Schlumberger

Company: Southern California Gas Company

Well: Porter 68A

Field: Aliso Canyon

County: Los Angeles State: California

Ultrasonic Imager

Gamma Ray - CCL

9-5/8" 43.5#/47#/53.5# casing

County:	Los Angeles
Field:	Aliso Canyon
Location:	496' S & 1388' W of Station #84
Well:	Porter 68A
Company:	Southern California Gas Company

Location:			
496' S & 1388' W of Station #84	Elev.:	K.B.	2098.00 ft
		G.L.	2080.00 ft
		D.F.	
Permanent Datum:	Ground Level	Elev.:	2080.00 f
Log Measured From:	Kelly Bushing	18.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	Section:	Township:	Range:
04-037-22742-00	27	3W	16W

Logging Date		24-May-2016	
Run Number		One	
Depth Driller		6920.00 ft	
Schlumberger Depth		6918.00 ft	
Bottom Log Interval		6912.00 ft	
Top Log Interval		200.00 ft	
Casing Fluid Type		Brine	
Salinity			
Density		9.5 lbm/gal	
Fluid Level		8.00 ft	
BIT/CASING/TUBING STRING			
Bit Size		12.25 in	
From		1015.00 ft	
To		7044.00 ft	
Casing/Tubing Size		9.625 in	
Weight		53.5 lbm/ft	
Grade		N80	
From		6239.00 ft	
To		7044.00 ft	
Max Recorded Temperatures		165 degF	
Logger on Bottom	Time	24-May-2016 09:30:00	
Unit Number	Location:	2222 Bakersfield	
Recorded By		Kevin Crow	
Witnessed By		Mr. Tom McMahon	

Disclaimer

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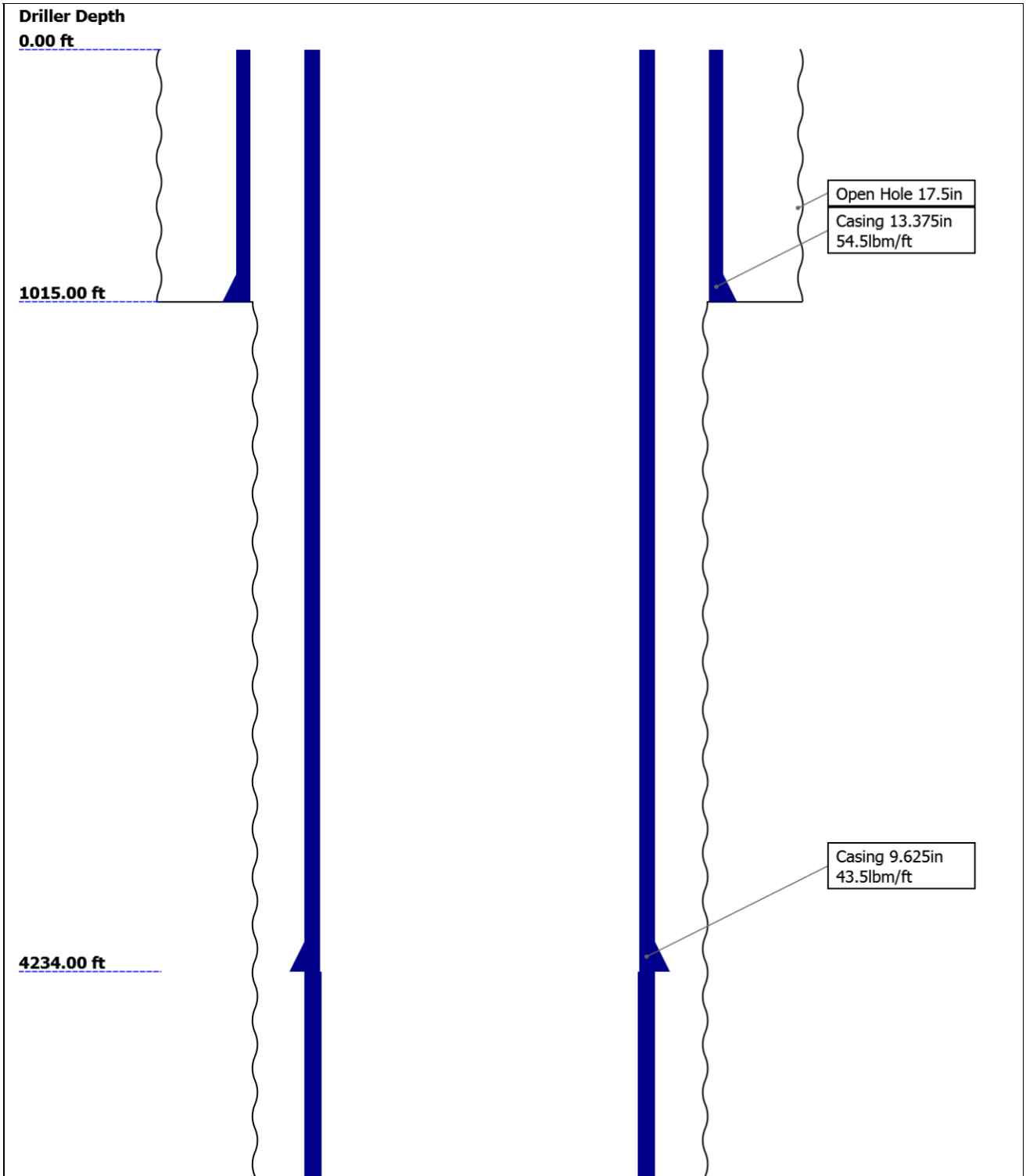
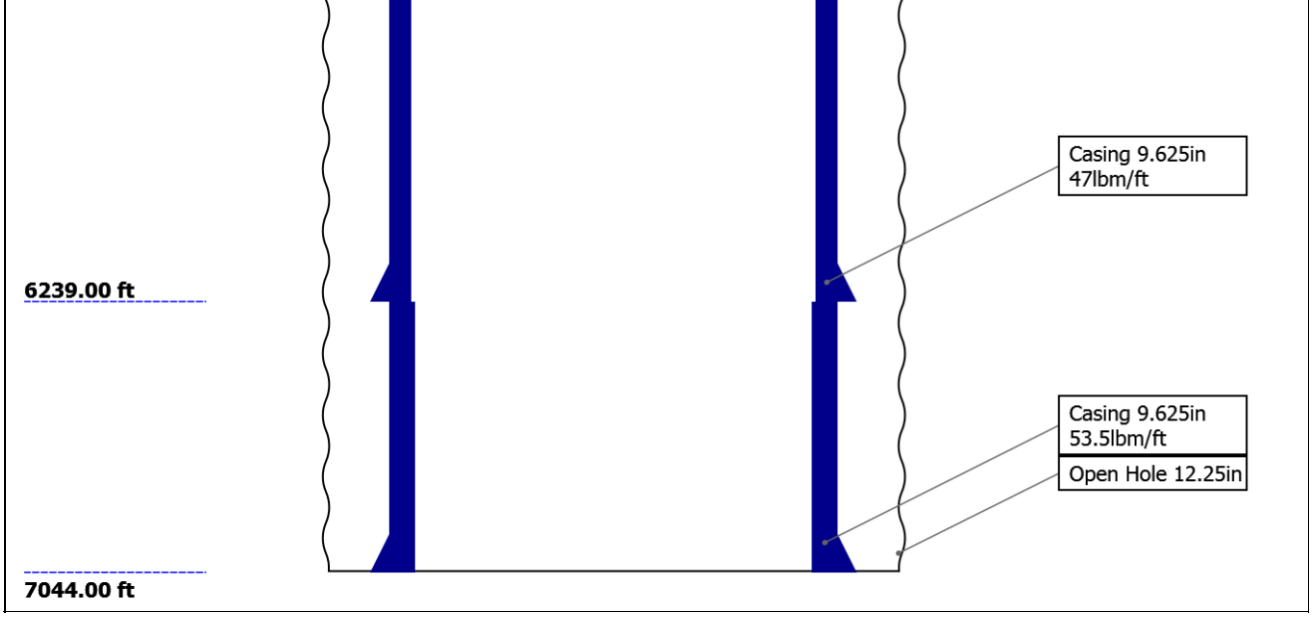
Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5	12.25				
Top Driller (ft)	0	1015				
Top Logger (ft)	0	1015				
Bottom Driller (ft)	1015	7044				
Bottom Logger (ft)	1015	7044				
Casing						
Size (in)	13.375	9.625	9.625	9.625		
Weight (lbm/ft)	54.5	43.5	47	53.5		
Inner Diameter (in)	12.615	8.755	8.681	8.535		
Grade	K55	N80	N80	N80		
Top Driller (ft)	0	0	4234	6239		
Top Logger (ft)	0	0	4234	6239		
Bottom Driller (ft)	1015	4234	6239	7044		
Bottom Logger (ft)	1015	4234	6239	7044		

Remarks and Equipment Summary

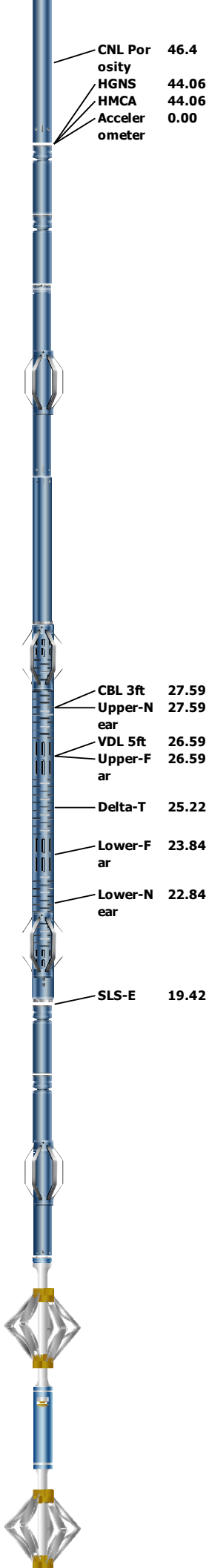
TWO: Toolstring

Equip name	Length	MP name	Offset
LEH-QT:2789	**59.39**	Blue	
LEH-QT:2789			
DTC-H:9312	**56.47**	**CTEM**	**55.57**
ECH-KC:10399		**HV**	**0.00**
DTC-H:9312		**TelStatus**	**53.47**
HGNS-H:4961	**53.47**	**ToolStatus**	**53.47**
HGNH:4829		**Temperature**	**53.44**
NSR-F:2573		**GR**	**52.73**
NPV-N			
HACCZ-H:7830			
HGNS-H:4961			

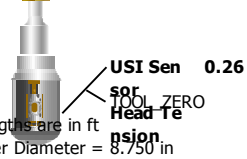
TWO: Remarks

Depth correlated to Dresser Atlas Acoustic Cement Bond Log dated 06-22-83
Logging Objective: Cement and Corrosion Evaluation
USIT Logged in 10 deg/ 1.5 inch, logging speed 2900 fph, Repeated hi-res in 10 deg/0.6 inch, speed 1000 fph
Bridge plug set at 6920 ft. Top of sand tagged at 6914 ft, logged from 6612 to 300 ft under no pressure
Logged from 300-Surface with 200 psi to keep pressure on transducer
Cemented in 1983 no cement data given. Original estimated top of cement 1492
Rig: Rival 12
Toolstring ran as per toolsketch.

961
HMCA-H



Two centralizers on USIS and two CME-Y used to centralize ultrasonic tool.
Thank you for choosing Schlumberger!
Rig: Ensign 334
Toolstring ran as per toolsketch.
Gemcos ran on USAC and DSLT as per toolsketch to centralize tool
Thank you for choosing Schlumberger



Lengths are in ft
Maximum Outer Diameter = 8.750 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Job Event Summary

Event	Time	Duration	Interval	Remark
Log[1]:Down	May-24-2016 08:18	01:07:11	101.69 - 6921.88 ft	fpm
Log[2]:Up	May-24-2016 09:27	02:29:14	6911.16 - 198.58 ft	Main Pass
Log[3]:Up	May-24-2016 12:40	01:02:40	6912.61 - 5775.4 ft	Hi-res 6900-5800
Log[4]:Up	May-24-2016 13:52	00:23:19	5516.72 - 5092.36 ft	Hi-Res 5500-5100
Log[5]:Up	May-24-2016 14:37	00:25:22	3262.55 - 2803.9 ft	Hi-Res 3250-2800
Log[6]:Up	May-24-2016 15:05	00:06:25	2541.16 - 2422.8 ft	Hi-Res 2530-2420
Log[7]:Up	May-24-2016 15:14	01:55:36	2172.21 - 1117.78 ft	Hi-Res 2170-1120
Log[8]:Up	May-25-2016 06:27	00:21:21	1205 - 792.66 ft	Hi-Res Repeat 1120-800

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Log[2]:Up	6911.16	198.58

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 : 62.11m(203.76ft) to 66.84m(219.31ft)
MUD_N_FRP = 0.99
DFD = 1.14g/cm3(9.50lbm/gal)
CZMD median computed in free pipe normalization interval = 1.70 MRayl

Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)

TWO

Main Pass 5 in = 100 ft

Software Version

Acquisition System	Version
Maxwell 2016 SP1	6.1.58882.3100

Computation	Description	Version
CEVAL	Sonic Cement Evaluation Computation Ensemble provides common Parameters and Channels	6.1.58882.3100
Cementation	Cementation Computation Application	6.1.58882.3100

SoftwareVersion_Tool	SoftwareVersion_Run Version	SoftwareVersion_Build Version
WAFE-SEC	Synergy SV451EC version 9.10	Synergy SV451EC version 9.10
WAFE-FEC	Synergy SV451EC version 9.10	Synergy SV451EC version 9.10
WAFE-TMDI	Synergy SV451EC version 46.19	Synergy SV451EC version 46.19

Tool Elements	Description	Software Version	Firmware Version
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	6.1.58882.3100	2.0
SLS-E	Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL	6.1.58882.3100	4.0
USI-SENSOR	USIT Transducer Element	6.1.58882.3100	DSP: v1.82

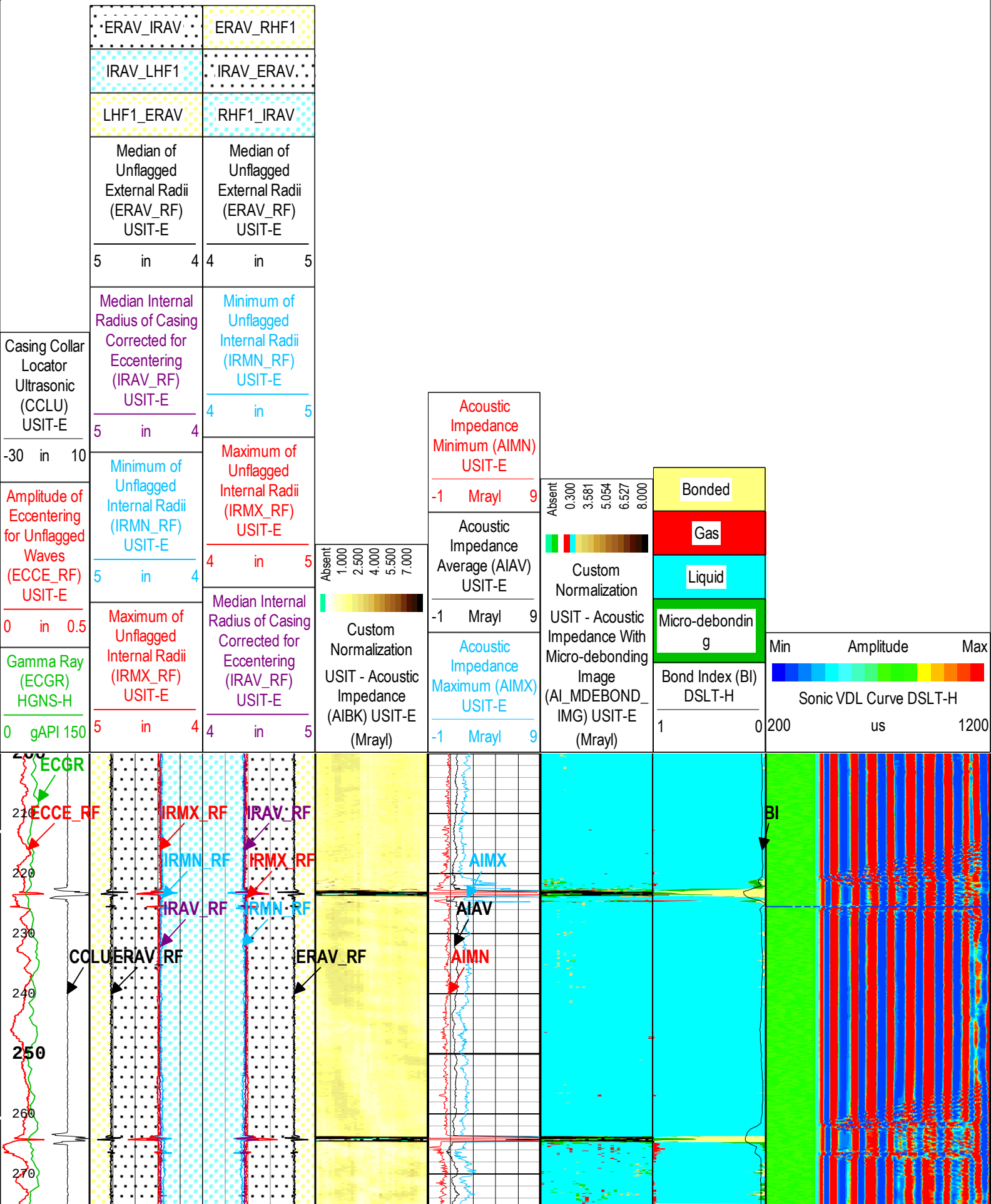
Pass Summary

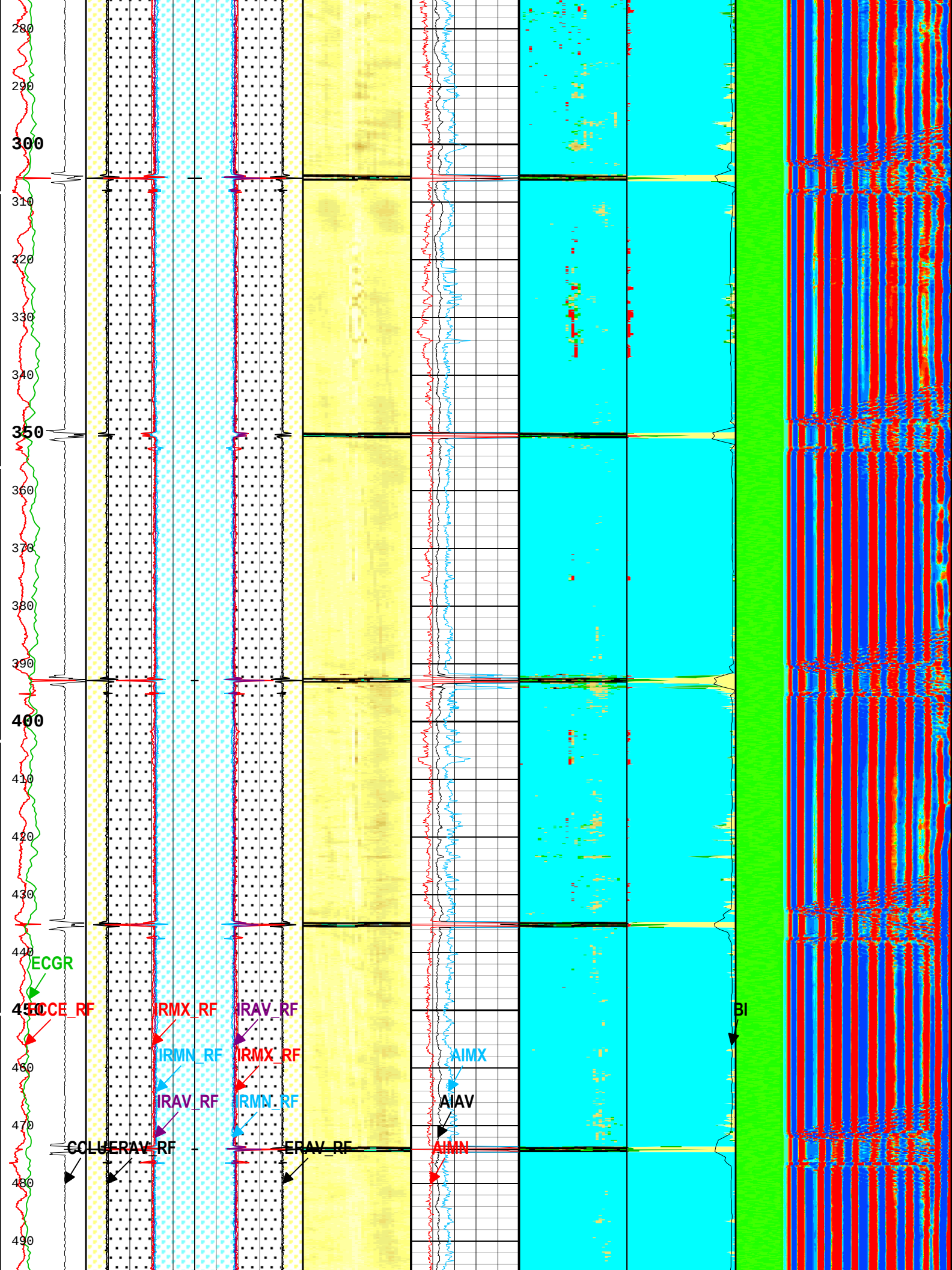
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[2]:Up	Up	198.58 ft	6911.16 ft	24-May-2016 9:27:08 AM	24-May-2016 11:56:22 AM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Description: USI VDL Cement Format: Log (LBV1_USI-VDL (DSLT) Cement 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:20:34

TIME_1900 - Time Marked every 60.00 (s)

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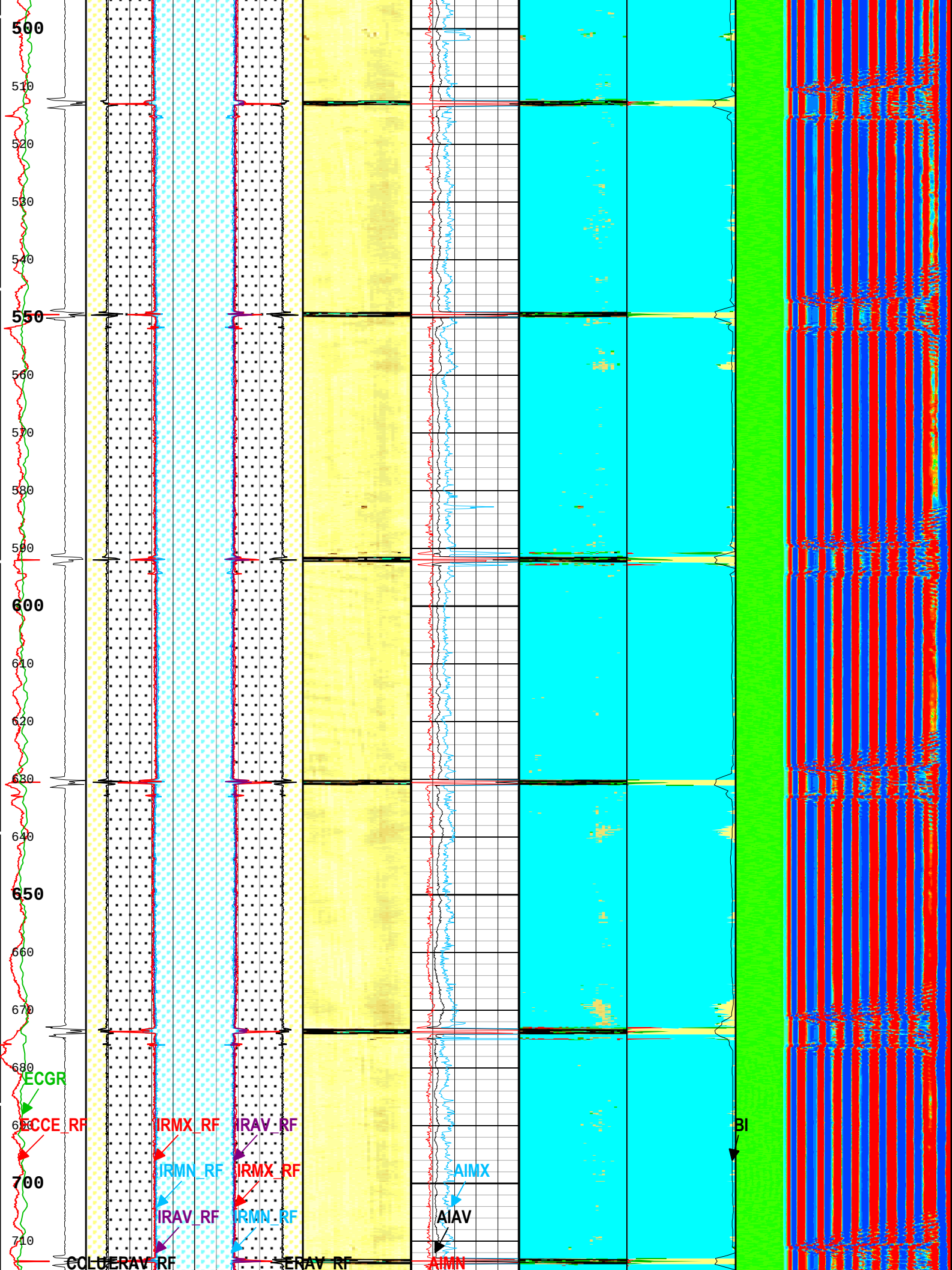
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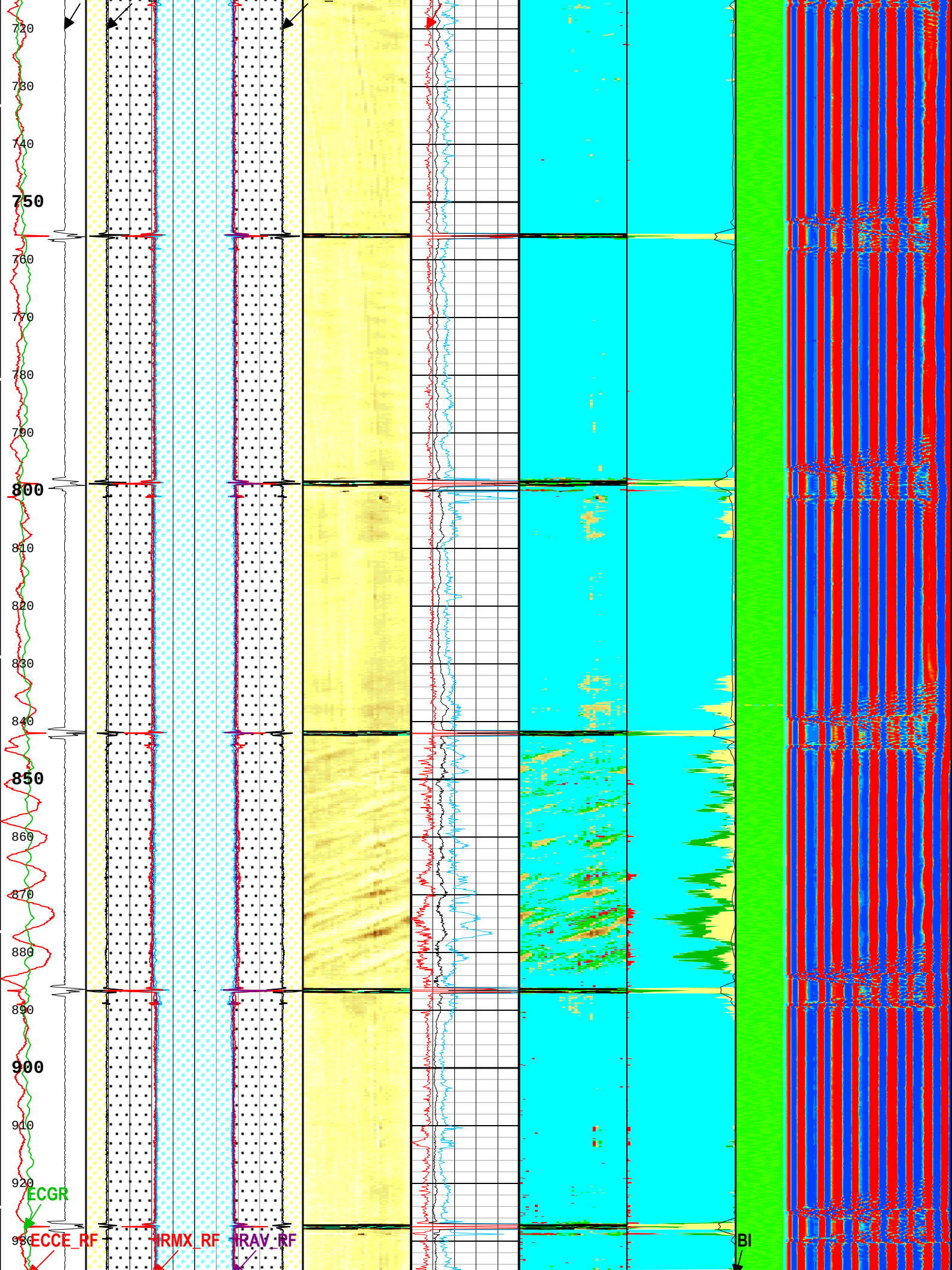
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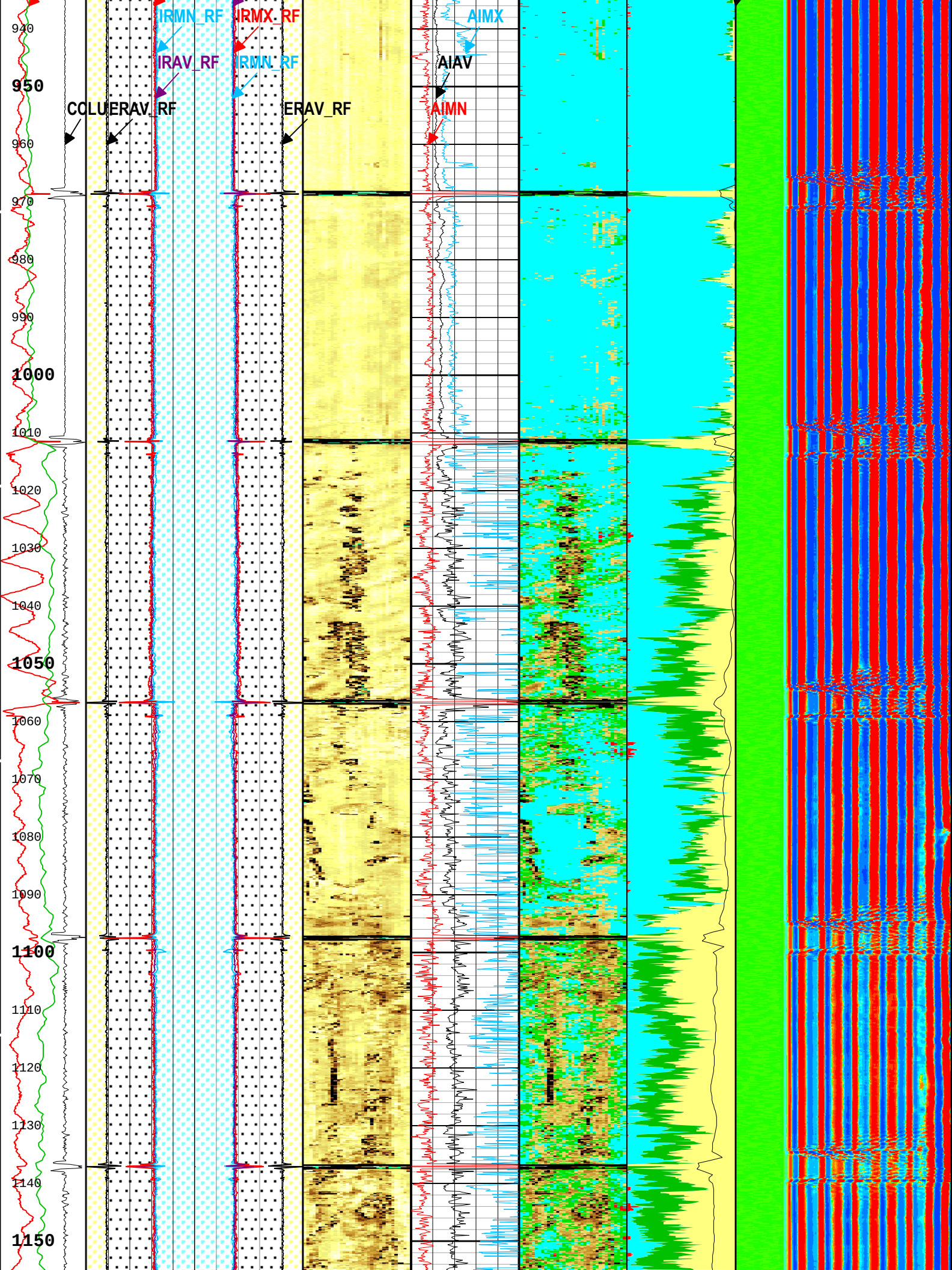
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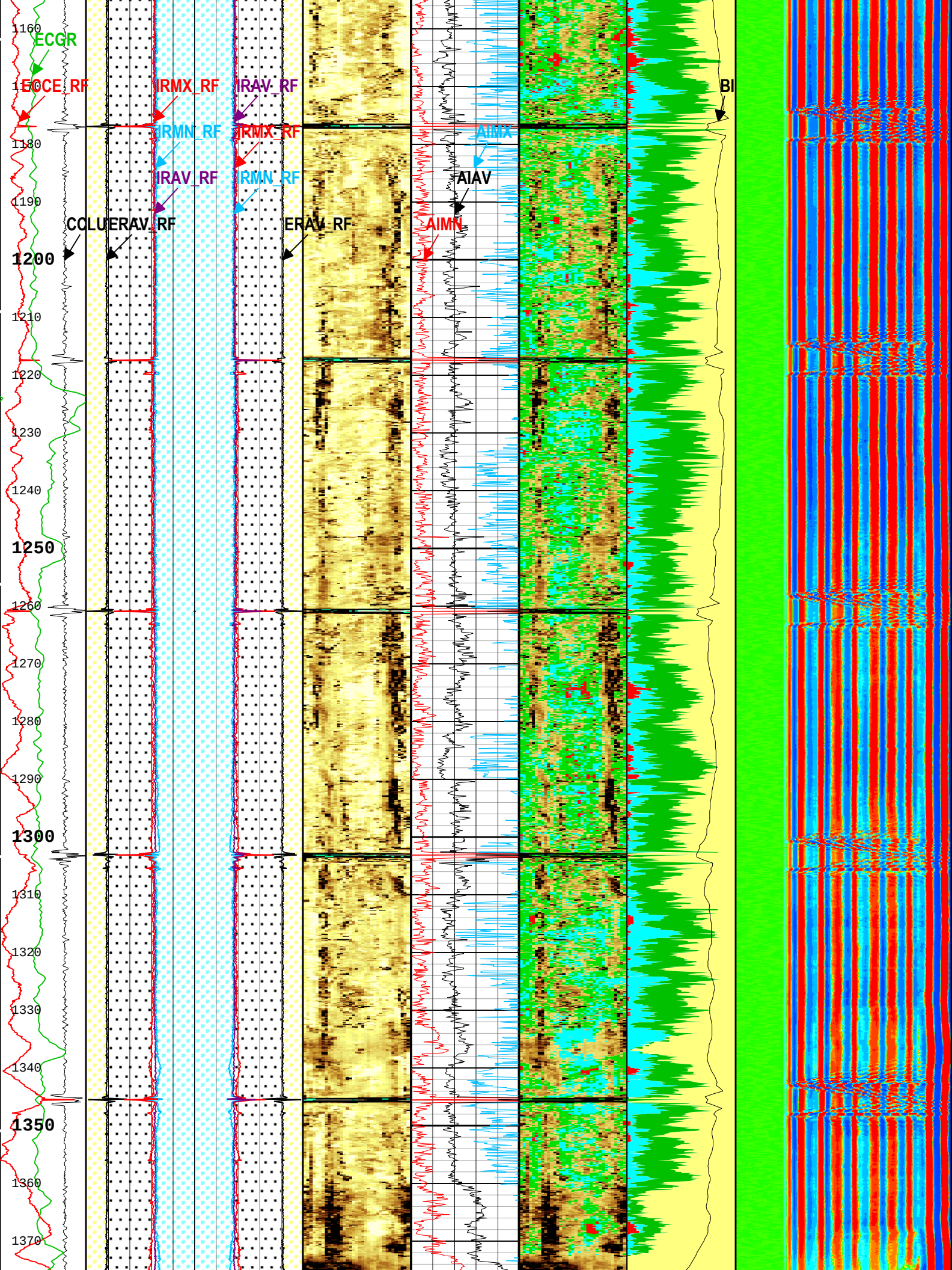
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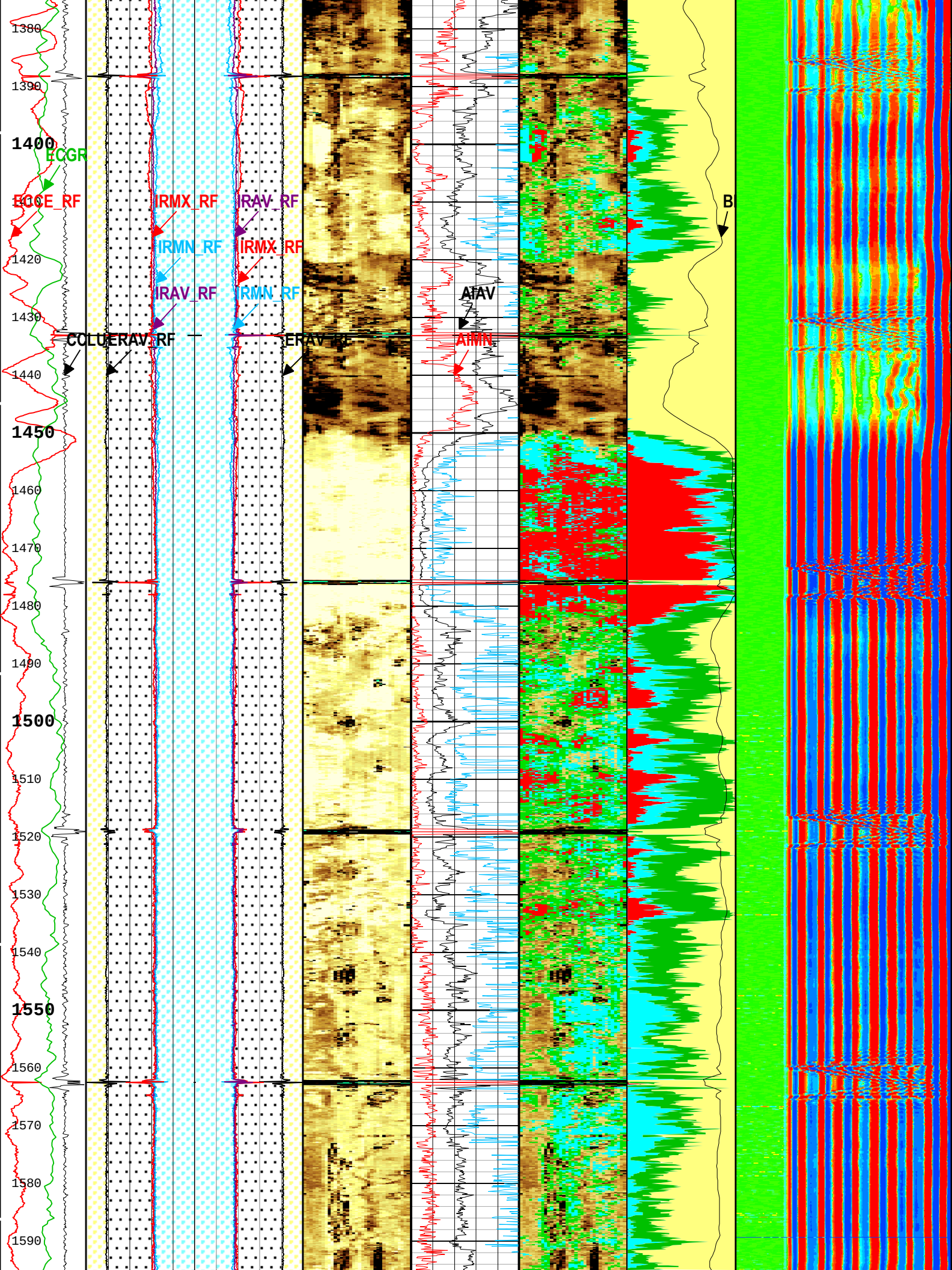
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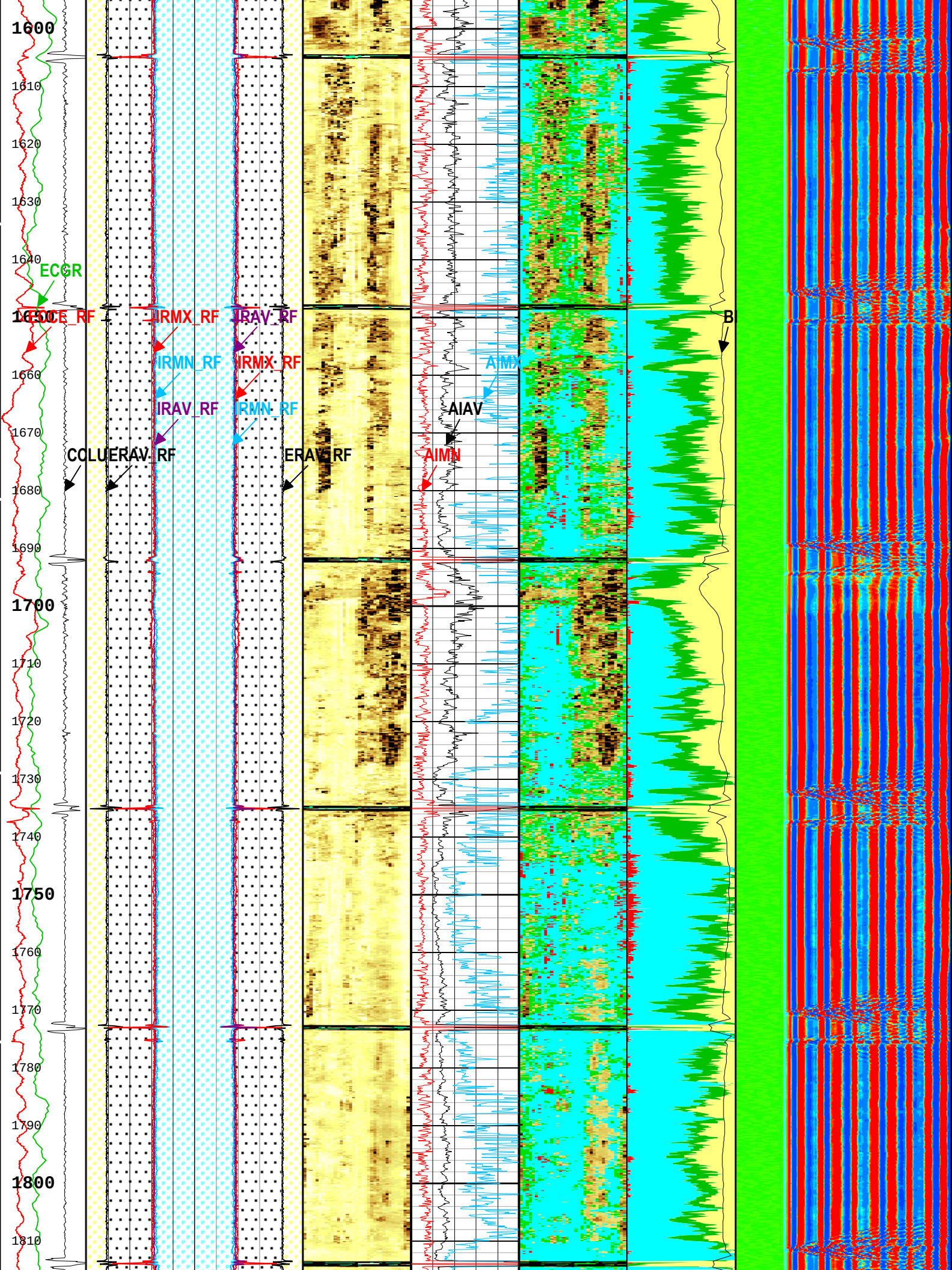
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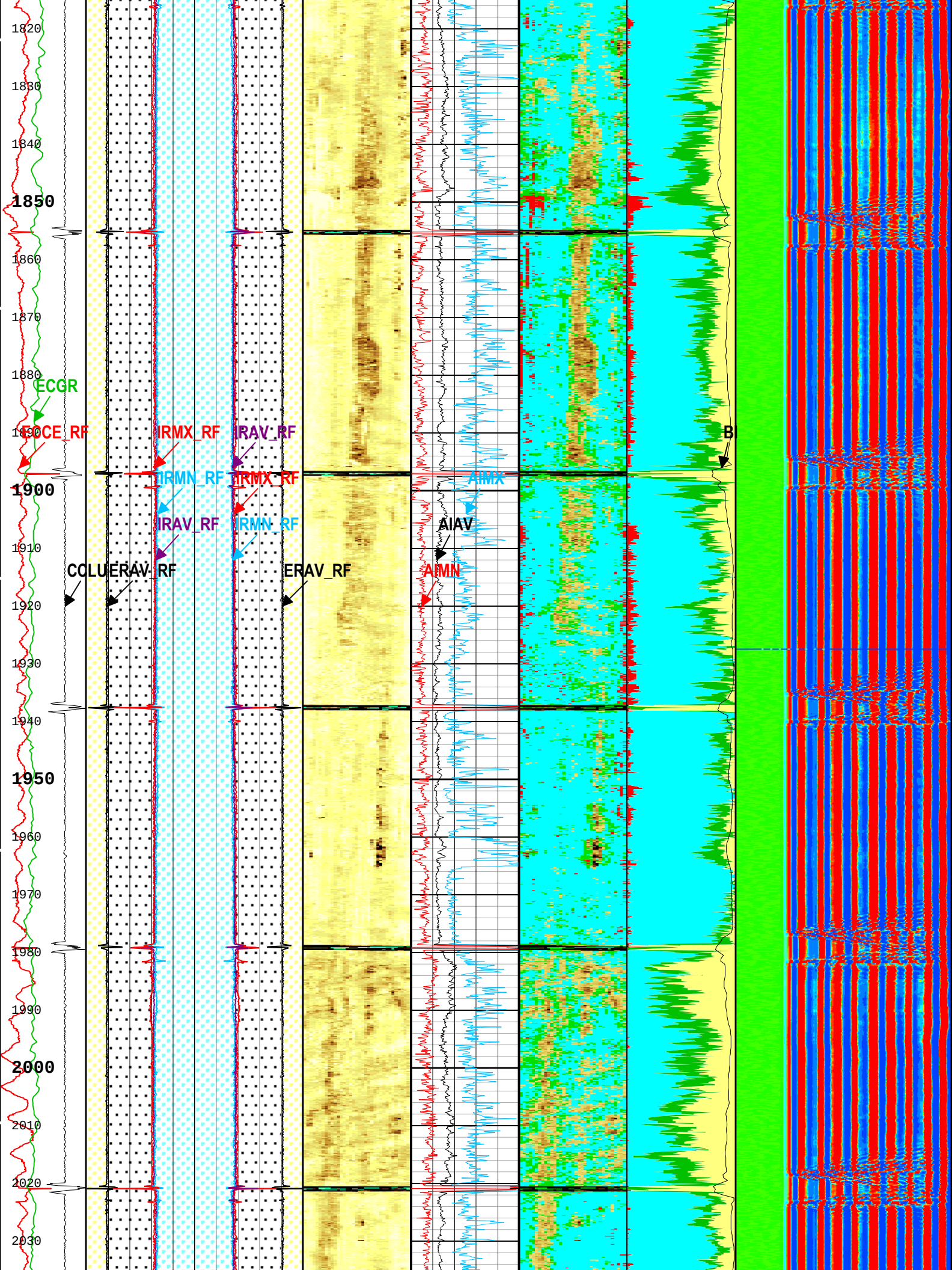
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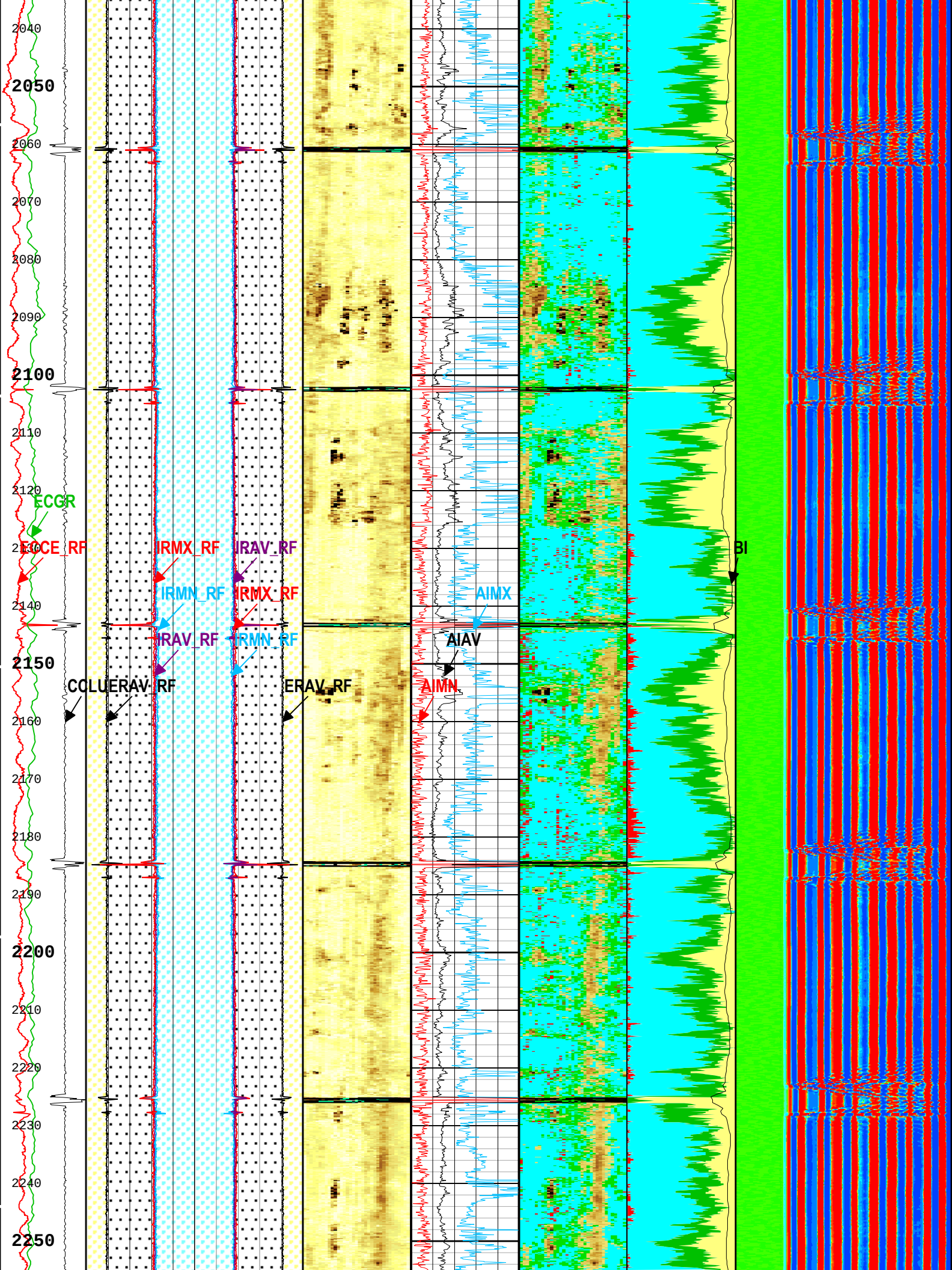
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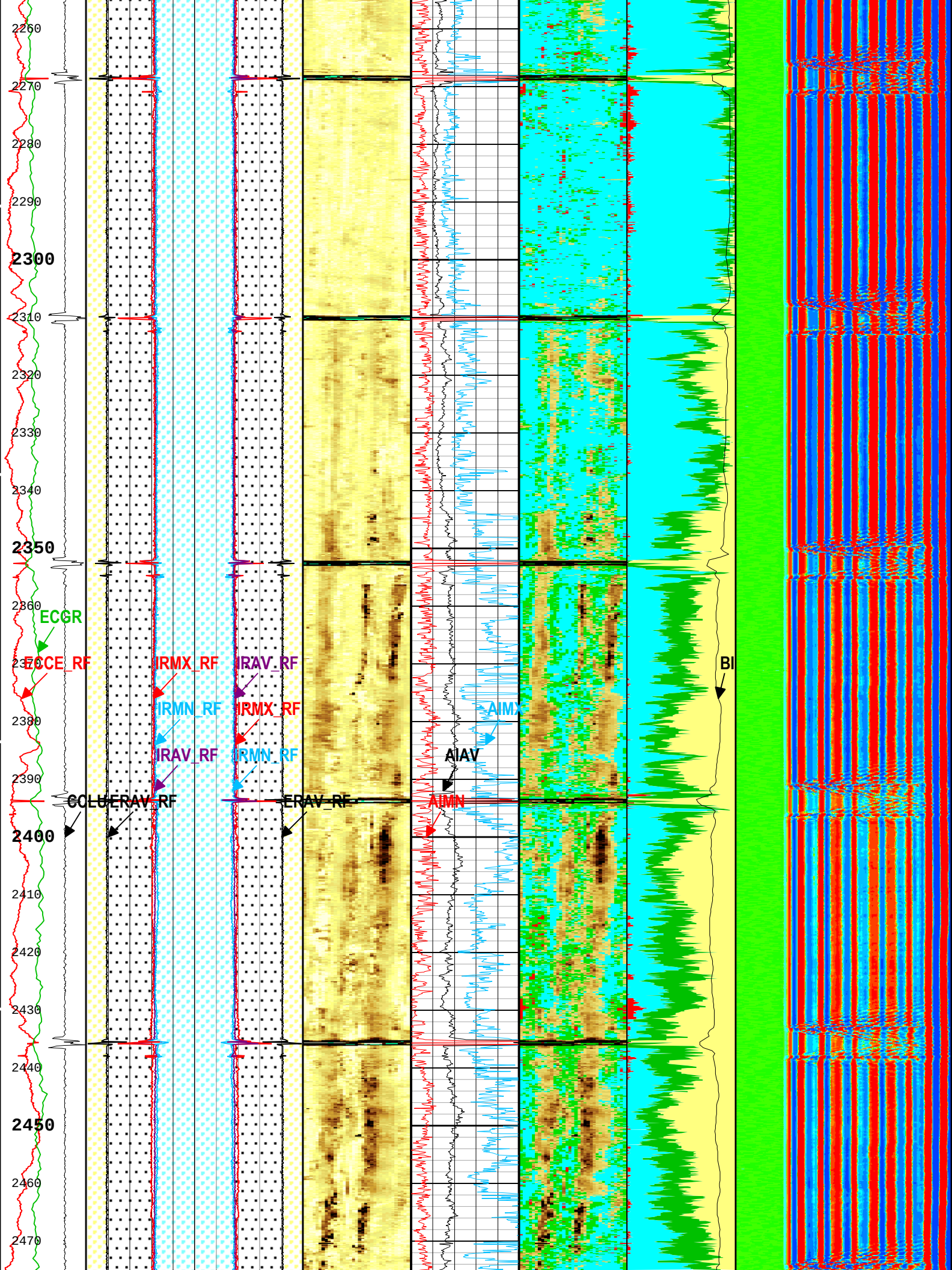
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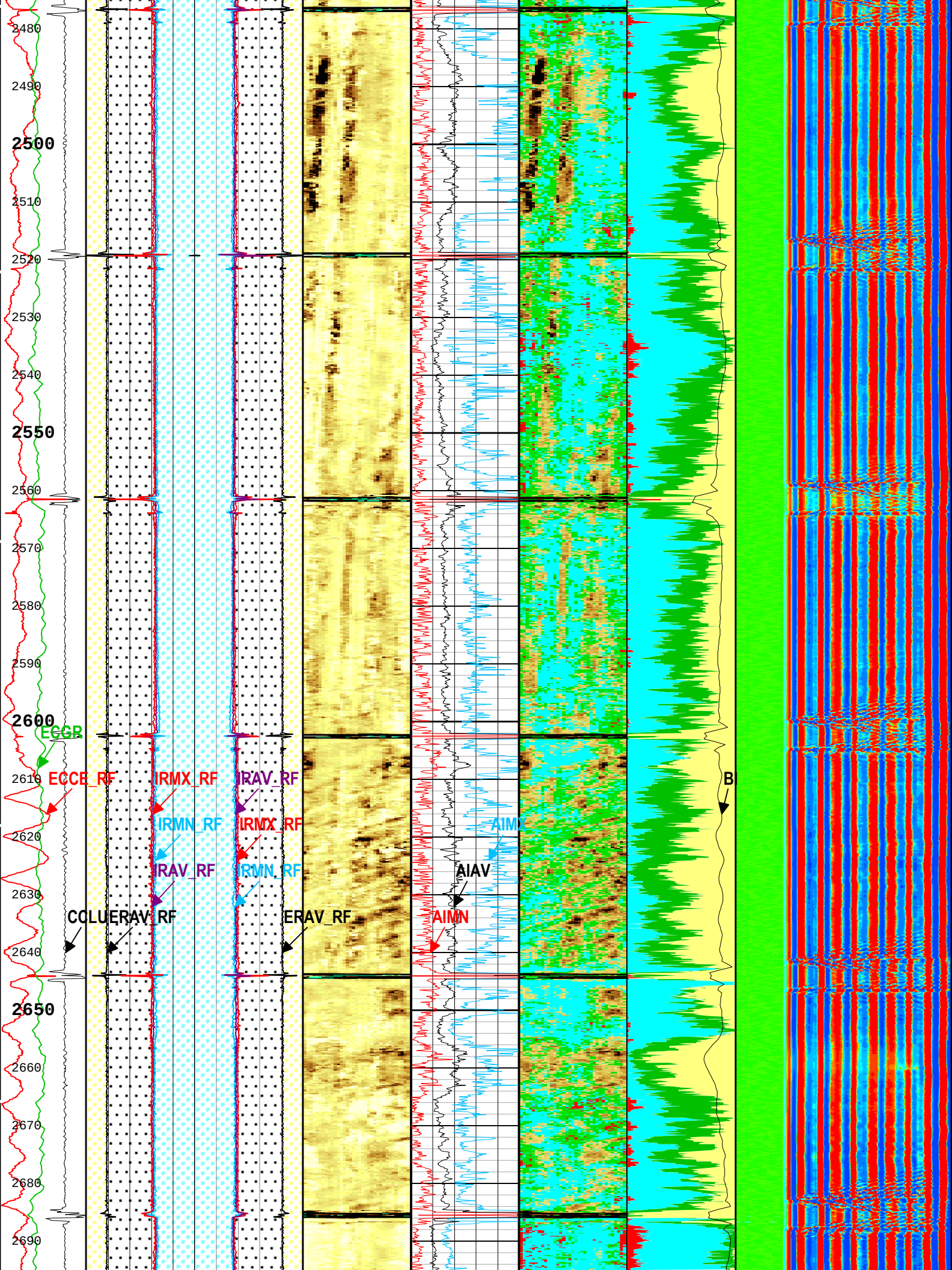
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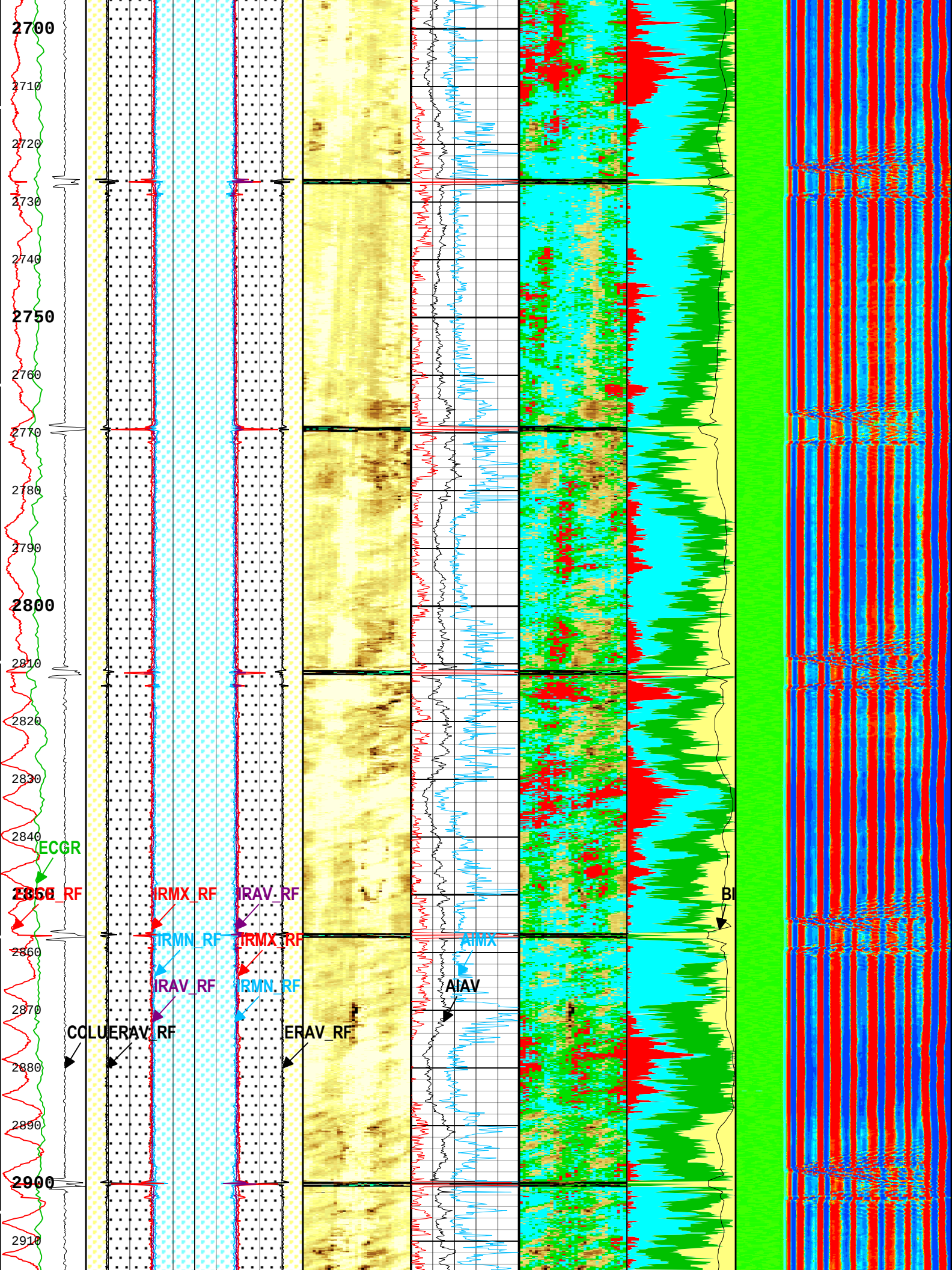
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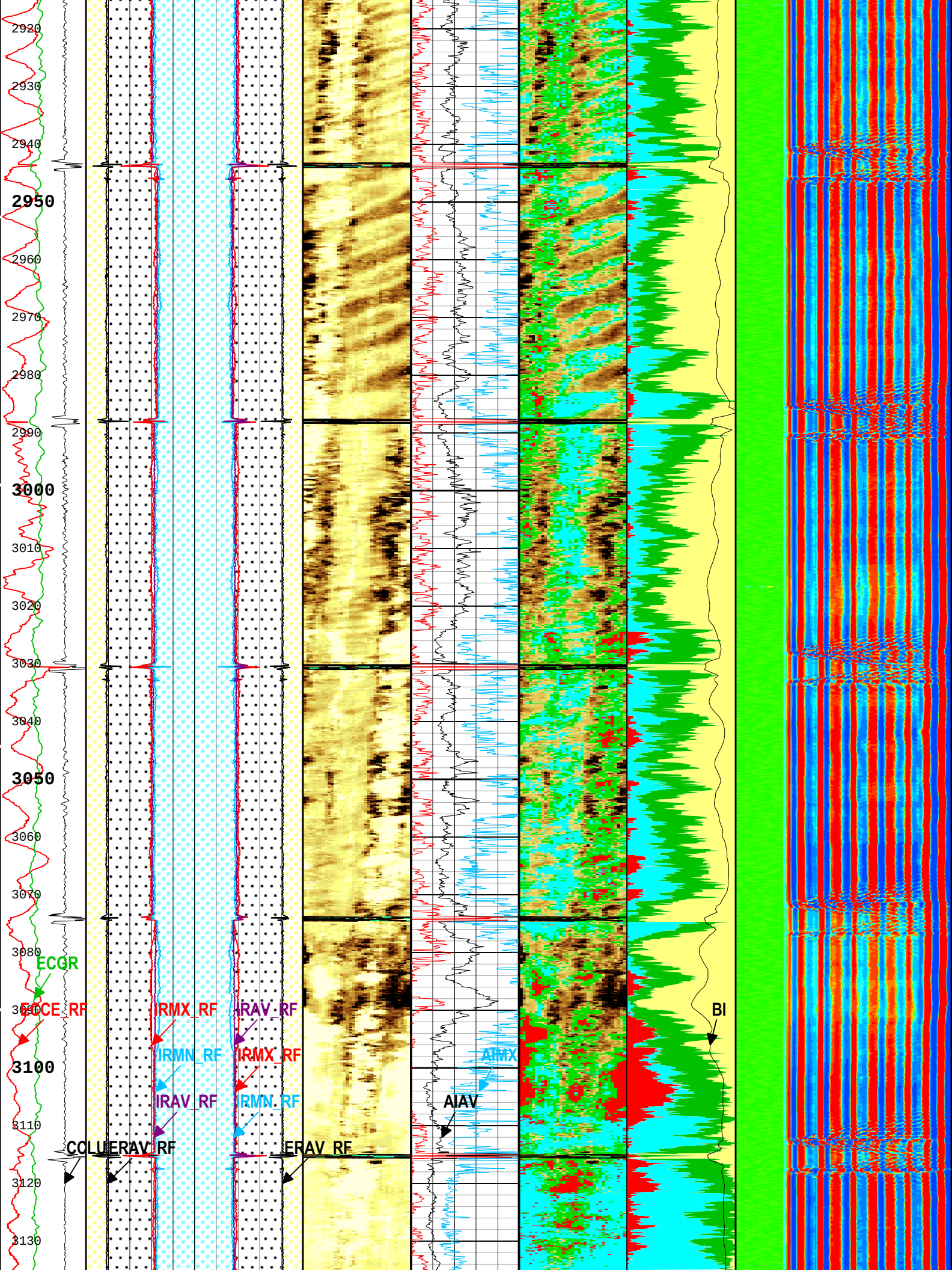
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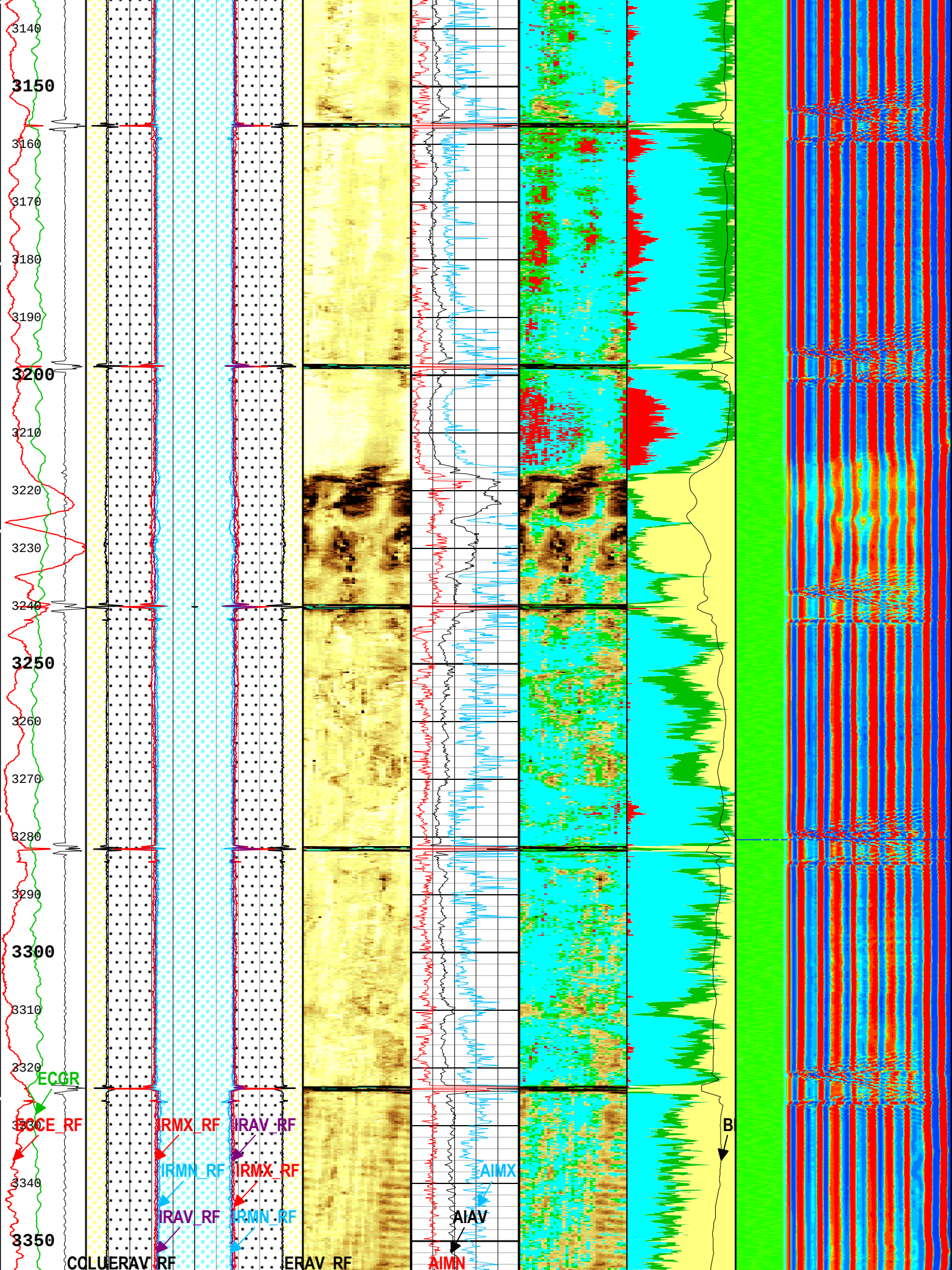
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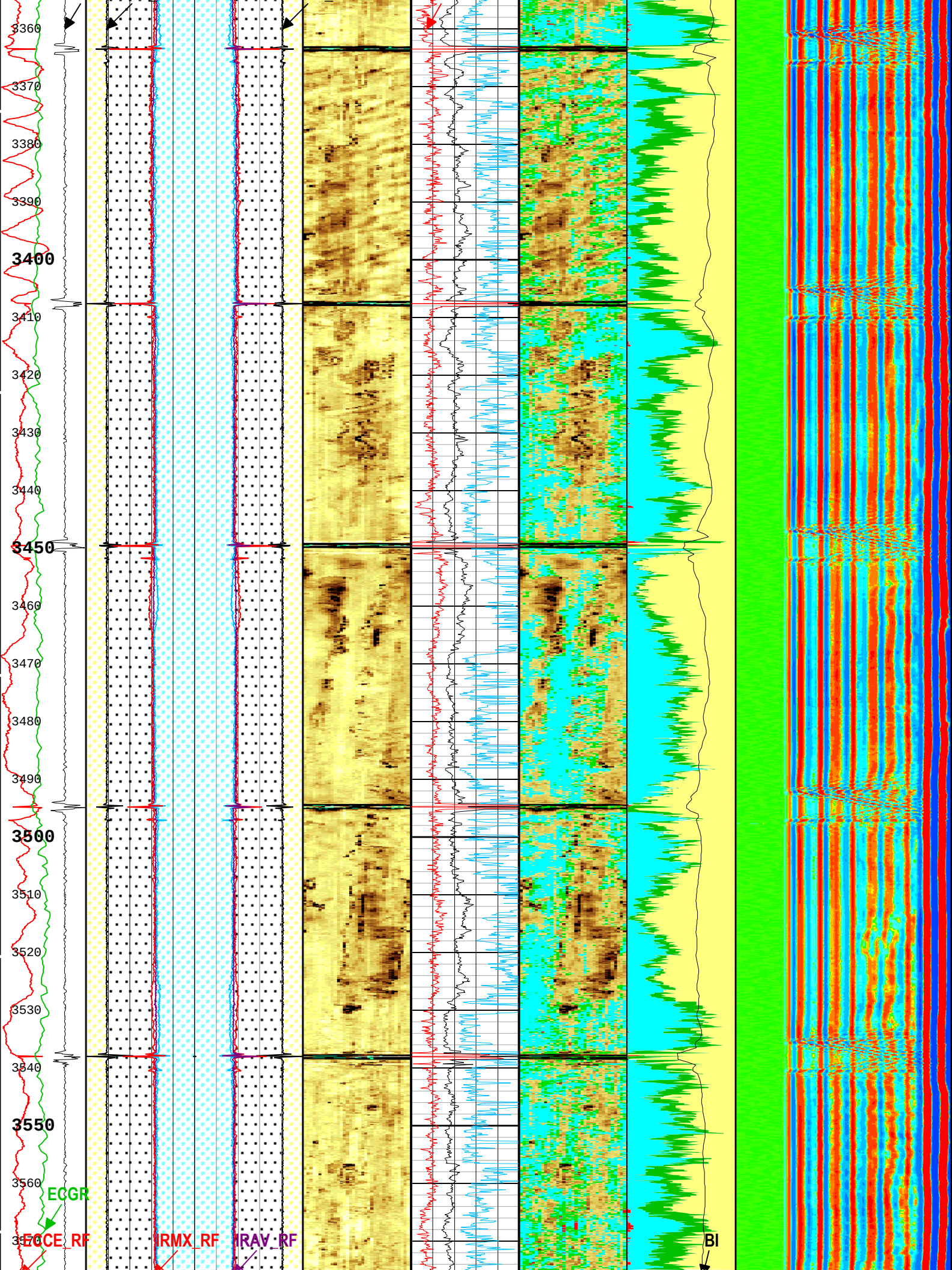
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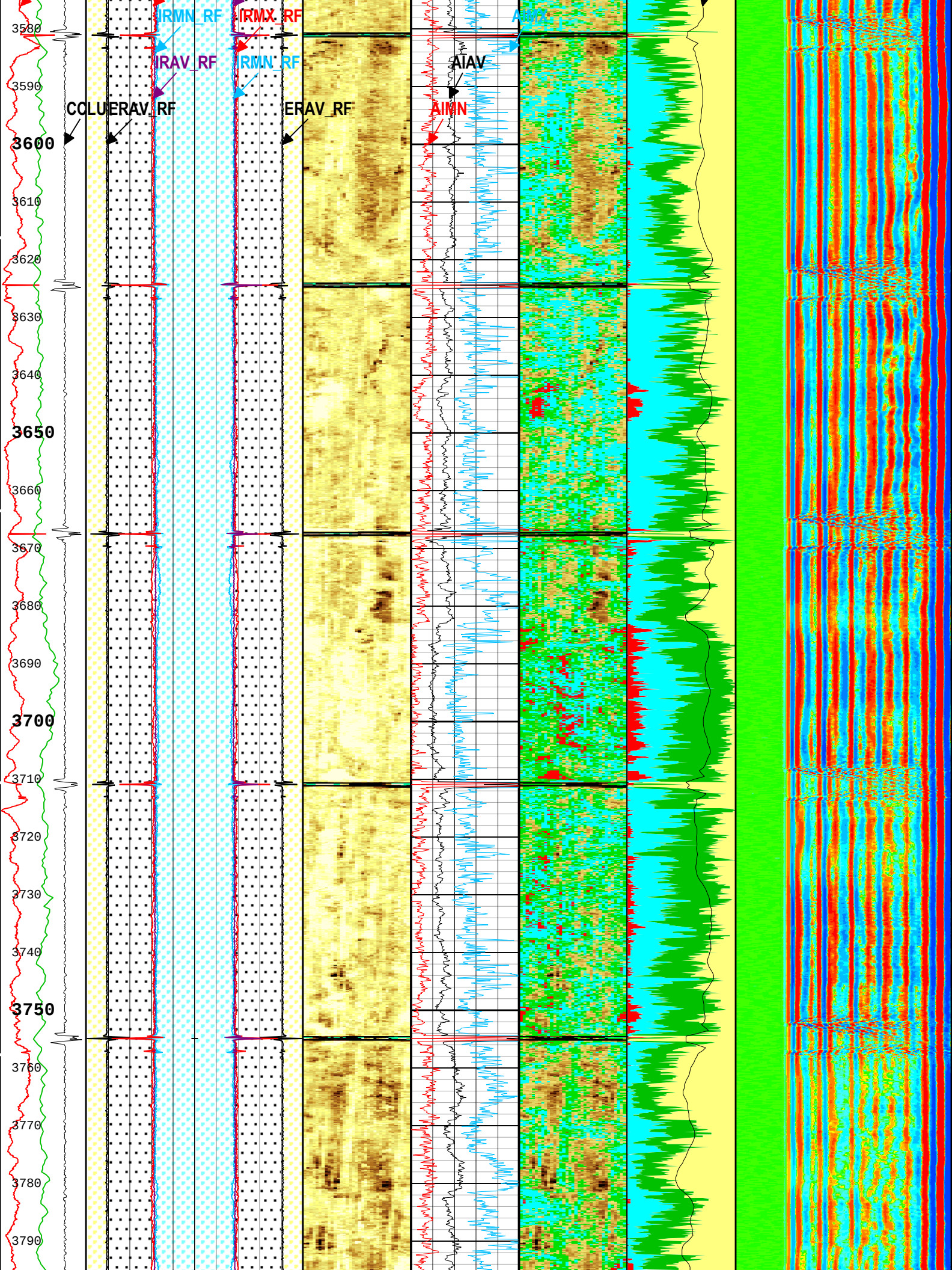
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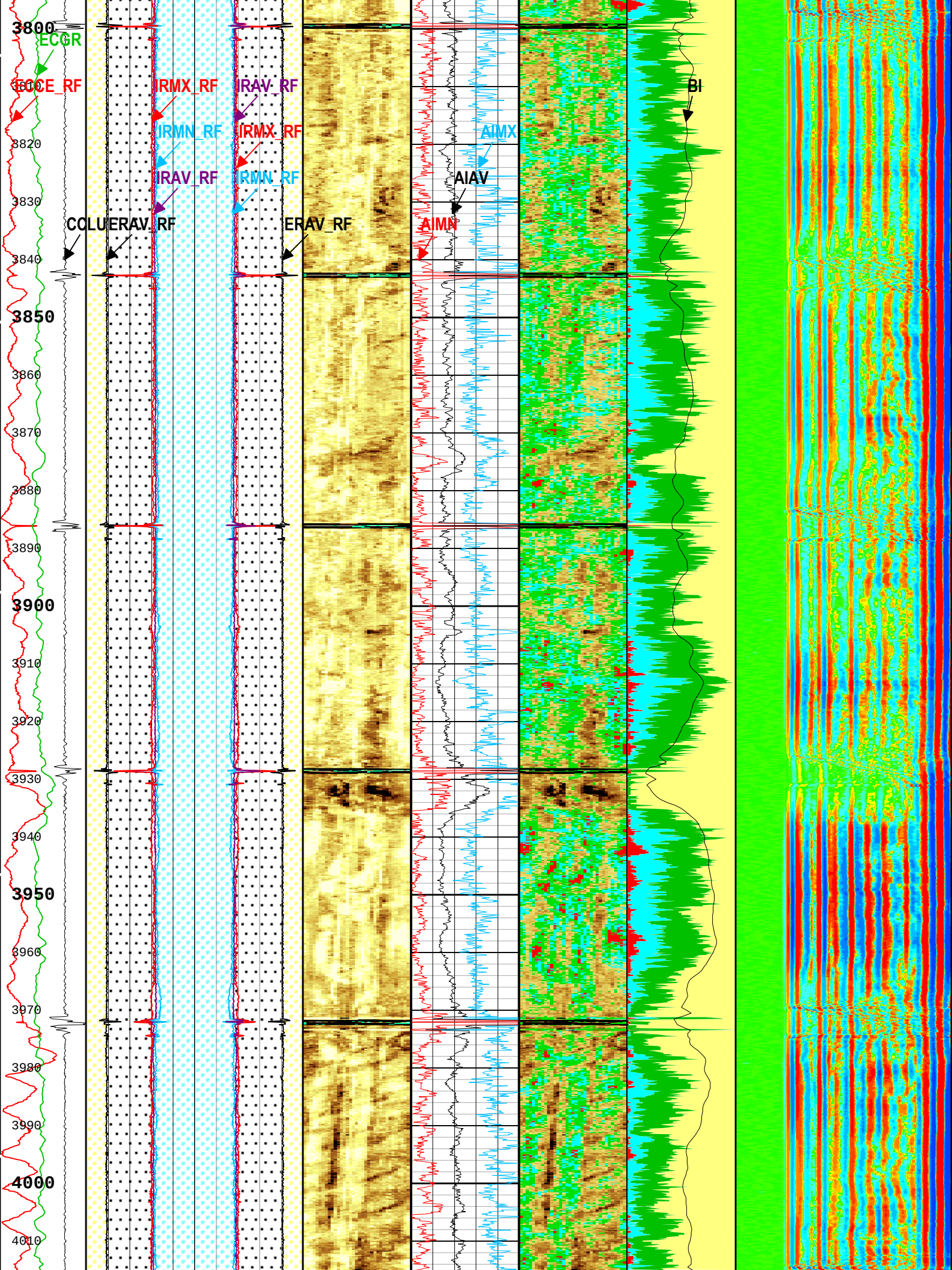
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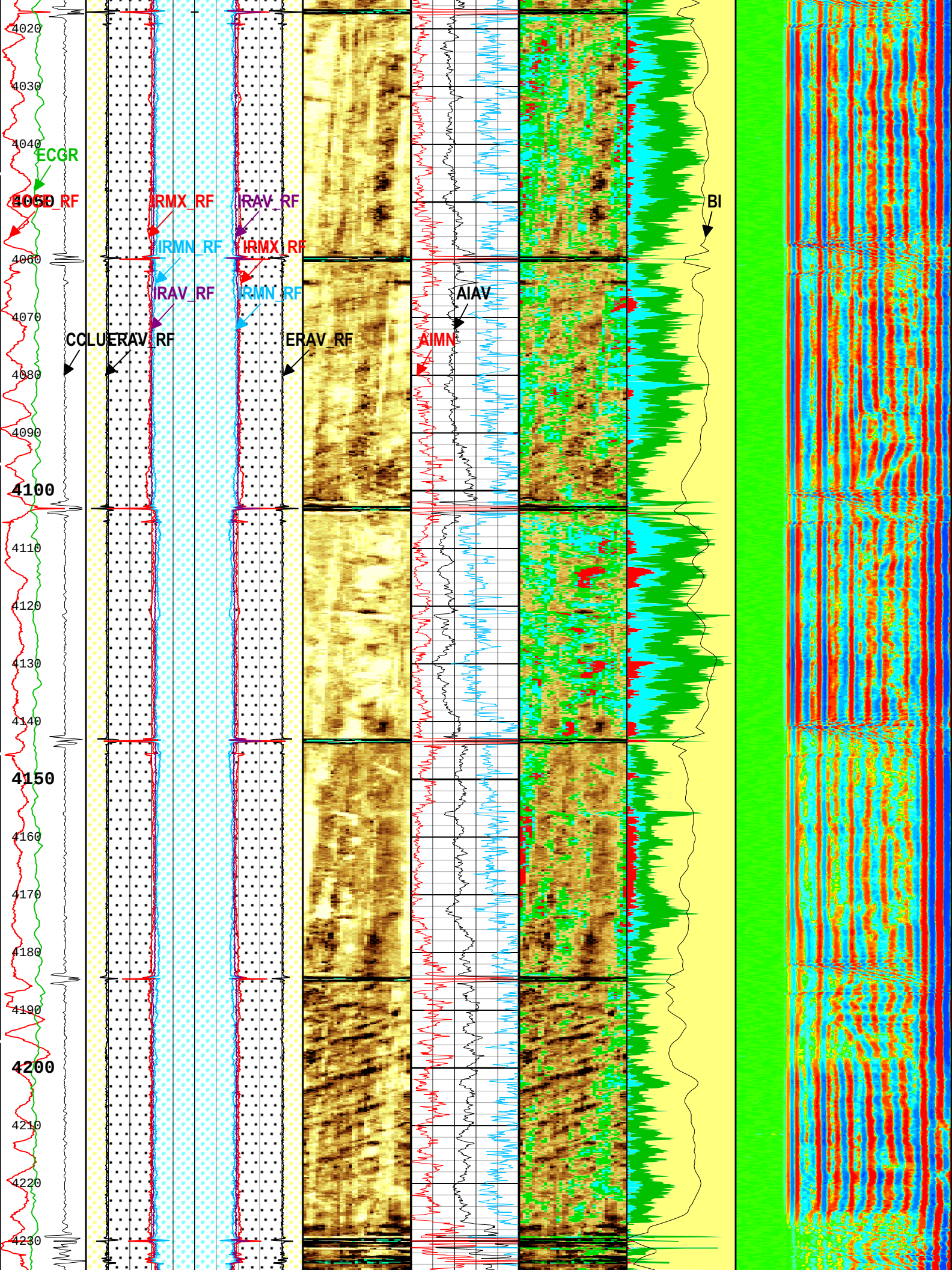
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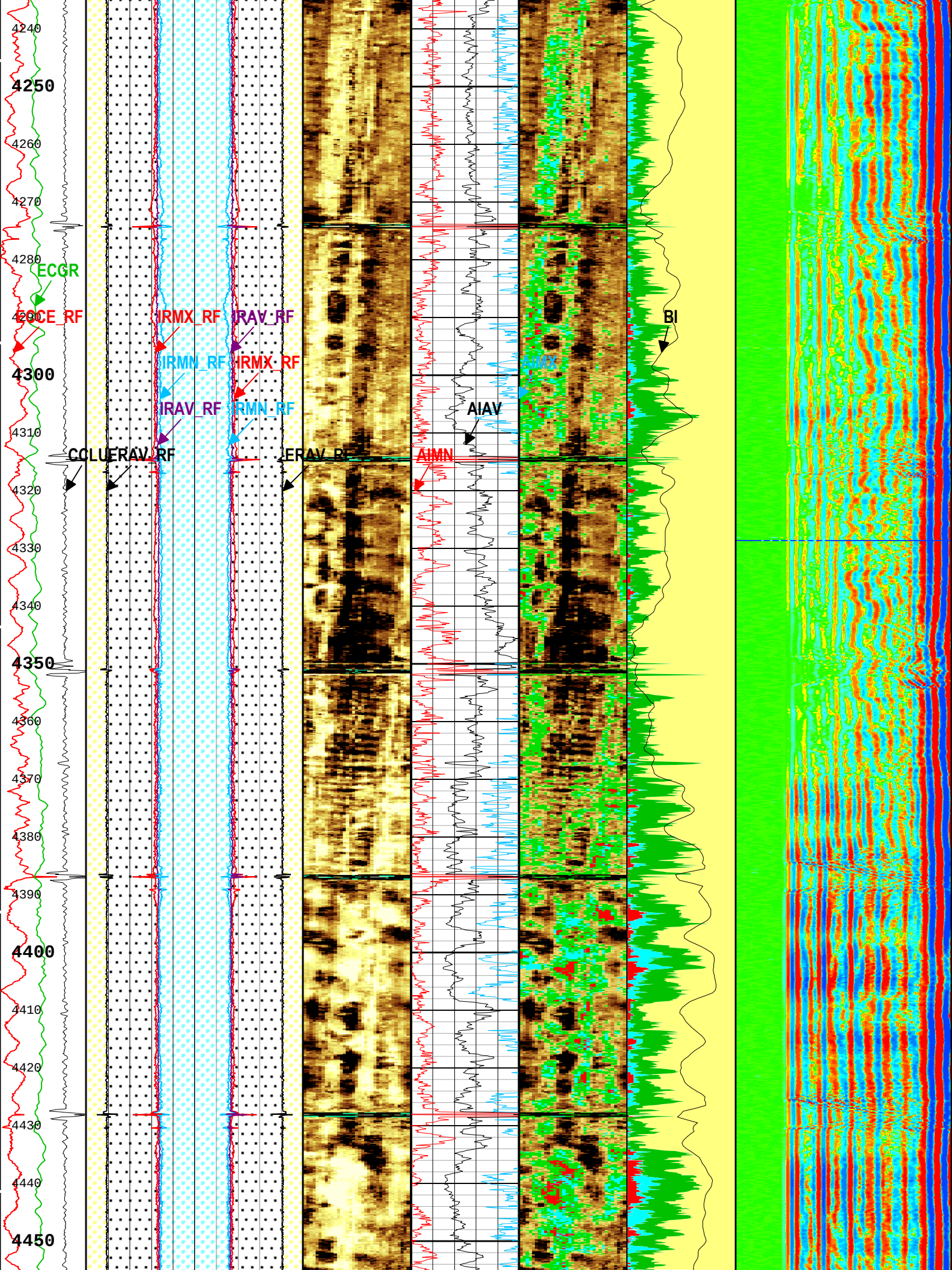
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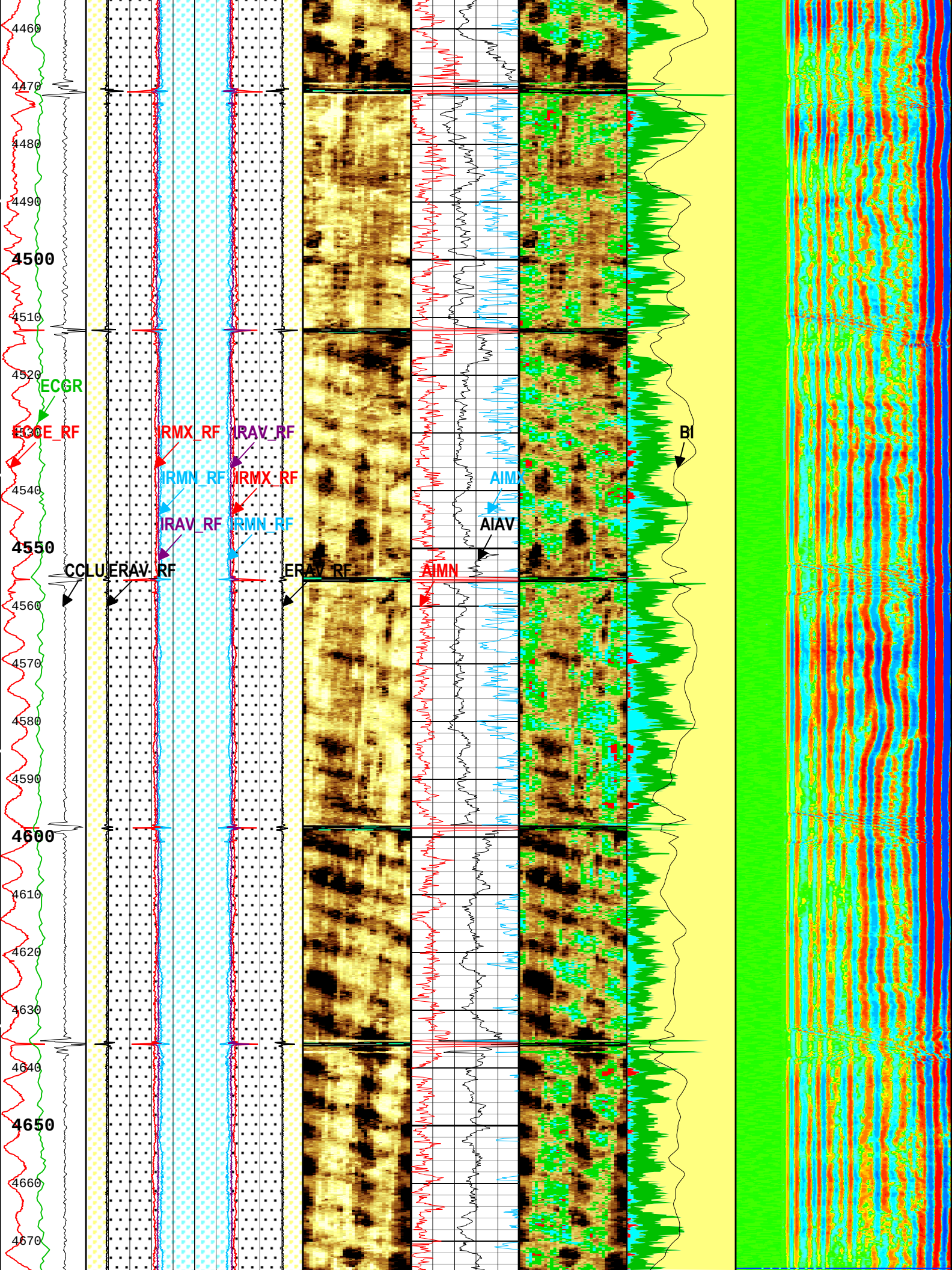
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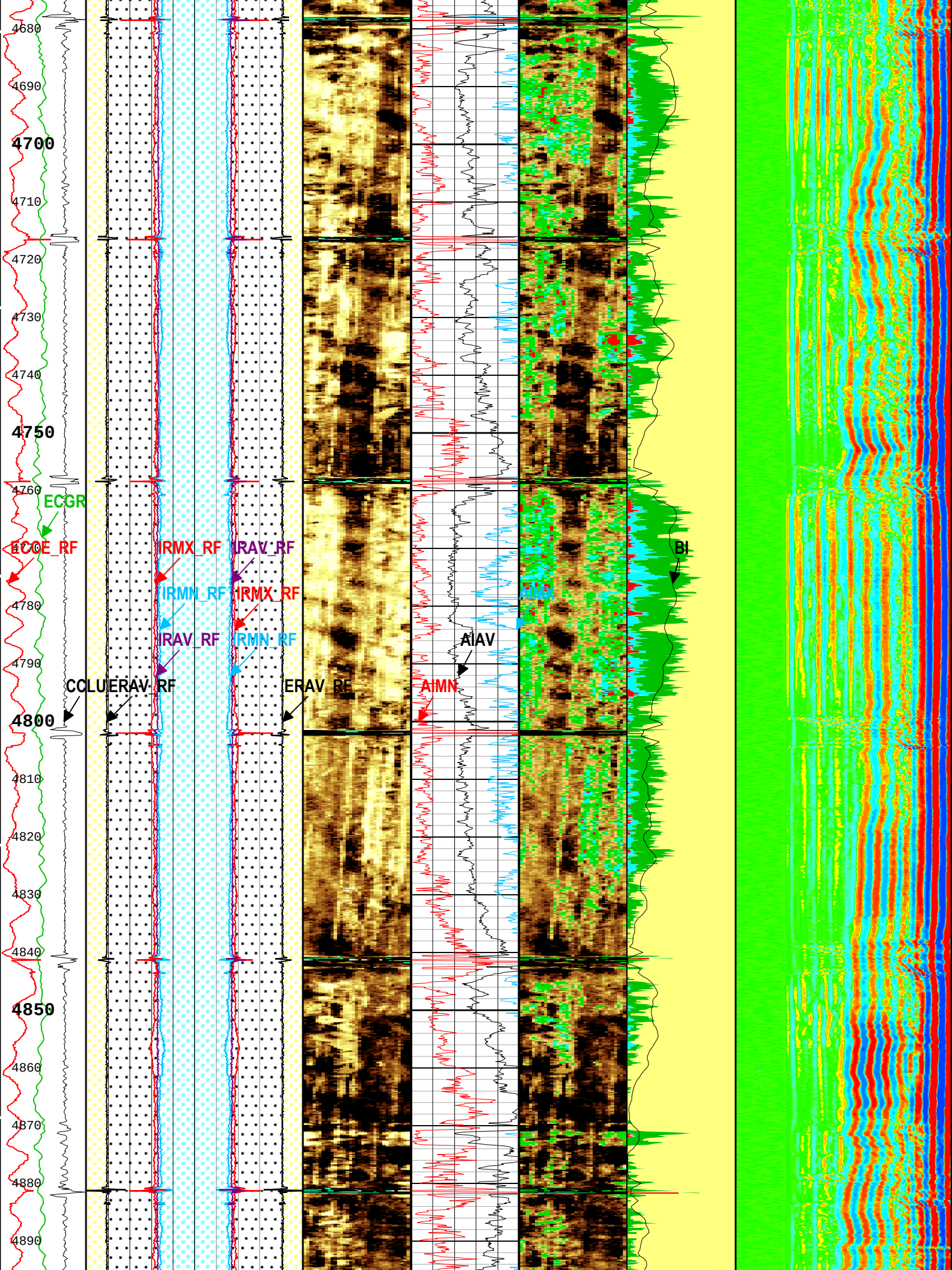
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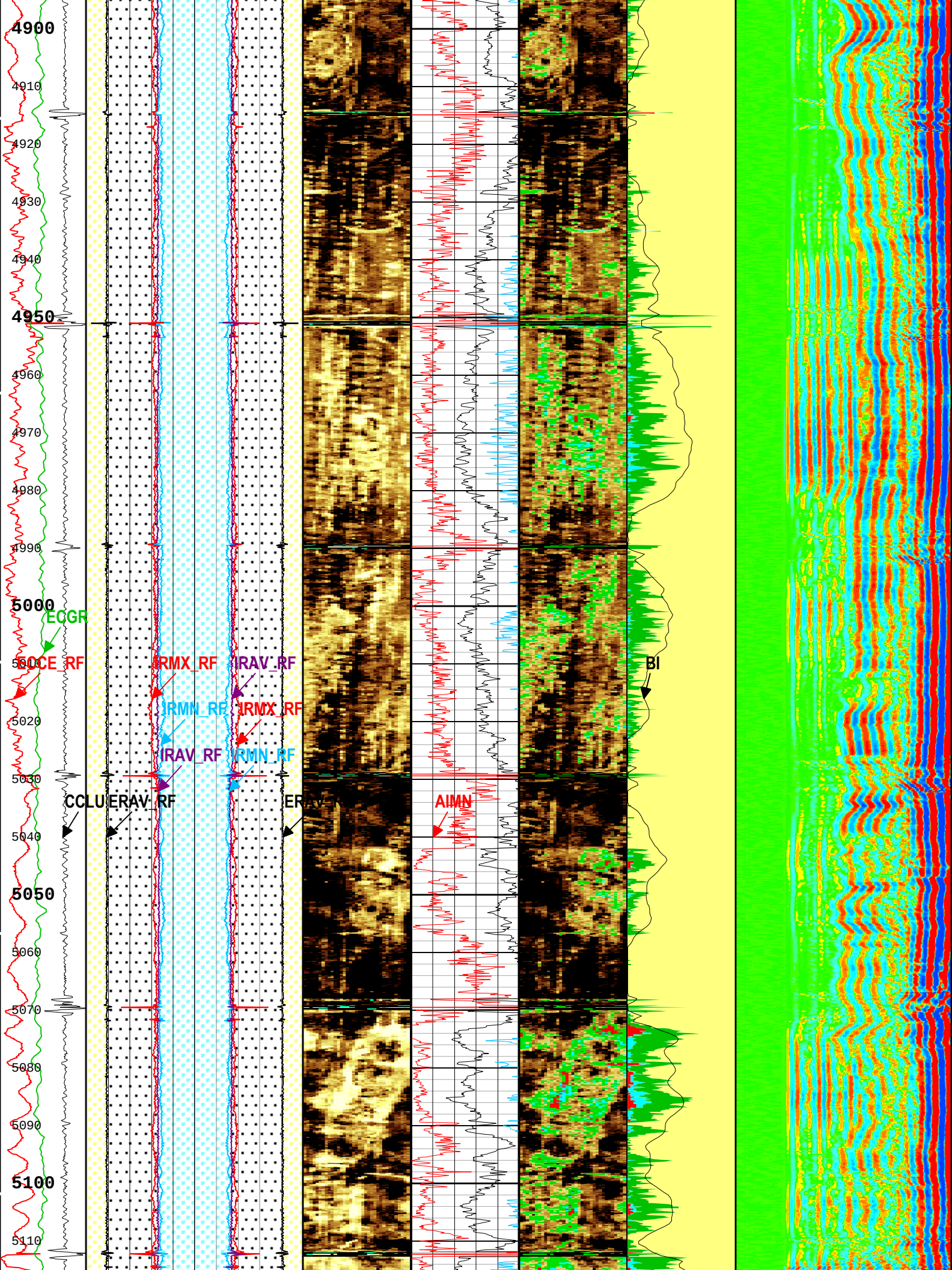
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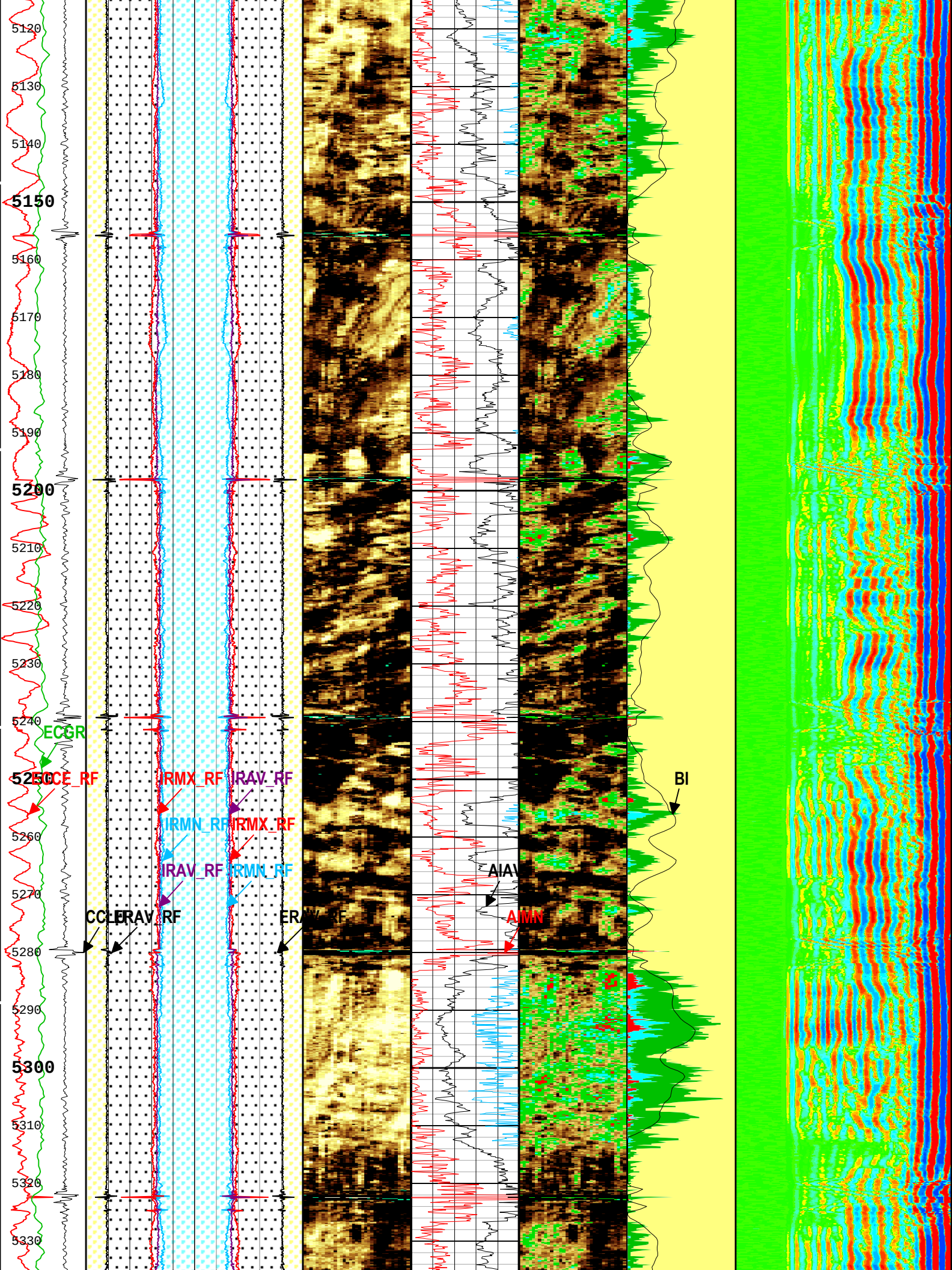
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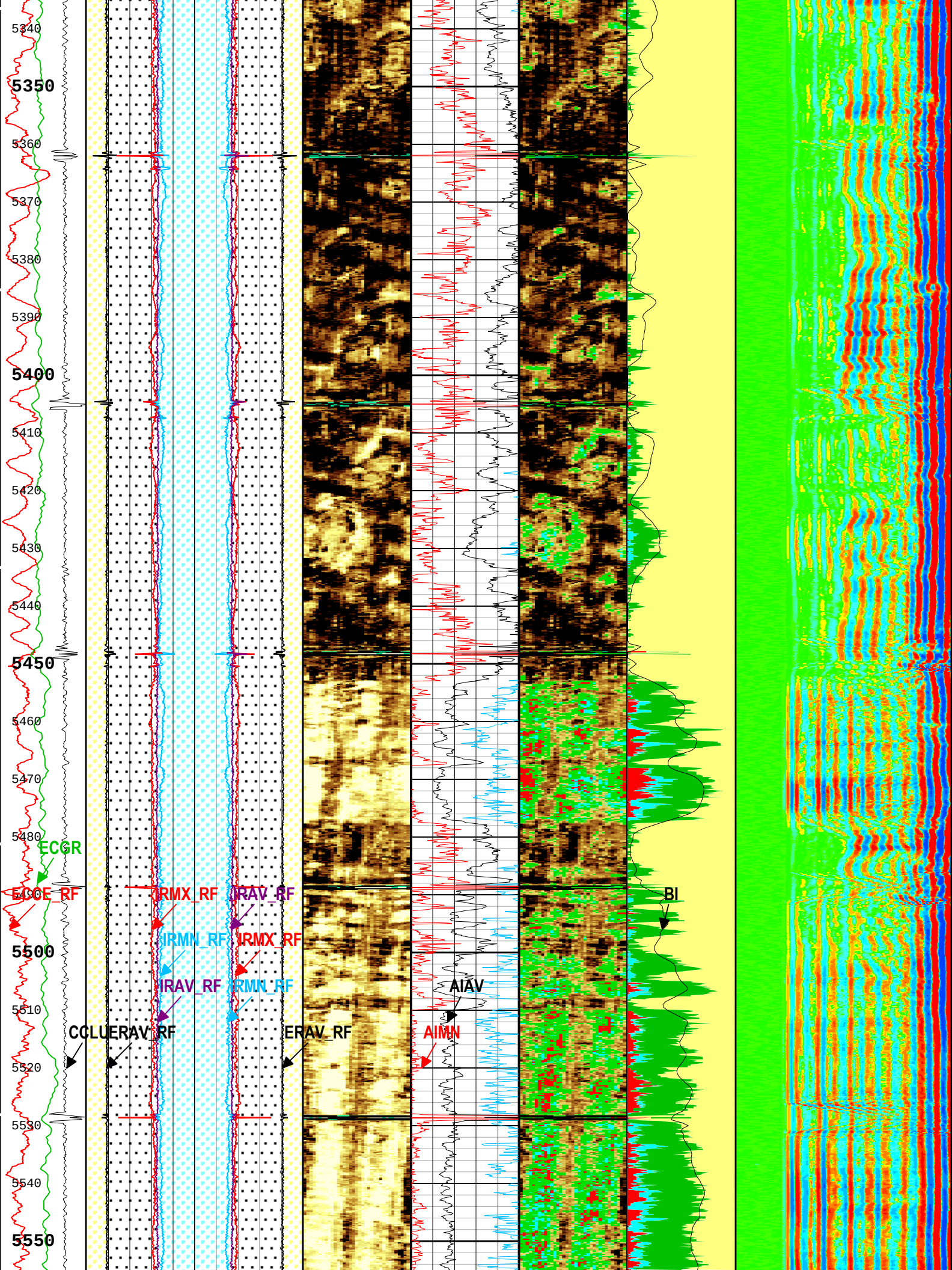
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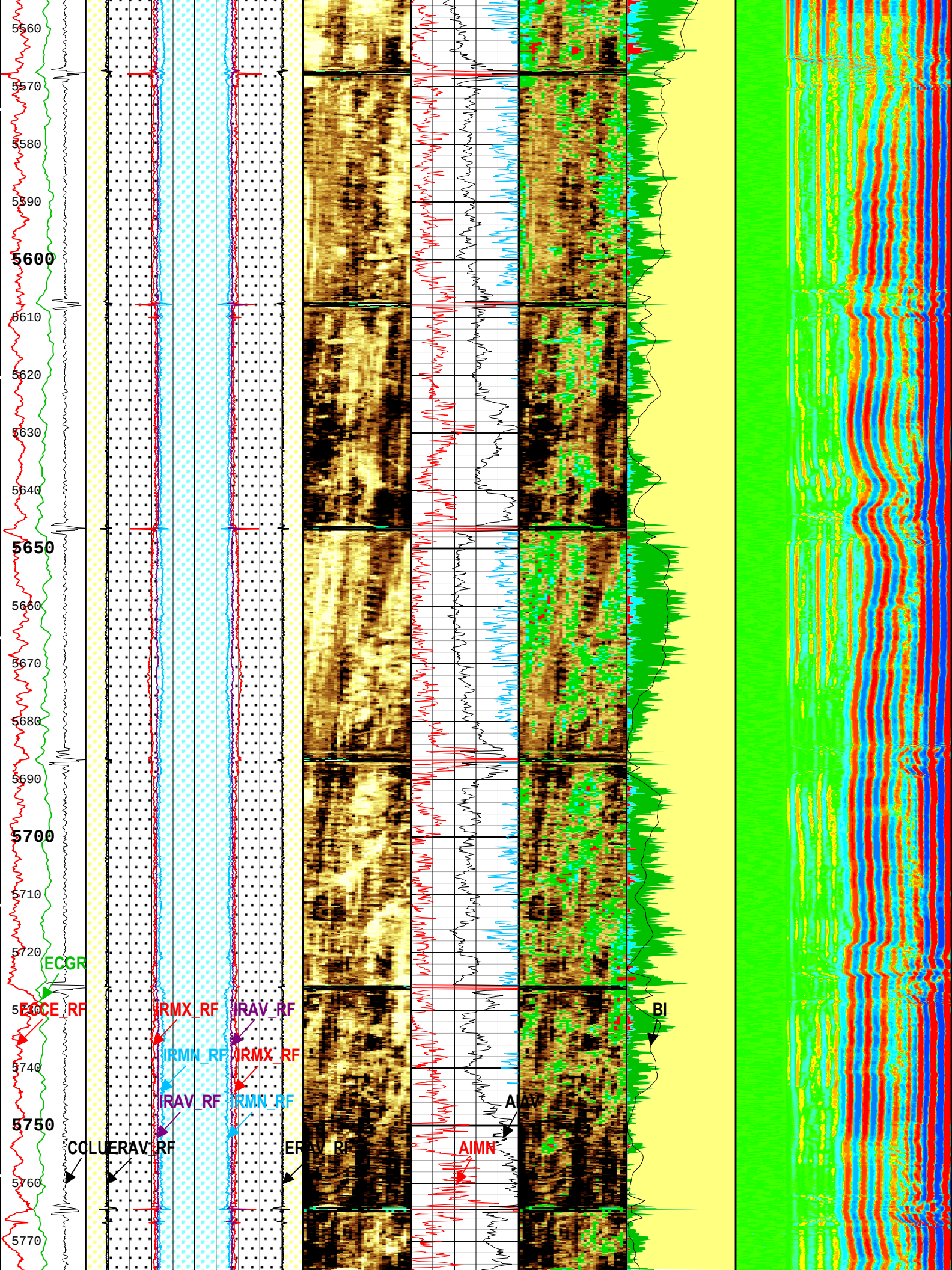
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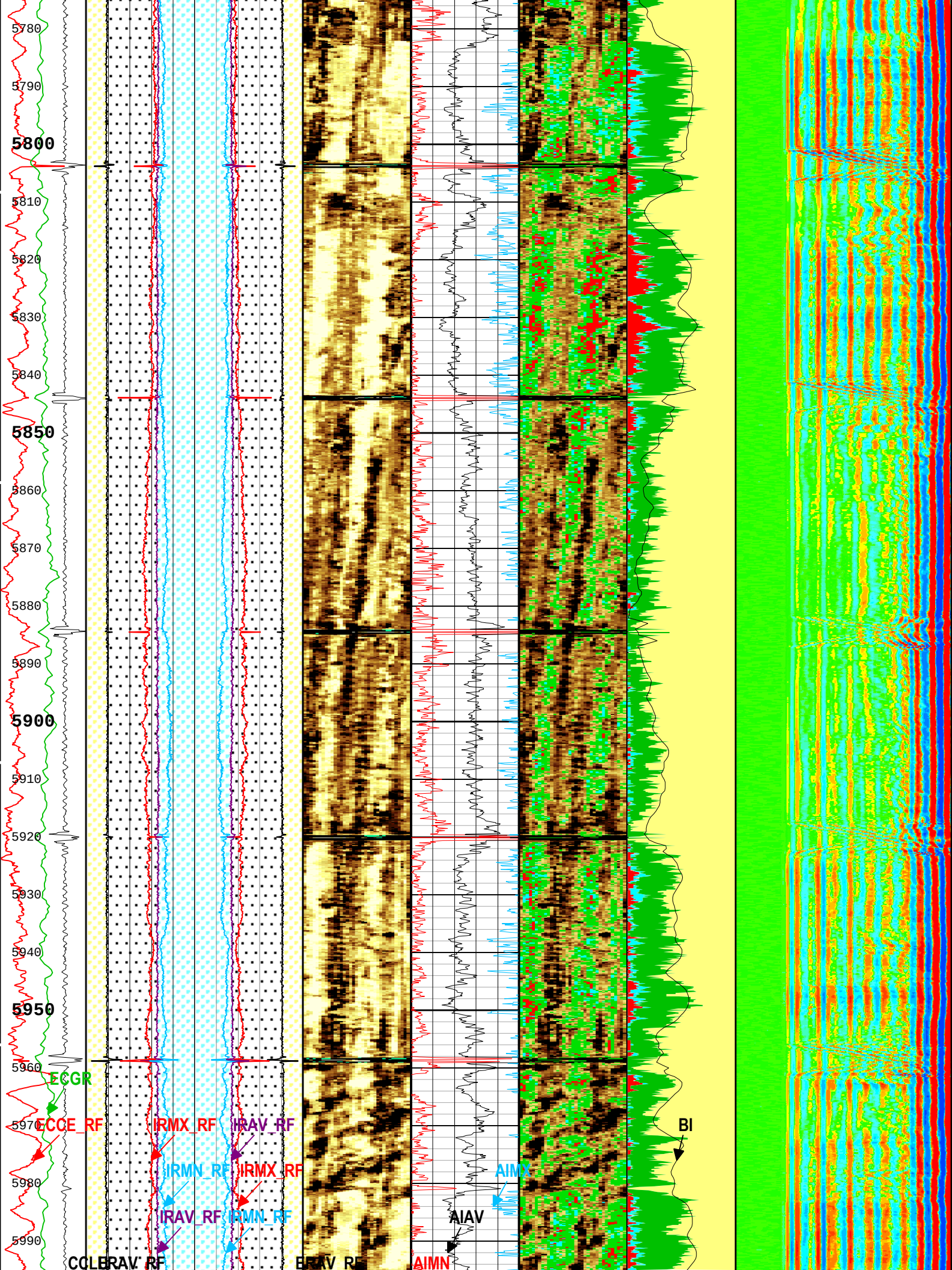
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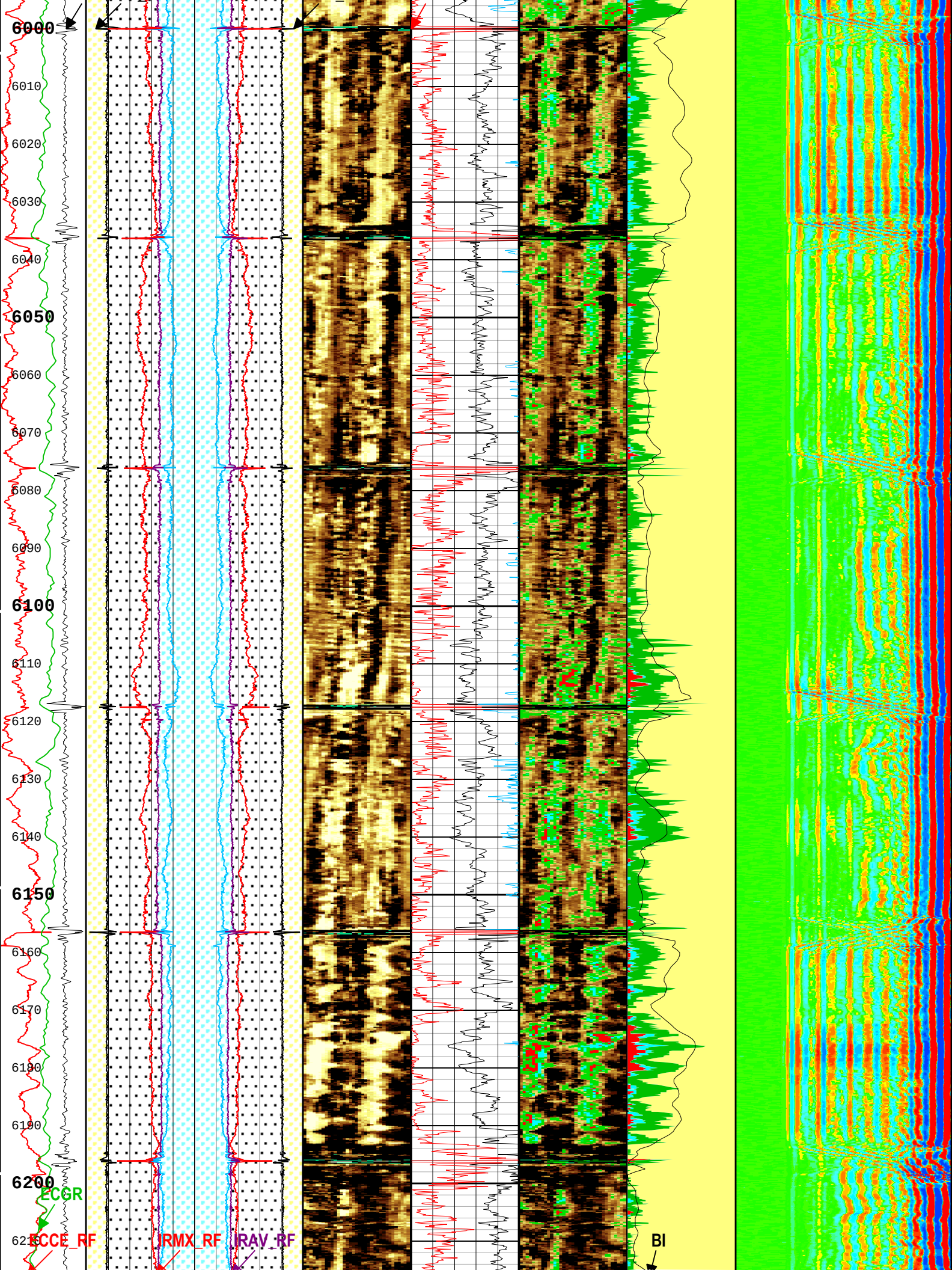
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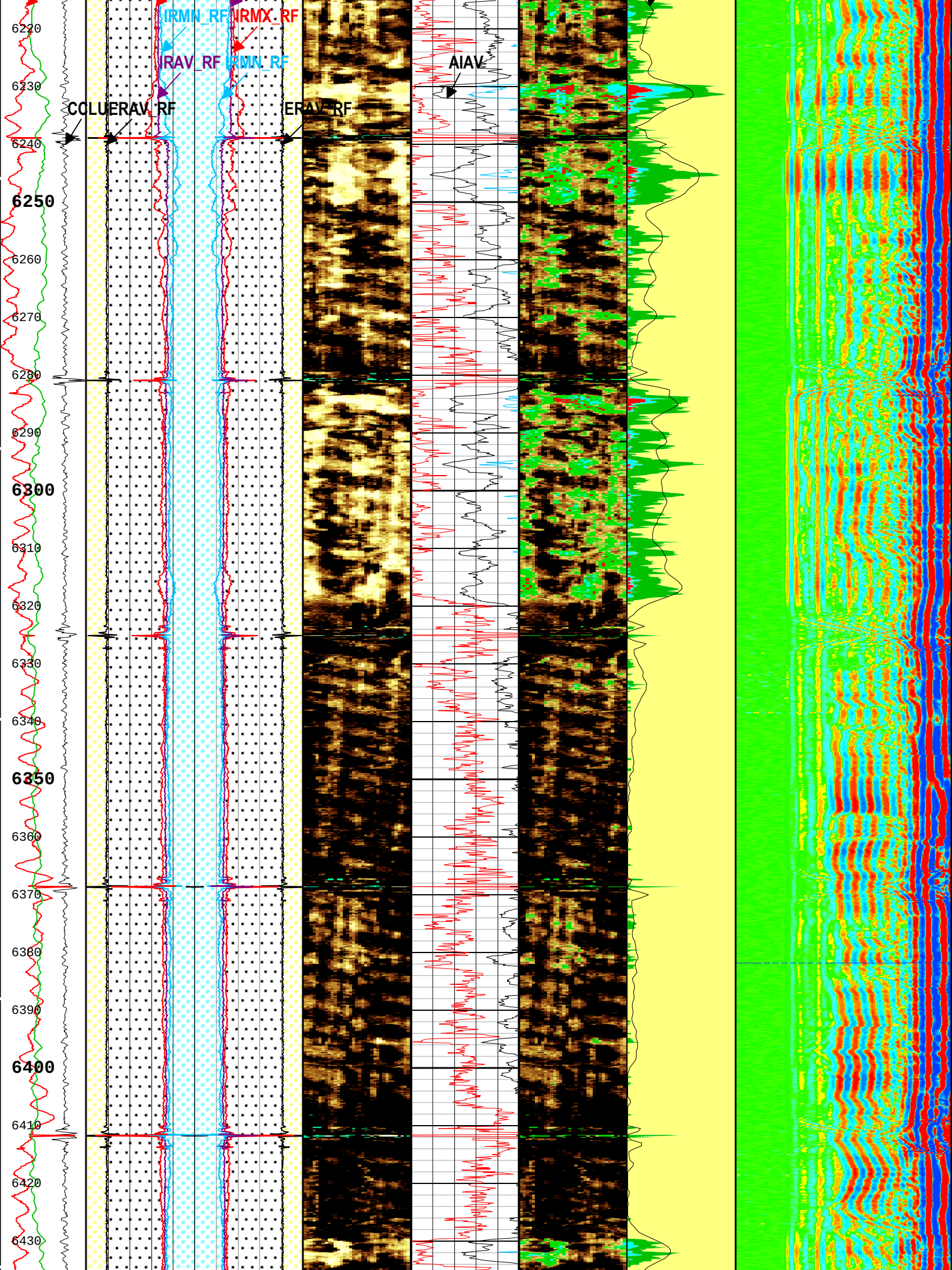
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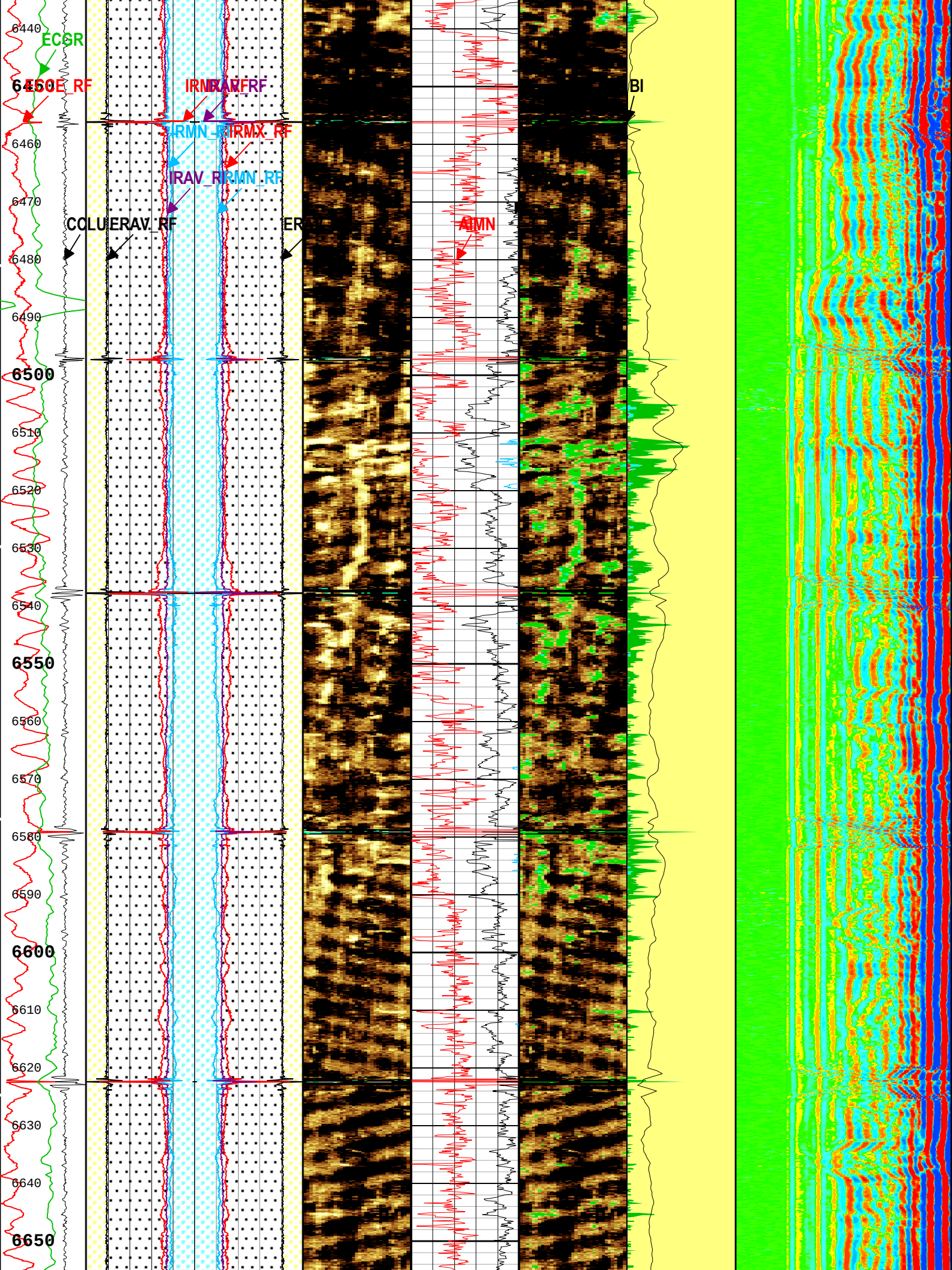
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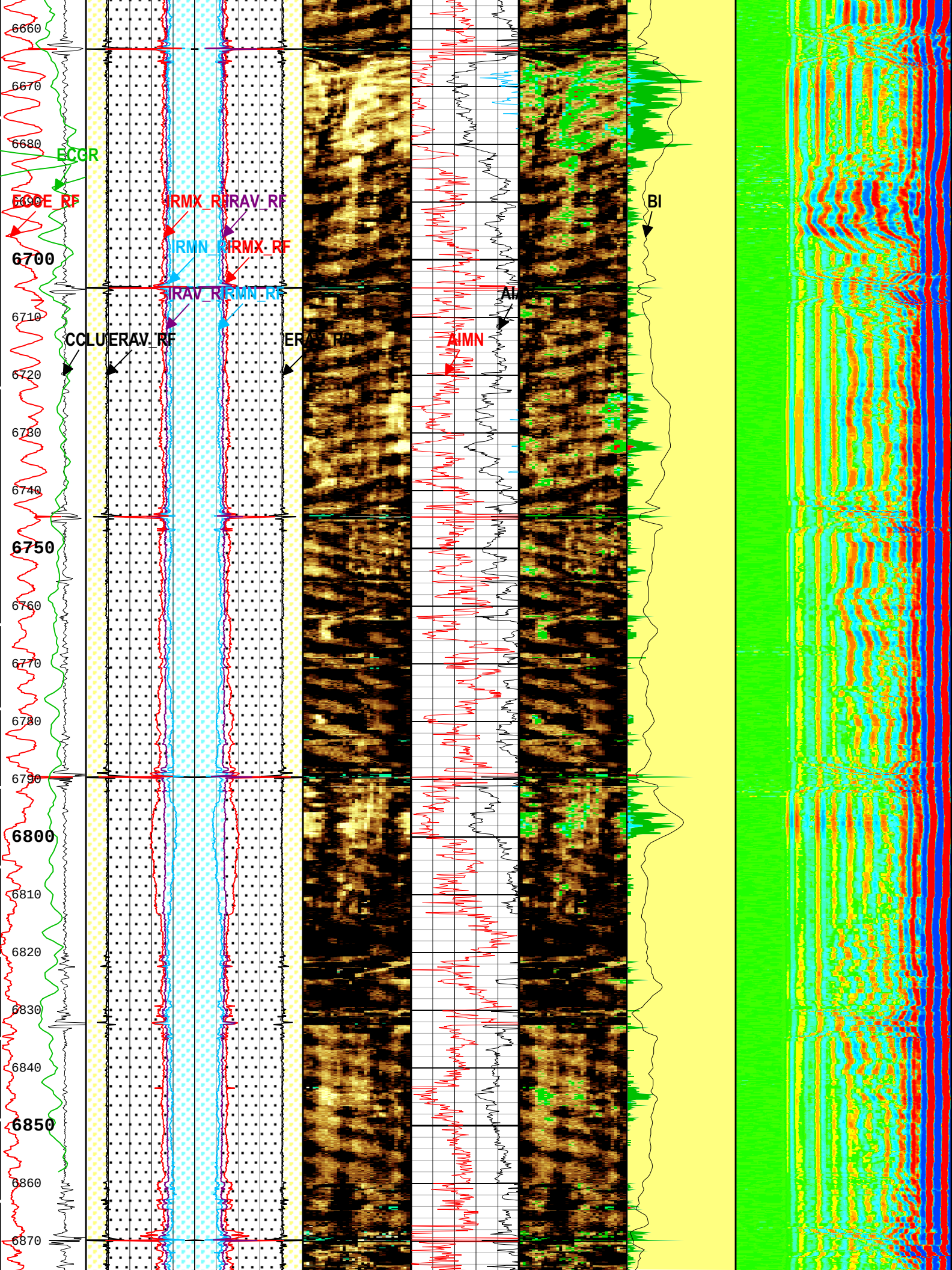
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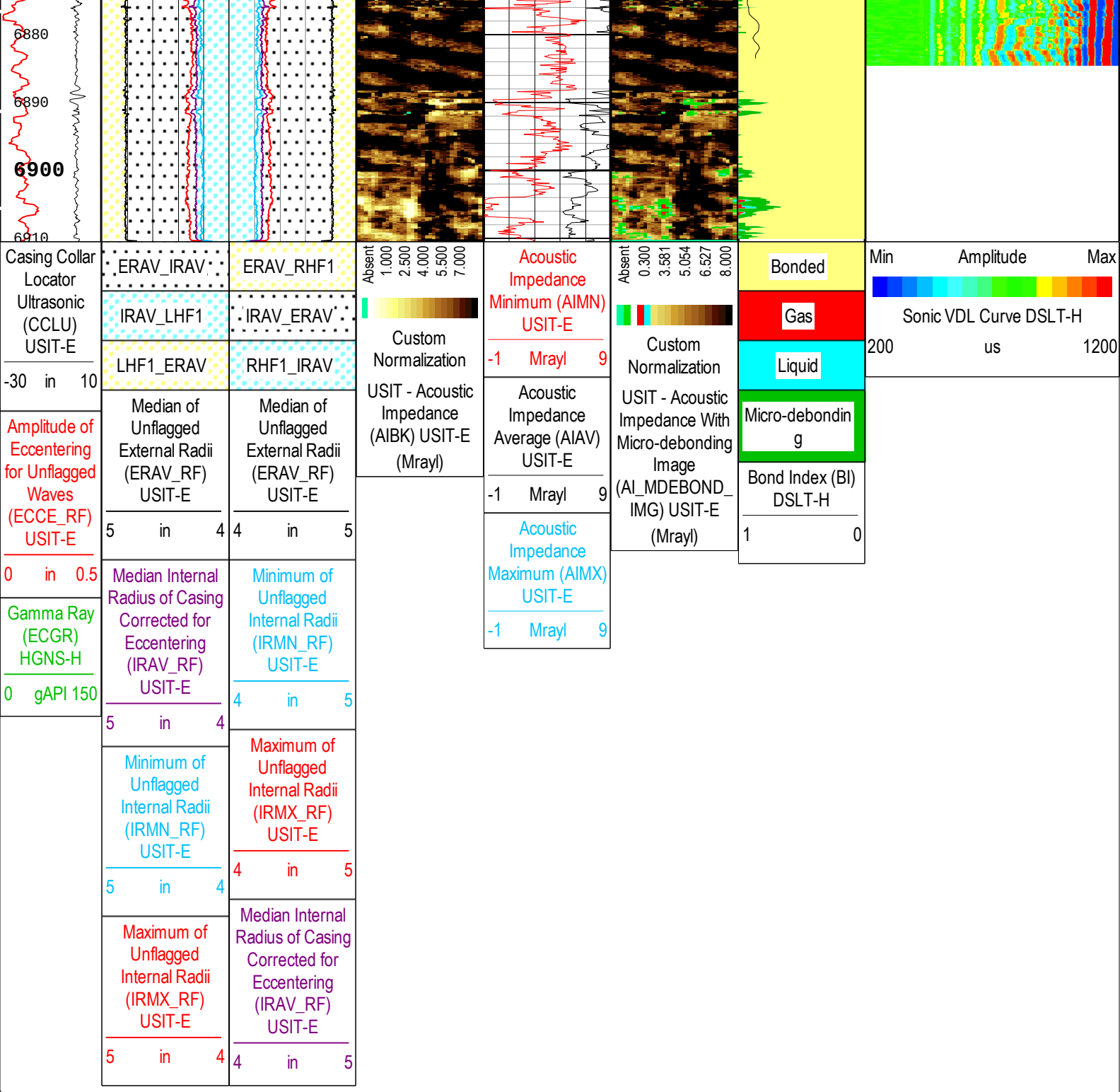


Description: USI VDL Cement Format: Log (LBV1_USI-VDL (DSLT) Cement 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:20:34

Channel Processing Parameters

TWO: Parameters

Parameter	Description	Tool	Value	Unit
AMSG	Auxiliary Minimum Sliding Gate	DSLT-H	140	us
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BERJ	Bad Echo Rejection	USIT-E	On	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BILI	Bond Index Level for Zone Isolation	DSLT-H	0.8	
BS	Bit Size	WLSESSION	Depth Zoned	in
CASING_PRATIO	Casing Poisson Ratio	USIT-E	Standard Poisson Ratio	

CBLG	CBL Gate Width	DSLT-H	71	us
CBLO	Casing Bottom (Logger)	WLSESSION	7044	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLT-H	52	mV
CDEN	Cement Density	HGNS-H	2	g/cm3
CMCF	CBL Cement Type Compensation Factor	DSLT-H	1	
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	Depth Zoned	in
DETE	Delta-T Detection	DSLT-H	E1	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	DSLT-H	0.89	
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	
GOBO_CURR	Good Bond in Arbitrary Cement	DSLT-H	Depth Zoned	mV
GR_MULTIPLIER	Gamma Ray Multiplier	HGNS-H	1	
HEMA	Hematite Presence Flag	Borehole	No	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MAHTR	Manual High Threshold Reference for first arrival detection	DSLT-H	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLT-H	Depth Zoned	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLT-H	Depth Zoned	ft
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	Depth Zoned	us
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLT-H	100	
MSA	Minimum Sonic Amplitude	DSLT-H	Depth Zoned	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	Depth Zoned	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	0.99	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
NMSG	Near Minimum Sliding Gate	DSLT-H	295	us
NMXG	Near Maximum Sliding Gate	DSLT-H	950	us
NUMP	Number of Detection Passes	DSLT-H	2	
OPLEV	USIT Remove Flagged Data Level	USIT-E	OPT2	
RCOD	Reference Calibrator Outer Diameter	USIT-E	7	in
RCSO	Reference Calibrator Standoff	USIT-E	1.378	in
RCTH	Reference Calibrator Thickness	USIT-E	0.295	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
SFAF	Sonic Formation Attenuation Factor	DSLT-H	3.25	dB/ft
SGAD	Sliding Gate Status	DSLT-H	Off	
SGCL	Sliding Gate Closing Delta-T	DSLT-H	130	us/ft
SGCW	Sliding Gate Closing Width	DSLT-H	25	us
SGDT	Sliding Gate Delta-T	DSLT-H	57	us/ft
SGW	Sliding Gate Width	DSLT-H	110	us
SLEV	Signal Level for AGC	DSLT-H	5000	mV
SOCN	Standoff Distance	HGNS-H	0.125	in
SOCO	Standoff Correction Option	HGNS-H	No	
TCUB	T^3 Processing Level	USIT-E	Loop	
THRH	Maximum Sonic Thickness (measurement from nominal)	USIT-E	100	%

THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	70	%
HISC	Tool Position: Centered or Eccentered	HGNS-H	Eccentered	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
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
VDLG	VDL Manual Gain	DSLT-H	5	
ZCAS	Acoustic Impedance of Casing	USIT-E	46.25	Mrayl
ZCMT	Acoustic Impedance of Cement	DSLT-H	6.8	Mrayl
ZCMT_NEAT	Acoustic Impedance of Cement in Neat Cement	DSLT-H	6.8	Mrayl
ZINI	Initial Estimate of Cement Impedance	USIT-E	-1	Mrayl
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	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	17.5	200	1015
BS	12.25	1015	6910.5
THNO	0.435	200	4234
THNO	0.472	4234	6239
THNO	0.545	6239	6910.5
GOBO_CURR	3.94	200	6237
GOBO_CURR	4.74	6237	6910.5
MATT_CURR	10	200	6237
MATT_CURR	9.3	6237	6910.5
MCI	21.68	200	1015
MCI	14.81	1015	6910.5
MEAS_WLEN	27.24	200	6237
MEAS_WLEN	29.67	6237	6910.5
MSA	2.06	200	6237
MSA	2.61	6237	6910.5
MSA_CURR	2.06	200	6237
MSA_CURR	2.61	6237	6910.5

All depth are actual.

Tool Control Parameters

TWO: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
DDEL	Digitizing Delay	DSLT-H	0	us
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
DOT(DOS)	Distance between Opposite Transducer Faces	USIT-E	4.874	in
MODE	DSLT Acquisition Mode	DSLT-H	CBL	

RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
DWCO	Digitizer Word Count	DSLT-H	250	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MOTOR_PROTECT	Motor Protection	USIT-E	On	
SDTH	Switch Down Threshold	DSLT-H	20000	
SGAI	Selectable Acquisition Gain	DSLT-H	x1	
SUTH	Switch Up Threshold	DSLT-H	1000	
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 1.5 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6914	ft
USSP	Ultrasonic Service	USIT-E	USI	
VRES	Vertical Resolution	USIT-E	1.5 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us
WMOD	Waveform Firing Mode	DSLT-H	Full	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	40	24-May-2016 09:27:08	24-May-2016 09:30:21	6911.16	6871.94
EMXV	45	24-May-2016 09:30:21	24-May-2016 09:30:38	6871.94	6868.22
EMXV	50	24-May-2016 09:30:38	24-May-2016 09:33:51	6868.22	6822.57
EMXV	45	24-May-2016 09:33:51	24-May-2016 09:44:33	6822.57	6455.01
EMXV	40	24-May-2016 09:44:33	24-May-2016 09:56:13	6455.01	5895.86
EMXV	45	24-May-2016 09:56:13	24-May-2016 10:28:09	5895.86	4385.55
EMXV	48	24-May-2016 10:28:09	24-May-2016 10:44:03	4385.55	3613.32
EMXV	43	24-May-2016 10:44:03	24-May-2016 10:44:56	3613.32	3571.28
EMXV	46	24-May-2016 10:44:56	24-May-2016 11:15:40	3571.28	2118.61
EMXV	50	24-May-2016 11:15:40	24-May-2016 11:36:02	2118.61	1159.7
EMXV	55	24-May-2016 11:36:02	24-May-2016 11:36:25	1159.7	1141.68
EMXV	60	24-May-2016 11:36:25	24-May-2016 11:41:19	1141.68	908.5
EMXV	65	24-May-2016 11:41:19	24-May-2016 11:42:14	908.5	865.14
EMXV	70	24-May-2016 11:42:14	24-May-2016 11:54:55	865.14	264.07
EMXV	75	24-May-2016 11:54:55	24-May-2016 11:56:22	264.07	198.58
WINB	42.85	24-May-2016 09:27:08	24-May-2016 09:27:42	6911.16	6909.5
WINB	38.18	24-May-2016 09:27:42	24-May-2016 11:56:22	6909.5	198.58
WINE	82.85	24-May-2016 09:27:08	24-May-2016 09:27:45	6911.16	6908.89
WINE	90.48	24-May-2016 09:27:45	24-May-2016 11:56:22	6908.89	198.58

All depth are at tool zero.

TWO

Main Pass 5 IN = 100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[2]:Up	Up	198.58 ft	6911.16 ft	24-May-2016 9:27:08 AM	24-May-2016 11:56:22 AM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A

TWO: Log[2]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:21:09

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

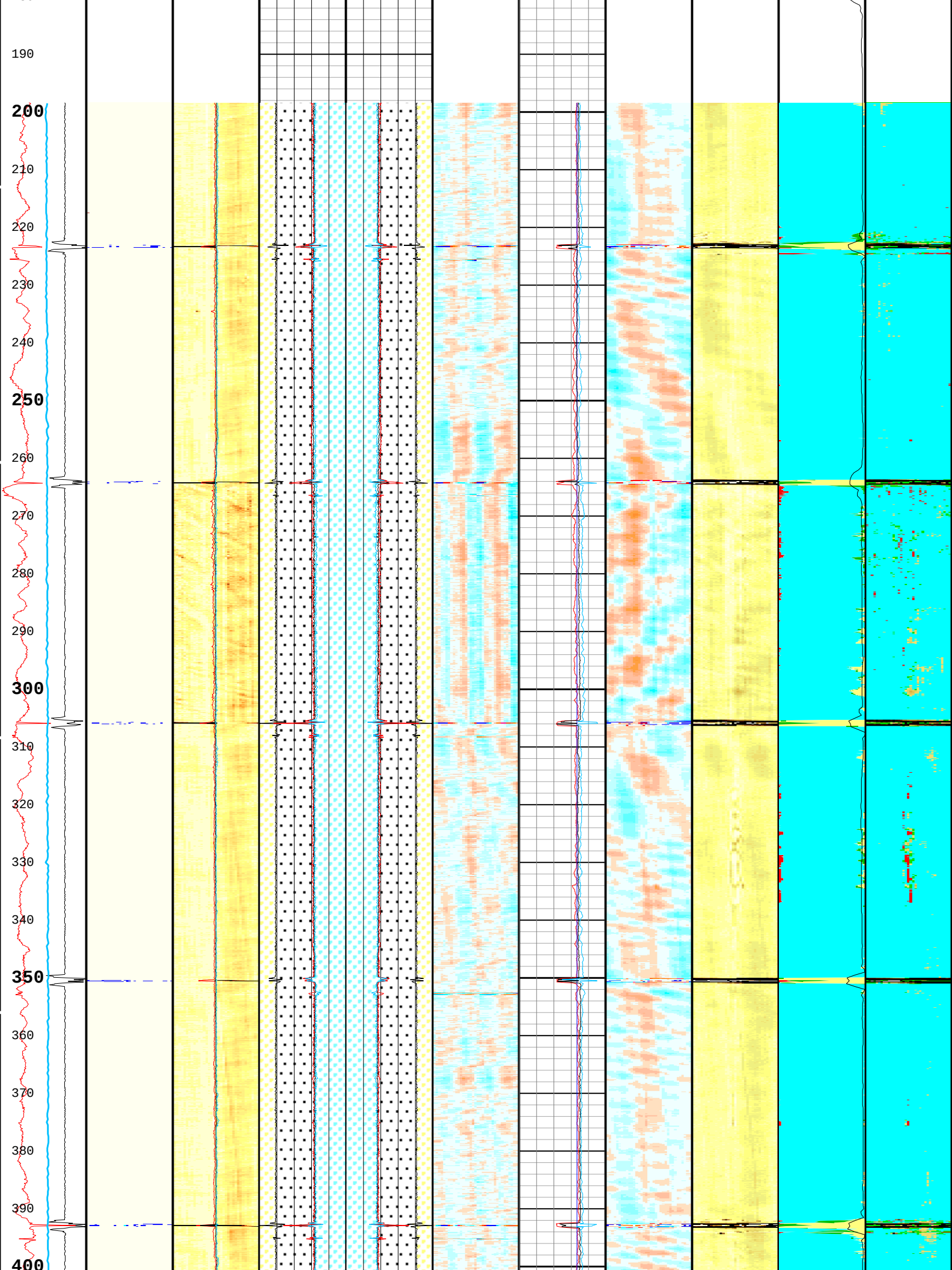
Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

180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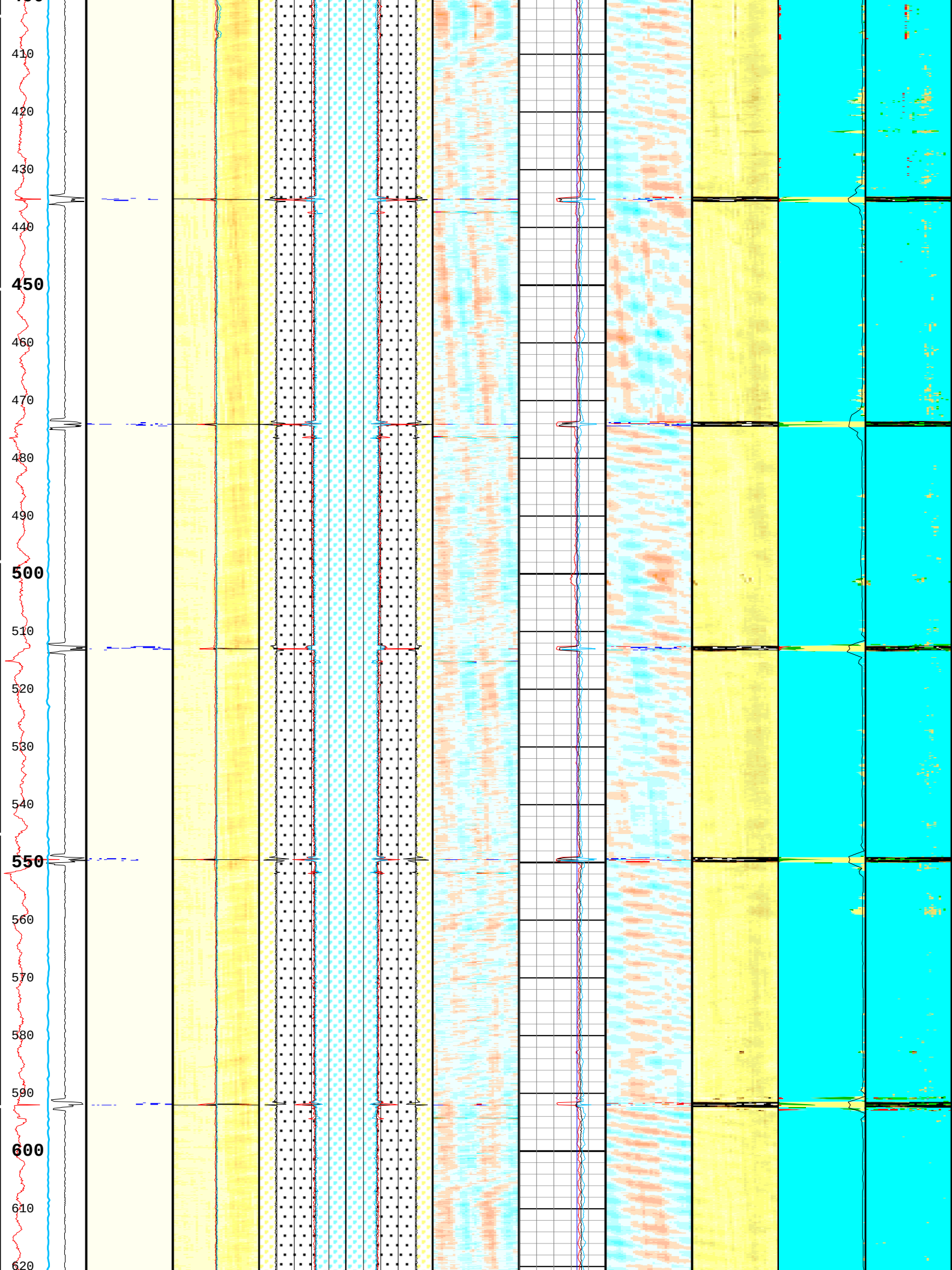
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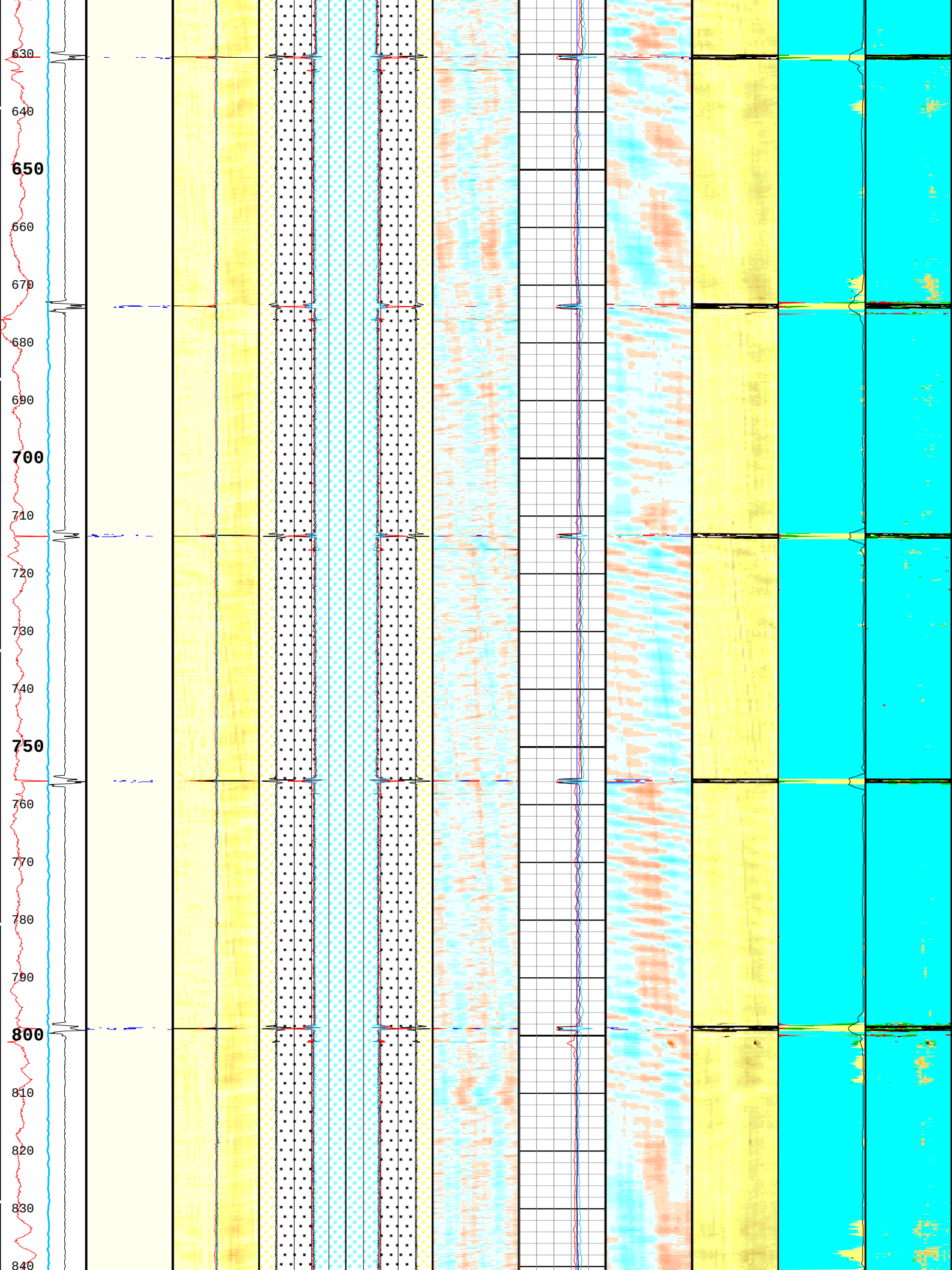
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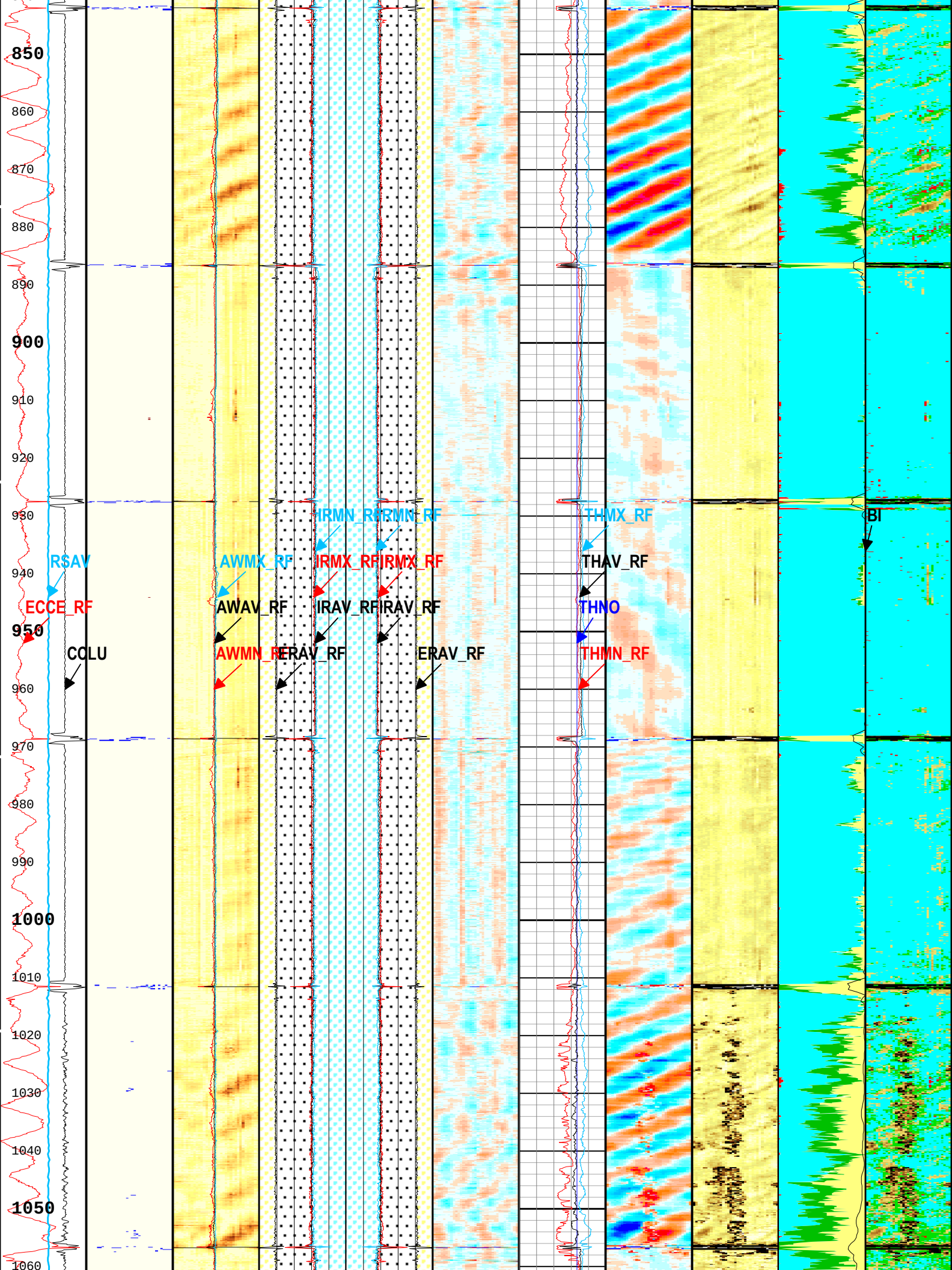
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COLU
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AWAV_RF
AWMN_RF
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IRMX_RF
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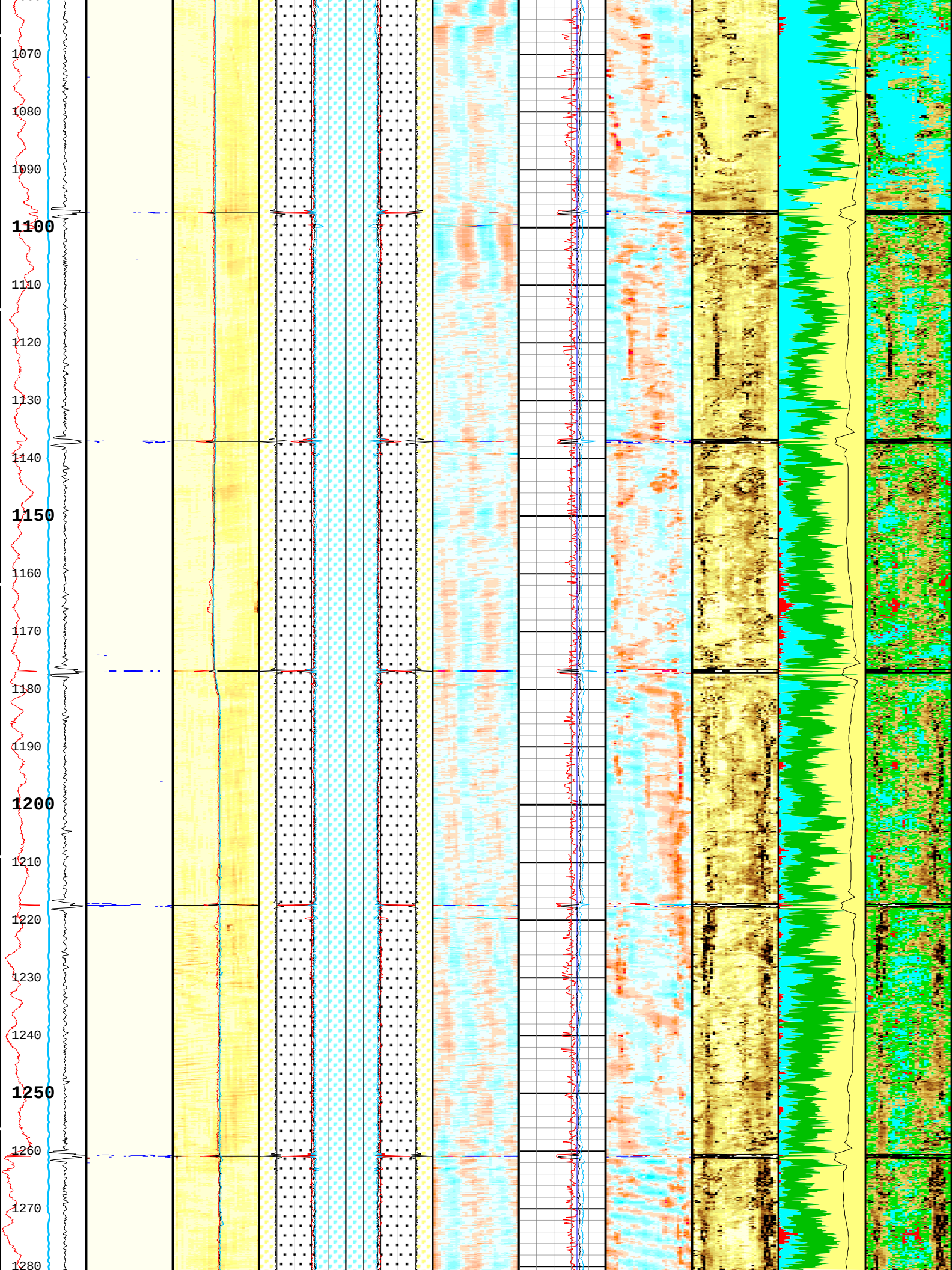
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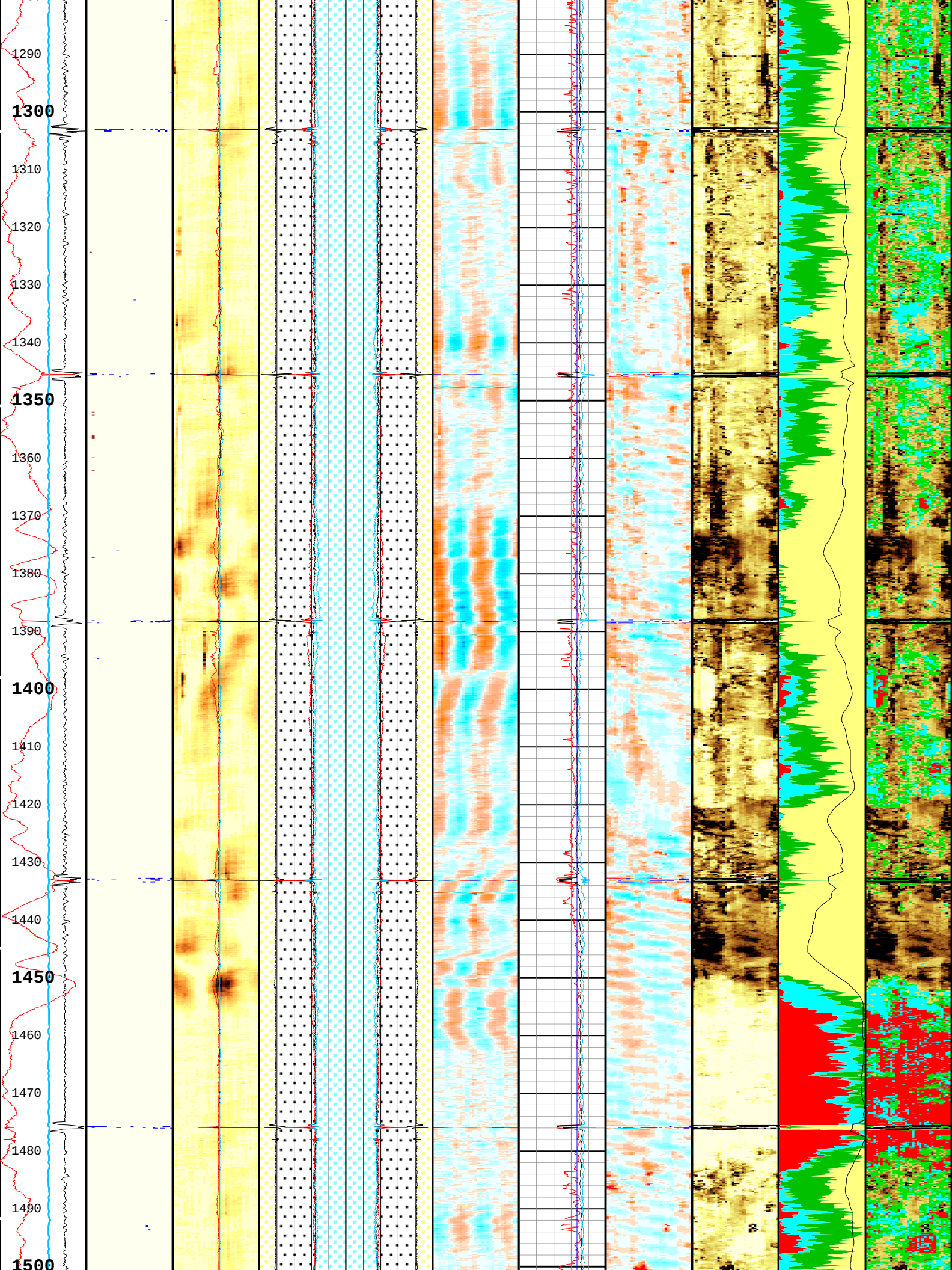
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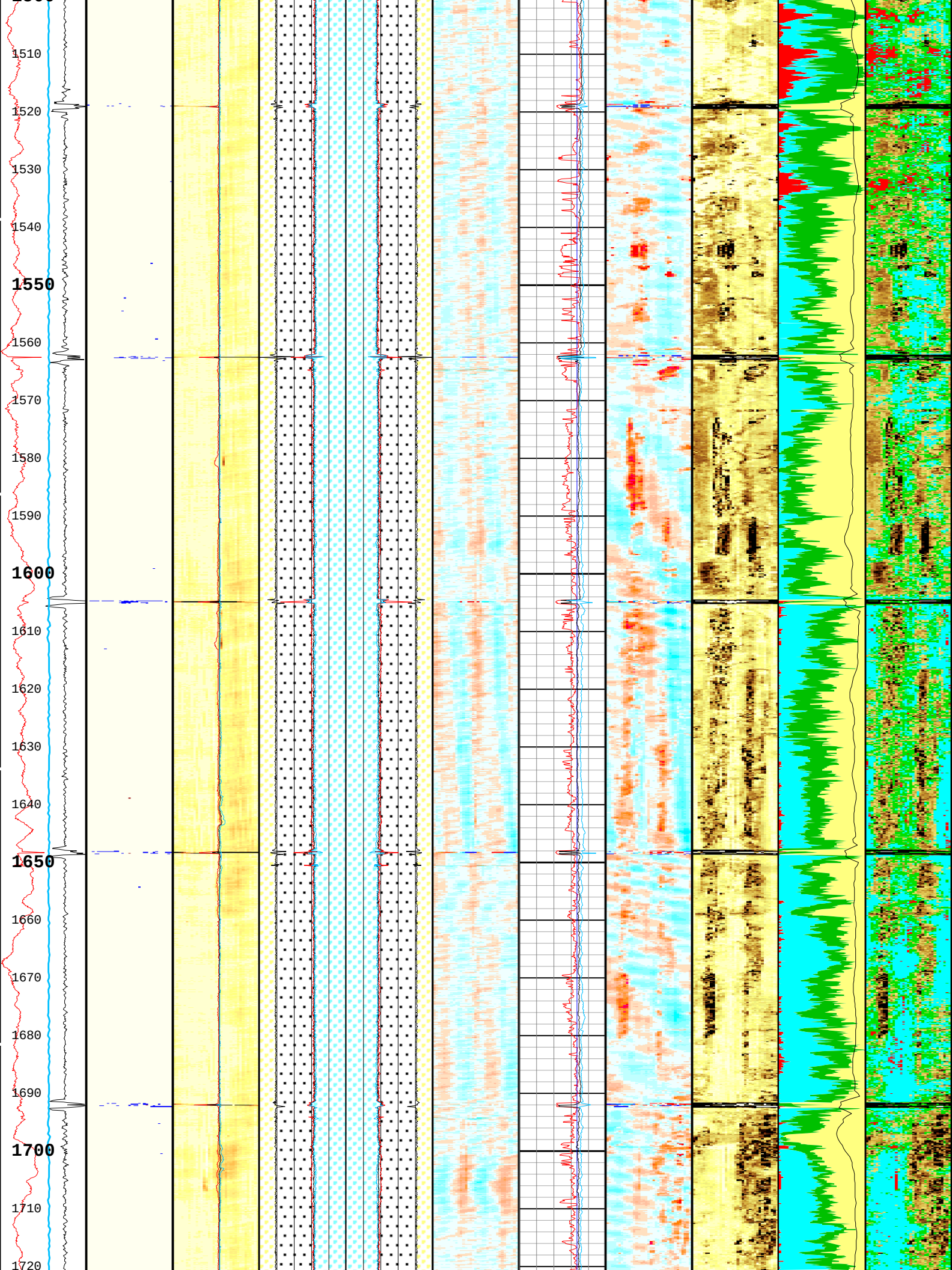
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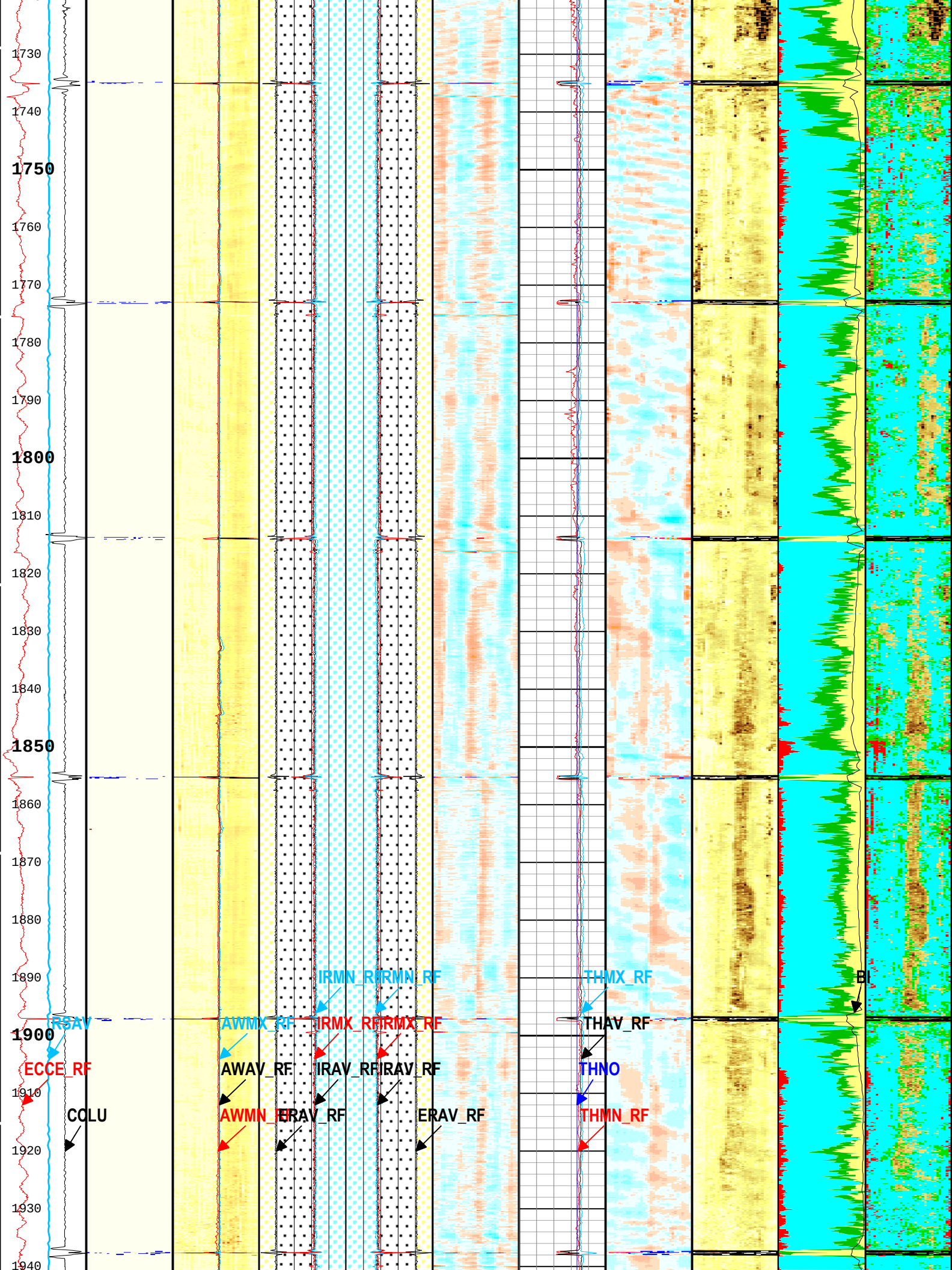
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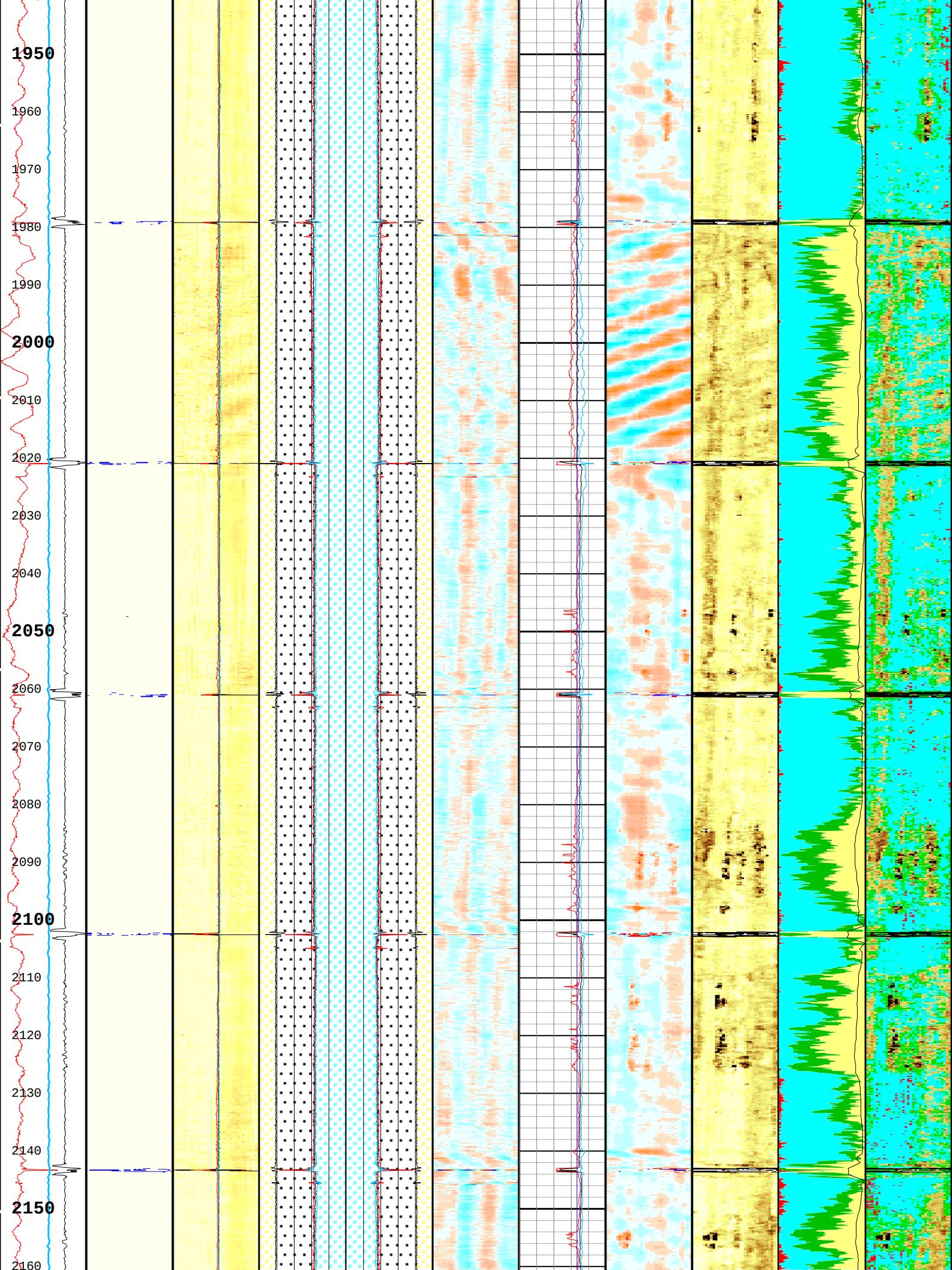
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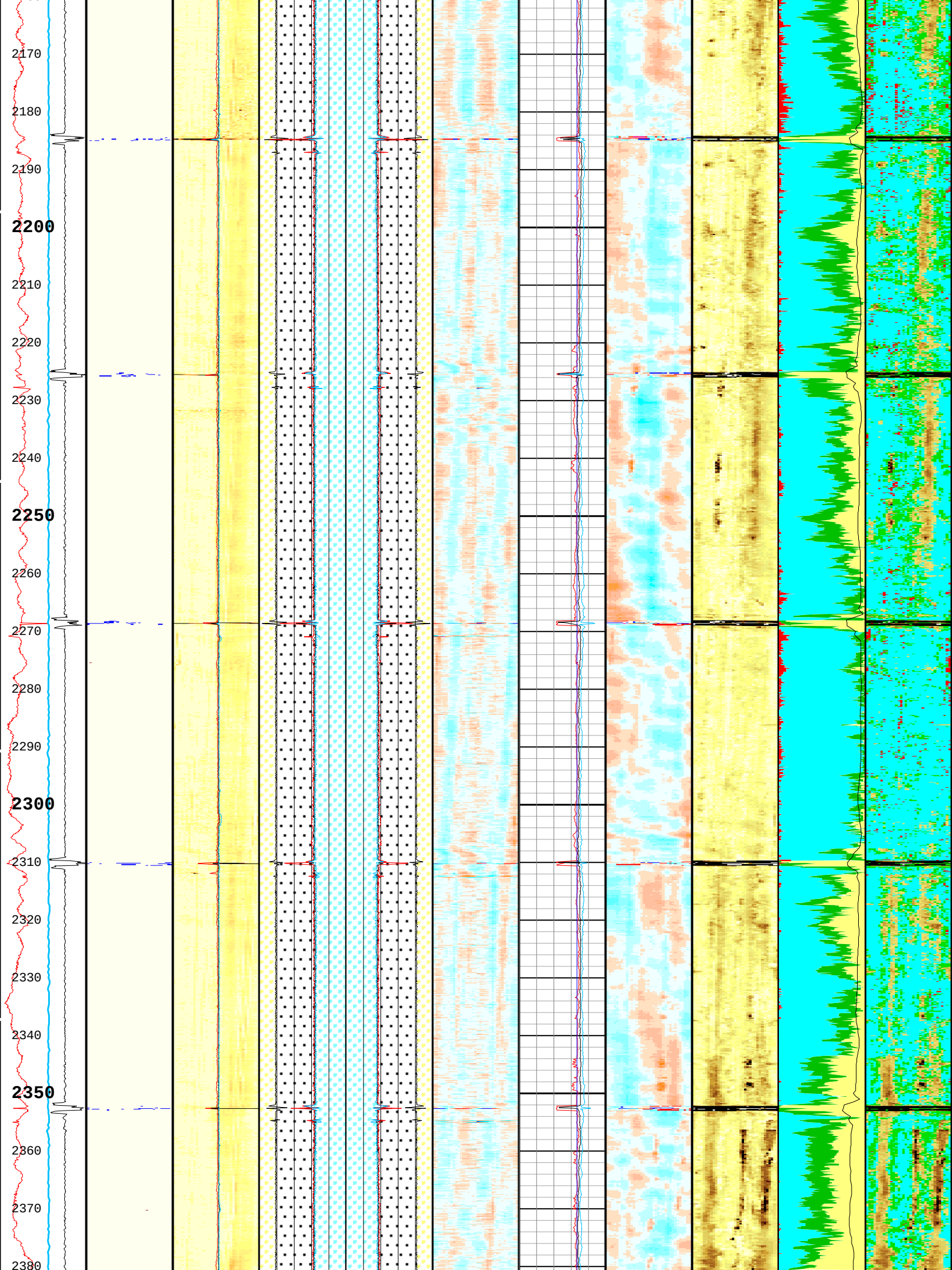
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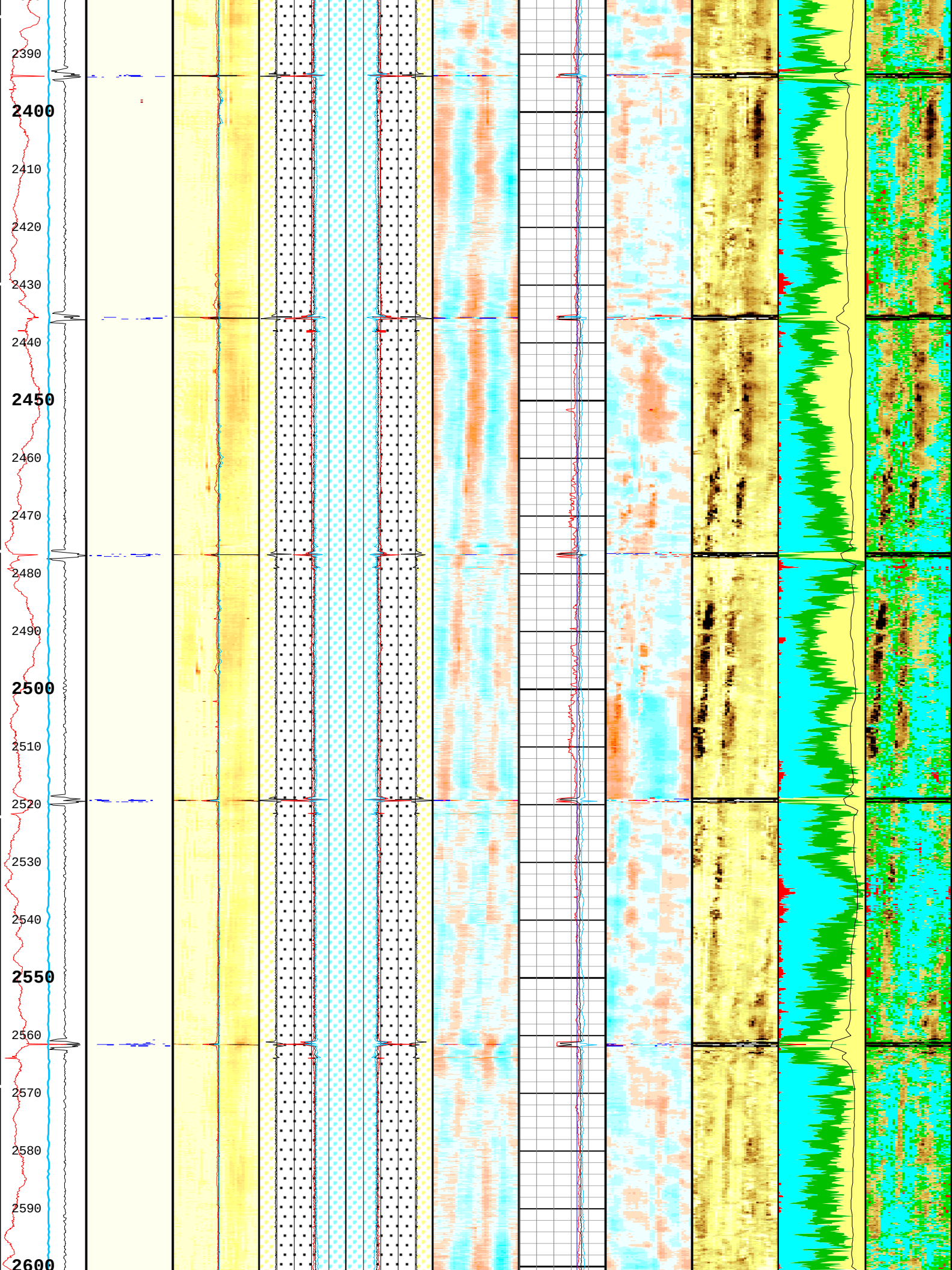
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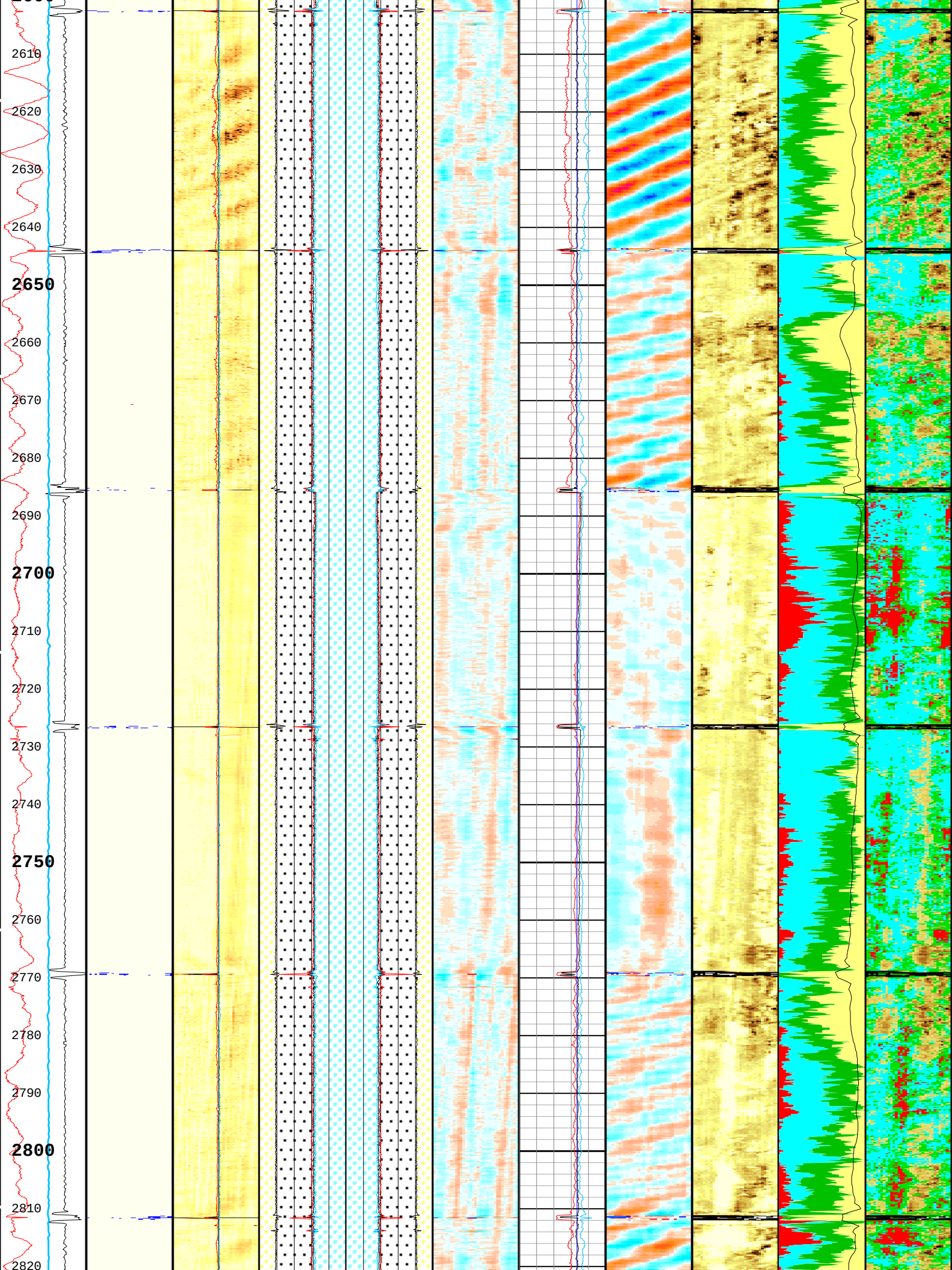
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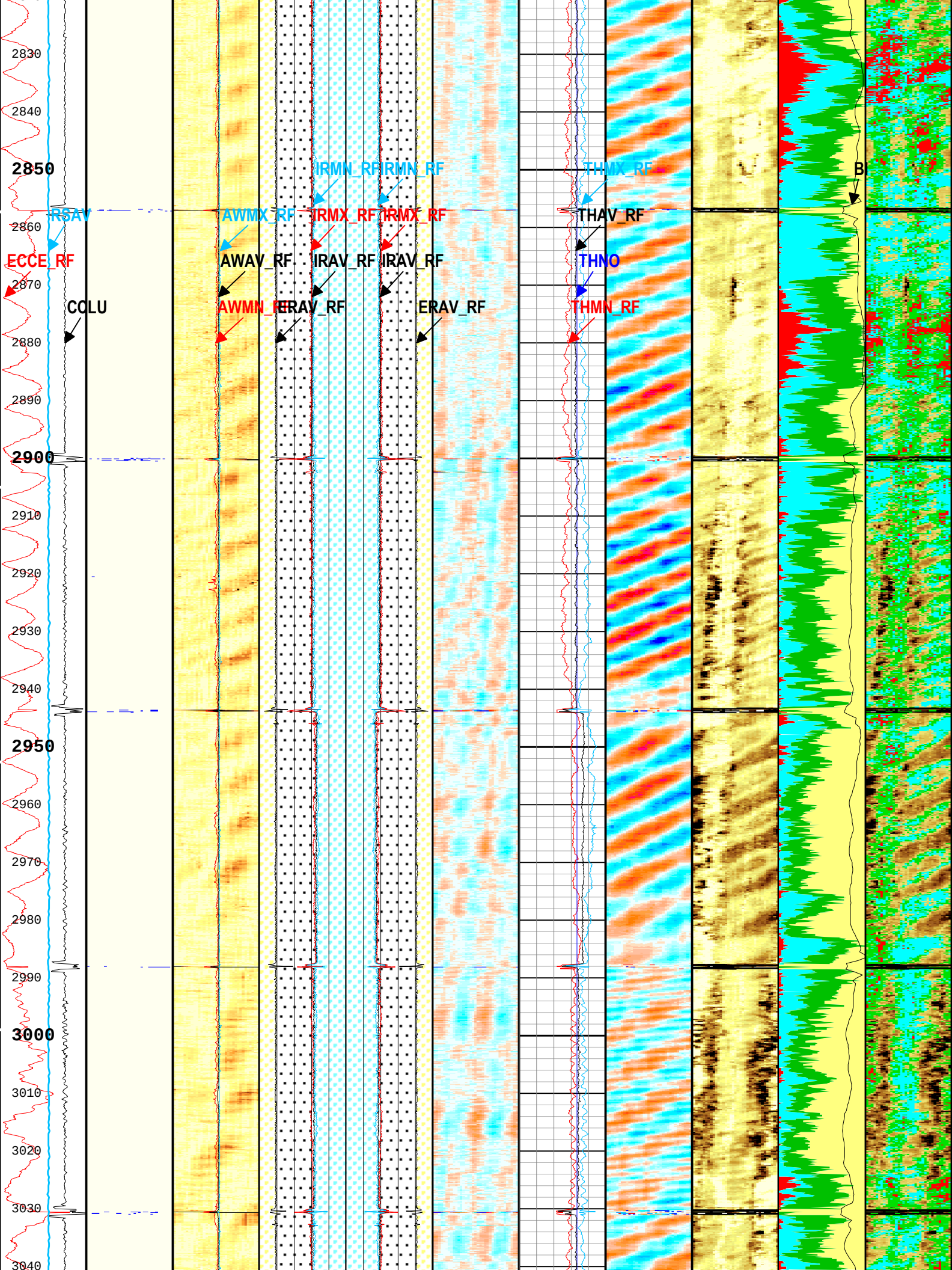
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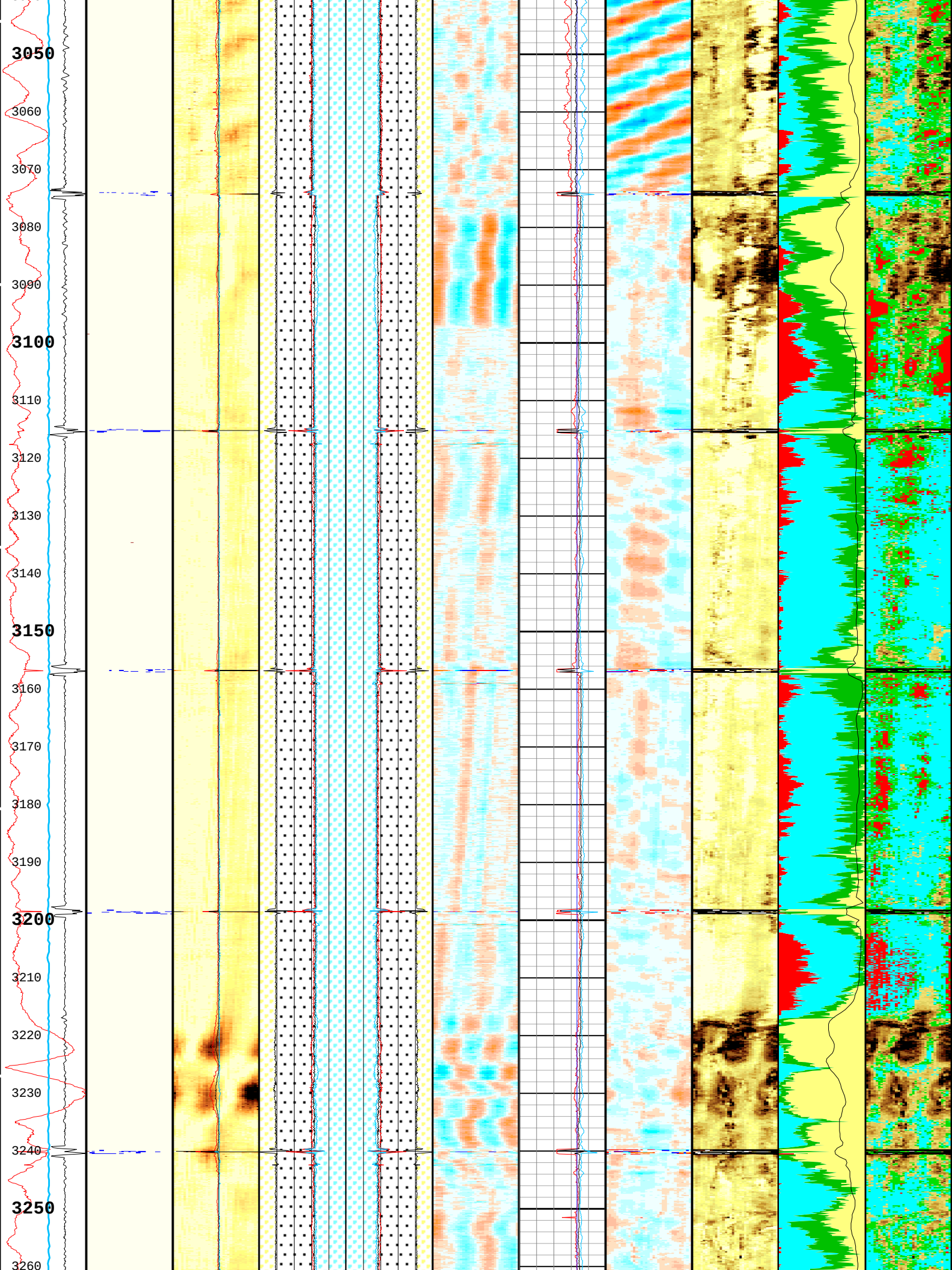
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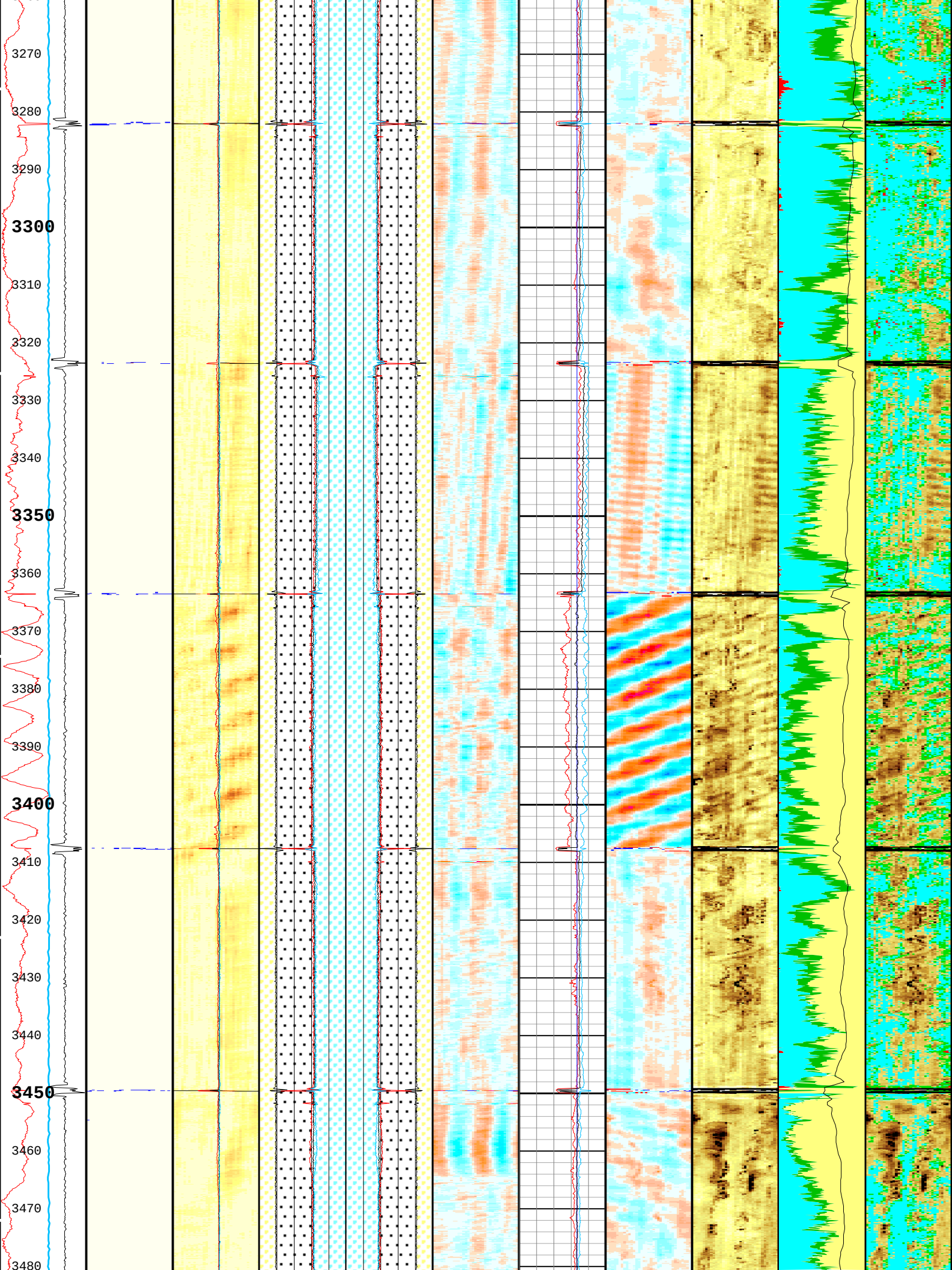
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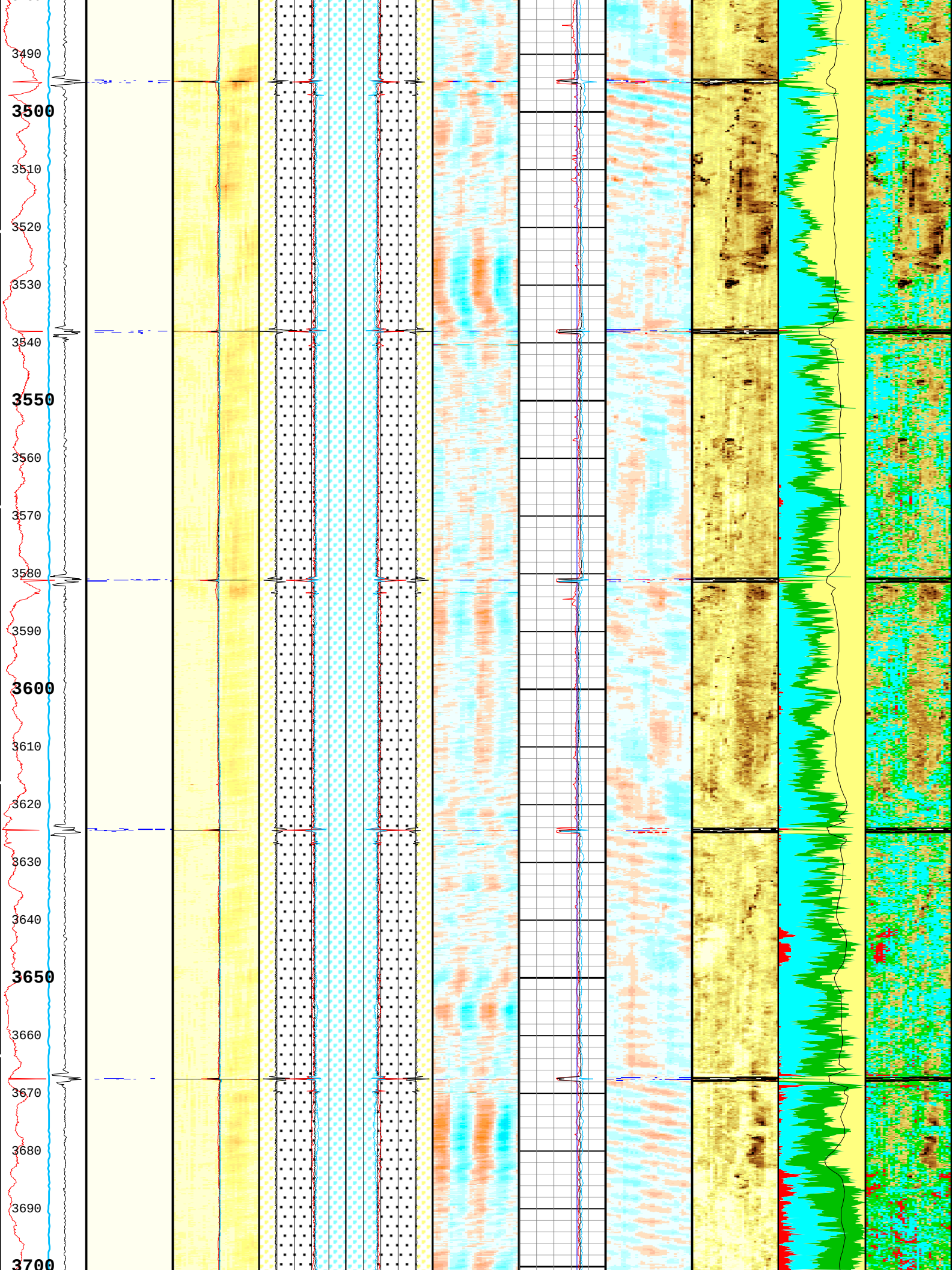
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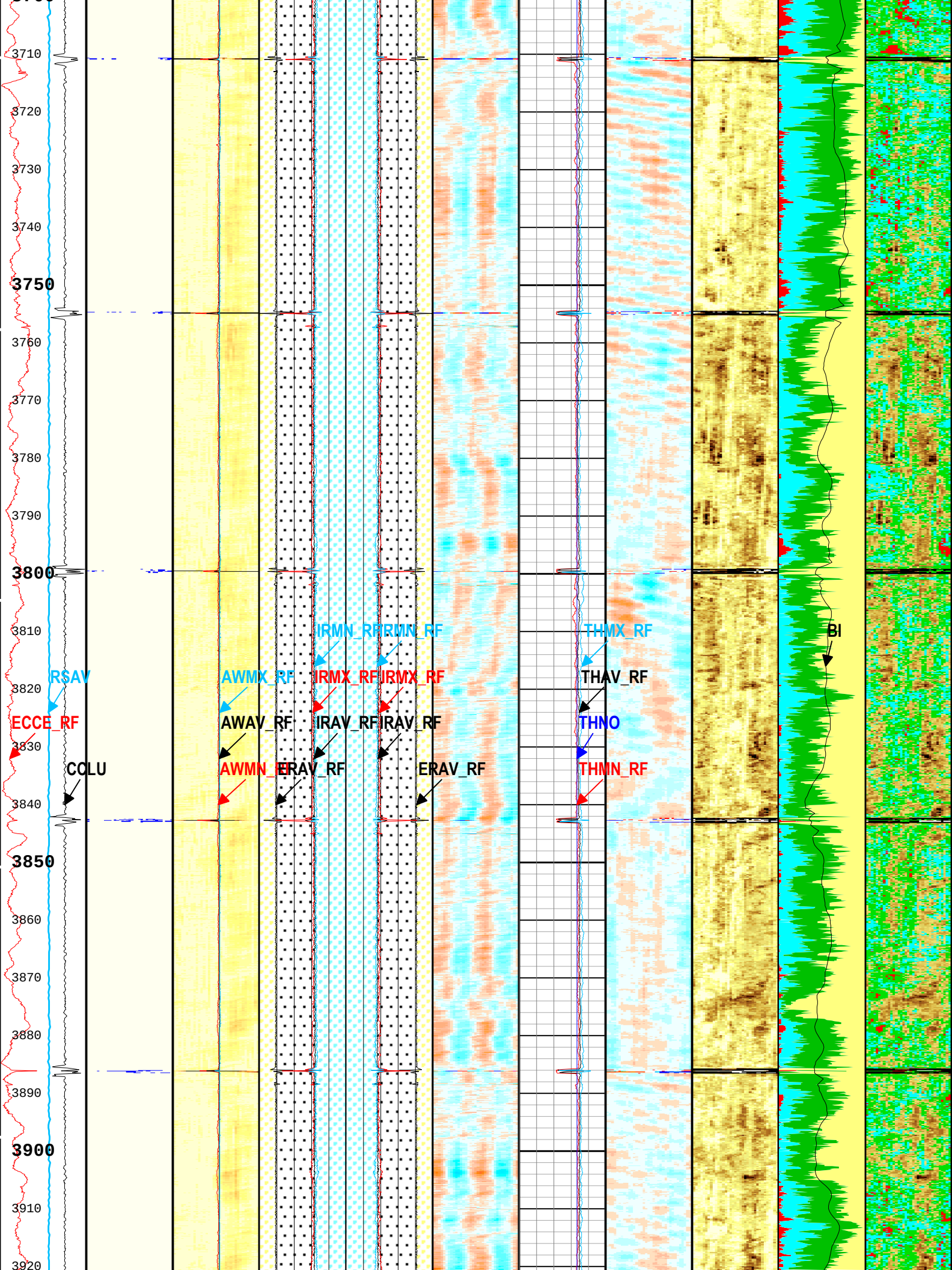
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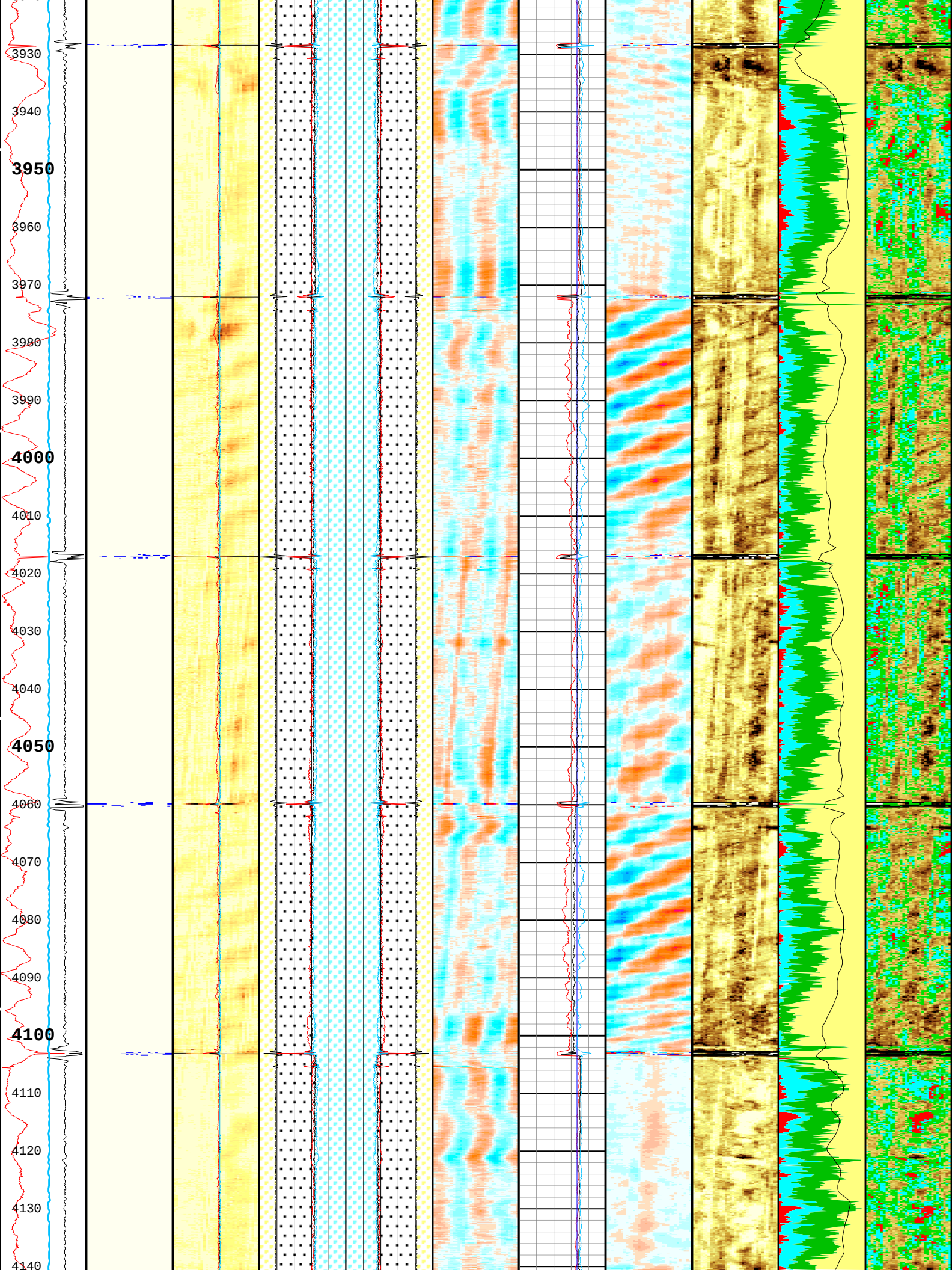
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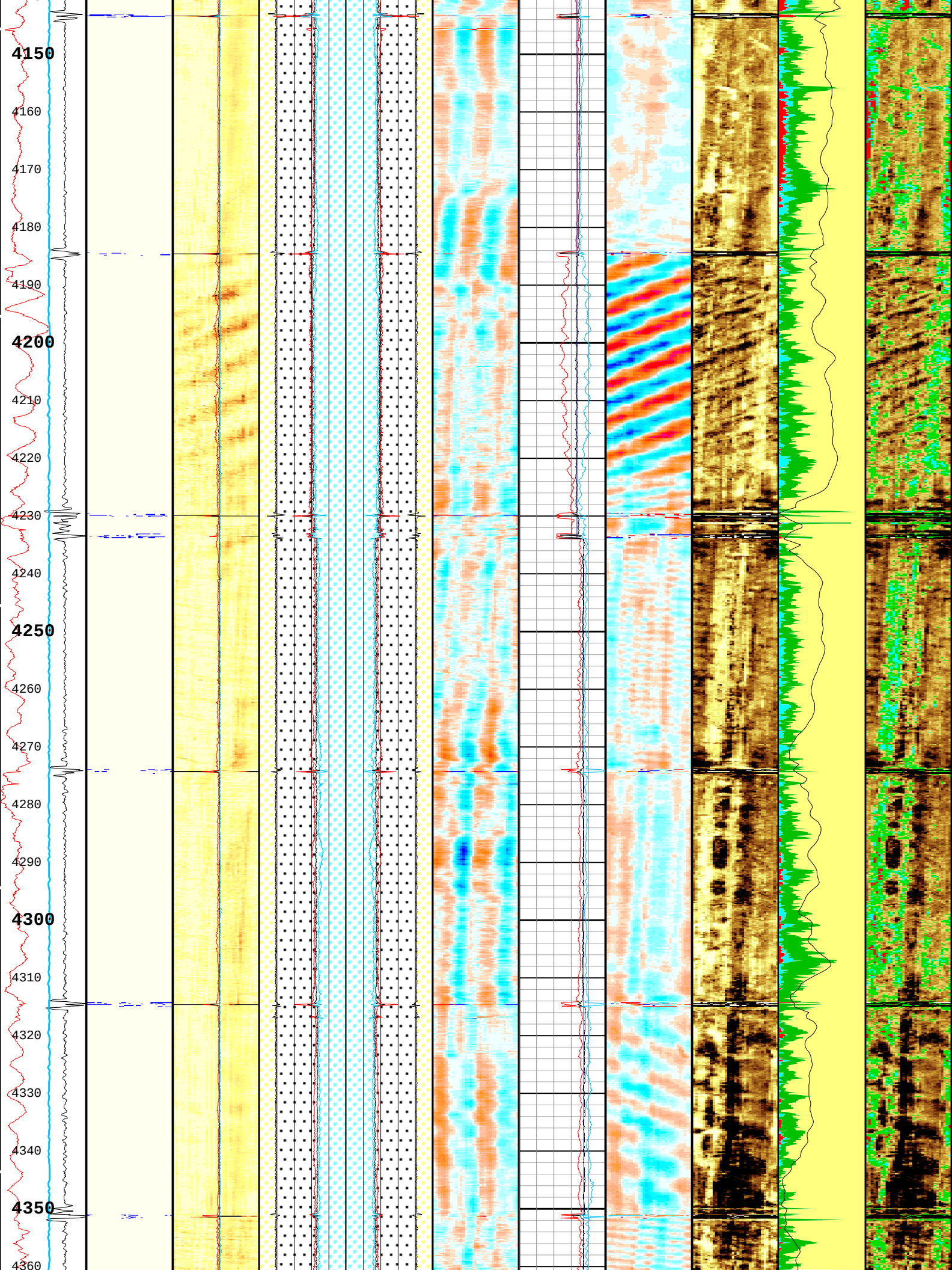
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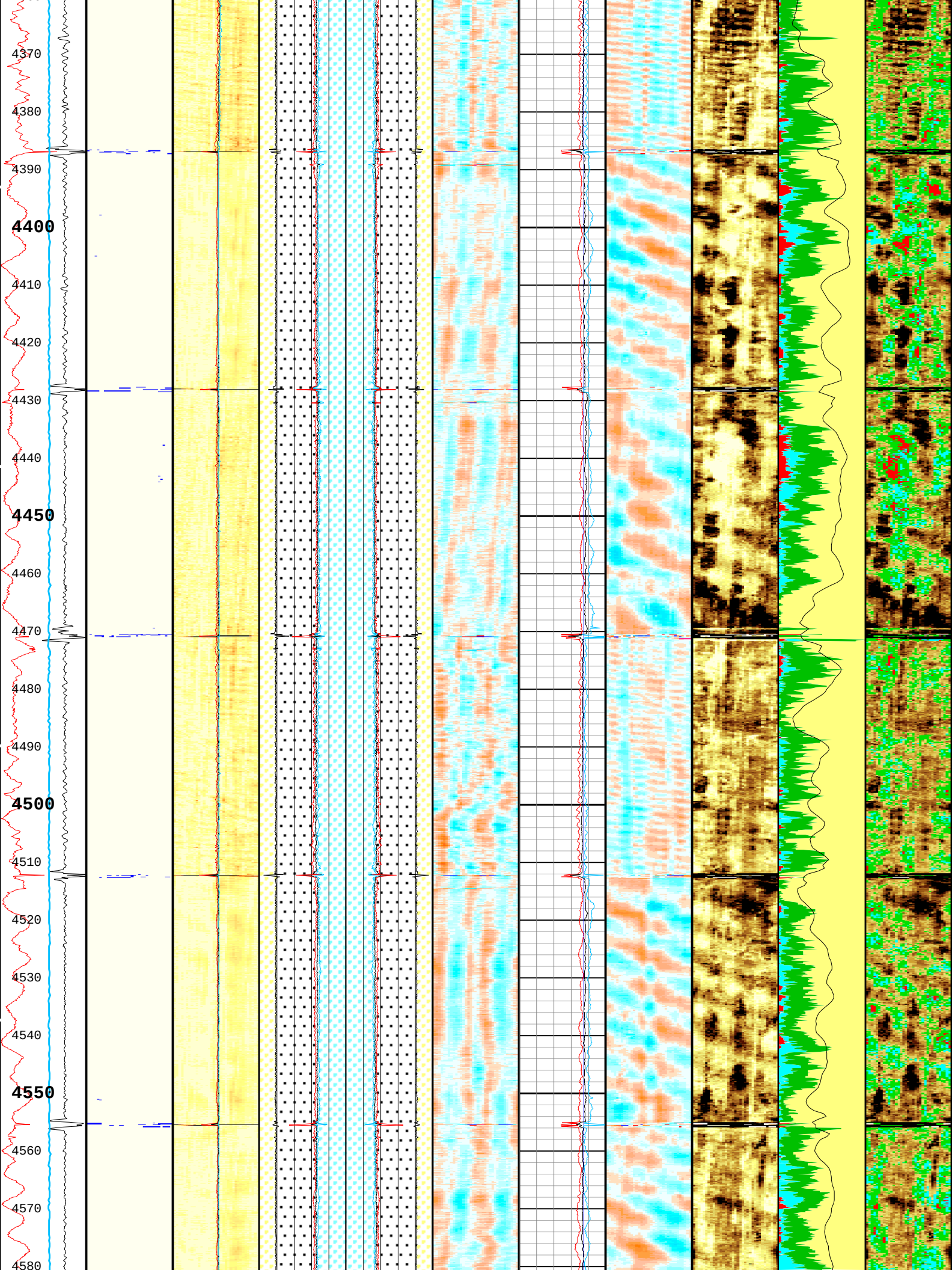
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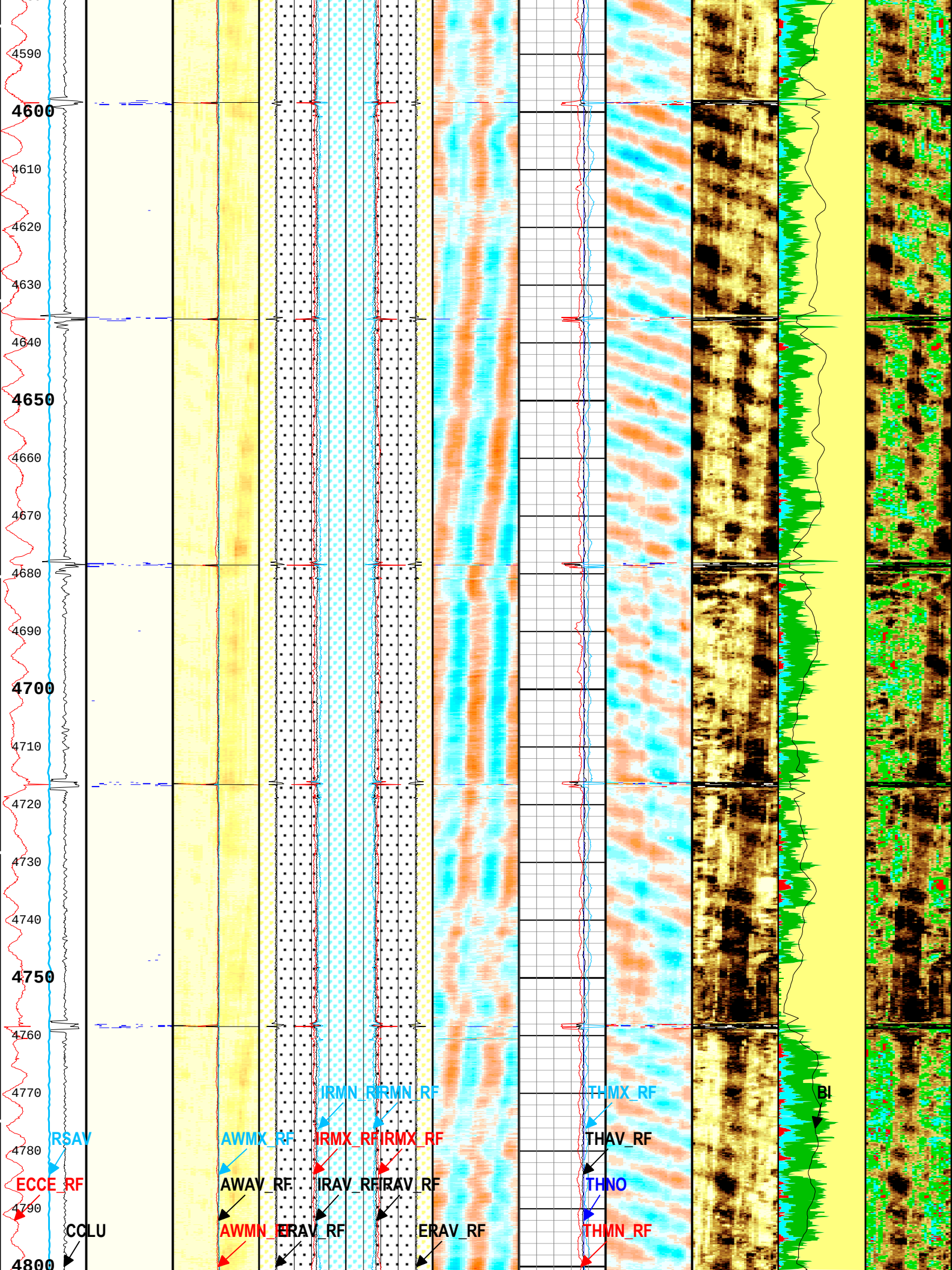
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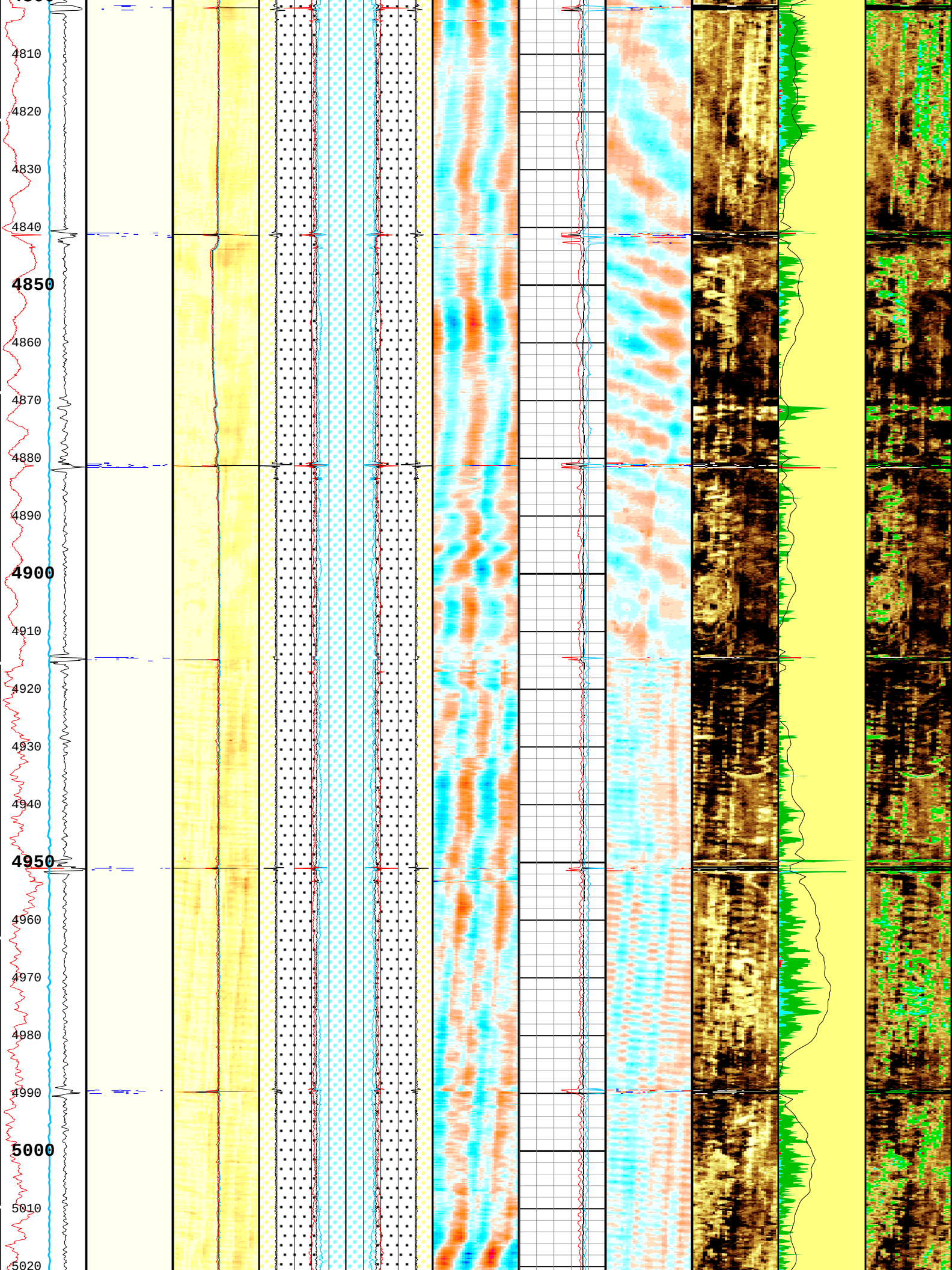
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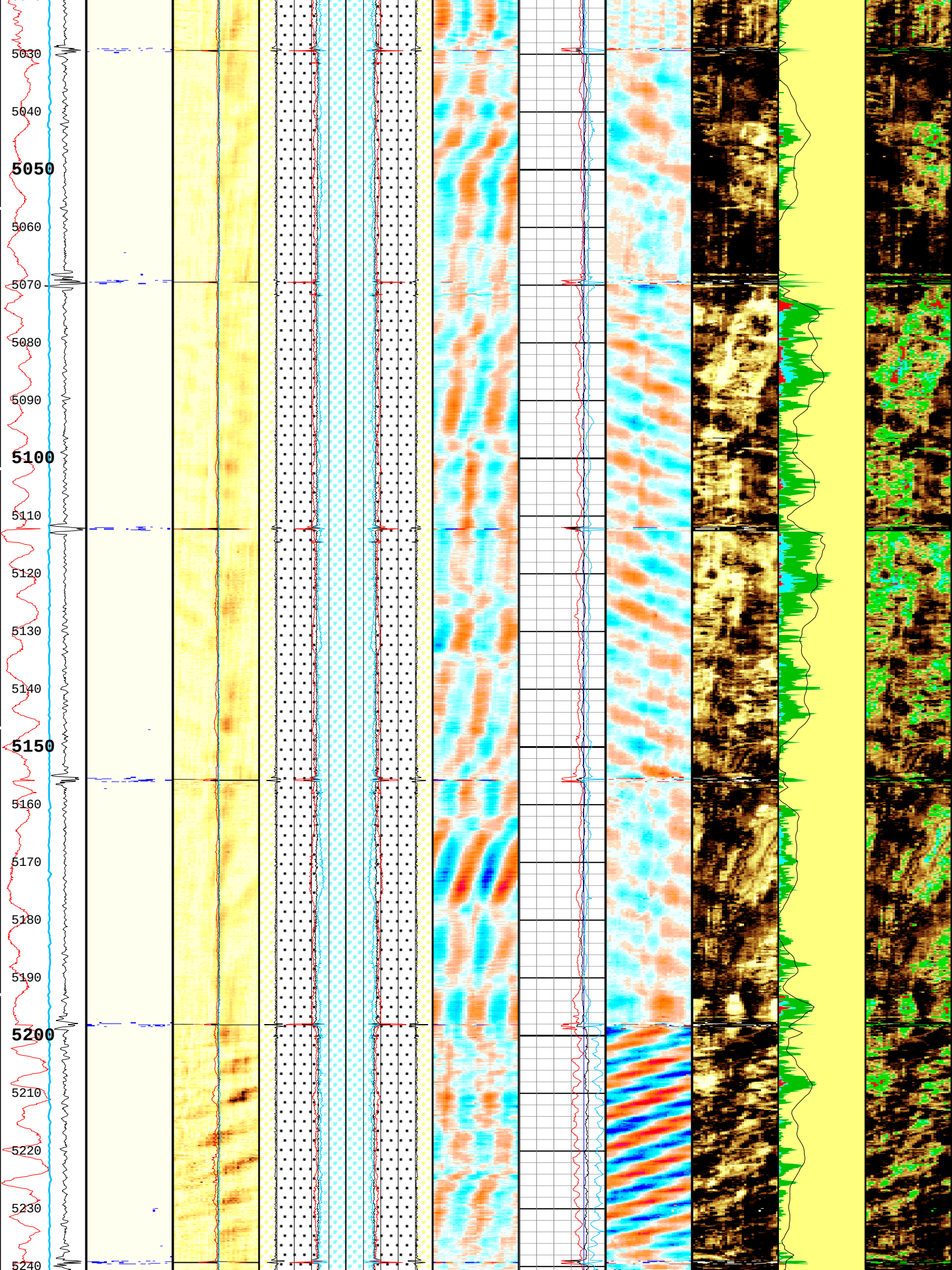
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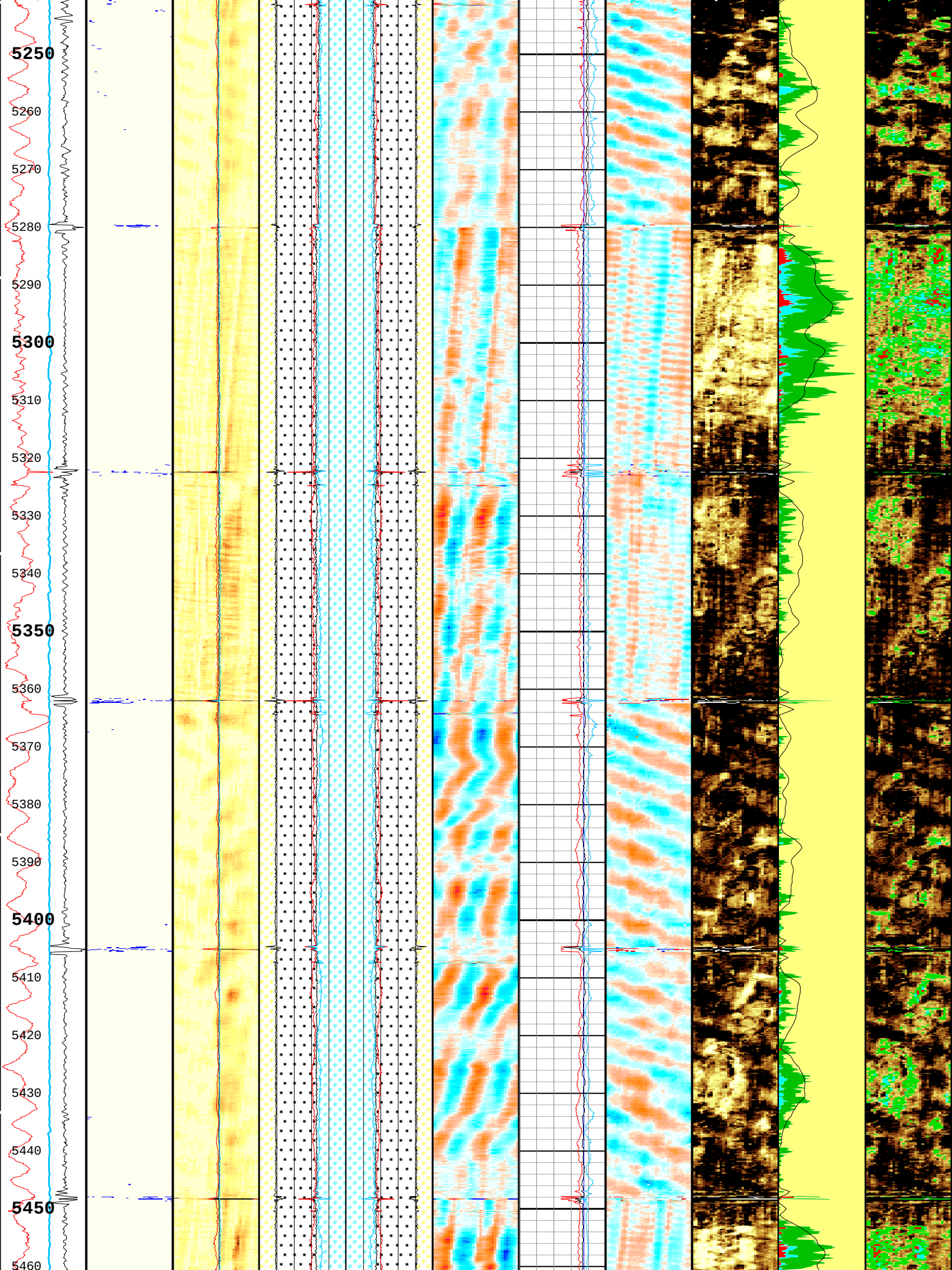
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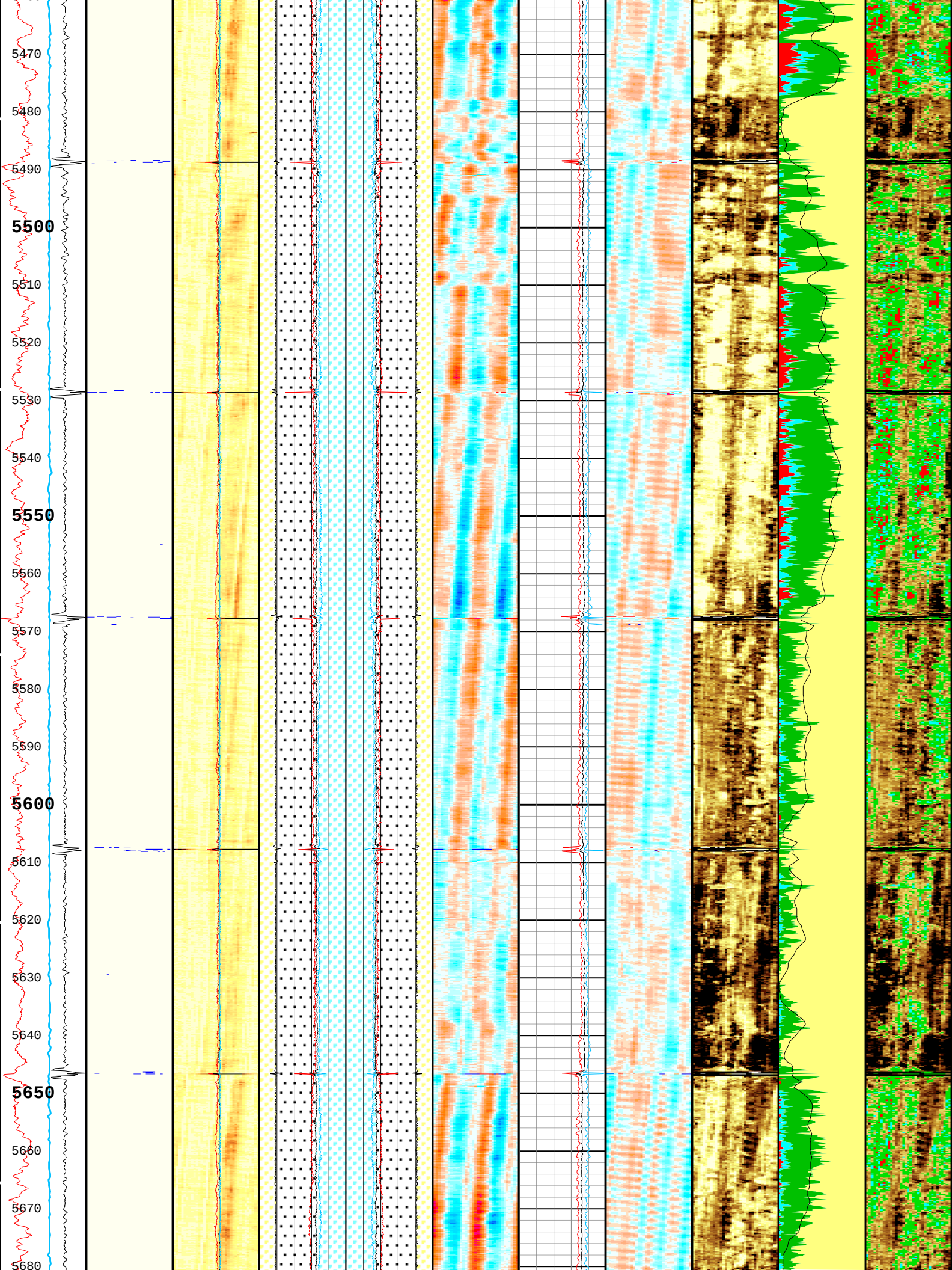
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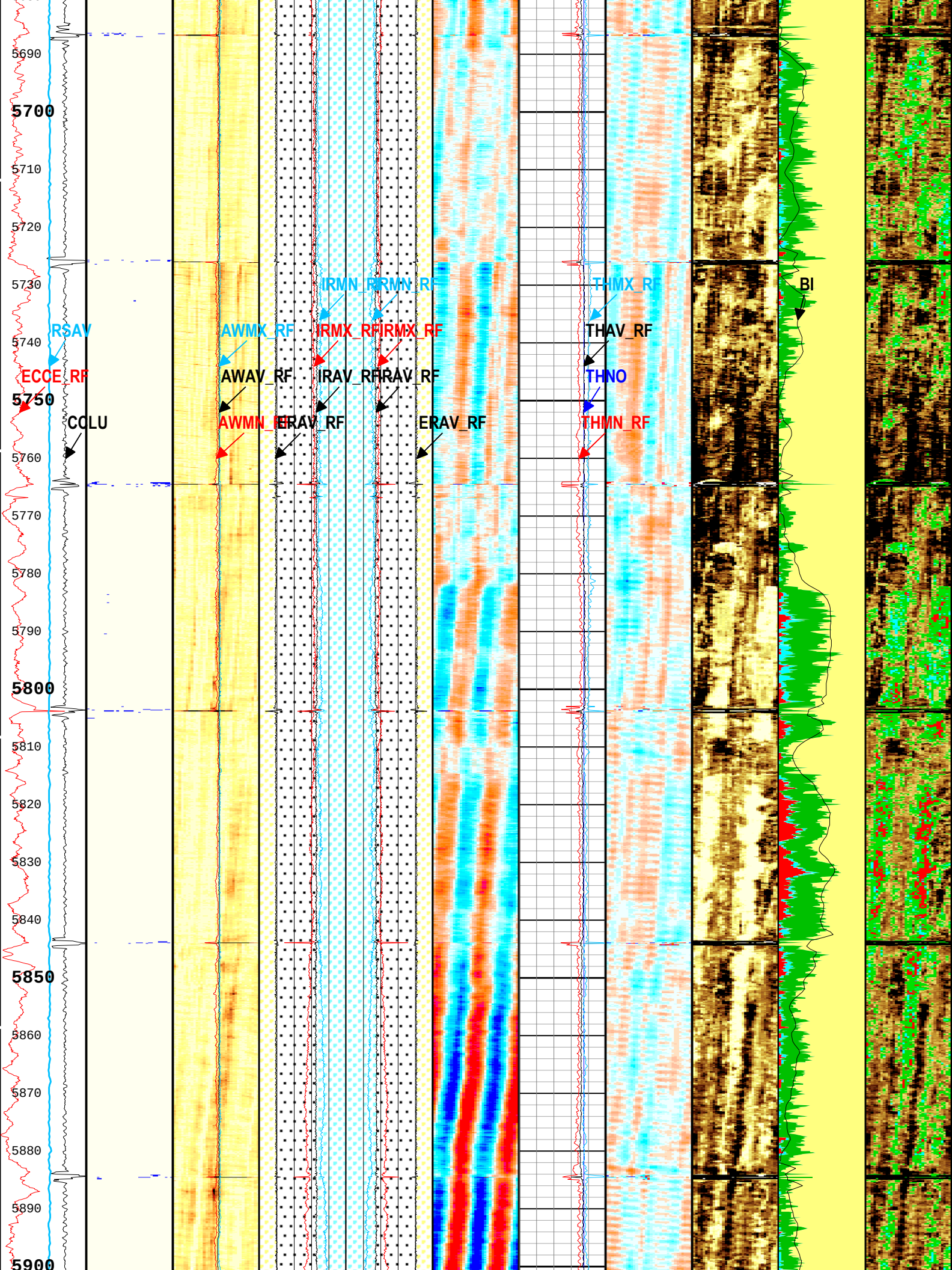
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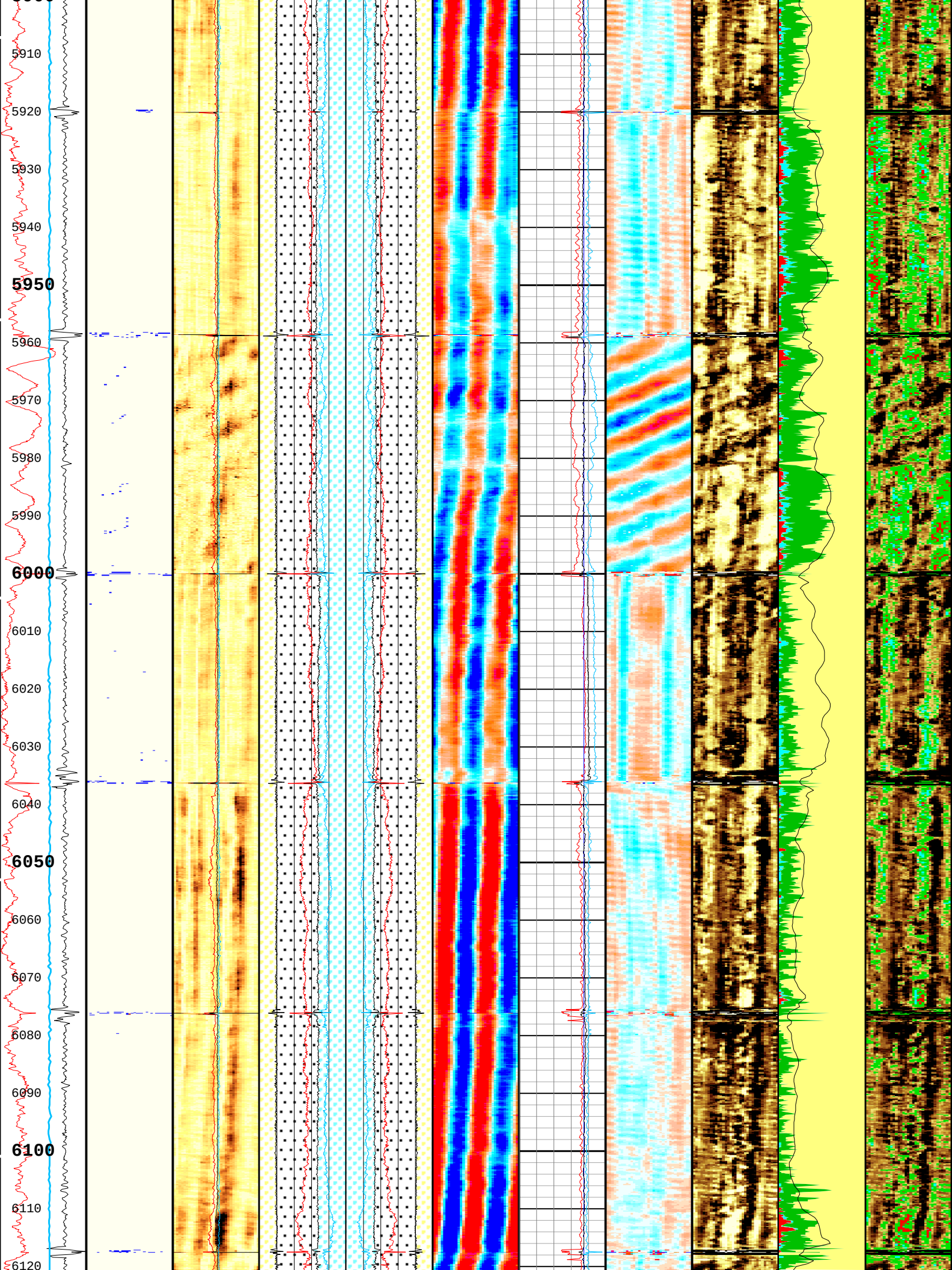
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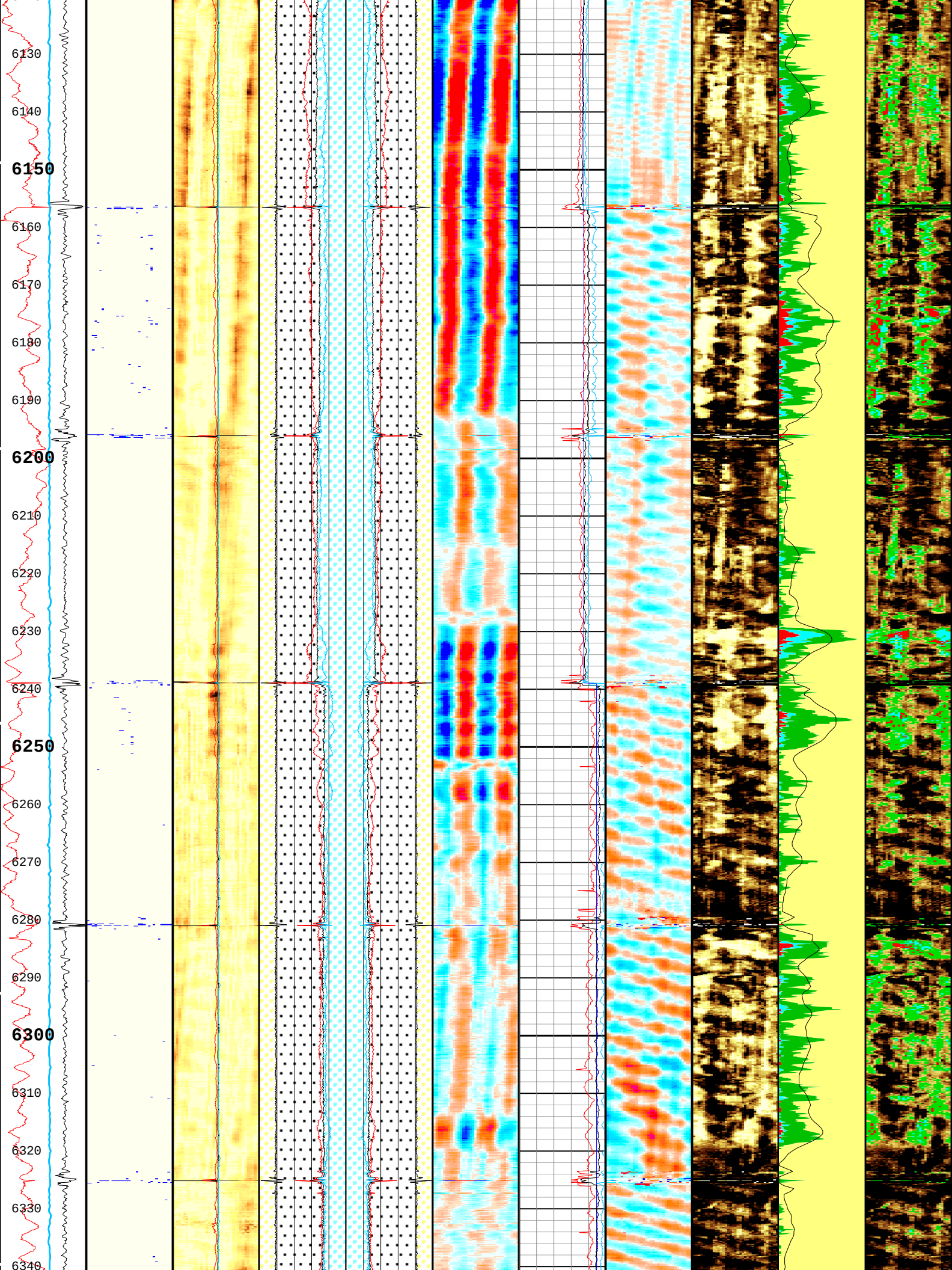
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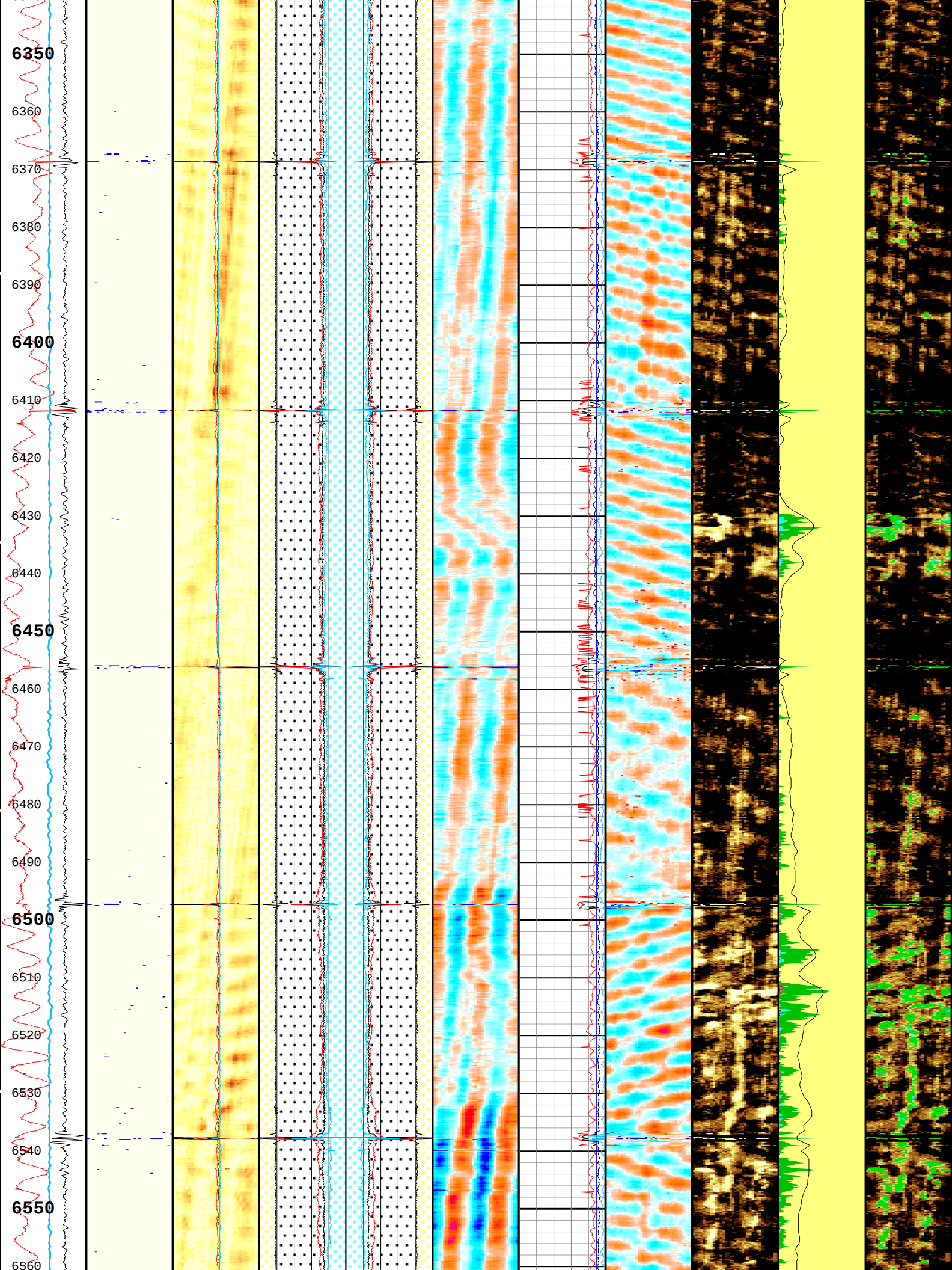
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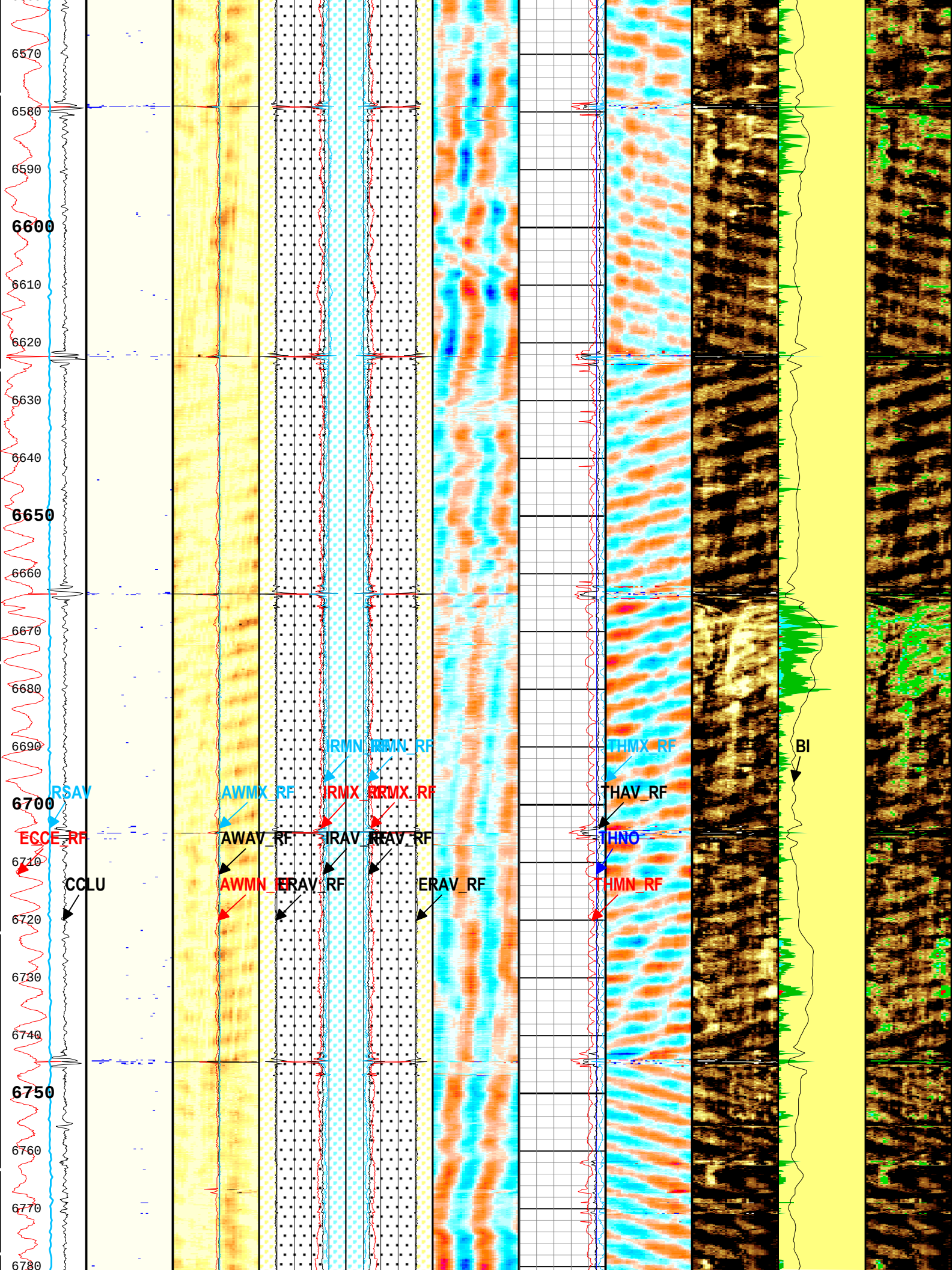
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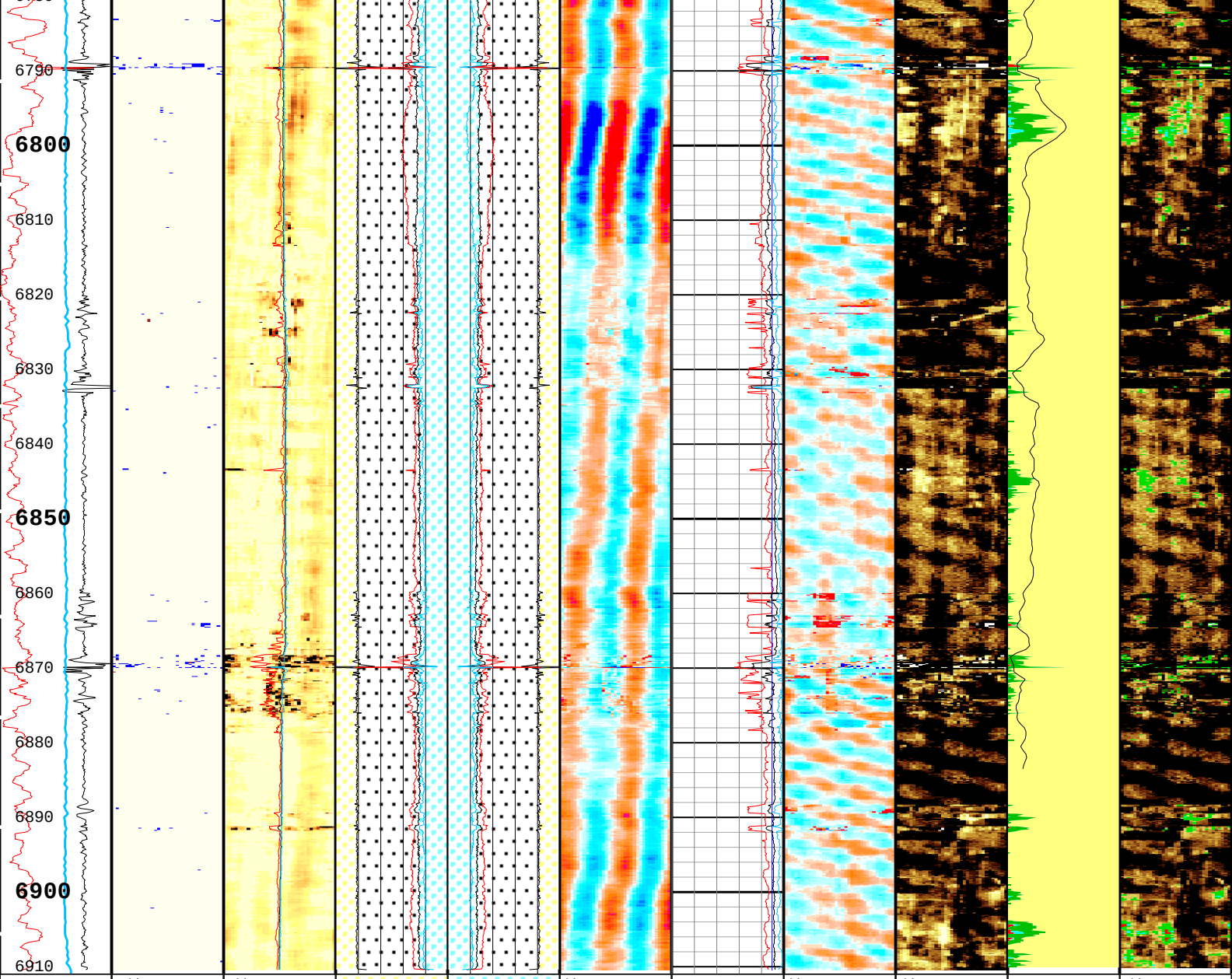
6760
6770
6780
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
BI



Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF)

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Bonded
Gas

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG)

USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Liquid

USIT-E (Mrayl)

Micro-debonding

Bond Index (BI) DSLT-H
1 0

TIME_1900 - Time Marked every 60.00 (s)

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

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

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

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

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

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

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:21:09

TWO

Cement Log 2 IN = 100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[2]:Up	Up	198.58 ft	6911.16 ft	24-May-2016 9:27:08 AM	24-May-2016 11:56:22 AM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[2]:Up:S005

Description: USI Cement Format: Log (LBV1_USI Cement 9.625inch) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:21:24

TIME_1900 - Time Marked every 60.00 (s)

ERAV_IRAV

ERAV_RHF1

IRAV_LHF1

IRAV_ERAV

LHF1_ERAV

RHF1_IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

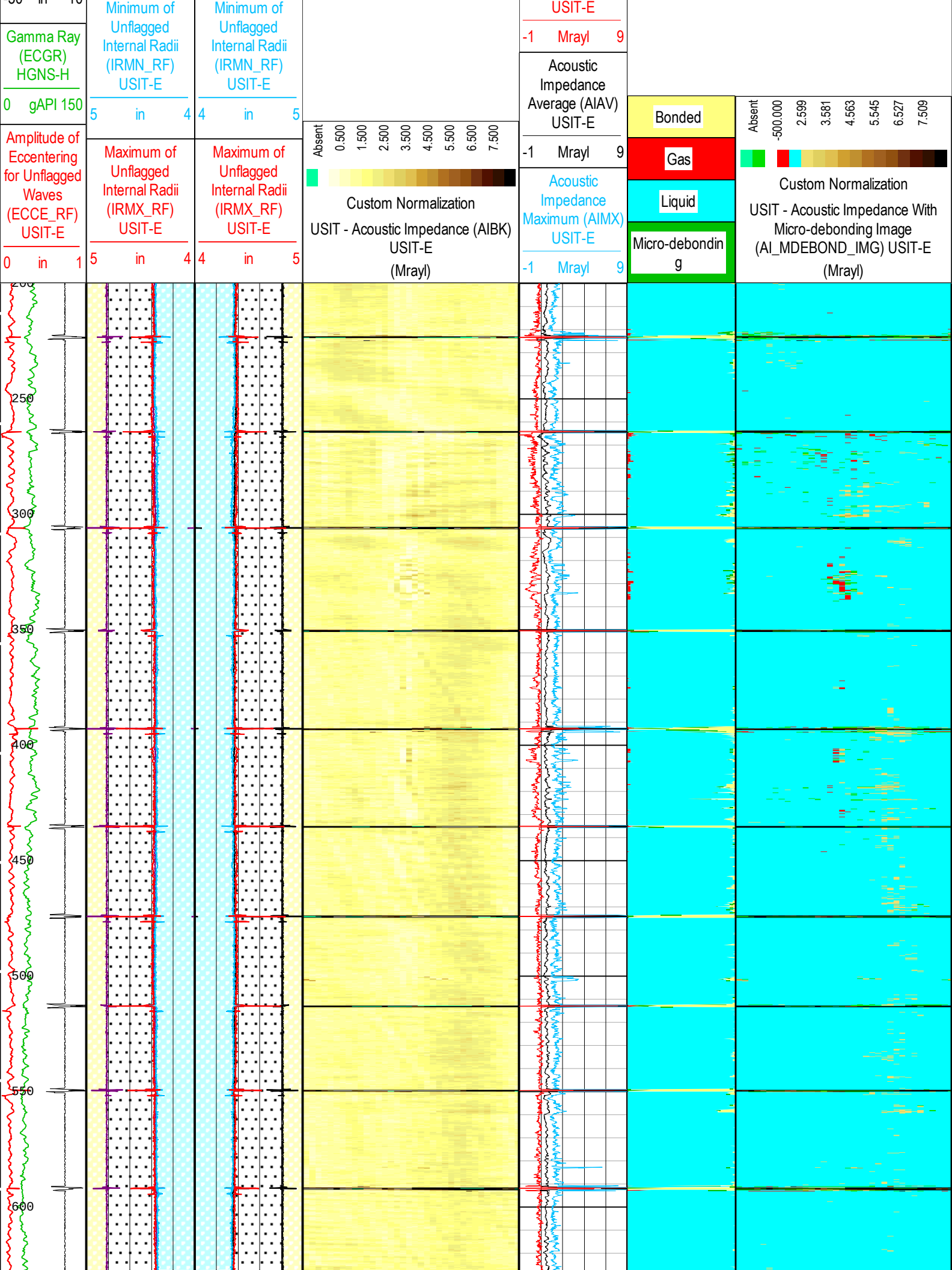
Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Acoustic Impedance Minimum (AIMN)


Gamma Ray (ECGR) HGNS-H
0 gAPI 150
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 1
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
Absent 0.500 1.500 2.500 3.500 4.500 5.500 6.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
USIT-E
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9
Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9
Bonded
Gas
Liquid
Micro-debonding
Absent -500.000 2.599 3.581 4.563 5.545 6.527 7.509
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E
(Mrayl)
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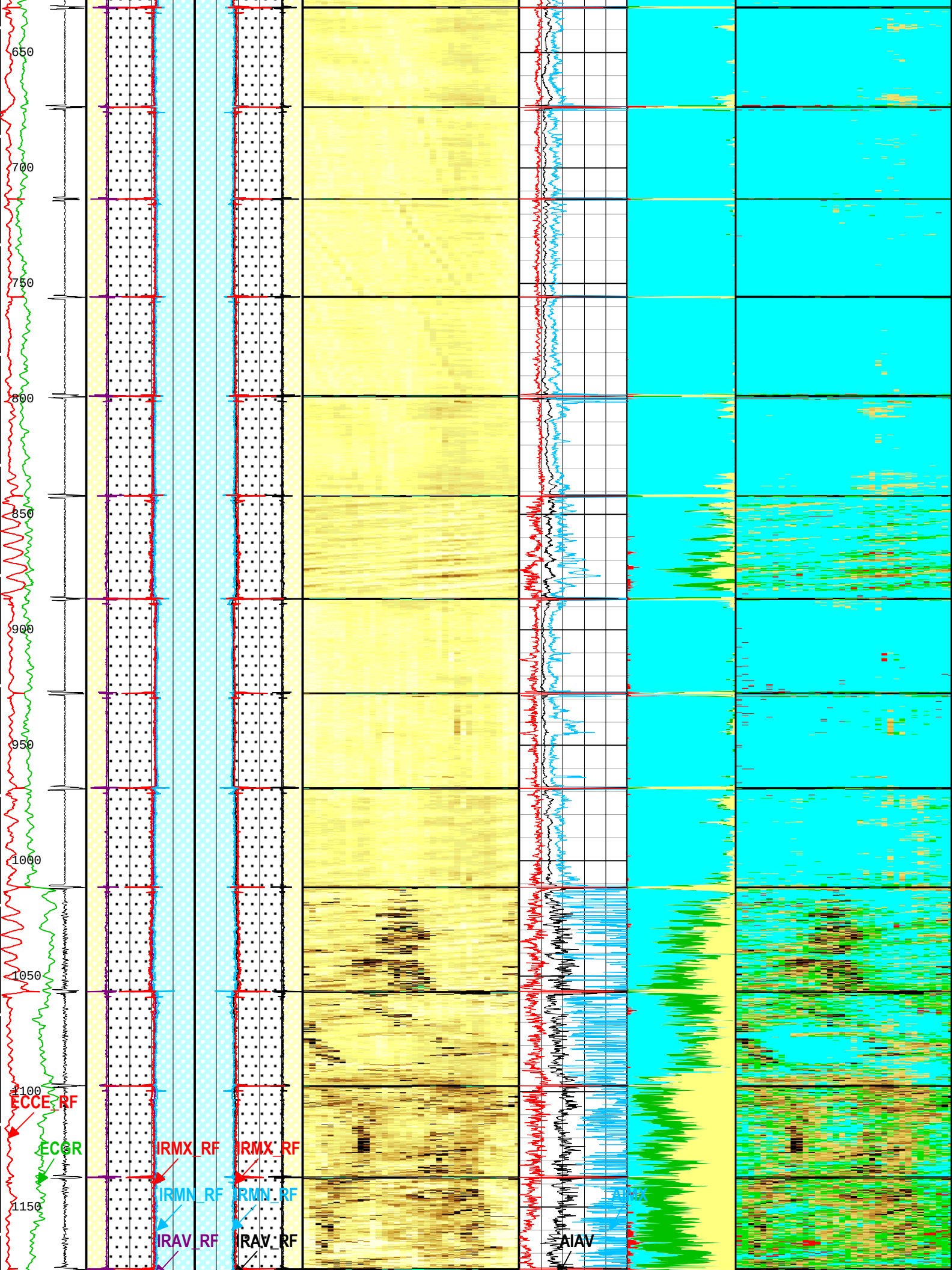
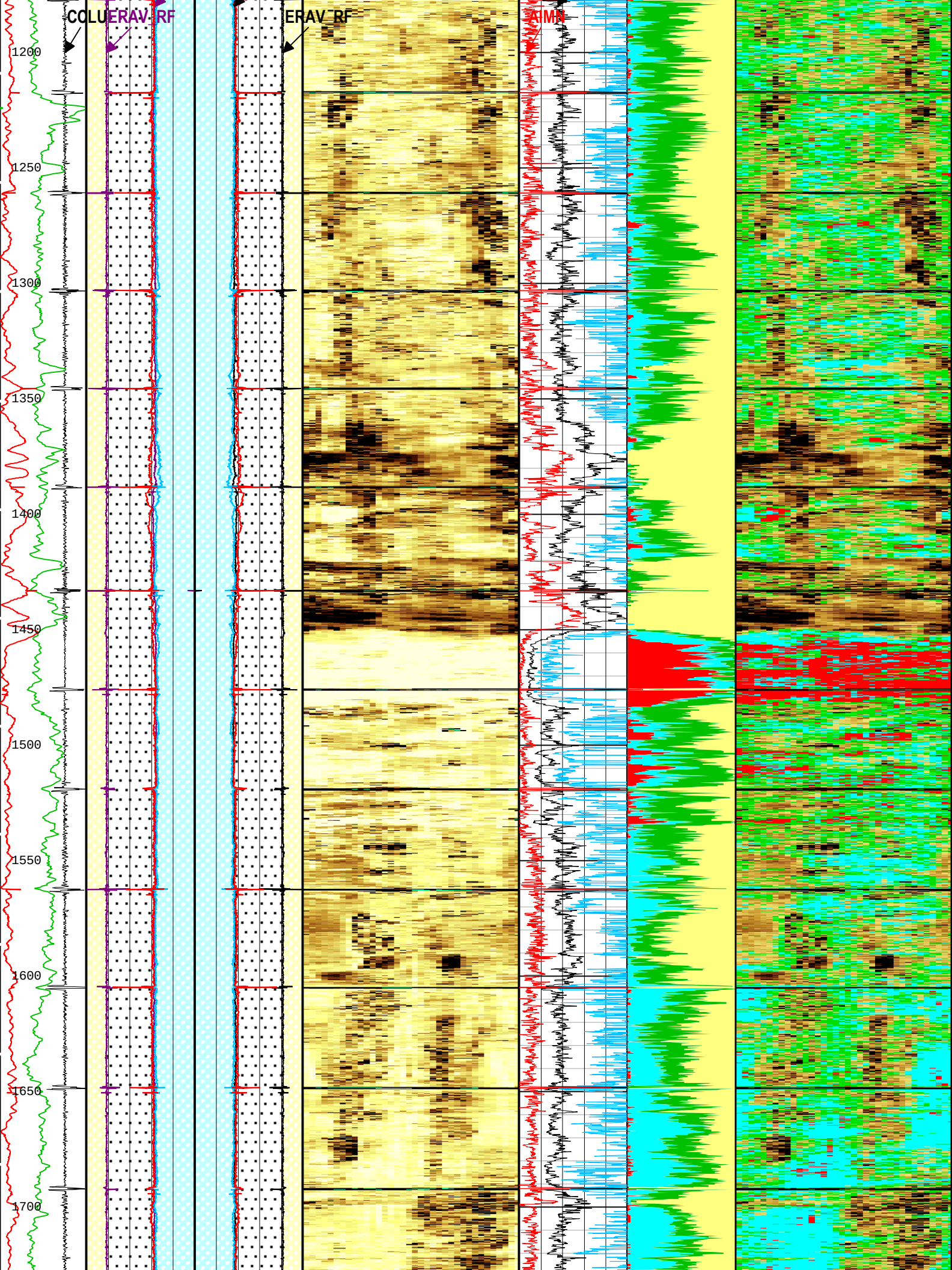
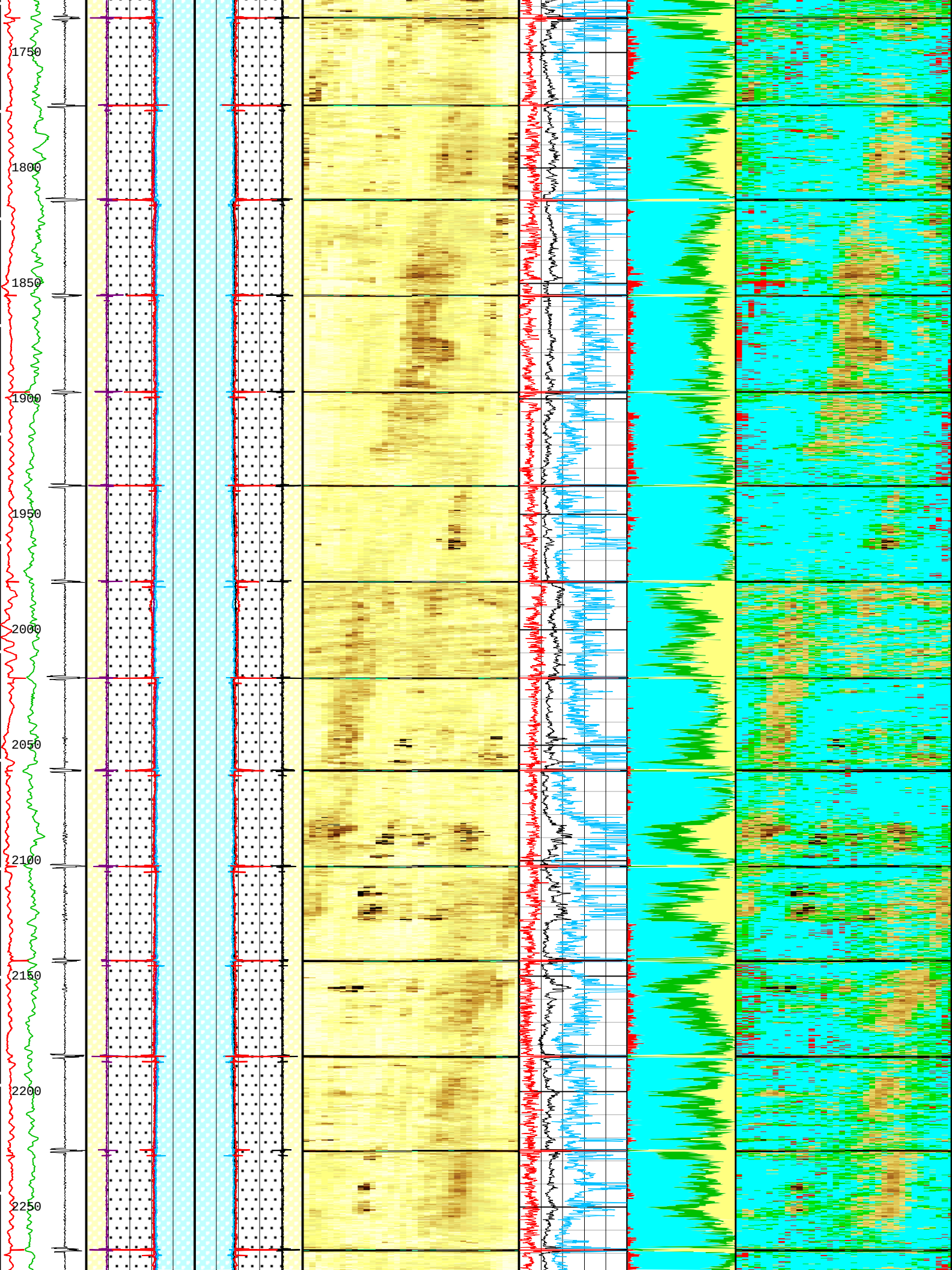
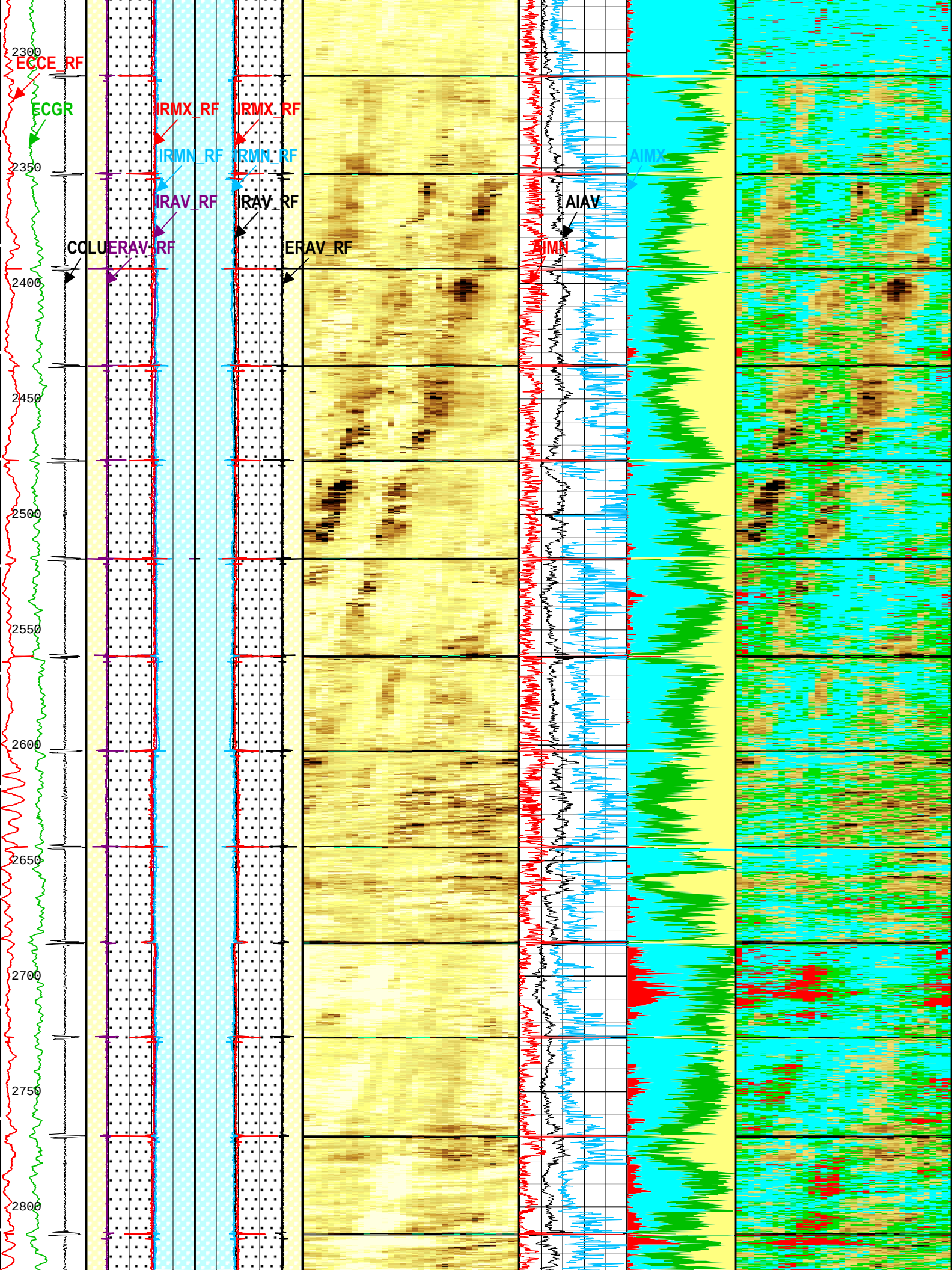
300
350
400
450
500
550
600


650
700
750
800
850
900
950
1000
1050
1100
1150
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
IRAV_RF
IRAV_RF
AIMX
AIAV


COLU
ERAV RF
ERAV RF
AIMP
1200
1250
1300
1350
1400
1450
1500
1550
1600
1650
1700


1750
1800
1850
1900
1950
2000
2050
2100
2150
2200
2250


2300
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
2350
IRAV_RF
IRAV_RF
AIMX
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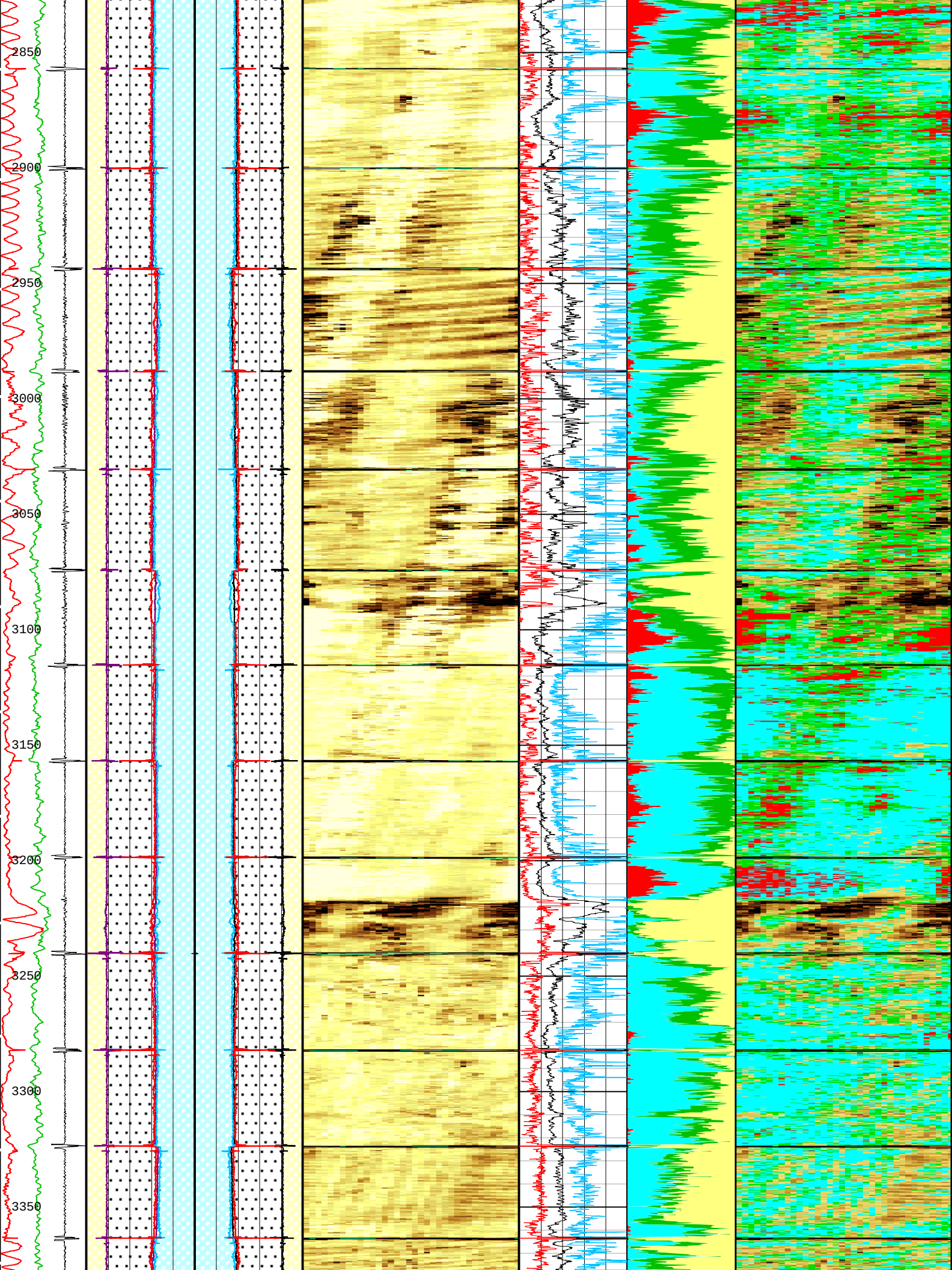
2600
2650
2700
2750
2800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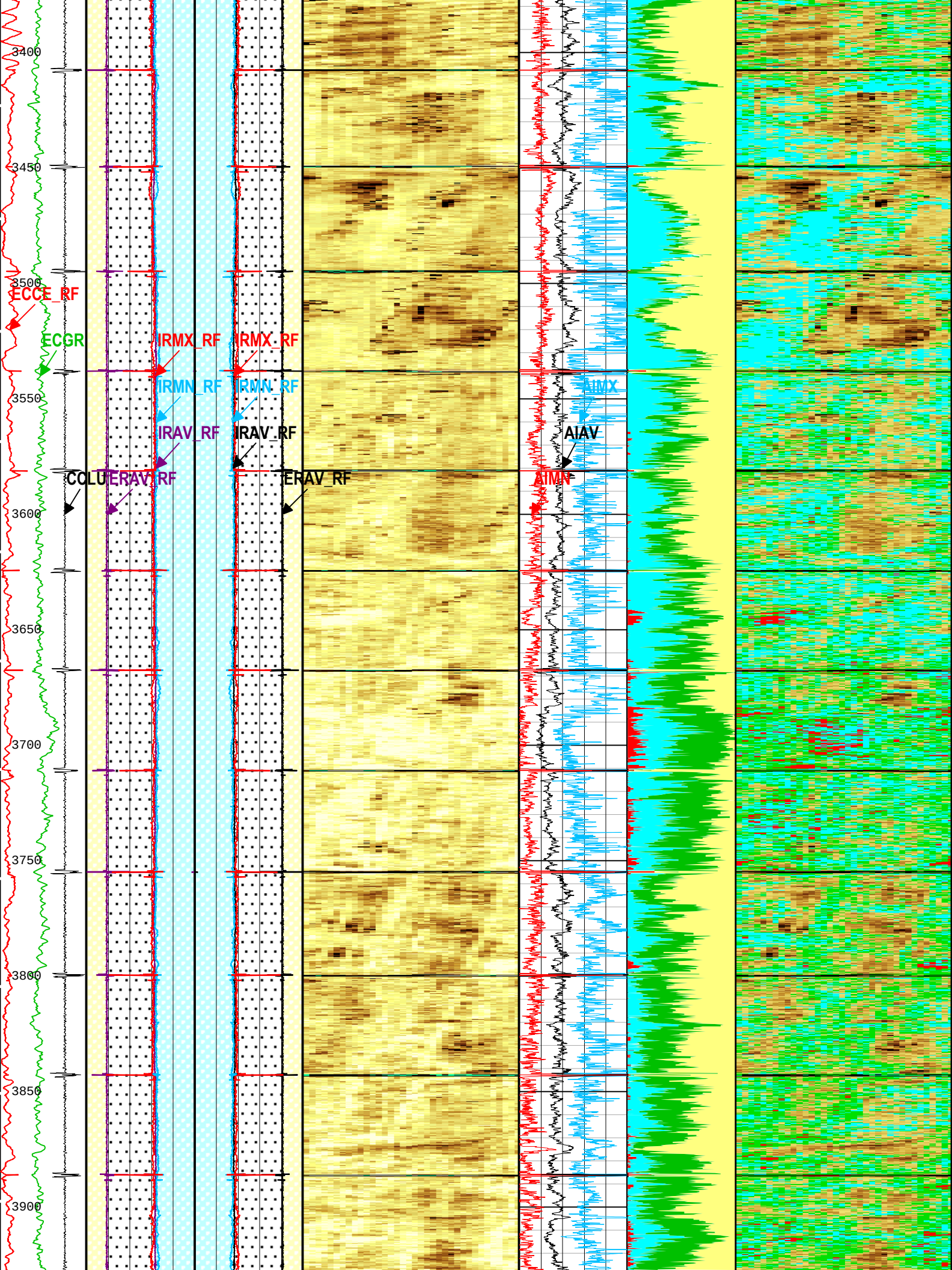
2900
2950
3000
3050
3100
3150
3200
3250
3300
3350


3400
3450
3500
3550
3600
3650
3700
3750
3800
3850
3900
ECCE_RF
ECGR
IRMX_RF
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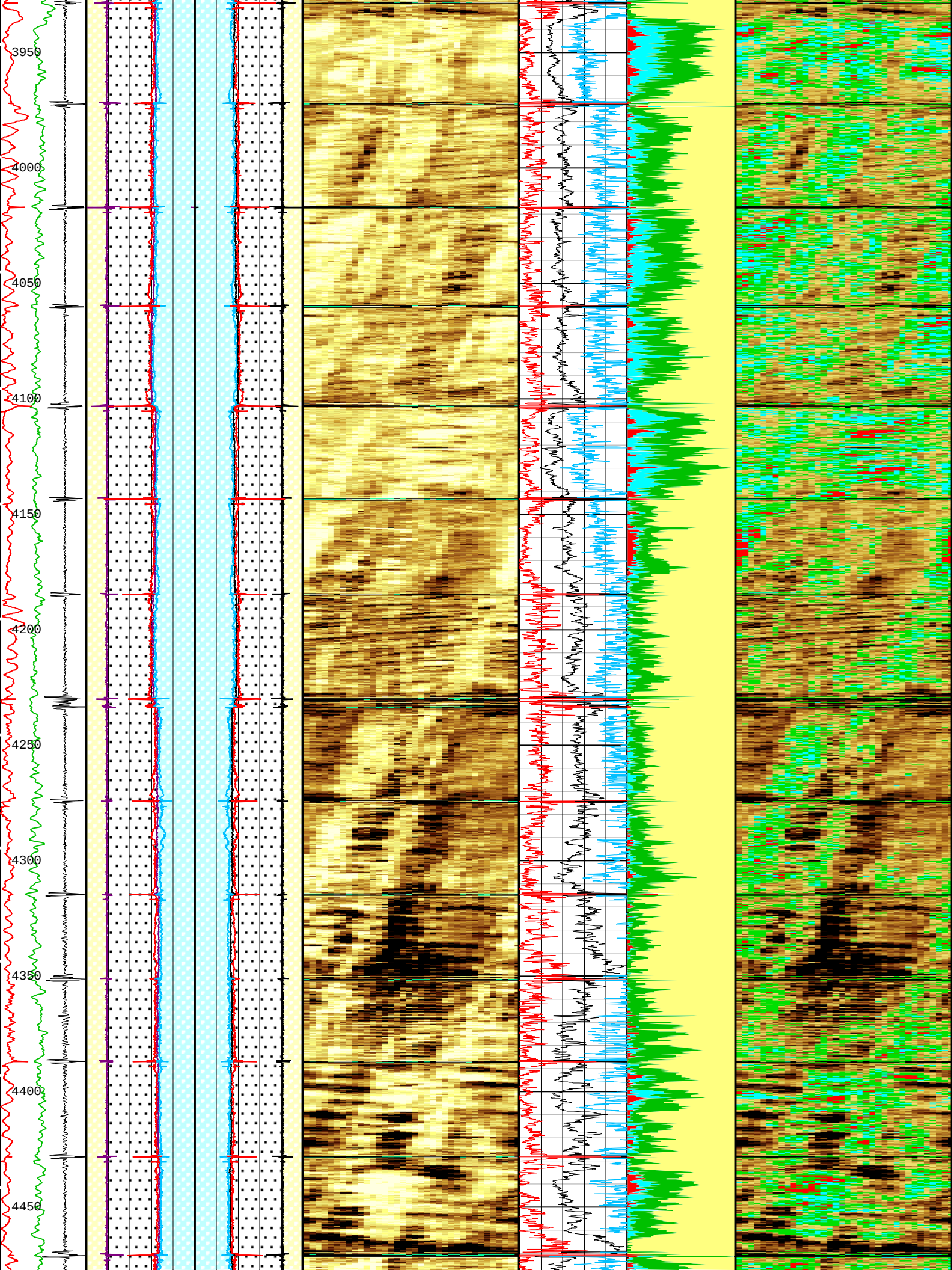
ERAV_RF
AIMX
AIAV
AIMN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4100
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4200
4250
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4350
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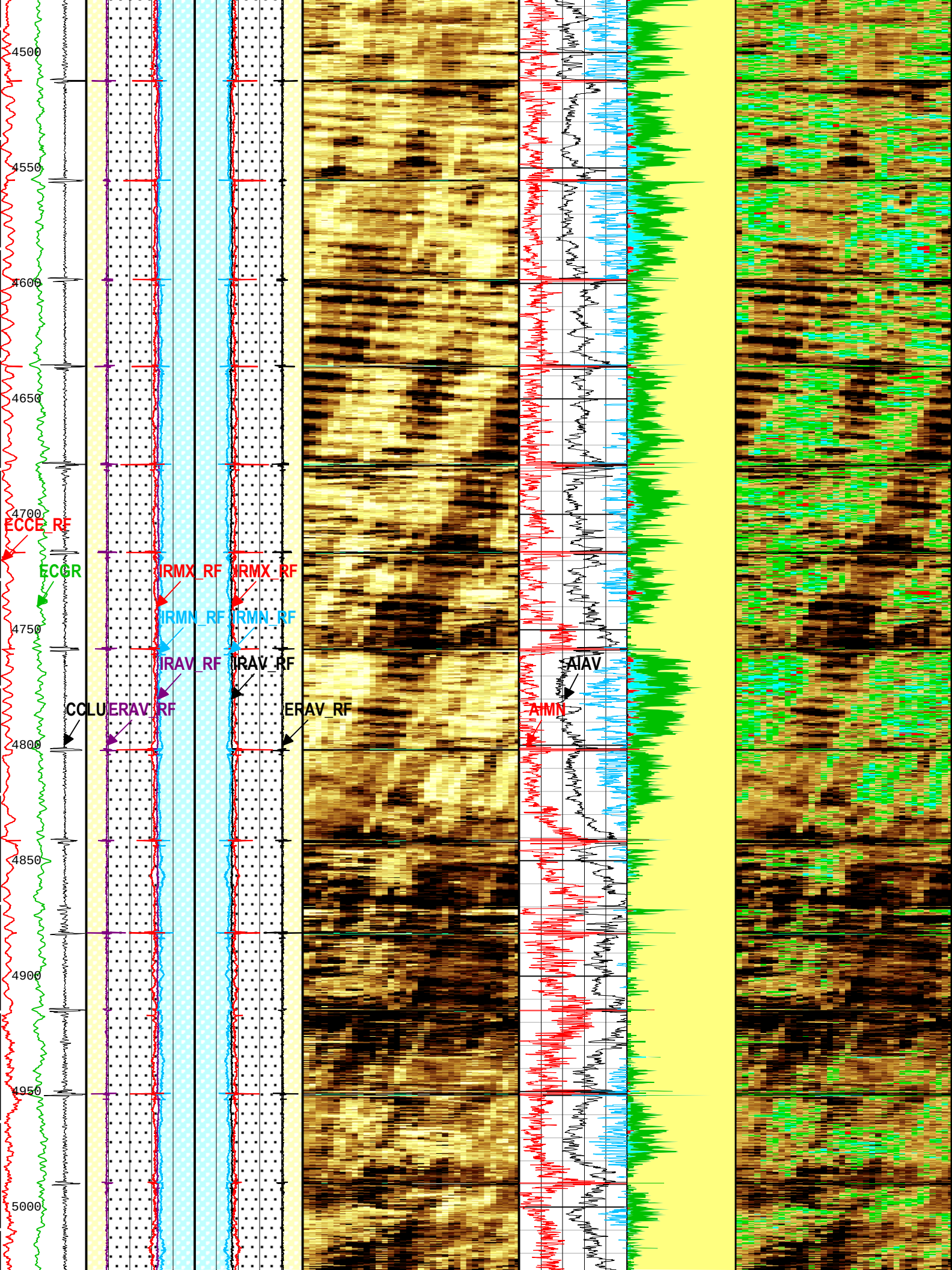
4450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4600
4650
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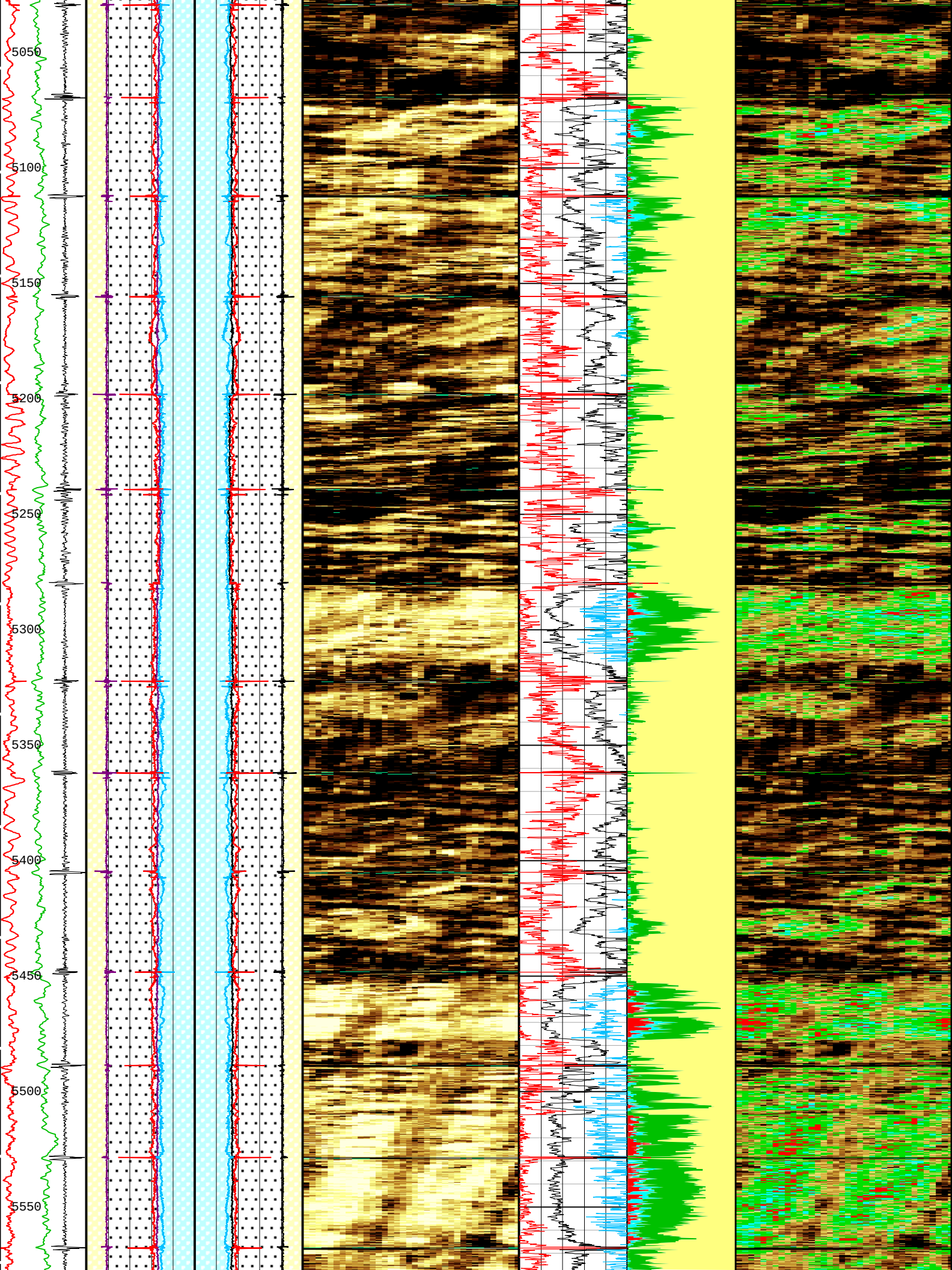
4800
4850
4900
4950
5000
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
IRAV_RF
IRAV_RF
CCLU
ERAV_RF
ERAV_RF
AIAV
AIMN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5100
5150
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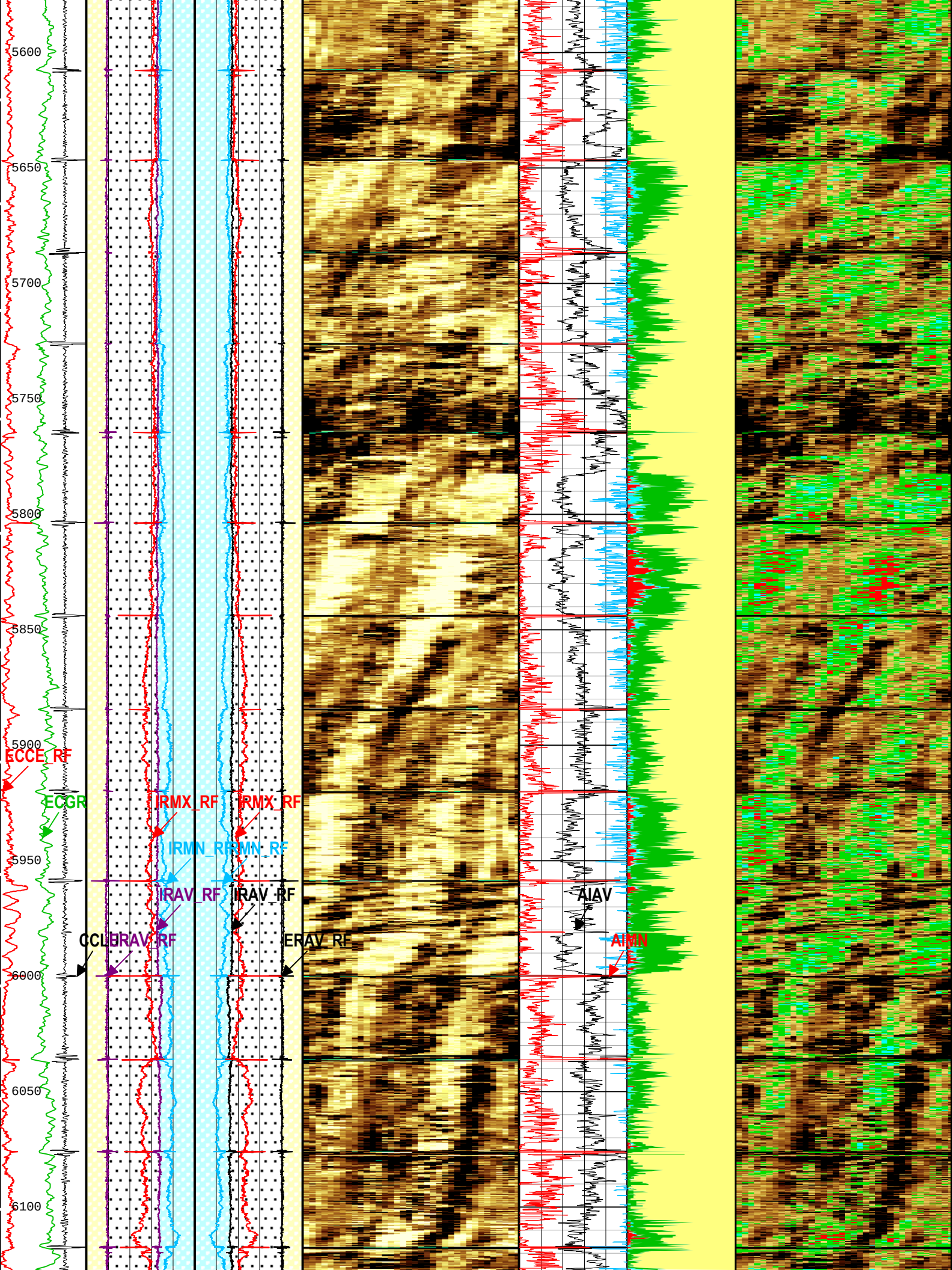
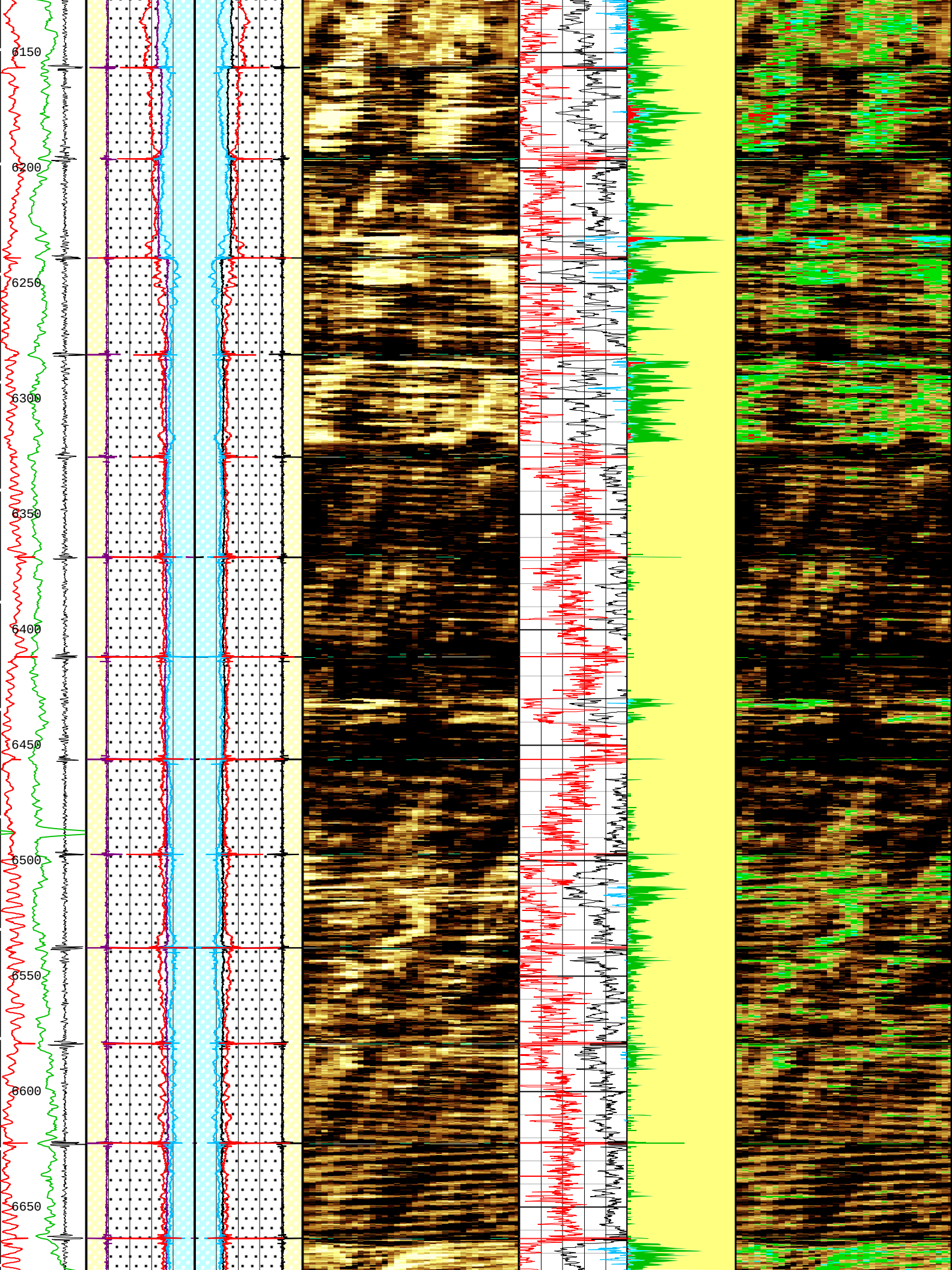
5350
5400
5450
5500
5550


5600
5650
5700
5750
5800
5850
5900
5950
6000
6050
6100
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
IRAV_RF
IRAV_RF
CCL
IRAV_RF
ERAV_RF
AIAV
AIMN


6150
6200
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6300
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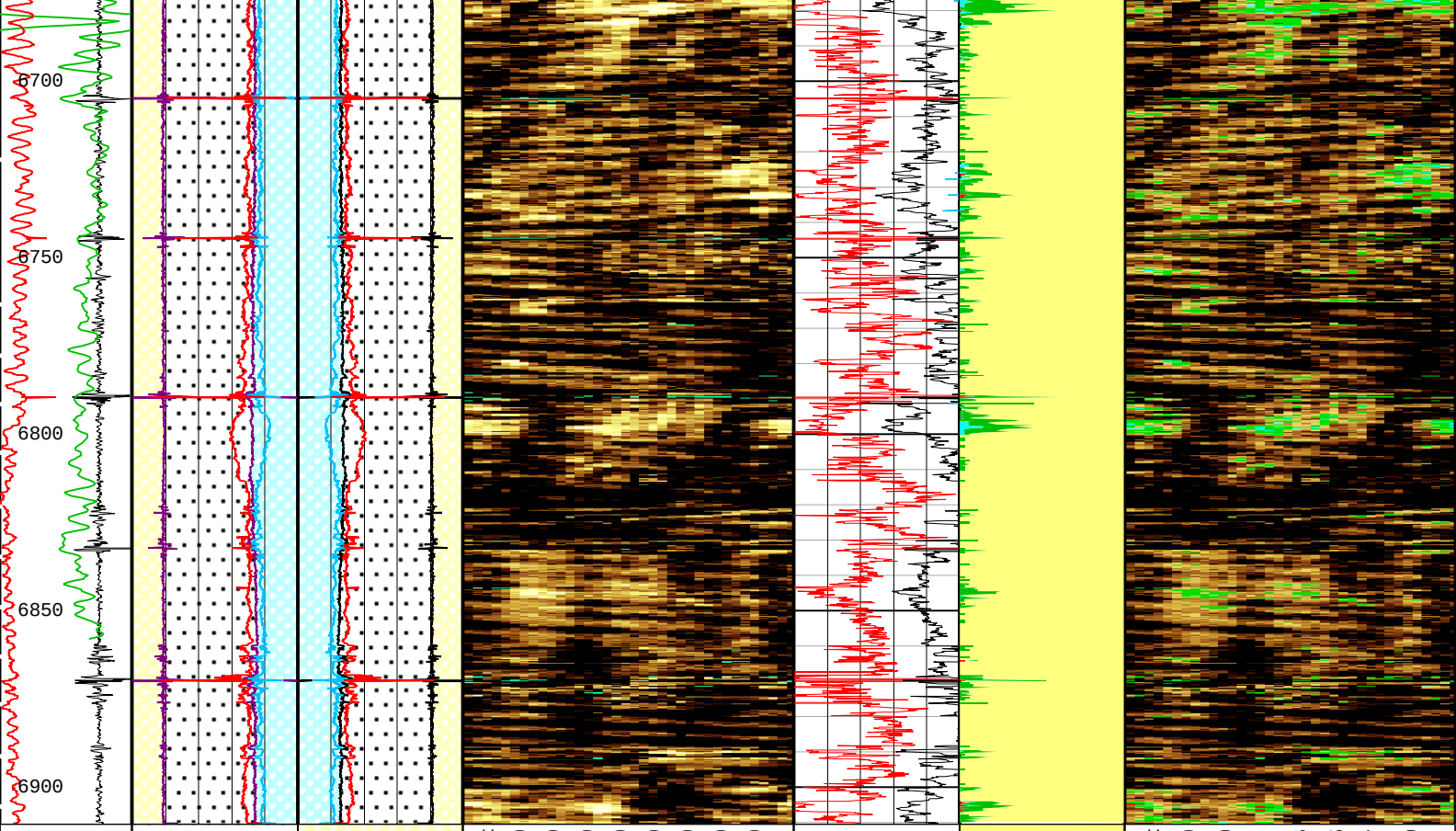
6650



Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Gamma Ray (ECGR) HGNS-H
0 gAPI 150

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 1

ERAV_IRAV	ERAV_RHF1
IRAV_LHF1	IRAV_ERAV
LHF1_ERAV	RHF1_IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

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

Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9

Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9

TIME 1900 Time Marked every 60.00 (s)

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Cement Format: Log (LBV1_USI Cement 9.625inch) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:21:24

TWO

Corrosion 5 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[2]:Up	Up	198.58 ft	6911.16 ft	24-May-2016 9:27:08 AM	24-May-2016 11:56:22 AM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A

TWO: Log[2]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:21:31

TIME_1900 - Time Marked every 60.00 (s)

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

UTIM Error
Pulse Origin Not Detected
WINLEN Error
Casing Thickness Error
Loop Processing Error

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
4 5

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Internal Radius Maximum Value (IRMX) USIT-E
4 in 5

Internal Radius Minimum Value (IRMN) USIT-E
4 in 5

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

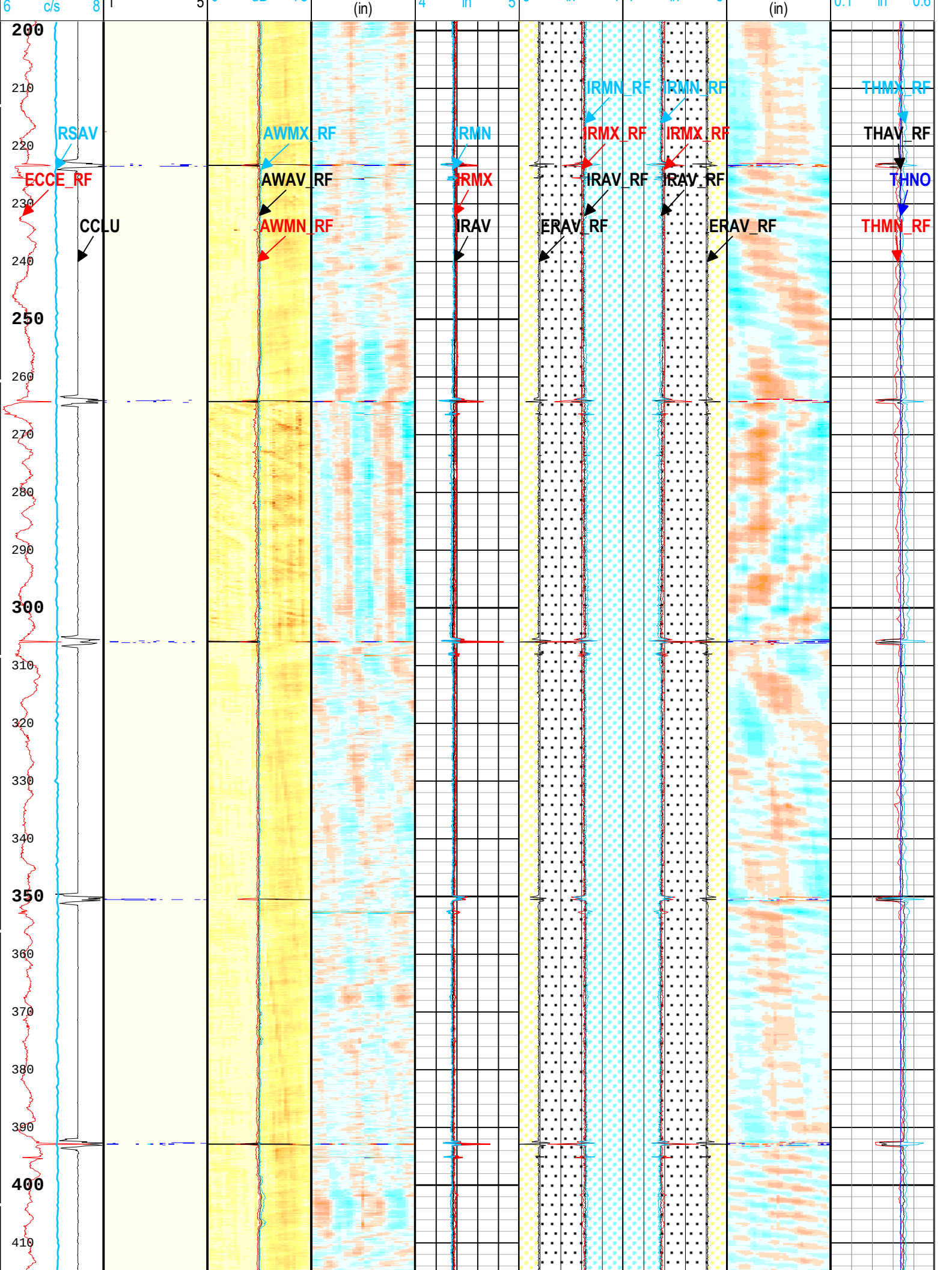
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6


6 c/s 8
1 5
(in)
4 in 5
(in)
0.1 in 0.6
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
360
370
380
390
400
410
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
IRMX
IRAV
IRMN_RF
IRMX_RF
IRAV_RF
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IRMN_RF
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IRAV_RF
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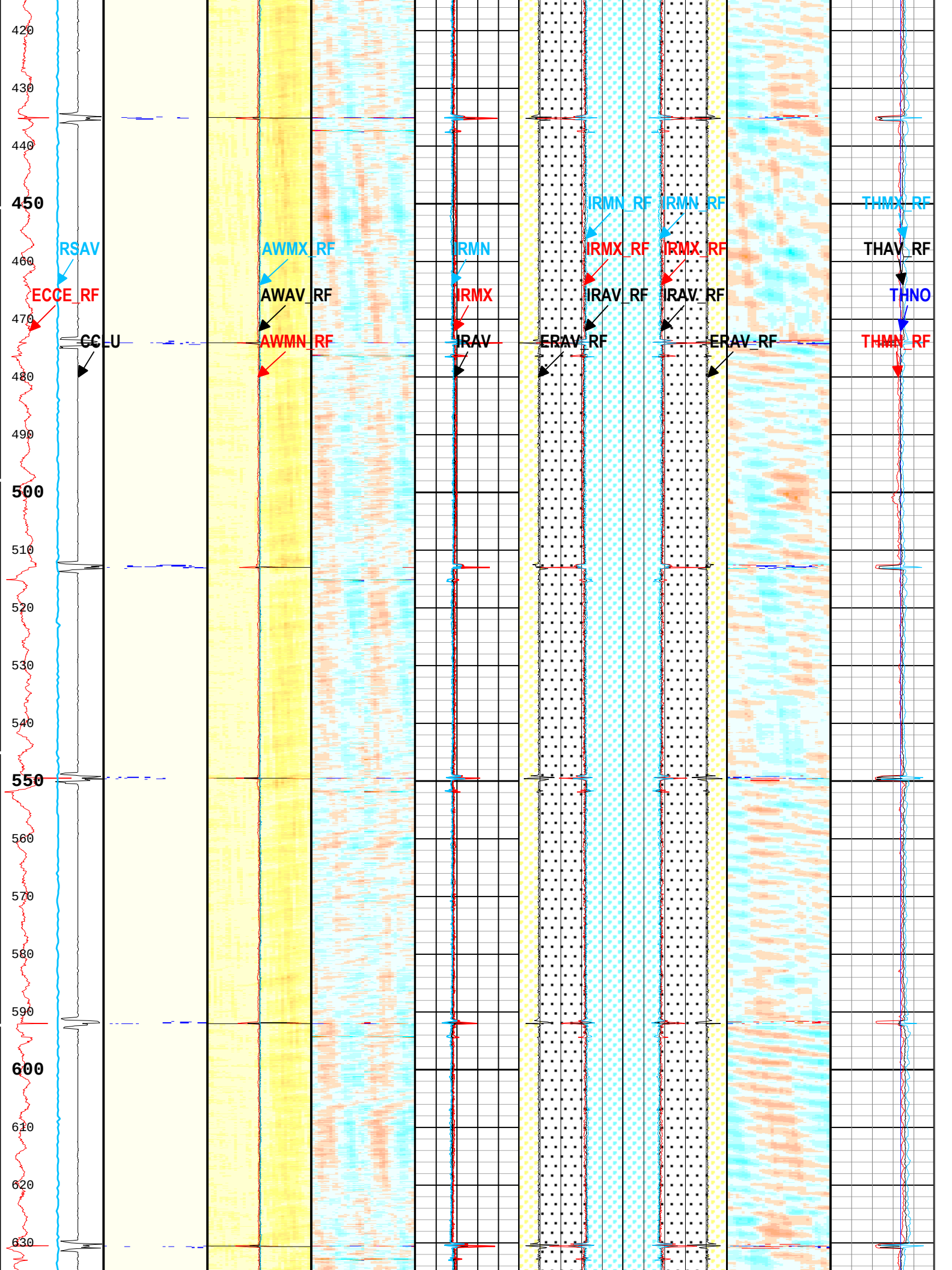
THMX_RF
THAV_RF
THNO
THMN_RF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620
630
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
IRMX
IRAV
IRMN_RF
IRMX_RF
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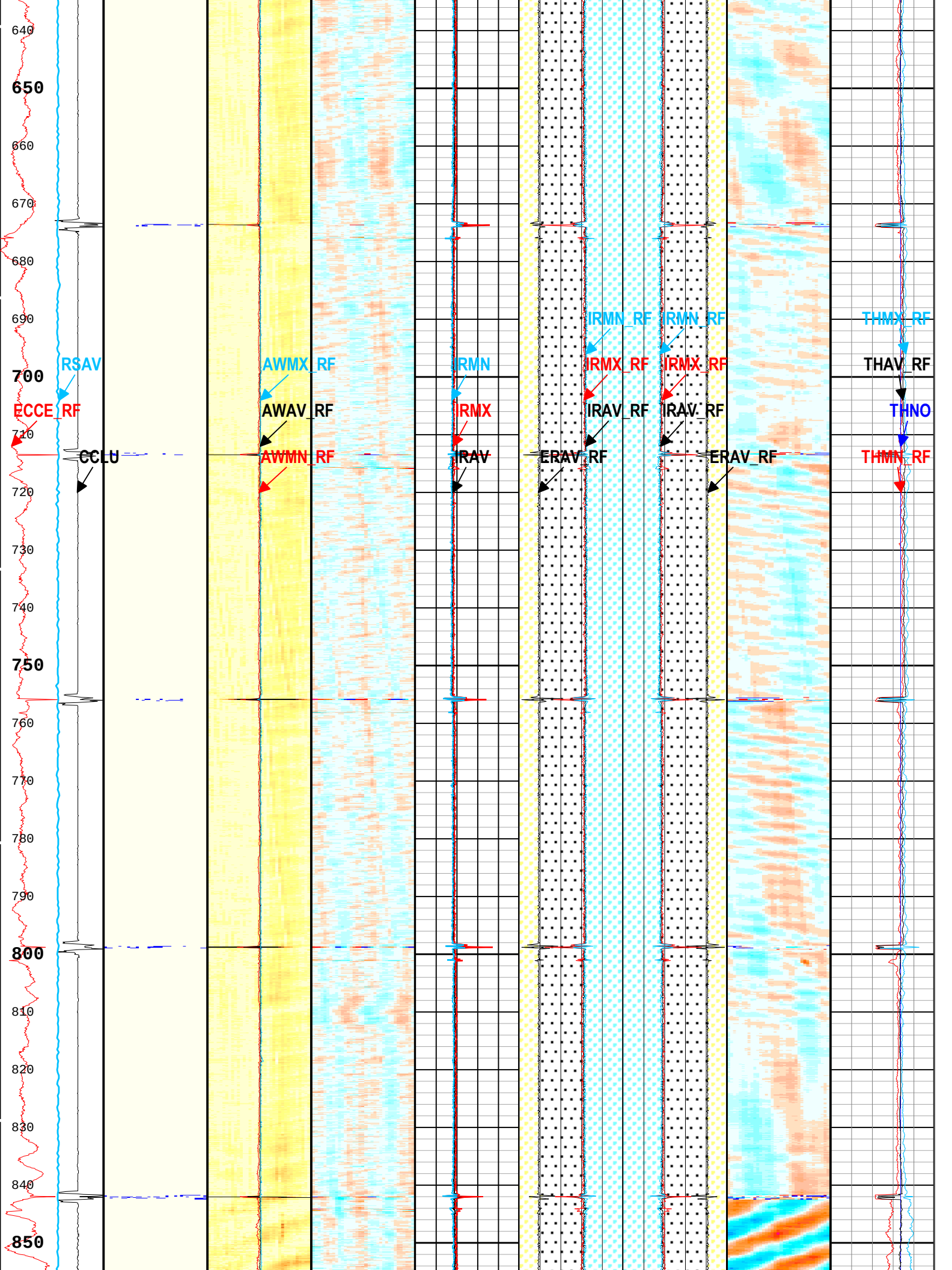
THAV_RF
THNO
THMN_RF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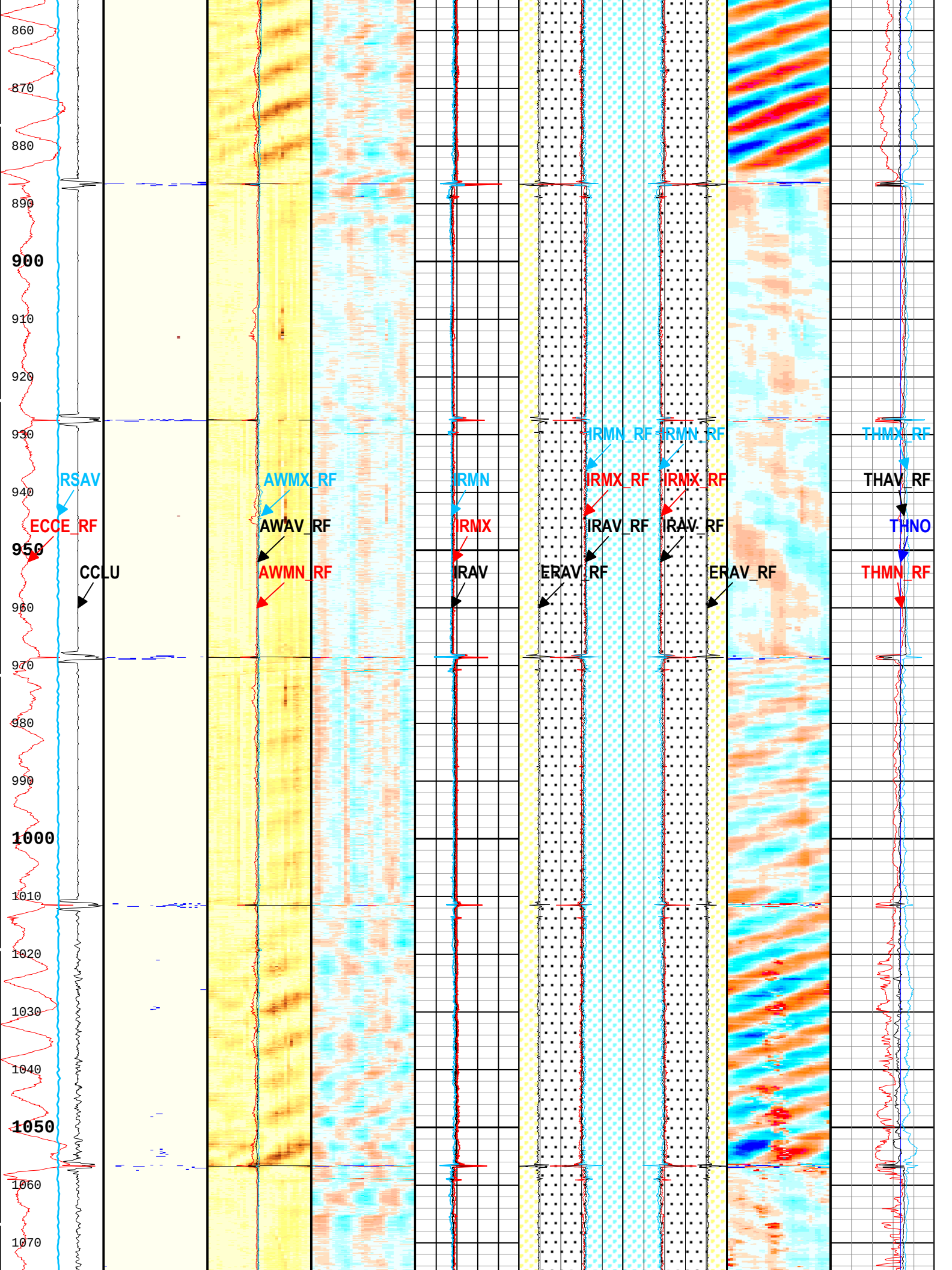
850
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN
IRMX
IRAV
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
RMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF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1070
RSAV
ECCE_RF
CCLU
AWMX_RF
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RMN
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IRAV
IRMN_RF
IRMX_RF
IRAV_RF
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IRMX_RF
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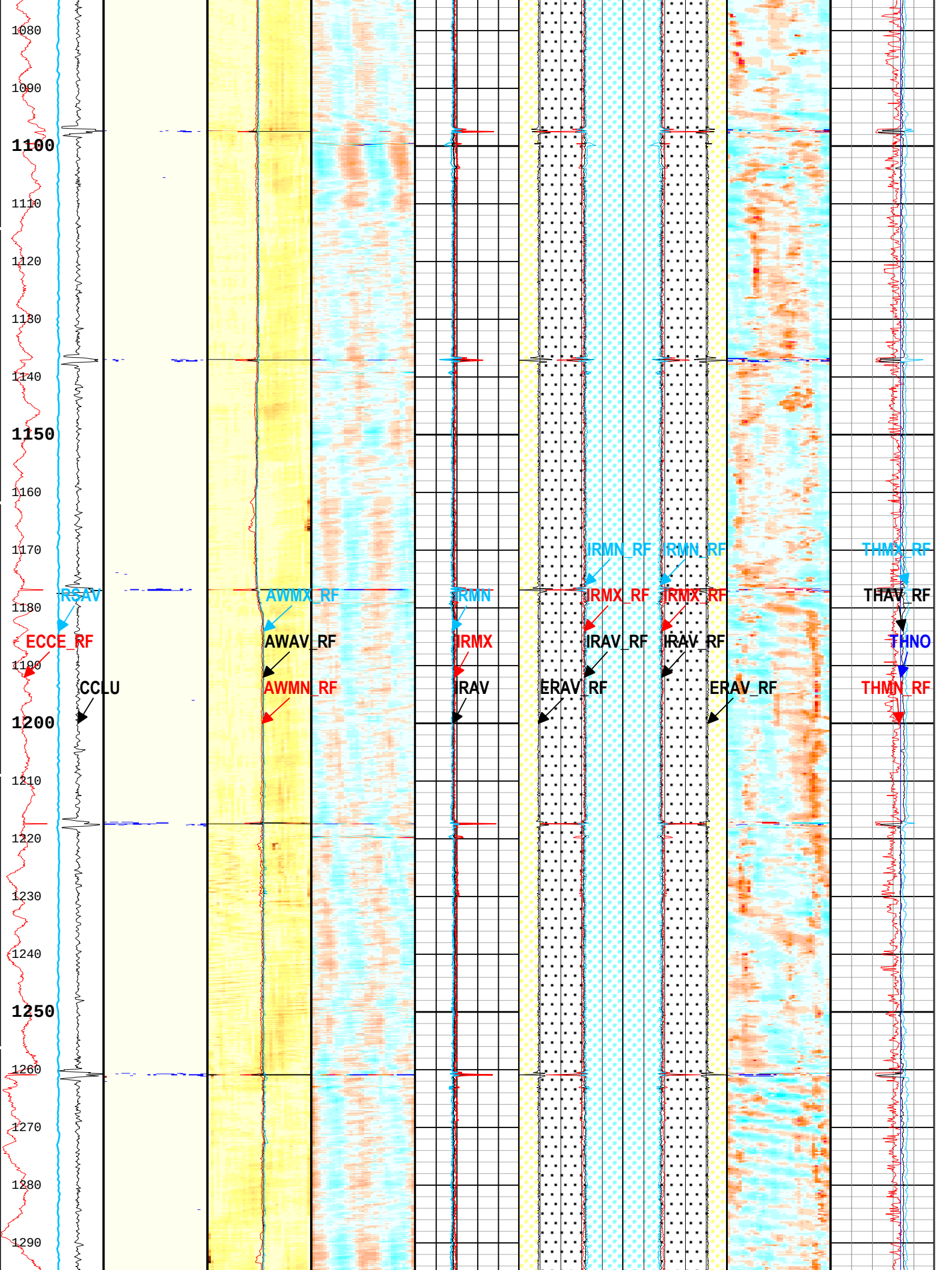
THMX_RF
THAV_RF
THNO
THMN_RF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1200
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ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
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IRMX_RF
IRAV_RF
ERAV_RF
RMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
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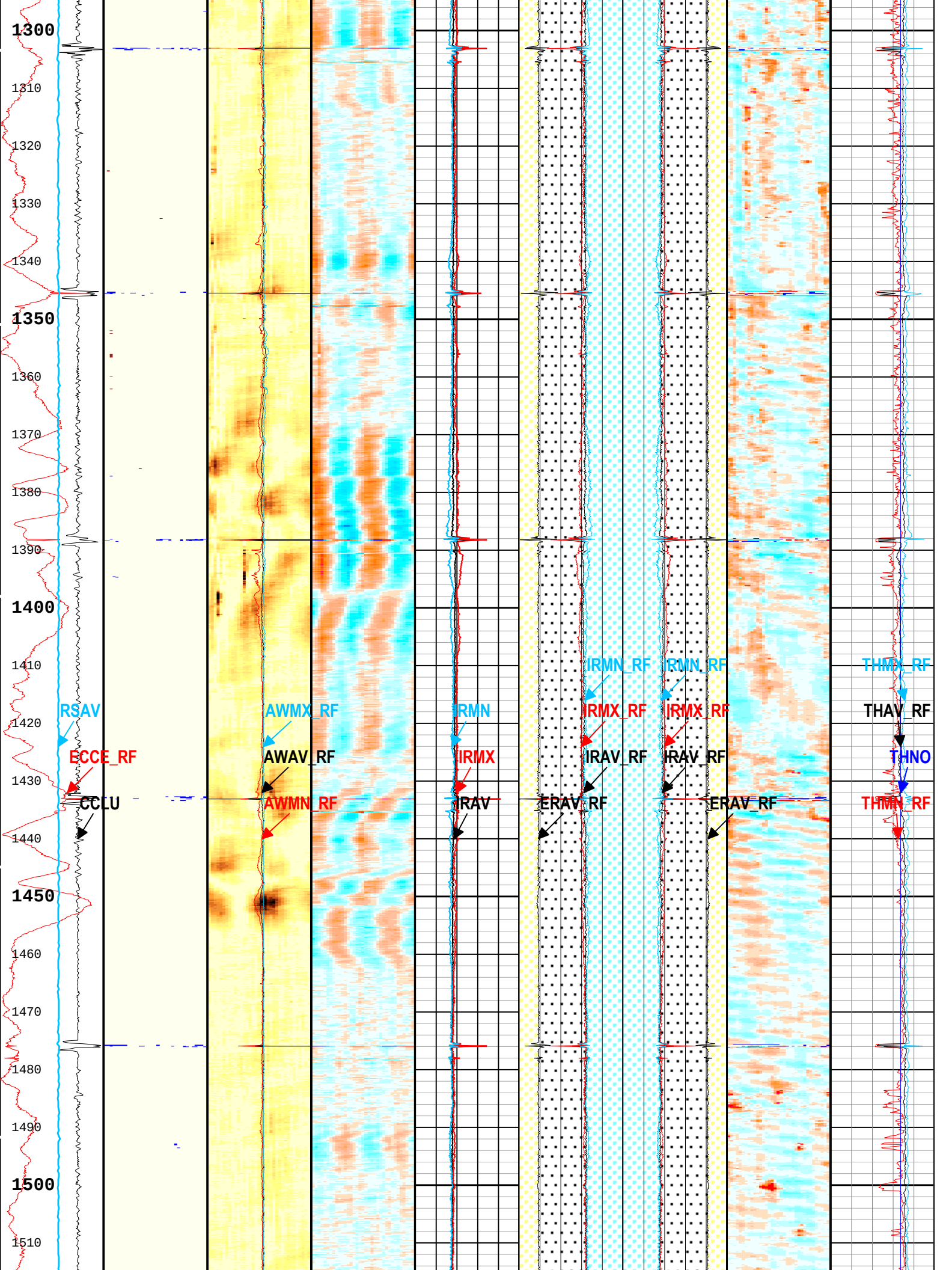
THMN_RF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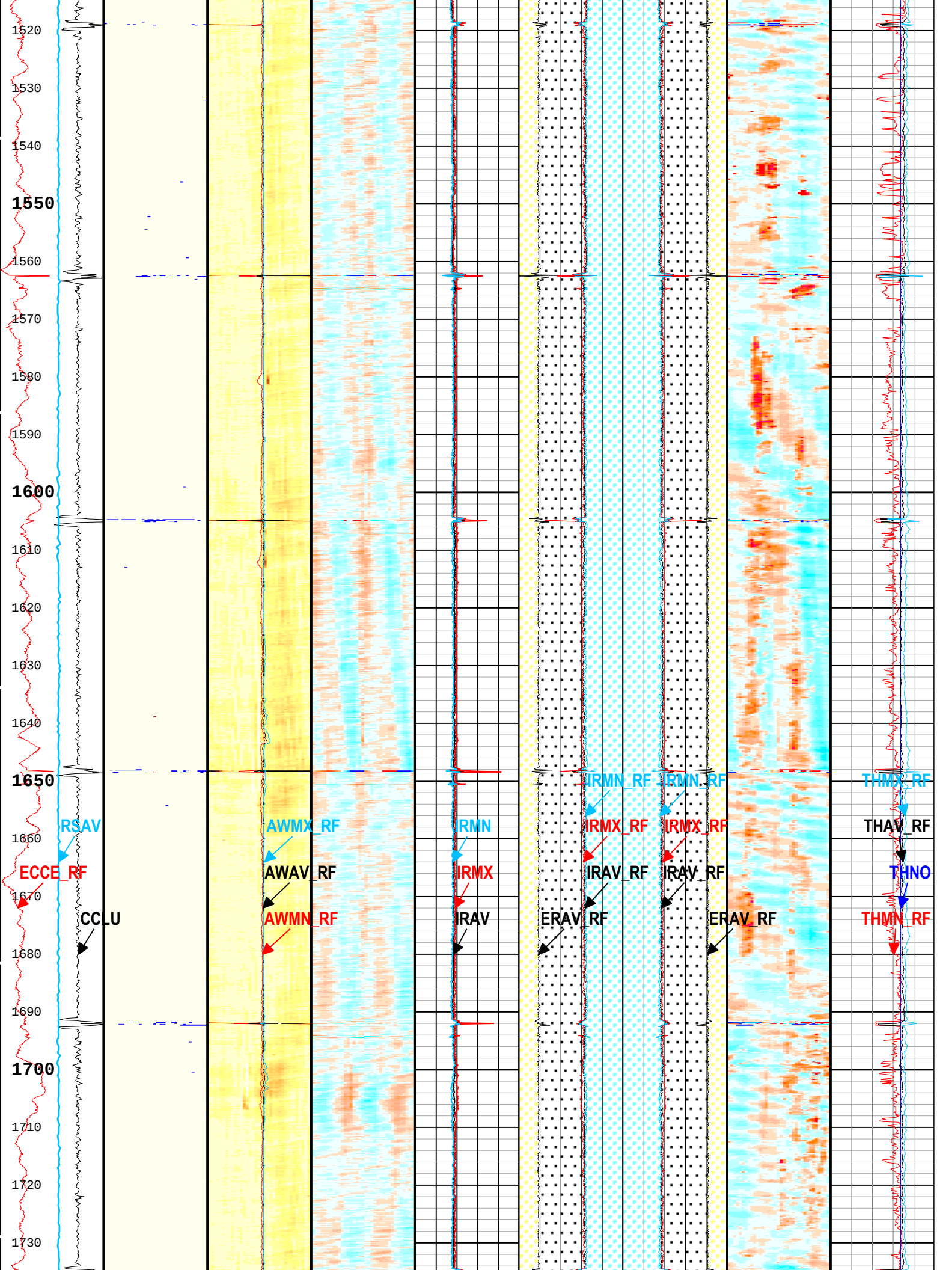
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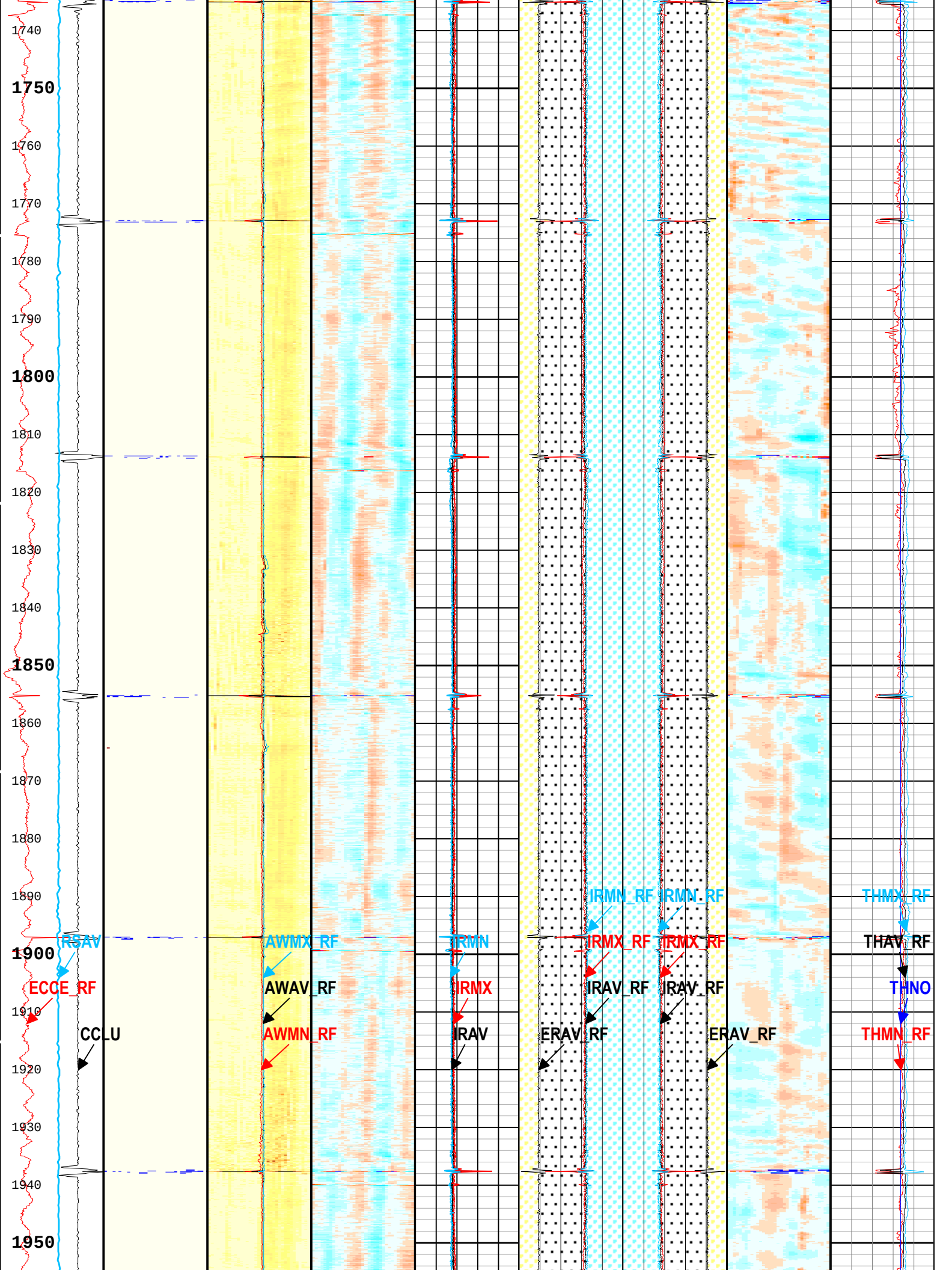
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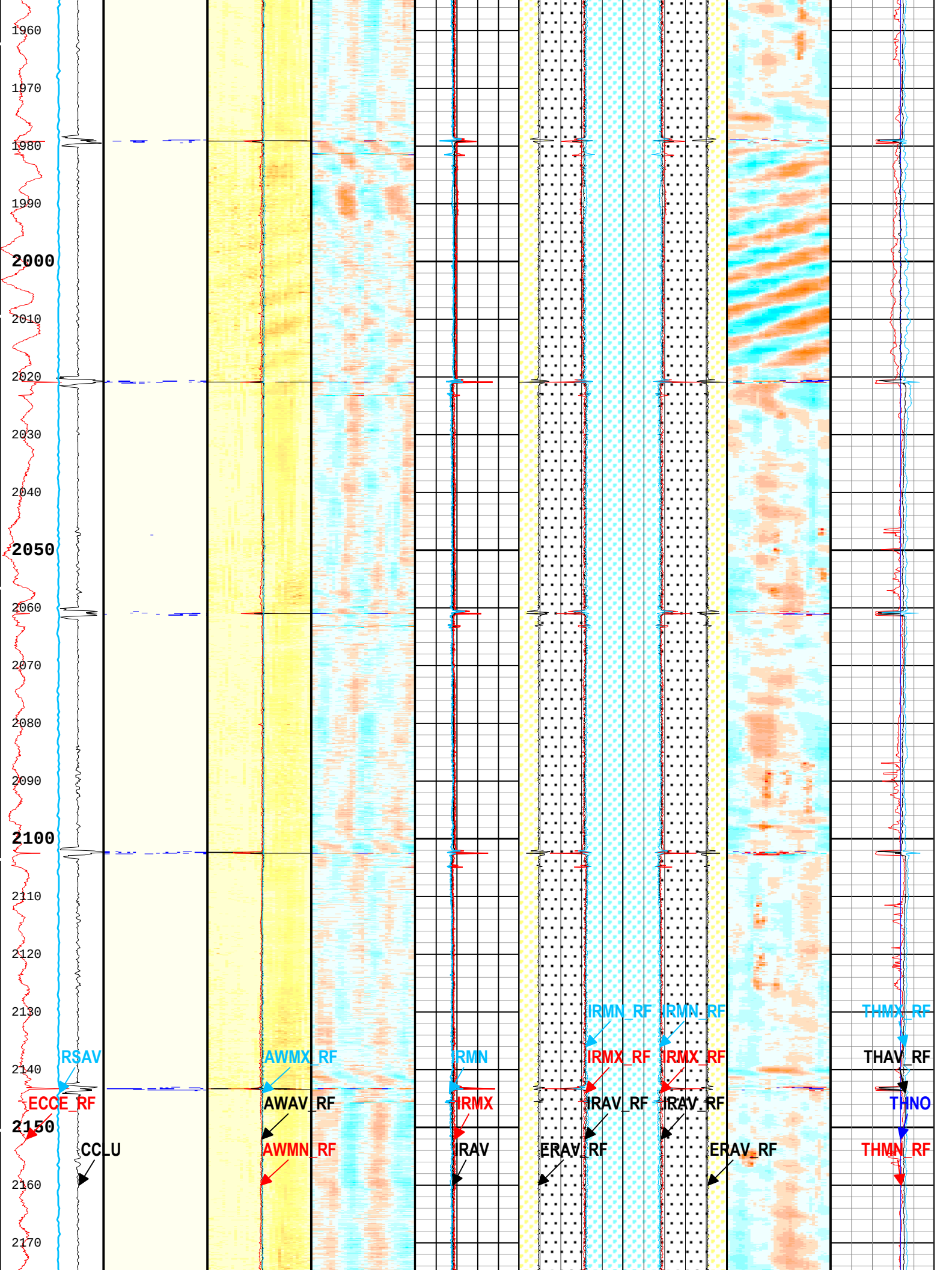
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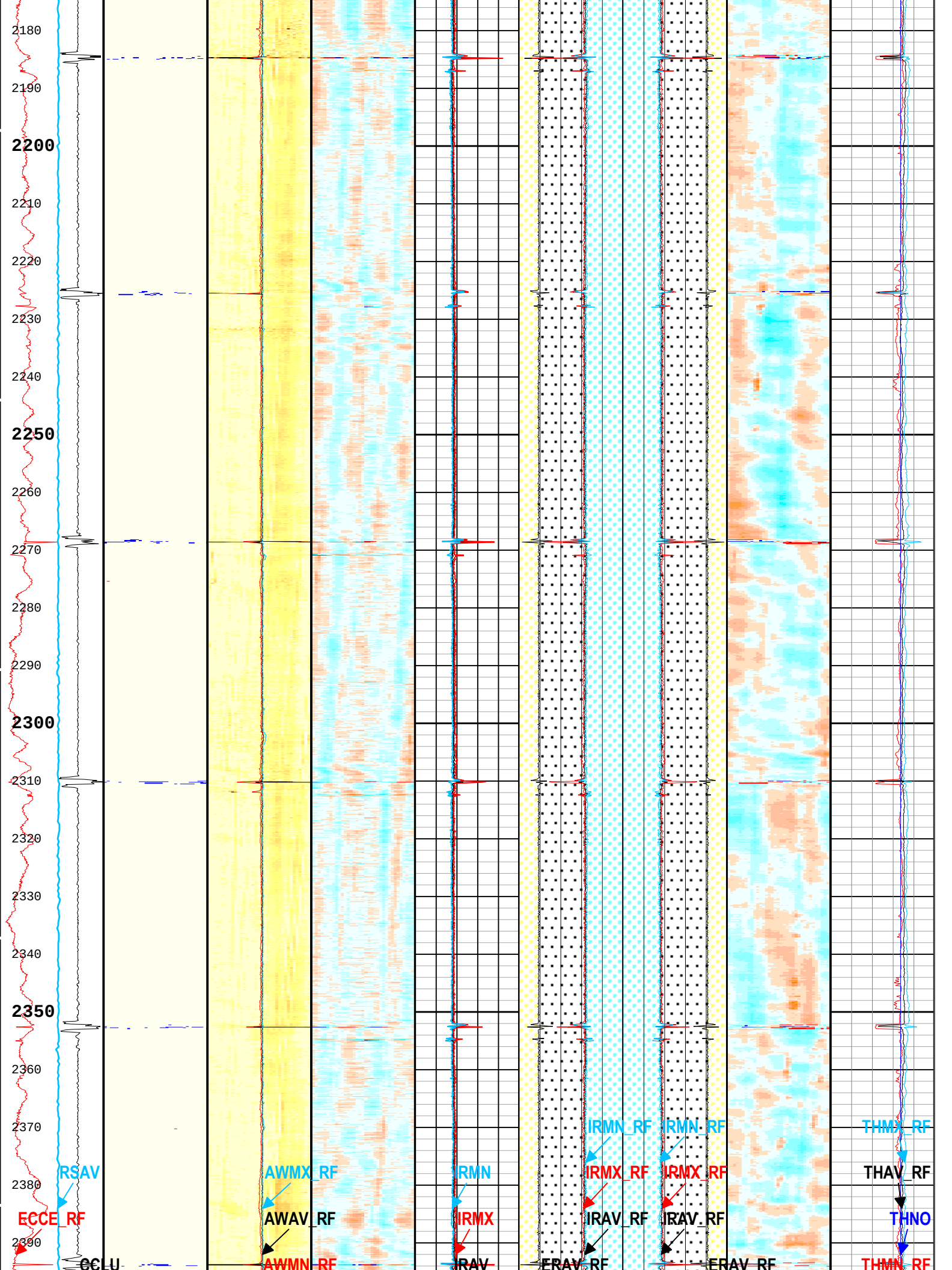
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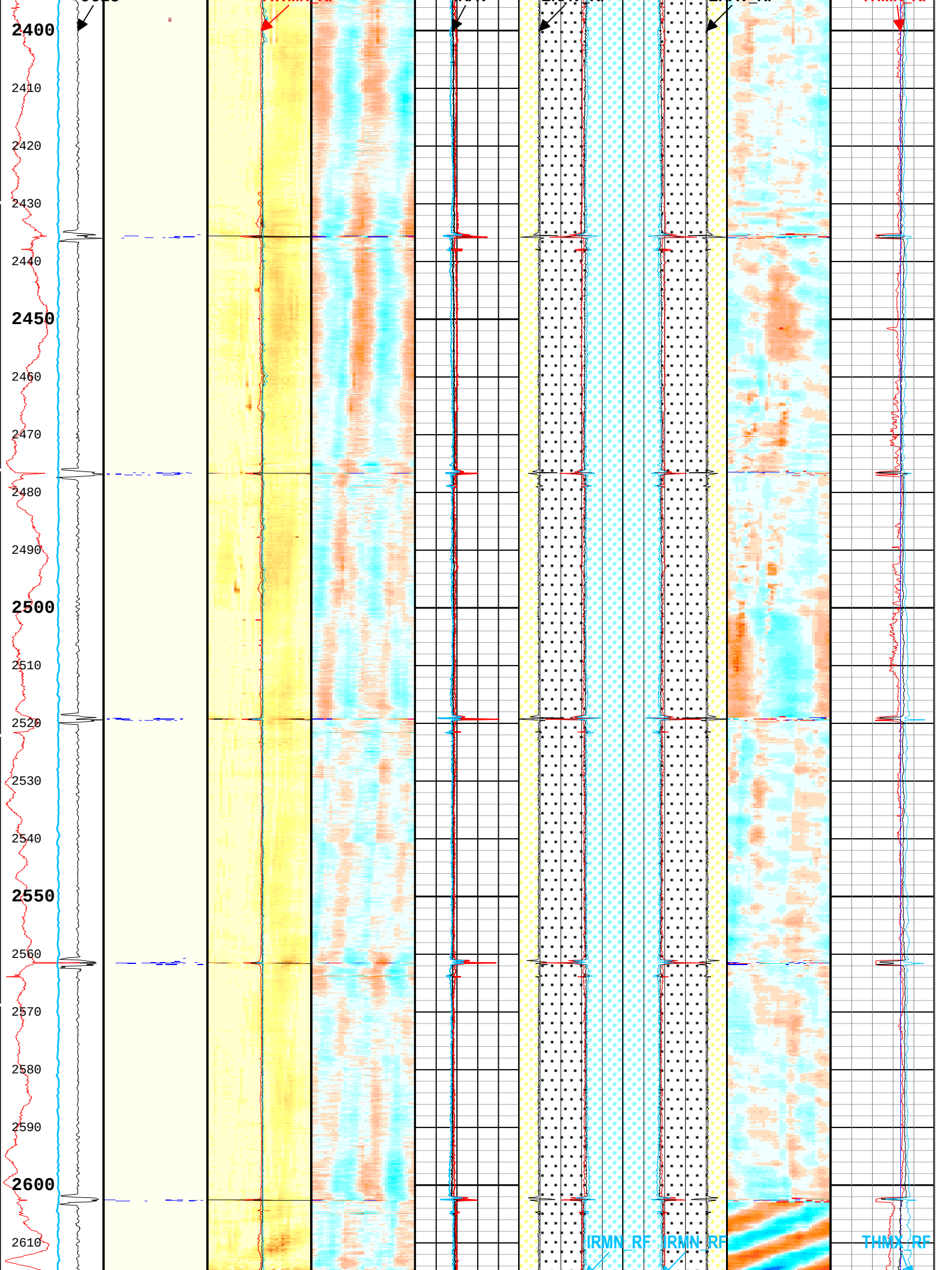
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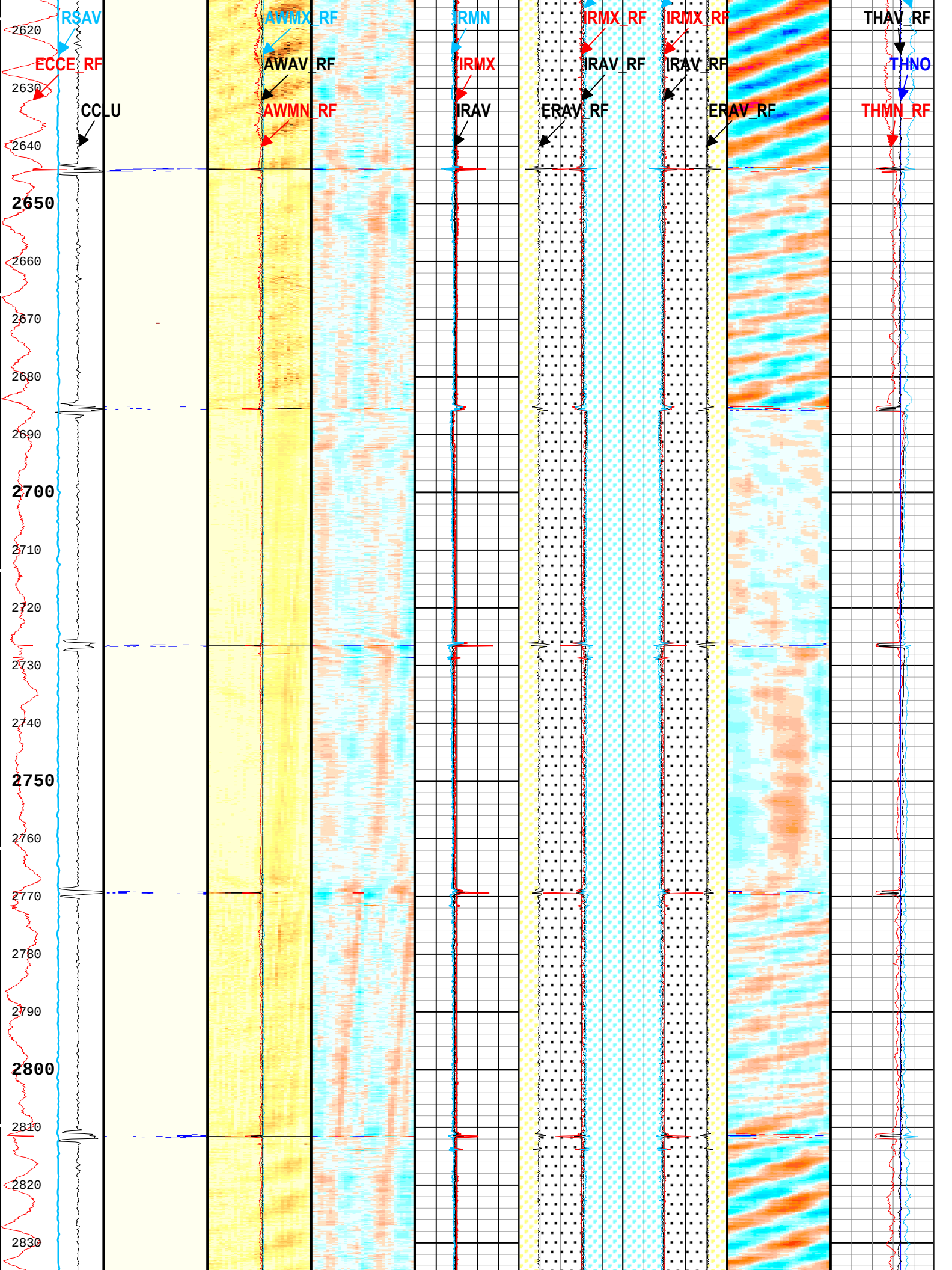
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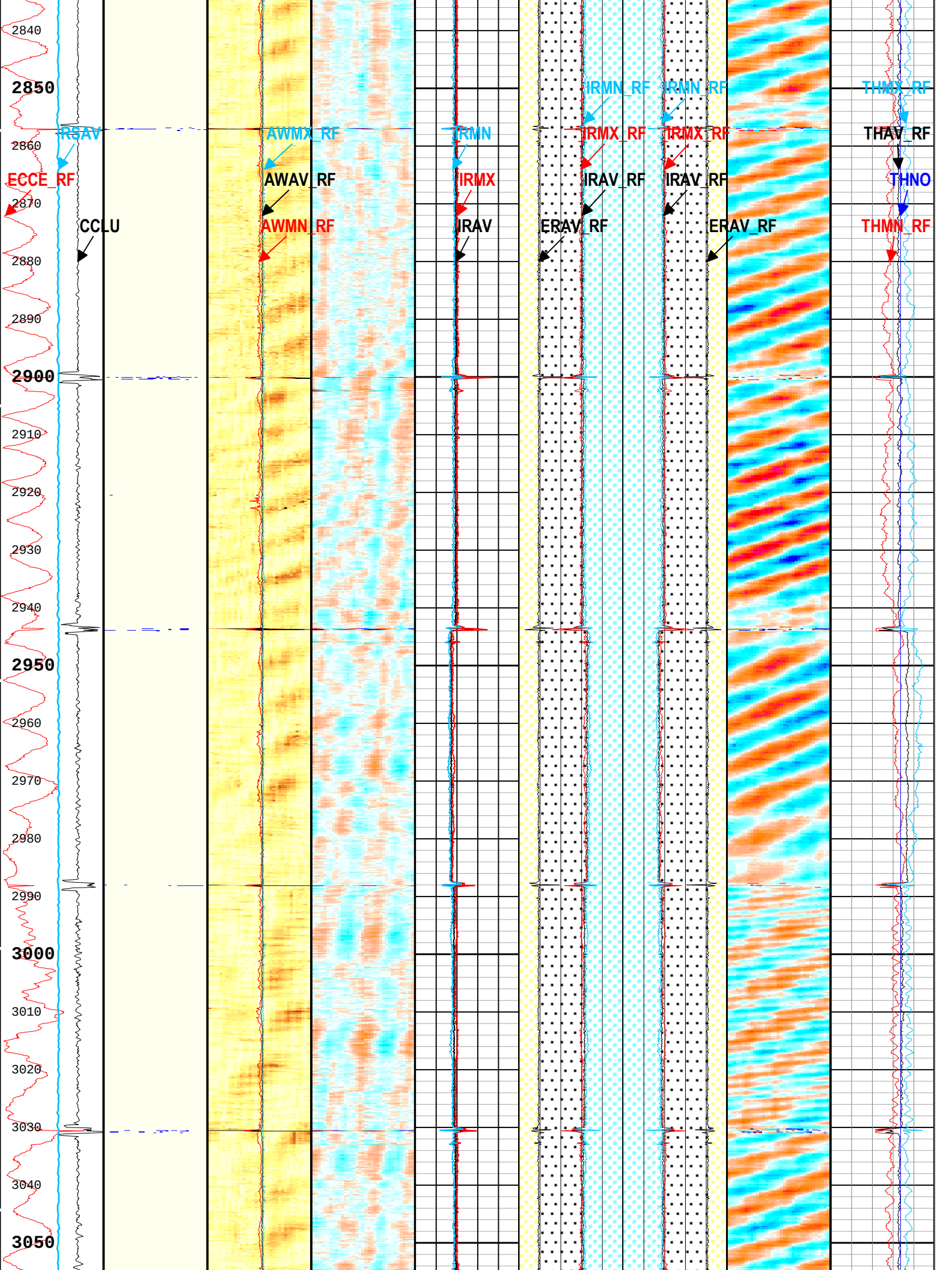
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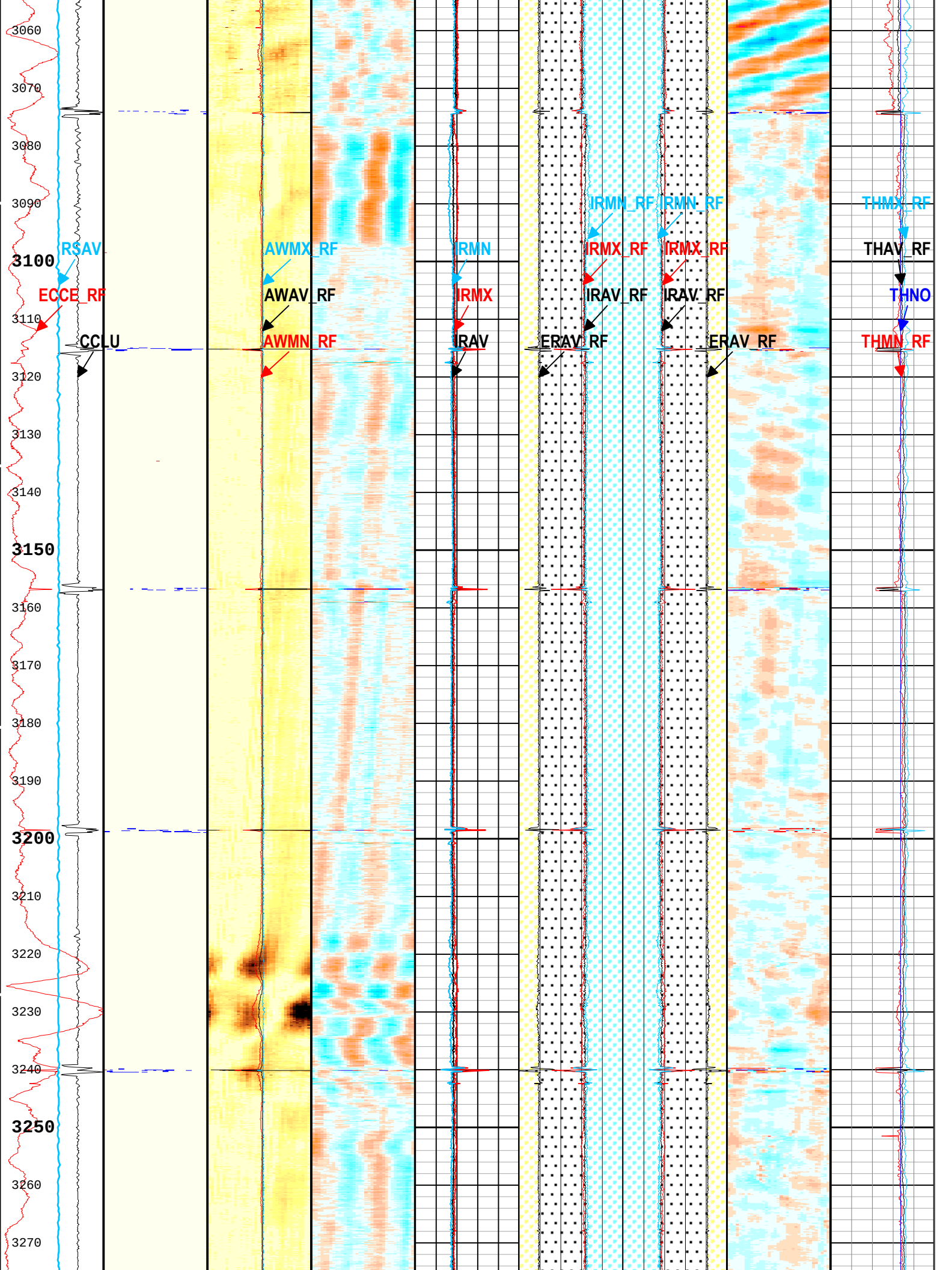
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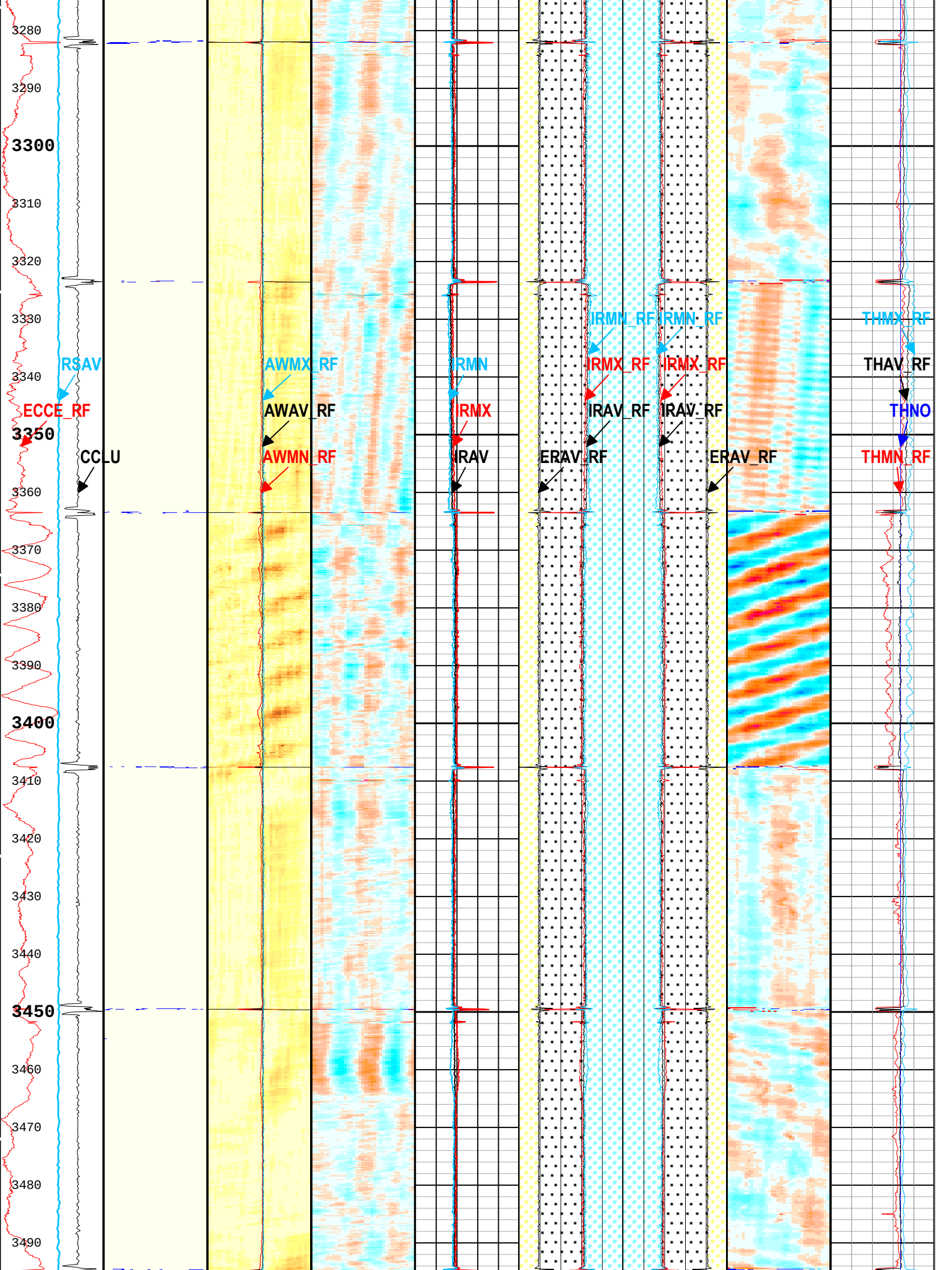
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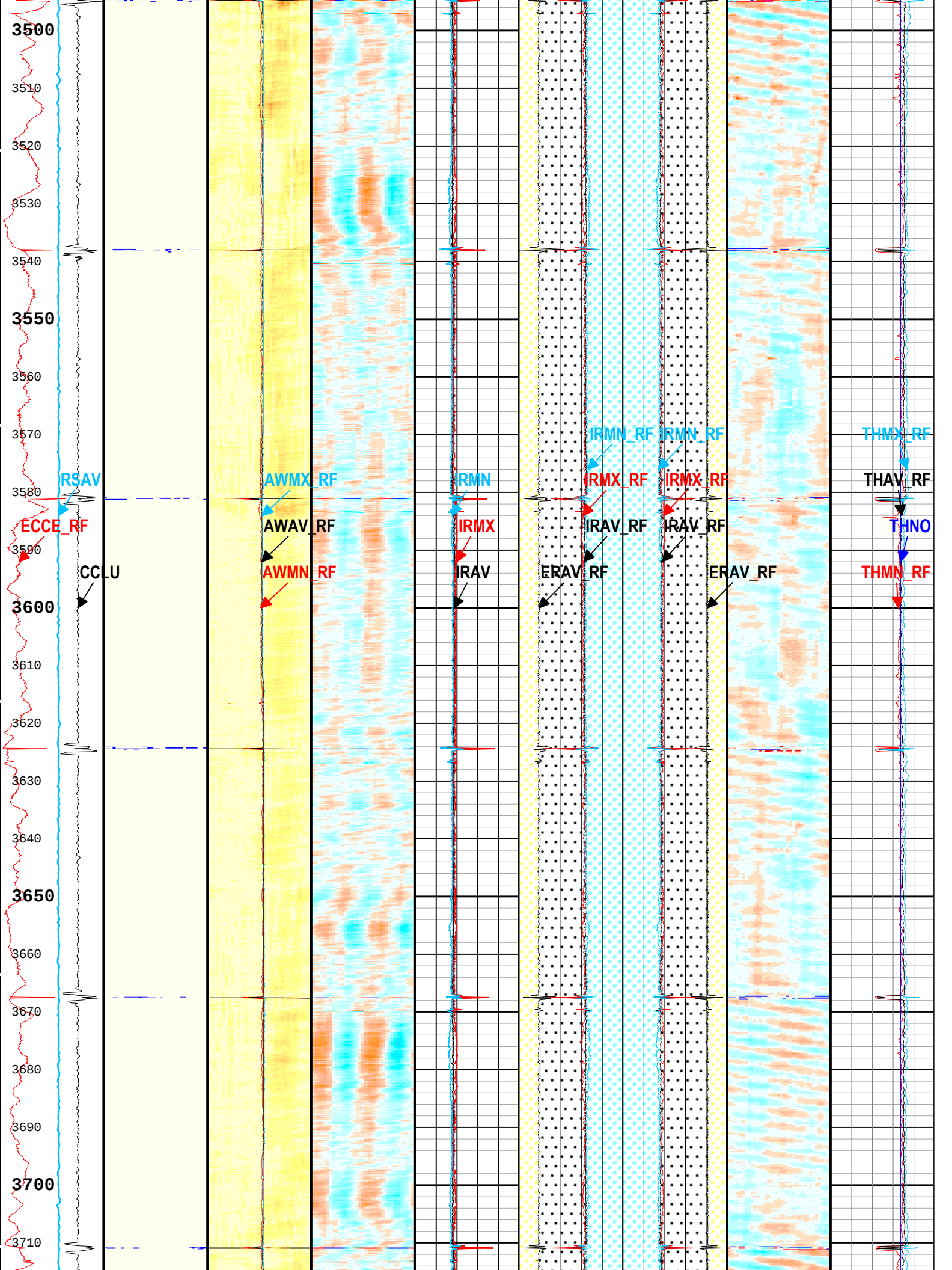
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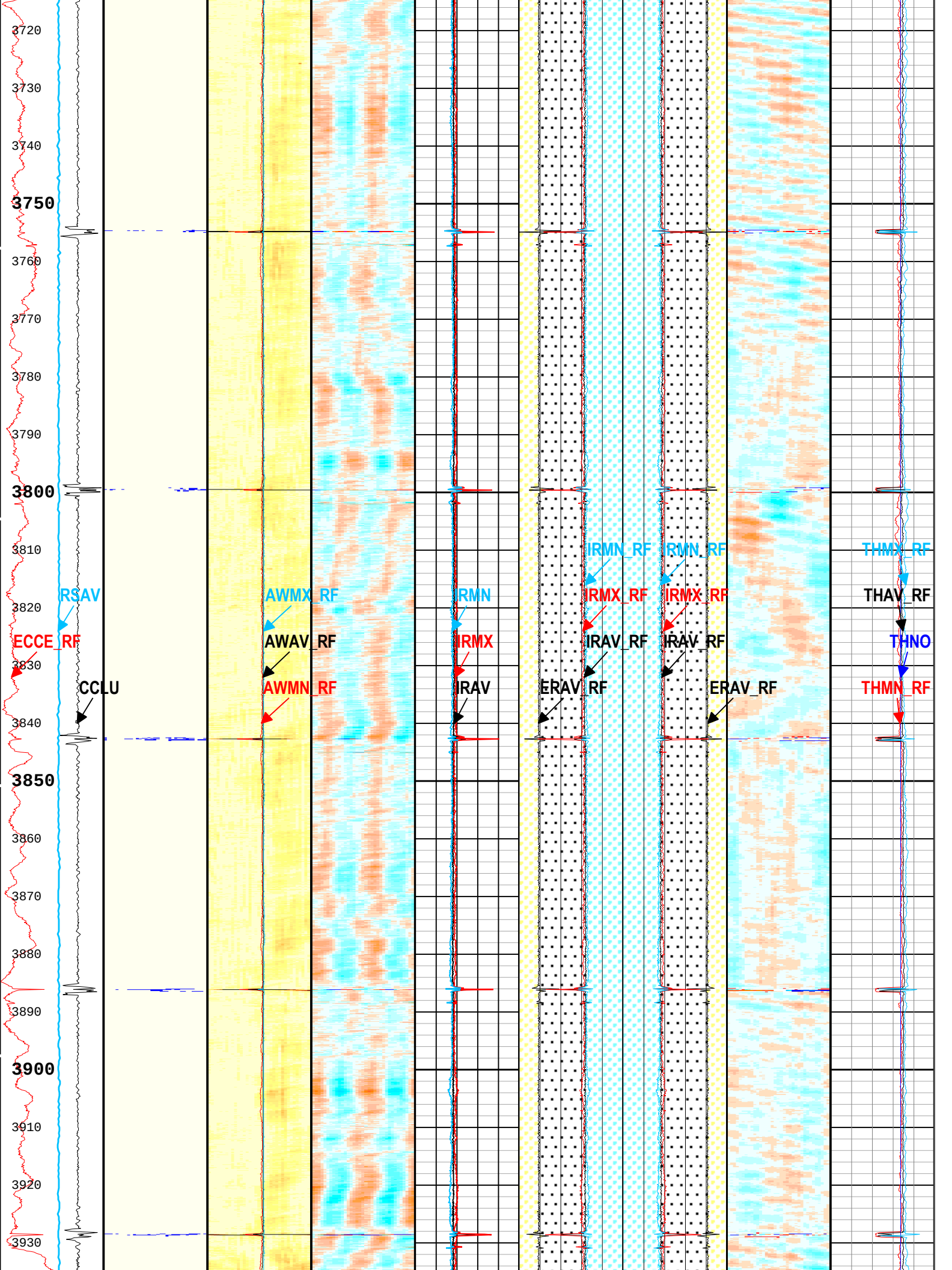
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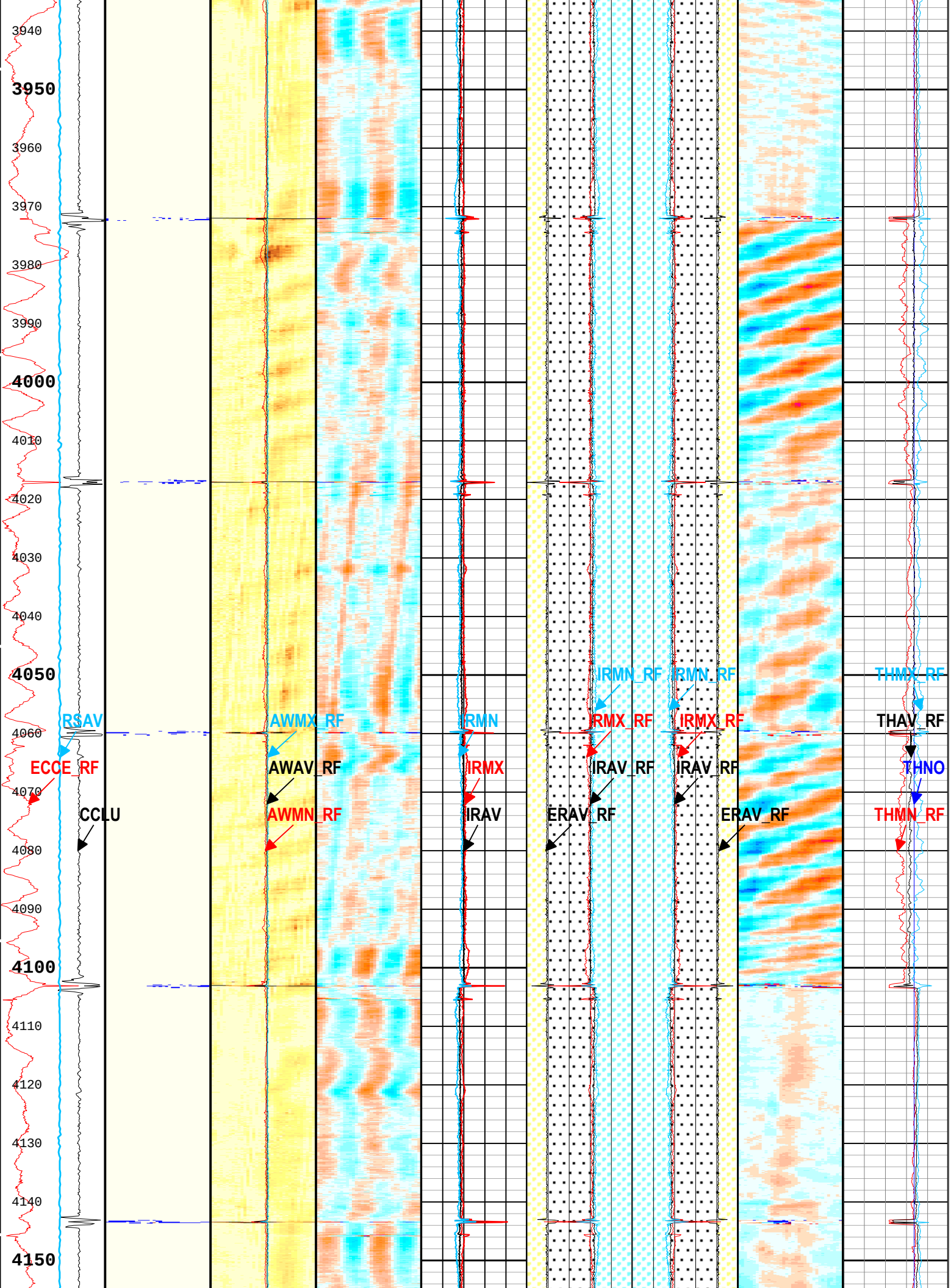
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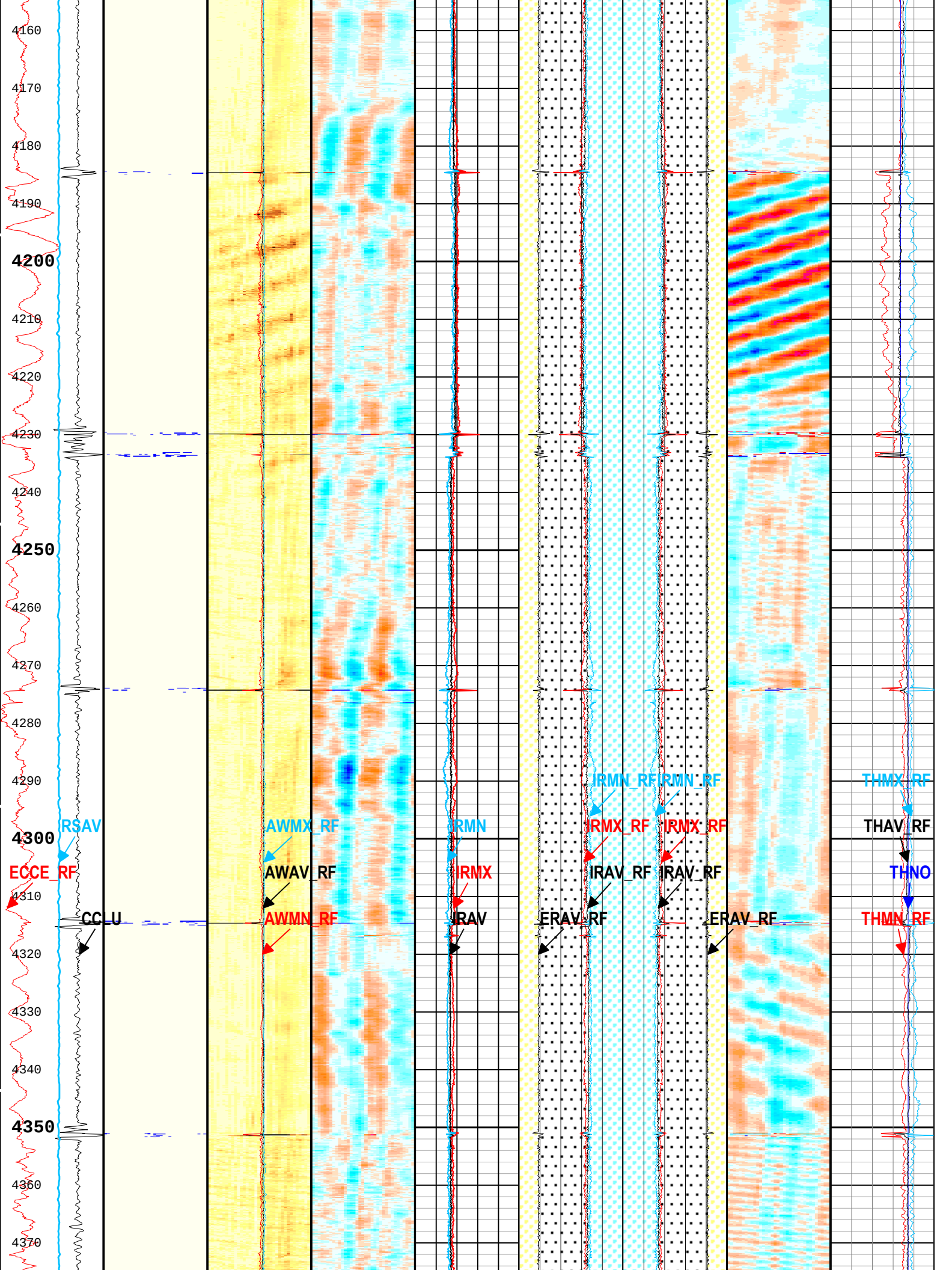
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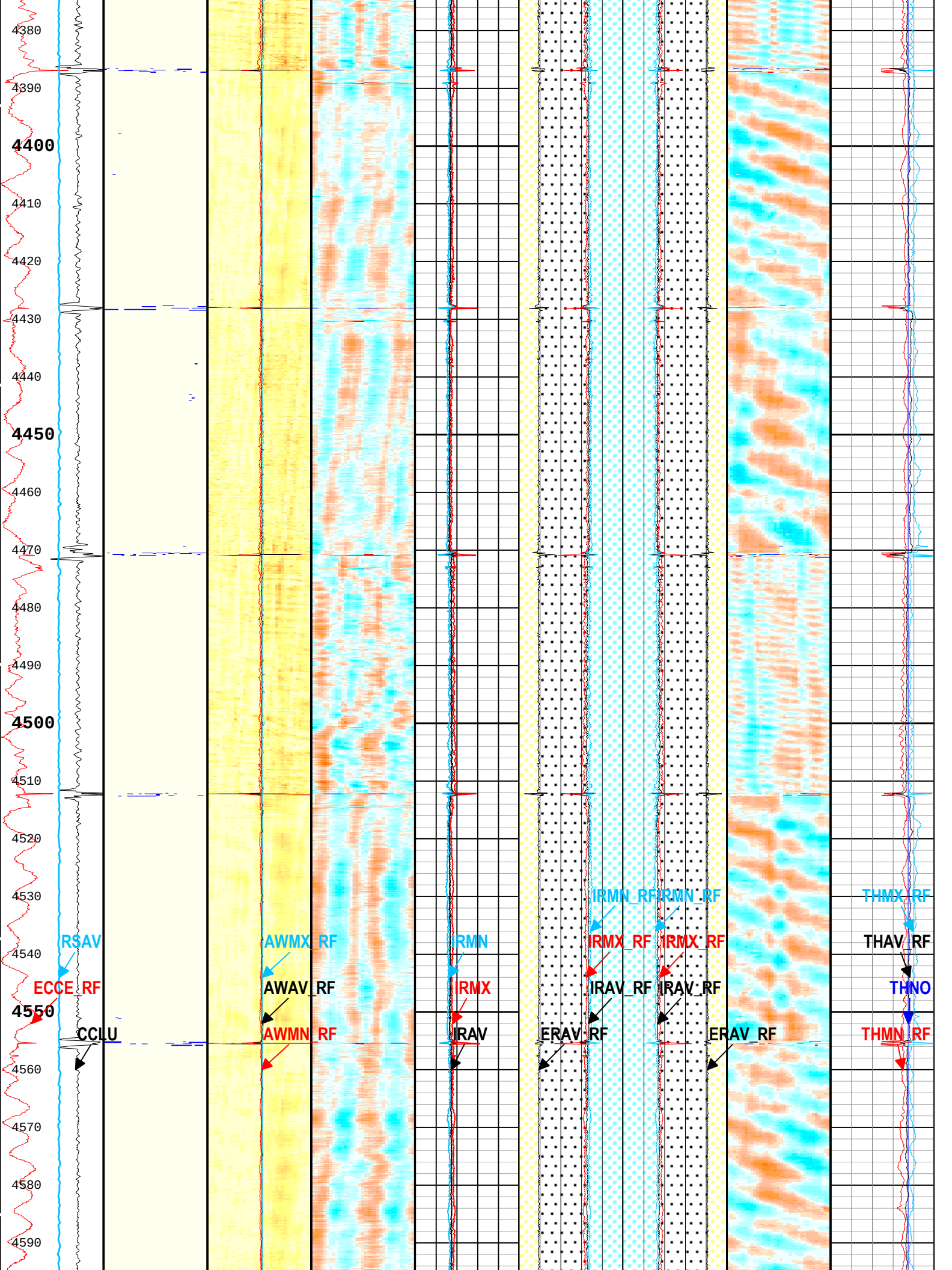
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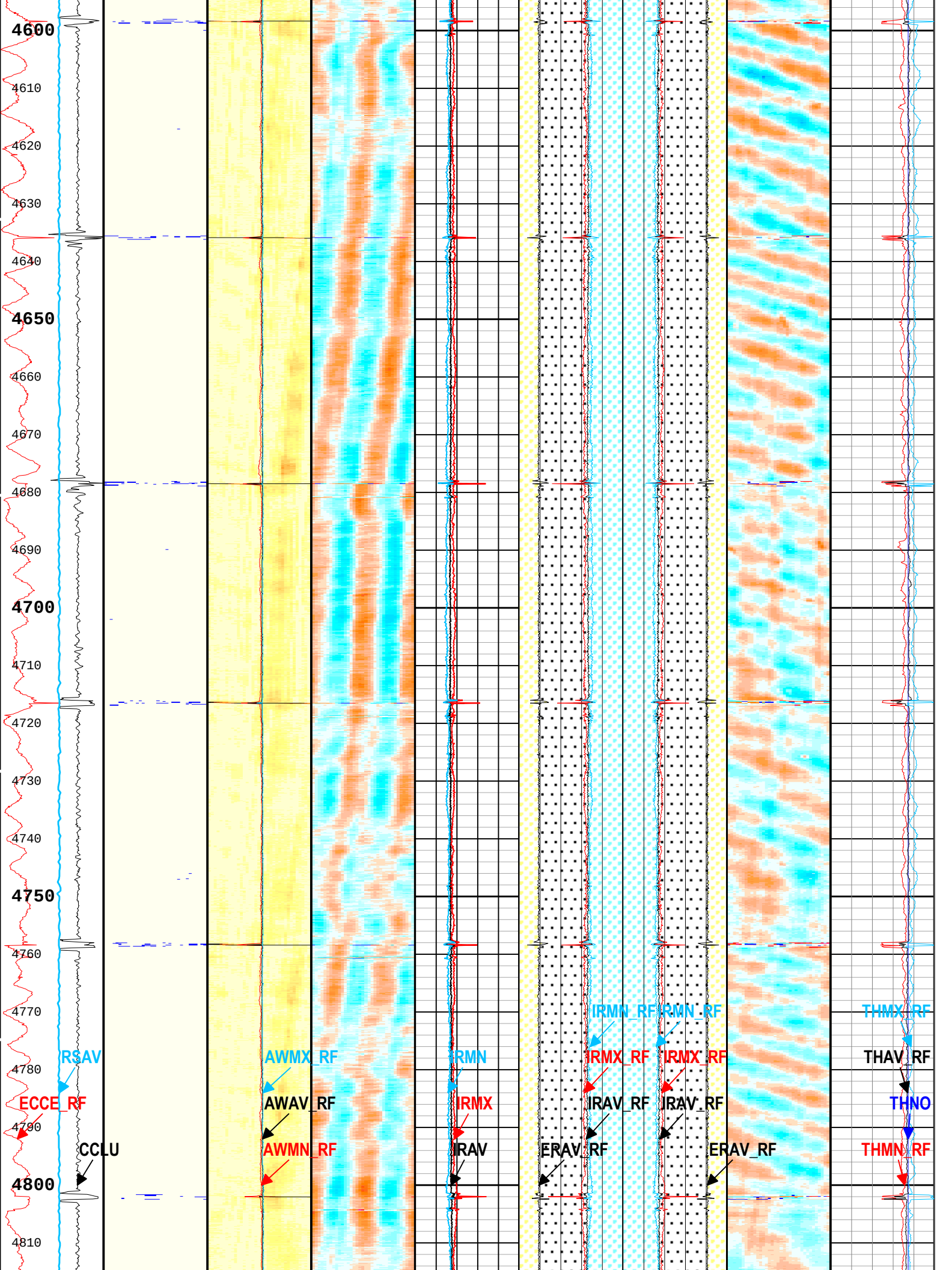
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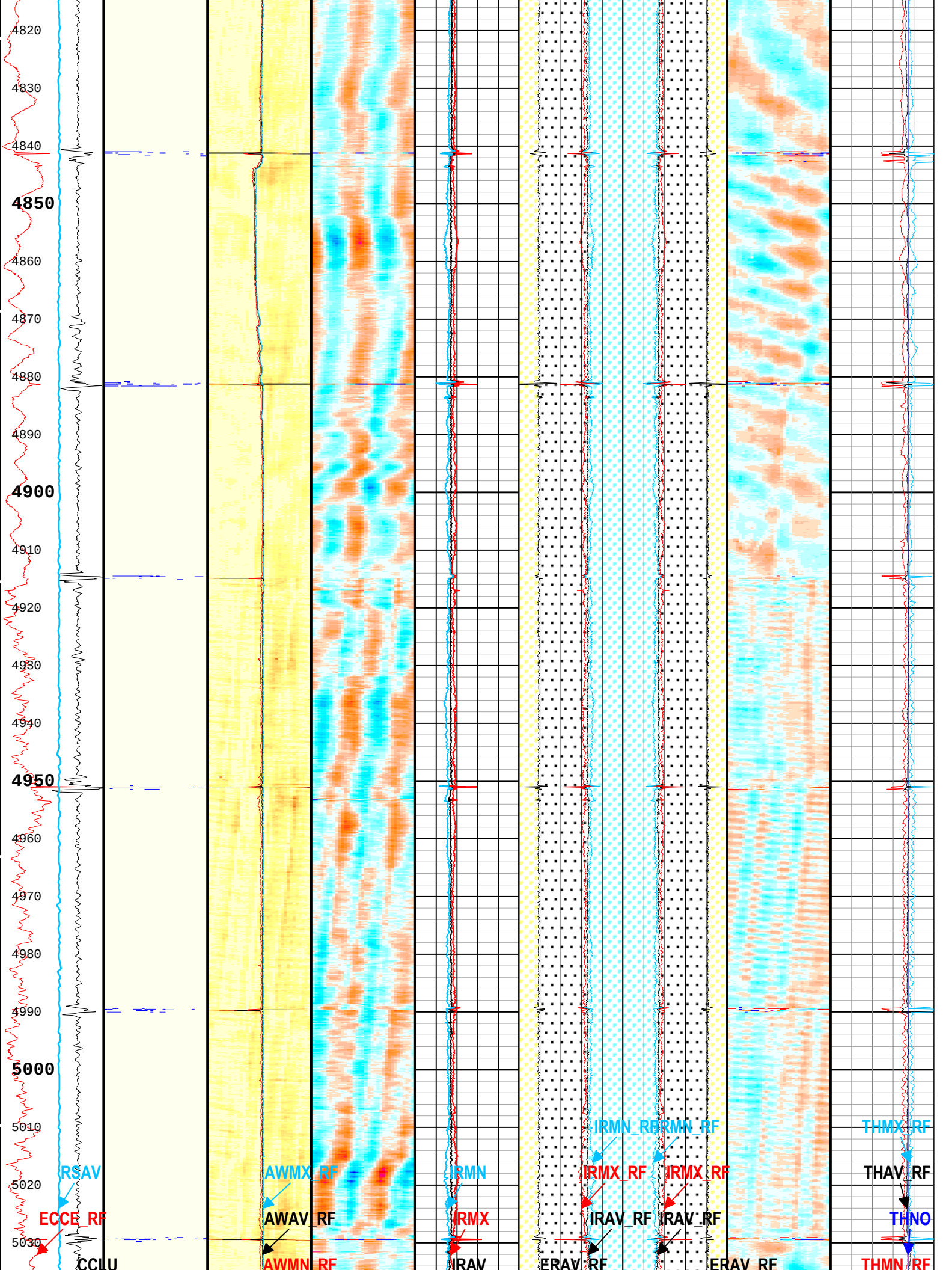
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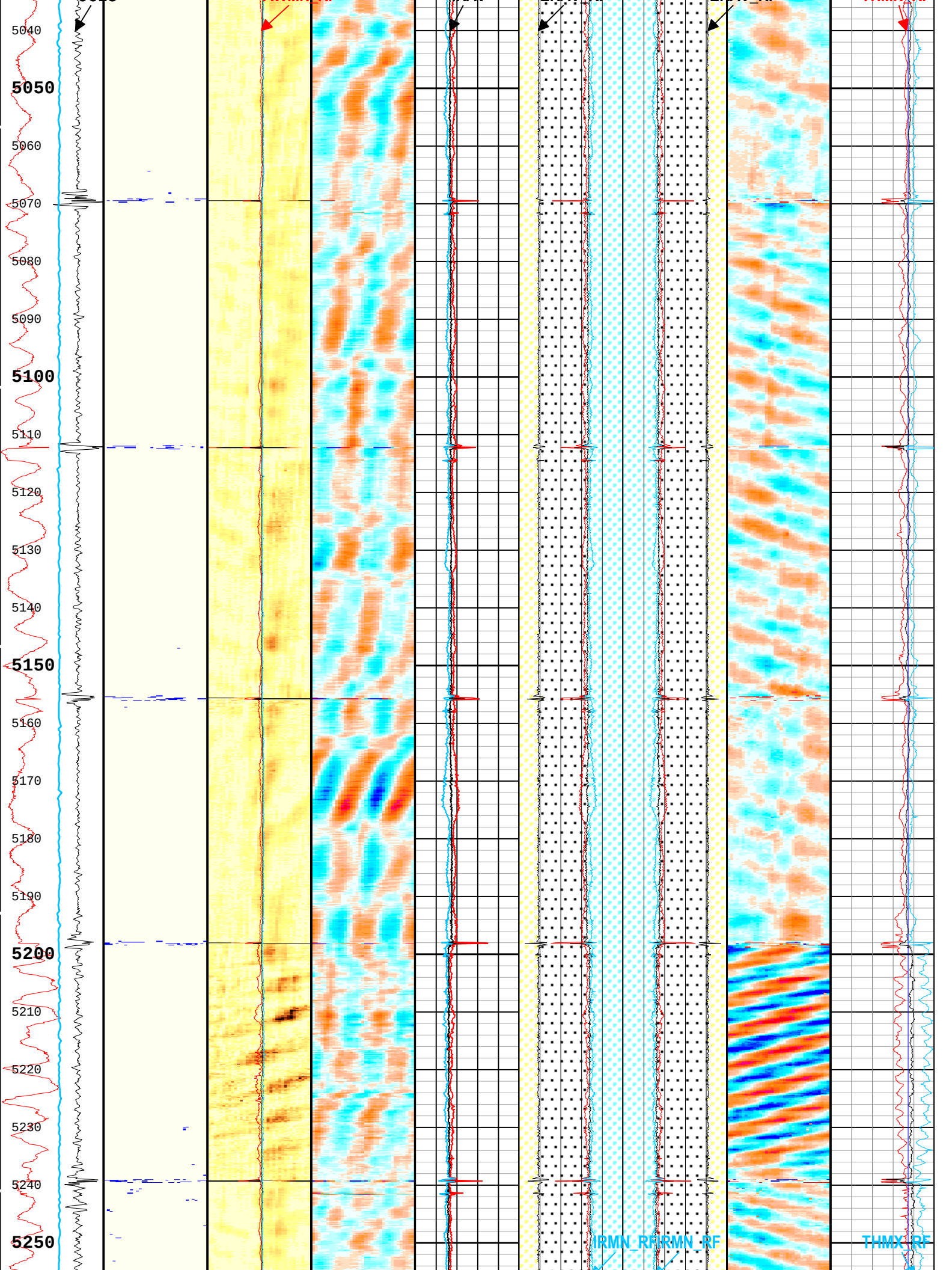
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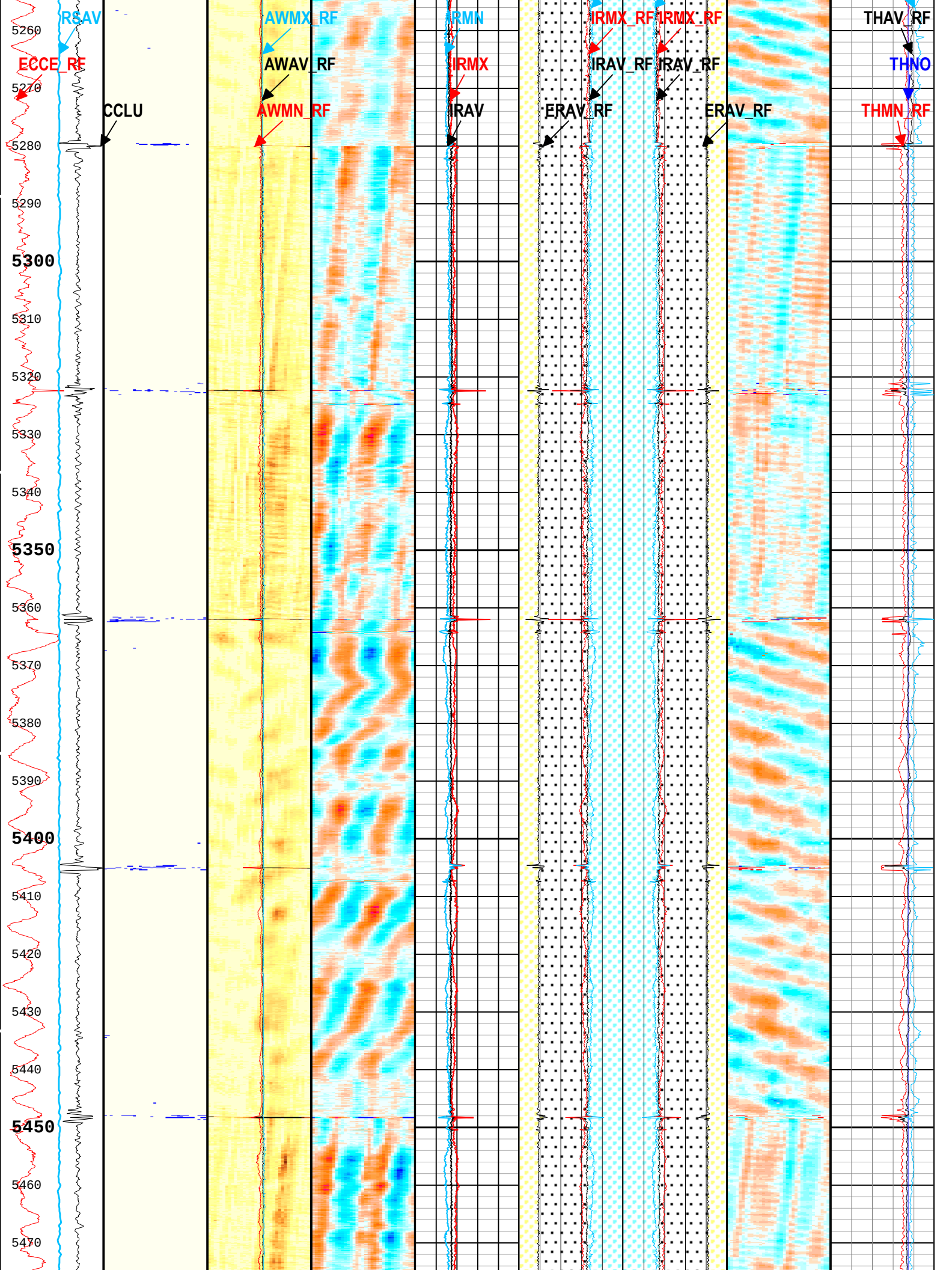
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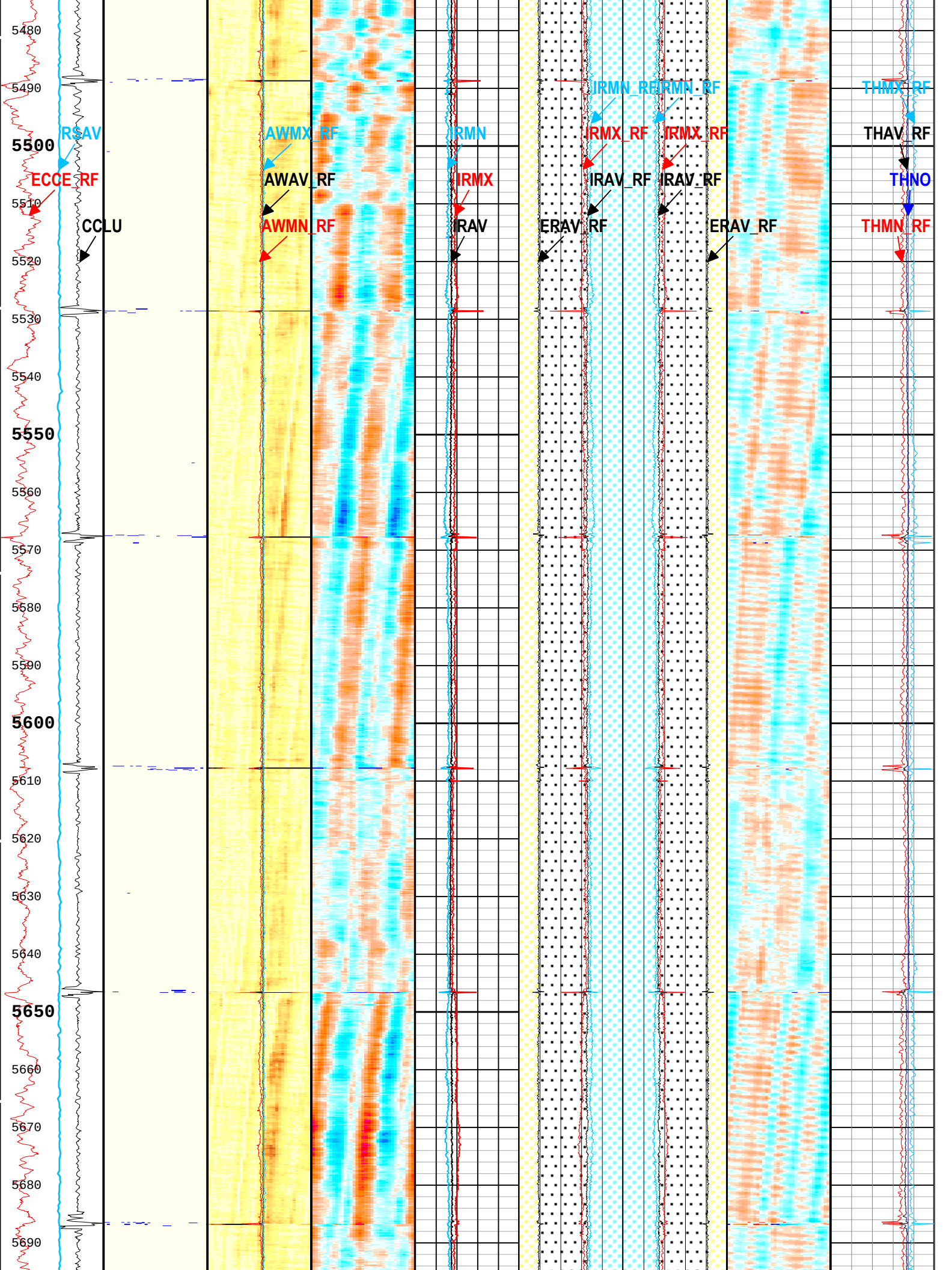
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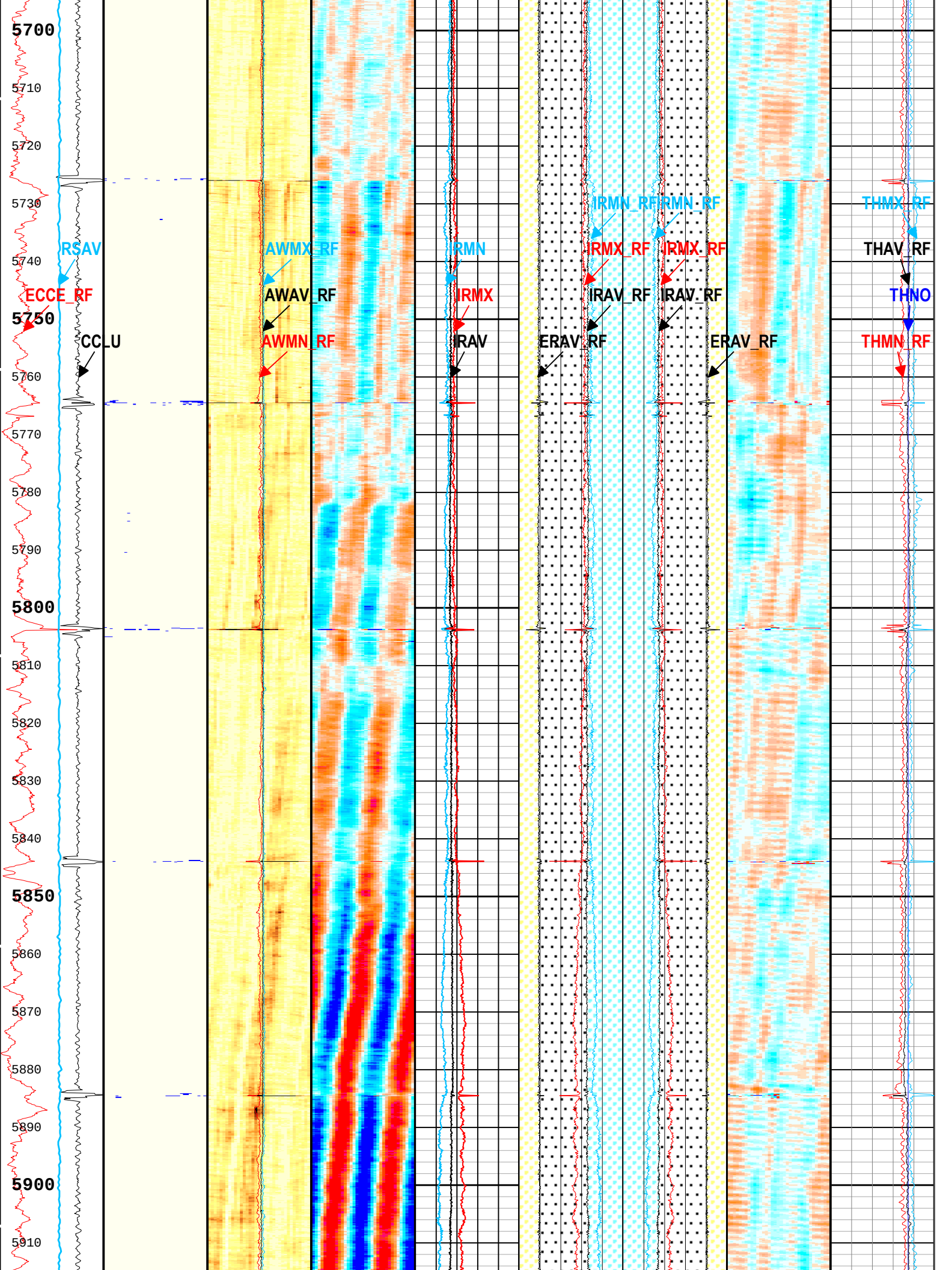
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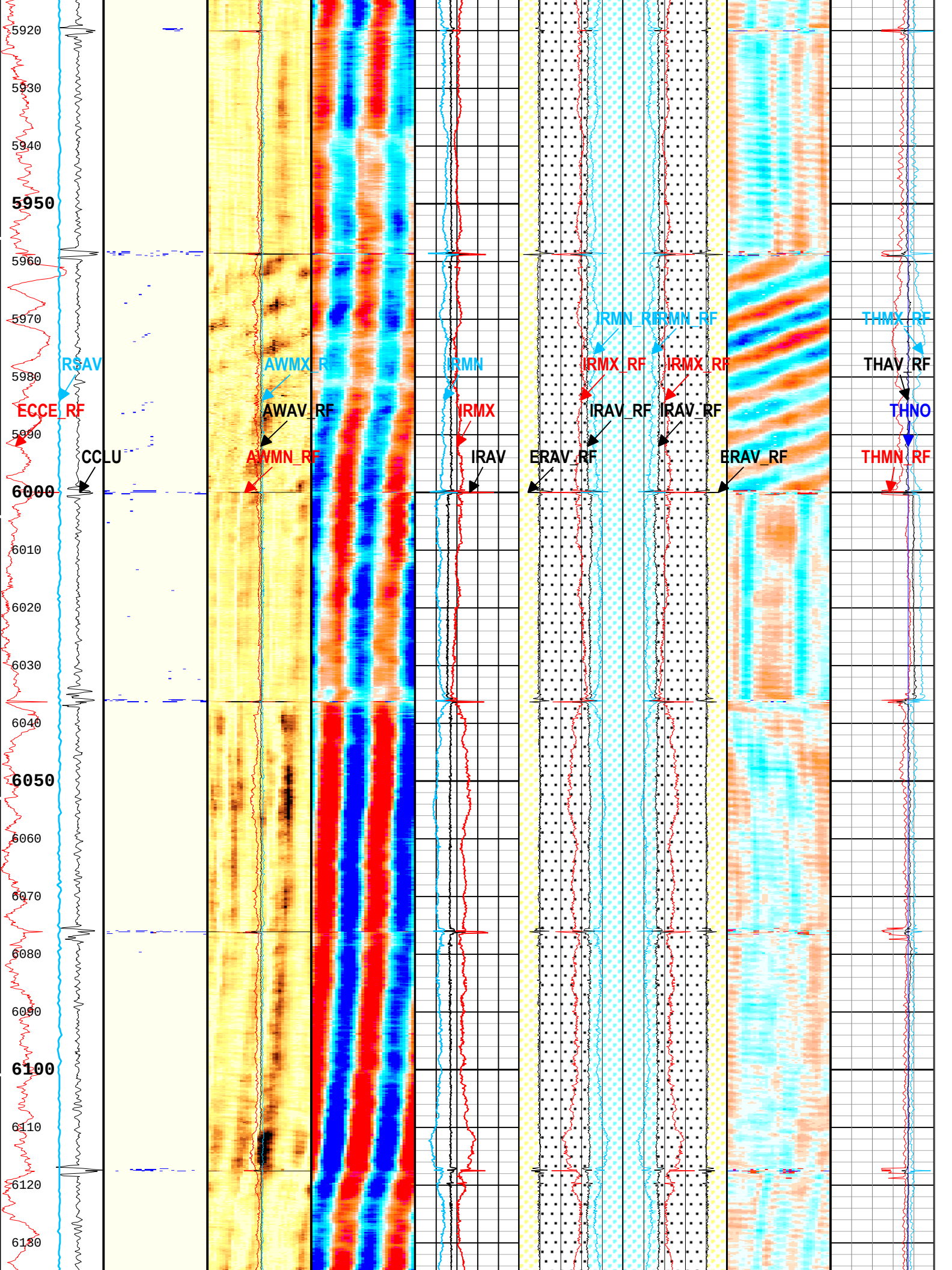
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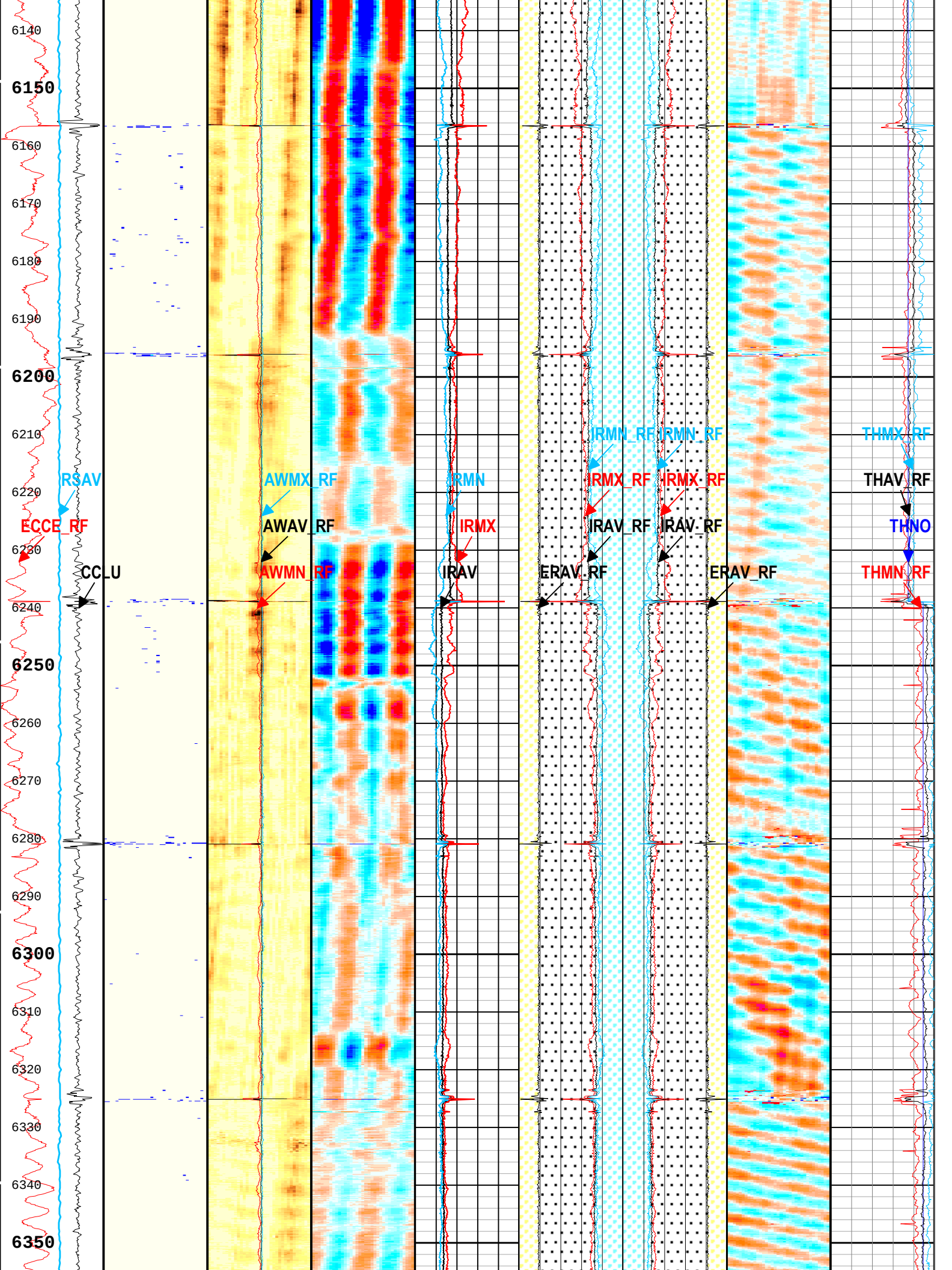
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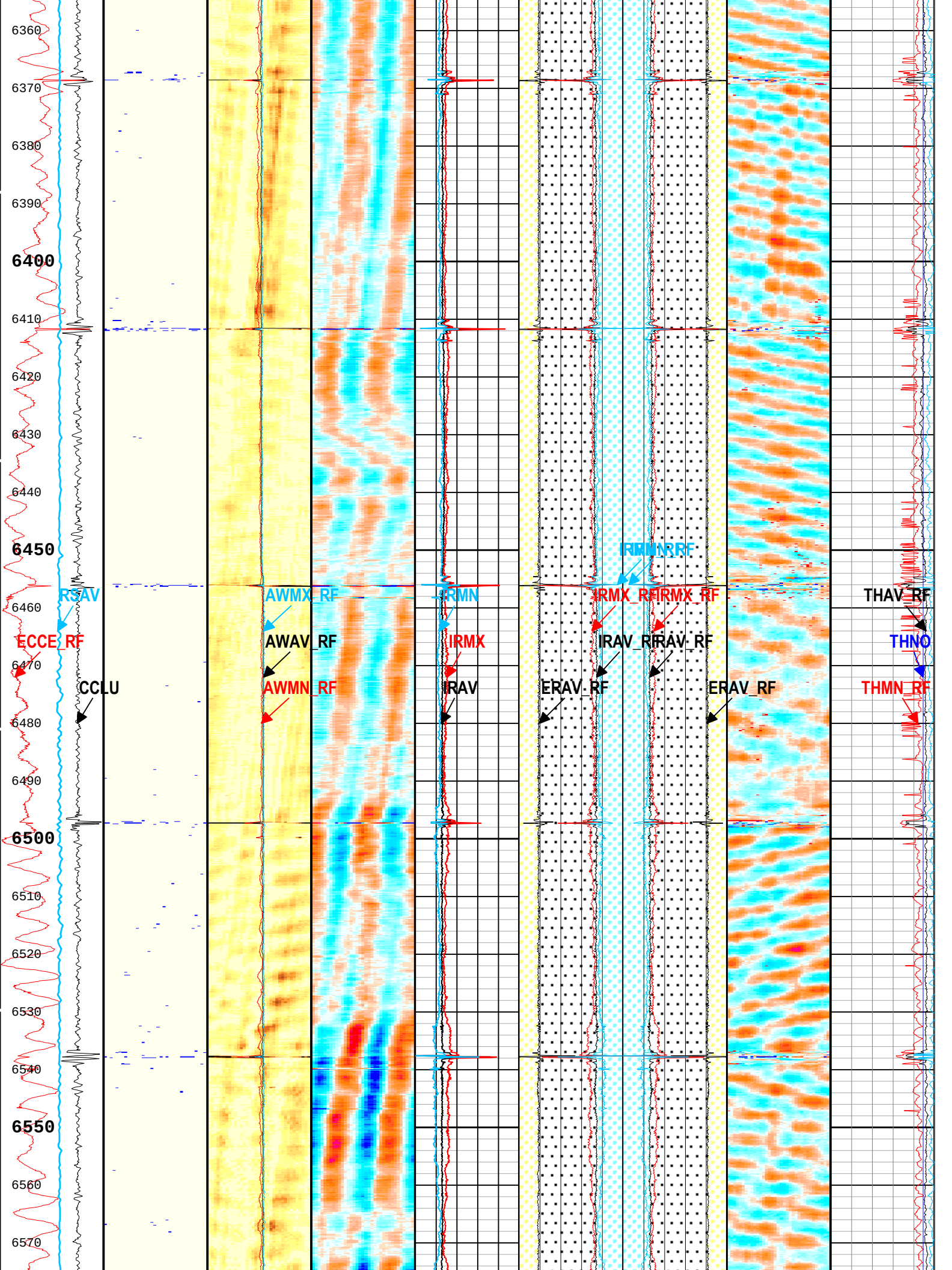
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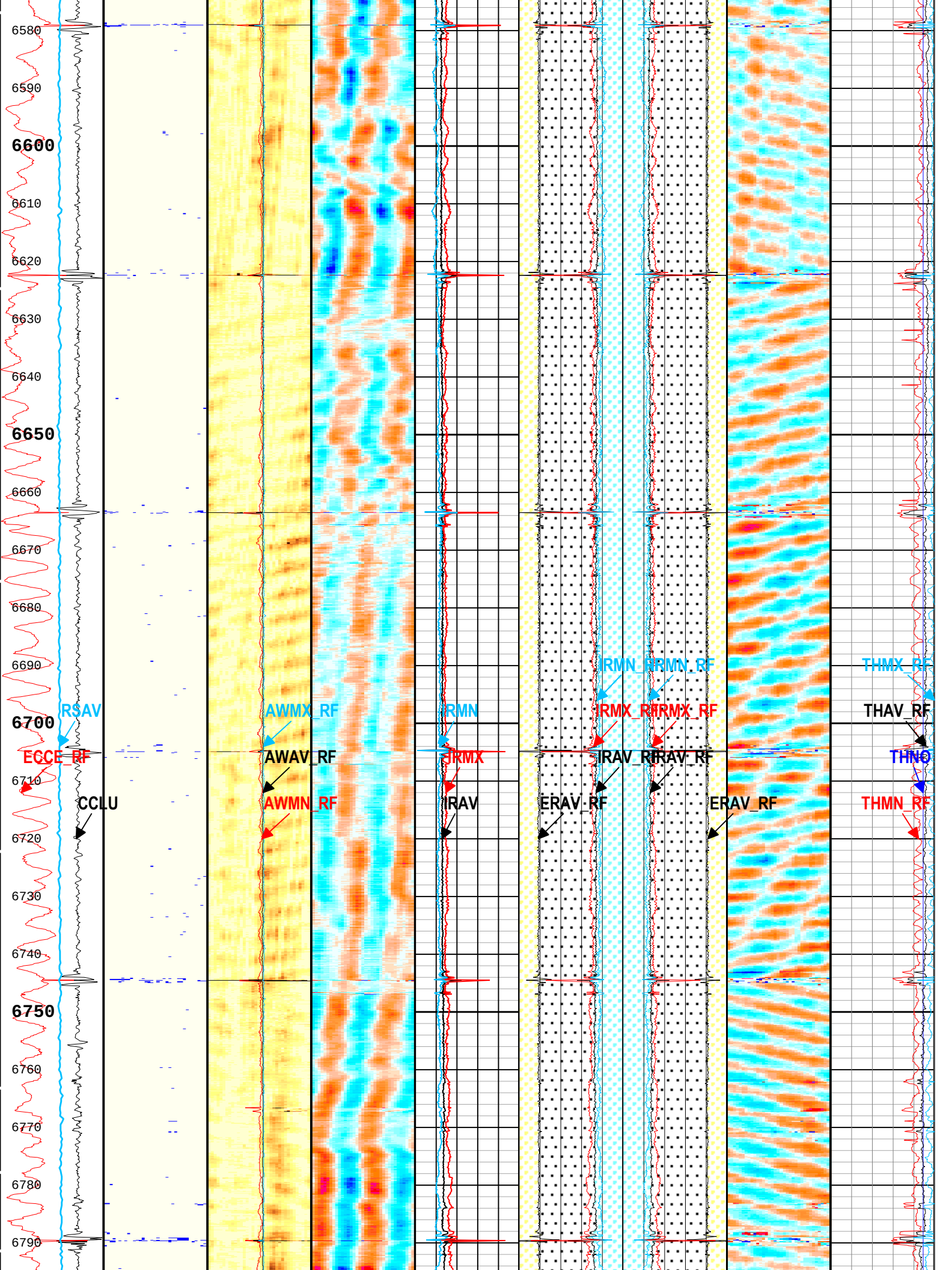
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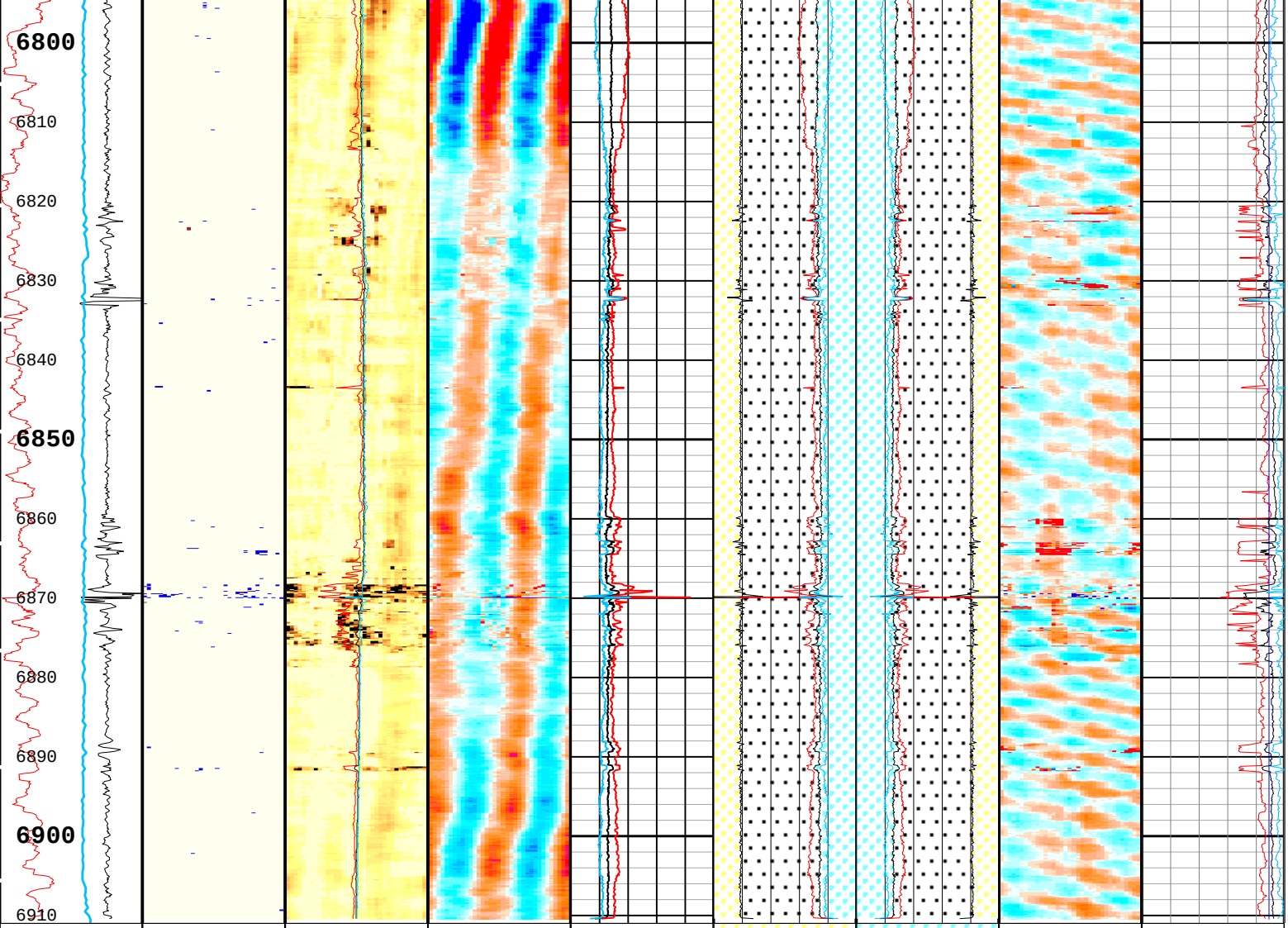


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E
(dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF)

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)

Internal Radius Averaged Value (IRAV) USIT-E
4 in 5

Internal Radius Maximum Value (IRMX) USIT-E
4 in 5

Internal Radius Minimum Value (IRMN) USIT-E
4 in 5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

(AWMX_RF) USIT-E	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
0 dB 75	5 in 4	4 in 5

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:21:31

TWO

USI Compressed Goodwin

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[2]:Up	Up	198.58 ft	6911.16 ft	24-May-2016 9:27:08 AM	24-May-2016 11:56:22 AM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[2]:Up:S005

Description: USI Goodwin Format: Log (Import of USI Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:21:42

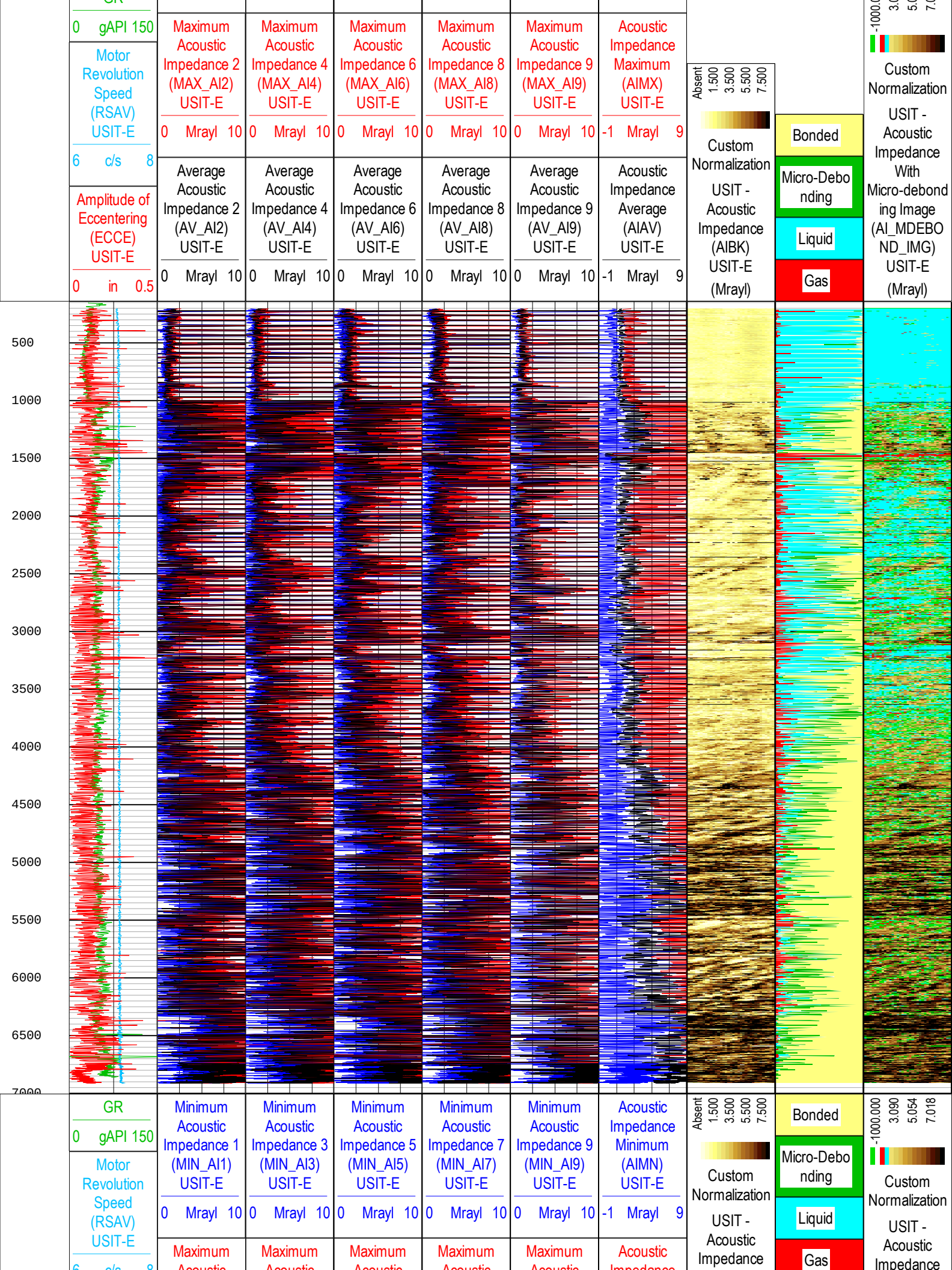
TIME_1900 - Time Marked every 60.00 (s)

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 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10
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 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10
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 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10

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	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E	Acoustic Impedance Minimum (AIMN) USIT-E
0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-1 Mrayl 9

GR

000
090
054
018


GR
0 gAPI 150
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
Amplitude of Eccentering (ECCE) USIT-E
0 in 0.5
Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E
0 Mrayl 10
Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E
0 Mrayl 10
Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E
0 Mrayl 10
Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E
0 Mrayl 10
Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E
0 Mrayl 10
Acoustic Impedance Maximum (AIMX) USIT-E
-1 Mrayl 9
Average Acoustic Impedance 2 (AV_AI2) USIT-E
0 Mrayl 10
Average Acoustic Impedance 4 (AV_AI4) USIT-E
0 Mrayl 10
Average Acoustic Impedance 6 (AV_AI6) USIT-E
0 Mrayl 10
Average Acoustic Impedance 8 (AV_AI8) USIT-E
0 Mrayl 10
Average Acoustic Impedance 9 (AV_AI9) USIT-E
0 Mrayl 10
Acoustic Impedance Average (AIAV) USIT-E
-1 Mrayl 9
Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)
Bonded
Micro-Debonding
Liquid
Gas
-1000.0 3.0 5.0 7.0
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
GR
0 gAPI 150
Motor Revolution Speed (RSAV) USIT-E
Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E
0 Mrayl 10
Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E
0 Mrayl 10
Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E
0 Mrayl 10
Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E
0 Mrayl 10
Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E
0 Mrayl 10
Acoustic Impedance Minimum (AIMN) USIT-E
-1 Mrayl 9
Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance
Bonded
Micro-Debonding
Liquid
Gas
-1000.000 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance

6 c/s 8	Acoustic Impedance 1 (MAX_AI1) USIT-E	Acoustic Impedance 3 (MAX_AI3) USIT-E	Acoustic Impedance 5 (MAX_AI5) USIT-E	Acoustic Impedance 7 (MAX_AI7) USIT-E	Acoustic Impedance 9 (MAX_AI9) USIT-E	Impedance Maximum (AIMX) USIT-E	(AIBK) USIT-E (Mrayl)				With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)
Amplitude of Eccentering (ECCE) USIT-E	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-1 Mrayl 9					
0 in 0.5	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 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-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							
	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10							
	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							
	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10							
	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							
	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10							

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Goodwin Format: Log (Import of USI Goodwin) Index Scale: 0.1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:21:42

TWO

Very Hi-Res Repeat 10 IN=100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[3]:Up	Up	5775.40 ft	6912.61 ft	24-May-2016 12:40:08 PM	24-May-2016 1:42:49 PM	ON	3.24 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A

TWO: Log[3]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 26-May-2016 00:21:46

TIME_1900 - Time Marked every 60.00 (s)

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

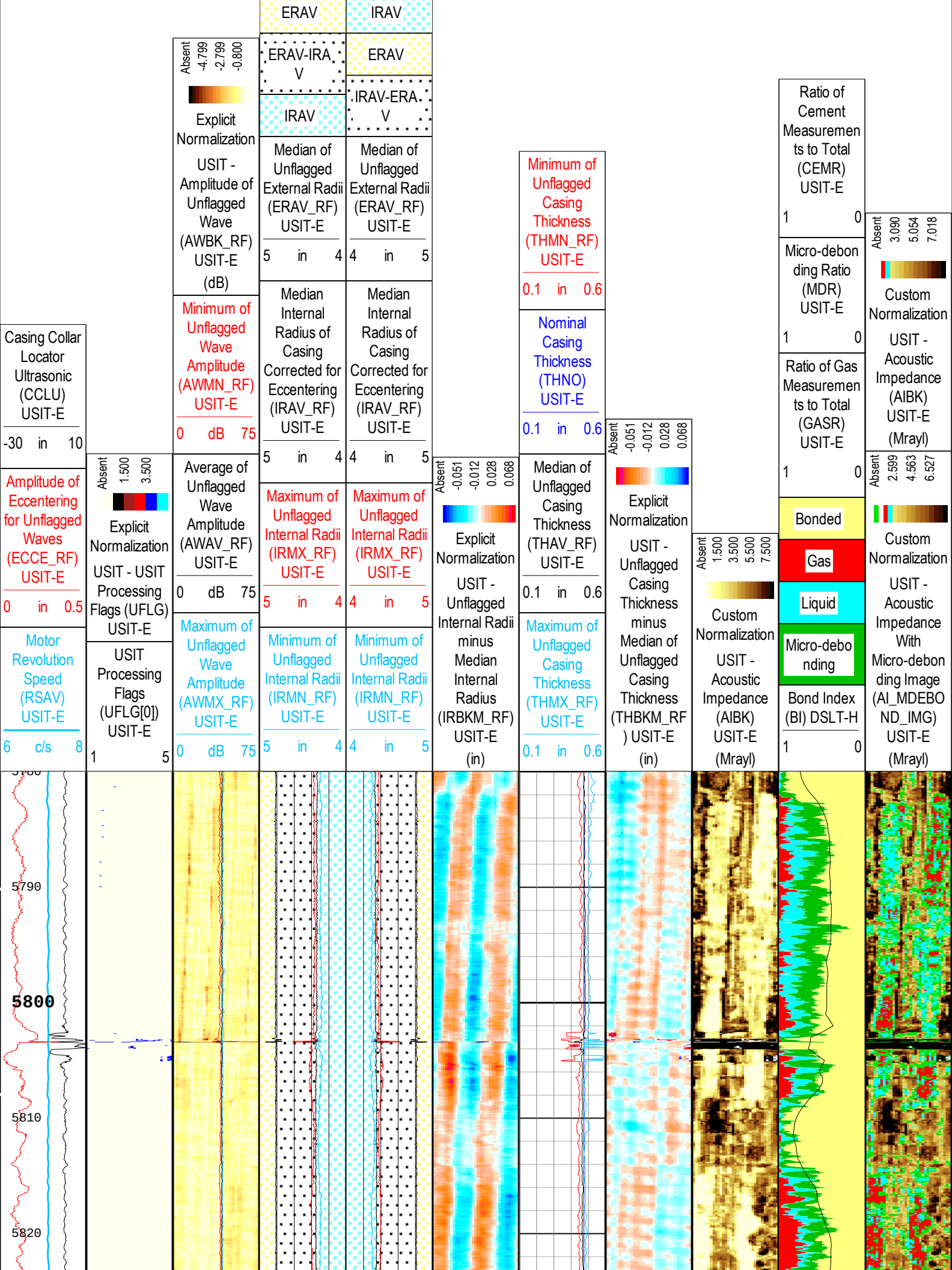
1 - UFLG 1 Value within [0.0 - 1.5] - : UTIM Error

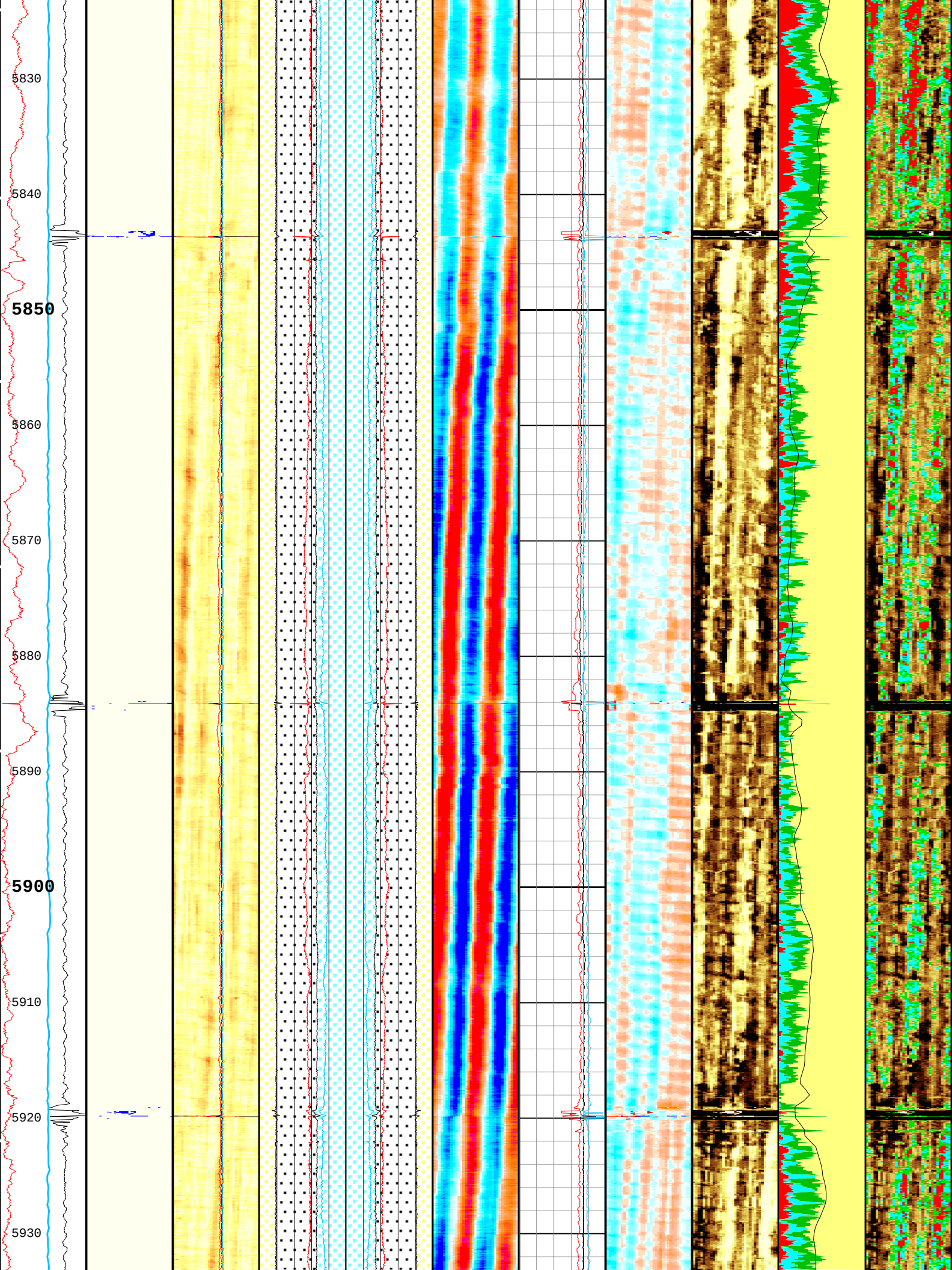
2 - UFLG 2 Value within [1.5 - 2.5] - : Pulse Origin Not Detected

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

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

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


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
USIT Processing Flags (UFLG[0]) USIT-E
1 5
Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)
Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75
ERAV
ERAV-IRAV
IRAV
Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4
IRAV
ERAV
IRAV-ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6
Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6
Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)
Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)
Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0
Micro-debonding Ratio (MDR) USIT-E
1 0
Ratio of Gas Measurements to Total (GASR) USIT-E
1 0
Bonded
Gas
Liquid
Micro-debonding
Bond Index (BI) DSLT-H
1 0
Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)
Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)
5790
5800
5810
5820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5840
5850
5860
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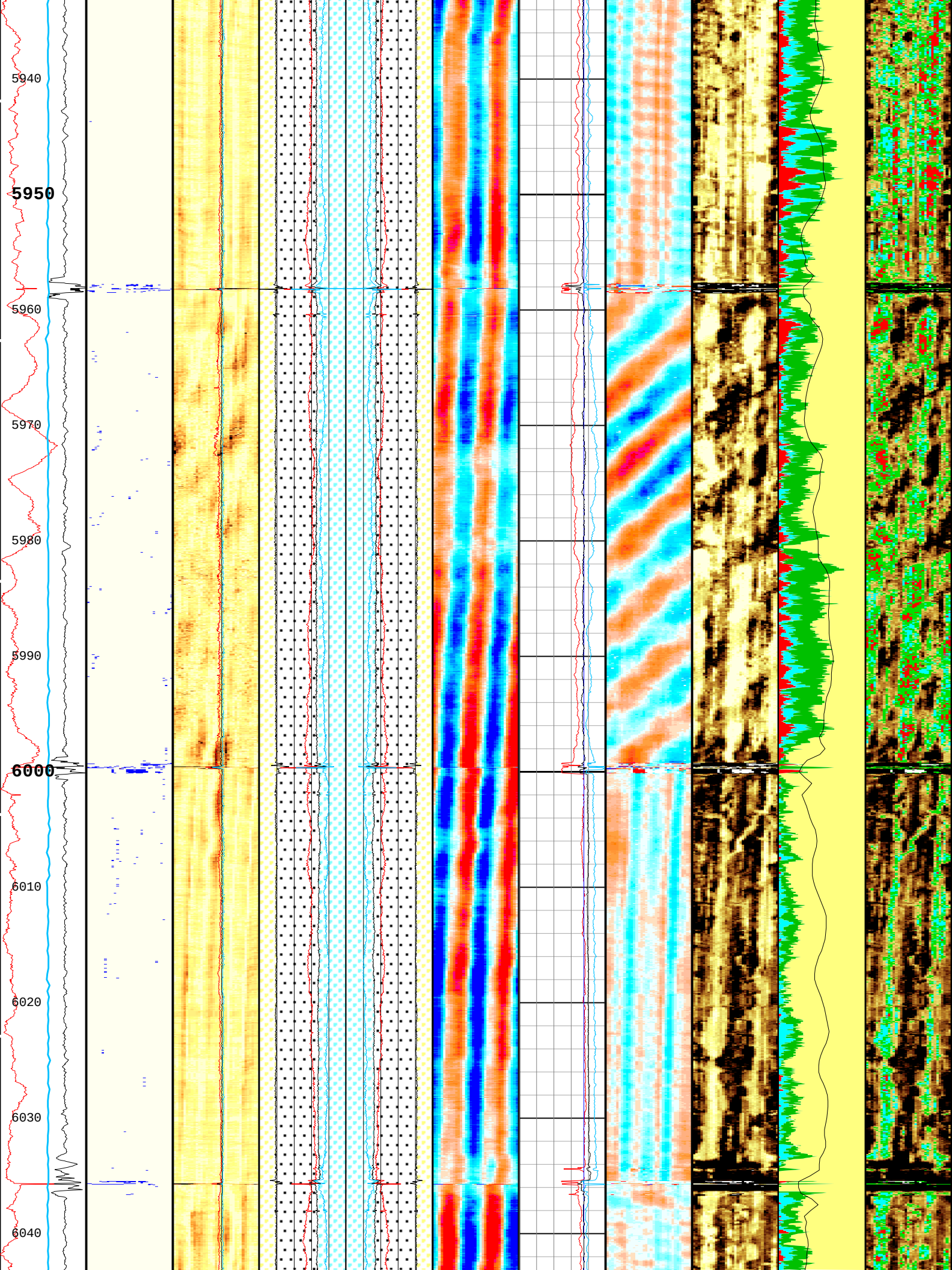
5880
5890
5900
5910
5920
5930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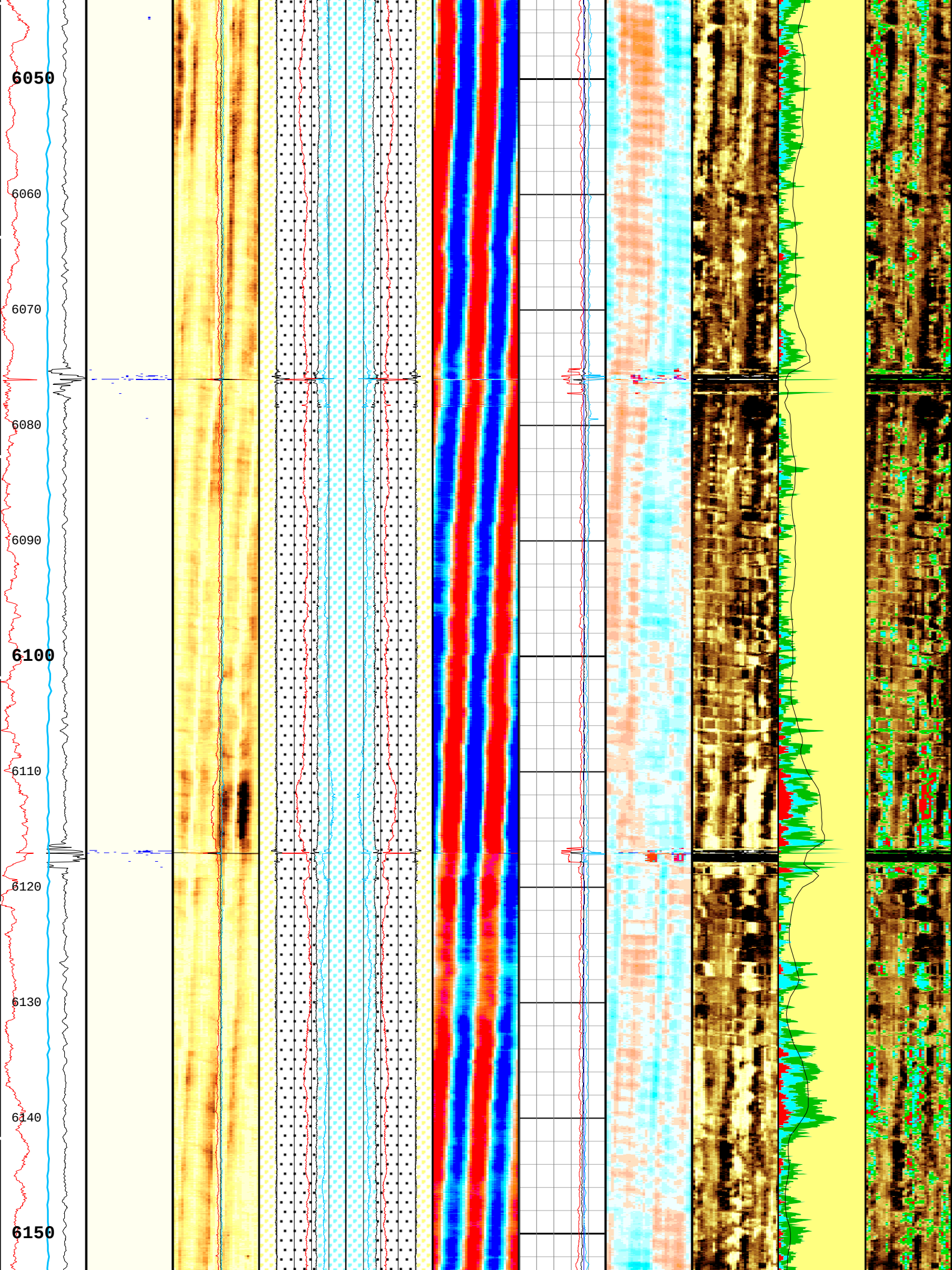
6010
6020
6030
6040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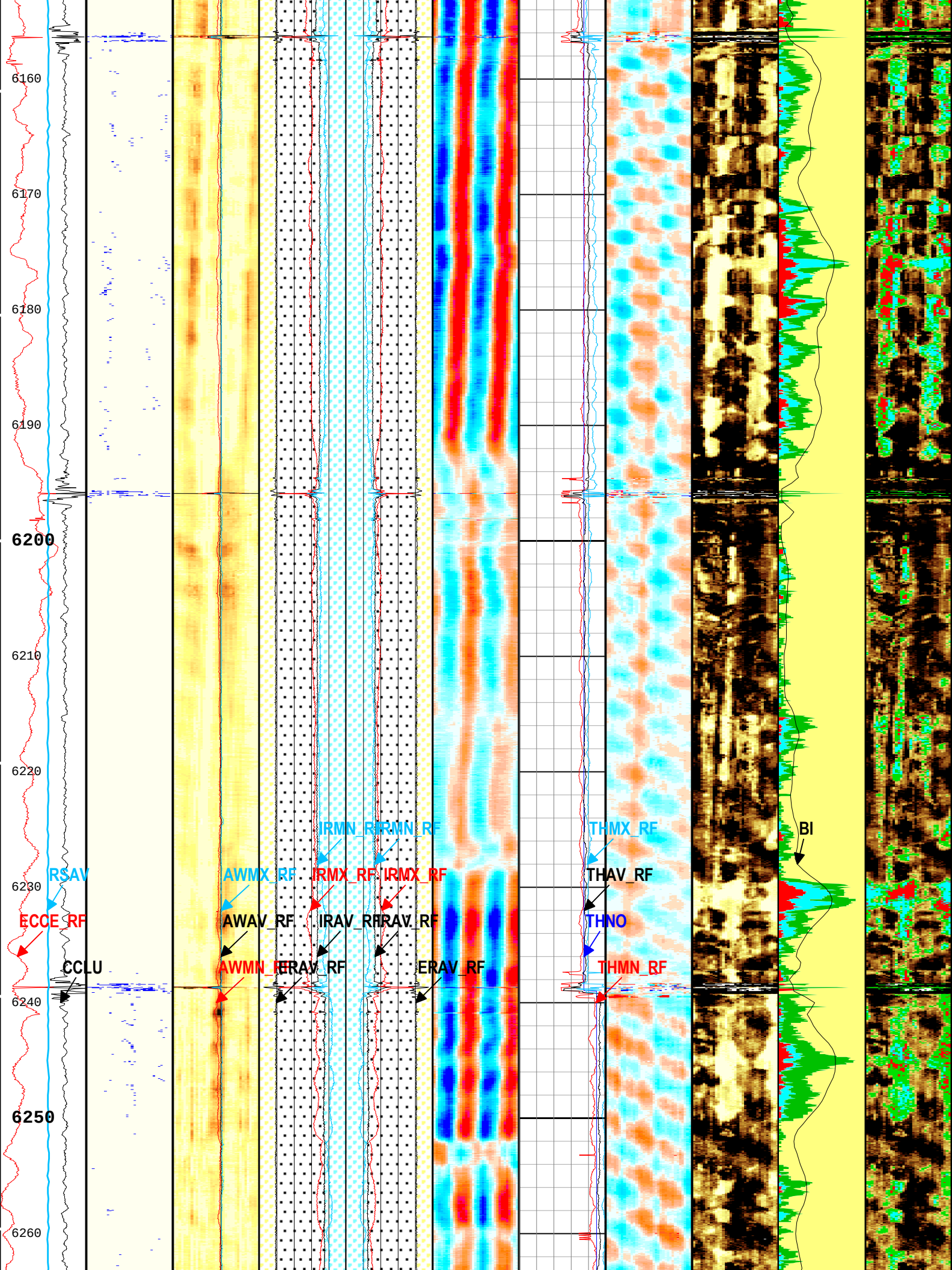
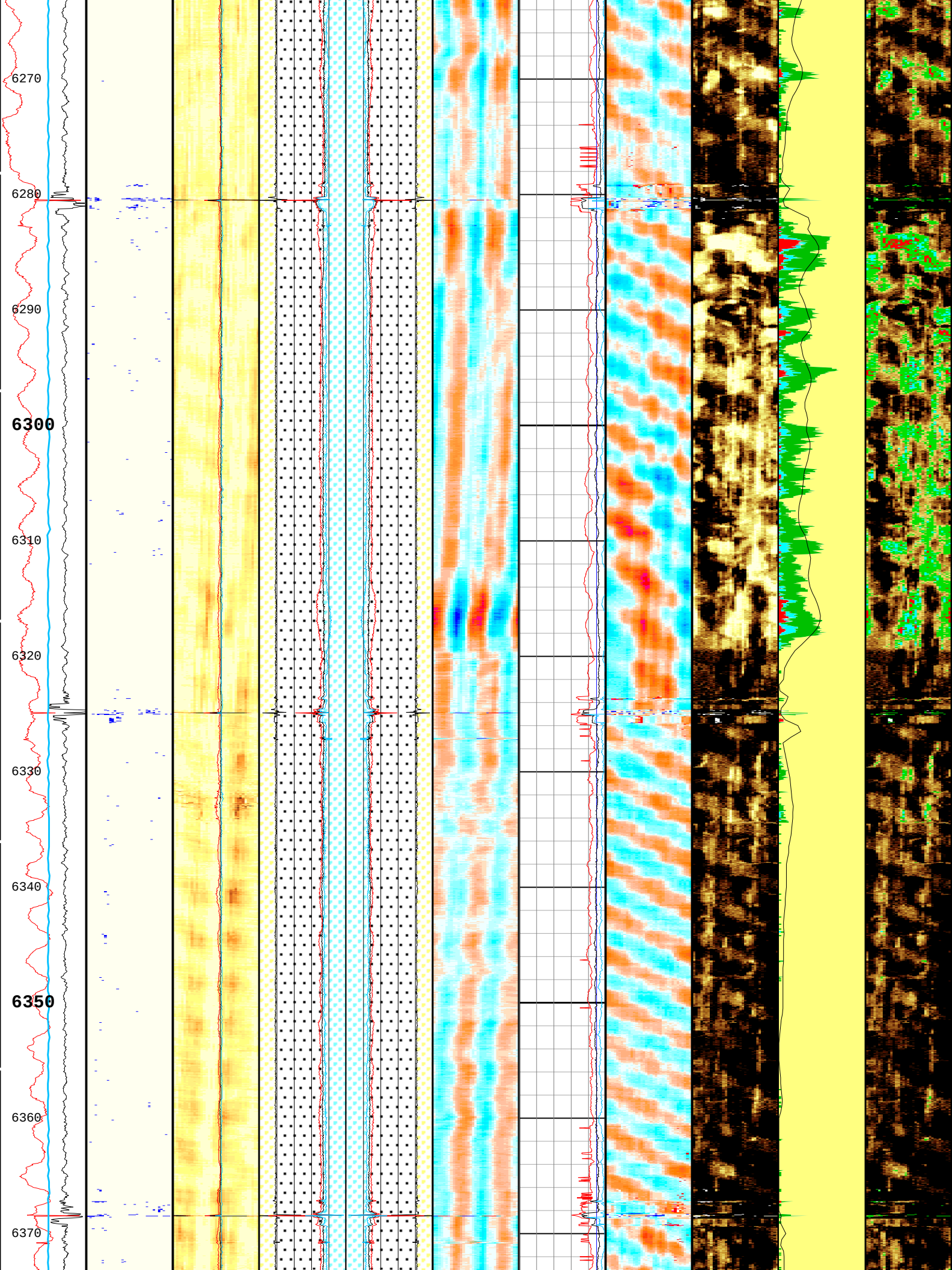
6060
6070
6080
6090
6100
6110
6120
6130
6140
6150


6160
6170
6180
6190
6200
6210
6220
6230
6240
6250
6260
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMN_RF
IRMX_RF
IRMX_RF
IRAV_RF
IRAV_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
BI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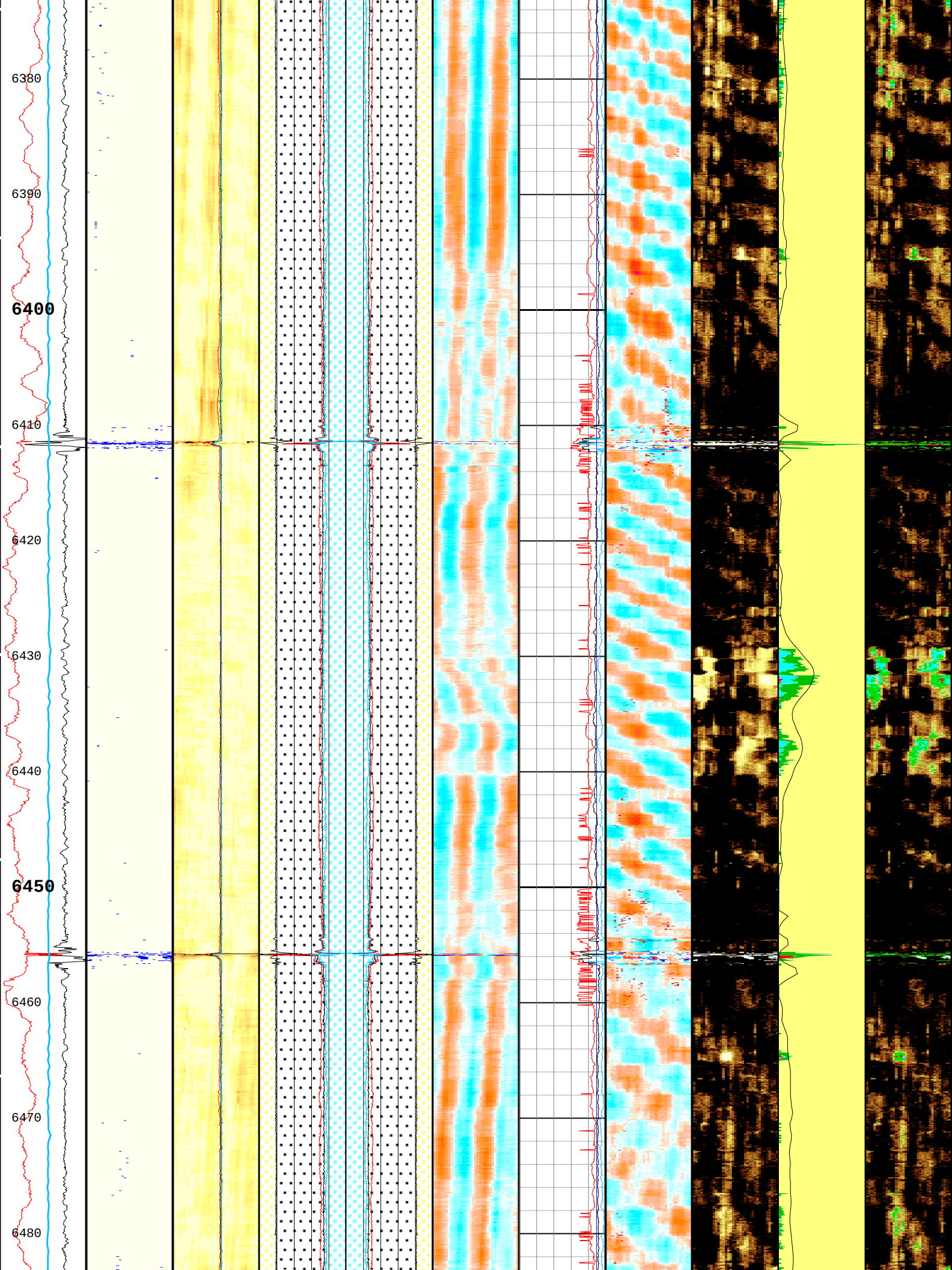
6350
6360
6370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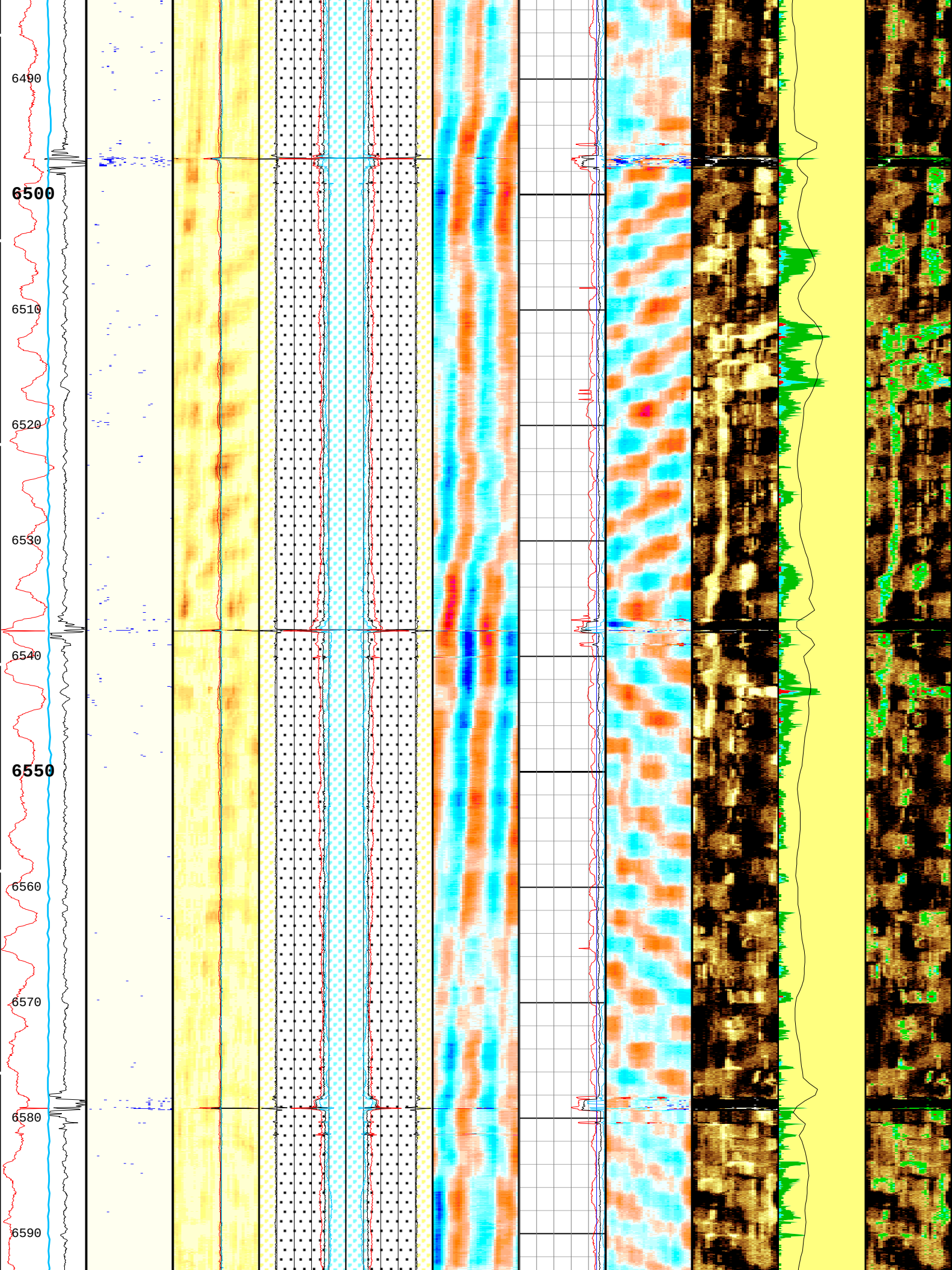
6460
6470
6480


6490
6500
6510
6520
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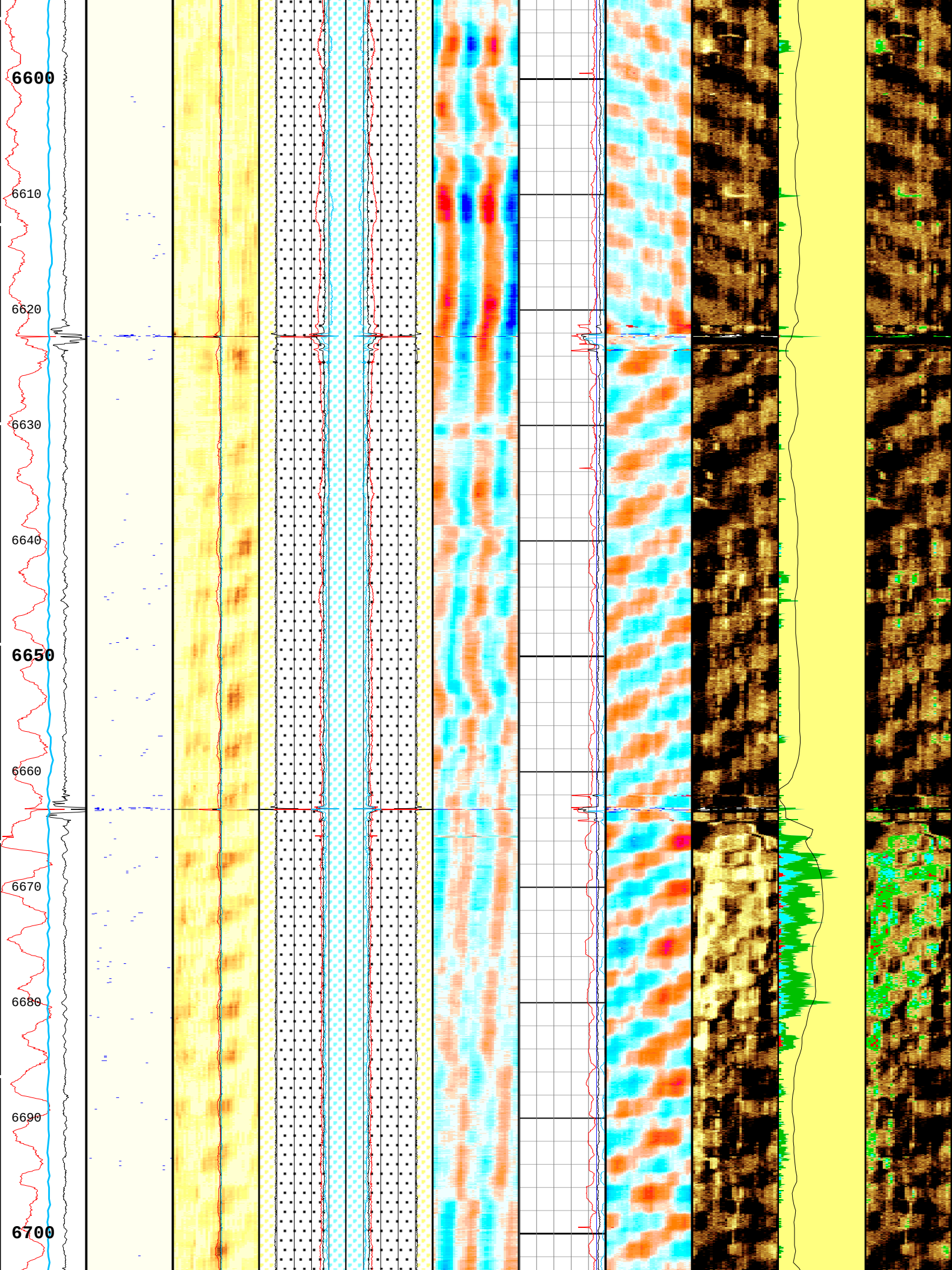
6540
6550
6560
6570
6580
6590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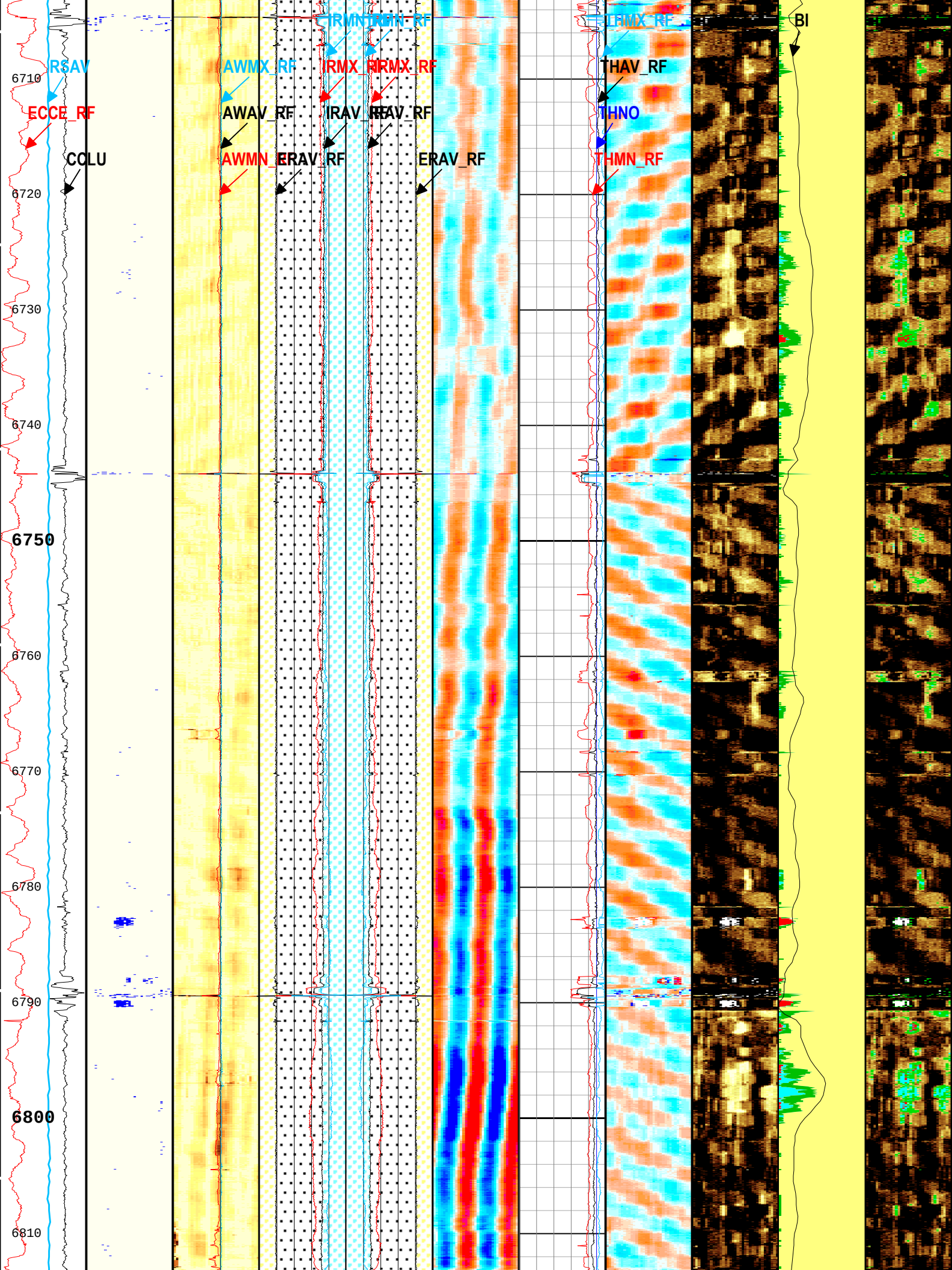
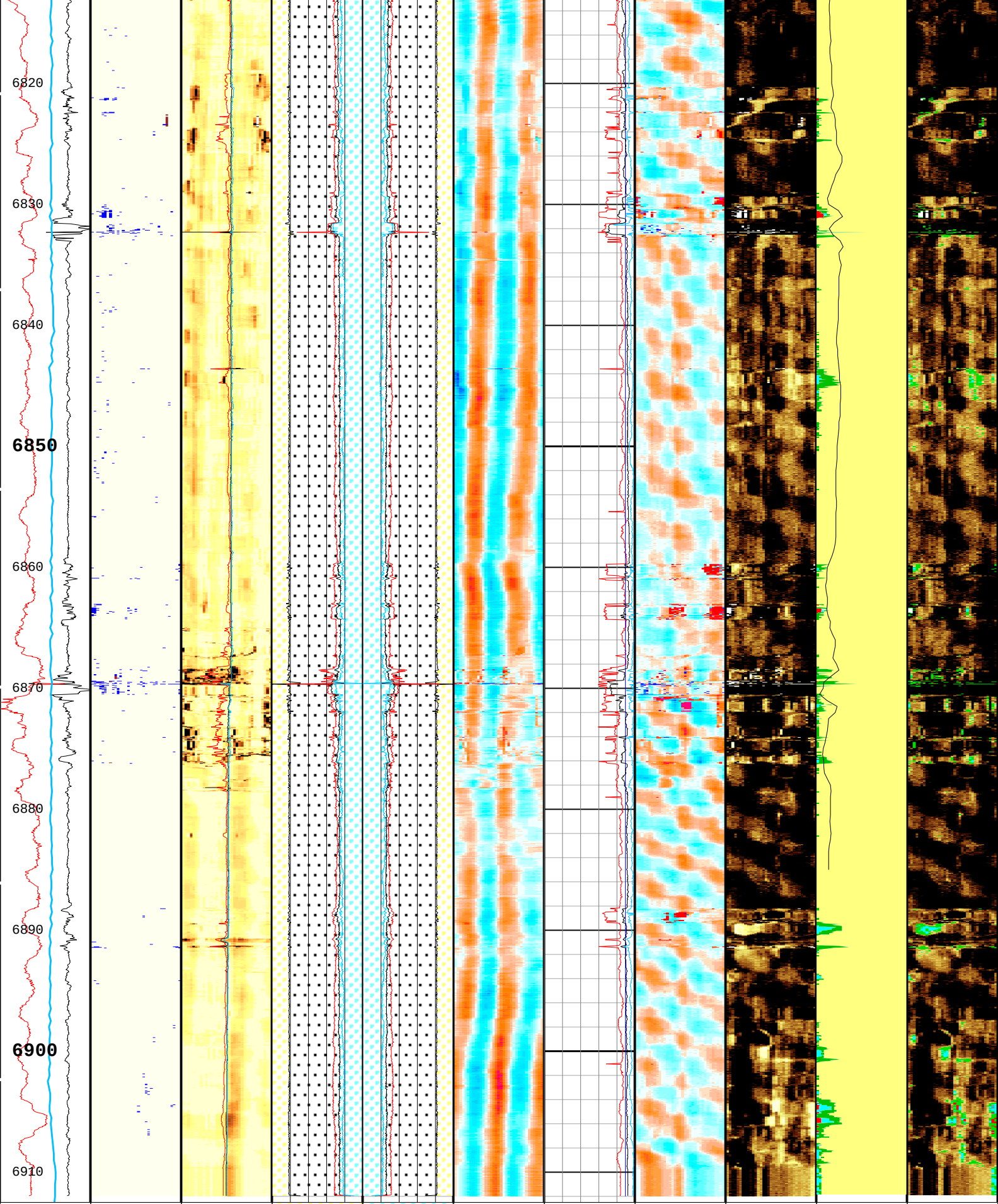
6680
6690
6700


RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
ERAV_RF
IRMX_RF
IRAV_RF
ERAV_RF
THAV_RF
THNO
THMN_RF
BI
6710
6720
6730
6740
6750
6760
6770
6780
6790
6800
6810


6820
6830
6840
6850
6860
6870
6880
6890
6900
6910
Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10
Absent 1.500 3.500
Explicit Normalization
USIT - USIT
Absent -4.799 -2.799 -0.800
Explicit Normalization
ERAV
ERAV-IRAV
IRAV
IRAV
ERAV
IRAV-ERAV
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
Absent 1.500 3.500 5.500 7.500
Custom Normalization
Ratio of Cement Measurements to Total (CEMR) USIT-E
Absent 3.090 5.054 7.018
Custom Normalization

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

IRAV V

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Bonded

Gas

Liquid

Micro-debonding

Bond Index (BI) DSLT-H
1 0

USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527

Custom Normalization

USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:21:46

TWO

Very Hi-Res Repeat 10 IN=100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[4]:Up	Up	5092.36 ft	5516.72 ft	24-May-2016 1:52:01 PM	24-May-2016 2:15:21 PM	ON	3.65 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[4]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:06

TIME_1900 - Time Marked every 60.00 (s)

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

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

- UTIM Error

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

UTIM Error
Pulse Origin Not Detected
WINLEN Error
Casing Thickness Error
Loop Processing Error

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

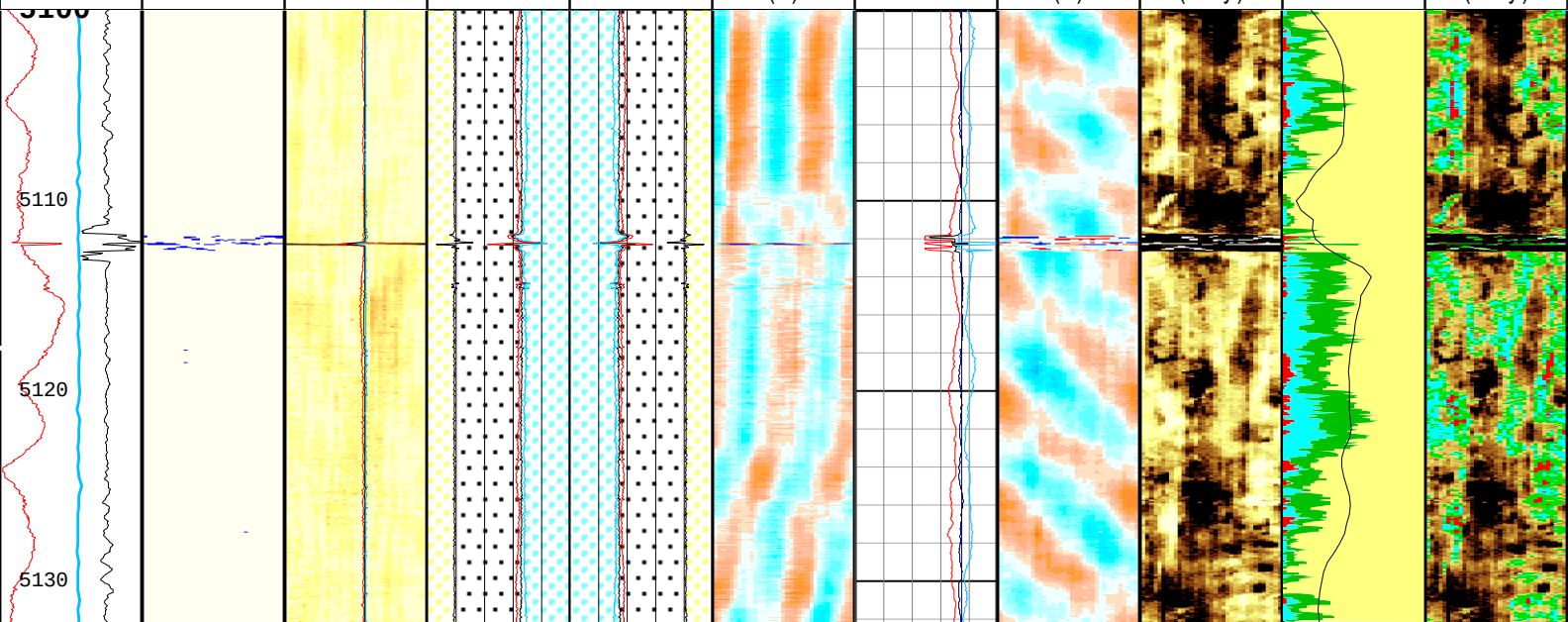
Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

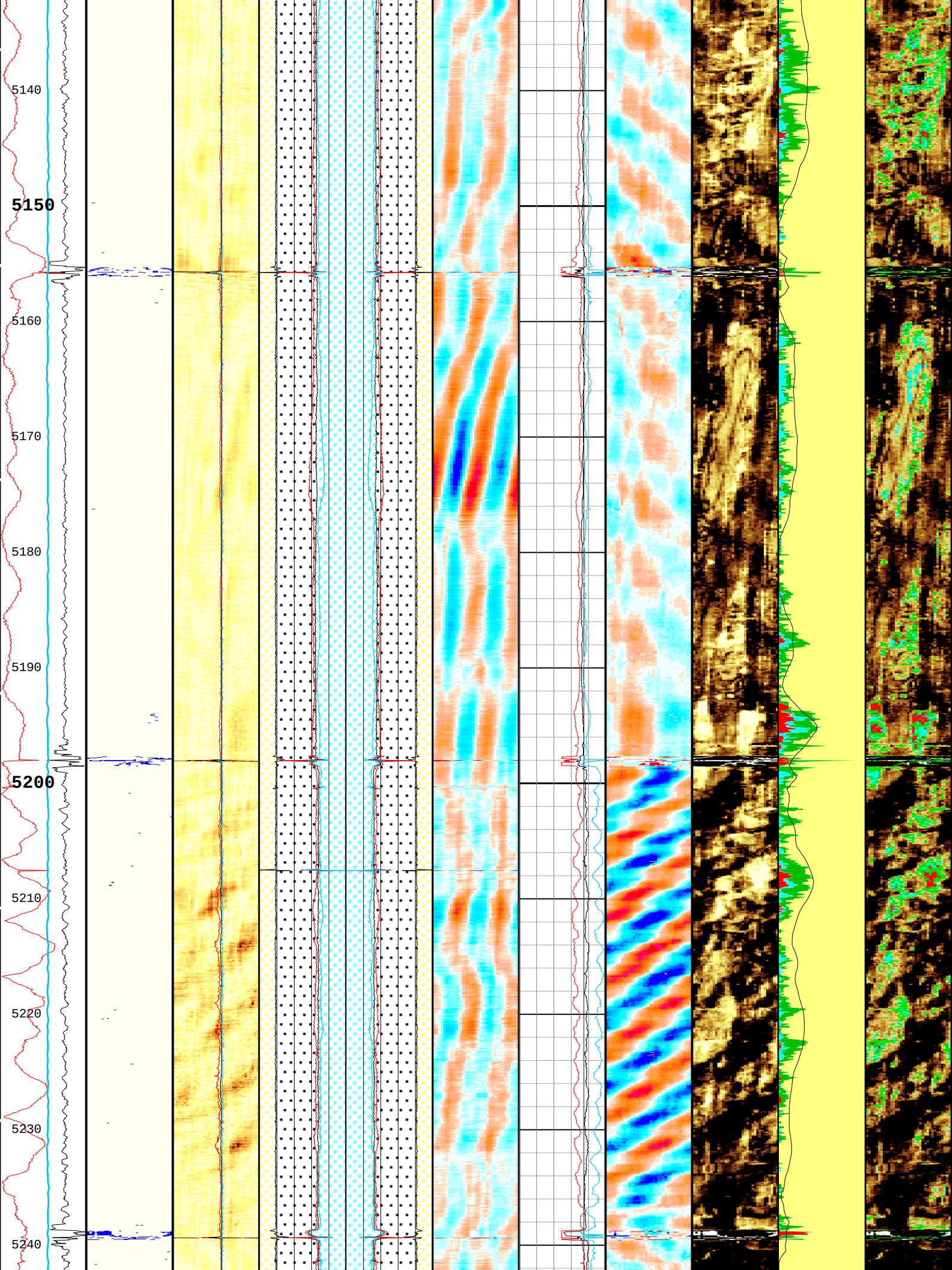
Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

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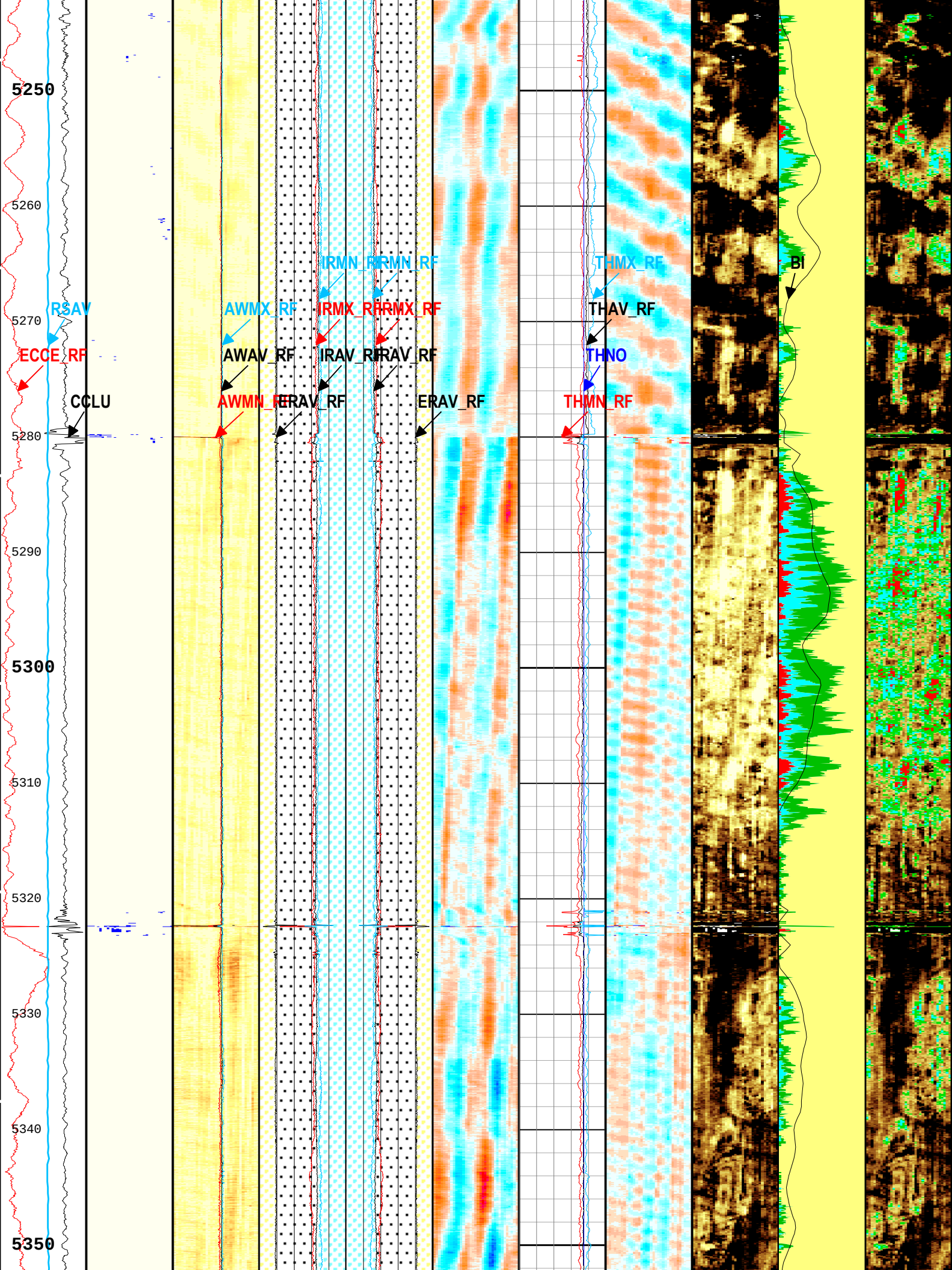
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AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
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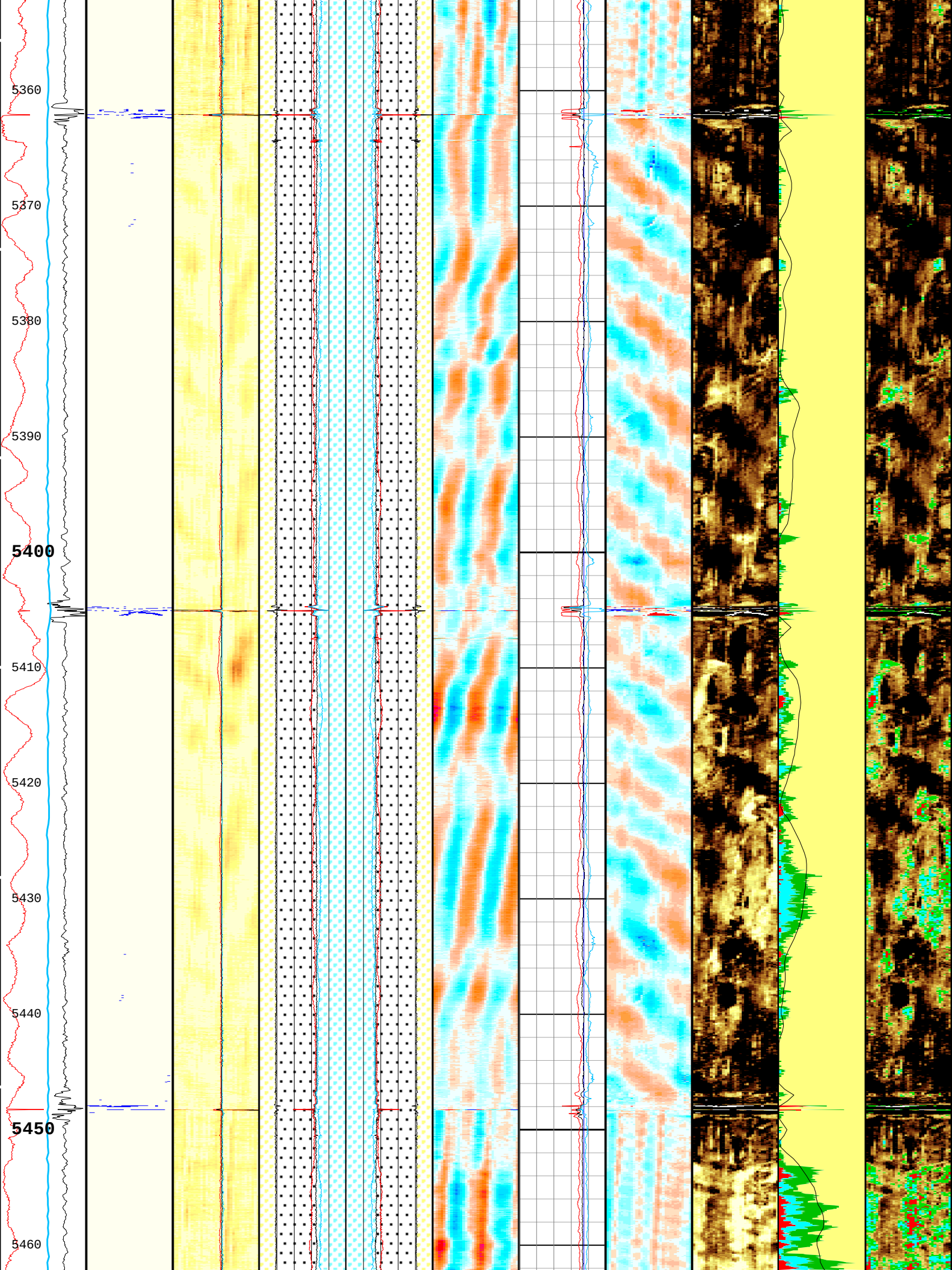
THNO
THMN_RF
BI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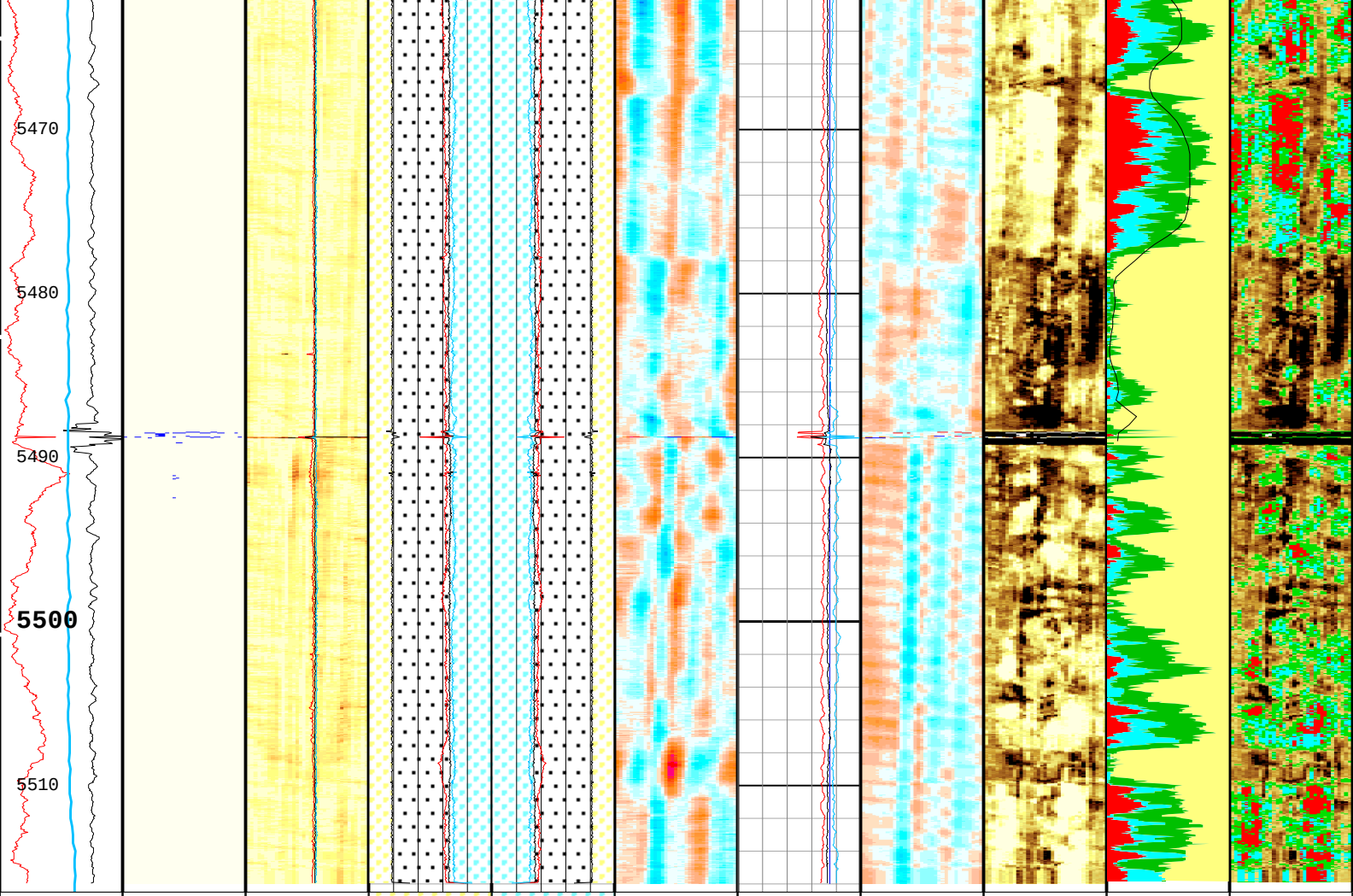


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave

ERAV
ERAV-IRAV
IRAV
Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

Amplitude (AWMX_RF) USIT-E
0 dB 75

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

(BI) USIT-E
1 0

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:06

TWO

Very Hi-Res Repeat 10 IN=100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[5]:Up	Up	2803.90 ft	3262.55 ft	24-May-2016 2:37:35 PM	24-May-2016 3:02:57 PM	ON	3.65 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[5]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:16

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

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

TIME_1900 - Time Marked every 60.00 (s)

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

ERAV
ERAV-IRAV
IRAV

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance

Casing Collar Locator Ultrasonic (CCLU)

Minimum of Unflagged Wave Amplitude (AWMN_RF)

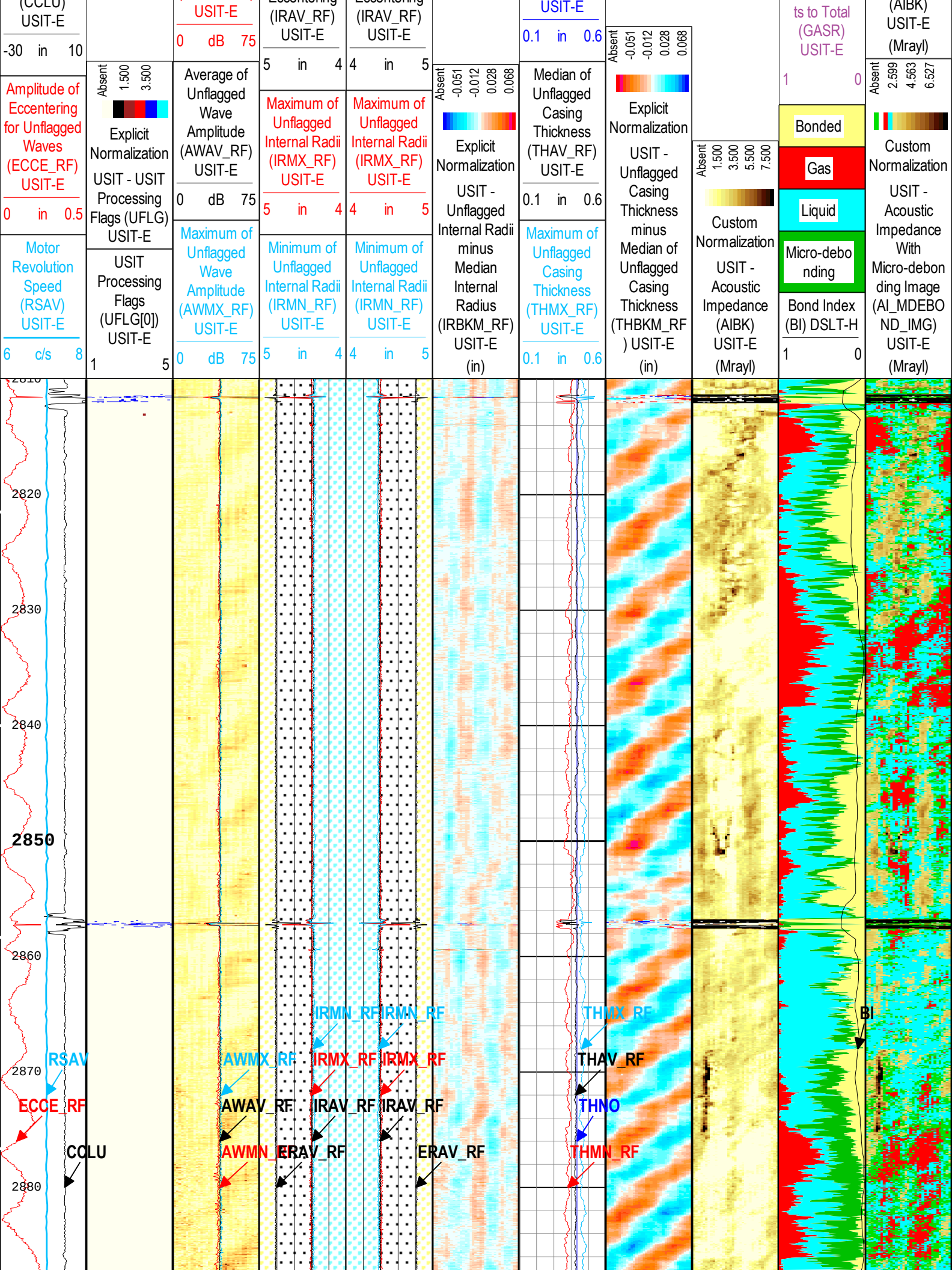
Median Internal Radius of Casing Corrected for Eccentering

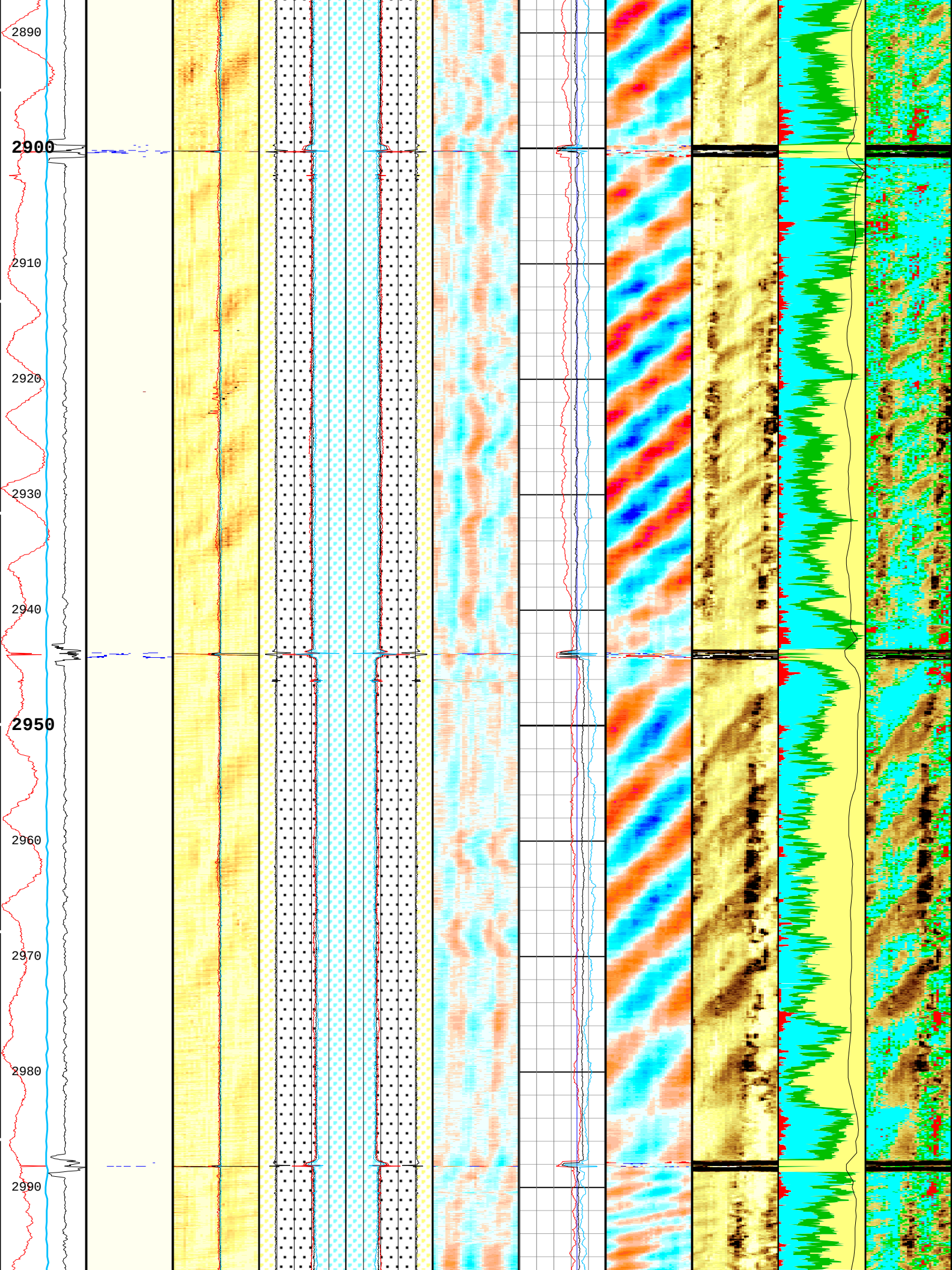
Median Internal Radius of Casing Corrected for Eccentering

Nominal Casing Thickness (THNO)

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measuremen


(CCLU)
USIT-E
-30 in 10
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
USIT Processing Flags (UFLG[0]) USIT-E
1 5
USIT-E
0 dB 75
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75
(IRAV_RF)
USIT-E
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4
(IRAV_RF)
USIT-E
4 in 5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)
USIT-E
0.1 in 0.6
Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)
Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
ts to Total (GASR) USIT-E
1 0
Bonded
Gas
Liquid
Micro-debonding
Bond Index (BI) DSLT-H
1 0
(AIBK)
USIT-E
(Mrayl)
Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E
(Mrayl)
2820
2830
2840
2850
2860
2870
2880
RSAV
ECCE_RF
CCLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
BI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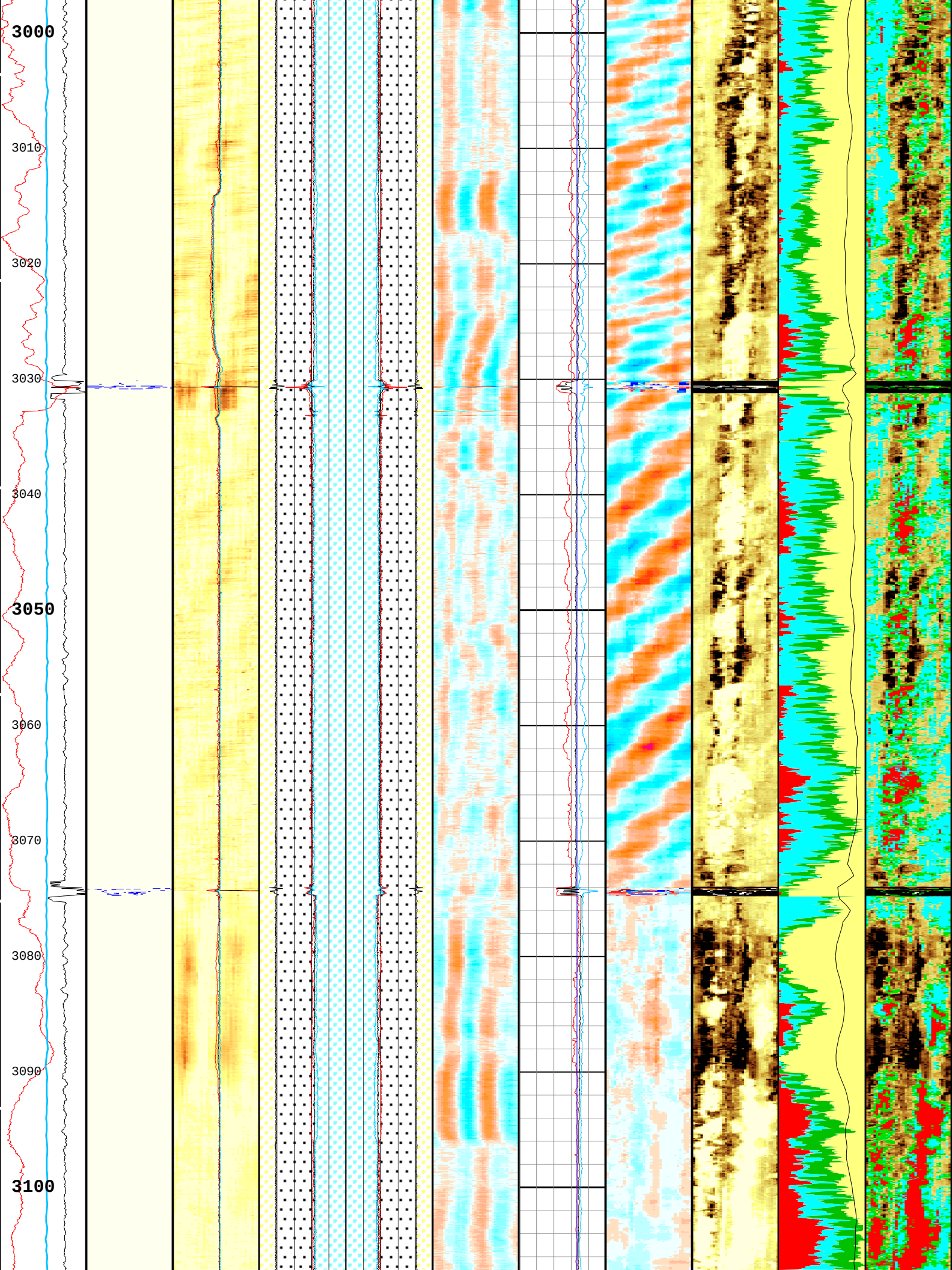
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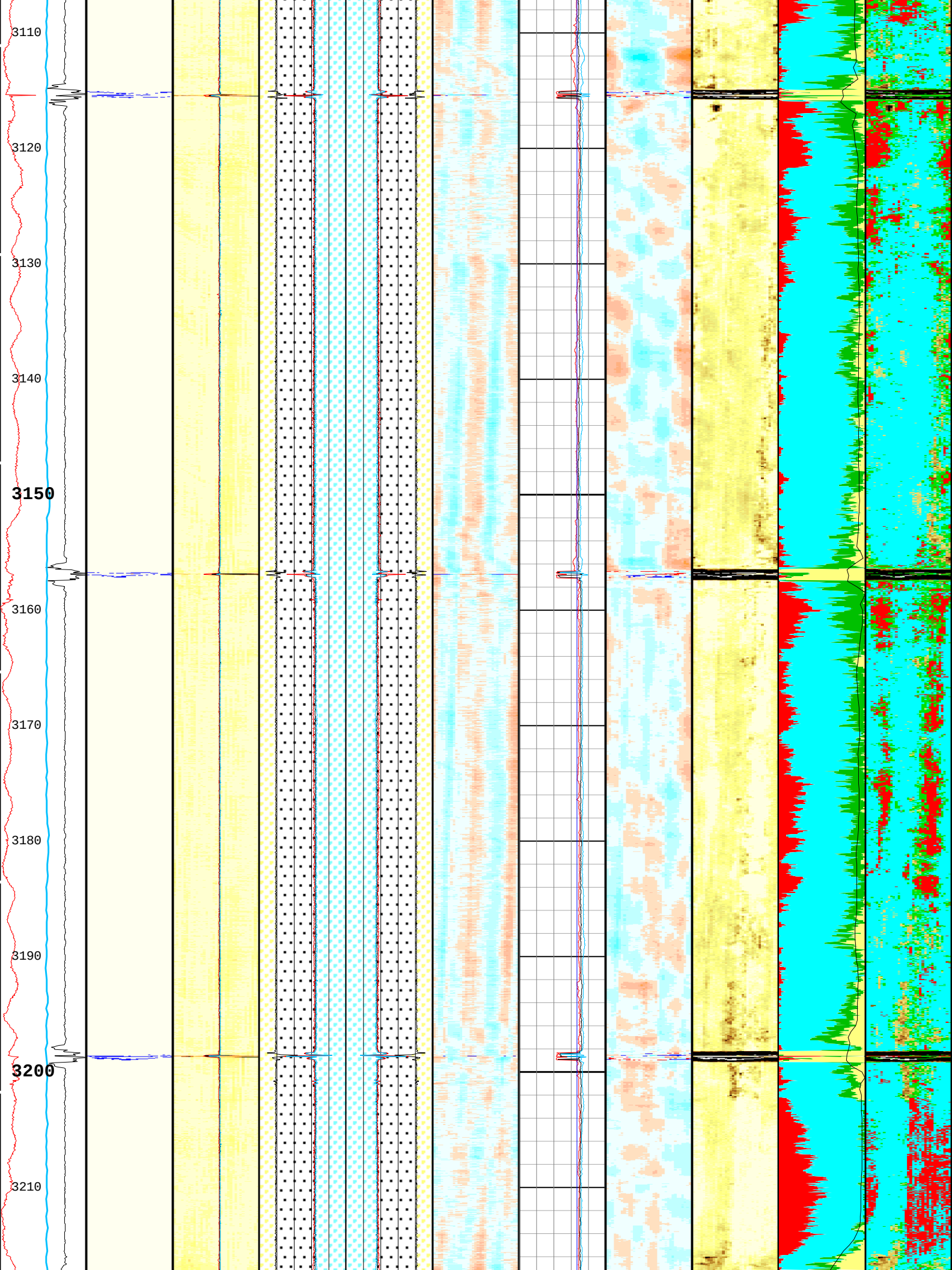
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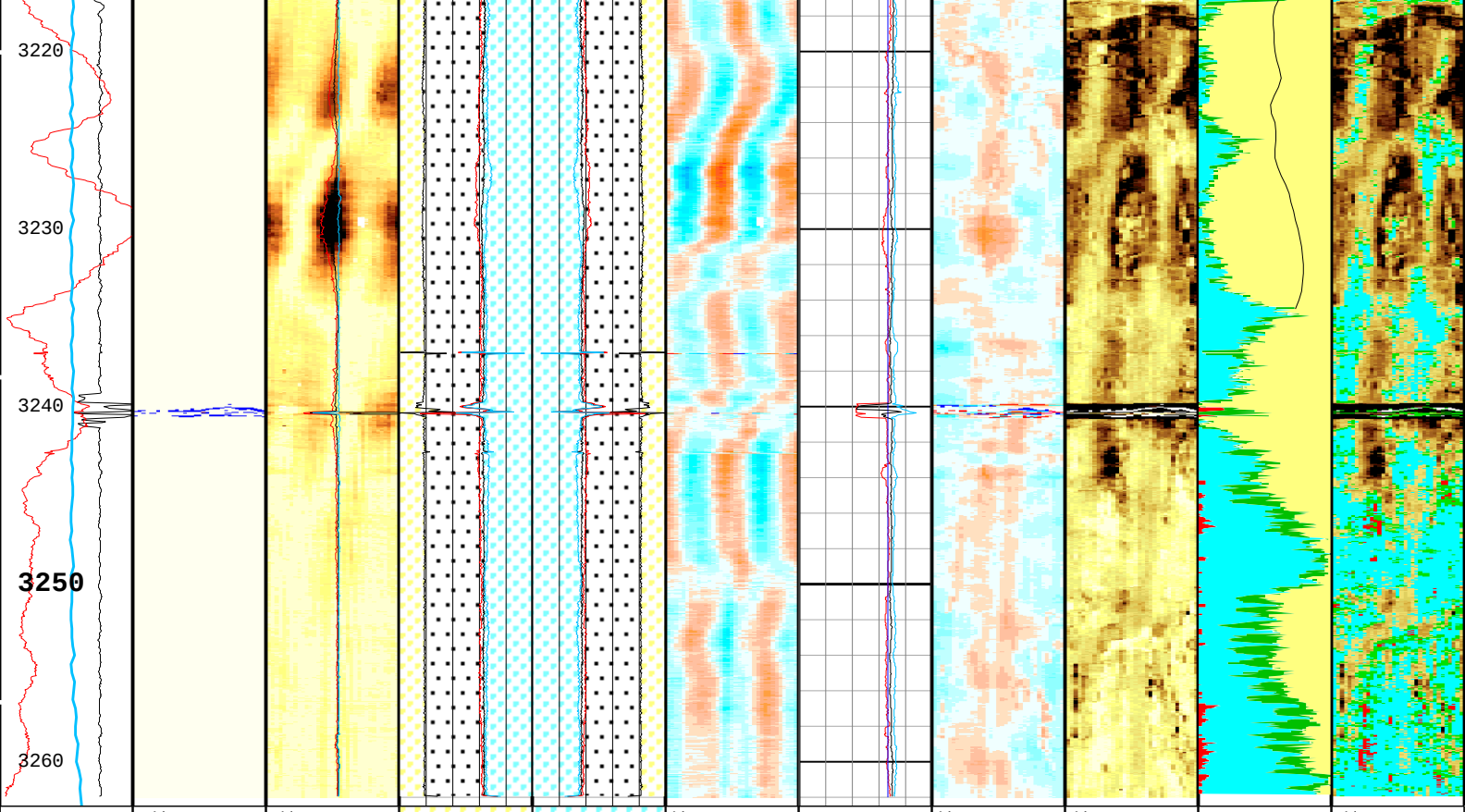


Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

5 in 4 | 4 in 5

TIME_1900 - Time Marked every 60.00 (s)

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

UTIM Error
Pulse Origin Not Detected
WINLEN Error
Casing Thickness Error
Loop Processing Error

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:16

TWO

Very Hi-Res Repeat 10 IN=100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[6]:Up	Up	2422.80 ft	2541.16 ft	24-May-2016 3:05:49 PM	24-May-2016 3:12:14 PM	ON	3.65 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[6]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:25

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

UTIM Error
Pulse Origin Not Detected
WINLEN Error
Casing Thickness Error
Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

ERAV | IRAV
ERAV-IRAV | ERAV
IRAV | IRAV-ERAV

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Absent -0.051 -0.012 0.028 0.068

Absent 1.500 3.500

Amplitude of

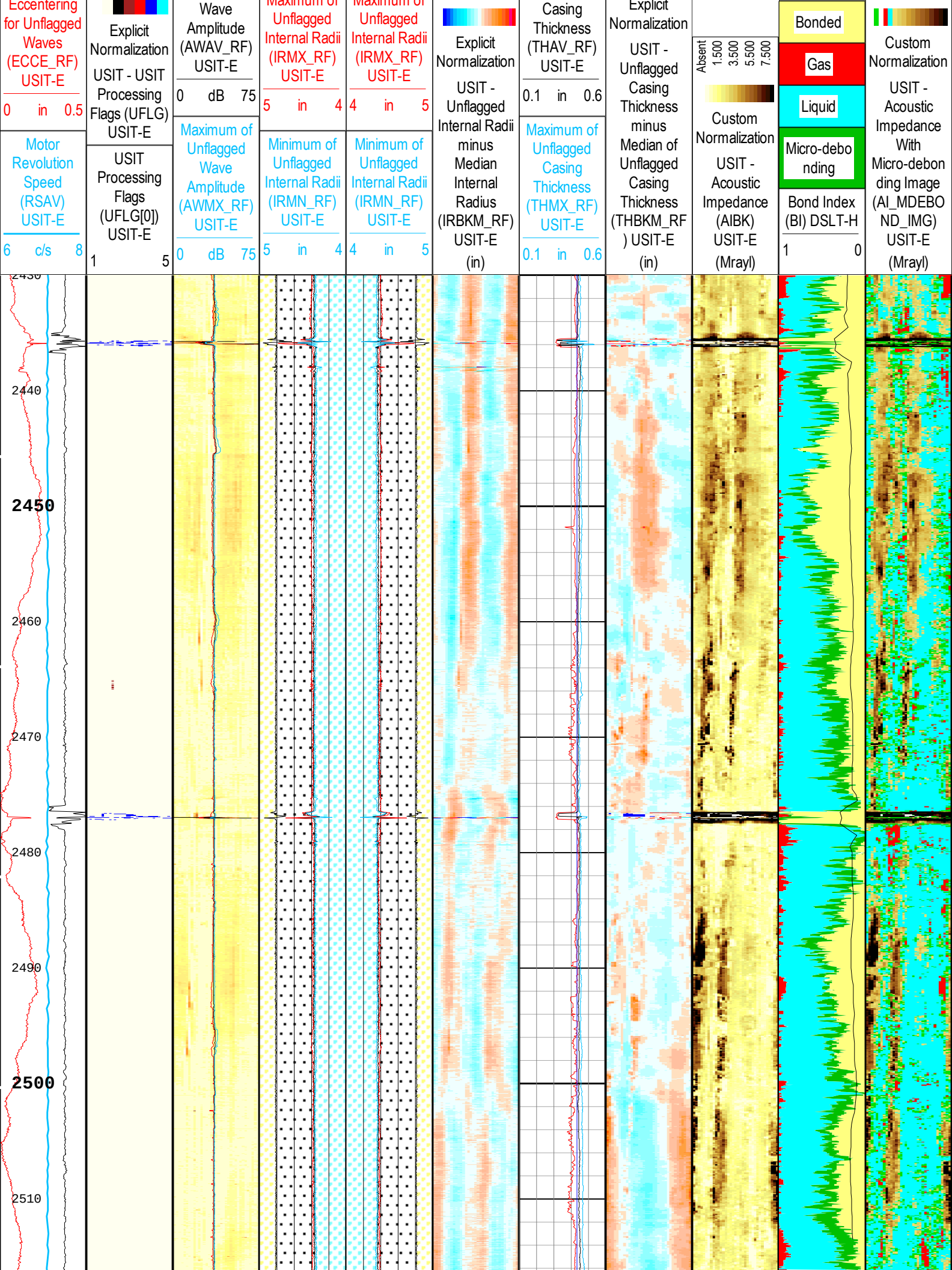
Average of Unflagged

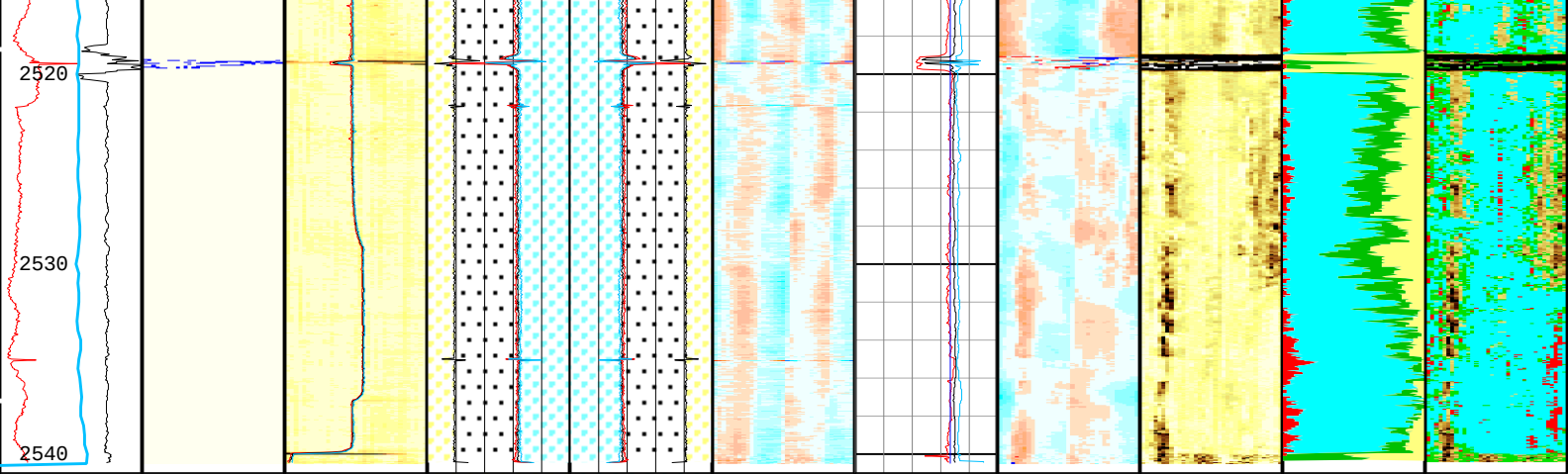
Median of Unflagged

Maximum of

Maximum of

Absent 2.599 4.563 6.527


Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E
USIT Processing Flags (UFLG[0]) USIT-E
1 5
Wave Amplitude (AWAV_RF) USIT-E
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)
Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)
Absent
1.500
3.500
5.500
7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)
Bonded
Gas
Liquid
Micro-debonding
Bond Index (BI) DSLT-H
1 0
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E
(Mrayl)
2430
2440
2450
2460
2470
2480
2490
2500
2510



Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

TIME_1900 - Time Marked every 60.00 (s)

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

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

Description: USI Composite Format: Log (LBV1 USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:25

TWO

Very Hi-Res Repeat 10 IN=100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[7]:Up	Up	1117.78 ft	2172.21 ft	24-May-2016 3:14:51 PM	24-May-2016 4:10:28 PM	ON	3.46 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[7]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:29

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :
4 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
5 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

- UTIM Error
- Pulse Origin Not Detected
- WINLEN Error
- Casing Thickness Error
- Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

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

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E

ERAV | IRAV | ERAV-IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

ERAV | IRAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

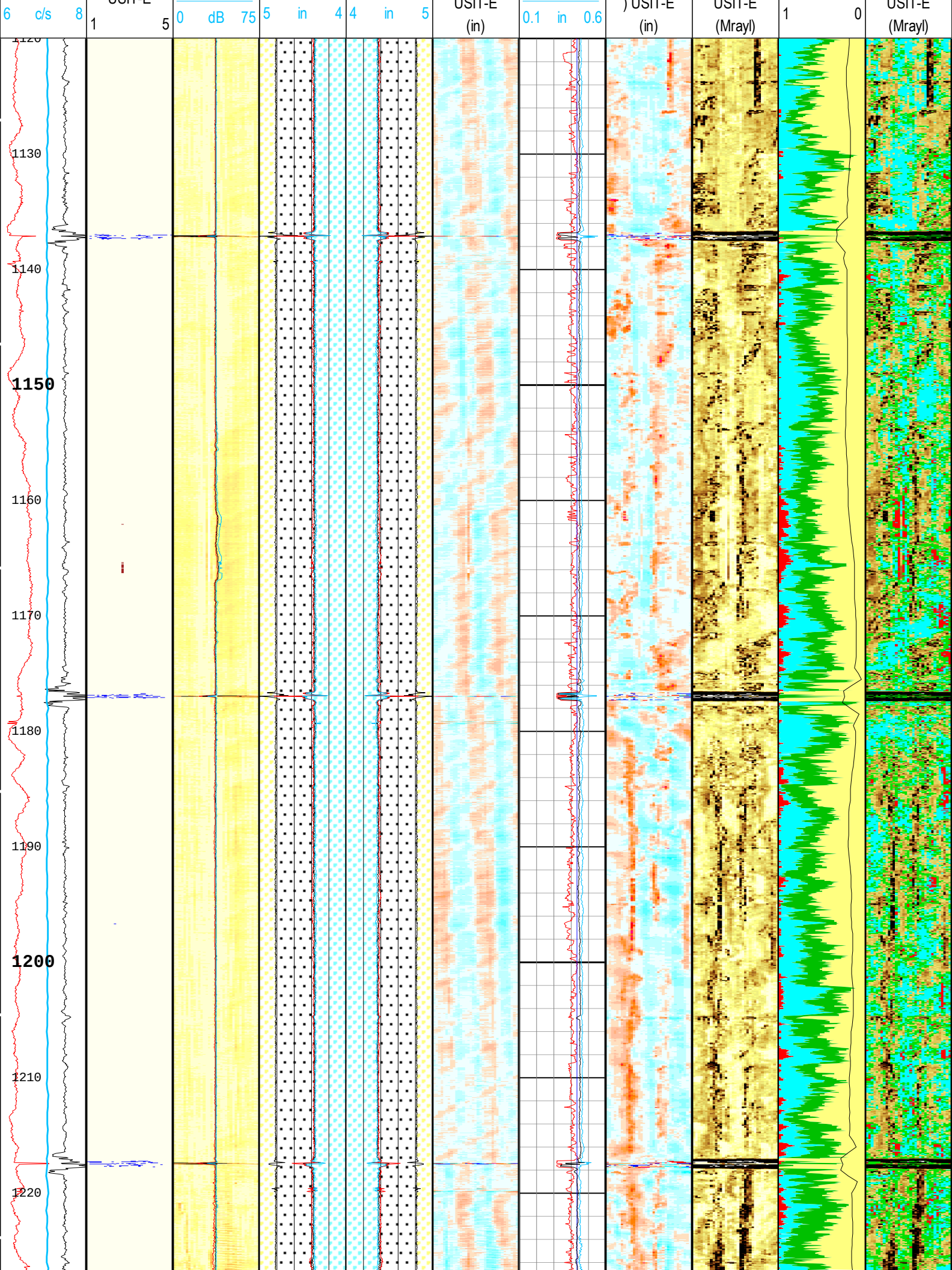
Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

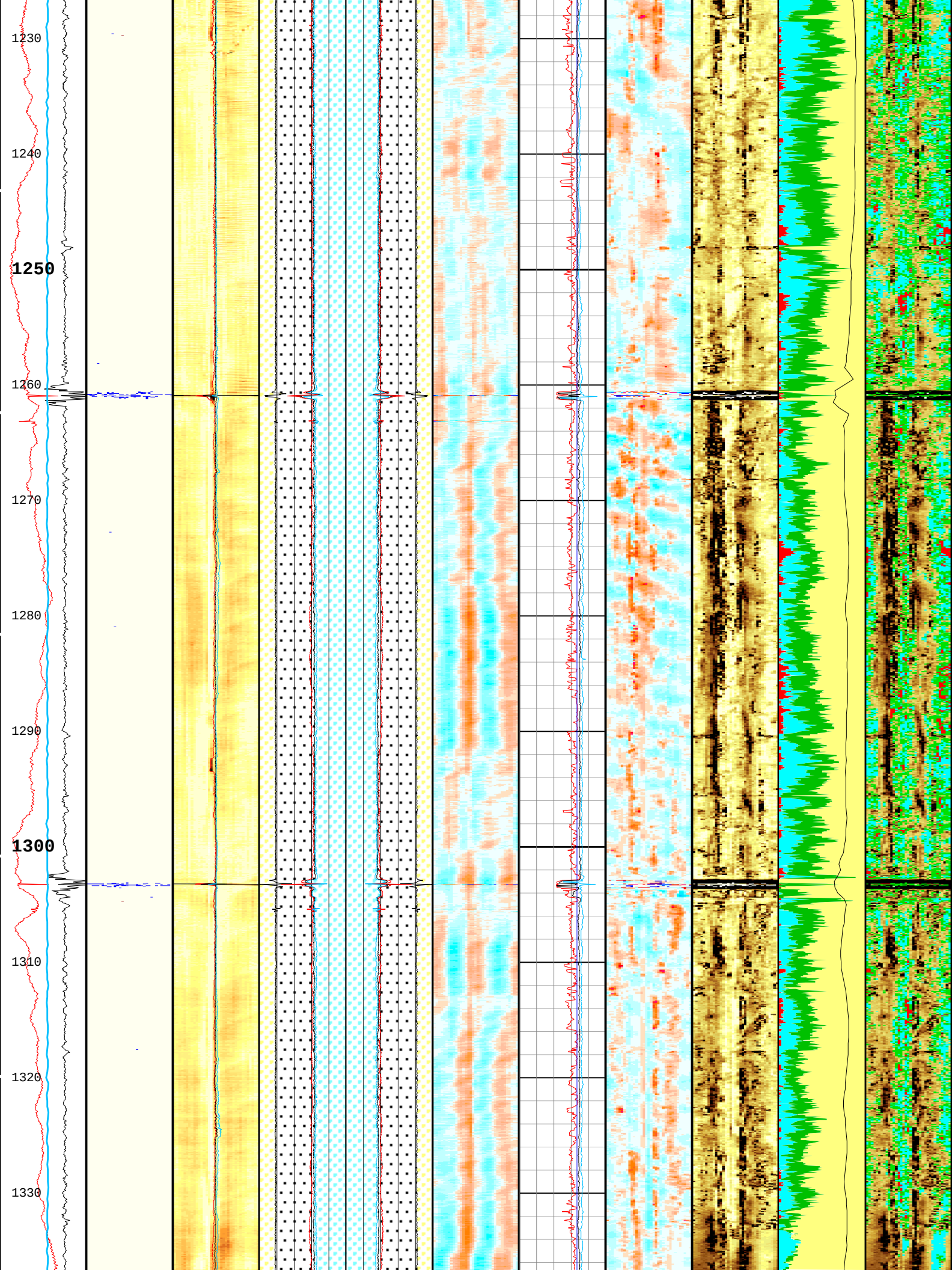
Bonded | Gas | Liquid | Micro-debonding

Bond Index (BI) DSLT-H

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E


6 c/s 8
USIT-E
1 5
0 dB 75
5 in 4
4 in 5
USIT-E
(in)
0.1 in 0.6
) USIT-E
(in)
USIT-E
(Mrayl)
1 0
USIT-E
(Mrayl)
1130
1140
1150
1160
1170
1180
1190
1200
1210
1220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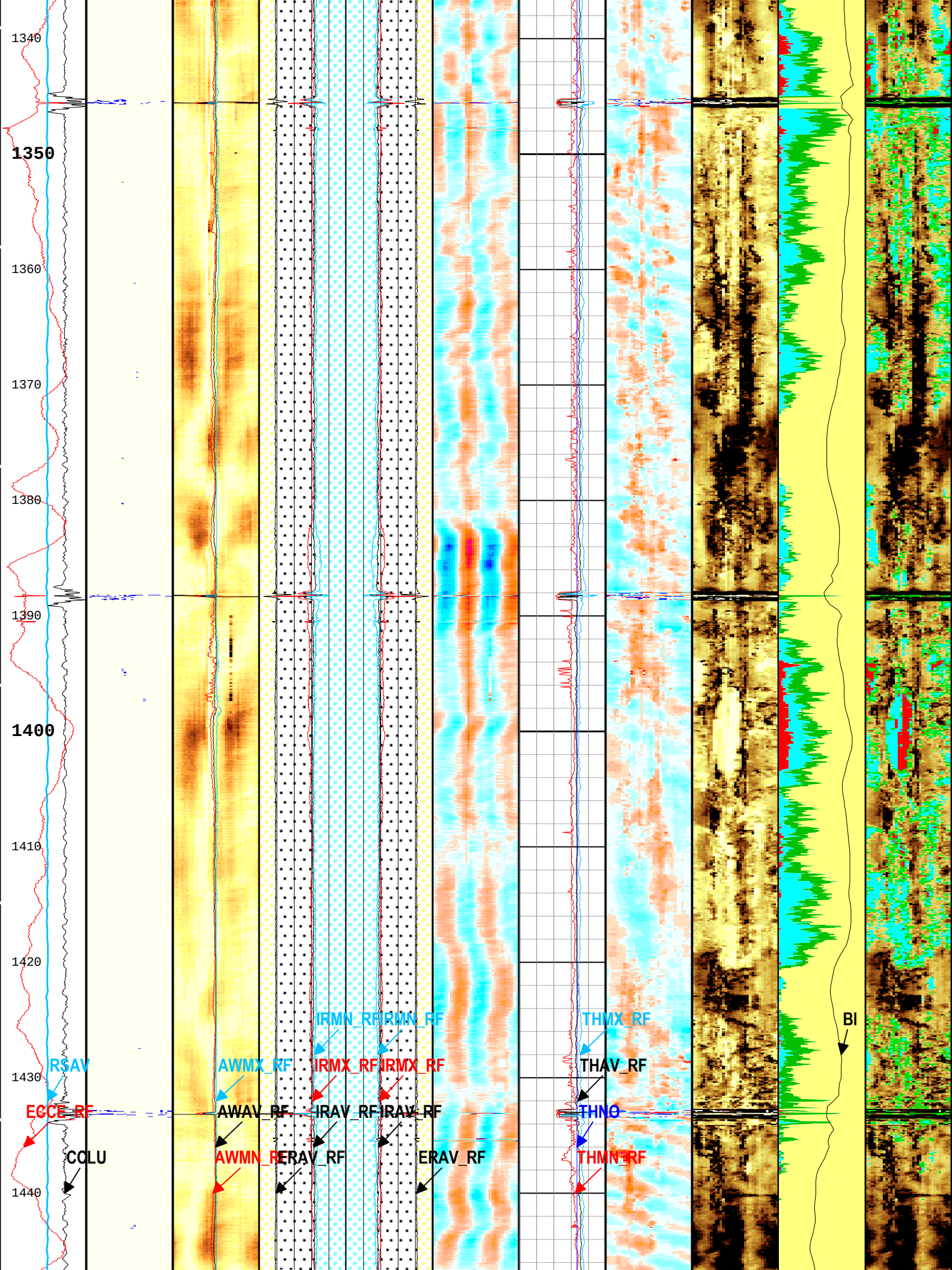
1310
1320
1330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1350
1360
1370
1380
1390
1400
1410
1420
1430
1440
RSAV
ECCE_RF
COLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
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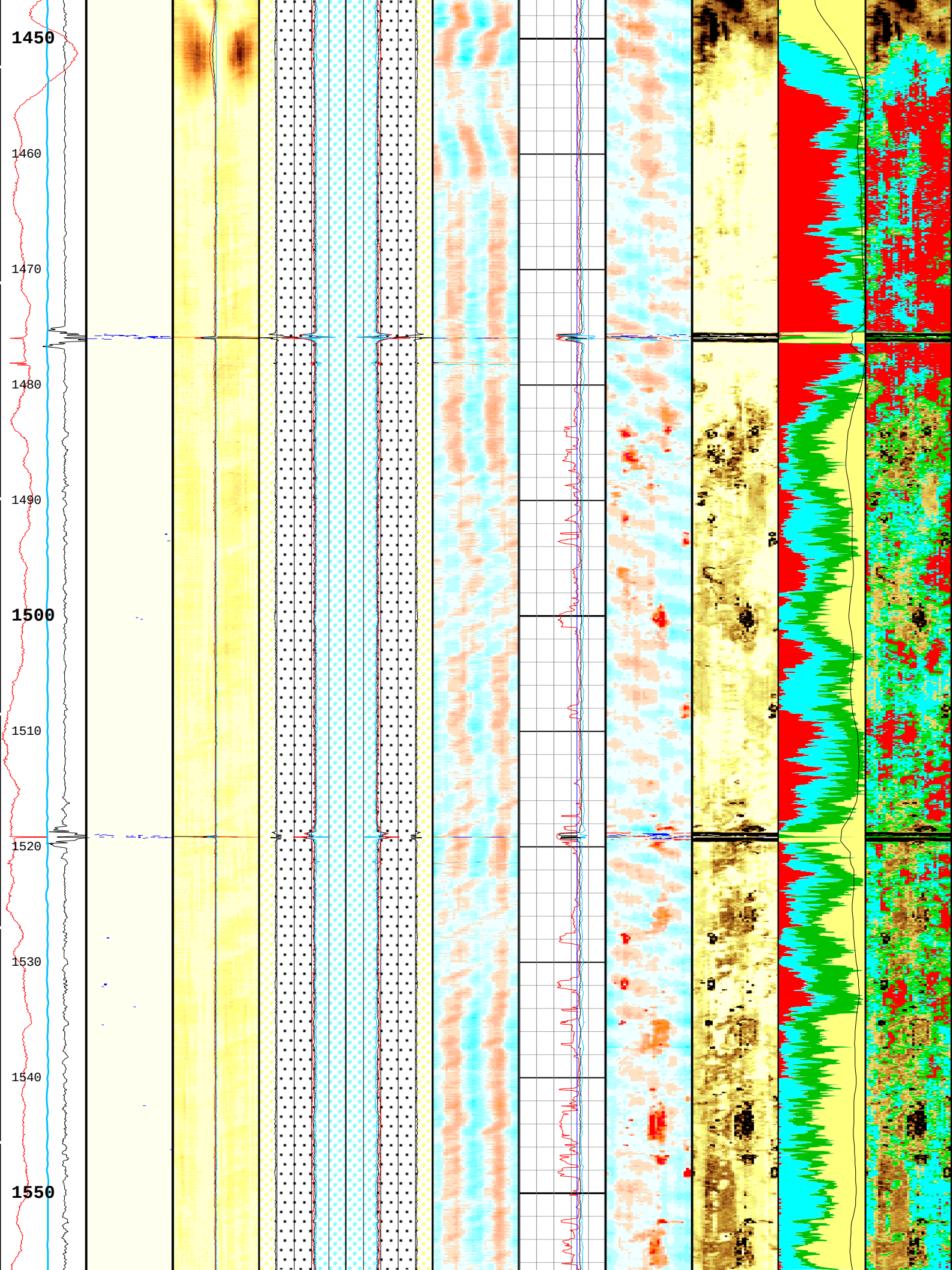
THAV_RF
THNO
THMN_RF
BI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1540
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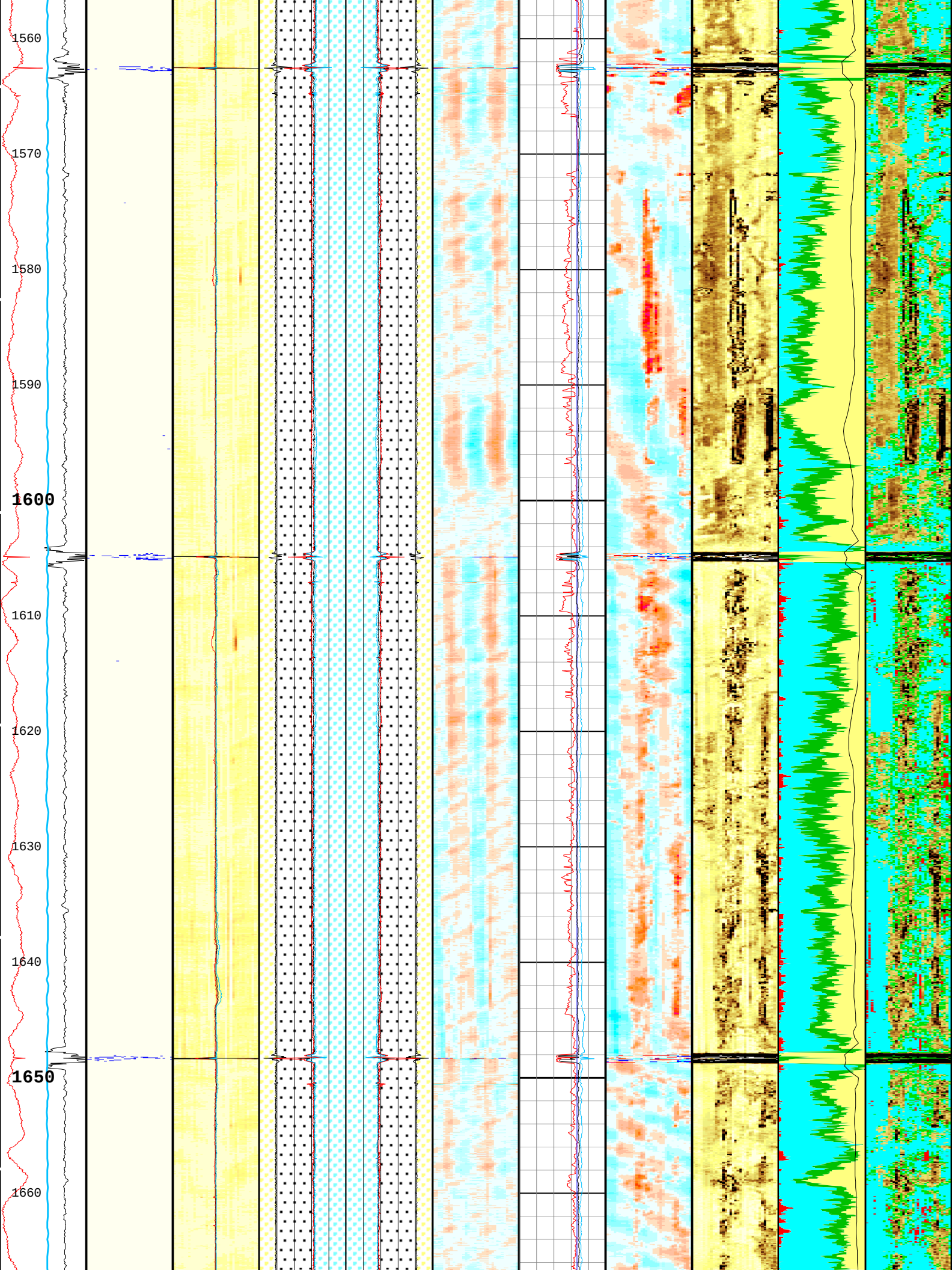
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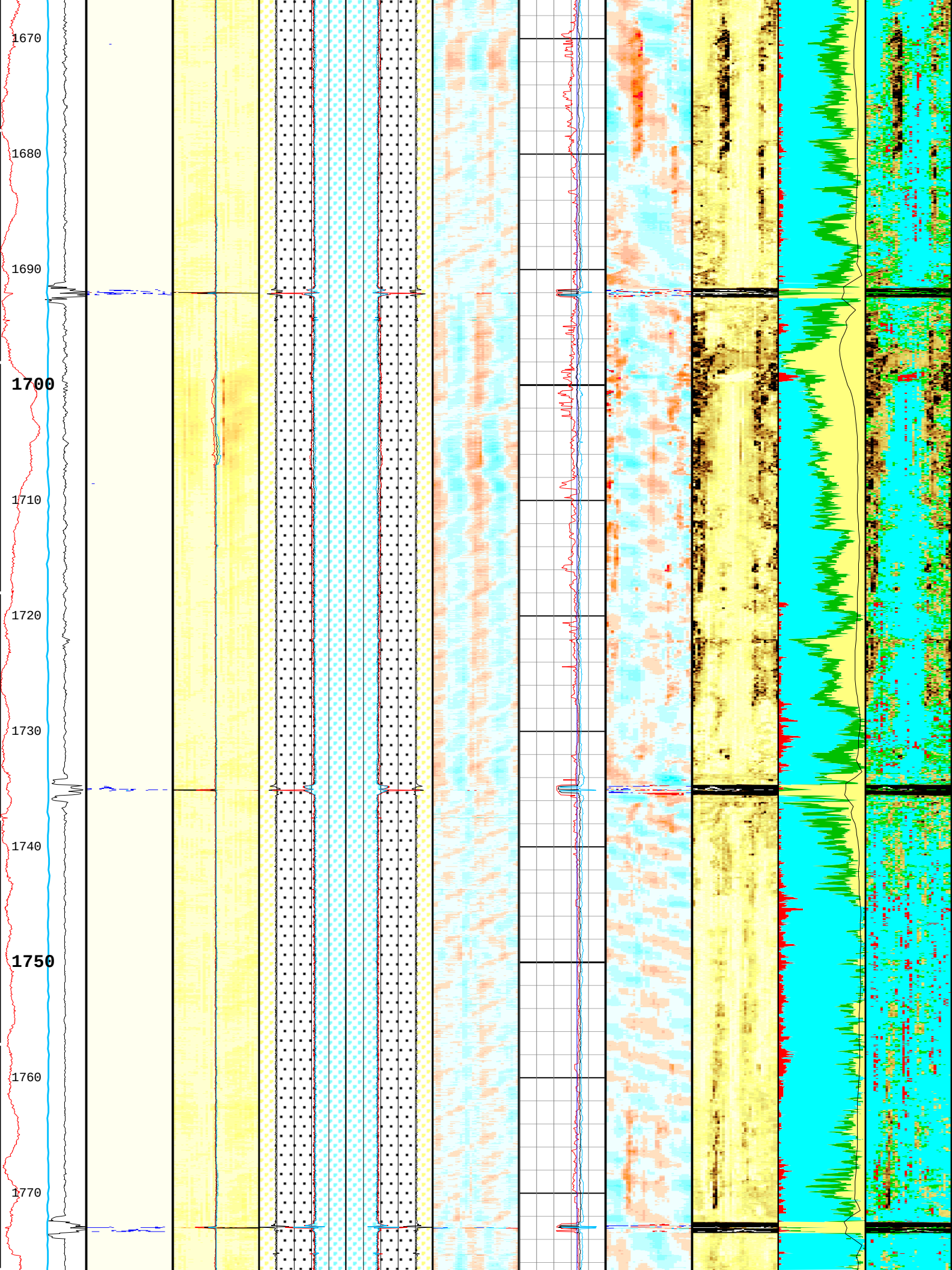
1660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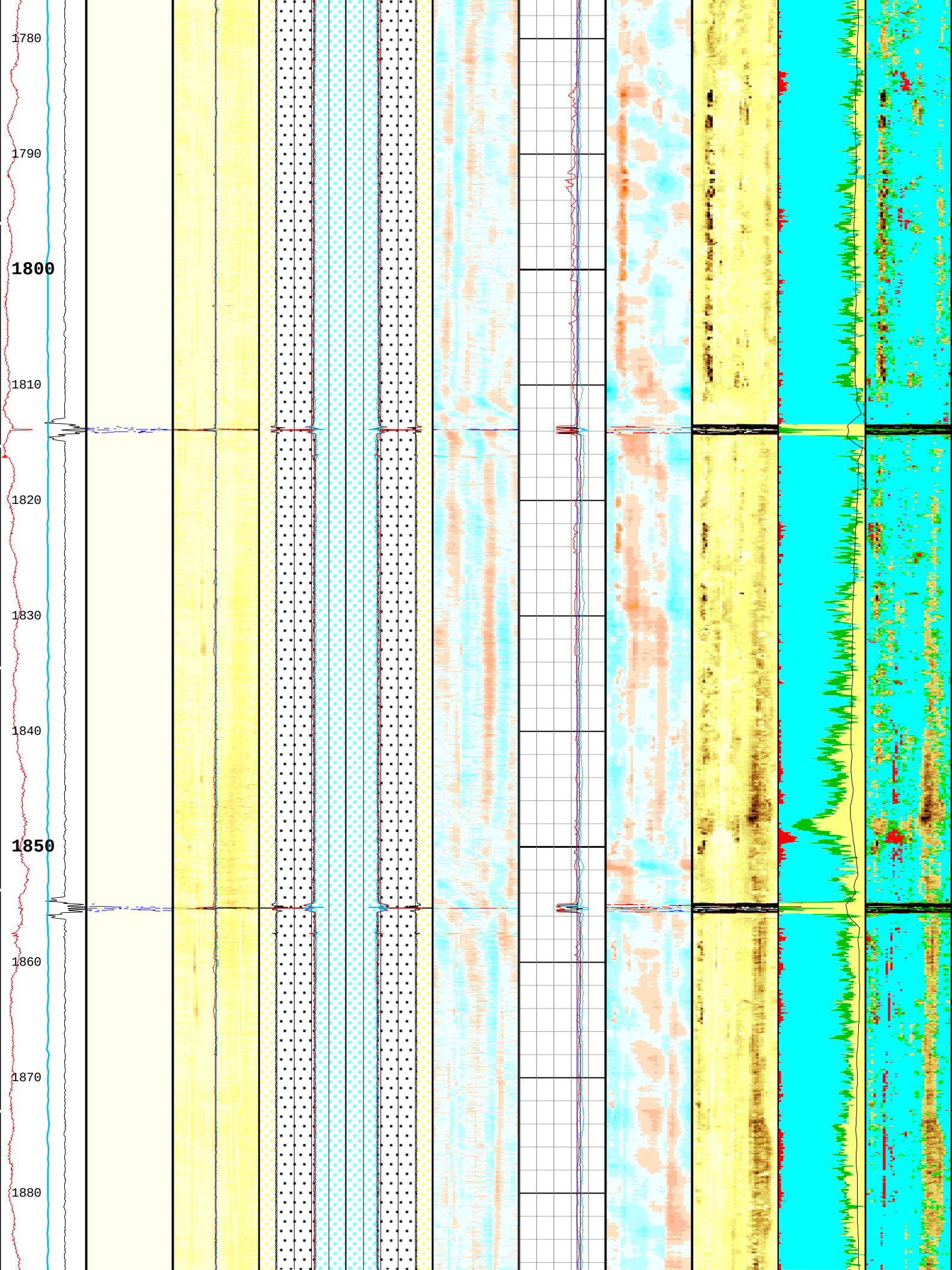
1770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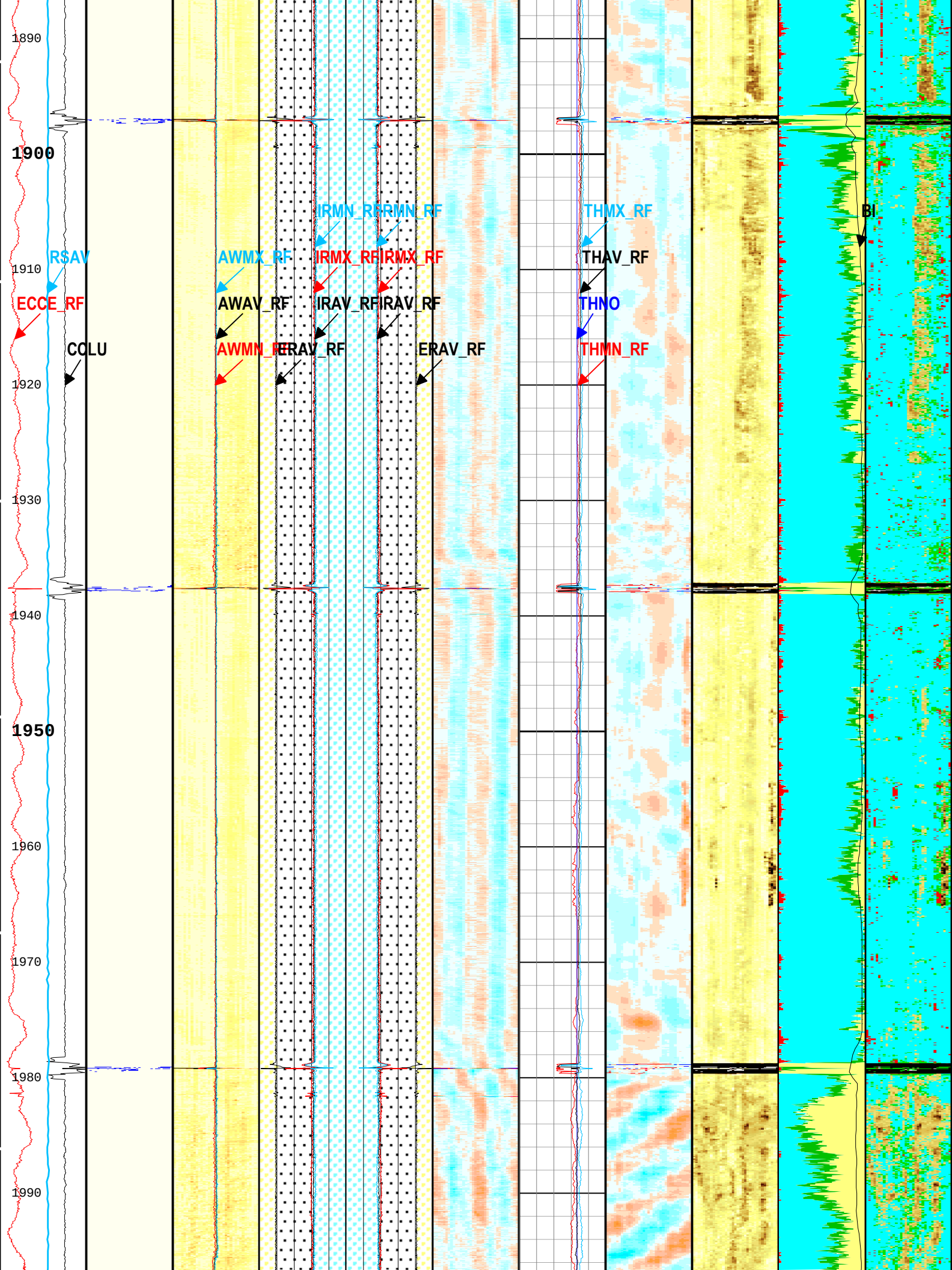
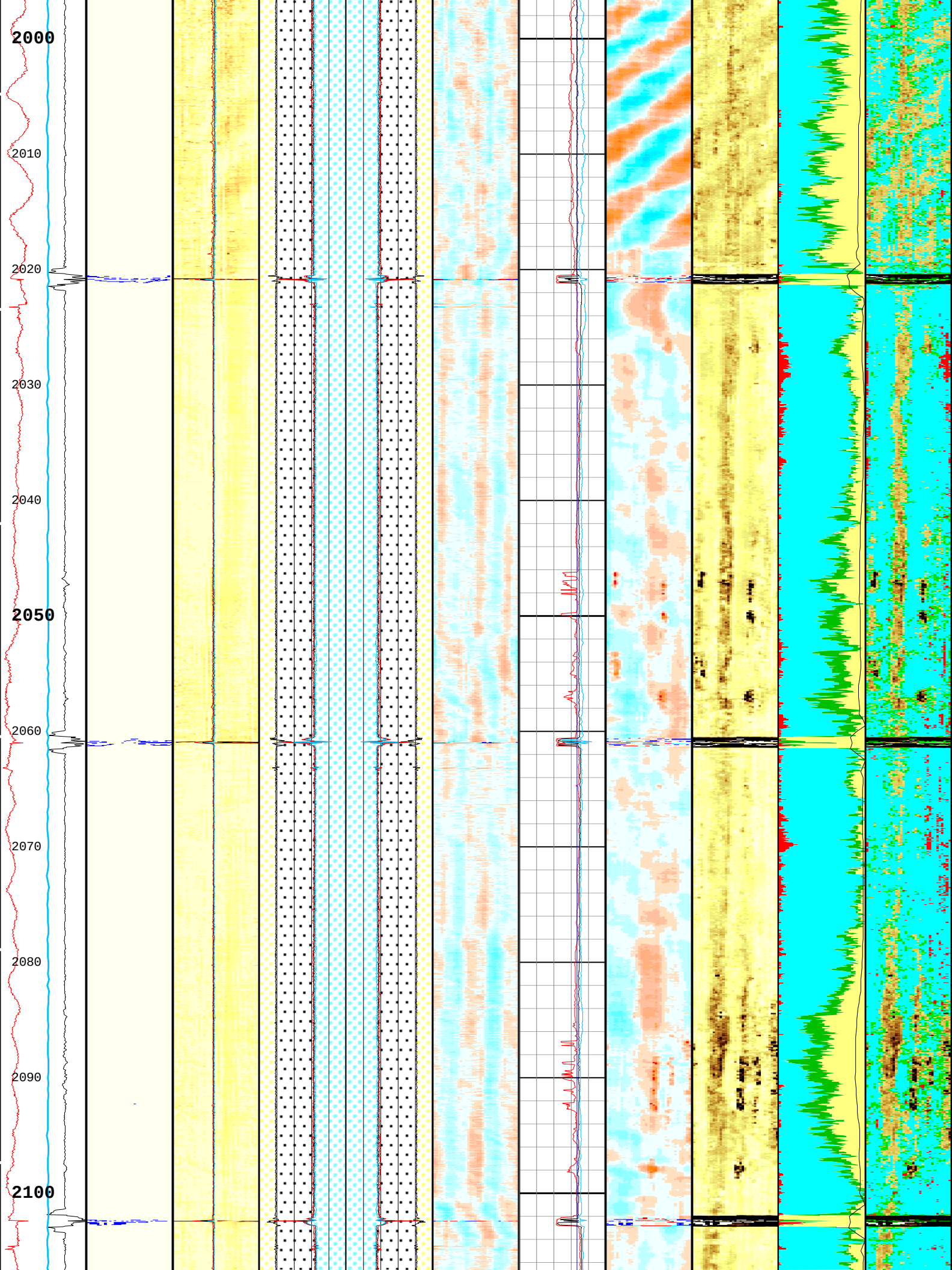
1870
1880


1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
RSAV
ECCE_RF
COLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMN_RF
IRMX_RF
IRMX_RF
IRAV_RF
IRAV_RF
ERAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
BI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2010
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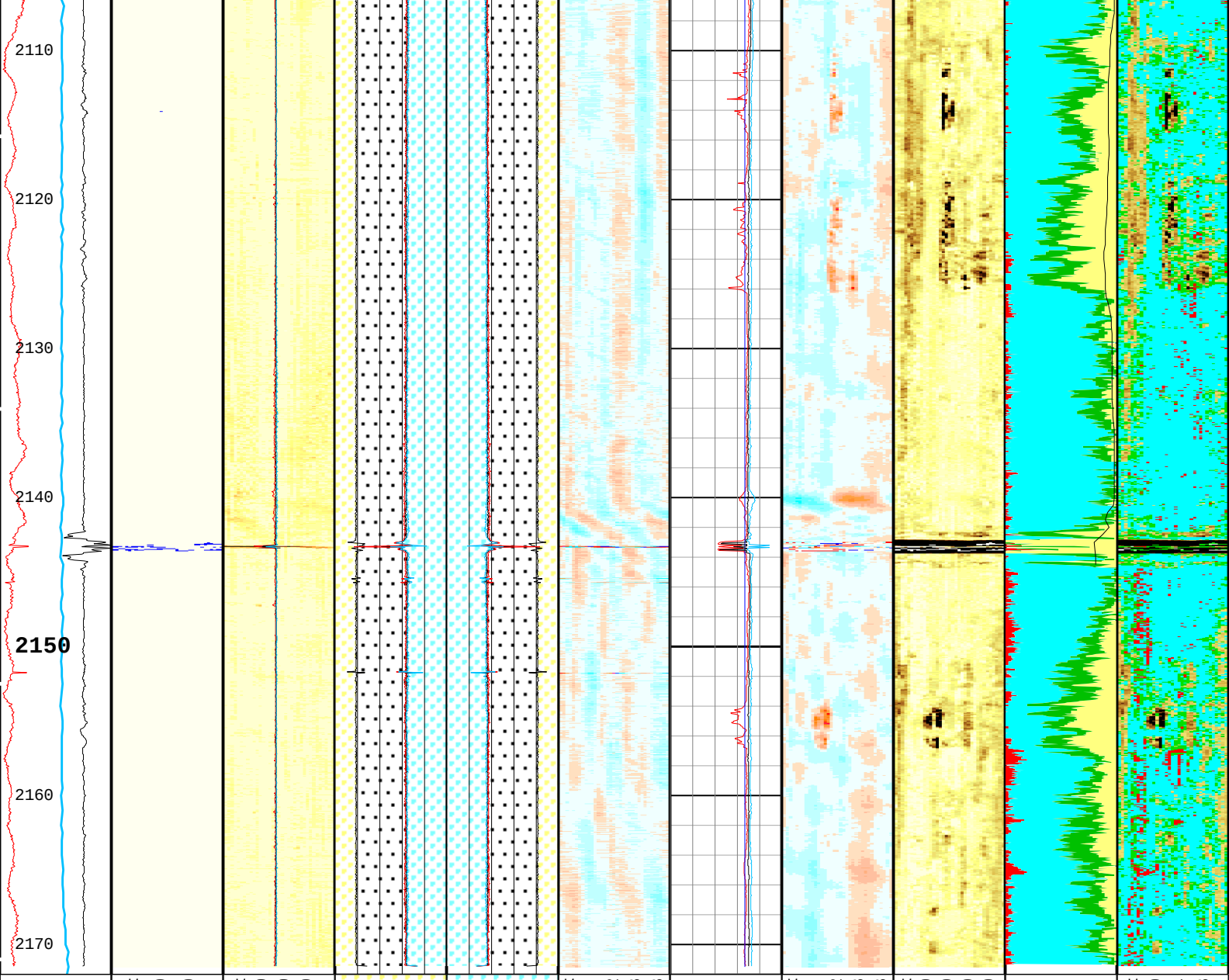
2090
2100



Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF)

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Bonded
Gas

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG)

USIT-E
0 dB 75

Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Liquid

USIT-E (Mrayl)

Micro-debonding

Bond Index (BI) DSLT-H
1 0

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

TIME_1900 - Time Marked every 60.00 (s)

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

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

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:29

TWO

Very Hi-Res Repeat 10 IN=100 FT

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
TWO	Log[8]:Up	Up	792.66 ft	1205.00 ft	25-May-2016 6:27:03 AM	25-May-2016 6:48:24 AM	ON	-5.08 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[8]:Up:S005

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:49

TIME_1900 - Time Marked every 60.00 (s)

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

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

ERAV
ERAV-IRAV
IRAV

IRAV
ERAV
IRAV-ERAV

Absent -4.799 -2.799 -0.800

Explicit Normalization

USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Absent 3.090 5.054 7.018

Micro-debon

Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

(dB)
Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)

0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)

ding Ratio (MDR) USIT-E
1 0

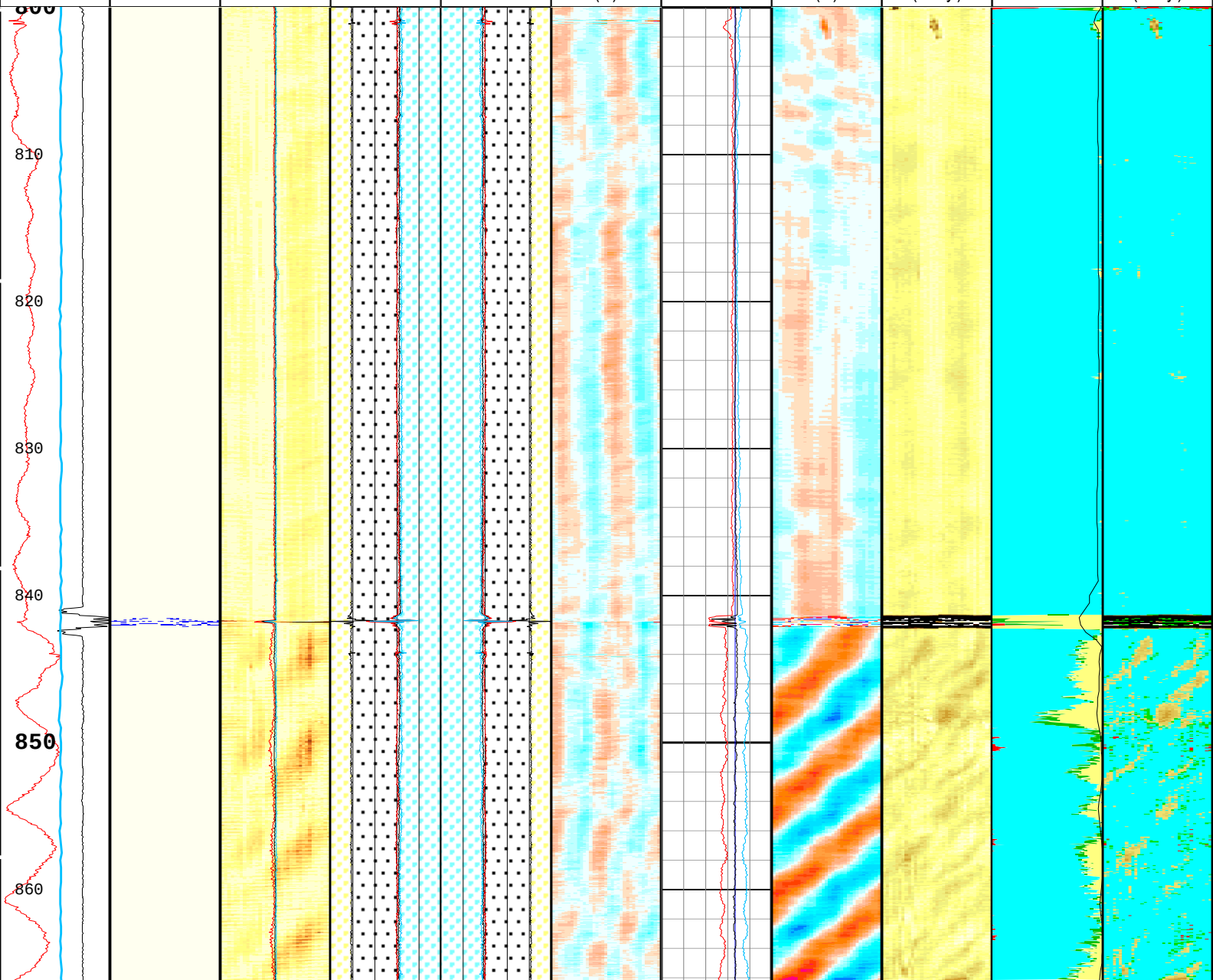
Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

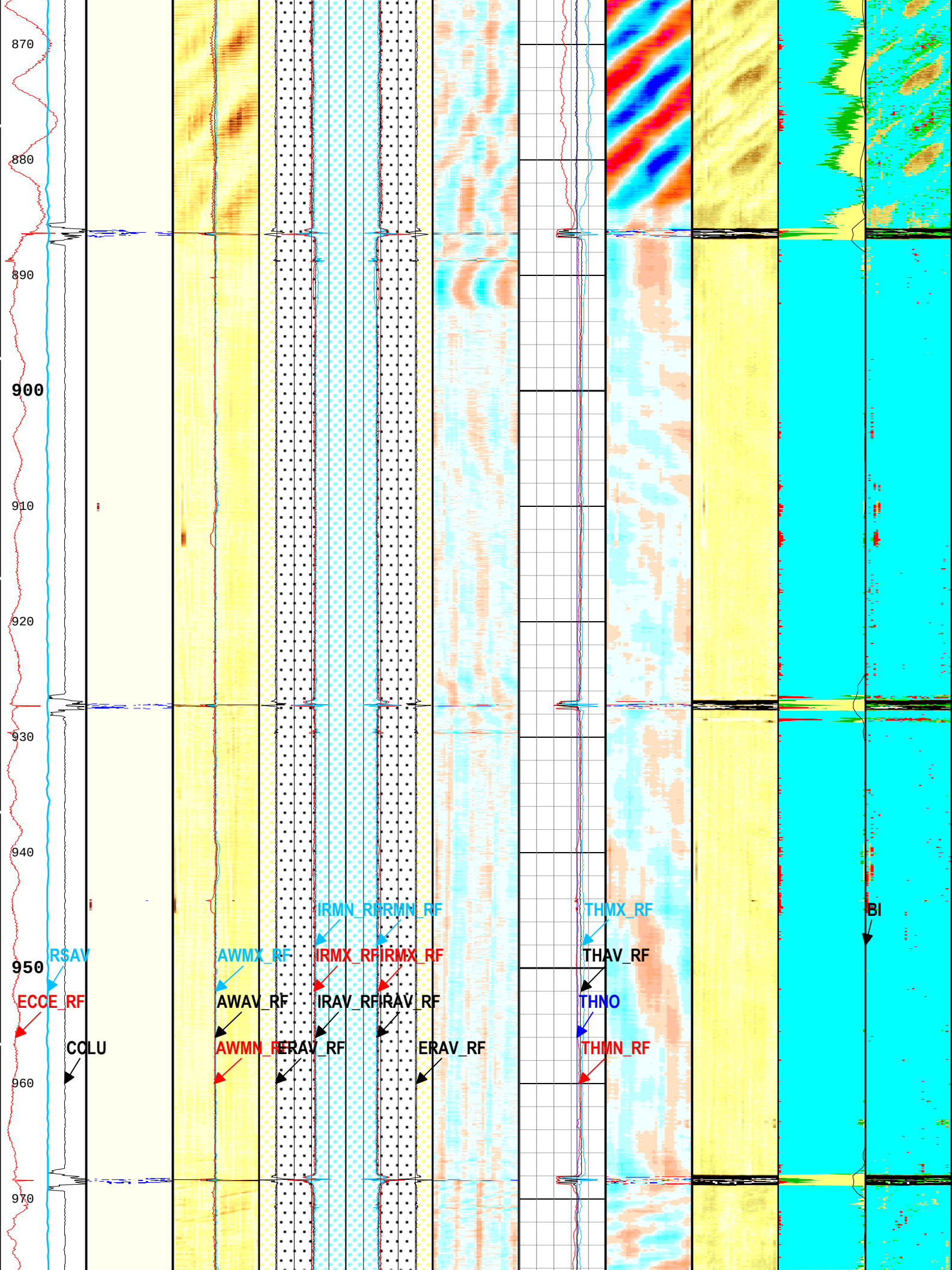
Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H
1 0

Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E
(Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E
(Mrayl)

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880
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920
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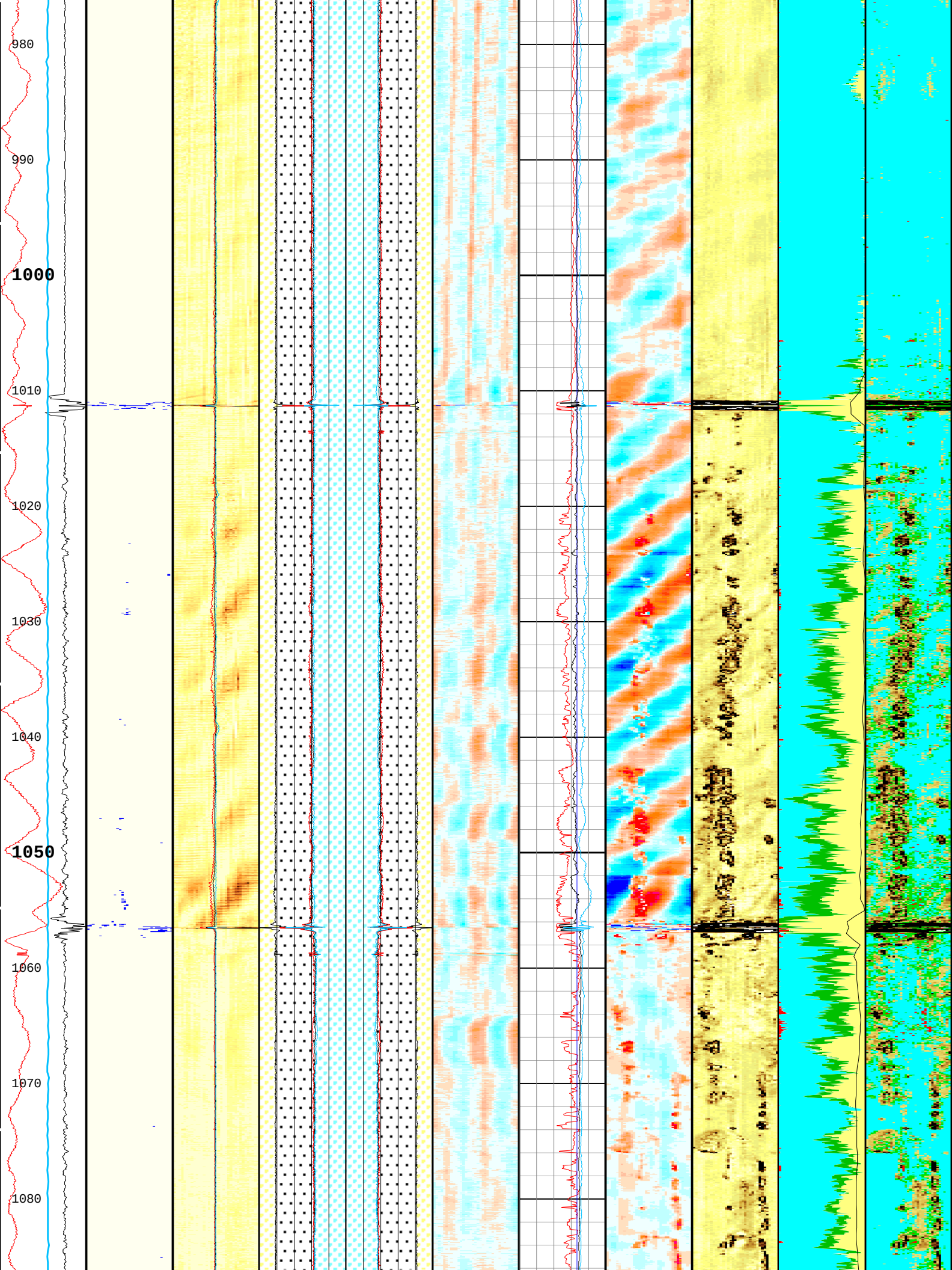
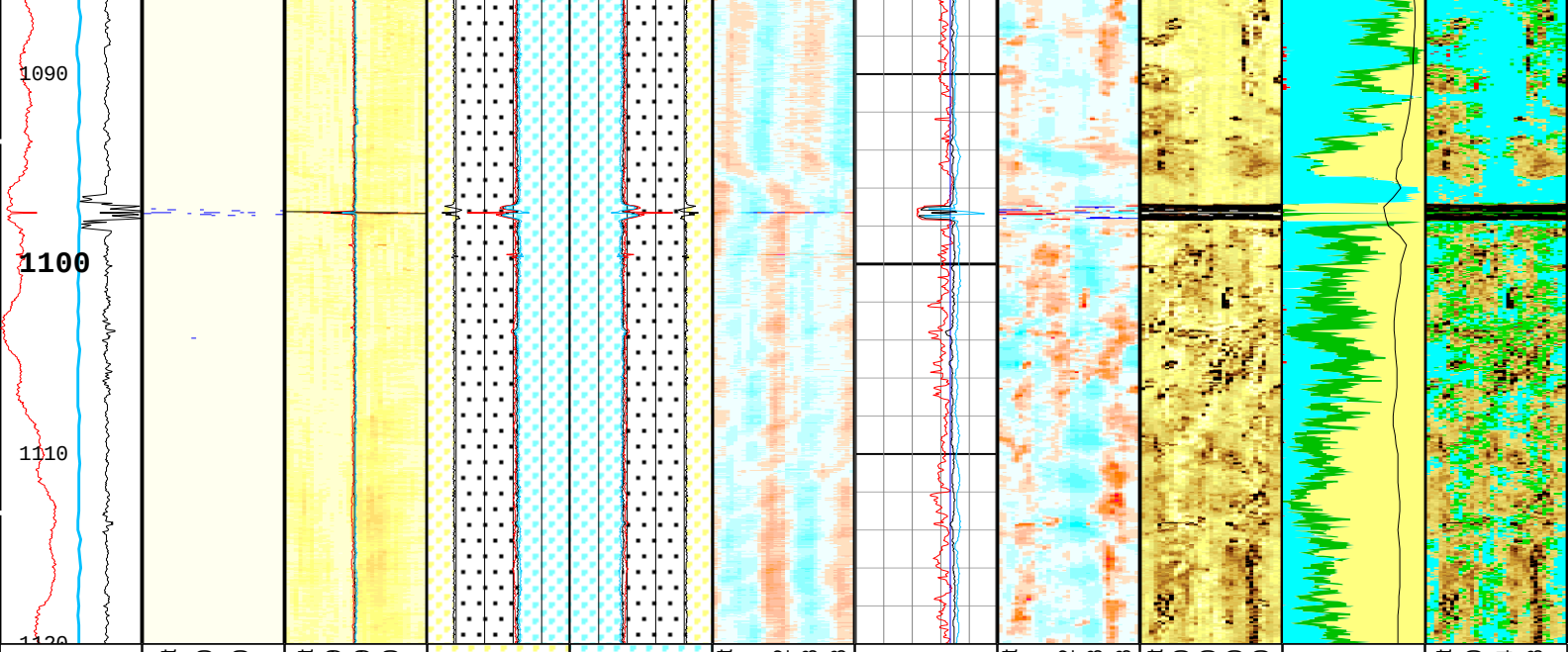
940
950
960
970
RSAV
ECCE_RF
COLU
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMN_RF
IRMX_RF
IRMX_RF
IRAV_RF
IRAV_RF
ERAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
BI


980
990
1000
1010
1020
1030
1040
1050
1060
1070
1080



Casing Collar Locator Ultrasonic (CCLU) USIT-E
-30 in 10

Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E

USIT Processing Flags (UFLG[0]) USIT-E
1 5

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
5 in 4

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
5 in 4

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
5 in 4

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
5 in 4

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4 in 5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4 in 5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4 in 5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4 in 5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.1 in 0.6

Nominal Casing Thickness (THNO) USIT-E
0.1 in 0.6

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.1 in 0.6

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.1 in 0.6

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Ratio of Cement Measurements to Total (CEMR) USIT-E
1 0

Micro-debonding Ratio (MDR) USIT-E
1 0

Ratio of Gas Measurements to Total (GASR) USIT-E
1 0

Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E (Mrayl)

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

1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.5] - :
3 - UFLG 3 Value within [2.5 - 3.5] - :

UTIM Error
Pulse Origin Not Detected
WINLEN Error

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

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

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 26-May-2016 00:22:49

XYZ

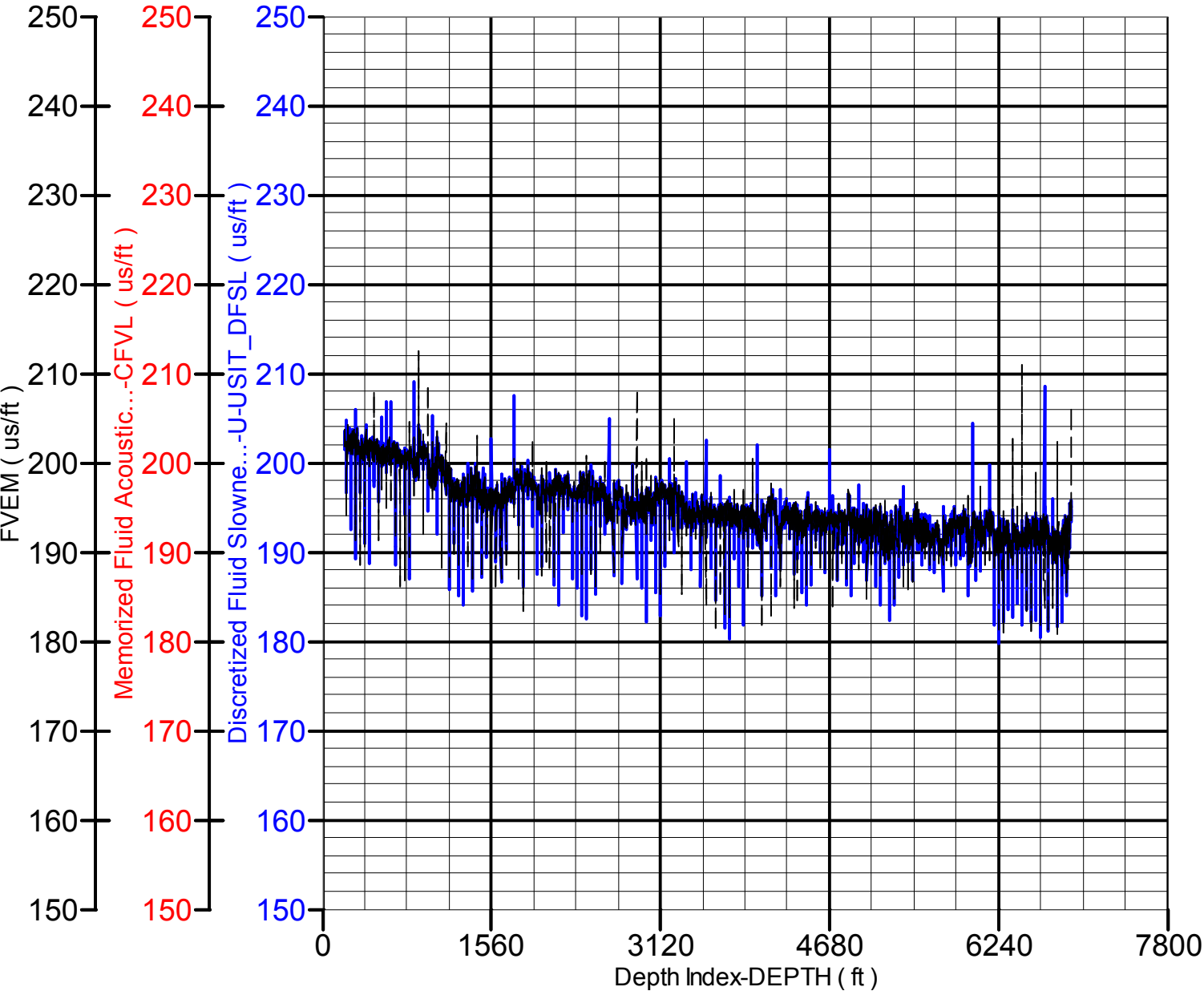
Company:Southern California Gas Company Well:Porter 68A
TWO: Log[2]:Up:S005

Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 6911.00 to 198.38 ft

DEPTH-U-USIT_DFSL — — - DEPTH-CFVL
— — - DEPTH-FVEM (FVEM : Data Not Found)



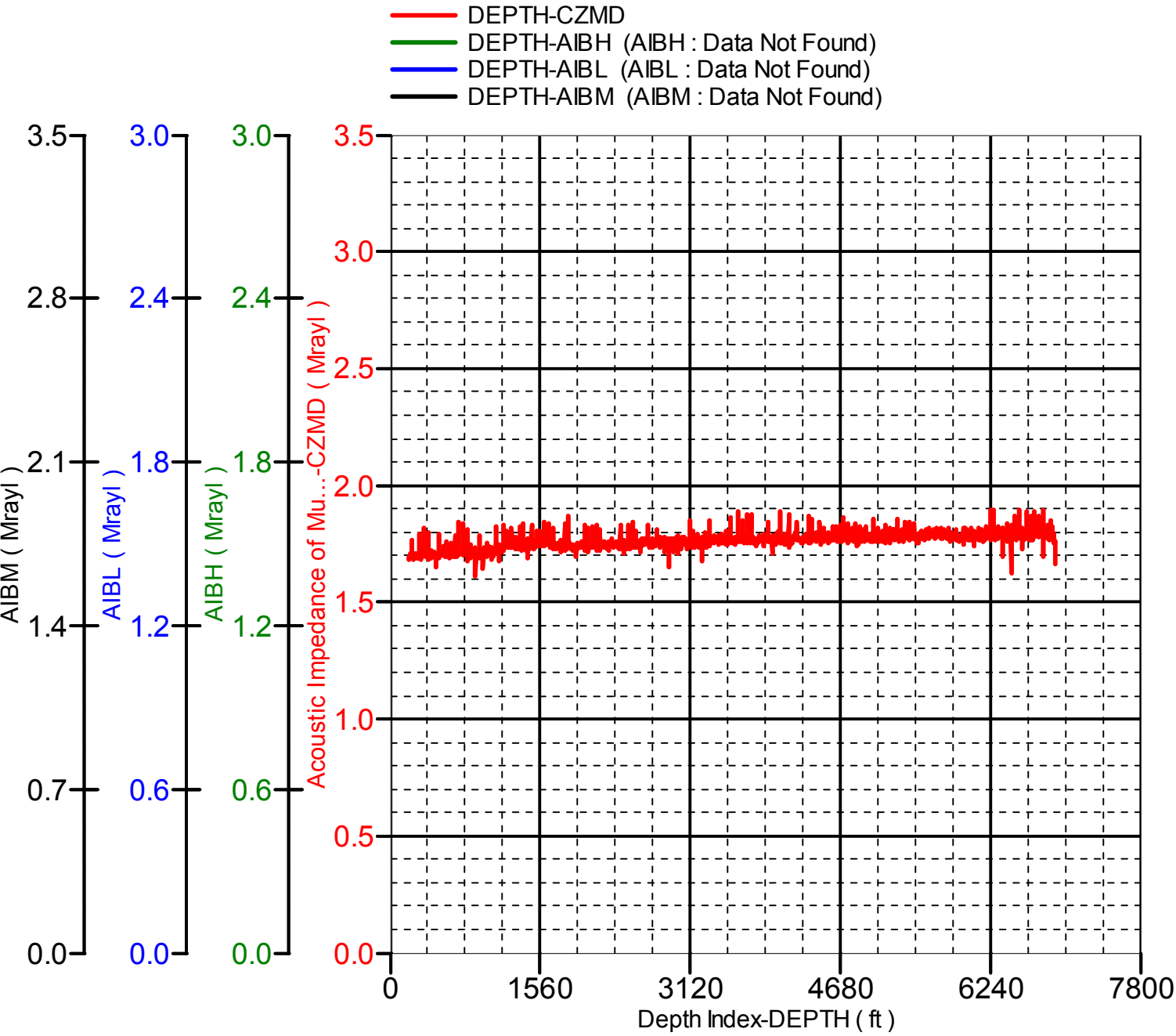
XYZ

Company:Southern California Gas Company Well:Porter 68A
TWO: Log[2]:Up:S005

Theoretical Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 6911.00 to 198.38 ft



Company:	Southern California Gas Company
Well:	Porter 68A
Field:	Aliso Canyon
County:	Los Angeles
State:	California

Schlumberger

Ultrasonic Imager

Gamma Ray - CCL

9-5/8" 43.5#/47#/53.5# casing