

Company: Anadarko Petroleum Company

Well: Bane 28N3-9HZ

Field: Wattenberg

County: Weld State: Colorado

Ultrasonic Imager  
Cement Evaluation  
Gamma Ray - CCL Log

County: Weld  
Field: Wattenberg  
Location: SWSE Sec 9 T1N R65W  
Well: Bane 28N3-9HZ  
Company: Anadarko Petroleum Company

Location:		SWSE Sec 9 T1N R65W SHL: 620' FSL & 1590' FEL Lat/Long: 40.060443/-104.665272	Elev.: K.B. 4991.00 ft G.L. 4966.00 ft D.F. 4991.00 ft
Permanent Datum:	Ground Level		Elev.: 4966.00 f
Log Measured From:	Kelly Bushing		25.00 ft above Perm.Datum
Drilling Measured From:	Kelly Bushing		
API Serial No. 05-123-41308	Section: 9	Township: 1N	Range: 65W

Logging Date	09-Sep-2015		
Run Number	ONE		
Depth Driller	11720.00 ft		
Schlumberger Depth	11720.00 ft		
Bottom Log Interval	7350.00 ft		
Top Log Interval			
Casing Fluid Type	Water		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.50 in		
From	0.00 ft		
To	11720.00 ft		
Casing/Tubing Size	5.5 in		
Weight	17 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	11710.00 ft		
Max Recorded Temperatures			
Logger on Bottom	Time	09-Sep-2015 13:41:00	
Unit Number	Location:	2135	Fort Morgan, CO
Recorded By	Evan Meadows		
Witnessed By	Steve Vigil		

Disclaimer

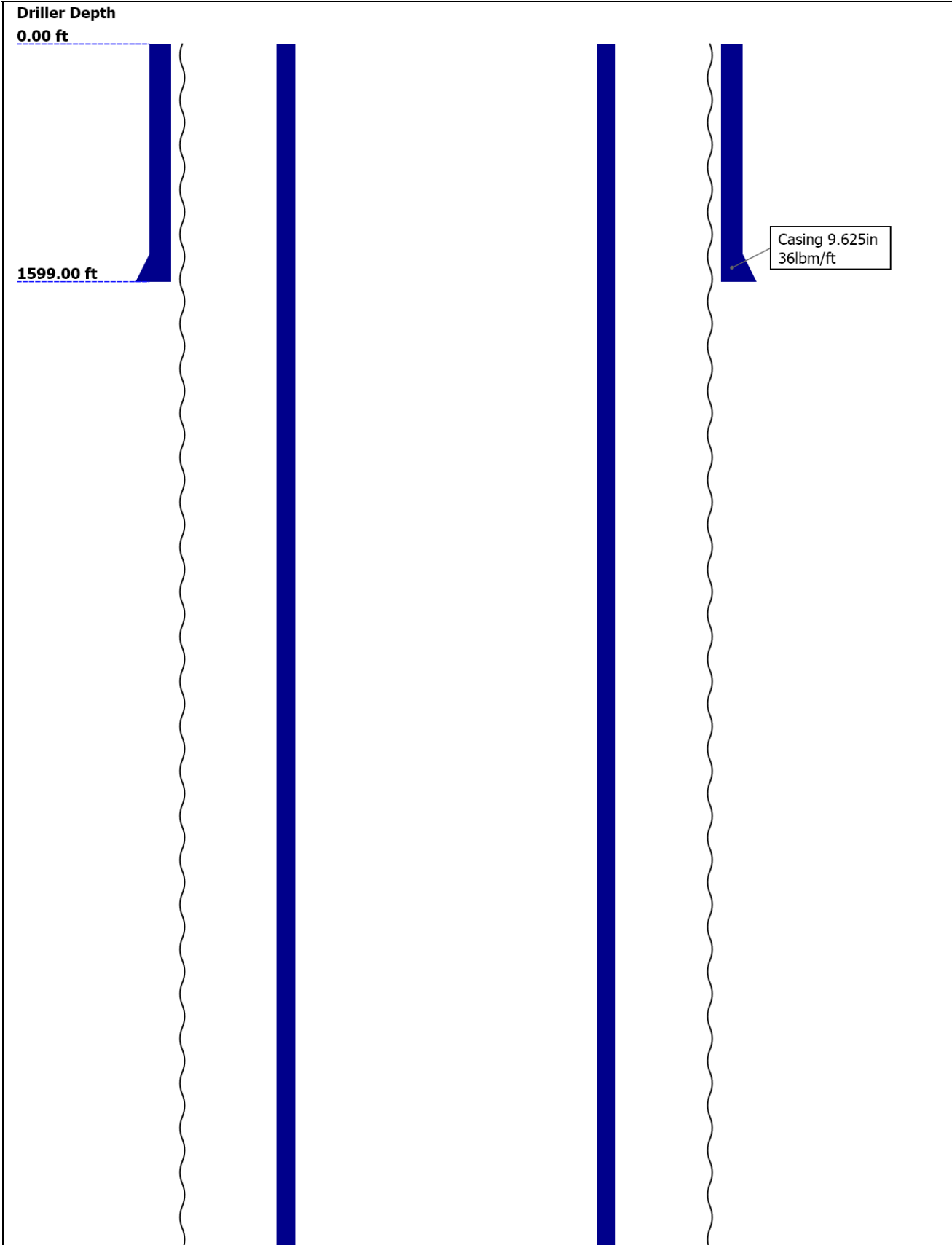
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (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.

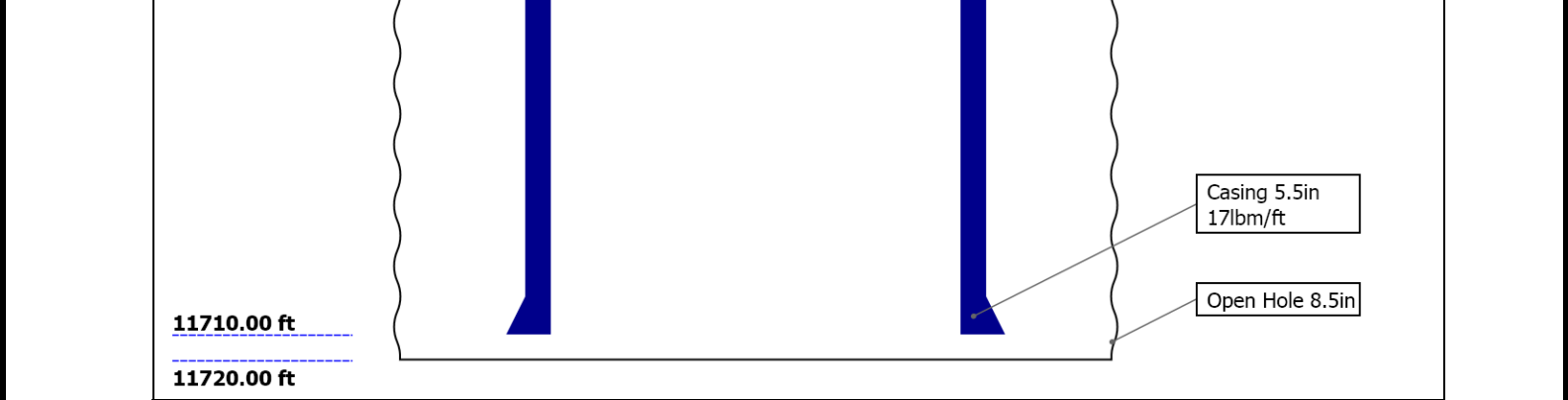
Contents

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

- 12. XYZ ( USI Fluid Acoustic Slowness vs Depth 3.0 in )
- 13. XYZ ( USI Acoustic Impedance of Mud vs Depth 3.0 in )
- 14. Calibration Report
- 15. Tail

Well Sketch





## Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	8.5					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	11720					
Bottom Logger ( ft )	11720					
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 )	1599	11710				
Bottom Logger ( ft )	1599	11710				

## Operational Run Summary

Parameter ( unit )	ONE					
Date Log Started	09-Sep-2015					
Time Log Started	12:21:29					
Date Log Finished	09-Sep-2015					
Time Log Finished	15:46:56					
Top Log Interval ( ft )						
Bottom Log Interval ( ft )						
Total Depth ( ft )						
Max Hole Deviation ( deg )						
Azimuth of Max Deviation ( deg )						
Bit Size ( in )	8.500					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan, CO					
Recorded By	Evan Meadows					

Witnessed By	Steve Vigil					
Service Order Number	D62I-00047					

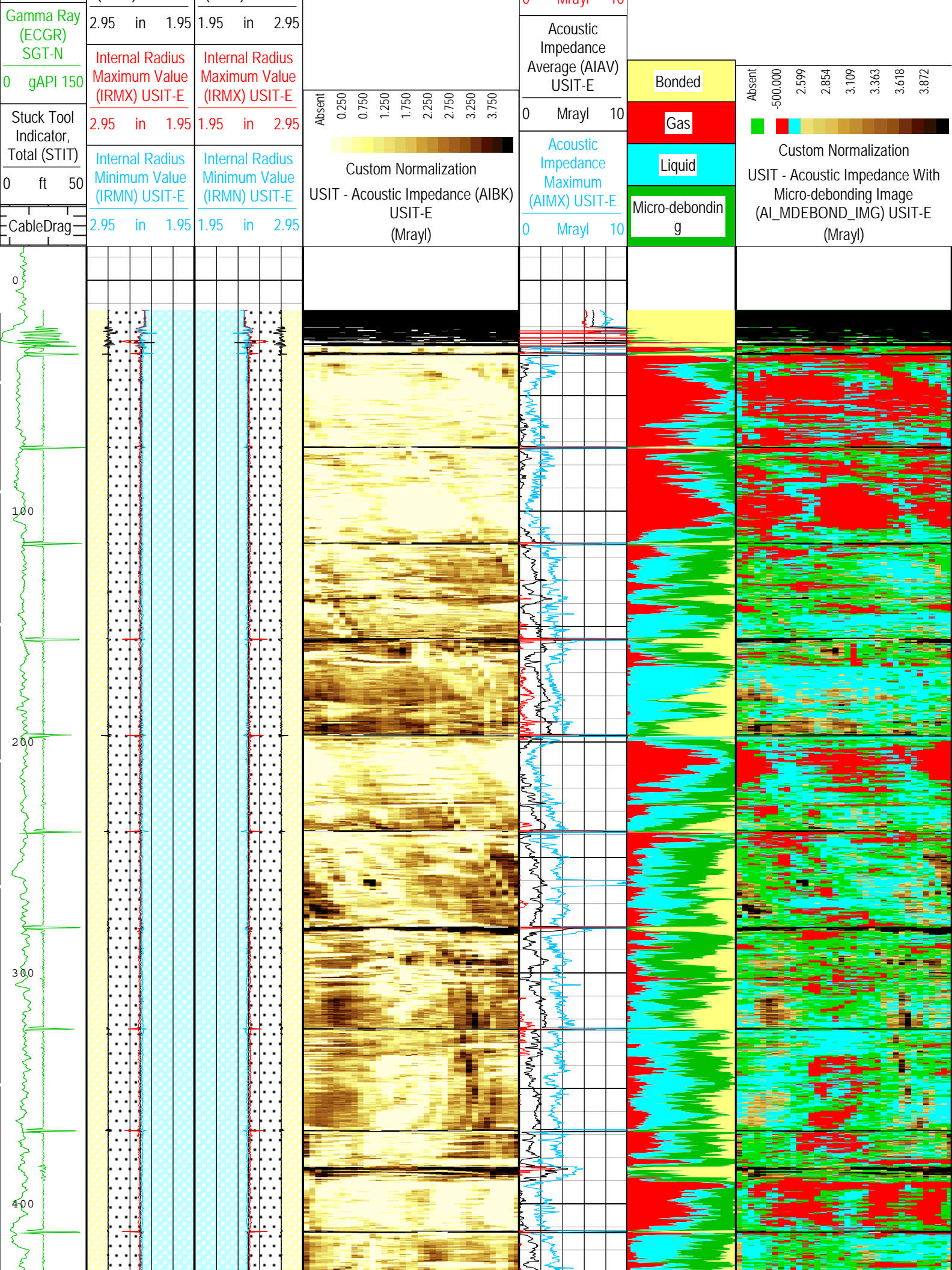
## Remarks and Equipment Summary

ONE: Toolstring			ONE: Remarks		
<div> <div> <div>Equip name</div> <div>length</div> </div> <div> <div>MP name</div> <div>Offset</div> </div> </div> <div> <div>LEH-QT</div> <div>34.77</div> <div>LEH-QT</div> </div> <div> <div>DTC-H</div> <div>31.85</div> <div>ECH-KC</div> <div>DTC-H</div> </div> <div> <div>SGT-N</div> <div>28.85</div> <div>SGH-K</div> <div>SGC-TB</div> <div>SGD-TAA</div> </div> <div> <div>AH-184</div> <div>23.35</div> <div>[2]</div> </div> <div> <div>AH-184</div> <div>21.35</div> <div>[1]</div> </div> <div> <div>CME-AF</div> <div>19.35</div> </div> <div> <div>USIT-E</div> <div>15.56</div> <div>ECH-MFA</div> <div>USAC-A</div> <div>USIS-A</div> <div>USSC-B</div> <div>USRS-A</div> <div>USI-SEN</div> <div>SOR</div> </div> <div> <div>USI Se</div> <div>0.37</div> <div>nsor</div> <div>head</div> <div>ension</div> </div> <div> <div>Lengths are in ft</div> <div>Maximum Outer Diameter = 6.250 in</div> <div>Line: Sensor Location, Value: Gating Offset</div> <div>All measurements are relative to TOOL_ZERO</div> </div>		<div>1. THIS IS THE FIRST RUN IN THE WELL.</div> <div>2. TOOL RAN AS PER TOOL SKETCH.</div> <div>3. CSG: 5.5" 17# FLUID: 8.4 PPG BIOCID E WATER</div> <div>4. LEAD: 12 PPG CLASS G TAIL: 13.5 PPG CLASS G SPACER: 8.34 PPG FRESH WATER</div> <div>5. LOG STARTED AT 7350' DUE TO LOSS OF HEAD TENSION IN CURVE.</div> <div>6. REPEAT PASS RECORDED AT 0 PSI MAIN PASS RECORDED AT 2800 PSI</div>			

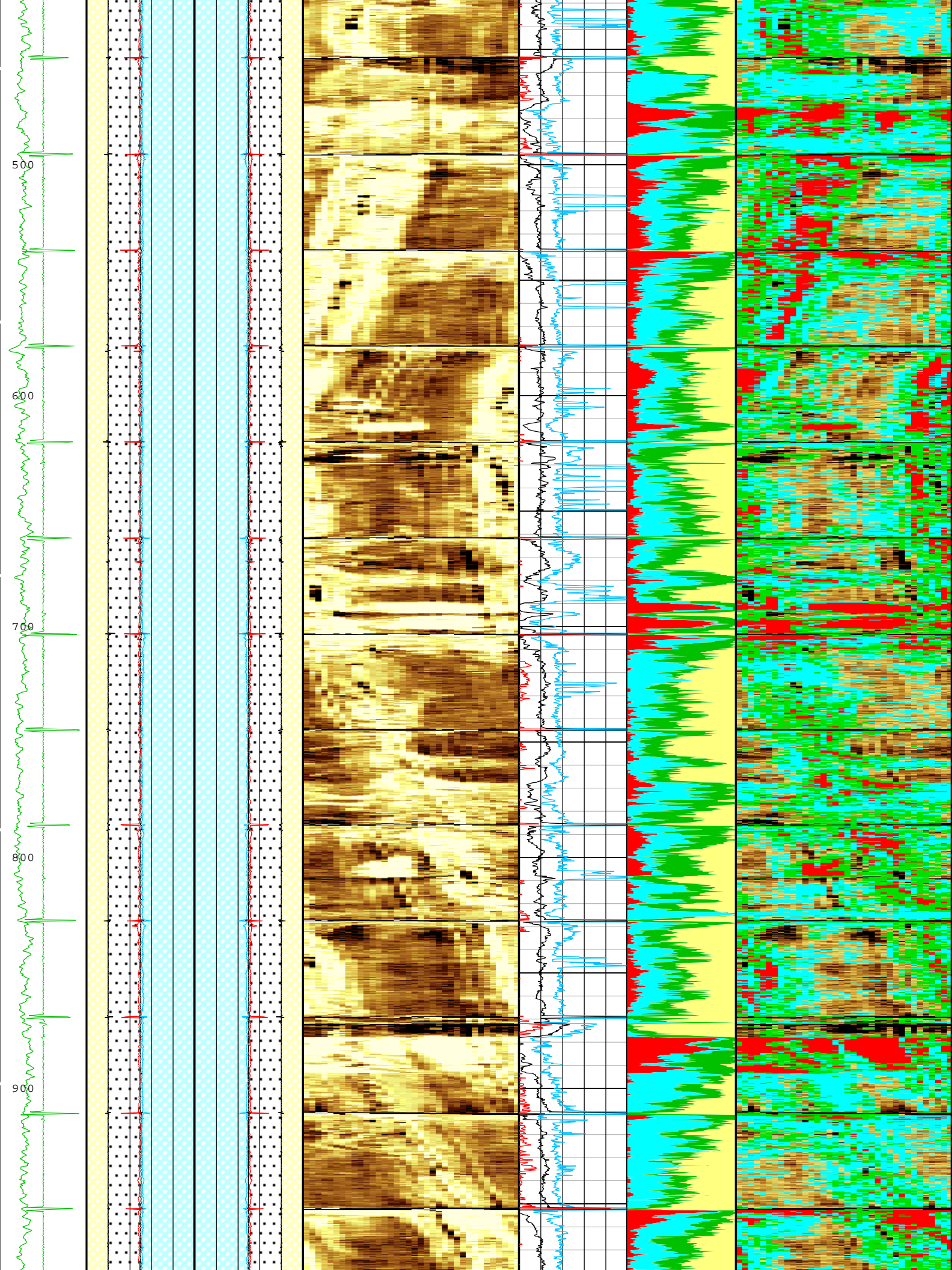
## Depth Summary

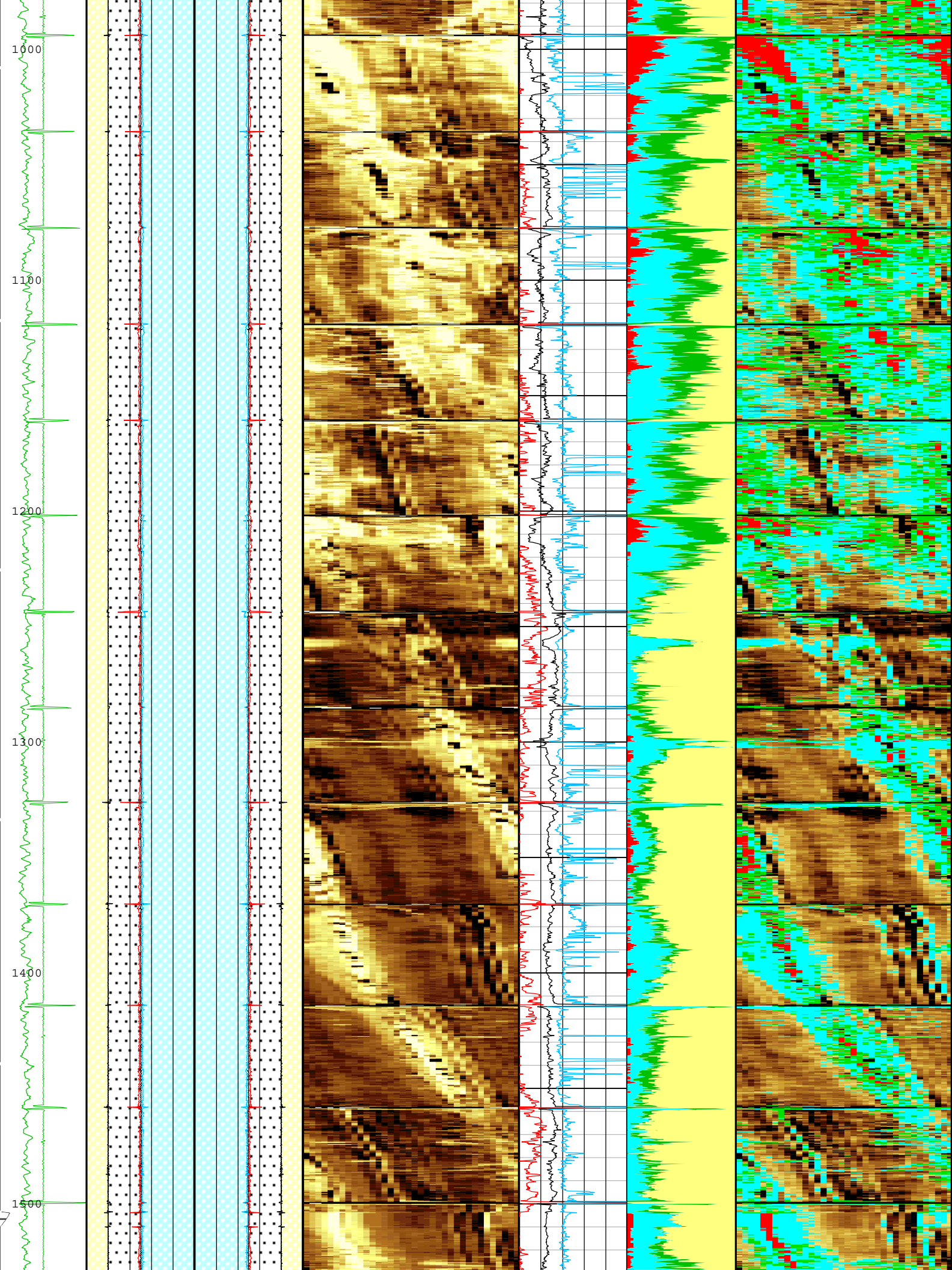
	ONE		
Depth Measuring Device			
Type	IDW-B		

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	Crane		
ONE:Depth Control Parameters		Depth Control Remarks	
Log Sequence	First Log In the Well	1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES WERE FOLLOWED DURING LOGGING OPERATIONS.	
Rig Up Length At Surface		2. IDW USED AS PRIMARY DEPTH CONTROL.	
Rig Up Length At Bottom		3. Z CHART USED AS SECONDARY DEPTH CONTROL.	
Rig Up Length Correction		4. LOG STARTED FROM /450' DUE TO LOSS OF HEAD TENSION IN CURVE.	
Stretch Correction			
Tool Zero Check At Surface			
USI Cement			
USIT - Fluid Properties Measurement			
Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[3]:Up	7347.75	13.34
Fluid Velocity = "Automatic". CFVL equals DFSL channel			
Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
Mud Impedance = "FreePipe Norm." Free Pipe normalization zone is : 10.74m(35.24ft) to 21.22m(69.62ft) MUD_N_FRP = 1.06 DFD = 1.01g/cm3(8.40lbm/gal) CZMD median computed in free pipe normalization interval = 1.60 MRayl			
Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
ONE			
USI Cement			
Log	Company:Anadarko Petroleum Company		Well:Bane 28N3-9HZ
			ONE: Log[3]:Up:S005
Description: USI Cement    Format: USI Cement    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 09-Sep-2015 15:55:48			
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 Averaged Value (IRAV) USIT-E		Internal Radius Averaged Value (IRAV) USIT-E
-20 in 20			Acoustic Impedance Minimum (AIMN) USIT-E
			0 Mrayl 10

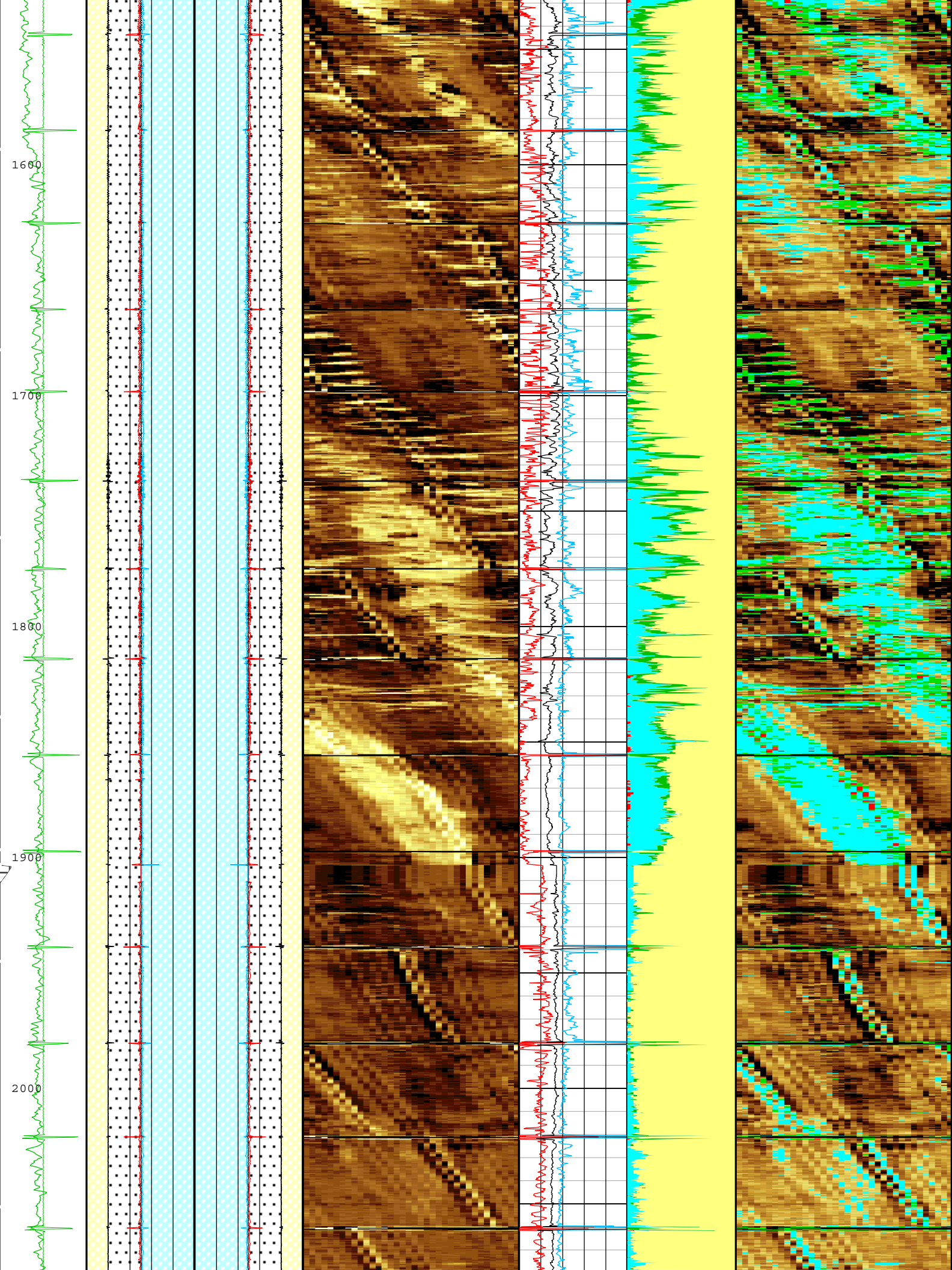


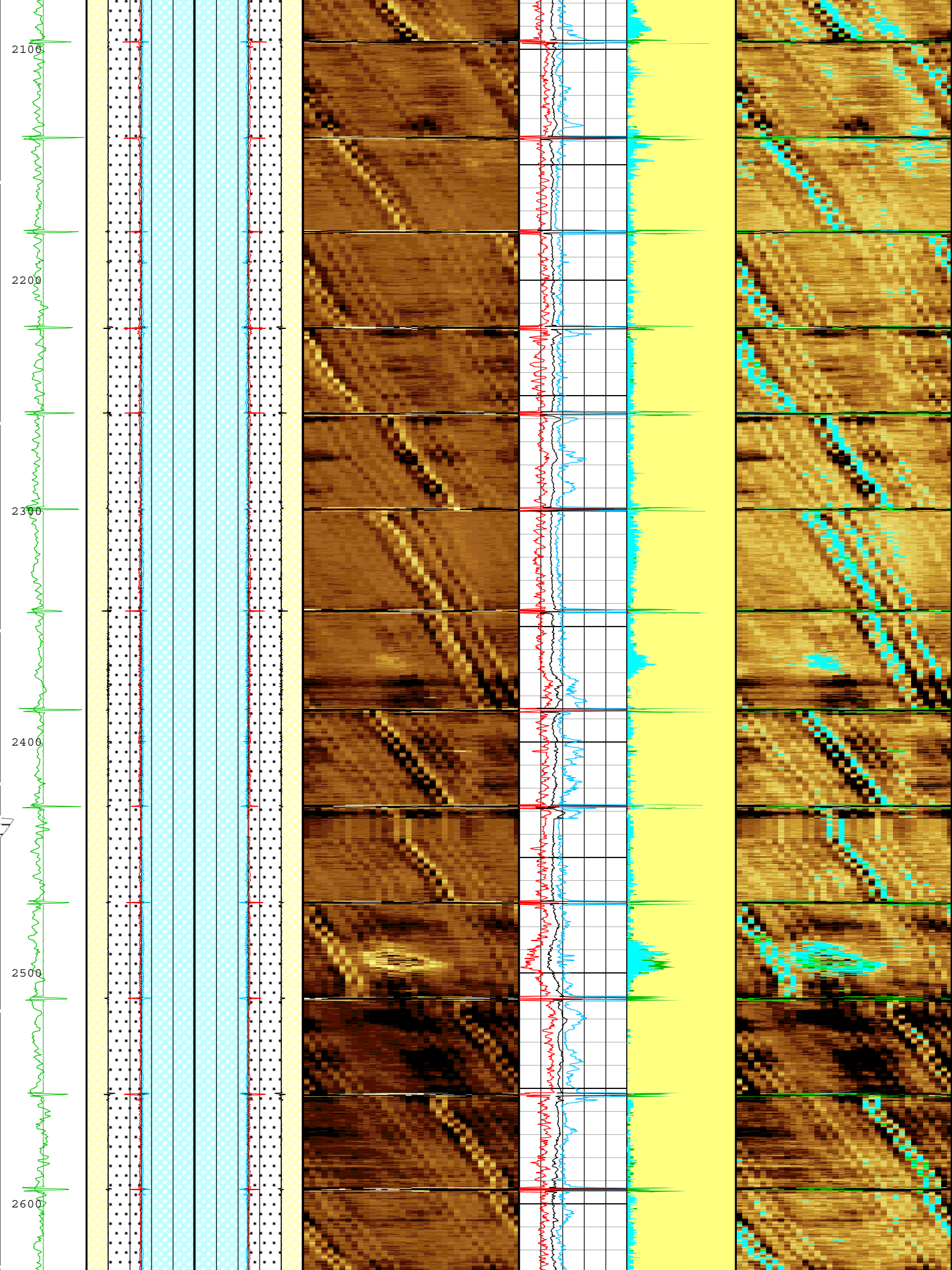


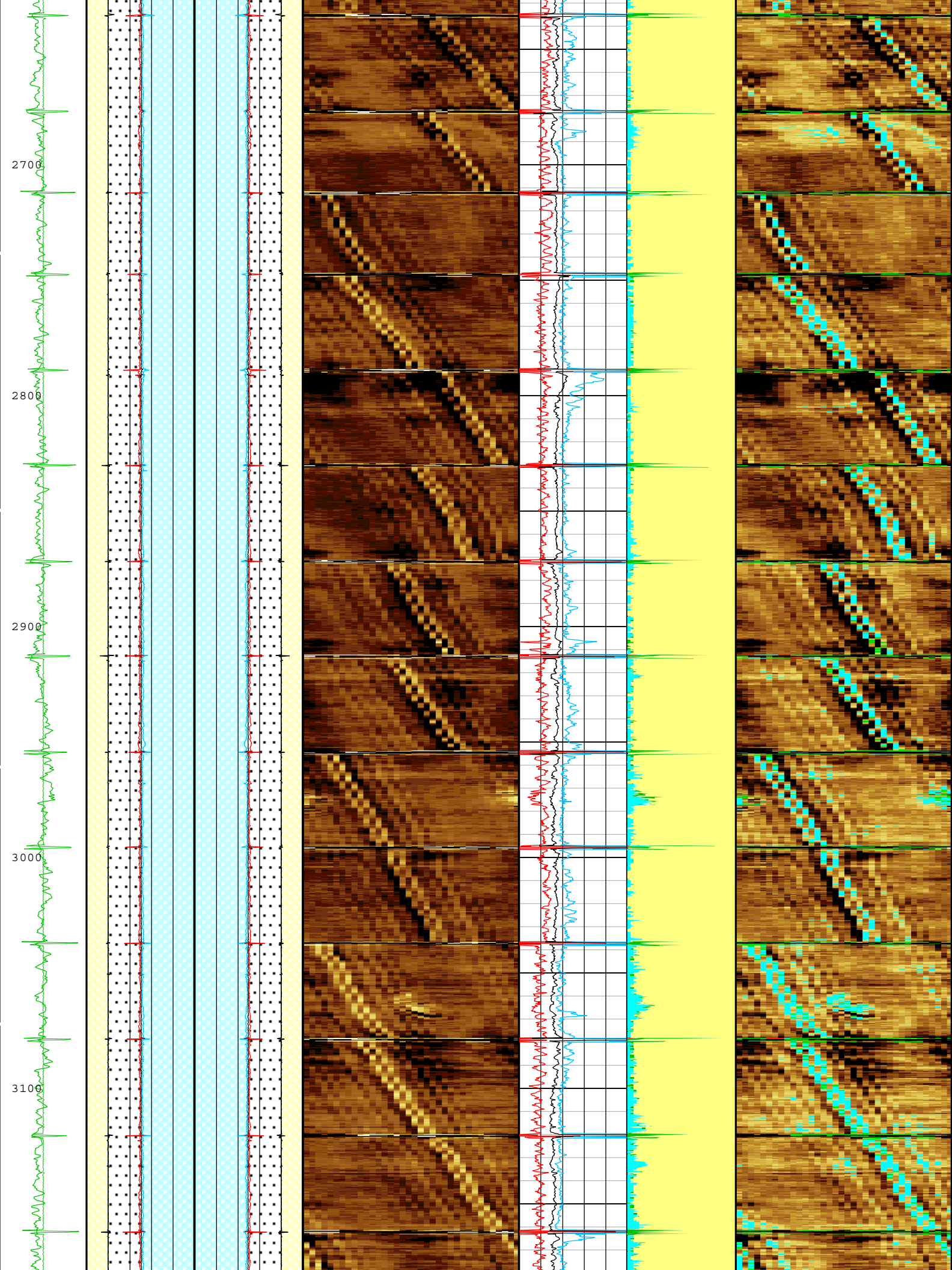




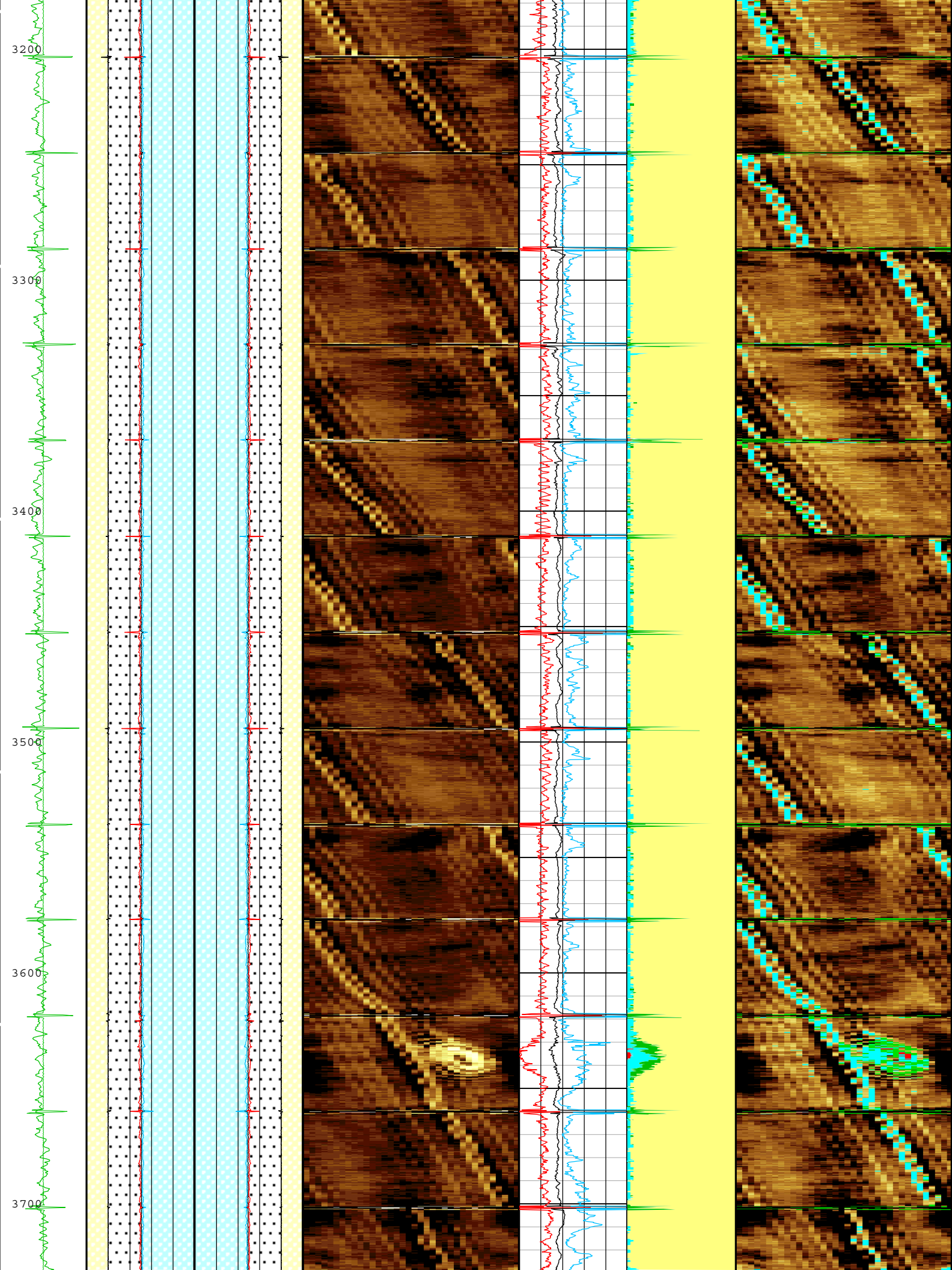


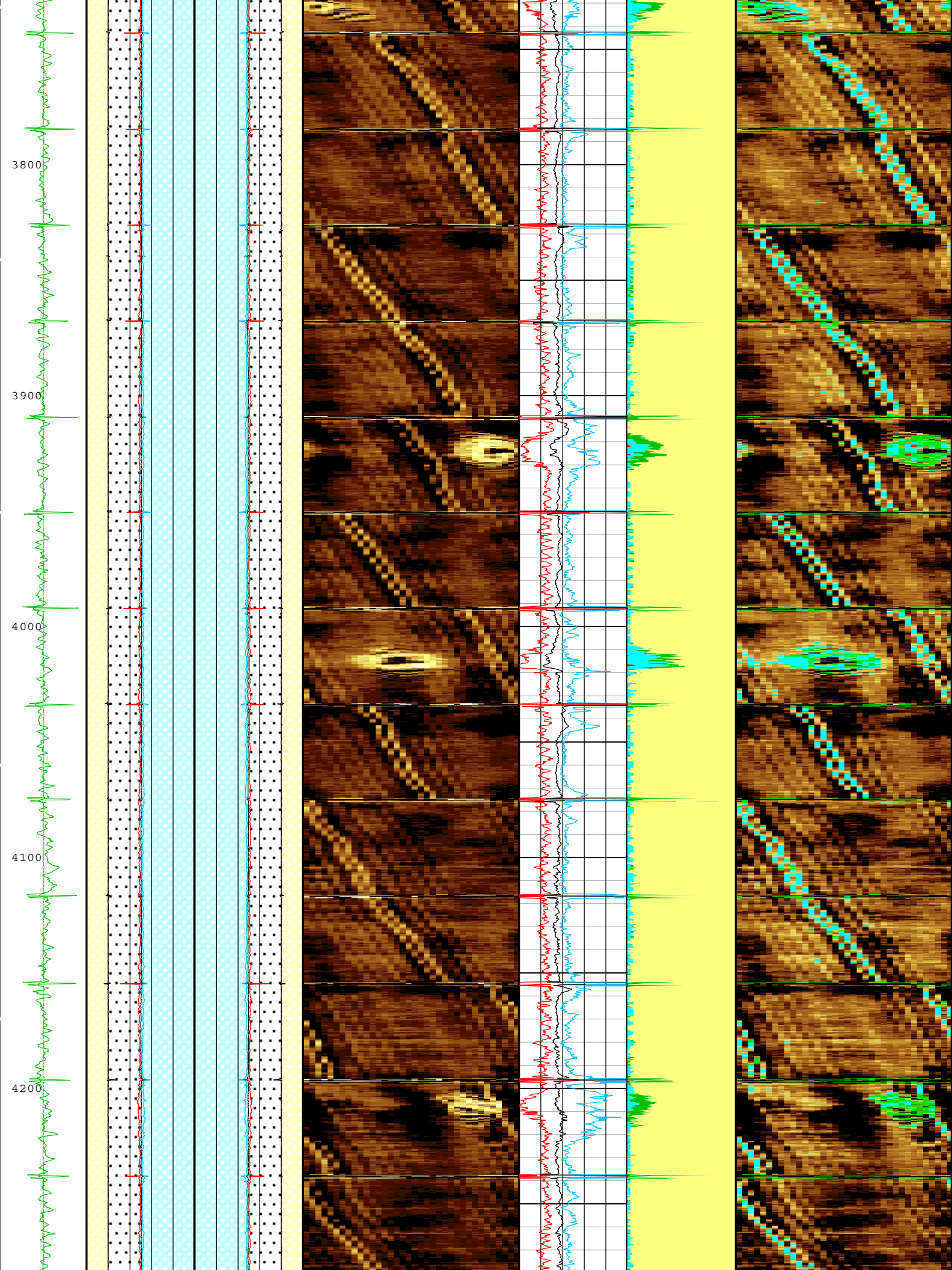




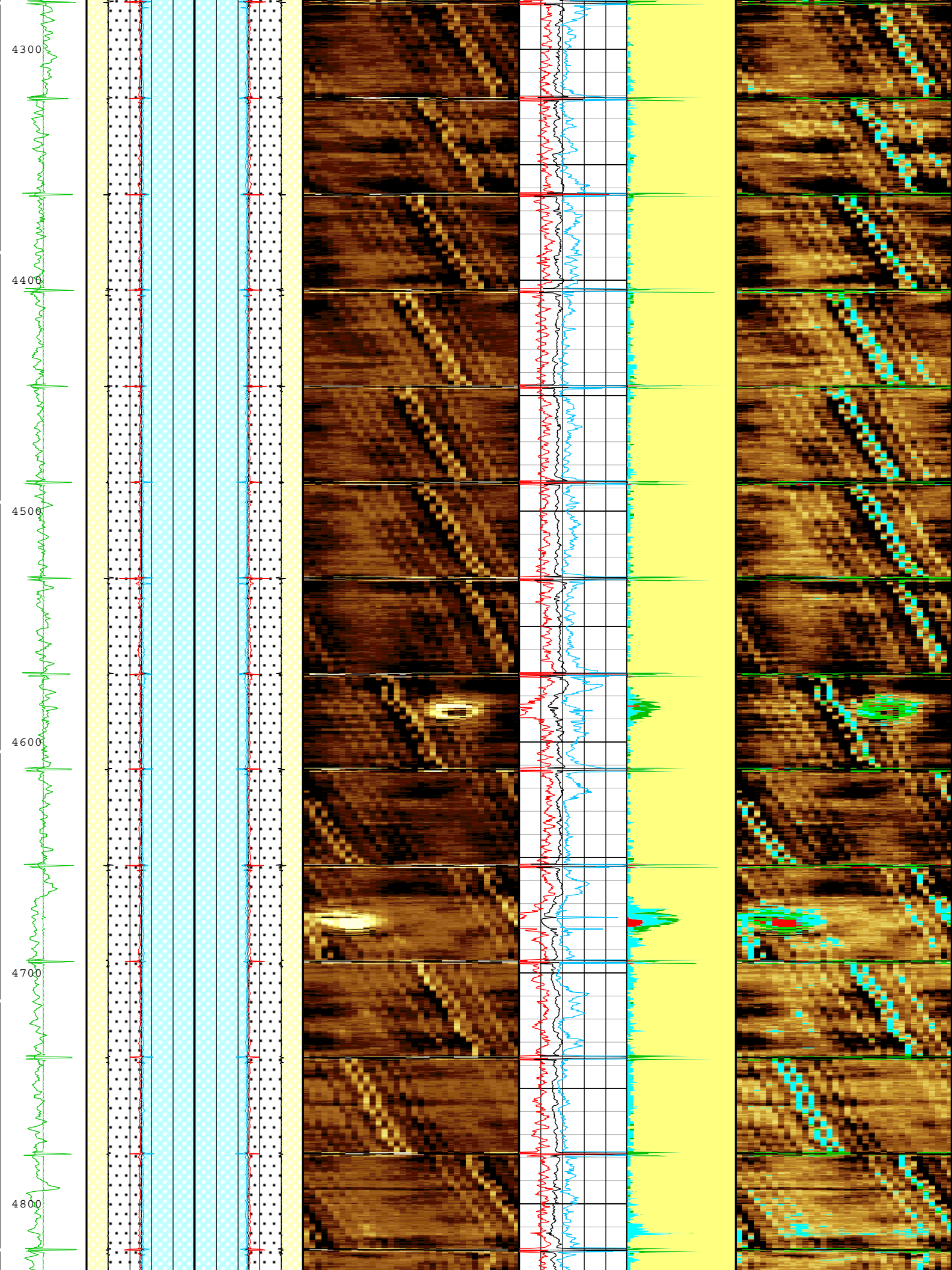


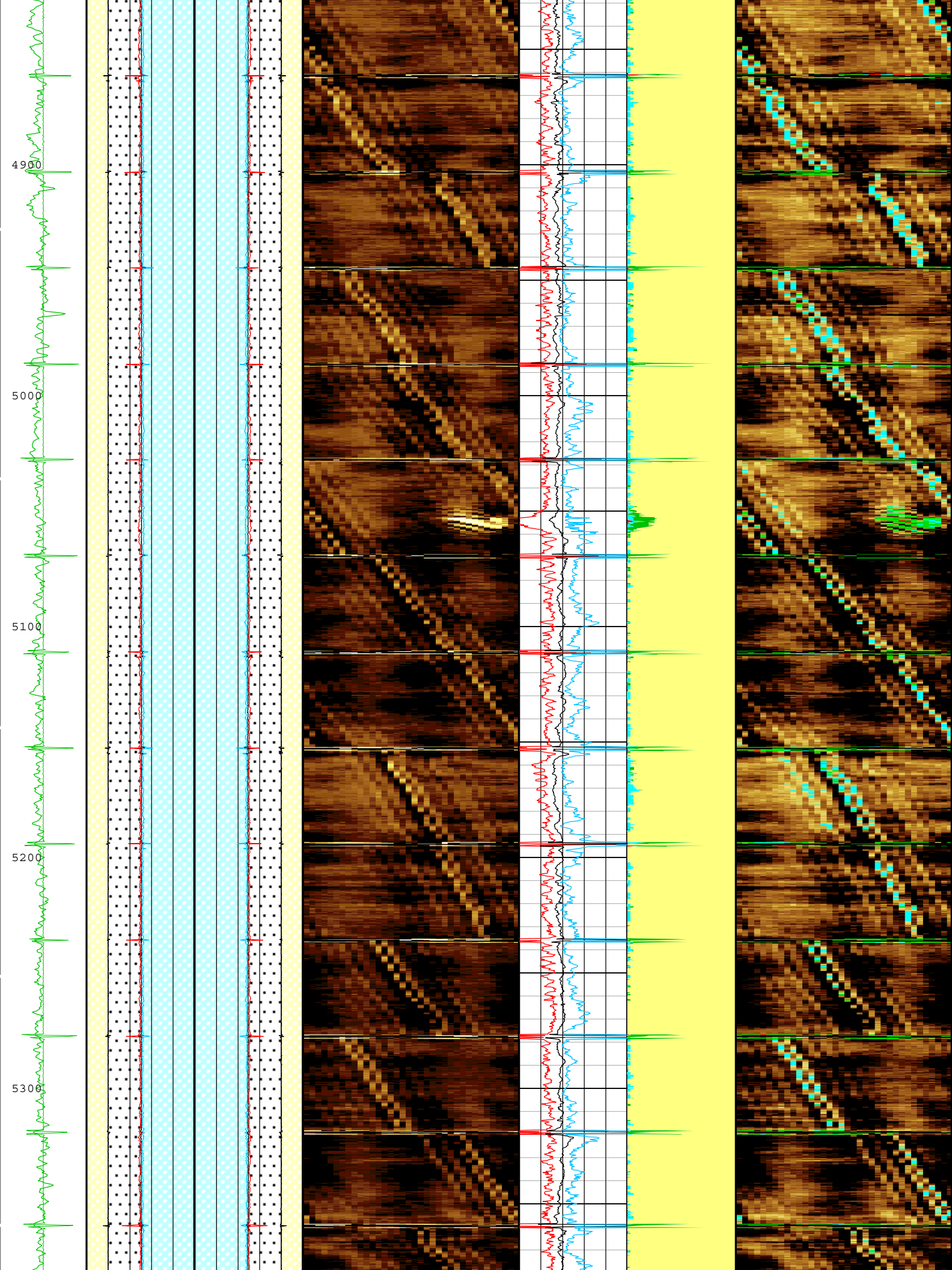


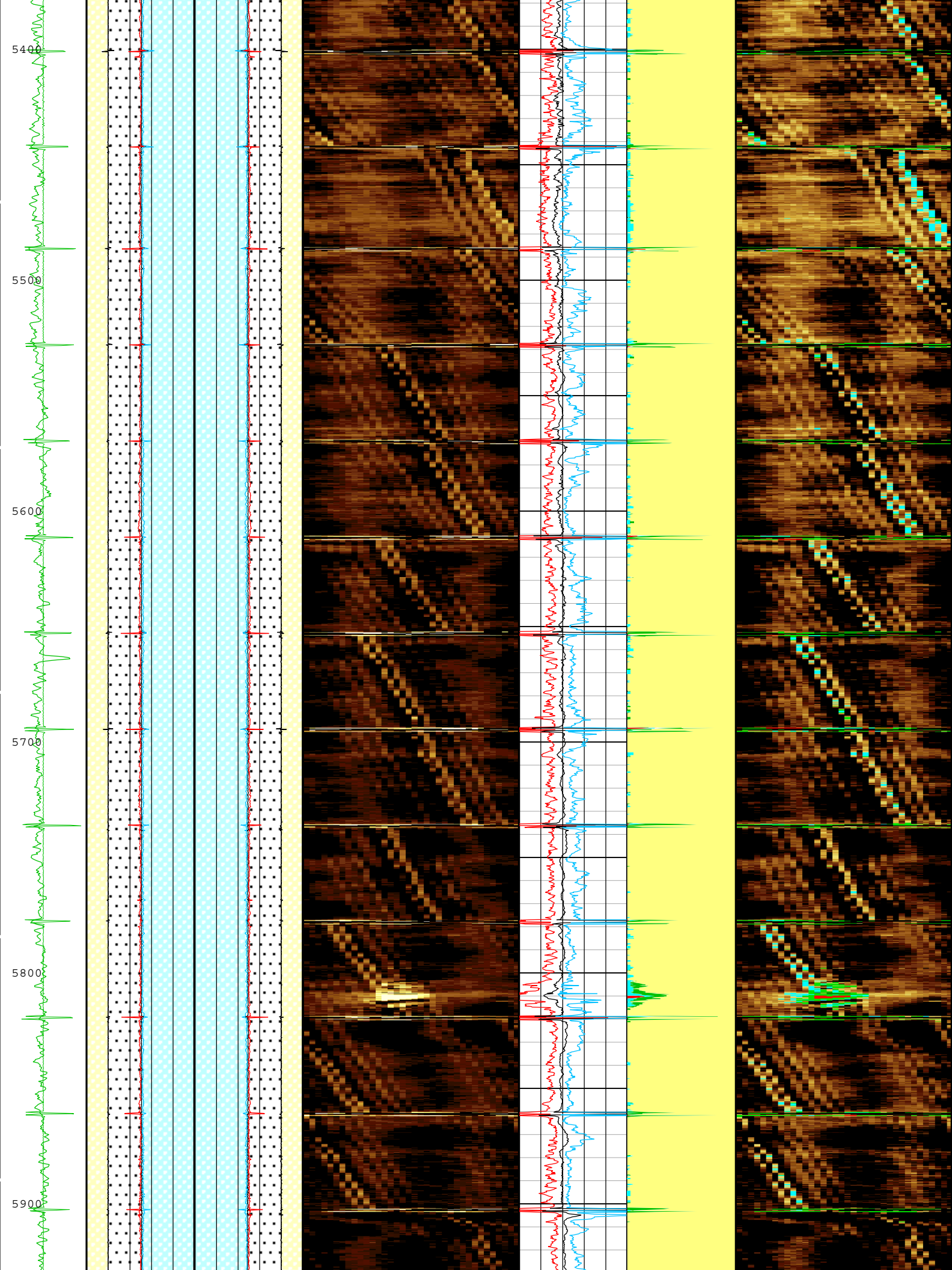




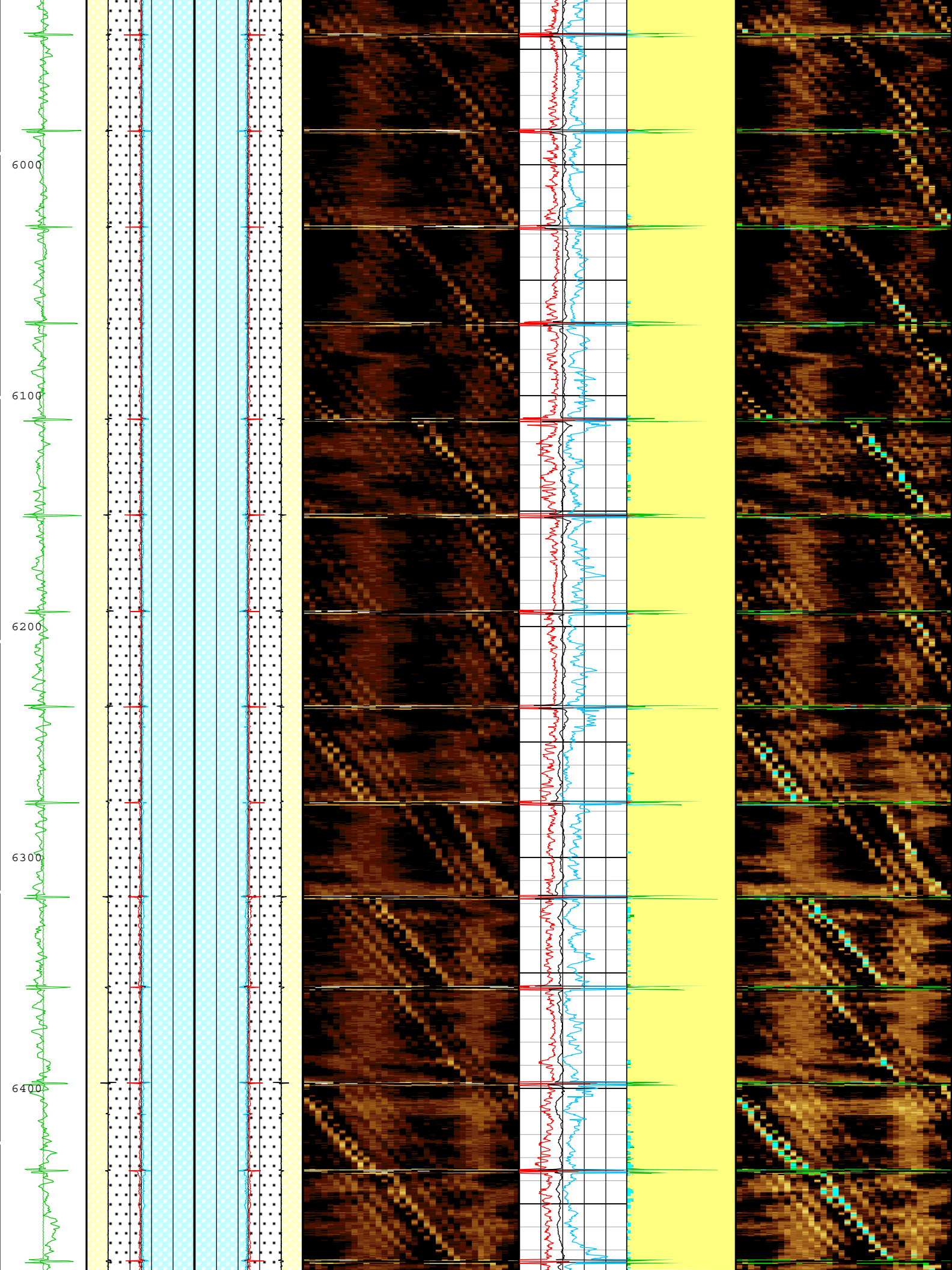


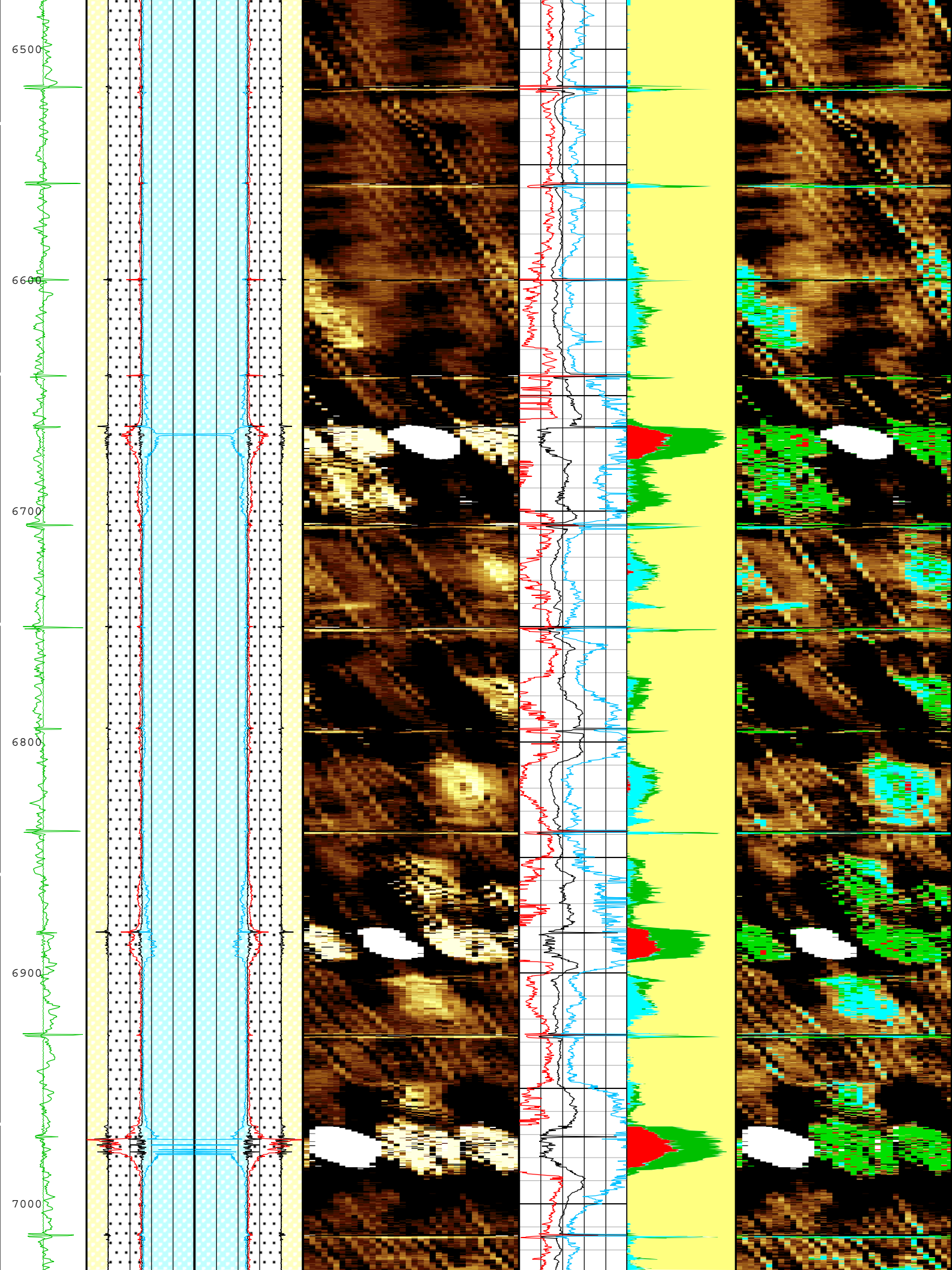




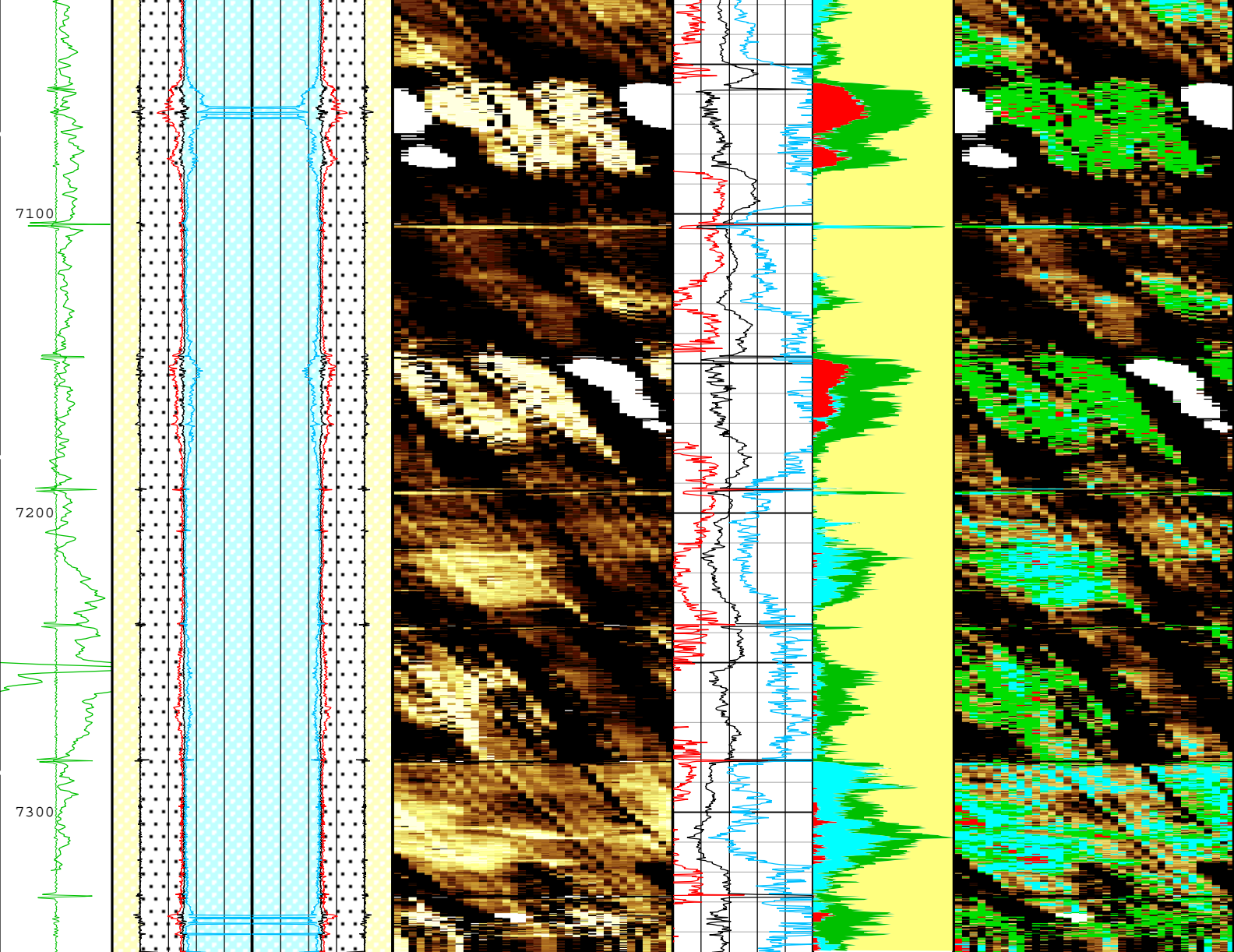




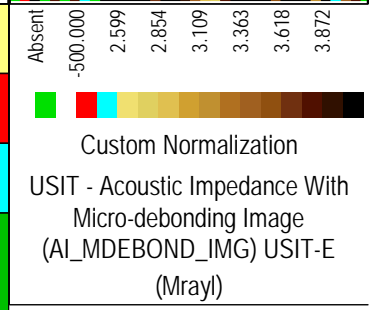
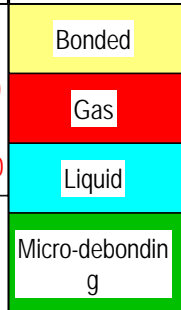
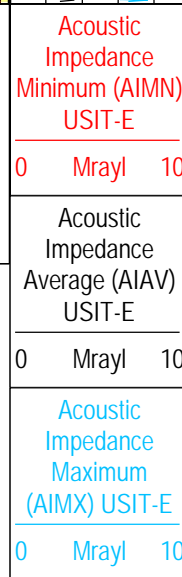
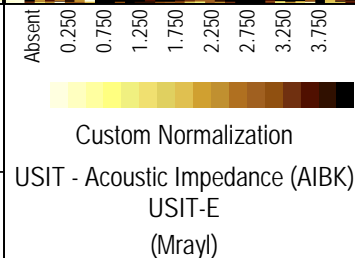








Casing Collar Locator Ultrasonic (CCLU) USIT-E	External Radii Average (ERAV) USIT-E	External Radii Average (ERAV) USIT-E
-20 in 20	2.95 in 1.95	1.95 in 2.95
Gamma Ray (ECGR) SGT-N	Internal Radius Averaged Value (IRAV) USIT-E	Internal Radius Averaged Value (IRAV) USIT-E
0 gAPI 150	2.95 in 1.95	1.95 in 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



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: 09-Sep-2015 15:55:48

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	8.5	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	11710	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	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	8.4	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_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.06	
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	
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	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	FreePipe Norm.	
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

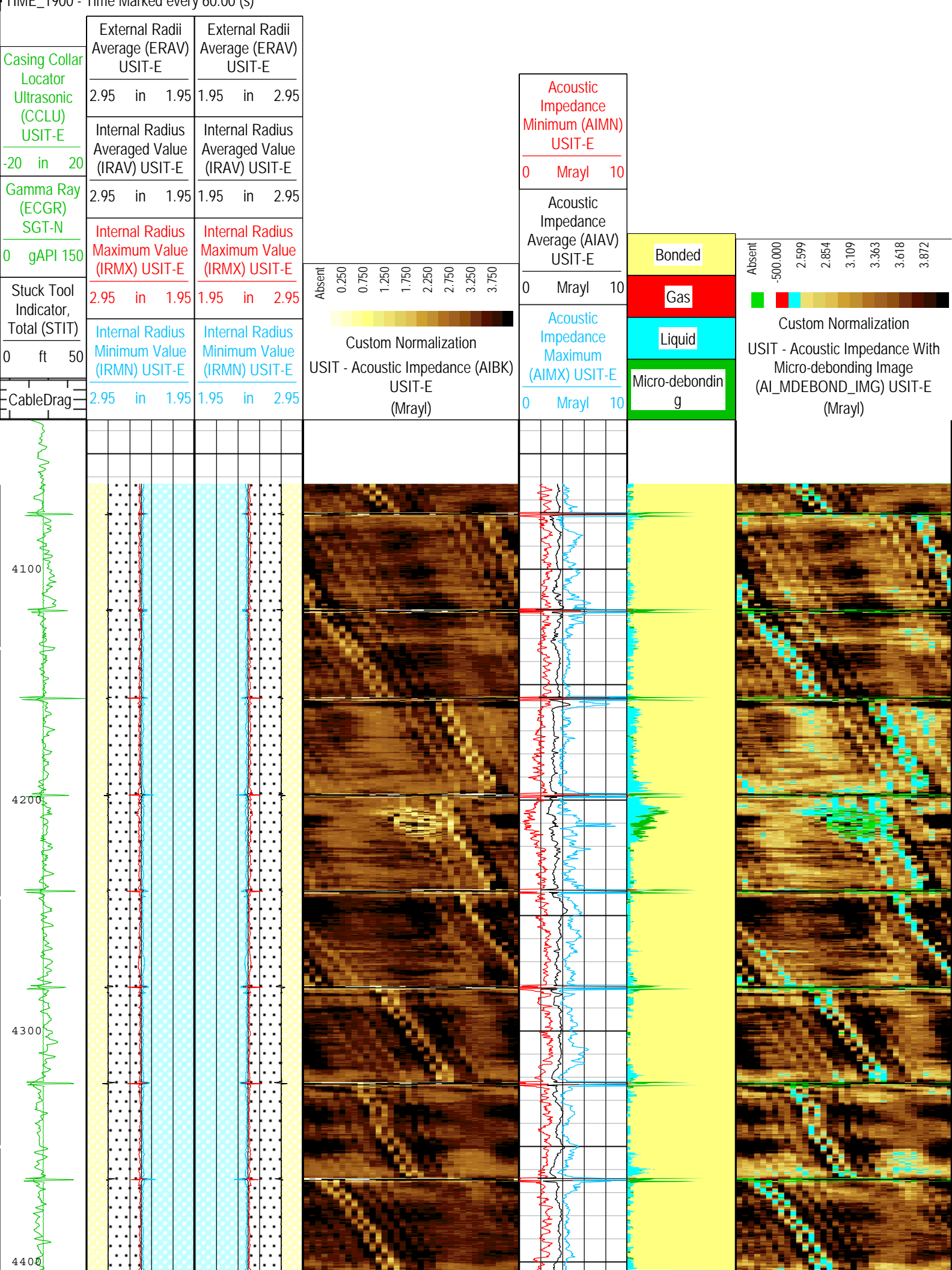
Depth Zone Parameters				
Parameter	Value	Start ( ft )	Stop ( ft )	
ZMUD	1.5	0	500	
ZMUD	1.52	500	1000	
ZMUD	1.54	1000	2000	
ZMUD	1.55	2000	3000	
ZMUD	1.56	3000	4000	
ZMUD	1.57	4000	5000	
ZMUD	1.58	5000	6000	
ZMUD	1.59	6000	7000	
ZMUD	1.6	7000	7347.5	
All depth are actual.				

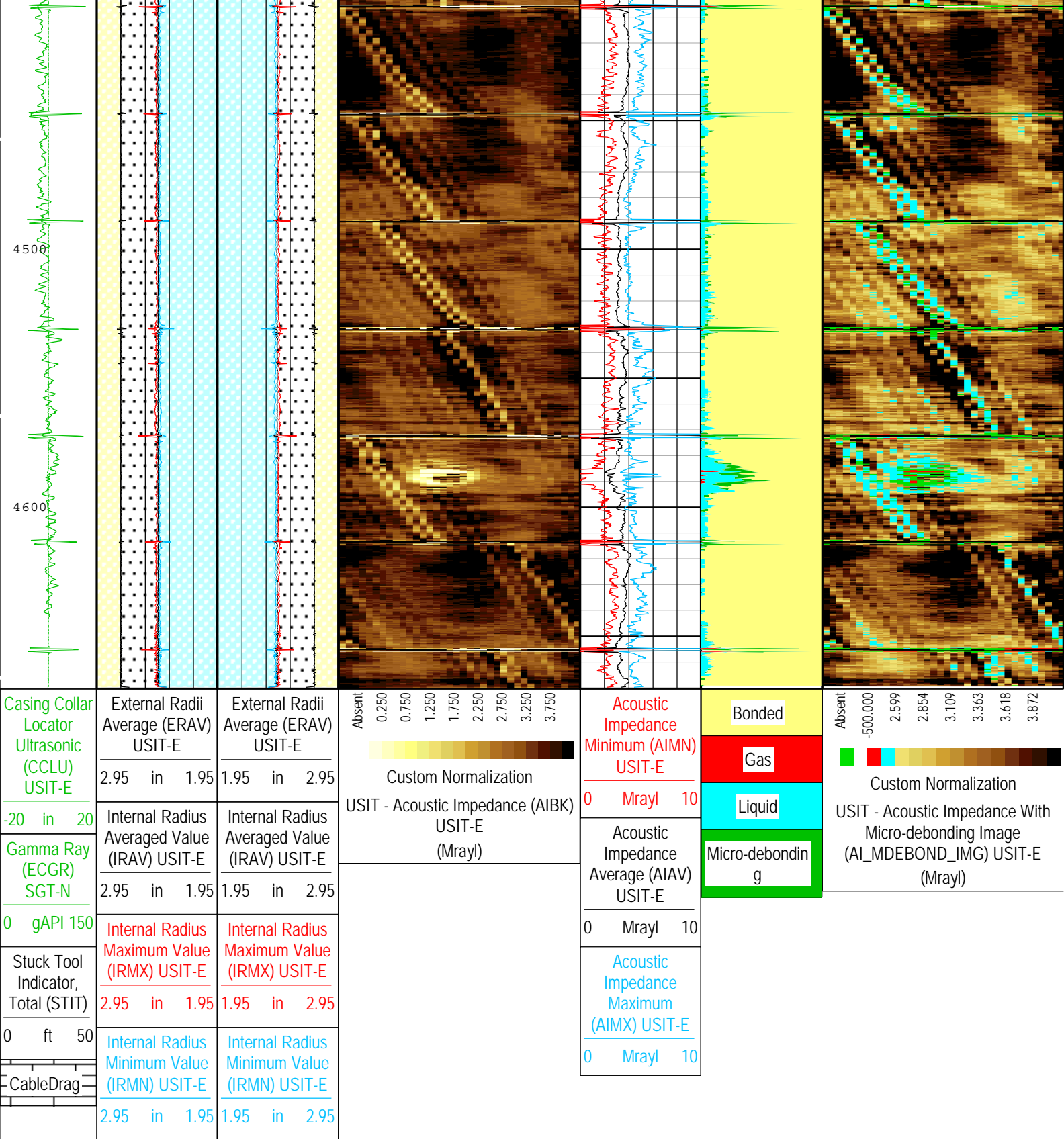
Tool Control Parameters	
-------------------------	--

ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	36	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	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	4500	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	

Log	Company:Anadarko Petroleum Company	Well:Bane 28N3-9HZ
		ONE: Log[2]:Up:S005
Description: USI Cement    Format: USI Cement    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 09-Sep-2015 15:55:55		
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: 09-Sep-2015 15:55:55

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	8.5	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	
CBLO	Casing Bottom (Logger)	WLSESSION	11710	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	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	8.4	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_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.06	
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	
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	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	FreePipe Norm.	
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	1.57	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

## ONE: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	36	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	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	4500	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 Petroleum Company

Well:Bane 28N3-9HZ

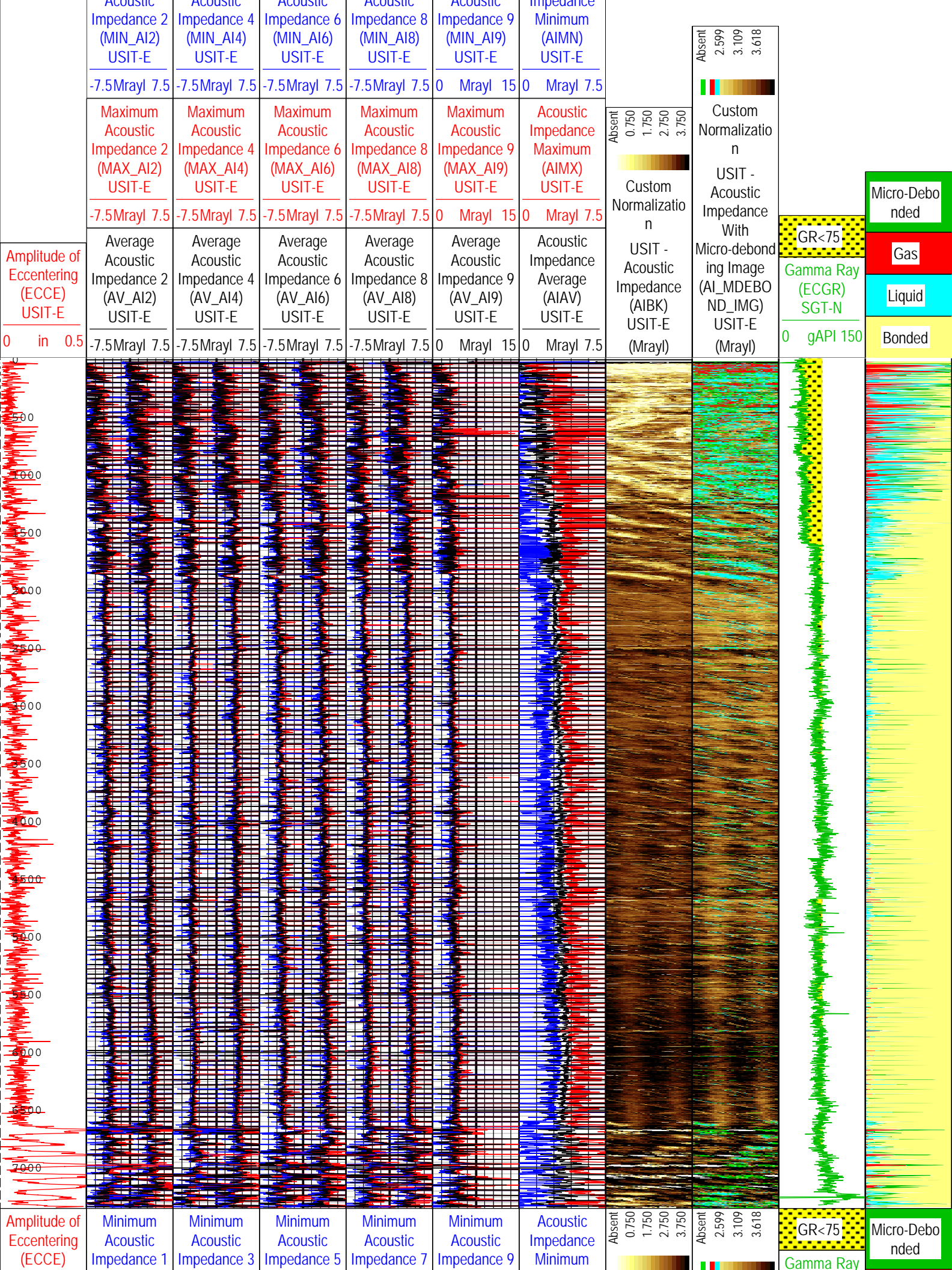
ONE: Log[3]:Up:S005

Description: USI Goodwin   Format: USI Goodwin   Index Scale: 0.1 in per 100 ft   Index Unit: ft   Index Type: Measured Depth   Creation Date: 09-Sep-2015 15:55:59

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
0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15
Minimum Acoustic	Minimum Acoustic	Minimum Acoustic	Minimum Acoustic
Acoustic	Acoustic	Acoustic	Acoustic

Minimum  
AcousticAcoustic  
Impedance



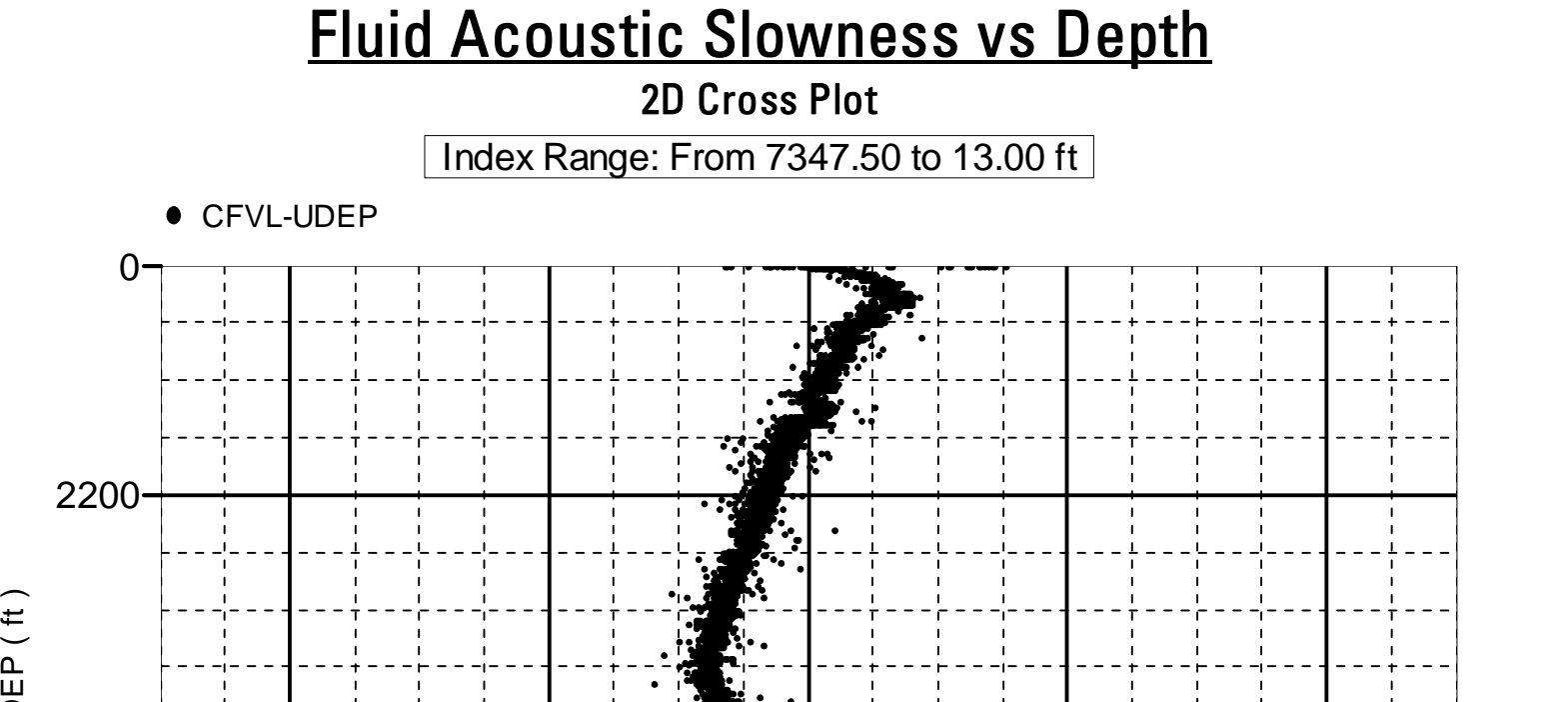
USIT-E	(MIN_AI1) USIT-E	(MIN_AI3) USIT-E	(MIN_AI5) USIT-E	(MIN_AI7) USIT-E	(MIN_AI9) USIT-E	(AIMN) USIT-E	Custom Normalizatio n	Custom Normalizatio n	(ECGR) SGT-N	Gas
0 in 0.5	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5	USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)	USIT - Acoustic Impedance With Micro-debond ing Image (AI_MDEBO ND_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					Bonded
0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 15	0 Mrayl 7.5					
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	0 Mrayl 7.5					
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							

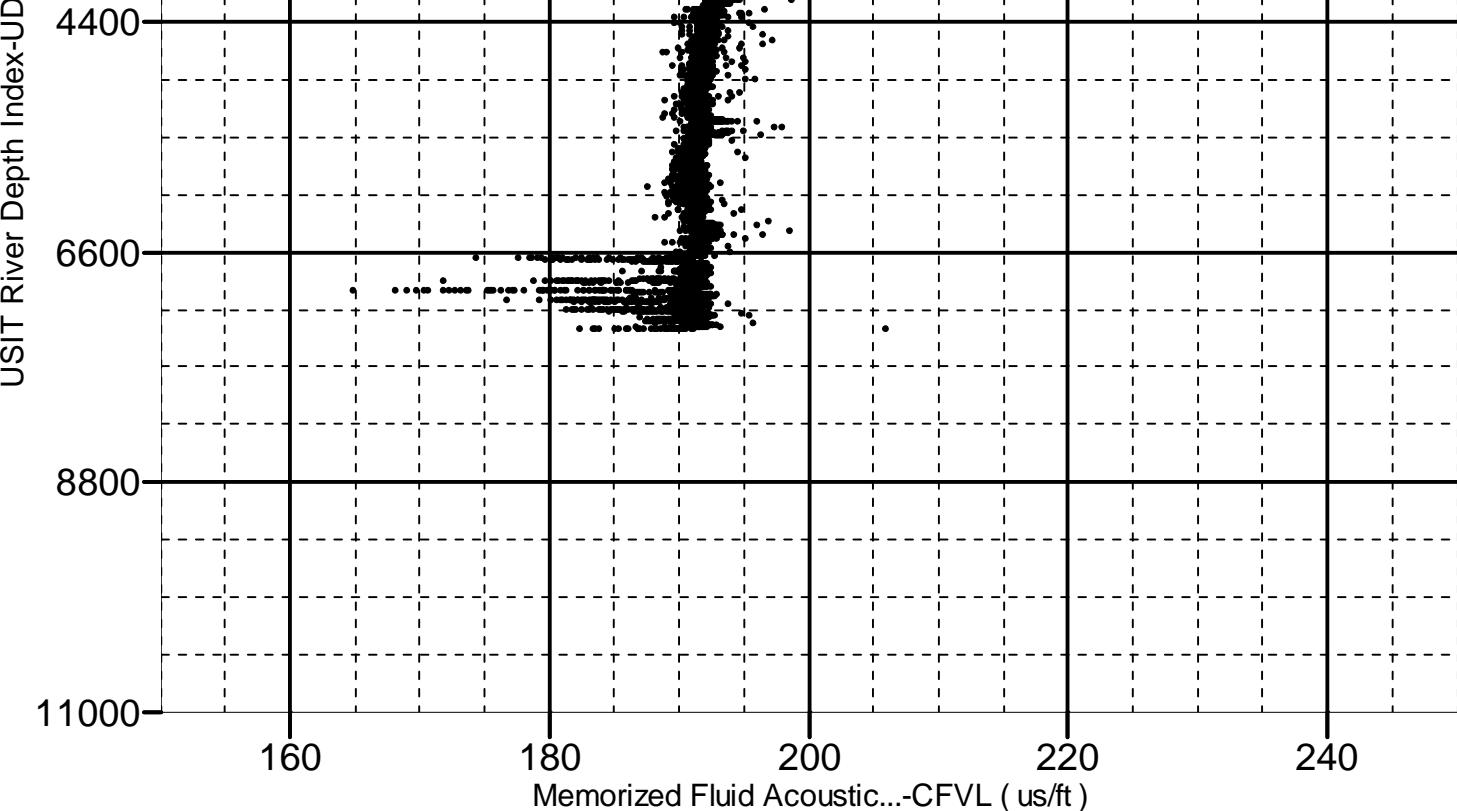
TIME\_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin    Format: USI Goodwin    Index Scale: 0.1 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 09-Sep-2015 15:55:59

XYZ

Company:Anadarko Petroleum Company Well:Bane 28N3-9HZ  
 ONE: Log[3]:Up:S005





XYZ

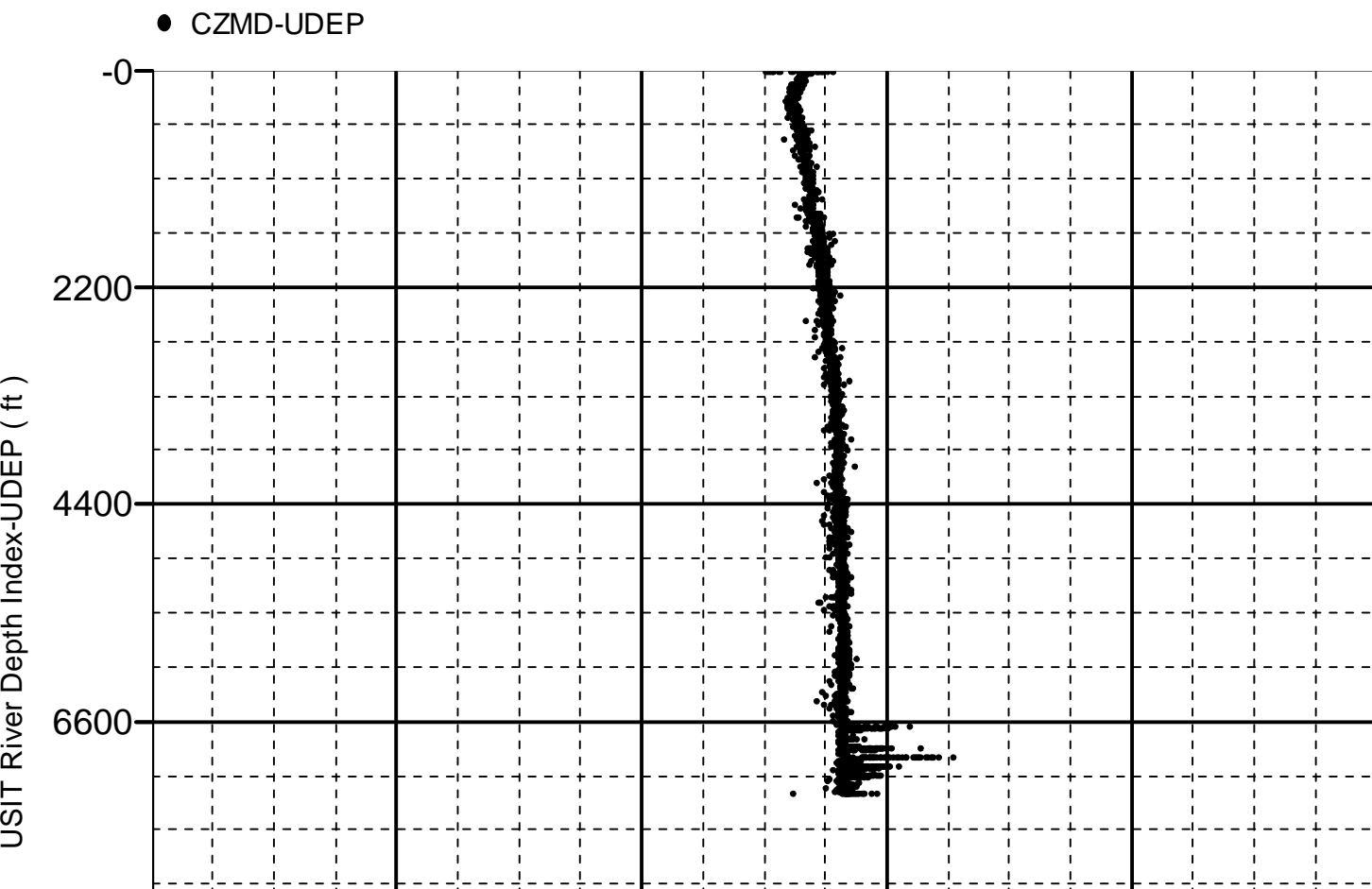
Company:Anadarko Petroleum Company Well:Bane 28N3-9HZ

ONE: Log[3]:Up:S005

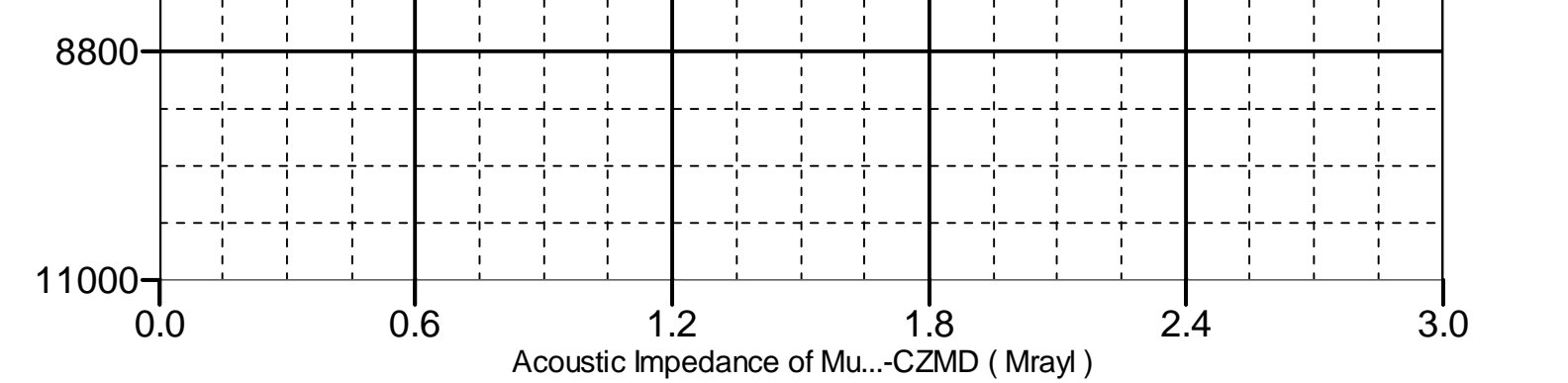
## Acoustic Impedance of Mud vs Depth

### 2D Cross Plot

Index Range: From 7347.50 to 13.00 ft







## Calibration Report

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

Primary Equipment :	Scintillation Gamma Cartridge	SGC-TB
Calibration Parameter :	Plus Reference	

### SGT-N Gamma-Ray Calibration - Gamma Ray Coefficients

Before:		After:					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Gain		Before			NOT DONE		
		After	----	----	----	----	
		After-Before	----	----	----	----	

### SGT-N Gamma-Ray Calibration - Gamma Ray Accumulations

Before:		After:					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
RGR Plus Measurement	gAPI	Before			NOT DONE		
		After			NOT DONE		
		After-Before	----	----	----	----	

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

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

### LEH-QT (Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor) Calibration - Run ONE

Primary Equipment :	Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor	LEH-QT
---------------------	---	--------

### HTEN Master Calibration - HTEN Master Calibration

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HTEN Shop Gain		Master	1.000	0.800	NOT DONE	4.500	
HTEN Shop Offset	lbf	Master	0	-1000.000	NOT DONE	1000.000	

### HTEN Before Calibration - HTEN Before Calibration

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
RHTE Zero Measurement - 0	lbf	Before	----	----	----	----		
RHTE Plus Measurement - 0	lbf	Before	----	----	----	----		
HTEN Gain - 0		Before	----	----	----	----		
HTEN Offset - 0	lbf	Before	----	----	----	----		

Company:	Anadarko Petroleum Company	<b>Schlumberger</b>
Well:	Bane 28N3-9HZ	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Ultrasonic Imager Cement Evaluation Gamma Ray - CCL Log		