

Company: Noble Energy Inc

Well: Wells Ranch AA22-631  
Field: Wattenberg  
County: Weld State: Colorado

County: Weld		<div>USI-LITE</div>	
Field: Wattenberg			
Location: SHL SWSW S22 T6N R63W			
Well: Wells Ranch AA22-631			
Company: Noble Energy Inc			
Logging Date	04-May-2016	LOCATION	
Run Number	One	Permanent Datum: Log Measured From: Drilling Measured From:	
Depth Driller	11877.0 F	GL KB KB	
Schlumberger Depth	6400.0 F	Elev: K.B. 4805.0 F	
Bottom Log Interval	-999.2 F	G.L. 4775.0 F	
Top Log Interval	100.0 F	D.F. 4805.0 F	
Casing Fluid Level	0.0 F		
Salinity			
Density	9.00 LB/G		
Fluid Level	0.0 F		
BIT/CASING/TUBING STRING			
Bit Size	8.500 IN		
From	6400.0 F		
To	-999.2 F		
Casing Size	5.50 IN		
Weight	20.00 LB/F		
Grade	N/A		
From	30.0 F		
To	11870.0 F		
Max Recorded Temp	192.5		
Logger on bottom (date)	04-May-2016		
Location	Fort Morgan CO		
Recorded By	Benjamin Marmon / Blanka Kesek		
Witnessed By	Bill Mansfield		

DEPTH SUMMARY LISTING

DEPTH SYSTEM EQUIPMENT

Depth Measuring Device	Tension Device	Logging Cable
Type: Serial Number: Calibration Date: Calibration Cable Type: Wheel Correction 1: Wheel Correction 2:	Type: Serial Number: Calibration Date: Calibrator Serial Number: Number Of Calibration Points: Calibration RMS: Calibration Peak Error:	Serial Number: Length: 24000.00000

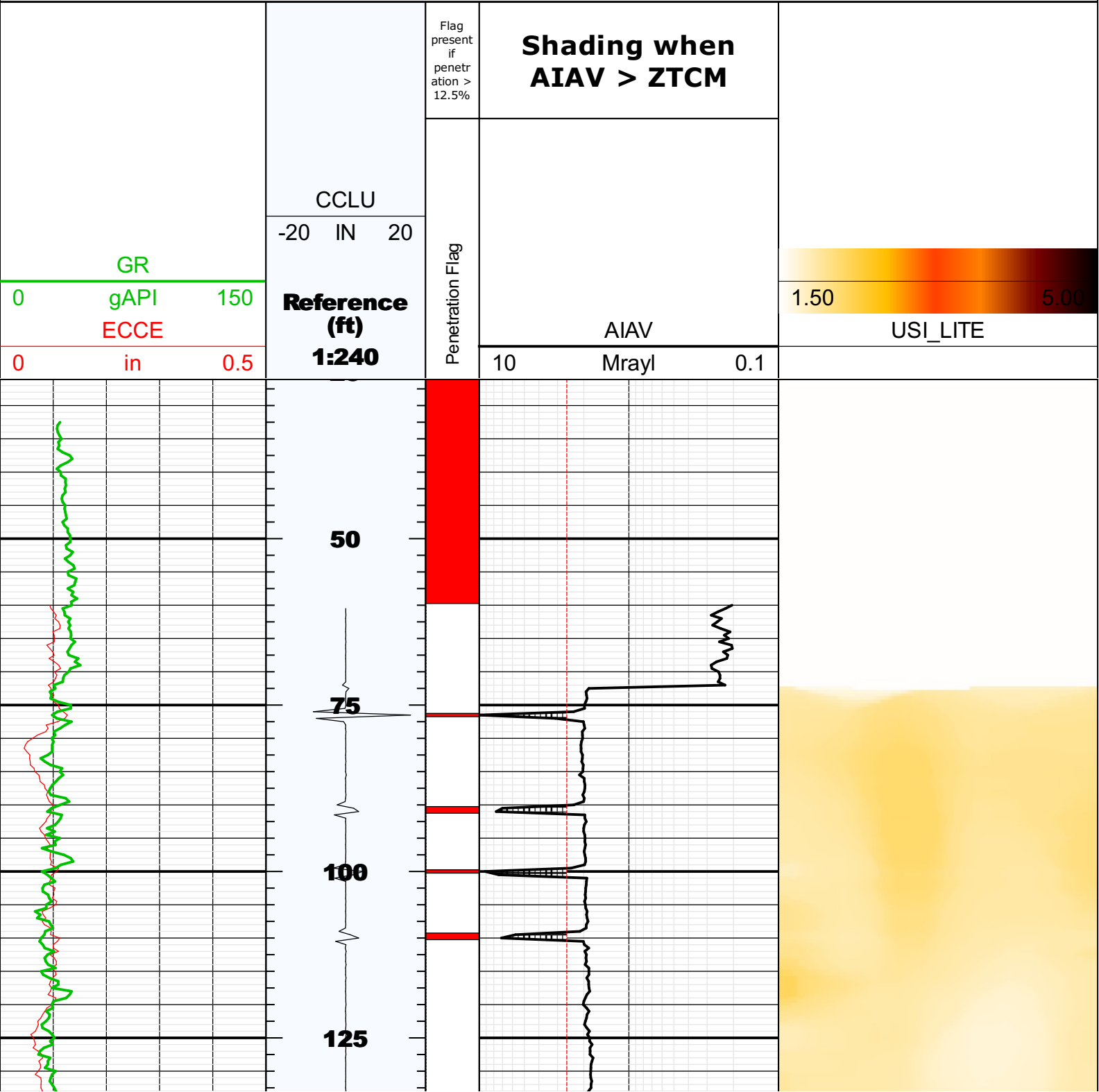
DISCLAIMER

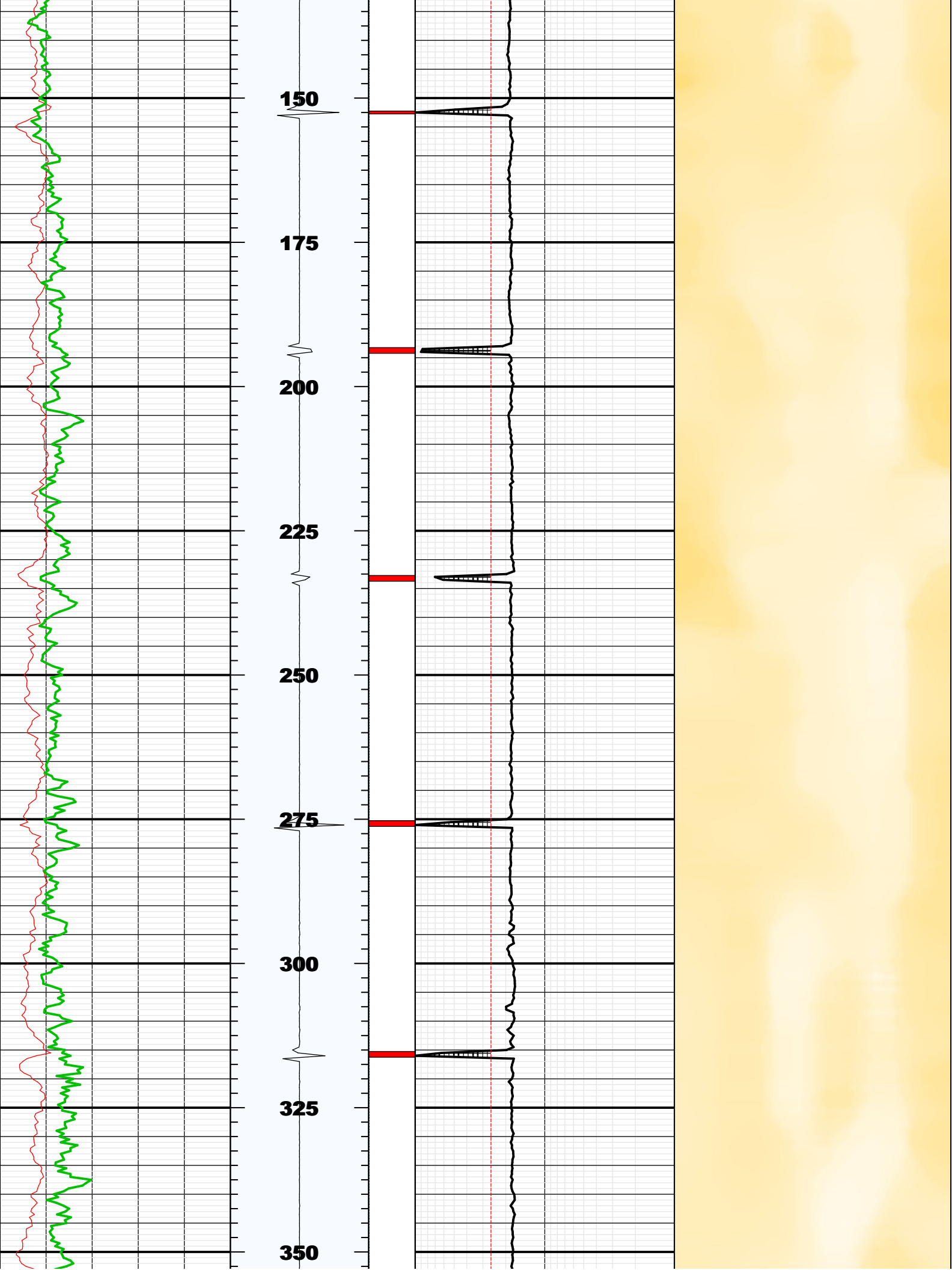
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRCTIONS ON USE OF THE RECORDED-DATA (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF ANR RELIANCE UPN THE RECORDED-DATA; AND (c)CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISIONS MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA

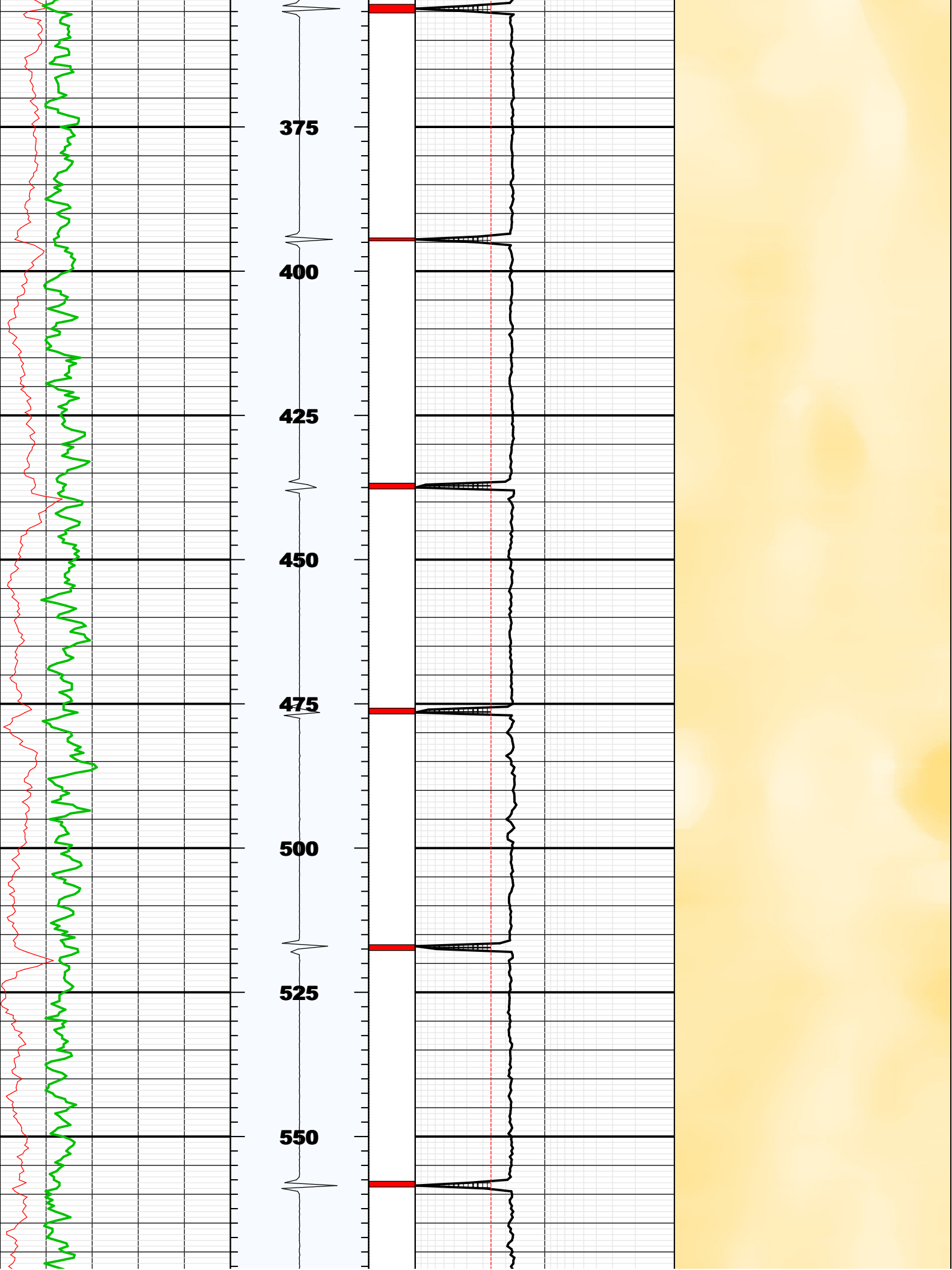
This is the first log in the well.  
Toolstring ran as per toolsketch.  
Log Objective Cement Evaluation.  
0PSI Repeat Pass and 2500 PSI Main Pass.  
Estimated TOC@ 1971'  
Bottom Log Interval 6400'  
Log started at begining of dog leg.

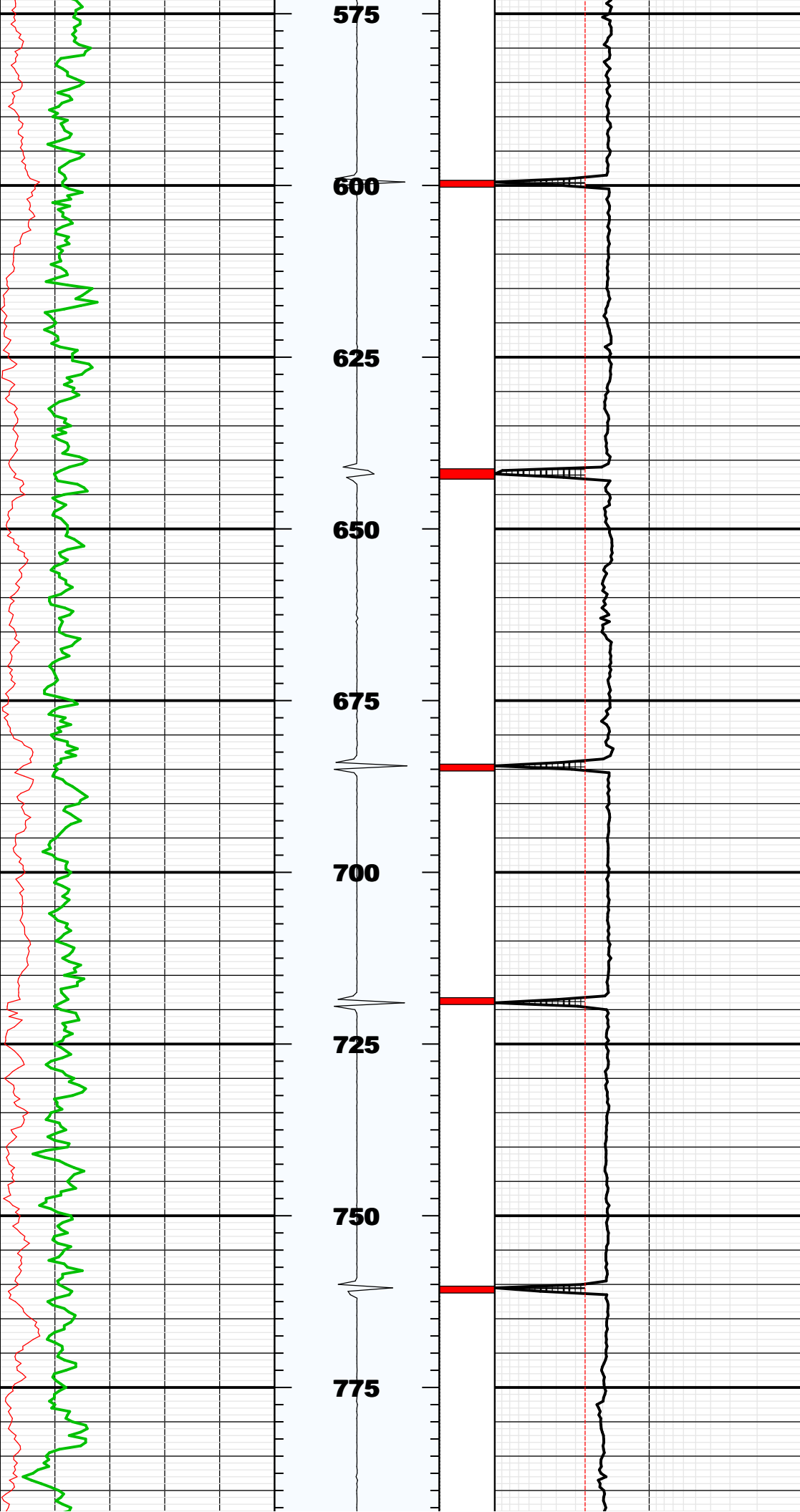
Main Pass

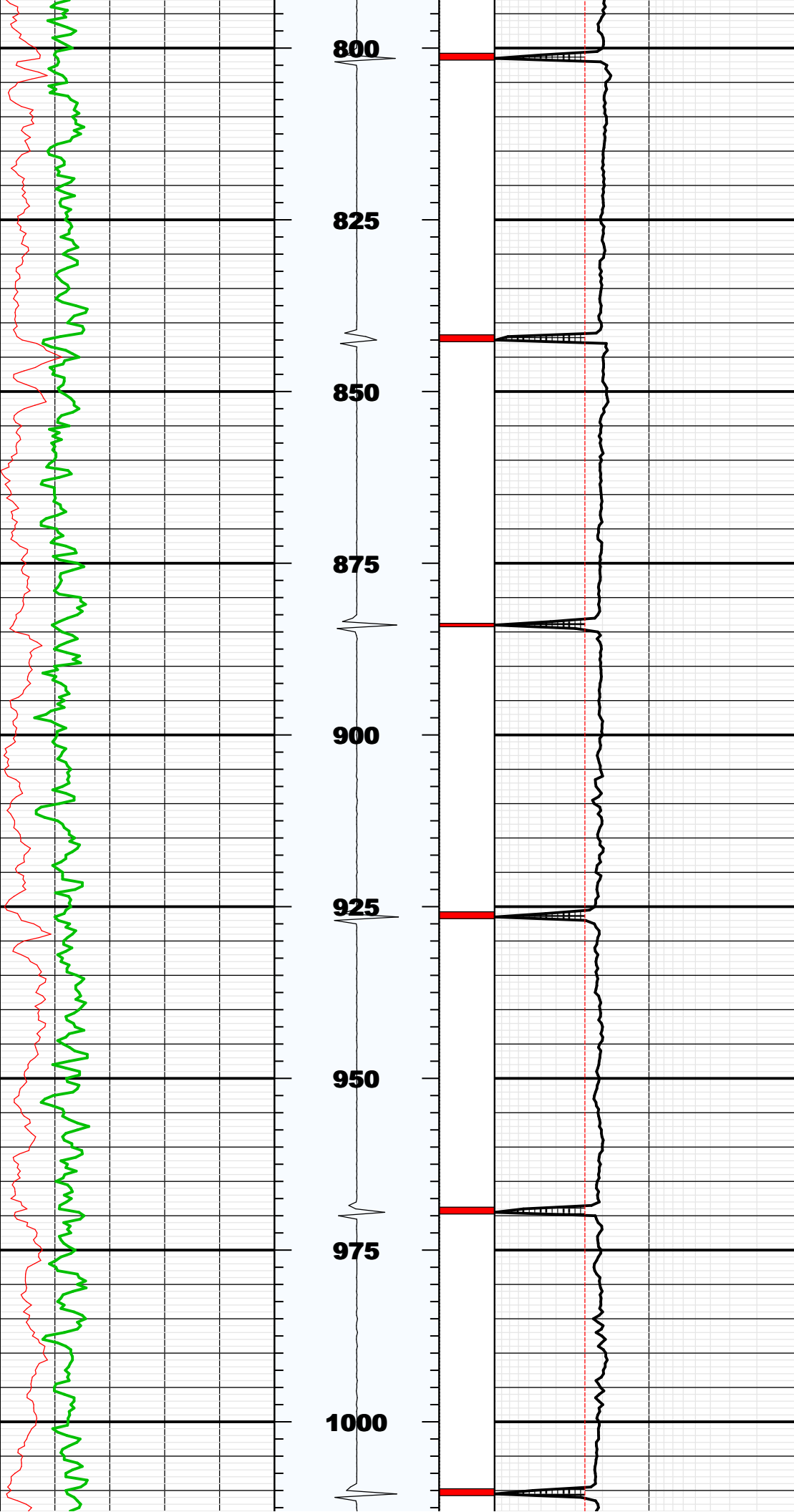
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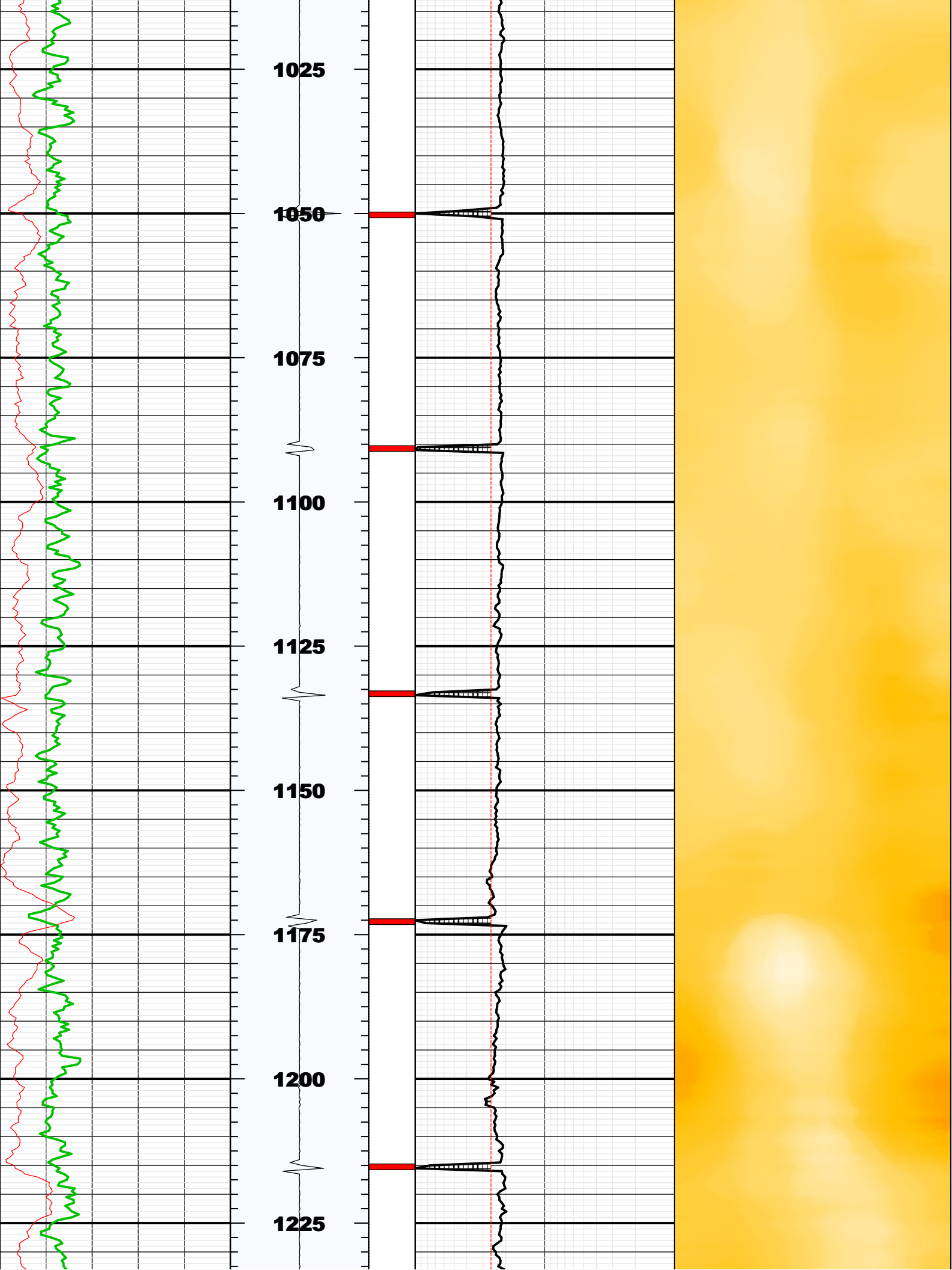


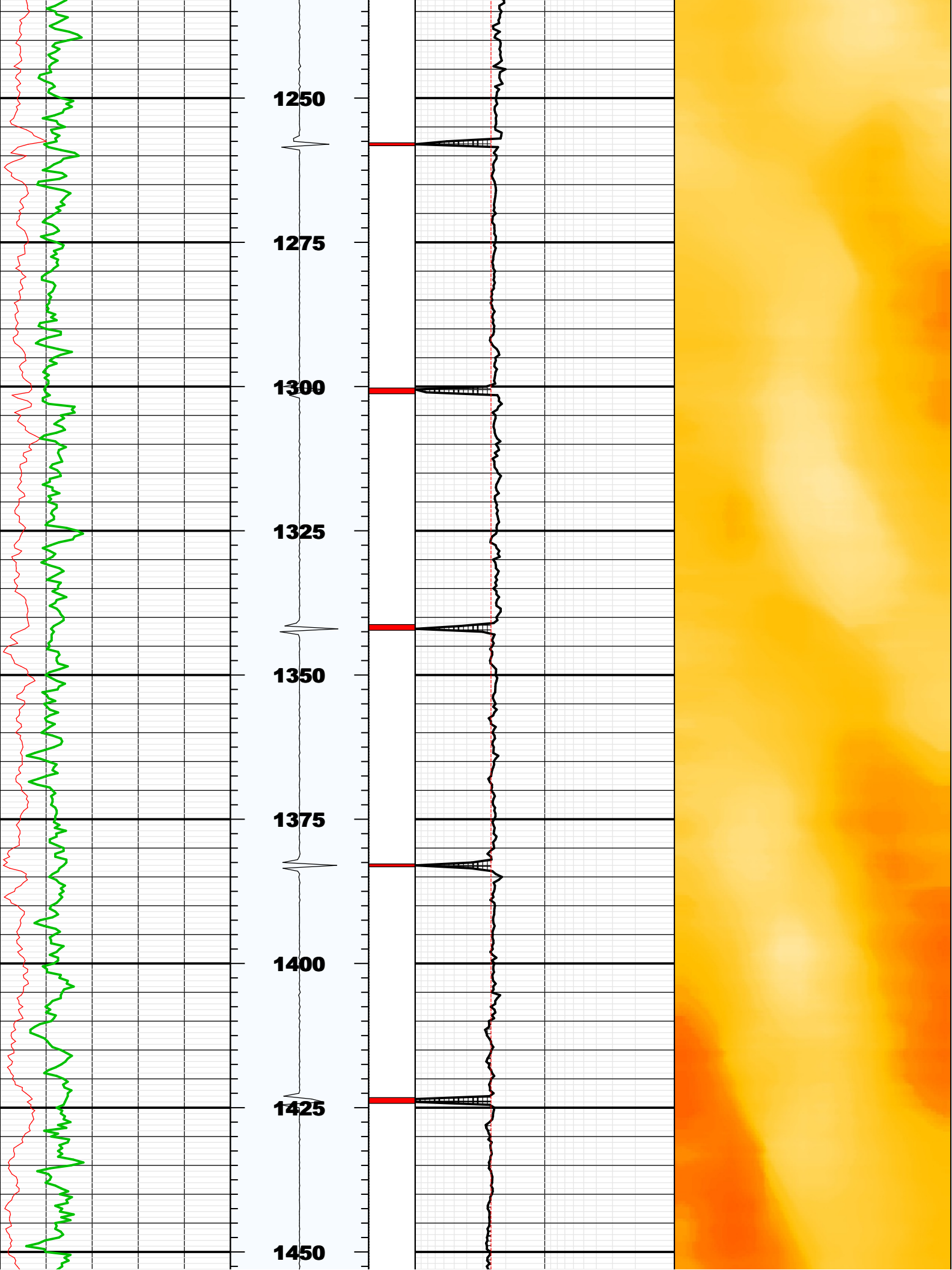


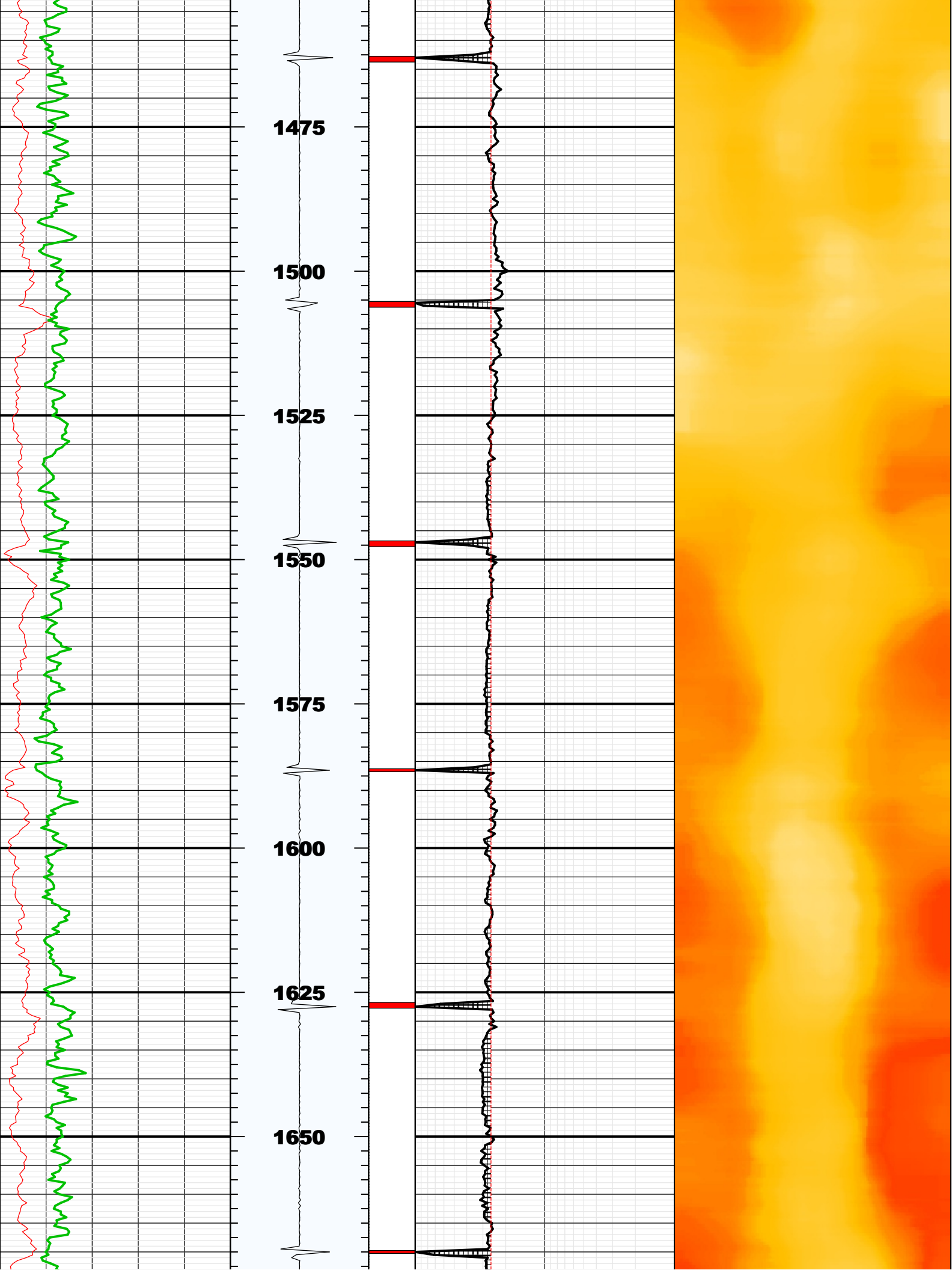


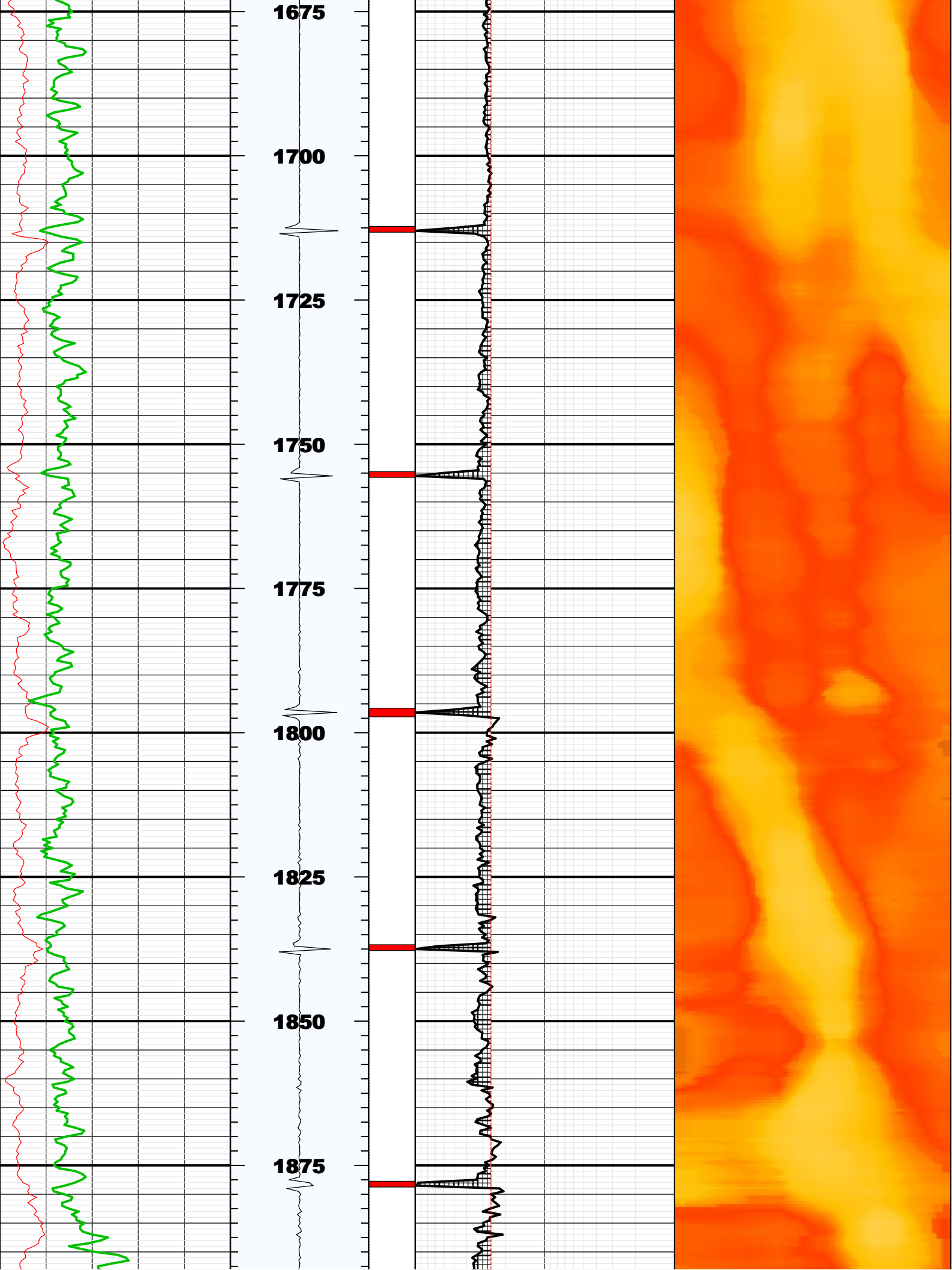


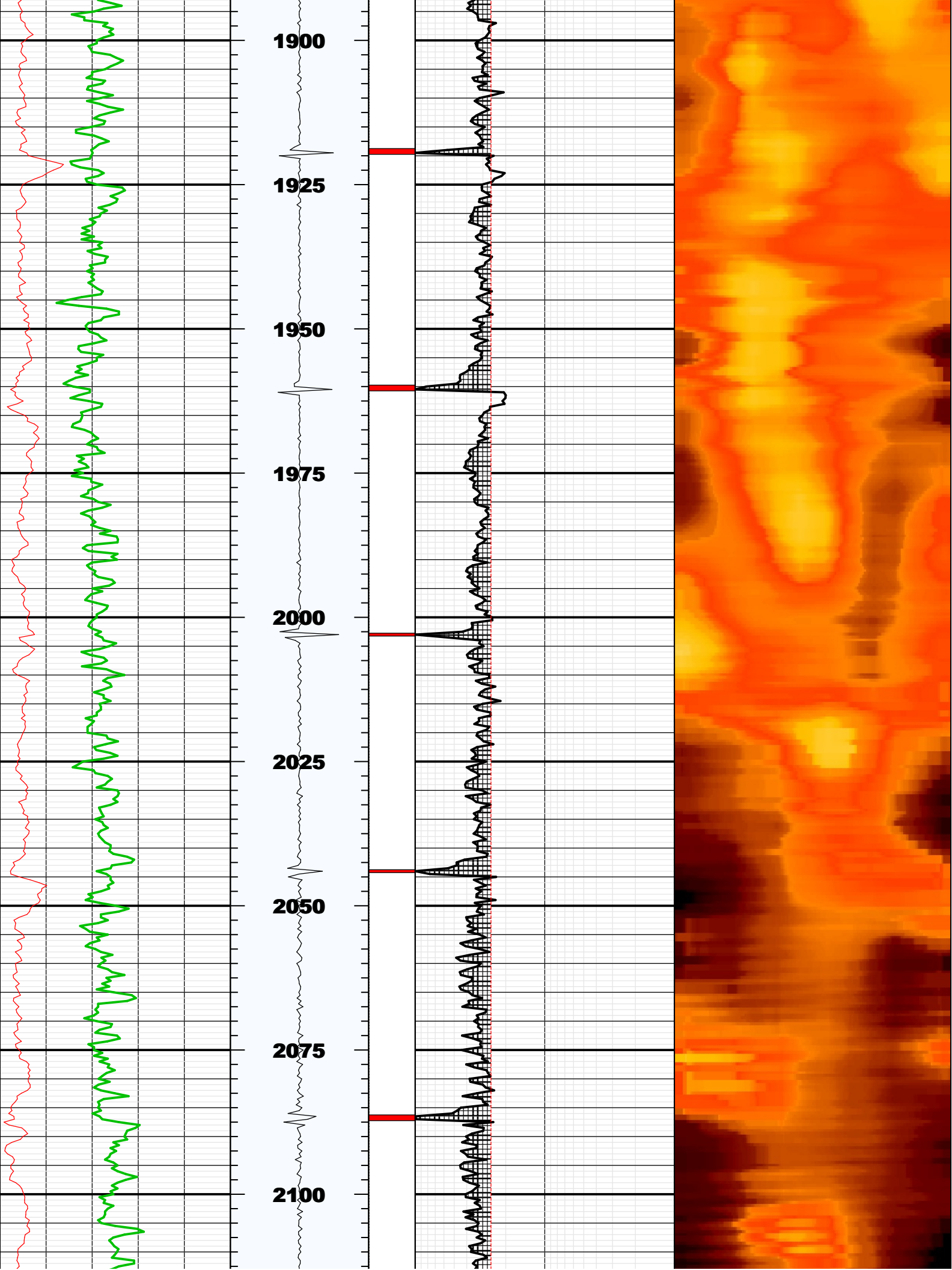


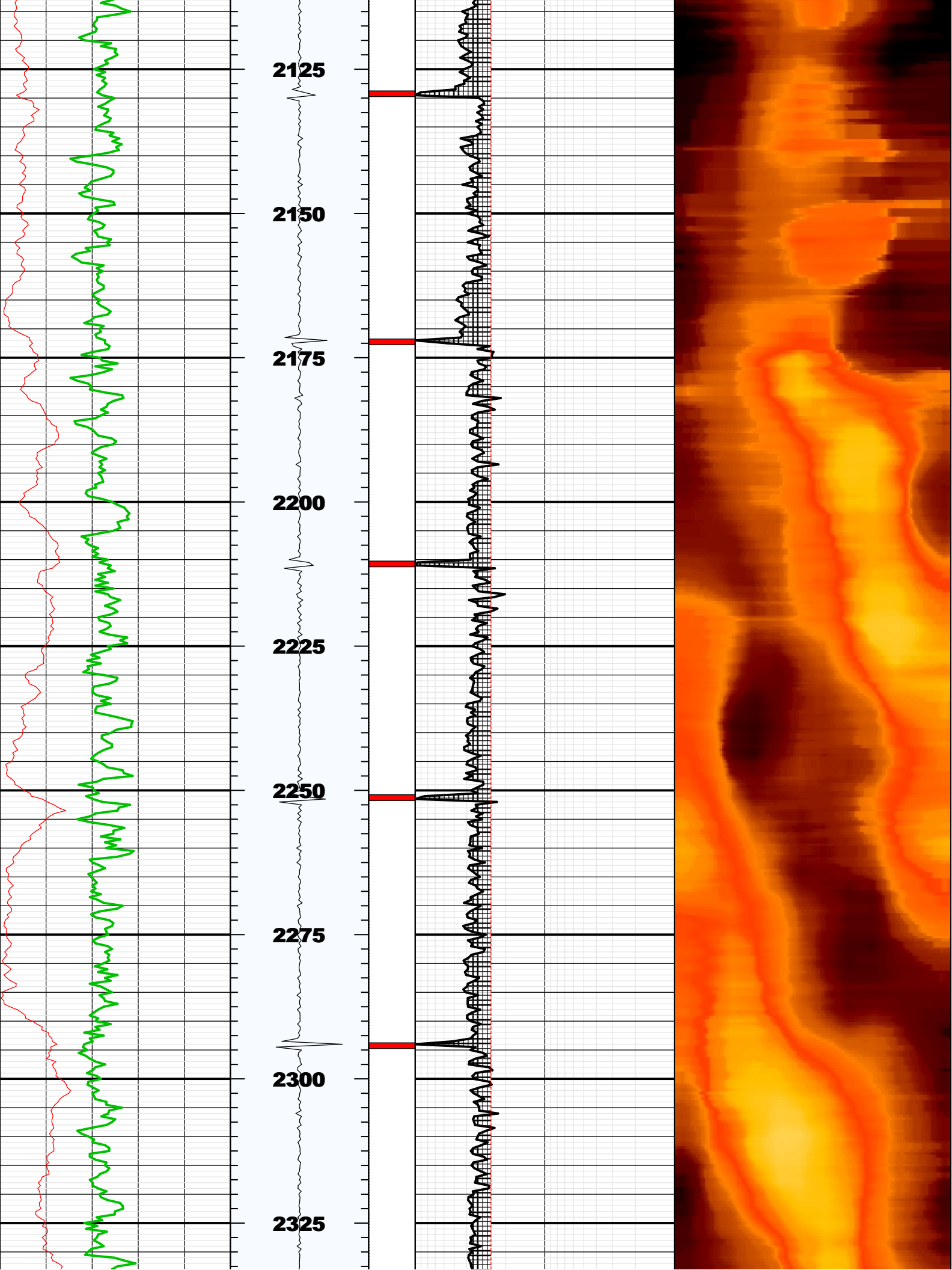


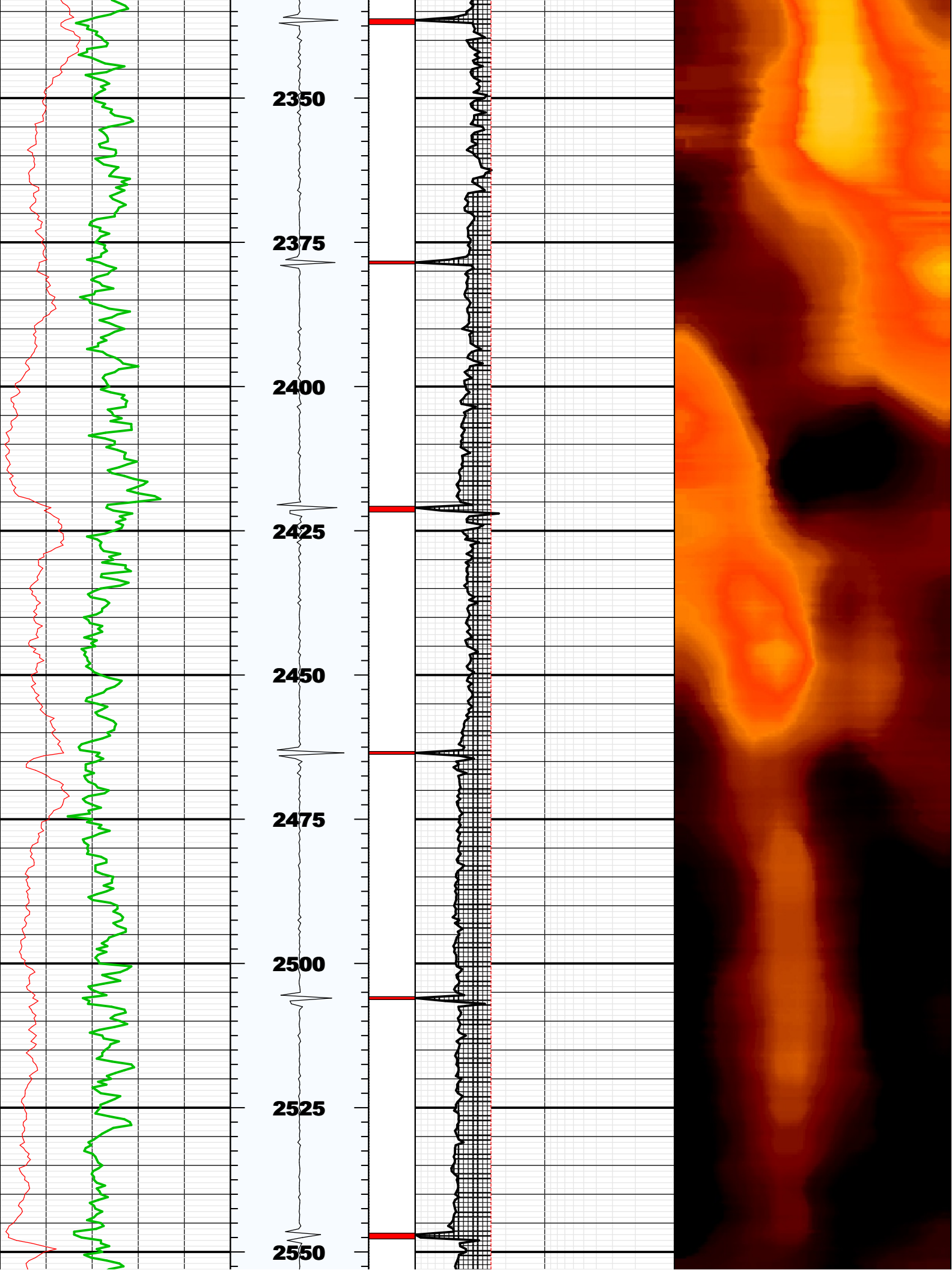


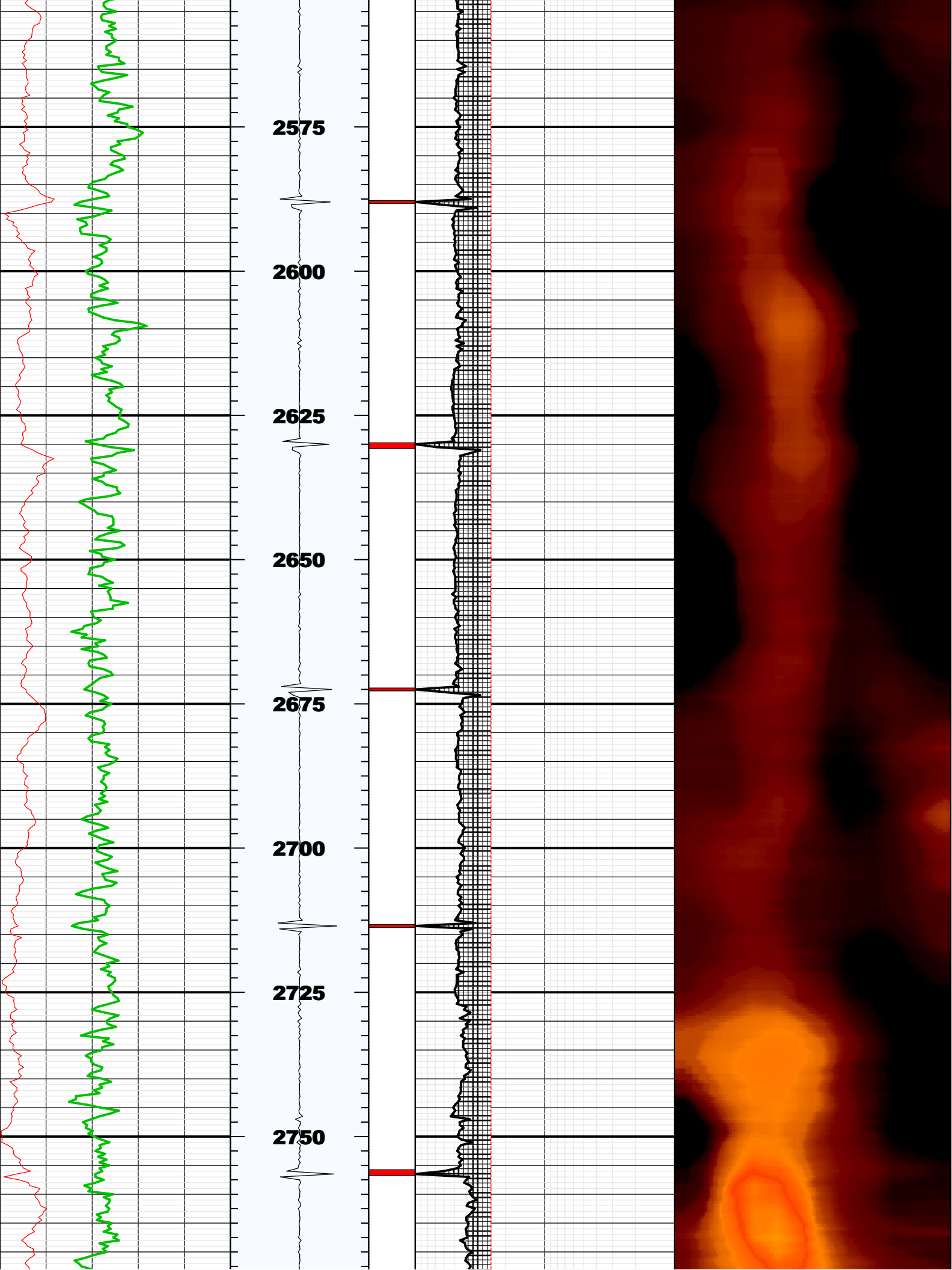


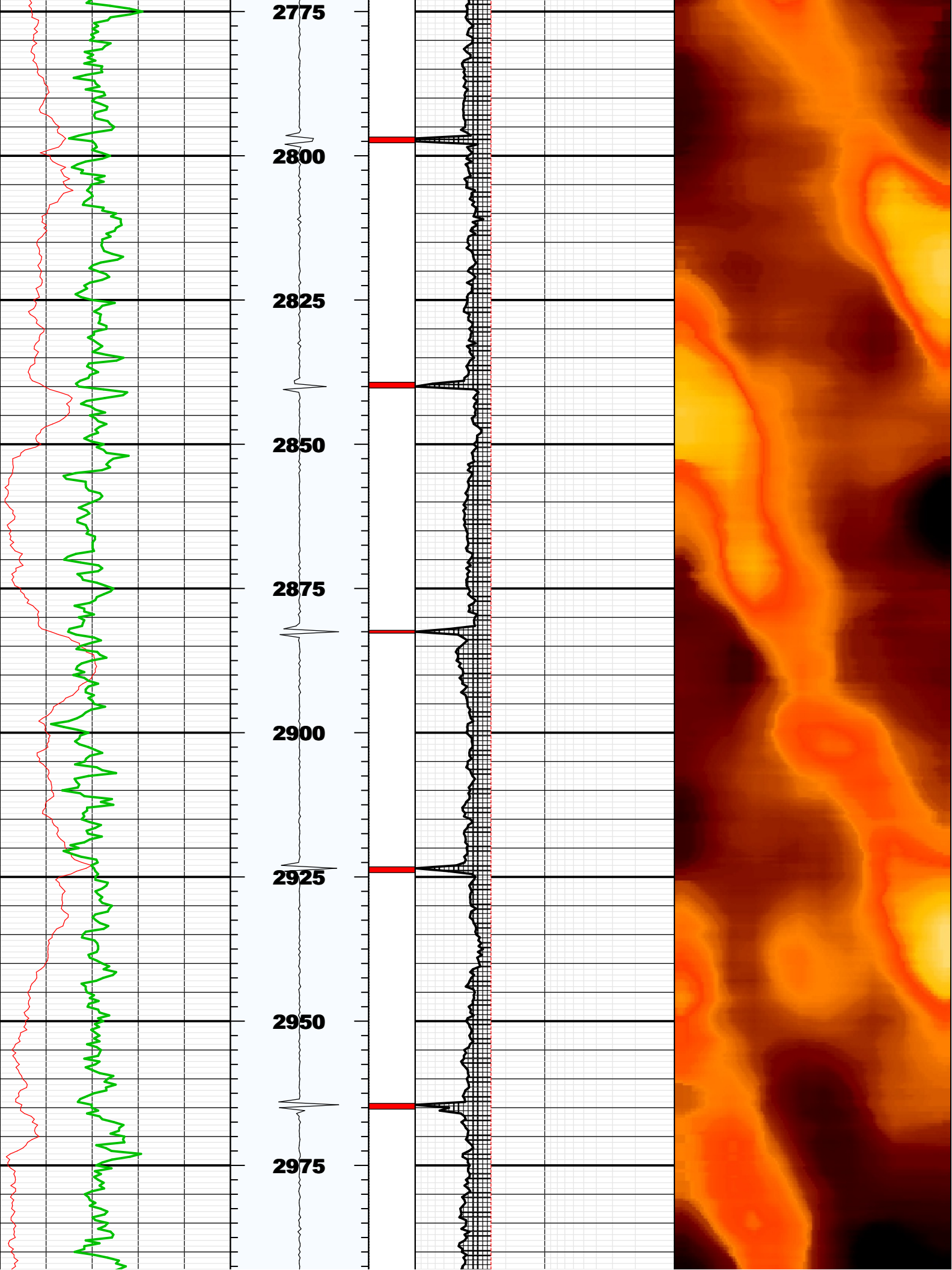


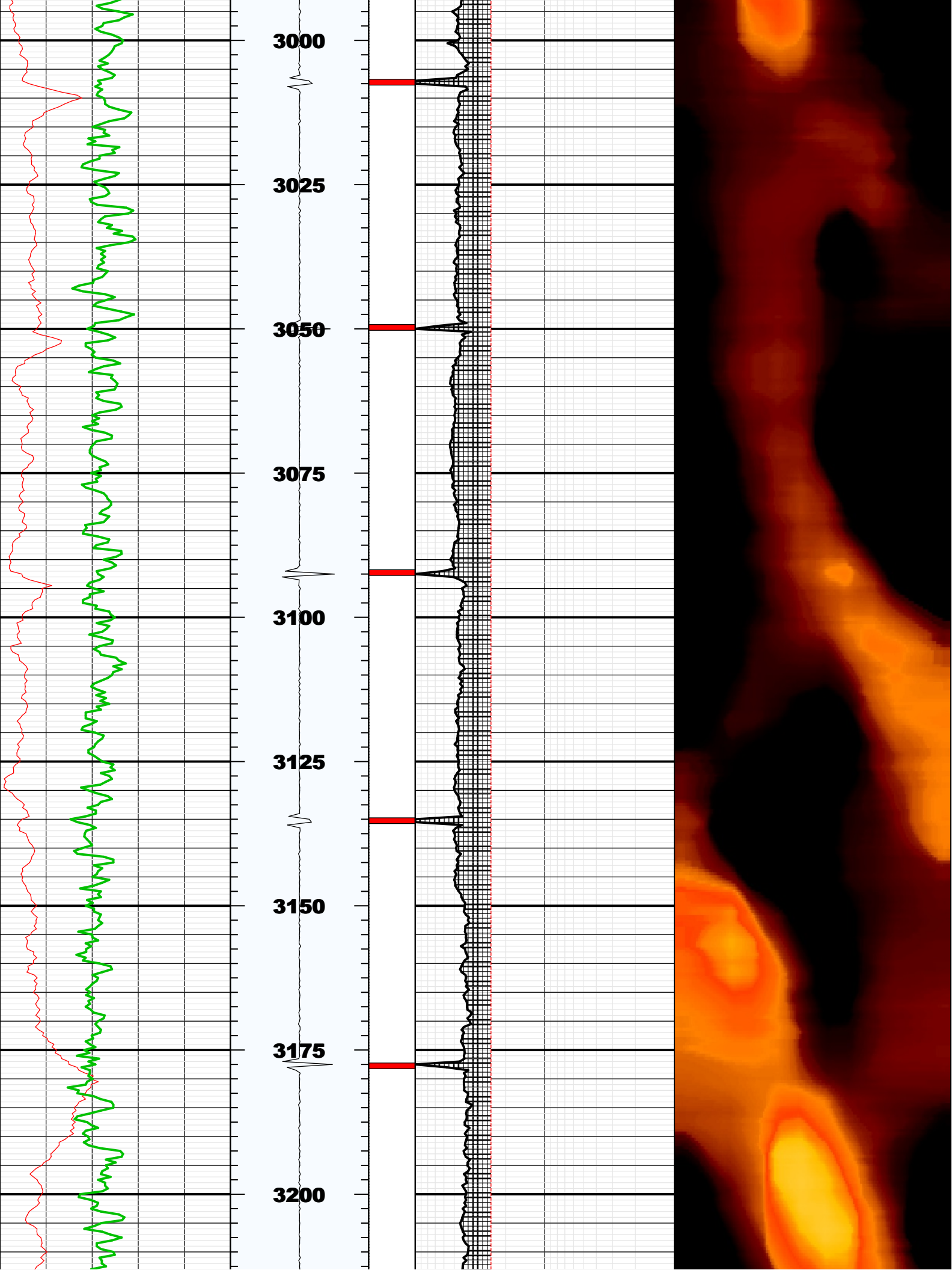


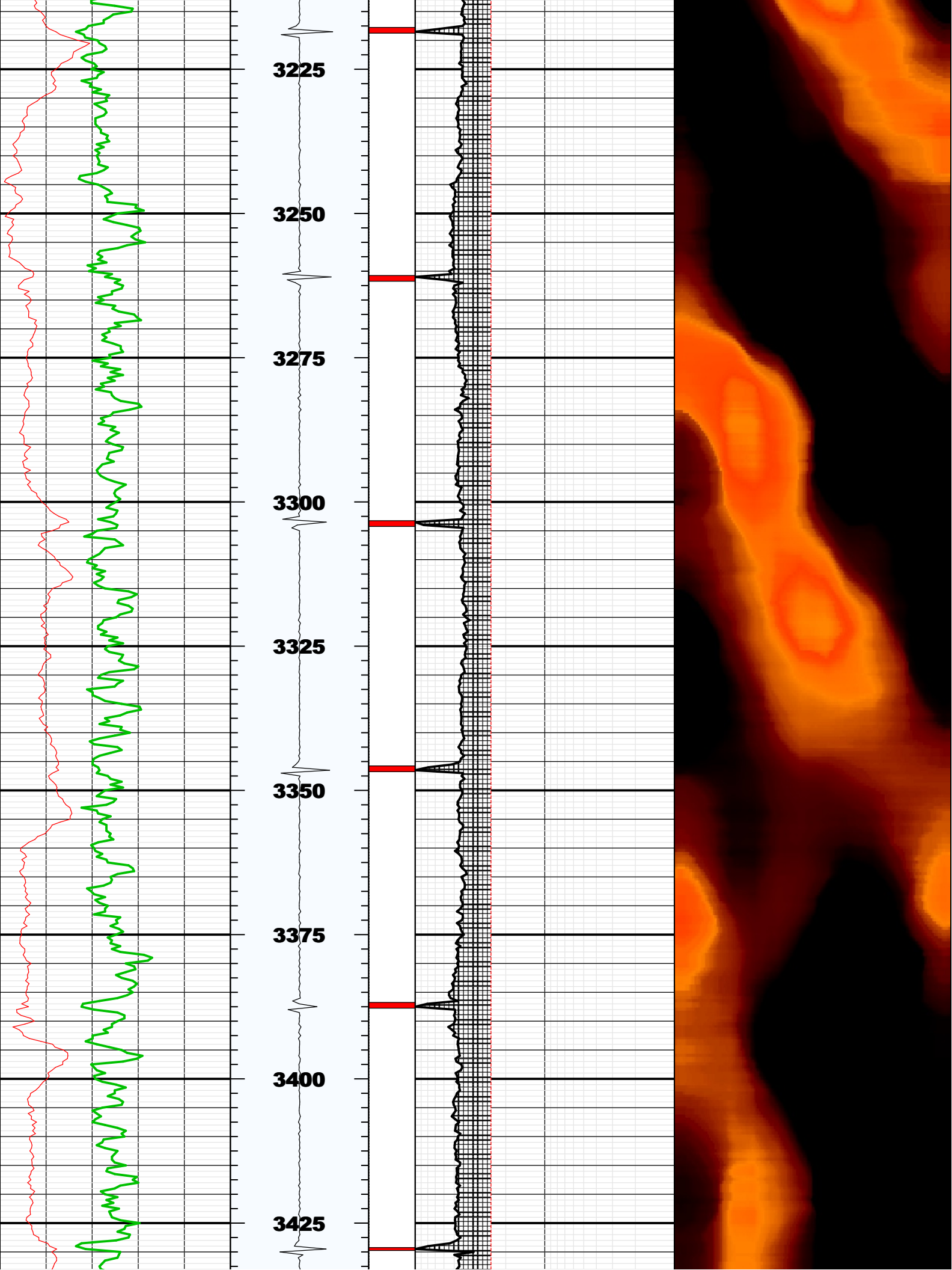


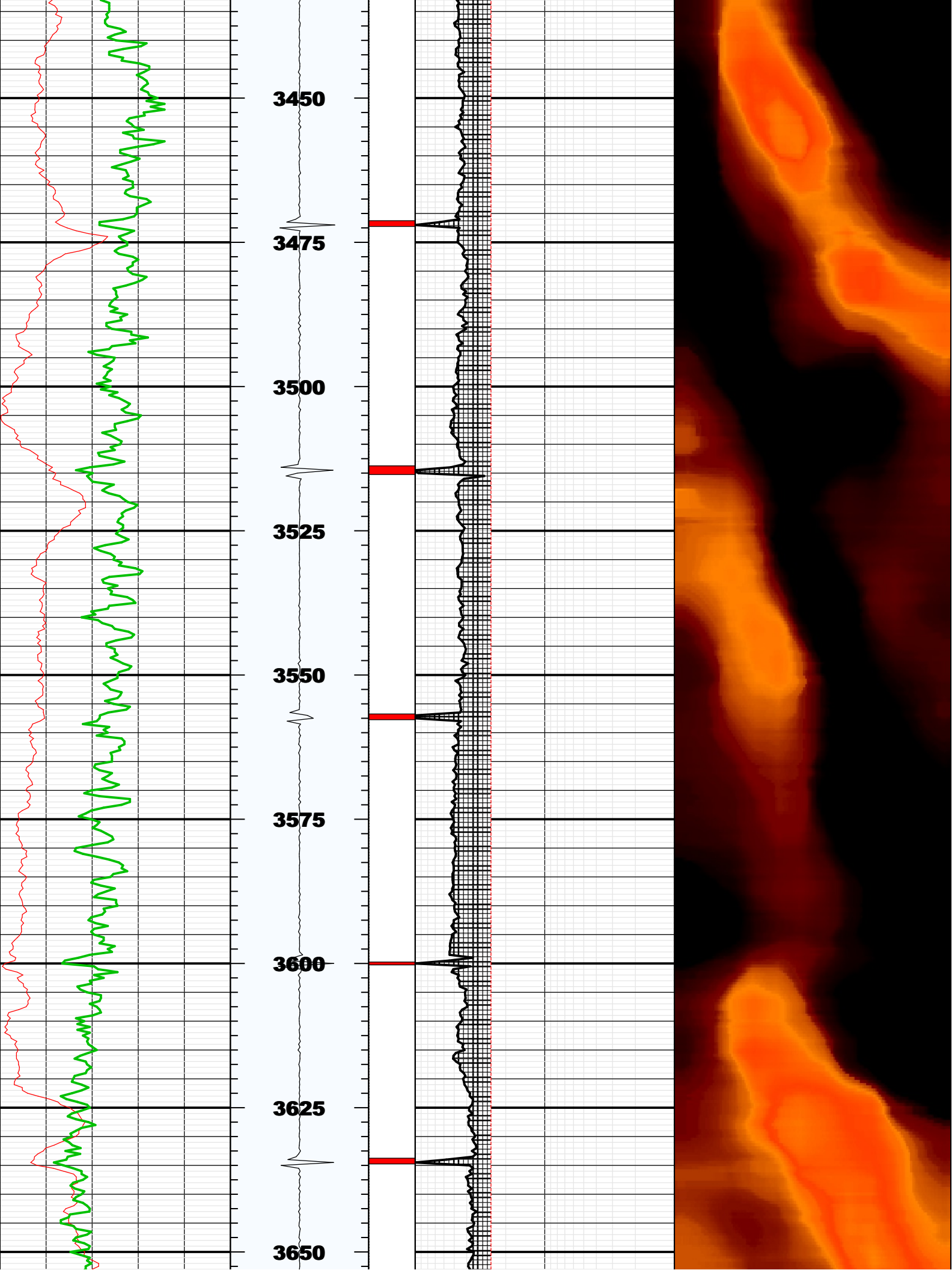


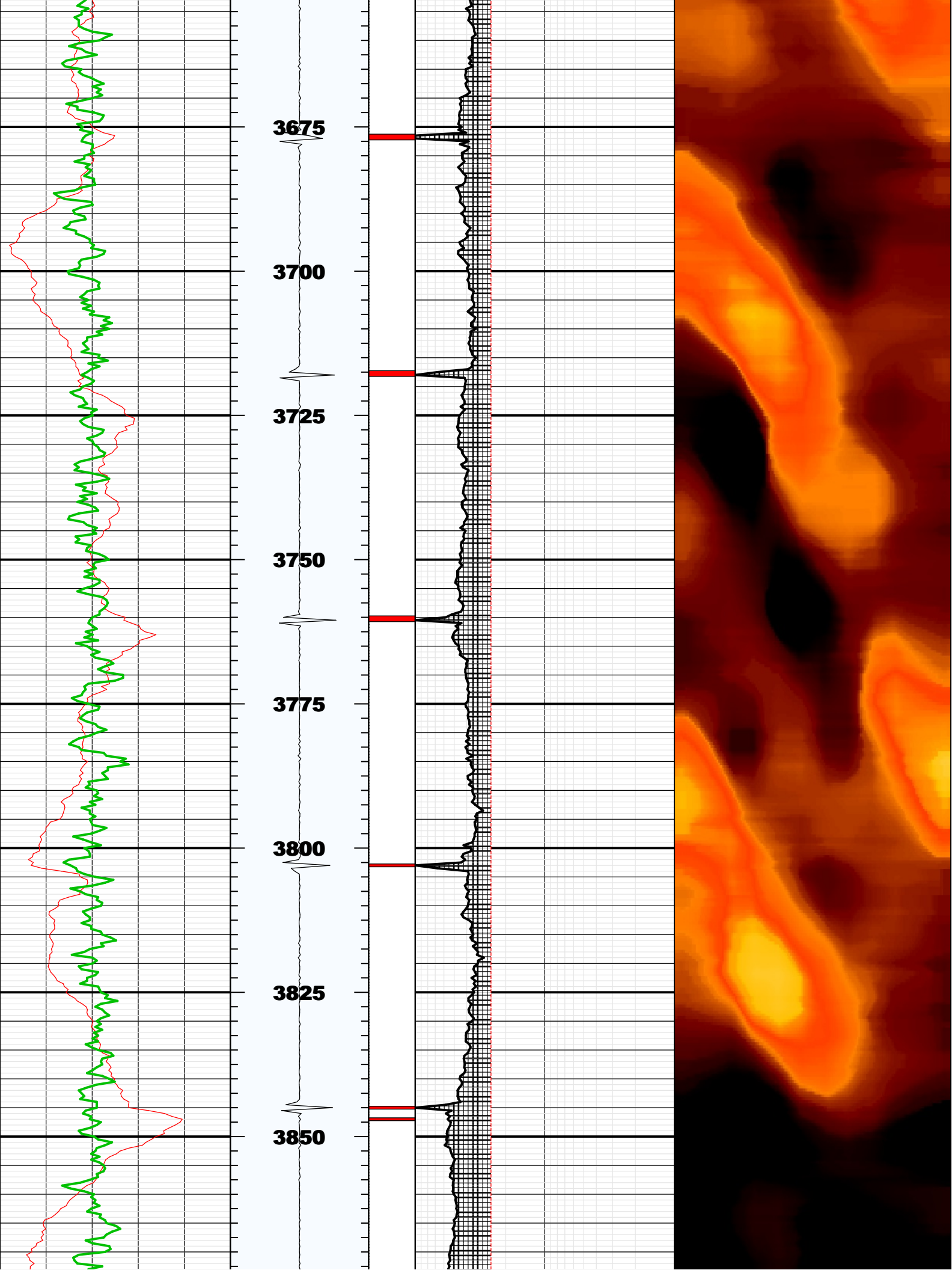


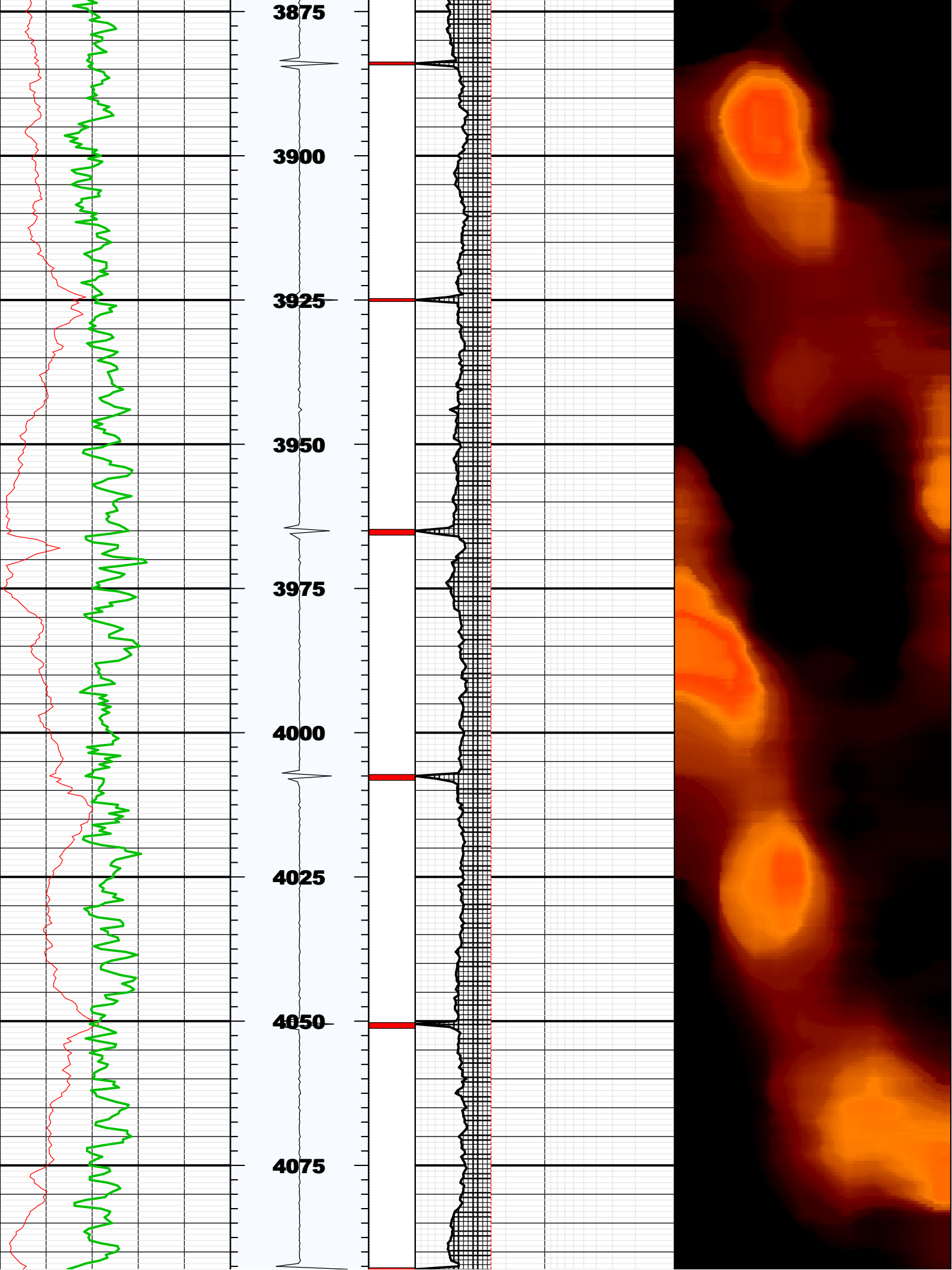


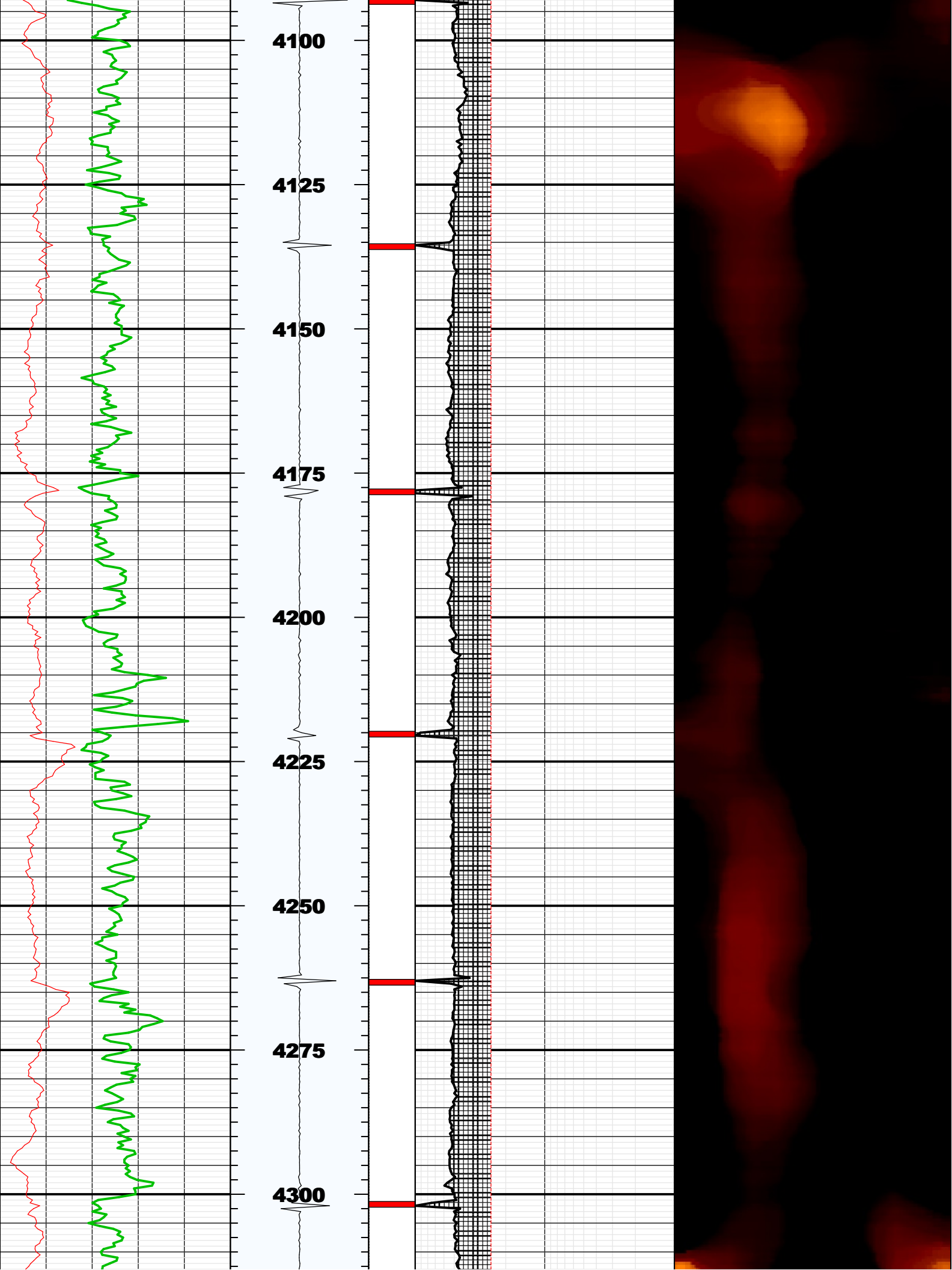


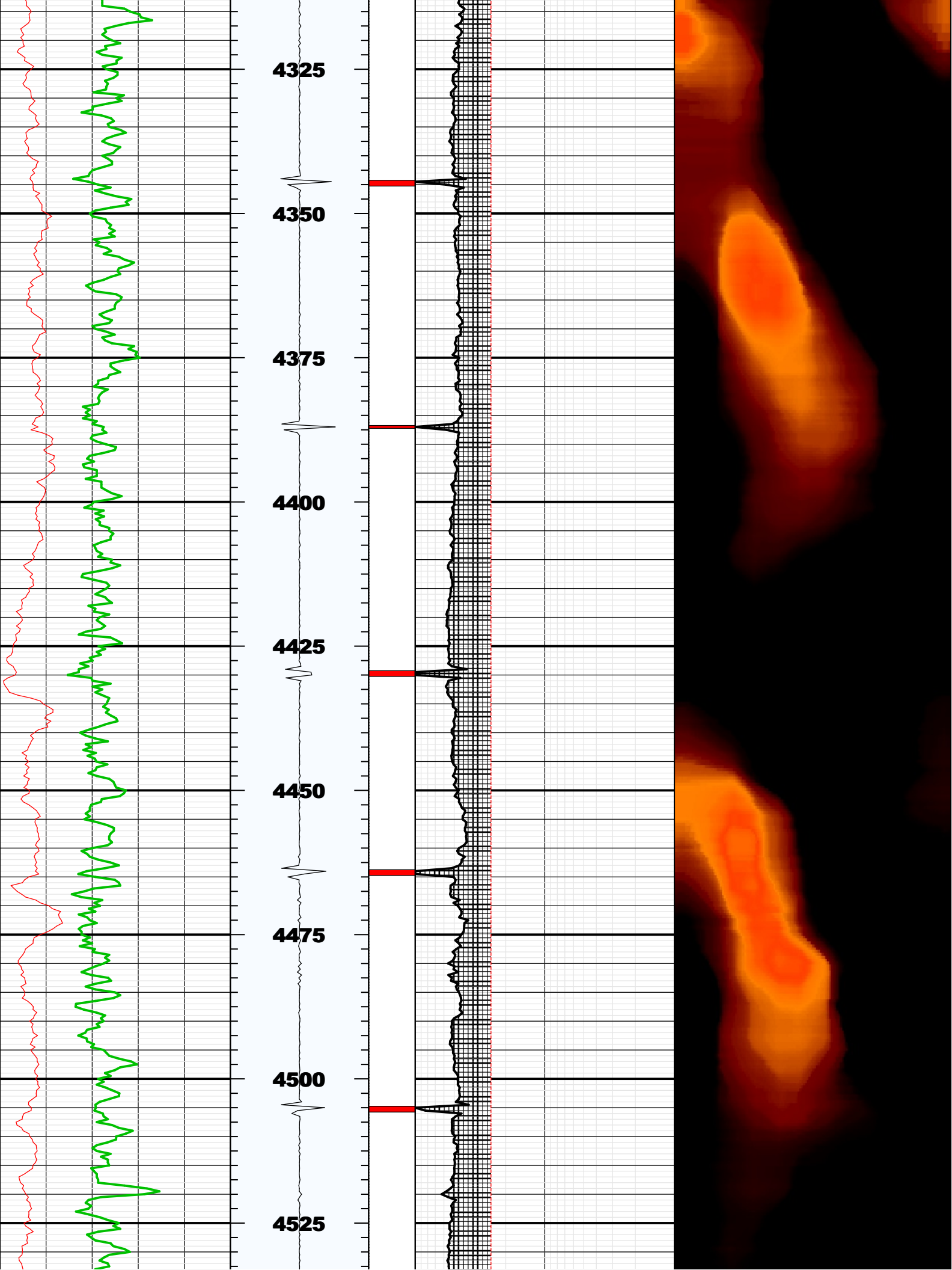


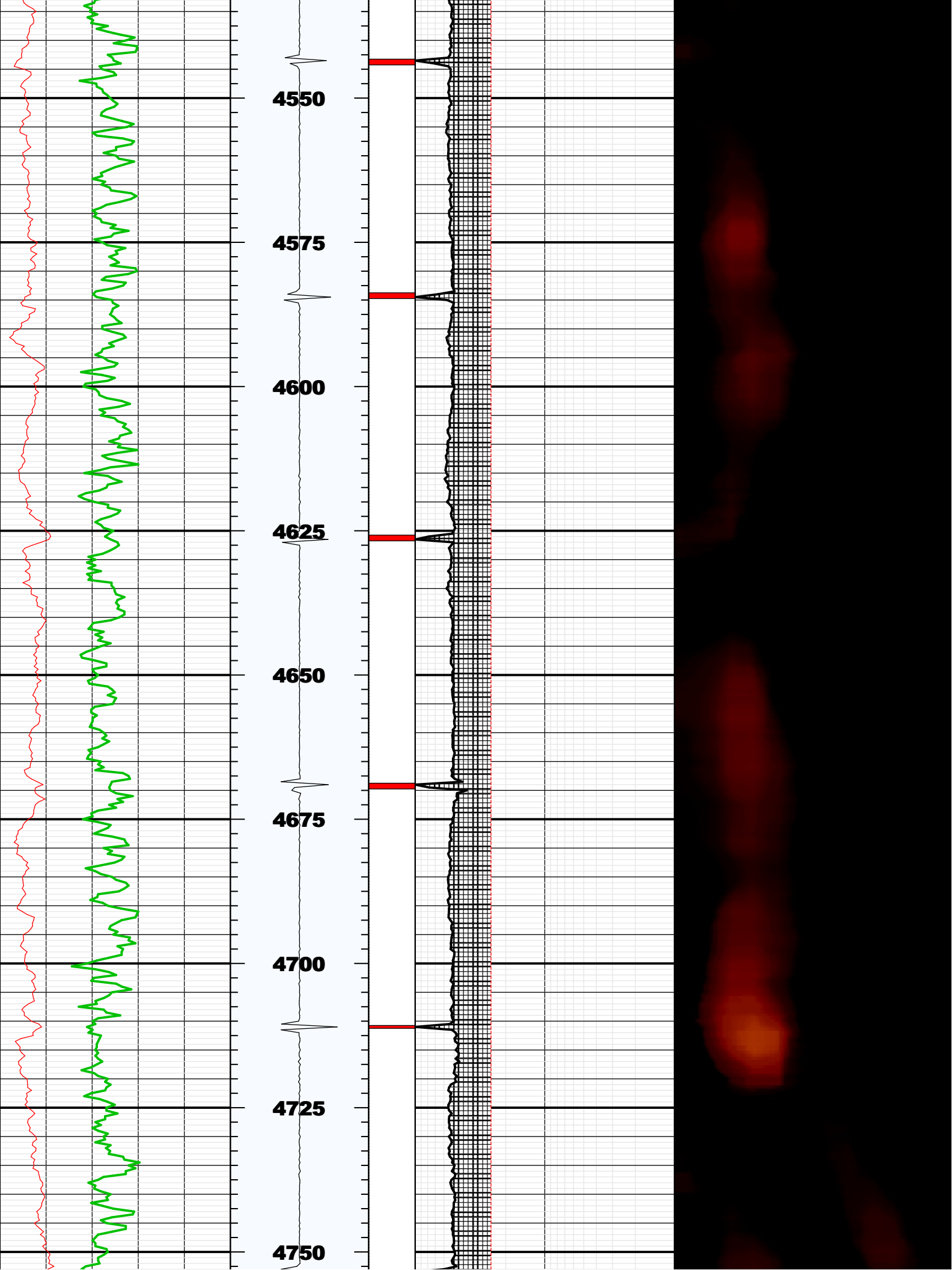


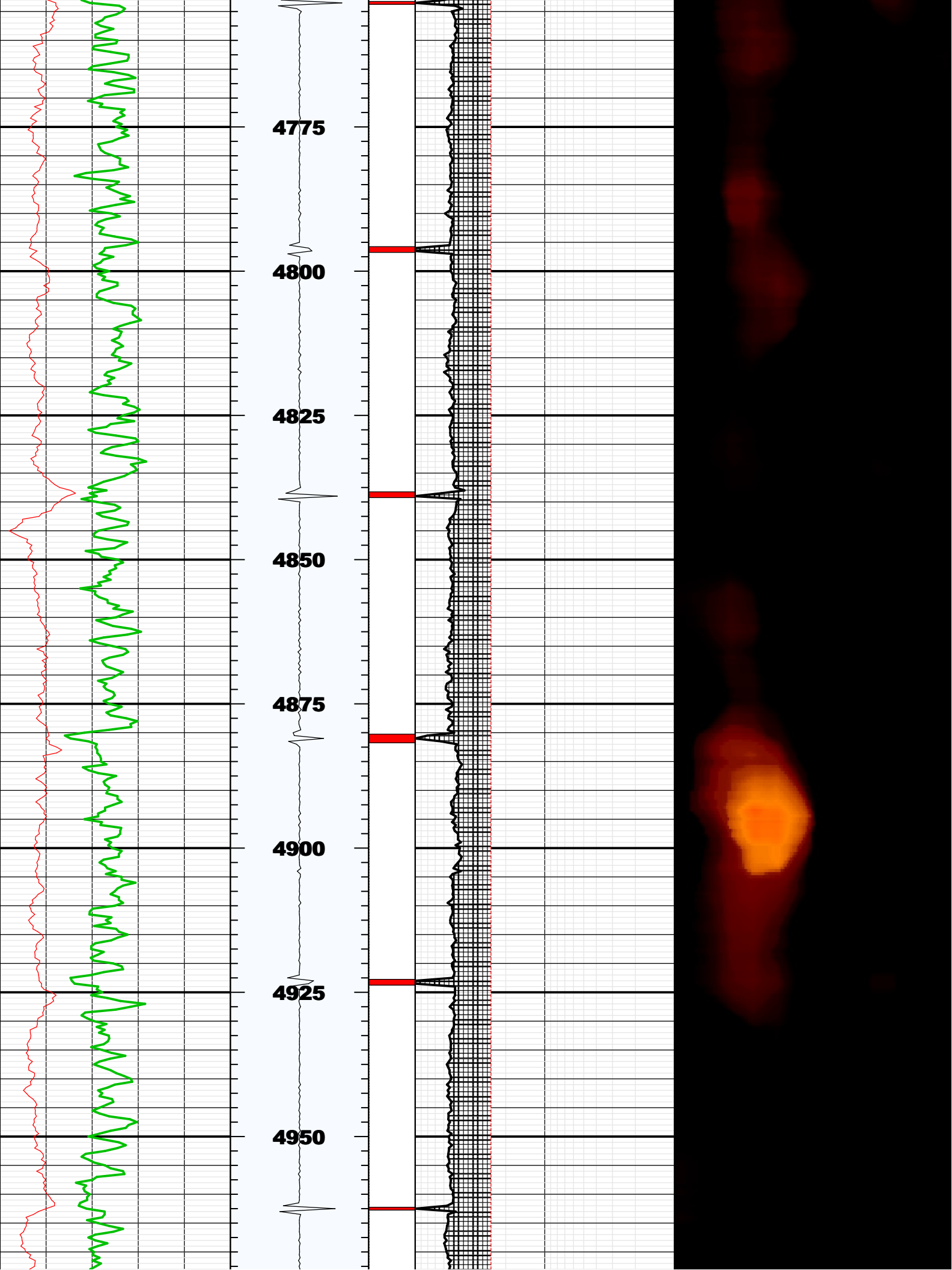


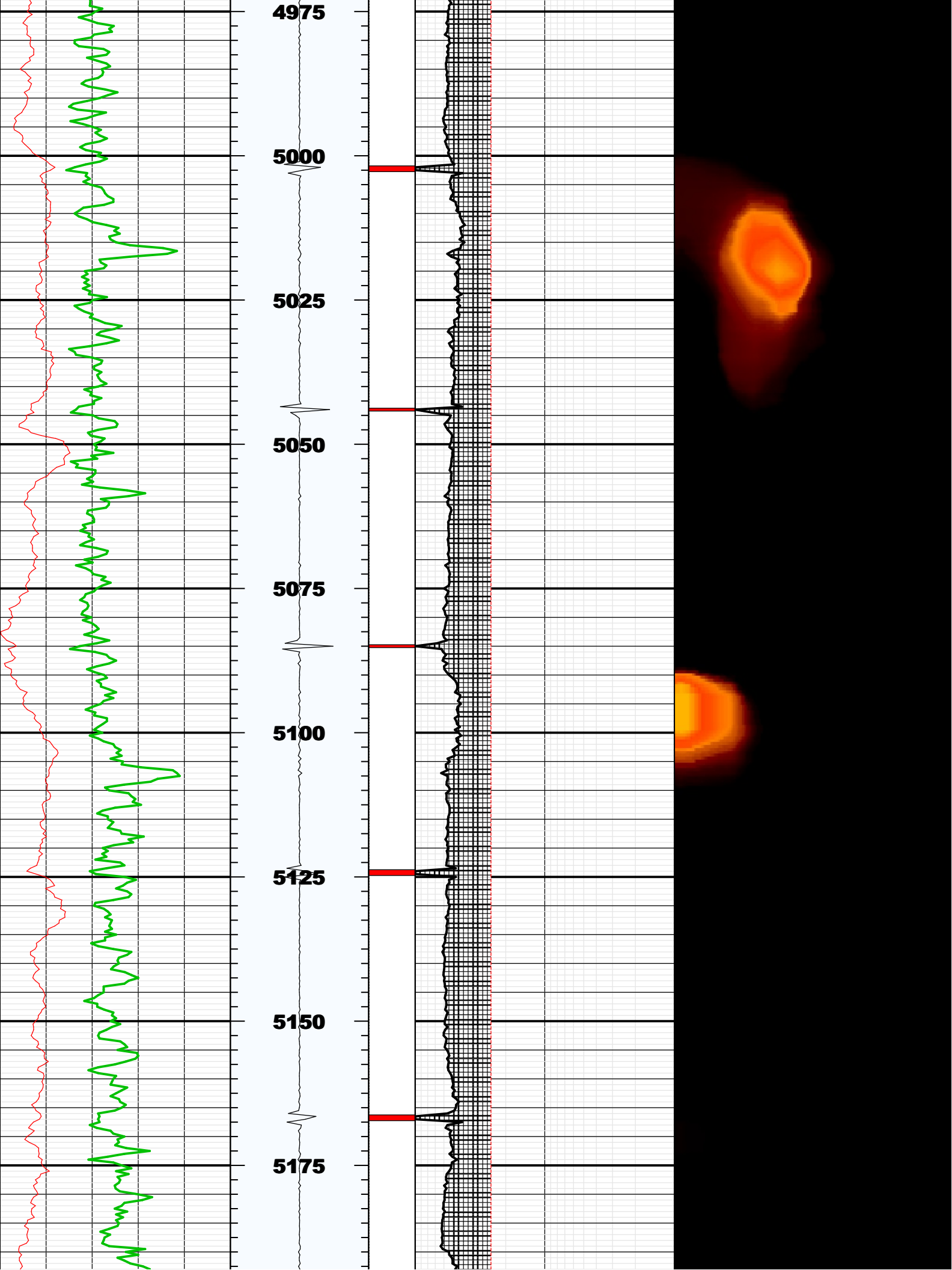


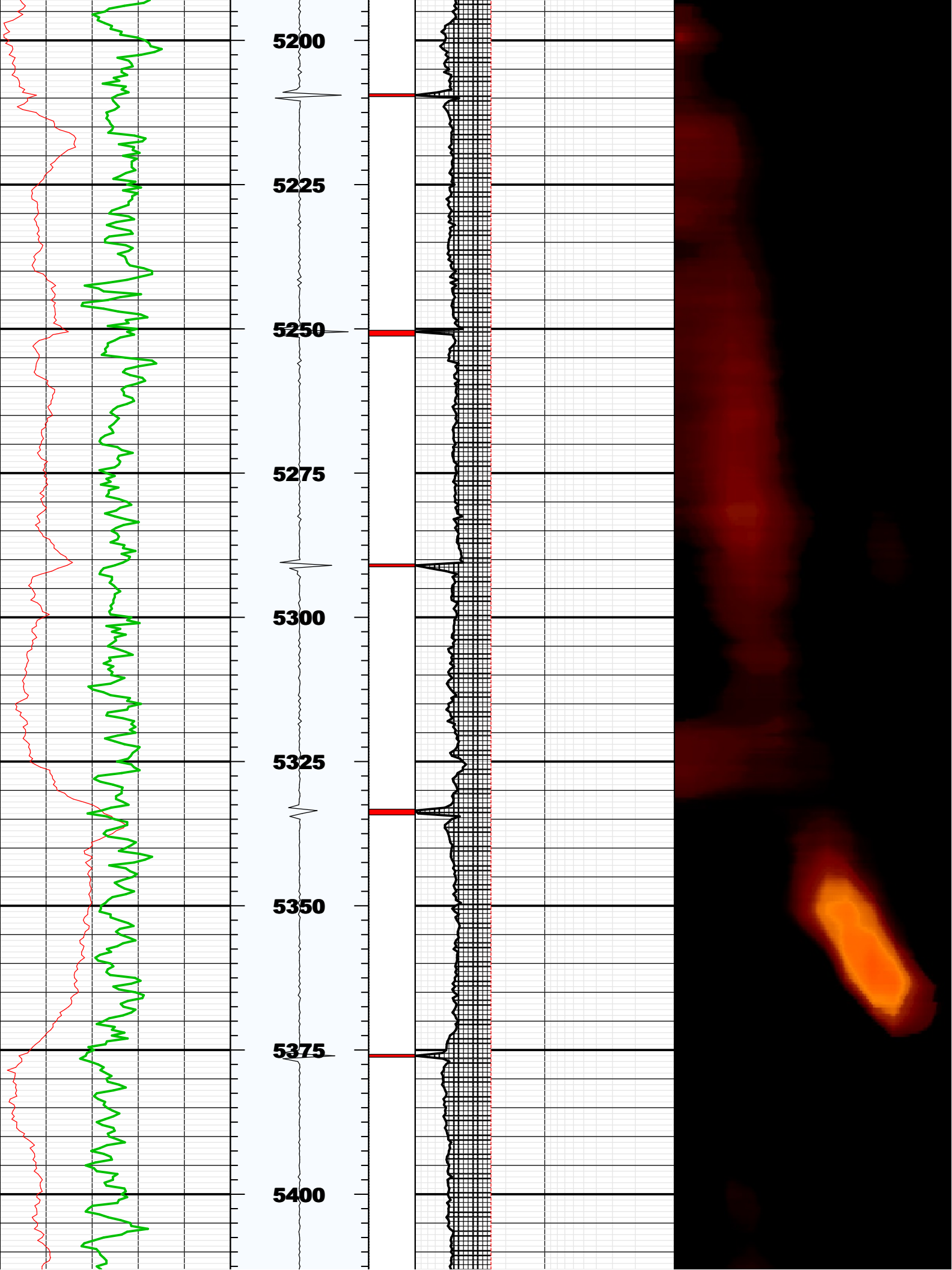


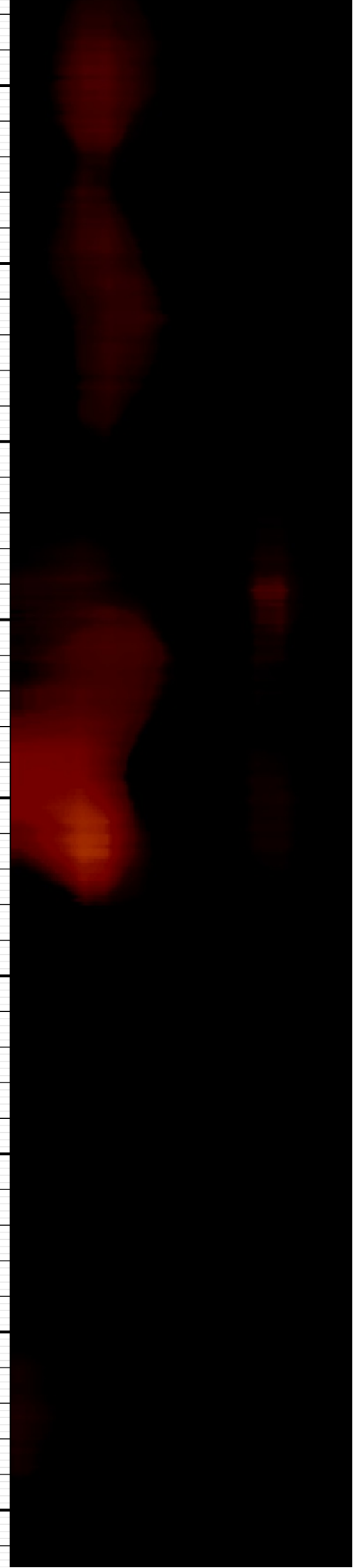
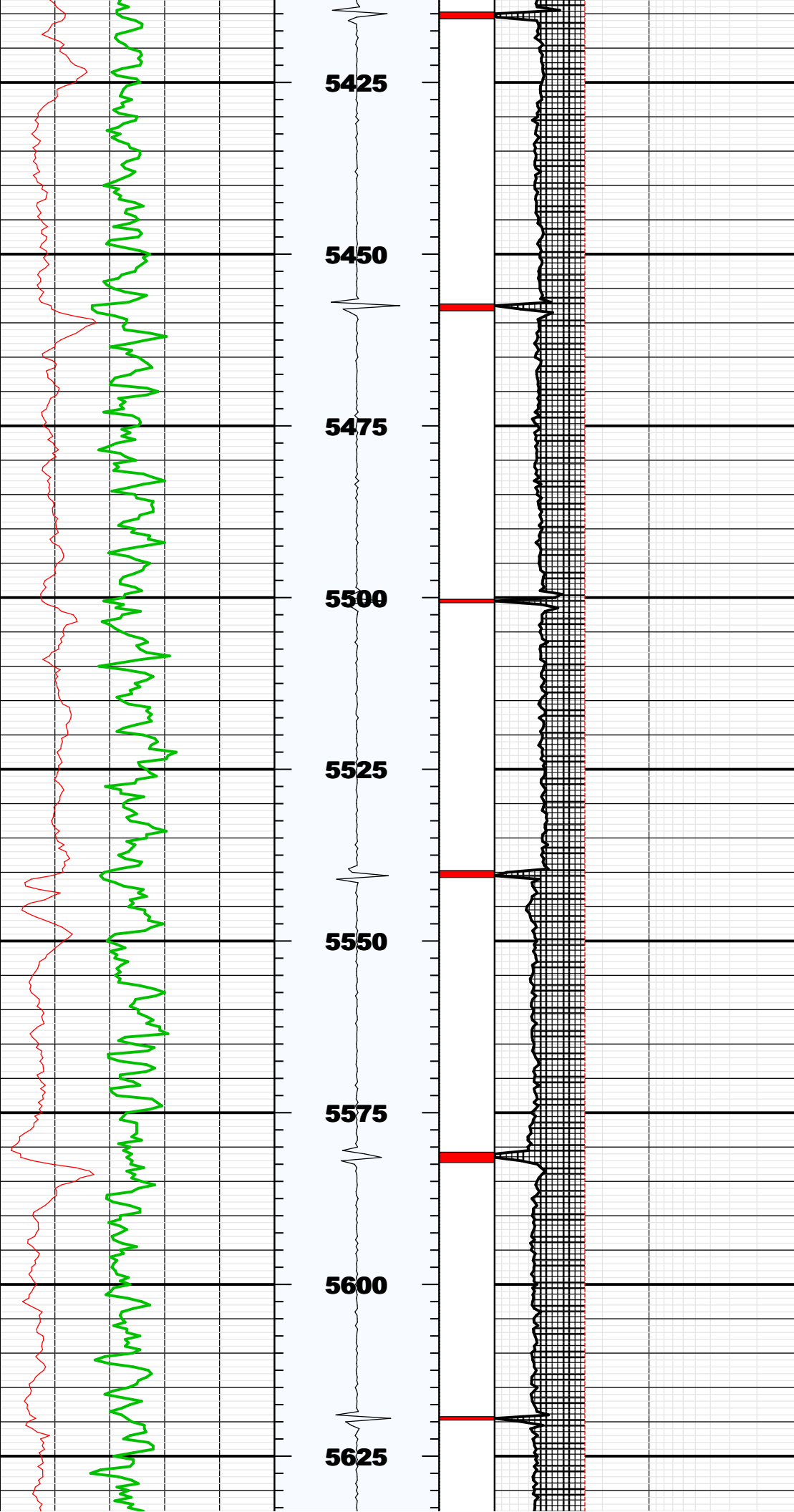


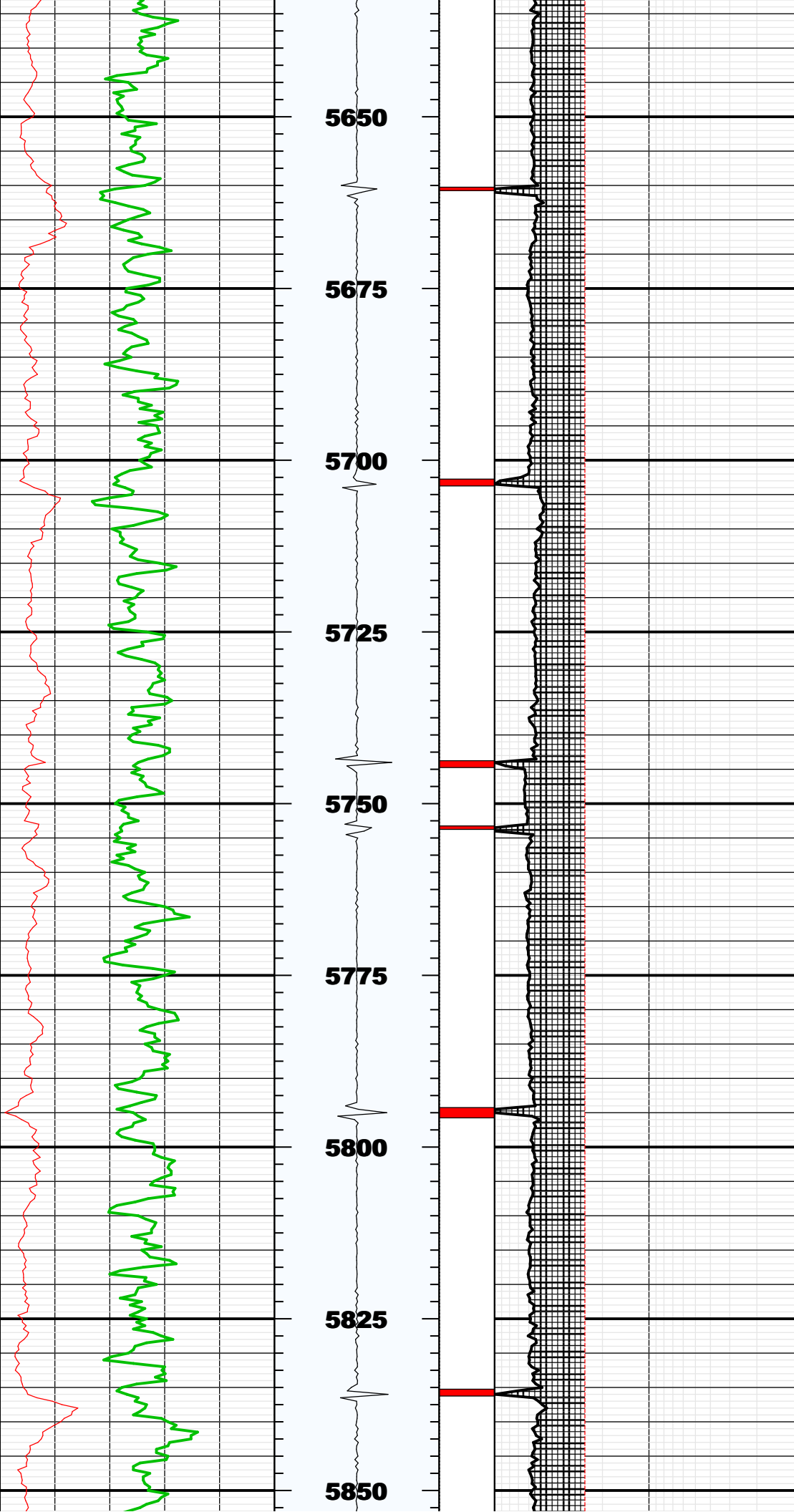


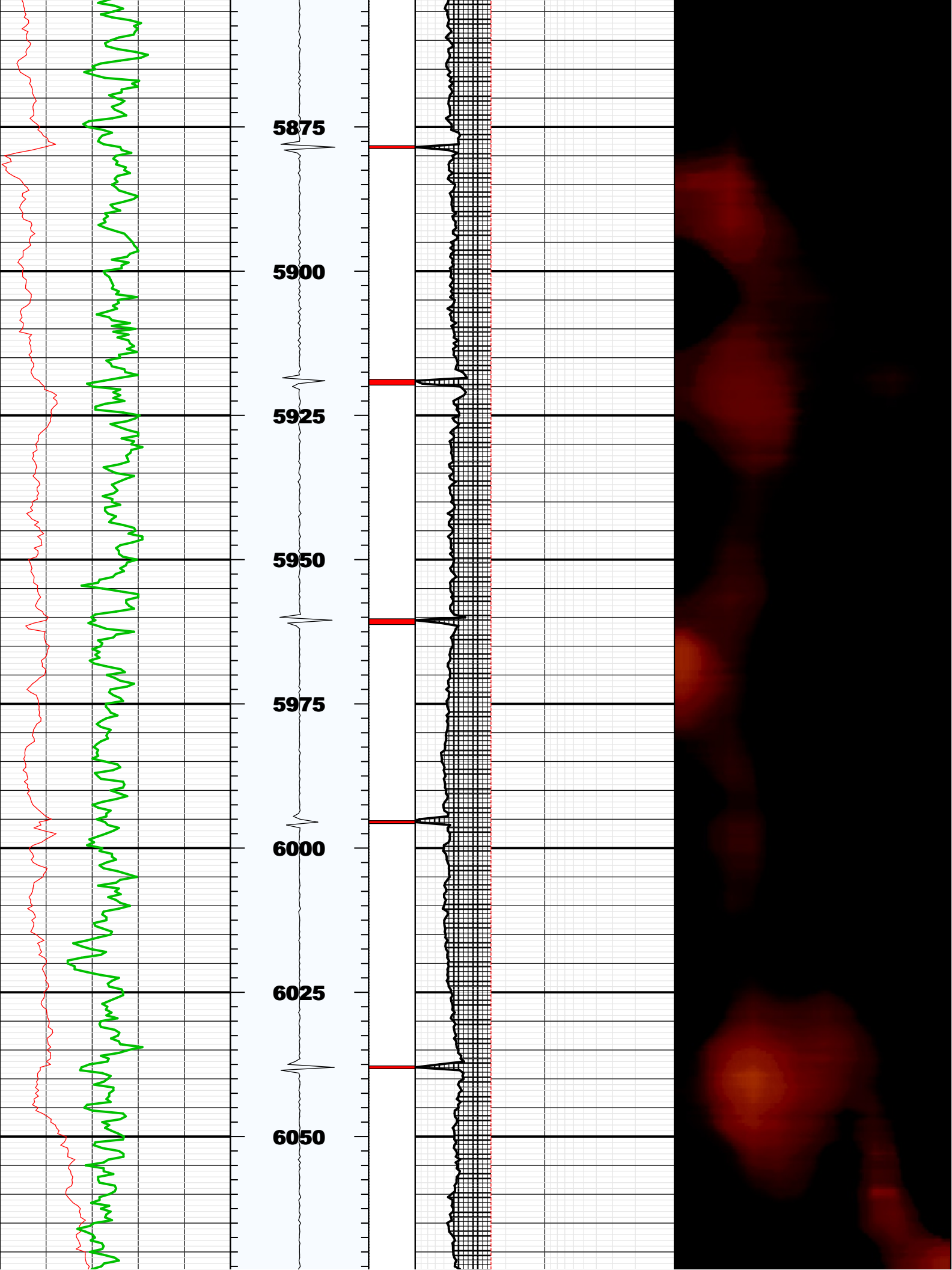


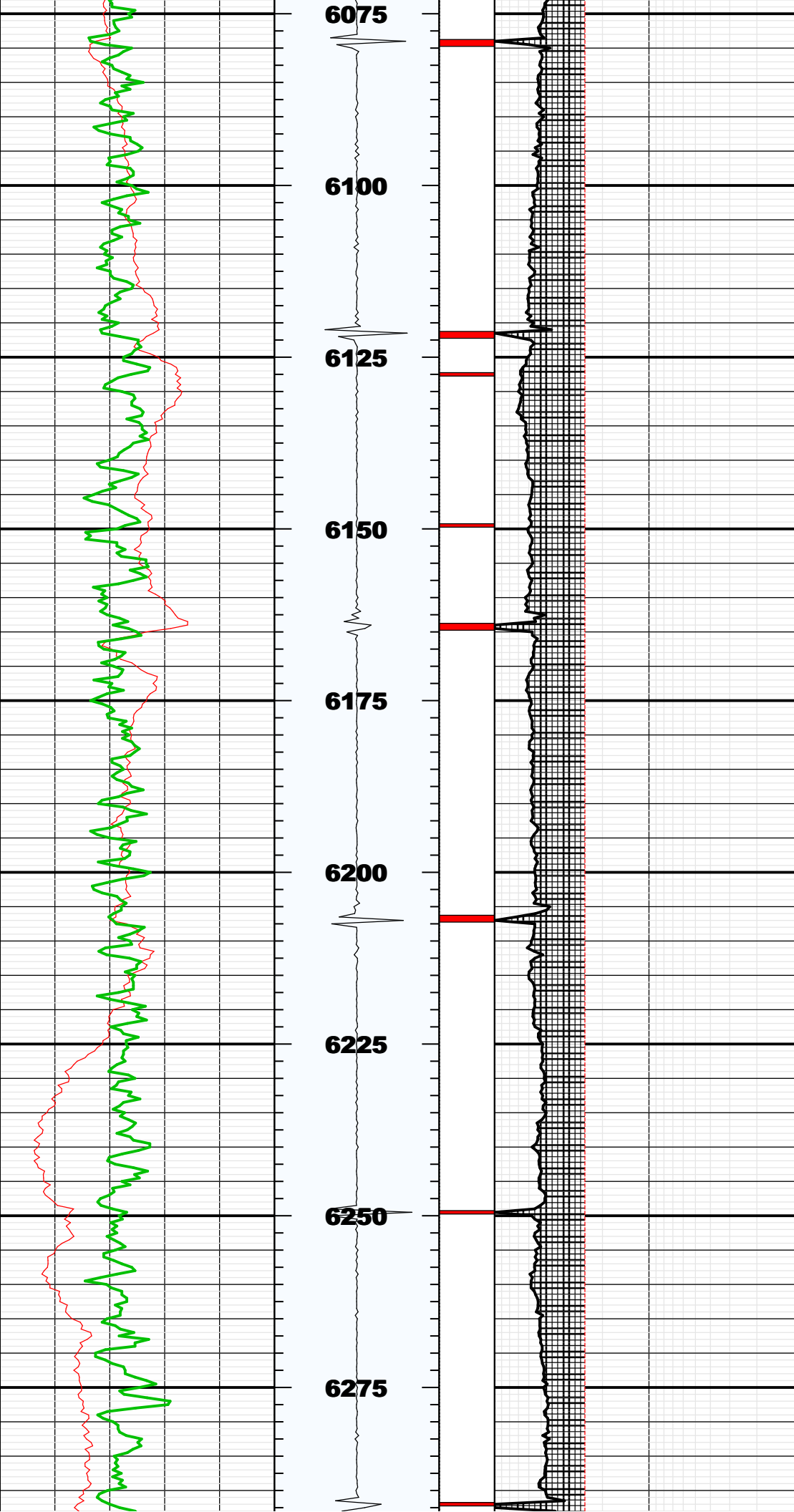


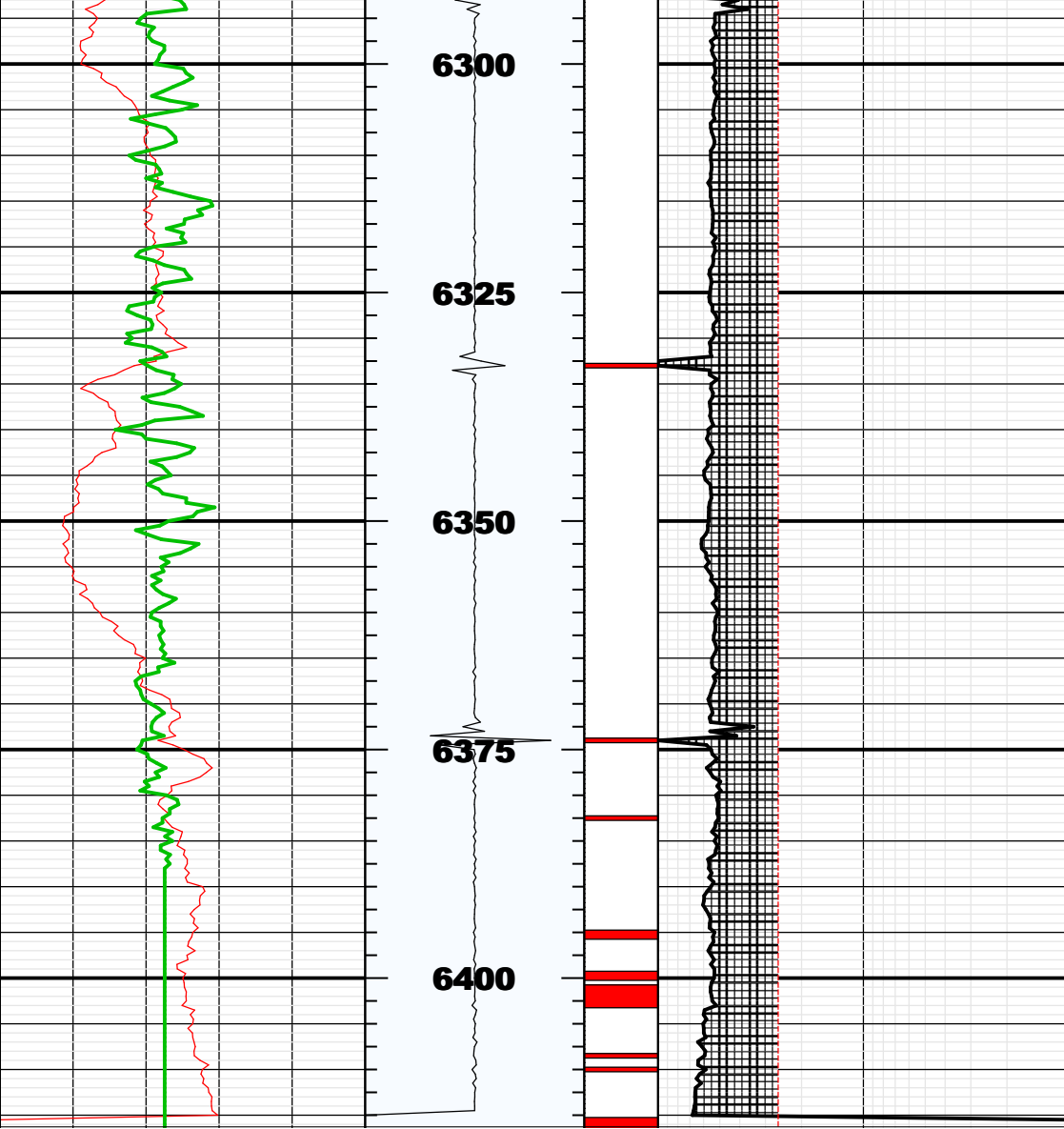








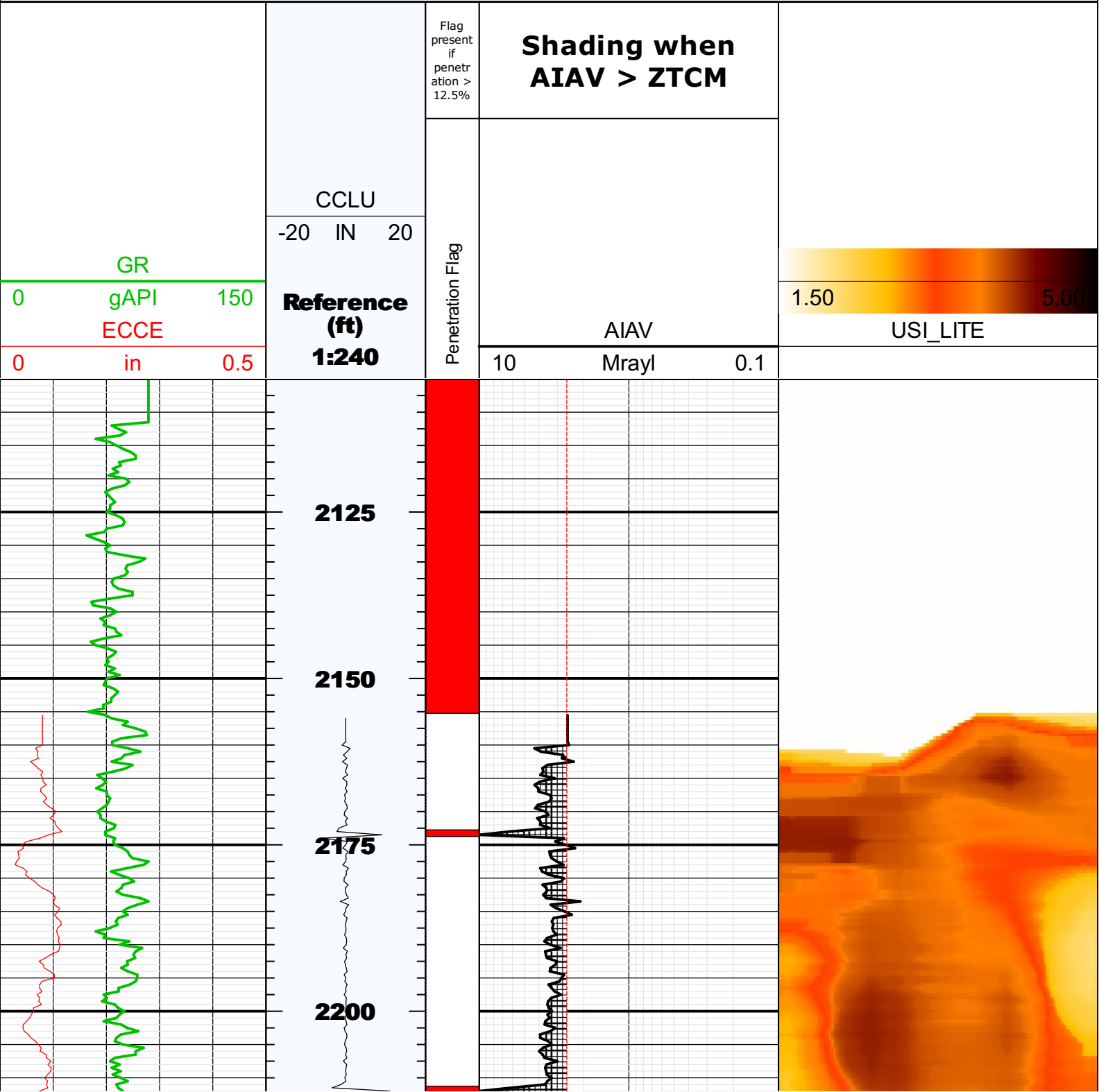


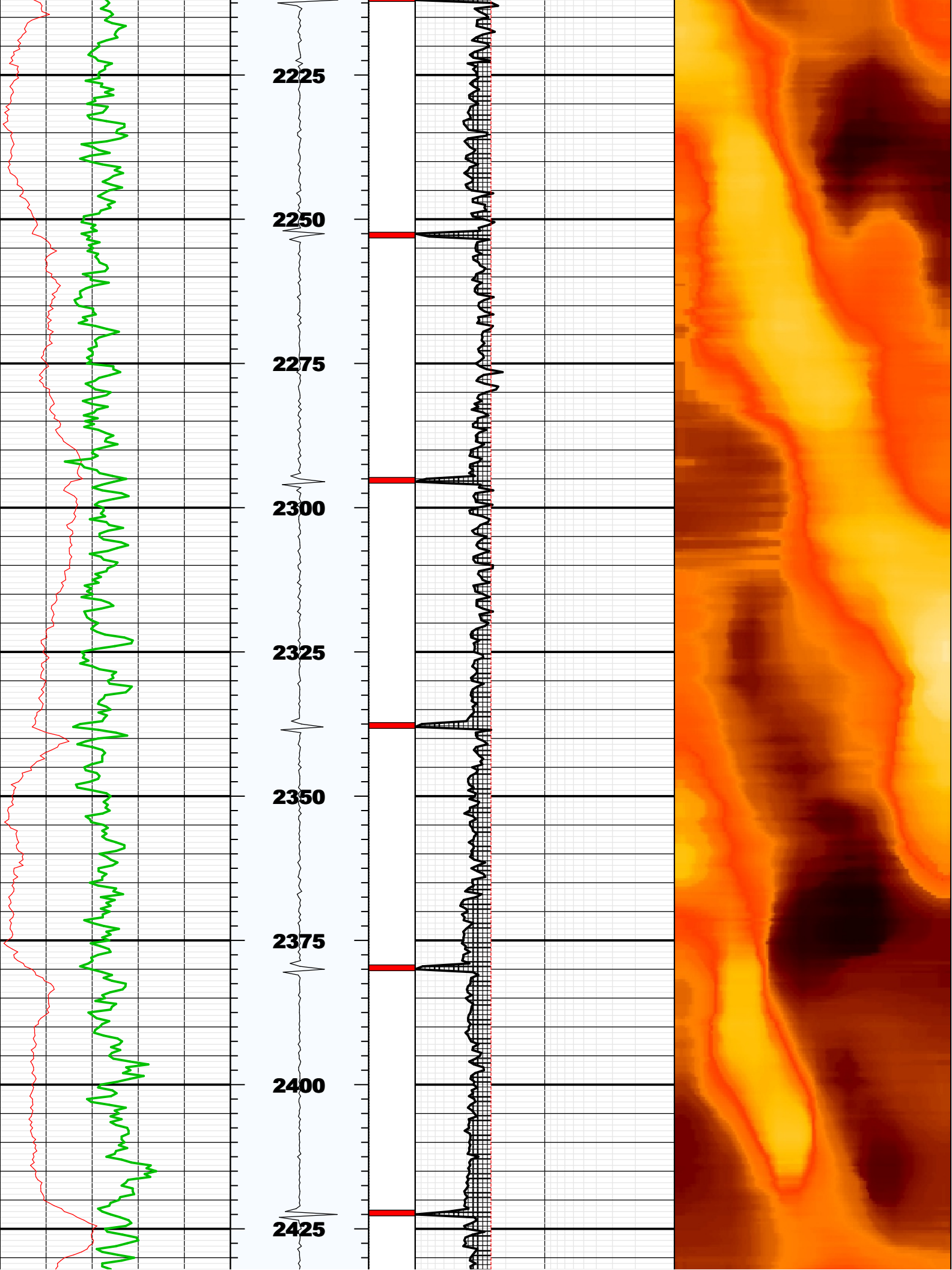


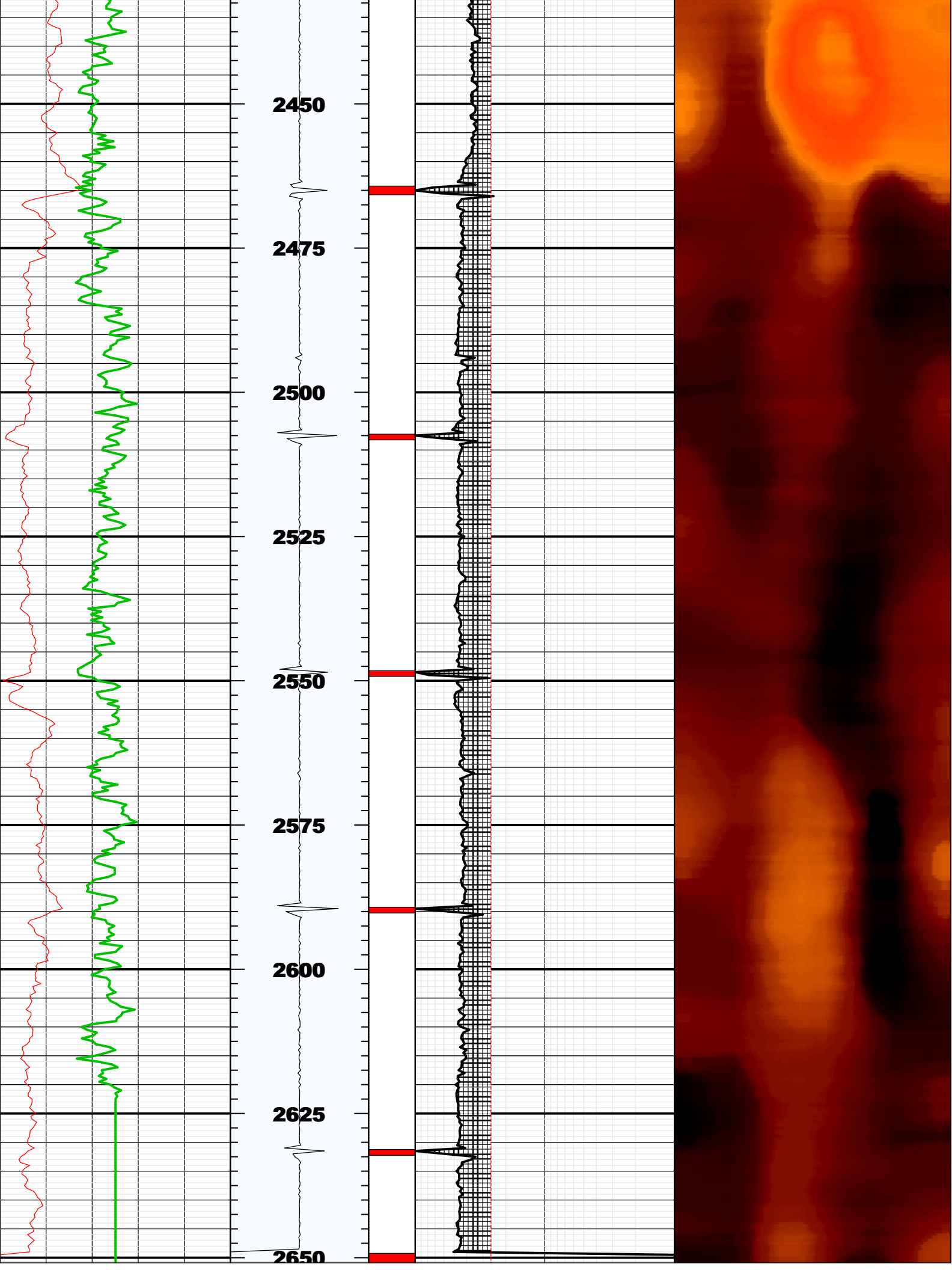
BS	8.50000	IN	Bit Size
CASG	N/A		Casing Grade
CDIA	5.50000	IN	Casing Outer Diameter
CSID	4.77800	IN	Casing Inner Diameter
CSIZ	5.50000	IN	Current Casing Size
CWEI	20.00000	LB/F	Casing Weight
DFD	9.00000	LB/G	Drilling Fluid Density
DFVL	190.00000	US/F	Default Fluid Velocity
DO			
DOT	1.75600	IN	Diameter of Transducer Sensor
EMXV	45	V	EMEX Voltage
FDII	0.00000	F	FPM Data Interpolation Interval
FSOD	0_OFF		Fluid Slowness Fits Casing Outer Diameter
LOGMODE			
PP			
STEP	-0.5	F	STEP
THDH	130.00000	%	Maximum Search Thickness (percentage of nominal)
THDL	70.00000	%	Minimum Search Thickness (percentage of nominal)
THDP	Fundamental		Thickness Detection Policy
THNO	0.36100	IN	Nominal Thickness of Casing
TMUC	WRM		Type of Mud
U-USIT_DT3P			
UPAT	375K		Emission Pattern
USUB	5INC		USIT Sub Identifier
UWKM	D606010L		Working Mode
VCAS	51.40000	US/F	Ultrasonic Transversal Velocity in Casing
WINB	27.84833	US	Window Begin Time
WINE	67.84833	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.48000	MRAY	Acoustic Impedance of Mud
ZTCM	2.60000	MRAY	Acoustic Impedance Threshold for Cement
ZTGS	0.30000	MRAY	Acoustic Impedance Threshold for Gas
WLEN	22.43906	US	T^3 Processing Length

Repeat Pass

Company: Noble Energy Inc  
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Field: Wattenberg







## Fluid Properties Used for Main Pass

