Schlumberger

Company: Southern California Gas Company

Well: Fernando Fee 35A

Field: Aliso Canyon

County: Los Angeles State: California

County: Los Angeles
Field: Aliso Canyon
Location:
Well: Fernando Fee 35A
Company: Southern California Gas Company

Ultrasonic Imager

Gamma Ray - CCL

8-5/8" 36# casing

Location:		Elev.: K.B.	1689.00 ft
		G.L.	1674.00 ft
		D.F.	
Permanent Datum:	Ground Level	Elev.:	1674.00 f
Log Measured From:	Kelly Bushing	15.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	Section:	Township:	Range:
04-037-21457-00	34	3N	16W

Logging Date		18-Aug-2016	
Run Number		One	
Depth Driller		6971.00 ft	
Schlumberger Depth		6983.00 ft	
Bottom Log Interval		6980.00 ft	
Top Log Interval		28.00 ft	
Casing Fluid Type		Brine with Polymer	
Salinity			
Density		9 lbm/gal	
Fluid Level		8.00 ft	
BIT/CASING/TUBING STRING			
Bit Size		11.00 in	
From		812.00 ft	
To		7026.00 ft	
Casing/Tubing Size		8.625 in	
Weight		36 lbm/ft	
Grade		N/A	
From		0.00 ft	
To		7026.00 ft	
Max Recorded Temperatures			
Logger on Bottom	Time	18-Aug-2016 10:32:00	
Unit Number	Location:	3079 Ventura	
Recorded By		I. Kartawidjaja	
Witnessed By		Mr. Tom McMahon	

Disclaimer

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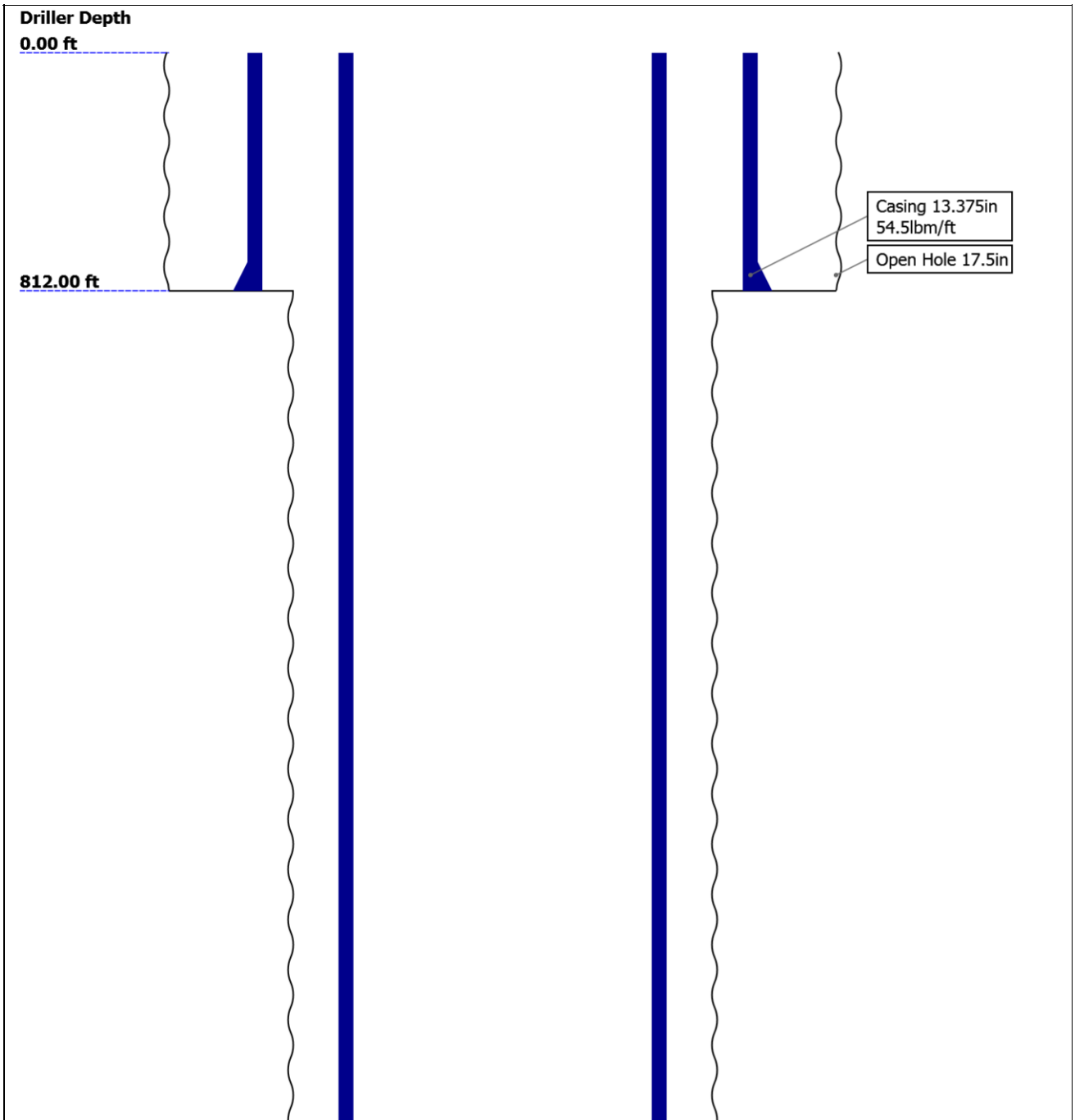
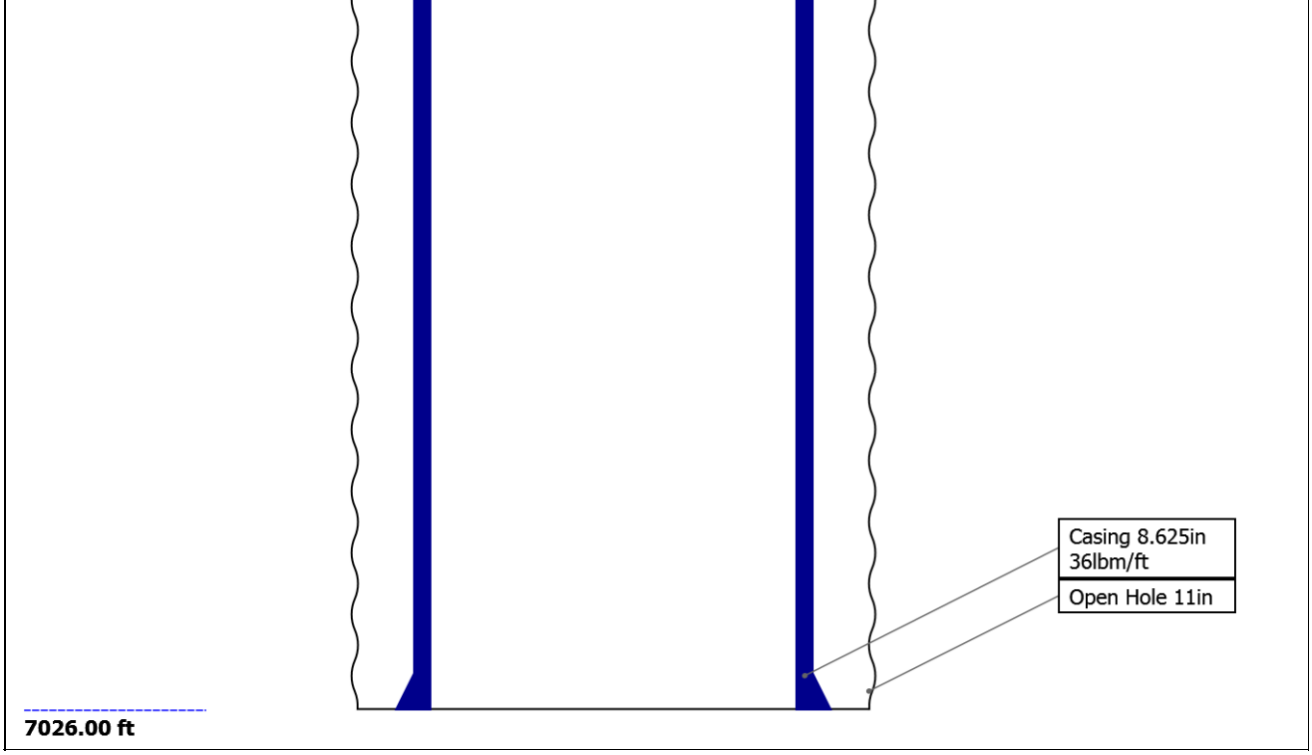
Well Sketch





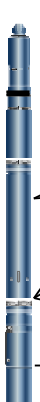
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5	11				
Top Driller (ft)	0	812				
Top Logger (ft)	0	812				
Bottom Driller (ft)	812	7026				
Bottom Logger (ft)	812	7026				
Casing						
Size (in)	13.375	8.625				
Weight (lbm/ft)	54.5	36				
Inner Diameter (in)	12.615	7.825				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	812	7026				
Bottom Logger (ft)	812	7026				

Remarks and Equipment Summary

One: Toolstring

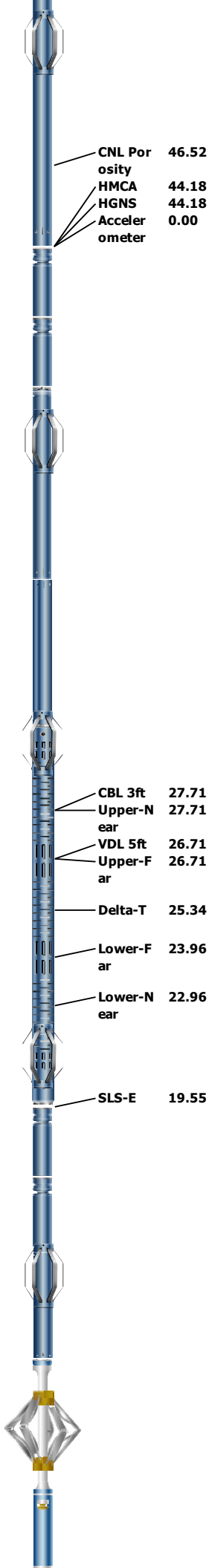
Equip name	Length	MP name	Offset
LEH-QT:2867	**59.51**	Red	
LEH-QT:2867			
DTC-H	**56.59**	**CTEM**	**55.69**
ECH-KC		**HV**	**0.00**
DTC-H		**TelStatus**	**53.59**
		ToolStatus	**53.59**
HGNS-H:3923	**53.59**	**Temperature**	**53.57**
HGNH:4819		**GR**	**52.85**
NSR-E:130			



One: Remarks

Depth correlated to Welex Induction Electrical log dated 8-6-74
Correlated neutron from current logging to resistivity between 6650 and 6750 ft
USIT logged at 10 deg 1.5 inch, speed 3000 fph. Repeat at 10 deg 0.6 inch at 1200 fph
Anomalies repeated at very hi-res
All passes recorded with 0 psi surface pressure
Top of sand at 6971 ft (tubing depth). Logged from above top of sand to surface.
Speed correction applied to data to correct for tool stick and slipping

NSR-F:130
3
NPV-N
HACCZ-H:
4177
HMCA-H
HGNS-H:3
923



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678
DSLC-H:82
36
SLS-E:639

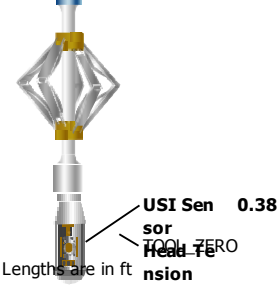
ECH-MFA:
199
USAC-A:1
726
USIS-A:18
04
USSC-B:99
2
USRS-B:17
58
USI-SENS
OR:1586

Rig: Ensign 341

Toolstring ran as per toolsketch.

Two centralizers on USIS and one GEMCO used to centralize ultrasonic tool.

Thank you for choosing Schlumberger!



Lengths are in ft
Maximum Outer Diameter = 6.500 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	Aug-18-2016 09:34	00:09:08	89.8 - 561.27 ft	Fluid Properties Measurement
Log[3]:Down	Aug-18-2016 09:50	00:15:42	1786.83 - 6968.49 ft	Fluid Properties Measurement
Log[5]:Up	Aug-18-2016 10:17	00:04:24	6976.47 - 6894.42 ft	Hi-Res Repeat
Log[6]:Up	Aug-18-2016 10:24	00:05:44	6983.35 - 6724.32 ft	Repeat Pass
Log[7]:Up	Aug-18-2016 10:32	01:34:53	6987.04 - 5184.38 ft	Main Pass #1
Log[9]:Up	Aug-18-2016 11:10	00:05:26	5728.44 - 5622.66 ft	Hi-Res Repeat
Log[11]:Up	Aug-18-2016 11:29	01:29:07	5434.88 - 1280.64 ft	Main Pass #2
Log[12]:Up	Aug-18-2016 13:08	01:30:19	1429.75 - 45.18 ft	Main Pass #3
Log[13]:Up	Aug-18-2016 13:59	00:07:03	4732.42 - 4601.74 ft	Hi-Res Repeat
Log[14]:Up	Aug-18-2016 14:07	00:06:13	4475.49 - 4362.17 ft	Hi-Res Repeat
Log[15]:Up	Aug-18-2016 14:16	00:08:30	3489.84 - 3324.54 ft	Hi-Res Repeat
Log[16]:Up	Aug-18-2016 14:27	00:10:21	2688.75 - 2500.52 ft	Hi-Res Repeat
Log[17]:Up	Aug-18-2016 14:40	00:05:41	1427.89 - 1325.2 ft	Hi-Res Repeat
Log[18]:Up	Aug-18-2016 14:53	00:05:15	172.29 - 22.17 ft	Main Pass #4, Surface
Log[19]:Up	Aug-18-2016 14:59	00:03:05	63.76 - 25.64 ft	Hi-Res Repeat

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Log[18]:Up	171.59	21.44

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

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

Mud Impedance = "Theoretical".
CZMD uses theoretical results.
MUD_N_THE=1.00
DFD=1.08g/cm3(9.00lbm/gal)

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

Composite 1

Main Pass 5 in = 100 ft

Software Version

Acquisition System	Version
Maxwell 2016 SP1	6.1.58882.3100
Application Patch	Wireline_Hotfix-Perfo-2016SP1_6.1.63773

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 8.10	Synergy SV451EC version 9.10
WAFE-FEC	Synergy SV451EC version 8.10	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

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[7]:Up	Up	5184.38 ft	6987.38 ft	18-Aug-2016 10:32:04 AM	18-Aug-2016 11:06:58 AM	ON	2.26 ft	No
One	Log[11]:Up	Up	1280.11 ft	5434.15 ft	18-Aug-2016 11:29:44 AM	18-Aug-2016 12:58:51 PM	ON	11.15 ft	No
One	Log[12]:Up	Up	44.45 ft	1429.03 ft	18-Aug-2016 1:08:22 PM	18-Aug-2016 1:38:42 PM	ON	11.26 ft	No
One	Log[18]:Up	Up	21.44 ft	171.59 ft	18-Aug-2016 2:53:06 PM	18-Aug-2016 2:58:21 PM	ON	-0.05 ft	No

All depths are referenced to toolstring zero

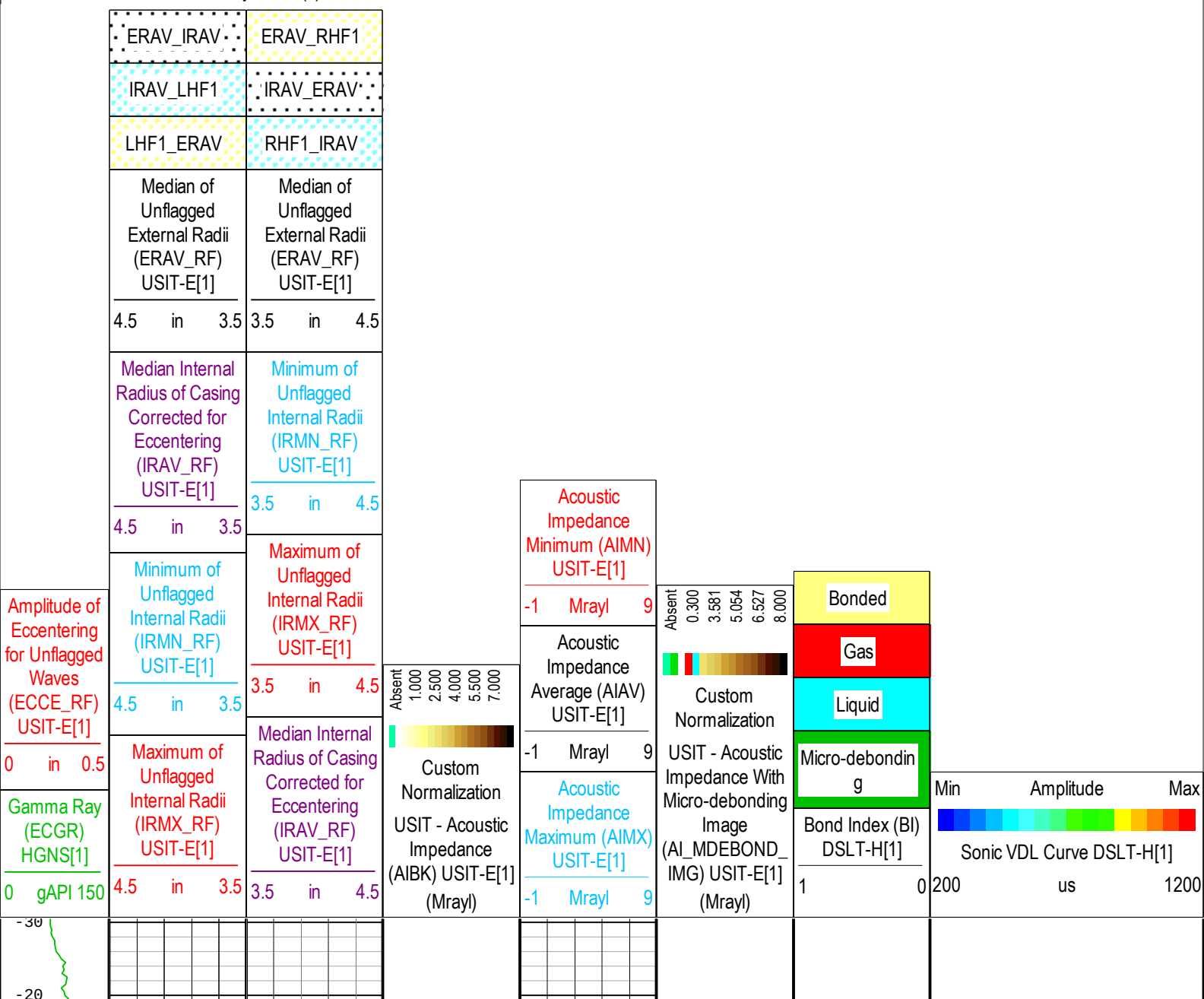
Log

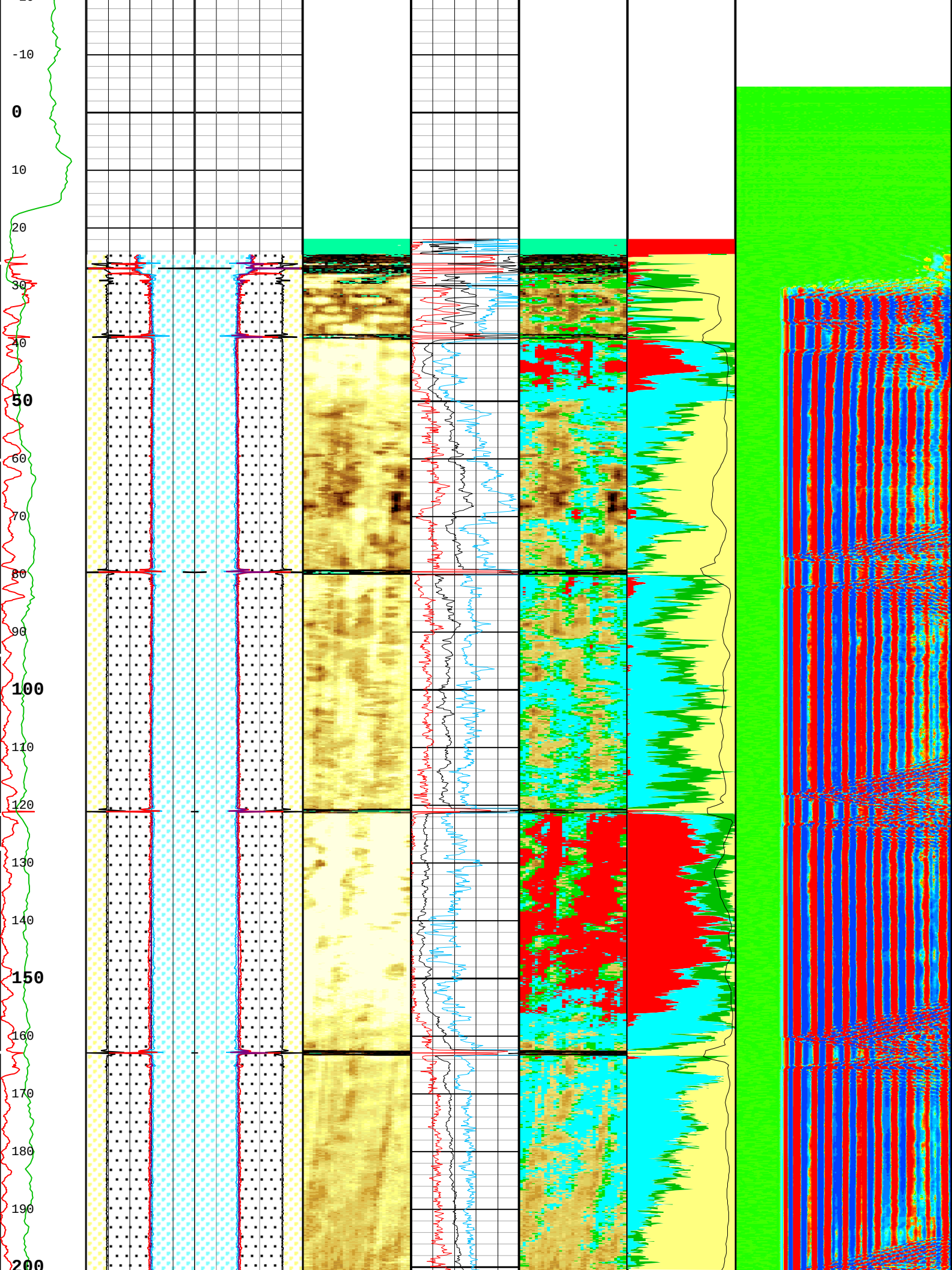
Company:Southern California Gas Company Well:Fernando Fee 35A

Composite 1:S006

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: 18-Aug-2016 20:18:55

TIME_1900 - Time Marked every 60.00 (s)

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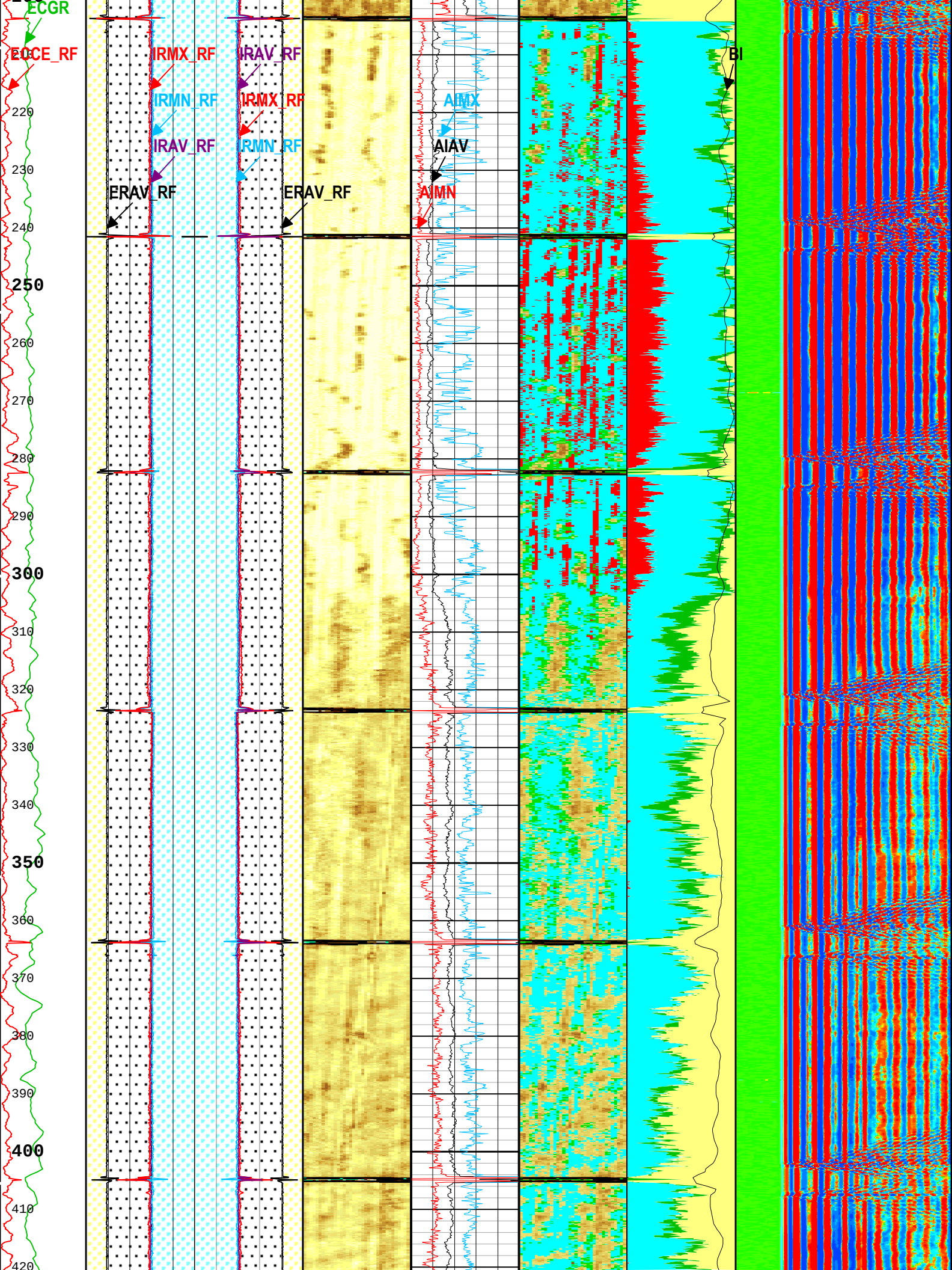
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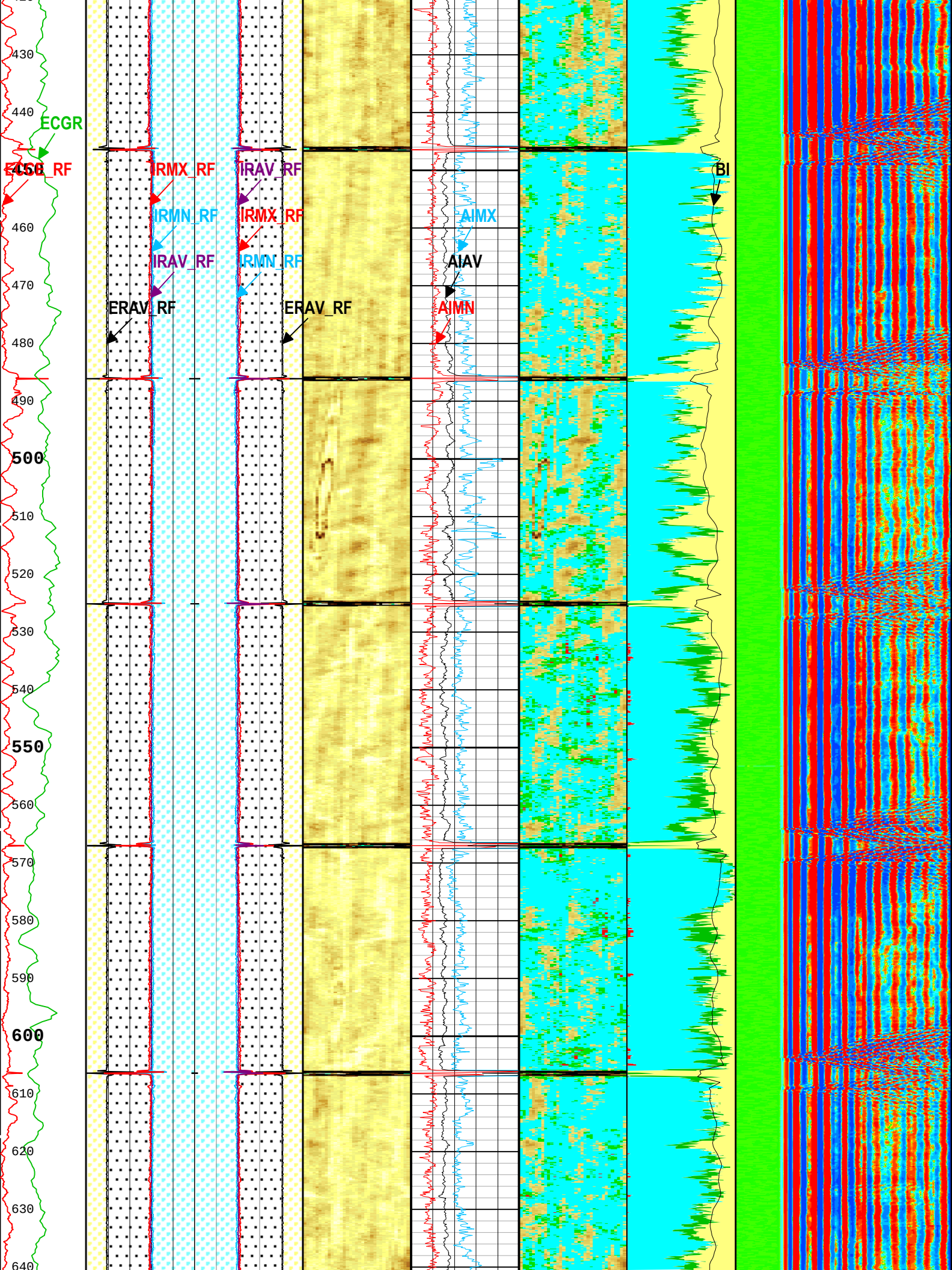
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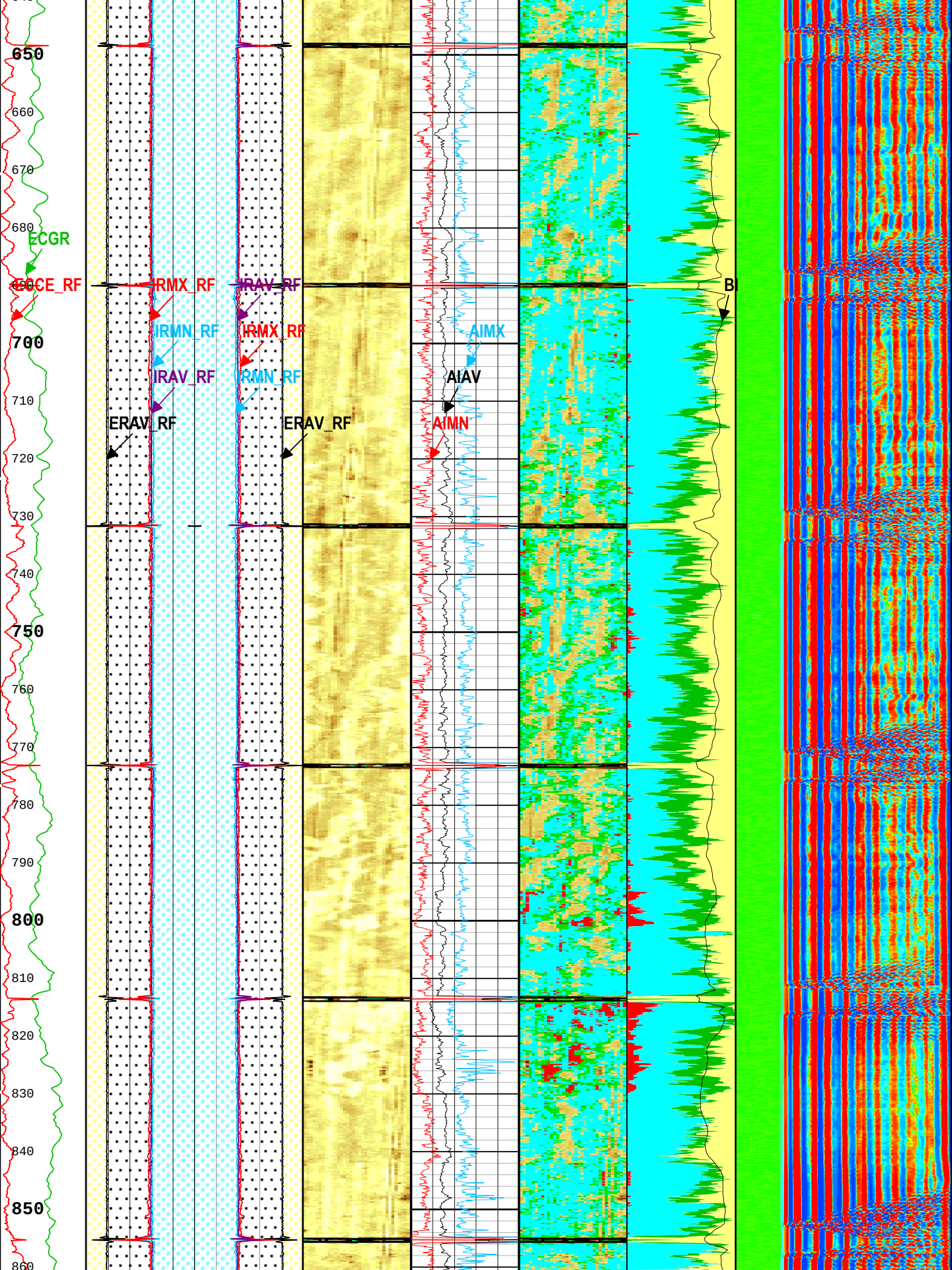
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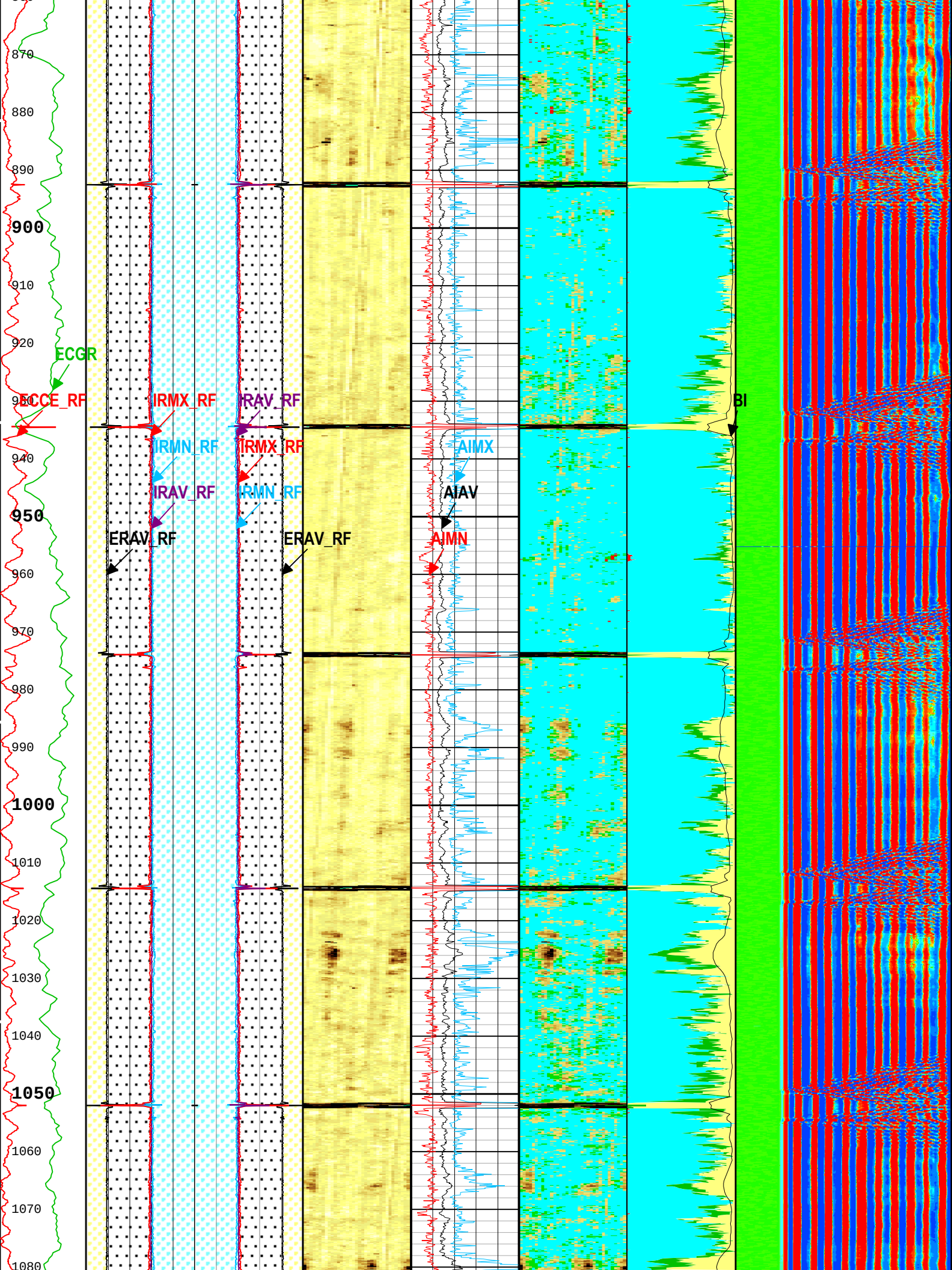
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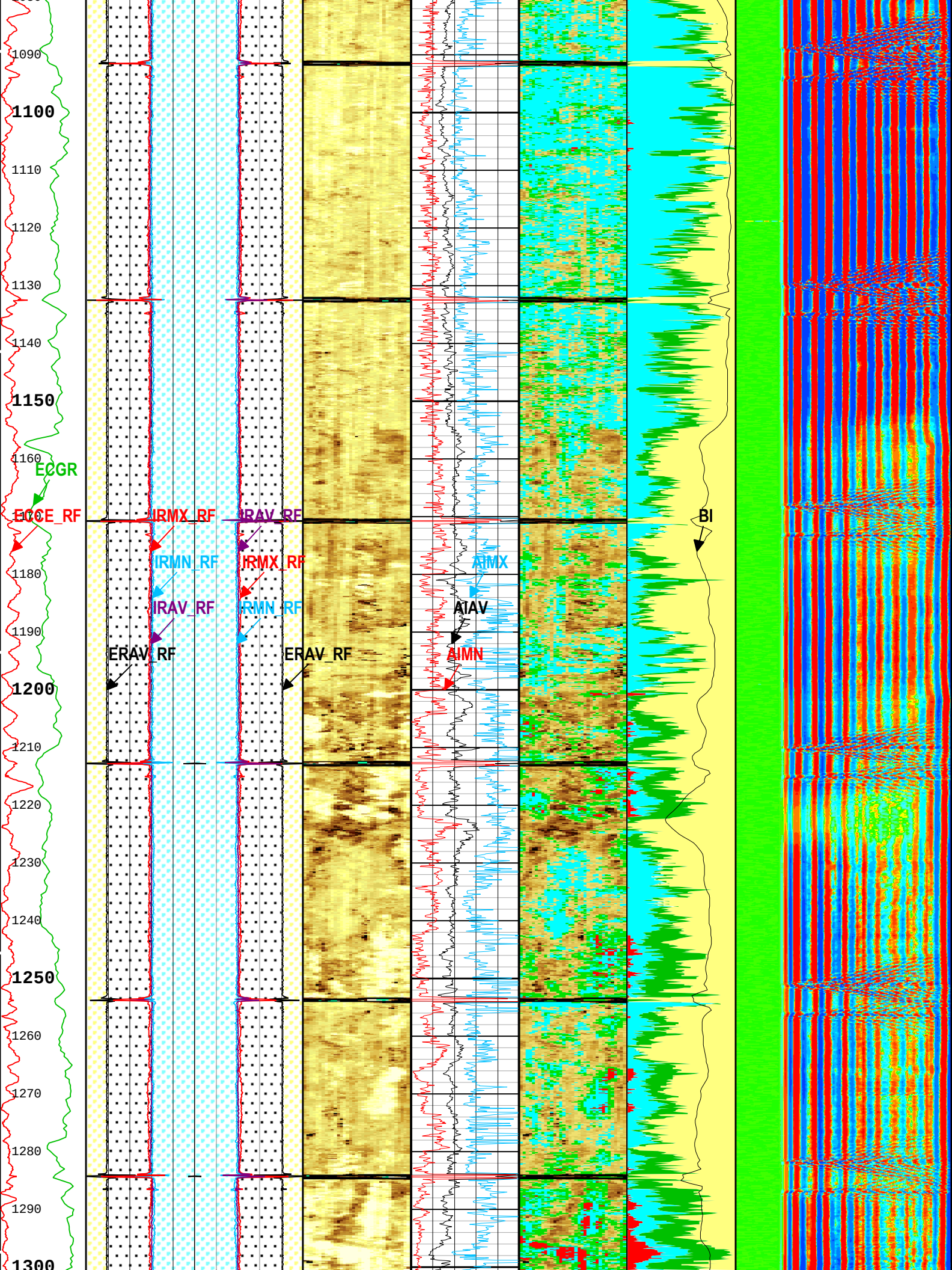
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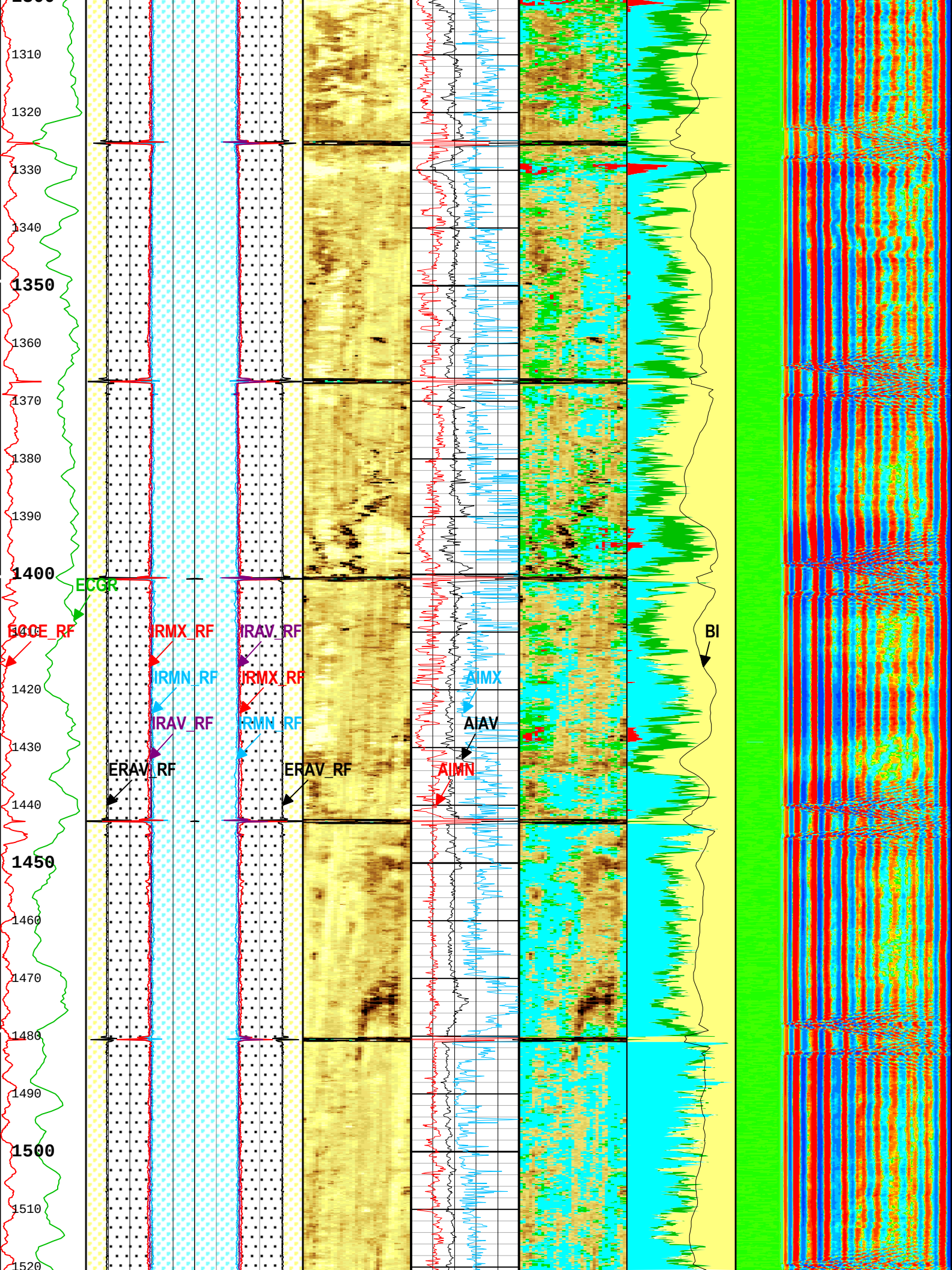
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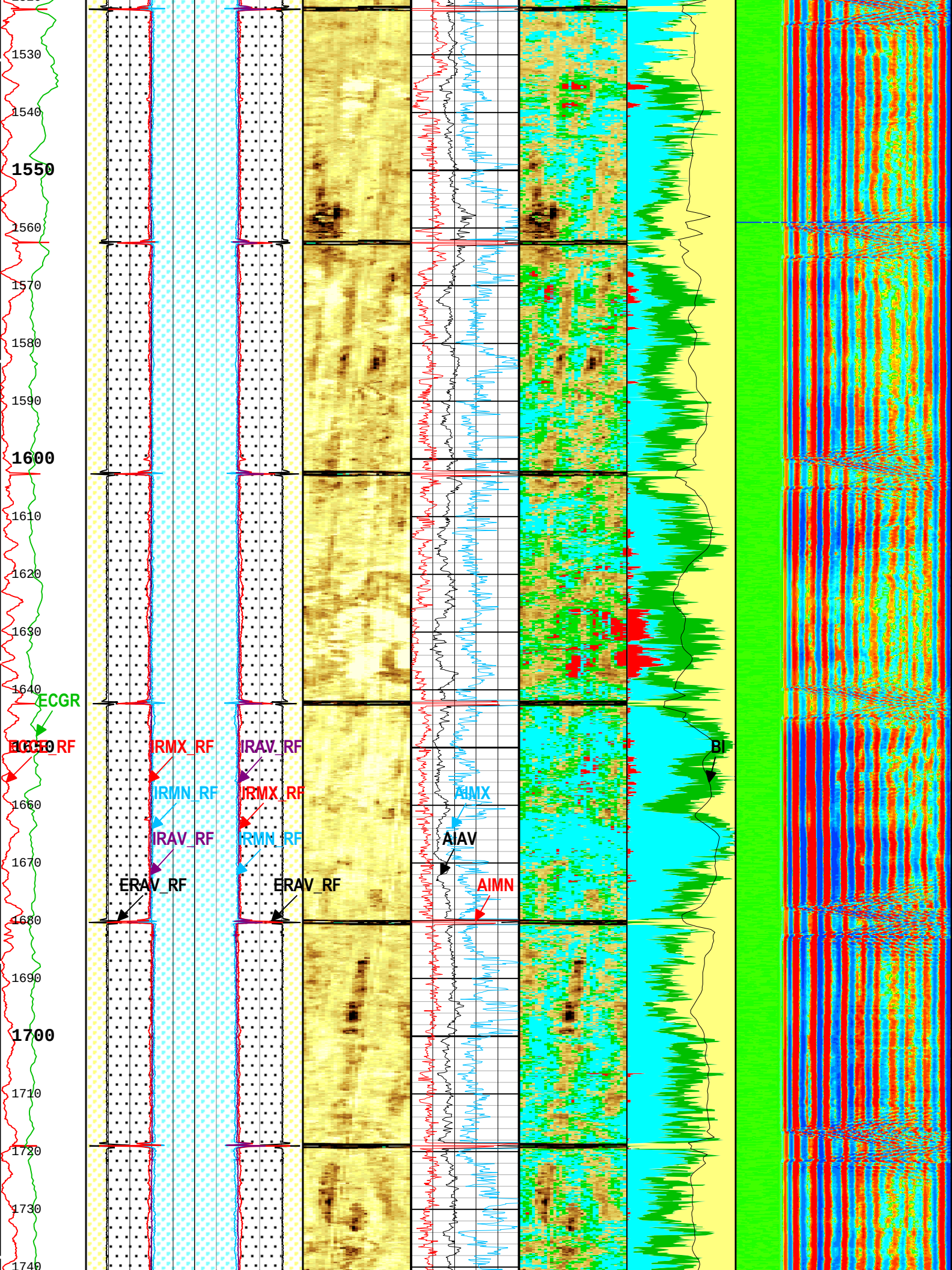
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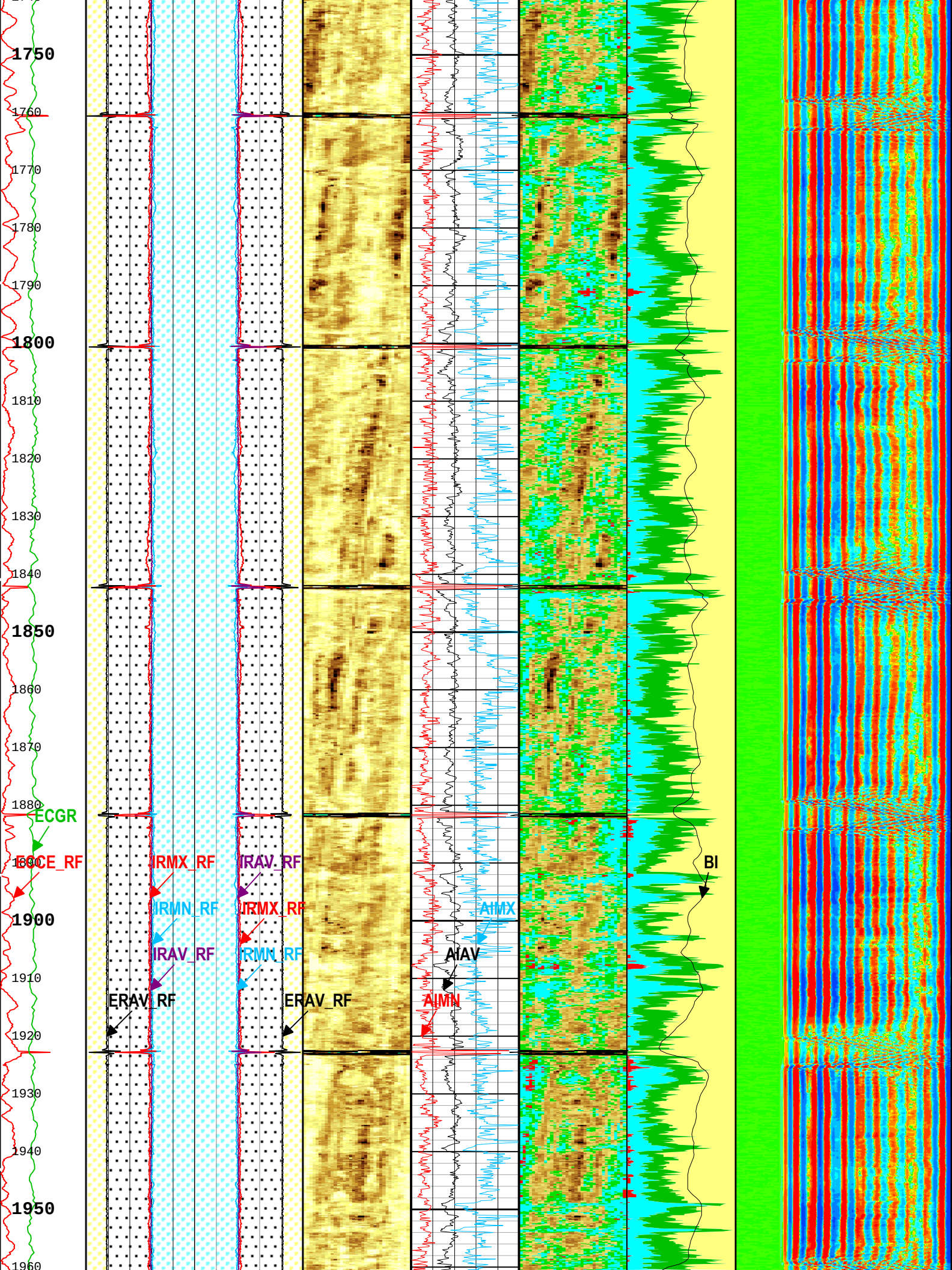
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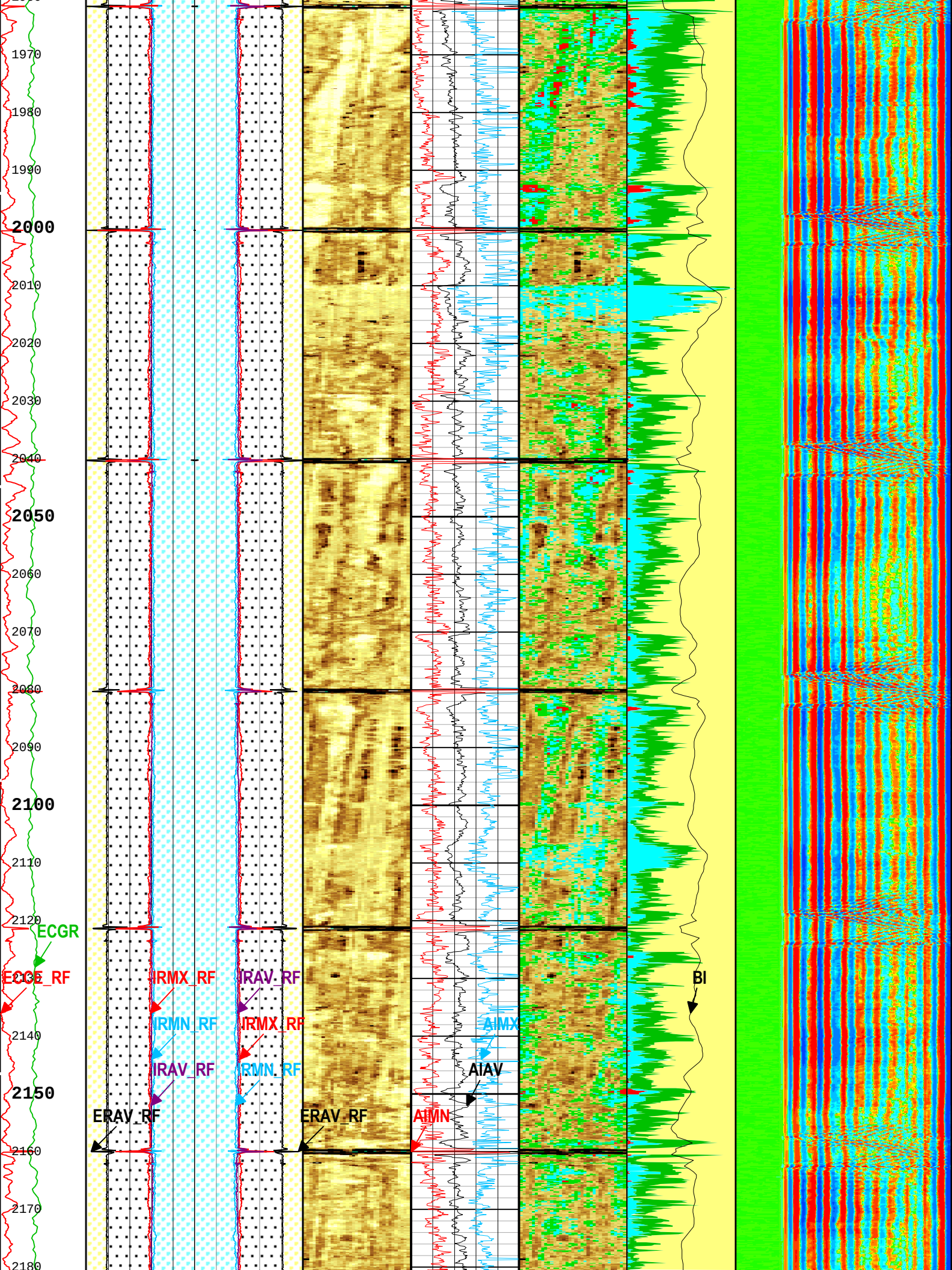
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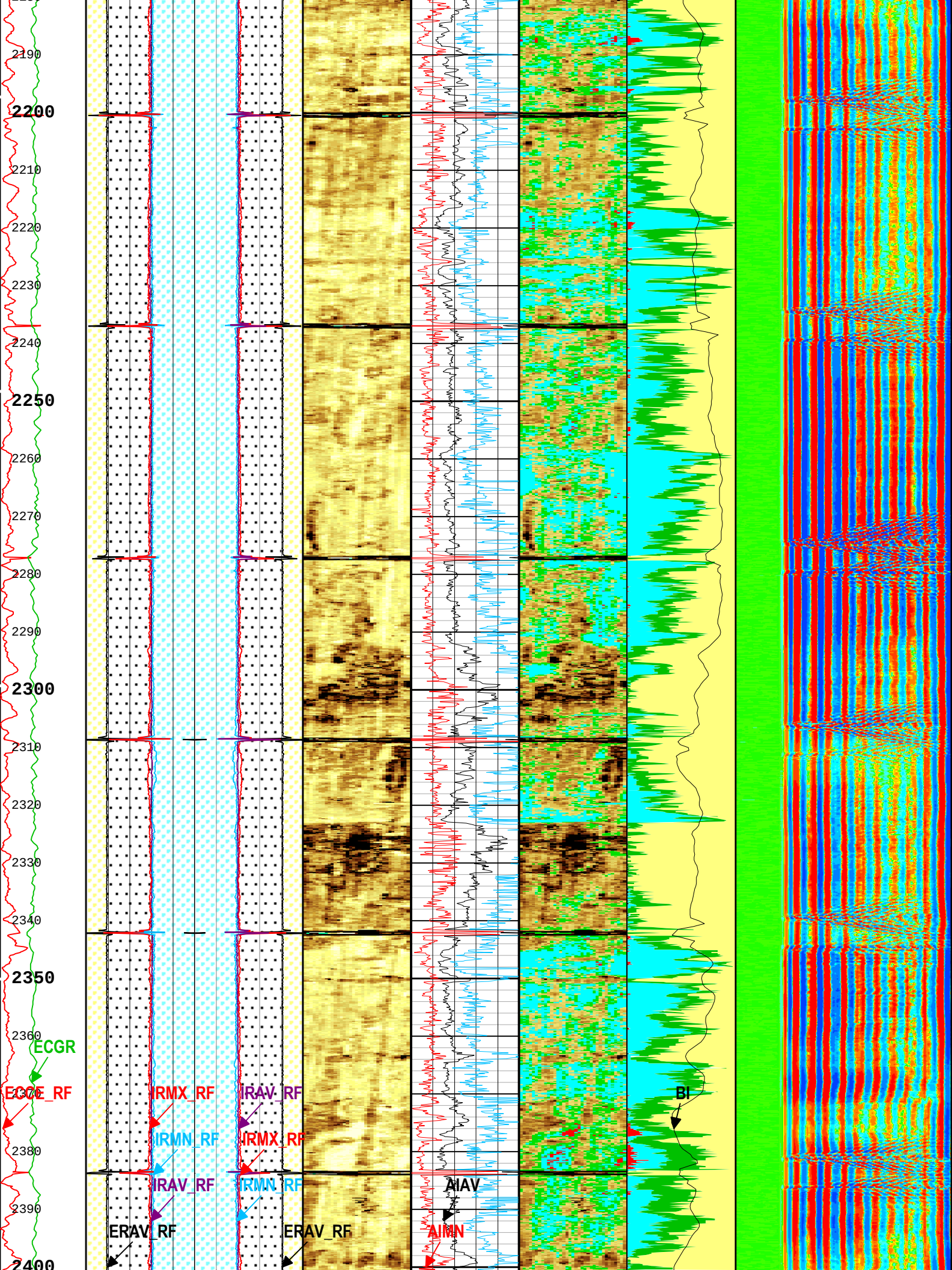
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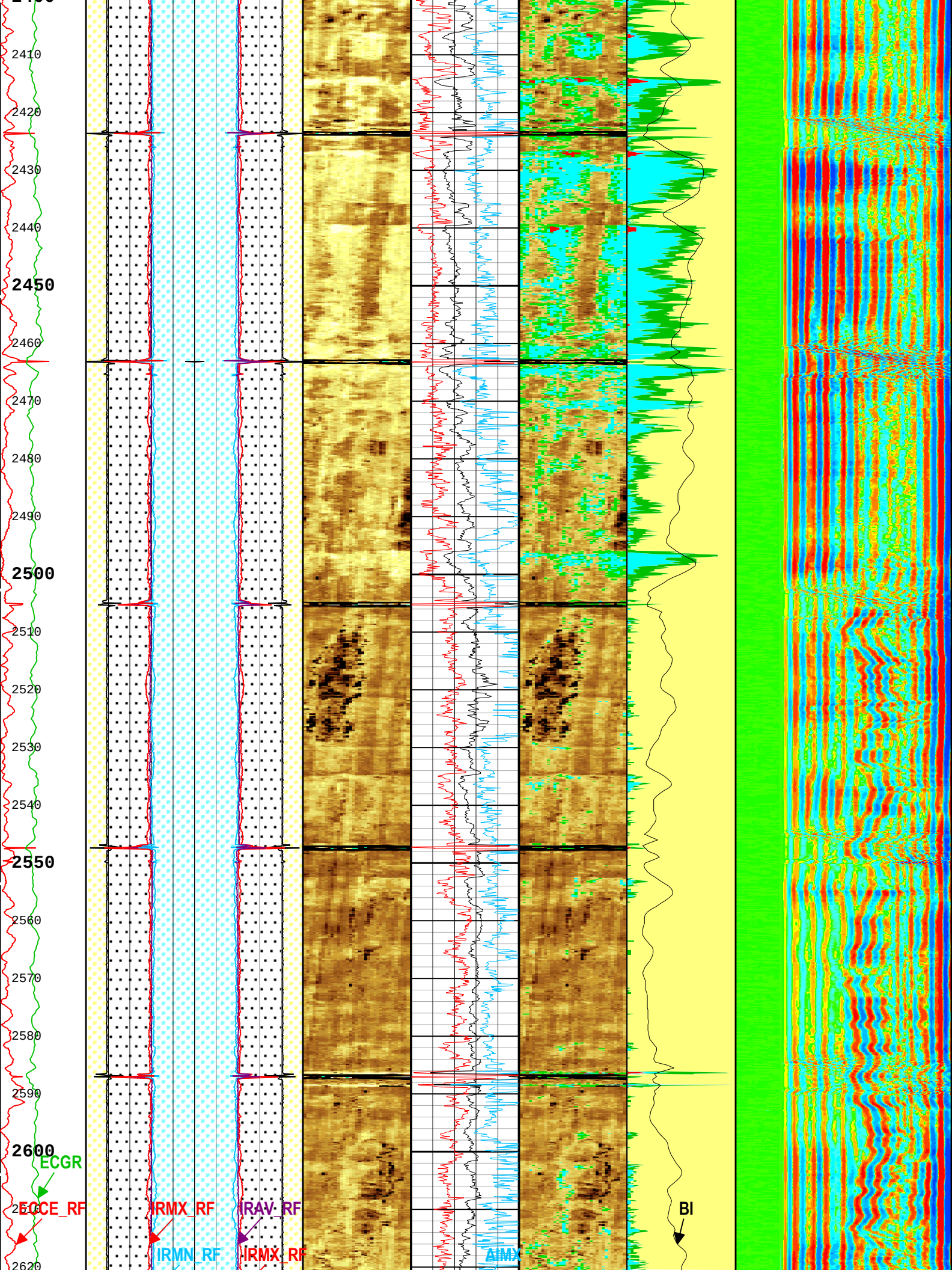
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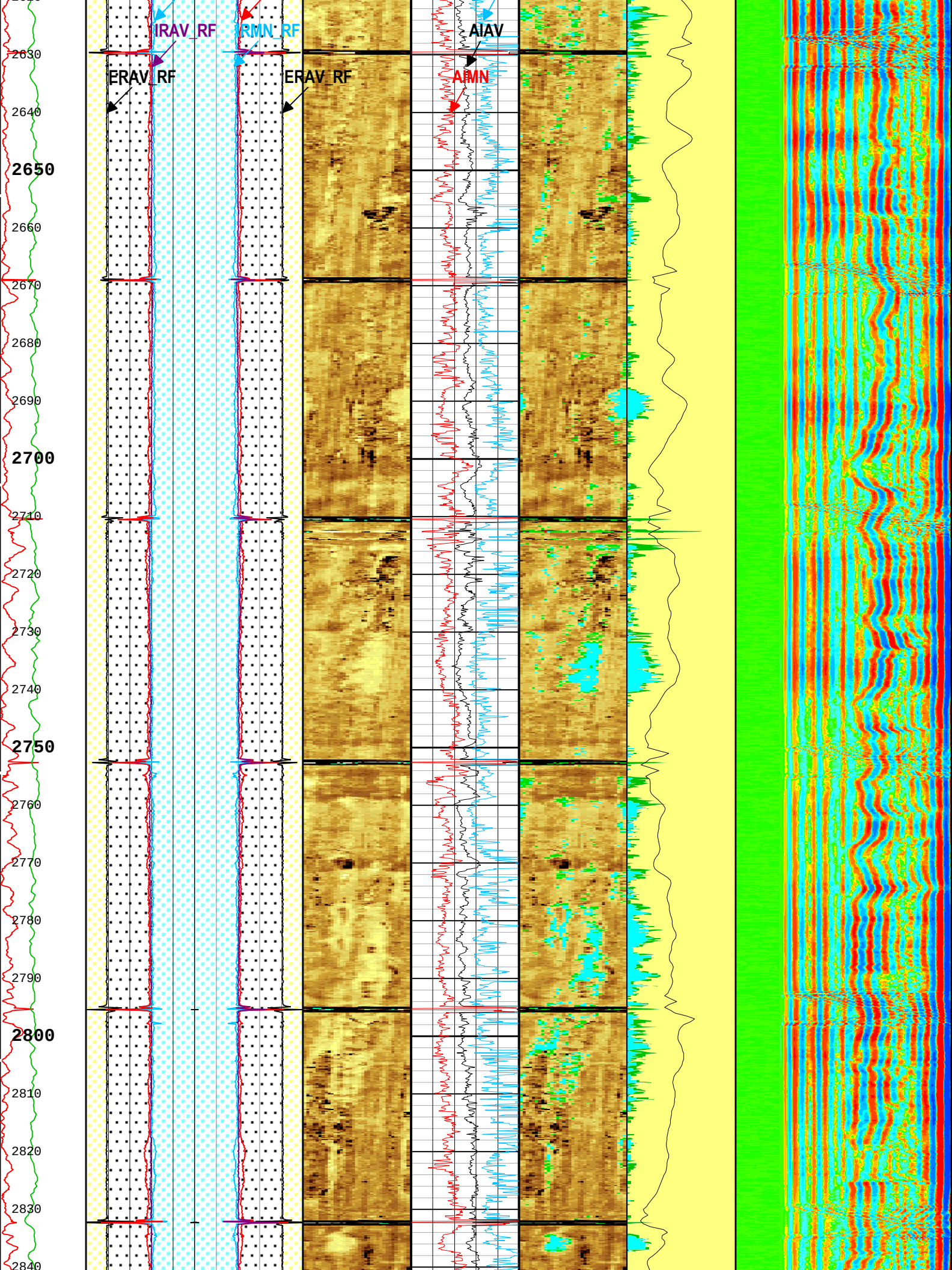
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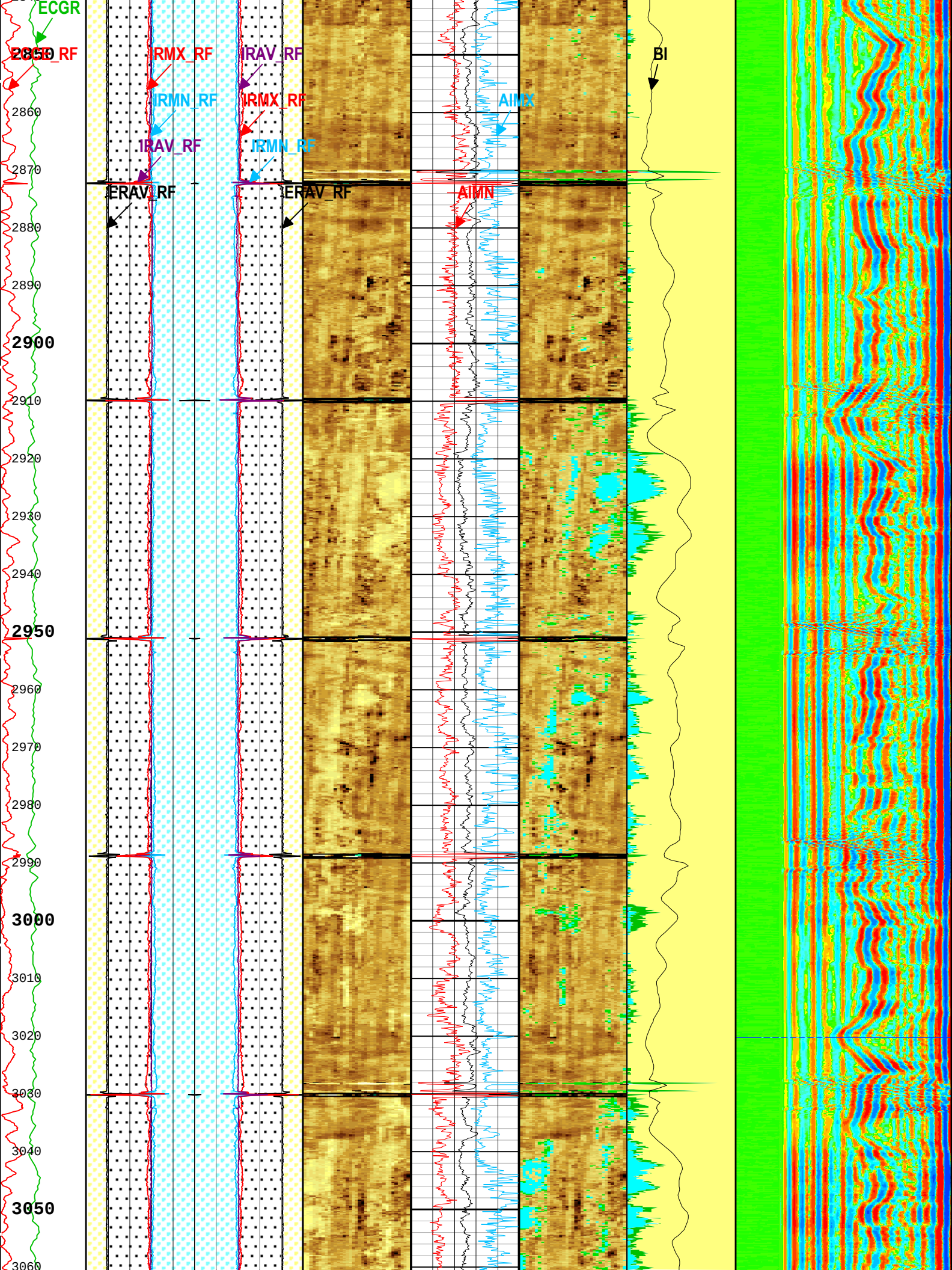
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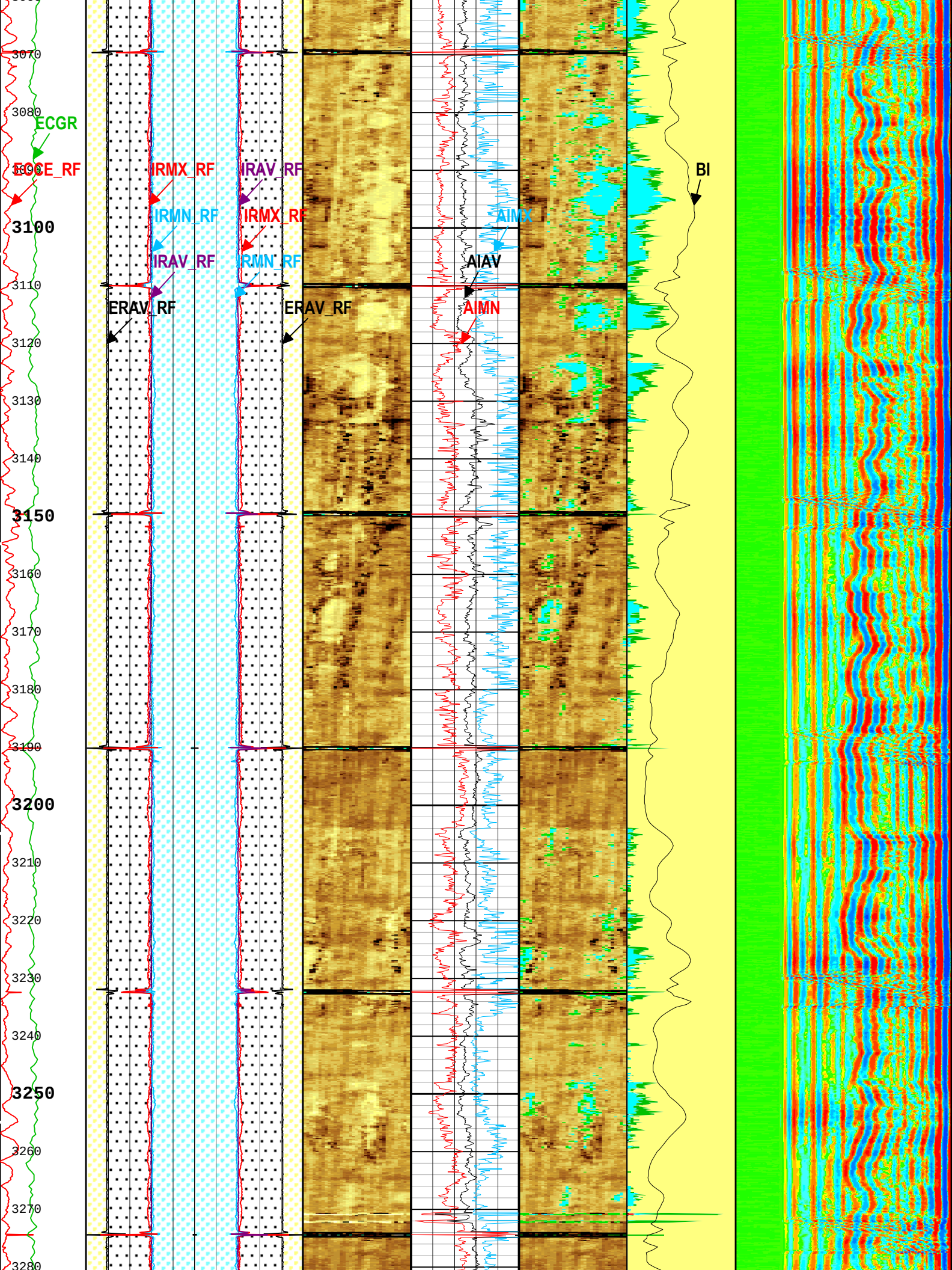
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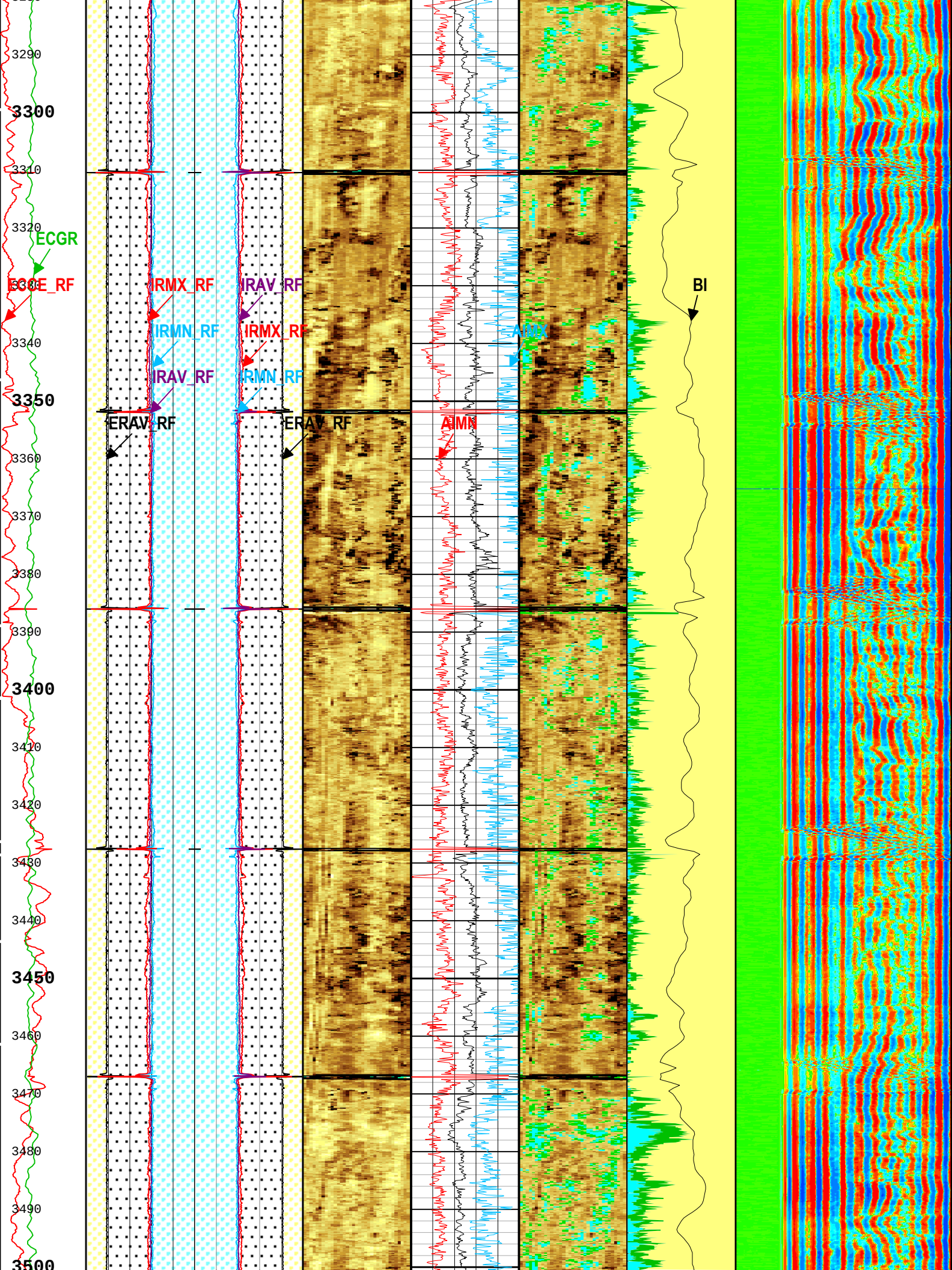
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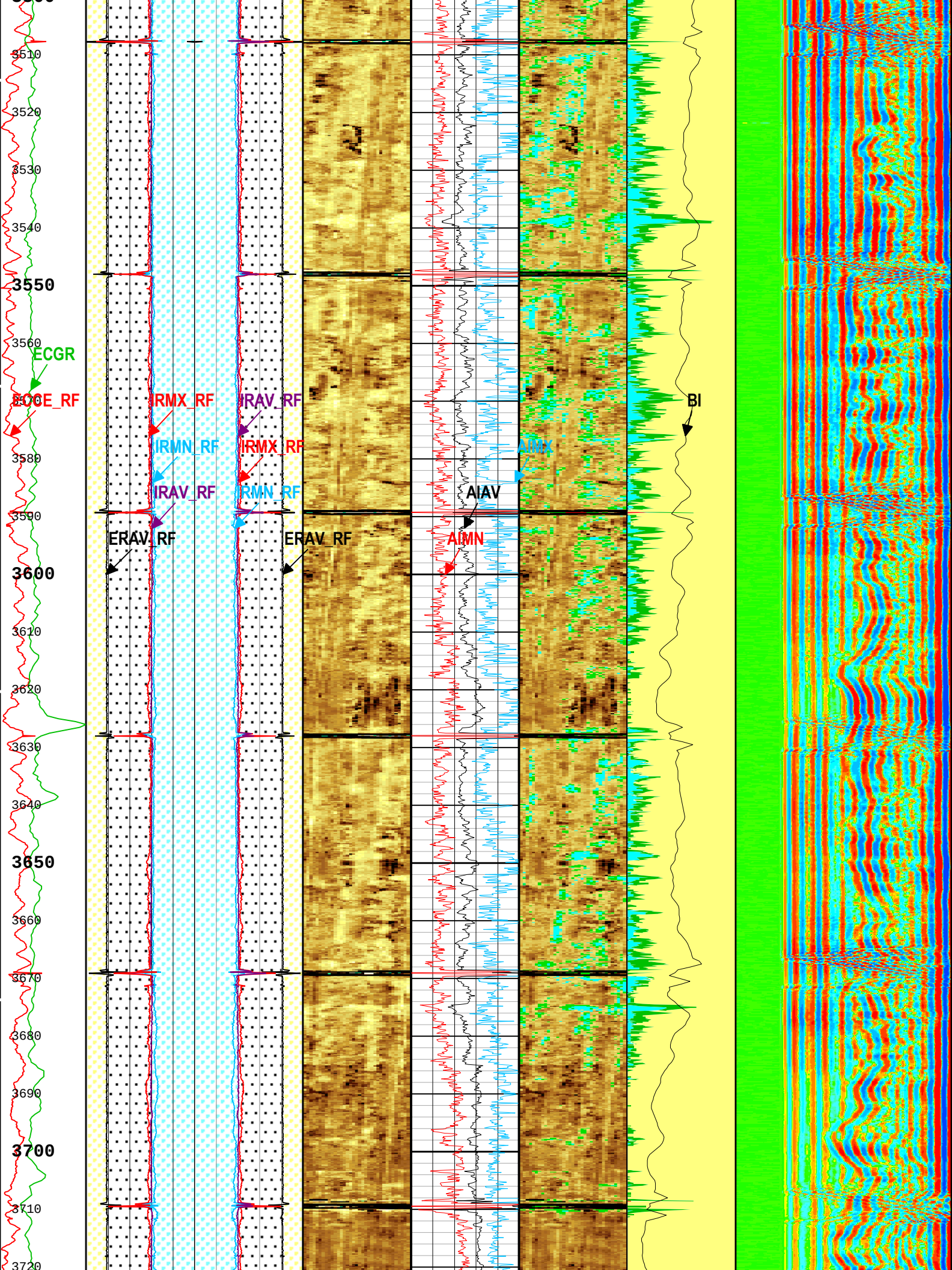
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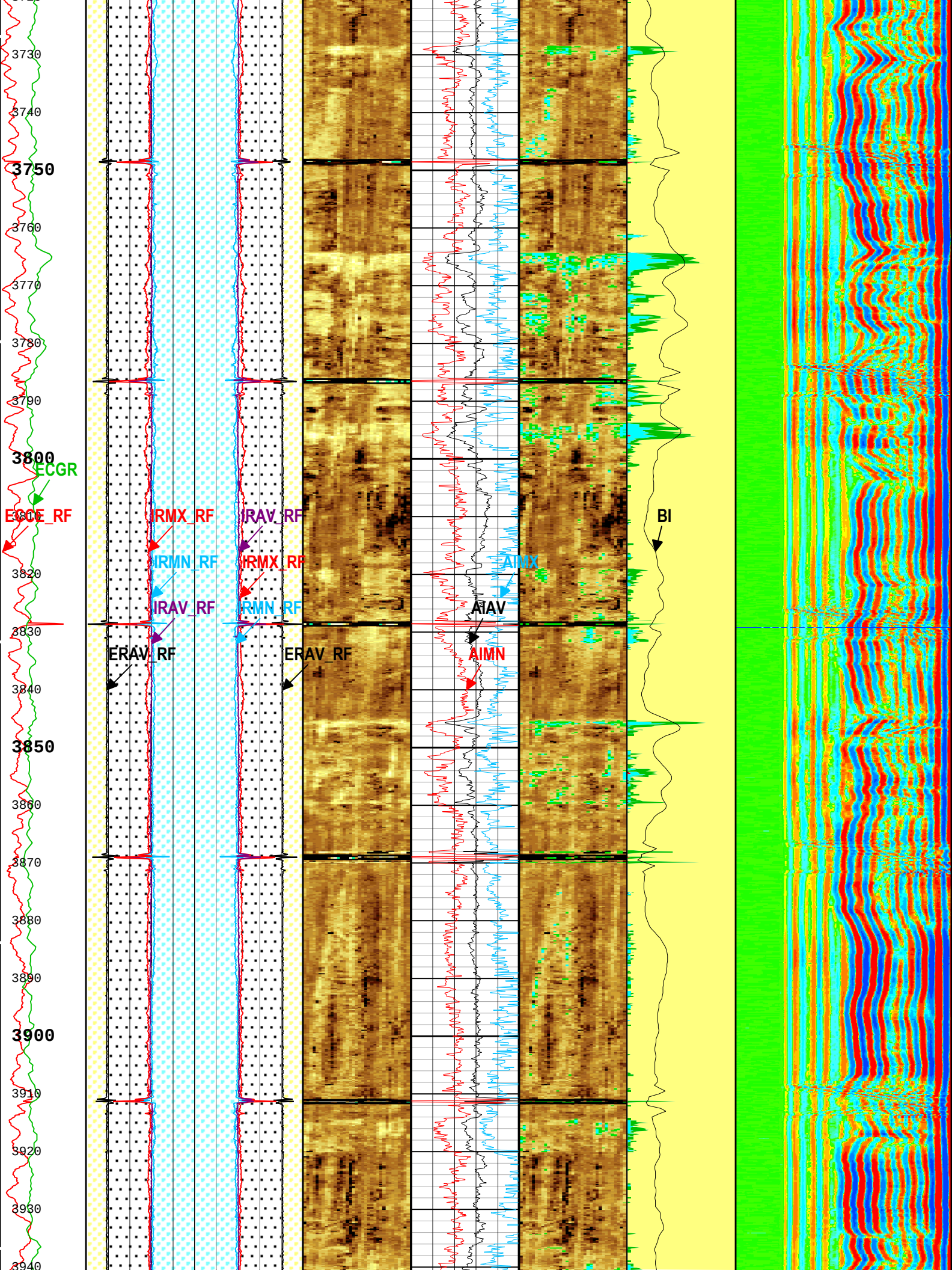
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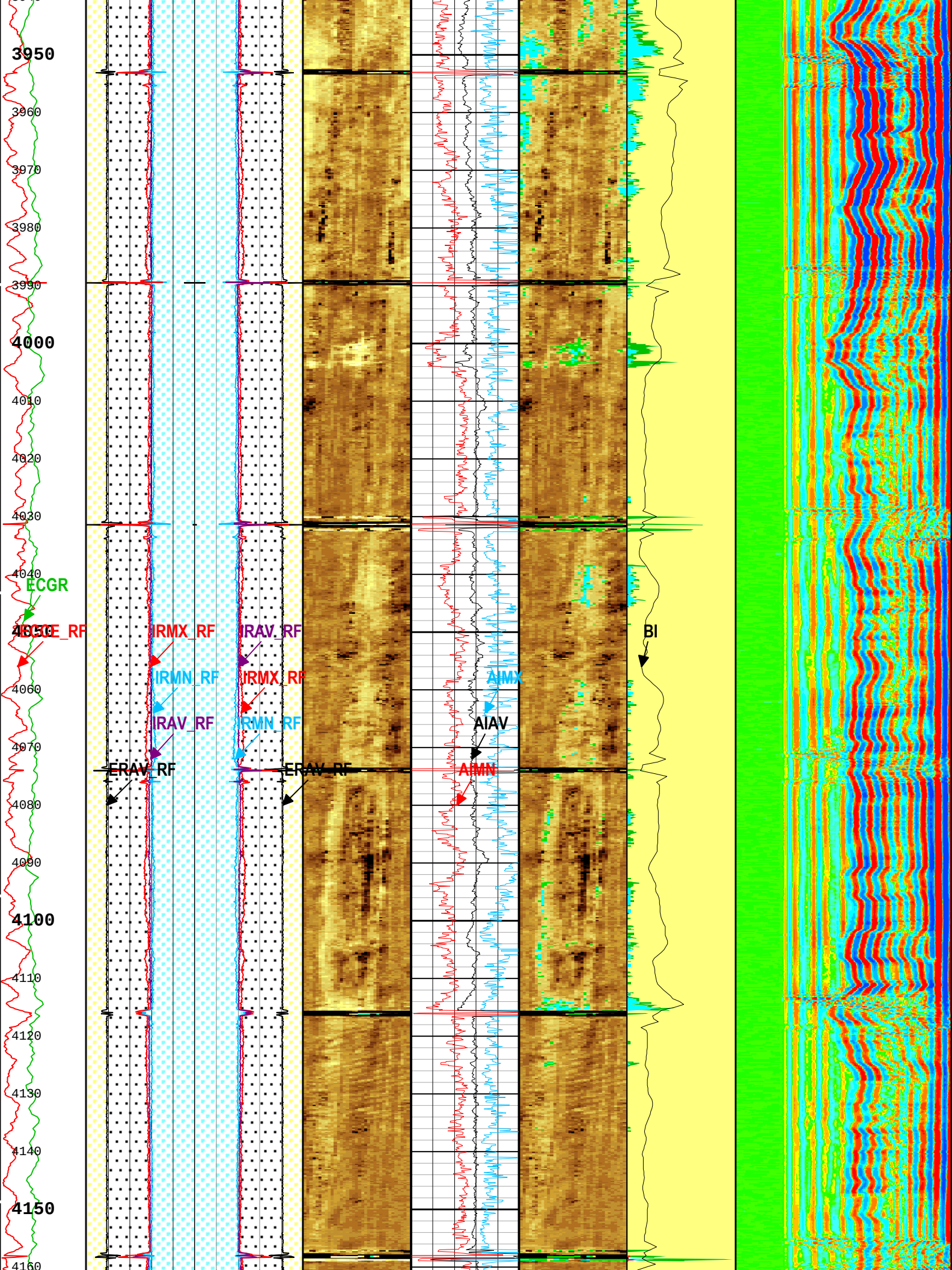
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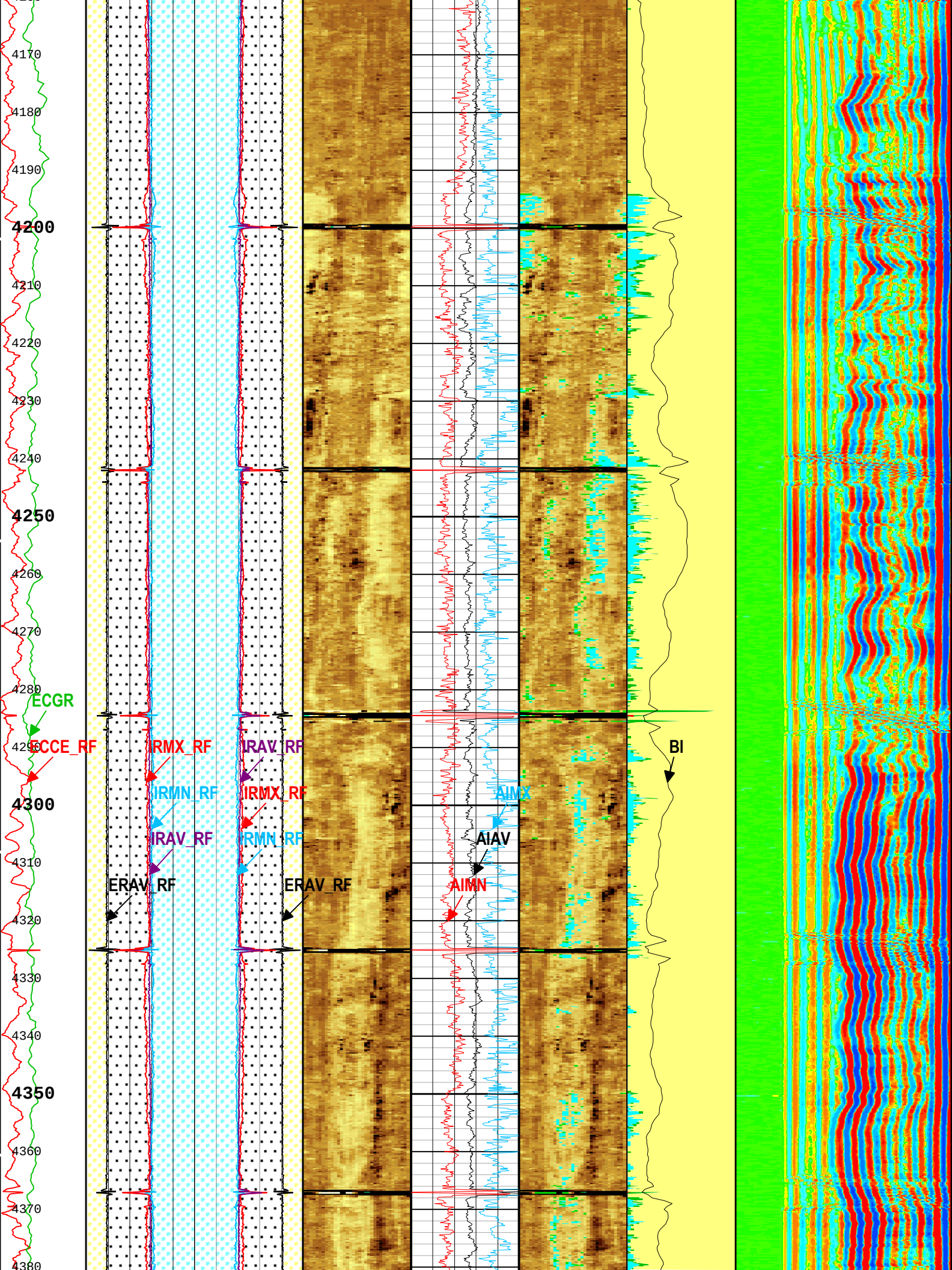
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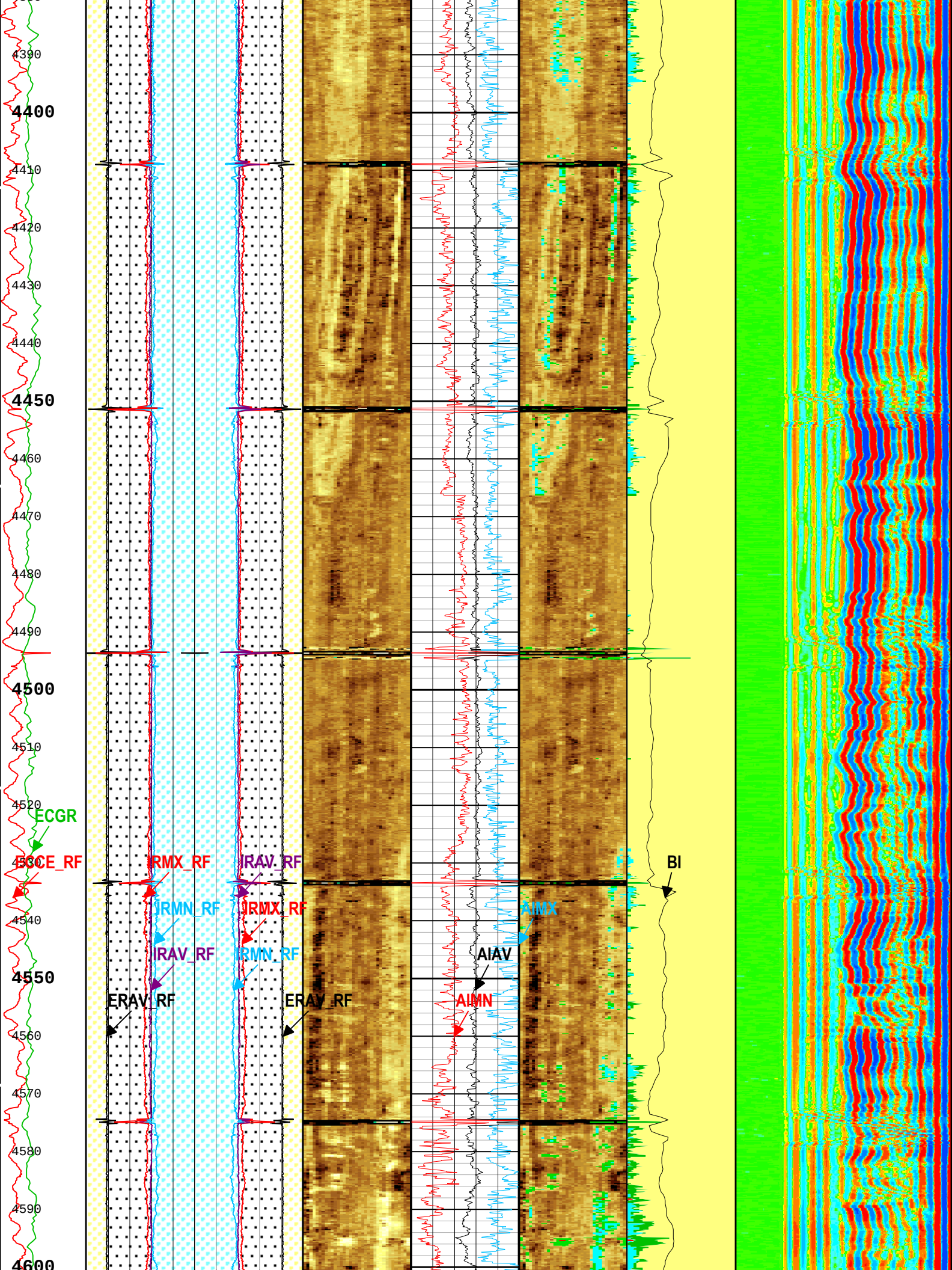
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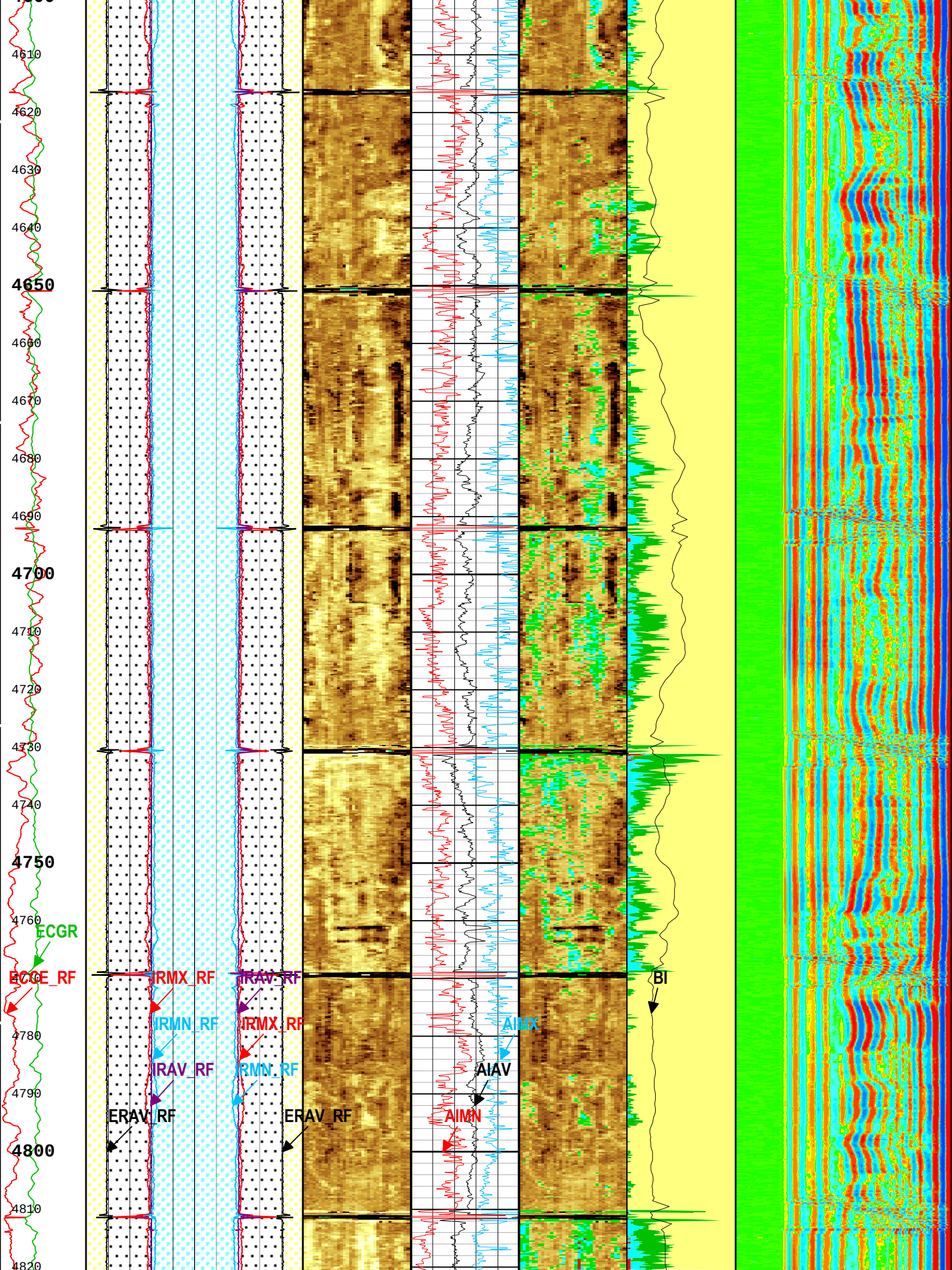
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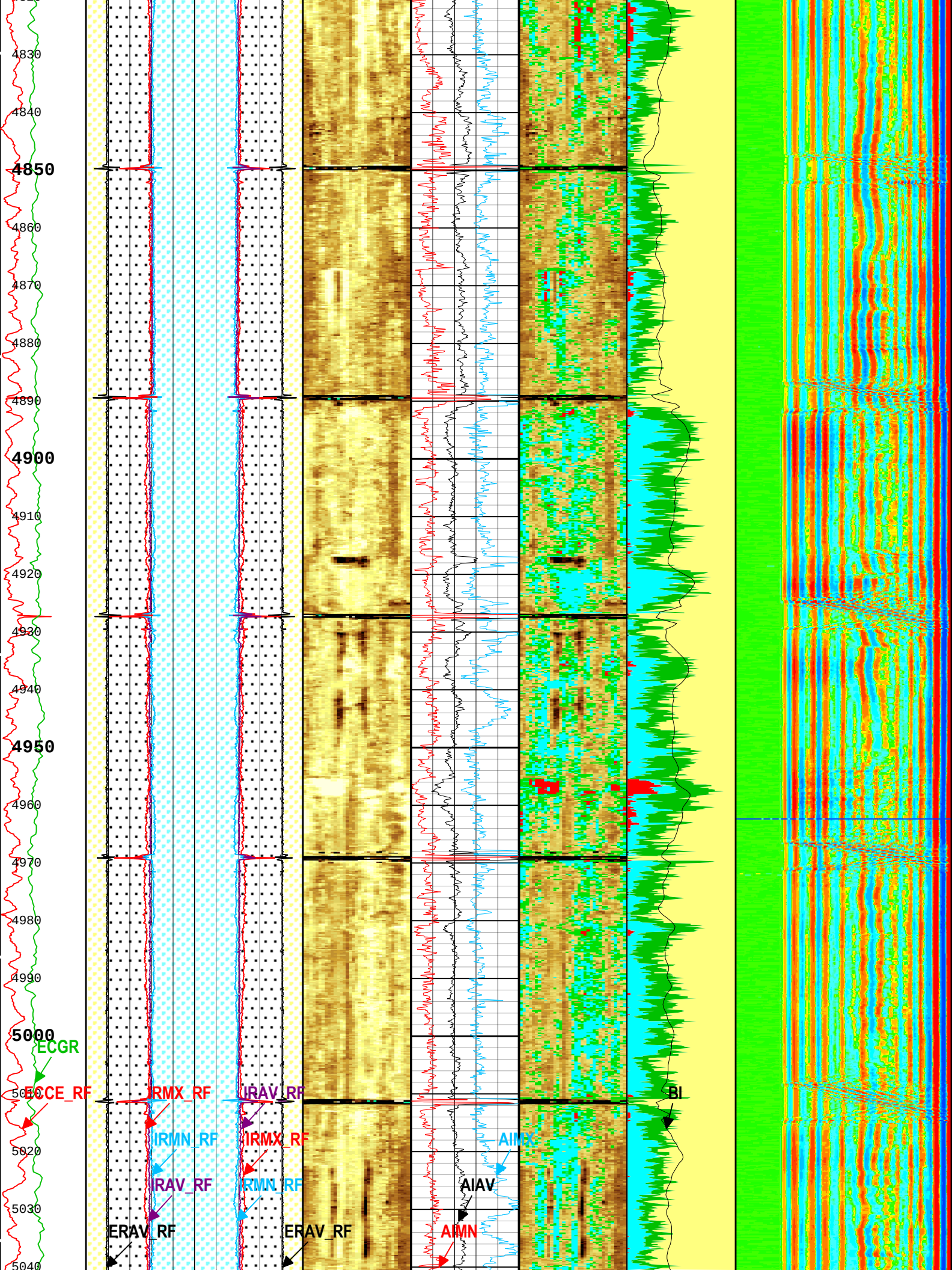
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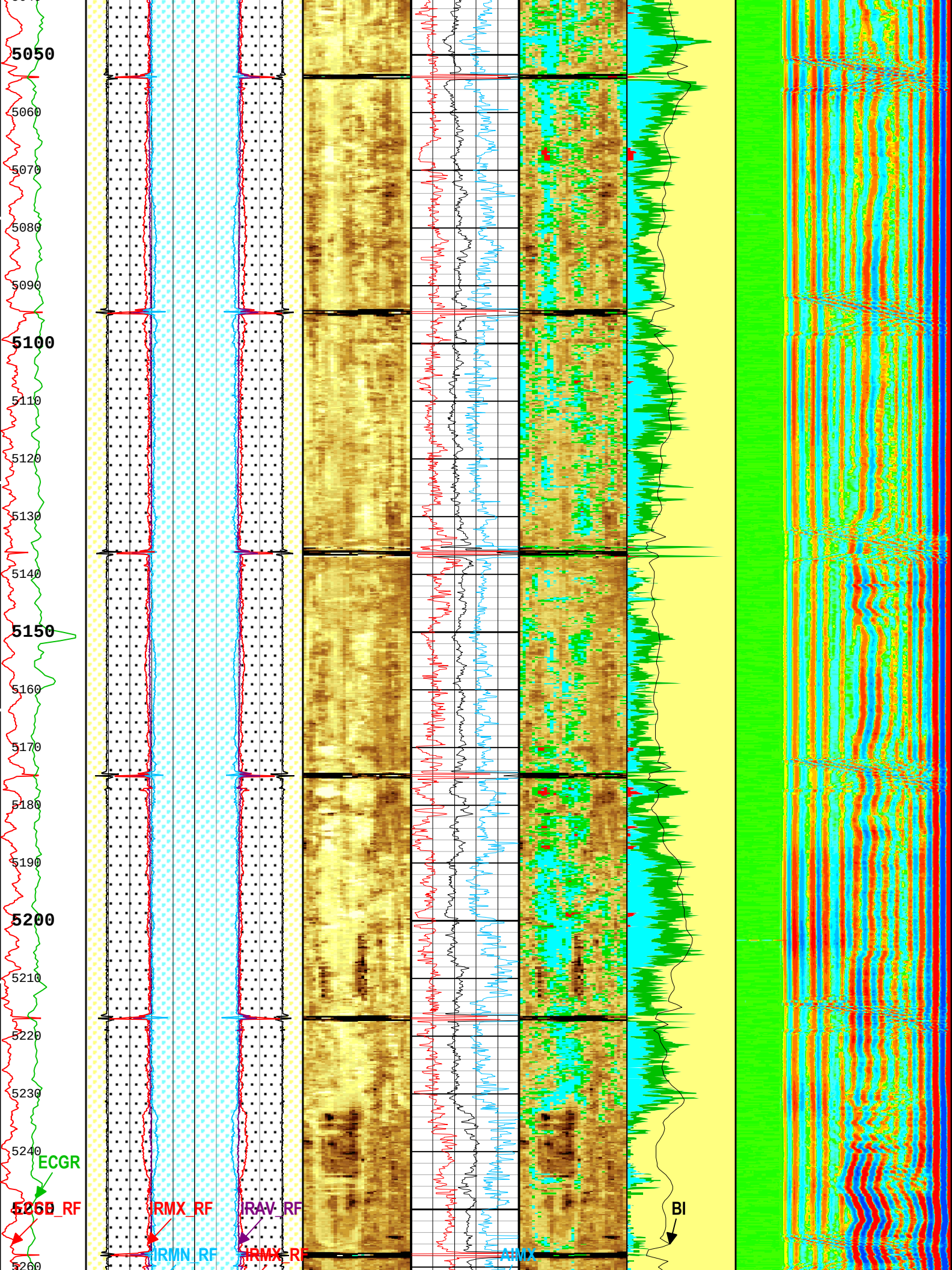
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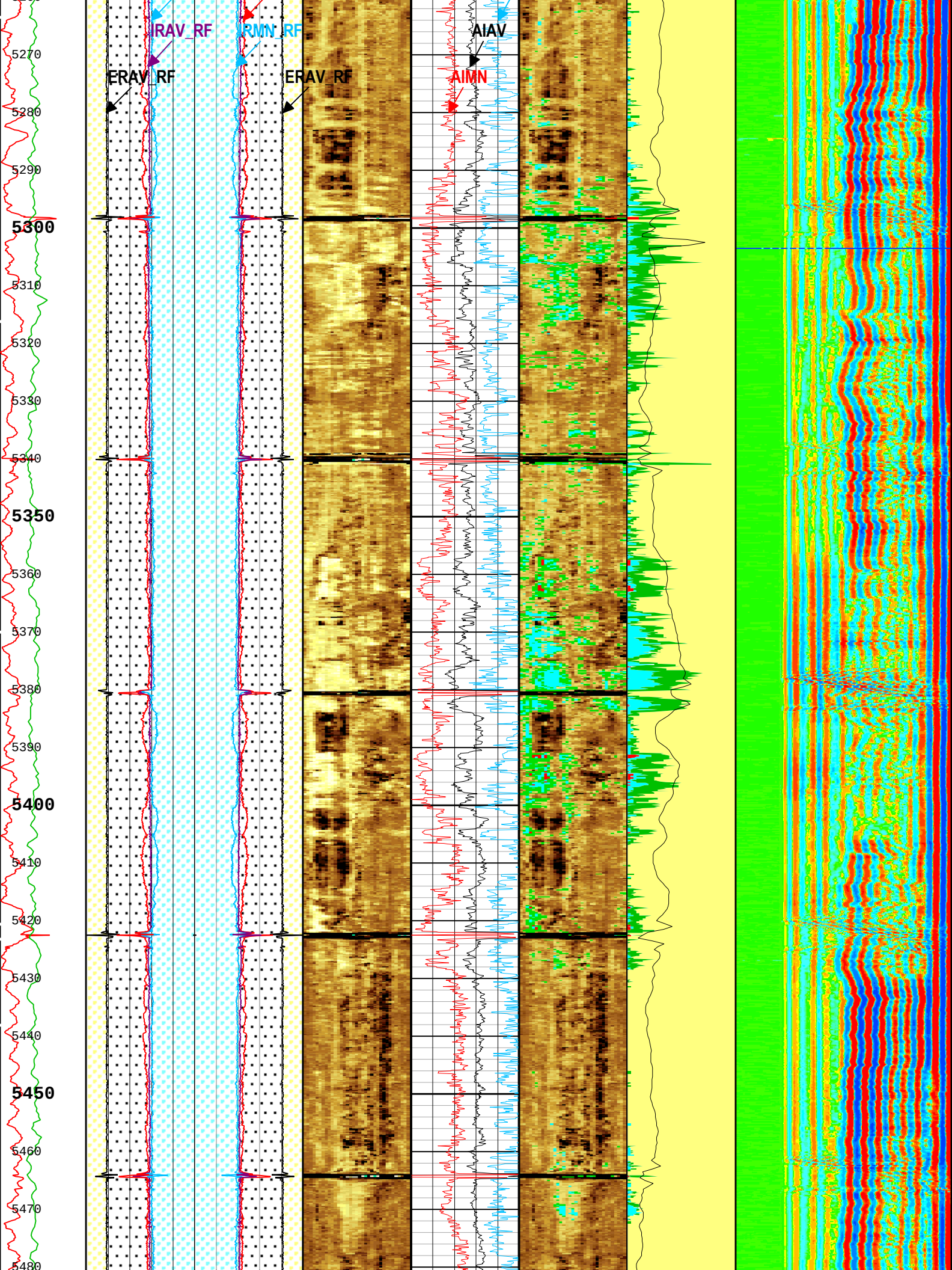
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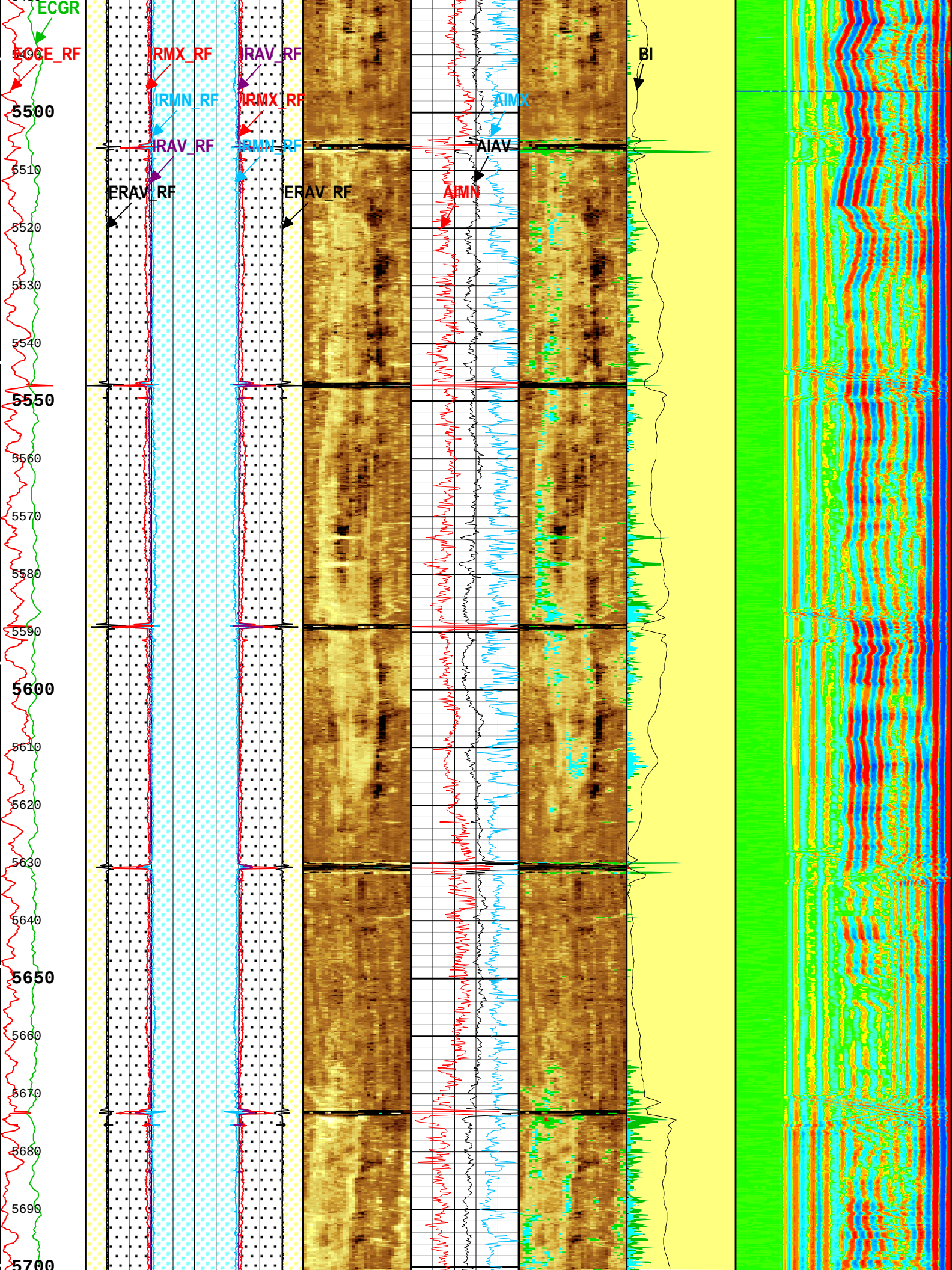
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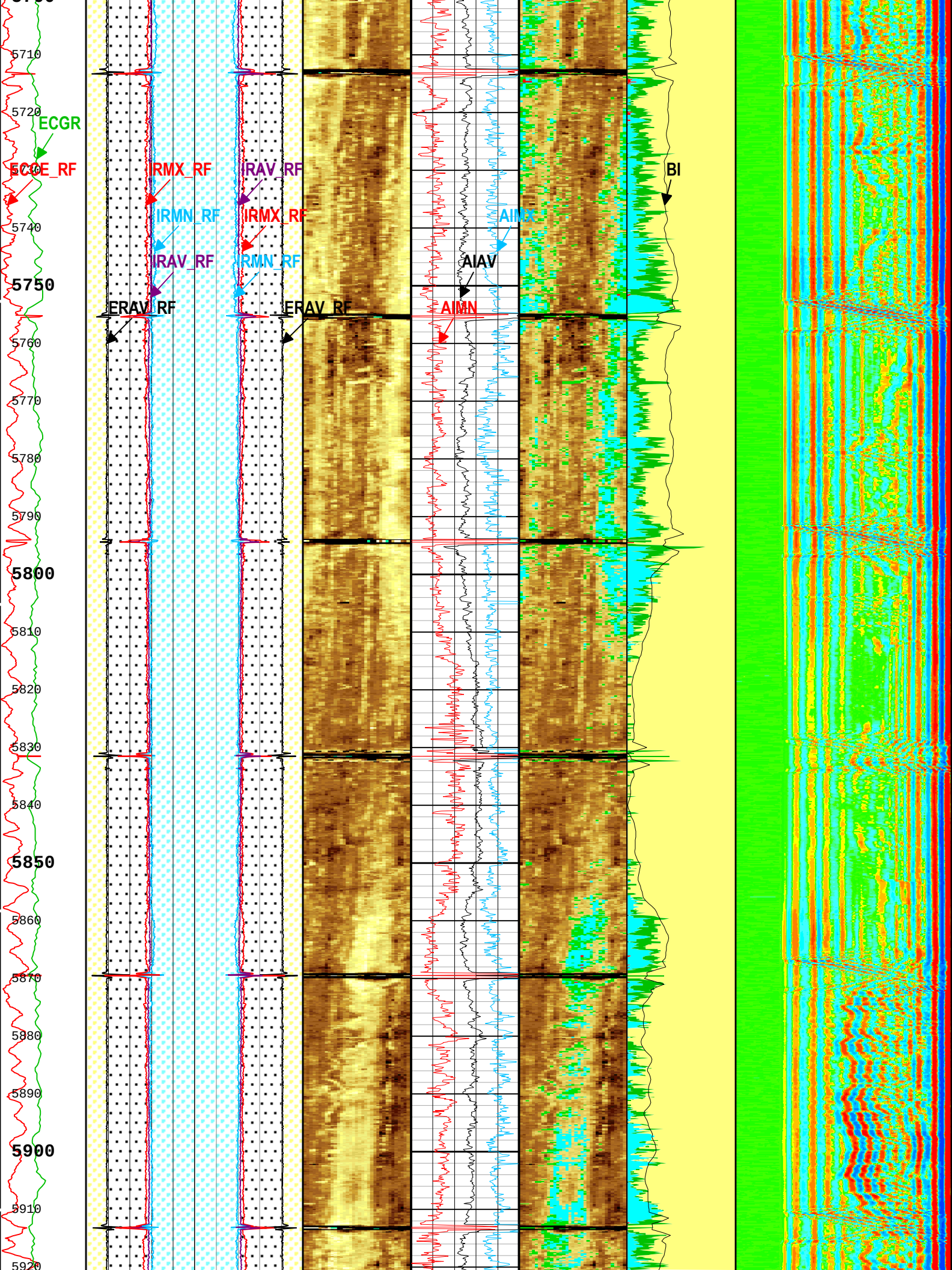
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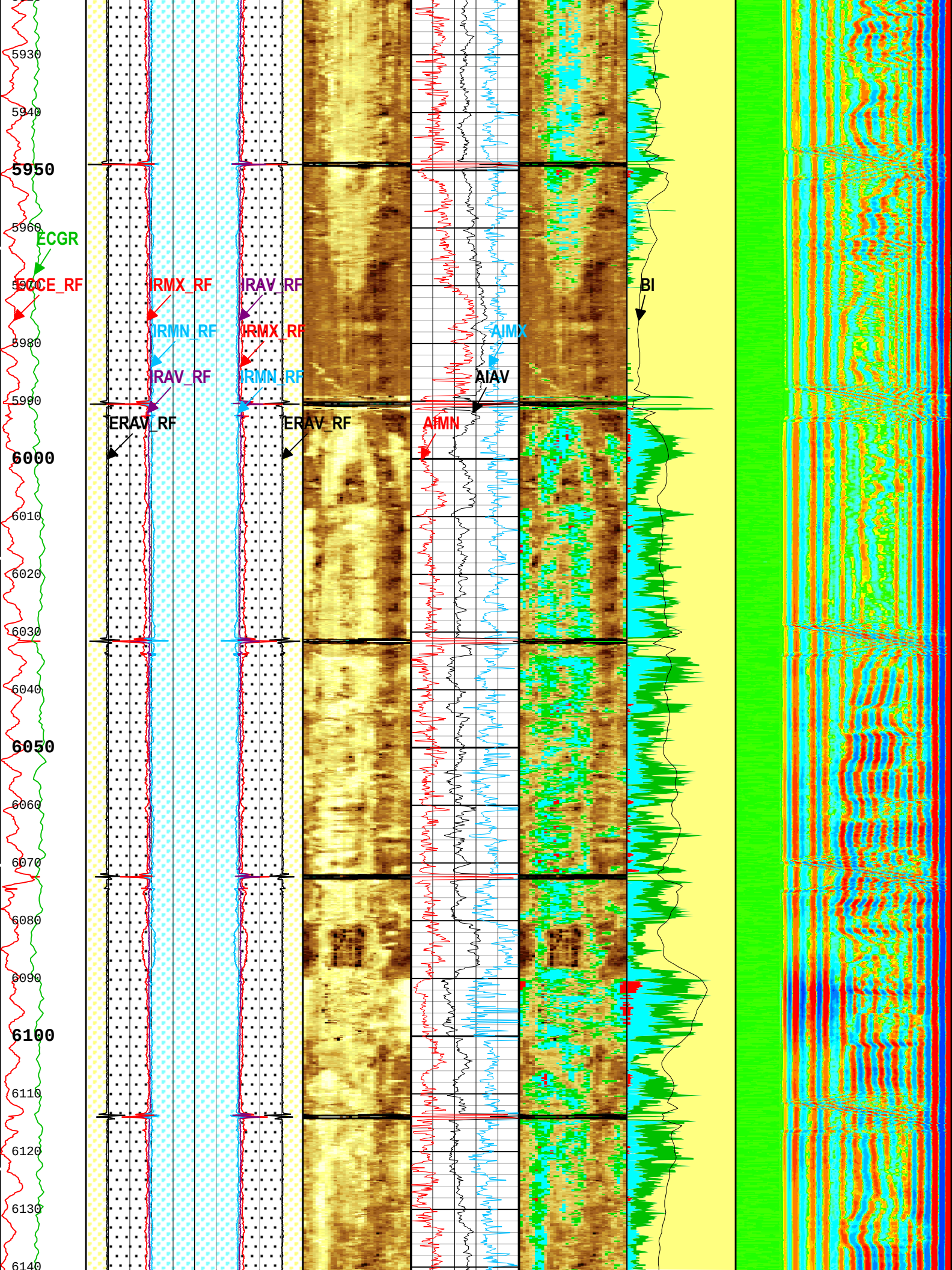
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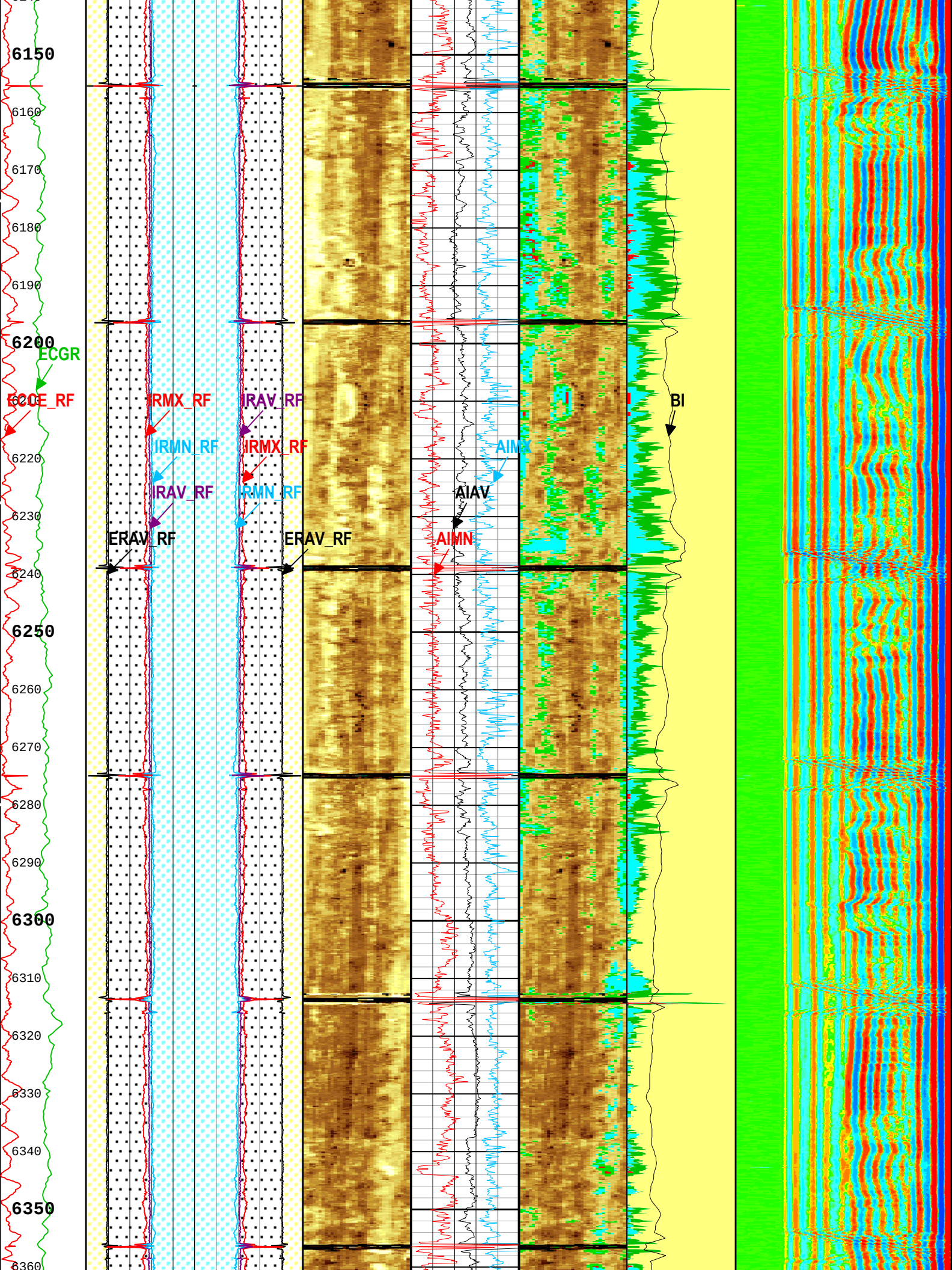
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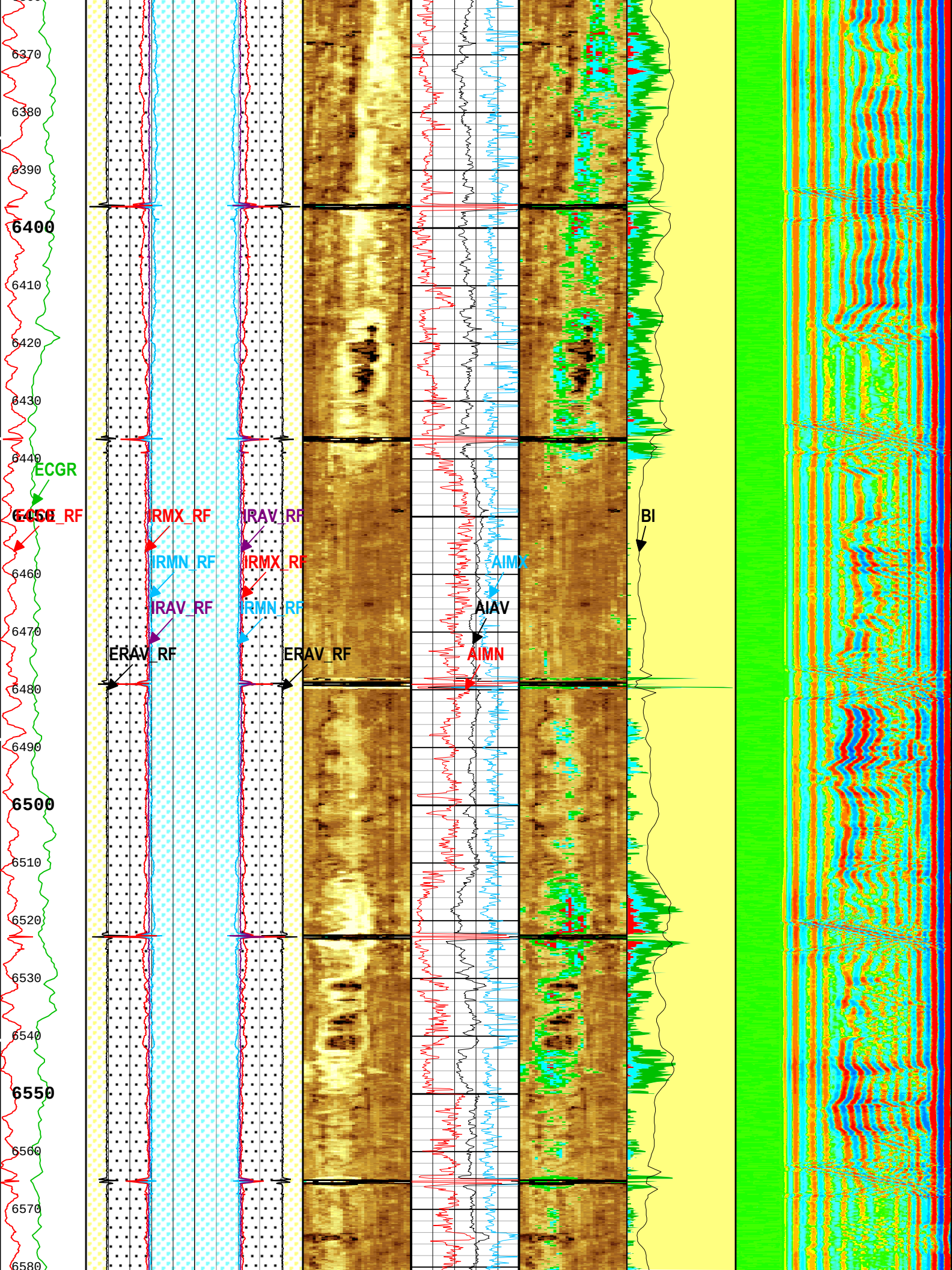
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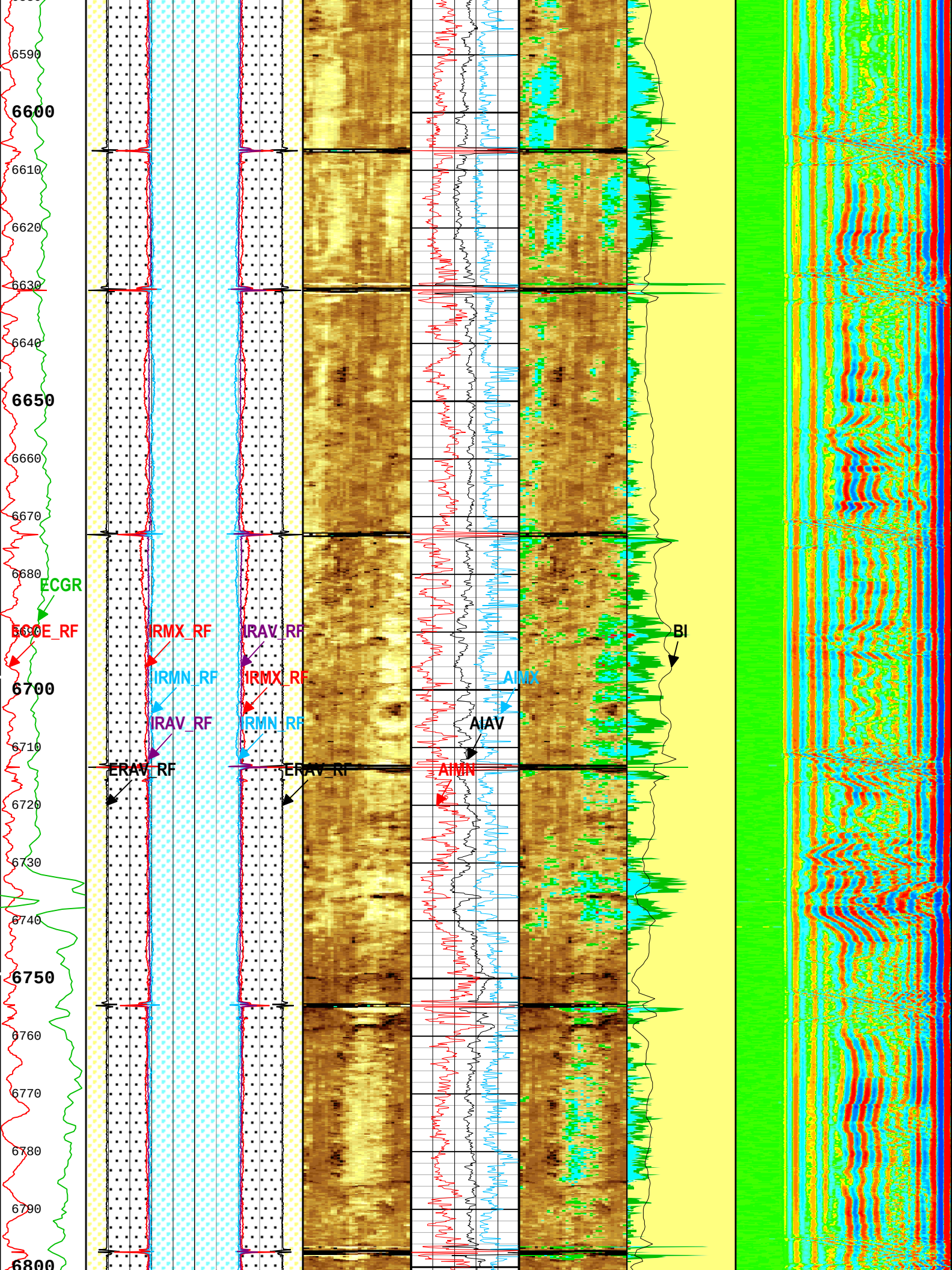
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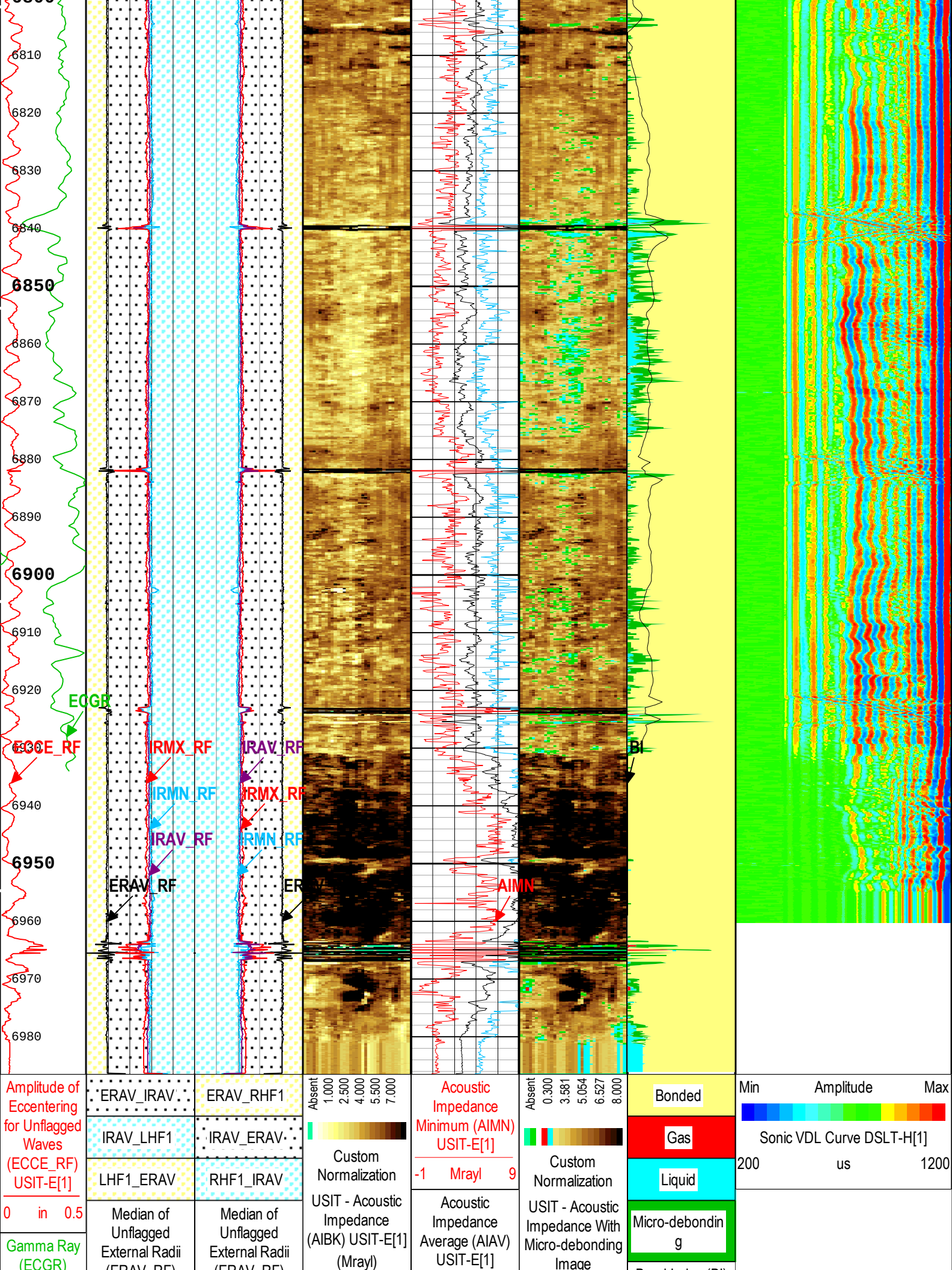
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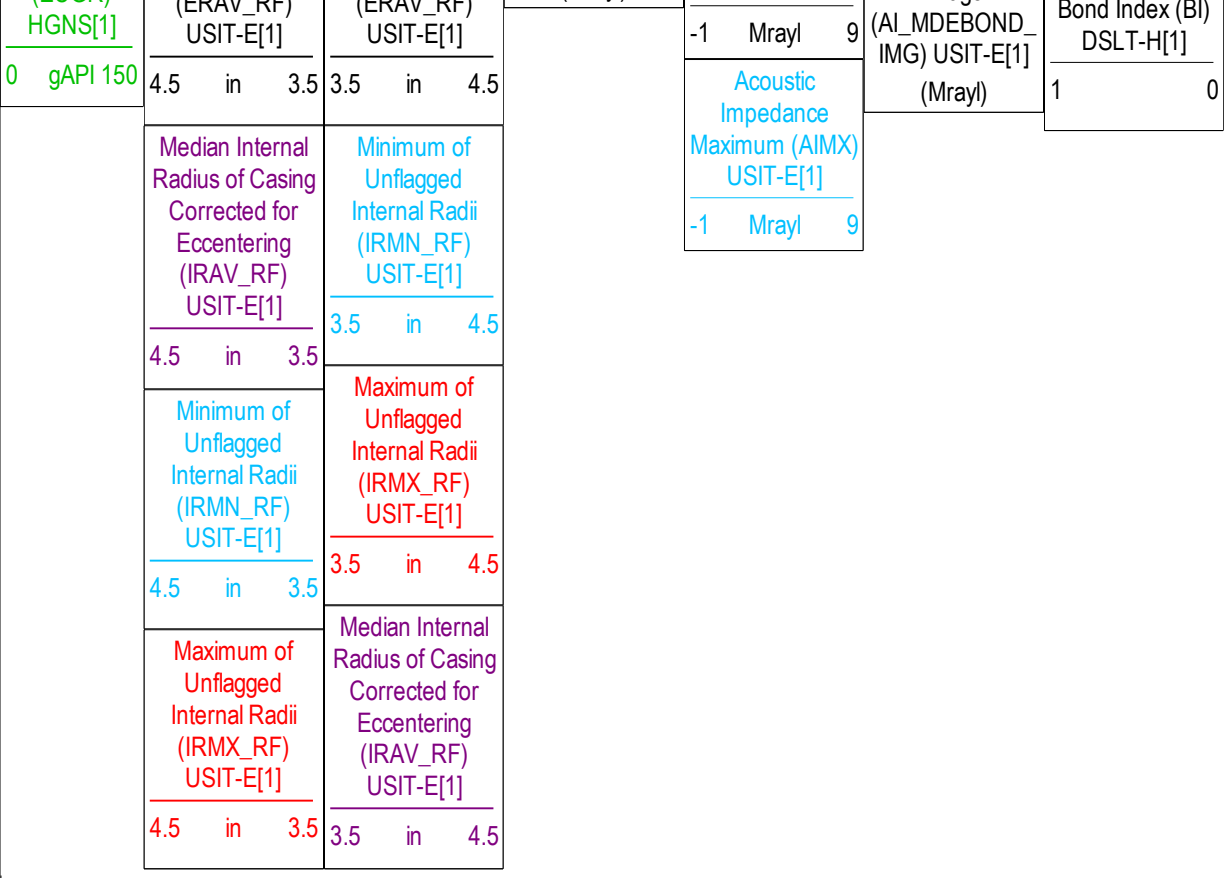
BI
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5
Gamma Ray (ECGR)
ERAV_IRAV
IRAV_LHF1
LHF1_ERAV
Median of Unflagged External Radii
ERAV_RHF1
IRAV_ERAV
RHF1_IRAV
Median of Unflagged External Radii
Absent 1.000 2.500 4.000 5.500 7.000
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)
Acoustic Impedance Minimum (AIMN) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E[1]
Absent 0.300 3.581 5.054 6.527 8.000
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image
Bonded
Gas
Liquid
Micro-debonding
Min Amplitude Max
Sonic VDL Curve DSLT-H[1]
200 us 1200



TIME_1900 - Time Marked every 60.00 (s)

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: 18-Aug-2016 20:18:55

Channel Processing Parameters

One: 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	Open	
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	45	us
CBLO	Casing Bottom (Logger)	WLSESSION	7026	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLT-H	55	mV
CDEN	Cement Density	HGNS-H	2	g/cm3
CMCF	CBL Cement Type Compensation Factor	DSLT-H	0.6	
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.4	in
DETE	Delta-T Detection	DSLT-H	E1	
DFD	Drilling Fluid Density	Borehole	9	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	DSLT-H	0.94	
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	5.06	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	9.26	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLT-H	Depth Zoned	ft
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	24.96	us
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLT-H	100	
MSA	Minimum Sonic Amplitude	DSLT-H	1.67	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	2.78	mV
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1	
NMSG	Near Minimum Sliding Gate	DSLT-H	305	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	1.181	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	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	130	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	65	%
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	Theoretical	
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	5.5	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

OneDepth Zoned Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	17.5	0	812
BS	11	812	6986.5
MCI	21.68	0	812
MCI	12.98	812	6986.5

All depth are actual.

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	18	dB
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	2.874	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	6970	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	125	us
WMOD	Waveform Firing Mode	DSLT-H	Full	

OneTime Zoned Parameters

Pass Log[7]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	40	18-Aug-2016 10:32:10	18-Aug-2016 11:06:58	6986.88	5423.2
WINB	45	18-Aug-2016 10:32:10	18-Aug-2016 11:06:58	6986.88	5423.2

Pass Log[11]:Up

EMXV	40	18-Aug-2016 11:29:56	18-Aug-2016 12:58:51	5423.85	1400.42
WINB	45	18-Aug-2016 11:29:56	18-Aug-2016 12:58:51	5423.85	1400.42

Pass Log[12]:Up

EMXV	40	18-Aug-2016 13:09:00	18-Aug-2016 13:38:42	1400.91	121.63
WINB	45	18-Aug-2016 13:09:00	18-Aug-2016 13:38:42	1400.91	121.63

Pass Log[18]:Up

EMXV	80	18-Aug-2016 14:53:06	18-Aug-2016 14:57:22	122.15	47.73
EMXV	125	18-Aug-2016 14:57:22	18-Aug-2016 14:58:21	47.73	22.25
WINB	40	18-Aug-2016 14:55:10	18-Aug-2016 14:58:21	122.15	22.25

All depth are at tool zero.

Composite 1

Main Pass 5 IN = 100 FT

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[7]:Up	Up	5184.38 ft	6987.38 ft	18-Aug-2016 10:32:04 AM	18-Aug-2016 11:06:58 AM	ON	2.26 ft	No
One	Log[11]:Up	Up	1280.11 ft	5434.15 ft	18-Aug-2016 11:29:44 AM	18-Aug-2016 12:58:51 PM	ON	11.15 ft	No
One	Log[12]:Up	Up	44.45 ft	1429.03 ft	18-Aug-2016 1:08:22 PM	18-Aug-2016 1:38:42 PM	ON	11.26 ft	No
One	Log[18]:Up	Up	21.44 ft	171.59 ft	18-Aug-2016 2:53:06 PM	18-Aug-2016 2:58:21 PM	ON	-0.05 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

Composite 1:S006

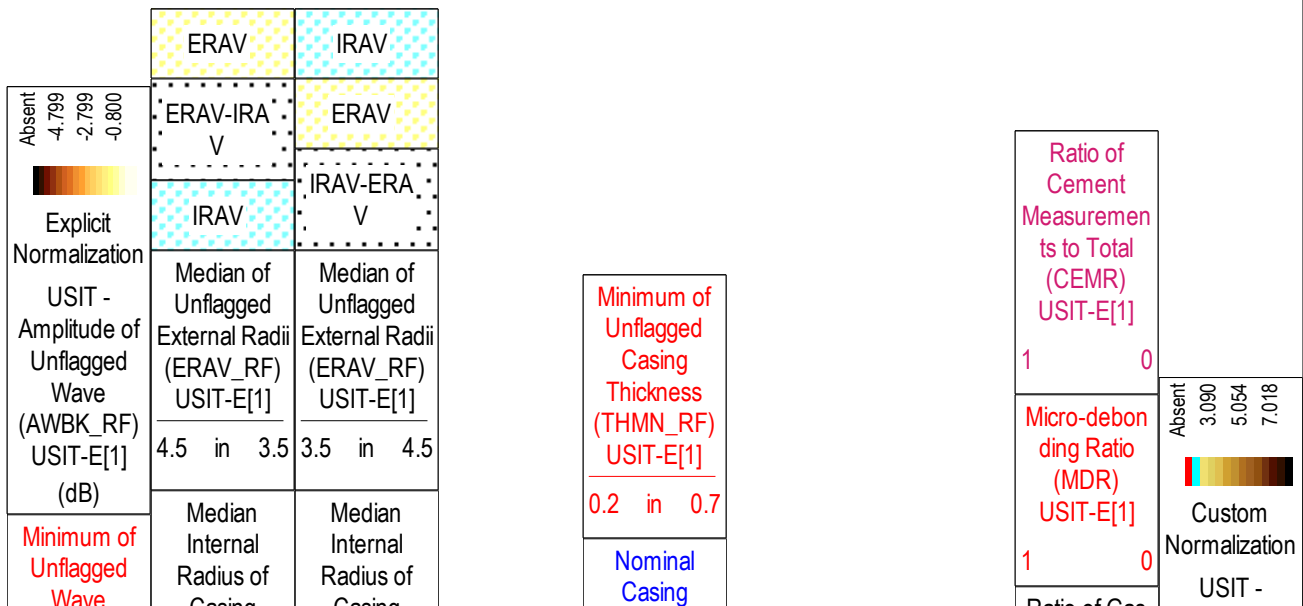
Description: USI Composite Format: Log (LBV1_USI Composite 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:19:12

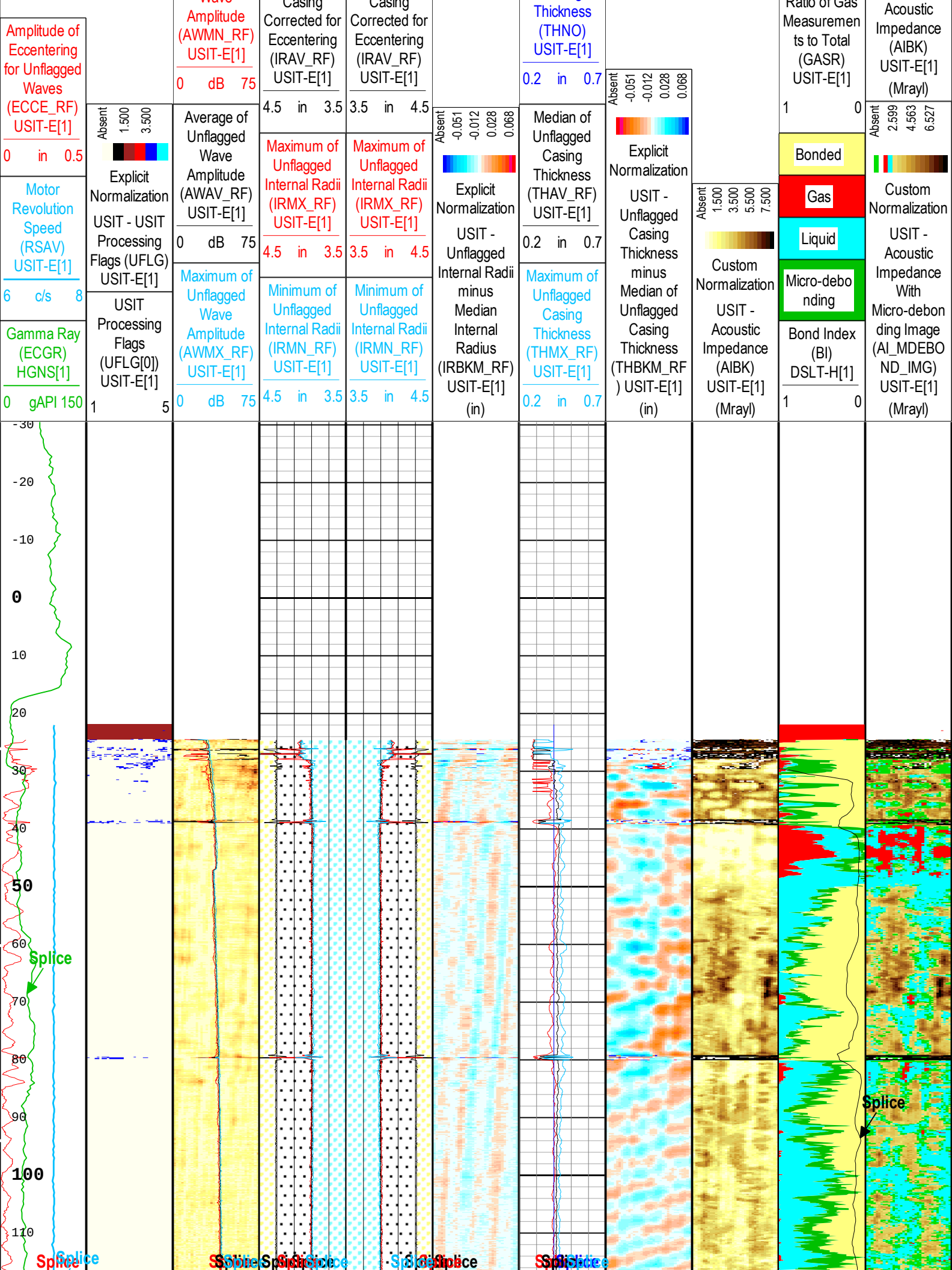
USIT Processing Flags (UFLG[0]) USIT-E[1]

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)




Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8
Gamma Ray (ECGR) HGNS[1]
0 gAPI 150
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]
USIT Processing Flags (UFLG[0]) USIT-E[1]
1 5
Wave Amplitude (AWMN_RF) USIT-E[1]
0 dB 75
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
0 dB 75
Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
4.5 in 3.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4.5 in 3.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4.5 in 3.5
Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
3.5 in 4.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
3.5 in 4.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
3.5 in 4.5
Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E[1] (in)
Thickness (THNO) USIT-E[1]
0.2 in 0.7
Median of Unflagged Casing Thickness (THAV_RF) USIT-E[1]
0.2 in 0.7
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.2 in 0.7
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[1] (in)
Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)
Ratio of Gas Measurements to Total (GASR) USIT-E[1]
1 0
Bonded
Gas
Liquid
Micro-debonding
Bond Index (BI) DSLT-H[1]
1 0
Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)
Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl)
-30
-20
-10
0
10
20
30
40
50
60
70
80
90
100
110
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Splice
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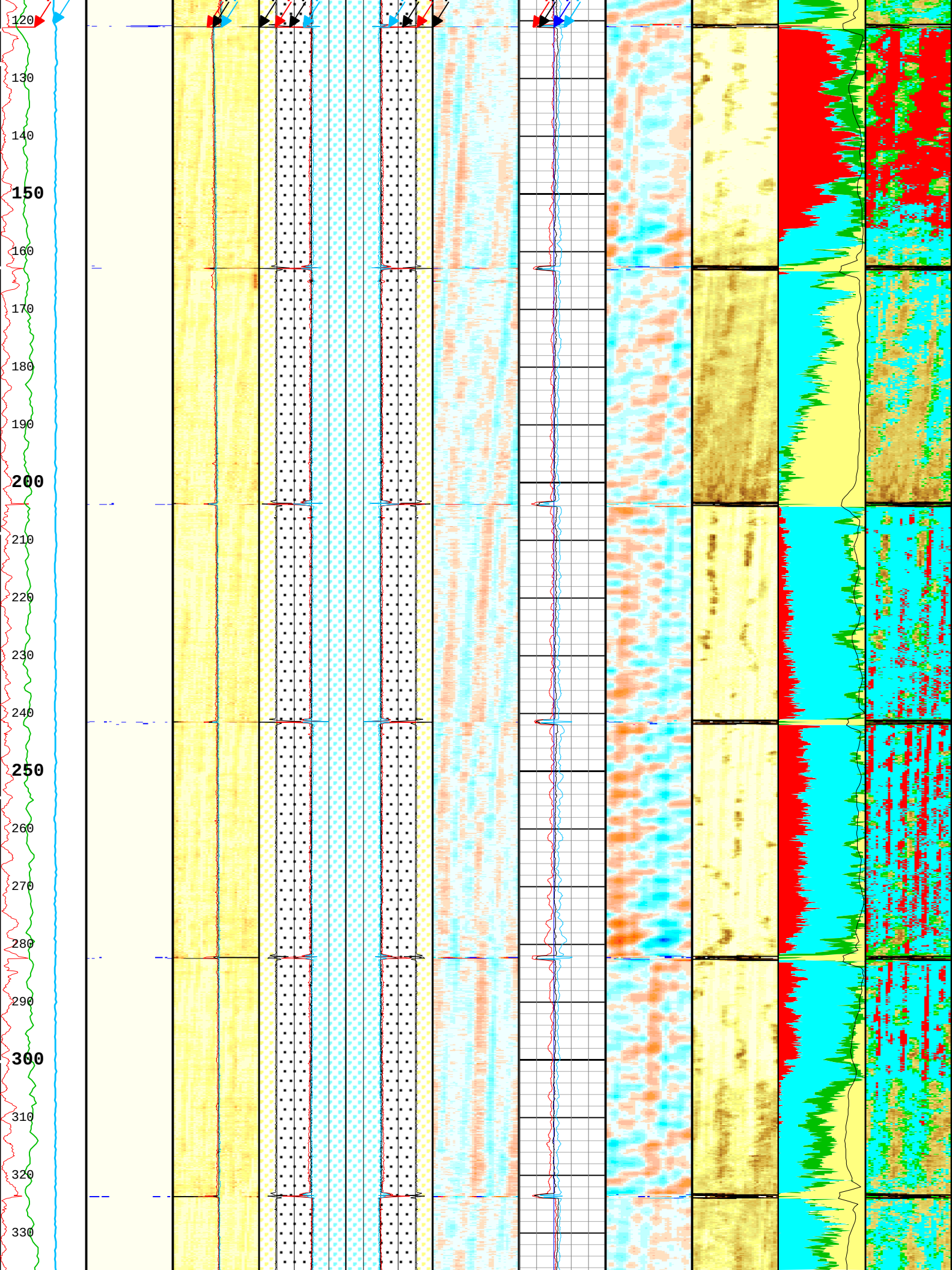
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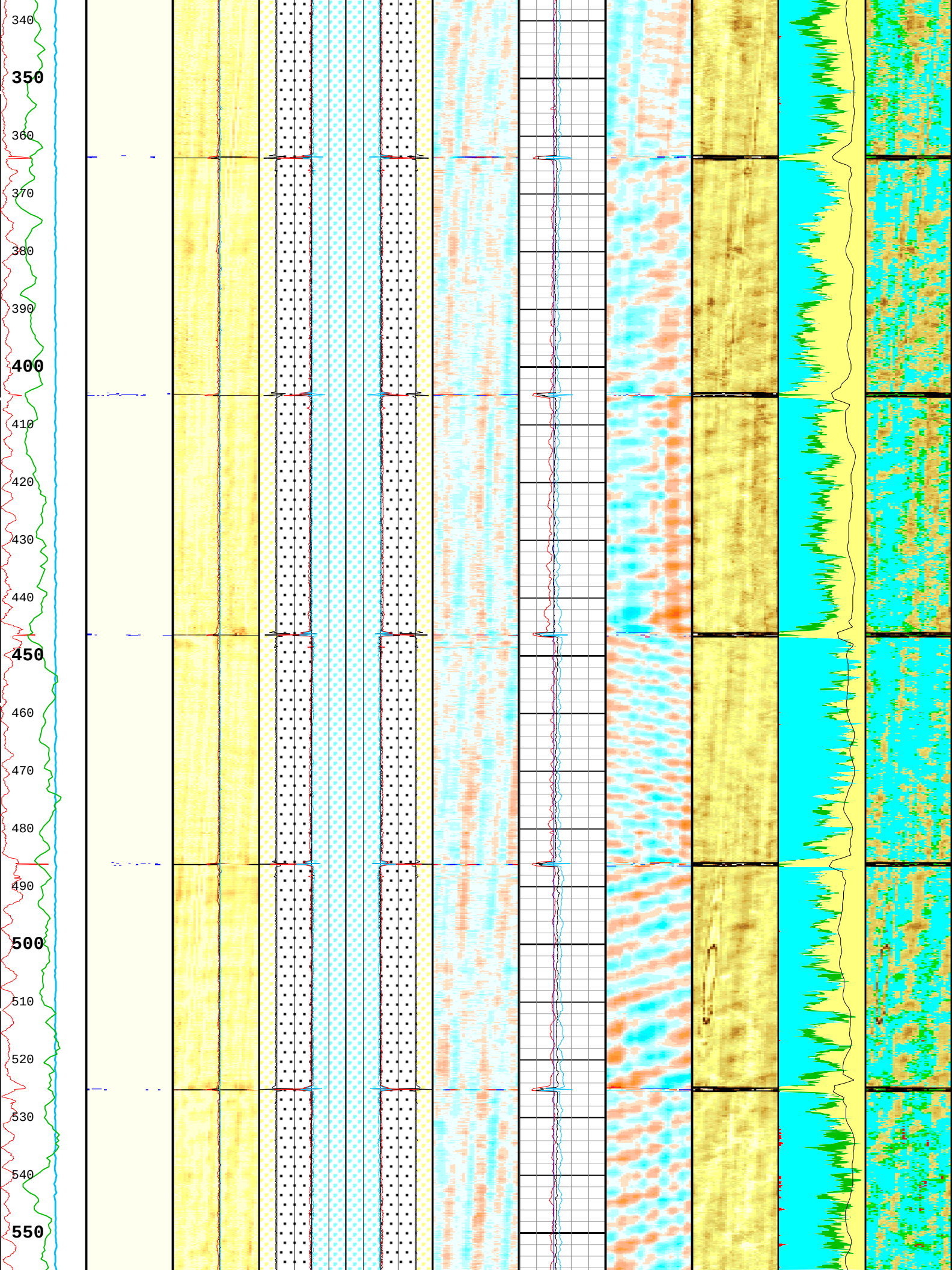
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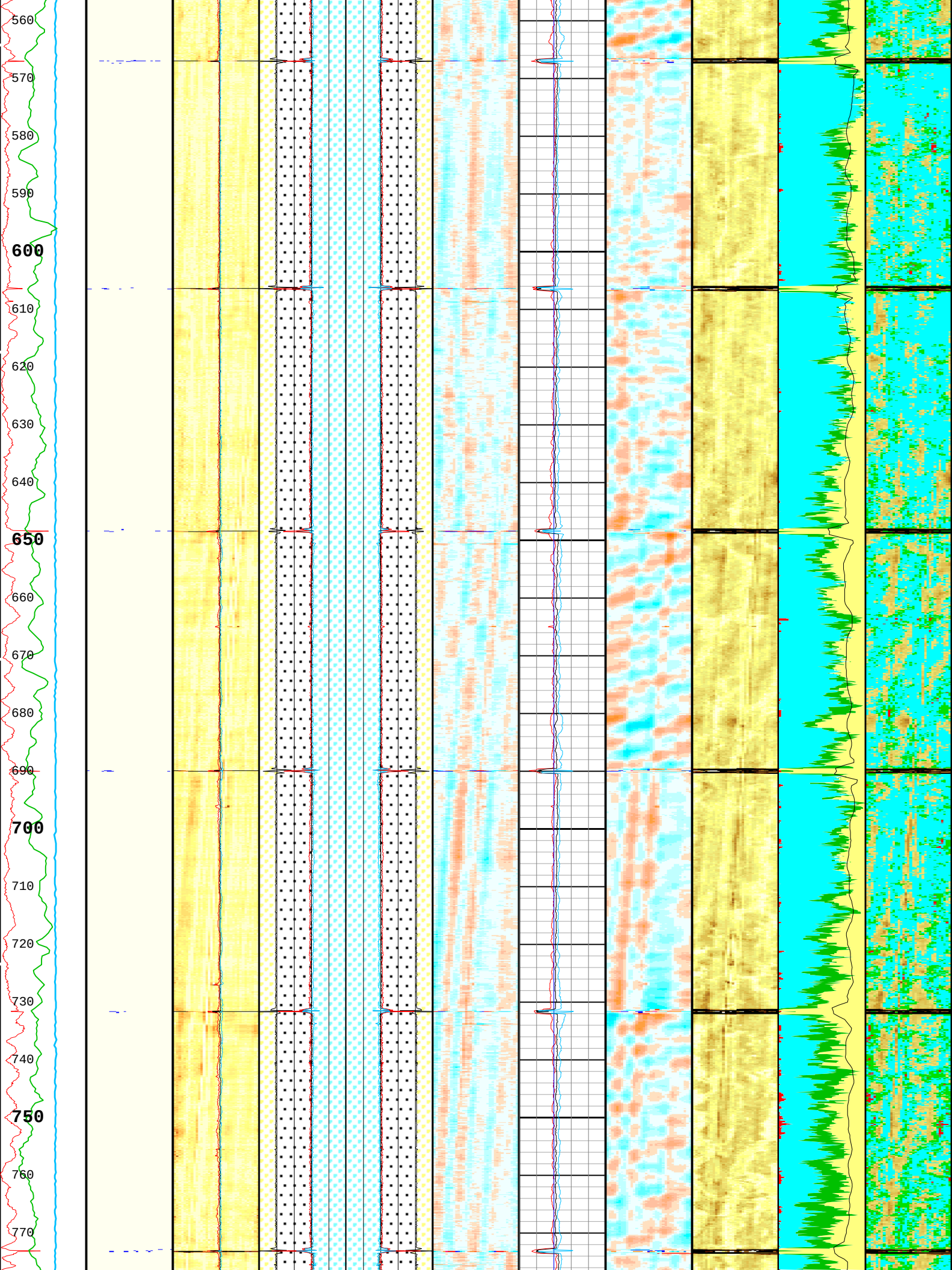
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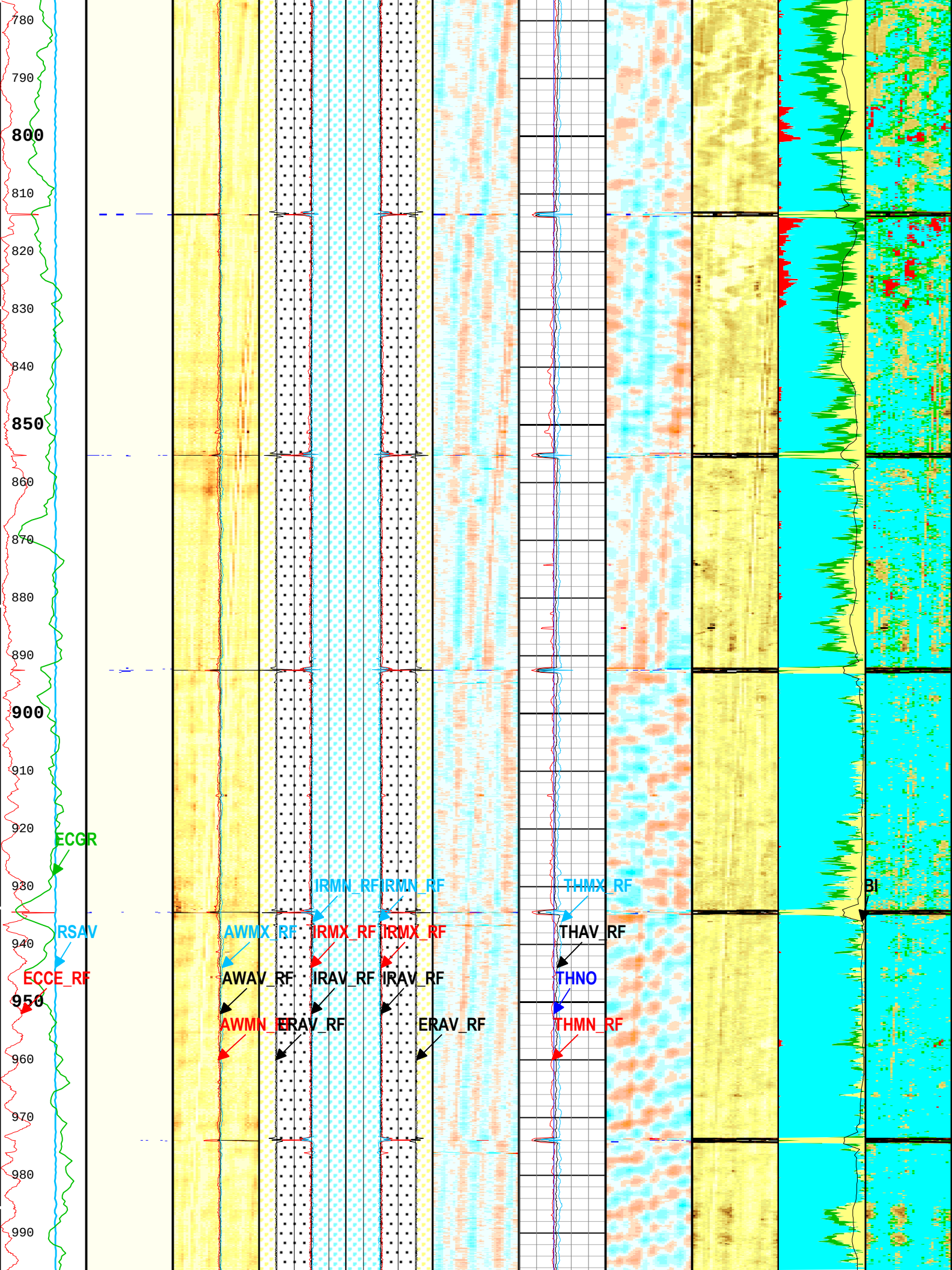
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RSAV
ECCE_RF
IRMN_RF
IRMN_RF
AWMX_RF
IRMX_RF
IRMX_RF
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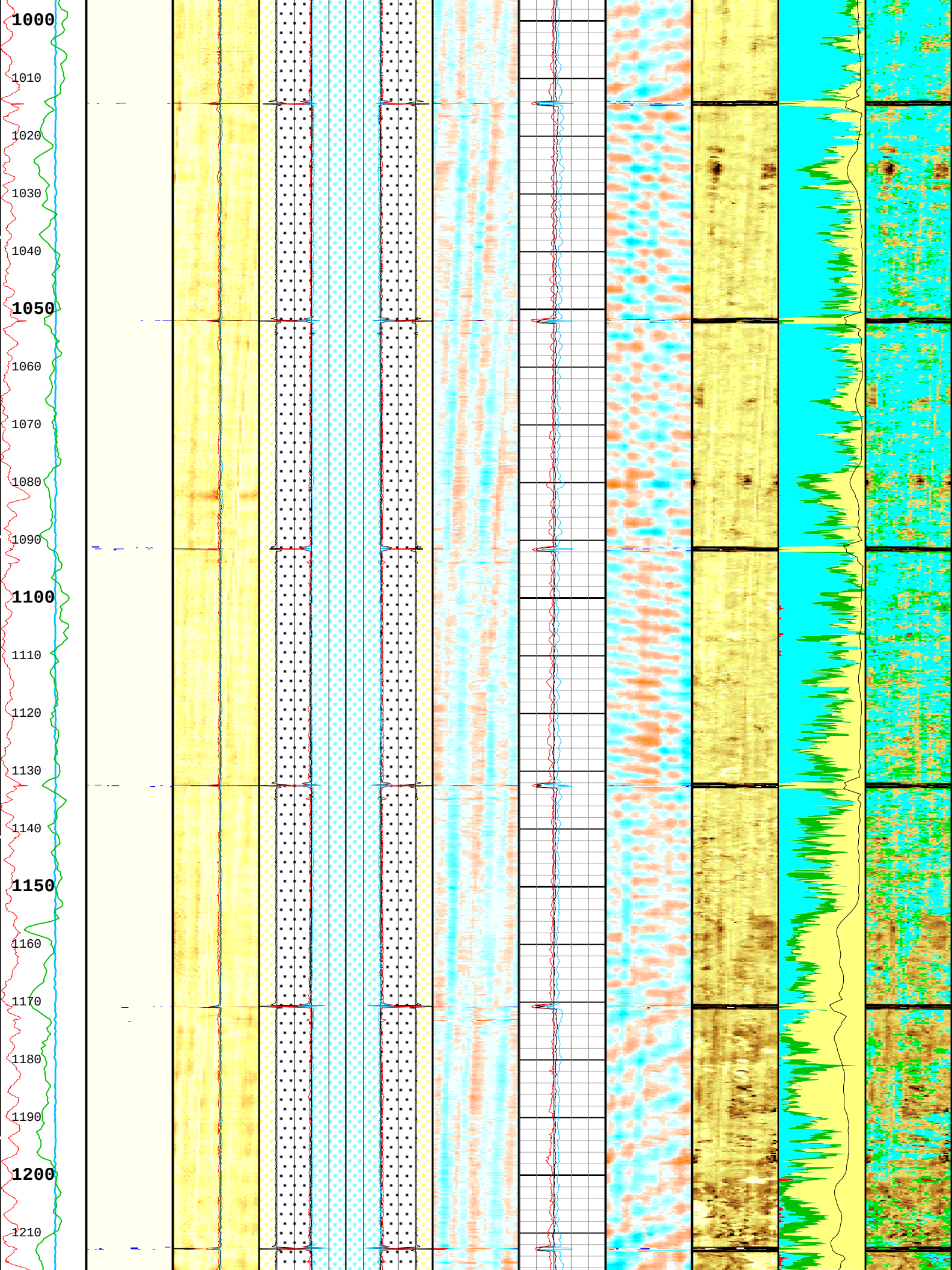
THNO
THMN_RF
BI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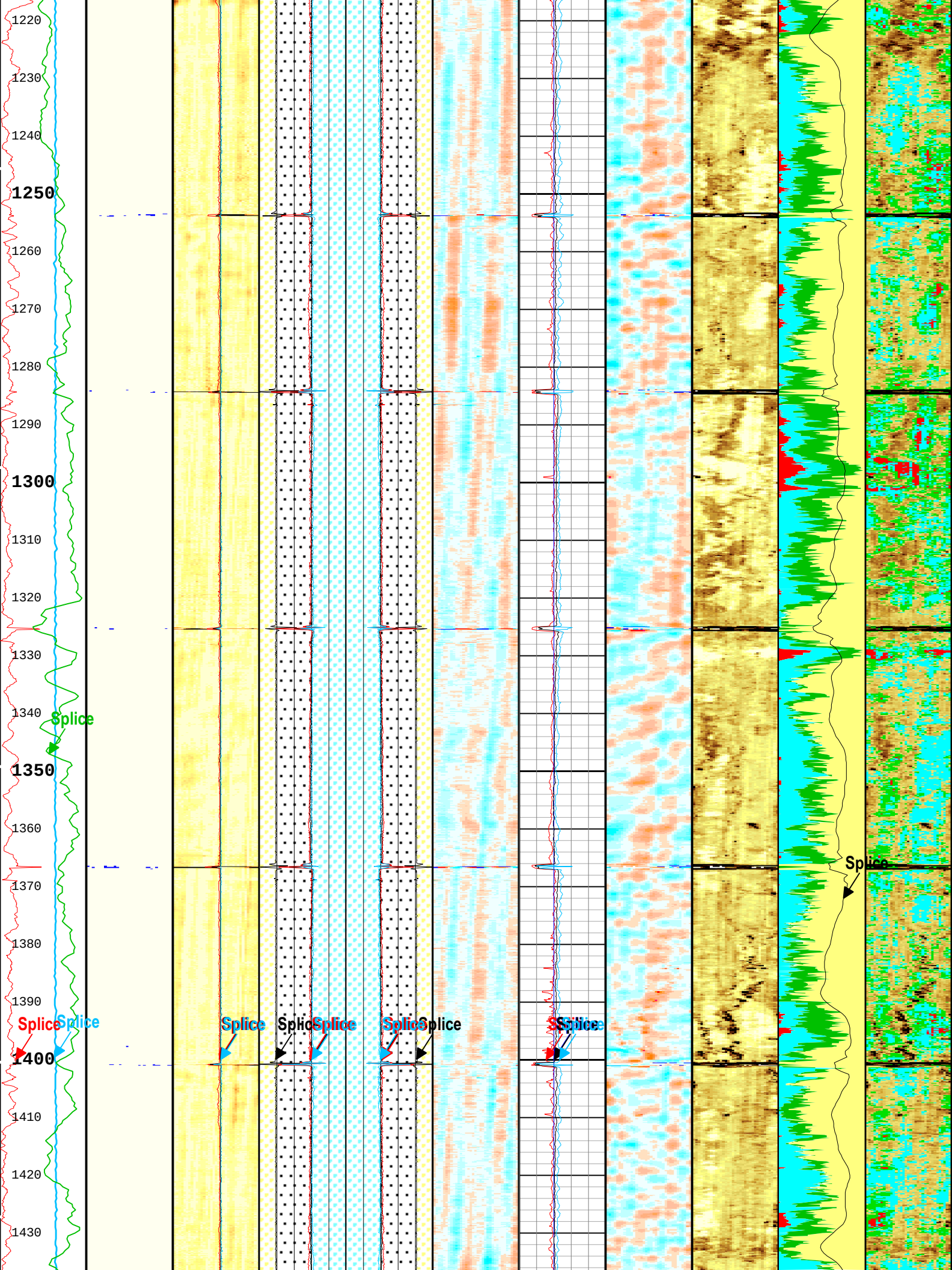
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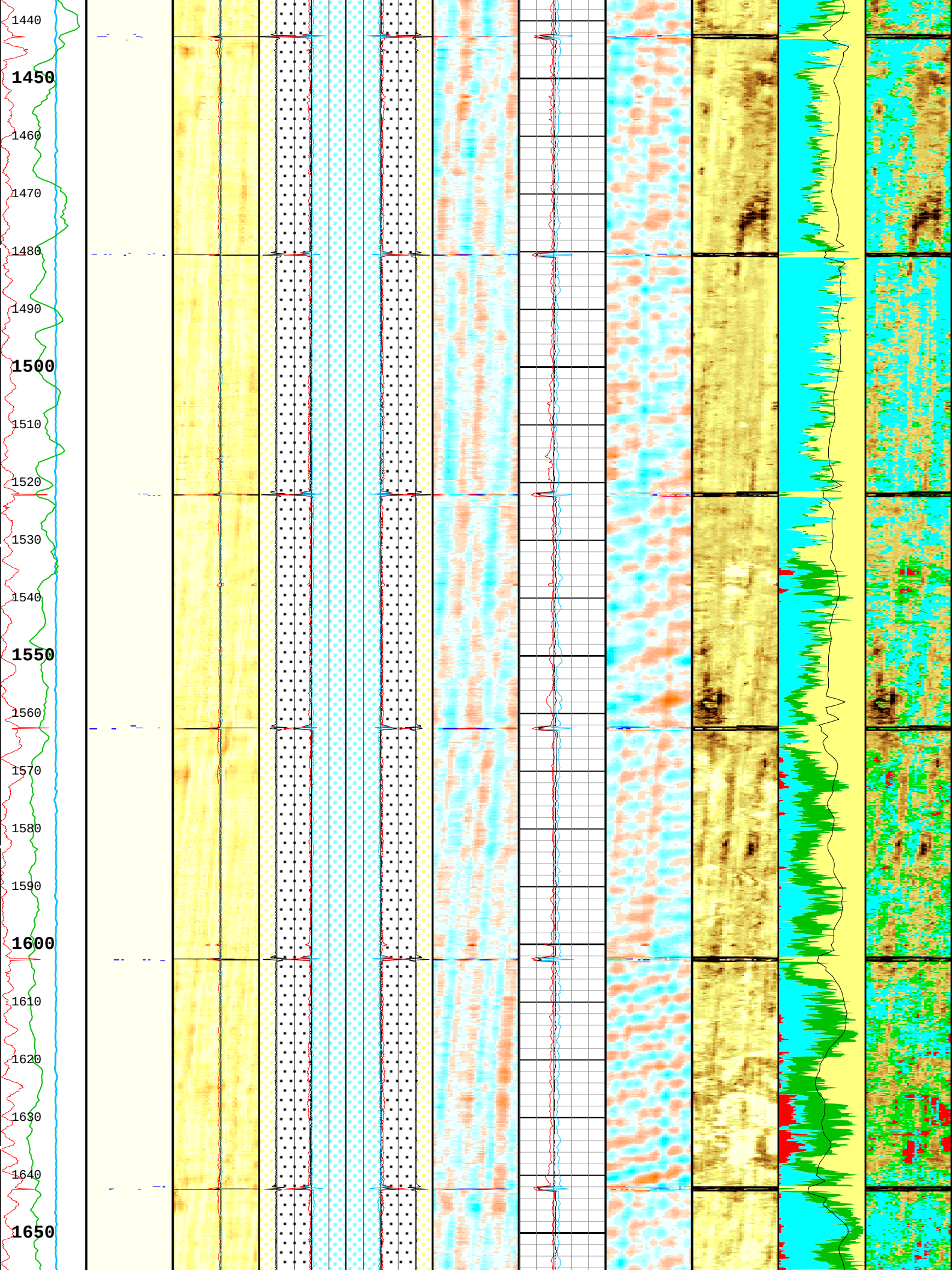
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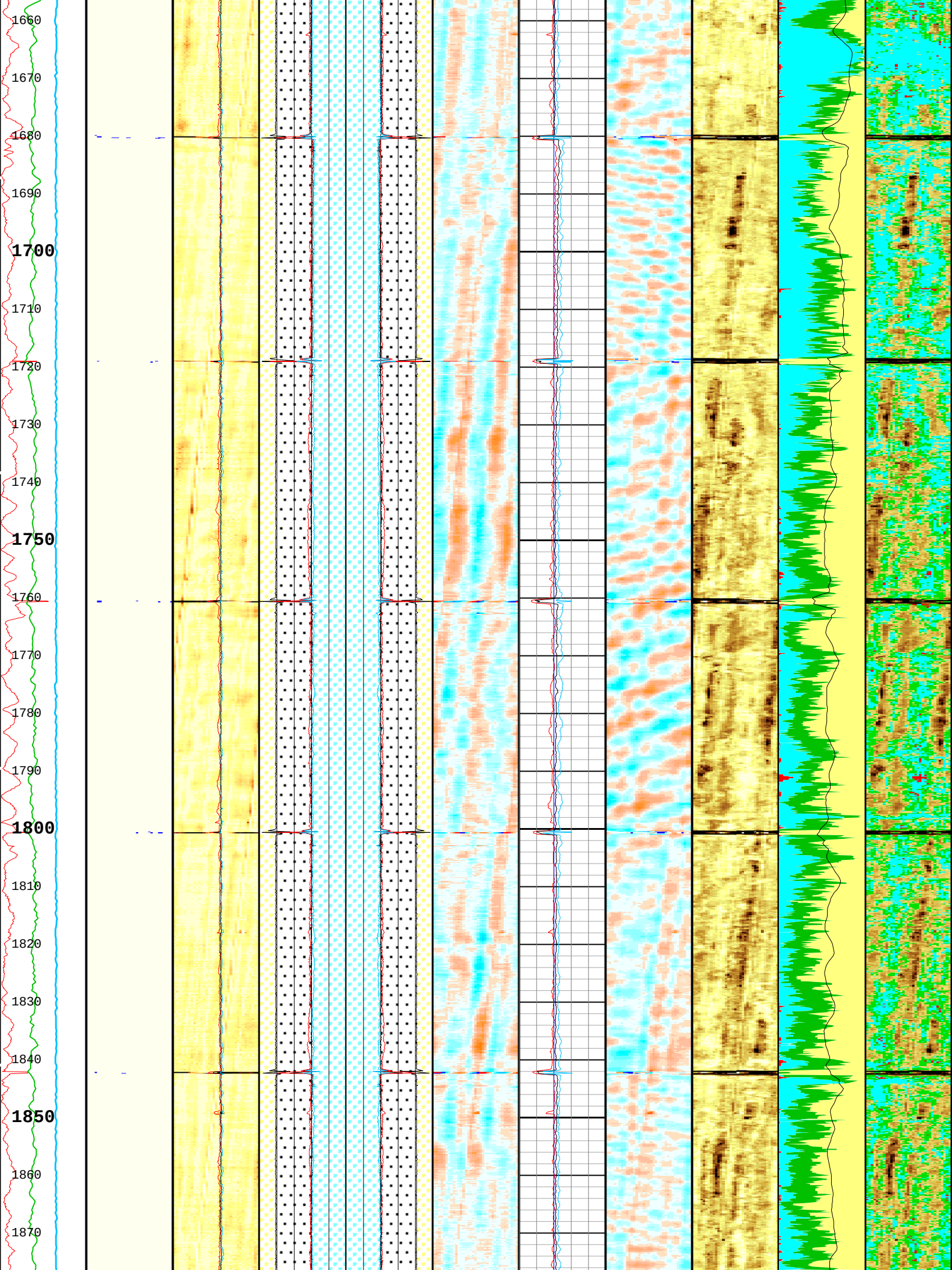
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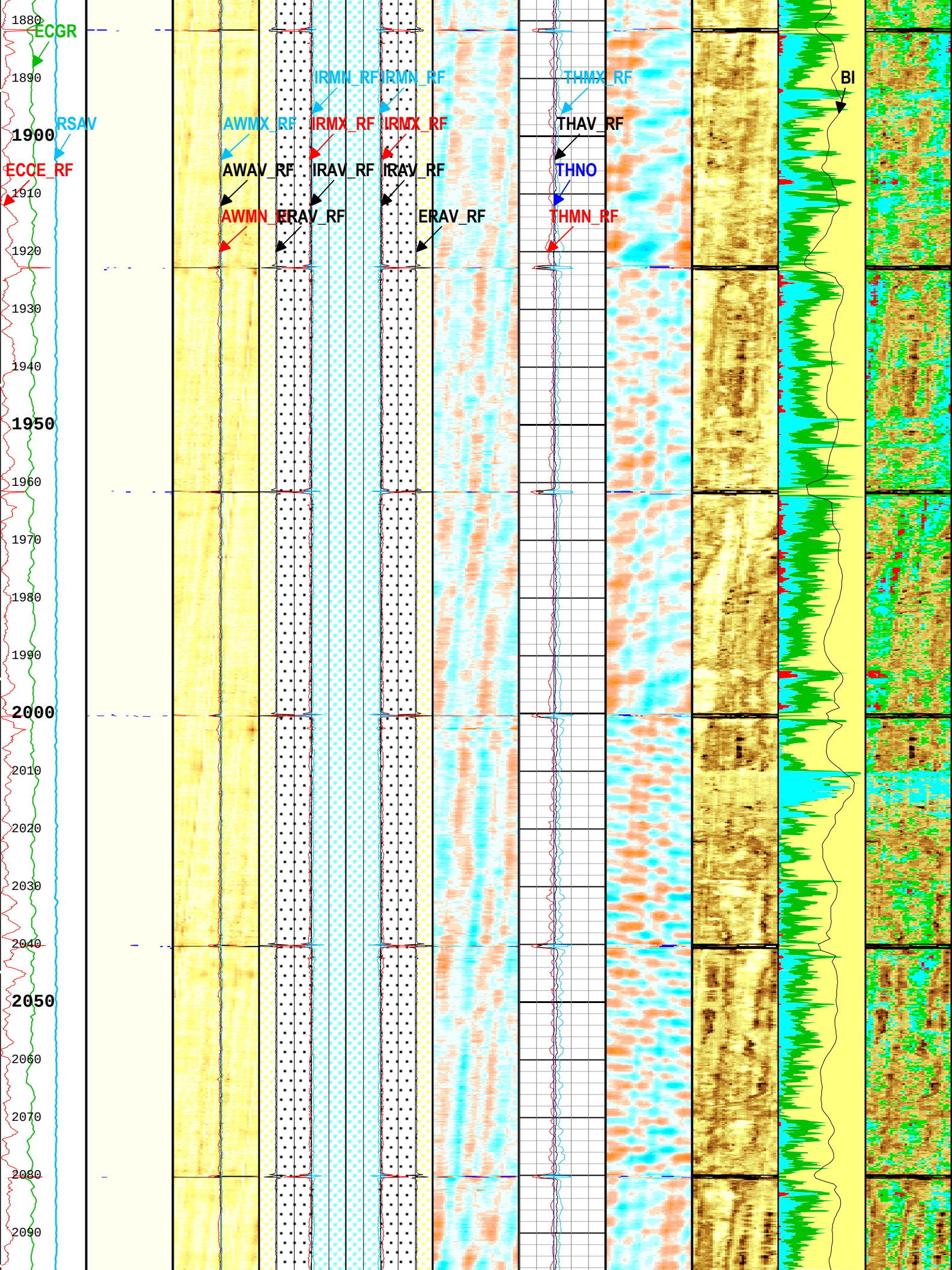
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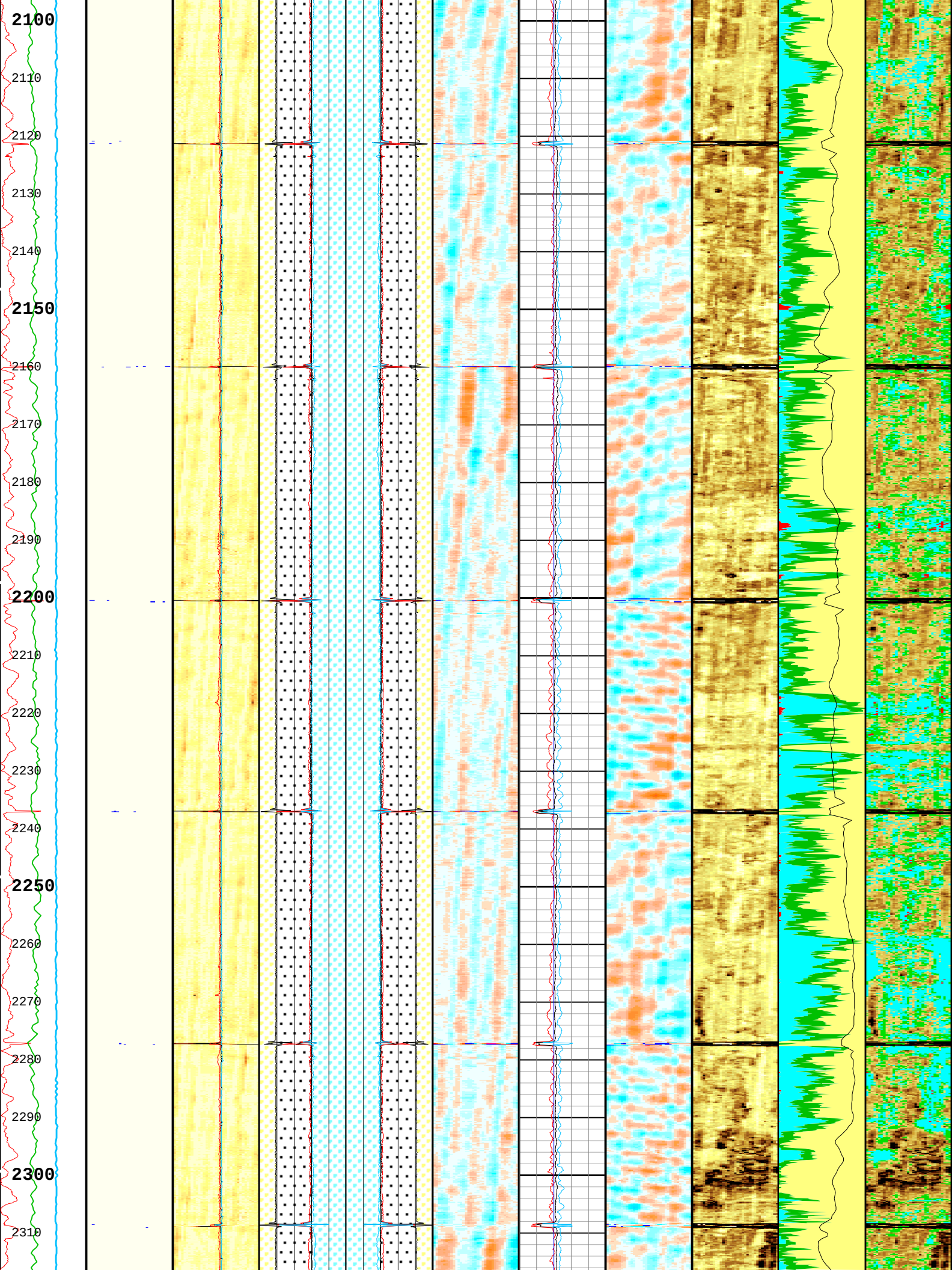
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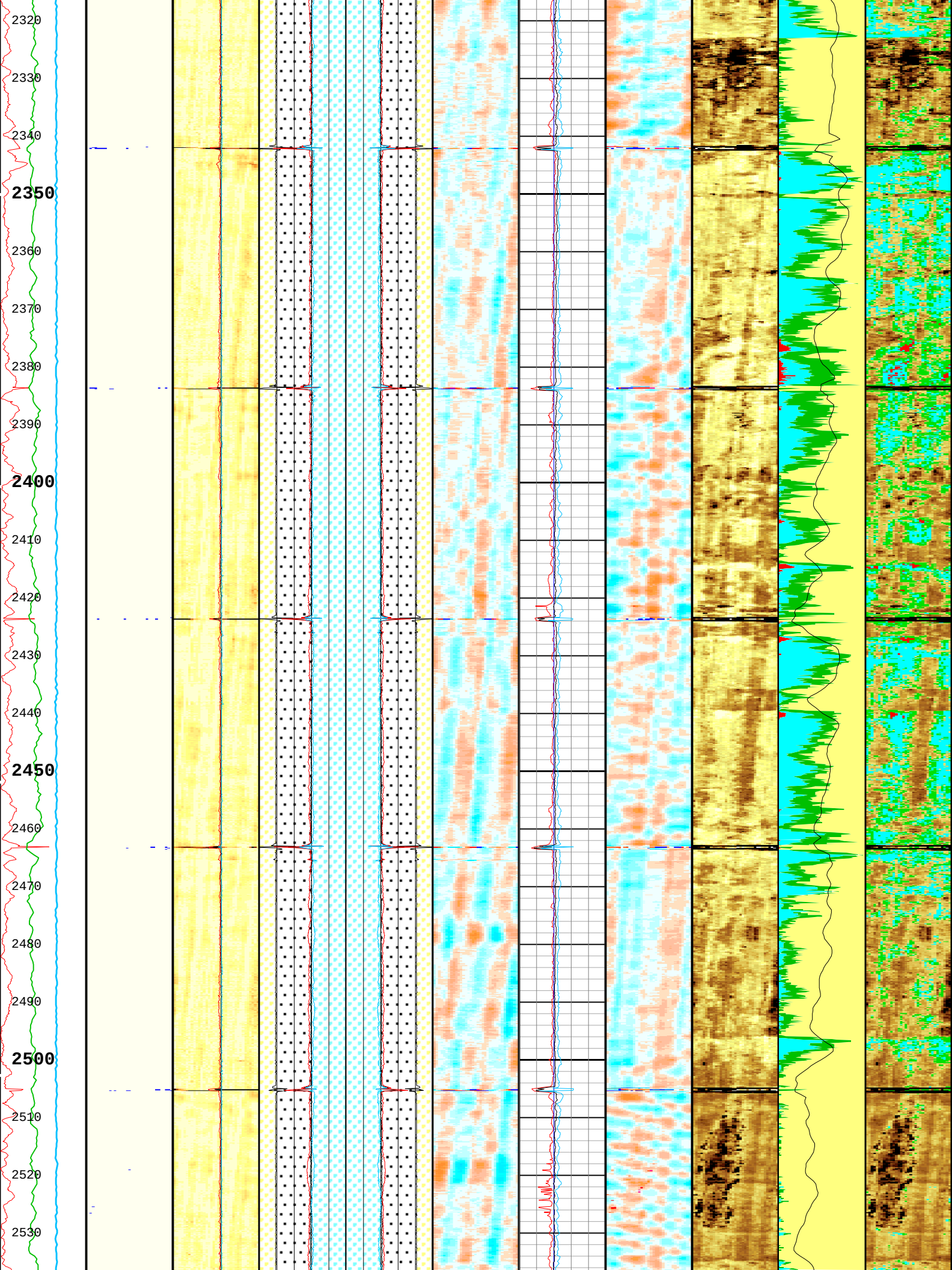
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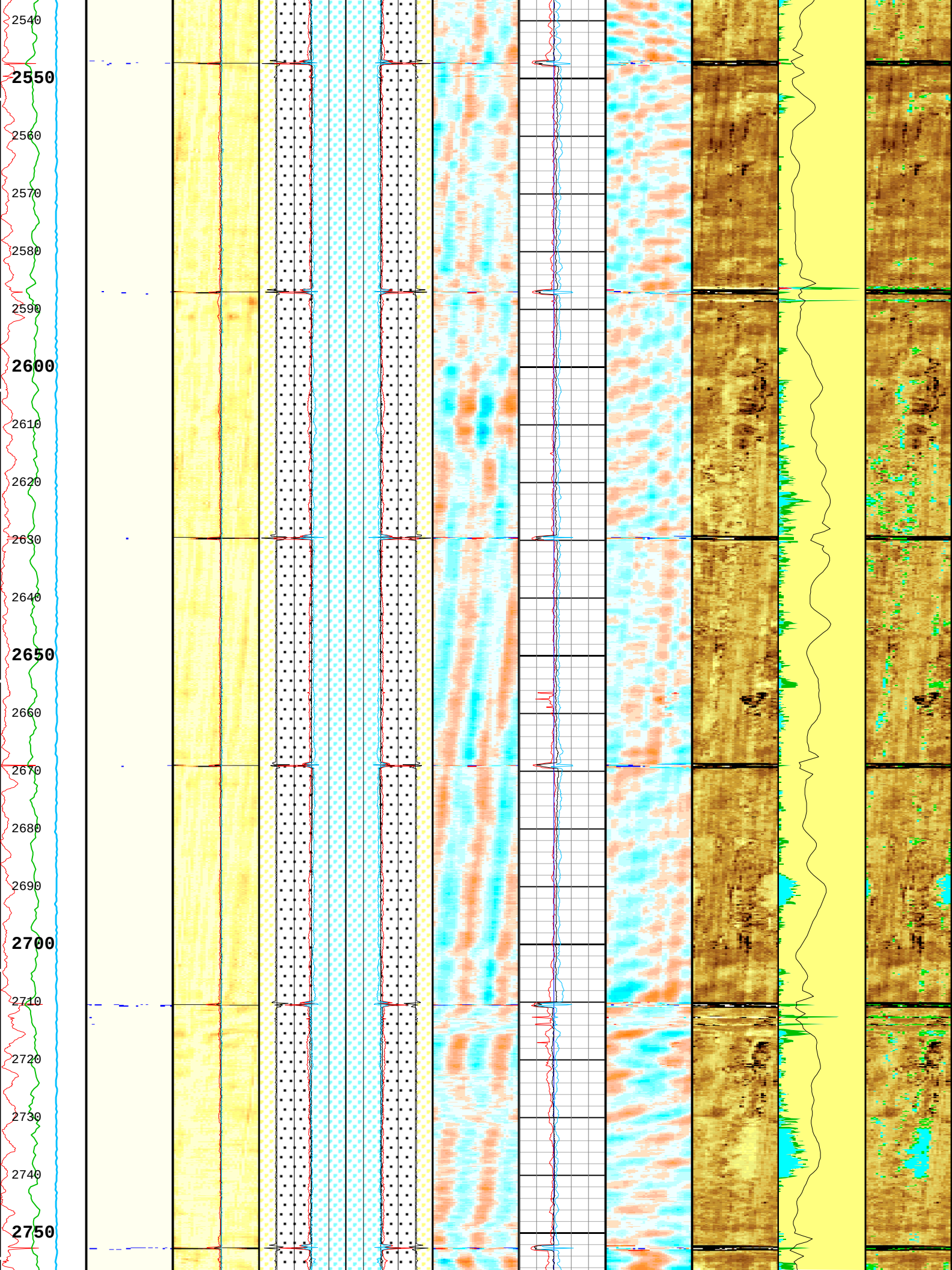
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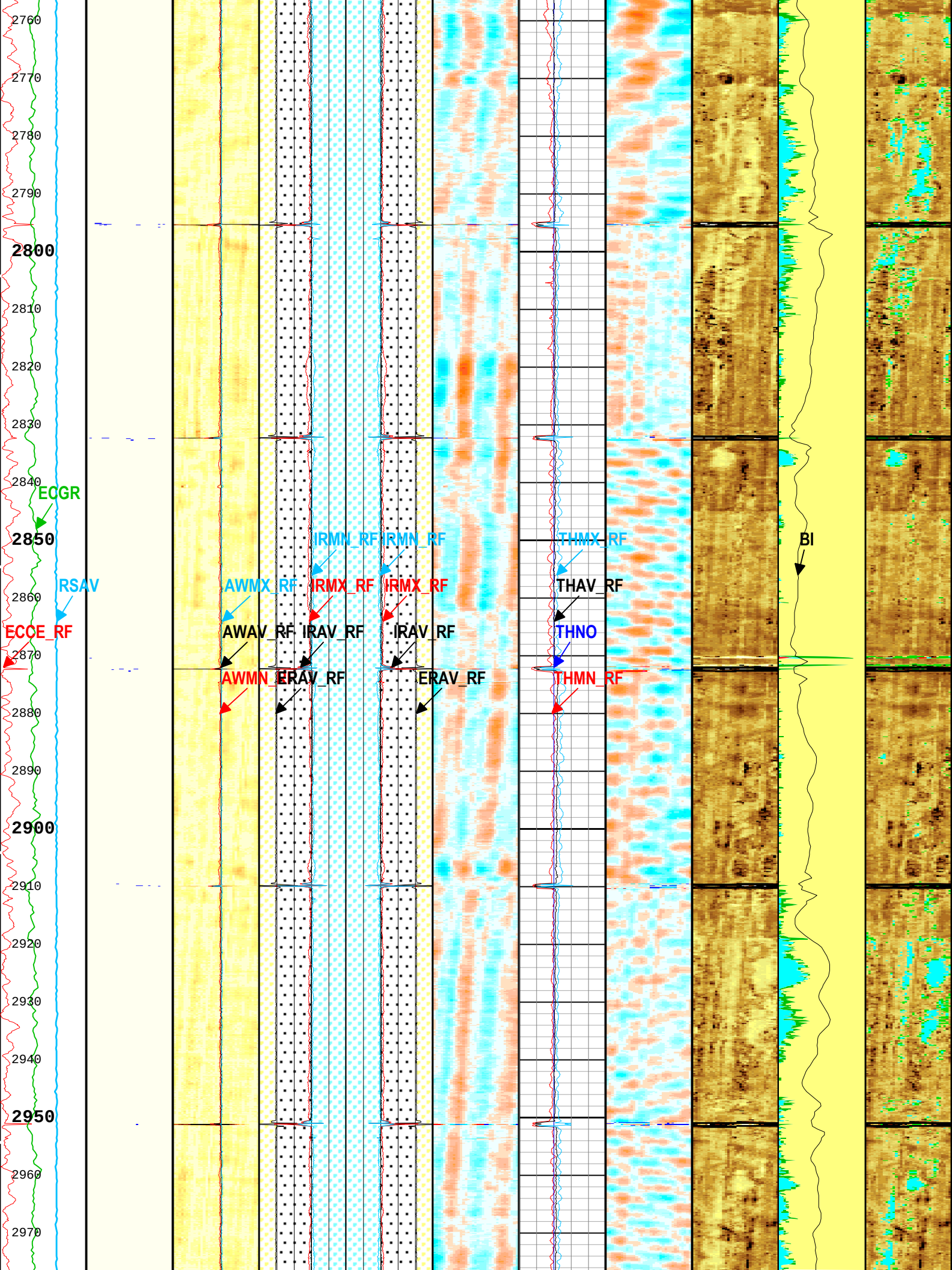
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THNO
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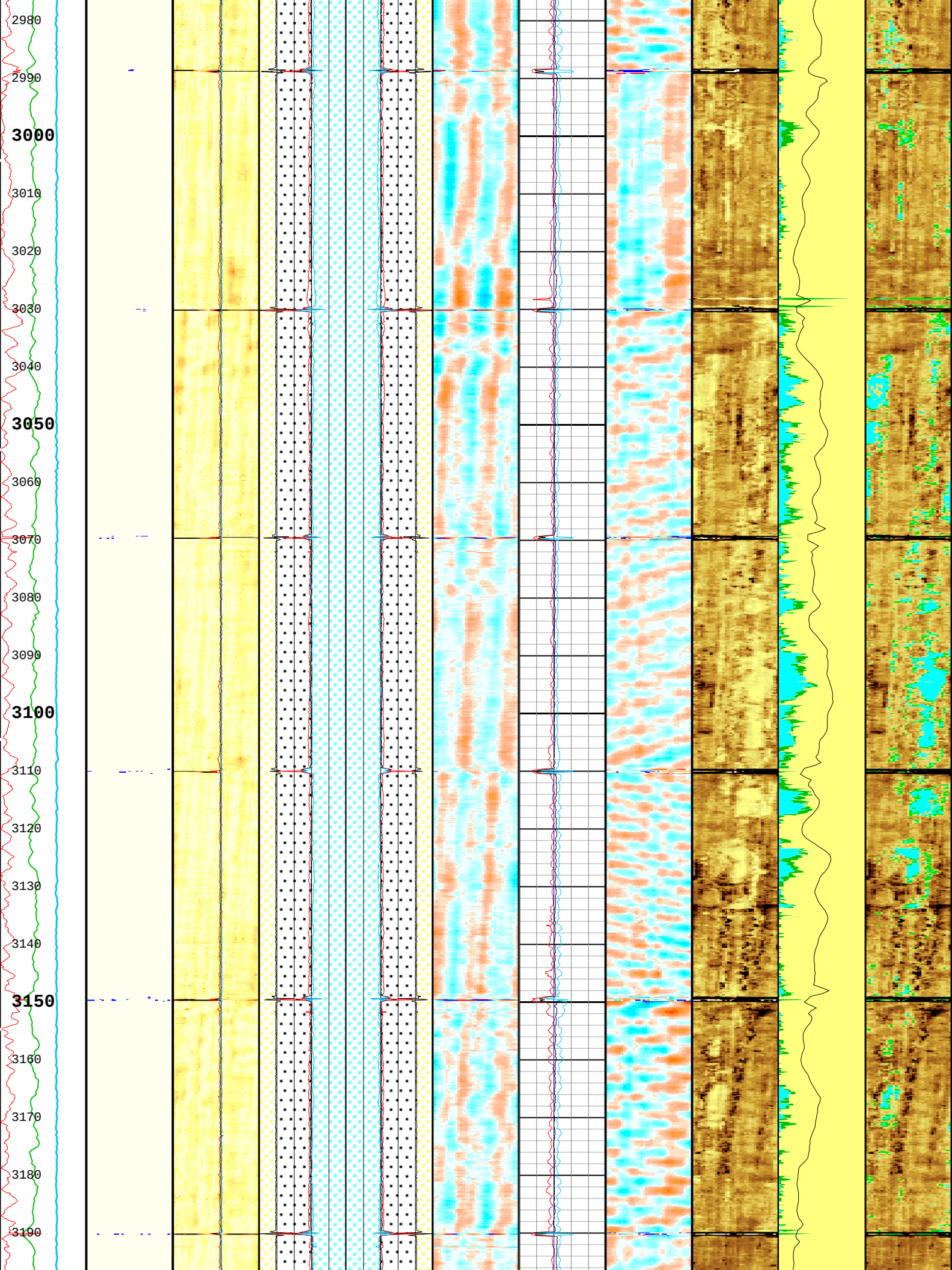
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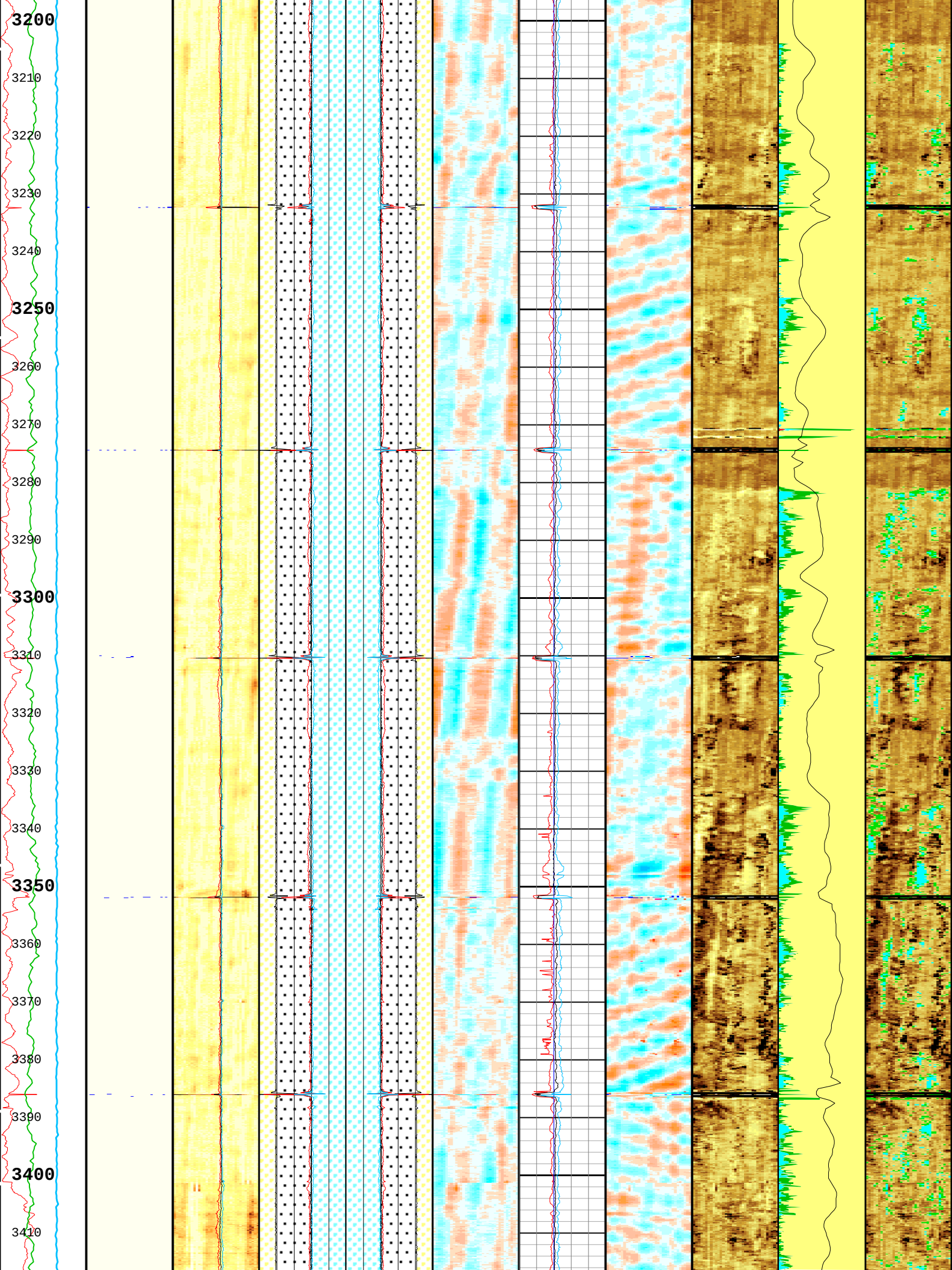
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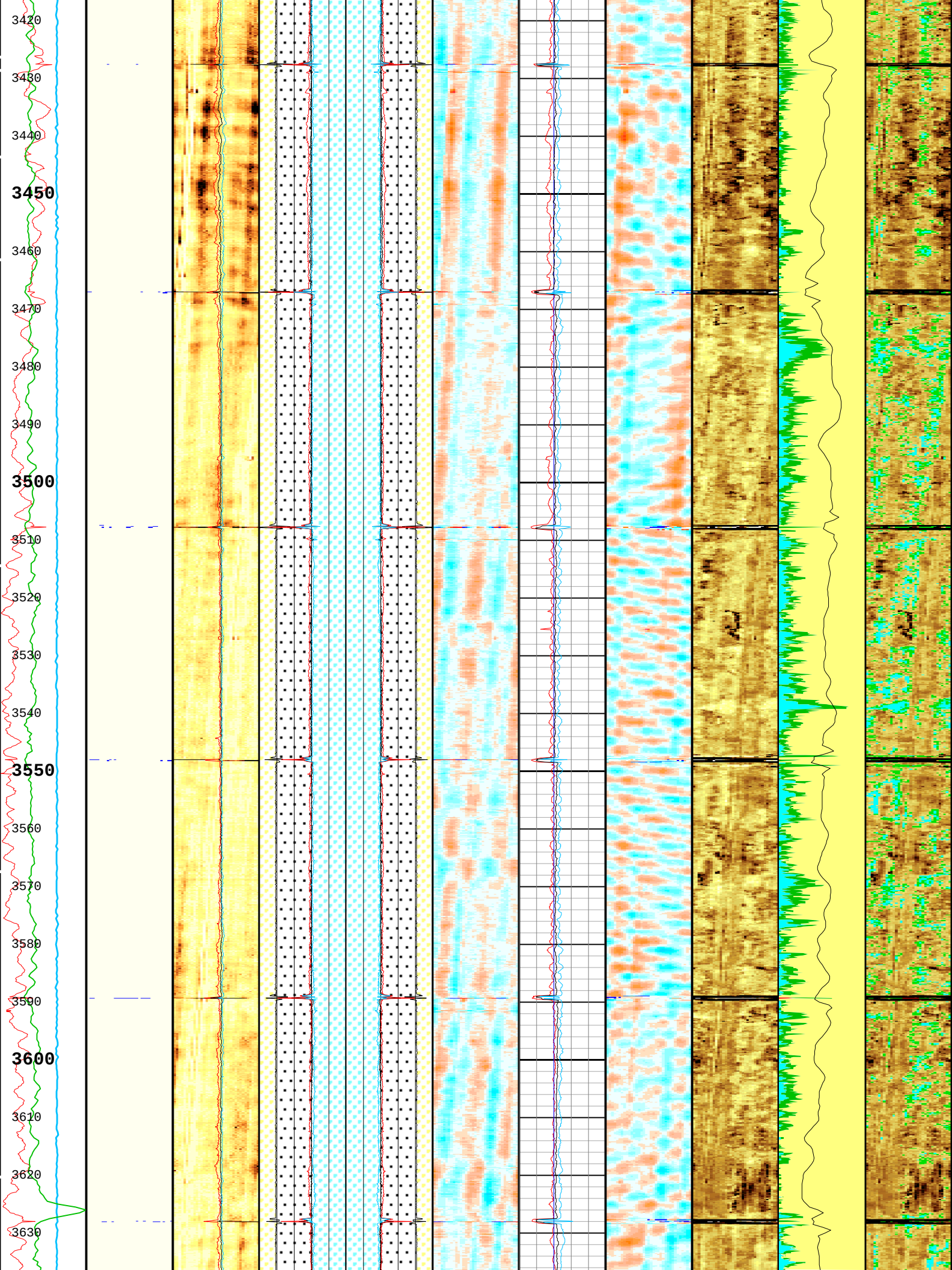
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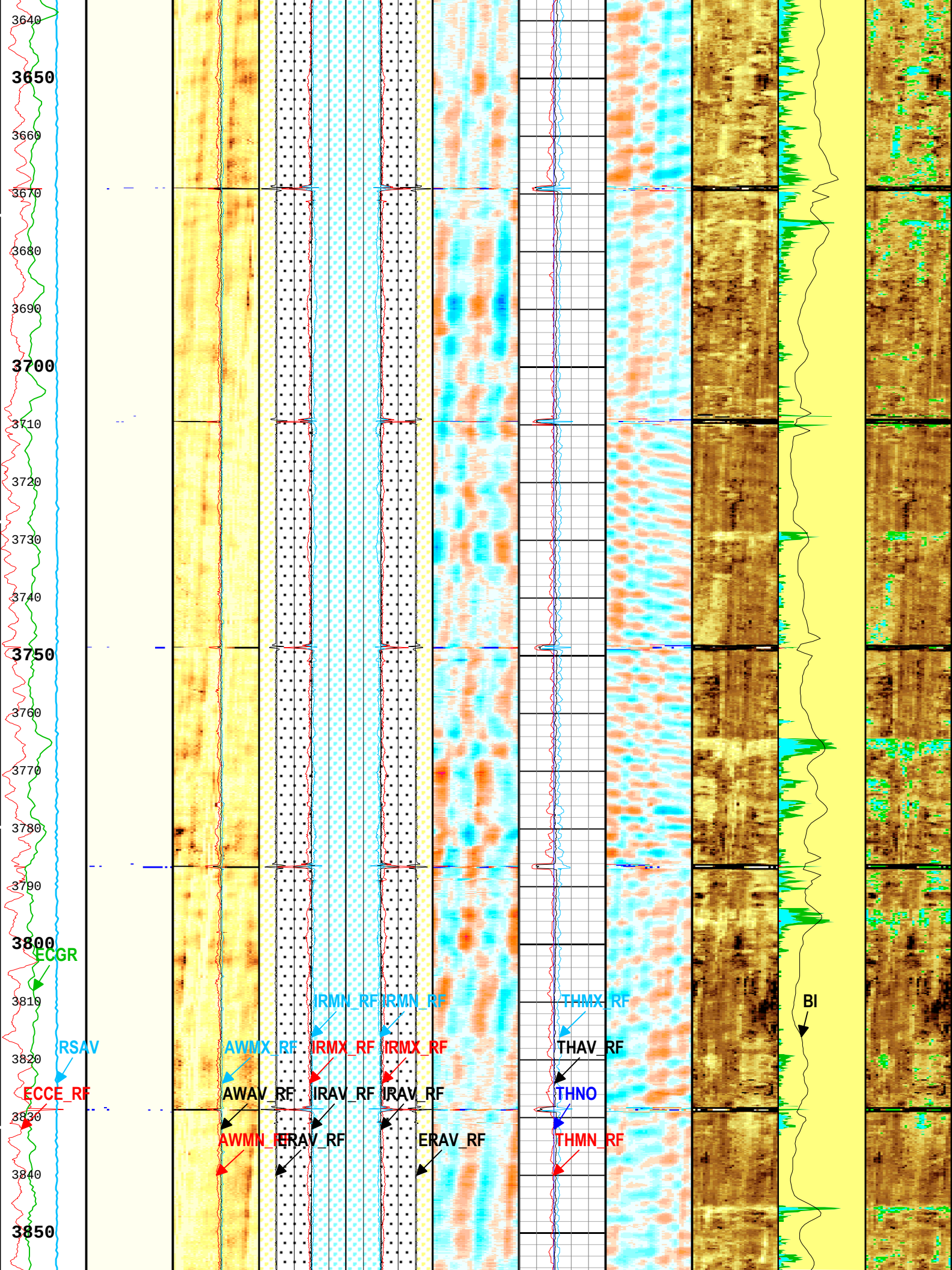
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AWAV_RF
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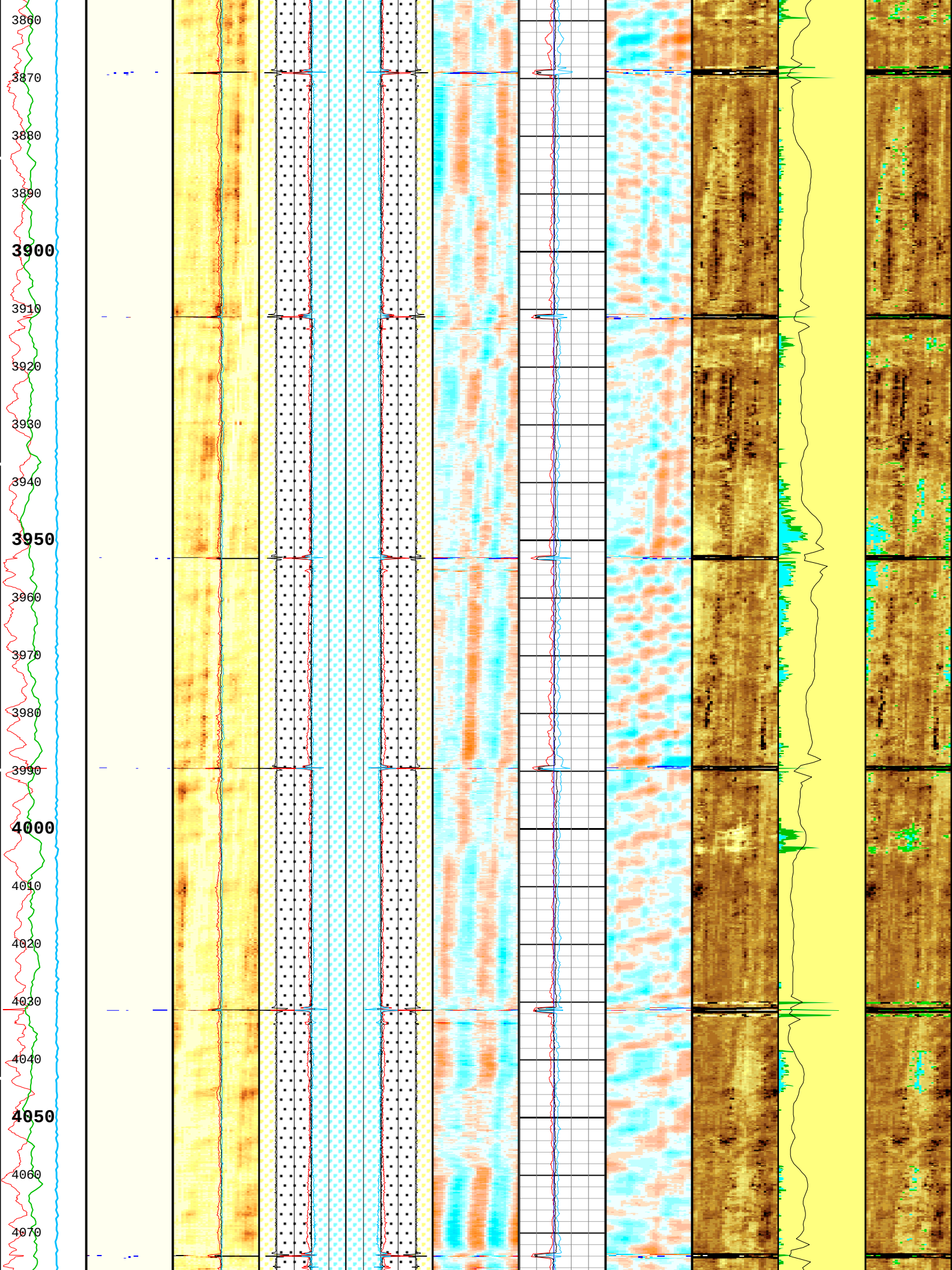
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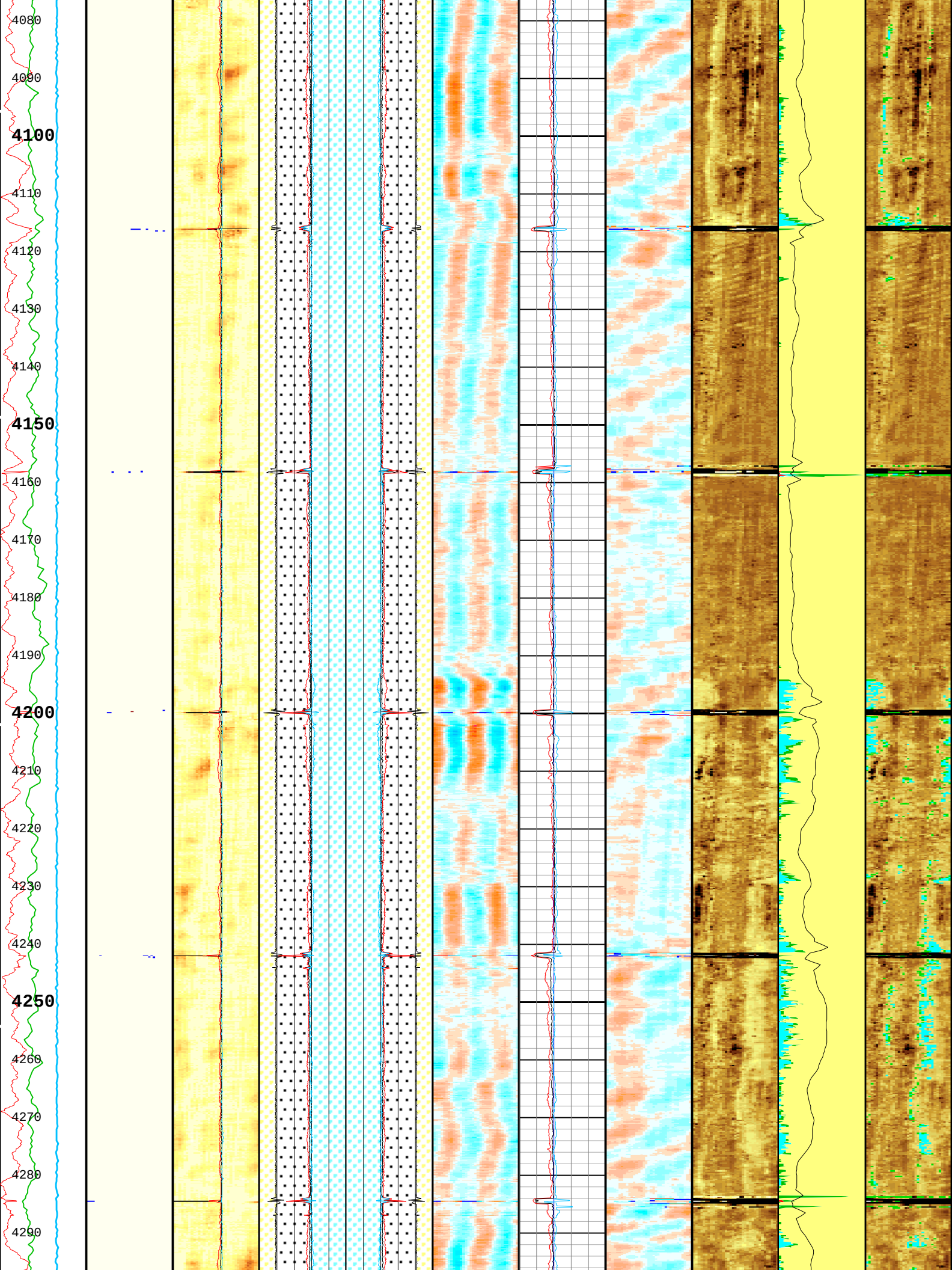
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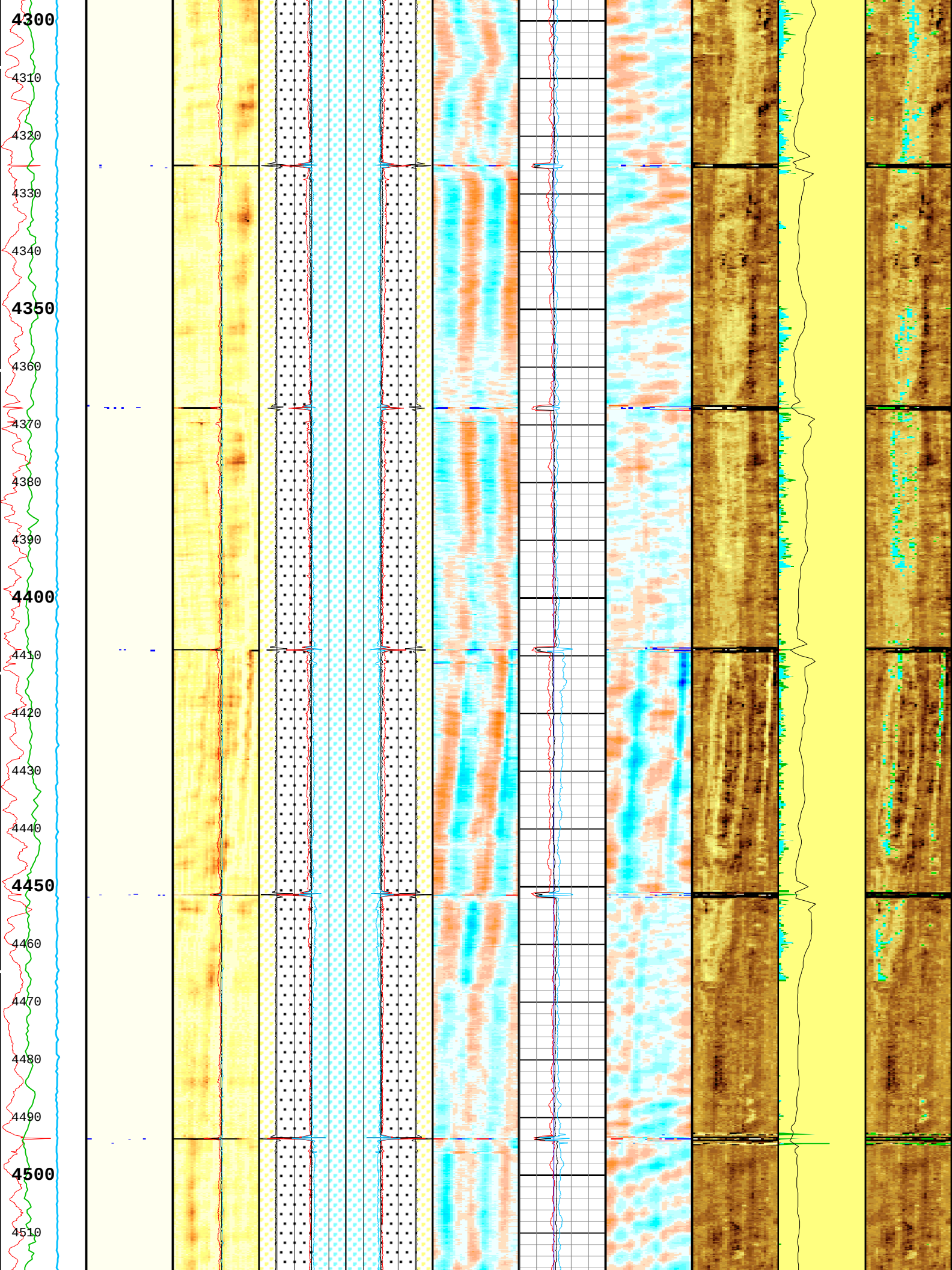
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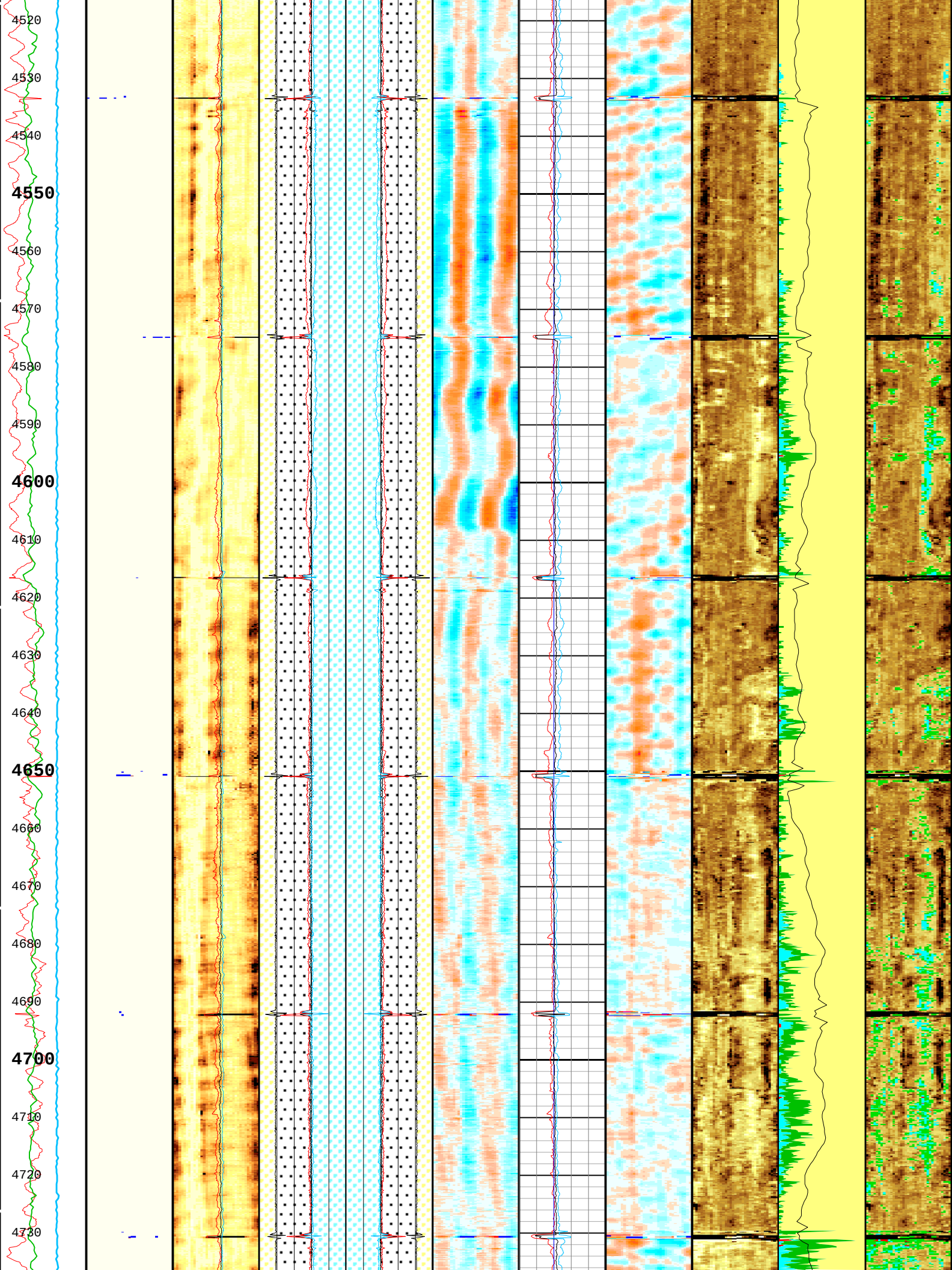
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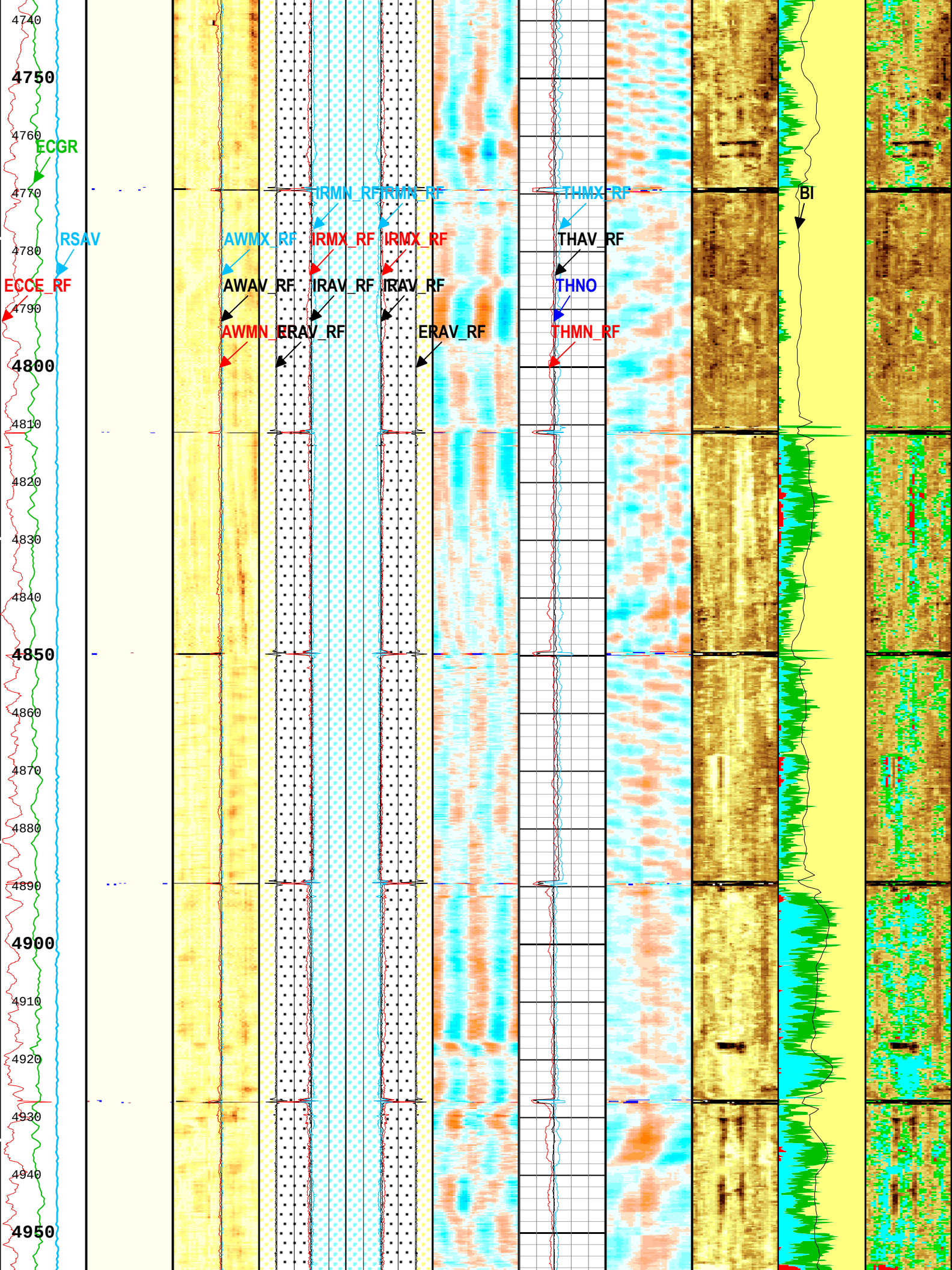
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IRMN_RF
IRMX_RF
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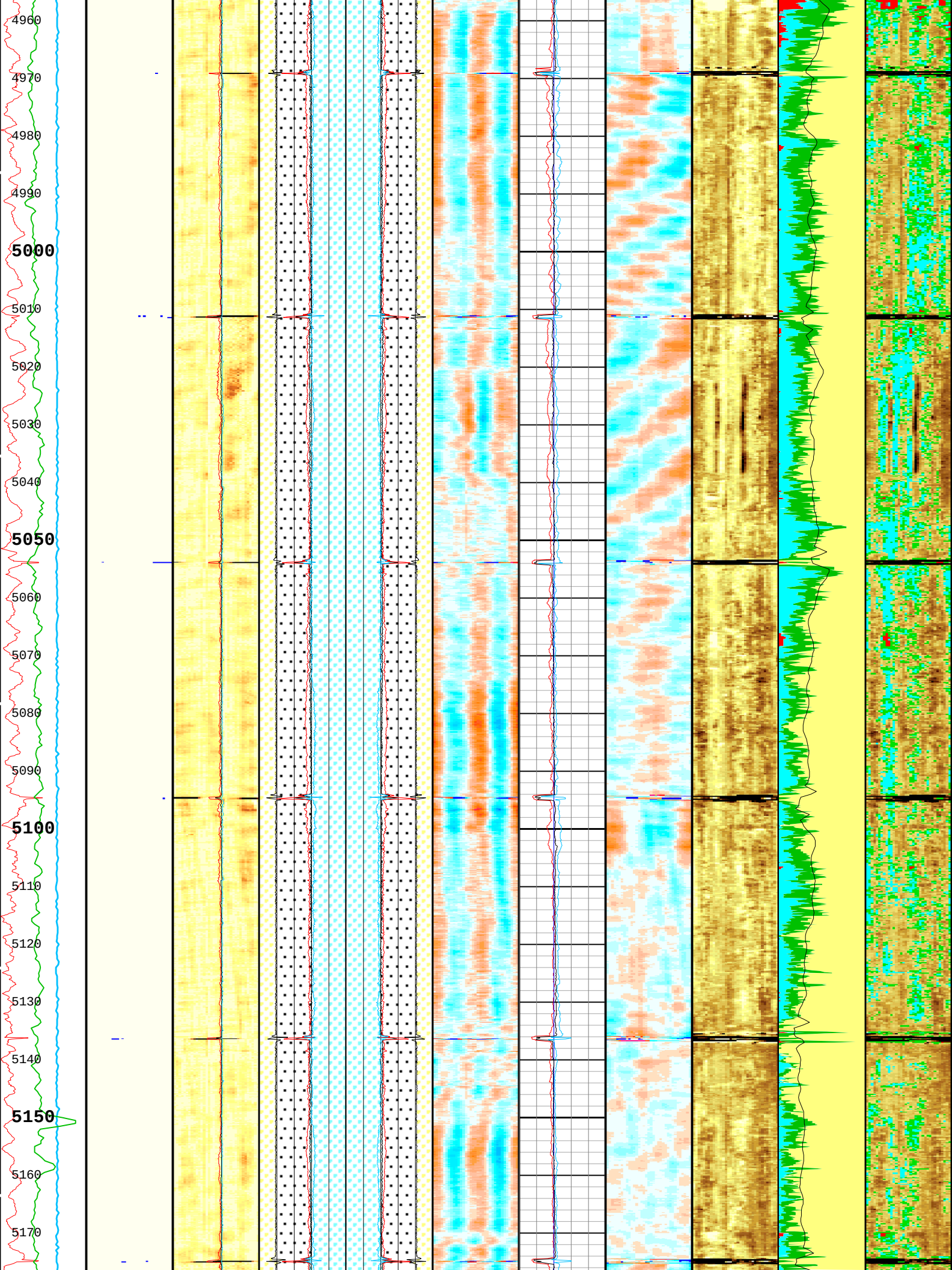
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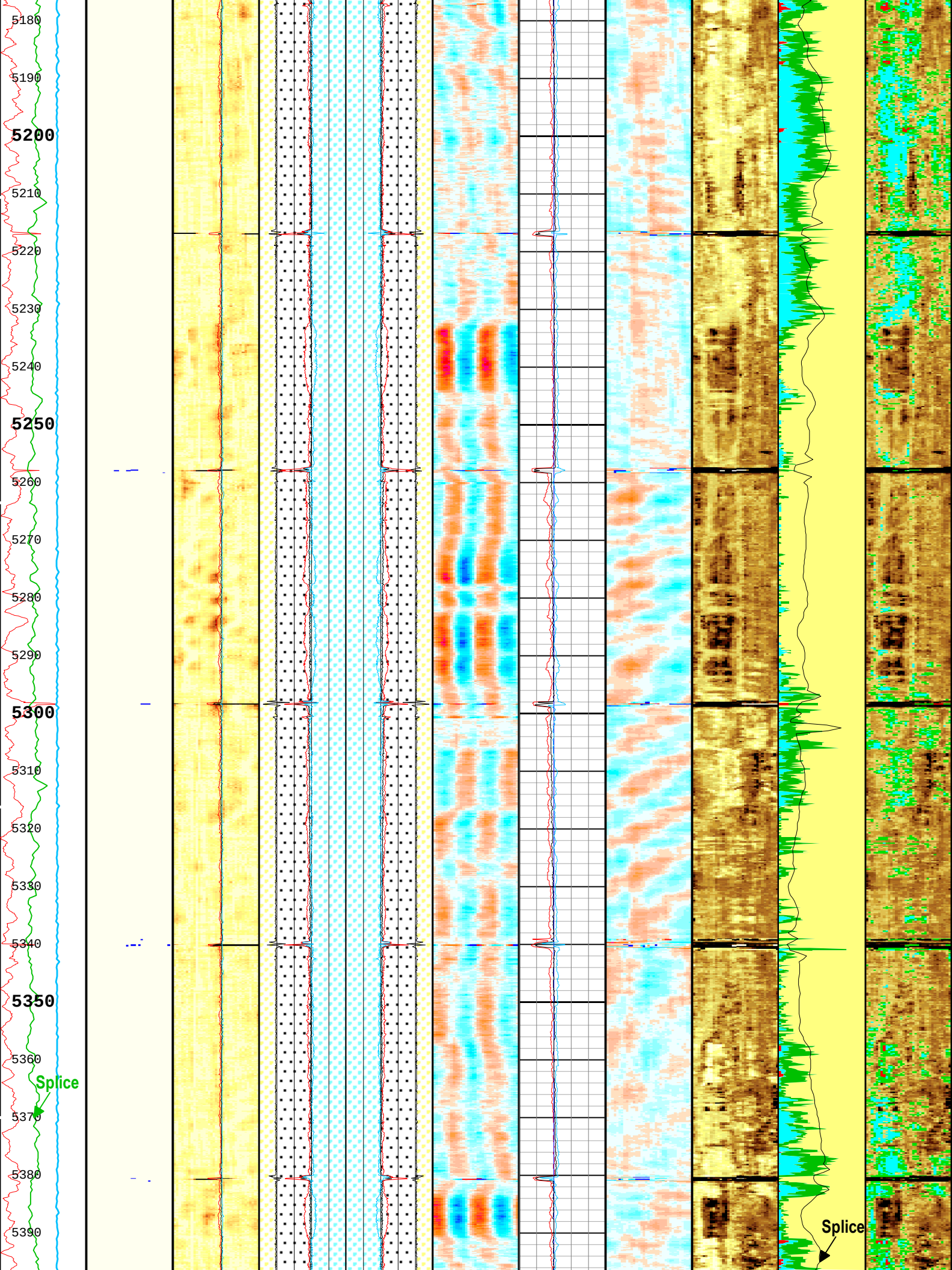
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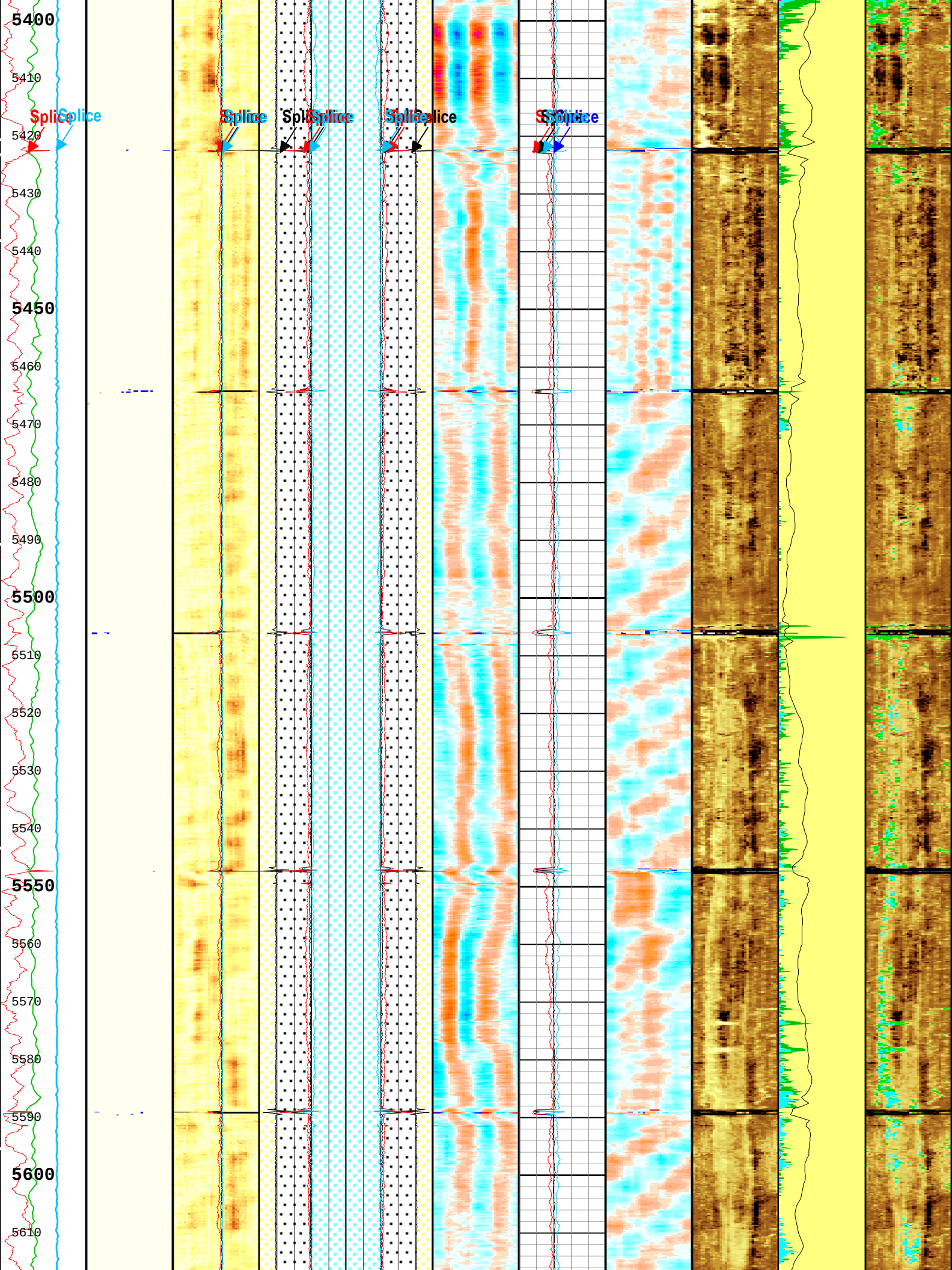
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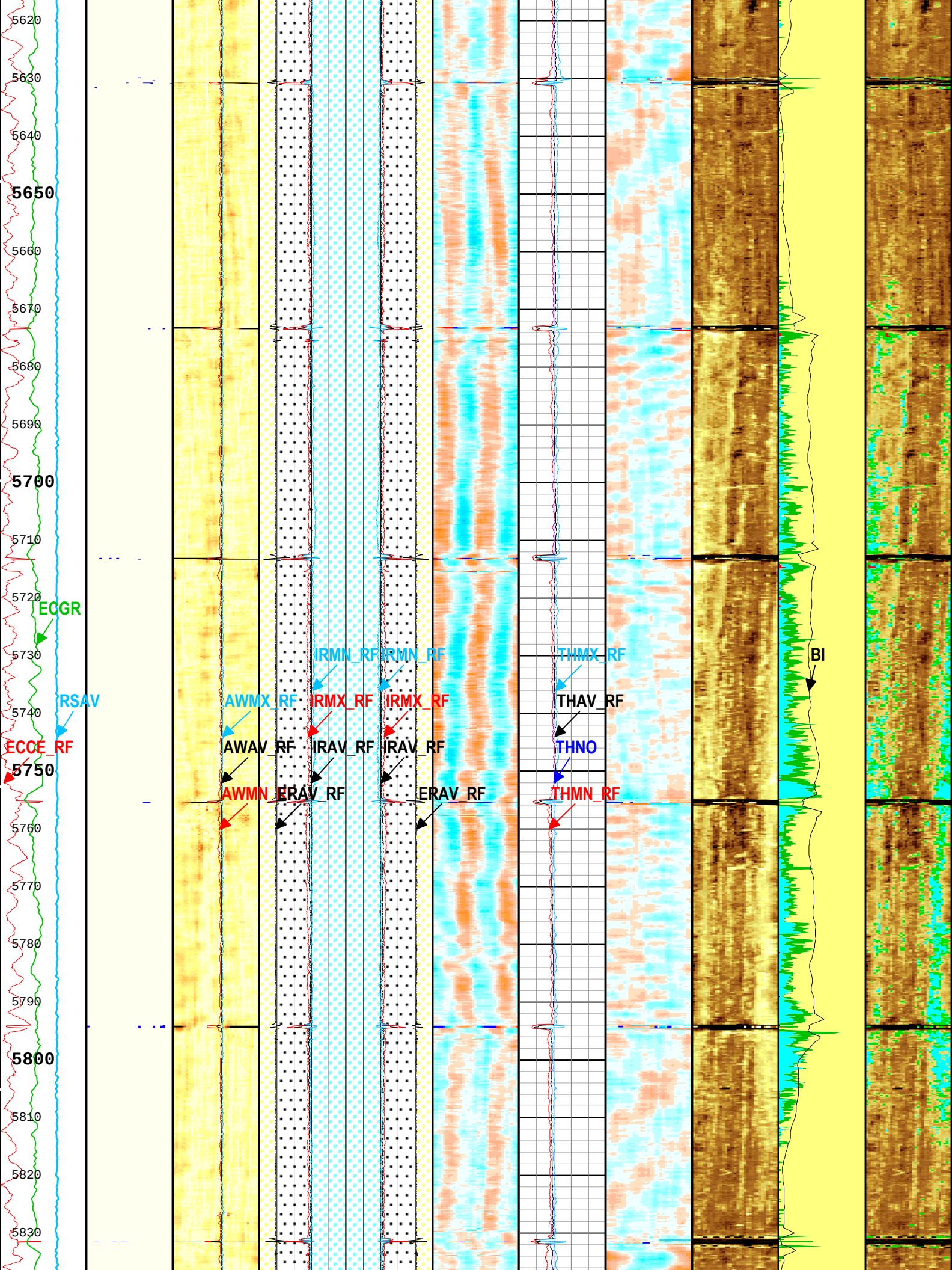
Splice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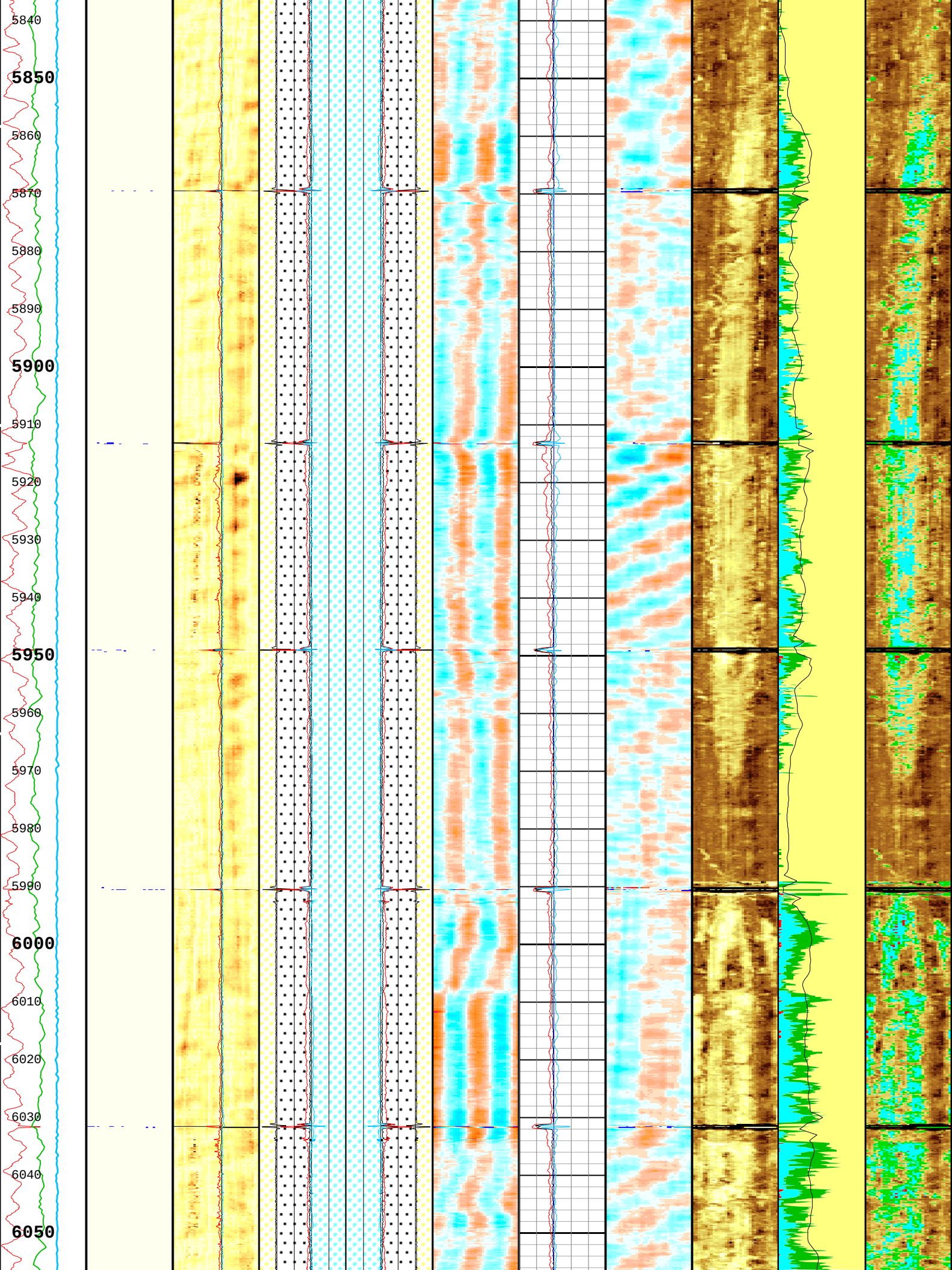
5770
5780
5790
5800
5810
5820
5830
ECGR
RSAV
ECCE_RF
IRMN_RF
IRMN_RF
IRMX_RF
IRMX_RF
AWMX_RF
AWAV_RF
IRAV_RF
IRAV_RF
AWMN_RF
ERAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
BI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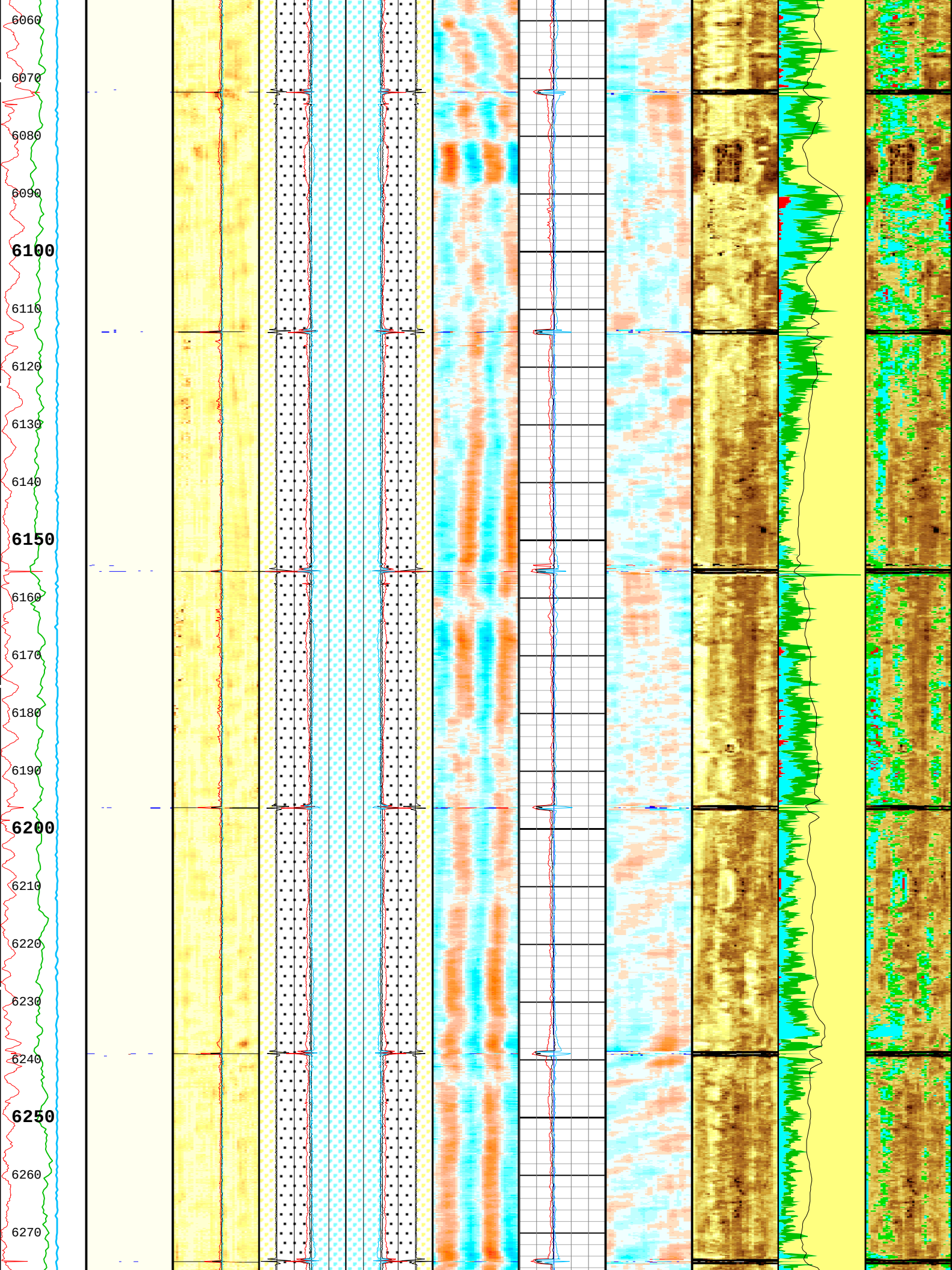
6030
6040
6050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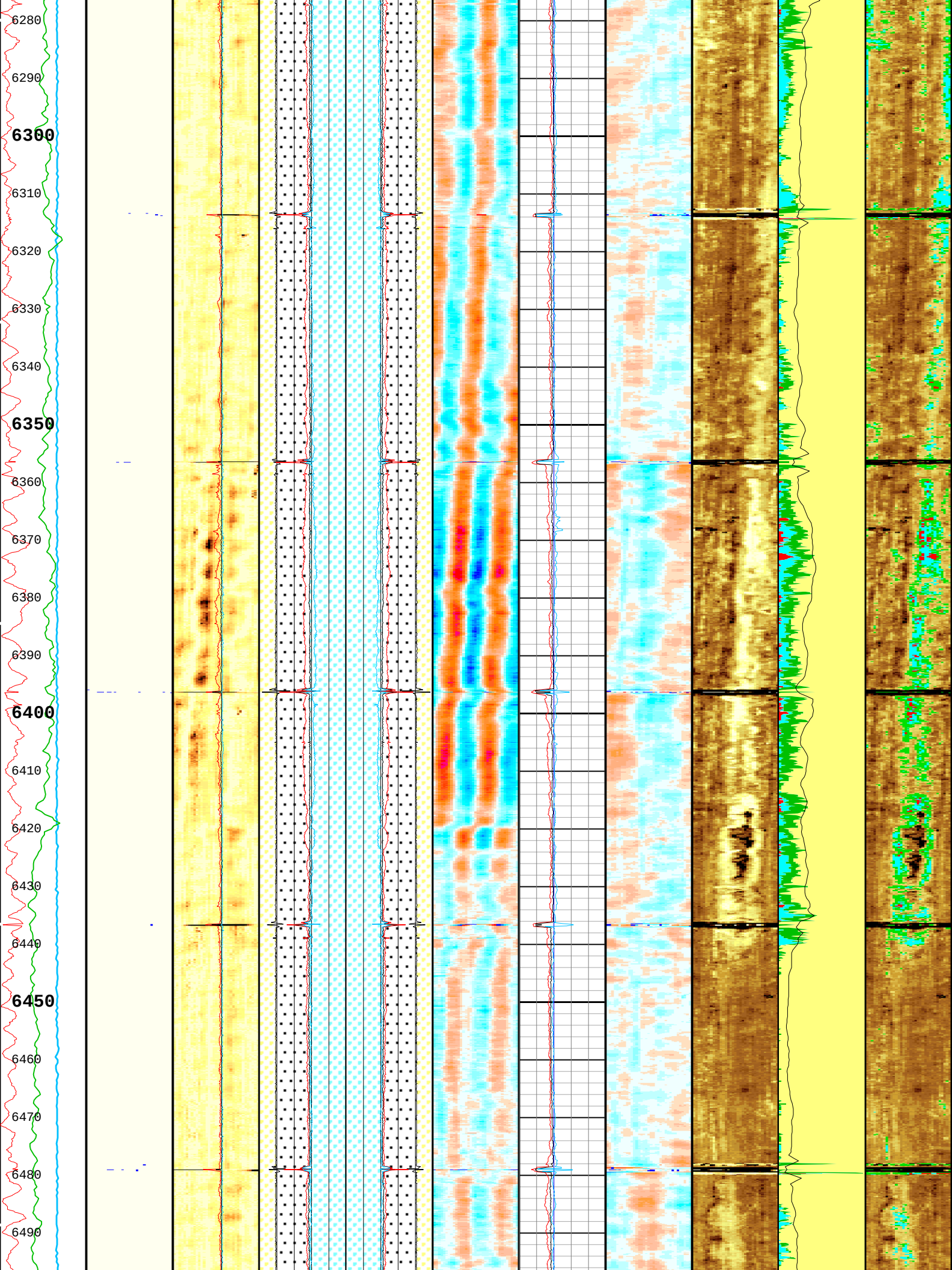
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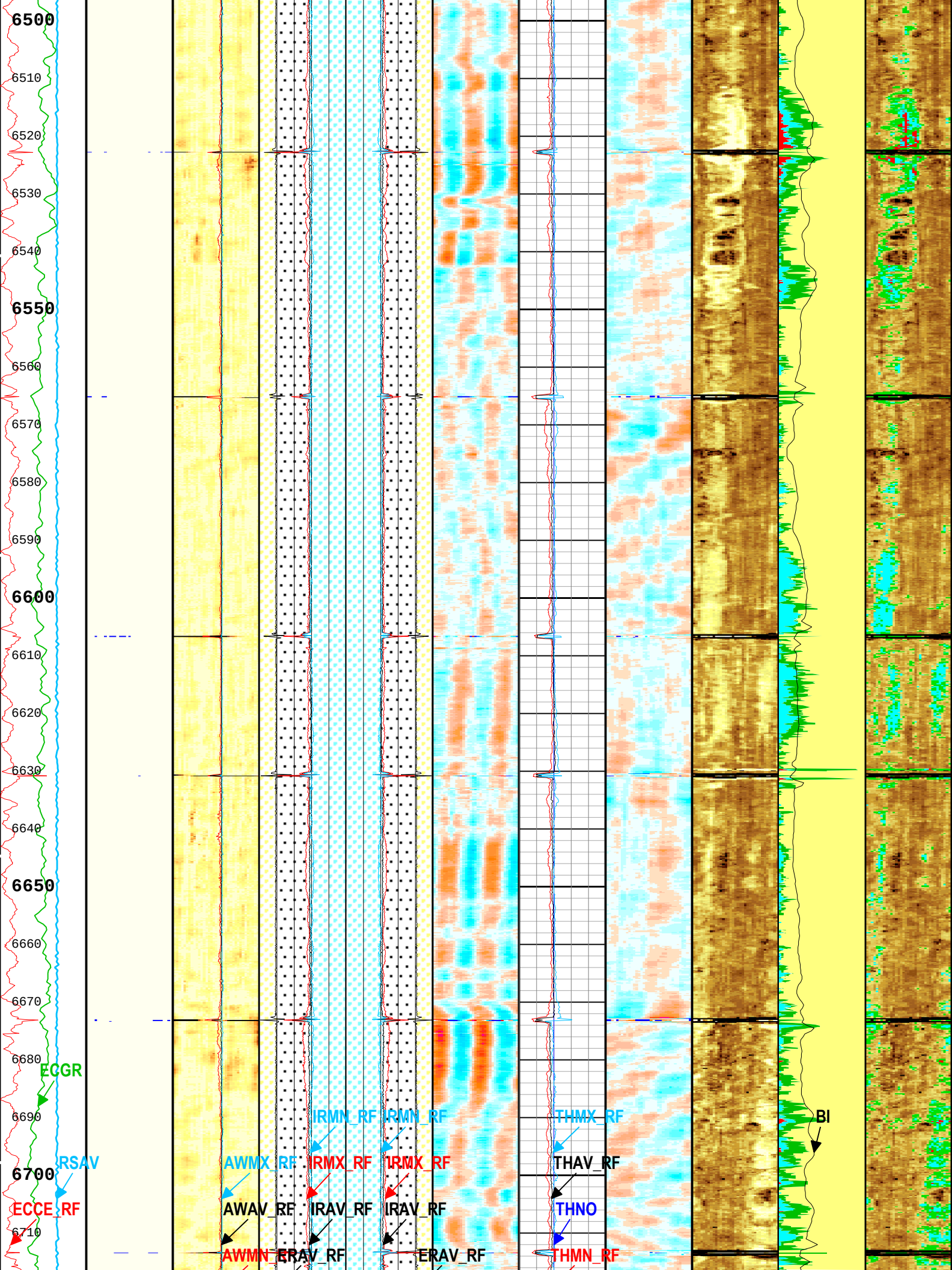
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IRMN_RF
IRMN_RF
THMX_RF
AWMX_RF
IRMX_RF
IRMX_RF
THAV_RF
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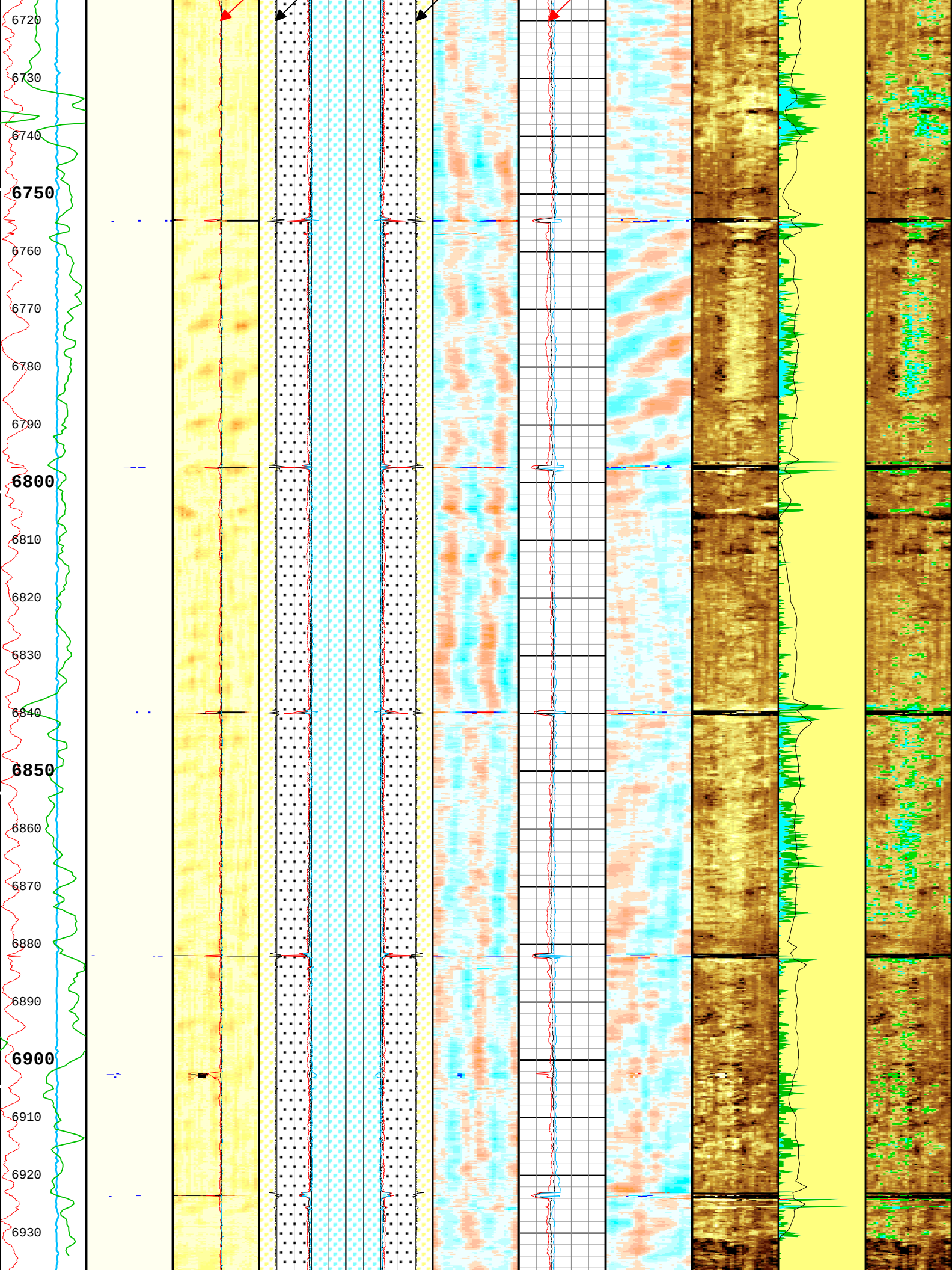
IRAV_RF
IRAV_RF
THNO
AWMN_RF
ERAV_RF
ERAV_RF
THMN_RF
BI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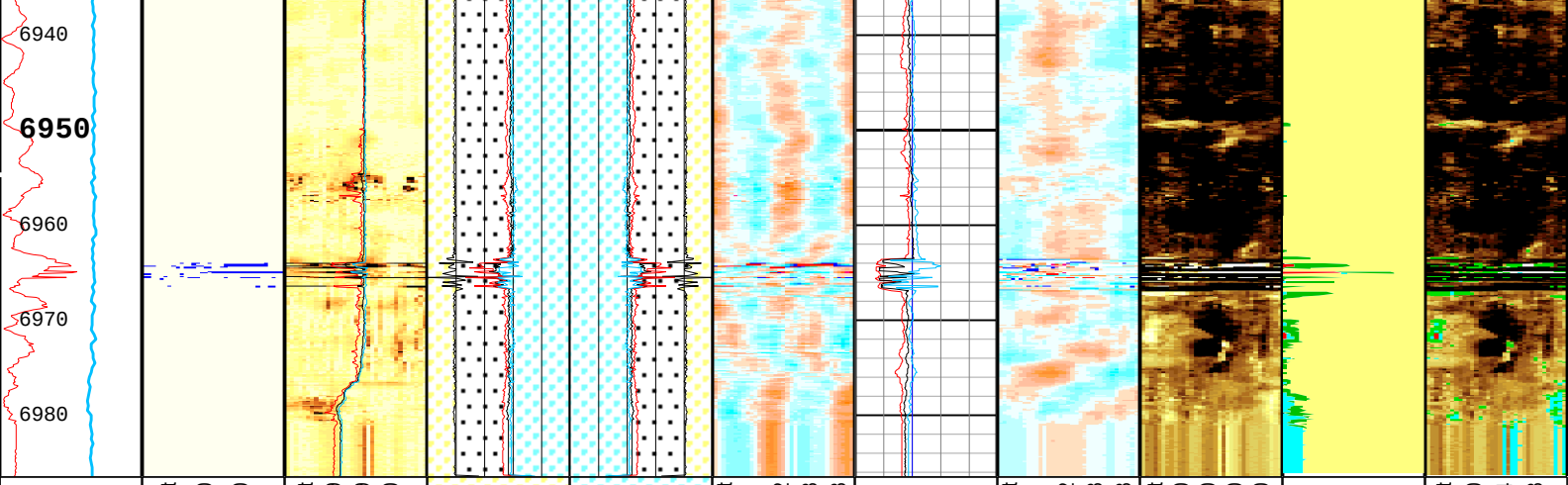


Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8

Gamma Ray (ECGR) HGNS[1]
0 gAPI 150

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]

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

Absent -4.799 -2.799 -0.800
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E[1] (dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E[1]
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
0 dB 75

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4.5 in 3.5

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
3.5 in 4.5

Absent -0.051 -0.012 0.028 0.068
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E[1] (in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E[1]
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E[1]
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E[1]
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.2 in 0.7

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[1] (in)

Absent 1.500 3.500 5.500 7.500
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)

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

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

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

Bonded
Gas
Liquid
Micro-debonding

Bond Index (BI) DSLT-H[1]
1 0

Absent 3.090 5.054 7.018
Custom Normalization
USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)

Absent 2.599 4.563 6.527
Custom Normalization
USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl)

TIME_1900 - Time Marked every 60.00 (s)

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

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

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: 18-Aug-2016 20:19:12

Composite 1

Cement Log 2 IN = 100 FT

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[7]:Up	Up	5184.38 ft	6987.38 ft	18-Aug-2016 10:32:04 AM	18-Aug-2016 11:06:58 AM	ON	2.26 ft	No
One	Log[11]:Up	Up	1280.11 ft	5434.15 ft	18-Aug-2016 11:29:44 AM	18-Aug-2016 12:58:51 PM	ON	11.15 ft	No
One	Log[12]:Up	Up	44.45 ft	1429.03 ft	18-Aug-2016 1:08:22 PM	18-Aug-2016 1:38:42 PM	ON	11.26 ft	No
One	Log[18]:Up	Up	21.44 ft	171.59 ft	18-Aug-2016 2:53:06 PM	18-Aug-2016 2:58:21 PM	ON	-0.05 ft	No

All depths are referenced to toolstring zero

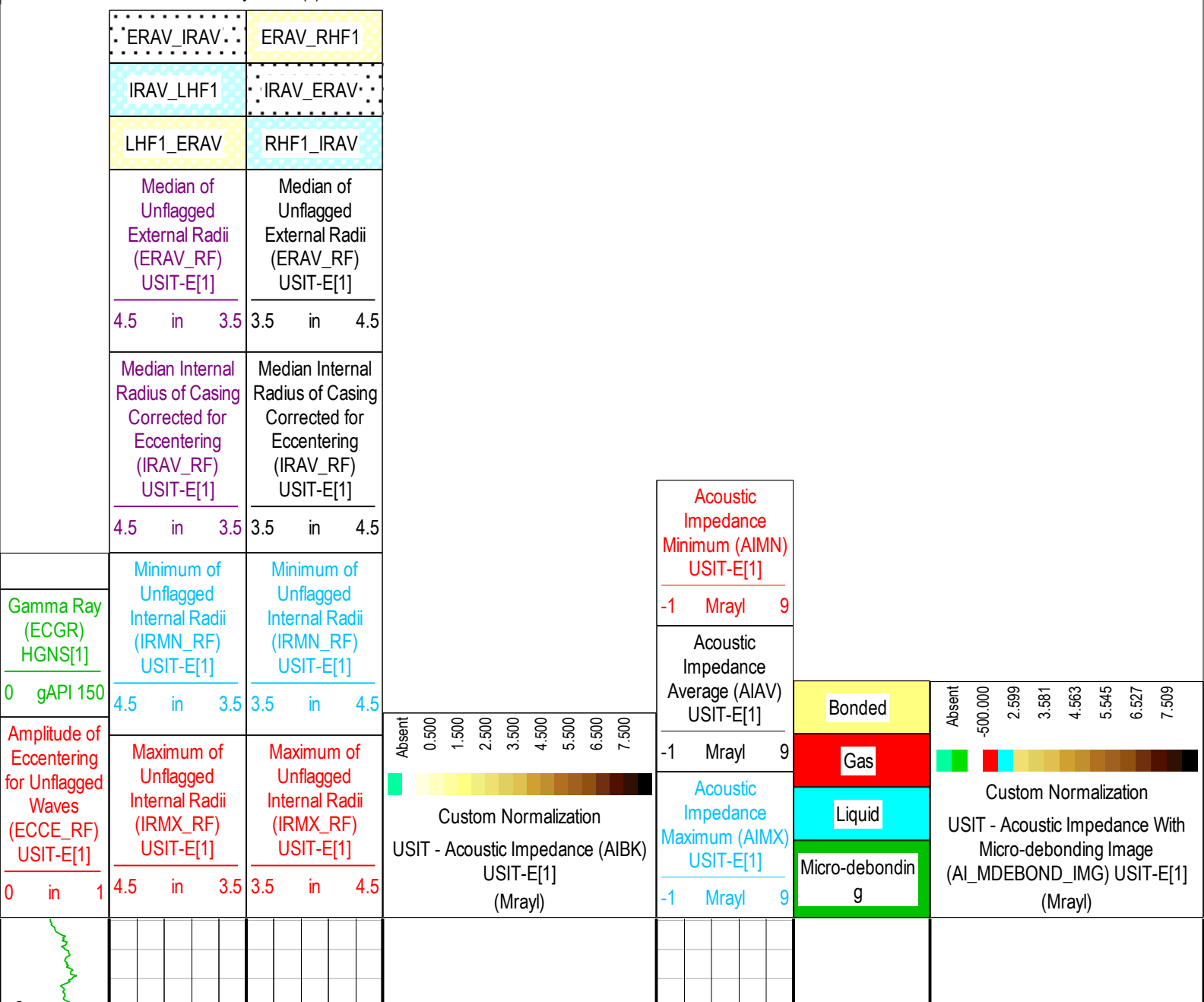
Log

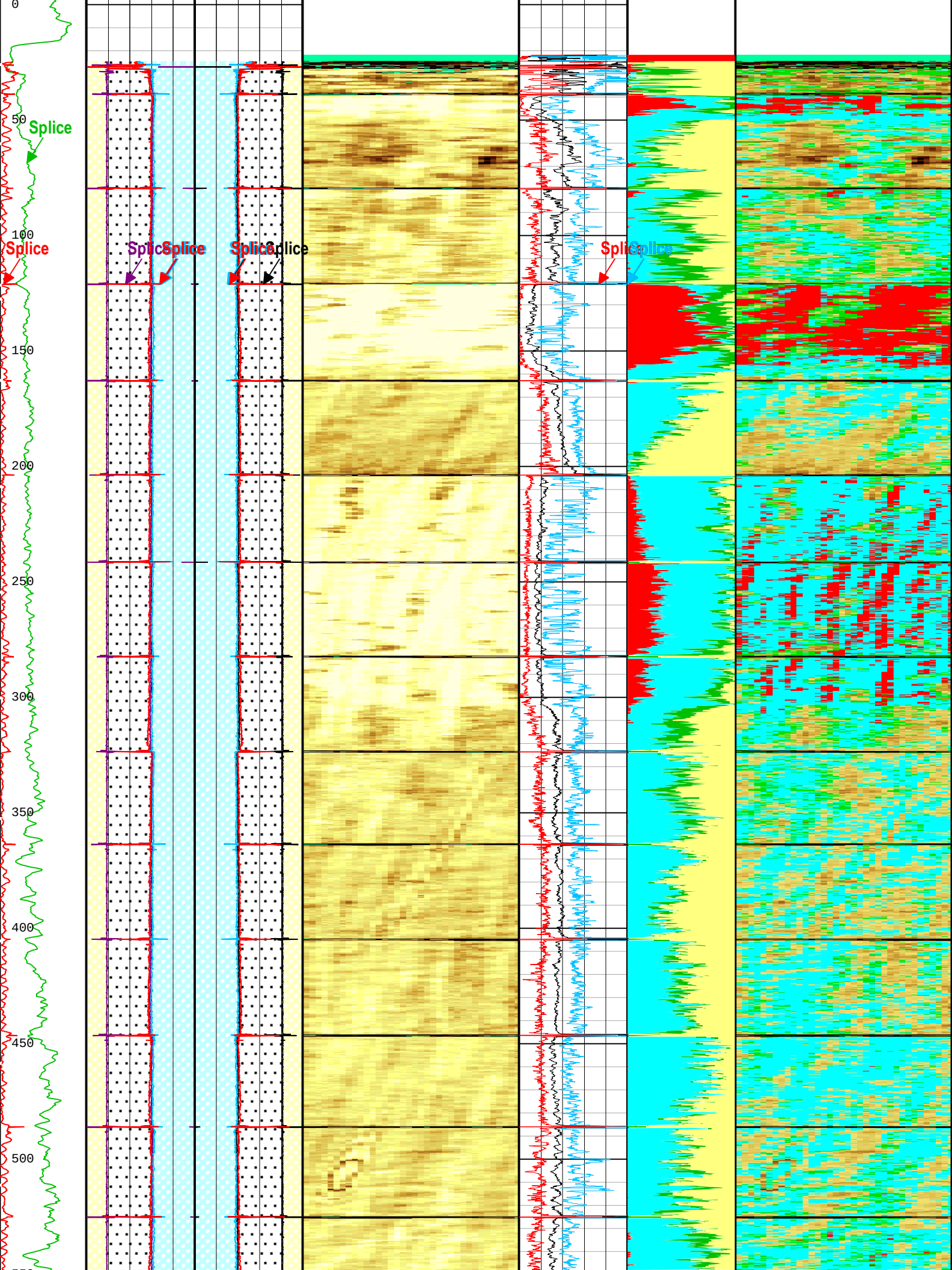
Company:Southern California Gas Company Well:Fernando Fee 35A

Composite 1:S006

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: 18-Aug-2016 20:19:37

TIME_1900 - Time Marked every 60.00 (s)




0
50
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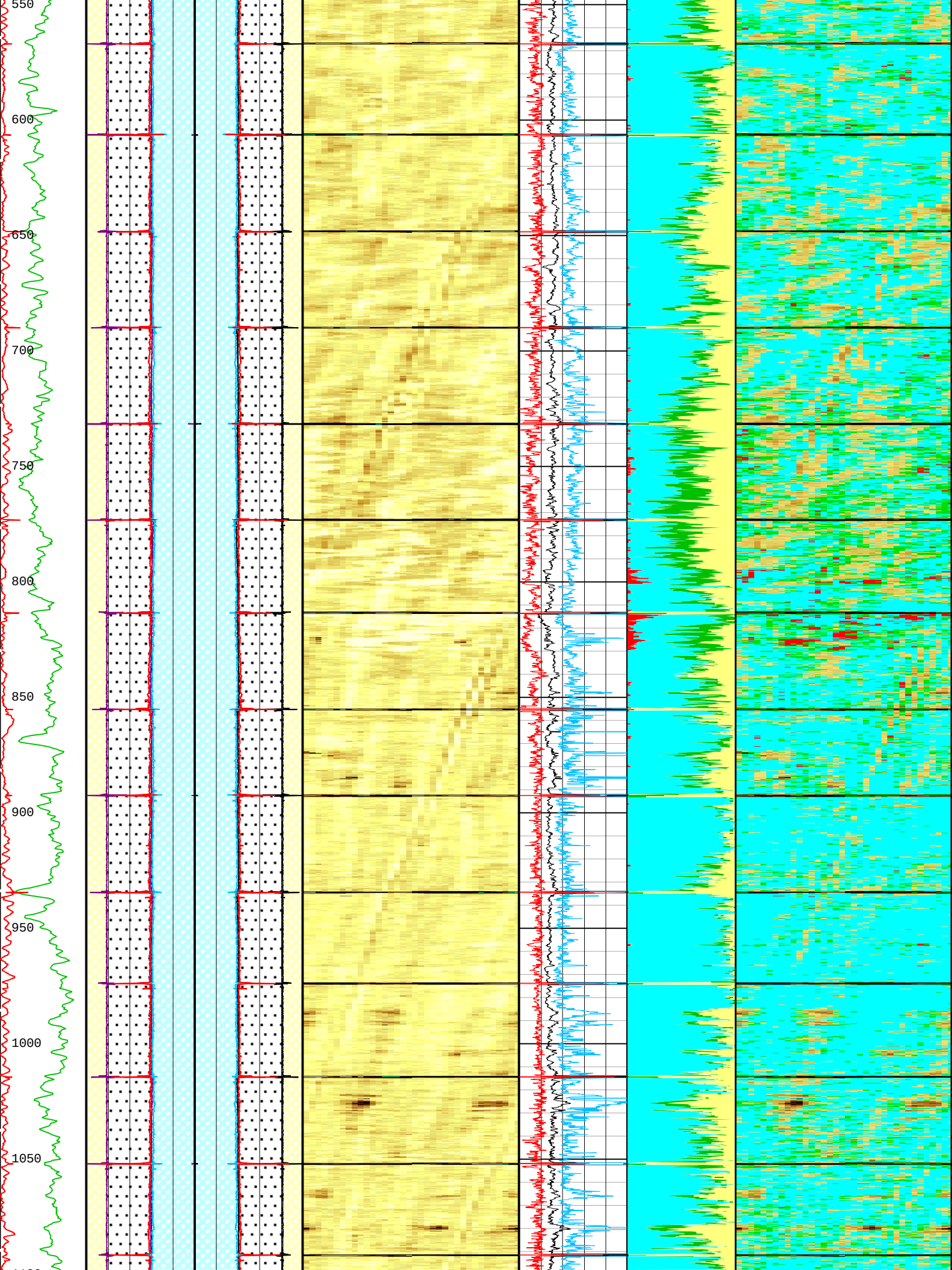
150
200
250
300
350
400
450
500
Splice
Splice
Splice
Splice
Splice
Splice
Splice
Splice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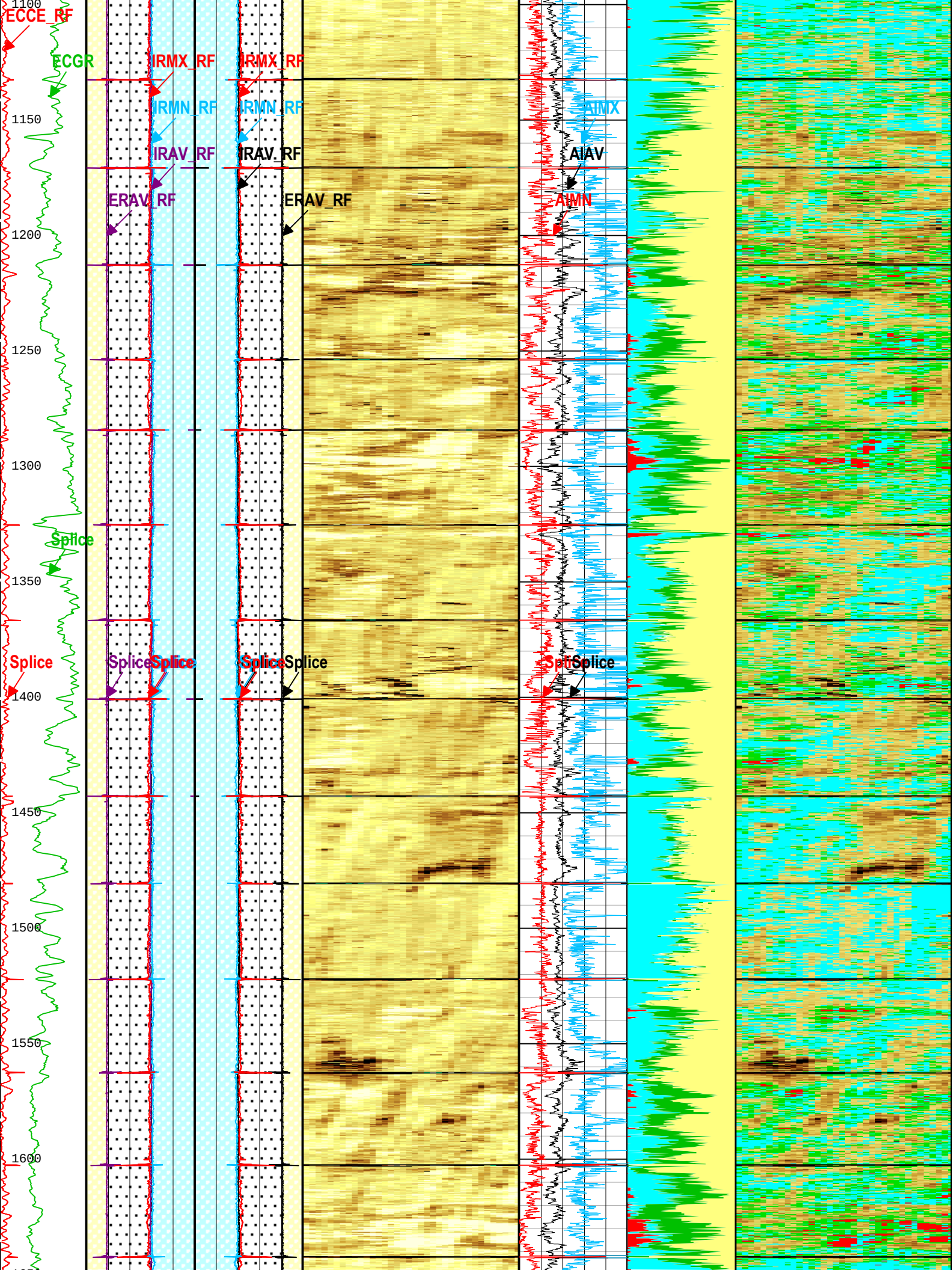
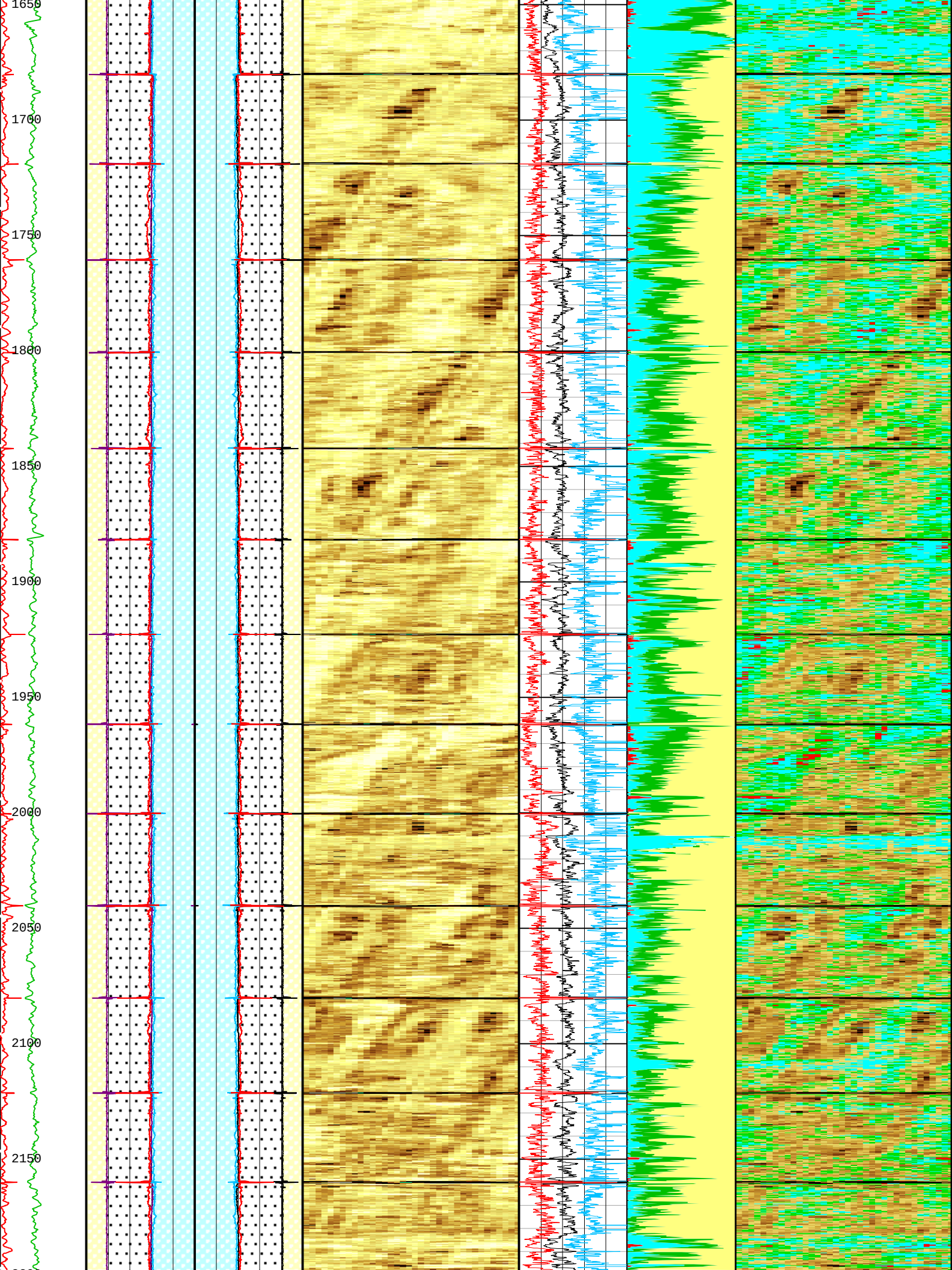
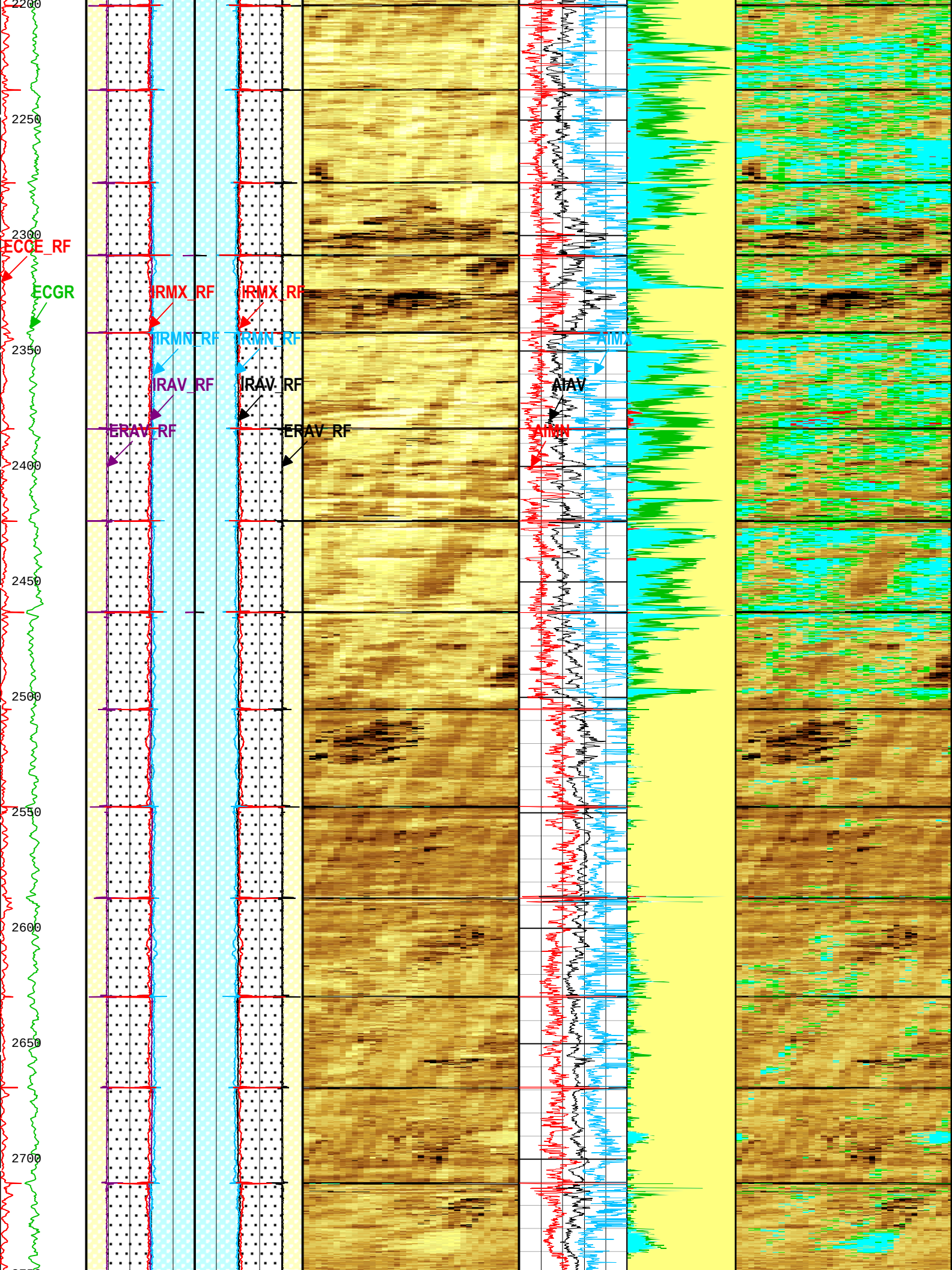
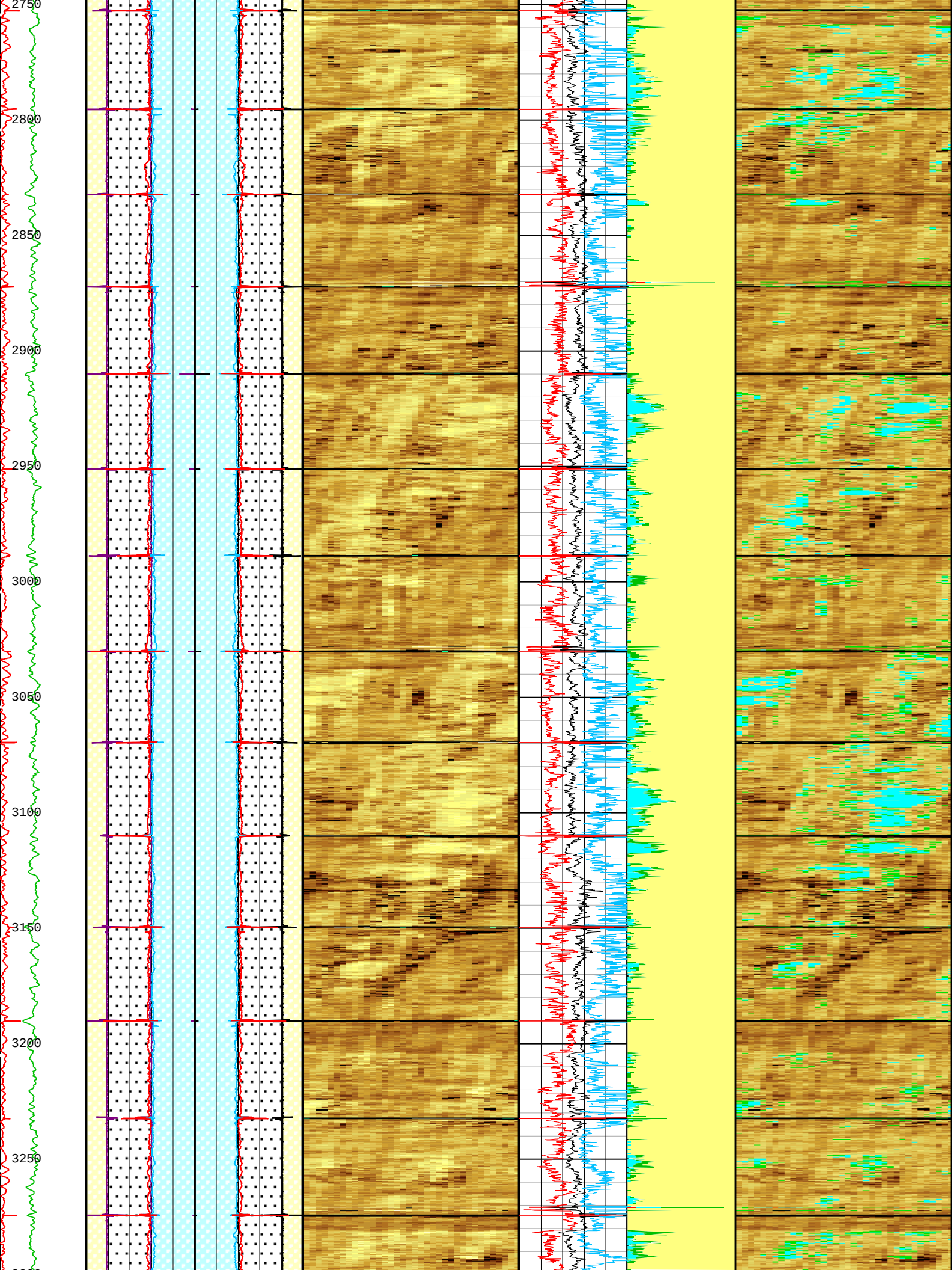
600
650
700
750
800
850
900
950
1000
1050


ECCE_RF
ECGR
IRMX_RF
IRMN_RF
IRAV_RF
ERAV_RF
IRMX_RF
IRMN_RF
IRAV_RF
ERAV_RF
AIMX
AIAV
AIMN
Splice
Splice
SpliceSplice
SpliceSplice
SpliceSplice
SpliceSplice
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550
1600


1650
1700
1750
1800
1850
1900
1950
2000
2050
2100
2150


2200
2250
2300
2350
2400
2450
2500
2550
2600
2650
2700
ECCE_RF
ECGR
IRMX_RF
IRMX_RF
IRMN_RF
IRMN_RF
IRAV_RF
IRAV_RF
ERAV_RF
ERAV_RF
AIMX
AIAV
AIMN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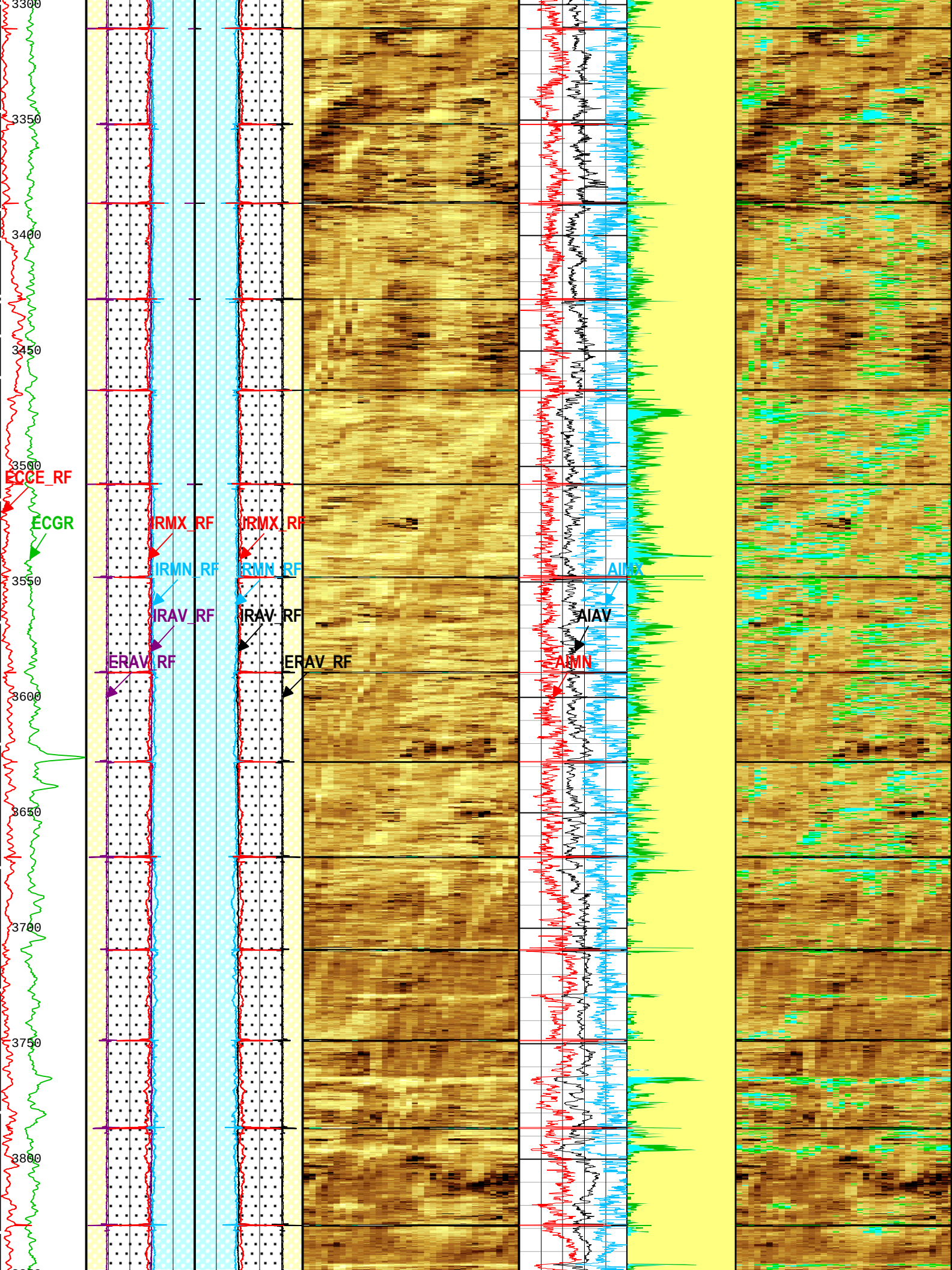
2900
2950
3000
3050
3100
3150
3200
3250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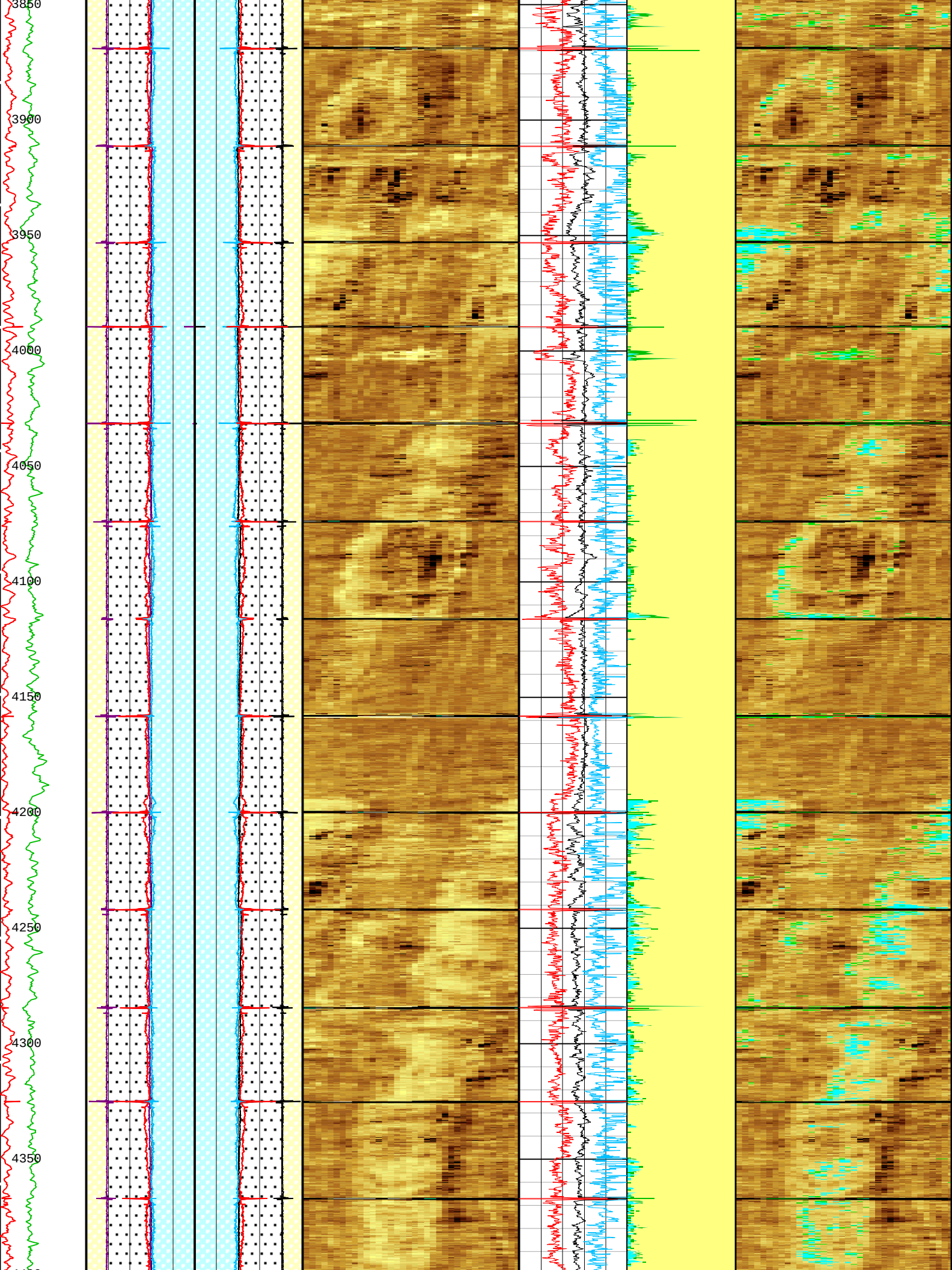
3350
3400
3450
3500
3550
3600
3650
3700
3750
3800
ECCE_RF
ECGR
IRMX_RF
IRMN_RF
IRAV_RF
ERAV_RF
IRMX_RF
IRMN_RF
IRAV_RF
ERAV_RF
AIMX
AIAV
AIMN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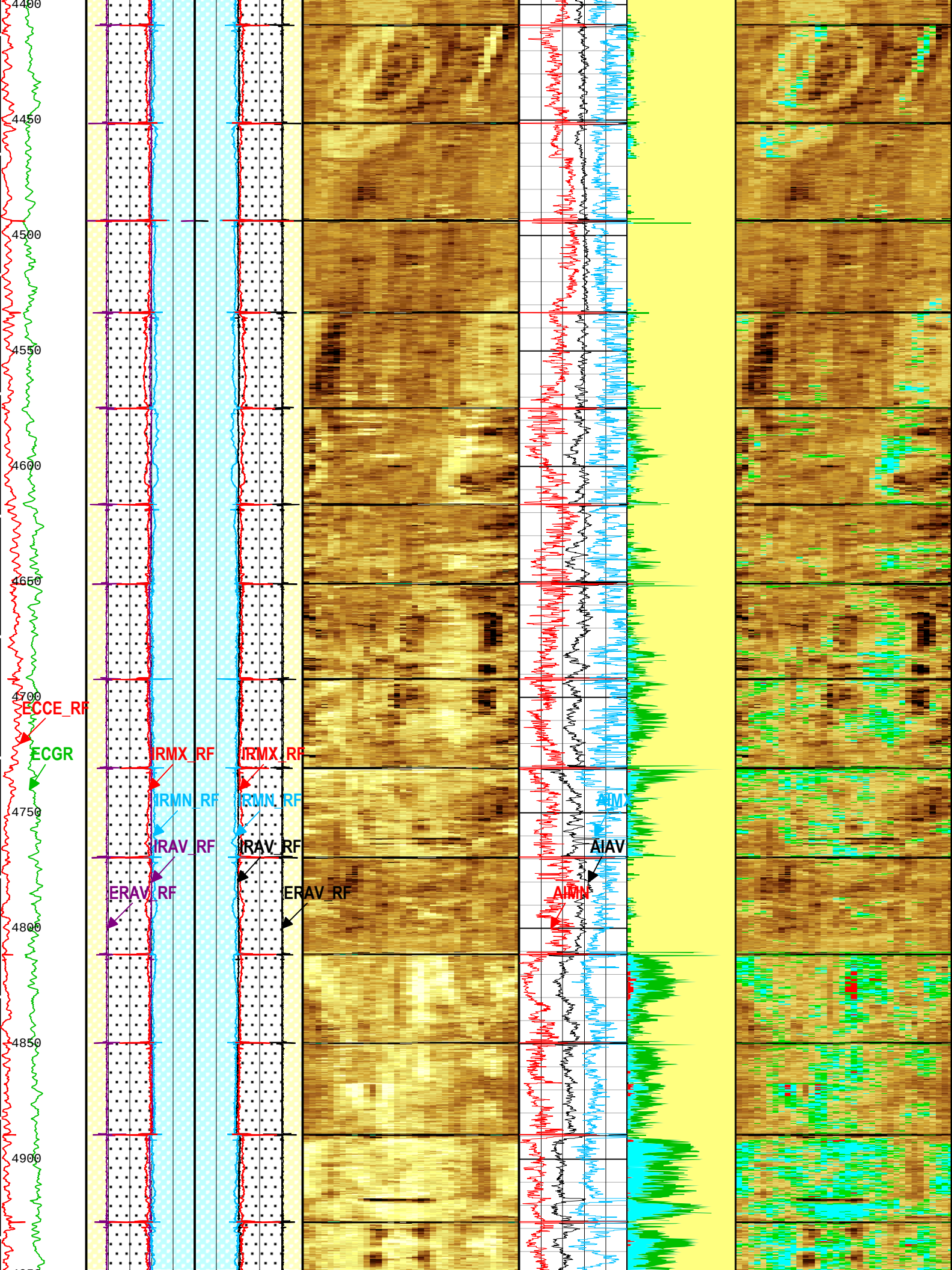
4300
4350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ECGR
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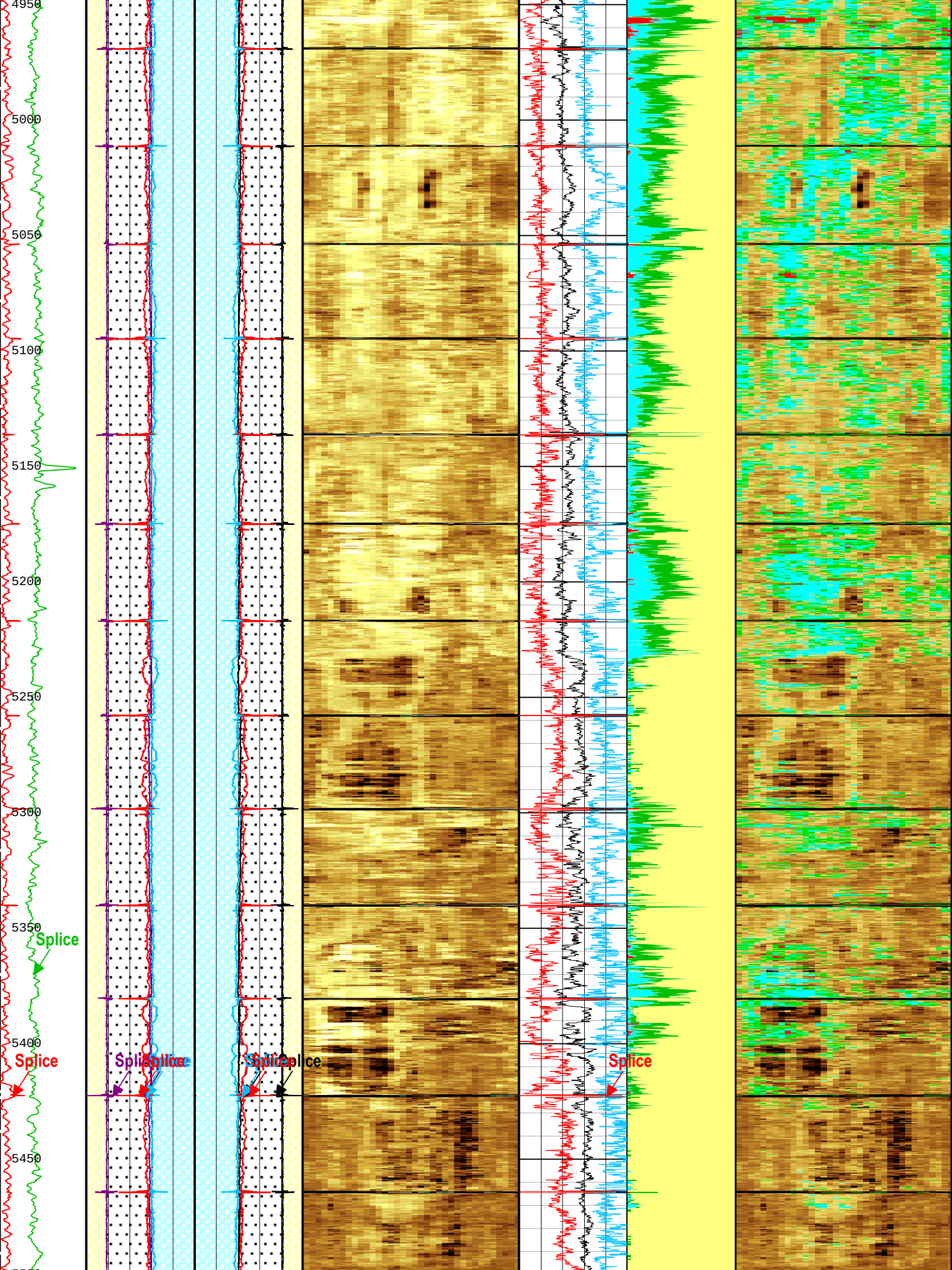
AIMX
AIAV
AIMN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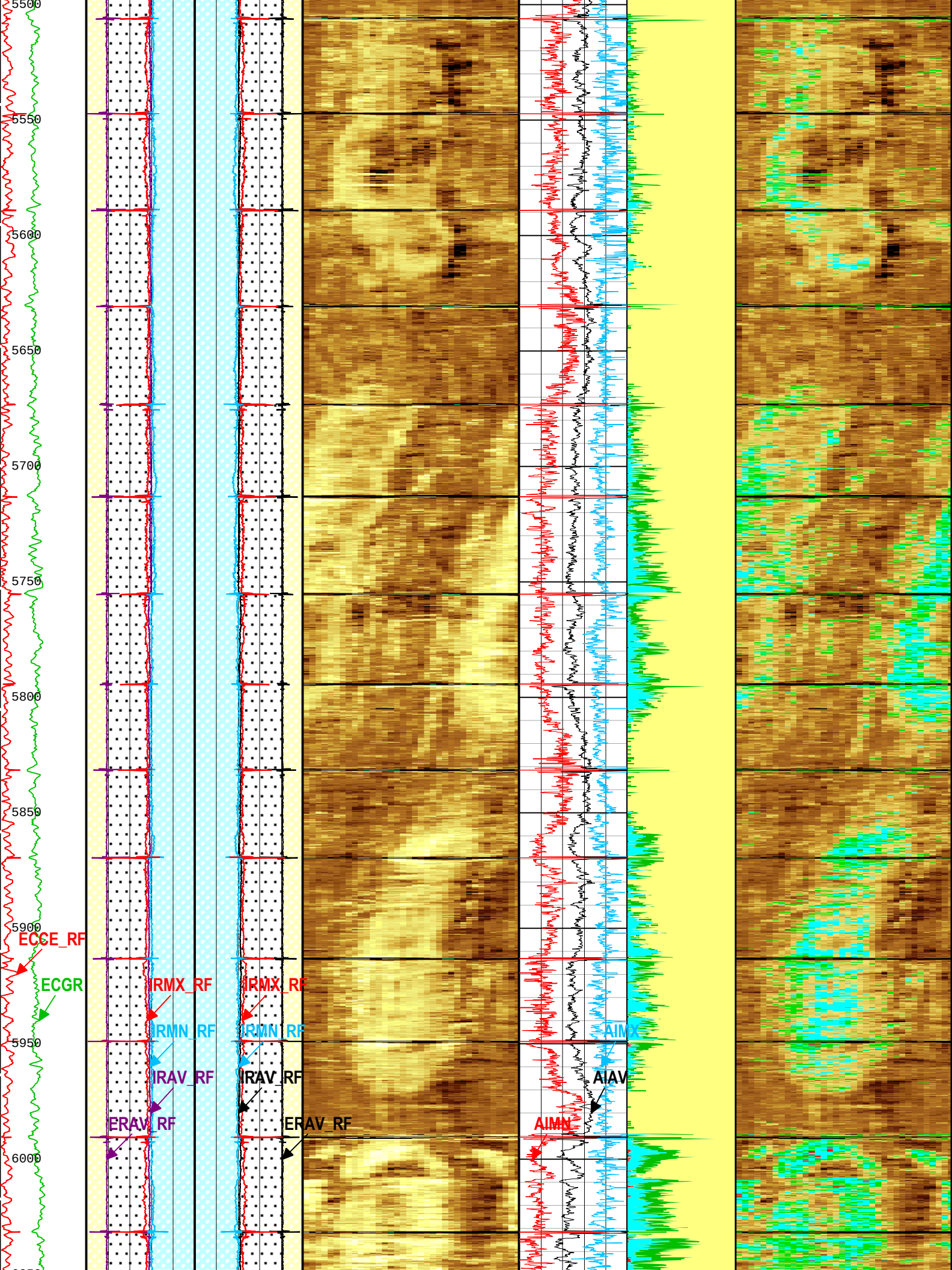
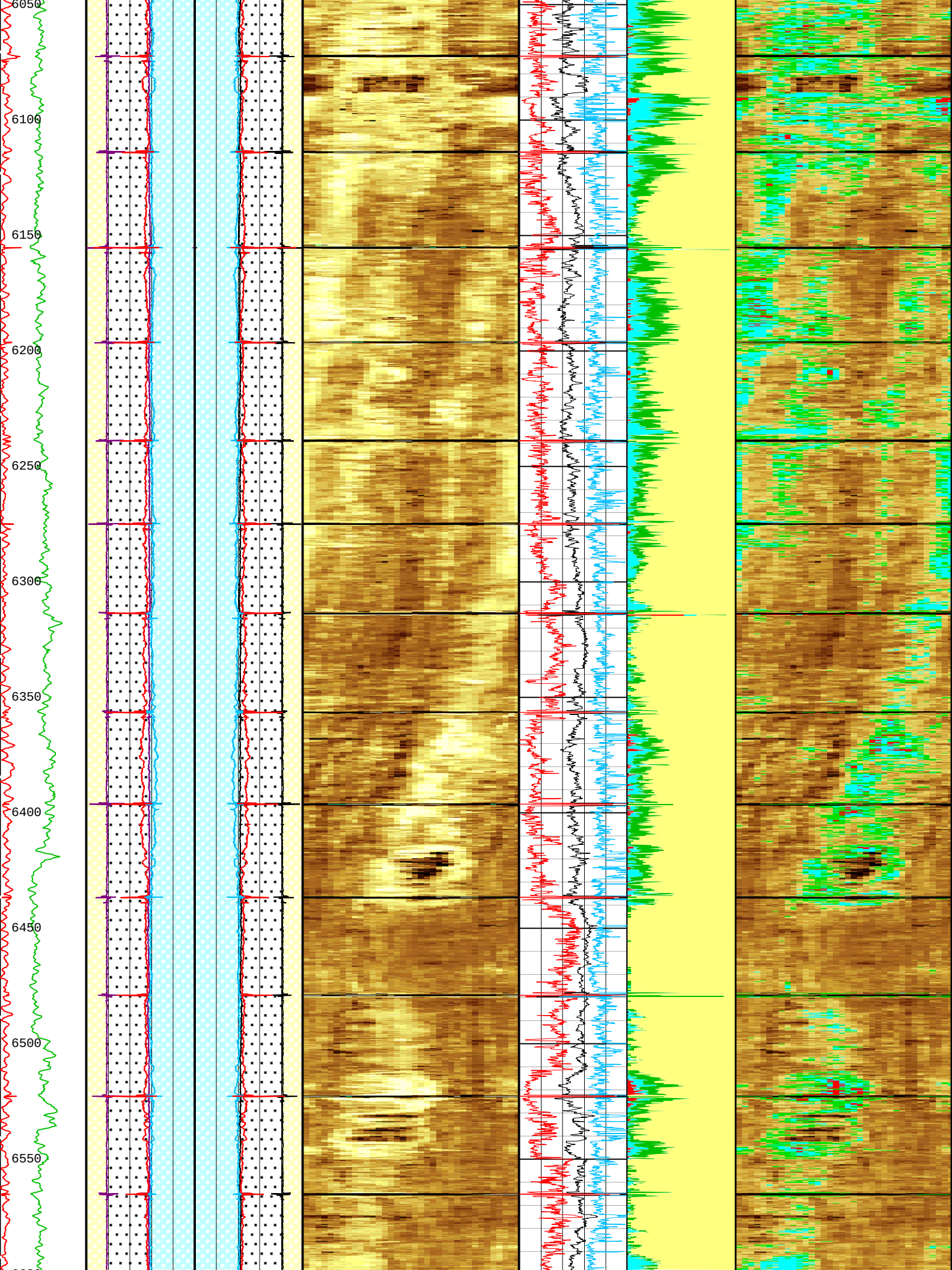
Splice
Splice


5500
5550
5600
5650
5700
5750
5800
5850
5900
5950
6000
ECCE_RF
ECGR
IRMX_RF
IRMN_RF
IRAV_RF
ERAV_RF
IRMX_RF
IRMN_RF
IRAV_RF
ERAV_RF
AIMX
AIAV
AIMN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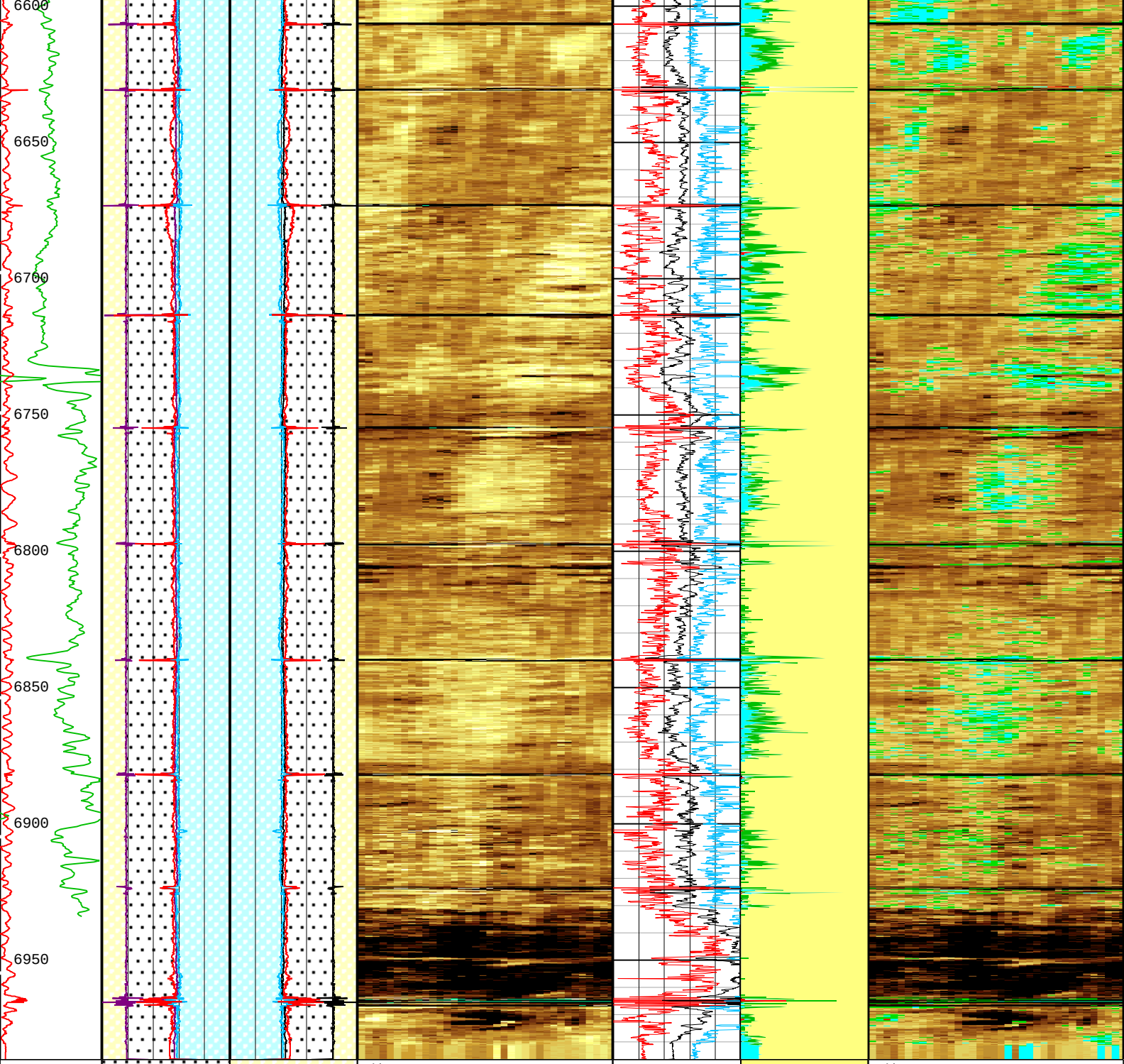
6300
6350
6400
6450
6500
6550


6600
6650
6700
6750
6800
6850
6900
6950
Gamma Ray (ECGR) HGNS[1]
0 gAPI 150
Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 1
ERAV_IRAV
IRAV_LHF1
LHF1_ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
4.5 in 3.5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF)
ERAV_RHF1
IRAV_ERAV
RHF1_IRAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
3.5 in 4.5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF)
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[1] (Mrayl)
Acoustic Impedance Minimum (AIMN) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Average (AIAV) USIT-E[1]
-1 Mrayl 9
Acoustic Impedance Maximum (AIMX) USIT-E[1]
-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[1] (Mrayl)

USIT-E[1]	USIT-E[1]
4.5 in 3.5	3.5 in 4.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4.5 in 3.5	3.5 in 4.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4.5 in 3.5	3.5 in 4.5

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: 18-Aug-2016 20:19:37

Composite 1

Corrosion 5 in = 100 ft

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[7]:Up	Up	5184.38 ft	6987.38 ft	18-Aug-2016 10:32:04 AM	18-Aug-2016 11:06:58 AM	ON	2.26 ft	No
One	Log[11]:Up	Up	1280.11 ft	5434.15 ft	18-Aug-2016 11:29:44 AM	18-Aug-2016 12:58:51 PM	ON	11.15 ft	No
One	Log[12]:Up	Up	44.45 ft	1429.03 ft	18-Aug-2016 1:08:22 PM	18-Aug-2016 1:38:42 PM	ON	11.26 ft	No
One	Log[18]:Up	Up	21.44 ft	171.59 ft	18-Aug-2016 2:53:06 PM	18-Aug-2016 2:58:21 PM	ON	-0.05 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

Composite 1:S006

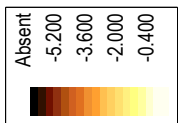
Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Aug-2016 20:19:50

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

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)

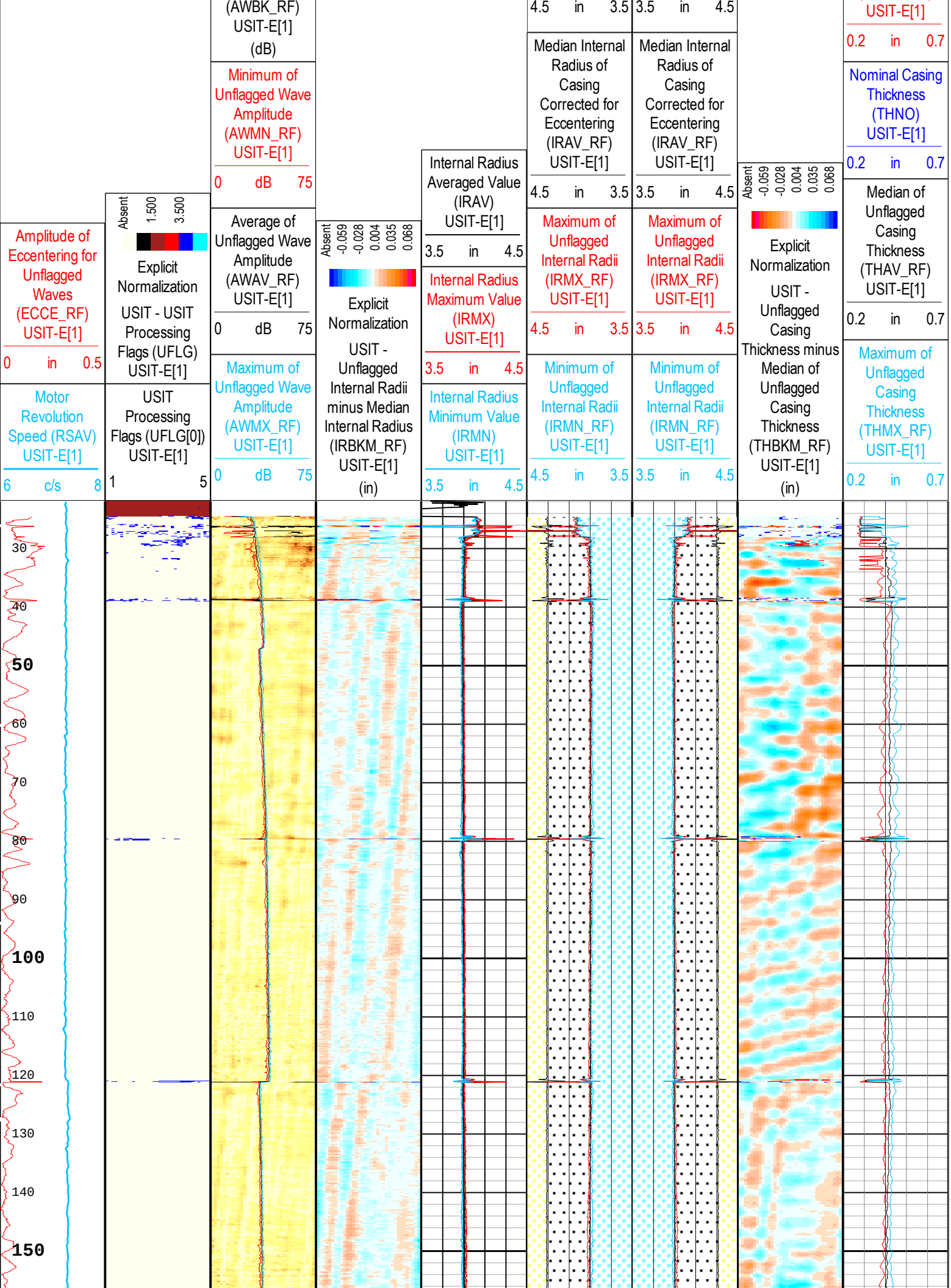


Explicit Normalization

USIT - Amplitude of Unflagged Wave

ERAV	IRAV
ERAV-IRAV	ERAV
IRAV	IRAV-ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E[1]	Median of Unflagged External Radii (ERAV_RF) USIT-E[1]

Minimum of Unflagged Casing Thickness (THMN_RF)


Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8
Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]
USIT Processing Flags (UFLG[0]) USIT-E[1]
1 5
(AWBK_RF) USIT-E[1] (dB)
Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E[1]
0 dB 75
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
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[1] (in)
Internal Radius Averaged Value (IRAV) USIT-E[1]
3.5 in 4.5
Internal Radius Maximum Value (IRMX) USIT-E[1]
3.5 in 4.5
Internal Radius Minimum Value (IRMN) USIT-E[1]
3.5 in 4.5
4.5 in 3.5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
4.5 in 3.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4.5 in 3.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4.5 in 3.5
3.5 in 4.5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
3.5 in 4.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
3.5 in 4.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
3.5 in 4.5
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[1] (in)
USIT-E[1]
0.2 in 0.7
Nominal Casing Thickness (THNO) USIT-E[1]
0.2 in 0.7
Median of Unflagged Casing Thickness (THAV_RF) USIT-E[1]
0.2 in 0.7
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.2 in 0.7
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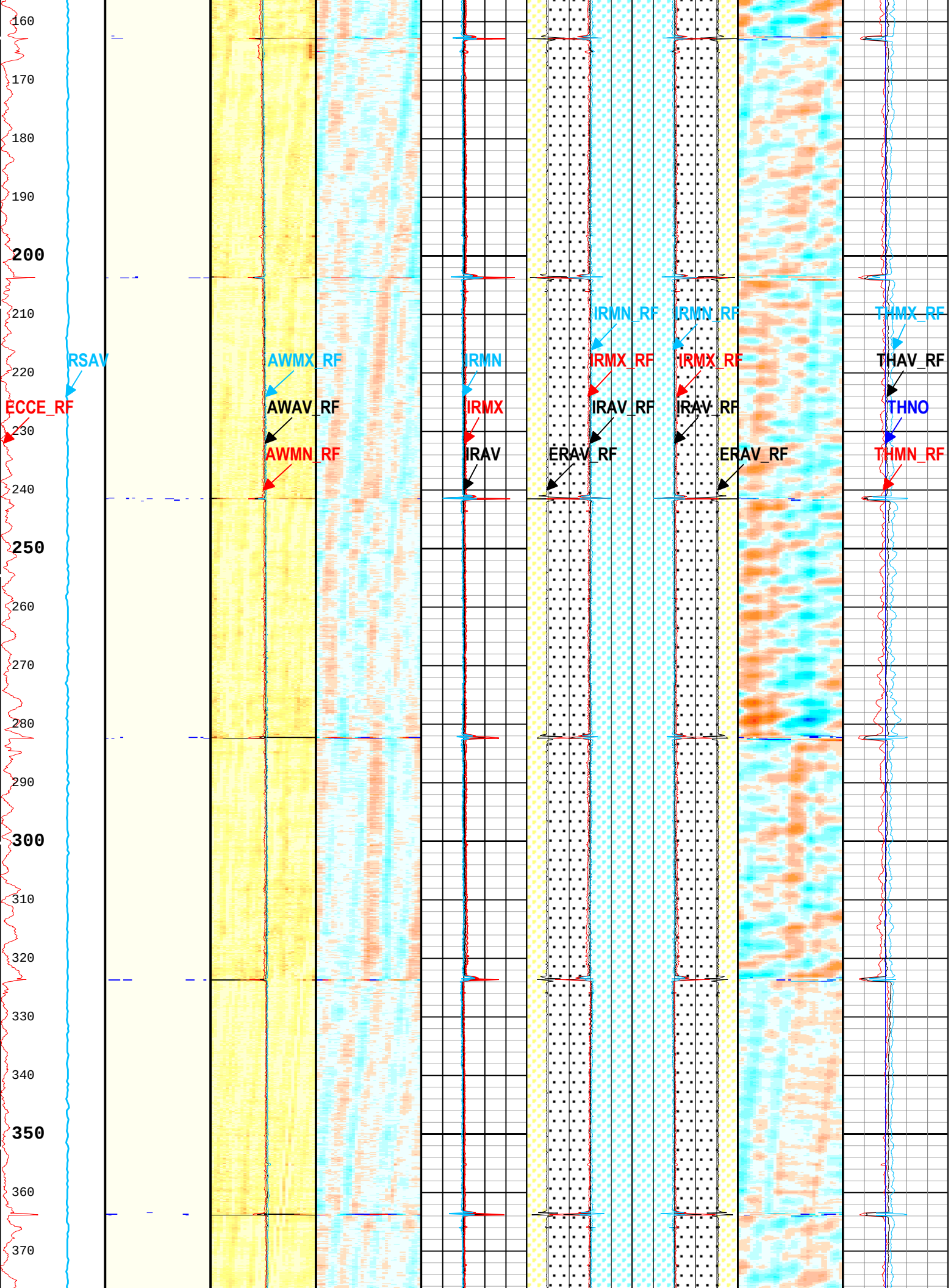
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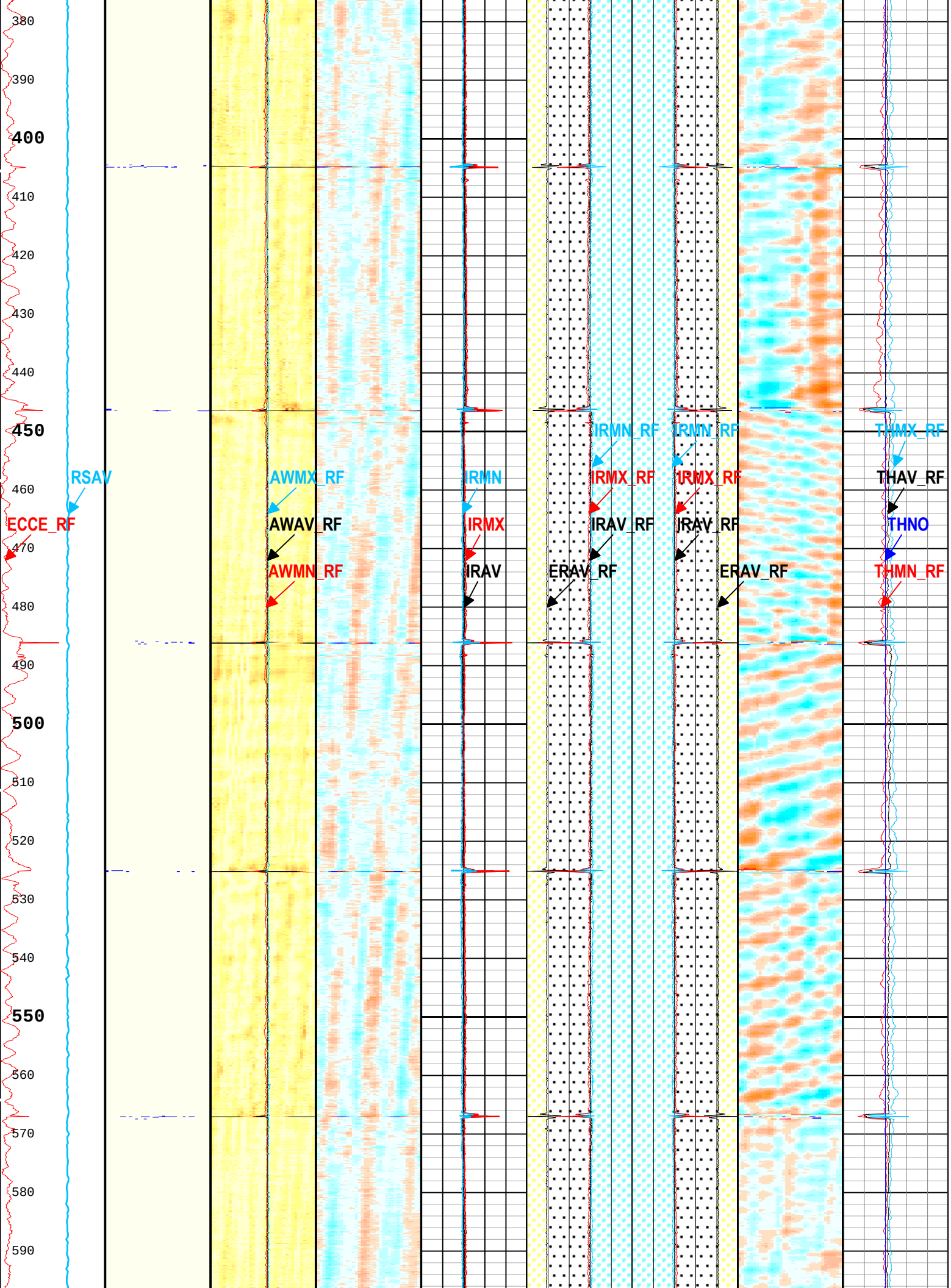
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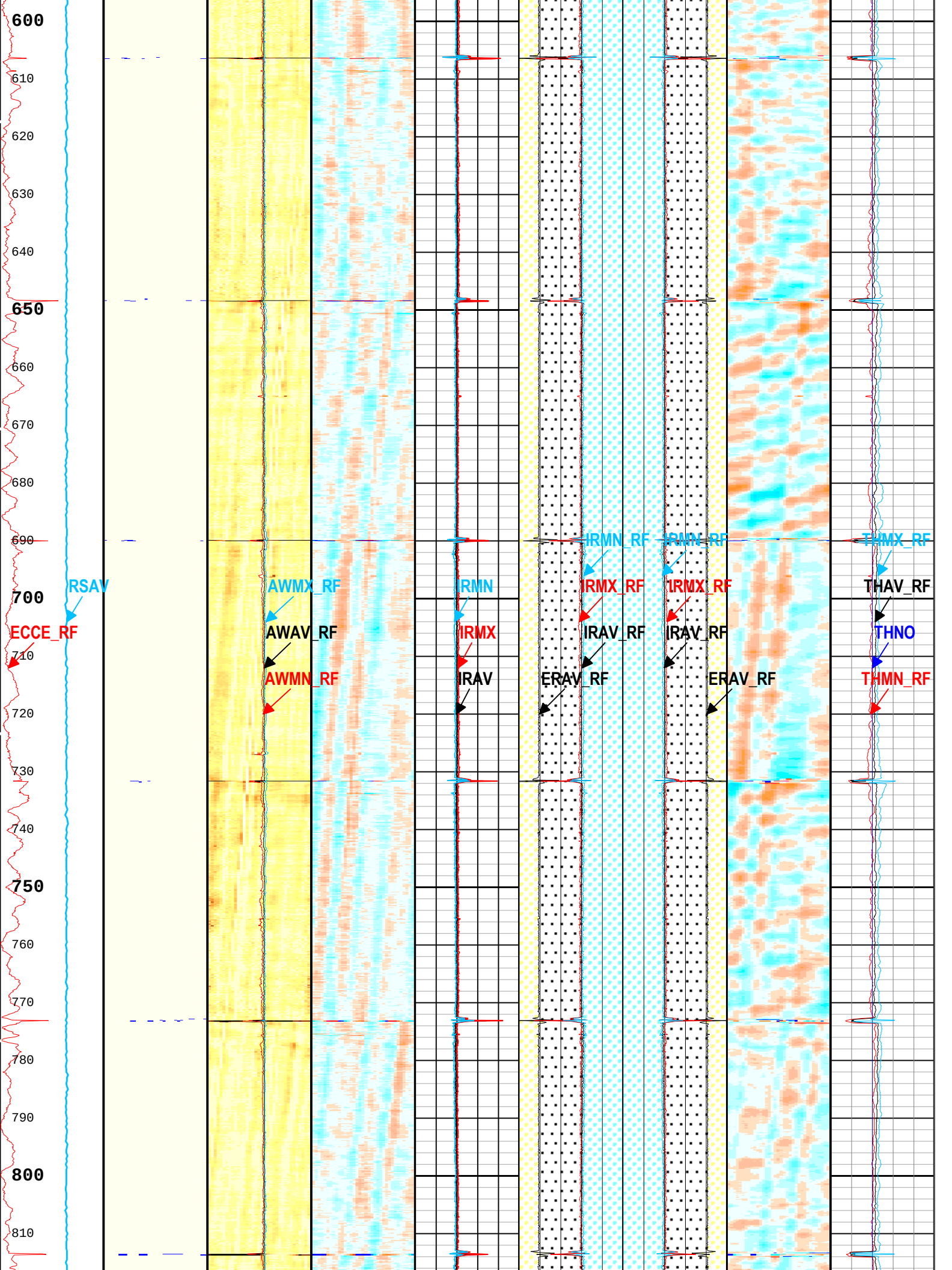
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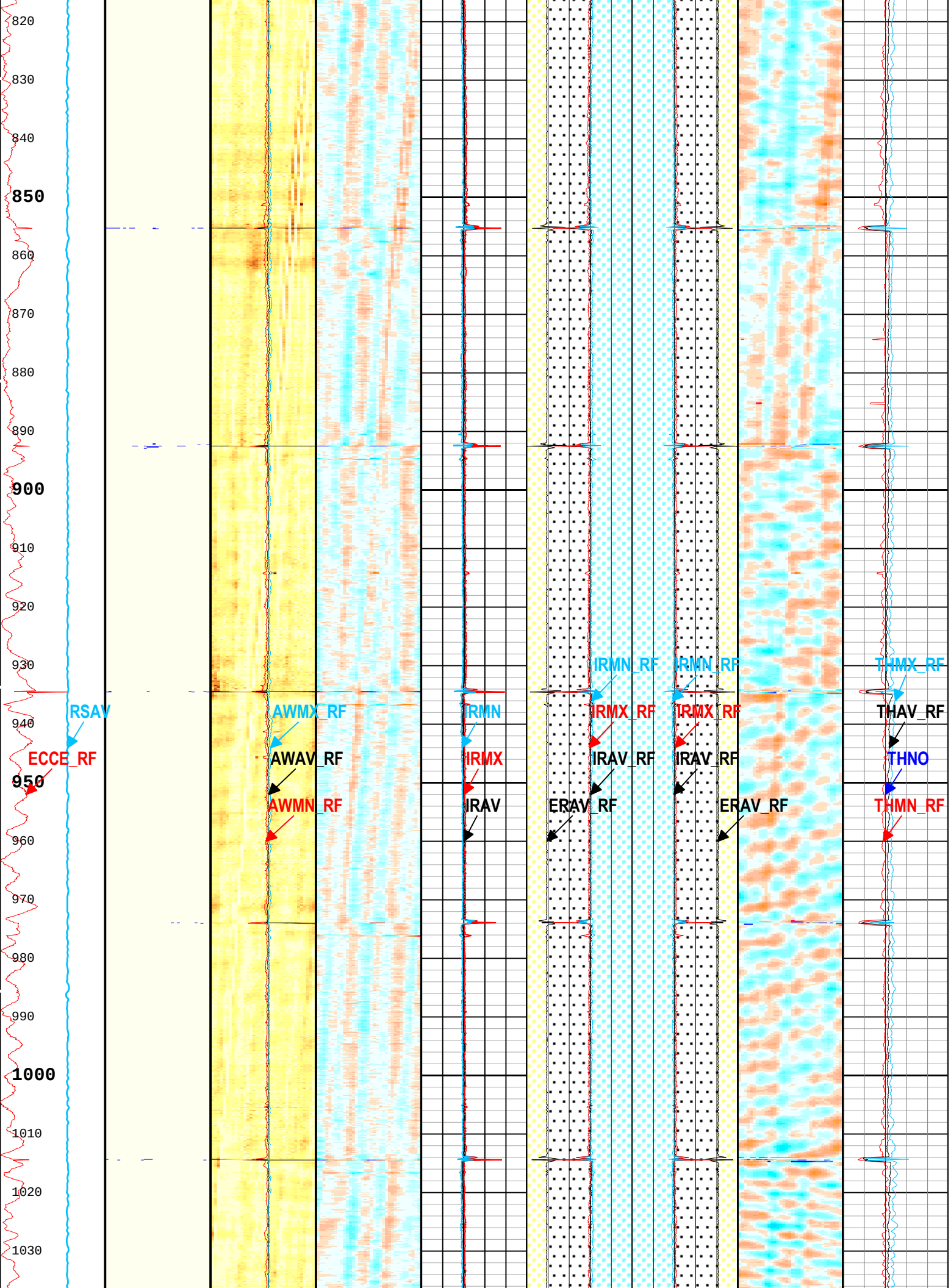
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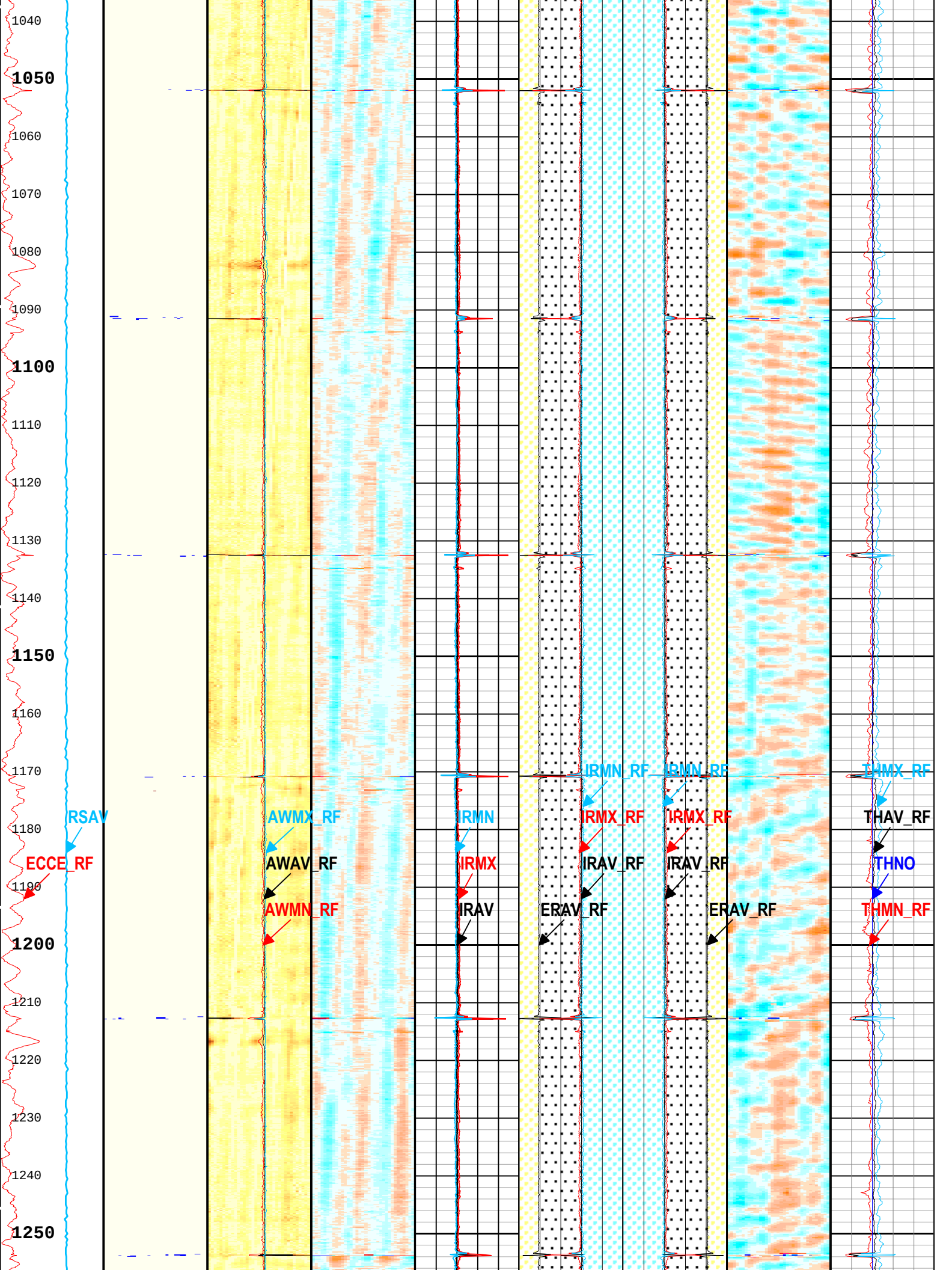
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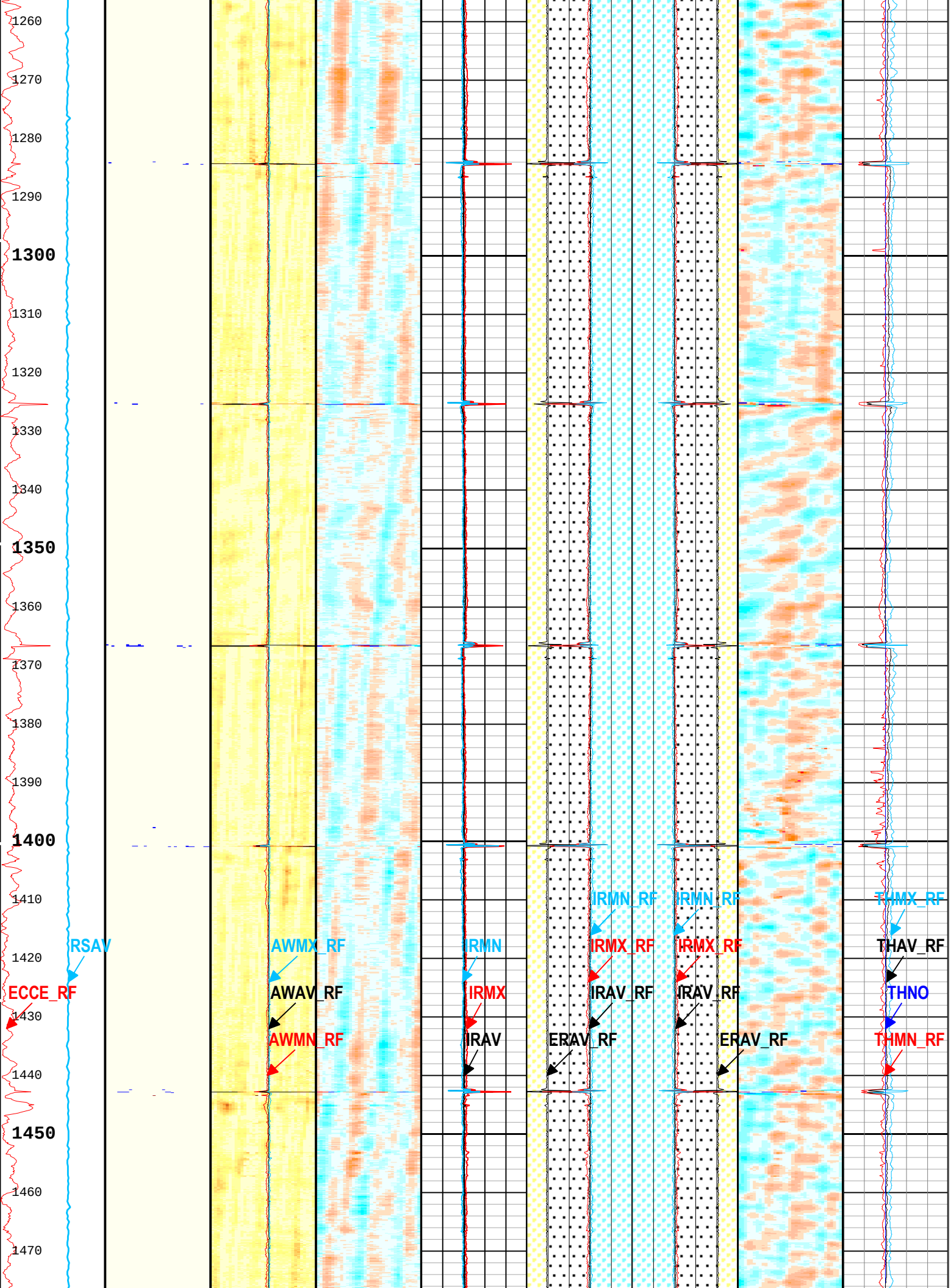
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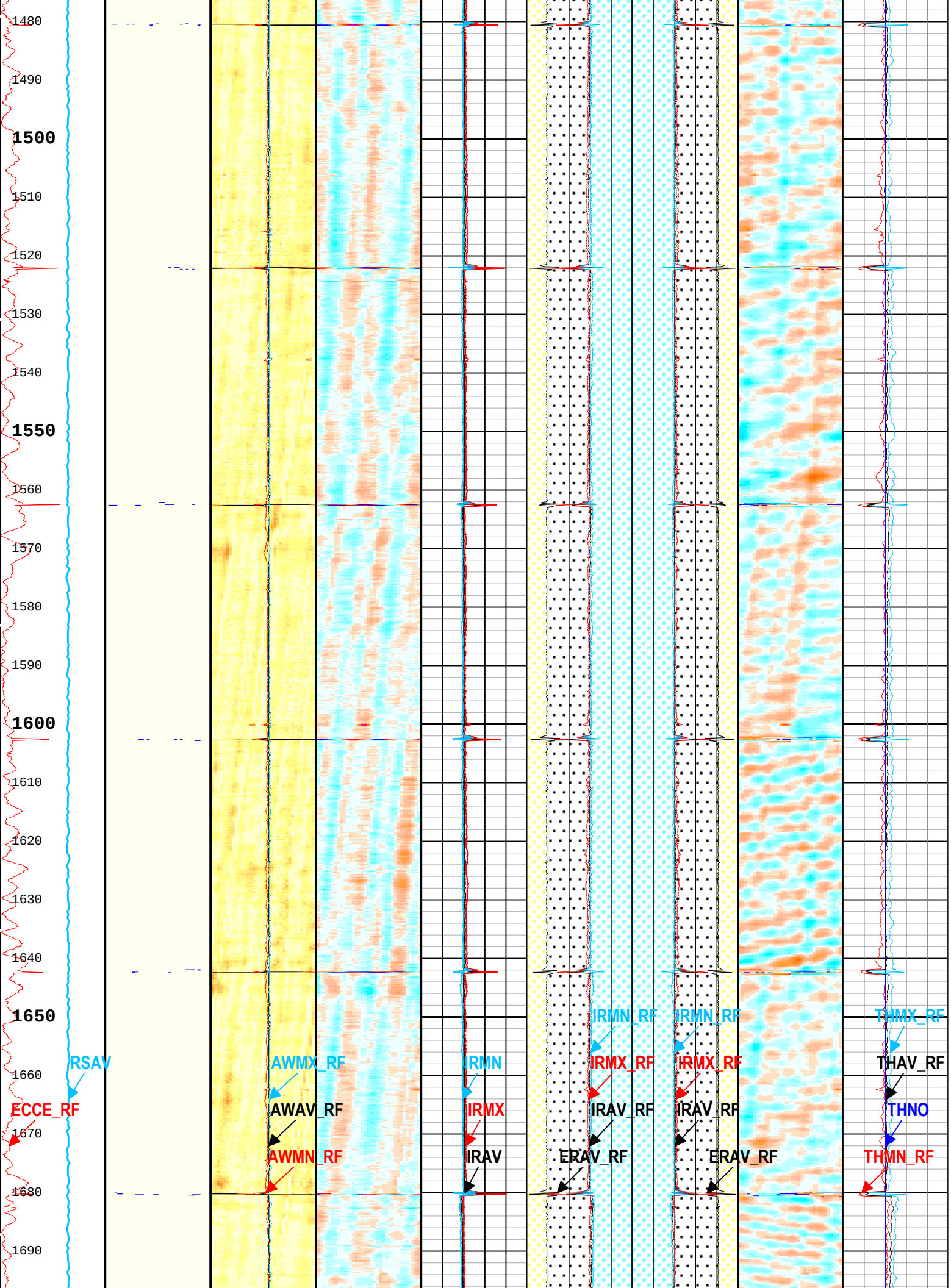
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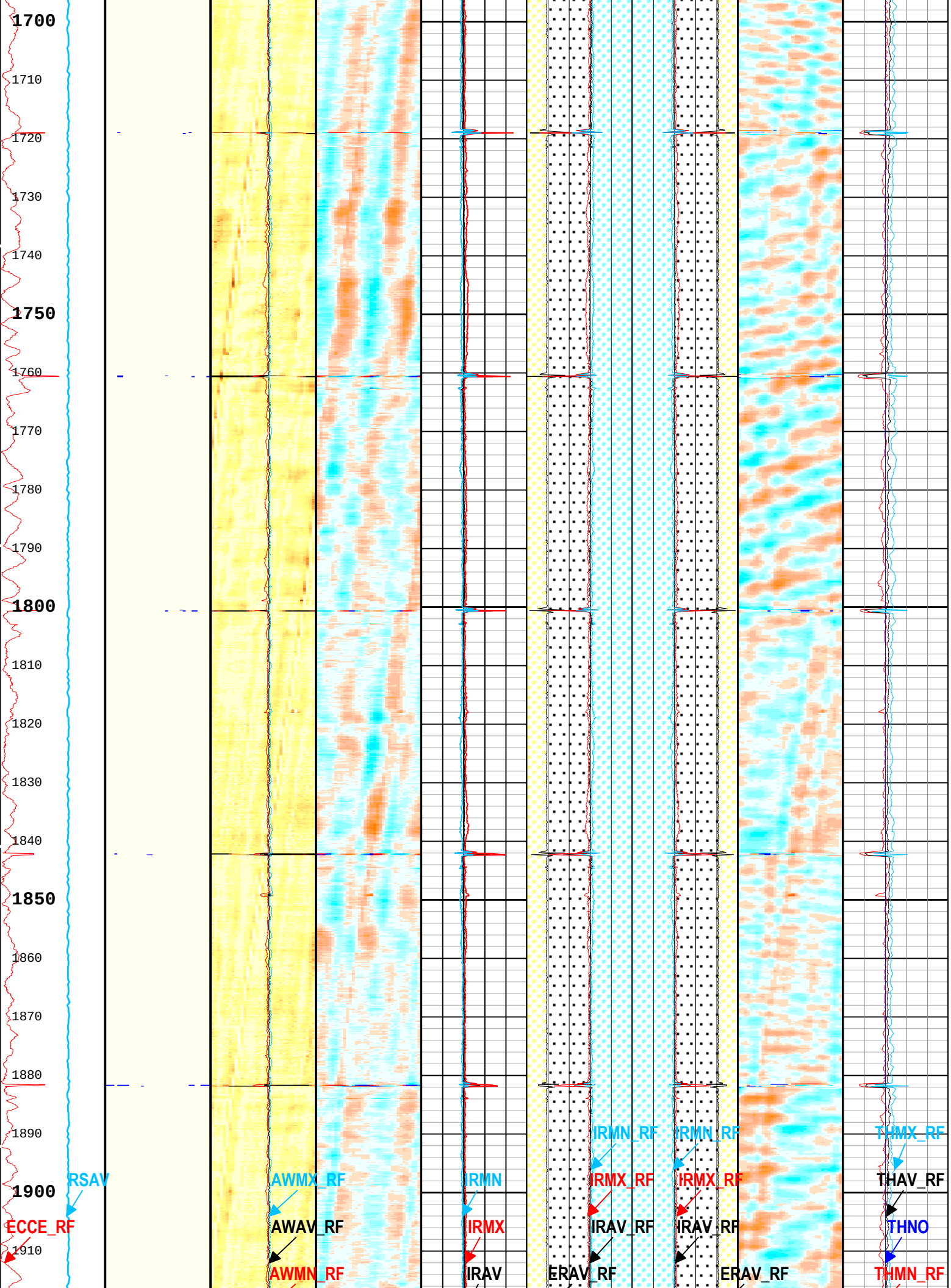
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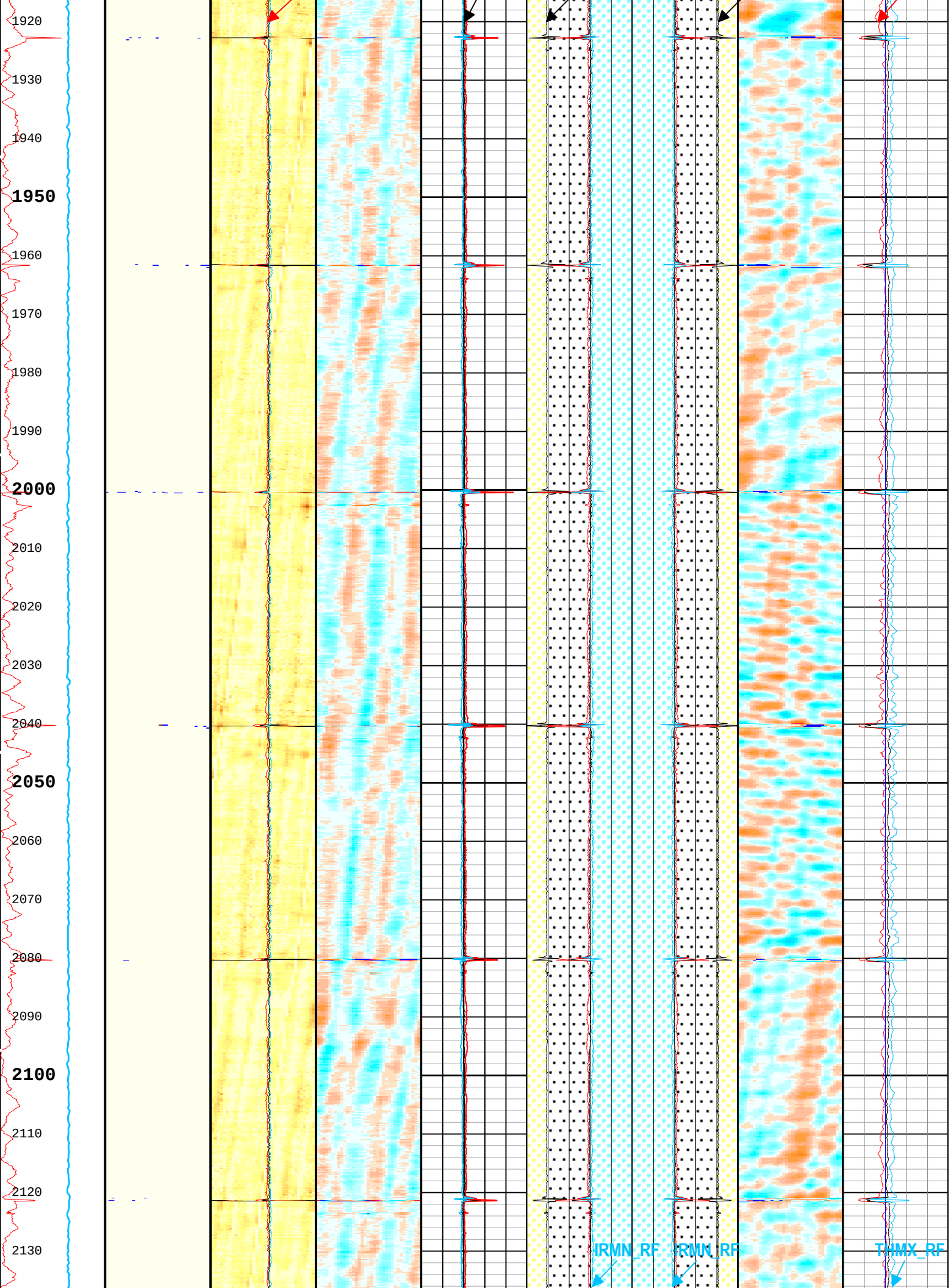
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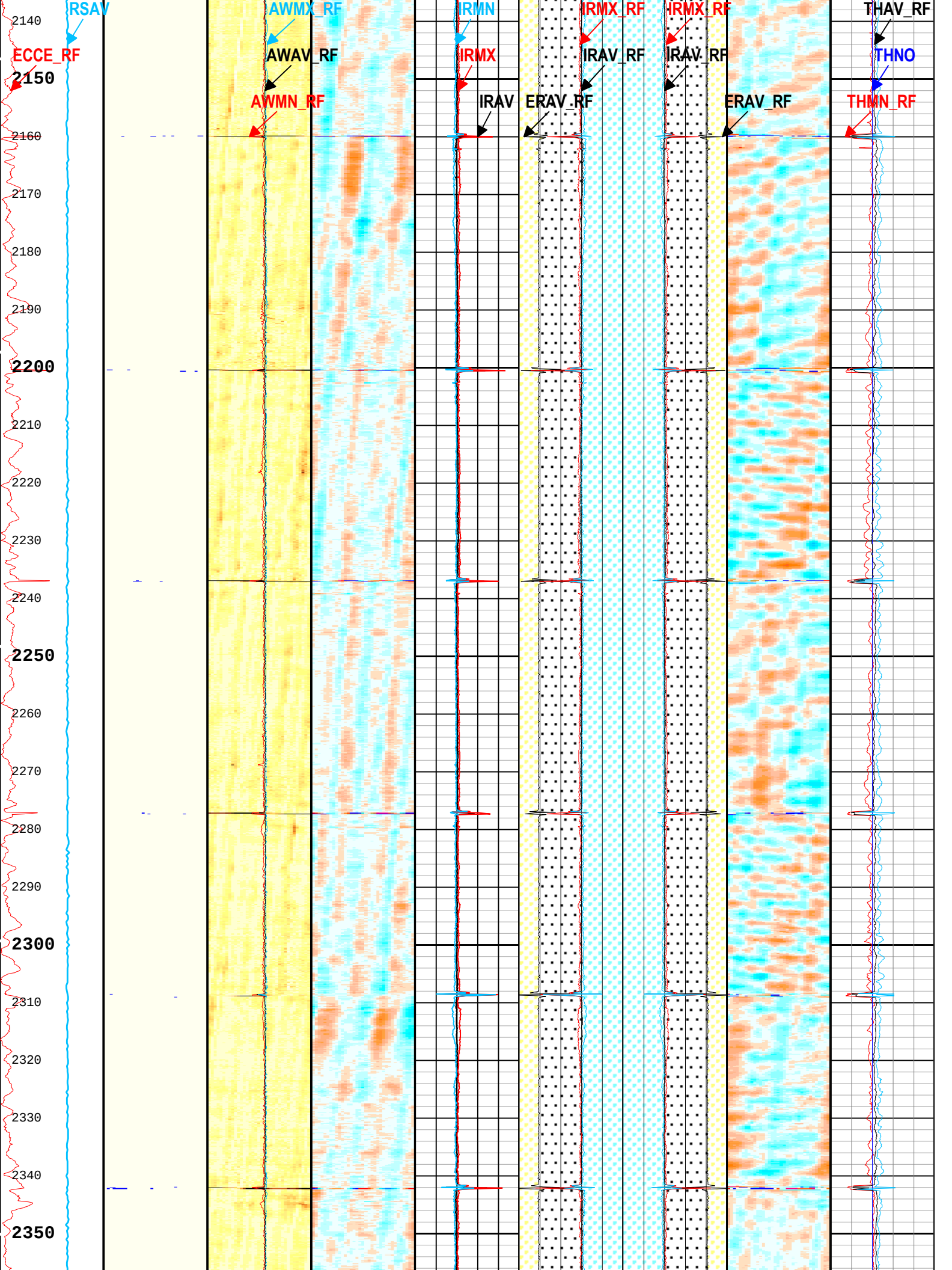
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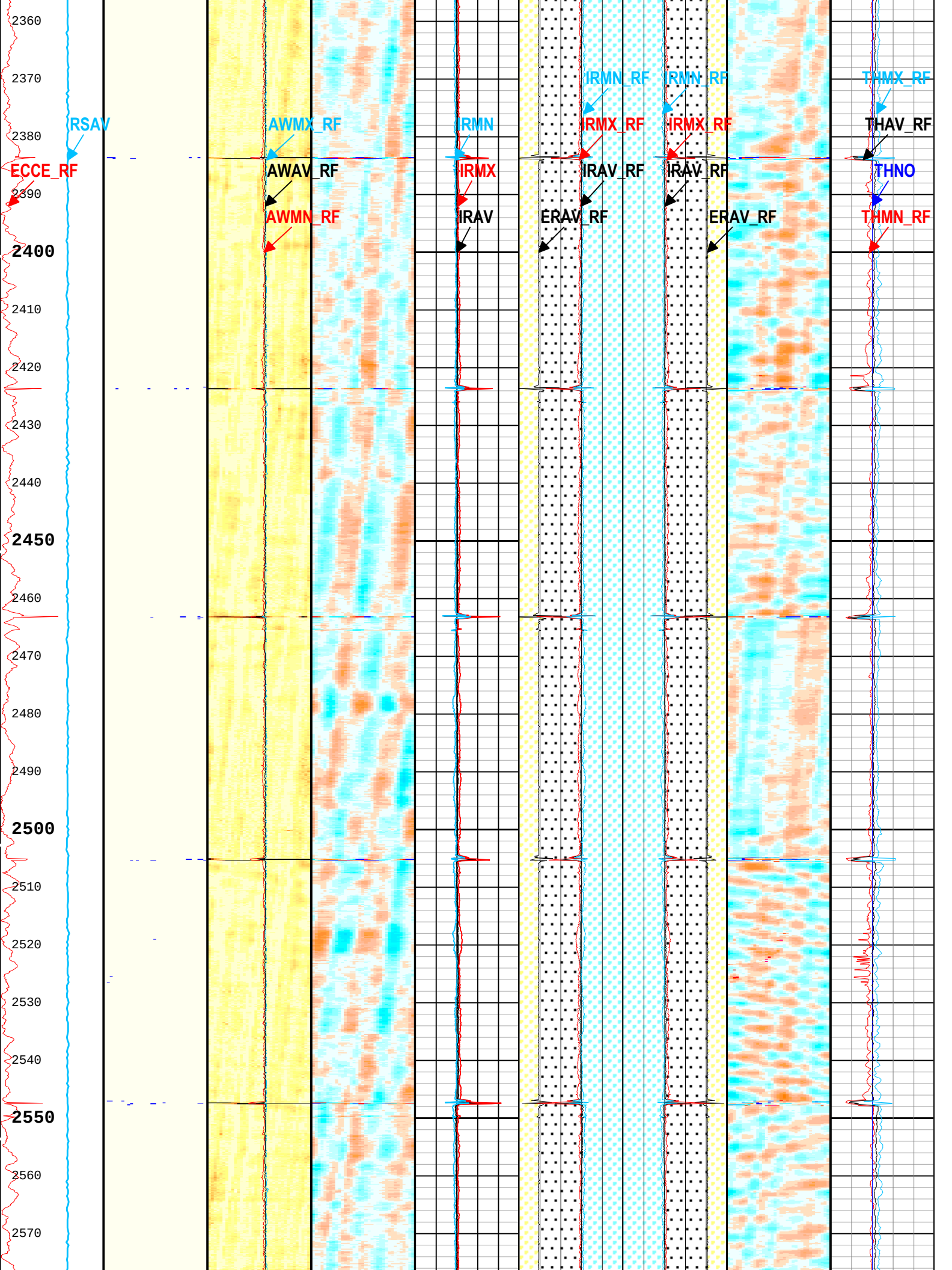
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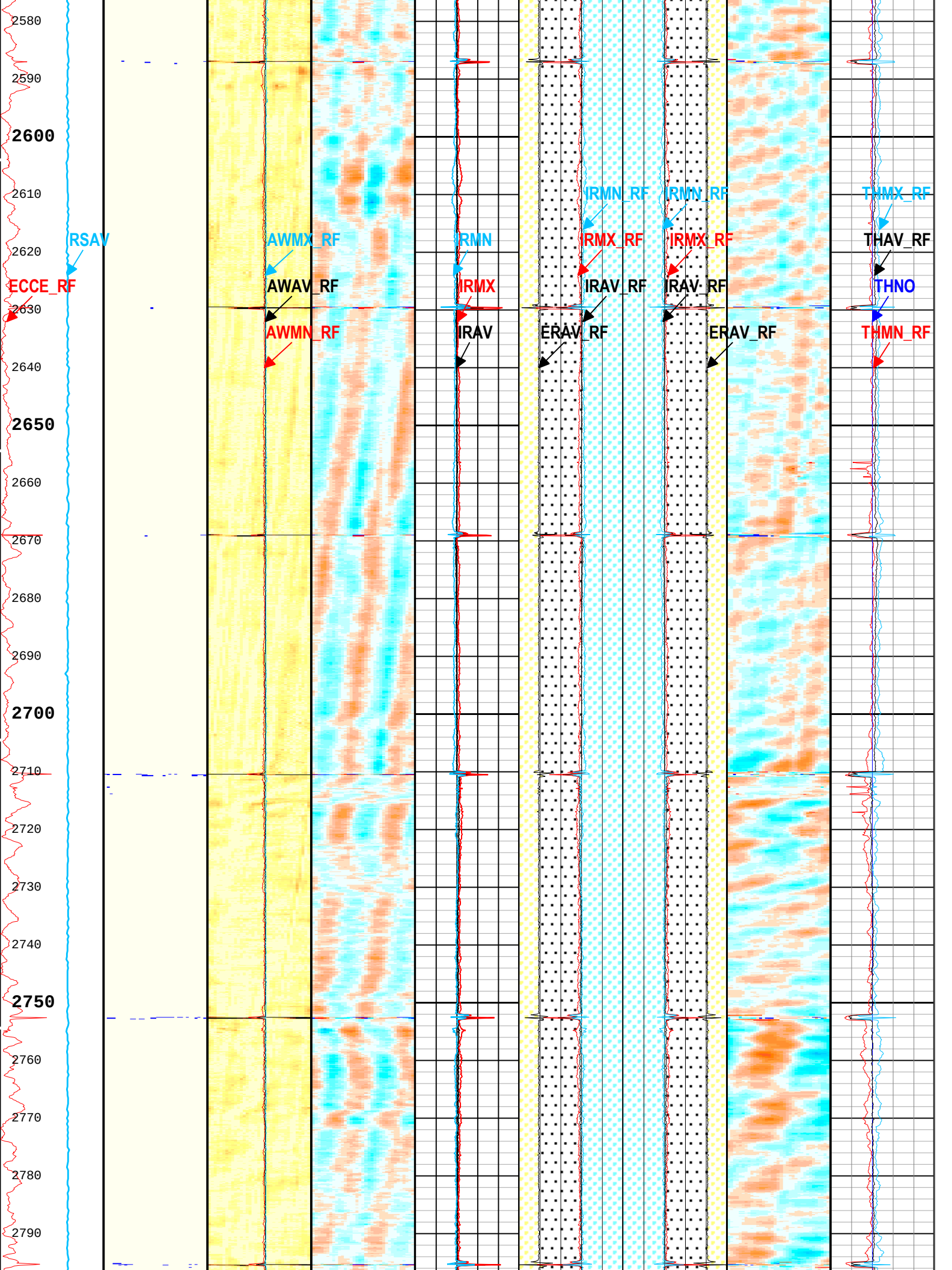
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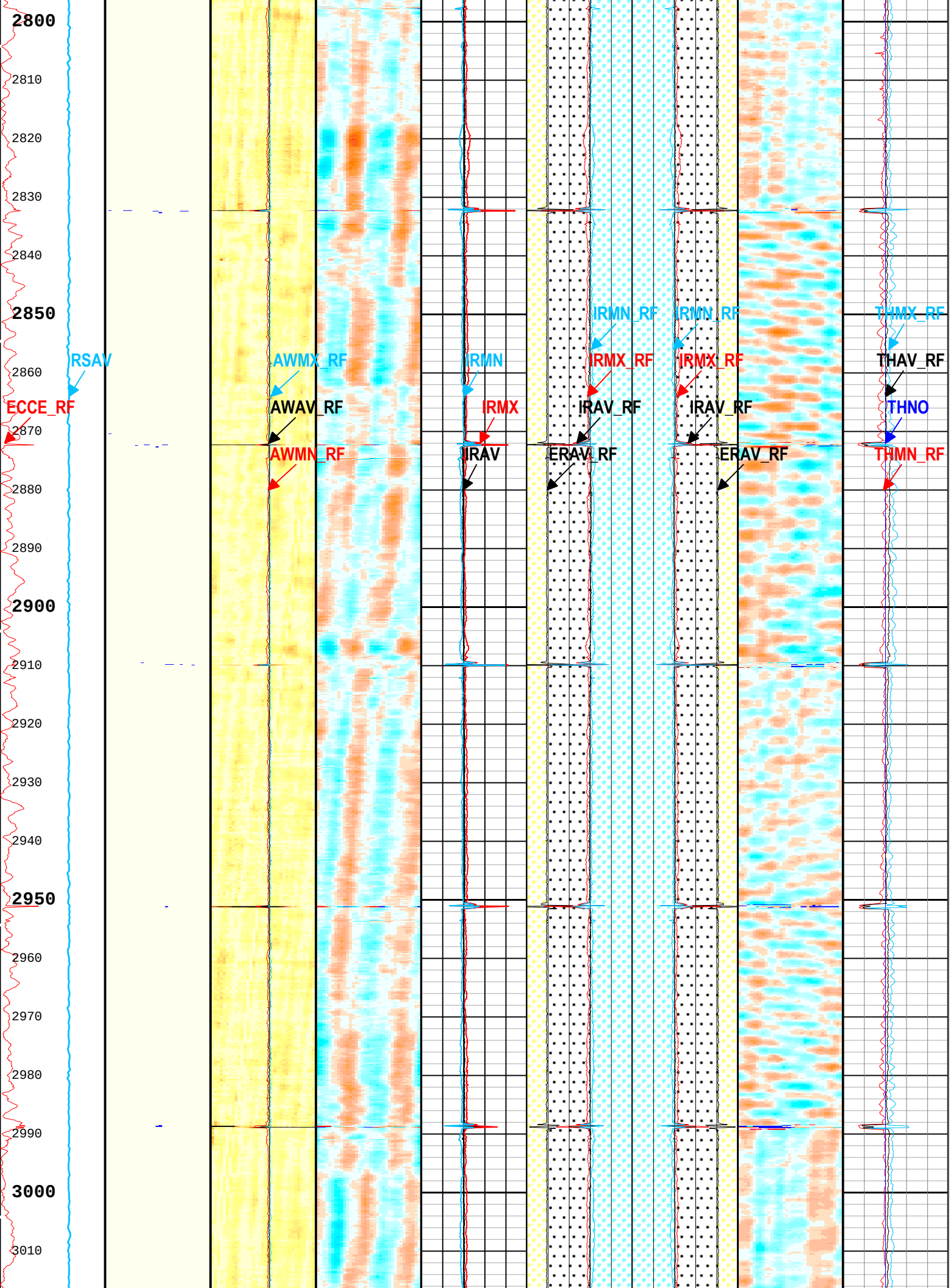
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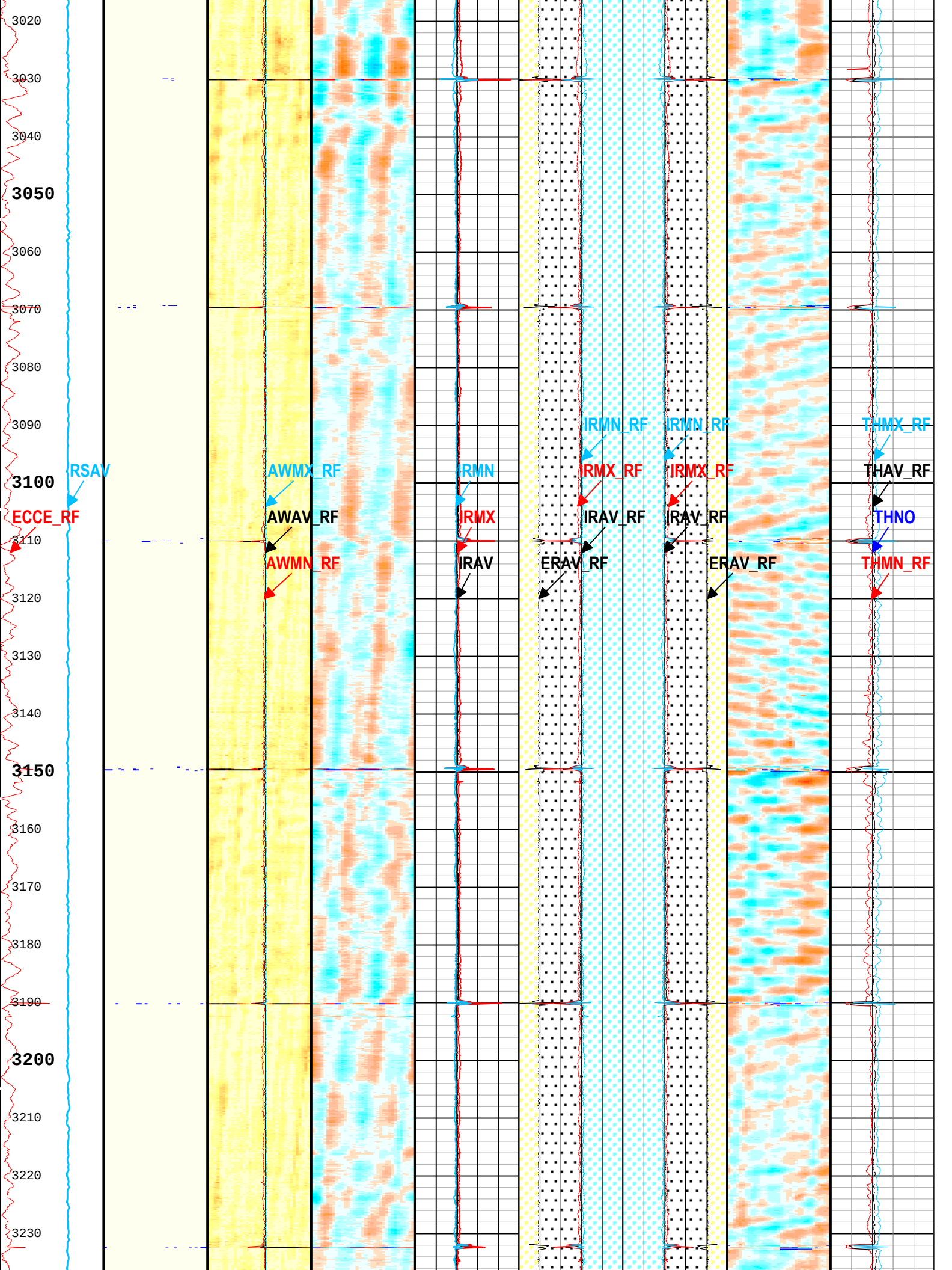
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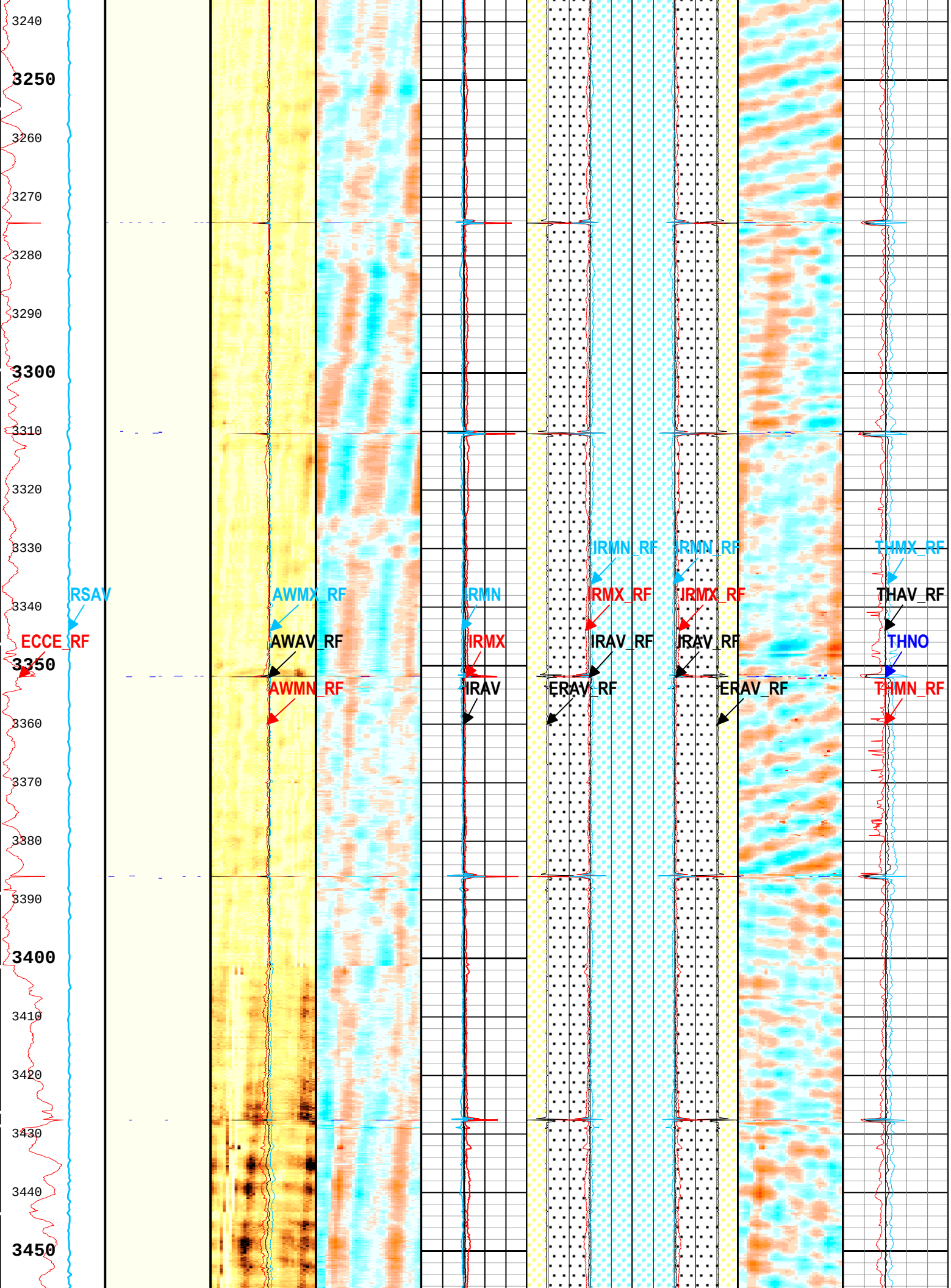
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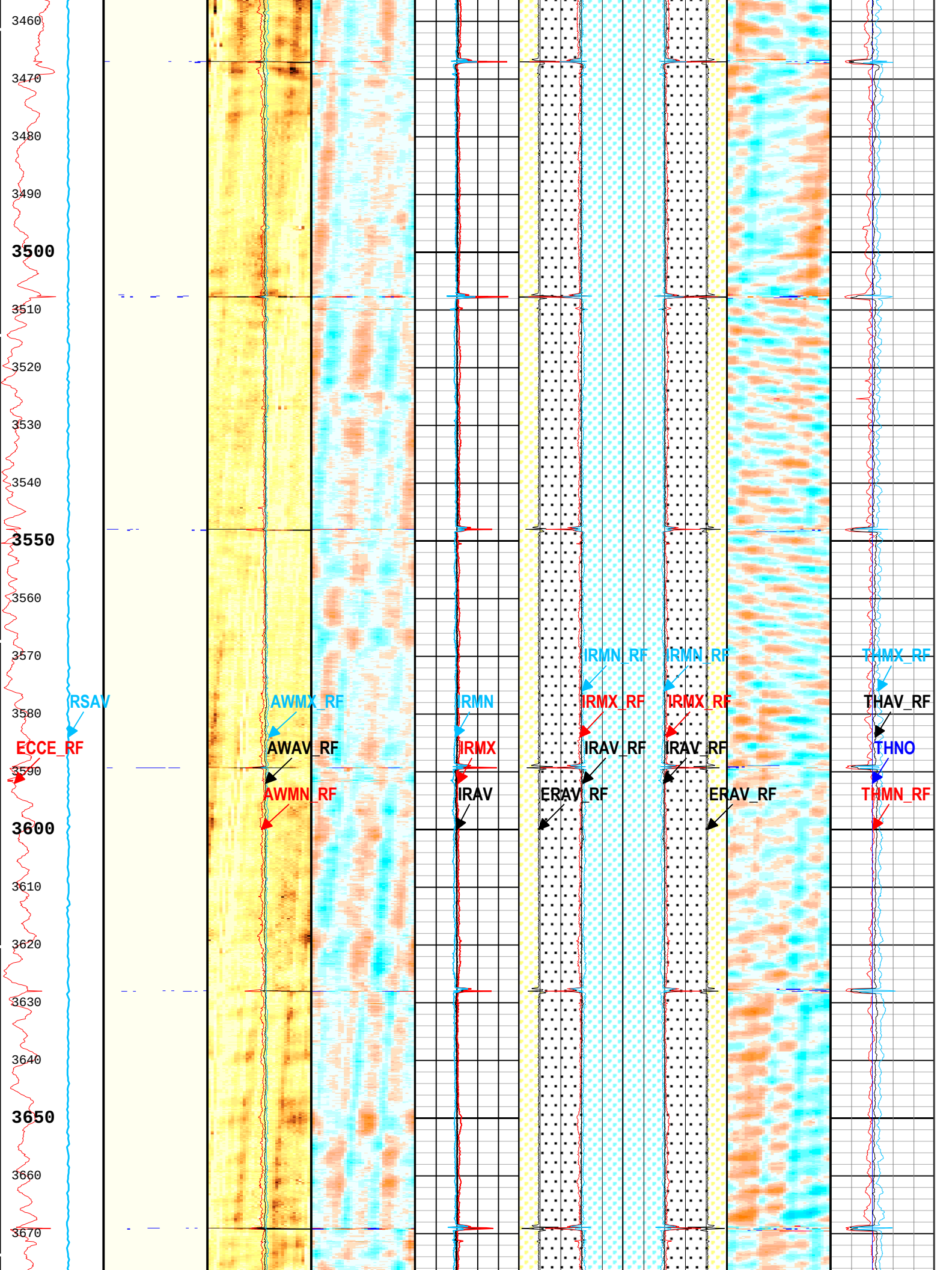
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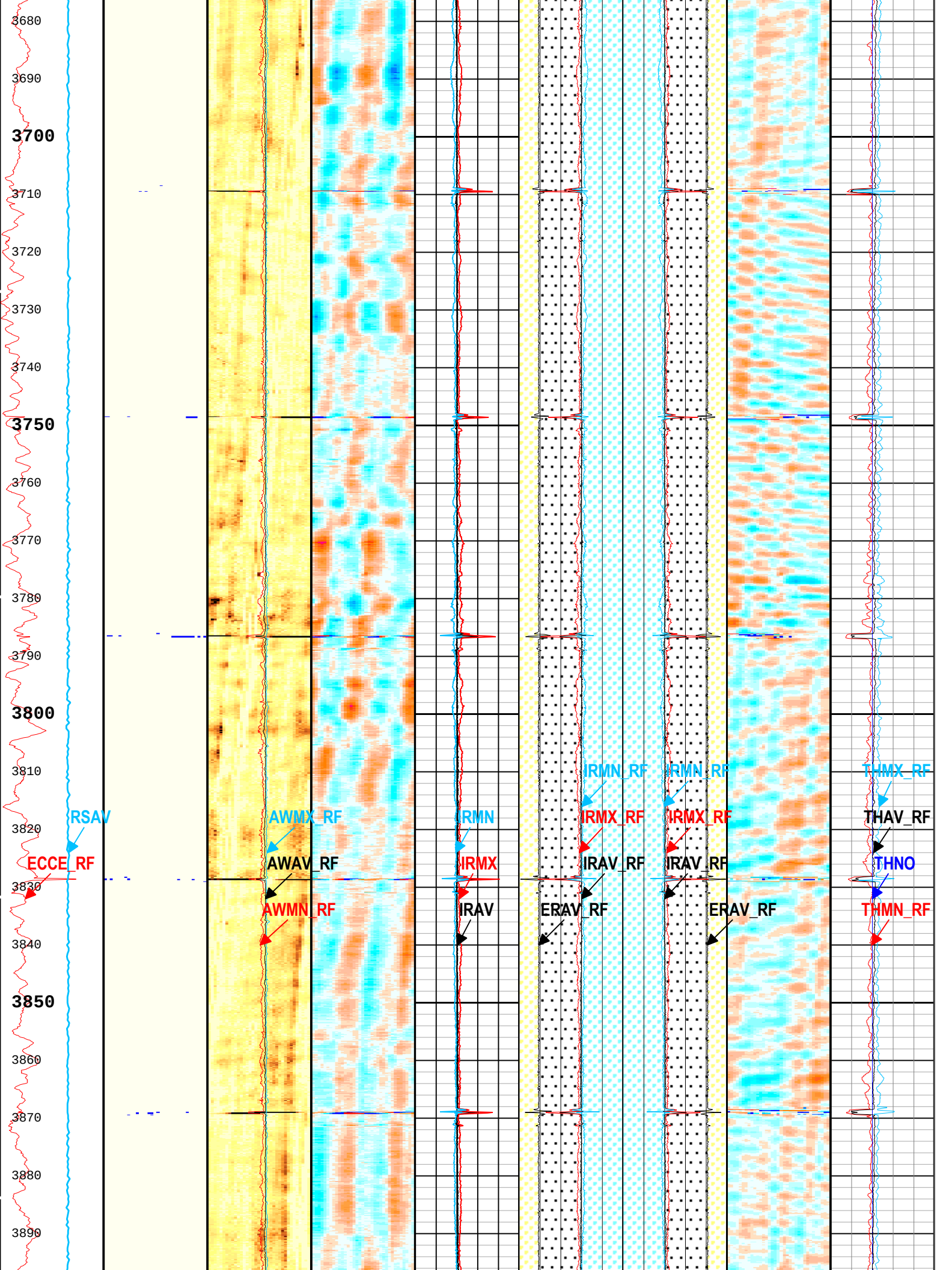
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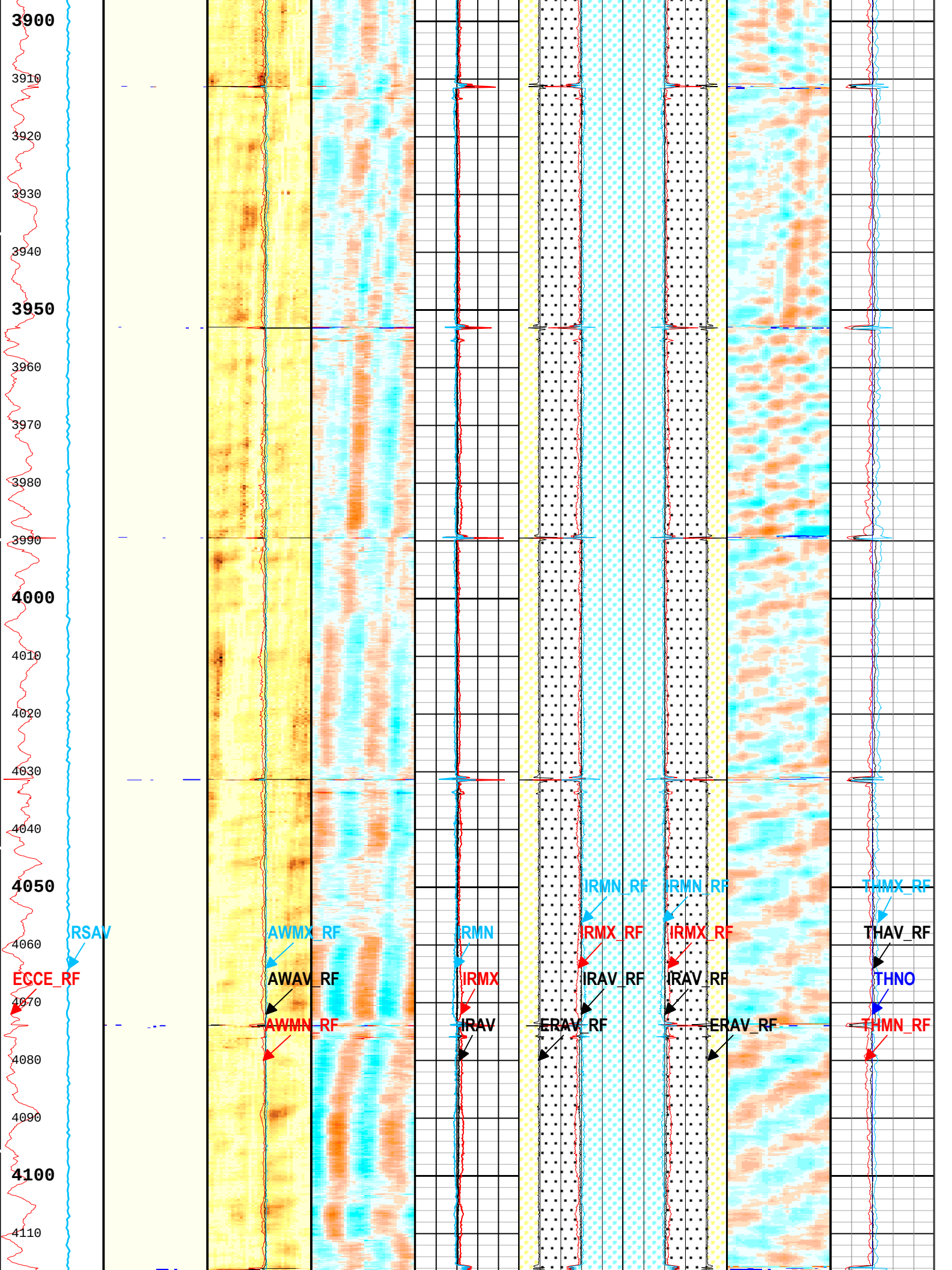
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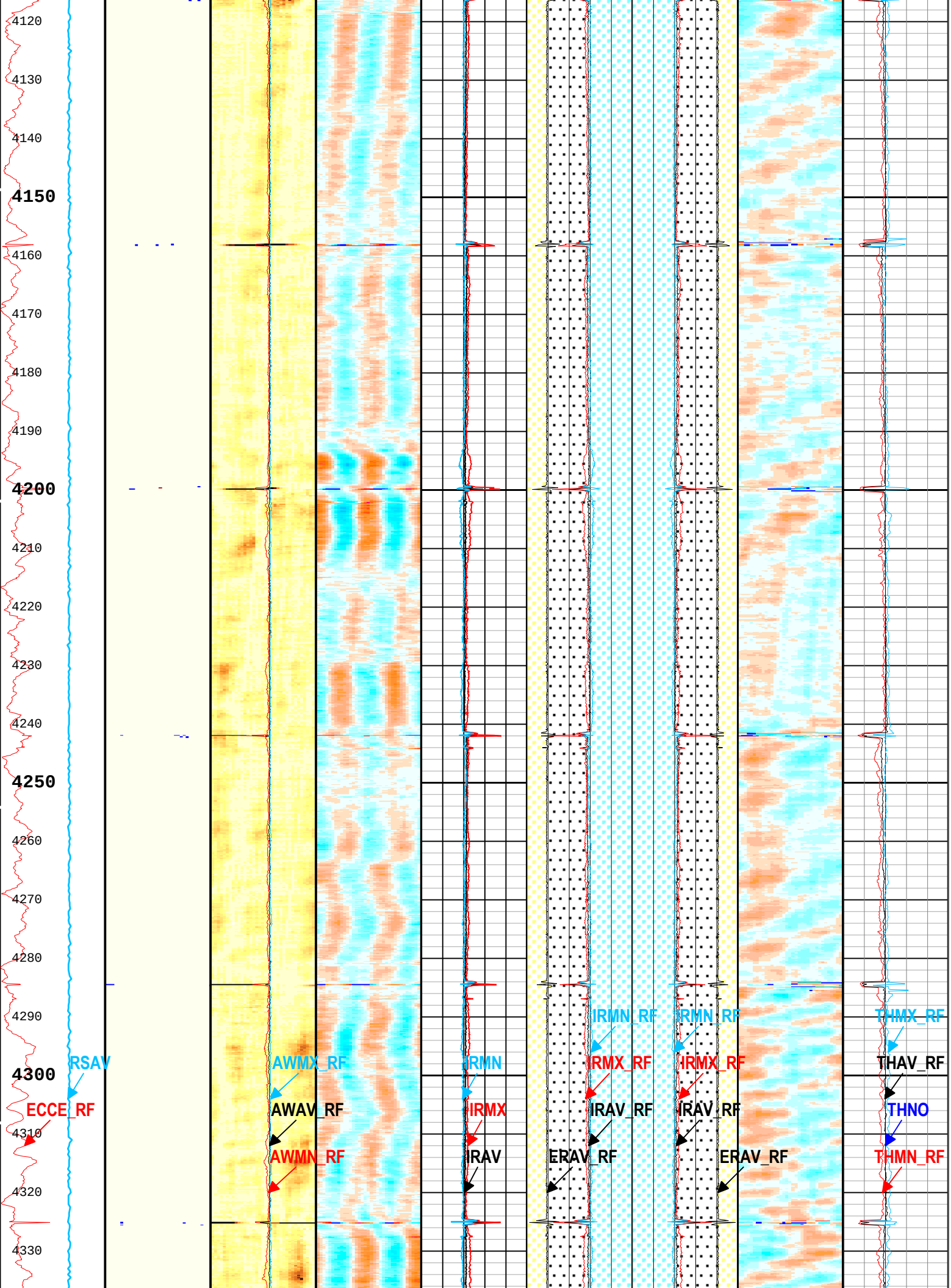
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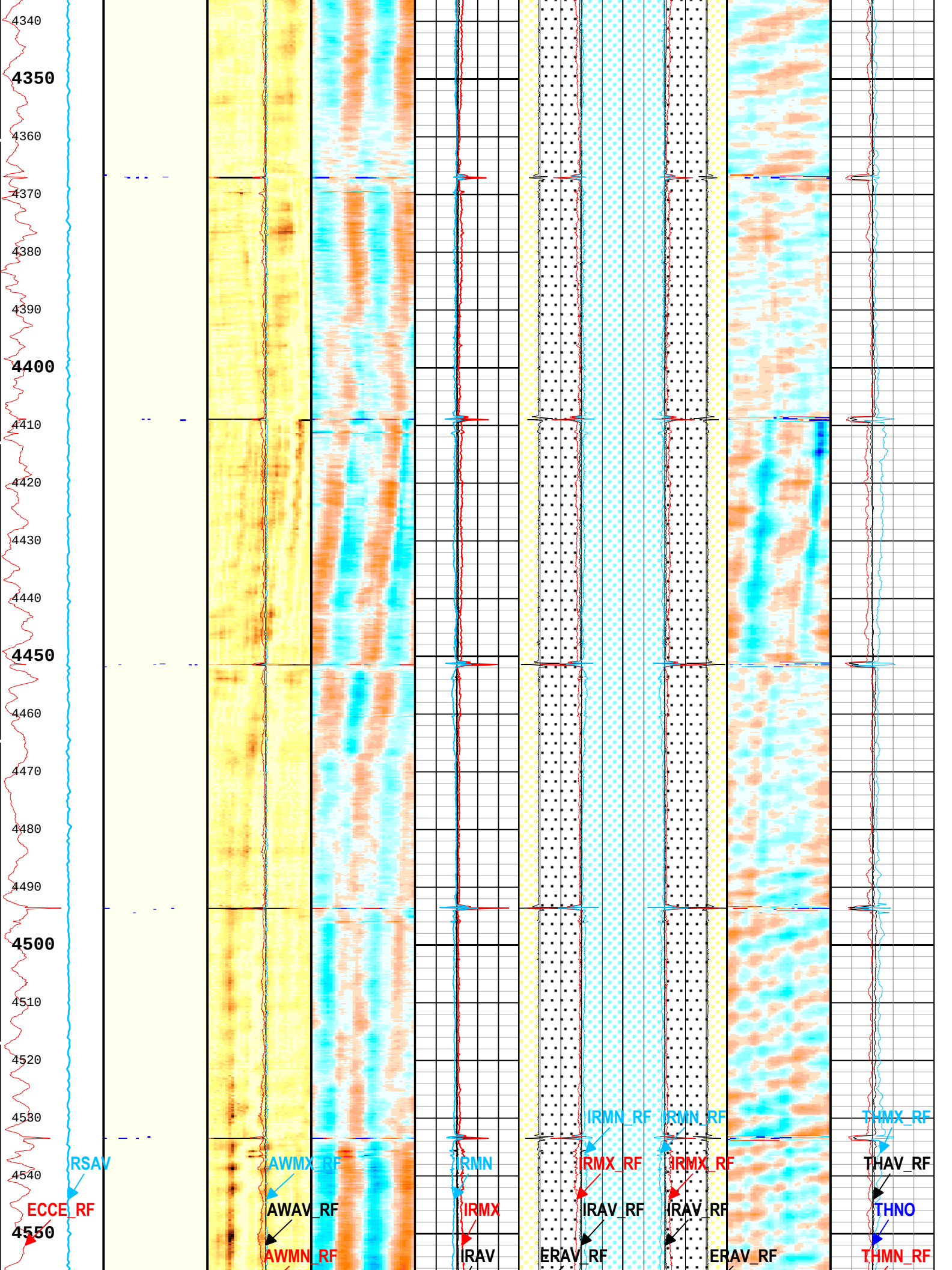
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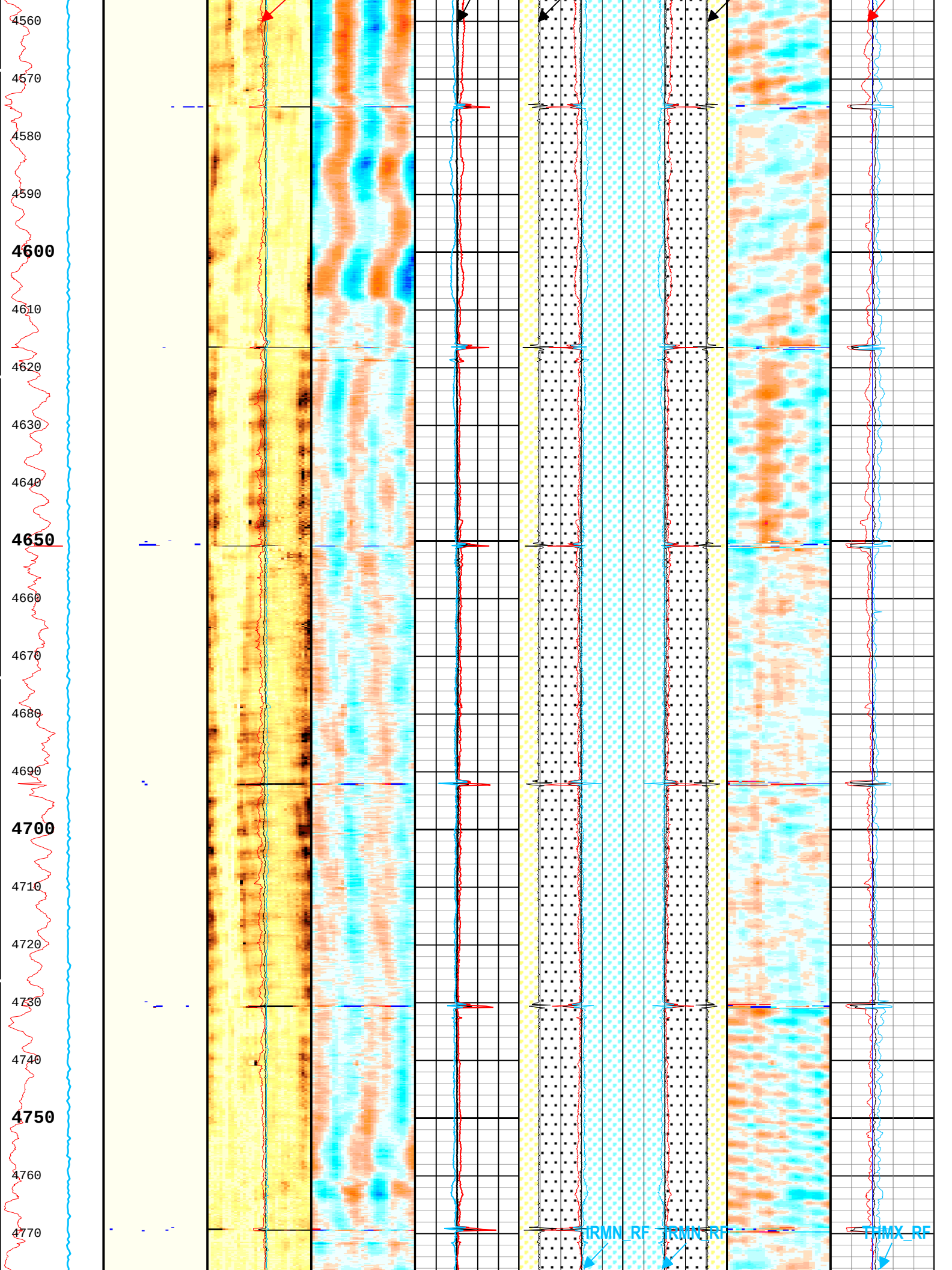
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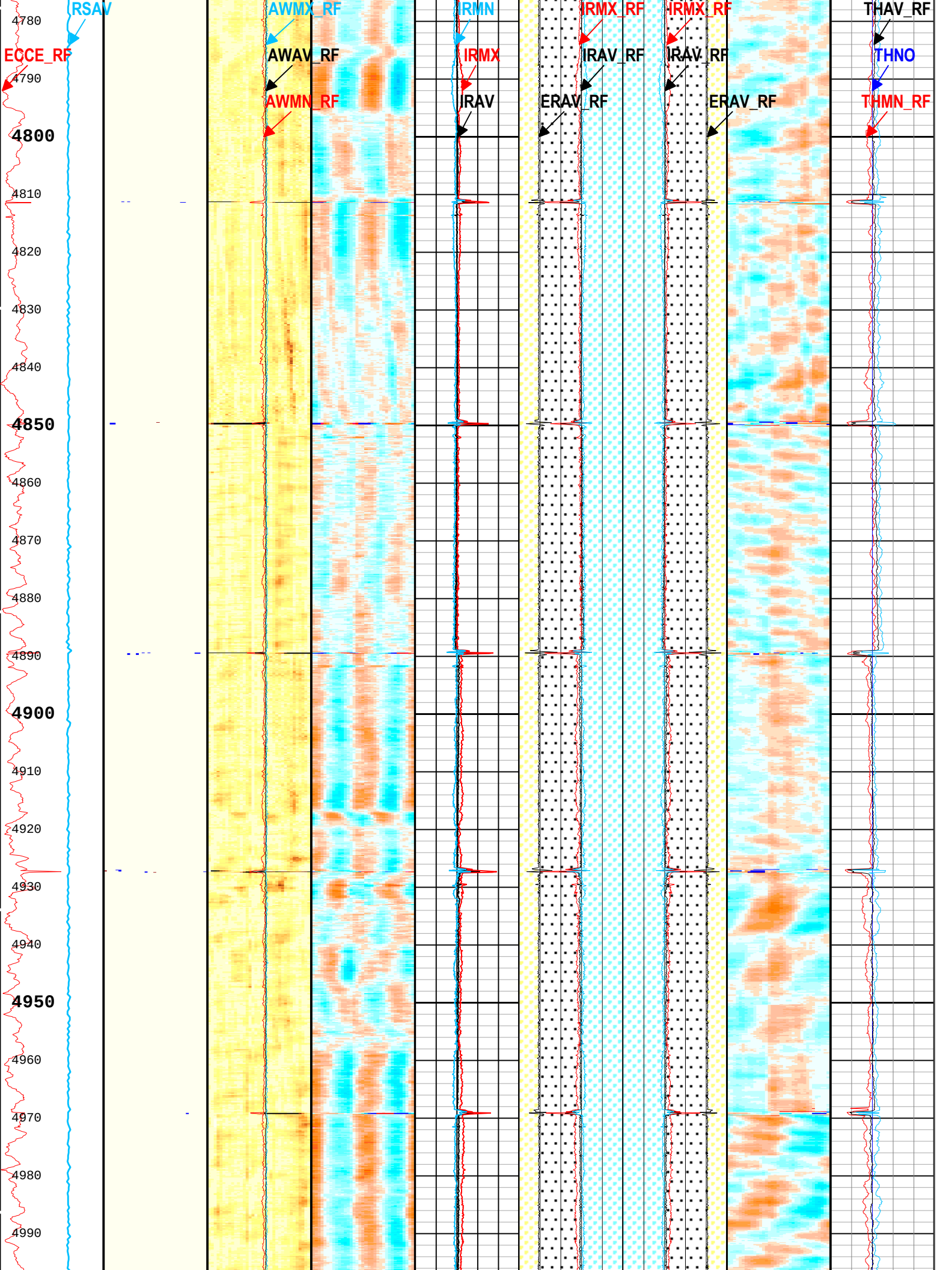
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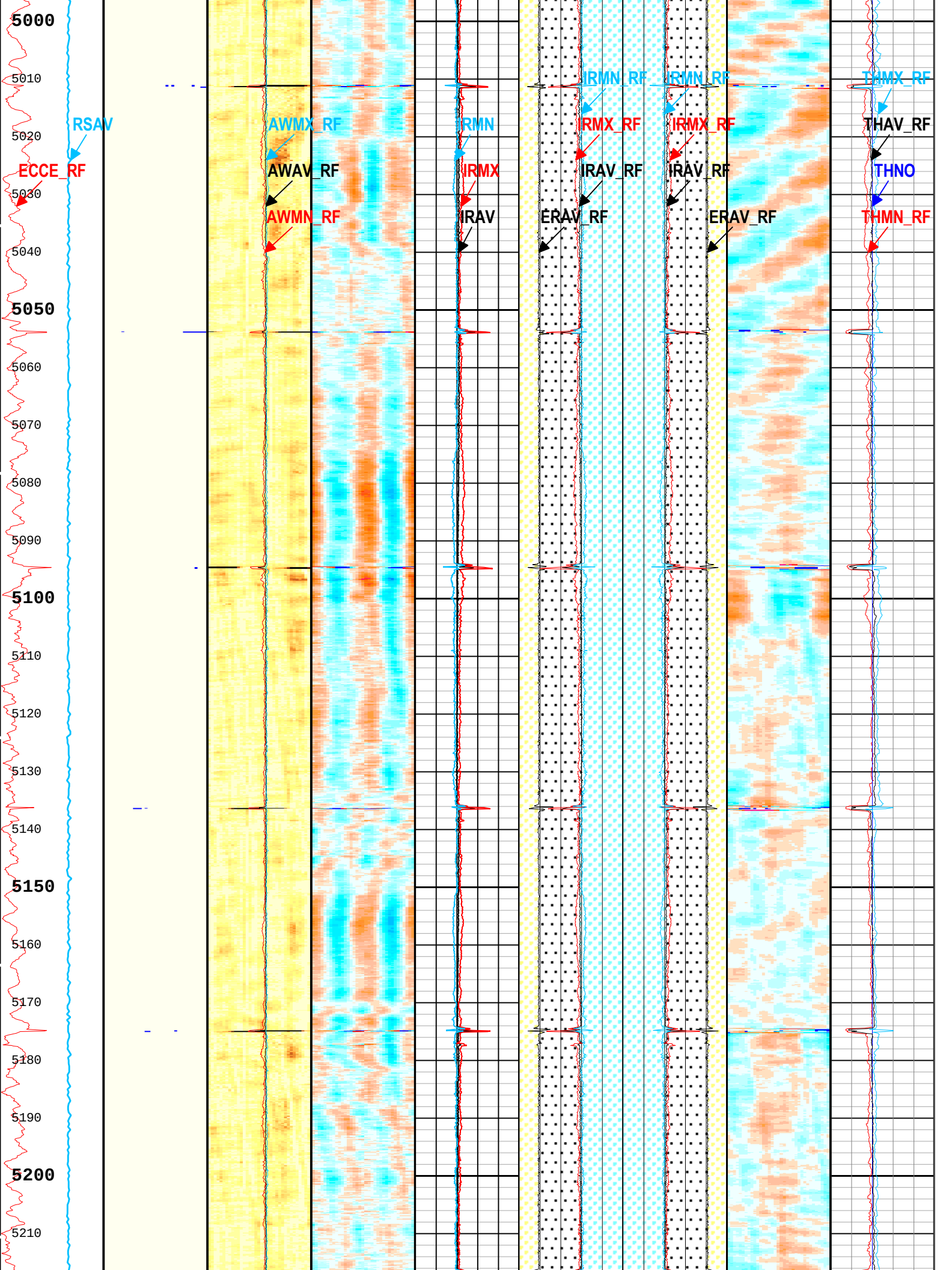
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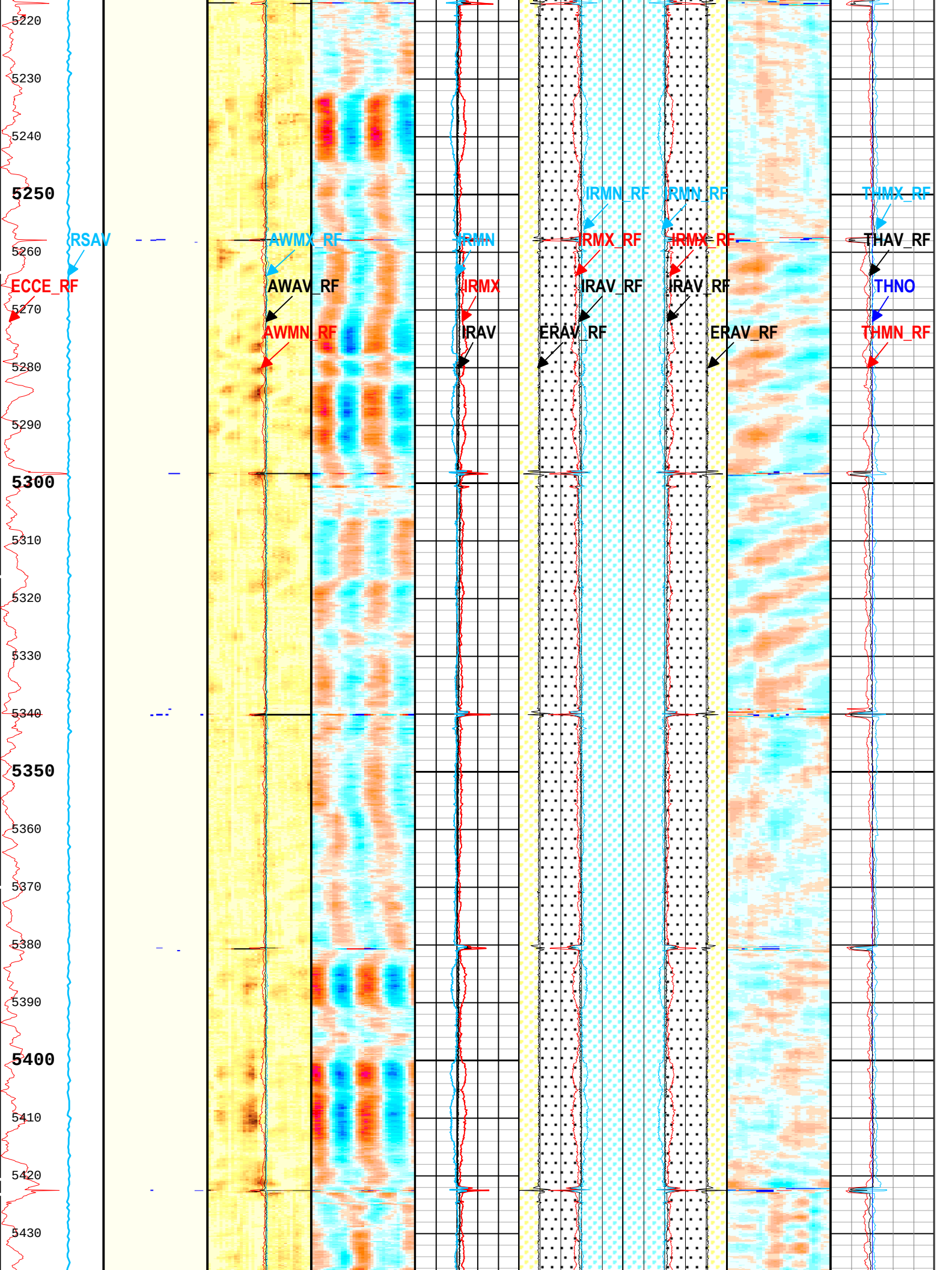
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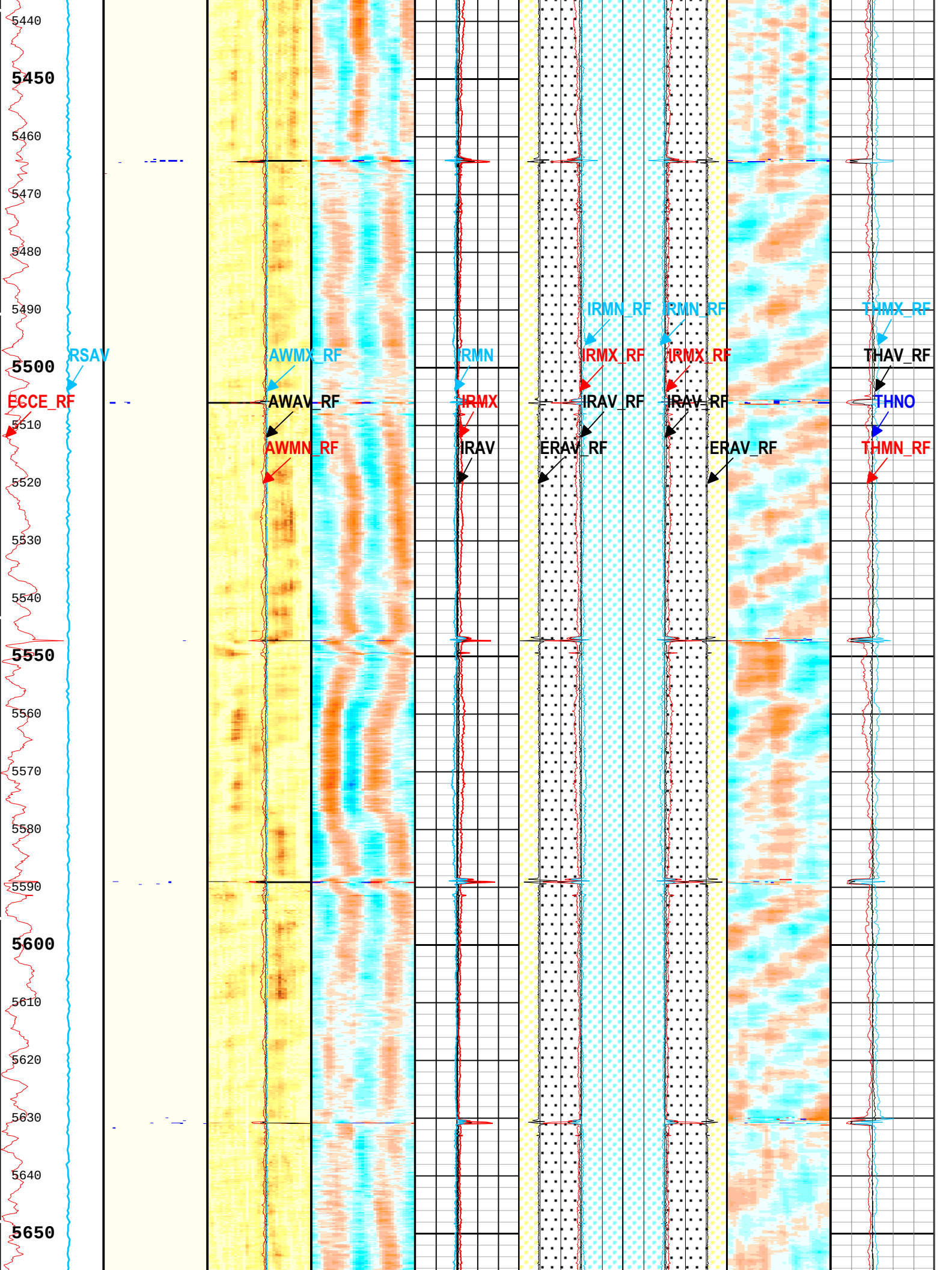
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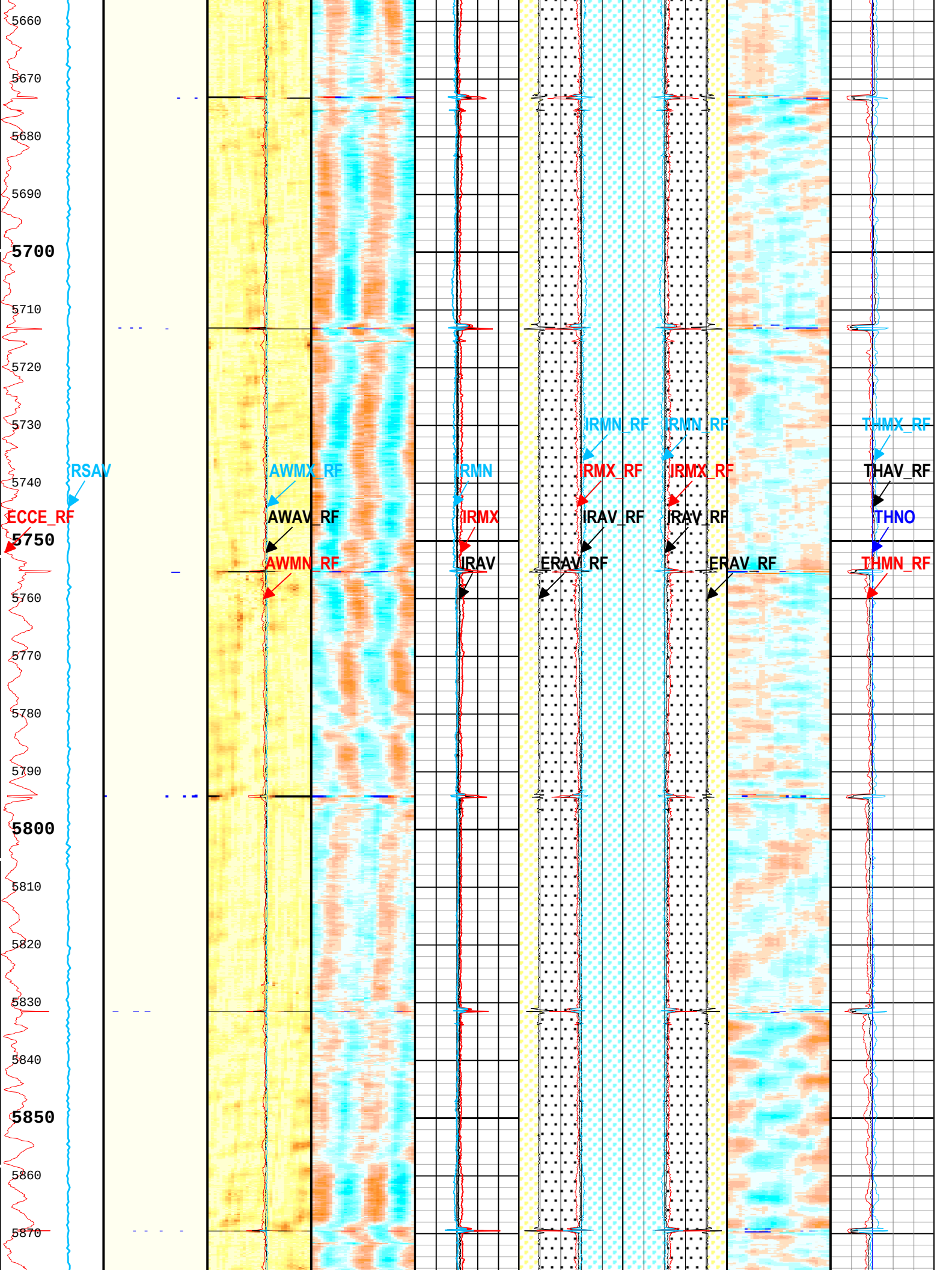
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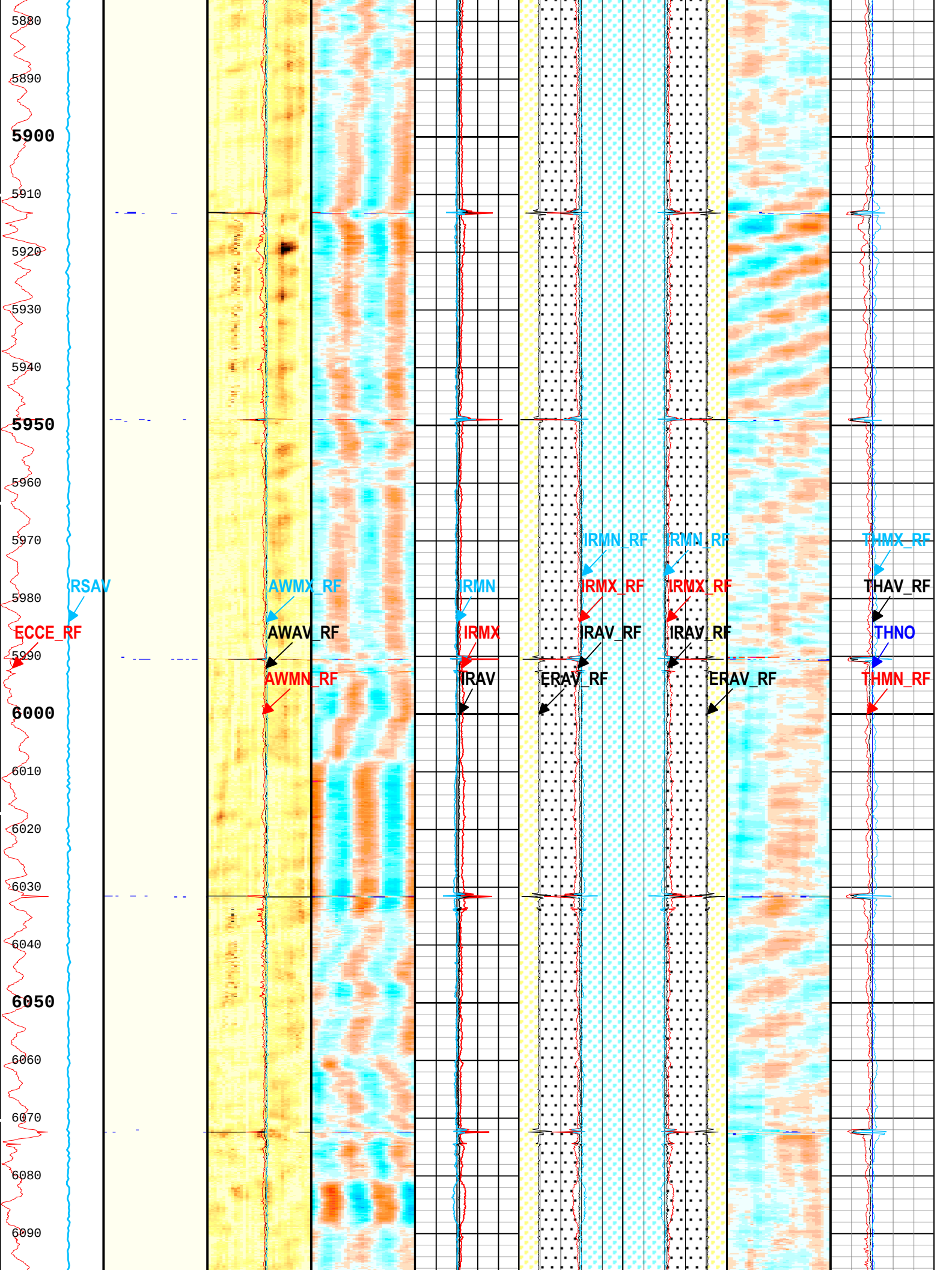
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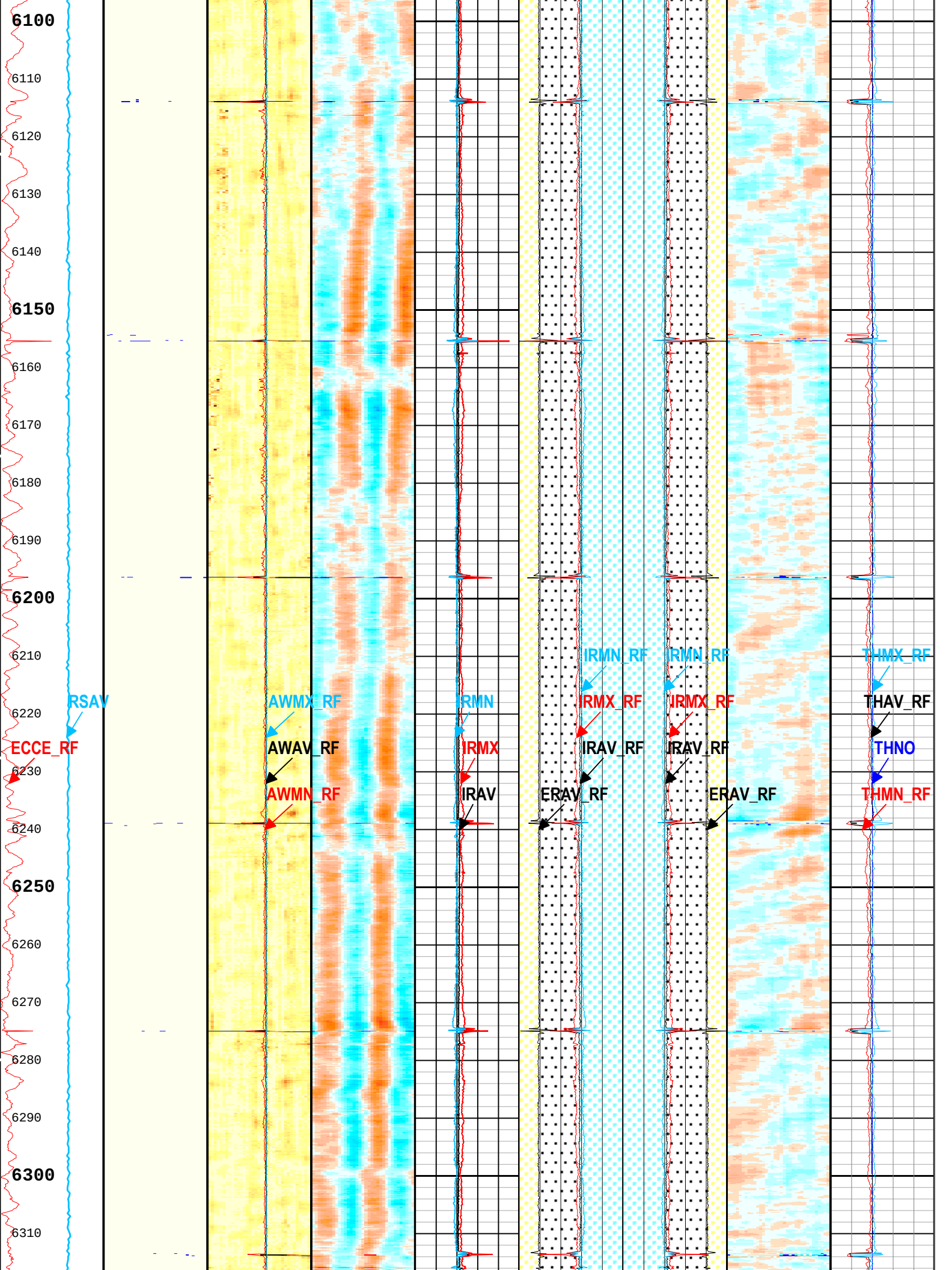
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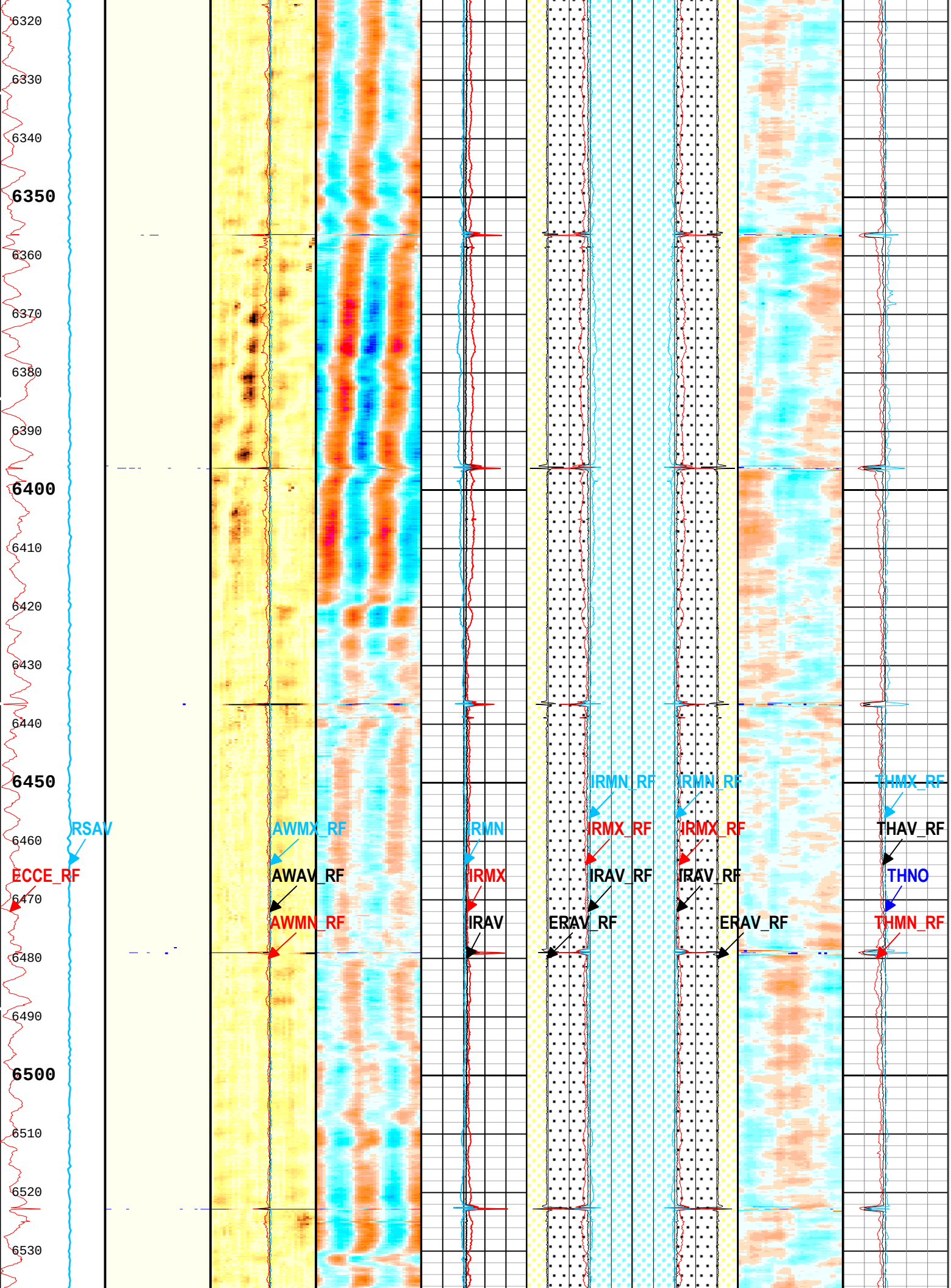
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AWMX_RF
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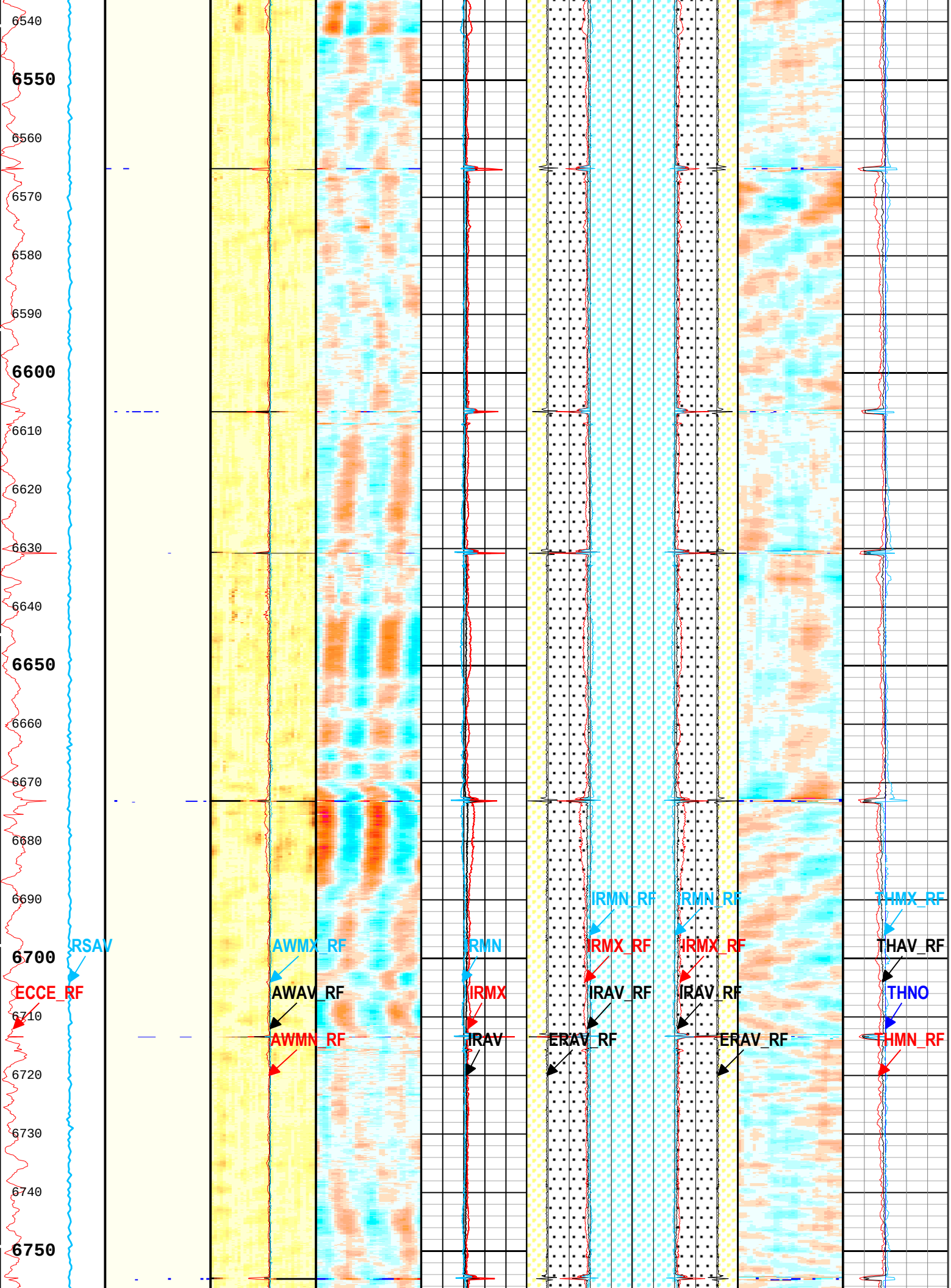
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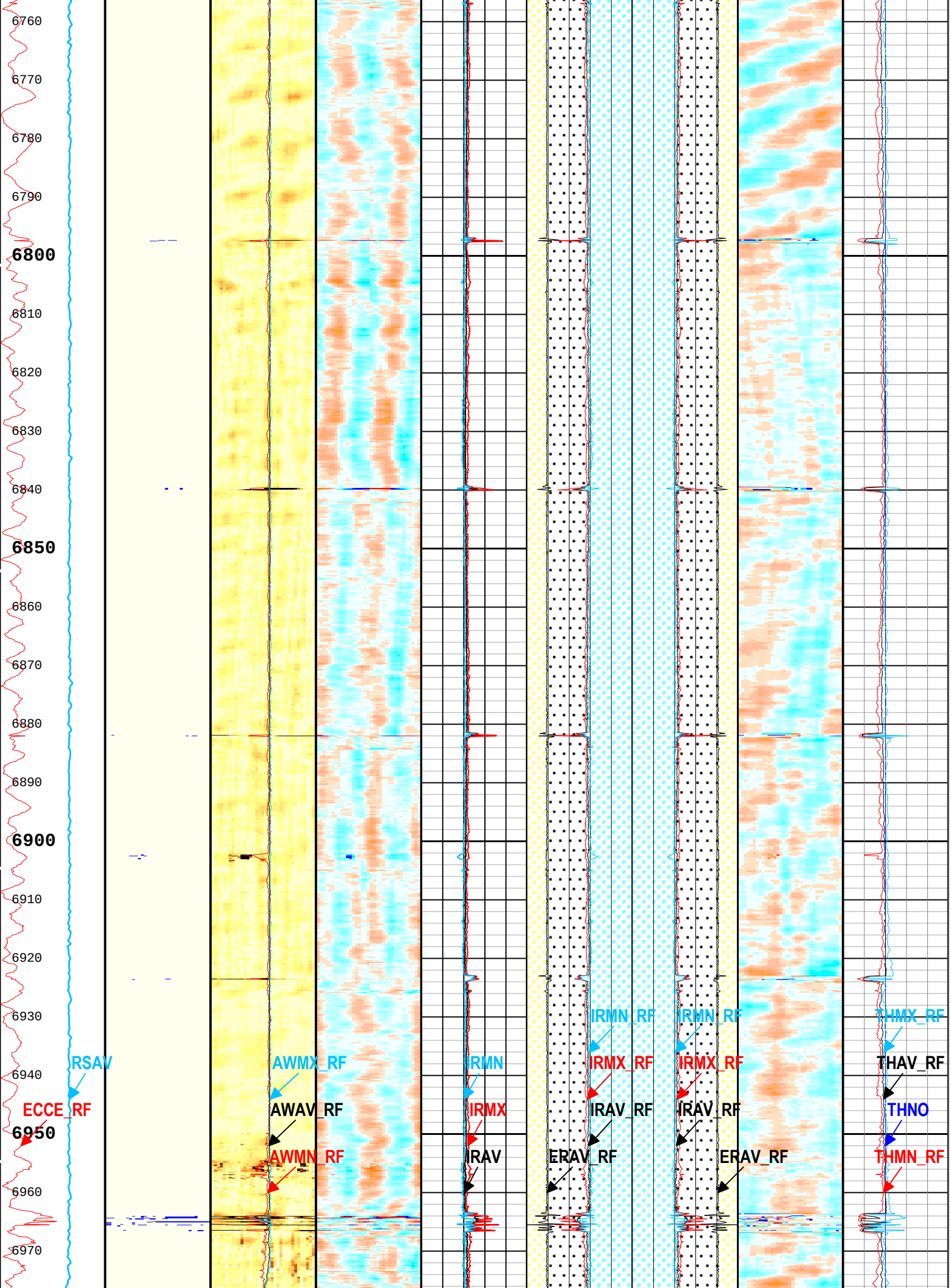
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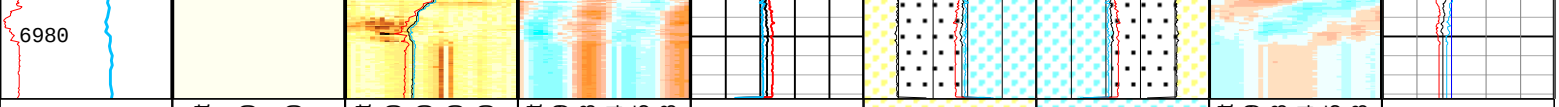


Amplitude of Eccentering for Unflagged Waves (ECCE_RF) USIT-E[1]
0 in 0.5

Motor Revolution Speed (RSAV) USIT-E[1]
6 c/s 8

Absent 1.500 3.500
Explicit Normalization
USIT - USIT Processing Flags (UFLG) USIT-E[1]

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

Absent -5.200 -3.600 -2.000 -0.400
Explicit Normalization
USIT - Amplitude of Unflagged Wave (AWBK_RF) USIT-E[1]
(dB)

Minimum of Unflagged Wave Amplitude (AWMN_RF) USIT-E[1]
0 dB 75

Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E[1]
0 dB 75

Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E[1]
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[1]
(in)

Internal Radius Averaged Value (IRAV) USIT-E[1]
3.5 in 4.5

Internal Radius Maximum Value (IRMX) USIT-E[1]
3.5 in 4.5

Internal Radius Minimum Value (IRMN) USIT-E[1]
3.5 in 4.5

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

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
4.5 in 3.5

Median of Unflagged External Radii (ERAV_RF) USIT-E[1]
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E[1]
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E[1]
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E[1]
3.5 in 4.5

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[1]
(in)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E[1]
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E[1]
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E[1]
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E[1]
0.2 in 0.7

TIME_1900 - Time Marked every 60.00 (s)

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

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 Corrosion 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:19:50

Composite 1

USI Compressed Goodwin

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[7]:Up	Up	5184.38 ft	6987.38 ft	18-Aug-2016 10:32:04 AM	18-Aug-2016 11:06:58 AM	ON	2.26 ft	No
One	Log[11]:Up	Up	1280.11 ft	5434.15 ft	18-Aug-2016 11:29:44 AM	18-Aug-2016 12:58:51 PM	ON	11.15 ft	No
One	Log[12]:Up	Up	44.45 ft	1429.03 ft	18-Aug-2016	18-Aug-2016	ON	11.26 ft	No

One	Log[12]:Up	Up	[illegible] ft	[illegible] ft	18-Aug-2016 1:08:22 PM	18-Aug-2016 1:38:42 PM	ON	[illegible] ft	No
One	Log[18]:Up	Up	21.44 ft	171.59 ft	18-Aug-2016 2:53:06 PM	18-Aug-2016 2:58:21 PM	ON	-0.05 ft	No

All depths are referenced to toolstring zero

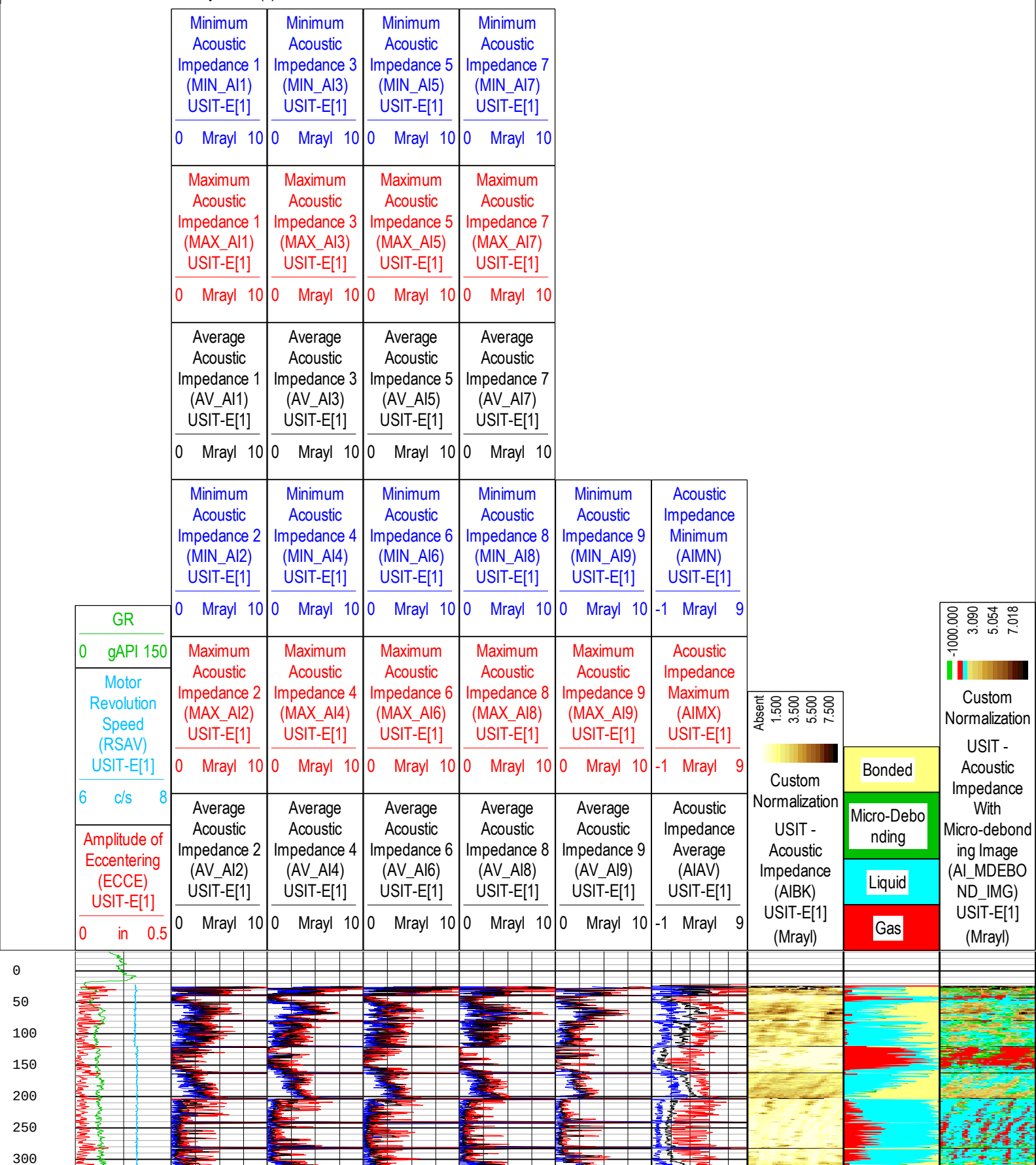
Log

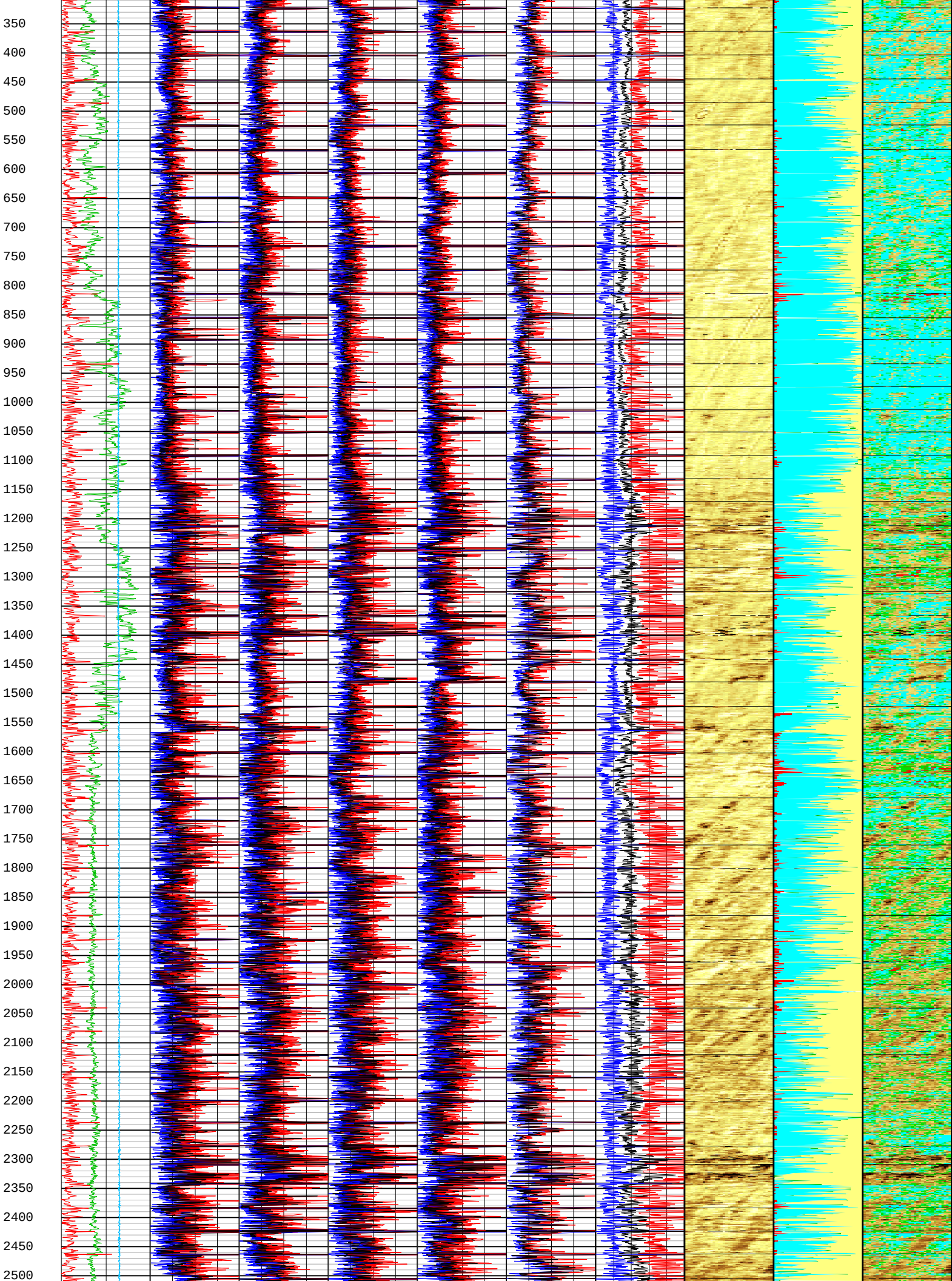
Company:Southern California Gas Company Well:Fernando Fee 35A

Composite 1:S006

Description: USI Goodwin Format: Log (Import of USI Goodwin) Index Scale: 0.5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Aug-2016 20:20:08

TIME_1900 - Time Marked every 60.00 (s)

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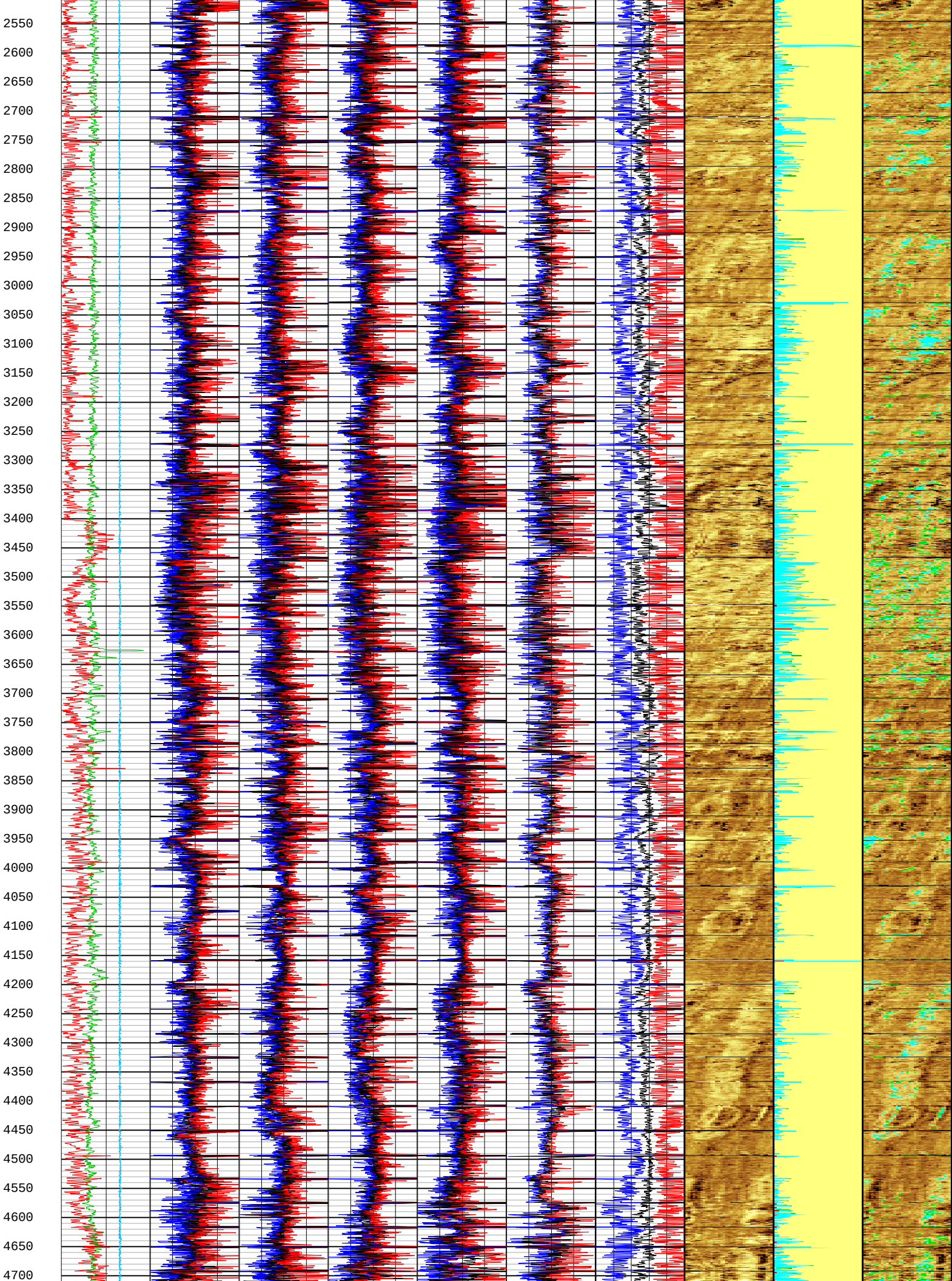
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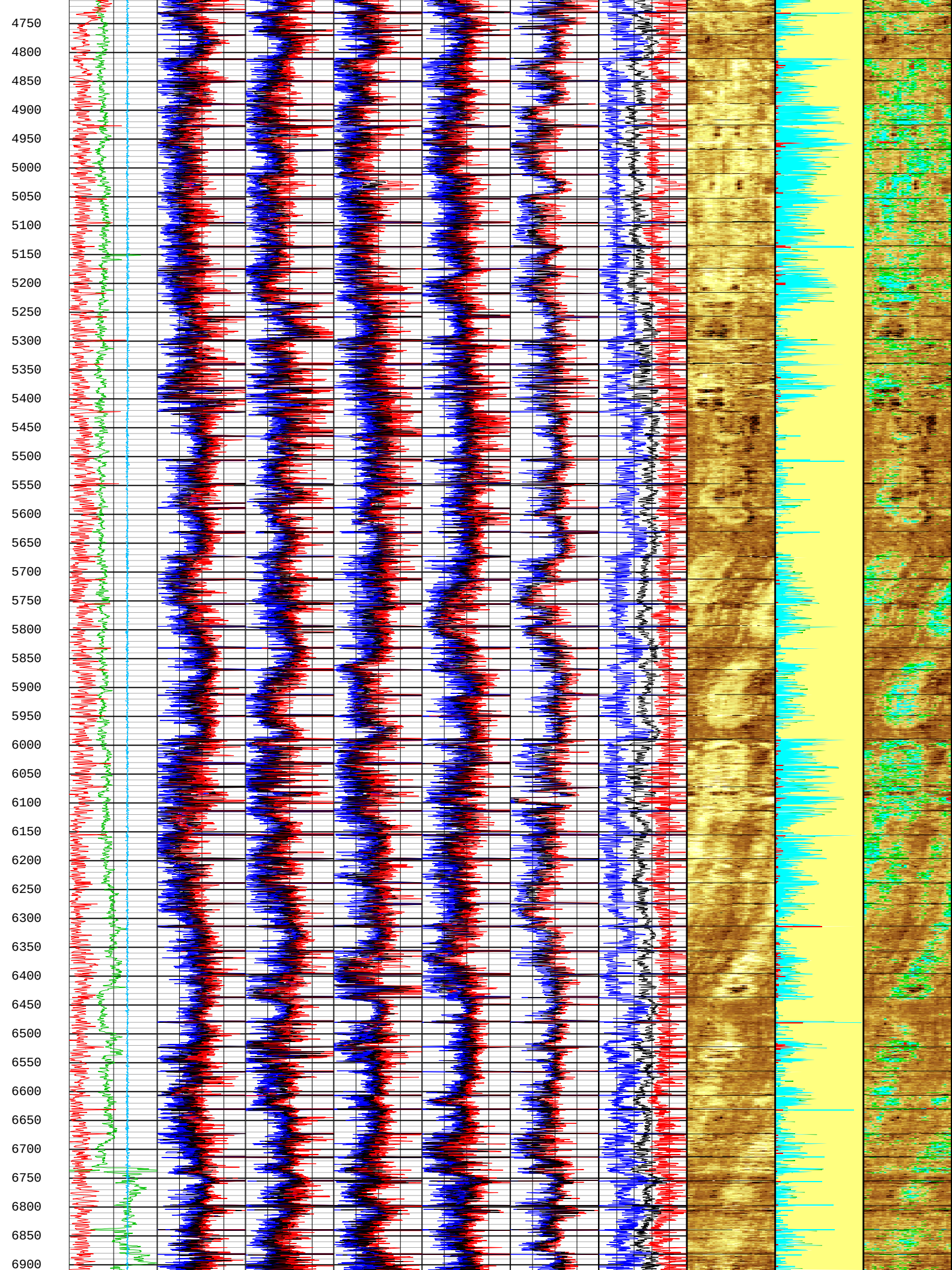
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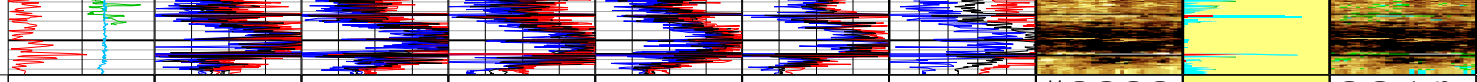


GR	Minimum Acoustic Impedance 1 (MIN_AI1) USIT-E[1]	Minimum Acoustic Impedance 3 (MIN_AI3) USIT-E[1]	Minimum Acoustic Impedance 5 (MIN_AI5) USIT-E[1]	Minimum Acoustic Impedance 7 (MIN_AI7) USIT-E[1]	Minimum Acoustic Impedance 9 (MIN_AI9) USIT-E[1]	Acoustic Impedance Minimum (AIMN) USIT-E[1]	Absent 1.500 3.500 5.500 7.500	Bonded	-1000.000 3.090 5.054 7.018
0 gAPI 150	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-1 Mrayl 9	Custom Normalization	Micro-Debonding	Custom Normalization
Motor Revolution Speed (RSAV) USIT-E[1]	Maximum Acoustic Impedance 1 (MAX_AI1) USIT-E[1]	Maximum Acoustic Impedance 3 (MAX_AI3) USIT-E[1]	Maximum Acoustic Impedance 5 (MAX_AI5) USIT-E[1]	Maximum Acoustic Impedance 7 (MAX_AI7) USIT-E[1]	Maximum Acoustic Impedance 9 (MAX_AI9) USIT-E[1]	Acoustic Impedance Maximum (AIMX) USIT-E[1]	USIT - Acoustic Impedance (AIBK) USIT-E[1] (Mrayl)	Liquid	USIT - Acoustic Impedance With Micro-debonding Image (AI_MDEBOND_IMG) USIT-E[1] (Mrayl)
6 c/s 8	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	-1 Mrayl 9		Gas	
Amplitude of Eccentering (ECCE) USIT-E[1]	Average Acoustic Impedance 1 (AV_AI1) USIT-E[1]	Average Acoustic Impedance 3 (AV_AI3) USIT-E[1]	Average Acoustic Impedance 5 (AV_AI5) USIT-E[1]	Average Acoustic Impedance 7 (AV_AI7) USIT-E[1]	Average Acoustic Impedance 9 (AV_AI9) USIT-E[1]	Acoustic Impedance Average (AIAV) USIT-E[1]			
0 in 0.5	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[1]	Minimum Acoustic Impedance 4 (MIN_AI4) USIT-E[1]	Minimum Acoustic Impedance 6 (MIN_AI6) USIT-E[1]	Minimum Acoustic Impedance 8 (MIN_AI8) USIT-E[1]					
	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10					
	Maximum Acoustic Impedance 2 (MAX_AI2) USIT-E[1]	Maximum Acoustic Impedance 4 (MAX_AI4) USIT-E[1]	Maximum Acoustic Impedance 6 (MAX_AI6) USIT-E[1]	Maximum Acoustic Impedance 8 (MAX_AI8) USIT-E[1]					
	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10	0 Mrayl 10					
	Average Acoustic Impedance 2 (AV_AI2) USIT-E[1]	Average Acoustic Impedance 4 (AV_AI4) USIT-E[1]	Average Acoustic Impedance 6 (AV_AI6) USIT-E[1]	Average Acoustic Impedance 8 (AV_AI8) USIT-E[1]					
	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: 0.5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Aug-2016 20:20:08

One

Hi-Res Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[19]:Up	Up	24.92 ft	63.03 ft	18-Aug-2016 2:59:53 PM	18-Aug-2016 3:02:59 PM	ON	17.58 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

One: Log[19]:Up:S006

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

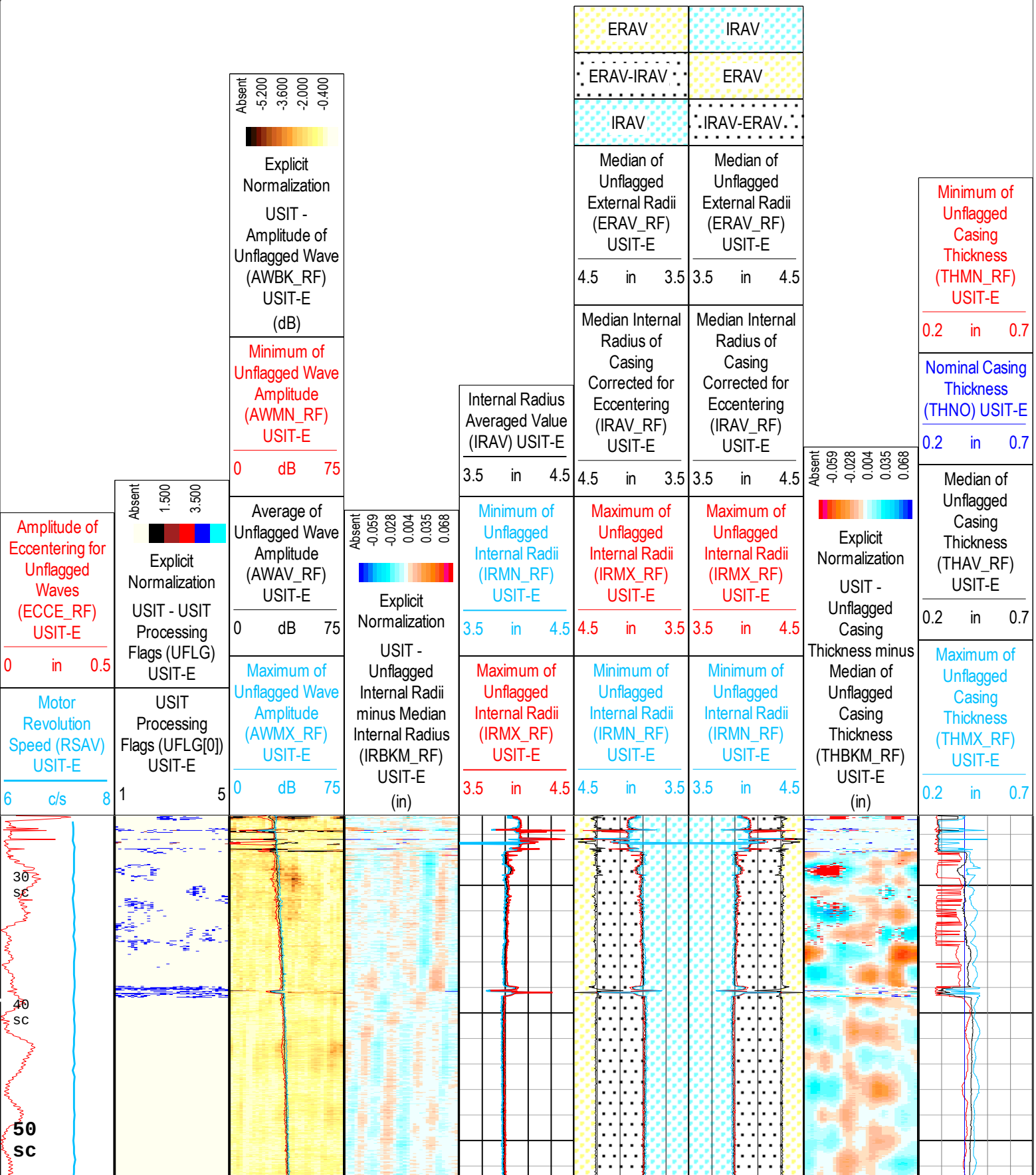
Creation Date: 18-Aug-2016 20:20:13

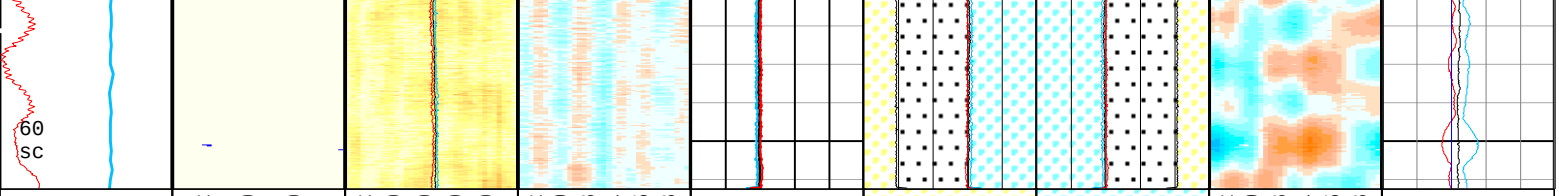
USIT Processing Flags (UFLG[0]) USIT-E

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)





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) 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
(in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

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
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7

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 Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:13

One

Hi-Res Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[17]:Up	Up	1325.23 ft	1427.89 ft	18-Aug-2016 2:40:59 PM	18-Aug-2016 2:46:41 PM	ON	18.23 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

One: Log[17]:Up:S006

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 18-Aug-2016 20:20:15

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

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) 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 (in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

ERAV | ERAV-IRAV | IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

IRAV | ERAV | IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

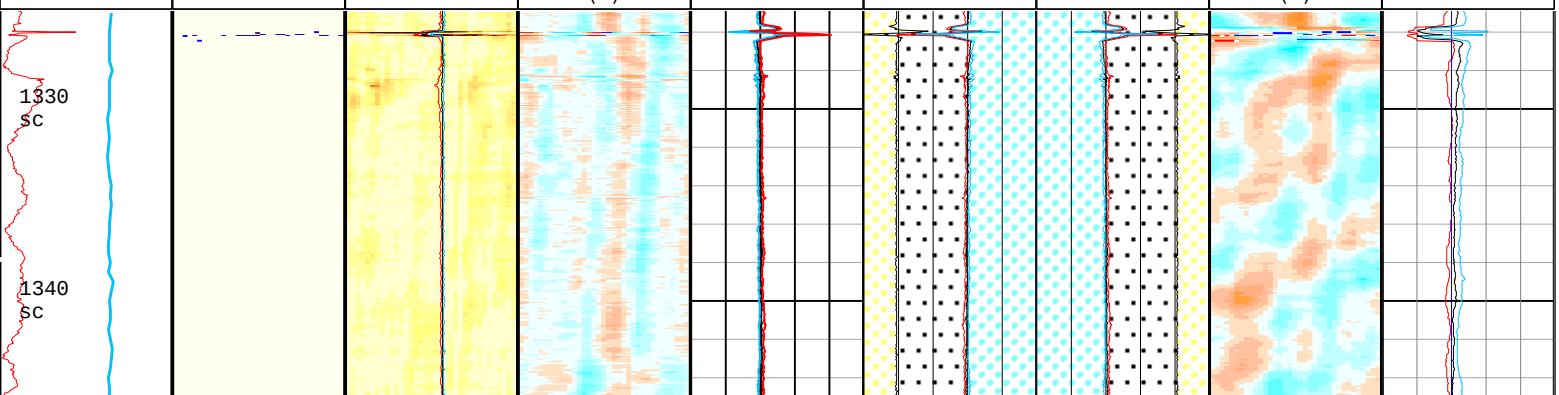
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

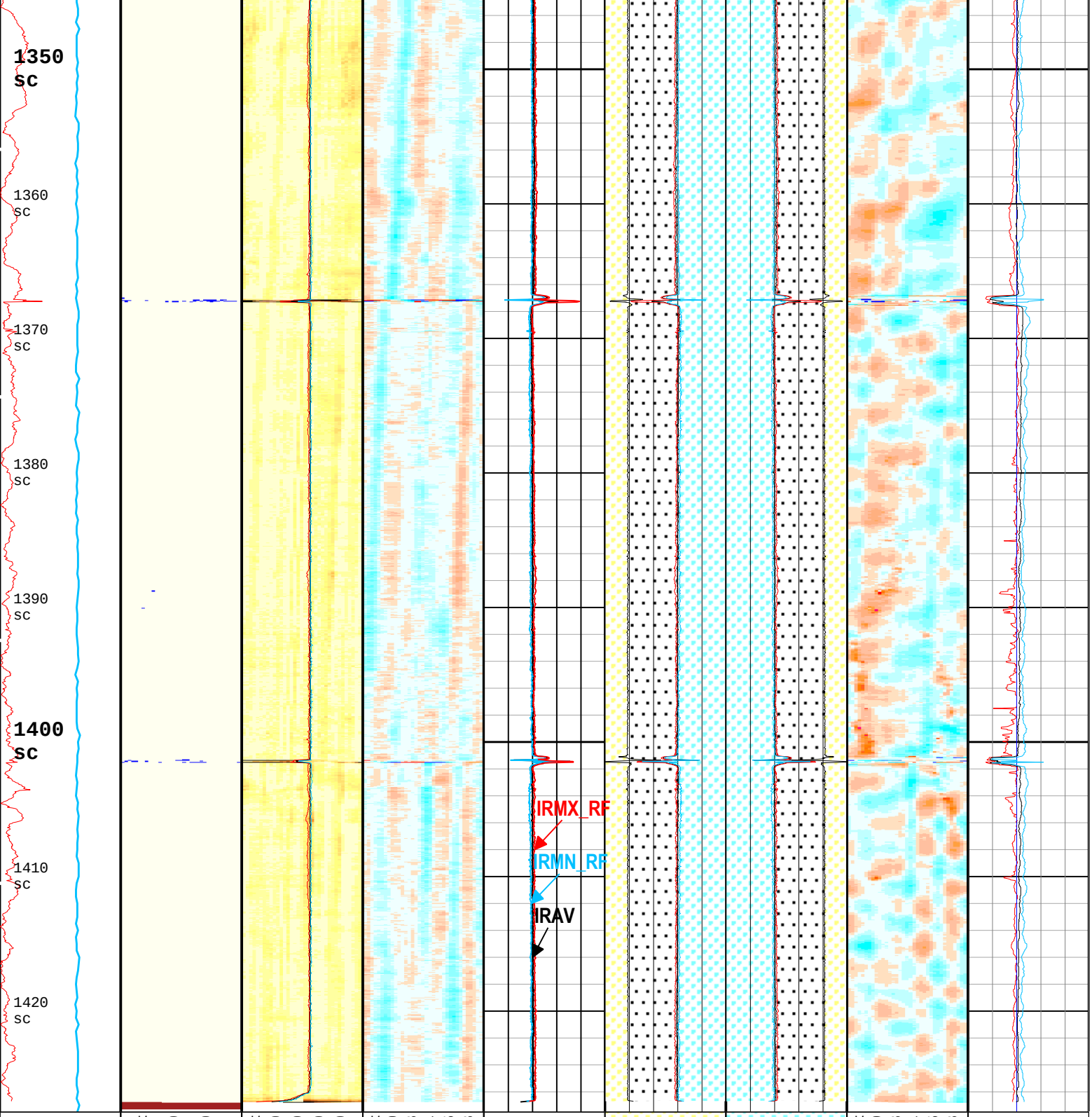
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7





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)

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
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF)

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of

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
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing

USIT-E	(IRMX_RF) USIT-E	Casing Corrected for Eccentering (IRAV_RF) USIT-E	Casing Corrected for Eccentering (IRAV_RF) USIT-E	(in)	Thickness (THAV_RF) USIT-E
0 dB 75	3.5 in 4.5	4.5 in 3.5	3.5 in 4.5		0.2 in 0.7
Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E		Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E		Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0 dB 75		4.5 in 3.5	3.5 in 4.5		0.2 in 0.7
Maximum of Unflagged Wave Amplitude (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		4.5 in 3.5	3.5 in 4.5		

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 Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:15

One

Hi-Res Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[16]:Up	Up	2500.54 ft	2688.75 ft	18-Aug-2016 2:27:20 PM	18-Aug-2016 2:37:42 PM	ON	18.23 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

One: Log[16]:Up:S006

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:17

TIME_1900 - Time Marked every 60.00 (s)

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

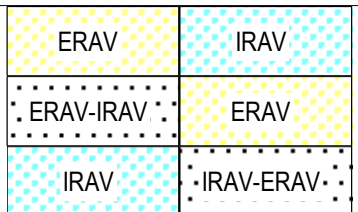
1 - UFLG 1 Value within [0.0 - 1.5] - : UTIM Error

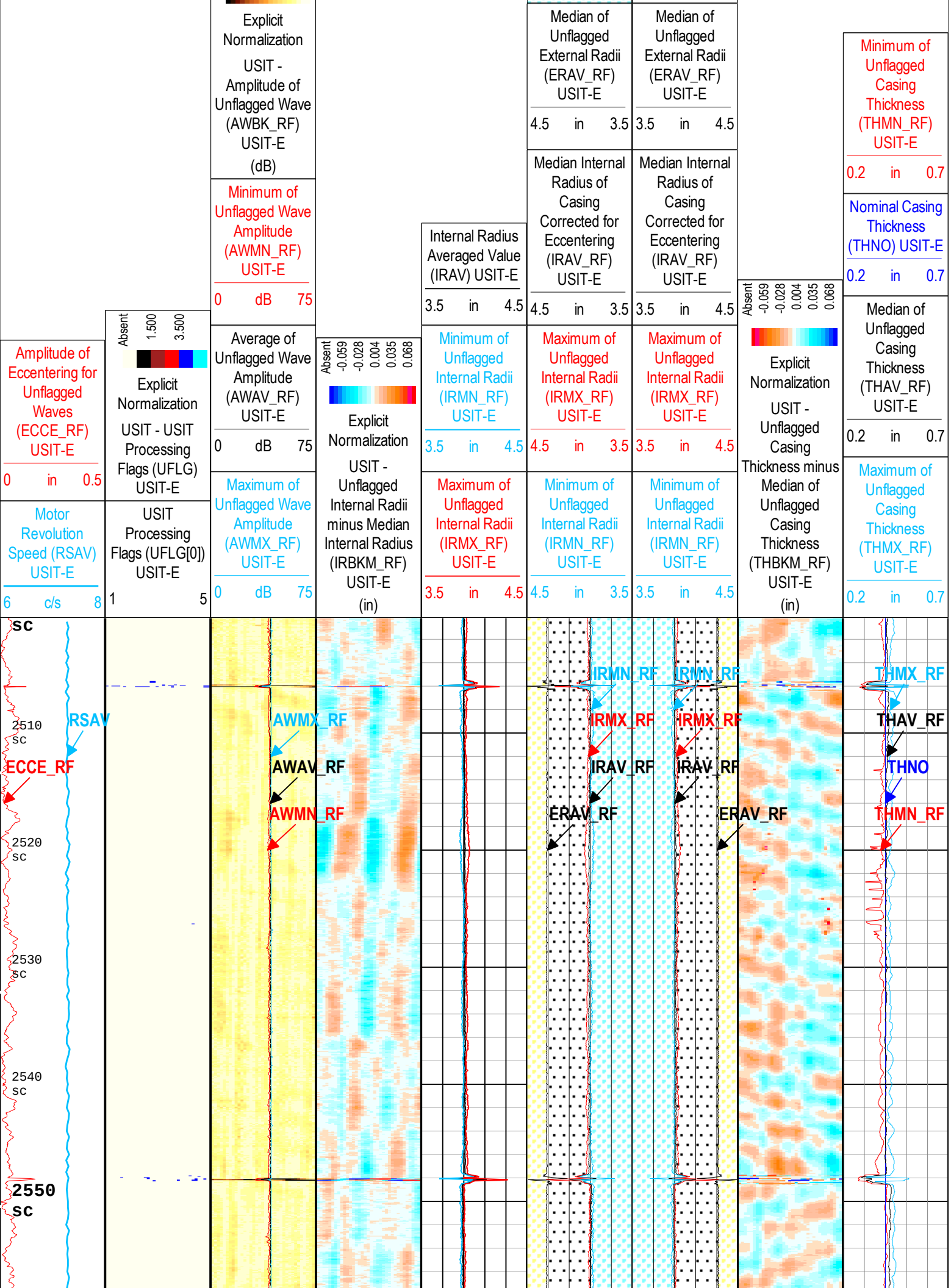
2 - UFLG 2 Value within [1.5 - 2.5] - : Pulse Origin Not Detected

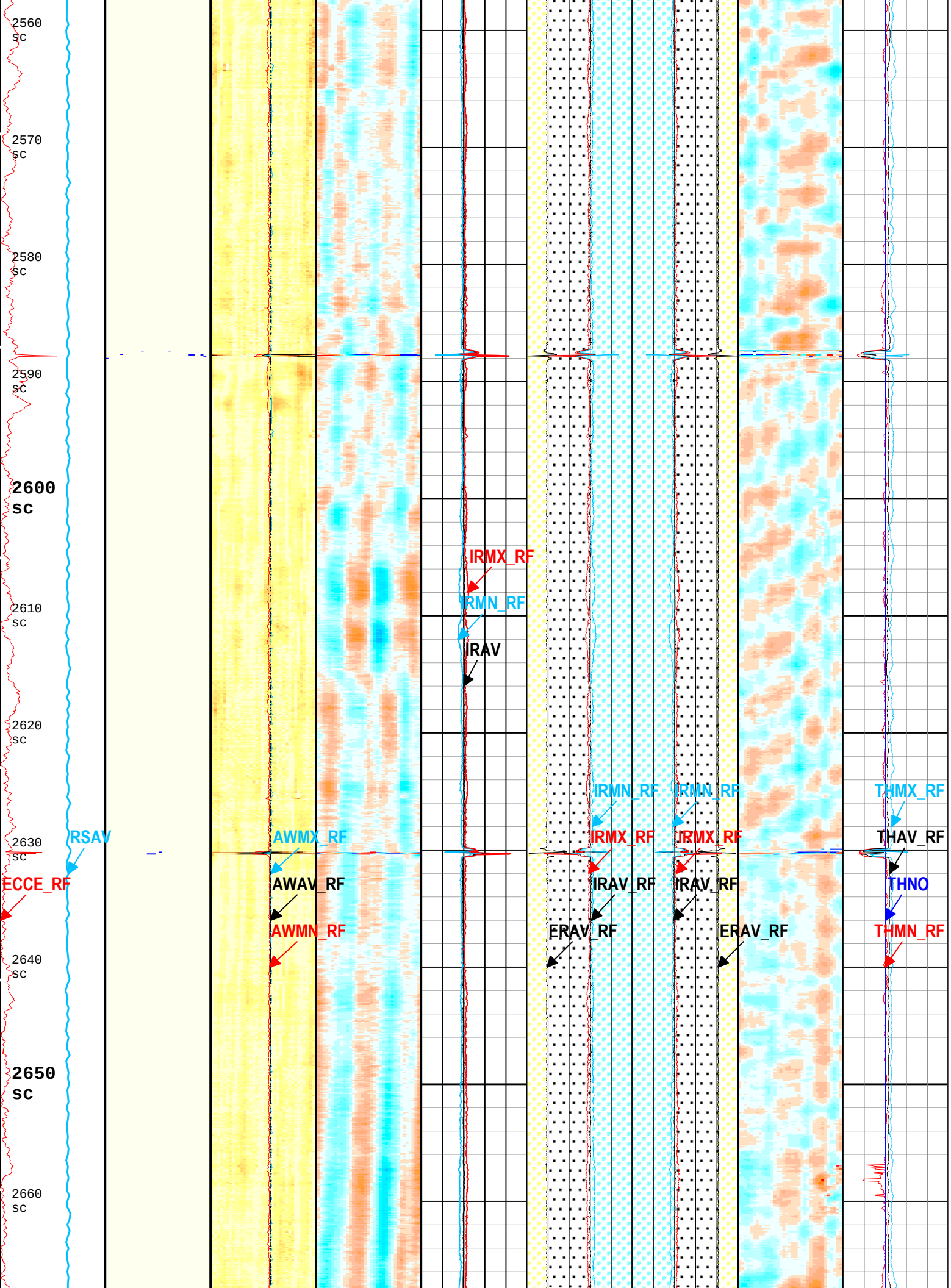
3 - UFLG 3 Value within [2.5 - 3.5] - : WINLEN Error

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




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
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 (in)
Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5
Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5
Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5
Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5
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
0.2 in 0.7
Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7
Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7
sc
2510 sc
2520 sc
2530 sc
2540 sc
2550 sc
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF


2560 sc
2570 sc
2580 sc
2590 sc
2600 sc
2610 sc
2620 sc
2630 sc
2640 sc
2650 sc
2660 sc
IRMX_RF
IRMN_RF
IRAV
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
AWMN_RF
IRMN_RF
IRMX_RF
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IRMX_RF
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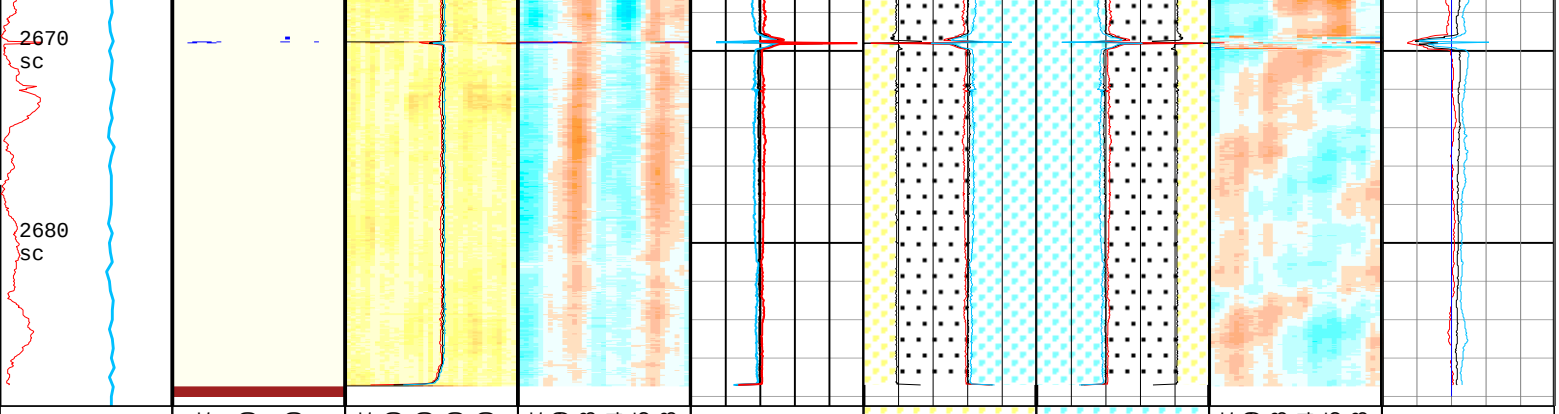
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF



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) 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 (in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

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
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7

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: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:17

One

Hi-Res Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[15]:Up	Up	3324.60 ft	3489.84 ft	18-Aug-2016 2:16:50 PM	18-Aug-2016 2:25:21 PM	ON	18.49 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

One: Log[15]:Up:S006

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:21

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

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) 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 (in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

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

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

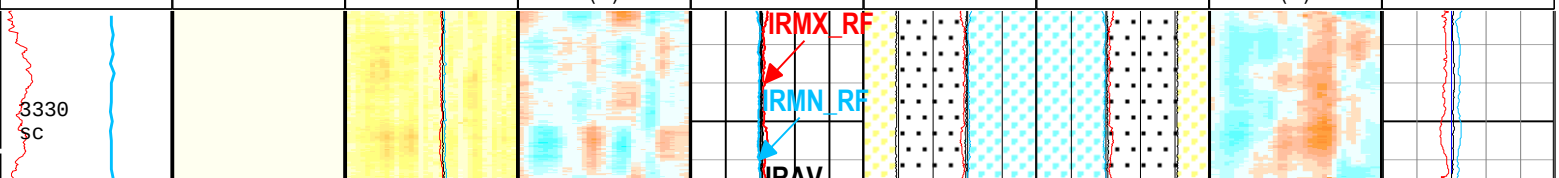
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

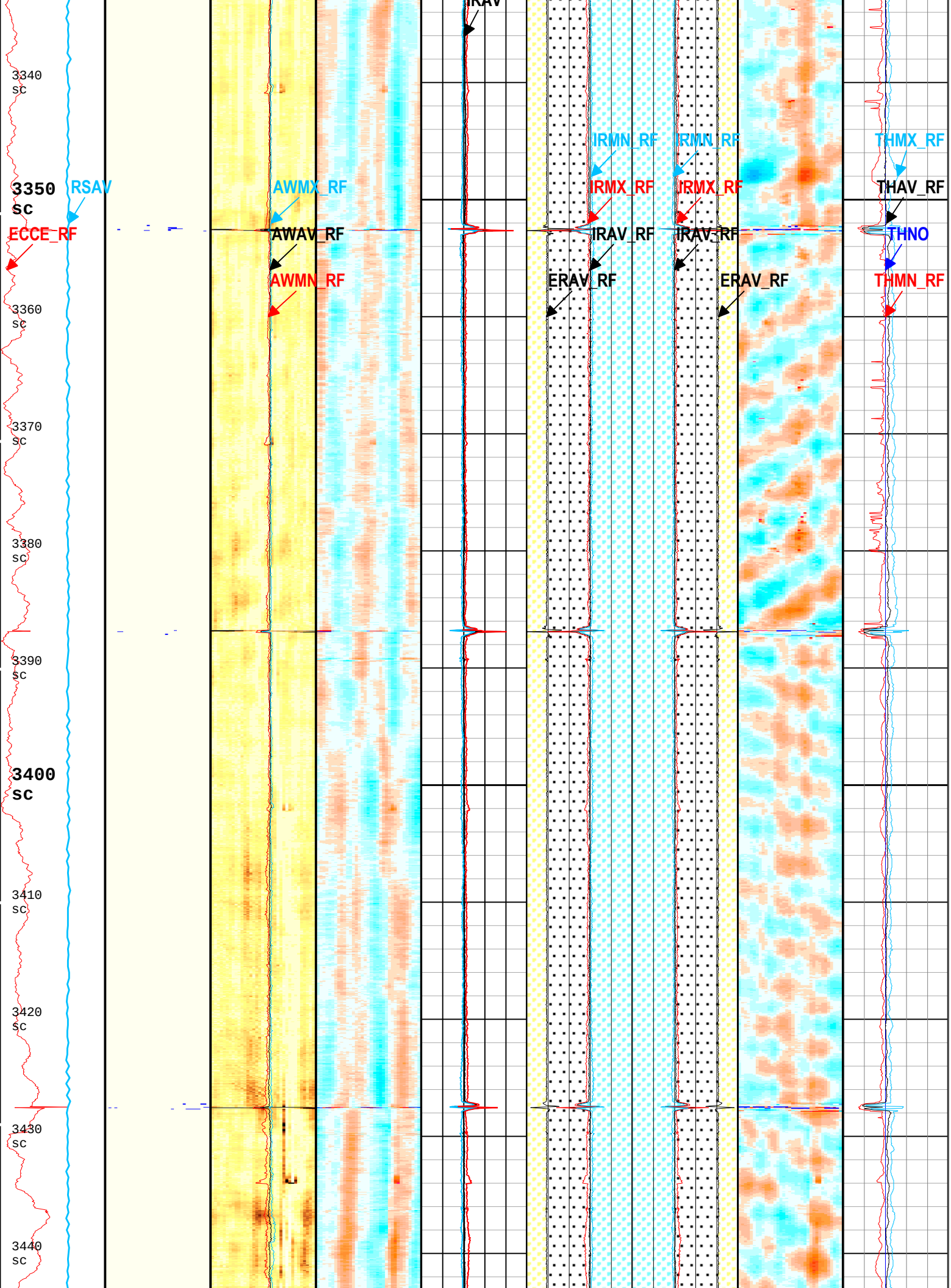
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7




3340
sc
3350
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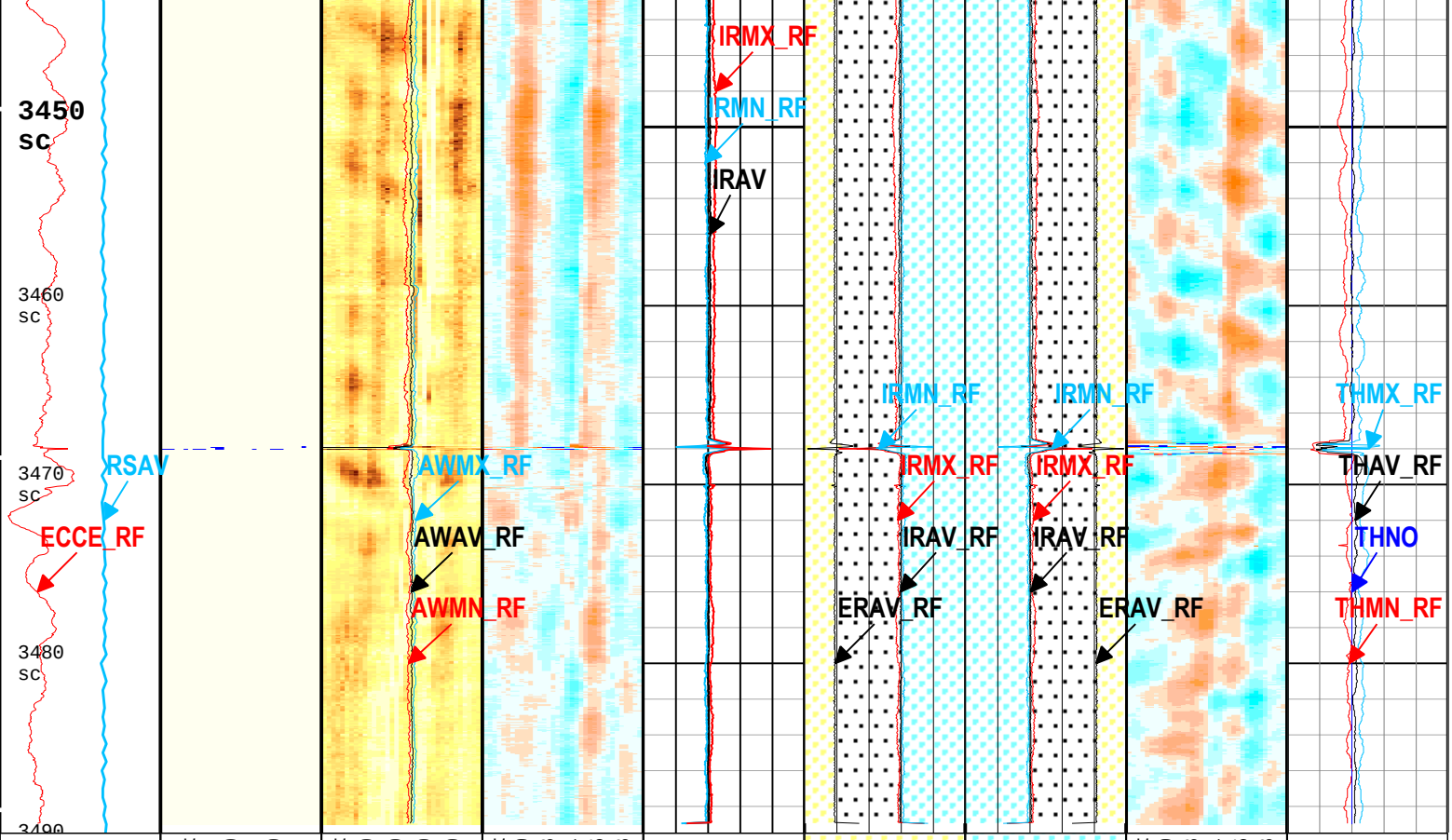
3360
sc
3370
sc
3380
sc
3390
sc
3400
sc
3410
sc
3420
sc
3430
sc
3440
sc
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
AWMN_RF
IRAV
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF



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) 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 (in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

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
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7

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: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:21

One

Hi-Res Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[14]:Up	Up	4362.19 ft	4475.49 ft	18-Aug-2016 2:07:09 PM	18-Aug-2016 2:13:22 PM	ON	18.49 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A
One: Log[14]:Up:S006

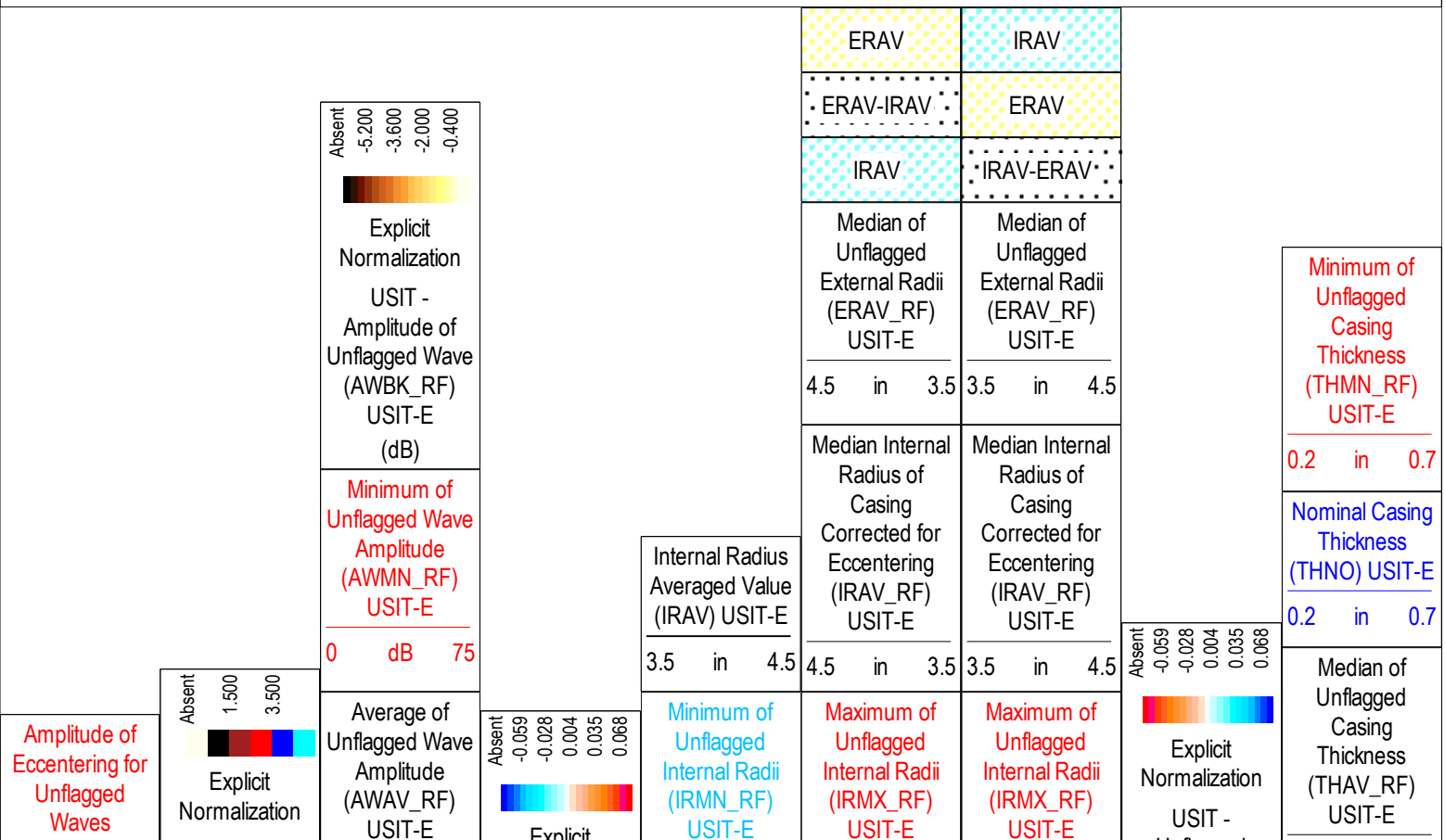
Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:25

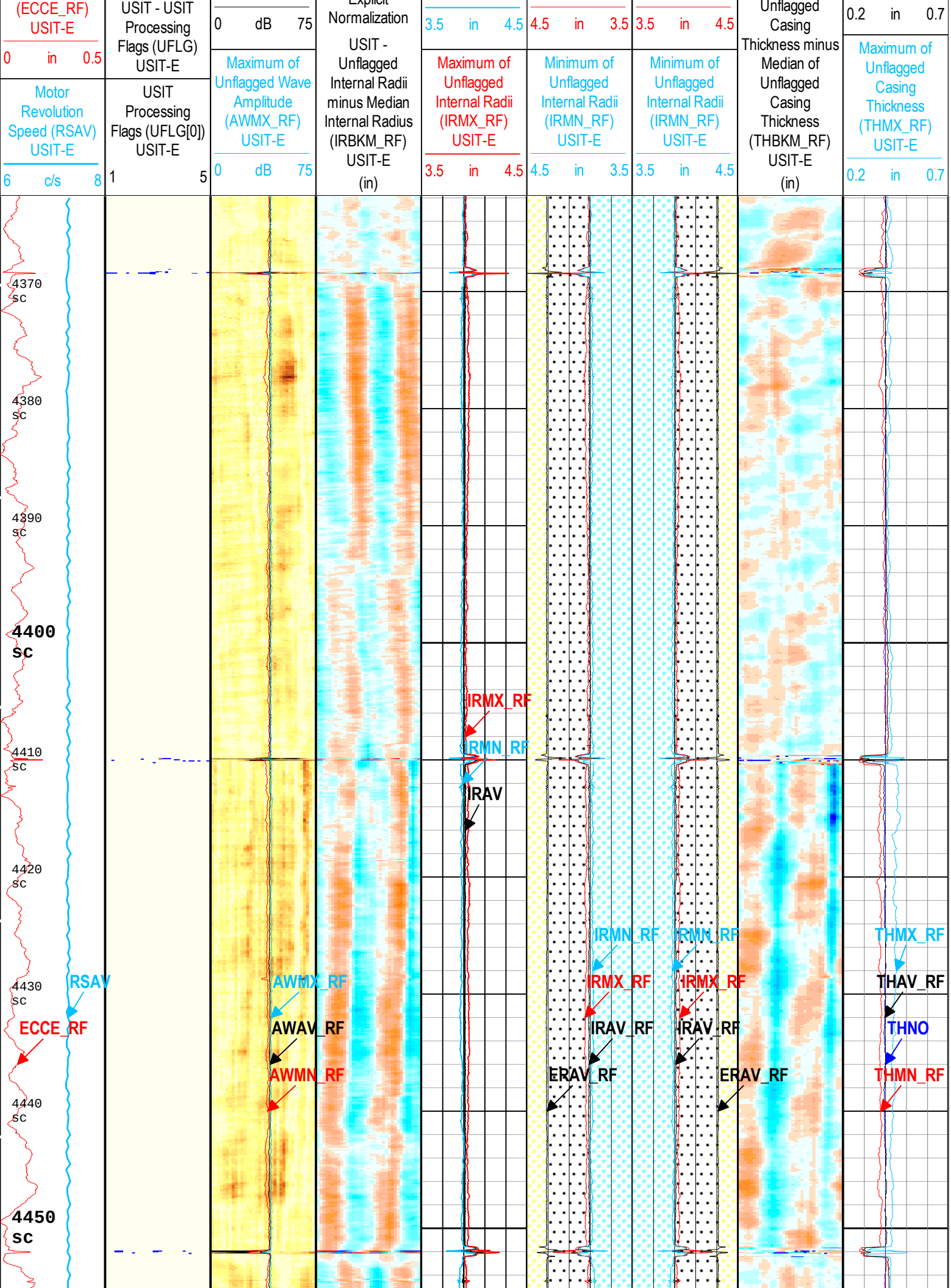
TIME_1900 - Time Marked every 60.00 (s)

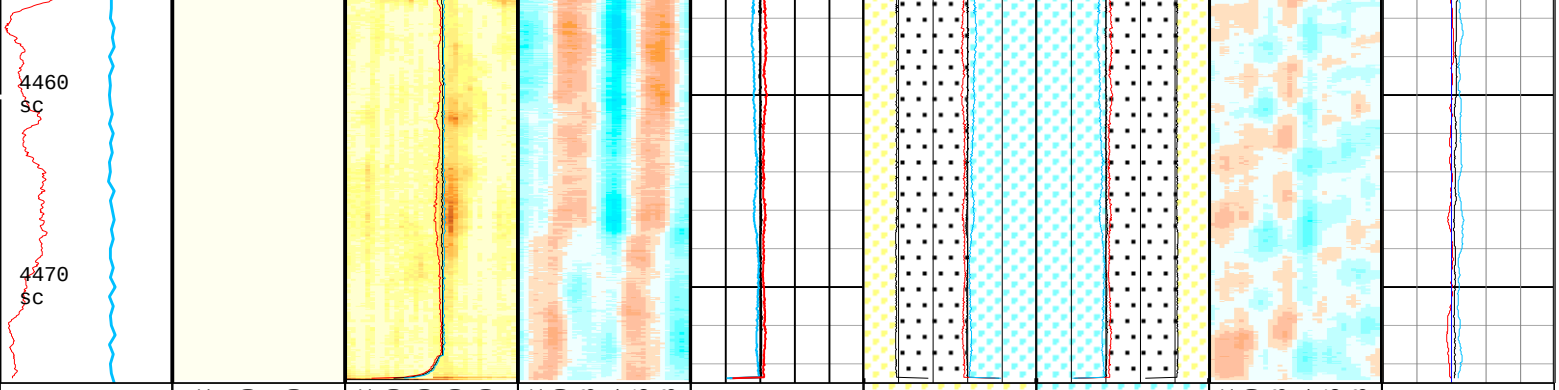
USIT Processing Flags (UFLG[0]) USIT-E

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




(ECCE_RF)
USIT-E
0 in 0.5
Motor Revolution Speed (RSAV) USIT-E
6 c/s 8
USIT - USIT Processing Flags (UFLG) USIT-E
USIT Processing Flags (UFLG[0]) USIT-E
1 5
0 dB 75
Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E
0 dB 75
Explicit Normalization
USIT - Unflagged Internal Radii minus Median Internal Radius (IRBKM_RF) USIT-E
(in)
3.5 in 4.5
Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5
4.5 in 3.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5
3.5 in 4.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5
Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E
(in)
0.2 in 0.7
Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7
4370 sc
4380 sc
4390 sc
4400 sc
4410 sc
4420 sc
4430 sc
4440 sc
4450 sc
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
AWMN_RF
IRMX_RF
IRMN_RF
IRAV
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF



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) 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 (in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

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
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7

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: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:25

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[13]:Up	Up	4601.78 ft	4732.42 ft	18-Aug-2016 1:59:18 PM	18-Aug-2016 2:06:22 PM	ON	17.97 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

One: Log[13]:Up:S006

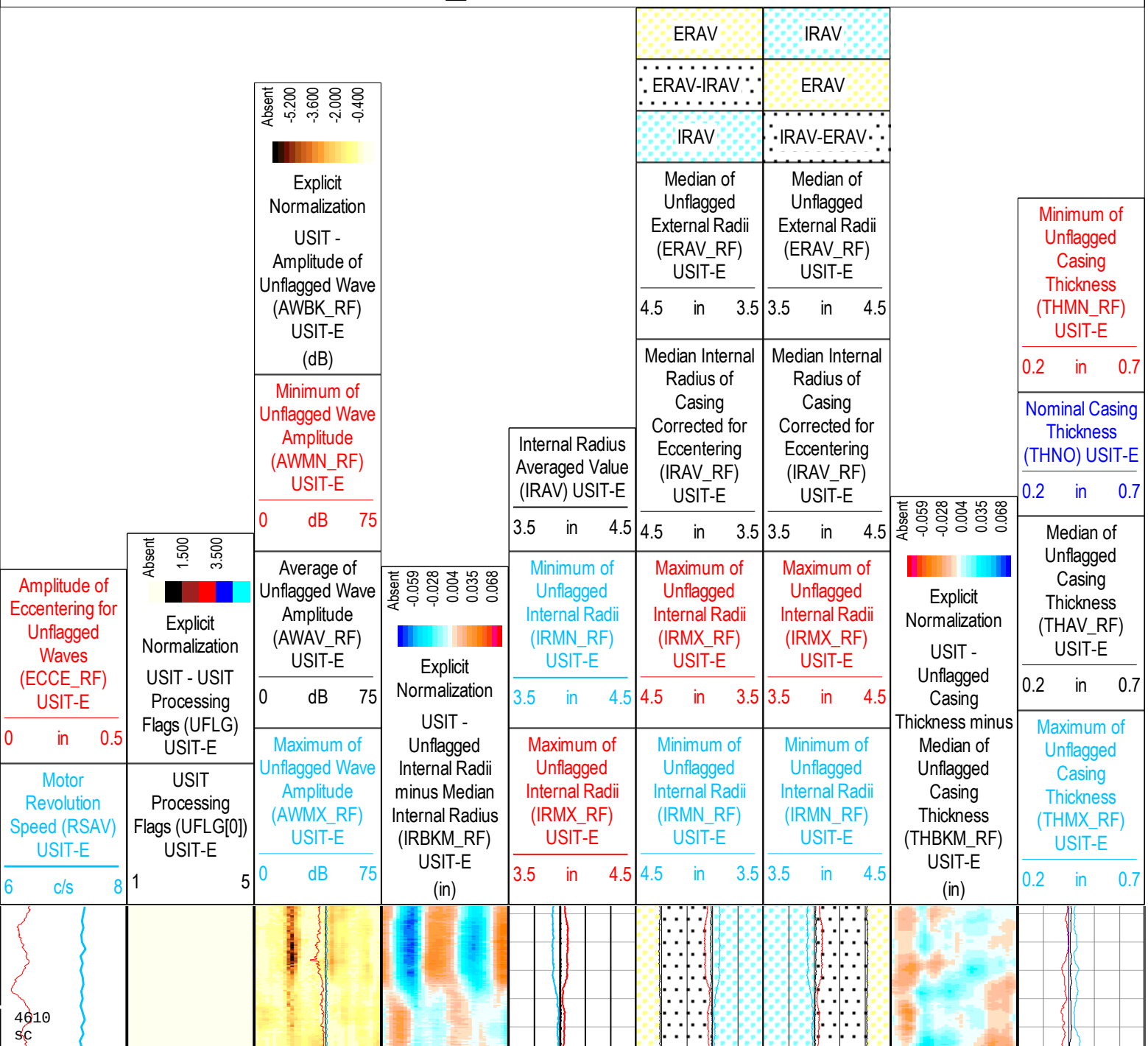
Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:28

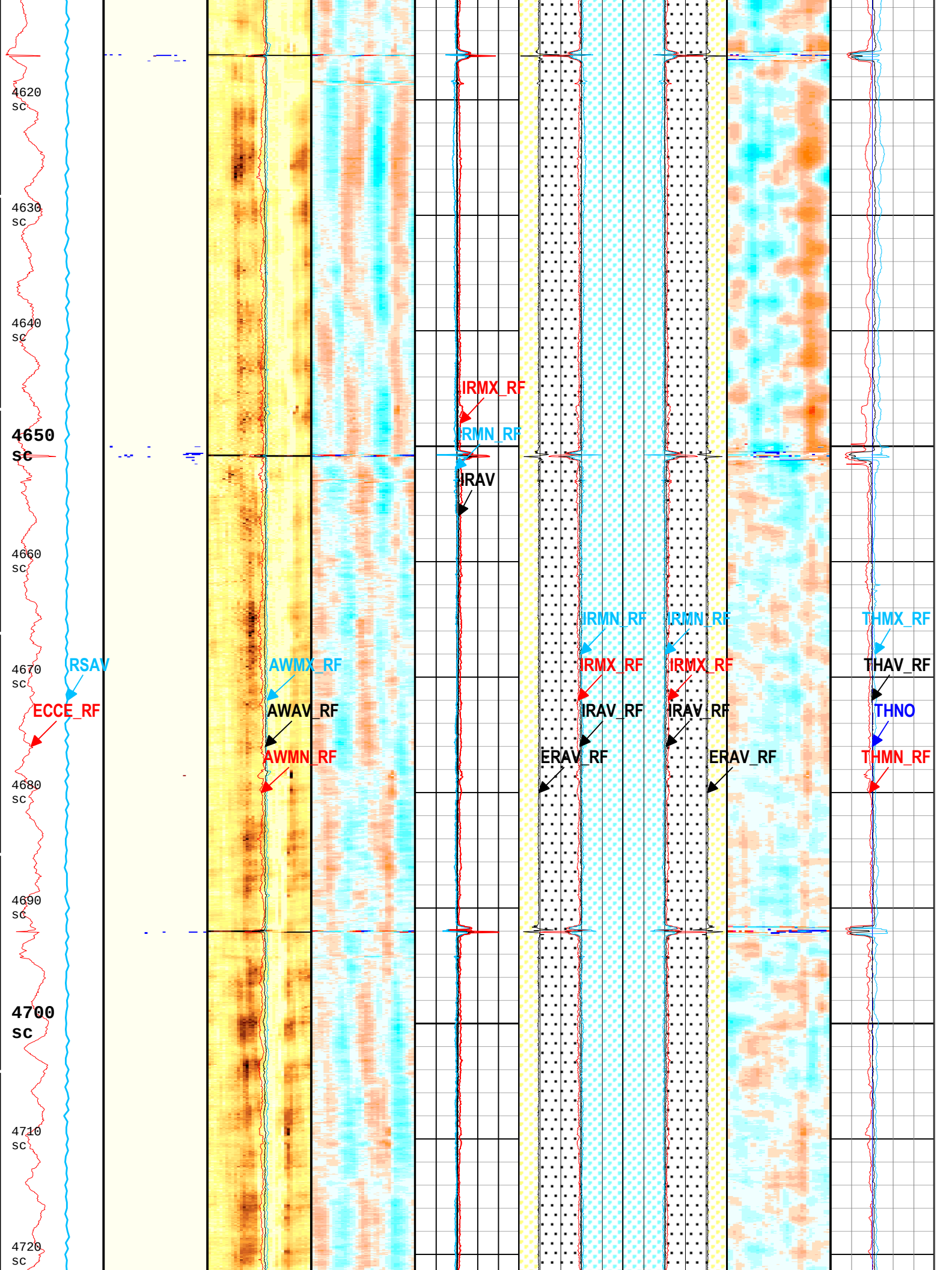
TIME_1900 - Time Marked every 60.00 (s)

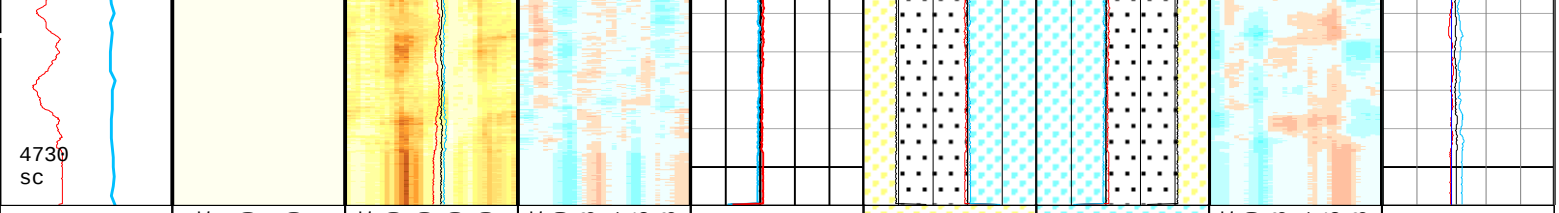
USIT Processing Flags (UFLG[0]) USIT-E

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




4620 sc
4630 sc
4640 sc
4650 sc
4660 sc
4670 sc
4680 sc
4690 sc
4700 sc
4710 sc
4720 sc
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
AWMN_RF
IRMX_RF
IRMN_RF
IRAV
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF



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) 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
(in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

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

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

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
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7

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: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:28

One

Hi-Res Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[9]:Up	Up	5622.73 ft	5728.44 ft	18-Aug-2016 11:10:18 AM	18-Aug-2016 11:15:45 AM	ON	2.86 ft	No

					11:10:18 AM	11:15:45 AM			

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

One: Log[9]:Up:S006

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: 18-Aug-2016 20:20:32

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)

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) 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 (in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

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

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

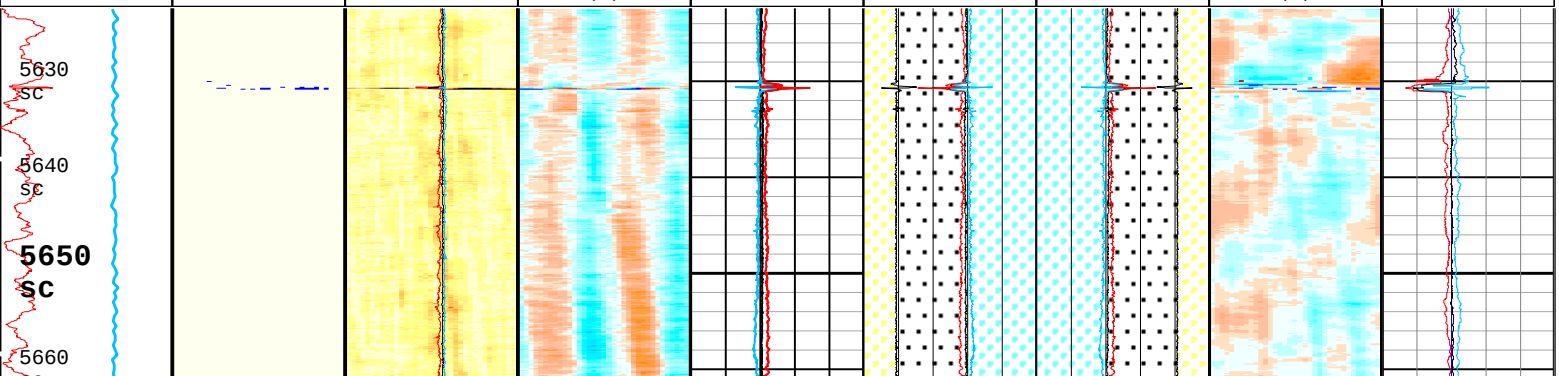
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF) USIT-E (in)

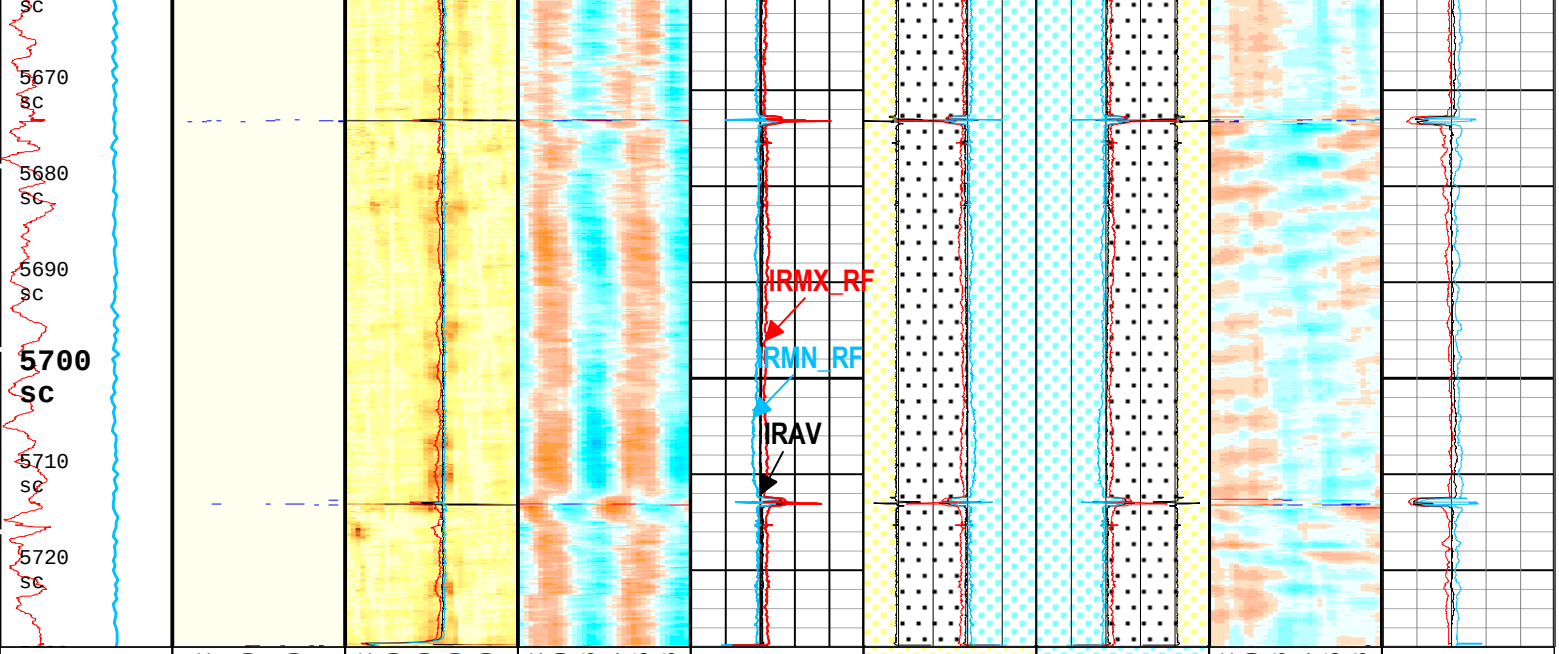
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7





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) 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 (in)

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

ERAV
ERAV-IRAV
IRAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
4.5 in 3.5

IRAV
ERAV
IRAV-ERAV

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

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
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E
0.2 in 0.7

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] - :

UTIM Error
Pulse Origin Not Detected
WINLEN Error
Casing Thickness 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 Corrosion 9.625inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:32

One

Hi-Res Corrosion 10 in = 100 ft

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[5]:Up	Up	6894.42 ft	6976.47 ft	18-Aug-2016 10:17:15 AM	18-Aug-2016 10:21:39 AM	ON	21.30 ft	No

All depths are referenced to toolstring zero

Log

Company:Southern California Gas Company Well:Fernando Fee 35A

One: Log[5]:Up:S006

Description: USI Composite Format: Log (LBV1_USI Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:35

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)

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 -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

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

Internal Radius Averaged Value (IRAV) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E

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

Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5

Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
4.5 in 3.5

Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E
3.5 in 4.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
4.5 in 3.5

Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E
3.5 in 4.5

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E

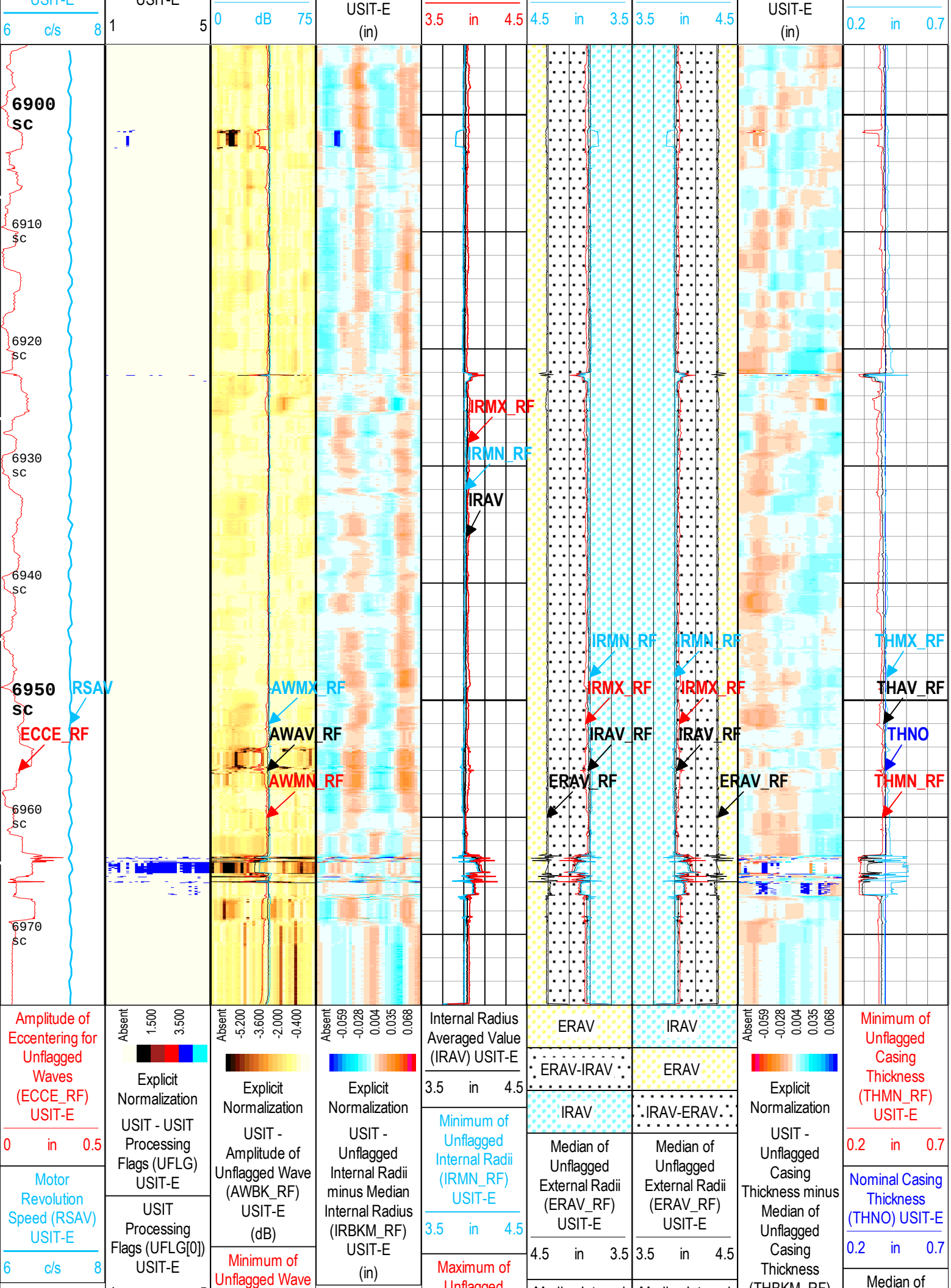
Absent -0.059 -0.028 0.004 0.035 0.068
Explicit Normalization
USIT - Unflagged Casing Thickness minus Median of Unflagged Casing Thickness (THBKM_RF)

Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.2 in 0.7

Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7

Median of Unflagged Casing Thickness (THAV_RF) USIT-E
0.2 in 0.7

Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E


USIT-E
6 c/s 8
1 5
0 dB 75
USIT-E (in)
3.5 in 4.5
4.5 in 3.5
3.5 in 4.5
USIT-E (in)
0.2 in 0.7
6900 sc
6910 sc
6920 sc
6930 sc
6940 sc
6950 sc
6960 sc
6970 sc
RSAV
ECCE_RF
AWMX_RF
AWAV_RF
AWMN_RF
IRMX_RF
IRMN_RF
IRAV
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
IRMN_RF
IRMX_RF
IRAV_RF
ERAV_RF
THMX_RF
THAV_RF
THNO
THMN_RF
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
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
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
3.5 in 4.5
Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E
3.5 in 4.5
Maximum of Unflagged
ERAV
ERAV-IRAV
IRAV
Median of Unflagged External Radii (ERAV_RF) USIT-E
4.5 in 3.5
IRAV
ERAV
IRAV-ERAV
Median of Unflagged External Radii (ERAV_RF) USIT-E
3.5 in 4.5
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)
Minimum of Unflagged Casing Thickness (THMN_RF) USIT-E
0.2 in 0.7
Nominal Casing Thickness (THNO) USIT-E
0.2 in 0.7
Median of

1 5	Amplitude (AWMN_RF) USIT-E 0 dB 75	Internal Radii (IRMX_RF) USIT-E 3.5 in 4.5	Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E 4.5 in 3.5	Median Internal Radius of Casing Corrected for Eccentering (IRAV_RF) USIT-E 3.5 in 4.5	(THBKM_RF) USIT-E (in)	Unflagged Casing Thickness (THAV_RF) USIT-E 0.2 in 0.7	
	Average of Unflagged Wave Amplitude (AWAV_RF) USIT-E 0 dB 75		Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E 4.5 in 3.5	Maximum of Unflagged Internal Radii (IRMX_RF) USIT-E 3.5 in 4.5		Maximum of Unflagged Casing Thickness (THMX_RF) USIT-E 0.2 in 0.7	
	Maximum of Unflagged Wave Amplitude (AWMX_RF) USIT-E 0 dB 75		Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E 4.5 in 3.5	Minimum of Unflagged Internal Radii (IRMN_RF) USIT-E 3.5 in 4.5			

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 Corrosion 9.625inch) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 18-Aug-2016 20:20:35

XYZ

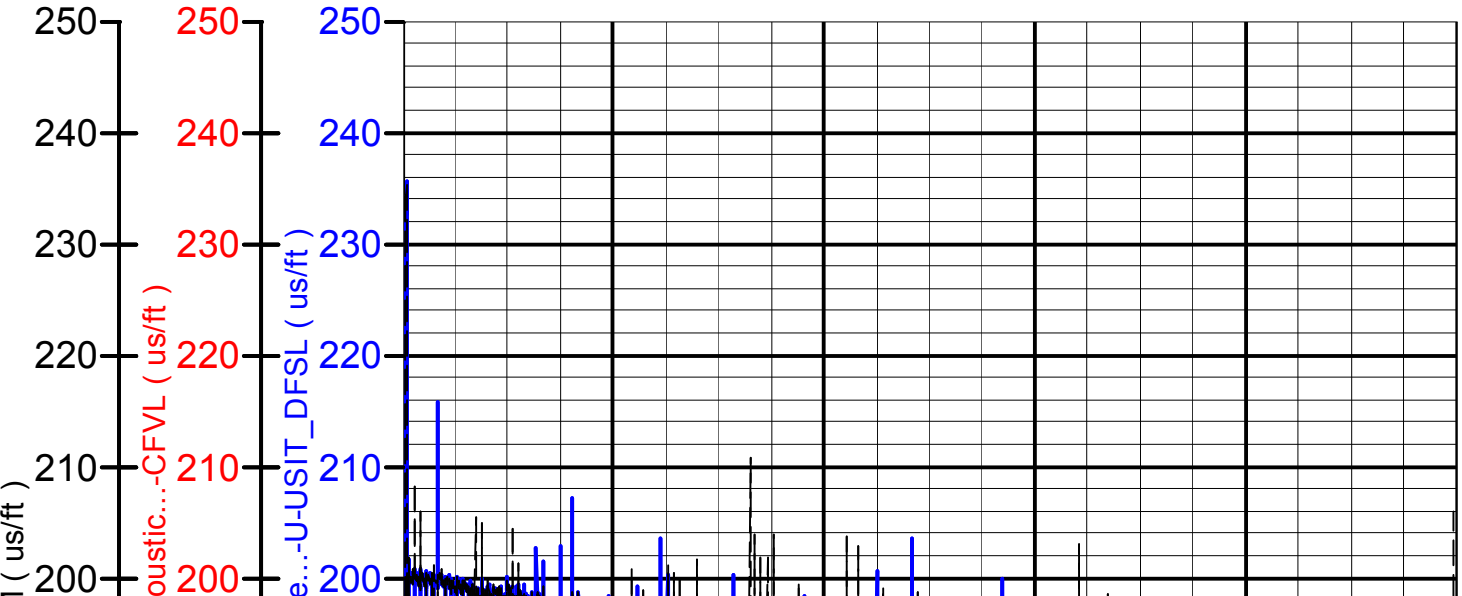
Company:Southern California Gas Company Well:Fernando Fee 35A
Composite 1:S006

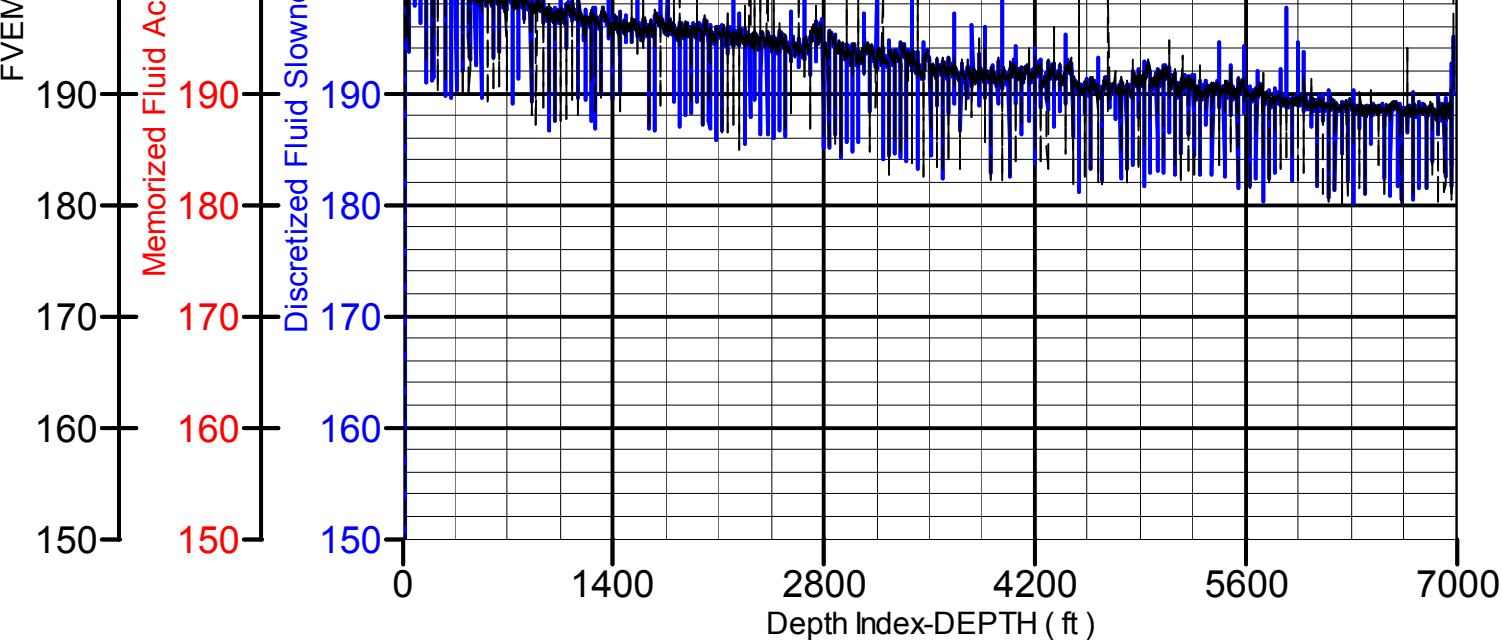
Fluid Acoustic Slowness vs Depth

2D Cross Plot

Index Range: From 21.88 to 6987.00 ft

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





XYZ

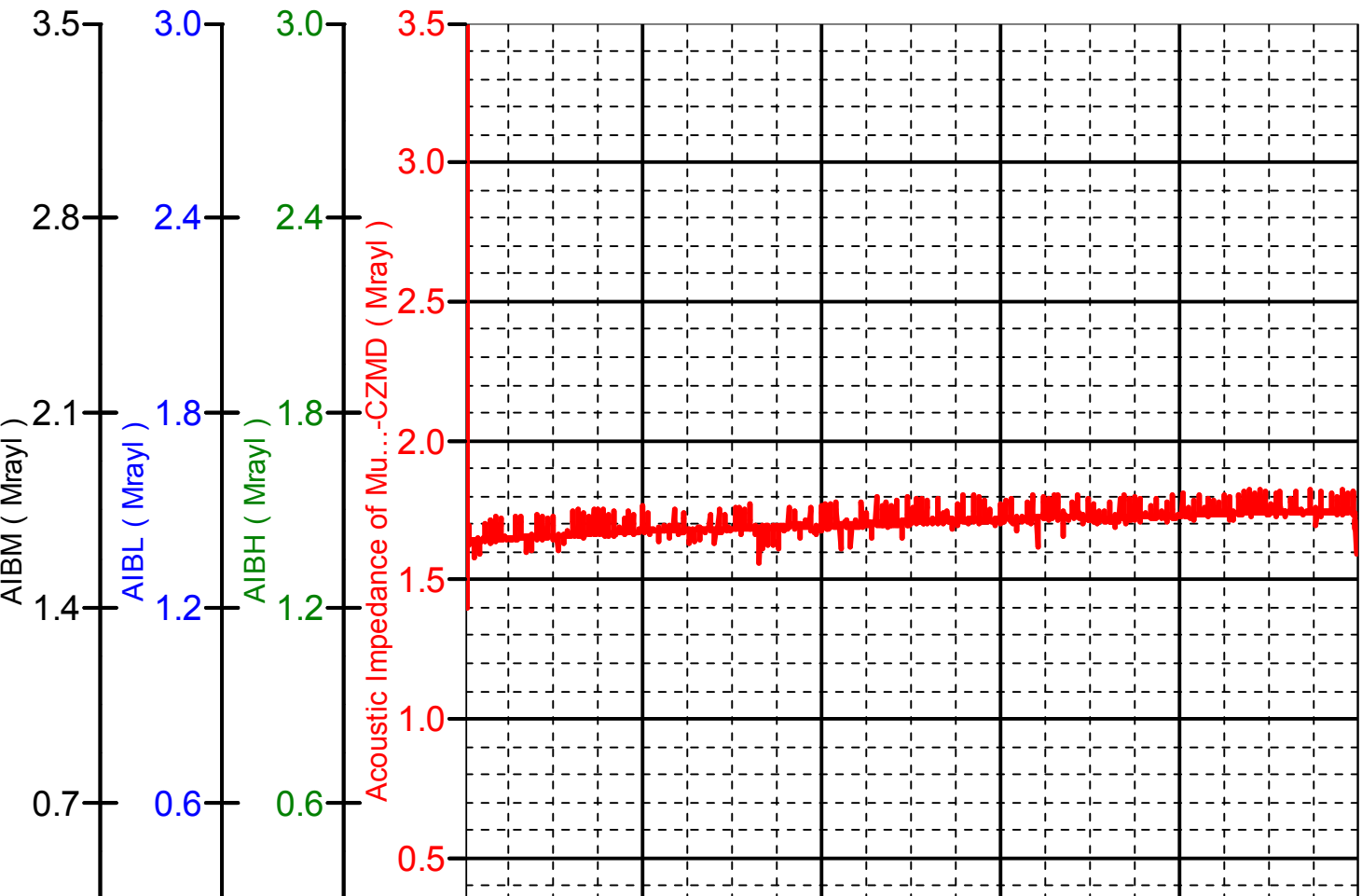
Company:Southern California Gas Company Well:Fernando Fee 35A
Composite 1:S006

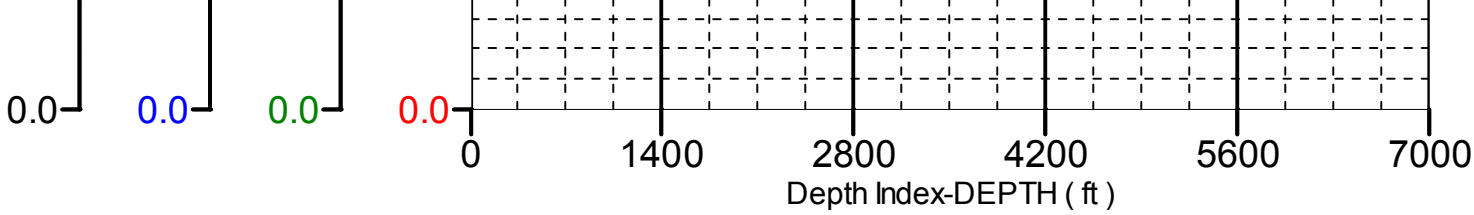
Theoretical Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 21.88 to 6987.00 ft

DEPTH-CZMD
DEPTH-AIBH (AIBH : Data Not Found)
DEPTH-AIBL (AIBL : Data Not Found)
DEPTH-AIBM (AIBM : Data Not Found)




0.0
0.0
0.0
0.0
0
1400
2800
4200
5600
7000
Depth Index-DEPTH (ft)

Well:	Fernando Fee 35A
Field:	Aliso Canyon
County:	Los Angeles
State:	California

Ultrasonic Imager

Gamma Ray - CCL

8-5/8" 36# casing