

Company: ENCANA OIL & GAS (USA) INC.

Well: STEWART 36-13H (PL36SW)

Field: PLATEAU

County: MESA

State: COLORADO

County: MESA
Field: PLATEAU
Location: SHL: SWSW 662' FSL & 717' FWL
Well: STEWART 36-13H (PL36SW)
Company: ENCANA OIL & GAS (USA) INC.

IMAGE BEHIND CASING CEMENT EVALUATION GAMMA RAY – CCL		LOCATION		
		SHL: SWSW 662' FSL & 717' FWL BHL: NENE 798' FNL & 676' FEL		
		Elev.: K.B. 5986.00 ft G.L. 5964.00 ft D.F. 5985.00 ft		
		Permanent Datum: _____ Log Measured From: KELLY BUSHING Drilling Measured From: KELLY BUSHING		
API Serial No. 05-077-1010000		Section 36	Township 9S	Range 96W
Logging Date 26-Apr-2011				
Run Number 1				
Depth Driller 6514 ft				
Schlumberger Depth 6406 ft				
Bottom Log Interval 6405.1 ft				
Top Log Interval 400 ft				
Casing Fluid Type WATER BASED MUD				
Salinity 900 ppm				
Density 9.9 lbm/gal				
Fluid Level 5 ft				
BIT/CASING/TUBING STRING				
Bit Size 9.875 in				
From 22 ft				
To 6514 ft				
Casing/Tubing Size 7.625 in				
Weight 26.4 lbm/ft				
Grade				
From 22 ft				
To 6514 ft				
Maximum Recorded Temperatures 186 degF				
Logger On Bottom 26-Apr-2011 20:17				
Unit Number 2379 VERNAL, UT				
Recorded By M. ARNETT / D. PATE				
Witnessed By CHARLIE BROWN				

PVT DATA			Run 1	Run 2	Run 3
Oil Density					
Water Salinity			900 ppm		
Gas Gravity					
Bo					
Bw					
1/Bg					
Bubble Point Pressure					
Bubble Point Temperature					
Solution GOR					
Maximum Deviation			13 deg		
CEMENTING DATA					
Primary/Squeeze			Primary		
Casing String No					
Lead Cement Type					
Volume					
Density			12 lbm/gal		
Water Loss					
Additives					
Tail Cement Type			CLASS G		
Volume					
Density			13 lbm/gal		
Water Loss					
Additives					
Expected Cement Top			2500 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					
Unit Number					
Recorded By					
Witnessed By					

DEPTH SUMMARY LISTING

Date Created: 26-APR-2011 21:11:45

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46ZV XS
Serial Number:	6122	Serial Number:	8093	Serial Number:	71025
Calibration Date:	22-APR-2011	Calibration Date:	2-APR-2011	Length:	24000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	100518	Conveyance Method:	Wireline
Calibration Cable Type:	7-46P	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-6	Calibration RMS:	21		
Wheel Correction 2:	-7	Calibration Peak Error:	42		

Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	PLATFORM EXPRESS
Reference Log Run Number:	1
Reference Log Date:	23-APR-2011
Subsequent Trip Down Log Correction:	1.00 FT

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE, Z-CHART USED AS SECONDARY
- 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:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THIS IS A SUBSEQUENT TRIP TO WELL	
TOOLSTRING RUN AS PER TOOLSKETCH	
IBC RAN WITH TWO INLINE CENTRALIZERS AND TWO GEMCOS	
UFAO: -30	
HGNS RAN FOR GR CORRELATION	
BOTTOM HOLE TEMPERATURE: 186 DEGF	
CEMENT DENSITY 12 LB/G	

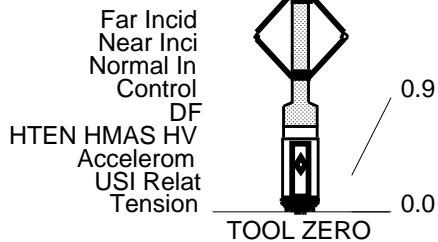
LOGGED AT 2000FT/HR	
TD NOT TAGGED DUE TO TOOL CONSTRAINTS	
RIG: NABORS M13	
AFE: 09120889	
YOUR CREW: KEN, DAVE, WALLY, & MIKE	
THANK YOU FOR CHOOSING SCHLUMBERGER!	

RUN 1			RUN 2		
SERVICE ORDER #:		BCVF-00101	SERVICE ORDER #:		
PROGRAM VERSION:		18C0-147	PROGRAM VERSION:		
FLUID LEVEL:		5 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

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

DOWNHOLE EQUIPMENT			
LEH-QT			39.0
LEH-QT 2428			
DTC-H			36.1
ECH-KC 9667	CTEM	— 35.2	
DTCH0-A			
DTCH1-A	TelStatus	— 33.1	
	ToolStatu	— 33.1	
	HGNS HTEM	— 32.4	33.1
	HMCA		
HILTH-FTB	HGNS Gamm		
HGNSD-H 3985			
HMCA-H			
HGNH 3785			
NLS-KL			
NSR-F			
HACCZ-H			
HCNT-H			
HGR			
NPV-N			
	HGNS Neut	— 26.5	
	HGNS Neut	— 26.0	
	HGNS sens	— 23.7	
USIT-D			23.7
ECH-MRA			
USIC-D			
AH-107 3899			
USIS-A 951			
USSC-B			
IBCS_B-100158202 826			
Top Transducer			
Middle Top Transducer			
Middle Bottom Transducer			
Bottom Transducer			



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

Schlumberger

IBC SLG COMPOSITE

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: STEWART 36-13H (PL36SW)

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012LUP	FN:20	PRODUCER	26-Apr-2011 20:31	6400.5 FT	323.2 FT
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Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_014PUP	FN:24	PRODUCER	26-Apr-2011 23:35	6404.5 FT	327.5 FT
RTB	USI_TLD_MCFL_CNL_014PUP	FN:25	PRODUCER	26-Apr-2011 23:44	6404.5 FT	327.5 FT

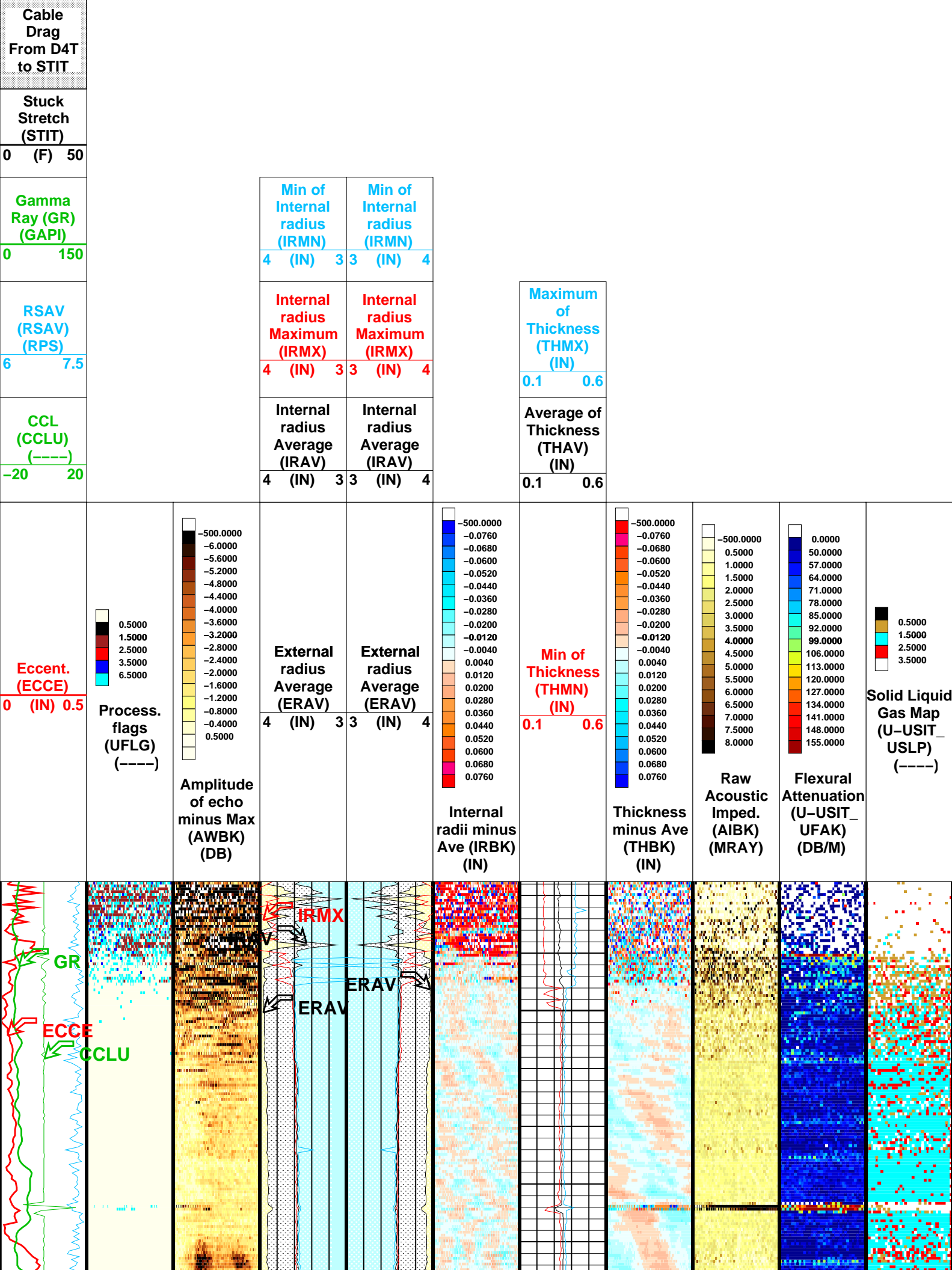
OP System Version: 18C0-147

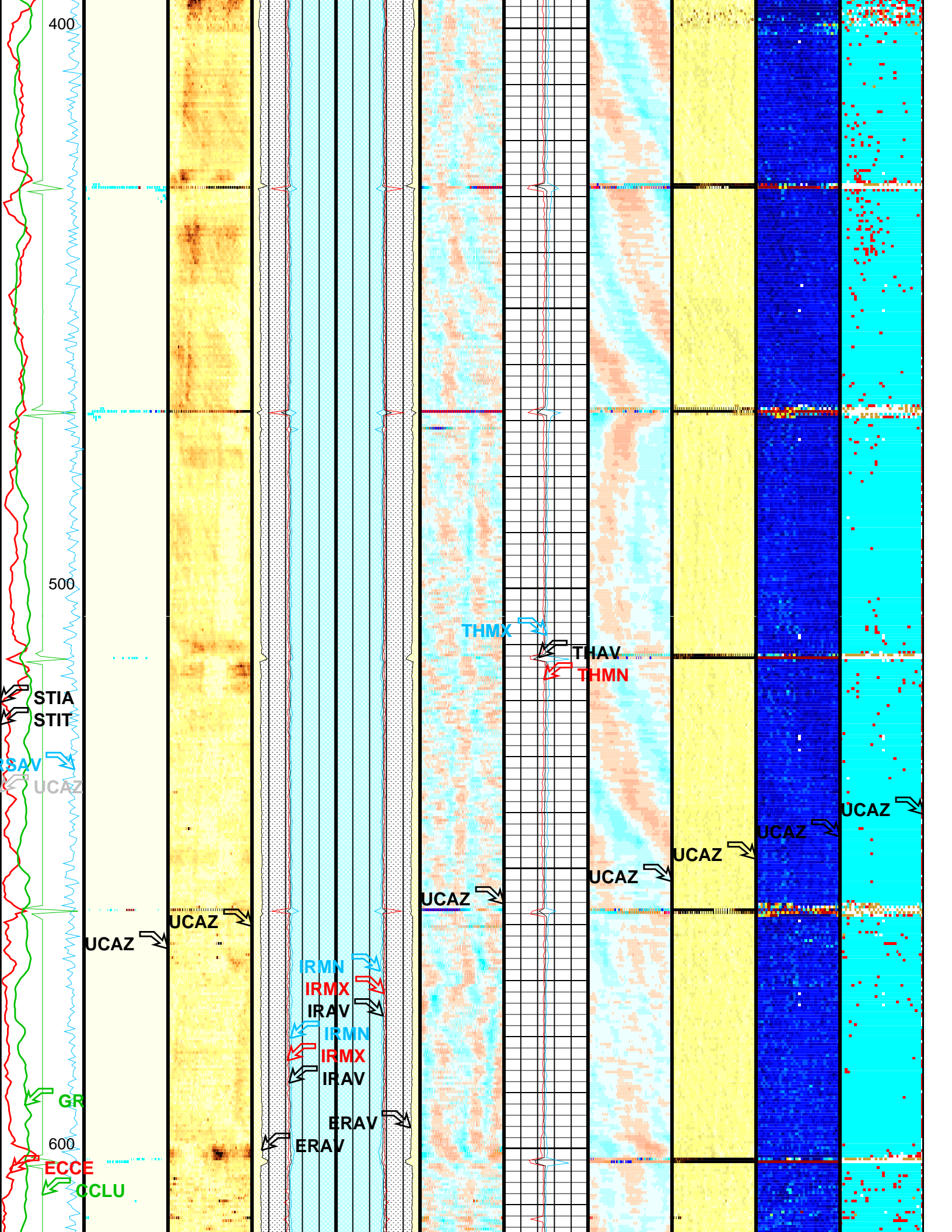
USIT-D	18C0-147	HILTH-FTB	18C0-147
DTC-H	18C0-147		

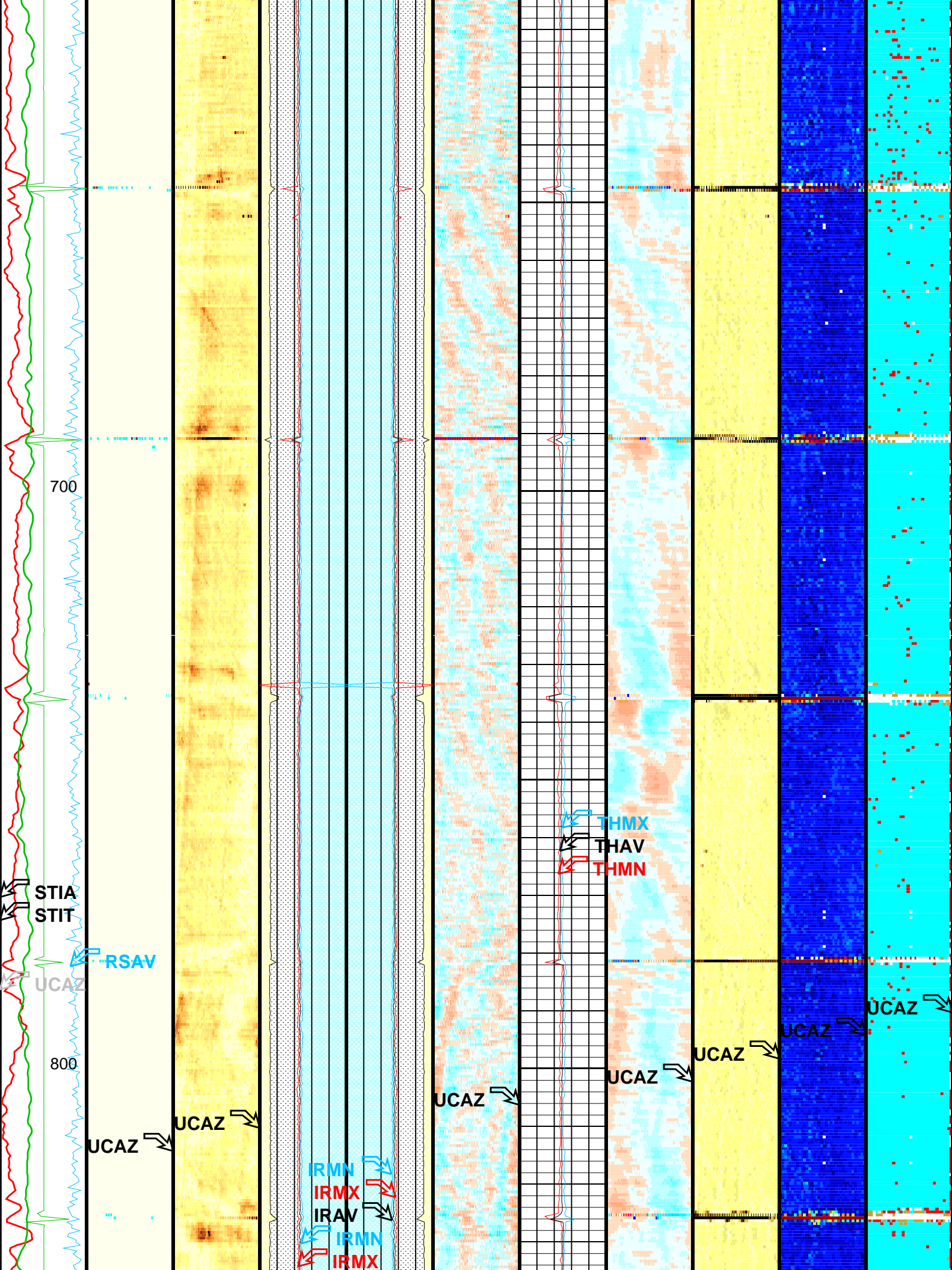
Image
rotation
(UCAZ)
(DEG)

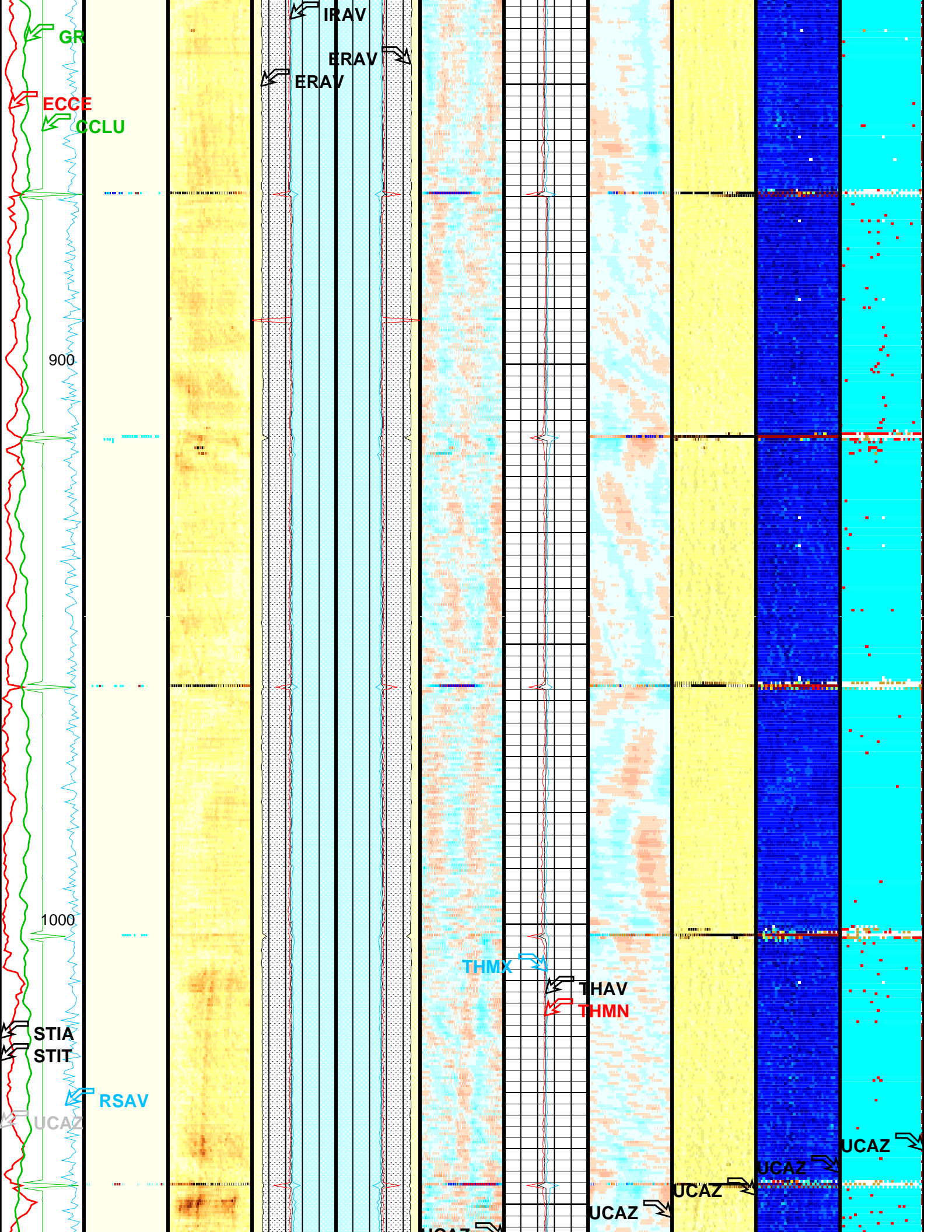
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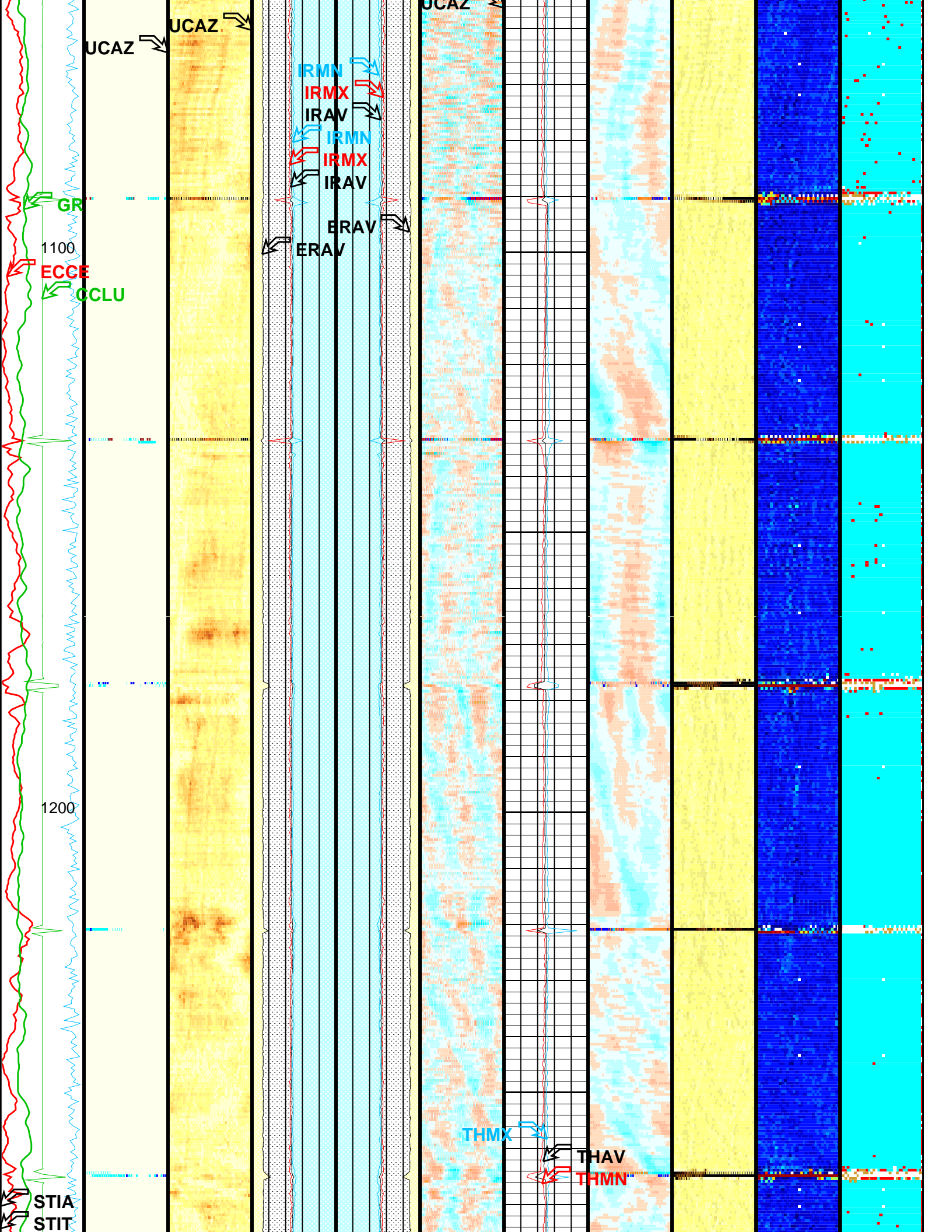
Tool/Tot.
Drag
From D4T
to STIA

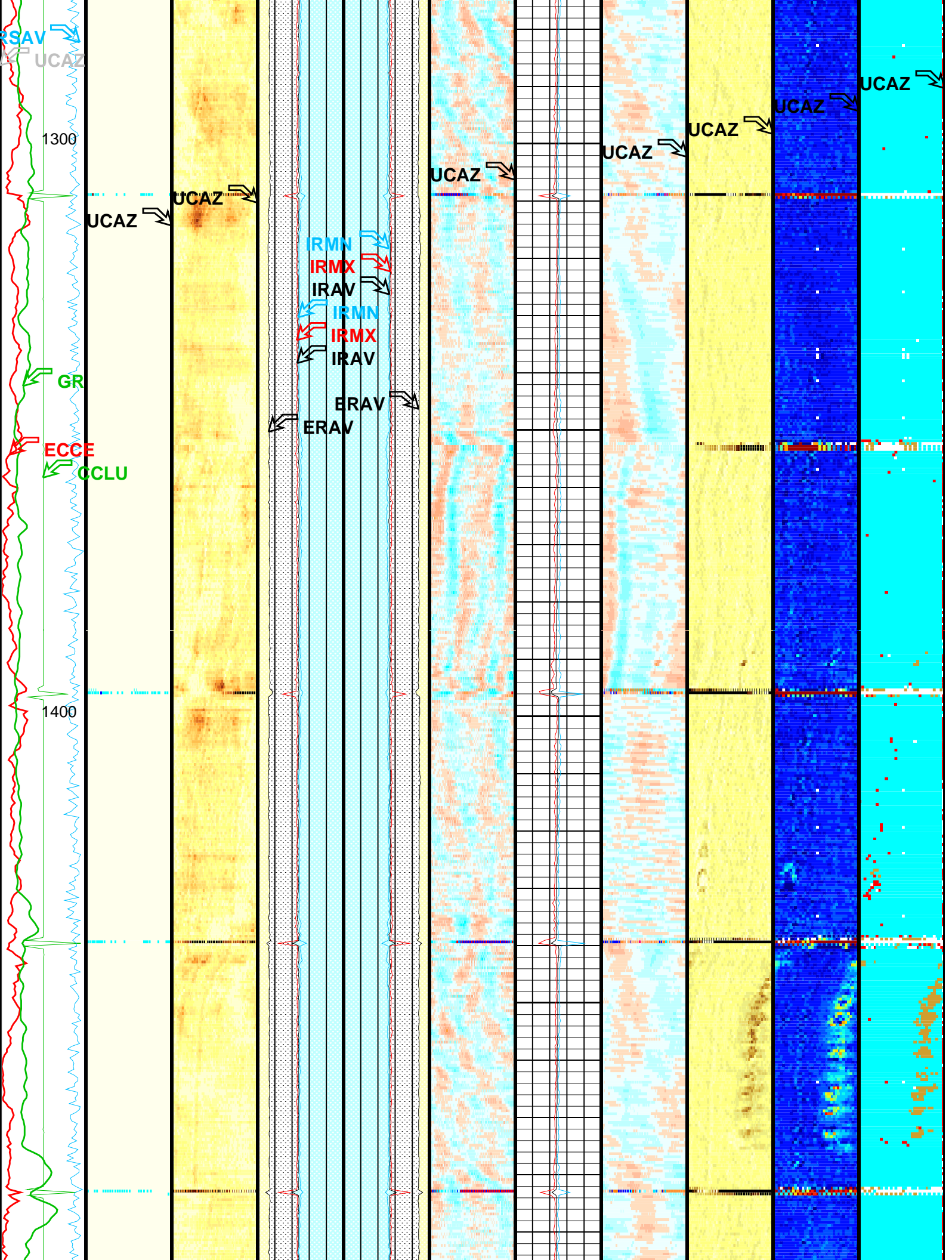


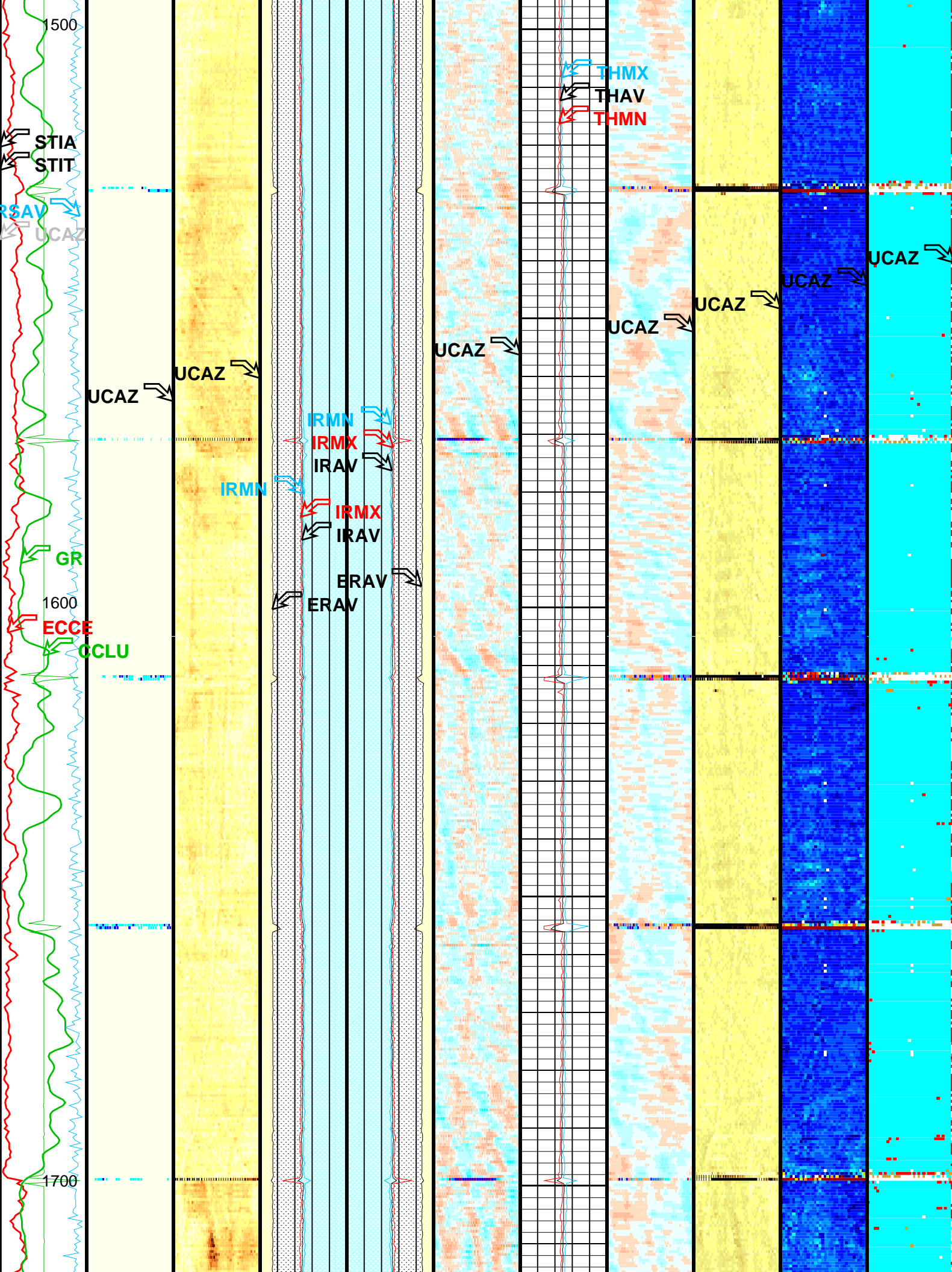


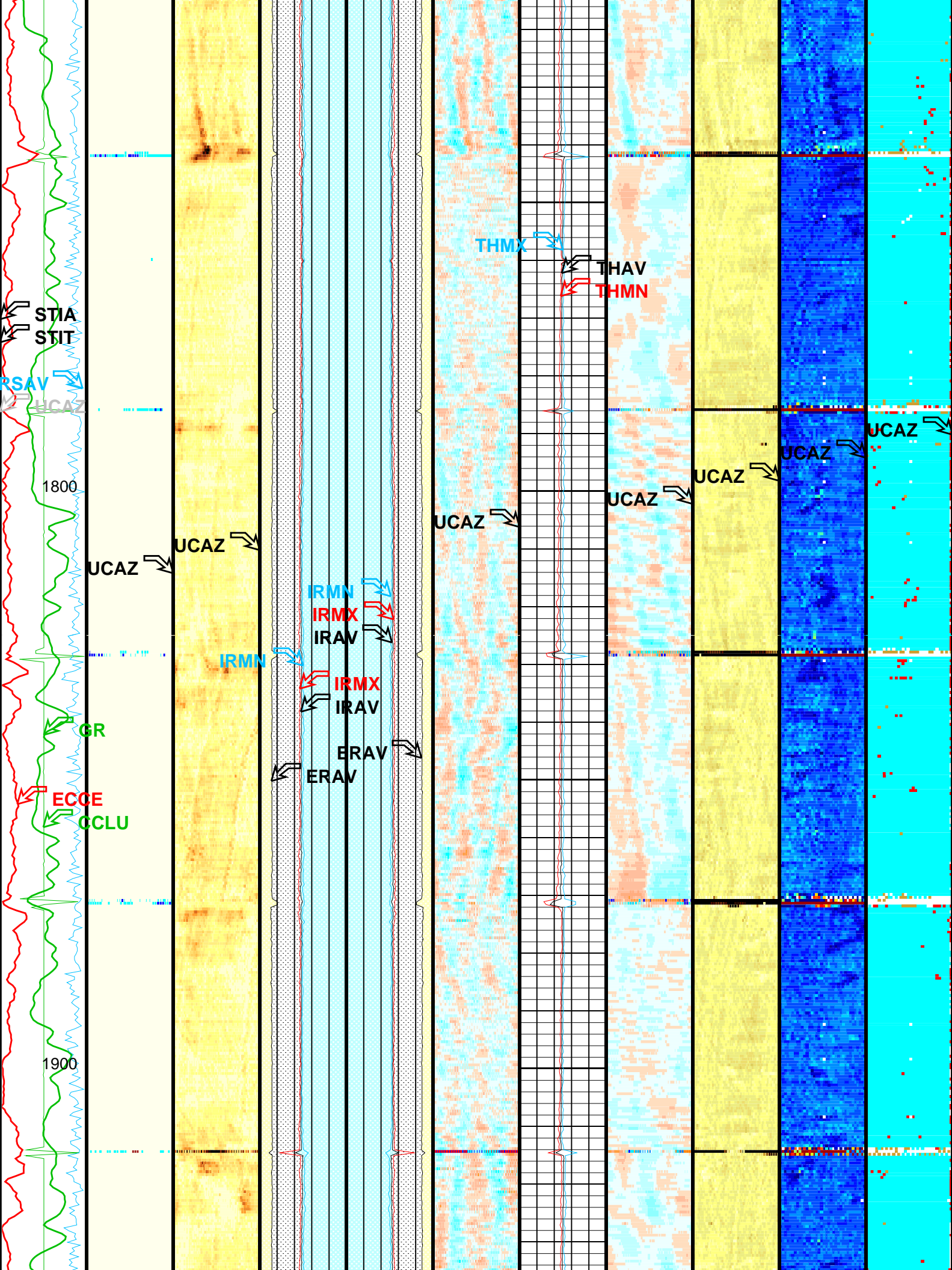


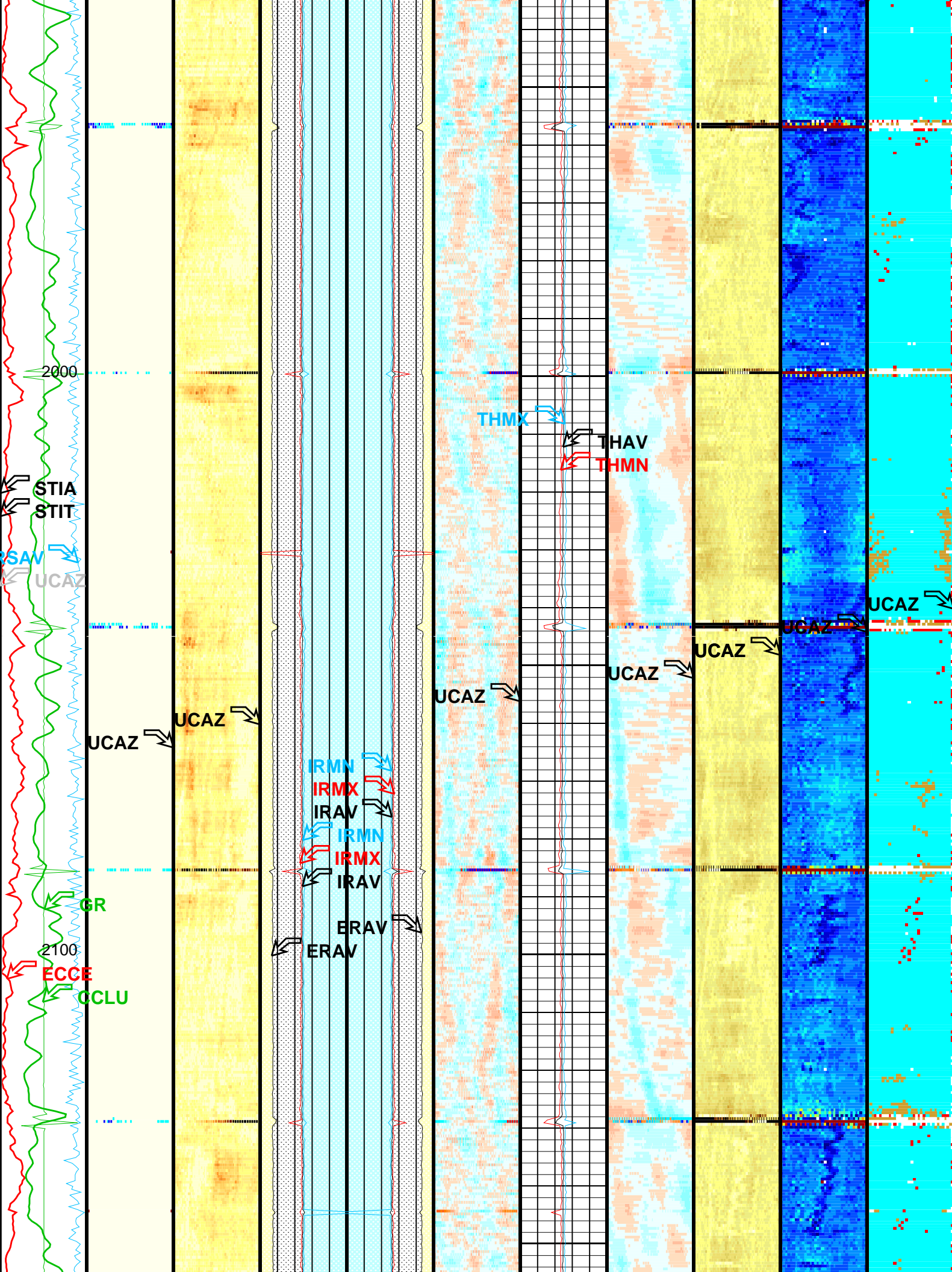


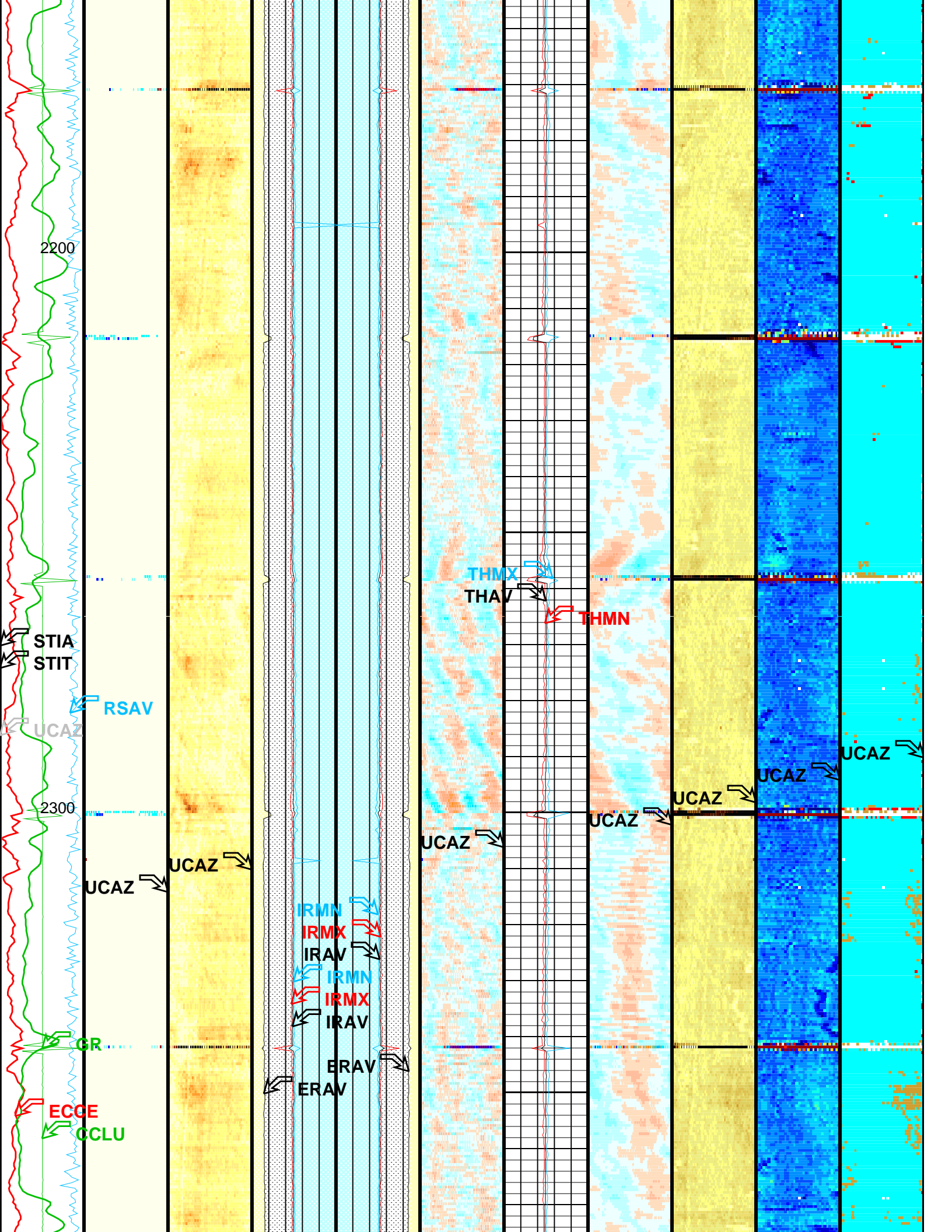


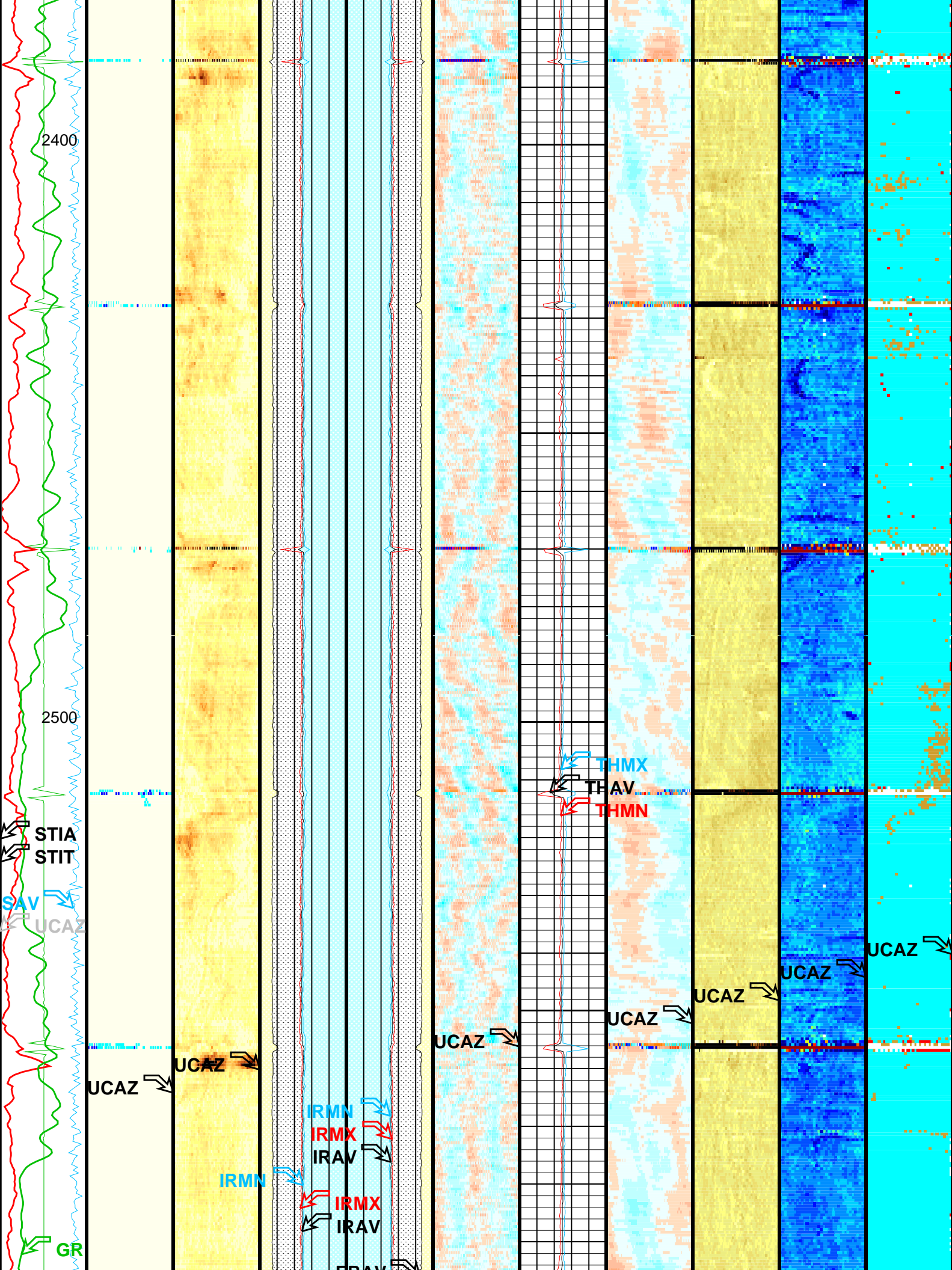


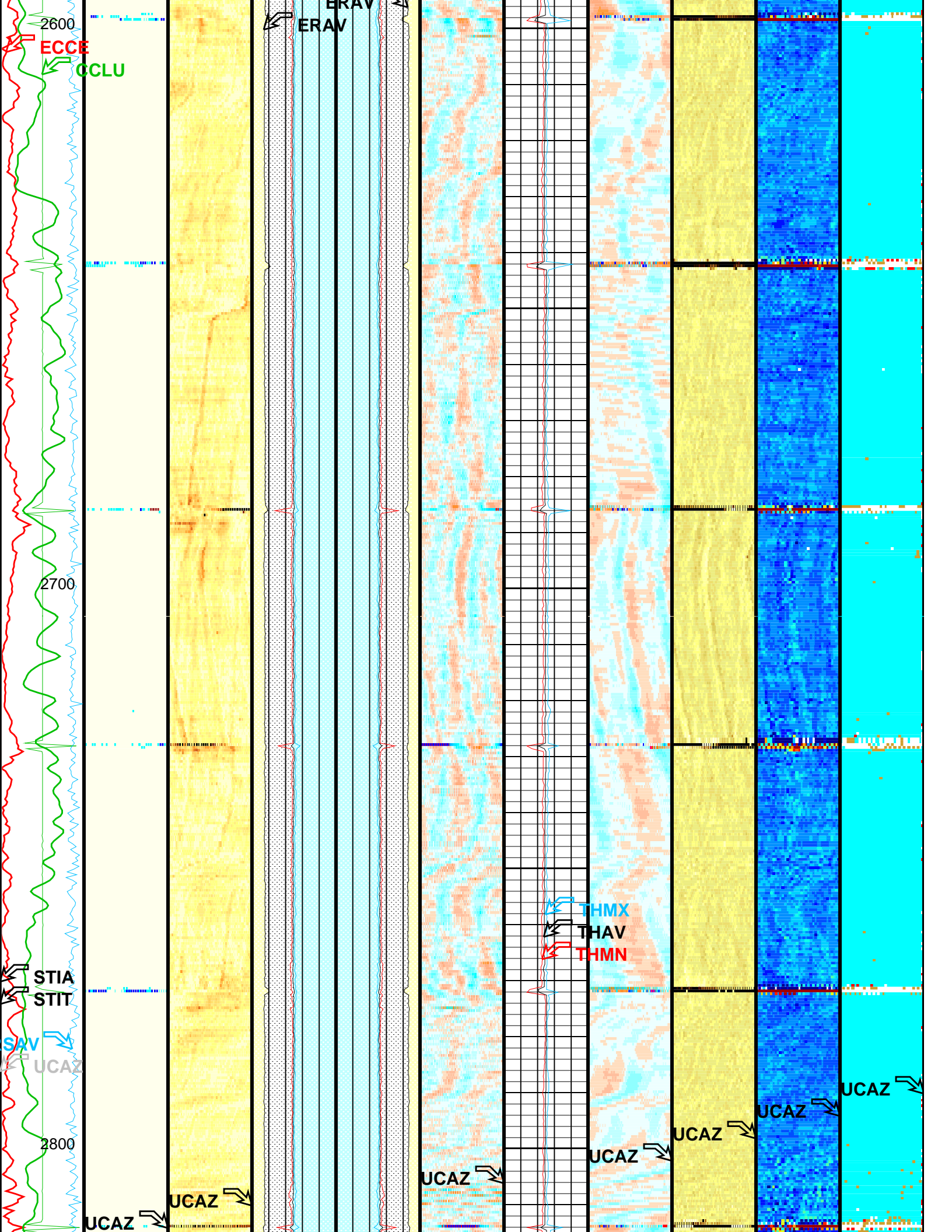


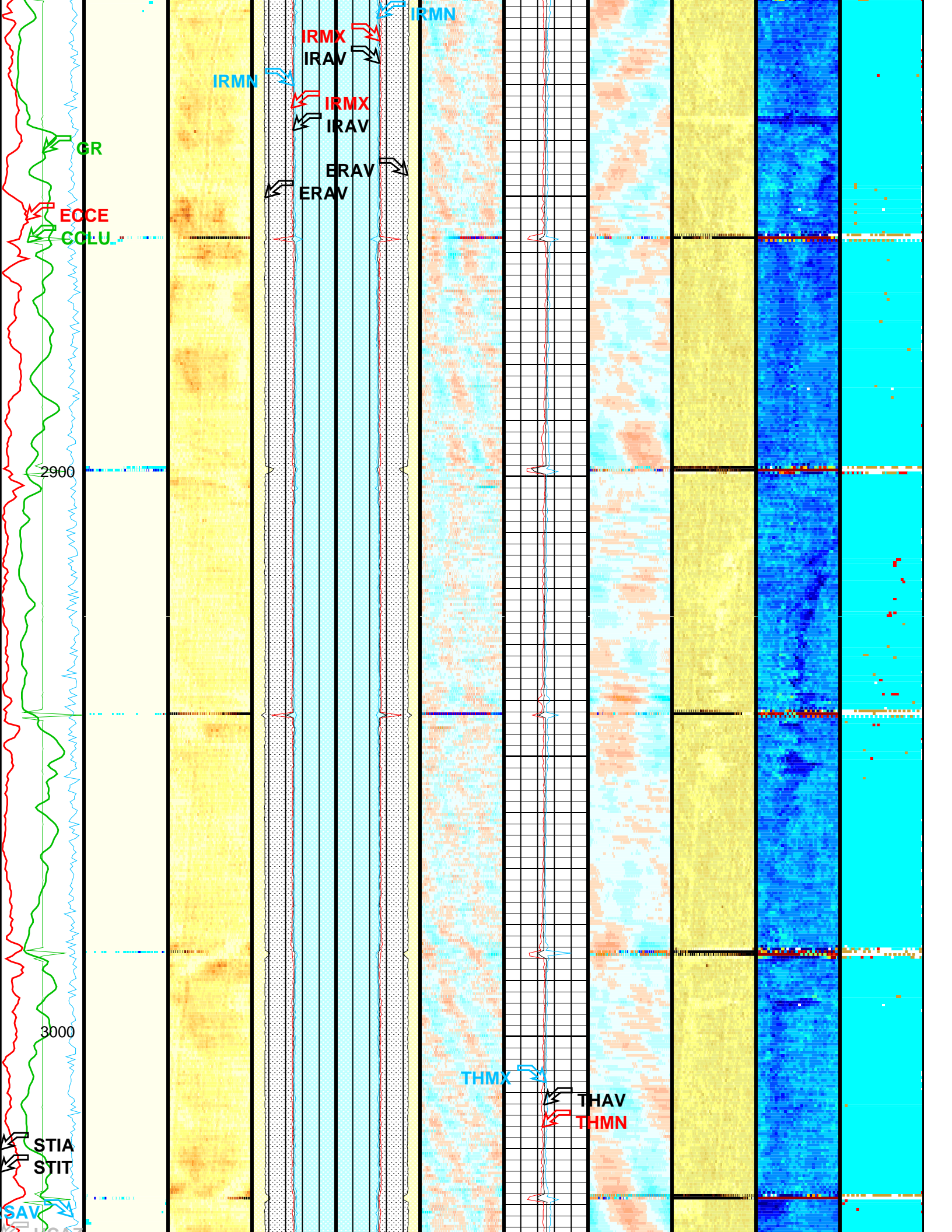


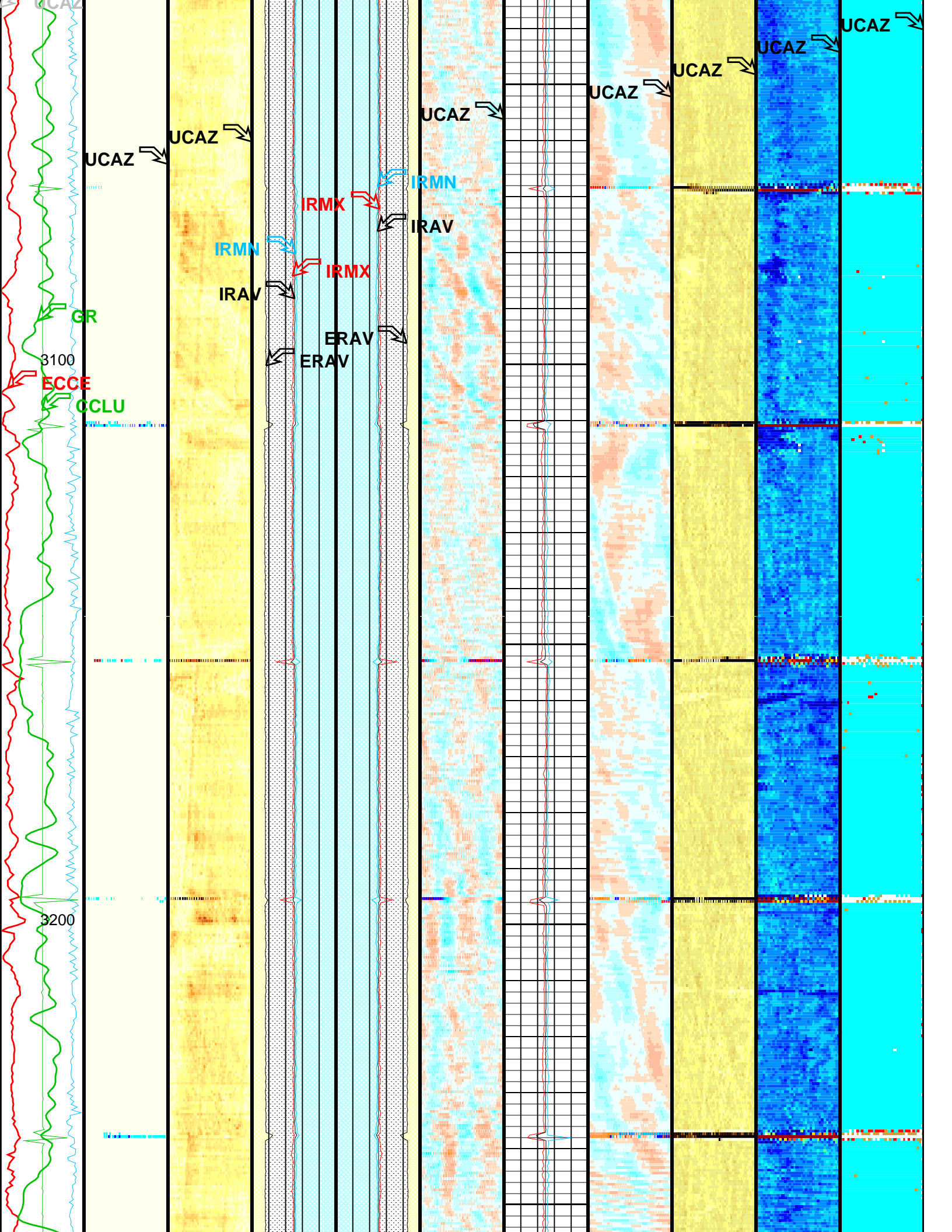


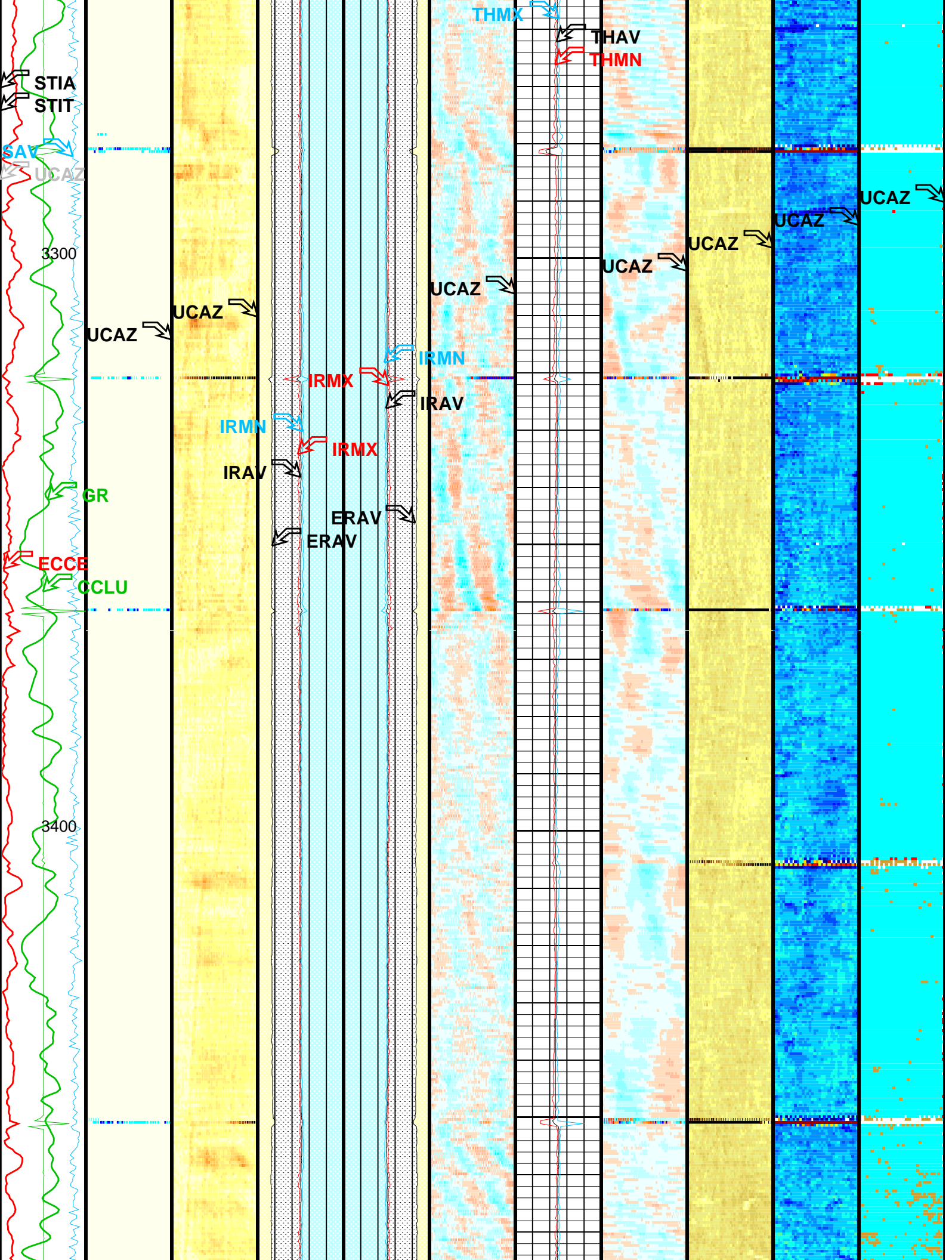


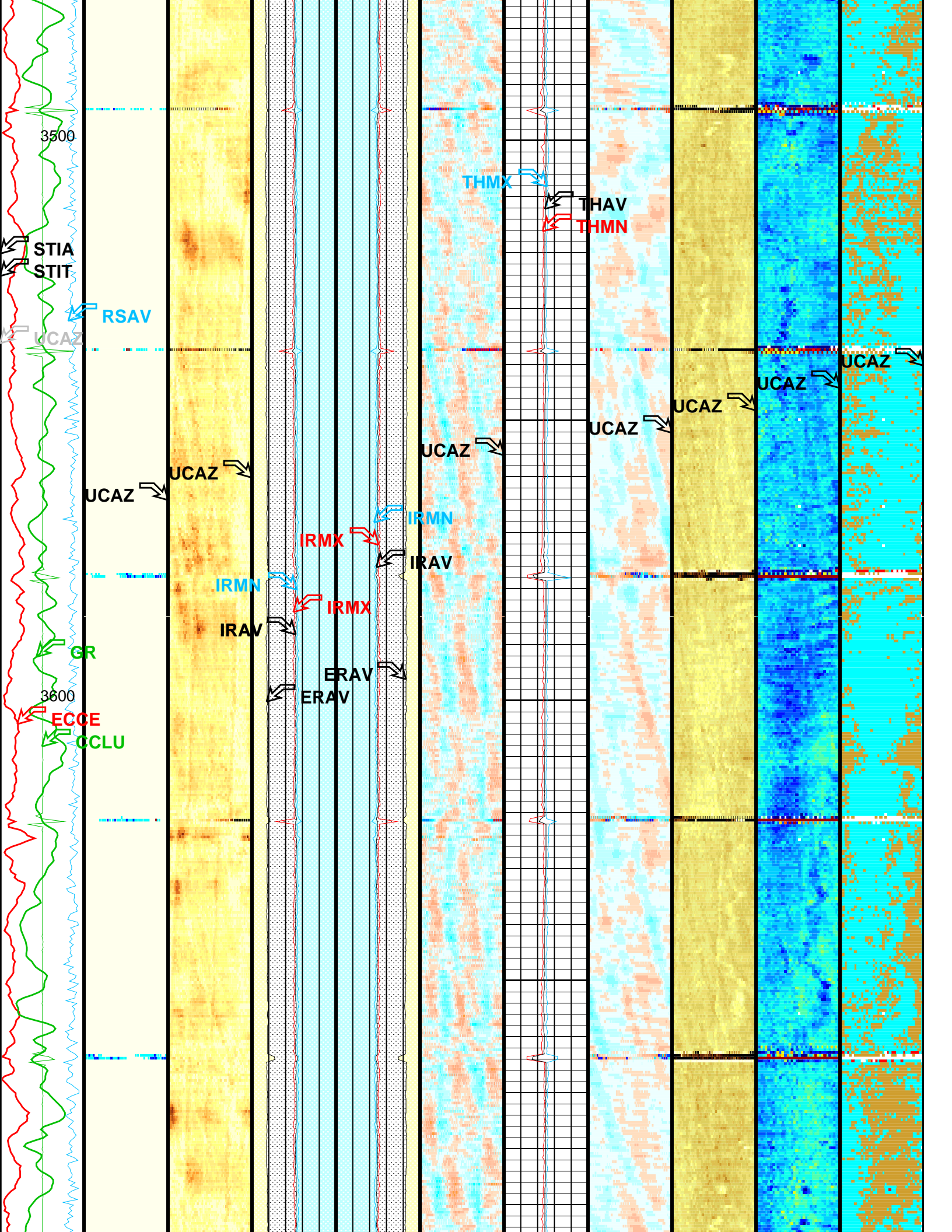


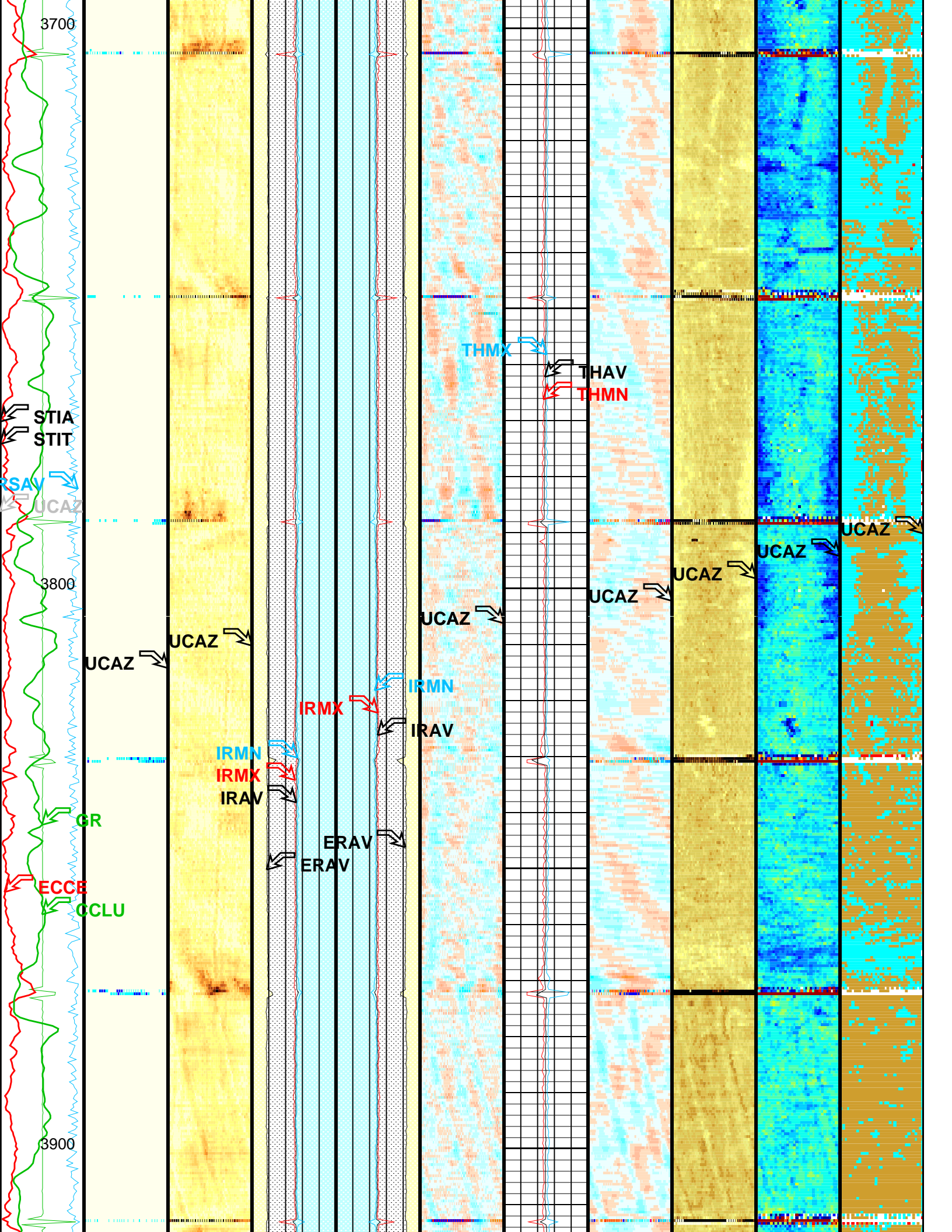


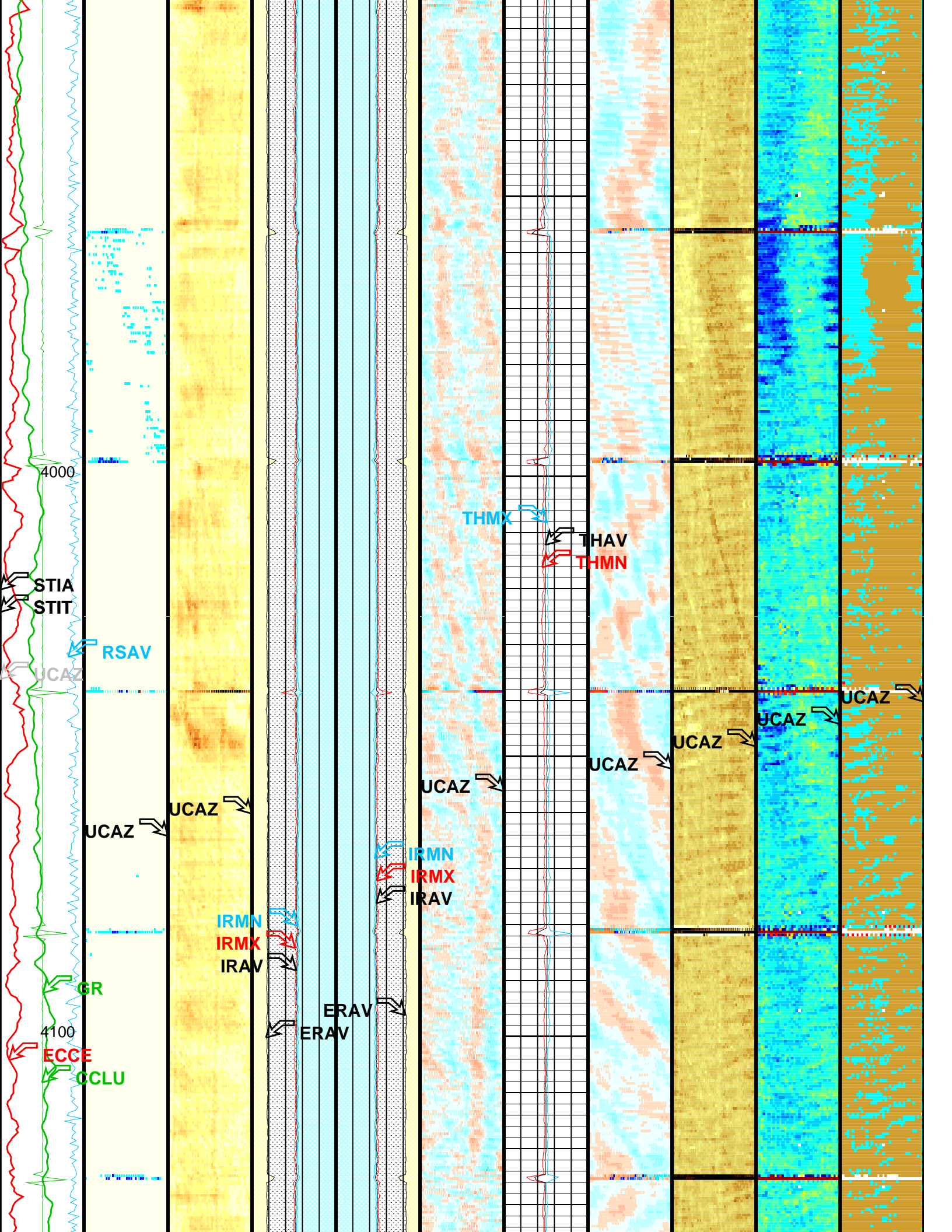


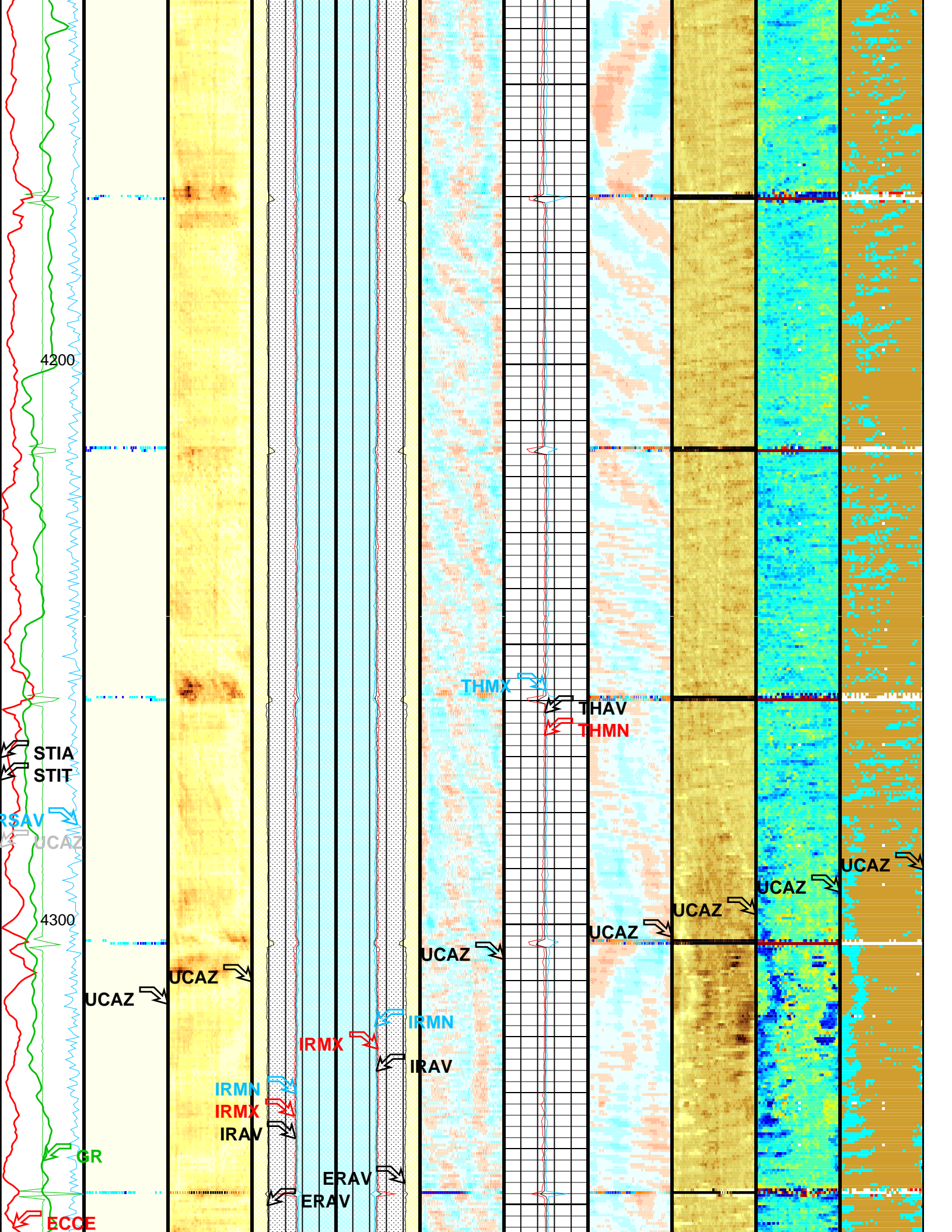


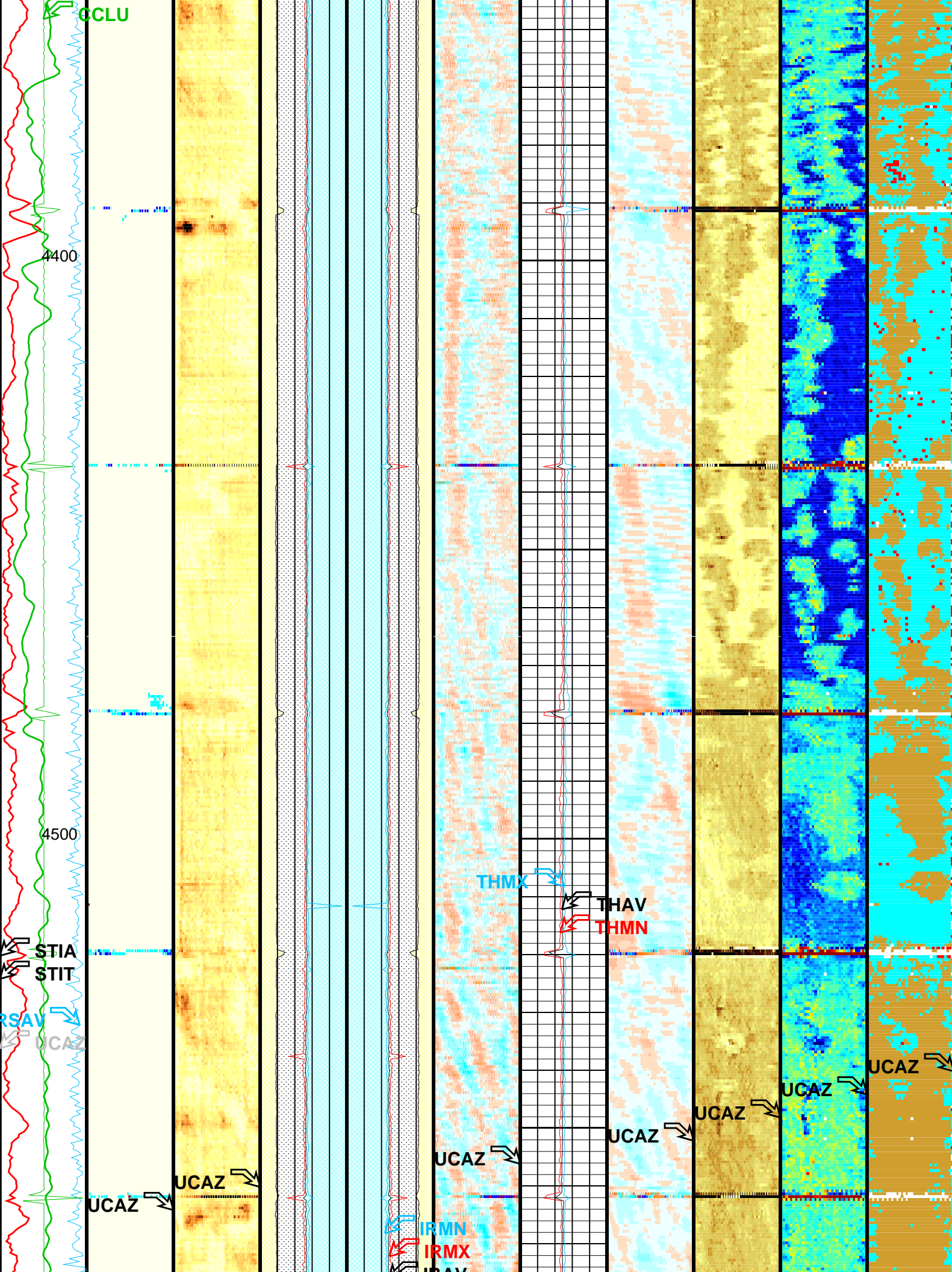


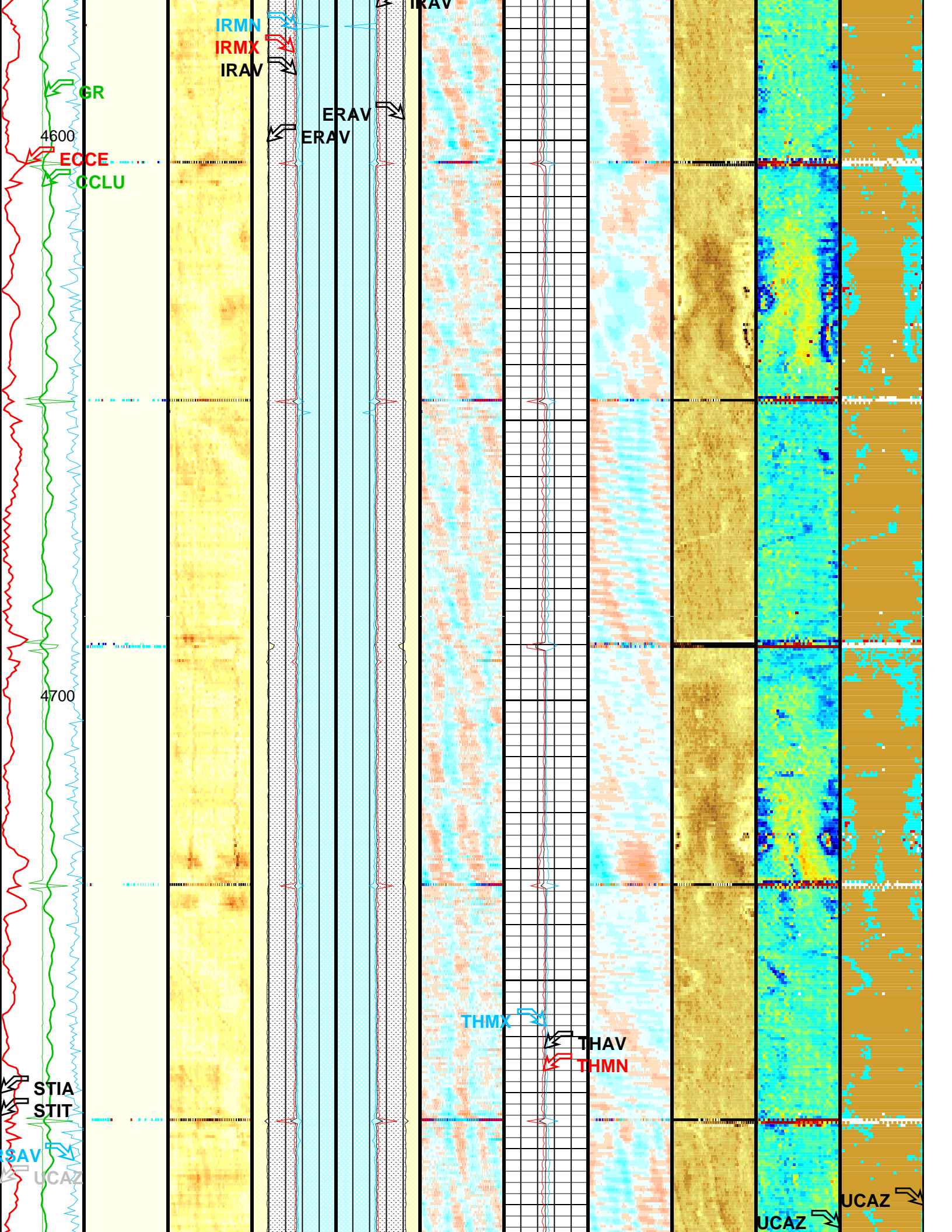


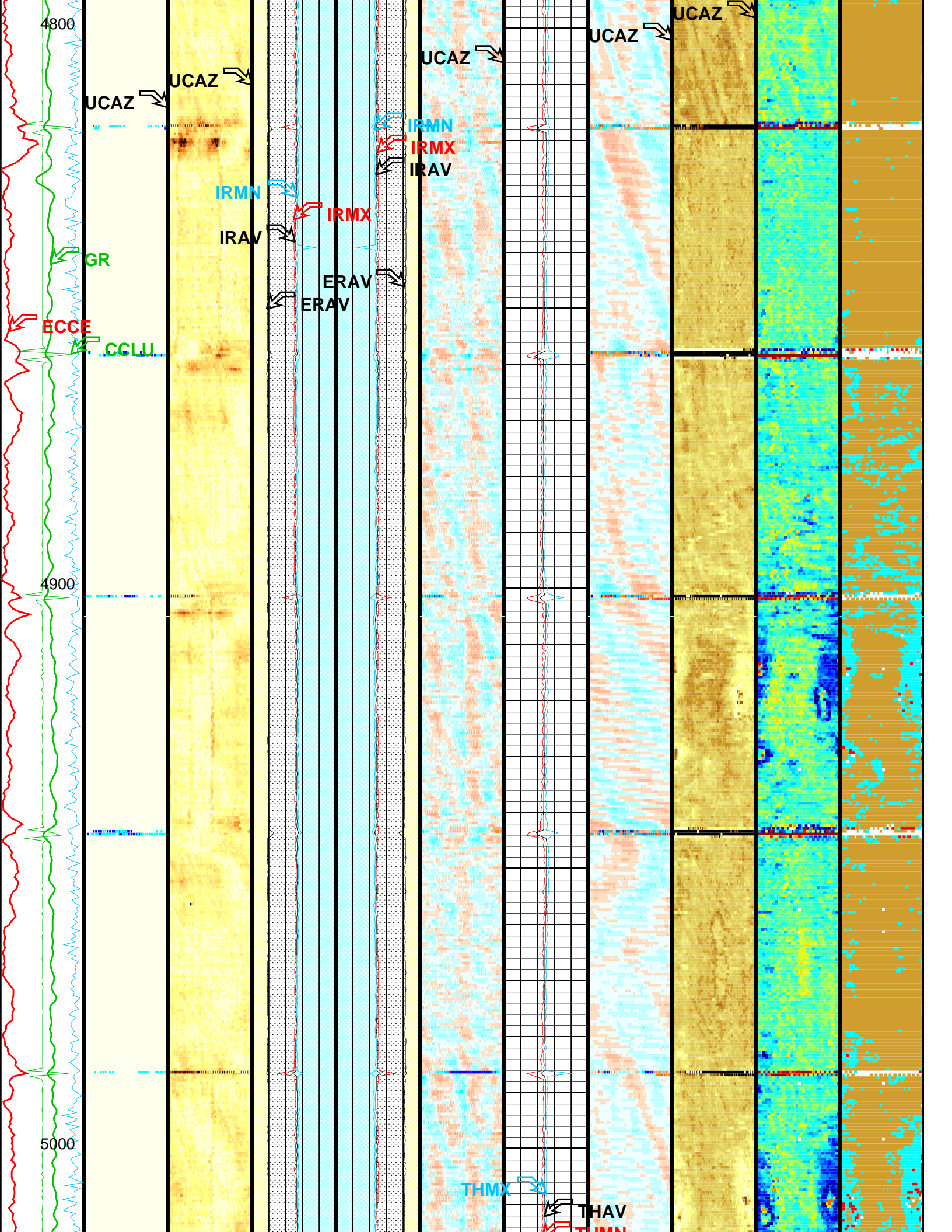


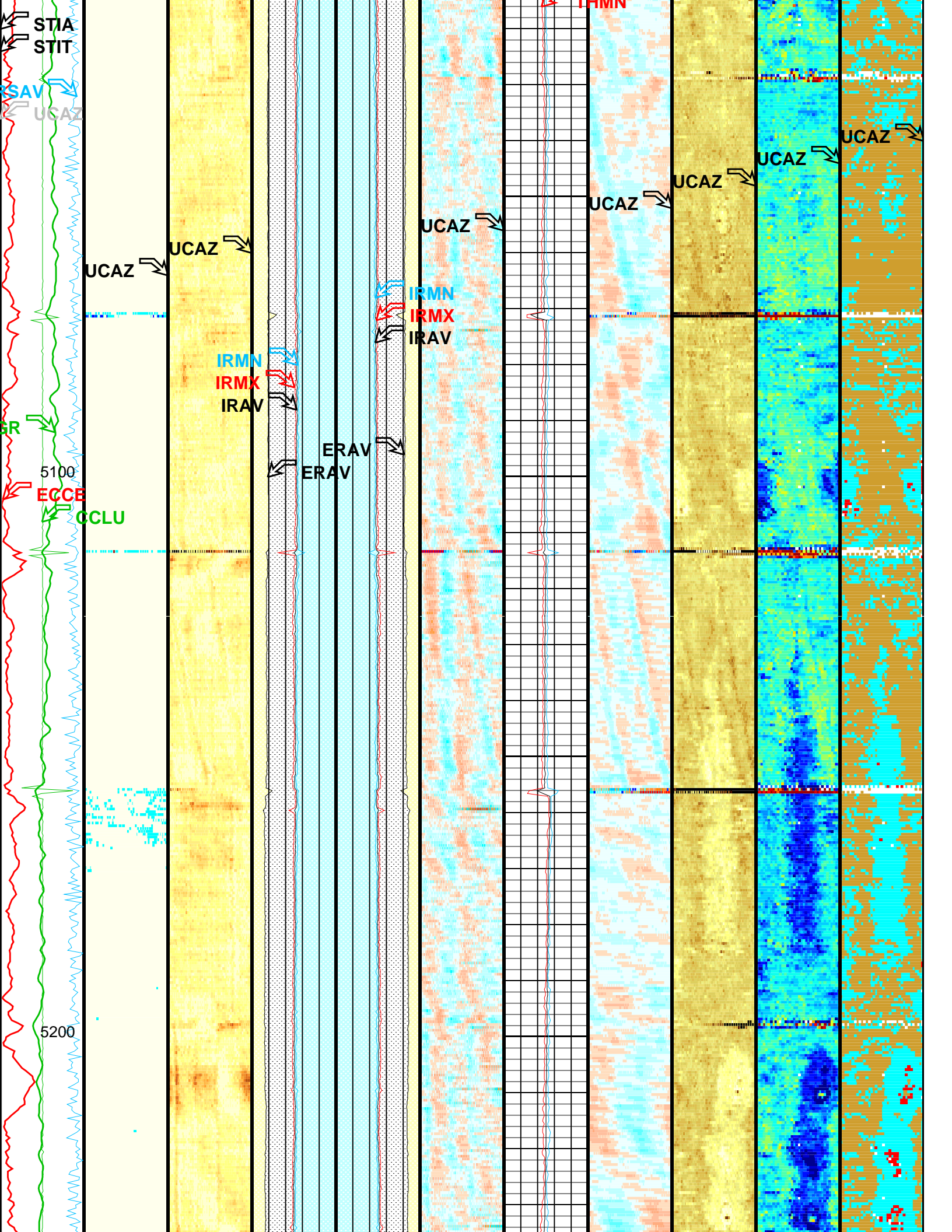


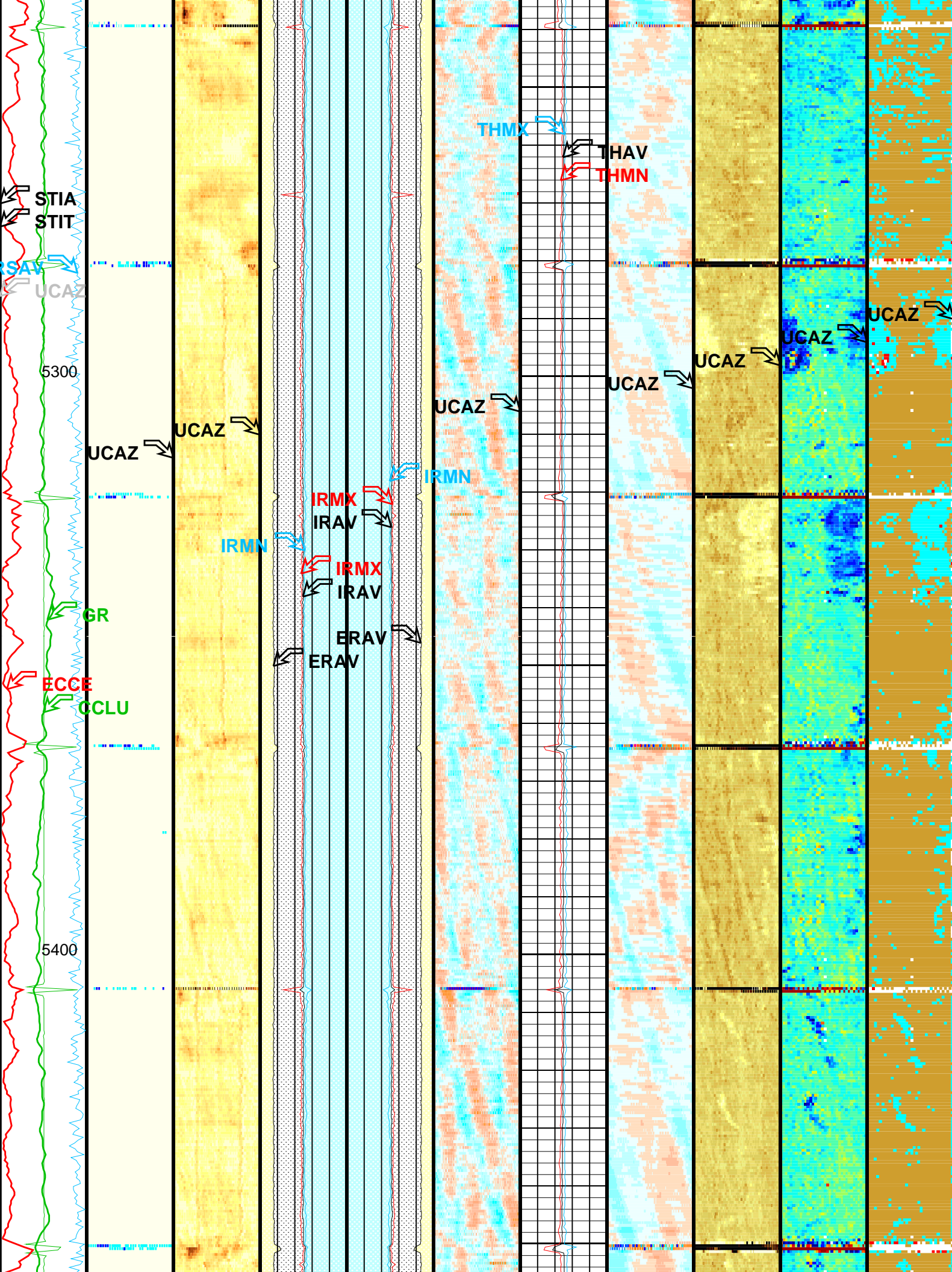


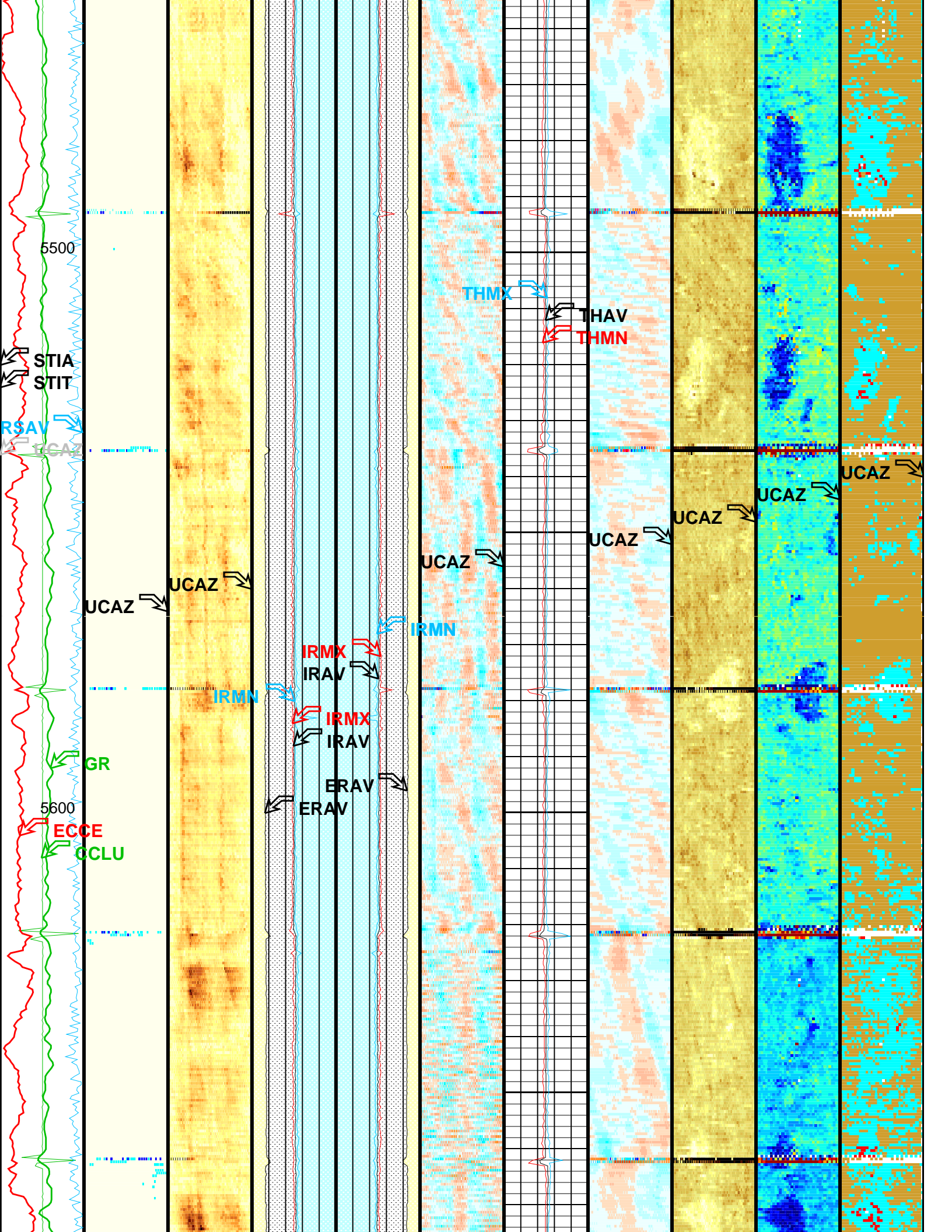


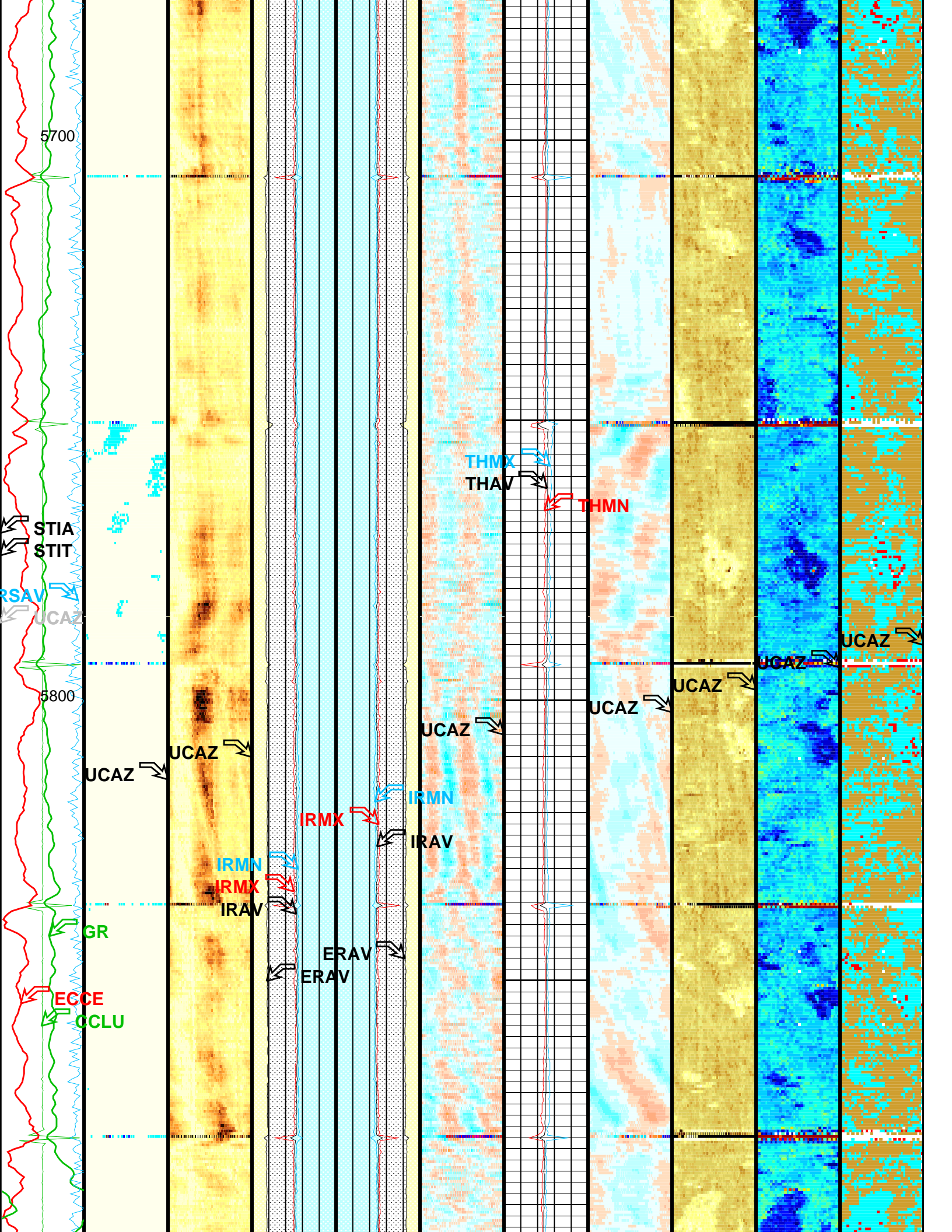


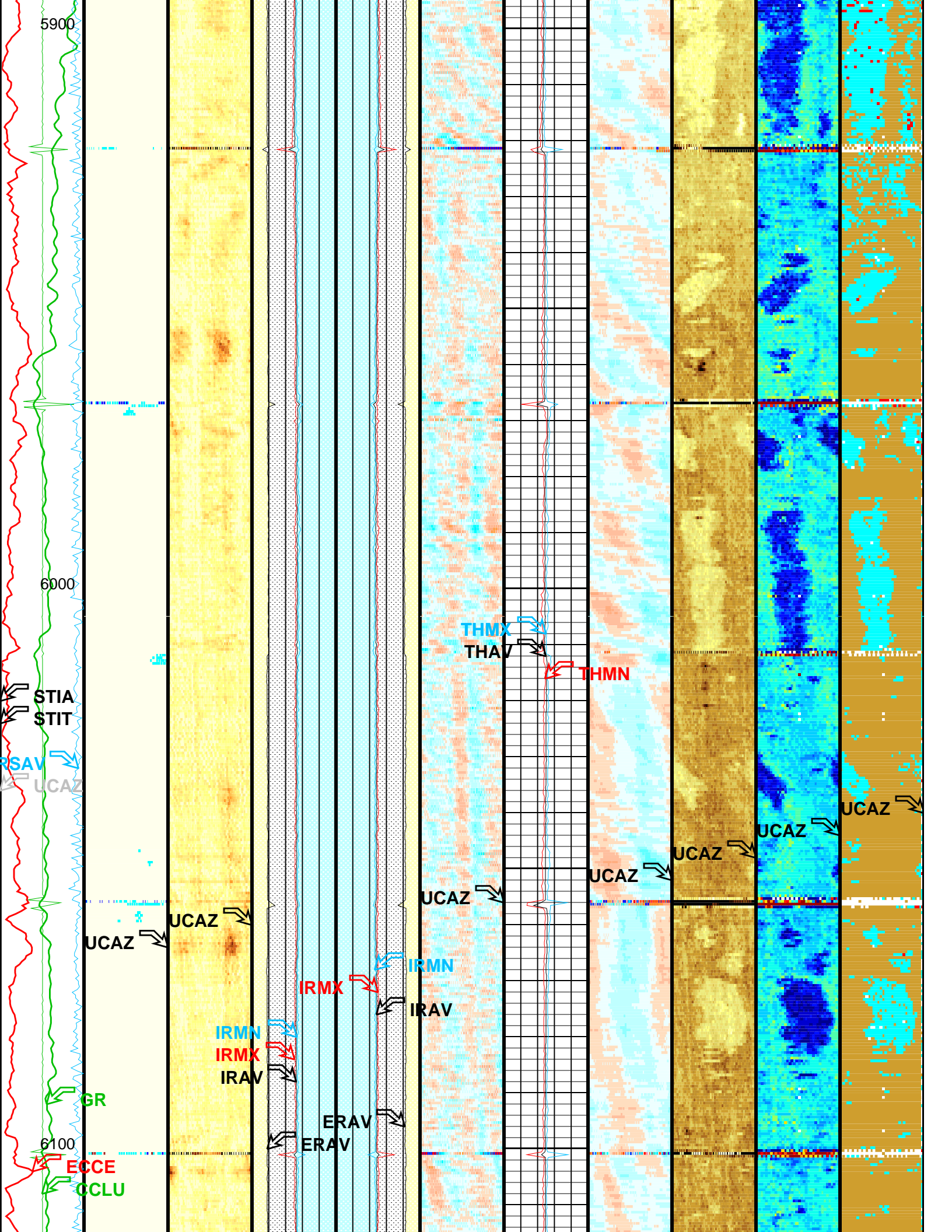


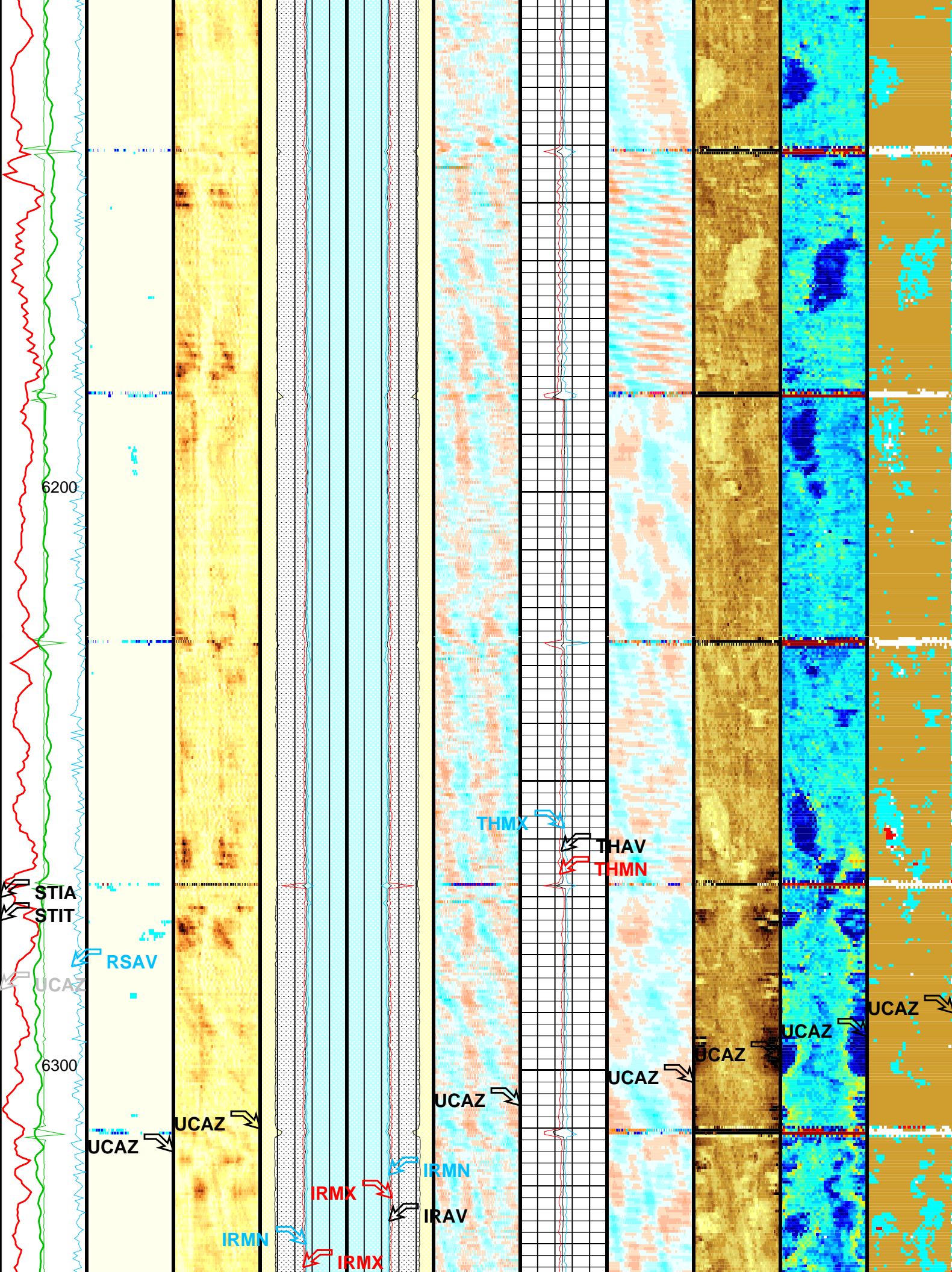


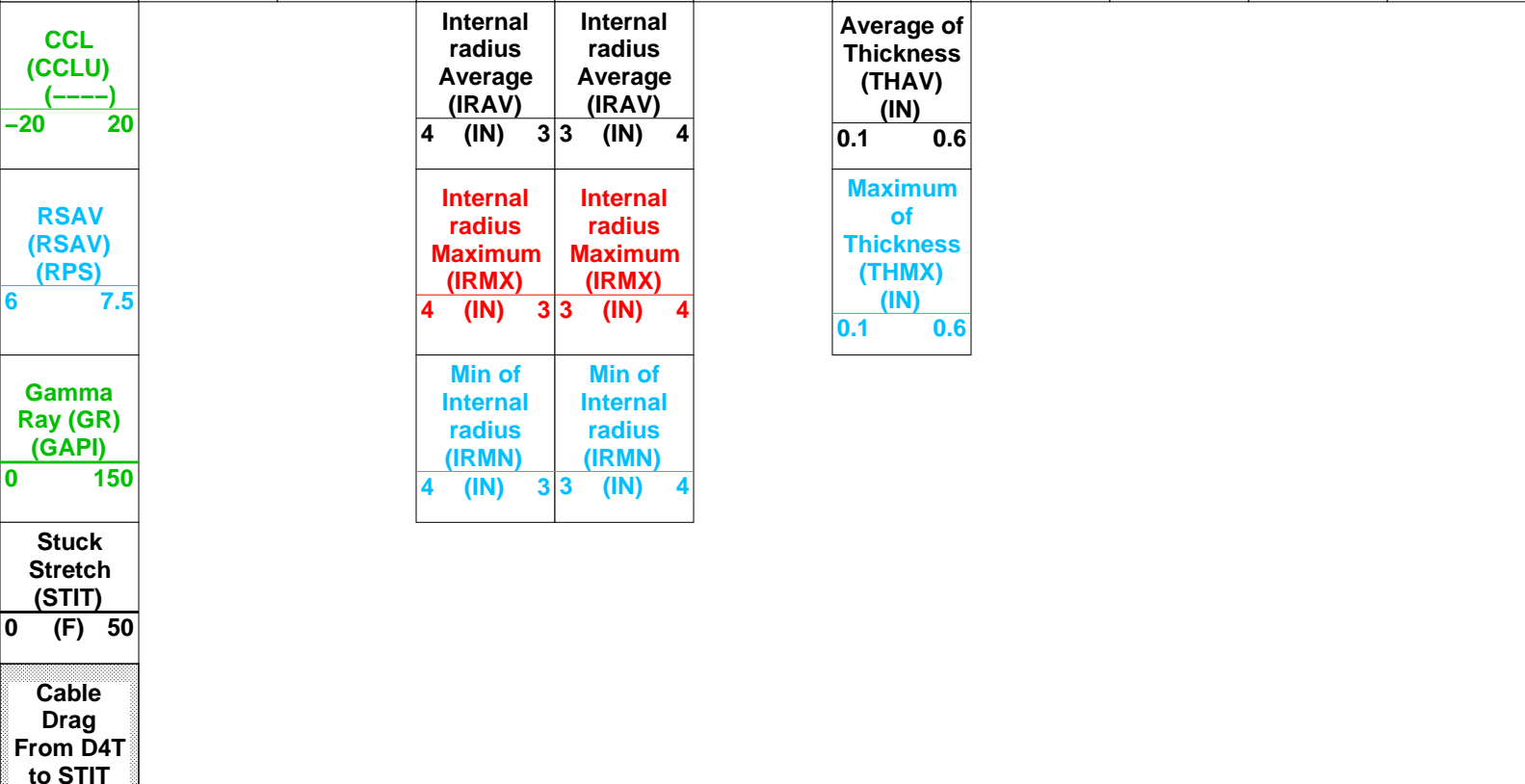
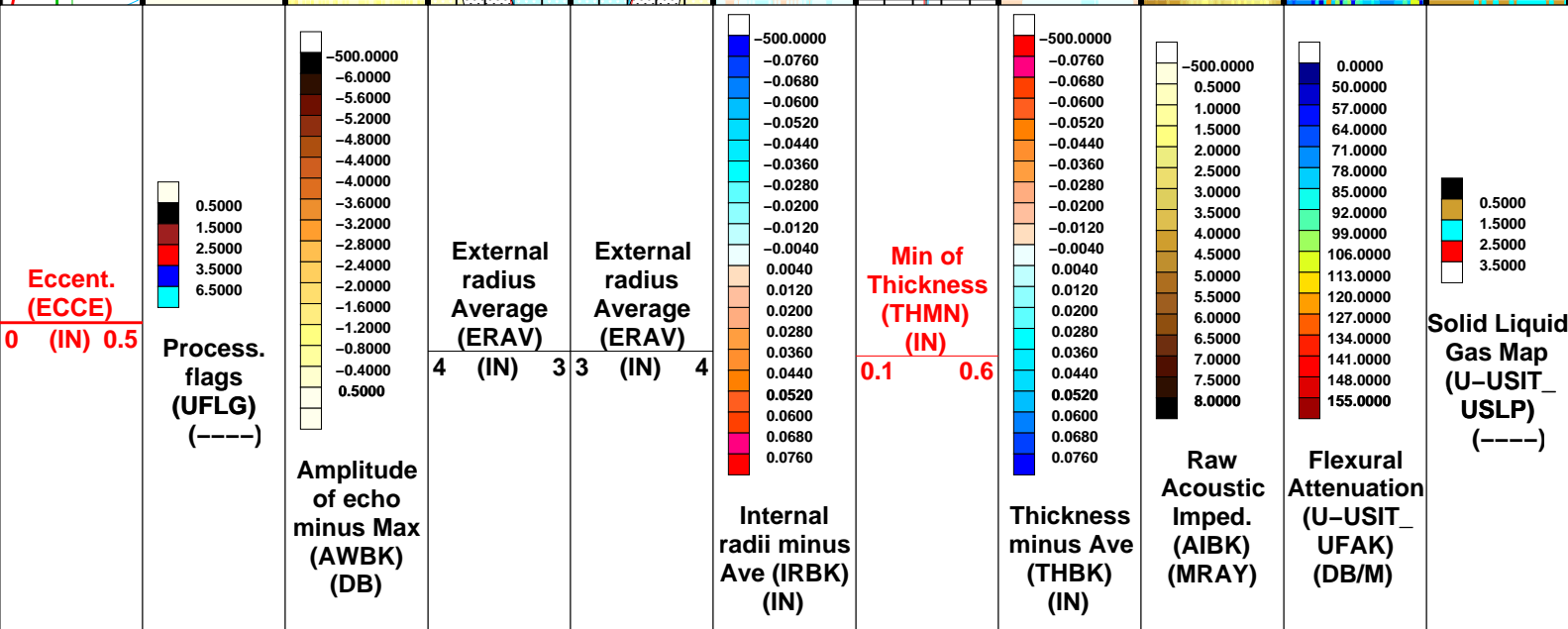
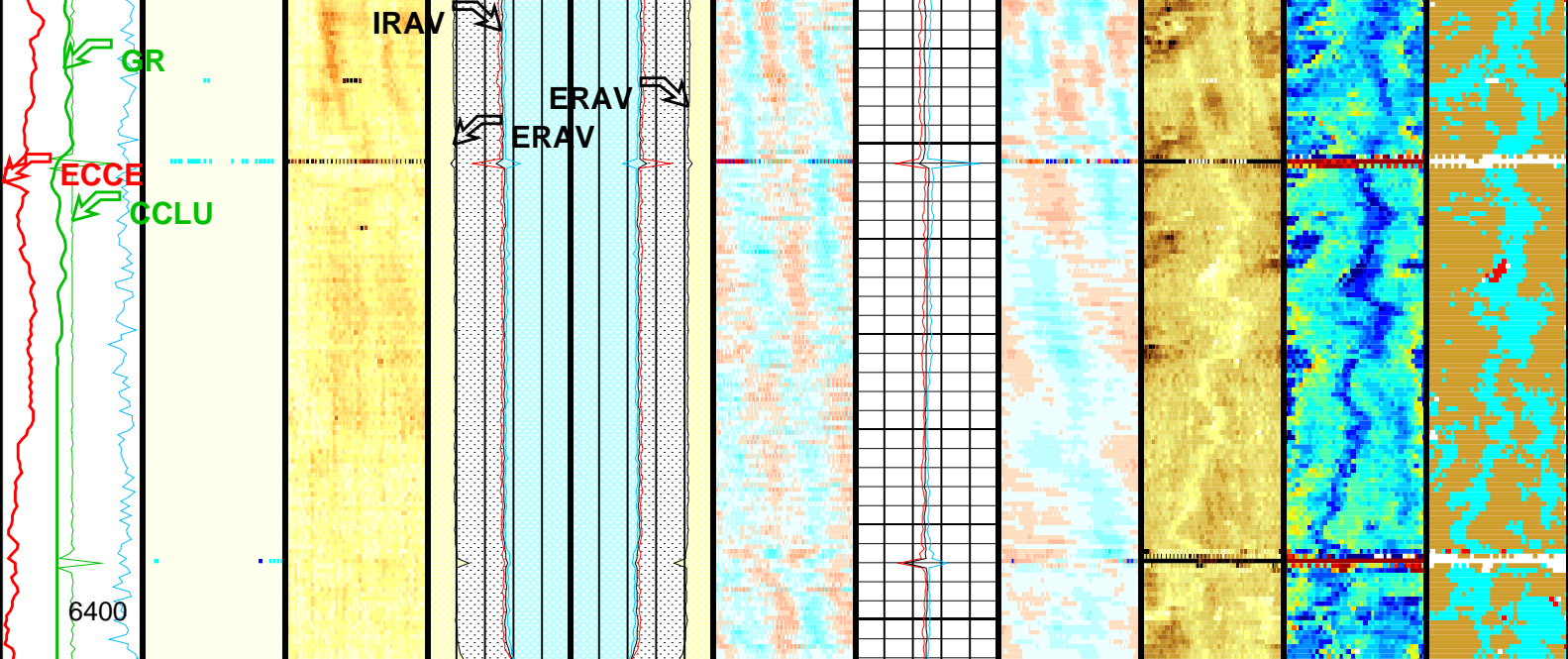












Tool/Tot. Drag From D4T to STIA	
Image rotation (UCAZ) (DEG)	
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Format: USI_IBC_SLG_Composite Vertical Scale: 5" per 100' Graphics File Created: 26-Apr-2011 23:35

OP System Version: 18C0-147

USIT-D 18C0-147 HILTH-FTB 18C0-147
DTC-H 18C0-147

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	7.625 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.969 IN
DFVL	Default Fluid Velocity	200 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	95 V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI
IMAR	Image Rotation	OFF
MW	Mud Weight	10.1 LB/G
RCOD	Reference Calibrator Outer Diameter	7 IN
RCSO	Reference Calibrator Standoff	1.1811 IN
RCTH	Reference Calibrator Thickness	0.2952 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	0.328 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	-30 DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_B
U-USIT_UTAN	USIT Transducer Angles	38_DEG
UMAO	USIT Measurement Angular Offset	-10 DEG
USTO	Ultrasonic Time Offset	-2 US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch
USUM	Ultrasonic Working Mode	5DEG_SIN_420LINE_15

UWK	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	51.4	US/F
VCAS	Ultrasonic Transversal Velocity in Casing		19.6689	US
WLEN	T^3 Processing Length		46.25	MRAY
ZCAS	Acoustic Impedance of Casing		-1	MRAY
ZINI	Initial Estimate of Cement Impedance		1.9	MRAY
ZMUD	Acoustic Impedance of Mud		2.6	MRAY
ZTCM	Acoustic Impedance Threshold for Cement		0.3	MRAY
ZTGS	Acoustic Impedance Threshold for Gas			
USPS: USIT Pipe Stats				
AGMN	Minimum Gain of Cartridge		-4	DB
AGMX	Maximum Gain of Cartridge		20	DB
BERJ	Bad Echo Rejection		ON	
CDIA	Casing Outer Diameter		7.625	IN
CSDE	Casing Density		486.94	LBCF
CSID	Casing Inner Diameter		6.969	IN
DFVL	Default Fluid Velocity		200	US/F
DOT	Diameter of Transducer Sensor		2.874	IN
EMXV	EMEX Voltage		95	V
IMAR	Image Rotation		OFF	
MW	Mud Weight		10.1	LB/G
RCOD	Reference Calibrator Outer Diameter		7	IN
RCSO	Reference Calibrator Standoff		1.1811	IN
RCTH	Reference Calibrator Thickness		0.2952	IN
TCUB	T^3 Processing Level	Vax_Loop		
THDH	Maximum Search Thickness (percentage of nominal)		130	
THDL	Minimum Search Thickness (percentage of nominal)		70	
THNO	Nominal Thickness of Casing		0.328	IN
UMAO	USIT Measurement Angular Offset		-10	DEG
USTO	Ultrasonic Time Offset		-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch		
UWK	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF		
VCAS	Ultrasonic Transversal Velocity in Casing		51.4	US/F
WLEN	T^3 Processing Length		19.6689	US
ZCAS	Acoustic Impedance of Casing		46.25	MRAY
ZINI	Initial Estimate of Cement Impedance		-1	MRAY
ZMUD	Acoustic Impedance of Mud		1.9	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		STI	
STKT	STI Stuck Threshold		2.5	FT
TDD	Total Depth - Driller		6514.00	FT
TDL	Total Depth - Logger		6406.00	FT
System and Miscellaneous				
BS	Bit Size		9.875	IN
CWEI	Casing Weight		26.40	LB/F
DO	Depth Offset for Playback		4.0	FT
PP	Playback Processing	RECOMPUTE		

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012LUP	FN:20	PRODUCER	26-Apr-2011 20:31	6400.5 FT	323.2 FT
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Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_014PUP	FN:24	PRODUCER	26-Apr-2011 23:35		
RTB	USI_TLD_MCFL_CNL_014PUP	FN:25	PRODUCER	26-Apr-2011 23:44		

Schlumberger

REPEAT PASS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: STEWART 36-13H (PL36SW)

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_011LUP	FN:18	PRODUCER	26-Apr-2011 20:17	6383.0 FT	6126.6 FT
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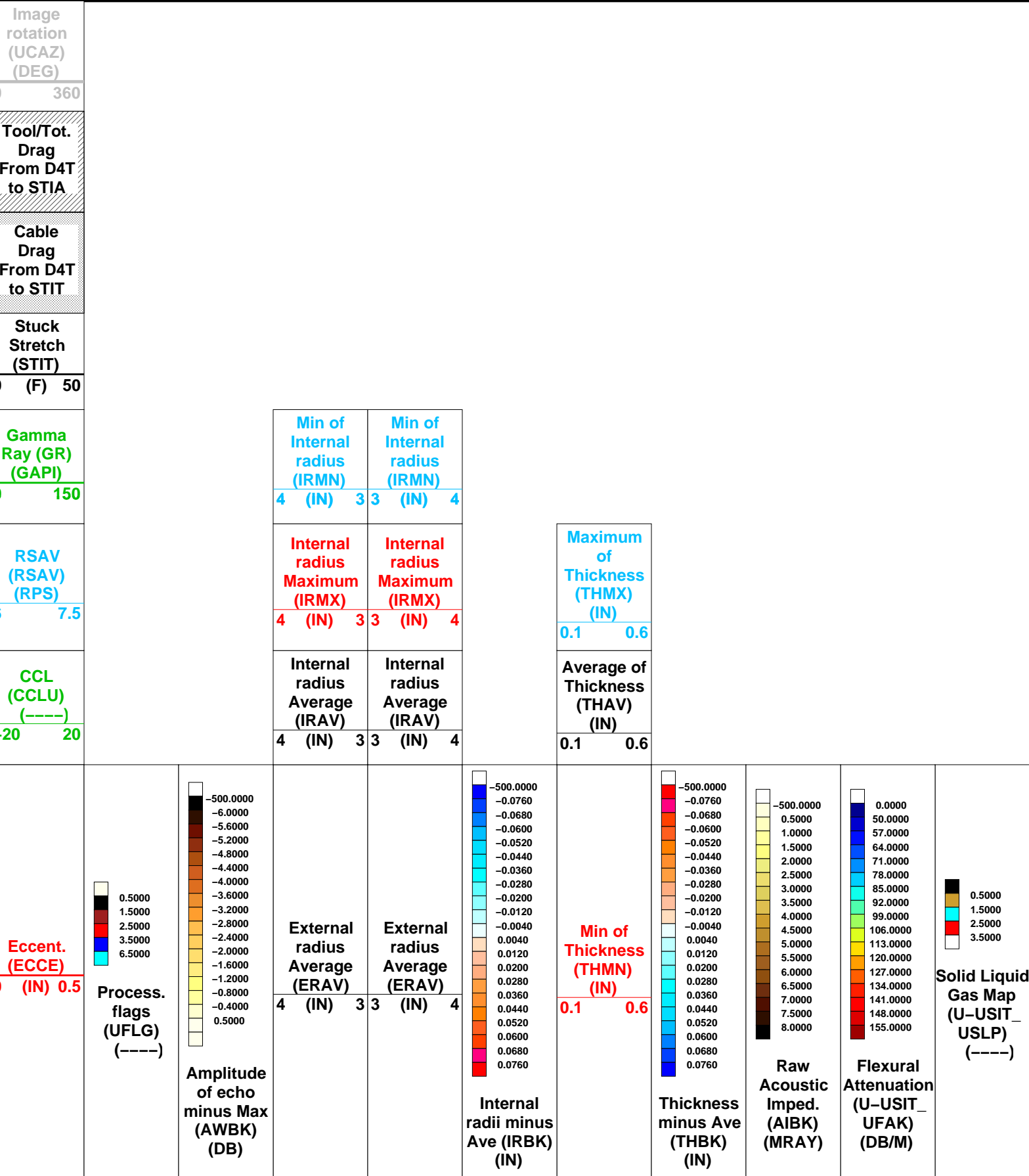
Output DLIS Files

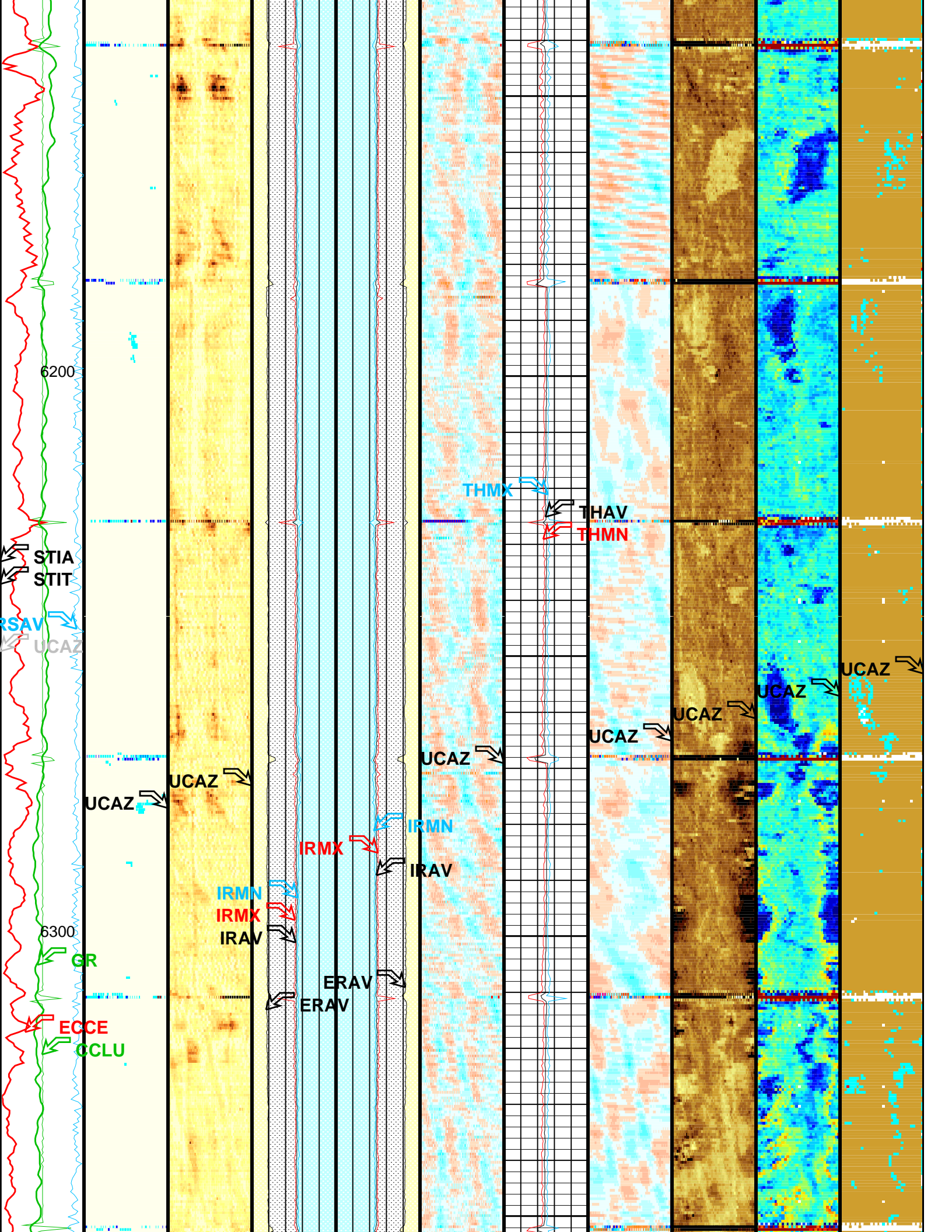
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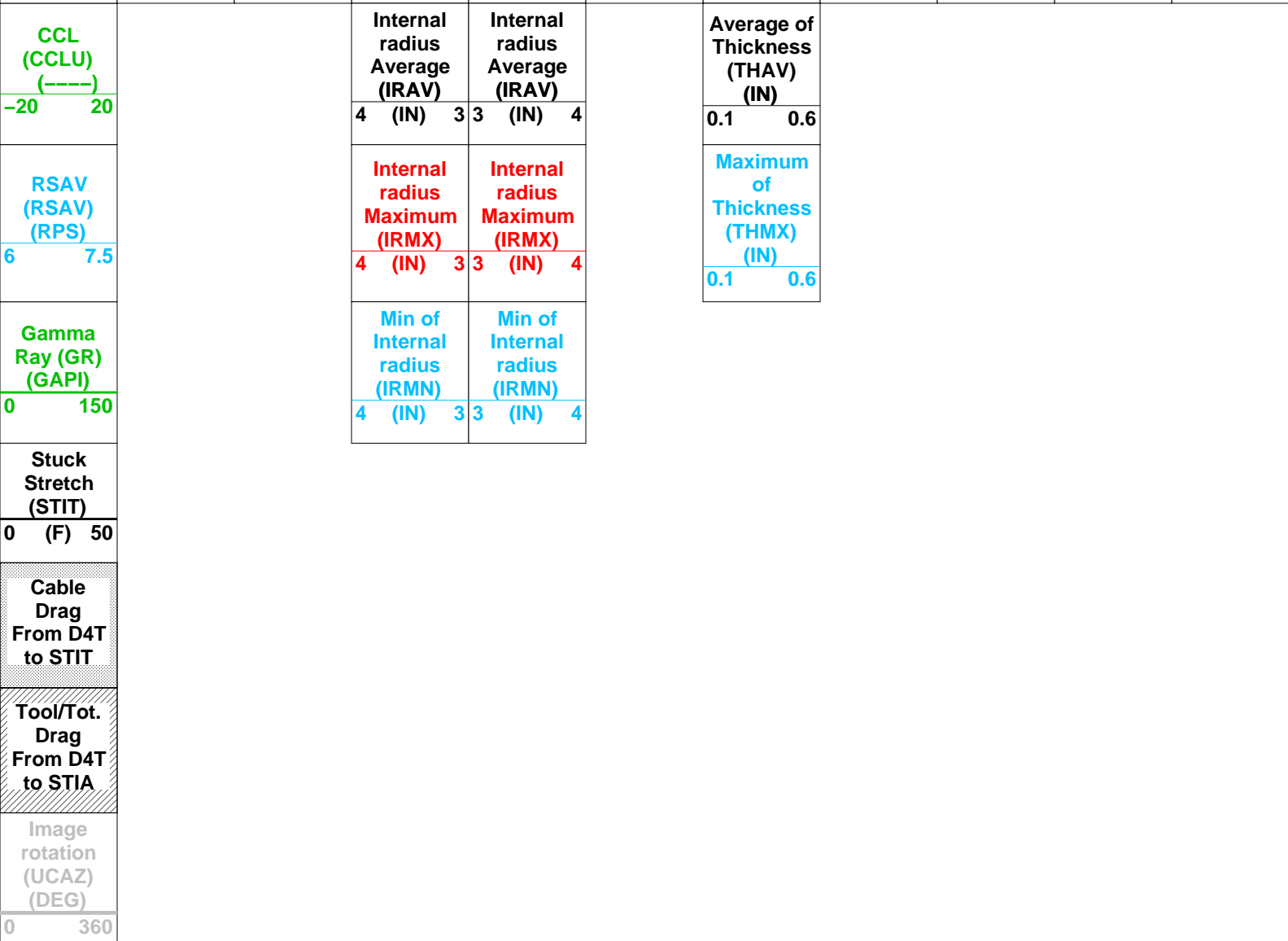
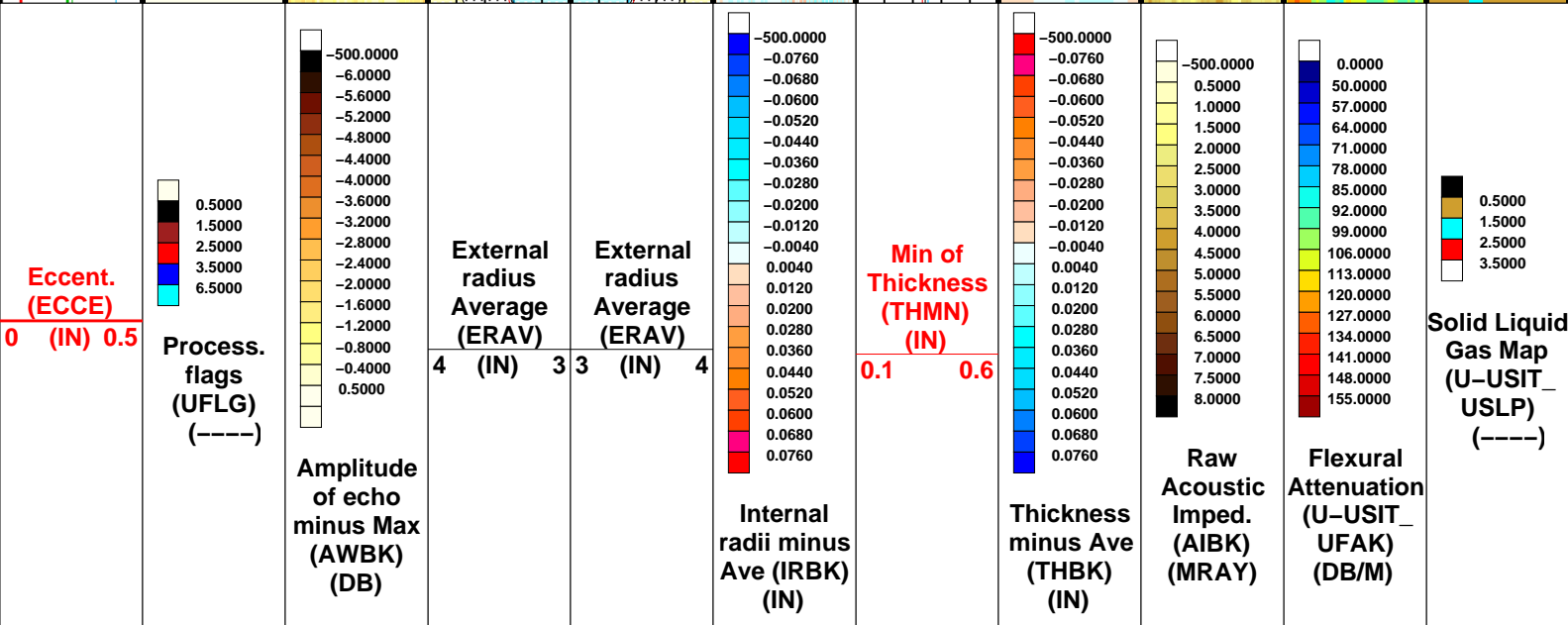
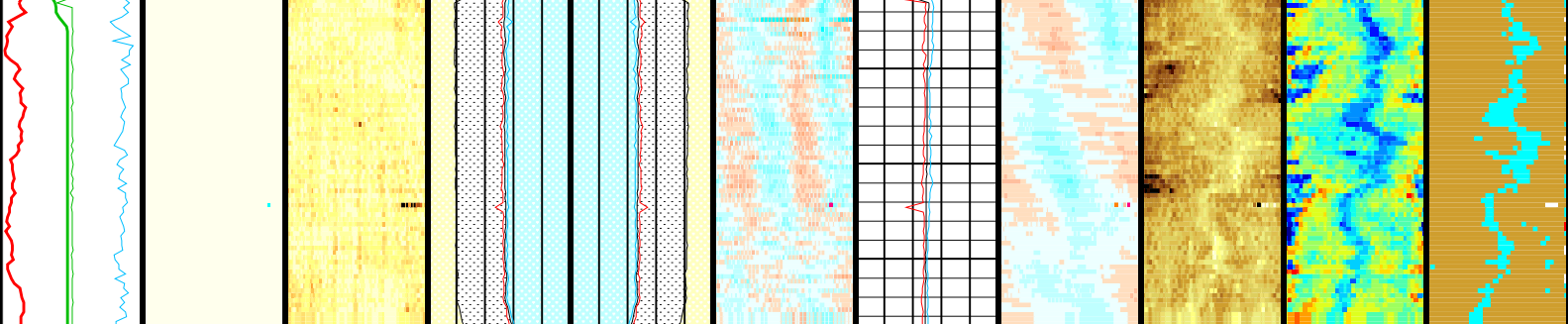
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RTB	USI_TLD_MCFL_CNL_013PUP	FN:23	PRODUCER	26-Apr-2011 23:42	6387.0 FT	6131.0 FT

OP System Version: 18C0-147

USIT-D	18C0-147	HILTH-FTB	18C0-147
DTC-H	18C0-147		







OP System Version: 18C0-147

USIT-D	18C0-147	HILTH-FTB	18C0-147
DTC-H	18C0-147		

All USI Images are outside views

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AGMX	Maximum Gain of Cartridge	20	DB
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CDIA	Casing Outer Diameter	7.625	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.969	IN
DFVL	Default Fluid Velocity	200	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	95	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI	
IMAR	Image Rotation	OFF	
MW	Mud Weight	10.1	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	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	0.328	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	-30	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_B	
U-USIT_UTAN	USIT Transducer Angles	38_DEG	
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	19.6689	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.9	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
USPS: USIT Pipe Stats			
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7.625	IN
CSDE	Casing Density	486.94	LBCF

CSID	Casing Inner Diameter	6.969	IN
DFVL	Default Fluid Velocity	200	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	95	V
IMAR	Image Rotation	OFF	
MW	Mud Weight	10.1	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THNO	Nominal Thickness of Casing	0.328	IN
UMAO	USIT Measurement Angular Offset	-10	DEG
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	19.6689	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.9	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	STI	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	6514.00	FT
TDL	Total Depth - Logger	6406.00	FT
System and Miscellaneous			
BS	Bit Size	9.875	IN
CWEI	Casing Weight	26.40	LB/F
DO	Depth Offset for Playback	4.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_011LUP	FN:18	PRODUCER	26-Apr-2011 20:17	6383.0 FT	6126.6 FT
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Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_013PUP	FN:22	PRODUCER	26-Apr-2011 23:33		
RTB	USI_TLD_MCFL_CNL_013PUP	FN:23	PRODUCER	26-Apr-2011 23:42		

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IBC CEMENT

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: STEWART 36-13H (PL36SW)

Input DLIS Files

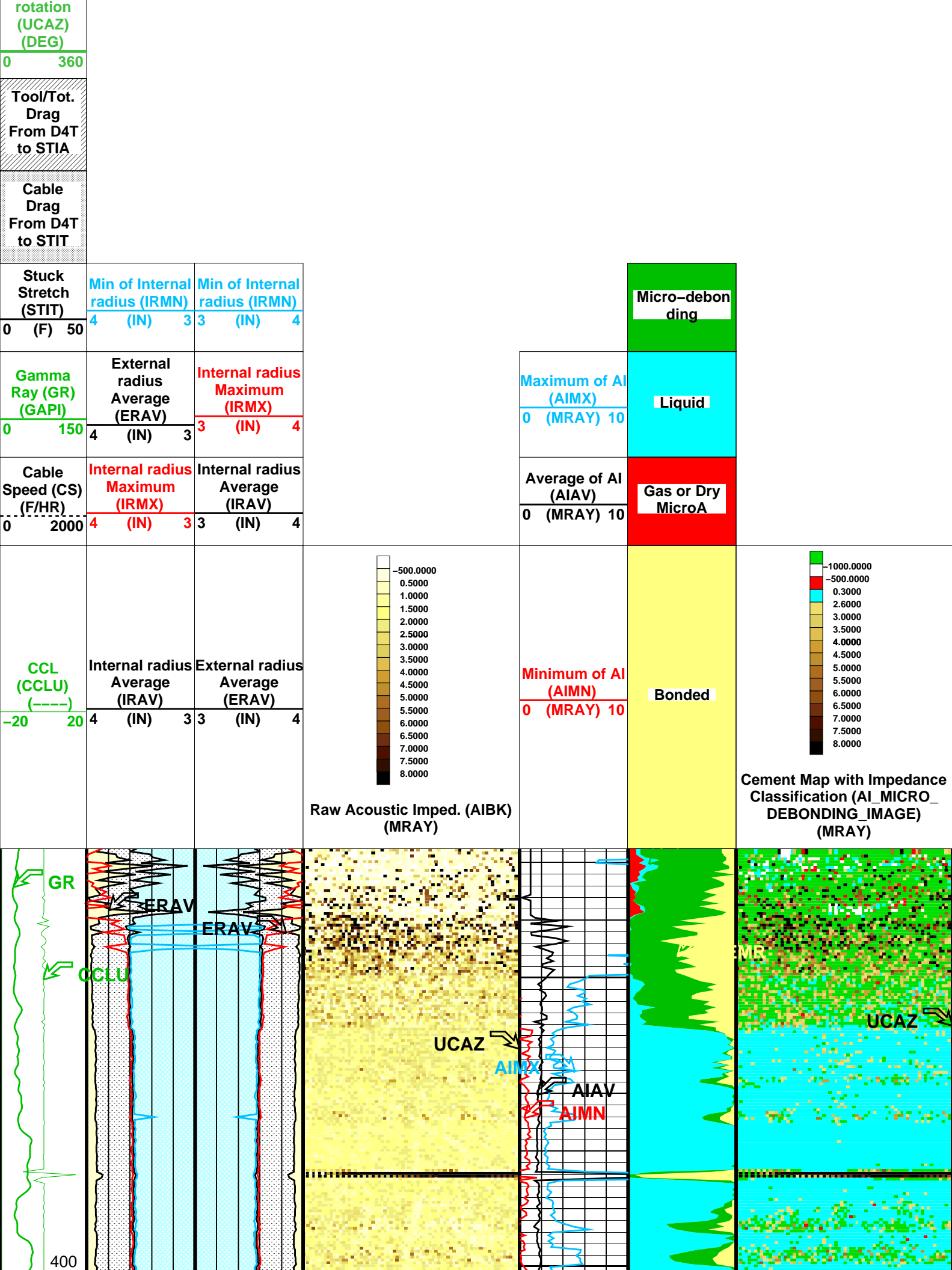
DEFAULT	USI_TLD_MCFL_CNL_012LUP	FN:20	PRODUCER	26-Apr-2011 20:31	6400.5 FT	323.2 FT
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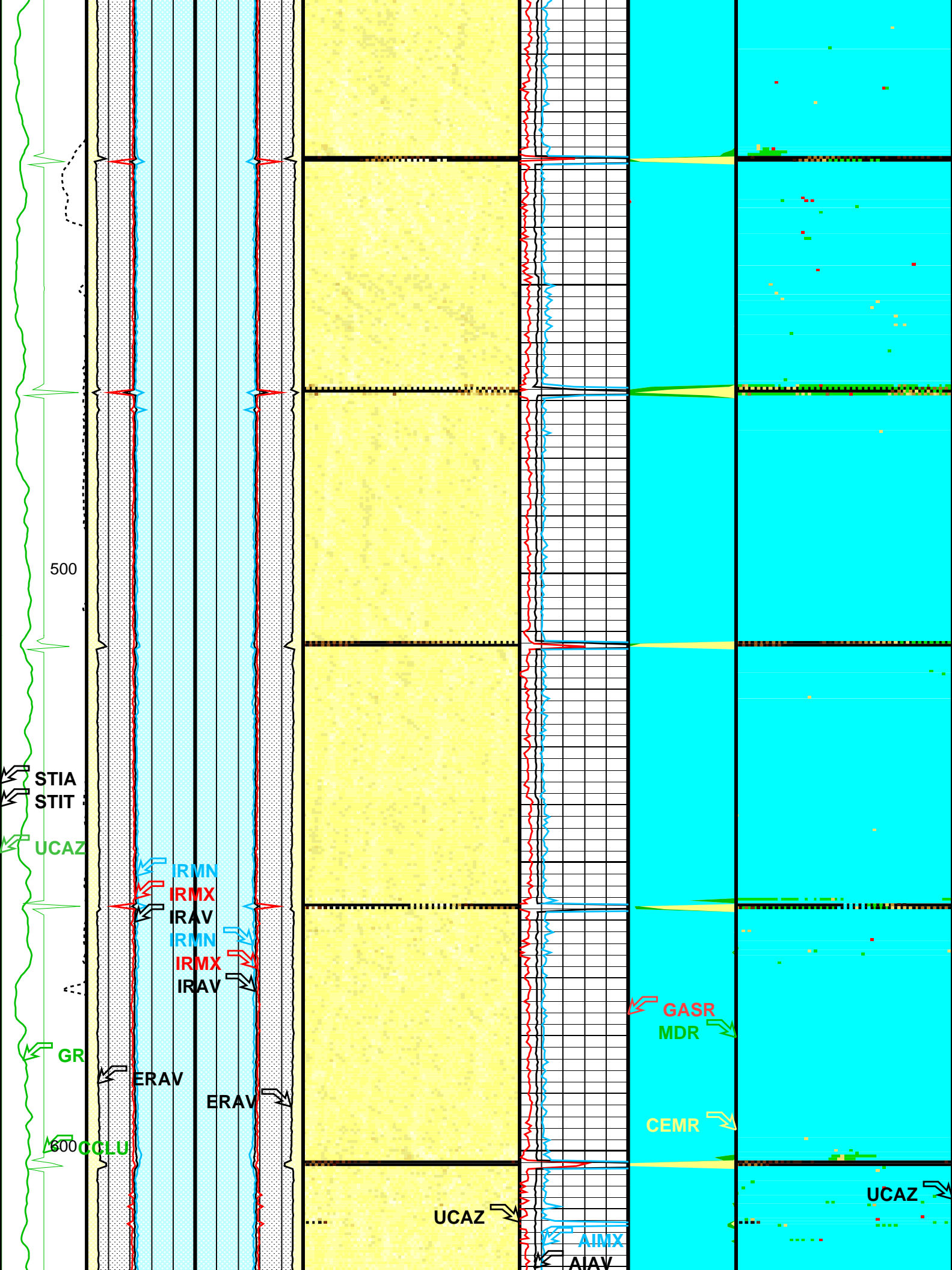
Output DLIS Files

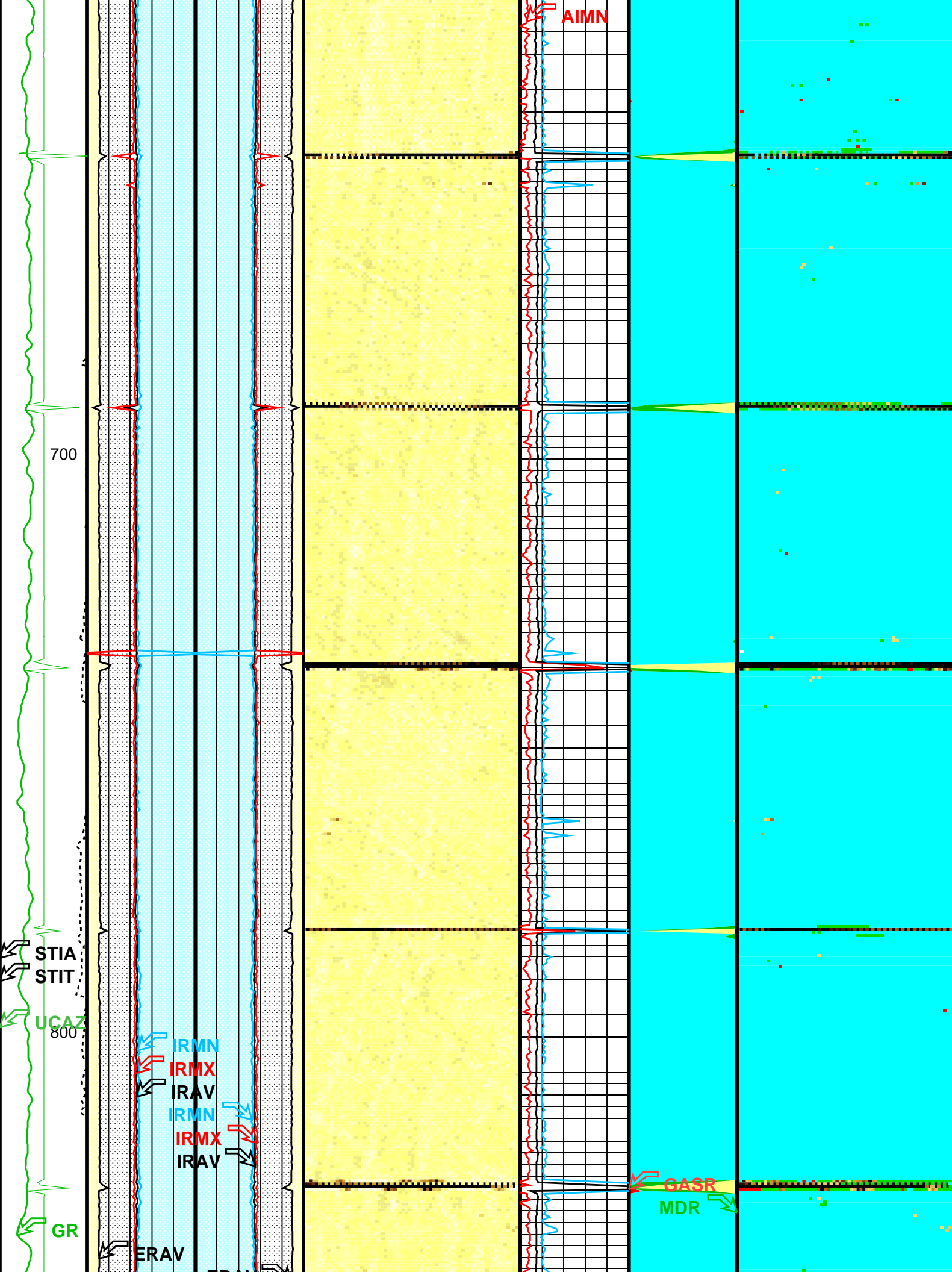
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RTB	USI_TLD_MCFL_CNL_014PUP	FN:25	PRODUCER	26-Apr-2011 23:44	6404.5 FT	327.5 FT

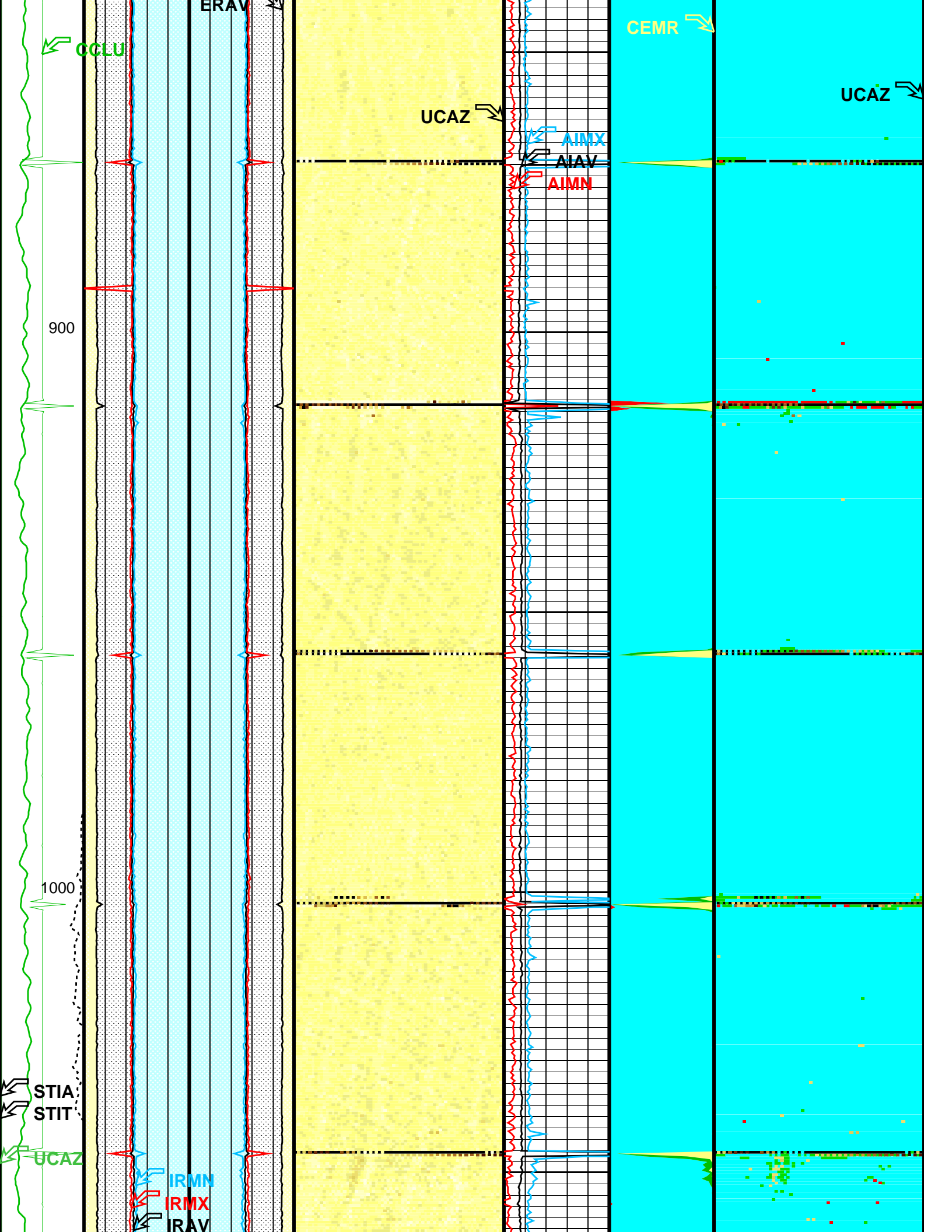
OP System Version: 18C0-147

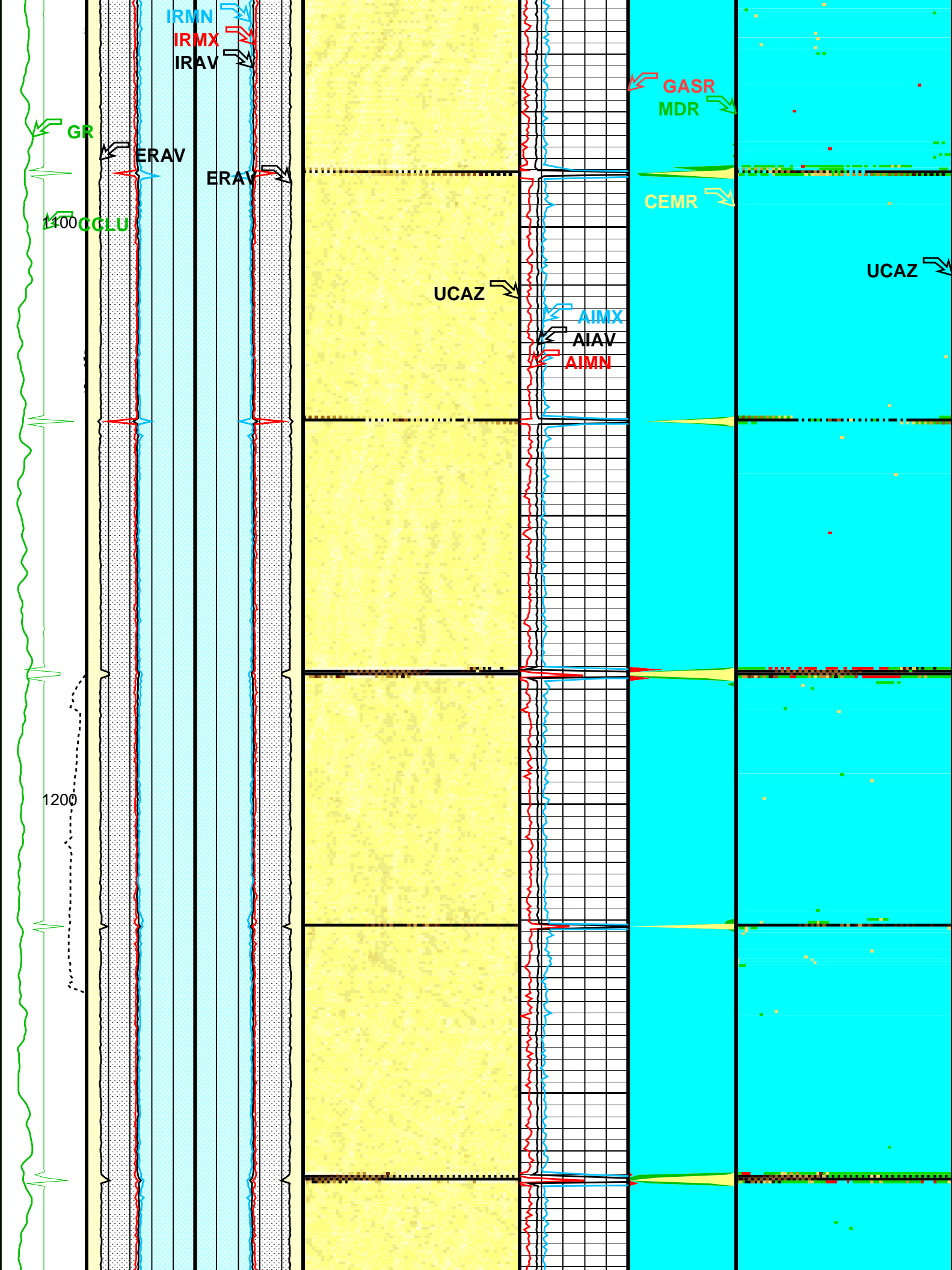
USIT-D	18C0-147	HILTH-FTB	18C0-147
DTC-H	18C0-147		

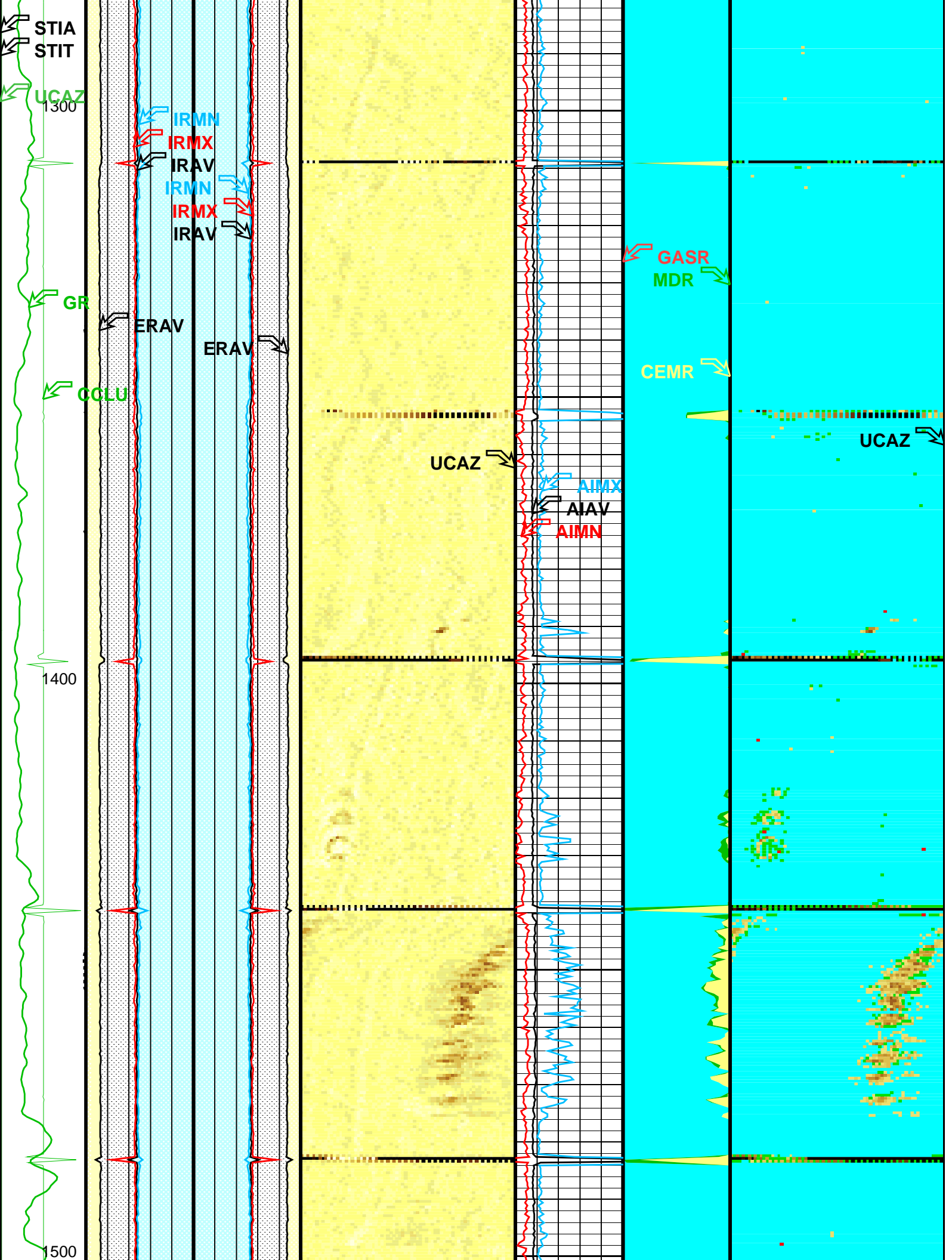


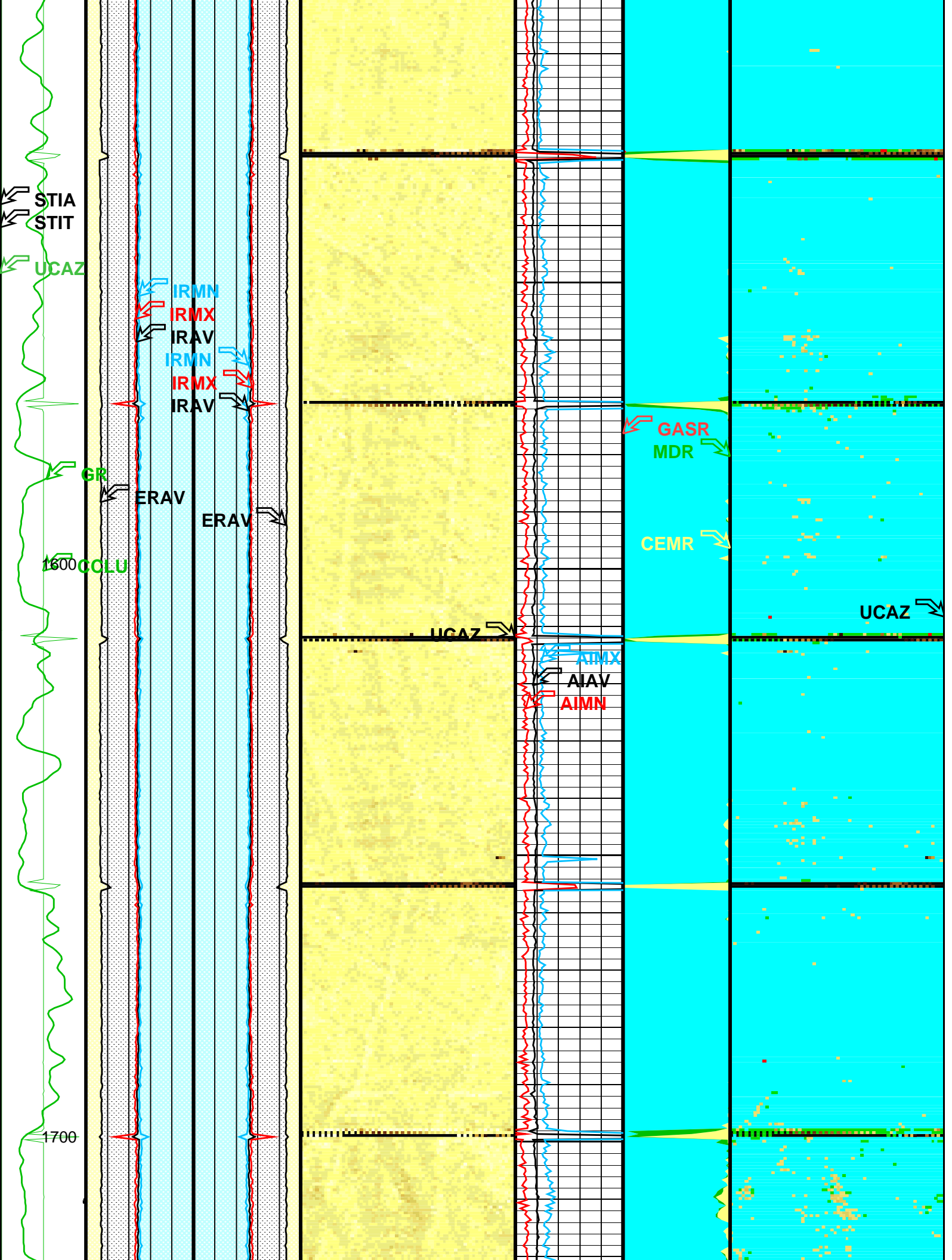


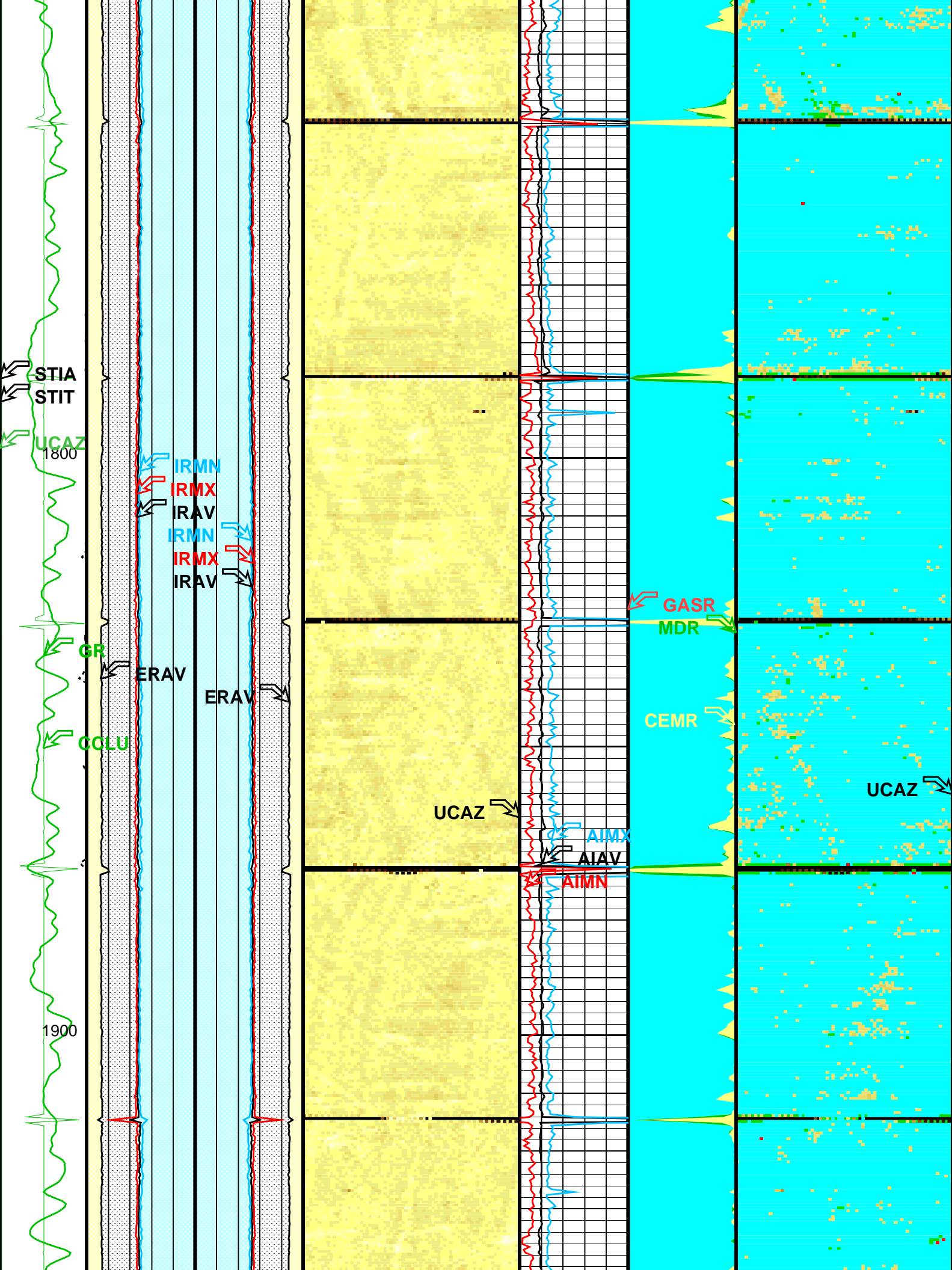


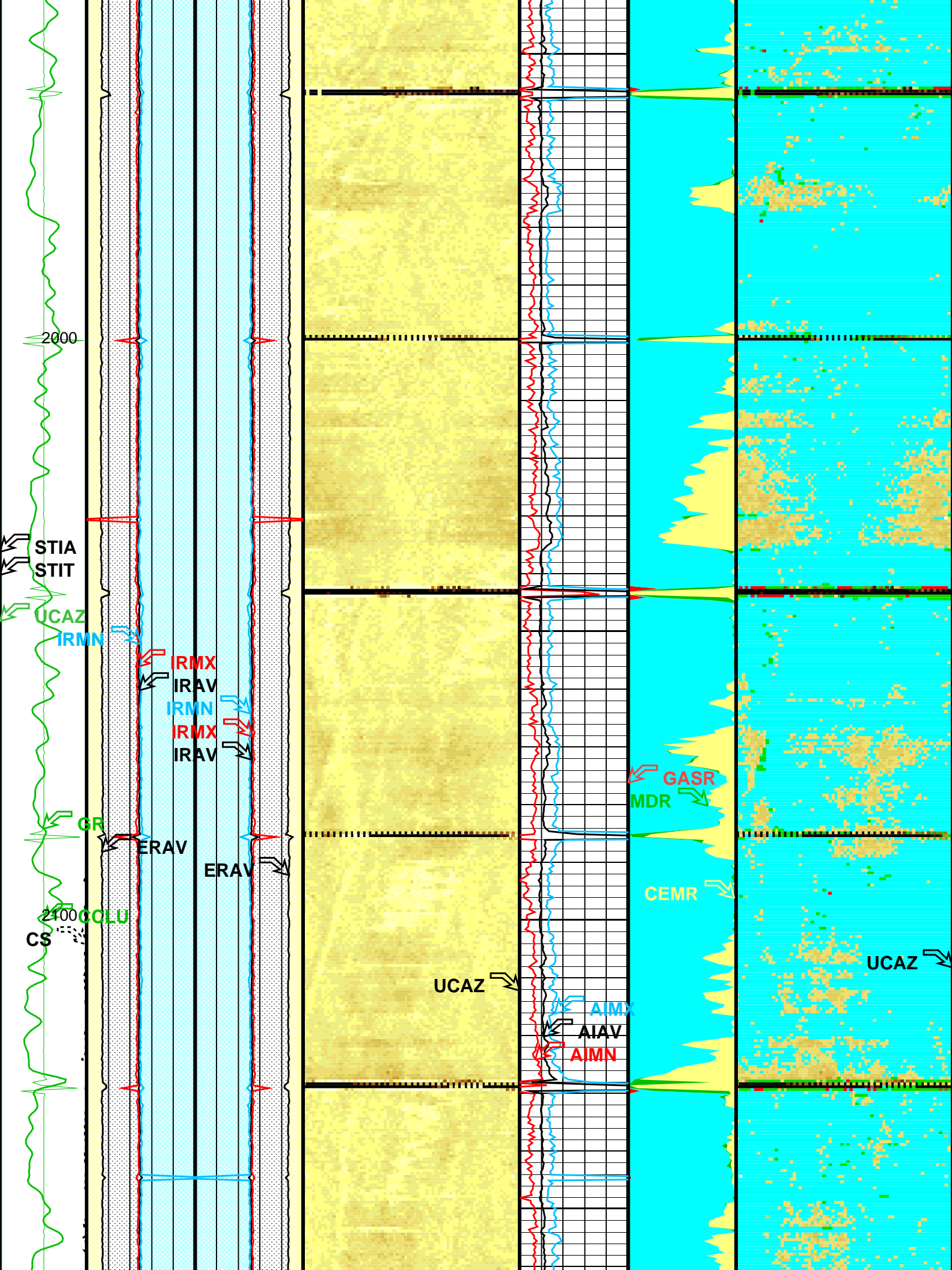


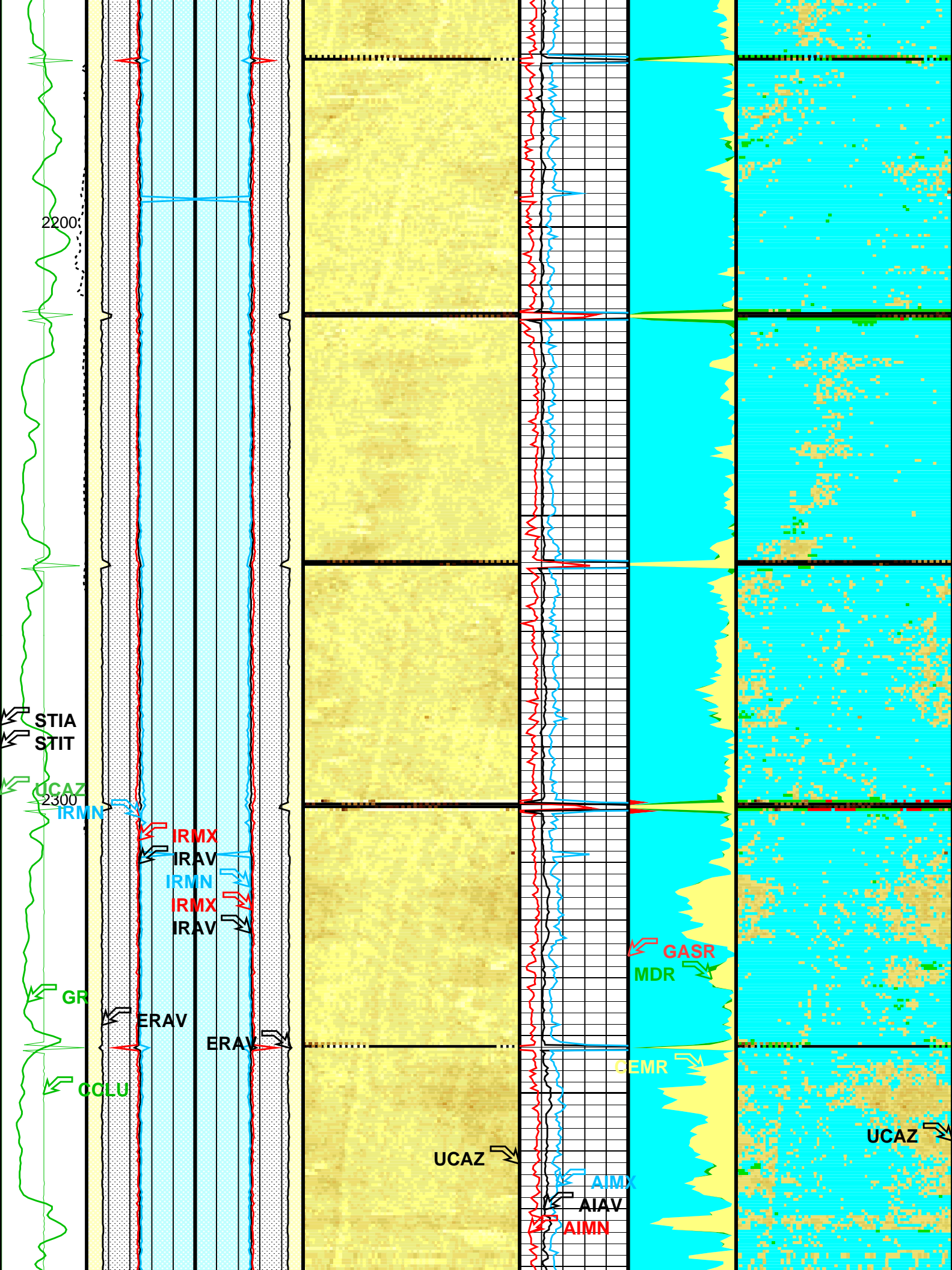


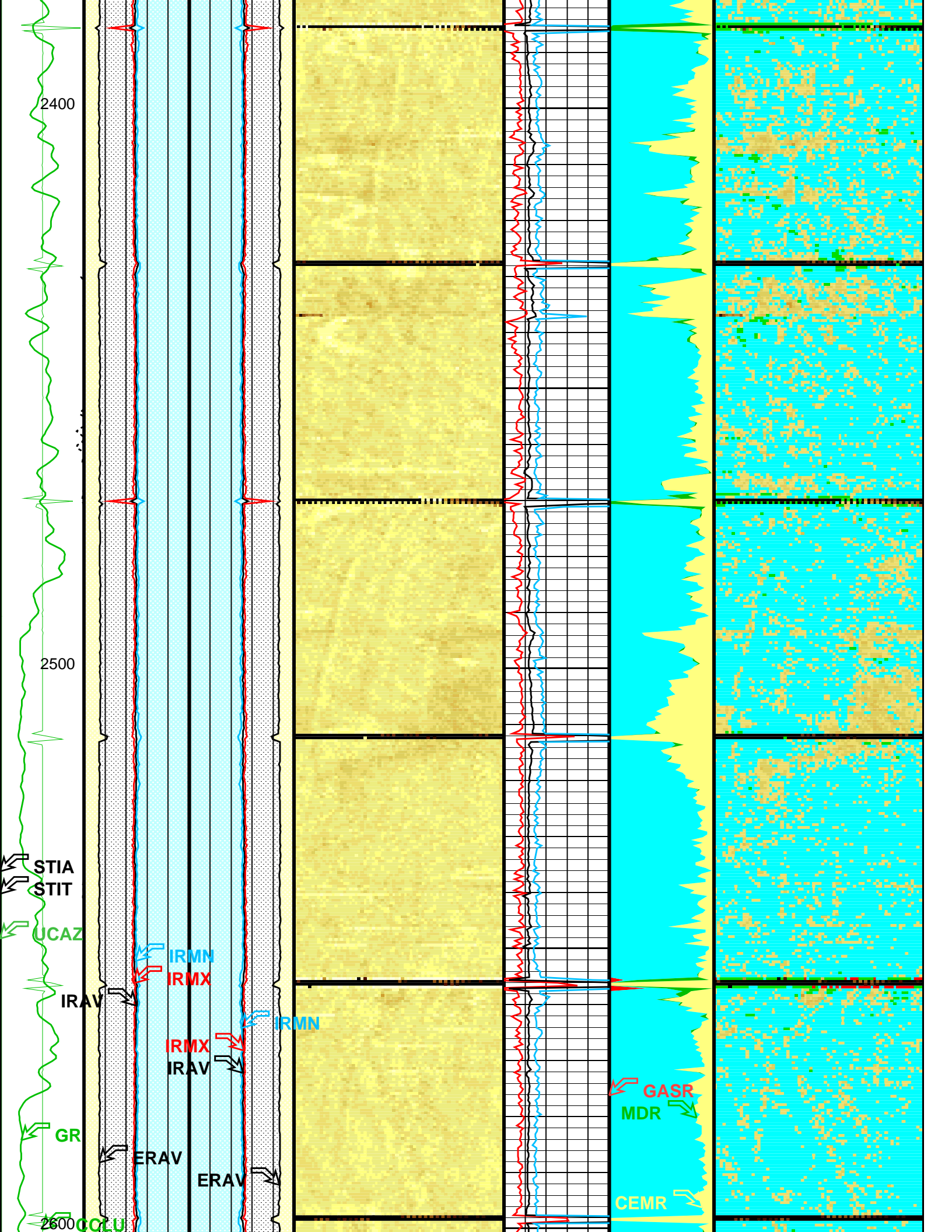


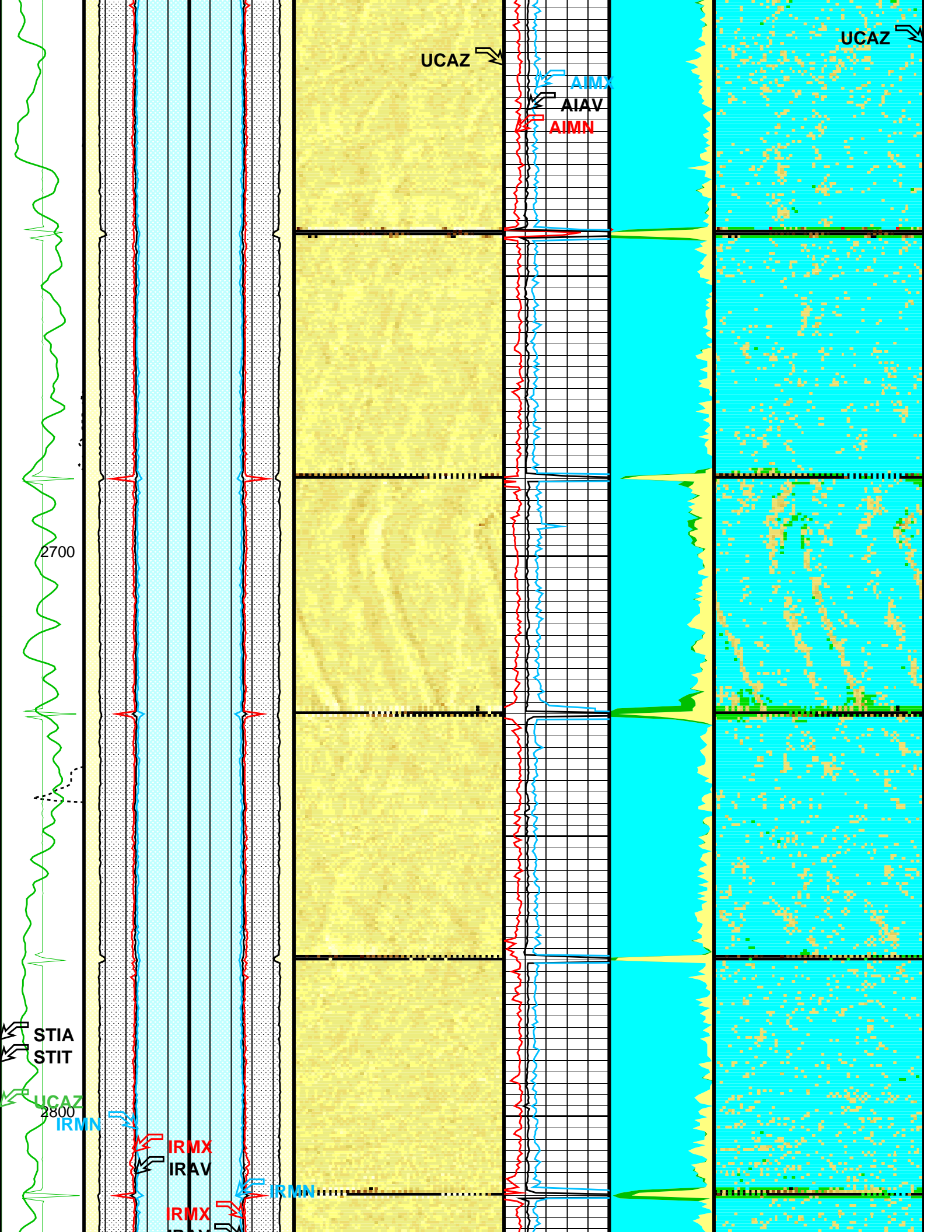


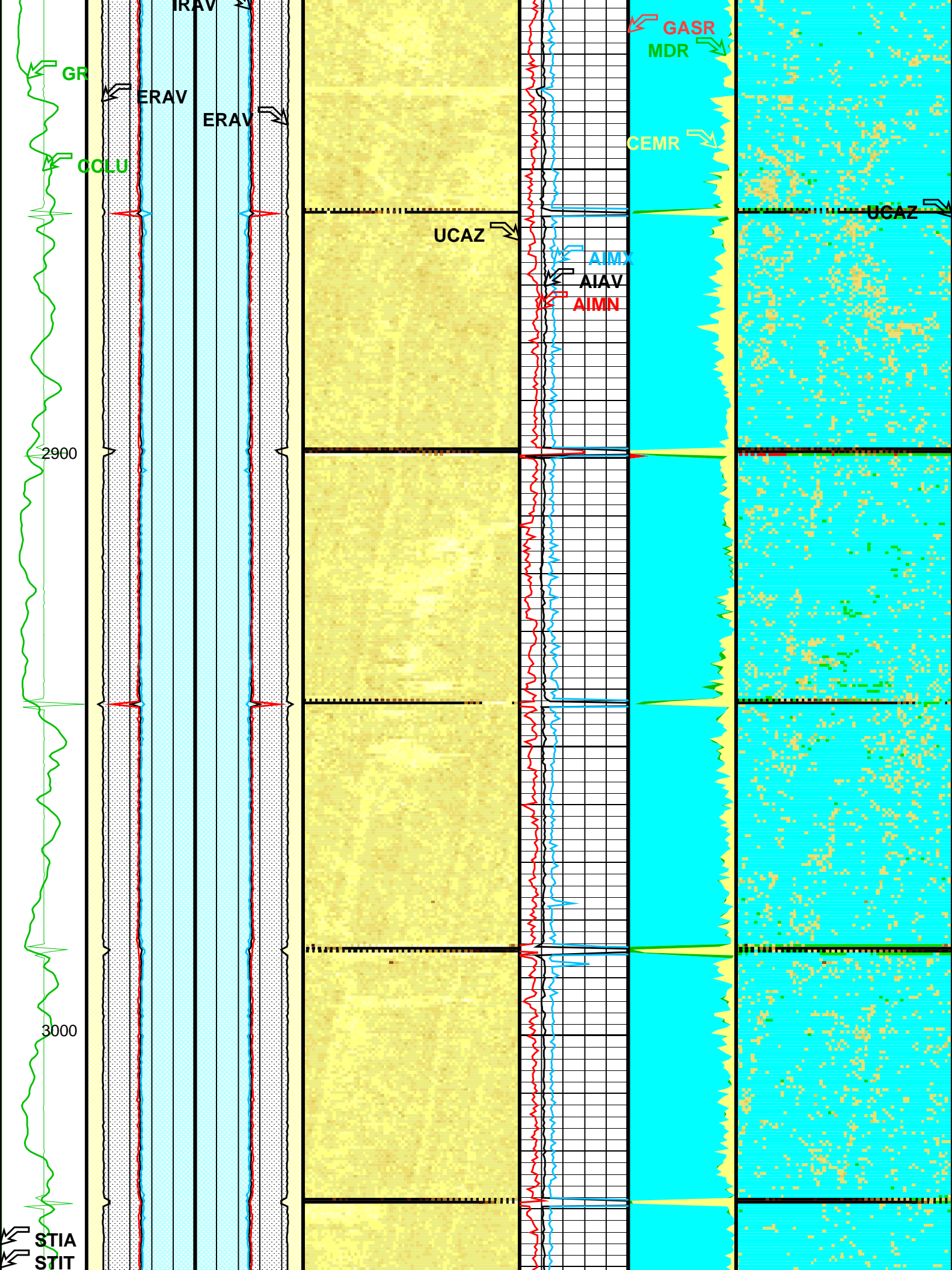


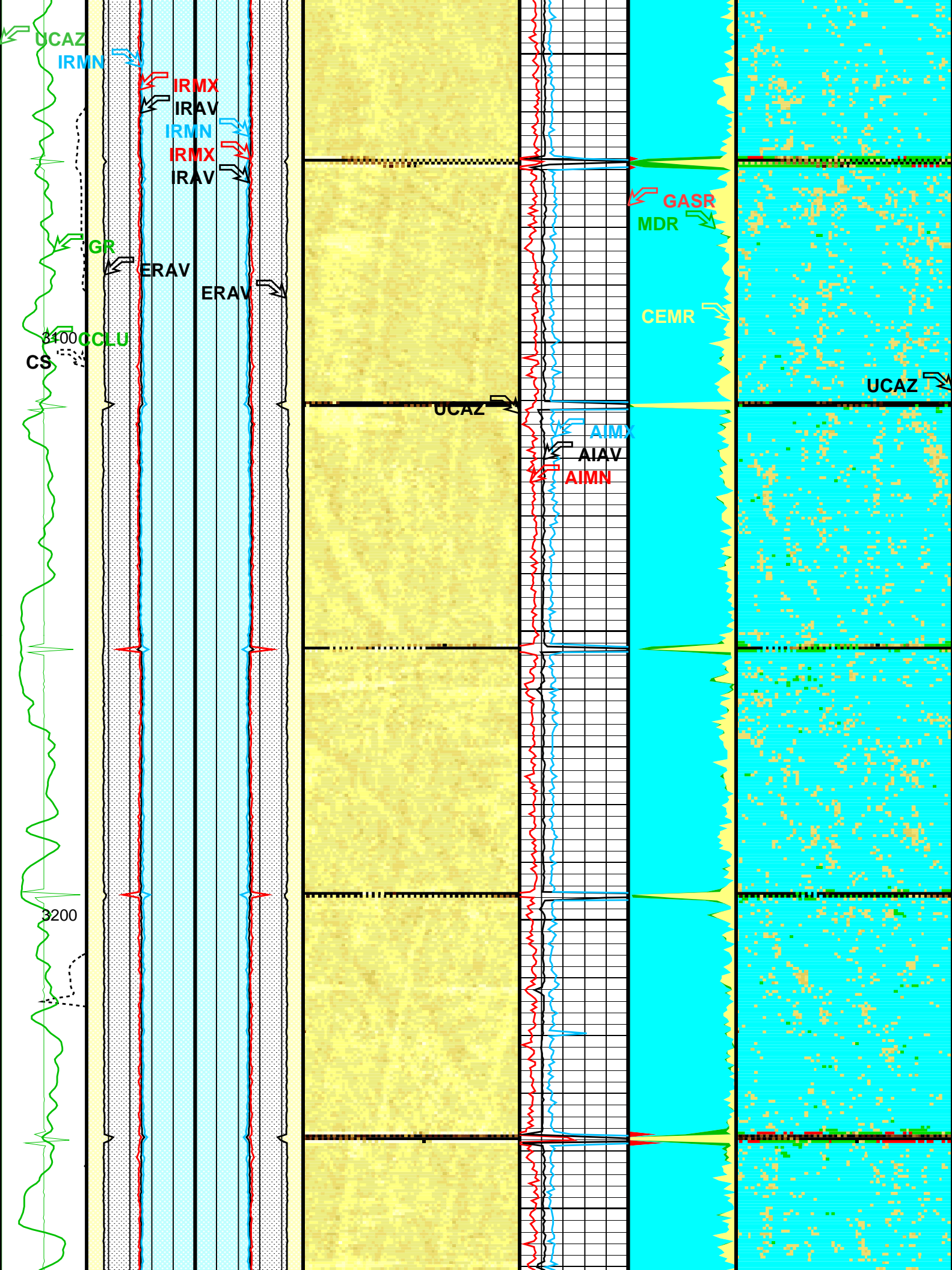


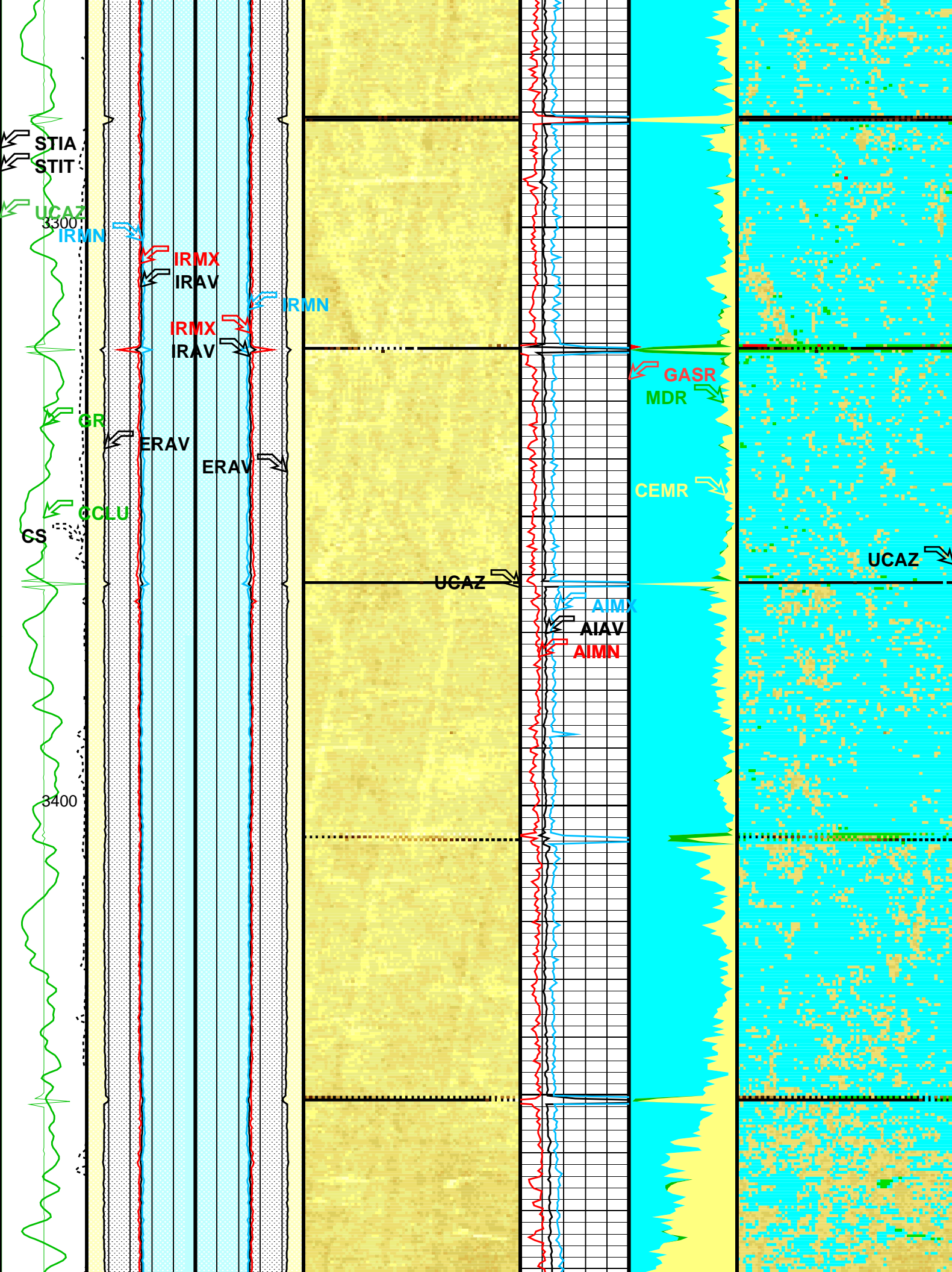


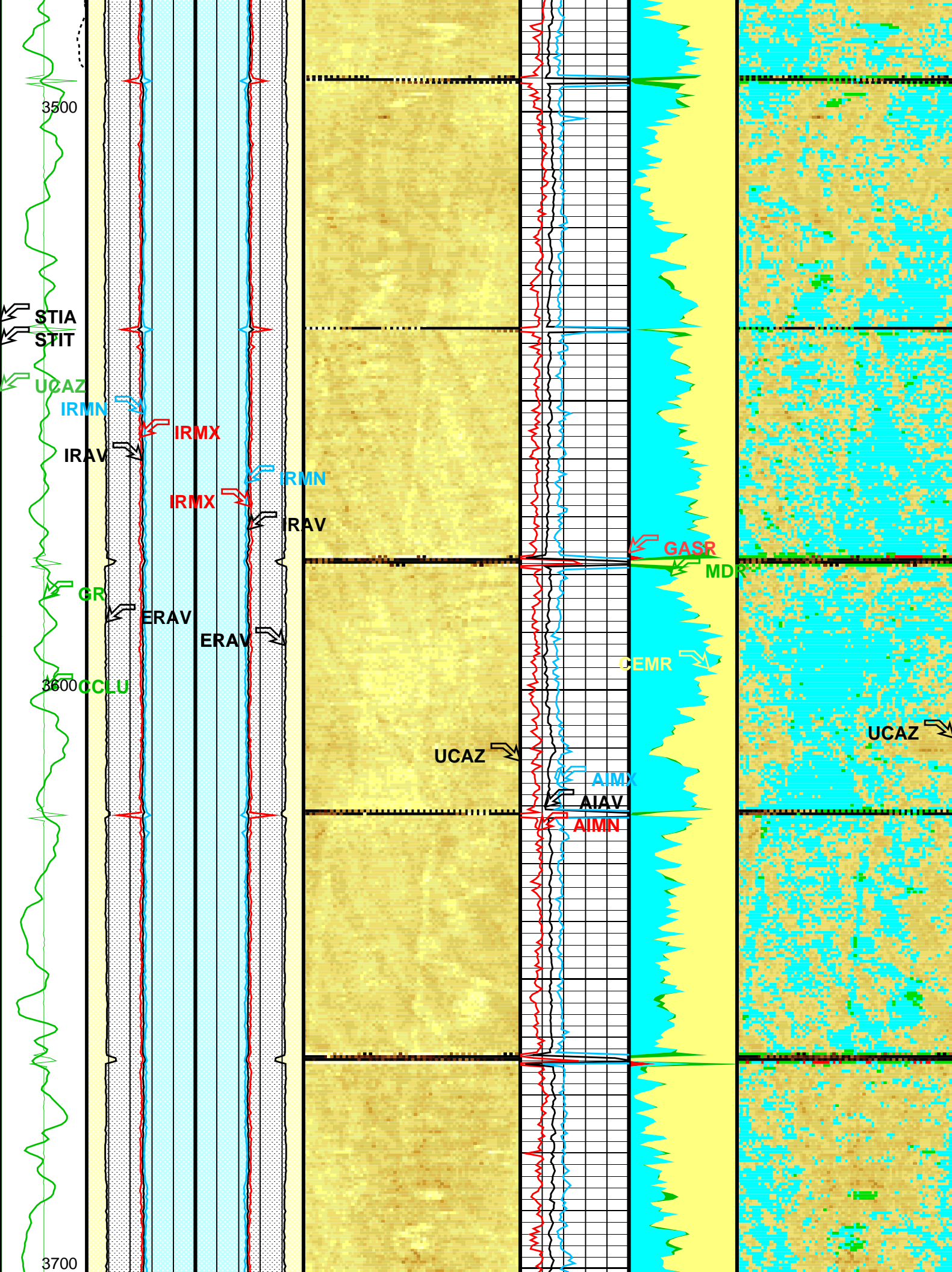


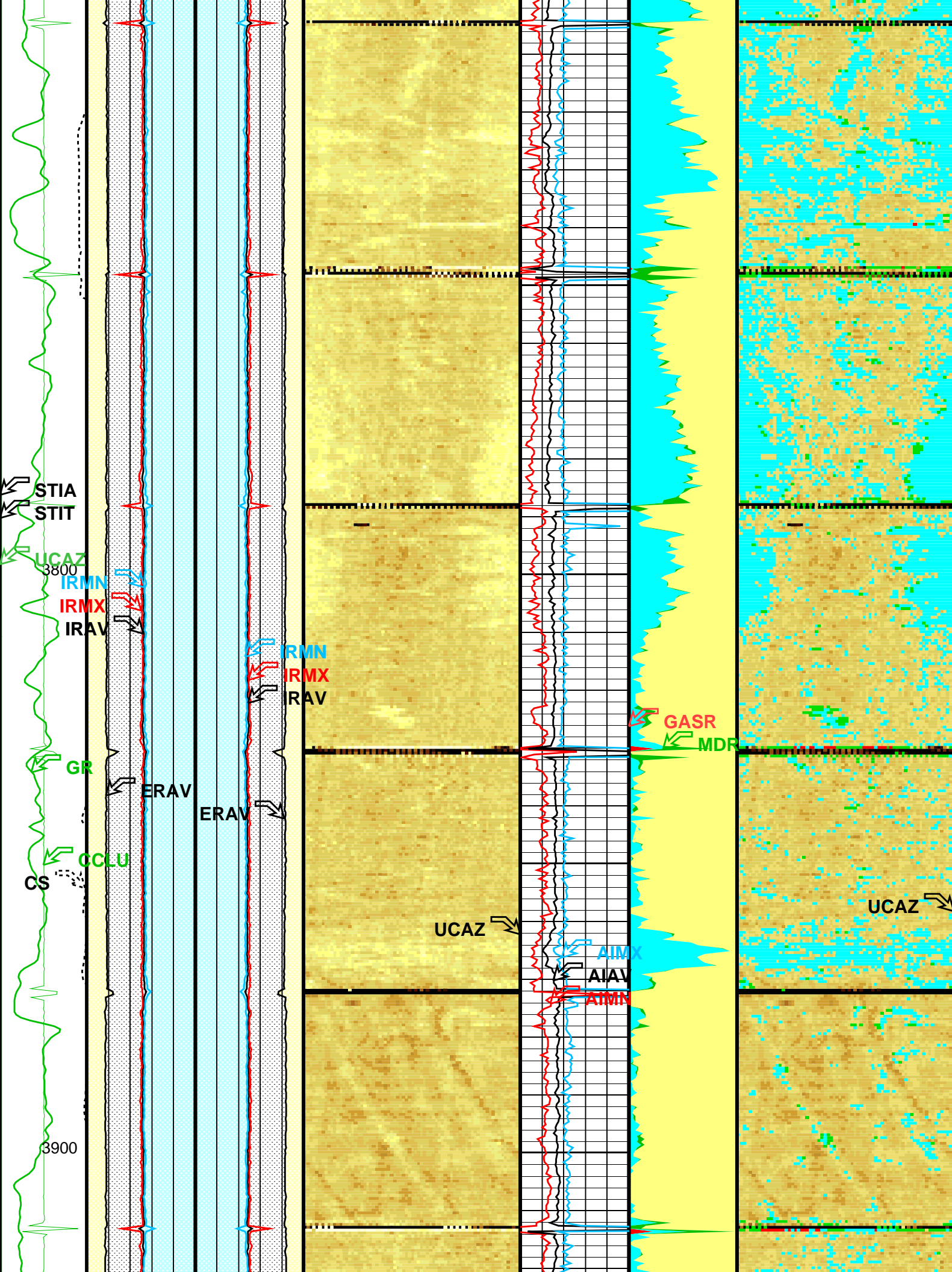


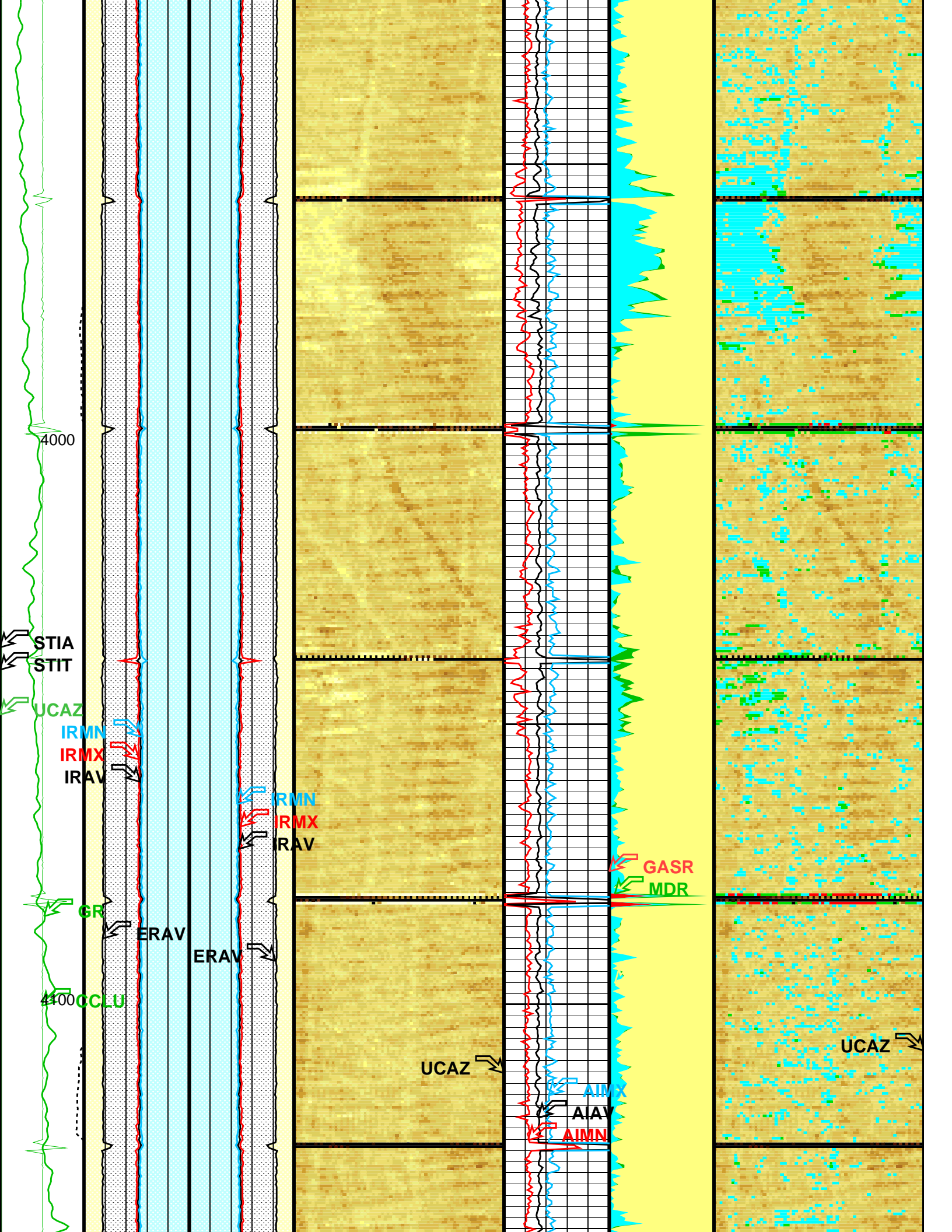


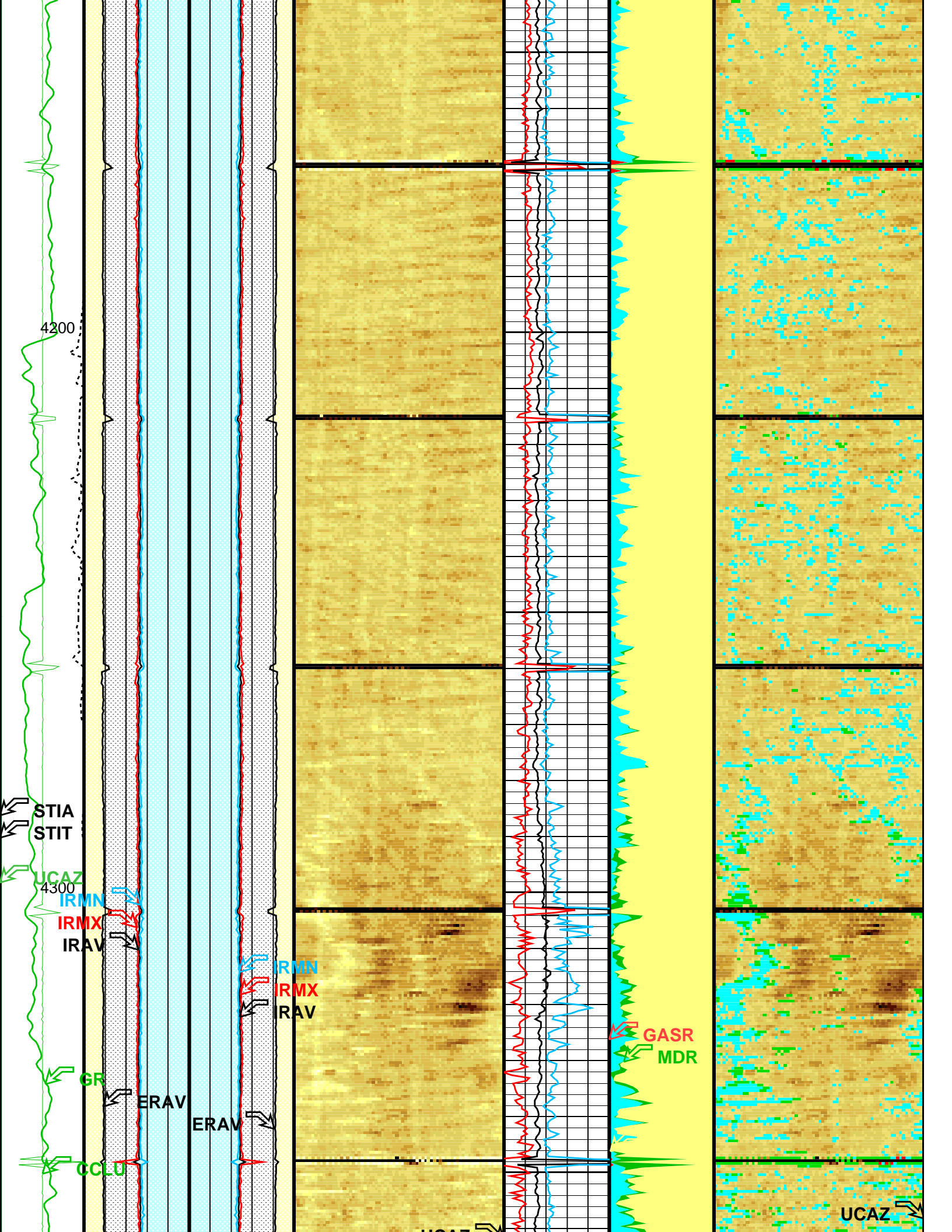


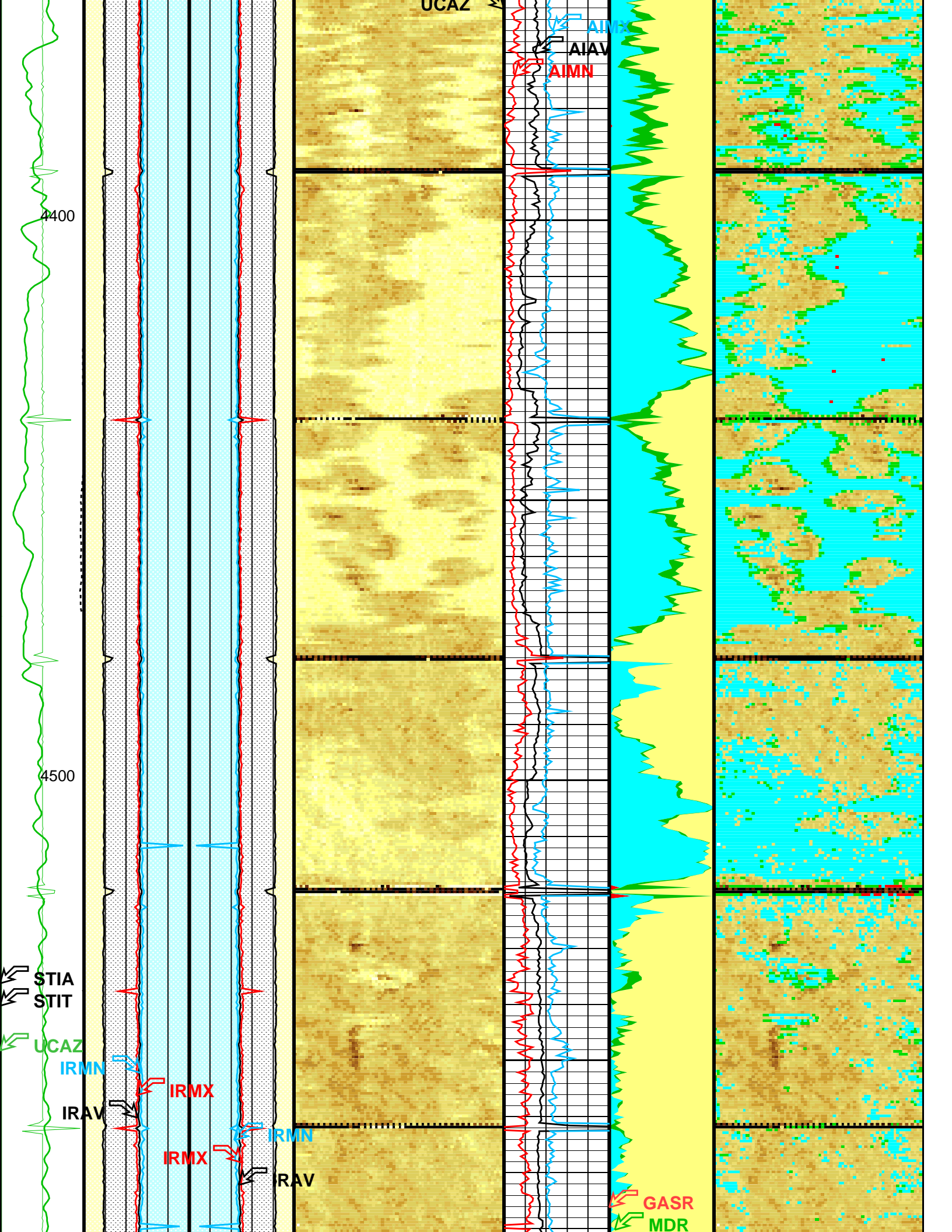


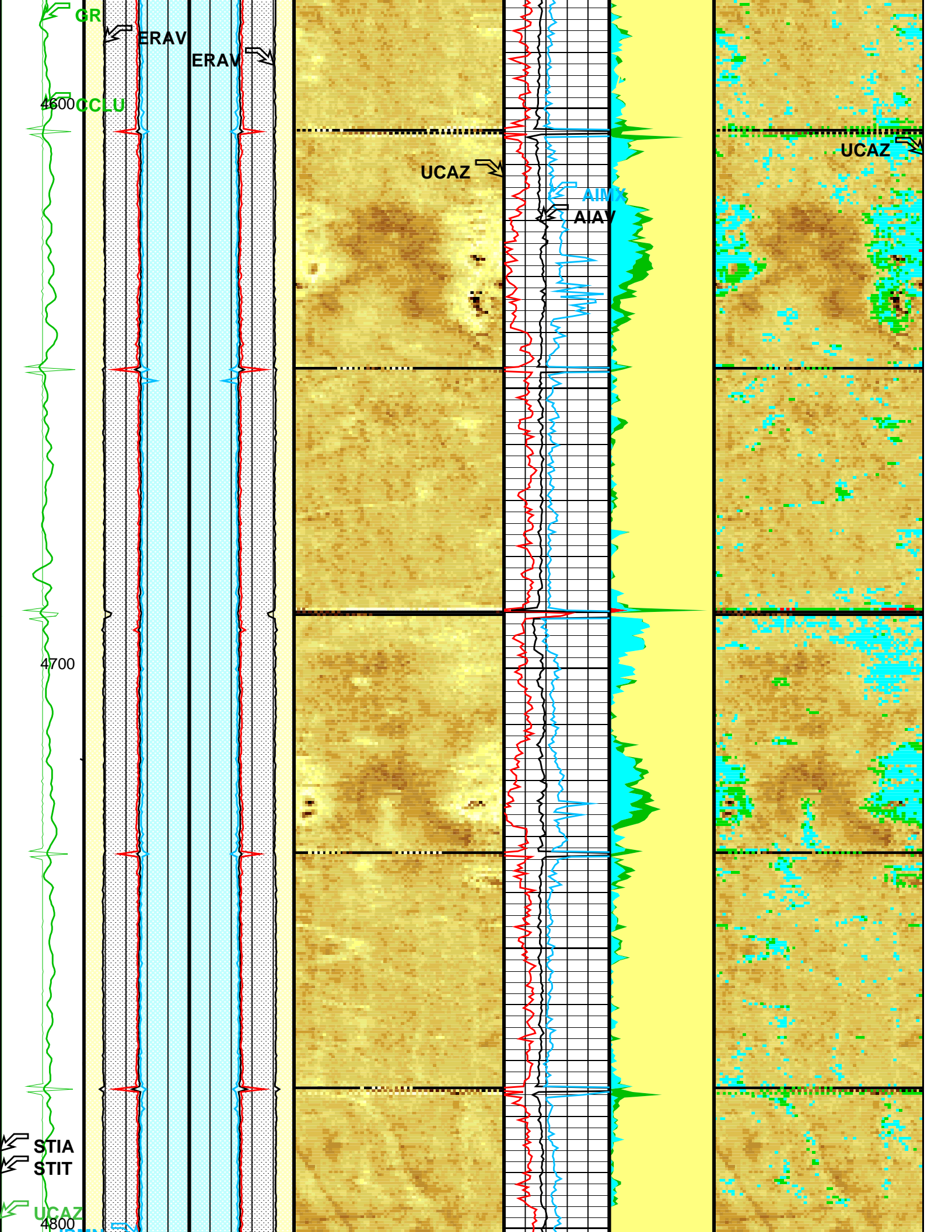


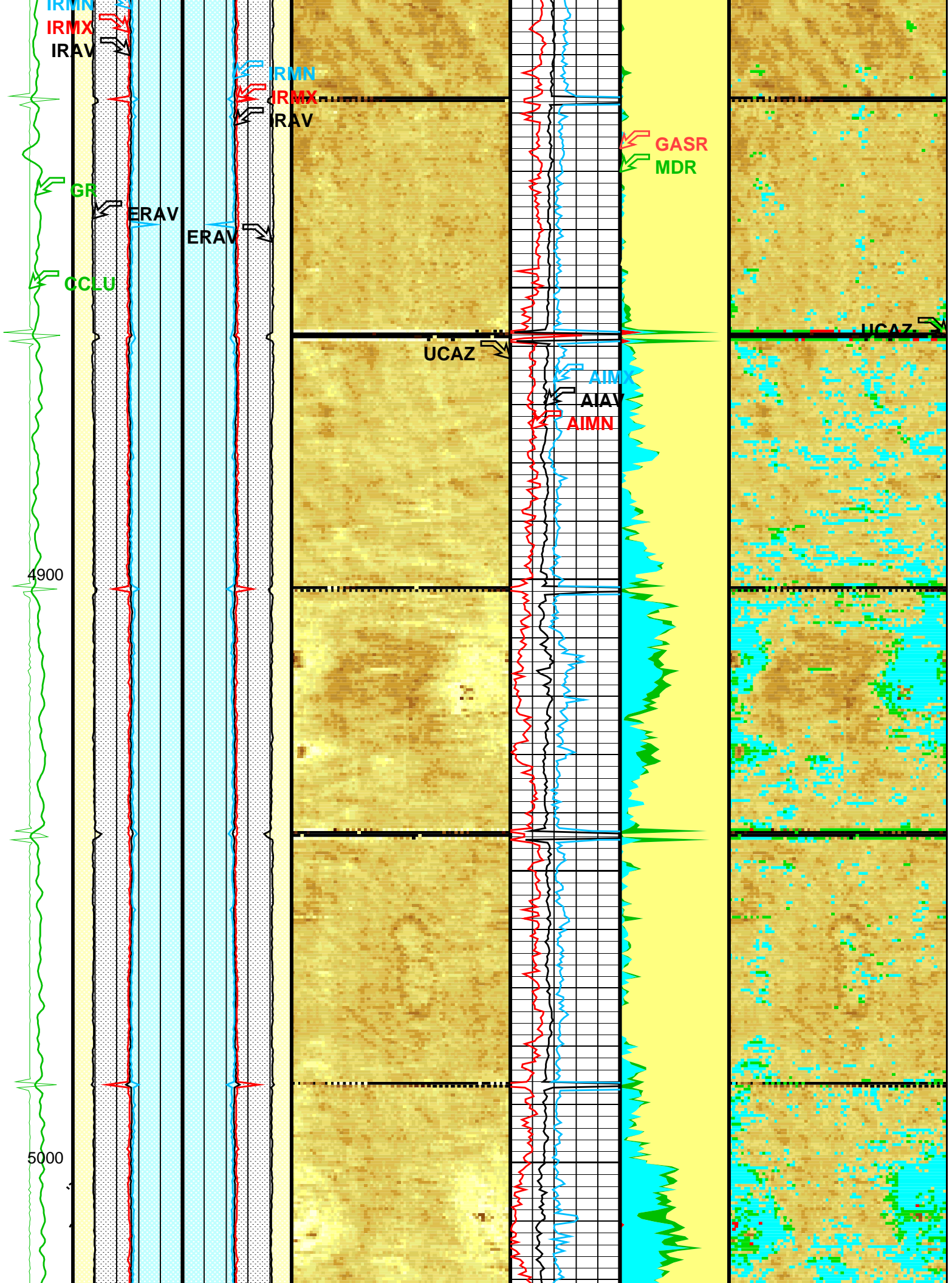


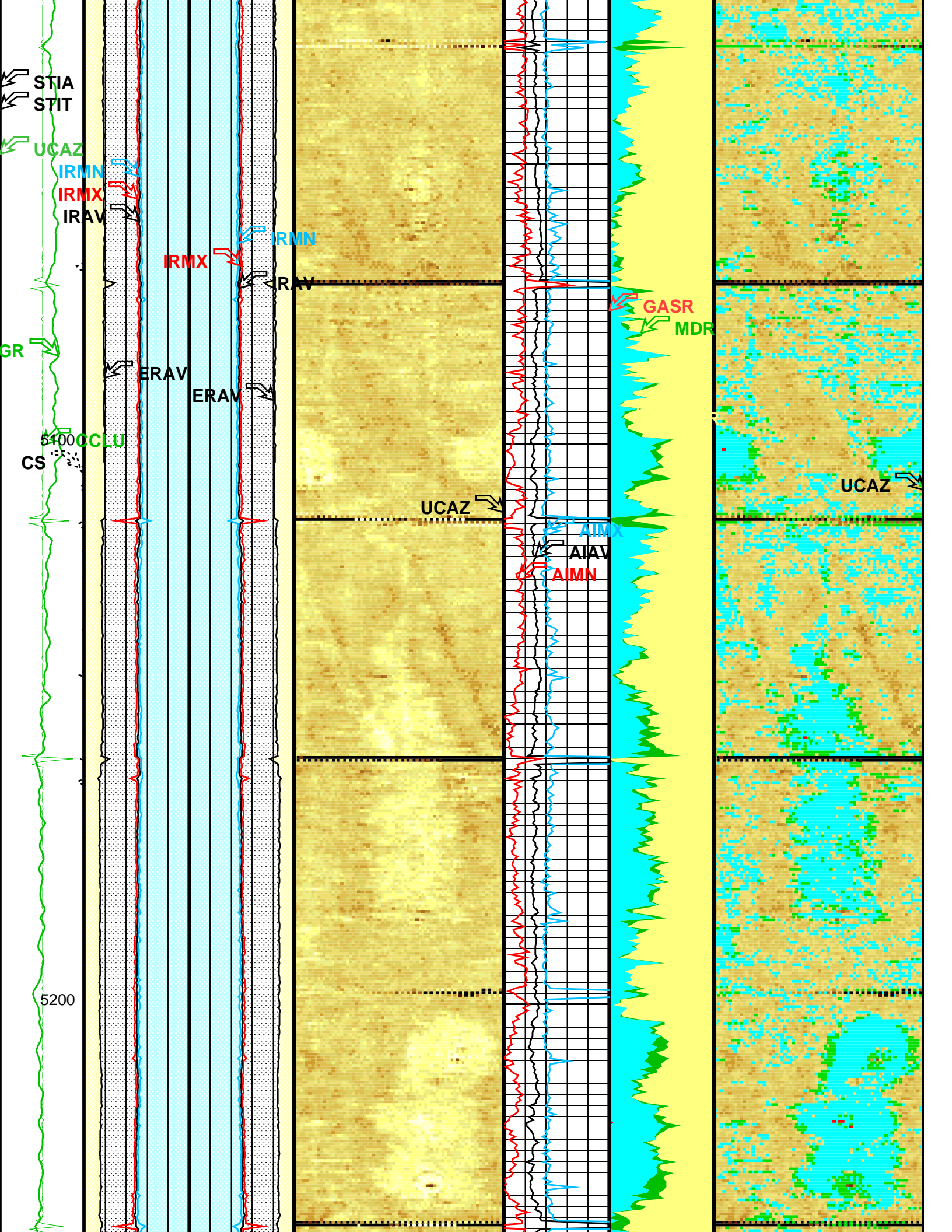


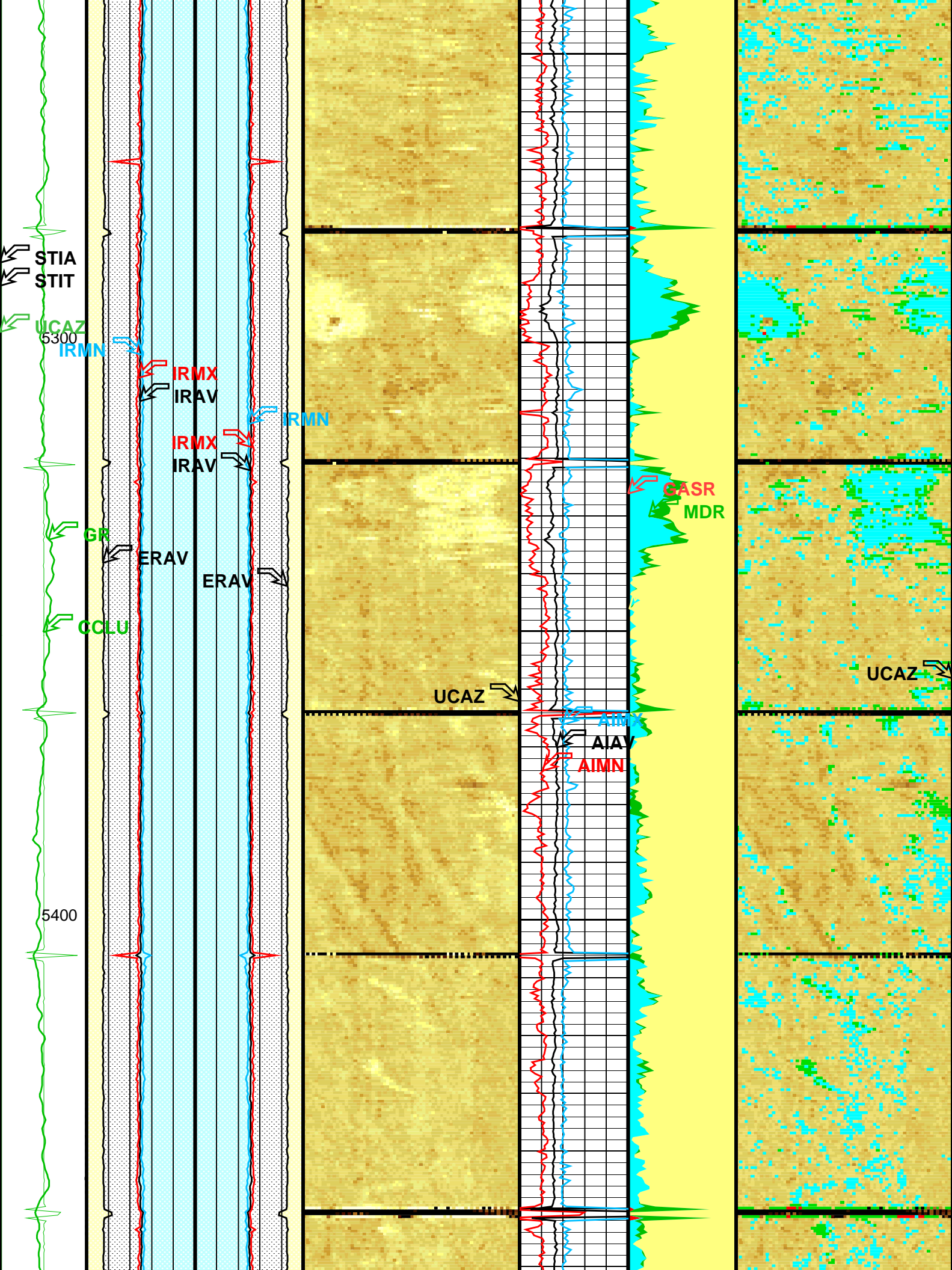


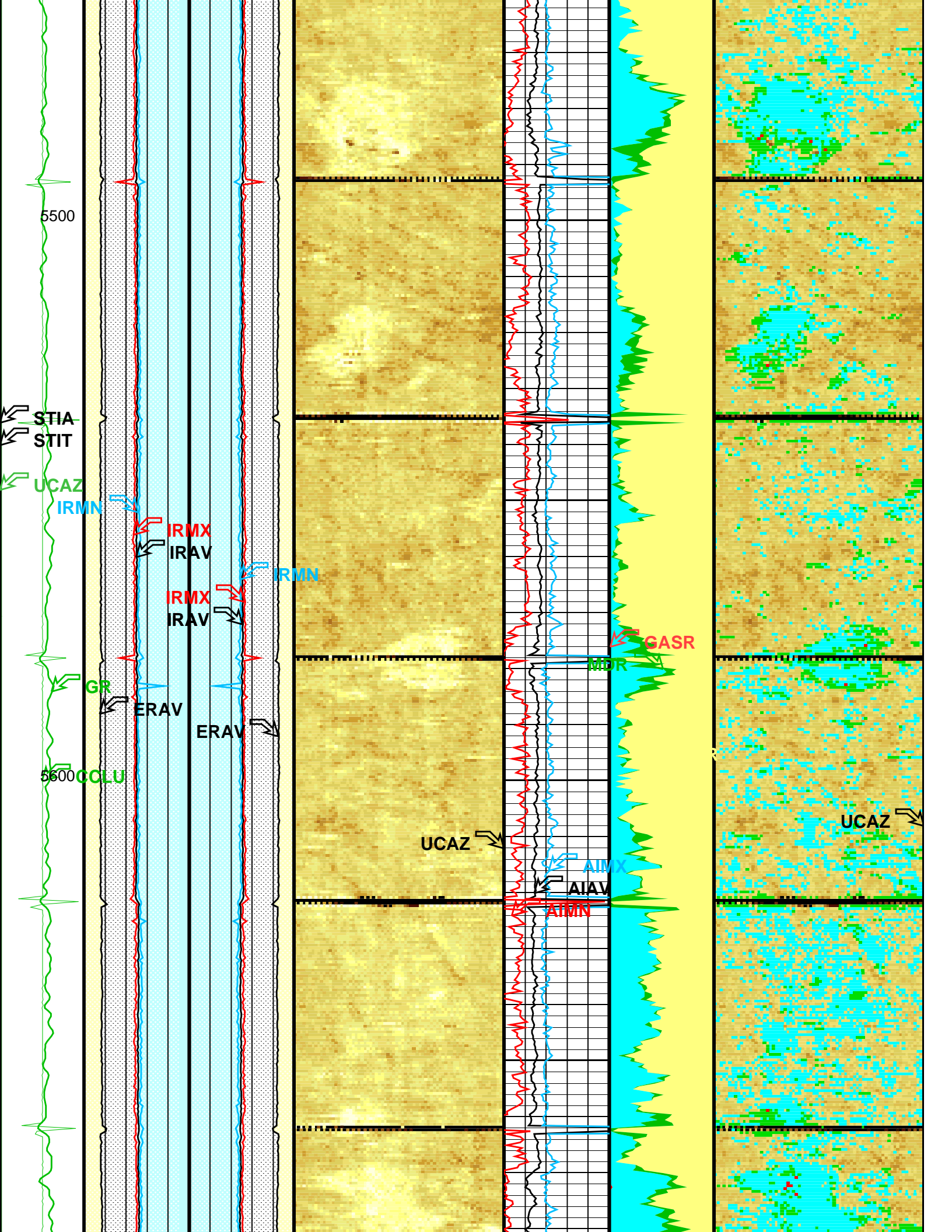


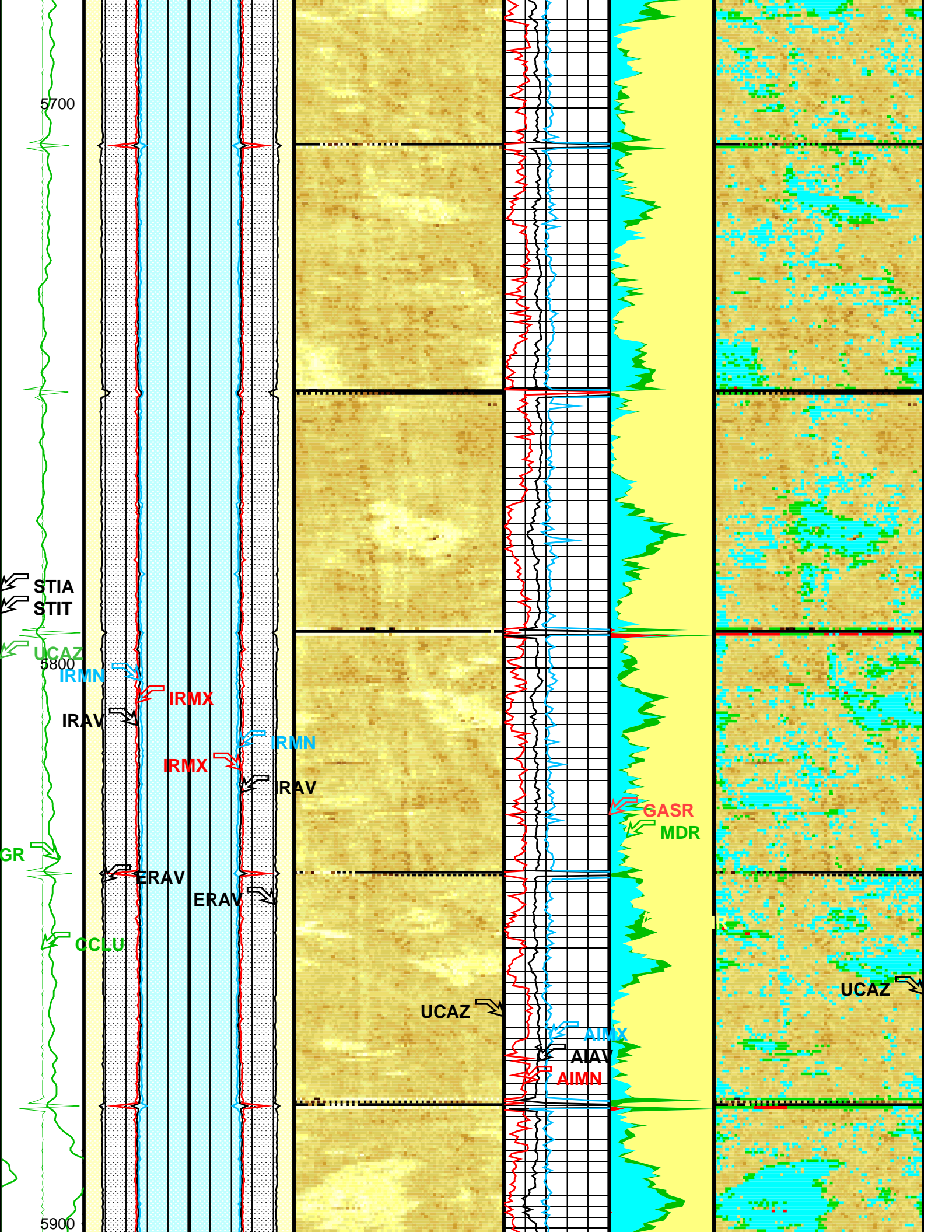


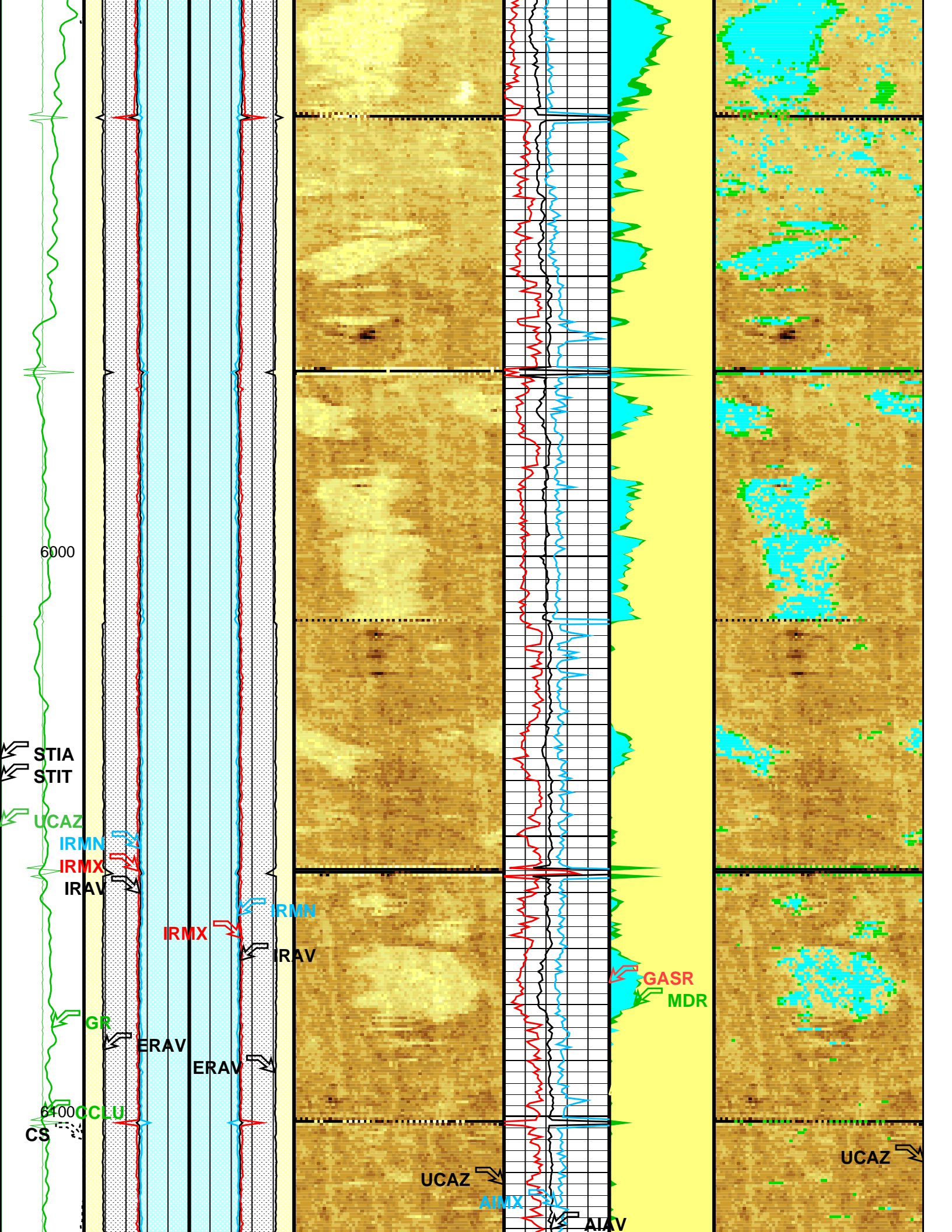


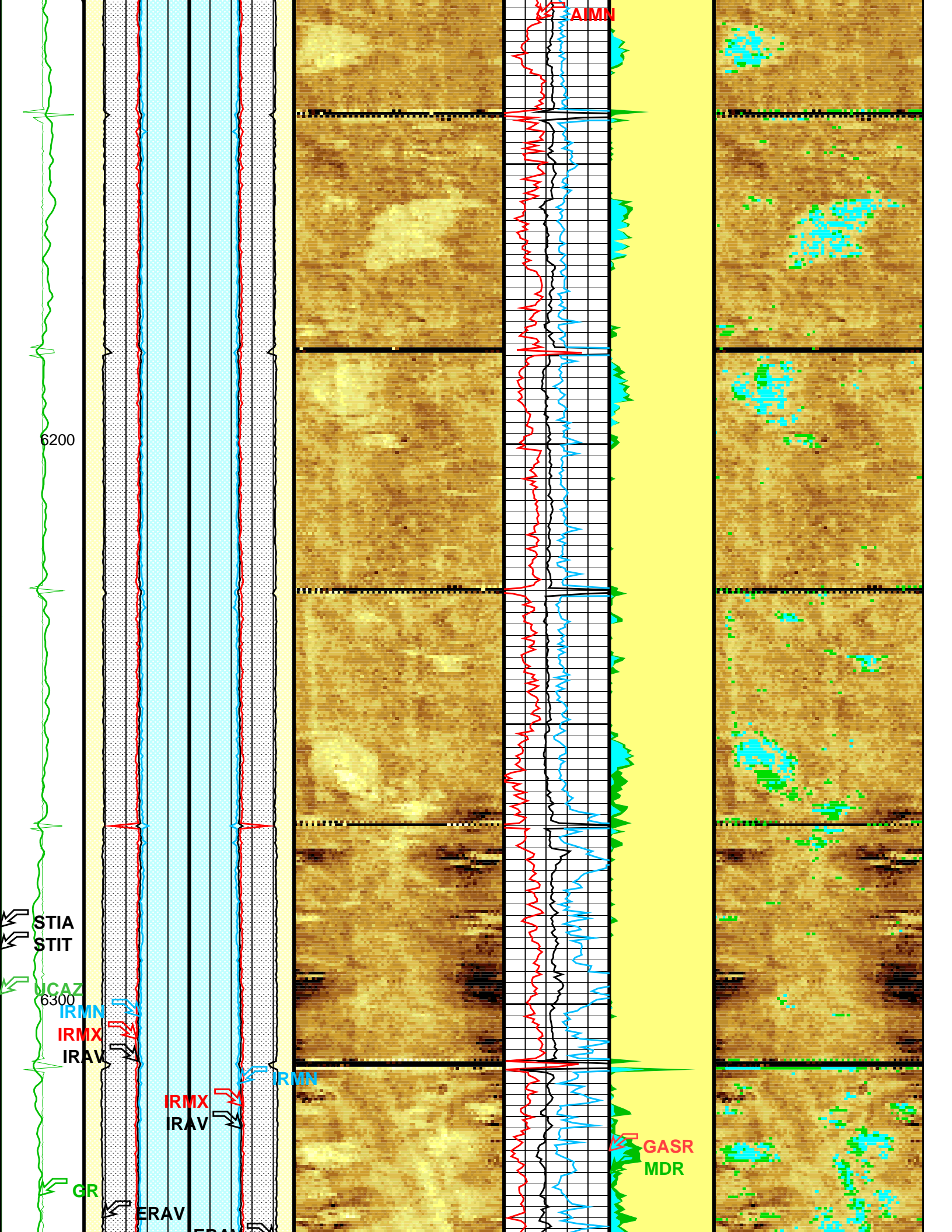


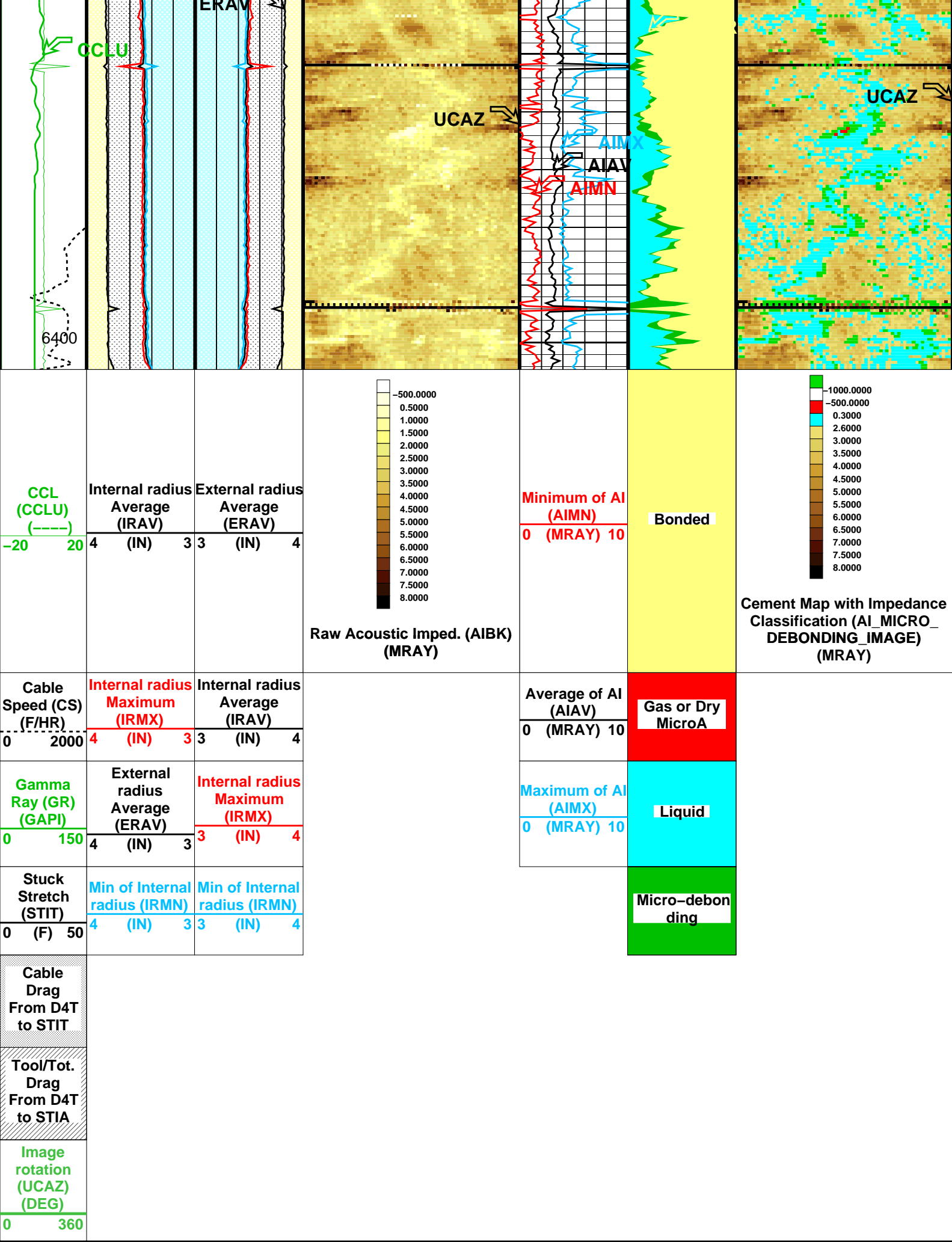












OP System Version: 18C0-147

USIT-D	18C0-147	HILTH-FTB	18C0-147
DTC-H	18C0-147		

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	7.625	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.969	IN
DFVL	Default Fluid Velocity	200	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	95	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI	
IMAR	Image Rotation	OFF	
MW	Mud Weight	10.1	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro–debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro–debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro–debonding	0.3	
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	0.328	IN
UMAO	USIT Measurement Angular Offset	–10	DEG
USTO	Ultrasonic Time Offset	–2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	19.6689	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	–1	MRAY
ZMUD	Acoustic Impedance of Mud	1.9	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
USPS: USIT Pipe Stats			
AGMN	Minimum Gain of Cartridge	–4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7.625	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.969	IN
DFVL	Default Fluid Velocity	200	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	95	V
IMAR	Image Rotation	OFF	
MW	Mud Weight	10.1	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THNO	Nominal Thickness of Casing	0.328	IN
UMAO	USIT Measurement Angular Offset	–10	DEG
USTO	Ultrasonic Time Offset	–2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F

VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T*3 Processing Length	19.6689	US
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ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.9	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	STI	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth – Driller	6514.00	FT
TDL	Total Depth – Logger	6406.00	FT
System and Miscellaneous			
CWEI	Casing Weight	26.40	LB/F
DO	Depth Offset for Playback	4.0	FT
PP	Playback Processing	RECOMPUTE	



MAXIS Field Log

Input DLIS Files						
DEFAULT	USI_TLD_MCFL_CNL_012LUP	FN:20	PRODUCER	26-Apr-2011 20:31	6400.5 FT	323.2 FT
Output DLIS Files						
DEFAULT	USI_TLD_MCFL_CNL_014PUP	FN:24	PRODUCER	26-Apr-2011 23:35	6404.5 FT	327.5 FT
RTB	USI_TLD_MCFL_CNL_014PUP	FN:25	PRODUCER	26-Apr-2011 23:44	6404.5 FT	327.5 FT

[illegible]

[illegible]

OP System Version: 18C0-147

USIT-D	18C0-147	HILTH-FTB	18C0-147
DTC-H	18C0-147		

COMPUTATION FLAGS LABELLING

(0 - 1.5)	UFLG 1	UTIM error
(1.5 - 2.5)	UFLG 2	Pulse origin not detected
(2.5 - 3.5)	UFLG 3	WINLEN error
<hr/>		
(3.5 - 6.5)	UFLG 4 UFLG 5 UFLG 6	CASING THICKNESS error
<hr/>		
(6.5 - 10)	UFLG 7 UFLG 8 UFLG 9	LOOP PROCESSING error

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	7.625 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.969 IN
DFVL	Default Fluid Velocity	200 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	95 V
MW	Mud Weight	10.1 LB/G
RCOD	Reference Calibrator Outer Diameter	7 IN
RCSO	Reference Calibrator Standoff	1.1811 IN
RCTH	Reference Calibrator Thickness	0.2952 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	0.328 IN
USTO	Ultrasonic Time Offset	-2 US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF
VCAS	Ultrasonic Transversal Velocity in Casing	51.4 US/F
WLEN	T^3 Processing Length	19.6689 US
ZCAS	Acoustic Impedance of Casing	46.25 MRAY
ZINI	Initial Estimate of Cement Impedance	-1 MRAY
ZMUD	Acoustic Impedance of Mud	1.9 MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6 MRAY
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USPS: USIT Pipe Stats		
AGMN	Minimum Gain of Cartridge	-4 DB
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DOT	Diameter of Transducer Sensor	2.874 IN
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RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
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THDH	Maximum Search Thickness (percentage of nominal)	130	
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THNO	Nominal Thickness of Casing	0.328	IN
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	19.6689	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
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ZMUD	Acoustic Impedance of Mud	1.9	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	STI	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	6514.00	FT
TDL	Total Depth - Logger	6406.00	FT
System and Miscellaneous			
CWEI	Casing Weight	26.40	LB/F
DO	Depth Offset for Playback	4.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_012LUP	FN:20	PRODUCER	26-Apr-2011 20:31	6400.5 FT	323.2 FT
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Output DLIS Files

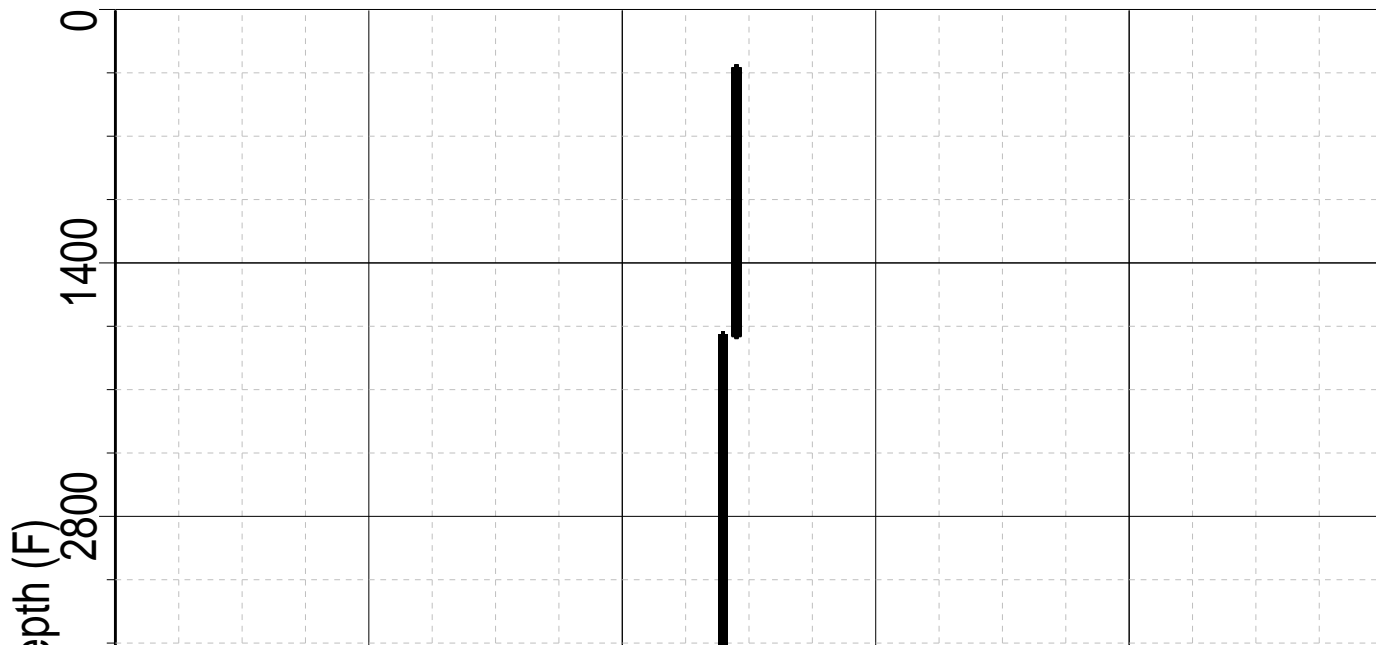
DEFAULT	USI_TLD_MCFL_CNL_014PUP	FN:24	PRODUCER	26-Apr-2011 23:35		
RTB	USI_TLD_MCFL_CNL_014PUP	FN:25	PRODUCER	26-Apr-2011 23:44		

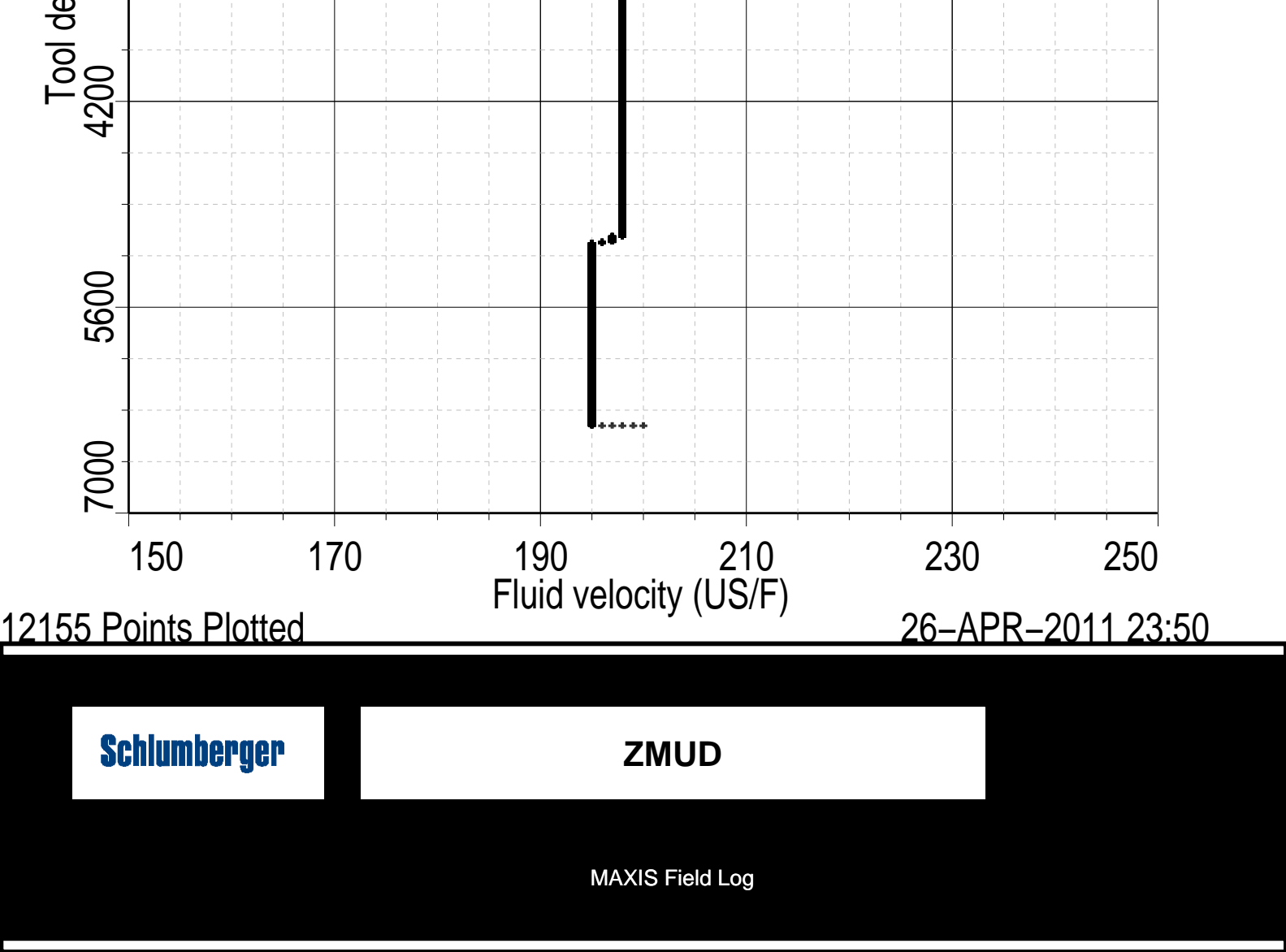
Schlumberger

FVEL

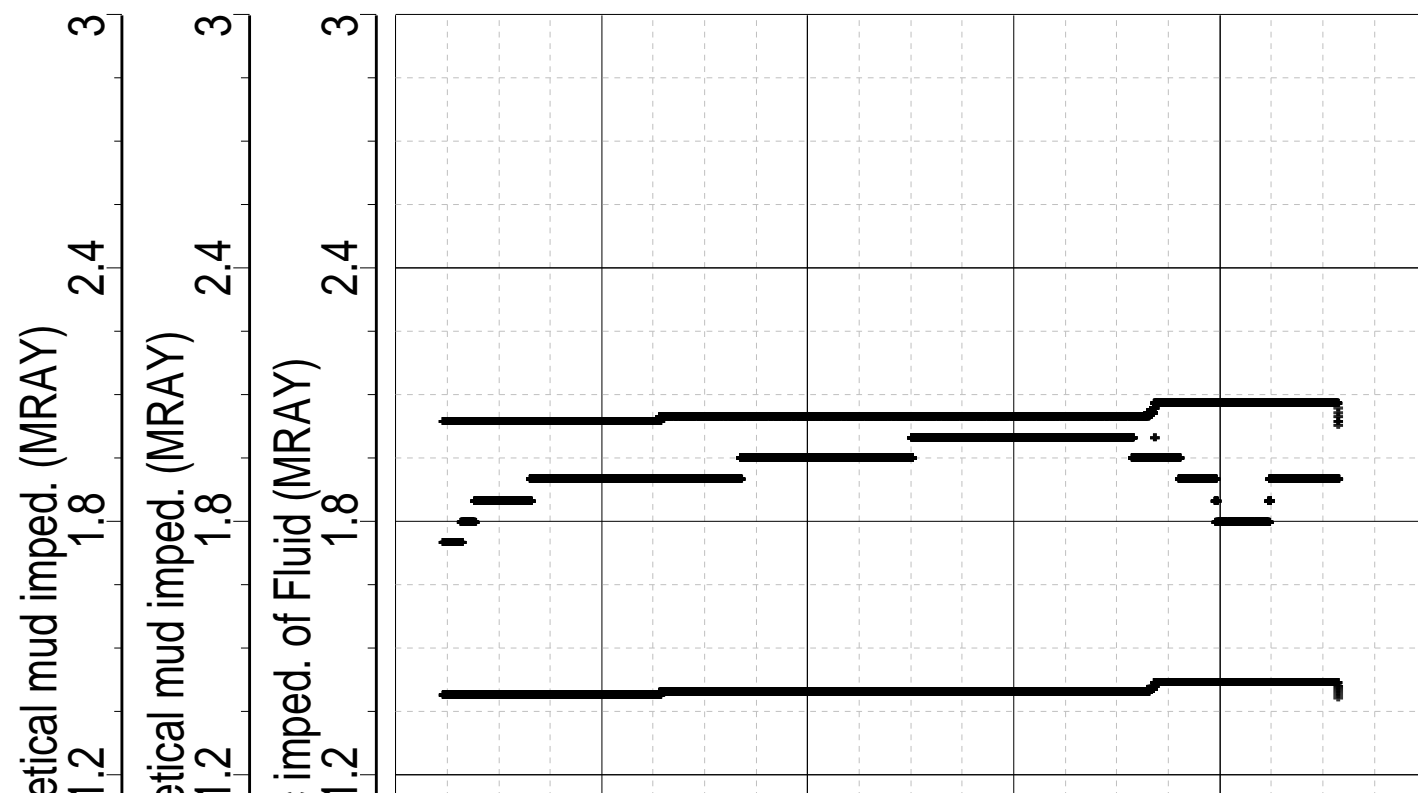
MAXIS Field Log

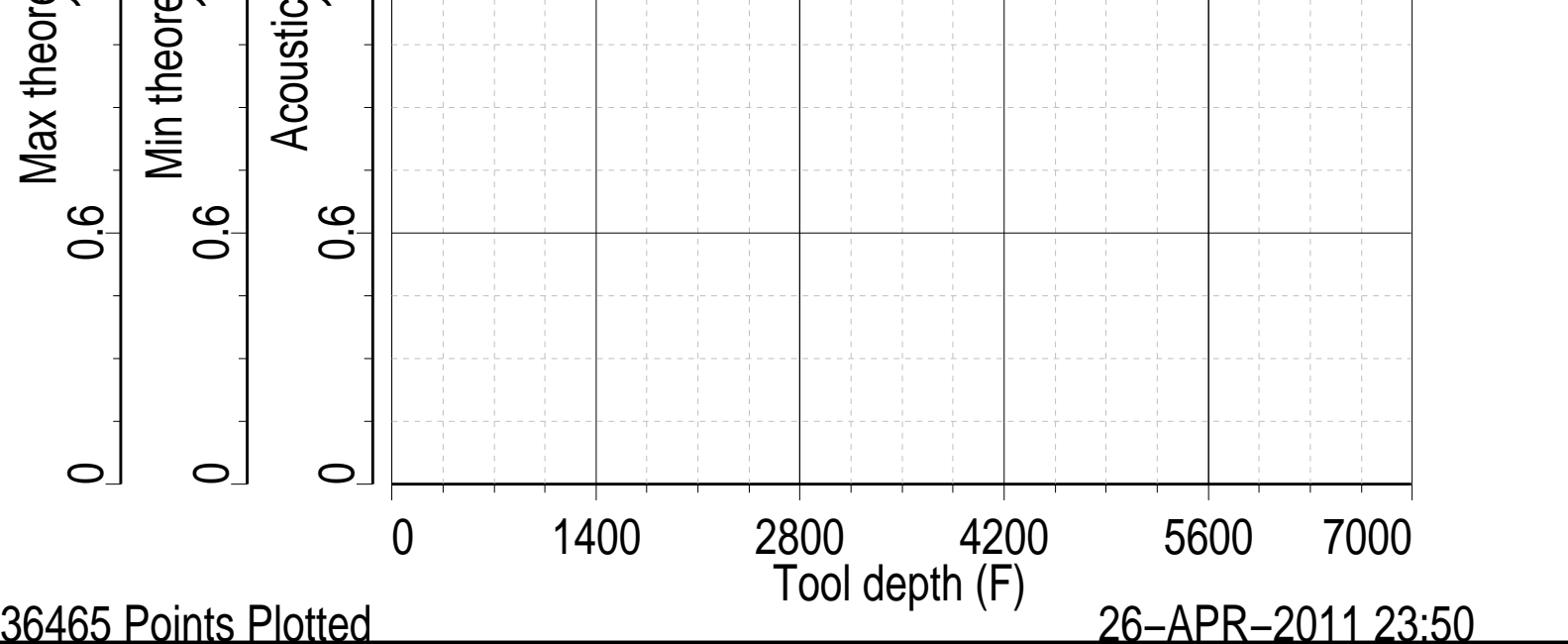
Index: 6404.5 – 327.5 FT





Index: 6404.5 – 327.5 FT





Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary




Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Detector Calibration							
Before: 11-Apr-2011 1:44							
Gamma Ray Background	30.00	N/A	45.04	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	165.2	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Zero Measurement							
Master: 18-Apr-2011 16:10 Before: 11-Apr-2011 1:45							
CNTC Background	27.87	27.87	26.89	N/A	N/A	4.181	CPS
CFTC Background	26.66	26.66	32.29	N/A	N/A	3.999	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Ratio Measurement							
Master: 18-Apr-2011 16:10							
Thermal Near Corr. (Tank)	5800	5192	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2151	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.414	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration							
Before: 26-Apr-2011 19:12							
Z-Axis Acceleration	32.19	N/A	32.13	N/A	N/A	N/A	F/S2

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

NCT-B Water Temperature 55.9 DEGF.
 Thermal Housing Size 3.378 IN.
 NSR-F serial number 0

HGNS – H	3985
HGR –	
HCNT – H	
HACC – H	4269
NLS – KL	
NSR – F	
CNB – AB	
HMCA – H	

NCT – B	
GSR – U/Y	
HGNH –	3785

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				5192	Master				2151	Master				2.414
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)			1900 (Minimum)	2400 (Nominal)	2900 (Maximum)			2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)	
Master: 18–Apr–2011 16:10														

Primary Equipment:

DTC-H Auxiliary Cartridge
DTC-H Telemetry Cartridge

DTCH – A
DTCH – A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH – KC 9667

Company: **ENCANA OIL & GAS (USA) INC.**

Schlumberger

Well: **STEWART 36-13H (PL36SW)**
Field: **PLATEAU**
County: **MESA**
State: **COLORADO**

IMAGE BEHIND CASING
CEMENT EVALUATION
GAMMA RAY – CCL