

Company: Anadarko

Well: Cheese 16N-28HZ

Field: Wattenberg

County: Weld State: Colorado

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

County:	Weld			
Field:	Wattenberg			
Location:	NENE S28 T3N R65W			
Well:	Cheese 16N-28HZ			
Company:	Anadarko			
Location:	NENE S28 T3N R65W	Elev.:	K.B.	4842.00 ft
	SHL: 428' FNL & 830' FEL		G.L.	4817.00 ft
	LAT: 40.202512 / LONG: -104.662232		D.F.	4841.00 ft
	Permanent Datum:	Ground Level	Elev.:	4817.00 f
Log Measured From:	Kelly Bushing	25.00 ft	above Perm.Datum	
Drilling Measured From:	Kelly Bushing			
API Serial No.	Section:	Township:	Range:	
05-123-40950	28	3N	65W	

Logging Date	23-Jul-2015		
Run Number	ONE		
Depth Driller	12610.00 ft		
Schlumberger Depth	12610.00 ft		
Bottom Log Interval	7276.00 ft		
Top Log Interval	26.00 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	1204.00 ft		
To	12610.00 ft		
Casing/Tubing Size	5.5 in		
Weight	17 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	12610.00 ft		
Max Recorded Temperatures	262 degF		
Logger on Bottom	23-Jul-2015	10:00:00	
Unit Number	Location:	Time	
3022			
Recorded By	Michel Lapointe	Ft. Morgan, CO	
Witnessed By	Van Franke		

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.

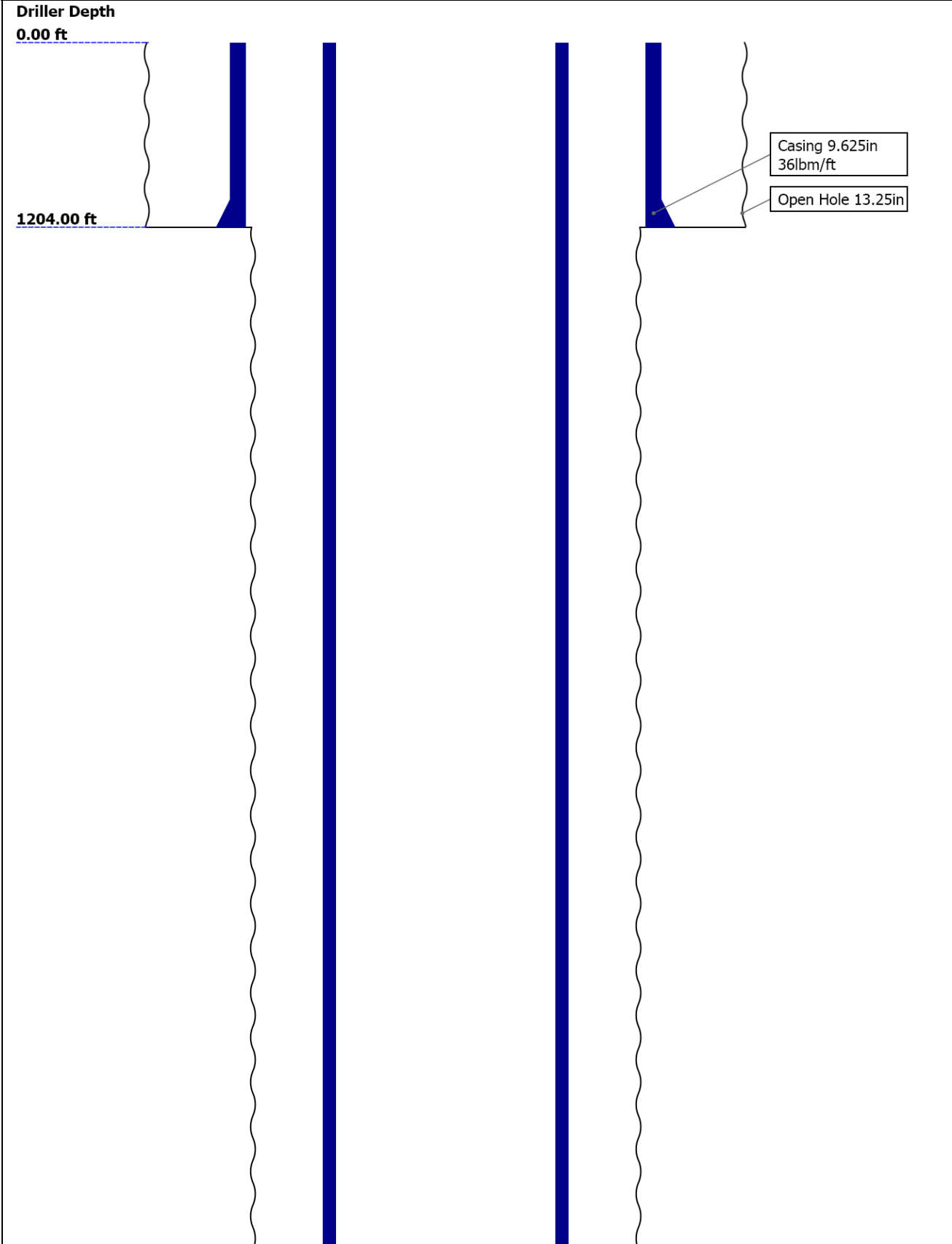
Contents

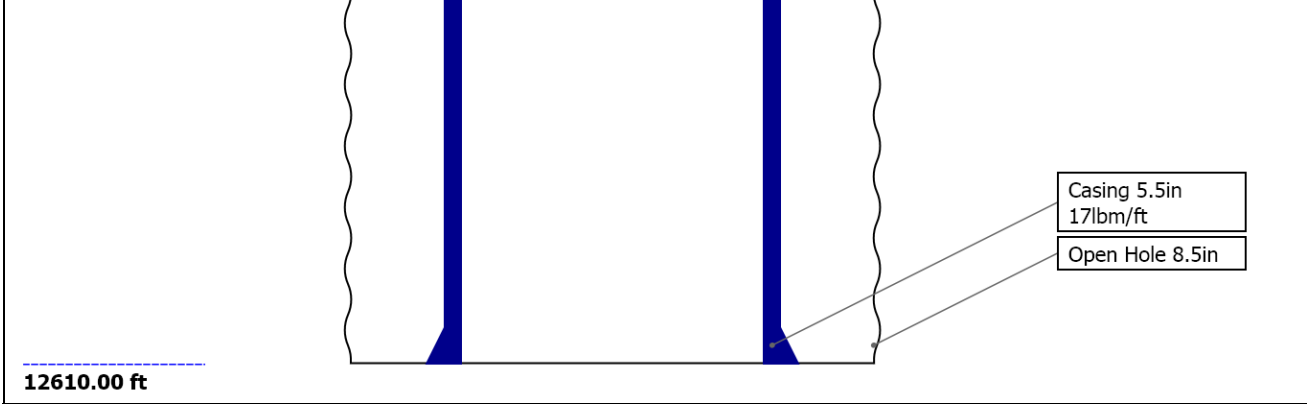
- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Operational Run Summary
- 7. Borehole Fluids
- 8. Remarks and Equipment Summary
- 9. Depth Summary
- 10. USI Cement
  - 10.1 USI Fluid Properties Measurement
  - 10.2 USI Cement
  - 10.3 Parameter Listing
- 11. USI Cement
  - 11.1 USI Fluid Properties Measurement
  - 11.2 USI Cement
  - 11.3 Parameter Listing

16. Tail

- 12. USI Goodwin
  - 12.1 USI Fluid Properties Measurement
  - 12.2 USI Goodwin
- 13. XYZ ( USI Fluid Acoustic Slowness vs Depth 3.0 in )
- 14. XYZ ( USI Acoustic Impedance of Mud vs Depth 3.0 in )
- 15. Calibration Report

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.25	8.5				
Top Driller ( ft )	0	1204				
Top Logger ( ft )	0	1204				
Bottom Driller ( ft )	1204	12610				
Bottom Logger ( ft )	1204	12610				
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 )	1204	12610				
Bottom Logger ( ft )	1204	12610				

Operational Run Summary

Parameter ( unit )	ONE					
Date Log Started	23-Jul-2015					
Time Log Started	09:07:51					
Date Log Finished	23-Jul-2015					
Time Log Finished	12:16:41					
Top Log Interval ( ft )	26.00					
Bottom Log Interval ( ft )	7276.00					
Total Depth ( ft )	7276.00					
Max Hole Deviation ( deg )	0.00					
Azimuth of Max Deviation ( deg )	0.00					
Bit Size ( in )	8.500					
Logging Unit Number	3022					
Logging Unit Location	Ft. Morgan, CO					
Recorded By	Michel Lapointe					

Witnessed By	Van Franke					
Service Order Number	DAE0-00006					

Borehole Fluids						
Parameter( unit )	ONE					
Fluid Type	Water					
Fluid Name	Water					
Max Recorded Temperatures ( degF )	262					
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	23-Jul-2015					
Time Logger on Bottom	10:00:00					
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 @ 262					
RMF @ BHT ( ohm.m@degF )	0.04 @ 262					
RMC @ BHT ( ohm.m@degF )	NaN @ 262					
Total Solid ( % )						
High Gravity Solids ( % )						

Remarks and Equipment Summary				
ONE: Toolstring			ONE: Remarks	
<div><div><div>Equip nameLength</div><div>LEH-QT:230.97</div><div>491</div><div>LEH-QT:24</div><div>91</div></div><div><div><div>DTC-H:8728.06</div><div>94</div><div>ECH-KC:9</div><div>373</div><div>DTC-H:879</div><div>4</div></div><div><div>SGT-N:1025.06</div><div>210</div><div>SGH-K:299</div><div>6</div><div>SGD-TAA:</div><div>21661</div><div>SGC-TB:10</div><div>210</div></div></div><div><div><div>AH-184:219.56</div><div>746</div></div><div><div>AH-107:317.56</div><div>255</div></div></div><div><div><div>MP nameOffset</div><div>CTEM27.16</div><div>HV0.00</div><div>TelStatu25.06</div><div>s25.06</div><div>ToolStatustus</div><div>GR24.14</div></div></div></div>			<div>1. TOOLS RAN AS PER TOOLSKETCH.</div> <div>2. 5.5", 17# CASING.</div> <div>3. 11.2 PPG SPACER (TO SURFACE). 12.0 PPG LEAD - EXPECTED TO SURFACE. 13.5 PPG TAIL - EXPECTED TOP AT 5772.</div> <div>4. 0 PSI REPEAT PASS. 2800 PSI MAIN PASS.</div> <div>5. TOOLS RAN TO POINT OF REFUSAL AT 7276 FT.</div> <div>6. CEMENT QUALITY BASED ON USIT DATA LOOKS POORER THAN EXAMPLES FROM NEARBY PADS. WELLSITE CONSULTANT INFORMED.</div>	

855

**USIT-E:99 15.56**

2

ECH-MFA:

1964

USAC-A:9

92

USIS-A:99

9

USSC-B:17

94

USRS-AB:

865

USI-SENS

OR:3248

USI Sen 0.37

TOOL\_ZERO

Length in ft

Maximum Outer Diameter = 5.250 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL\_ZERO

## Depth Summary

ONE

### Depth Measuring Device

Type	IDW-JA		
Serial Number	7234		
Calibration Date	13-FEB-2015		
Calibrator Serial Number			
Calibration Cable Type	7-39PL-XS		
Wheel Correction 1	-4		
Wheel Correction 2	-2		

## Tension Device

Type	CMTD-B/A		
Serial Number	1109		
Calibration Date	13-Jul-2015		
Calibrator Serial Number	441435A		
Number of Calibration Points	10		
Calibration Root Mean Square Error	31		
Calibration Peak Error	72		

## Logging Cable

Type	7-39P-LXS		
Serial Number	3022		
Length	12000.00 ft		
Conveyance Type	Wireline		
Rig Type	Rigless		

## ONE:Depth Control Parameters

Log Sequence	First Log In the Well	Schlumberger depth control policy followed.
Rig Up Length At Surface		Primary depth measurement = IDW.
Rig Up Length At Bottom		Secondary depth control = Z-Chart.
Rig Up Length Correction		Logs depth-correlated to downlog. Re-zero done and logs adjusted.
Stretch Correction		
Tool Zero Check At Surface		

### Depth Control Remarks

# USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[3]:Up	7283.12	8.73
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	200	1.59	1.59
200	450	1.6	1.6
450	700	1.61	1.61
700	950	1.62	1.62
950	1200	1.63	1.63
1200	1450	1.64	1.64
1450	1700	1.65	1.65
1700	1950	1.66	1.66
1950	2200	1.67	1.67
2200	3000	1.68	1.68
3000	4000	1.69	1.69
4000	7300	1.7	1.7
7300	10000	1.71	1.71
10000		1.71	1.71

ONE

USI Cement - Main

Log

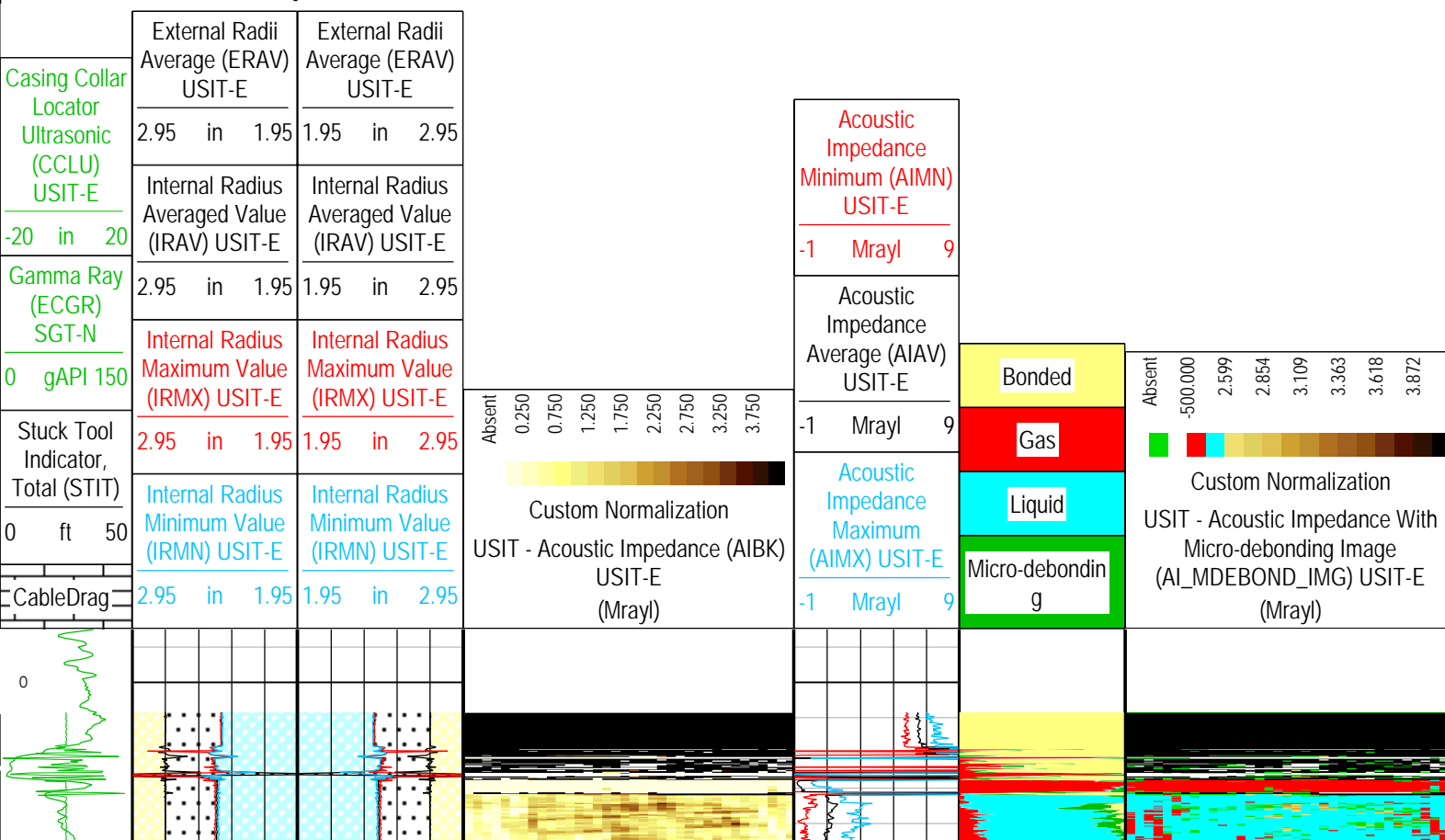
Company:Anadarko

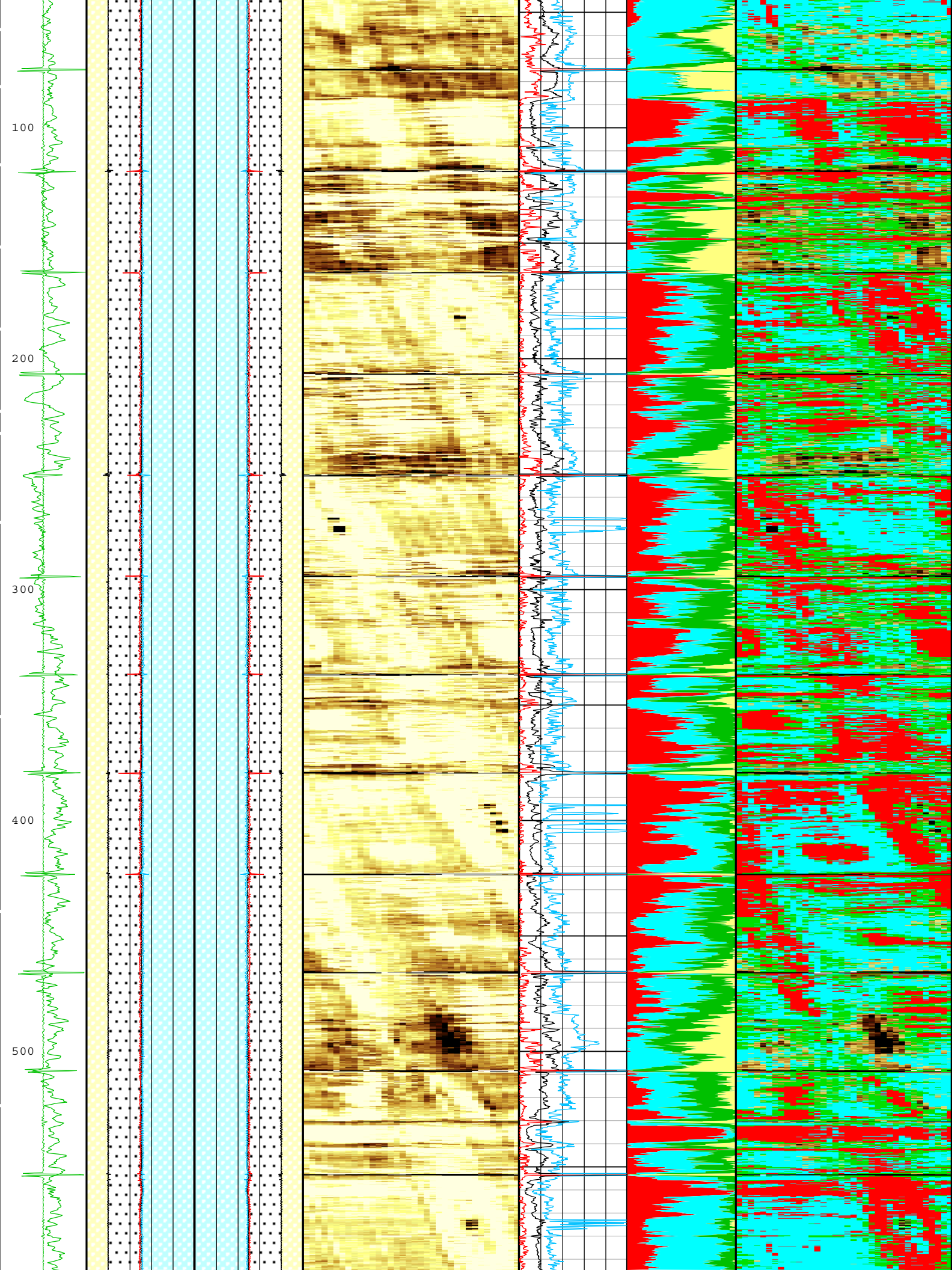
Well:Cheese 16N-28HZ

ONE: Log[3]:Up:S019

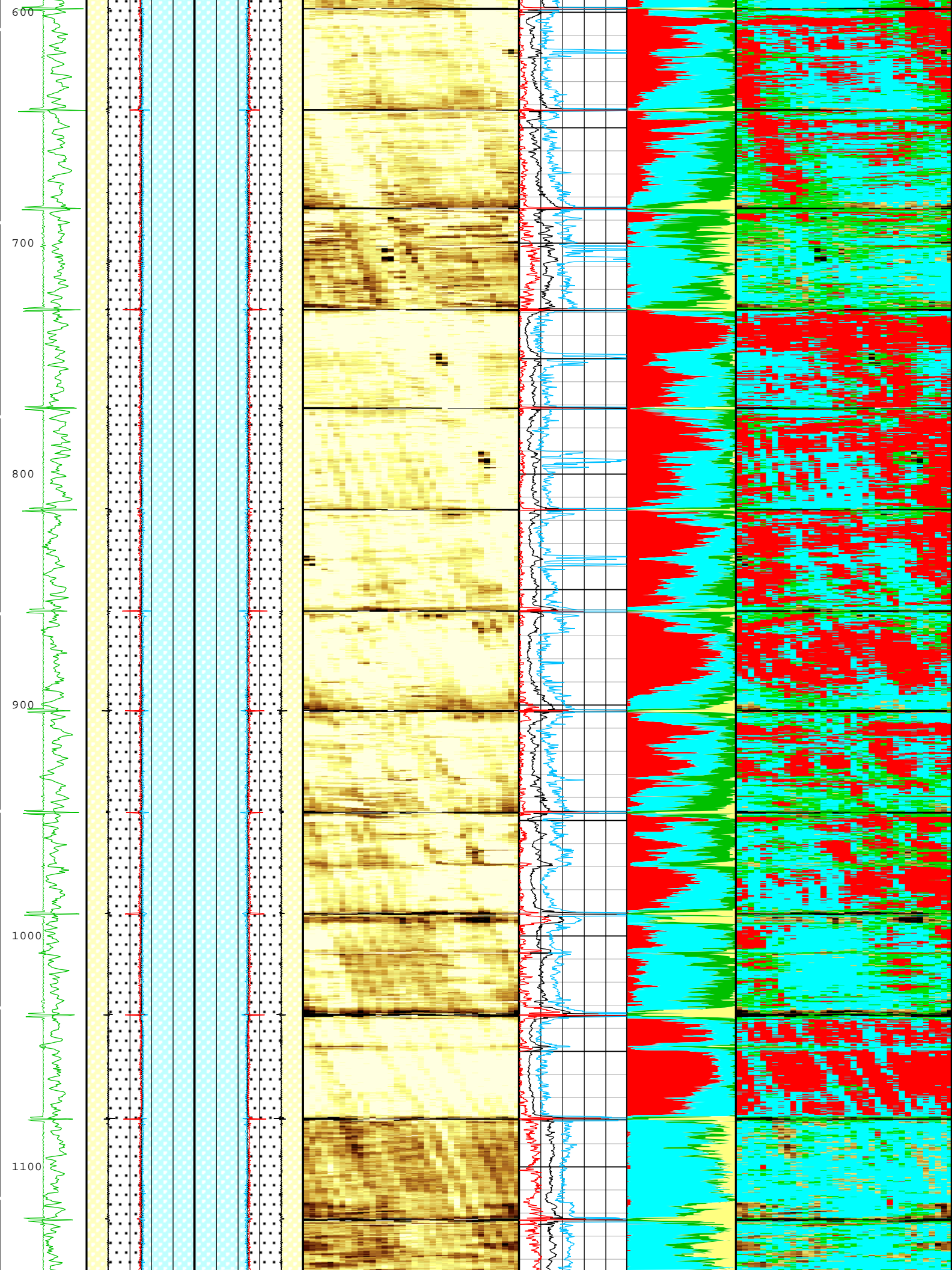
Description: USI Cement   Format: USI Cement   Index Scale: 2 in per 100 ft   Index Unit: ft   Index Type: Measured Depth   Creation Date: 27-Jul-2015 20:13:57

TIME\_1900 - Time Marked every 60.00 (s)

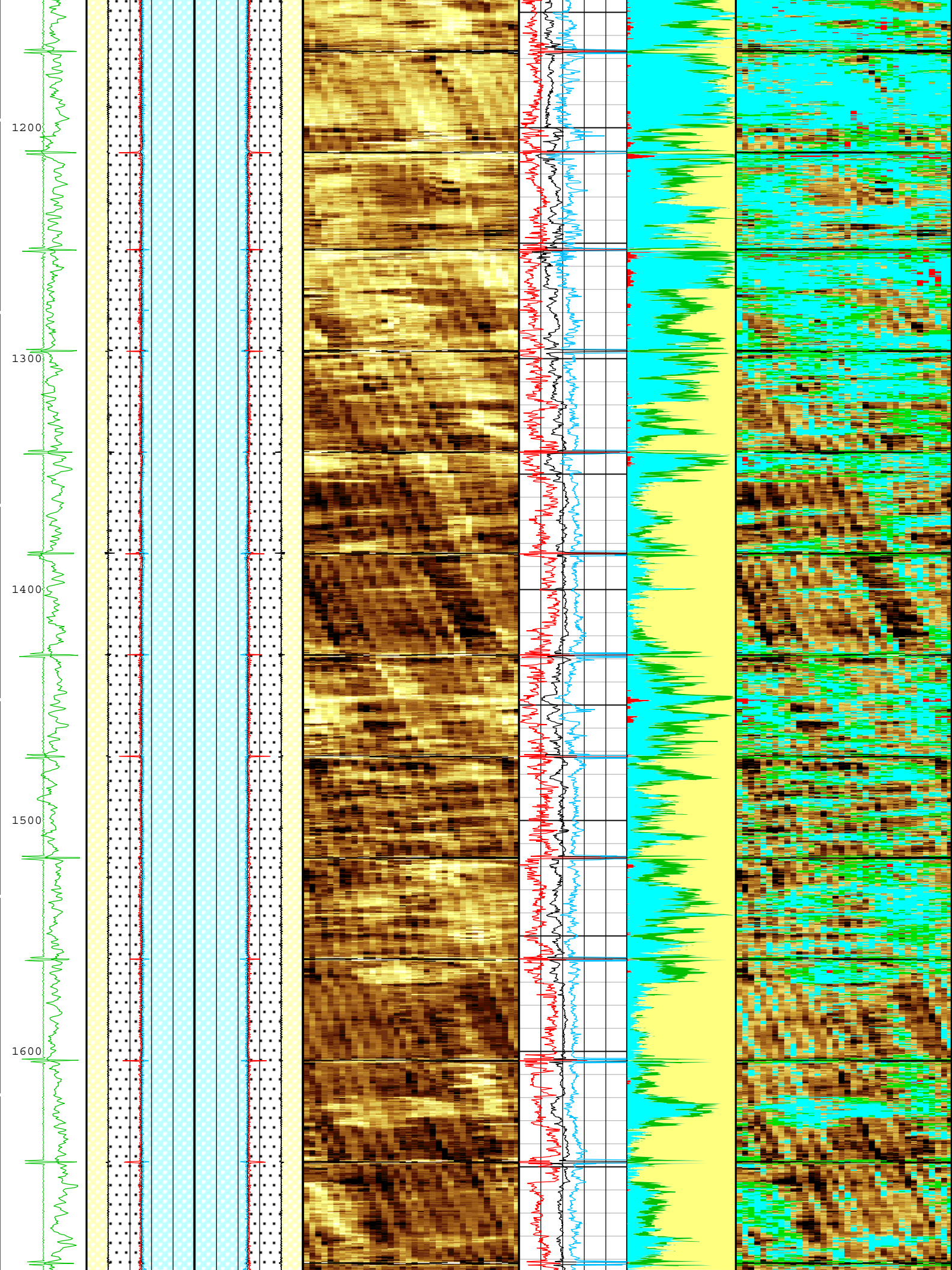


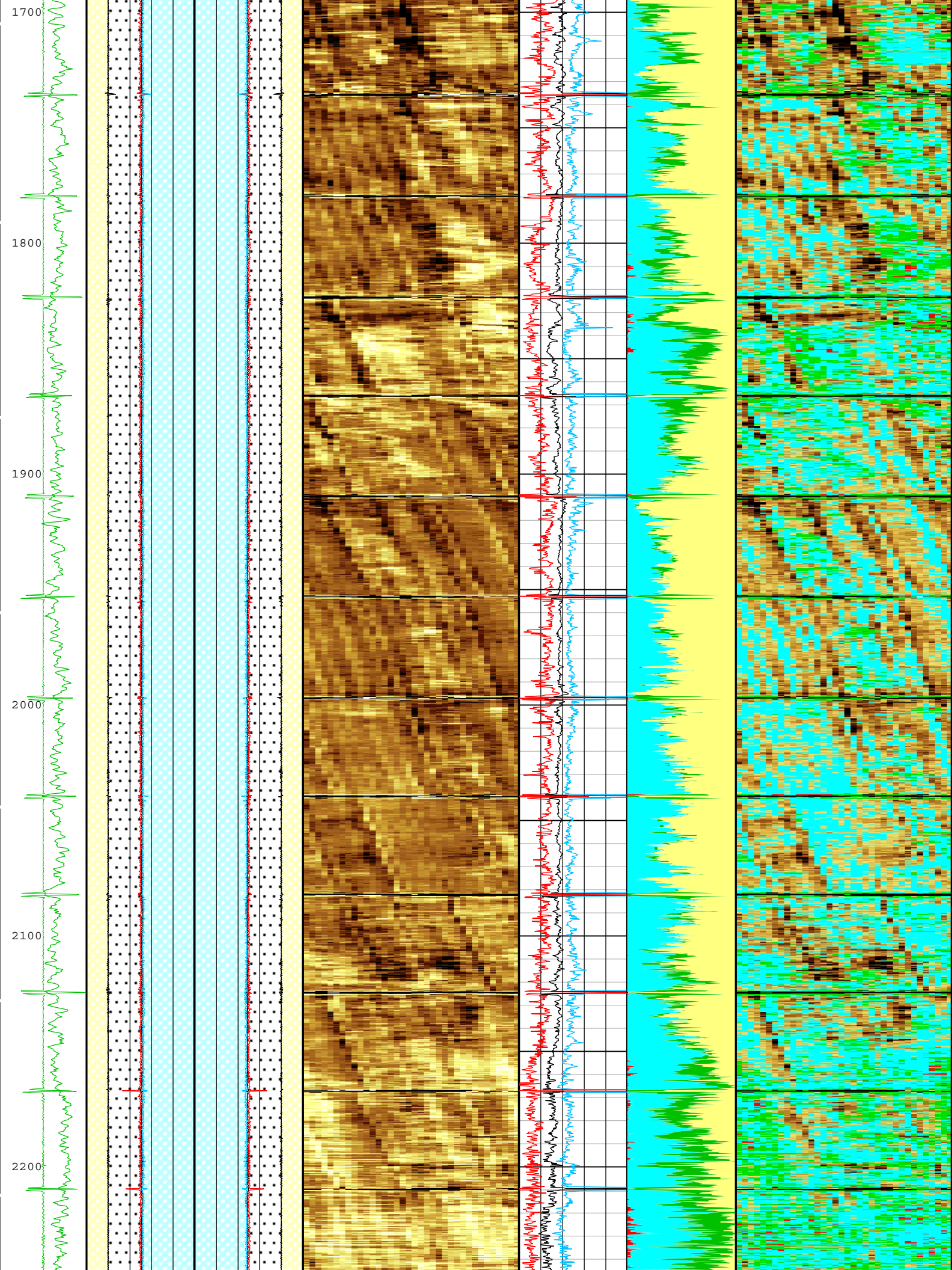




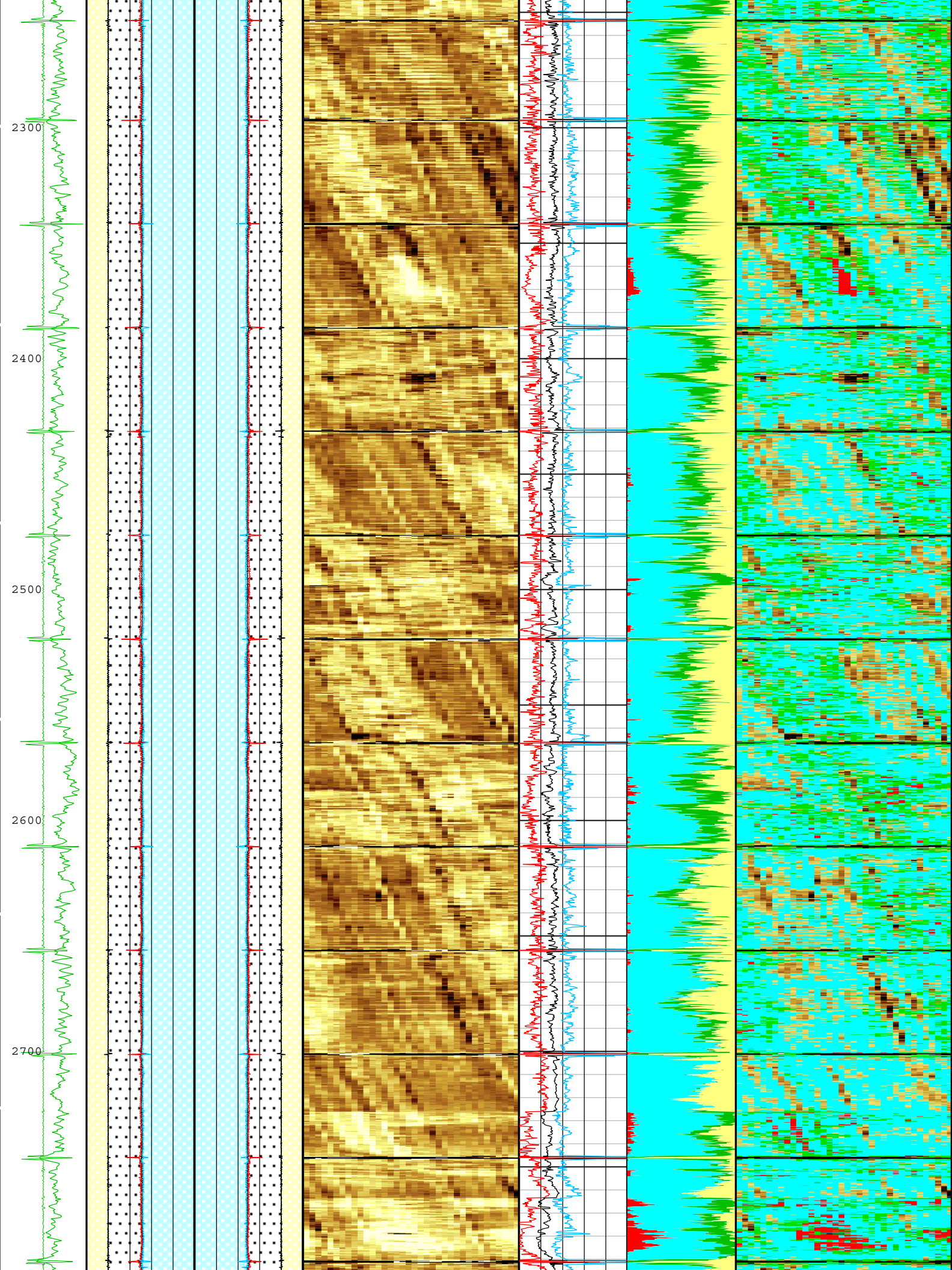


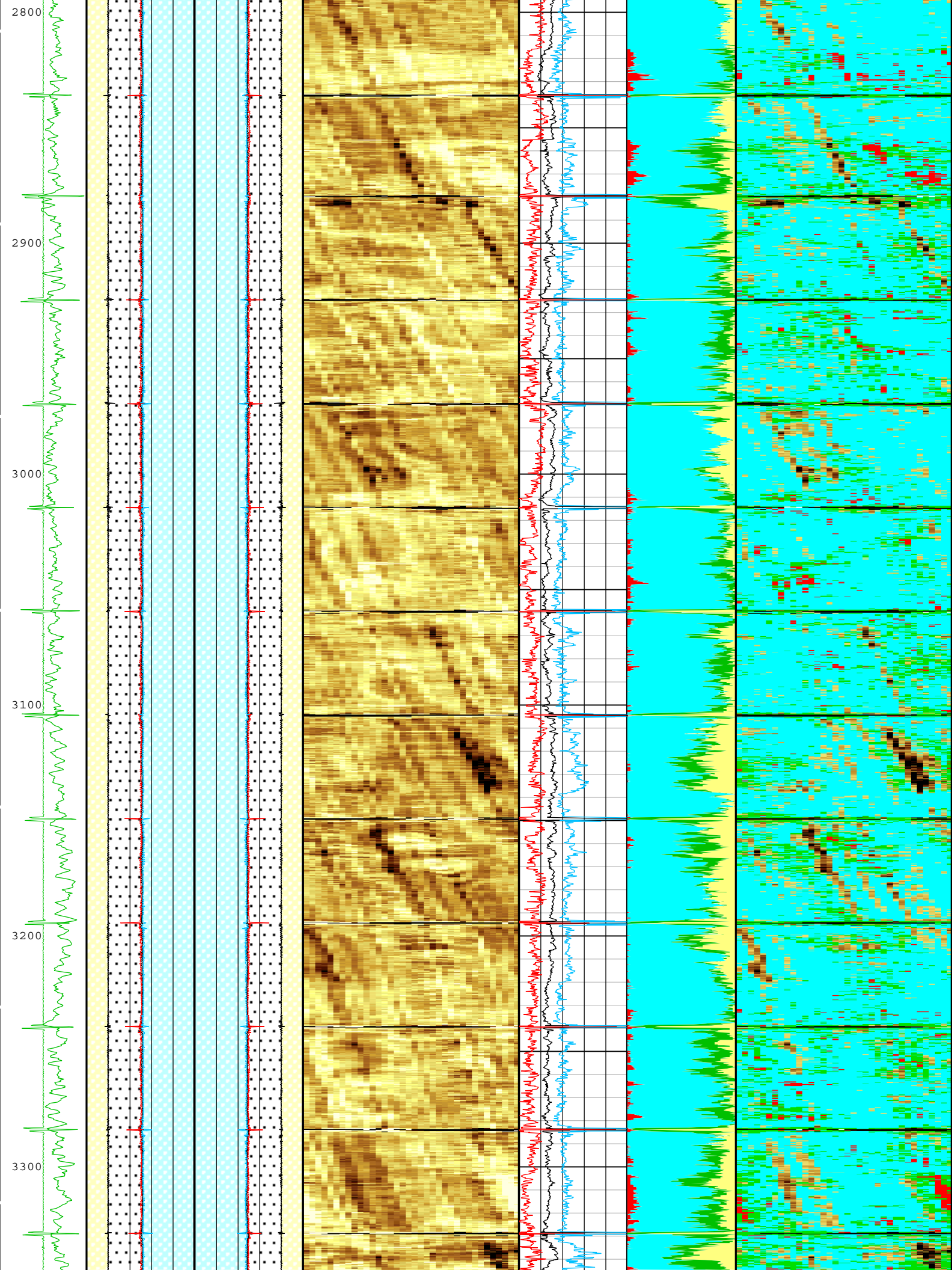




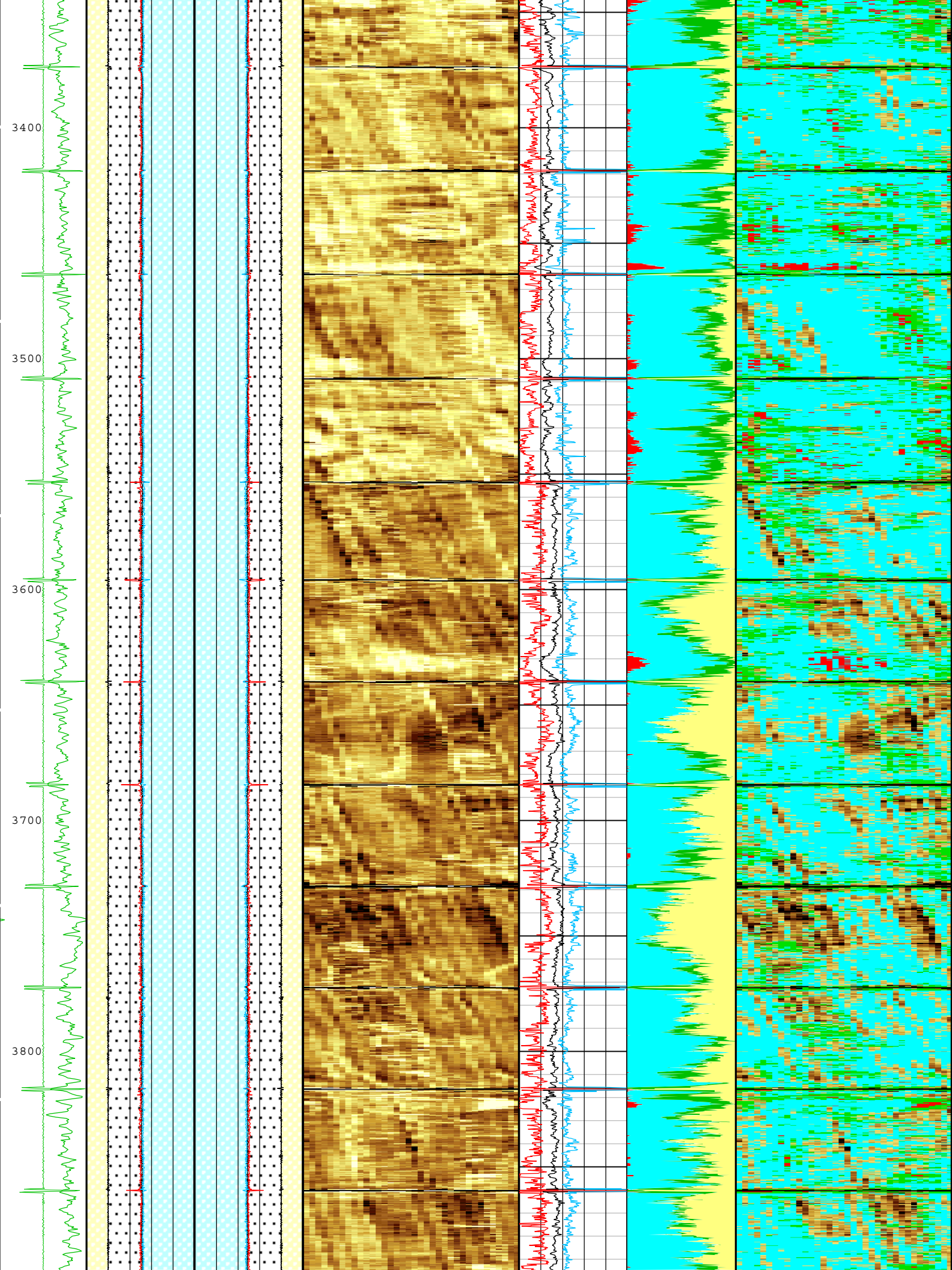


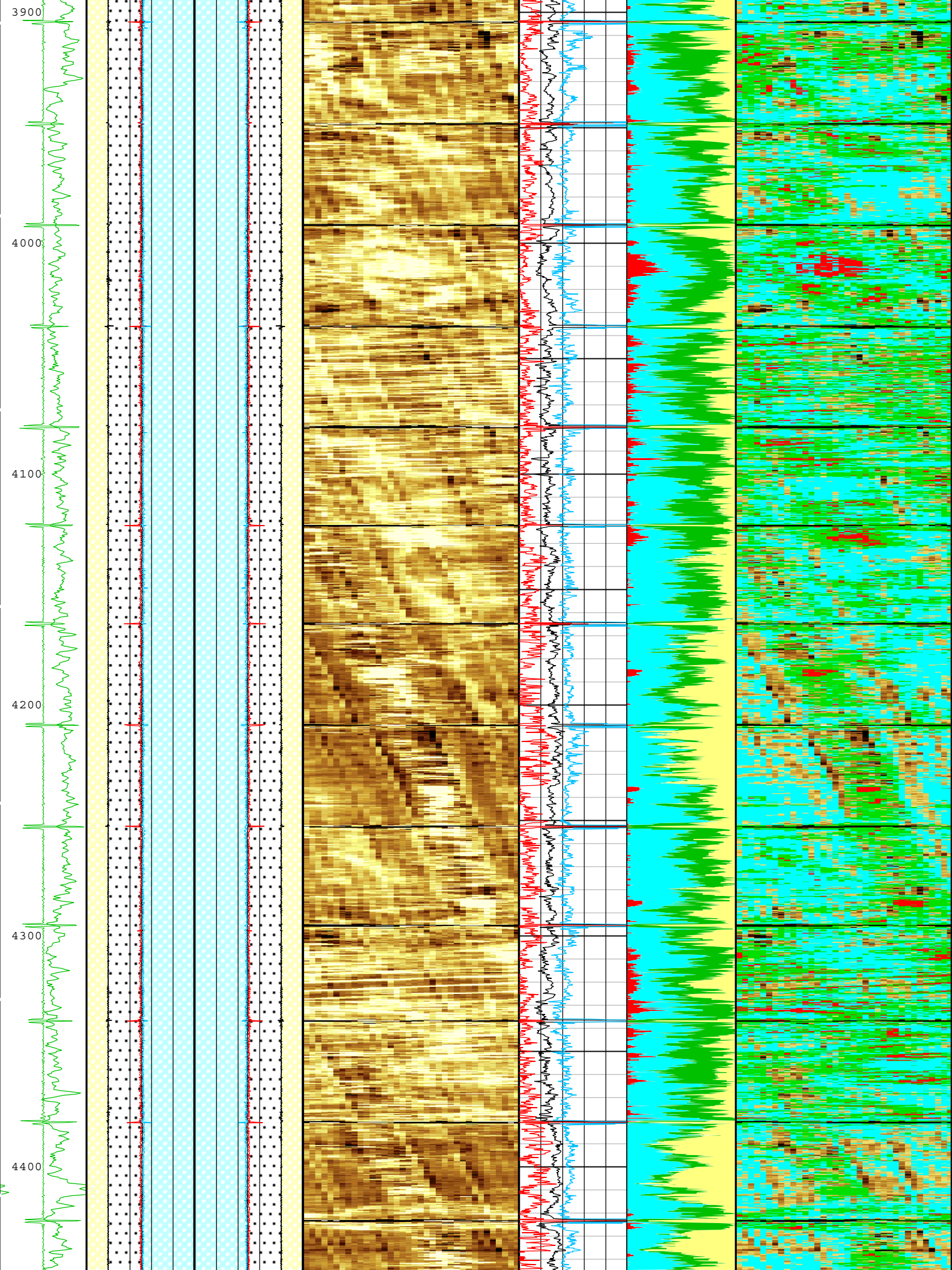




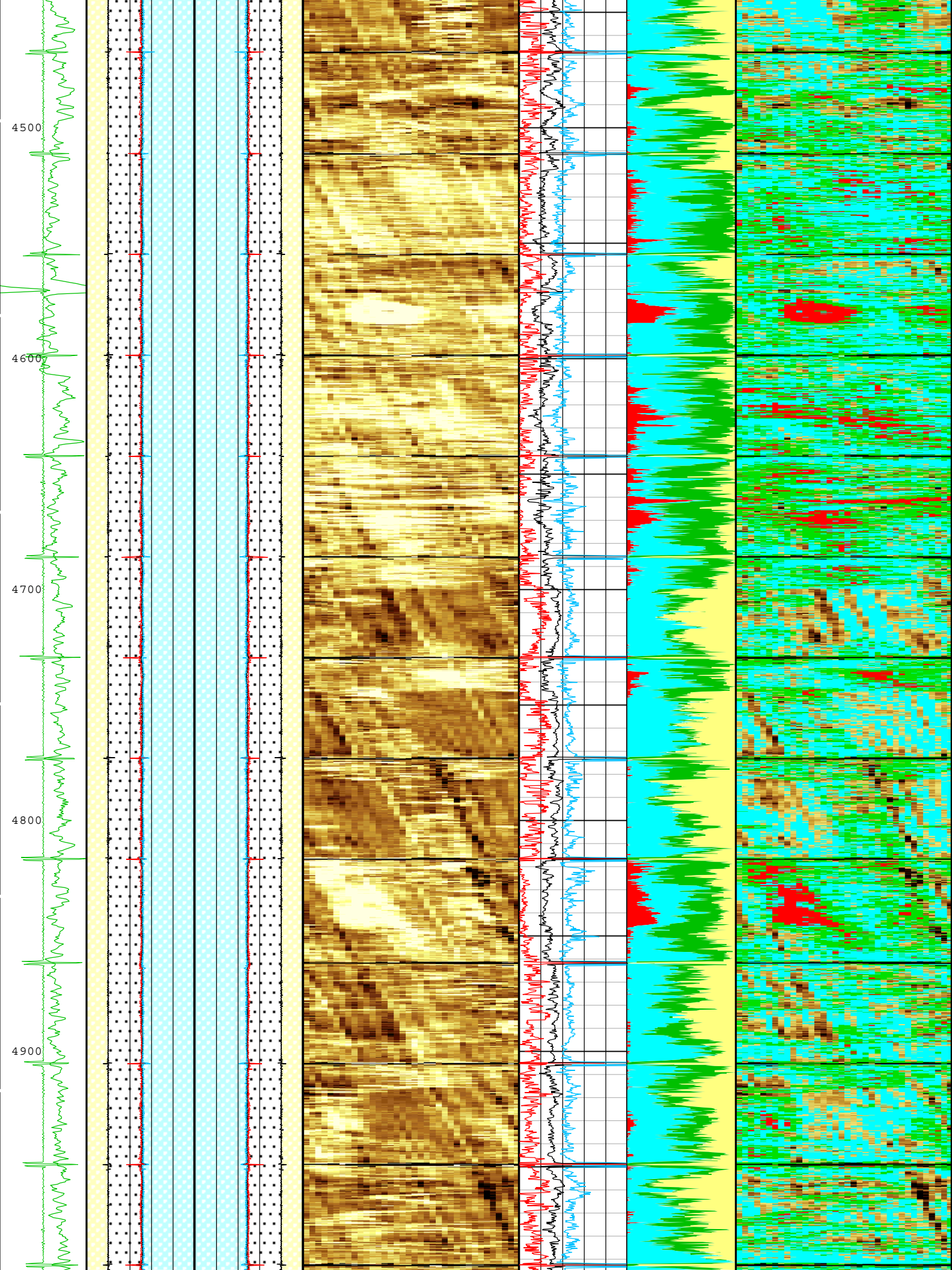


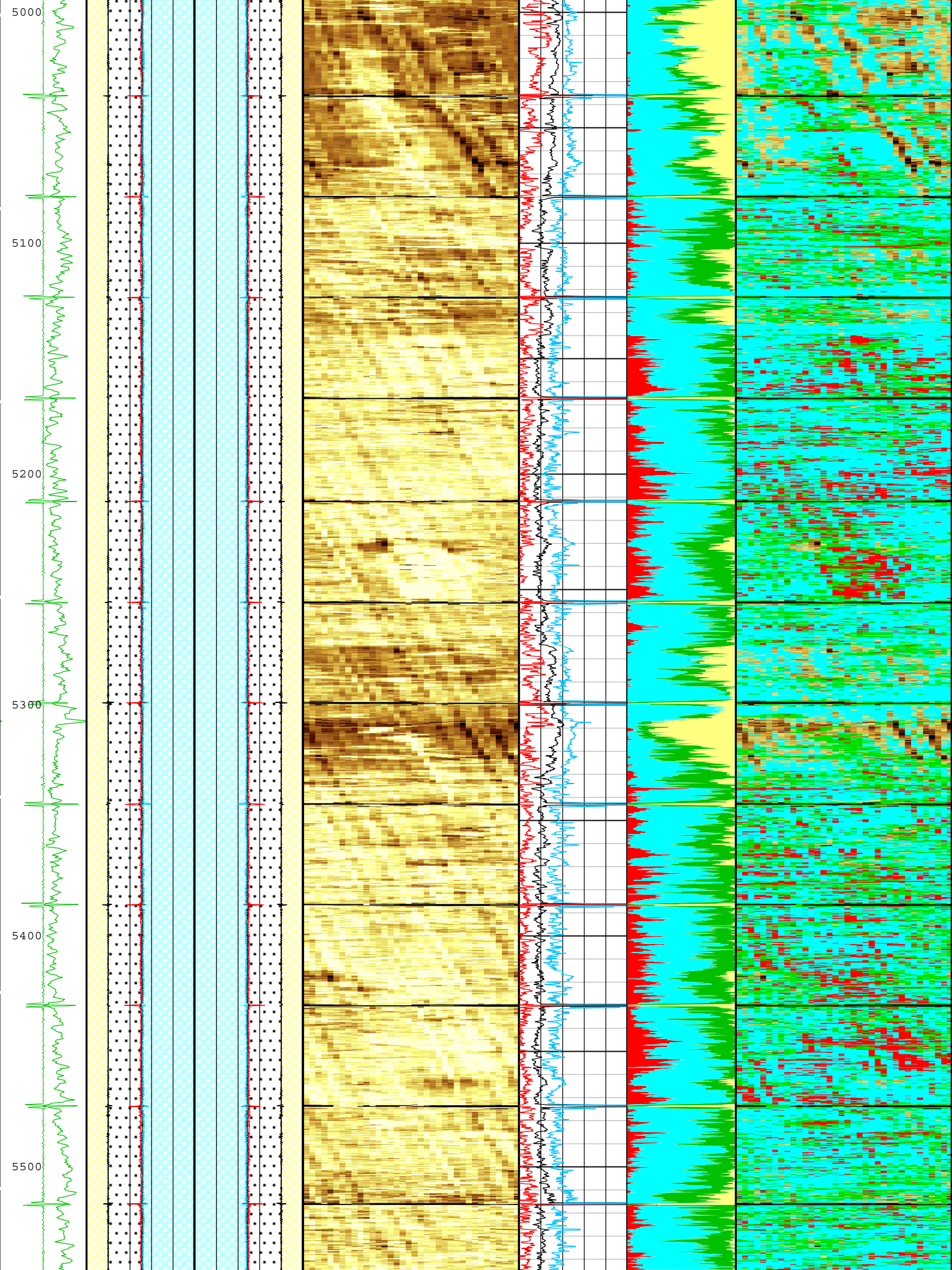




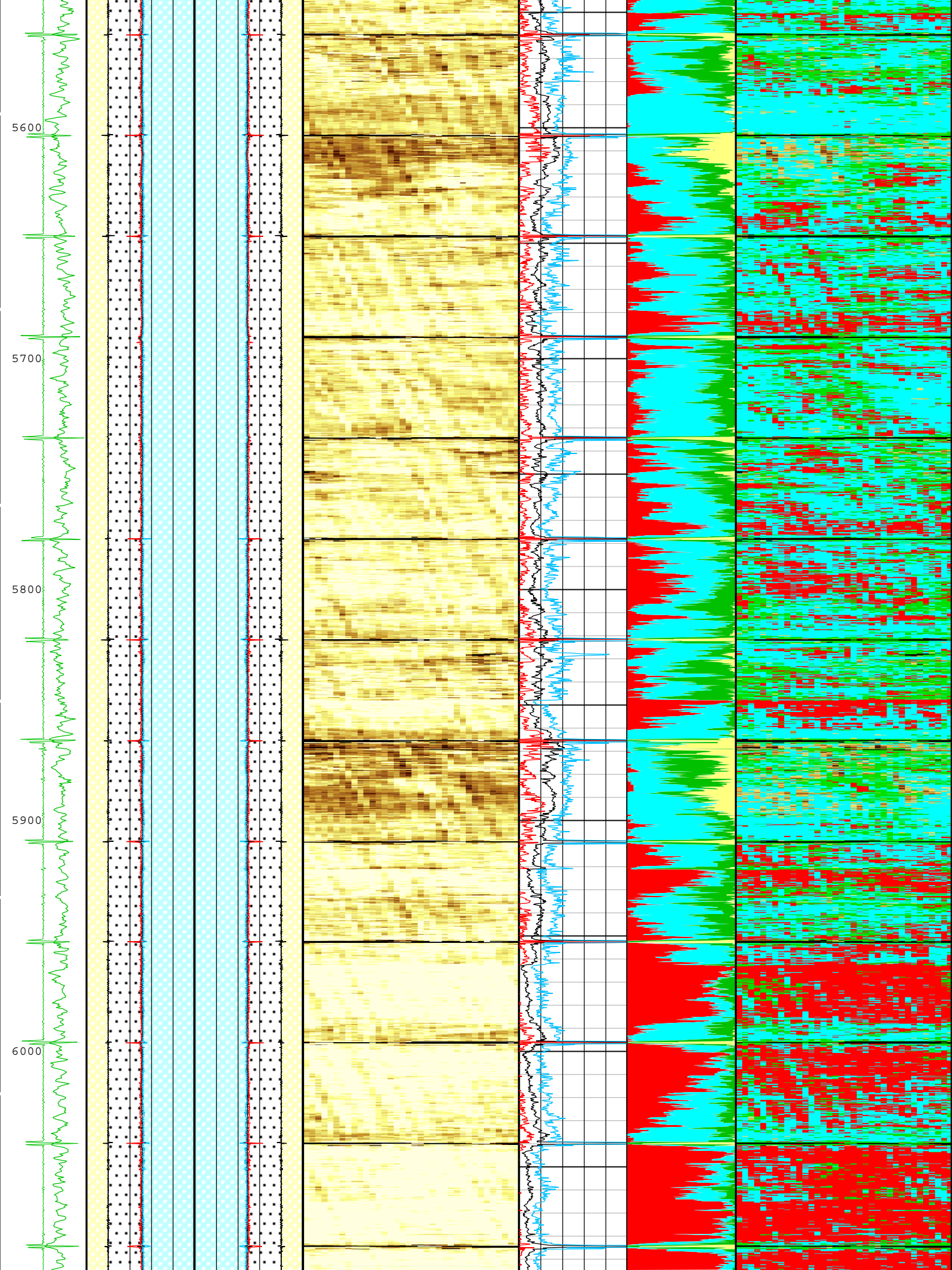


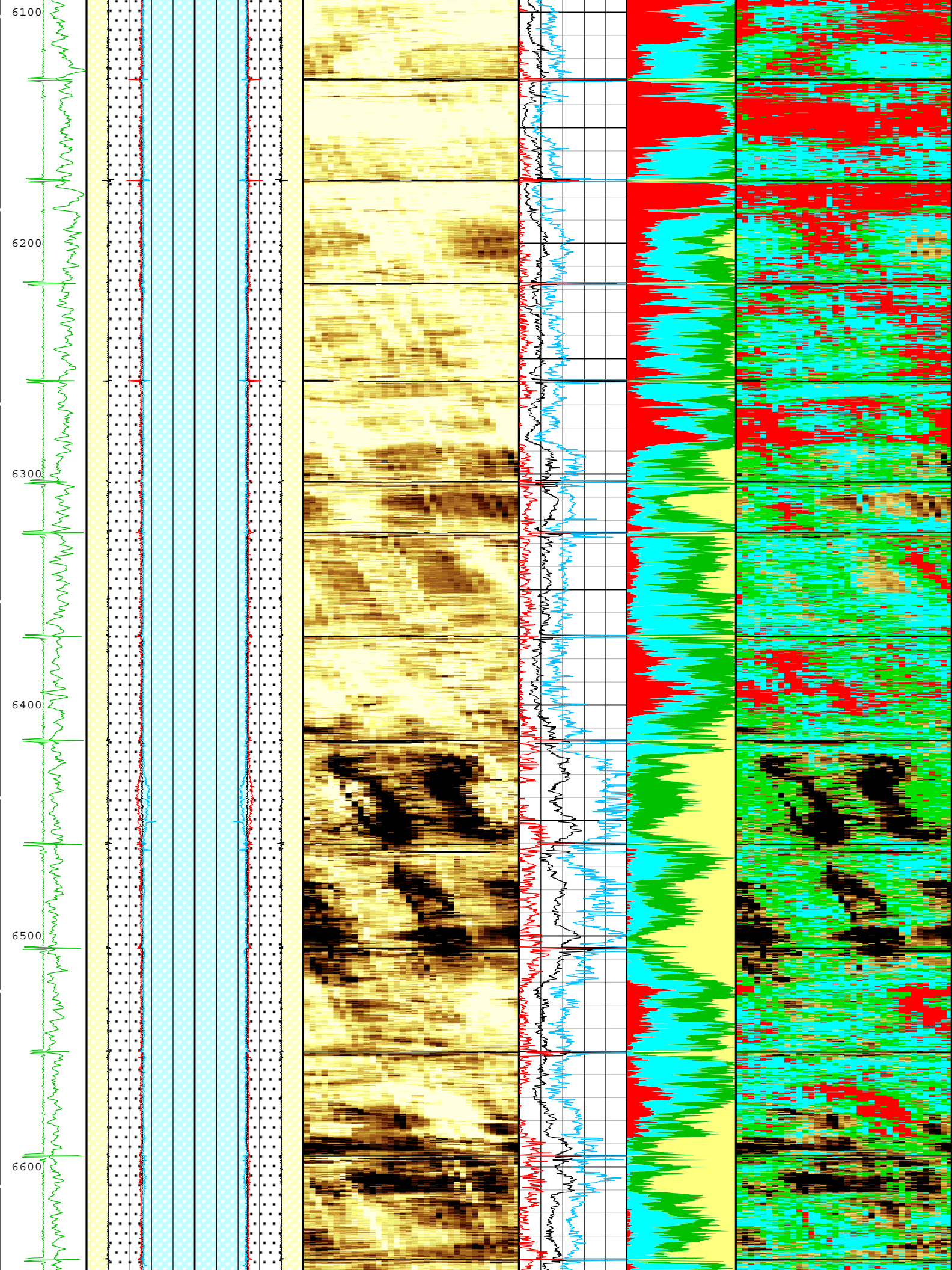




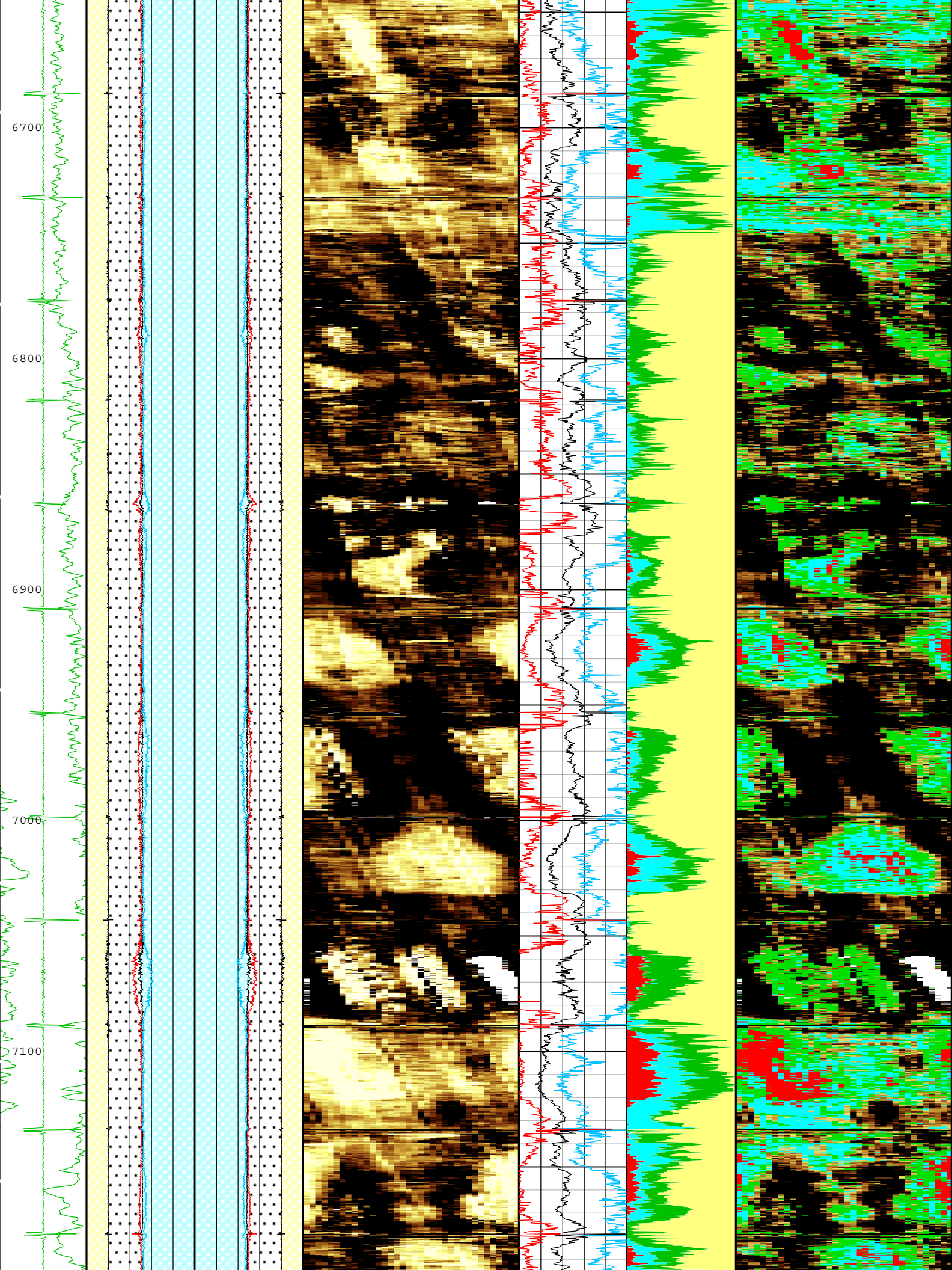












TIME_1900 - Time Marked every 60.00 (s)					
Description: USI Cement	Format: USI Cement	Index Scale: 2 in per 100 ft	Index Unit: ft	Index Type: Measured Depth	Creation Date: 27-Jul-2015 20:13:57



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
SDTVR	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	7276	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	13.25	0	1204
BS	8.5	1204	7283
ZMUD	1.59	0	200
ZMUD	1.6	200	450
ZMUD	1.61	450	700
ZMUD	1.62	700	950
ZMUD	1.63	950	1200
ZMUD	1.64	1200	1450
ZMUD	1.65	1450	1700
ZMUD	1.66	1700	1950
ZMUD	1.67	1950	2200
ZMUD	1.68	2200	3000
ZMUD	1.69	3000	4000
ZMUD	1.7	4000	7283

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	7245	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 )
EMXV	60	23-Jul-2015 10:16:42	23-Jul-2015 11:51:10	7283.12	1603.39
EMXV	50	23-Jul-2015 11:51:10	23-Jul-2015 11:52:34	1603.39	1483.25
EMXV	40	23-Jul-2015 11:52:34	23-Jul-2015 12:16:17	1483.25	8.73
WINE	73.83	23-Jul-2015 10:16:42	23-Jul-2015 11:33:11	7283.12	3127.4
WINE	87.99	23-Jul-2015 11:33:11	23-Jul-2015 11:33:24	3127.4	3109.17
WINE	75.99	23-Jul-2015 11:33:24	23-Jul-2015 12:16:17	3109.17	8.73

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	7283.19	6433.42

**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	200	1.59	1.59
200	450	1.6	1.6
450	700	1.61	1.61
700	950	1.62	1.62
950	1200	1.63	1.63
1200	1450	1.64	1.64

1450	1700	1.65	1.65
1700	1950	1.66	1.66
1950	2200	1.67	1.67
2200	3000	1.68	1.68
3000	4000	1.69	1.69
4000	7300	1.7	1.7
7300	10000	1.71	1.71
10000		1.71	1.71

ONE

USI Cement - Repeat

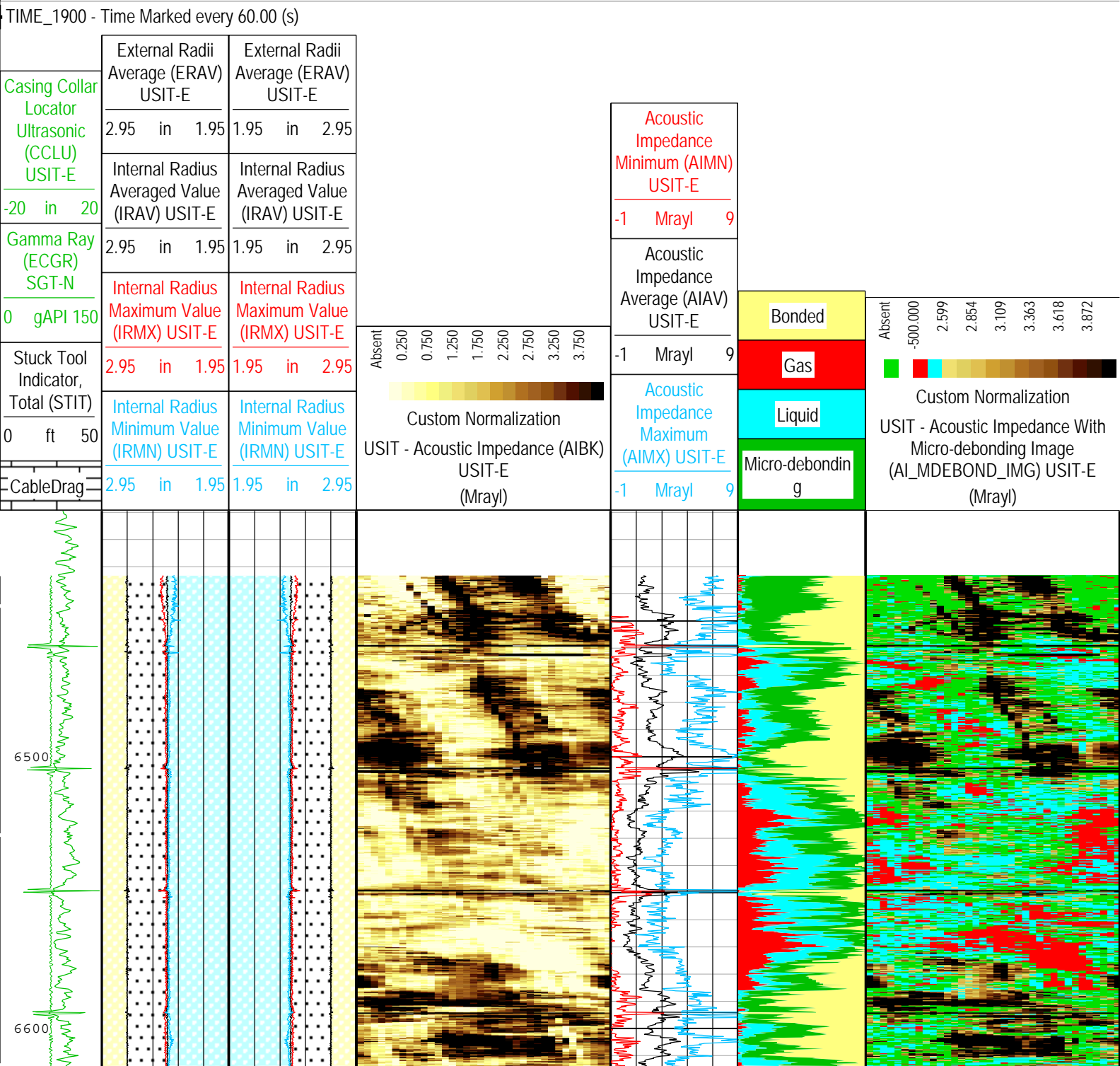
Log

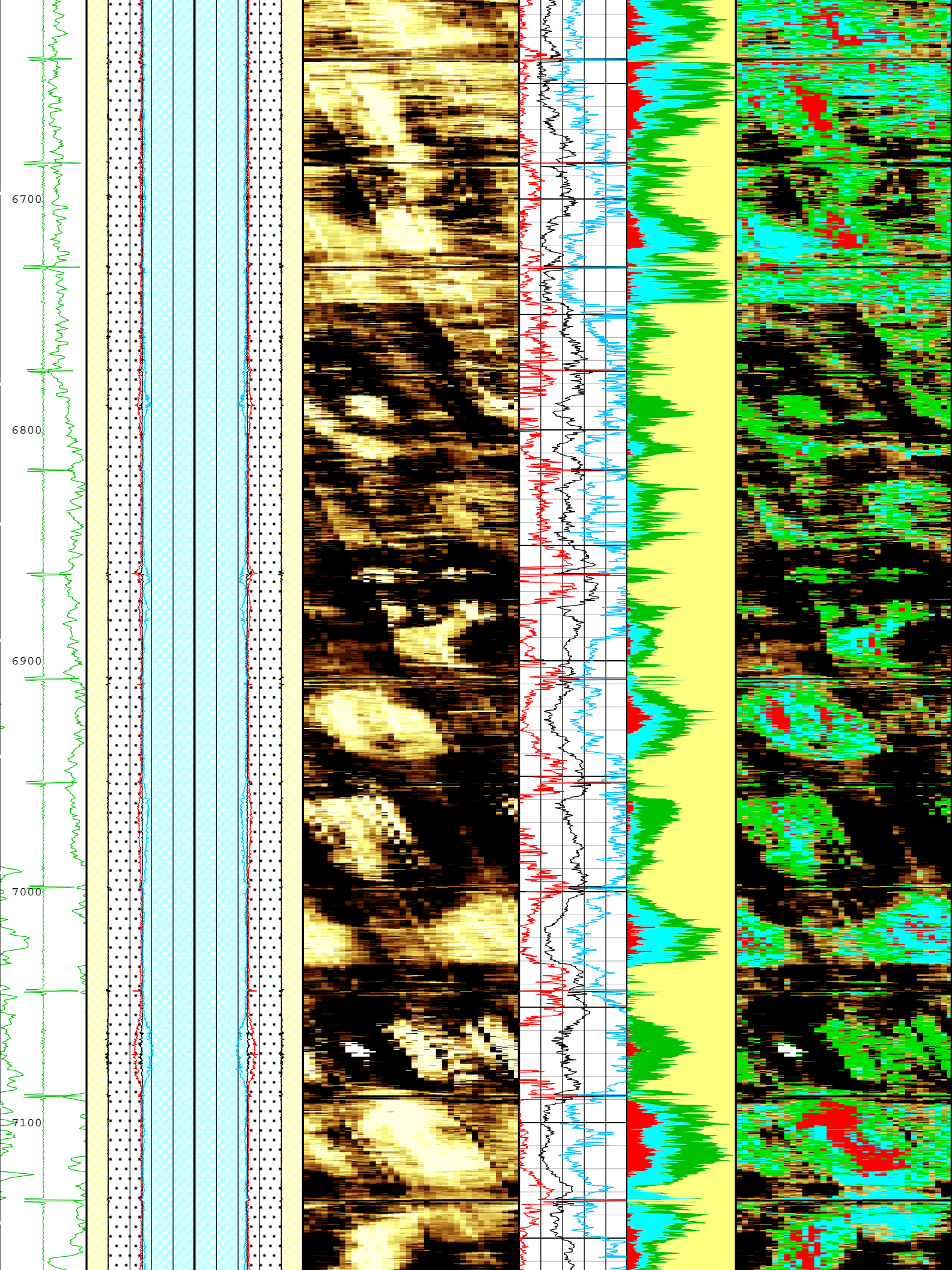
Company:Anadarko

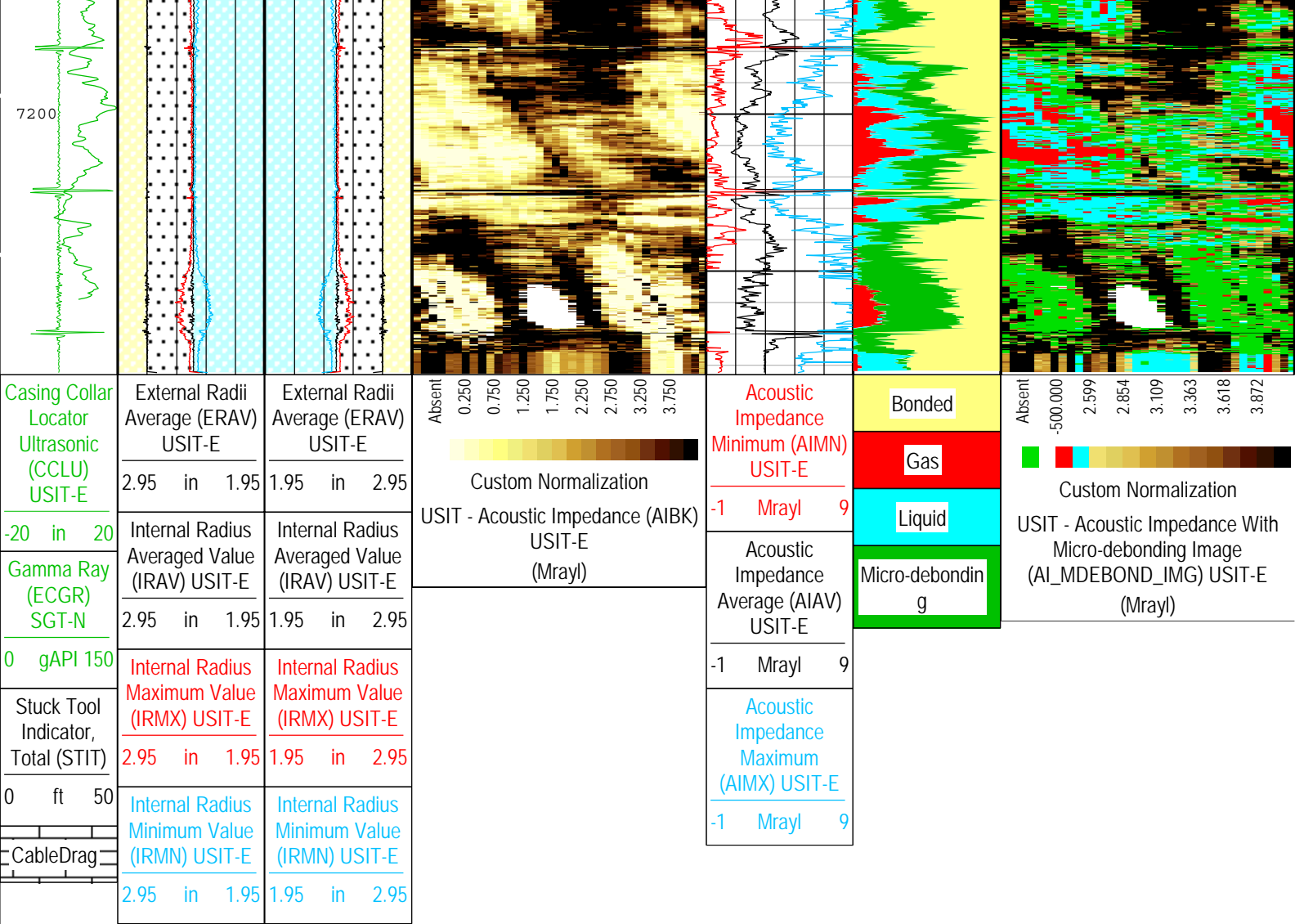
Well:Cheese 16N-28HZ

ONE: Log[2]:Up:S019

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 20:14:04







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 20:14:04

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	8.5	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	12610	ft
CDEN	Cement Density	SGT-N	12	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	7276	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	1.7	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	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	7245	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 )
EMXV	60	23-Jul-2015 09:53:20	23-Jul-2015 09:58:10	7283.19	7083.75
EMXV	50	23-Jul-2015 09:58:10	23-Jul-2015 09:58:20	7083.75	7075.58
EMXV	60	23-Jul-2015 09:58:20	23-Jul-2015 10:08:20	7075.58	6433.42
WINE	73.83	23-Jul-2015 09:53:20	23-Jul-2015 09:54:18	7283.19	7278.29
WINE	97.59	23-Jul-2015 09:54:18	23-Jul-2015 09:56:56	7278.29	7146.61
WINE	80.79	23-Jul-2015 09:56:56	23-Jul-2015 09:56:59	7146.61	7143.87
WINE	83.79	23-Jul-2015 09:56:59	23-Jul-2015 10:08:20	7143.87	6433.42
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	7283.12	8.73

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
---

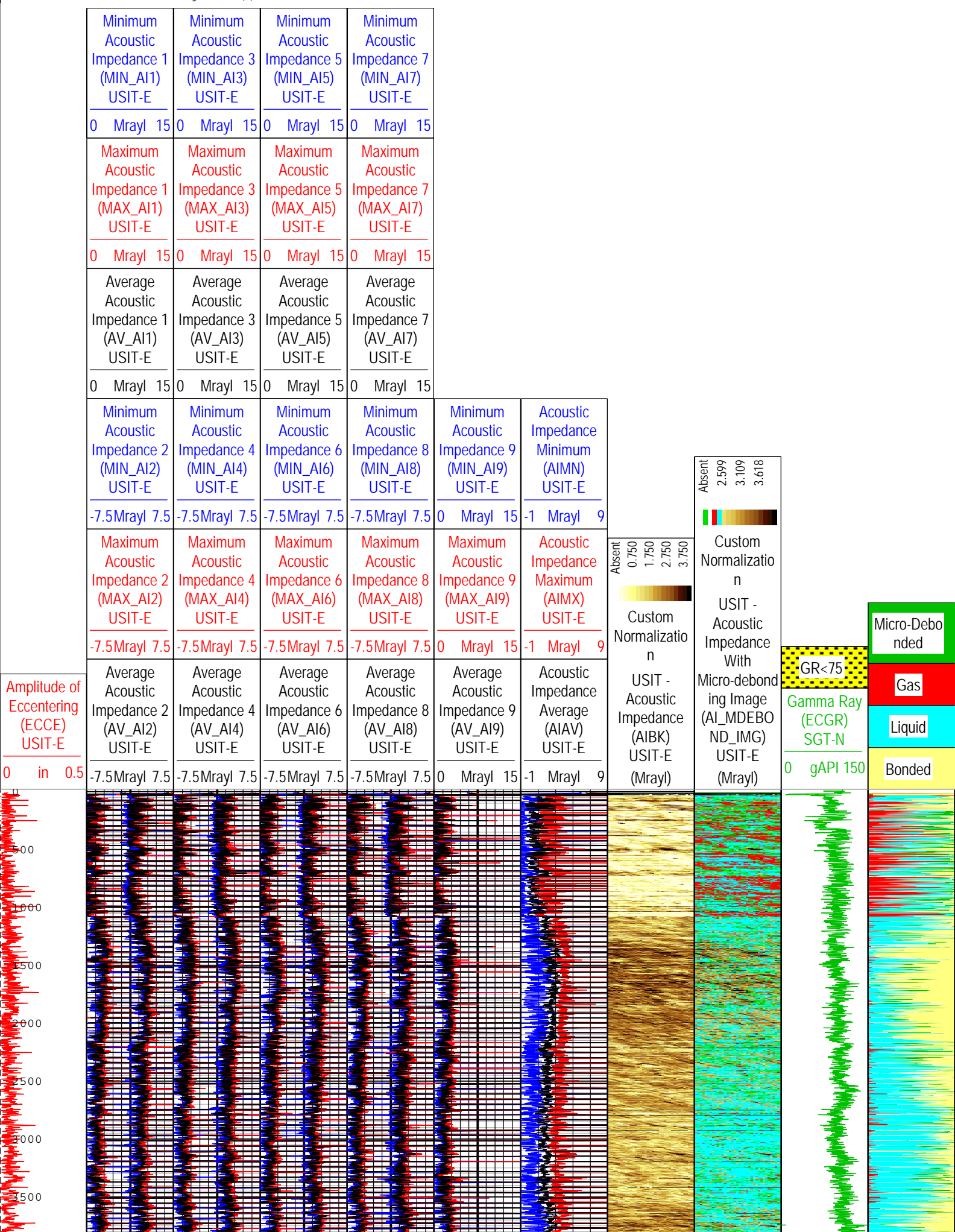
Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
0	200	1.59	1.59
200	450	1.6	1.6
450	700	1.61	1.61
700	950	1.62	1.62
950	1200	1.63	1.63
1200	1450	1.64	1.64
1450	1700	1.65	1.65
1700	1950	1.66	1.66
1950	2200	1.67	1.67
2200	3000	1.68	1.68
3000	4000	1.69	1.69
4000	7300	1.7	1.7
7300	10000	1.71	1.71
10000		1.71	1.71

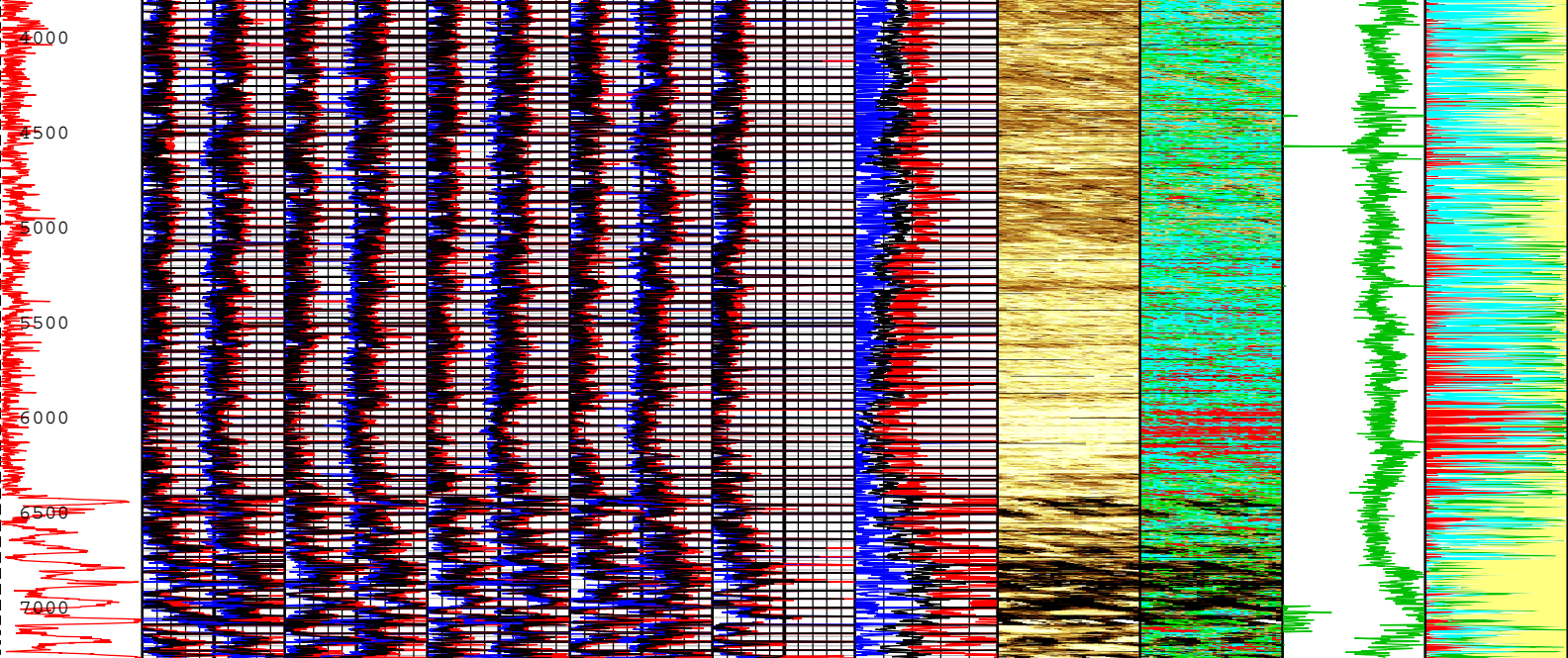
ONE

USI Goodwin Compressed - Main
-------------------------------

Log	Company:Anadarko	Well:Cheese 16N-28HZ
		ONE: Log[3]:Up:S019

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





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	Absent 0.750 1.750 2.750 3.750 Custom Normalization	Absent 2.599 3.109 3.618 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)	Gamma Ray (ECGR) SGT-N	Gas
	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			gAPI 150	Liquid
	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	-1 Mrayl 9				Bonded
	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)

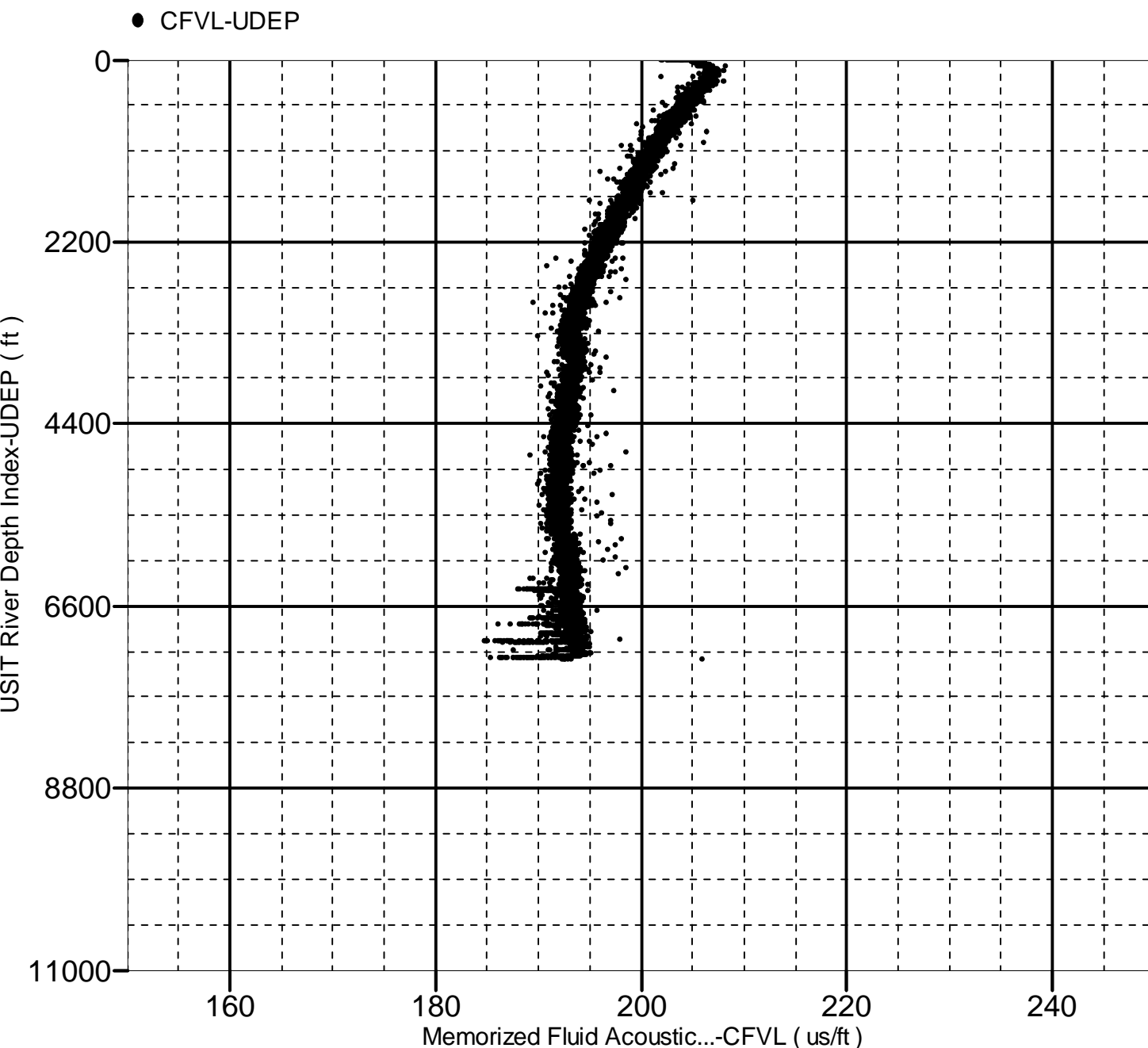
Description: USI Goodwin    Format: USI Goodwin    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 27-Jul-2015 20:14:08

Company: Anadarko Well: Cheese 16N-28HZ

# Fluid Acoustic Slowness vs Depth

## 2D Cross Plot

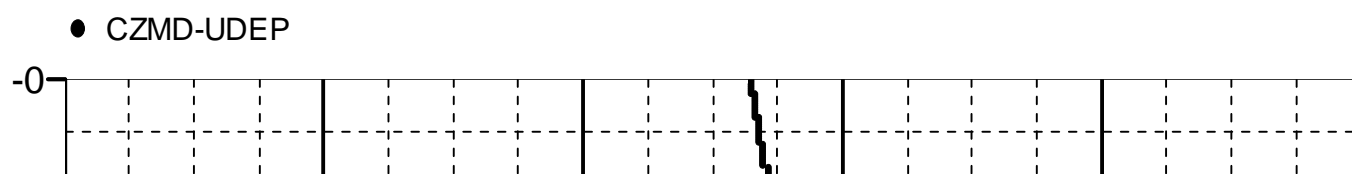
Index Range: From 7282.75 to 8.50 ft

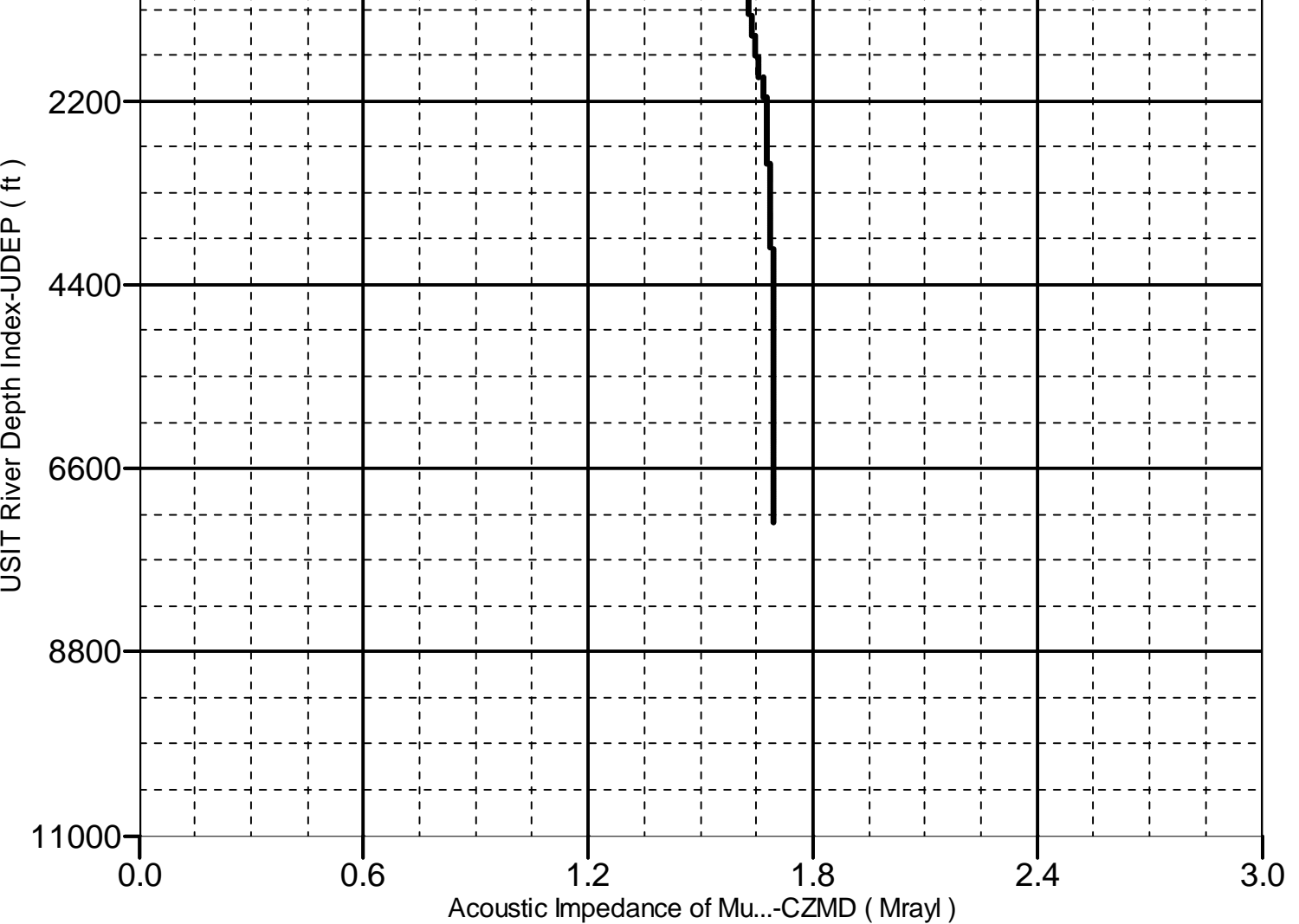


# Acoustic Impedance of Mud vs Depth

## 2D Cross Plot

Index Range: From 7282.75 to 8.50 ft





Label	OSDD_Code	ToolPath	SamplingRate	AcqMode	RunPath
CZMD-UDEP	CZMD	USIT-E[1]:USRS[1]:USI-SENSOR[1]	3"		
CZMD-UDEP	UDEP	USIT-E[1]:USRS[1]:USI-SENSOR[1]	3"		

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	Schlumberger
Well:	Cheese 16N-28HZ	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Ultrasonic Imager		
Cement Evaluation (Short)		
Gamma Ray - CCL Log		