

Company: Noble Energy Inc

Well: Reliance E23-69-1HN
Field: Greeley
County: Weld State: Colorado

County: Weld		USI-LITE					
Field: Greeley							
Location: NWNW Sec. 23 T6N R65W							
Well: Reliance E23-69-1HN							
Company: Noble Energy Inc							
LOCATION		Permanent Datum: Log Measured From: Drilling Measured From:	GL KB KB	Elev: K.B. G.L. D.F. 4763.0 F 4733.0 F 4762.0 F			
API Serial No. 05-123-38141-0000					Section 23	Township 6N	Range 65W
Logging Date 25-Mar-2015							
Run Number Run 1							
Depth Driller		7365.0 F					
Schlumberger Depth		7140.0 F					
Bottom Log Interval		7140.0 F					
Top Log Interval		30.0 F					
Casing Fluid Level		8.0 F					
Salinity							
Density		8.70 LB/G					
Fluid Level		8.0 F					
BIT/CASING/TUBING STRING							
Bit Size		8.750 IN					
From		7140.0 F					
To		-999.2 F					
Casing Size		7.00 IN					
Weight		26.00 LB/F					
Grade		P110					
From		30.0 F					
To		7365.0 F					
Max Recorded Temp		248.5					
Logger on bottom (date)		25-Mar-2015					
Location		Fort Morgan CO					
Recorded By		Keri Ondrus					
Witnessed By							

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: 1109 Calibration Date: Calibrator Serial Number: Number Of Calibration Points: Calibration RMS: Calibration Peak Error:	Serial Number: U711136 Length: 17200.00000

DISCLAIMER

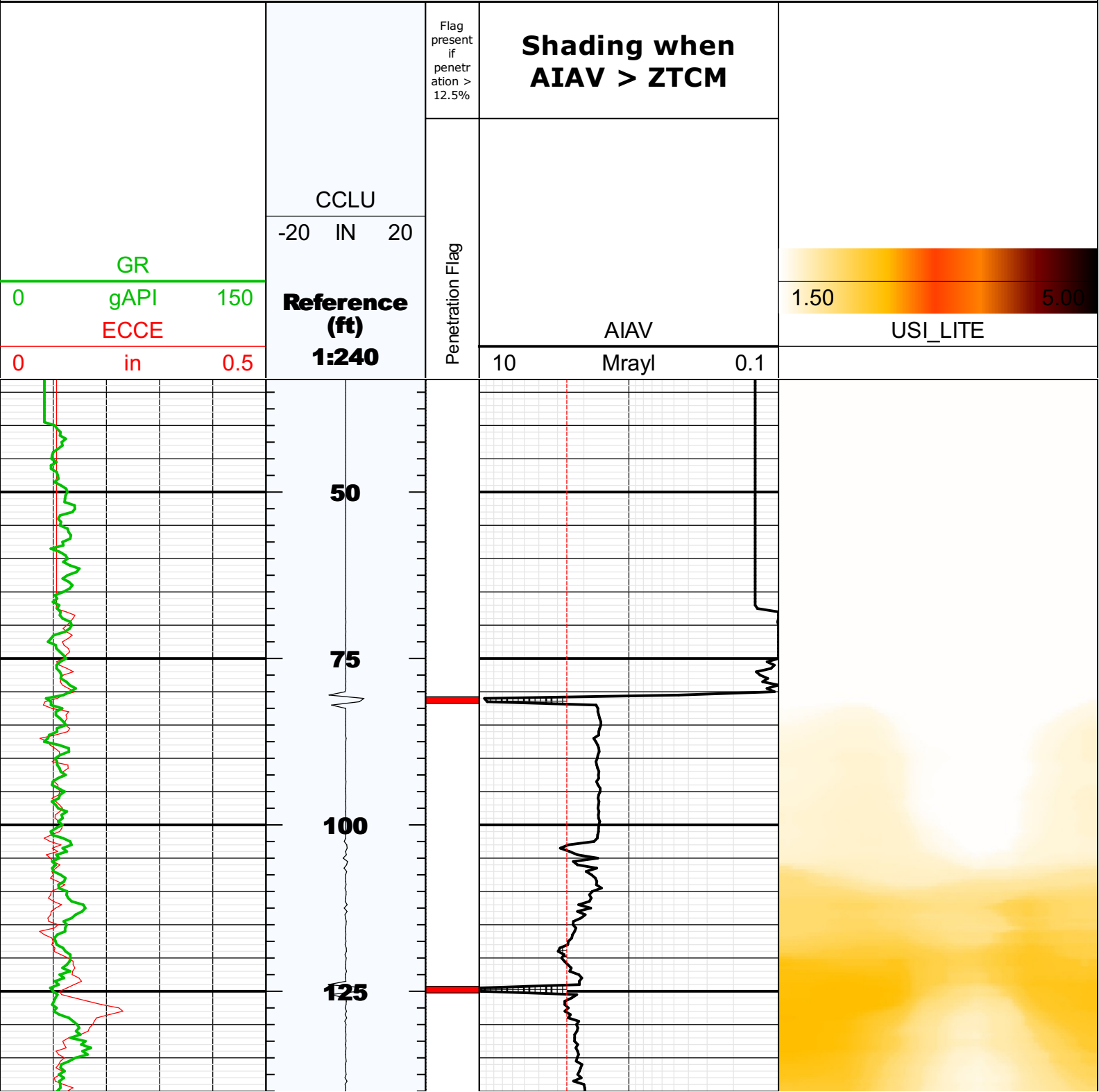
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIIONS ON USE OF THE RECORDED-DATA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

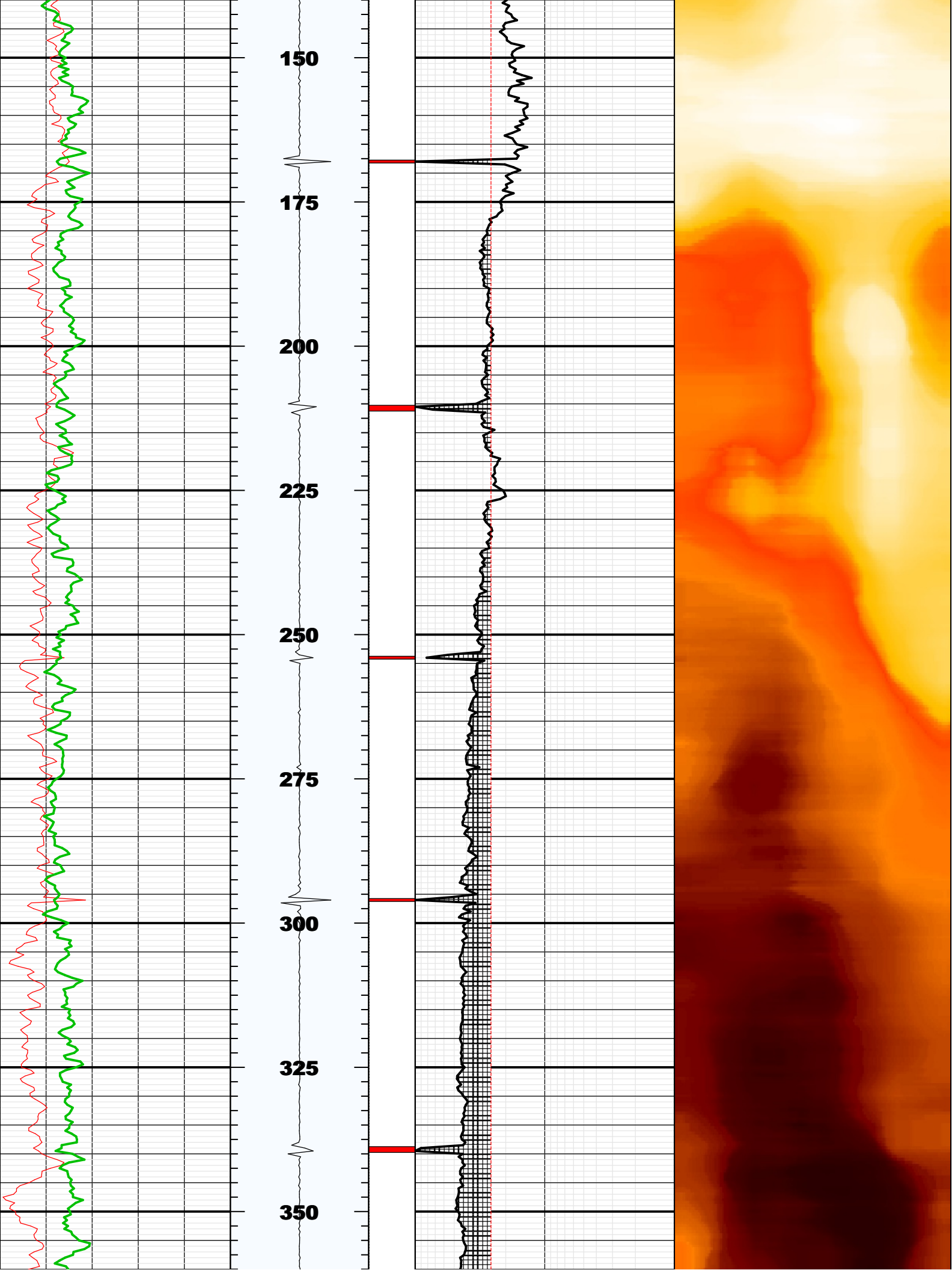
This is the first run in hole.
Toolstring run as per toolsketch.
Log Objective Cement Evaluation.
0 PSI repeat pass and 2500 PSI main pass
High resolution repeat under 0 PSI from 7020-7140' to check casing integrity.
Estimated TOC @ 275'. Expected TOC @ 30'.
Top of 4.5 liner at 7154.4'.
Bottom log interval at 7140' to maintain distance from liner top.
Bottom hole temperature was 248.56 degF.

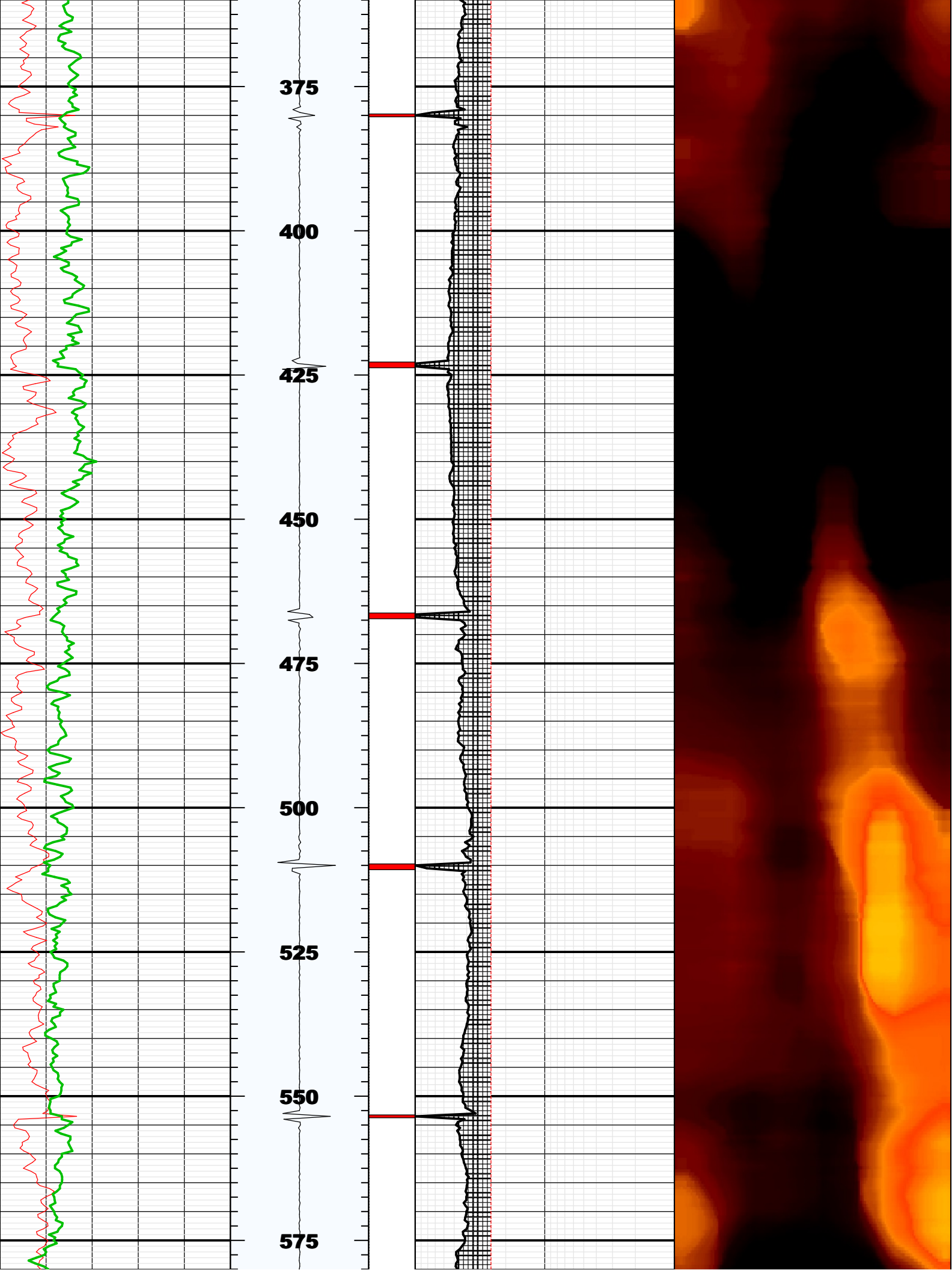
Thank you for choosing Schlumberger Wireline.
SLB crew K Krentz J Jump K Ondrus

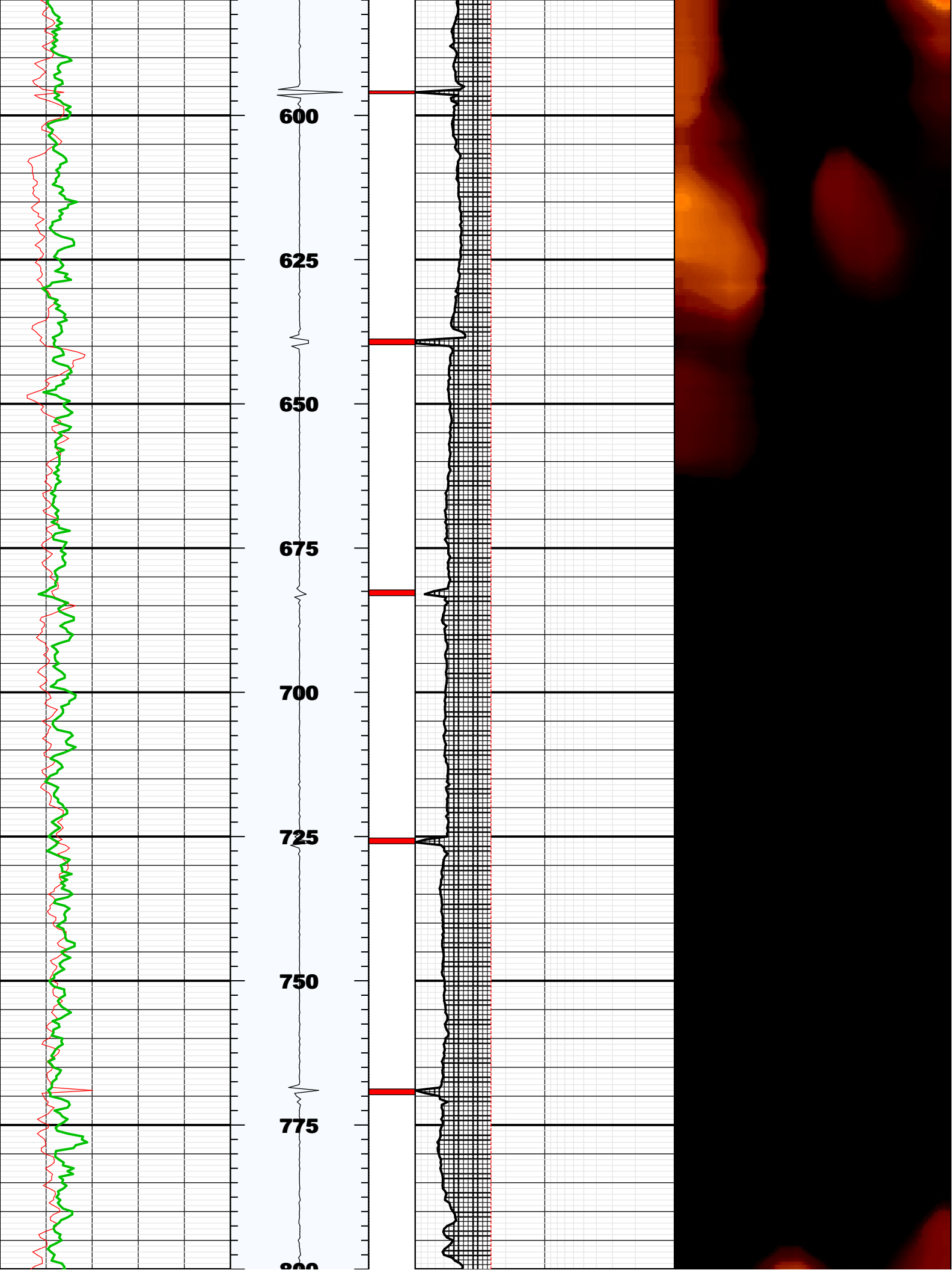
Main Pass

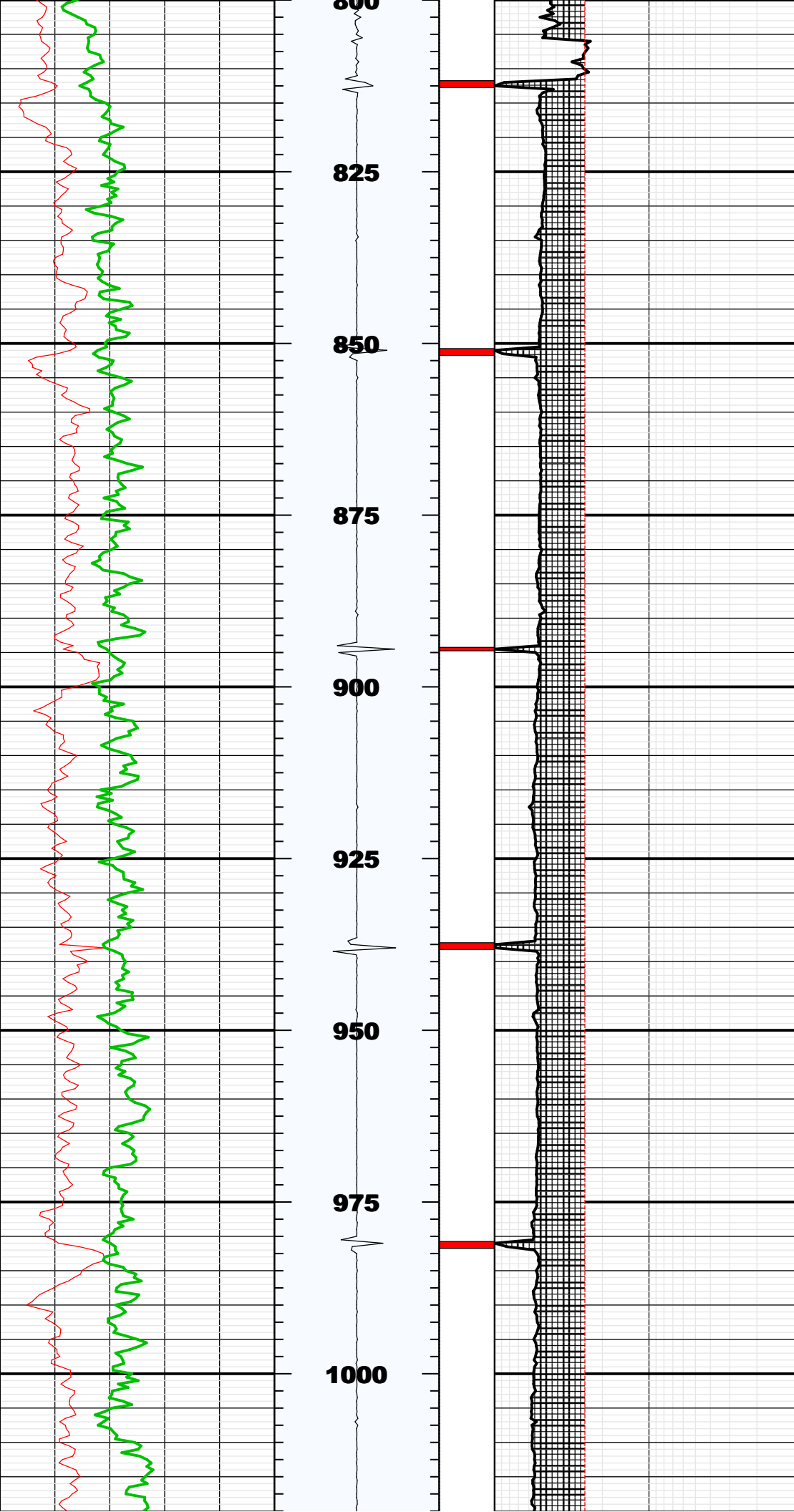
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Well: Reliance E23-69-1HN
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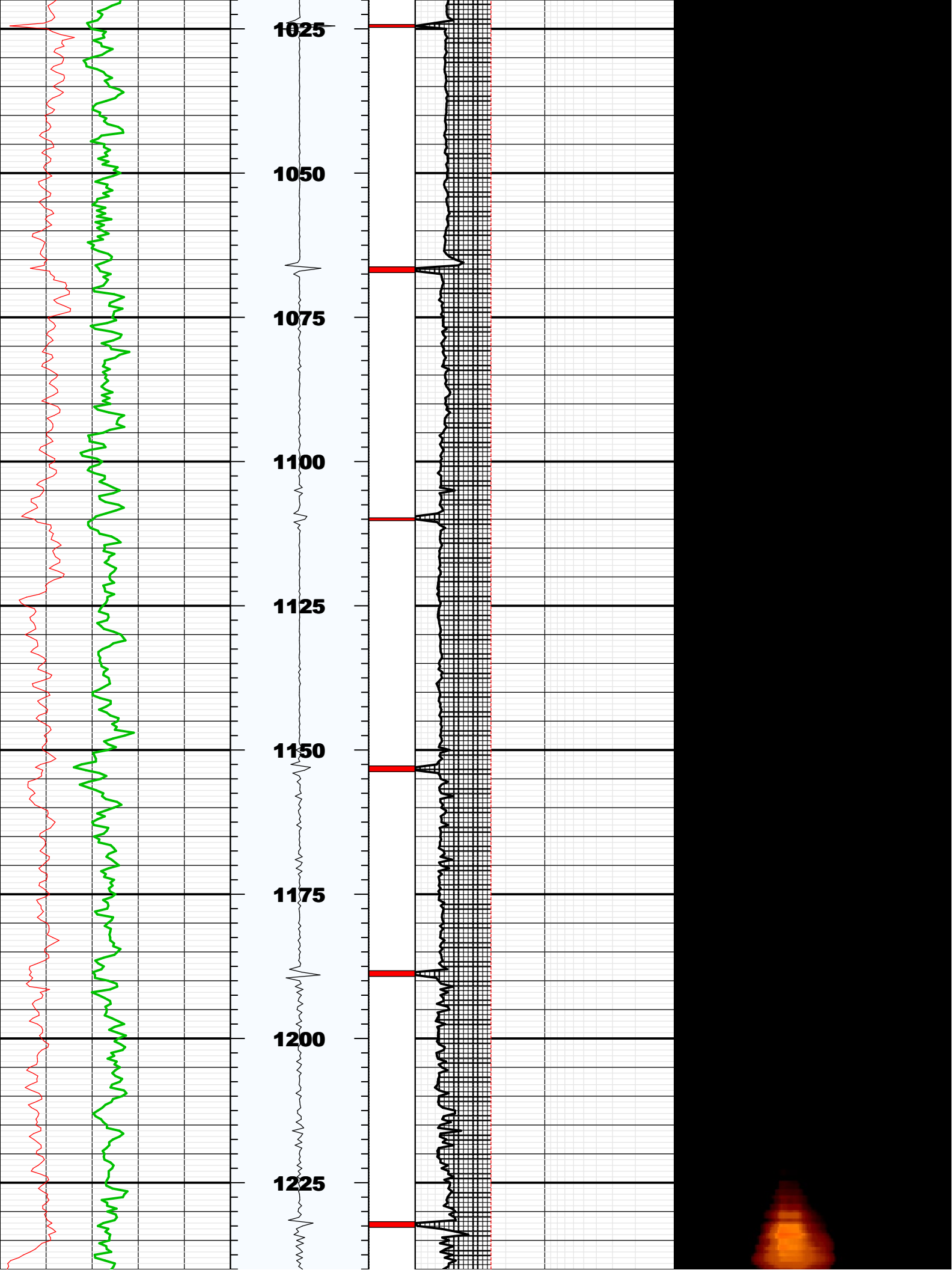


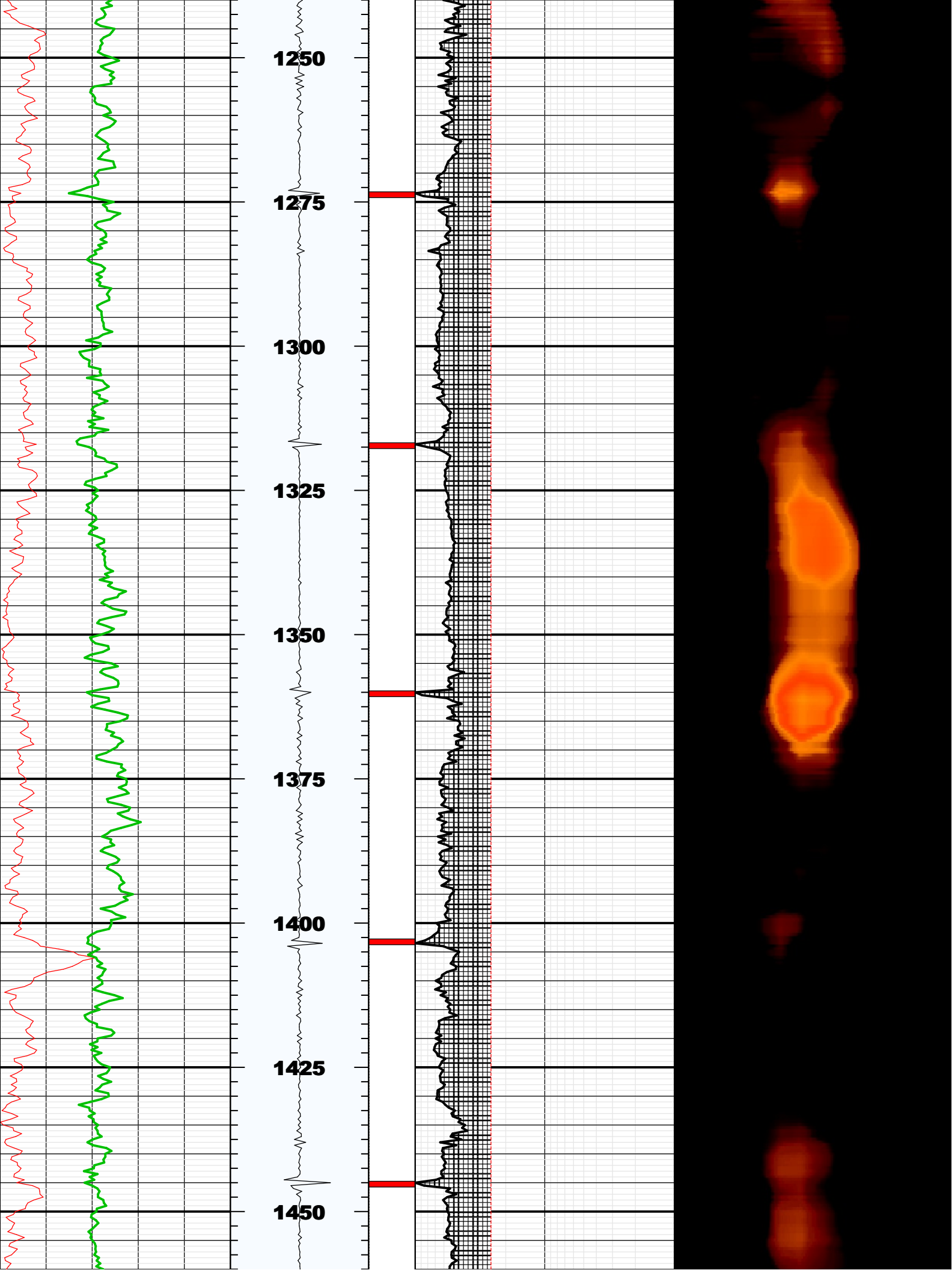


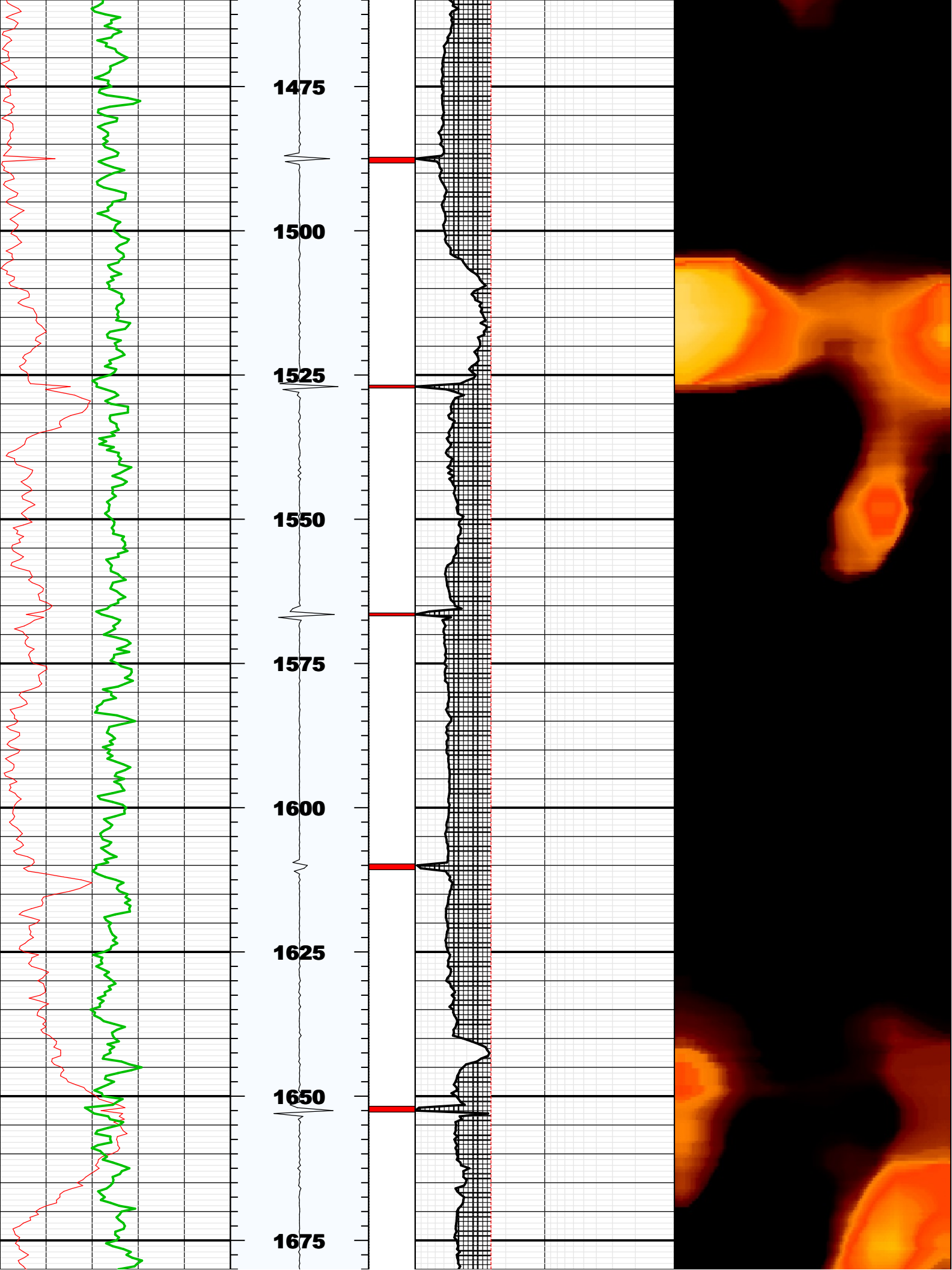


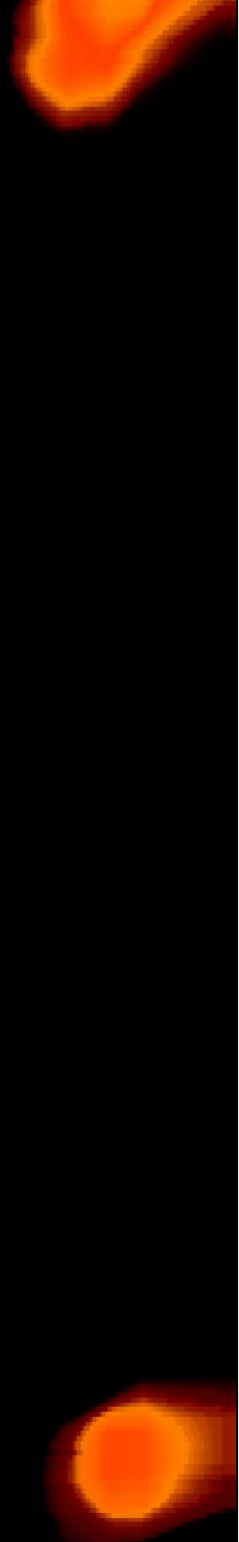
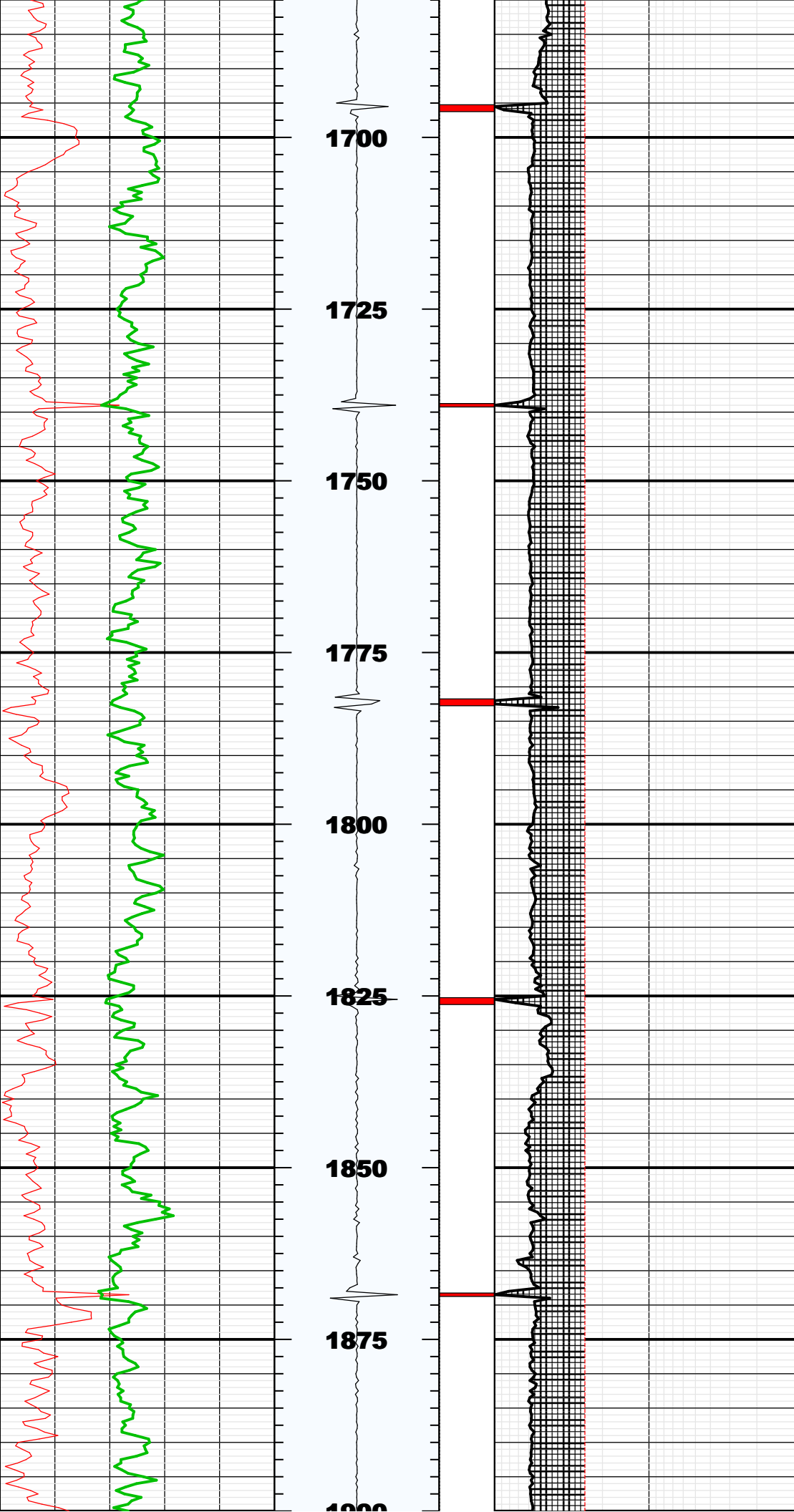


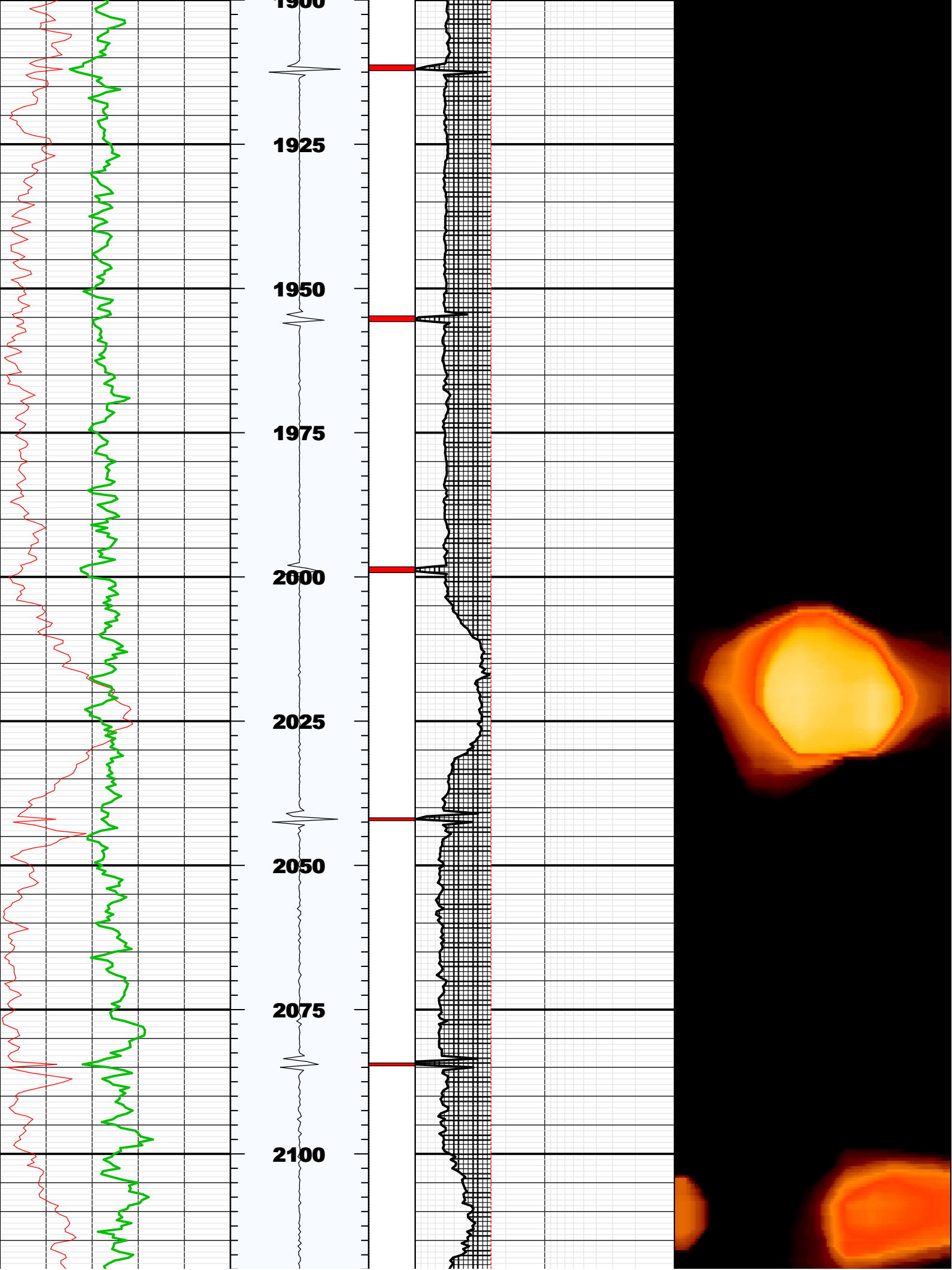


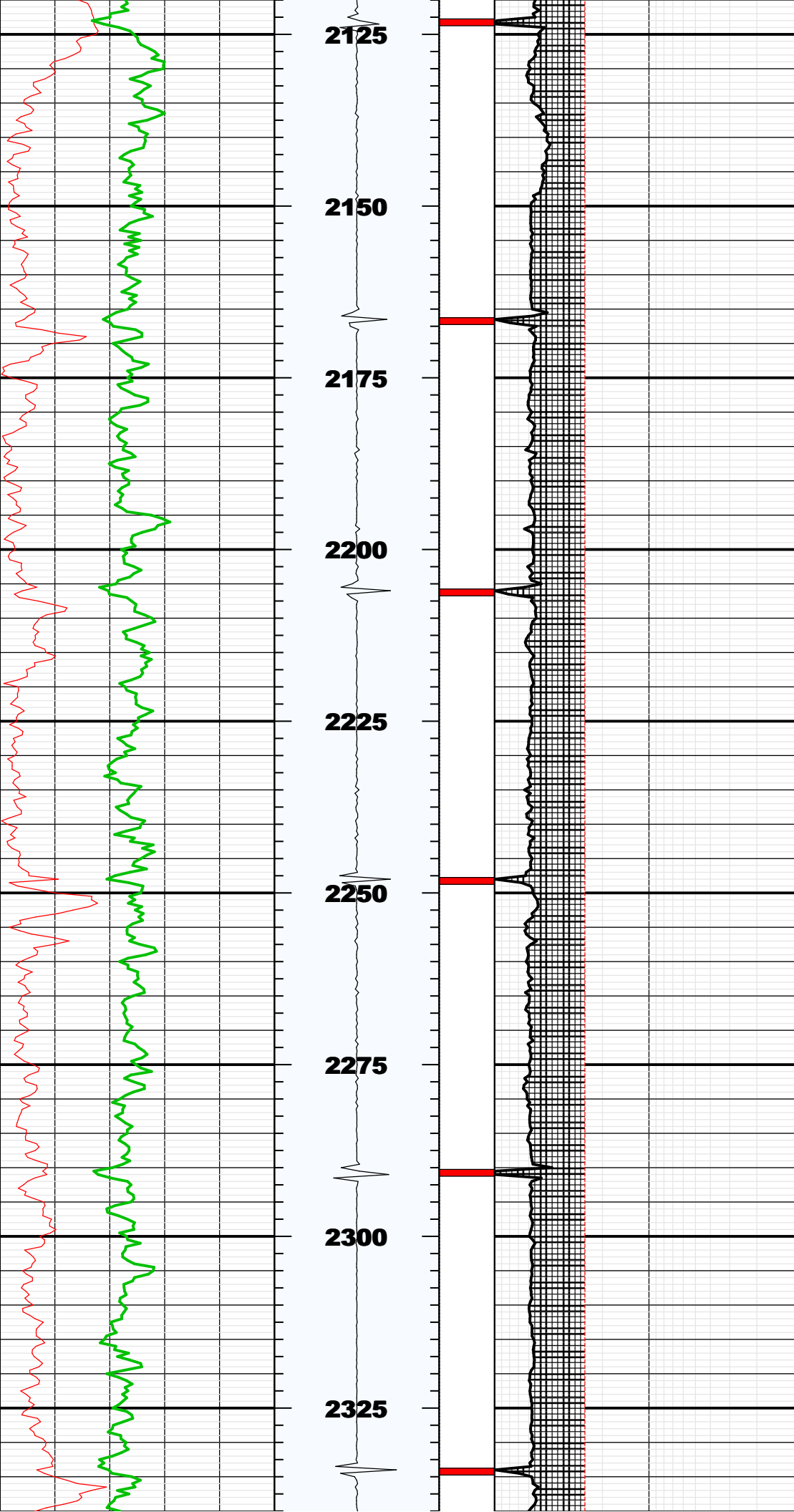


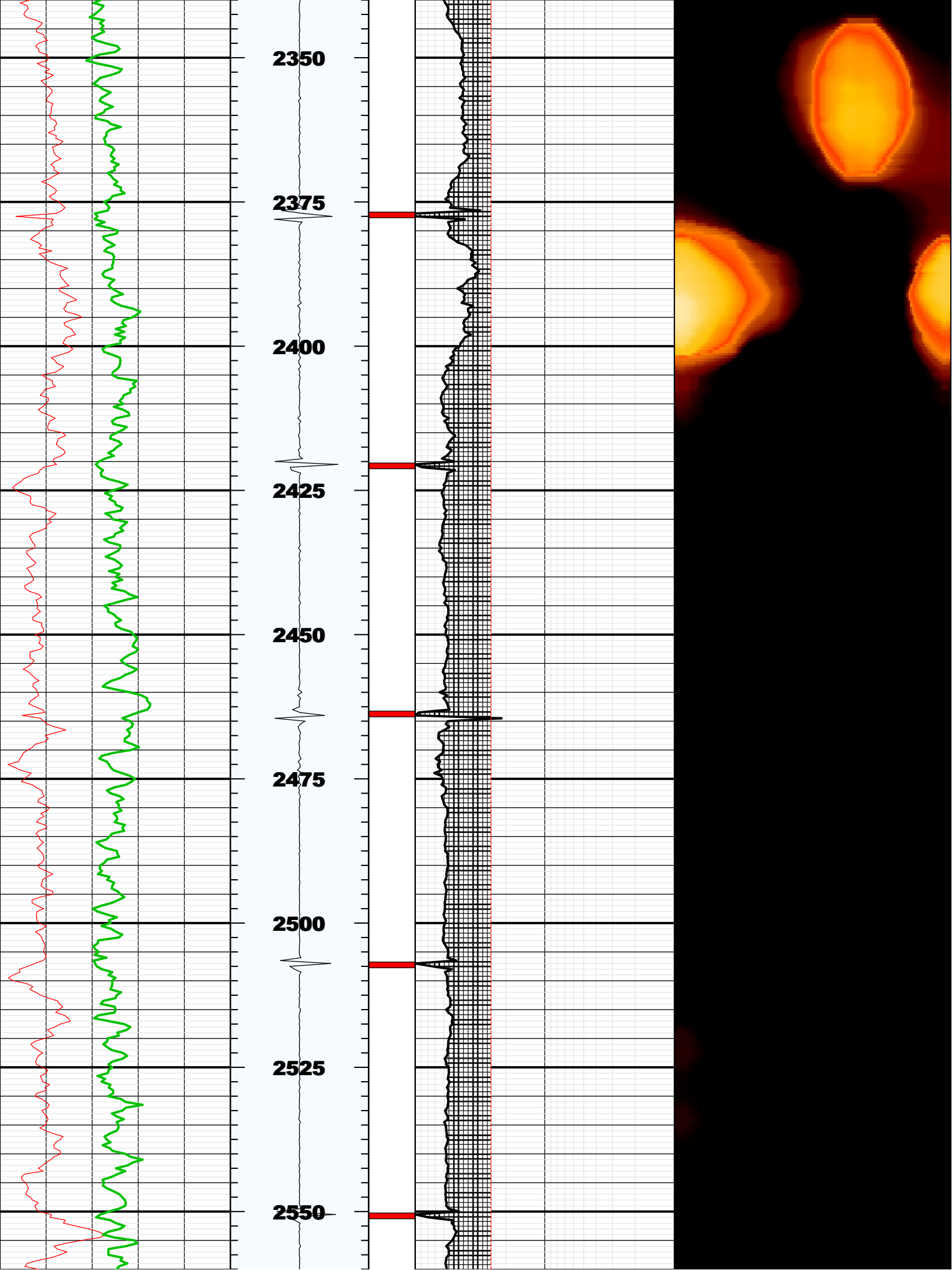


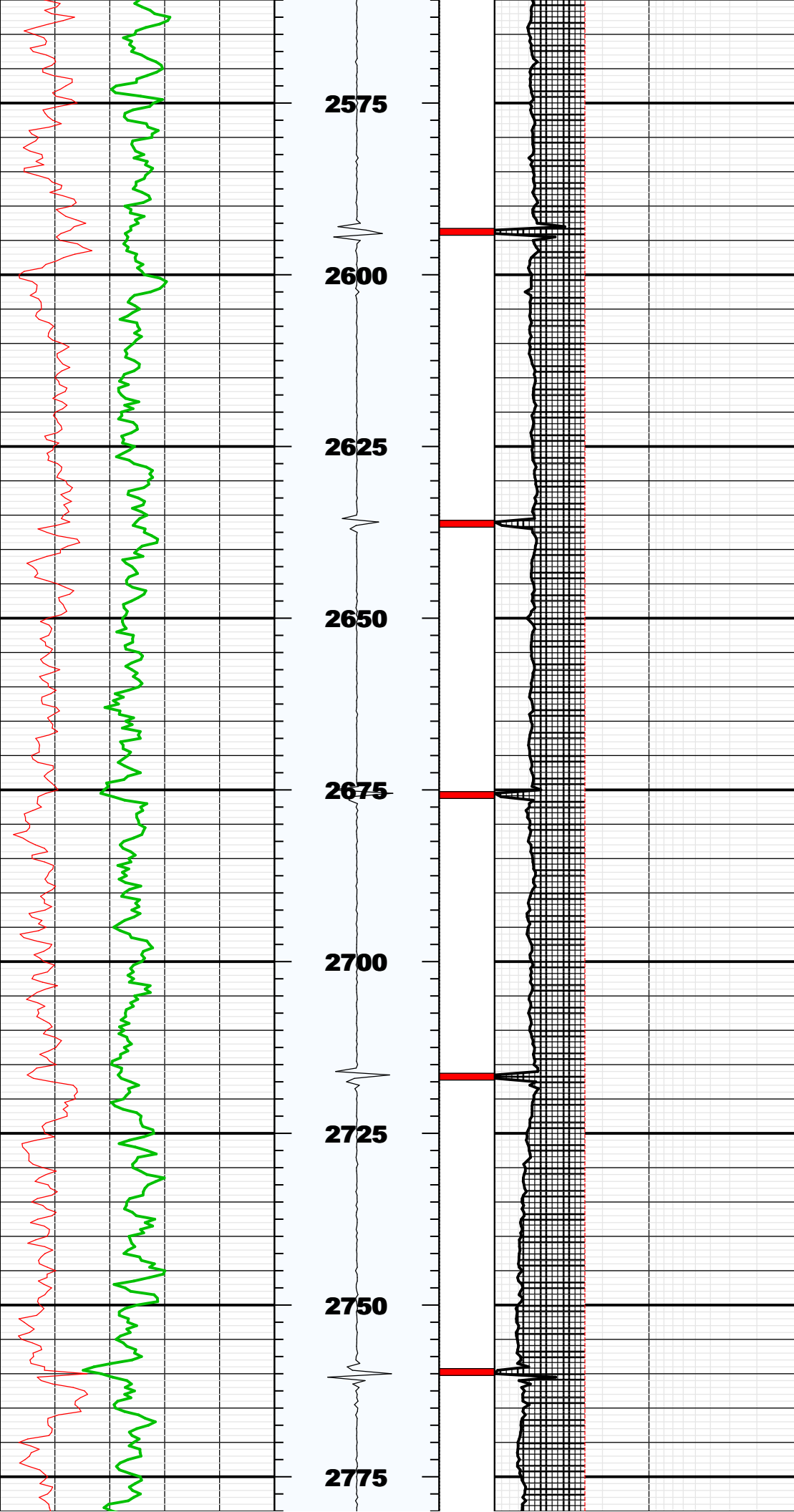


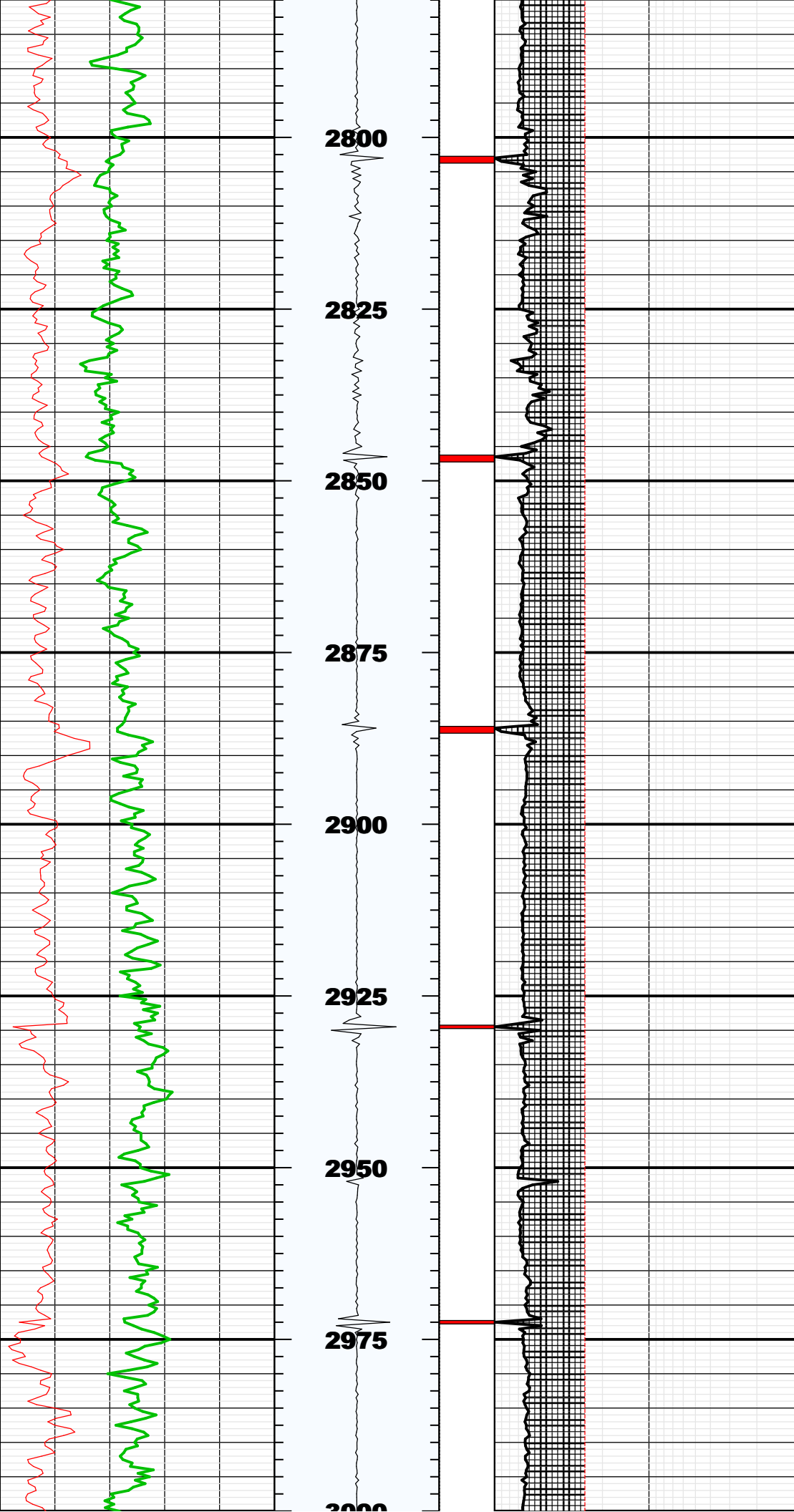


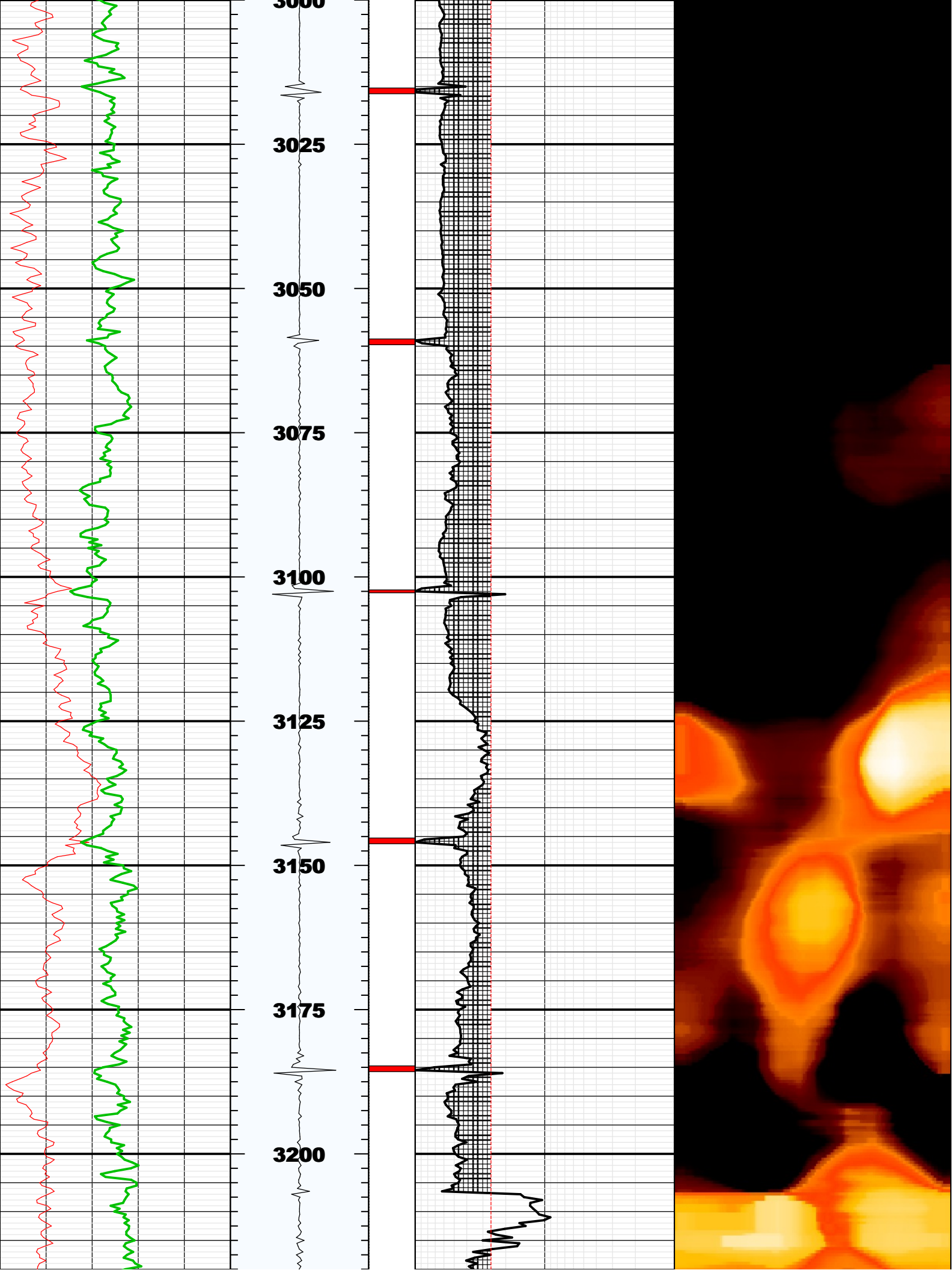


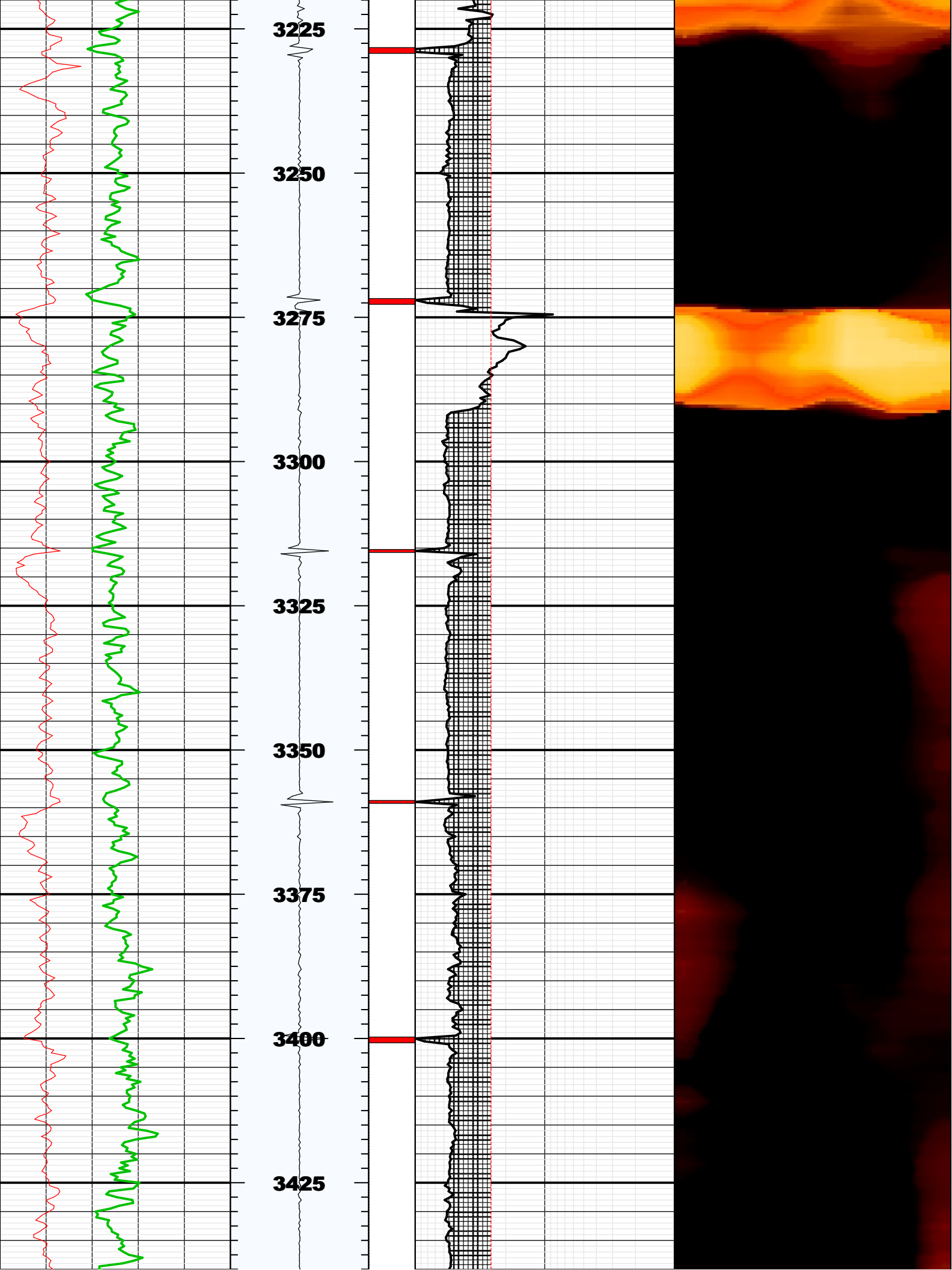


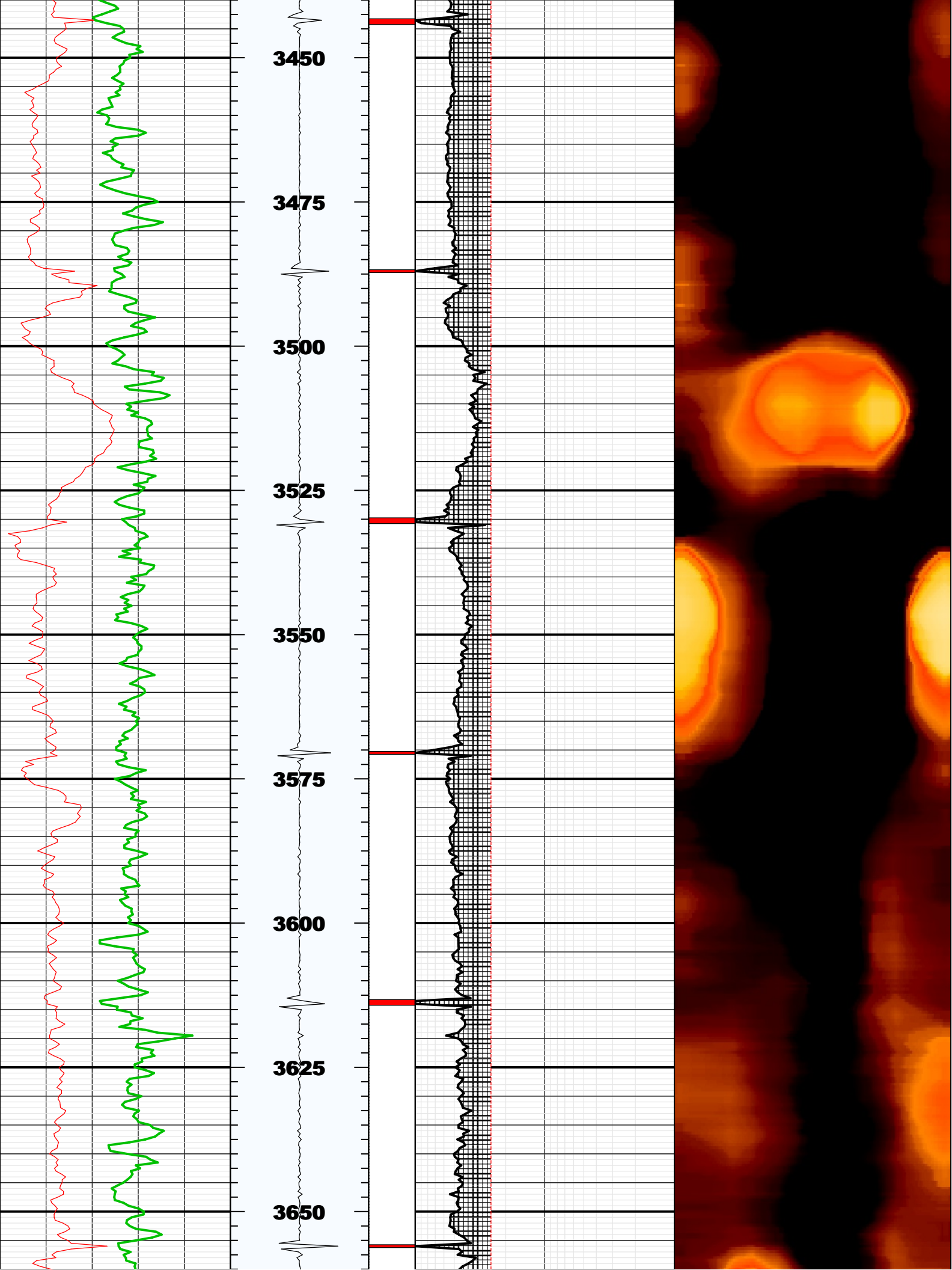


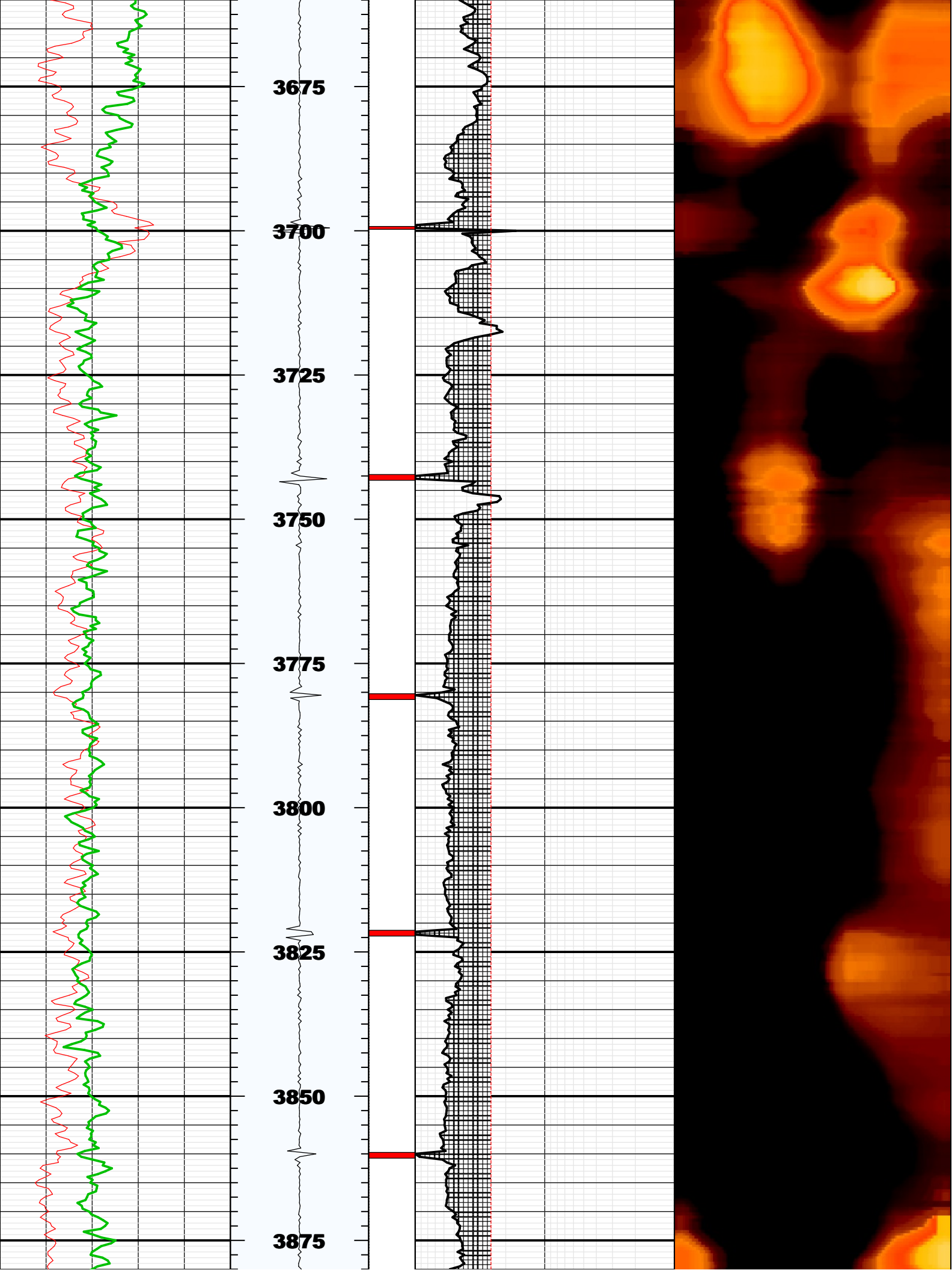


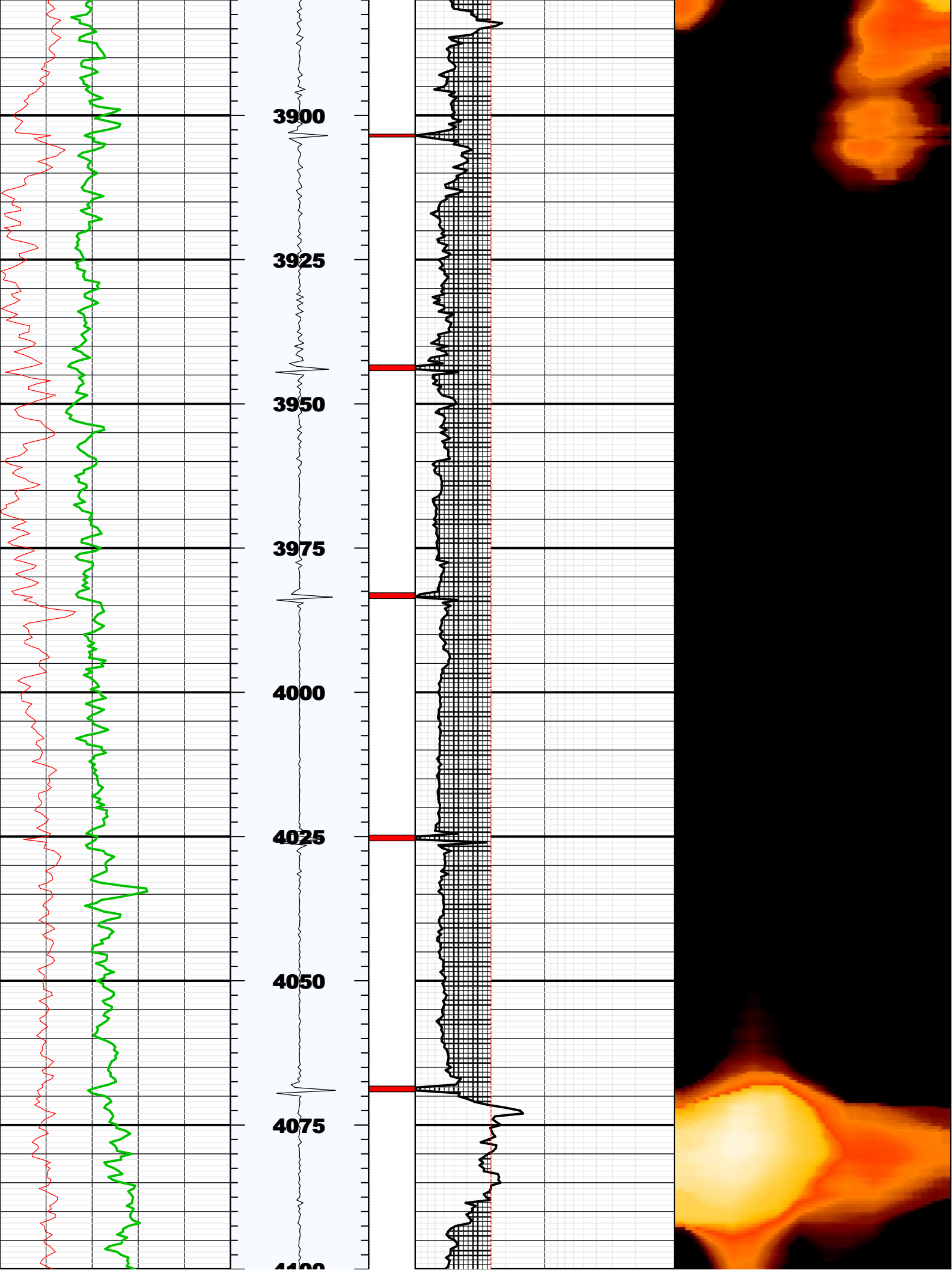


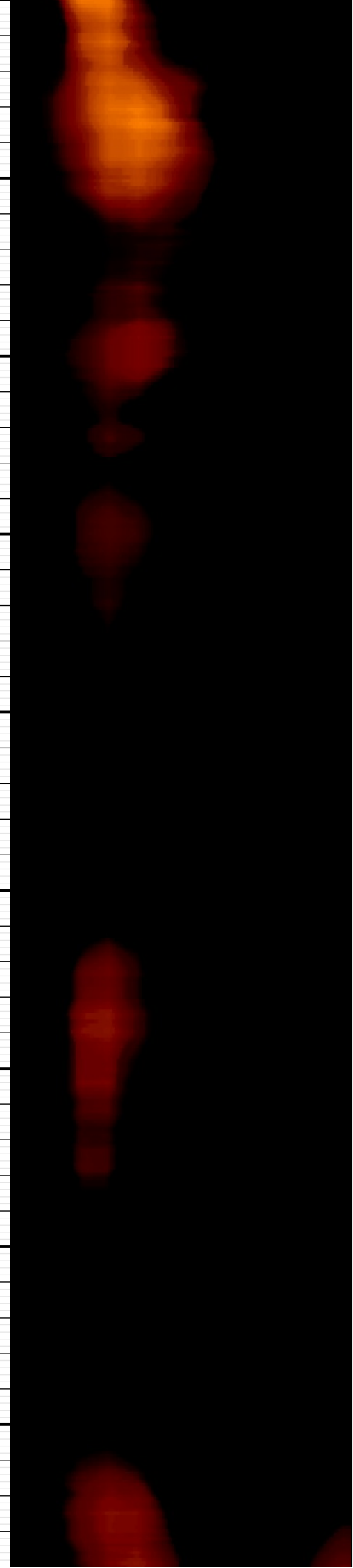
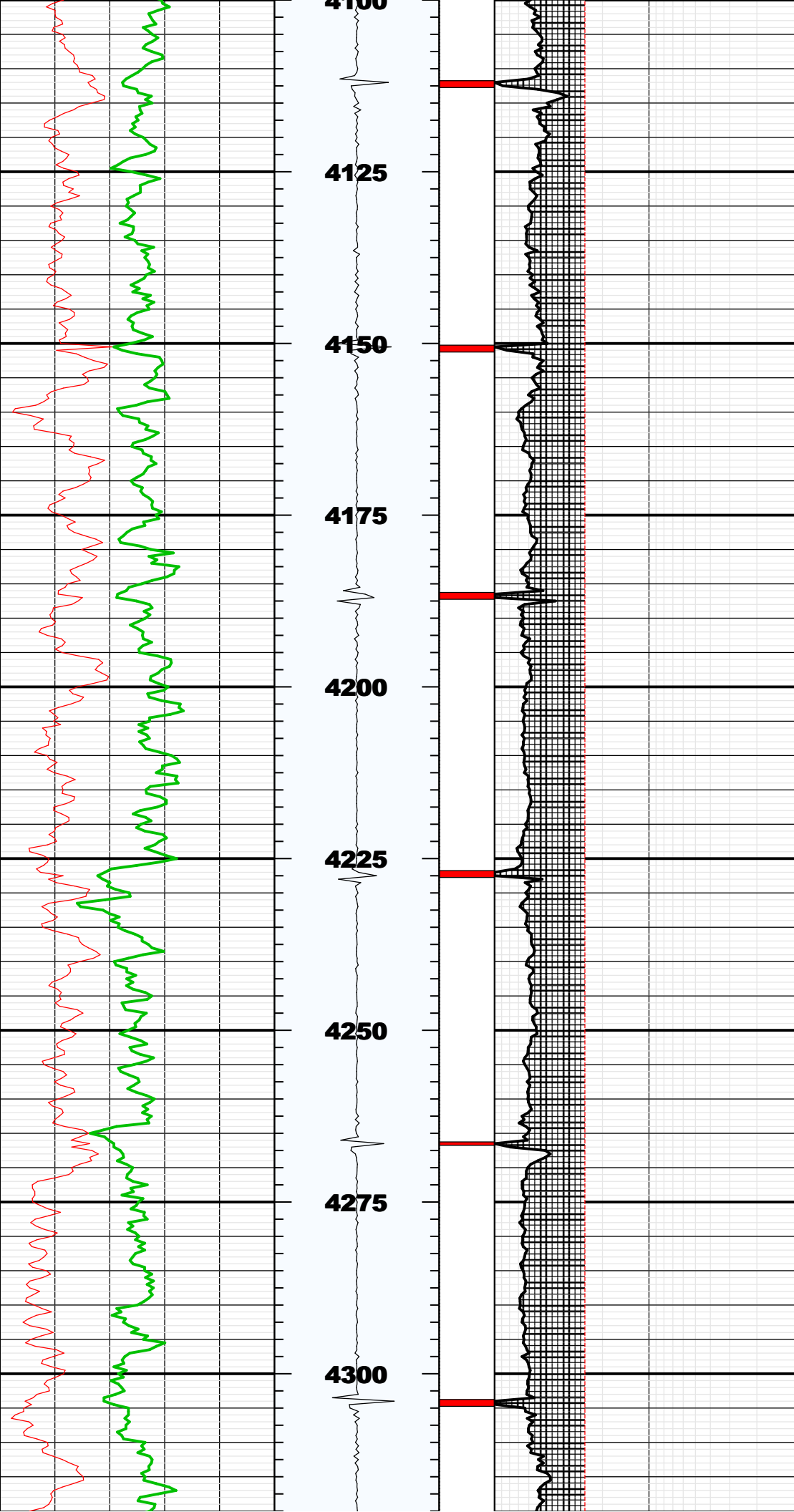


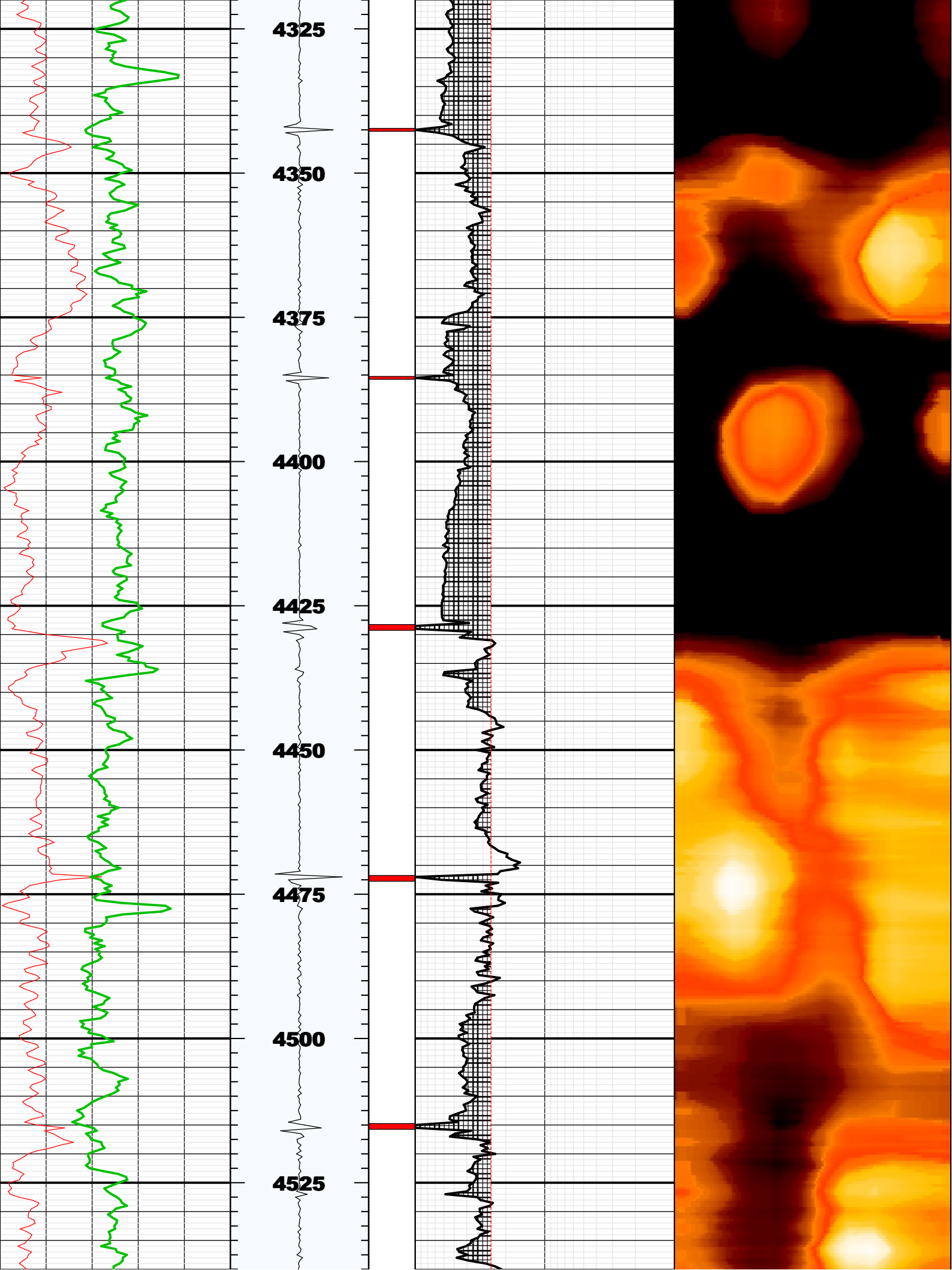


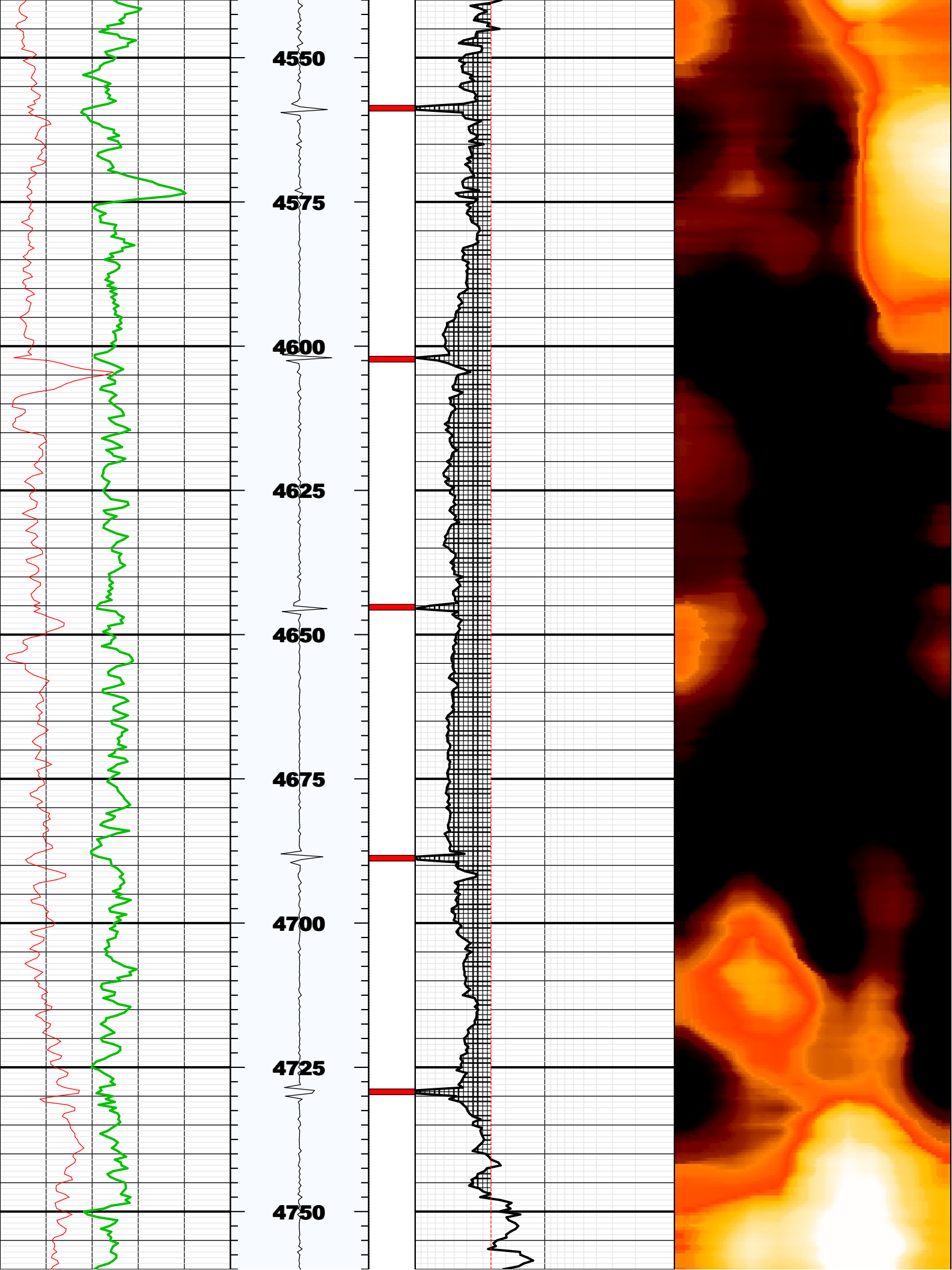


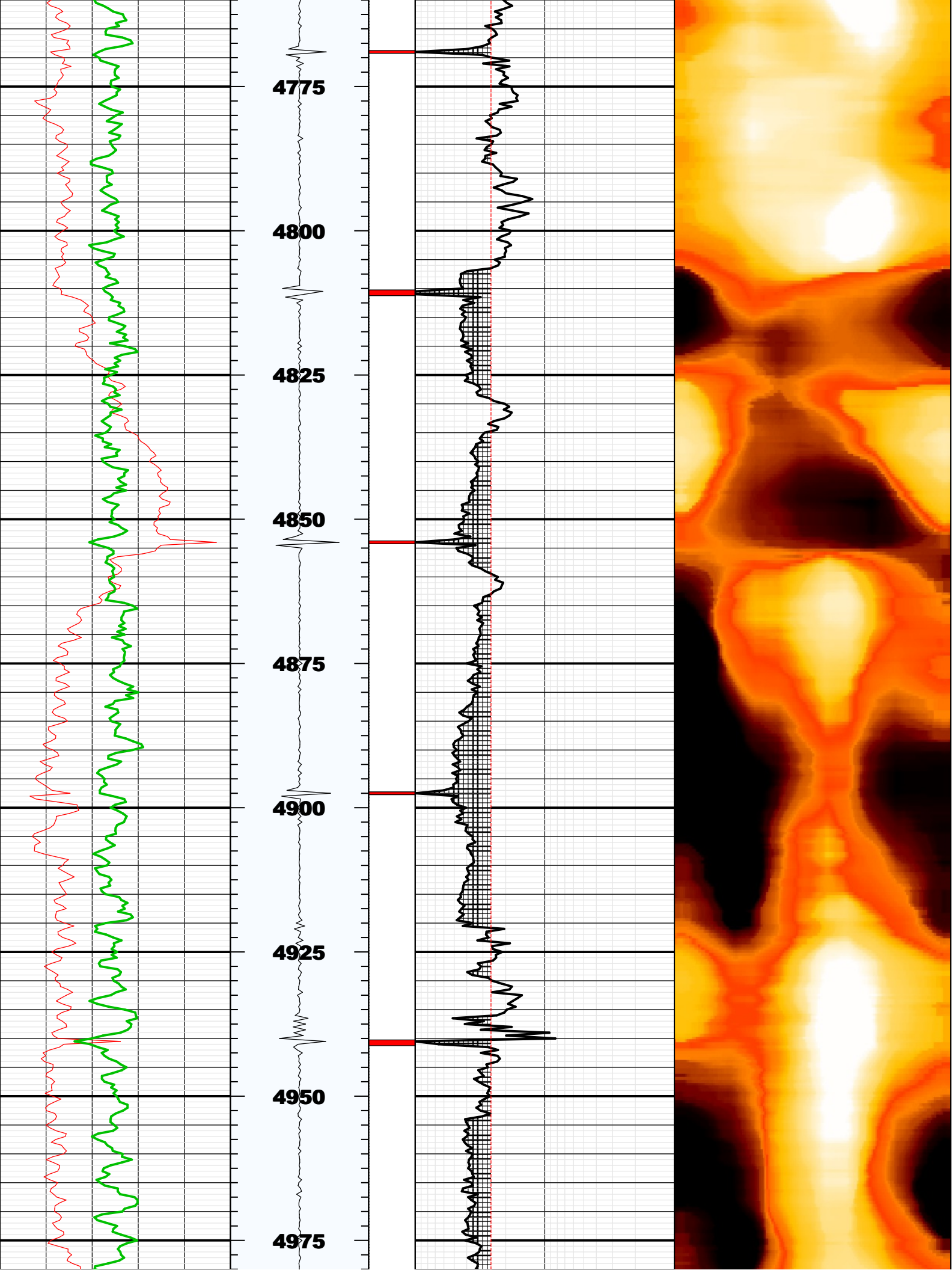


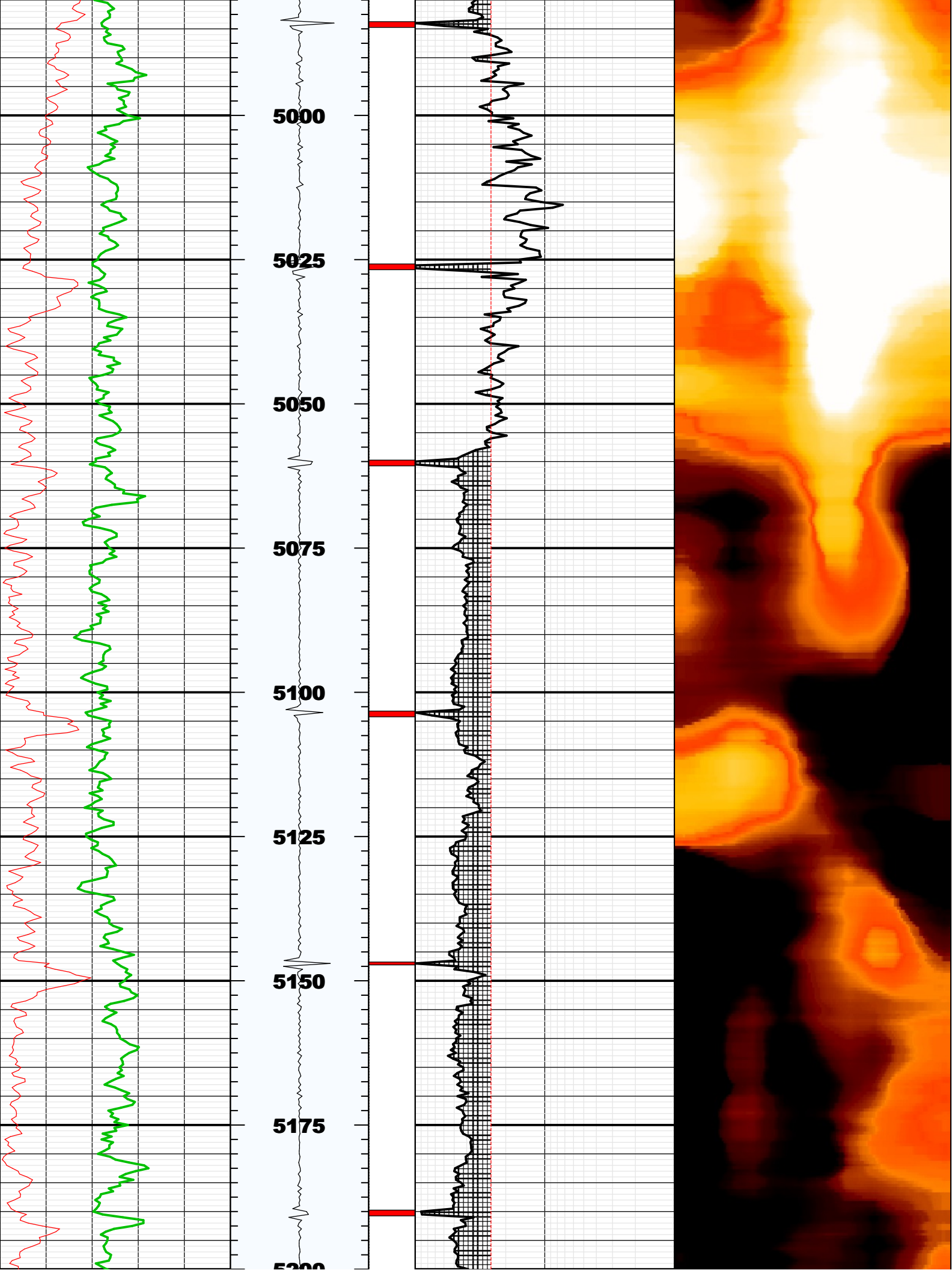


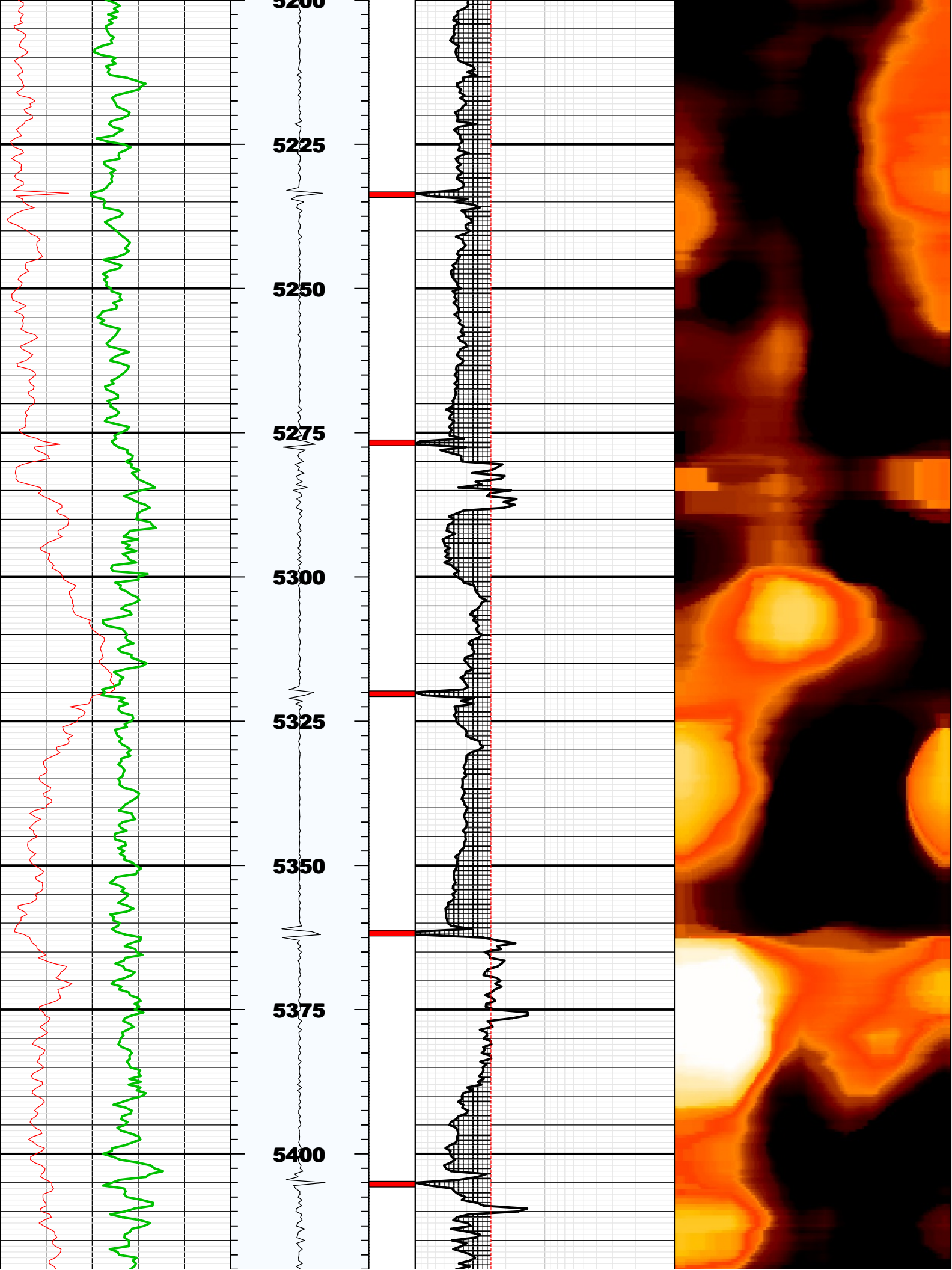


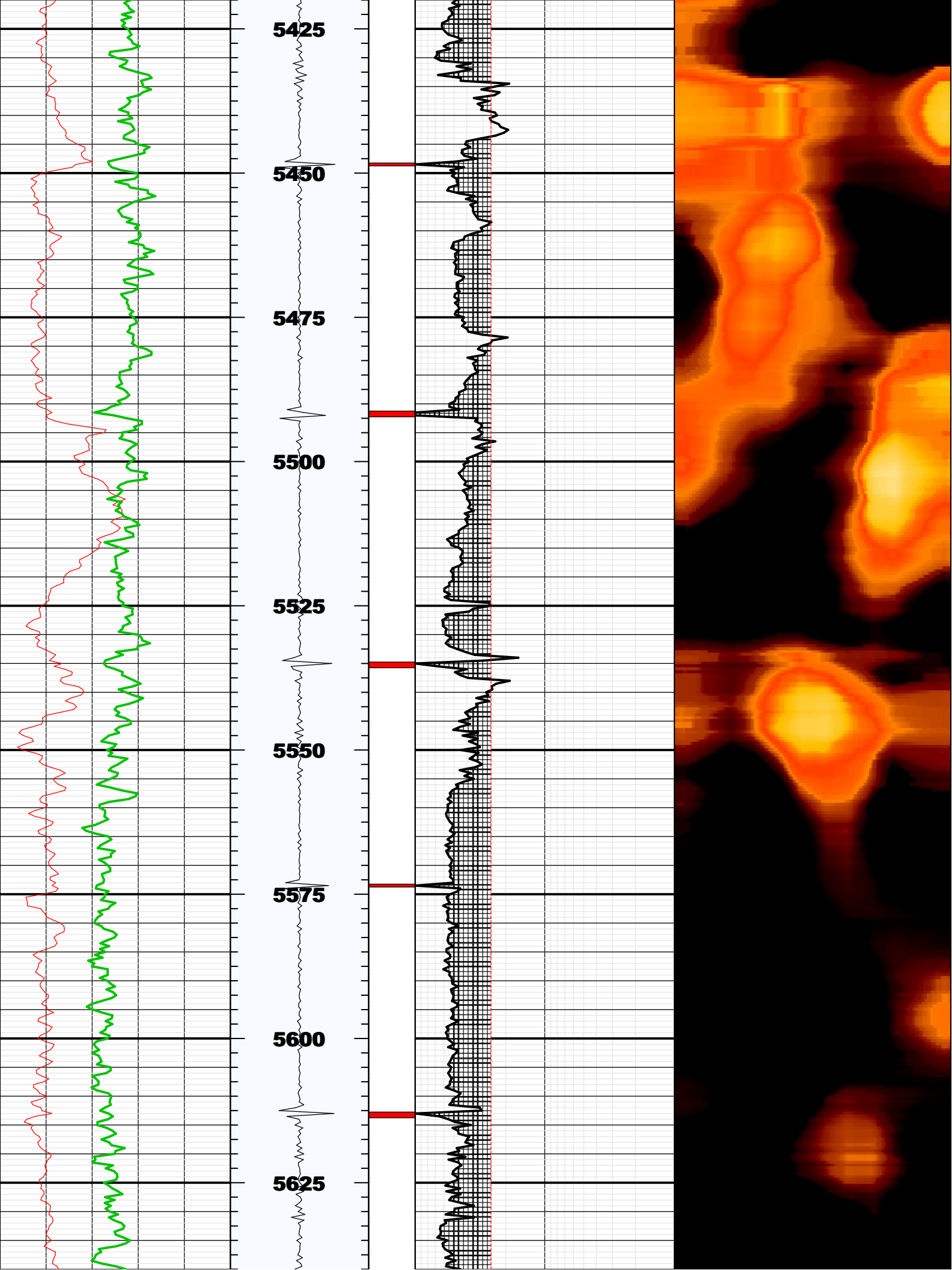


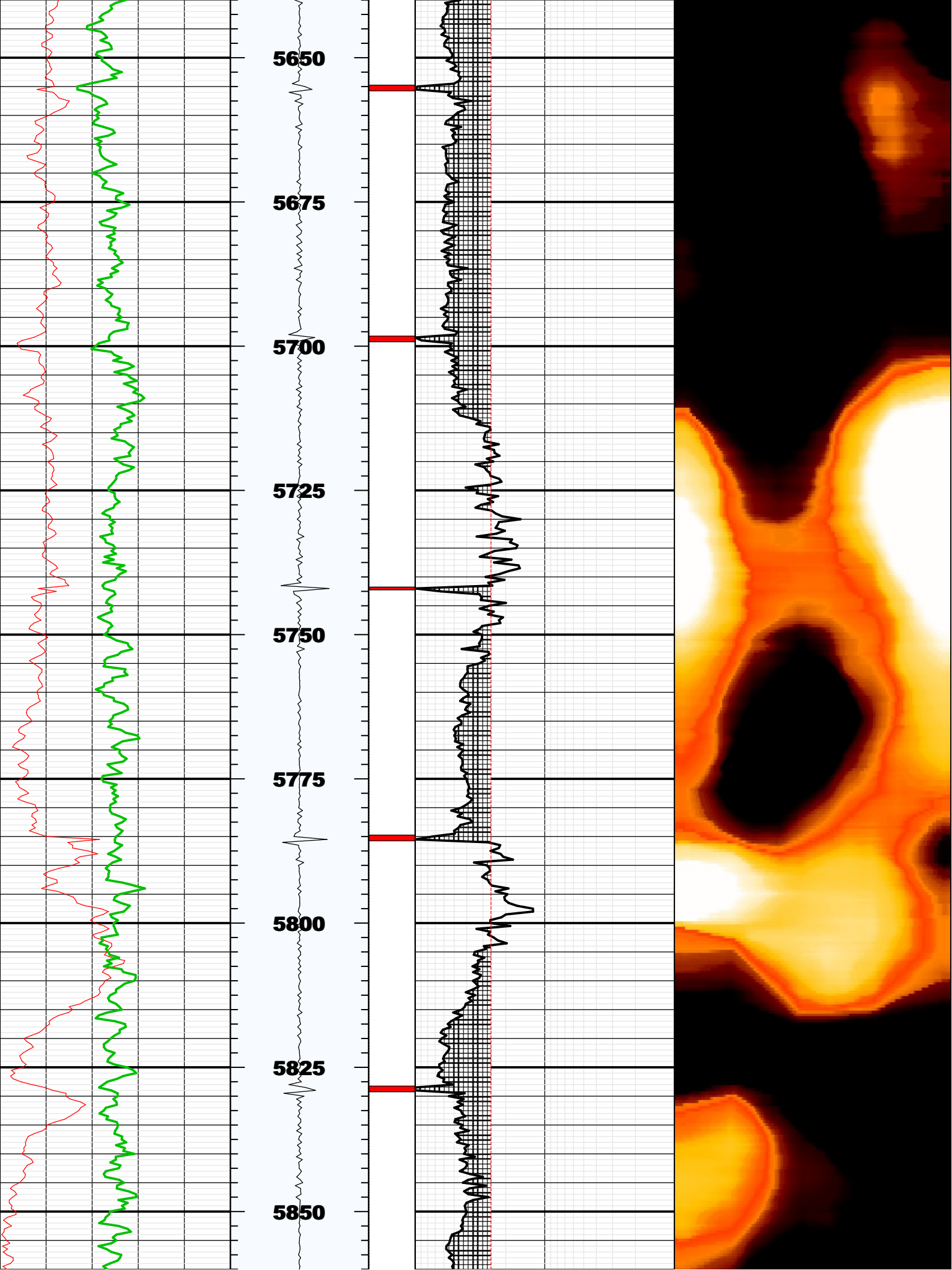


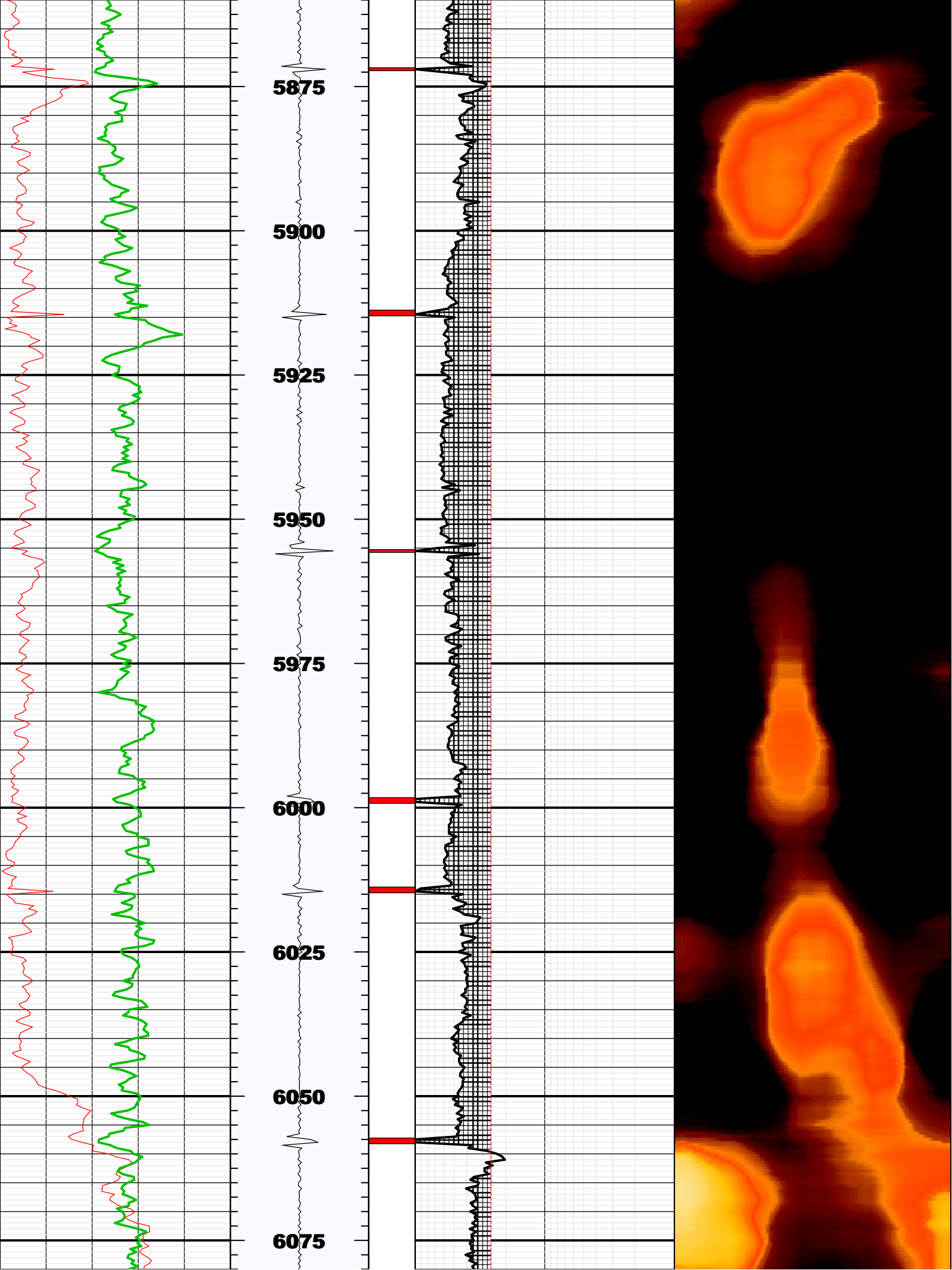


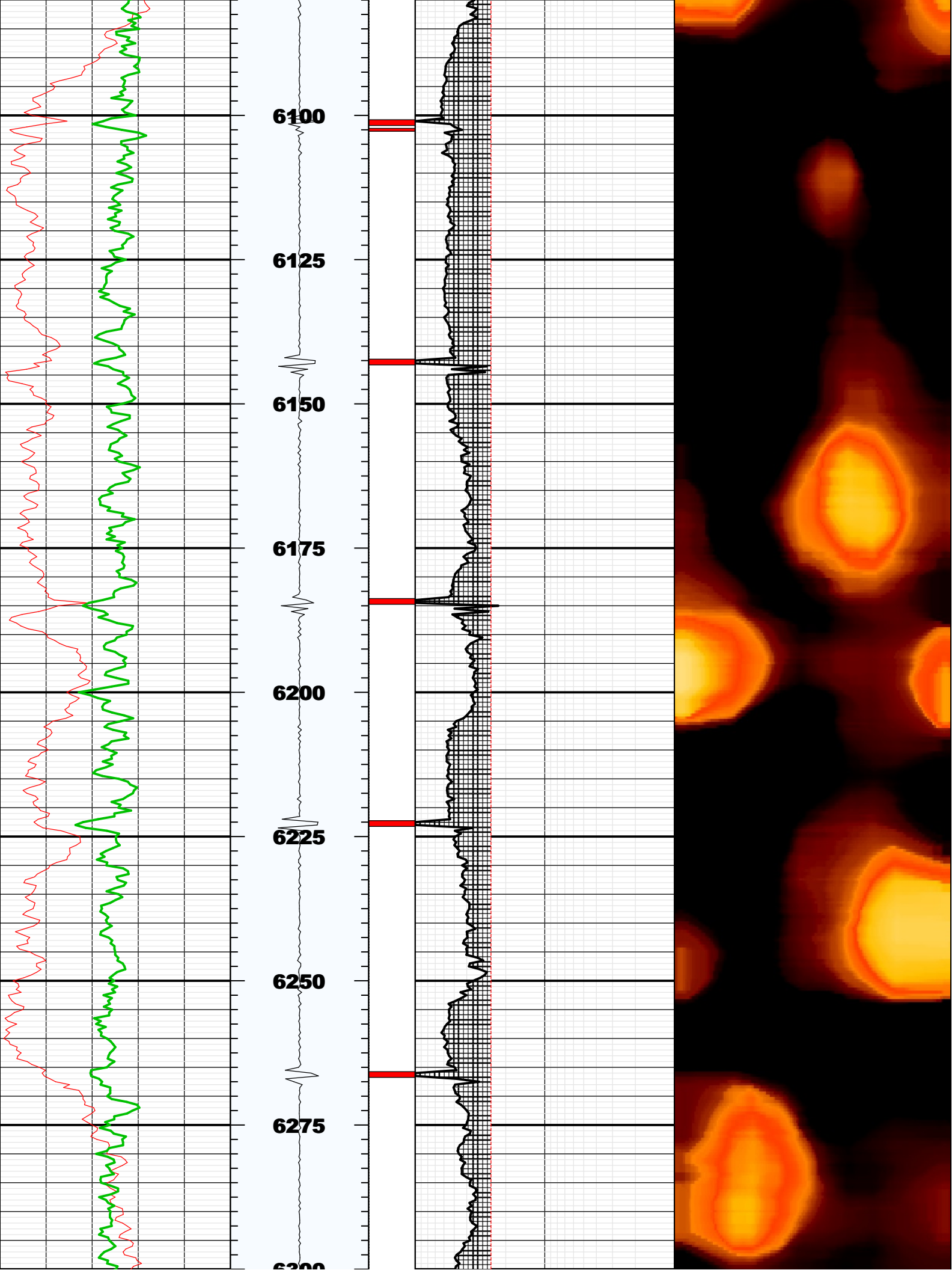


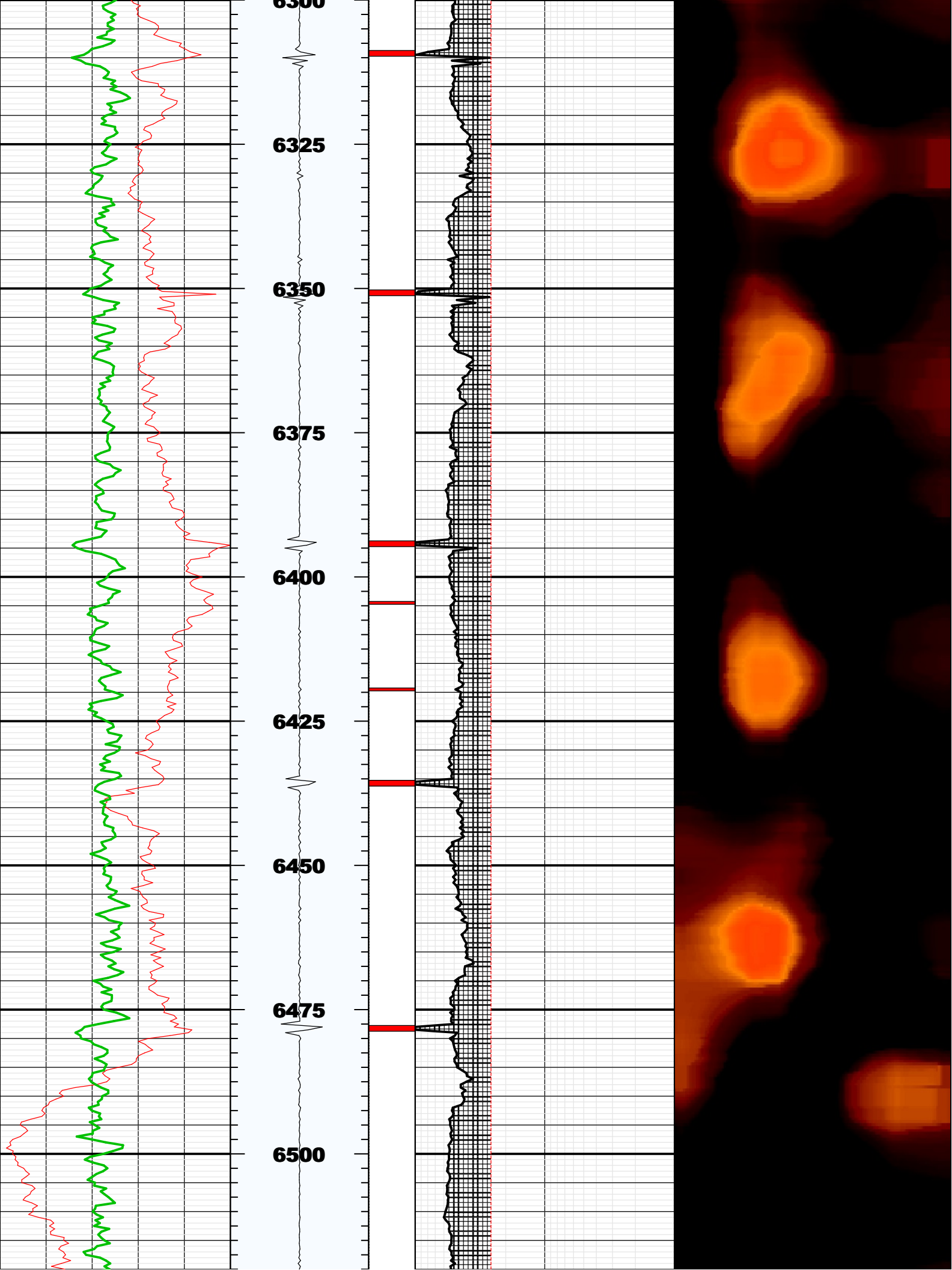


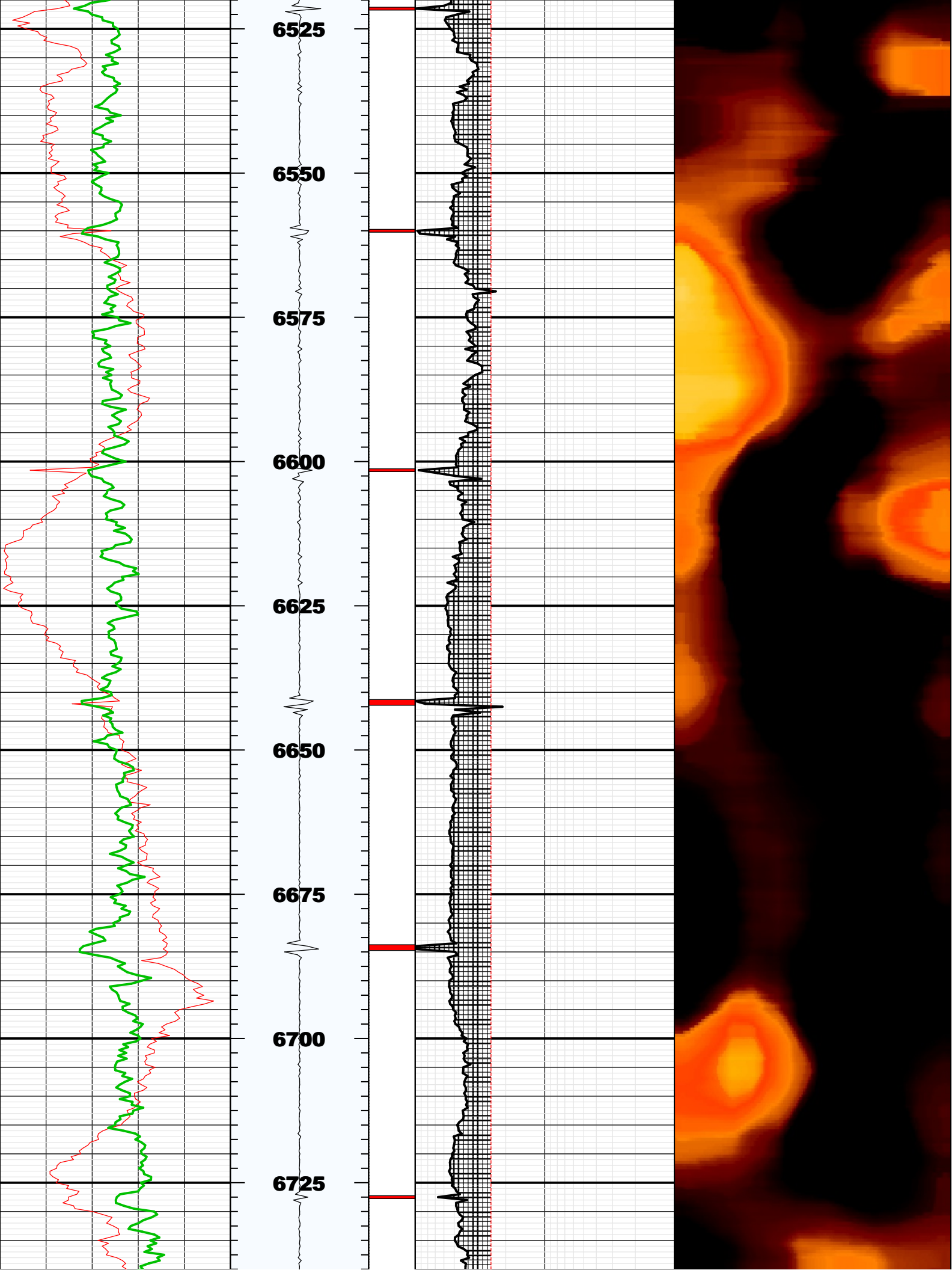


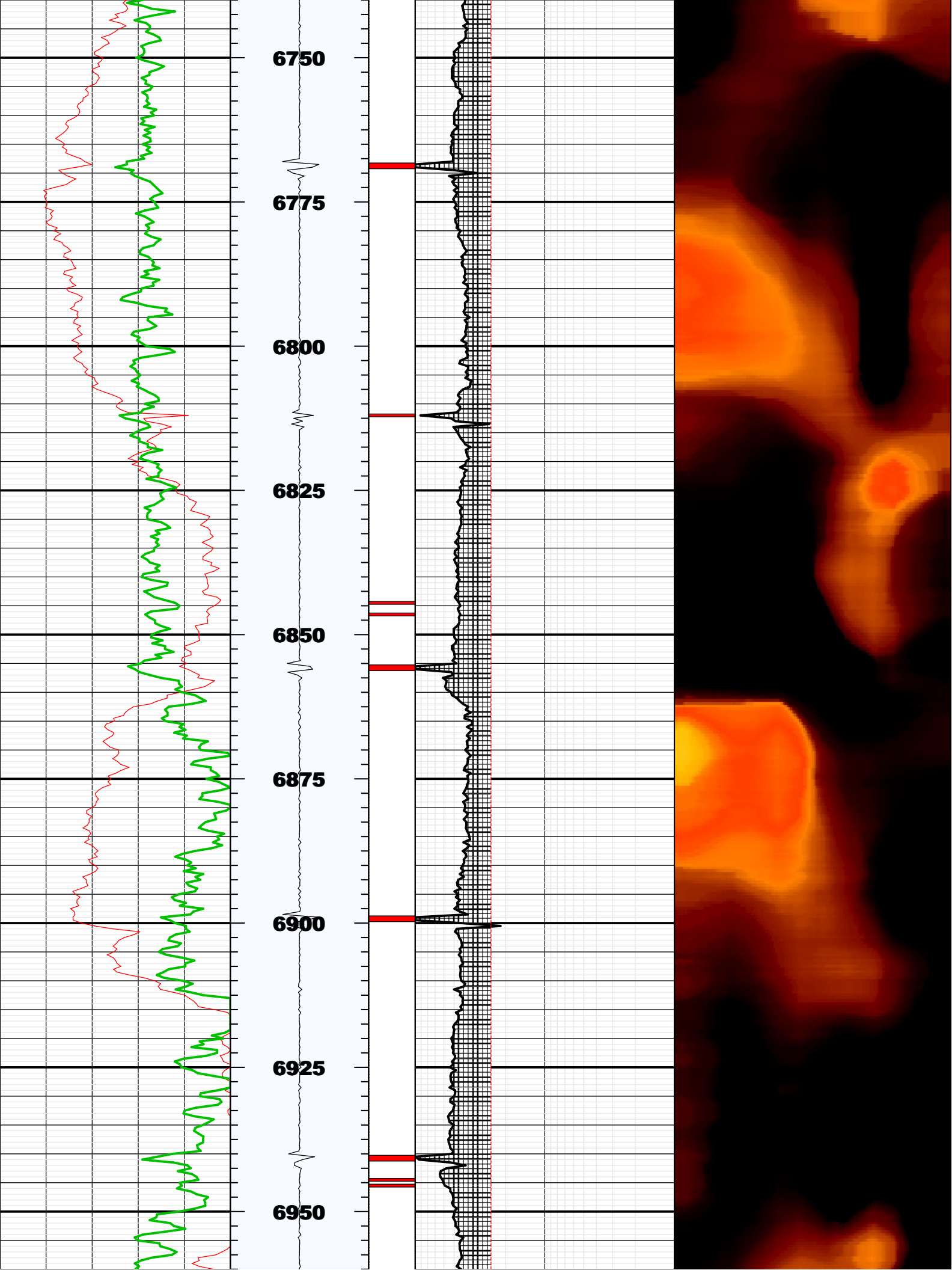


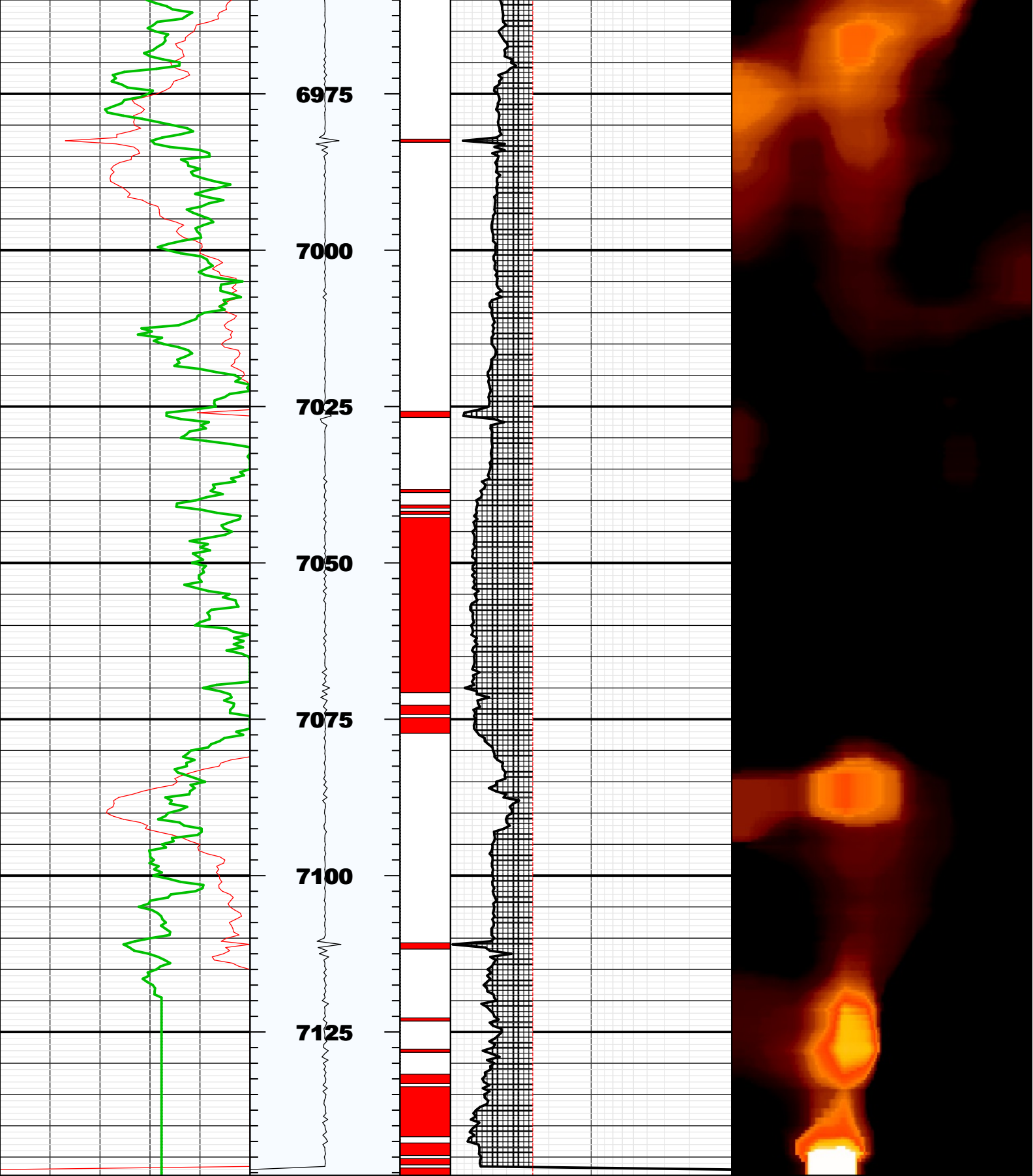








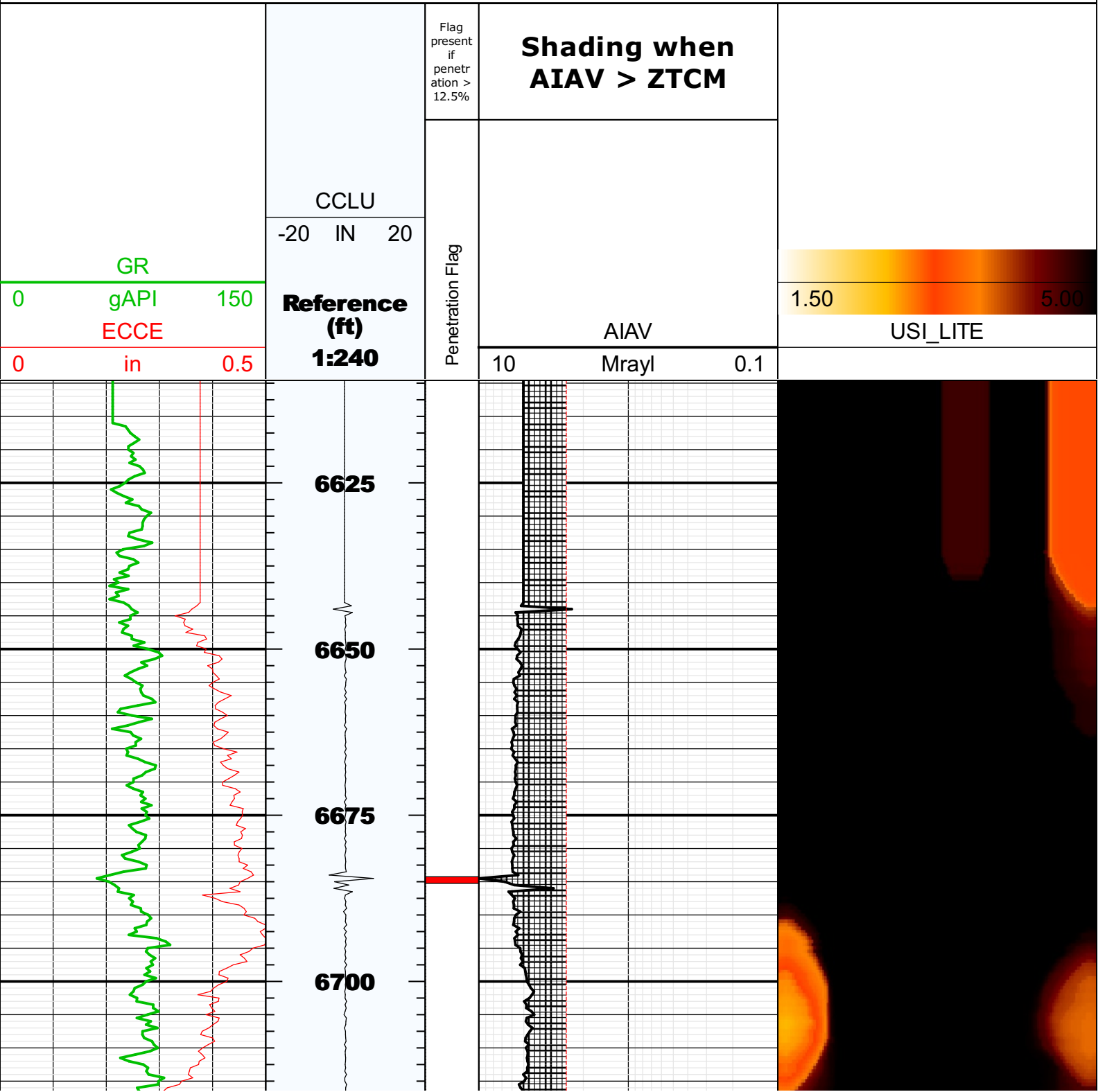


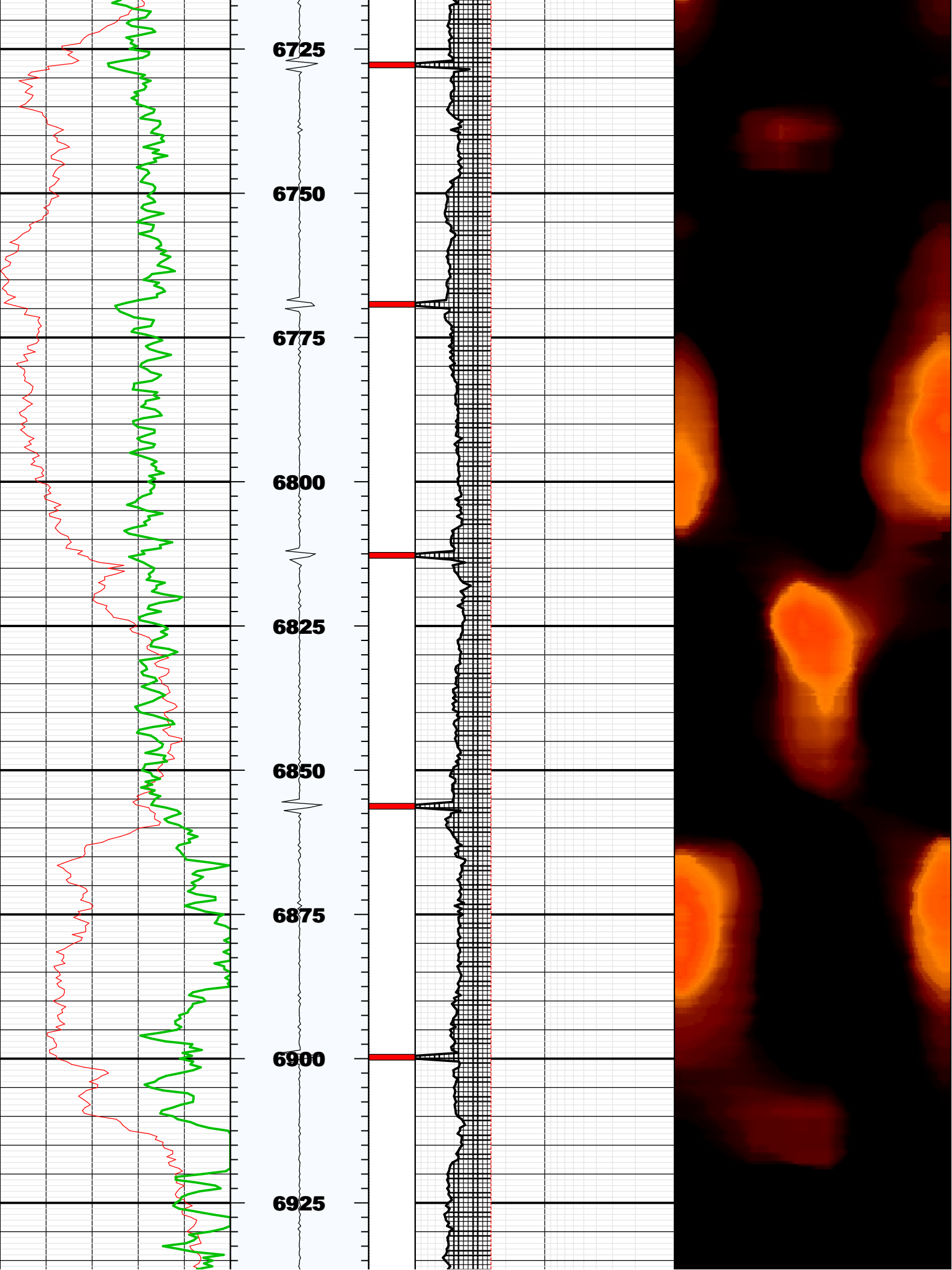


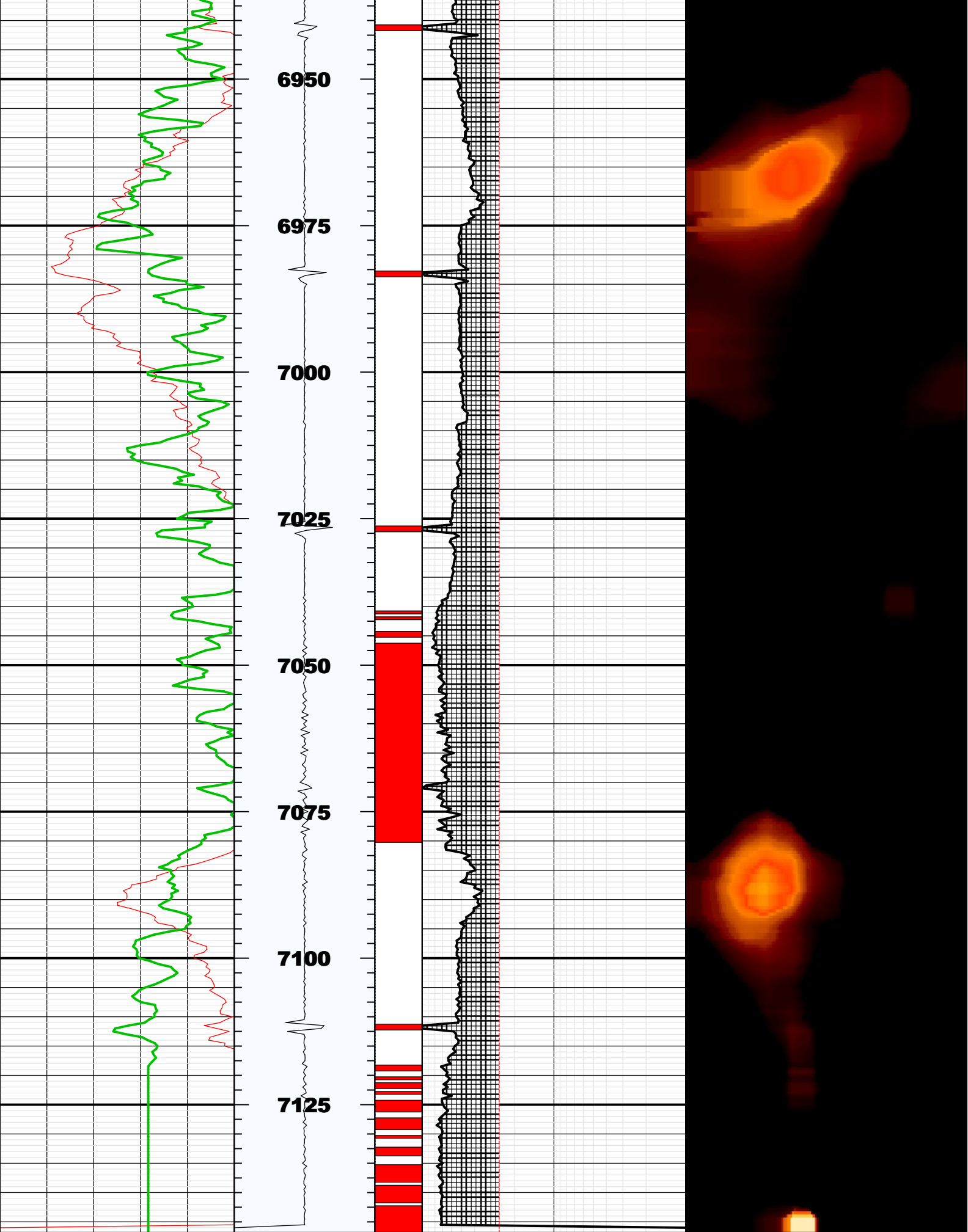
BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID	6.27600	IN	Casing Inner Diameter
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.70000	LB/G	Drilling Fluid Density
DFVL	206.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	125	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	0.36200	IN	Nominal Thickness of Casing
TMUC	WRM		Type of Mud
U-USIT_DT3P			
UPAT	375K		Emission Pattern
USUB	7INC		USIT Sub Identifier
UWKM	D603010L		Working Mode
VCAS	51.40000	US/F	Ultrasonic Transversal Velocity in Casing
WINB	23.79618	US	Window Begin Time
WINE	96.99409	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.84000	MRAY	Acoustic Impedance of Mud
ZTCM	2.60000	MRAY	Acoustic Impedance Threshold for Cement
ZTGS	0.30000	MRAY	Acoustic Impedance Threshold for Gas
WLEN	22.50350	US	T [^] 3 Processing Length

Repeat Pass

Company: Noble Energy Inc
Well: Reliance E23-69-1HN
Field: Greeley







Fluid Properties Used for Main Pass

