

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 31-2C (PF31)

Field: PARACHUTE

County: GARFIELD

State: COLORADO

*** ISOLATION SCANNER *** CASING INSPECTION LOG

County: GARFIELD
 Field: PARACHUTE
 Location: SHL: 2347' FNL & 1434' FWL
 Well: FEDERAL 31-2C (PF31)
 Company: ENCANA OIL & GAS (USA) INC

LOCATION		SHL: 2347' FNL & 1434' FWL	Elev.: K.B. 5855.00 ft
		BHL: 869' FNL & 2298' FEL	G.L. 5833.00 ft
			D.F. 5854.00 ft
Permanent Datum:	GROUND LEVEL	Elev.: 5833.00 ft	
Log Measured From:	KELLY BUSHING	22.00 ft	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		
API Serial No.	Section	Township	Range
05-045-20516-000C	31	7S	95W

Oil Density	Run 1	Run 2	Run 3
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation	44 deg		
CEMENTING DATA			
Primary/Squeeze	Primary		
Casing String No			
Lead Cement Type	LIGHT CRETE		
Volume			
Density	10.5 lbm/gal		
Water Loss			
Additives			
Tail Cement Type			
Volume			
Density			
Water Loss			
Additives			
Expected Cement Top	3705 ft		

Logging Date	17-Dec-2013
Run Number	1
Depth Driller	6869.6 ft
Schlumberger Depth	6850 ft
Bottom Log Interval	6850 ft
Top Log Interval	0 ft
Casing Fluid Type	PRODUCTION WATER
Salinity	
Density	8.4 lbm/gal
Fluid Level	130 ft
BIT/CASING/TUBING STRING	
Bit Size	8.750 in
From	6869.6 ft
To	0 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	S-80
From	6869.6 ft
To	0 ft
Maximum Recorded Temperatures	195 degF
Logger On Bottom	17-Dec-2013
Unit Number	2379
Recorded By	SARAH MALOUIN
Witnessed By	JOHN ANSBRO

Logging Date	17-Dec-2013
Run Number	1
Depth Driller	6869.6 ft
Schlumberger Depth	6850 ft
Bottom Log Interval	6850 ft
Top Log Interval	0 ft
Casing Fluid Type	PRODUCTION WATER
Salinity	
Density	8.4 lbm/gal
Fluid Level	130 ft
BIT/CASING/TUBING STRING	
Bit Size	8.750 in
From	6869.6 ft
To	0 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	S-80
From	6869.6 ft
To	0 ft
Maximum Recorded Temperatures	195 degF
Logger On Bottom	17-Dec-2013
Unit Number	2379
Recorded By	SARAH MALOUIN
Witnessed By	JOHN ANSBRO

DEPTH SUMMARY LISTING

Date Created: 17-DEC-2013 20:57:03

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B	Type: CMTD-B/A	Type: 7-46A-XS
Serial Number: 4994	Serial Number: 2300	Serial Number: 711172
Calibration Date: 16-SEP-2013	Calibration Date: 16-DEC-201	Length: 17800 FT
Calibrator Serial Number:	Calibrator Serial Number: 83310	Conveyance Method: Wireline Rig Type: LAND
Calibration Cable Type: 7-46A-XS	Number of Calibration Points: 10	
Wheel Correction 1: -5	Calibration RMS: 40	
Wheel Correction 2: -2	Calibration Peak Error: 60	

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	168.20 FT
Rig Up Length At Bottom:	165.81 FT
Rig Up Length Correction:	2.39 FT
Stretch Correction:	3.60 FT
Tool Zero Check At Surface:	0.60 FT

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES FOLLOWED.
2. IDW USED AS PRIMARY DEPTH CONTROL.
3. Z CHART USED AS SECONDARY DEPTH CONTROL.
4. ALL LOGS CORRELATED TO DOWN LOG OVER BOTTOM 300 FT.
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	OTHER SERVICES2
OS1: RST	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
WELL CEMENTED NOV 3, 2013.	
NO EXTERNAL WELLHEAD PRESSURE APPLIED AT SURFACE.	
WELL FLUID DENSITY 8.4 LB/GAL.	
CEMENT USED WAS LIGHT CRETE, 10.5 LB/GAL.	
MAX TEMPERATURE TAKEN FROM SURROUNDING WELLS.	
LOGGED AT 10DEG, 6IN.	
LOGS SPLICED TO HAVE CONTINUOUS DLIS FILE.	

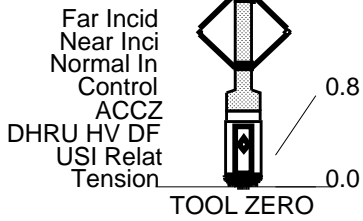
DSP ERROS CAUSED MOMENTARY FLAT LINES ON LOGS. THEY WERE REPEATED					
MULTIPLE TIMES IN SAME SPOT.					
BOOSTER KIT AND INLINE CENTRALIZERS USED TO CENTRALIZE TOOLS.					

RUN 1			RUN 2		
SERVICE ORDER #:		CNZI-00015	SERVICE ORDER #:		
PROGRAM VERSION:		19C1-222	PROGRAM VERSION:		
FLUID LEVEL:		130 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
SURFACE EQUIPMENT	
WITM (EDTS)-A	

DOWNHOLE EQUIPMENT			
LEH-QT LEH-QT 2608		42.9	
EDTC-B EDTH-B 8187 EDTC-B 8188 EDTG-A/B 77098	MDSB_EDTC Mud Tempe 	40.0	40.0
	CTEM Gamma Ray EFTB DIAG TelStatus EDTCB Ele	36.5 34.7 33.5	
GPIT-F GPIH-B 2997 GPIC-F 1879		33.5	
AH-INLINE AH-INLINE 8190		29.5	
AH-107 AH-107 4709		25.7	
USIT-D ECH-MRA 5931 USIC-D 1846 AH-107 3918 USIS-A 1832 USSC-B 972 IBCS_A-100158201 866 Top Transducer 3615 Middle Top Transducer 3616		23.7	



MAXIMUM STRING DIAMETER 3.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET



USI IBC SLG COMPOSITE MAIN PASS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 31-20

Input DLIS Files

DEFAULT	Splice_USI_IS_036CUP	FN:1	PRODUCER	17-Dec-2013 20:02	6864.5 FT	112.1 FT
---------	----------------------	------	----------	-------------------	-----------	----------

Output DLIS Files

DEFAULT	USI_IS_002PUP	FN:1	PRODUCER	18-Dec-2013 15:12	6864.5 FT	112.5 FT
---------	---------------	------	----------	-------------------	-----------	----------

OP System Version: 19C1-222

eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

Image rotation (UCAZ) (DEG)	0	360
Tension (TENS) (LBF)	5000	0

CCL

Min of Internal	Min of Internal
-----------------	-----------------

(CCLU) (-----)	-20	20
RSAV (RSAV) (RPS)	6	7.5
CCL (CCLU) (-----)	-20	20

radius (IRMN) (IN)	2.4	1.4	1.4	2.4
Internal radius Maximum (IRMX) (IN)	2.4	1.4	1.4	2.4
Internal radius Average (IRAV) (IN)	2.4	1.4	1.4	2.4

Maximum of Thickness (THMX) (IN)	0.1	0.6
Average of Thickness (THAV) (IN)	0.1	0.6

Eccent. (ECCE)	0	0.5
-------------------	---	-----

Process. flags (UFLG) (-----)	0.5000	1.5000	2.5000	3.5000	6.5000
--	--------	--------	--------	--------	--------

Amplitude of echo minus Max (AWBK) (DB)	-500.0000	-6.0000	-5.6000	-5.2000	-4.8000	-4.4000	-4.0000	-3.6000	-3.2000	-2.8000	-2.4000	-2.0000	-1.6000	-1.2000	-0.8000	-0.4000	0.5000
---	-----------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	--------

External radius Average (ERAV) (IN)	2.4	1.4	1.4	2.4
--	-----	-----	-----	-----

External radius Average (ERAV) (IN)	2.4	1.4	1.4	2.4
--	-----	-----	-----	-----

Internal radii minus Ave (IRBK) (IN)	-500.0000	-0.0760	-0.0680	-0.0600	-0.0520	-0.0440	-0.0360	-0.0280	-0.0200	-0.0120	-0.0040	0.0040	0.0120	0.0200	0.0280	0.0360	0.0440	0.0520	0.0600	0.0680	0.0760
---	-----------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

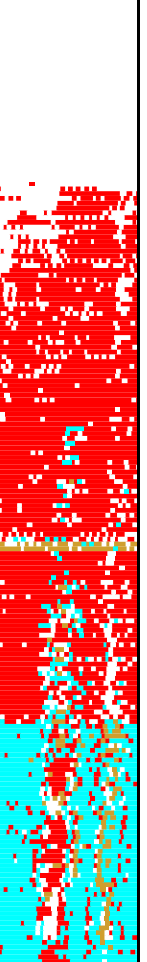
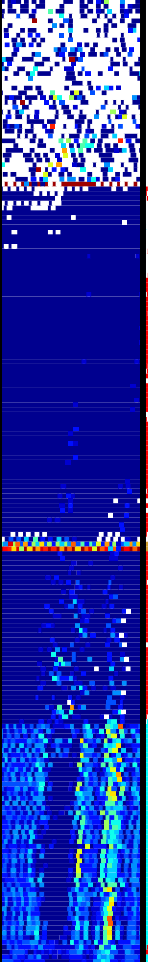
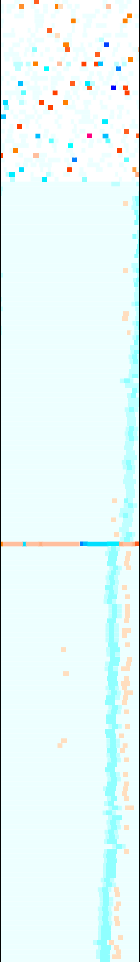
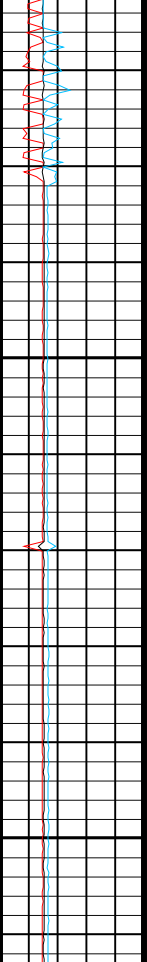
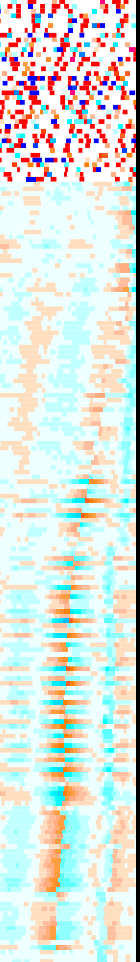
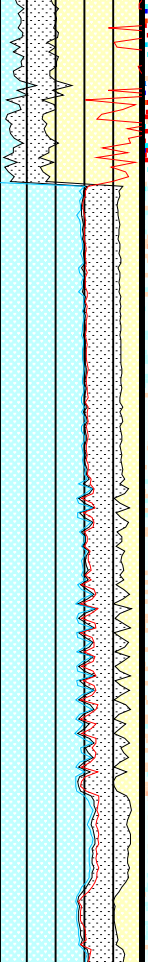
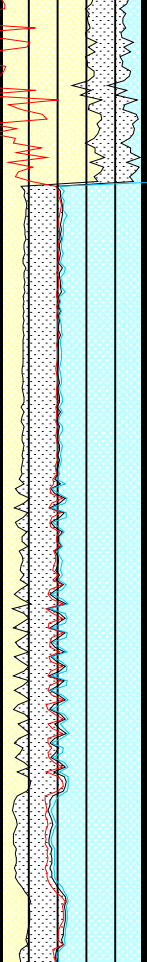
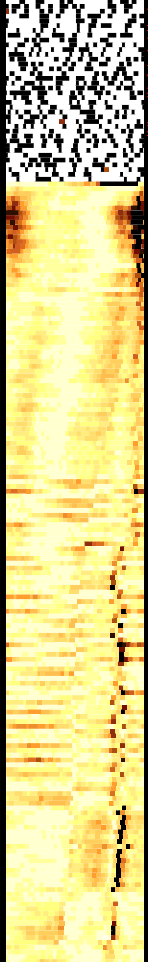
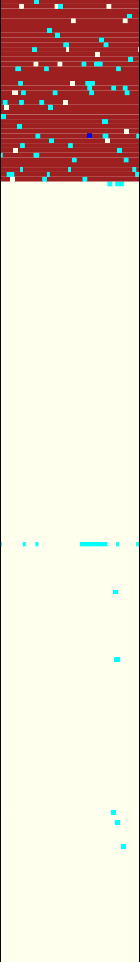
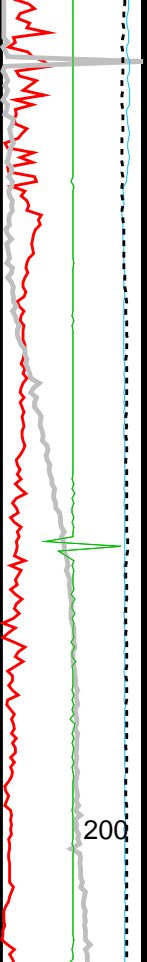
Min of Thickness (THMN) (IN)	0.1	0.6
---------------------------------------	-----	-----

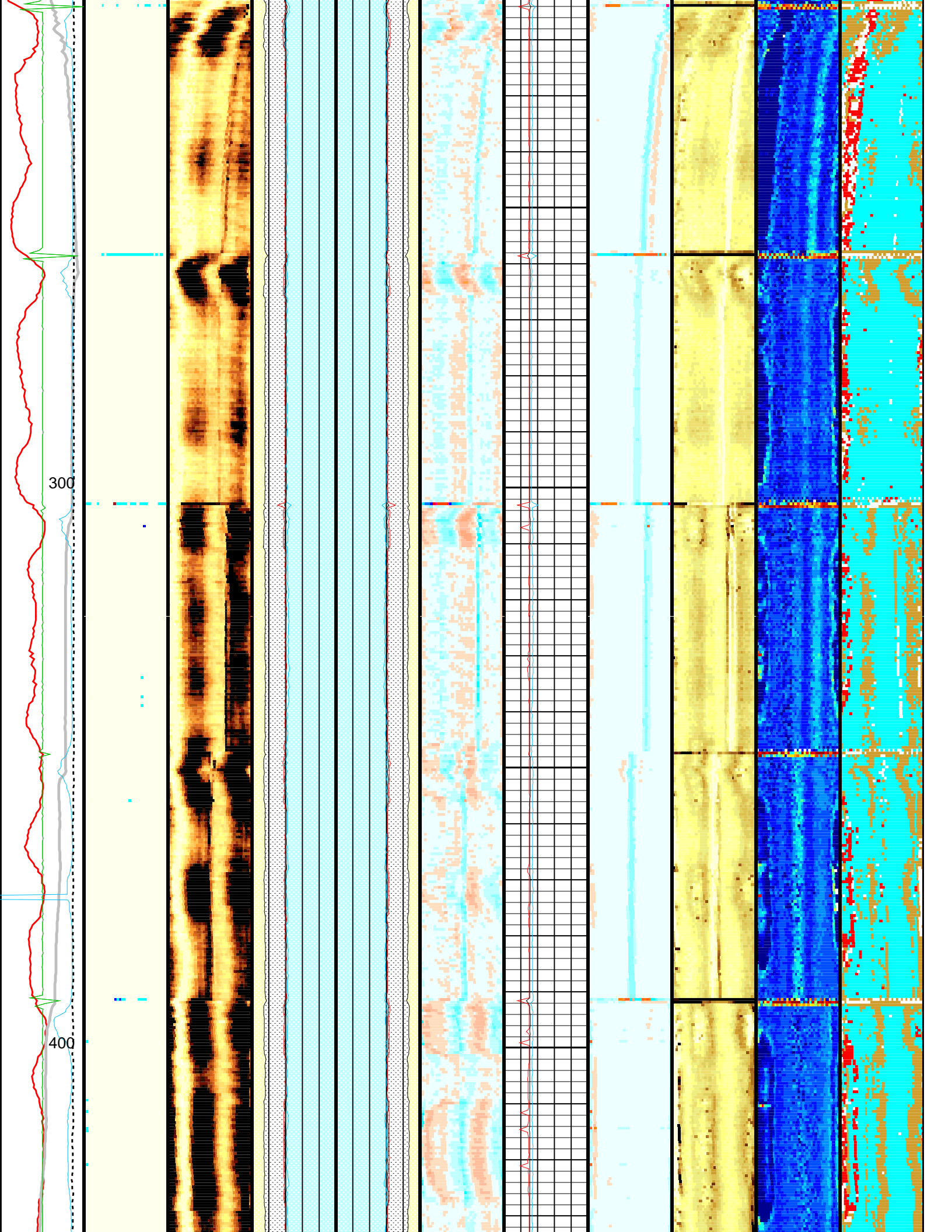
Thickness minus Ave (THBK) (IN)	-500.0000	-0.0760	-0.0680	-0.0600	-0.0520	-0.0440	-0.0360	-0.0280	-0.0200	-0.0120	-0.0040	0.0040	0.0120	0.0200	0.0280	0.0360	0.0440	0.0520	0.0600	0.0680	0.0760
--	-----------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

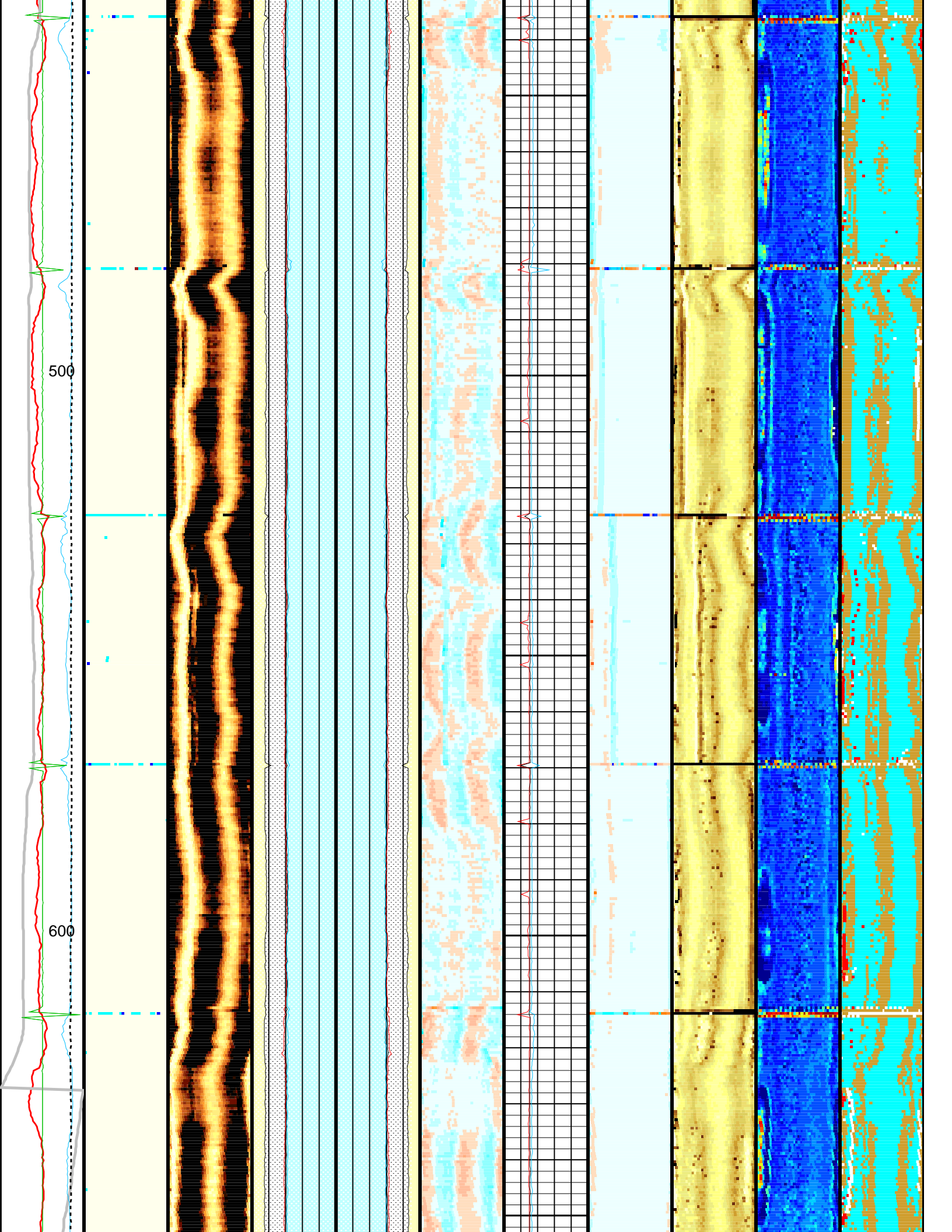
Raw Acoustic Imped. (AIBK) (MRAY)	-500.0000	0.5000	1.0000	1.5000	2.0000	2.5000	3.0000	3.5000	4.0000	4.5000	5.0000	5.5000	6.0000	6.5000	7.0000	7.5000	8.0000
---	-----------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

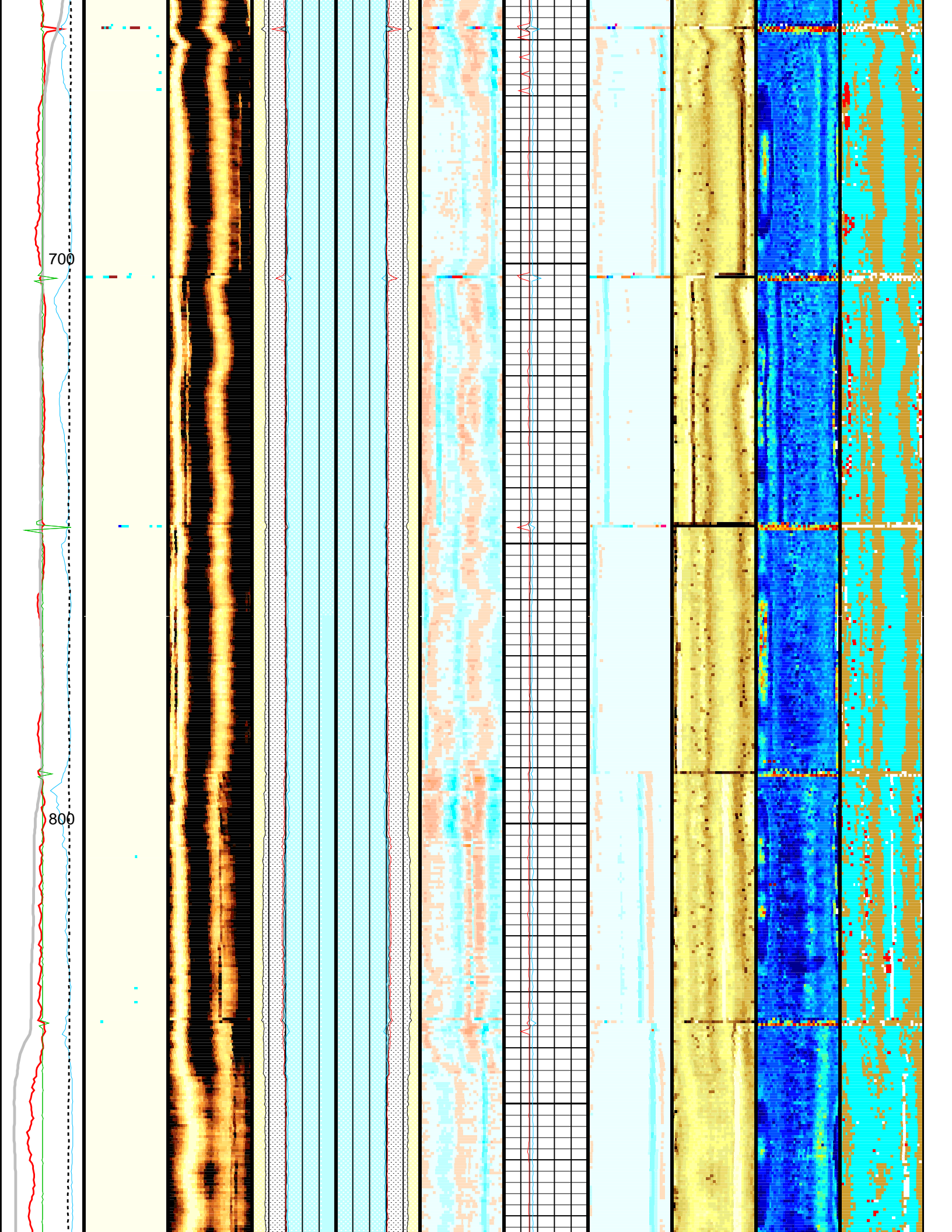
Flexural Attenuation (U-USIT_ UFAK) (DB/M)	0.0000	60.0000	68.0000	76.0000	84.0000	92.0000	100.0000	108.0000	116.0000	124.0000	132.0000	140.0000	148.0000	156.0000	164.0000	172.0000	180.0000
--	--------	---------	---------	---------	---------	---------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

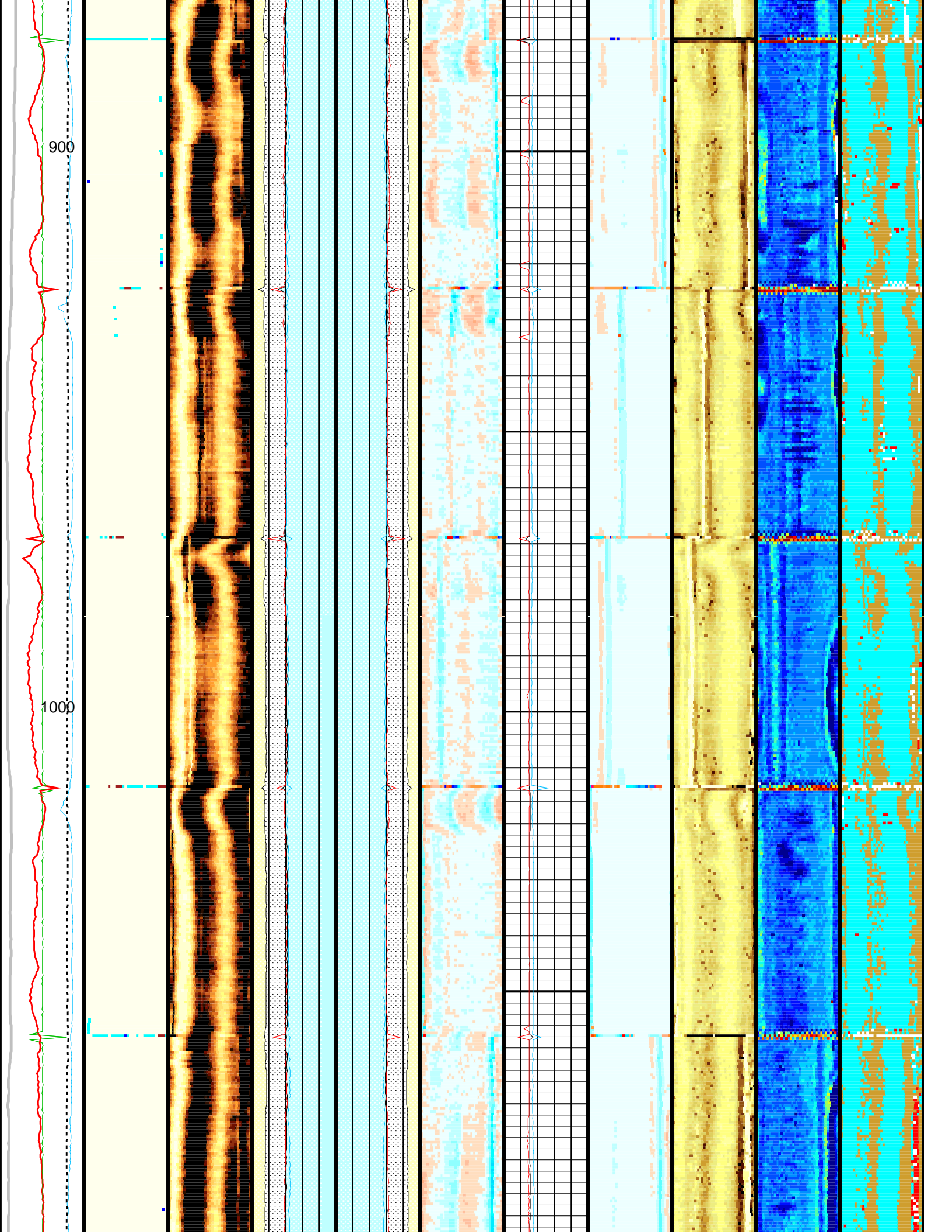
Solid Liquid Gas Map (U-USIT_ USLP) (-----)	0.5000	1.5000	2.5000	3.5000
---	--------	--------	--------	--------

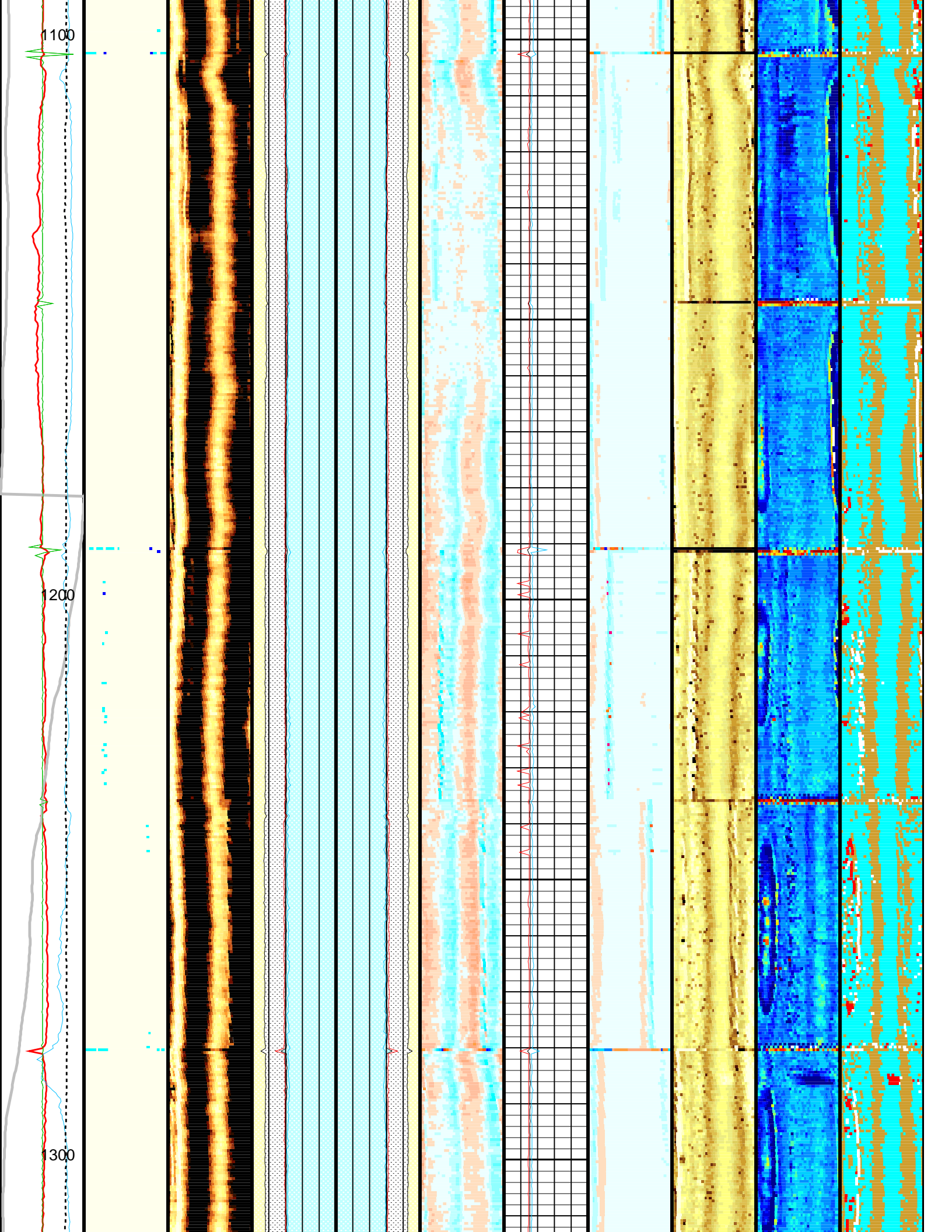


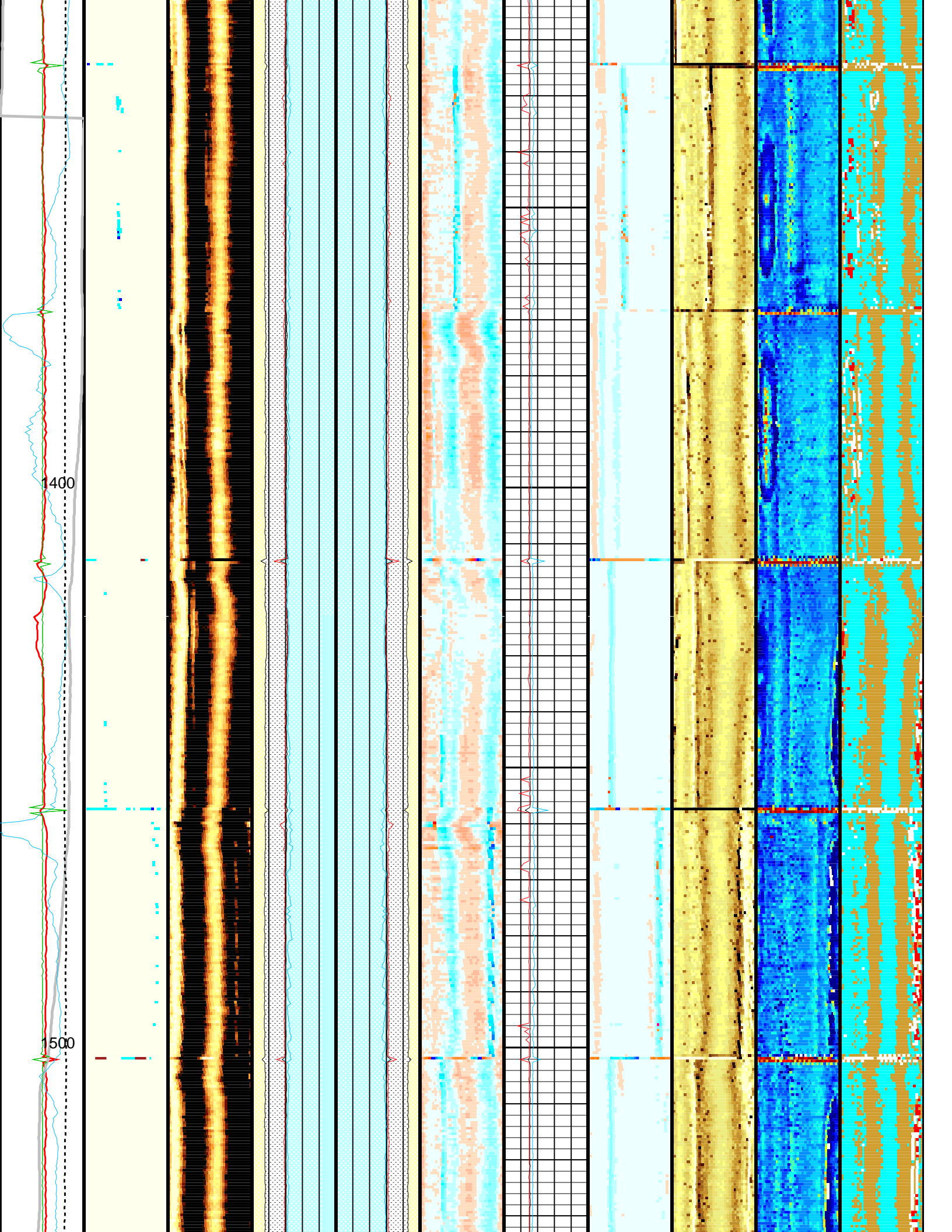


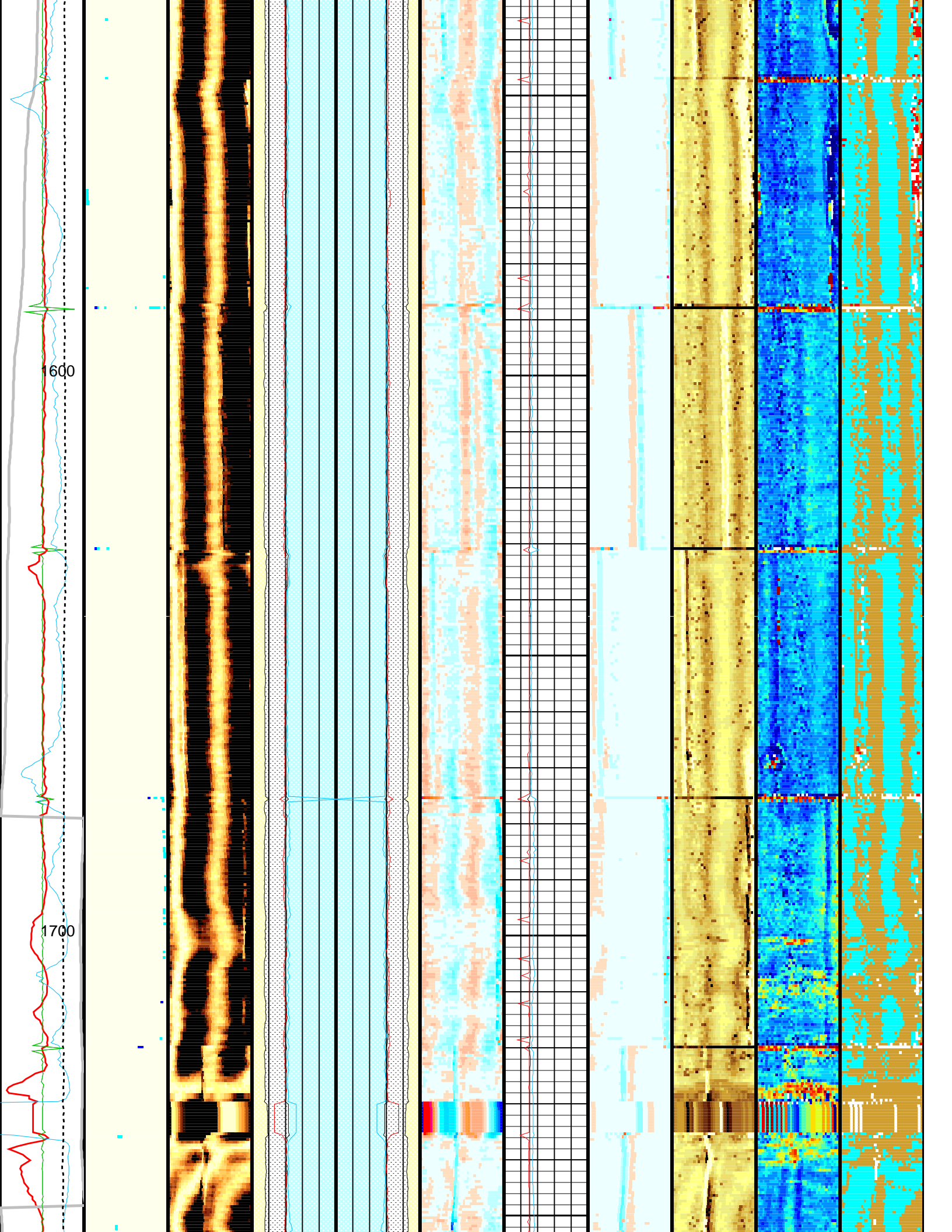


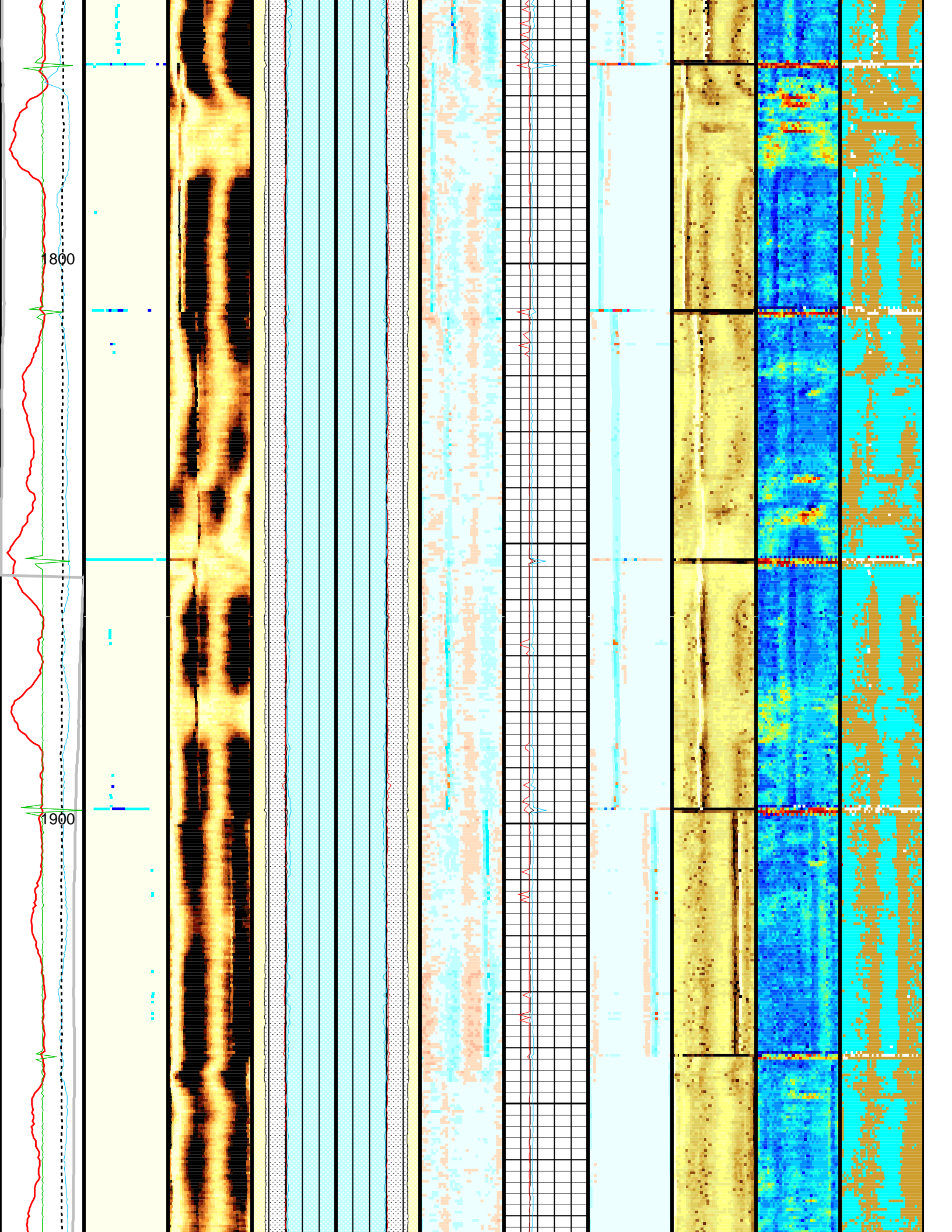


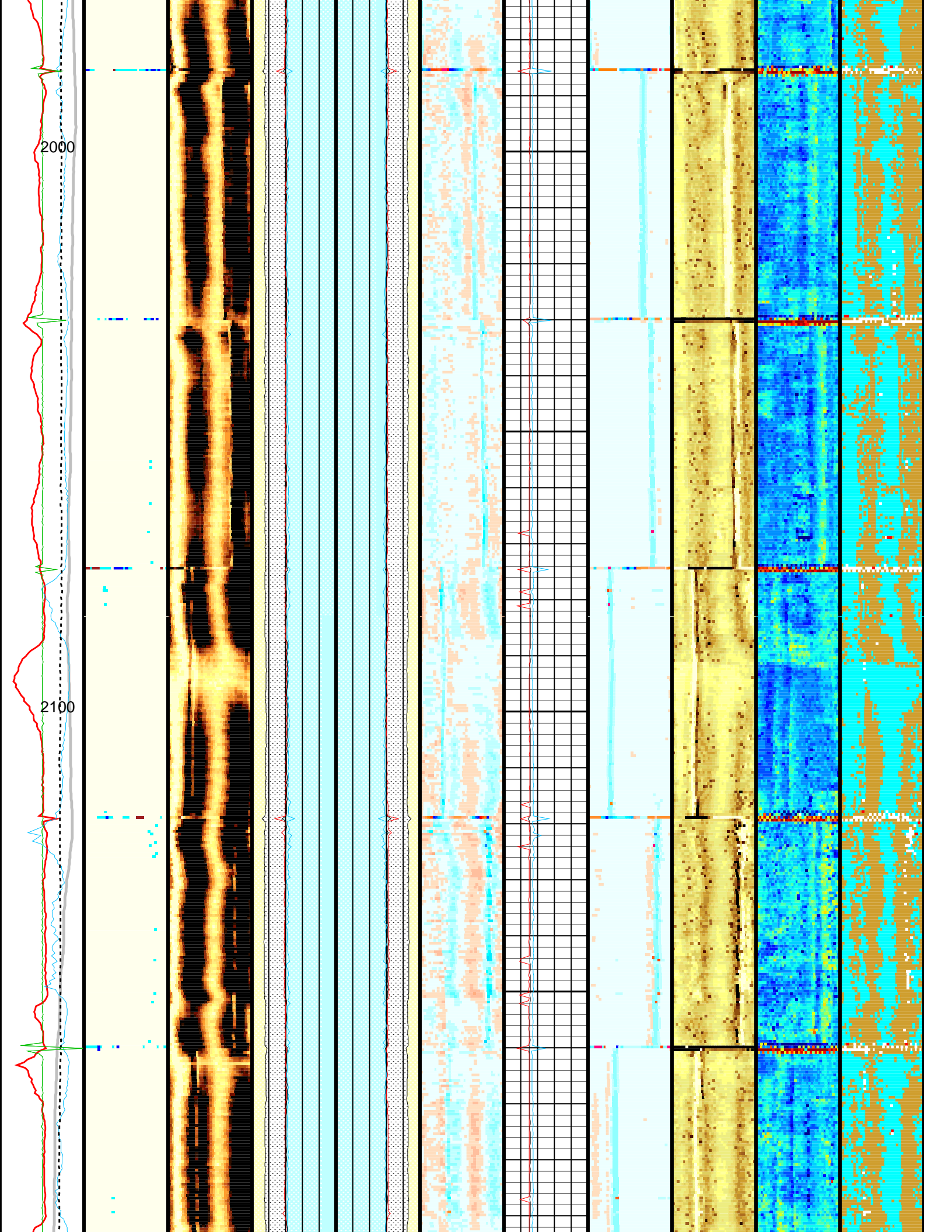


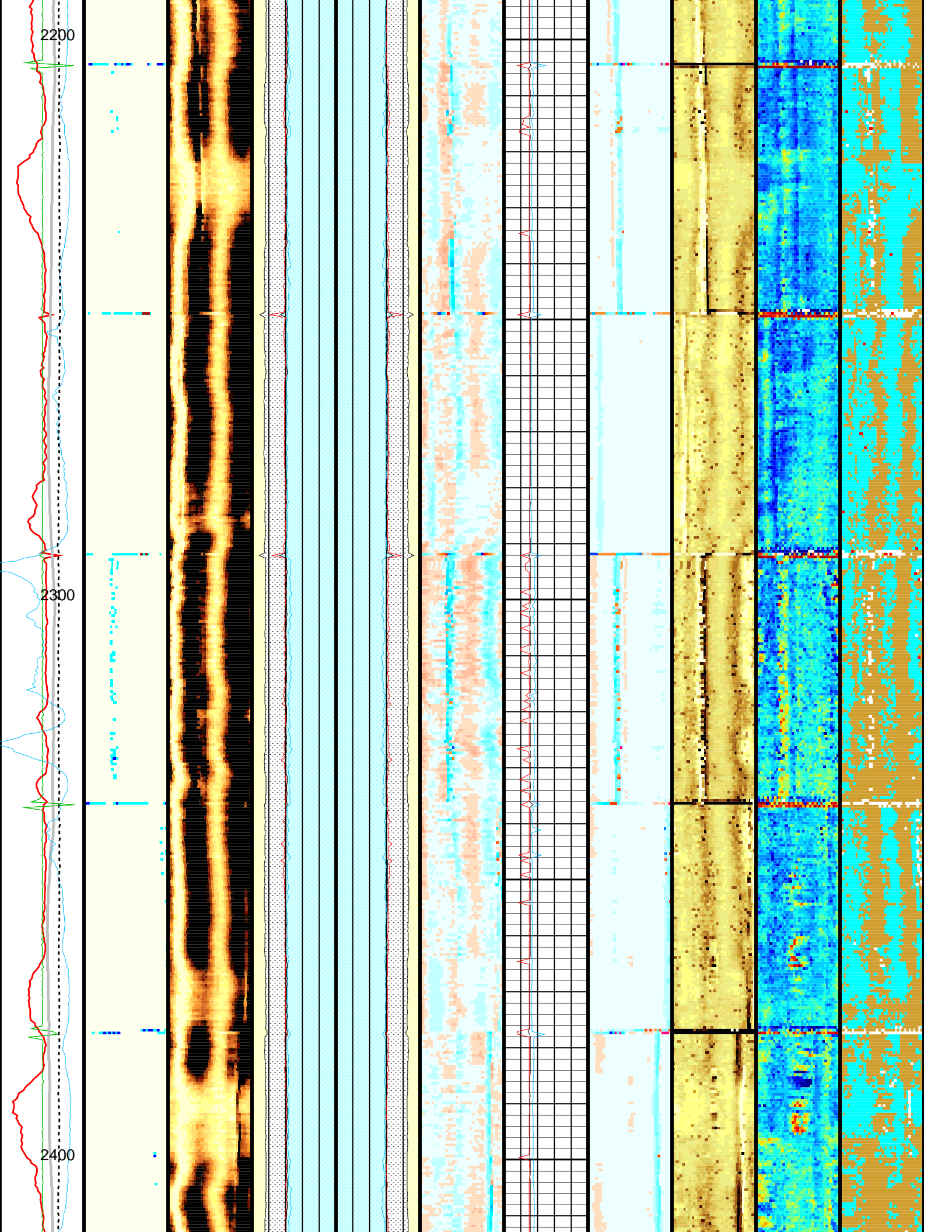


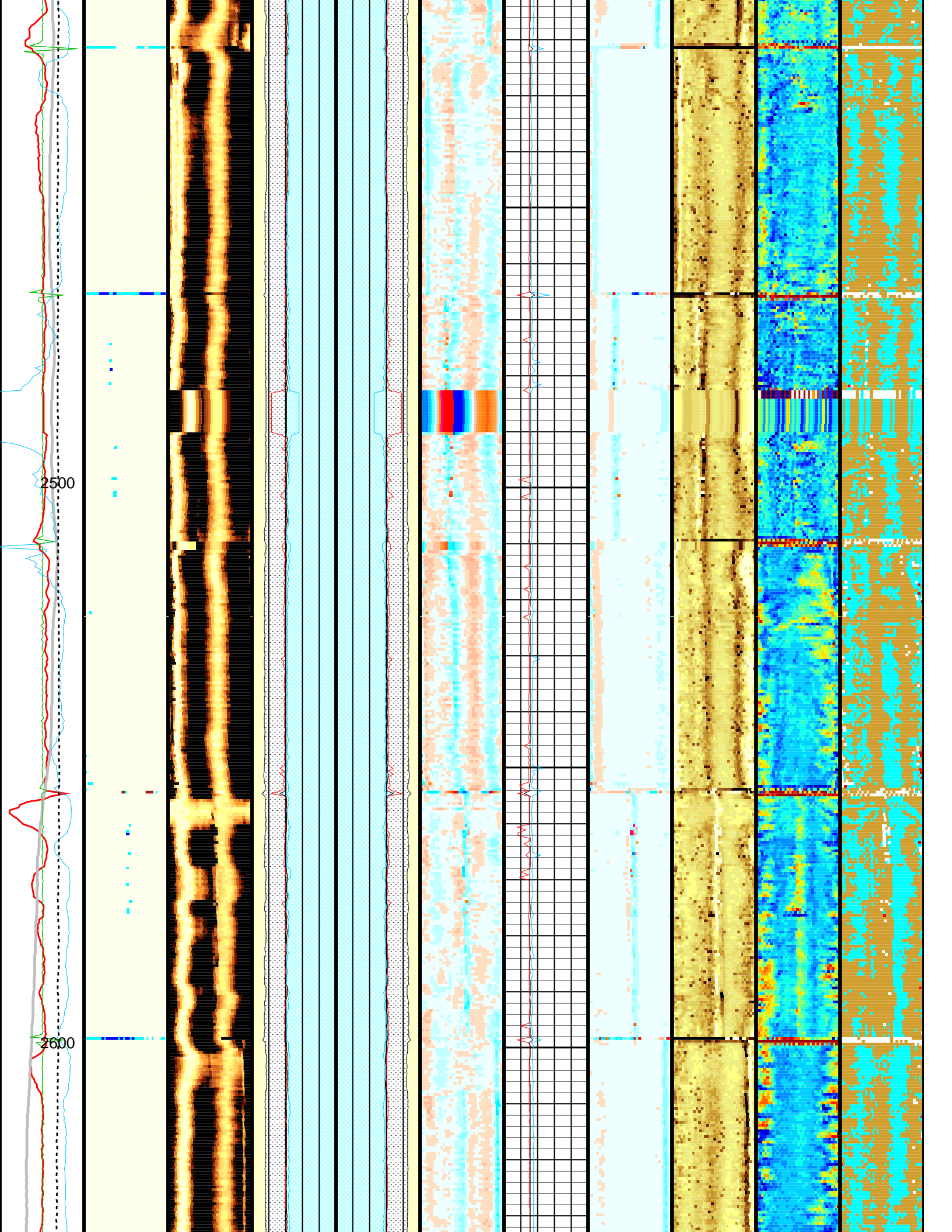


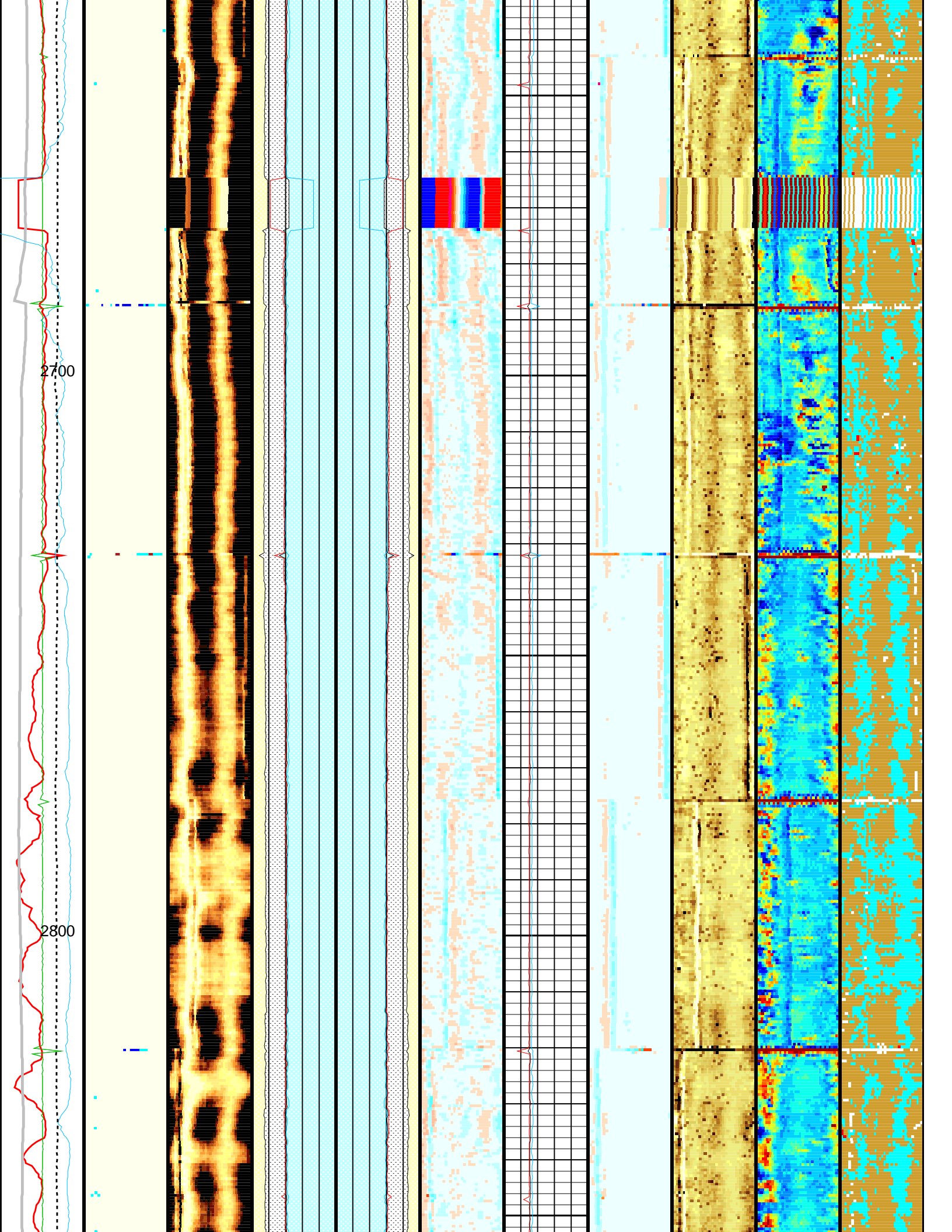


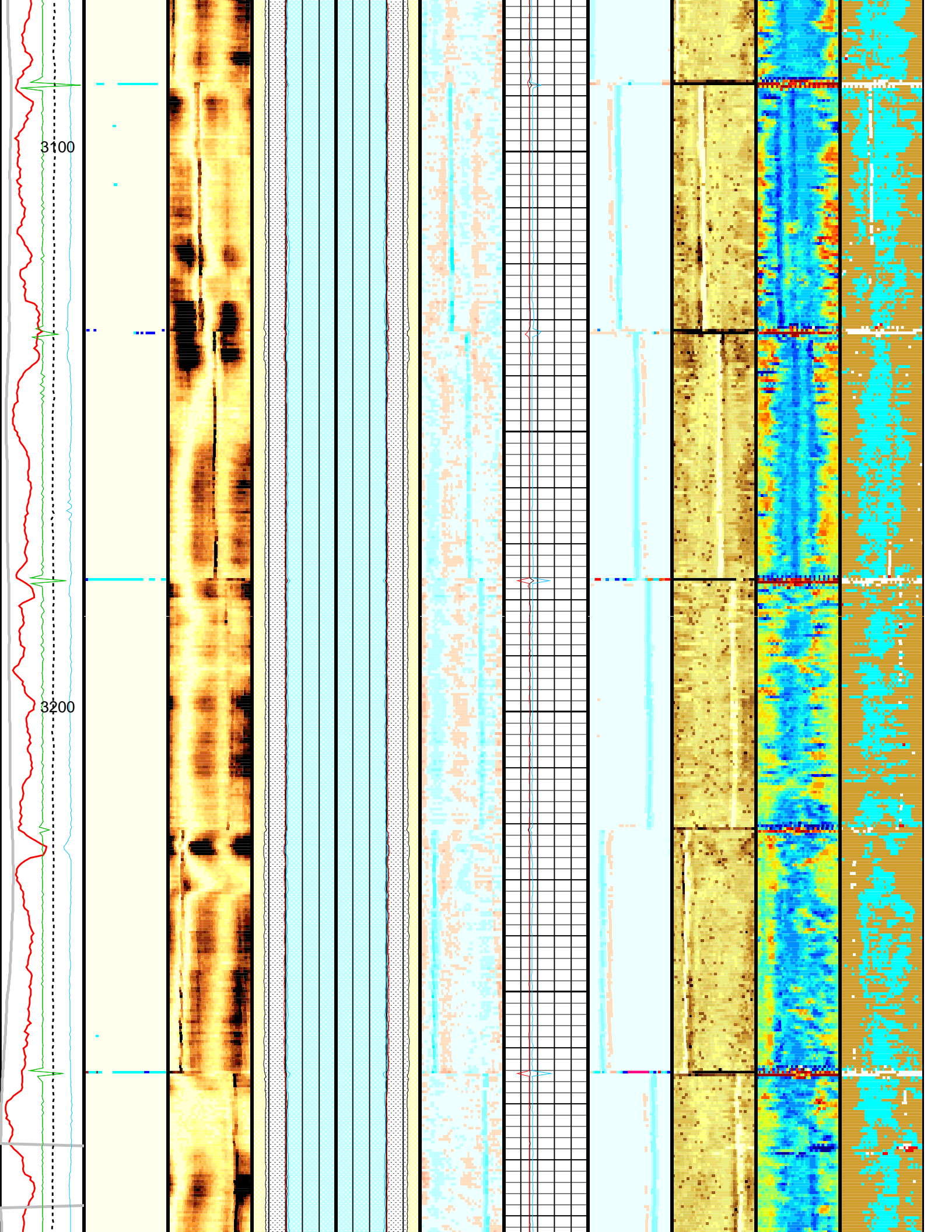


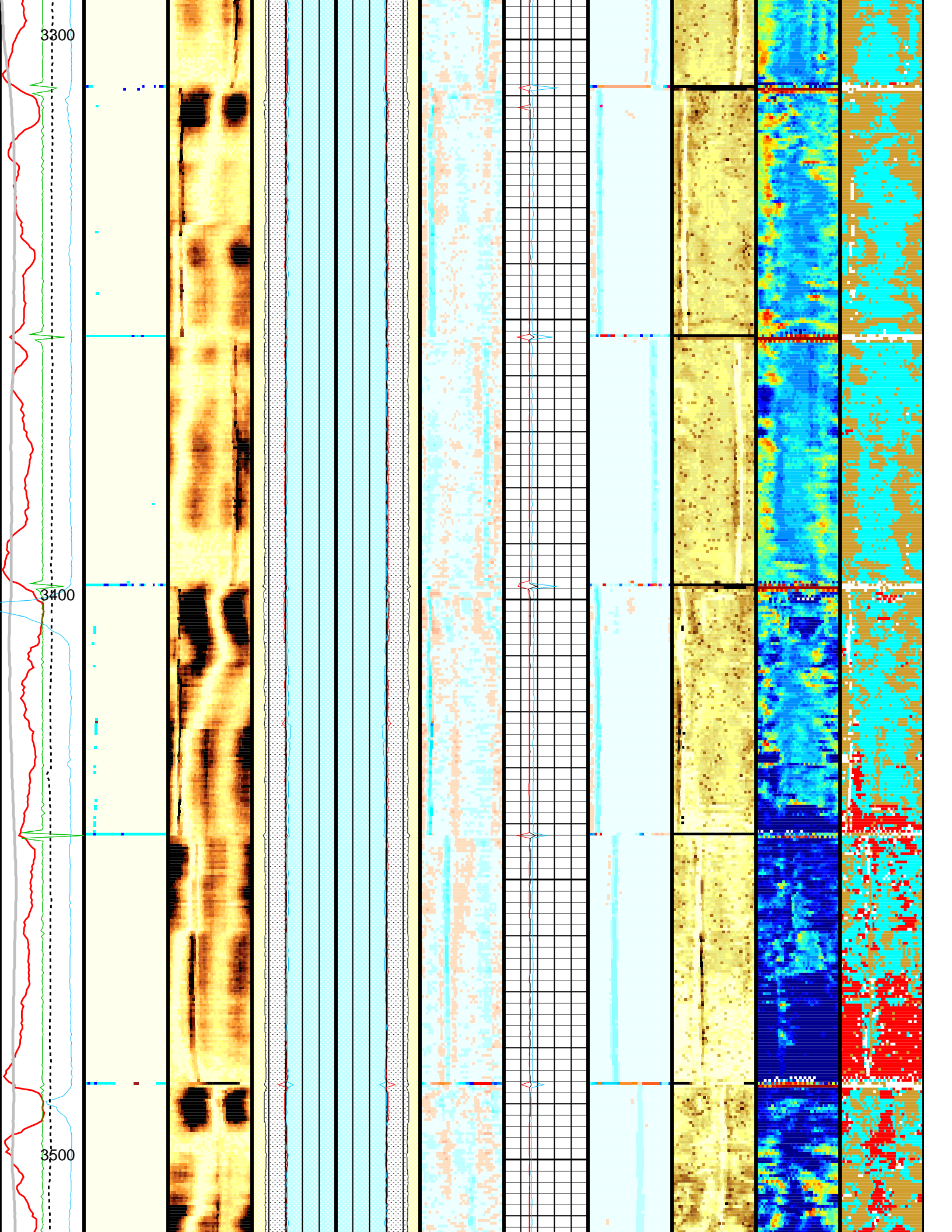


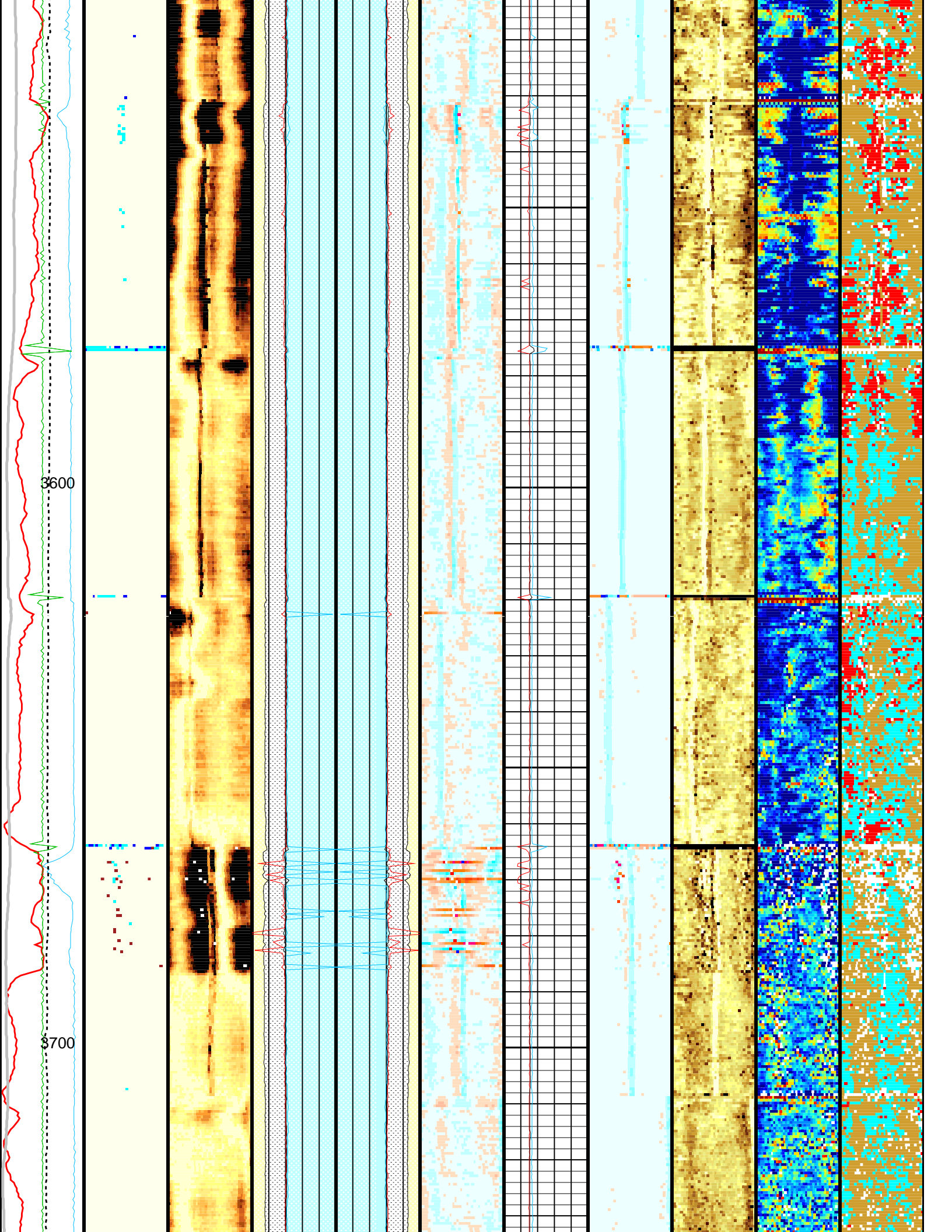


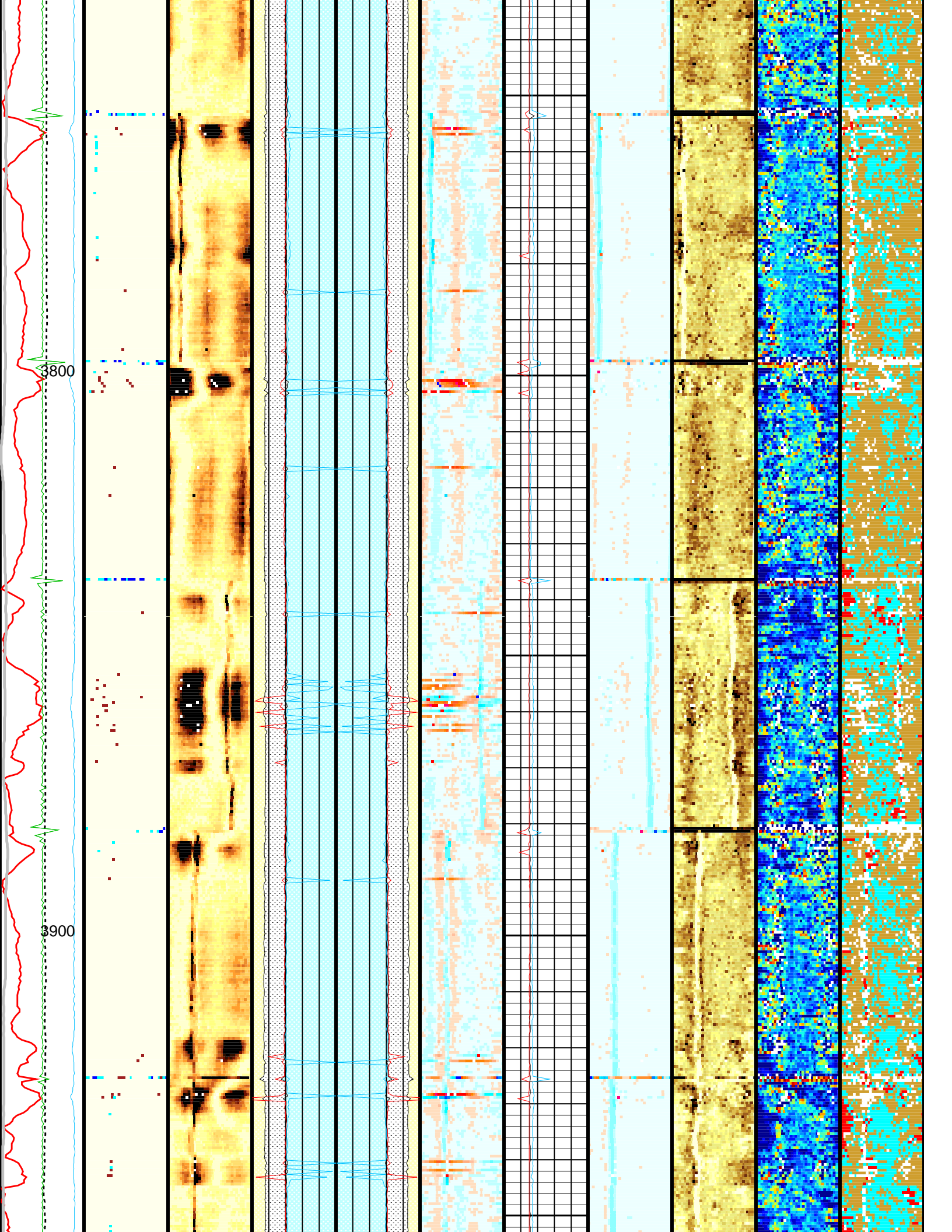


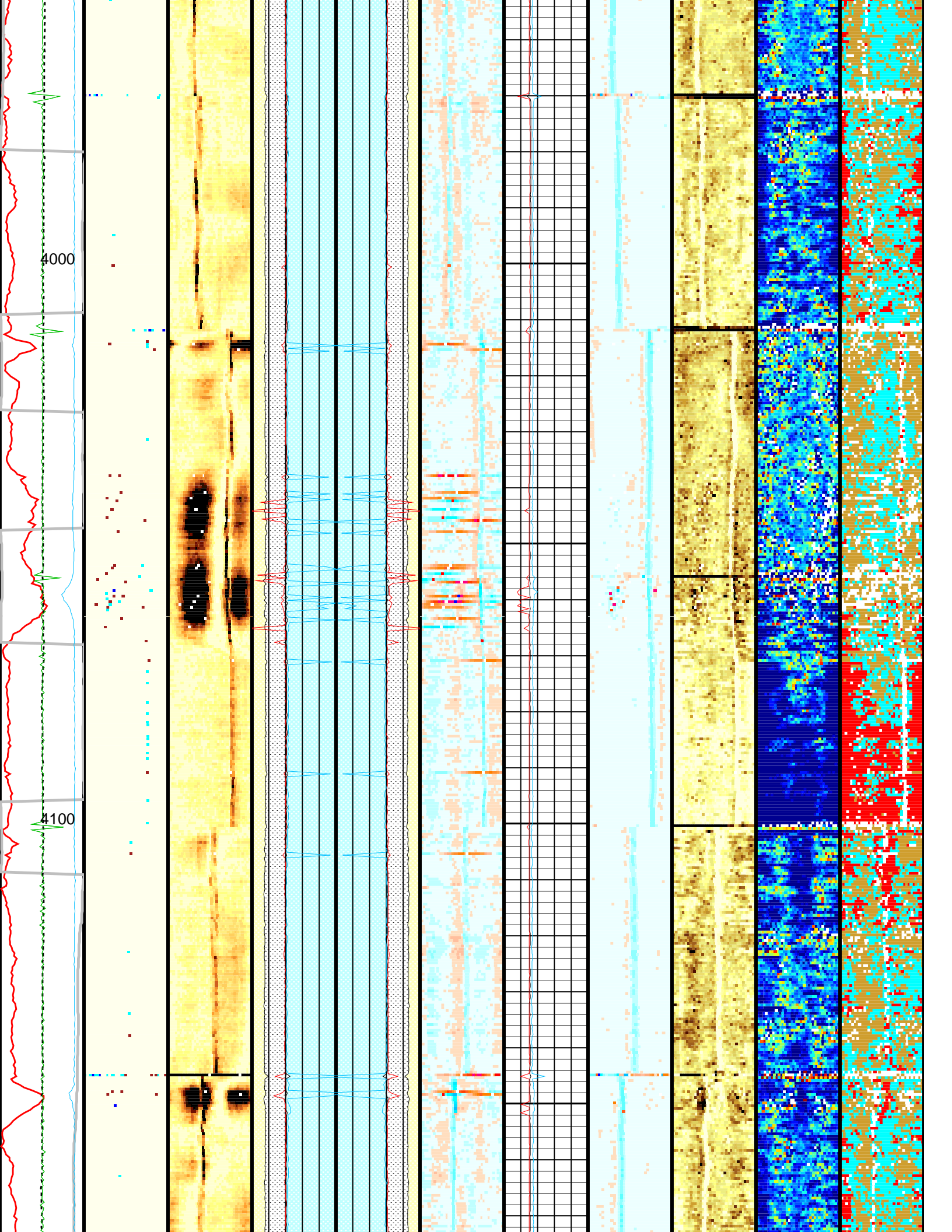


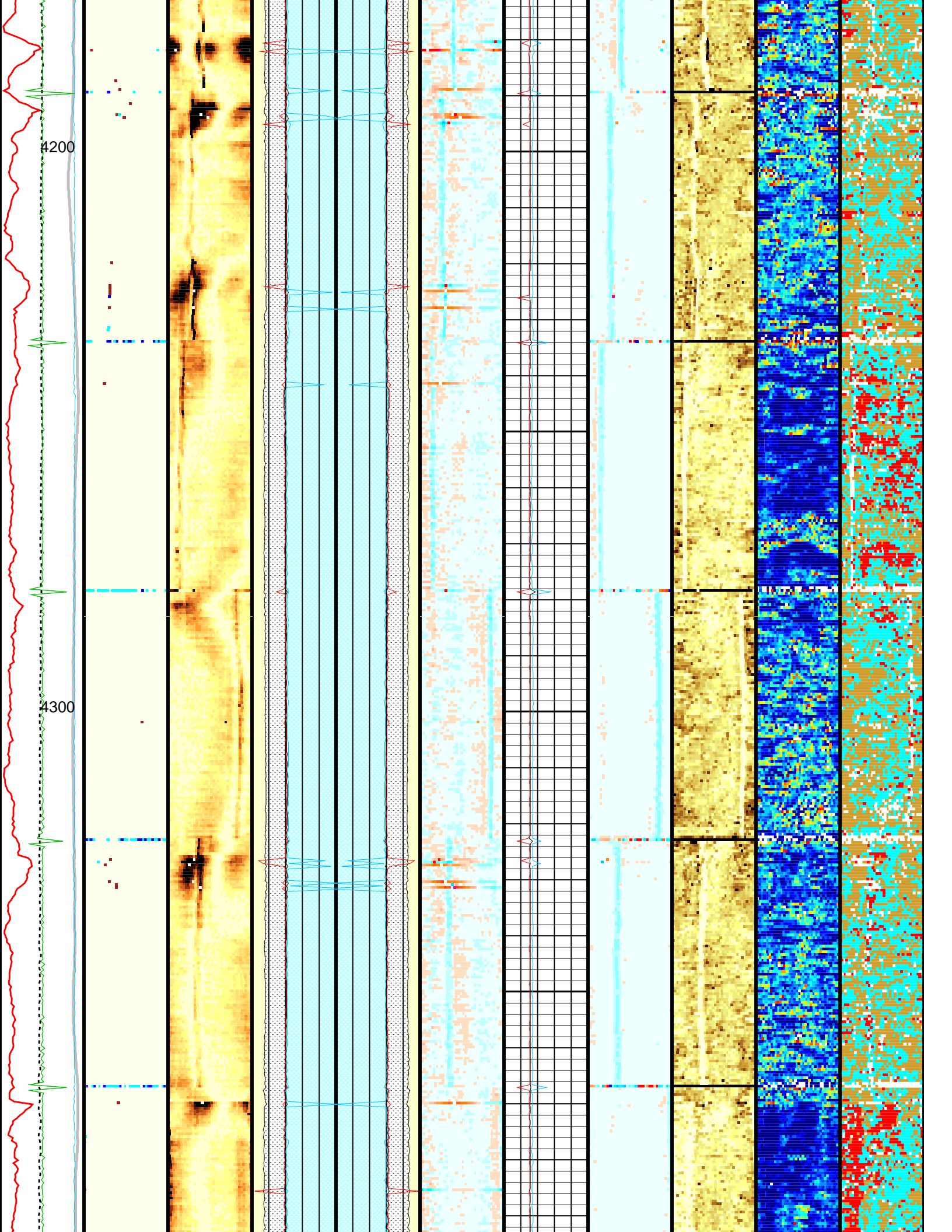


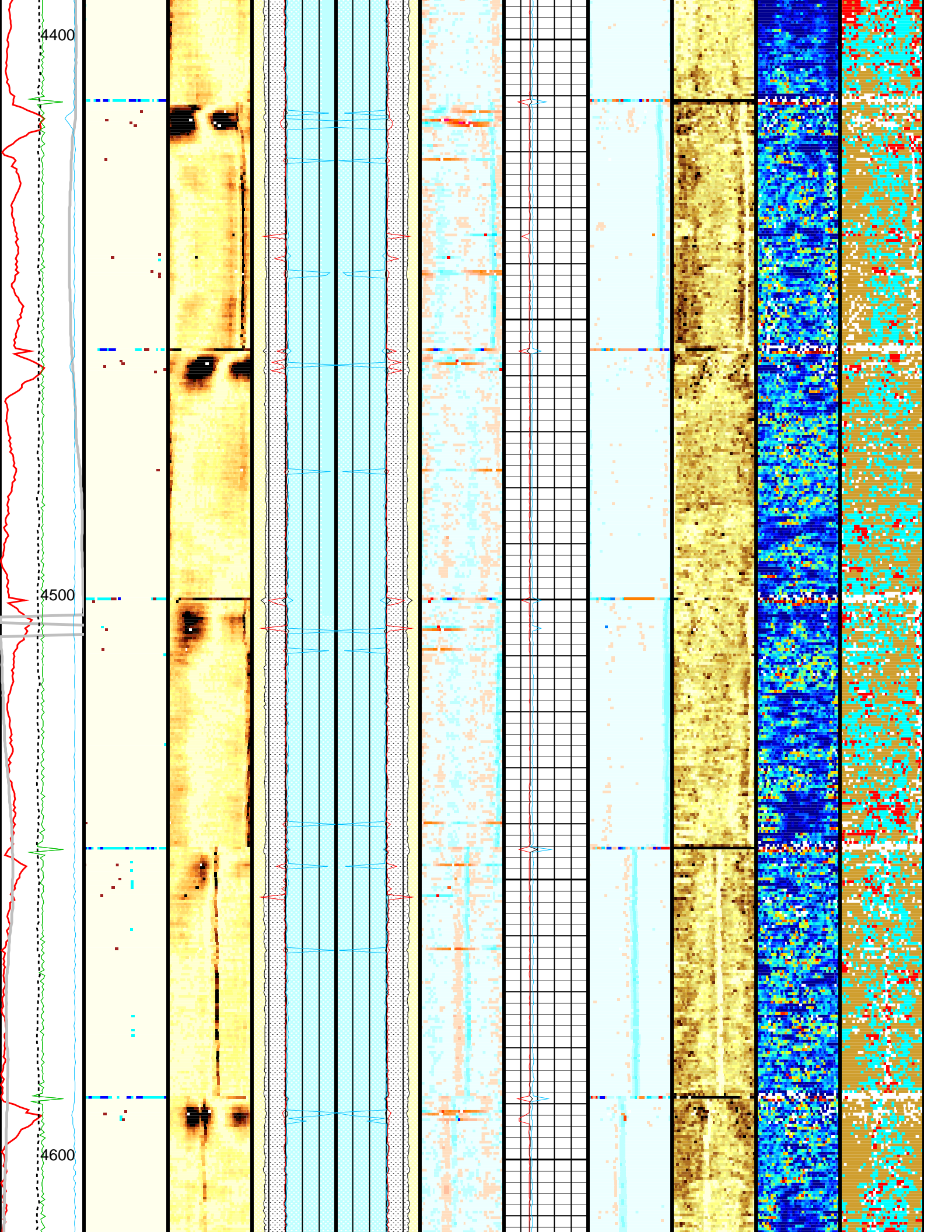


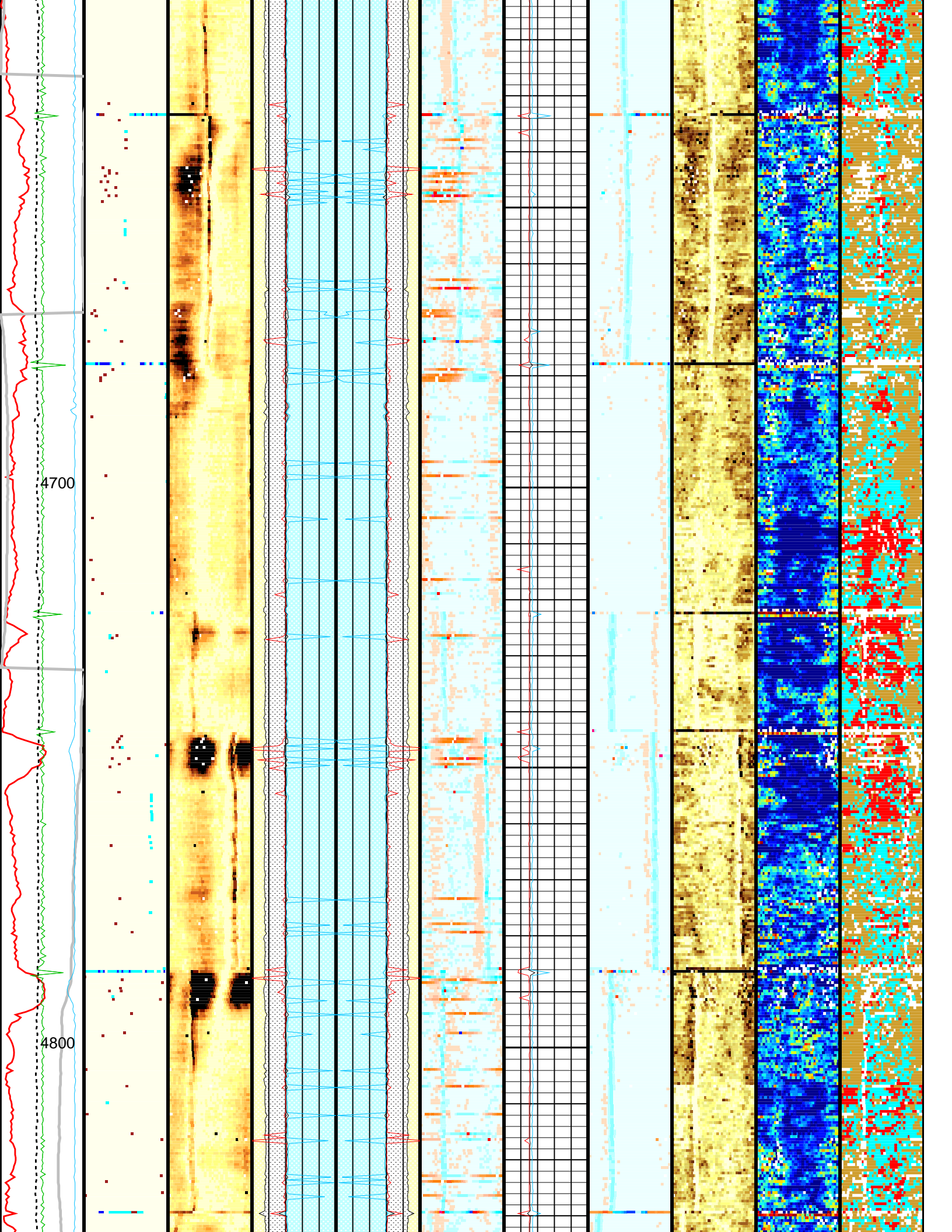


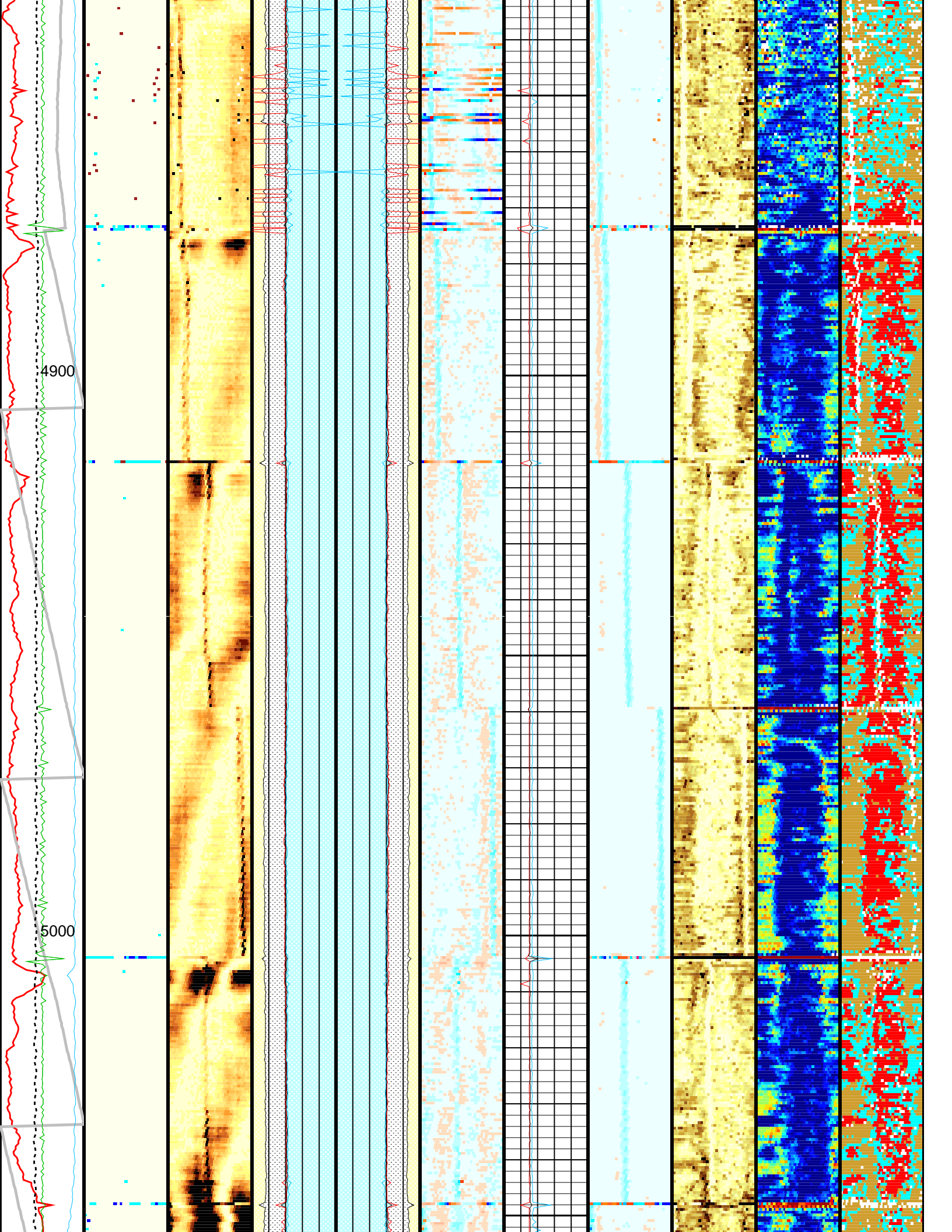


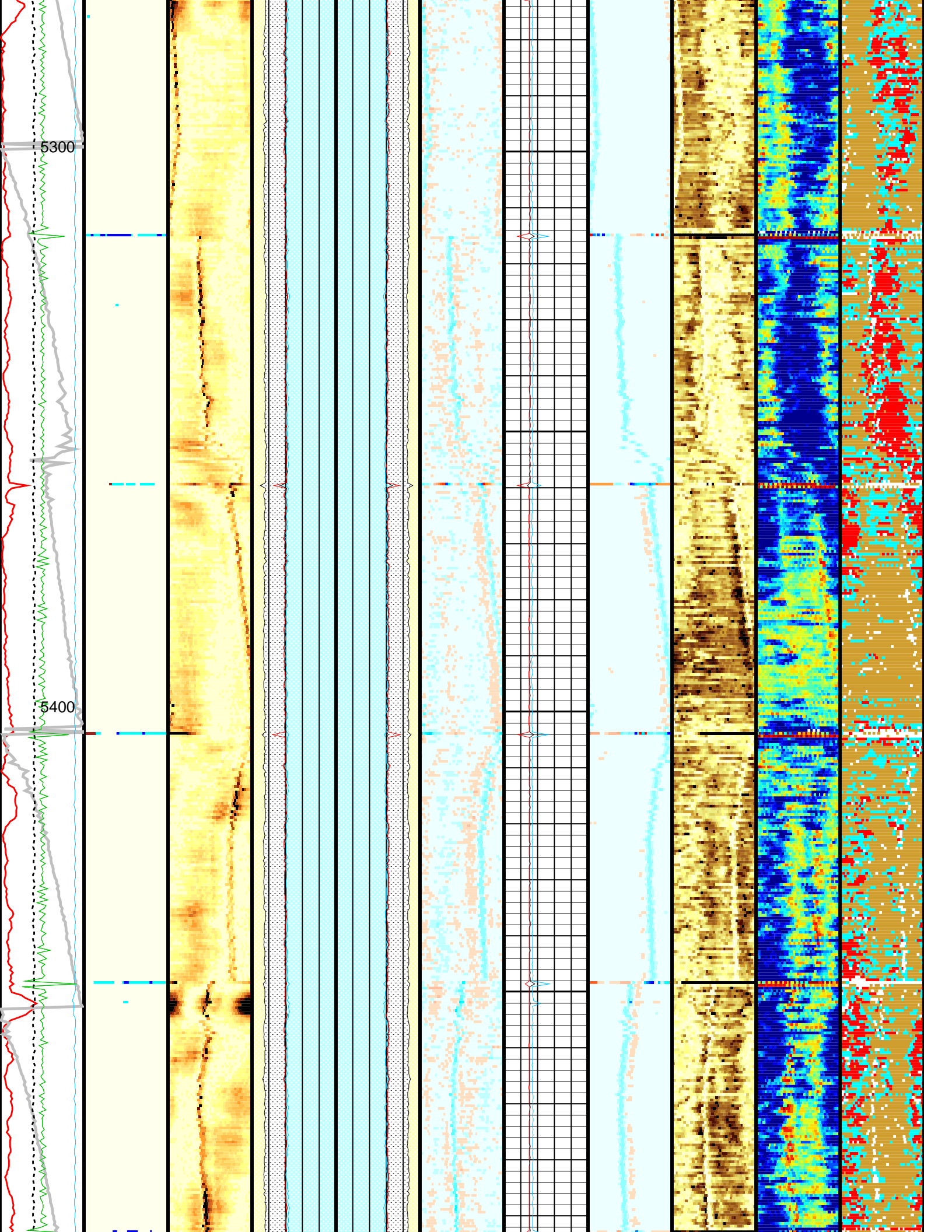


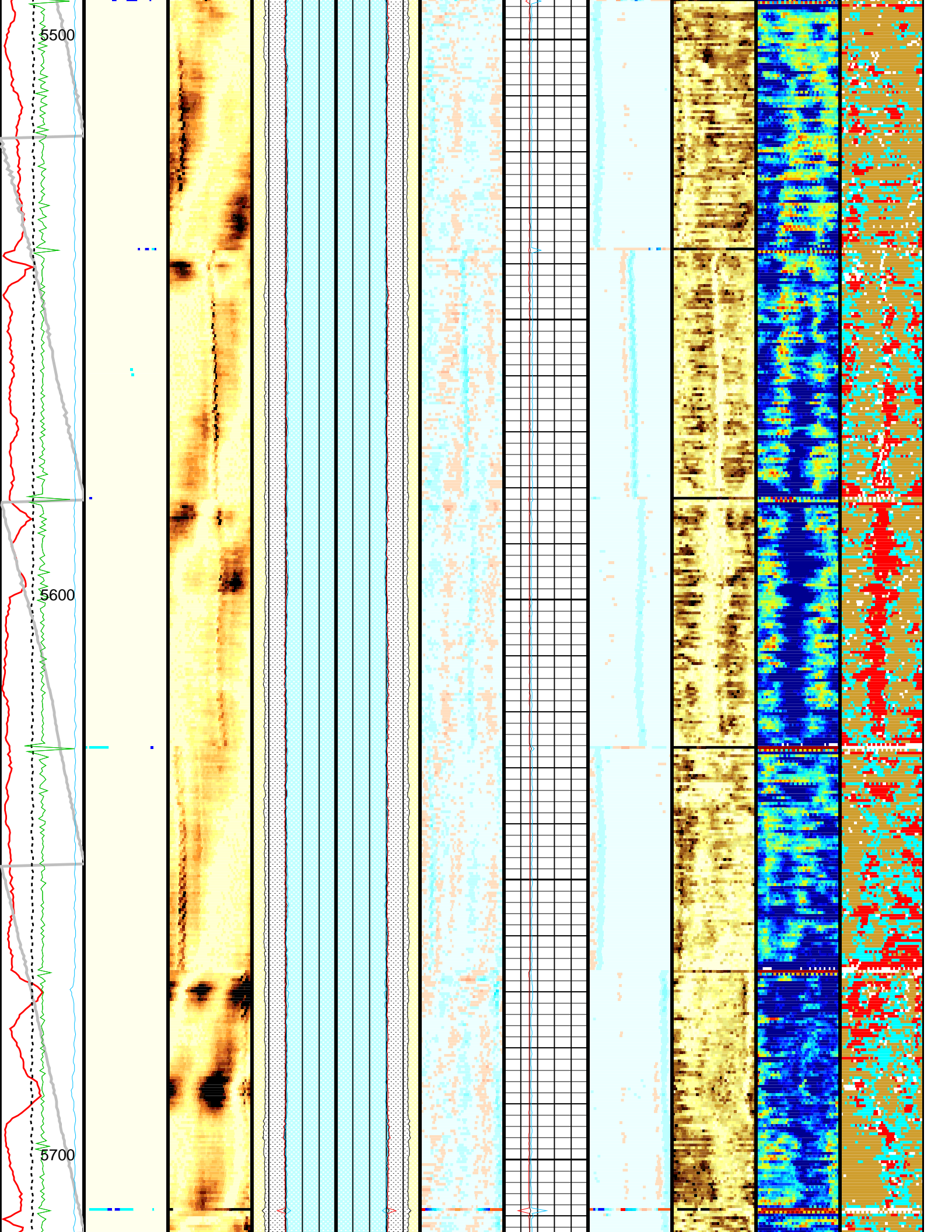


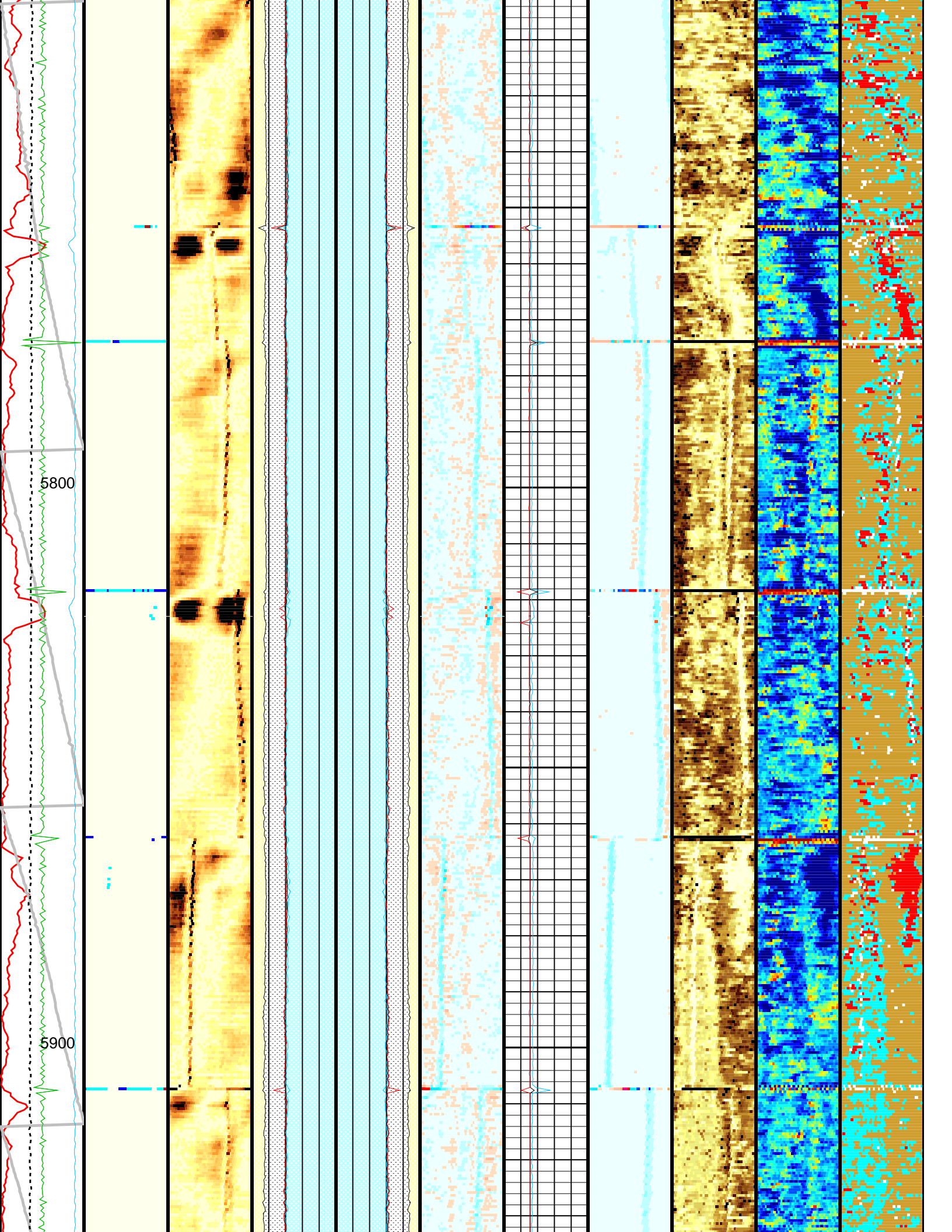


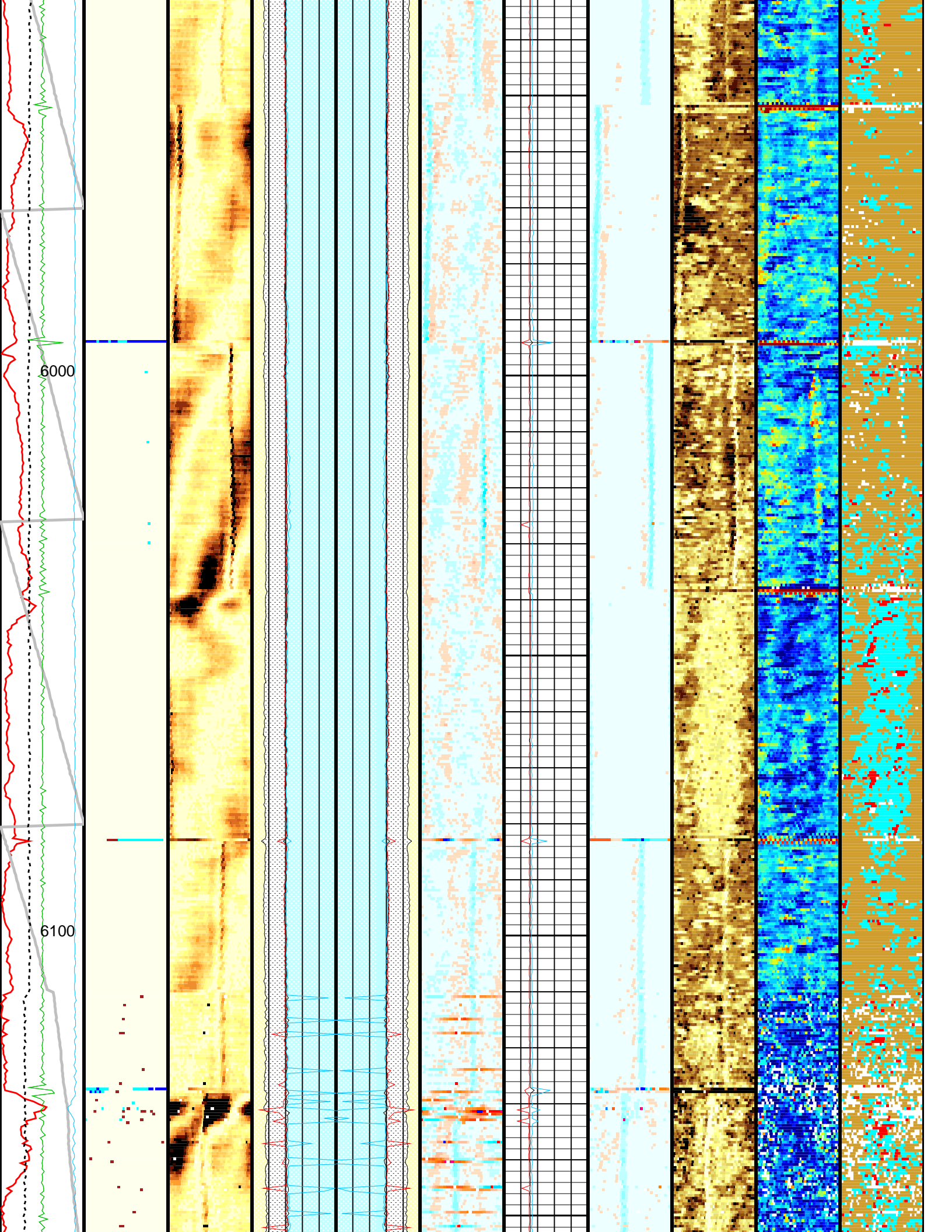


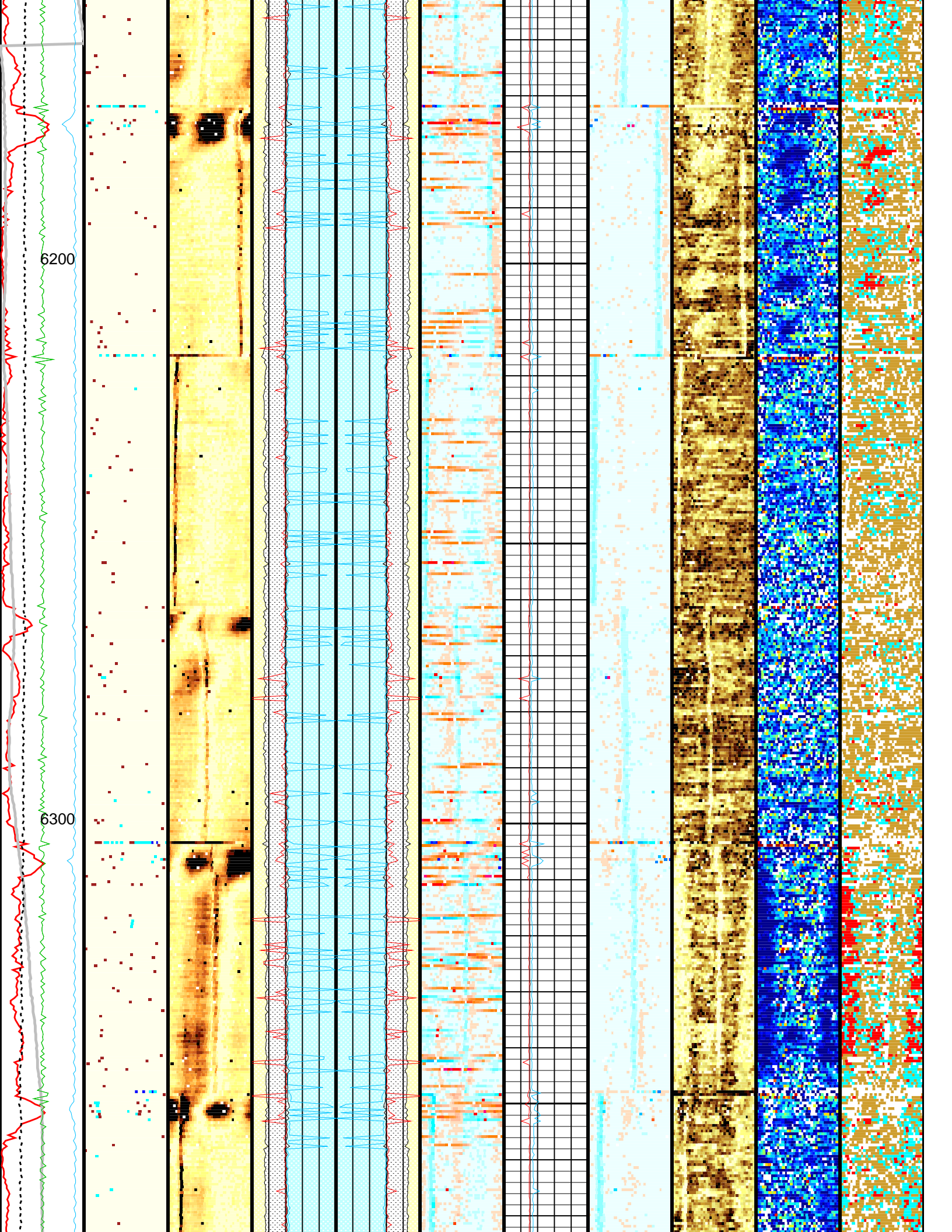


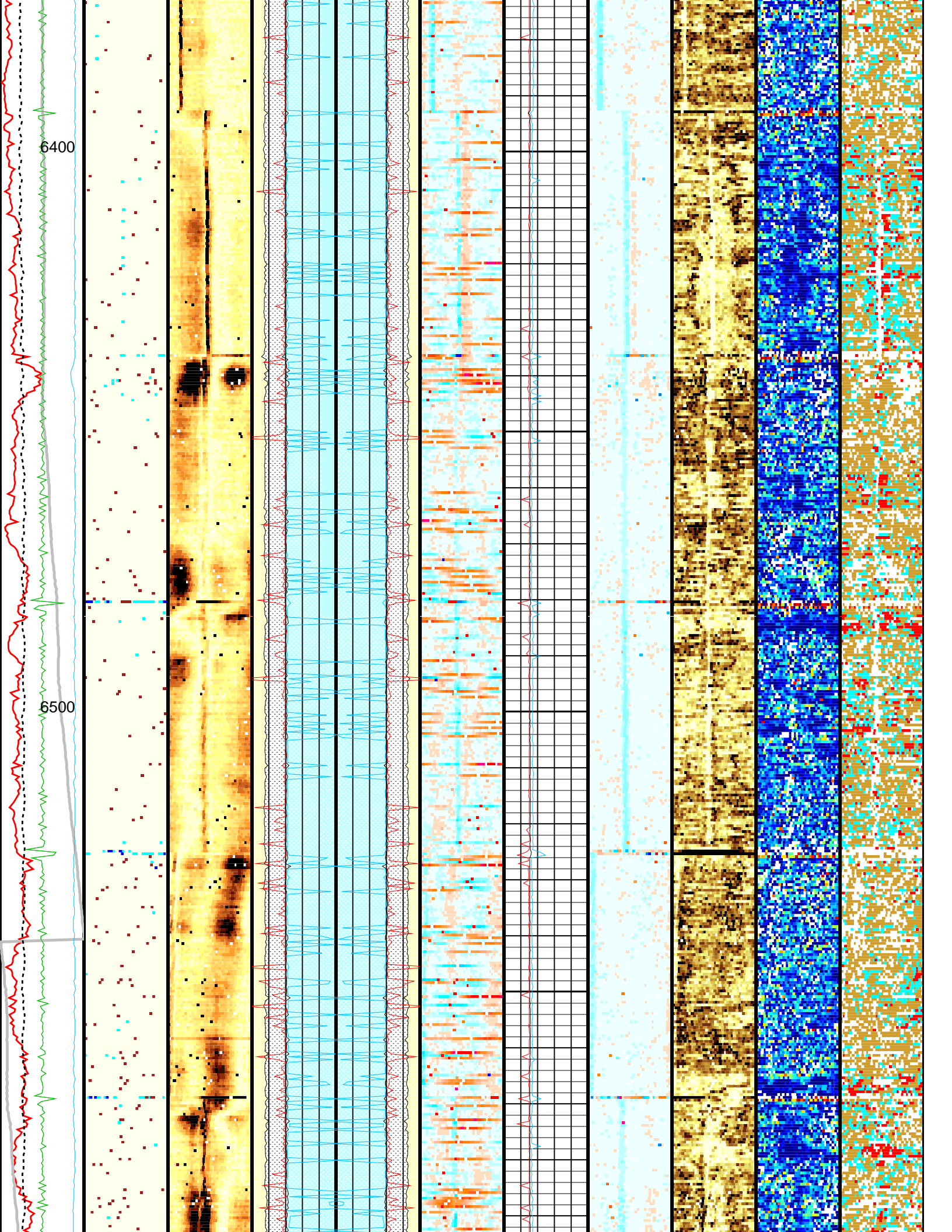


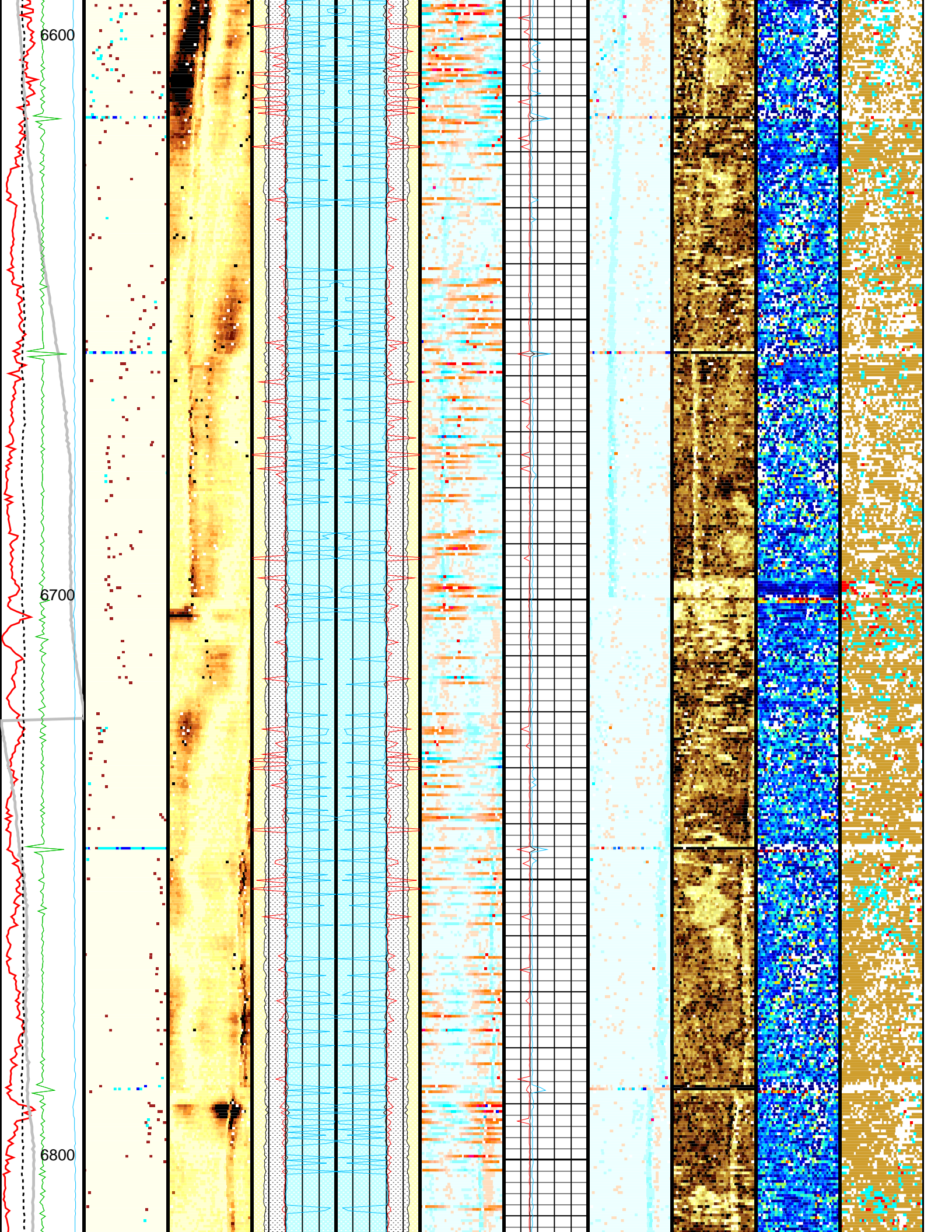


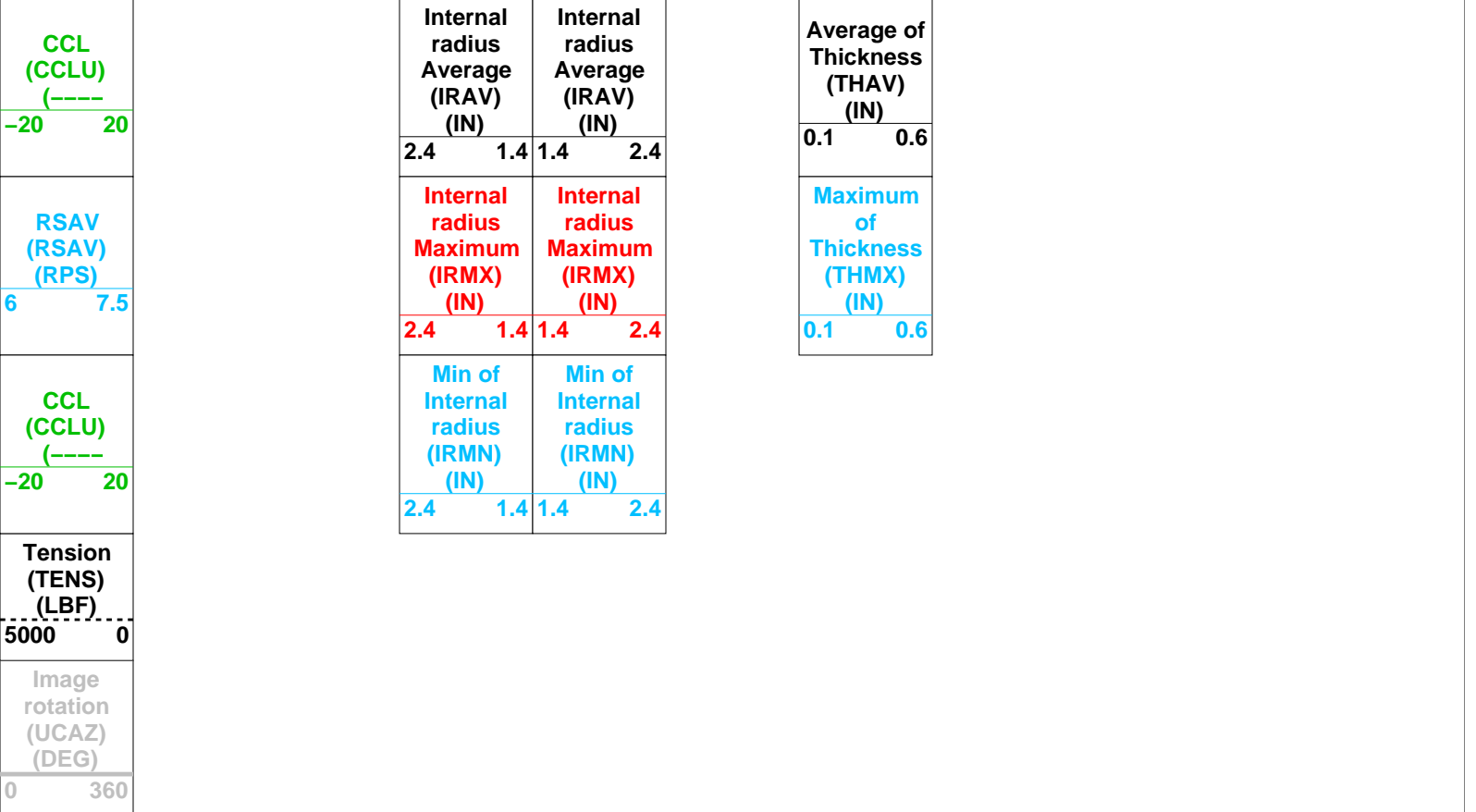
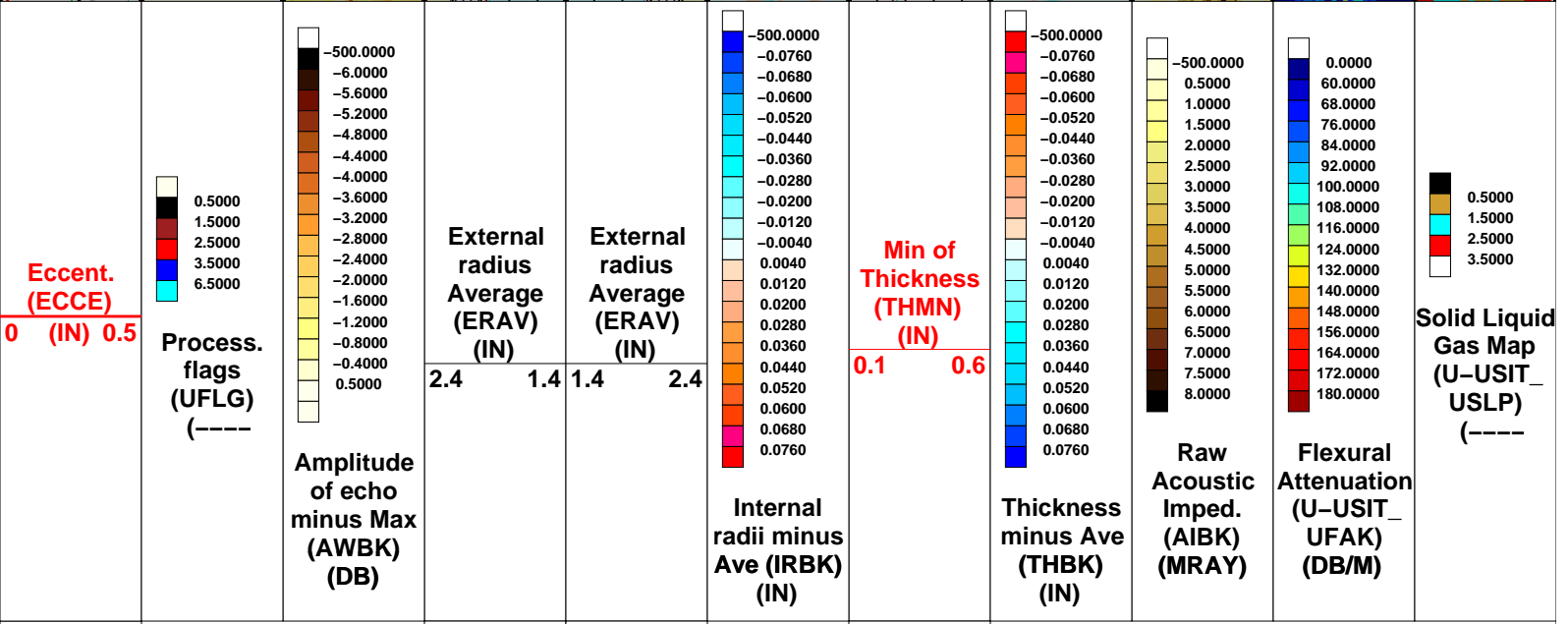
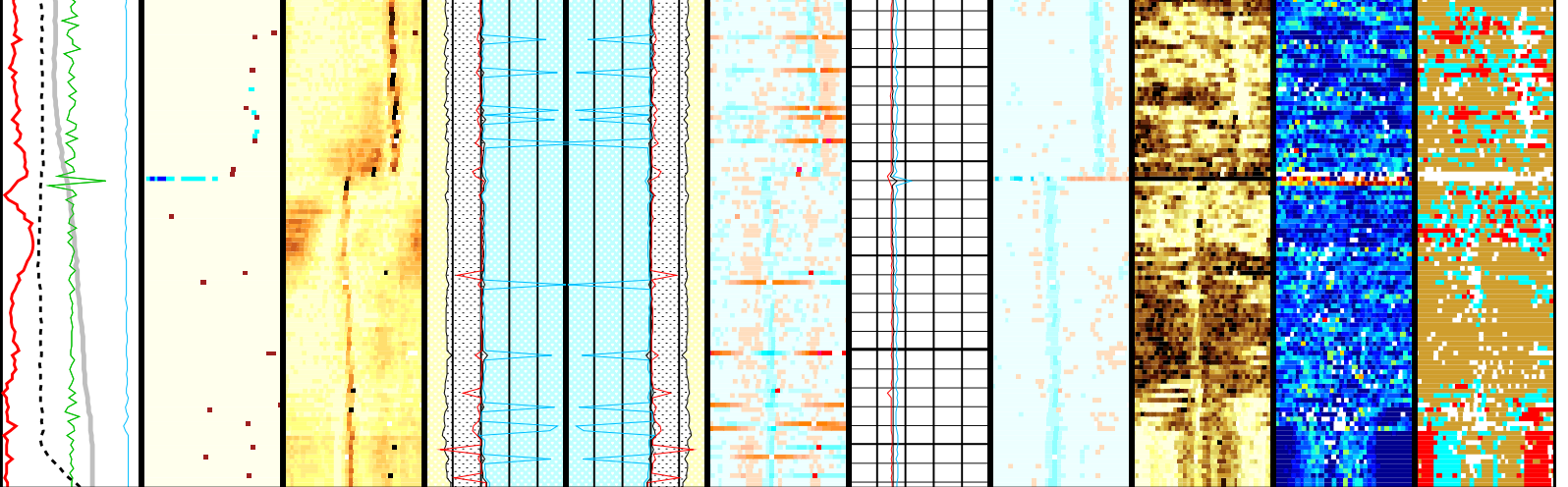












USIT-D 19C1-222
EDTC-B 19C1-222

GPIT-F

19C1-222

All USI Images are outside views

Center of image corresponds to bottom of casing

USI : HIGH Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.18 to 0.31 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	4.5	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	4	IN
DFVL	Default Fluid Velocity	200	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	51	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	3_UTFS_N_UFAI	
IMAR	Image Rotation	RB	
MW	Mud Weight	8.4	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	0.25	IN
U-USIT_CEMT	USIT Cement Type	ULTRA_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	-10	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	38_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_HF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	14.9916	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.7	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	11.60	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT Splice_USI_IS_036CUP FN:1 PRODUCER 17-Dec-2013 20:02 6864.5 FT 112.1 FT

Output DLIS Files

DEFAULT

USI_IS_002PUP

FN:1

PRODUCER

18-Dec-2013 15:12



USI IBC SLG MAIN PASS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 31-2C

Input DLIS Files

DEFAULT Splice_USI_IS_036CUP FN:1 PRODUCER 17-Dec-2013 20:02 6864.5 FT 112.1 FT

Output DLIS Files

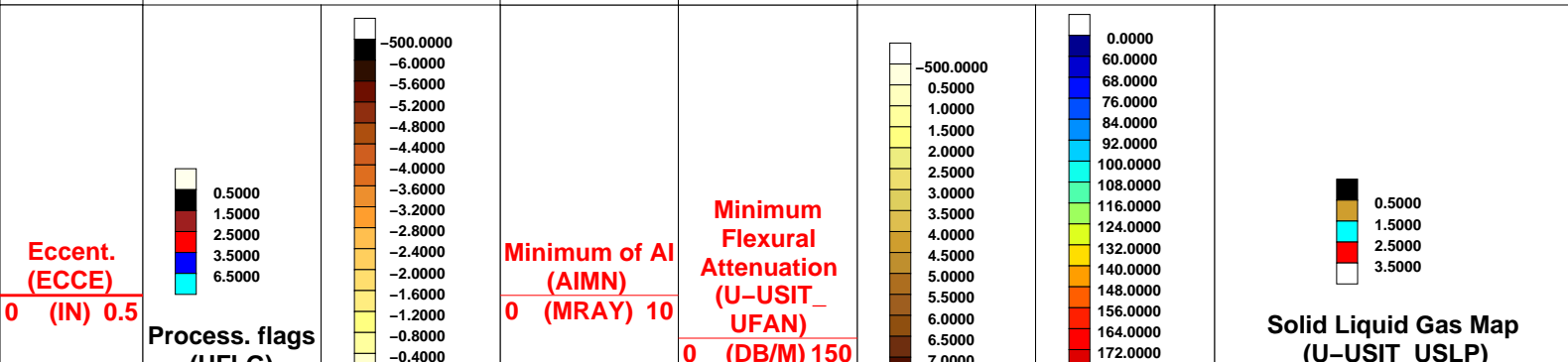
DEFAULT USI_IS_002PUP FN:1 PRODUCER 18-Dec-2013 15:12 6864.5 FT 112.5 FT

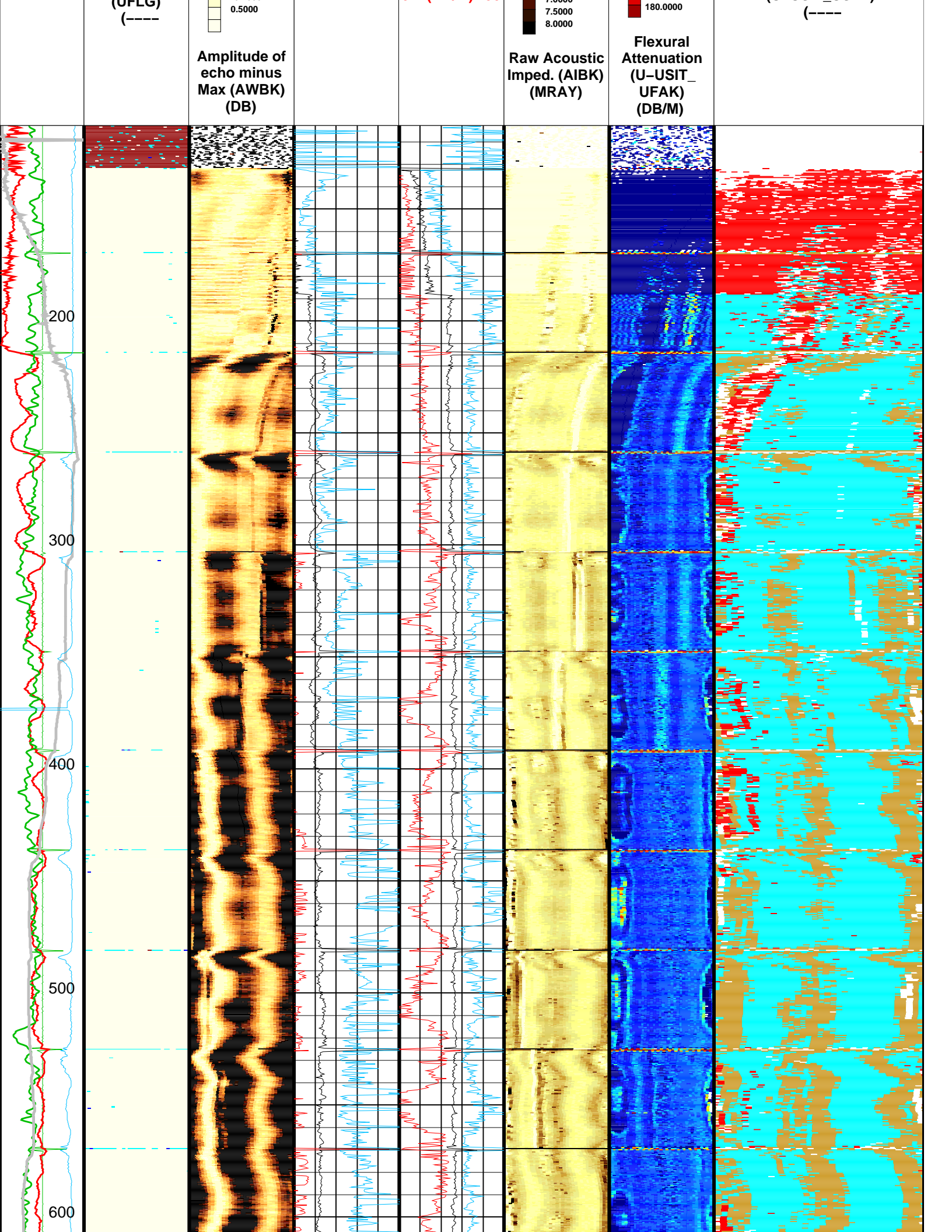
OP System Version: 19C1-222

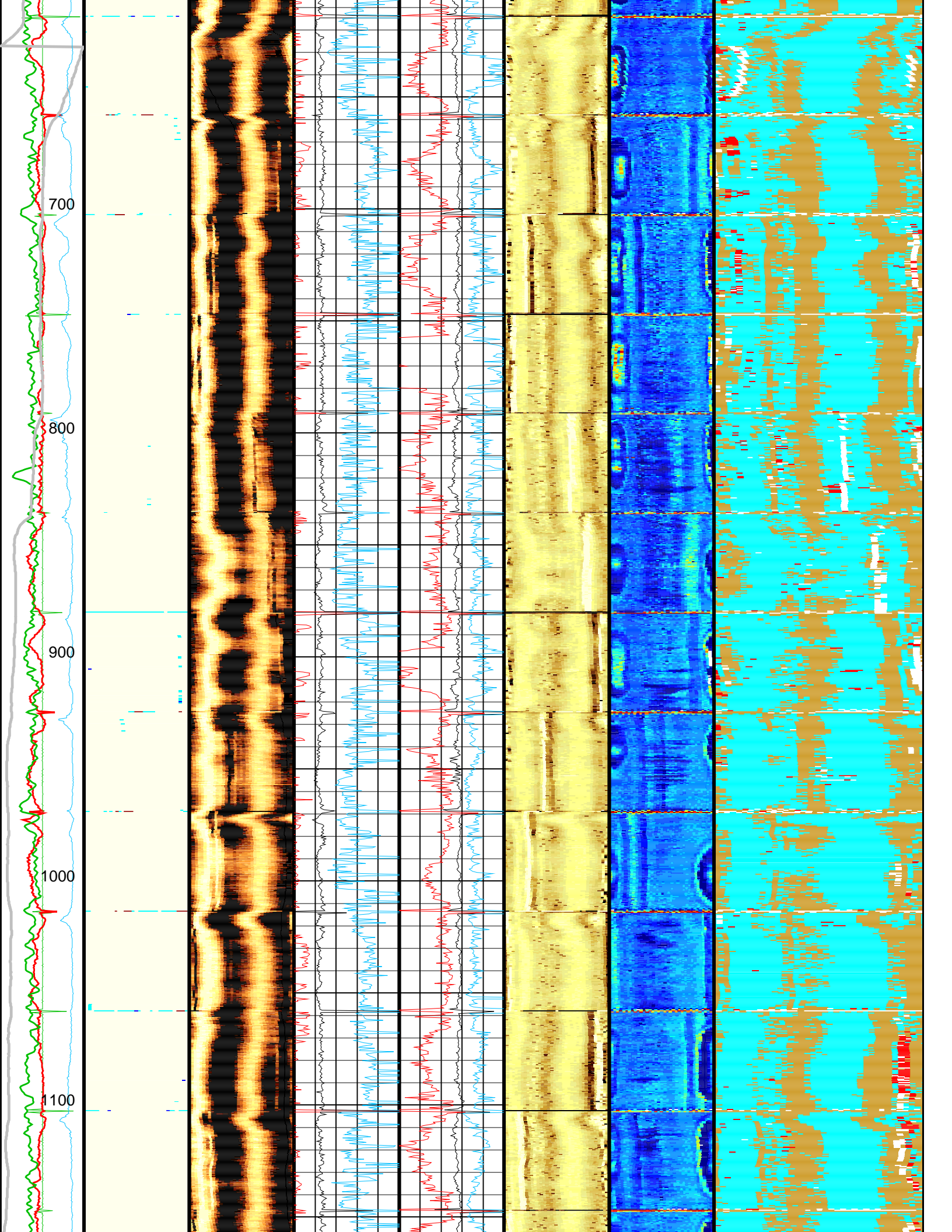
eWAFE Version: 1.189

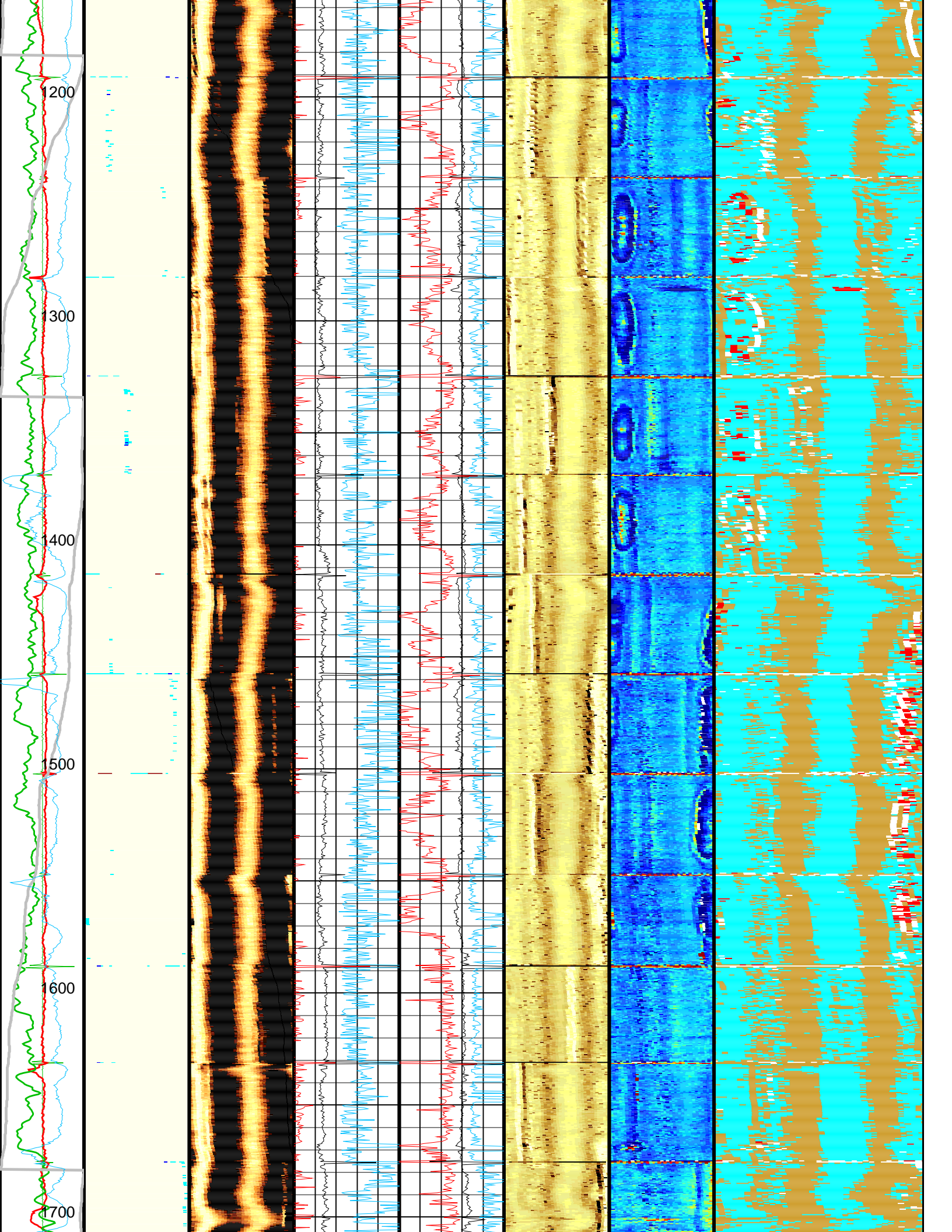
USIT-D 19C1-222 GPIT-F 19C1-222
EDTC-B 19C1-222

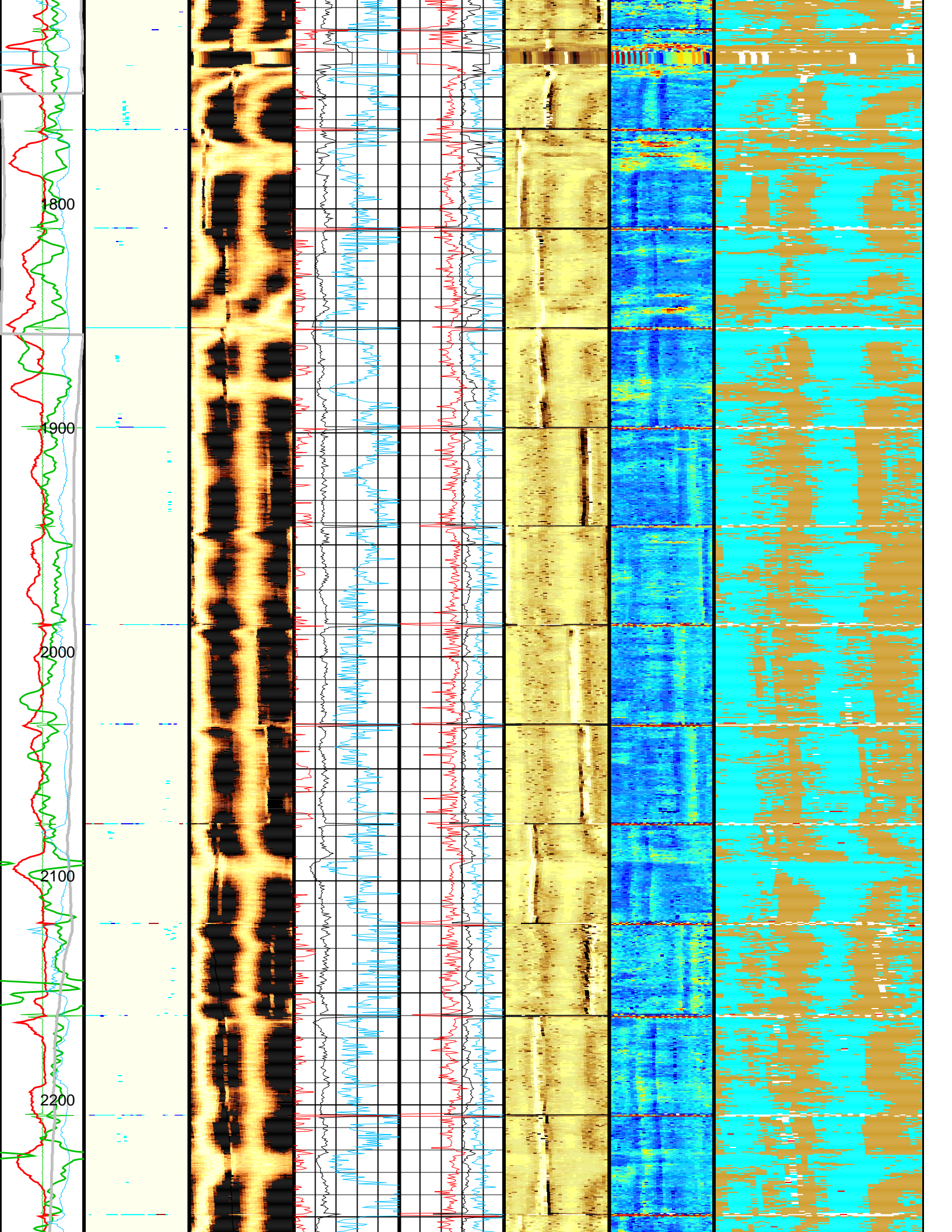
Image rotation (UCAZ) (DEG)	0	360
Gamma Ray (GR_EDTC) (GAPI)	0	150
RSAV (RSAV) (RPS)	6	7.5
CCL (CCLU) (----)	-20	20
Maximum of AI (AIMX) (MRAY) 10	0	10
Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M) 150	0	150
Average of AI (AIAV) (MRAY) 10	0	10
Average Flexural Attenuation (U-USIT_UFAV) (DB/M) 150	0	150

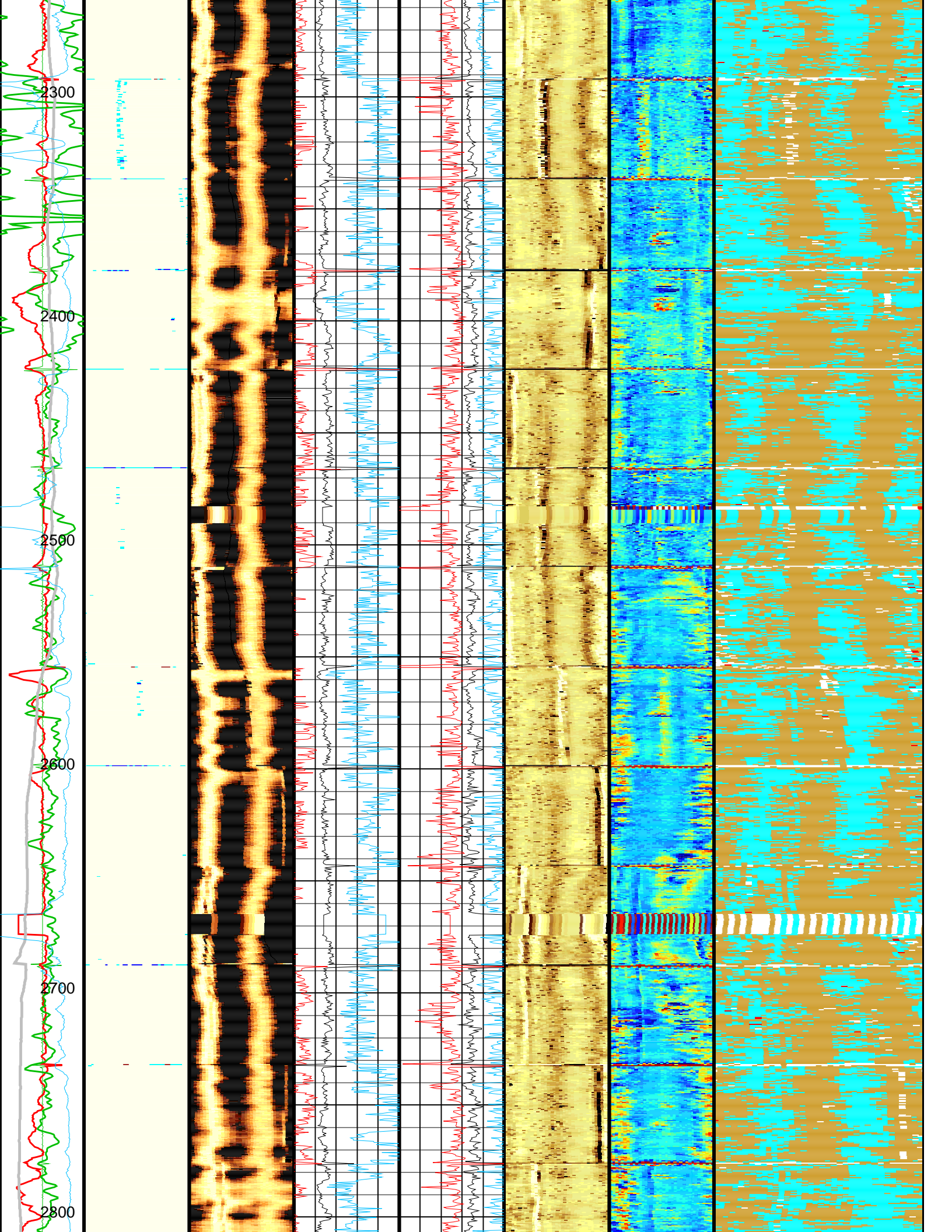


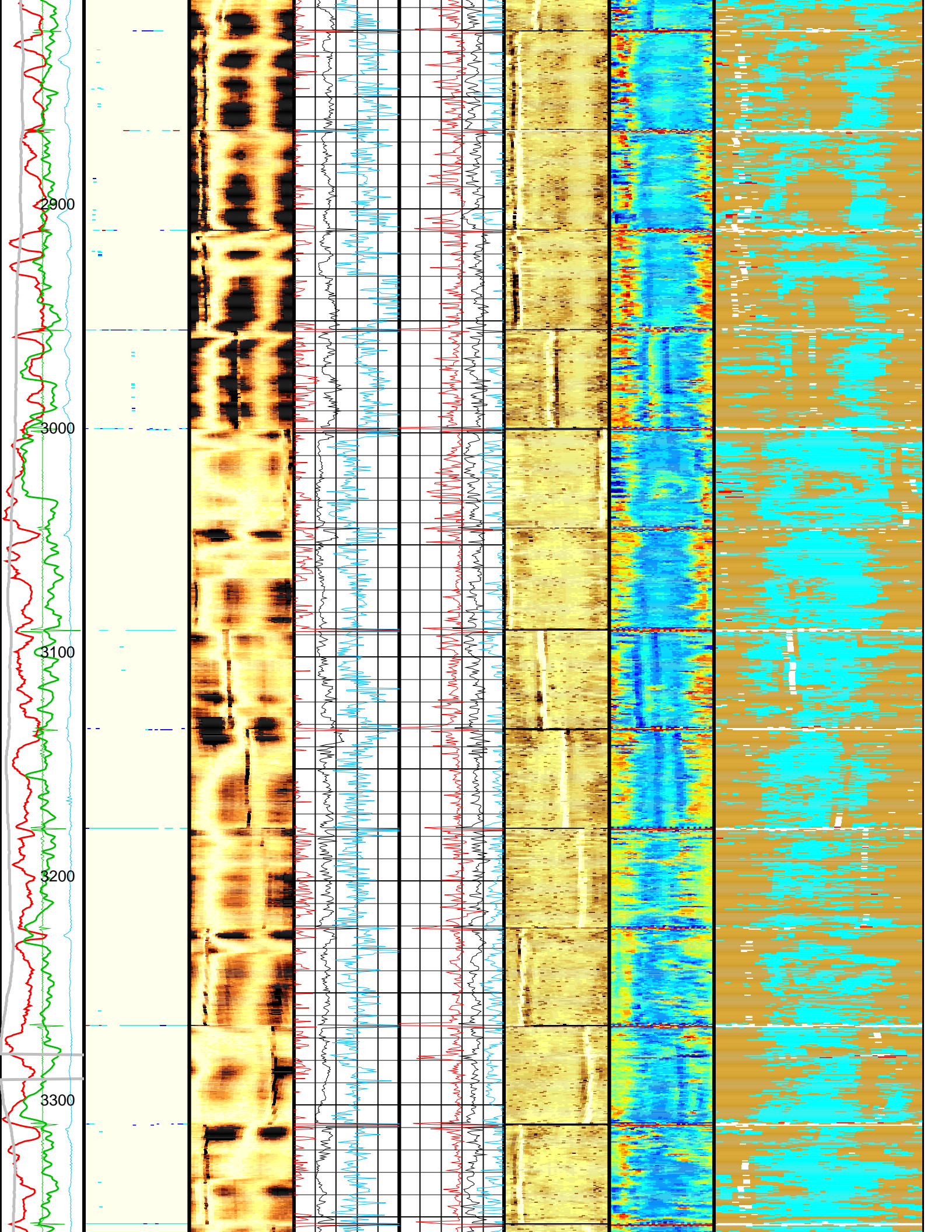


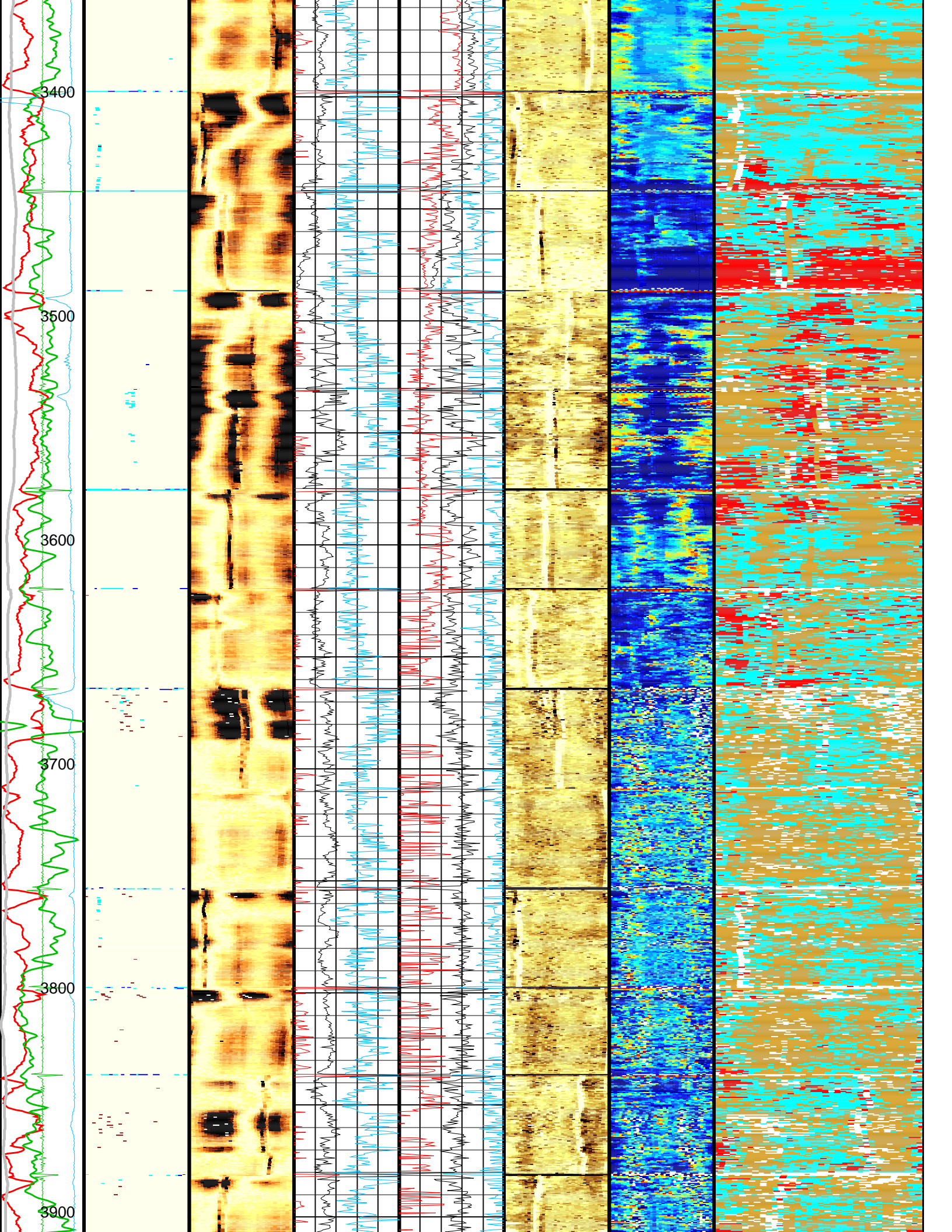


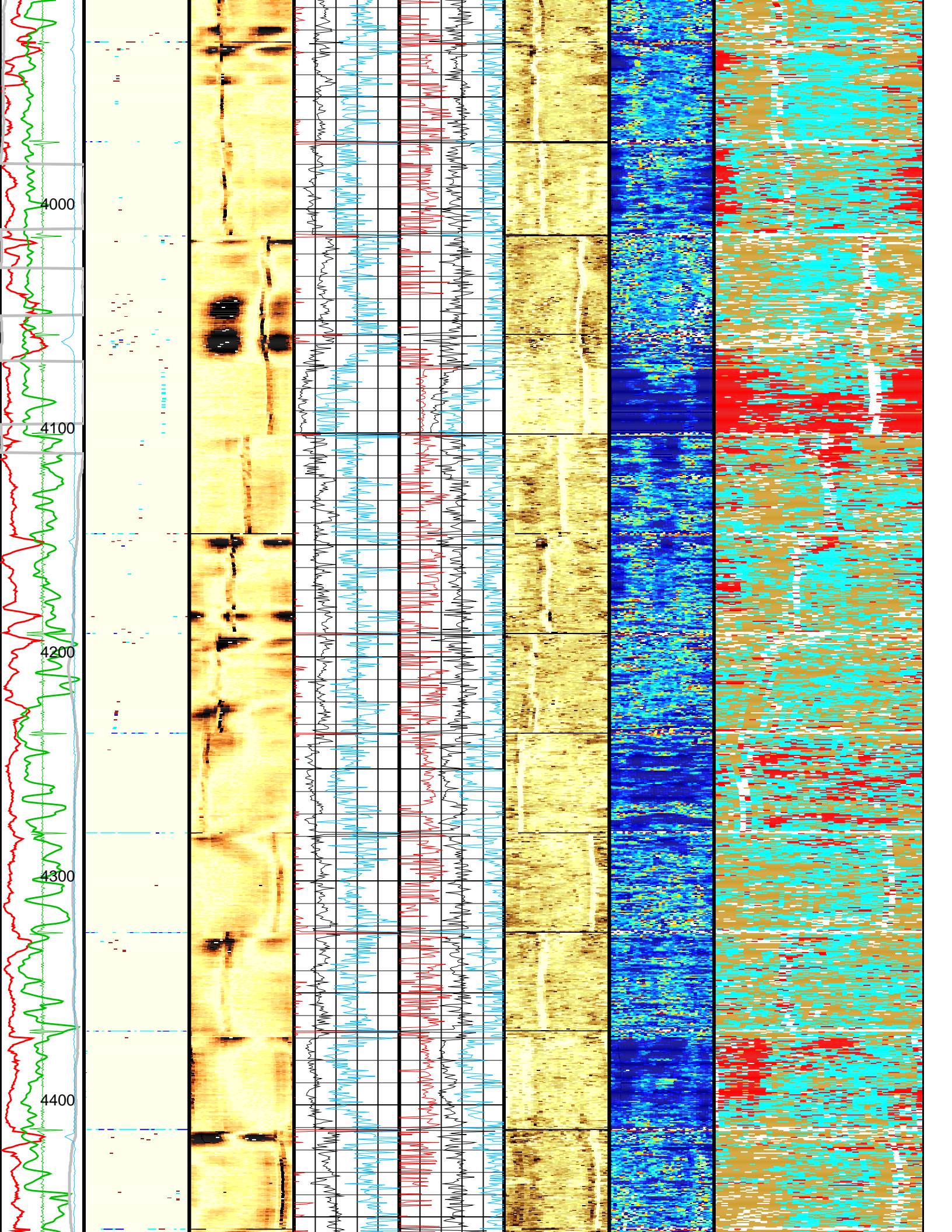


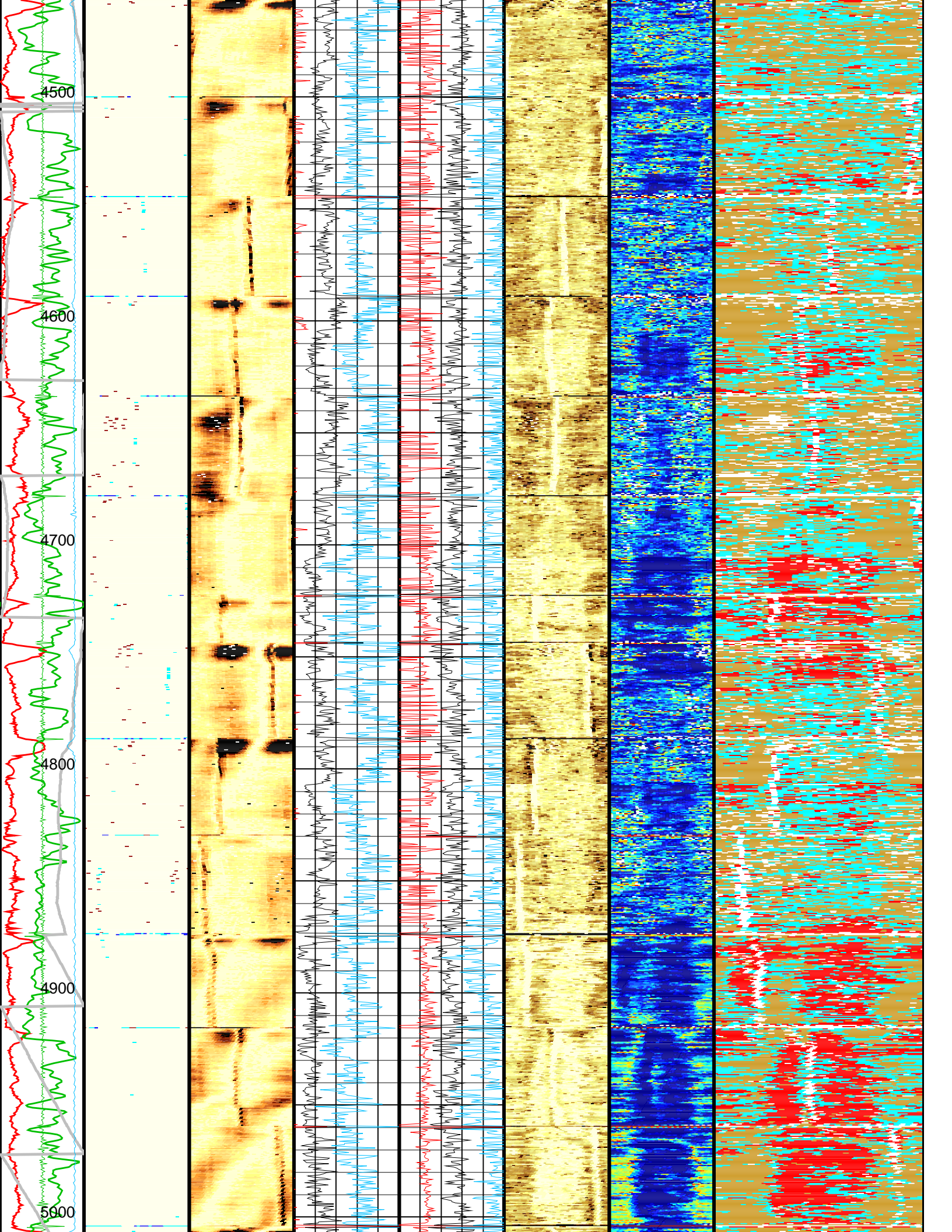


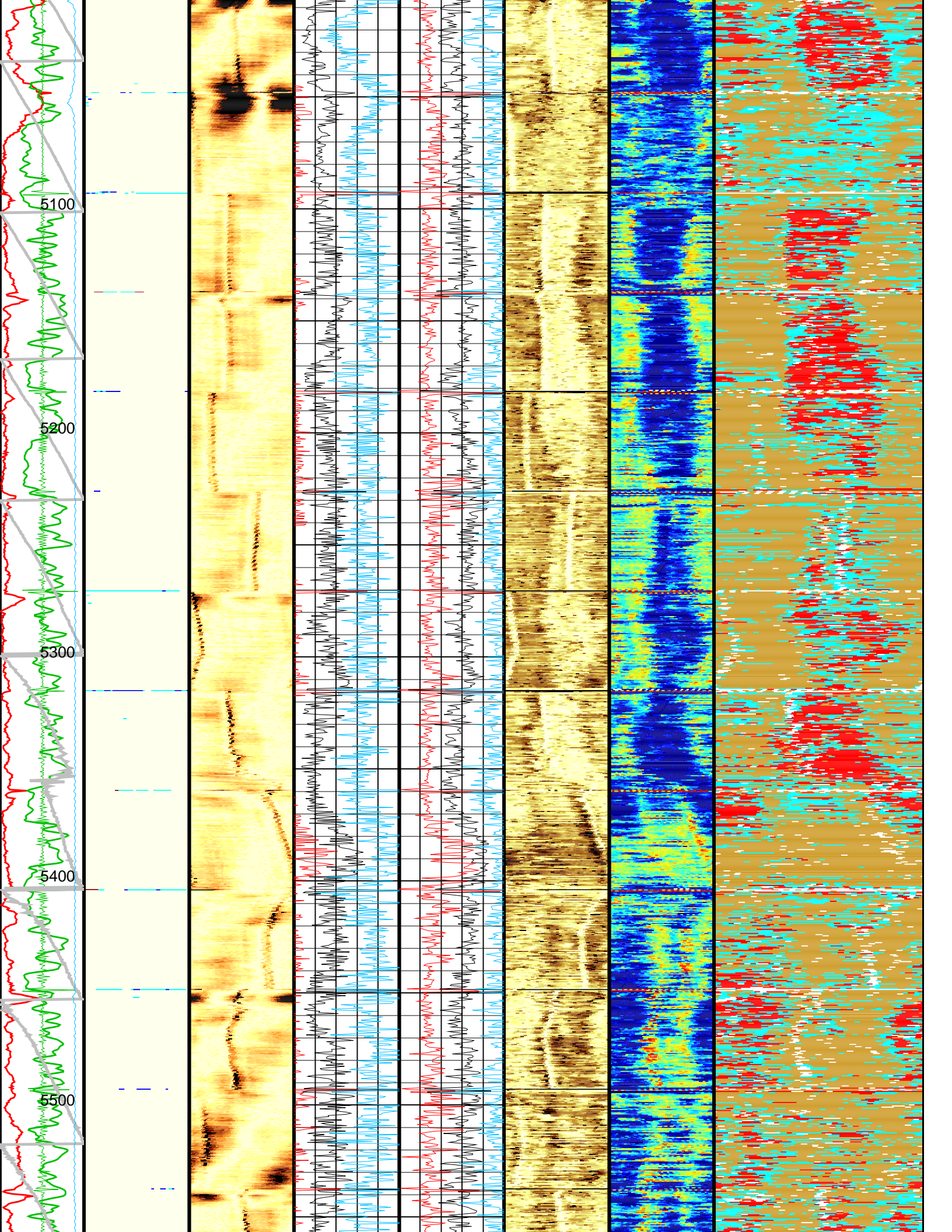


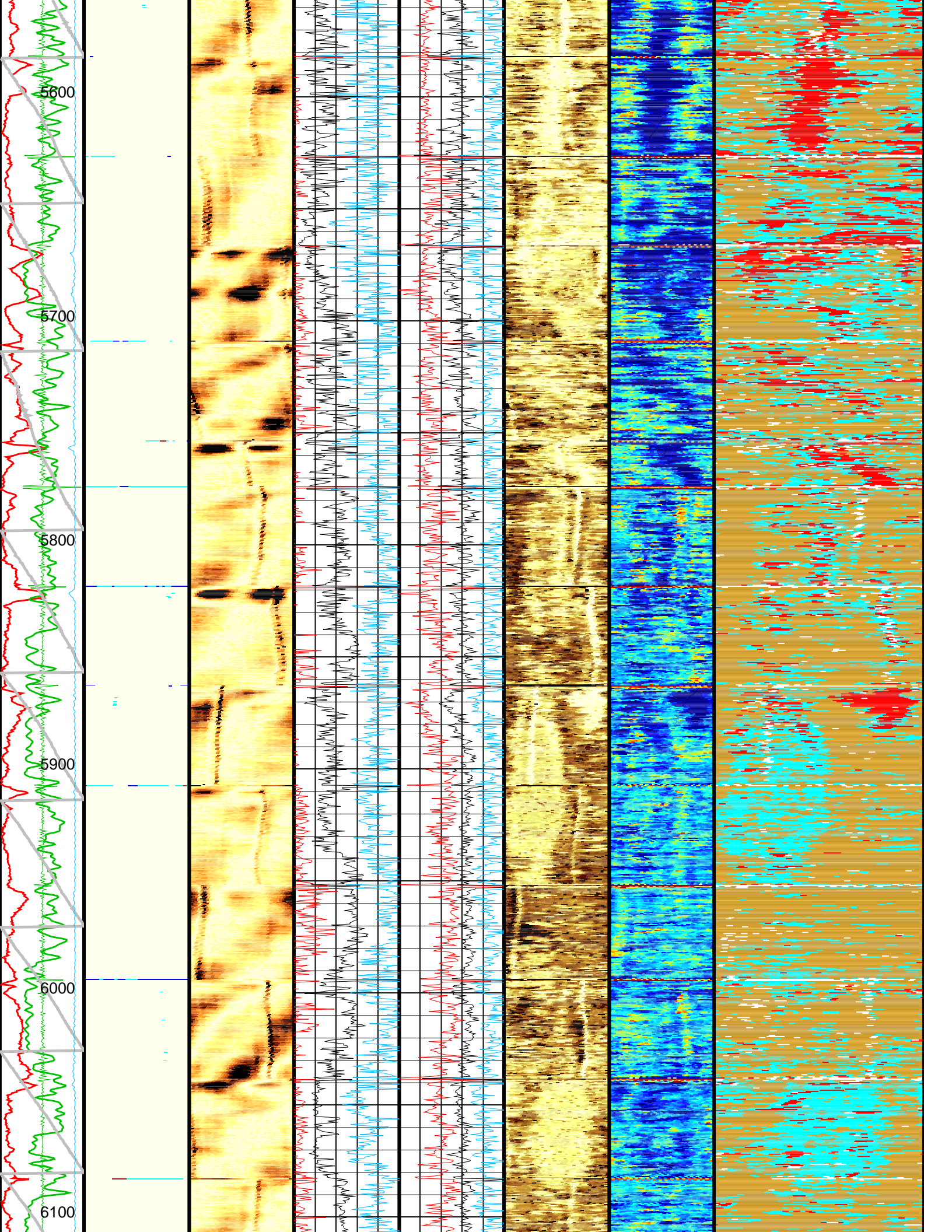


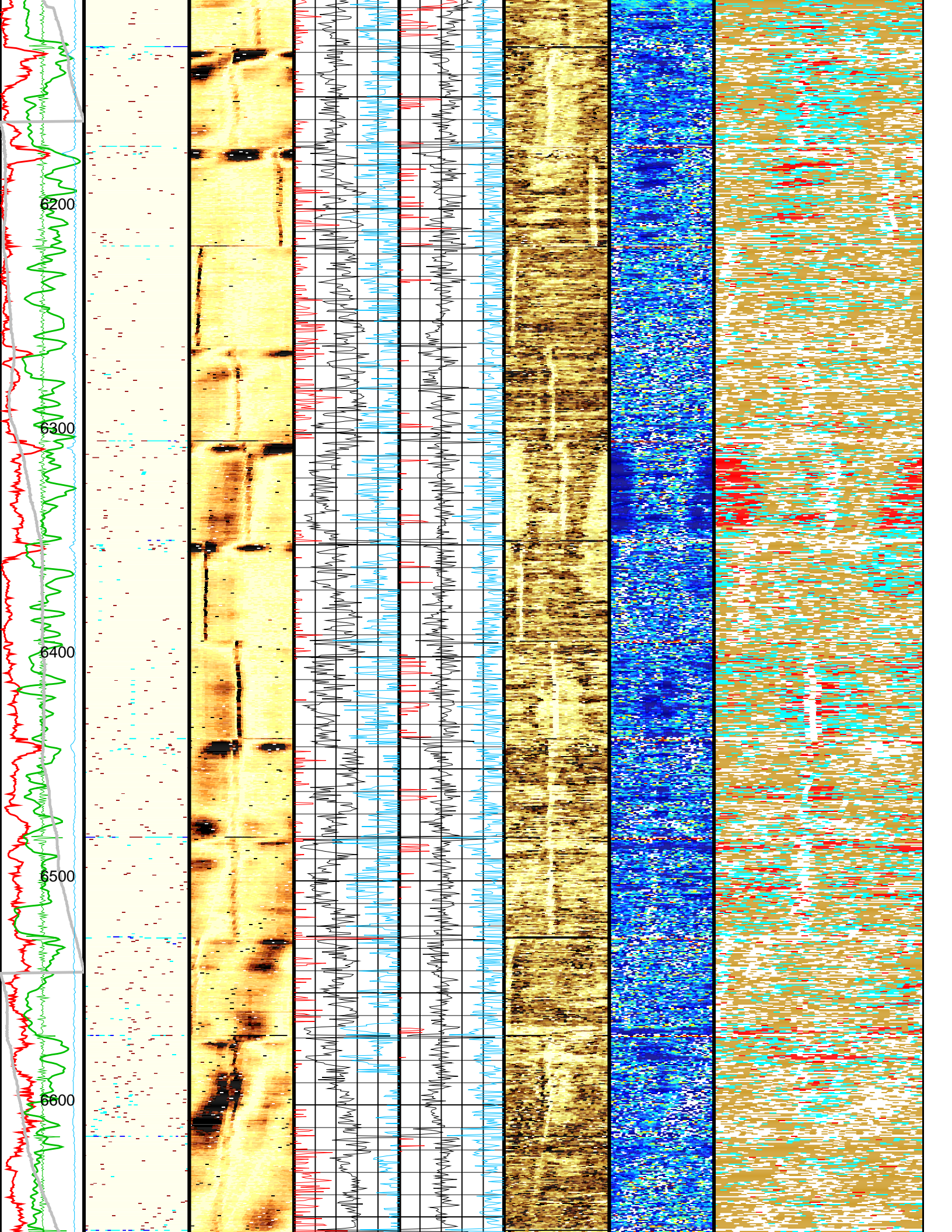


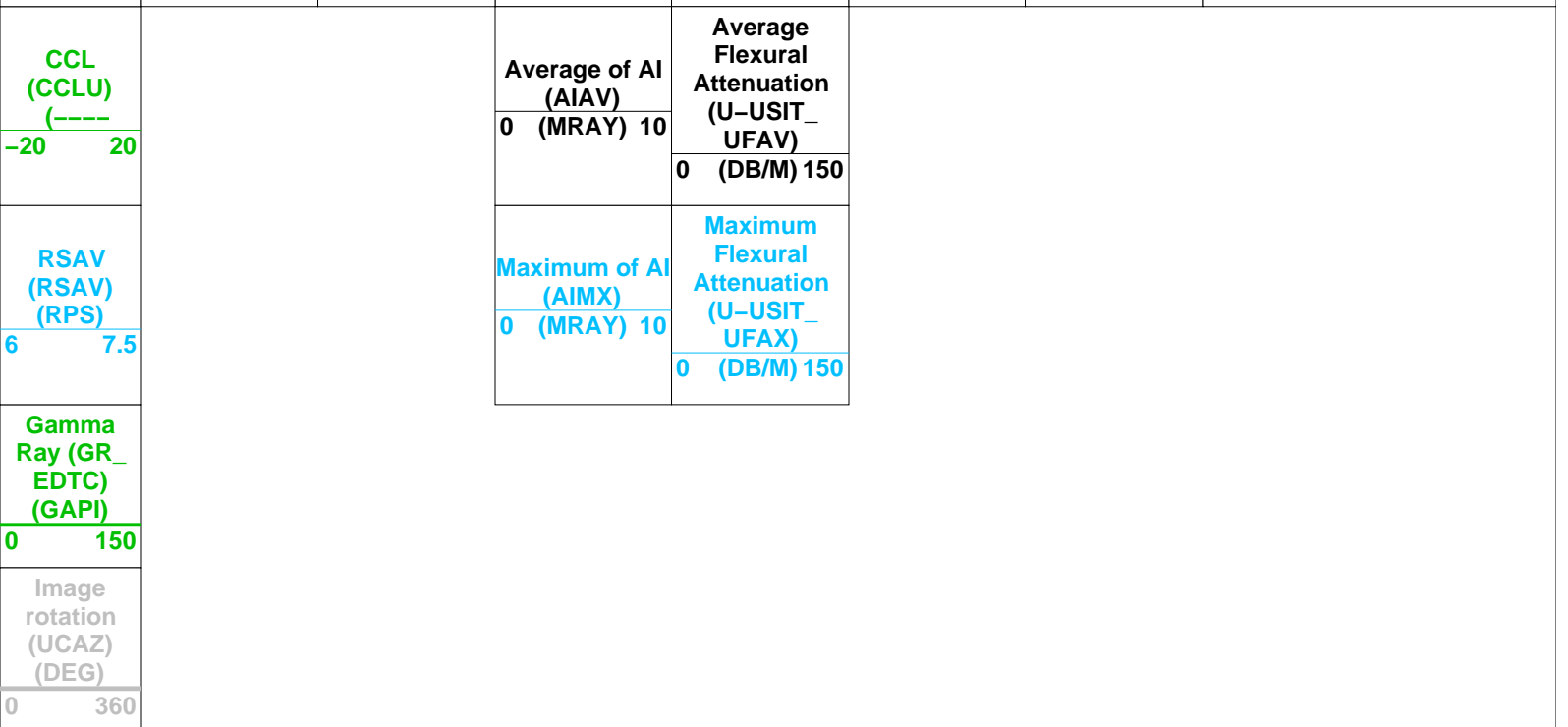
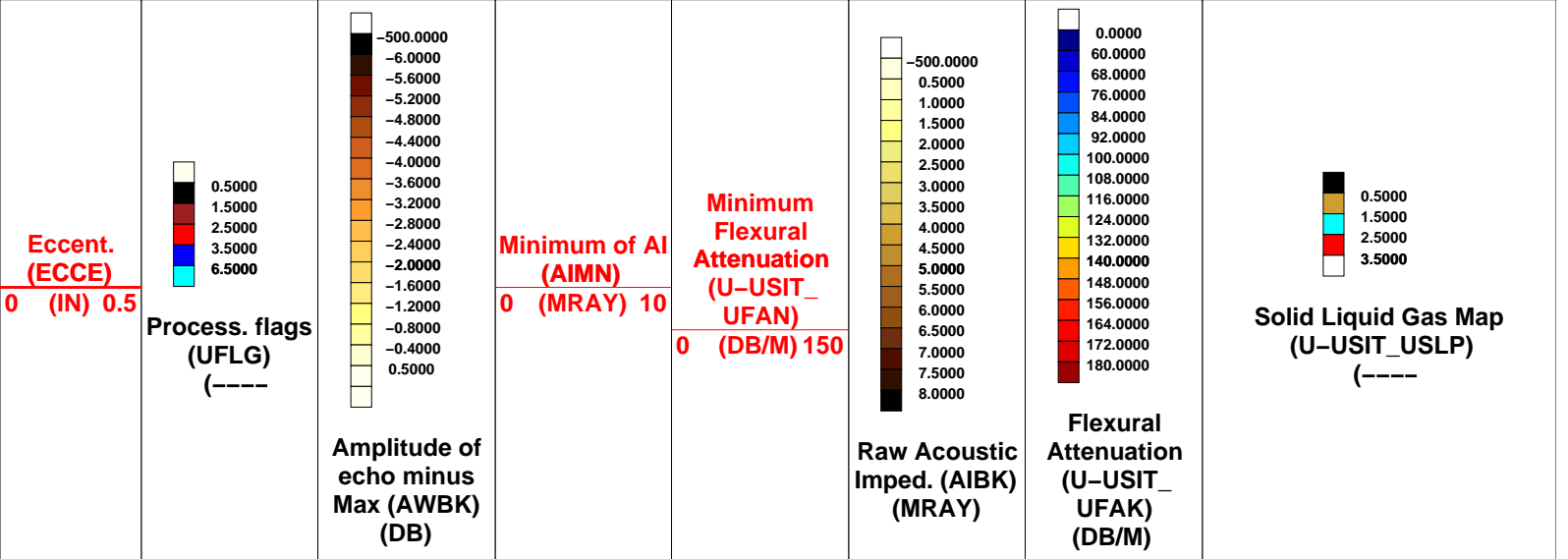
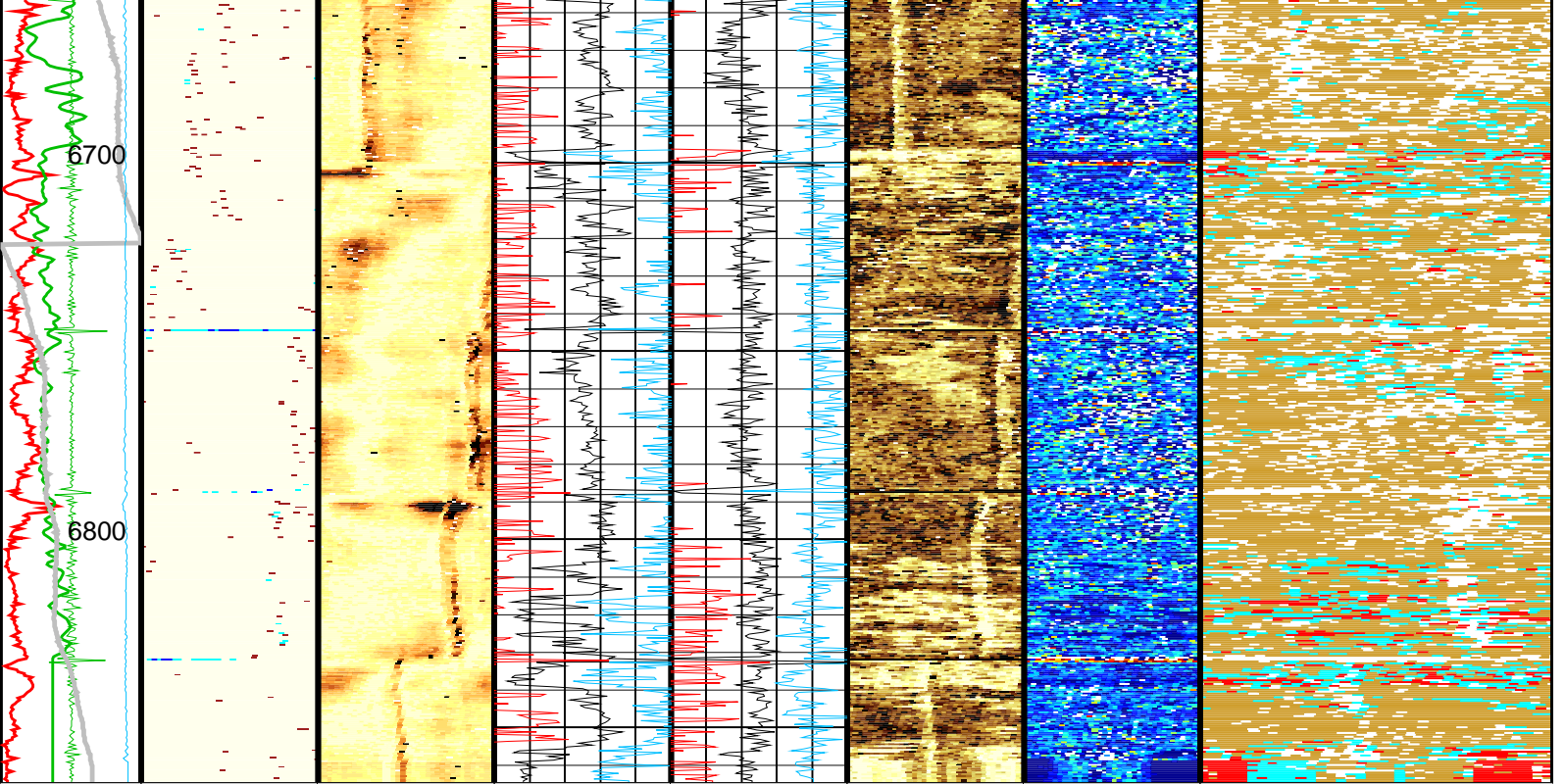












OP System Version: 19C1-222

eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

All USI Images are outside views

Center of image corresponds to bottom of casing

USI : HIGH Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.18 to 0.31 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	4.5	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	4	IN
DFVL	Default Fluid Velocity	200	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	51	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	3_UTFS_N_UFAI	
IMAR	Image Rotation	RB	
MW	Mud Weight	8.4	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	0.25	IN
U-USIT_CEMT	USIT Cement Type	ULTRA_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	-10	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	38_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_HF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	14.9916	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.7	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	11.60	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT Splice_USI_IS_036CUP FN:1 PRODUCER 17-Dec-2013 20:02 6864.5 FT 112.1 FT

Output DLIS Files

DEFAULT USI_IS_002PUP FN:1 PRODUCER 18-Dec-2013 15:12



USI IBC VDL WIDE MAIN PASS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 31-2C

Input DLIS Files

DEFAULT Splice_USI_IS_036CUP FN:1 PRODUCER 17-Dec-2013 20:02 6864.5 FT 112.1 FT

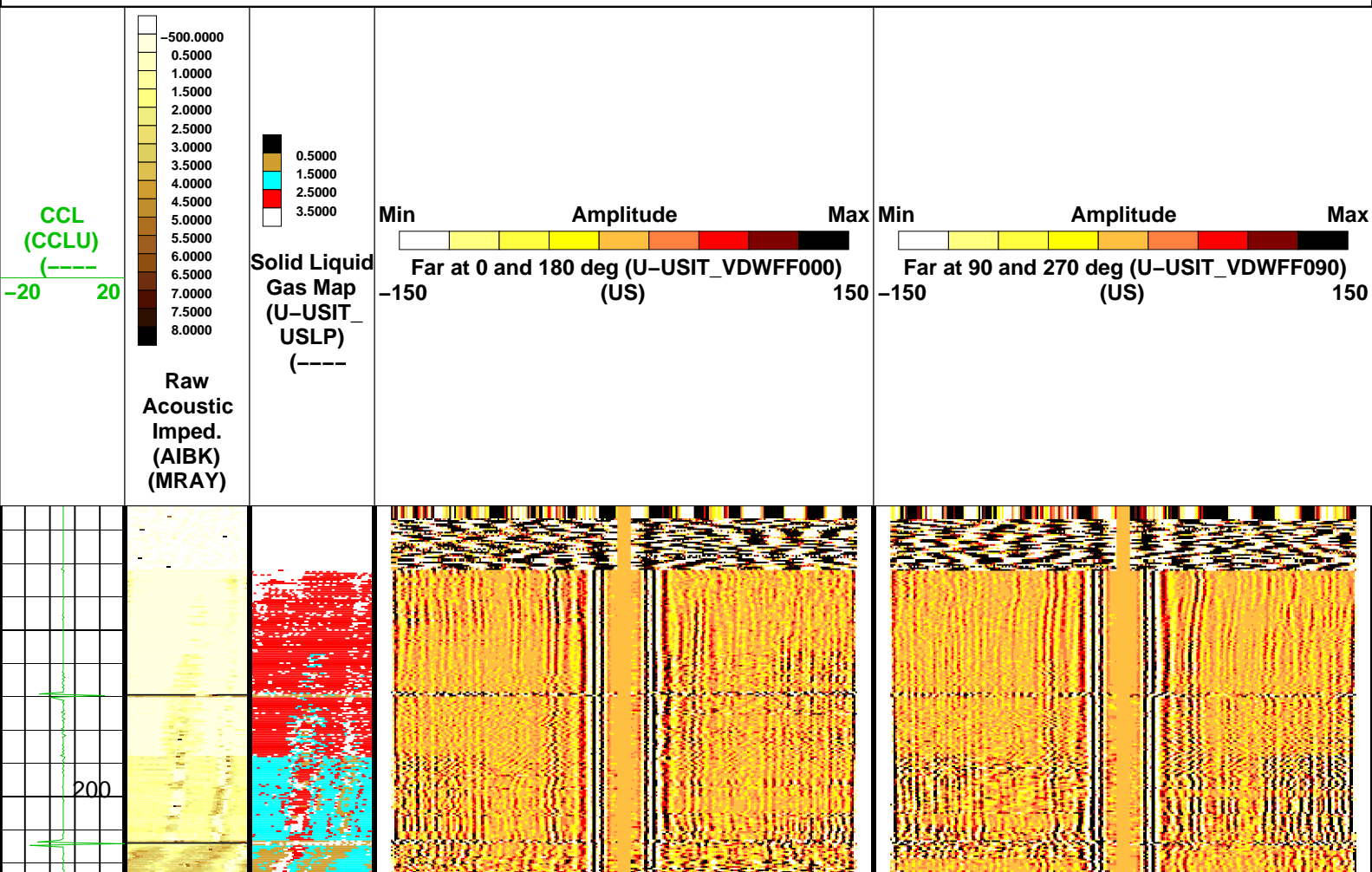
Output DLIS Files

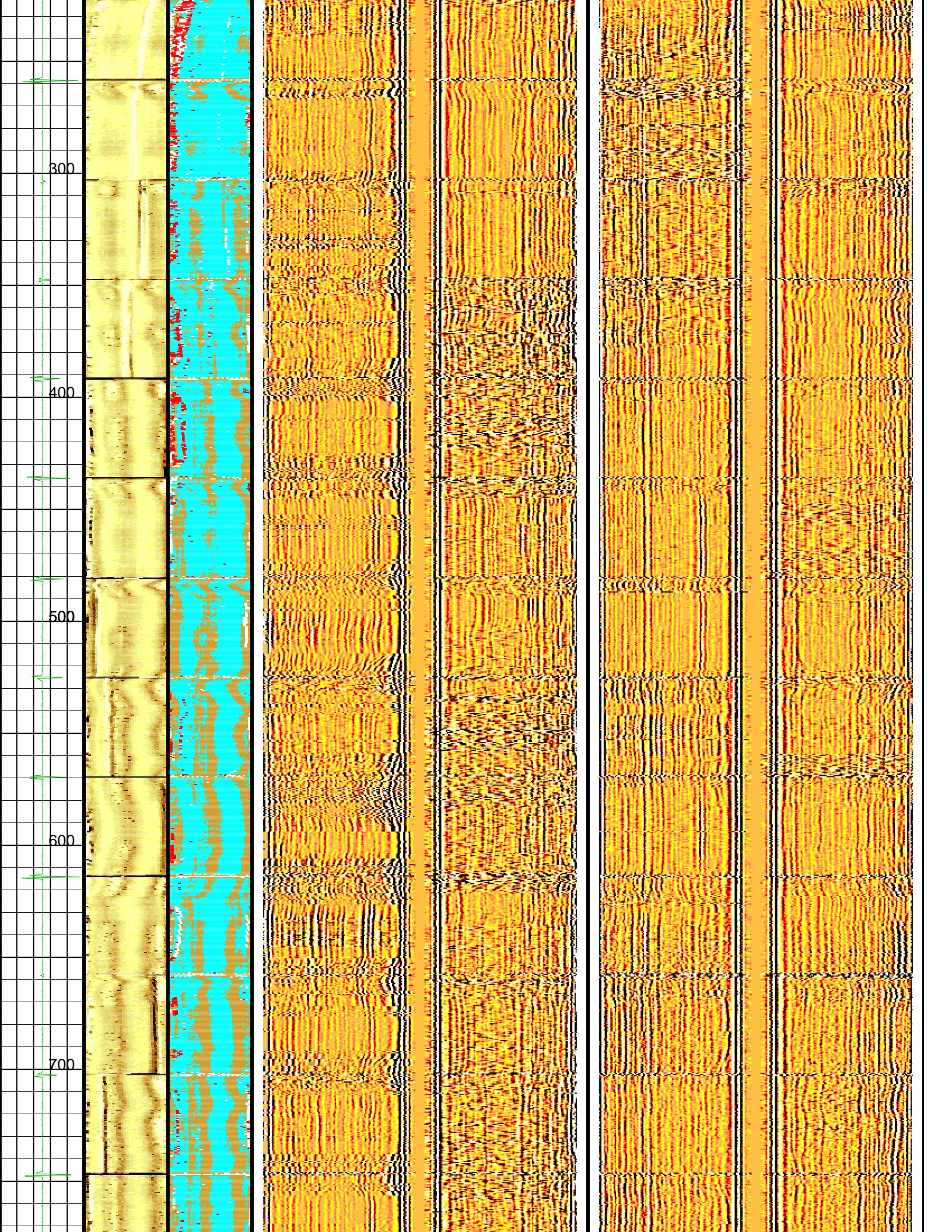
DEFAULT USI_IS_002PUP FN:1 PRODUCER 18-Dec-2013 15:12 6864.5 FT 112.5 FT

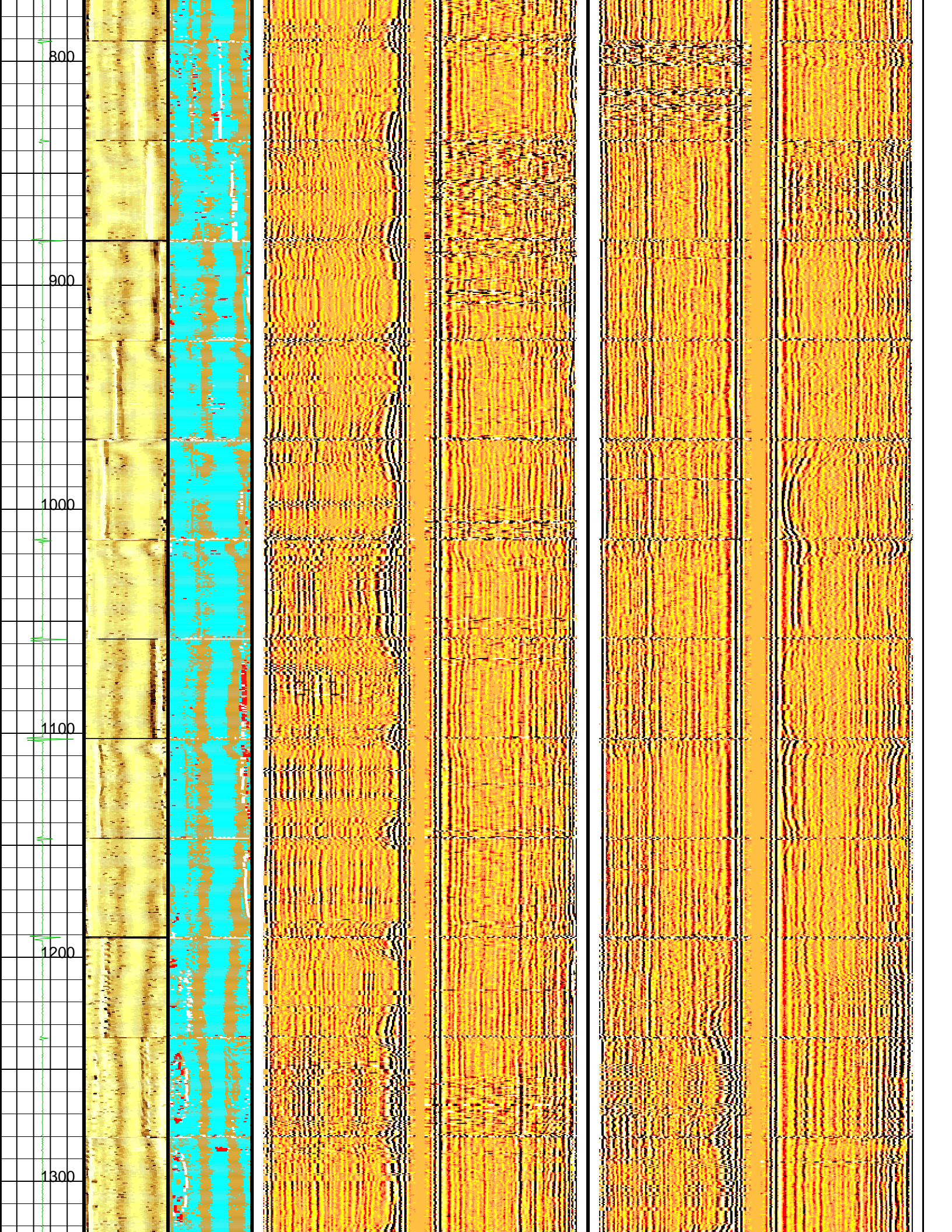
OP System Version: 19C1-222

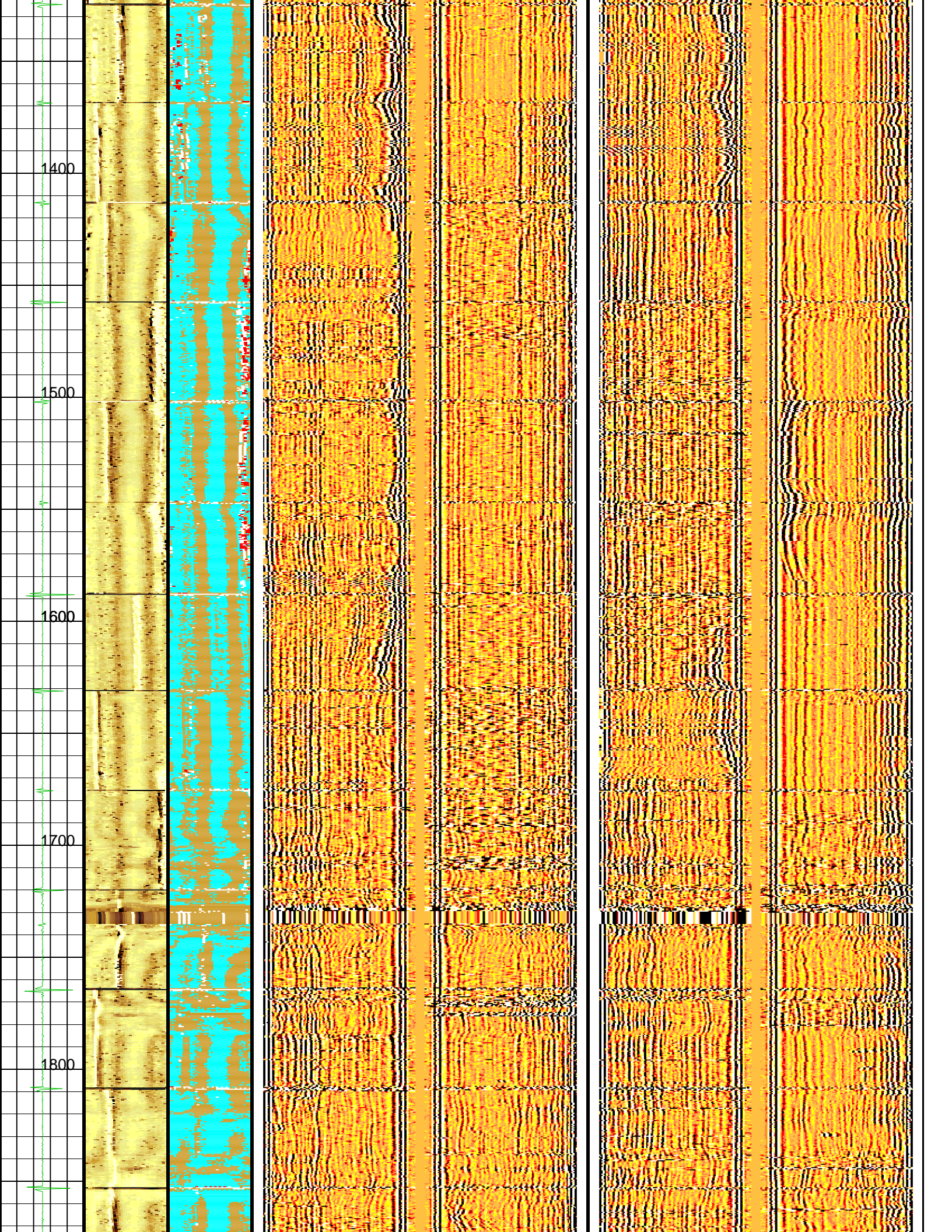
eWAFE Version: 1.189

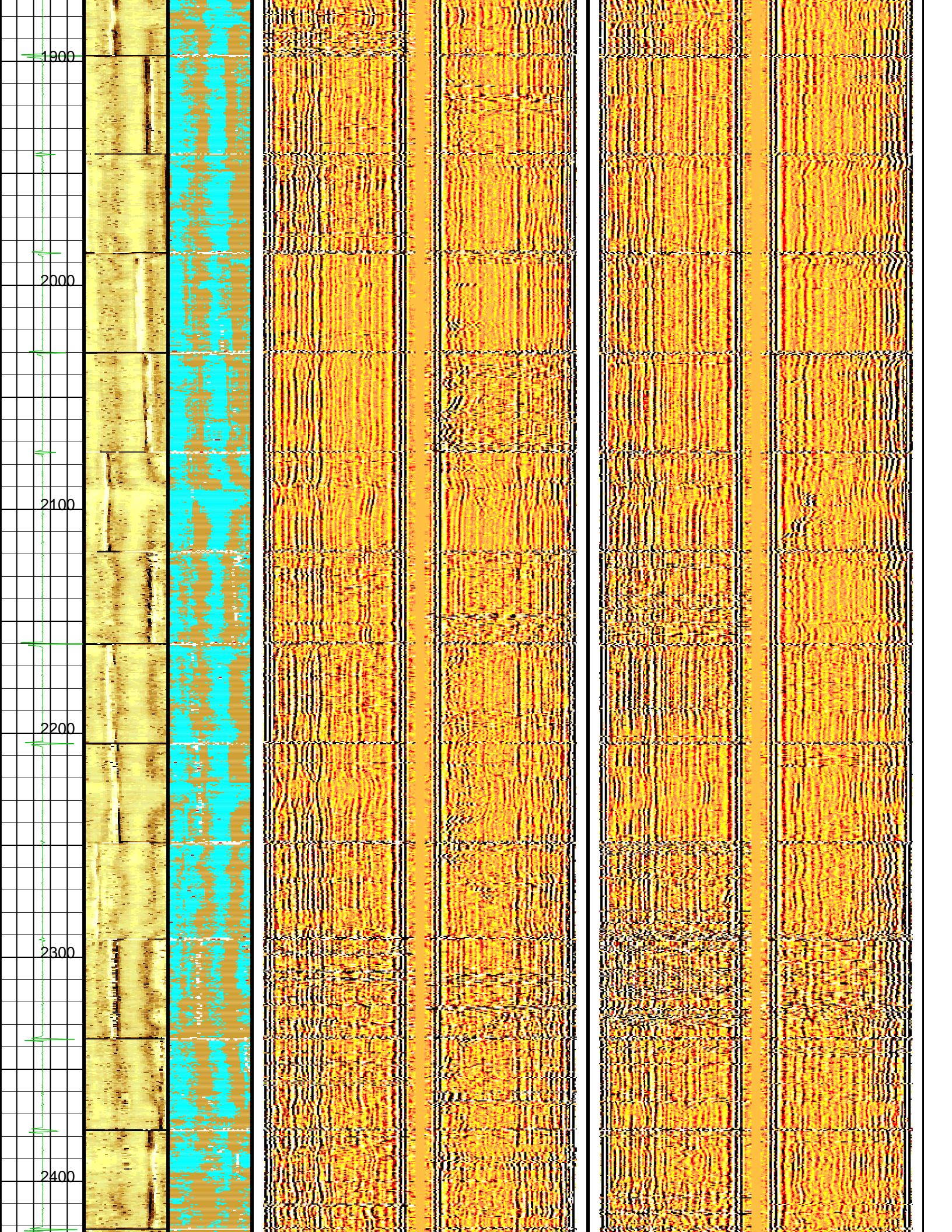
USIT-D 19C1-222 GPIT-F 19C1-222
EDTC-B 19C1-222

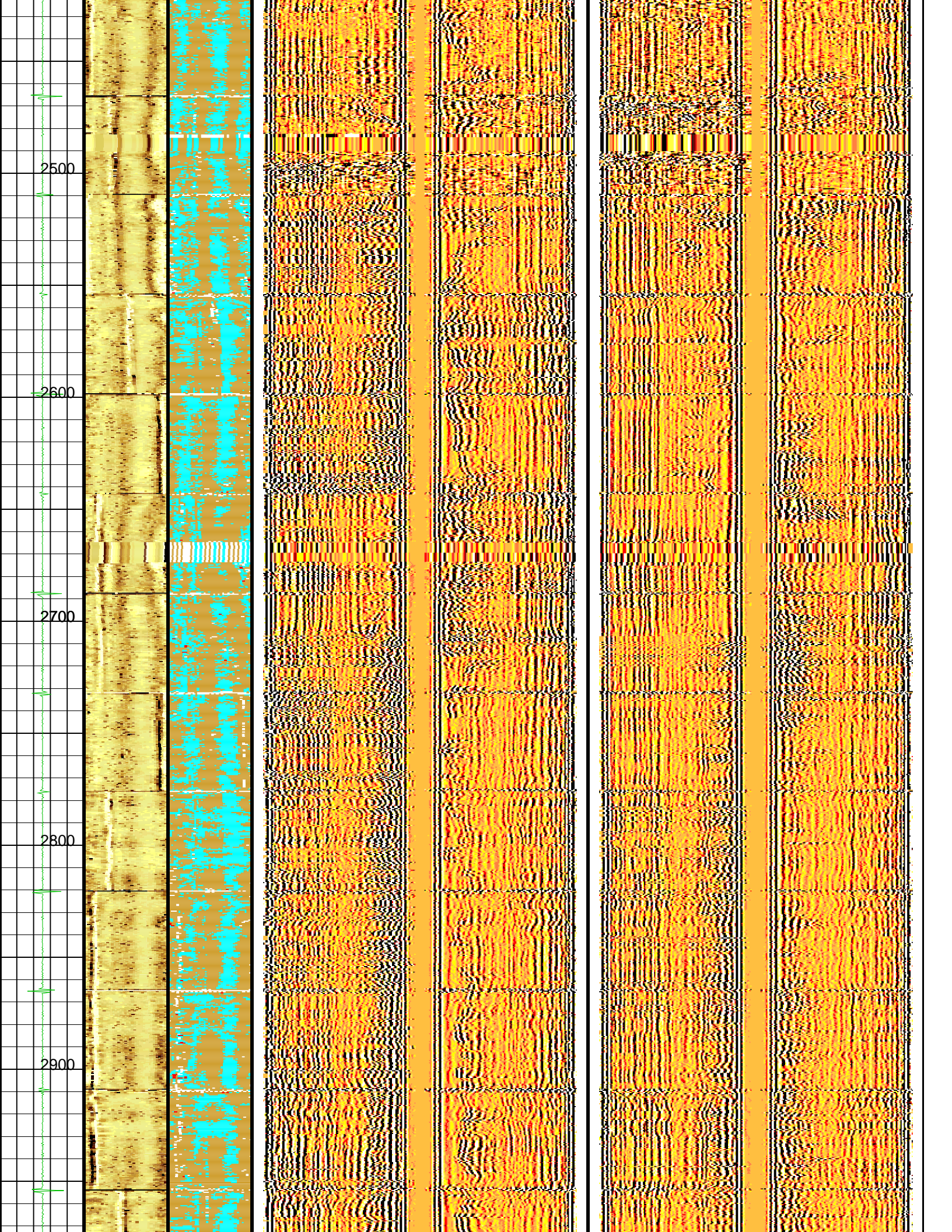


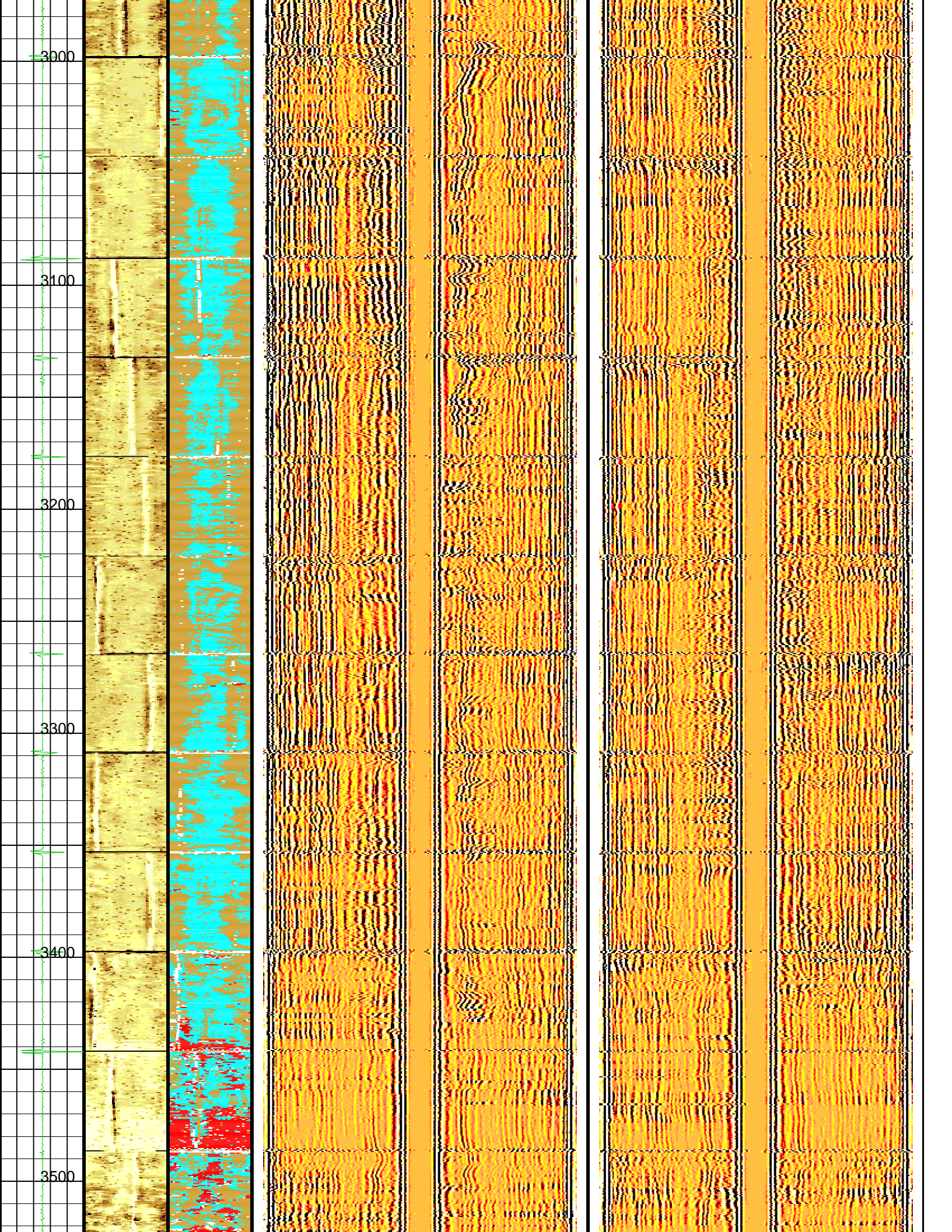


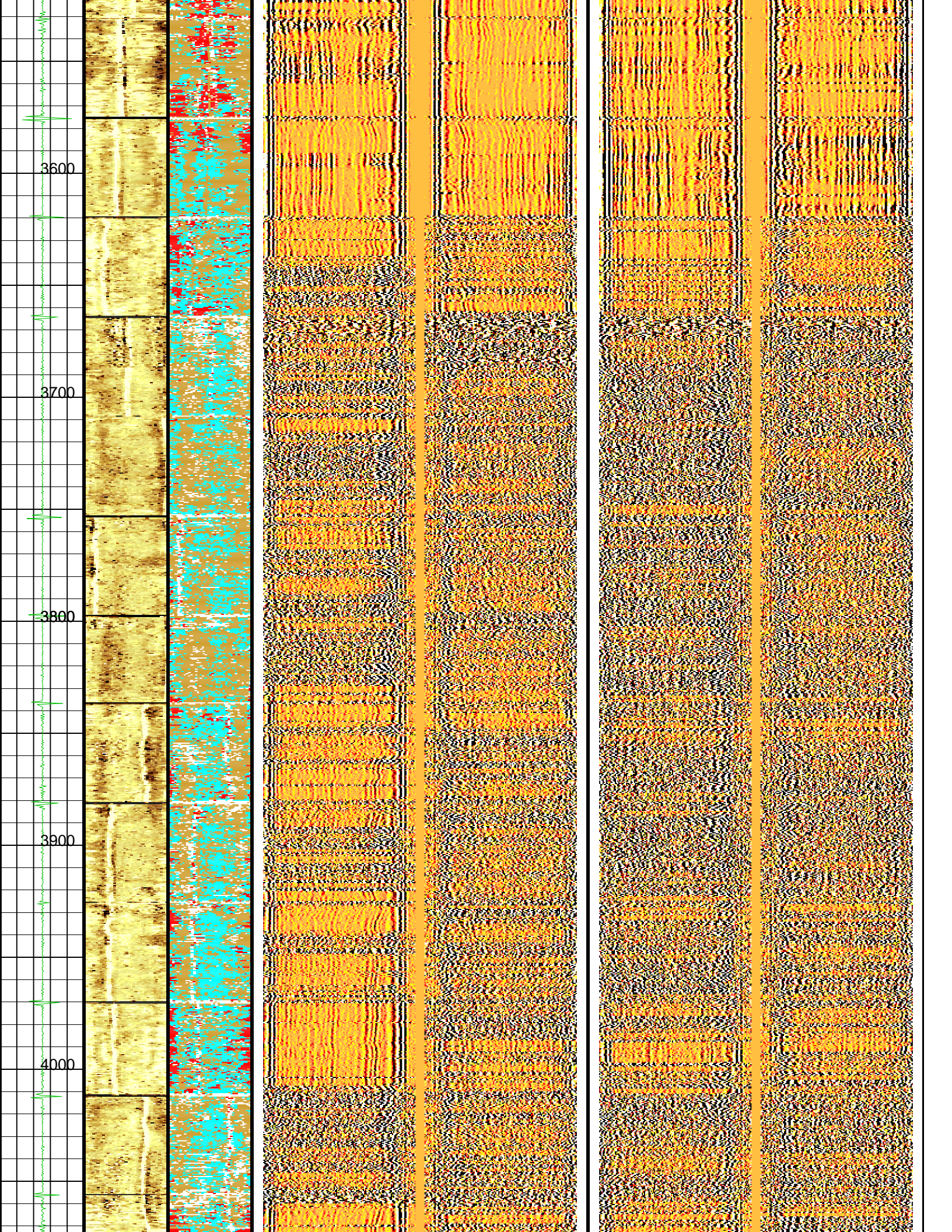


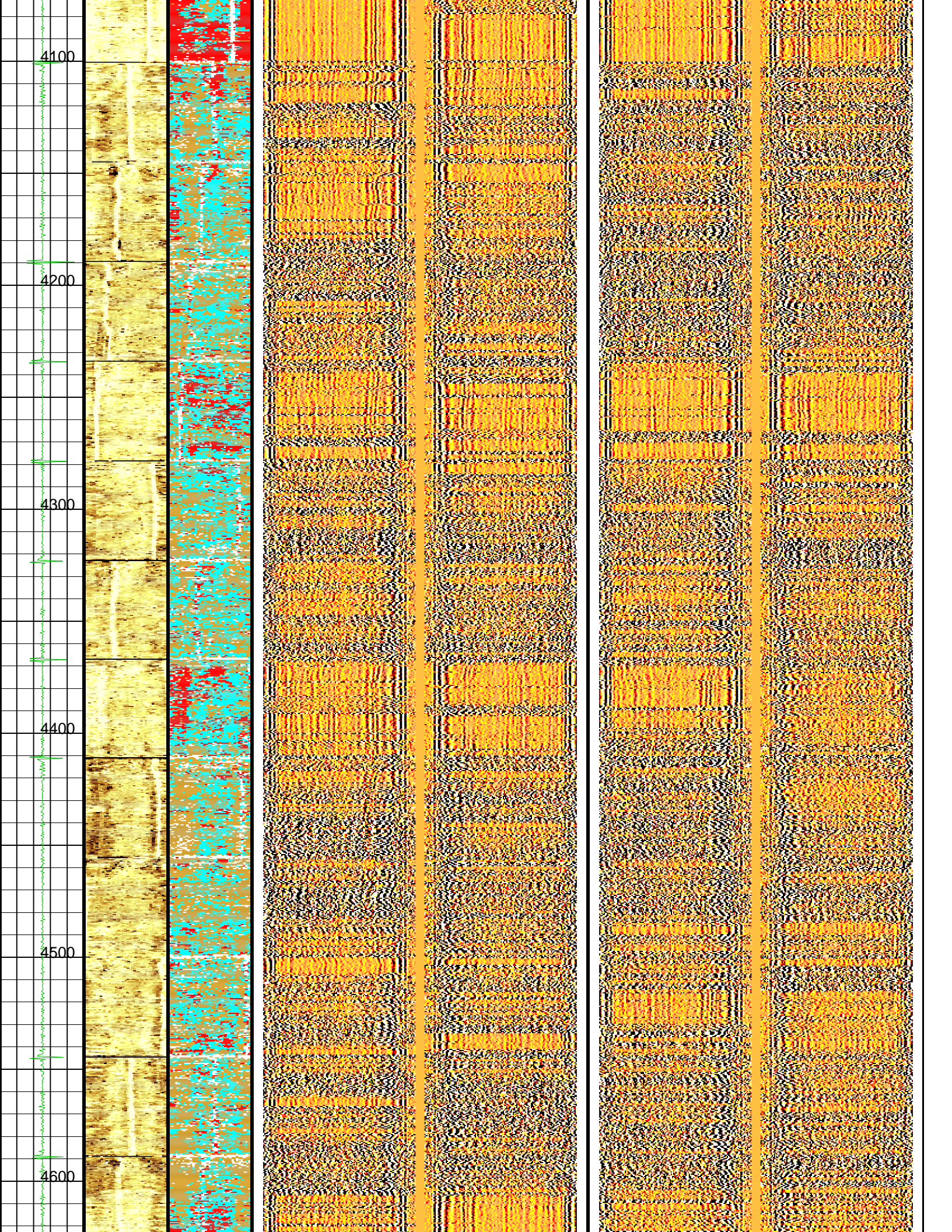


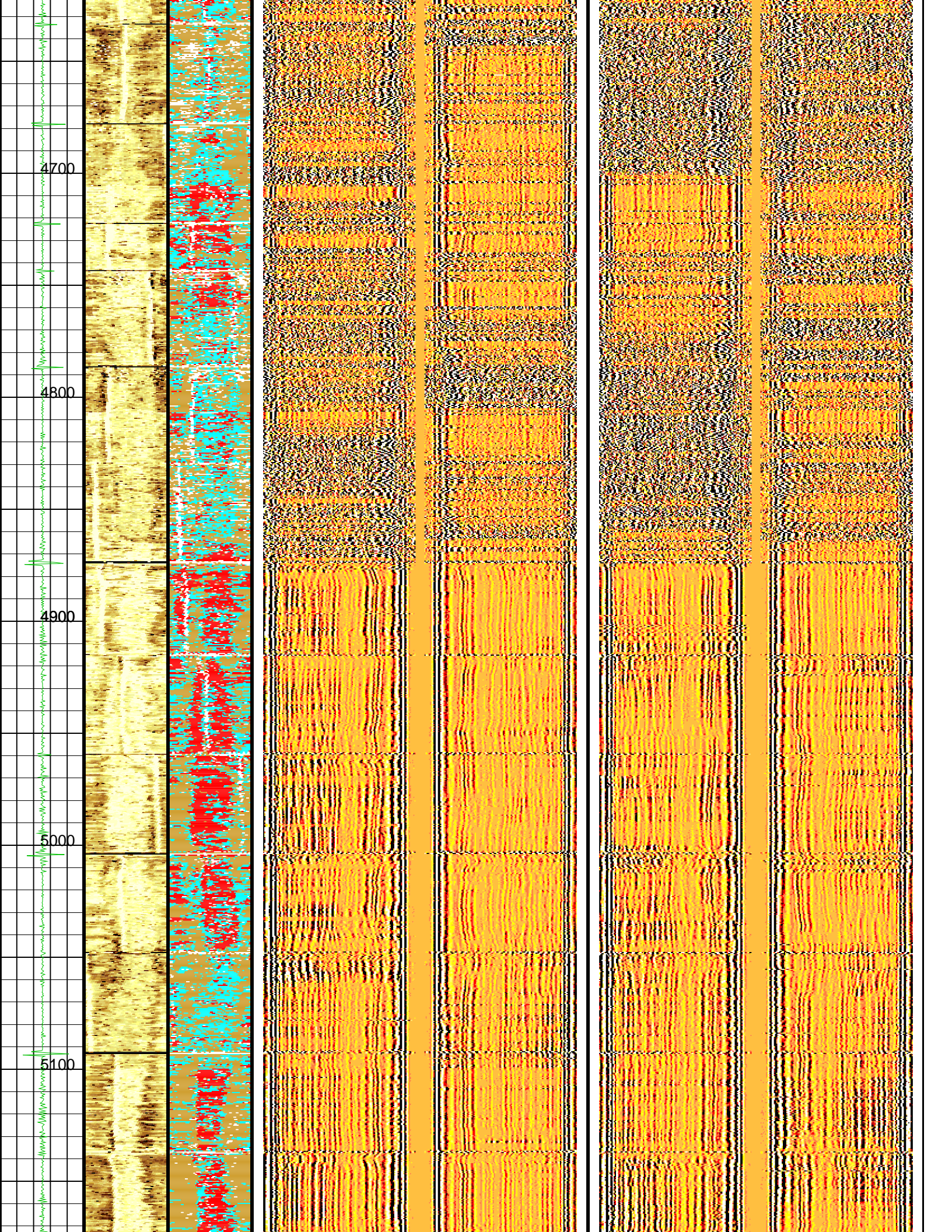


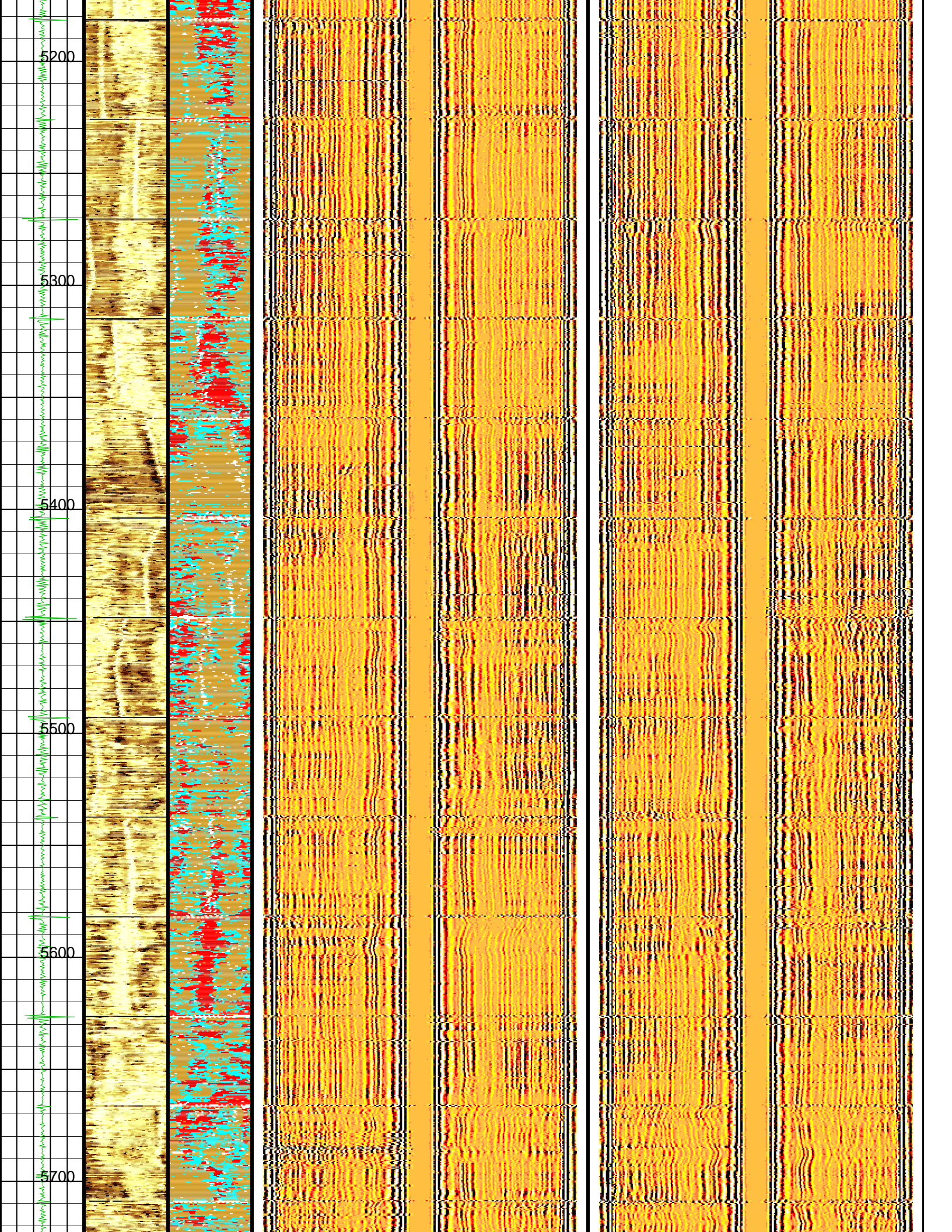


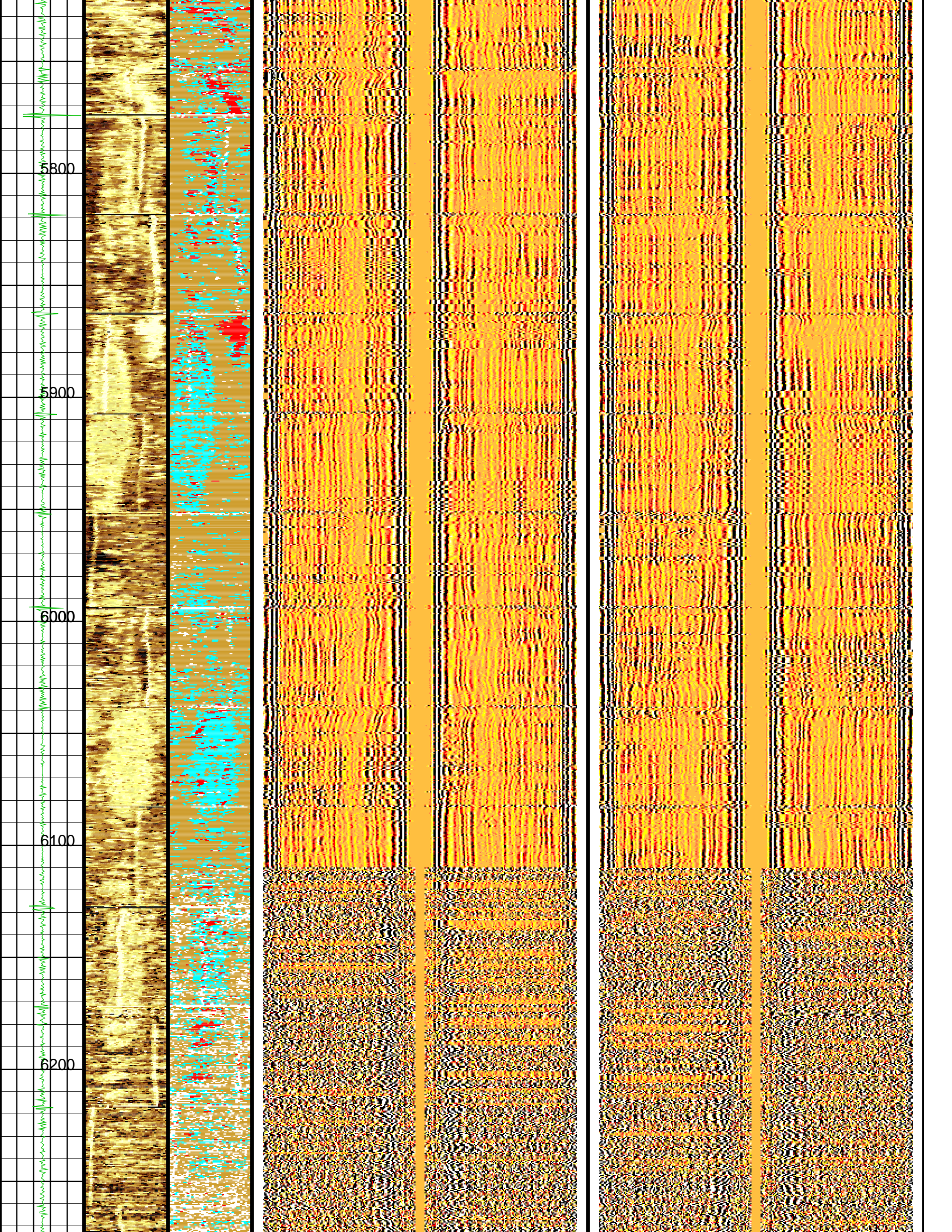


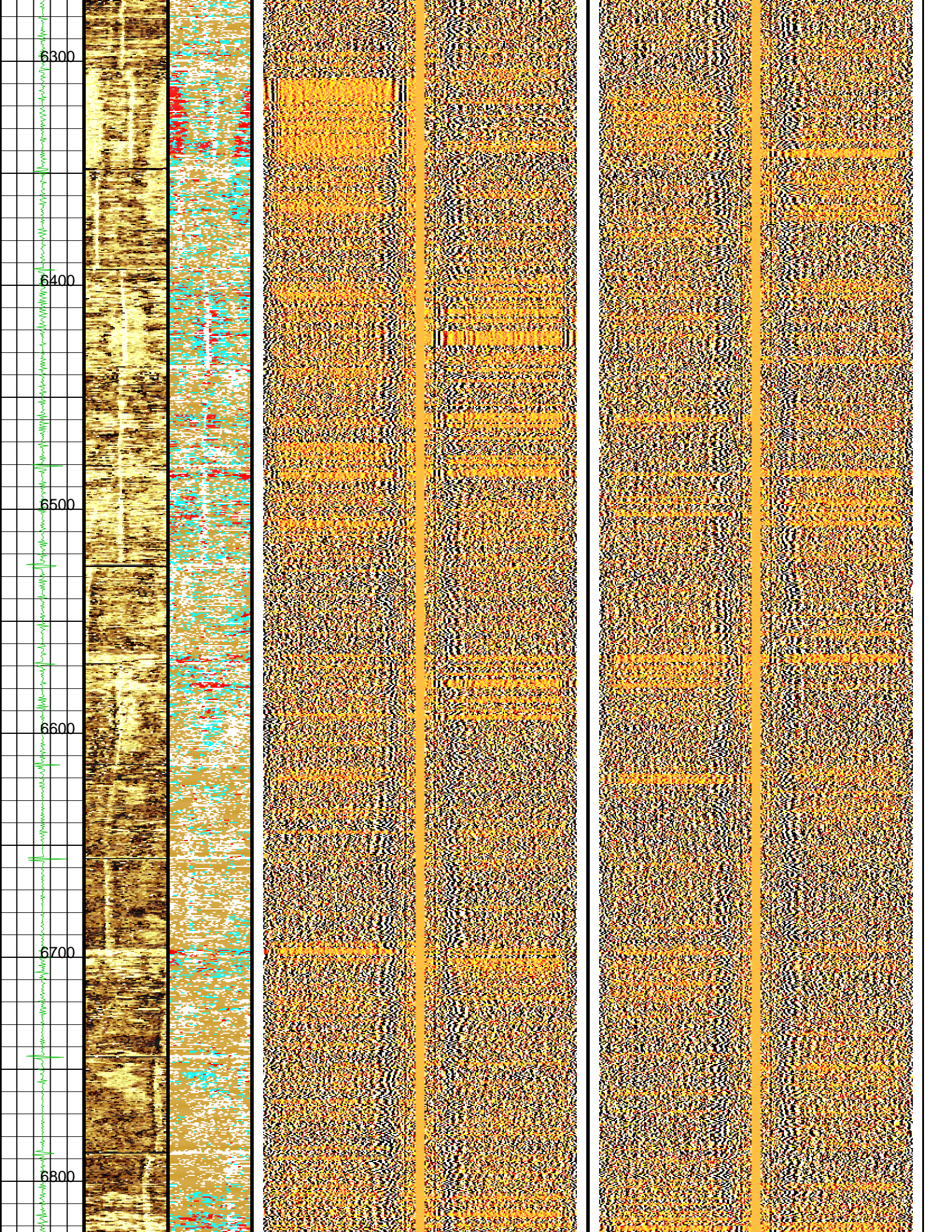


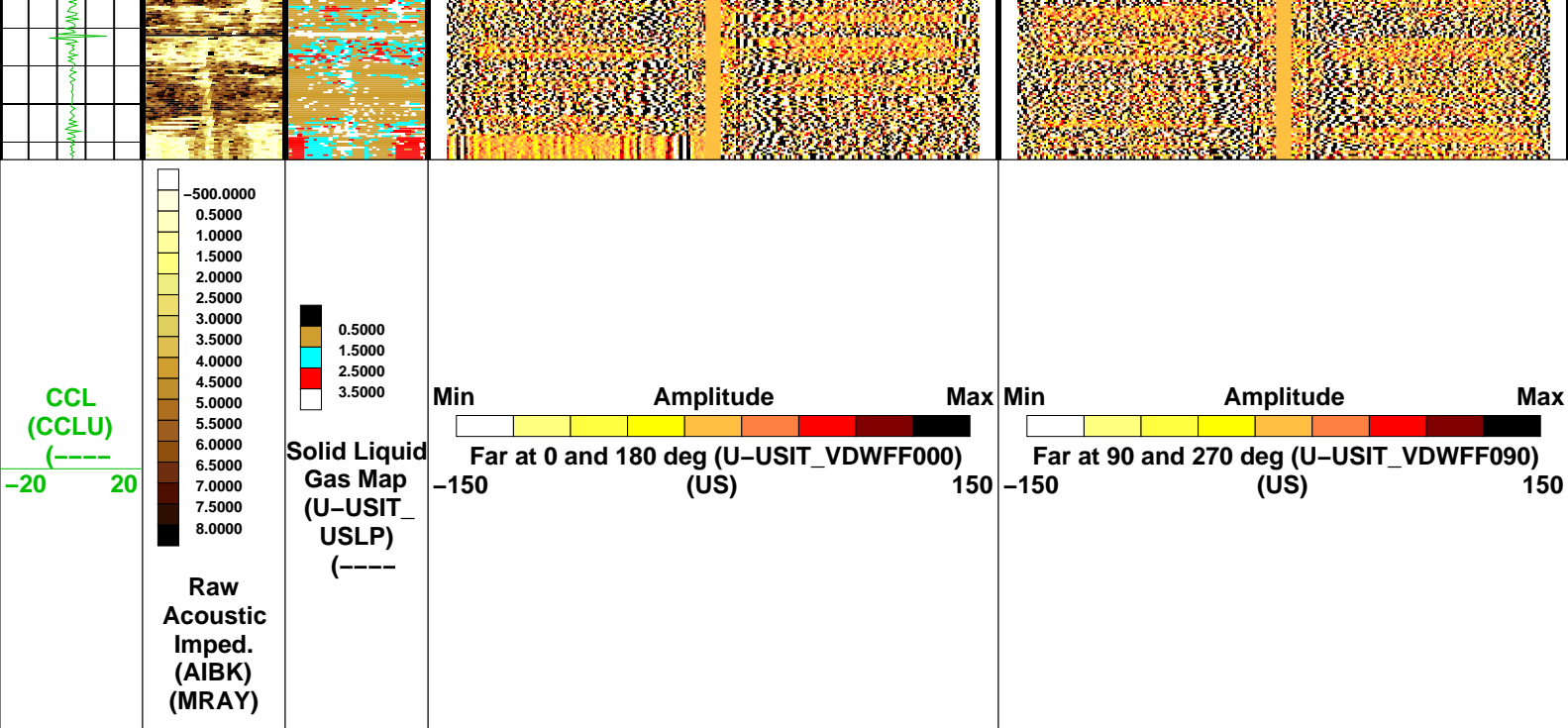












Parameters

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	4.5	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	4	IN
DFVL	Default Fluid Velocity	200	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	51	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	3_UTFS_N_UFAI	
IMAR	Image Rotation	RB	
MW	Mud Weight	8.4	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	0.25	IN
U-USIT_CEMT	USIT Cement Type	ULTRA_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	-10	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	38_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_HF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	14.9916	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.7	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTCS	Acoustic Impedance Threshold for Cas	0.3	MRAY

ZTGS	System and Miscellaneous	Acoustic Impedance Threshold for Gas	0.3	MRAY
BS		Bit Size	8.750	IN
CWEI		Casing Weight	11.60	LB/F
DO		Depth Offset for Playback	0.0	FT
PP		Playback Processing	RECOMPUTE	

Format: USI_IBC_VDL_WIDE Vertical Scale: 2" per 100' Graphics File Created: 18-Dec-2013 15:12

OP System Version: 19C1-222

eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

Input DLIS Files

DEFAULT	Splice_USI_IS_036CUP	FN:1	PRODUCER	17-Dec-2013 20:02	6864.5 FT	112.1 FT
---------	----------------------	------	----------	-------------------	-----------	----------

Output DLIS Files

DEFAULT	USI_IS_002PUP	FN:1	PRODUCER	18-Dec-2013 15:12		
---------	---------------	------	----------	-------------------	--	--



COMPRESSED GOODWIN MAIN PASS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: FEDERAL 31-2C

Input DLIS Files

DEFAULT	Splice_USI_IS_036CUP	FN:1	PRODUCER	17-Dec-2013 20:02	6864.5 FT	112.1 FT
---------	----------------------	------	----------	-------------------	-----------	----------

Output DLIS Files

DEFAULT	USI_IS_002PUP	FN:1	PRODUCER	18-Dec-2013 15:12	6864.5 FT	112.5 FT
---------	---------------	------	----------	-------------------	-----------	----------

OP System Version: 19C1-222

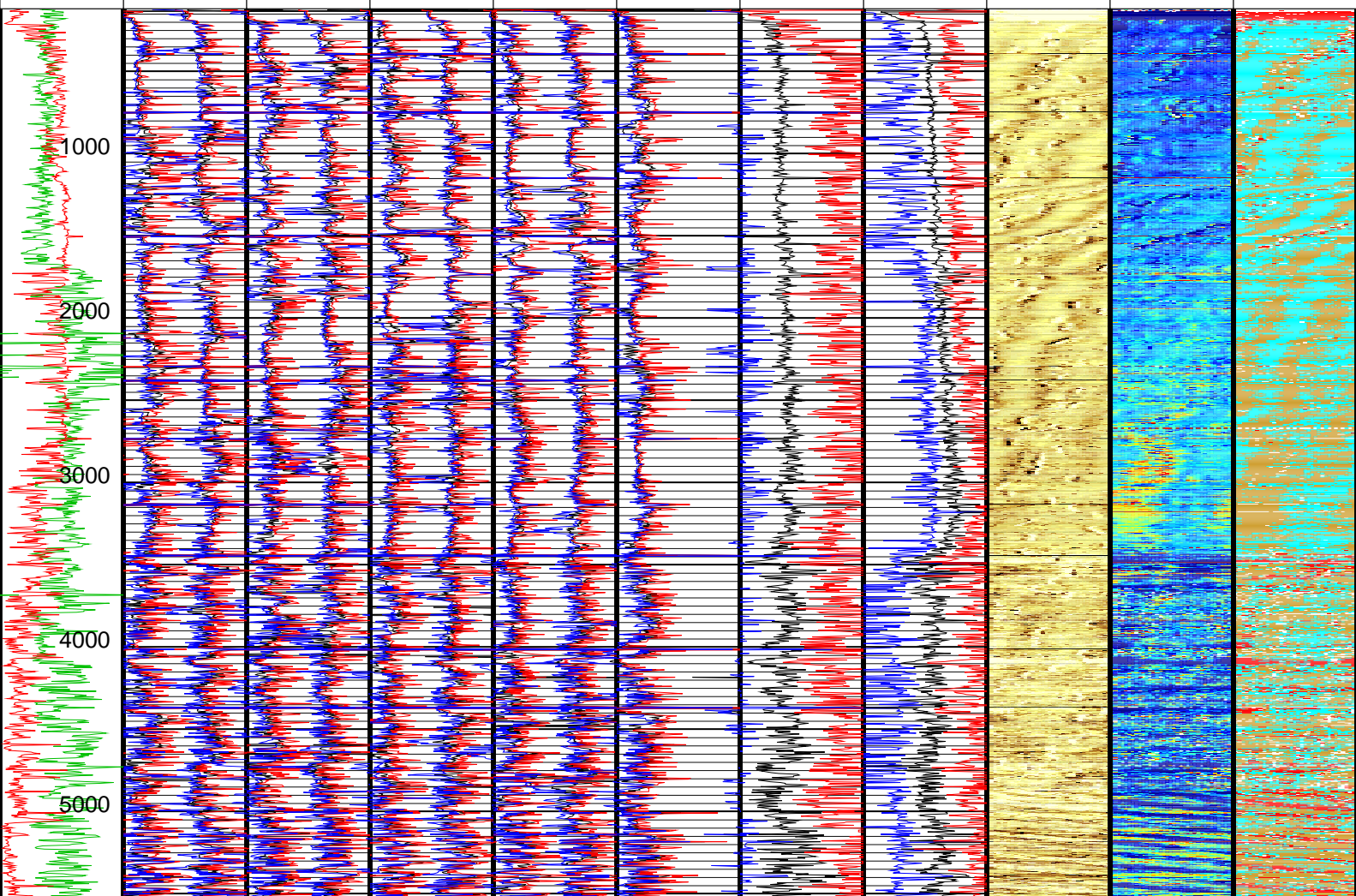
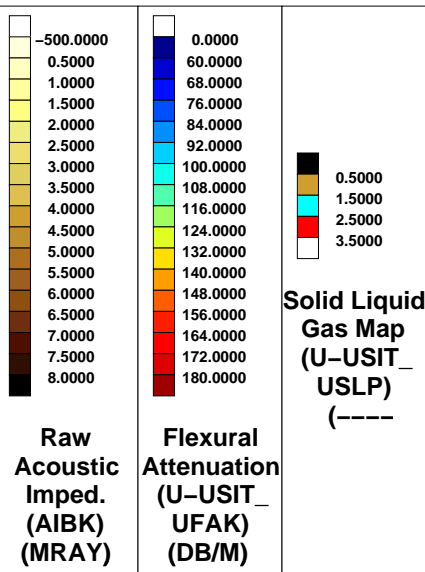
eWAFE Version: 1.189

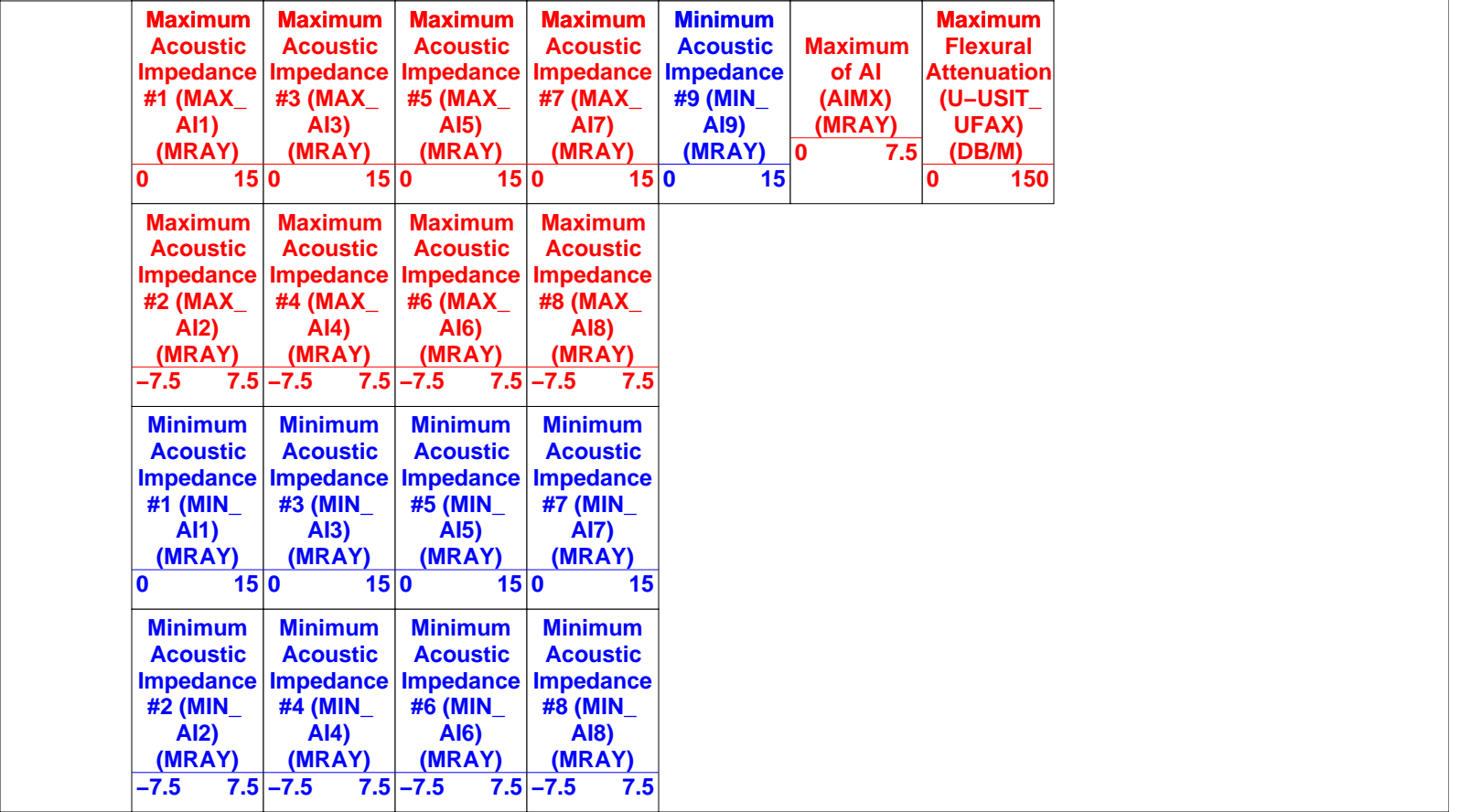
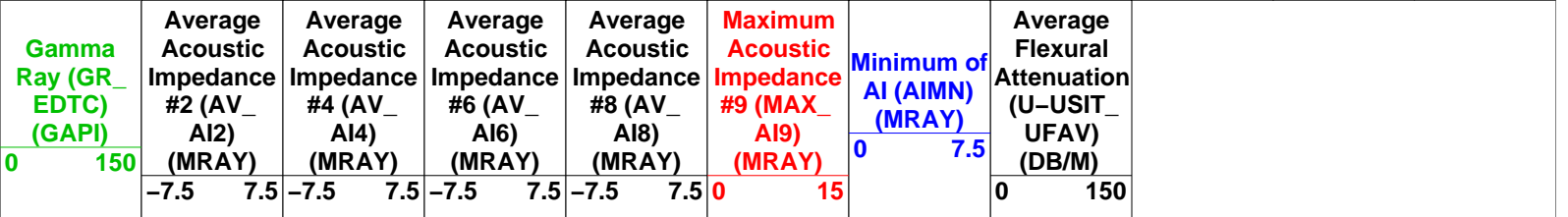
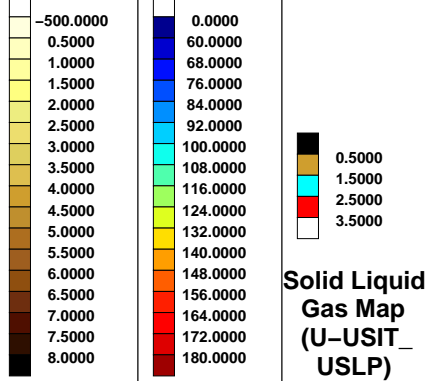
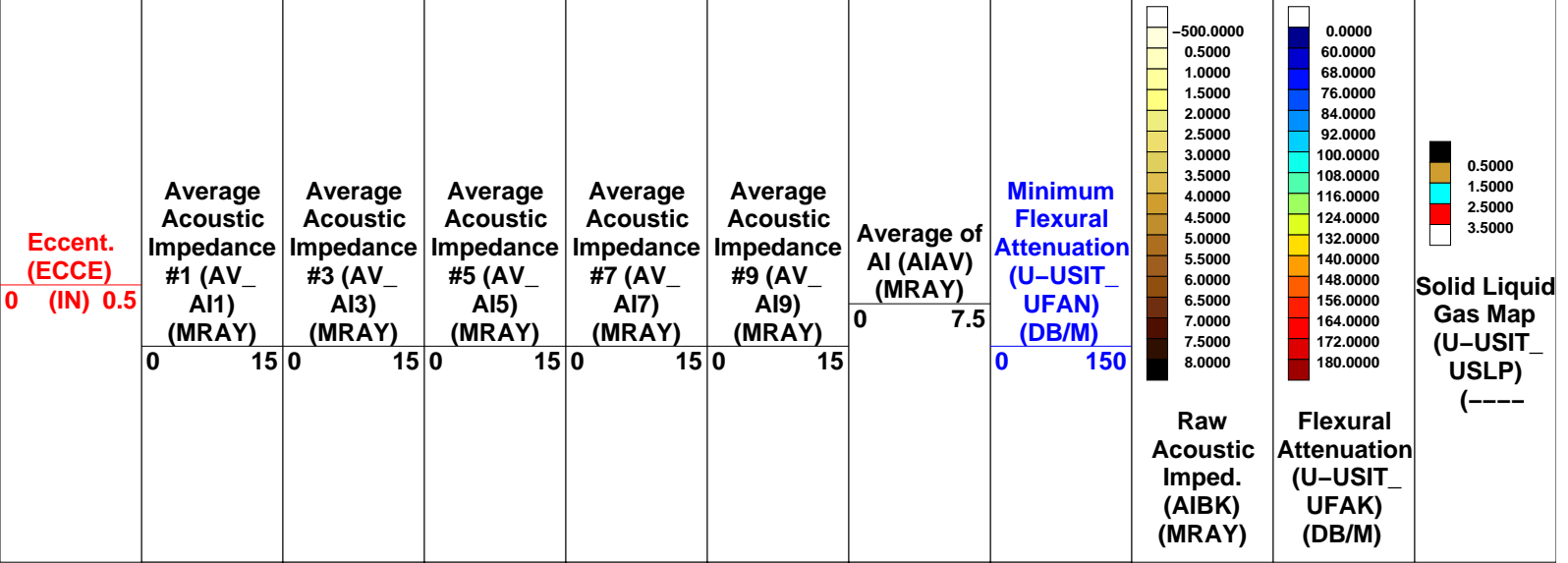
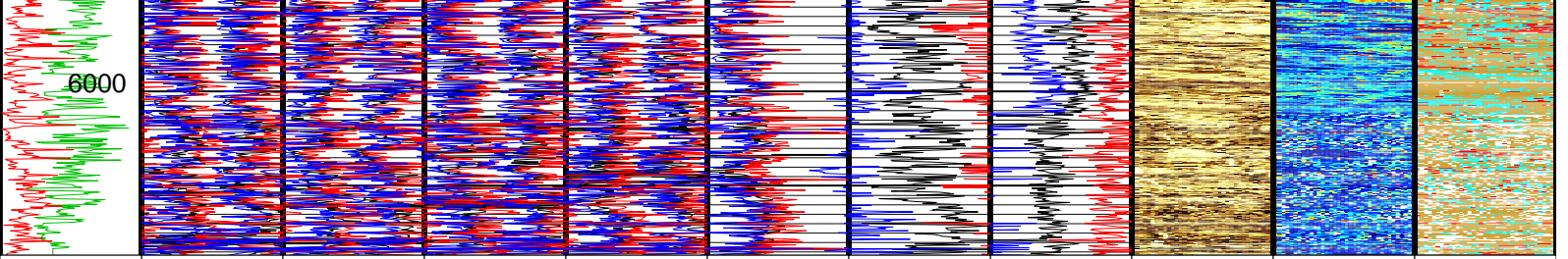
USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

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)

	(MRAY)	(MRAY)	(MRAY)	(MRAY)	(MRAY)	(MRAY)	(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	150		
Gamma Ray (GR_EDTC) (GAPI)	Average Acoustic Impedance #2 (AV_AI2) (MRAY)	Average Acoustic Impedance #4 (AV_AI4) (MRAY)	Average Acoustic Impedance #6 (AV_AI6) (MRAY)	Average Acoustic Impedance #8 (AV_AI8) (MRAY)	Maximum Acoustic Impedance #9 (MAX_AI9) (MRAY)	Minimum of AI (AIMN) (MRAY)	Average Flexural Attenuation (U-USIT_UFAV) (DB/M)			
0	15	0	15	0	15	0	150			
	-7.5	7.5	-7.5	7.5	-7.5	7.5	-7.5	7.5	0	15

Eccent. (ECCE) (IN) 0.5	Average Acoustic Impedance #1 (AV_AI1) (MRAY)	Average Acoustic Impedance #3 (AV_AI3) (MRAY)	Average Acoustic Impedance #5 (AV_AI5) (MRAY)	Average Acoustic Impedance #7 (AV_AI7) (MRAY)	Average Acoustic Impedance #9 (AV_AI9) (MRAY)	Average of AI (AIAV) (MRAY)	Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)			
0	15	0	15	0	15	0	150			
	-7.5	7.5	-7.5	7.5	-7.5	7.5	-7.5	7.5	0	15





Format: M_Goodwin_Compressed Vertical Scale: 0.1" per 100' Graphics File Created: 18-Dec-2013 15:12

OP System Version: 19C1-222
eWAFE Version: 1.189

All USI Images are outside views
Center of image corresponds to bottom of casing

USI : HIGH Frequency Compression Mode Used For Logging.
Recommended casing thickness range for optimum cement impedance measurement : 0.18 to 0.31 IN.

Input DLIS Files

DEFAULT Splice_USI_IS_036CUP FN:1 PRODUCER 17-Dec-2013 20:02 6864.5 FT 112.1 FT

Output DLIS Files

DEFAULT USI_IS_002PUP FN:1 PRODUCER 18-Dec-2013 15:12



**USI IBC SLG COMPOSITE
REPEAT PASS**

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 31-2C

Input DLIS Files

DEFAULT USI_IS_038PUP FN:36 PRODUCER 17-Dec-2013 20:02 6133.0 FT 5808.5 FT

Output DLIS Files

DEFAULT USI_IS_004PUP FN:3 PRODUCER 18-Dec-2013 15:24 6133.0 FT 5808.5 FT

OP System Version: 19C1-222

eWAFE Version: 1.189

USIT-D 19C1-222 GPIT-F 19C1-222
EDTC-B 19C1-222

Image rotation (UCAZ) (DEG)
0 360

Tension (TENS) (LBF)
5000 0

CCL (CCLU) (---)
-20 20

RSAV (RSAV)

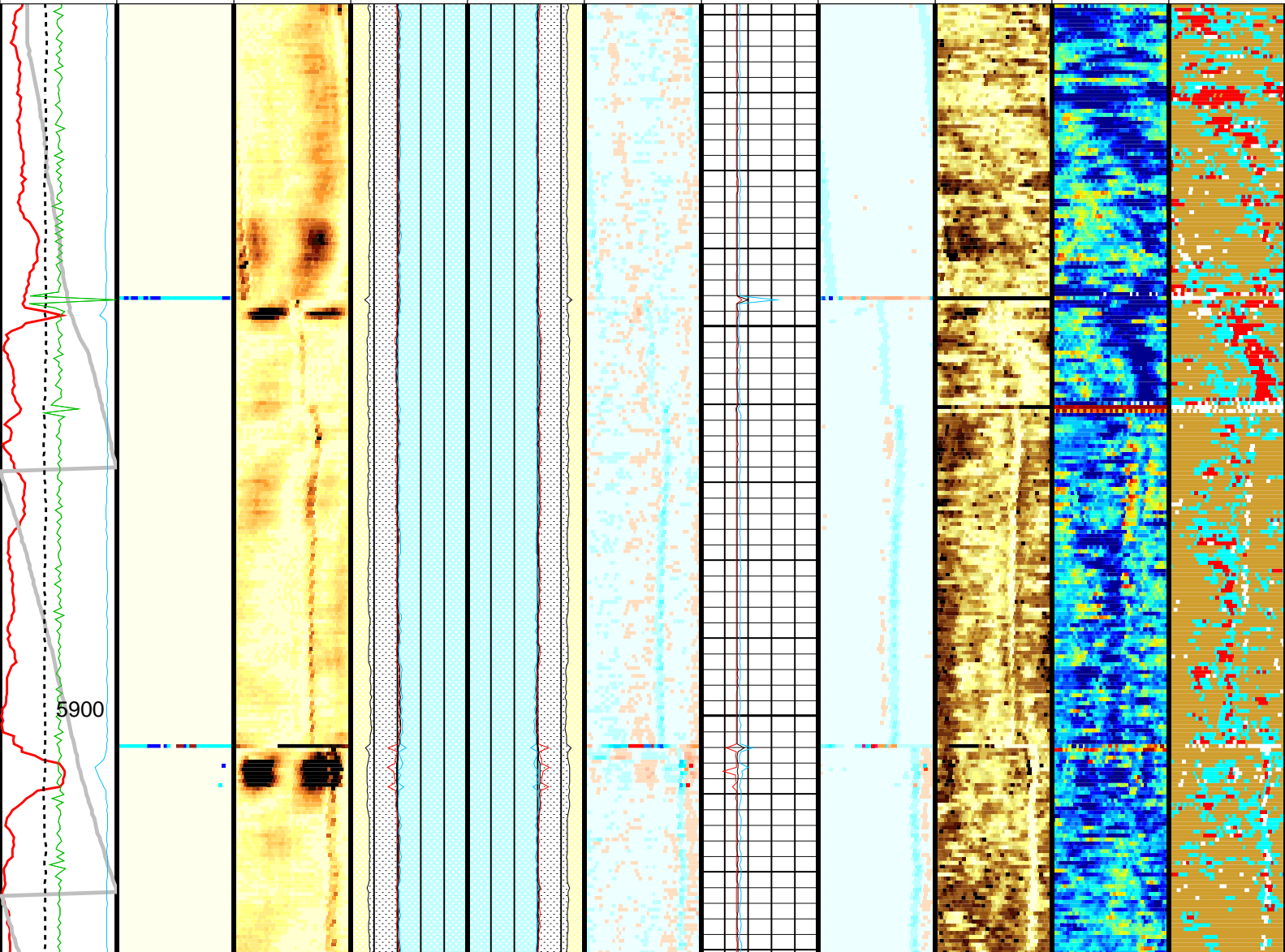
Min of Internal radius (IRMN) (IN)	Min of Internal radius (IRMN) (IN)
2.4 1.4	1.4 2.4

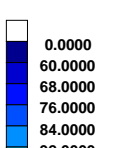
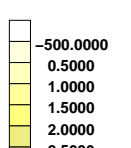
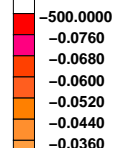
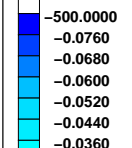
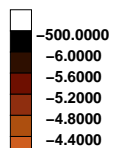
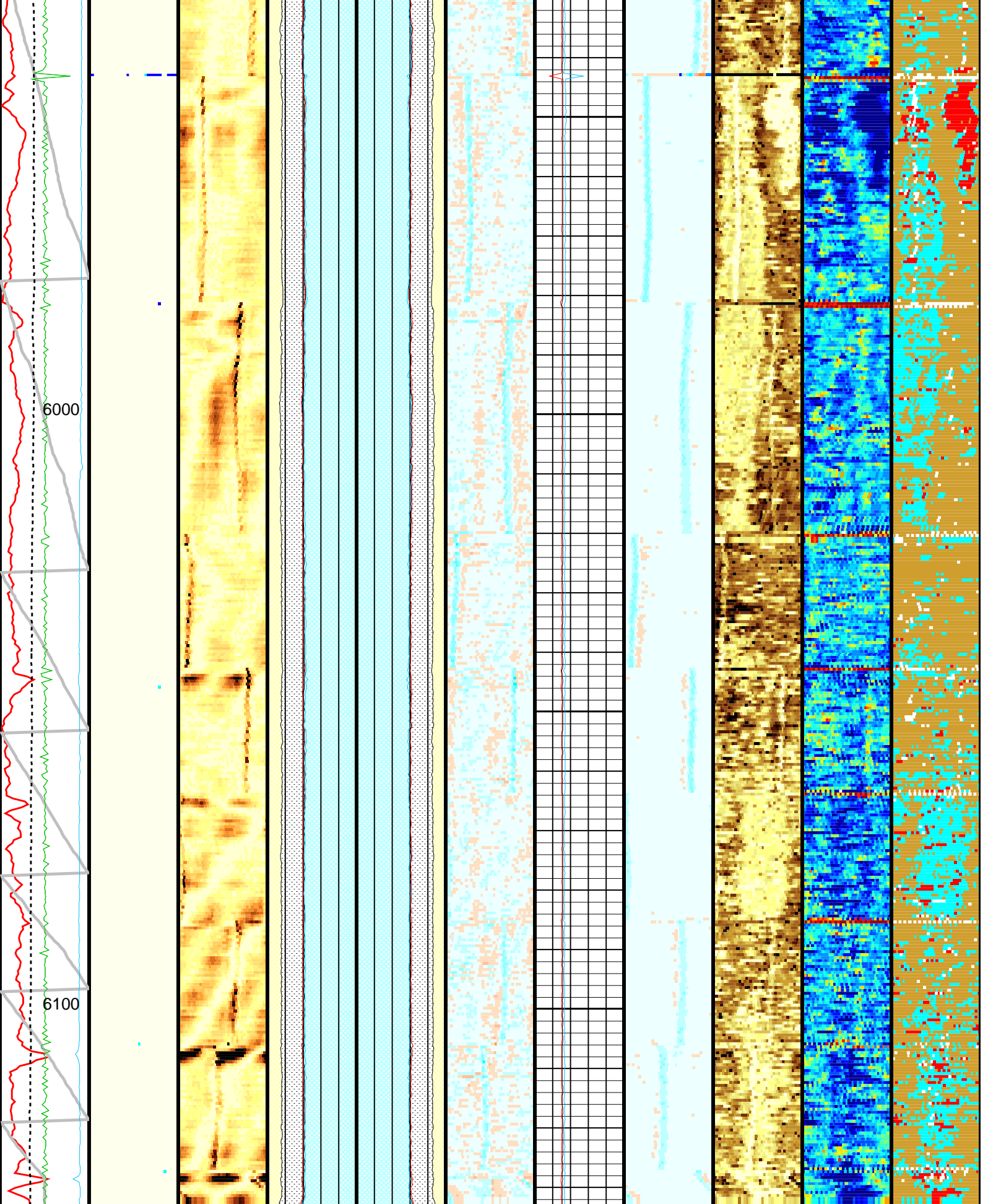
Internal radius Maximum Internal radius Maximum

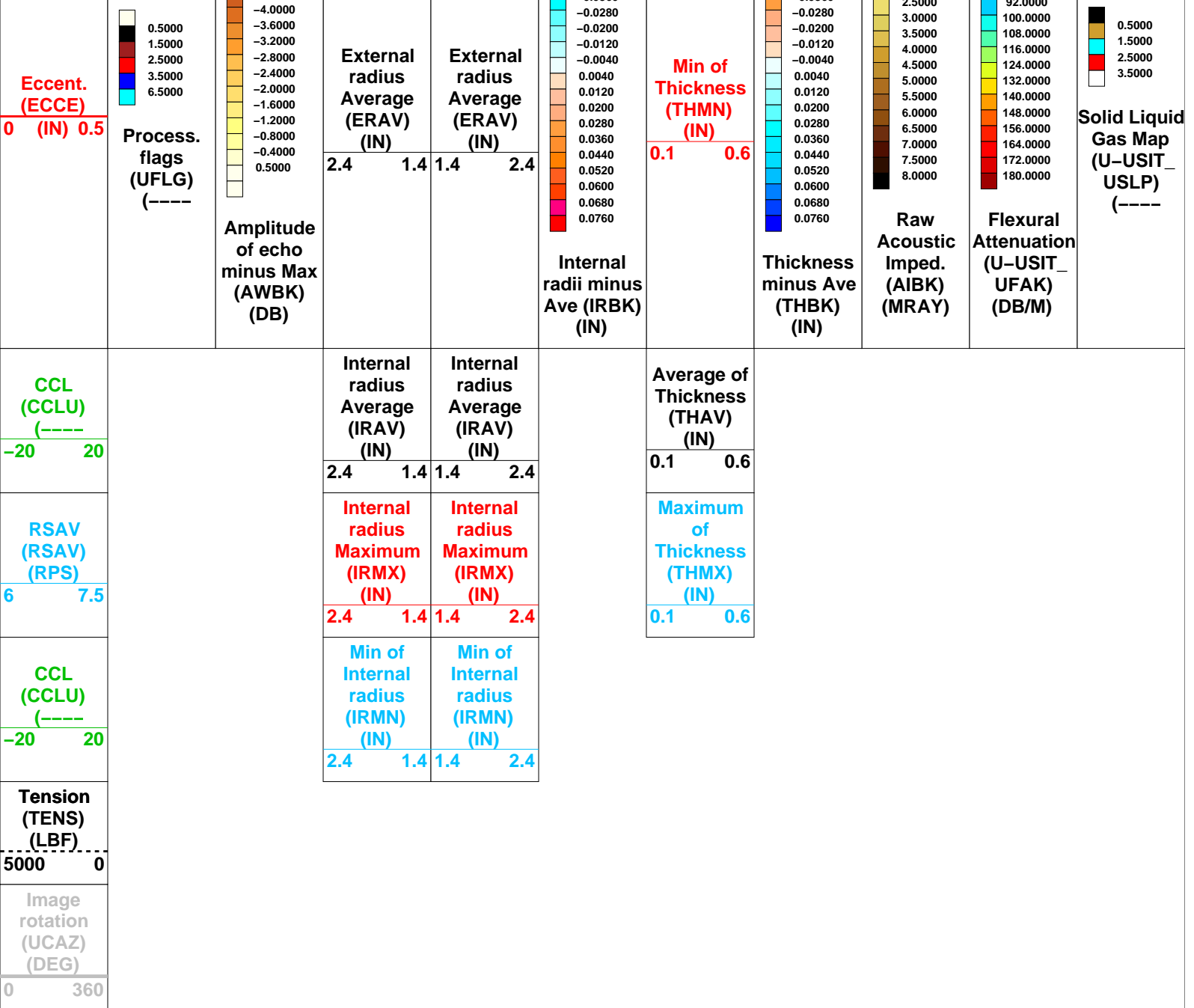
Maximum of Thickness

(RSAV) (RPS)			Maximum (IRMX) (IN)	Maximum (IRMX) (IN)	Thickness (THMX) (IN)
6 7.5			2.4 1.4	1.4 2.4	0.1 0.6
CCL (CCLU) (-----)			Internal radius Average (IRAV) (IN)	Internal radius Average (IRAV) (IN)	Average of Thickness (THAV) (IN)
-20 20			2.4 1.4	1.4 2.4	0.1 0.6

Eccent. (ECCE)	Process. flags (UFLG) (-----)	Amplitude of echo minus Max (AWBK) (DB)	External radius Average (ERAV) (IN)	External radius Average (ERAV) (IN)	Min of Thickness (THMN) (IN)	Thickness minus Ave (THBK) (IN)	Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (U-USIT_ UFAK) (DB/M)	Solid Liquid Gas Map (U-USIT_ USLP) (-----)
0 (IN) 0.5			2.4 1.4	1.4 2.4	0.1 0.6				







Format: USI_IBC_SLG_Composite Vertical Scale: 5" per 100' Graphics File Created: 18-Dec-2013 15:24

OP System Version: 19C1-222
eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

All USI Images are outside views
Center of image corresponds to bottom of casing

USI : HIGH Frequency Compression Mode Used For Logging.
Recommended casing thickness range for optimum cement impedance measurement : 0.18 to 0.31 IN.

Parameters

DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMY	Maximum Gain of Cartridge	20 DB

AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	4.5	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	4	IN
DFVL	Default Fluid Velocity	195	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	51	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	3_UTFS_N_UFAI	
IMAR	Image Rotation	RB	
MW	Mud Weight	8.4	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	0.25	IN
U-USIT_CEMT	USIT Cement Type	ULTRA_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	-10	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	38_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_HF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	14.9916	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.6	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	11.60	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

DEFAULT USI_IS_038PUP FN:36 PRODUCER 17-Dec-2013 20:02 6133.0 FT 5808.5 FT

Output DLIS Files

DEFAULT USI_IS_004PUP FN:3 PRODUCER 18-Dec-2013 15:24

Schlumberger

**USI IBC SLG
REPEAT PASS**

MAXIS Field Log

Output DLIS Files

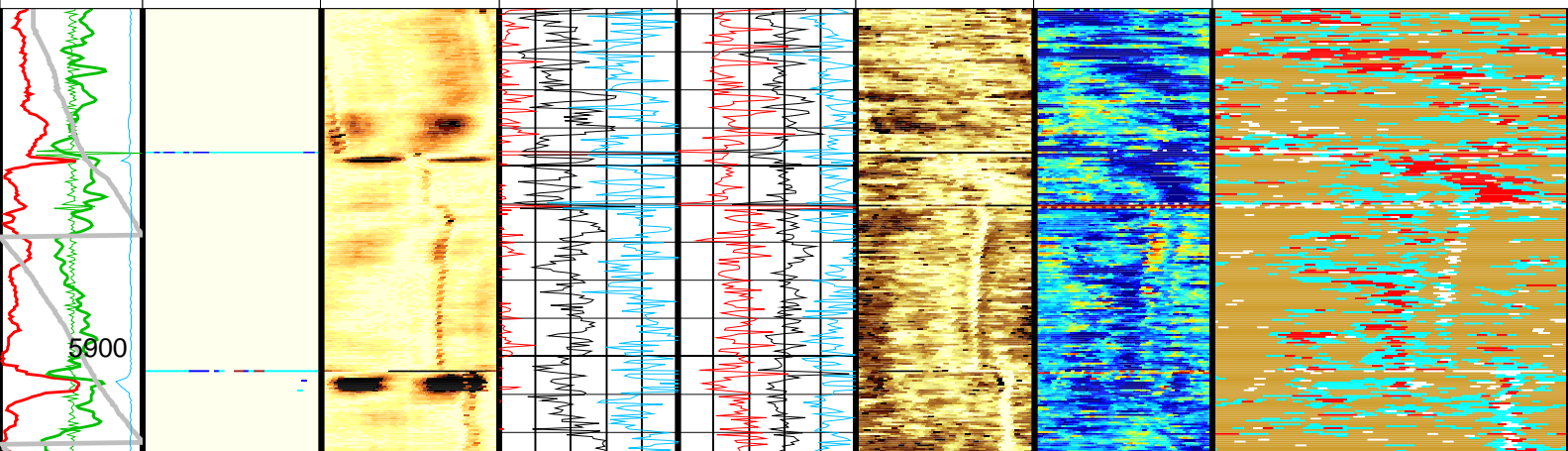
OP System Version: 19C1-222

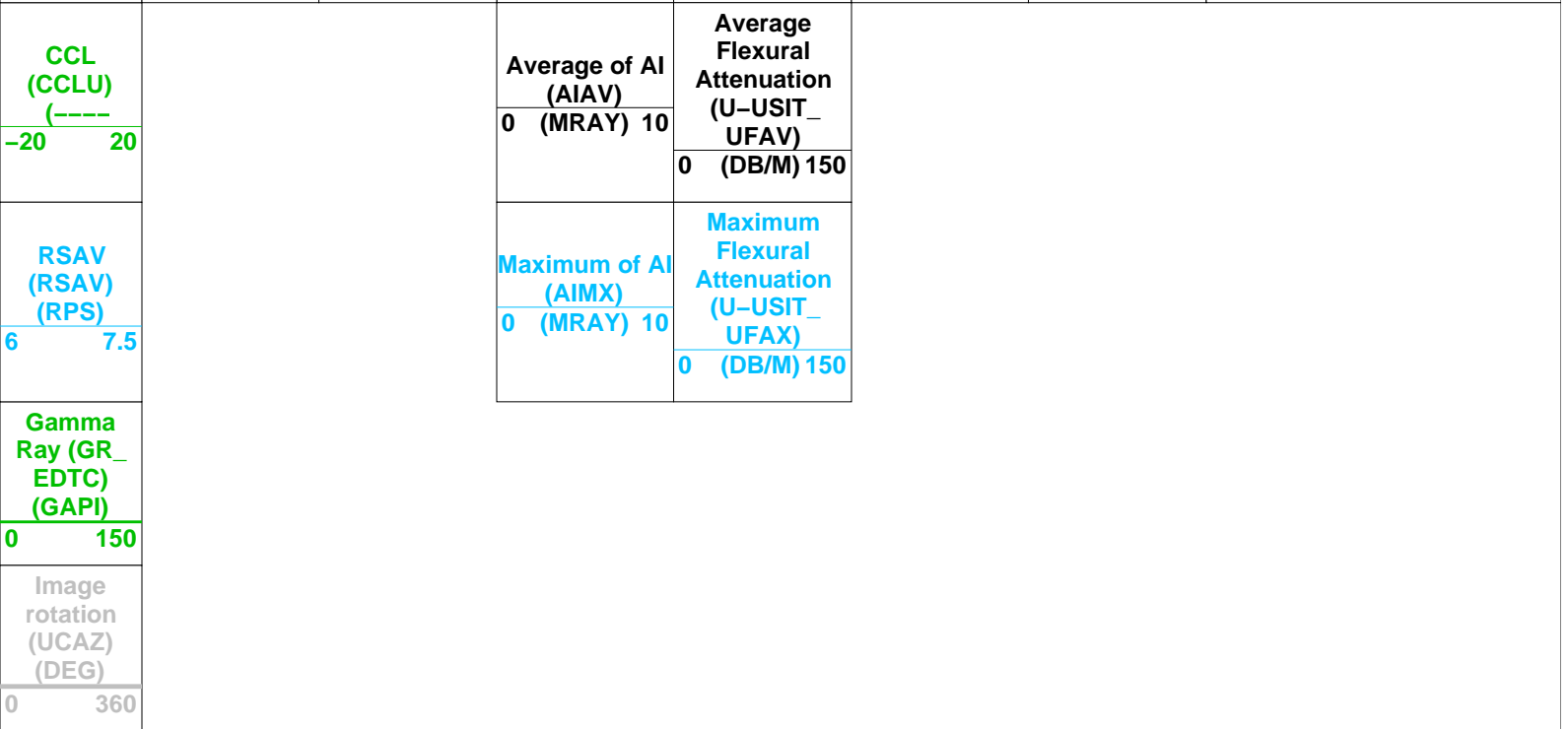
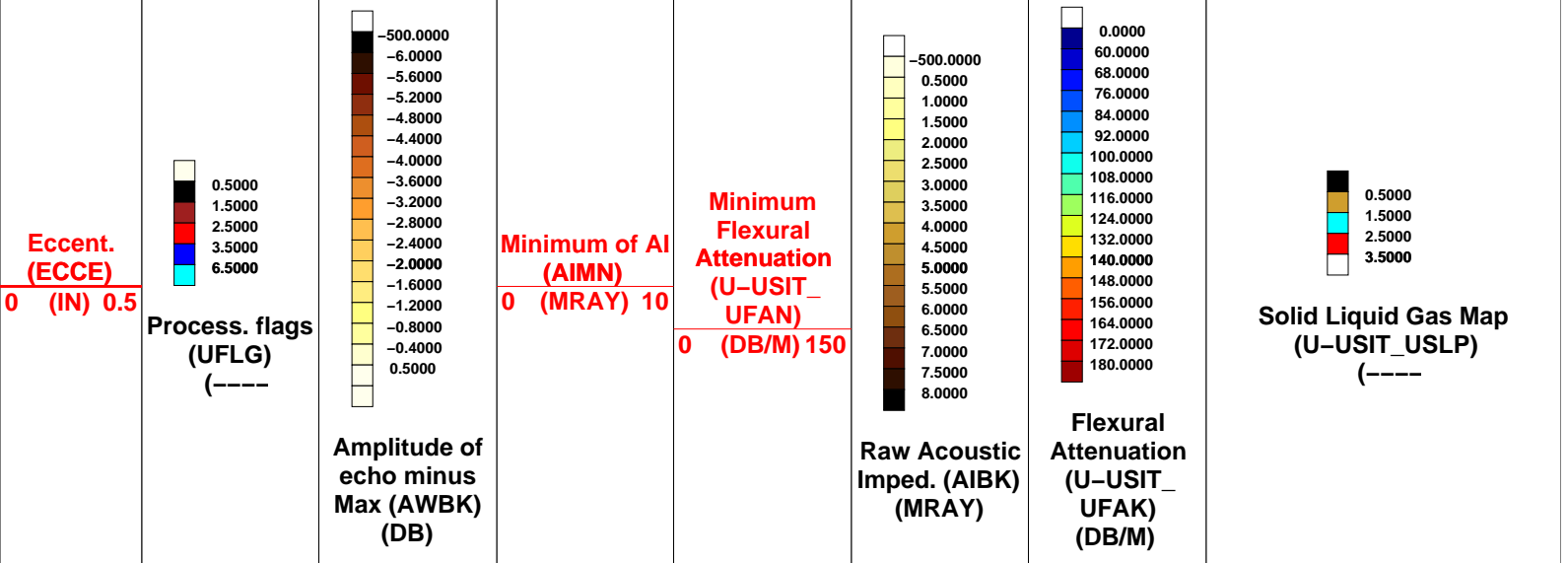
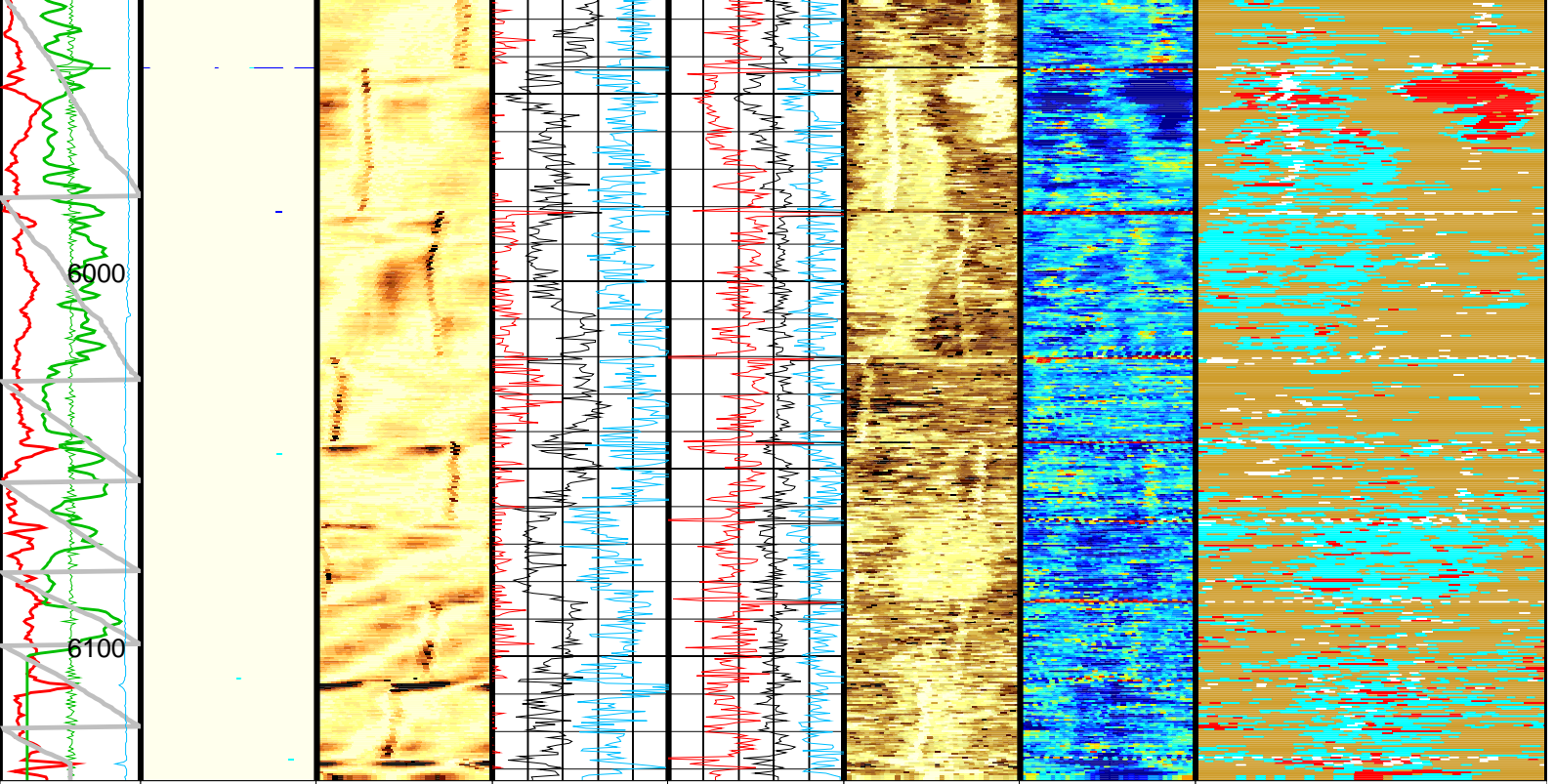
eWAFE Version: 1.189

USIT-D 19C1-222 GPIT-F 19C1-222
 EDTC-B 19C1-222

Image rotation (UCAZ) (DEG)	0	360
Gamma Ray (GR_EDTC) (GAPI)	0	150
RSAV (RSAV) (RPS)	6	7.5
CCL (CCLU) (----)	-20	20
Maximum of AI (AIMX) (MRAY) 10	0	10
Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M) 150	0	150
Average of AI (AIAV) (MRAY) 10	0	10
Average Flexural Attenuation (U-USIT_UFAV) (DB/M) 150	0	150

Eccent. (ECCE) (IN) 0.5	Process. flags (UFLG) (----)	Amplitude of echo minus Max (AWBK) (DB)	Minimum of AI (AIMN) (MRAY) 10	Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M) 150	Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (U-USIT_UFAK) (DB/M)	Solid Liquid Gas Map (U-USIT_USLP) (----)
-------------------------	------------------------------	---	--------------------------------	---	-----------------------------------	---	---





OP System Version: 19C1-222

eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

All USI Images are outside views

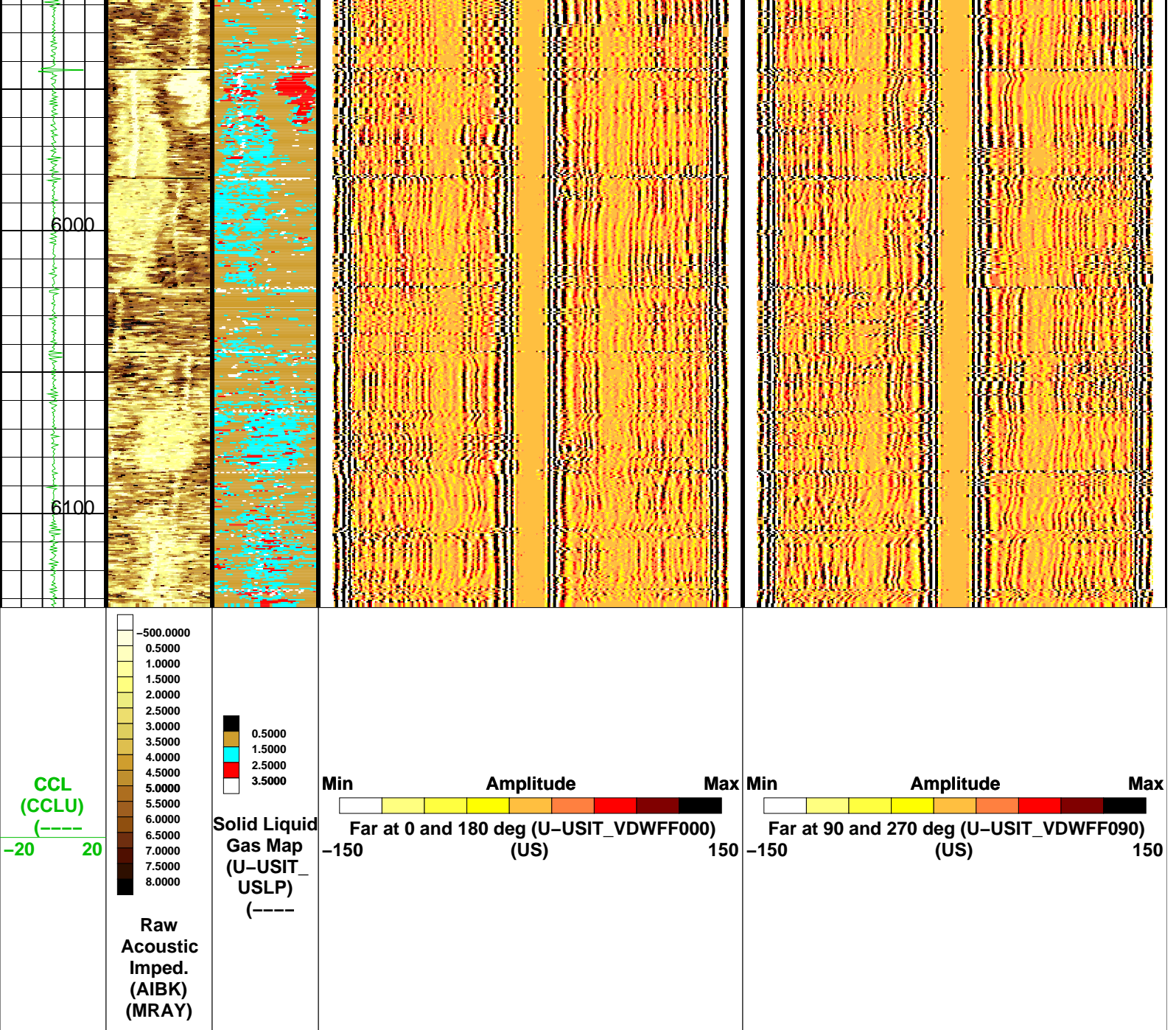
Center of image corresponds to bottom of casing

USI : HIGH Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.18 to 0.31 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	4.5	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	4	IN
DFVL	Default Fluid Velocity	195	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	51	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	3_UTFS_N_UFAI	
IMAR	Image Rotation	RB	
MW	Mud Weight	8.4	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	0.25	IN
U-USIT_CEMT	USIT Cement Type	ULTRA_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	-10	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	38_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_HF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	14.9916	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.6	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	11.60	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	



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	4.5	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	4	IN
DFVL	Default Fluid Velocity	195	US/F
DOT	Diameter of Transducer Sensor	1.756	IN
EMXV	EMEX Voltage	51	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	3_UTFS_N_UFAI	
IMAR	Image Rotation	RB	
MW	Mud Weight	8.4	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	0.25	IN
U-USIT_CENT	USIT Cement Type	ULTRA_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	-10	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	38_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_HF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	14.9916	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.6	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
BS	Bit Size	8.750	IN
CWEI	Casing Weight	11.60	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Format: USI_IBC_VDL_WIDE Vertical Scale: 2" per 100' Graphics File Created: 18-Dec-2013 15:24

OP System Version: 19C1-222
eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

Input DLIS Files

DEFAULT	USI_IS_038PUP	FN:36	PRODUCER	17-Dec-2013 20:02	6133.0 FT	5808.5 FT
---------	---------------	-------	----------	-------------------	-----------	-----------

Output DLIS Files

DEFAULT	USI_IS_004PUP	FN:3	PRODUCER	18-Dec-2013 15:24		
---------	---------------	------	----------	-------------------	--	--



**COMPRESSED GOODWIN
REPEAT PASS**

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: FEDERAL 31-2C

Input DLIS Files

DEFAULT	USI_IS_038PUP	FN:36	PRODUCER	17-Dec-2013 20:02	6133.0 FT	5808.5 FT
---------	---------------	-------	----------	-------------------	-----------	-----------

Output DLIS Files

DEFAULT	USI_IS_004PUP	FN:3	PRODUCER	18-Dec-2013 15:24	6133.0 FT	5808.5 FT
---------	---------------	------	----------	-------------------	-----------	-----------

OP System Version: 19C1-222
eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
--------	----------	--------	----------

	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				

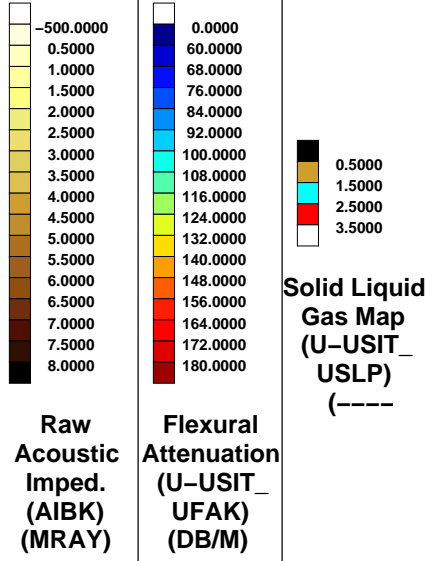
	Maximum Acoustic Impedance #1 (MAX_AI1) (MRAY)	Maximum Acoustic Impedance #3 (MAX_AI3) (MRAY)	Maximum Acoustic Impedance #5 (MAX_AI5) (MRAY)	Maximum Acoustic Impedance #7 (MAX_AI7) (MRAY)	Minimum Acoustic Impedance #9 (MIN_AI9) (MRAY)	Maximum of AI (AIMX) (MRAY)	Maximum Flexural Attenuation (U-USIT_UFAX) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150

Gamma Ray (GR_EDTC) (GAPI)	Average Acoustic Impedance #2 (AV_AI2) (MRAY)	Average Acoustic Impedance #4 (AV_AI4) (MRAY)	Average Acoustic Impedance #6 (AV_AI6) (MRAY)	Average Acoustic Impedance #8 (AV_AI8) (MRAY)	Maximum Acoustic Impedance #9 (MAX_AI9) (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

Eccent. (ECCE) (IN) 0.5	Average Acoustic Impedance #1 (AV_AI1) (MRAY)	Average Acoustic Impedance #3 (AV_AI3) (MRAY)	Average Acoustic Impedance #5 (AV_AI5) (MRAY)	Average Acoustic Impedance #7 (AV_AI7) (MRAY)	Average Acoustic Impedance #9 (AV_AI9) (MRAY)	Average of AI (AIAV) (MRAY)	Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)	Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (U-USIT_UFAK) (DB/M)	Solid Liquid Gas Map (U-USIT_USLP) (----)
0 0.5	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150			



Eccent. (ECCE) (IN) 0.5	Average Acoustic Impedance #1 (AV_AI1) (MRAY)	Average Acoustic Impedance #3 (AV_AI3) (MRAY)	Average Acoustic Impedance #5 (AV_AI5) (MRAY)	Average Acoustic Impedance #7 (AV_AI7) (MRAY)	Average Acoustic Impedance #9 (AV_AI9) (MRAY)	Average of AI (AIAV) (MRAY)	Minimum Flexural Attenuation (U-USIT_UFAN) (DB/M)	Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (U-USIT_UFAK) (DB/M)	Solid Liquid Gas Map (U-USIT_USLP) (----)
0 0.5	0 15	0 15	0 15	0 15	0 15	0 7.5	0 150			



(IN) 0.3	AI1) (MRAY)		AI3) (MRAY)		AI5) (MRAY)		AI7) (MRAY)		AI9) (MRAY)		UFAN) (DB/M)		Raw Acoustic Imped. (AIBK) (MRAY)	Flexural Attenuation (U-USIT_UFAK) (DB/M)	Gas Map (U-USIT_USLP) (----)
	0	15	0	15	0	15	0	15	0	15	0	150			
Gamma Ray (GR_EDTC) (GAPI)	Average Acoustic Impedance #2 (AV_AI2) (MRAY)		Average Acoustic Impedance #4 (AV_AI4) (MRAY)		Average Acoustic Impedance #6 (AV_AI6) (MRAY)		Average Acoustic Impedance #8 (AV_AI8) (MRAY)		Maximum Acoustic Impedance #9 (MAX_AI9) (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	
	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	
	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: 18-Dec-2013 15:24

OP System Version: 19C1-222
eWAFE Version: 1.189

USIT-D	19C1-222	GPIT-F	19C1-222
EDTC-B	19C1-222		

All USI Images are outside views
Center of image corresponds to bottom of casing

USI : HIGH Frequency Compression Mode Used For Logging.
Recommended casing thickness range for optimum cement impedance measurement : 0.18 to 0.31 IN.

Input DLIS Files

DEFAULT	USI_IS_038PUP	FN:36	PRODUCER	17-Dec-2013 20:02	6133.0 FT	5808.5 FT
---------	---------------	-------	----------	-------------------	-----------	-----------

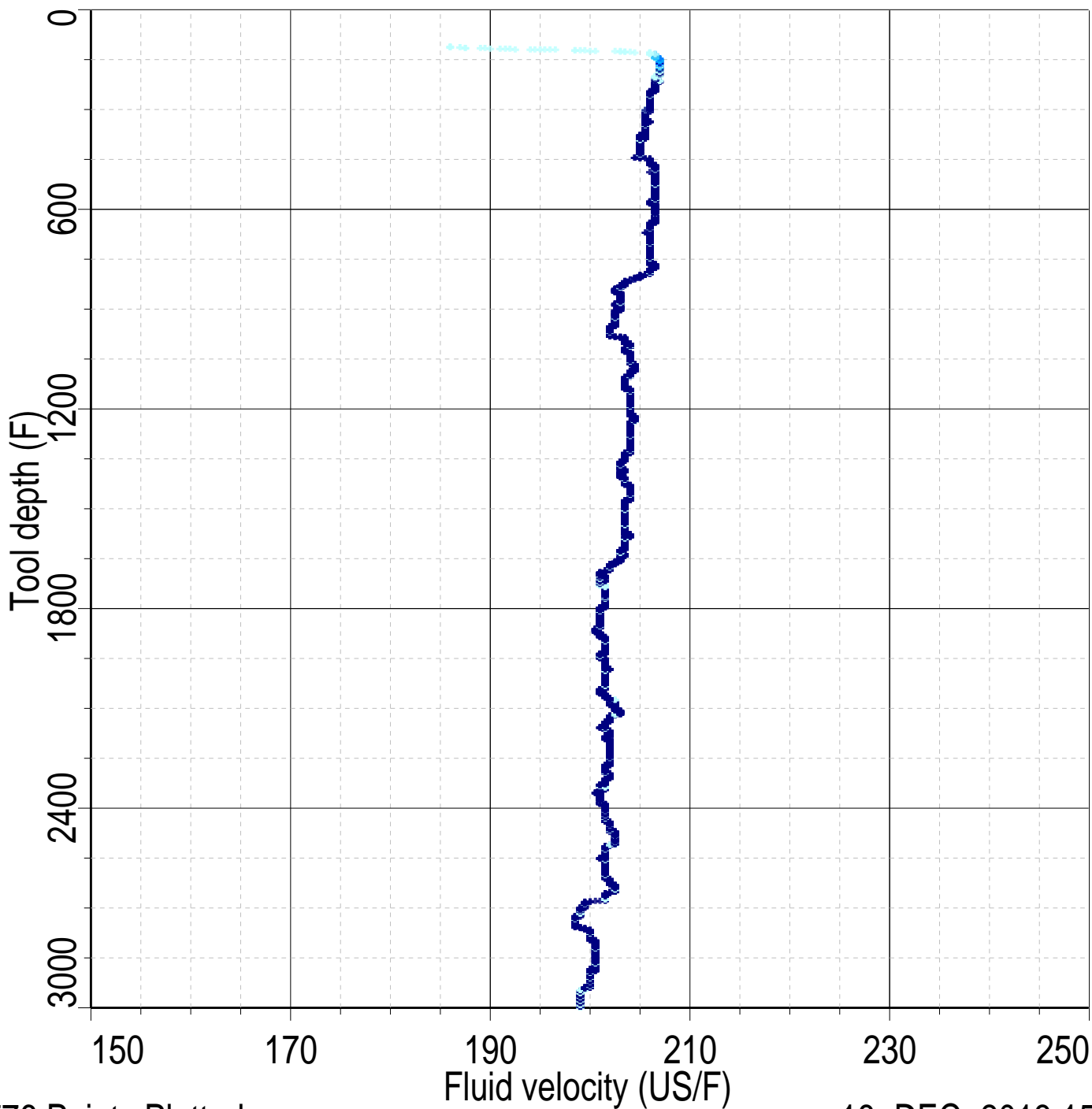
Output DLIS Files



FLUID PROPERTIES

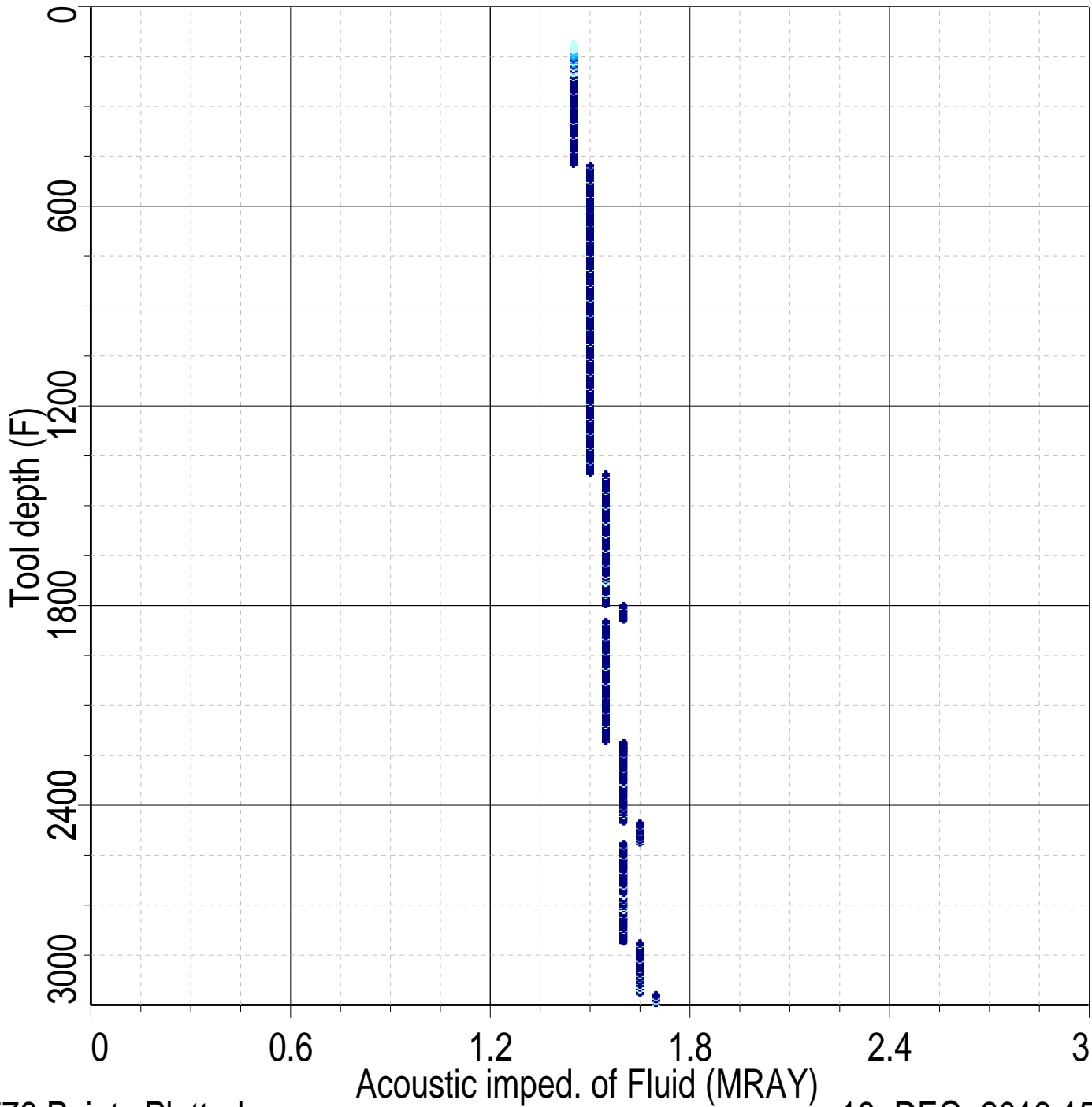
MAXIS Field Log

Index: 6864.5 – 112.5 FT IBC Inv. Fluid Z QC (----) 0.5



5776 Points Plotted

18-DEC-2013 15:18
IBC Inv. Fluid Z QC (----)



5776 Points Plotted

18-DEC-2013 15:18



CALIBRATIONS

MAXIS Field Log

AWBK	mean	32.0116	std	1.4243	dB
TTBK	mean	105.6669	std	0.2044	us
THBK+THAV	mean	0.3232	std	0.0009	in
AIBK	mean	0.8091	std	0.1393	MRAY
ECCE	mean	0.0082	max	0.0084	in
UACN	mean	397.0197	std	6.5764	
UACF	mean	178.9843	std	3.7835	
UCAN	mean	171.6315	std	0.2454	us
UCAF	mean	203.4501	std	0.2650	us
GAIN N-F	mean	-7.9000	std	0.0000	dB
UFAK	mean	69.2070	std	1.0263	dB/m
ALPHA	=	71.0157			dB/m
UFAO	=	-10.0000			dB/m
BAL_INDEX	=	0.0000			dB/Hz

Processing type : SFT VESSEL From: 40000.00 ft to 39855.50 ft

USIC-D

USIS-A

USSC-B

IBCS_A-100158201 #866

Top Transducer #3615

Middle Top Transducer #3616

Middle Bottom Transducer #3617

Bottom Transducer #3618

Report generated : 4-Oct-2013 10:06:37

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

Schlumberger

Well: **FEDERAL 31-2C (PF31)**

Field: **PARACHUTE**

County: **GARFIELD**

State: **COLORADO**

ISOLATION SCANNER
CASING INSPECTION LOG