

Company: Crestone Peak Resources Operating, LLC

Well: Kugel 1L-18H-H267

Field: Wattenberg

County: Weld State: Colorado

ISOLATION SCANNER  
CEMENT EVALUATION  
GAMMA RAY - COLLAR LOCATOR LOGCounty: Weld  
Field: Wattenberg  
Location: 2228' FNL & 680' FEL  
Well: Kugel 1L-18H-H267  
Company: Crestone Peak Resources Operating, LLC

|                         |                      |           |                 |
|-------------------------|----------------------|-----------|-----------------|
| Location:               | 2228' FNL & 680' FEL | Elev.:    | K.B. 4976.00 ft |
| Permanent Datum:        |                      | G.L.      | 4953.00 ft      |
| Log Measured From:      | Ground Level         | D.F.      | 4976.00 ft      |
| Drilling Measured From: | Kelly Bushing        |           |                 |
| API Serial No.          | 05-123-49484         | Section:  | 18              |
|                         |                      | Township: | 2 N             |
|                         |                      | Range:    | 67 W            |

|                           |                      |
|---------------------------|----------------------|
| Logging Date              | 29-Sep-2019          |
| Run Number                | 1A                   |
| Depth Driller             | 13732.00 ft          |
| Schlumberger Depth        | 13732.00 ft          |
| Bottom Log Interval       | 7960.00 ft           |
| Top Log Interval          | 92.00 ft             |
| Casing Fluid Type         | Water                |
| Salinity                  |                      |
| Density                   | 9 lbm/gal            |
| Fluid Level               | 8.00 ft              |
| BIT/CASING/TUBING STRING  |                      |
| Bit Size                  | 8.50 in              |
| From                      | 2855.00 ft           |
| To                        | 13732.00 ft          |
| Casing/Tubing Size        | 5.5 in               |
| Weight                    | 20 lbm/ft            |
| Grade                     | N/A                  |
| From                      | 0.00 ft              |
| To                        | 13717.00 ft          |
| Max Recorded Temperatures | 198 degF             |
| Logger on Bottom          | 29-Sep-2019 23:00:00 |
| Unit Number               | 2157                 |
| Recorded By               | Albert Ng            |
| Witnessed By              | Keith Kershnik       |

## 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 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.

## Contents

1. Header
2. Disclaimer
3. Contents
4. Well Sketch
5. Borehole Size/Casing/Tubing Record
6. Remarks and Equipment Summary
7. Import (2) of IBC Fluid Properties Measurement
8. 1A IBC SLG MAIN PASS @10DEG X 6IN @0PSI [5:100]
  - 8.1 Integration Summary
  - 8.2 Software Version
  - 8.3 Composite Summary
  - 8.4 Log ( Import (2) of IBC SLG )
  - 8.5 Parameter Listing
9. 1A IBC SLG COMPOSITE MAIN PASS @10DEG X 6IN @0PSI [2:100]
  - 9.1 Integration Summary
- 10.3 Log ( Import (2) of IBC Goodwin )
11. 1A IBC SLG REPEAT PASS 1 @10DEG X 6IN @0PSI [5:100]
  - 11.1 Integration Summary
  - 11.2 Software Version
  - 11.3 Composite Summary
  - 11.4 Log ( Import (2) of IBC SLG )
  - 11.5 Parameter Listing
12. 1A IBC SLG COMPOSITE REPEAT PASS 1 @10DEG X 6IN @0PSI [2:100]
  - 12.1 Integration Summary
  - 12.2 Composite Summary
  - 12.3 Log ( Import (2) of IBC SLG Composite )
  - 12.4 Parameter Listing
13. Xyz ( Import (2) of IBC Fluid Acoustic Slowness vs Depth 6.0 in )
14. Xyz ( Import (2) of IBC Acoustic Impedance of Mud vs

9.2 Composite Summary

9.3 Log ( Import (2) of IBC SLG Composite )

9.4 Parameter Listing

10. 1A IBC GOODWIN MAIN PASS @10DEG X 6IN

@0PSI [0.1:100]

10.1 Integration Summary

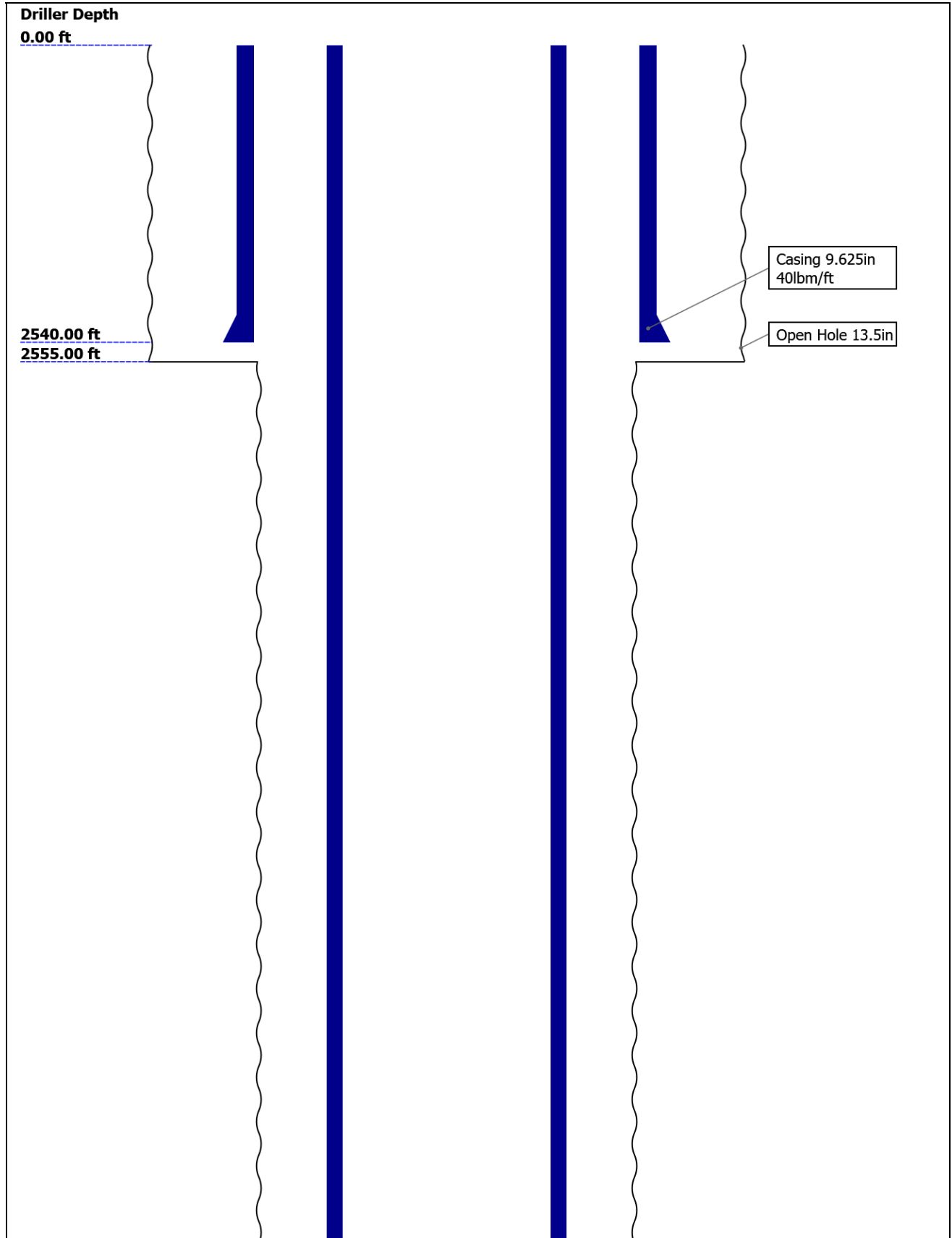
10.2 Composite Summary

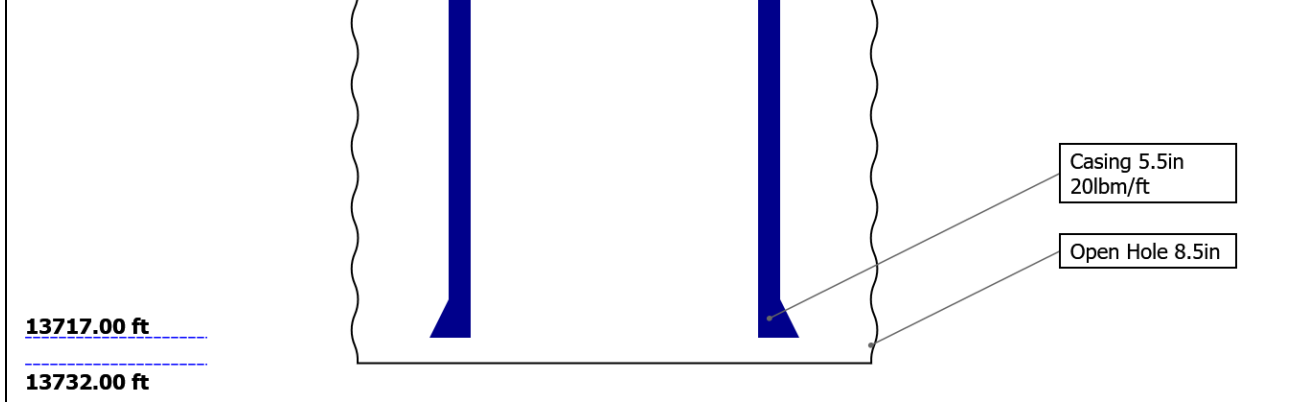
Depth 6.0 in )

15. Calibration Report

16. Tail

## Well Sketch



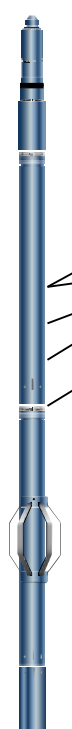


### Borehole Size/Casing/Tubing Record

|                       |       |       |  |  |  |
|-----------------------|-------|-------|--|--|--|
| Bit                   |       |       |  |  |  |
| Bit Size ( in )       | 13.5  | 8.5   |  |  |  |
| Top Driller ( ft )    | 0     | 2555  |  |  |  |
| Top Logger ( ft )     | 0     | 2555  |  |  |  |
| Bottom Driller ( ft ) | 2555  | 13732 |  |  |  |
| Bottom Logger ( ft )  | 2555  | 13732 |  |  |  |
| Casing                |       |       |  |  |  |
| Size ( in )           | 9.625 | 5.5   |  |  |  |
| Weight ( lbm/ft )     | 40    | 20    |  |  |  |
| Inner Diameter ( in ) | 8.835 | 4.778 |  |  |  |
| Grade                 | N/A   | N/A   |  |  |  |
| Top Driller ( ft )    | 0     | 0     |  |  |  |
| Top Logger ( ft )     | 0     | 0     |  |  |  |
| Bottom Driller ( ft ) | 2540  | 13717 |  |  |  |
| Bottom Logger ( ft )  | 2540  | 13717 |  |  |  |

### Remarks and Equipment Summary

| 1A: Toolstring    |               | 1A: Remarks     |               |
|-------------------|---------------|-----------------|---------------|
| <b>Equip name</b> | <b>Length</b> | <b>MP name</b>  | <b>Offset</b> |
| LEH-QT            | 51.26         |                 |               |
| LEH-QT            |               |                 |               |
| <b>EDTC-B:8</b>   | <b>47.78</b>  |                 |               |
| 324               |               |                 |               |
| EDTH-B:81         |               |                 |               |
| 01                |               |                 |               |
| EDTG-A:7          |               | <b>CTEM</b>     | <b>44.28</b>  |
| 7301              |               | <b>ACCZ</b>     | <b>0.00</b>   |
| EDTC-B:83         |               | <b>HV</b>       | <b>0.00</b>   |
| 24                |               | <b>Gamma</b>    | <b>42.41</b>  |
|                   |               | <b>Ray</b>      |               |
|                   |               | <b>TelStatu</b> | <b>41.28</b>  |
|                   |               | <b>s</b>        |               |
| <b>DSLT-H</b>     | <b>41.28</b>  |                 |               |
| ECH-KH:8          |               |                 |               |
| 401               |               |                 |               |
| DSLCH             |               |                 |               |
| SLS-E:122         |               |                 |               |
| 9                 |               |                 |               |

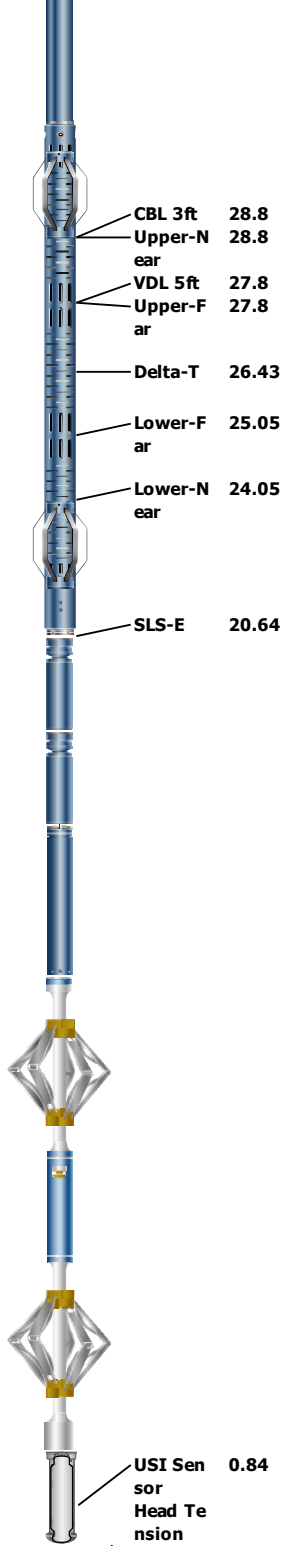


1A: Remarks

Toolstring run as per toolsketch.

All logging intervals as per client's request.

IBC data acquired in 10deg 6in resolution.



AH-184[2] 20.64

AH-184[1] 18.64

USIT-E:914 16.64

- ECH-MFA: 1781
- USAC-A:9 14
- USIS-A
- USSC-B
- IBCS-A:83 5
- FAR-SENS OR:4093
- IBC-TX
- NEAR-SEN SOR:4722
- IBC-TX
- USI-SENS OR
- IBC-TX
- EMITTER-SENSOR:4 684
- IBC-TX

Lengths are in ft  
 Maximum Outer Diameter = 6.250 in  
 Line: Sensor Location, Value: Gating Offset  
 All measurements are relative to TOOLS\_ZERO

## USIT - Fluid Properties Measurement

| Run Name | Pass Name | Start Depth(ft) | Stop Depth(ft) |
|----------|-----------|-----------------|----------------|
| Run 1    | Log[3]:Up | 7962.32         | 48.37          |

Fluid Velocity = "Automatic".  
 CFVL equals DFSL channel  
 Start Depth(ft) Stop Depth(ft) Start Value(us/ft) End Value(us/ft)

Mud Impedance = "Theoretical".  
 CZMD uses theoretical results.  
 MUD\_N\_THE=1.10  
 DFD=1.08g/cm3(9.00lbm/gal)  
 Start Depth(ft) Stop Depth(ft) Start Value(Mrayl) End Value(Mrayl)

# IBC SLG MAIN PASS @10DEG X 6IN @0PSI [5:100]

## Software Version

Acquisition System

Version

Maxwell 2019

9.0.106845.3100

## Pass Summary

| Run Name | Pass Objective | Direction | Top      | Bottom     | Start                   | Stop                   | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|----------|------------|-------------------------|------------------------|----------|-------------|-----------------------|
| 1A       | Log[3]:Up      | Up        | 48.37 ft | 7962.32 ft | 29-Sep-2019 11:07:06 PM | 30-Sep-2019 1:04:00 AM | ON       | 11.72 ft    | No                    |

All depths are referenced to toolstring zero

## Log

Company: Crestone Peak Resources Operating, LLC

Well: Kugel 1L-18H-H267

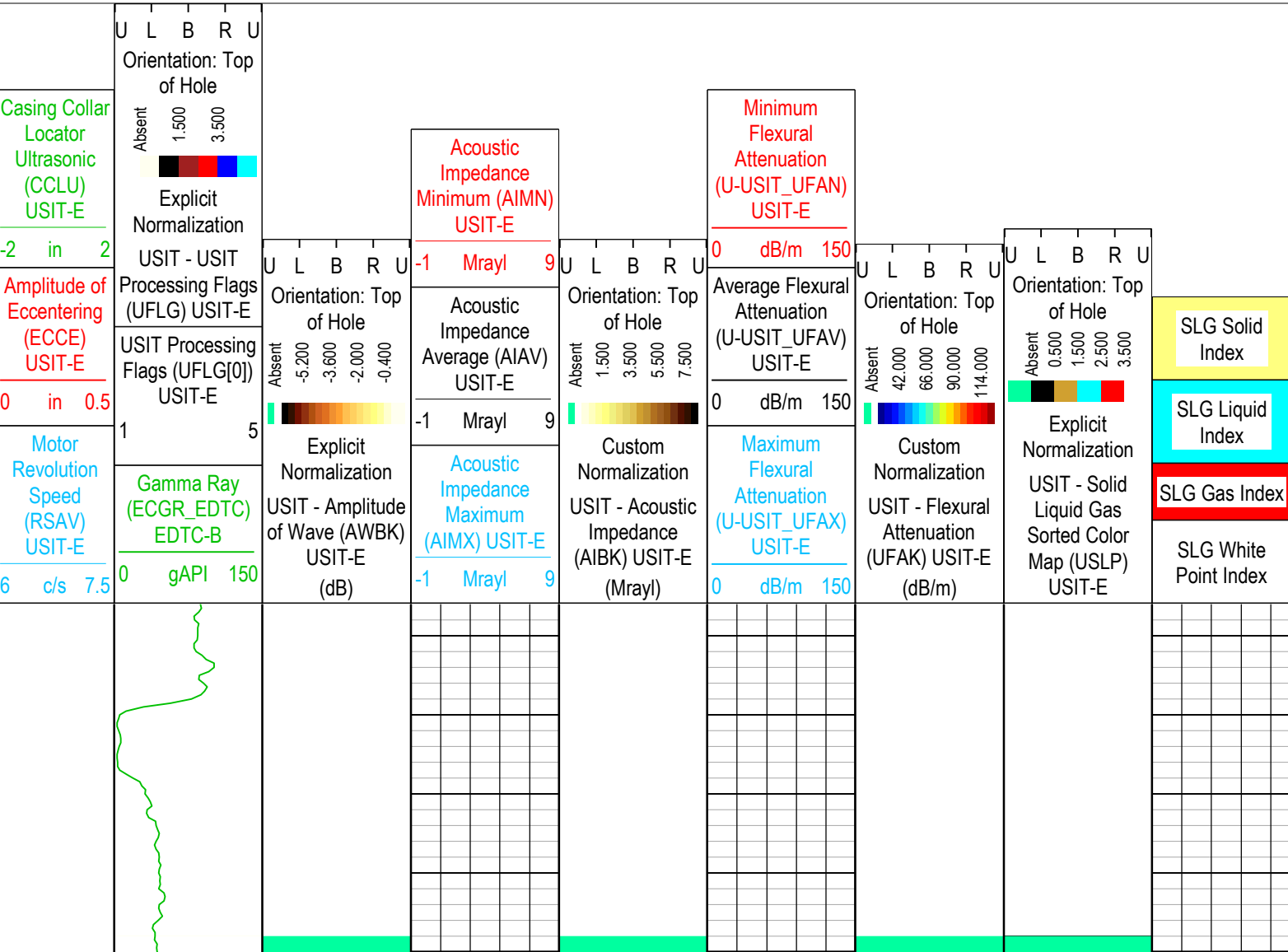
1A: Log[3]:Up:S003

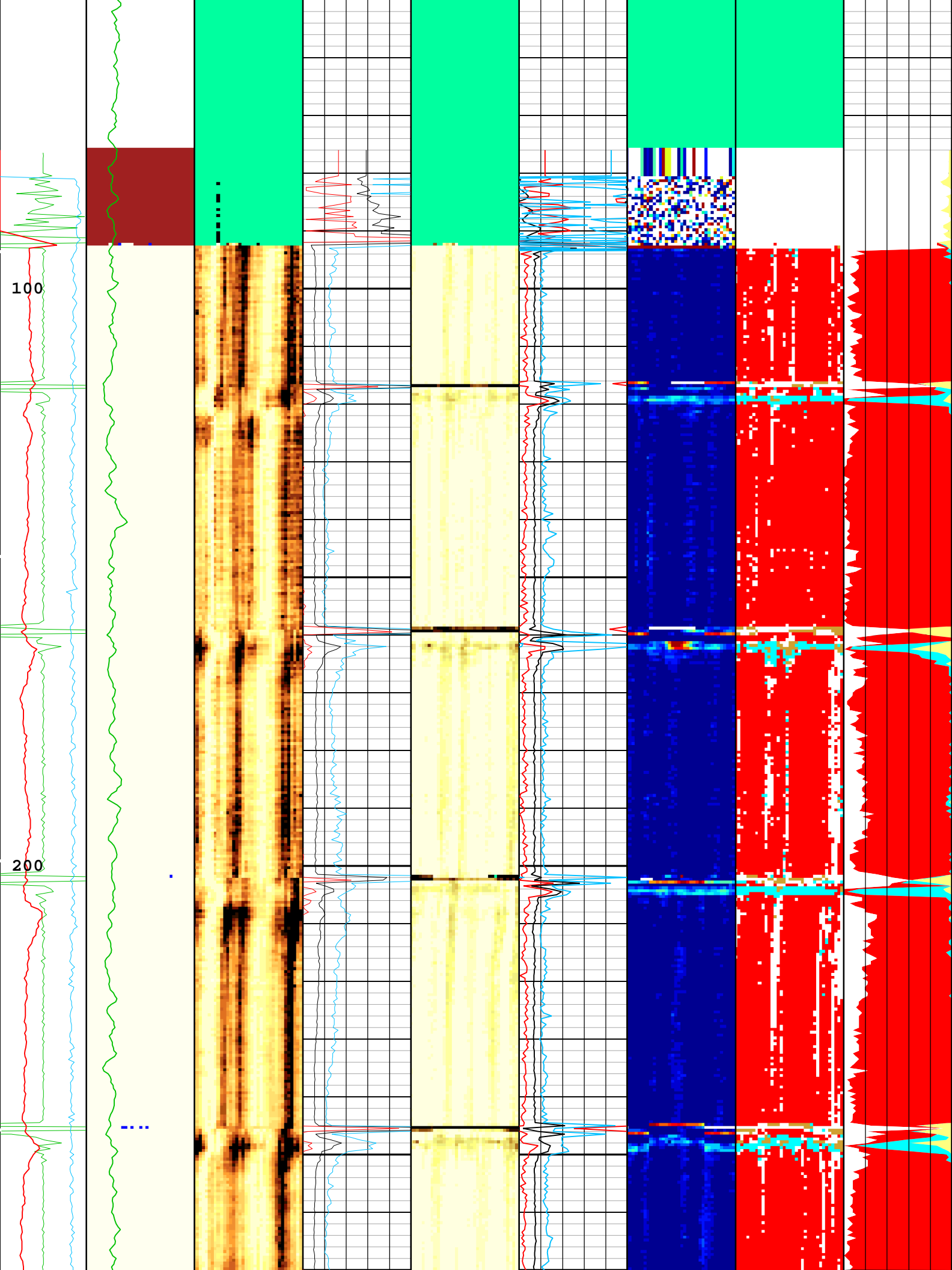
Description: USI IBC SLG Format: Log ( Import (2) of IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 30-Sep-2019 01:53:59

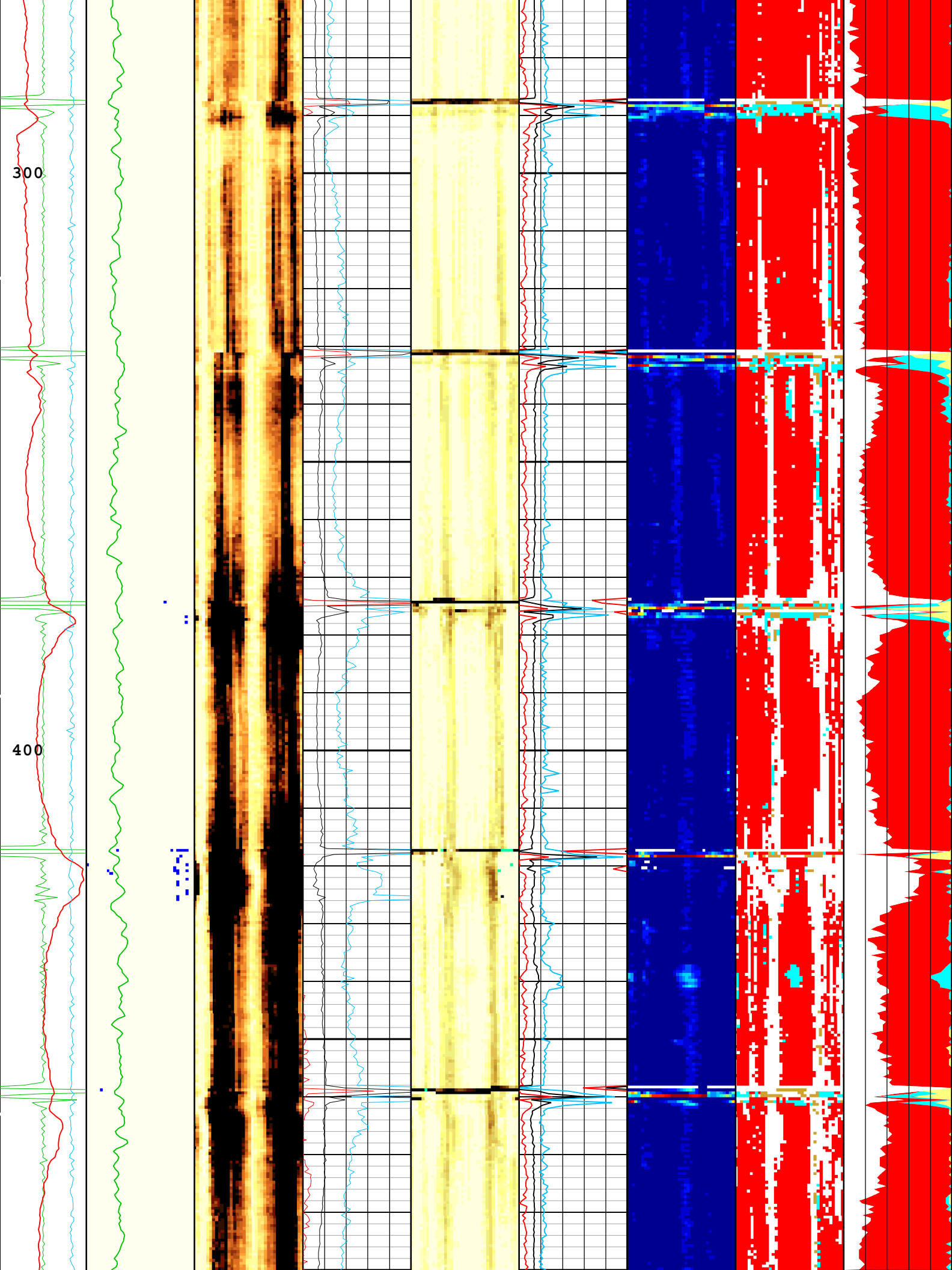
TIME\_1900 - Time Marked every 60.00 (s)

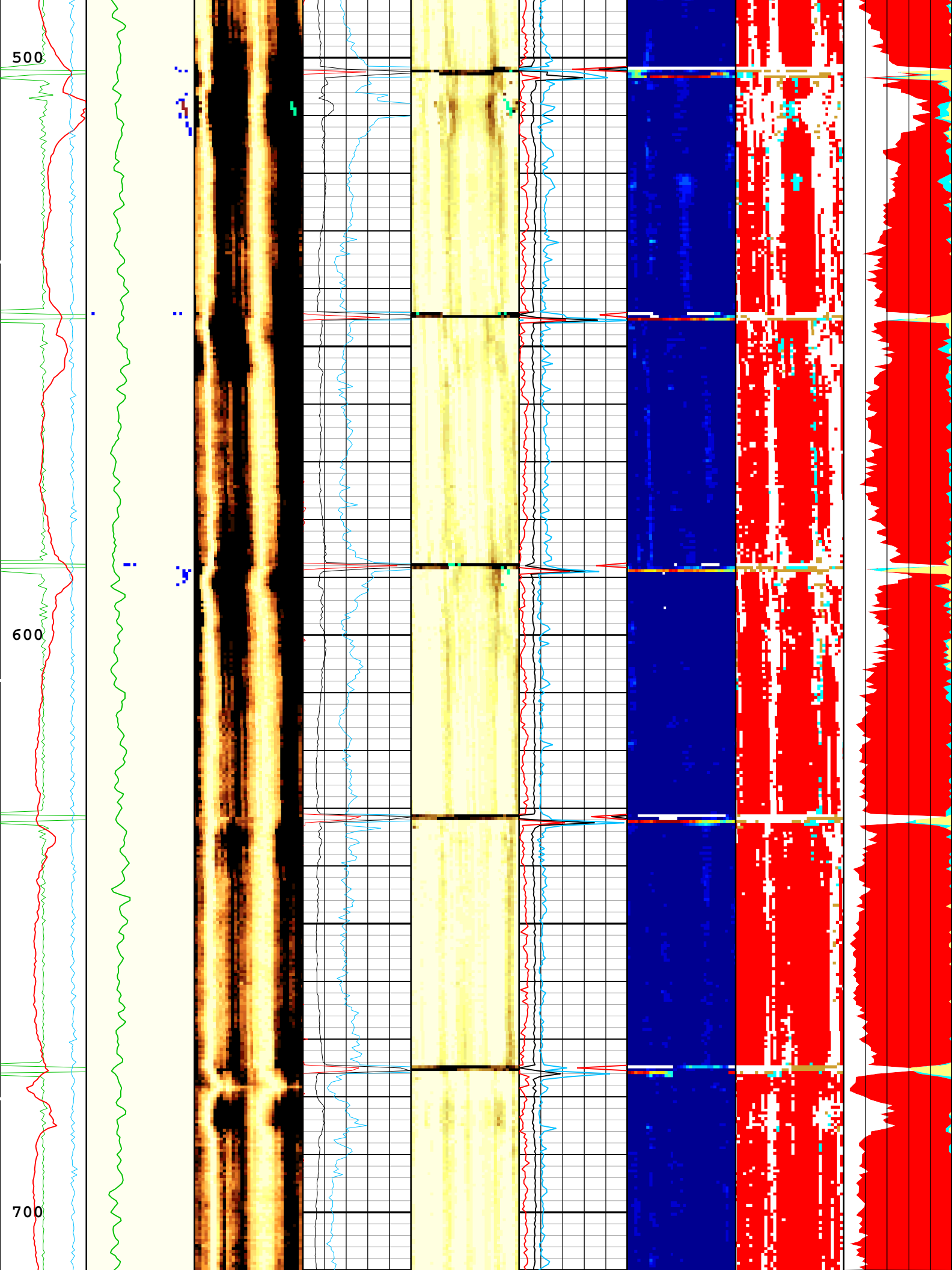
USIT Processing Flags (UFLG[0]) USIT-E

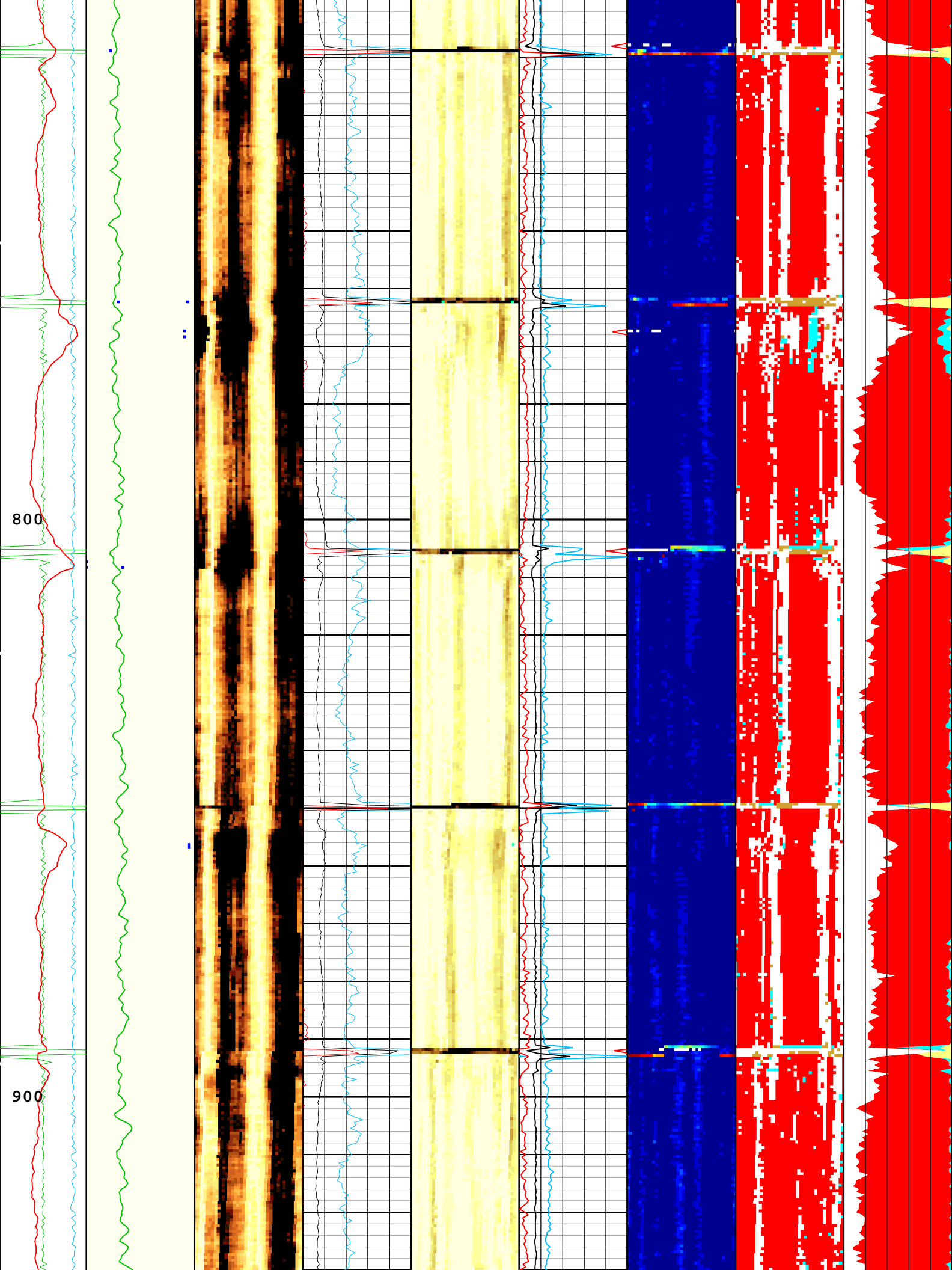
- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  Loop Processing Error

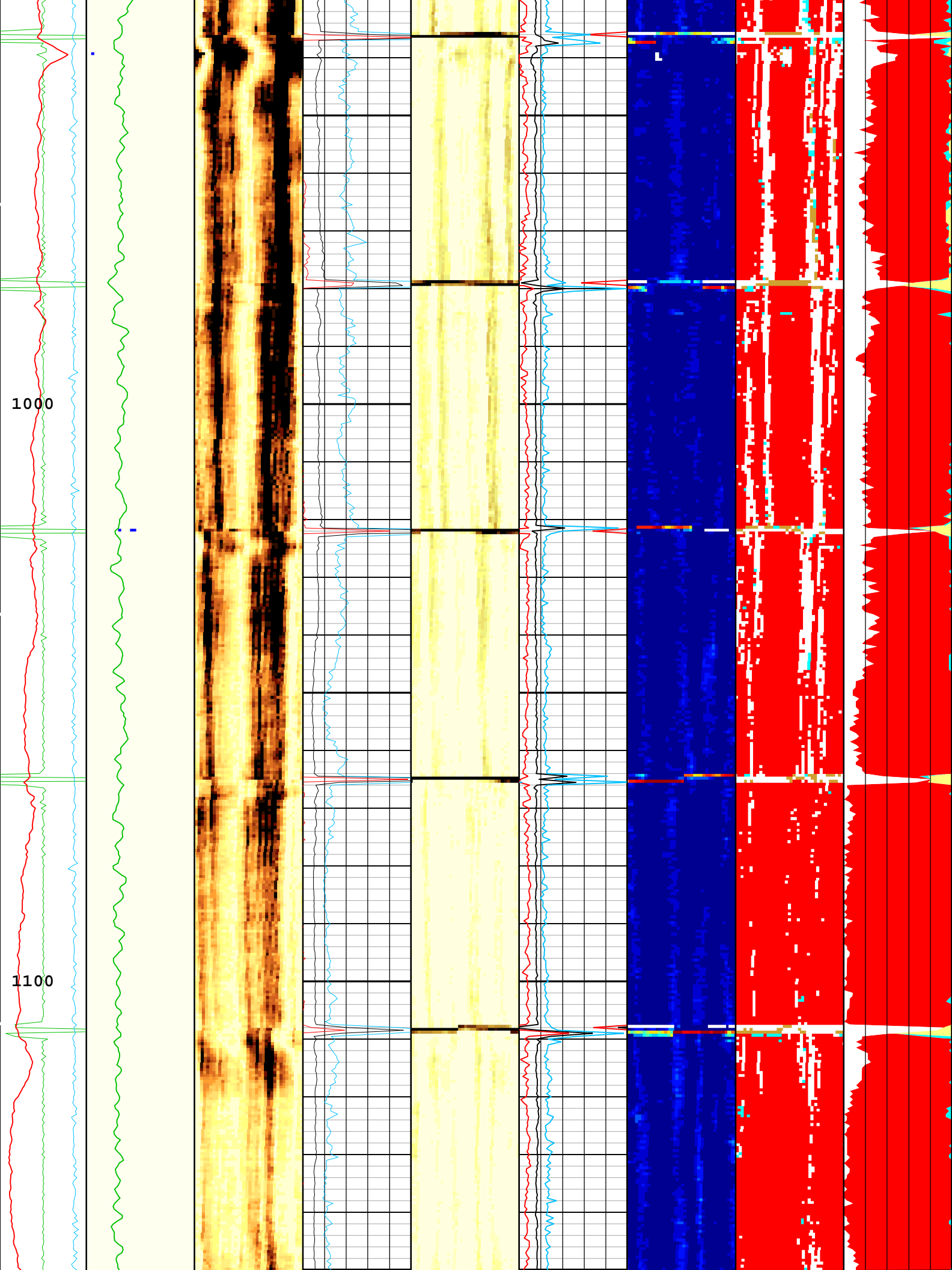


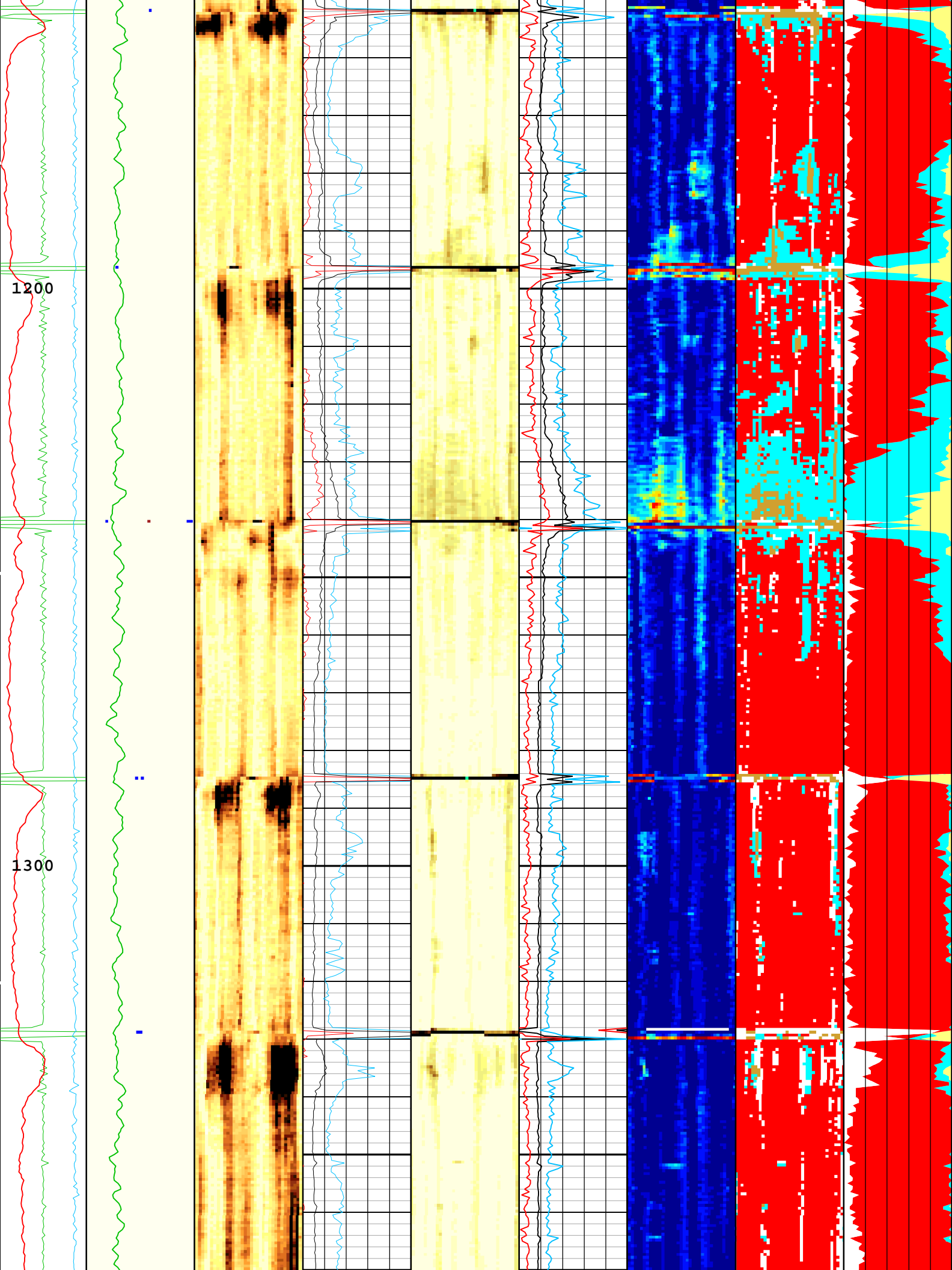


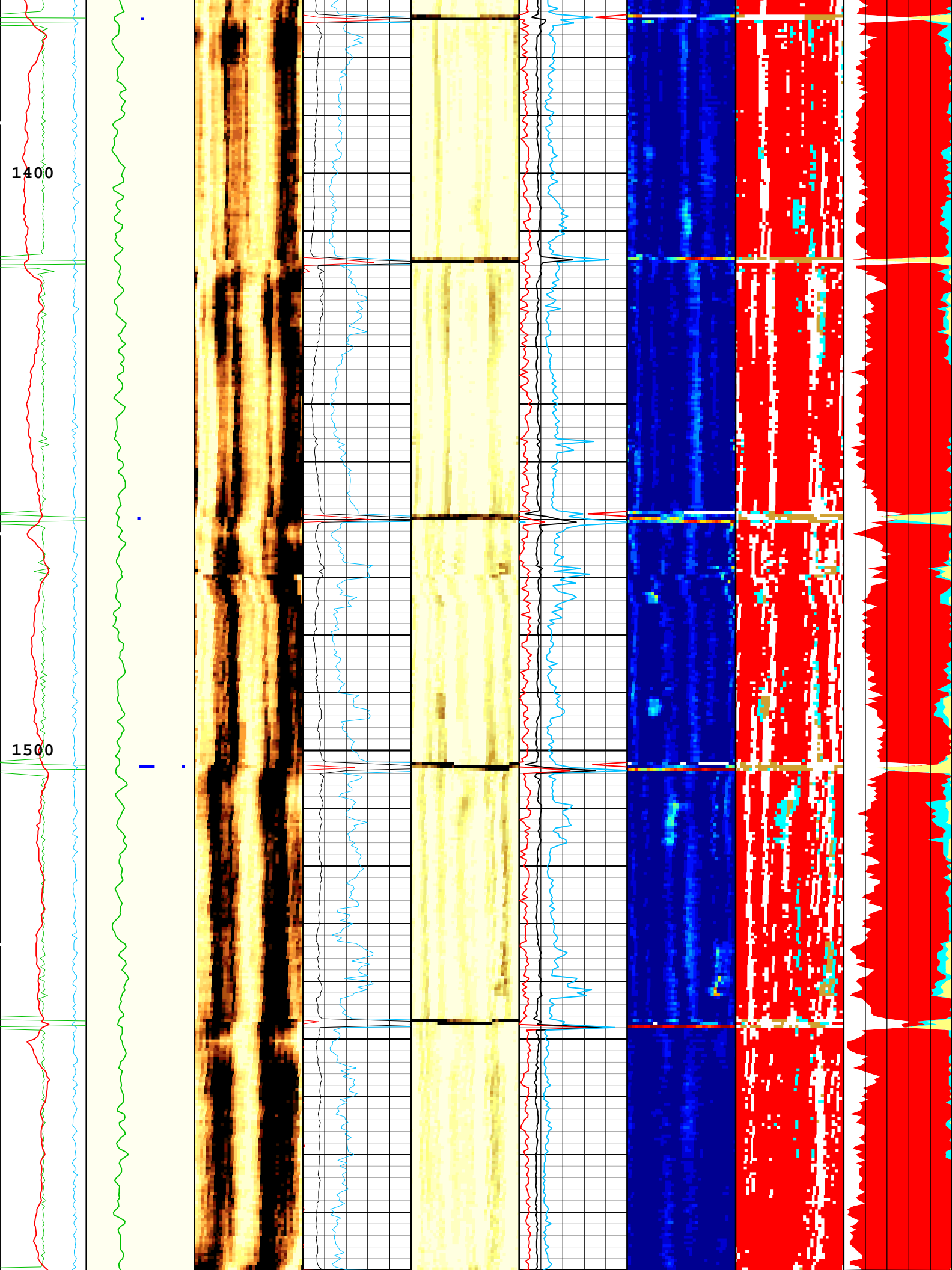


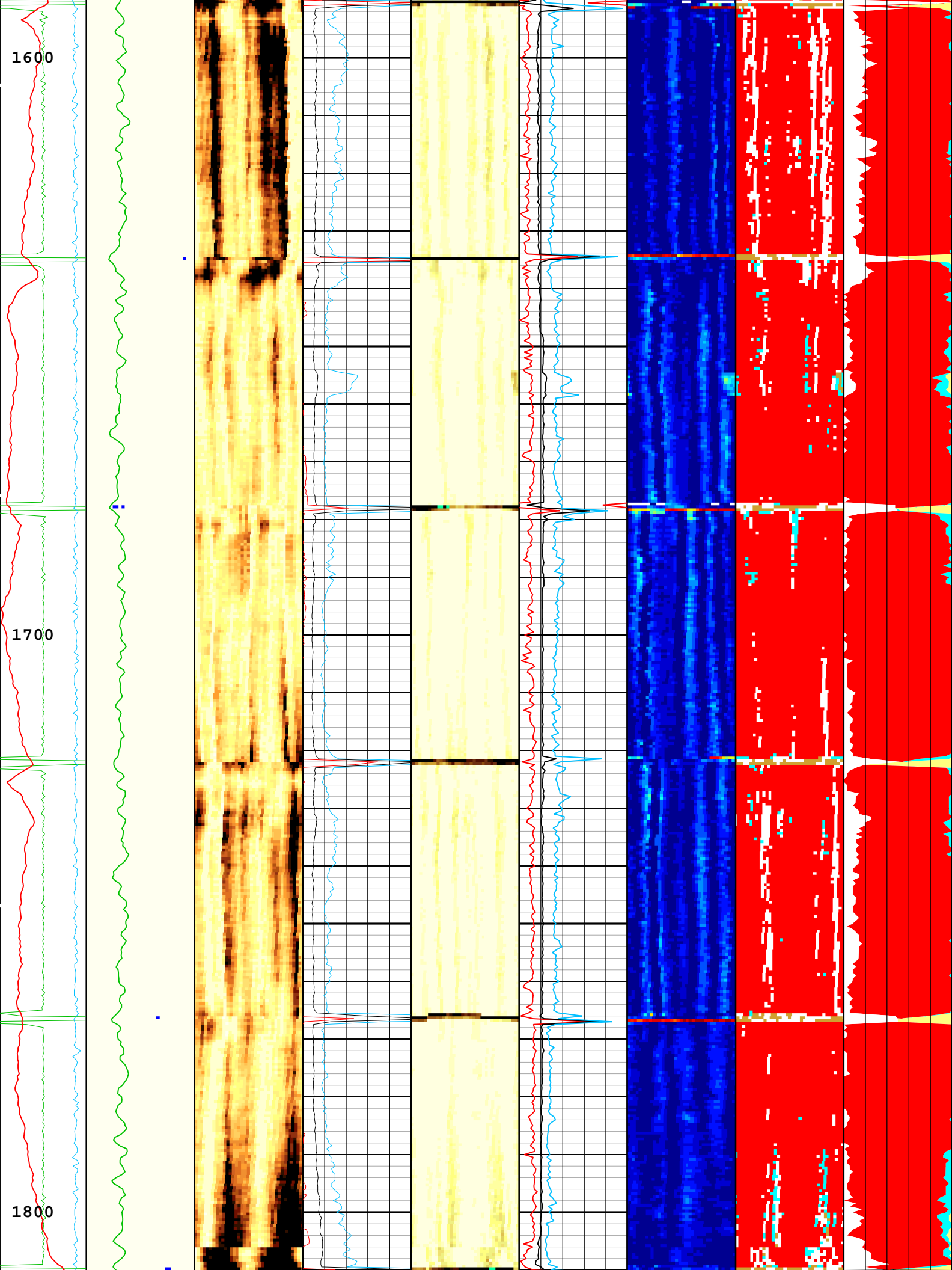


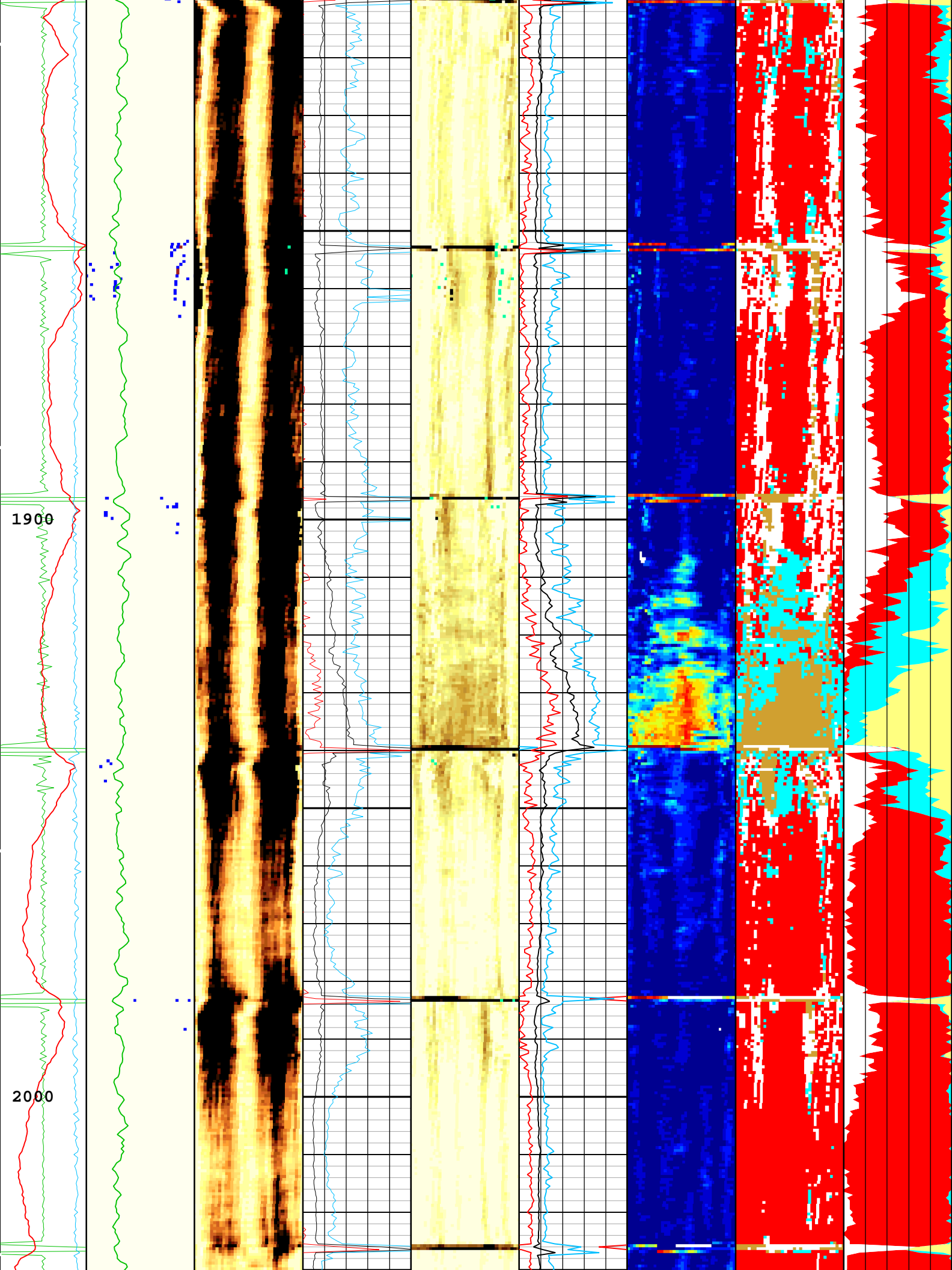


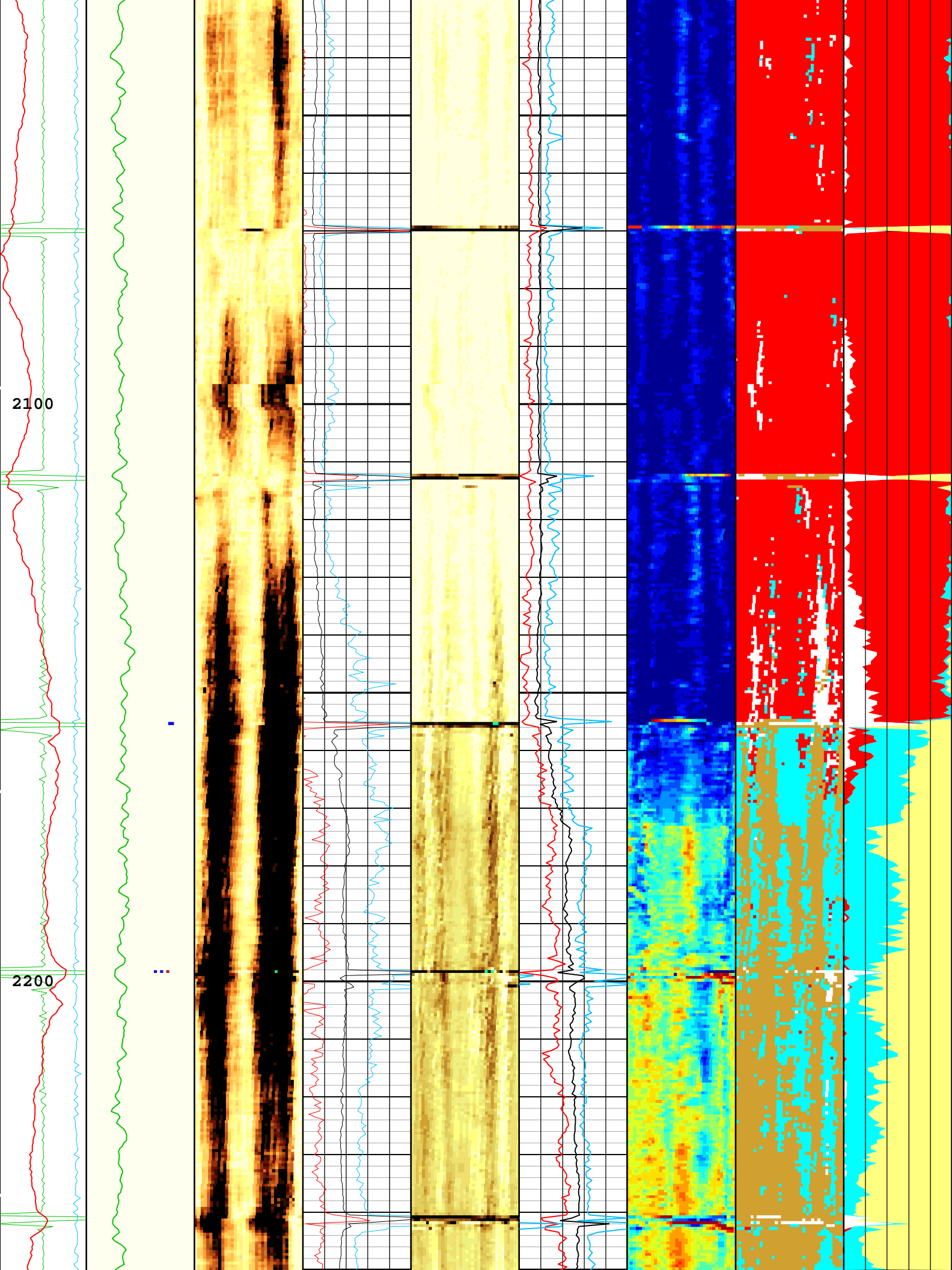


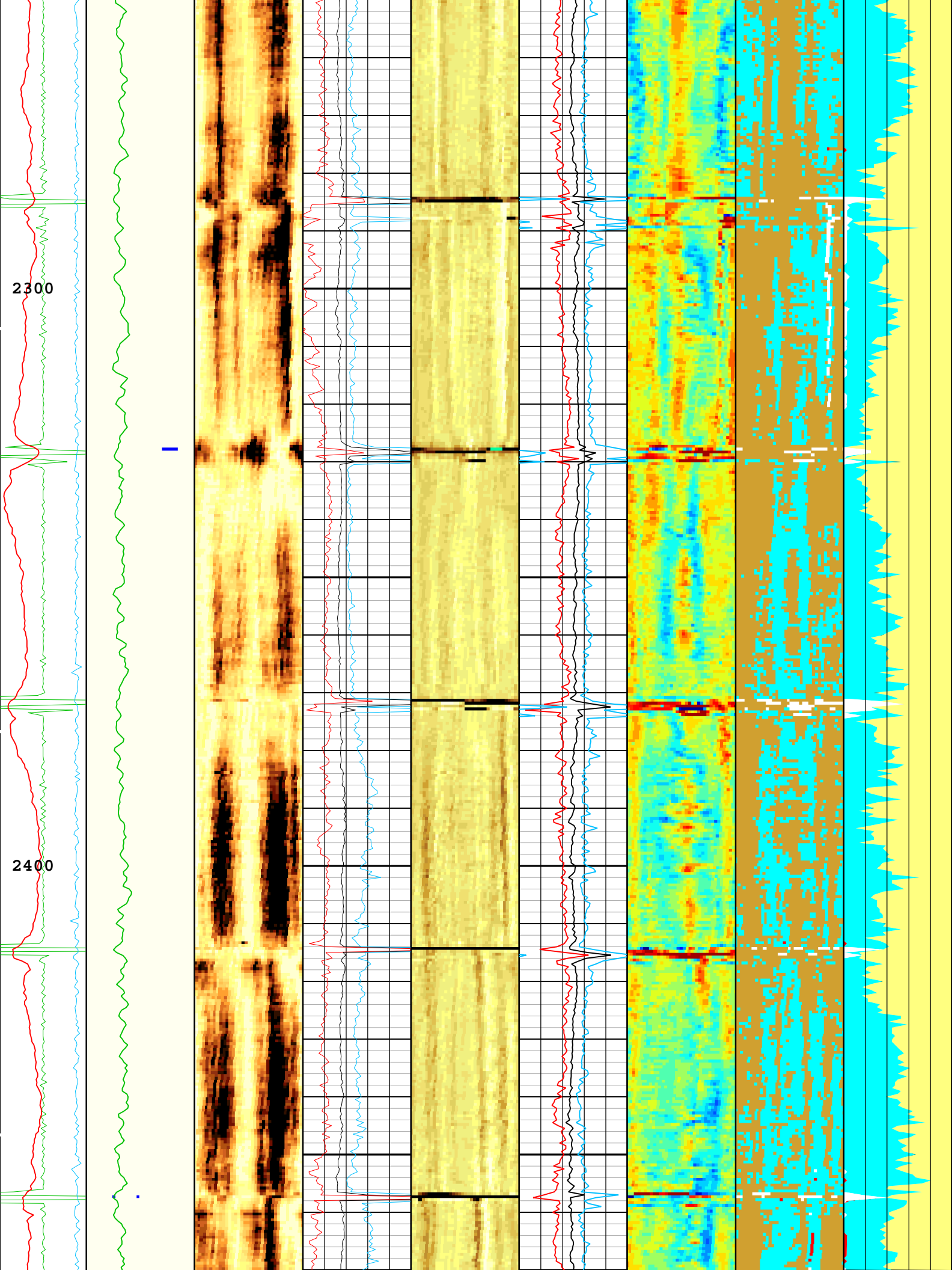


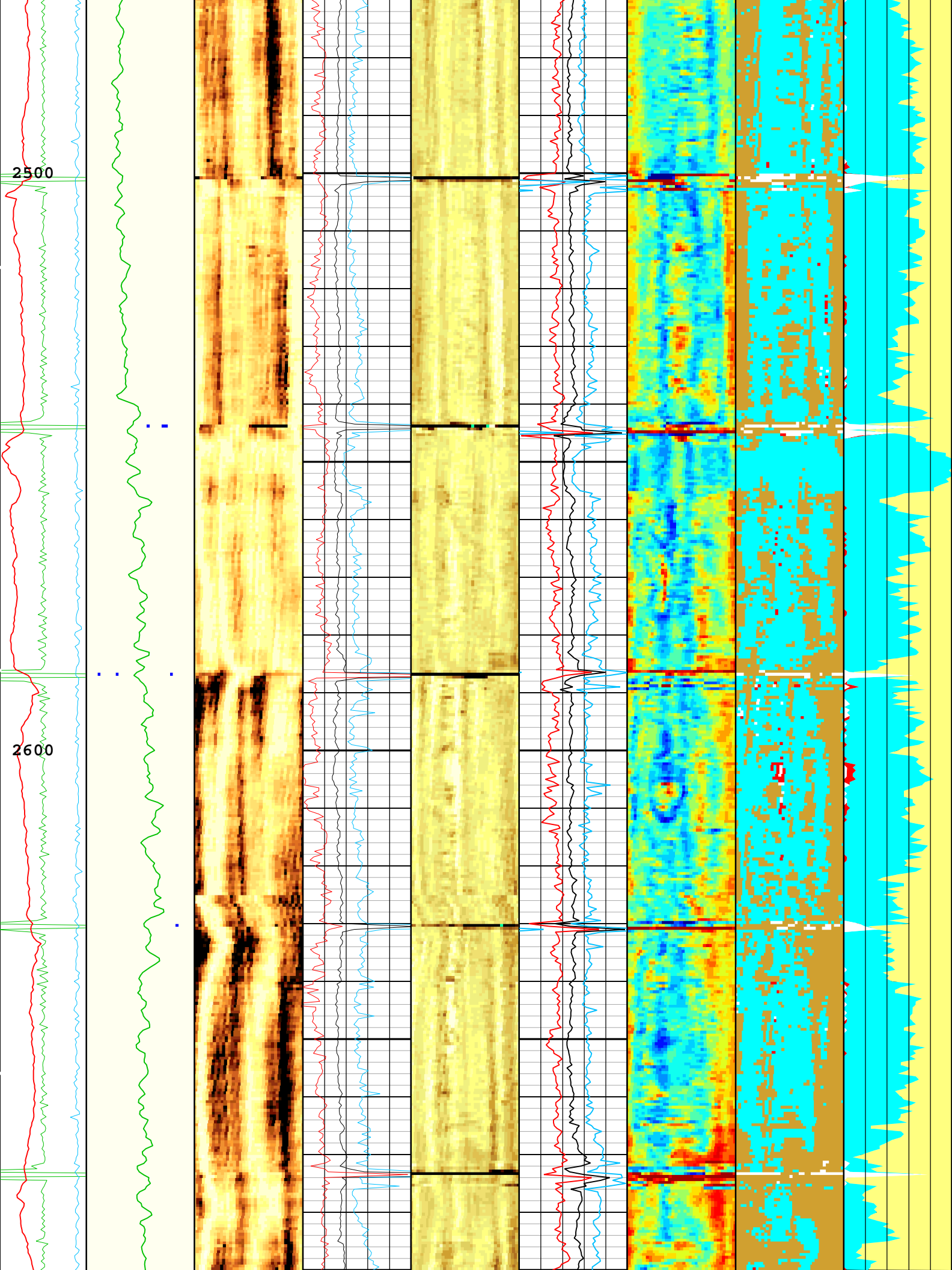


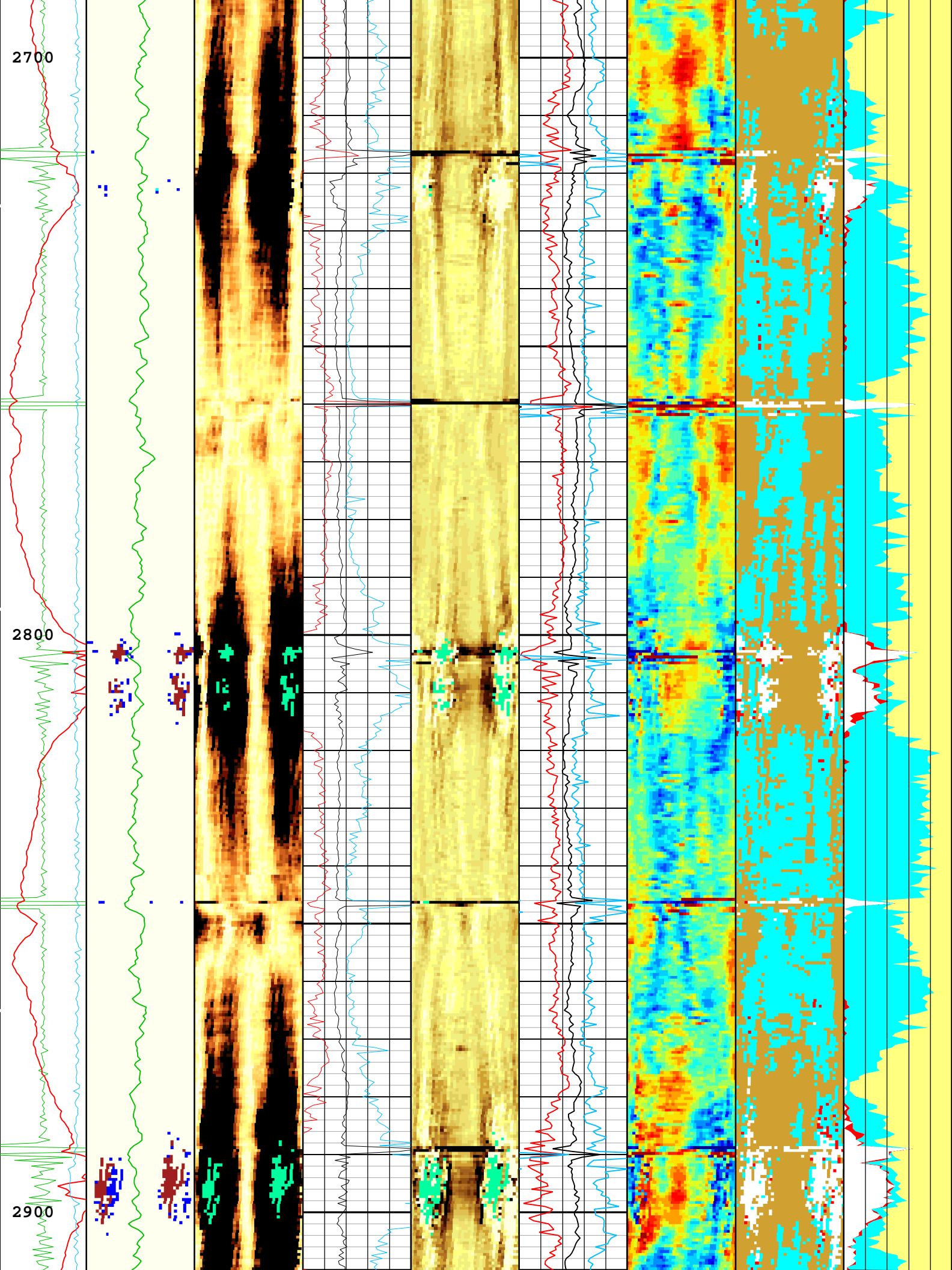


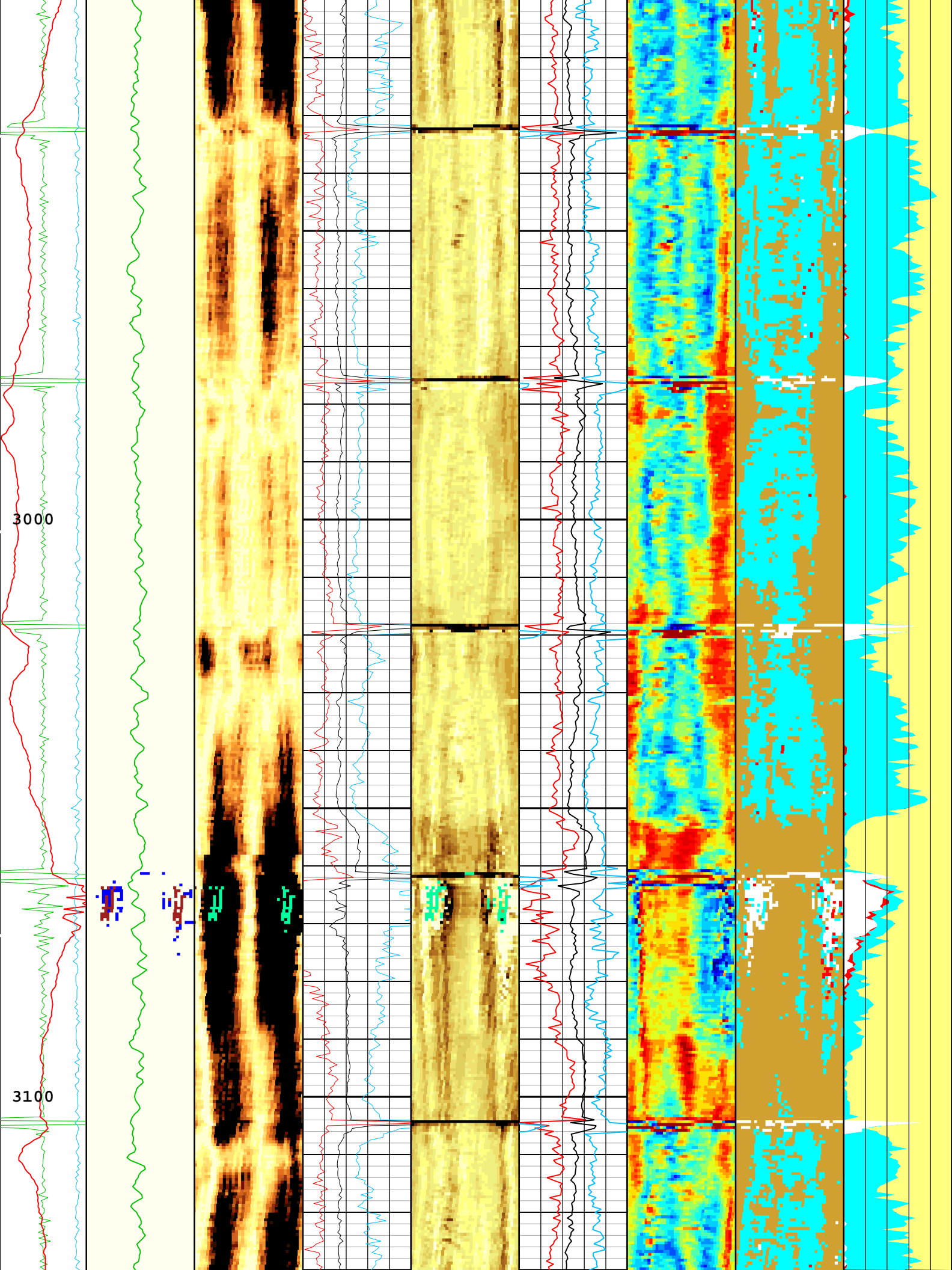


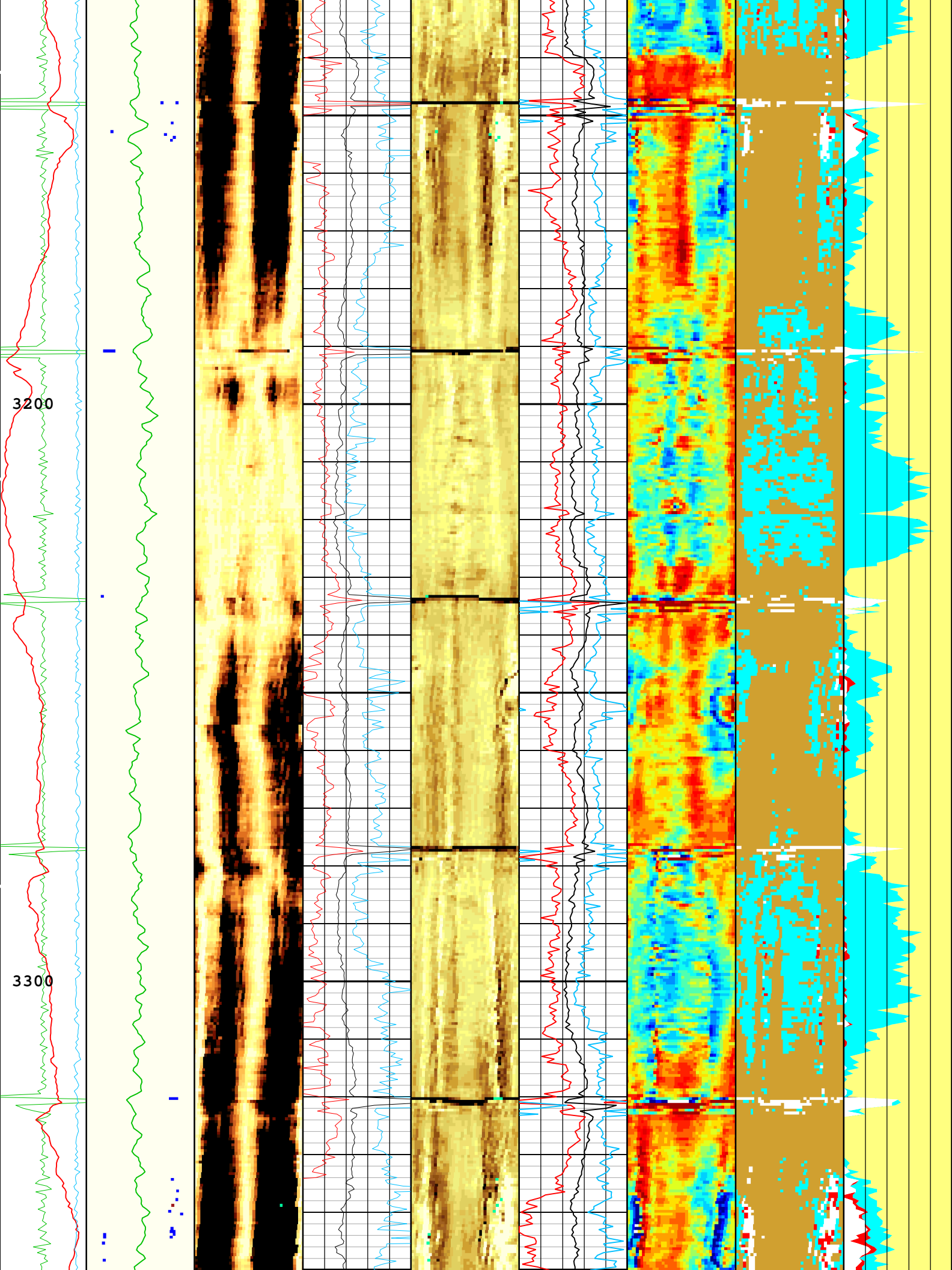


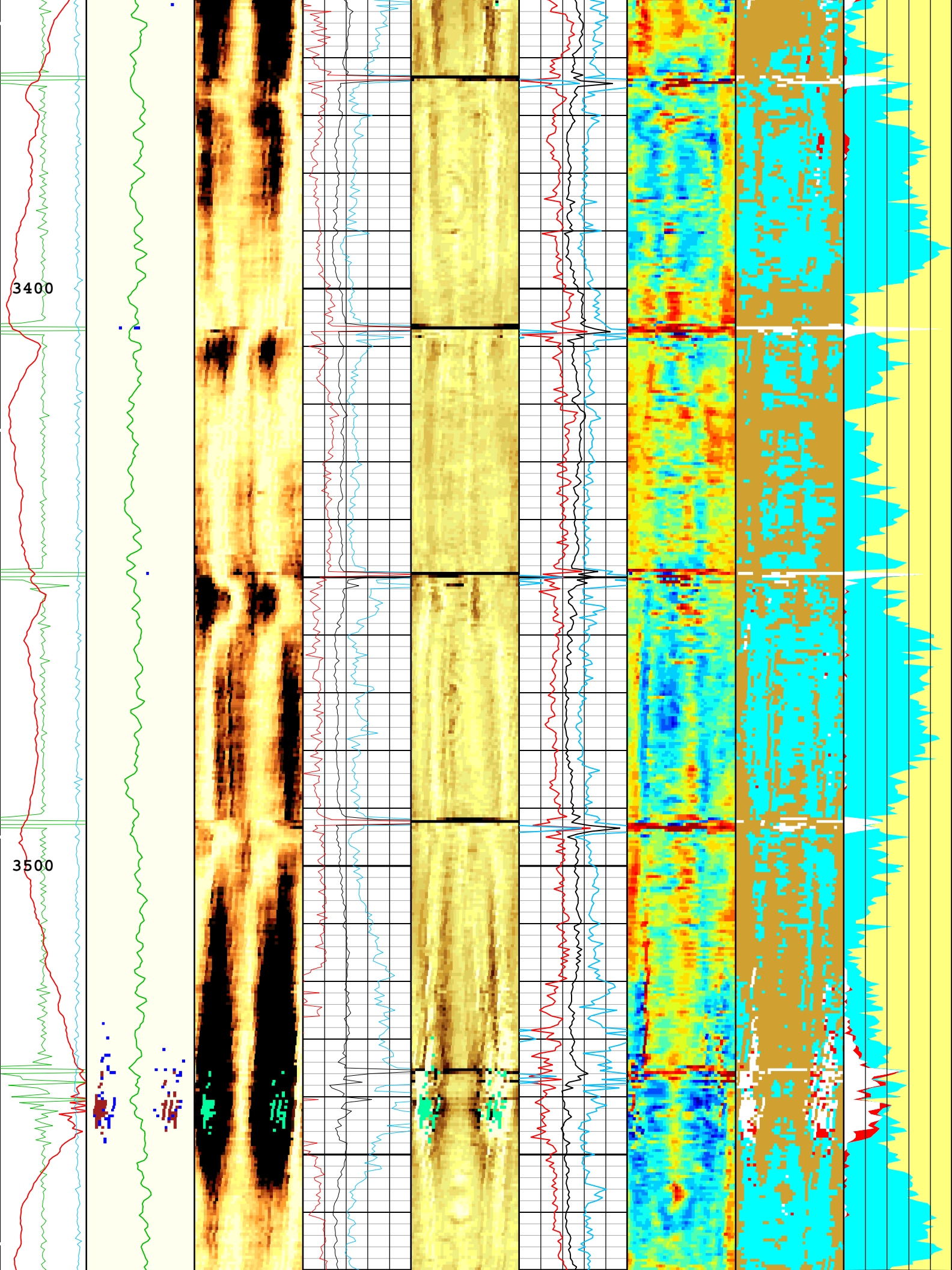


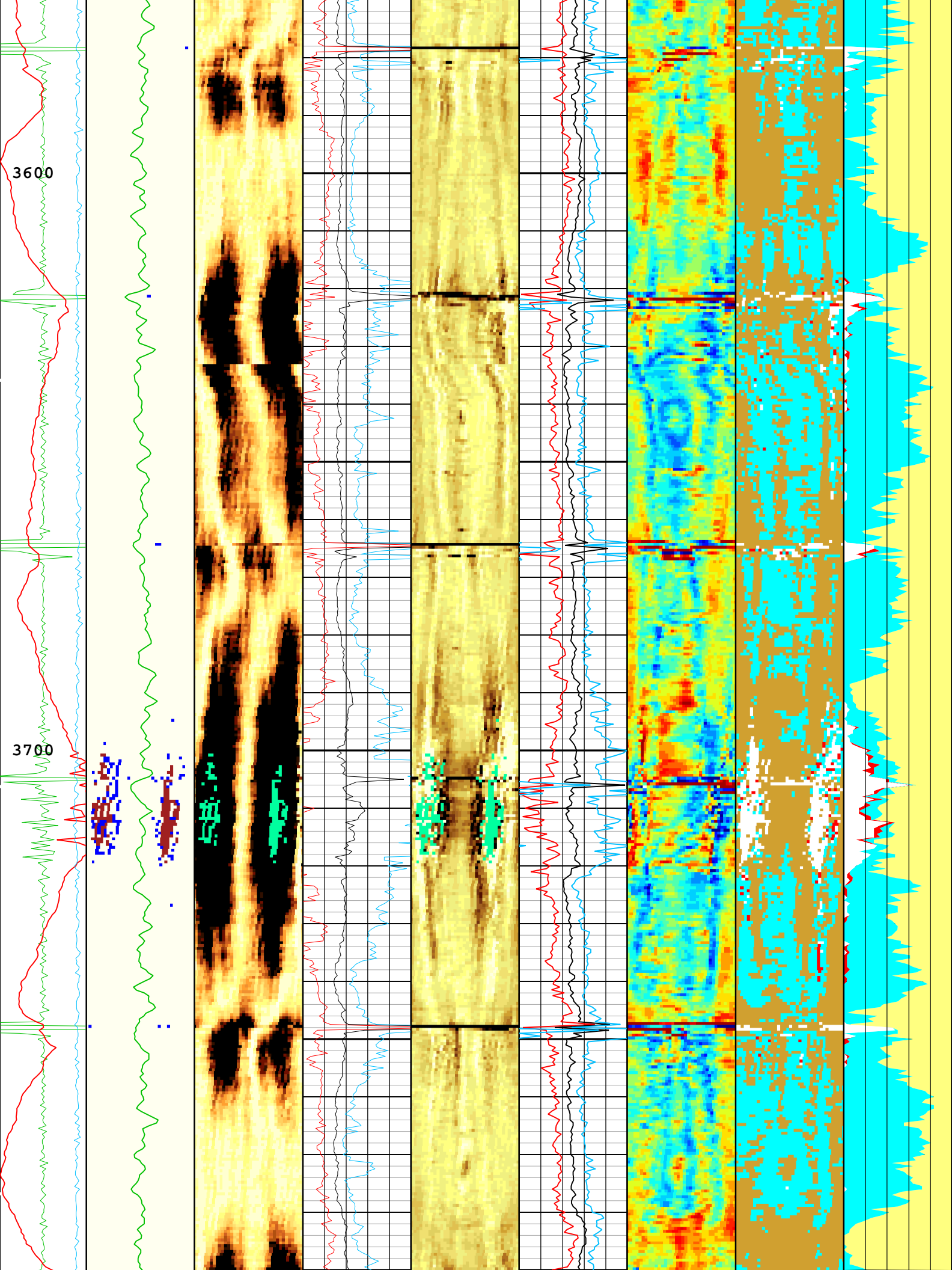


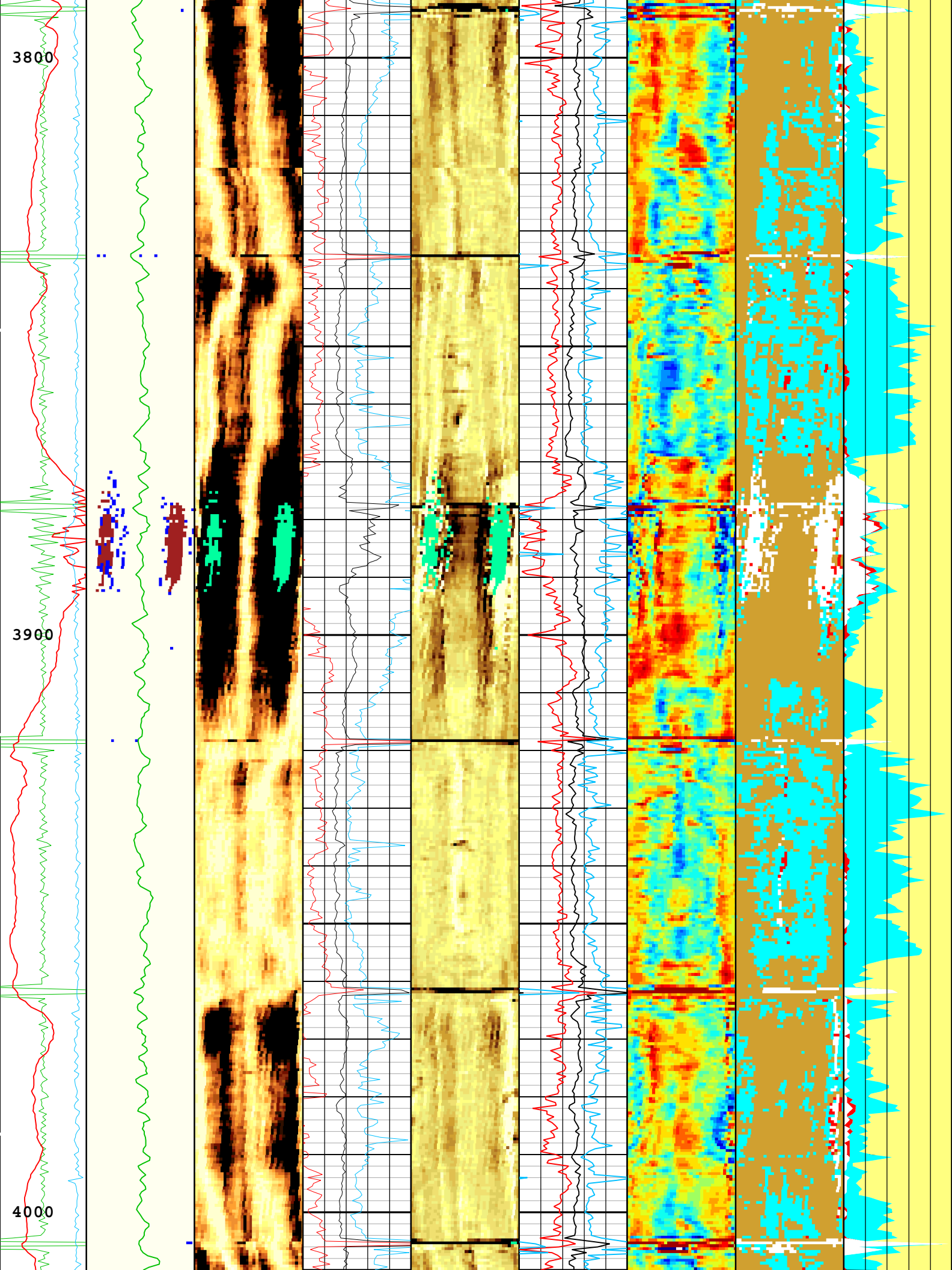


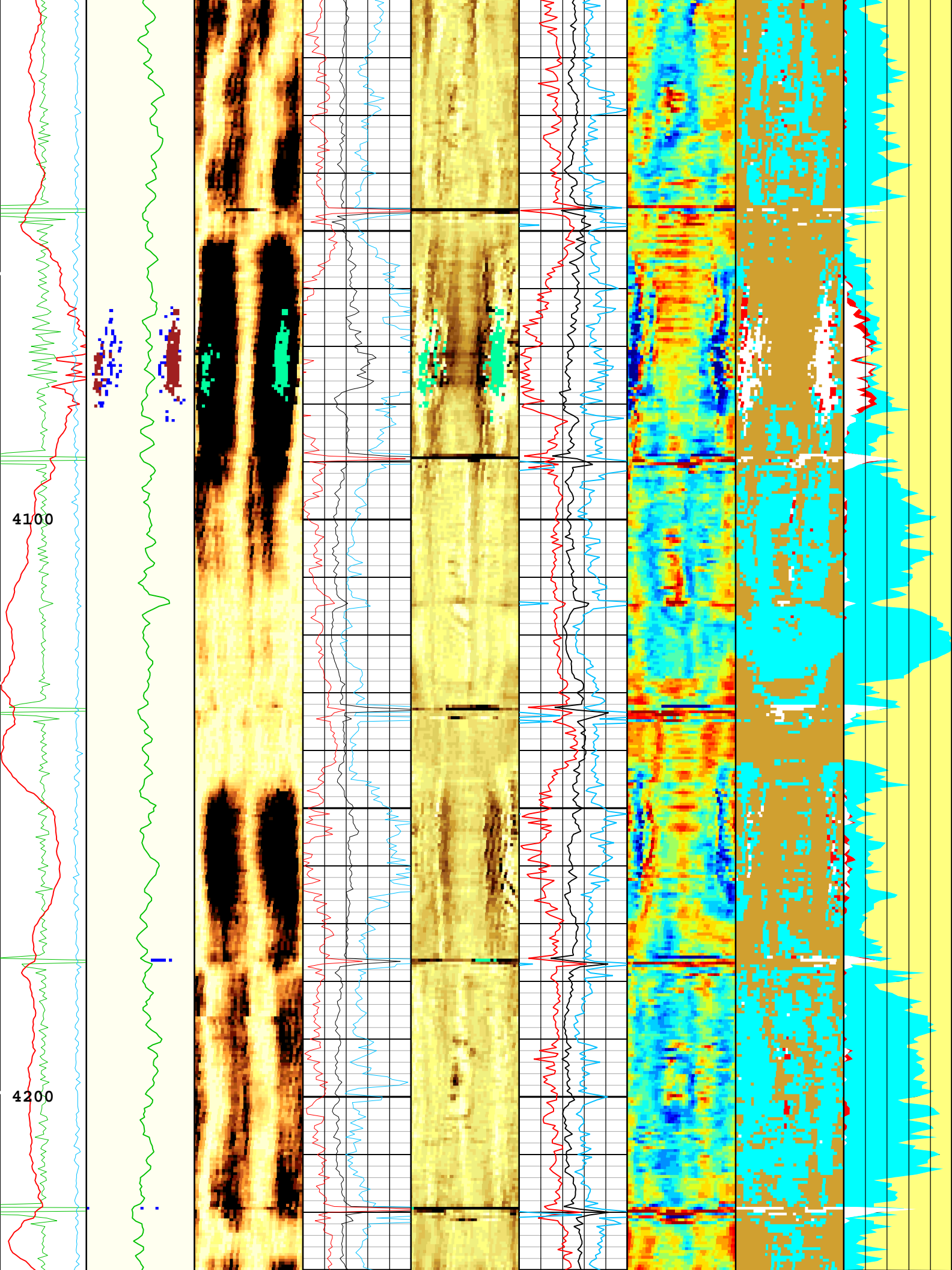


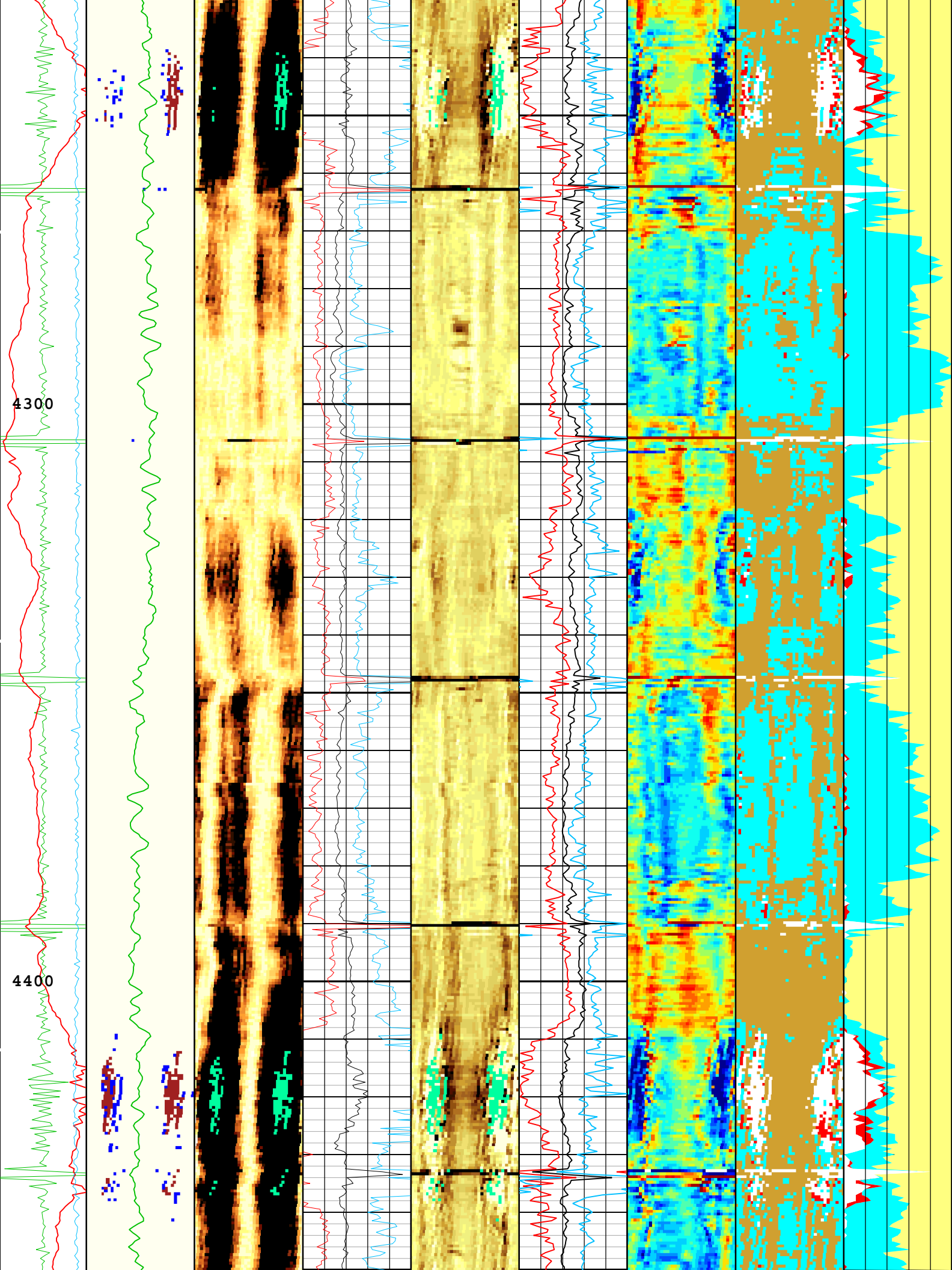


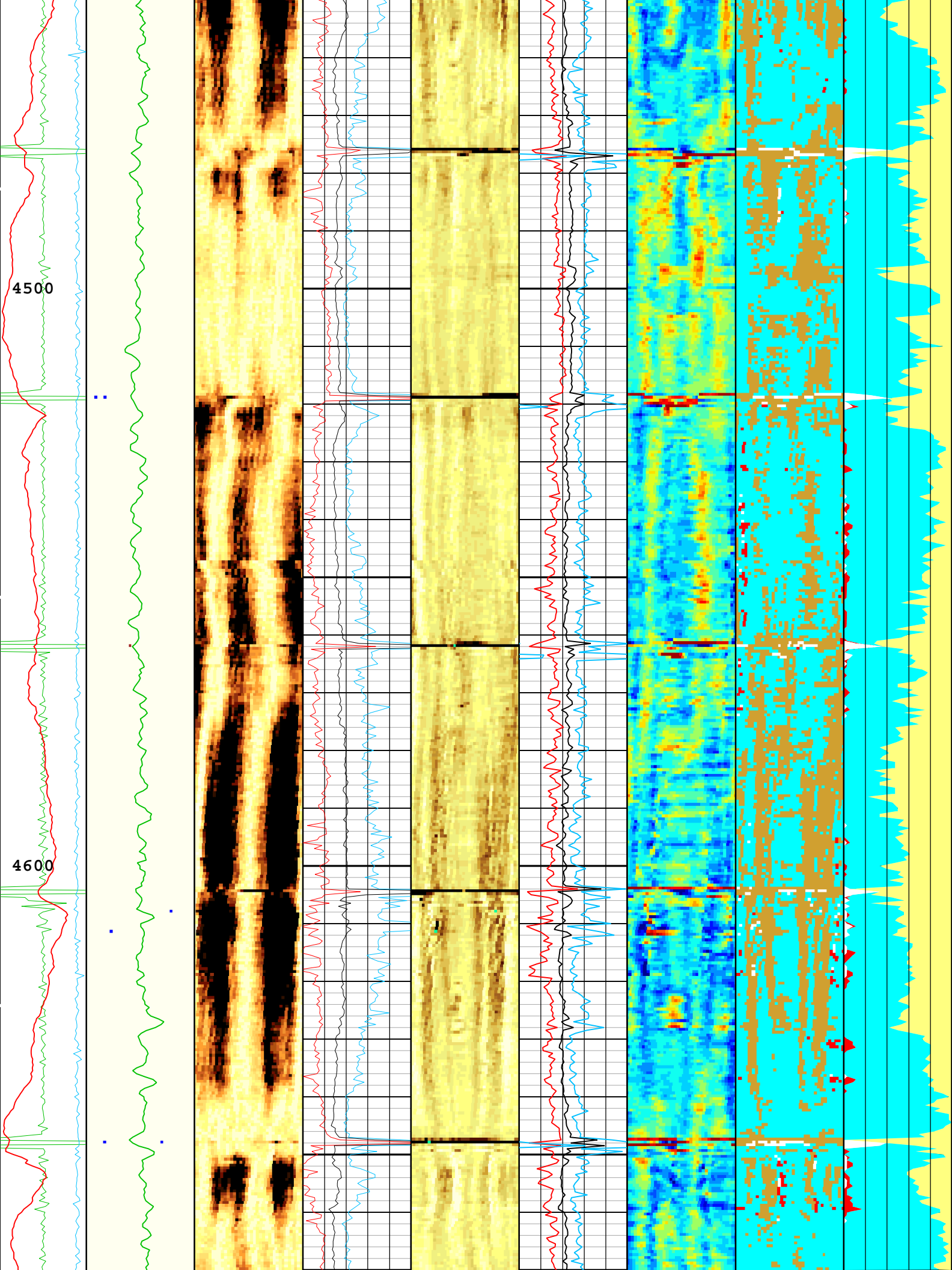


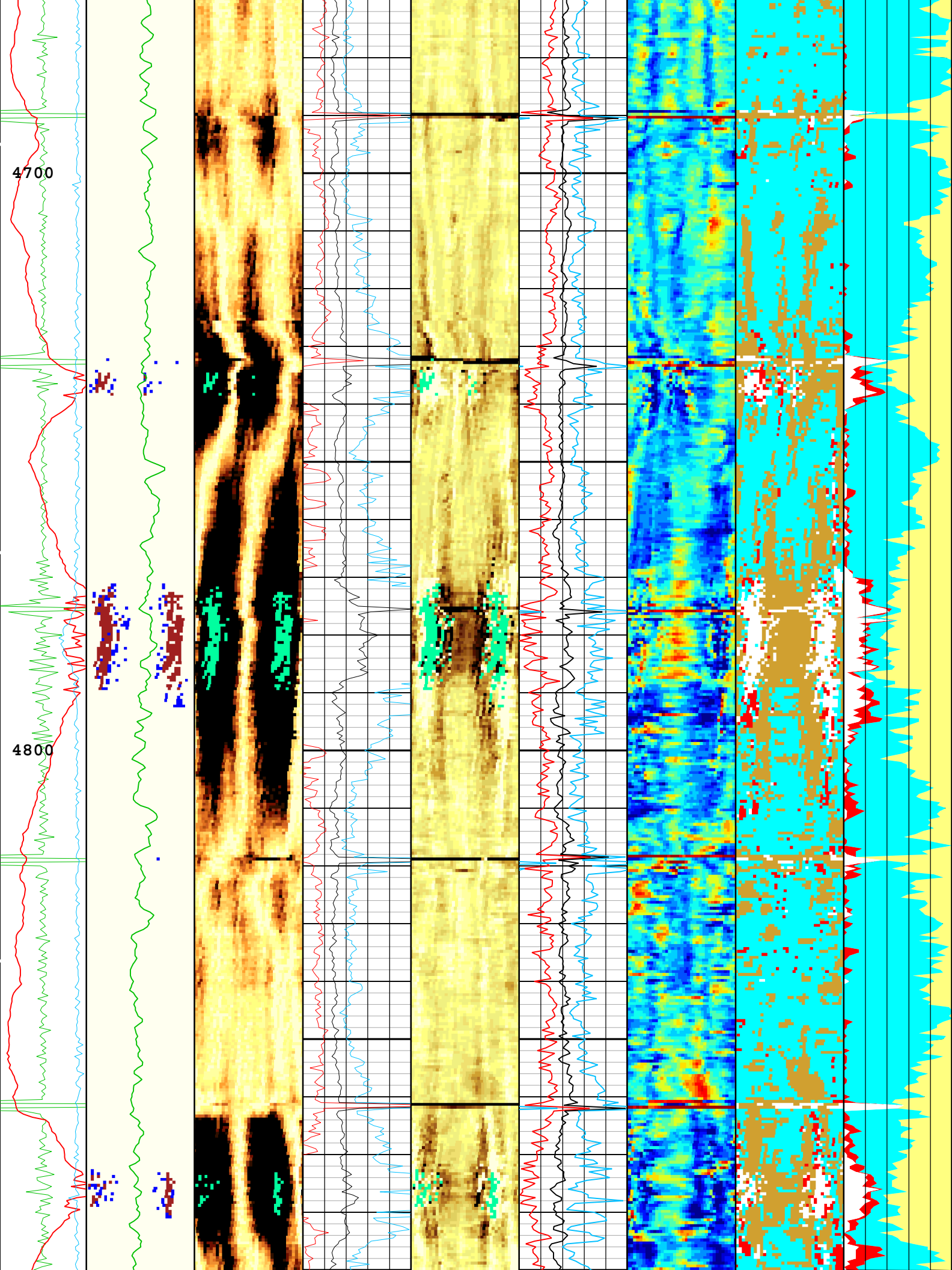


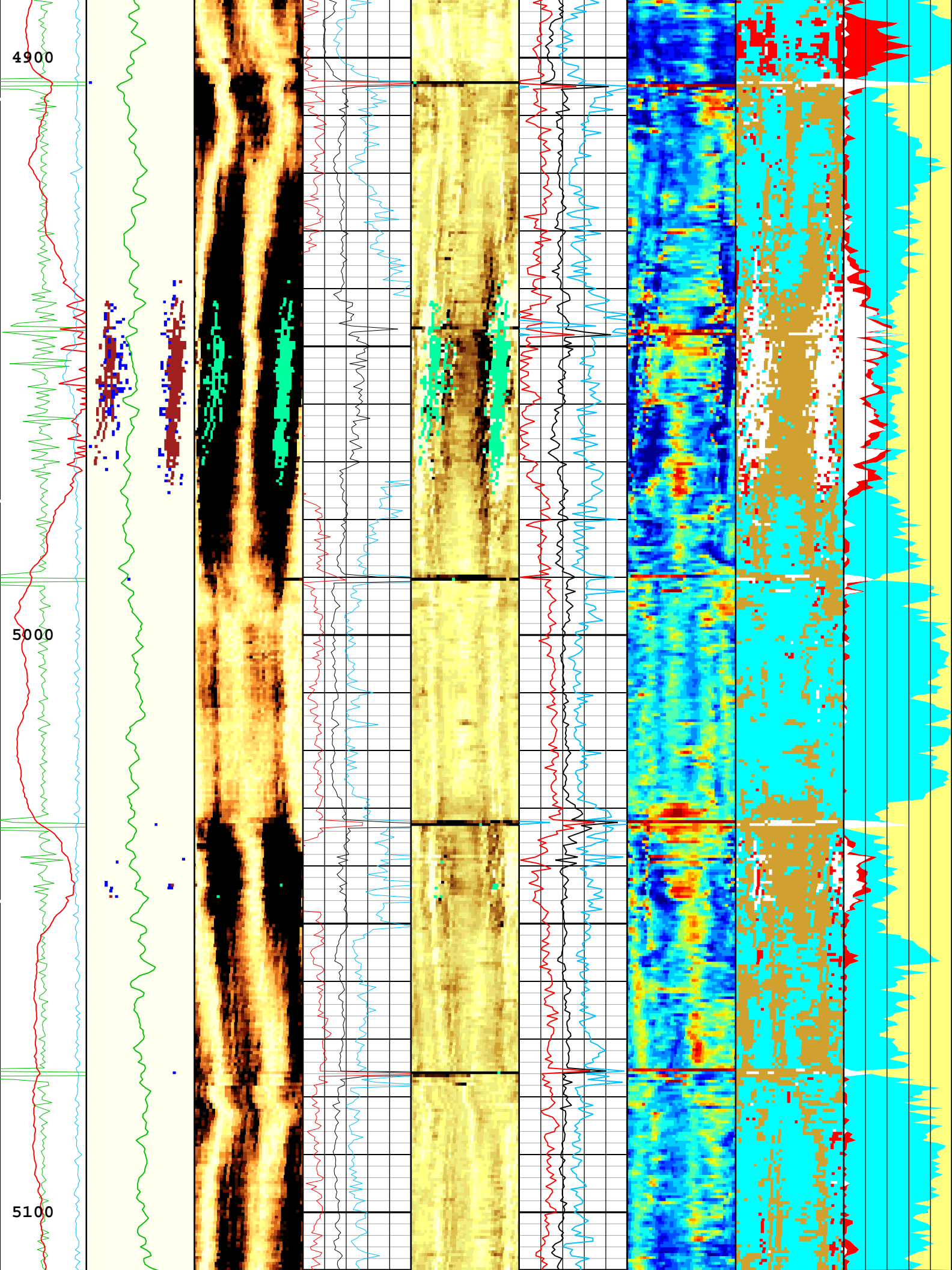


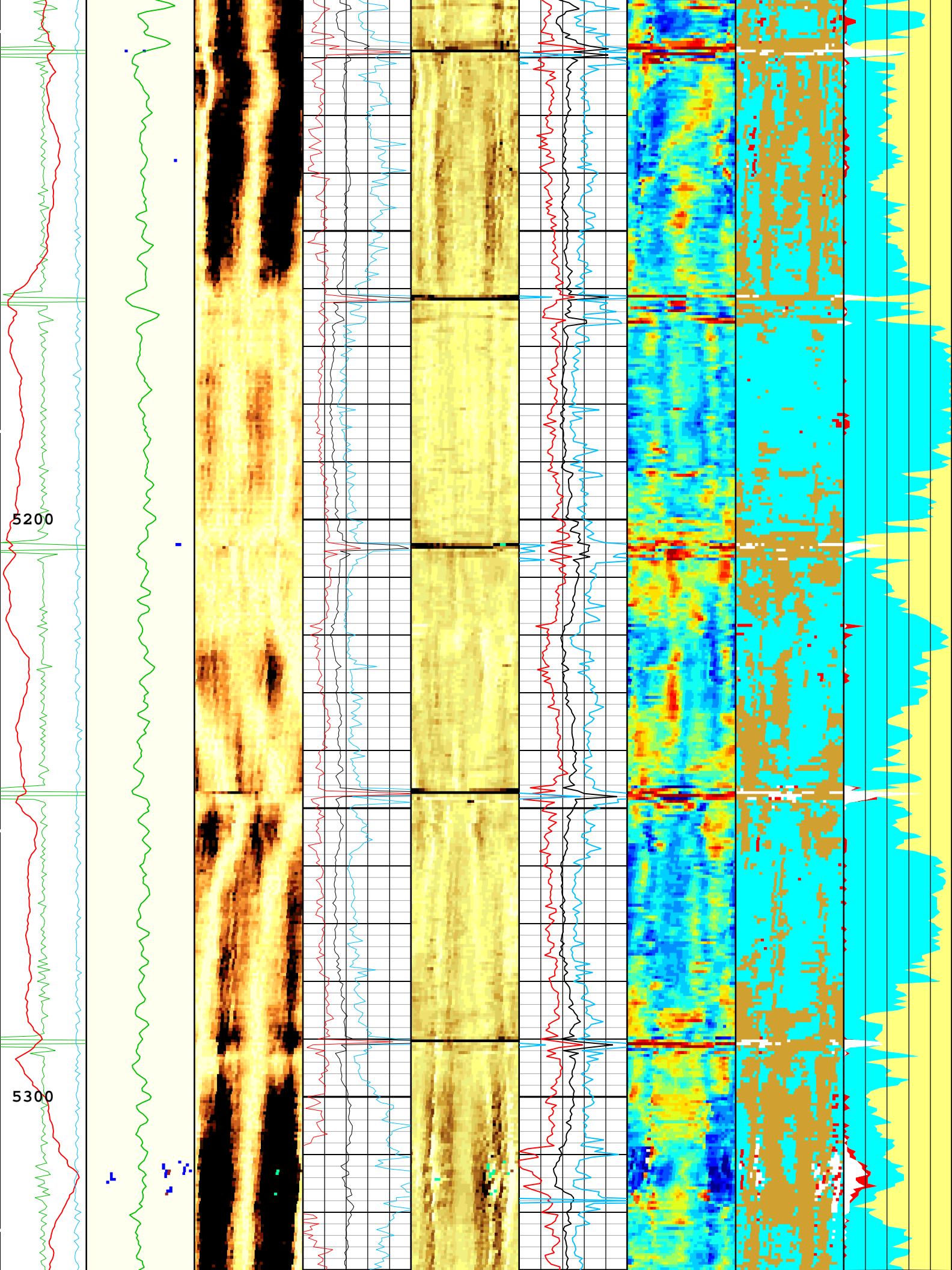


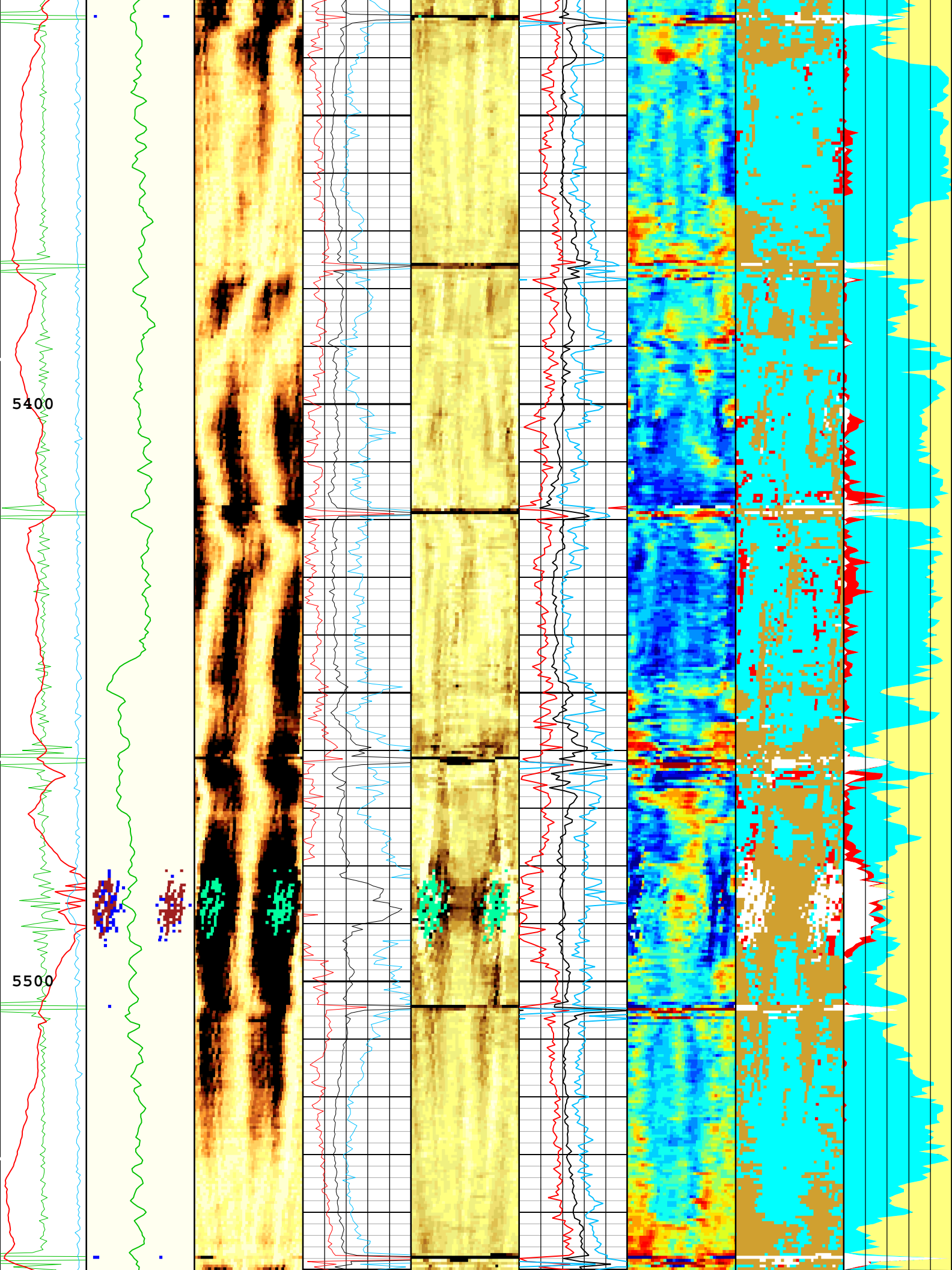


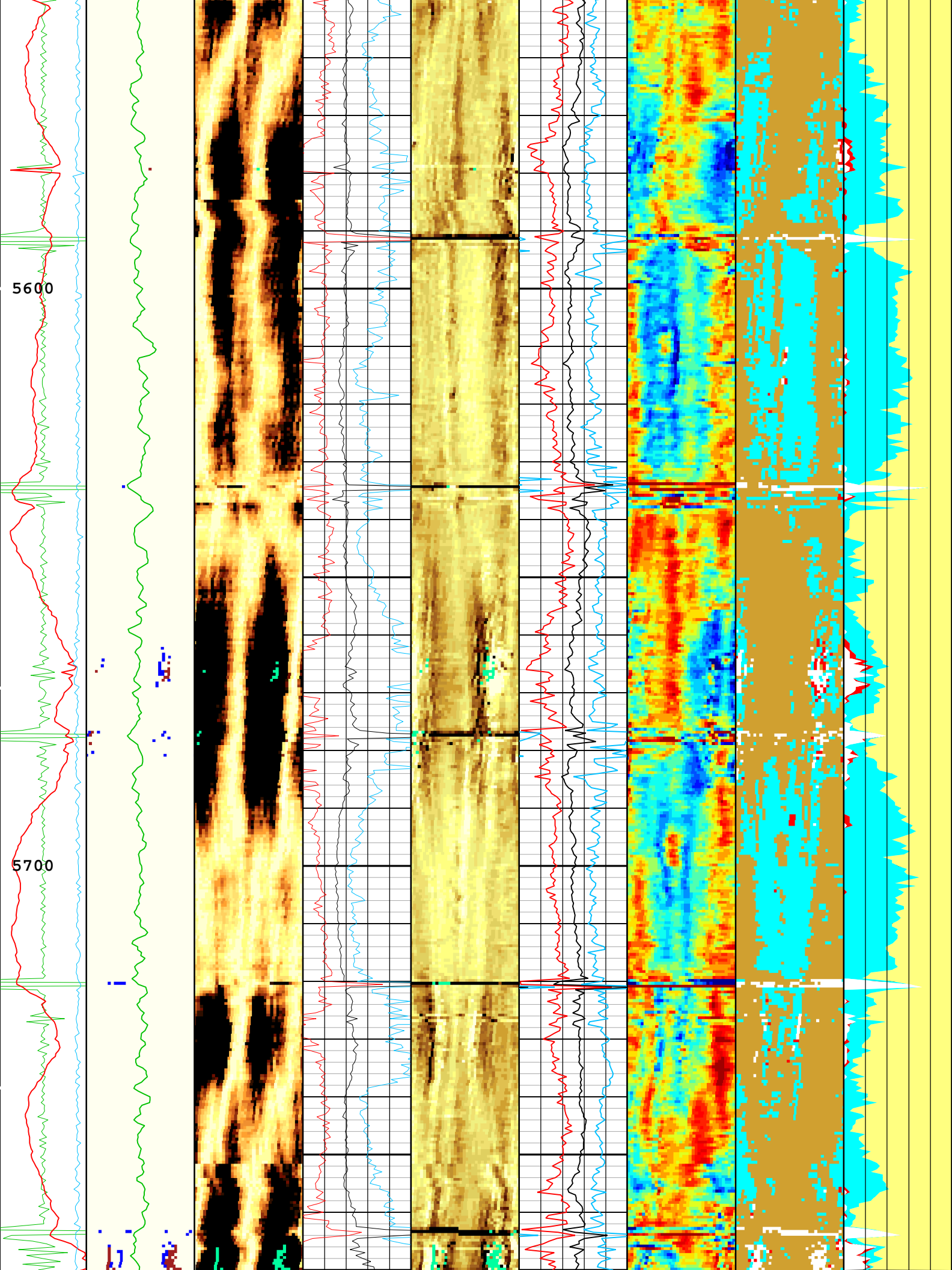


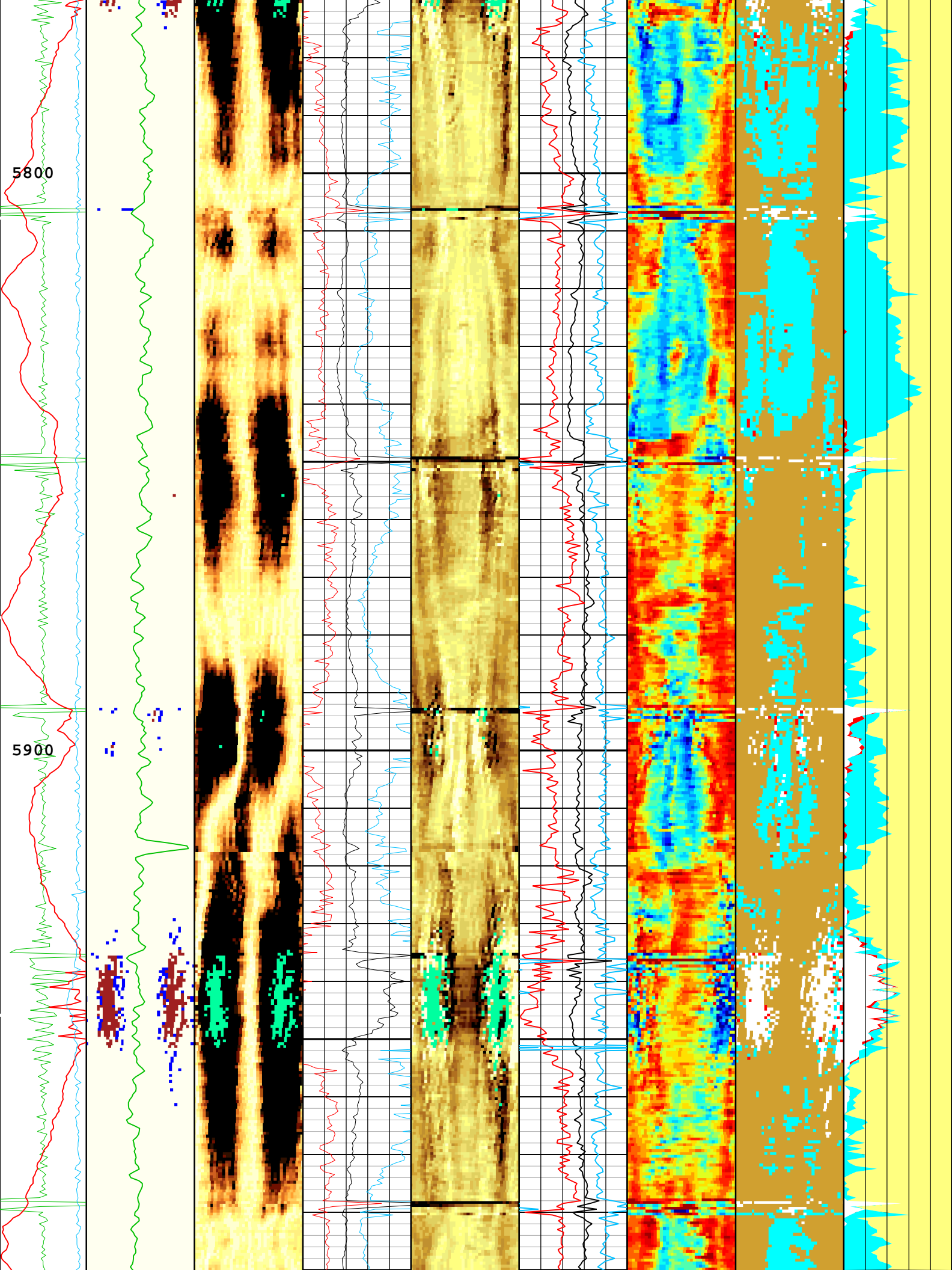


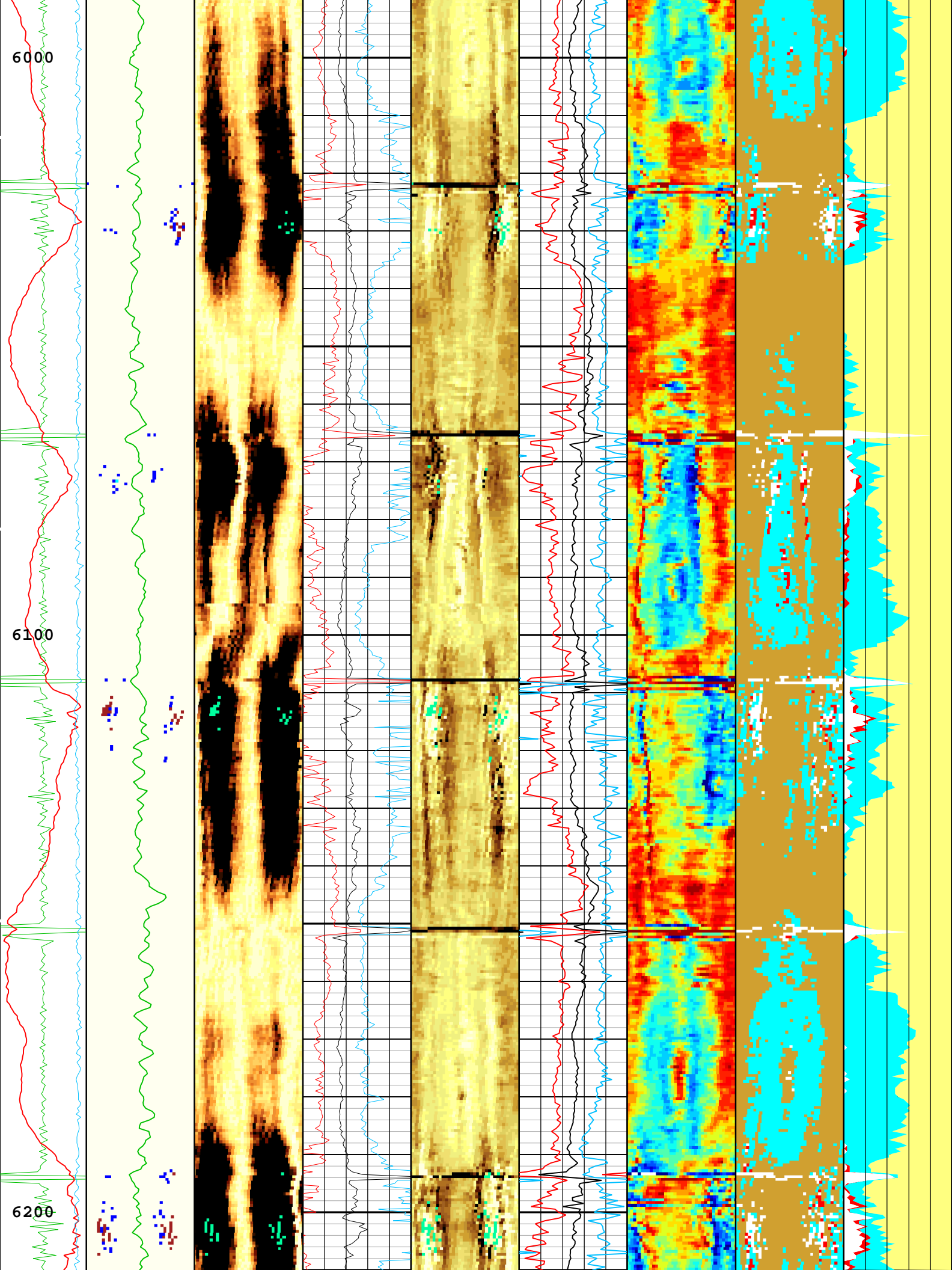


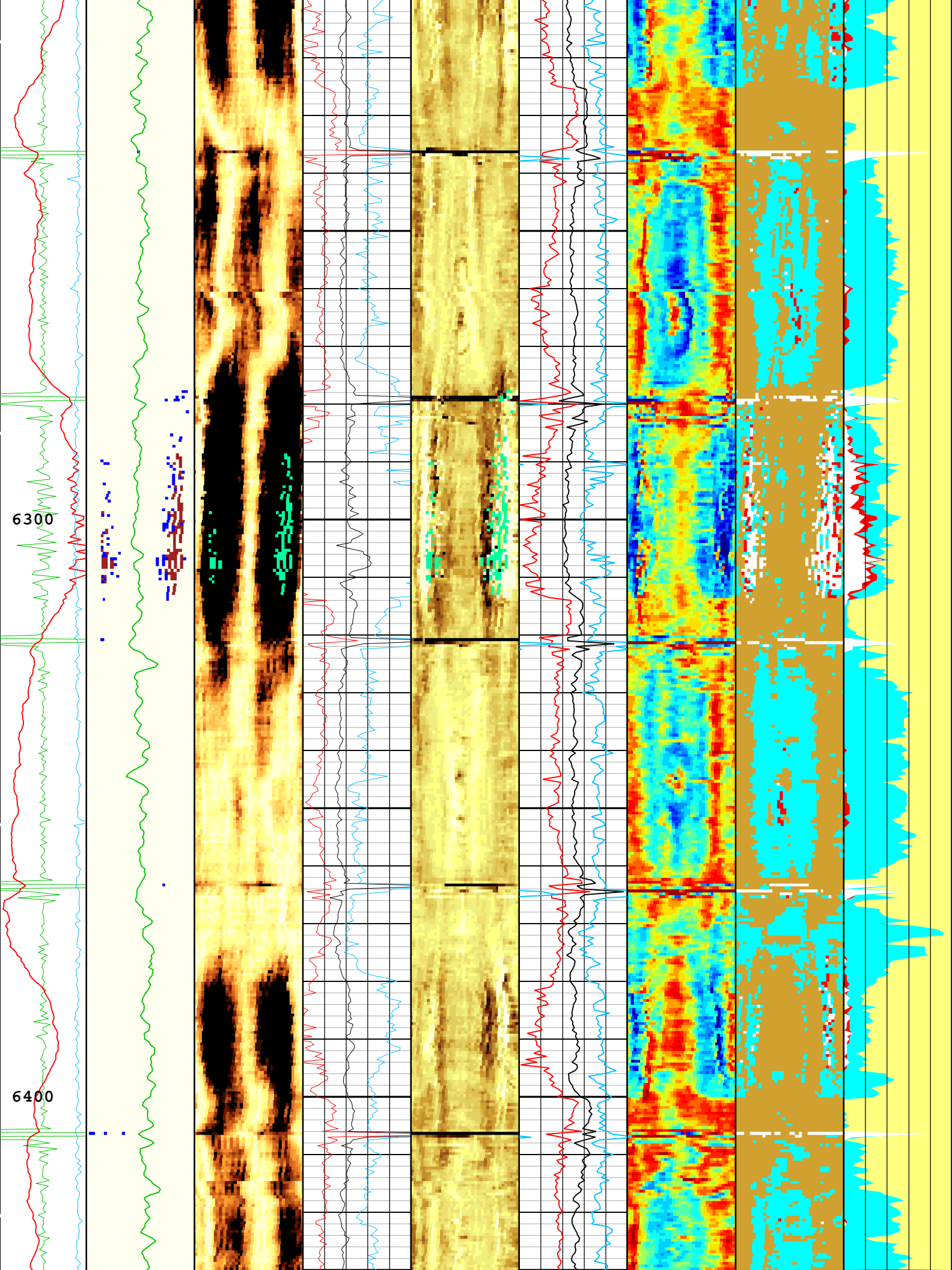


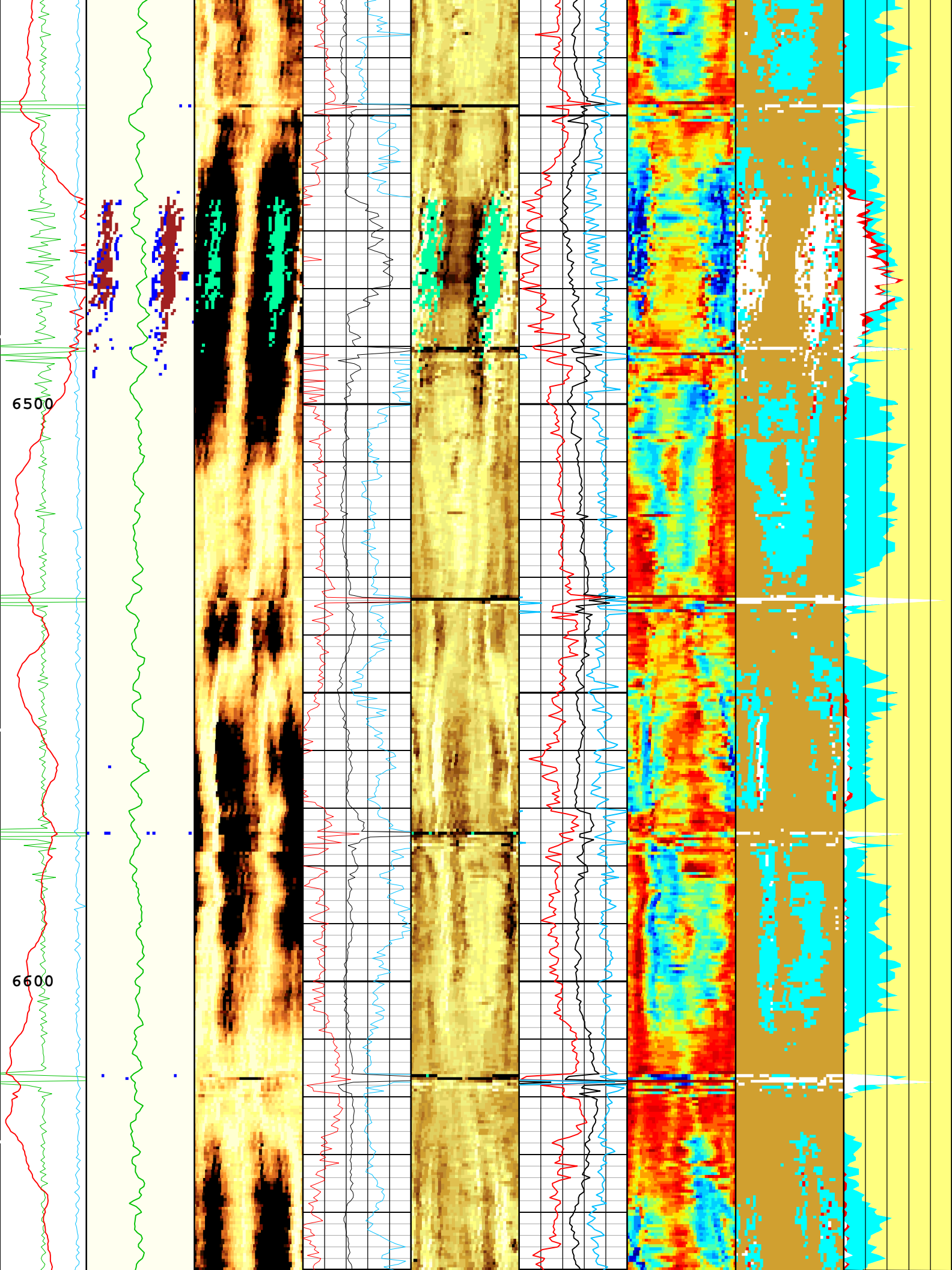


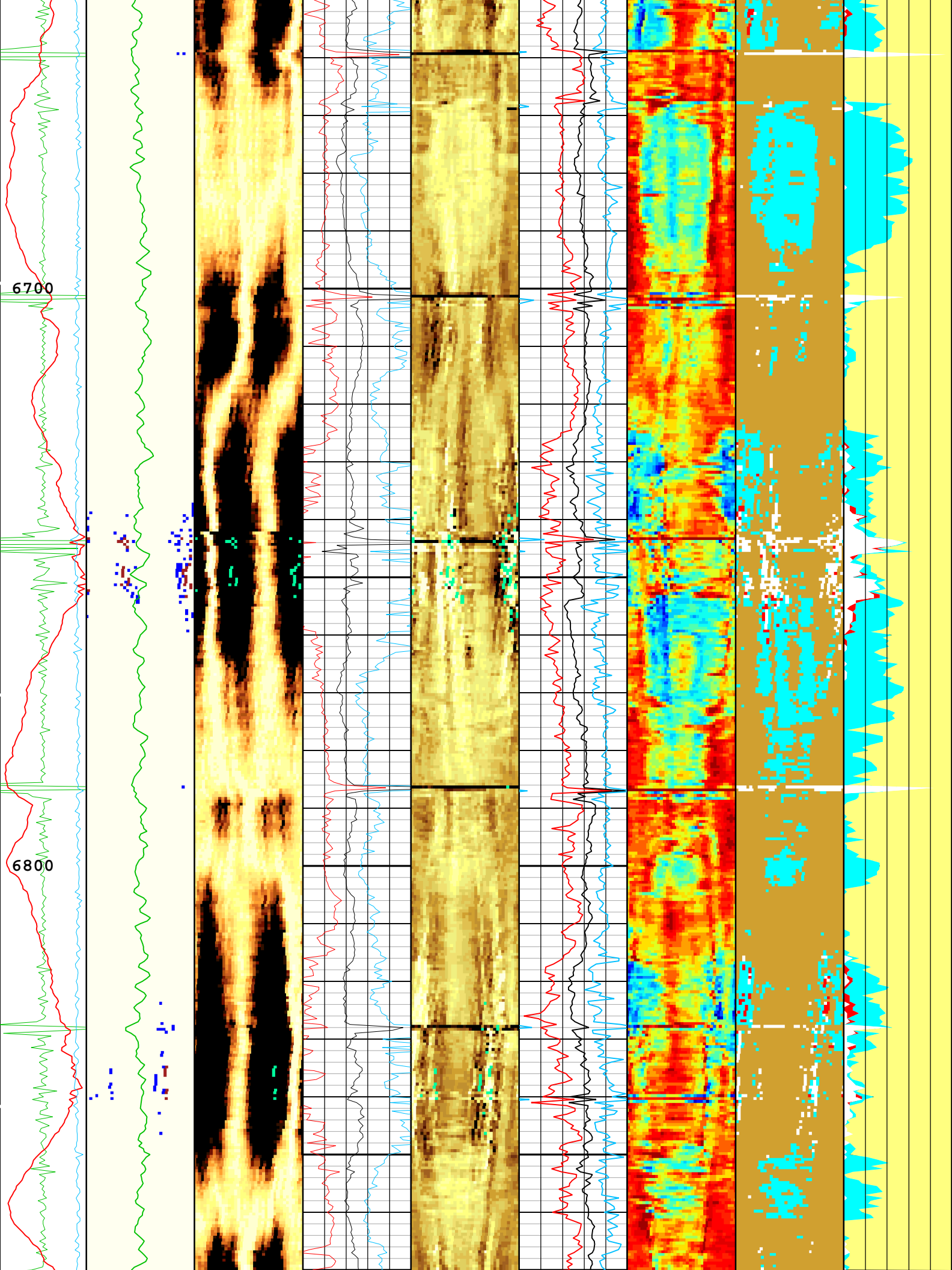


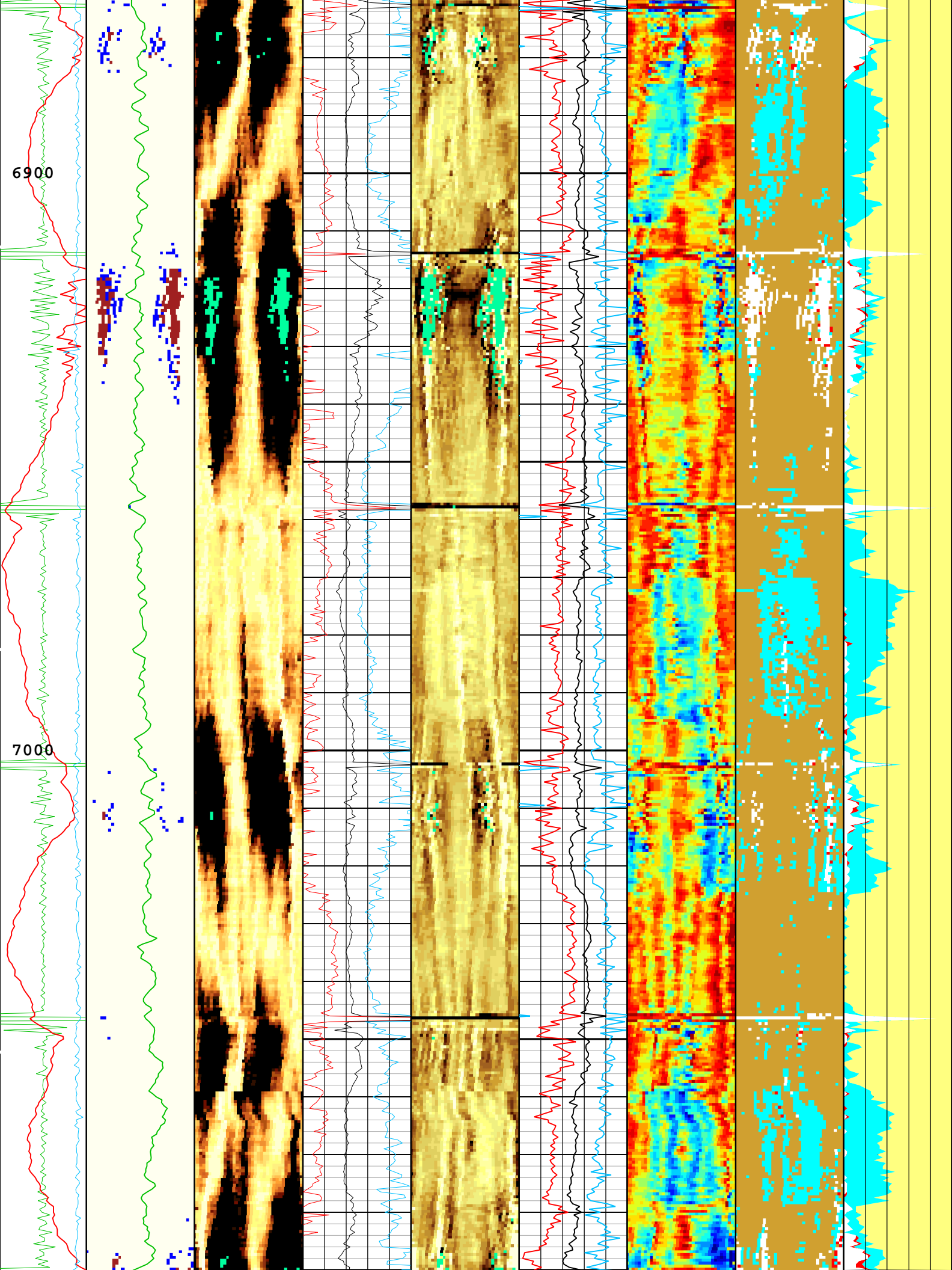


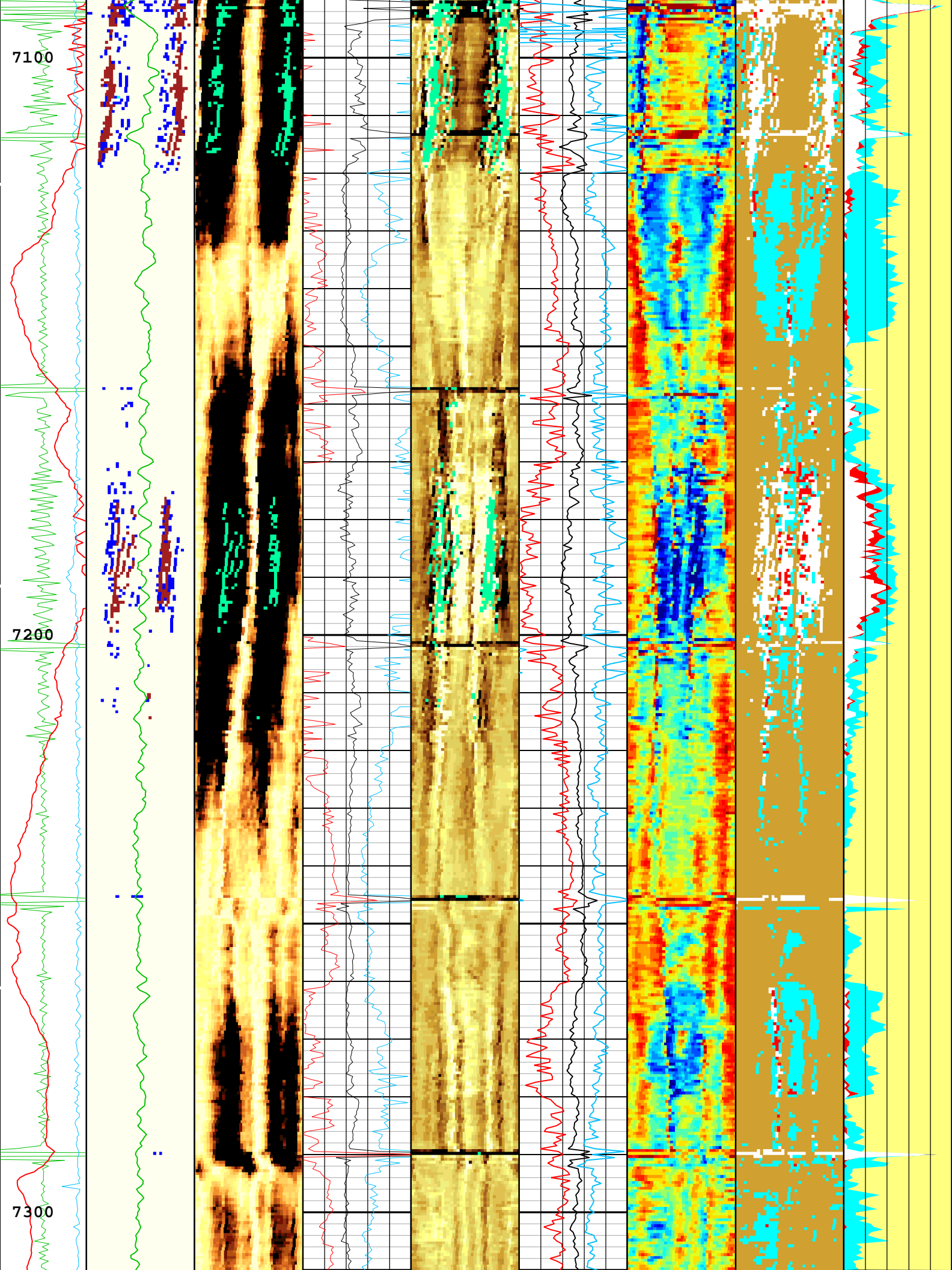


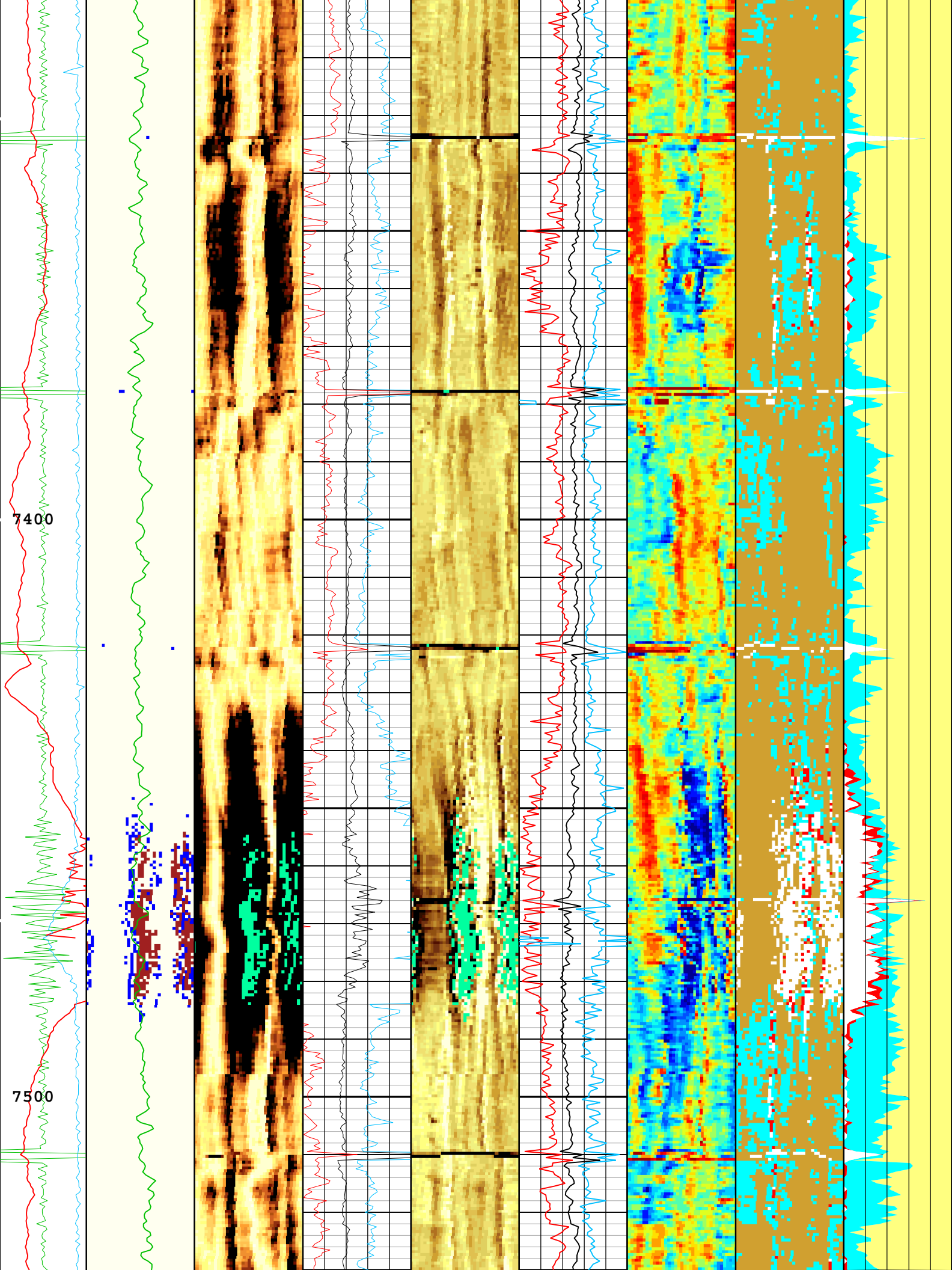


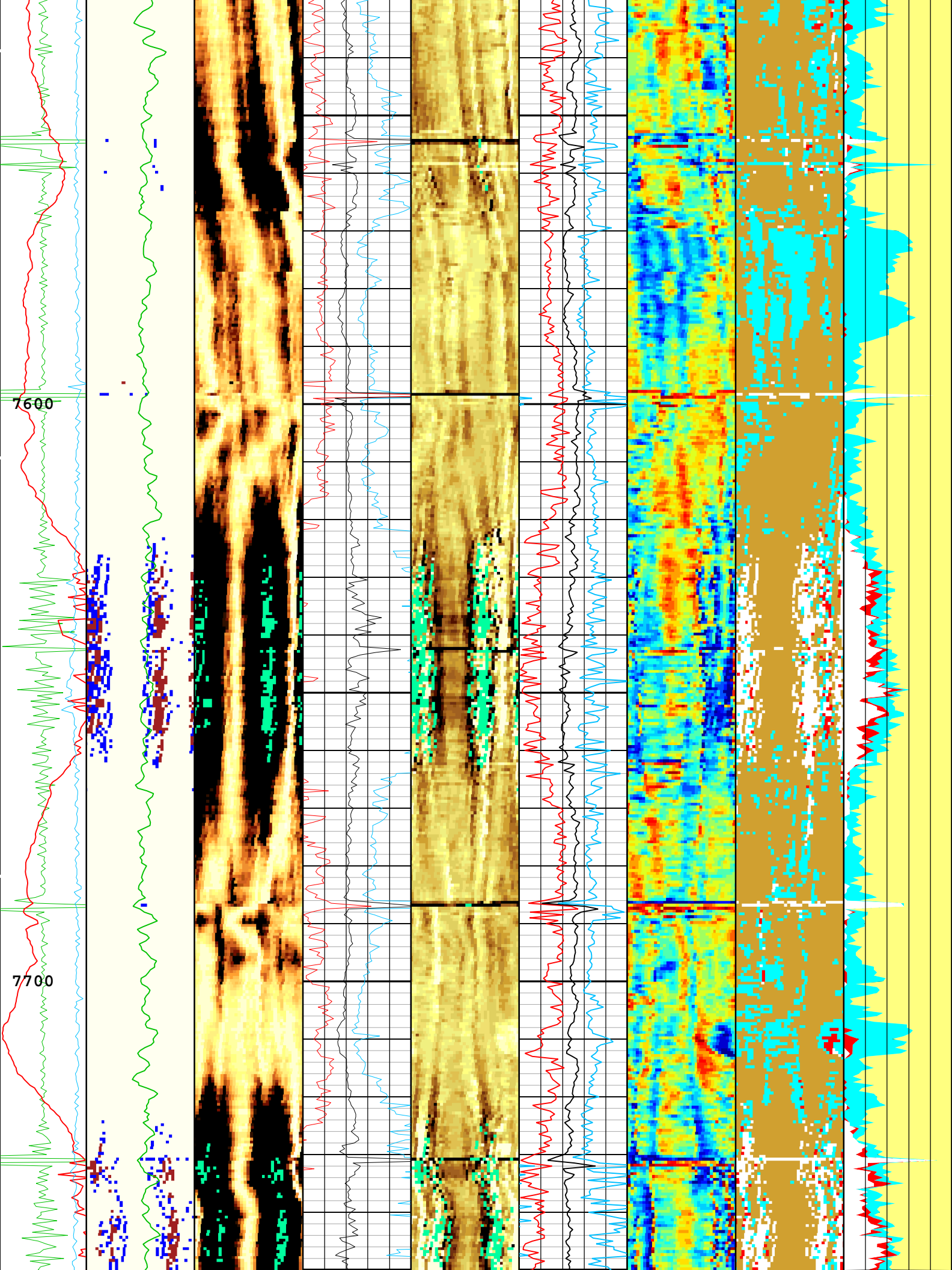


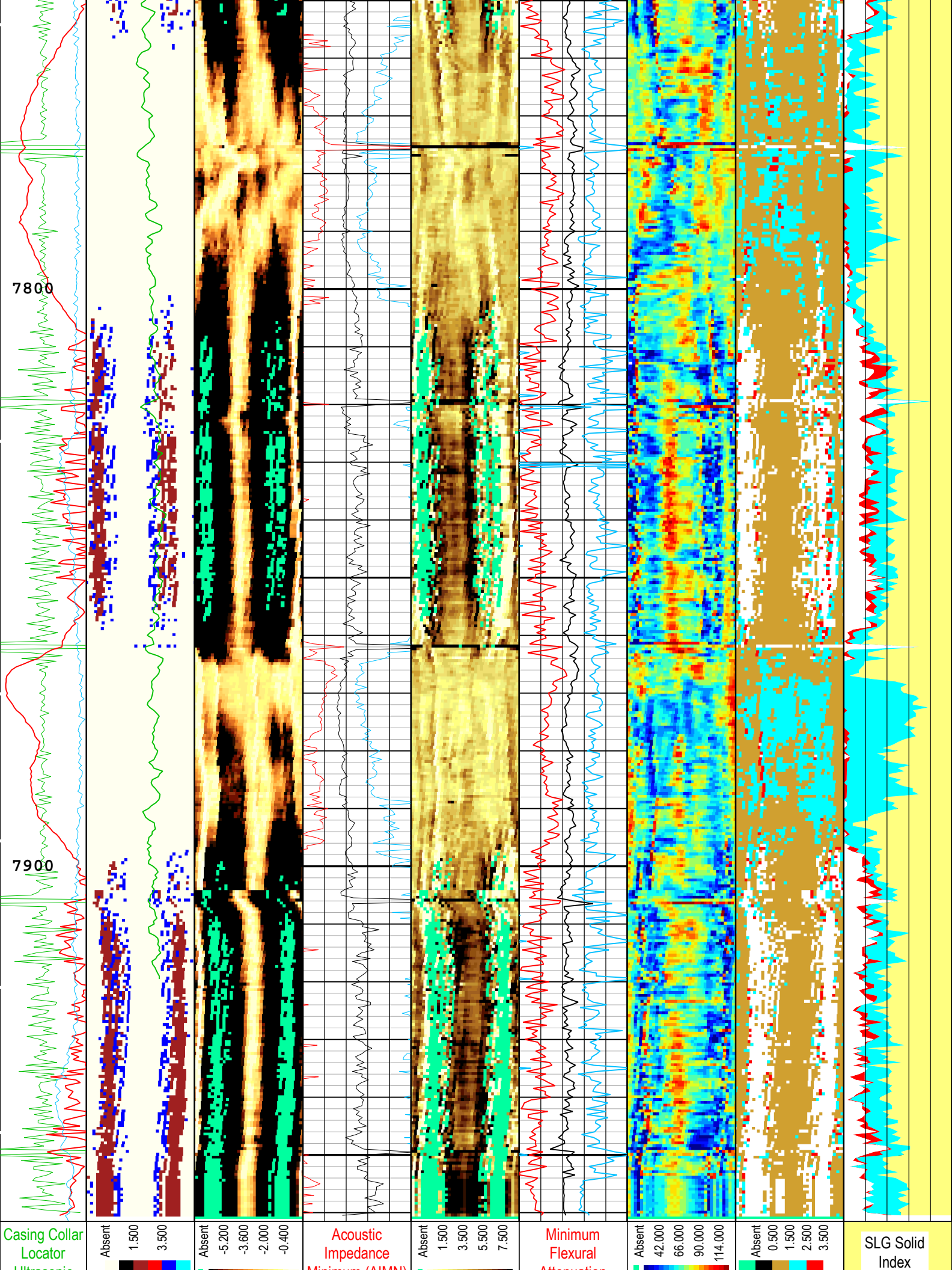












7800

7900

Casing Collar  
Locator  
Ultrasonic

Absent  
1.500  
3.500

Absent  
-5.200  
-3.600  
-2.000  
-0.400

Acoustic  
Impedance  
Minimum (AIMM)

Absent  
1.500  
3.500  
5.500  
7.500

Minimum  
Flexural

Absent  
42.000  
66.000  
90.000  
114.000

Absent  
0.500  
1.500  
2.500  
3.500

SLG Solid  
Index

|   |  |   |  |   |   |  |  |   |
|---|--|---|--|---|---|--|--|---|
| <b>Ultrasonic (CCLU) USIT-E</b><br>-2 in 2<br><b>Amplitude of Eccentering (ECCE) USIT-E</b><br>0 in 0.5<br><b>Motor Revolution Speed (RSAV) USIT-E</b><br>6 c/s 7.5 | <b>Explicit Normalization</b><br>USIT - USIT Processing Flags (UFLG) USIT-E<br>Orientation: Top of Hole<br>U L B R U<br>USIT Processing Flags (UFLG[0]) USIT-E<br>1 5<br><b>Gamma Ray (ECGR_EDTC) EDTC-B</b><br>0 gAPI 150 | <b>Explicit Normalization</b><br>USIT - Amplitude of Wave (AWBK) USIT-E (dB)<br>Orientation: Top of Hole<br>U L B R U | <b>Minimum (AIMN) USIT-E</b><br>-1 Mrayl 9<br><b>Acoustic Impedance Average (AIAV) USIT-E</b><br>-1 Mrayl 9<br><b>Acoustic Impedance Maximum (AIMX) USIT-E</b><br>-1 Mrayl 9 | <b>Custom Normalization</b><br>USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)<br>Orientation: Top of Hole<br>U L B R U | <b>Attenuation (U-USIT_UFAN) USIT-E</b><br>0 dB/m 150<br><b>Average Flexural Attenuation (U-USIT_UFAV) USIT-E</b><br>0 dB/m 150<br><b>Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E</b><br>0 dB/m 150 | <b>Custom Normalization</b><br>USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)<br>Orientation: Top of Hole<br>U L B R U | <b>Explicit Normalization</b><br>USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E<br>Orientation: Top of Hole<br>U L B R U | <b>SLG Liquid Index</b><br><b>SLG Gas Index</b><br><b>SLG White Point Index</b> |
|---|--|---|--|---|---|--|--|---|

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10 ] - :  Loop Processing Error

TIME\_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log ( Import (2) of IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 30-Sep-2019 01:53:59

## Channel Processing Parameters

### 1A: Parameters

| Parameter         | Description  | Tool      | Value                  | Unit    |
|-------------------|--|-----------|------------------------|---------|
| BARI(ISSBAR)      | Barite Mud Presence Flag                             | Borehole  | No                     |         |
| BERJ              | Bad Echo Rejection                                   | USIT-E    | On                     |         |
| BHS               | Borehole Status (Open or Cased Hole)                 | Borehole  | Cased                  |         |
| BS                | Bit Size   | WLSESSION | Depth Zoned            | in      |
| CASING_PRATIO     | Casing Poisson Ratio                                 | USIT-E    | Standard Poisson Ratio |         |
| CBLO              | Casing Bottom (Logger)                               | WLSESSION | 13717                  | ft      |
| CDEN              | Cement Density                                       | USIT-E    | 12.5                   | lbm/gal |
| CDEN              | Cement Density                                       | EDTC-B    | 16.69                  | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type  | USIT-E    | Regular Cement         |         |
| DFD               | Drilling Fluid Density                               | Borehole  | 9                      | lbm/gal |
| DFT_CATEGORY      | Drilling Fluid Type                                  | Borehole  | Water                  |         |
| DTMD              | Borehole Fluid Slowness                              | Borehole  | 192                    | us/ft   |
| FD                | Fluid Density  | USIT-E    | 10.5                   | lbm/gal |
| FDII              | FPM Data Interpolation Interval                      | USIT-E    | 0                      | ft      |
| GCSE_DOWN_PASS    | Generalized Caliper Selection for WL Log Down Passes | Borehole  | BS(RT)                 |         |
| GCSE_UP_PASS      | Generalized Caliper Selection for WL Log Up Passes   | Borehole  | BS(RT)                 |         |
| GR_MULTIPLIER     | Gamma Ray Multiplier                                 | EDTC-B    | 1                      |         |
| HEMA              | Hematite Presence Flag                               | Borehole  | No                     |         |
| IBC_FRP_OFFSET    | IBC Flexural Offset from Free Pipe                   | USIT-E    | -33.74                 | dB/m    |
| IBC_FVEL_SEL      | IBC Fluid Velocity Selection                         | USIT-E    | Automatic              |         |
| IBC_OFFSET_SEL    | IBC Flexural Offset Selector                         | USIT-E    | IBC_FRP_OFFSET         |         |
| IBC_ZMUD_SEL      | IBC Mud Impedance Selection                          | USIT-E    | Theoretical            |         |

|               |  |          |                   |       |
|---------------|--|----------|-------------------|-------|
| ICE_PROCESS   | ICE Processing                                     | USIT-E   | Yes               |       |
| IMAR          | Image Rotation                                     | USIT-E   | RB                |       |
| MEAS_WLEN     | Tcube Processing Window Length in Measurement Mode | USIT-E   | 22.44             | us    |
| MUD_N_THE     | Theoretical Mud Normalization Factor               | USIT-E   | 1.1               |       |
| RCOD          | Reference Calibrator Outer Diameter                | USIT-E   | 4.5               | in    |
| RCSO          | Reference Calibrator Standoff                      | USIT-E   | 0.842             | in    |
| RCTH          | Reference Calibrator Thickness                     | USIT-E   | 0.216             | in    |
| RPLUS_PROCESS | Ultrasonic R+ Processing                           | USIT-E   | No                |       |
| SOCN          | Standoff Distance                                  | EDTC-B   | 0.125             | in    |
| SOCO          | Standoff Correction Option                         | EDTC-B   | No                |       |
| THDH          | Maximum Search Thickness (percentage of nominal)   | USIT-E   | 130               | %     |
| THDL          | Minimum Search Thickness (percentage of nominal)   | USIT-E   | 70                | %     |
| TPOS_EDTC     | Tool Position: Centered or Eccentered              | EDTC-B   | Eccentered        |       |
| U-USIT_DFSZ   | Drilling Fluid Specific Acoustic Impedance         | USIT-E   | 1.6               | Mrayl |
| U-USIT_UFAO   | SIT Flexural Attenuation Offset                    | USIT-E   | -46.82            | dB/m  |
| U-USIT_UIAP   | IBC Answer Product Enabled                         | USIT-E   | SolidLiquidGasMap |       |
| THDP          | Thickness Detection Policy                         | USIT-E   | Fundamental       |       |
| VCAS          | Ultrasonic Transversal Velocity in Casing          | USIT-E   | 51.4              | us/ft |
| ZCAS          | Acoustic Impedance of Casing                       | USIT-E   | 46.25             | Mrayl |
| ZINI          | Initial Estimate of Cement Impedance               | USIT-E   | -1                | Mrayl |
| ZMUD          | Acoustic Impedance of Mud                          | Borehole | 1.71              | Mrayl |
| ZTCM          | Acoustic Impedance Threshold for Cement            | USIT-E   | 2.6               | Mrayl |
| ZTGS          | Acoustic Impedance Threshold for Gas               | USIT-E   | 0.3               | Mrayl |

## Depth Zone Parameters

| Parameter | Value | Start ( ft ) | Stop ( ft ) |
|-----------|-------|--------------|-------------|
| BS        | 13.5  | 6            | 2555        |
| BS        | 8.5   | 2555         | 7961.5      |

All depth are actual.

## Tool Control Parameters

### 1A: Parameters

| Parameter     | Description                                | Tool   | Value            | Unit |
|---------------|--|--------|------------------|------|
| AGMN          | Minimum Gain of Cartridge                  | USIT-E | -12              | dB   |
| AGMX          | Maximum Gain of Cartridge                  | USIT-E | 48               | dB   |
| U-USIT_DDT5   | USIC Downhole Decimation for T5 only       | USIT-E | 0_NONE           |      |
| DOT(DOS)      | Distance between Opposite Transducer Faces | USIT-E | 1.756            | in   |
| EMXV          | EMEX Voltage                               | USIT-E | Time Zoned       | V    |
| HRES          | Horizontal Resolution                      | USIT-E | 10 deg           |      |
| IBC_ACQTYPE   | IBC Acquisition type                       | USIT-E | 1 MHz            |      |
| IBC_FLEXDBP   | IBC Flex Duration Before Peak              | USIT-E | 30               | us   |
| ICE2_ACQ      | Ultrasonic ICE2 Acquisition                | USIT-E | Yes              |      |
| MOTOR_PROTECT | Motor Protection                           | USIT-E | On               |      |
| UACLV_PERM    | Ultrasonic ACLV Permanent                  | USIT-E | Yes              |      |
| U-USIT_UFWB   | Far Receiver Window Begin Time             | USIT-E | 121.48           | us   |
| U-USIT_UFWE   | Far Receiver Window End Time               | USIT-E | 189.35           | us   |
| U-USIT_UNWB   | Near Receiver Window Begin Time            | USIT-E | 79.64            | us   |
| U-USIT_UNWE   | Near Receiver Window End Time              | USIT-E | 153.09           | us   |
| USFR          | Ultrasonic Sampling Frequency              | USIT-E | 666667           | Hz   |
| UPAT          | USIT Emission Pattern                      | USIT-E | Pattern 375 KHz  |      |
| UWKM          | USIT Working Mode                          | USIT-E | 10 deg at 6.0 in |      |

|             |                     |        |        |    |
|-------------|---------------------|--------|--------|----|
| USSP        | Ultrasonic Service  | USIT-E | IBC    |    |
| U-USIT_UTAN | Transducer Angles   | USIT-E | 38_DEG |    |
| VRES        | Vertical Resolution | USIT-E | 6.0 in |    |
| WINB        | Window Begin Time   | USIT-E | 18.86  | us |
| WINE        | Window End Time     | USIT-E | 85.68  | us |

## Time Zone Parameters

| Parameter | Value | Start Time           | Stop Time            | Start Depth ( ft ) | Stop Depth ( ft ) |
|-----------|-------|----------------------|----------------------|--------------------|-------------------|
| EMXV      | 110   | 29-Sep-2019 23:07:06 | 30-Sep-2019 00:48:55 | 7962.32            | 1042.13           |
| EMXV      | 90    | 30-Sep-2019 00:48:55 | 30-Sep-2019 00:50:05 | 1042.13            | 958.31            |
| EMXV      | 95    | 30-Sep-2019 00:50:05 | 30-Sep-2019 00:50:19 | 958.31             | 942.55            |
| EMXV      | 90    | 30-Sep-2019 00:50:19 | 30-Sep-2019 00:58:50 | 942.55             | 329.72            |
| EMXV      | 85    | 30-Sep-2019 00:58:50 | 30-Sep-2019 01:04:00 | 329.72             | 48.37             |

All depth are at tool zero.

# 1A

## IBC SLG COMPOSITE MAIN PASS @10DEG X 6IN @0PSI [2:100]

### Pass Summary

| Run Name | Pass Objective | Direction | Top      | Bottom     | Start                   | Stop                   | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|----------|------------|-------------------------|------------------------|----------|-------------|-----------------------|
| 1A       | Log[3]:Up      | Up        | 48.37 ft | 7962.32 ft | 29-Sep-2019 11:07:06 PM | 30-Sep-2019 1:04:00 AM | ON       | 11.72 ft    | No                    |

All depths are referenced to toolstring zero

Log

Company: Crestone Peak Resources Operating, LLC    Well: Kugel 1L-18H-H267

1A: Log[3]:Up:S003

Description: USI IBC SLG Composite    Format: Log ( Import (2) of IBC SLG Composite )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured  
 Depth    Creation Date: 30-Sep-2019 01:54:18

USIT Processing Flags (UFLG[0]) USIT-E

|   |   |                           |
|---|---|---------------------------|
| 1 - UFLG 1 Value within [0.0 - 1.5] - :                     | ■ | UTIM Error                |
| 2 - UFLG 2 Value within [1.5 - 2.5] - :                     | ■ | Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - :                     | ■ | WINLEN Error              |
| 4 - UFLG 4    UFLG 5    UFLG 6 Value within [3.5 - 6.5] - : | ■ | Casing Thickness Error    |
| 5 - UFLG 7    UFLG 8    UFLG 9 Value within [6.5 - 10 ] - : | ■ | Loop Processing Error     |

TIME\_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E

-20 in 20

Amplitude of Eccentering (ECCE) USIT-E

0 in 0.5

Orientation: Top of Hole

Absent 1.500 3.500

Explicit Normalization

Absent -5.200 -3.600 -2.000 -0.400

External Radii Average (ERAV) USIT-E

3 in 2 2 in 3

Internal Radius Averaged Value (IRAV) USIT-E

3 in 2 2 in 3

Internal Radius Maximum Value (IRMX) USIT-E

3 in 2 2 in 3

Thickness Minimum Value (THMN) USIT-E

0.1 in 0.6

Thickness Average Value (THAV) USIT-E

0.1 in 0.6

Orientation: Top of Hole

Absent -0.051 -0.012 0.028 0.068

Orientation: Top of Hole

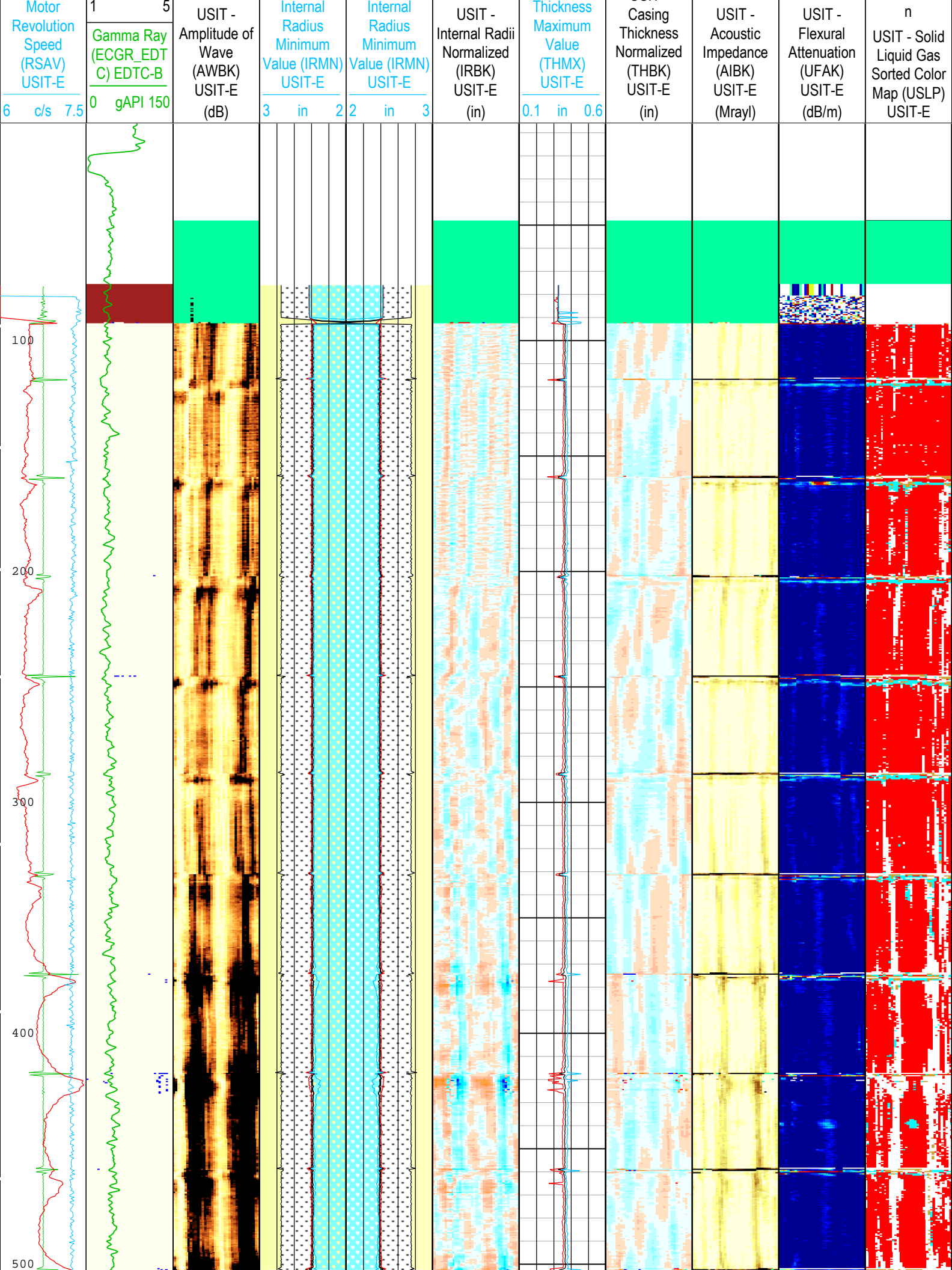
Absent 1.500 3.500 5.500 7.500

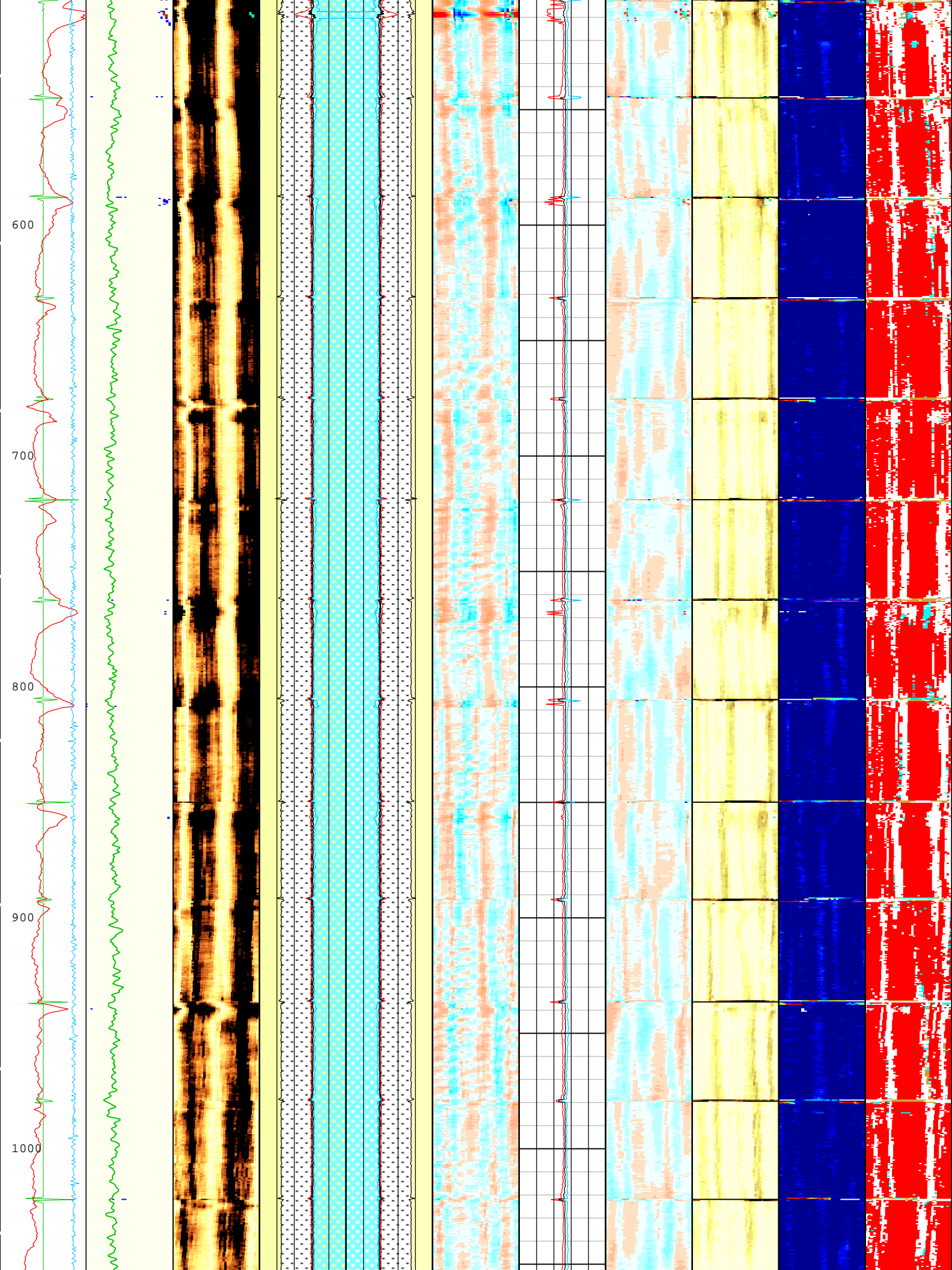
Orientation: Top of Hole

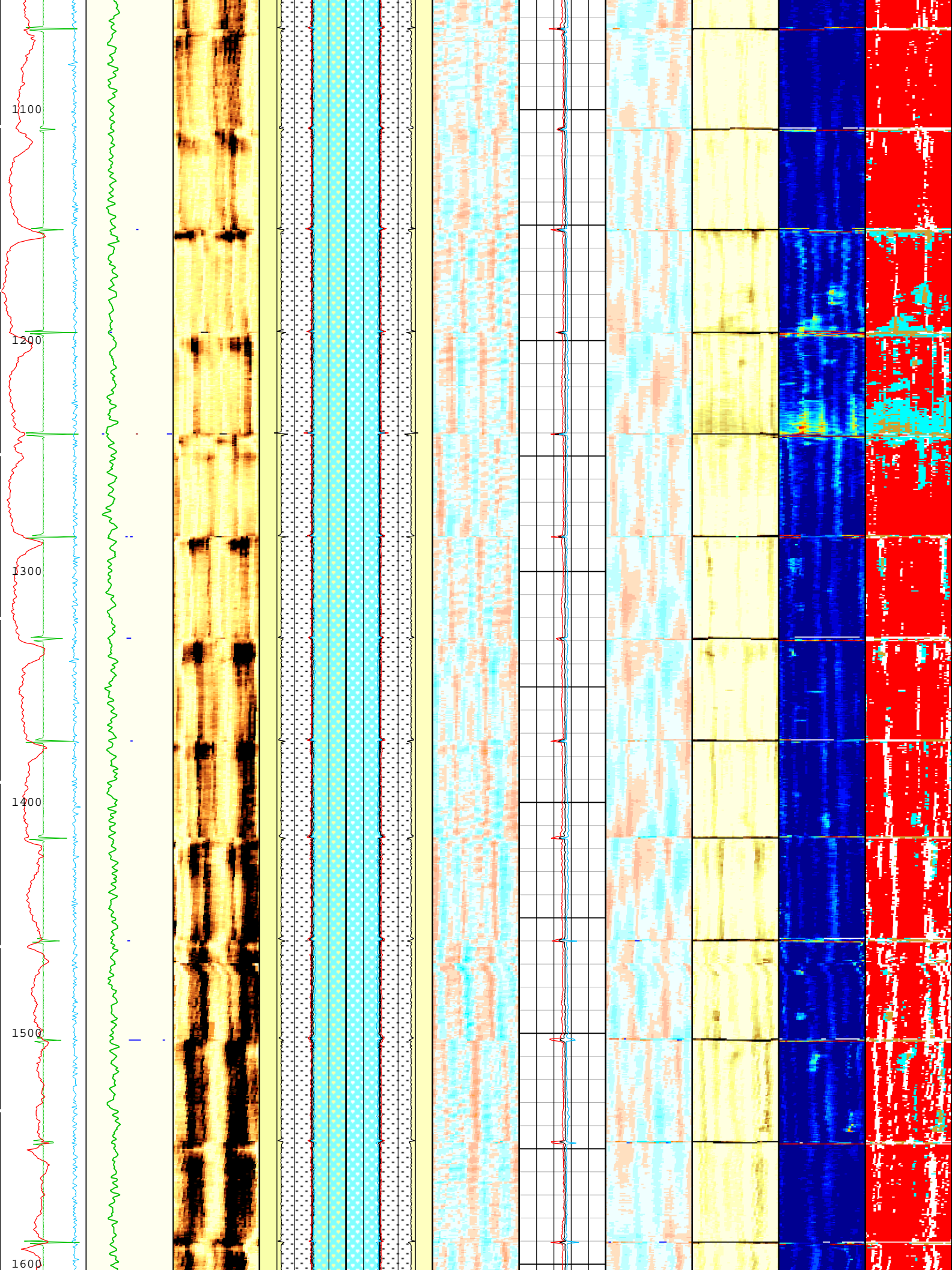
Absent 42.000 66.000 90.000 114.000

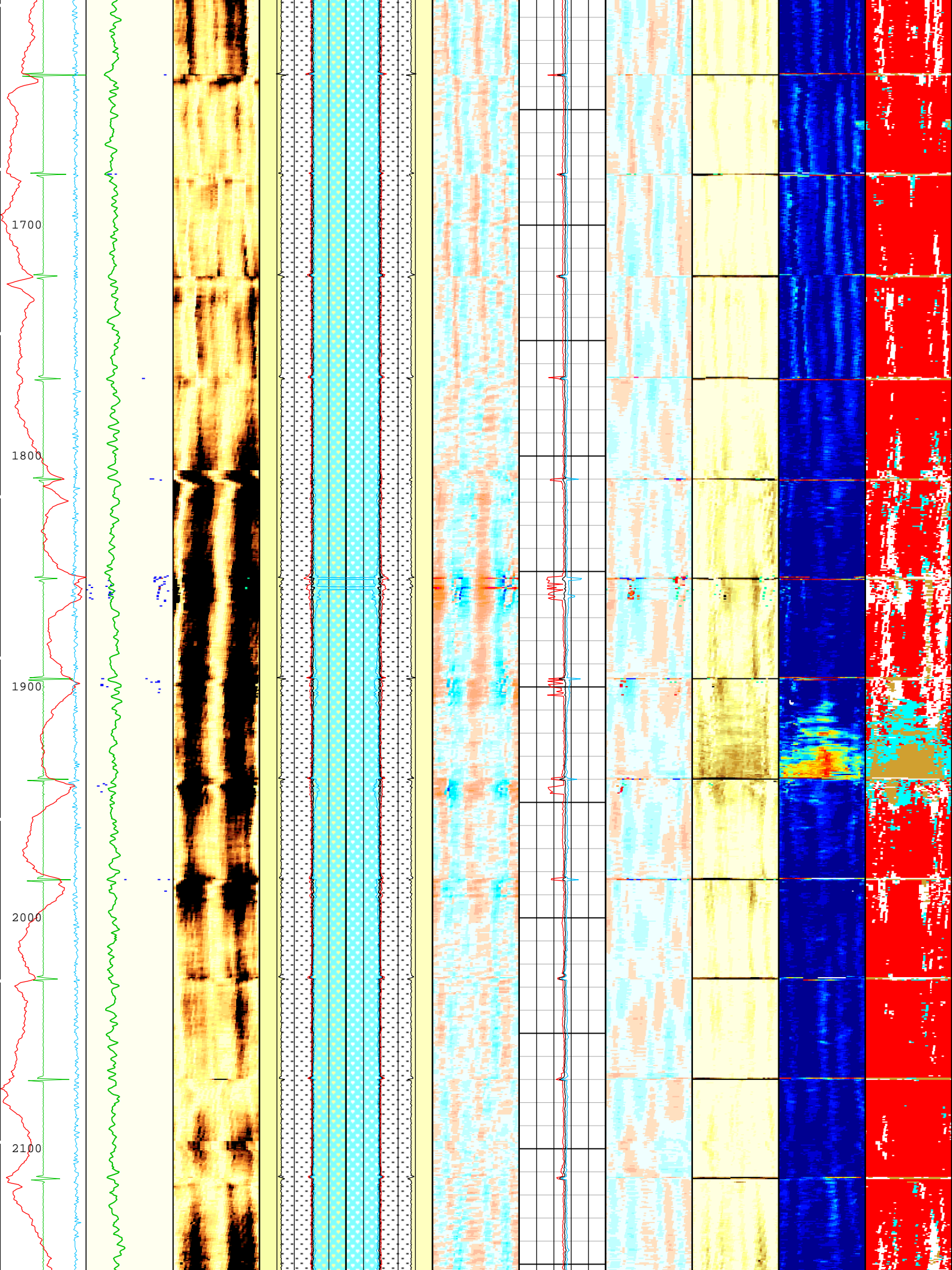
Orientation: Top of Hole

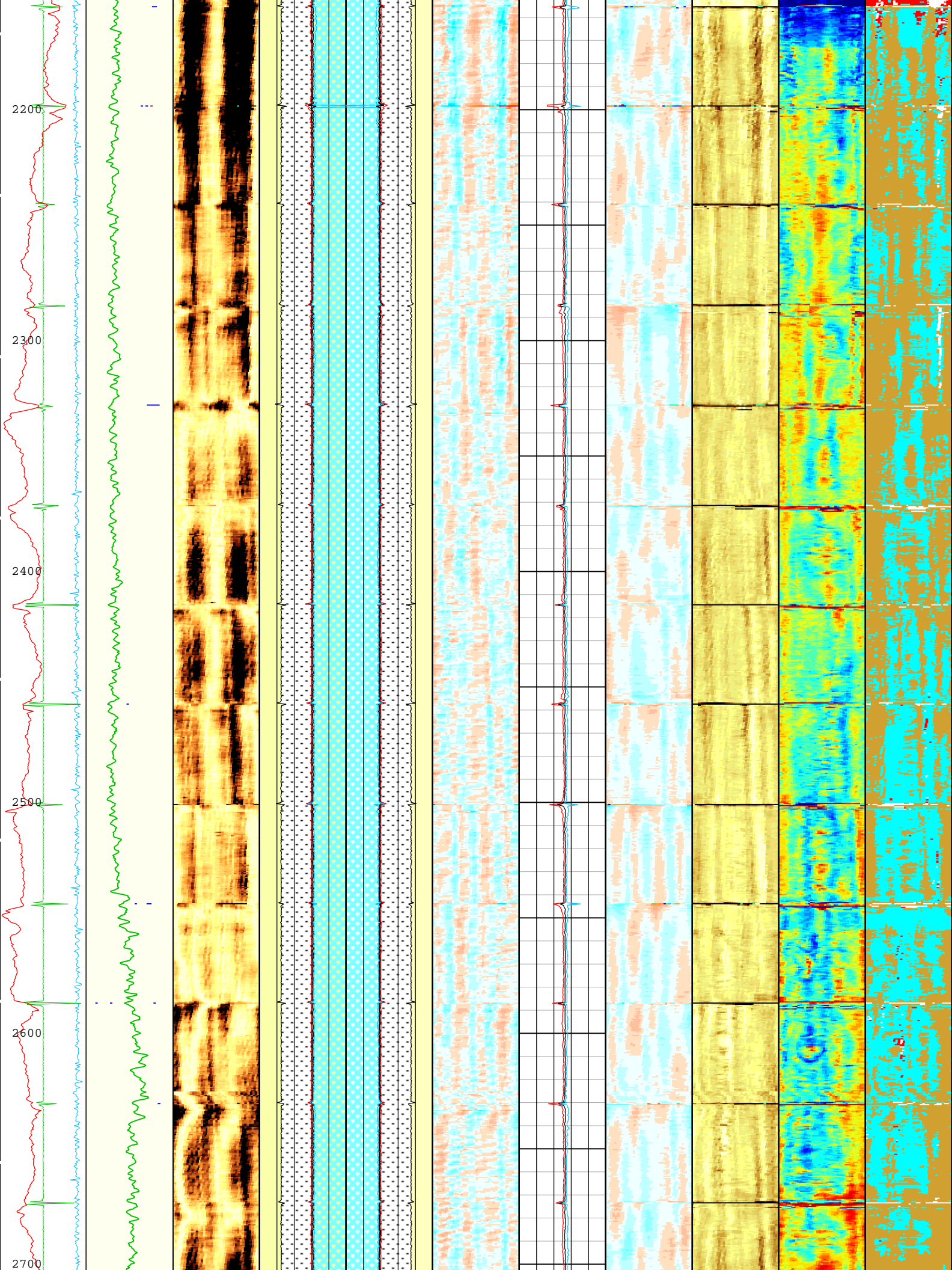
Absent 1.500 3.500

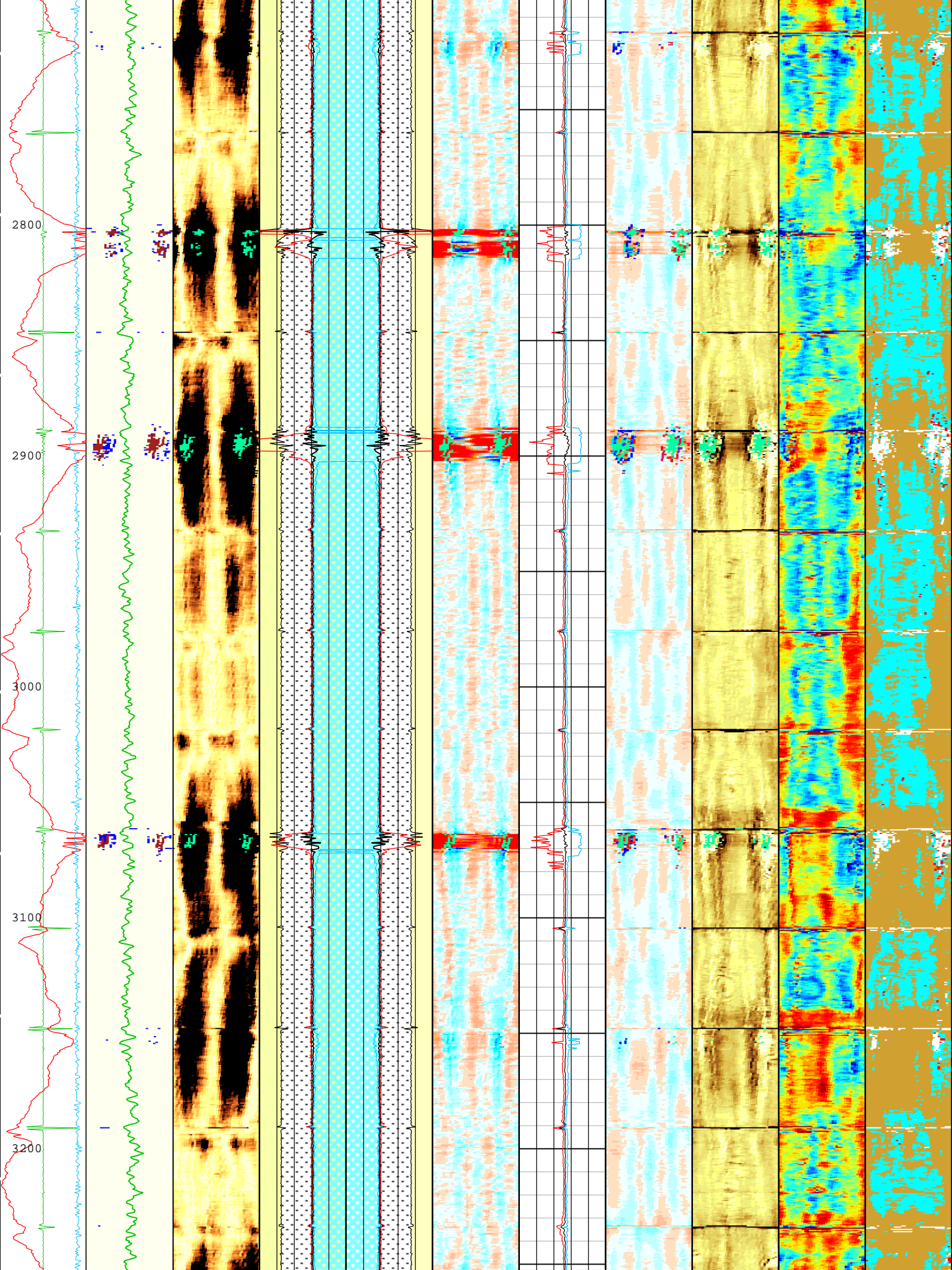


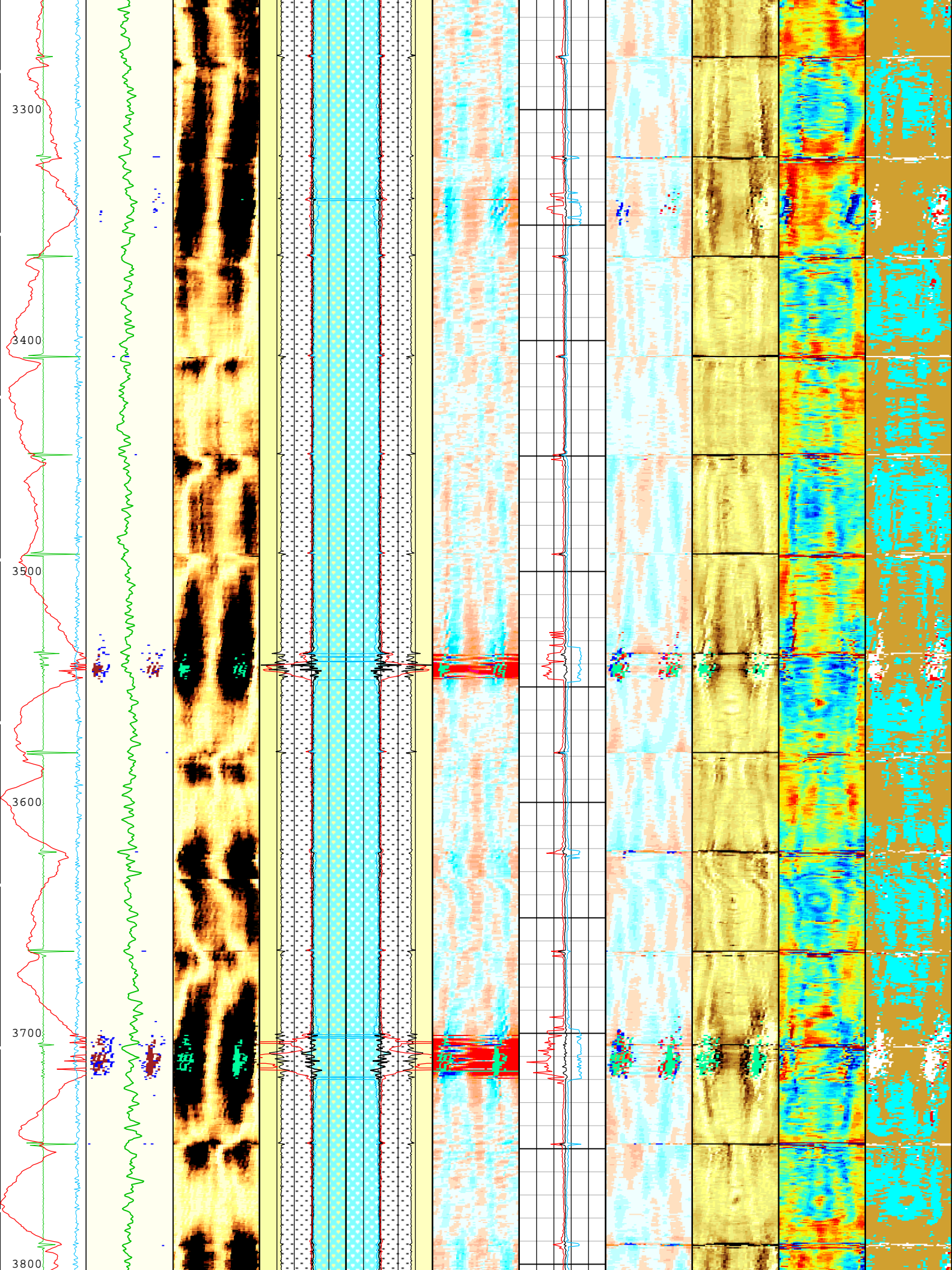


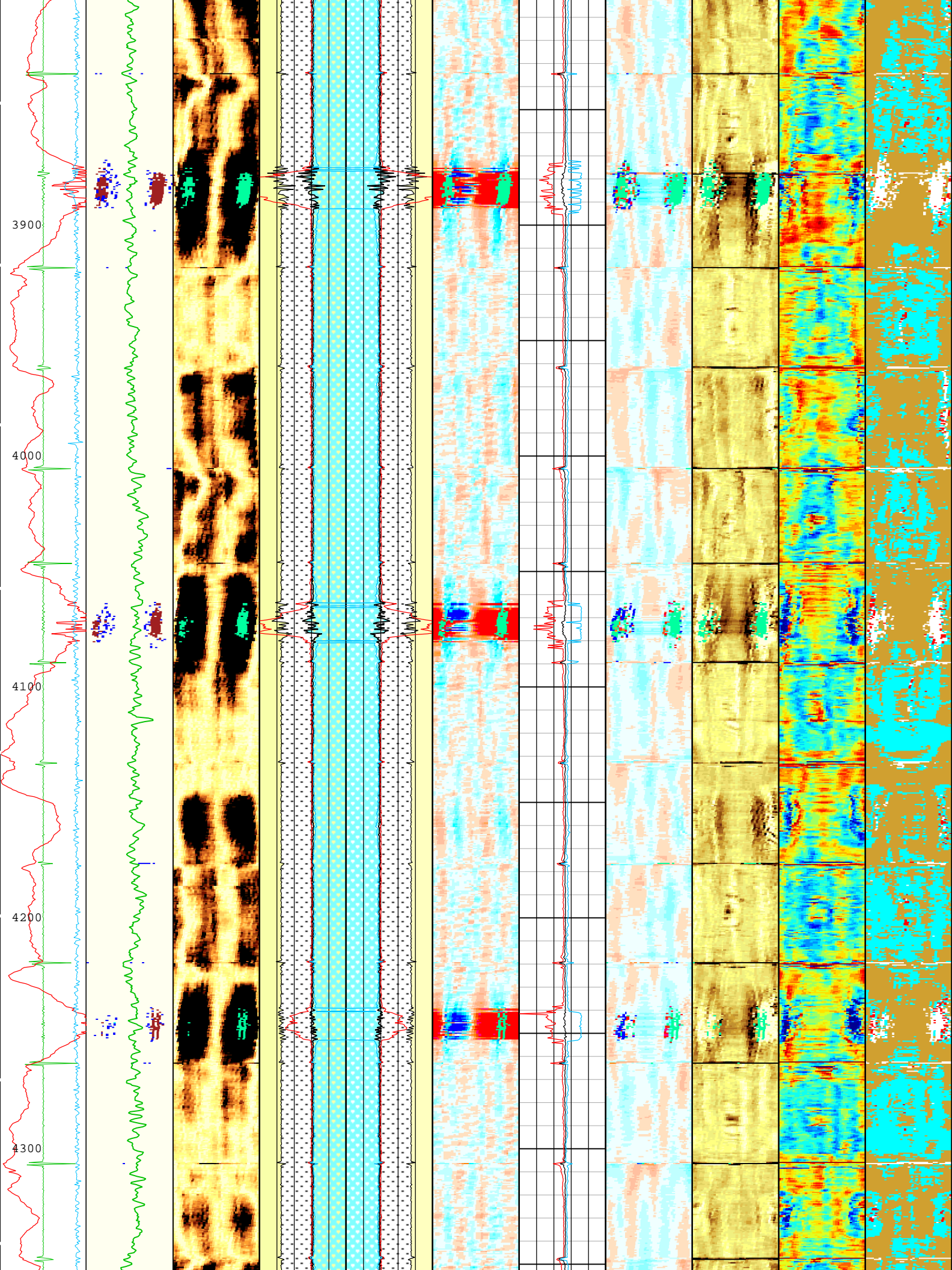


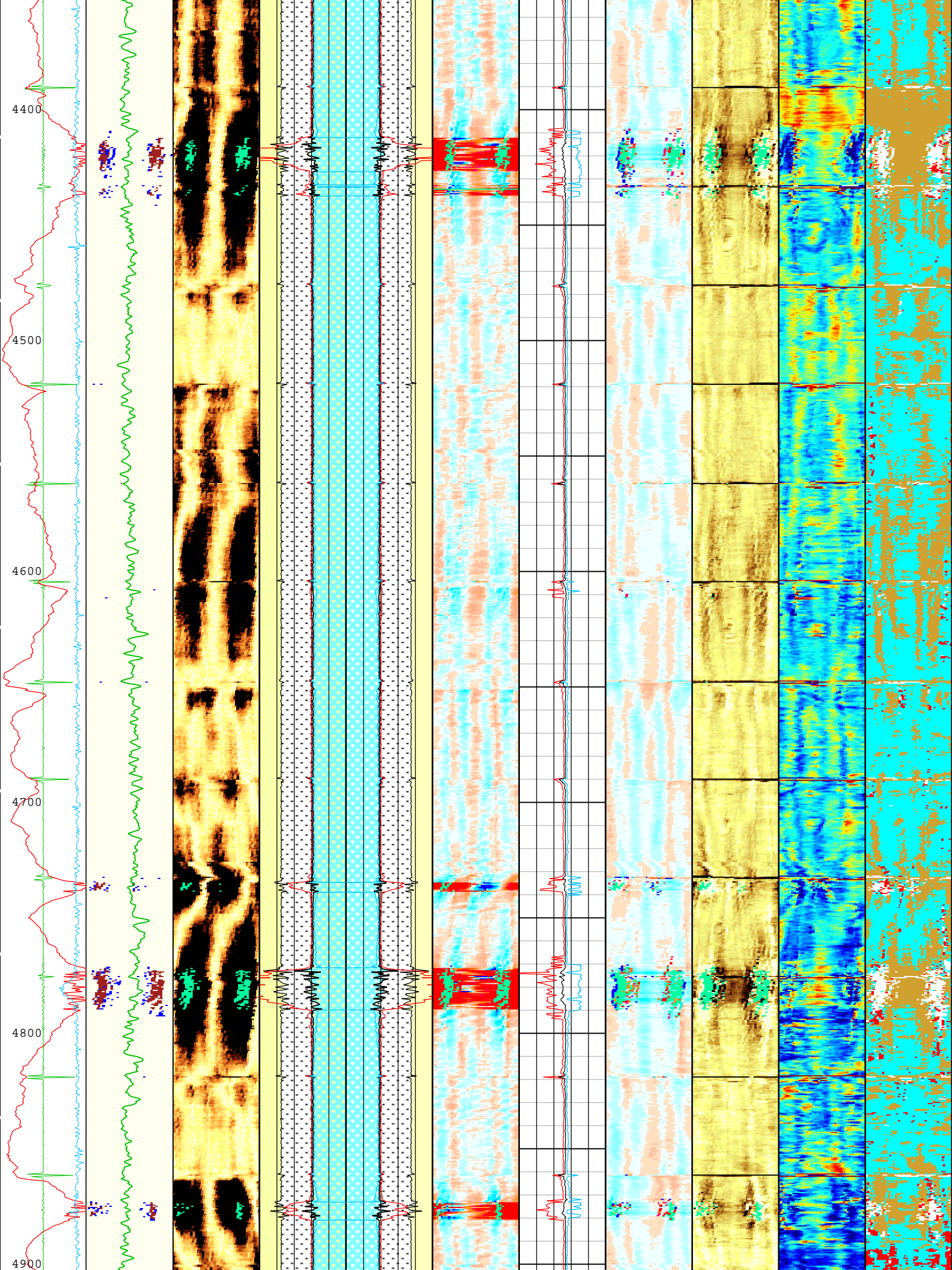


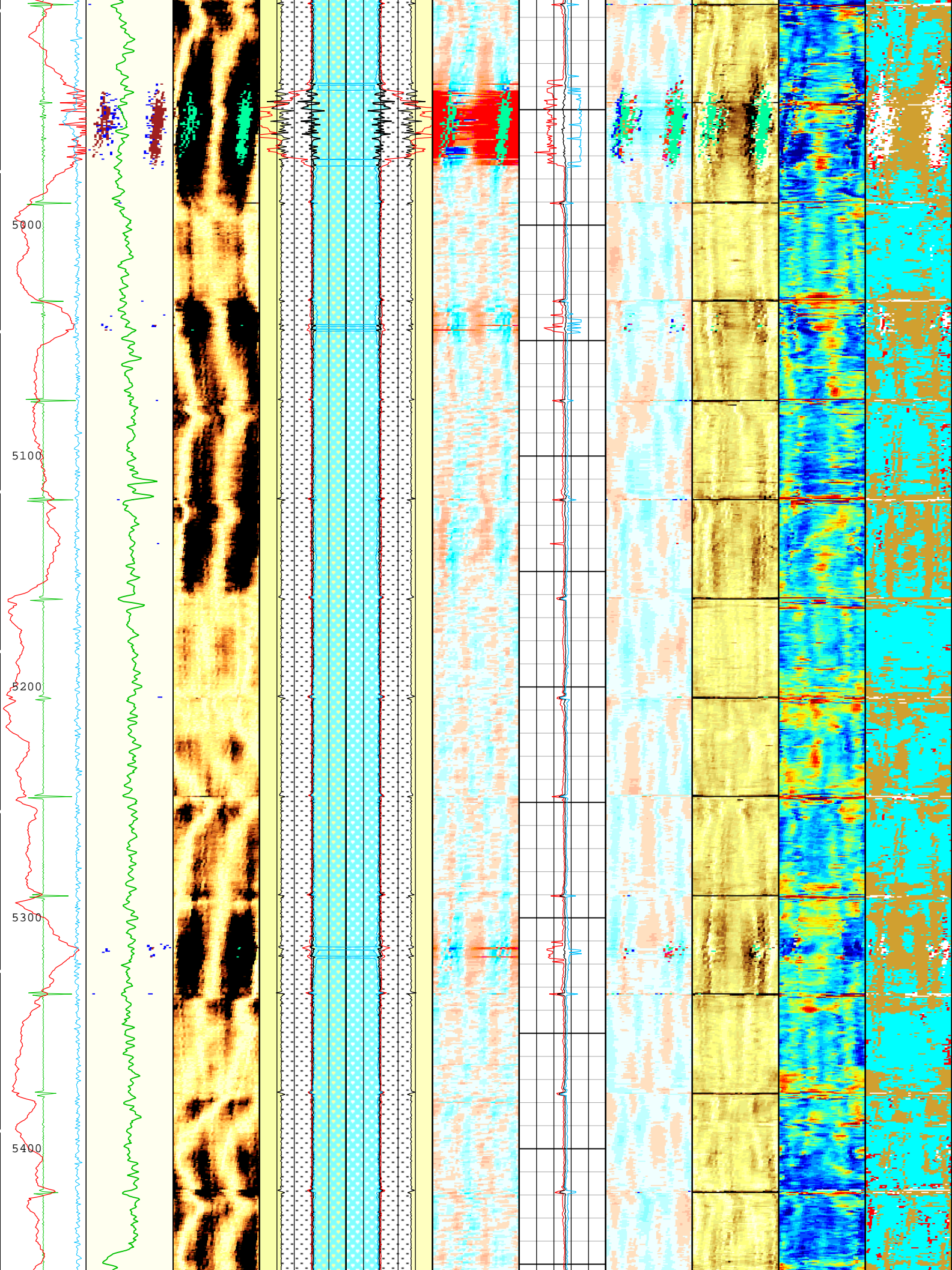


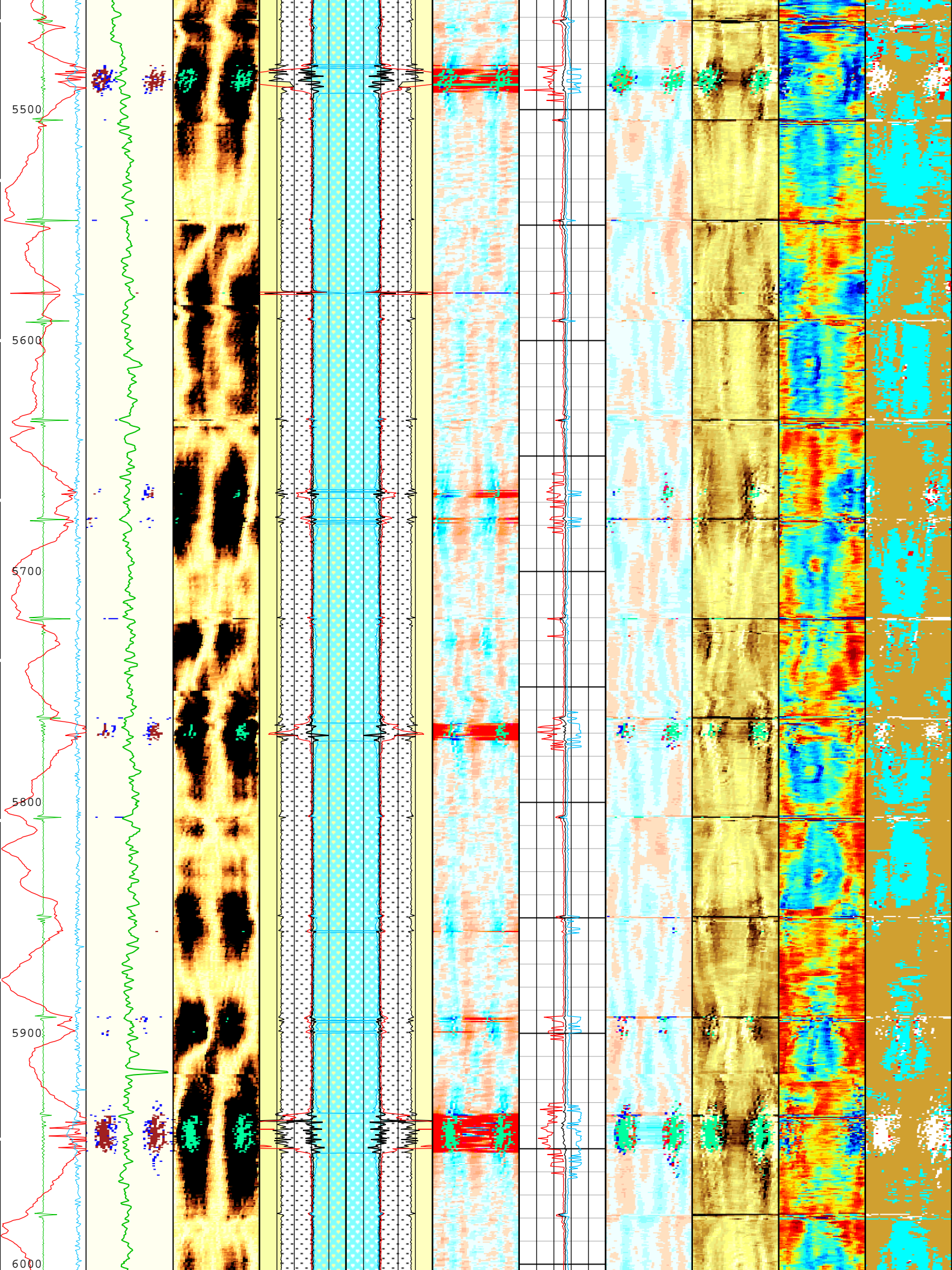


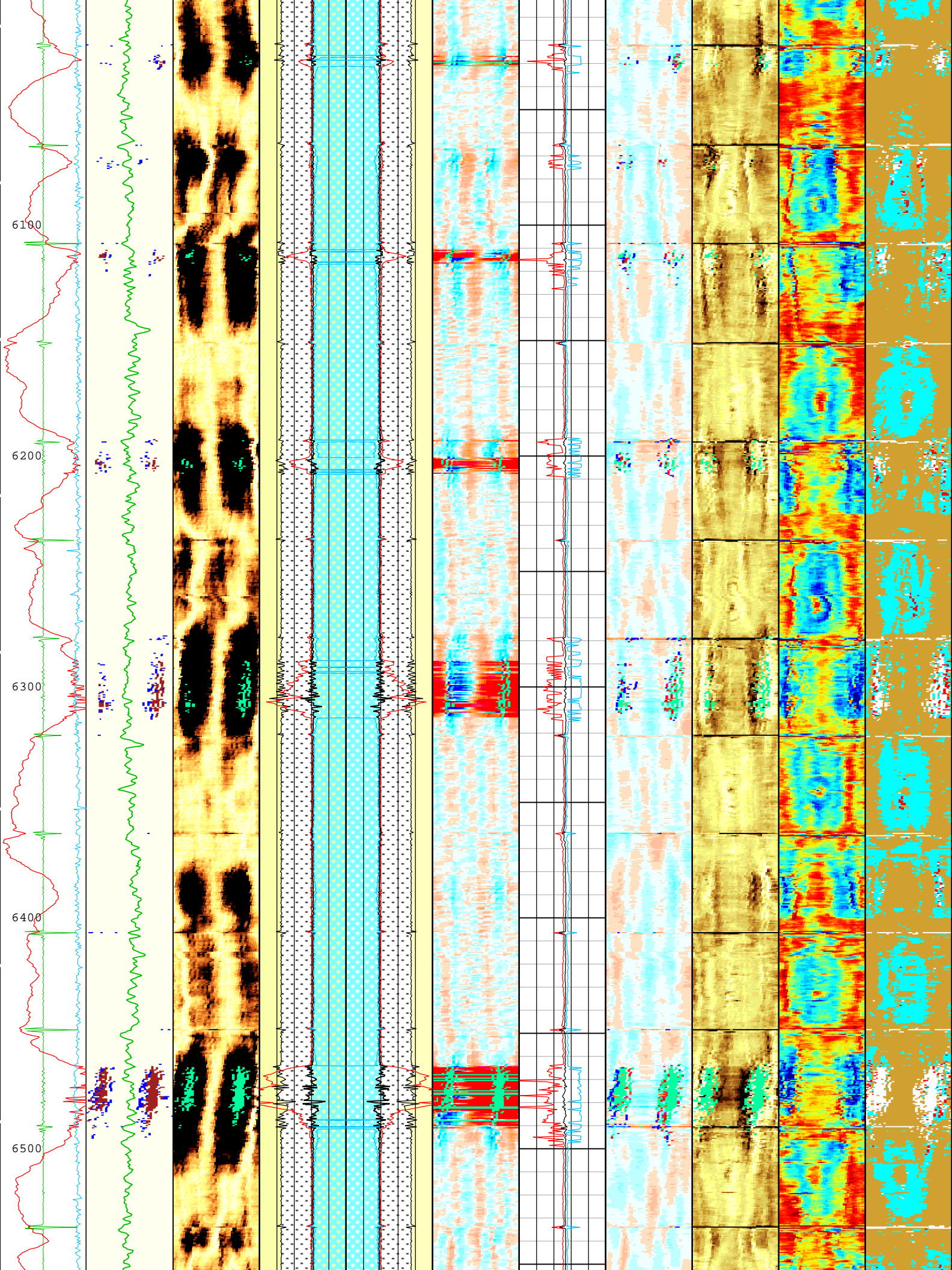


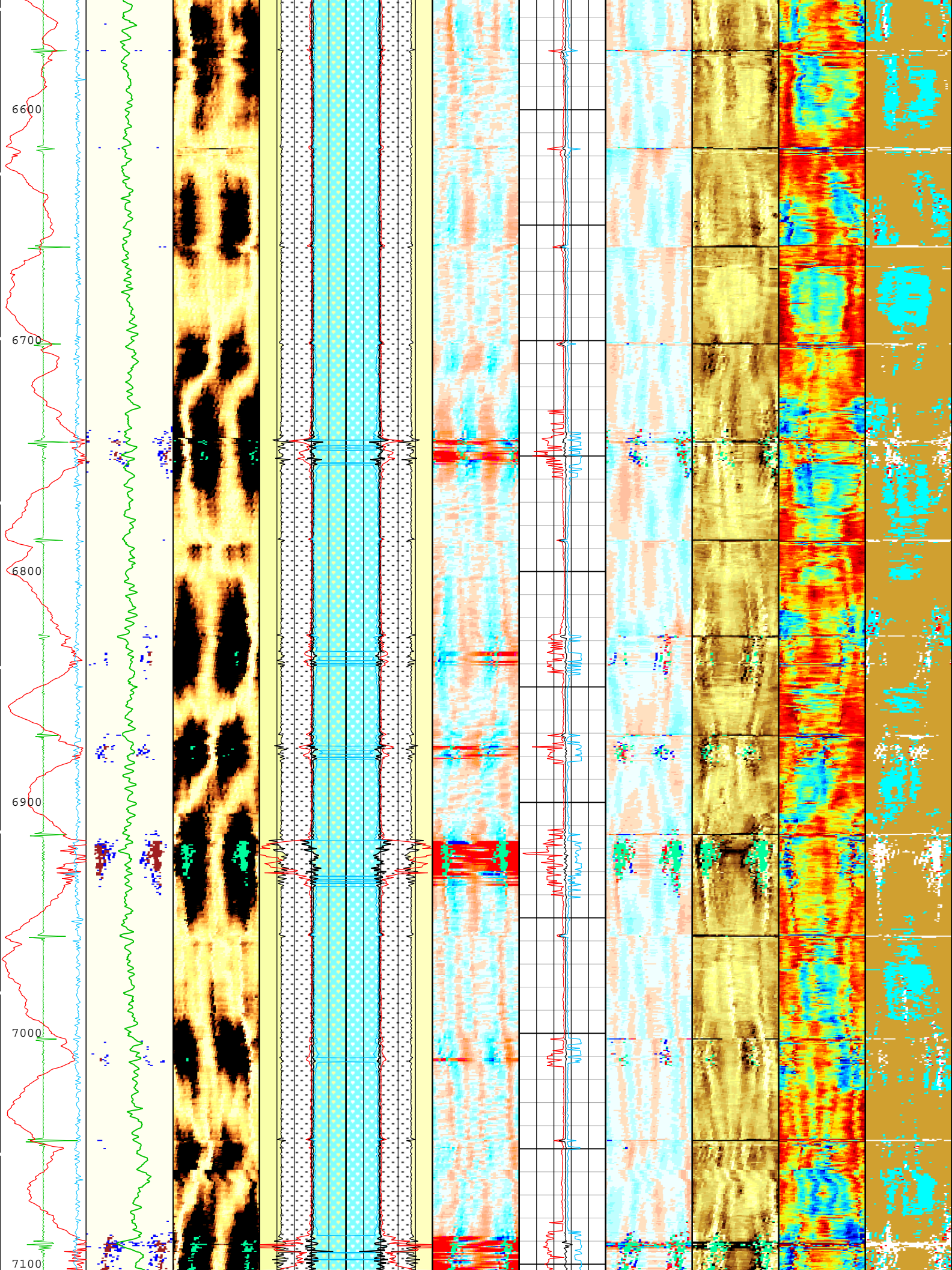


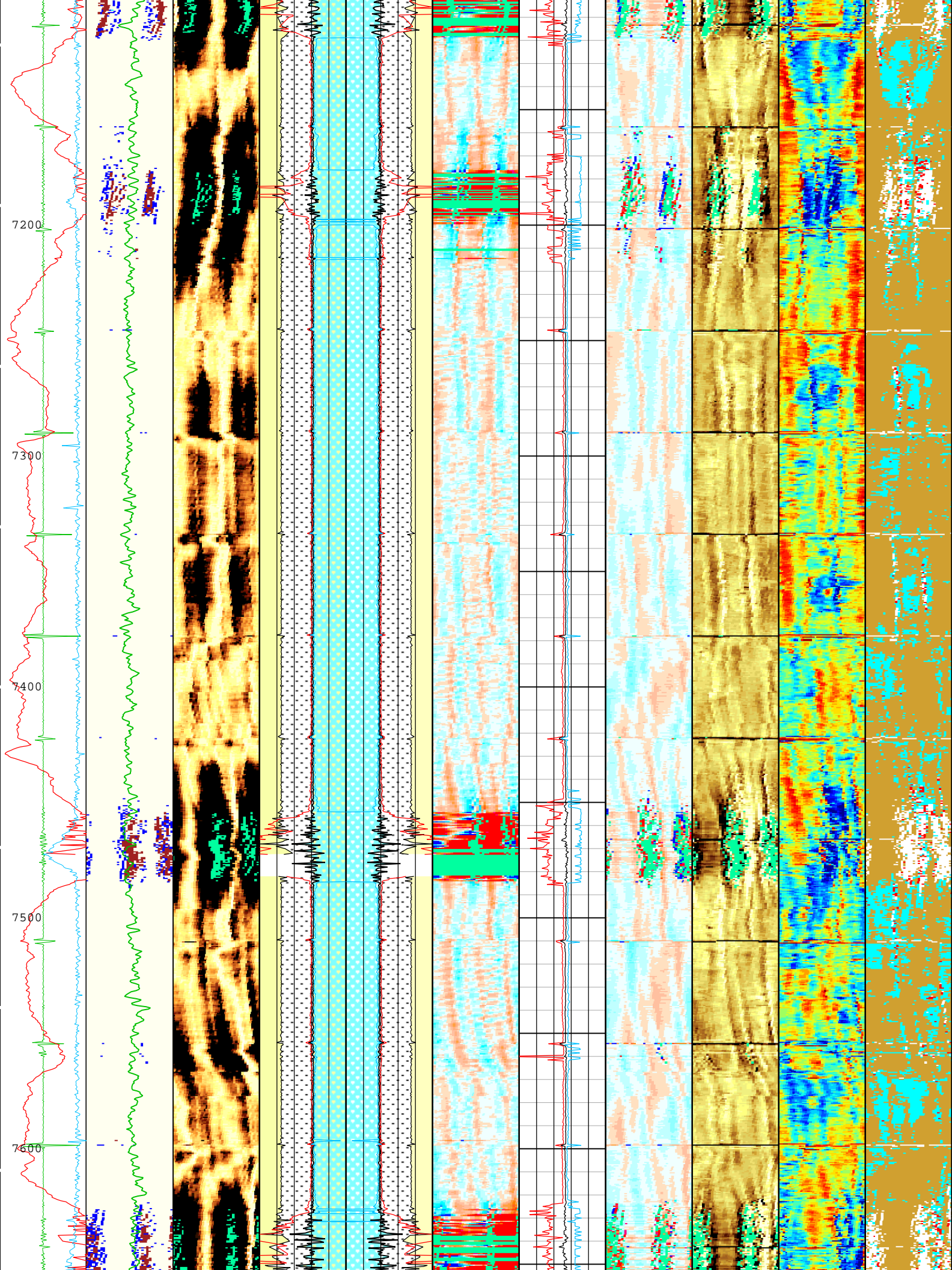


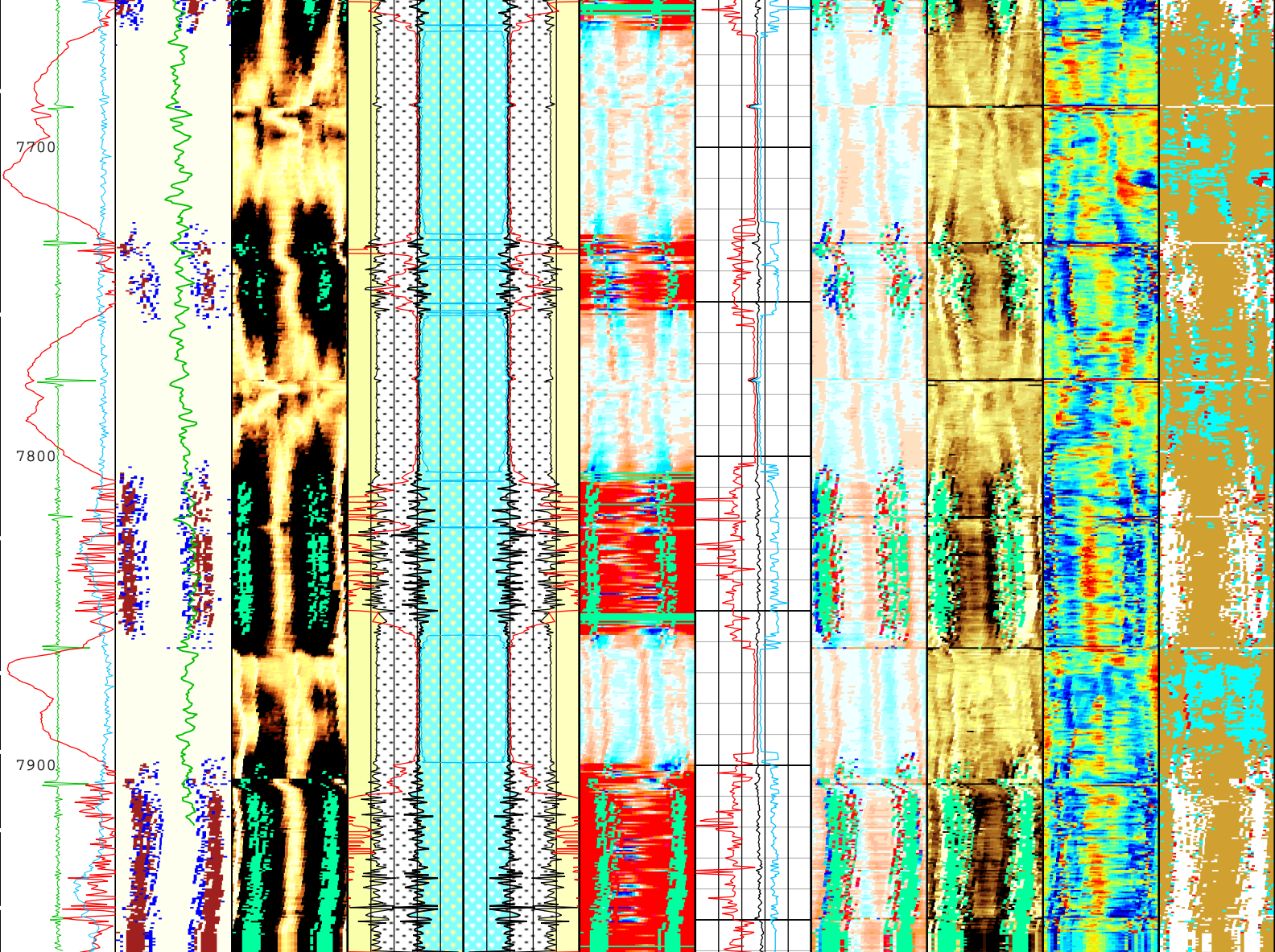

















|   |  |   |   |   |   |   |   |   |   |  |
|---|--|---|---|---|---|---|---|---|---|--|
| <p>Casing Collar Locator (CCLU) USIT-E</p> <p>-20 in 20</p>   | <p>Absent 1.500 3.500</p> <p>Explicit Normalization</p> <p>USIT - USIT Processing Flags (UFLG) USIT-E</p> <p>Orientation: Top of Hole</p> <p>U L B R U</p> | <p>Absent -5.200 -3.600 -2.000 -0.400</p> <p>Explicit Normalization</p> <p>USIT - Amplitude of Wave (AWBK) USIT-E (dB)</p> <p>Orientation: Top of Hole</p> <p>U L B R U</p> | <p>External Radii Average (ERAV) USIT-E</p> <p>3 in 2</p> <p>Internal Radius Averaged Value (IRAV) USIT-E</p> <p>3 in 2</p> | <p>External Radii Average (ERAV) USIT-E</p> <p>2 in 3</p> <p>Internal Radius Averaged Value (IRAV) USIT-E</p> <p>2 in 3</p> | <p>Absent -0.051 -0.012 0.028 0.068</p> <p>Explicit Normalization</p> <p>USIT - Internal Radii Normalized (IRBK) USIT-E (in)</p> <p>Orientation: Top of Hole</p> <p>U L B R U</p> | <p>Thickness Minimum Value (THMN) USIT-E</p> <p>0.1 in 0.6</p> <p>Thickness Average Value (THAV) USIT-E</p> <p>0.1 in 0.6</p> | <p>Absent -0.051 -0.012 0.028 0.068</p> <p>Explicit Normalization</p> <p>USIT - Casing Thickness Normalized (THBK) USIT-E (in)</p> <p>Orientation: Top of Hole</p> <p>U L B R U</p> | <p>Absent 1.500 3.500 5.500 7.500</p> <p>Custom Normalization</p> <p>USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)</p> <p>Orientation: Top of Hole</p> <p>U L B R U</p> | <p>Absent 42.000 66.000 90.000 114.000</p> <p>Custom Normalization</p> <p>USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)</p> <p>Orientation: Top of Hole</p> <p>U L B R U</p> | <p>Absent 1.500 3.500</p> <p>Explicit Normalization</p> <p>USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E</p> <p>Orientation: Top of Hole</p> <p>U L B R U</p> |
| <p>Amplitude of Eccentering (ECCE) USIT-E</p> <p>0 in 0.5</p> | <p>USIT Processing Flags (UFLG[0]) USIT-E</p> <p>1 5</p>   |   | <p>Internal Radius Maximum Value (IRMX) USIT-E</p> <p>3 in 2</p>  | <p>Internal Radius Maximum Value (IRMX) USIT-E</p> <p>2 in 3</p>  |   | <p>Thickness Maximum Value (THMX) USIT-E</p> <p>0.1 in 0.6</p>  |   |   |   |  |
| <p>Motor Revolution Speed (RSAV) USIT-E</p> <p>6 c/s 7.5</p>  |  |   | <p>Internal Radius Minimum Value (IRMN) USIT-E</p> <p>3 in 2</p>  | <p>Internal Radius Minimum Value (IRMN) USIT-E</p> <p>2 in 3</p>  |   |   |   |   |   |  |
| <p>Gamma Ray (ECGR_EDT C) EDTC-B</p> <p>0 gAPI 150</p>        |  |   |   |   |   |   |   |   |   |  |

TIME\_1900 - Time Marked every 60.00 (s)

|   |  |
|---|--|
| 1 - UFLG 1 Value within [0.0 - 1.5] - :               |  UTIM Error                 |
| 2 - UFLG 2 Value within [1.5 - 2.5] - :               |  Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - :               |  WINLEN Error             |
| 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : |  Casing Thickness Error   |
| 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10 ] - : |  Loop Processing Error    |

Description: USI IBC SLG Composite Format: Log ( Import (2) of IBC SLG Composite ) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured  
Depth Creation Date: 30-Sep-2019 01:54:18

## Channel Processing Parameters

### 1A: Parameters

| Parameter         | Description  | Tool      | Value             | Unit    |
|-------------------|--|-----------|-------------------|---------|
| BAR(ISSBAR)       | Barite Mud Presence Flag                             | Borehole  | No                |         |
| BHS               | Borehole Status (Open or Cased Hole)                 | Borehole  | Cased             |         |
| BS                | Bit Size   | WLSESSION | Depth Zoned       | in      |
| CBLO              | Casing Bottom (Logger)                               | WLSESSION | 13717             | ft      |
| CDEN              | Cement Density                                       | USIT-E    | 12.5              | lbm/gal |
| CDEN              | Cement Density                                       | EDTC-B    | 16.69             | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type  | USIT-E    | Regular Cement    |         |
| DFD               | Drilling Fluid Density                               | Borehole  | 9                 | lbm/gal |
| DFT_CATEGORY      | Drilling Fluid Type                                  | Borehole  | Water             |         |
| DTMD              | Borehole Fluid Slowness                              | Borehole  | 192               | us/ft   |
| FD                | Fluid Density  | USIT-E    | 10.5              | lbm/gal |
| GCSE_DOWN_PASS    | Generalized Caliper Selection for WL Log Down Passes | Borehole  | BS(RT)            |         |
| GCSE_UP_PASS      | Generalized Caliper Selection for WL Log Up Passes   | Borehole  | BS(RT)            |         |
| HEMA              | Hematite Presence Flag                               | Borehole  | No                |         |
| IBC_FRP_OFFSET    | IBC Flexural Offset from Free Pipe                   | USIT-E    | -33.74            | dB/m    |
| IBC_FVEL_SEL      | IBC Fluid Velocity Selection                         | USIT-E    | Automatic         |         |
| IBC_OFFSET_SEL    | IBC Flexural Offset Selector                         | USIT-E    | IBC_FRP_OFFSET    |         |
| IBC_ZMUD_SEL      | IBC Mud Impedance Selection                          | USIT-E    | Theoretical       |         |
| ICE_PROCESS       | ICE Processing                                       | USIT-E    | Yes               |         |
| IMAR              | Image Rotation                                       | USIT-E    | RB                |         |
| MEAS_WLEN         | Tcube Processing Window Length in Measurement Mode   | USIT-E    | 22.44             | us      |
| MUD_N_THE         | Theoretical Mud Normalization Factor                 | USIT-E    | 1.1               |         |
| U-USIT_DFSZ       | Drilling Fluid Specific Acoustic Impedance           | USIT-E    | 1.6               | Mrayl   |
| U-USIT_UFAO       | SIT Flexural Attenuation Offset                      | USIT-E    | -46.82            | dB/m    |
| U-USIT_UIAP       | IBC Answer Product Enabled                           | USIT-E    | SolidLiquidGasMap |         |
| ZMUD              | Acoustic Impedance of Mud                            | Borehole  | 1.71              | Mrayl   |
| ZTCM              | Acoustic Impedance Threshold for Cement              | USIT-E    | 2.6               | Mrayl   |
| ZTGS              | Acoustic Impedance Threshold for Gas                 | USIT-E    | 0.3               | Mrayl   |

### Depth Zone Parameters

| Parameter | Value | Start ( ft ) | Stop ( ft ) |
|-----------|-------|--------------|-------------|
| BS        | 13.5  | 6            | 2555        |
| BS        | 8.5   | 2555         | 7961.5      |

All depth are actual.

## Tool Control Parameters

### 1A: Parameters

| Parameter | Description               | Tool   | Value | Unit |
|-----------|---------------------------|--------|-------|------|
| AGMN      | Minimum Gain of Cartridge | USIT-E | -12   | dB   |

|             |                                 |        |                  |    |
|-------------|---------------------------------|--------|------------------|----|
| AGMX        | Maximum Gain of Cartridge       | USIT-E | 48               | dB |
| EMXV        | EMEX Voltage                    | USIT-E | Time Zoned       | V  |
| IBC_ACQTYPE | IBC Acquisition type            | USIT-E | 1 MHz            |    |
| IBC_FLEXDBP | IBC Flex Duration Before Peak   | USIT-E | 30               | us |
| ICE2_ACQ    | Ultrasonic ICE2 Acquisition     | USIT-E | Yes              |    |
| U-USIT_UFWB | Far Receiver Window Begin Time  | USIT-E | 121.48           | us |
| U-USIT_UFWE | Far Receiver Window End Time    | USIT-E | 189.35           | us |
| U-USIT_UNWB | Near Receiver Window Begin Time | USIT-E | 79.64            | us |
| U-USIT_UNWE | Near Receiver Window End Time   | USIT-E | 153.09           | us |
| UPAT        | USIT Emission Pattern           | USIT-E | Pattern 375 KHz  |    |
| UWKM        | USIT Working Mode               | USIT-E | 10 deg at 6.0 in |    |
| U-USIT_UTAN | Transducer Angles               | USIT-E | 38_DEG           |    |
| VRES        | Vertical Resolution             | USIT-E | 6.0 in           |    |
| WINB        | Window Begin Time               | USIT-E | 18.86            | us |
| WINE        | Window End Time                 | USIT-E | 85.68            | us |

### Time Zone Parameters

| Parameter | Value | Start Time           | Stop Time            | Start Depth ( ft ) | Stop Depth ( ft ) |
|-----------|-------|----------------------|----------------------|--------------------|-------------------|
| EMXV      | 110   | 29-Sep-2019 23:07:06 | 30-Sep-2019 00:48:55 | 7962.32            | 1042.13           |
| EMXV      | 90    | 30-Sep-2019 00:48:55 | 30-Sep-2019 00:50:05 | 1042.13            | 958.31            |
| EMXV      | 95    | 30-Sep-2019 00:50:05 | 30-Sep-2019 00:50:19 | 958.31             | 942.55            |
| EMXV      | 90    | 30-Sep-2019 00:50:19 | 30-Sep-2019 00:58:50 | 942.55             | 329.72            |
| EMXV      | 85    | 30-Sep-2019 00:58:50 | 30-Sep-2019 01:04:00 | 329.72             | 48.37             |

All depth are at tool zero.

## 1A

### IBC GOODWIN MAIN PASS @10DEG X 6IN @0PSI [0.1:100]

#### Pass Summary

| Run Name | Pass Objective | Direction | Top      | Bottom     | Start                   | Stop                   | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|----------|------------|-------------------------|------------------------|----------|-------------|-----------------------|
| 1A       | Log[3]:Up      | Up        | 48.37 ft | 7962.32 ft | 29-Sep-2019 11:07:06 PM | 30-Sep-2019 1:04:00 AM | ON       | 11.72 ft    | No                    |

All depths are referenced to toolstring zero

**Log** Company: Crestone Peak Resources Operating, LLC    Well: Kugel 1L-18H-H267

1A: Log[3]:Up:S003

Description: USI Goodwin    Format: Log ( Import (2) of IBC Goodwin )    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 30-Sep-2019 01:54:31

TIME\_1900 - Time Marked every 60.00 (s)

Gamma Ray (ECGR\_E DTC) EDTC-B  
0 150 gAPI

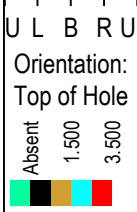
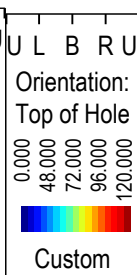
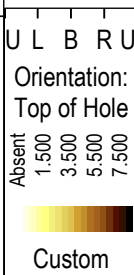
Amplitude of Eccentering (ECCE) USIT-E  
0 in 0.5

Acoustic Impedance Minimum (AIMN) USIT-E  
-1 Mrayl 9

Acoustic Impedance Maximum (AIMX) USIT-E  
40 140 dB/m

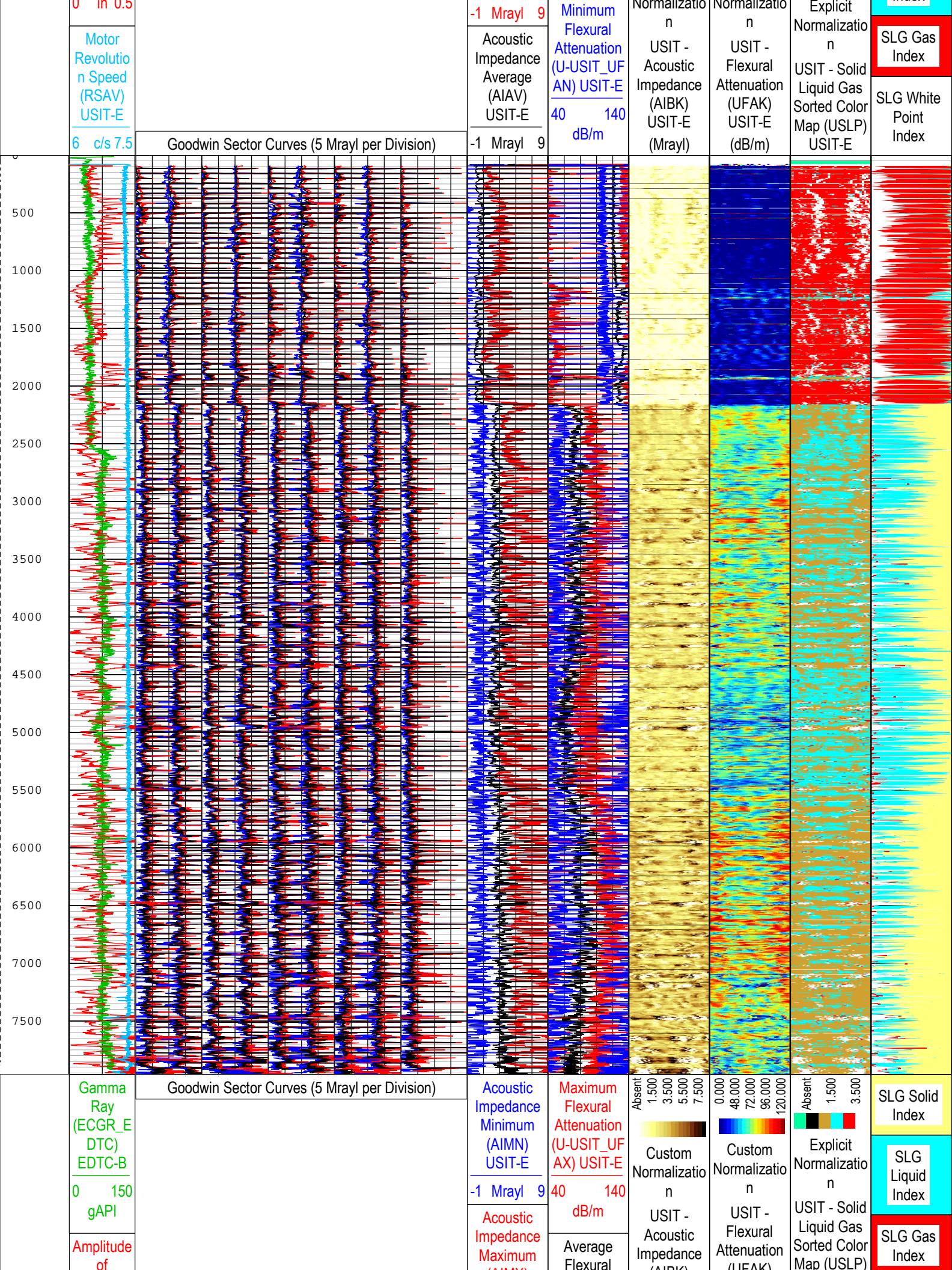
Maximum Flexural Attenuation (U-USIT\_UF AX) USIT-E  
40 140 dB/m

Average Flexural Attenuation (U-USIT\_UF AV) USIT-E  
40 140 dB/m



SLG Solid Index

SLG Liquid Index



Eccentricity (ECCE) USIT-E  
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E  
6 c/s 7.5

|  |   |  |   |   |                       |
|--|---|--|---|---|-----------------------|
| (AIMX) USIT-E<br>-1 Mrayl 9                            | Attenuation (U-USIT_UF AV) USIT-E<br>40 140 dB/m                  | (AIBK) USIT-E (Mrayl)<br>Orientation: Top of Hole<br>U L B R U | (U-AR) USIT-E (dB/m)<br>Orientation: Top of Hole<br>U L B R U | USIT-E<br>Orientation: Top of Hole<br>U L B R U | SLG White Point Index |
| Acoustic Impedance Average (AIAV) USIT-E<br>-1 Mrayl 9 | Minimum Flexural Attenuation (U-USIT_UF AN) USIT-E<br>40 140 dB/m |  |   |   |                       |

TIME\_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log ( Import (2) of IBC Goodwin ) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 30-Sep-2019 01:54:31

# 1A

## IBC SLG REPEAT PASS 1 @10DEG X 6IN @0PSI [5:100]

### Software Version

| Acquisition System | Version         |
|--------------------|-----------------|
| Maxwell 2019       | 9.0.106845.3100 |

### Pass Summary

| Run Name | Pass Objective | Direction | Top        | Bottom     | Start                   | Stop                    | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|------------|------------|-------------------------|-------------------------|----------|-------------|-----------------------|
| 1A       | Log[2]:Up      | Up        | 7155.71 ft | 7955.98 ft | 29-Sep-2019 10:44:44 PM | 29-Sep-2019 10:59:55 PM | ON       | 9.07 ft     | No                    |

All depths are referenced to toolstring zero

### Log

Company: Crestone Peak Resources Operating, LLC Well: Kugel 1L-18H-H267  
1A: Log[2]:Up:S003

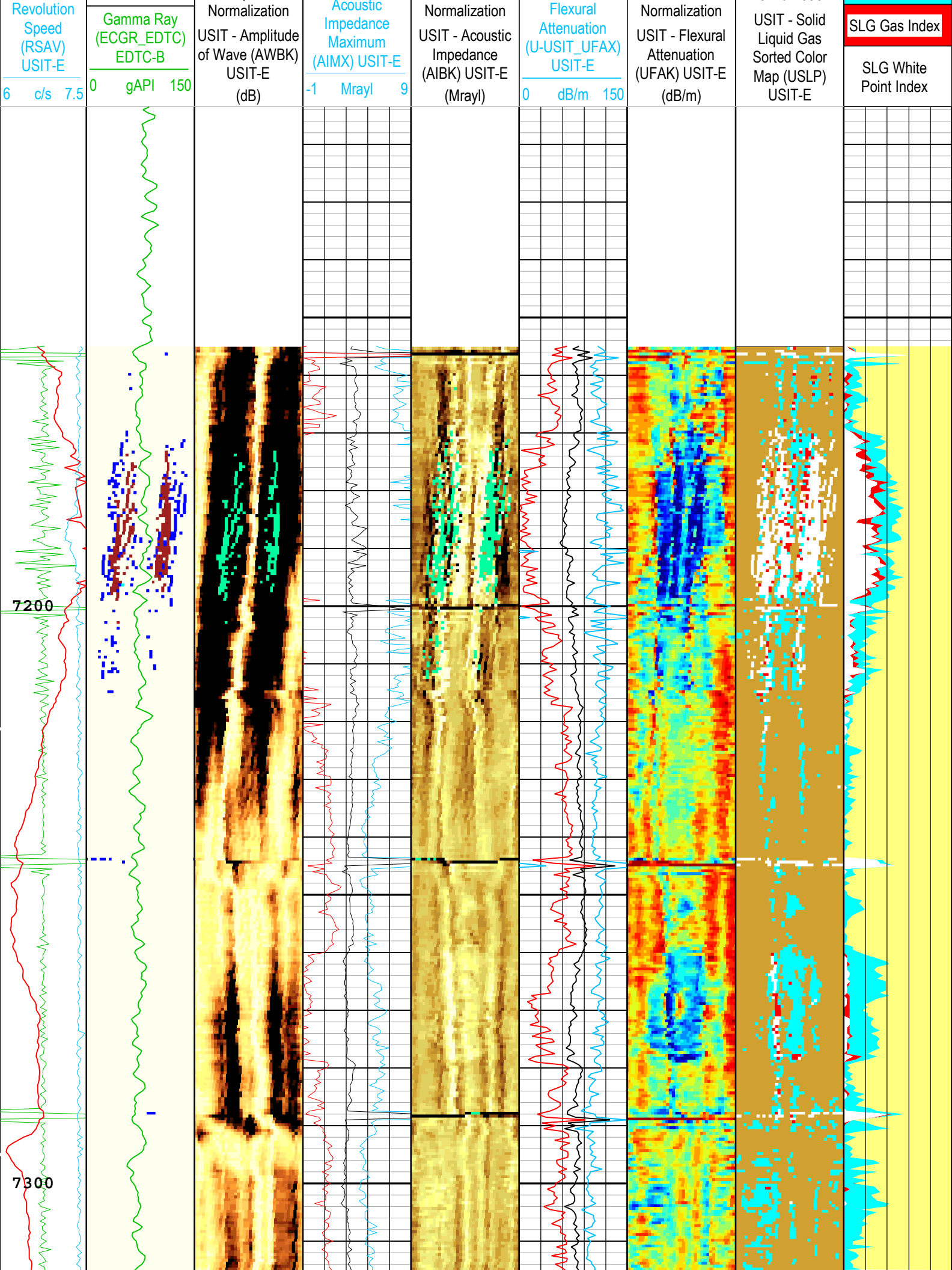
Description: USI IBC SLG Format: Log ( Import (2) of IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 30-Sep-2019 01:54:39

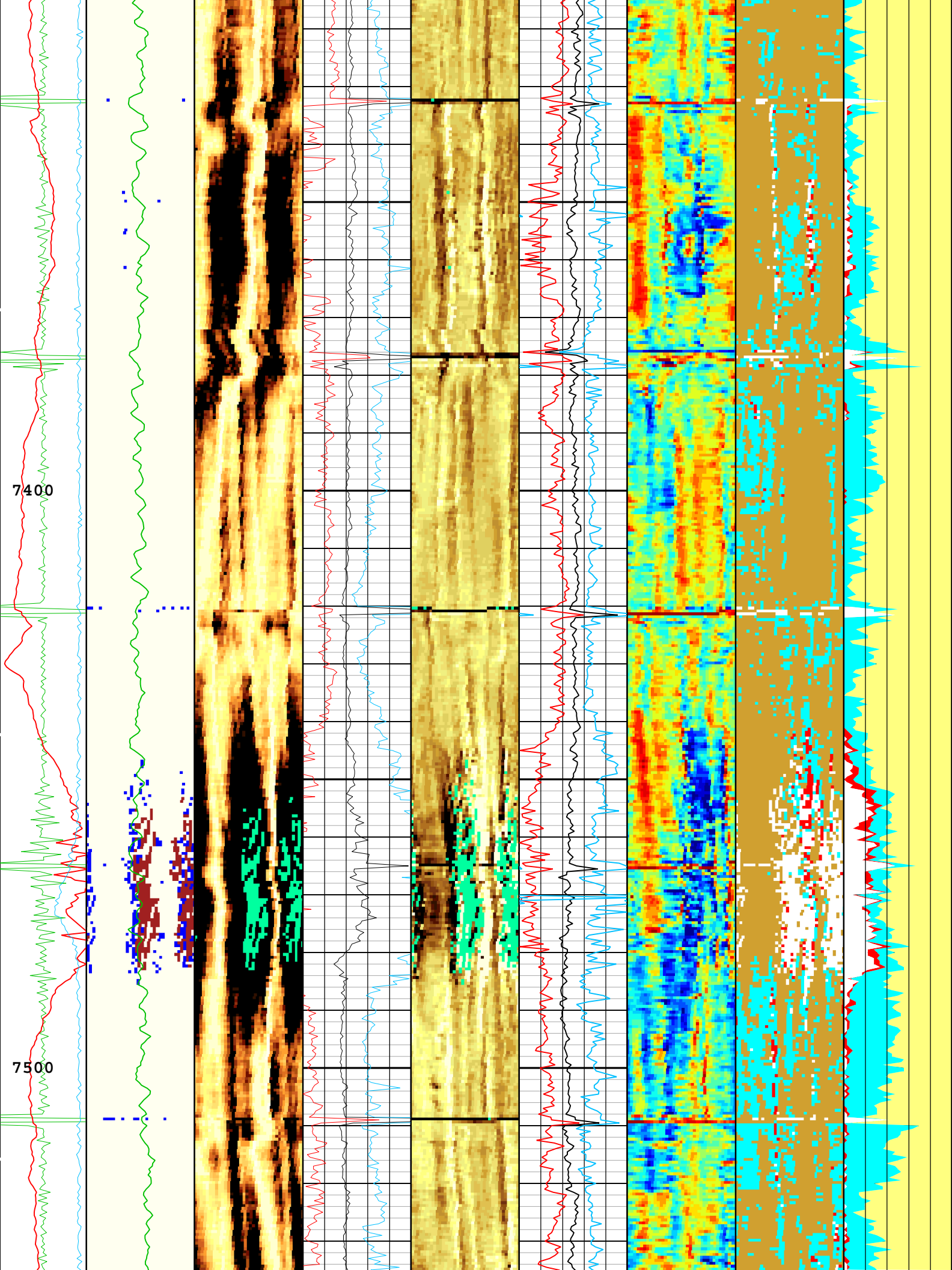
TIME\_1900 - Time Marked every 60.00 (s)

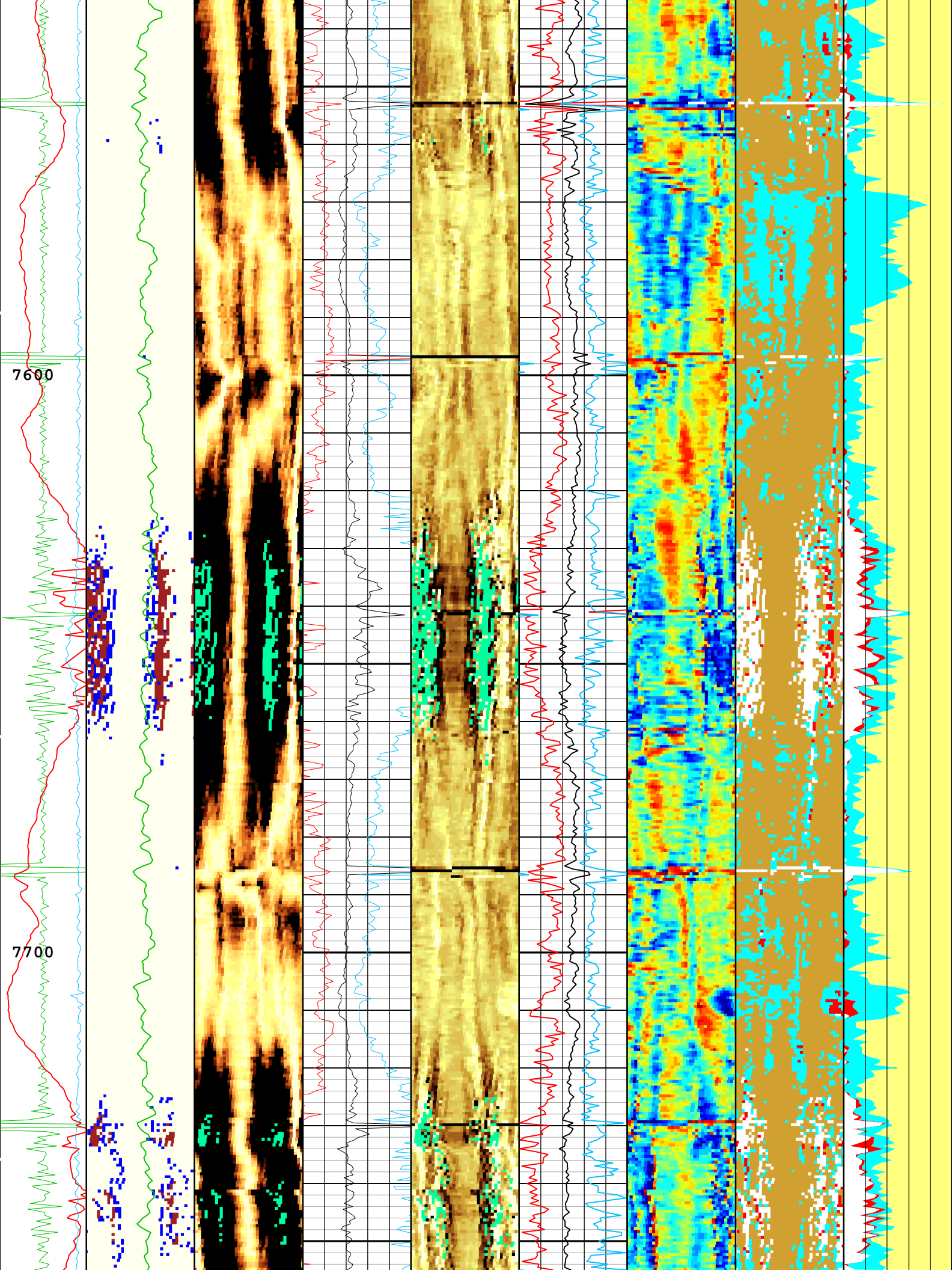
USIT Processing Flags (UFLG[0]) USIT-E

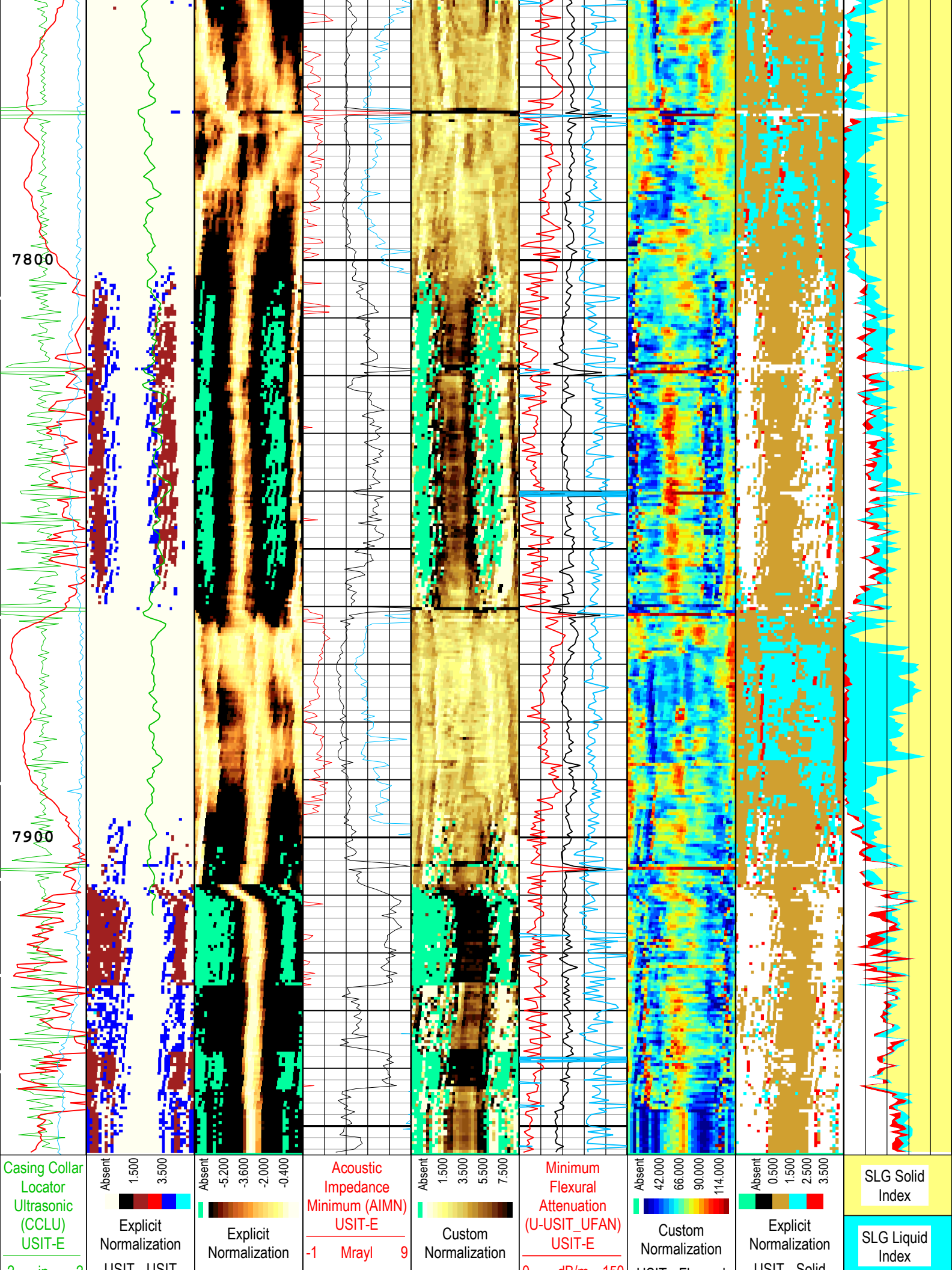
|   |                             |
|---|-----------------------------|
| 1 - UFLG 1 Value within [0.0 - 1.5] - :               | ■ UTIM Error                |
| 2 - UFLG 2 Value within [1.5 - 2.5] - :               | ■ Pulse Origin Not Detected |
| 3 - UFLG 3 Value within [2.5 - 3.5] - :               | ■ WINLEN Error              |
| 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | ■ Casing Thickness Error    |
| 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  | ■ Loop Processing Error     |

|   |   |  |   |  |   |  |   |  |   |  |                  |
|---|---|--|---|--|---|--|---|--|---|--|------------------|
| Casing Collar Locator Ultrasonic (CCLU) USIT-E<br>-2 in 2 | U L B R U<br>Orientation: Top of Hole<br>Absent 1.500 3.500<br>Explicit Normalization | Acoustic Impedance Minimum (AIMN) USIT-E<br>-1 Mrayl 9 | Minimum Flexural Attenuation (U-USIT_UFAN) USIT-E<br>0 dB/m 150 | Amplitude of Eccentering (ECCE) USIT-E<br>0 in 0.5 | U L B R U<br>Orientation: Top of Hole<br>Absent -5.200 -3.600 -2.000 -0.400<br>Explicit | Acoustic Impedance Average (AIAV) USIT-E<br>-1 Mrayl 9 | Average Flexural Attenuation (U-USIT_UFAV) USIT-E<br>0 dB/m 150 | U L B R U<br>Orientation: Top of Hole<br>Absent 42.000 66.000 90.000 114.000<br>Custom | U L B R U<br>Orientation: Top of Hole<br>Absent 0.500 1.500 2.500 3.500<br>Explicit Normalization | SLG Solid Index                        | SLG Liquid Index |
|   | USIT - USIT Processing Flags (UFLG) USIT-E  |  |   |  |   |  |   |  |   | USIT Processing Flags (UFLG[0]) USIT-E | Custom           |
| Motor   | 1 5   |  | Maximum   |  |   |  |   |  |   |  |                  |









|  |   |  |  |  |   |   |   |  |
|--|---|--|--|--|---|---|---|--|
| Amplitude of Eccentering (ECCE) USIT-E<br>0 in 0.5 | Processing Flags (UFLG) USIT-E<br>Orientation: Top of Hole<br>U L B R U | USIT - Amplitude of Wave (AWBK) USIT-E (dB)<br>Orientation: Top of Hole<br>U L B R U | Acoustic Impedance Average (AIAV) USIT-E<br>-1 Mrayl 9 | USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)<br>Orientation: Top of Hole<br>U L B R U | Average Flexural Attenuation (U-USIT_UFAV) USIT-E<br>0 dB/m 150 | USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)<br>Orientation: Top of Hole<br>U L B R U | USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E<br>Orientation: Top of Hole<br>U L B R U | SLG Gas Index<br>SLG White Point Index |
| Motor Revolution Speed (RSAV) USIT-E<br>6 c/s 7.5  | USIT Processing Flags (UFLG[0]) USIT-E<br>1 5                           |  | Acoustic Impedance Maximum (AIMX) USIT-E<br>-1 Mrayl 9 |  | Maximum Flexural Attenuation (U-USIT_UFAX) USIT-E<br>0 dB/m 150 |   |   |  |
|  | Gamma Ray (ECGR_EDTC) EDTC-B<br>0 gAPI 150                              |  |  |  |   |   |   |  |

USIT Processing Flags (UFLG[0]) USIT-E

1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error

2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected

3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error

4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error

5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  Loop Processing Error

TIME\_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Format: Log ( Import (2) of IBC SLG ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 30-Sep-2019 01:54:39

## Channel Processing Parameters

### 1A: Parameters

| Parameter         | Description  | Tool      | Value                  | Unit    |
|-------------------|--|-----------|------------------------|---------|
| BARI(ISSBAR)      | Barite Mud Presence Flag                             | Borehole  | No                     |         |
| BERJ              | Bad Echo Rejection                                   | USIT-E    | On                     |         |
| BHS               | Borehole Status (Open or Cased Hole)                 | Borehole  | Cased                  |         |
| BS                | Bit Size   | WLSESSION | 8.5                    | in      |
| CASING_PRATIO     | Casing Poisson Ratio                                 | USIT-E    | Standard Poisson Ratio |         |
| CBLO              | Casing Bottom (Logger)                               | WLSESSION | 13717                  | ft      |
| CDEN              | Cement Density                                       | USIT-E    | 12.5                   | lbm/gal |
| CDEN              | Cement Density                                       | EDTC-B    | 16.69                  | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type  | USIT-E    | Regular Cement         |         |
| DFD               | Drilling Fluid Density                               | Borehole  | 9                      | lbm/gal |
| DFT_CATEGORY      | Drilling Fluid Type                                  | Borehole  | Water                  |         |
| DTMD              | Borehole Fluid Slowness                              | Borehole  | 192                    | us/ft   |
| FD                | Fluid Density  | USIT-E    | 10.5                   | lbm/gal |
| FDII              | FPM Data Interpolation Interval                      | USIT-E    | 0                      | ft      |
| GCSE_DOWN_PASS    | Generalized Caliper Selection for WL Log Down Passes | Borehole  | BS(RT)                 |         |
| GCSE_UP_PASS      | Generalized Caliper Selection for WL Log Up Passes   | Borehole  | BS(RT)                 |         |
| GR_MULTIPLIER     | Gamma Ray Multiplier                                 | EDTC-B    | 1                      |         |
| HEMA              | Hematite Presence Flag                               | Borehole  | No                     |         |
| IBC_FRP_OFFSET    | IBC Flexural Offset from Free Pipe                   | USIT-E    | -33.74                 | dB/m    |
| IBC_FVEL_SEL      | IBC Fluid Velocity Selection                         | USIT-E    | Automatic              |         |
| IBC_OFFSET_SEL    | IBC Flexural Offset Selector                         | USIT-E    | IBC_FRP_OFFSET         |         |
| IBC_ZMUD_SEL      | IBC Mud Impedance Selection                          | USIT-E    | Theoretical            |         |
| ICE_PROCESS       | ICE Processing                                       | USIT-E    | Yes                    |         |
| IMAR              | Image Rotation                                       | USIT-E    | RB                     |         |
| MEAS_WLEN         | Tube Processing Window Length in Measurement Mode    | USIT-E    | 22.44                  | us      |

|               |  |          |                   |       |
|---------------|--|----------|-------------------|-------|
| MUD_N_THE     | Theoretical Mud Normalization Factor             | USIT-E   | 1.1               |       |
| RCOD          | Reference Calibrator Outer Diameter              | USIT-E   | 4.5               | in    |
| RCSO          | Reference Calibrator Standoff                    | USIT-E   | 0.842             | in    |
| RCTH          | Reference Calibrator Thickness                   | USIT-E   | 0.216             | in    |
| RPLUS_PROCESS | Ultrasonic R+ Processing                         | USIT-E   | No                |       |
| SOCN          | Standoff Distance                                | EDTC-B   | 0.125             | in    |
| SOCO          | Standoff Correction Option                       | EDTC-B   | No                |       |
| THDH          | Maximum Search Thickness (percentage of nominal) | USIT-E   | 130               | %     |
| THDL          | Minimum Search Thickness (percentage of nominal) | USIT-E   | 70                | %     |
| TPOS_EDTC     | Tool Position: Centered or Eccentered            | EDTC-B   | Eccentered        |       |
| U-USIT_DFSZ   | Drilling Fluid Specific Acoustic Impedance       | USIT-E   | 1.6               | Mrayl |
| U-USIT_UFAO   | SIT Flexural Attenuation Offset                  | USIT-E   | -46.82            | dB/m  |
| U-USIT_UIAP   | IBC Answer Product Enabled                       | USIT-E   | SolidLiquidGasMap |       |
| THDP          | Thickness Detection Policy                       | USIT-E   | Fundamental       |       |
| VCAS          | Ultrasonic Transversal Velocity in Casing        | USIT-E   | 51.4              | us/ft |
| ZCAS          | Acoustic Impedance of Casing                     | USIT-E   | 46.25             | Mrayl |
| ZINI          | Initial Estimate of Cement Impedance             | USIT-E   | -1                | Mrayl |
| ZMUD          | Acoustic Impedance of Mud                        | Borehole | 1.71              | Mrayl |
| ZTCM          | Acoustic Impedance Threshold for Cement          | USIT-E   | 2.6               | Mrayl |
| ZTGS          | Acoustic Impedance Threshold for Gas             | USIT-E   | 0.3               | Mrayl |

## Tool Control Parameters

### 1A: Parameters

| Parameter     | Description                                | Tool   | Value            | Unit |
|---------------|--|--------|------------------|------|
| AGMN          | Minimum Gain of Cartridge                  | USIT-E | -12              | dB   |
| AGMX          | Maximum Gain of Cartridge                  | USIT-E | 48               | dB   |
| U-USIT_DDT5   | USIC Downhole Decimation for T5 only       | USIT-E | 0_NONE           |      |
| DOT(DOS)      | Distance between Opposite Transducer Faces | USIT-E | 1.756            | in   |
| EMXV          | EMEX Voltage                               | USIT-E | Time Zoned       | V    |
| HRES          | Horizontal Resolution                      | USIT-E | 10 deg           |      |
| IBC_ACQTYPE   | IBC Acquisition type                       | USIT-E | 1 MHz            |      |
| IBC_FLEXDBP   | IBC Flex Duration Before Peak              | USIT-E | 30               | us   |
| ICE2_ACQ      | Ultrasonic ICE2 Acquisition                | USIT-E | Yes              |      |
| MOTOR_PROTECT | Motor Protection                           | USIT-E | On               |      |
| UACLV_PERM    | Ultrasonic ACLV Permanent                  | USIT-E | Yes              |      |
| U-USIT_UFWB   | Far Receiver Window Begin Time             | USIT-E | Time Zoned       | us   |
| U-USIT_UFWE   | Far Receiver Window End Time               | USIT-E | Time Zoned       | us   |
| U-USIT_UNWB   | Near Receiver Window Begin Time            | USIT-E | Time Zoned       | us   |
| U-USIT_UNWE   | Near Receiver Window End Time              | USIT-E | Time Zoned       | us   |
| USFR          | Ultrasonic Sampling Frequency              | USIT-E | 666667           | Hz   |
| UPAT          | USIT Emission Pattern                      | USIT-E | Pattern 375 KHz  |      |
| UWKM          | USIT Working Mode                          | USIT-E | 10 deg at 6.0 in |      |
| USSP          | Ultrasonic Service                         | USIT-E | IBC              |      |
| U-USIT_UTAN   | Transducer Angles                          | USIT-E | 38_DEG           |      |
| VRES          | Vertical Resolution                        | USIT-E | 6.0 in           |      |
| WINB          | Window Begin Time                          | USIT-E | Time Zoned       | us   |
| WINE          | Window End Time                            | USIT-E | Time Zoned       | us   |

### Time Zone Parameters

| Parameter | Value | Start Time | Stop Time | Start Depth ( ft ) | Stop Depth ( ft ) |
|-----------|-------|------------|-----------|--------------------|-------------------|
|-----------|-------|------------|-----------|--------------------|-------------------|

|             |        |                      |                      |         |         |
|-------------|--------|----------------------|----------------------|---------|---------|
| EMXV        | 75     | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:22 | 7955.98 | 7917.74 |
| EMXV        | 100    | 29-Sep-2019 22:47:22 | 29-Sep-2019 22:47:29 | 7917.74 | 7915.83 |
| EMXV        | 120    | 29-Sep-2019 22:47:29 | 29-Sep-2019 22:49:27 | 7915.83 | 7882.17 |
| EMXV        | 100    | 29-Sep-2019 22:49:27 | 29-Sep-2019 22:50:49 | 7882.17 | 7818.02 |
| EMXV        | 110    | 29-Sep-2019 22:50:49 | 29-Sep-2019 22:59:55 | 7818.02 | 7155.71 |
| U-USIT_UFWB | 133    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:45:53 | 7955.98 | 7942.32 |
| U-USIT_UFWB | 119.5  | 29-Sep-2019 22:45:53 | 29-Sep-2019 22:47:02 | 7942.32 | 7923.27 |
| U-USIT_UFWB | 106.6  | 29-Sep-2019 22:47:02 | 29-Sep-2019 22:48:36 | 7923.27 | 7897.15 |
| U-USIT_UFWB | 114.97 | 29-Sep-2019 22:48:36 | 29-Sep-2019 22:48:46 | 7897.15 | 7894.44 |
| U-USIT_UFWB | 121.48 | 29-Sep-2019 22:48:46 | 29-Sep-2019 22:59:55 | 7894.44 | 7155.71 |
| U-USIT_UFWE | 173    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:00 | 7955.98 | 7923.71 |
| U-USIT_UFWE | 189.35 | 29-Sep-2019 22:47:00 | 29-Sep-2019 22:47:14 | 7923.71 | 7919.96 |
| U-USIT_UFWE | 202.36 | 29-Sep-2019 22:47:14 | 29-Sep-2019 22:48:35 | 7919.96 | 7897.56 |
| U-USIT_UFWE | 189.35 | 29-Sep-2019 22:48:35 | 29-Sep-2019 22:59:55 | 7897.56 | 7155.71 |
| U-USIT_UNWB | 102    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:45:48 | 7955.98 | 7943.65 |
| U-USIT_UNWB | 84.14  | 29-Sep-2019 22:45:48 | 29-Sep-2019 22:46:56 | 7943.65 | 7924.81 |
| U-USIT_UNWB | 74.99  | 29-Sep-2019 22:46:56 | 29-Sep-2019 22:48:23 | 7924.81 | 7900.69 |
| U-USIT_UNWB | 81.5   | 29-Sep-2019 22:48:23 | 29-Sep-2019 22:48:53 | 7900.69 | 7892.55 |
| U-USIT_UNWB | 90.8   | 29-Sep-2019 22:48:53 | 29-Sep-2019 22:48:55 | 7892.55 | 7892.01 |
| U-USIT_UNWB | 88.01  | 29-Sep-2019 22:48:55 | 29-Sep-2019 22:49:11 | 7892.01 | 7887.63 |
| U-USIT_UNWB | 79.64  | 29-Sep-2019 22:49:11 | 29-Sep-2019 22:59:55 | 7887.63 | 7155.71 |
| U-USIT_UNWE | 142    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:44 | 7955.98 | 7911.56 |
| U-USIT_UNWE | 153.09 | 29-Sep-2019 22:47:44 | 29-Sep-2019 22:59:55 | 7911.56 | 7155.71 |
| WINB        | 28.35  | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:45:45 | 7955.98 | 7944.64 |
| WINB        | 23.5   | 29-Sep-2019 22:45:45 | 29-Sep-2019 22:46:09 | 7944.64 | 7937.99 |
| WINB        | 25.6   | 29-Sep-2019 22:46:09 | 29-Sep-2019 22:46:51 | 7937.99 | 7926.37 |
| WINB        | 17.5   | 29-Sep-2019 22:46:51 | 29-Sep-2019 22:49:01 | 7926.37 | 7890.26 |
| WINB        | 23.63  | 29-Sep-2019 22:49:01 | 29-Sep-2019 22:50:28 | 7890.26 | 7839.25 |
| WINB        | 18.86  | 29-Sep-2019 22:50:28 | 29-Sep-2019 22:59:55 | 7839.25 | 7155.71 |
| WINE        | 68.35  | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:54 | 7955.98 | 7908.77 |
| WINE        | 77.49  | 29-Sep-2019 22:47:54 | 29-Sep-2019 22:50:25 | 7908.77 | 7841.73 |
| WINE        | 85.68  | 29-Sep-2019 22:50:25 | 29-Sep-2019 22:59:55 | 7841.73 | 7155.71 |

All depth are at tool zero.

## 1A

### IBC SLG COMPOSITE REPEAT PASS 1 @10DEG X 6IN @0PSI [2:100]

#### Pass Summary

| Run Name | Pass Objective | Direction | Top        | Bottom     | Start                   | Stop                    | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|------------|------------|-------------------------|-------------------------|----------|-------------|-----------------------|
| 1A       | Log[2]:Up      | Up        | 7155.71 ft | 7955.98 ft | 29-Sep-2019 10:44:44 PM | 29-Sep-2019 10:59:55 PM | ON       | 9.07 ft     | No                    |

All depths are referenced to toolstring zero

|            |   |                         |
|------------|---|-------------------------|
| <b>Log</b> | Company: Crestone Peak Resources Operating, LLC | Well: Kugel 1L-18H-H267 |
|            |   | 1A: Log[2]:Up:S003      |

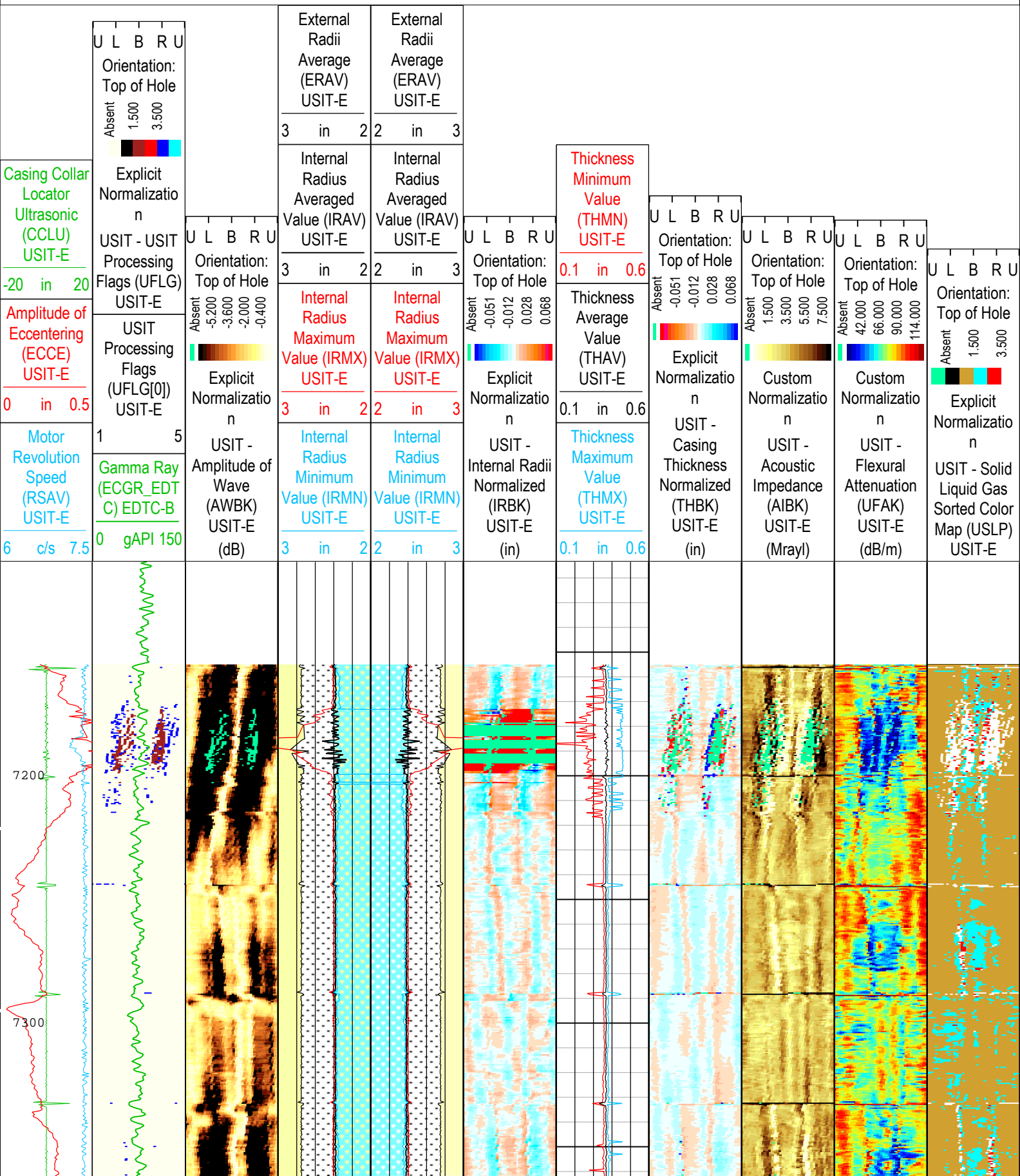
Description: USI IBC SLG Composite Format: Log ( Import (2) of IBC SLG Composite ) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured

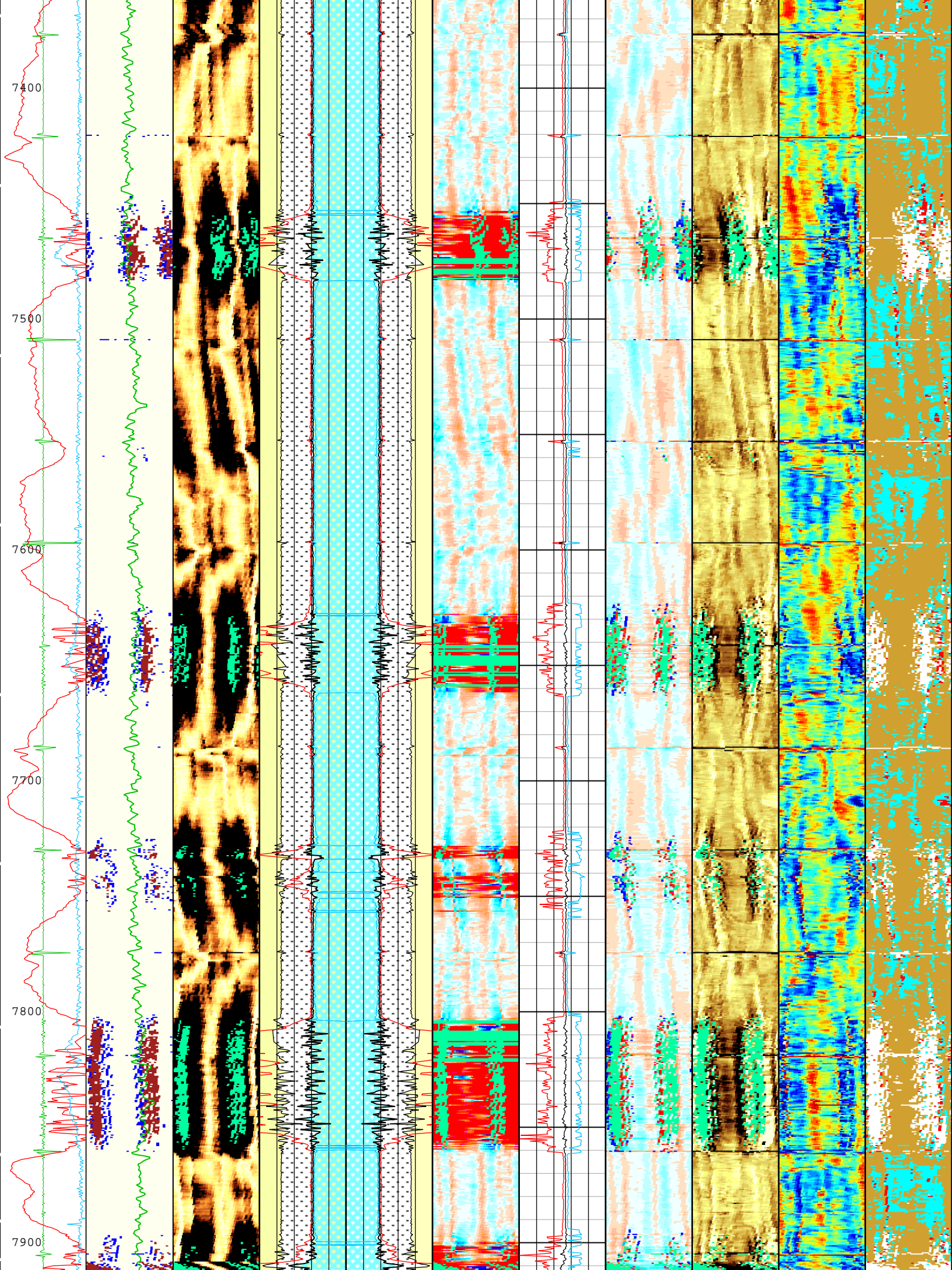
Depth Creation Date: 30-Sep-2019 01:54:46

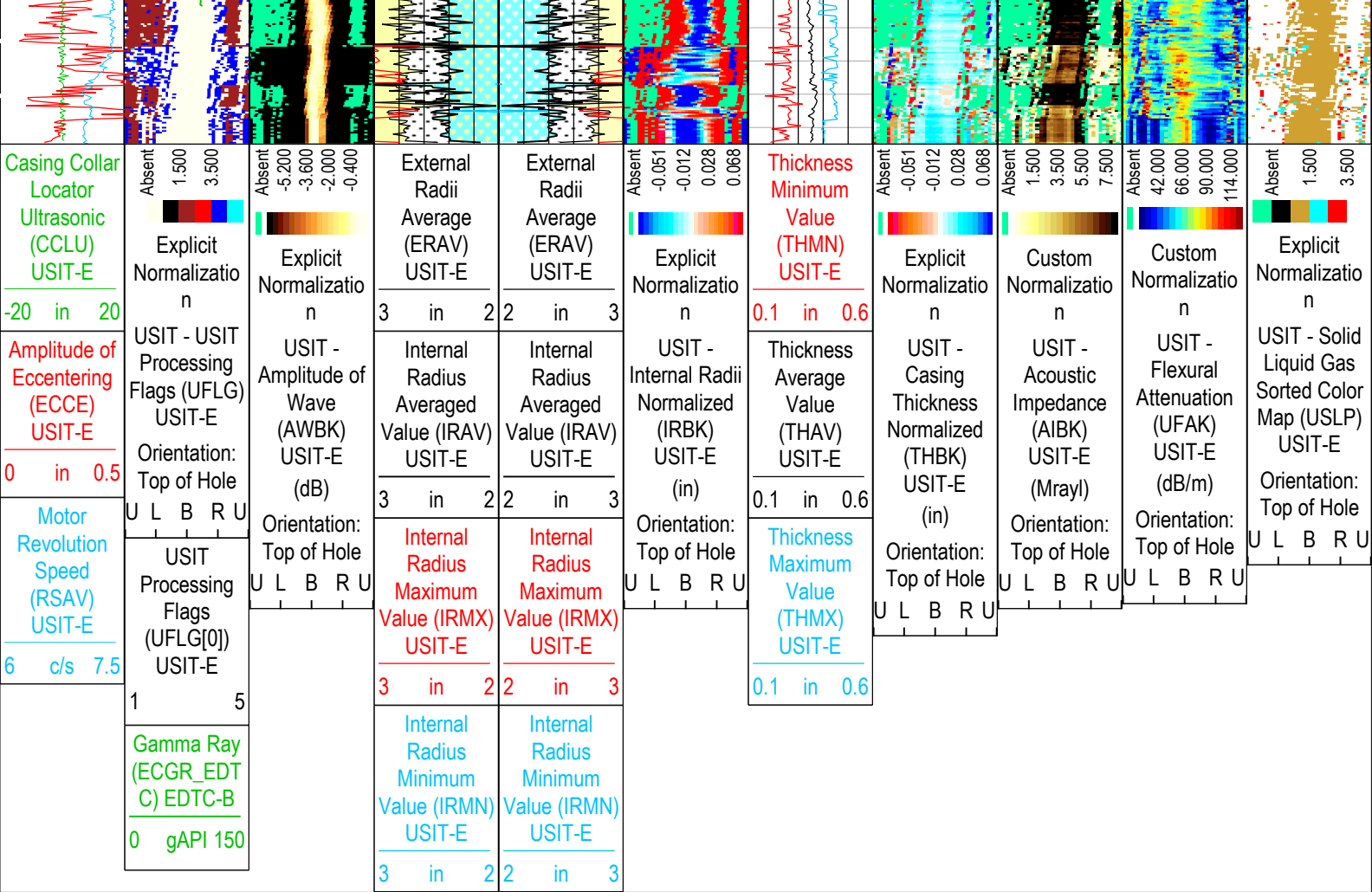
TIME: 1000 Time Marked every: 60.00 (-)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  Loop Processing Error







USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.5] - :  Pulse Origin Not Detected
- 3 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10 ] - :  Loop Processing Error

TIME\_1900 - Time Marked every 60.00 (s)

Description: USI IBC SLG Composite Format: Log ( Import (2) of IBC SLG Composite ) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured  
 Depth Creation Date: 30-Sep-2019 01:54:46

## Channel Processing Parameters

### 1A: Parameters

| Parameter         | Description  | Tool      | Value          | Unit    |
|-------------------|--|-----------|----------------|---------|
| BARI(ISSBAR)      | Barite Mud Presence Flag                             | Borehole  | No             |         |
| BHS               | Borehole Status (Open or Cased Hole)                 | Borehole  | Cased          |         |
| BS                | Bit Size   | WLSESSION | 8.5            | in      |
| CBLO              | Casing Bottom (Logger)                               | WLSESSION | 13717          | ft      |
| CDEN              | Cement Density                                       | USIT-E    | 12.5           | lbm/gal |
| CDEN              | Cement Density                                       | EDTC-B    | 16.69          | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type  | USIT-E    | Regular Cement |         |
| DFD               | Drilling Fluid Density                               | Borehole  | 9              | lbm/gal |
| DFT_CATEGORY      | Drilling Fluid Type                                  | Borehole  | Water          |         |
| DTMD              | Borehole Fluid Slowness                              | Borehole  | 192            | us/ft   |
| FD                | Fluid Density  | USIT-E    | 10.5           | lbm/gal |
| GCSE_DOWN_PASS    | Generalized Caliper Selection for WL Log Down Passes | Borehole  | BS(RT)         |         |
| GCSE_UP_PASS      | Generalized Caliper Selection for WL Log Up Passes   | Borehole  | BS(RT)         |         |

|                |  |          |                   |       |
|----------------|--|----------|-------------------|-------|
| HEMA           | Hematite Presence Flag                             | Borehole | No                |       |
| IBC_FRP_OFFSET | IBC Flexural Offset from Free Pipe                 | USIT-E   | -33.74            | dB/m  |
| IBC_FVEL_SEL   | IBC Fluid Velocity Selection                       | USIT-E   | Automatic         |       |
| IBC_OFFSET_SEL | IBC Flexural Offset Selector                       | USIT-E   | IBC_FRP_OFFSET    |       |
| IBC_ZMUD_SEL   | IBC Mud Impedance Selection                        | USIT-E   | Theoretical       |       |
| ICE_PROCESS    | ICE Processing                                     | USIT-E   | Yes               |       |
| IMAR           | Image Rotation                                     | USIT-E   | RB                |       |
| MEAS_WLEN      | Tcube Processing Window Length in Measurement Mode | USIT-E   | 22.44             | us    |
| MUD_N_THE      | Theoretical Mud Normalization Factor               | USIT-E   | 1.1               |       |
| U-USIT_DFSZ    | Drilling Fluid Specific Acoustic Impedance         | USIT-E   | 1.6               | Mrayl |
| U-USIT_UFAO    | SIT Flexural Attenuation Offset                    | USIT-E   | -46.82            | dB/m  |
| U-USIT_UIAP    | IBC Answer Product Enabled                         | USIT-E   | SolidLiquidGasMap |       |
| ZMUD           | Acoustic Impedance of Mud                          | Borehole | 1.71              | Mrayl |
| ZTCM           | Acoustic Impedance Threshold for Cement            | USIT-E   | 2.6               | Mrayl |
| ZTGS           | Acoustic Impedance Threshold for Gas               | USIT-E   | 0.3               | Mrayl |

## Tool Control Parameters

### 1A: Parameters

| Parameter   | Description                     | Tool   | Value            | Unit |
|-------------|---------------------------------|--------|------------------|------|
| AGMN        | Minimum Gain of Cartridge       | USIT-E | -12              | dB   |
| AGMX        | Maximum Gain of Cartridge       | USIT-E | 48               | dB   |
| EMXV        | EMEX Voltage                    | USIT-E | Time Zoned       | V    |
| IBC_ACQTYPE | IBC Acquisition type            | USIT-E | 1 MHz            |      |
| IBC_FLEXDBP | IBC Flex Duration Before Peak   | USIT-E | 30               | us   |
| ICE2_ACQ    | Ultrasonic ICE2 Acquisition     | USIT-E | Yes              |      |
| U-USIT_UFWB | Far Receiver Window Begin Time  | USIT-E | Time Zoned       | us   |
| U-USIT_UFWE | Far Receiver Window End Time    | USIT-E | Time Zoned       | us   |
| U-USIT_UNWB | Near Receiver Window Begin Time | USIT-E | Time Zoned       | us   |
| U-USIT_UNWE | Near Receiver Window End Time   | USIT-E | Time Zoned       | us   |
| UPAT        | USIT Emission Pattern           | USIT-E | Pattern 375 KHz  |      |
| UWKM        | USIT Working Mode               | USIT-E | 10 deg at 6.0 in |      |
| U-USIT_UTAN | Transducer Angles               | USIT-E | 38_DEG           |      |
| VRES        | Vertical Resolution             | USIT-E | 6.0 in           |      |
| WINB        | Window Begin Time               | USIT-E | Time Zoned       | us   |
| WINE        | Window End Time                 | USIT-E | Time Zoned       | us   |

### Time Zone Parameters

| Parameter   | Value  | Start Time           | Stop Time            | Start Depth ( ft ) | Stop Depth ( ft ) |
|-------------|--------|----------------------|----------------------|--------------------|-------------------|
| EMXV        | 75     | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:22 | 7955.98            | 7917.74           |
| EMXV        | 100    | 29-Sep-2019 22:47:22 | 29-Sep-2019 22:47:29 | 7917.74            | 7915.83           |
| EMXV        | 120    | 29-Sep-2019 22:47:29 | 29-Sep-2019 22:49:27 | 7915.83            | 7882.17           |
| EMXV        | 100    | 29-Sep-2019 22:49:27 | 29-Sep-2019 22:50:49 | 7882.17            | 7818.02           |
| EMXV        | 110    | 29-Sep-2019 22:50:49 | 29-Sep-2019 22:59:55 | 7818.02            | 7155.71           |
| U-USIT_UFWB | 133    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:45:53 | 7955.98            | 7942.32           |
| U-USIT_UFWB | 119.5  | 29-Sep-2019 22:45:53 | 29-Sep-2019 22:47:02 | 7942.32            | 7923.27           |
| U-USIT_UFWB | 106.6  | 29-Sep-2019 22:47:02 | 29-Sep-2019 22:48:36 | 7923.27            | 7897.15           |
| U-USIT_UFWB | 114.97 | 29-Sep-2019 22:48:36 | 29-Sep-2019 22:48:46 | 7897.15            | 7894.44           |
| U-USIT_UFWB | 121.48 | 29-Sep-2019 22:48:46 | 29-Sep-2019 22:59:55 | 7894.44            | 7155.71           |
| U-USIT_UFWE | 173    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:00 | 7955.98            | 7923.71           |

|             |        |                      |                      |         |         |
|-------------|--------|----------------------|----------------------|---------|---------|
| U-USIT_UFWE | 189.35 | 29-Sep-2019 22:47:00 | 29-Sep-2019 22:47:14 | 7923.71 | 7919.96 |
| U-USIT_UFWE | 202.36 | 29-Sep-2019 22:47:14 | 29-Sep-2019 22:48:35 | 7919.96 | 7897.56 |
| U-USIT_UFWE | 189.35 | 29-Sep-2019 22:48:35 | 29-Sep-2019 22:59:55 | 7897.56 | 7155.71 |
| U-USIT_UNWB | 102    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:45:48 | 7955.98 | 7943.65 |
| U-USIT_UNWB | 84.14  | 29-Sep-2019 22:45:48 | 29-Sep-2019 22:46:56 | 7943.65 | 7924.81 |
| U-USIT_UNWB | 74.99  | 29-Sep-2019 22:46:56 | 29-Sep-2019 22:48:23 | 7924.81 | 7900.69 |
| U-USIT_UNWB | 81.5   | 29-Sep-2019 22:48:23 | 29-Sep-2019 22:48:53 | 7900.69 | 7892.55 |
| U-USIT_UNWB | 90.8   | 29-Sep-2019 22:48:53 | 29-Sep-2019 22:48:55 | 7892.55 | 7892.01 |
| U-USIT_UNWB | 88.01  | 29-Sep-2019 22:48:55 | 29-Sep-2019 22:49:11 | 7892.01 | 7887.63 |
| U-USIT_UNWB | 79.64  | 29-Sep-2019 22:49:11 | 29-Sep-2019 22:59:55 | 7887.63 | 7155.71 |
| U-USIT_UNWE | 142    | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:44 | 7955.98 | 7911.56 |
| U-USIT_UNWE | 153.09 | 29-Sep-2019 22:47:44 | 29-Sep-2019 22:59:55 | 7911.56 | 7155.71 |
| WINB        | 28.35  | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:45:45 | 7955.98 | 7944.64 |
| WINB        | 23.5   | 29-Sep-2019 22:45:45 | 29-Sep-2019 22:46:09 | 7944.64 | 7937.99 |
| WINB        | 25.6   | 29-Sep-2019 22:46:09 | 29-Sep-2019 22:46:51 | 7937.99 | 7926.37 |
| WINB        | 17.5   | 29-Sep-2019 22:46:51 | 29-Sep-2019 22:49:01 | 7926.37 | 7890.26 |
| WINB        | 23.63  | 29-Sep-2019 22:49:01 | 29-Sep-2019 22:50:28 | 7890.26 | 7839.25 |
| WINB        | 18.86  | 29-Sep-2019 22:50:28 | 29-Sep-2019 22:59:55 | 7839.25 | 7155.71 |
| WINE        | 68.35  | 29-Sep-2019 22:44:44 | 29-Sep-2019 22:47:54 | 7955.98 | 7908.77 |
| WINE        | 77.49  | 29-Sep-2019 22:47:54 | 29-Sep-2019 22:50:25 | 7908.77 | 7841.73 |
| WINE        | 85.68  | 29-Sep-2019 22:50:25 | 29-Sep-2019 22:59:55 | 7841.73 | 7155.71 |

All depth are at tool zero.

XYZ

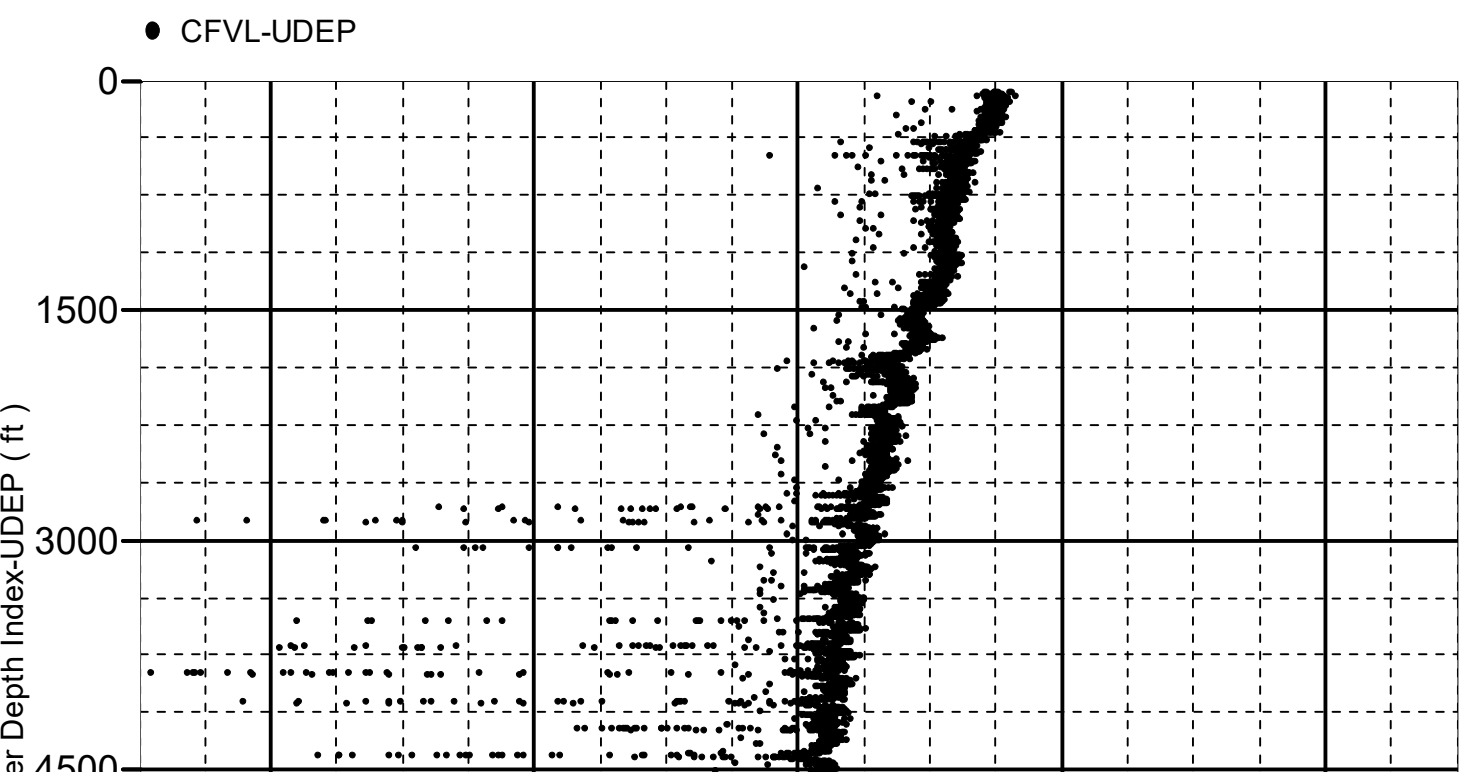
Company:Crestone Peak Resources Operating, LLC Well:Kugel 1L-18H-H267

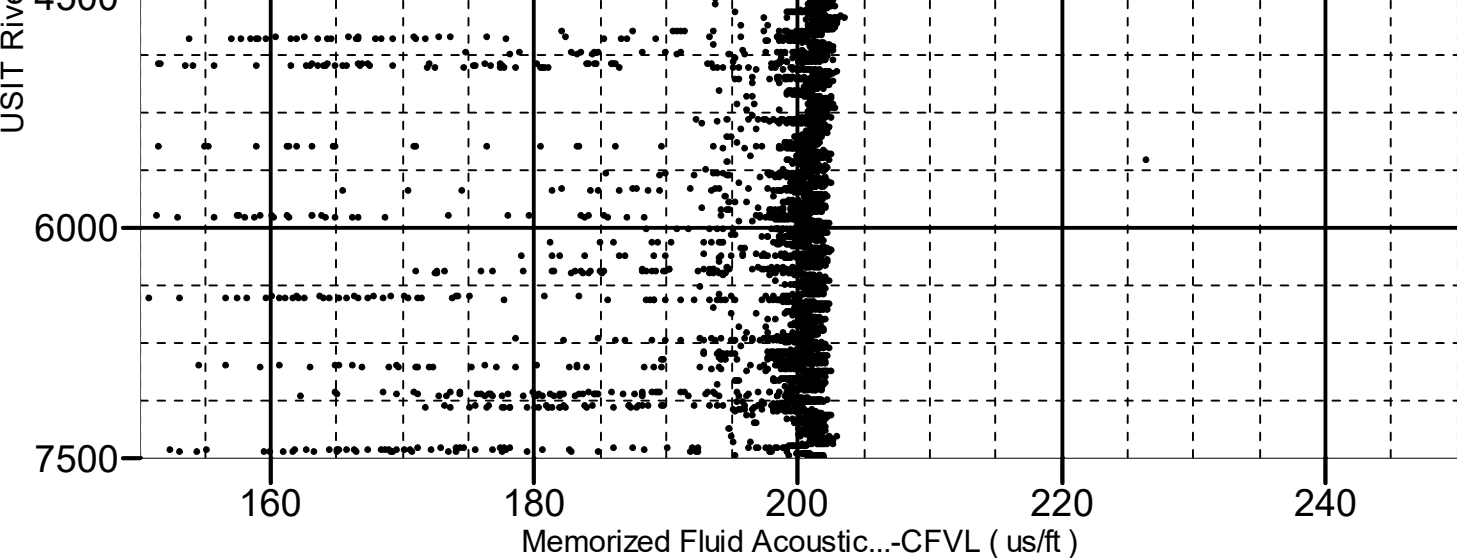
1A: Log[3]:Up:S003

# Fluid Acoustic Slowness vs Depth

## 2D Cross Plot

Index Range: From 7961.50 to 48.00 ft





XYZ

Company:Crestone Peak Resources Operating, LLC Well:Kugel 1L-18H-H267

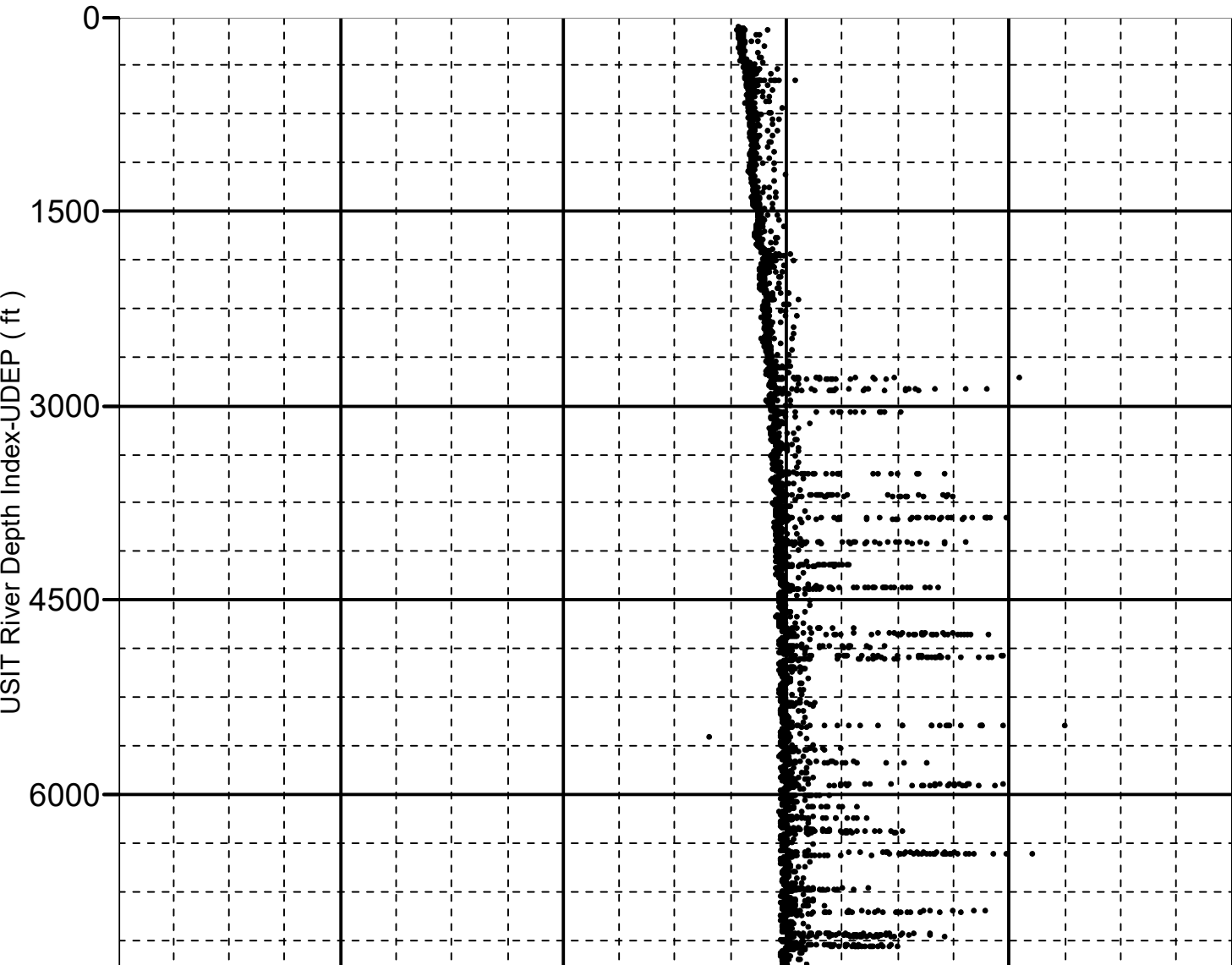
1A: Log[3]:Up:S003

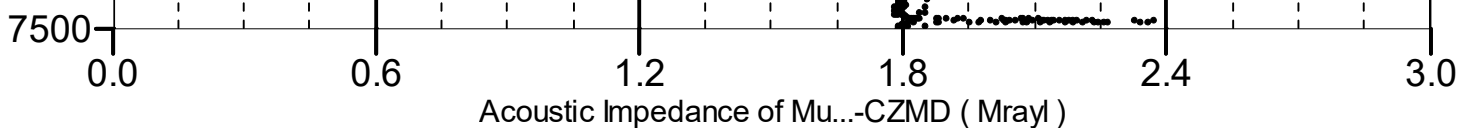
# Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7961.50 to 48.00 ft

● CZMD-UDEP





## Calibration Report

### DSLT-H (Digitizing Sonic Logging Tool - H) Calibration - Run 1A

Primary Equipment :

Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL

SLS-E

1229

### CBL Normalization - CBL Accumulations

Master (Measured): 06:37:25 21-Jan-2019

| Measurement              | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
|--------------------------|------|--------|---------|-----------|--------|------------|--|
| Upper Far Amplitude      |      | Master | 4200.0  | 3200.0    | 3281.4 |            |  |
| Upper Near Raw Amplitude | mV   | Master | 33.000  | 27.000    | 27.878 | 43.000     |  |
| Lower Far Amplitude      |      | Master | 4200.0  | 3200.0    | 3618.5 |            |  |
| Lower Near Raw Amplitude | mV   | Master | 46.000  | 27.000    | 35.332 | 68.000     |  |

### CBL Normalization - CBL/VDL Coefficients

Master (Measured): 06:37:25 21-Jan-2019

| Measurement                               | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
|---|------|--------|---------|-----------|--------|------------|--|
| CBL Correction Factor for UT              |      | Master | 3.500   | 2.700     | 4.161  | 4.300      |  |
| CBL Correction Factor for LT              |      | Master | 2.500   | 1.700     | 3.283  | 4.300      |  |
| VDL Ratio between UT and LT for CBLB Mode |      | Master | 1.000   |           | 1.103  |            |  |

### EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run 1A

Primary Equipment :

EDTC-B

EDTC-B

8324

Calibration Parameter :

Plus Reference (Jig minus background reference)

150

### EDTC-B Accelerometer Calibration - EDTC-B Accelerometer Calibration

Before (Measured): 22:06:55 29-Sep-2019

| Measurement             | Unit              | Phase  | Nominal | Low Limit | Actual | High Limit |  |
|-------------------------|-------------------|--------|---------|-----------|--------|------------|--|
| AZ Vertical Measurement | ft/s <sup>2</sup> | Before | 32.19   | 31.53     | 32.05  | 32.84      |  |

### EDTC-B Memory Data - EDTC-B Memory Data

Master (EEPROM): 22:05:10 29-Sep-2019

| Measurement                      | Unit | Phase  | Nominal | Low Limit | Actual      | High Limit |  |
|----------------------------------|------|--------|---------|-----------|-------------|------------|--|
| Initial PMT HV                   | V    | Master |         |           | 1596.000    |            |  |
| Accelerometer Serial Number      |      | Master |         |           | 387         |            |  |
| Accelerometer Coefficients - 0   |      | Master | ----    | ----      | 2.907E+000  | ----       |  |
| Accelerometer Coefficients - 1   |      | Master | ----    | ----      | 2.788E-004  | ----       |  |
| Accelerometer Coefficients - 2   |      | Master | ----    | ----      | -1.992E-007 | ----       |  |
| Accelerometer Coefficients - 3   |      | Master | ----    | ----      | -7.767E-008 | ----       |  |
| Accelerometer Coefficients - 4   |      | Master | ----    | ----      | 1.895E-009  | ----       |  |
| Accelerometer Coefficients - 5   |      | Master | ----    | ----      | -1.446E-011 | ----       |  |
| Accelerometer Coefficients - 6   |      | Master | ----    | ----      | 3.720E-014  | ----       |  |
| Accelerometer Coefficients - 7   |      | Master | ----    | ----      | -9.651E-003 | ----       |  |
| Accelerometer Coefficients - 8   |      | Master | ----    | ----      | 7.185E-005  | ----       |  |
| Accelerometer Coefficients - 9   |      | Master | ----    | ----      | 1.783E-008  | ----       |  |
| Accelerometer Coefficients - 10  |      | Master | ----    | ----      | -8.140E-010 | ----       |  |
| Accelerometer Coefficients - 11  |      | Master | ----    | ----      | 5.627E-013  | ----       |  |
| Gamma-Ray Detector Serial Number |      | Master |         |           | 77301       |            |  |

### EDTC-B Gamma-Ray Calibration - Gamma Ray Coefficients

Before (Measured): 19:54:07 28-Sep-2019

| Measurement    | Unit | Phase  | Nominal | Low Limit | Actual | High Limit |  |
|----------------|------|--------|---------|-----------|--------|------------|--|
| Gamma Ray Gain |      | Before | 1.000   | 0.900     | 1.061  | 1.100      |  |

### EDTC-B Gamma-Ray Calibration - Gamma-Ray Accumulations

# EDTC-B Gamma-Ray Calibration - Gamma Ray Accumulations

Before (Measured): 19:54:07 28-Sep-2019

| Measurement          | Unit | Phase  | Nominal | Low Limit | Actual  | High Limit |  |
|----------------------|------|--------|---------|-----------|---------|------------|--|
| RGR Zero Measurement | gAPI | Before |         | 0         | 78.144  | 120.000    |  |
| RGR Plus Measurement | gAPI | Before | 150.000 | 135.000   | 141.312 | 165.000    |  |

Company: Crestone Peak Resources Operating, LLC

**Schlumberger**

Well: Kugel 1L-18H-H267

Field: Wattenberg

County: Weld

State: Colorado

ISOLATION SCANNER

CEMENT EVALUATION

GAMMA RAY - COLLAR LOCATOR LOG