

Company: Anadarko

Well: Troutd 36N-33HZ

Field: Wattenberg

County: Weld State: Colorado

Ultrasonic Imager
Cement Evaluation (Short)
Gamma Ray - CCL Log

| | | | |
|--------------------------------|-------------------|-----------|--------|
| County: | Weld | | |
| Field: | Wattenberg | | |
| Location: | SESW S33 T2N R67W | | |
| Well: | Troutd 36N-33HZ | | |
| Company: | Anadarko | | |
| Location: | | | |
| SESW S33 T2N R67W | | | |
| SHL: 304' FSL & 1650' FWL | | | |
| Lat/Long: 40.088398/-104.89943 | | | |
| Permanent Datum: | | | |
| Ground Level | | | |
| Elev.: K.B. 5037.00 ft | | | |
| Log Measured From: | | | |
| Kelly Bushing | | | |
| Elev.: 0.00 ft | | | |
| above Perm.Datum | | | |
| Drilling Measured From: | | | |
| Kelly Bushing | | | |
| API Serial No. | Section: | Township: | Range: |
| 05-123-39280 | 33 | 2N | 67W |

| | |
|---------------------------|-----------------|
| Logging Date | 10-Jul-2015 |
| Run Number | ONE |
| Depth Driller | 10000.00 ft |
| Schlumberger Depth | 10000.00 ft |
| Bottom Log Interval | 7760.00 ft |
| Top Log Interval | 50.00 ft |
| Casing Fluid Type | Water |
| Salinity | |
| Density | 9 lbm/gal |
| Fluid Level | 8.00 ft |
| BIT/CASING/TUBING STRING | |
| Bit Size | 7.63 in |
| From | 0.00 ft |
| To | 10000.00 ft |
| Casing/Tubing Size | 5.5 in |
| Weight | 17 lbm/ft |
| Grade | N/A |
| From | 0.00 ft |
| To | 10000.00 ft |
| Max Recorded Temperatures | 205 degF |
| Logger on Bottom | 10-Jul-2015 |
| Time | 10:45:00 |
| Unit Number | 2135 |
| Location: | Fort Morgan, CO |
| Recorded By | Evan Meadows |
| Witnessed By | |

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

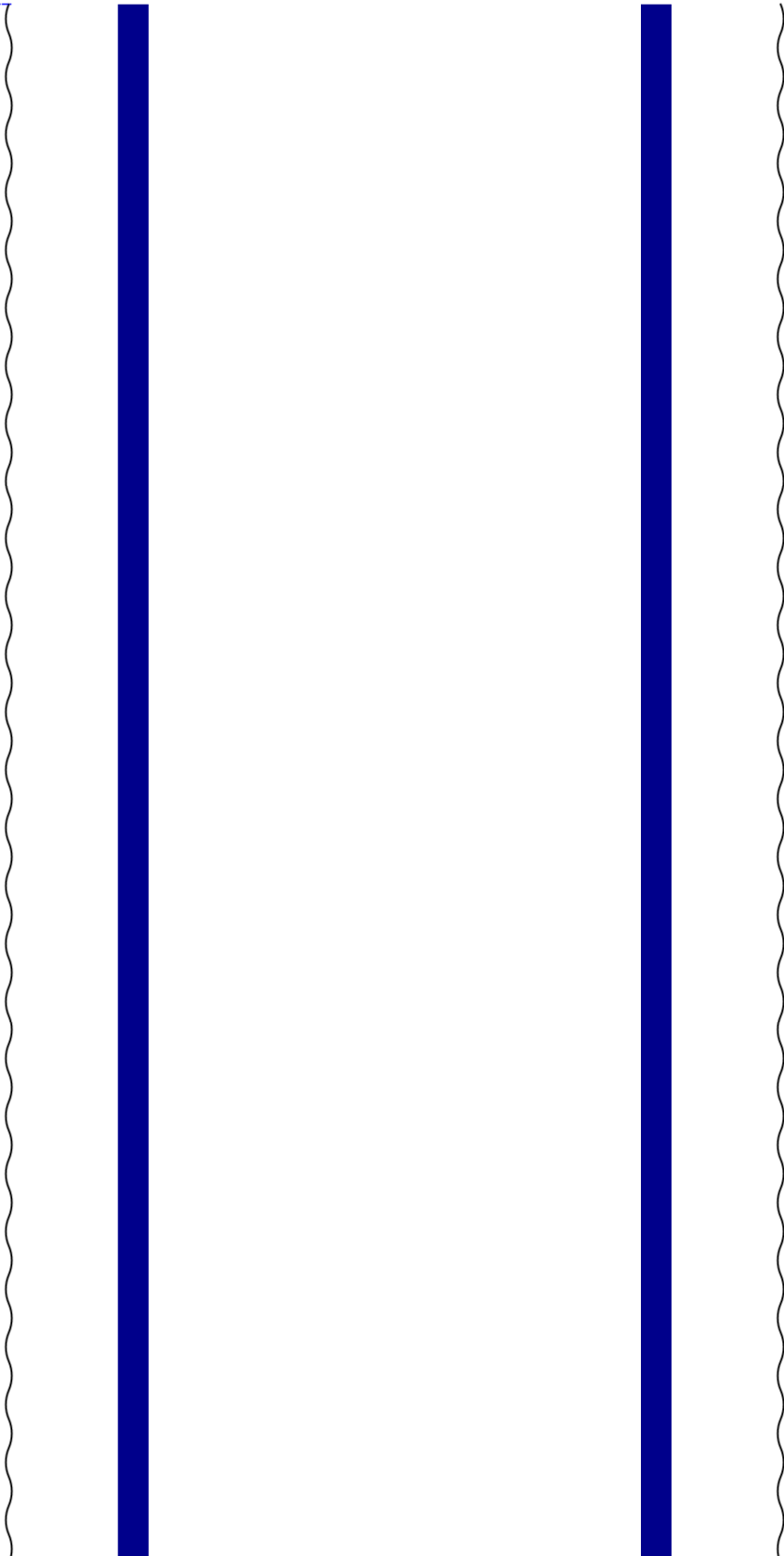
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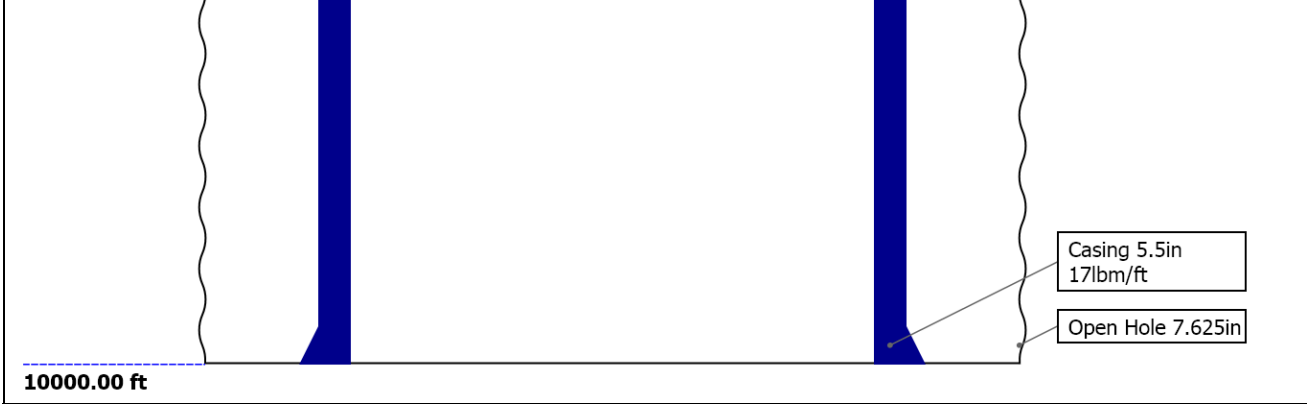
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Well Sketch

Driller Depth

0.00 ft





Borehole Size/Casing/Tubing Record

| | | | | | | |
|-----------------------|-------|--|--|--|--|--|
| Bit | | | | | | |
| Bit Size (in) | 7.625 | | | | | |
| Top Driller (ft) | 0 | | | | | |
| Top Logger (ft) | 0 | | | | | |
| Bottom Driller (ft) | 10000 | | | | | |
| Bottom Logger (ft) | 10000 | | | | | |
| Casing | | | | | | |
| Size (in) | 5.5 | | | | | |
| Weight (lbm/ft) | 17 | | | | | |
| Inner Diameter (in) | 4.892 | | | | | |
| Grade | N/A | | | | | |
| Top Driller (ft) | 0 | | | | | |
| Top Logger (ft) | 0 | | | | | |
| Bottom Driller (ft) | 10000 | | | | | |
| Bottom Logger (ft) | 10000 | | | | | |

Operational Run Summary

| | | | | | | |
|----------------------------------|-----------------|--|--|--|--|--|
| Parameter (unit) | ONE | | | | | |
| Date Log Started | 10-Jul-2015 | | | | | |
| Time Log Started | 08:42:37 | | | | | |
| Date Log Finished | 10-Jul-2015 | | | | | |
| Time Log Finished | 12:10:22 | | | | | |
| | | | | | | |
| Top Log Interval (ft) | 50.00 | | | | | |
| Bottom Log Interval (ft) | 7760.00 | | | | | |
| | | | | | | |
| Total Depth (ft) | | | | | | |
| Max Hole Deviation (deg) | NaN | | | | | |
| Azimuth of Max Deviation (deg) | NaN | | | | | |
| Bit Size (in) | 7.625 | | | | | |
| | | | | | | |
| Logging Unit Number | 2135 | | | | | |
| Logging Unit Location | Fort Morgan, CO | | | | | |
| Recorded By | Evan Meadows | | | | | |

| | | | | | | |
|----------------------|------------|--|--|--|--|--|
| Witnessed By | | | | | | |
| Service Order Number | D62I-00039 | | | | | |

| ONE: Toolstring | | | | ONE: Remarks | |
|--|--|---|--|--------------|--|
| <div><div><div>Equip name</div><div>Length</div></div><div>LEH-QT</div><div>28.97</div></div> <div><div><div>MP name</div><div>Offset</div></div><div>LEH-QT</div><div></div></div> | <div><div><div>CTEM</div><div>22.56</div></div><div><div>ACCZ</div><div>0.00</div></div><div><div>HV</div><div>0.00</div></div><div><div>Gamma Ray</div><div>20.69</div></div><div><div>TelStatu s</div><div>19.56</div></div></div> | <div><div>1. THIS IS THE FIRST RUN IN THE WELL.</div><div>2. TOOL RAN AS PER TOOLSKETCH.</div><div>3. 5.5" 17" CASING</div><div>4. 11.2 PPG SPACER (RETURNS AT SURFACE) 12.0 PPG LEAD (ESTIMATED TOC 592') 13.5 PPG TAIL (ESTIMATED TOC 6000')</div><div>5. 0 PSI REPEAT PASS 2,000 PSI MAIN PASS</div><div>6. LOG STARTED AT 7760' DUE TO LOSS OF</div><div>7. LOG CORRELATED TO TOP OF SHORT JOINT AT 7,016' DRILLERS DEPTH</div></div> | | | |
| <div><div><div>EDTC-B</div><div>26.06</div></div><div>EDTH-B</div><div>EDTG-A</div><div>EDTC-B</div></div> <div><div><div>AH-184</div><div>19.56</div></div><div>AH-107</div><div>17.56</div></div> <div><div><div>USIT-E</div><div>15.56</div></div><div>ECH-MFA</div><div>USAC-A</div><div>USIS-A</div><div>USSC-B</div><div>USRS-AB</div><div>USI-SENS</div><div>OR</div></div> | <div><div><div>USI Sen sor</div><div>0.37</div></div><div><div>TOOL_ZERO</div><div>Head Fe nsion</div></div></div> | | | | |
| <div><div>Length here in ft</div><div>Maximum Outer Diameter = 4.750 in</div><div>Line: Sensor Location, Value: Gating Offset</div><div>All measurements are relative to TOOL_ZERO</div></div> | | | | | |

| Depth Summary | | | | | | |
|--------------------------|----------|--|--|--|--|--|
| | ONE | | | | | |
| Depth Measuring Device | | | | | | |
| Type | IDW-B | | | | | |
| Serial Number | | | | | | |
| Calibration Date | | | | | | |
| Calibrator Serial Number | | | | | | |
| Calibration Cable Type | | | | | | |
| Wheel Correction 1 | 0 | | | | | |
| Wheel Correction 2 | 0 | | | | | |
| Tension Device | | | | | | |
| Type | CMTD-B/A | | | | | |

| | | | |
|------------------------------|---|--|--|
| Serial Number | | | |
| Calibration Date | | | |
| Calibrator Serial Number | | | |
| Number of Calibration Points | 0 | | |

Logging Cable

| | | | |
|-----------------|-------------|--|--|
| Type | 7-46NT-XS | | |
| Serial Number | | | |
| Length | 24000.00 ft | | |
| Conveyance Type | Wireline | | |
| Rig Type | Mast | | |

ONE:Depth Control Parameters

| | | |
|----------------------------|-----------------------|---|
| Log Sequence | First Log In the Well | Depth Control Remarks |
| Rig Up Length At Surface | | 1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES WERE FOLLOWED DURING LOGGING OPERATIONS. |
| Rig Up Length At Bottom | | 2. IDW USED AS PRIMARY DEPTH CONTROL MEASURE. |
| Rig Up Length Correction | | 3. Z CHART USED AS SECONDARY DEPTH CONTROL MEASURE. |
| Stretch Correction | | 4. LOG STARTED AT 7760' DUE TO LOSS OF HEAD TENSION IN THE CURVE. |
| Tool Zero Check At Surface | | 5. LOG CORRELATED TO TOP OF SHORT JOINT AT 7,016' DRILLERS DEPTH |

USI Cement

USIT - Fluid Properties Measurement

| Run Name | Pass Name | Start Depth(ft) | Stop Depth(ft) |
|----------|-----------|-----------------|----------------|
| Run 1 | Log[3]:Up | 7762.05 | 50.76 |

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

| Start Depth(ft) | Stop Depth(ft) | Start Value(us/ft) | End Value(us/ft) |
|-----------------|----------------|--------------------|------------------|
|-----------------|----------------|--------------------|------------------|

Mud Impedance = "Manual".
CZMD uses ZMUD parameter zoned table below

| Start Depth(ft) | Stop Depth(ft) | Start Value(Mrayl) | End Value(Mrayl) |
|-----------------|----------------|--------------------|------------------|
| 0 | 300 | 1.62 | 1.62 |
| 300 | 650 | 1.63 | 1.63 |
| 650 | 1000 | 1.64 | 1.64 |
| 1000 | 1400 | 1.65 | 1.65 |
| 1400 | 1900 | 1.66 | 1.66 |
| 1900 | 2300 | 1.67 | 1.67 |
| 2300 | 2900 | 1.68 | 1.68 |
| 2900 | 3500 | 1.69 | 1.69 |
| 3500 | 4300 | 1.7 | 1.7 |
| 4300 | 5400 | 1.71 | 1.71 |
| 5400 | 10000 | 1.72 | 1.72 |
| 10000 | | 1.72 | 1.72 |

ONE

USI Cement - Main

| | | |
|-----|------------------|----------------------|
| Log | Company:Anadarko | Well:Troudt 36N-33HZ |
| | | ONE: Log[3]:Up:S006 |

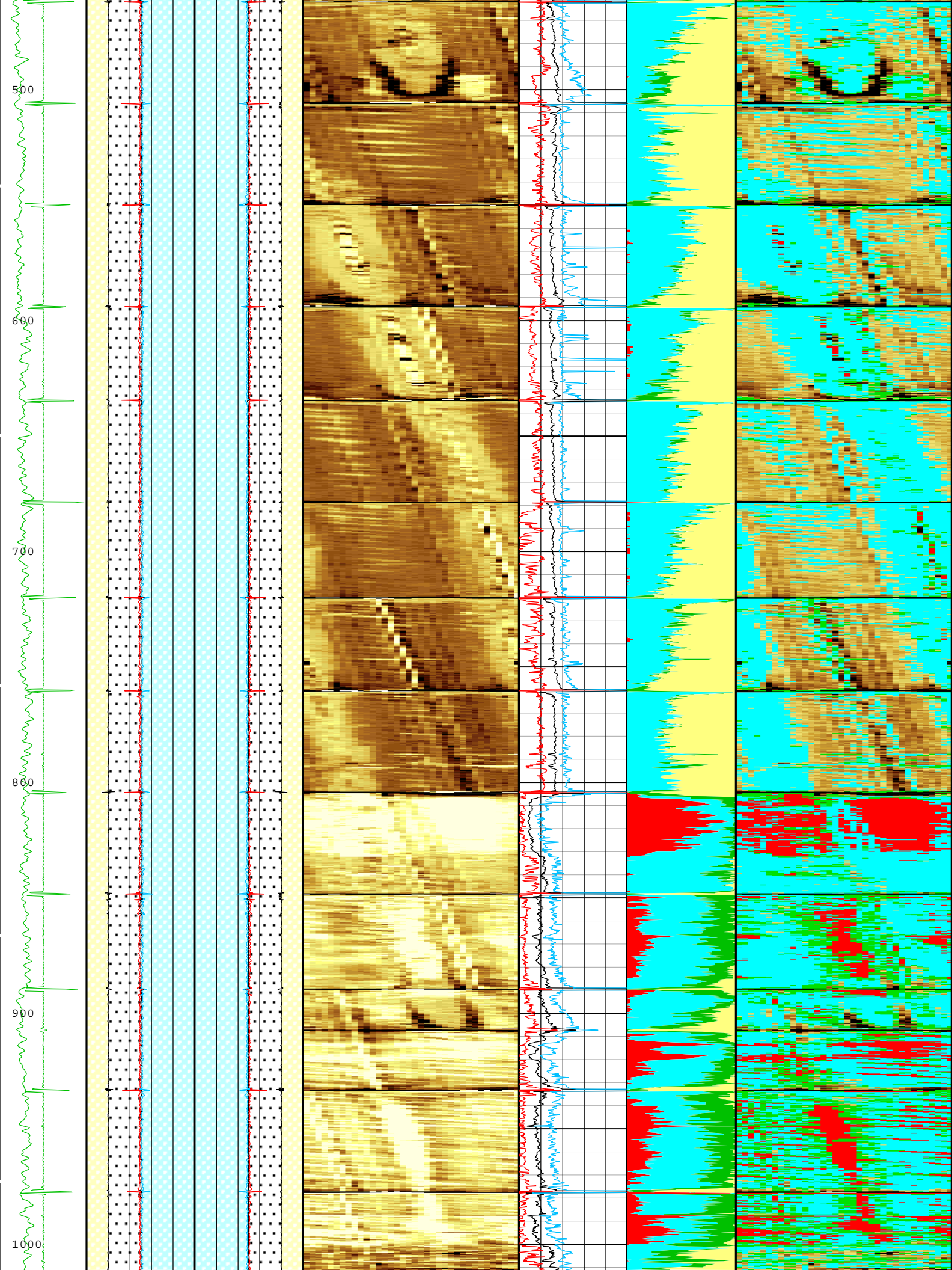
Description: USI Cement Format: USI Cement Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Jul-2015 20:07:35

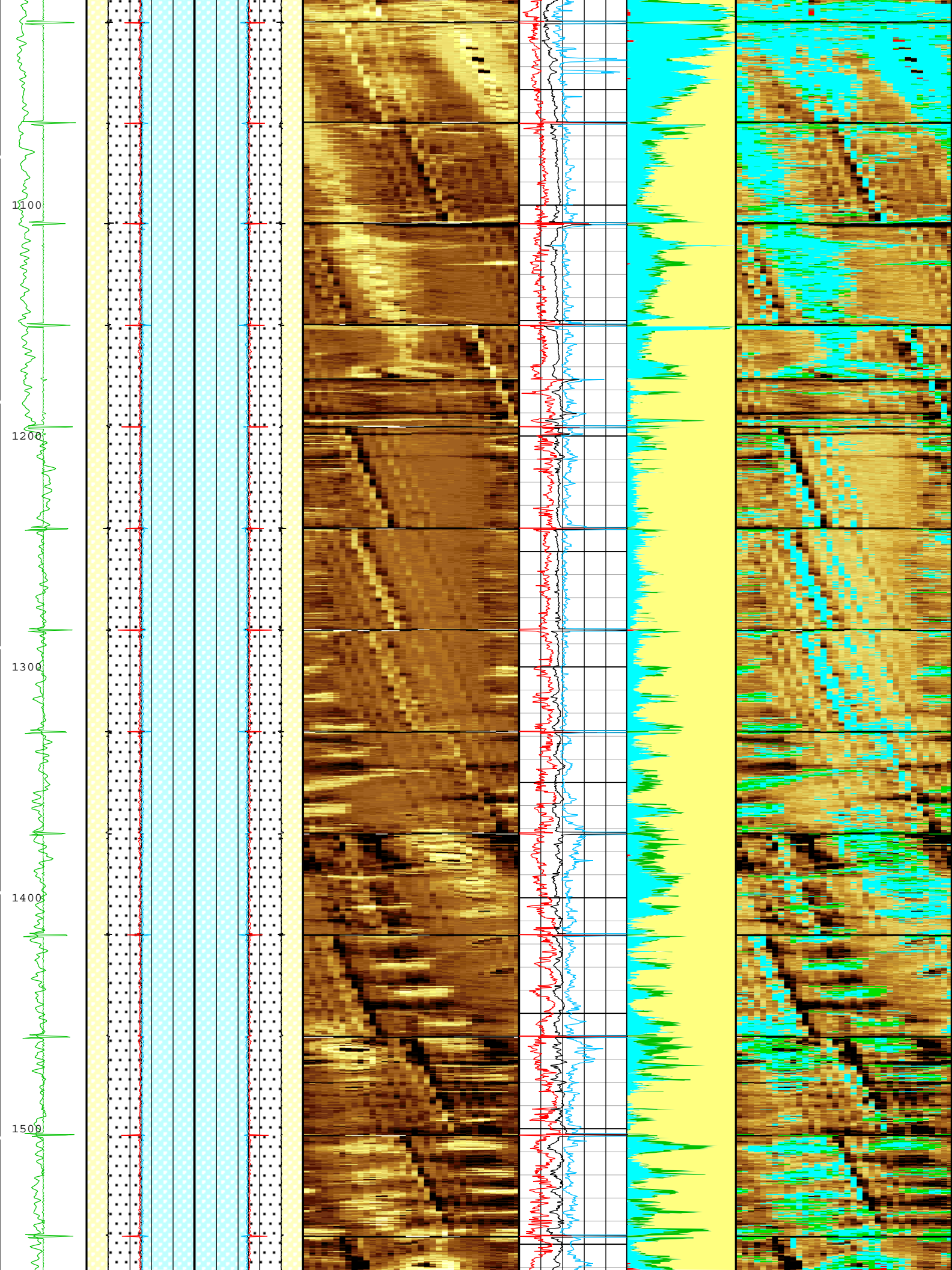
TIME_1900 - Time Marked every 60.00 (s)

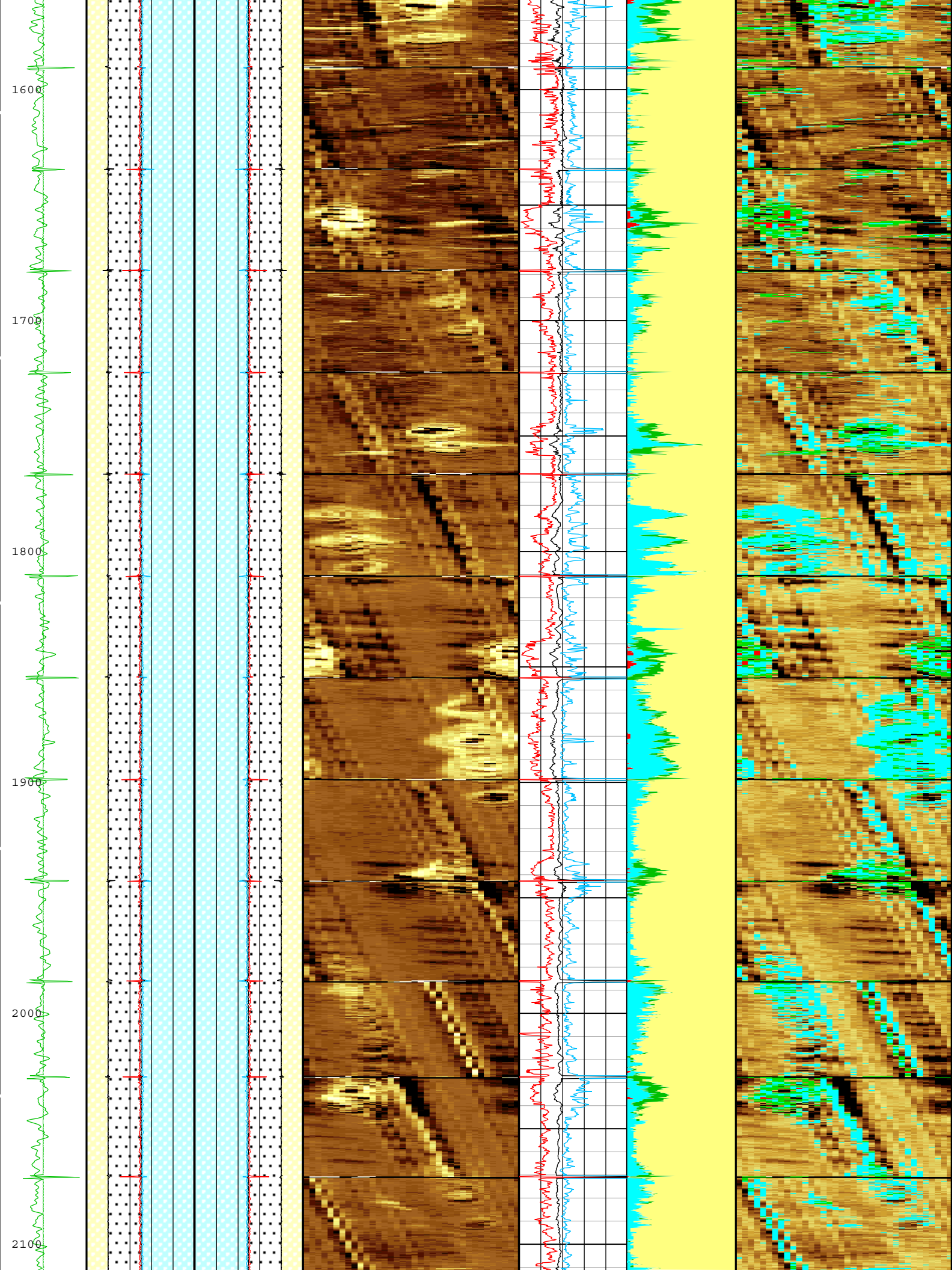
| | | |
|--|--|--|
| Casing Collar Locator Ultrasonic (CCLU) USIT-E | External Radii Average (ERAV) USIT-E | External Radii Average (ERAV) USIT-E |
| | 2.95 in 1.95 | 1.95 in 2.95 |
| | Internal Radius | Internal Radius |

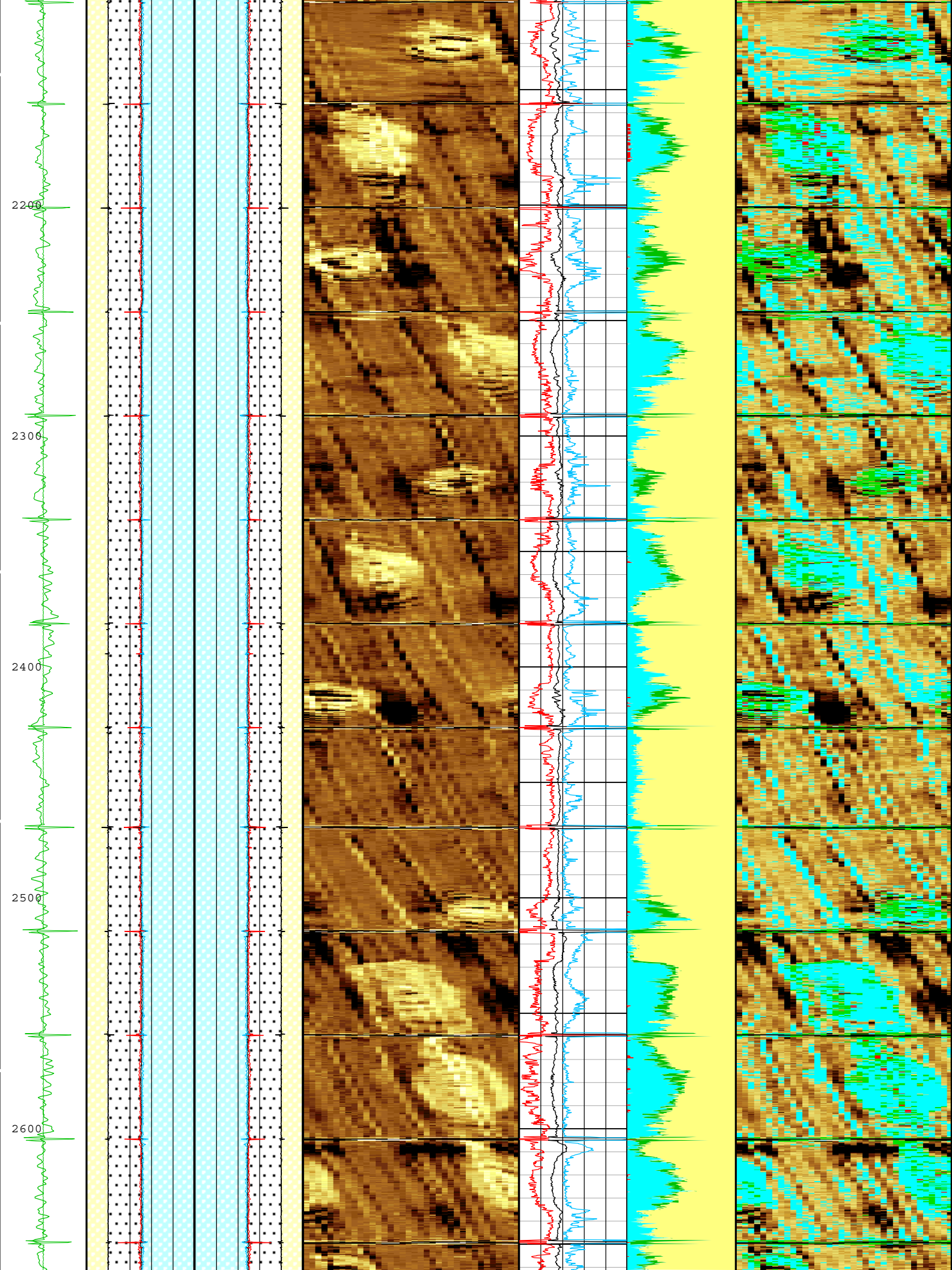
Acoustic
Impedance
Minimum (AIMN)
USIT-E

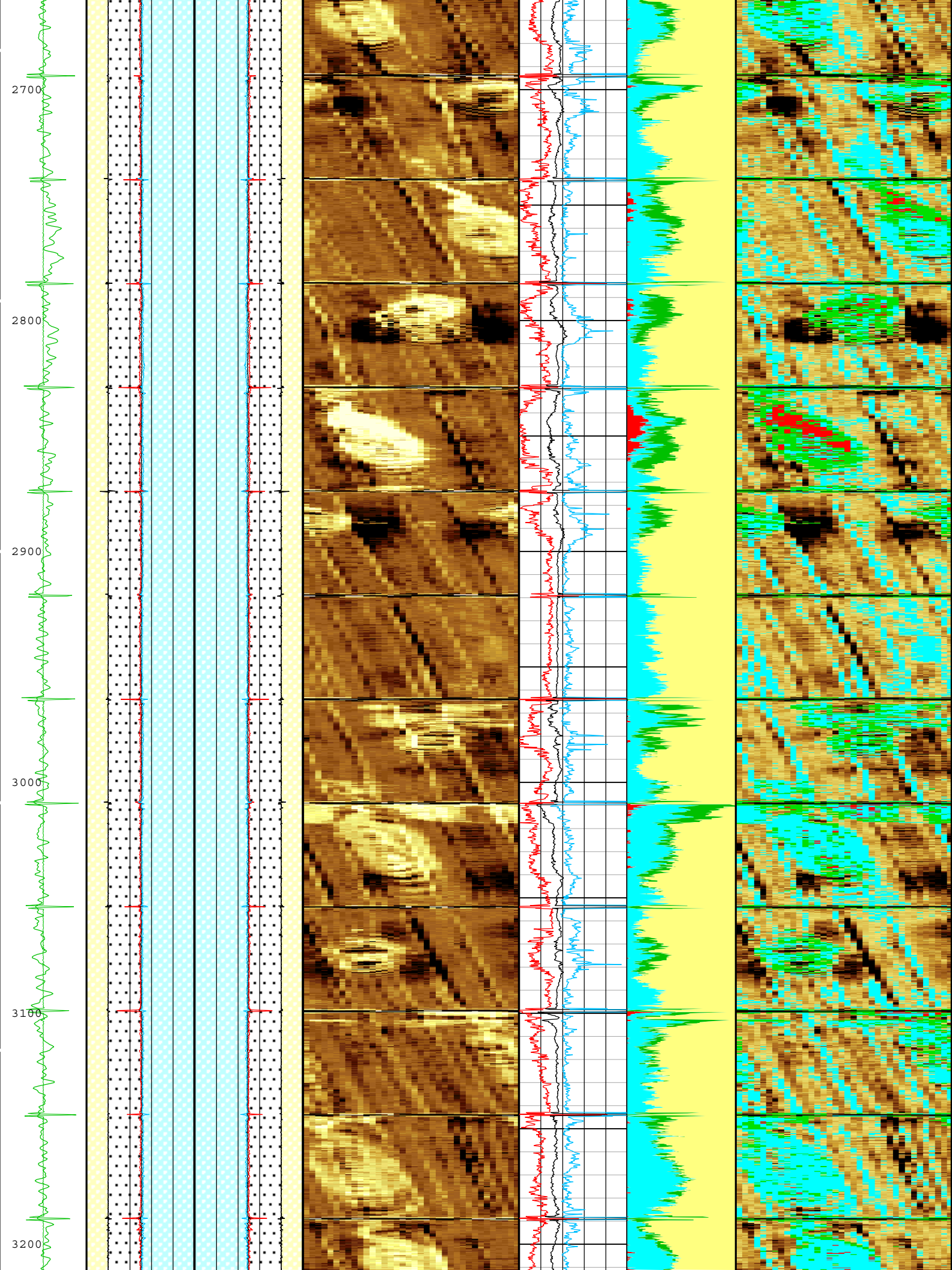
| -20 in 20 | | | Averaged Value (IRAV) USIT-E | | | Averaged Value (IRAV) USIT-E | | | USIT-E | | | | | | | | | | | |
|------------------------------------|--|--|---|--|--|---|--|--|---|--|--|--|--|--|-----------------|--|--|----------|--|--|
| Gamma Ray (ECGR_EDT C) EDTC-B | | | 2.95 in 1.95 | | | 1.95 in 2.95 | | | | | | Acoustic Impedance Average (AIAV) USIT-E | | | | | | | | |
| 0 gAPI 150 | | | Internal Radius Maximum Value (IRMX) USIT-E | | | Internal Radius Maximum Value (IRMX) USIT-E | | | | | | -1 Mrayl 10 | | | Bonded | | | Absent | | |
| Stuck Tool Indicator, Total (STIT) | | | 2.95 in 1.95 | | | 1.95 in 2.95 | | | | | | | | | Gas | | | -500,000 | | |
| 0 ft 50 | | | Internal Radius Minimum Value (IRMN) USIT-E | | | Internal Radius Minimum Value (IRMN) USIT-E | | | | | | Acoustic Impedance Maximum (AIMX) USIT-E | | | Liquid | | | 2,599 | | |
| CableDrag | | | 2.95 in 1.95 | | | 1.95 in 2.95 | | | Custom Normalization | | | -1 Mrayl 10 | | | Micro-debonding | | | 2,854 | | |
| | | | | | | | | | USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl) | | | | | | | | | 3,109 | | |
| | | | | | | | | | | | | | | | | | | 3,363 | | |
| | | | | | | | | | | | | | | | | | | 3,618 | | |
| | | | | | | | | | | | | | | | | | | 3,872 | | |
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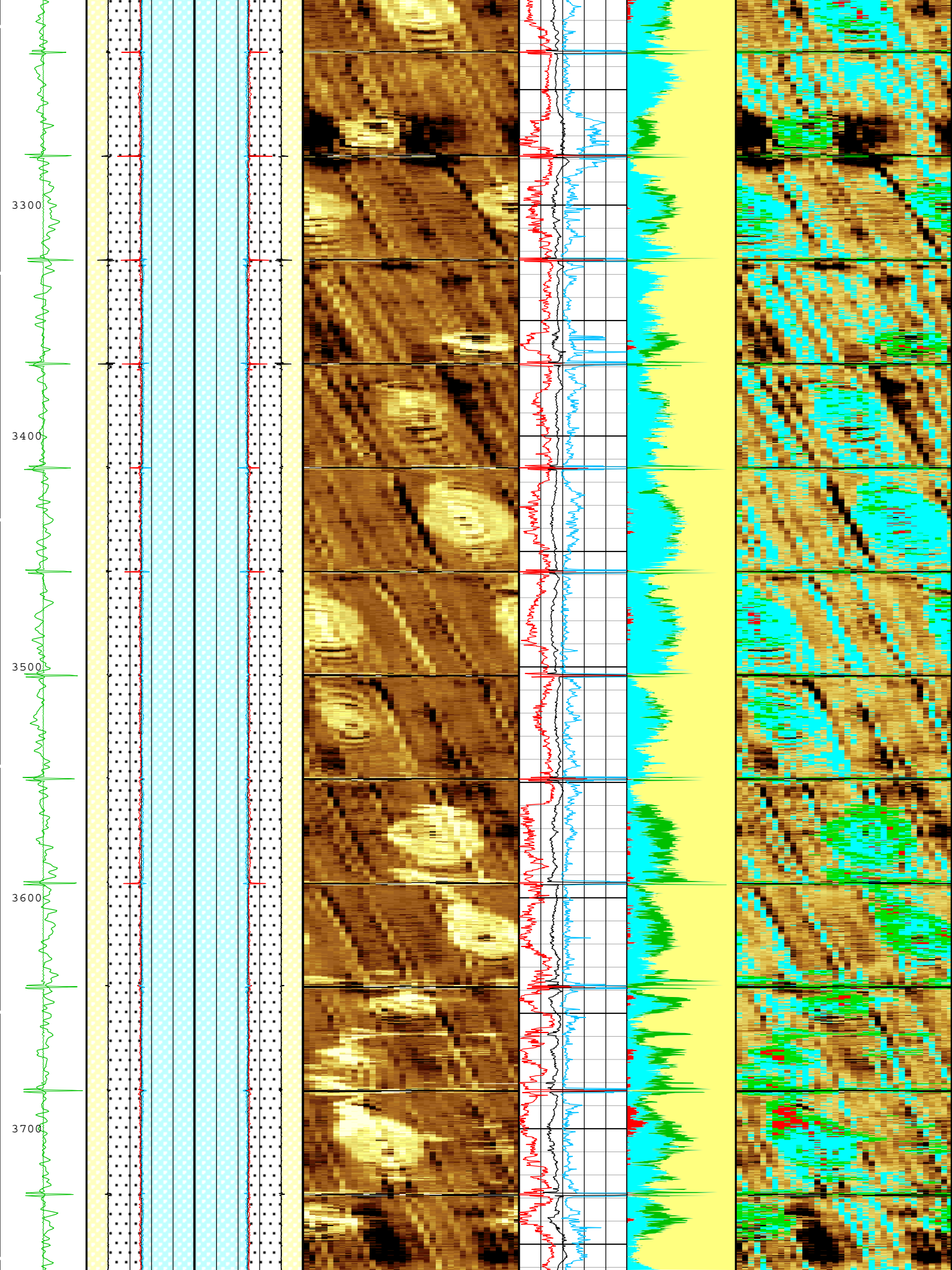


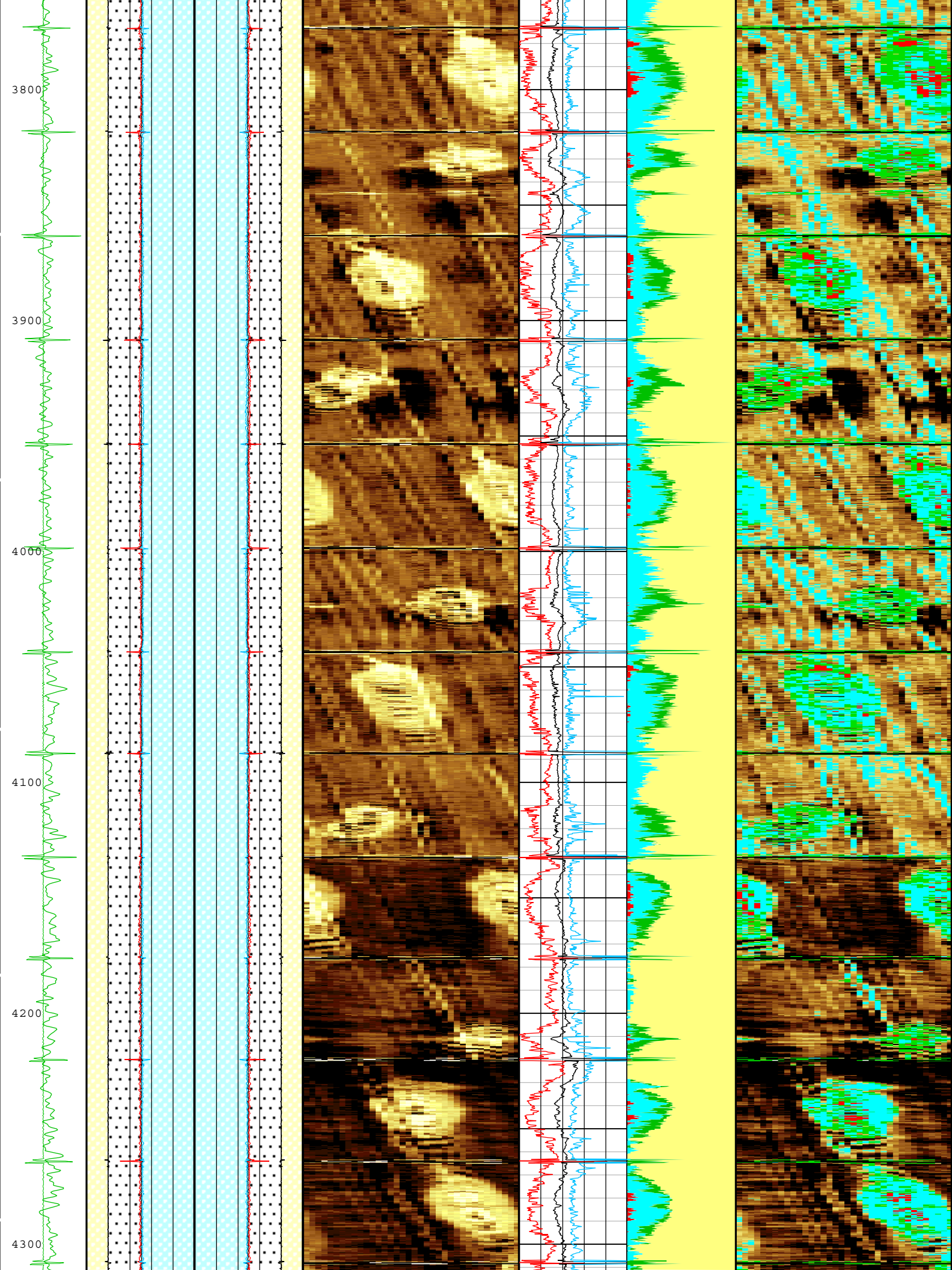


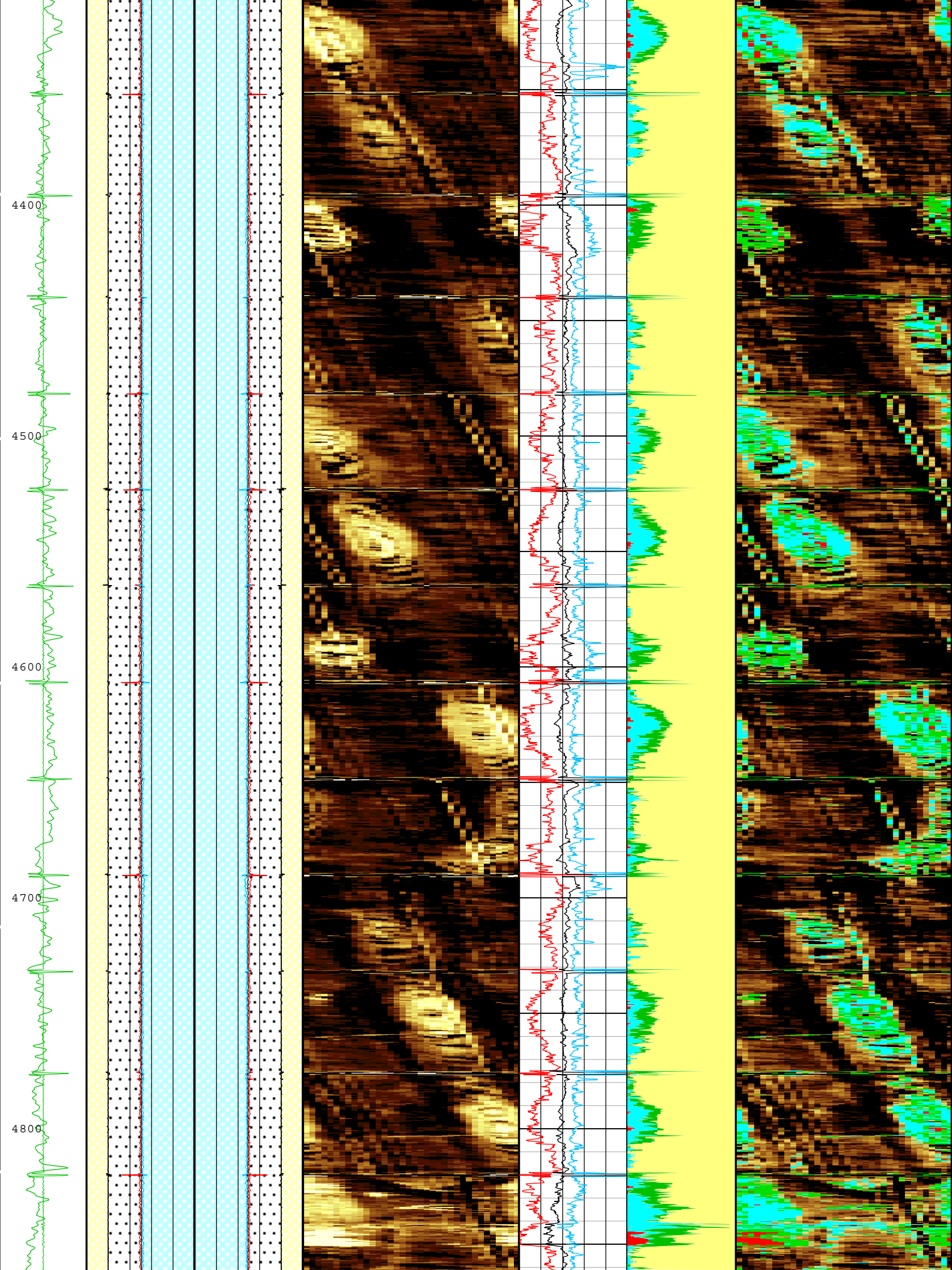


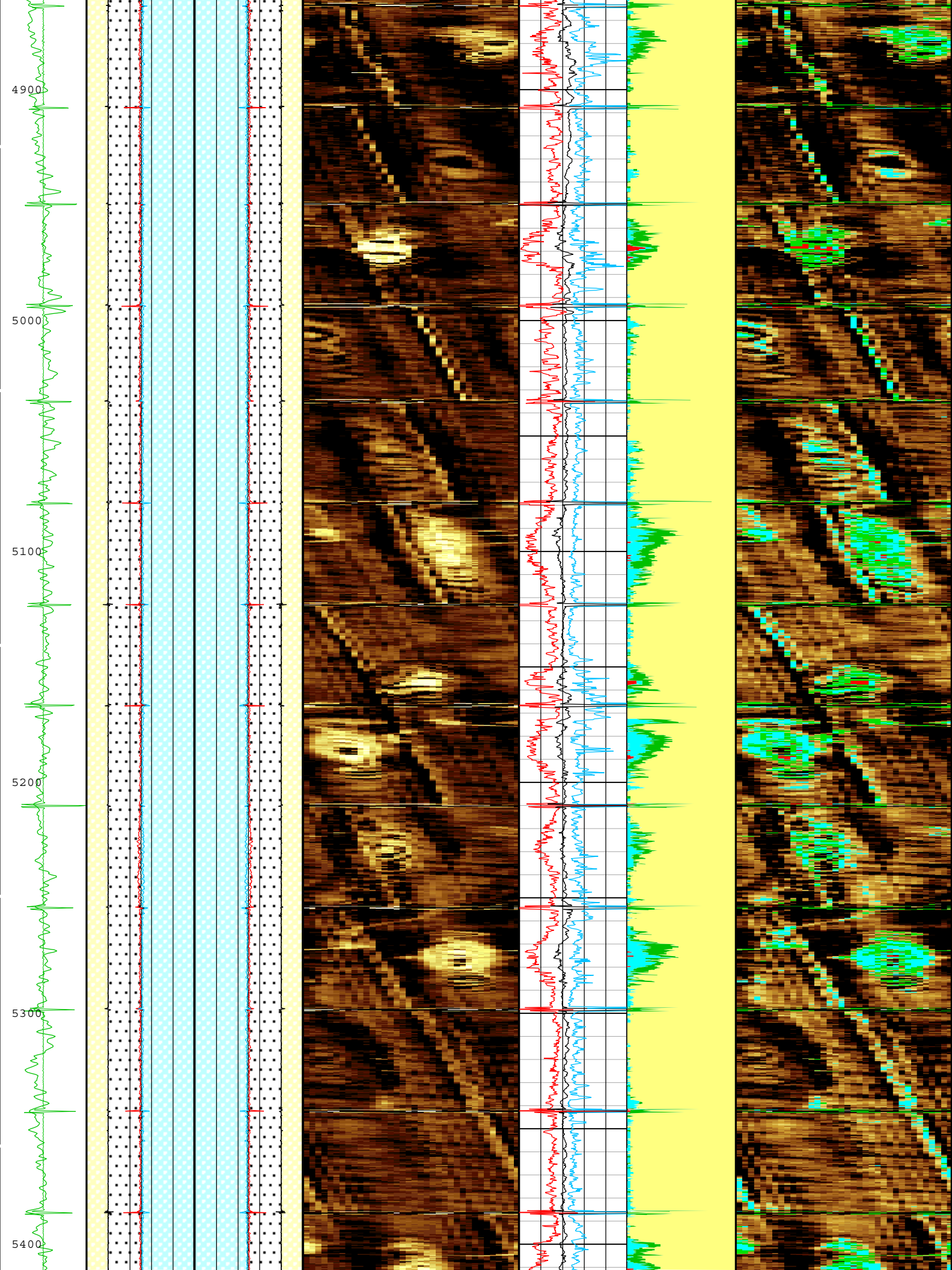


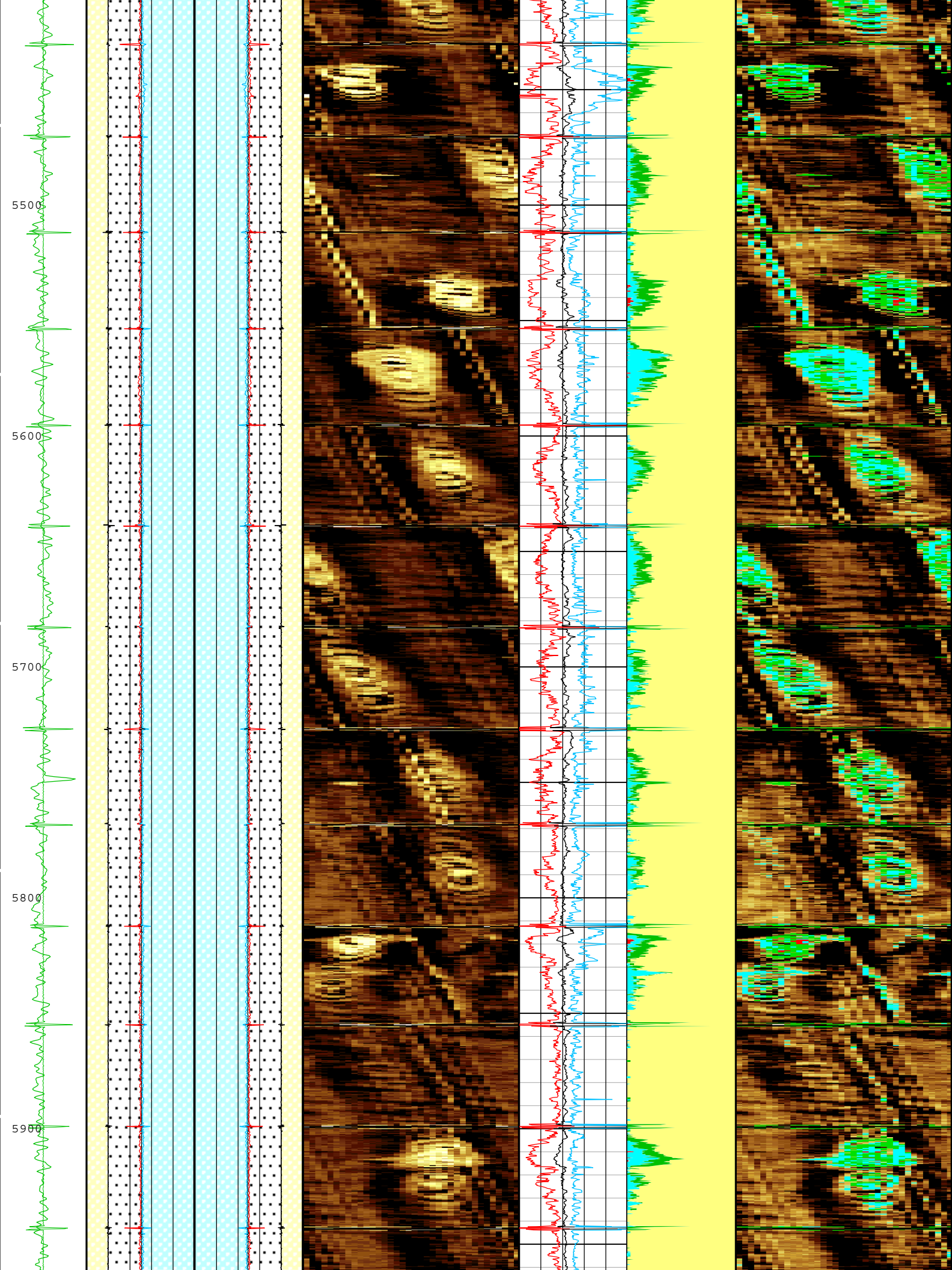


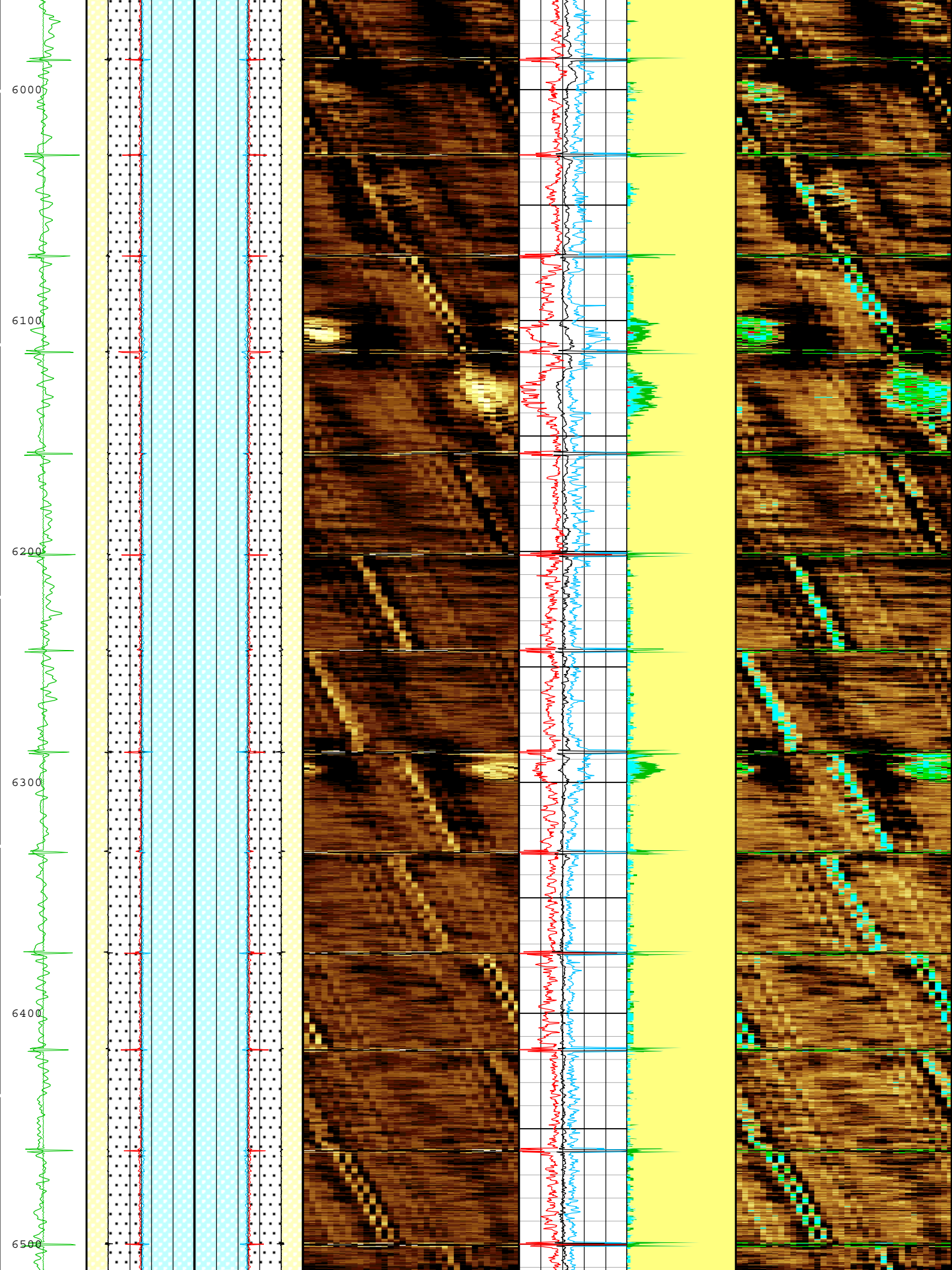


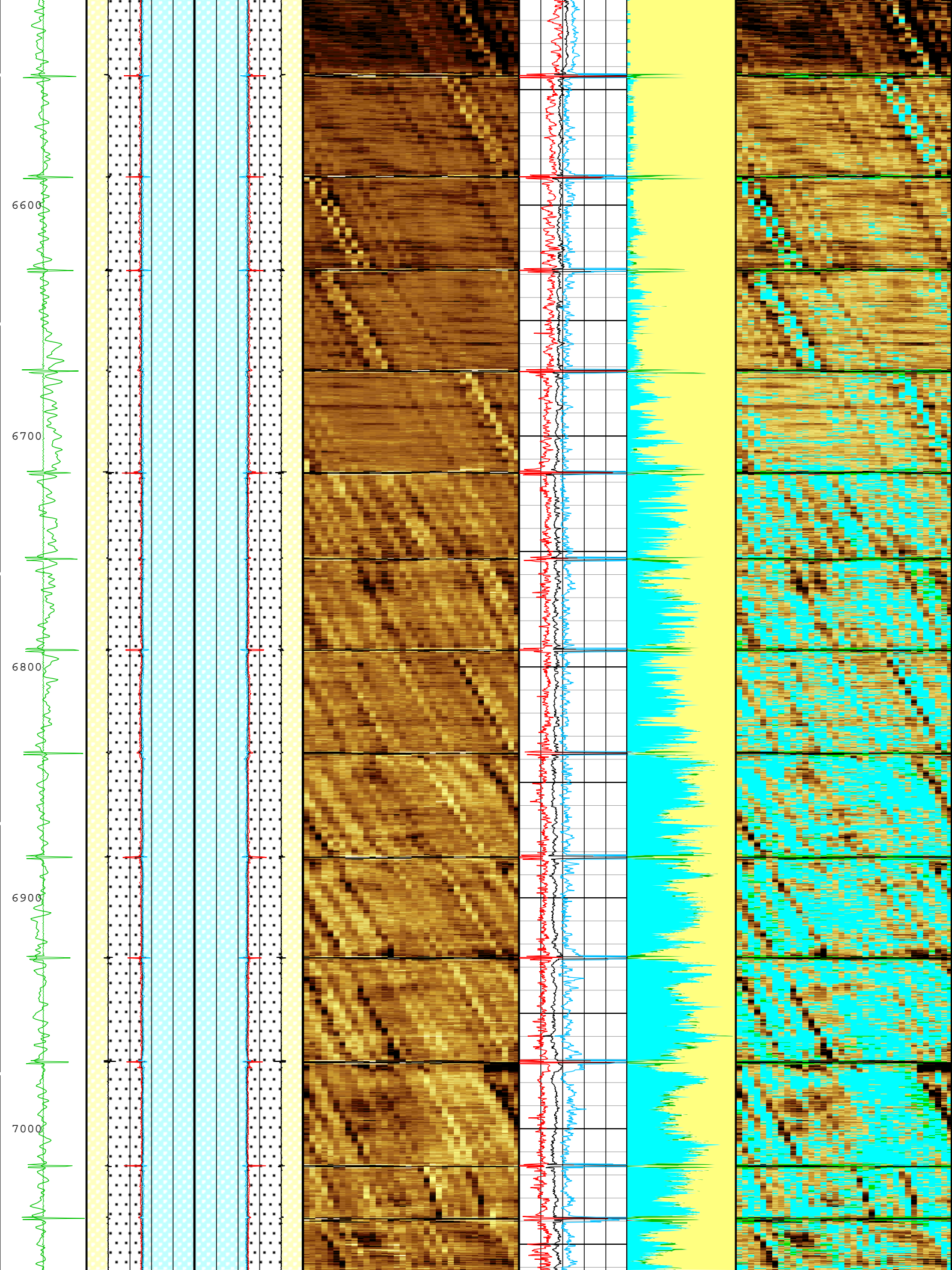


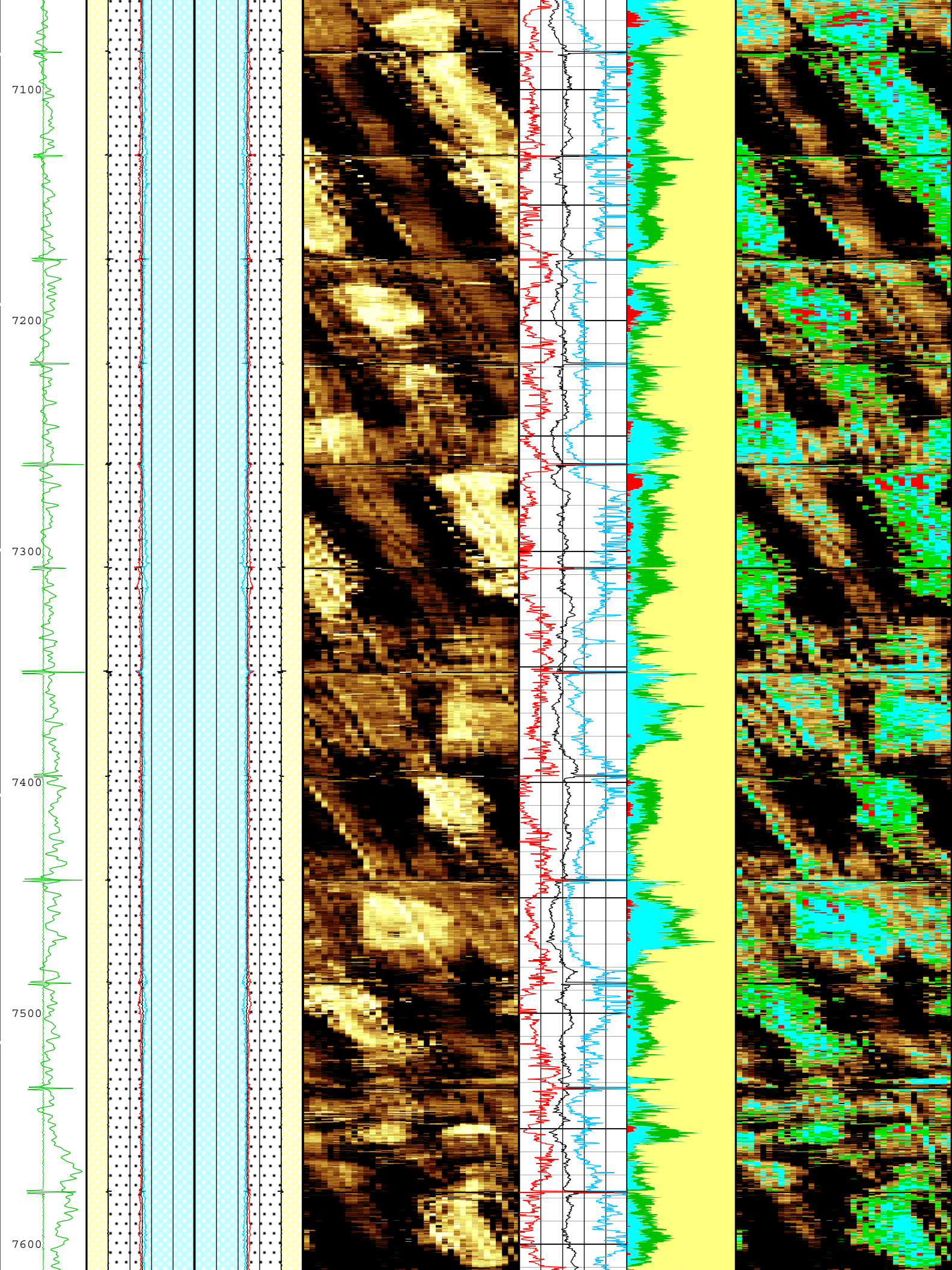


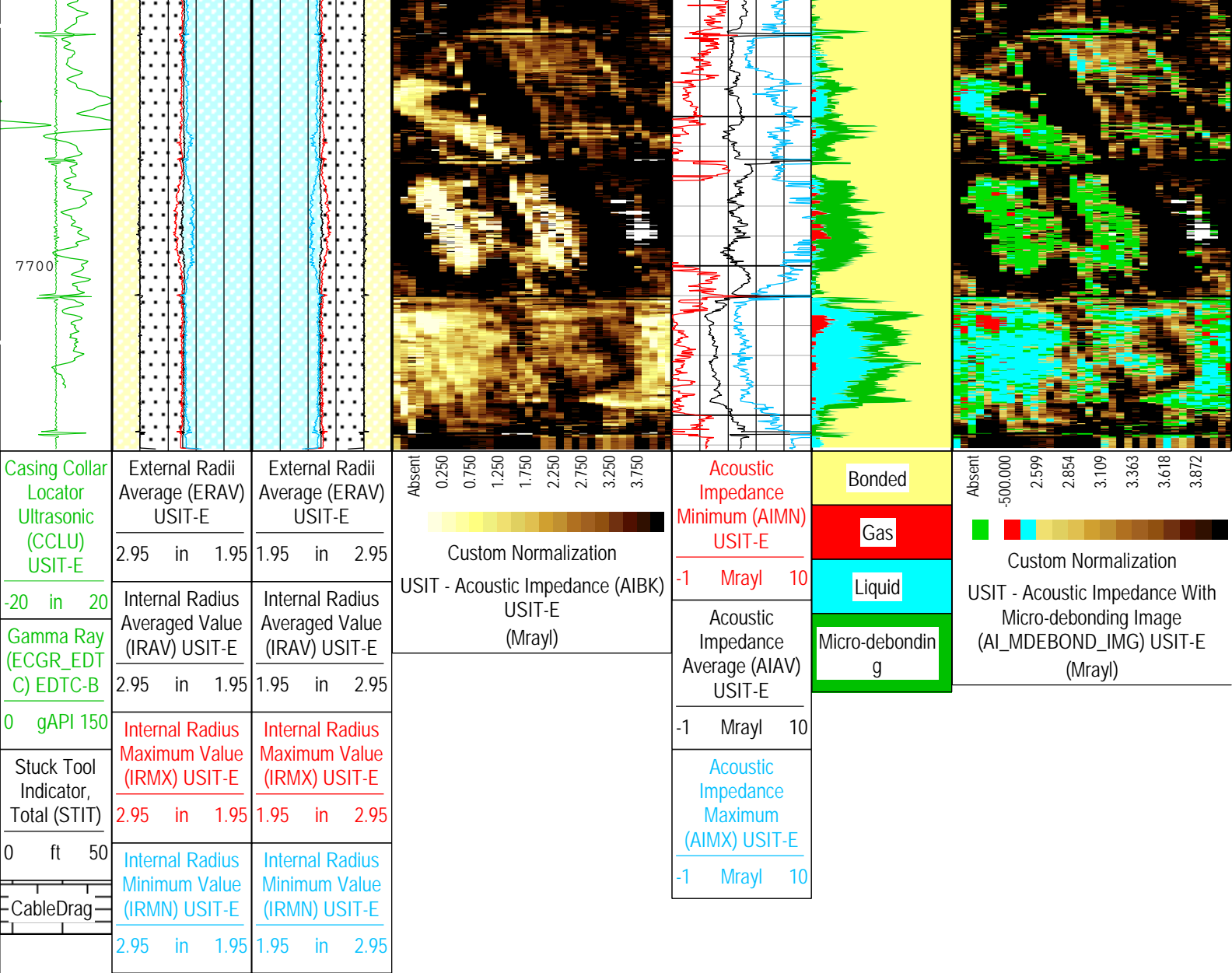












TIME_1900 - Time Marked every 60.00 (s)

Description: USI Cement Format: USI Cement Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Jul-2015 20:07:35

| Channel Processing Parameters | | | | |
|-------------------------------|--|-----------------|------------------------|---------|
| ONE: Parameters | | | | |
| Parameter | Description | Tool | Value | Unit |
| AFVU | Automatic Fluid Velocity Update | USIT-E | On | |
| ISSBAR | Barite Mud Presence Flag | Borehole | No | |
| BERJ | Bad Echo Rejection | USIT-E | On | |
| BHS | Borehole Status (Open or Cased Hole) | Borehole | Open | |
| BS | Bit Size | WLSESSION | 7.625 | in |
| CASING_PRATIO | Casing Poisson Ratio | USIT-E | Standard Poisson Ratio | |
| CBLO | Casing Bottom (Logger) | WLSESSION | 10000 | ft |
| CDEN | Cement Density | EDTC-B | 16.69 | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type | USIT-E | Light Cement | |
| THNO | Nominal Casing Thickness - Zoned along logger depths | WLSESSION | 0.304 | in |
| DC_MODE | Depth Correction Mode | DepthCorrection | Real-time | |
| DFD | Drilling Fluid Density | Borehole | 9 | lbm/gal |
| DFT | Drilling Fluid Type | Borehole | Water | |
| DTMD | Borehole Fluid Slowness | Borehole | 206 | us/ft |

| | | | | |
|----------------|---|----------|-------------|---------|
| FD | Fluid Density | USIT-E | 9 | lbm/gal |
| FDII | FPM Data Interpolation Interval | USIT-E | 0 | ft |
| GCSE_DOWN_PASS | Generalized Caliper Selection for WL Log Down Passes | Borehole | BS | |
| GCSE_UP_PASS | Generalized Caliper Selection for WL Log Up Passes | Borehole | BS | |
| GR_MULTIPLIER | Gamma Ray Multiplier | EDTC-B | 1 | |
| HEMA | Hematite Presence Flag | Borehole | No | |
| ICE_BINPROC | ICE Bin Processing Depth Interval | USIT-E | 0 | ft |
| ICE_PROCESS | ICE Processing | USIT-E | Yes | |
| IMAR | Image Rotation | USIT-E | Off | |
| MEAS_WLEN | Tcube Processing Window Length in Measurement Mode | USIT-E | 18.79 | us |
| MUD_N_FRP | Free Pipe Mud Normalization Factor | USIT-E | 1.02 | |
| MUD_N_THE | Theoretical Mud Normalization Factor | USIT-E | 1 | |
| RAPID_OPTION | Rapid Access Computation Option | USIT-E | Off | |
| 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 |
| SDNV | Number of Vertical Samples used for Micro-debonding Computation | USIT-E | 5 | |
| SDTHOR | Acoustic Impedance STD Horizontal Threshold for Micro-debonding | USIT-E | 0.5 | Mrayl |
| SDTVER | Acoustic Impedance STD Vertical Threshold for Micro-debonding | USIT-E | 0.3 | Mrayl |
| SOCN | Standoff Distance | EDTC-B | 0.125 | in |
| SOCO | Standoff Correction Option | EDTC-B | No | |
| TCUB | T^3 Processing Level | USIT-E | Loop | |
| 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 | 0.1 | Mrayl |
| UFGDE | Fiberglass Density | USIT-E | 16.27 | lbm/gal |
| UFGPS | Fiberglass Processing Selection | USIT-E | No | |
| UFGVL | Fiberglass Velocity | USIT-E | 9678.48 | ft/s |
| USI_FSOD | USIT USI Fluid Slowness Fits Casing Outer Diameter | USIT-E | 0_OFF | |
| USI_FVEL_SEL | USI Fluid Velocity Selection | USIT-E | Automatic | |
| USI_ZMUD_SEL | USI Mud Impedance Selection | USIT-E | Manual | |
| 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 | Depth Zoned | 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) |
| ZMUD | 1.62 | 30.5 | 300 |
| ZMUD | 1.63 | 300 | 650 |
| ZMUD | 1.64 | 650 | 1000 |
| ZMUD | 1.65 | 1000 | 1400 |
| ZMUD | 1.66 | 1400 | 1900 |
| ZMUD | 1.67 | 1900 | 2300 |
| ZMUD | 1.68 | 2300 | 2900 |
| ZMUD | 1.69 | 2900 | 3500 |

| | | | |
|-----------------------|------|------|------|
| ZMUD | 1.7 | 3500 | 4300 |
| ZMUD | 1.71 | 4300 | 5400 |
| ZMUD | 1.72 | 5400 | 7762 |
| All depth are actual. | | | |

Tool Control Parameters

ONE: Parameters

| Parameter | Description | Tool | Value | Unit |
|---------------|--|-----------|----------------------------------|------|
| AGMN | Minimum Gain of Cartridge | USIT-E | -12 | dB |
| AGMX | Maximum Gain of Cartridge | USIT-E | 30 | 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 | 50 | V |
| HRES | Horizontal Resolution | USIT-E | 10 deg | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 6750 | ft/h |
| MOTOR_PROTECT | Motor Protection | USIT-E | On | |
| TMUC | Type of Mud | USIT-E | BRI | |
| UACLV_PERM | Ultrasonic ACLV Permanent | USIT-E | No | |
| ULOG | Logging Objective | USIT-E | MEASUREMENT | |
| UMFR | Modulation Frequency | USIT-E | 333333 | Hz |
| USFR | Ultrasonic Sampling Frequency | USIT-E | 500000 | Hz |
| UPAT | USIT Emission Pattern | USIT-E | Pattern 500 KHz | |
| UWKM | USIT Working Mode | USIT-E | Uncompressed 10 deg at 3.0 in LF | |
| USIT_DEPTHLOG | Starting Depth Log for Ultrasonics | USIT-E | 8000 | ft |
| USSP | Ultrasonic Service | USIT-E | USI | |
| VRES | Vertical Resolution | USIT-E | 3.0 in | |
| WINB | Window Begin Time | USIT-E | 33.83 | us |
| WINE | Window End Time | USIT-E | 73.83 | us |

USI Cement

ONE

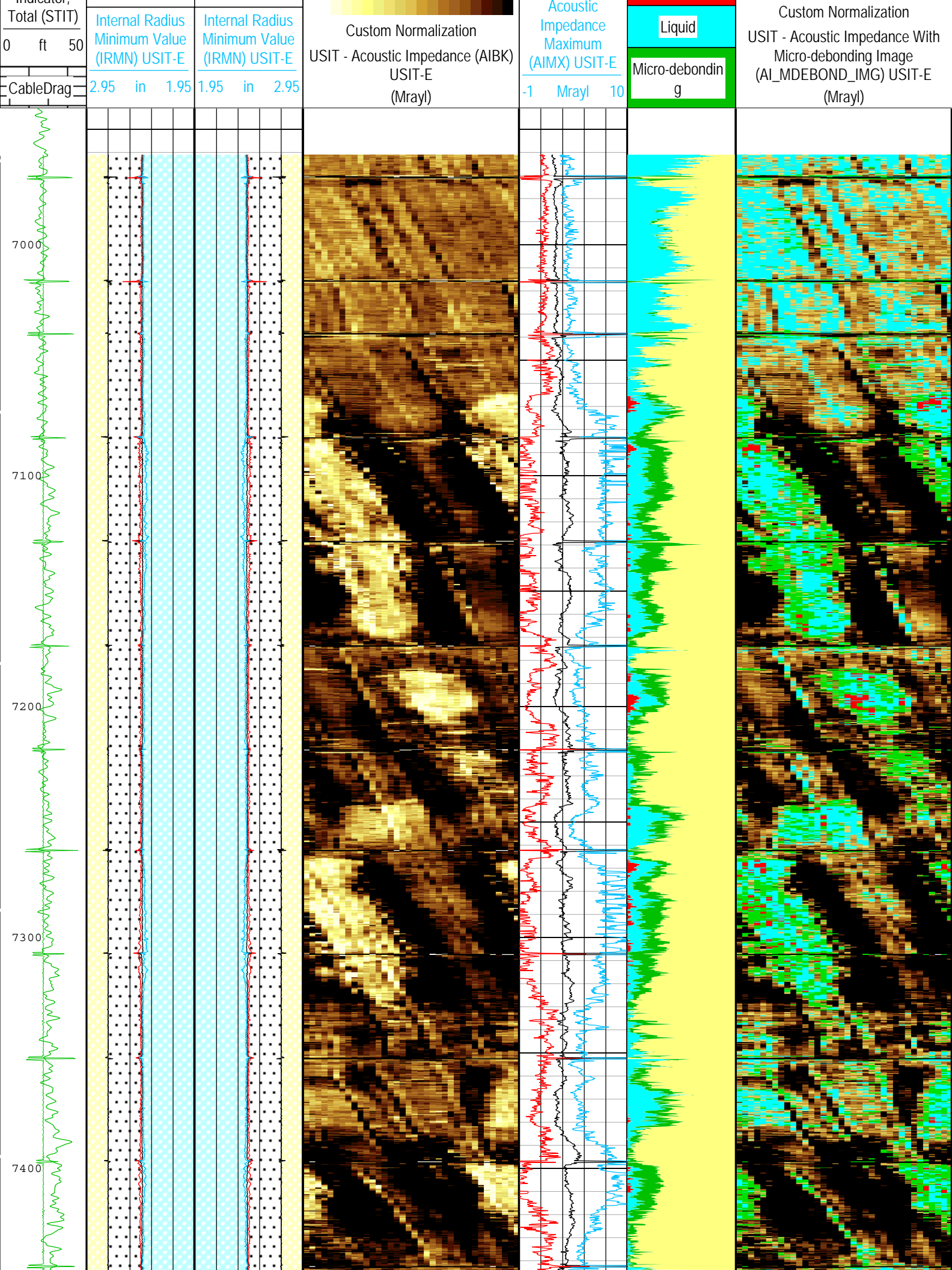
USI Cement - Repeat

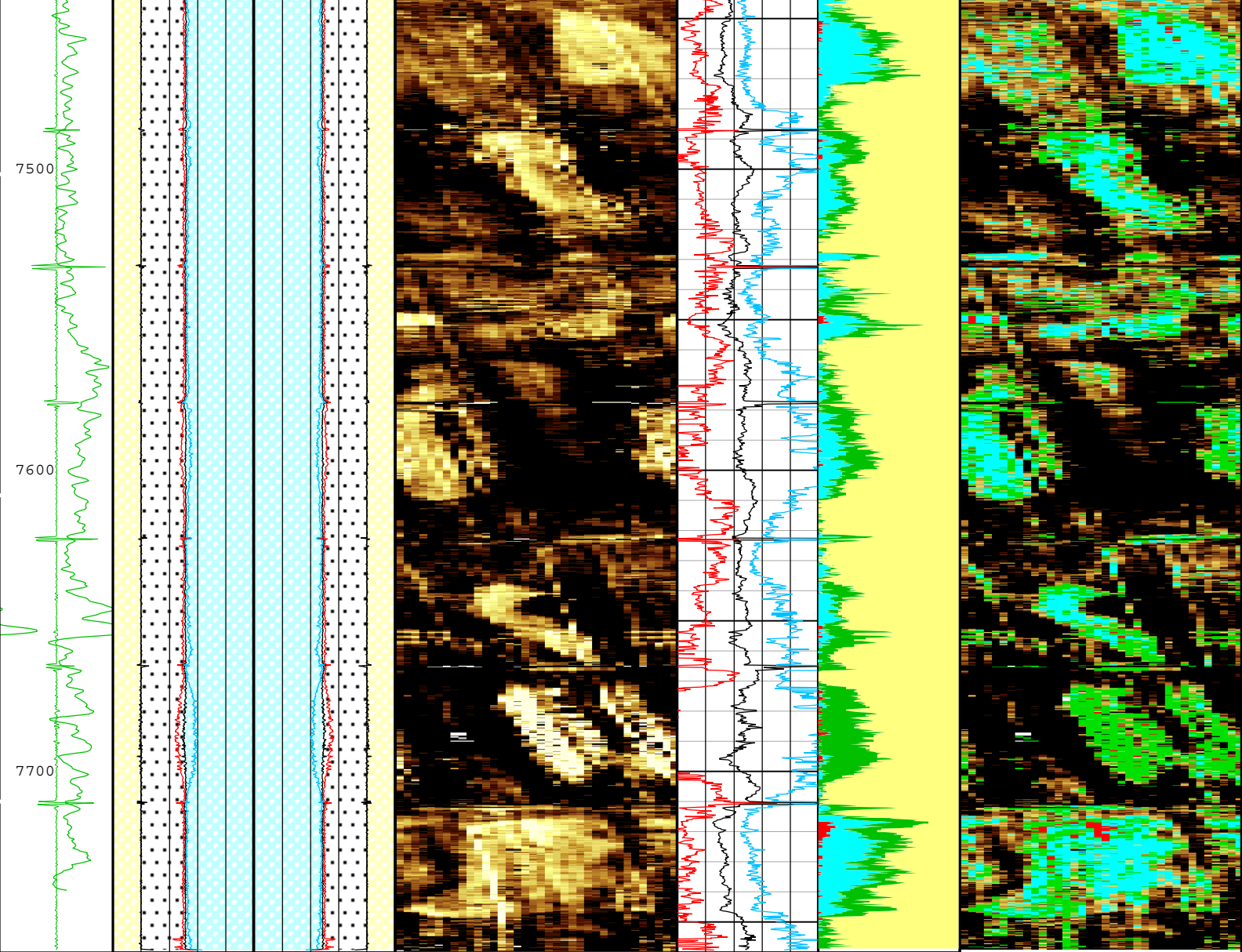
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| Log | Company:Anadarko | Well:Troudt 36N-33HZ |
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Description: USI Cement Format: USI Cement Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Jul-2015 20:07:54

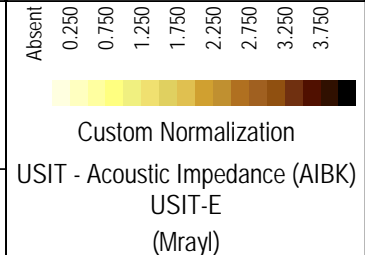
TIME_1900 - Time Marked every 60.00 (s)

| | | | | | | | | |
|--|--|----|------|--|----|------|--|-----------------|
| Casing Collar Locator Ultrasonic (CCLU) USIT-E | External Radii Average (ERAV) USIT-E | | | External Radii Average (ERAV) USIT-E | | | Acoustic Impedance Minimum (AIMN) USIT-E | -1 Mrayl 10 |
| | 2.95 | in | 1.95 | 1.95 | in | 2.95 | | |
| | Internal Radius Averaged Value (IRAV) USIT-E | | | Internal Radius Averaged Value (IRAV) USIT-E | | | | |
| -20 in 20 | 2.95 | in | 1.95 | 1.95 | in | 2.95 | Acoustic Impedance Average (AIAV) USIT-E | |
| Gamma Ray (ECGR_EDT C) EDTC-B | Internal Radius Maximum Value (IRMX) USIT-E | | | Internal Radius Maximum Value (IRMX) USIT-E | | | Bonded | |
| 0 gAPI 150 | 2.95 | in | 1.95 | 1.95 | in | 2.95 | Gas | |
| Stuck Tool Indicator | 2.95 | in | 1.95 | 1.95 | in | 2.95 | | |
| Absent 0.250 0.750 1.250 1.750 2.250 2.750 3.250 3.750 | | | | Absent 500.000 2.599 2.854 3.109 3.363 3.618 3.872 | | | | |



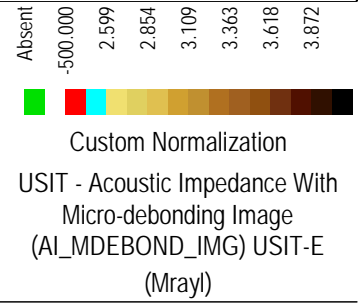


| | | |
|--|--|--|
| Casing Collar Locator Ultrasonic (CCLU) USIT-E | External Radii Average (ERAV) USIT-E | External Radii Average (ERAV) USIT-E |
| -20 in 20 | 2.95 in 1.95 | 1.95 in 2.95 |
| Gamma Ray (ECGR_EDT C) EDTC-B | Internal Radius Averaged Value (IRAV) USIT-E | Internal Radius Averaged Value (IRAV) USIT-E |
| 0 gAPI 150 | 2.95 in 1.95 | 1.95 in 2.95 |
| Stuck Tool Indicator, Total (STIT) | Internal Radius Maximum Value (IRMX) USIT-E | Internal Radius Maximum Value (IRMX) USIT-E |
| 0 ft 50 | 2.95 in 1.95 | 1.95 in 2.95 |
| CableDrag | Internal Radius Minimum Value (IRMN) USIT-E | Internal Radius Minimum Value (IRMN) USIT-E |
| | 2.95 in 1.95 | 1.95 in 2.95 |



| | |
|--|-------------|
| Acoustic Impedance Minimum (AIMN) USIT-E | -1 Mrayl 10 |
| Acoustic Impedance Average (AIAV) USIT-E | -1 Mrayl 10 |
| Acoustic Impedance Maximum (AIMX) USIT-E | -1 Mrayl 10 |

| |
|-----------------|
| Bonded |
| Gas |
| Liquid |
| Micro-debonding |

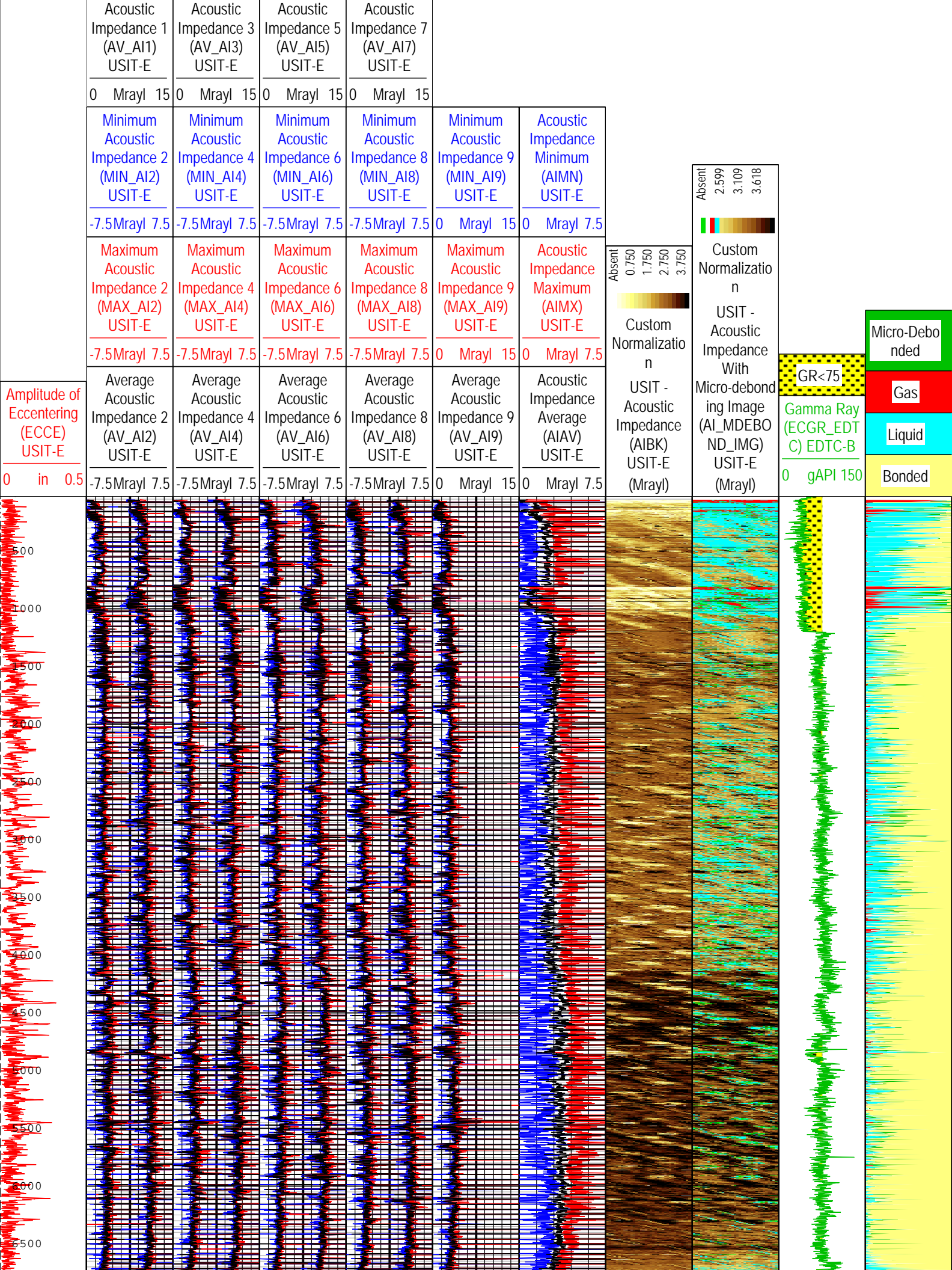


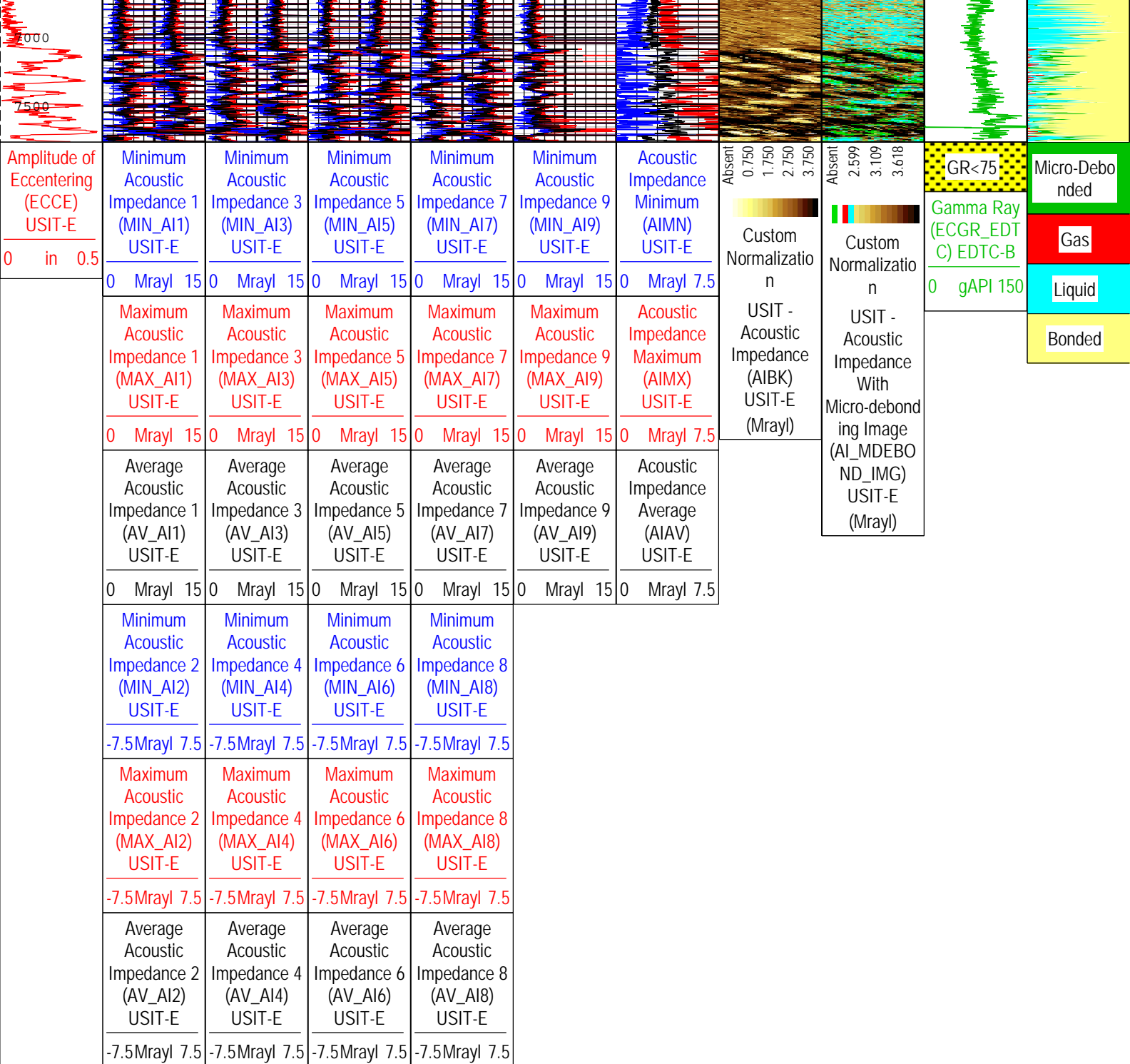
TIME_1900 - Time Marked every 60.00 (s)

Description: USI Cement Format: USI Cement Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Jul-2015 20:07:54

| Parameter | Description | Tool | Value | Unit |
|-------------------|---|-----------------|------------------------|---------|
| AFVU | Automatic Fluid Velocity Update | USIT-E | On | |
| ISSBAR | Barite Mud Presence Flag | Borehole | No | |
| BERJ | Bad Echo Rejection | USIT-E | On | |
| BHS | Borehole Status (Open or Cased Hole) | Borehole | Open | |
| BS | Bit Size | WLSESSION | 7.625 | in |
| CASING_PRATIO | Casing Poisson Ratio | USIT-E | Standard Poisson Ratio | |
| CBLO | Casing Bottom (Logger) | WLSESSION | 10000 | ft |
| CDEN | Cement Density | EDTC-B | 16.69 | lbm/gal |
| CMTY(U-USIT_CEMT) | Cement Type | USIT-E | Light Cement | |
| THNO | Nominal Casing Thickness - Zoned along logger depths | WLSESSION | 0.304 | in |
| DC_MODE | Depth Correction Mode | DepthCorrection | Real-time | |
| DFD | Drilling Fluid Density | Borehole | 9 | lbm/gal |
| DFT | Drilling Fluid Type | Borehole | Water | |
| DTMD | Borehole Fluid Slowness | Borehole | 206 | us/ft |
| FD | Fluid Density | USIT-E | 9 | lbm/gal |
| FDII | FPM Data Interpolation Interval | USIT-E | 0 | ft |
| GCSE_DOWN_PASS | Generalized Caliper Selection for WL Log Down Passes | Borehole | BS | |
| GCSE_UP_PASS | Generalized Caliper Selection for WL Log Up Passes | Borehole | BS | |
| GR_MULTIPLIER | Gamma Ray Multiplier | EDTC-B | 1 | |
| HEMA | Hematite Presence Flag | Borehole | No | |
| ICE_BINPROC | ICE Bin Processing Depth Interval | USIT-E | 0 | ft |
| ICE_PROCESS | ICE Processing | USIT-E | Yes | |
| IMAR | Image Rotation | USIT-E | Off | |
| MEAS_WLEN | Tcube Processing Window Length in Measurement Mode | USIT-E | 18.79 | us |
| MUD_N_FRP | Free Pipe Mud Normalization Factor | USIT-E | 1.02 | |
| MUD_N_THE | Theoretical Mud Normalization Factor | USIT-E | 1 | |
| RAPID_OPTION | Rapid Access Computation Option | USIT-E | Off | |
| 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 |
| SDNV | Number of Vertical Samples used for Micro-debonding Computation | USIT-E | 5 | |
| SDTHOR | Acoustic Impedance STD Horizontal Threshold for Micro-debonding | USIT-E | 0.5 | Mrayl |
| SDTVR | Acoustic Impedance STD Vertical Threshold for Micro-debonding | USIT-E | 0.3 | Mrayl |
| SOCN | Standoff Distance | EDTC-B | 0.125 | in |
| SOCO | Standoff Correction Option | EDTC-B | No | |
| TCUB | T^3 Processing Level | USIT-E | Loop | |
| 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 | 0.1 | Mrayl |
| UFGDE | Fiberglass Density | USIT-E | 16.27 | lbm/gal |
| UFGPS | Fiberglass Processing Selection | USIT-E | No | |
| UFGVL | Fiberglass Velocity | USIT-E | 9678.48 | ft/s |
| USI_FSOD | USIT USI Fluid Slowness Fits Casing Outer Diameter | USIT-E | 0_OFF | |
| USI_FVEL_SEL | USI Fluid Velocity Selection | USIT-E | Automatic | |
| USI_ZMUD_SEL | USI Mud Impedance Selection | USIT-E | Manual | |
| 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 | 1.72 | 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 | | | | |
| ONE: Parameters | | | | |
| Parameter | Description | Tool | Value | Unit |
| AGMN | Minimum Gain of Cartridge | USIT-E | -12 | dB |
| AGMX | Maximum Gain of Cartridge | USIT-E | 30 | 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 | 50 | V |
| HRES | Horizontal Resolution | USIT-E | 10 deg | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 6750 | ft/h |
| MOTOR_PROTECT | Motor Protection | USIT-E | On | |
| TMUC | Type of Mud | USIT-E | BRI | |
| UACLV_PERM | Ultrasonic ACLV Permanent | USIT-E | No | |
| ULOG | Logging Objective | USIT-E | MEASUREMENT | |
| UMFR | Modulation Frequency | USIT-E | 333333 | Hz |
| USFR | Ultrasonic Sampling Frequency | USIT-E | 500000 | Hz |
| UPAT | USIT Emission Pattern | USIT-E | Pattern 500 KHz | |
| UWKM | USIT Working Mode | USIT-E | Uncompressed 10 deg at 3.0 in LF | |
| USIT_DEPTHLOG | Starting Depth Log for Ultrasonics | USIT-E | 8000 | ft |
| USSP | Ultrasonic Service | USIT-E | USI | |
| VRES | Vertical Resolution | USIT-E | 3.0 in | |
| WINB | Window Begin Time | USIT-E | 33.83 | us |
| WINE | Window End Time | USIT-E | 73.83 | us |
| USI Goodwin | | | | |
| ONE | | | | |
| USI Goodwin Compressed | | | | |
| Log | Company:Anadarko | | Well:Troudt 36N-33HZ | |
| | | | ONE: Log[3]:Up:S006 | |
| Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Jul-2015 20:08:00 | | | | |
| TIME_1900 - Time Marked every 60.00 (s) | | | | |
| Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E | Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E | Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E | Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E | |
| 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | |
| Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E | Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E | Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E | Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E | |
| 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | |
| Average | Average | Average | Average | |





TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Jul-2015 20:08:00

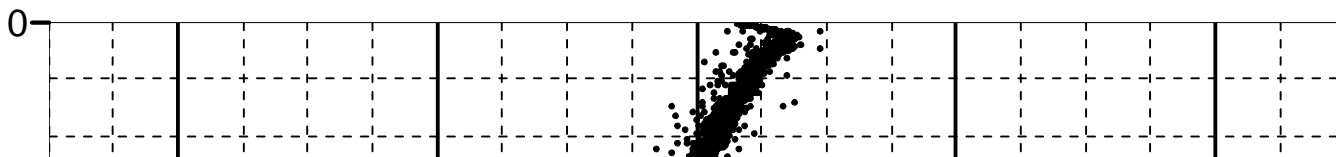
XYZ Company: Anadarko Well: Troudt 36N-33HZ ONE: Log[3]: Up: S006

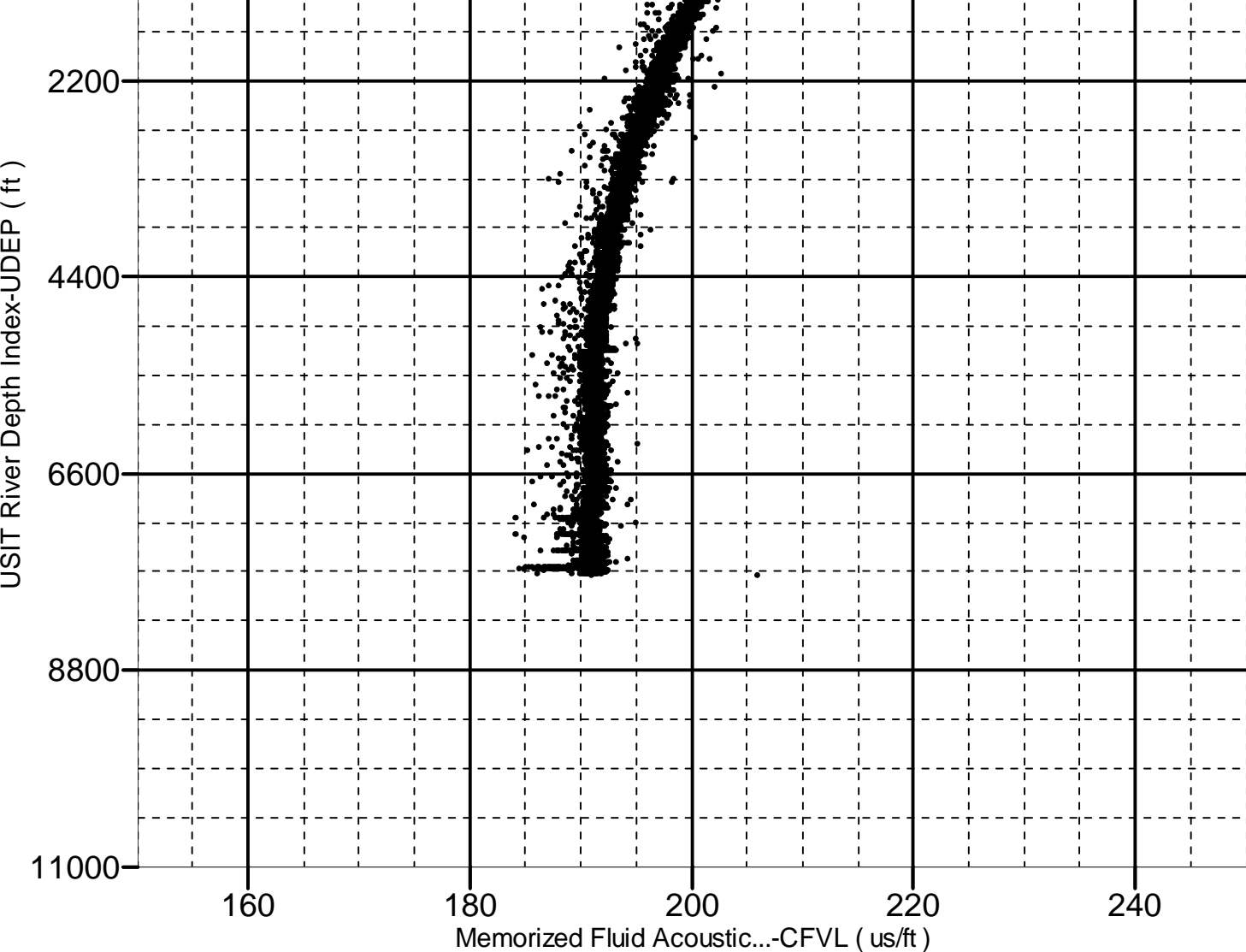
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 7761.75 to 50.50 ft

● CFVL-UDEP





XYZ

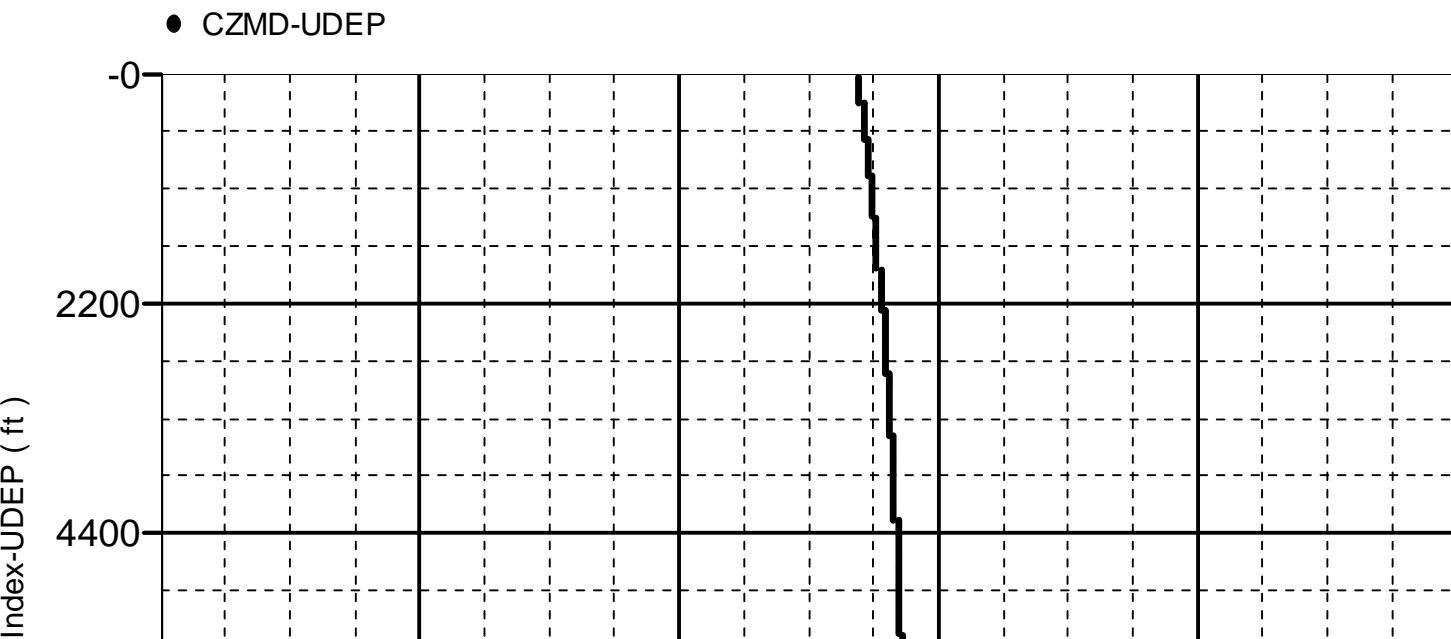
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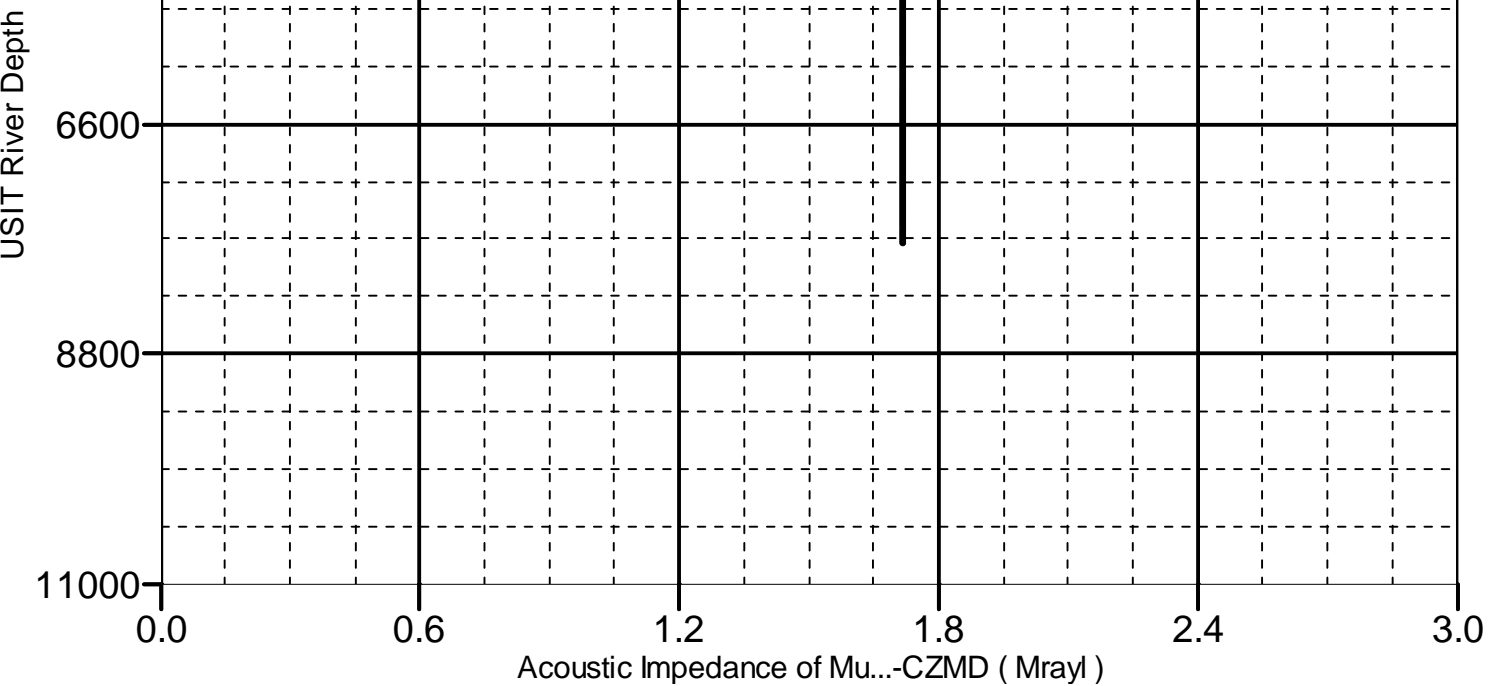
ONE: Log[3]:Up:S006

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7761.75 to 50.50 ft





| | | |
|---------------------------|-----------------|--------------|
| Company: | Anadarko | Schlumberger |
| Well: | Troudt 36N-33HZ | |
| Field: | Wattenberg | |
| County: | Weld | |
| State: | Colorado | |
| Ultrasonic Imager | | |
| Cement Evaluation (Short) | | |
| Gamma Ray - CCL Log | | |