

Company: Anadarko

Well: Skim State 30N-21HZ

Field: Wattenberg

County: Weld

State: Colorado

Ultrasonic Imager

Cement Evaluation (Short)

Gamma Ray - CCL Log

County: Weld

Field: Wattenberg

Location: SWSW S21 T3N R65W

Well: Skim State 30N-21HZ

Company: Anadarko

Location:

SWSW S21 T3N R65W

SHL: 639' FSL 1211' FWL

LAT: 40.205451 / LONG: -104.673555

Elev.: K.B.

G.L.

D.F.

4864.00 ft

4848.00 ft

4863.00 ft

Permanent Datum:

Ground Level

Elev.: 4848.00 f

Log Measured From:

Kelly Bushing

16.00 ft

above Perm.Datum

Drilling Measured From:

Kelly Bushing

API Serial No.

Section:

Township:

Range:

05-123-40981

21

3N

65W

| | | | |
|---------------------------|-----------------|----------------|--|
| Logging Date | 27-Jul-2015 | | |
| Run Number | ONE | | |
| Depth Driller | 12675.00 ft | | |
| Schlumberger Depth | 12675.00 ft | | |
| Bottom Log Interval | 7461.00 ft | | |
| Top Log Interval | 16.00 ft | | |
| Casing Fluid Type | Fresh Water | | |
| Salinity | | | |
| Density | 9 lbm/gal | | |
| Fluid Level | 8.00 ft | | |
| BIT/CASING/TUBING STRING | | | |
| Bit Size | 7.88 in | | |
| From | 1237.00 ft | | |
| To | 12675.00 ft | | |
| Casing/Tubing Size | 5.5 in | | |
| Weight | 17 lbm/ft | | |
| Grade | N/A | | |
| From | 0.00 ft | | |
| To | 12675.00 ft | | |
| Max Recorded Temperatures | 264 degF | | |
| Logger on Bottom | 27-Jul-2015 | 09:30:00 | |
| Unit Number | Location: | Time | |
| 3022 | | | |
| Recorded By | Michel Lapointe | Ft. Morgan, CO | |
| Witnessed By | Mario Torres | | |

Disclaimer

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11.1 USI Fluid Properties Measurement

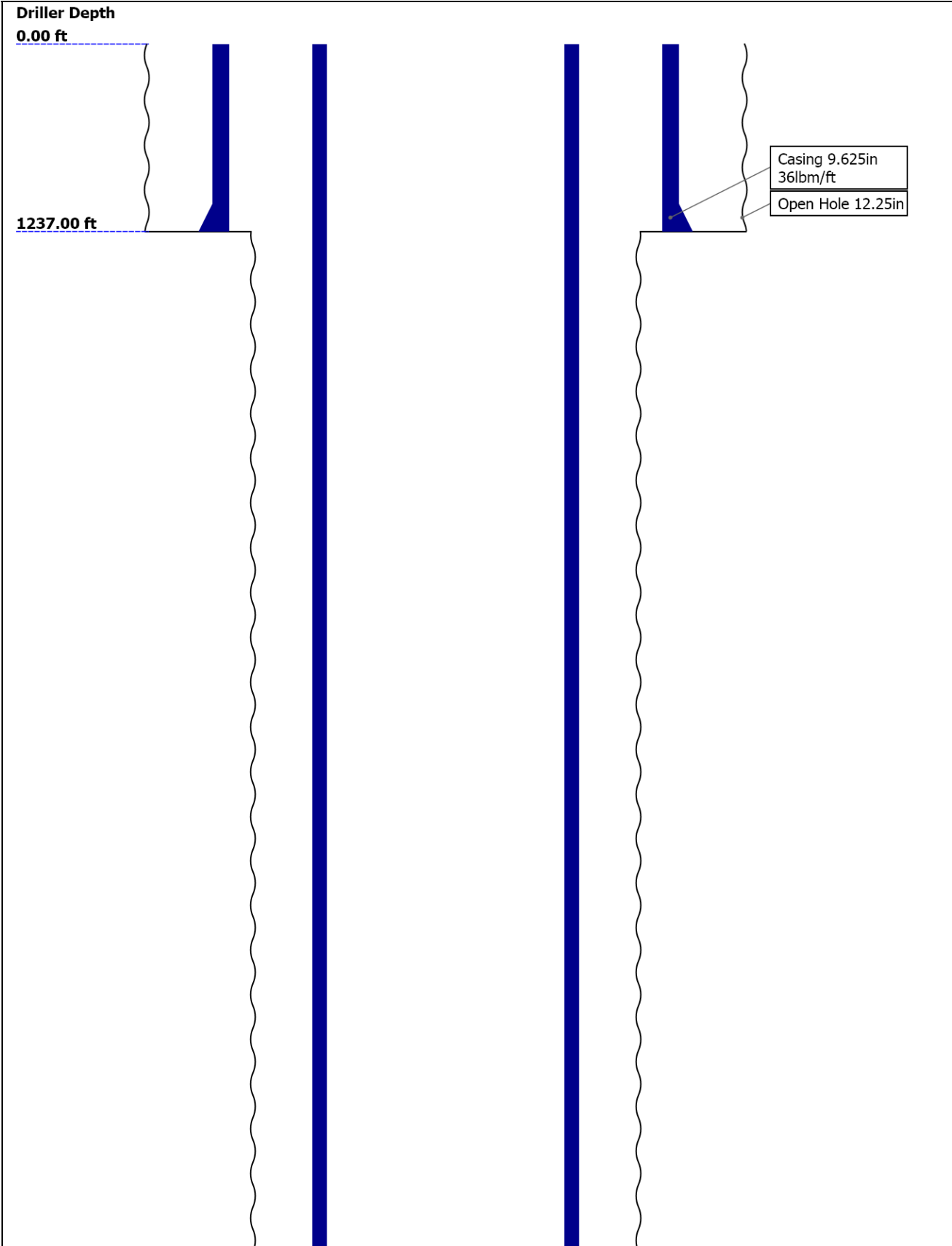
11.2 USI Cement

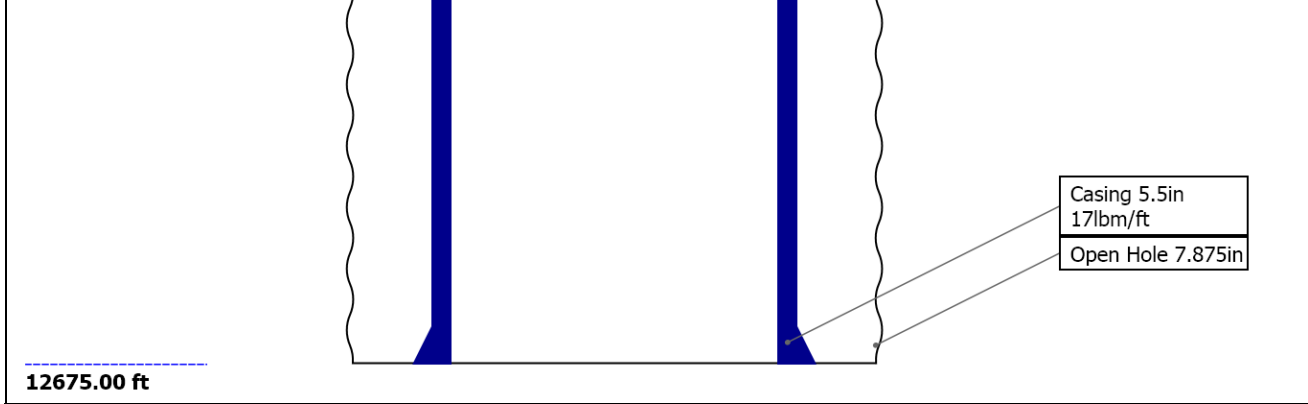
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Well Sketch





Borehole Size/Casing/Tubing Record


| | | | | | | |
|-----------------------|-------|-------|--|--|--|--|
| Bit | | | | | | |
| Bit Size (in) | 12.25 | 7.875 | | | | |
| Top Driller (ft) | 0 | 1237 | | | | |
| Top Logger (ft) | 0 | 1237 | | | | |
| Bottom Driller (ft) | 1237 | 12675 | | | | |
| Bottom Logger (ft) | 1237 | 12675 | | | | |
| Casing | | | | | | |
| Size (in) | 9.625 | 5.5 | | | | |
| Weight (lbm/ft) | 36 | 17 | | | | |
| Inner Diameter (in) | 8.921 | 4.892 | | | | |
| Grade | N/A | N/A | | | | |
| Top Driller (ft) | 0 | 0 | | | | |
| Top Logger (ft) | 0 | 0 | | | | |
| Bottom Driller (ft) | 1237 | 12675 | | | | |
| Bottom Logger (ft) | 1237 | 12675 | | | | |

Operational Run Summary

| | | | | | | |
|----------------------------------|-----------------|--|--|--|--|--|
| Parameter (unit) | ONE | | | | | |
| Date Log Started | 27-Jul-2015 | | | | | |
| Time Log Started | 08:34:35 | | | | | |
| Date Log Finished | 27-Jul-2015 | | | | | |
| Time Log Finished | 11:43:55 | | | | | |
| | | | | | | |
| Top Log Interval (ft) | 16.00 | | | | | |
| Bottom Log Interval (ft) | 7461.00 | | | | | |
| | | | | | | |
| Total Depth (ft) | 7461.00 | | | | | |
| Max Hole Deviation (deg) | 0.00 | | | | | |
| Azimuth of Max Deviation (deg) | 0.00 | | | | | |
| Bit Size (in) | 7.875 | | | | | |
| | | | | | | |
| Logging Unit Number | 3022 | | | | | |
| Logging Unit Location | Ft. Morgan, CO | | | | | |
| Recorded By | Michel Lapointe | | | | | |

| | | | | | | |
|----------------------|--------------|--|--|--|--|--|
| Witnessed By | Mario Torres | | | | | |
| Service Order Number | DAE0-00010 | | | | | |

| Borehole Fluids | | | | | | |
|------------------------------------|-------------|--|--|--|--|--|
| Parameter(unit) | ONE | | | | | |
| Fluid Type | Water | | | | | |
| Fluid Name | Fresh Water | | | | | |
| Max Recorded Temperatures (degF) | 264 | | | | | |
| Source of Sample | | | | | | |
| Salinity (ppm) | 0 | | | | | |
| Density (lbm/gal) | 9 | | | | | |
| Funnel Viscosity (s) | | | | | | |
| Fluid Loss (cm3) | | | | | | |
| PH | | | | | | |
| Date/Time Circulation Stopped | NaN | | | | | |
| Date Logger on Bottom | 27-Jul-2015 | | | | | |
| Time Logger on Bottom | 09:30:00 | | | | | |
| Source RMF | | | | | | |
| RMC | | | | | | |
| RM @ Meas Temp (ohm.m@degF) | 0.2 @ 68 | | | | | |
| RMF @ Meas Temp (ohm.m@degF) | 0.15 @ 68 | | | | | |
| RMC @ Meas Temp (ohm.m@degF) | | | | | | |
| RM @ BHT (ohm.m@degF) | 0.06 @ 264 | | | | | |
| RMF @ BHT (ohm.m@degF) | 0.04 @ 264 | | | | | |
| RMC @ BHT (ohm.m@degF) | NaN @ 264 | | | | | |
| Total Solid (%) | | | | | | |
| High Gravity Solids (%) | | | | | | |

| Remarks and Equipment Summary | | | |
|---|--------|--|--------|
| ONE: Toolstring | | ONE: Remarks | |
| Equip name | Length | MP name | Offset |
| LEH-QT:2 | 30.97 | | |
| 491 | | | |
| LEH-QT:24 | | | |
| 91 | | | |
| DTC-H:87 | 28.06 | | |
| 94 | | | |
| ECH-KC:9 | | | |
| 373 | | | |
| DTC-H:879 | | | |
| 4 | | | |
| SGT-N:10 | 25.06 | | |
| 210 | | | |
| SGH-K:299 | | | |
| 6 | | | |
| SGD-TAA: | | | |
| 21661 | | | |
| SGC-TB:10 | | | |
| 210 | | | |
| AH-184:2 | 19.56 | | |
| 746 | | | |
| AH-107:3 | 17.56 | | |
| 275 | | | |
|  | | | |
| | | 1. TOOLS RAN AS PER TOOLSKETCH. | |
| | | 2. 5.5", 17# CASING. | |
| | | 3. 11.2 PPG SPACER - TO SURFACE. 12.0 PPG LEAD - EXPECTED TO SURFACE. 13.5 PPG TAIL - EXPECTED TO 6000 FEE | |
| | | 4. 0 PSI REPEAT PASS. 2800 PSI MAIN PASS. | |
| | | | |

CTEM

27.16

HV

0.00

TelStatu

25.06

s

25.06

ToolSta

tus

GR

24.14

1. TOOLS RAN AS PER TOOLSKETCH.

2. 5.5", 17# CASING.

3. 11.2 PPG SPACER - TO SURFACE.
12.0 PPG LEAD - EXPECTED TO SURFACE.
13.5 PPG TAIL - EXPECTED TO 6000 FEE

4. 0 PSI REPEAT PASS.
2800 PSI MAIN PASS.

All measurements are relative to TOOL_ZERO

SCHLUMBERGER DEPTH CONTROL POLICY FOLLOWED.
PRIMARY DEPTH MEASUREMENT = IDW.
SECONDARY DEPTH CONTROL = Z-CHART.
LOGS CORRELATED TO DOWNLOG.

| USIT - Fluid Properties Measurement | | | |
|---|----------------|--------------------|------------------|
| Run Name | Pass Name | Start Depth(ft) | Stop Depth(ft) |
| Run 1 | Log[3]:Up | 7464.59 | 3.10 |
| 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 | 400 | 1.77 | 1.77 |
| 400 | 500 | 1.81 | 1.81 |
| 500 | 600 | 1.76 | 1.76 |
| 600 | 700 | 1.61 | 1.61 |
| 700 | 800 | 1.51 | 1.51 |
| 800 | 900 | 1.57 | 1.57 |
| 900 | 1000 | 1.7 | 1.7 |
| 1000 | 1100 | 1.82 | 1.82 |
| 1100 | 1500 | 1.88 | 1.88 |
| 1500 | 2000 | 1.92 | 1.92 |
| 2000 | 2100 | 1.9 | 1.9 |
| 2100 | 2200 | 1.89 | 1.89 |
| 2200 | 2300 | 1.88 | 1.88 |
| 2300 | 2500 | 1.86 | 1.86 |
| 2500 | 2600 | 1.84 | 1.84 |
| 2600 | 2700 | 1.83 | 1.83 |
| 2700 | 3000 | 1.82 | 1.82 |
| 3000 | 3100 | 1.81 | 1.81 |
| 3100 | 3200 | 1.8 | 1.8 |
| 3200 | 3300 | 1.79 | 1.79 |
| 3300 | 3400 | 1.78 | 1.78 |
| 3400 | 3600 | 1.77 | 1.77 |
| 3600 | 3800 | 1.75 | 1.75 |
| 3800 | 3900 | 1.73 | 1.73 |
| 3900 | 4100 | 1.72 | 1.72 |
| 4100 | 4500 | 1.71 | 1.71 |
| 4500 | 4600 | 1.69 | 1.69 |
| 4600 | 4700 | 1.68 | 1.68 |
| 4700 | 4800 | 1.67 | 1.67 |
| 4800 | 5000 | 1.66 | 1.66 |
| 5000 | 5100 | 1.65 | 1.65 |
| 5100 | 5200 | 1.64 | 1.64 |
| 5200 | 5300 | 1.63 | 1.63 |
| 5300 | 5500 | 1.62 | 1.62 |
| 5500 | 5600 | 1.61 | 1.61 |
| 5600 | 5700 | 1.59 | 1.59 |
| 5700 | 5800 | 1.58 | 1.58 |
| 5800 | 5900 | 1.57 | 1.57 |
| 5900 | 6000 | 1.56 | 1.56 |
| 6000 | 6100 | 1.54 | 1.54 |
| 6100 | 6200 | 1.53 | 1.53 |
| 6200 | 6300 | 1.52 | 1.52 |
| 6300 | 6400 | 1.49 | 1.49 |
| 6400 | 6500 | 1.48 | 1.48 |
| 6500 | 6600 | 1.47 | 1.47 |
| 6600 | 6700 | 1.45 | 1.45 |
| 6700 | 6800 | 1.44 | 1.44 |
| 6800 | 6900 | 1.42 | 1.42 |

| | | | |
|-------|-------|------|------|
| 6900 | 7000 | 1.41 | 1.41 |
| 7000 | 7100 | 1.4 | 1.4 |
| 7100 | 7200 | 1.39 | 1.39 |
| 7200 | 10000 | 1.38 | 1.38 |
| 10000 | | 1.37 | 1.37 |

ONE

USI Cement - Main Pass

Log

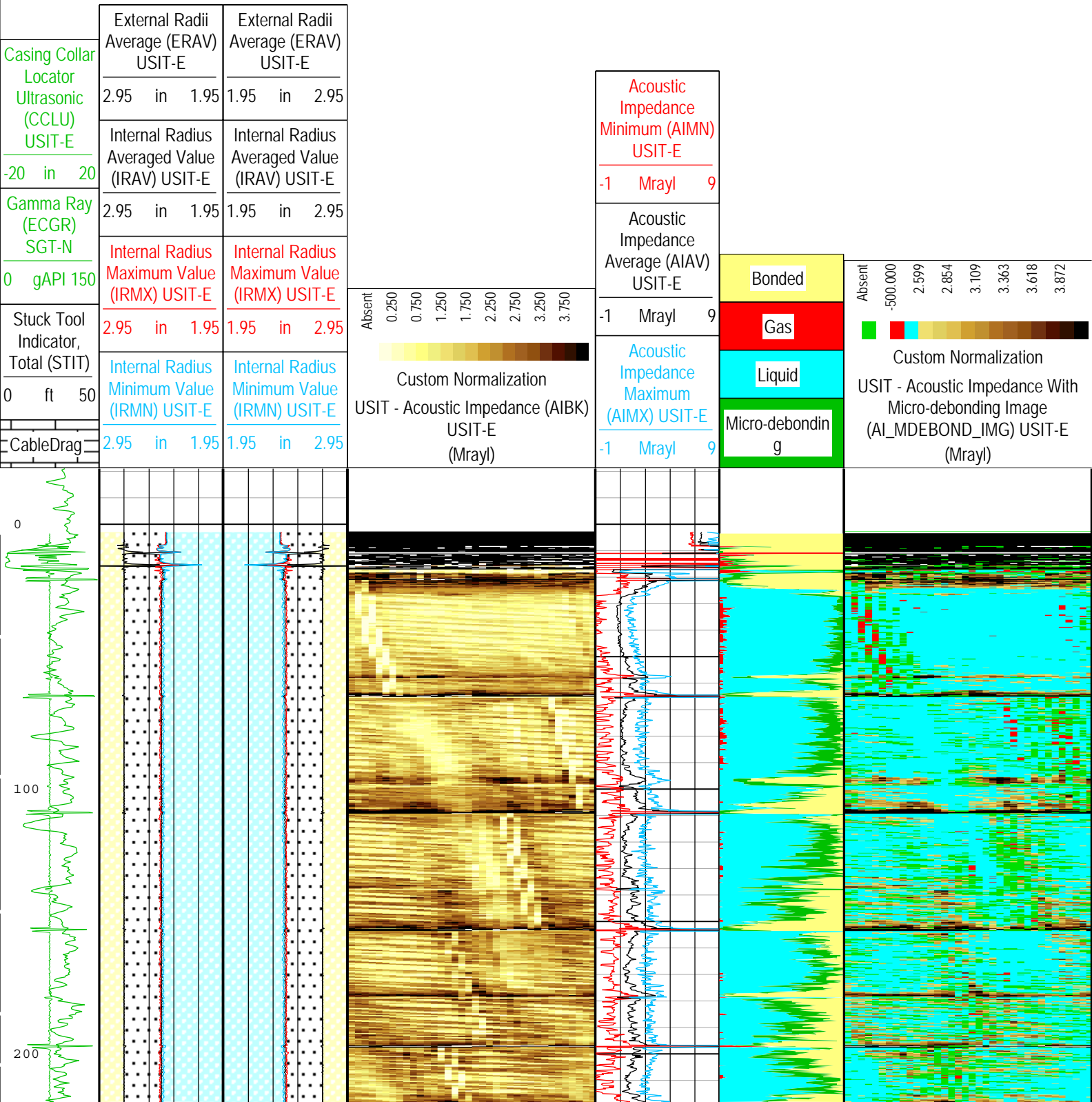
Company:Anadarko

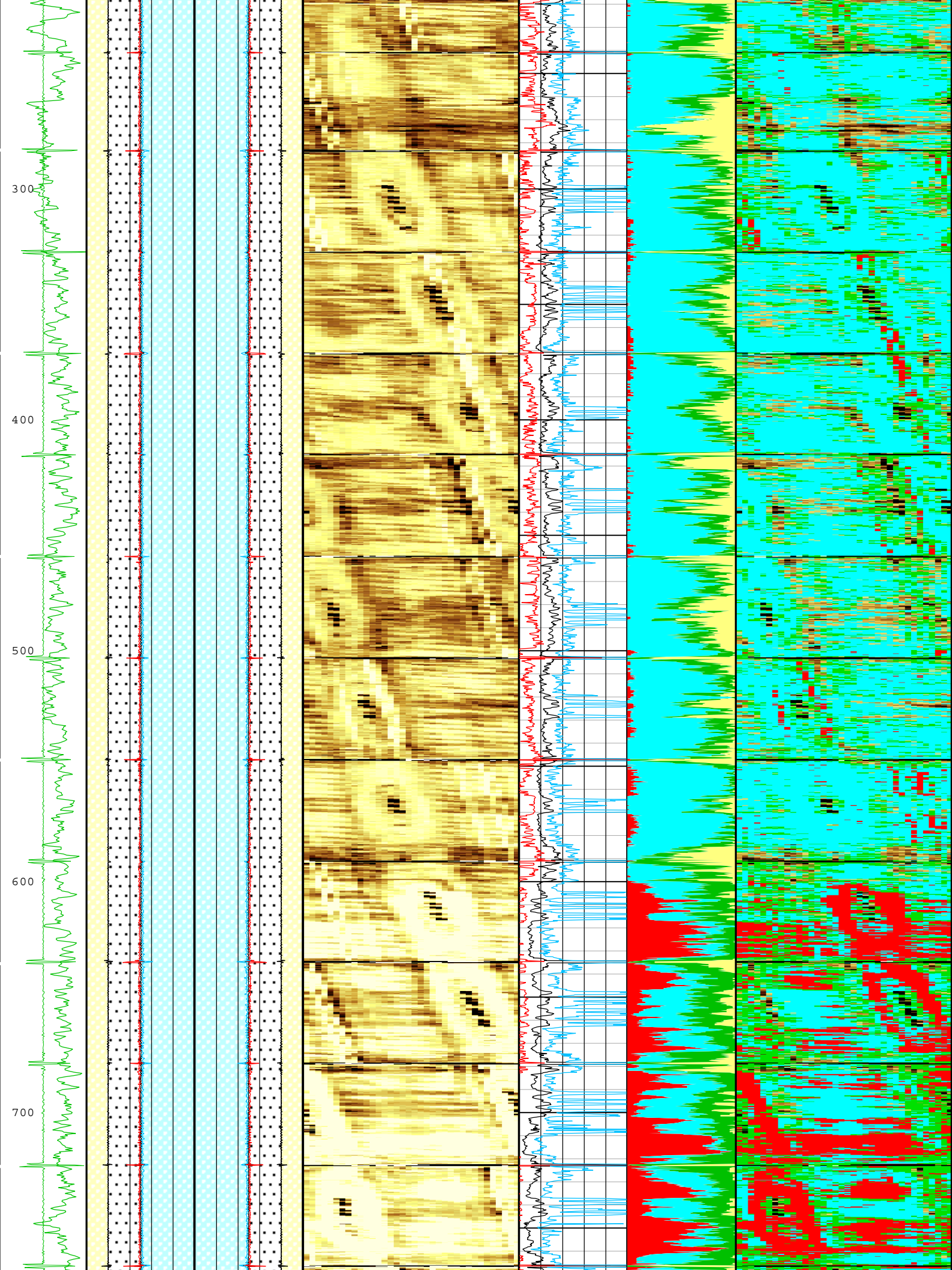
Well:Skim State 30N-21HZ

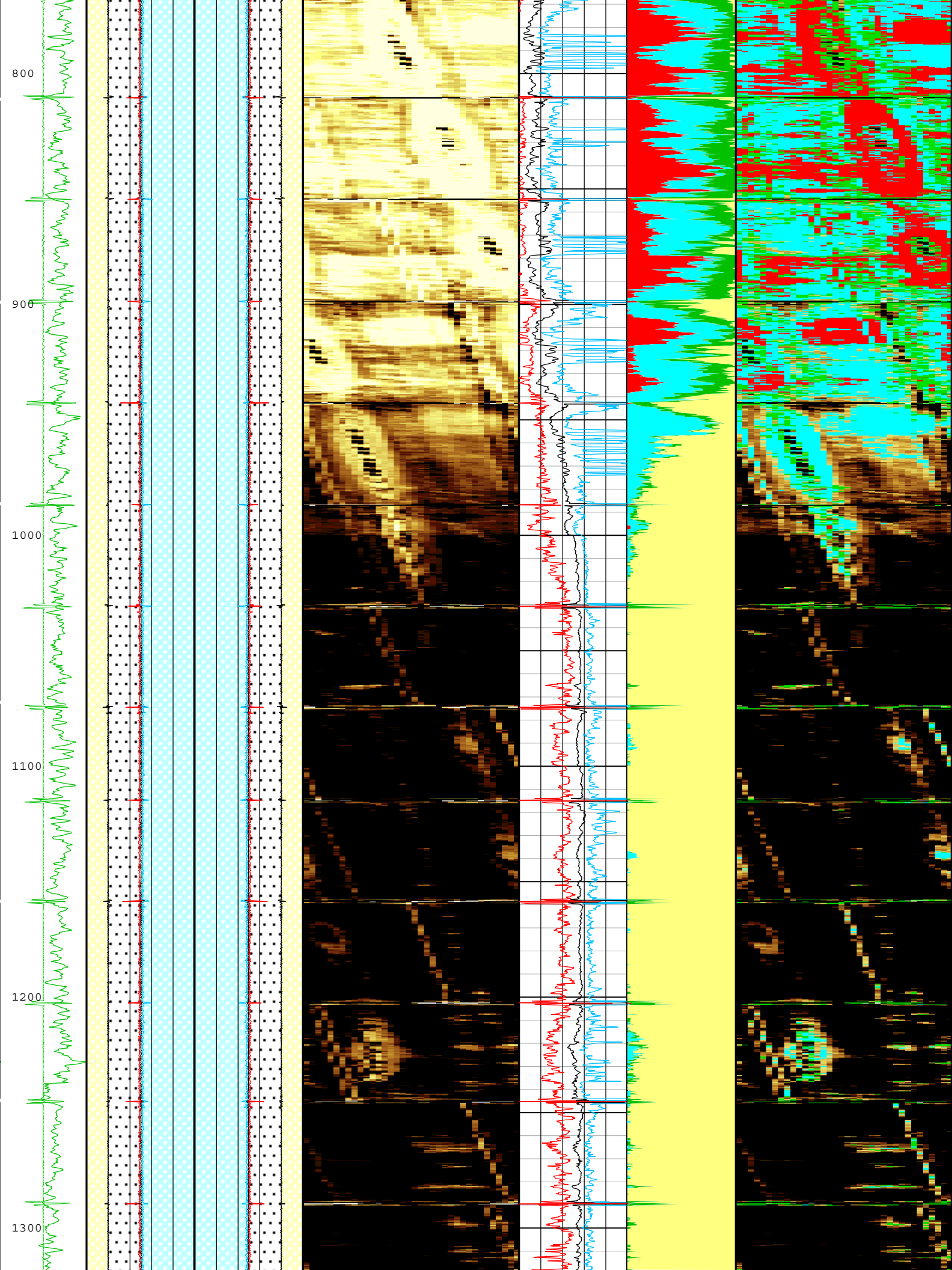
ONE: Log[3]:Up:S008

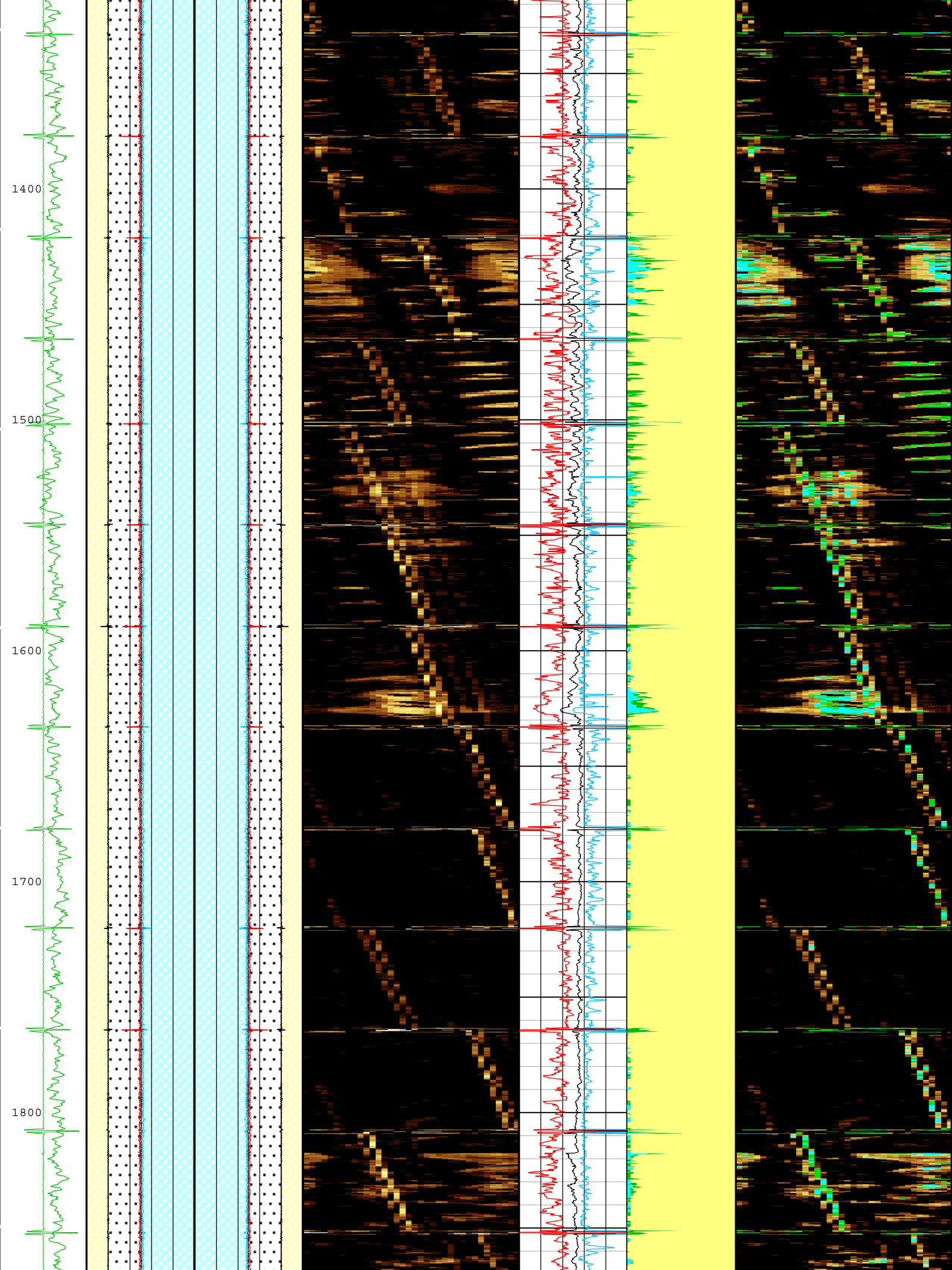
Description: USI Cement
Format: USI Cement
Index Scale: 2 in per 100 ft
Index Unit: ft
Index Type: Measured Depth
Creation Date: 27-Jul-2015
12:58:37

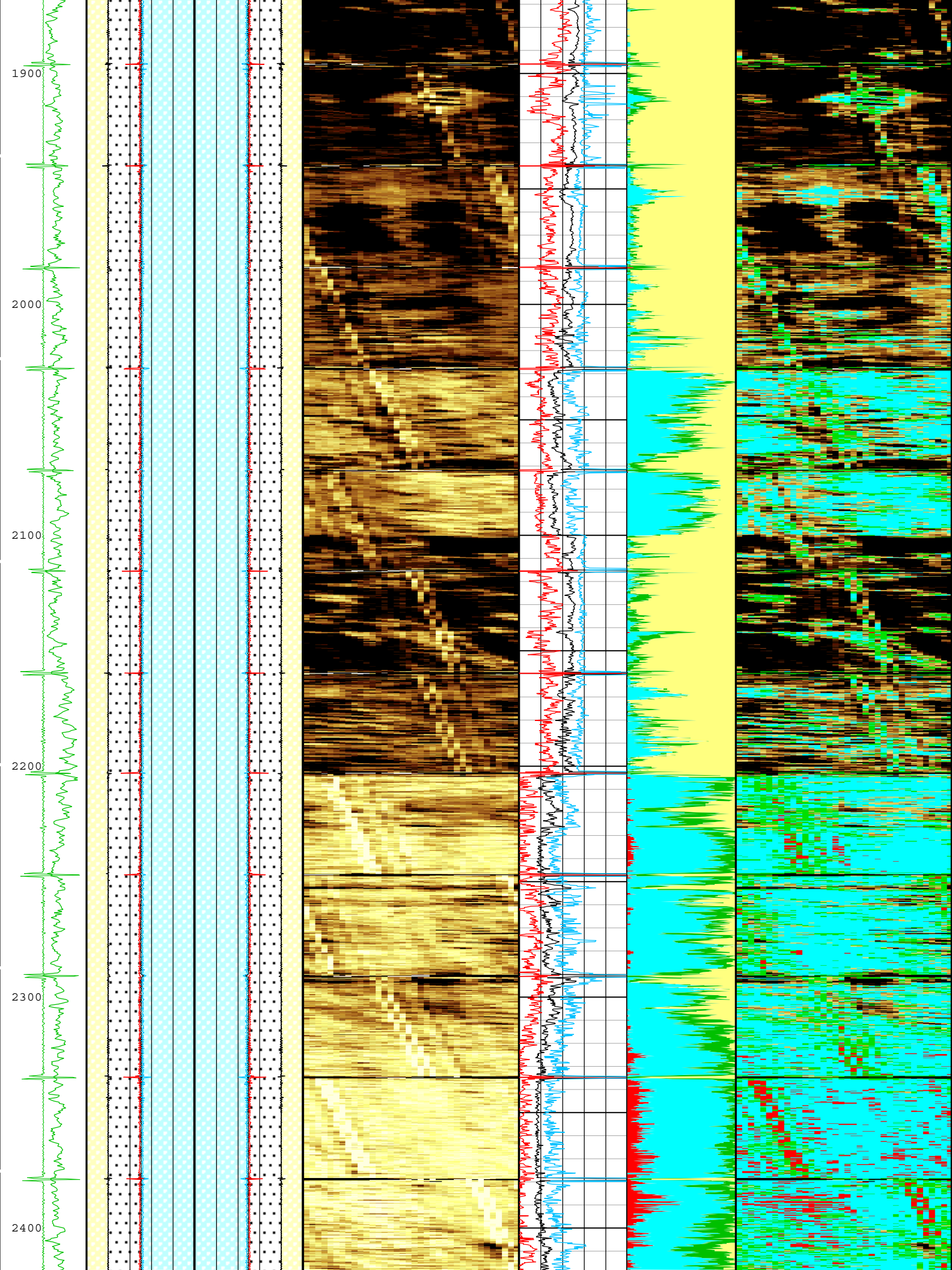
TIME_1900 - Time Marked every 60.00 (s)

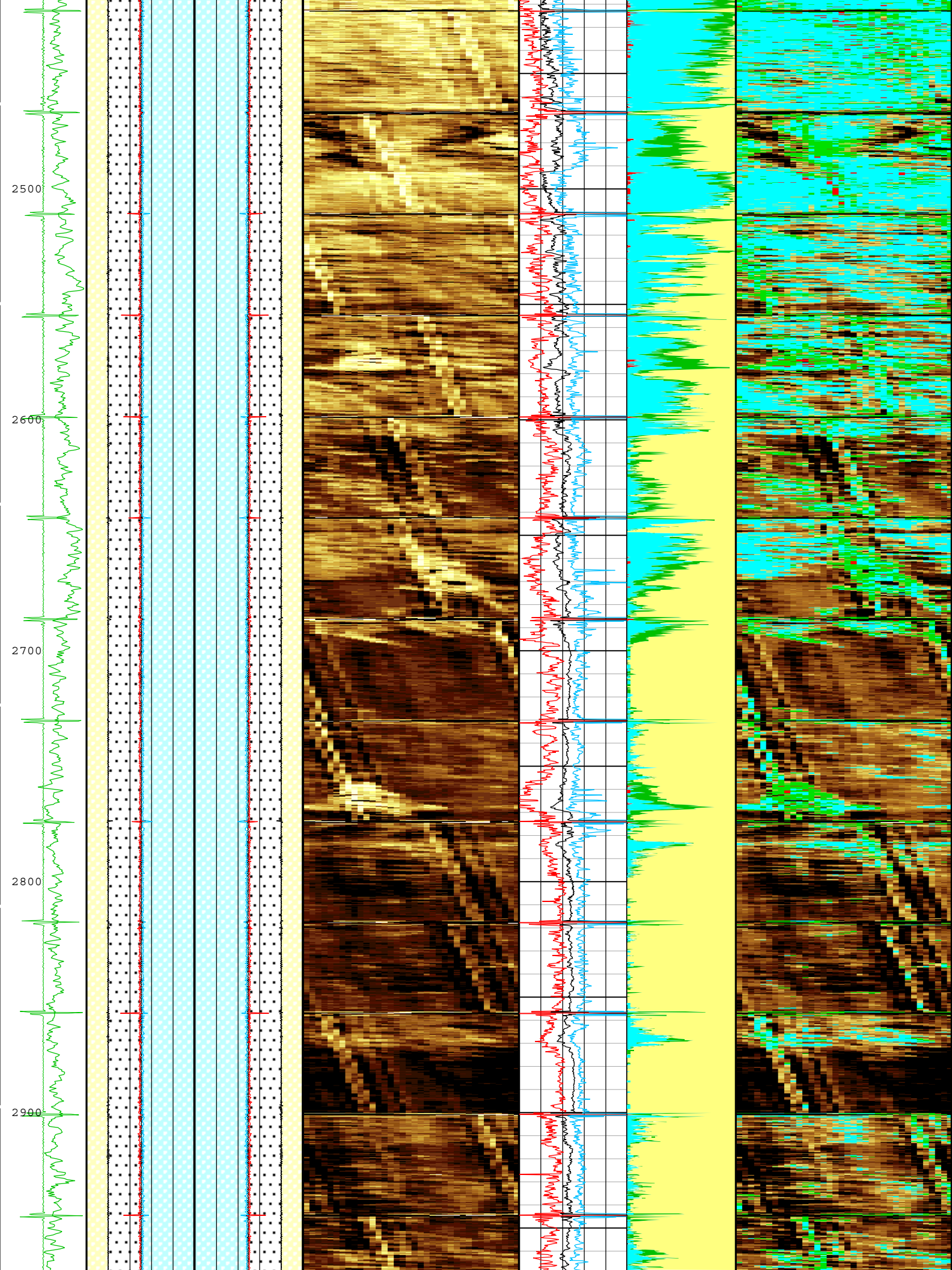


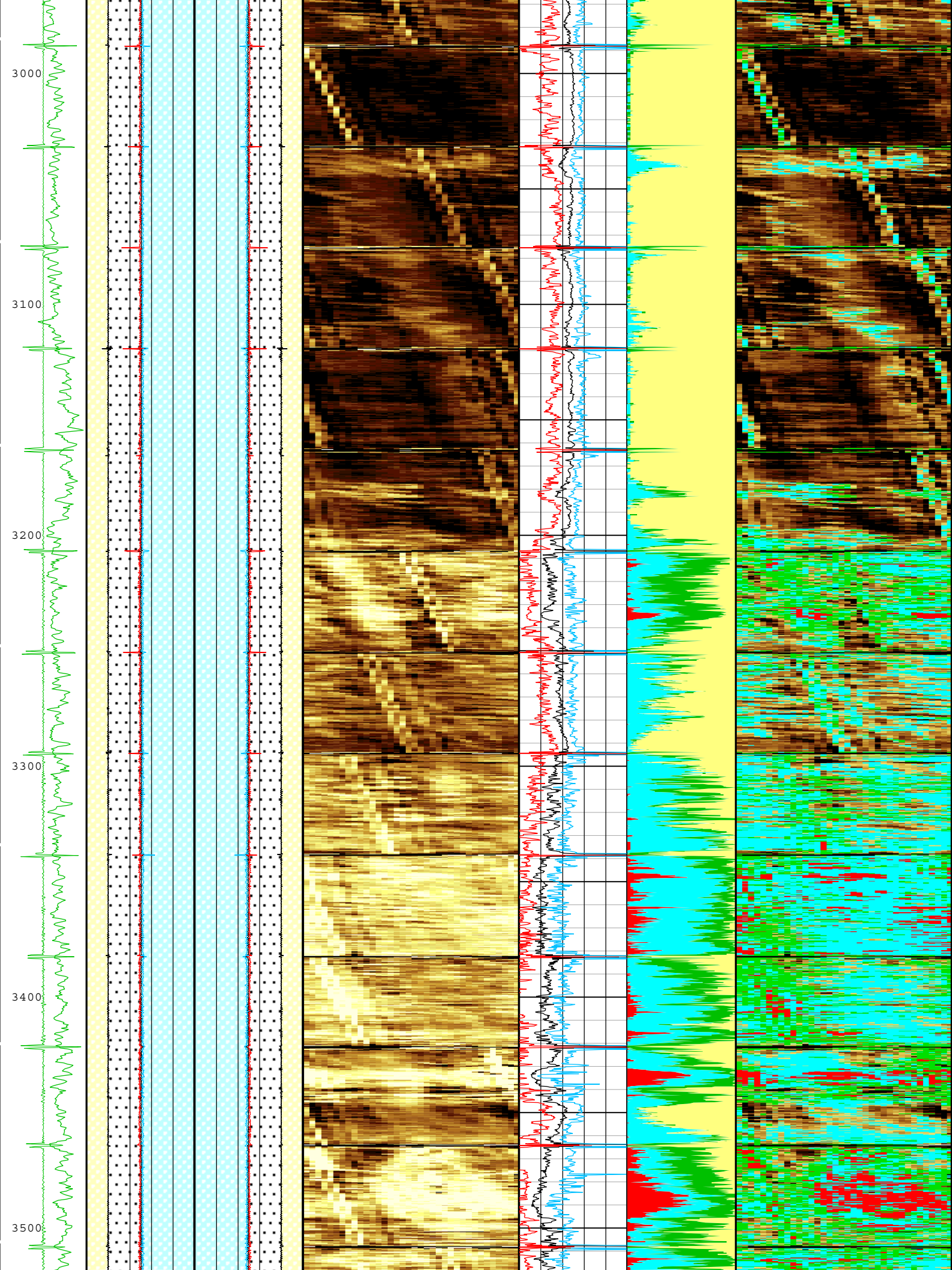


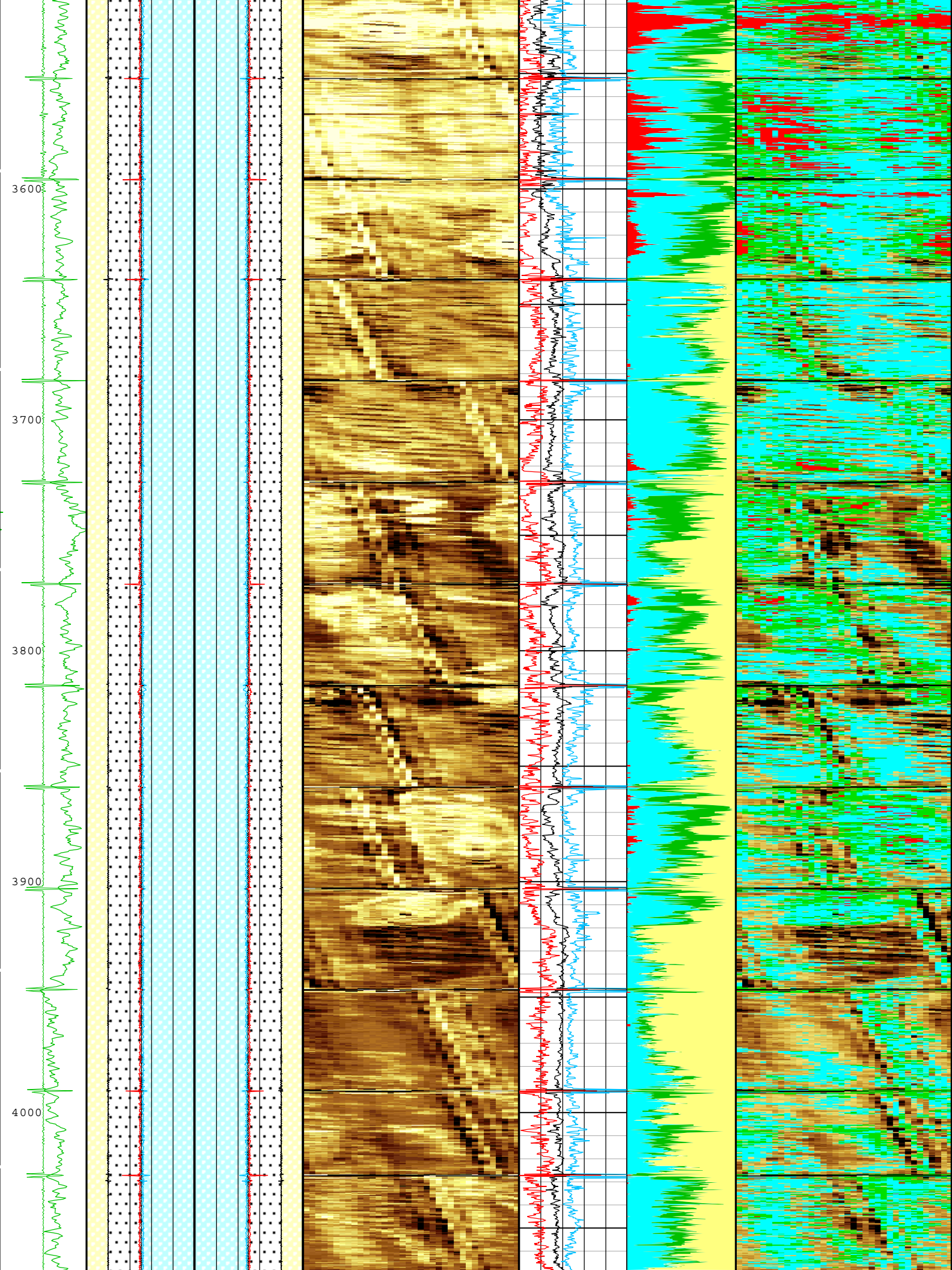


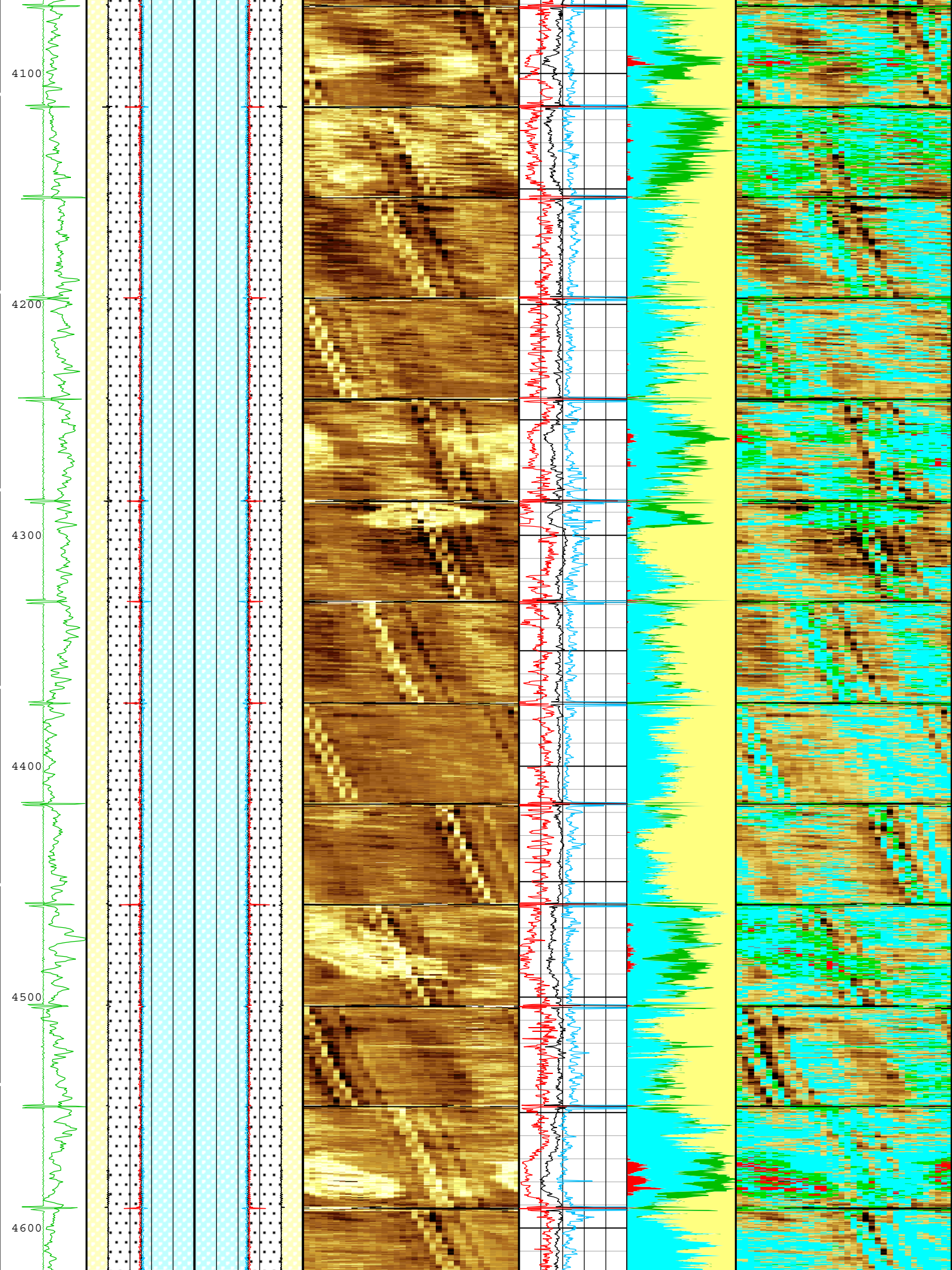


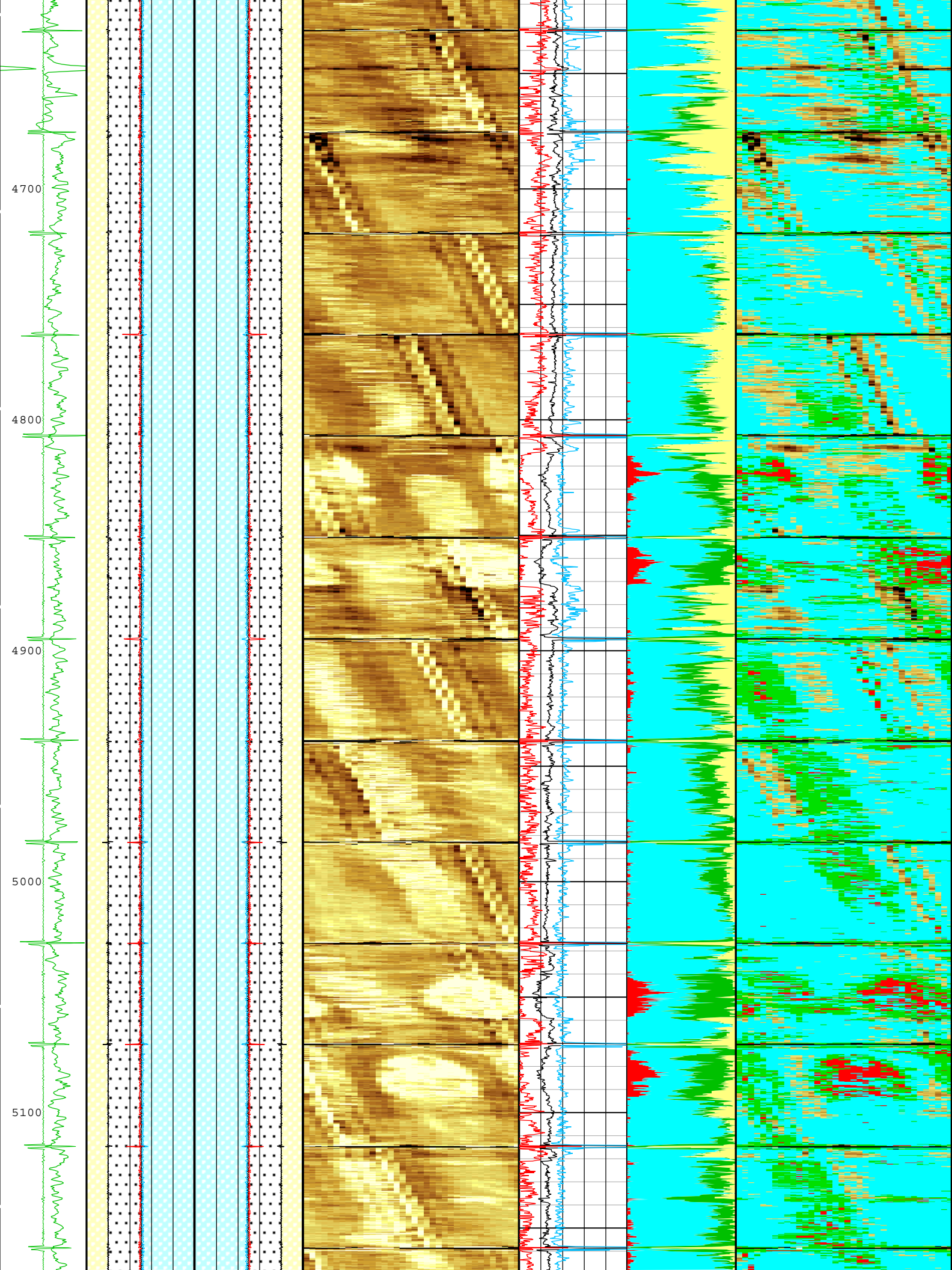


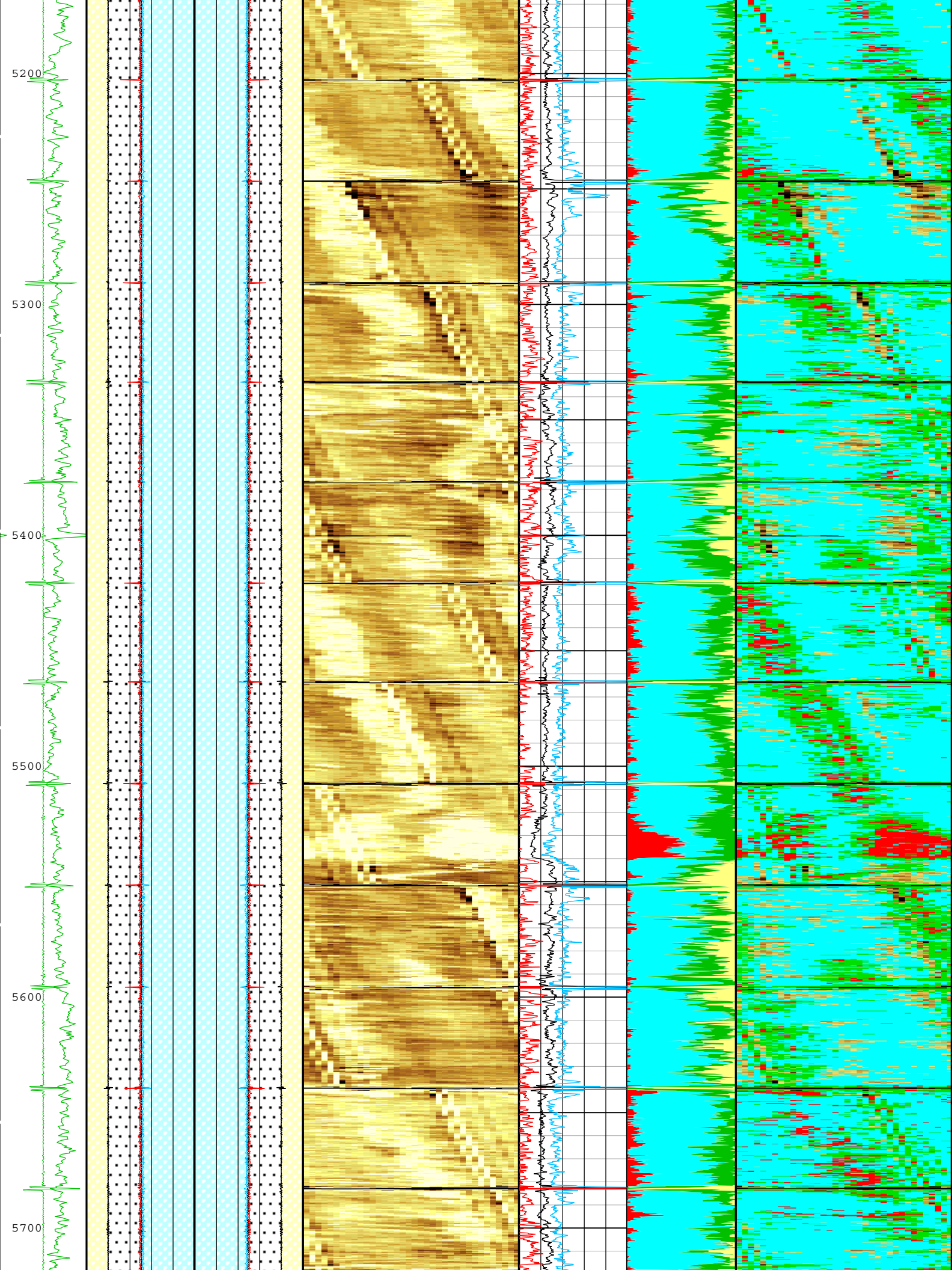


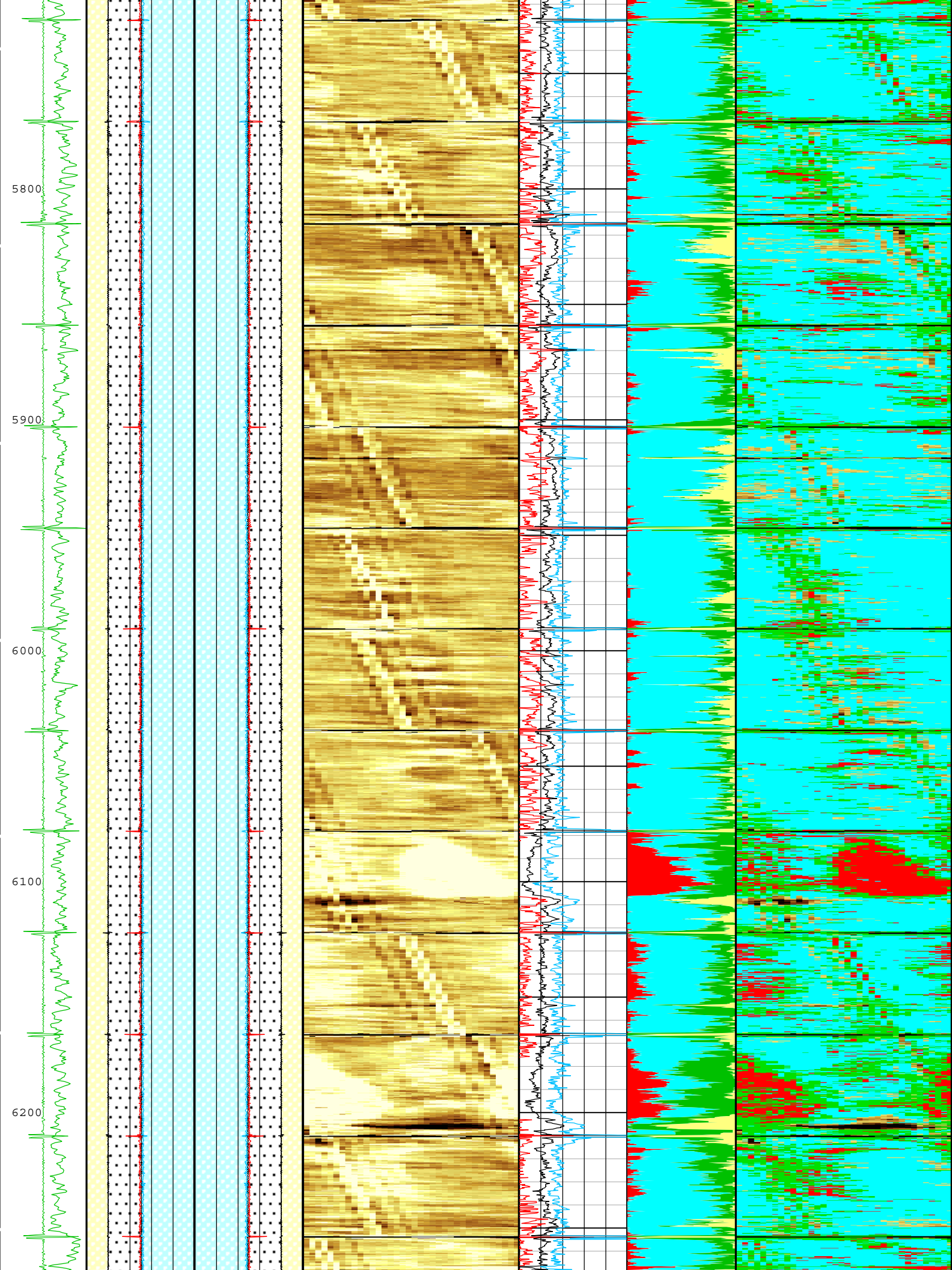


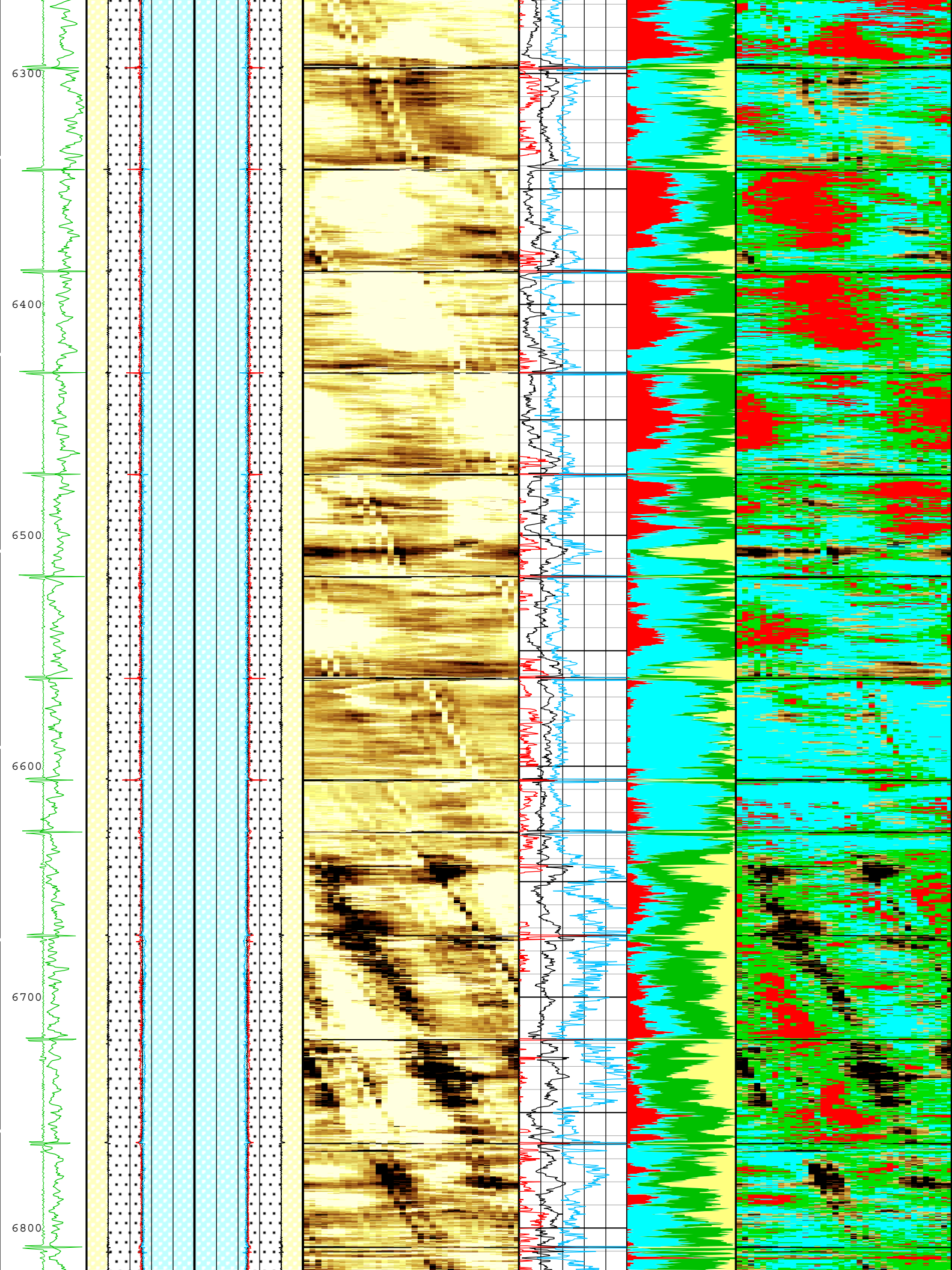


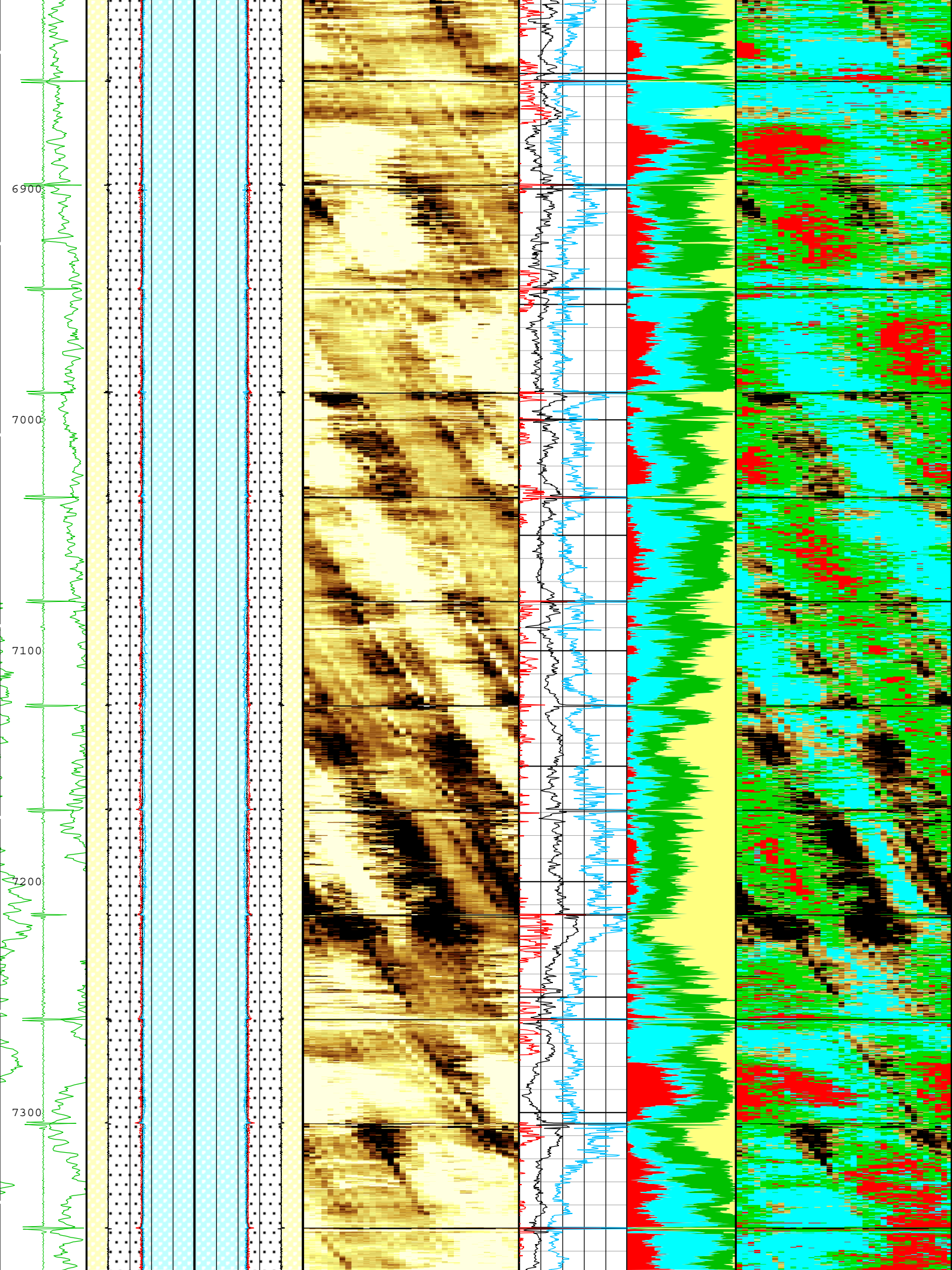


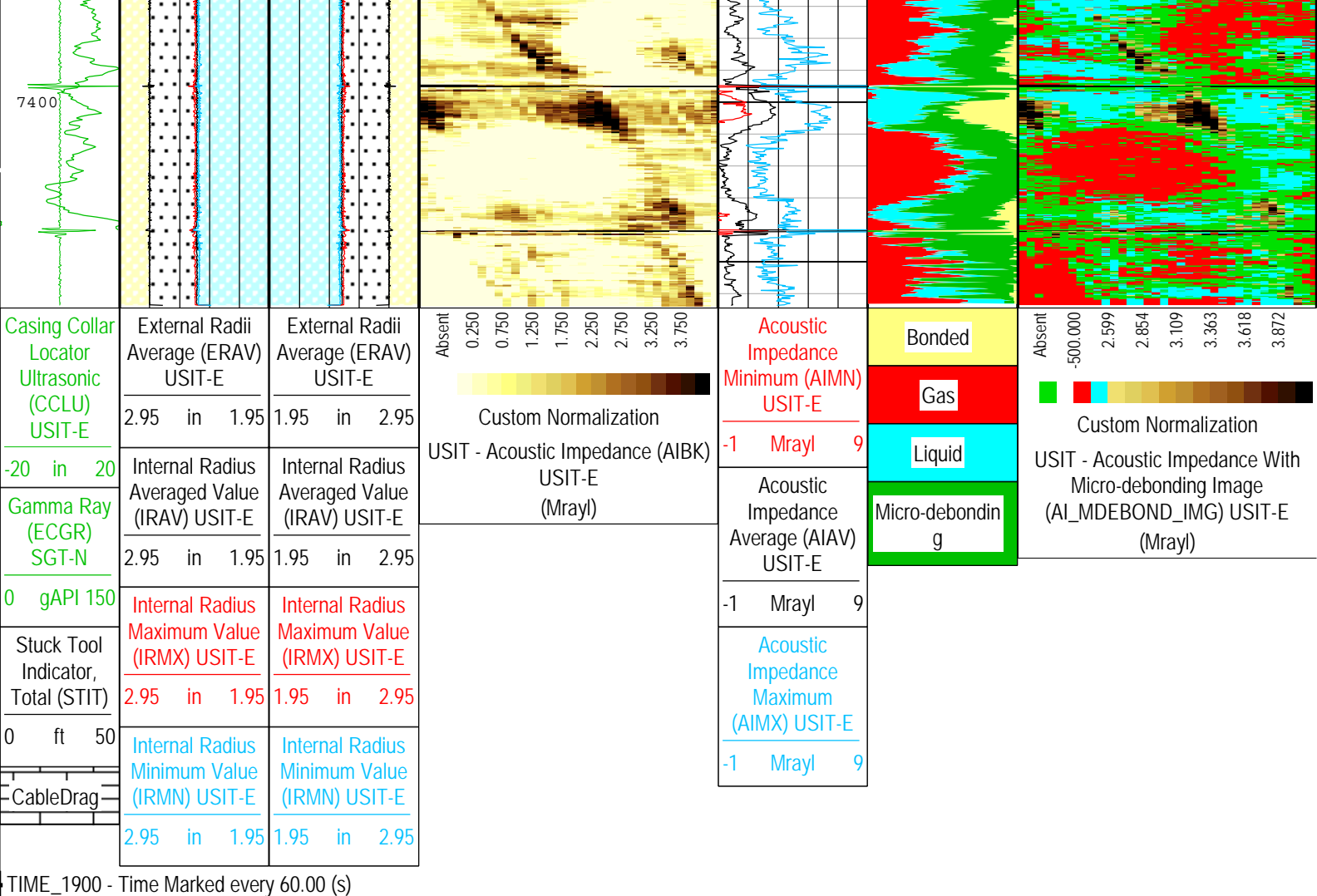












Description: USI Cement Format: USI Cement Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 27-Jul-2015 12:58:37

| 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 | Cased | |
| BS | Bit Size | WLSESSION | Depth Zoned | in |
| CASING_PRATIO | Casing Poisson Ratio | USIT-E | Standard Poisson Ratio | |
| CBLO | Casing Bottom (Logger) | WLSESSION | 12675 | ft |
| CDEN | Cement Density | SGT-N | 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 | SGT-N | 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_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 |
| SOGR | Standoff Distance of the Gamma Ray Tool | SGT-N | 0 | in |
| TCUB | T^3 Processing Level | USIT-E | Loop | |
| TD | Total Measured Depth | Borehole | 7461 | ft |
| THDH | Maximum Search Thickness (percentage of nominal) | USIT-E | 130 | % |
| THDL | Minimum Search Thickness (percentage of nominal) | USIT-E | 70 | % |
| TPOS | Tool Position: Centered or Eccentered | SGT-N | Centered | |
| U-USIT_DFSZ | Drilling Fluid Specific Acoustic Impedance | USIT-E | 0 | 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) |
| BS | 12.25 | 0 | 1237 |
| BS | 7.875 | 1237 | 7464.5 |
| ZMUD | 1.77 | 0 | 400 |
| ZMUD | 1.81 | 400 | 500 |
| ZMUD | 1.76 | 500 | 600 |
| ZMUD | 1.61 | 600 | 700 |
| ZMUD | 1.51 | 700 | 800 |
| ZMUD | 1.57 | 800 | 900 |
| ZMUD | 1.7 | 900 | 1000 |
| ZMUD | 1.82 | 1000 | 1100 |
| ZMUD | 1.88 | 1100 | 1500 |
| ZMUD | 1.92 | 1500 | 2000 |
| ZMUD | 1.9 | 2000 | 2100 |
| ZMUD | 1.89 | 2100 | 2200 |

| | | | |
|------|------|------|--------|
| | | | |
| ZMUD | 1.88 | 2200 | 2300 |
| ZMUD | 1.86 | 2300 | 2500 |
| ZMUD | 1.84 | 2500 | 2600 |
| ZMUD | 1.83 | 2600 | 2700 |
| ZMUD | 1.82 | 2700 | 3000 |
| ZMUD | 1.81 | 3000 | 3100 |
| ZMUD | 1.8 | 3100 | 3200 |
| ZMUD | 1.79 | 3200 | 3300 |
| ZMUD | 1.78 | 3300 | 3400 |
| ZMUD | 1.77 | 3400 | 3600 |
| ZMUD | 1.75 | 3600 | 3800 |
| ZMUD | 1.73 | 3800 | 3900 |
| ZMUD | 1.72 | 3900 | 4100 |
| ZMUD | 1.71 | 4100 | 4500 |
| ZMUD | 1.69 | 4500 | 4600 |
| ZMUD | 1.68 | 4600 | 4700 |
| ZMUD | 1.67 | 4700 | 4800 |
| ZMUD | 1.66 | 4800 | 5000 |
| ZMUD | 1.65 | 5000 | 5100 |
| ZMUD | 1.64 | 5100 | 5200 |
| ZMUD | 1.63 | 5200 | 5300 |
| ZMUD | 1.62 | 5300 | 5500 |
| ZMUD | 1.61 | 5500 | 5600 |
| ZMUD | 1.59 | 5600 | 5700 |
| ZMUD | 1.58 | 5700 | 5800 |
| ZMUD | 1.57 | 5800 | 5900 |
| ZMUD | 1.56 | 5900 | 6000 |
| ZMUD | 1.54 | 6000 | 6100 |
| ZMUD | 1.53 | 6100 | 6200 |
| ZMUD | 1.52 | 6200 | 6300 |
| ZMUD | 1.49 | 6300 | 6400 |
| ZMUD | 1.48 | 6400 | 6500 |
| ZMUD | 1.47 | 6500 | 6600 |
| ZMUD | 1.45 | 6600 | 6700 |
| ZMUD | 1.44 | 6700 | 6800 |
| ZMUD | 1.42 | 6800 | 6900 |
| ZMUD | 1.41 | 6900 | 7000 |
| ZMUD | 1.4 | 7000 | 7100 |
| ZMUD | 1.39 | 7100 | 7200 |
| ZMUD | 1.38 | 7200 | 7464.5 |

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 | 18 | 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 | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 3600 | 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 | 7425 | 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 | 80.19 | us |

| Time Zone Parameters | | | | | |
|-----------------------------|-------|----------------------|----------------------|--------------------|-------------------|
| Parameter | Value | Start Time | Stop Time | Start Depth (ft) | Stop Depth (ft) |
| EMXV | 60 | 27-Jul-2015 09:41:29 | 27-Jul-2015 10:13:46 | 7464.59 | 7439.83 |
| EMXV | 50 | 27-Jul-2015 10:13:46 | 27-Jul-2015 10:39:38 | 7439.83 | 5258 |
| EMXV | 60 | 27-Jul-2015 10:39:38 | 27-Jul-2015 10:39:46 | 5258 | 5247.54 |
| EMXV | 40 | 27-Jul-2015 10:39:46 | 27-Jul-2015 10:40:04 | 5247.54 | 5221.12 |
| EMXV | 50 | 27-Jul-2015 10:40:04 | 27-Jul-2015 10:40:53 | 5221.12 | 5149.96 |
| EMXV | 40 | 27-Jul-2015 10:40:53 | 27-Jul-2015 10:41:20 | 5149.96 | 5111.58 |
| EMXV | 30 | 27-Jul-2015 10:41:20 | 27-Jul-2015 10:41:39 | 5111.58 | 5083.89 |
| EMXV | 40 | 27-Jul-2015 10:41:39 | 27-Jul-2015 10:41:48 | 5083.89 | 5070.99 |
| EMXV | 50 | 27-Jul-2015 10:41:48 | 27-Jul-2015 10:41:55 | 5070.99 | 5060.5 |
| EMXV | 40 | 27-Jul-2015 10:41:55 | 27-Jul-2015 10:42:51 | 5060.5 | 4979.1 |
| EMXV | 30 | 27-Jul-2015 10:42:51 | 27-Jul-2015 10:43:04 | 4979.1 | 4961.18 |
| EMXV | 40 | 27-Jul-2015 10:43:04 | 27-Jul-2015 11:43:18 | 4961.18 | 3.1 |
| All depth are at tool zero. | | | | | |

| | |
|------------|--|
| USI Cement | |
|------------|--|

| | |
|-------------------------------------|--|
| USIT - Fluid Properties Measurement | |
|-------------------------------------|--|

| Run Name | Pass Name | Start Depth(ft) | Stop Depth(ft) |
|----------|-----------|-----------------|----------------|
| Run 1 | Log[2]:Up | 7429.36 | 6975.38 |

| |
|---|
| 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 | 400 | 1.77 | 1.77 |
| 400 | 500 | 1.81 | 1.81 |
| 500 | 600 | 1.76 | 1.76 |
| 600 | 700 | 1.61 | 1.61 |
| 700 | 800 | 1.51 | 1.51 |
| 800 | 900 | 1.57 | 1.57 |
| 900 | 1000 | 1.7 | 1.7 |
| 1000 | 1100 | 1.82 | 1.82 |
| 1100 | 1500 | 1.82 | 1.82 |

| | | | |
|-------|-------|------|------|
| 1100 | 1500 | 1.88 | 1.88 |
| 1500 | 2000 | 1.92 | 1.92 |
| 2000 | 2100 | 1.9 | 1.9 |
| 2100 | 2200 | 1.89 | 1.89 |
| 2200 | 2300 | 1.88 | 1.88 |
| 2300 | 2500 | 1.86 | 1.86 |
| 2500 | 2600 | 1.84 | 1.84 |
| 2600 | 2700 | 1.83 | 1.83 |
| 2700 | 3000 | 1.82 | 1.82 |
| 3000 | 3100 | 1.81 | 1.81 |
| 3100 | 3200 | 1.8 | 1.8 |
| 3200 | 3300 | 1.79 | 1.79 |
| 3300 | 3400 | 1.78 | 1.78 |
| 3400 | 3600 | 1.77 | 1.77 |
| 3600 | 3800 | 1.75 | 1.75 |
| 3800 | 3900 | 1.73 | 1.73 |
| 3900 | 4100 | 1.72 | 1.72 |
| 4100 | 4500 | 1.71 | 1.71 |
| 4500 | 4600 | 1.69 | 1.69 |
| 4600 | 4700 | 1.68 | 1.68 |
| 4700 | 4800 | 1.67 | 1.67 |
| 4800 | 5000 | 1.66 | 1.66 |
| 5000 | 5100 | 1.65 | 1.65 |
| 5100 | 5200 | 1.64 | 1.64 |
| 5200 | 5300 | 1.63 | 1.63 |
| 5300 | 5500 | 1.62 | 1.62 |
| 5500 | 5600 | 1.61 | 1.61 |
| 5600 | 5700 | 1.59 | 1.59 |
| 5700 | 5800 | 1.58 | 1.58 |
| 5800 | 5900 | 1.57 | 1.57 |
| 5900 | 6000 | 1.56 | 1.56 |
| 6000 | 6100 | 1.54 | 1.54 |
| 6100 | 6200 | 1.53 | 1.53 |
| 6200 | 6300 | 1.52 | 1.52 |
| 6300 | 6400 | 1.49 | 1.49 |
| 6400 | 6500 | 1.48 | 1.48 |
| 6500 | 6600 | 1.47 | 1.47 |
| 6600 | 6700 | 1.45 | 1.45 |
| 6700 | 6800 | 1.44 | 1.44 |
| 6800 | 6900 | 1.42 | 1.42 |
| 6900 | 7000 | 1.41 | 1.41 |
| 7000 | 7100 | 1.4 | 1.4 |
| 7100 | 7200 | 1.39 | 1.39 |
| 7200 | 10000 | 1.38 | 1.38 |
| 10000 | | 1.37 | 1.37 |

ONE

USI Cement - Repeat Pass

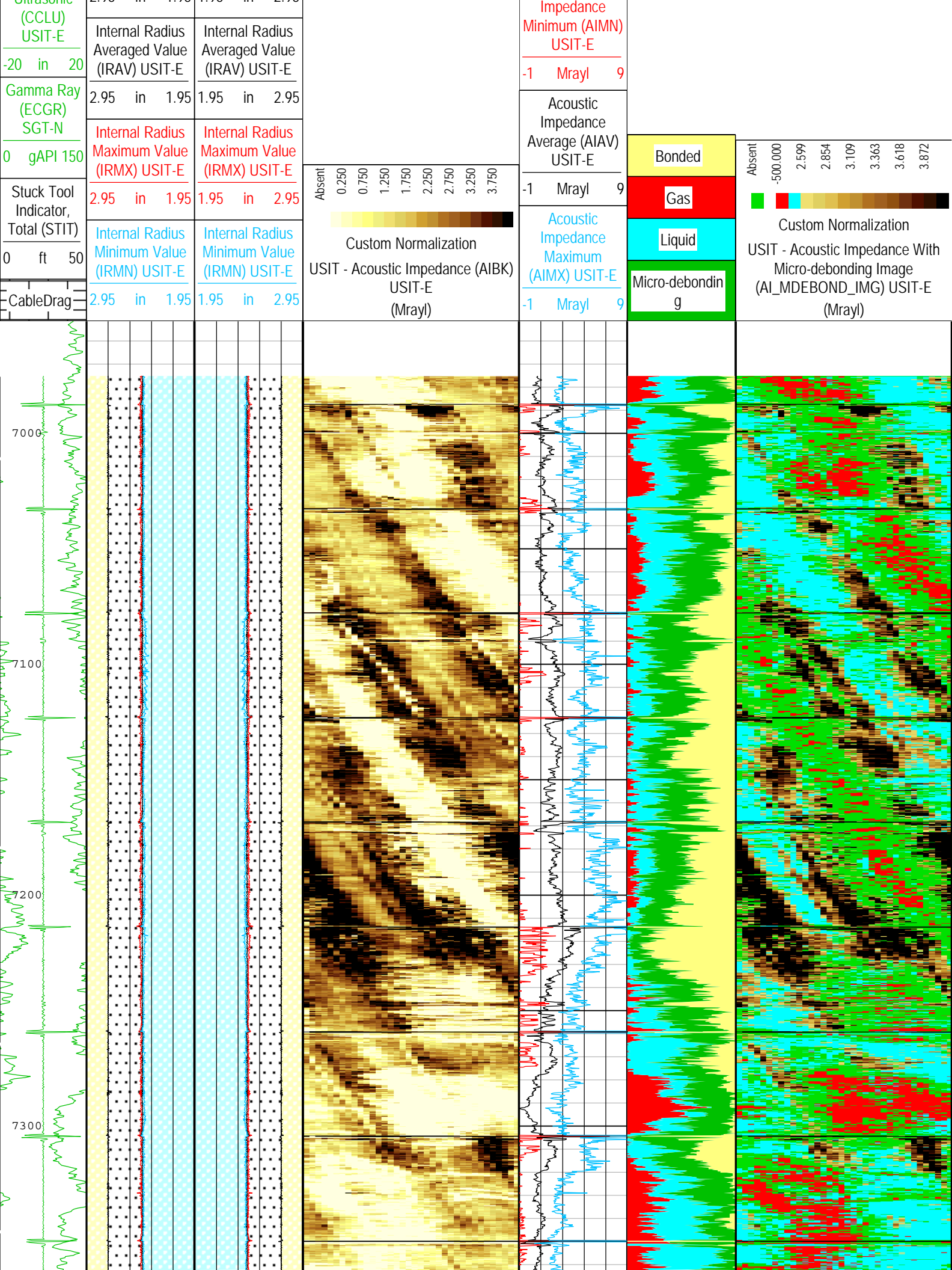
Log

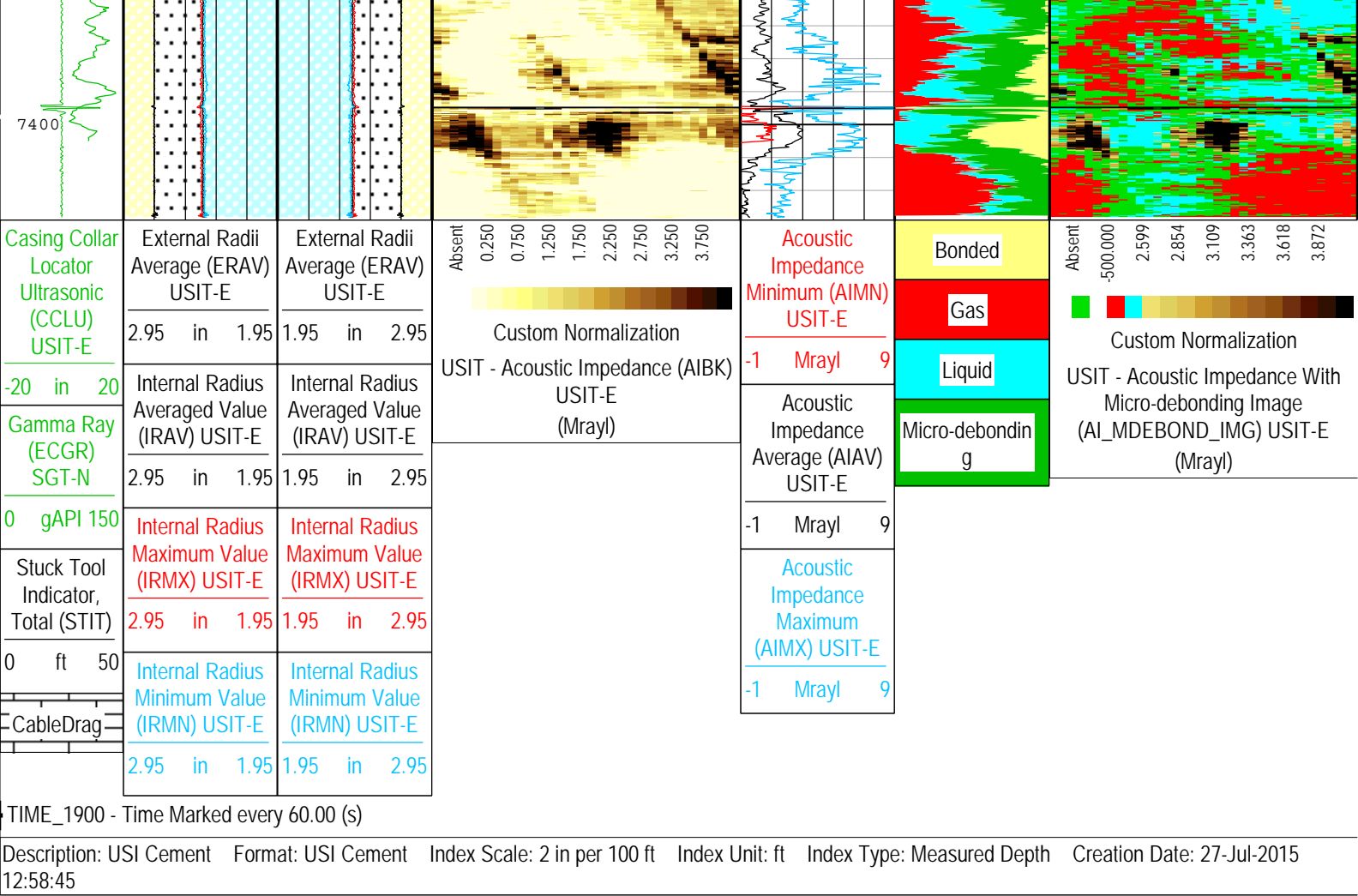
Company:Anadarko Well:Skim State 30N-21HZ
ONE: Log[2]:Up:S008

Description: USI Cement Format: USI Cement Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 27-Jul-2015 12:58:45

TIME_1900 - Time Marked every 60.00 (s)

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





| | | | | |
|--------------|---|----------|-------------|---------|
| IMAR | Image Rotation | USIT-E | Off | |
| MEAS_WLEN | Tcube Processing Window Length in Measurement Mode | USIT-E | 18.79 | us |
| 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 |
| SOGR | Standoff Distance of the Gamma Ray Tool | SGT-N | 0 | in |
| TCUB | T*3 Processing Level | USIT-E | Loop | |
| TD | Total Measured Depth | Borehole | 7461 | ft |
| THDH | Maximum Search Thickness (percentage of nominal) | USIT-E | 130 | % |
| THDL | Minimum Search Thickness (percentage of nominal) | USIT-E | 70 | % |
| TPOS | Tool Position: Centered or Eccentered | SGT-N | Centered | |
| U-USIT_DFSZ | Drilling Fluid Specific Acoustic Impedance | USIT-E | 0 | 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 | 1.41 | 6951.5 | 7000 |
| ZMUD | 1.4 | 7000 | 7100 |
| ZMUD | 1.39 | 7100 | 7200 |
| ZMUD | 1.38 | 7200 | 7429 |
| All depth are actual. | | | |

Tool Control Parameters

| ONE: Parameters | | | | |
|-----------------|--|-----------|--------|------|
| Parameter | Description | Tool | Value | Unit |
| AGMN | Minimum Gain of Cartridge | USIT-E | -12 | dB |
| AGMX | Maximim Gain of Cartridge | USIT-E | 18 | 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 | 60 | V |
| HRES | Horizontal Resolution | USIT-E | 10 deg | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 3600 | ft/h |
| MOTOR_PROTECT | Motor Protection | USIT-E | On | |

| | | | | |
|---------------|------------------------------------|--------|----------------------------------|----|
| 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 | 7425 | 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 | Time Zoned | us |

Time Zone Parameters

| Parameter | Value | Start Time | Stop Time | Start Depth (ft) | Stop Depth (ft) |
|-----------|-------|----------------------|----------------------|--------------------|-------------------|
| WINE | 73.83 | 27-Jul-2015 09:31:10 | 27-Jul-2015 09:34:35 | 7429.36 | 7214.58 |
| WINE | 92.19 | 27-Jul-2015 09:34:35 | 27-Jul-2015 09:34:41 | 7214.58 | 7205.42 |
| WINE | 87.39 | 27-Jul-2015 09:34:41 | 27-Jul-2015 09:34:52 | 7205.42 | 7189.73 |
| WINE | 83.79 | 27-Jul-2015 09:34:52 | 27-Jul-2015 09:35:01 | 7189.73 | 7177.72 |
| WINE | 80.19 | 27-Jul-2015 09:35:01 | 27-Jul-2015 09:37:28 | 7177.72 | 6975.38 |

All depth are at tool zero.

USI Goodwin

USIT - Fluid Properties Measurement

| Run Name | Pass Name | Start Depth(ft) | Stop Depth(ft) |
|----------|-----------|-----------------|----------------|
| Run 1 | Log[3]:Up | 7464.59 | 3.10 |

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 | 400 | 1.77 | 1.77 |
| 400 | 500 | 1.81 | 1.81 |
| 500 | 600 | 1.76 | 1.76 |
| 600 | 700 | 1.61 | 1.61 |
| 700 | 800 | 1.51 | 1.51 |
| 800 | 900 | 1.57 | 1.57 |
| 900 | 1000 | 1.7 | 1.7 |
| 1000 | 1100 | 1.82 | 1.82 |
| 1100 | 1500 | 1.88 | 1.88 |
| 1500 | 2000 | 1.92 | 1.92 |
| 2000 | 2100 | 1.9 | 1.9 |
| 2100 | 2200 | 1.89 | 1.89 |
| 2200 | 2300 | 1.88 | 1.88 |
| 2300 | 2500 | 1.86 | 1.86 |
| 2500 | 2600 | 1.84 | 1.84 |
| 2600 | 2700 | 1.83 | 1.83 |
| 2700 | 3000 | 1.82 | 1.82 |
| 3000 | 3100 | 1.81 | 1.81 |
| 3100 | 3200 | 1.8 | 1.8 |
| 3200 | 3300 | 1.79 | 1.79 |
| 3300 | 3400 | 1.78 | 1.78 |

| | | | |
|-------|-------|------|------|
| 3400 | 3600 | 1.77 | 1.77 |
| 3600 | 3800 | 1.75 | 1.75 |
| 3800 | 3900 | 1.73 | 1.73 |
| 3900 | 4100 | 1.72 | 1.72 |
| 4100 | 4500 | 1.71 | 1.71 |
| 4500 | 4600 | 1.69 | 1.69 |
| 4600 | 4700 | 1.68 | 1.68 |
| 4700 | 4800 | 1.67 | 1.67 |
| 4800 | 5000 | 1.66 | 1.66 |
| 5000 | 5100 | 1.65 | 1.65 |
| 5100 | 5200 | 1.64 | 1.64 |
| 5200 | 5300 | 1.63 | 1.63 |
| 5300 | 5500 | 1.62 | 1.62 |
| 5500 | 5600 | 1.61 | 1.61 |
| 5600 | 5700 | 1.59 | 1.59 |
| 5700 | 5800 | 1.58 | 1.58 |
| 5800 | 5900 | 1.57 | 1.57 |
| 5900 | 6000 | 1.56 | 1.56 |
| 6000 | 6100 | 1.54 | 1.54 |
| 6100 | 6200 | 1.53 | 1.53 |
| 6200 | 6300 | 1.52 | 1.52 |
| 6300 | 6400 | 1.49 | 1.49 |
| 6400 | 6500 | 1.48 | 1.48 |
| 6500 | 6600 | 1.47 | 1.47 |
| 6600 | 6700 | 1.45 | 1.45 |
| 6700 | 6800 | 1.44 | 1.44 |
| 6800 | 6900 | 1.42 | 1.42 |
| 6900 | 7000 | 1.41 | 1.41 |
| 7000 | 7100 | 1.4 | 1.4 |
| 7100 | 7200 | 1.39 | 1.39 |
| 7200 | 10000 | 1.38 | 1.38 |
| 10000 | | 1.37 | 1.37 |

ONE

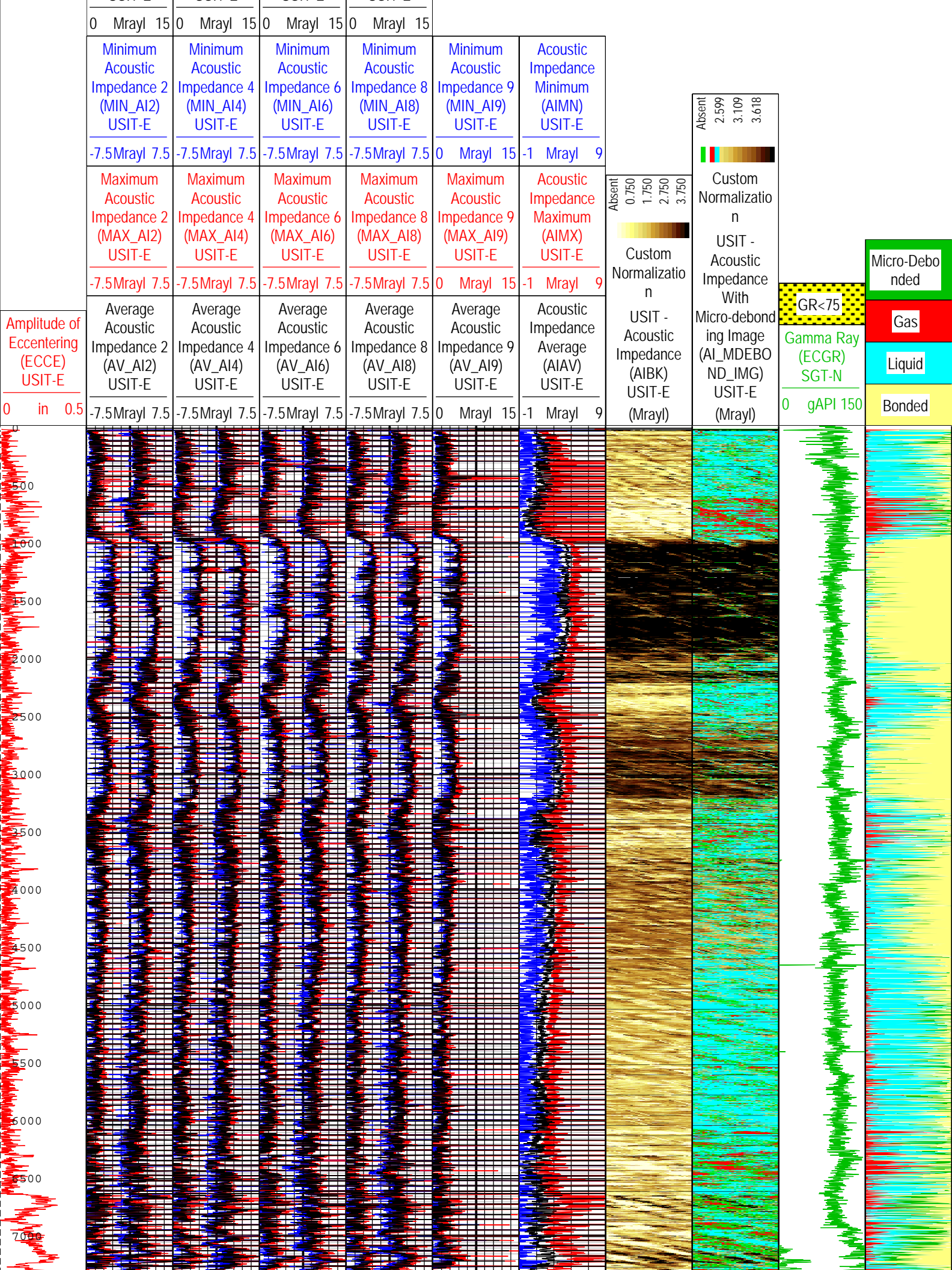
USI Goodwin Compressed - Main Pass

| | | |
|-----|---------------------|--------------------------|
| Log | Company:Anadarko | Well:Skim State 30N-21HZ |
| | ONE: Log[3]:Up:S008 | |

Description: USI Goodwin Format: USI Goodwin Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 27-Jul-2015 12:58:50

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 Acoustic Impedance 1 (AV_AI1) USIT-E | Average Acoustic Impedance 3 (AV_AI3) USIT-E | Average Acoustic Impedance 5 (AV_AI5) USIT-E | Average Acoustic Impedance 7 (AV_AI7) USIT-E |



| Amplitude of Eccentering (ECCE) USIT-E | 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 | Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E | Acoustic Impedance Minimum (AIMN) USIT-E | Custom Normalization | Custom Normalization | GR<75 | Micro-Debonded |
|---|---|---|---|---|---|--|---|--|------------|----------------|
| 0 in 0.5 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | -1 Mrayl 9 | USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl) | USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl) | 0 gAPI 150 | Liquid |
| 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 | Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E | Acoustic Impedance Maximum (AIMX) USIT-E | | | | | |
| 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | -1 Mrayl 9 | | | | | |
| Average Acoustic Impedance 1 (AV_AI1) USIT-E | Average Acoustic Impedance 3 (AV_AI3) USIT-E | Average Acoustic Impedance 5 (AV_AI5) USIT-E | Average Acoustic Impedance 7 (AV_AI7) USIT-E | Average Acoustic Impedance 9 (AV_AI9) USIT-E | Acoustic Impedance Average (AIAV) USIT-E | | | | | |
| 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | 0 Mrayl 15 | -1 Mrayl 9 | | | | | |
| Minimum Acoustic Impedance 2 (MIN_AI2) USIT-E | Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E | Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E | Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E | | | | | | | |
| -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | | | | | | | |
| Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E | Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E | Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E | Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E | | | | | | | |
| -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | | | | | | | |
| Average Acoustic Impedance 2 (AV_AI2) USIT-E | Average Acoustic Impedance 4 (AV_AI4) USIT-E | Average Acoustic Impedance 6 (AV_AI6) USIT-E | Average Acoustic Impedance 8 (AV_AI8) USIT-E | | | | | | | |
| -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | -7.5Mrayl 7.5 | | | | | | | |

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: 27-Jul-2015 12:58:50

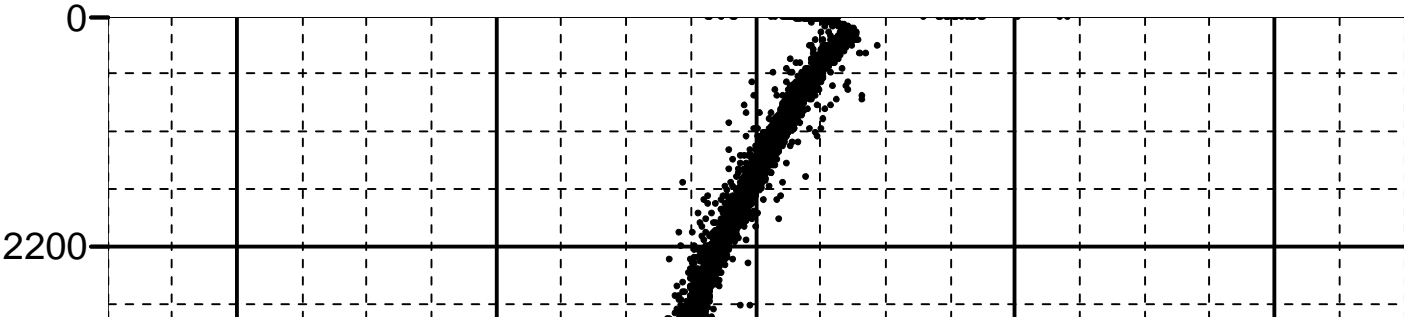
| | |
|-----|--|
| XYZ | Company:Anadarko Well:Skim State 30N-21HZ ONE: Log[3]:Up:S008 |
|-----|--|

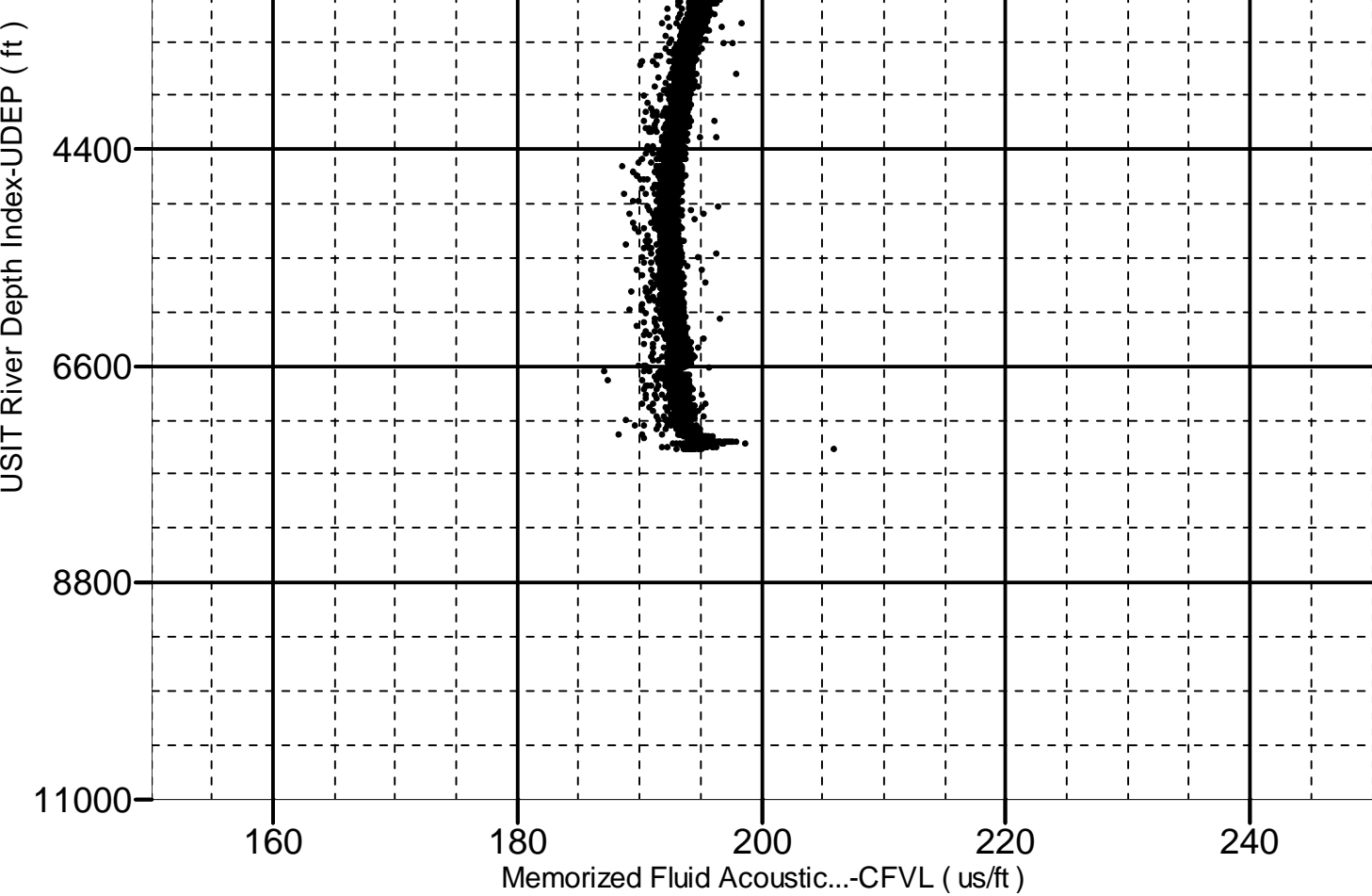
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 7464.25 to 2.75 ft

● CFVL-UDEP

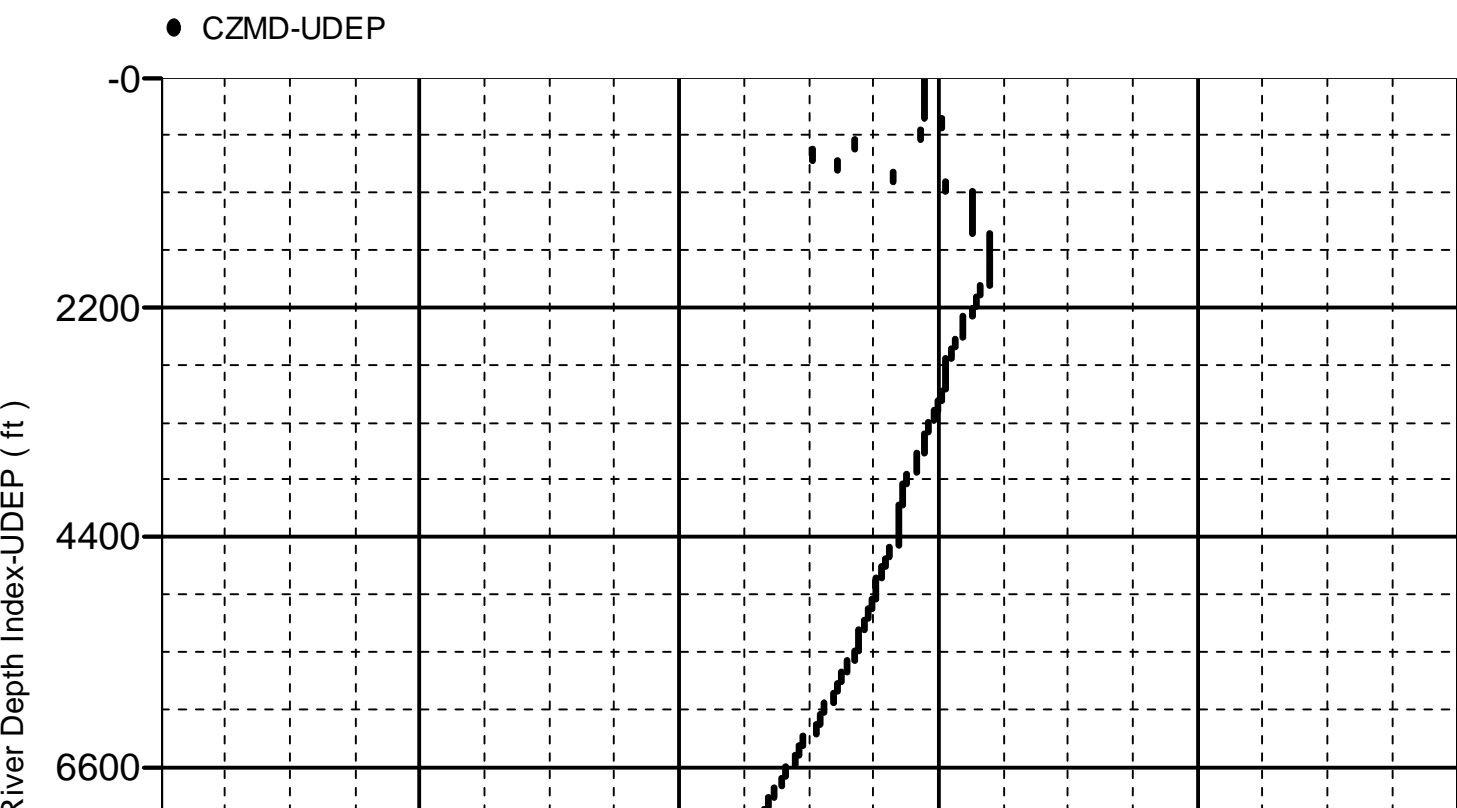


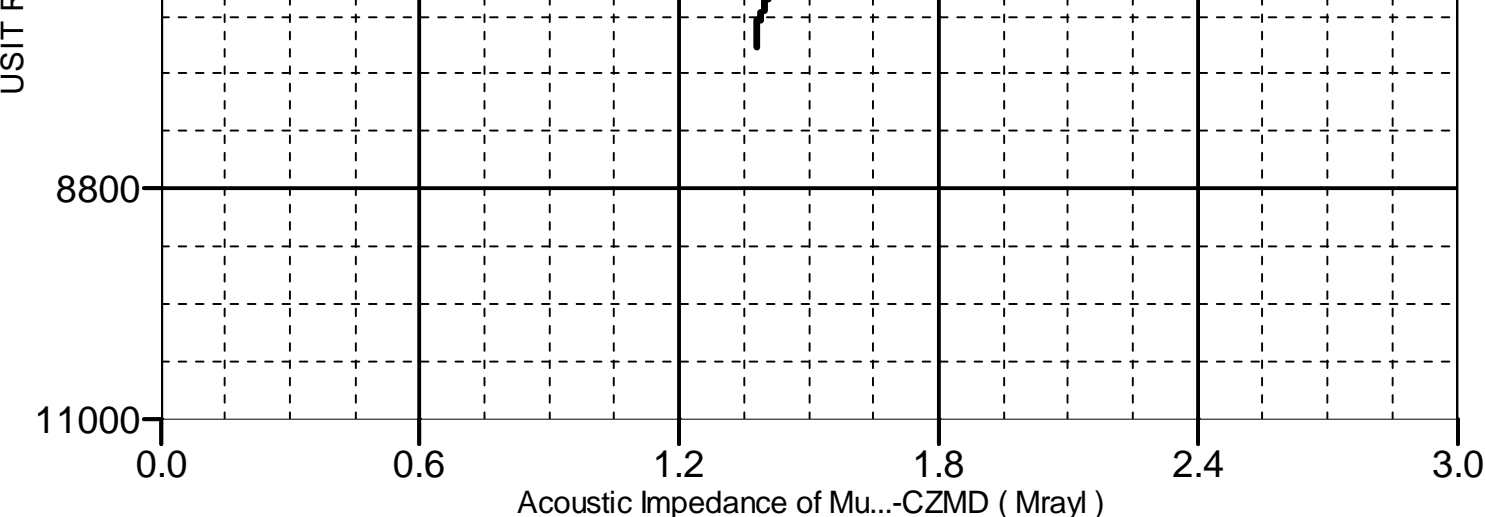


Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 7464.25 to 2.75 ft





Calibration Report

SGT-N (Scintillation Gamma-Ray Tool) Calibration - Run ONE

Primary Equipment :

Scintillation Gamma CartridgeSGC-TB10210

Calibration Parameter :

Plus Reference (Jig minus background reference)165

SGT-N Gamma-Ray Calibration - Gamma Ray Coefficients

Before (Measured):16:16:43 20-Jul-2015

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|----------------|------|--------|---------|-----------|--------|------------|--|
| Gamma Ray Gain | | Before | | | 1.087 | | |

SGT-N Gamma-Ray Calibration - Gamma Ray Accumulations

Before (Measured):16:16:43 20-Jul-2015

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|----------------------|------|--------|---------|-----------|---------|------------|--|
| RGR Zero Measurement | gAPI | Before | | 0 | 61.755 | 120.000 | |
| RGR Plus Measurement | gAPI | Before | 151.810 | 138.009 | 151.810 | 165.610 | |

SGT-N Gamma-Ray Plateau Check - Gamma Ray Plateau Check

Before:

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|-----------------------------------|------|--------|---------|-----------|--------|------------|--|
| RGR Plus Plateau Measurement - 0 | gAPI | Before | ---- | ---- | ---- | ---- | |
| RGR Minus Plateau Measurement - 0 | gAPI | Before | ---- | ---- | ---- | ---- | |

| | | |
|----------|---------------------|--|
| Company: | Anadarko | |
| Well: | Skim State 30N-21HZ | |
| Field: | Wattenberg | |
| County: | Weld | |
| State: | Colorado | |

Ultrasonic Imager

Ultrasonic Imager

Cement Evaluation (Short)

Gamma Ray - CCL Log