

**HALLIBURTON**

**CAST-M & CBL-M  
CEMENT EVALUATION  
PIPE INSPECTION LOG**

Aardwarmte Vierpolders						
Company	Aardwarmte Vierpolders					
Well	BRI-GT-01					
Field	Vierpolders					
County	Zuid-Holland	Country	THE NETHERLANDS	Location	Other Services	Elevation
Date	16-AUG-2015	Permanent Datum	MSL	Elevation 0.0m	K.B.	
Run Number	ONE	Log Measured From	GL	, 6.93m above perm. datum	D.F. 9 m	
Depth Driller		Drilling Measured From GL			G.L. 6.93 m	
Depth Logger						
Bottom Logged Interval						
Top Logged Interval						
Open Hole Size	N/A					
Type Fluid	BRINE					
Density of Fluid	1.13 g/cc					
Fluid Level	FULL					
Max. Recorded Temperature	N/A					
Estimated Cement Top	N/A					
Operational Time	N/A					
Equipment Number	IJM_NL_OH					
Location	IJMUIDEN					
Recorded By	M.BOURAHLA					
Witnessed By	KARL GOLLOB					
Borehole Record			Casing Record			
Run Number	Bit	From	To	Size	Weight	From To
ONE				9.625"	47#	2779 m 1256 m
				13.375 "	68#	1360 m 0 m

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current price schedule.

## Comments

1. LOG CORRELATED TO BAKER LWD GAMMA-RAY OPEN HOLE LOG DATED 28-JUL-2015
  2. TOOLS RUN AS PER TOOLSTRING DIAGRAM
  3. TOOL COULD PASS BEYOUN 2685 m, JUST ONE TRY TO AVOID DAMAGE OF CAST-M HEAD.
  4. LOG INTERVAL AS PER CUSTOMER REQUEST.
  5. TOOL LOG FOR BOTH CEMENT AND PIPE INSPECTION AS PER CLIENT REQUEST.
  6. CAST-M SCANNING HEAD USED: WHITE 250 kHz, 7", 4spf

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - WPS GE

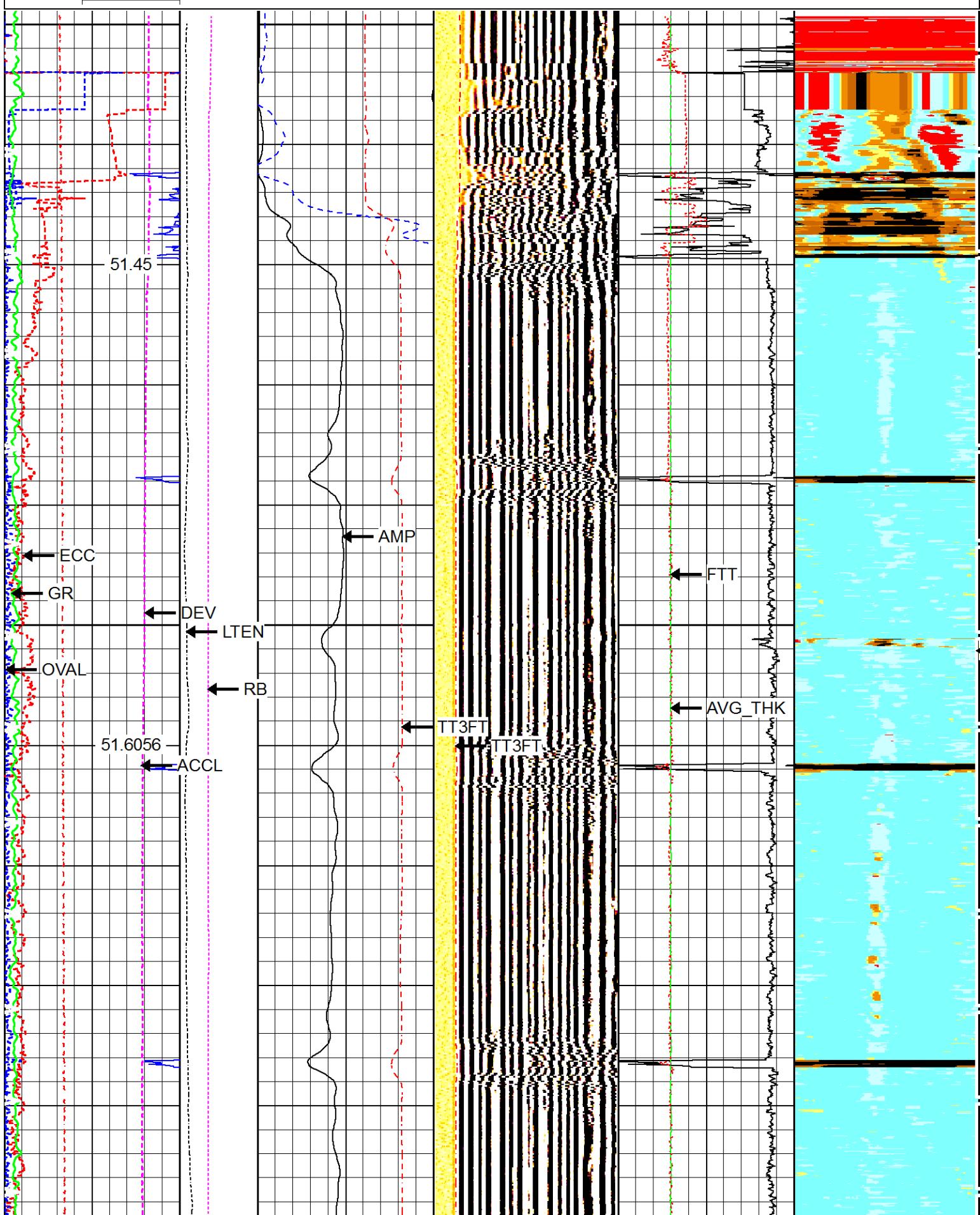
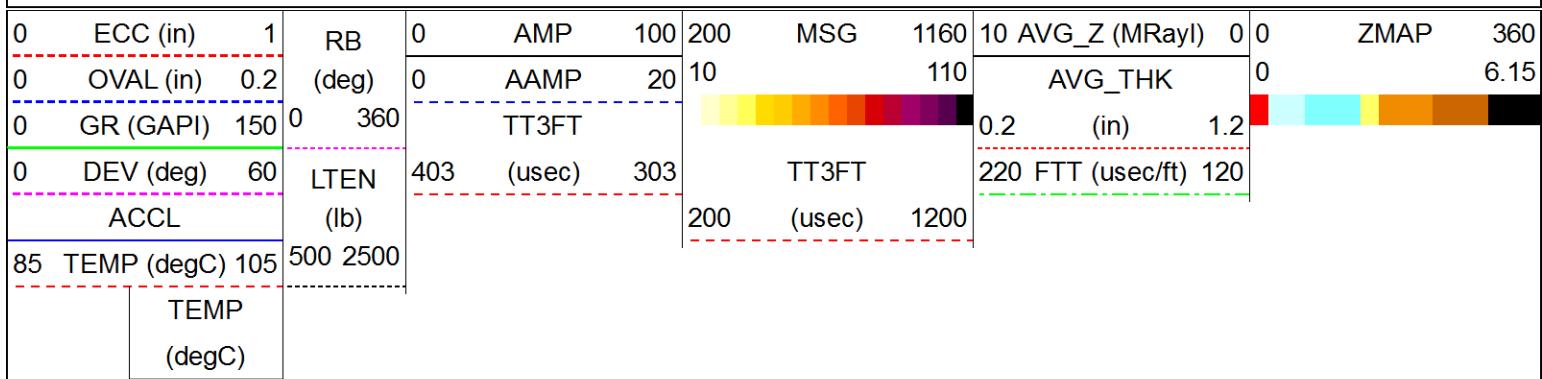
# CEMENT INSPECTION MODE

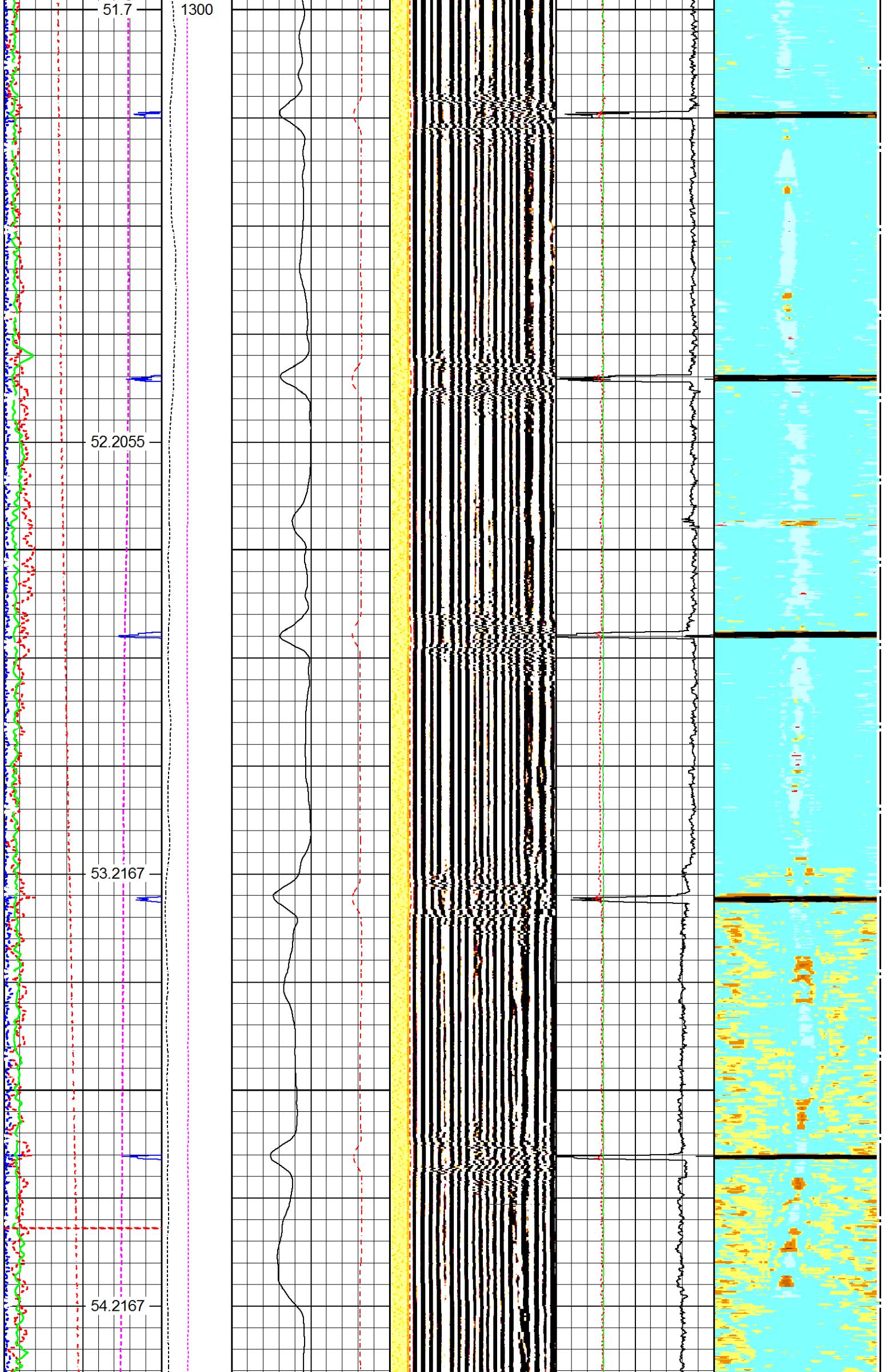
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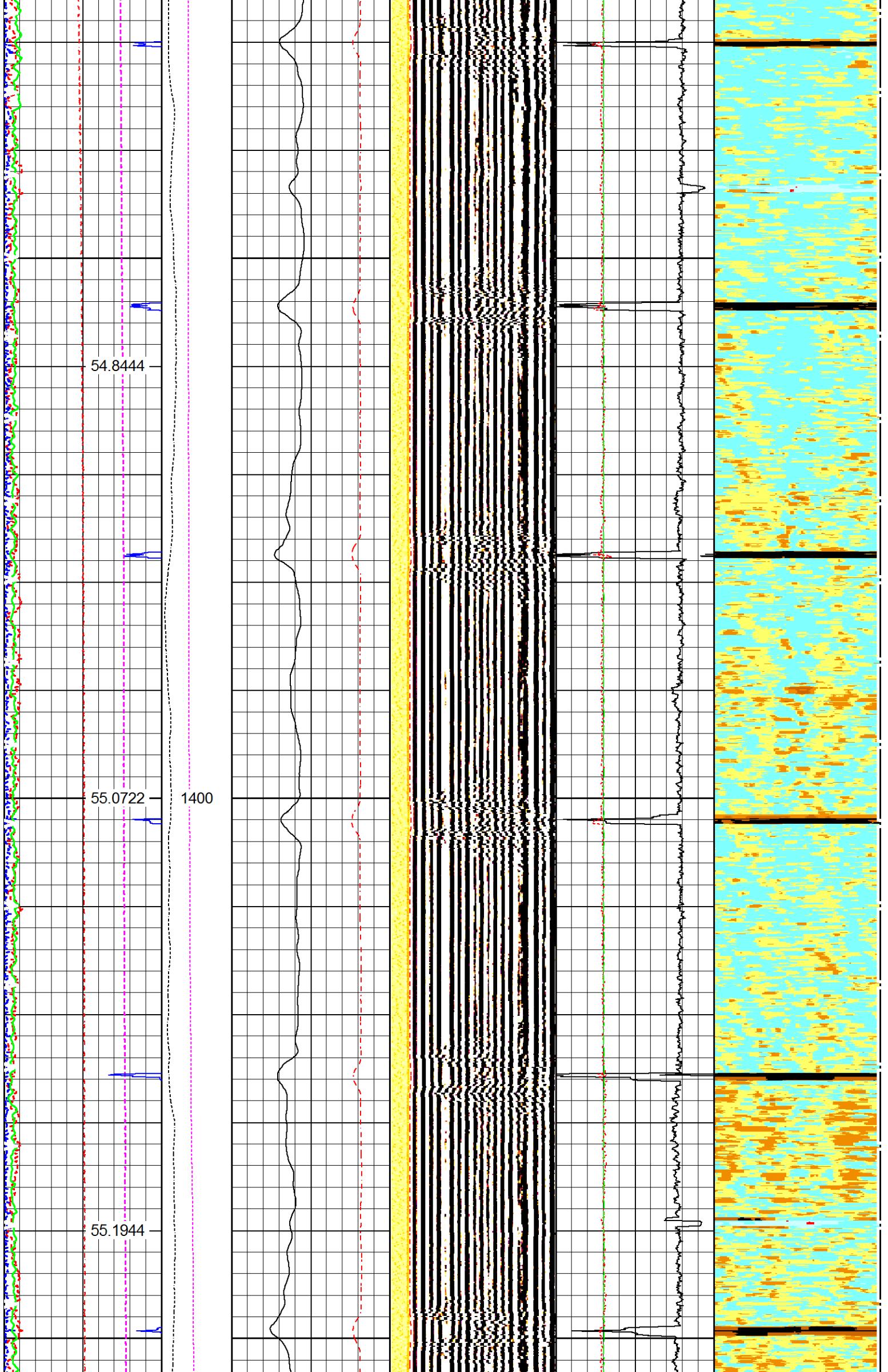
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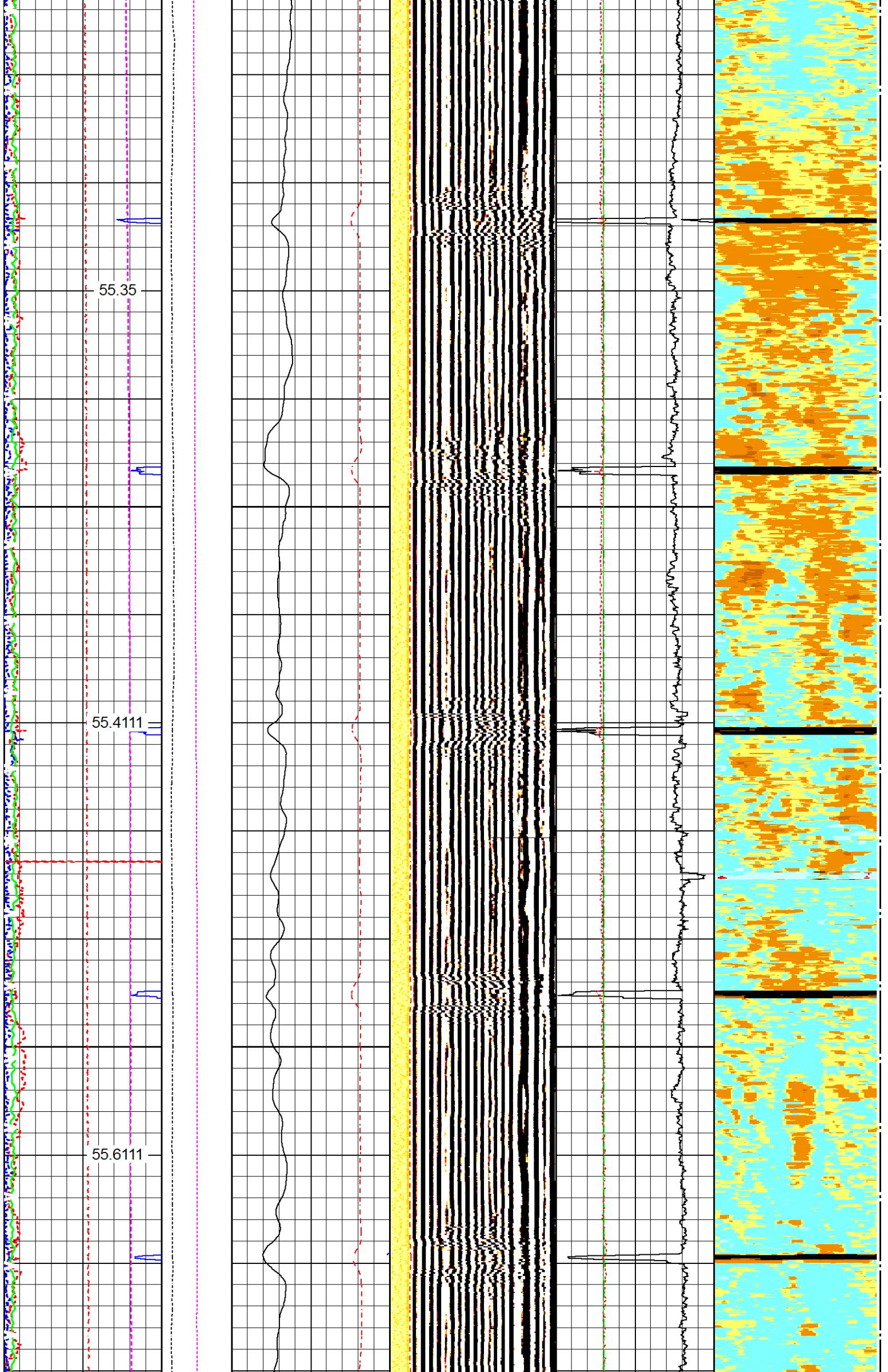
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Dataset Creation  
Charted by

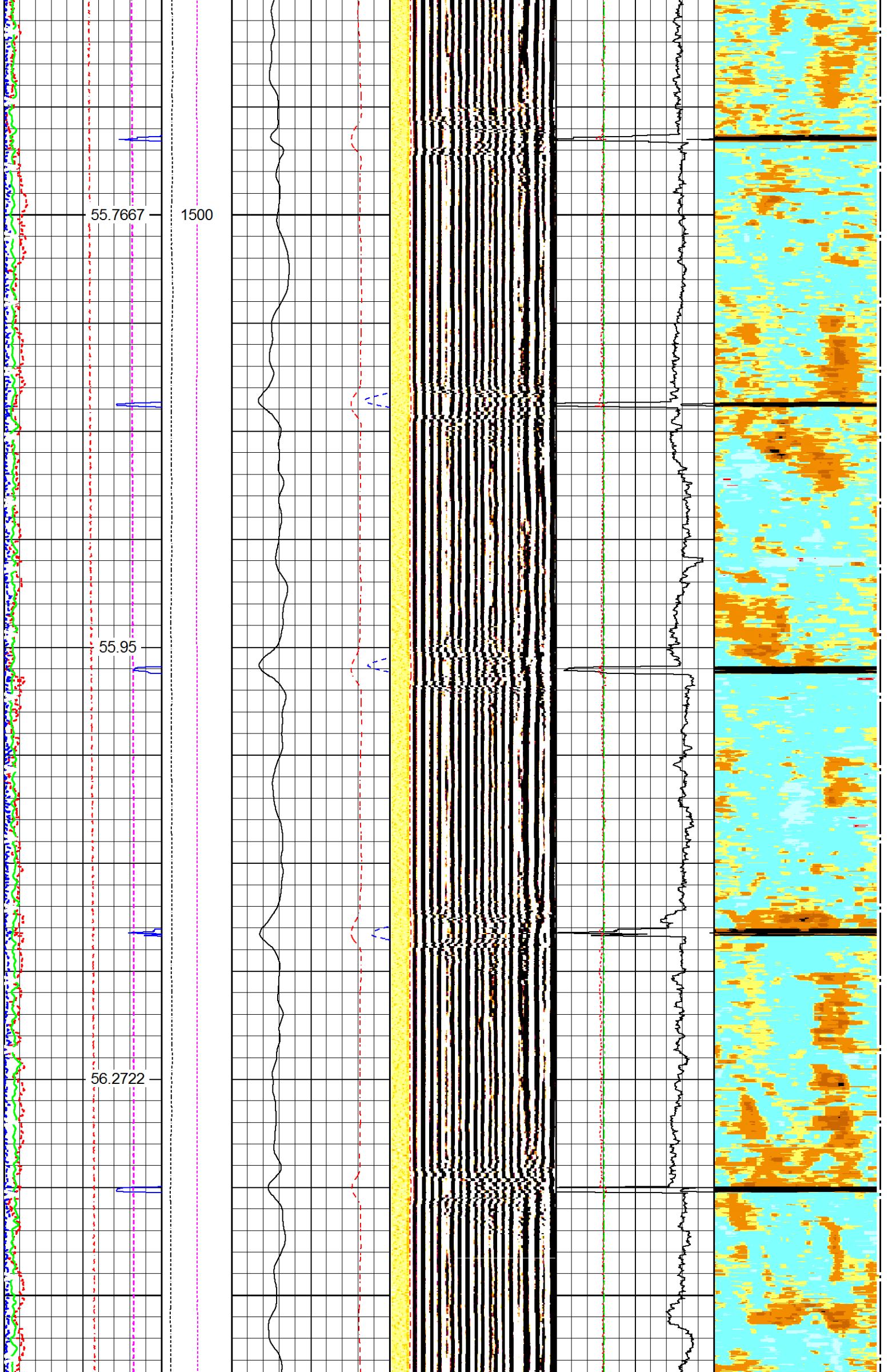
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Sun Aug 16 08:50:56 2015  
Depth in Meters scaled 1:200

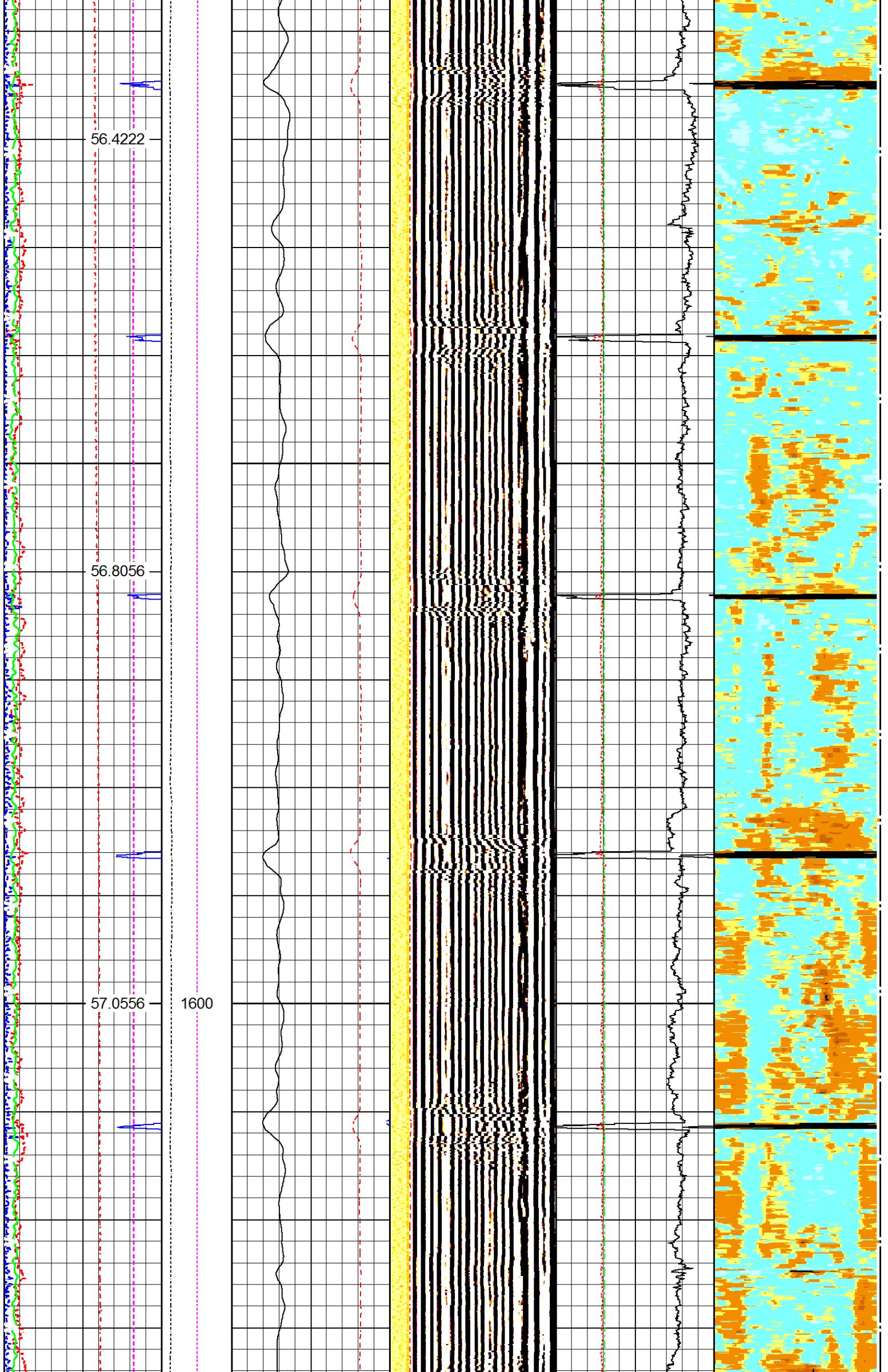


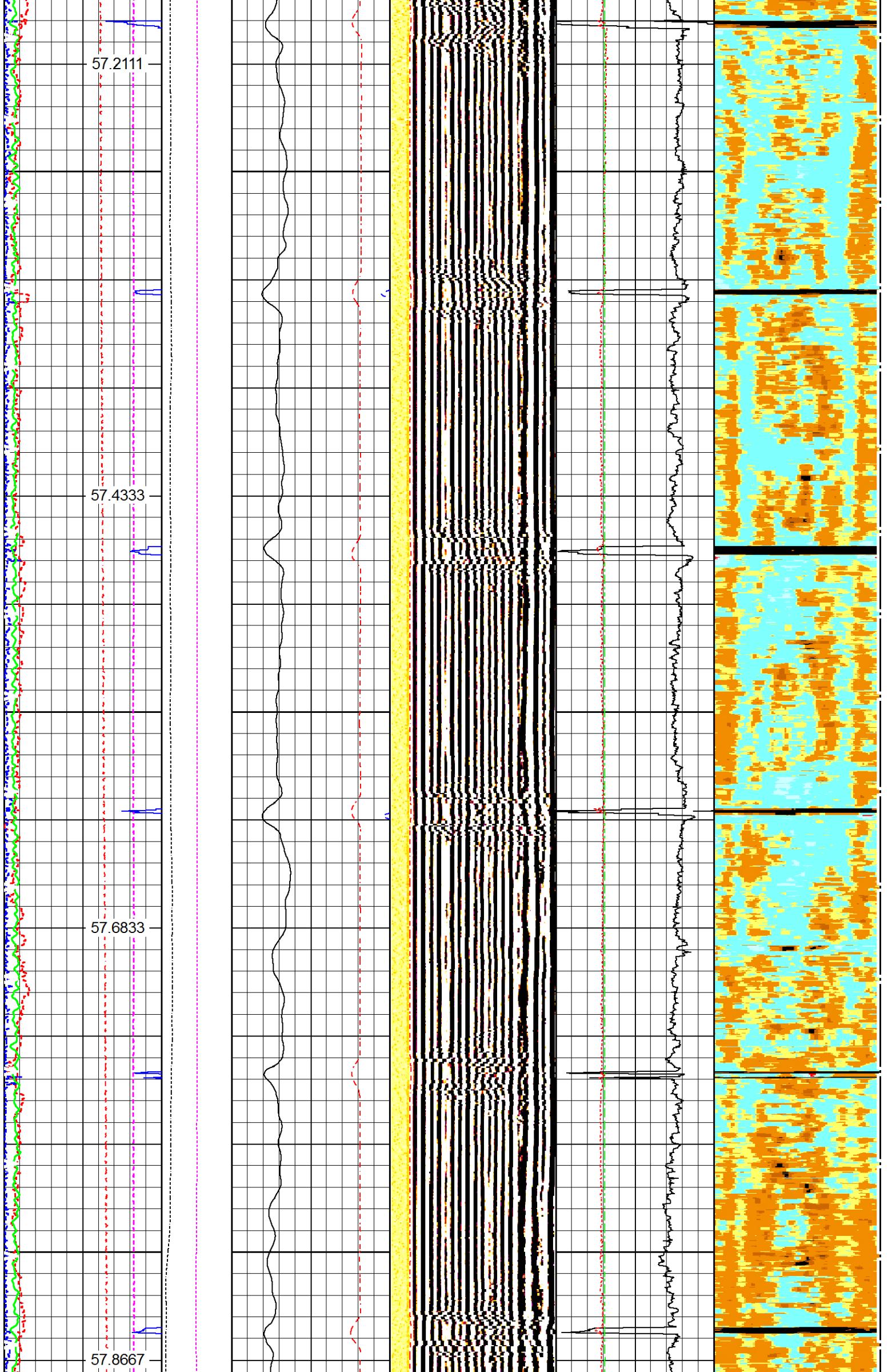


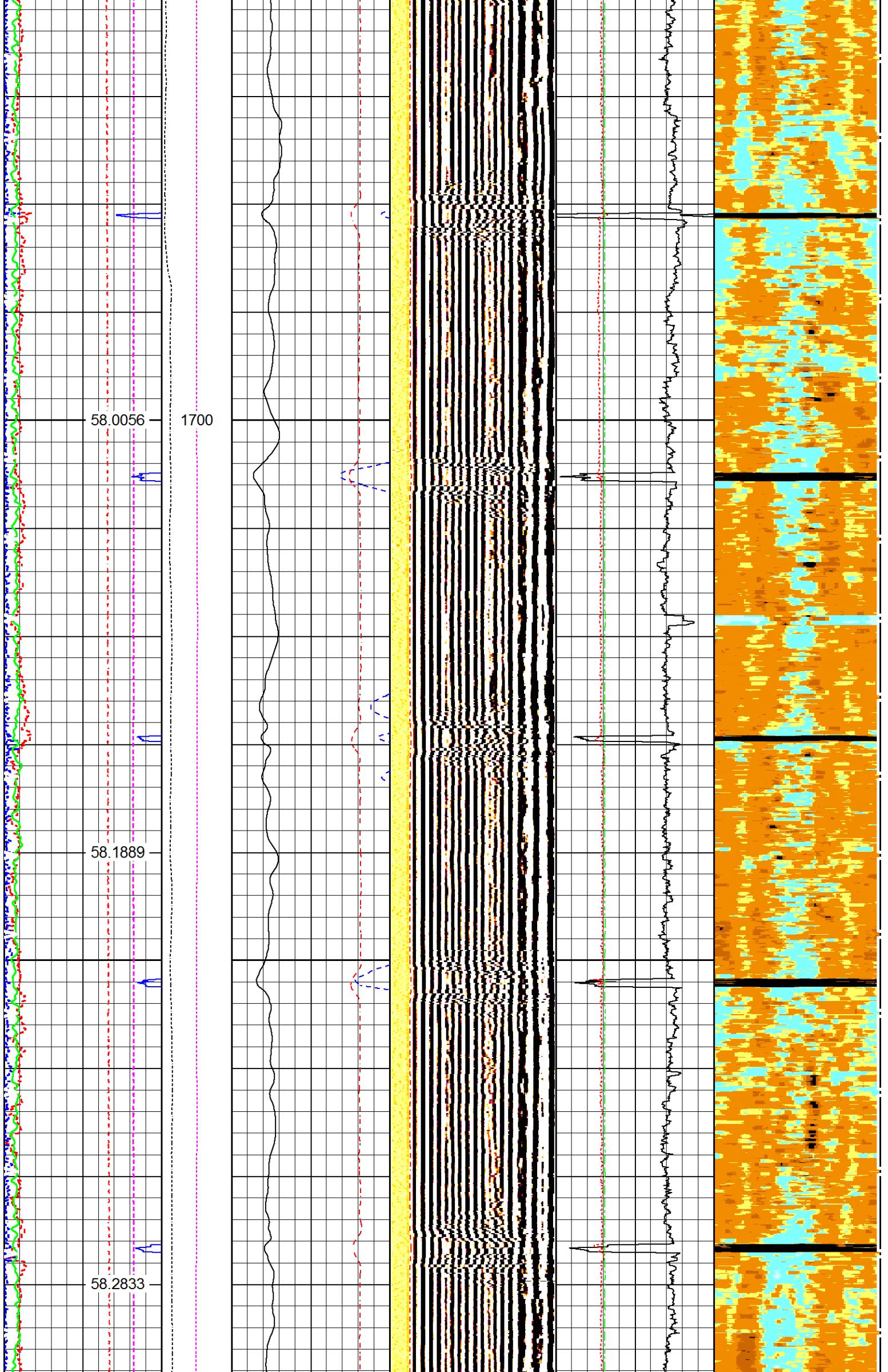


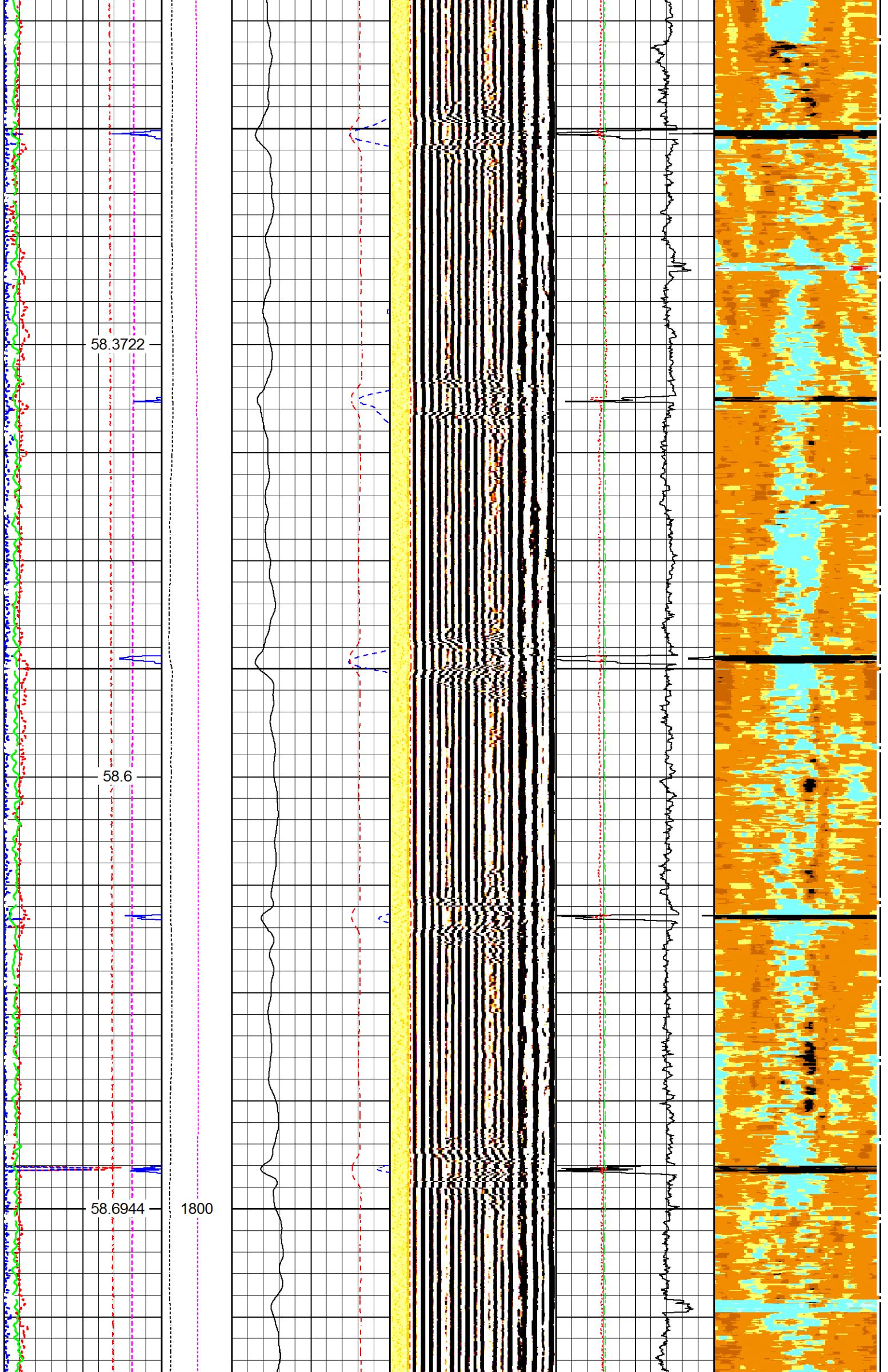


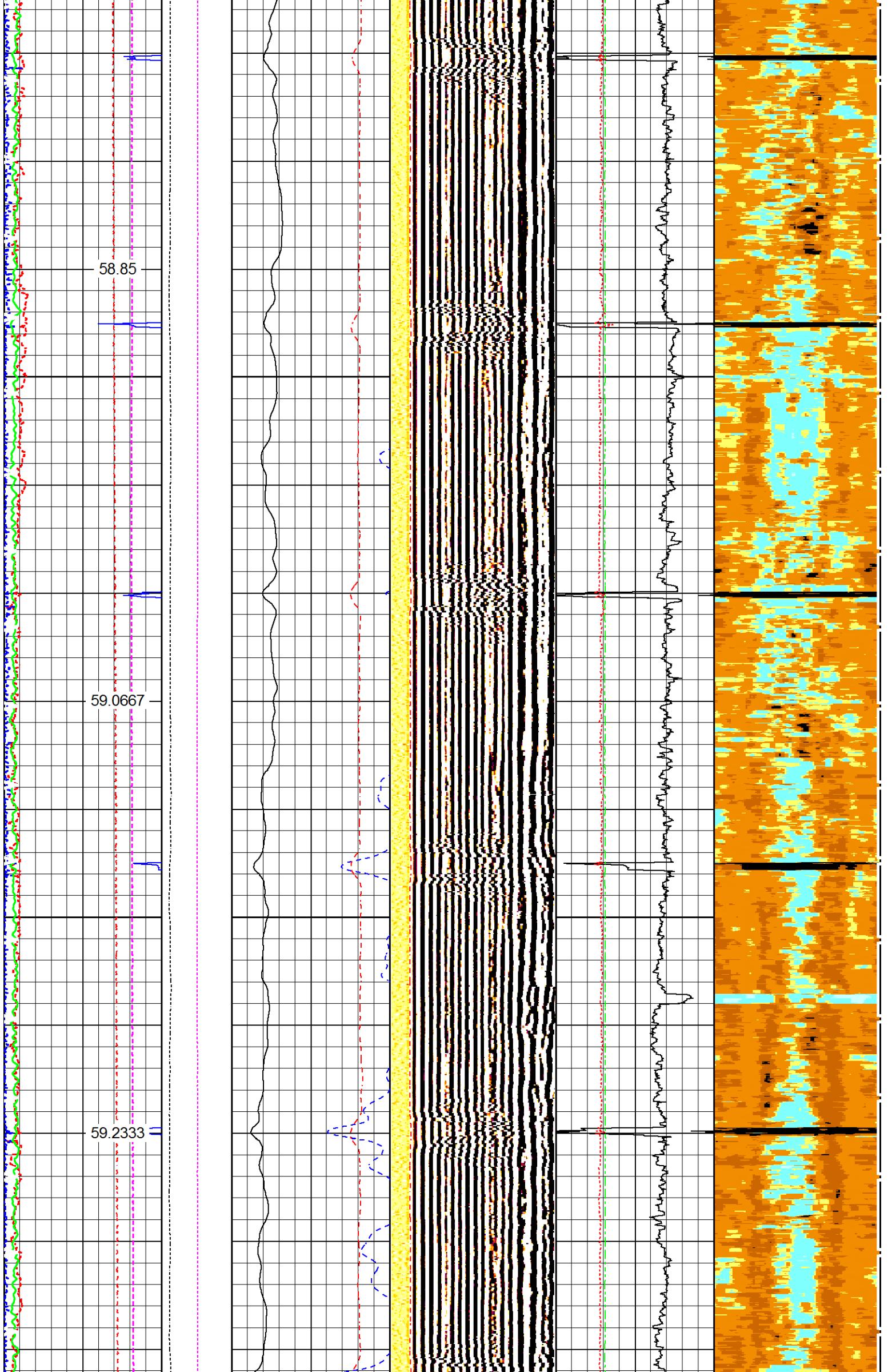


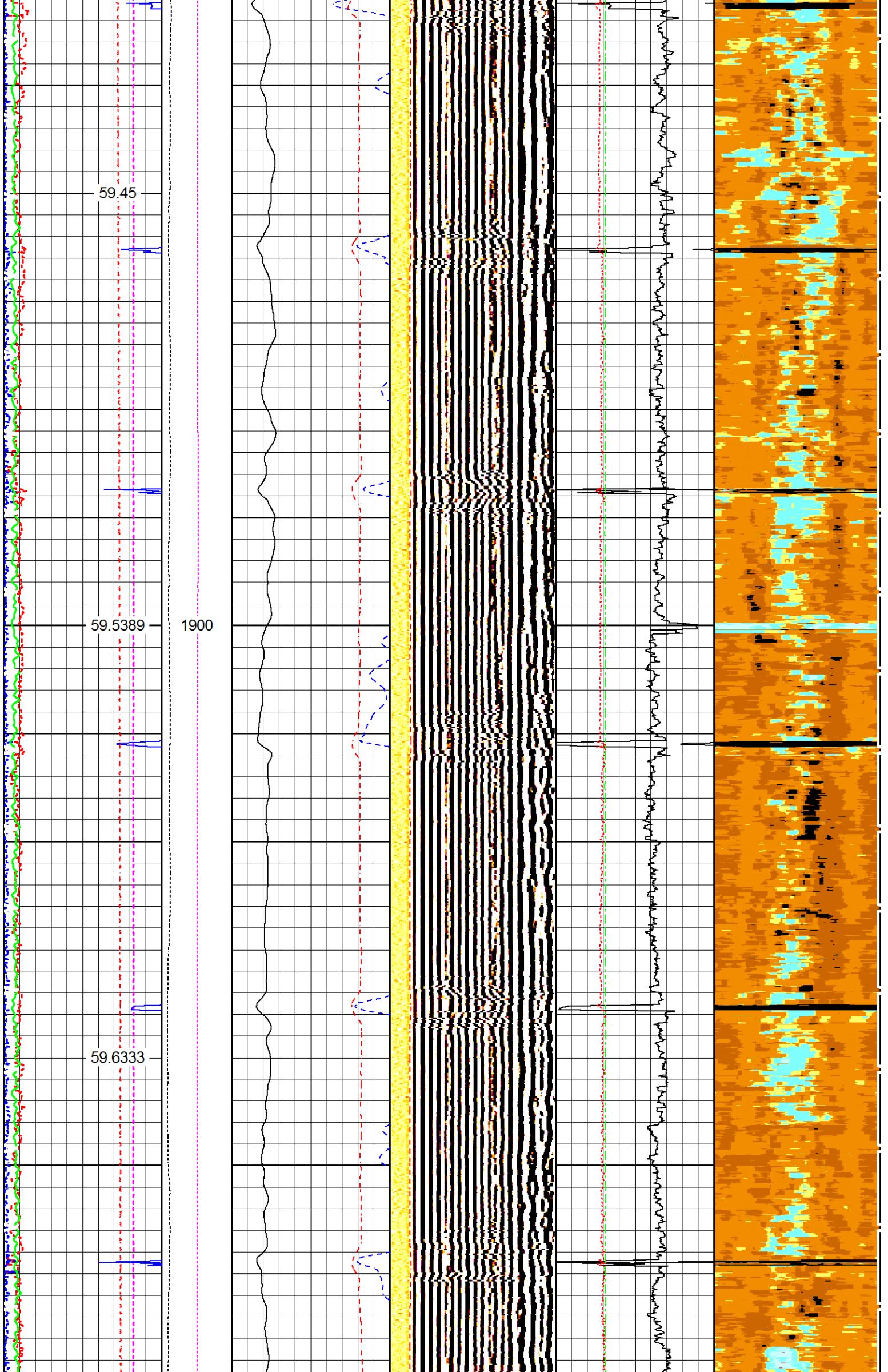


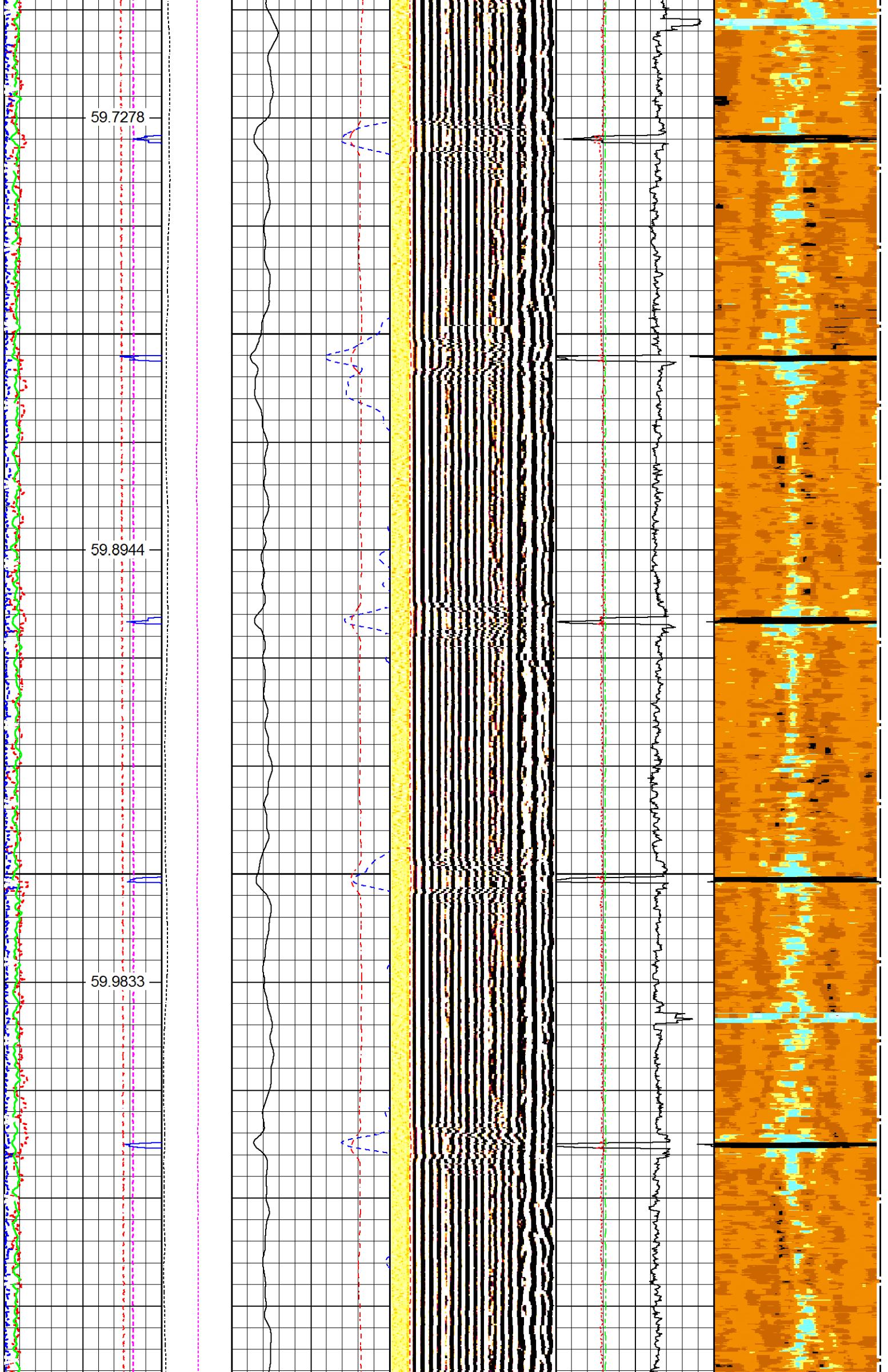


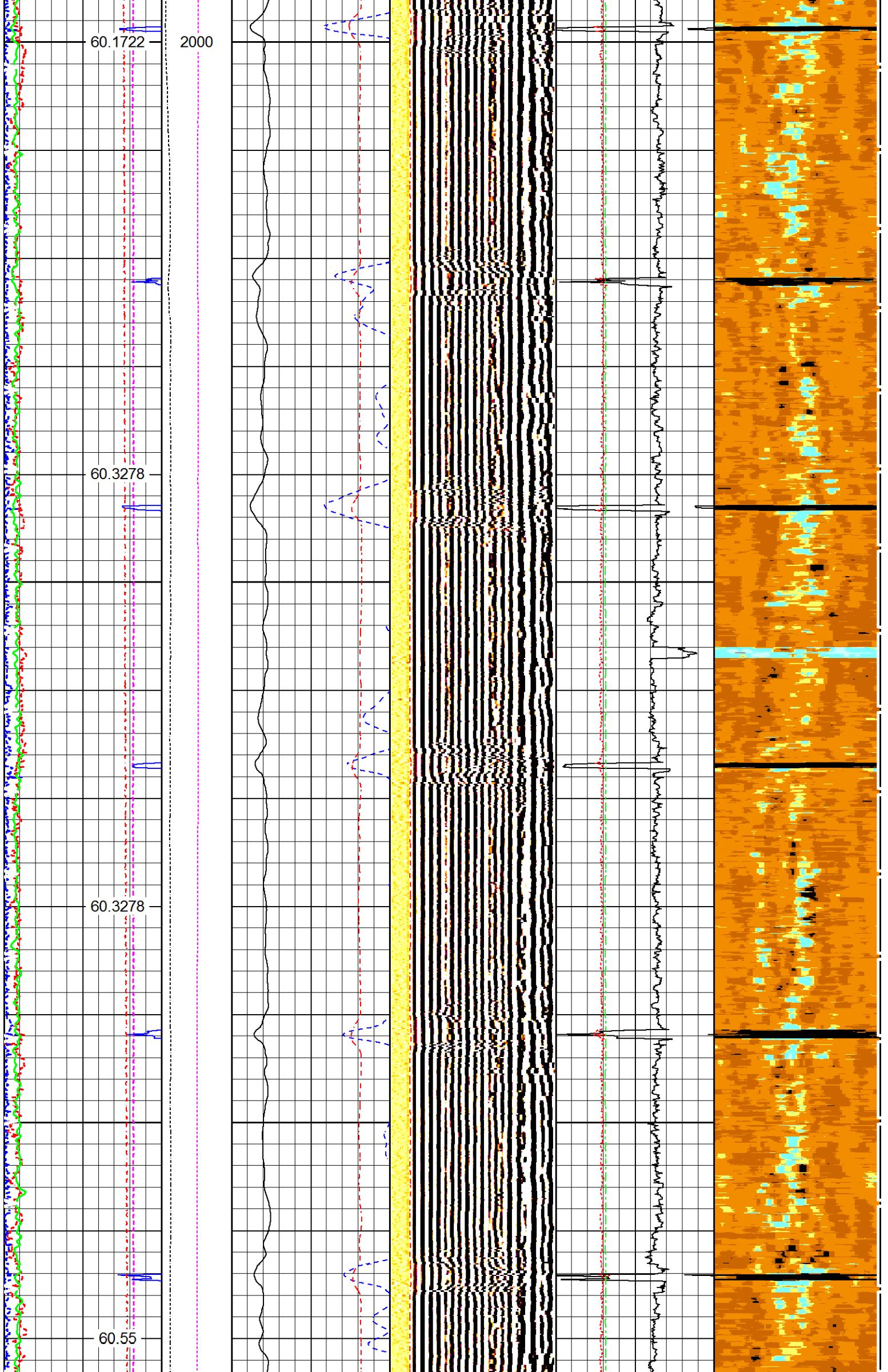


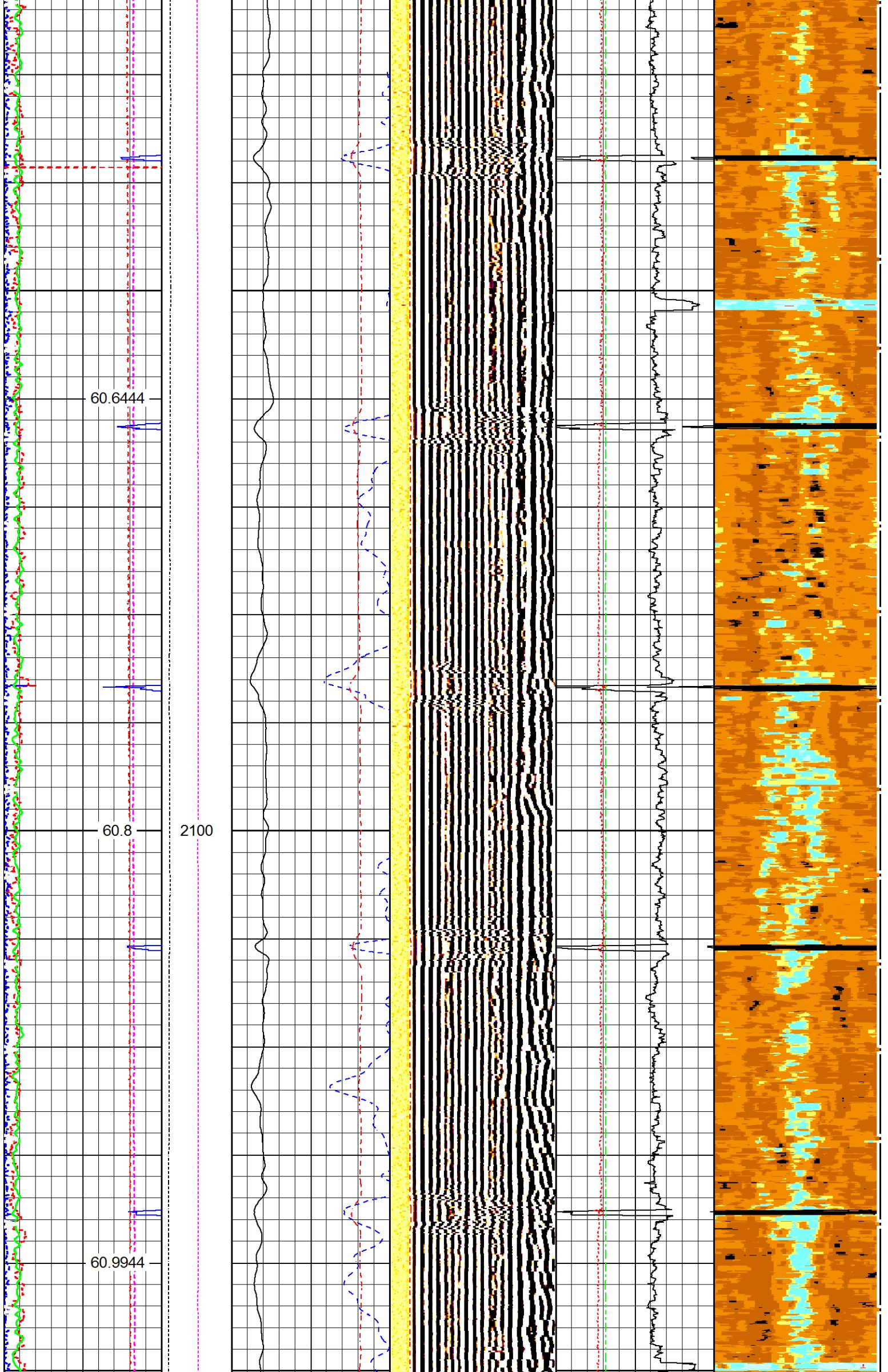


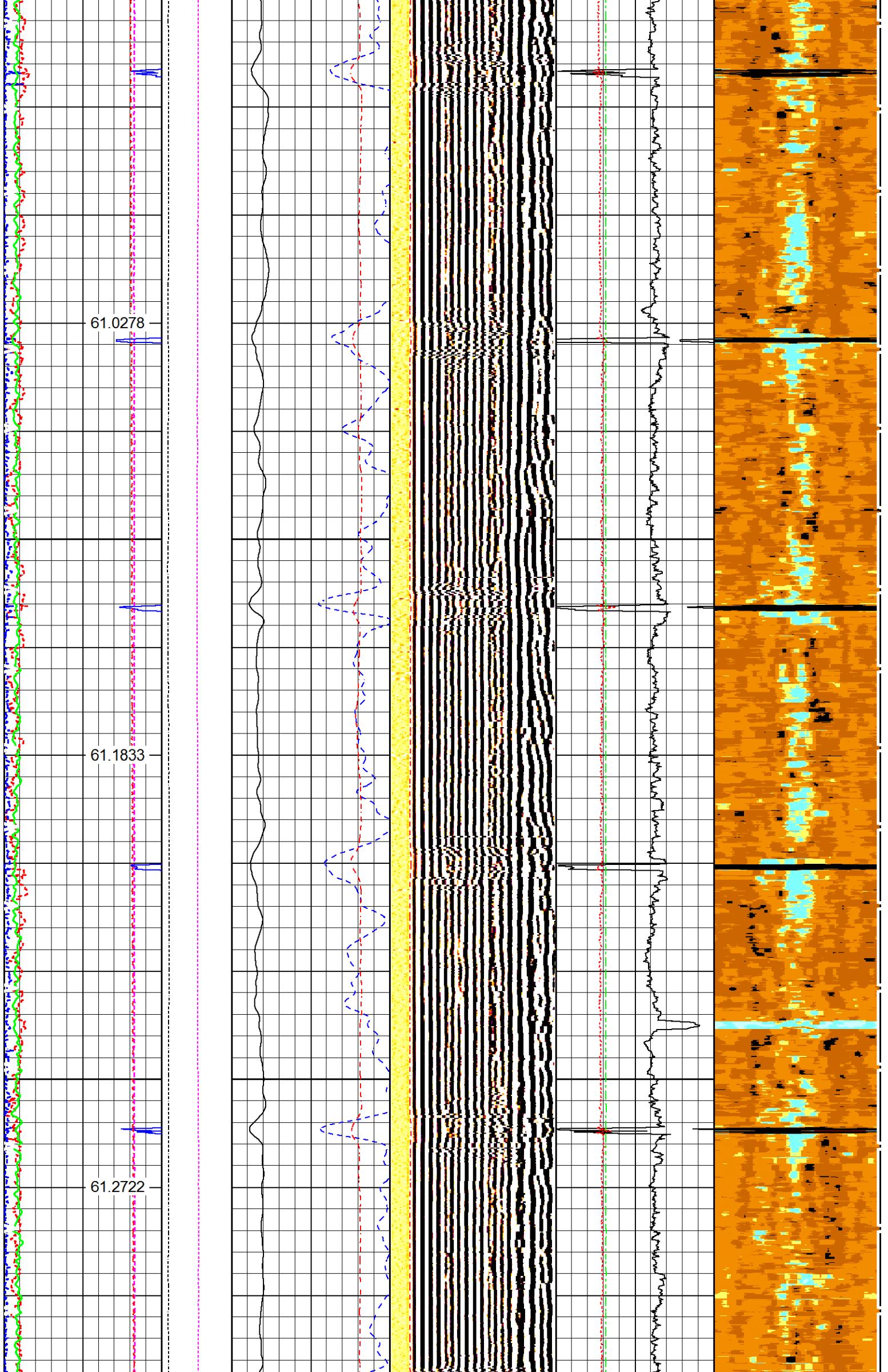


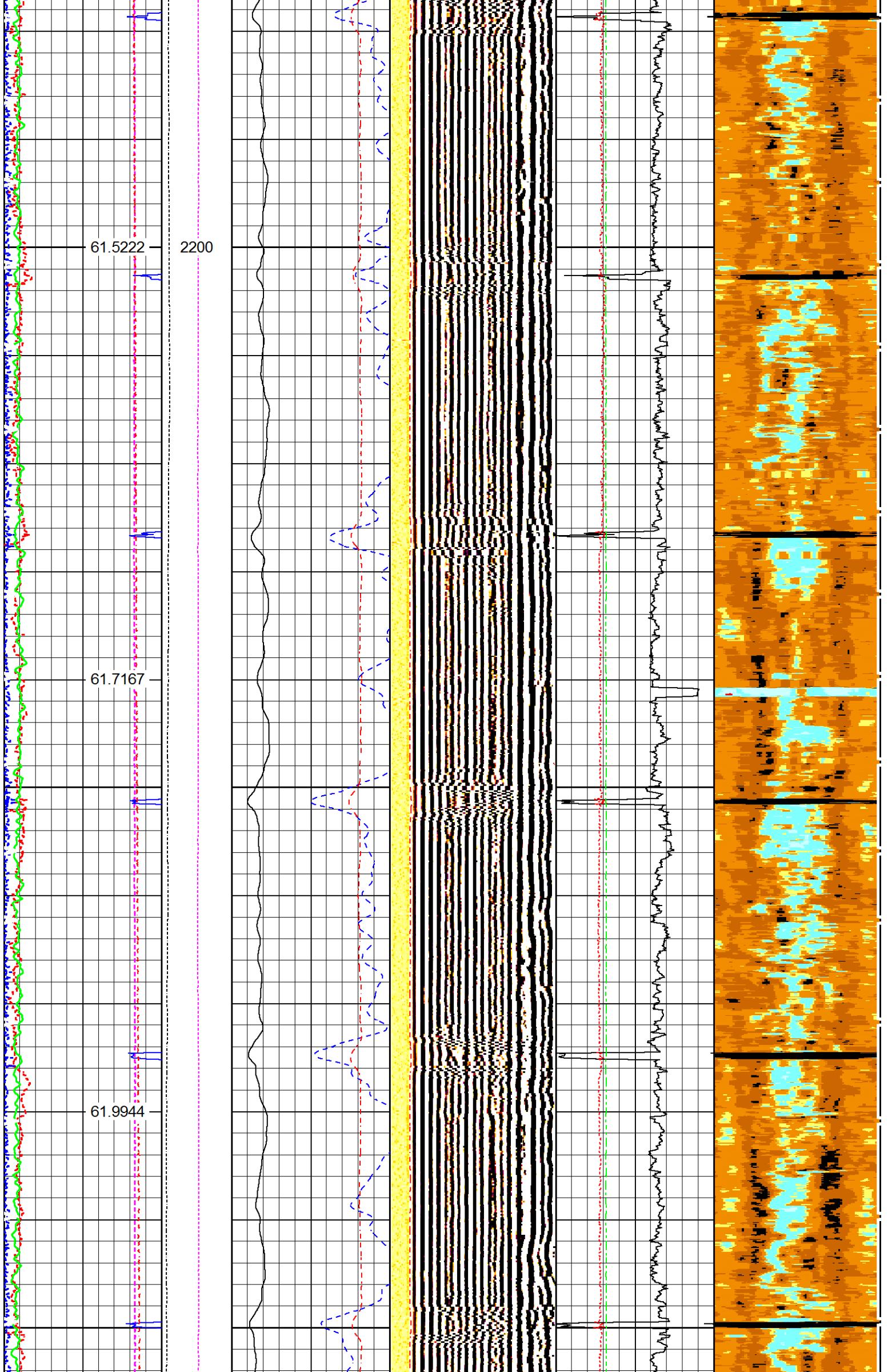


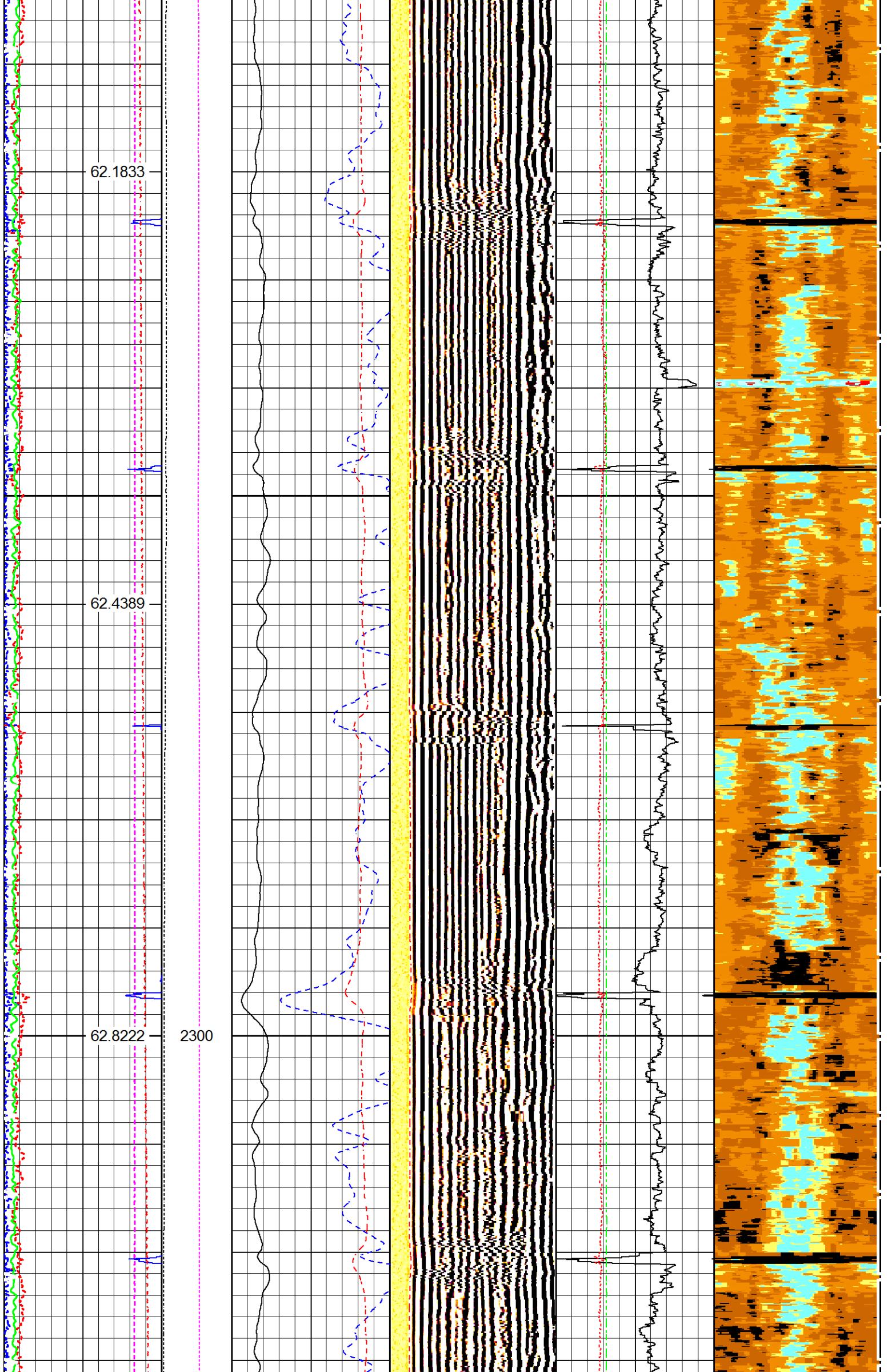


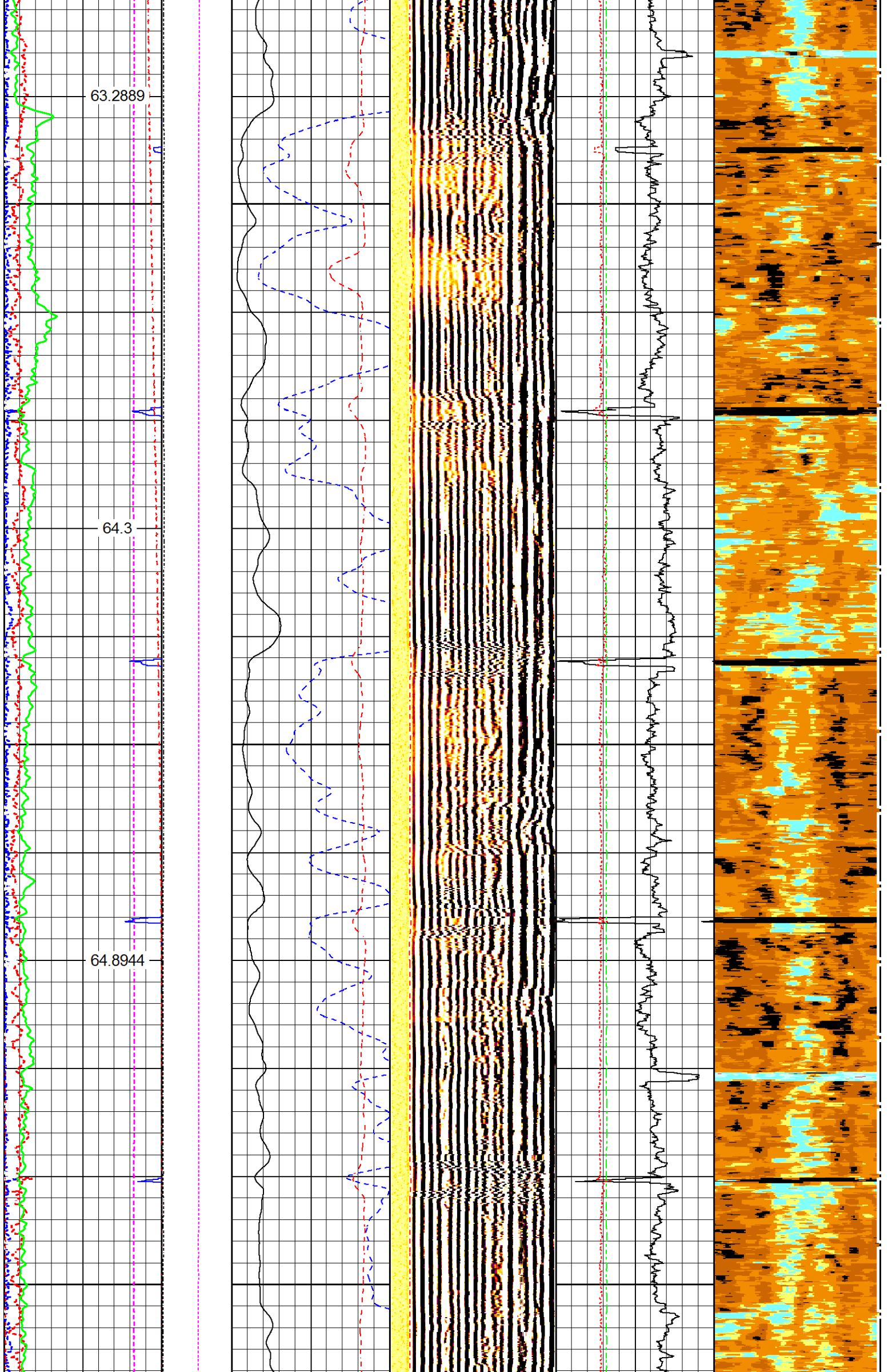


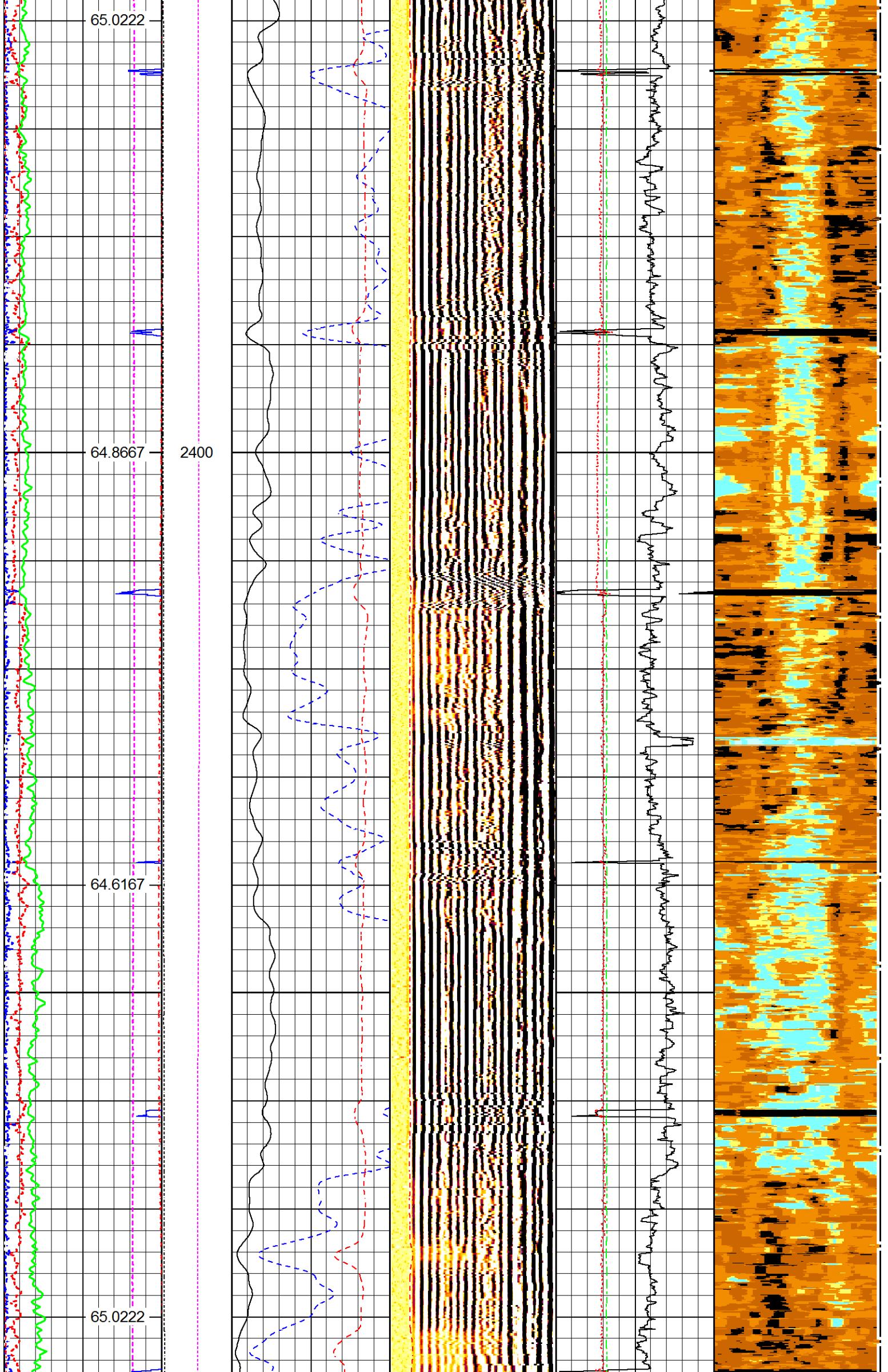


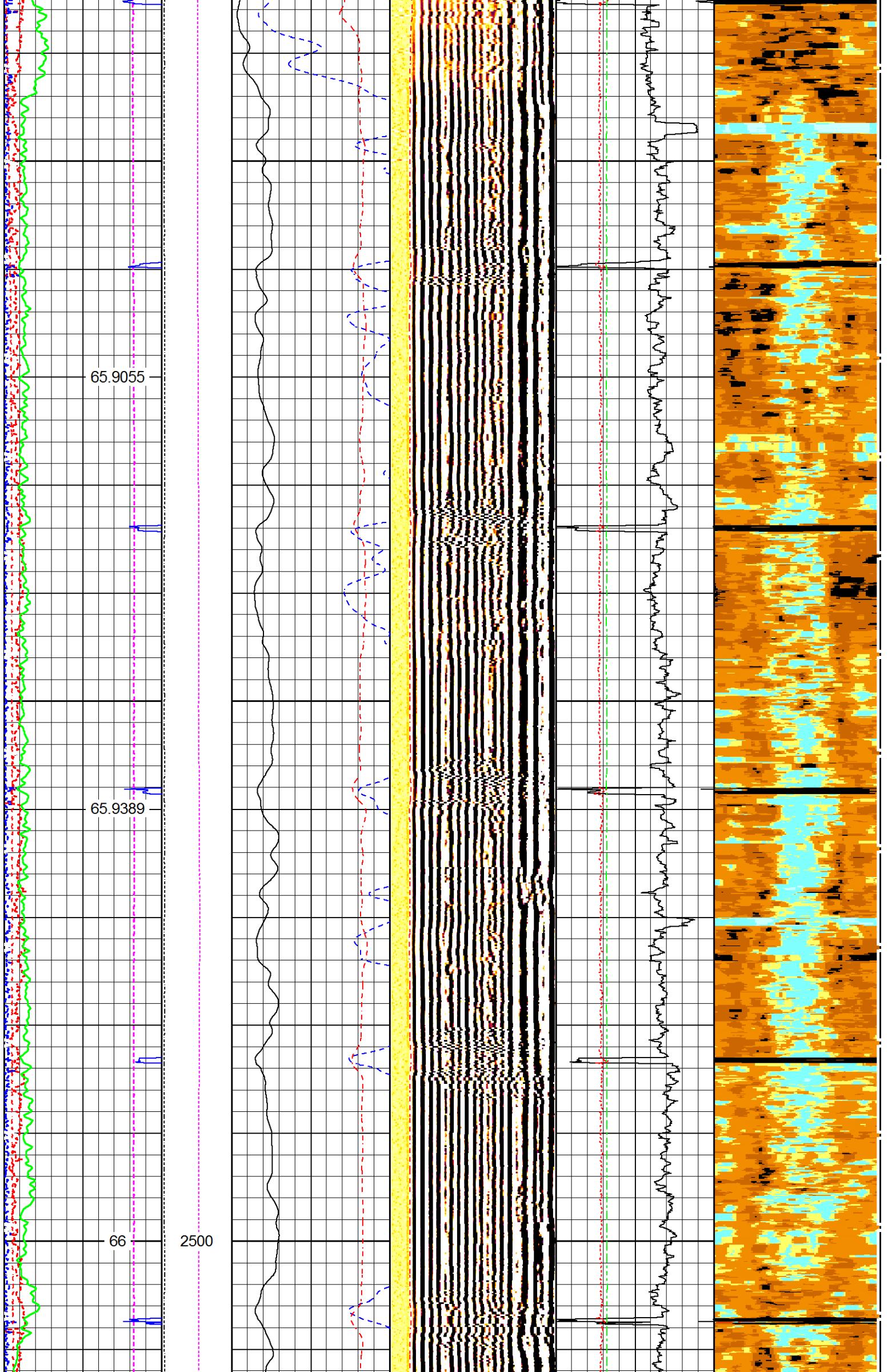


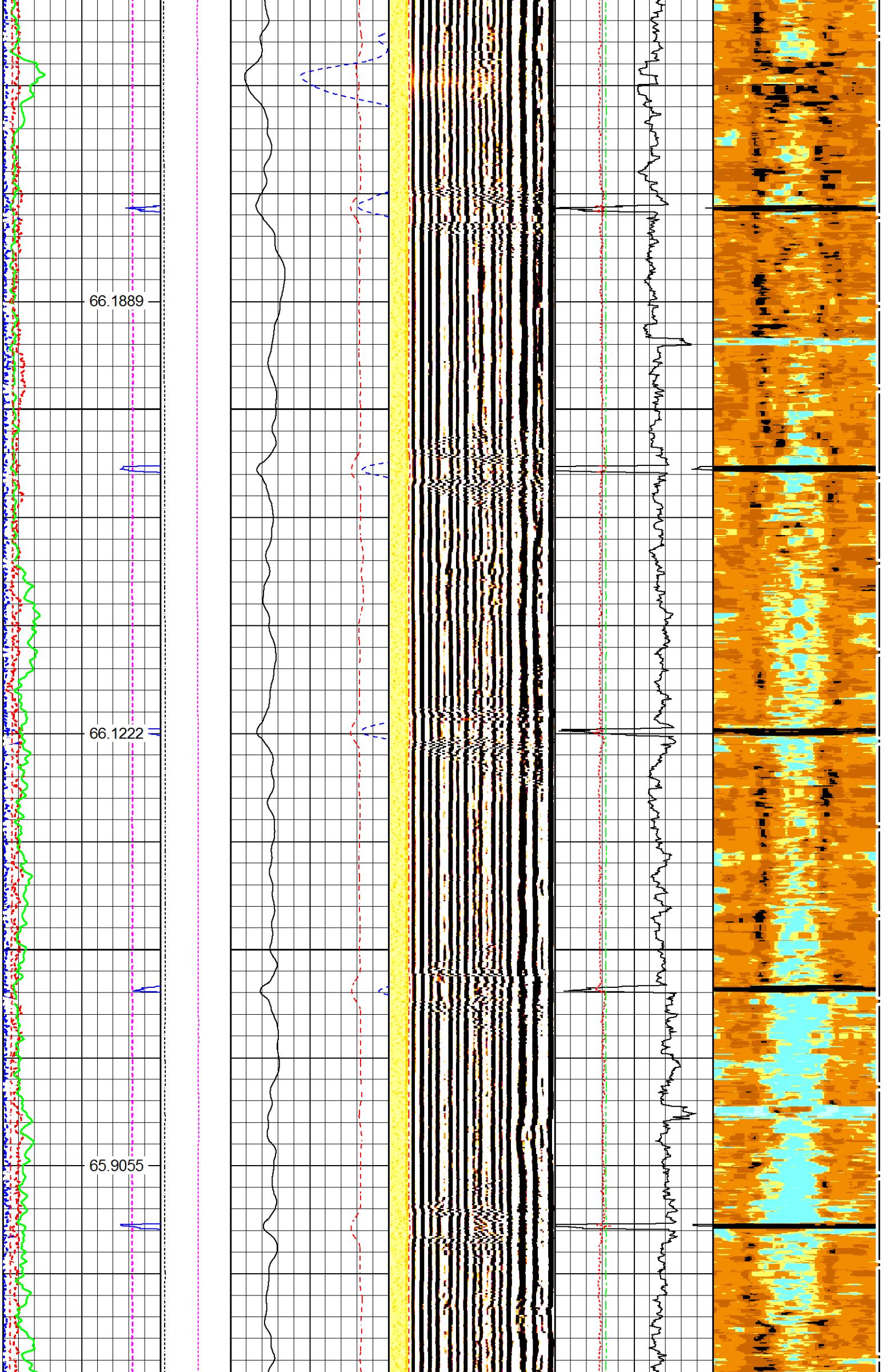


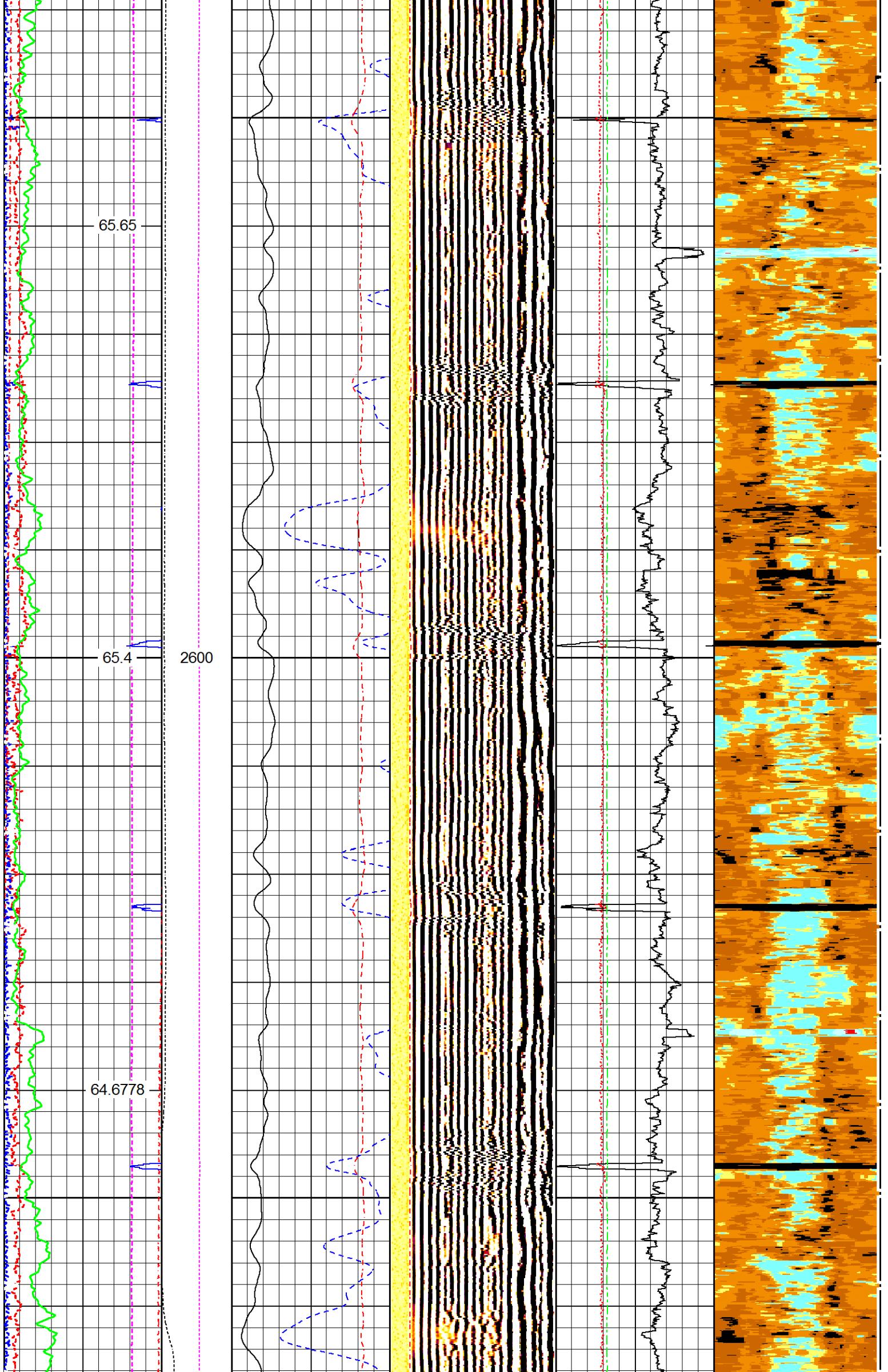


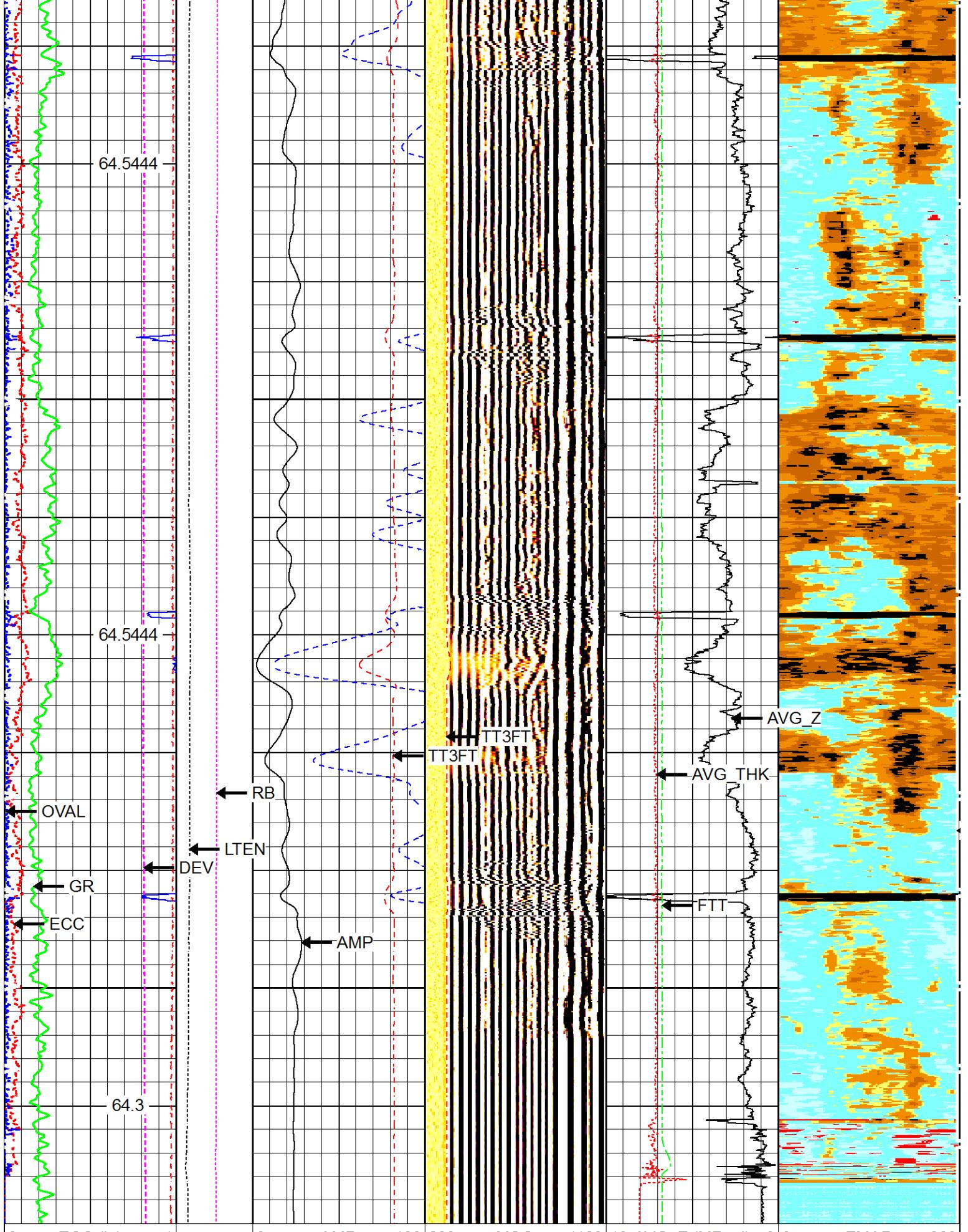




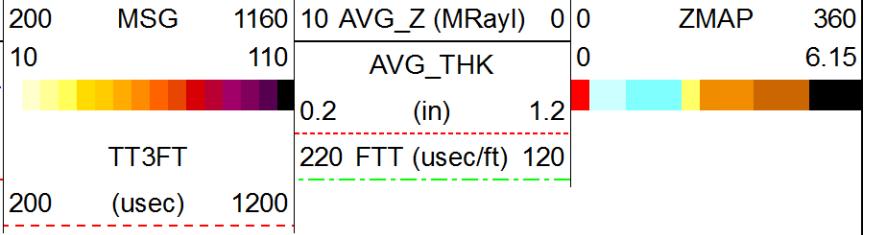








0	ECC (in)	1	RB	0	AMP	100
0	OVAL (in)	0.2	(deg)	0	AAMP	20
0	GR (GAPI)	150	360	TT3FT		
0	DEV (deg)	60	LTEN	403	(usec)	303
	ACCL		(lb)		TT3FT	
85	TEMP (degC)	105		200	(usec)	1200
	TEMP					
	(degC)					



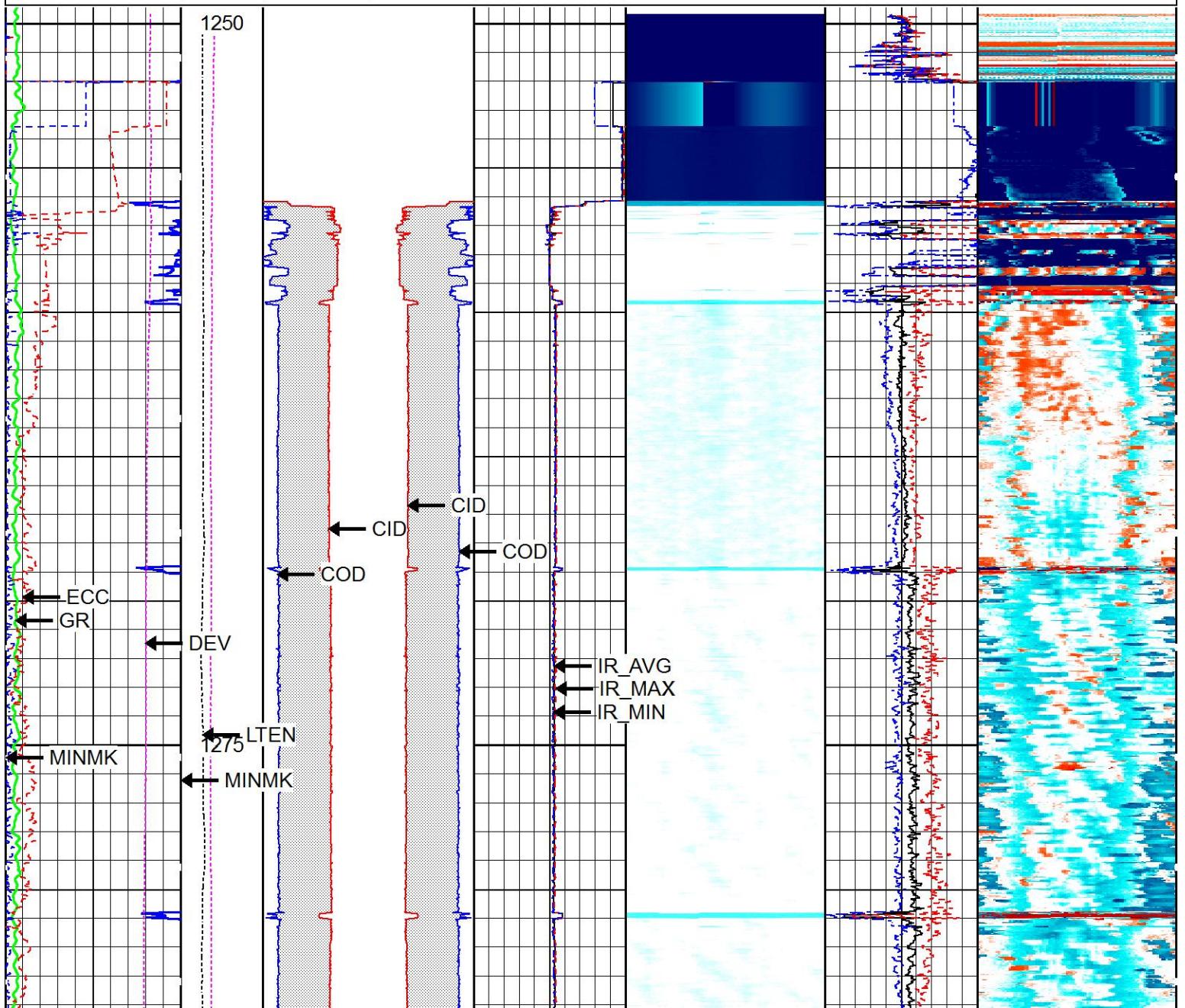
## PIPE INSPECTION MODE

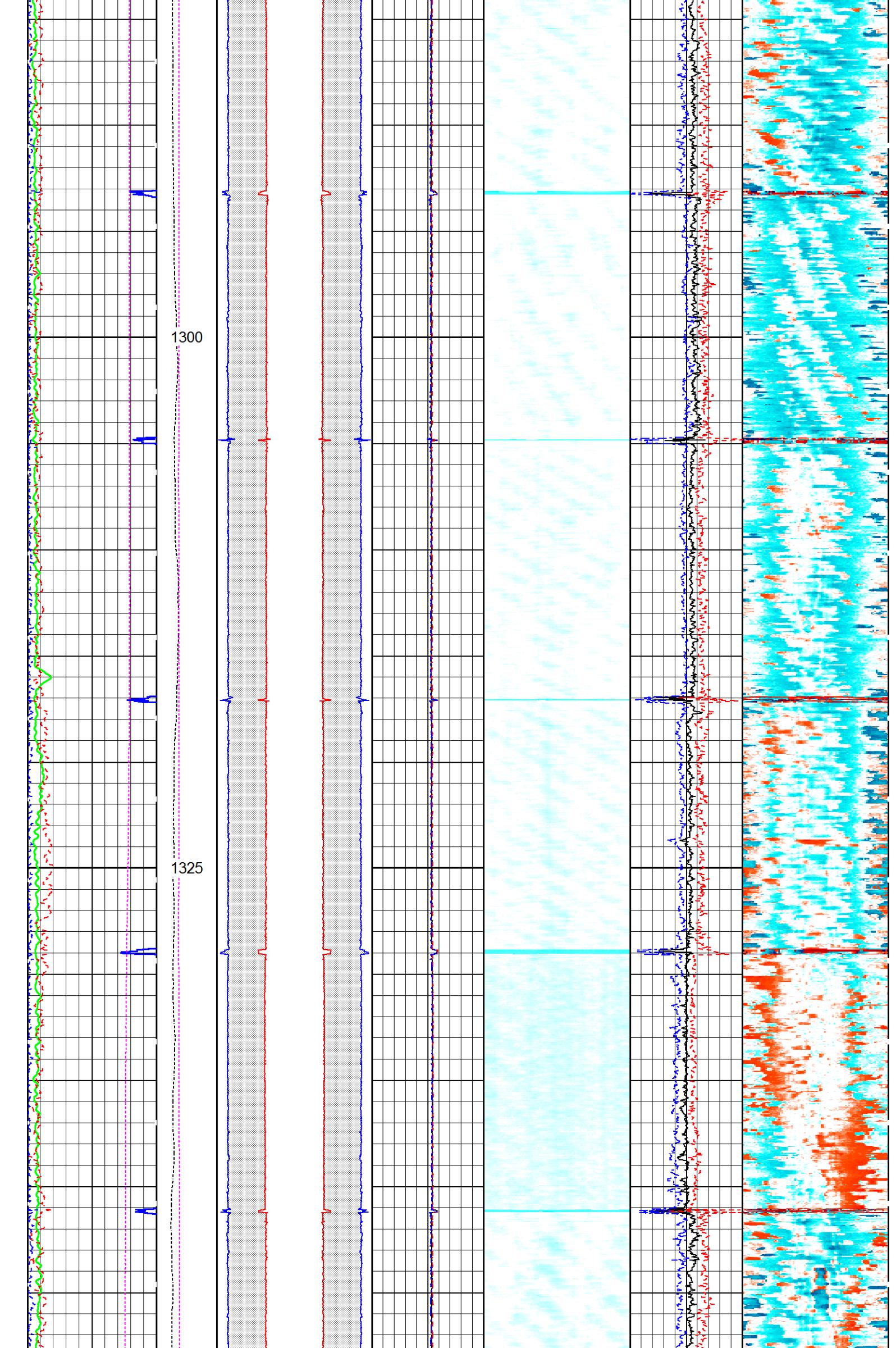
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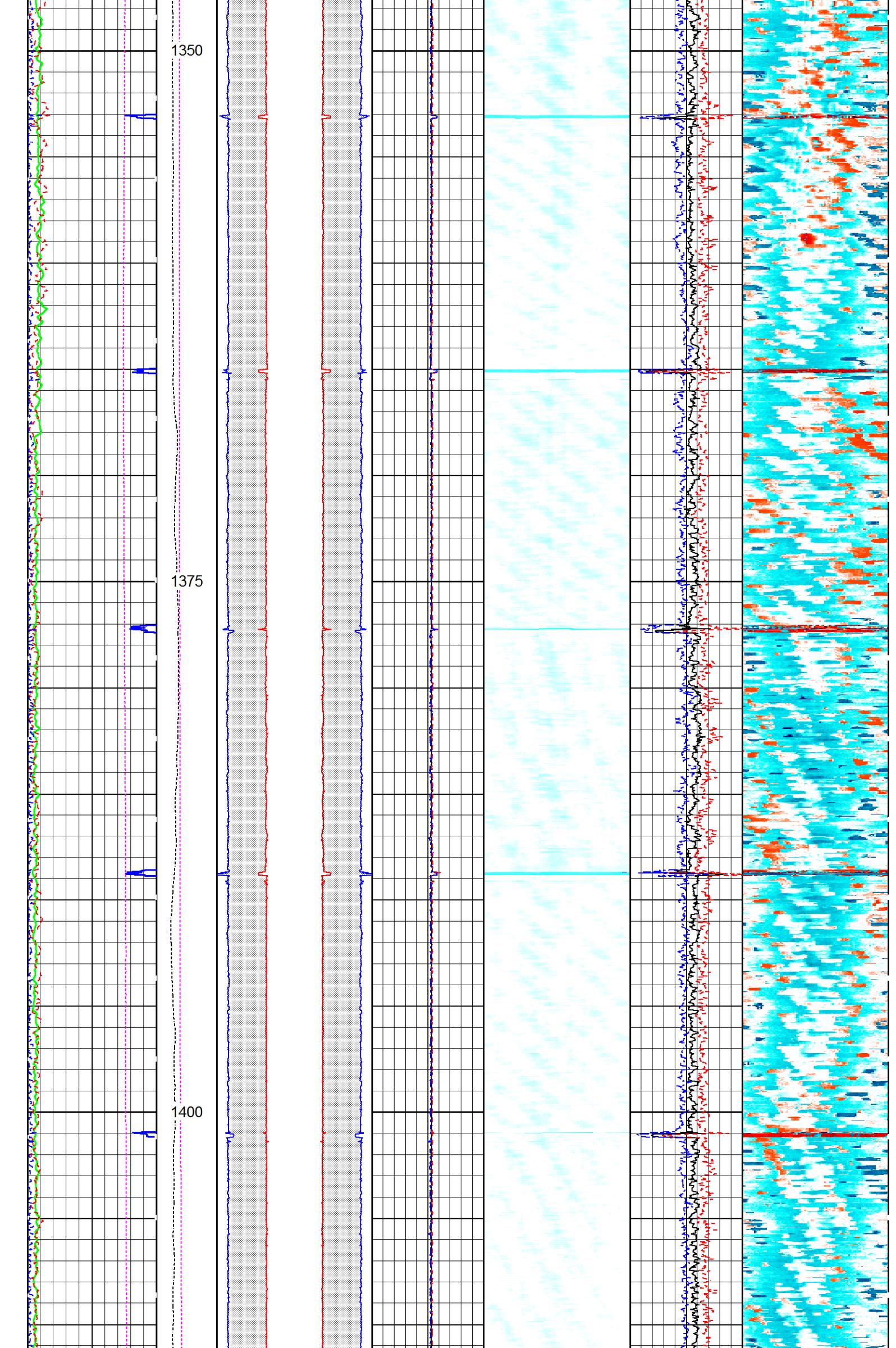
SCALE 1:200

Database File c:\wojtek\halliburton\jobs\nl\geomec\bri-gt-01\bri-gt-01.db  
 Dataset Pathname pass5  
 Presentation Format hcastpim958  
 Dataset Creation Sun Aug 16 08:50:56 2015  
 Charted by Depth in Meters scaled 1:200

0 GR (GAPI) 150	LTEN	CID (in)	CID (in)	IR_AVG	0	IR	360	THK_AV	0	THICKNESS 360
0 ECC (in) 1				3.35 (in)	5.35	3.35	5.35	0.38 (in)	0.58	0.38 0.58
0 OVAL (in) 0.2	0 (2500)	10.1	8.1	IR_MAX				THK_MAX		
ACCL				3.35 (in)	5.35			0.38 (in)	0.58	
0 DEV (deg) 60	RB (deg)	COD (in)	COD (in)	IR_MIN				THK_MIN		
-1 359		10.1	8.1	3.35 (in)	5.35			0.38 (in)	0.58	

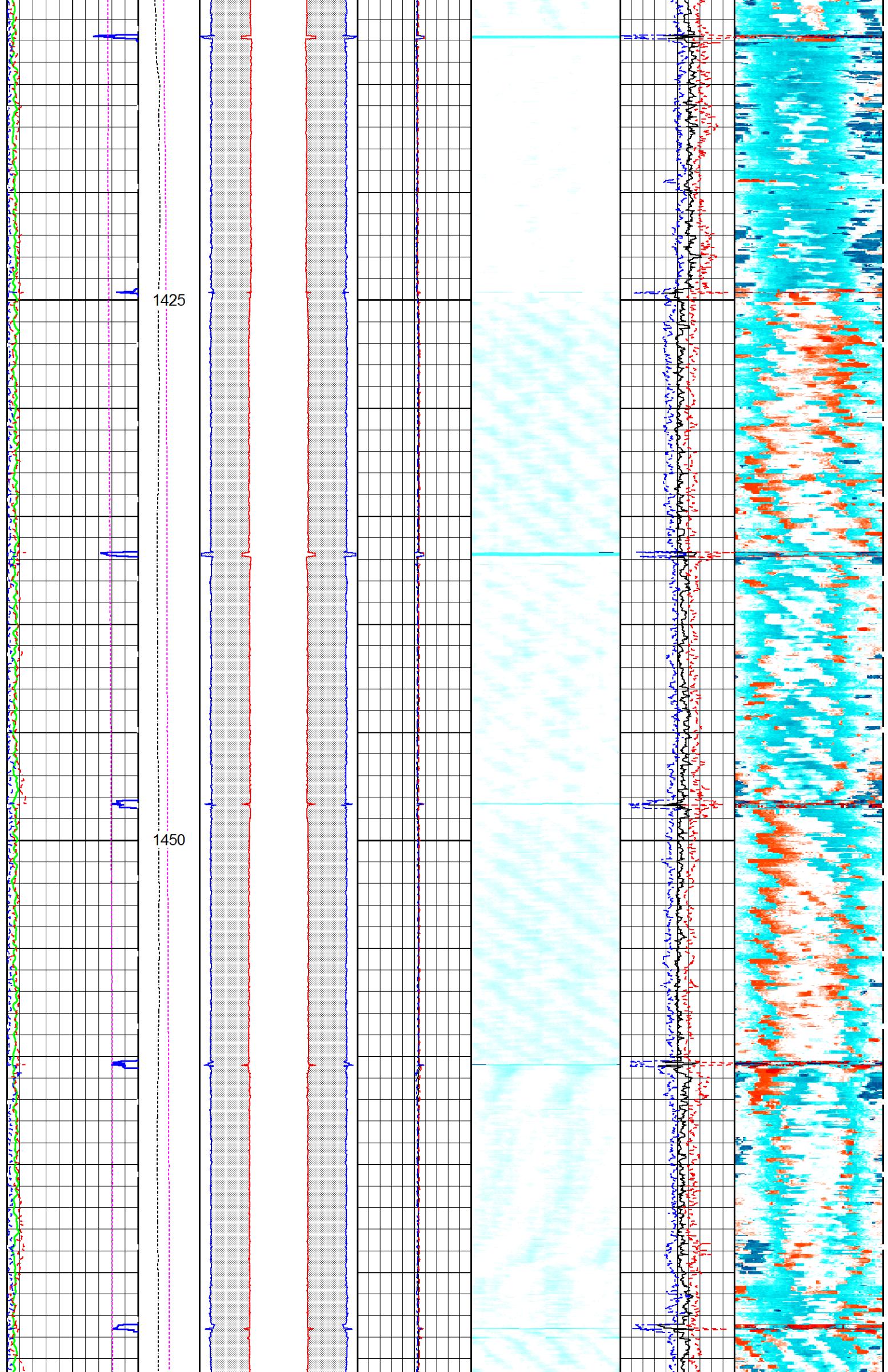






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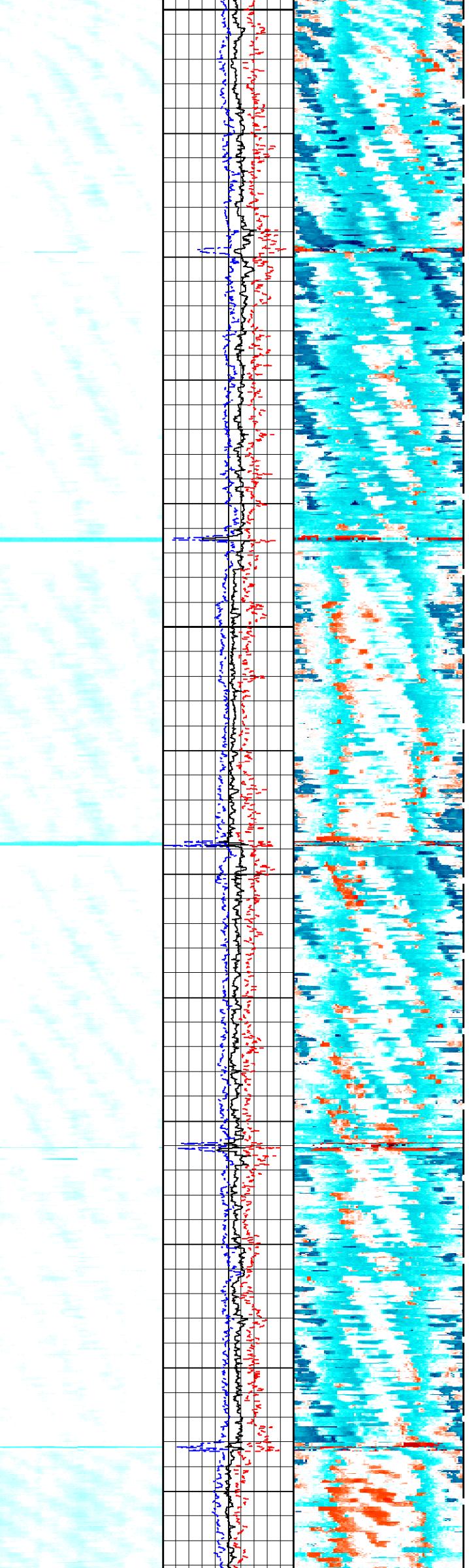
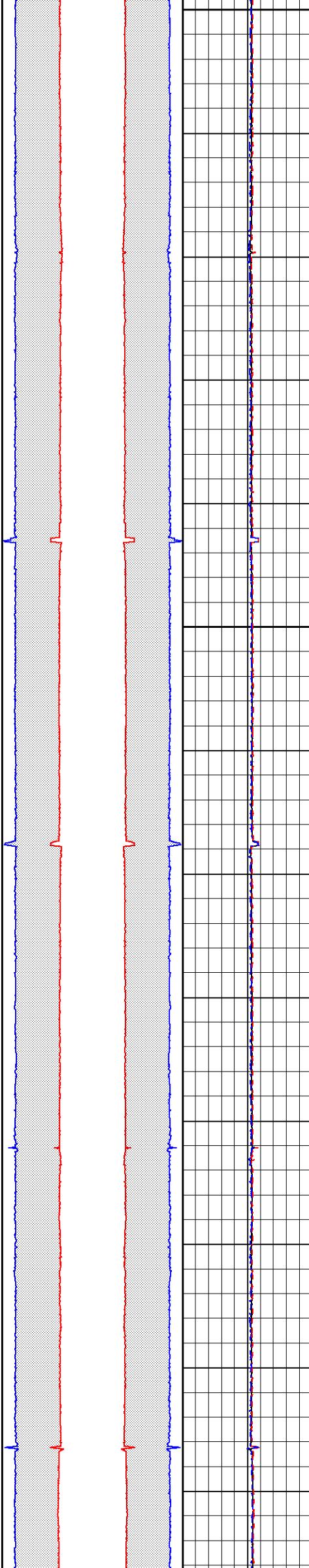
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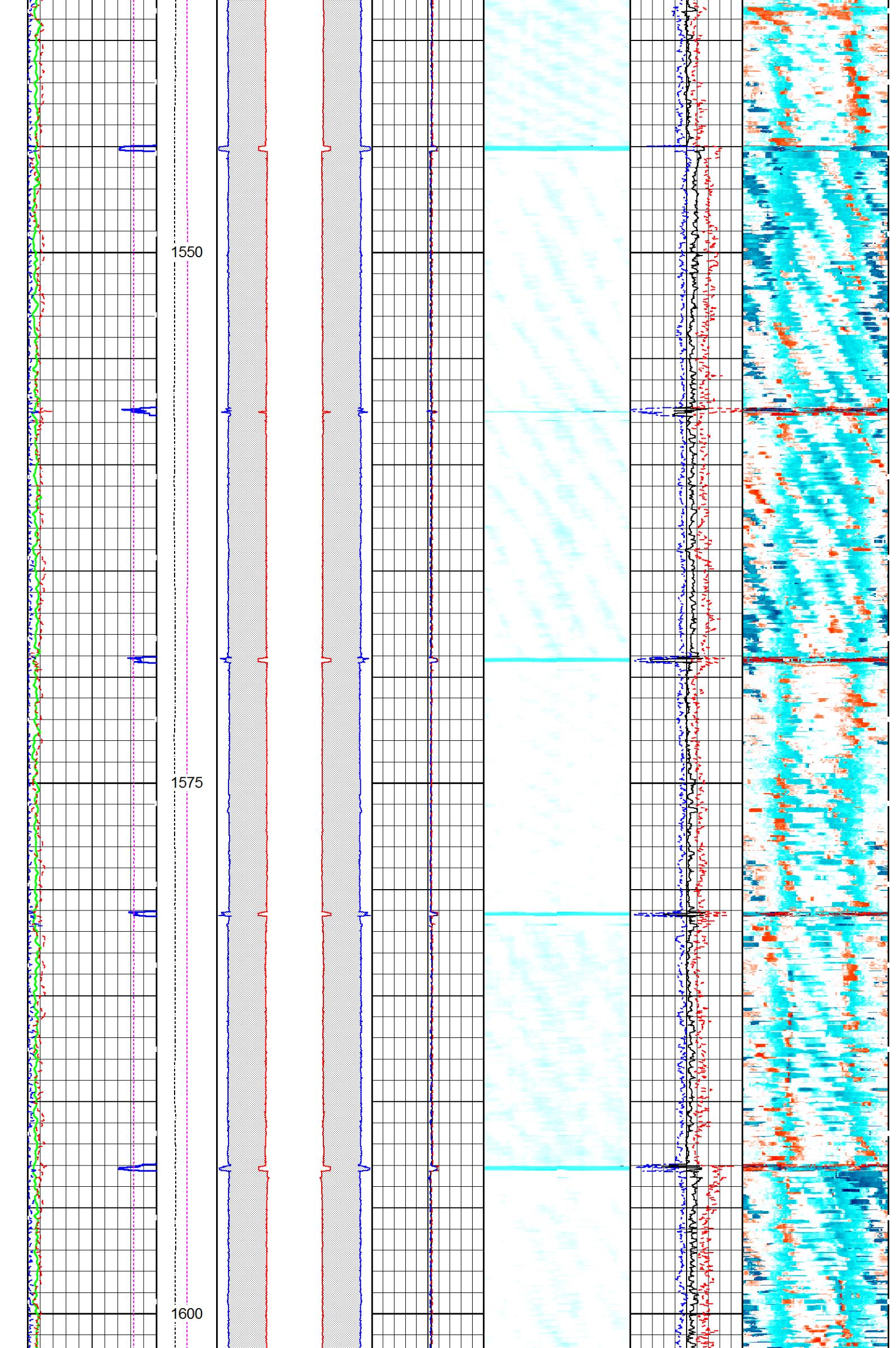


1475

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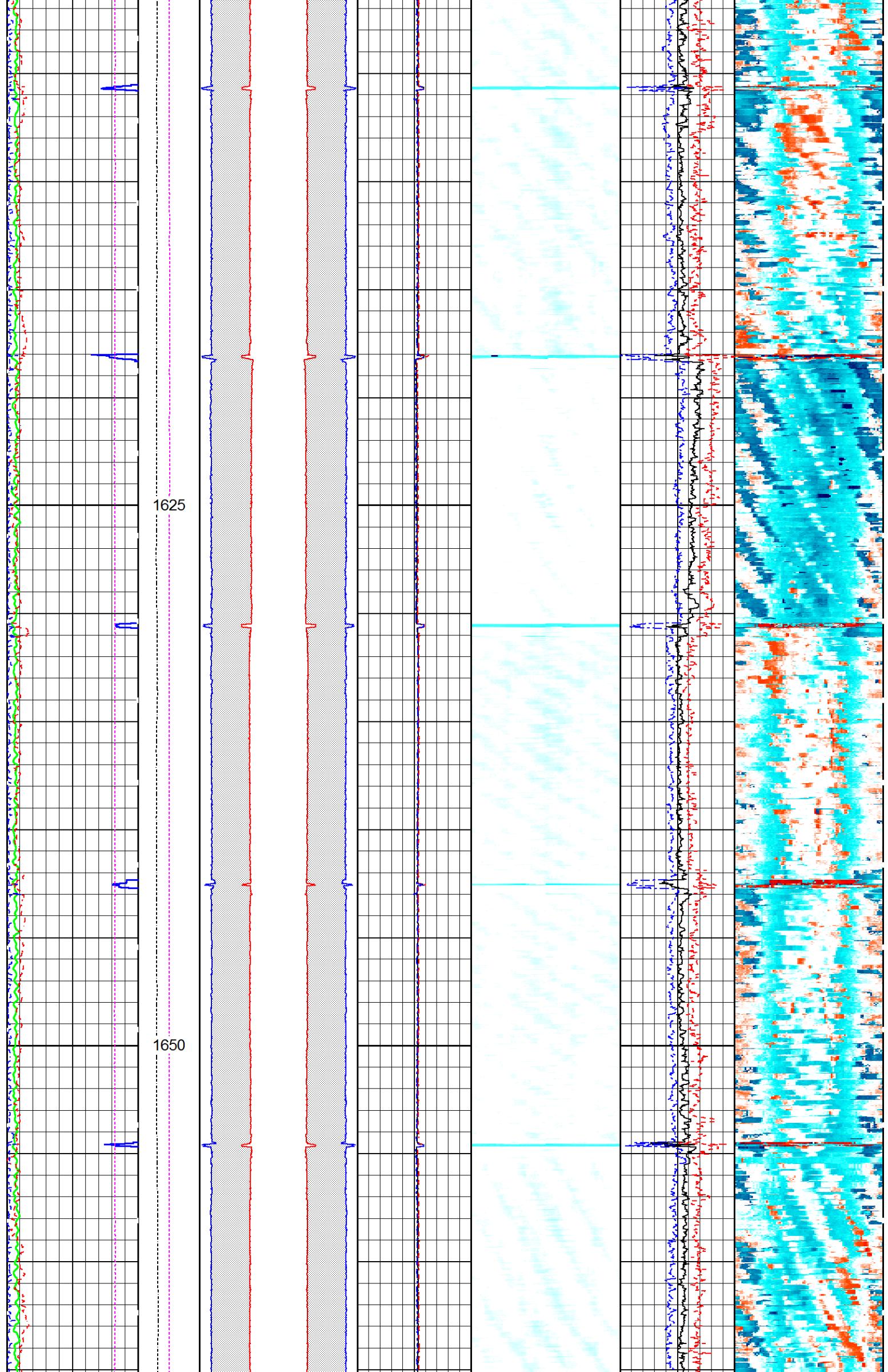
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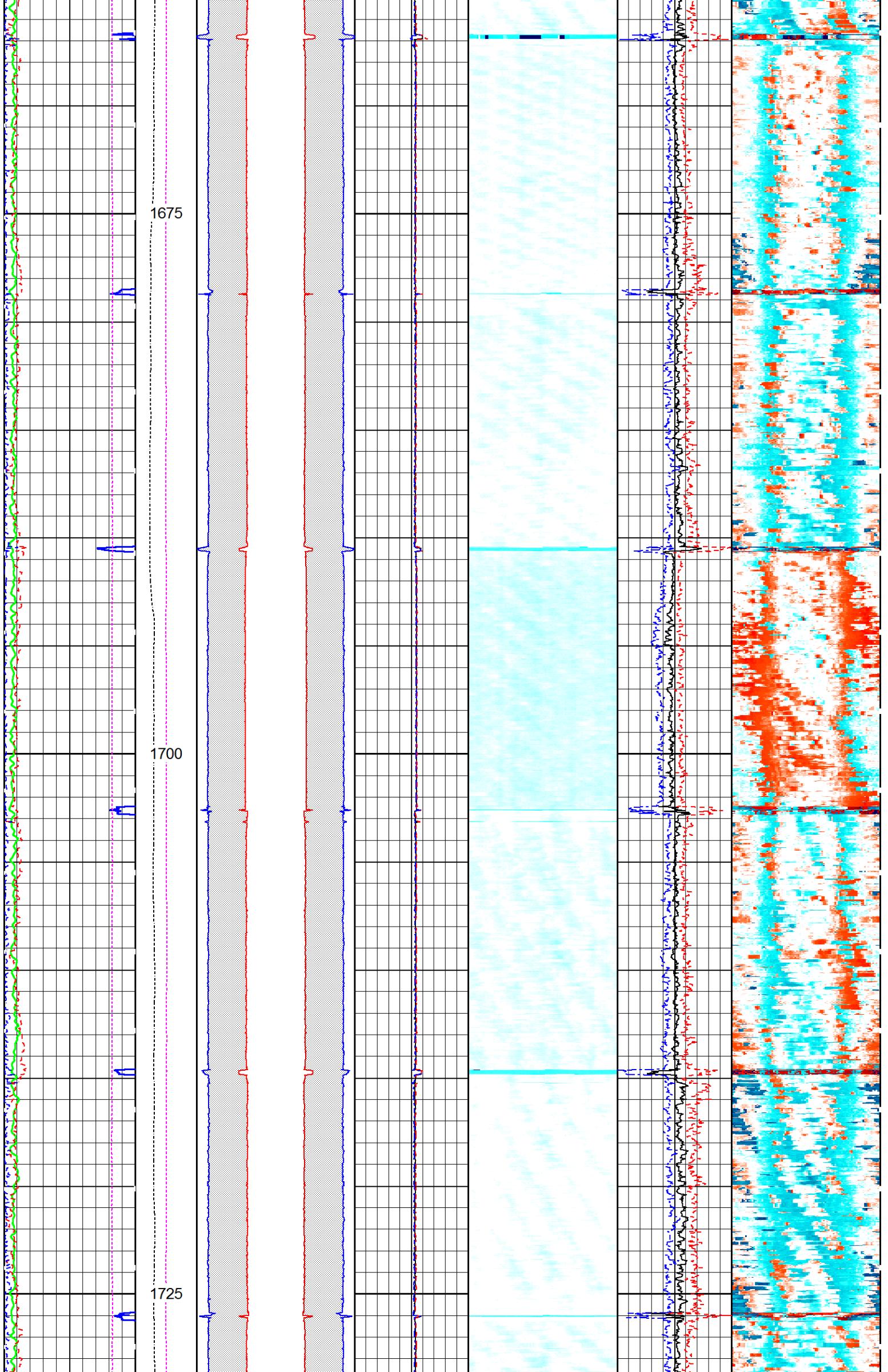


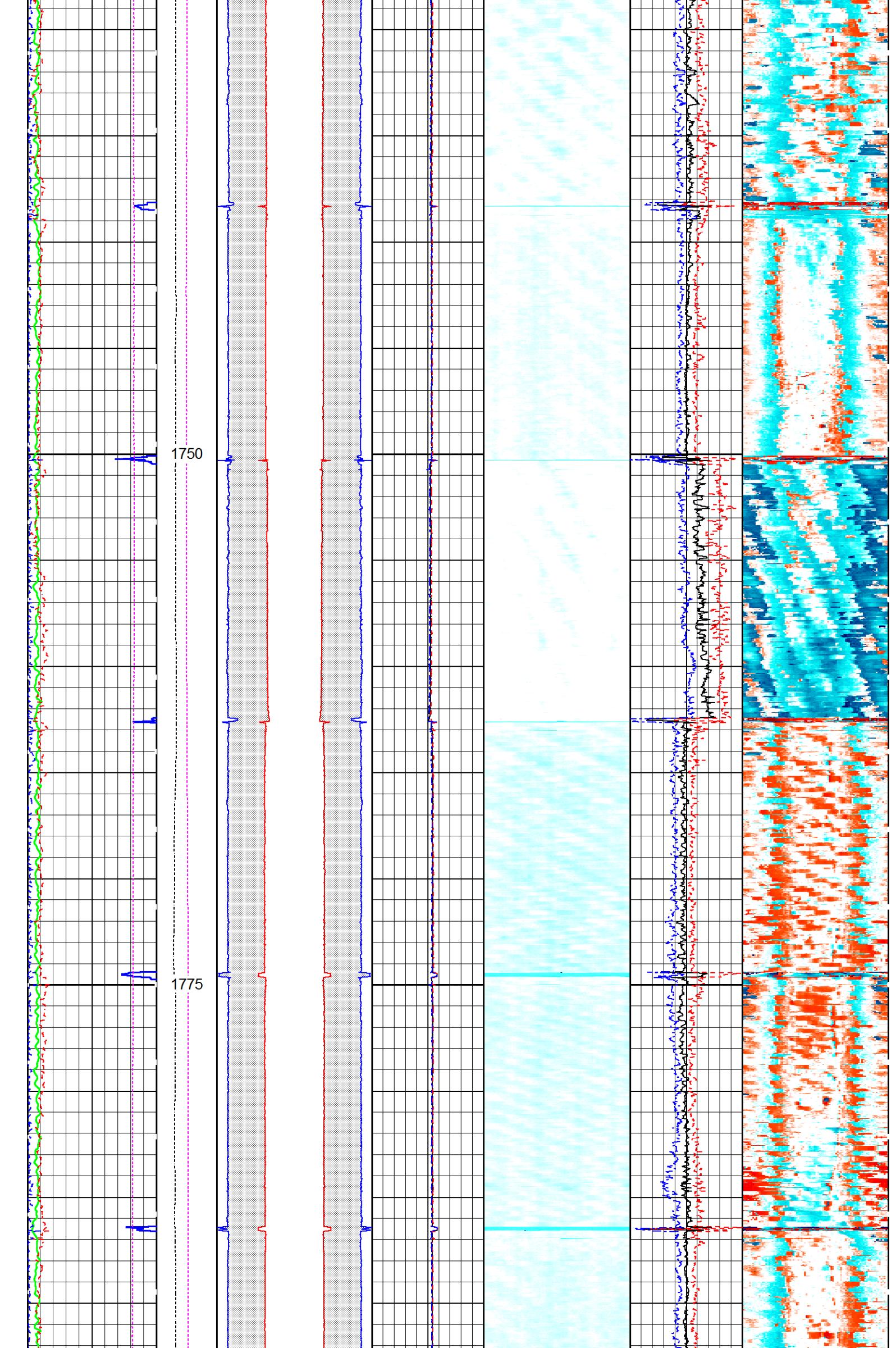


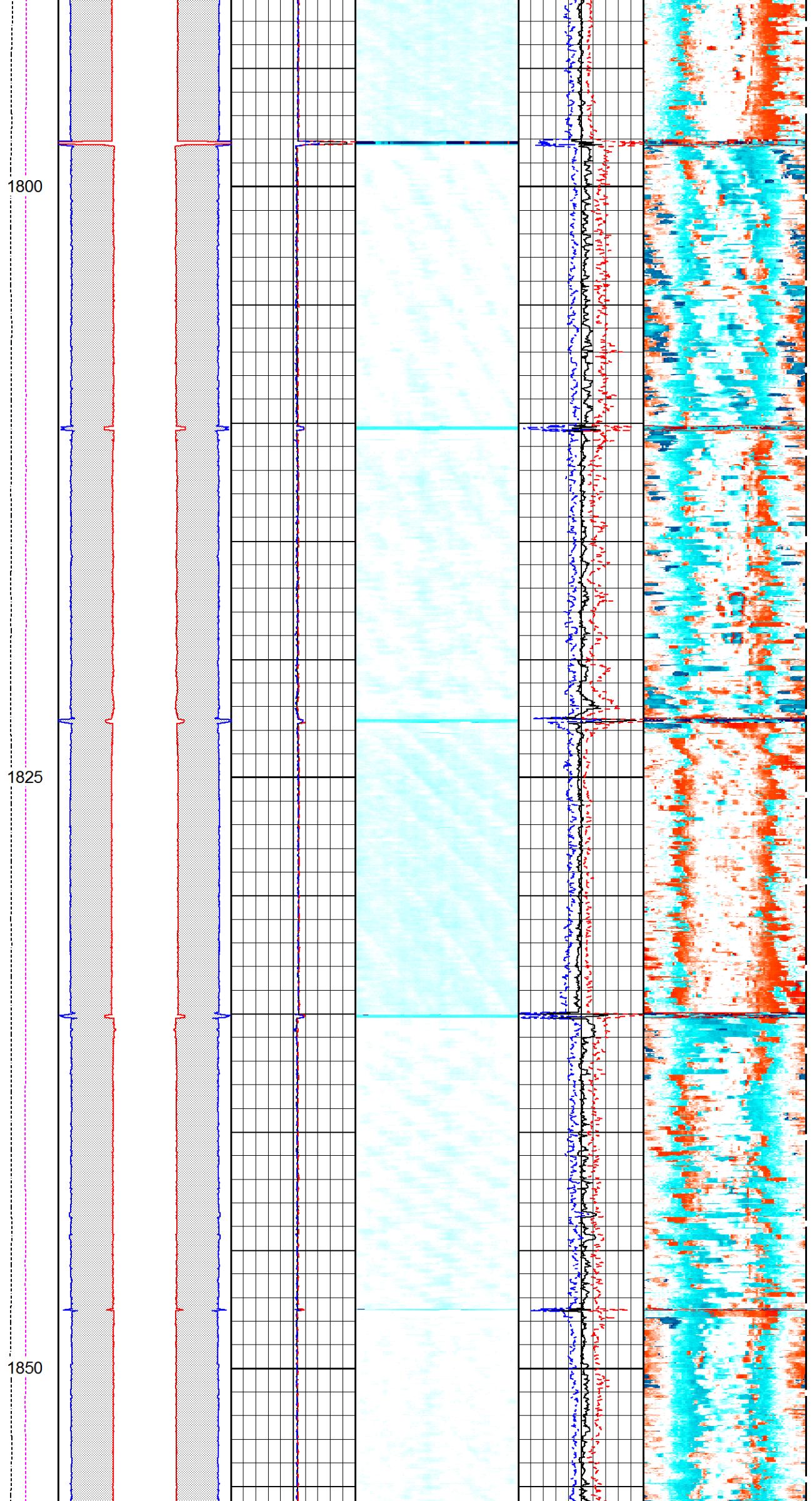
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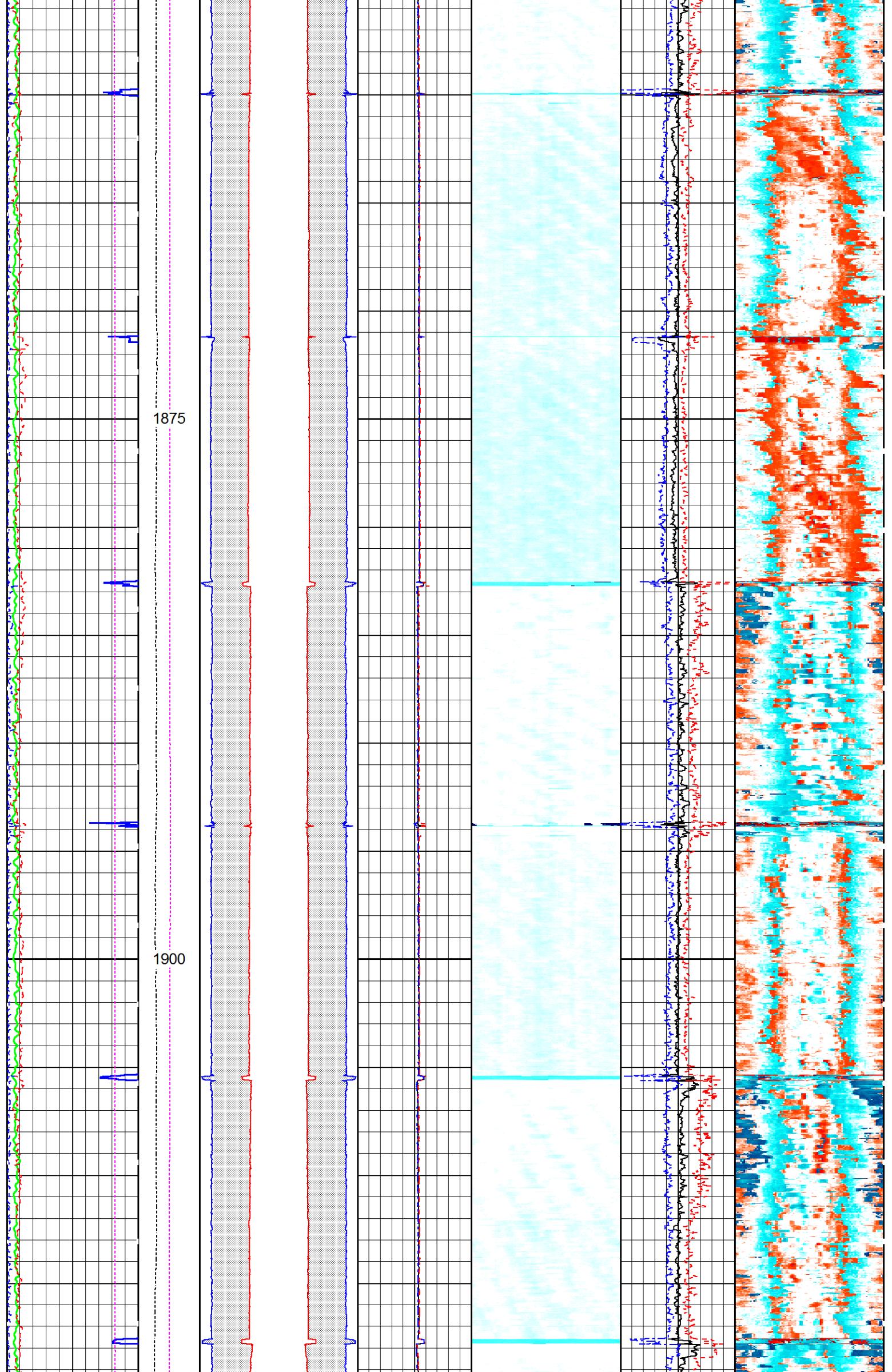


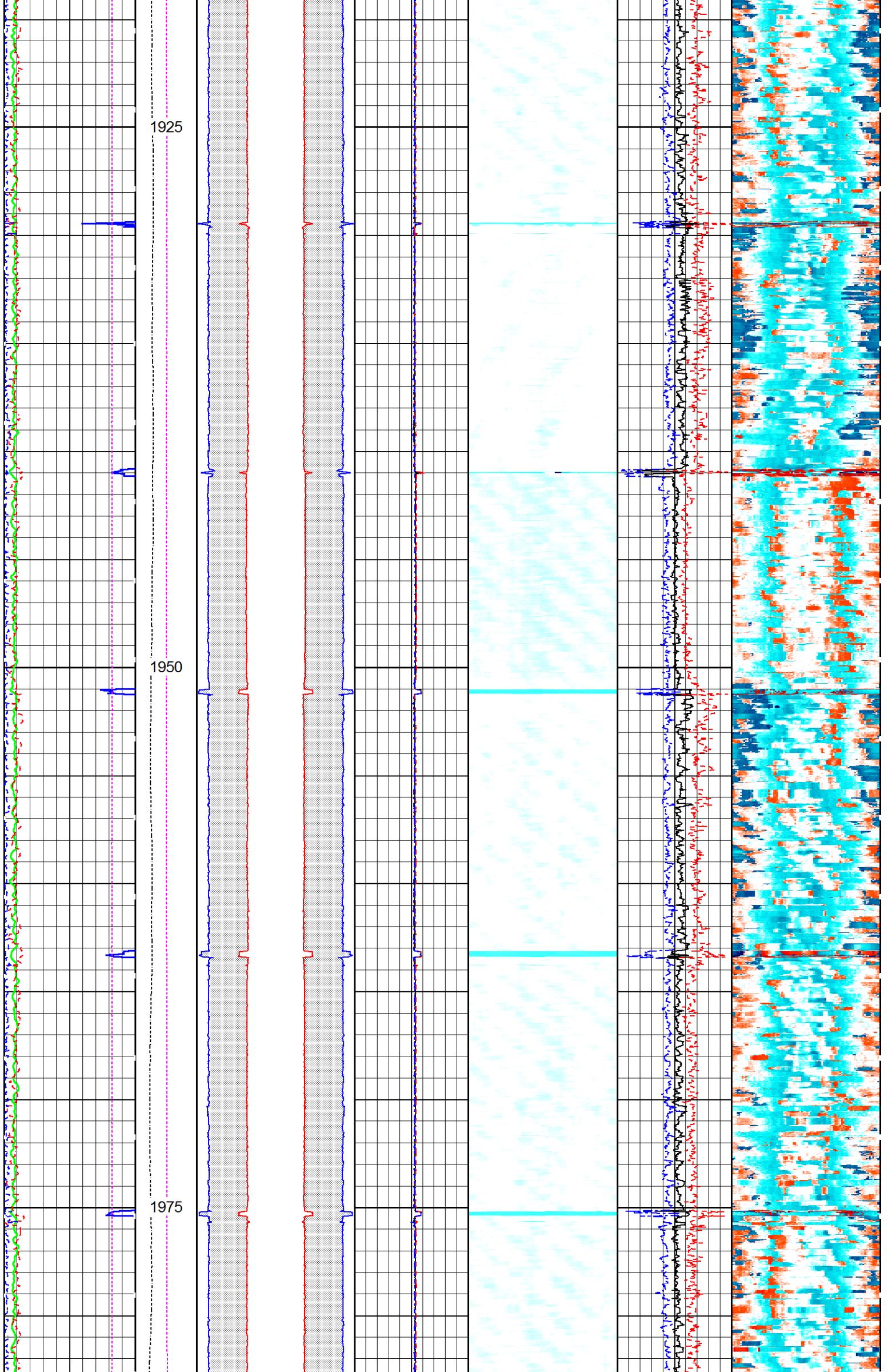


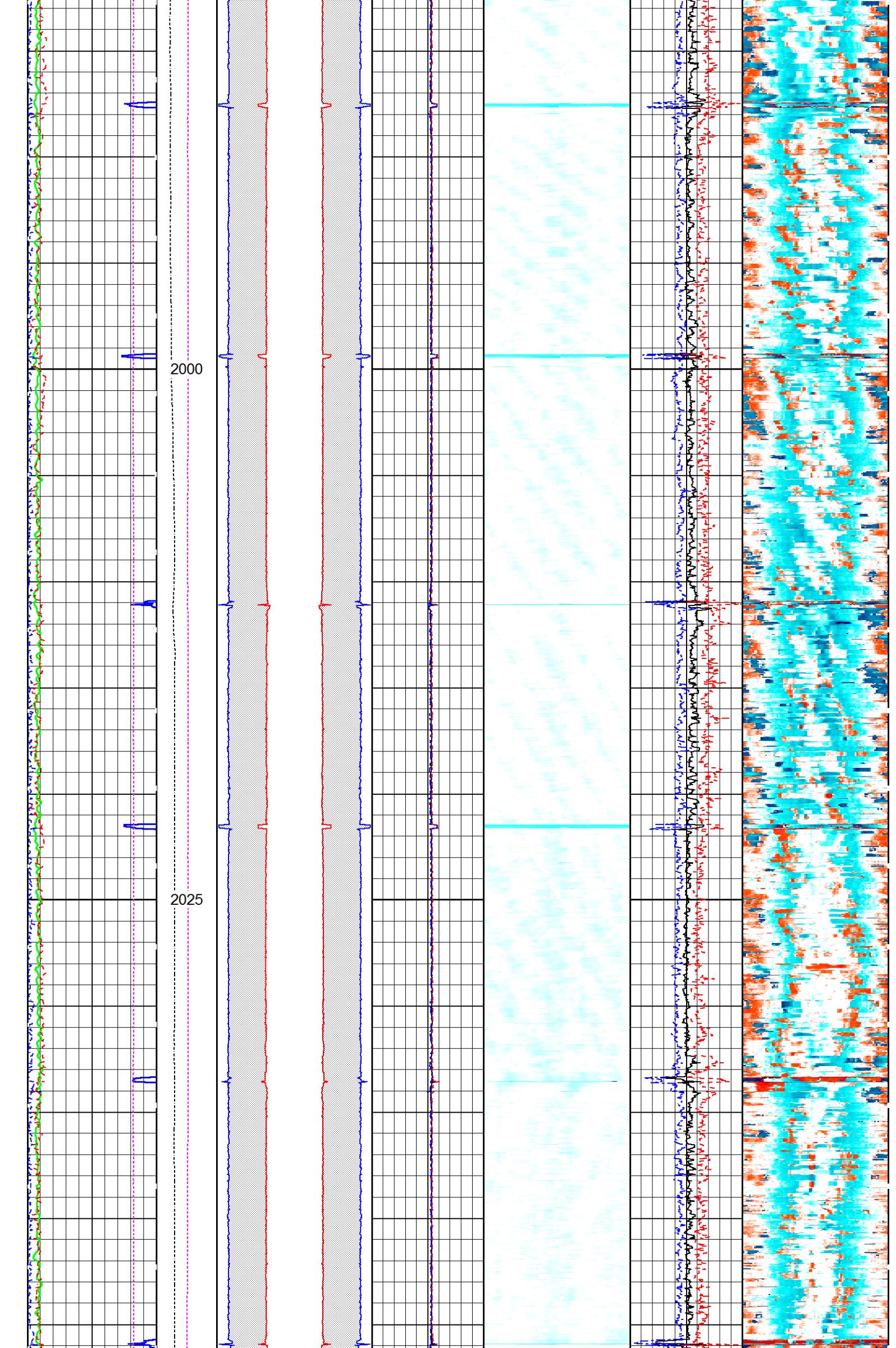


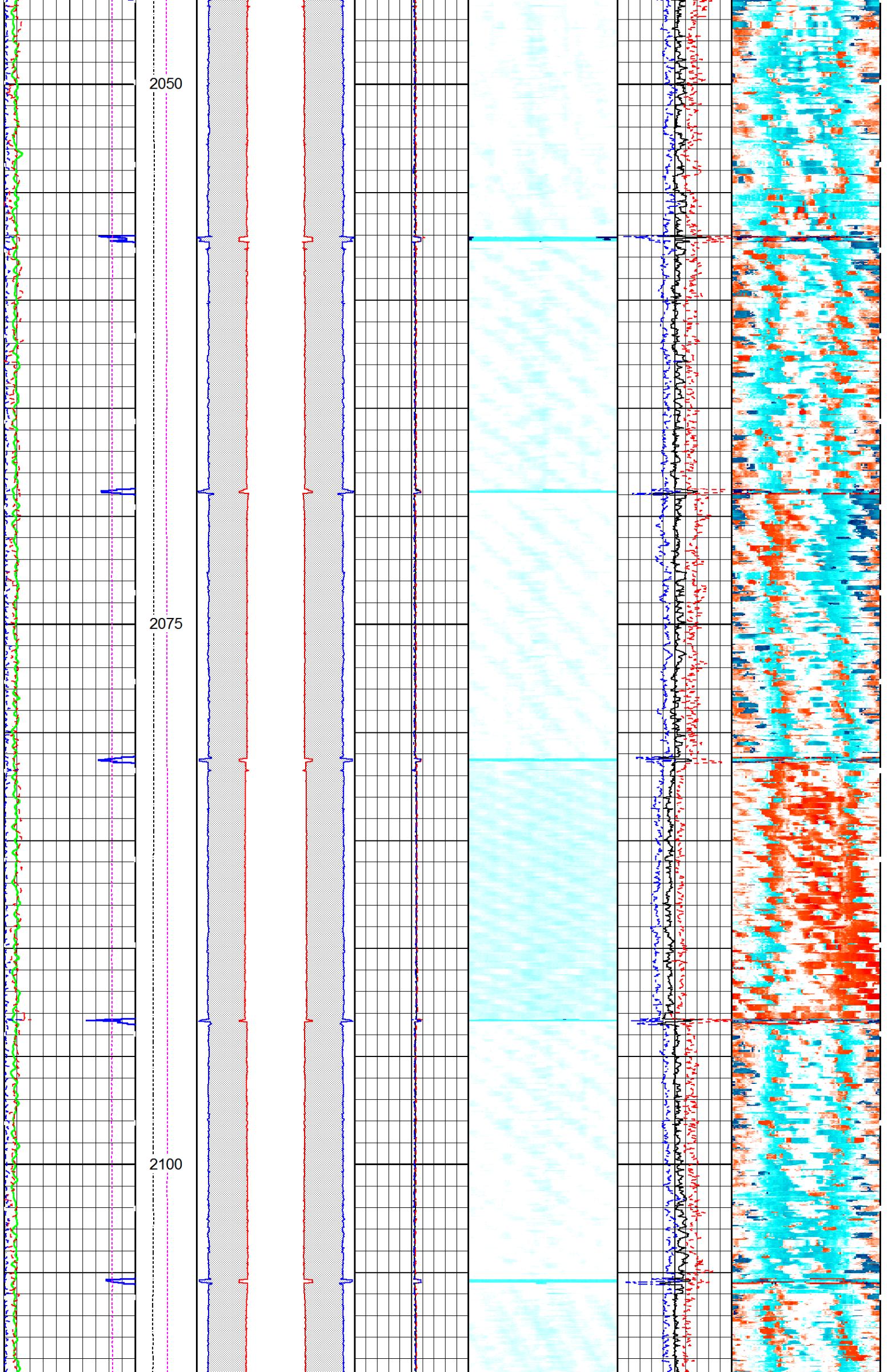
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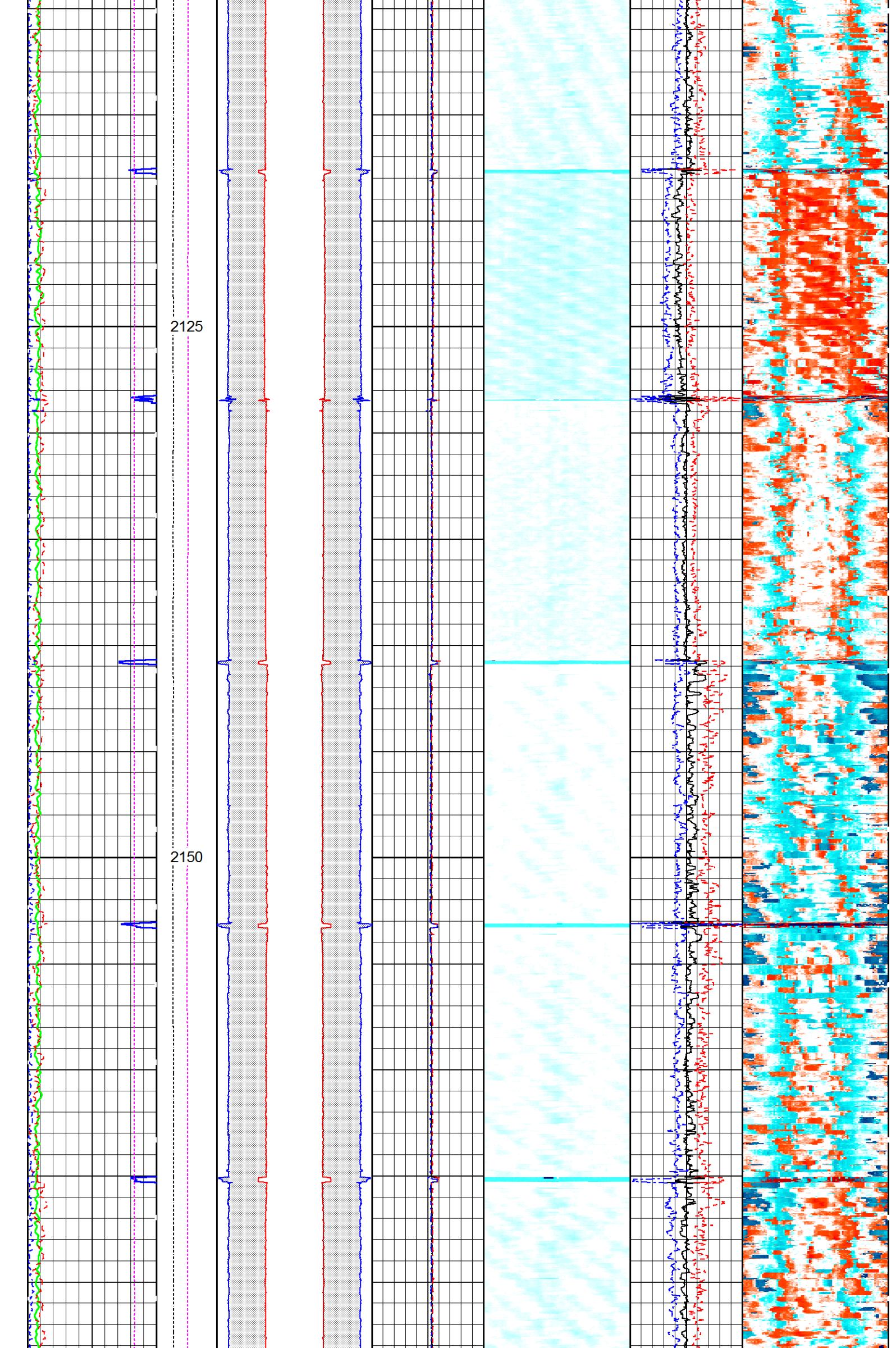
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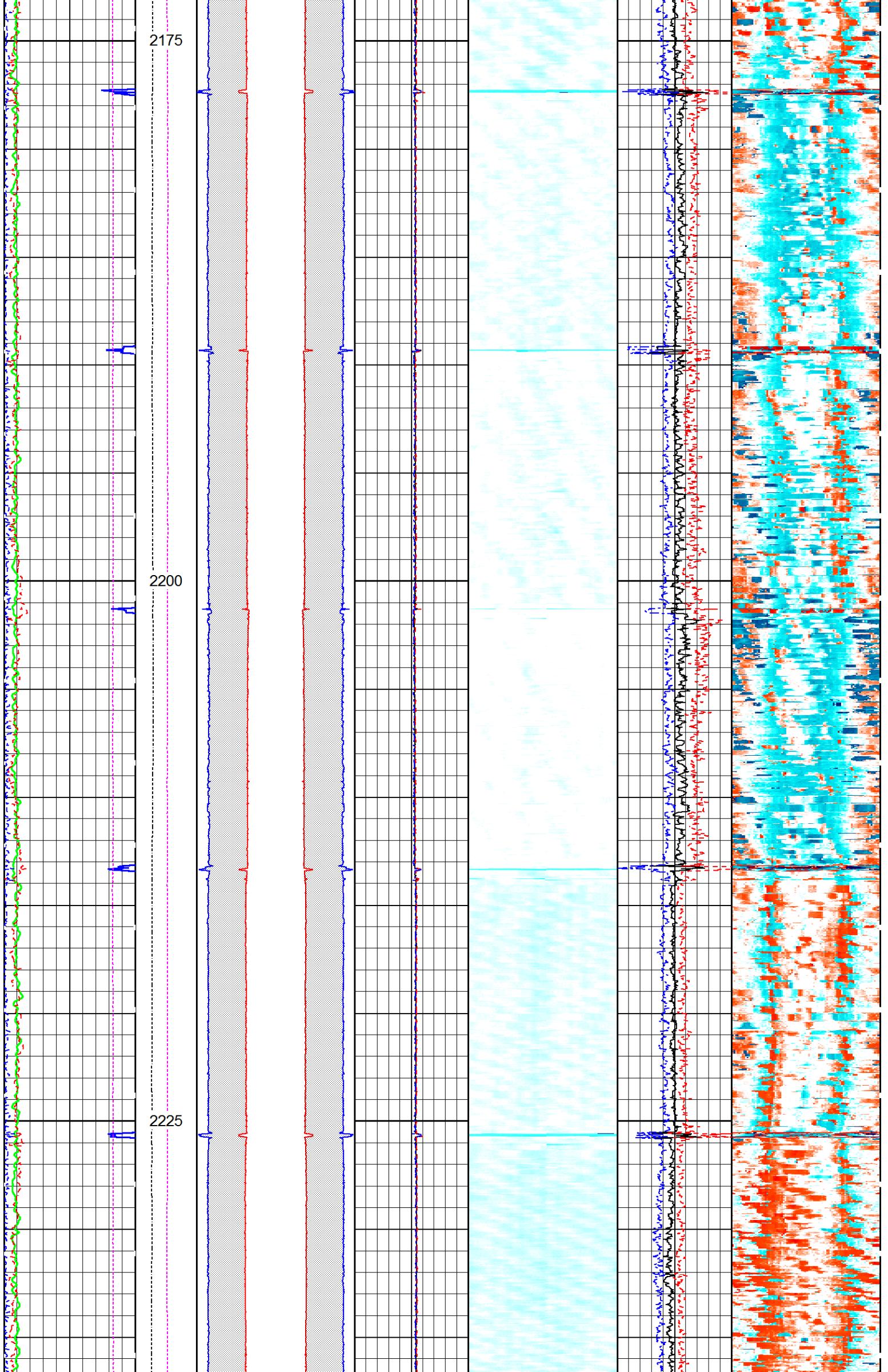


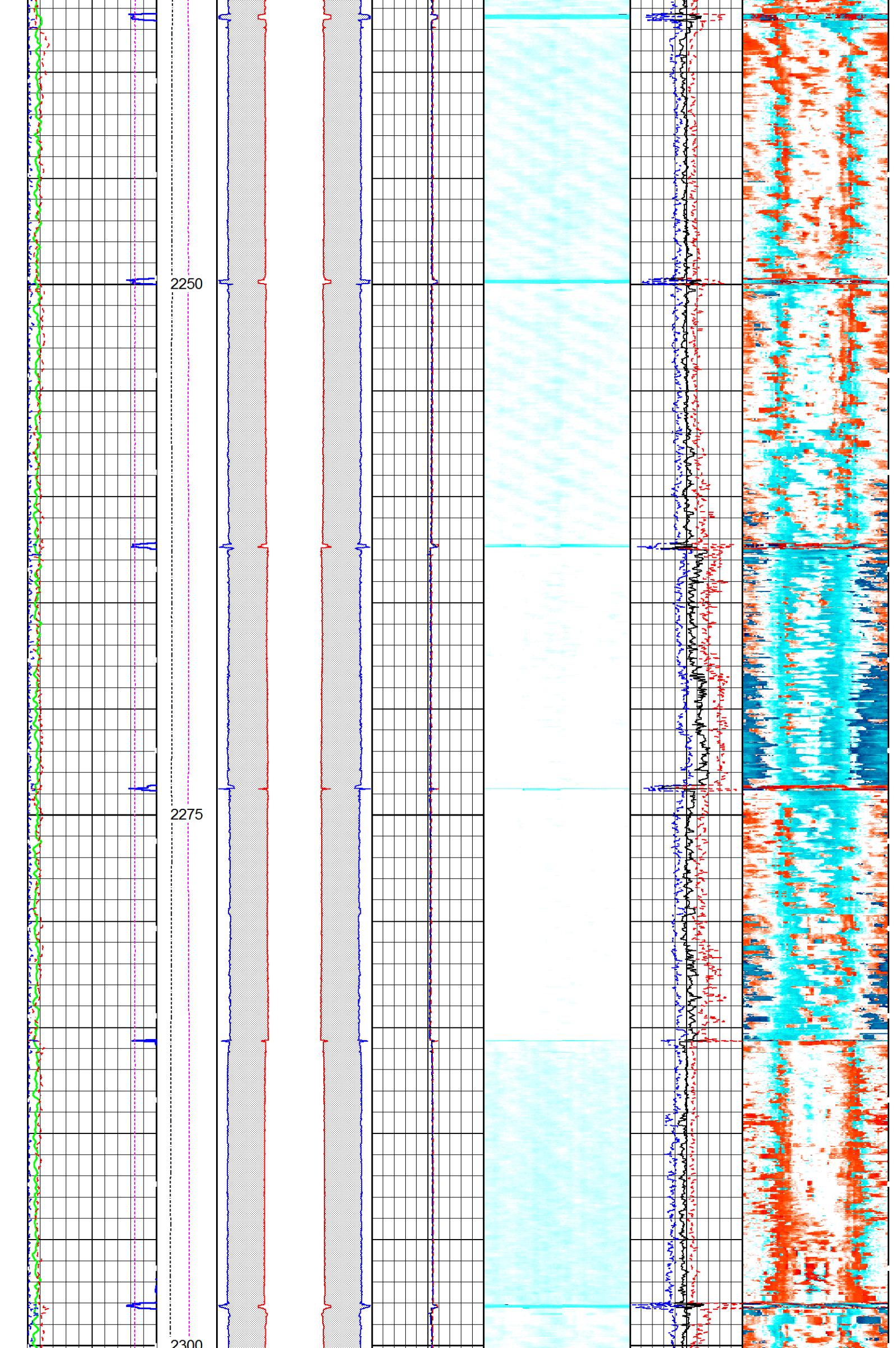


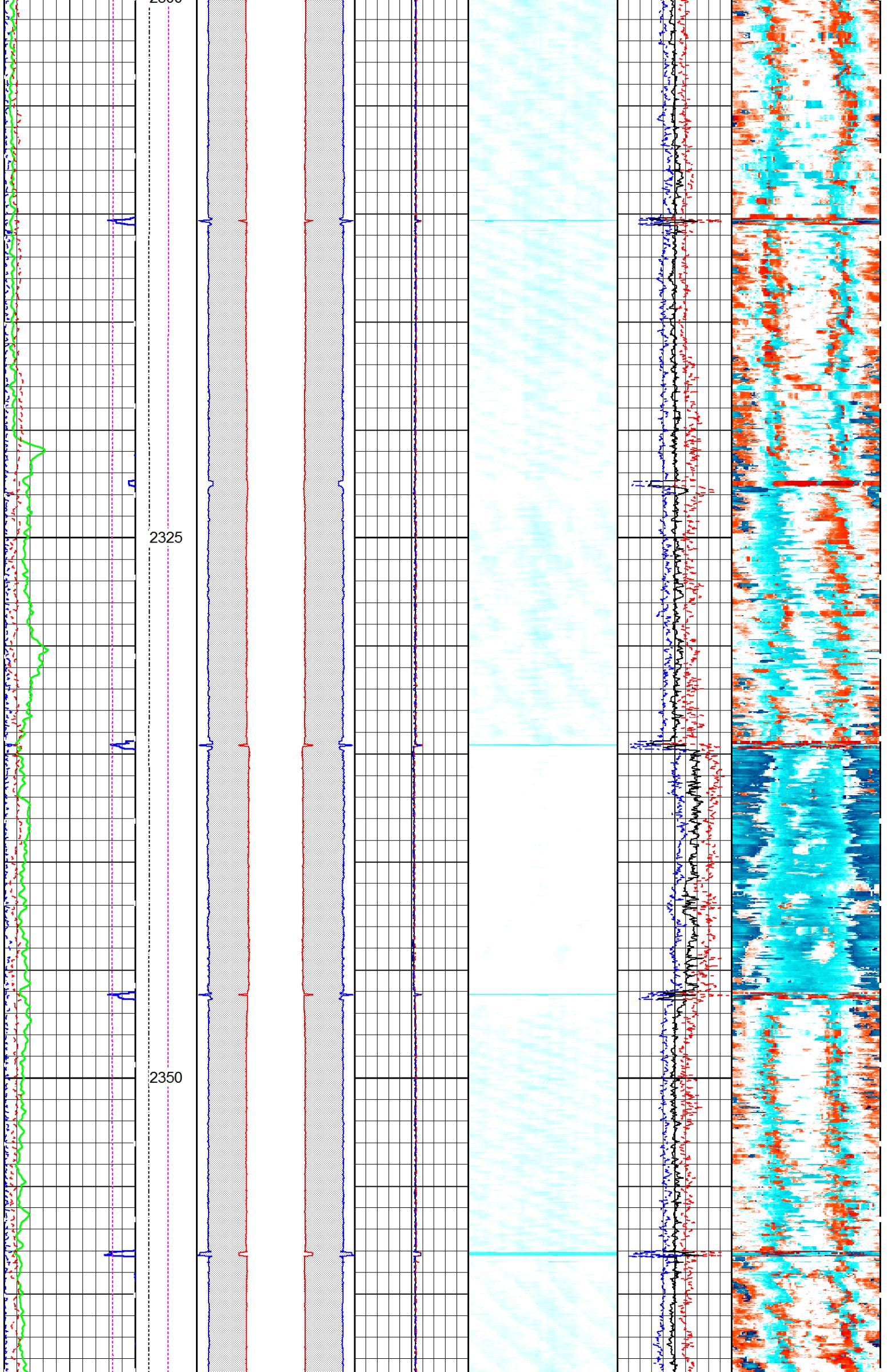


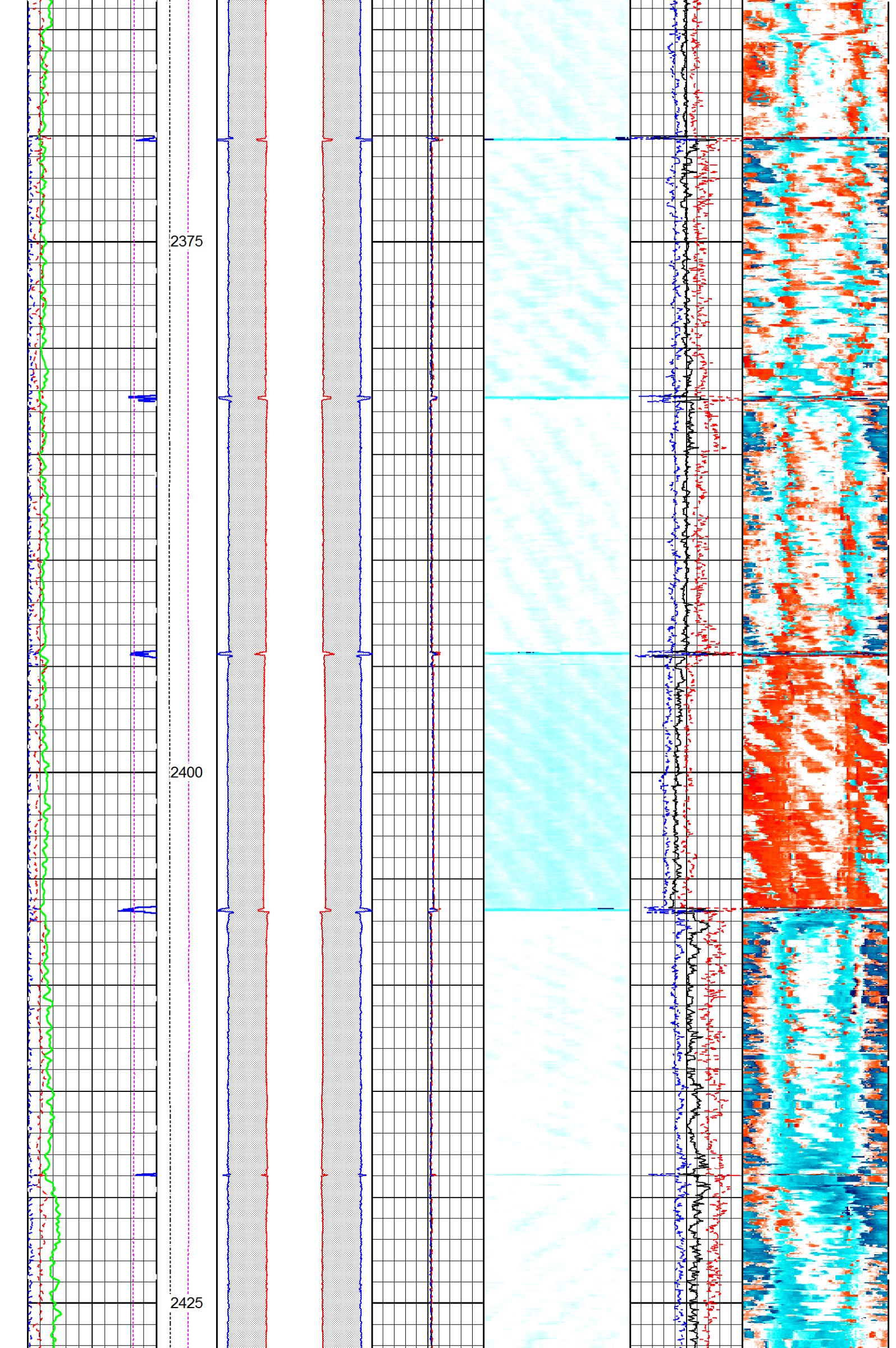


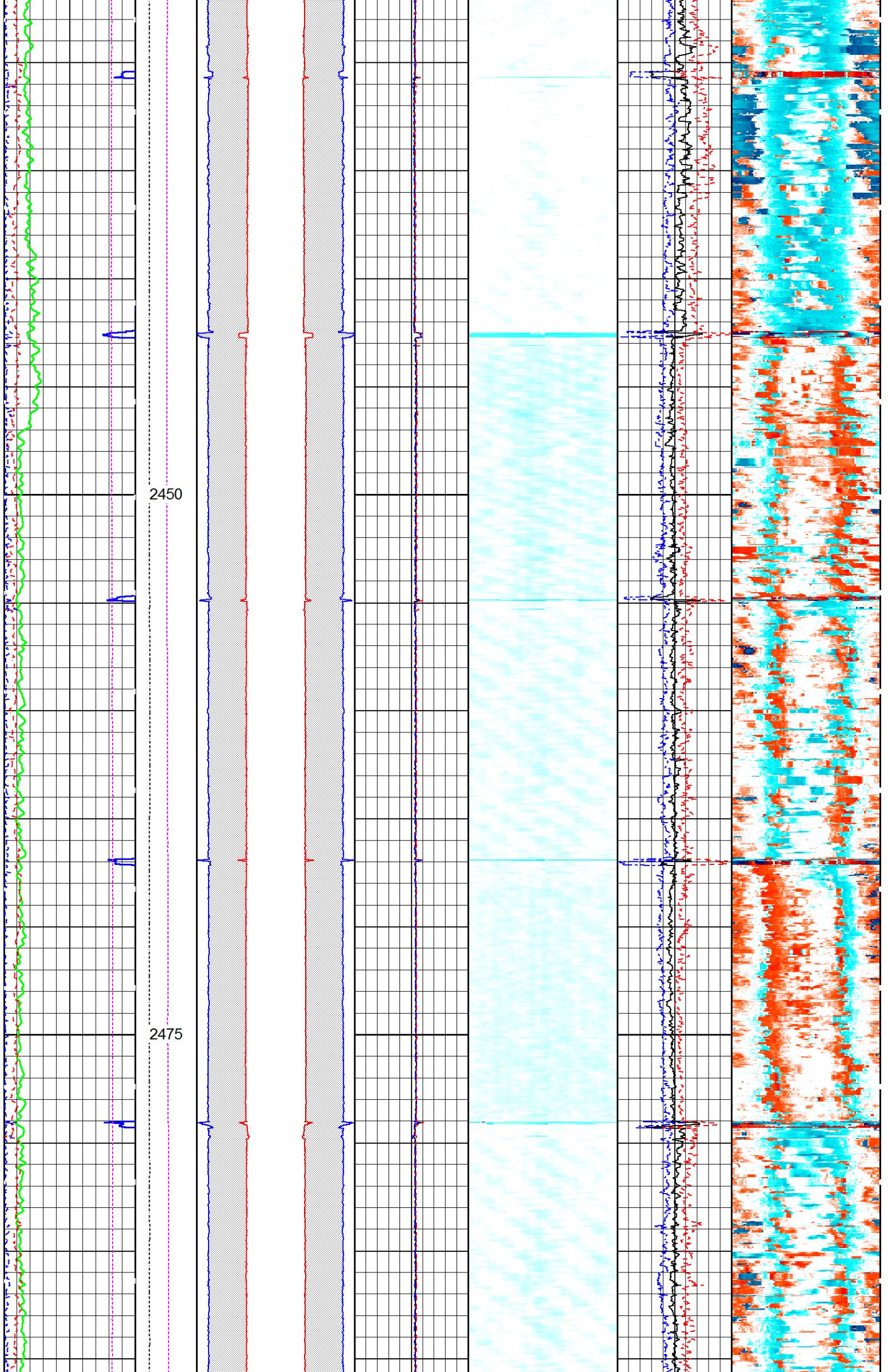


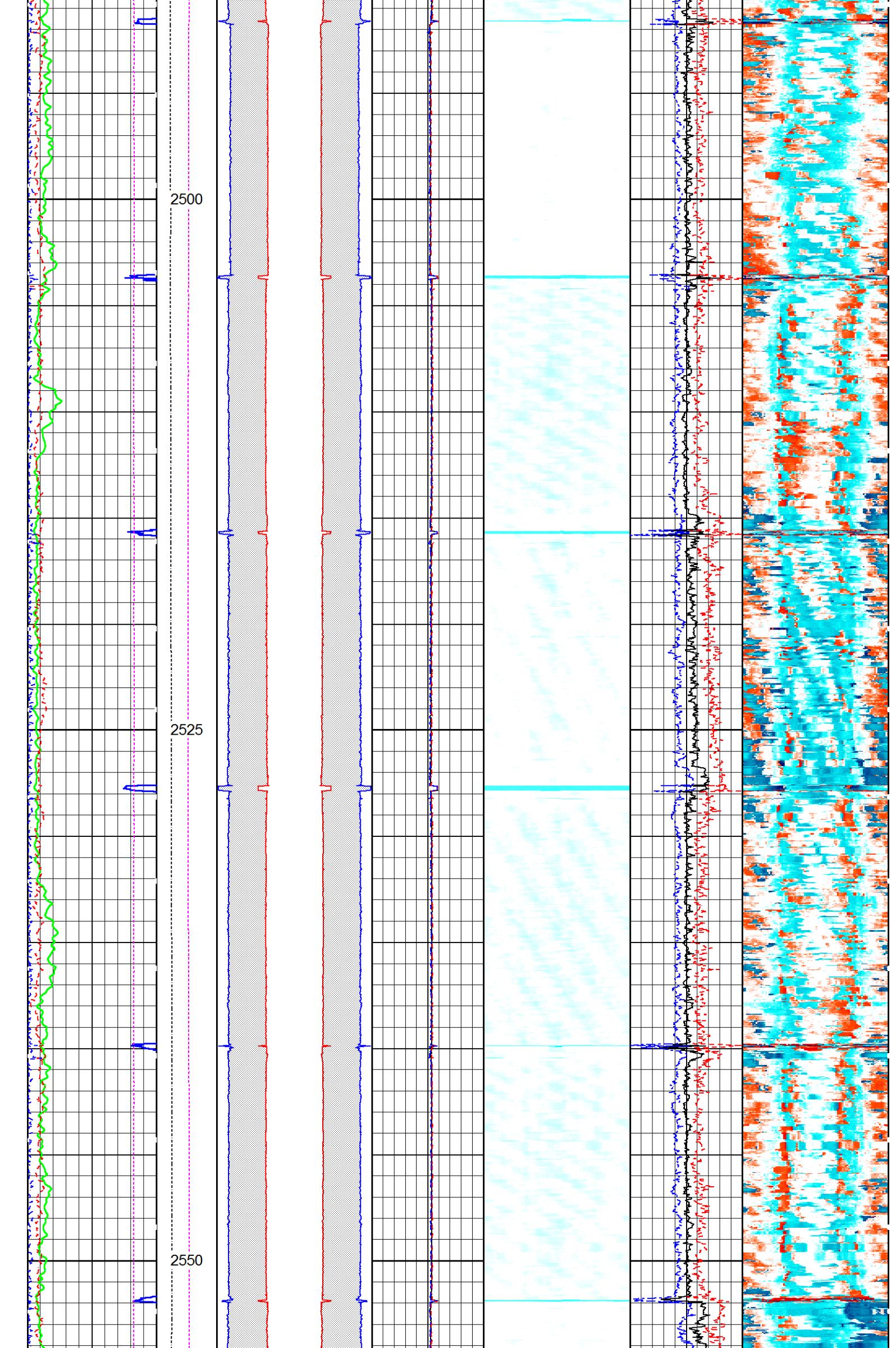


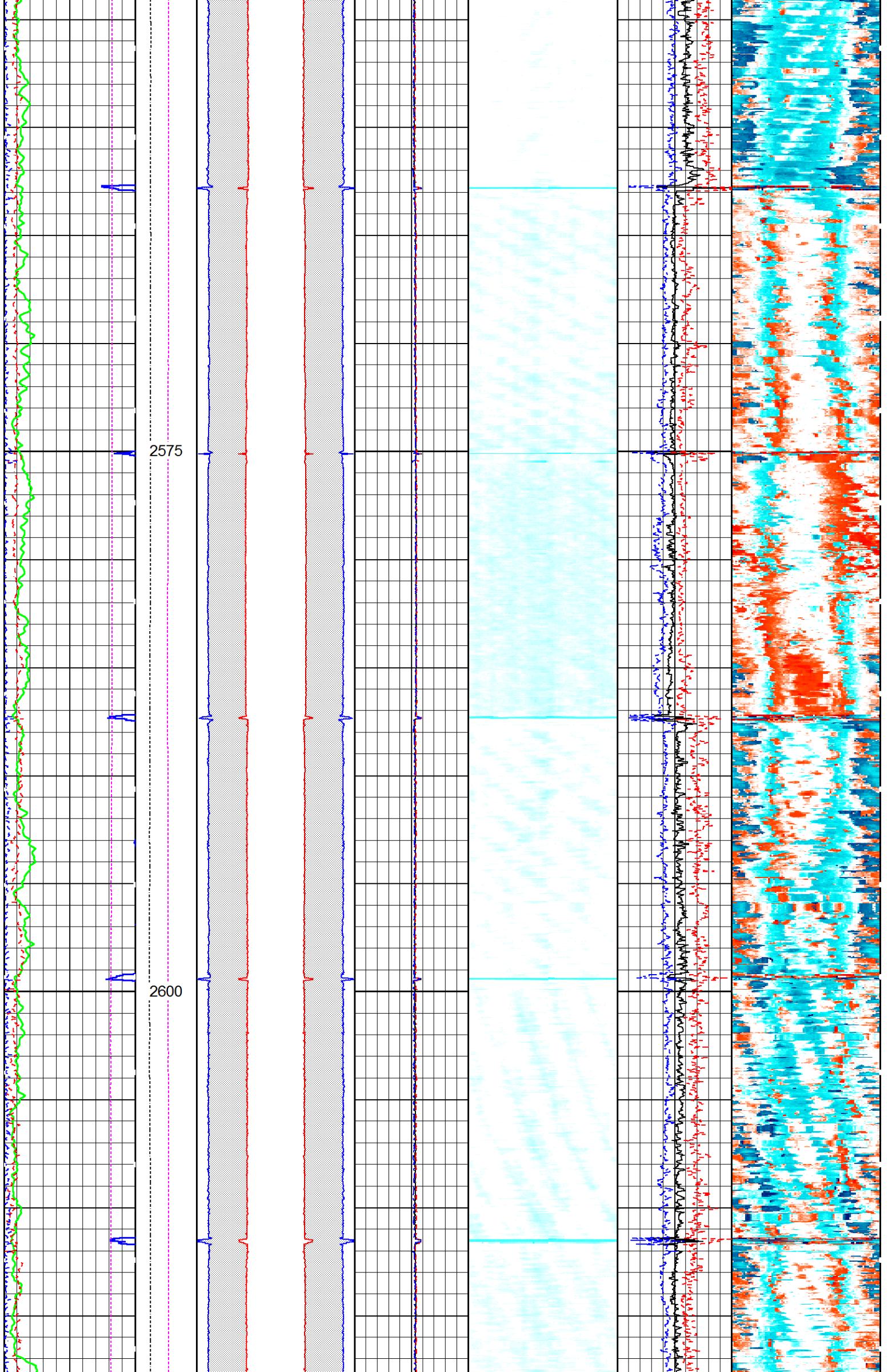


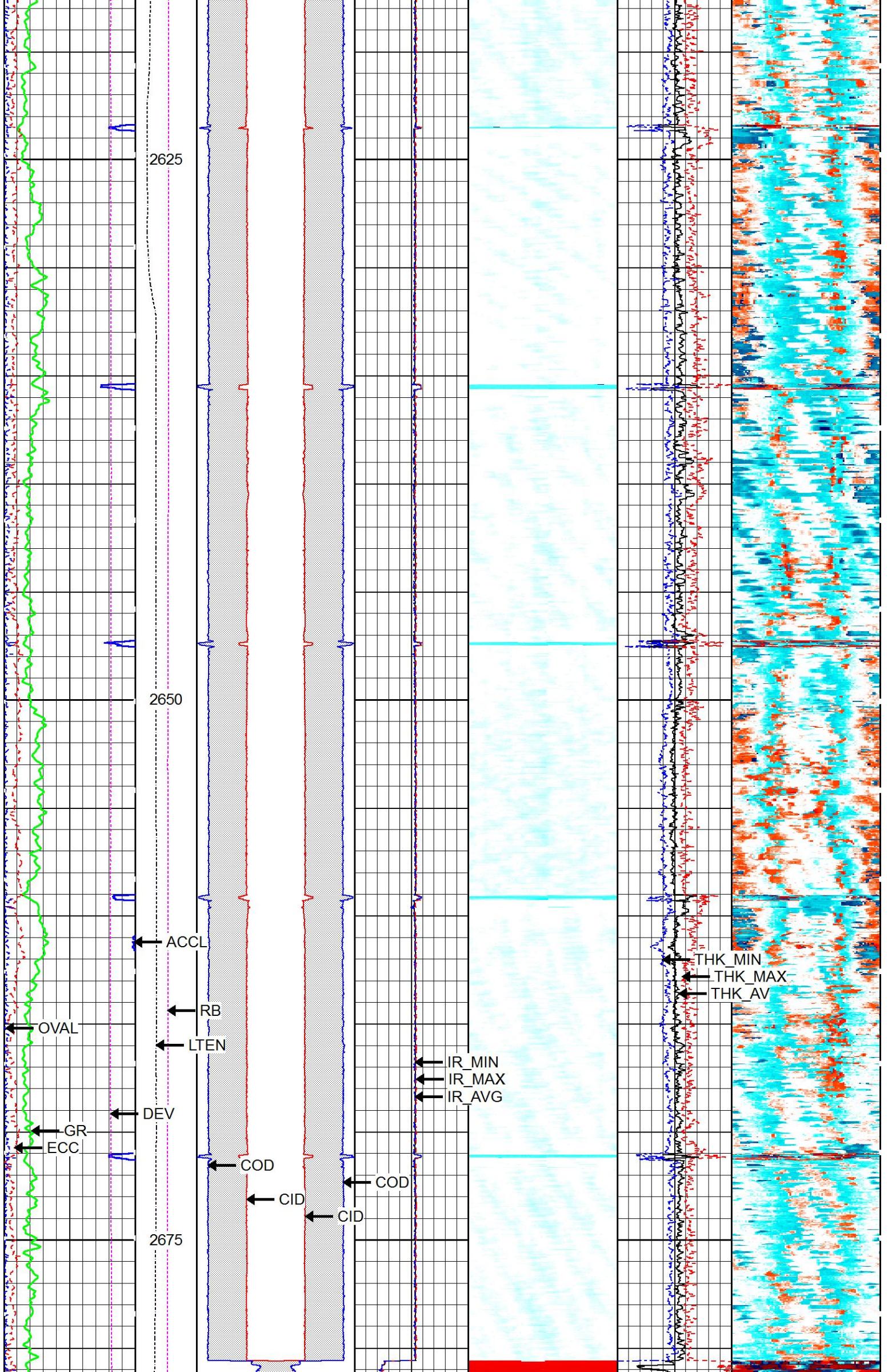


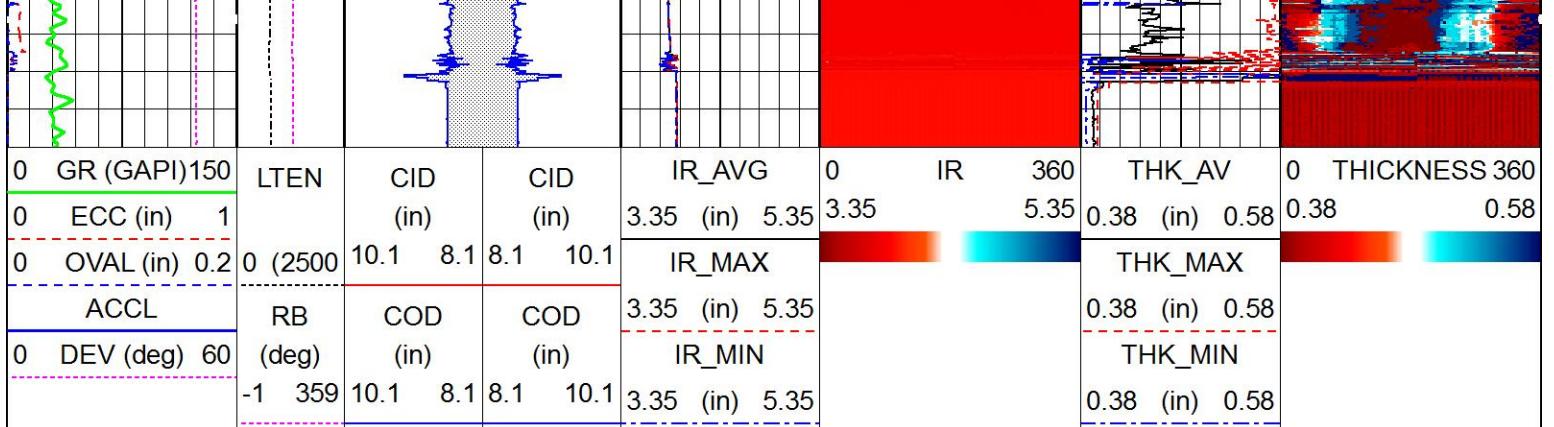












HALLIBURTON

SCALE 1:200

Calibration Report												
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Dataset Pathname	pass5											
Dataset Creation	Sun Aug 16 08:50:56 2015											
Circumferential Acoustic Scanning Tool Downhole Calibration Report												
Serial-Model:				7_P002-7 SCAN								
Calibration Performed:				Sun Aug 16 06:40:46 2015								
<b>Averaged Results</b>												
Name			Value			Units						
TT-Main			52.7			usec						
Amp-Main			125.0									
Frq-Main			236.8			khz						
TT-Mud			43.6			usec						
Amp-Mud			70.1									
TT-LW1			52.1			usec						
TT-LW2			98.5			usec						
Amp-LW1			131.3									
Amp-LW2			49.5									
Frq-LW			236.9			khz						
TT-MW1			43.7			usec						
TT-MW2			83.3			usec						
Amp-MW1			70.0									
Amp-MW2			26.5									
Frq-MW			283.5			khz						
<b>Calibrated Offsets</b>												
Name			Value									
TCAL			6.4									
MCAL			3.9									
<b>XY Accelerometers Calibration Report</b>												
Performed:		(Not Performed)										
		Low Read.	High Read.			Low Ref.	High Ref.					
X Accelerometer		0.000	1.000	gee			0.000	1.000 gee				
Y Accelerometer		0.000	1.000	gee			0.000	1.000 gee				
<b>Cement Bond Log Shop Calibration Report</b>												
Serial-Model:				11390783-A								
Calibration Report Date:				Mon Aug 17 06:40:46 2015								

## Free Pipe Calibration

	Measured	Units
TT	263.0	usec
Amplitude	704.8	mV
Log Base Line	26.2	mV

## Calibration References and Gain

Name	Value	Units
Pipe O.D.	5.500	in
Pipe Weight	17.0	lb/ft
Pipe Ref. Amp.	71.9	mV
Amp. Gain	0.106	

## Gamma Ray Calibration Report

Type / Serial: 002 / 10009938

## SHOP CALIBRATION (Not Performed)

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0		1.0000		cps

## PRIMARY VERIFICATION

Background	0.0			cps
Calibrator	0.0			cps
Difference			0.0	GAPI

## BEFORE SURVEY VERIFICATION

Background	0.0			cps
Calibrator	0.0			cps
Difference			0.0	GAPI

## AFTER SURVEY VERIFICATION

Background	0.0			cps
Calibrator	0.0			cps
Difference			0.0	GAPI

Sensor	Offset (m)	Schematic	Description	Length (m)	O.D. (in)	Weight (lb)
CCL	10.68					
GR	9.99		TTTCU-002 (10009938) Through Tubing Telemetry Cartridge - Ultrawire  XHU-003 (10008389) Crossover Halliburton 1553 to Ultrawire  CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.33	1.69	40.00
Temp	7.03					



TT3FT	6.34		HCBLM-A (11390783) Halliburton HCBLM Tool	2.86	2.75	116.00
AMP3FT	6.34		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	0.66	3.13	25.00
			HAL-CAST-M-ELECT-CAST-M-Elect (11532.314) CAST M ELECTRONIC	2.75	30.00	
AccY2	0.00					
AccX2	0.00					
AccY1	0.00					
AccX1	0.00					
SCAN	0.00					
LOCTIM	0.00					
UTCTIM	0.00					
Dataset: bri-gt-01.db: field/well/run1/pass5						
Total length: 11.31 m						
Total weight: 519.00 lb						
O.D.: 7.00 in						

Company Aardwarmte Vierpolders  
 Well BRI-GT-01  
 Field Vierpolders  
 County Zuid-Holland

Country THE NETHERLANDS

HALLIBURTON

SCALE 1:200