

Schlumberger

Company: Encana Oil & Gas Company

Well: Flanigan 1A-6H

Field: Wattenberg

County: Weld State: Colorado

Isolation Scanner
Cement Evaluation

County:	Weld		
Field:	Wattenberg		
Location:	Sec. 6, T1N, R64W NWNE		
Well:	Flanigan 1A-6H		
Company:	Encana Oil & Gas Company		
Logging Date	LOCATION		
	Sec. 6, T1N, R64W NWNE	Elev.:	K.B. 5010.00 ft
	SHL: 230 FNL X 2048 FEL		G.L. 4997.00 ft
	BHL: 460 FSL X 2220 FWL		D.F. 5010.00 ft
	Permanent Datum:	Ground Level	Elev.: 4997.00 ft
Logging Date	Log Measured From:	Kelly Bushing	13.00 ft above Perm. Datum
	Drilling Measured From:	Kelly Bushing	
Logging Date	API Serial No. 05-123-35690-0000	Section 6	Township 1N Range 64W

Run Number	1		
Depth Driller	11531 ft		
Schlumberger Depth	6905 ft		
Bottom Log Interval	6905 ft		
Top Log Interval	0 ft		
Casing Fluid Type	Water Based Mud		
Salinity	990 ppm		
Density	9.5 lbm/gal		
Fluid Level	0 ft		
BIT/CAISING/TUBING STRING			
Bit Size	8.750 in		
From			
To			
Casing/Tubing Size	7.000 in		
Weight	26 lbm/ft		
Grade	P-110		
From			
To			
Maximum Recorded Temperatures			
Logger On Bottom	31-Jul-2012	Time	3:00
Unit Number	3030	Fort Morgan	
Recorded By	Allison Johnston		
Witnessed By	Ruch Borner		

PVT DATA			
Oil Density	Run 1	Run 2	Run
Water Salinity	990 ppm		
Gas Gravity			
Bo			
Bw			
1/Bq			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation			
CEMENTING DATA			
Primary/Squeeze	Primary		
Casing String No			
Lead Cement Type			
Volume			
Density			
Water Loss			
Additives			
Tail Cement Type			
Volume			
Density			
Water Loss			
Additives			
Expected Cement Top	0 ft		
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Fluid Type			
Salinity			
Density			
Fluid Level			
BIT/CAISING/TUBING STRING			
Bit Size			
From			
To			
Casing/Tubing Size			
Weight			
Grade			
From			
To			
Maximum Recorded Temperatures			
Logger On Bottom		Time	
Unit Number			
Recorded By			
Witnessed By			

DEPTH SUMMARY LISTING

Date Created: 31-JUL-2012 6:01:07

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: Calibration Date: Calibrator Serial Number: Calibration Cable Type: 7-39P LXS Wheel Correction 1: Wheel Correction 2:	Type: CMTD-B/A Serial Number: 2858 Calibration Date: 13-Jul-2012 Calibrator Serial Number: 100513 Number of Calibration Points: 10 Calibration RMS: 19 Calibration Peak Error: 47	Type: 7-39P LXS Serial Number: 712017 Length: 17500 FT Conveyance Method: Wireline Rig Type: LAND

Depth Control Parameters

Log Sequence: First Log In the Well
Rig Up Length At Surface: 0.00 FT
Rig Up Length At Bottom: 0.00 FT
Rig Up Length Correction: 0.00 FT
Stretch Correction: 7.50 FT
Tool Zero Check At Surface:

Depth Control Remarks

1. This is the first run in well.
2. All Schlumberger depth procedures followed.
3. IDW used as primary depth control. Z-Chart used as secondary depth control.
- 4.
- 5.
- 6.

DISCLAIMER

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OTHER SERVICES1

OS1:
OS2:
OS3:
OS4:
OS5:

OTHER SERVICES2

OS1:
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1

- 1) Toolstring run as per toolsketch. Three inline centralizers and two gemcos used for centralization. Knuckle used for flex.

- 2) Main and repeat pass down without surface induced pressure due to open hole beneath intermediate casing.

- 3) Well cemented 25-Jul-2012.

REMARKS: RUN NUMBER 2

4) 13 pound Varicem Cement from casing shoe to 6,500'	
12 pound Varicem Cement from 6,500' to 4,500'.	
10 pound Varicem Cement from 4,500' to 10'.	
Schlumberger Crew: Jake Jump	
Rig: Ensign 124	

RUN 1			RUN 2		
SERVICE ORDER #:		C31T-00028	SERVICE ORDER #:		
PROGRAM VERSION:		19C0-187	PROGRAM VERSION:		
FLUID LEVEL:		0 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
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SURFACE EQUIPMENT

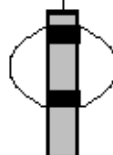
GSR-U/Y
WITM (DTS)-A

DOWNHOLE EQUIPMENT

LEH-QT 42.4
LEH-QT



AH-CEN 39.5
AH-CEN



CAL-Y 35.7
CAL-Y CCL 34.9



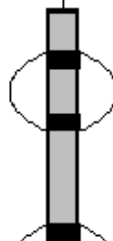
DTC-H 32.2
ECH-KC CTEM 31.3
DTCH0-A
DTCH1-A TelStatus 29.2
ToolStatu



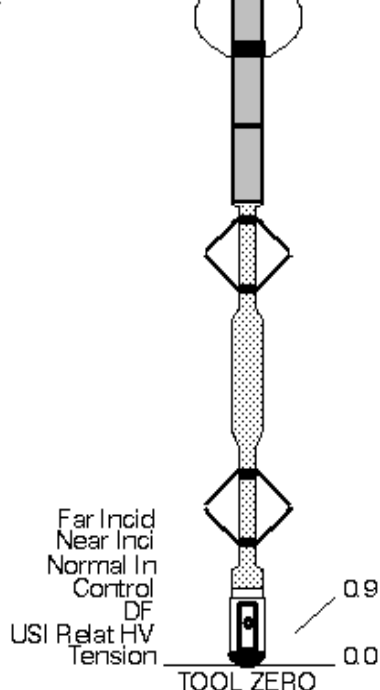
SGT-N 29.2
SGH-K Gamma Ray 28.3
SGC-TB
SGD-TAB



USI T-D 23.7
ECH-MPA
USIC-D
AH-107
USIS-A
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

5" SLG Composite

MAXIS Field Log

Company: Encana Oil & Gas Company

Well: Ranigan 1A-6H

Input DLIS Files

DEFAULT	USI_012LUP	FN:11	PRODUCER	31-Jul-2012 02:31	6909.0 FT	36.0 FT
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Output DLIS Files

DEFAULT	USI_017PUP	FN:16	PRODUCER	31-Jul-2012 05:56	6909.0 FT	36.0 FT
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OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187	CAL-Y	19C0-187

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
DFVL	200.5 US/F	208 US/F	6909.0 05:56:17
	203 US/F	200.5 US/F	6750.0 05:56:24
	204.5 US/F	203 US/F	6300.0 05:56:51
	205.5 US/F	204.5 US/F	4500.0 05:58:18
	206 US/F	205.5 US/F	3000.0 05:59:46
	207 US/F	206 US/F	2300.0 06:00:28
	208 US/F	207 US/F	1750.0 06:01:02
	1.83 MRAY	1.83 MRAY	6909.0 05:56:17
ZMUD	1.83 MRAY	1.83 MRAY	6750.0 05:56:24

1.83 MRAY
1.83 MRAY
1.83 MRAY
1.83 MRAY
1.83 MRAY

1.83 MRAY
1.83 MRAY
1.83 MRAY
1.83 MRAY
1.83 MRAY

6300.0 05:56:51
4500.0 05:58:18
3000.0 05:59:46
2300.0 06:00:28
1750.0 06:01:02

Tool/Tot.
Drag
From D4T
to STIA

Cable
Drag
From D4T
to STIT

Stuck
Stretch
(STIT)

0 (F) 50

RSAV
(RSAV)
(RPS)

6 7.5

Min of
Internal
radius
(IRMN)
(IN)

3.7 2.7 2.7 3.7

Internal
radius
Maximum
(IRMX)
(IN)

3.7 2.7 2.7 3.7

Maximum
of
Thickness
(THMX)
(IN)

0.1 0.6

CCL
(CCLU)
(---)

-20 20

0.5000
1.5000
2.5000
3.5000
6.5000

Process.
flags
(U FLG)
(---)

-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

Amplitude
of echo
minus Max
(AWBK)
(DB)

Internal
radius
Average
(IRAV)
(IN)

3.7 2.7 2.7 3.7

Internal
radius
Average
(IRAV)
(IN)

3.7 2.7 2.7 3.7

Average of
Thickness
(THAV)
(IN)

0.1 0.6

Eccentr.
(ECCE)

0 (IN) 0.5

Gamma
Ray (GR)
(GAPI)

0 150

Image
rotation
(U CAZ)
(DEG)

0 360

External
radius
Average
(ERAV)
(IN)

3.7 2.7 2.7 3.7

External
radius
Average
(ERAV)
(IN)

3.7 2.7 2.7 3.7

-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

Internal
radii minus
Ave (IRBK)
(IN)

Min of
Thickness
(THMN)
(IN)

0.1 0.6

-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

Thickness
minus Ave
(THBK)
(IN)

-500.0000
0.2500
0.5000
0.7500
1.0000
1.2500
1.5000
1.7500
2.0000
2.2500
2.5000
2.7500
3.0000
3.2500
3.5000
3.7500
4.0000

Raw
Acoustic
Imped.
(AIBK)
(M RAY)

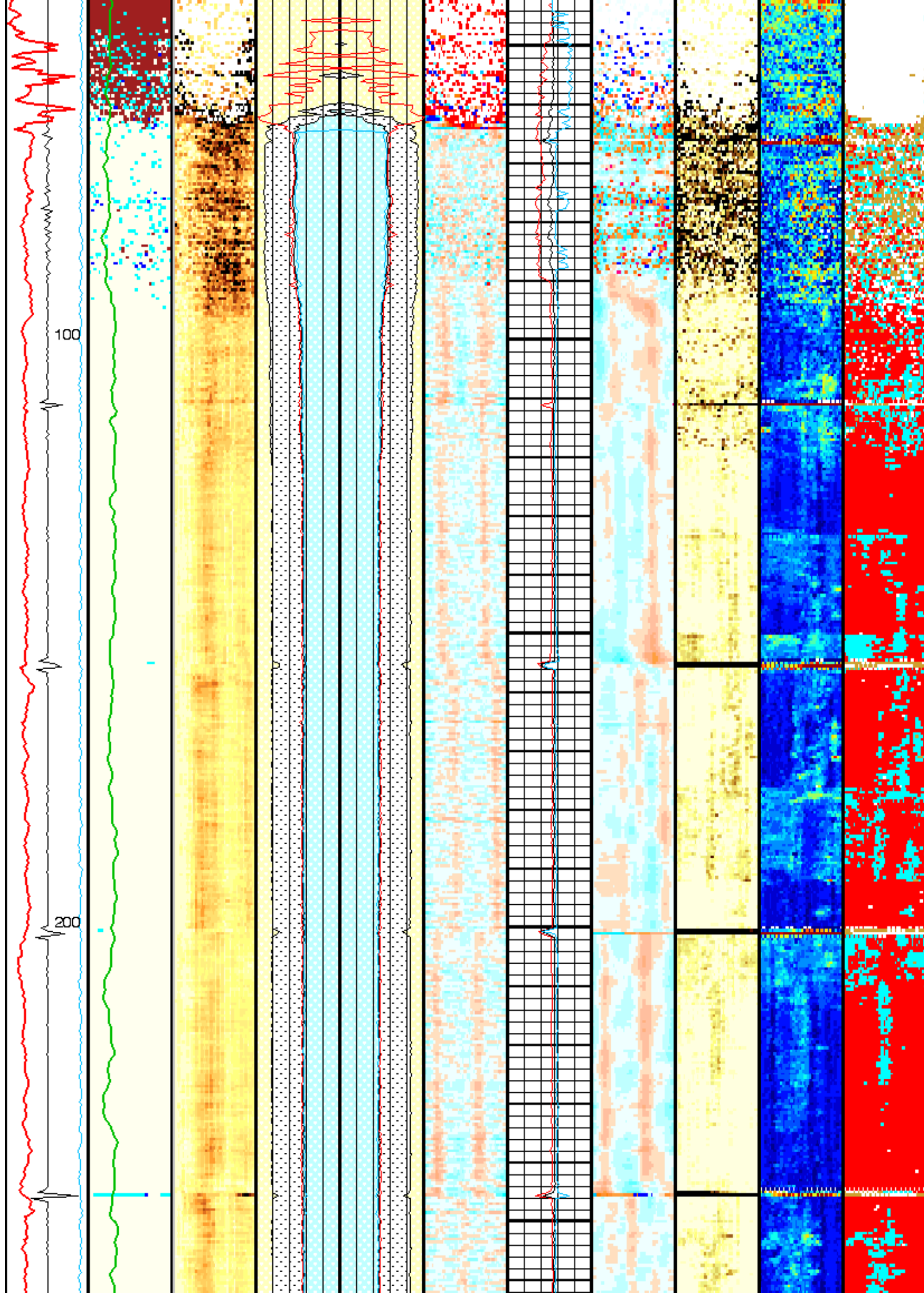
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30.0000
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102.0000
108.0000
114.0000
120.0000

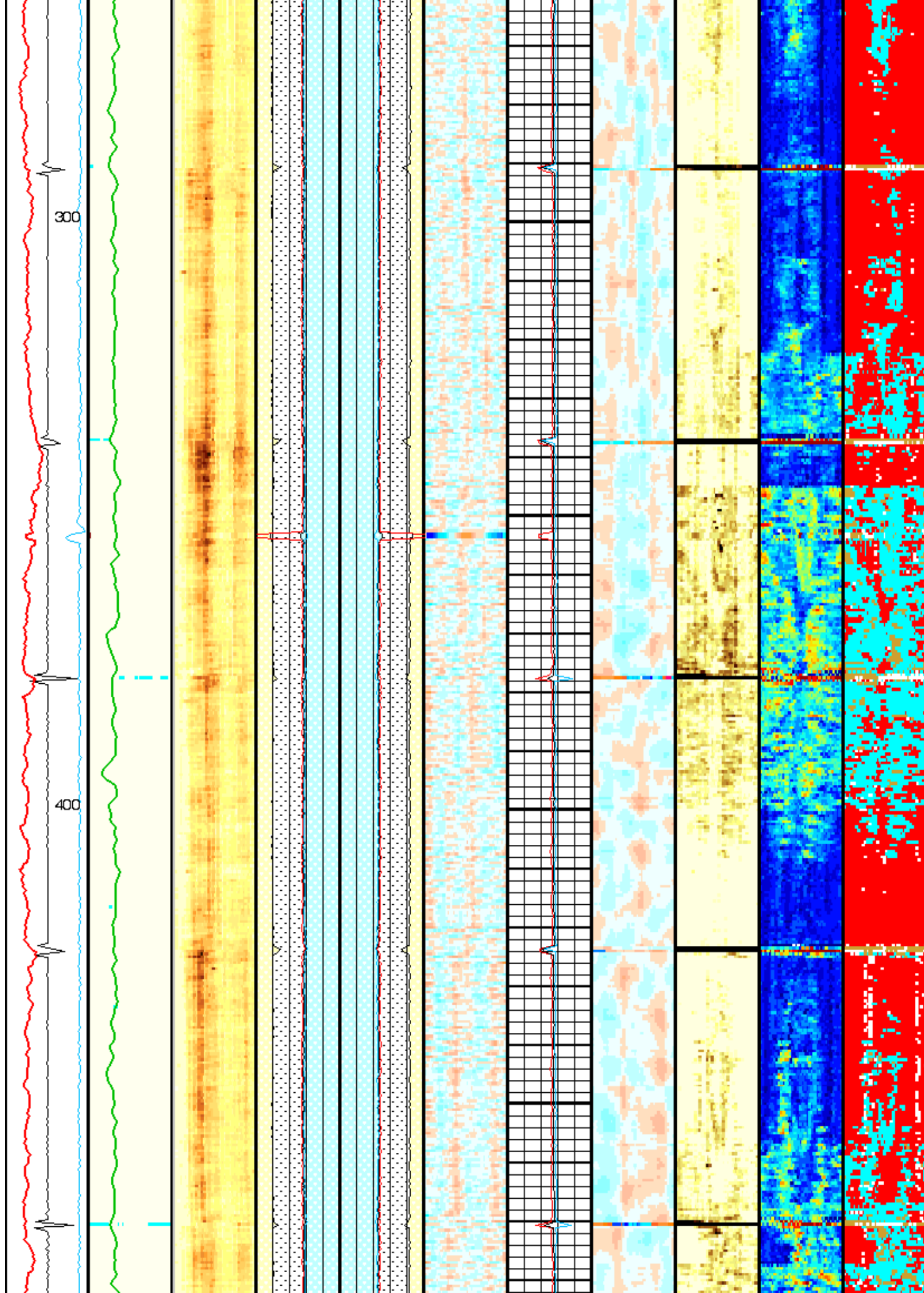
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Attenuation
(U-USIT_
UFAK)
(DB/M)

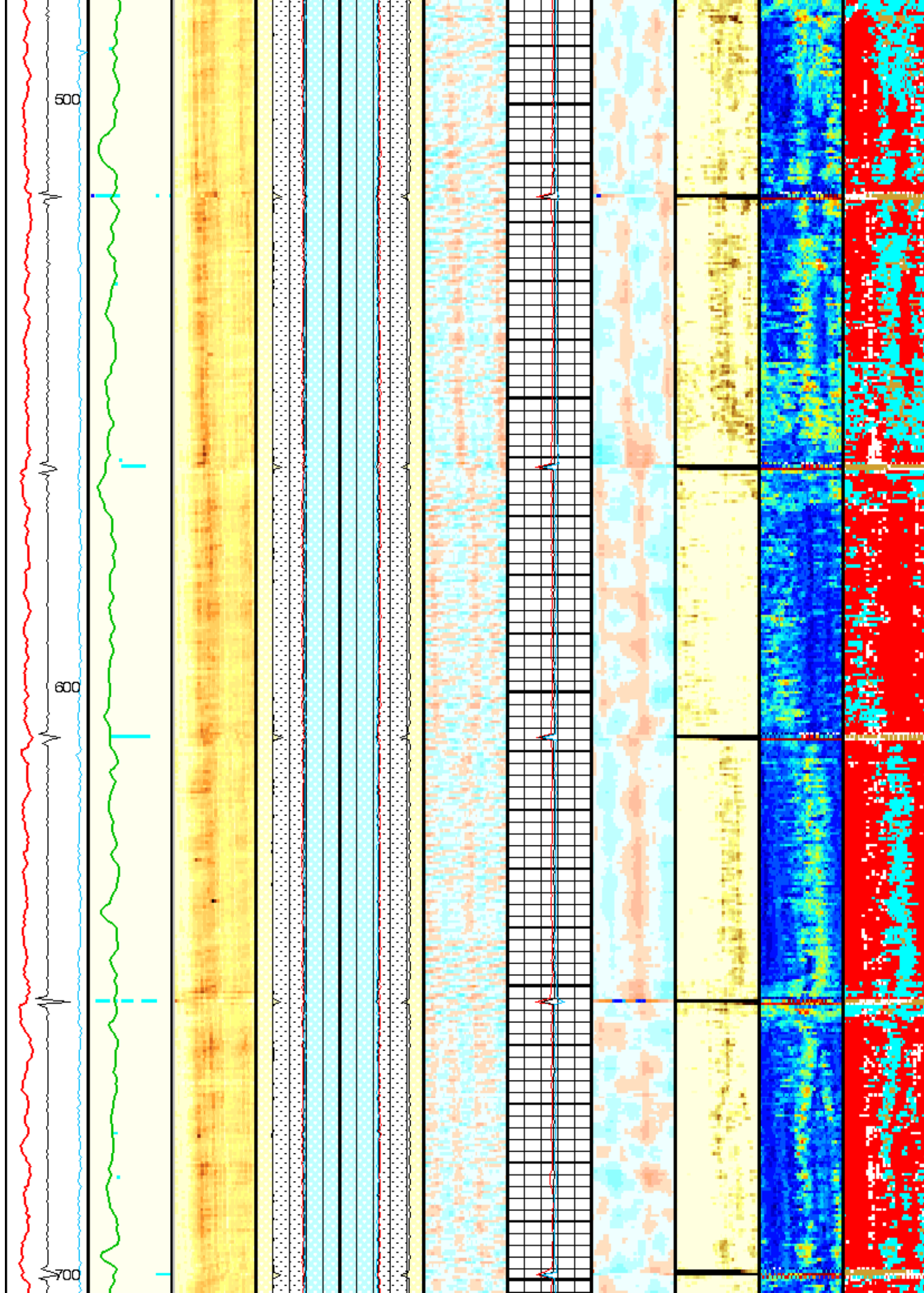
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1.5000
2.5000
3.5000

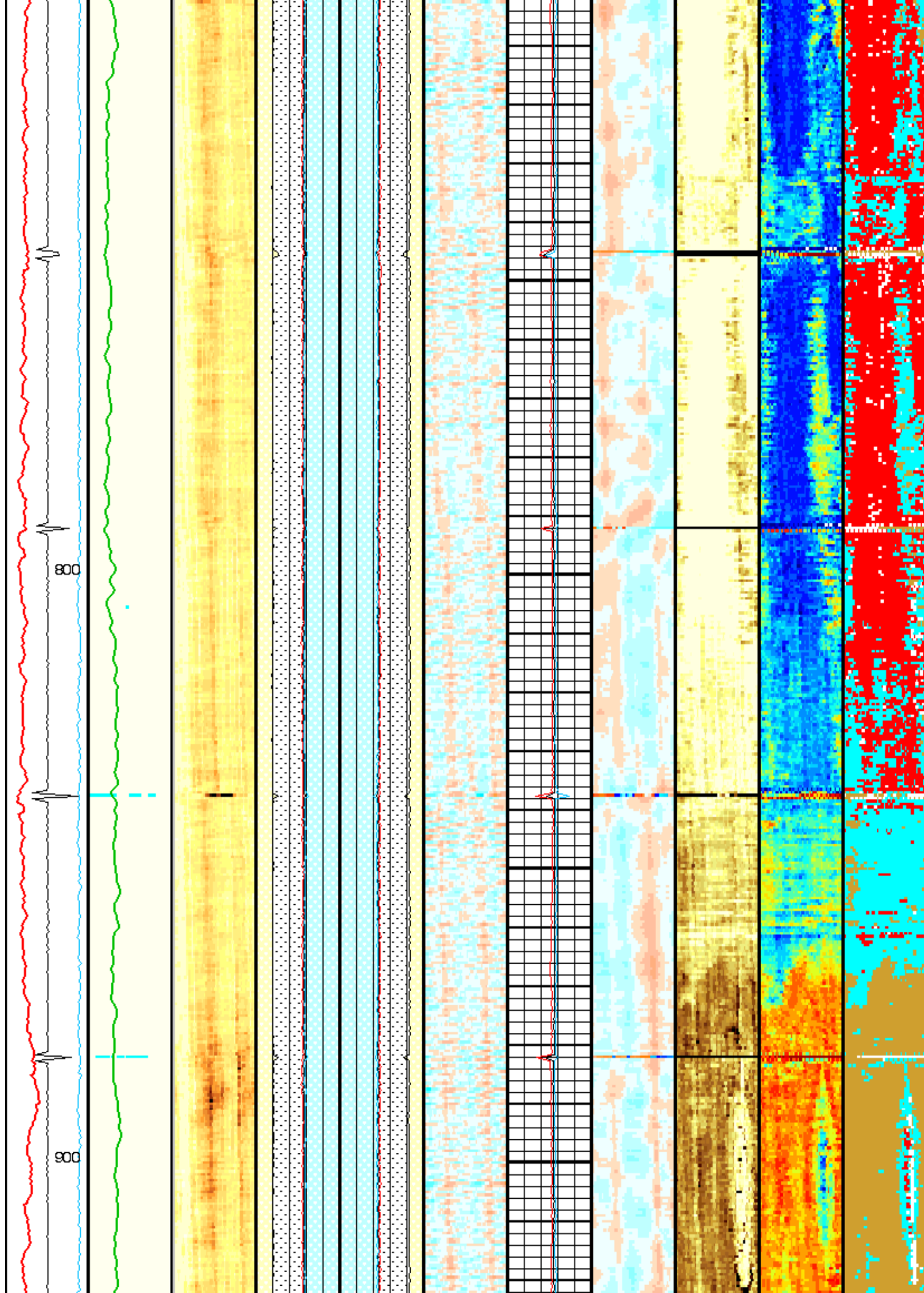
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USLP)
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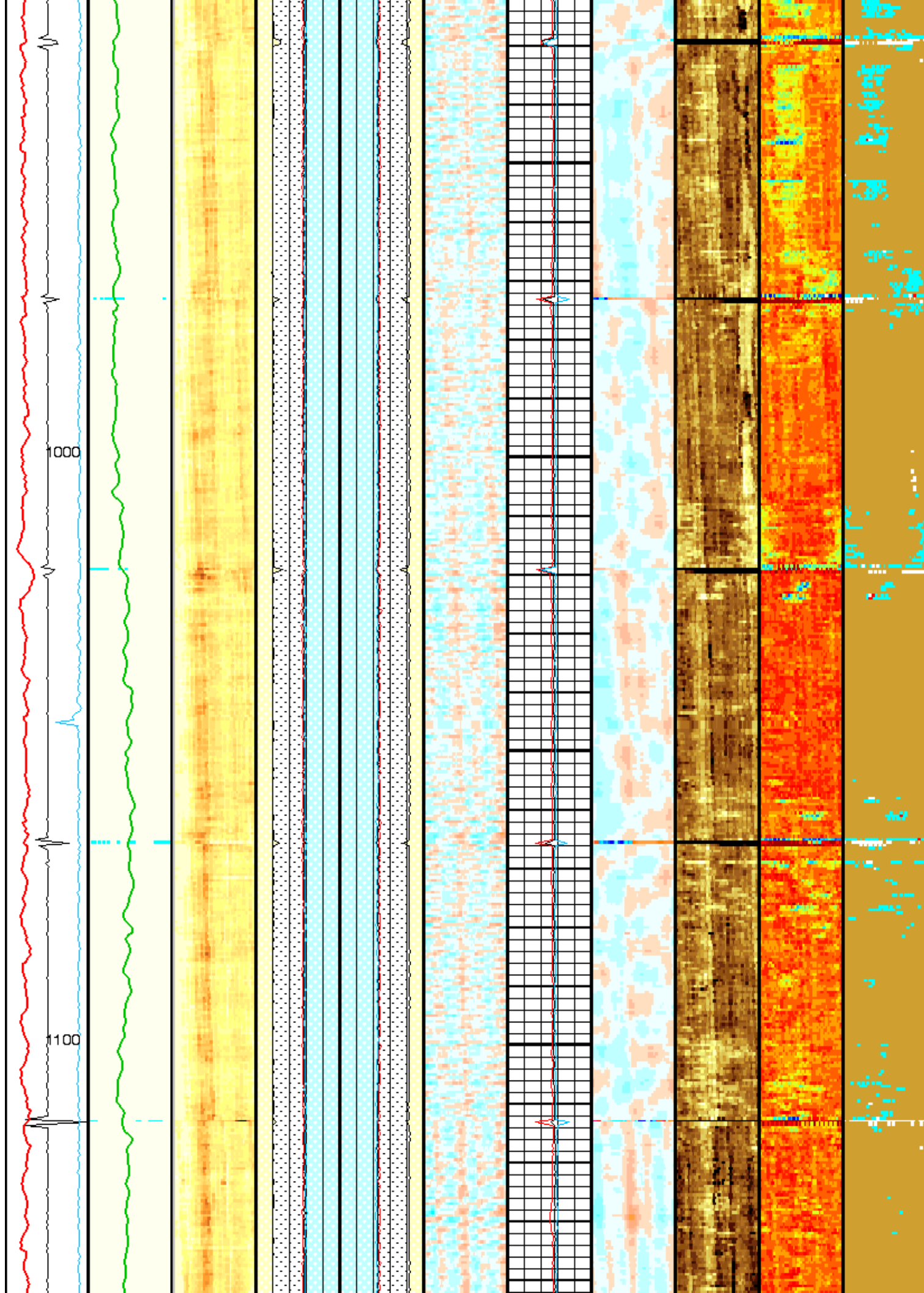


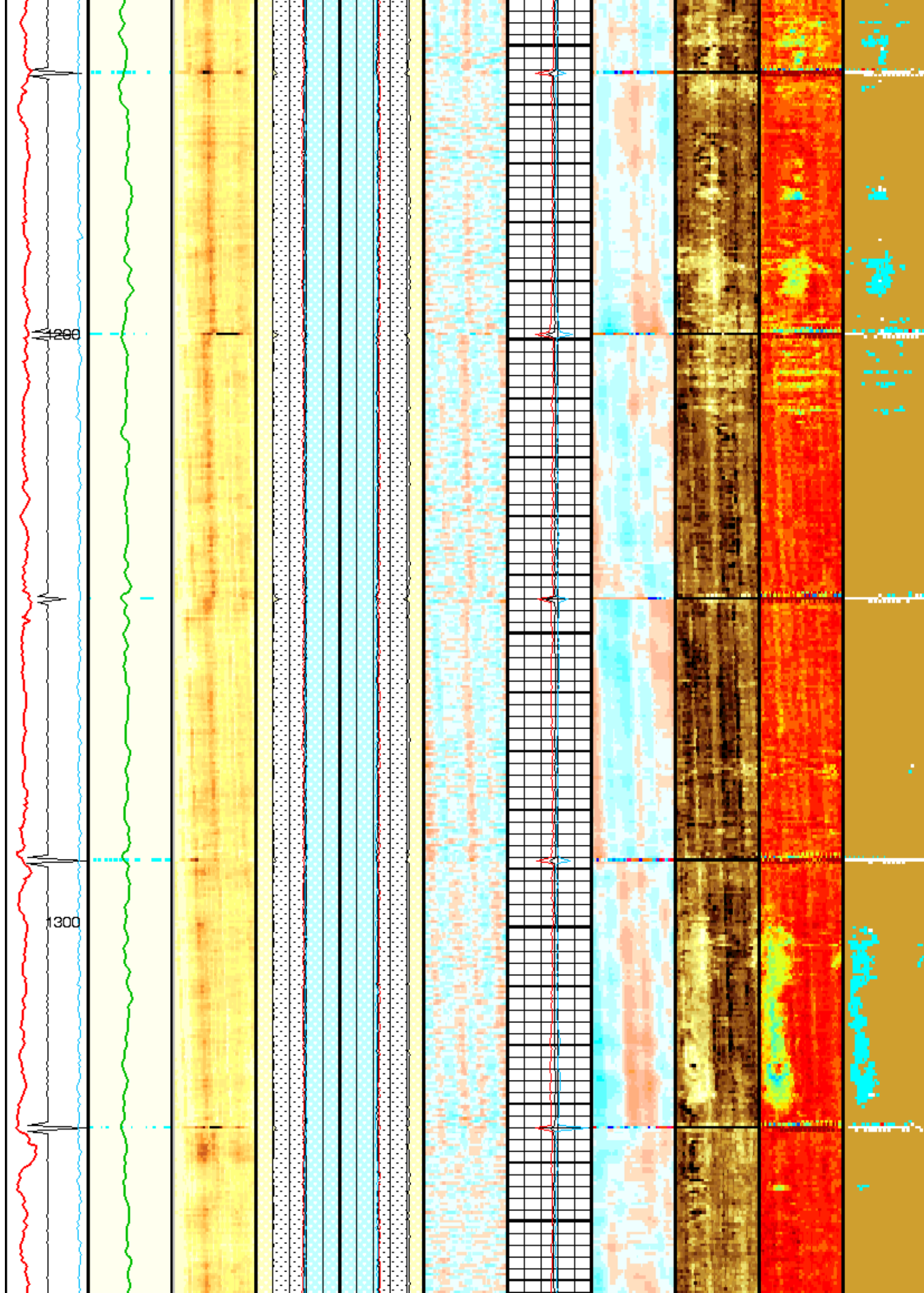


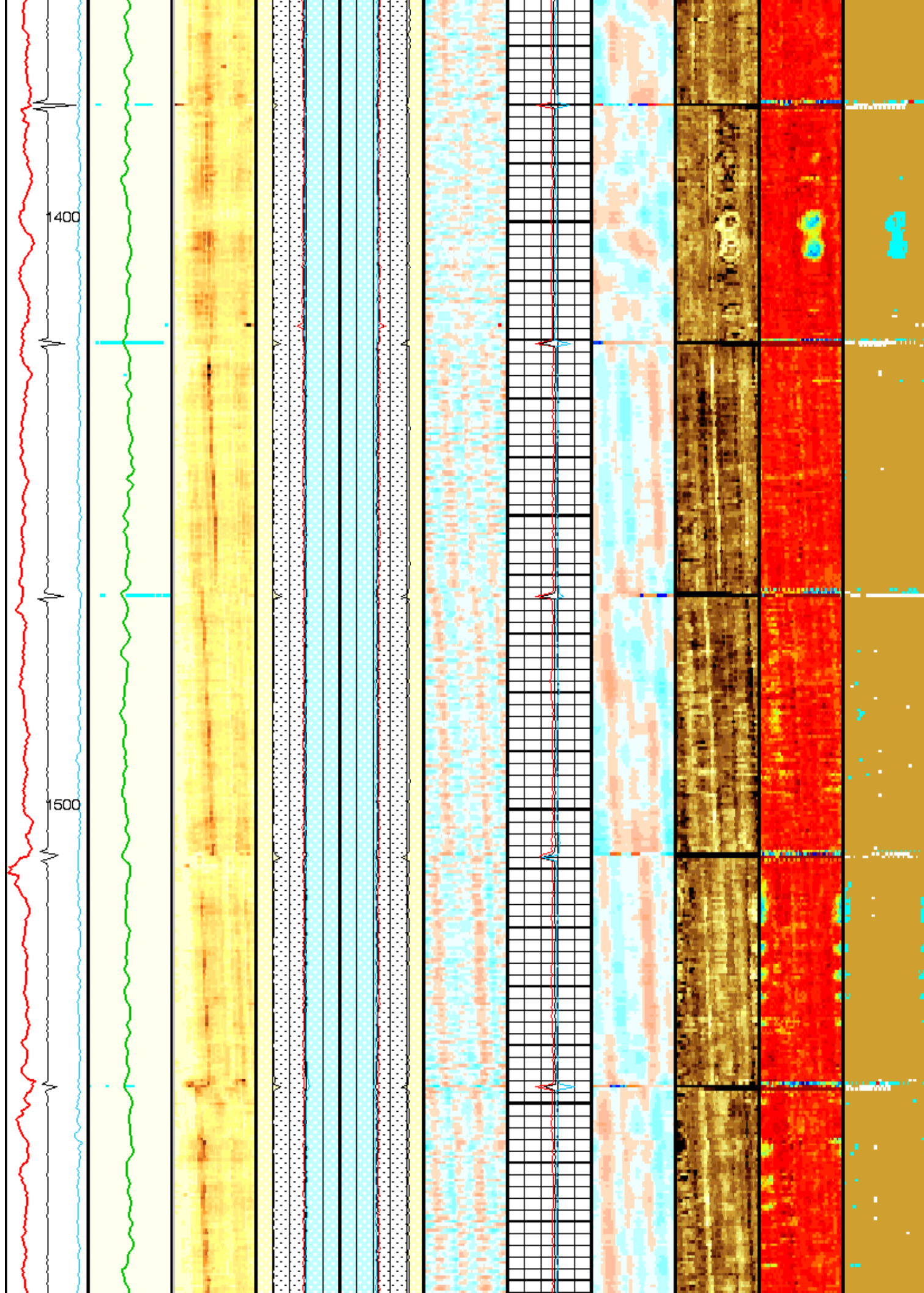


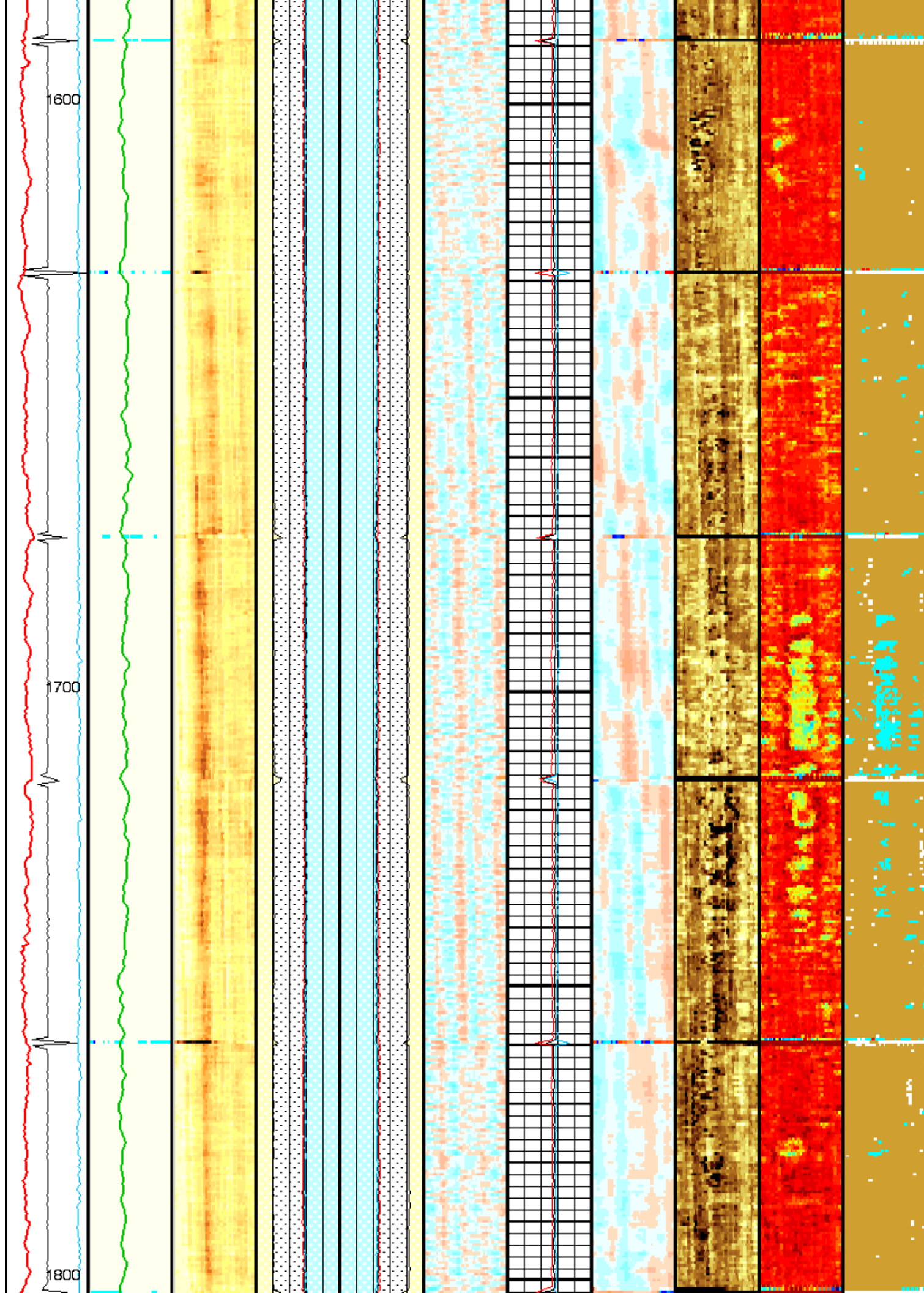


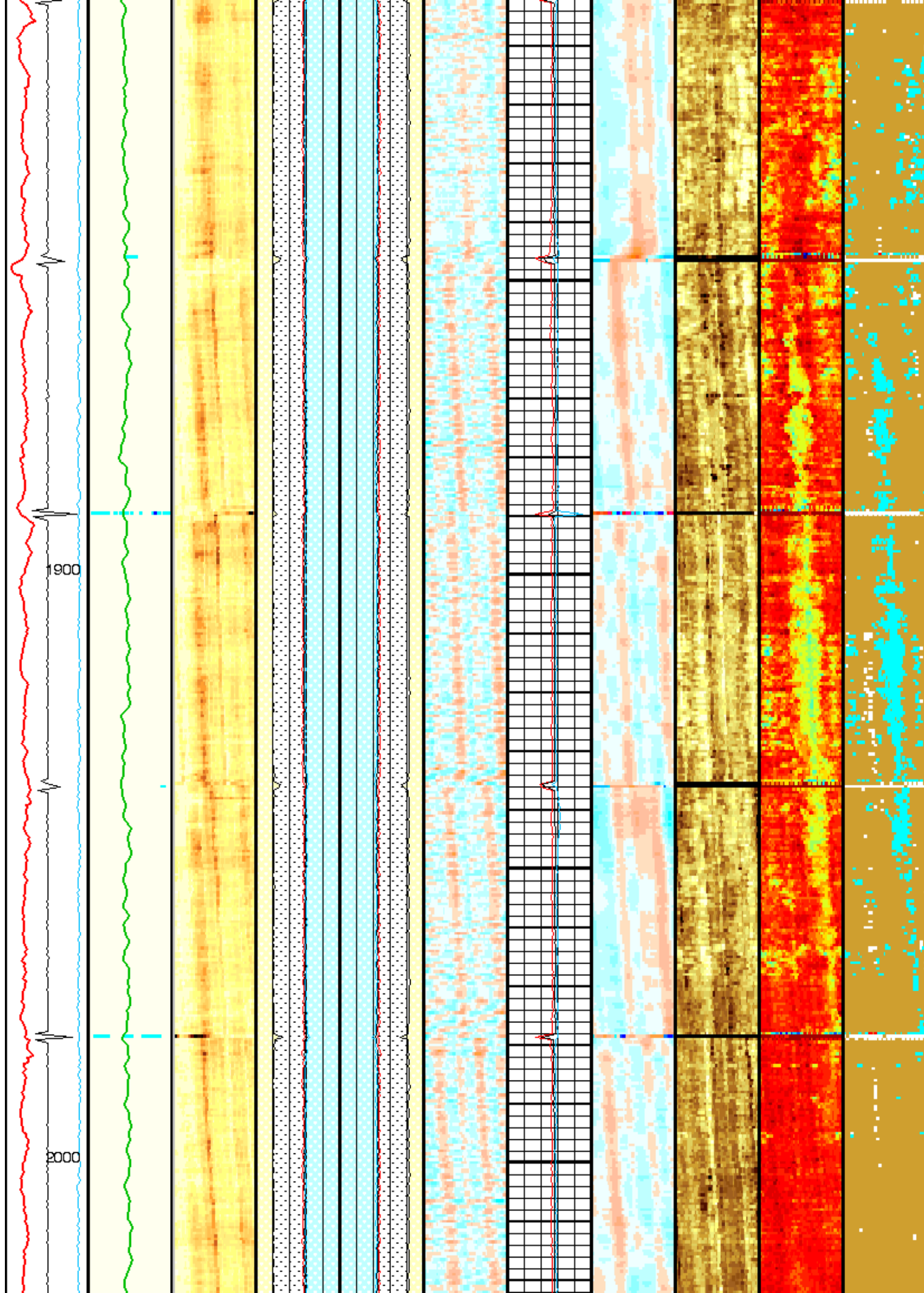


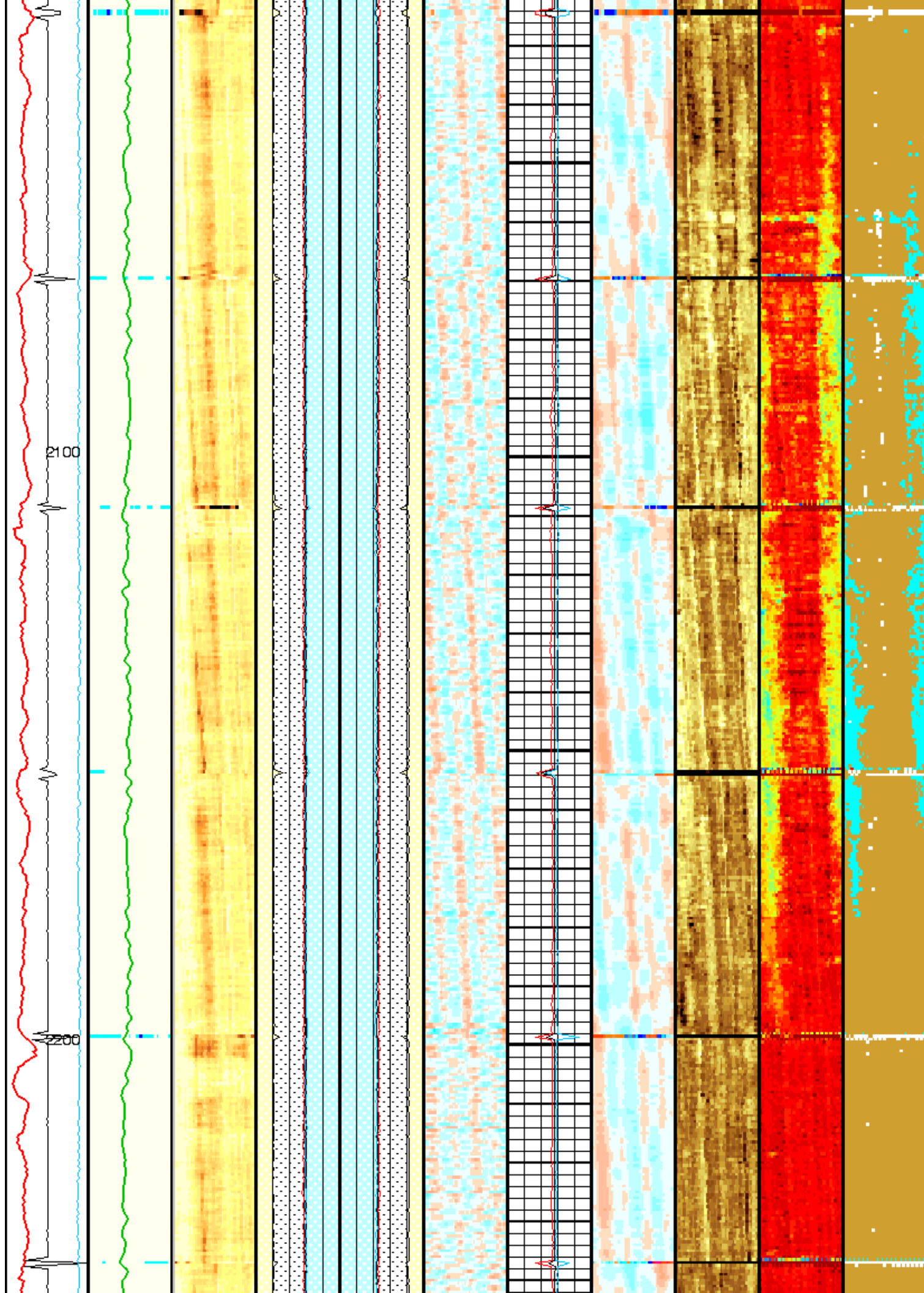


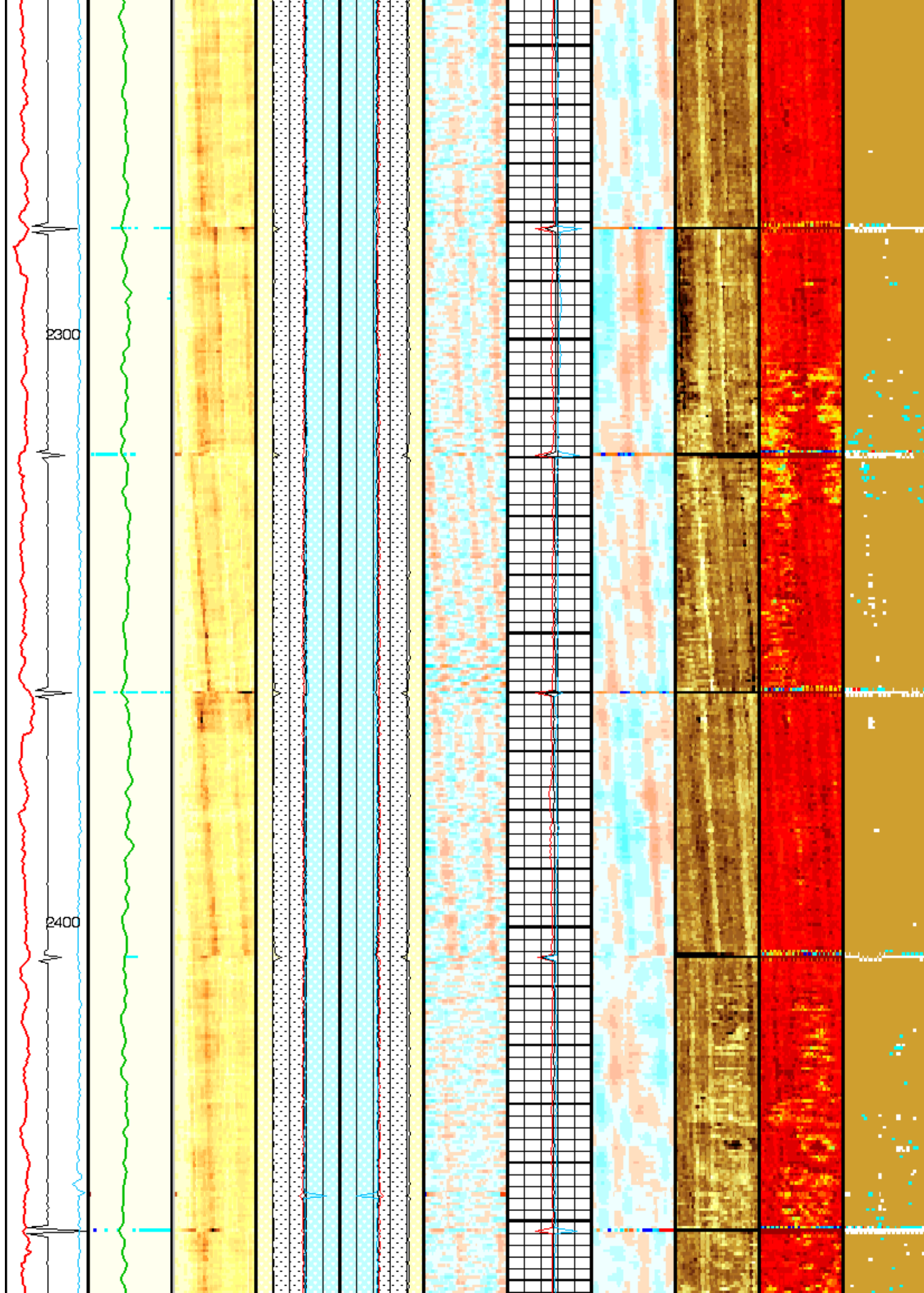


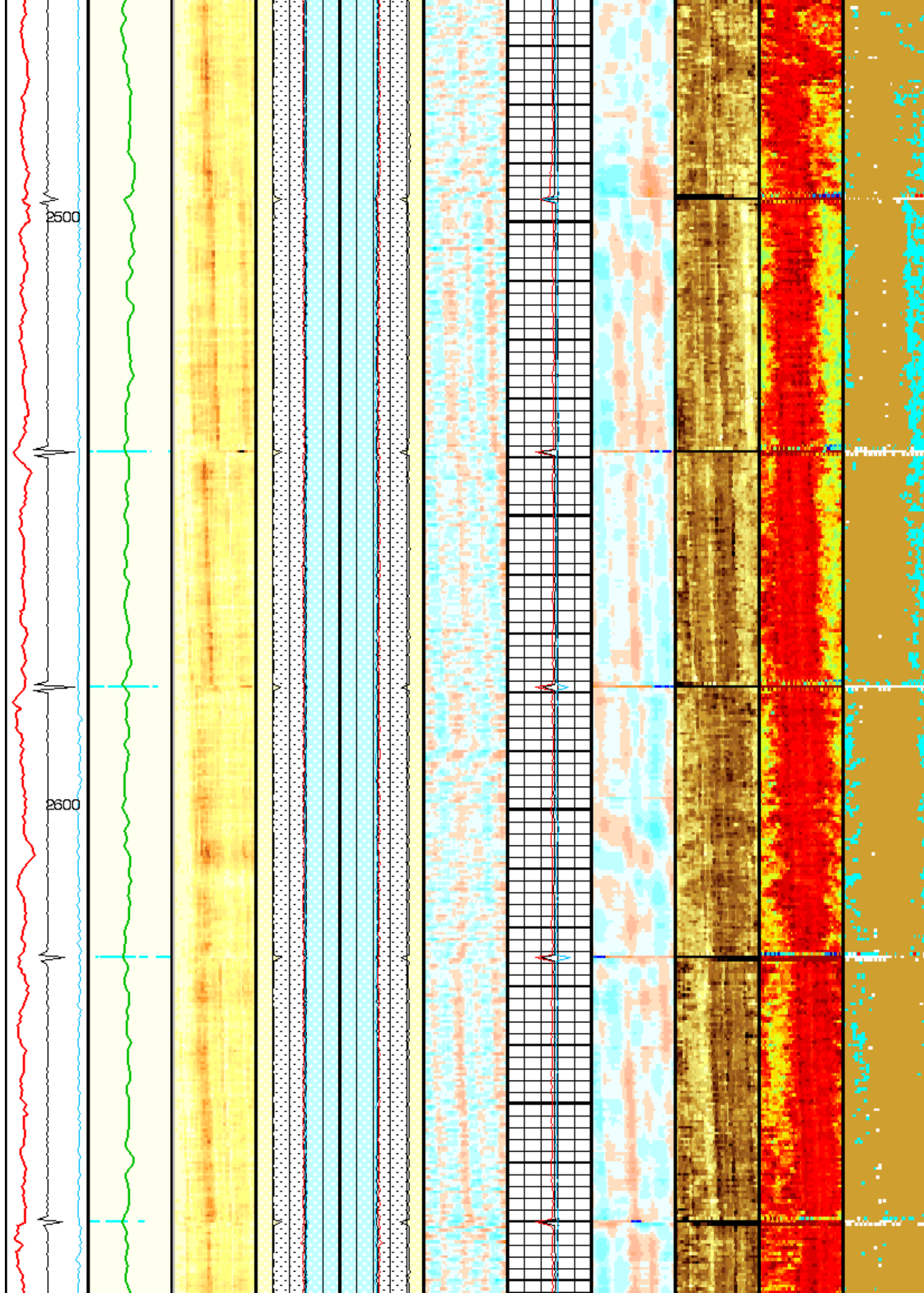


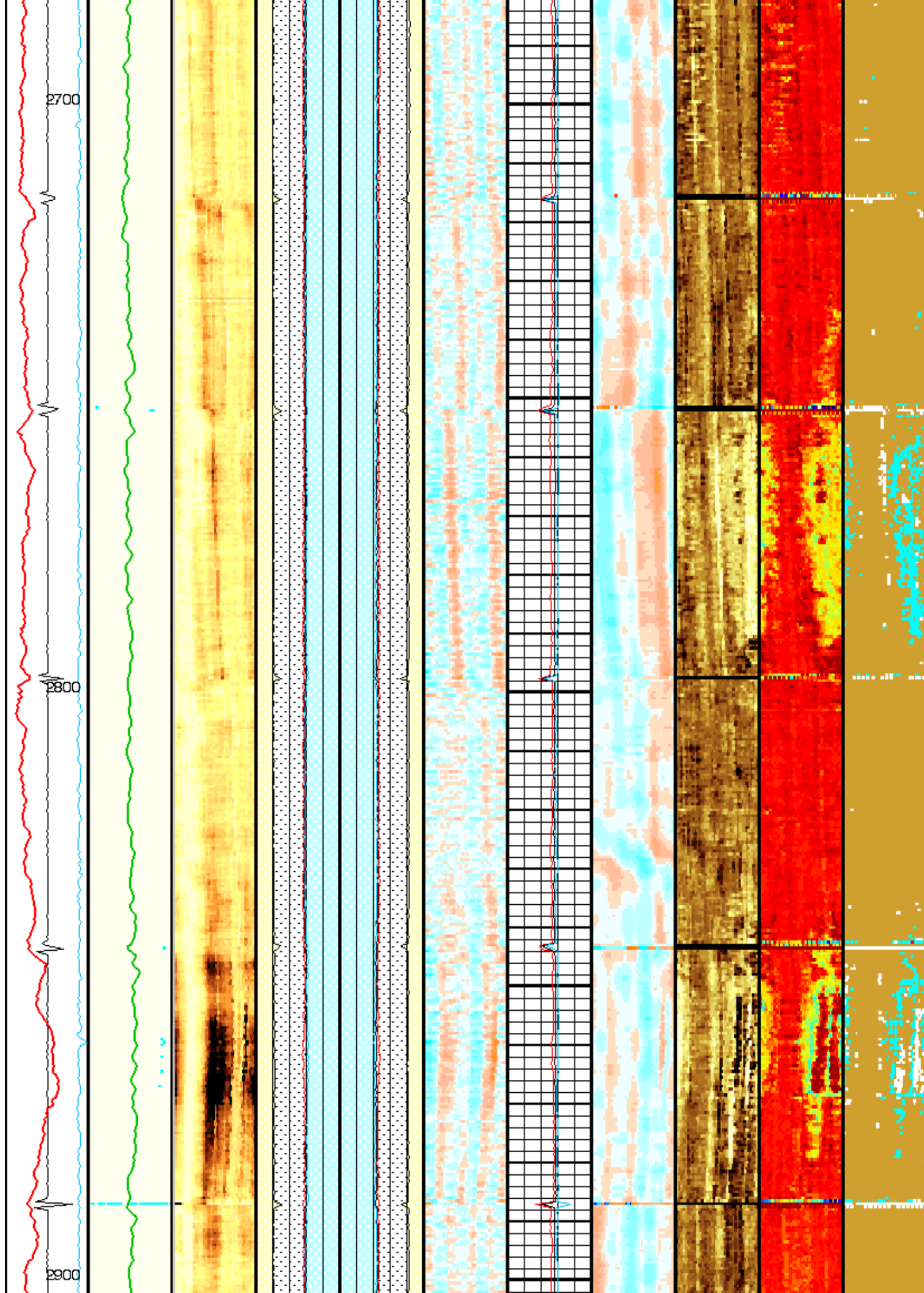


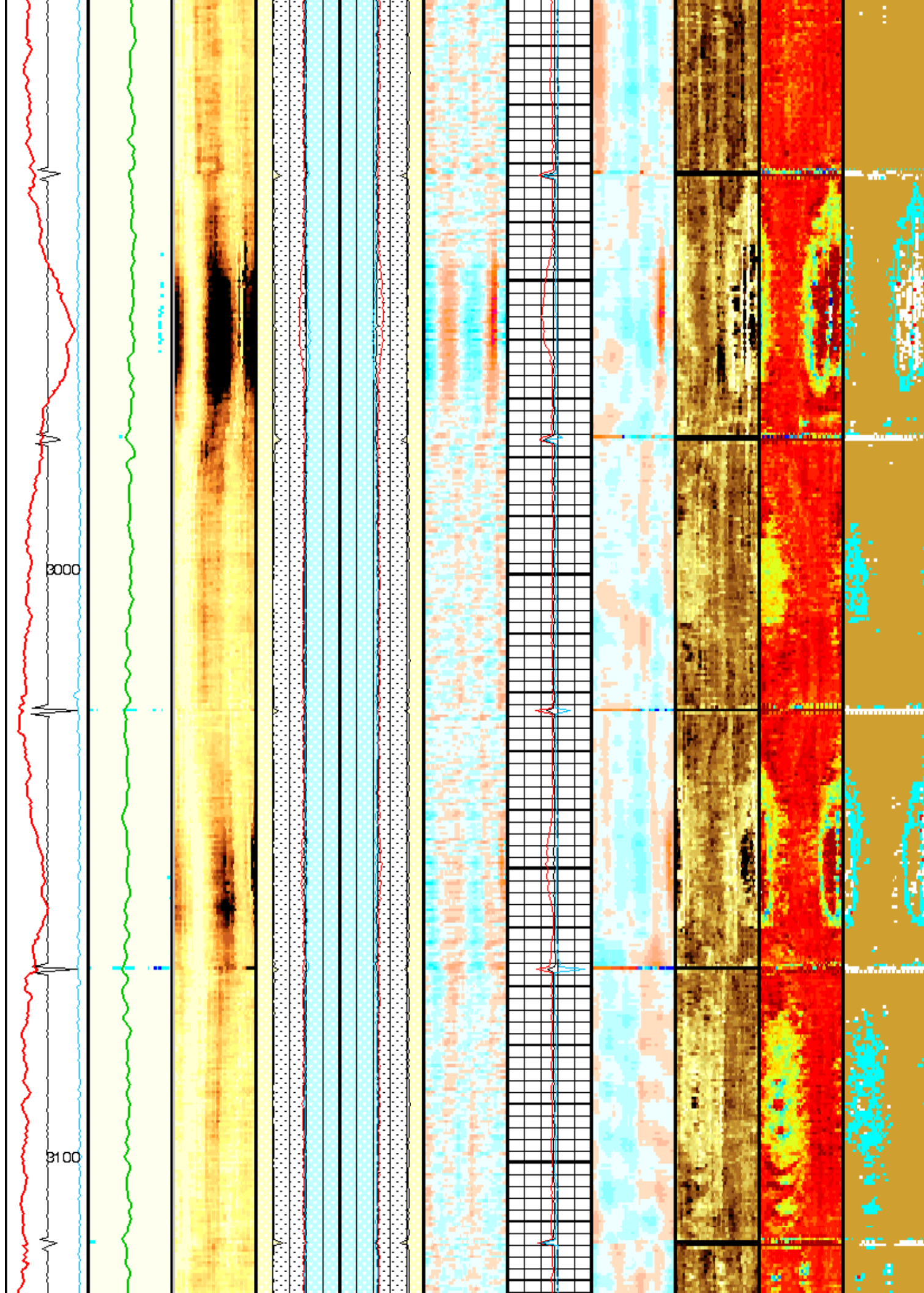


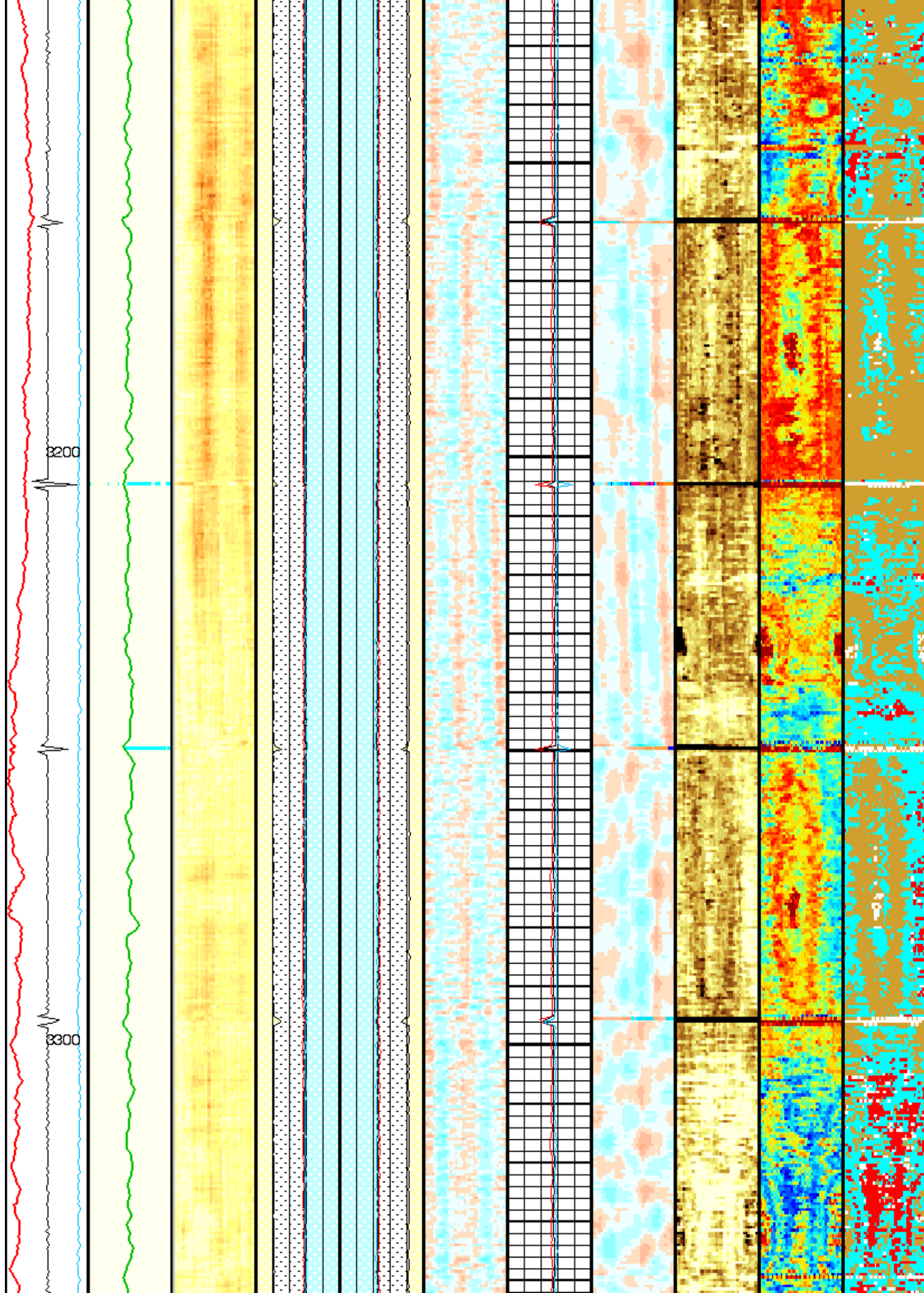


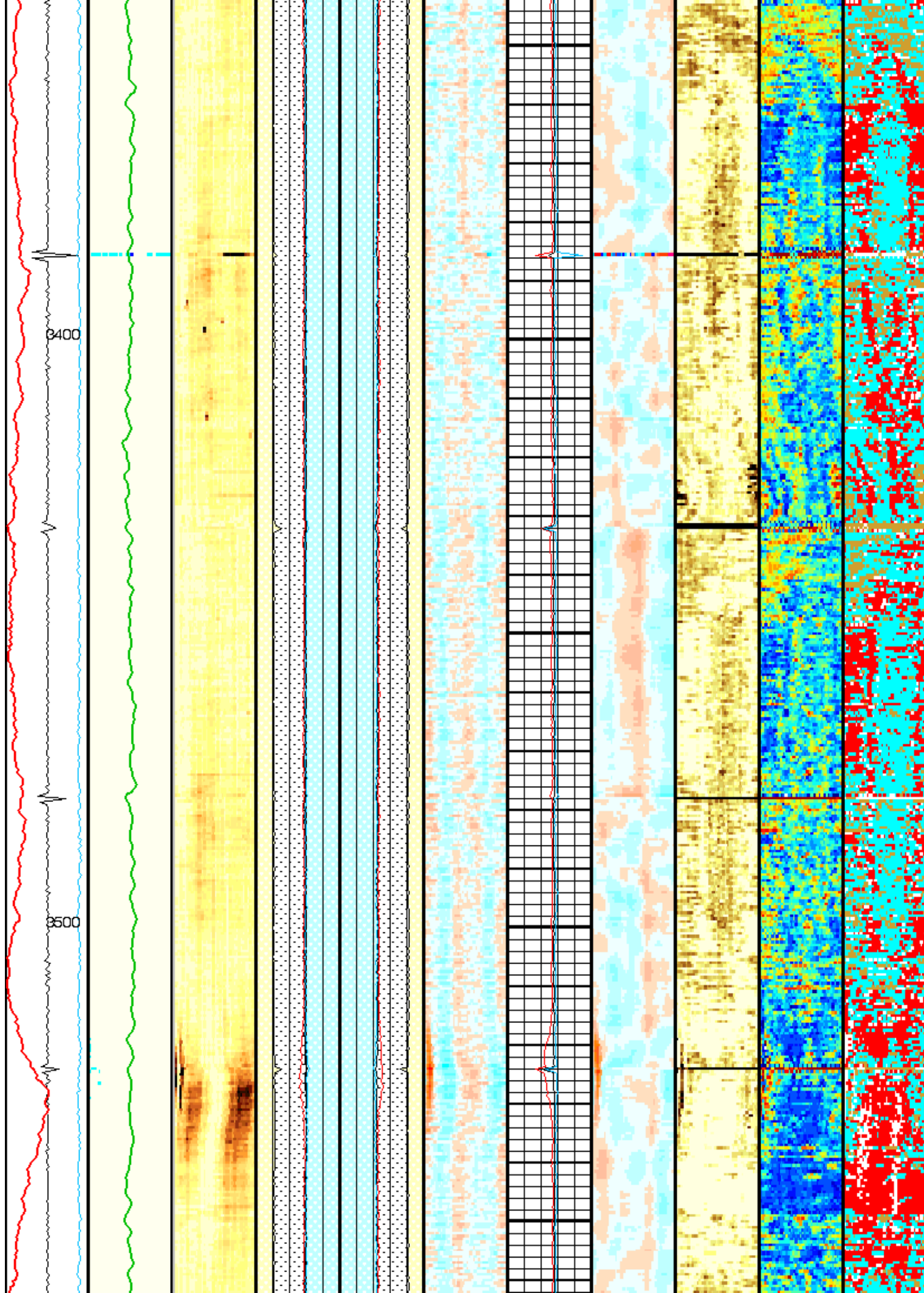


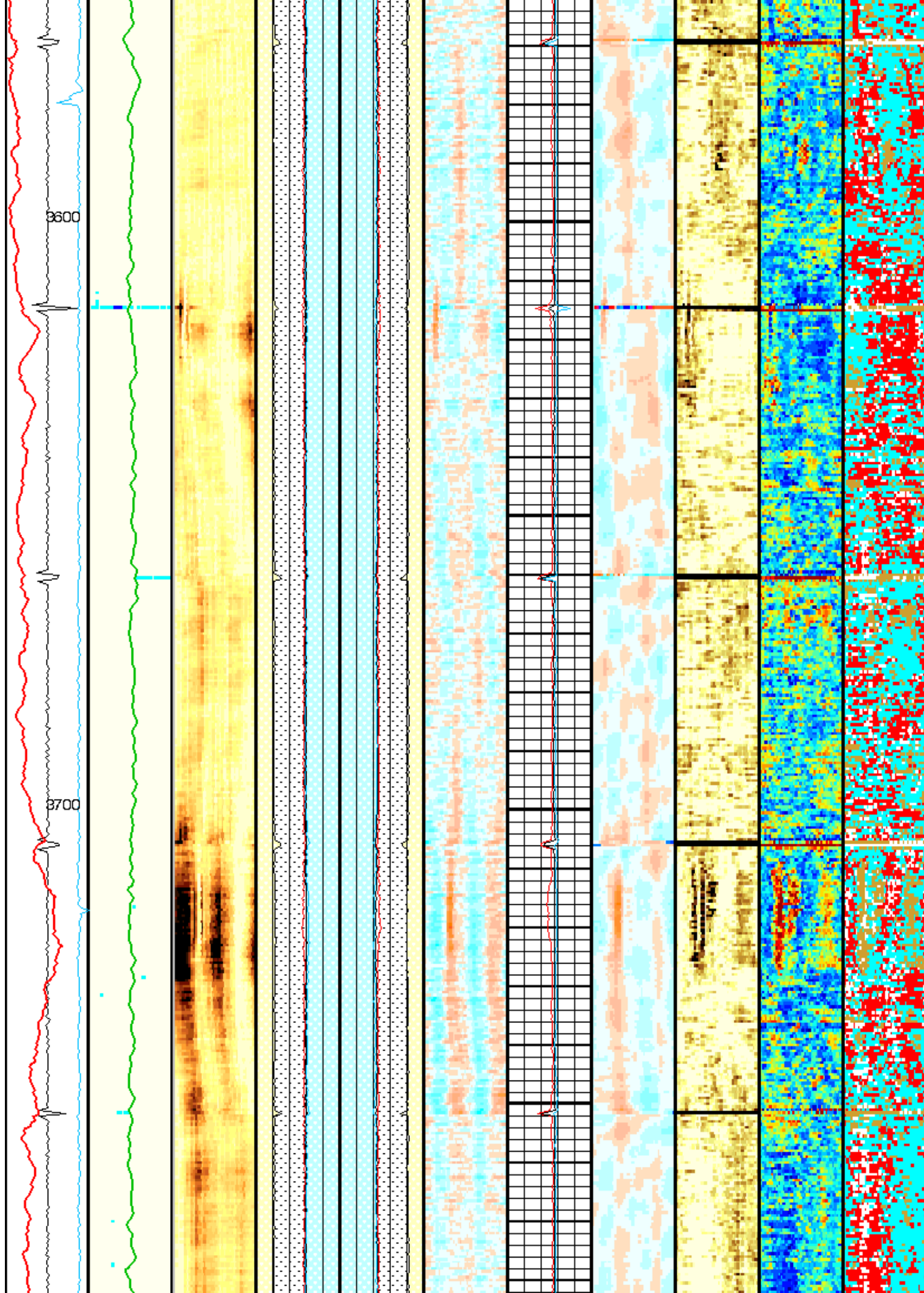


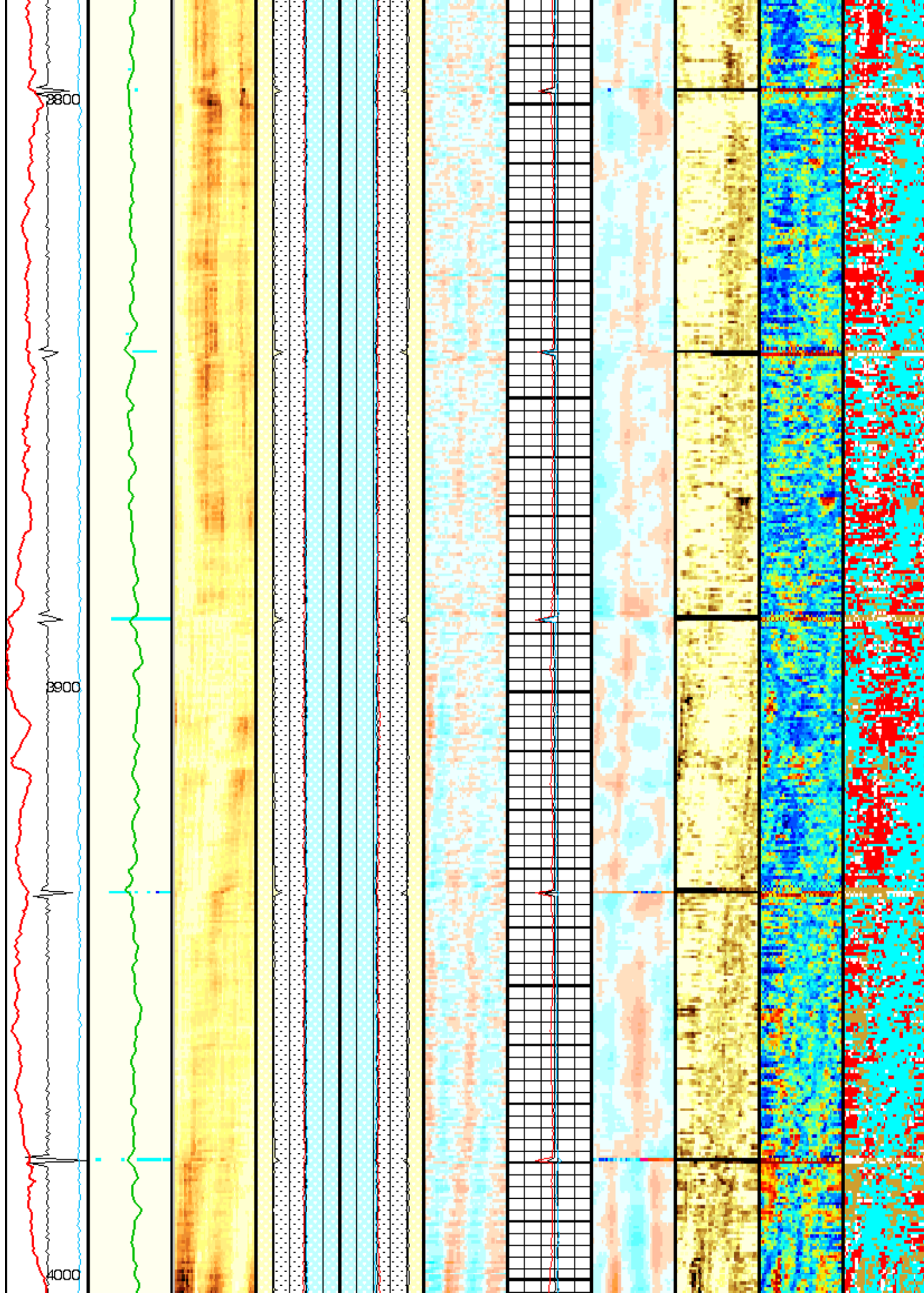


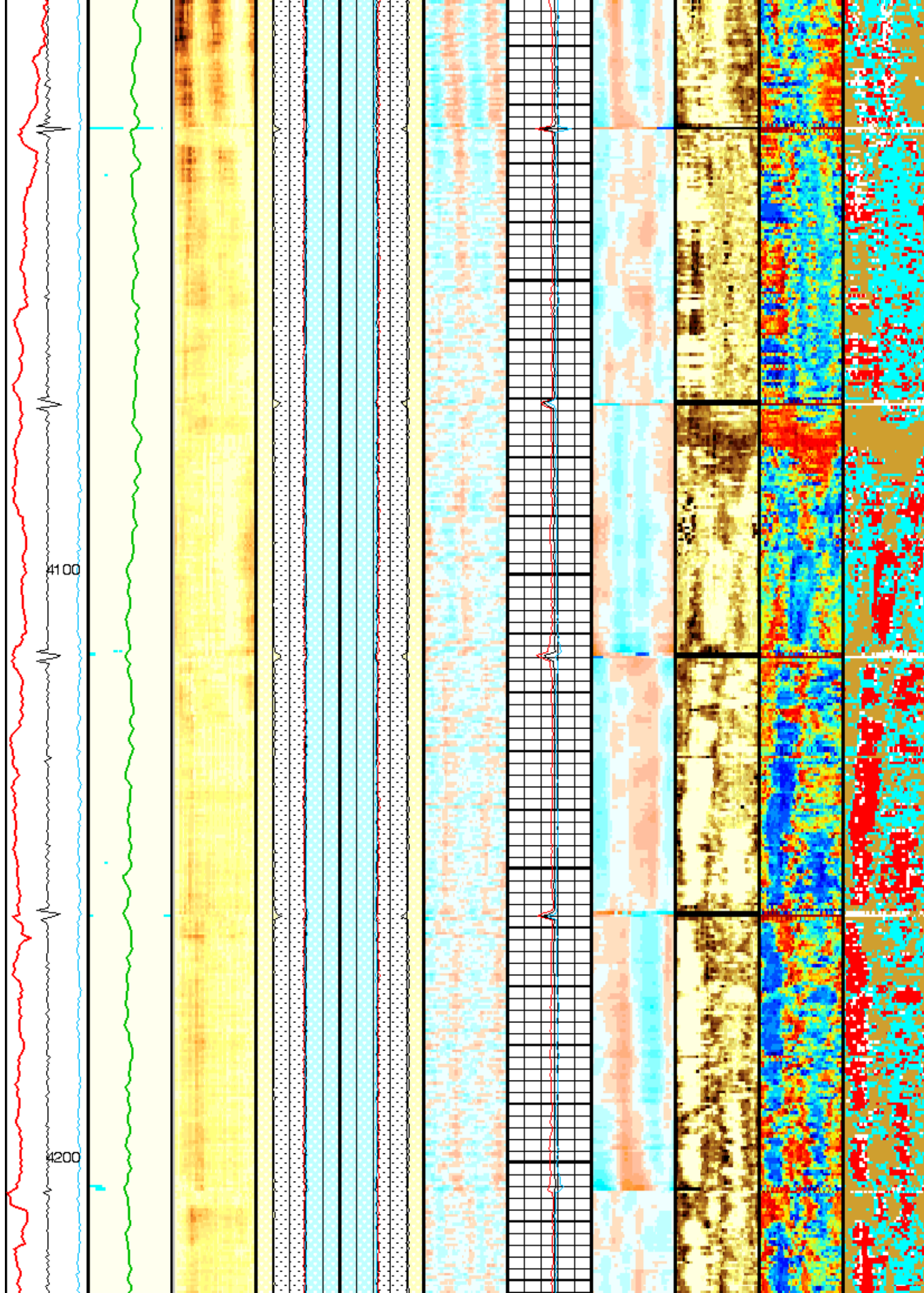


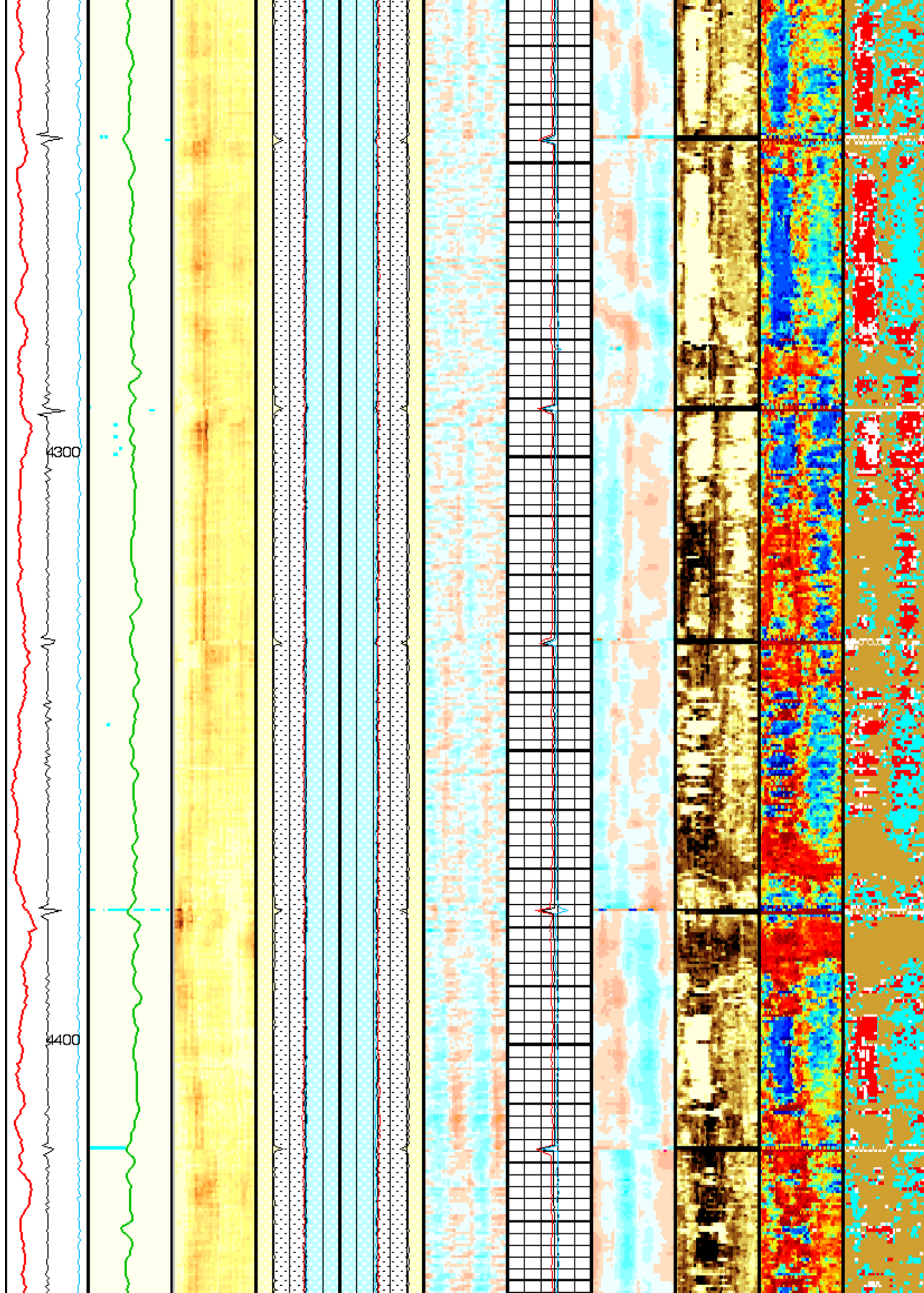


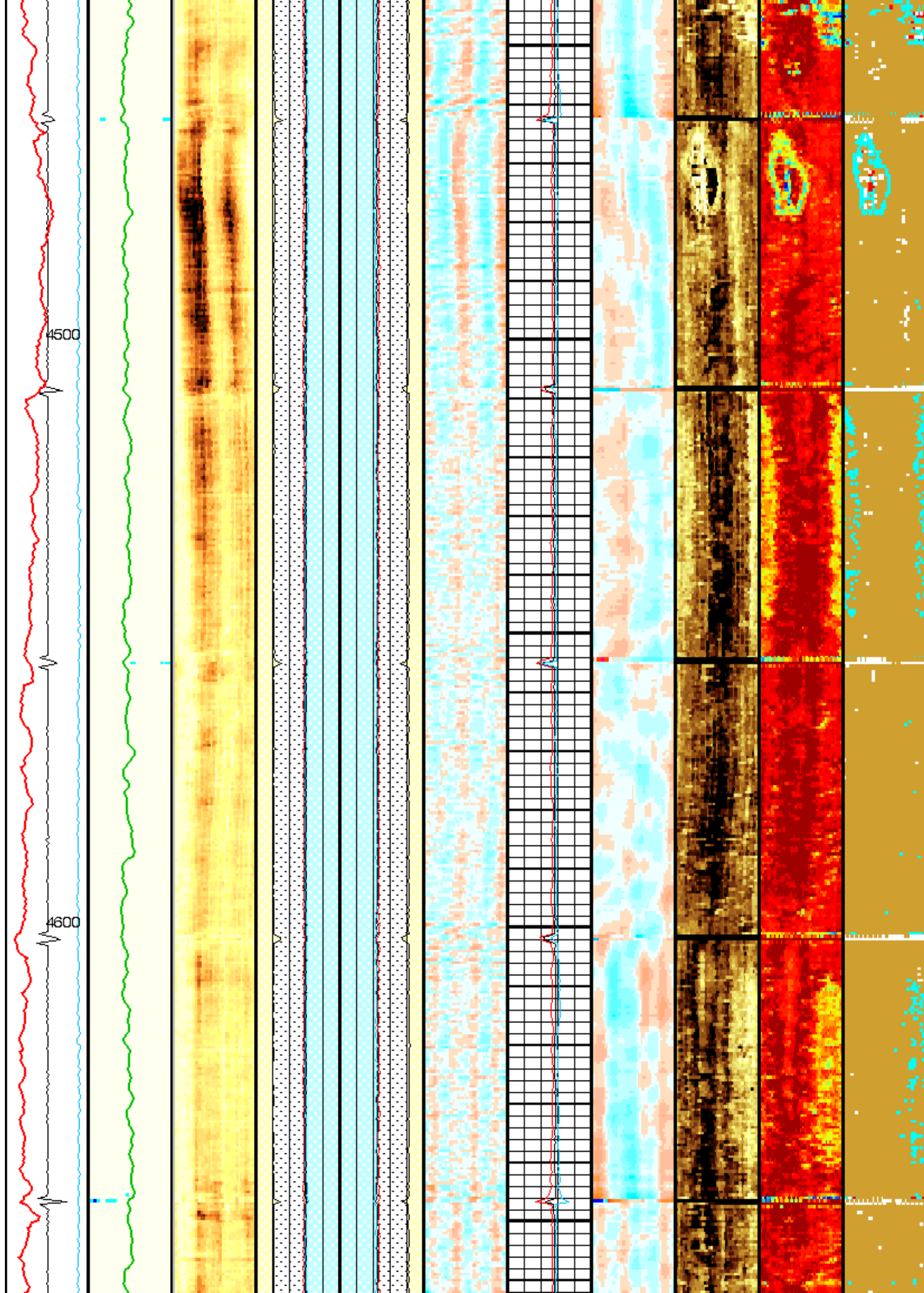


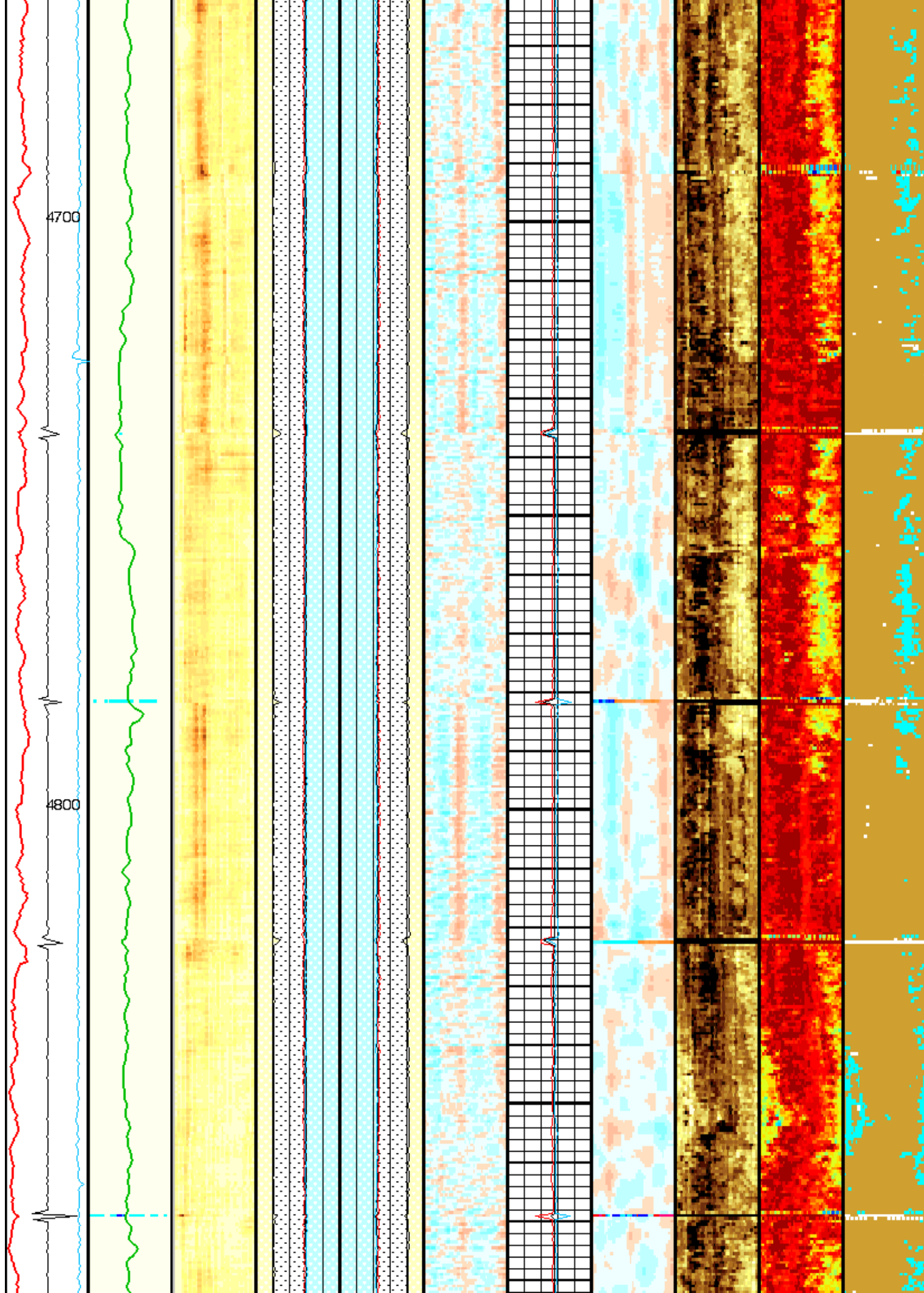


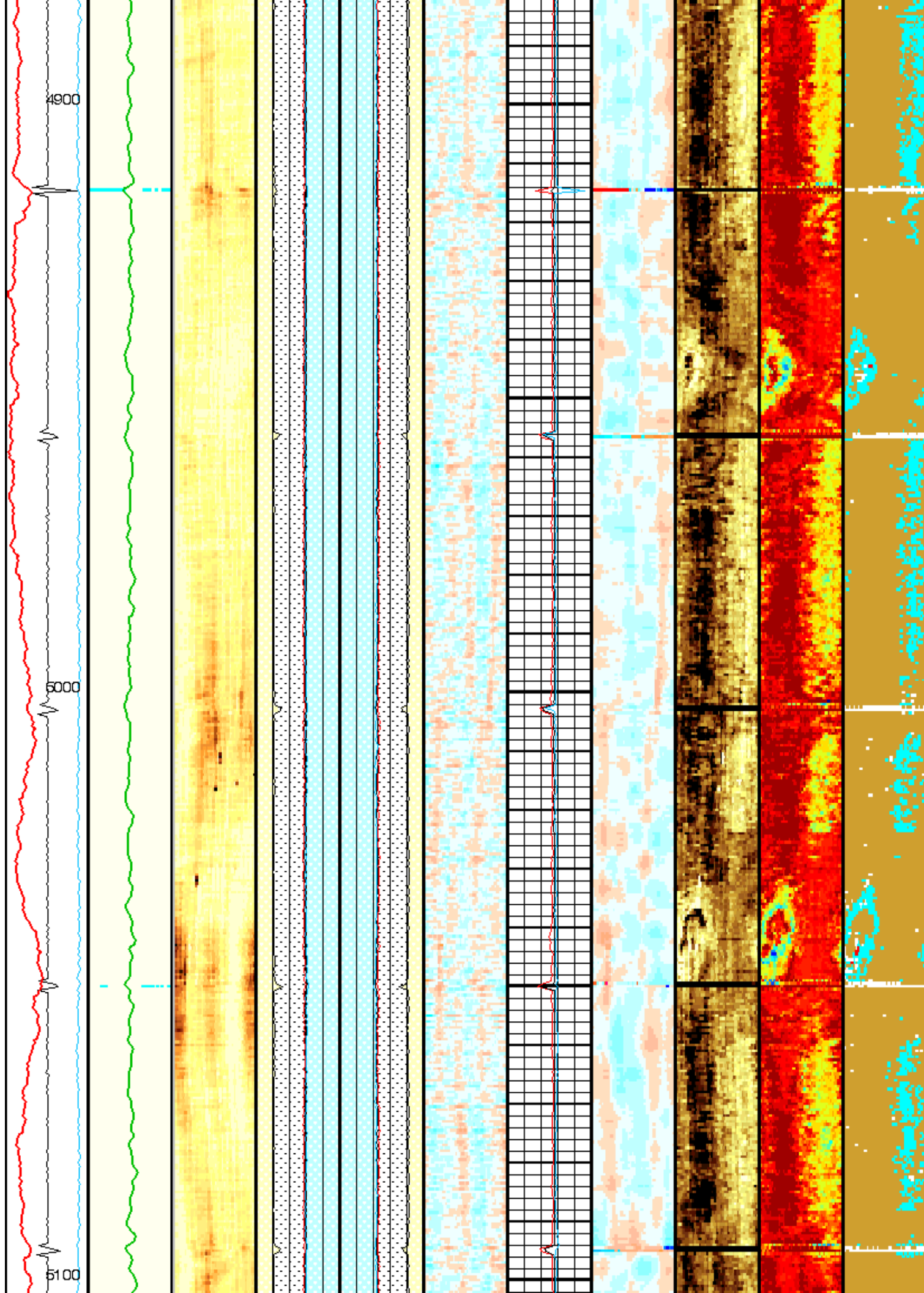


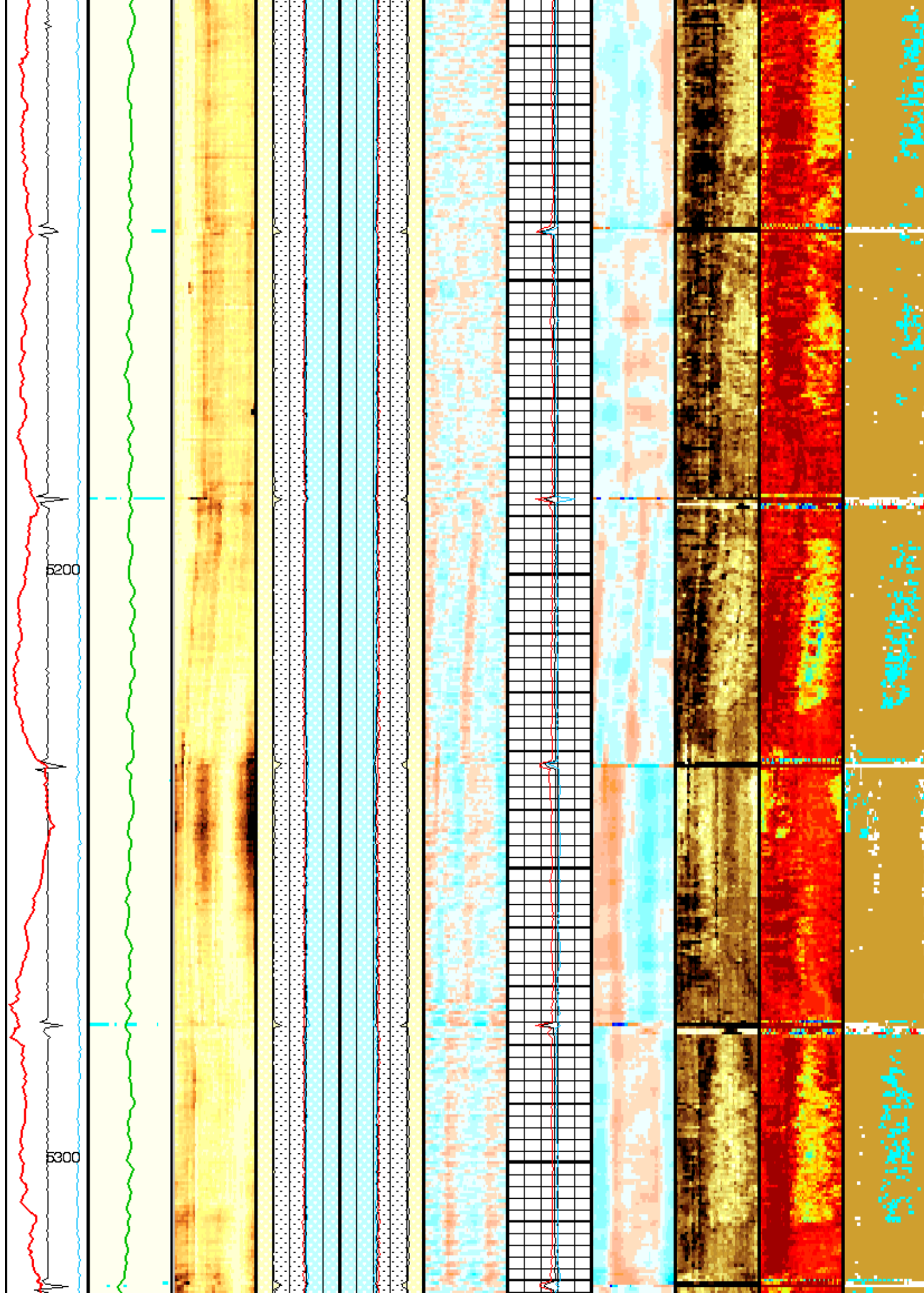


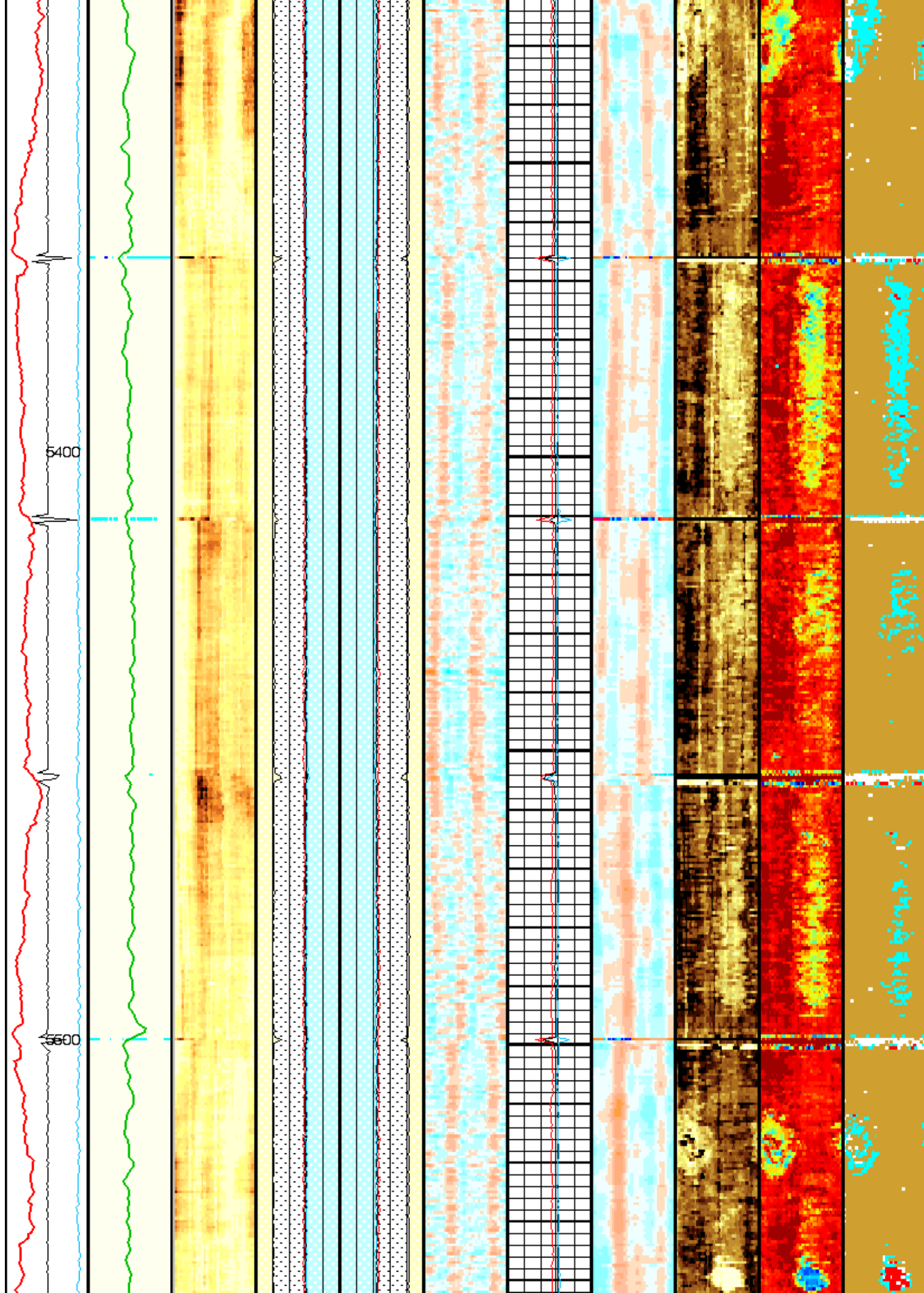


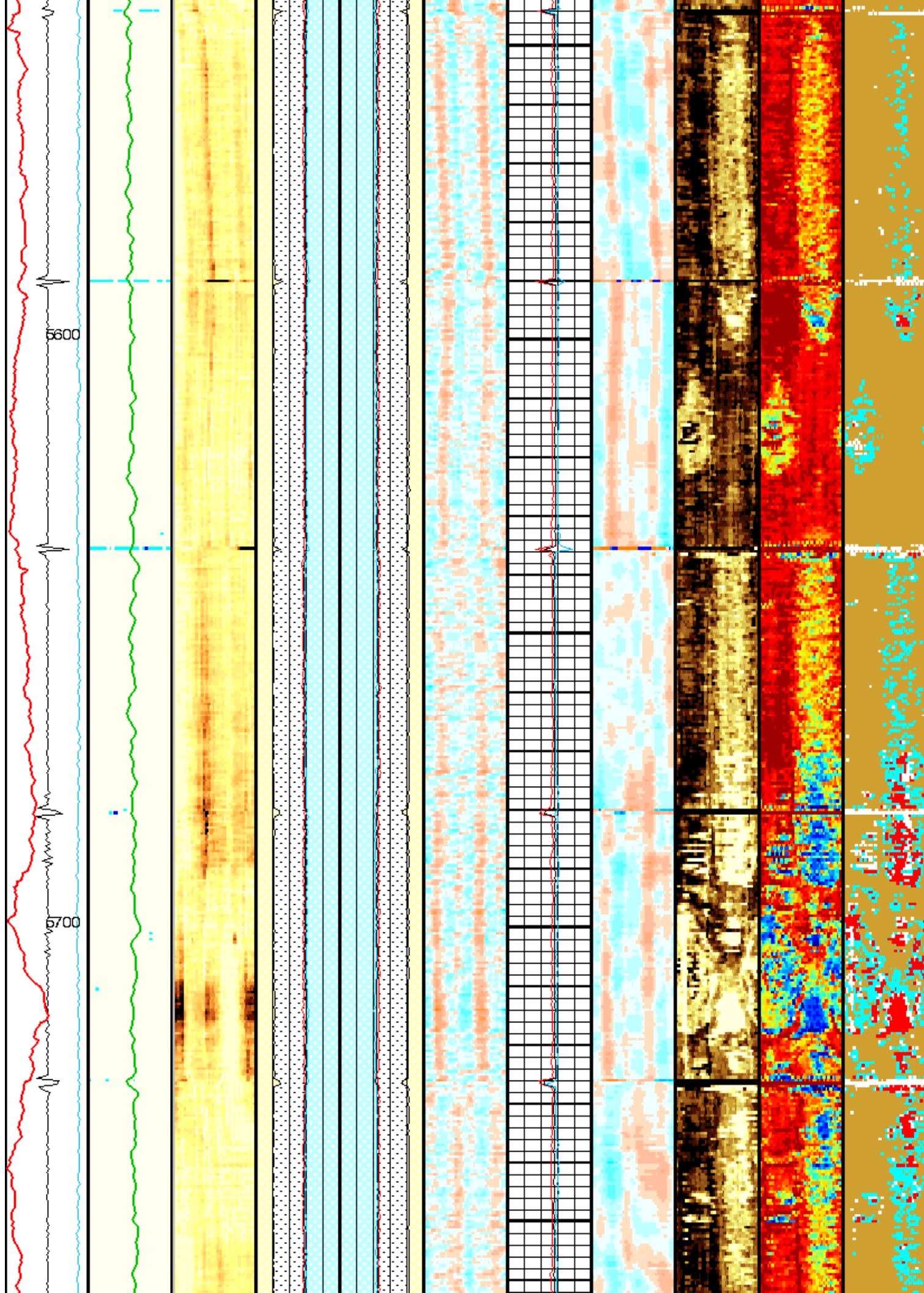


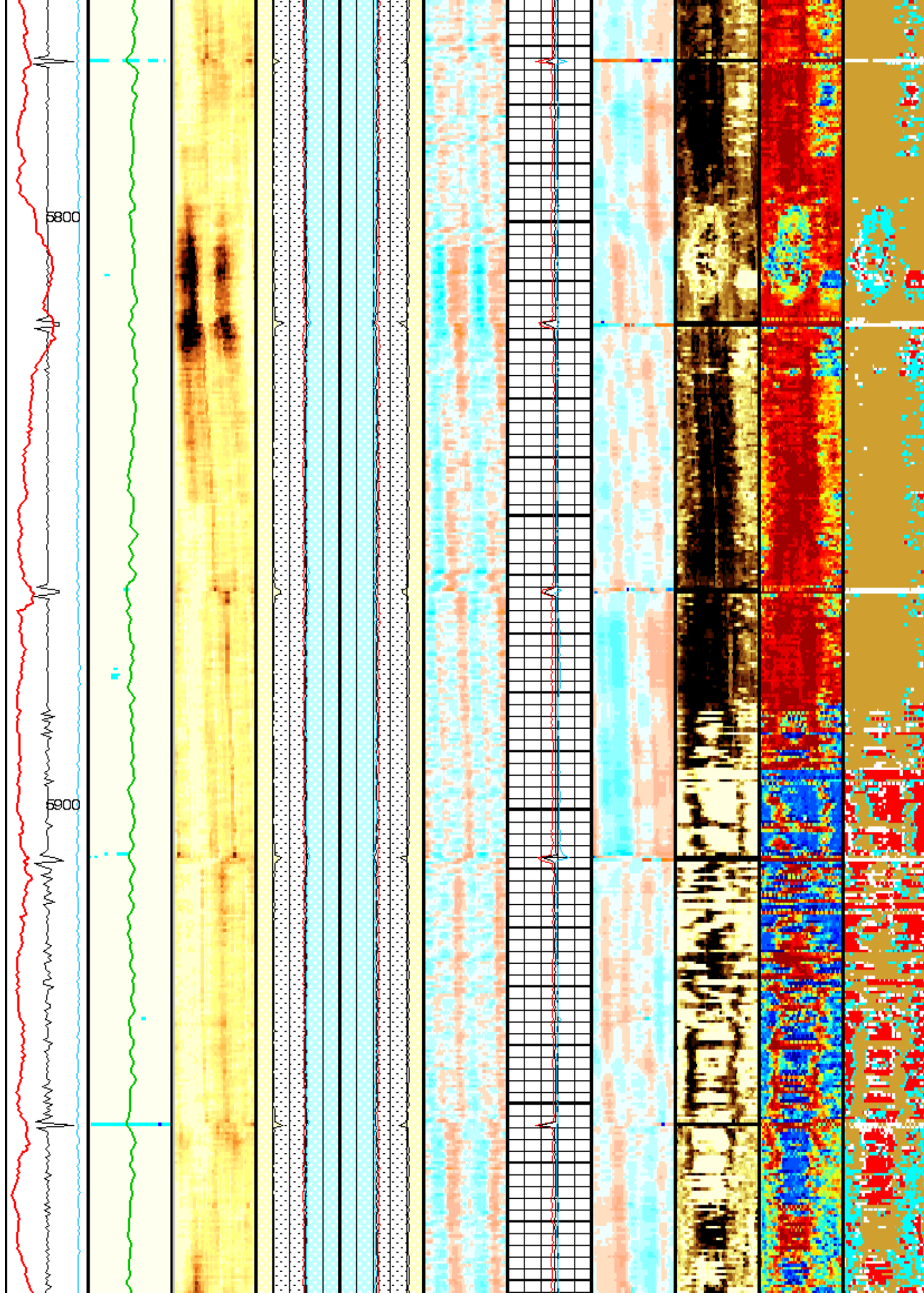


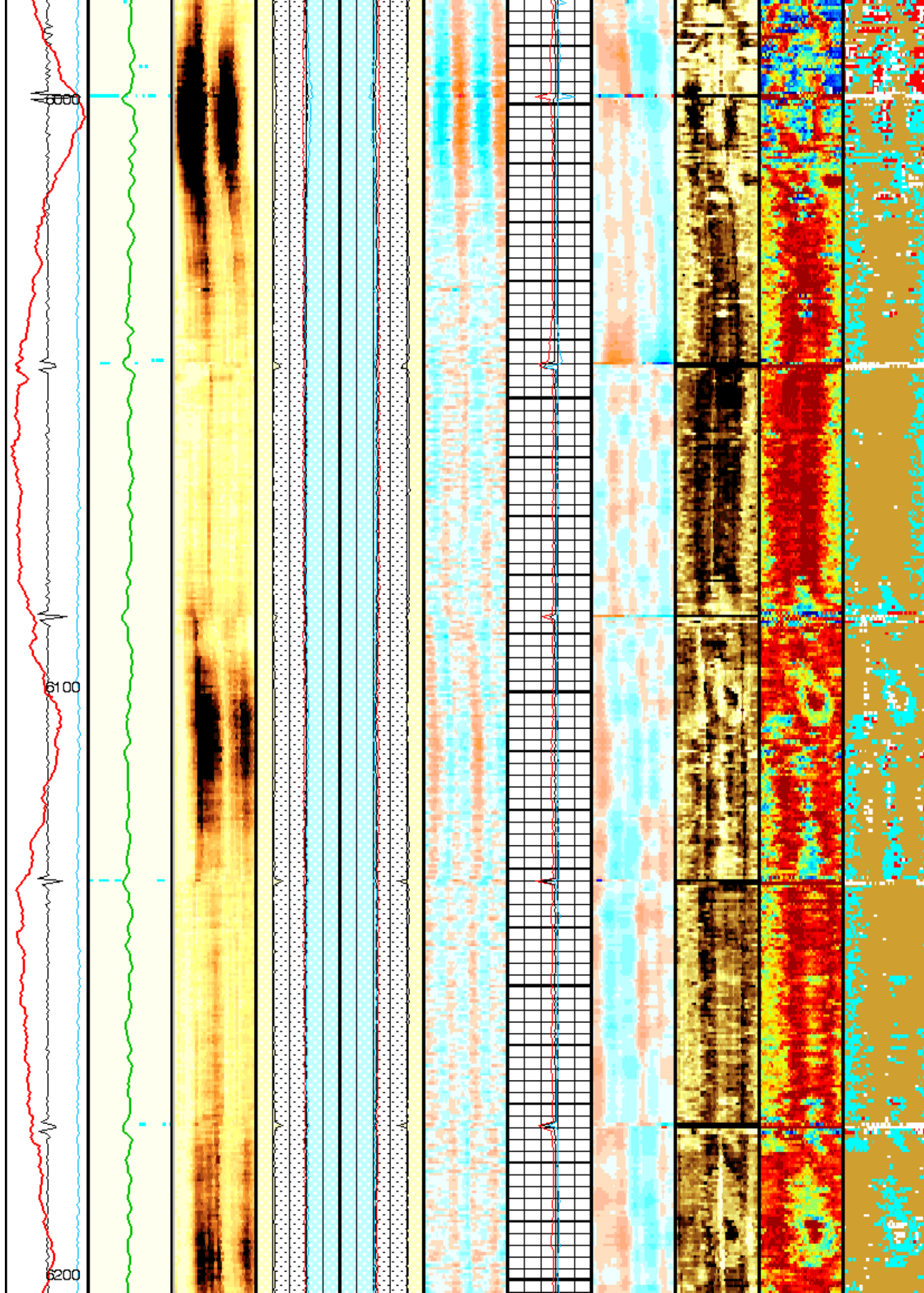


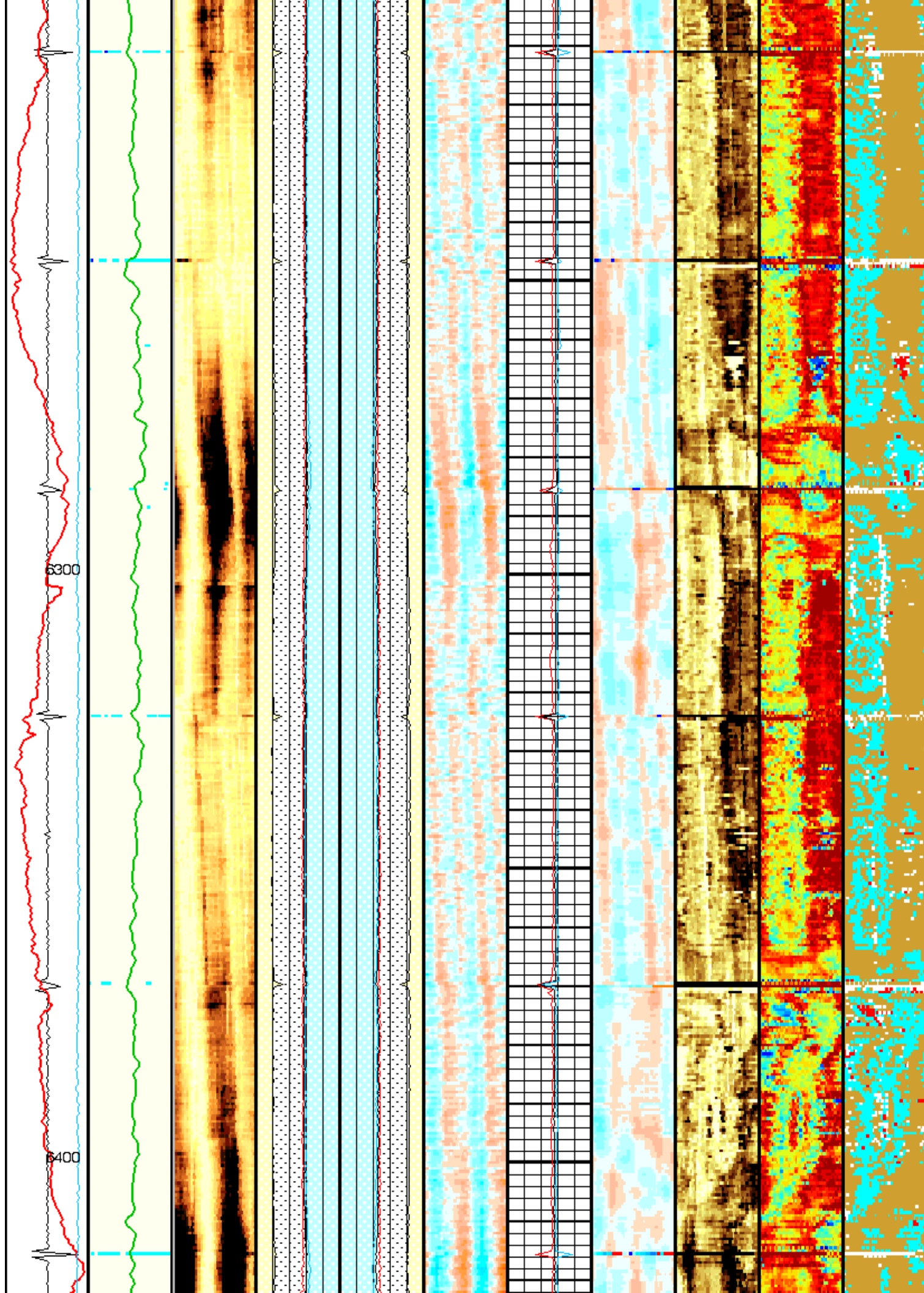


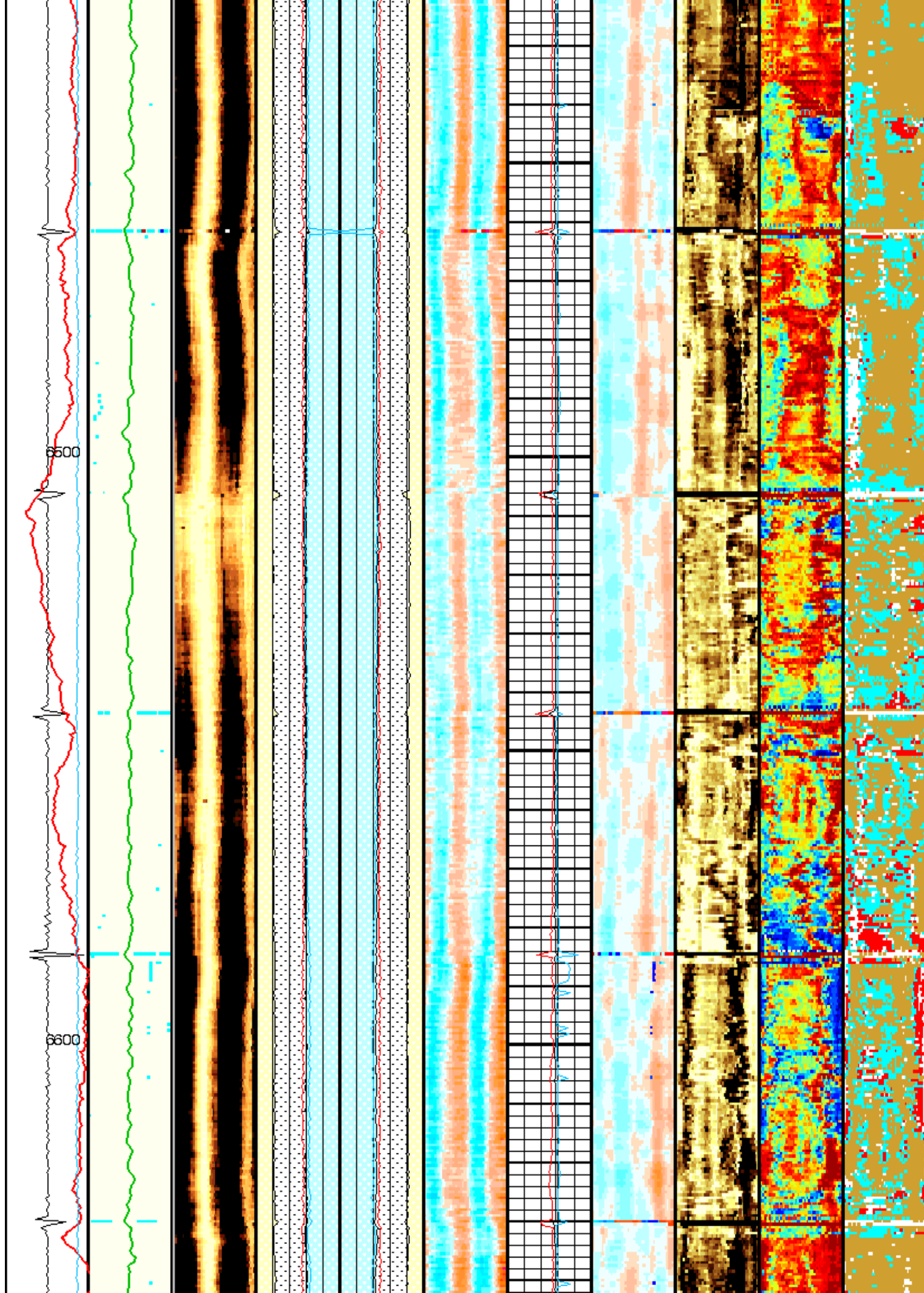


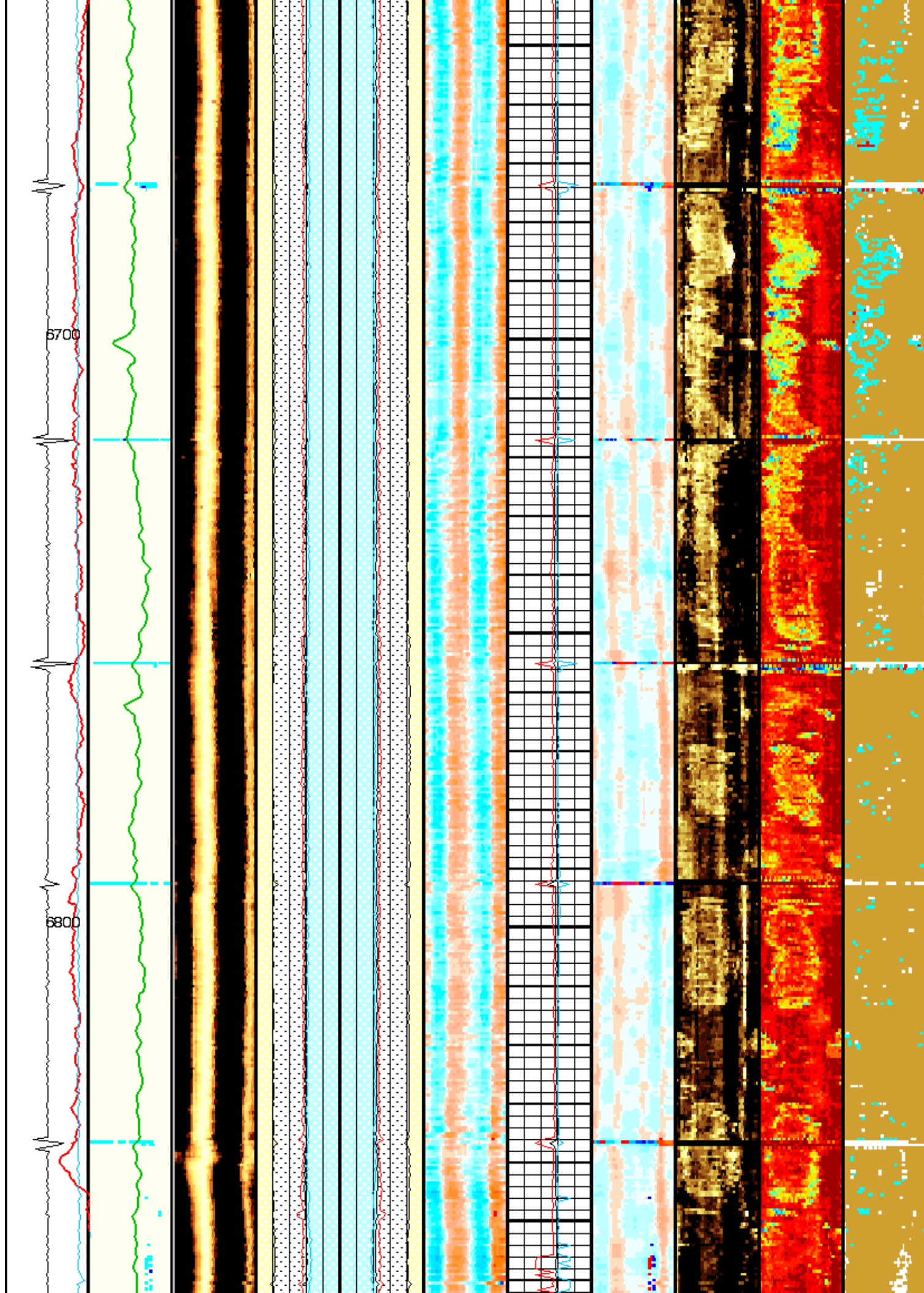


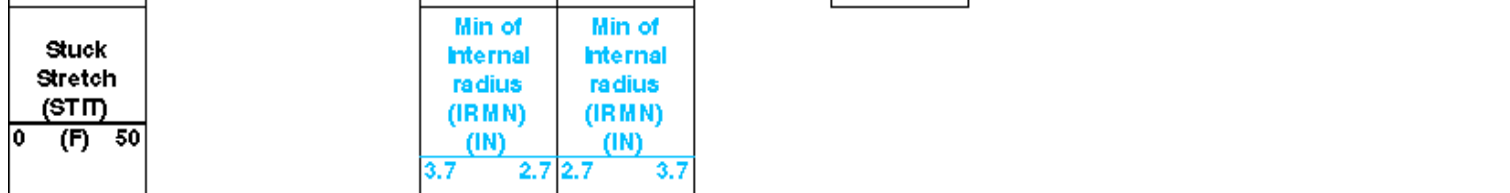
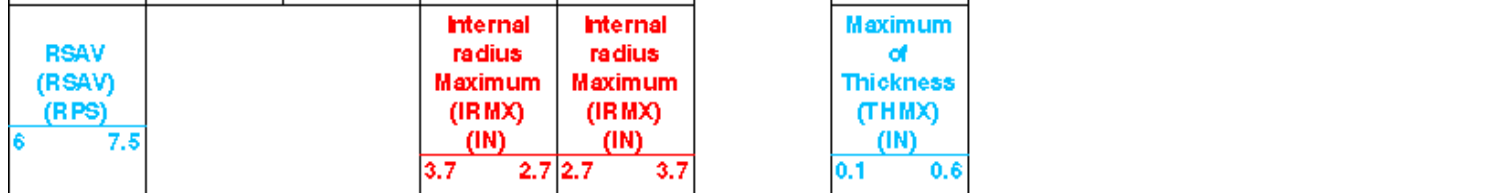
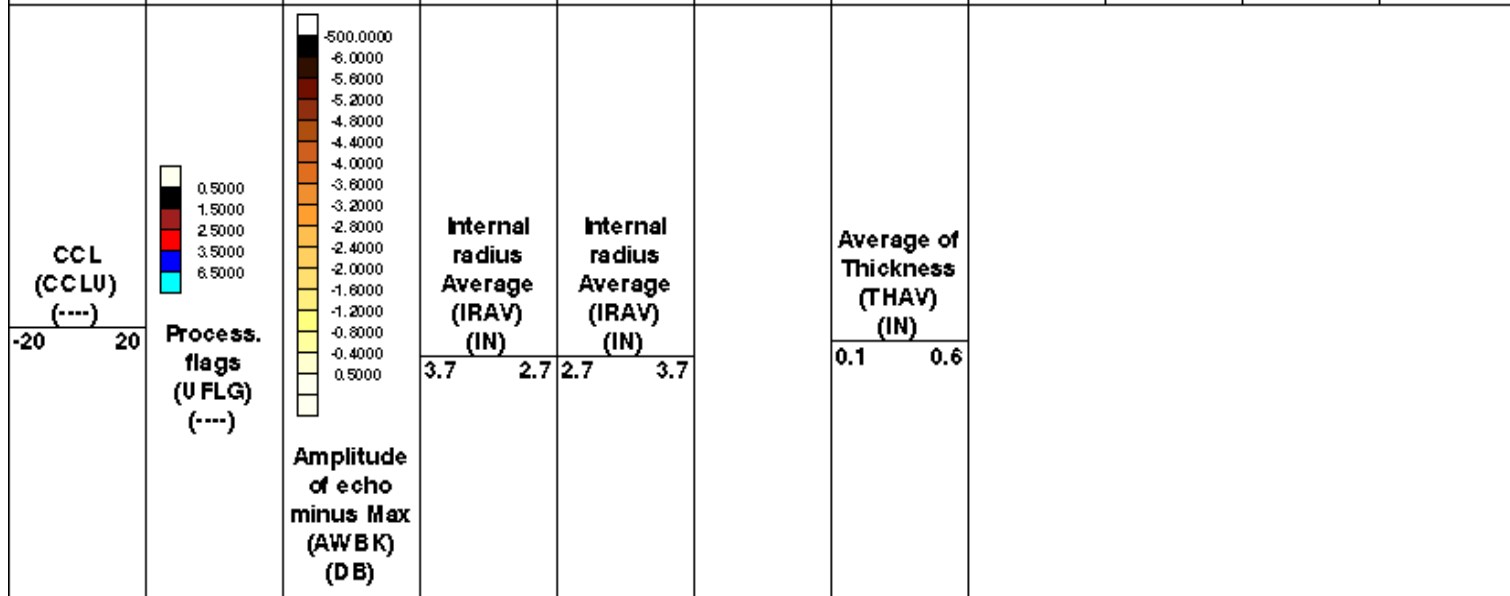
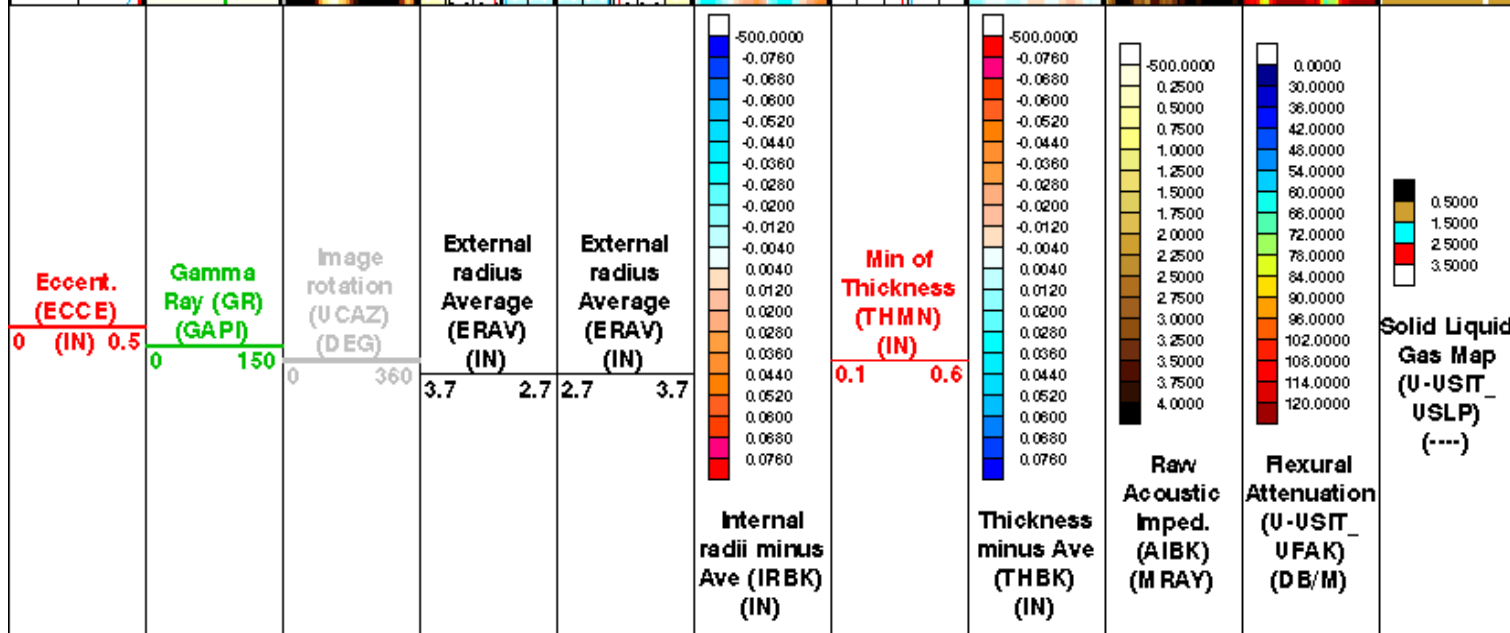
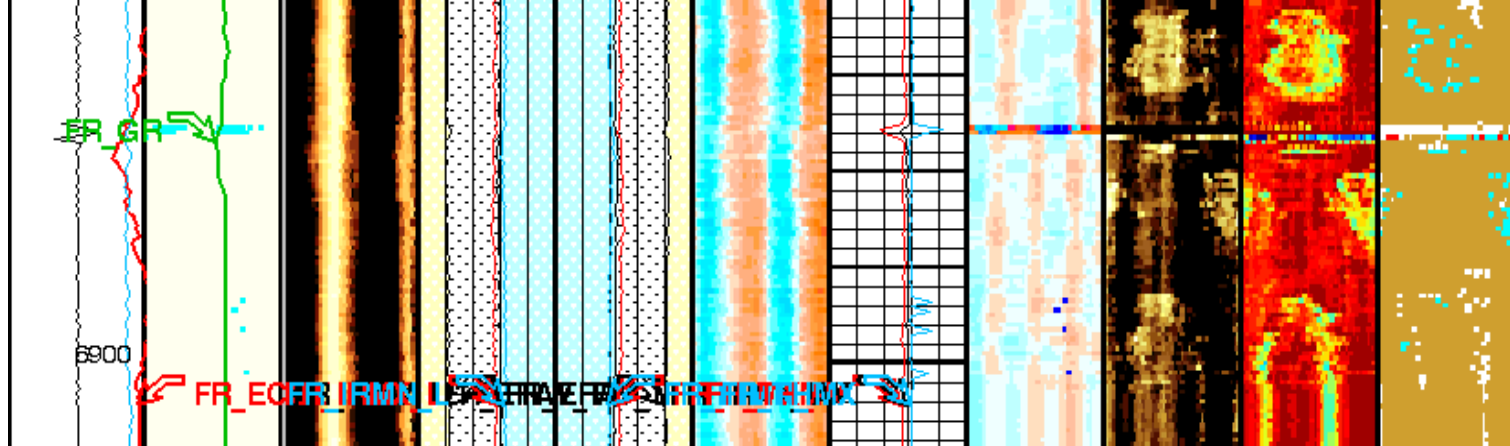












Drag
From D4T
to STIT

Tool/Tot.
Drag
From D4T
to STIA

Format: 5 inch IBC CEMENT COMPOSITE

Vertical Scale: 5" per 100'

Graphics File Created: 31-Jul-2012 05:56

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187	CAL-Y	19C0-187

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		
	Corrosion range maximum	0.076 IN
	Corrosion range minimum	-0.076 IN
	T 3 Processing Length for FPM	26.648 US
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CDUN	Curves Unit Declared in Presentation Manager	IN
CSDE	Casing Density	486.94 LBC/F
CSID	Casing Inner Diameter	6.276 IN
CYST	Casing Yield Strength	0 PSI
DFVL	Default Fluid Velocity	208 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	99 V
FDII	FPM Data Interpolation Interval	0 FT
FSOD	Fluid Slowness Fits Casing Outer Diameter	0 OFF
IMAR	Image Rotation	OFF
MW	Mud Weight	9.5 LB/G
OPLEV	USIT Remove Flagged Data Level	level2
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
SDTVR	Acoustic Impedance STD Vertical Threshold for Micro-debonding	0.3
SUBT	Ultrasonic Subassembly Type	Sub 7 inch S
TCUB	T 3 Processing Level	Vax_Loop
THDH	Maximum Search Thickness (percentage of nominal)	130
THDL	Minimum Search Thickness (percentage of nominal)	70
THDP	Thickness Detection Policy	Fundamental
THNO	Nominal Thickness of Casing	0.362 IN
TMUC	Type of Mud	WBM
U-USIT_CENT	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_RFVB	USIT Remove Flagged Data Window Begin	0 US
U-USIT_RWE	USIT Remove Flagged Data Window End	511 US
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_TIER	IBC Third Interface Echo Relieve	YES

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_UDFC	USIT Deflector for Casing	NONE	
U-USIT_UFAO	USIT Flexural Attenuation Offset	13	DB/M
U-USIT_UFGA	Far Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UFGI	Far Receiver Minimum Gain of Cartridge	-12	DB
U-USIT_UHCI	USIT IBC Hydraulic Communication Interval	06FT_02M	
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_B	
U-USIT_UNGA	Near Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UNGI	Near Receiver Minimum Gain of Cartridge	-12	DB
U-USIT_URTP	USIT Radial Transducer Position	UNKNOWN	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
U-MAO	USIT Measurement Angular Offset	-10	DEG
U-PAT	Emission Pattern	Pattern_375K	
USIT_USAC_TASK_ALLOW	USIT USAC Allow Task after Power Up	YES	
USIT_USAC_TASK_TIMEOUT	USIT USAC Task Timeout (in seconds) FOR TEST REPORT	600	
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub 7 inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T-3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.83	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
SGT-N: Scintillation Gamma Ray Tool - N			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEG F
DPPM	Density Porosity Processing Mode	STAN	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEG F
SOGR	SGT Standoff Distance	0	IN
CAL-Y: Casing Anomaly Locator - Y			
CCLD	CCL reset delay	12	IN
CCLT	CCL Detection Level	0.3	V
FEQL: Formation Evaluation Quick Look			
CSXO	Coefficient of Sxo	1	
DLLM	DPOR Lower Limit for Mineral Detection	0.35	CFCF
EDSE	EPT Data Selector	STANDARD	
FEPT	EPT Option Flag	NONE	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHI	
GDCL	Grain Density Clean Reading	0	G/C3
GDSH	Grain Density Shale Reading	2.9	G/C3
GRCL	Gamma Ray Clean Reading	0	GAPI
GRSH	Gamma Ray Shale Reading	200	GAPI
GULM	Gamma Ray Upper Limit for Mineral Detection	999	GAPI
KGR	Kill GR Shale Index (USE, KILL)	USE	
KPN	Kill NPES Shale Index (USE, KILL)	USE	
KRH	Kill RHGA Shale Index (USE, KILL)	USE	
KSP	Kill SP Shale Index (USE, KILL)	USE	
LSWB	SWB Limit Selector (NO_LIMIT, LIMIT)	NO_LIMIT	
MDET	Mineral Flag (NONE, COAL, SALT)	NONE	
NLIM	Neutron Limit for Mineral Detection	0.01	CFCF
NPCL	NPES Clean Reading	0	CFCF
NPSH	NPES Shale Reading	0.5	CFCF
RWB	Bound Water Resistivity	0.1	OHM M
RXOF	RXO Presence Flag	ABSENT	
SDGC	Clean Grain Density Selector	GDCL	
SEXP	N in Water Saturation Equation	2	
SIS	Three Mineral Shale Index Selector	NOT_USED	
SPCL	SP Clean Reading	-200	MV
SPSB	SP Shale Baseline	0	MV
SPSH	SP Shale Reading	0	MV
SWMIN	Sw Minimum	0.05	CFCF
TPCN	Time Propagation of non-shale	7.2	NS/M
TPM1	Time Propagation, Matrix-1 <Limestone>	9.8	NS/M
TPM2	Time Propagation, Matrix-2 <Sandstone>	7.2	NS/M
TPM3	Time Propagation, Matrix-3 <Dolomite>	8.7	NS/M
TPSH	Time Propagation of Shale	8.9	NS/M
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEG F
FCD	Future Casing (Outer) Diameter	0	IN

GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEG F
PERT: Preliminary Evaluation - Real Time			
ARTS	AIT Rt Selection (for ALLRES computation)	AIT_TwoResA60	
BDPS	Bulk Density Processing Selector	Standard	
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEG F
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	
FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHI	
FSON	Sonic Presence Flag	ABSENT	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	LIMESTONE	
RG21	RHO Grain (2-Mineral Model, Min-1)	2.71	G/C3
RG22	RHO Grain (2-Mineral Model, Min-2)	2.644	G/C3
RG23	RHO Grain (2-Mineral Model, Min-3)	2.877	G/C3
RG31	RHO Grain (3-Mineral Model, Min-1)	2.71	G/C3
RG32	RHO Grain (3-Mineral Model, Min-2)	2.644	G/C3
RG33	RHO Grain (3-Mineral Model, Min-3)	2.877	G/C3
RTCO	RTCO - Rt Invasion Correction	YES	
RTLF	RT Limit Flag	NO_LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEG F
UF	U Fluid	0.398	
UM21	U Matrix (2-Mineral Model, Min-1)	13.77	
UM22	U Matrix (2-Mineral Model, Min-2)	4.779	
UM23	U Matrix (2-Mineral Model, Min-3)	8.997	
UM31	U Matrix (3-Mineral Model, Min-1)	13.77	
UM32	U Matrix (3-Mineral Model, Min-2)	4.779	
UM33	U Matrix (3-Mineral Model, Min-3)	8.997	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	11531.00	FT
TDL	Total Depth - Logger	6905.00	FT
System and Miscellaneous			
ALTDPCAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	990.00	PPM
CSIZ	Current Casing Size	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	9.50	LB/G
DO	Depth Offset for Playback	0.0	FT
FLEV	Fluid Level	0.00	FT
MST	Mud Sample Temperature	-50000.00	DEG F
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	11531	FT
TWS	Temperature of Connate Water Sample	100.00	DEG F

Input DLIS Files

DEFAULT	USI_012LUP	FN:11	PRODUCER	31-Jul-2012 02:31	6909.0 FT	36.0 FT
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Output DLIS Files

DEFAULT	USI_017PUP	FN:16	PRODUCER	31-Jul-2012 05:56
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MAXIS Field Log

Company: Encana Oil & Gas Company

Well: Flanigan 1A-6H

Input DLIS Files

DEFAULT	USI_012LUP	FN:11	PRODUCER	31-Jul-2012 02:31	6909.0 FT	36.0 FT
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Output DLIS Files

DEFAULT	USI_017PUP	FN:16	PRODUCER	31-Jul-2012 05:56	6909.0 FT	36.0 FT
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OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187	CAL-Y	19C0-187

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
DFVL	200.5 US/F	208 US/F	6909.0 05:56:17
	203 US/F	200.5 US/F	6750.0 05:56:24
	204.5 US/F	203 US/F	6300.0 05:56:51
	205.5 US/F	204.5 US/F	4500.0 05:58:18
	206 US/F	205.5 US/F	3000.0 05:59:46
	207 US/F	206 US/F	2300.0 06:00:28
	208 US/F	207 US/F	1750.0 06:01:02
	ZMUD	1.83 MRAY	1.83 MRAY
1.83 MRAY		1.83 MRAY	6750.0 05:56:24
1.83 MRAY		1.83 MRAY	6300.0 05:56:51
1.83 MRAY		1.83 MRAY	4500.0 05:58:18
1.83 MRAY		1.83 MRAY	3000.0 05:59:46
1.83 MRAY		1.83 MRAY	2300.0 06:00:28
1.83 MRAY		1.83 MRAY	1750.0 06:01:02

Image
rotation
(U CAZ)
(DEG)

0 360

Tool/Tot.
Drag
From D4T
to STIACable
Drag
From D4T
to STITStuck
Stretch
(STIT)

0 (F) 50

RSAV
(RSAV)
(RPS)

6 7.5

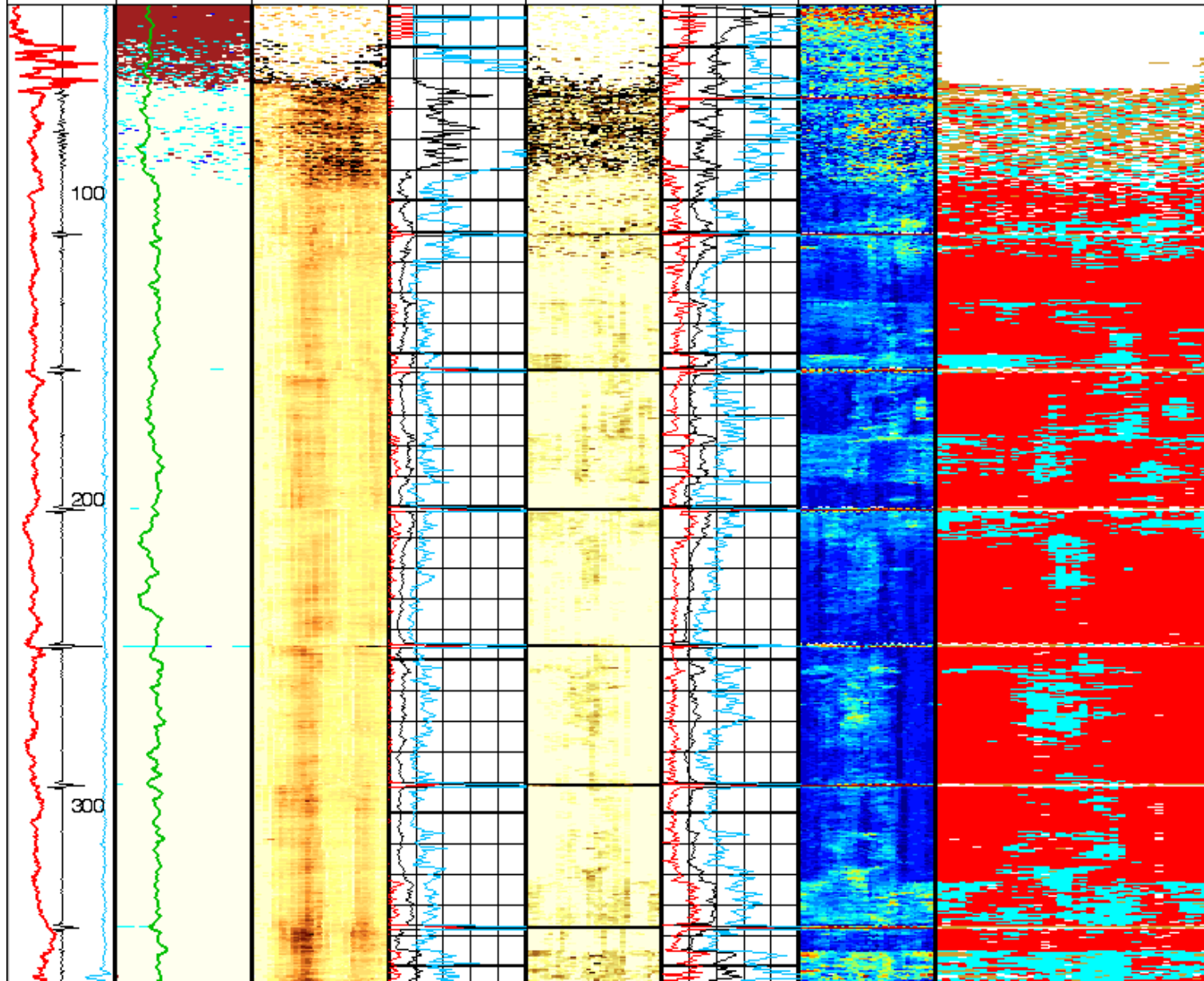
Maximum of AI
(AIMX)

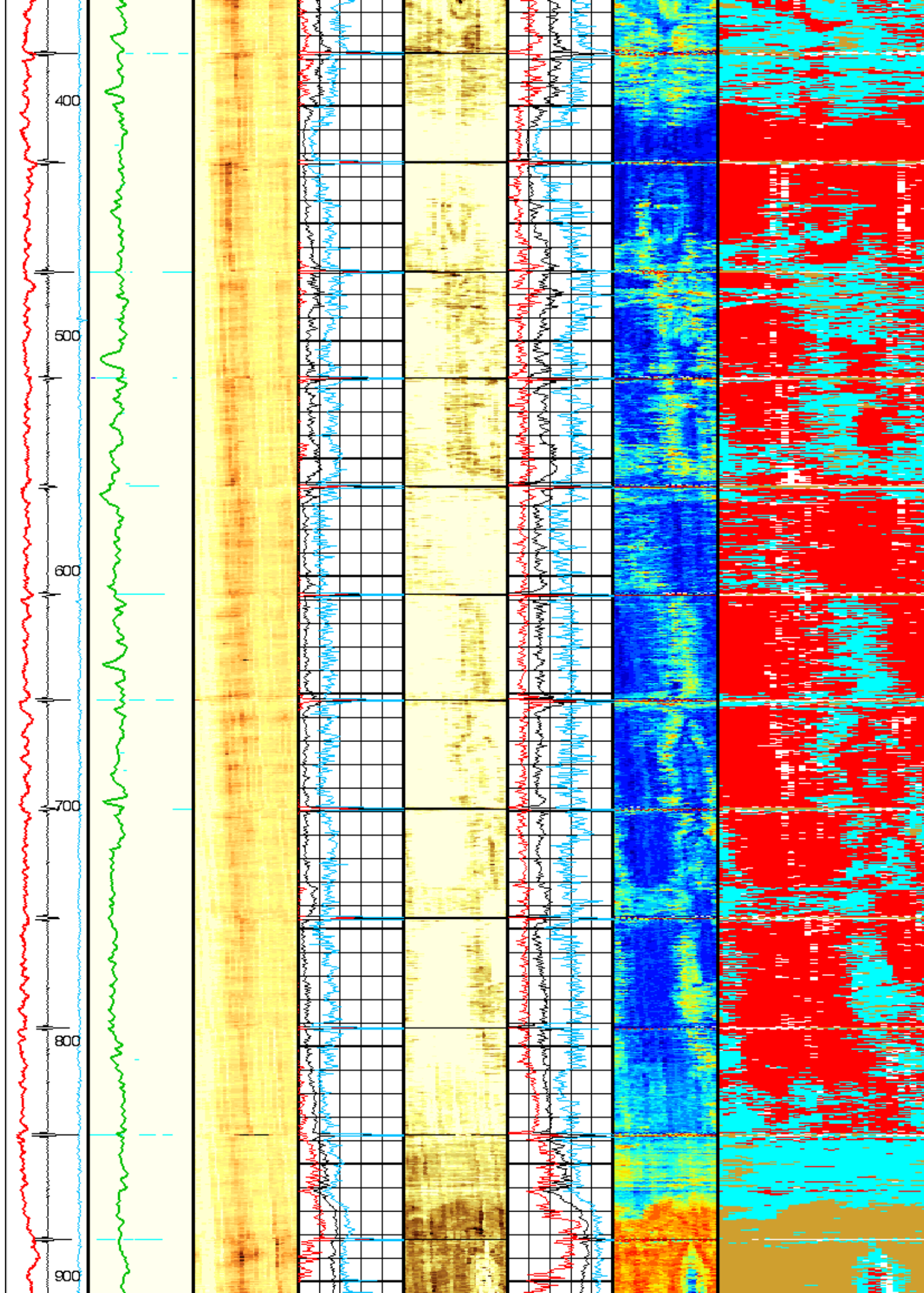
-1 (MRAY) 9

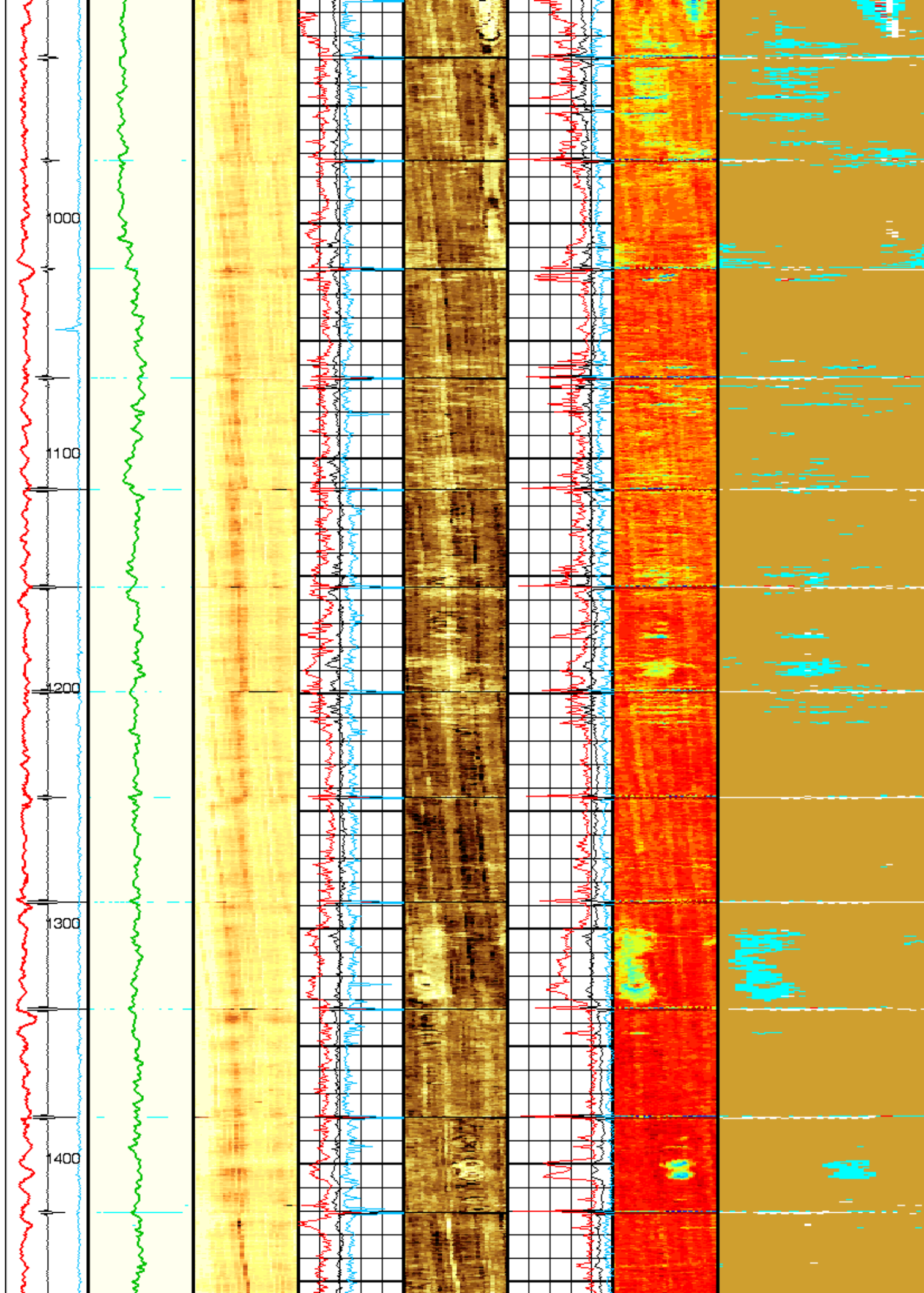
Maximum
Flexural
Attenuation
(U-USIT_
UFAX)
(DB/M)

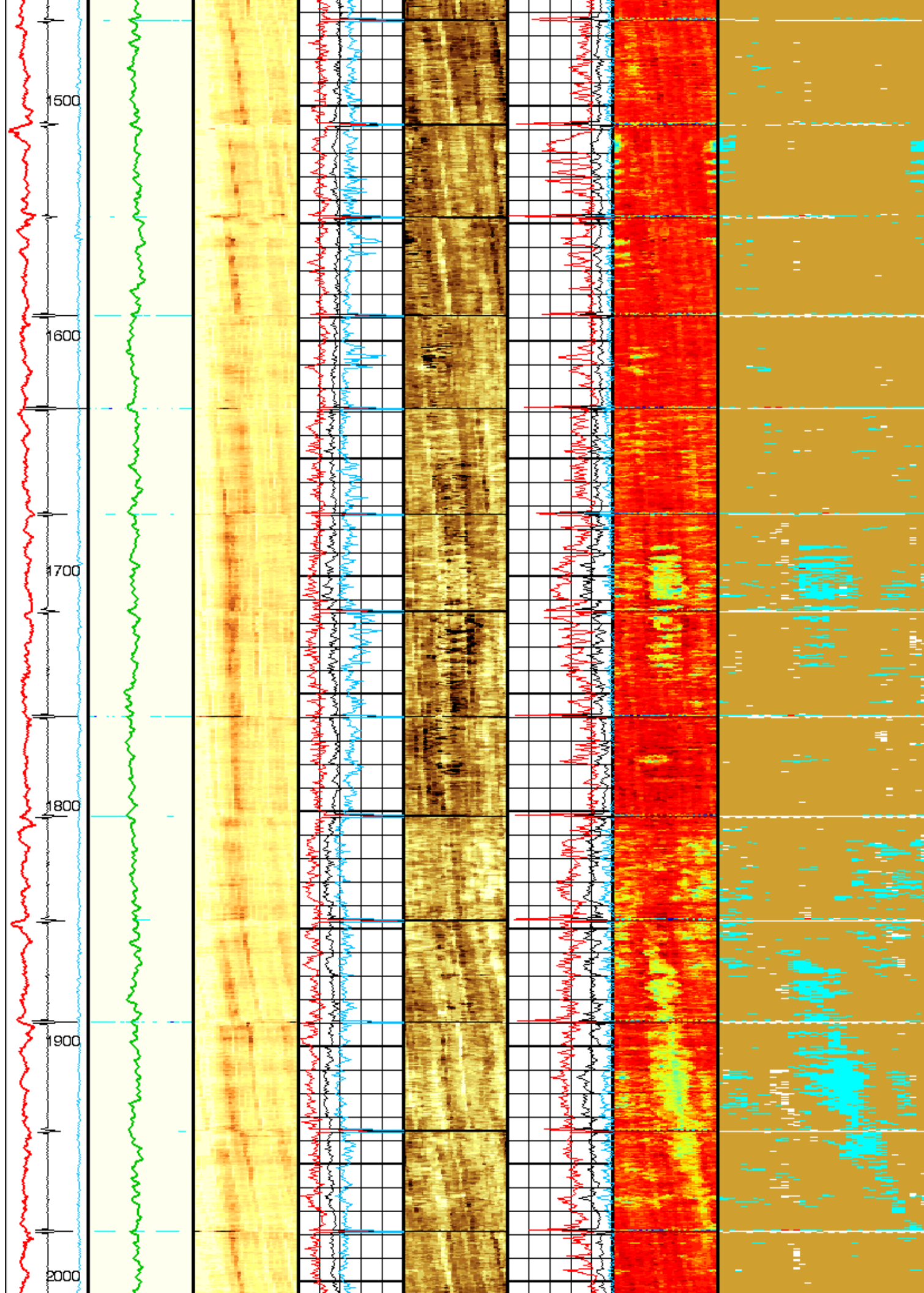
CCL (CCLU) (---) -20 20	<div data-bbox="203 52 316 199"> <div>0.5000</div> <div>1.5000</div> <div>2.5000</div> <div>3.5000</div> <div>6.5000</div> </div> <div data-bbox="186 210 349 304"> Process. flags (U FLG) (---) </div>	Average of AI (AIAV) -1 (M RAY) 9		Average Flexural Attenuation (U-USIT_ UFAV) (DB/M) 20 120			
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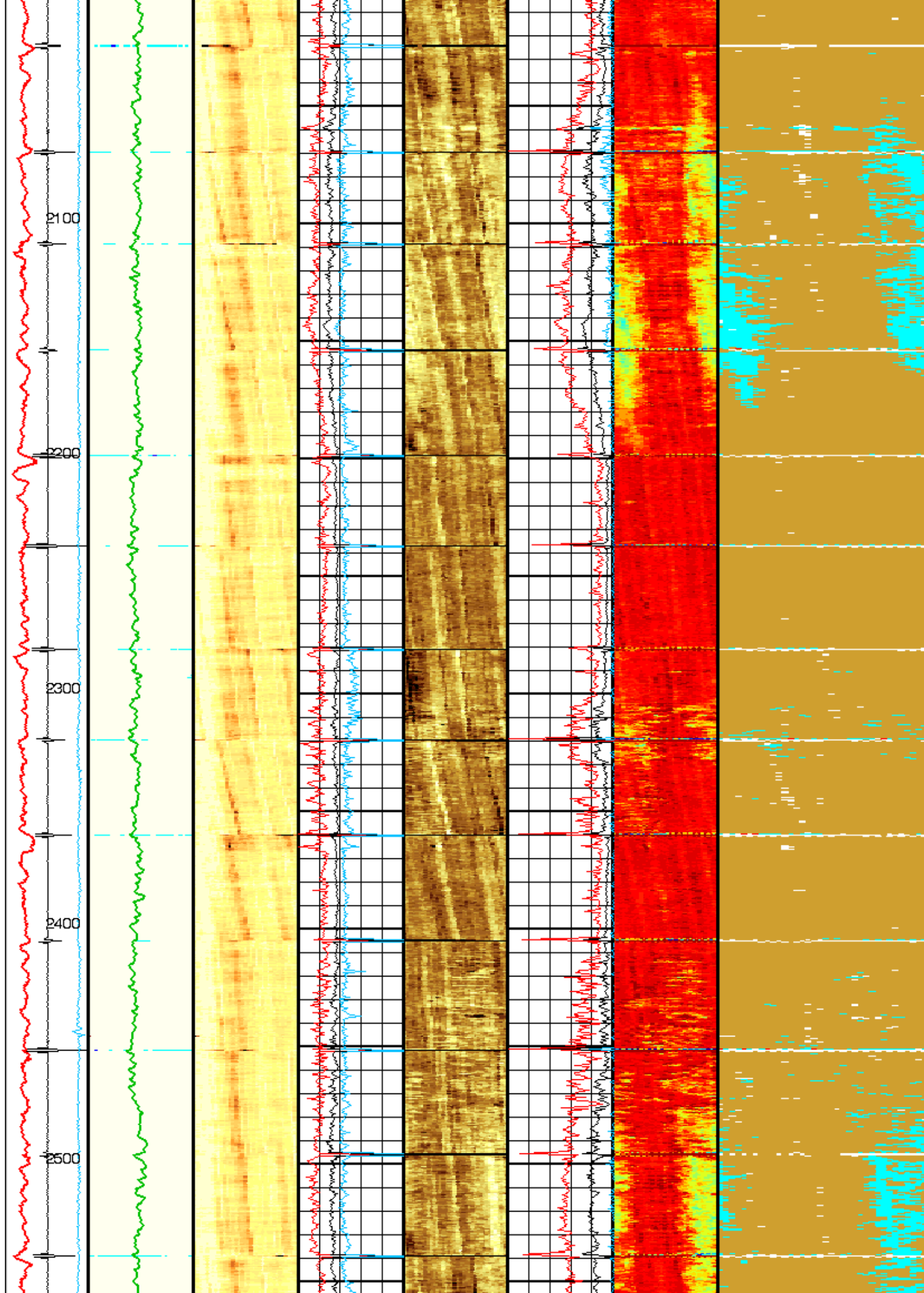
Eccent. (ECCE) 0 (IN) 0.5	Gamma Ray (GR) 0 (GAPI) 150	<div data-bbox="365 325 479 724"> <div>-500.0000</div> <div>-6.0000</div> <div>-5.6000</div> <div>-5.2000</div> <div>-4.8000</div> <div>-4.4000</div> <div>-4.0000</div> <div>-3.6000</div> <div>-3.2000</div> <div>-2.8000</div> <div>-2.4000</div> <div>-2.0000</div> <div>-1.6000</div> <div>-1.2000</div> <div>-0.8000</div> <div>-0.4000</div> <div>0.5000</div> </div> <div data-bbox="349 745 527 877"> Amplitude of echo minus Max (AWBK) (DB) </div>	Minimum of AI (AIM N) -1 (M RAY) 9	<div data-bbox="722 346 836 724"> <div>-500.0000</div> <div>0.2500</div> <div>0.5000</div> <div>0.7500</div> <div>1.0000</div> <div>1.2500</div> <div>1.5000</div> <div>1.7500</div> <div>2.0000</div> <div>2.2500</div> <div>2.5000</div> <div>2.7500</div> <div>3.0000</div> <div>3.2500</div> <div>3.5000</div> <div>3.7500</div> <div>4.0000</div> </div> <div data-bbox="706 745 885 877"> Raw Acoustic Imped. (AIBK) (M RAY) </div>	Minimum Flexural Attenuation (U-USIT_ UFAN) (DB/M) 20 120	<div data-bbox="1079 325 1193 703"> <div>0.0000</div> <div>30.0000</div> <div>36.0000</div> <div>42.0000</div> <div>48.0000</div> <div>54.0000</div> <div>60.0000</div> <div>66.0000</div> <div>72.0000</div> <div>78.0000</div> <div>84.0000</div> <div>90.0000</div> <div>96.0000</div> <div>102.0000</div> <div>108.0000</div> <div>114.0000</div> <div>120.0000</div> </div> <div data-bbox="1063 724 1242 877"> Flexural Attenuation (U-USIT_ UFAK) (DB/M) </div>	<div data-bbox="1323 483 1437 598"> <div>0.5000</div> <div>1.5000</div> <div>2.5000</div> <div>3.5000</div> </div> <div data-bbox="1242 619 1542 714"> Solid Liquid Gas Map (U-USIT_ USLP) (---) </div>
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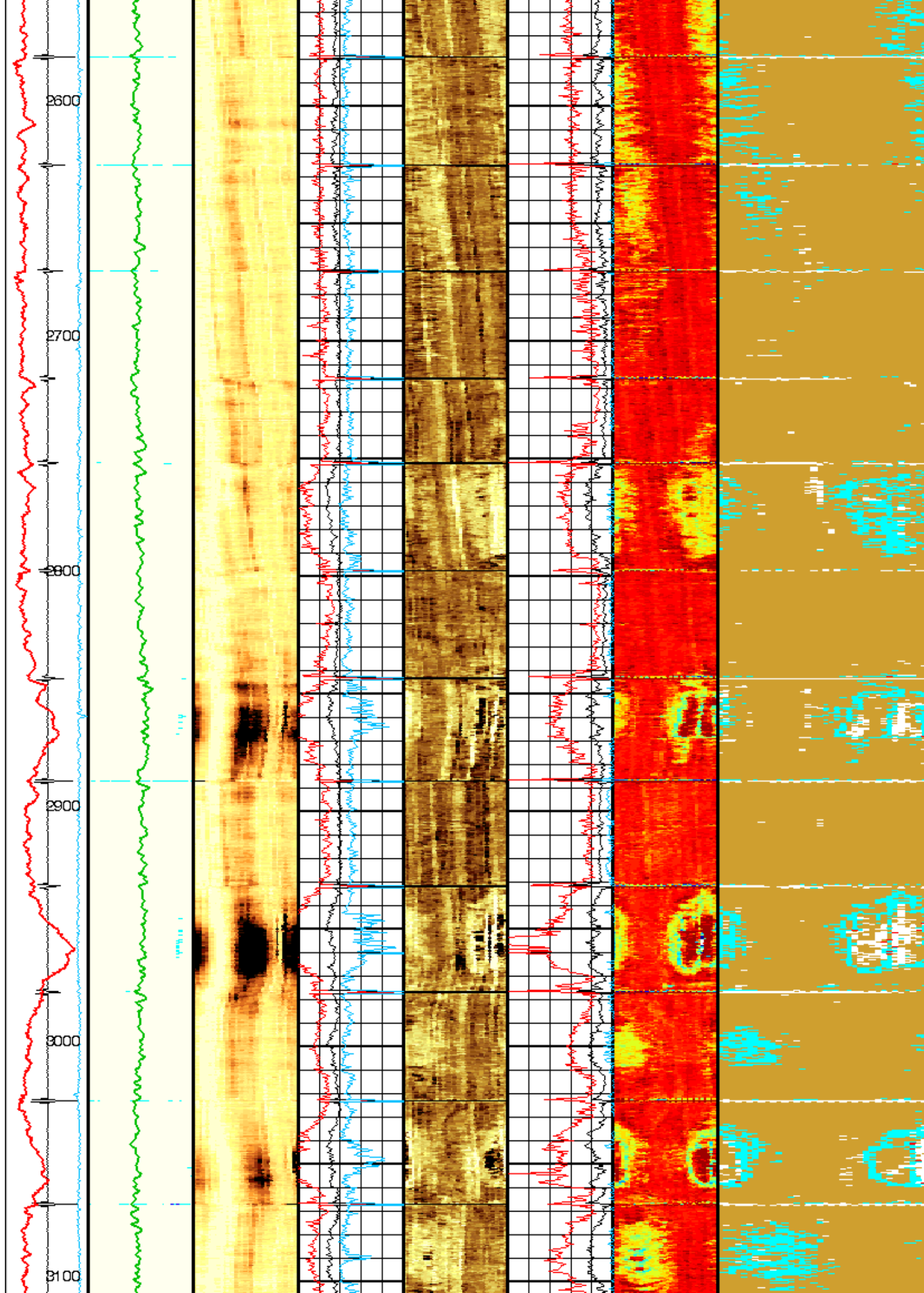


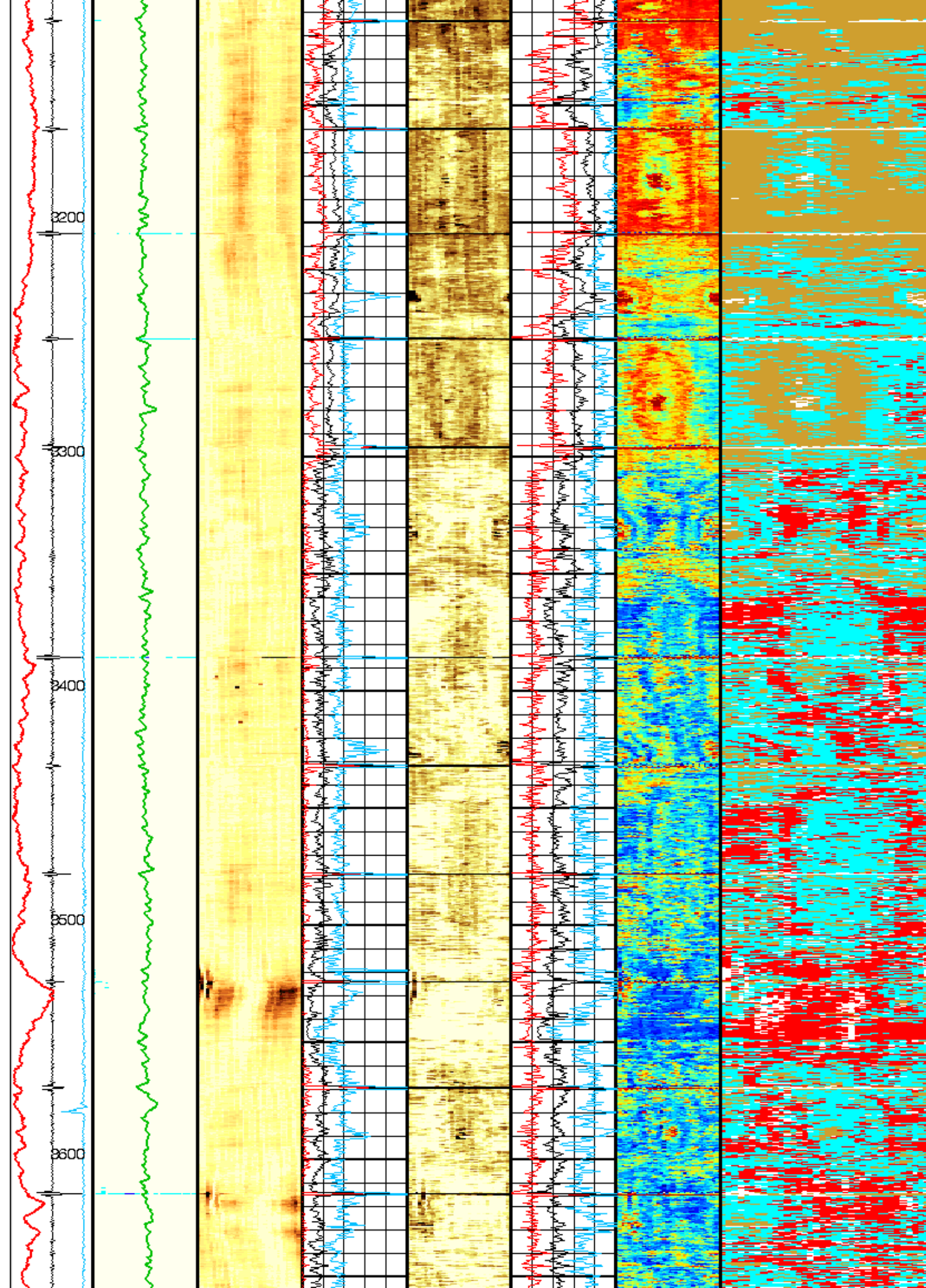


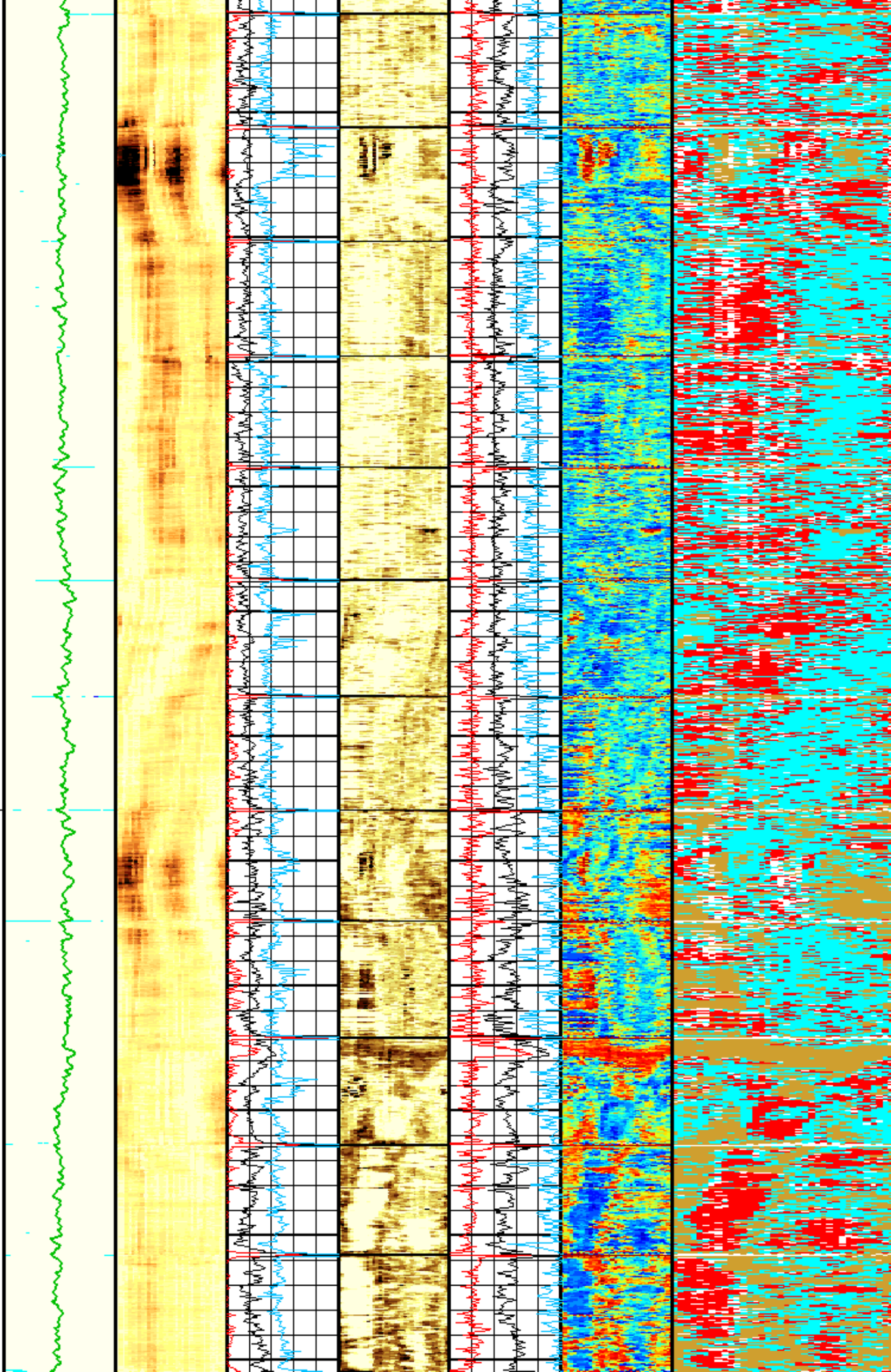
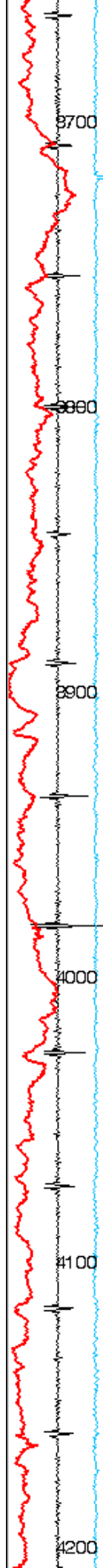


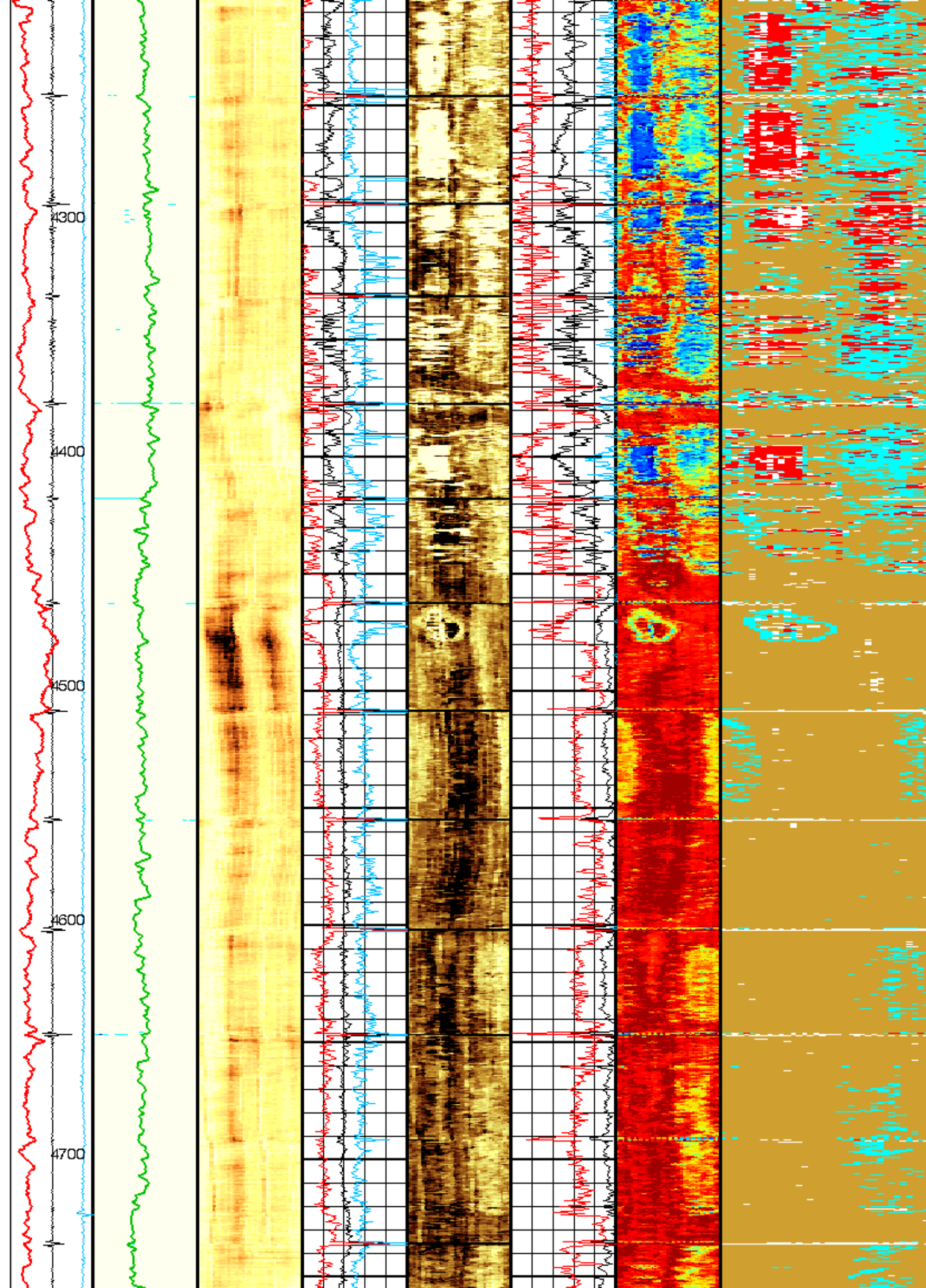


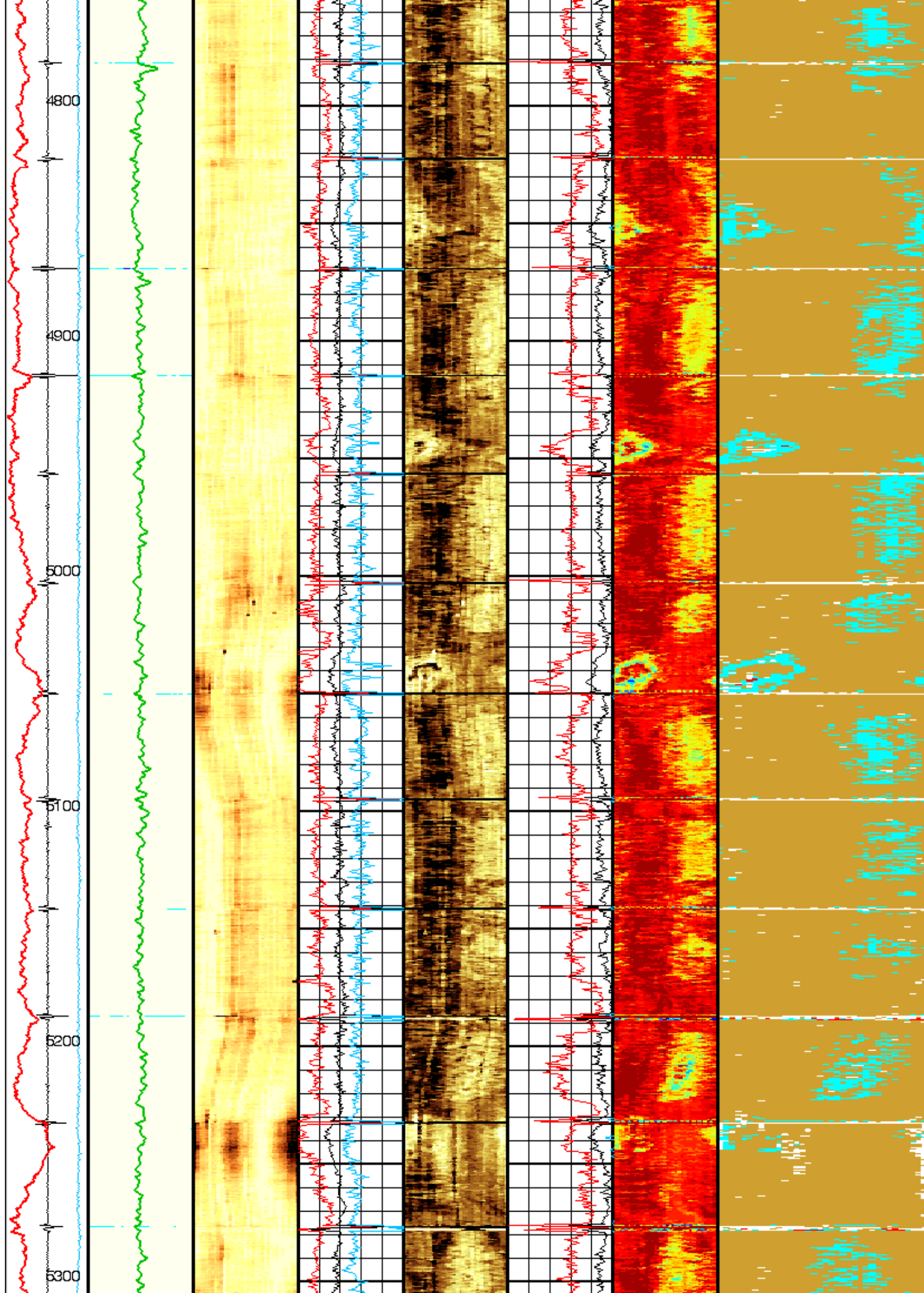


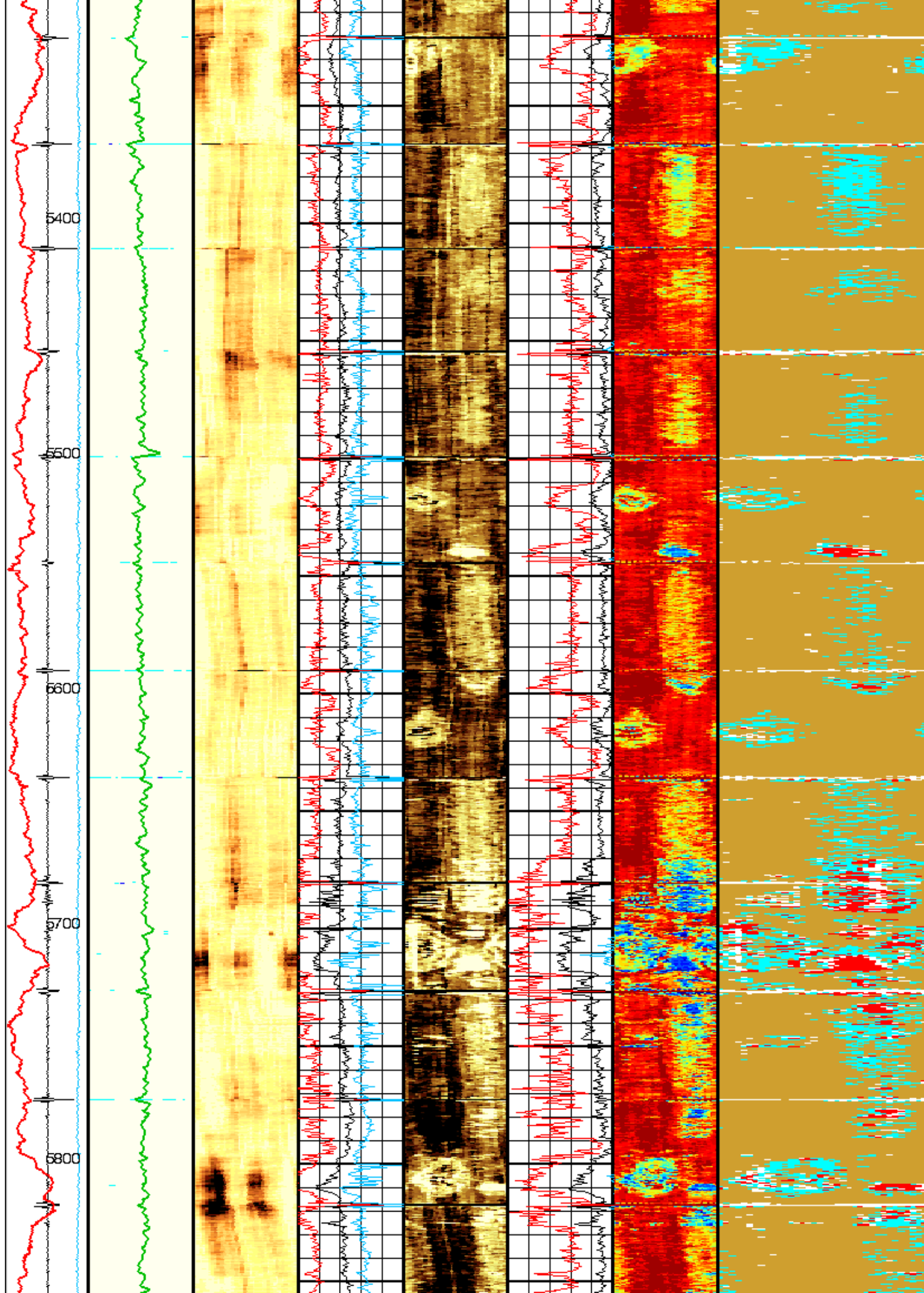


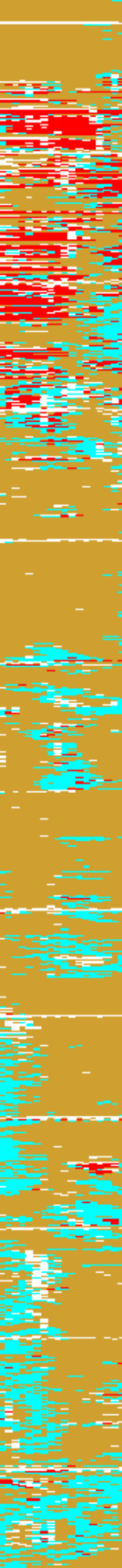
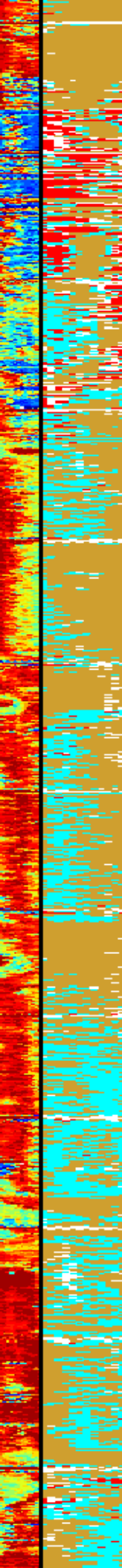
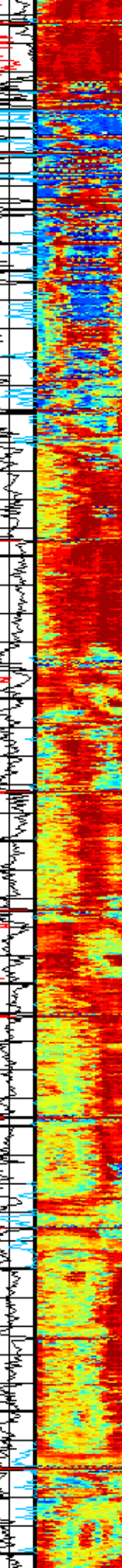
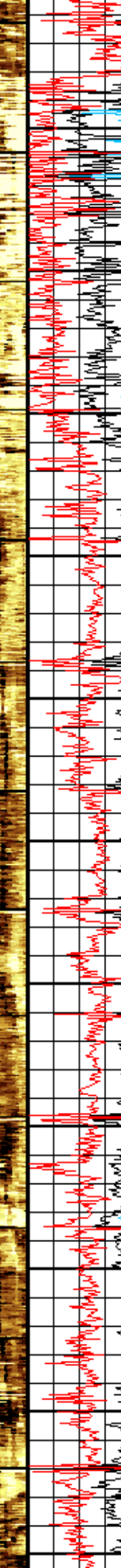
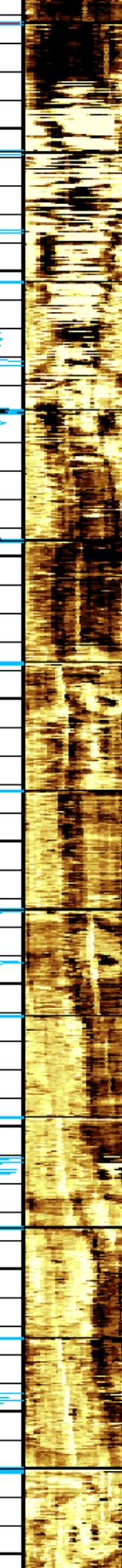
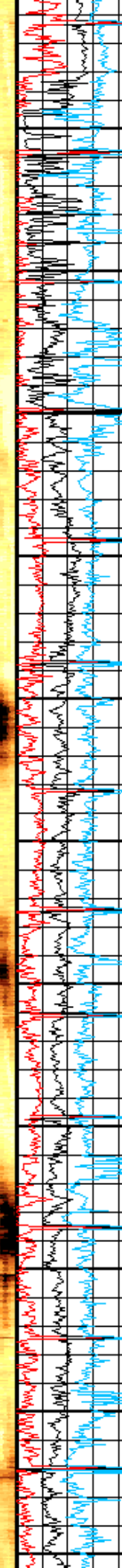
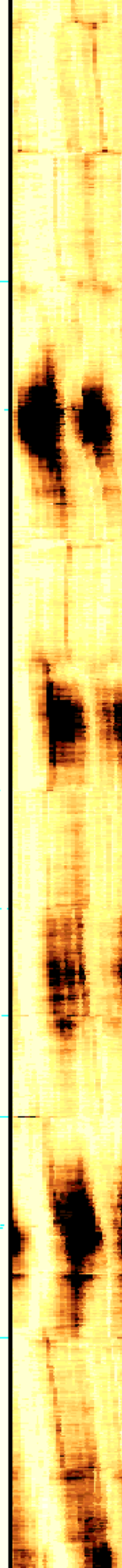
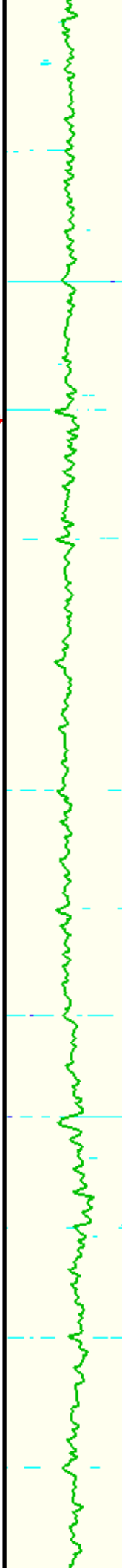
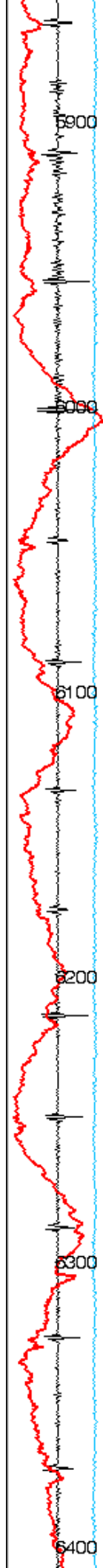


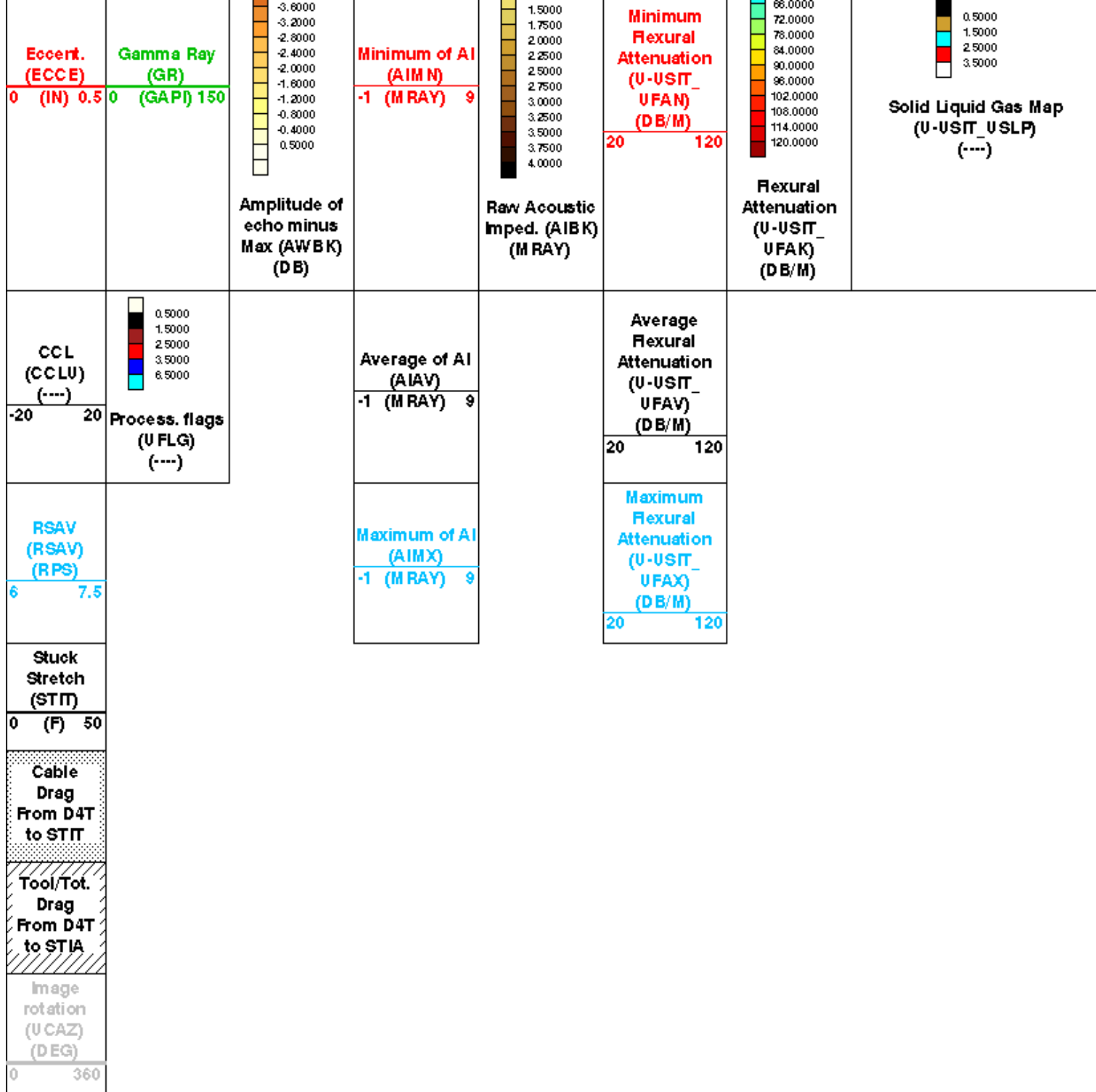












Format: 2 inch IBC SLG Vertical Scale: 2" per 100' Graphics File Created: 31-Jul-2012 05:56

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187	CAL-Y	19C0-187

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

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

Parameters

DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	208 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	99 V
FDII	FPM Data Interpolation Interval	0 FT
IMAR	Image Rotation	OFF
MW	Mud Weight	9.5 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	0.362 IN
U-USIT_CENT	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	13 DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub Ibc B
U-USIT_UTAN	USIT Transducer Angles	33_DEG
UMAO	USIT Measurement Angular Offset	-10 DEG
USTO	Ultrasonic Time Offset	-2 US
USUB	Ultrasonic Subassembly Identifier	Sub 7_inch
UWKM	Ultrasonic Working Mode	10DEG_6IN_136UNF_LF
VCAS	Ultrasonic Transversal Velocity in Casing	51.4 US/F
WLEN	T ₃ Processing Length	21.7078 US
ZCAS	Acoustic Impedance of Casing	46.25 MRAY
ZINI	Initial Estimate of Cement Impedance	-1 MRAY
ZMUD	Acoustic Impedance of Mud	1.83 MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6 MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3 MRAY
STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	2.5 FT
TDD	Total Depth - Driller	11531.00 FT
TDL	Total Depth - Logger	6905.00 FT
System and Miscellaneous		
BS	Bit Size	8.750 IN
CWEI	Casing Weight	26.00 LB/F
DO	Depth Offset for Playback	0.0 FT
PP	Playback Processing	NORMAL

Input DLIS Files

DEFAULT	USI_012LUP	FN:11	PRODUCER	31-Jul-2012 02:31	6909.0 FT	36.0 FT
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Output DLIS Files

DEFAULT	USI_017PUP	FN:16	PRODUCER	31-Jul-2012 05:56
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Company: Encana Oil & Gas Company

Well: Ranigan 1A-6H

Input DLIS Files

DEFAULT	USI_012LUP	FN:11	PRODUCER	31-Jul-2012 02:31	6909.0 FT	36.0 FT
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Output DLIS Files

DEFAULT	USI_017PUP	FN:16	PRODUCER	31-Jul-2012 05:56	6909.0 FT	36.0 FT
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OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187	CAL-Y	19C0-187

Changed Parameter Summary

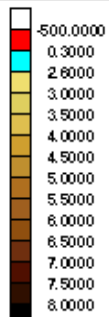
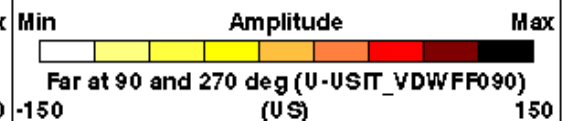
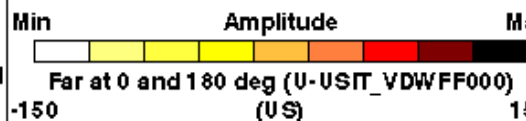
DLIS Name	New Value	Previous Value	Depth & Time
DFVL	200.5 US/F	208 US/F	6909.0 05:56:17
	203 US/F	200.5 US/F	6750.0 05:56:24
	204.5 US/F	203 US/F	6300.0 05:56:51
	205.5 US/F	204.5 US/F	4500.0 05:58:18
	206 US/F	205.5 US/F	3000.0 05:59:46
	207 US/F	206 US/F	2300.0 06:00:28
	208 US/F	207 US/F	1750.0 06:01:02
	ZMUD	1.83 MRAY	1.83 MRAY
1.83 MRAY		1.83 MRAY	6750.0 05:56:24
1.83 MRAY		1.83 MRAY	6300.0 05:56:51
1.83 MRAY		1.83 MRAY	4500.0 05:58:18
1.83 MRAY		1.83 MRAY	3000.0 05:59:46
1.83 MRAY		1.83 MRAY	2300.0 06:00:28
1.83 MRAY		1.83 MRAY	1750.0 06:01:02

Tool/Tot.
Drag
From D4T
to STIACable
Drag
From D4T
to STITStuck
Stretch
(STIT)

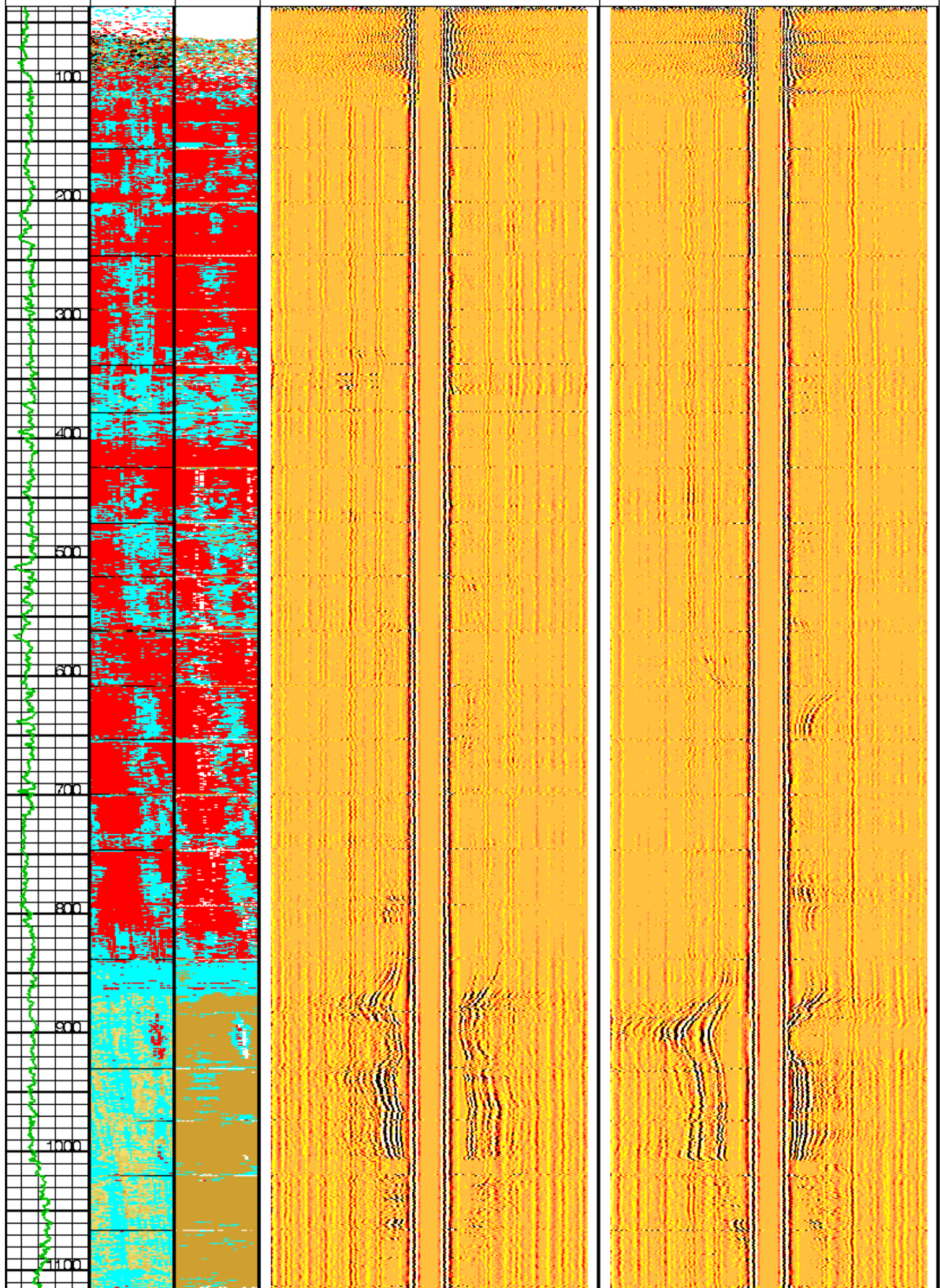
0 (F) 50

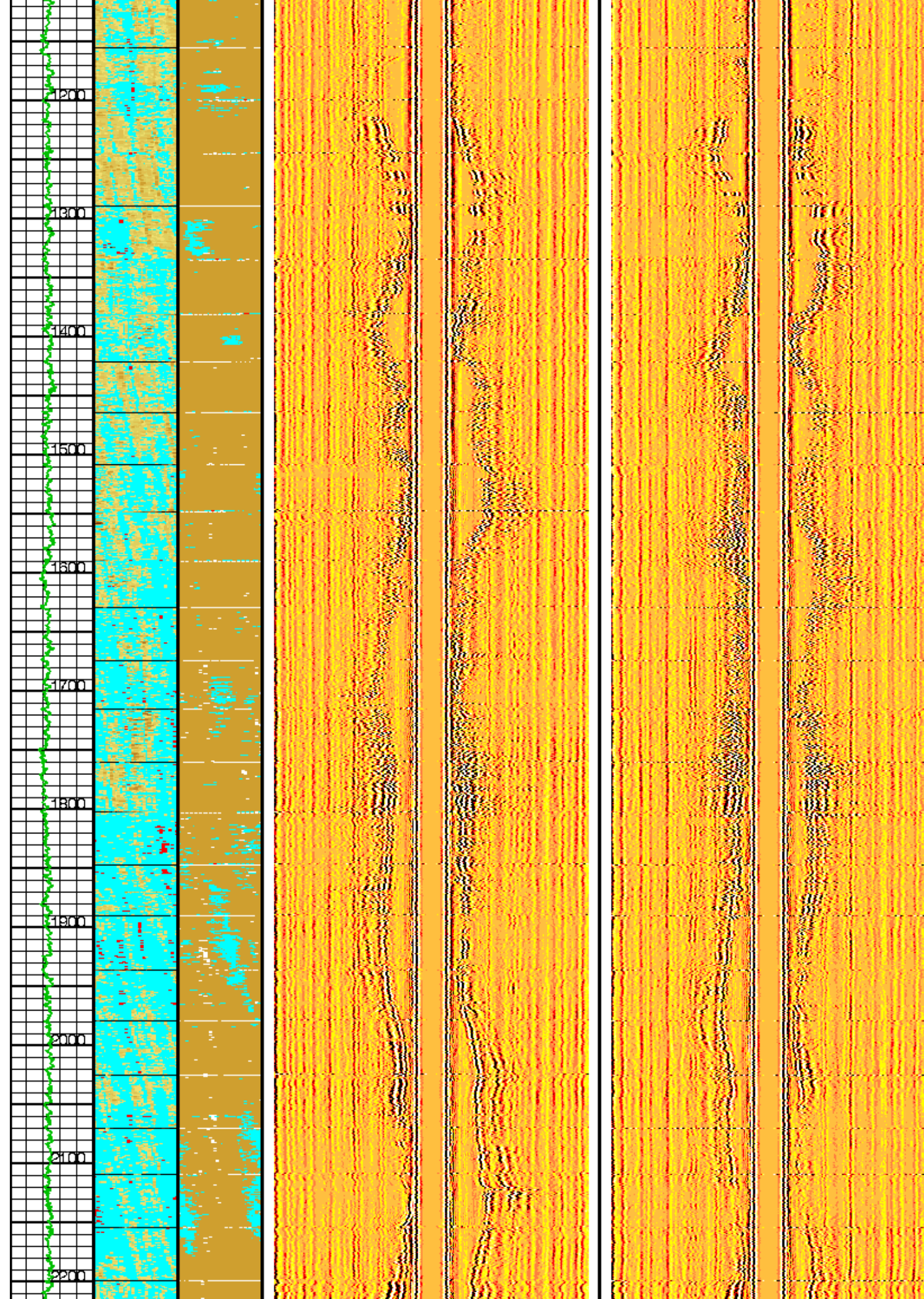
Gamma
Ray (GR)
(GAPI)

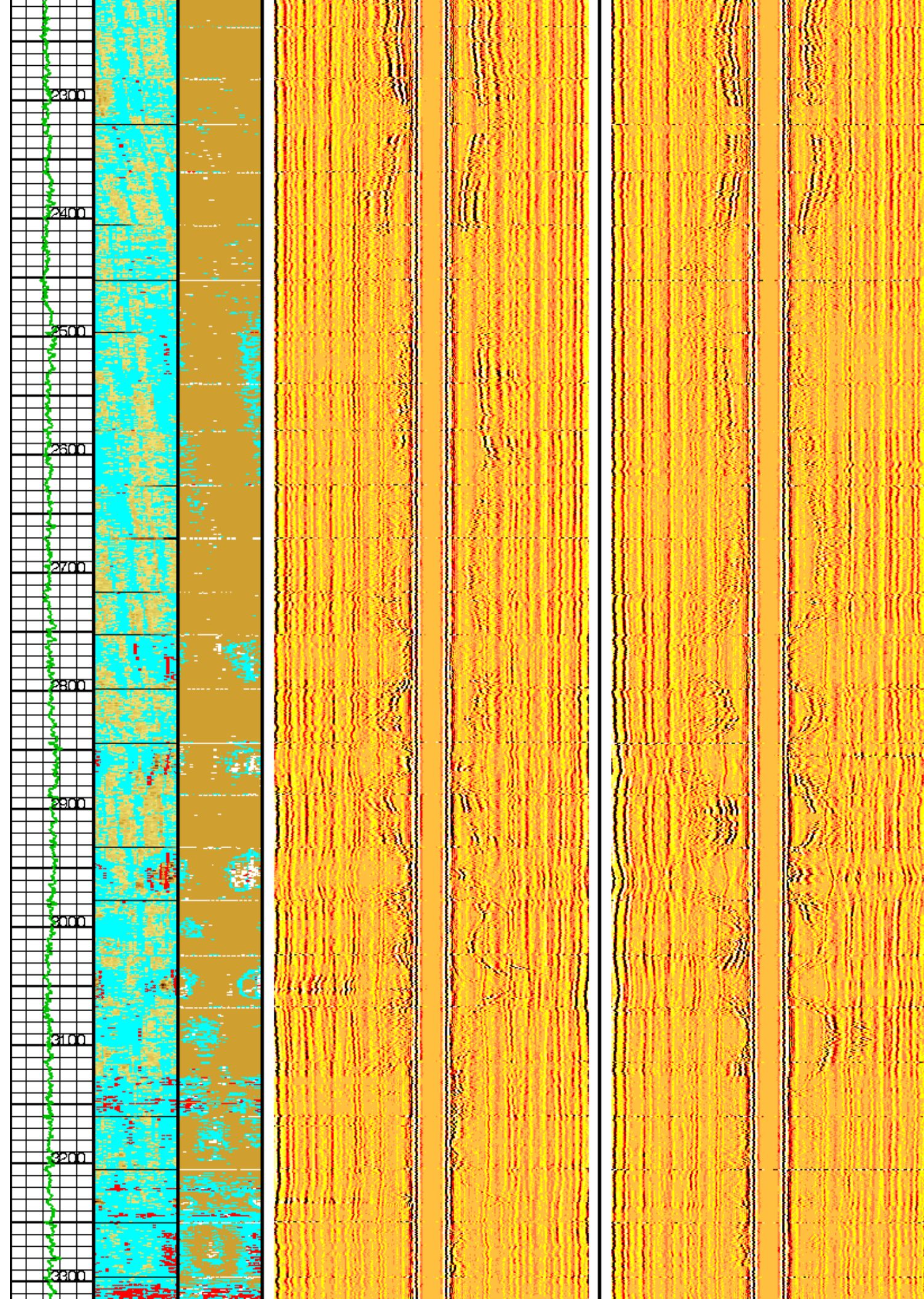
0 150

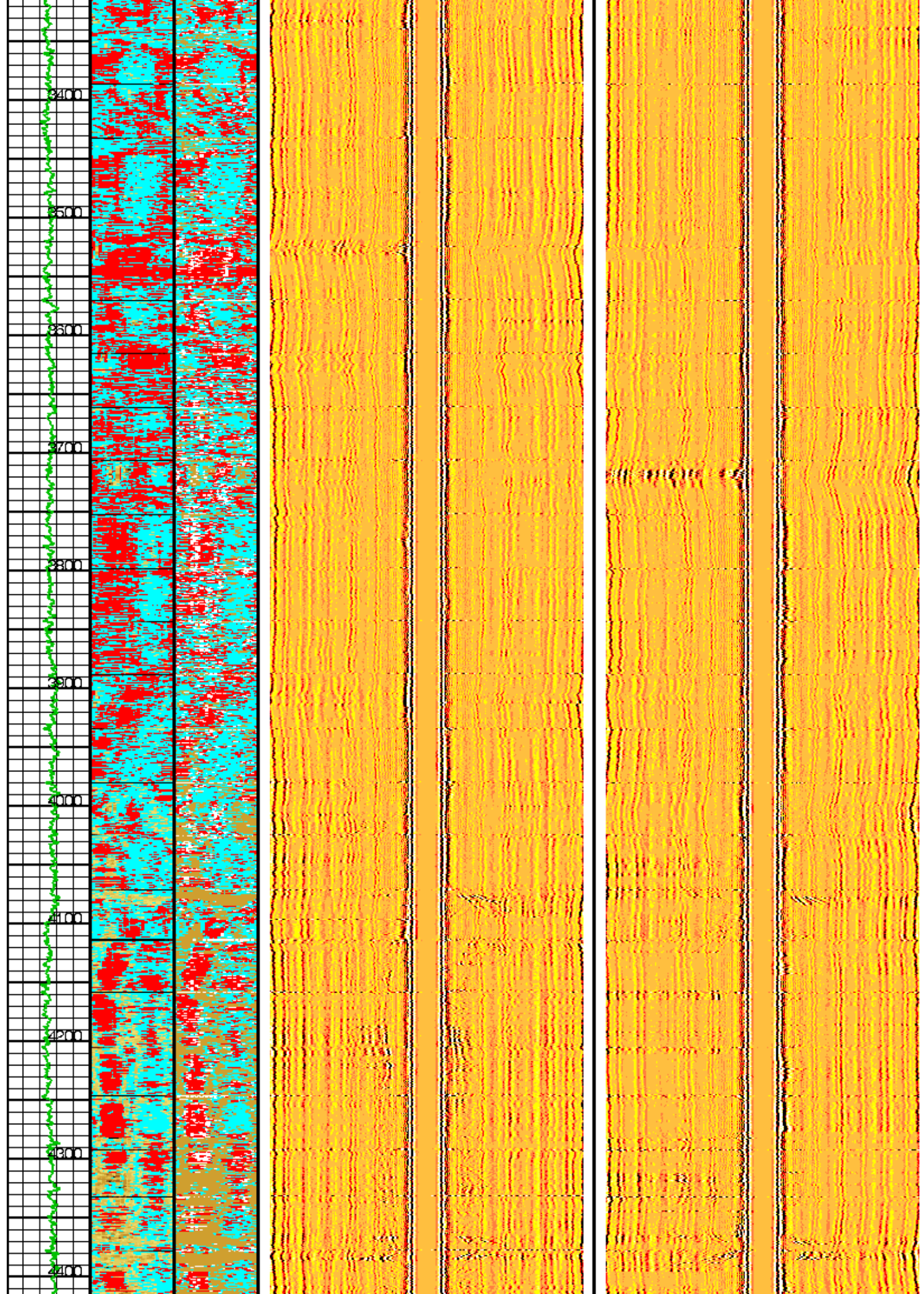
Cement
Map with
Impedance
Classificati
on (AIBK)Solid Liquid
Gas Map
(U-USIT_
USLP)
(---)

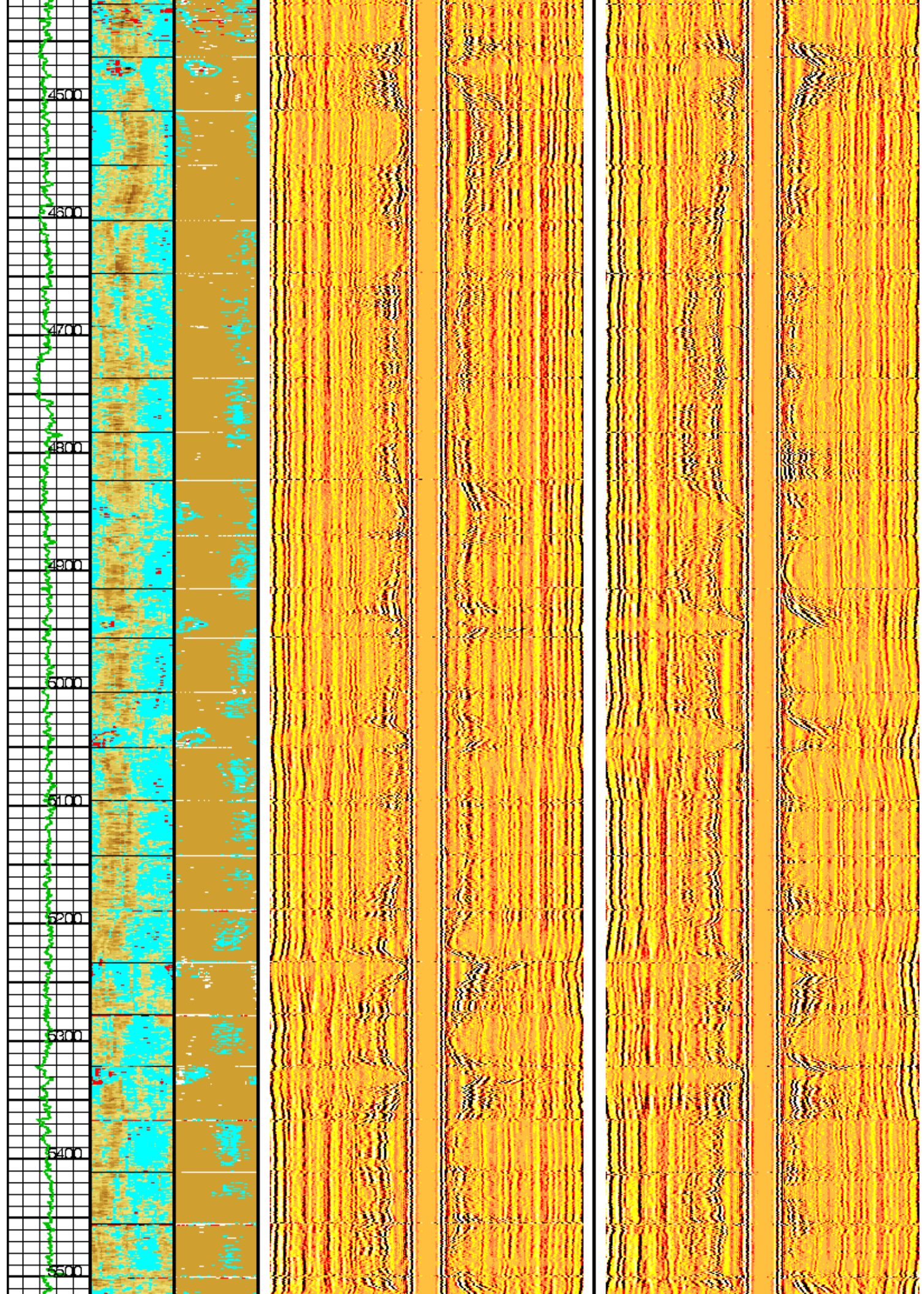
(M RAY)

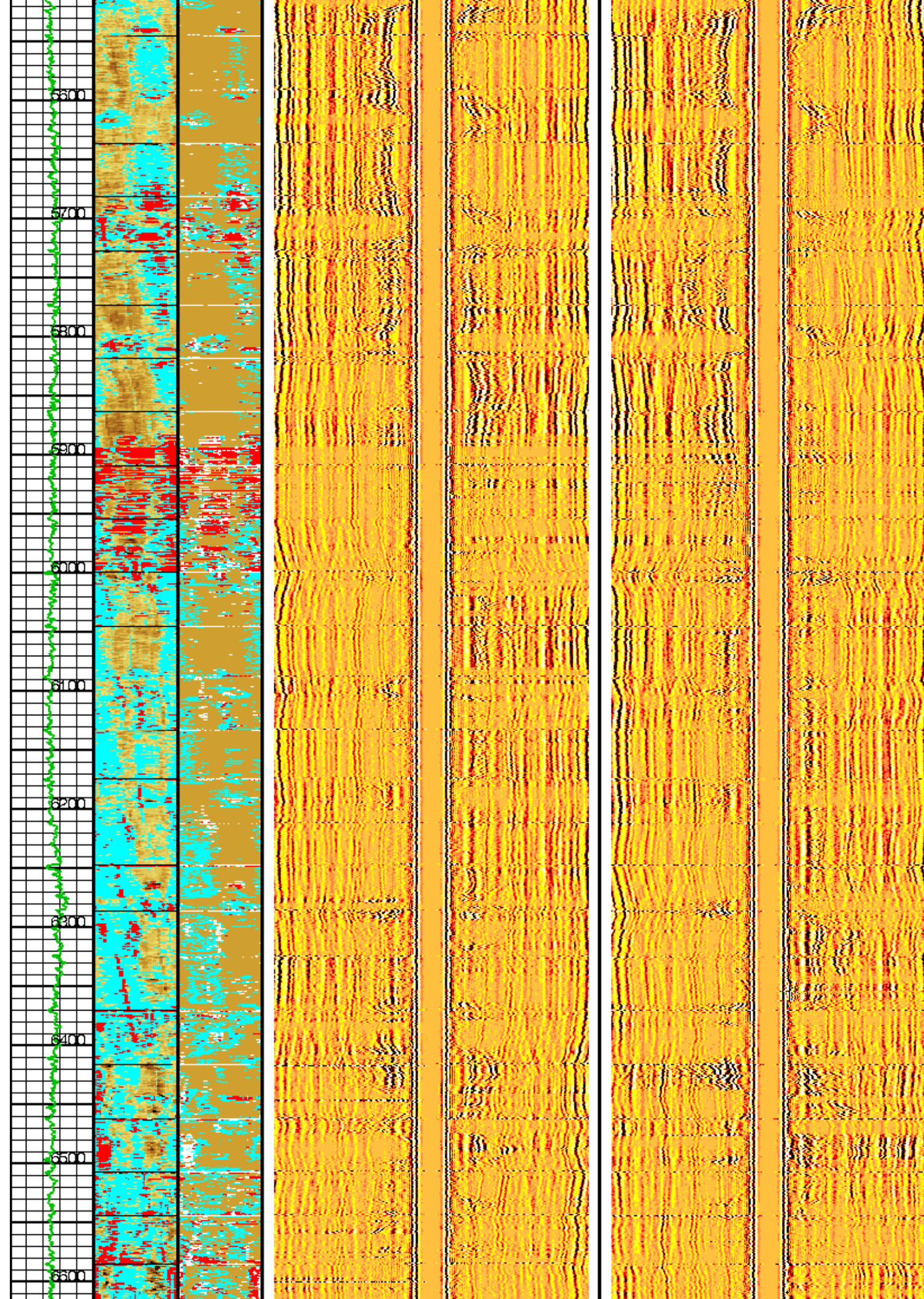


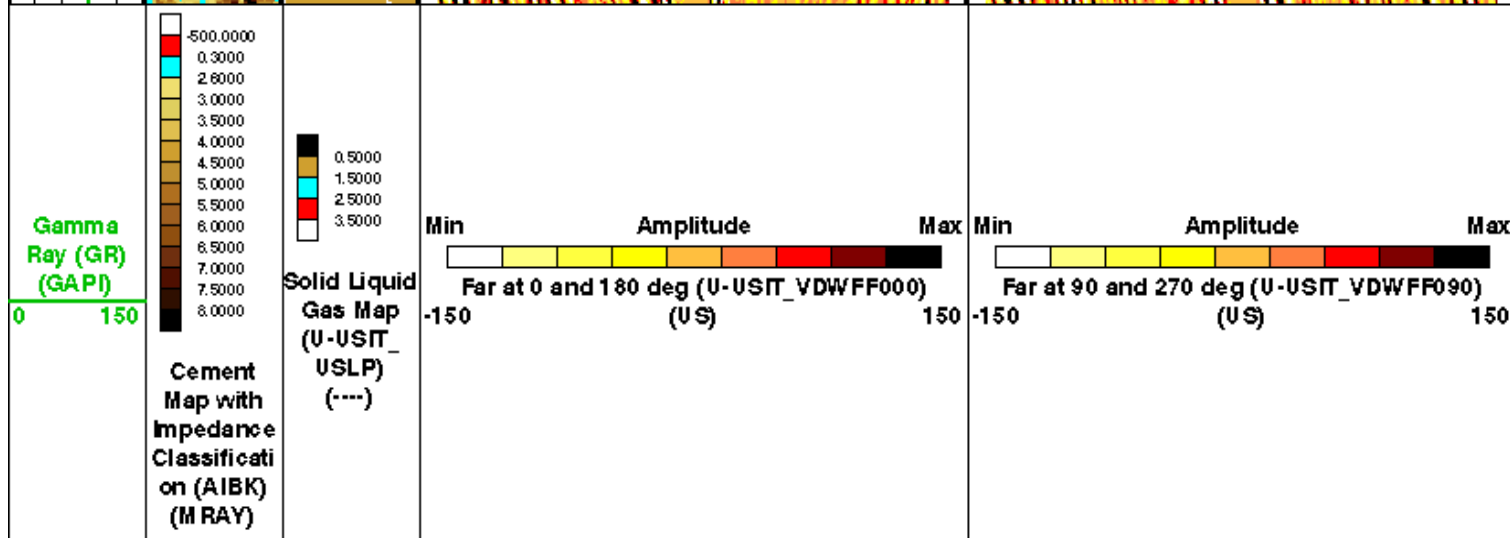
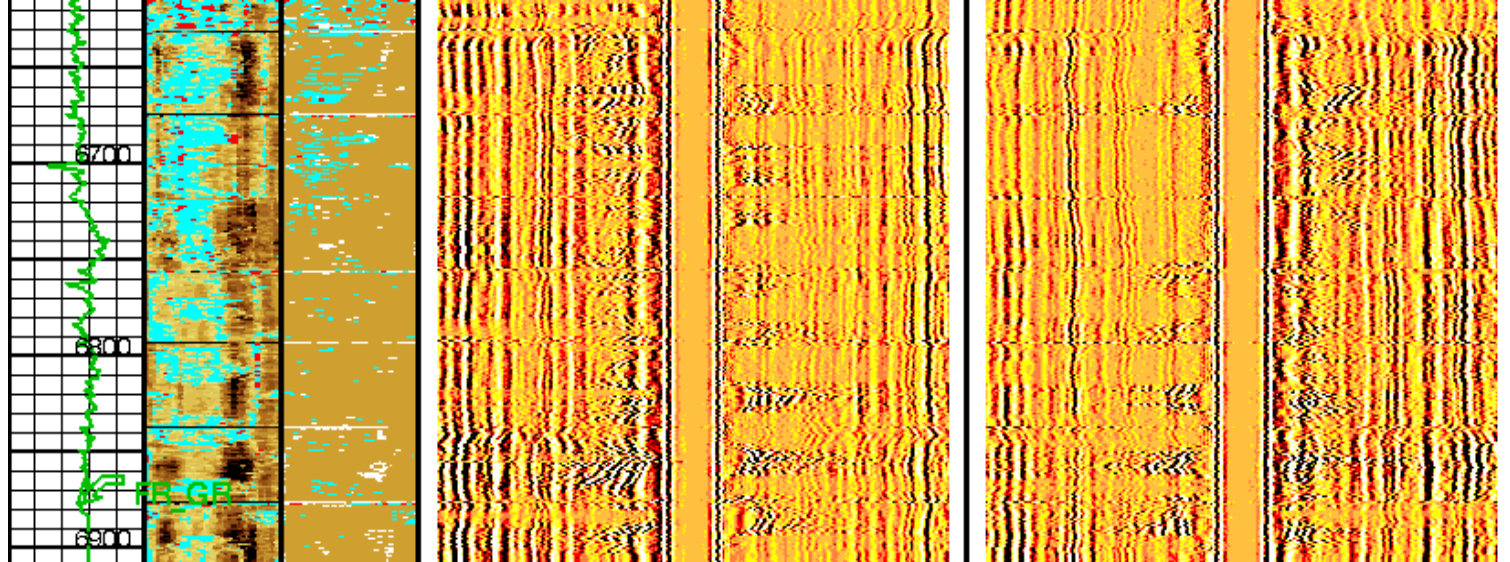












Stuck Stretch (STIT)	
0 (F) 50	
Cable Drag From D4T to STIT	
Tool/Tot. Drag From D4T to STIA	

Parameters

DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging - D			
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
DFVL	Default Fluid Velocity	208	US/F
DOT	Diameter of Transducer Sensor	2.874	IN
EMXV	EMEX Voltage	99	V
FDII	FPM Data Interpolation Interval	0	FT
IMAR	Image Rotation	OFF	
MW	Mud Weight	9.5	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.1811	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
TCUP	TCU Processing Level	Max Low	

TCUB	T 3 Processing Level	Max_Loop	130	
THDH	Maximum Search Thickness (percentage of nominal)		70	
THDL	Minimum Search Thickness (percentage of nominal)			
THDP	Thickness Detection Policy	Fundamental		
THNO	Nominal Thickness of Casing	0.362		IN
U-USIT_CEMT	USIT Cement Type	LIGHT		
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	0		MRAY
U-USIT_IISR	USIT IBC Inverted Fluid Slowness Resolution	1.0 US P FT		
U-USIT_IIZR	USIT IBC Inverted ZMUD Resolution	0.050_MRAY		
U-USIT_OCDI	USIT Outer Casing Diameter	0		IN
U-USIT_OCSH	USIT Outer Casing Shoe	0		FT
U-USIT_OCWE	USIT Outer Casing Weight	0		LB/F
U-USIT_TIEB	IBC Third Interface Echo Bin Processing	YES		
U-USIT_TIEC	IBC Third Interface Echo Cleaning	NONE		
U-USIT_TIEM	IBC Third Interface Echo Multi Tracking	NO		
U-USIT_TIEP	IBC Third Interface Echo Policy	BFEF		
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	13		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	33_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	10DEG_6IN_136UNF_LF		
VCAS	Ultrasonic Transversal Velocity in Casing	51.4		US/F
WLEN	T 3 Processing Length	21.7078		US
ZCAS	Acoustic Impedance of Casing	46.25		MRAY
ZINI	Initial Estimate of Cement Impedance	-1		MRAY
ZMUD	Acoustic Impedance of Mud	1.83		MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6		MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3		MRAY
STI: Stuck Tool Indicator				
LBFR	Trigger for MAXIS First Reading Label	TDL		
STKT	STI Stuck Threshold	2.5		FT
TDD	Total Depth - Driller	11531.00		FT
TDL	Total Depth - Logger	6905.00		FT
System and Miscellaneous				
BS	Bit Size	8.750		IN
CWEI	Casing Weight	26.00		LB/F
DO	Depth Offset for Playback	0.0		FT
PP	Playback Processing	NORMAL		

Format: 1 inch IBC VDL WIDE Vertical Scale: 1" per 100' Graphics File Created: 31-Jul-2012 05:56

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187	CAL-Y	19C0-187

Input DLIS Files

DEFAULT	USI_012LUP	FN:11	PRODUCER	31-Jul-2012 02:31	6909.0 FT	36.0 FT
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Output DLIS Files

DEFAULT	USI_017PUP	FN:16	PRODUCER	31-Jul-2012 05:56
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Schlumberger

0.1" Compressed Goodwin

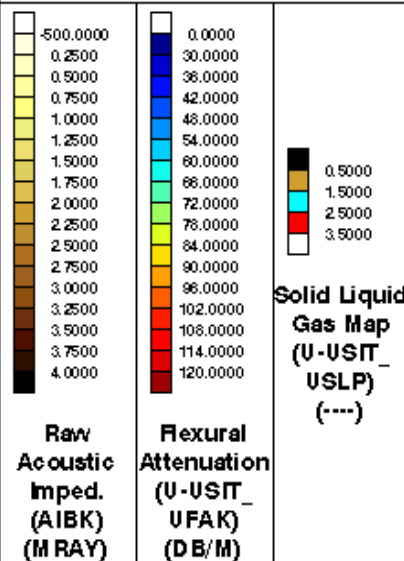
MAXIS Field Log

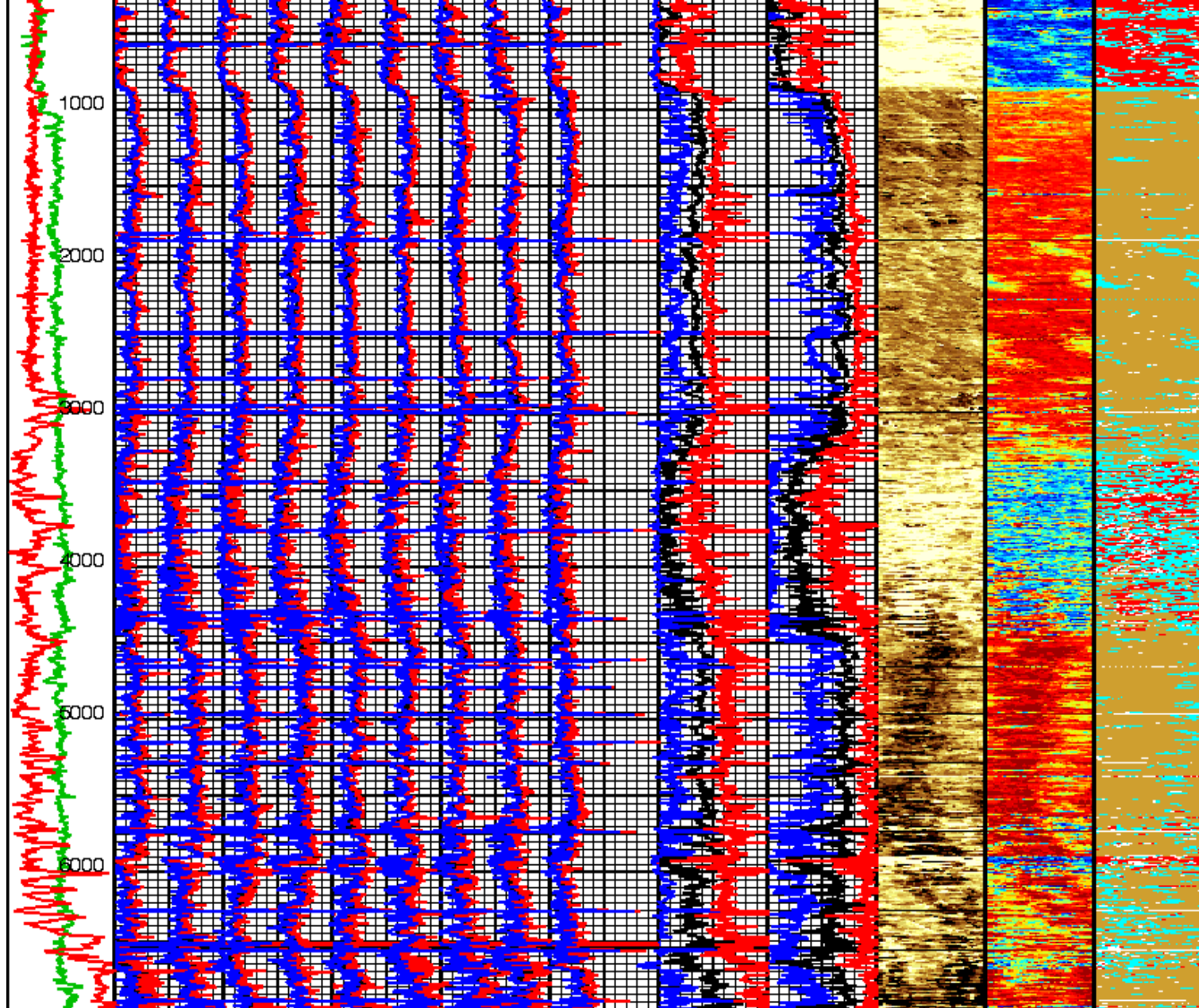
Output DLIS Files

OP System Version: 19C0-187

USIT-D 19C0-187 SGT-N 19C0-187
DTC-H 19C0-187 CAL-Y 19C0-187

	Minimum Acoustic Impedance #2 (MIN_ AI2) (M RAY)	Minimum Acoustic Impedance #4 (MIN_ AI4) (M RAY)	Minimum Acoustic Impedance #6 (MIN_ AI6) (M RAY)	Minimum Acoustic Impedance #8 (MIN_ AI8) (M RAY)			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
	Minimum Acoustic Impedance #1 (MIN_ AI1) (M RAY)	Minimum Acoustic Impedance #3 (MIN_ AI3) (M RAY)	Minimum Acoustic Impedance #5 (MIN_ AI5) (M RAY)	Minimum Acoustic Impedance #7 (MIN_ AI7) (M RAY)			
	0 15	0 15	0 15	0 15			
	Maximum Acoustic Impedance #2 (MAX_ AI2) (M RAY)	Maximum Acoustic Impedance #4 (MAX_ AI4) (M RAY)	Maximum Acoustic Impedance #6 (MAX_ AI6) (M RAY)	Maximum Acoustic Impedance #8 (MAX_ AI8) (M RAY)			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
	Maximum Acoustic Impedance #1 (MAX_ AI1) (M RAY)	Maximum Acoustic Impedance #3 (MAX_ AI3) (M RAY)	Maximum Acoustic Impedance #5 (MAX_ AI5) (M RAY)	Maximum Acoustic Impedance #7 (MAX_ AI7) (M RAY)	Minimum Acoustic Impedance #9 (MIN_ AI9) (M RAY)	Maximum of AI (AIMX) (M RAY)	Maximum Flexural Attenuation (U-USIT_ UFAX) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	40 140
Gamma Ray (GR) (GAPI) 0 150	Average Acoustic Impedance #2 (AV_ AI2) (M RAY)	Average Acoustic Impedance #4 (AV_ AI4) (M RAY)	Average Acoustic Impedance #6 (AV_ AI6) (M RAY)	Average Acoustic Impedance #8 (AV_ AI8) (M RAY)	Maximum Acoustic Impedance #9 (MAX_ AI9) (M RAY)	Minimum of AI (AIMN) (M RAY)	Average Flexural Attenuation (U-USIT_ UFAV) (DB/M)
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15	0 7.5	40 140
	Average Acoustic Impedance #1 (AV_ AI1) (M RAY)	Average Acoustic Impedance #3 (AV_ AI3) (M RAY)	Average Acoustic Impedance #5 (AV_ AI5) (M RAY)	Average Acoustic Impedance #7 (AV_ AI7) (M RAY)	Average Acoustic Impedance #9 (AV_ AI9) (M RAY)	Average of AI (AIAV) (M RAY)	Minimum Flexural Attenuation (U-USIT_ UFAN) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	40 140
Eccent. (ECCE) 0 (IN) 0.5	Average Acoustic Impedance #1 (AV_ AI1) (M RAY)	Average Acoustic Impedance #3 (AV_ AI3) (M RAY)	Average Acoustic Impedance #5 (AV_ AI5) (M RAY)	Average Acoustic Impedance #7 (AV_ AI7) (M RAY)	Average Acoustic Impedance #9 (AV_ AI9) (M RAY)	Average of AI (AIAV) (M RAY)	Minimum Flexural Attenuation (U-USIT_ UFAN) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	40 140
	Average Acoustic Impedance #1 (AV_ AI1) (M RAY)	Average Acoustic Impedance #3 (AV_ AI3) (M RAY)	Average Acoustic Impedance #5 (AV_ AI5) (M RAY)	Average Acoustic Impedance #7 (AV_ AI7) (M RAY)	Average Acoustic Impedance #9 (AV_ AI9) (M RAY)	Average of AI (AIAV) (M RAY)	Minimum Flexural Attenuation (U-USIT_ UFAN) (DB/M)
	0 15	0 15	0 15	0 15	0 15	0 7.5	40 140





Eccentr. (ECCE) 0 (IN) 0.5	Average Acoustic Impedance #1 (AV_ AI1) (M RAY)	Average Acoustic Impedance #3 (AV_ AI3) (M RAY)	Average Acoustic Impedance #5 (AV_ AI5) (M RAY)	Average Acoustic Impedance #7 (AV_ AI7) (M RAY)	Average Acoustic Impedance #9 (AV_ AI9) (M RAY)	Average of AI (AIAV) (M RAY)	Minimum Flexural Attenuation (U-USIT_ UFAN) (DB/M)	Raw Acoustic Imped. (AIBK) (M RAY)	Flexural Attenuation (U-USIT_ UFAK) (DB/M)	Solid Liquid Gas Map (U-USIT_ USLP) (----)
	0 15	0 15	0 15	0 15	0 15	0 7.5	40 140			
Gamma Ray (GR) (GAPI) 0 150	Average Acoustic Impedance #2 (AV_ AI2) (M RAY)	Average Acoustic Impedance #4 (AV_ AI4) (M RAY)	Average Acoustic Impedance #6 (AV_ AI6) (M RAY)	Average Acoustic Impedance #8 (AV_ AI8) (M RAY)	Maximum Acoustic Impedance #9 (MAX_ AI9) (M RAY)	Minimum of AI (AIMN) (M RAY)	Average Flexural Attenuation (U-USIT_ UFAV) (DB/M)			
	-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5	0 15	0 7.5	40 140			
	Maximum	Maximum	Maximum	Maximum	Minimum		Maximum			

Acoustic Impedance #1 (MAX_ AI1) (M RAY)	Acoustic Impedance #3 (MAX_ AI3) (M RAY)	Acoustic Impedance #5 (MAX_ AI5) (M RAY)	Acoustic Impedance #7 (MAX_ AI7) (M RAY)	Acoustic Impedance #9 (MIN_ AI9) (M RAY)	Maximum of AI (AIMX) (M RAY)	Flexural Attenuation (U-USIT_ UFAX) (DB/M)
0 15	0 15	0 15	0 15	0 15	0 7.5	40 140
Maximum Acoustic Impedance #2 (MAX_ AI2) (M RAY)	Maximum Acoustic Impedance #4 (MAX_ AI4) (M RAY)	Maximum Acoustic Impedance #6 (MAX_ AI6) (M RAY)	Maximum Acoustic Impedance #8 (MAX_ AI8) (M RAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			
Minimum Acoustic Impedance #1 (MIN_ AI1) (M RAY)	Minimum Acoustic Impedance #3 (MIN_ AI3) (M RAY)	Minimum Acoustic Impedance #5 (MIN_ AI5) (M RAY)	Minimum Acoustic Impedance #7 (MIN_ AI7) (M RAY)			
0 15	0 15	0 15	0 15			
Minimum Acoustic Impedance #2 (MIN_ AI2) (M RAY)	Minimum Acoustic Impedance #4 (MIN_ AI4) (M RAY)	Minimum Acoustic Impedance #6 (MIN_ AI6) (M RAY)	Minimum Acoustic Impedance #8 (MIN_ AI8) (M RAY)			
-7.5 7.5	-7.5 7.5	-7.5 7.5	-7.5 7.5			

Format: IBC Goodwin Compressed

Vertical Scale: 0.1" per 100'

Graphics File Created: 31-Jul-2012 05:56

OP System Version: 19C0-187

USIT-D 19C0-187
DTC-H 19C0-187

SGT-N 19C0-187
CAL-Y 19C0-187

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

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

Input DLIS Files

DEFAULT USI_012LUP FN:11 PRODUCER 31-Jul-2012 02:31 6909.0 FT 36.0 FT

Output DLIS Files

DEFAULT USI_017PUP FN:16 PRODUCER 31-Jul-2012 05:56

Schlumberger

Repeat Pass

Input DLIS Files

DEFAULT USI_009LUP FN:8 PRODUCER 31-Jul-2012 02:14 6909.5 FT 6616.0 FT

Output DLIS Files

DEFAULT USI_021PUP FN:20 PRODUCER 31-Jul-2012 06:03 6909.5 FT 6616.0 FT

OP System Version: 19C0-187

USIT-D 19C0-187 SGT-N 19C0-187
DTC-H 19C0-187 CAL-Y 19C0-187

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
DFVL	200.5 US/F	208 US/F	6909.5 06:03:47
	203 US/F	200.5 US/F	6750.0 06:03:54
ZMUD	1.83 MRAY	1.83 MRAY	6909.5 06:03:47
	1.83 MRAY	1.83 MRAY	6750.0 06:03:54

Tool/Tot.
Drag
From D4T
to STIA

Cable
Drag
From D4T
to STIT

Stuck
Stretch
(STIT)
0 (F) 50

RSV
(RSV)
(RPS)
6 7.5

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

Process.
flags
(U FLG)
(---)

Amplitude
of echo
minus Max
(AWBK)
(DB)

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

Internal
radius
Maximum
(IRMX)
(IN)
3.7 2.7 2.7 3.7

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

Maximum
of
Thickness
(THMX)
(IN)
0.1 0.6

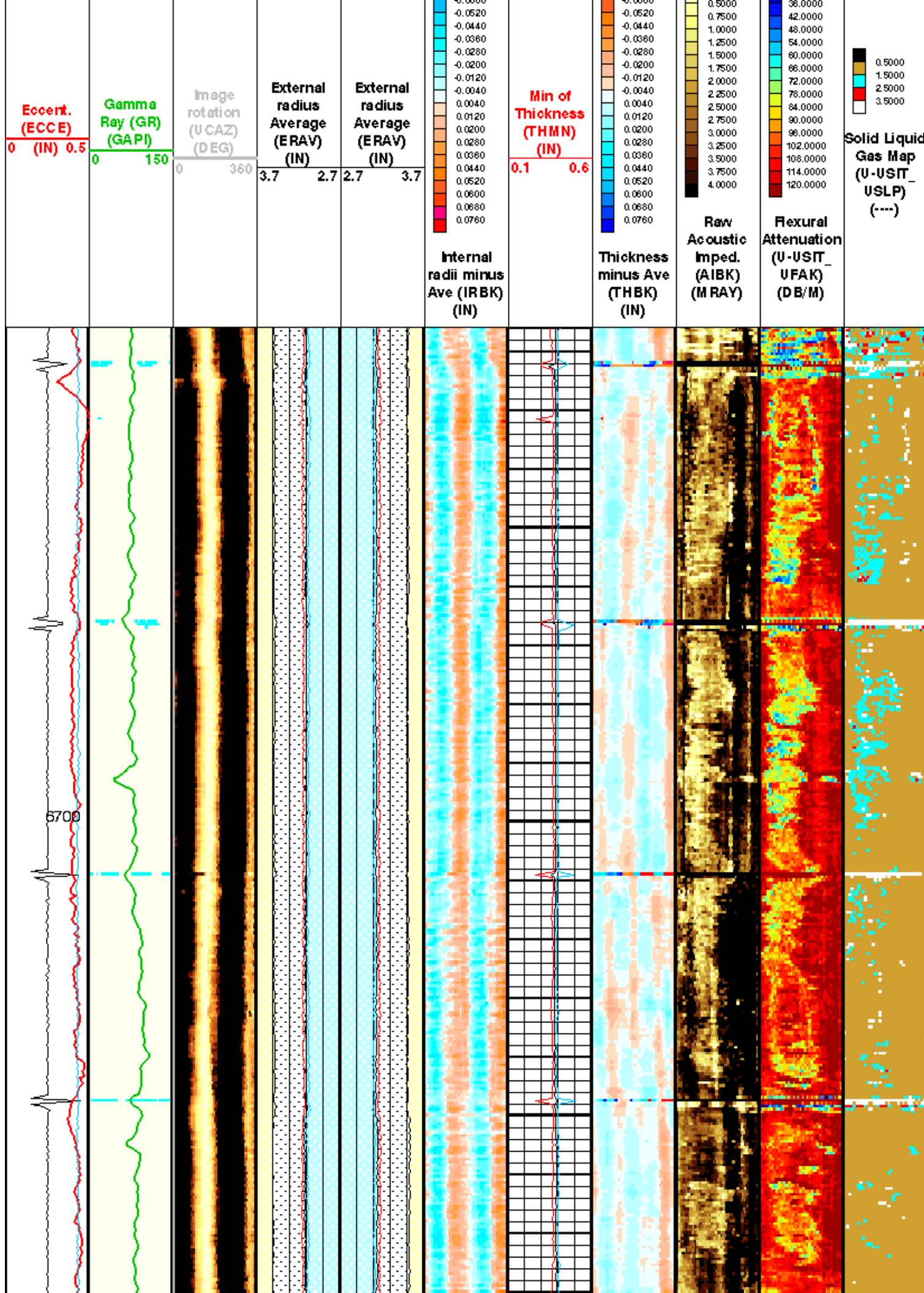
Average of
Thickness
(THAV)
(IN)
0.1 0.6

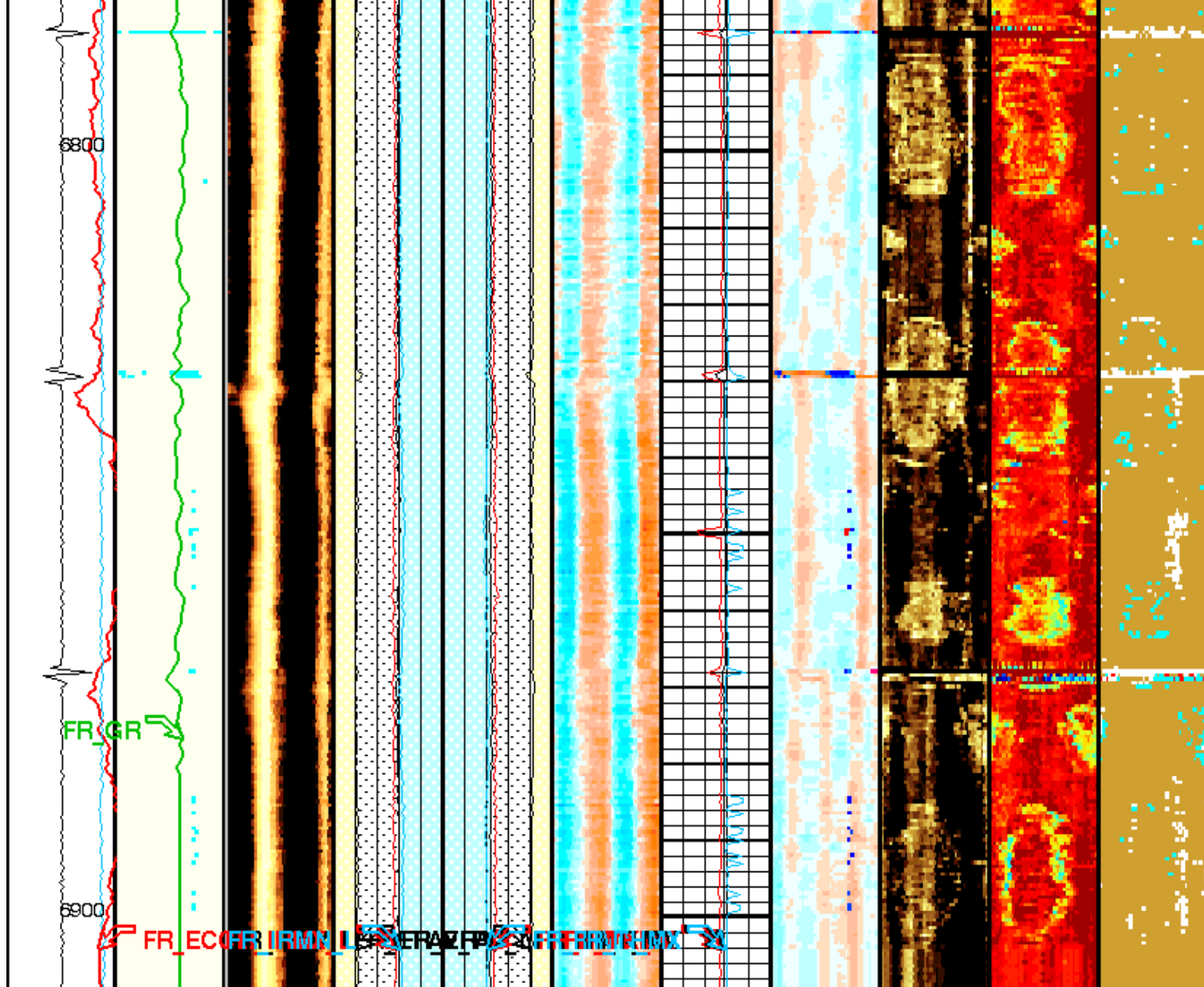
500.0000
-0.0760
-0.0680
0.0000

500.0000
-0.0760
-0.0680
0.0000

500.0000
0.2500

0.0000
30.0000





Eccent. (ECCE) 0 (IN) 0.5	Gamma Ray (GR) (GAPI) 0 150	Image rotation (U CAZ) (DEG) 0 360	External radius Average (ERAV) (IN) 3.7 2.7	External radius Average (ERAV) (IN) 2.7 3.7	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 0.2500 0.5000 0.7500 1.0000 1.2500 1.5000 1.7500 2.0000 2.2500 2.5000 2.7500 3.0000 3.2500 3.5000 3.7500 4.0000	Flexural Attenuation (U-USIT_ UFAK) (DB/M) 0.0000 30.0000 36.0000 42.0000 48.0000 54.0000 60.0000 66.0000 72.0000 78.0000 84.0000 90.0000 96.0000 102.0000 108.0000 114.0000 120.0000	Solid Liquid Gas Map (U-USIT_ USLP) (----) 0.5000 1.5000 2.5000 3.5000
-------------------------------------	---------------------------------------	--	---	---	--	--	---	---	---	---

0.5000 1.5000 2.5000	-500.0000 -6.0000 -5.6000 -5.2000 -4.8000 -4.4000 -4.0000 -3.6000 -3.2000 -2.8000 -2.4000	Internal	Internal	Average of
----------------------------	---	-----------------	-----------------	-------------------

CCL (CCLV) (----	3.5000 6.5000	Process. flags (U FLG) (----	Amplitude of echo minus Max (AWBK) (DB)	radius Average (IRAV) (IN)	radius Average (IRAV) (IN)	Thickness (THAV) (IN)
-20 20				3.7 2.7	2.7 3.7	0.1 0.6
RSAV (RSV) (RPS)	6 7.5			Internal radius Maximum (IRMX) (IN)	Internal radius Maximum (IRMX) (IN)	Maximum of Thickness (THMX) (IN)
				3.7 2.7	2.7 3.7	0.1 0.6
Stuck Stretch (STIT)	0 (F) 50			Min of Internal radius (IRMN) (IN)	Min of Internal radius (IRMN) (IN)	
				3.7 2.7	2.7 3.7	
Cable Drag From D4T to STIT						
Tool/Tot. Drag From D4T to STIA						

Format: 5 inch IBC CEMENT COMPOSITE

Vertical Scale: 5" per 100'

Graphics File Created: 31-Jul-2012 06:03

OP System Version: 19C0-187

USIT-D	19C0-187	SGT-N	19C0-187
DTC-H	19C0-187	CAL-Y	19C0-187

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.

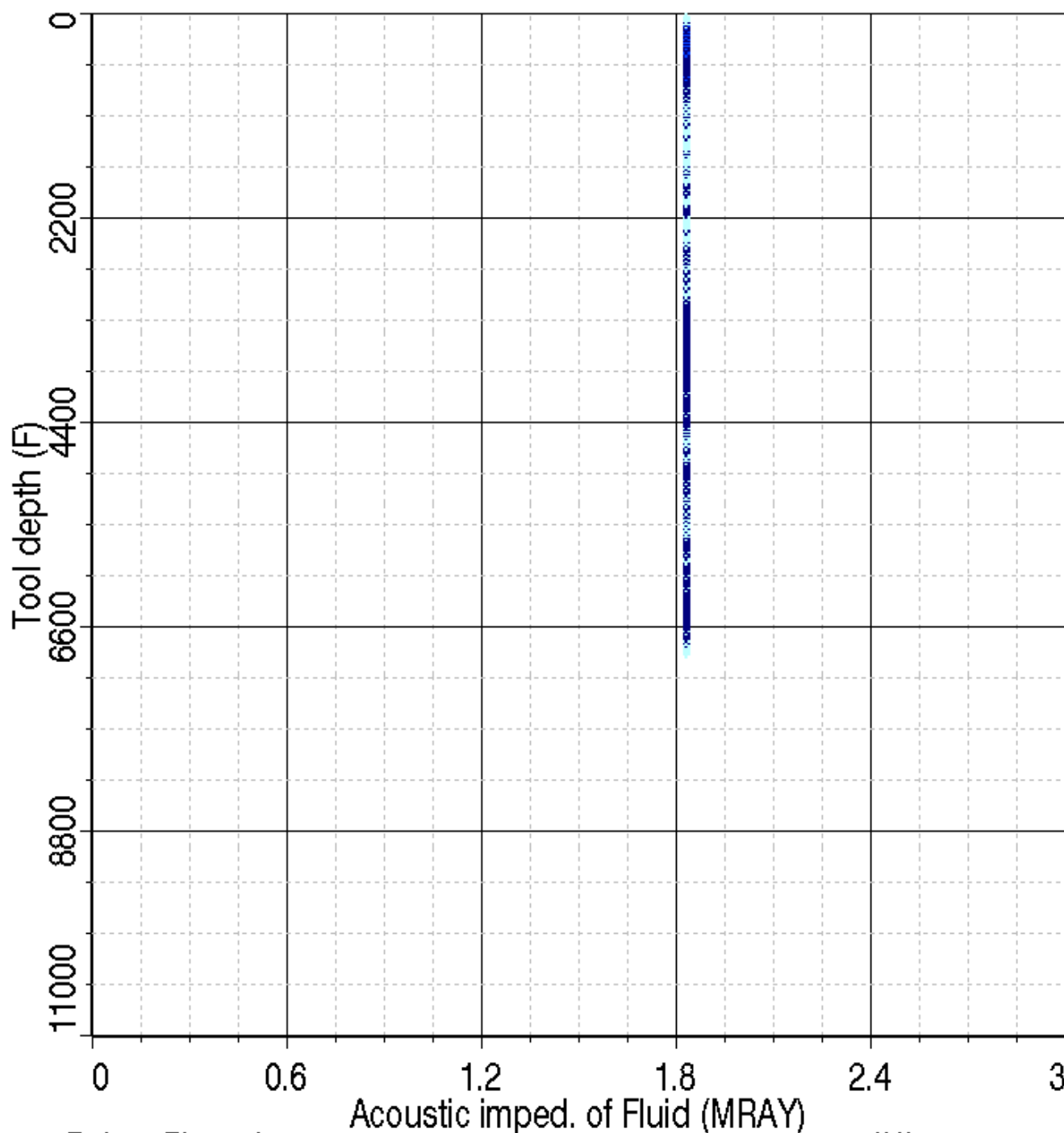
Parameters

DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging - D			
	Corrosion range maximum	0.076	IN
	Corrosion range minimum	-0.076	IN
	T 3 Processing Length for FPM	26.648	US
AGMN	Minimum Gain of Cartridge	-4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	7	IN
CDUN	Curves Unit Declared in Presentation Manager	IN	
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	6.276	IN
CYST	Casing Yield Strength	0	PSI
DFVL	Default Fluid Velocity	208	US/F
DOT	Diameter of Transducer Sensor	2.874	IN

EMXV	EMEX Voltage	99	V
FDII	FPM Data Interpolation Interval	0	FT
FSOD	Fluid Slowness Fits Casing Outer Diameter	0	OFF
IMAR	Image Rotation	OFF	
MW	Mud Weight	9.5	LB/G
OPLEV	USIT Remove Flagged Data Level	level2	
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	
SUBT	Ultrasonic Subassembly Type	Sub_7_inch_S	
TCUB	T 3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.362	IN
TMUC	Type of Mud	WBM	
U-USIT_CENT	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_RFWB	USIT Remove Flagged Data Window Begin	0	US
U-USIT_RWE	USIT Remove Flagged Data Window End	511	US
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_UDFC	USIT Deflector for Casing	NONE	
U-USIT_UFAO	USIT Flexural Attenuation Offset	13	DB/M
U-USIT_UFGA	Far Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UFGI	Far Receiver Minimum Gain of Cartridge	-12	DB
U-USIT_UHCI	USIT IBC Hydraulic Communication Interval	06FT_02M	
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_B	
U-USIT_UNGA	Near Receiver Maximum Gain of Cartridge	48	DB
U-USIT_UNGI	Near Receiver Minimum Gain of Cartridge	-12	DB
U-USIT_URTP	USIT Radial Transducer Position	UNKNOWN	
U-USIT_UTAN	USIT Transducer Angles	33_DEG	
U-MAO	USIT Measurement Angular Offset	-10	DEG
UPAT	Emission Pattern	Pattern_375K	
USIT_USAC_TASK_ALLOW	USIT USAC Allow Task after Power Up	YES	
USIT_USAC_TASK_TIMEOUT	USIT USAC Task Timeout (in seconds) FOR TEST REPORT	600	
USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_1360_NF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T 3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	1.83	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
SGT-N: Scintillation Gamma Ray Tool - N			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
DPPM	Density Porosity Processing Mode	STAN	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
SOGT	SGT Standoff Distance	0	IN
CAL-Y: Casing Anomaly Locator - Y			
CCLD	CCL reset delay	12	IN
CCLT	CCL Detection Level	0.3	V
FEQL: Formation Evaluation Quick Look			
CSXO	Coefficient of Sxo	1	
DLLM	DPOR Lower Limit for Mineral Detection	0.35	CFCF
EDSE	EPT Data Selector	STANDARD	
FEPT	EPT Option Flag	NONE	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHI	
QDOL	QDOL Density Slope Reading	0	Q/Q

GDCL	Grain Density Clean Reading	2.9	G/C3
GDSH	Gamma Ray Clean Reading	0	GAPI
GRSH	Gamma Ray Shale Reading	200	GAPI
GULM	Gamma Ray Upper Limit for Mineral Detection	999	GAPI
KGR	Kill GR Shale Index (USE, KILL)	USE	
KPN	Kill NPES Shale Index (USE, KILL)	USE	
KRH	Kill RHGA Shale Index (USE, KILL)	USE	
KSP	Kill SP Shale Index (USE, KILL)	USE	
LSWB	SWB Limit Selector (NO LIMIT, LIMIT)	NO LIMIT	
MDET	Mineral Flag (NONE, COAL, SALT)	NONE	
NLIM	Neutron Limit for Mineral Detection	0.01	CFCF
NPCL	NPES Clean Reading	0	CFCF
NPSH	NPES Shale Reading	0.5	CFCF
RWB	Bound Water Resistivity	0.1	OHMM
RXOF	RXO Presence Flag	ABSENT	
SDGC	Clean Grain Density Selector	GDCL	
SEXP	N in Water Saturation Equation	2	
SIS	Three Mineral Shale Index Selector	NOT_USED	
SPCL	SP Clean Reading	-200	MV
SPSB	SP Shale Baseline	0	MV
SPSH	SP Shale Reading	0	MV
SWMN	Sw Minimum	0.05	CFCF
TPCN	Time Propagation of non-shale	7.2	NS/M
TPM1	Time Propagation, Matrix-1 <Limestone>	9.8	NS/M
TPM2	Time Propagation, Matrix-2 <Sandstone>	7.2	NS/M
TPM3	Time Propagation, Matrix-3 <Dolomite>	8.7	NS/M
TPSH	Time Propagation of Shale	8.9	NS/M
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
FCD	Future Casing (Outer) Diameter	0	IN
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART GEN 9	
GTSE	Generalized Temperature Selection	LINEAR ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
ARTS	AIT Rt Selection (for ALLRES computation)	AIT_TwoResA60	
BDPS	Bulk Density Processing Selector	Standard	
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	
FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHI	
FSON	Sonic Presence Flag	ABSENT	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART GEN 9	
GTSE	Generalized Temperature Selection	LINEAR ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	LIMESTONE	
RG21	RHO Grain (2-Mineral Model, Min-1)	2.71	G/C3
RG22	RHO Grain (2-Mineral Model, Min-2)	2.644	G/C3
RG23	RHO Grain (2-Mineral Model, Min-3)	2.877	G/C3
RG31	RHO Grain (3-Mineral Model, Min-1)	2.71	G/C3
RG32	RHO Grain (3-Mineral Model, Min-2)	2.644	G/C3
RG33	RHO Grain (3-Mineral Model, Min-3)	2.877	G/C3
RTCO	RTCO - Rt Invasion Correction	YES	
RTLF	RT Limit Flag	NO LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEGF
UF	U Fluid	0.398	
UM21	U Matrix (2-Mineral Model, Min-1)	13.77	
UM22	U Matrix (2-Mineral Model, Min-2)	4.779	
UM23	U Matrix (2-Mineral Model, Min-3)	8.997	
UM31	U Matrix (3-Mineral Model, Min-1)	13.77	
UM32	U Matrix (3-Mineral Model, Min-2)	4.779	
UM33	U Matrix (3-Mineral Model, Min-3)	8.997	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT

11
150 170 190 210 230 250
Fluid velocity (US/F)
13747 Points Plotted 31-JUL-2012 6:03
Index: 6909.0 - 36.0 FT IBC Inv. Fluid Z QC (----) 0. 0.5



13747 Points Plotted 31-JUL-2012 6:03

Company: **Encana Oil & Gas Company**

Schlumberger

Well: **Flanigan 1A-6H**

Field: **Wattenberg**

County: **Weld**

State: **Colorado**

