

Company: EnCana Oil & Gas Inc.

Well: SGU 8504D-25 F25 496 (F25)

Field: Story Gulch

County: Garfield

State: Colorado

County: Garfield
Field: Story Gulch
Location: SHL: SENW Sec 25 T4S R96W 6
Well: SGU 8504D-25 F25 496 (F25)
Company: EnCana Oil & Gas Inc.

IMAGING BEHIND CASING
ISOLATION SCANNER
GAMMA RAY – CCLU

SHL: SENW Sec 25 T4S R96W 6th PM		Elev.: K.B. 8320.00 ft
BHL: NENW 25-4S-96W 6th PM		G.L. 8298.00 ft
		D.F. 8319.00 ft
Permanent Datum:	GROUND LEVEL	Elev.: 8298.00 ft
Log Measured From:	KELLY BUSHING	22.00 ft above Perm. Datum
Drilling Measured From:	KELLY BUSHING	

API Serial No. 05-045-19762-000C	Section 25	Township 4S	Range 96W
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Logging Date	11-Apr-2011
Run Number	1
Depth Driller	2961 ft
Schlumberger Depth	2627 ft
Bottom Log Interval	2615 ft
Top Log Interval	300 ft
Casing Fluid Type	Water
Salinity	
Density	8.35 lbm/gal
Fluid Level	22 ft
BIT/CASING/TUBING STRING	
Bit Size	14.750 in
From	22 ft
To	3007 ft
Casing/Tubing Size	9.625 in
Weight	36 lbm/ft
Grade	J-55
From	22 ft
To	3007 ft
Maximum Recorded Temperatures	
Logger On Bottom	11-Apr-2011 14:50
Unit Number	9102 Vernal, UT
Recorded By	Mike Septon
Witnessed By	Unattended

PVT DATA		Run 1	Run 2	Run
Oil Density				
Water Salinity				
Gas Gravity				
Bo				
Bw				
1/Bg				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Deviation				
CEMENTING DATA				
Primary/Squeeze		Primary		
Casing String No				
Lead Cement Type				
Volume				
Density		9 lbm/gal		
Water Loss				
Additives				
Tail Cement Type				
Volume				
Density				
Water Loss				
Additives				
Expected Cement Top				
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Fluid Type				
Salinity				
Density				
Fluid Level				
BIT/CASING/TUBING STRING				
Bit Size				
From				
To				
Casing/Tubing Size				
Weight				
Grade				
From				
To				
Maximum Recorded Temperatures				
Logger On Bottom				
Unit Number				
Recorded By				
Witnessed By				

RECOMPUTED

DEPTH SUMMARY LISTING

Date Created: 11-APR-2011 16:00:11

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46P XS
Serial Number:	6982	Serial Number:	119	Serial Number:	6710245
Calibration Date:	22-DEC-2010	Calibration Date:	17-MAR-201	Length:	21200 FT
Calibrator Serial Number:	26	Calibrator Serial Number:	100518	Conveyance Method:	Wireline
Calibration Cable Type:	7-46P	Number of Calibration Points:	10	Rig Type:	Rigless
Wheel Correction 1:	-7	Calibration RMS:	6		
Wheel Correction 2:	-7	Calibration Peak Error:	9		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	186.00 FT
Rig Up Length At Bottom:	186.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	1.00 FT
Tool Zero Check At Surface:	0.00 FT

Depth Control Remarks

1. SHLUMBERGER DEPTH CONTROL STANDARDS FOLLOWED
2. IDW USED AS PRIMARY DEPTH CONTROL, Z-CHART USED AS SECONDARY DEPTH CONTROL
- 3.
- 4.
- 5.
- 6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1 OS1: NONE OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in the well	
Toolstring ran as per toolsketch	
Toolstring centralized with 2 in-line centralizers and 2 GEMCOs	
Logging speed: 1800 ft/hr	
Expected attenuation with free fluid behind casing: 59 db/m	
Log ran with no wellhead pressure	

[illegible]

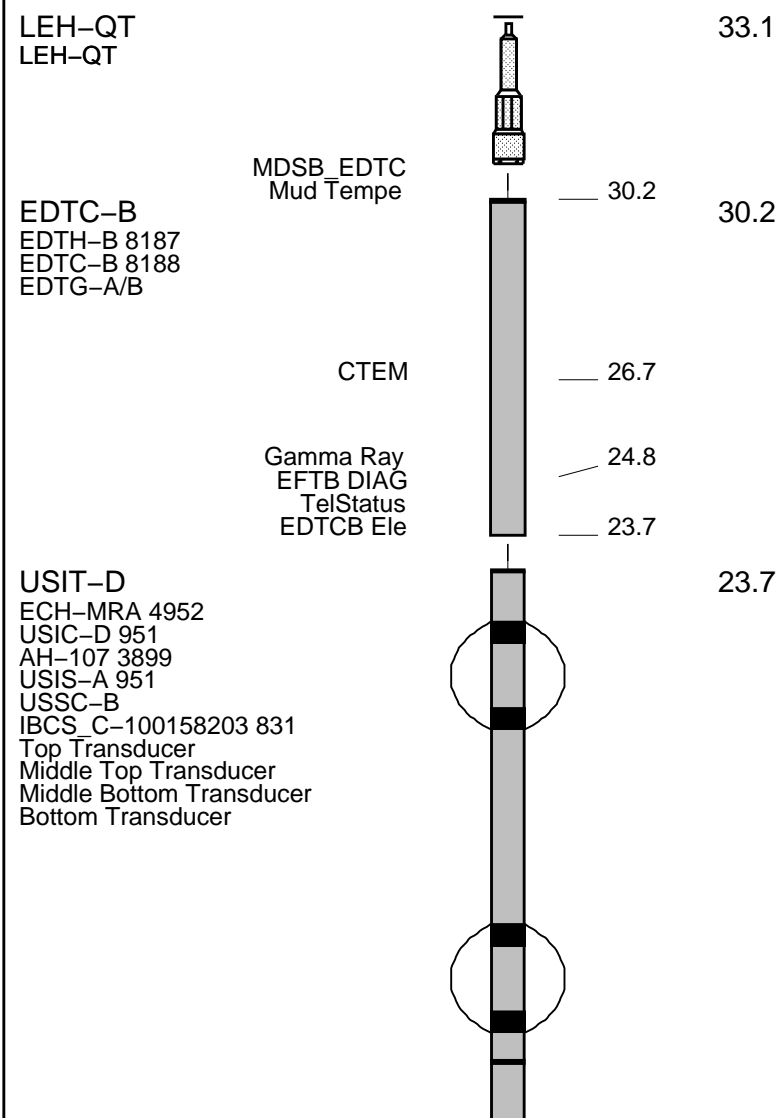
RUN 1			RUN 2		
SERVICE ORDER #:	BEHA-00058		SERVICE ORDER #:		
PROGRAM VERSION:	18C0-147		PROGRAM VERSION:		
FLUID LEVEL:	22 ft		FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT	DESCRIPTION

	RUN 1	RUN 2
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
18	1	1
19	1	1
20	1	1
21	1	1
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23	1	1
24	1	1
25	1	1
26	1	1
27	1	1
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88	1	1
89	1	1
90	1	1
91	1	1
92	1	1
93	1	1
94	1	1
95	1	1
96	1	1
97	1	1
98	1	1
99	1	1
100	1	1

WITM (EDTS)-A	SURFACE EQUIPMENT	
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DOWNHOLE EQUIPMENT



Far Incid
Near Inci
Normal In
Control
DF ACCZ
USI Relat HV
Tension

1.1
0.0

TOOL ZERO

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

Schlumberger

SLG COMPOSITE

MAXIS Field Log

Company: EnCana Oil & Gas Inc.

Well: SGU 8504D-25 F25 496 (F25)

Input DLIS Files

USI_010PUP FN:9 13-Apr-2011 15:10 2615.5 FT 300.0 FT

Output DLIS Files

DEFAULT USI_056PUP FN:49 PRODUCER 15-Apr-2011 09:46 2615.5 FT 300.0 FT

OP System Version: 18C0-147

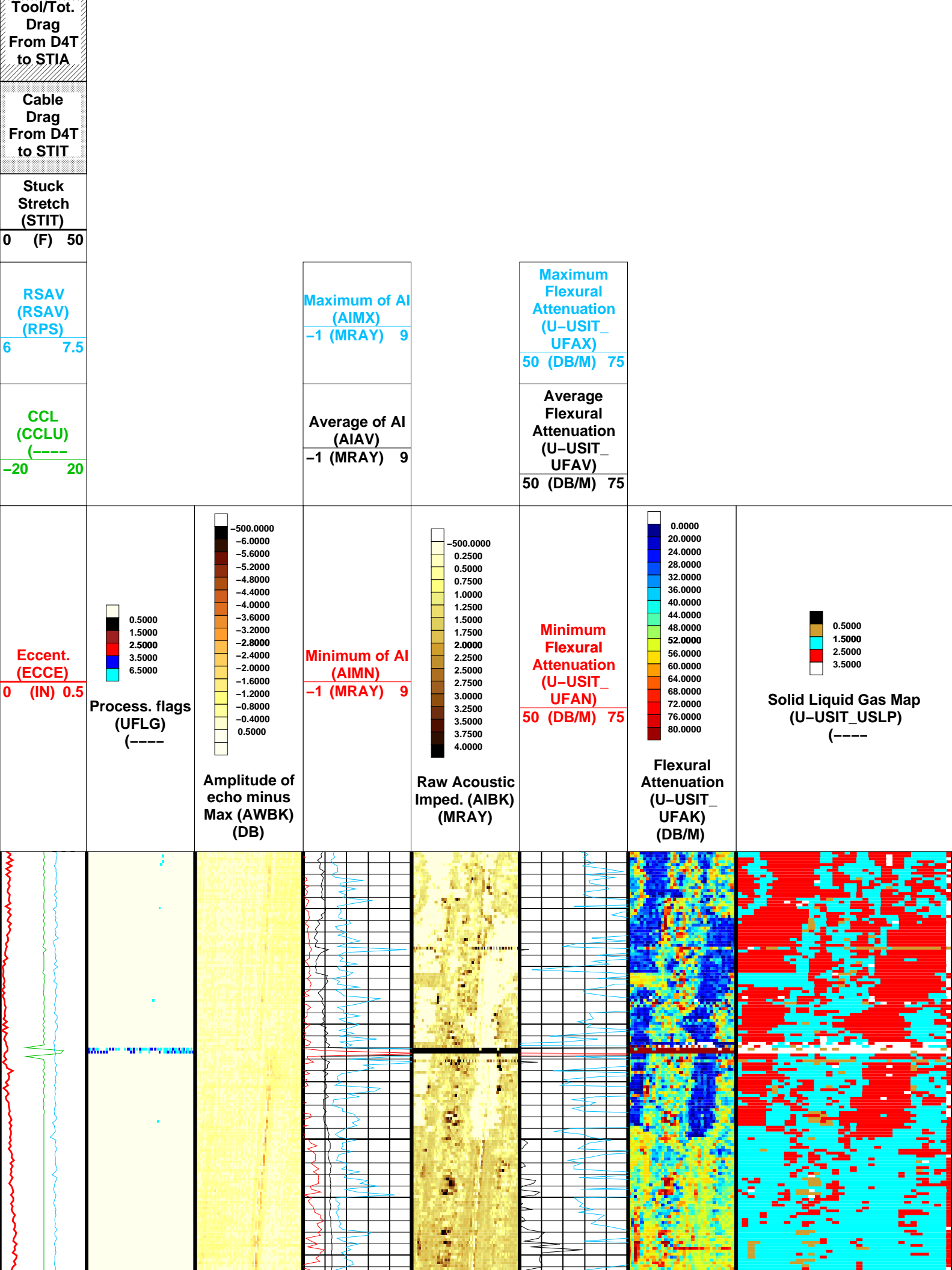
USIT-D SRPC-4072-Q4_2010_OP18 EDTC-B SRPC-4072-Q4_2010_OP18

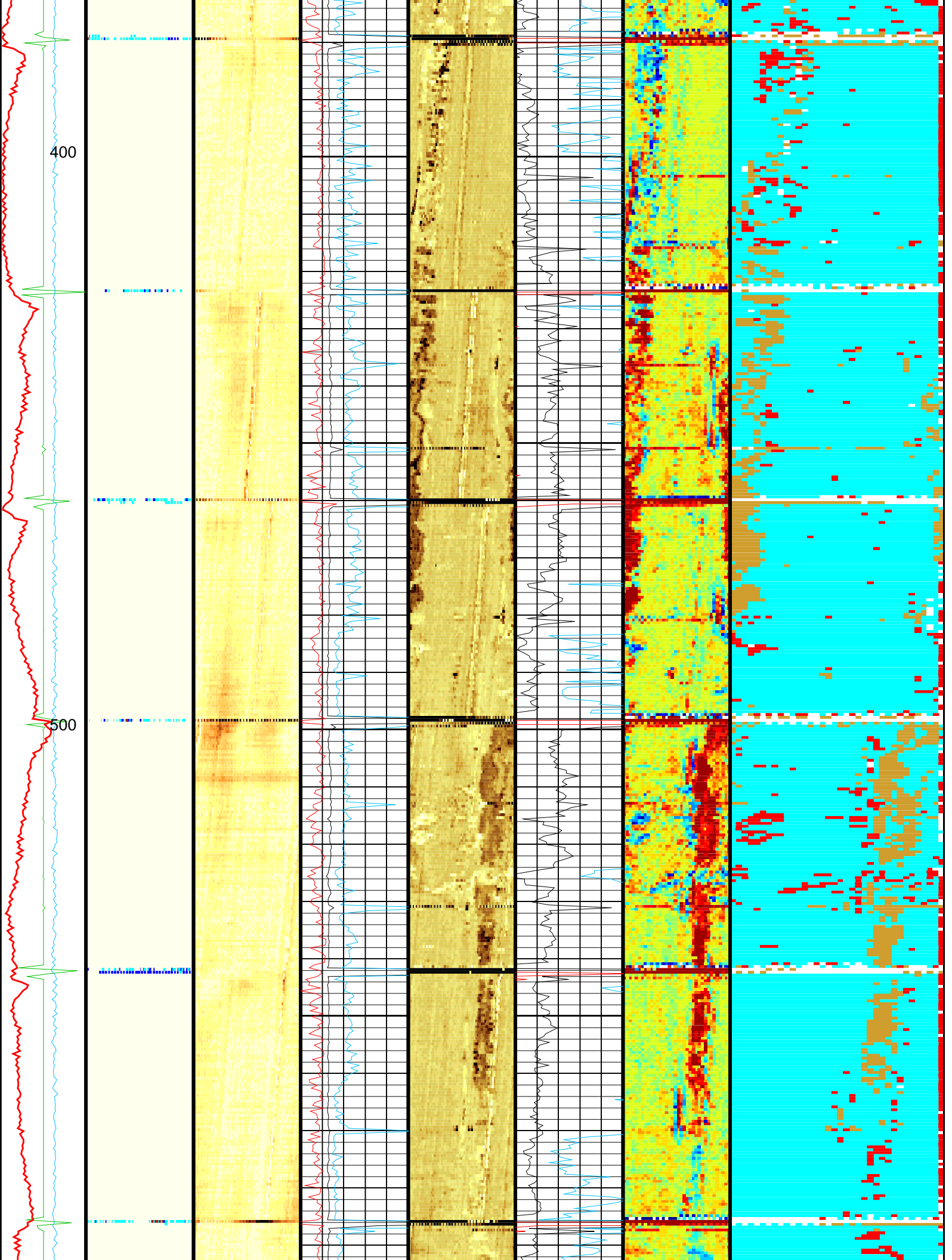
Changed Parameter Summary

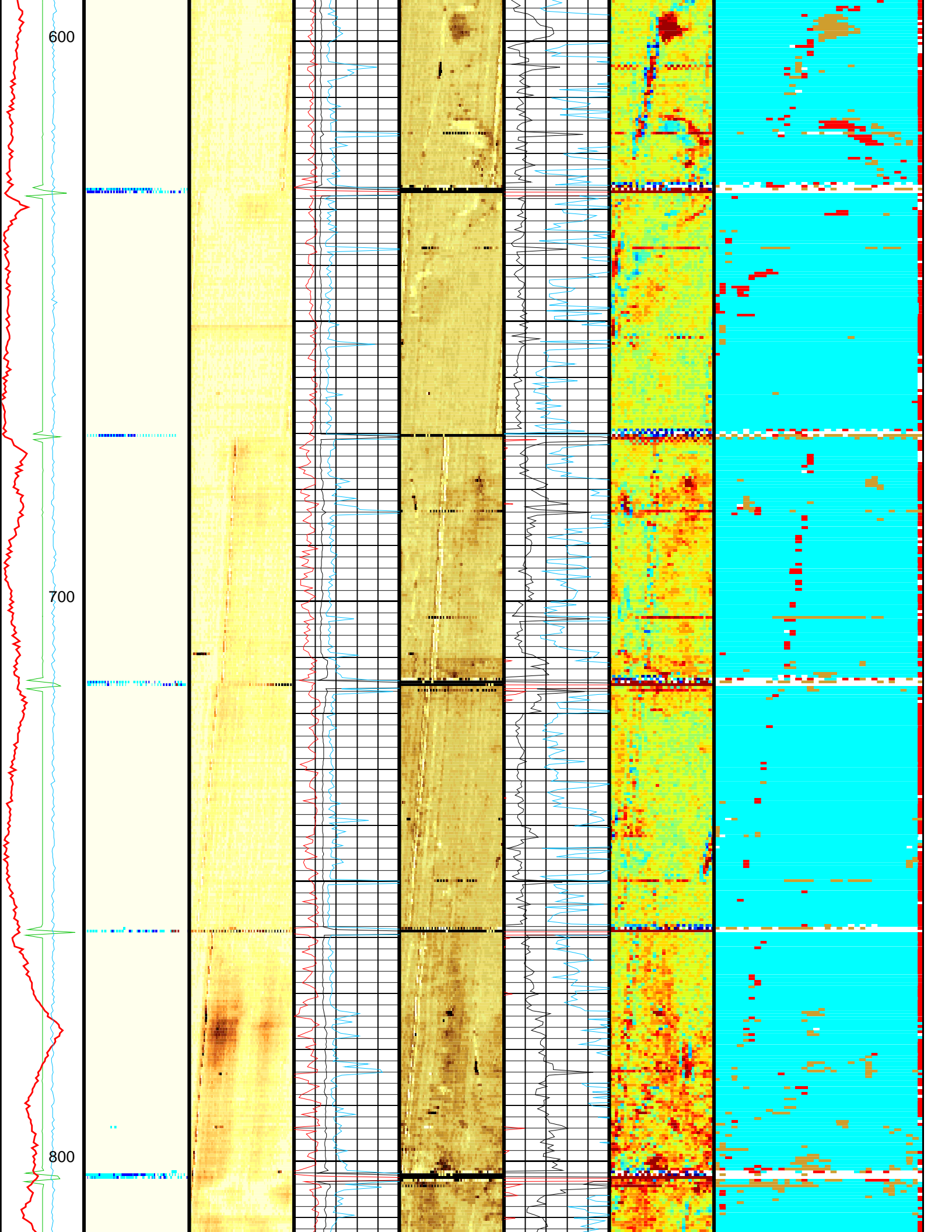
DLIS Name	New Value	Previous Value	Depth & Time
ZMUD	1.6 MRAY	1.7 MRAY	2231.5 09:48:01
	1.5 MRAY	1.6 MRAY	712.5 09:49:55

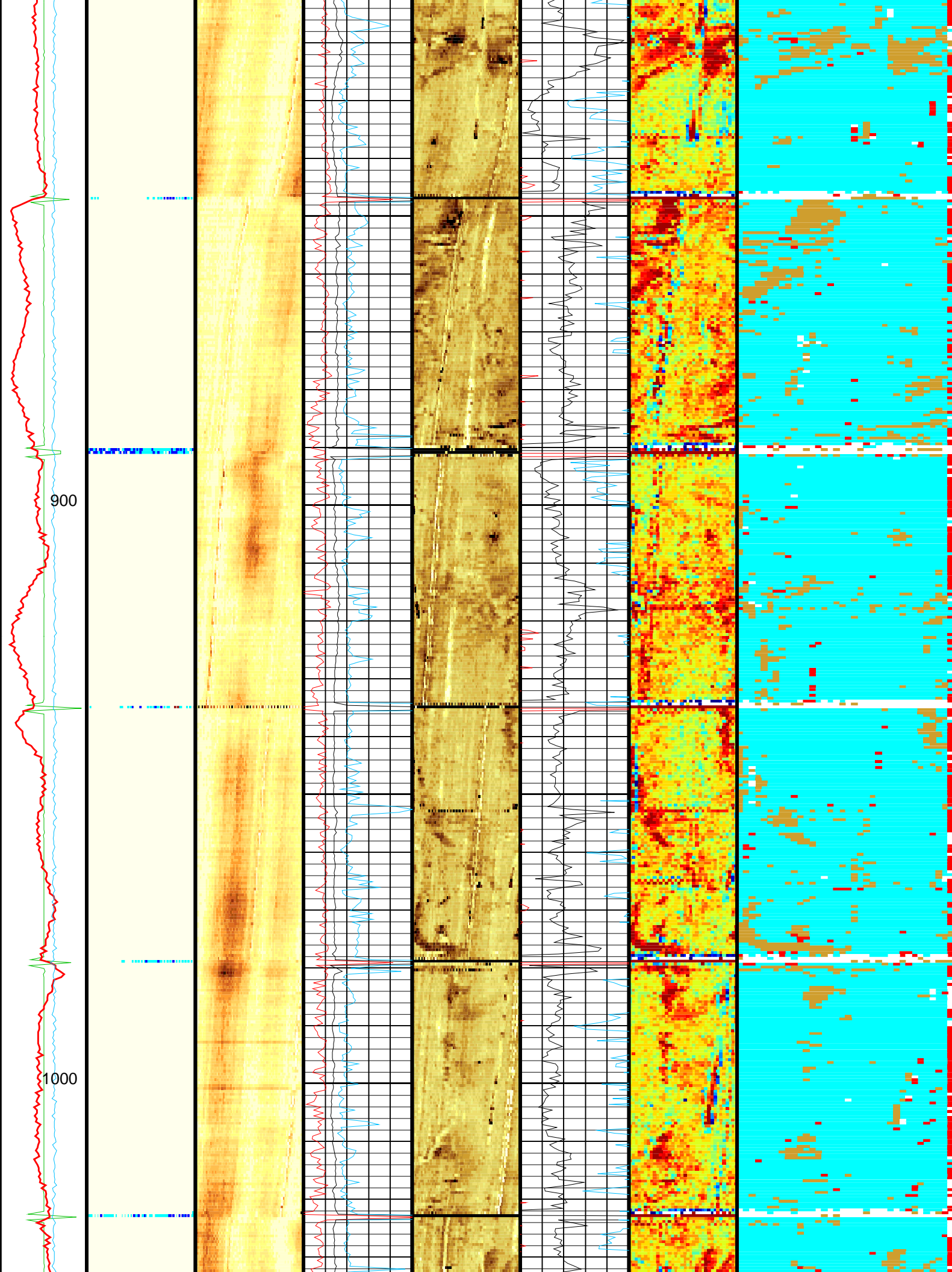
Image
rotation
(UCAZ)
(DEG)

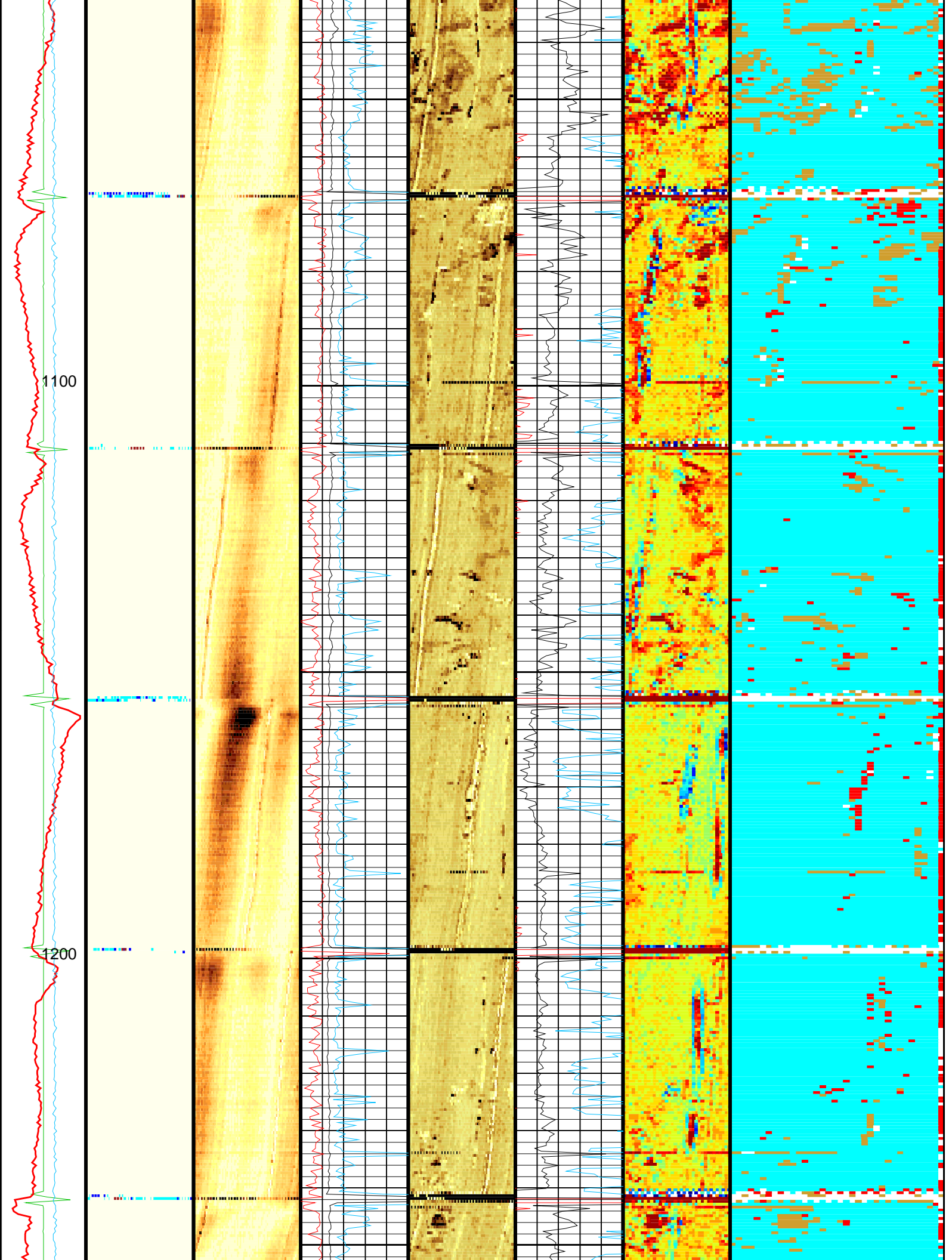
0 360

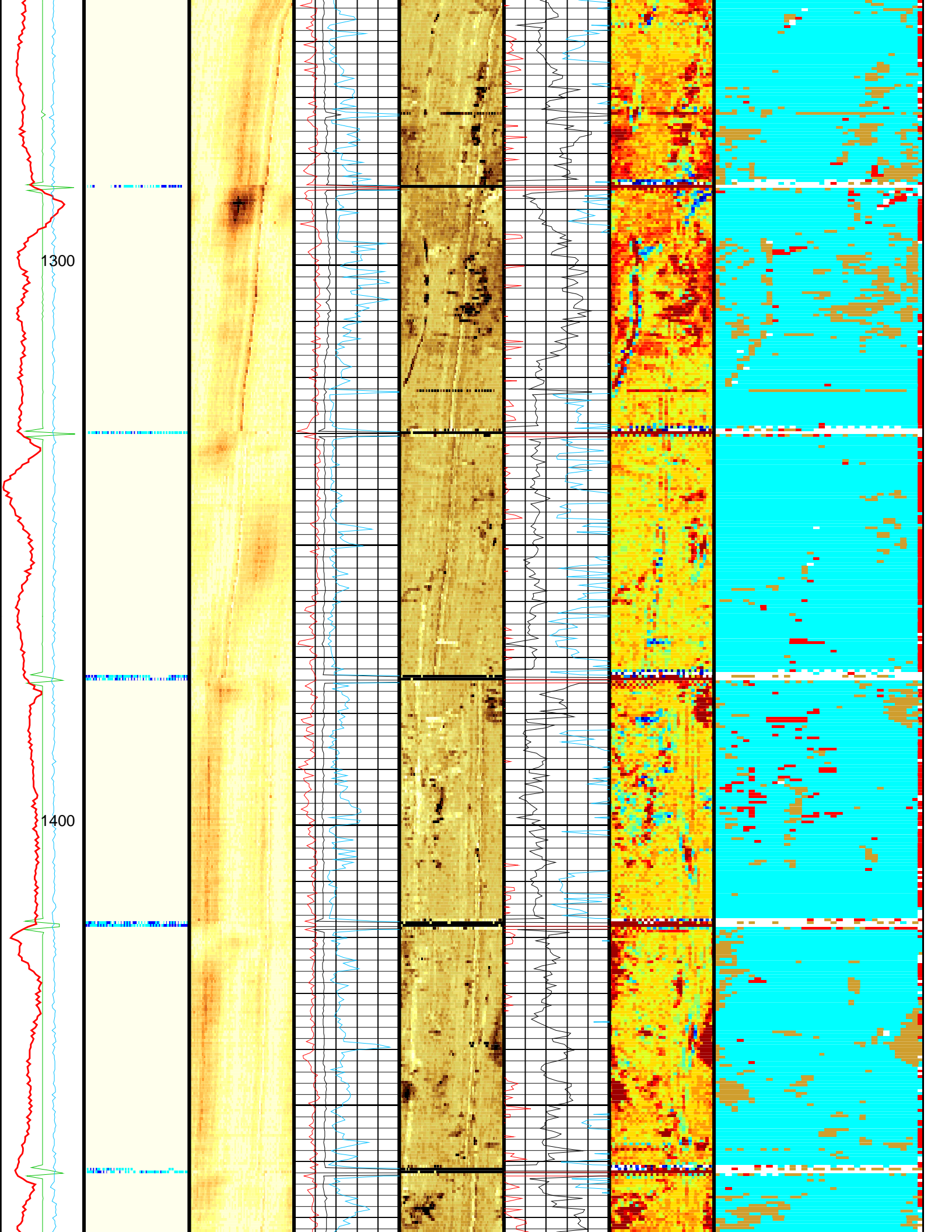


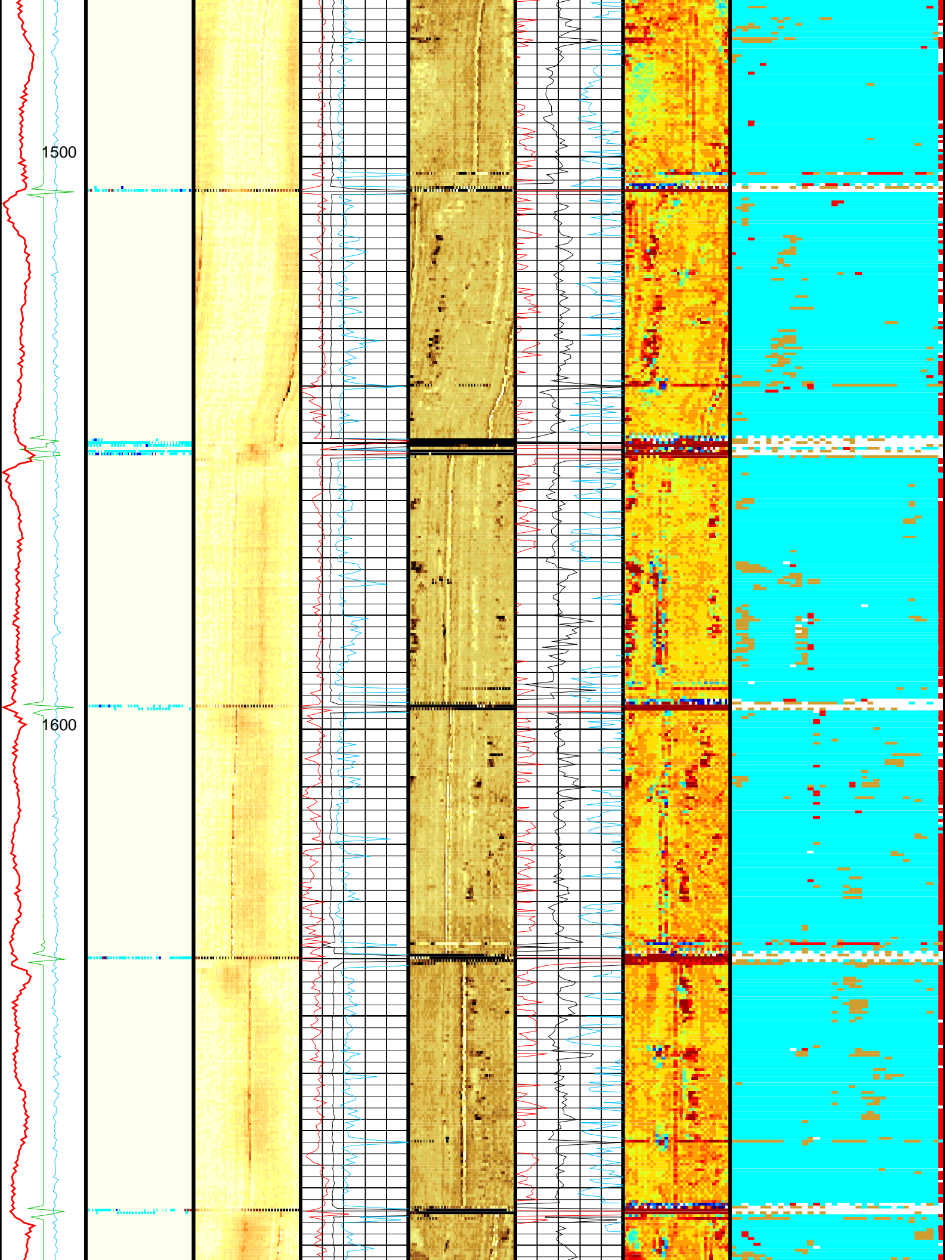


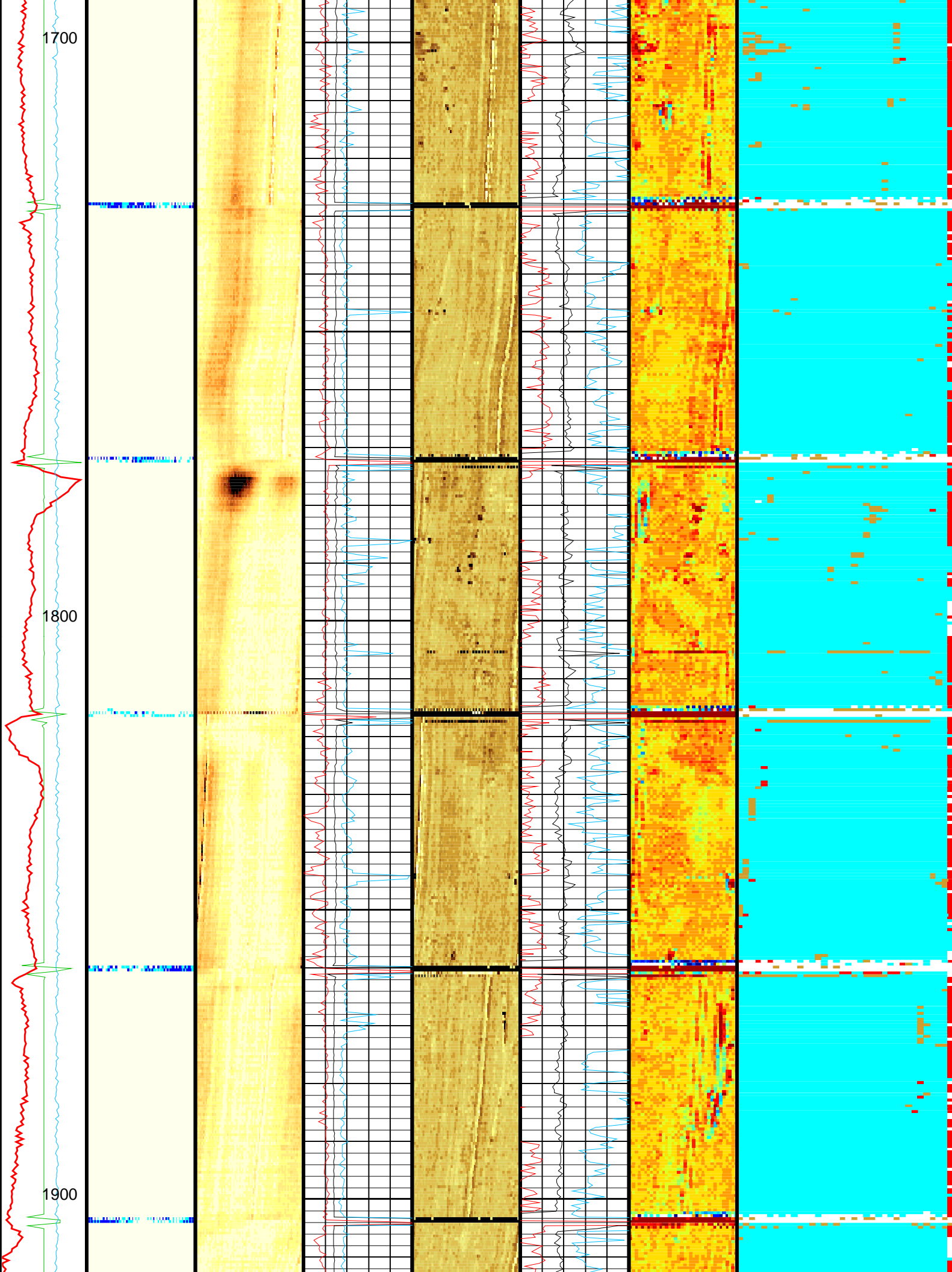


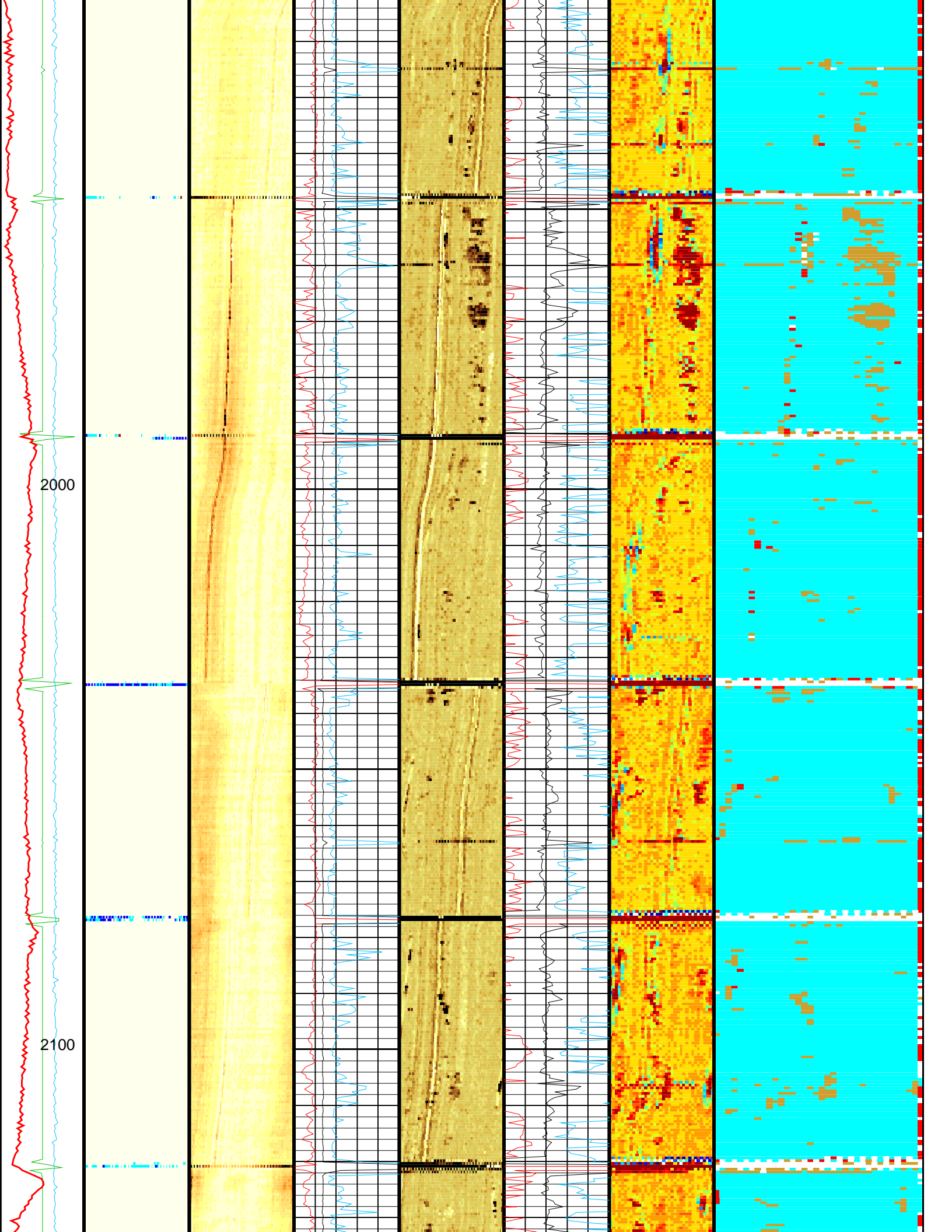


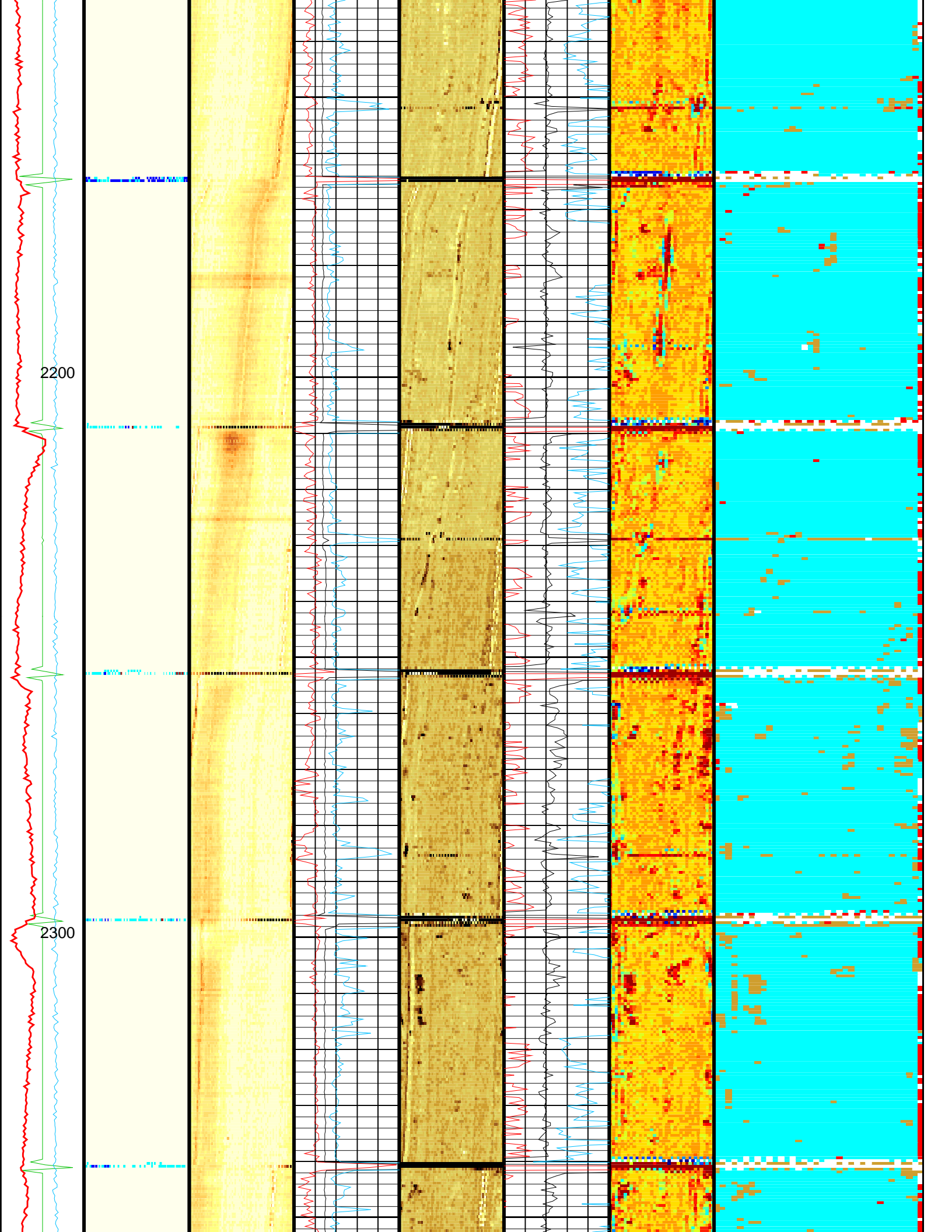


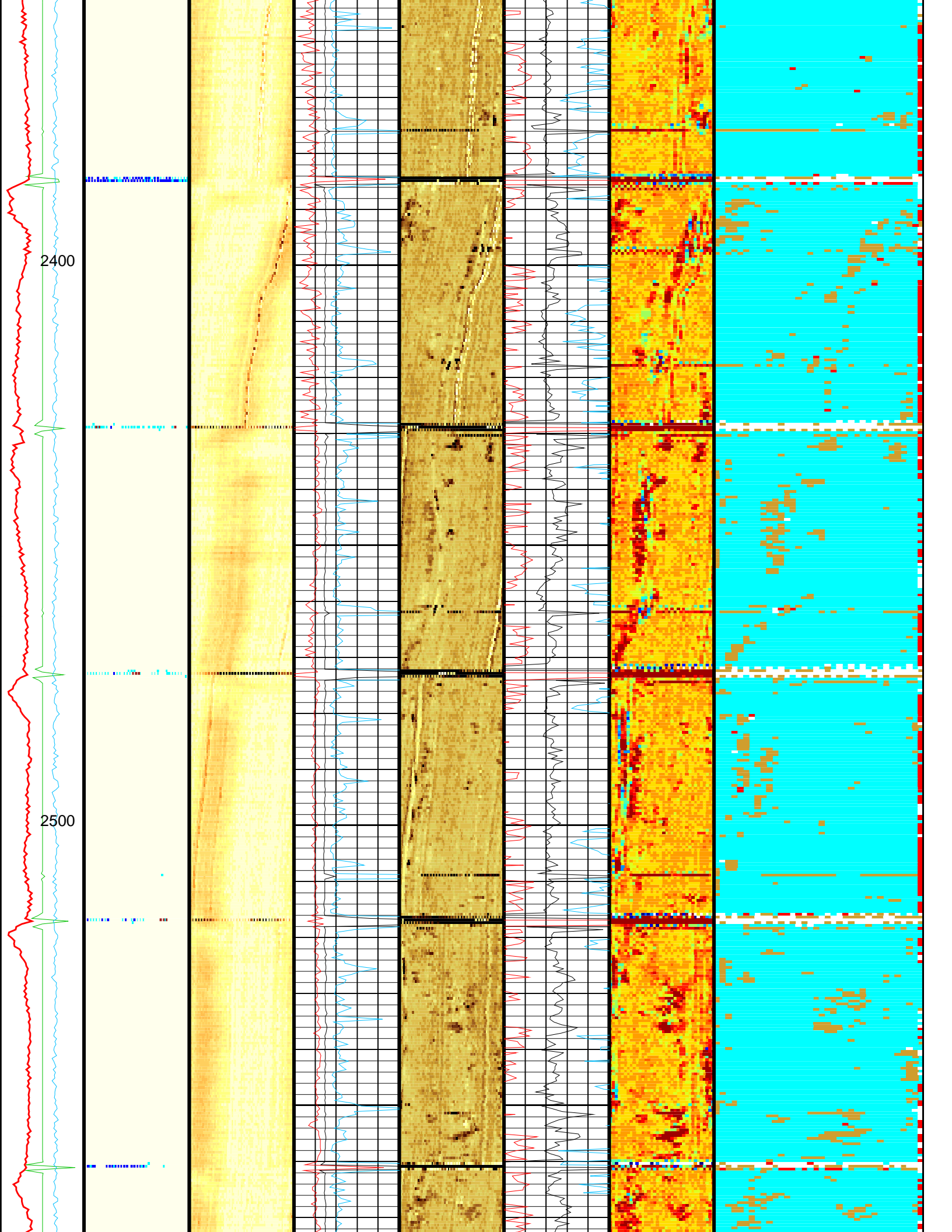


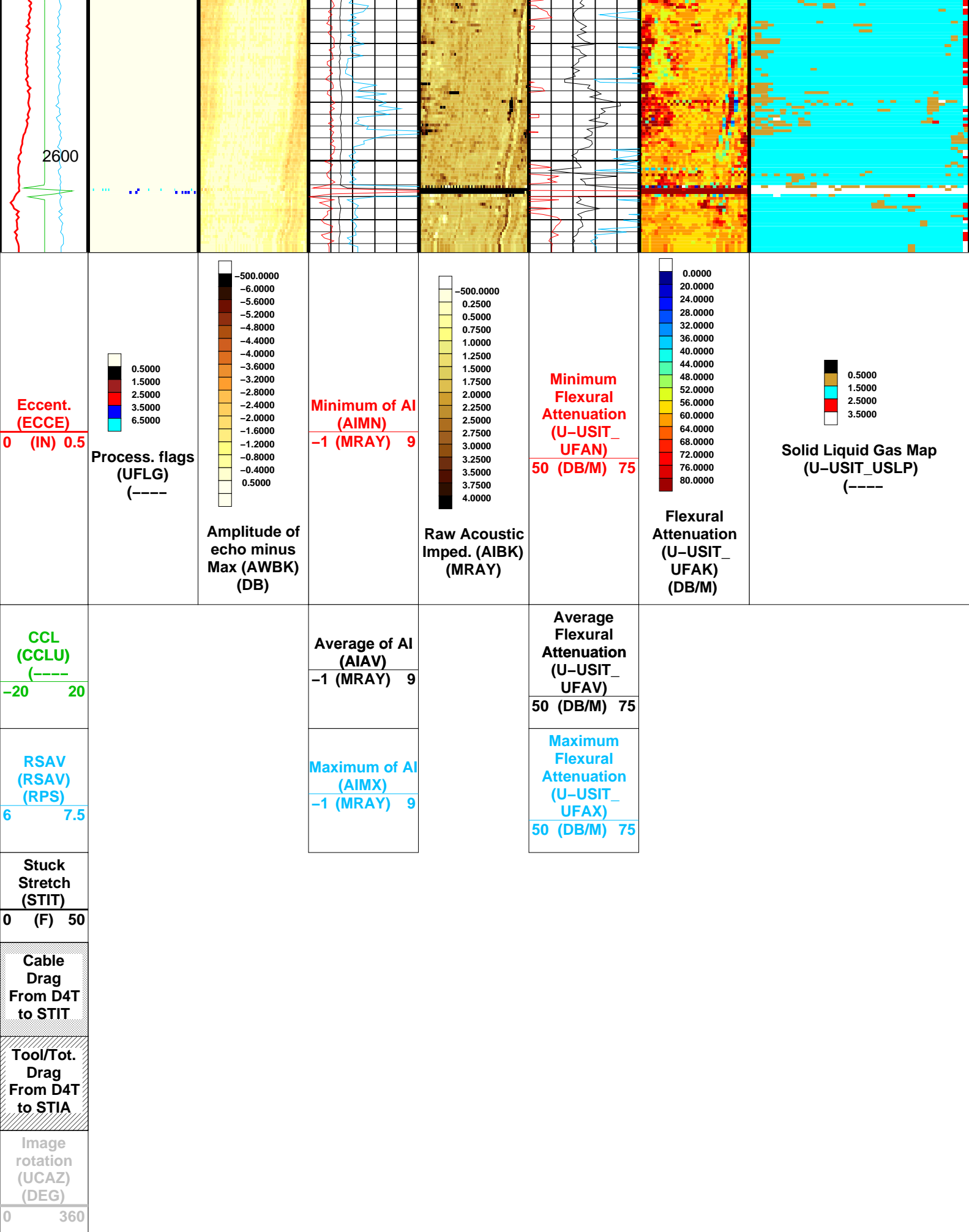












All USI Images are outside views

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	9.625	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	8.921	IN
DFVL	Default Fluid Velocity	202	US/F
DOT	Diameter of Transducer Sensor	4.874	IN
EMXV	EMEX Voltage	40	V
FSOD	Fluid Slowness Fits Casing Outer Diameter	2_UFSL_N_UFAI	
IMAR	Image Rotation	OFF	
MW	Mud Weight	8.4	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.37795	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	0.352	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	–1	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_lbcs_C	
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_9_58_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.1081	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	2.1	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth – Driller	2961.00	FT
TDL	Total Depth – Logger	2627.00	FT
System and Miscellaneous			
BS	Bit Size	14.750	IN
CWEI	Casing Weight	36.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

USI_010PUP

FN:9

13-Apr-2011 15:10

2615.5 FT

300.0 FT

Output DLIS Files

DEFAULT

USI_056PUP

FN:49

PRODUCER

15-Apr-2011 09:46

Schlumberger

REPEAT PASS

MAXIS Field Log

Company: EnCana Oil & Gas Inc.

Well: SGU 8504D-25 F25 496 (F25)

Input DLIS Files

USI_006PUP

FN:5

15-Apr-2011 07:32

2615.0 FT

2394.5 FT

Output DLIS Files

DEFAULT

USI_055PUP

FN:48

PRODUCER

15-Apr-2011 09:35

2615.0 FT

2394.5 FT

OP System Version: 18C0-147

USIT-D

SRPC-4072-Q4_2010_OP18

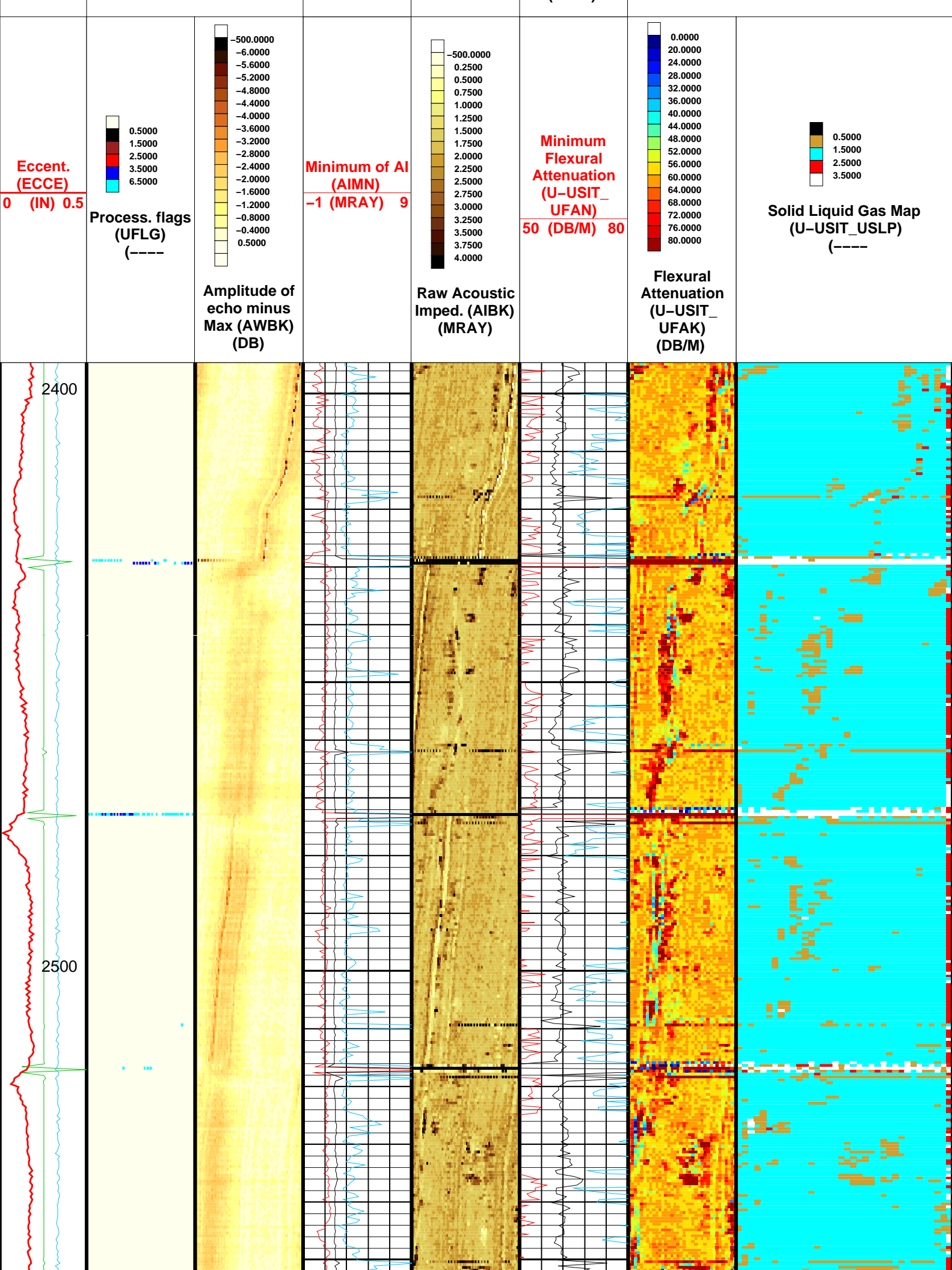
EDTC-B

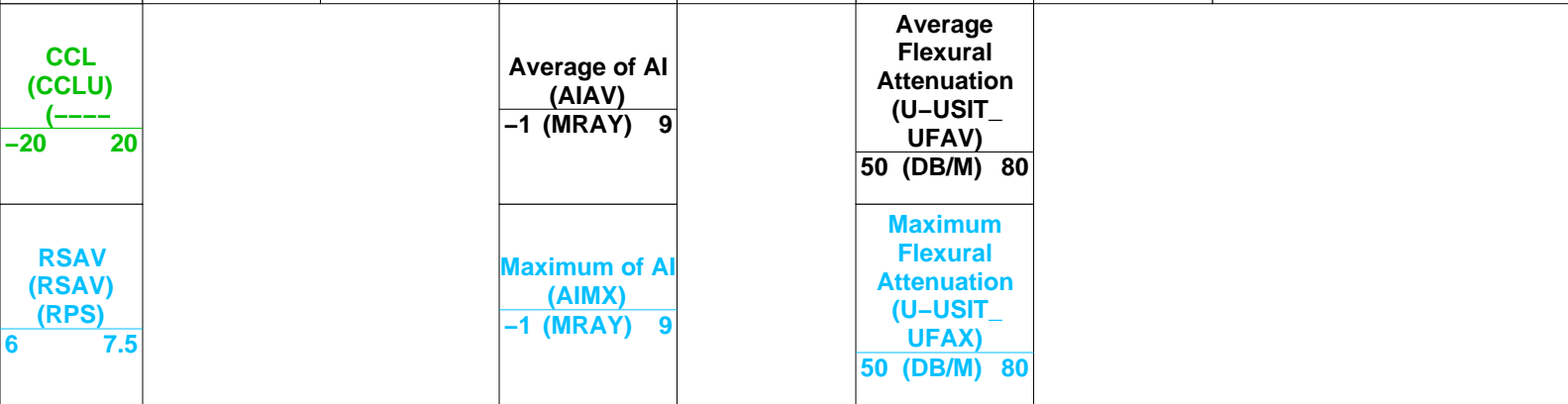
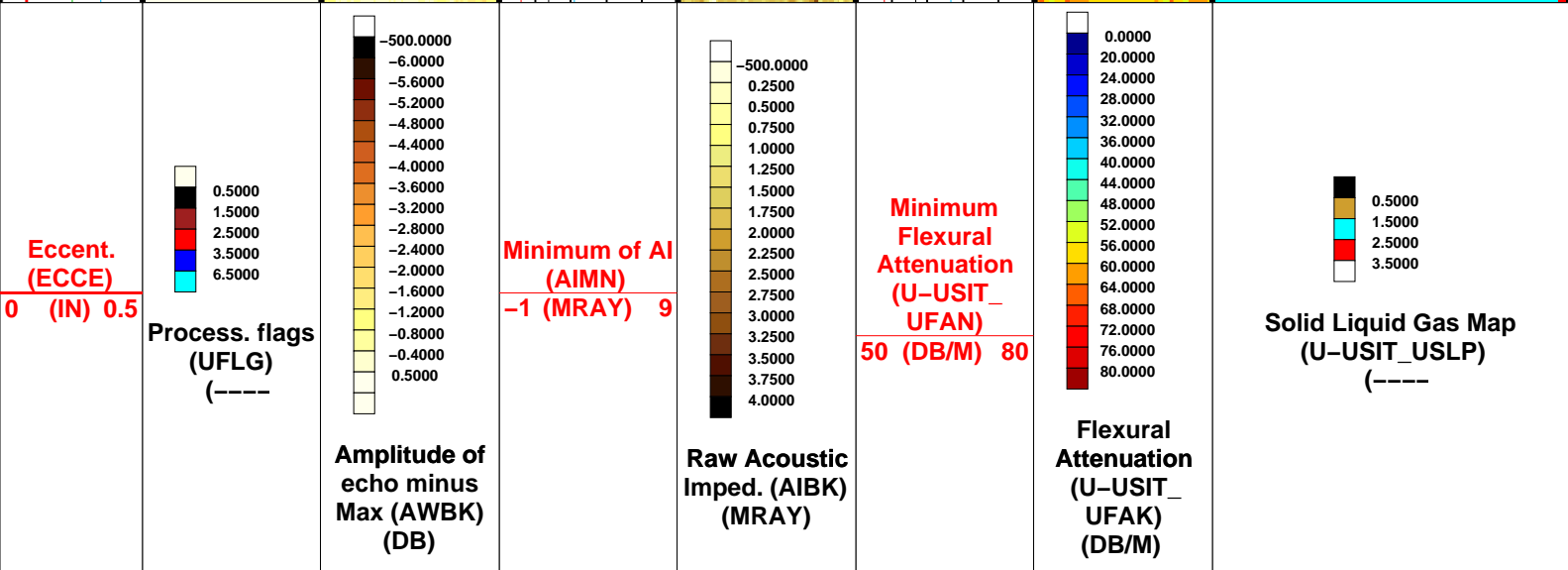
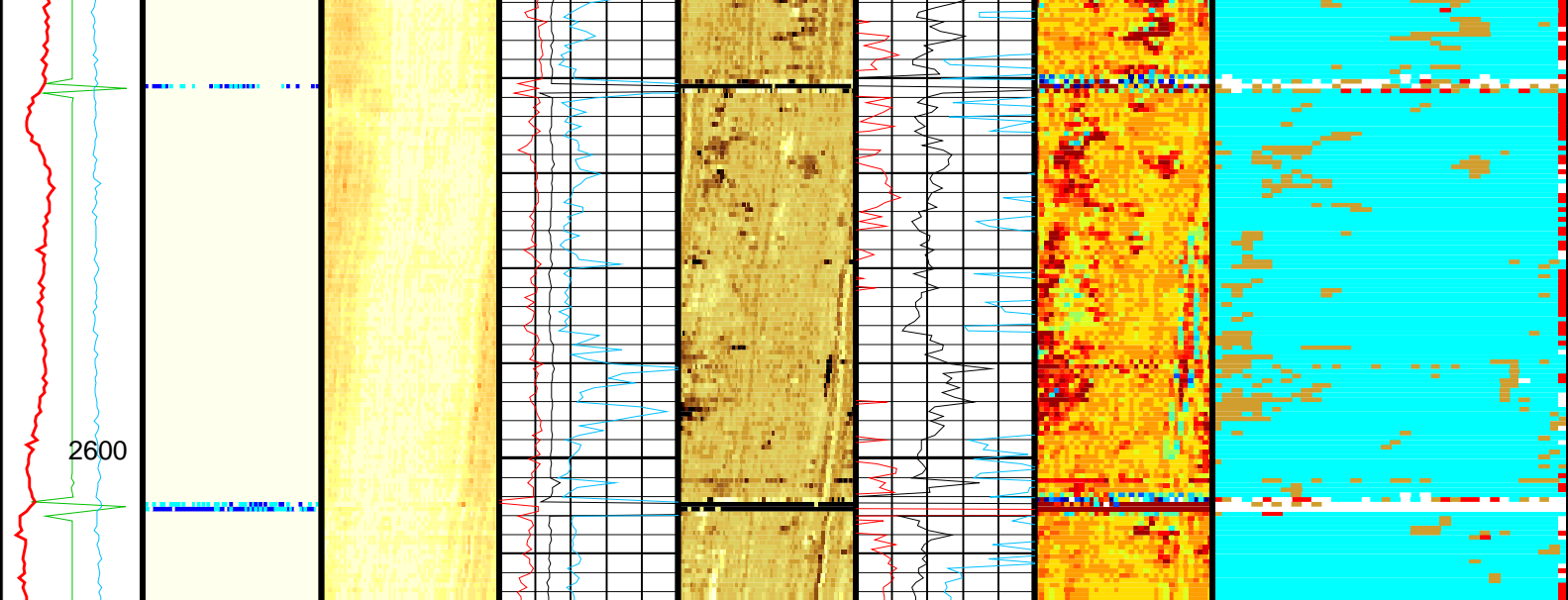
SRPC-4072-Q4_2010_OP18

Image rotation (UCAZ) (DEG)
0 360
Tool/Tot. Drag From D4T to STIA
Cable Drag From D4T to STIT
Stuck Stretch (STIT)
0 (F) 50
RSAV (RSBV) (RPS)
6 7.5
CCL (CCLU) (----
-20 20

Maximum of AI (AIMX)
-1 (MRAY) 9
Average of AI (AIAV)
-1 (MRAY) 9

Maximum Flexural Attenuation (U-USIT_ UFAV)
50 (DB/M) 80
Average Flexural Attenuation (U-USIT_ UFAV)
50 (DB/M) 80





OP System Version: 18C0-147

USIT-D SRPC-4072-Q4_2010_OP18 EDTC-B SRPC-4072-Q4_2010_OP18

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

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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	-1	DB/M
U-USIT_UIAP	USIT IBC Answer Product Enabled	SolidLiquidGasMap	
U-USIT_UIST	Ultrasonic IBC Sonde Type	Sub_ibcs_C	
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_9_58_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.1081	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	2.1	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	2.5	FT

TDD	Total Depth - Driller	2961.00	FT
TDL	Total Depth - Logger	2627.00	FT
System and Miscellaneous			
BS	Bit Size	14.750	IN
CWEI	Casing Weight	36.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Input DLIS Files

USI_006PUP
 FN:5
 15-Apr-2011 07:32
 2615.0 FT
 2394.5 FT

Output DLIS Files

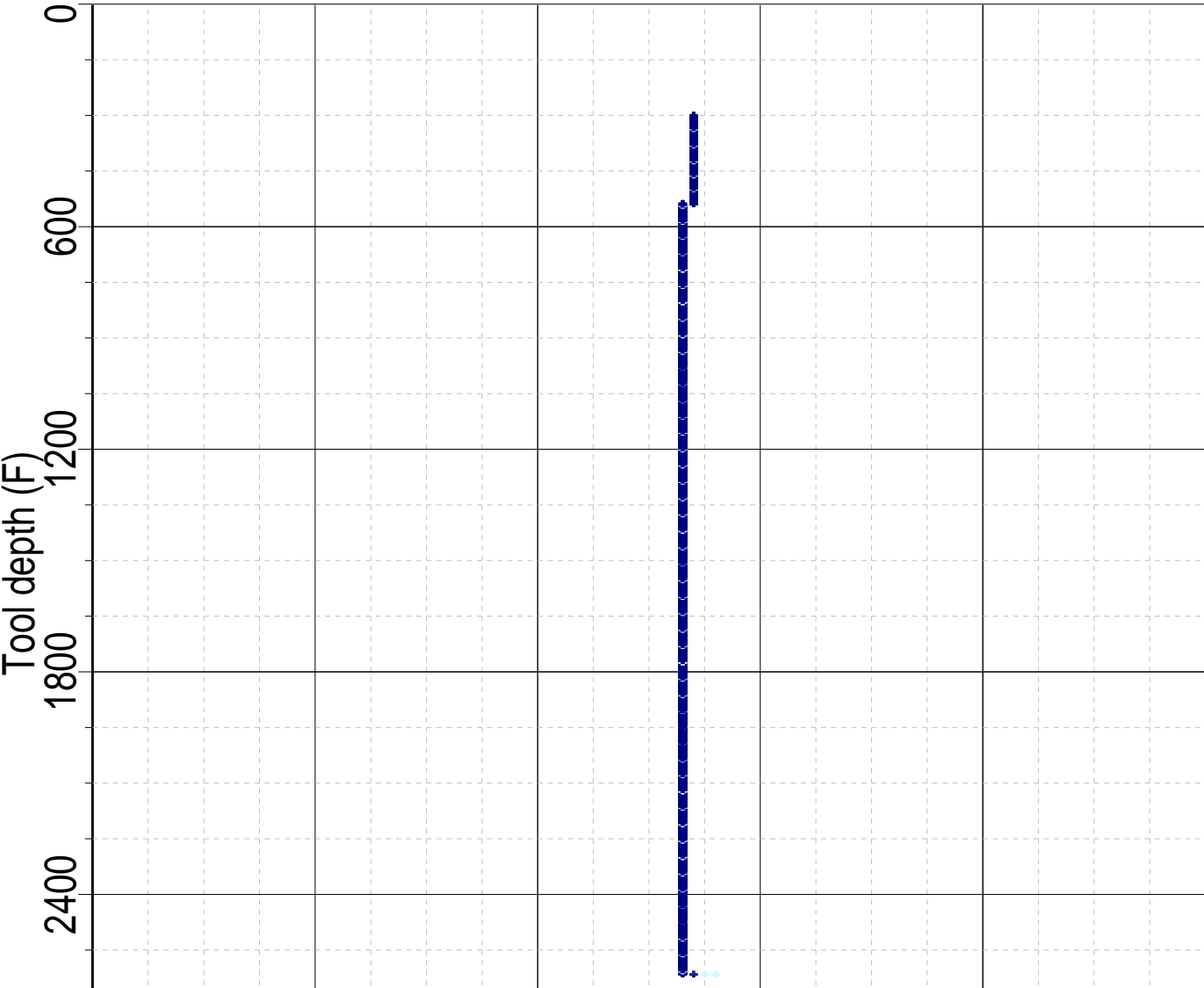
DEFAULT
 USI_055PUP
 FN:48
 PRODUCER
 15-Apr-2011 09:35

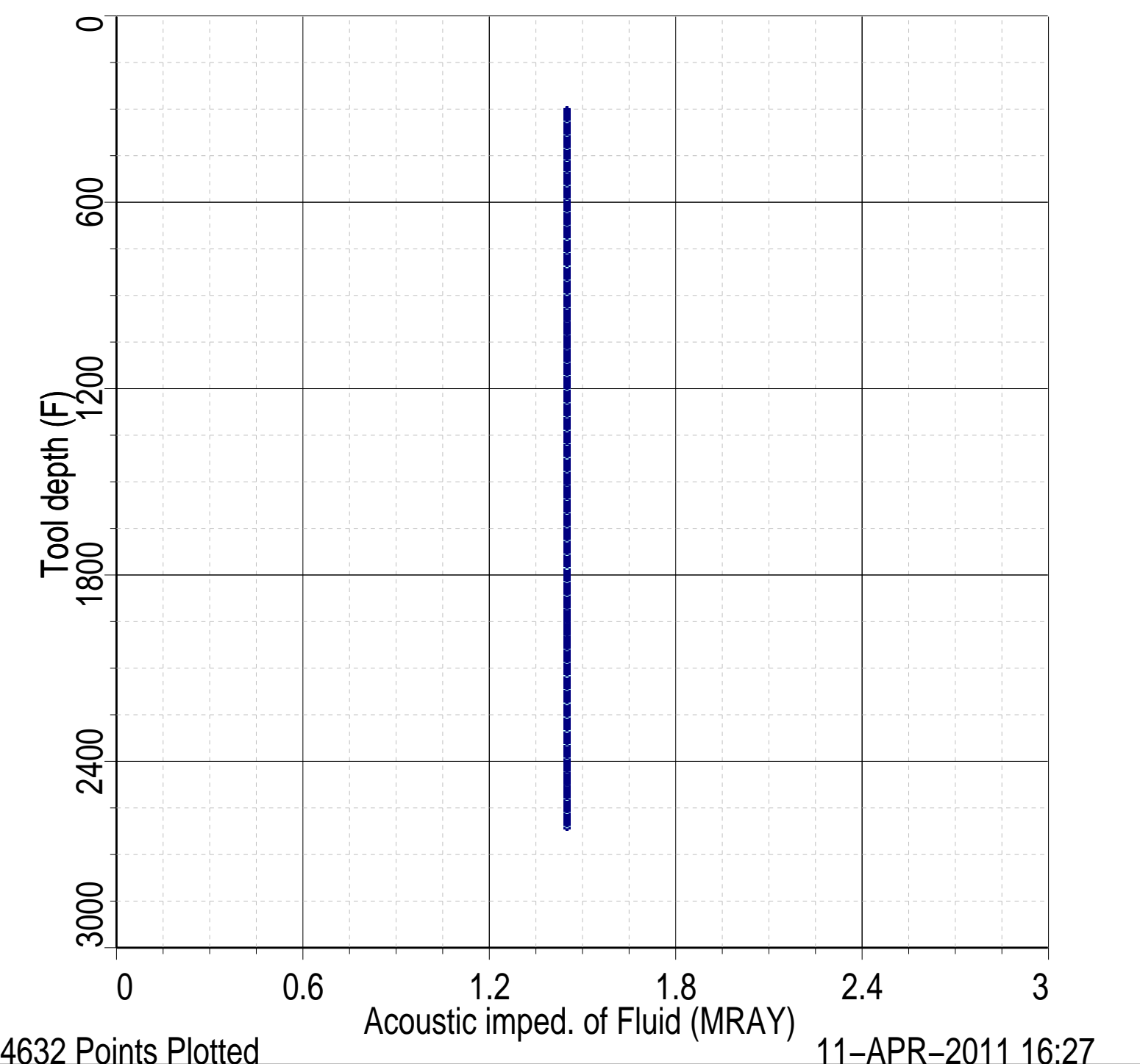
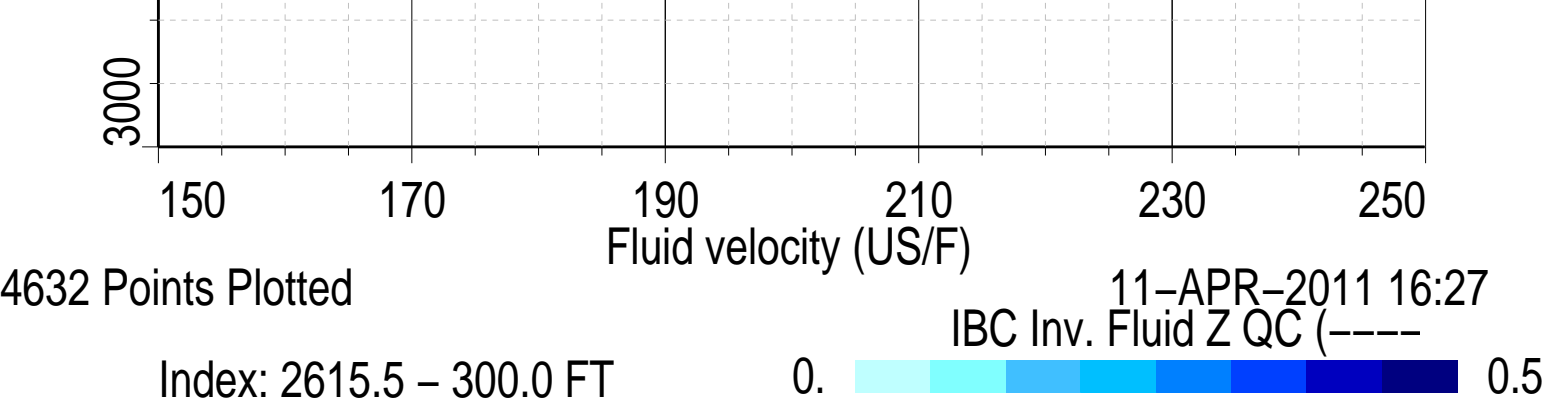


FLUID PROPERTIES

MAXIS Field Log

Index: 2615.5 – 300.0 FT
 IBC Inv. Fluid Z QC (----)
 0. 0.5





Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
-------------	---------	--------	--------	-------	--------	-------	-------

Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration

Before: 11–Apr–2011 14:28

EDTC Z–Axis Acceleration	32.19	N/A	32.44	N/A	N/A	N/A	F/S2
--------------------------	-------	-----	-------	-----	-----	-----	------

Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration

Before: 10–Apr–2011 9:34

Gamma Ray (Jig – Bkg)	151.4	N/A	151.4	N/A	N/A	13.76	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

EDTC Gamma Ray Detector

EDTG – A/B

Enhanced DTS Cartridge

EDTC – B

8188

Auxiliary Equipment:


EDTC Housing

EDTH – B

8187

Enhanced DTS Cartridge Wellsite Calibration




EDTC Accelerometer Calibration

Phase	EDTC Z–Axis Acceleration F/S2	Value
Before		32.44
	31.53 (Minimum) 32.19 (Nominal) 32.84 (Maximum)	

Before: 11–Apr–2011 14:28

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig – Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		35.04	Before		151.4	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			137.6 (Minimum) 151.4 (Nominal) 165.1 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 10–Apr–2011 9:34

Company: **EnCana Oil & Gas Inc.****Schlumberger**Well: **SGU 8504D–25 F25 496 (F25)**Field: **Story Gulch**County: **Garfield**State: **Colorado**

IMAGING BEHIND CASING

