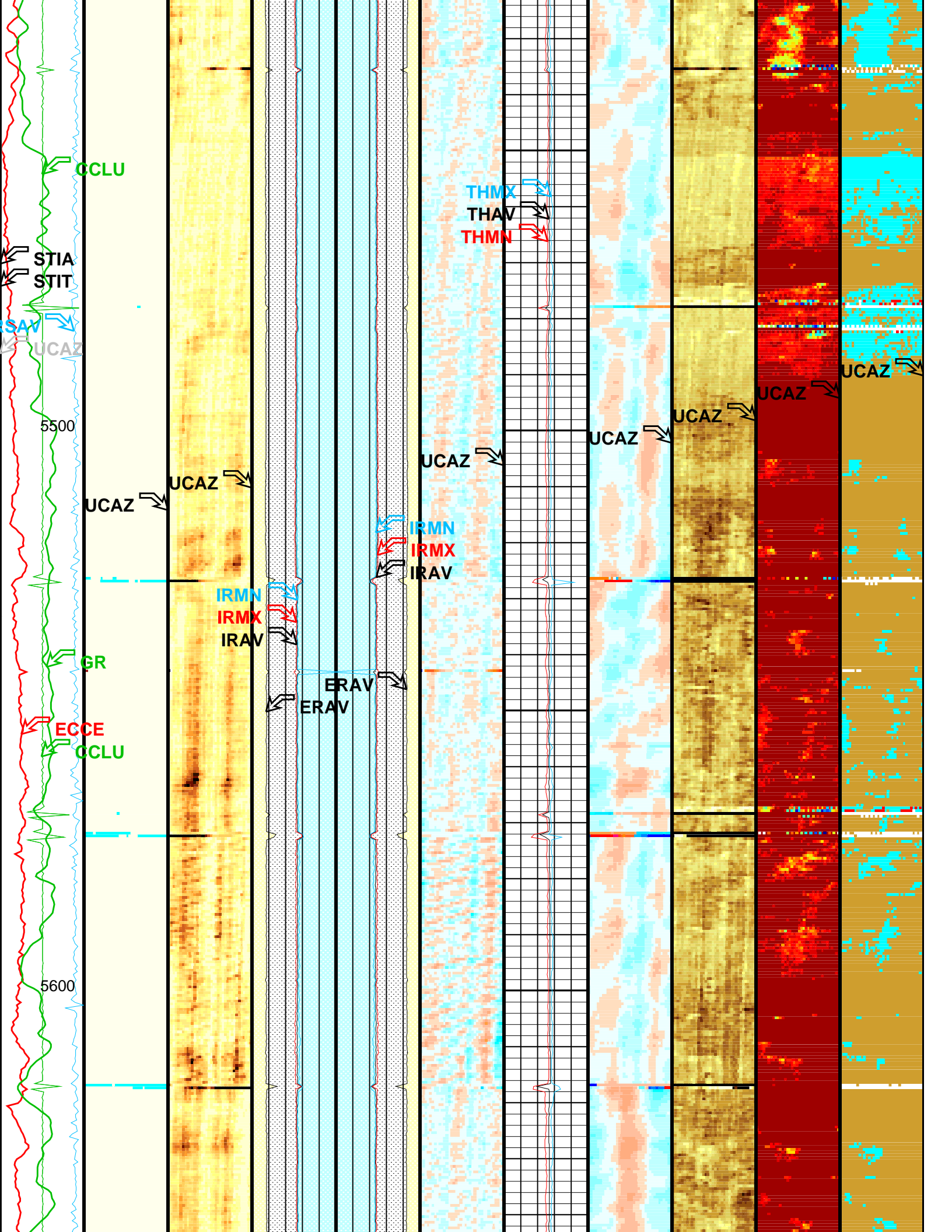


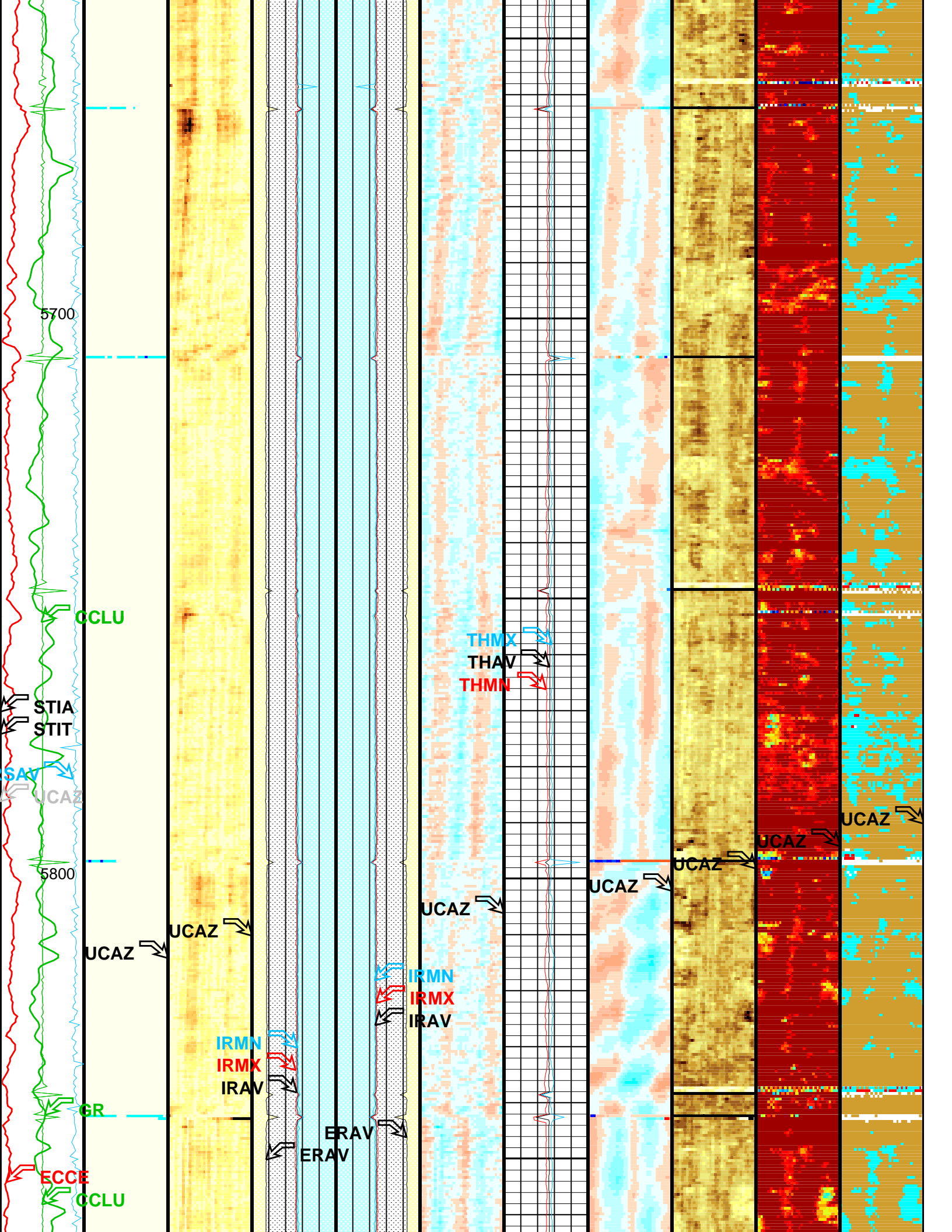
External radius Average (ERAV) (IN)	3.7	2.7	2.7	3.7
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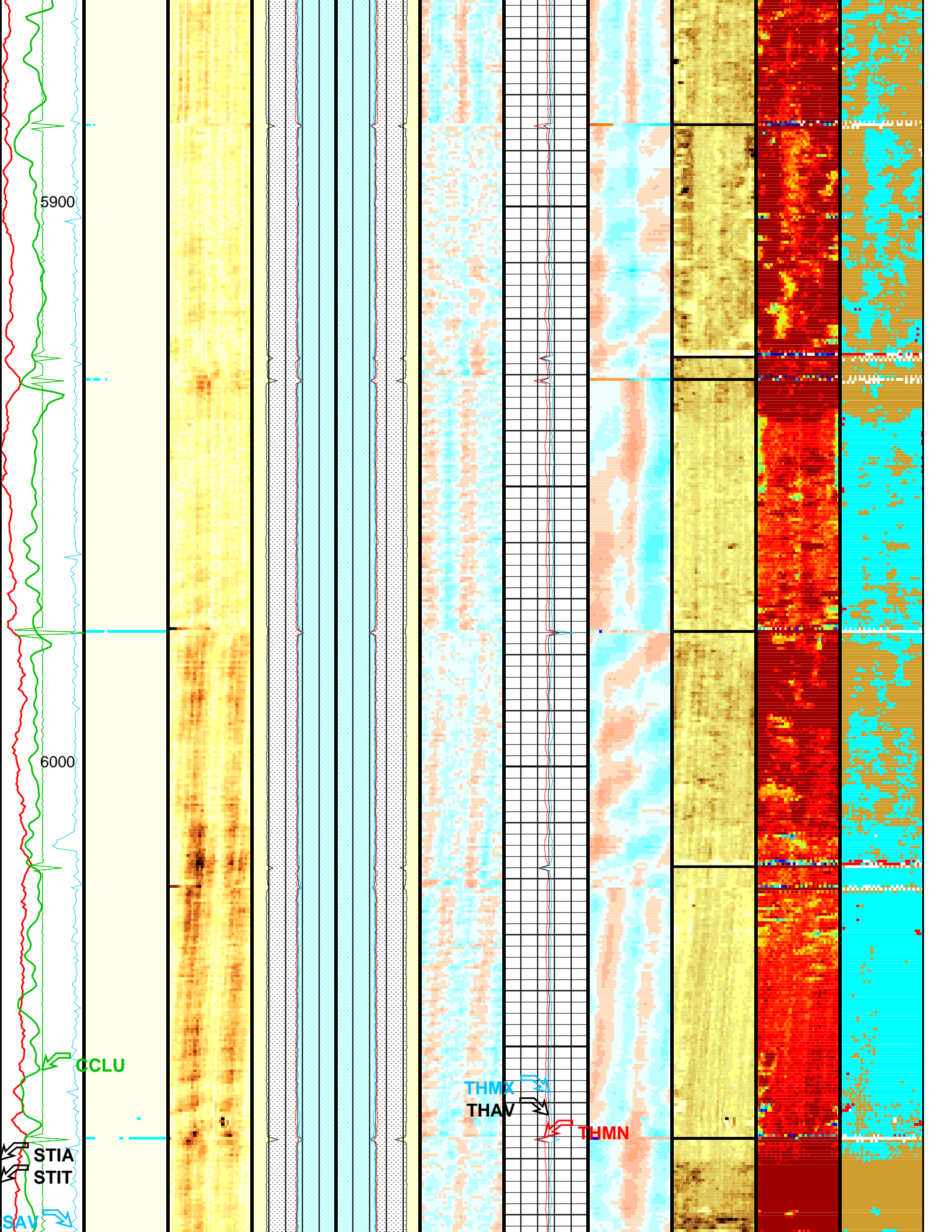


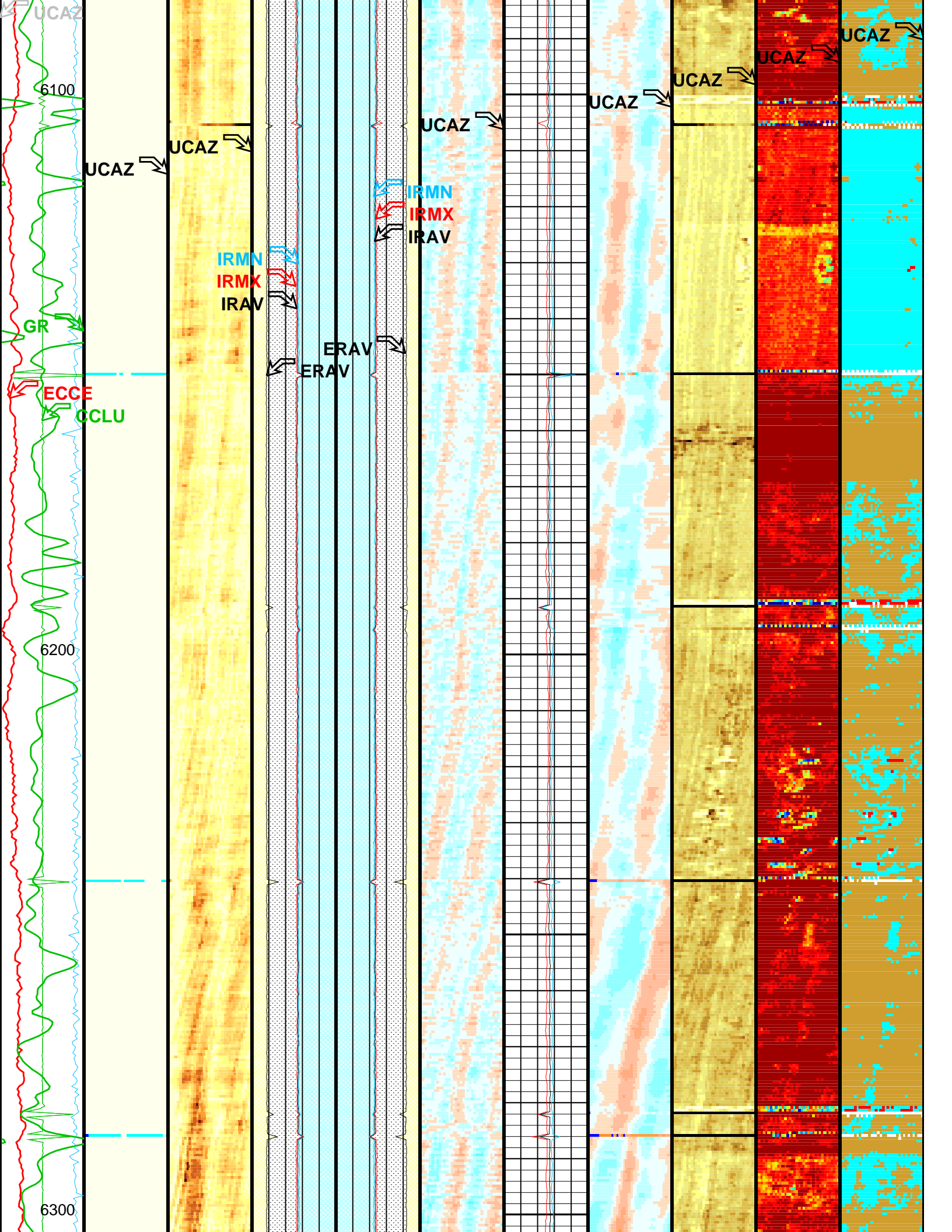


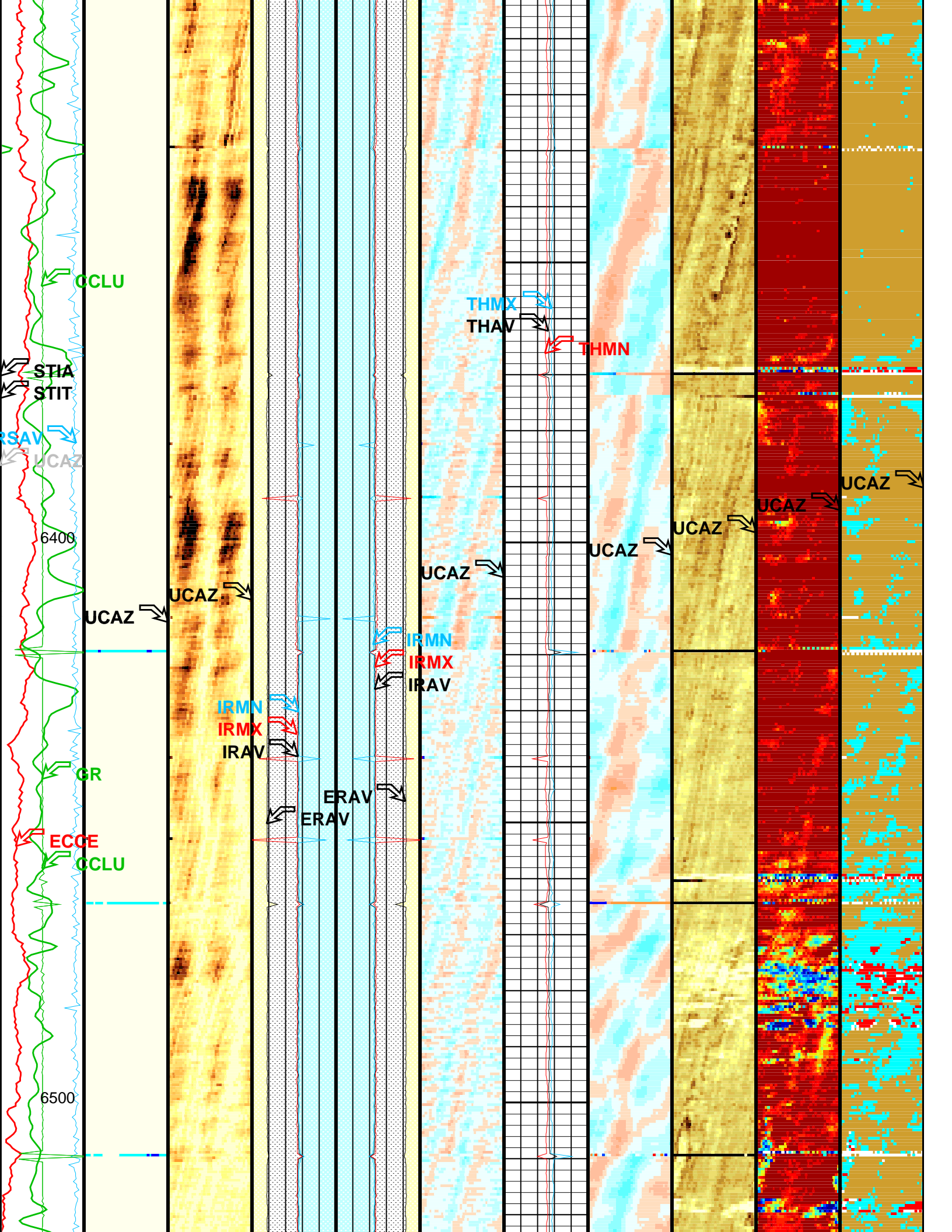


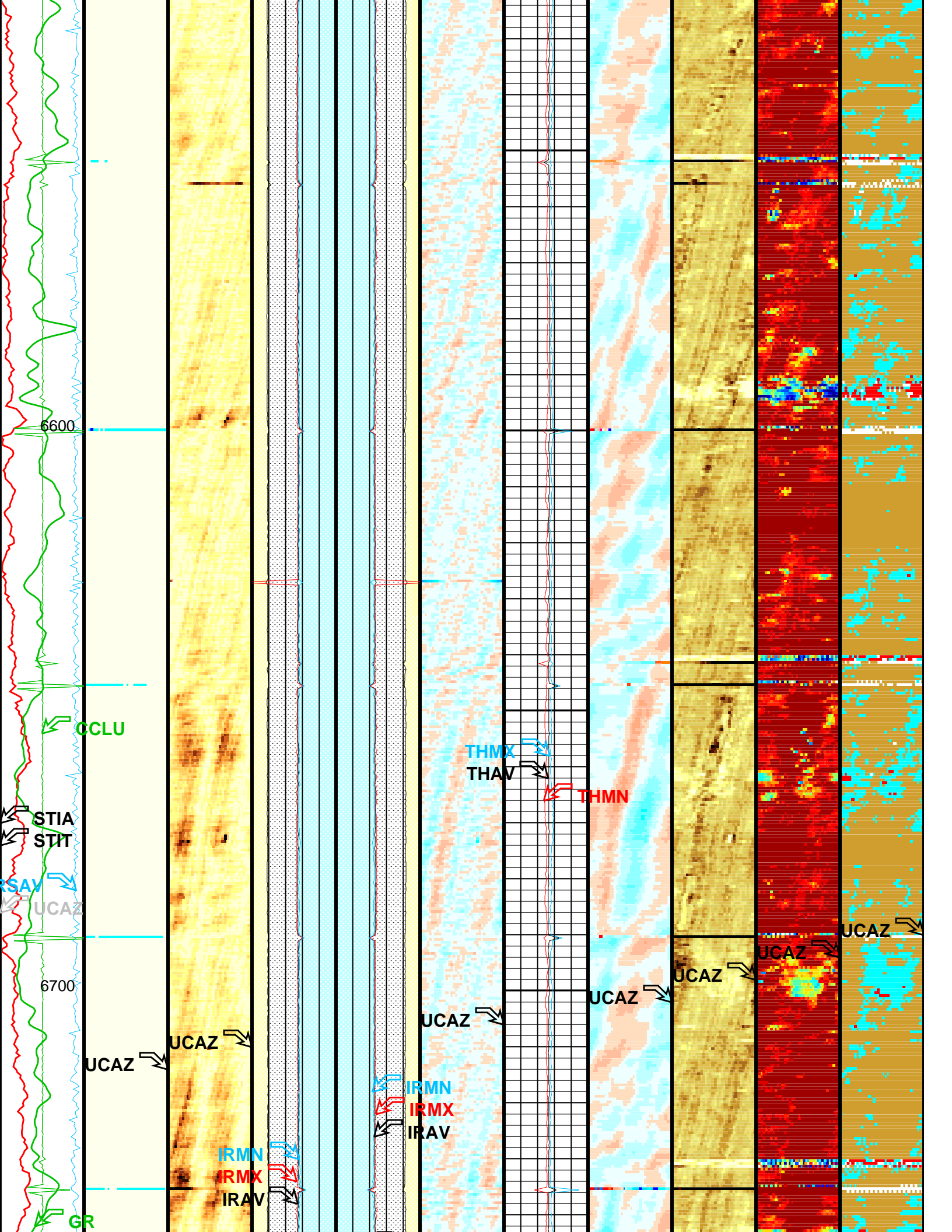


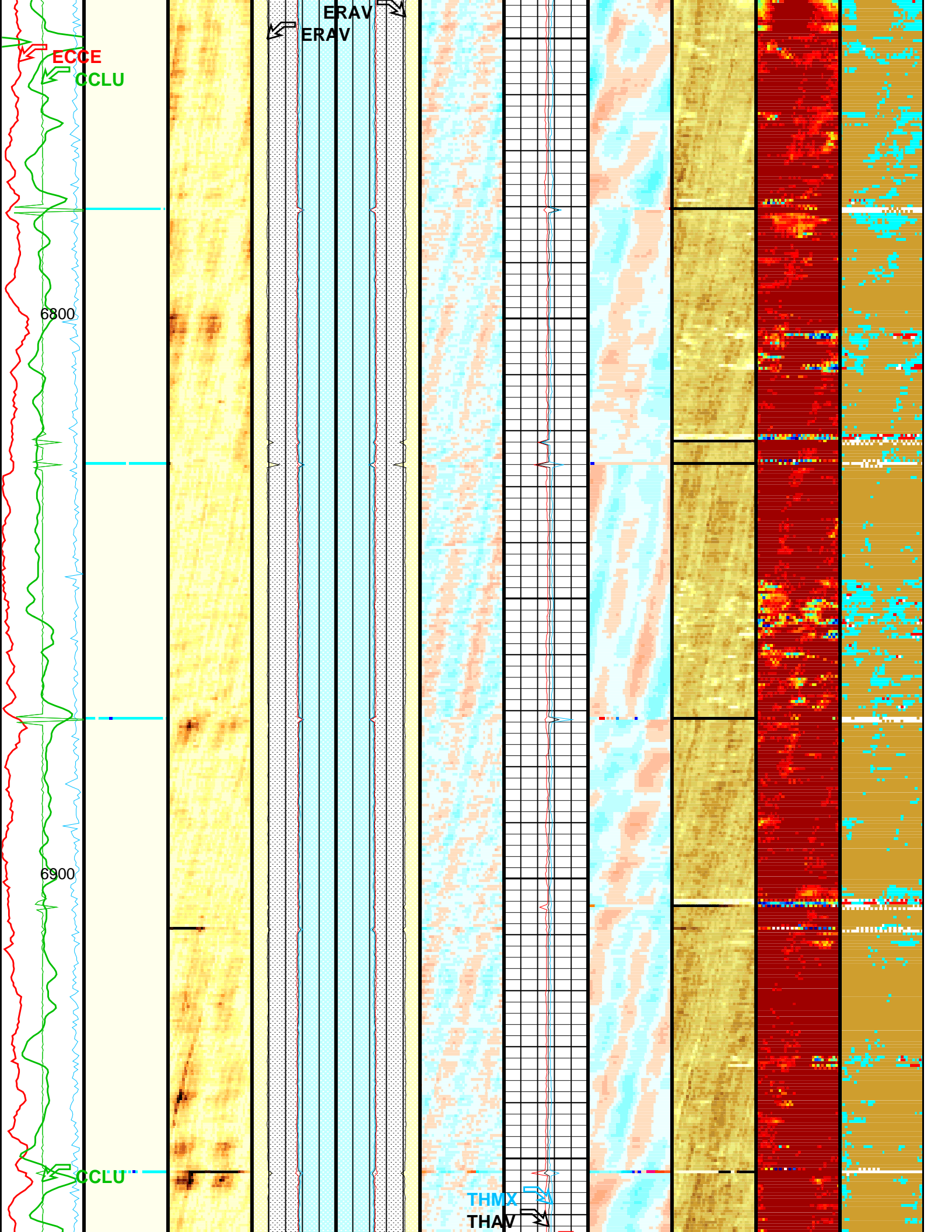


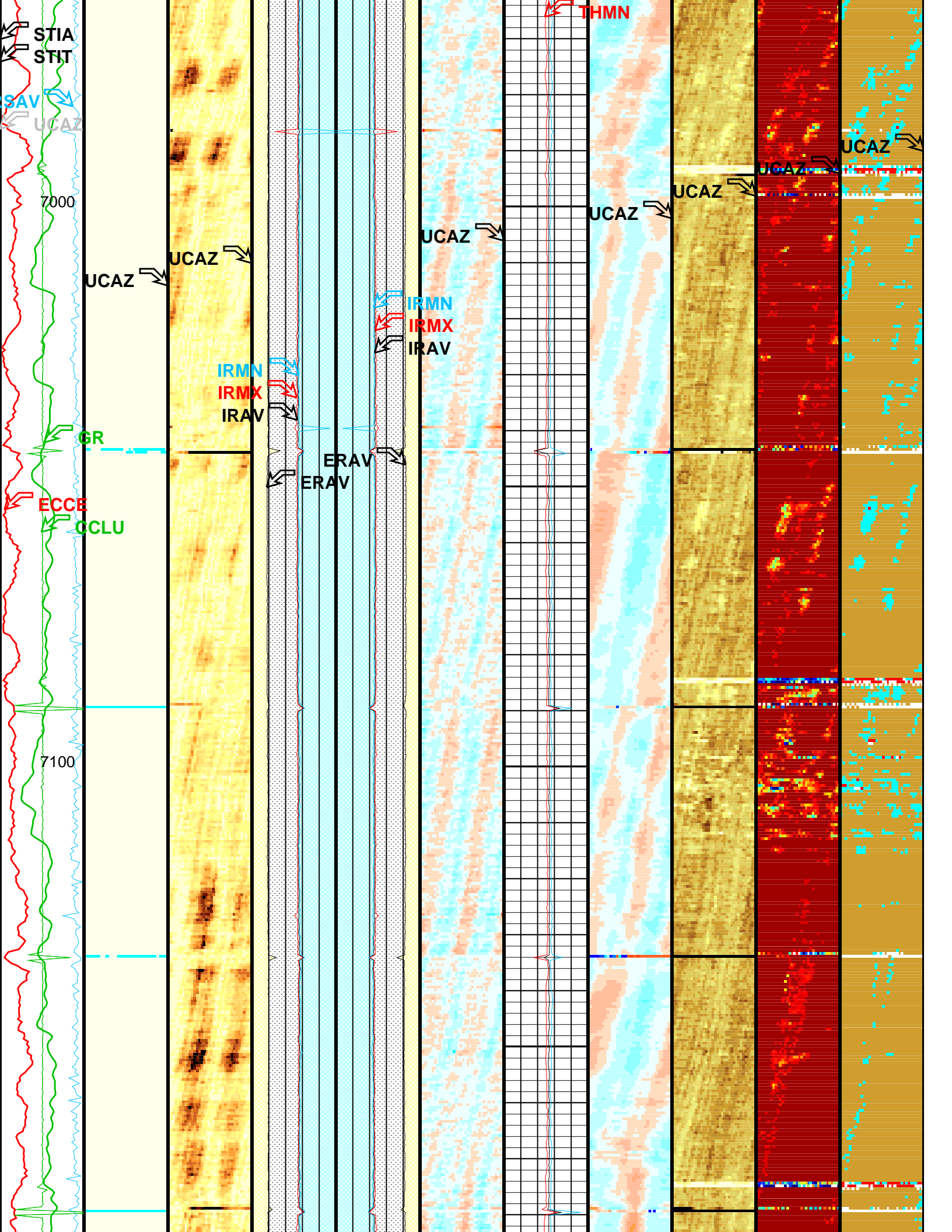


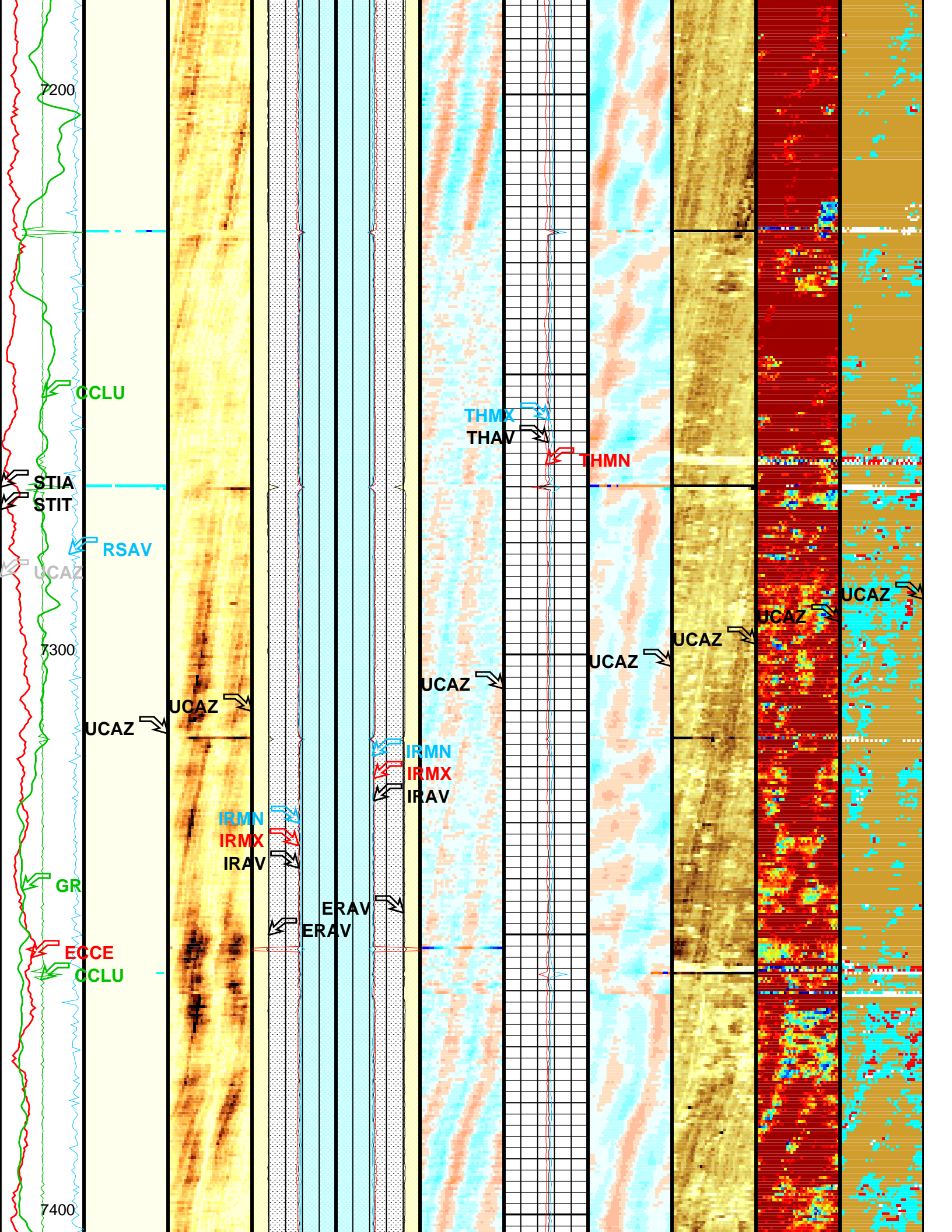




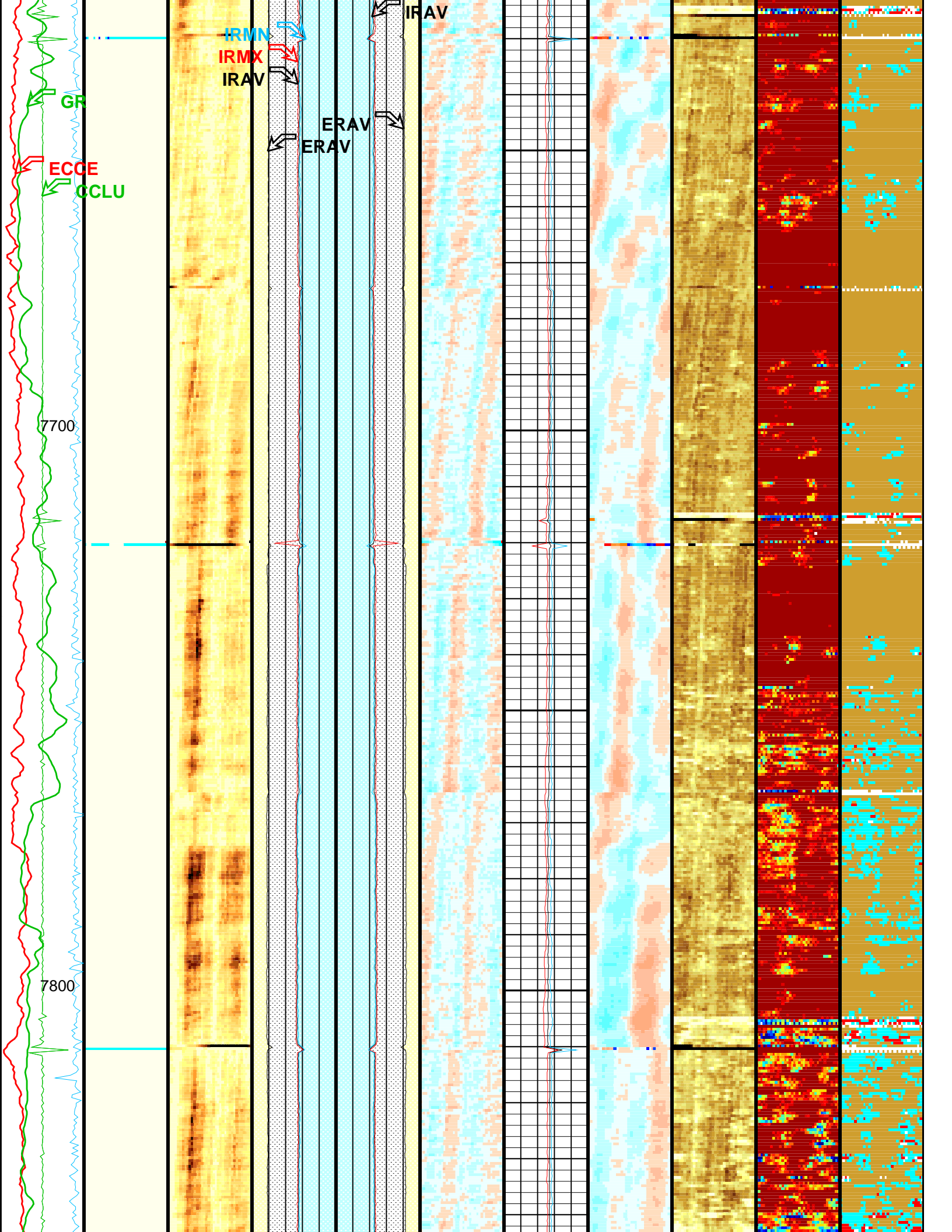


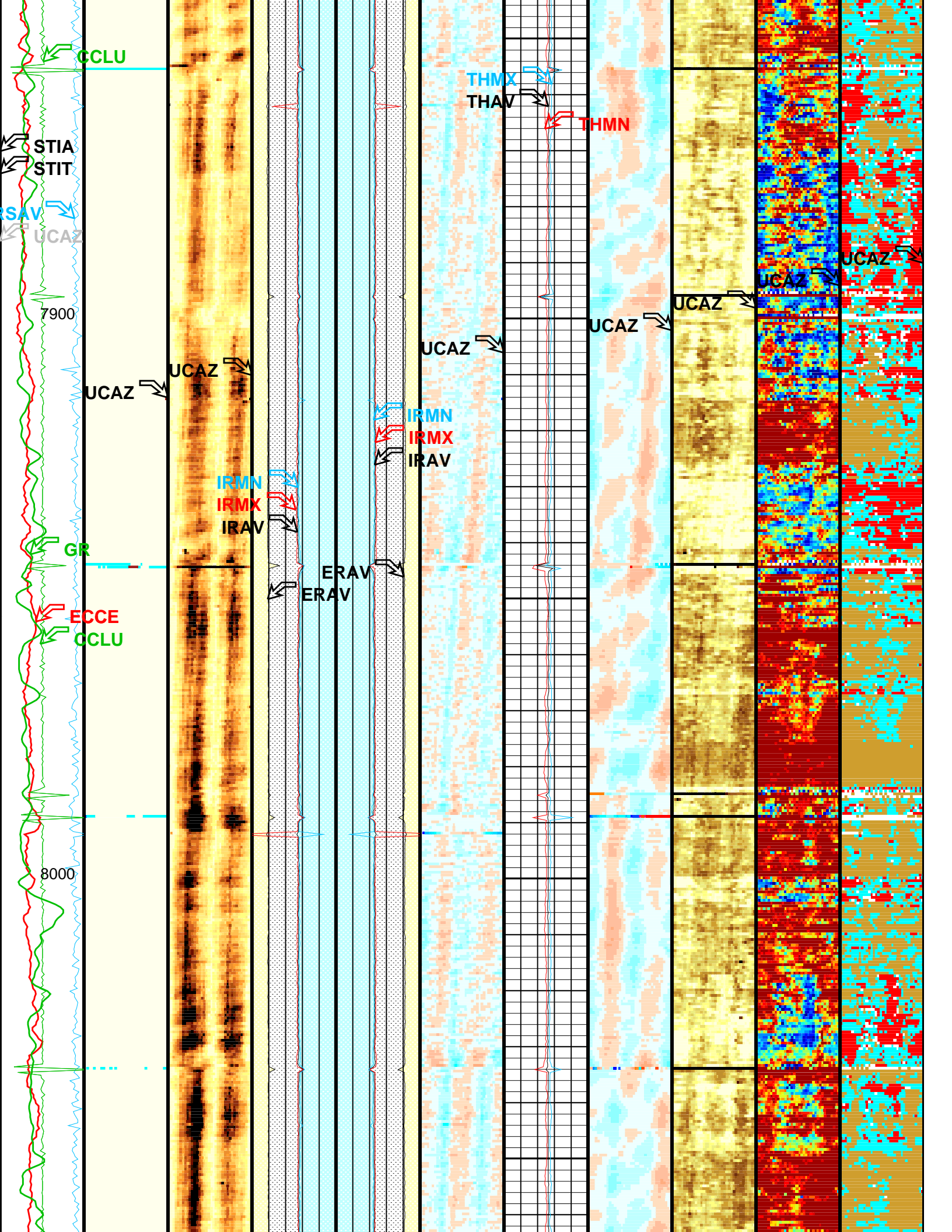






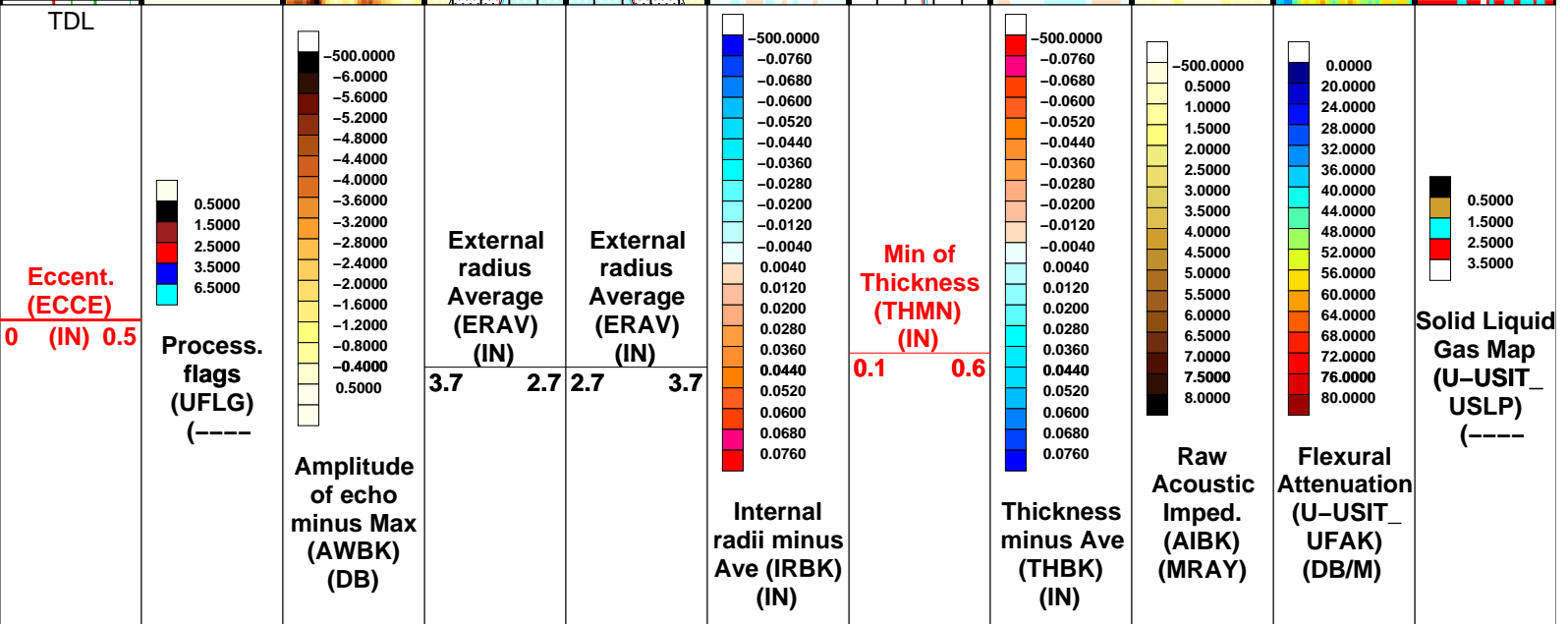
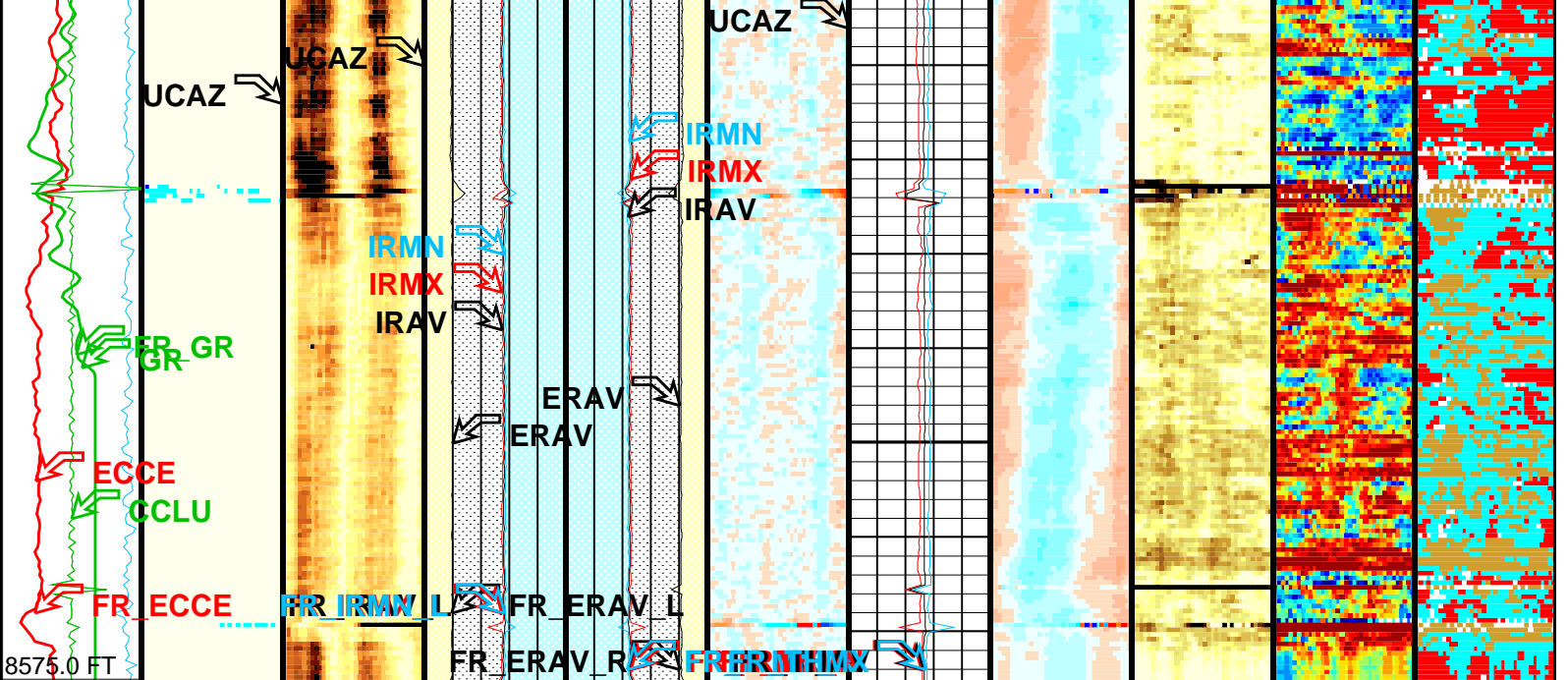












<b>CCL (CCLU) (----)</b> -20 20	<b>Internal radius Average (IRAV) (IN)</b> 3.7 2.7 2.7 3.7	<b>Internal radius Average (IRAV) (IN)</b> 3.7 2.7 2.7 3.7	<b>Average of Thickness (THAV) (IN)</b> 0.1 0.6
<b>RSAV (RSAV) (RPS)</b> 6 7.5	<b>Internal radius Maximum (IRMX) (IN)</b> 3.7 2.7 2.7 3.7	<b>Internal radius Maximum (IRMX) (IN)</b> 3.7 2.7 2.7 3.7	<b>Maximum of Thickness (THMX) (IN)</b> 0.1 0.6
<b>CCL (CCLU) (----)</b> -20 20	<b>Min of Internal radius (IRMN) (IN)</b> 3.7 2.7 2.7 3.7	<b>Min of Internal radius (IRMN) (IN)</b> 3.7 2.7 2.7 3.7	

<b>Gamma Ray (GR) (GAPI)</b> 0 150
<b>Stuck Stretch</b>

(STIT)
0 (F) 50
Cable Drag From D4T to STIT
Tool/Tot. Drag From D4T to STIA
Image rotation (UCAZ) (DEG)
0 360

Format: USI\_IBC\_SLG\_Composite Vertical Scale: 5" per 100' Graphics File Created: 02-Dec-2009 20:51

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.  
 Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

### Parameters

DLIS Name	Description	Value
<b>USIT-D: Ultrasonic Imaging - D</b>		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	192 US/F
DOT	Diameter of Transducer Sensor	1.756 IN
EMXV	EMEX Voltage	110 V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI
IMAR	Image Rotation	OFF
MW	Mud Weight	11 LB/G
RCOD	Reference Calibrator Outer Diameter	4.5 IN
RCSO	Reference Calibrator Standoff	0.8425 IN
RCTH	Reference Calibrator Thickness	0.2165 IN
TCUB	T^3 Processing Level	Vax_Loop
THDH	Maximum Search Thickness (percentage of nominal)	130
THDL	Minimum Search Thickness (percentage of nominal)	70
THDP	Thickness Detection Policy	Fundamental
THNO	Nominal Thickness of Casing	0.362 IN
U-USIT_CEMT	USIT Cement Type	LIGHT
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0 MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY
U-USIT_OCDI	USIT Outer Casing Diameter	0 IN
U-USIT_OCSH	USIT Outer Casing Shoe	0 FT
U-USIT_OCWE	USIT Outer Casing Weight	0 LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH
U-USIT_U3WE	Third Interface Echo Window End	110 US
U-USIT_U3WT	Third Interface Echo Window Start	UNKNOWN

U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	2	DB/M
U-USIT_UFAO	USIT Flexural Attenuation Offset			
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap		
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_A		
U-USIT_UTAN	USIT Transducer Angles	33_DEG		
UMAO	USIT Measurement Angular Offset	-10		DEG
USTO	Ultrasonic Time Offset	-2		US
USUB	Ultrasonic Subassembly Identifier	Sub_5_inch		
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF		
VCAS	Ultrasonic Transversal Velocity in Casing	51.4		US/F
WLEN	T^3 Processing Length	21.7078		US
ZCAS	Acoustic Impedance of Casing	46.2537		MRAY
ZINI	Initial Estimate of Cement Impedance	-1		MRAY
ZMUD	Acoustic Impedance of Mud	1.86		MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6		MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3		MRAY
<b>STI: Stuck Tool Indicator</b>				
LBFR	Trigger for MAXIS First Reading Label		TDL	
STKT	STI Stuck Threshold		5	FT
TDD	Total Depth - Driller		8626.00	FT
TDL	Total Depth - Logger		8575.00	FT
<b>System and Miscellaneous</b>				
BS	Bit Size		9.875	IN
CWEI	Casing Weight		26.00	LB/F
DO	Depth Offset for Playback		0.0	FT
PP	Playback Processing		NORMAL	

**Input DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_007LUP	FN:10	PRODUCER	02-Dec-2009 17:55	8575.5 FT	191.5 FT
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**Output DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:17	PRODUCER	02-Dec-2009 20:51		
BACKUP	USI_TLD_MCFL_CNL_012PUP	FN:18	PRODUCER	02-Dec-2009 20:51		



MAXIS Field Log

Company: ExxonMobil Production Corp Well: PCU 297-11B8

**Input DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_007LUP	FN:10	PRODUCER	02-Dec-2009 17:55	8575.5 FT	191.5 FT
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**Output DLIS Files**

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:17	PRODUCER	02-Dec-2009 20:51	8575.5 FT	4991.5 FT
BACKUP	USI_TLD_MCFL_CNL_012PUP	FN:18	PRODUCER	02-Dec-2009 20:51	8575.5 FT	4991.5 FT

**OP System Version: 17C0-154**

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

**Changed Parameter Summary**

DLIS Name	New Value	Previous Value	Depth & Time
MW	9.6 LB/G	11 LB/G	7101.5 20:54:26

Tool/Tot.  
Drag

From D4T to STIA

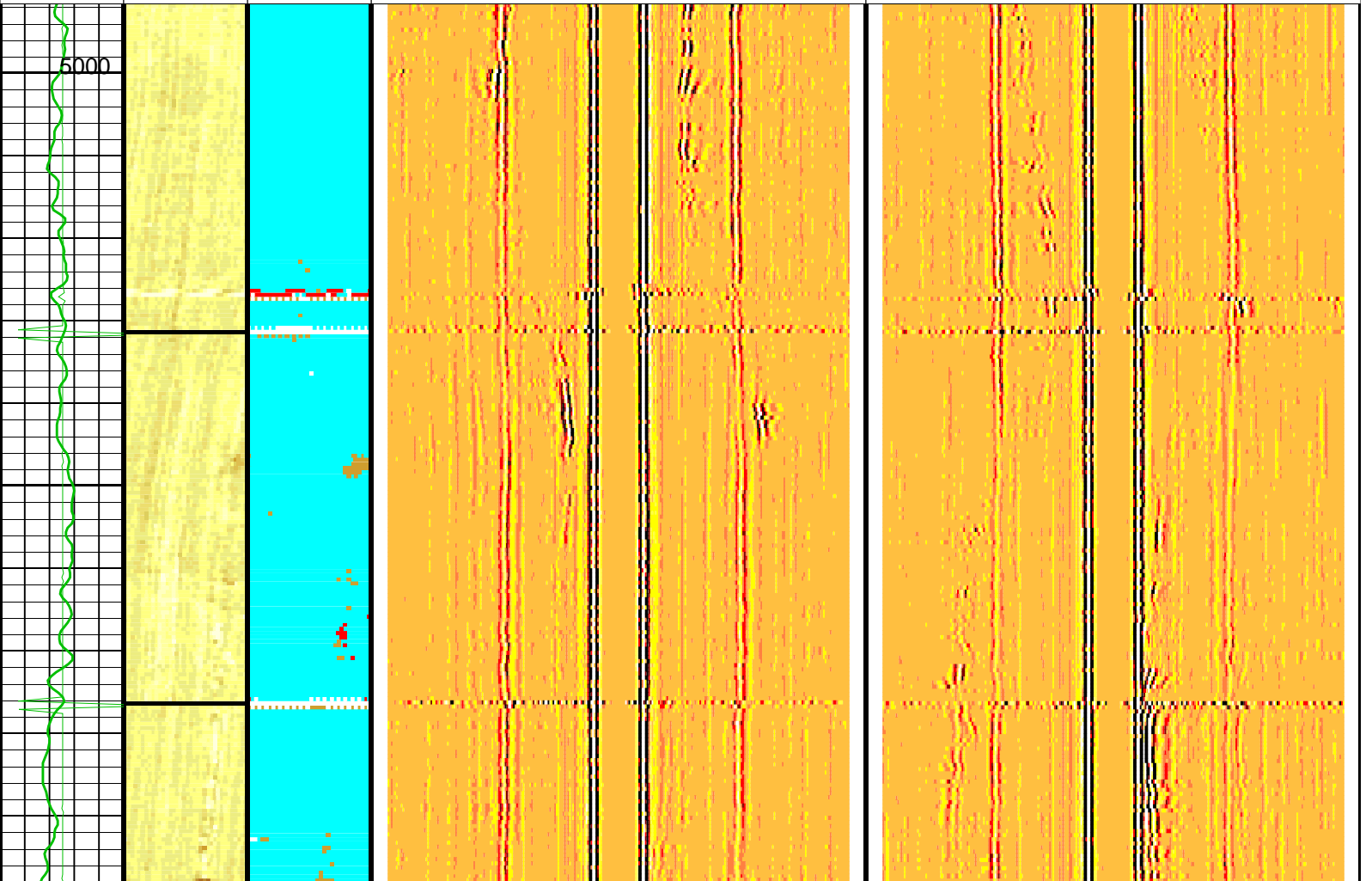
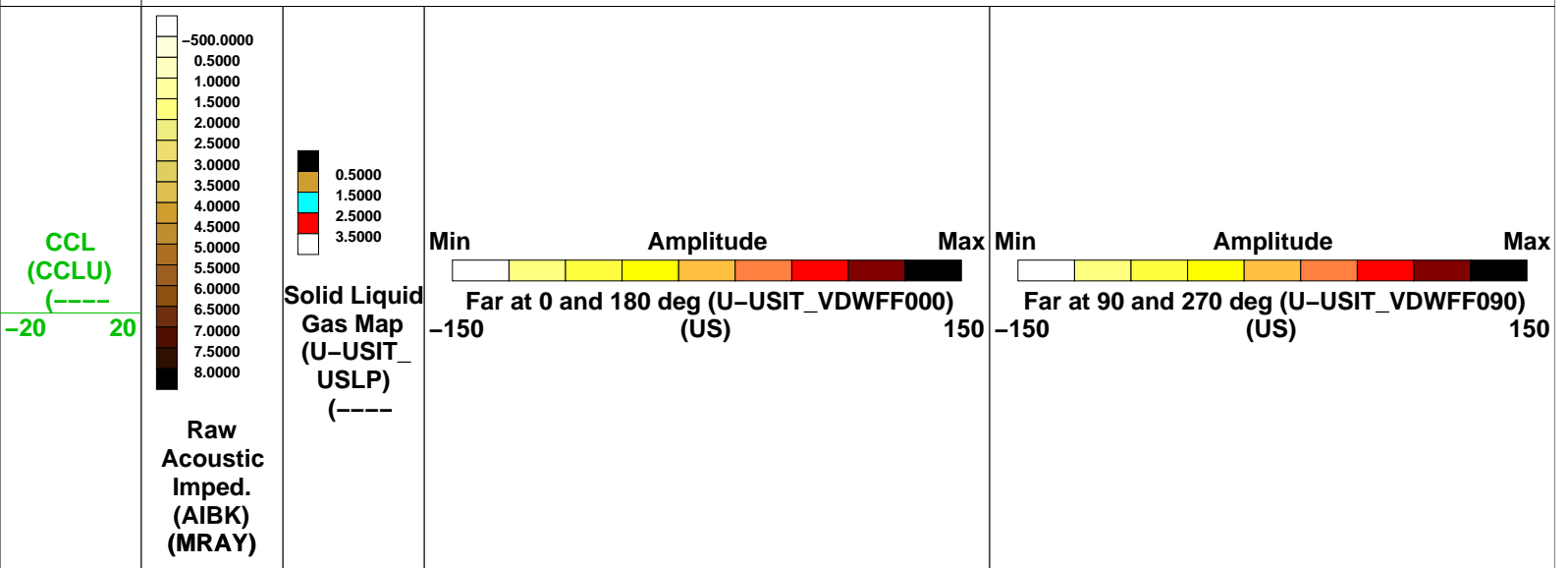
Cable Drag From D4T to STIT

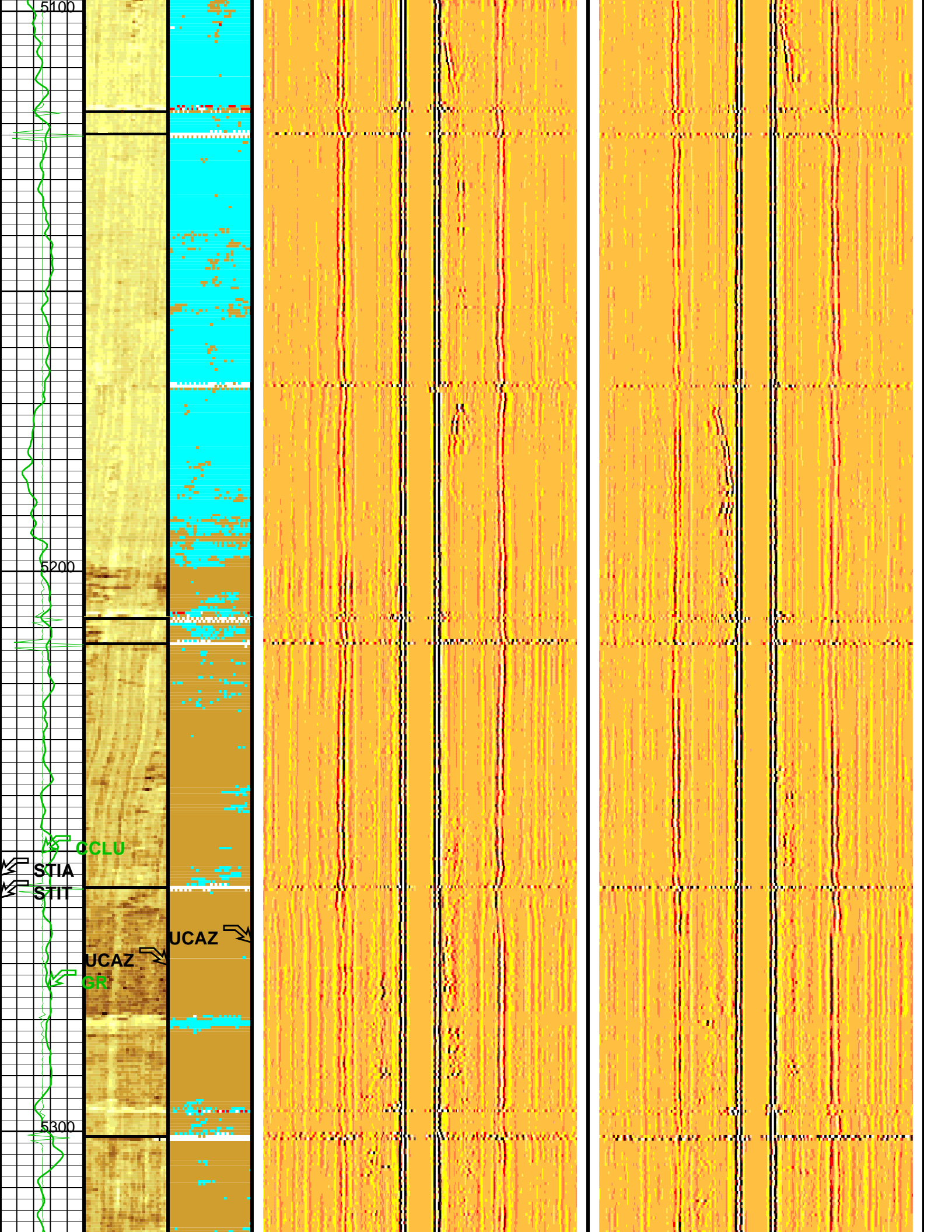
Stuck Stretch (STIT)

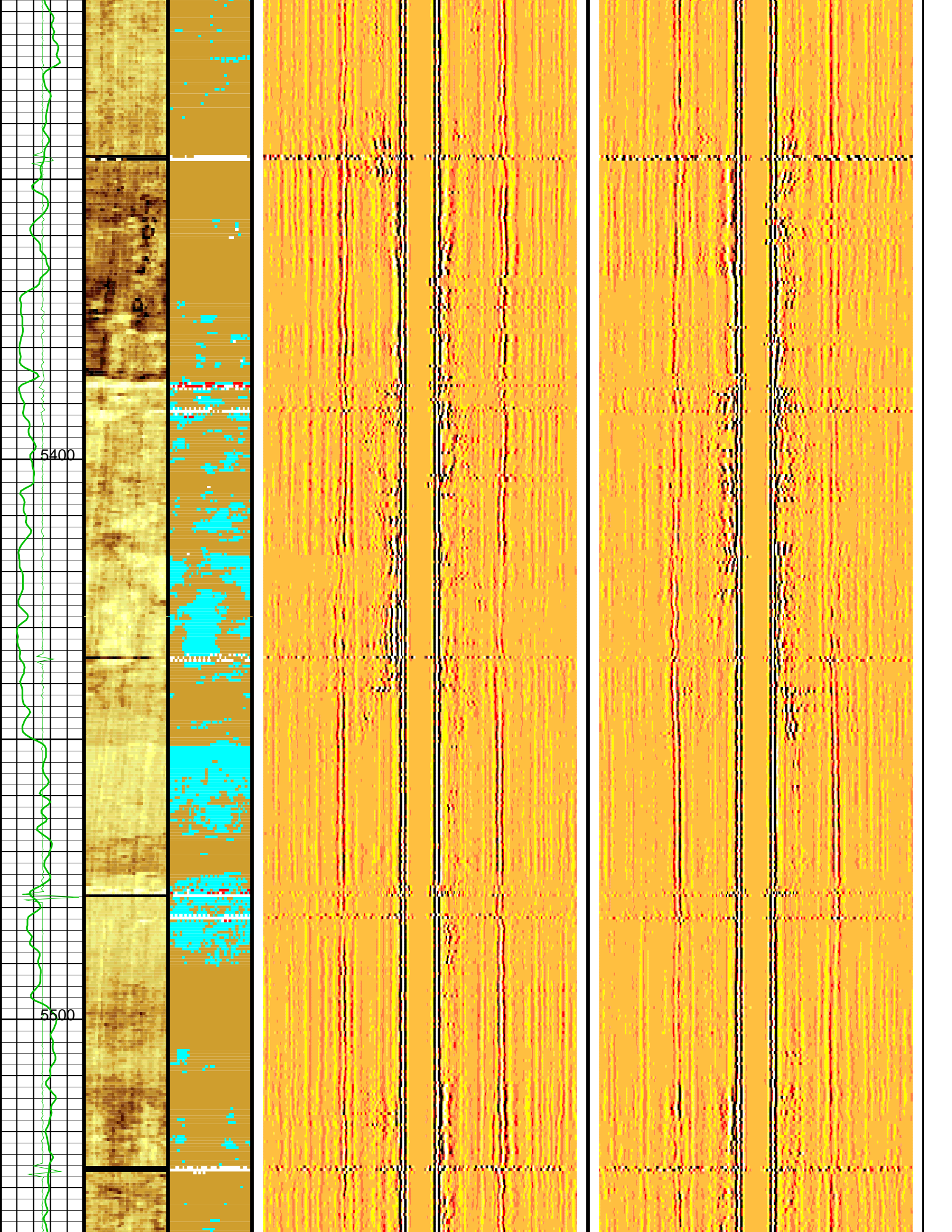
0 (F) 50

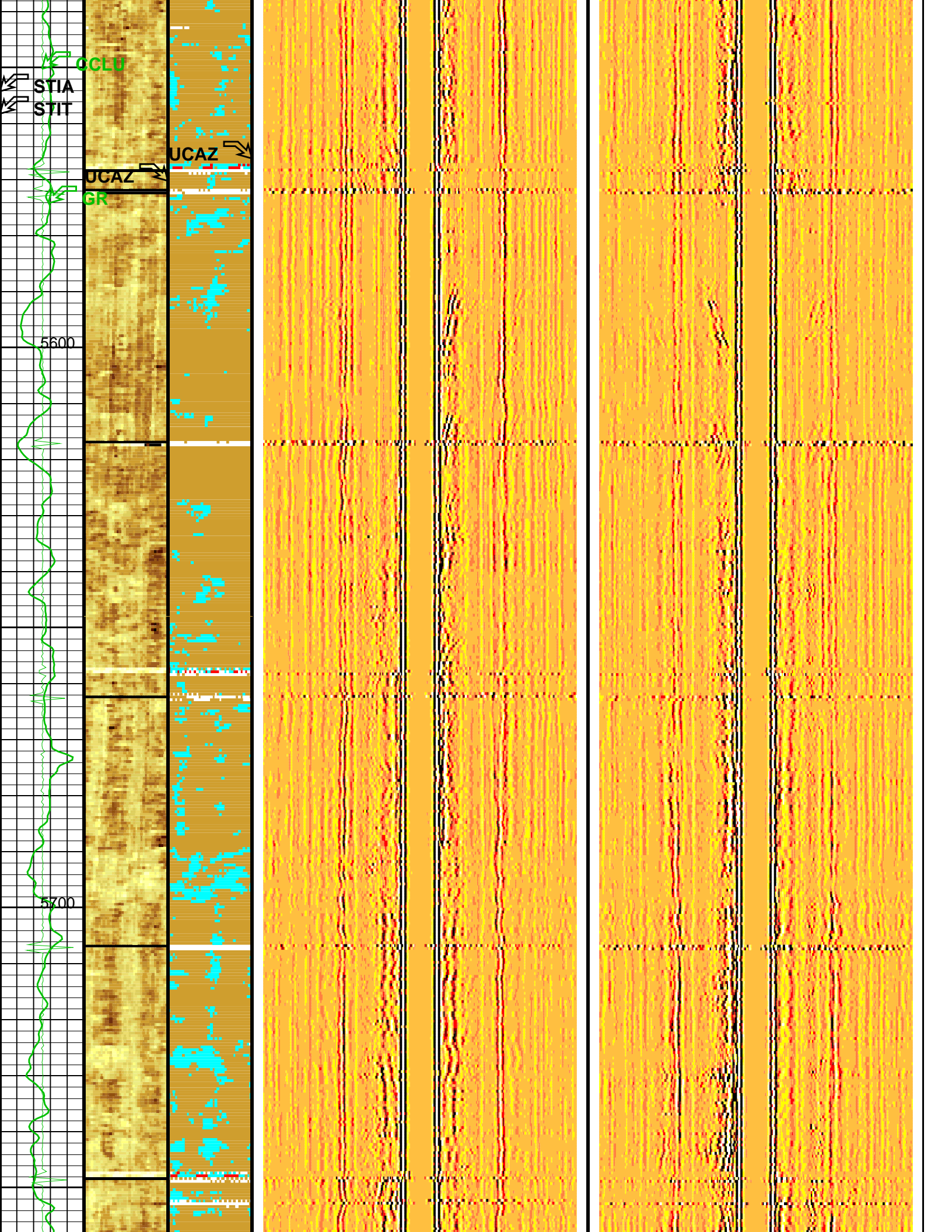
Gamma Ray (GR) (GAPI)

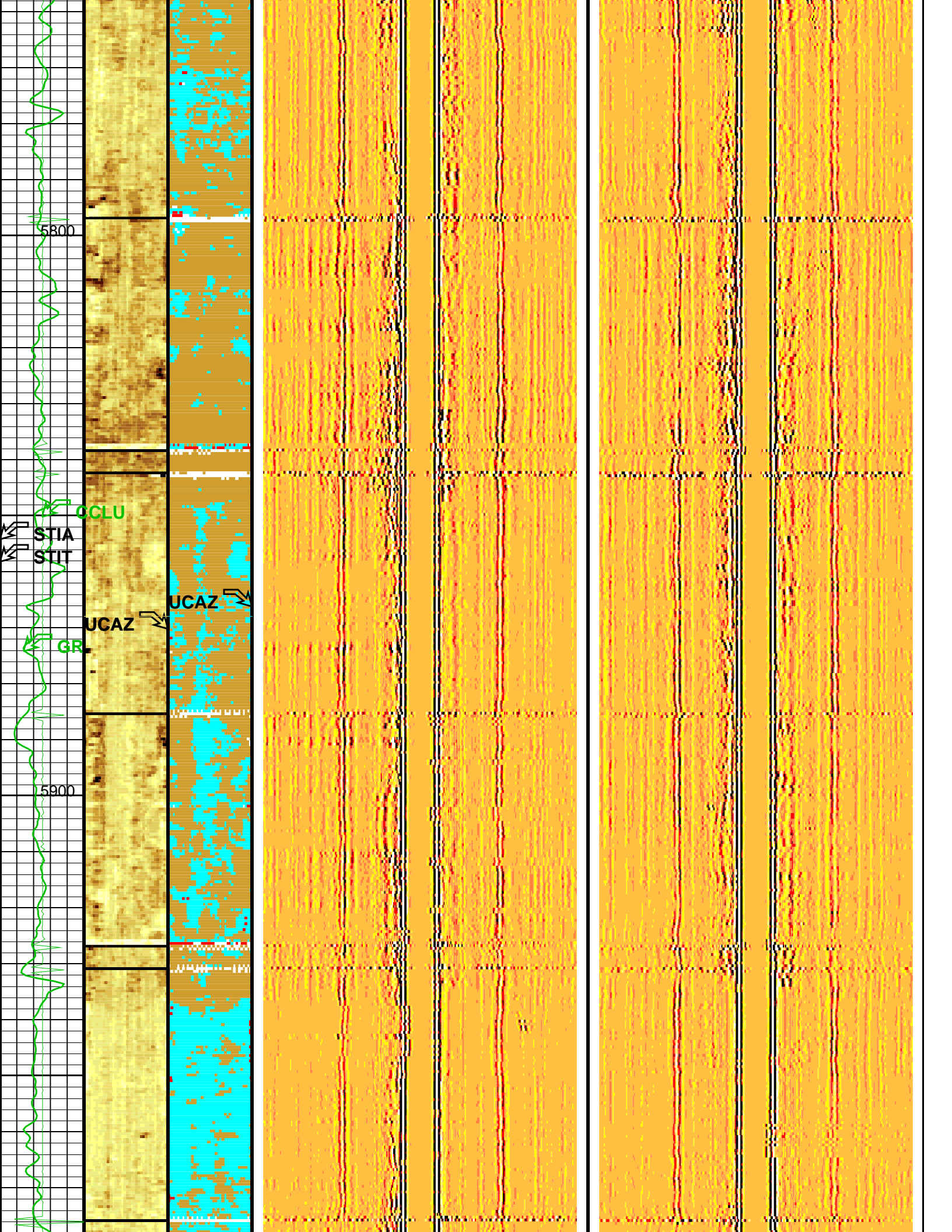
0 150











5800

5900

OCLU

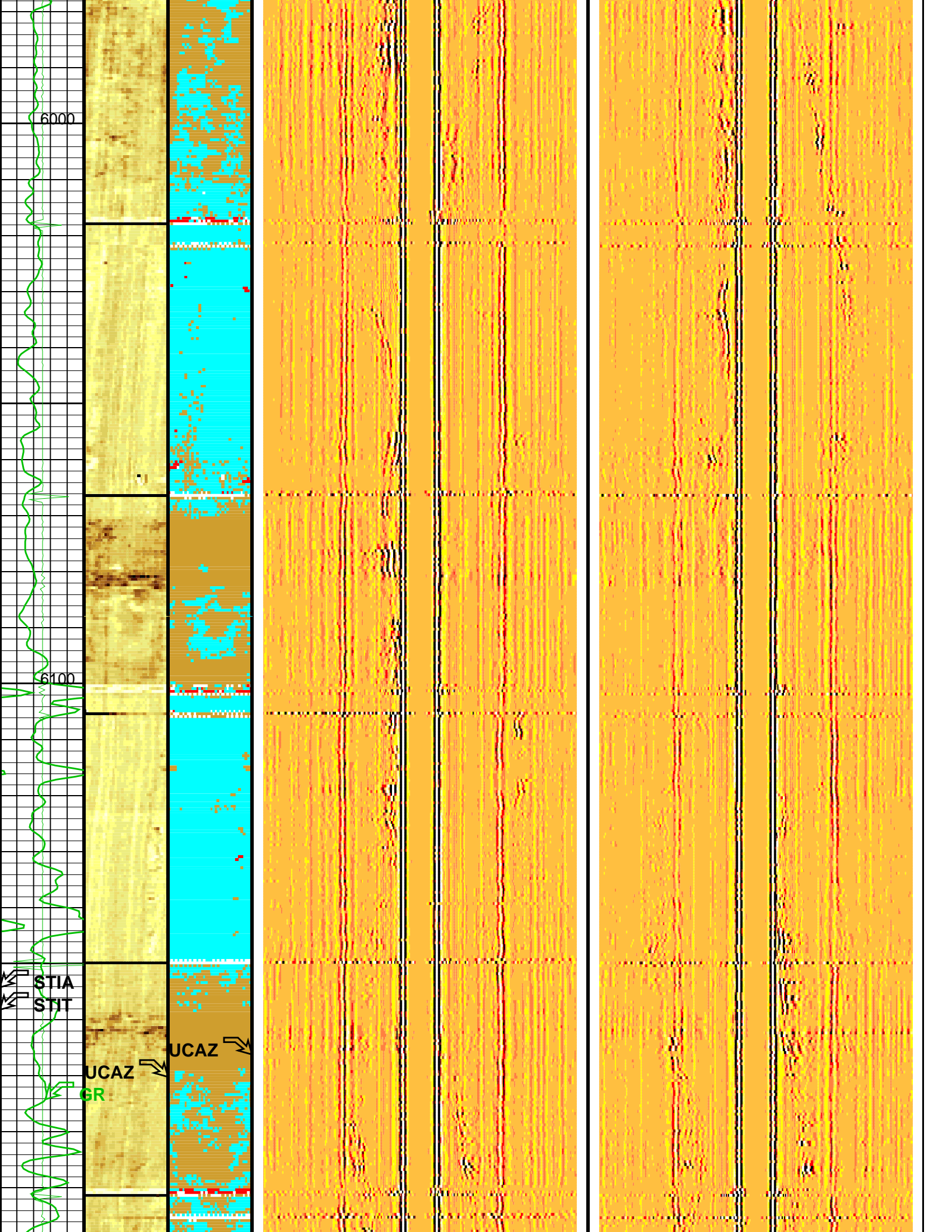
STIA

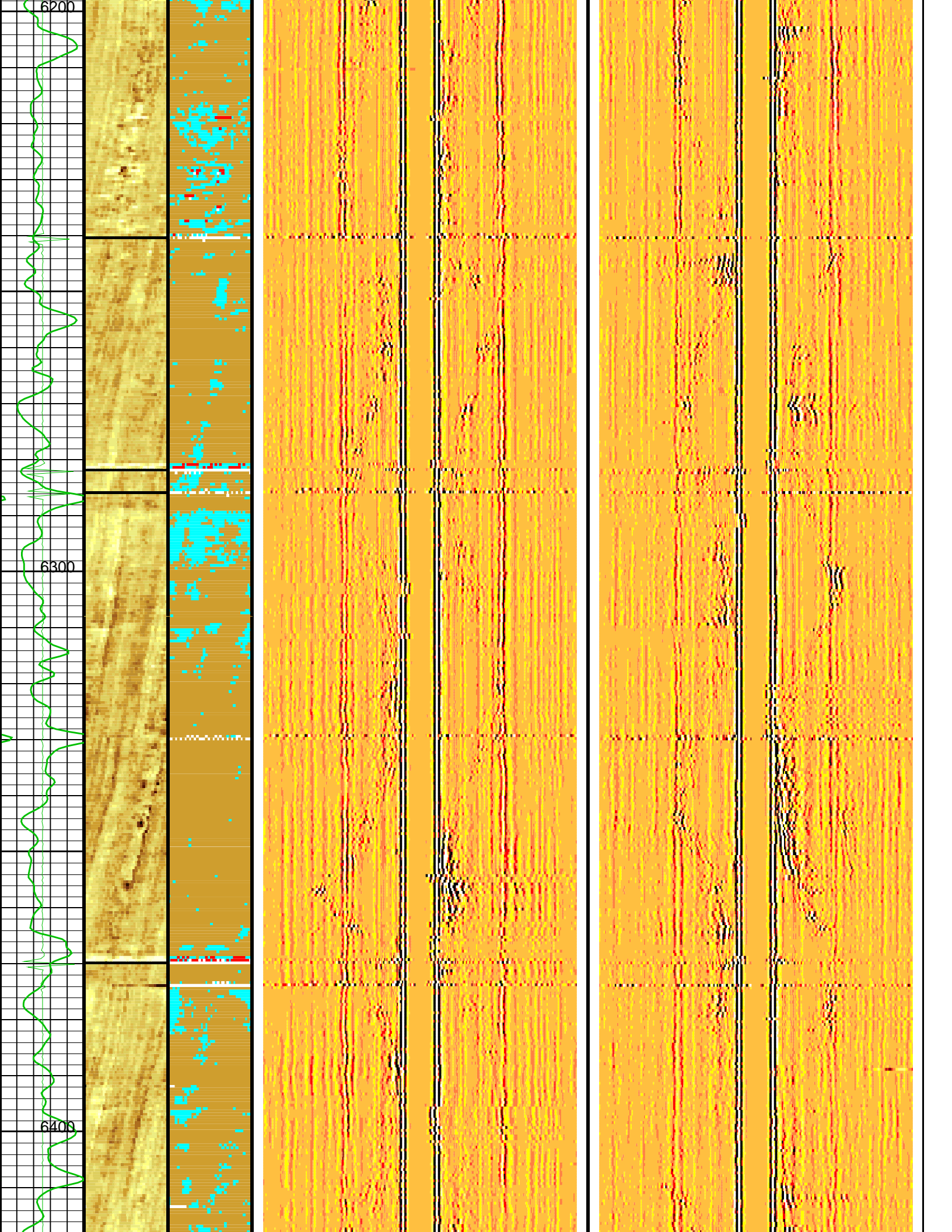
STIT

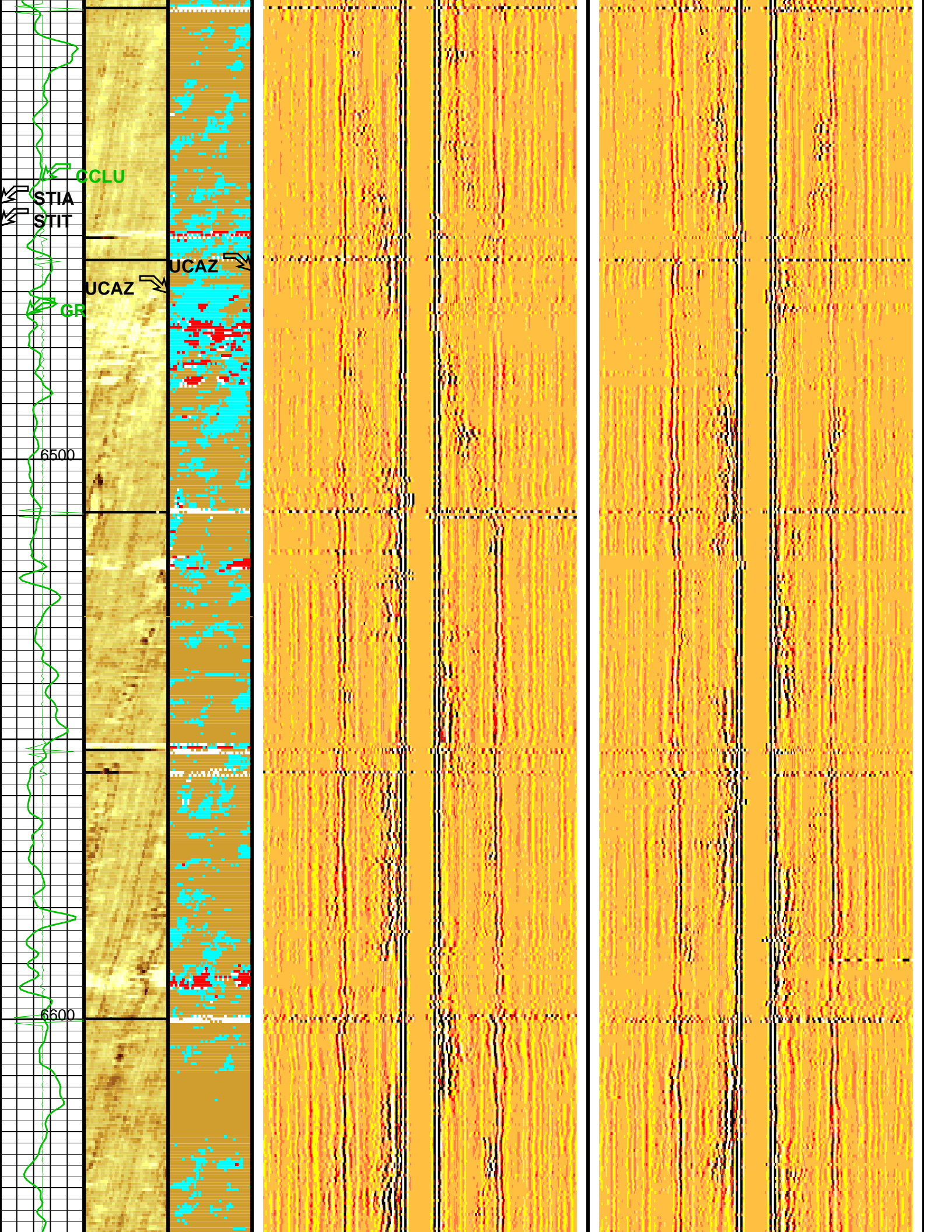
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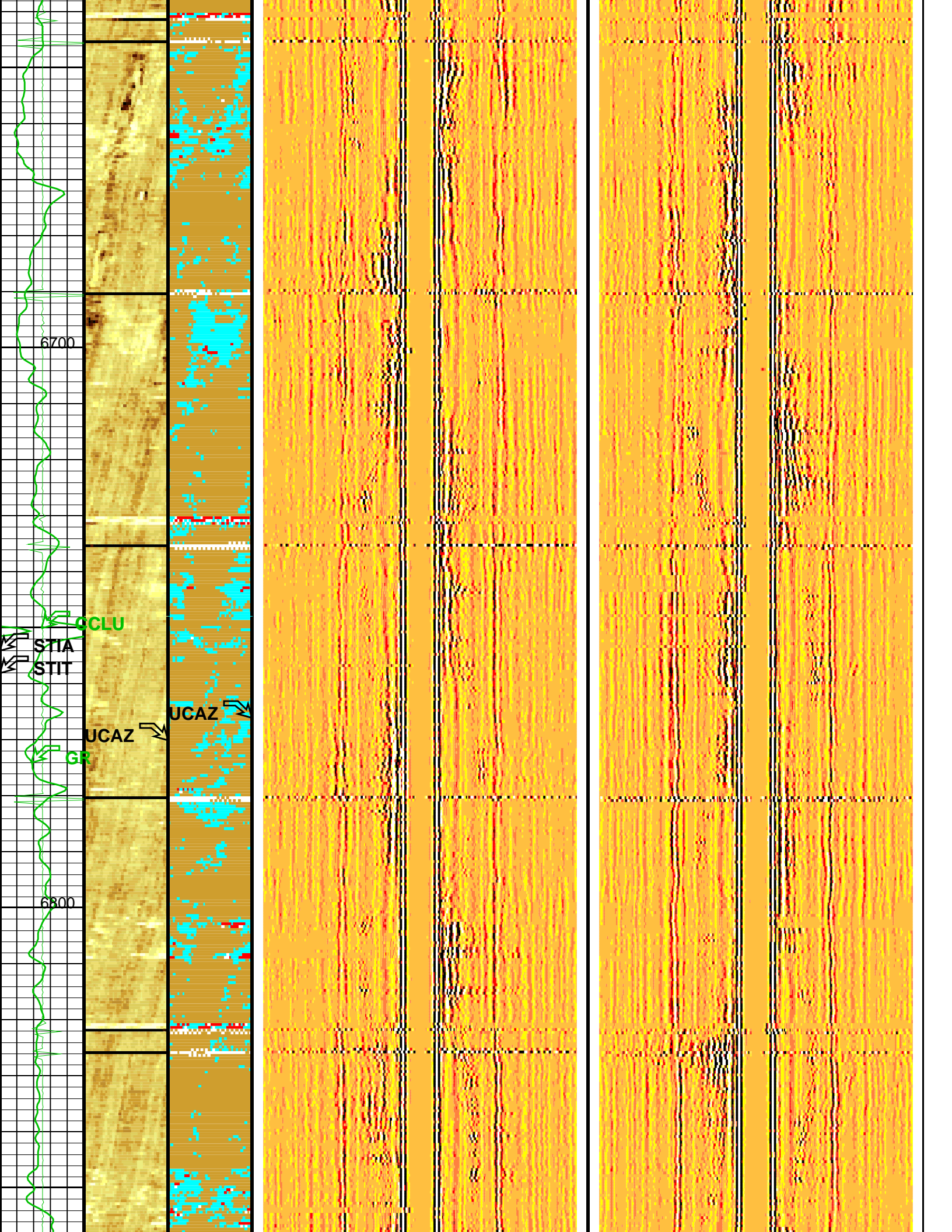
UCAZ

GR









6700

6800

CCLU

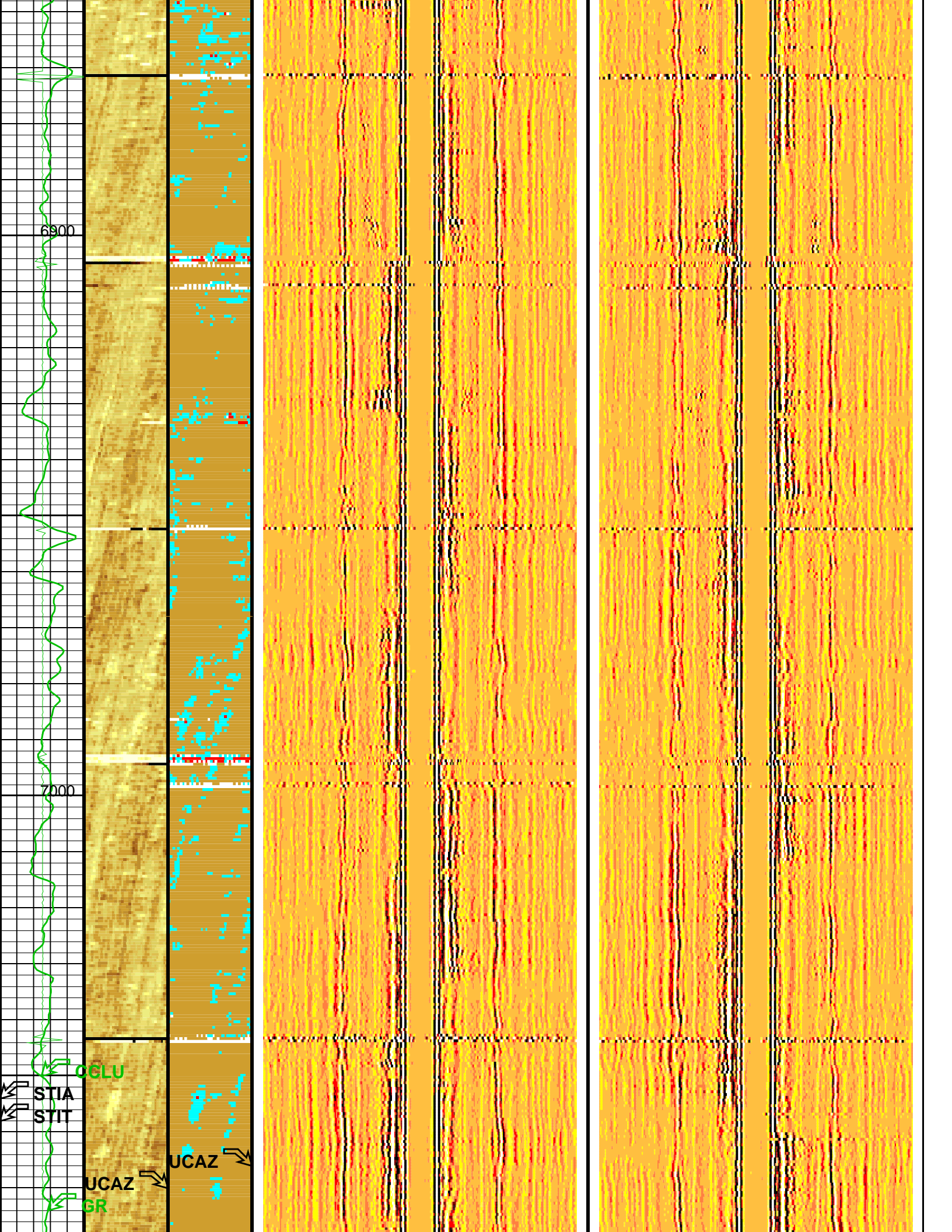
STIA

STIT

UCAZ

UCAZ

GR



6900

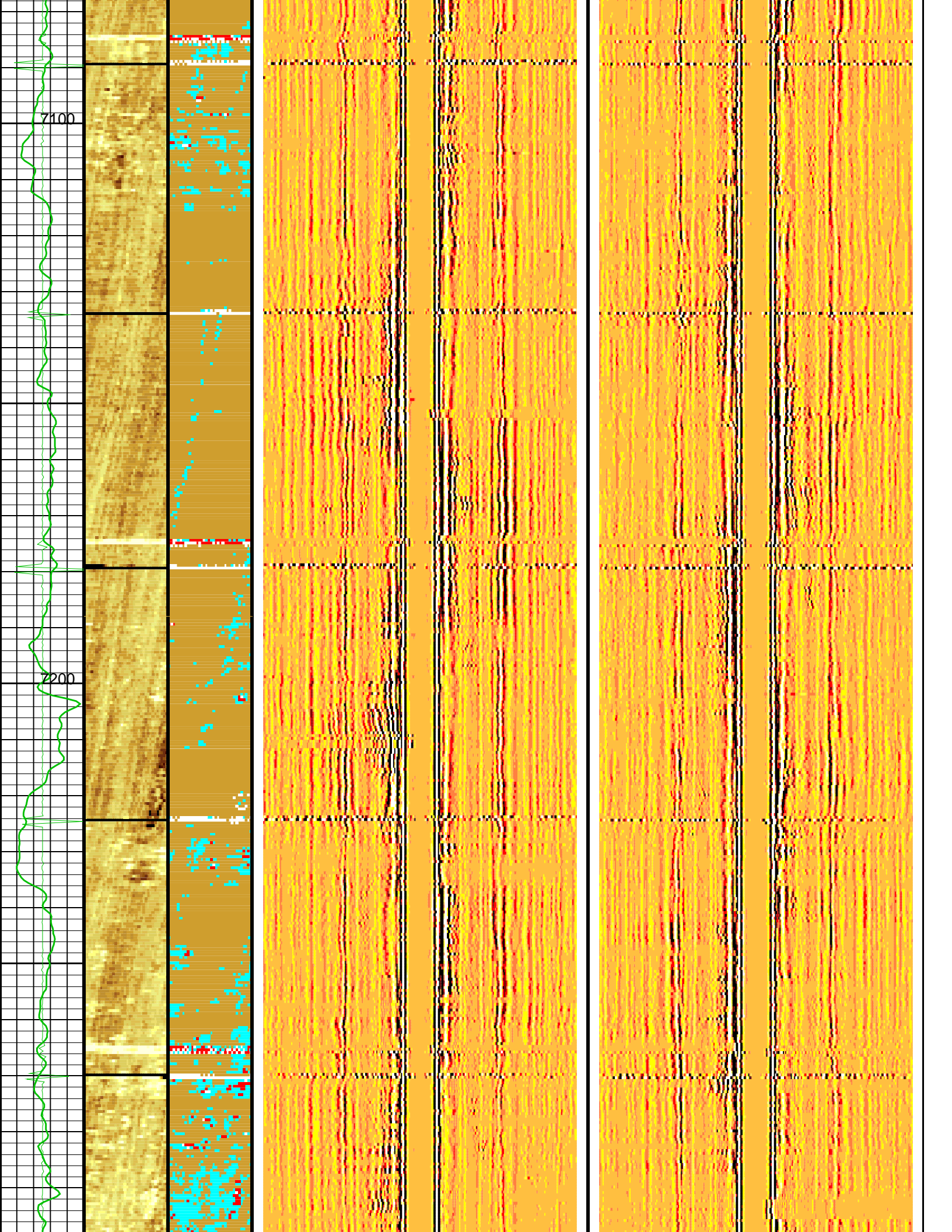
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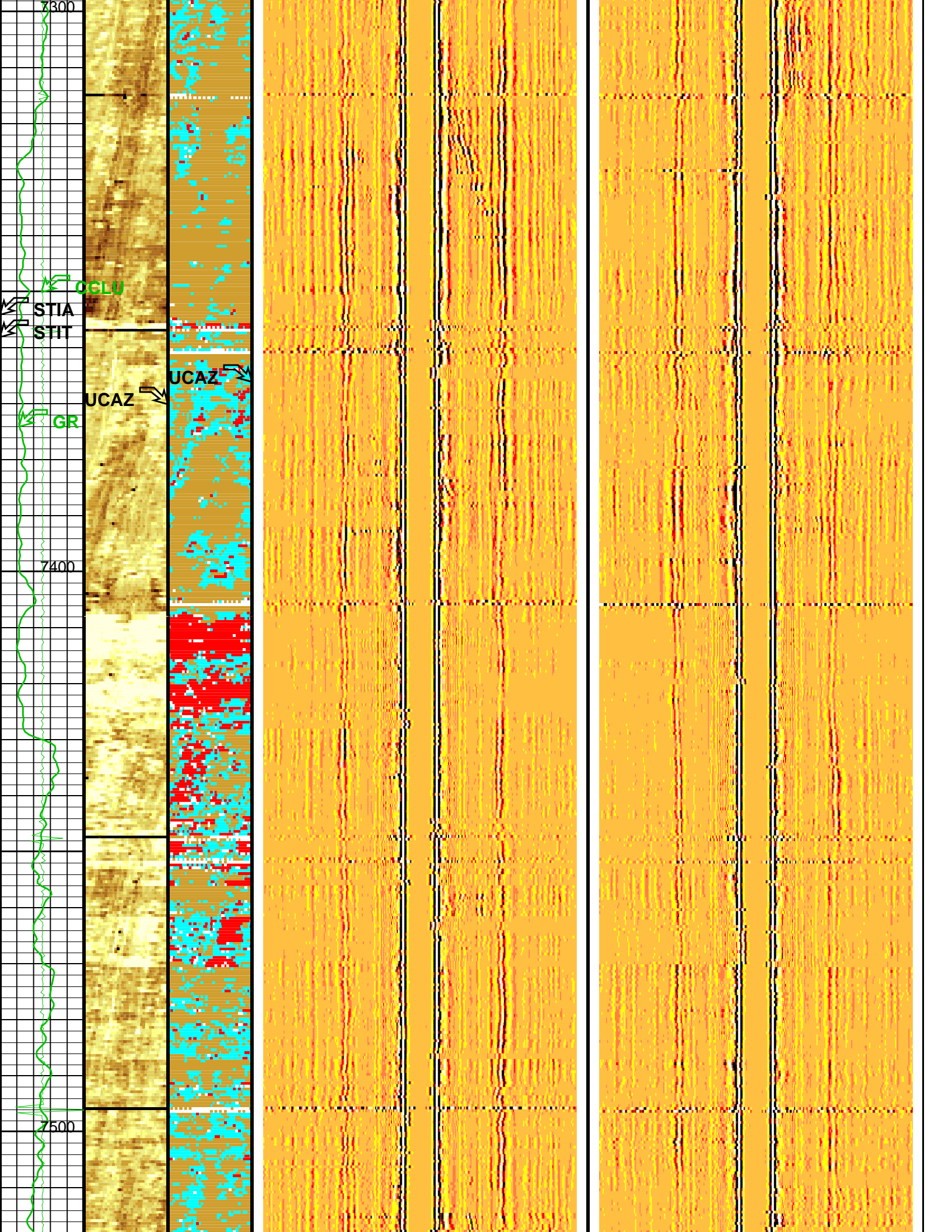
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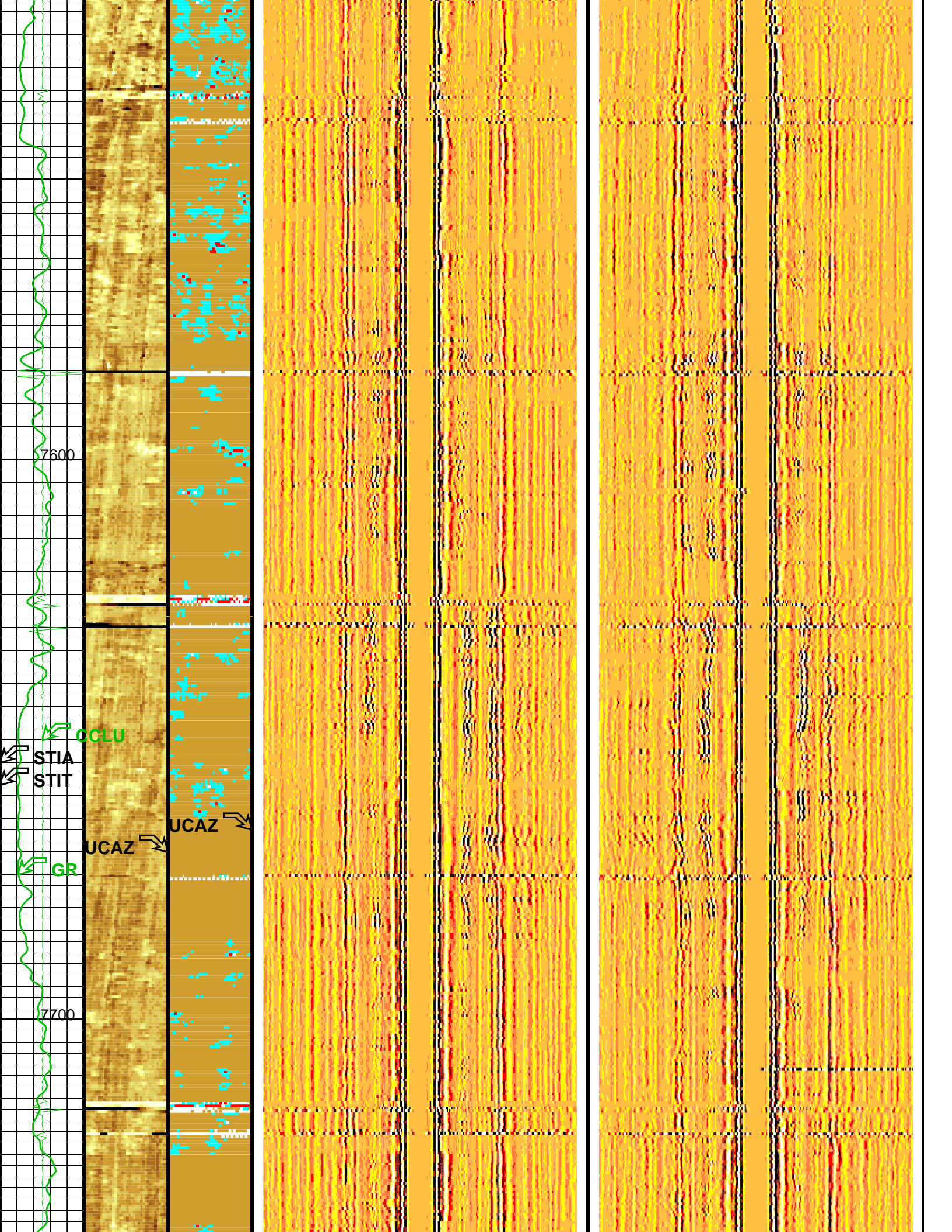
STIA  
STIT

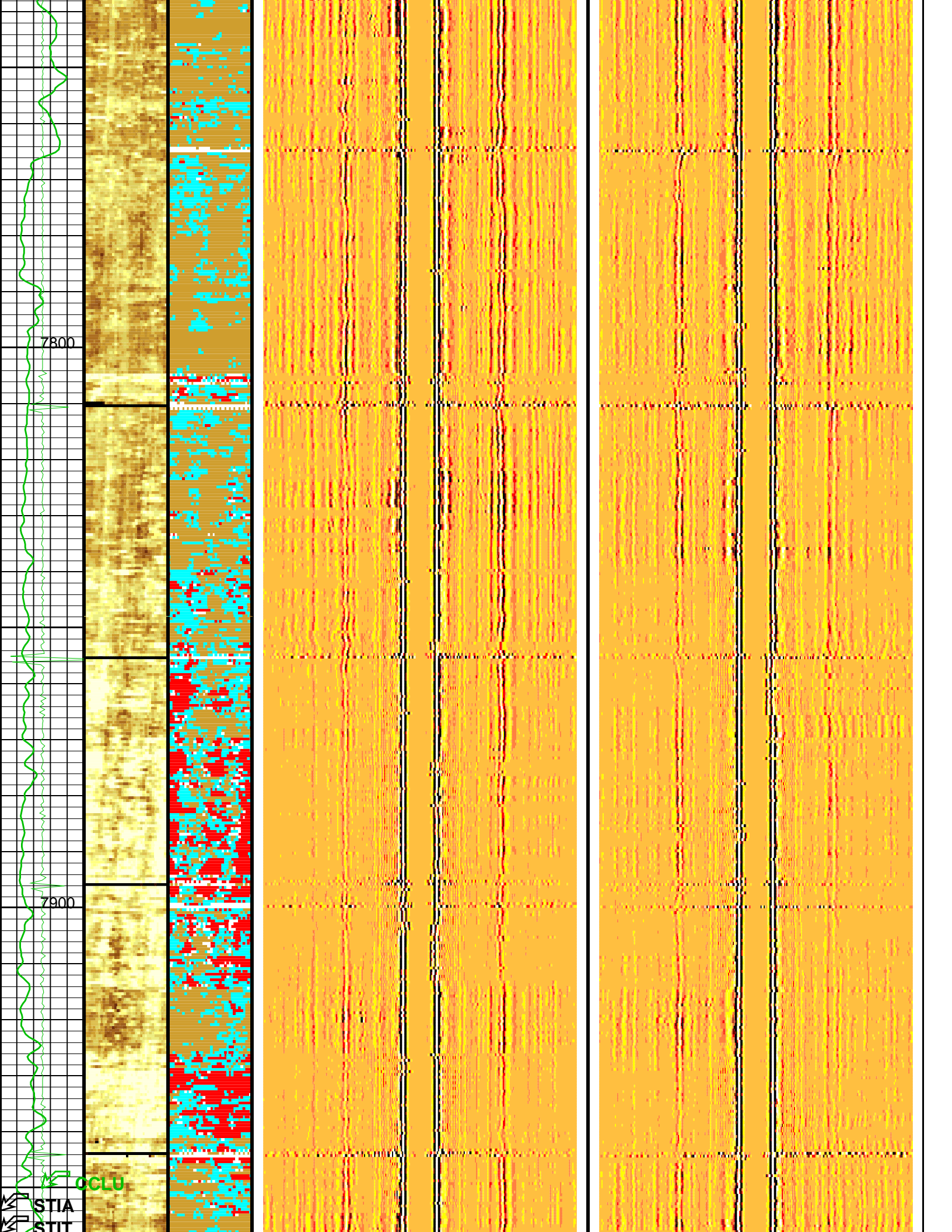
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GR

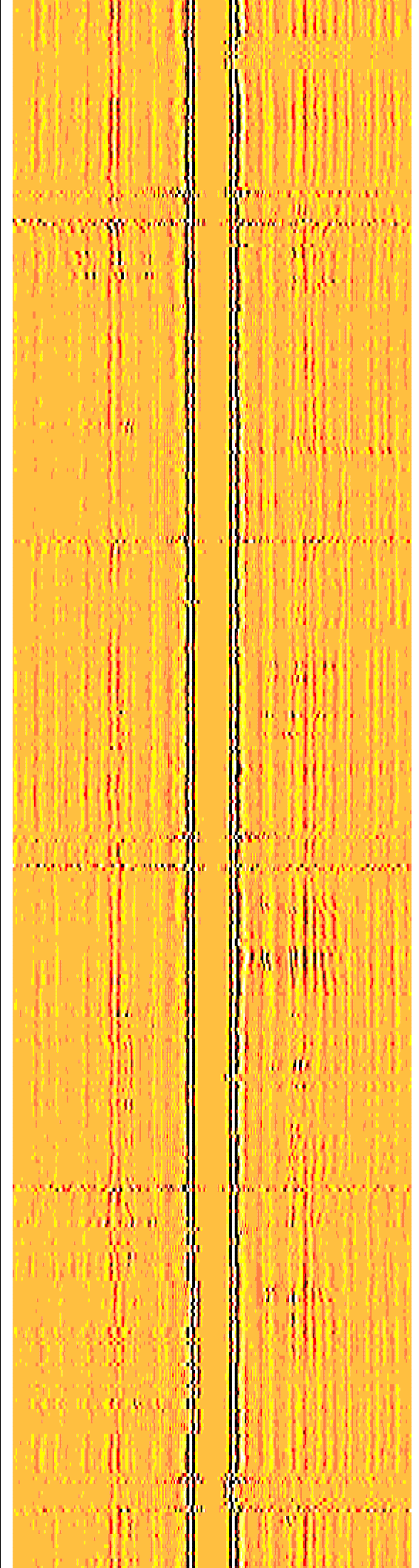
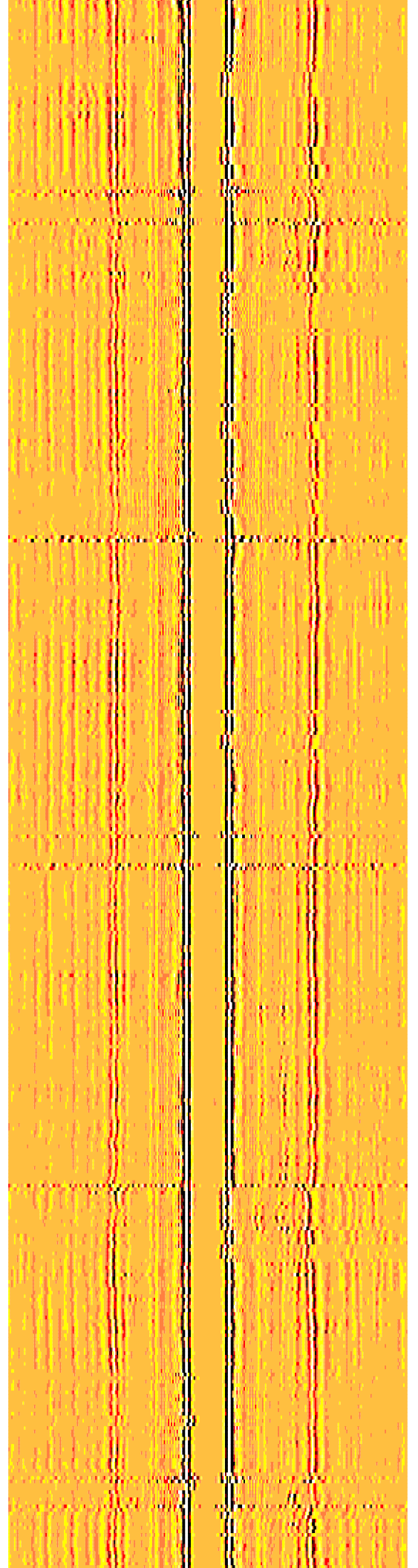
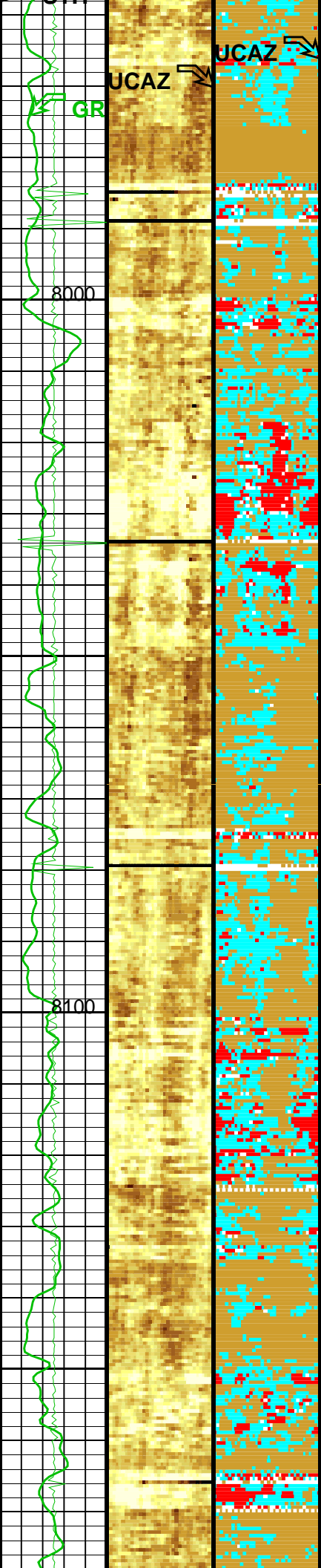
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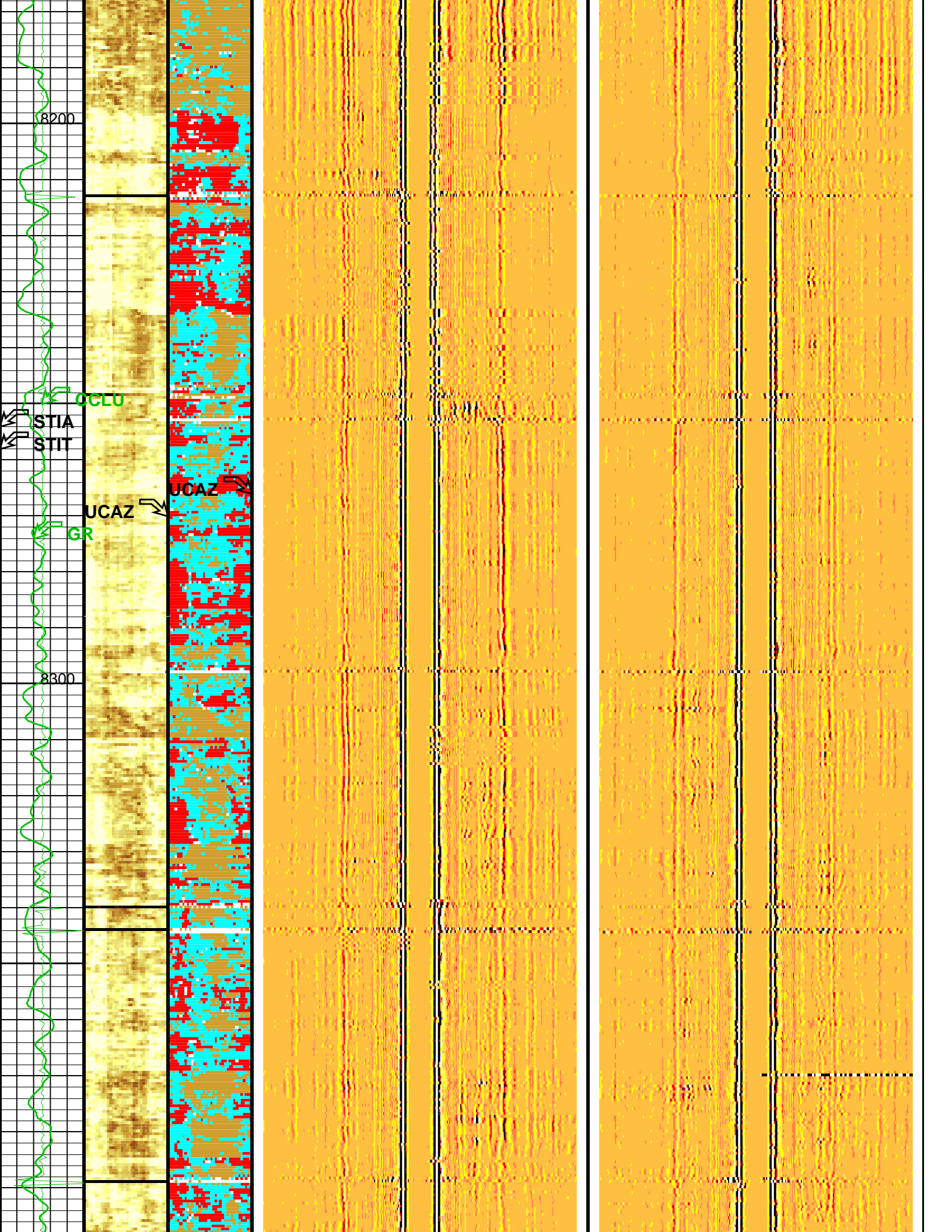


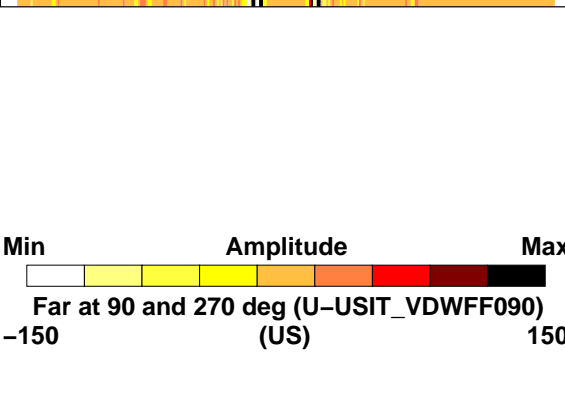
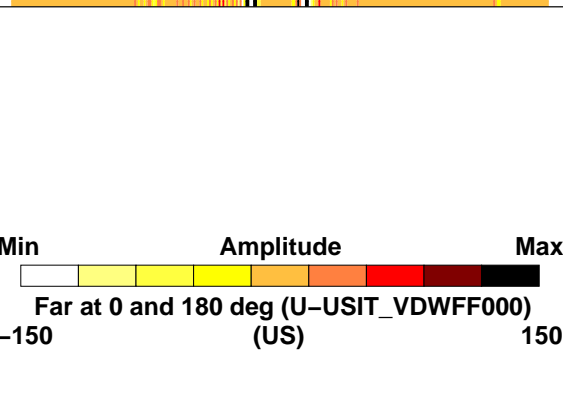
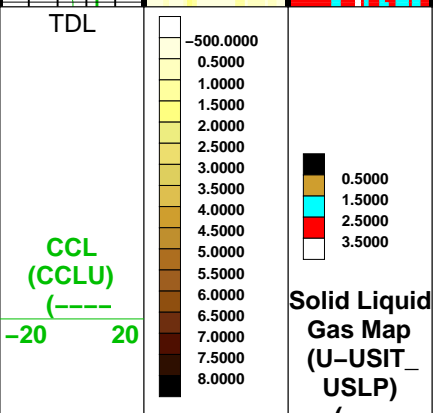
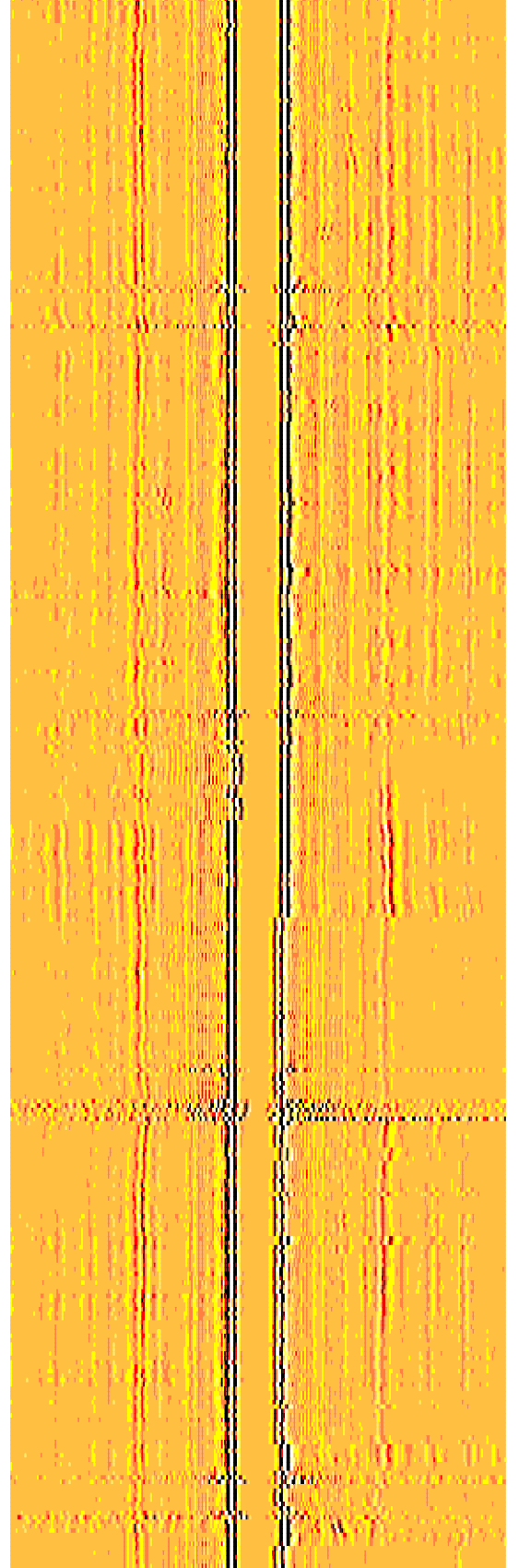
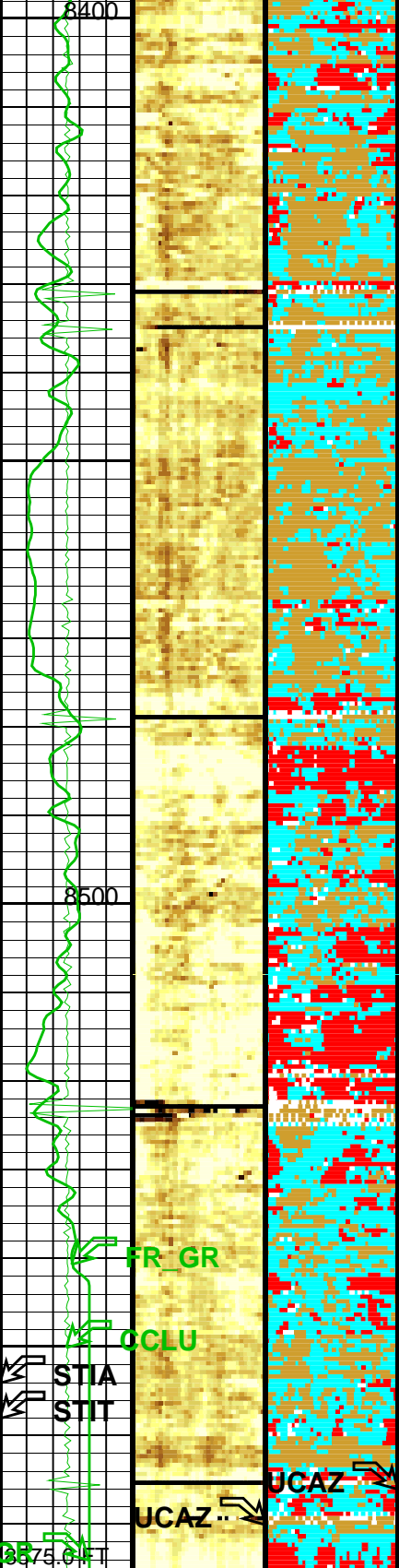












	Raw Acoustic Imped. (AIBK) (MRAY)		
Gamma Ray (GR) (GAPI)			
0	150		
Stuck Stretch (STIT)			
0	(F)	50	
Cable Drag From D4T to STIT			
Tool/Tot. Drag From D4T to STIA			

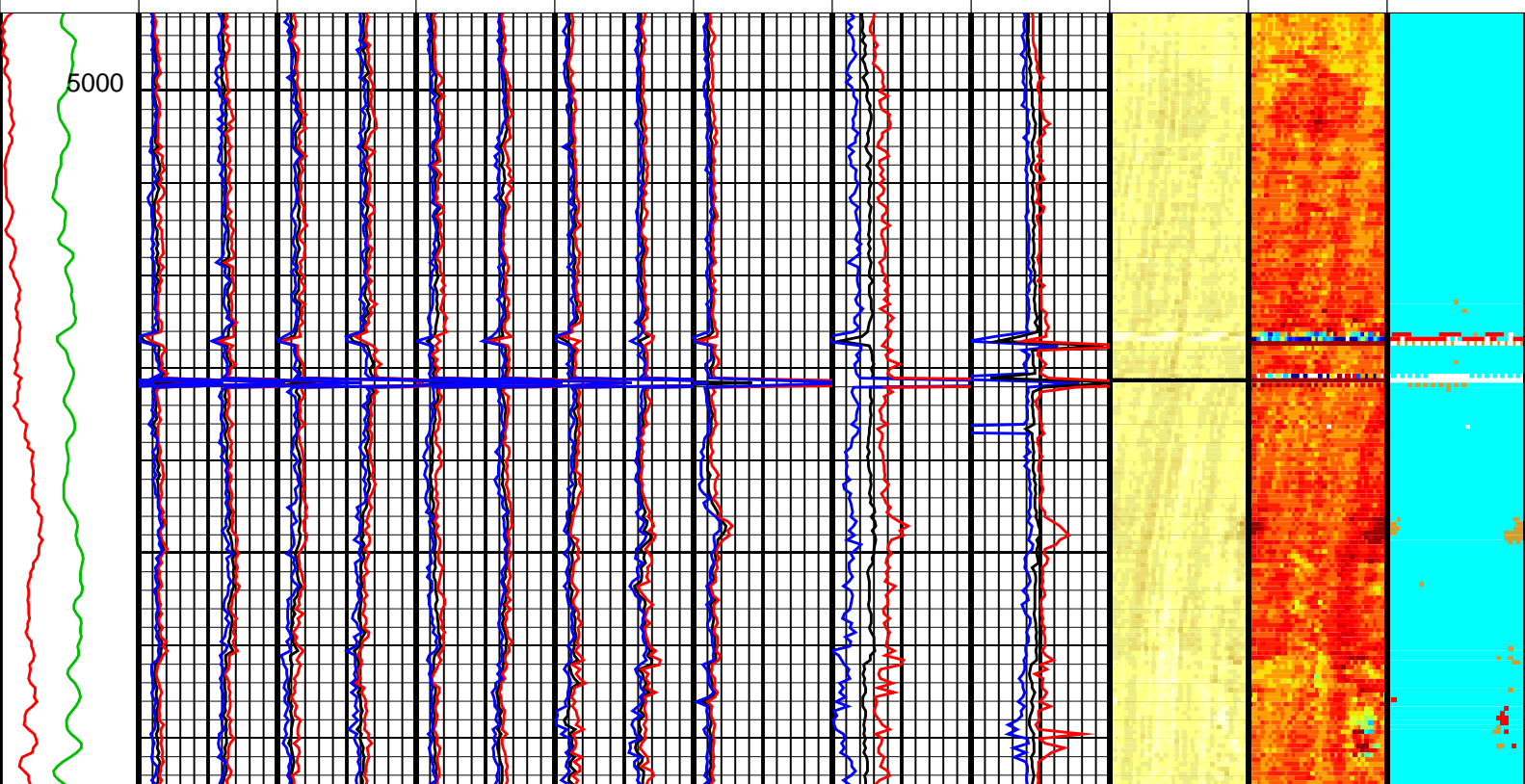
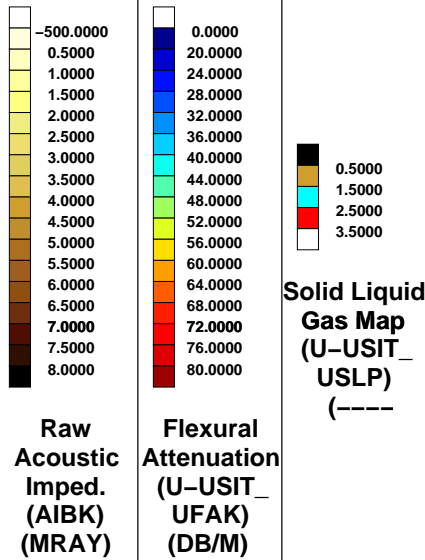
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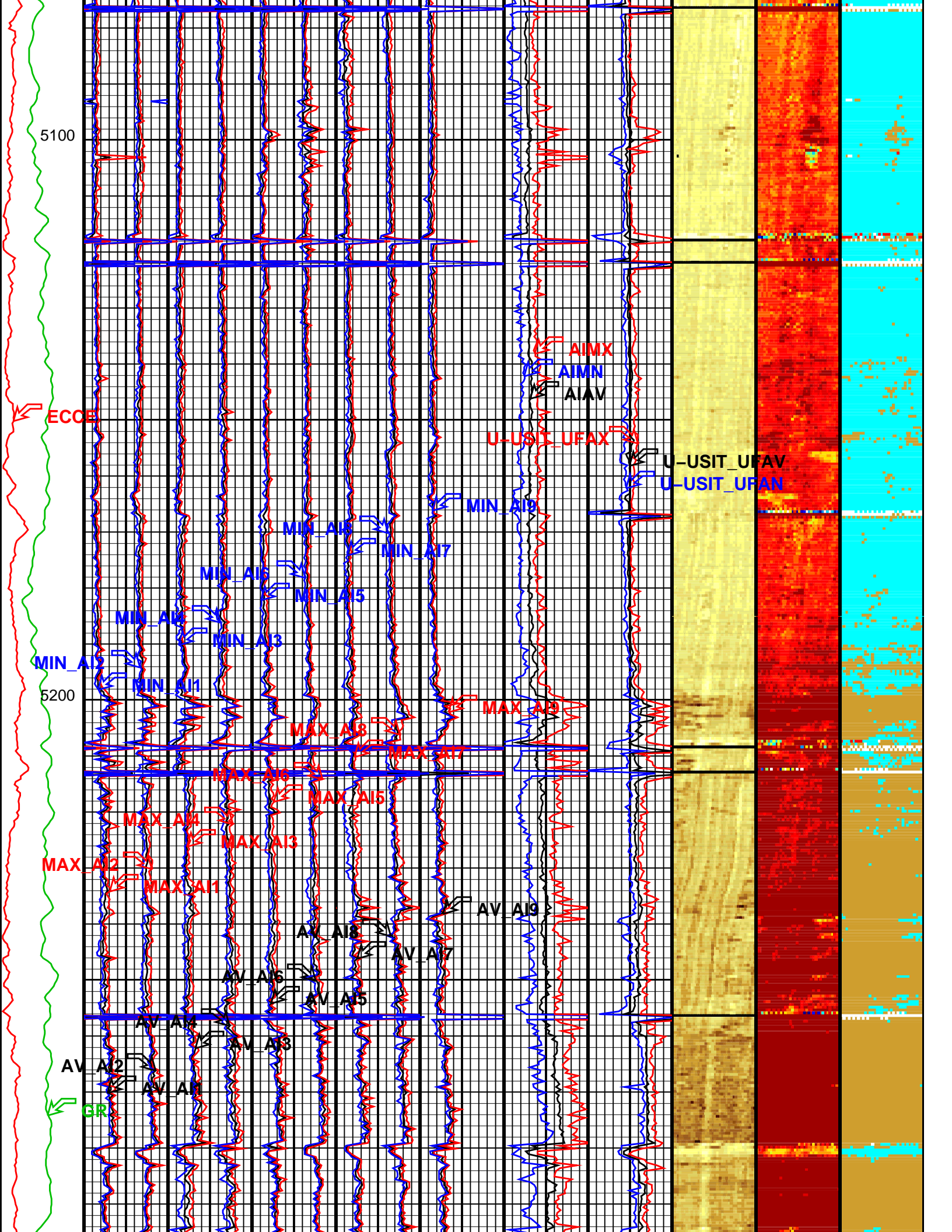
DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging - D			
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	192	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	110	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI	
IMAR	Image Rotation	OFF	
MW	Mud Weight	11	LB/G
RCOD	Reference Calibrator Outer Diameter	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
U-USIT_CEMT	USIT Cement Type	LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	2	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_A	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_5_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.2537	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.86	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY

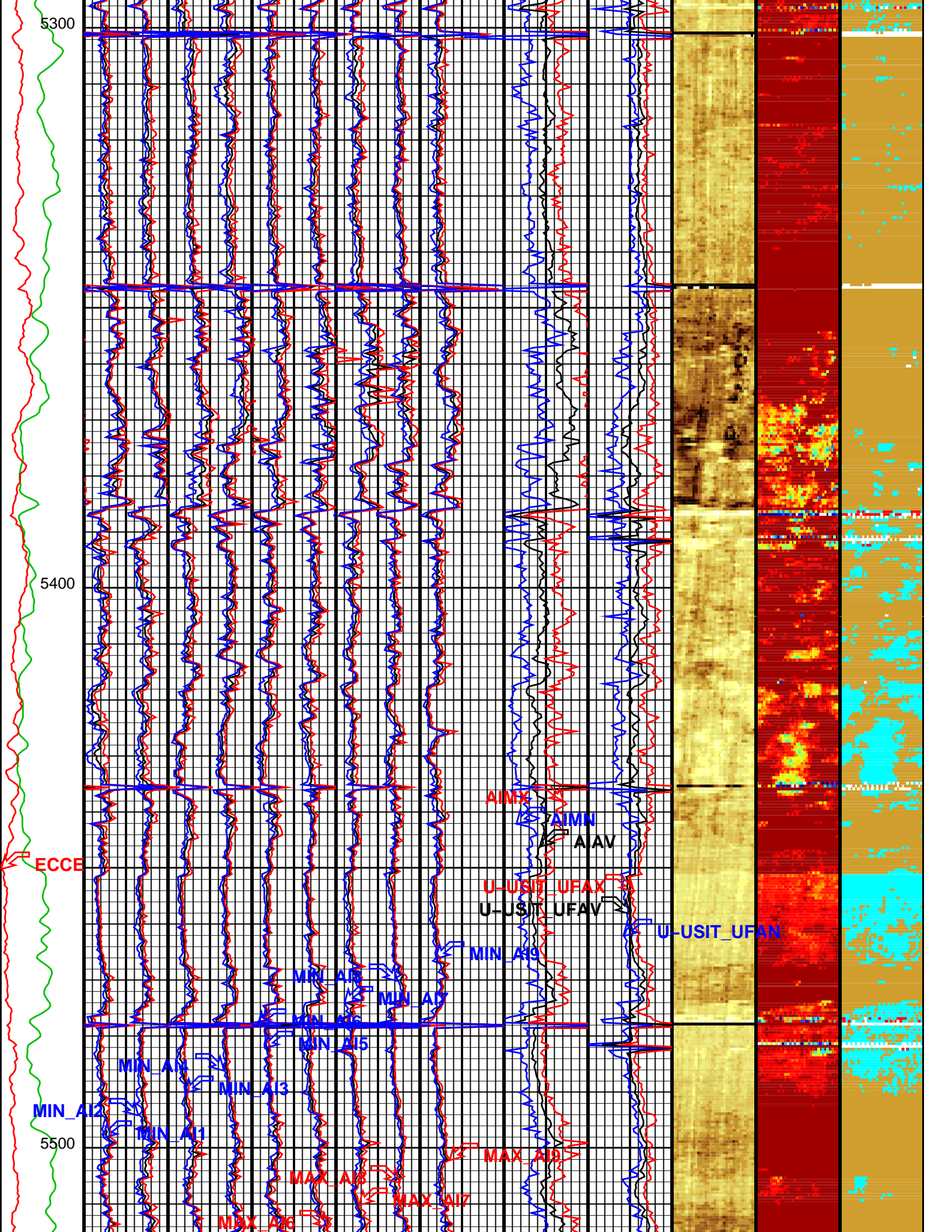


	(MRAY)	(MRAY)	(MRAY)	(MRAY)			
	0 15	0 15	0 15	0 15			
	Maximum Acoustic Impedance #2 (MAX_A12) (MRAY)	Maximum Acoustic Impedance #4 (MAX_A14) (MRAY)	Maximum Acoustic Impedance #6 (MAX_A16) (MRAY)	Maximum Acoustic Impedance #8 (MAX_A18) (MRAY)			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
	Maximum Acoustic Impedance #1 (MAX_A11) (MRAY)	Maximum Acoustic Impedance #3 (MAX_A13) (MRAY)	Maximum Acoustic Impedance #5 (MAX_A15) (MRAY)	Maximum Acoustic Impedance #7 (MAX_A17) (MRAY)	Minimum Acoustic Impedance #9 (MIN_A19) (MRAY)	Maximum of AI (AIMX) (MRAY)	Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150
Gamma Ray (GR) (GAPI)	Average Acoustic Impedance #2 (AV_A12) (MRAY)	Average Acoustic Impedance #4 (AV_A14) (MRAY)	Average Acoustic Impedance #6 (AV_A16) (MRAY)	Average Acoustic Impedance #8 (AV_A18) (MRAY)	Maximum Acoustic Impedance #9 (MAX_A19) (MRAY)	Minimum of AI (AIMN) (MRAY)	Average Flexural Attenuation (U-USIT_UFAV) (DB/M)
0 150	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15	0 7.5	0 150

	Average Acoustic Impedance #1 (AV_A11) (MRAY)	Average Acoustic Impedance #3 (AV_A13) (MRAY)	Average Acoustic Impedance #5 (AV_A15) (MRAY)	Average Acoustic Impedance #7 (AV_A17) (MRAY)	Average Acoustic Impedance #9 (AV_A19) (MRAY)	Average of AI (AIAV) (MRAY)	Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150
Eccent. (ECCE)							
0 (IN) 0.5							







5300

5400

5500

ECCE

MIN\_A12

5500

AIMX

AIMN

AIAV

U-USIT\_UFAX

U-USIT\_UFAV

U-USIT\_UFAN

MIN\_A19

MIN\_A18

MIN\_A17

MIN\_A16

MIN\_A15

MIN\_A14

MIN\_A13

MIN\_A12

MIN\_A11

MAX\_A18

MAX\_A17

MAX\_A16

MAX\_A15

MAX\_A14

MAX\_A13

MAX\_A12

MAX\_A11

MAX\_A10

MAX\_A9

MAX\_A8

MAX\_A7

MAX\_A6

MAX\_A5

MAX\_A4

MAX\_A3

MAX\_A2

MAX\_A1

MAX\_A0

MAX\_A-1

MAX\_A-2

MAX\_A-3

MAX\_A-4

MAX\_A-5

MAX\_A-6

MAX\_A-7

MAX\_A-8

MAX\_A-9

MAX\_A-10

MAX\_A-11

MAX\_A-12

MAX\_A-13

MAX\_A-14

MAX\_A-15

MAX\_A-16

MAX\_A-17

MAX\_A-18

MAX\_A-19

MAX\_A-20

MAX\_A-21

MAX\_A-22

MAX\_A-23

MAX\_A-24

MAX\_A-25

MAX\_A-26

MAX\_A-27

MAX\_A-28

MAX\_A-29

MAX\_A-30

MAX\_A-31

MAX\_A-32

MAX\_A-33

MAX\_A-34

MAX\_A-35

MAX\_A-36

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MAX\_A-41

MAX\_A-42

MAX\_A-43

MAX\_A-44

MAX\_A-45

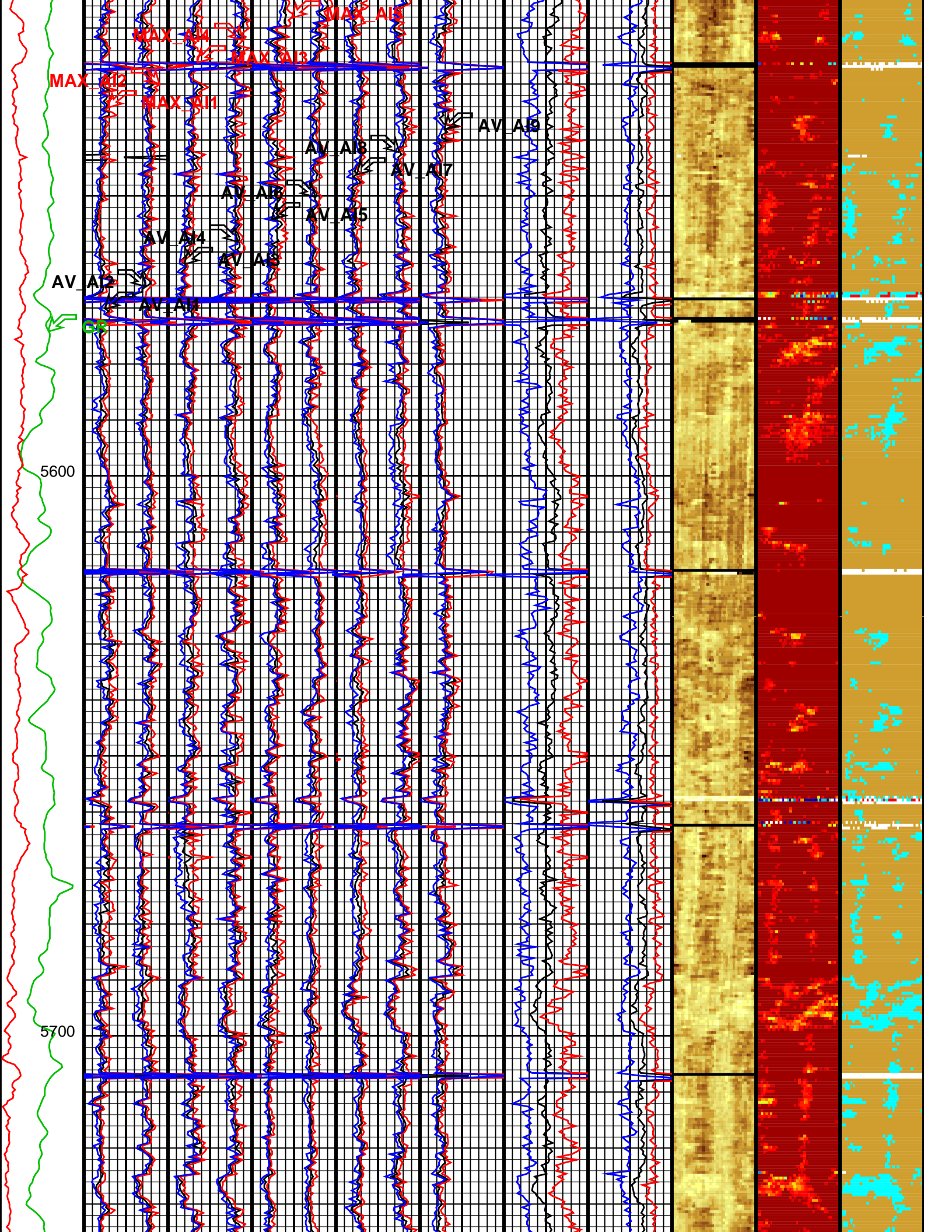
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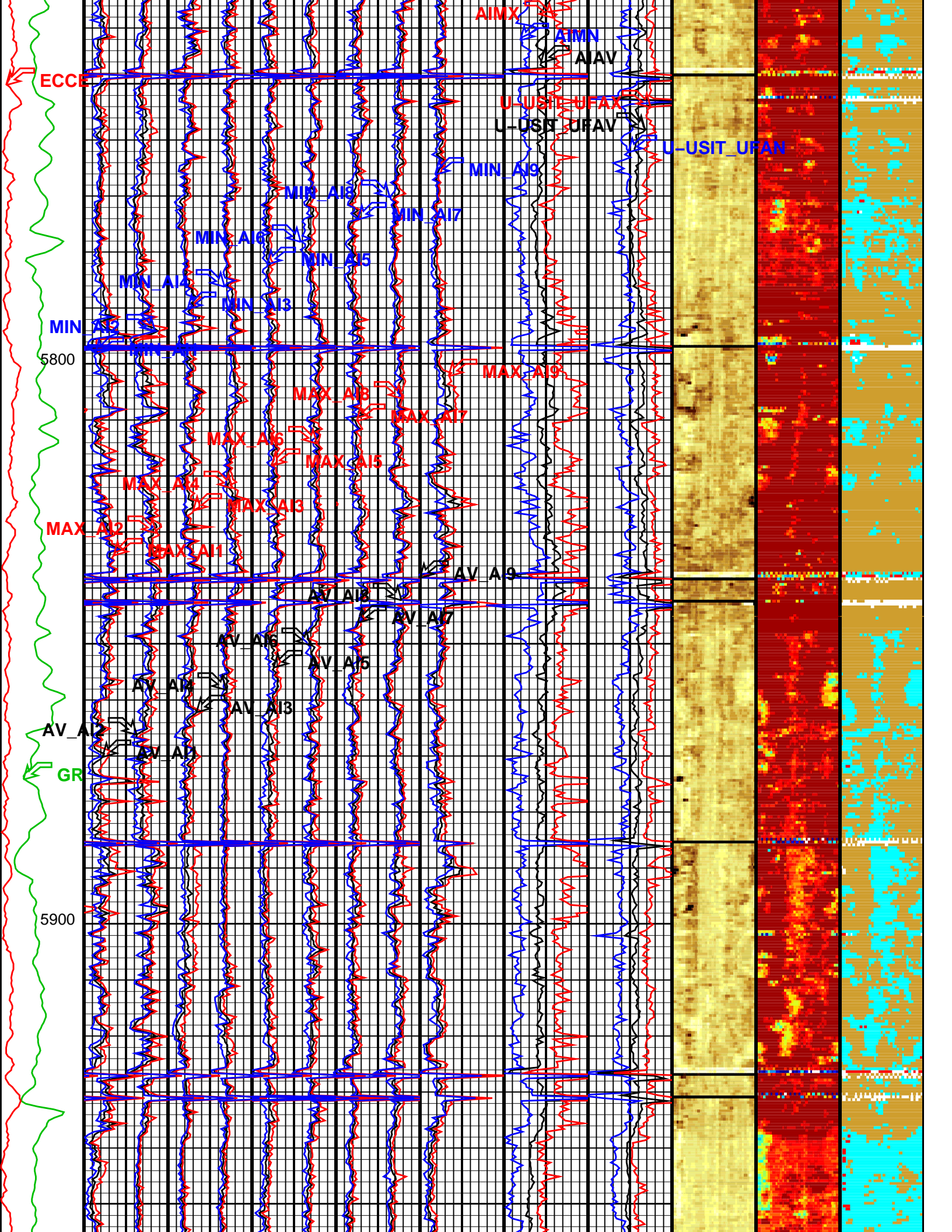
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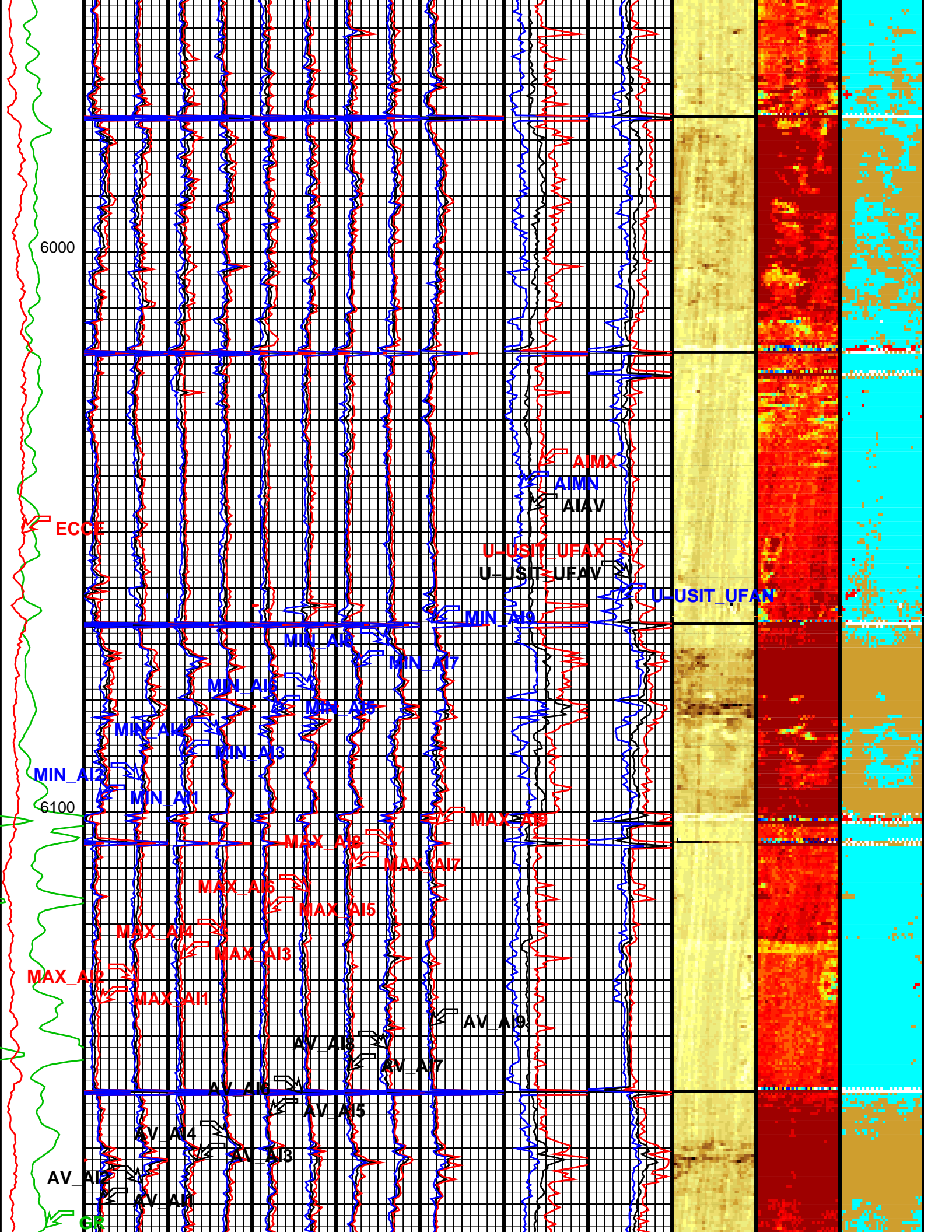
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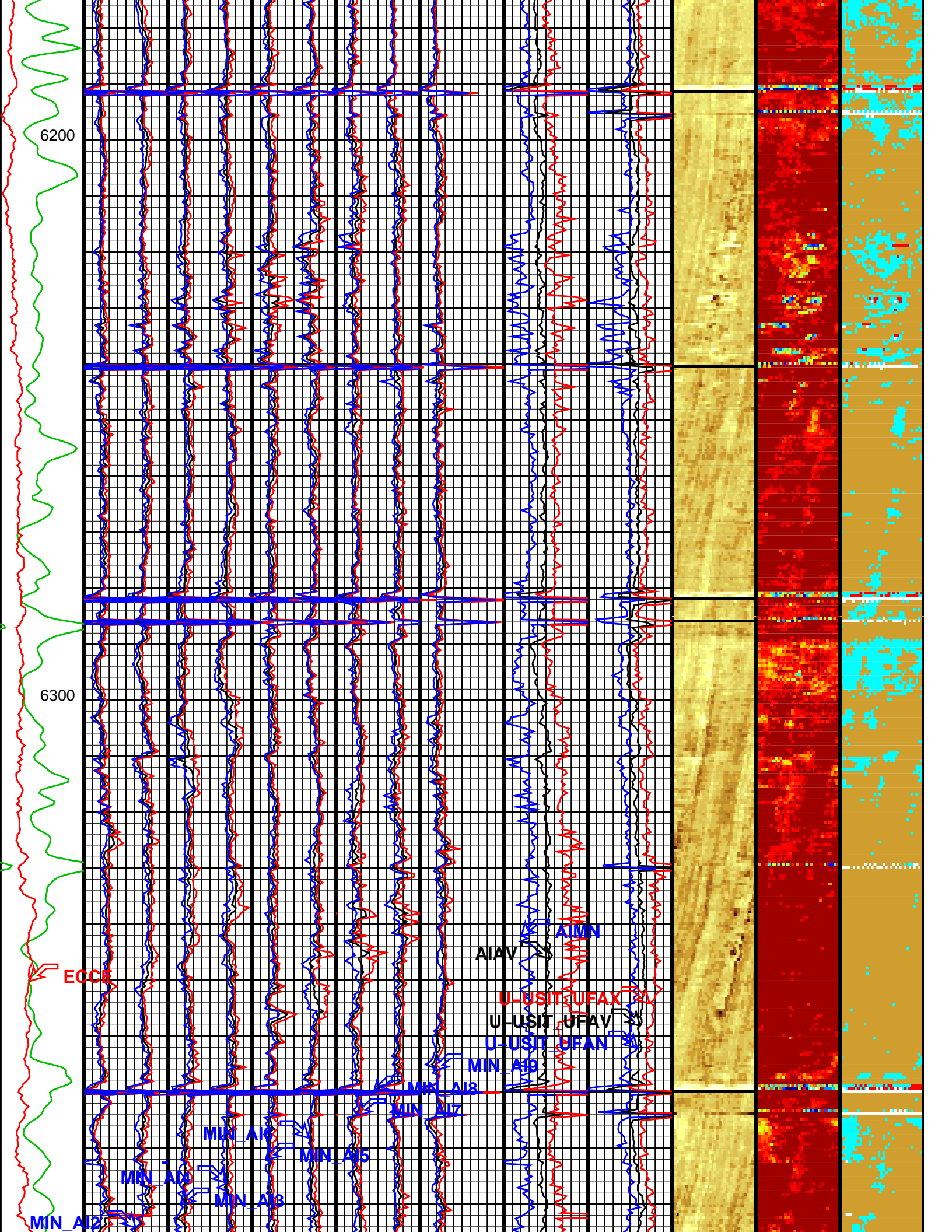
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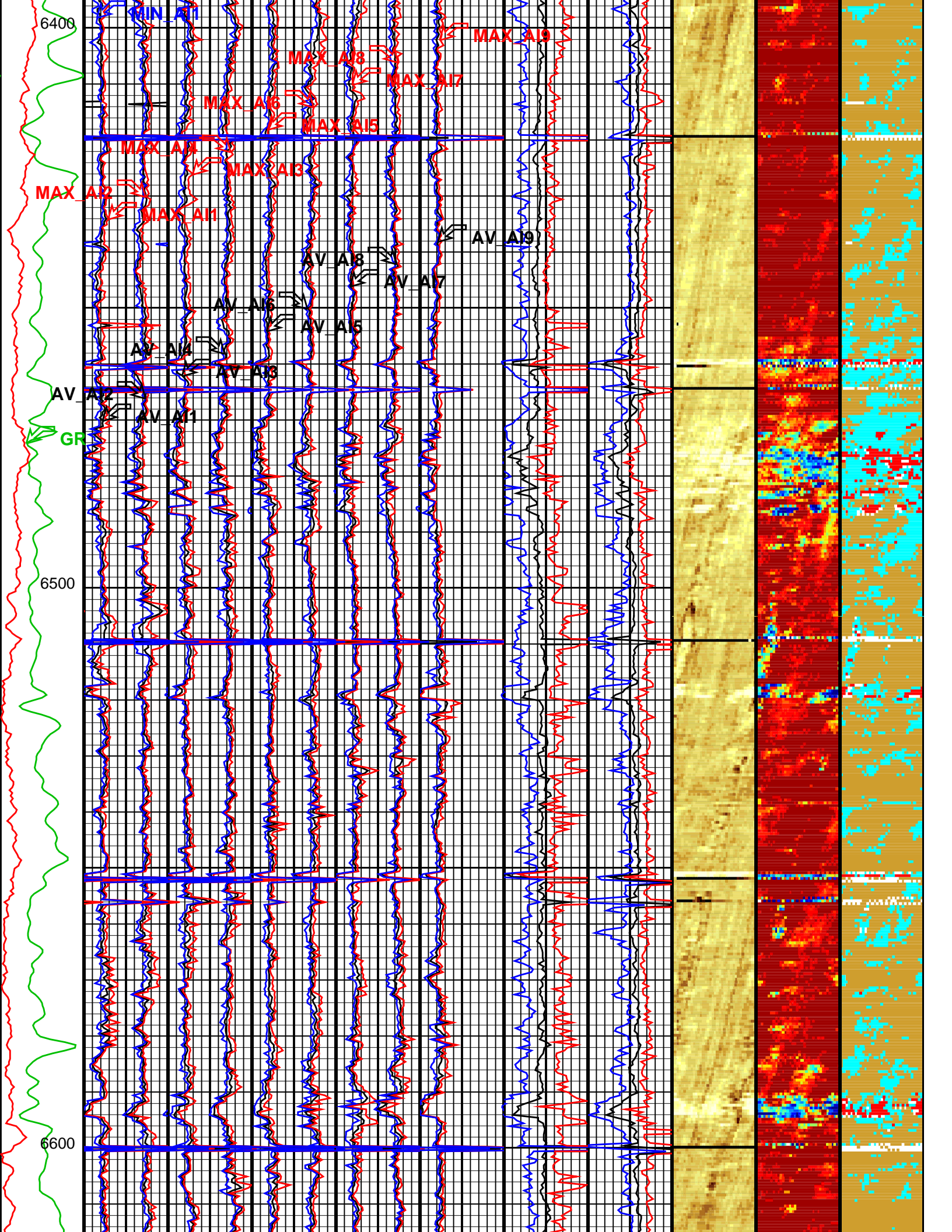
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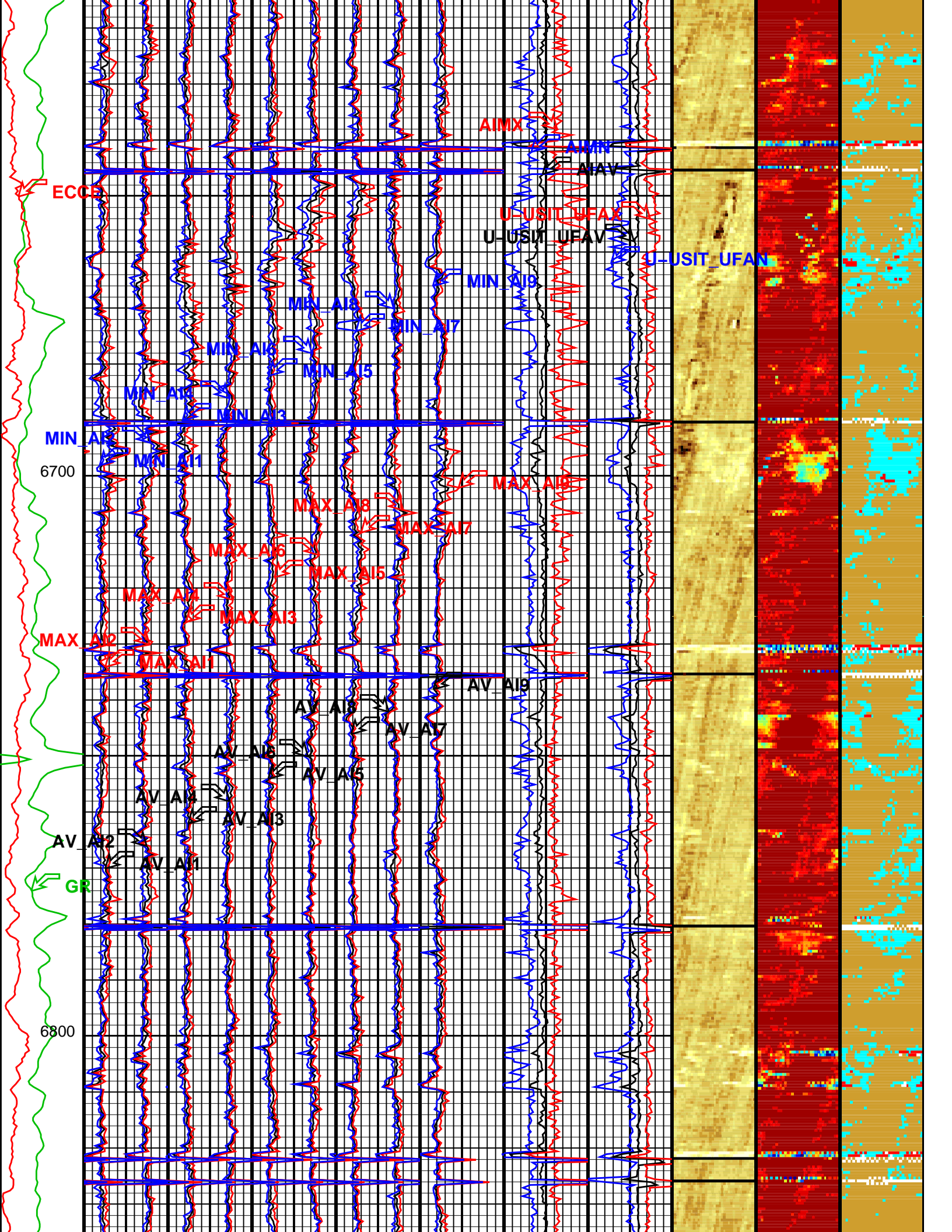


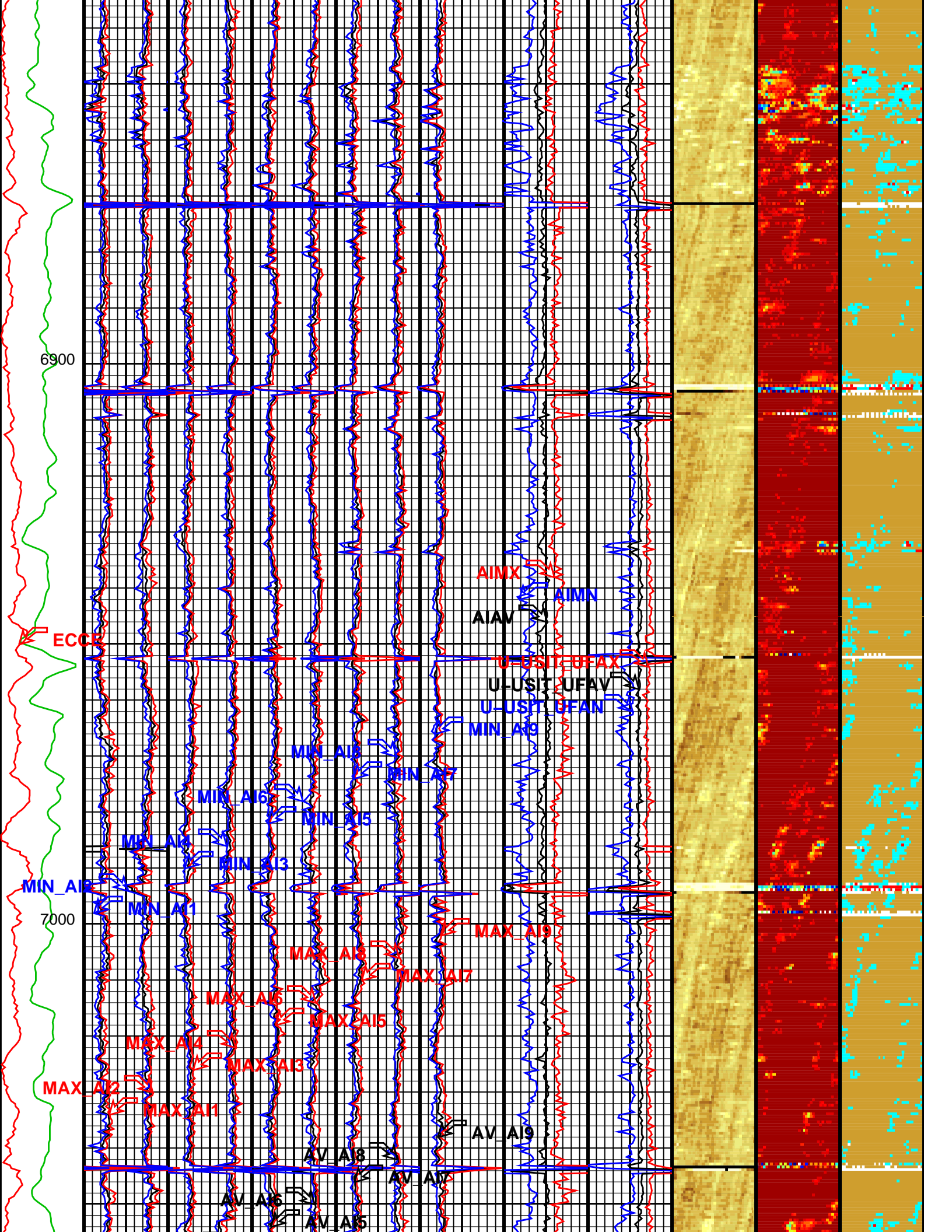




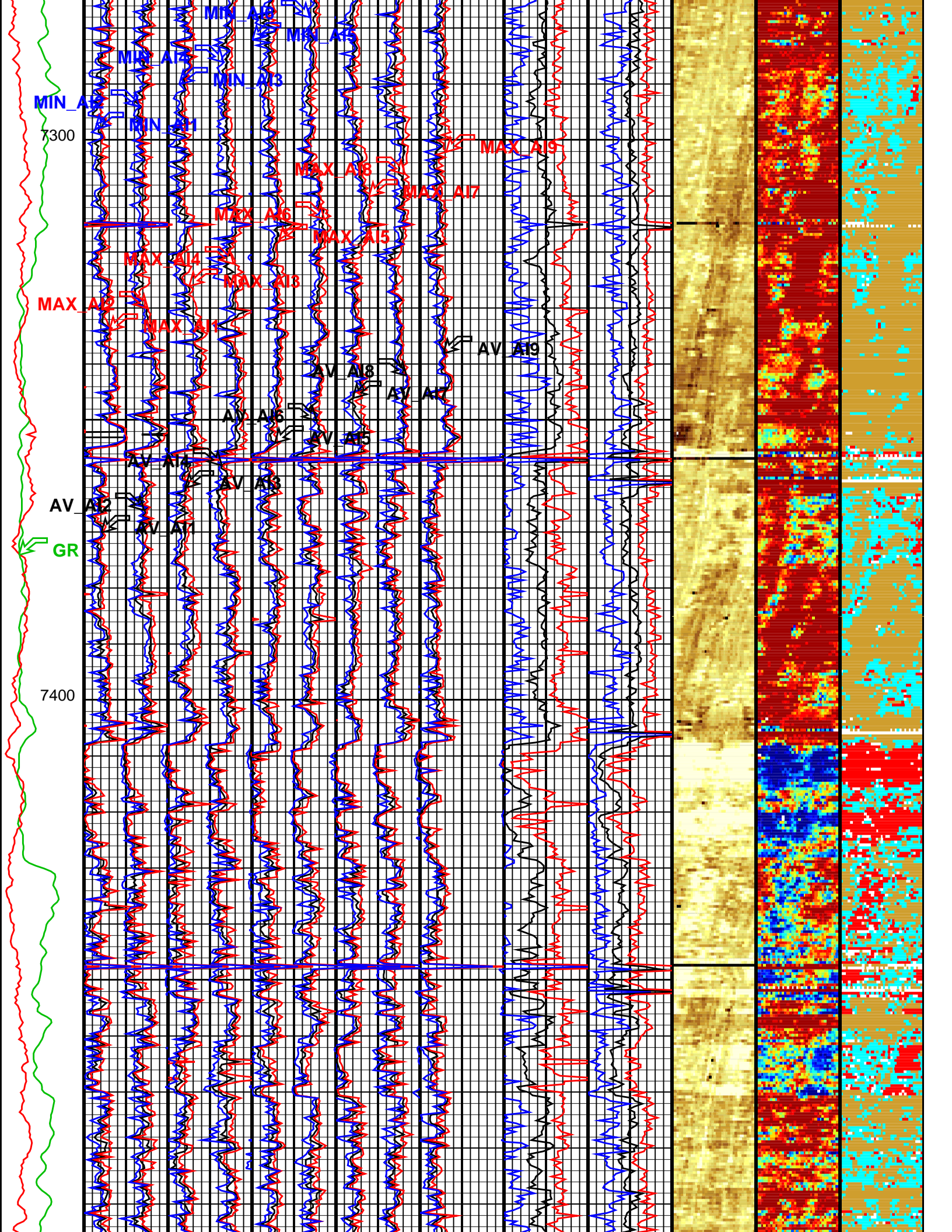


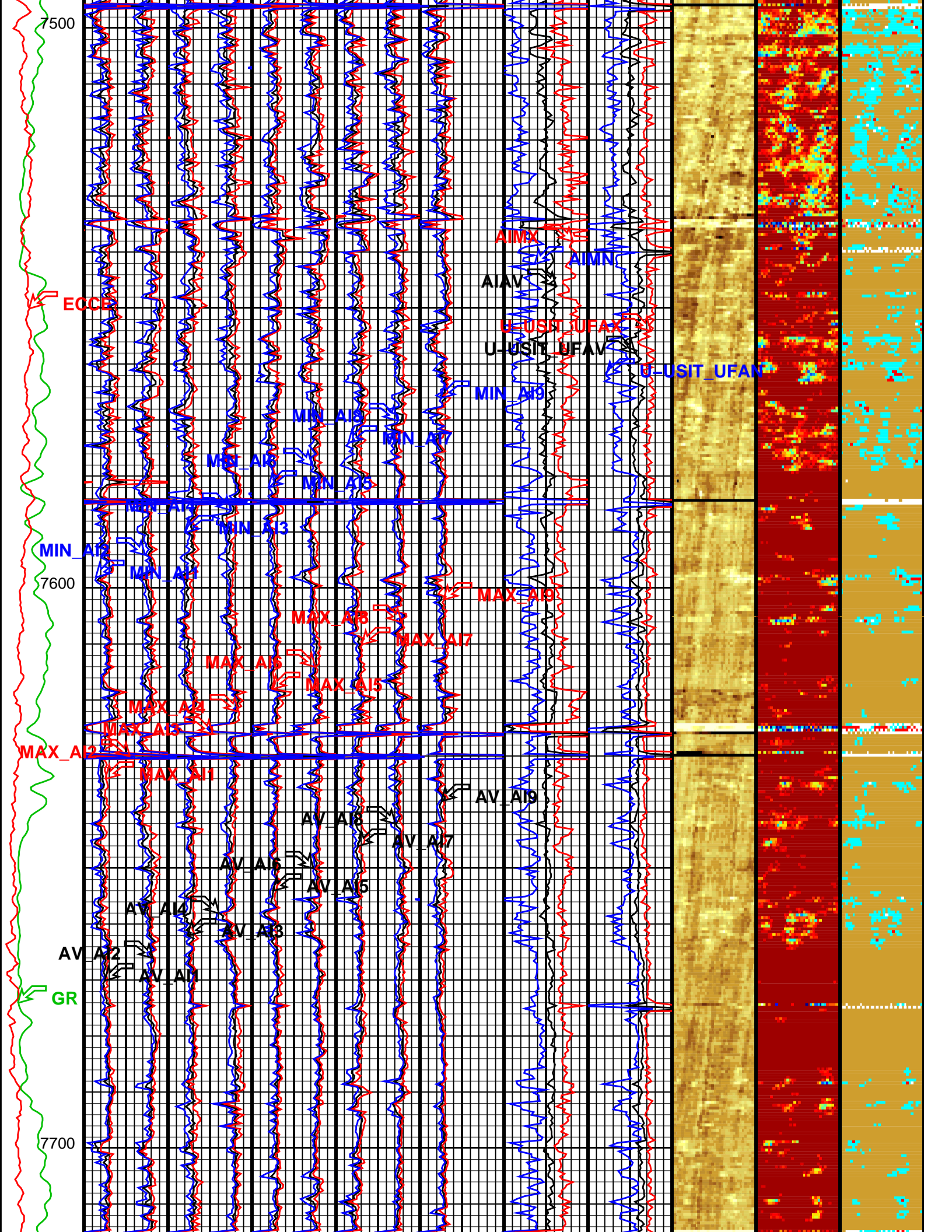


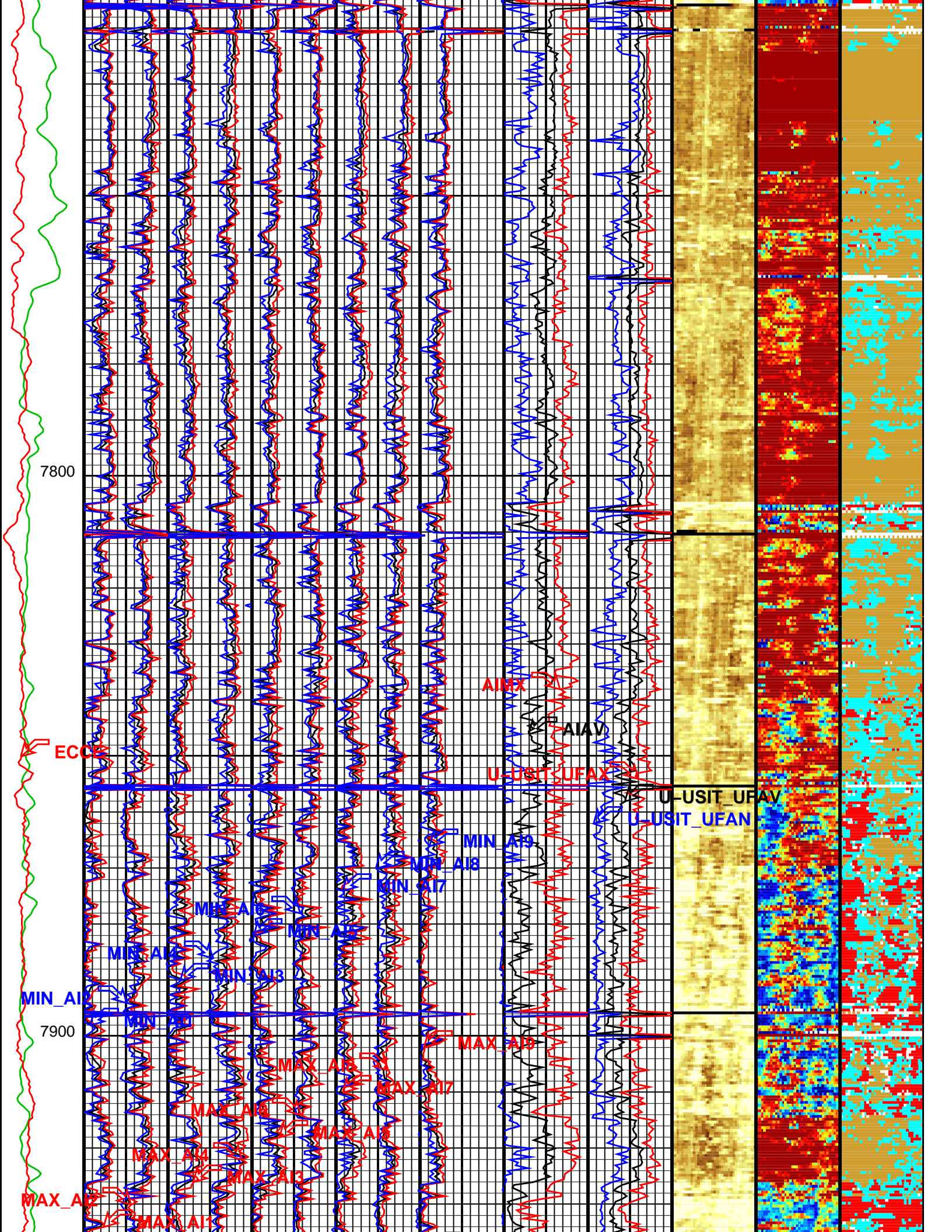


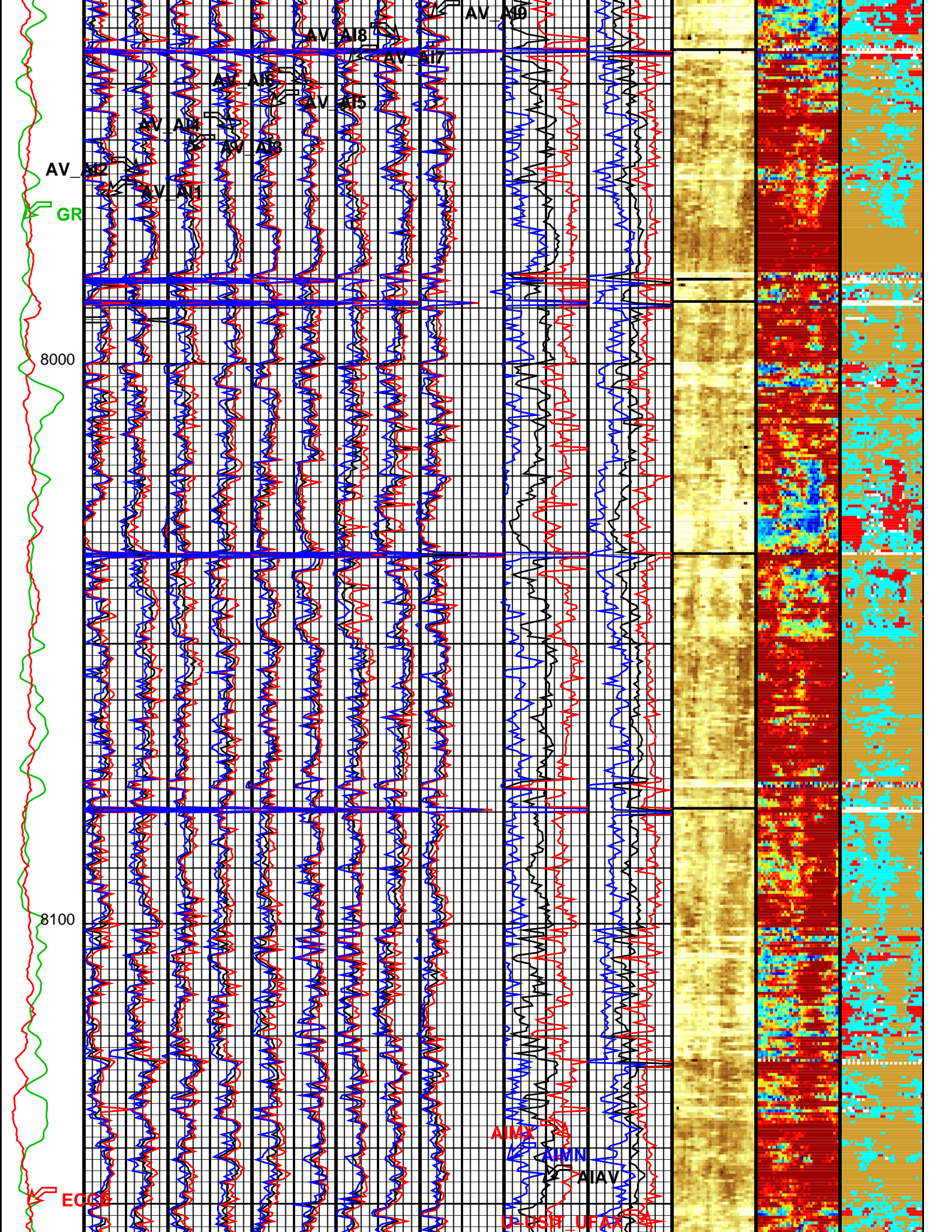


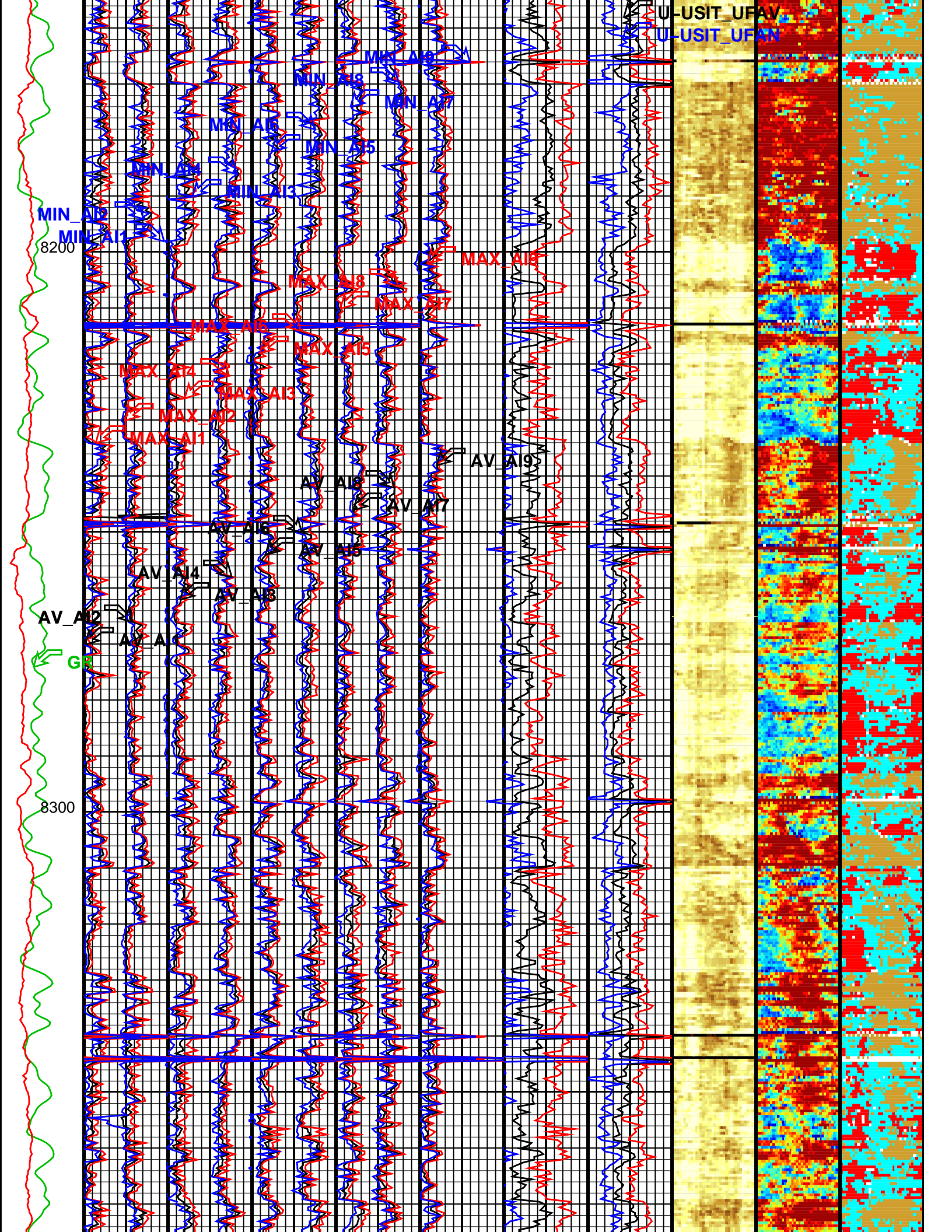


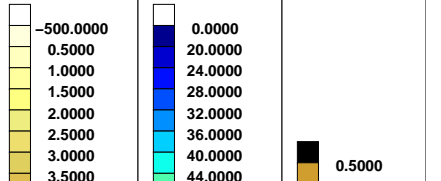
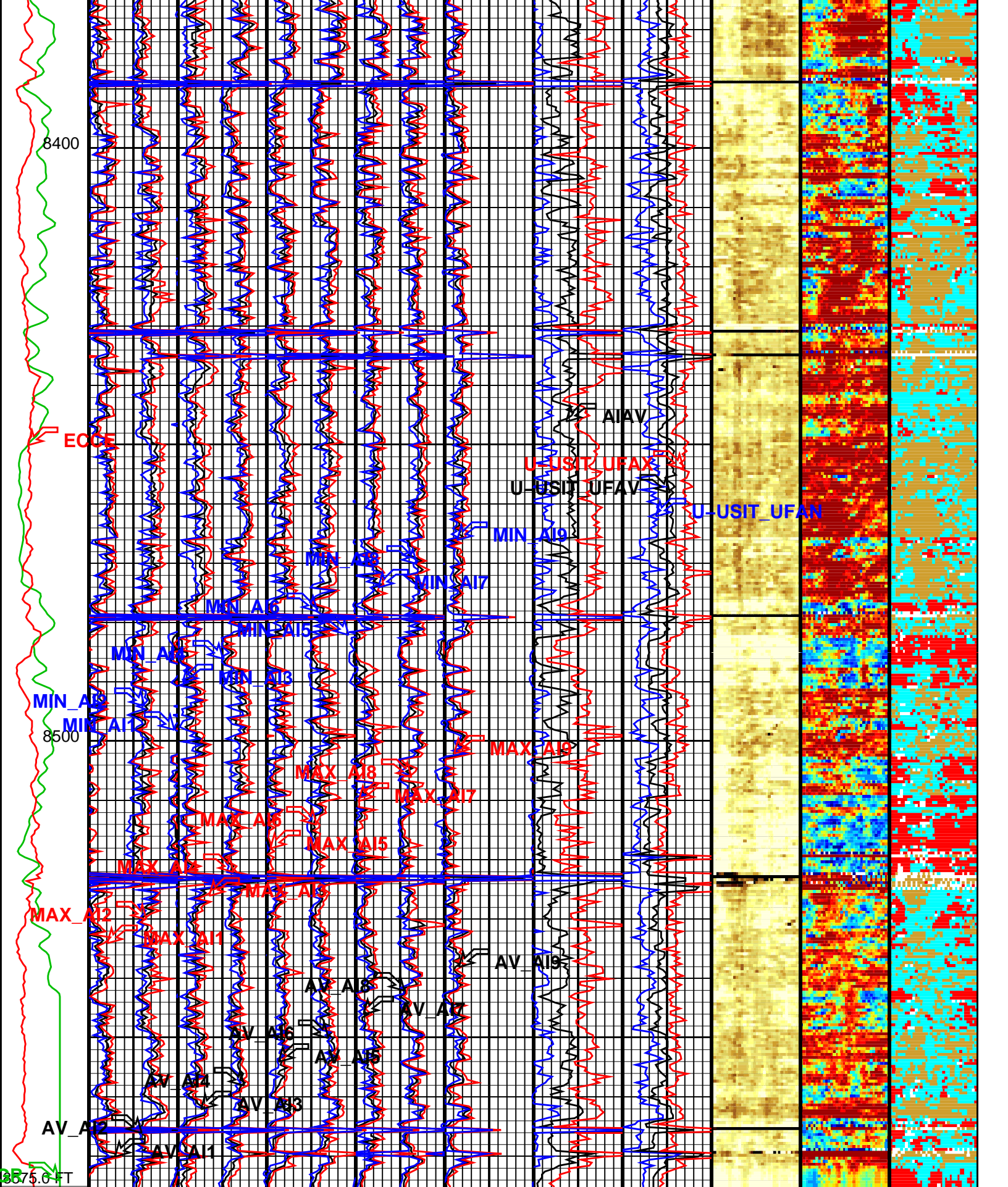


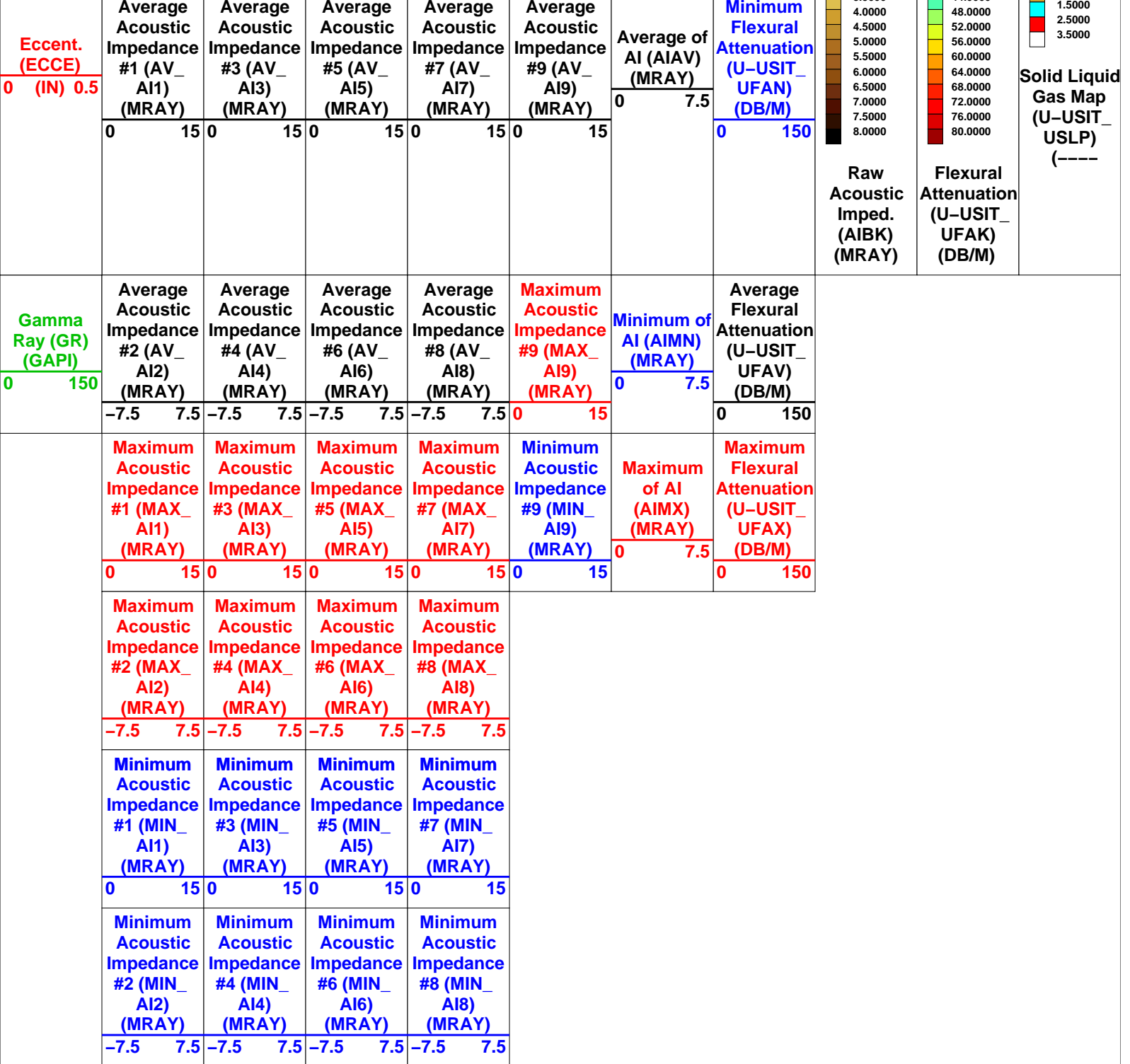












Format: M\_Goodwin Vertical Scale: 5" per 100' Graphics File Created: 02-Dec-2009 20:51

### OP System Version: 17C0-154

USIT-D 17C0-154 HILTH-FTB 17C0-154  
 DTC-H 17C0-154

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

**Input DLIS Files**

DEFAULT USI\_TLD\_MCFL\_CNL\_007LUP FN:10 PRODUCER 02-Dec-2009 17:55 8575.5 FT 191.5 FT

**Output DLIS Files**

DEFAULT USI\_TLD\_MCFL\_CNL\_012PUP FN:17 PRODUCER 02-Dec-2009 20:51  
 BACKUP USI\_TLD\_MCFL\_CNL\_012PUP FN:18 PRODUCER 02-Dec-2009 20:51



**Goodwin**  
 .1" = 100'

MAXIS Field Log

Company: ExxonMobil Production Corp Well: PCU 297-11B8

**Input DLIS Files**

DEFAULT USI\_TLD\_MCFL\_CNL\_007LUP FN:10 PRODUCER 02-Dec-2009 17:55 8575.5 FT 191.5 FT

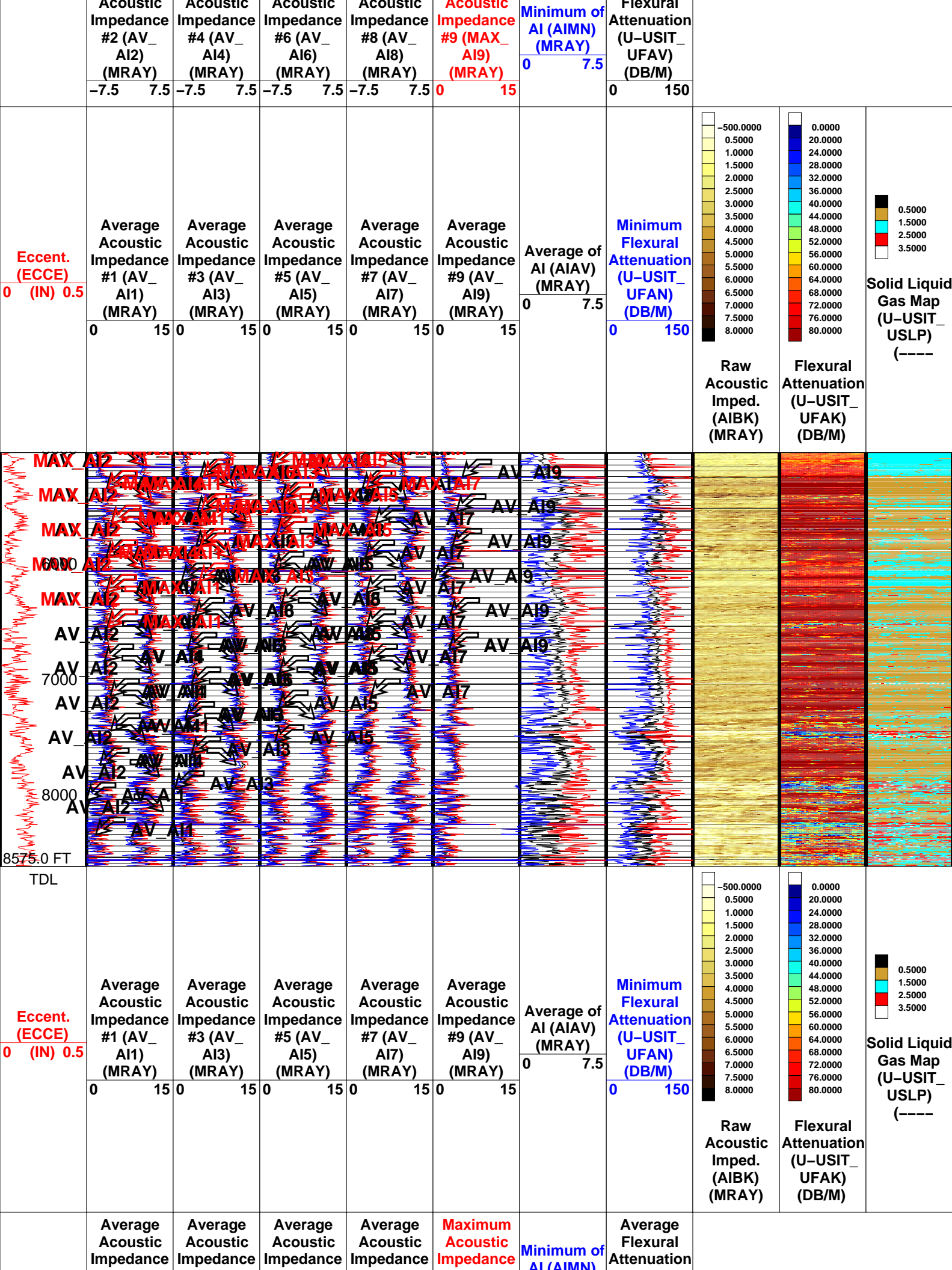
**Output DLIS Files**

DEFAULT USI\_TLD\_MCFL\_CNL\_012PUP FN:17 PRODUCER 02-Dec-2009 20:51 8575.5 FT 4991.5 FT  
 BACKUP USI\_TLD\_MCFL\_CNL\_012PUP FN:18 PRODUCER 02-Dec-2009 20:51 8575.5 FT 4991.5 FT

**OP System Version: 17C0-154**

USIT-D 17C0-154 HILTH-FTB 17C0-154  
 DTC-H 17C0-154

Minimum Acoustic Impedance #2 (MIN_AI2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_AI4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_AI6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_AI8) (MRAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
Minimum Acoustic Impedance #1 (MIN_AI1) (MRAY)	Minimum Acoustic Impedance #3 (MIN_AI3) (MRAY)	Minimum Acoustic Impedance #5 (MIN_AI5) (MRAY)	Minimum Acoustic Impedance #7 (MIN_AI7) (MRAY)			
0 15	0 15	0 15	0 15			
Maximum Acoustic Impedance #2 (MAX_AI2) (MRAY)	Maximum Acoustic Impedance #4 (MAX_AI4) (MRAY)	Maximum Acoustic Impedance #6 (MAX_AI6) (MRAY)	Maximum Acoustic Impedance #8 (MAX_AI8) (MRAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
Maximum Acoustic Impedance #1 (MAX_AI1) (MRAY)	Maximum Acoustic Impedance #3 (MAX_AI3) (MRAY)	Maximum Acoustic Impedance #5 (MAX_AI5) (MRAY)	Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)	Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)	Maximum of AI (AIMX) (MRAY)	Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
0 15	0 15	0 15	0 15	0 15	0 7.5	0 150
Average Acoustic Impedance	Average Acoustic Impedance	Average Acoustic Impedance	Average Acoustic Impedance	Maximum Acoustic Impedance		Average Flexural Attenuation



#2 (AV_ AI2) (MRAY)	#4 (AV_ AI4) (MRAY)	#6 (AV_ AI6) (MRAY)	#8 (AV_ AI8) (MRAY)	#9 (MAX_ AI9) (MRAY)	AI (AIMX) (MRAY)	(U-USIT_ UFAV) (DB/M)
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15	0 7.5	0 150
Maximum Acoustic Impedance #1 (MAX_ AI1) (MRAY)	Maximum Acoustic Impedance #3 (MAX_ AI3) (MRAY)	Maximum Acoustic Impedance #5 (MAX_ AI5) (MRAY)	Maximum Acoustic Impedance #7 (MAX_ AI7) (MRAY)	Minimum Acoustic Impedance #9 (MIN_ AI9) (MRAY)	Maximum of AI (AIMX) (MRAY)	Maximum Flexural Attenuation (U-USIT_ UFAV) (DB/M)
0 15	0 15	0 15	0 15	0 15	0 7.5	0 150
Maximum Acoustic Impedance #2 (MAX_ AI2) (MRAY)	Maximum Acoustic Impedance #4 (MAX_ AI4) (MRAY)	Maximum Acoustic Impedance #6 (MAX_ AI6) (MRAY)	Maximum Acoustic Impedance #8 (MAX_ AI8) (MRAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
Minimum Acoustic Impedance #1 (MIN_ AI1) (MRAY)	Minimum Acoustic Impedance #3 (MIN_ AI3) (MRAY)	Minimum Acoustic Impedance #5 (MIN_ AI5) (MRAY)	Minimum Acoustic Impedance #7 (MIN_ AI7) (MRAY)			
0 15	0 15	0 15	0 15			
Minimum Acoustic Impedance #2 (MIN_ AI2) (MRAY)	Minimum Acoustic Impedance #4 (MIN_ AI4) (MRAY)	Minimum Acoustic Impedance #6 (MIN_ AI6) (MRAY)	Minimum Acoustic Impedance #8 (MIN_ AI8) (MRAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			

Format: M\_Goodwin\_Compressed      Vertical Scale: 0.1" per 100'      Graphics File Created: 02-Dec-2009 20:51

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.  
 Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

### Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_007LUP	FN:10	PRODUCER	02-Dec-2009 17:55	8575.5 FT	191.5 FT
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### Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012PUP	FN:17	PRODUCER	02-Dec-2009 20:51	
BACKUP	USI_TLD_MCFL_CNL_012PUP	FN:18	PRODUCER	02-Dec-2009 20:51	



REPEAT PASS

Company: ExxonMobil Production Corp

Well: PCU 297-11B8

### Input DLIS Files

DEFAULT      USI\_TLD\_MCFL\_CNL\_006LUP      FN:8      PRODUCER      02-Dec-2009 17:37      8575.5 FT      8273.5 FT

### Output DLIS Files

DEFAULT      USI\_TLD\_MCFL\_CNL\_011PUP      FN:15      PRODUCER      02-Dec-2009 20:49      8575.5 FT      8273.5 FT

BACKUP      USI\_TLD\_MCFL\_CNL\_011PUP      FN:16      PRODUCER      02-Dec-2009 20:49      8575.5 FT      8273.5 FT

### OP System Version: 17C0-154

USIT-D      17C0-154      HILTH-FTB      17C0-154  
 DTC-H      17C0-154

Image rotation (UCAZ) (DEG)  
 0      360

Tool/Tot. Drag From D4T to STIA

Cable Drag From D4T to STIT

Stuck Stretch (STIT)  
 0 (F) 50

Gamma Ray (GR) (GAPI)  
 0      150

CCL (CCLU) (----)  
 -20      20

RSAV (RSAV) (RPS)  
 6      7.5

CCL (CCLU) (----)  
 -20      20

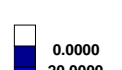
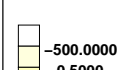
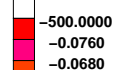
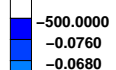
Min of Internal radius (IRMN) (IN)	Min of Internal radius (IRMN) (IN)
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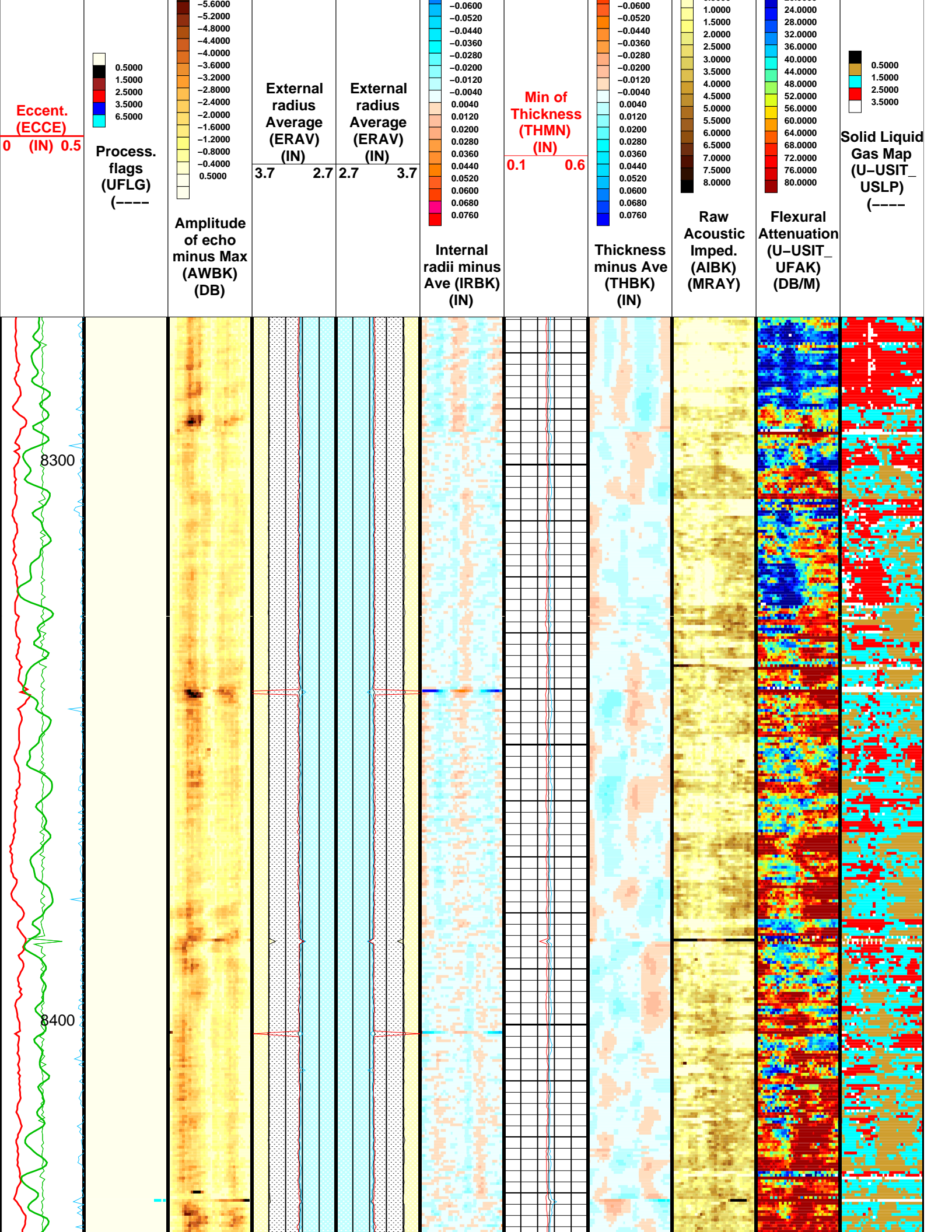
Internal radius Maximum (IRMX) (IN)	Internal radius Maximum (IRMX) (IN)
3.7      2.7	2.7      3.7

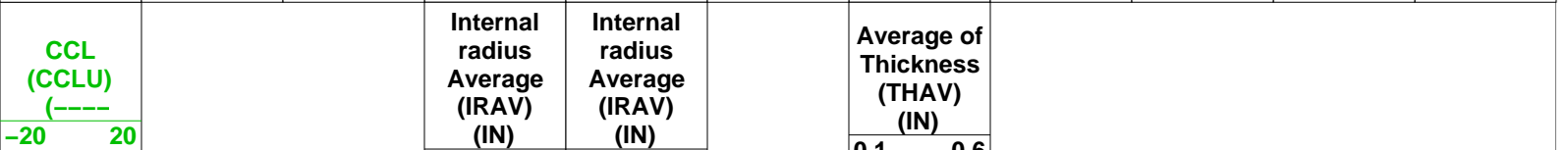
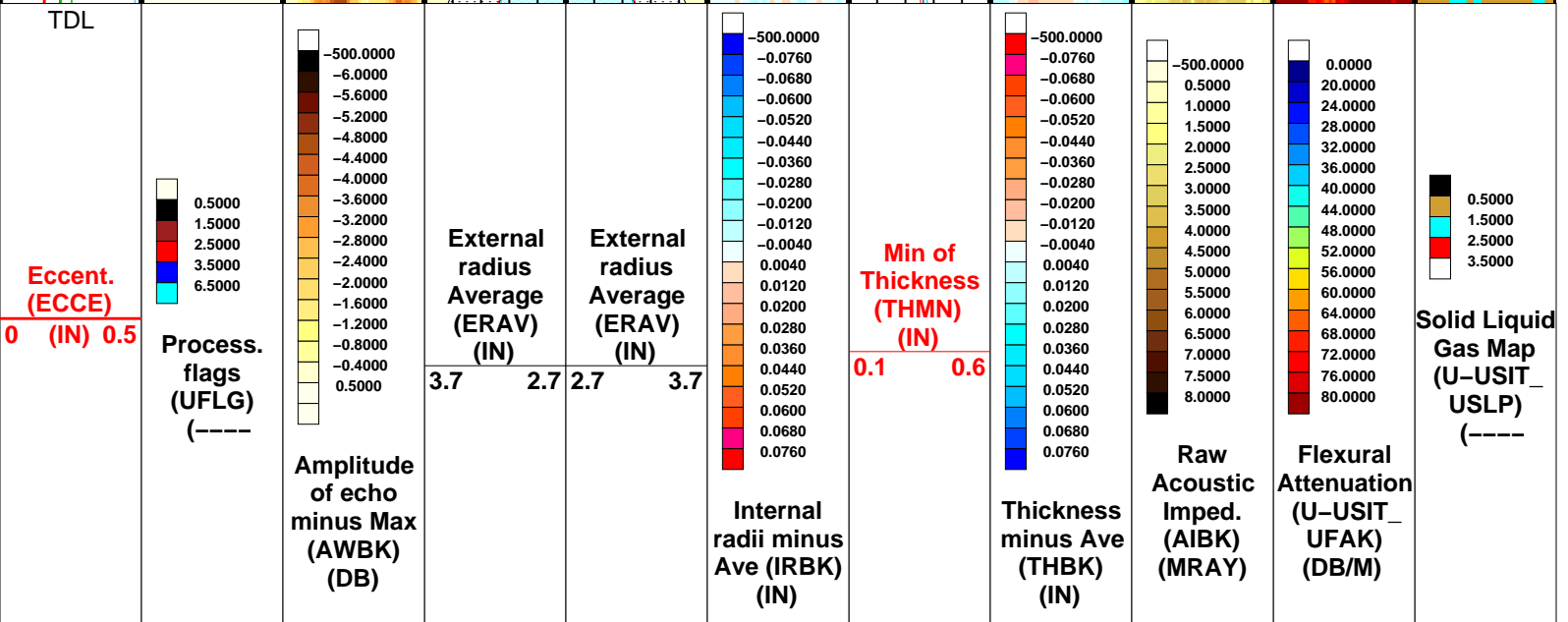
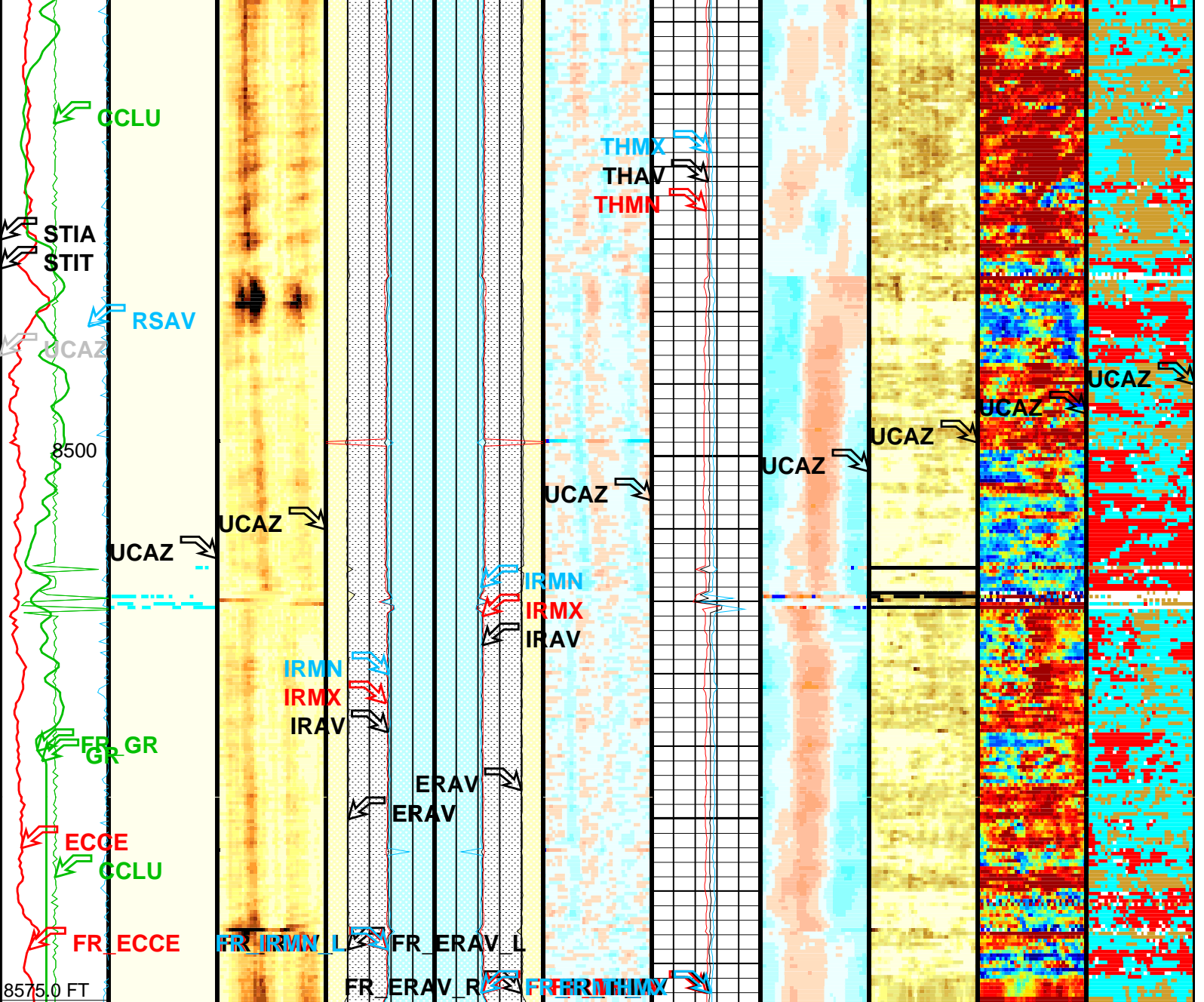
Maximum of Thickness (THMX) (IN)
0.1      0.6

Internal radius Average (IRAV) (IN)	Internal radius Average (IRAV) (IN)
3.7      2.7	2.7      3.7

Average of Thickness (THAV) (IN)
0.1      0.6







<b>RSAV (RSAV) (RPS)</b> 6      7.5	<b>Internal radius Maximum (IRMX) (IN)</b>	<b>Internal radius Maximum (IRMX) (IN)</b>	<b>Maximum of Thickness (THMX) (IN)</b>
	3.7    2.7    2.7    3.7	3.7    2.7    2.7    3.7	0.1    0.6
<b>CCL (CCLU) (----)</b> -20    20	<b>Min of Internal radius (IRMN) (IN)</b>	<b>Min of Internal radius (IRMN) (IN)</b>	
	3.7    2.7    2.7    3.7	3.7    2.7    2.7    3.7	
<b>Gamma Ray (GR) (GAPI)</b> 0      150			
<b>Stuck Stretch (STIT)</b> 0    (F)    50			
<b>Cable Drag From D4T to STIT</b>			
<b>Tool/Tot. Drag From D4T to STIA</b>			
<b>Image rotation (UCAZ) (DEG)</b> 0      360			

Format: USI\_IBC\_SLG\_Composite      Vertical Scale: 5" per 100'      Graphics File Created: 02-Dec-2009 20:49

## OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.  
 Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

### Parameters

DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	192 US/F
DOT	Diameter of Transducer Sensor	1.756 IN

EMXV	EMEX Voltage	110	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI	
IMAR	Image Rotation	OFF	
MW	Mud Weight	11	LB/G
RCOD	Reference Calibrator Outer Diameter	4.5	IN
RCSO	Reference Calibrator Standoff	0.8425	IN
RCTH	Reference Calibrator Thickness	0.2165	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
U-USIT_CEMT	USIT Cement Type	LIGHT	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0	MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0_US_P_FT	
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY	
U-USIT_OCDI	USIT Outer Casing Diameter	0	IN
U-USIT_OCSH	USIT Outer Casing Shoe	0	FT
U-USIT_OCWE	USIT Outer Casing Weight	0	LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES	
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE	
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO	
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEP	
U-USIT_TIER	IBC Third Interface Echo Receivers	BOTH	
U-USIT_U3WE	Third Interface Echo Window End	110	US
U-USIT_UBTP	USIT Bottom Transducer Position	UNKNOWN	
U-USIT_UFAO	USIT Flexural Attenuation Offset	2	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_A	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_5_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.2537	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.86	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	5	FT
TDD	Total Depth - Driller	8626.00	FT
TDL	Total Depth - Logger	8575.00	FT
System and Miscellaneous			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	

### Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006LUP	FN:8	PRODUCER	02-Dec-2009 17:37	8575.5 FT	8273.5 FT
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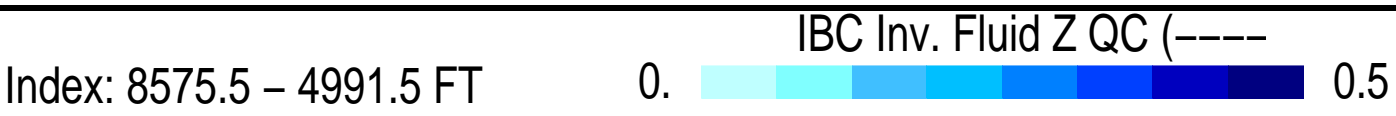
### Output DLIS Files

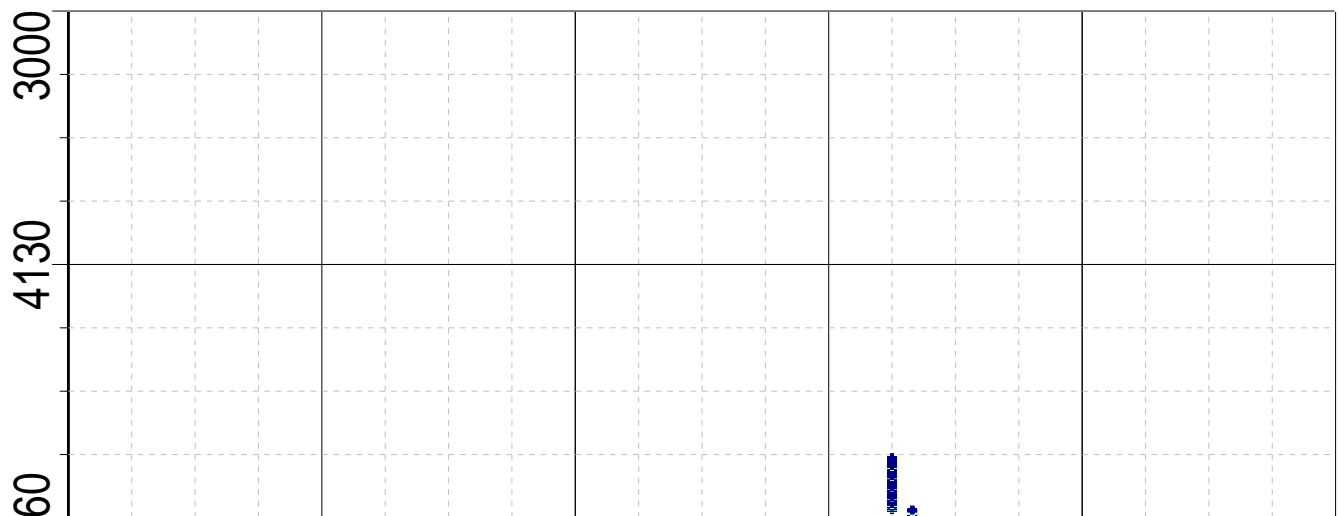
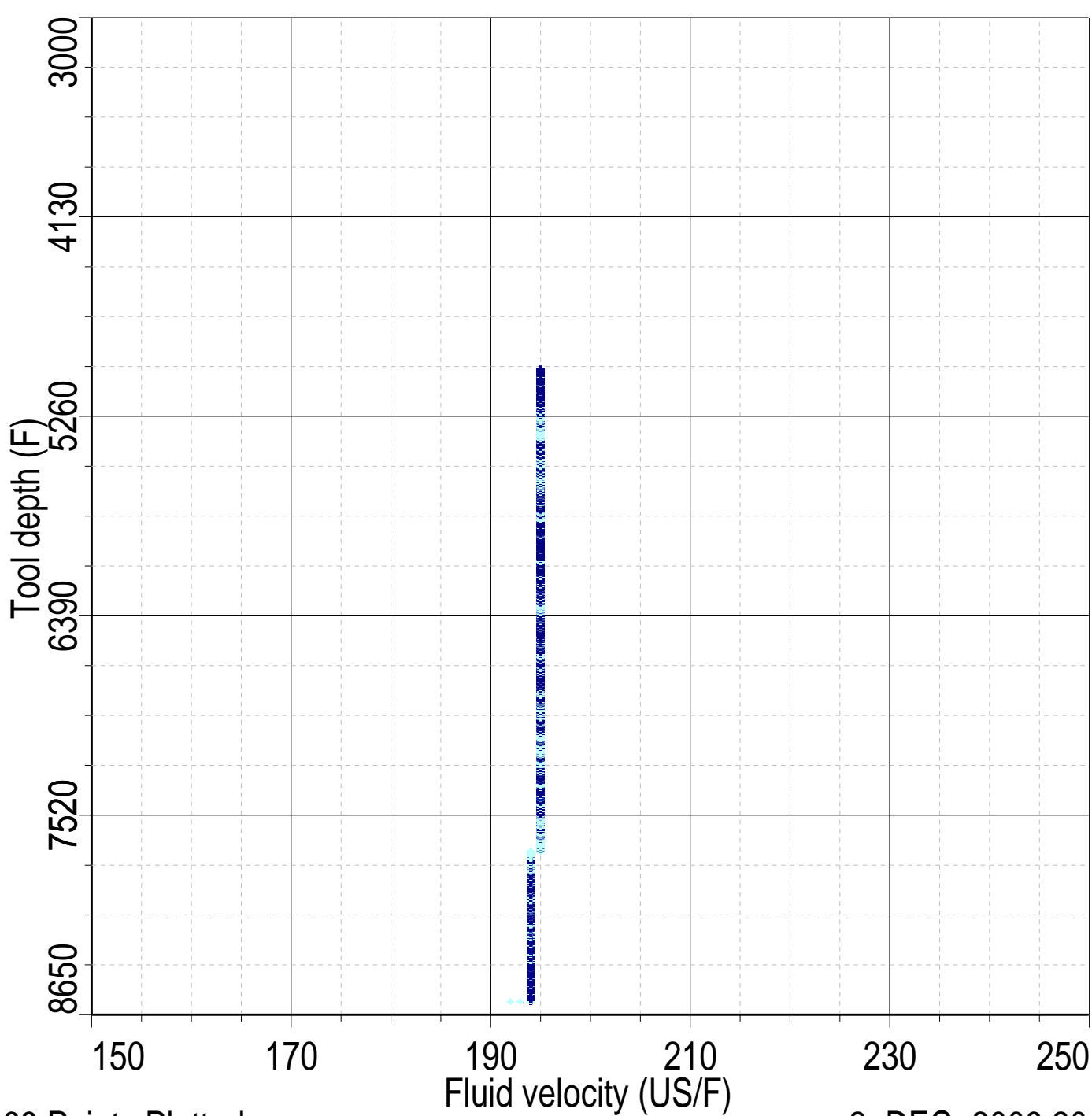
DEFAULT	USI_TLD_MCFL_CNL_011PUP	FN:15	PRODUCER	02-Dec-2009 20:49		
BACKUP	USI_TLD_MCFL_CNL_011PUP	FN:16	PRODUCER	02-Dec-2009 20:49		

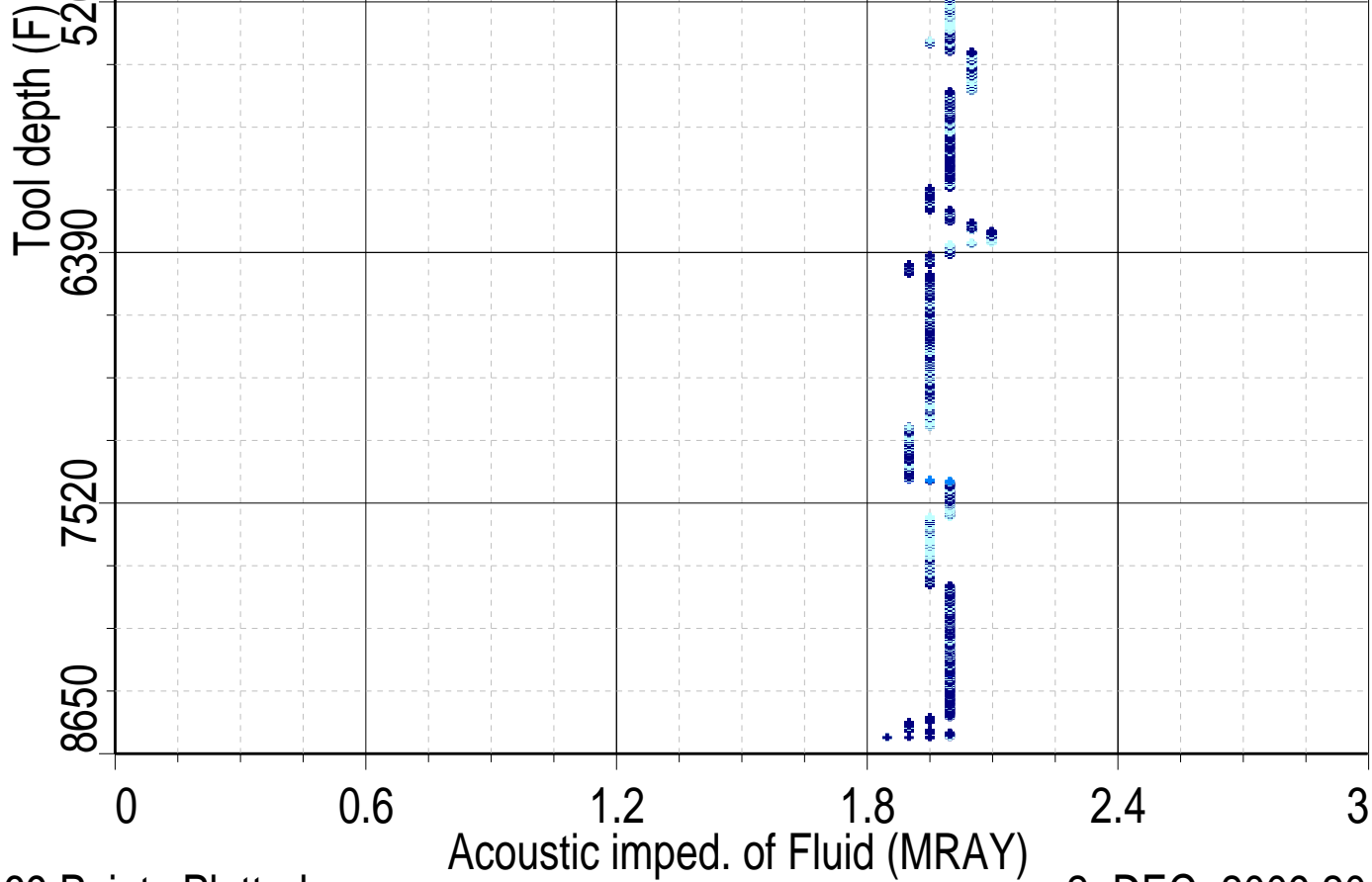


## Fluid Properties

MAXIS Field Log







7169 Points Plotted

2-DEC-2009 20:59

**Schlumberger**

**CALIBRATIONS**

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Ultrasonic Imaging – D Wellsite Calibration – IBC CSL: Far versus Near Gain Offset							
Before: 2-Dec-2009 2:17							
Near Waveform for azimuth 001	0	N/A	0	N/A	N/A	N/A	DB/M
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration							
Before: 1-Dec-2009 10:43							
Gamma Ray Background	30.00	N/A	45.06	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	169.5	N/A	169.5	N/A	N/A	15.41	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement							
Master: 30-Nov-2009 17:04 Before: 1-Dec-2009 10:44							
CNTC Background	28.99	28.99	28.01	N/A	N/A	4.349	CPS
CFTC Background	30.15	30.15	29.61	N/A	N/A	4.523	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement							
Master: 30-Nov-2009 17:04							
Thermal Near Corr. (Tank)	5800	5583	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2213	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.522	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 66.0 DEGF.  
Thermal Housing Size 3.362 IN.  
NSR-F serial number 5138

Ultrasonic Imaging – D / Equipment Identification

Primary Equipment:  
IBC 5 Inch Sub IBCS – 100  
Ultrasonic Transducer Bott –  
Ultrasonic Transducer Midd –  
Ultrasonic Transducer Top –  
USIT sonde USIS – A  
USIT Sonde Cartridge For 4 Transducers USSC – B  
USIT Acquisition Cartridge DTS/FTB USIC – D

Auxiliary Equipment:  
USIT Housing/cartridge ECH – MRA

Ultrasonic Imaging – D Wellsite Calibration			
IBC CSL: Far versus Near Gain Offset			
Phase	Near Waveform for azimuth 001 DB/M		Value
Before			0
	-200.0 (Minimum)	0 (Nominal)	200.0 (Maximum)

Before: 2-Dec-2009 2:17

High resolution Integrated Logging Tool–DTS / Equipment Identification

Primary Equipment:  
HILT Gamma-Ray Neutron Sonde–DTS HGNS – H  
HGNS Gamma-Ray Device HGR –  
HGNS Neutron Detector with Alpha Source HCNT – H  
Z–Axis Accelerometer HACC – H 2594  
Neutron Logging Source NLS – KL  
Neutron Source Radioactive NSR – F 5138  
Compensated Neutron Box CNB – AB  
HTBC Communication Assembly DTS Mode HMCA – H

Auxiliary Equipment:  
Neutron Calibration Tank NCT – B  
Gamma Source Radioactive GSR – U/Y  
HGNS Housing HGNH –

High resolution Integrated Logging Tool–DTS Wellsite Calibration											
Detector Calibration											
Phase	Gamma Ray Background	GAPI	Value	Phase	Gamma Ray (Jig – Bkg)	GAPI	Value	Phase	Gamma Ray (Calibrated)	GAPI	Value
Before			45.06	Before			169.5	Before			165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		154.1 (Minimum)	169.5 (Nominal)	184.9 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 1-Dec-2009 10:43

High resolution Integrated Logging Tool–DTS Wellsite Calibration							
Zero Measurement							
Phase	CNTC Background	CPS	Value	Phase	CFTC Background	CPS	Value
Master			28.99	Master			30.15
Before			28.01	Before			29.61
	5.000 (Minimum)	28.99 (Nominal)	40.00 (Maximum)		5.000 (Minimum)	30.15 (Nominal)	40.00 (Maximum)

Master: 30-Nov-2009 17:04 Before: 1-Dec-2009 10:44

High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Ratio Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5583	Master				2213	Master				2.522
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)			
Master: 30–Nov–2009 17:04														

High resolution Integrated Logging Tool–DTS Wellsite Calibration			
Accelerometer Calibration			
Phase	Z–Axis Acceleration F/S2		Value
Before			32.09
	31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)
Before: 2–Dec–2009 16:31			

High resolution Integrated Logging Tool–DTS Master Calibration							
Zero Measurement							
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value
Master			28.99	Master			30.15
	5.000 (Minimum)	28.99 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	30.15 (Nominal)	40.00 (Maximum)	
Master: 30–Nov–2009 17:04							

High resolution Integrated Logging Tool–DTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5583	Master				2213	Master				2.522
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)			
Master: 30–Nov–2009 17:04														

DTS Telemetry Tool / Equipment Identification	
Primary Equipment:	
DTC–H Auxiliary Cartridge	DTCH – A
DTC–H Telemetry Cartridge	DTCH – A
Auxiliary Equipment:	
DTCH Telemetry Cartridge Housing	ECH – KC

Company: **ExxonMobil Production Corp**

**Schlumberger**

Well: **PCU 297–11B8**  
 Field: **Piceance Creek**  
 County: **Rio Blanco**  
 State: **COLORADO**

IMAGING BEHIND CASING TOOL  
 ULTRASONIC LOG  
 CCL / GAMMA RAY