

Company: Noble Energy Inc

Well: Mahalo State AA09-78-1BHNB
Field: Wattenberg
County: Weld State: Colorado

County: Weld			
Field: Wattenberg			
Location: SWSW Sec. 4 T6N R63W			
Well: Mahalo State AA09-78-1BHNB			
Company: Noble Energy Inc			
USI-LITE			
Permanent Datum: Log Measured From: Drilling Measured From:		GL KB KB	Elev: K.B. 4722.0 F G.L. 4698.0 F D.F. 4721.0 F
Logging Date	API Serial No. 05-123-39120-0000	Section 4	Township 6N
Run Number	Run 1		Range 63W
Depth Driller	6944.0 F		
Schlumberger Depth	6710.0 F		
Bottom Log Interval	6710.0 F		
Top Log Interval	24.0 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	6710.0 F		
To	-999.2 F		
Casing Size	7.00 IN		
Weight	26.00 LB/F		
Grade	P110		
From	24.0 F		
To	6939.5 F		
Max Recorded Temp	218.0		
Logger on bottom (date)	03-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: 17300.00000

DISCLAIMER

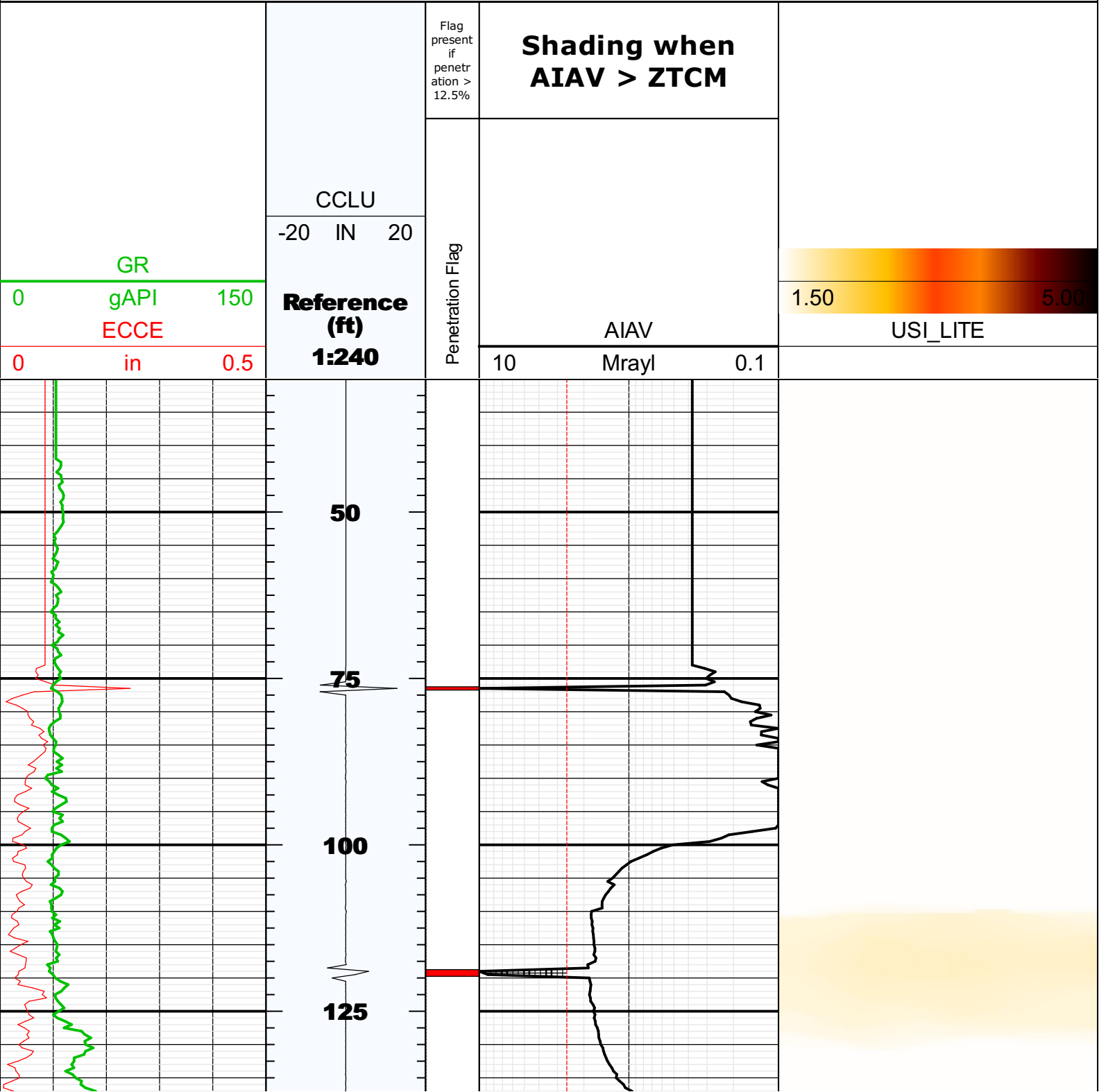
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIIONS ON USE OF THE RECORDED-DATA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

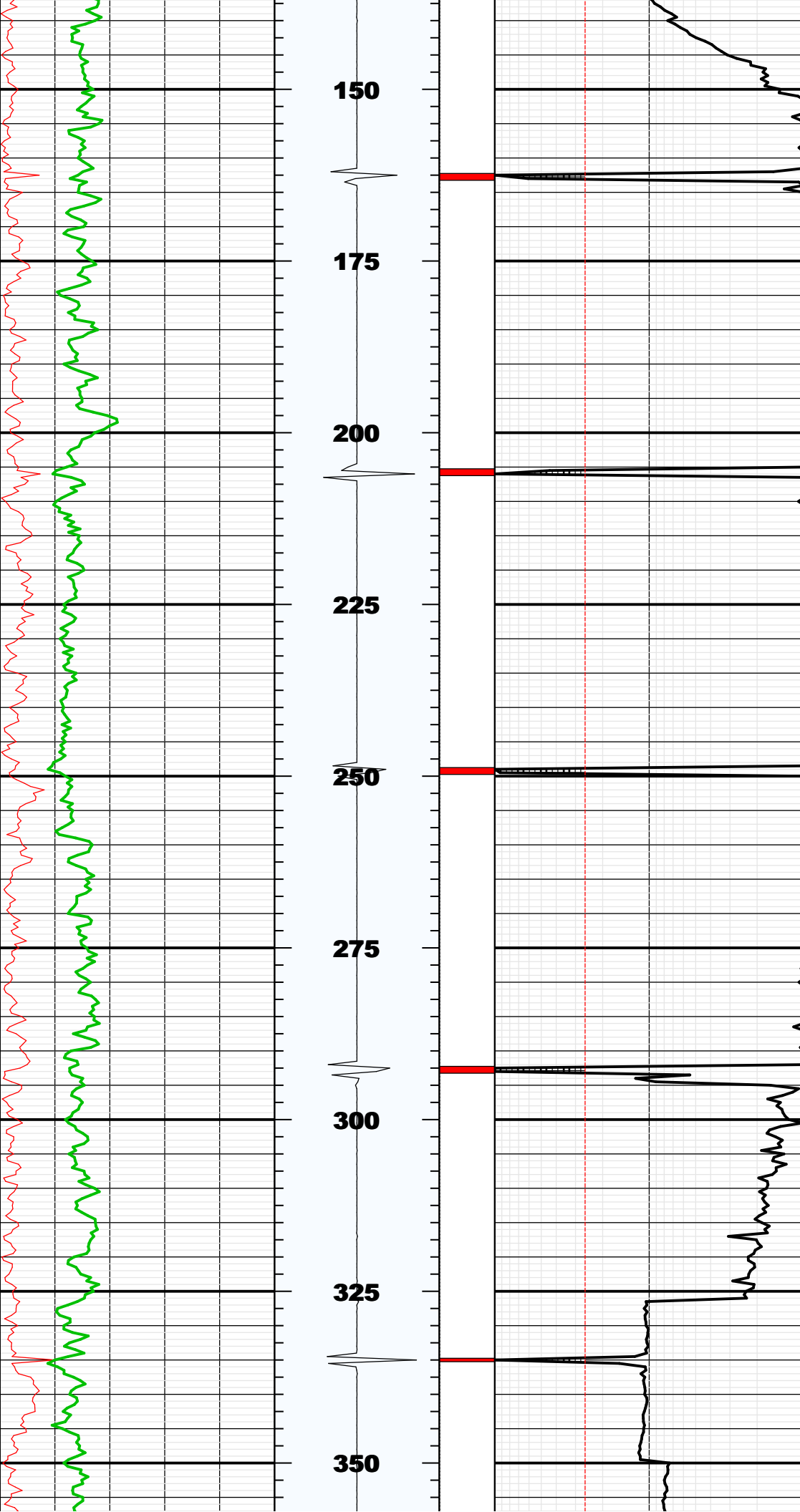
This is the first run in hole.
Toolstring run as per toolsketch.
Log objective Cement Evaluation
0 PSI repeat pass and 2500 PSI main pass.
Estimated TOC @ 2650'. Expected TOC @ 2569'.
During cement job pump failure after 143 of 194 BBLs needed displaced with rig pump.
4.5 liner top at 6729'.
Bottom log interval at 6710' because sub would not spin below this depth.
Bottom hole temperature was 218.03 degF.

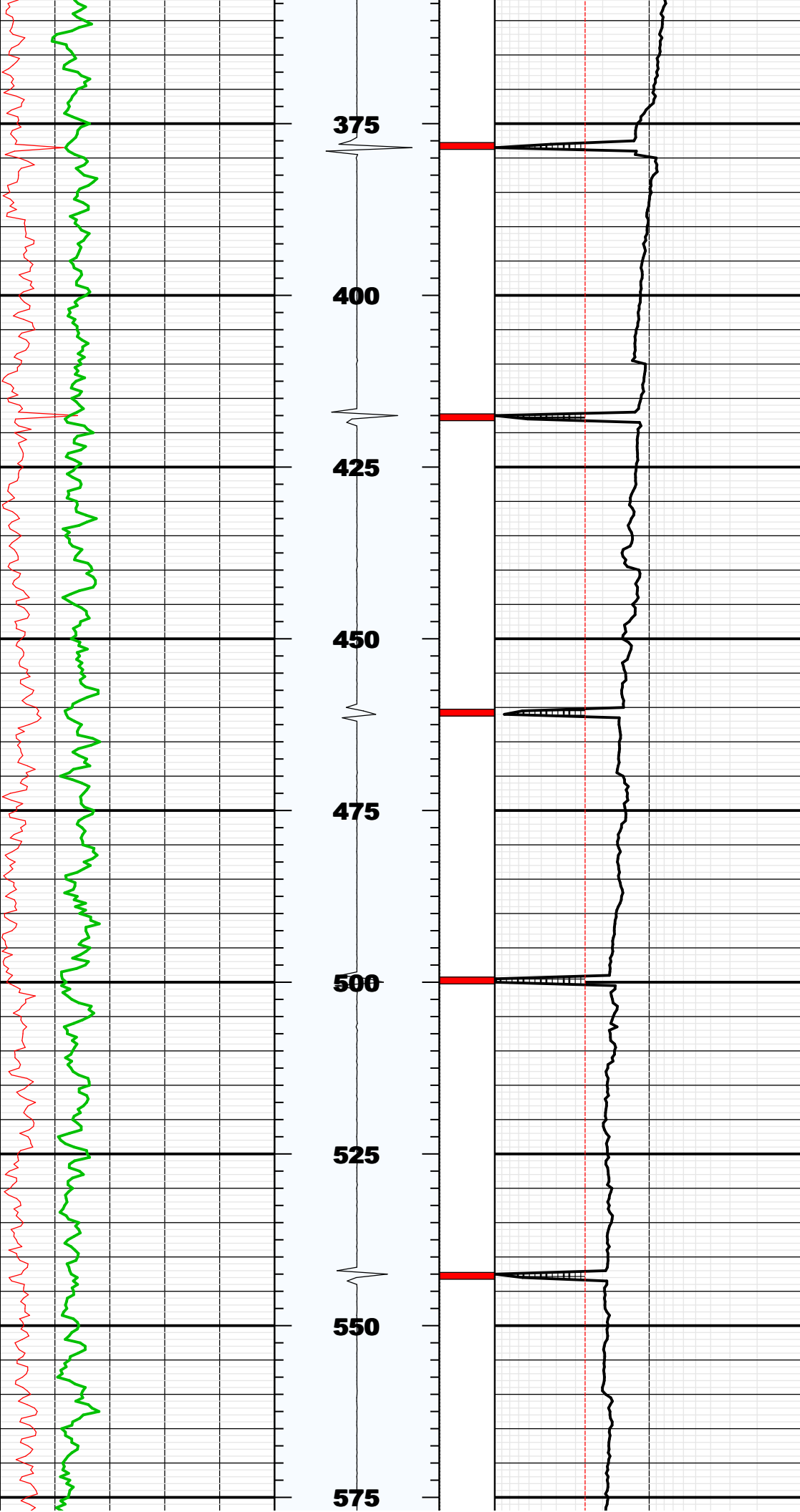
Thank you for choosing Schlumberger Wireline!
SLB crew Ian Derry Jake Jump and Keri Ondrus.

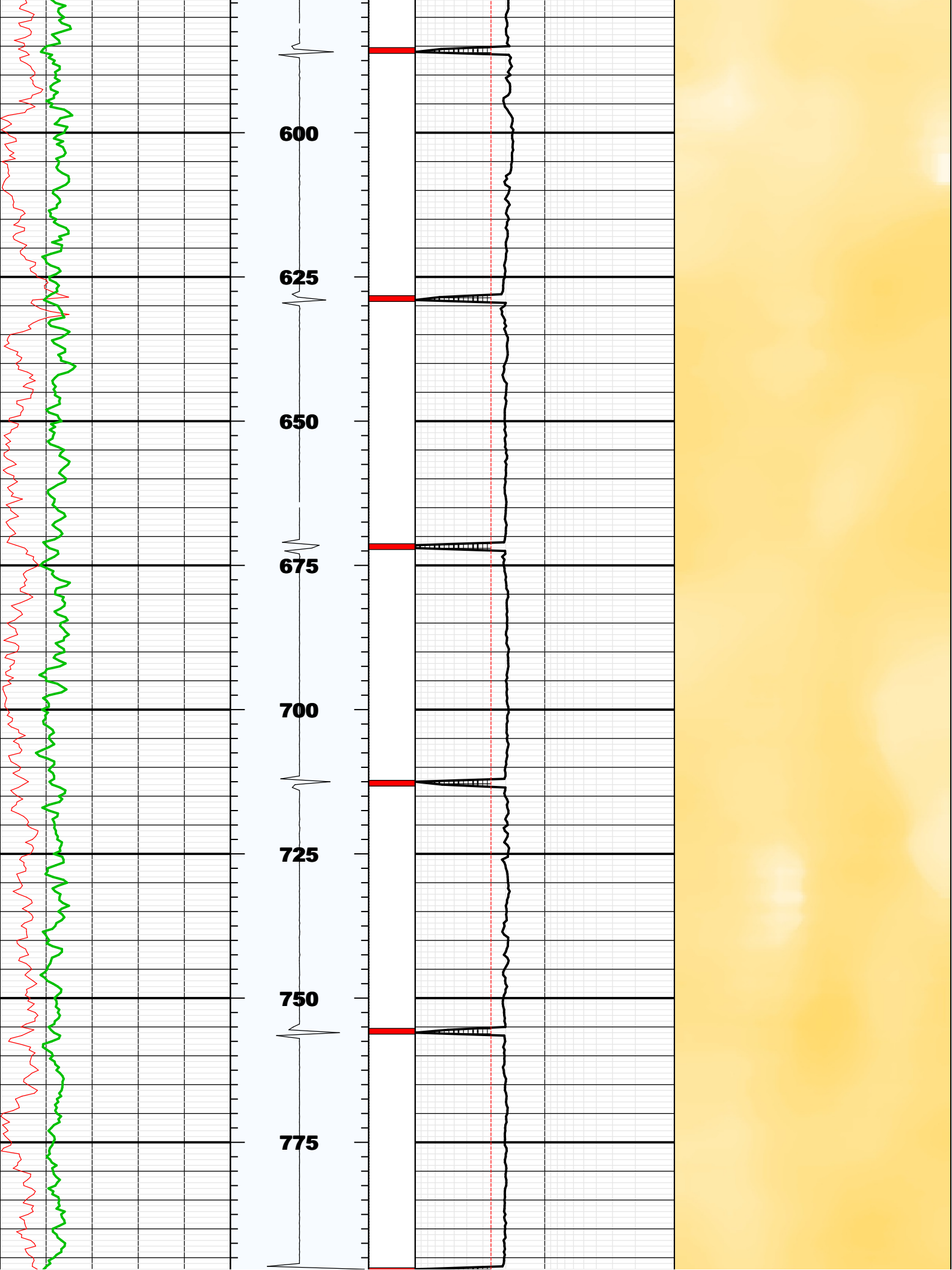
Main Pass

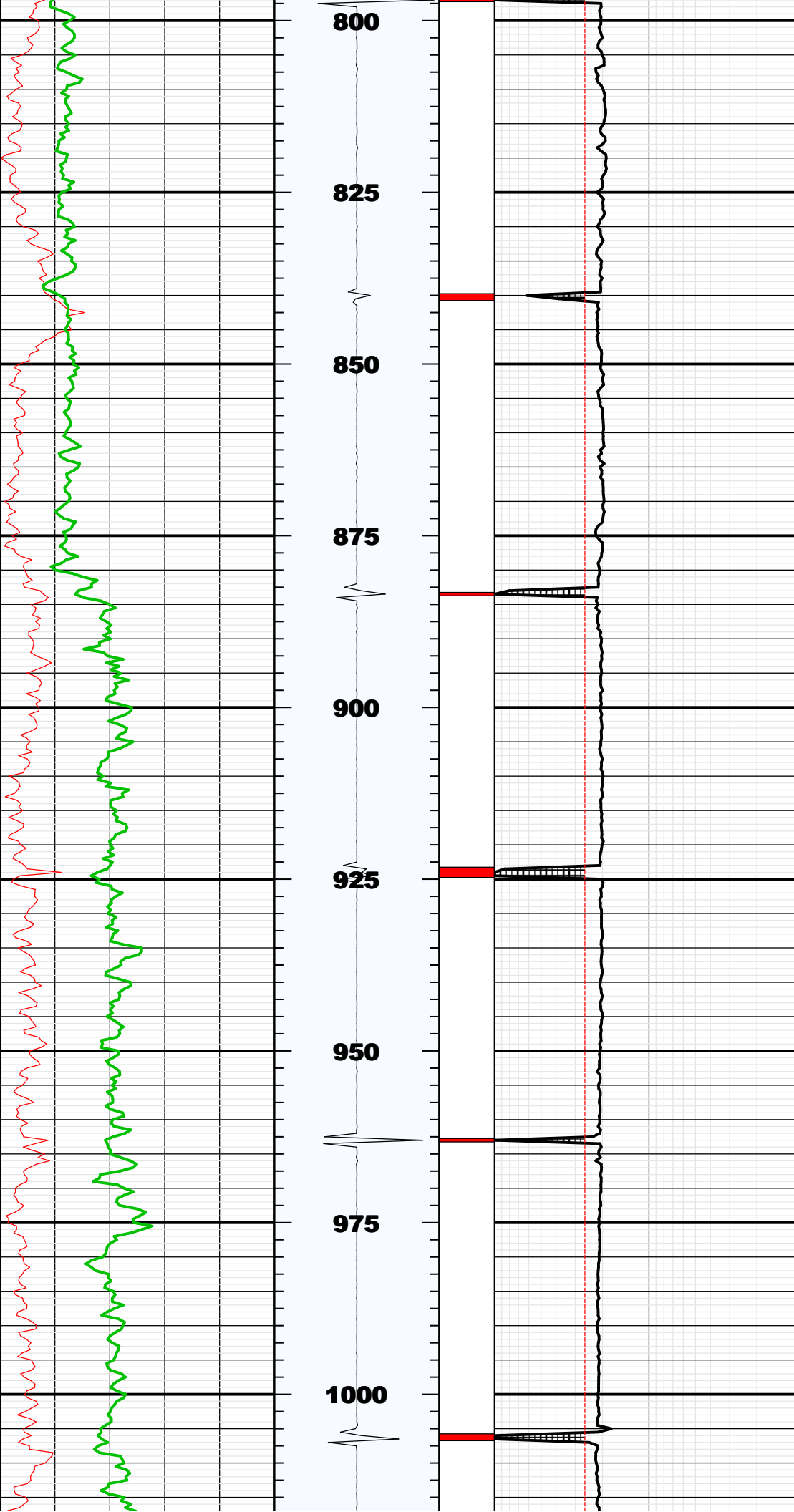
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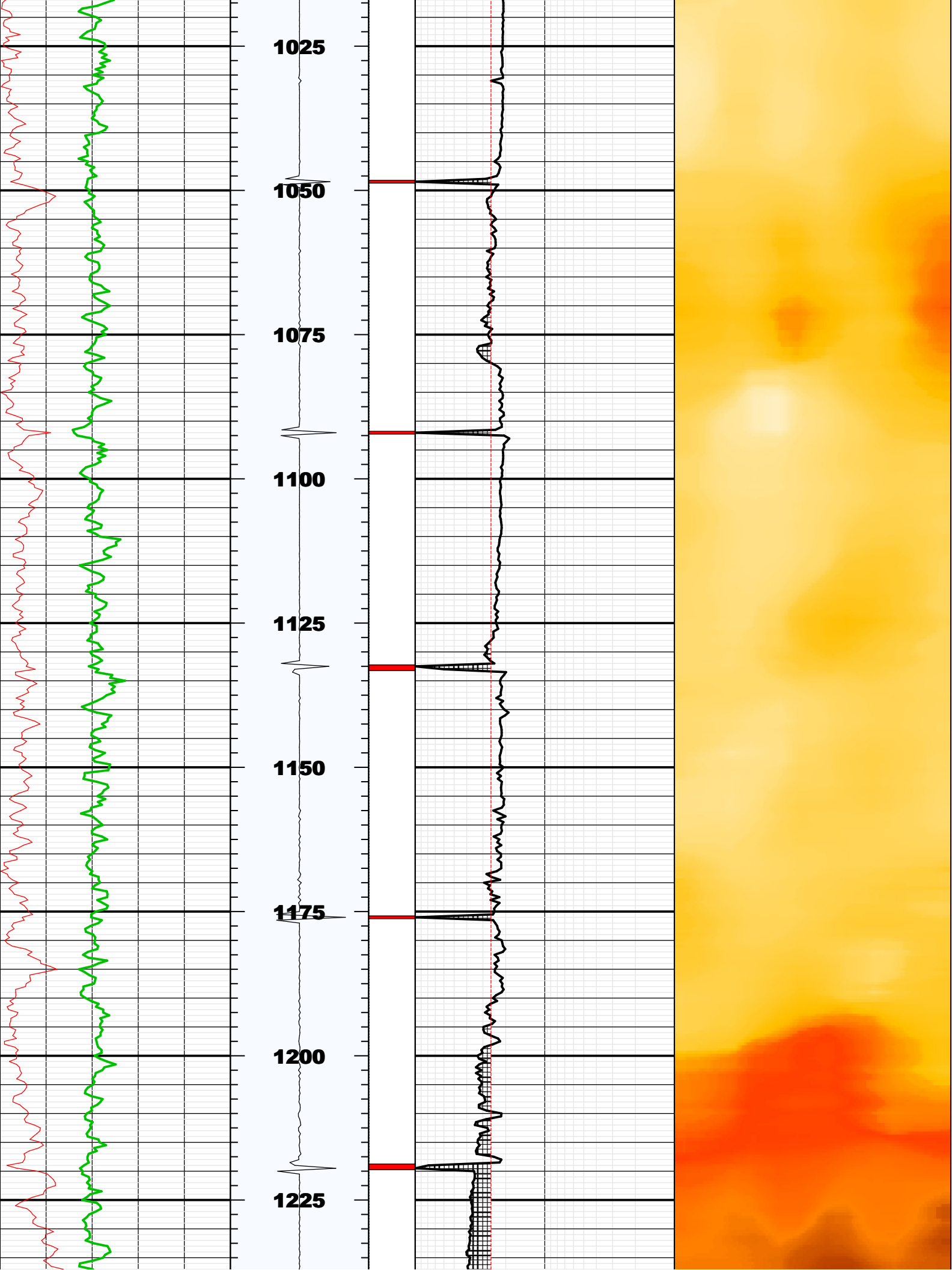


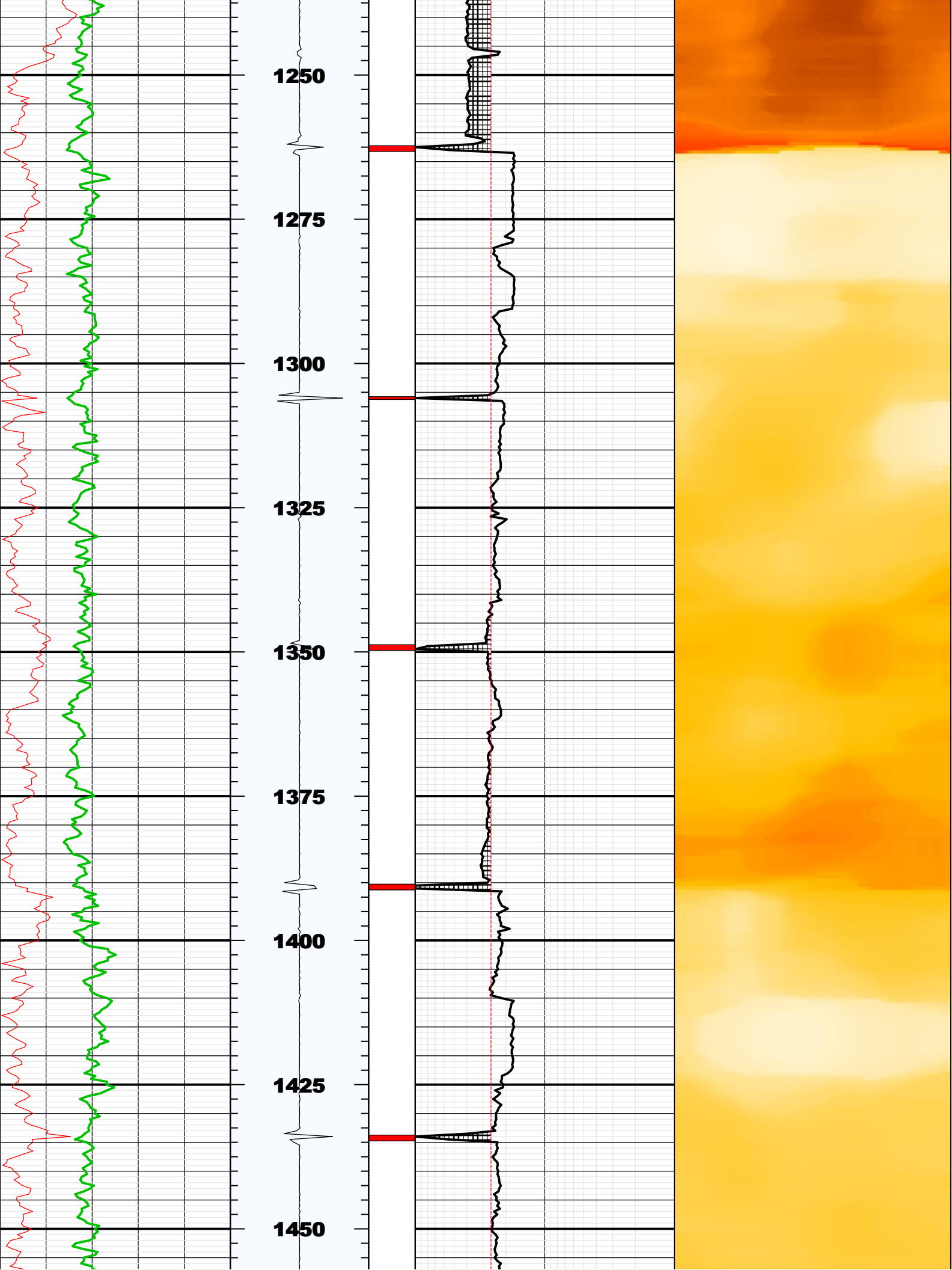


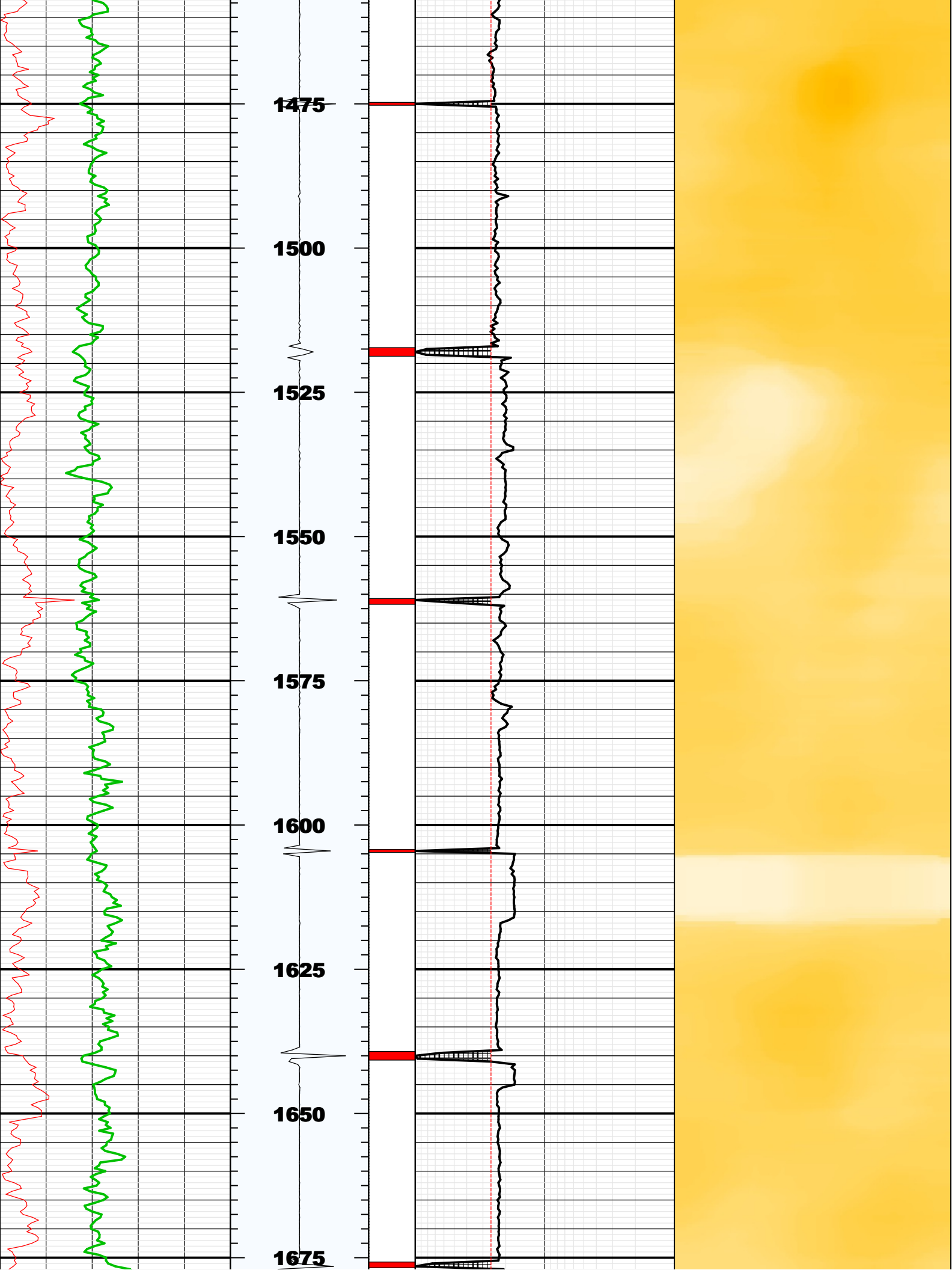


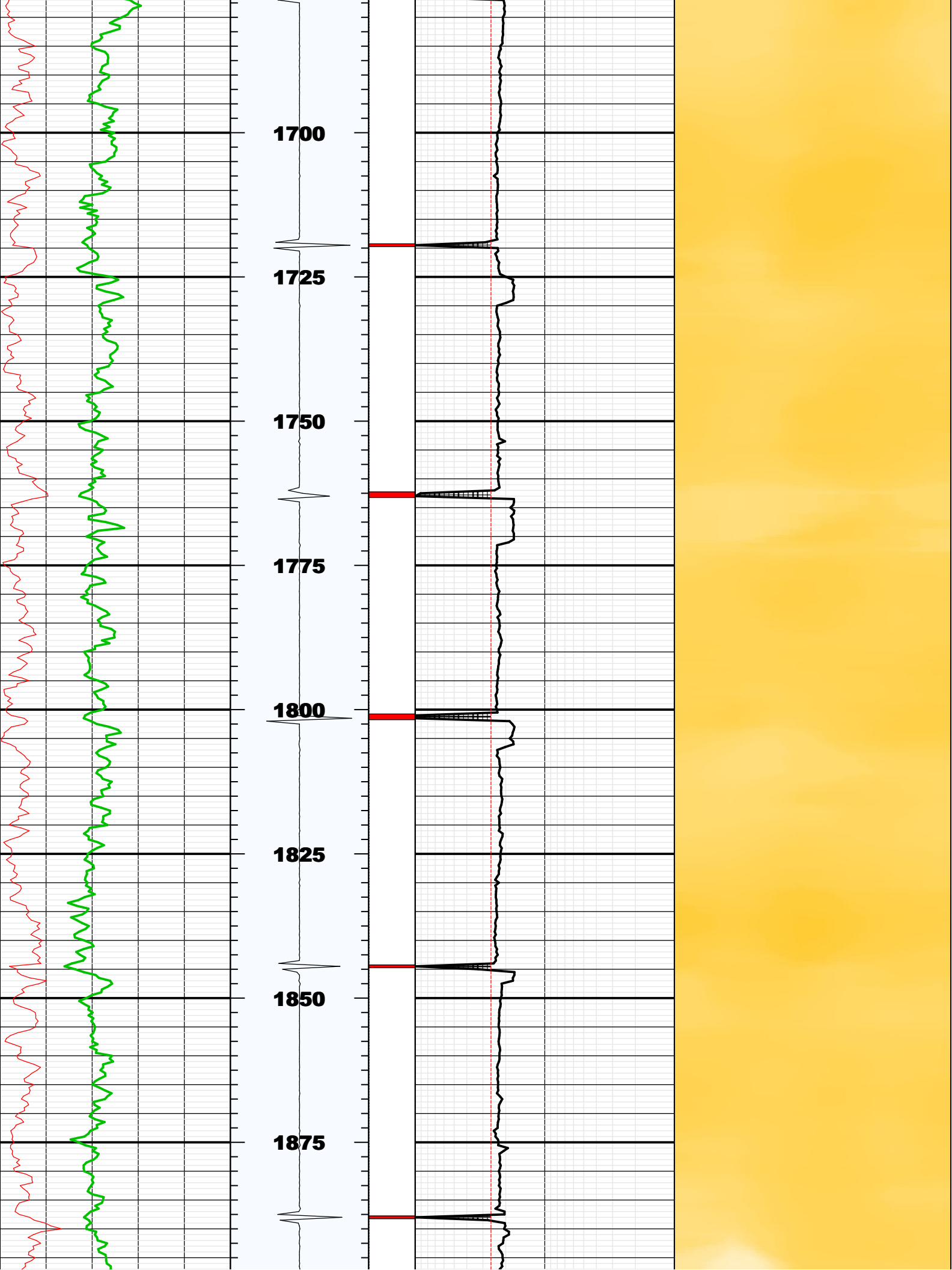


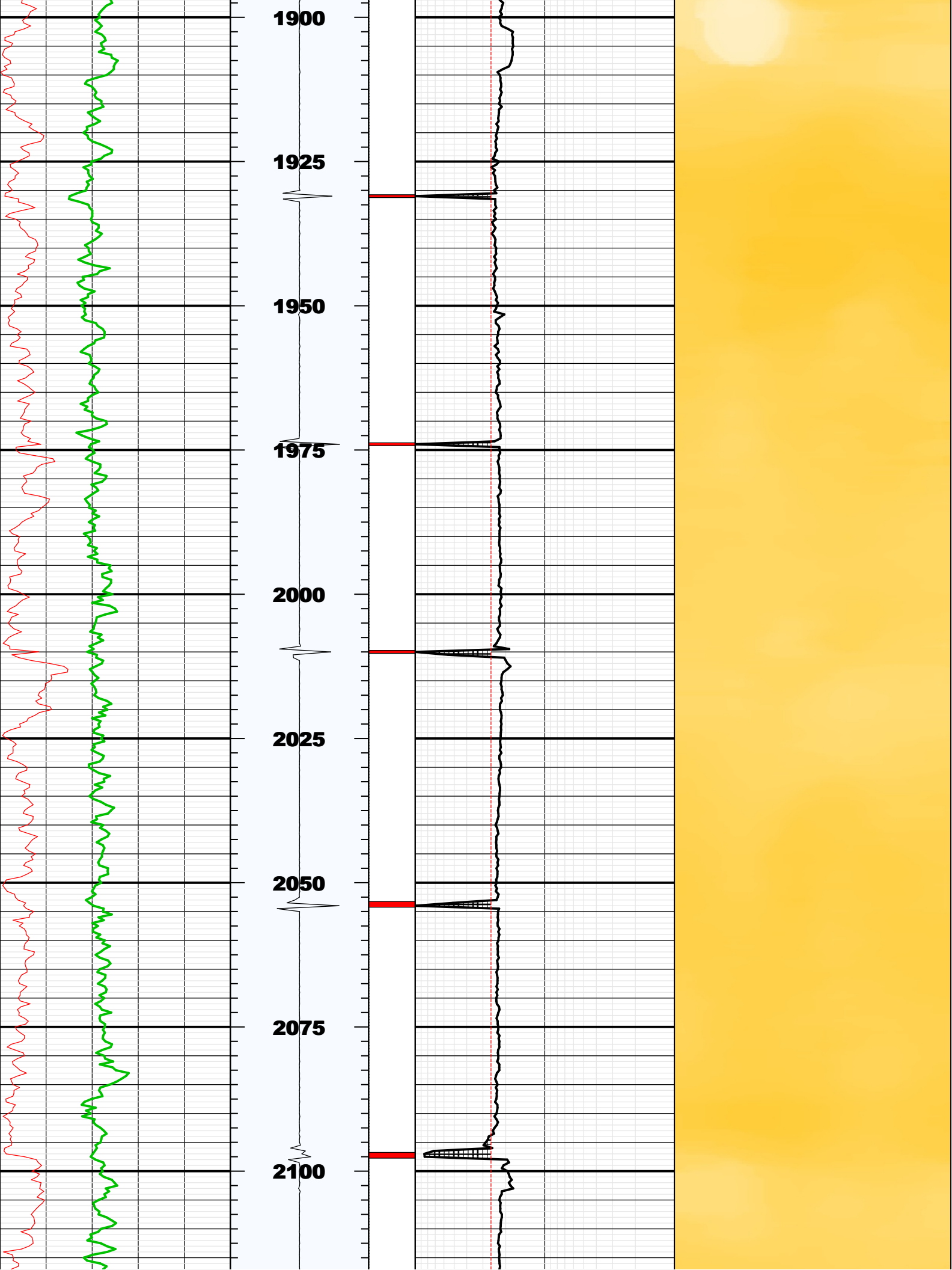


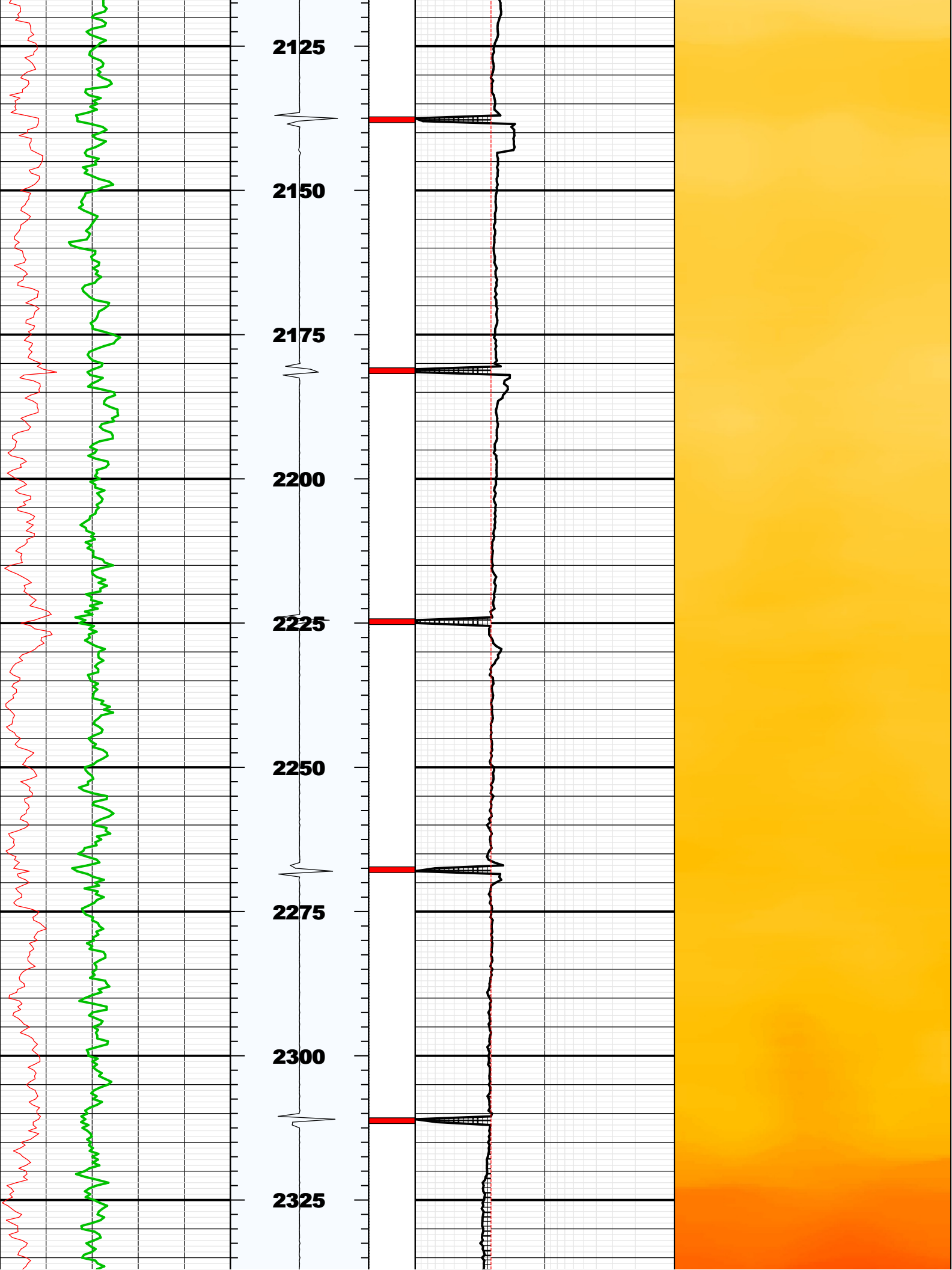


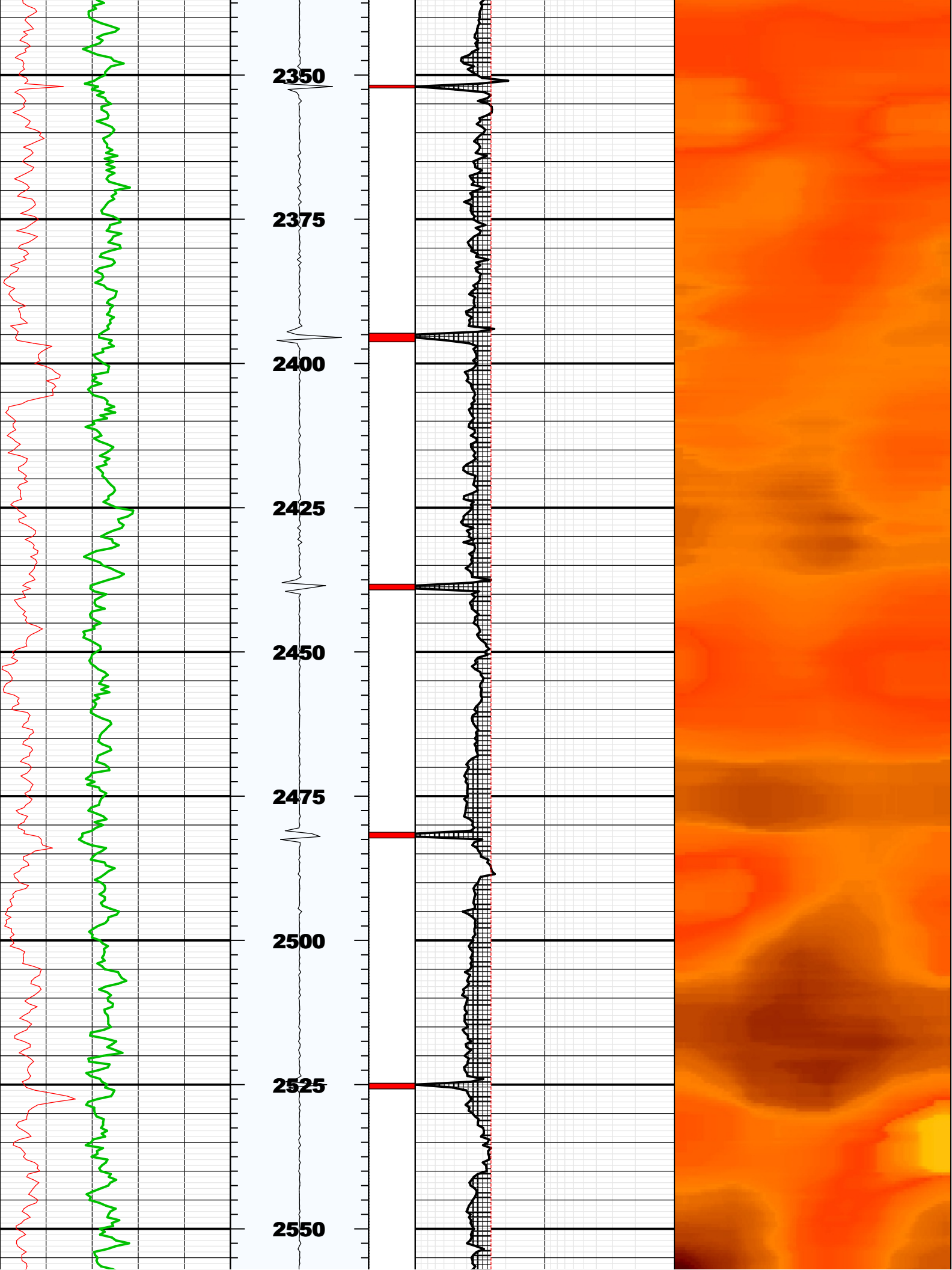


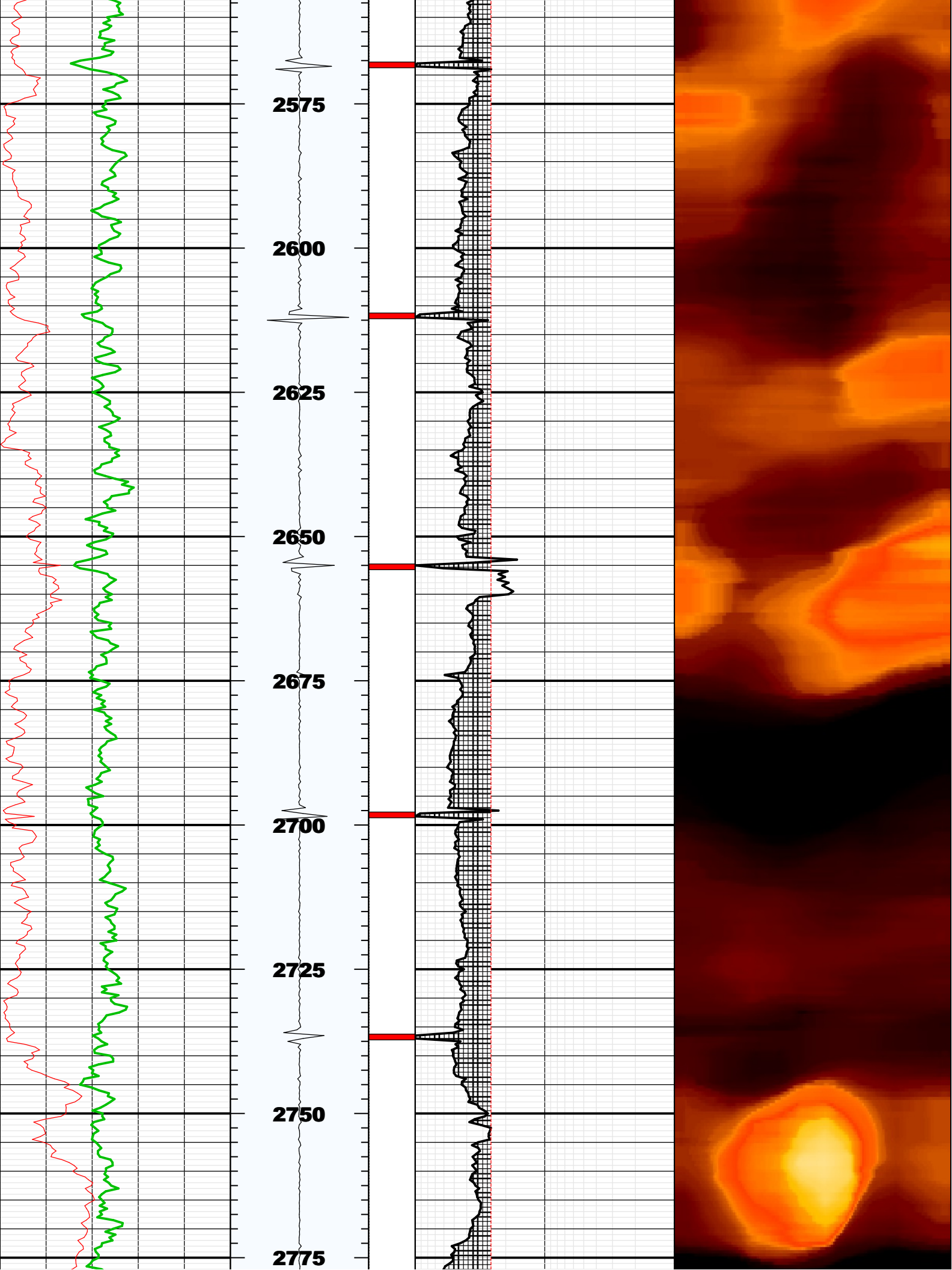


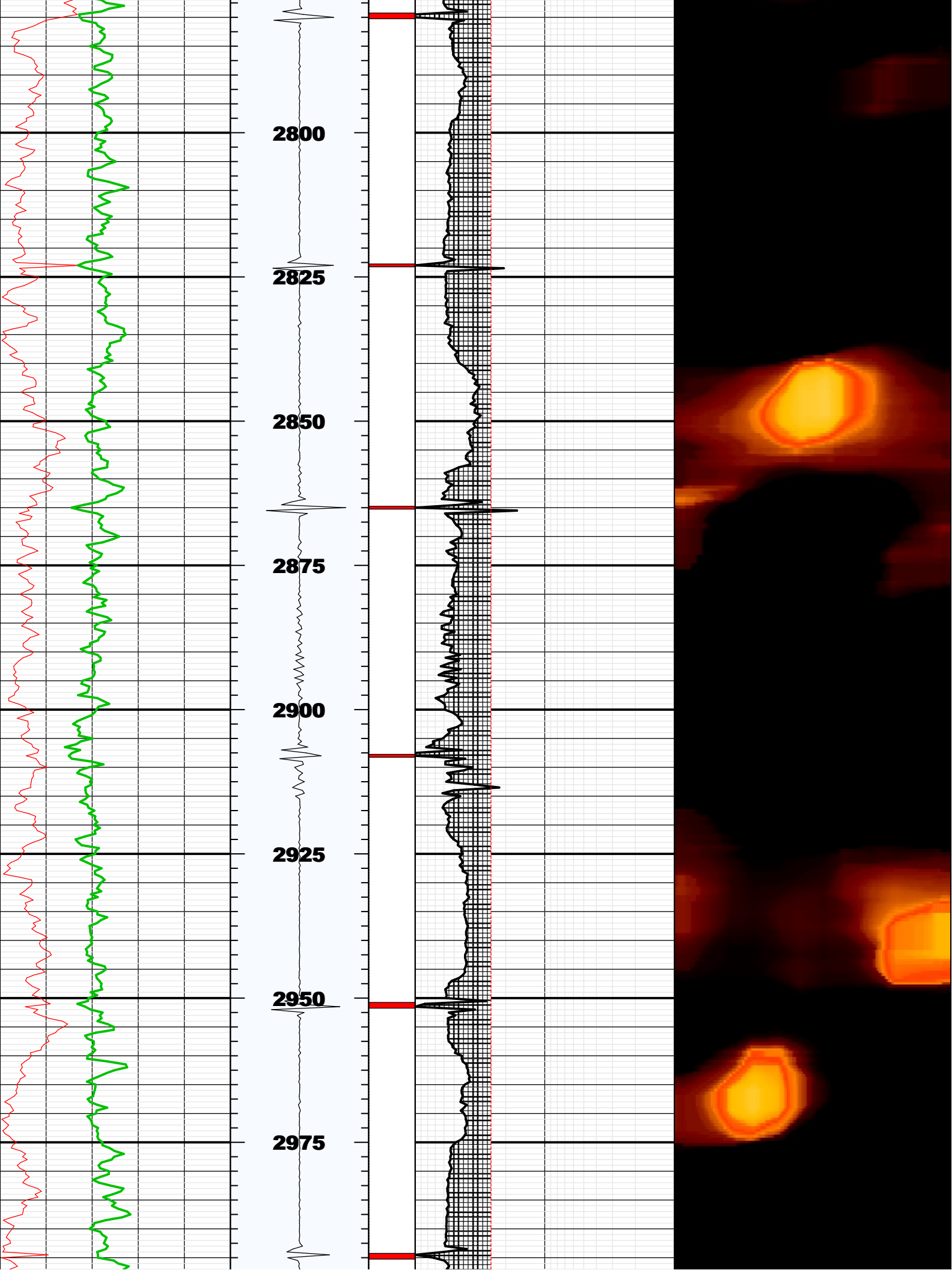


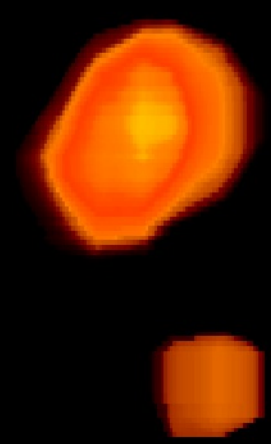
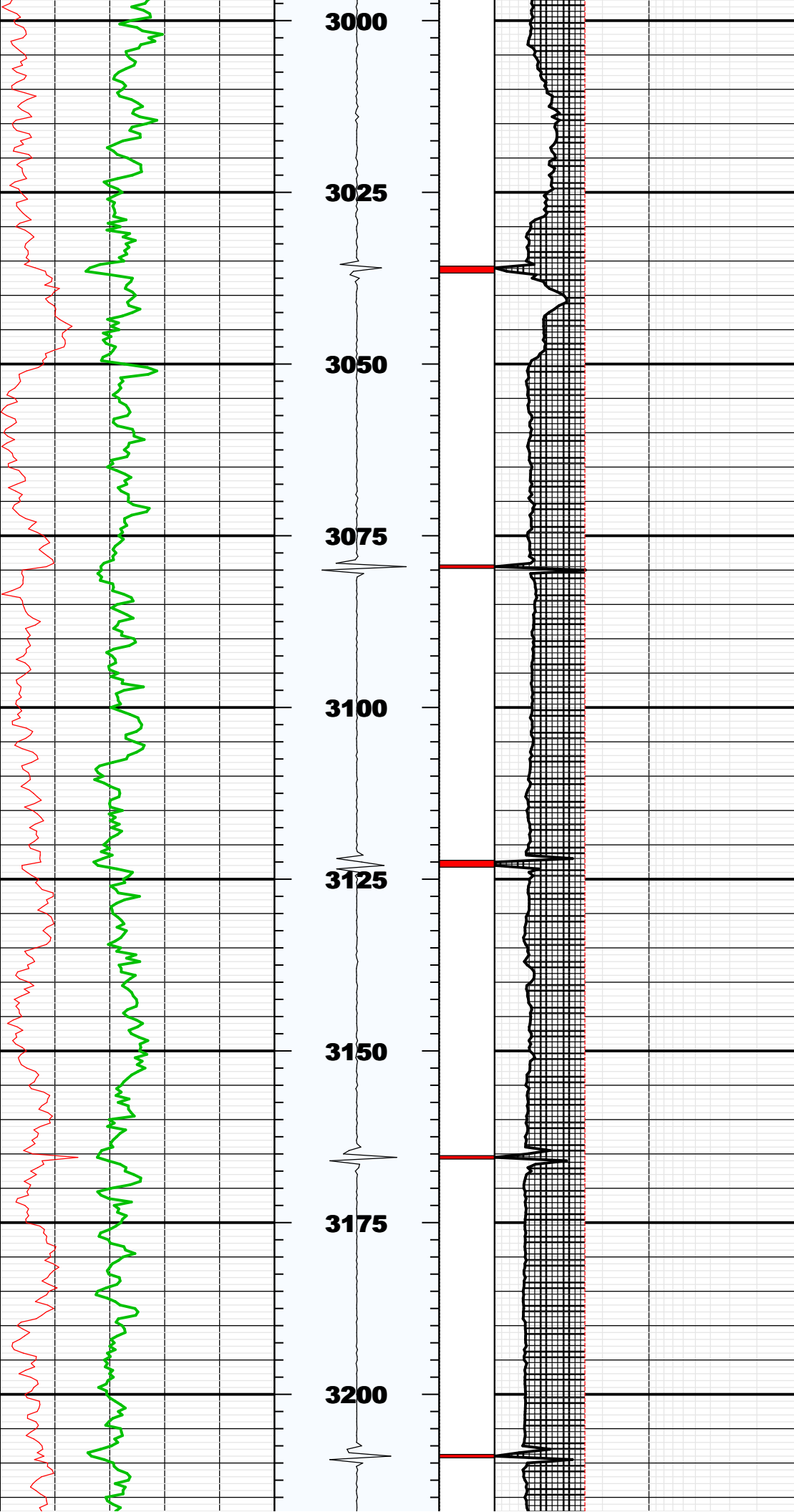


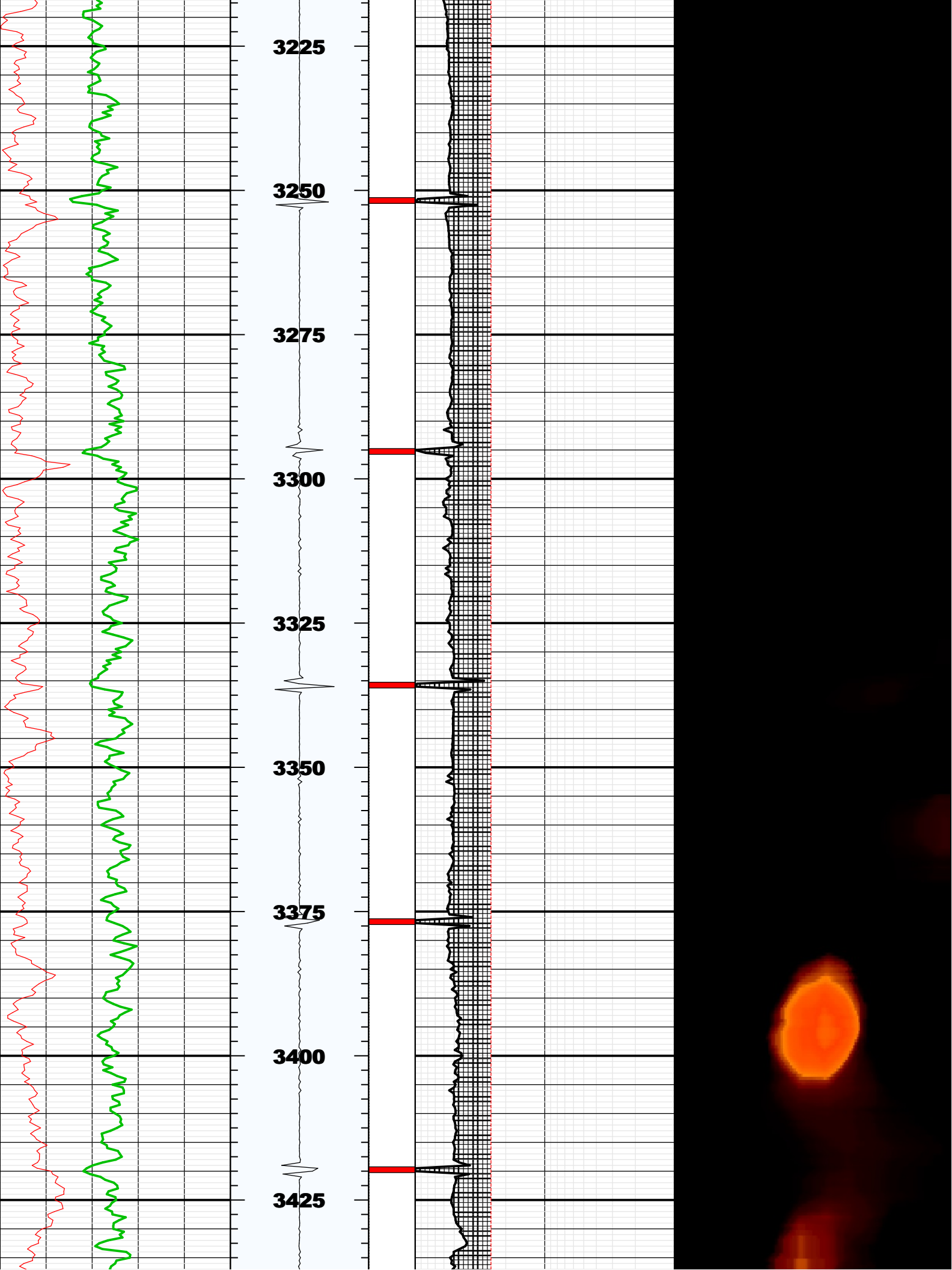


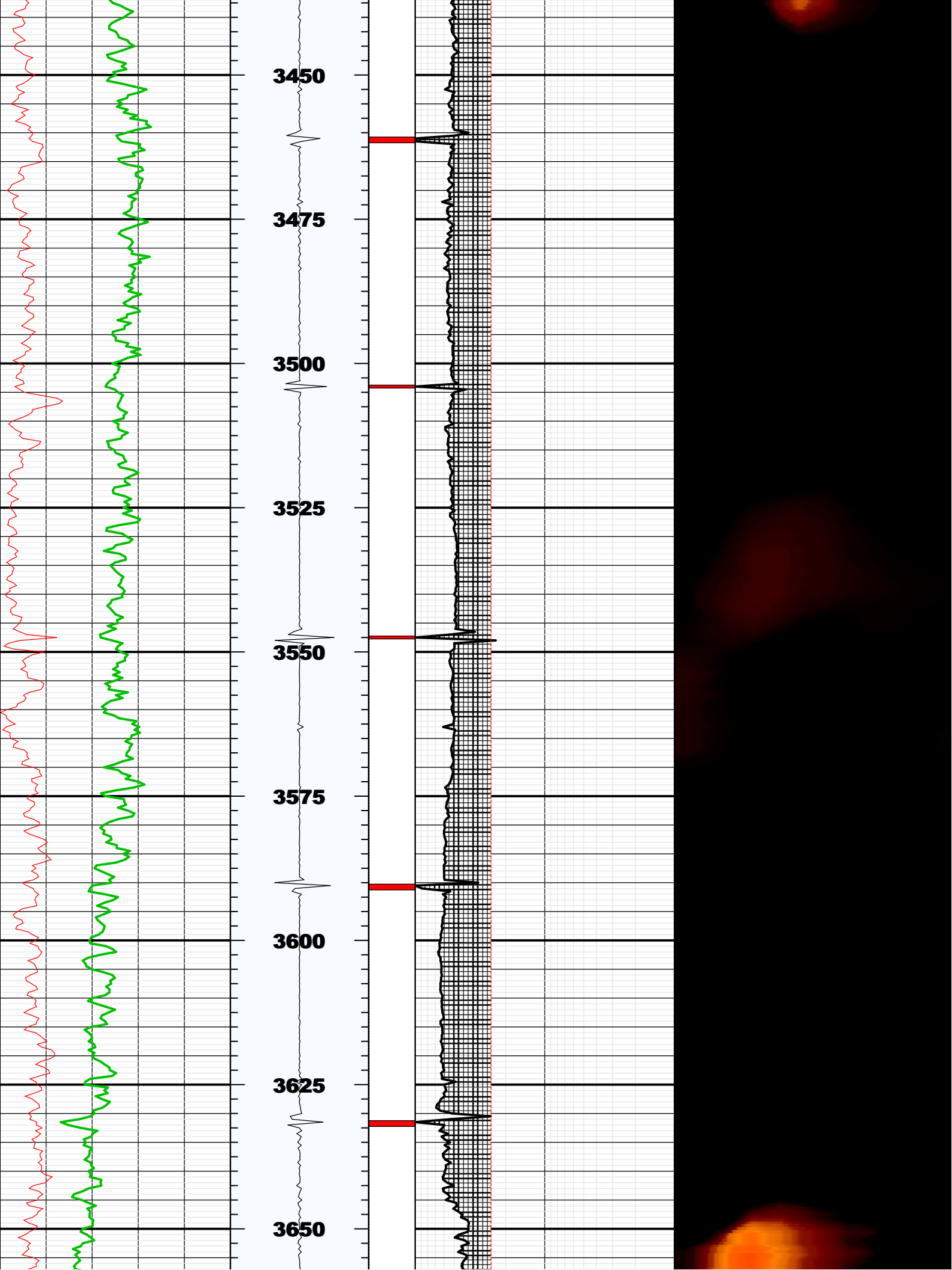


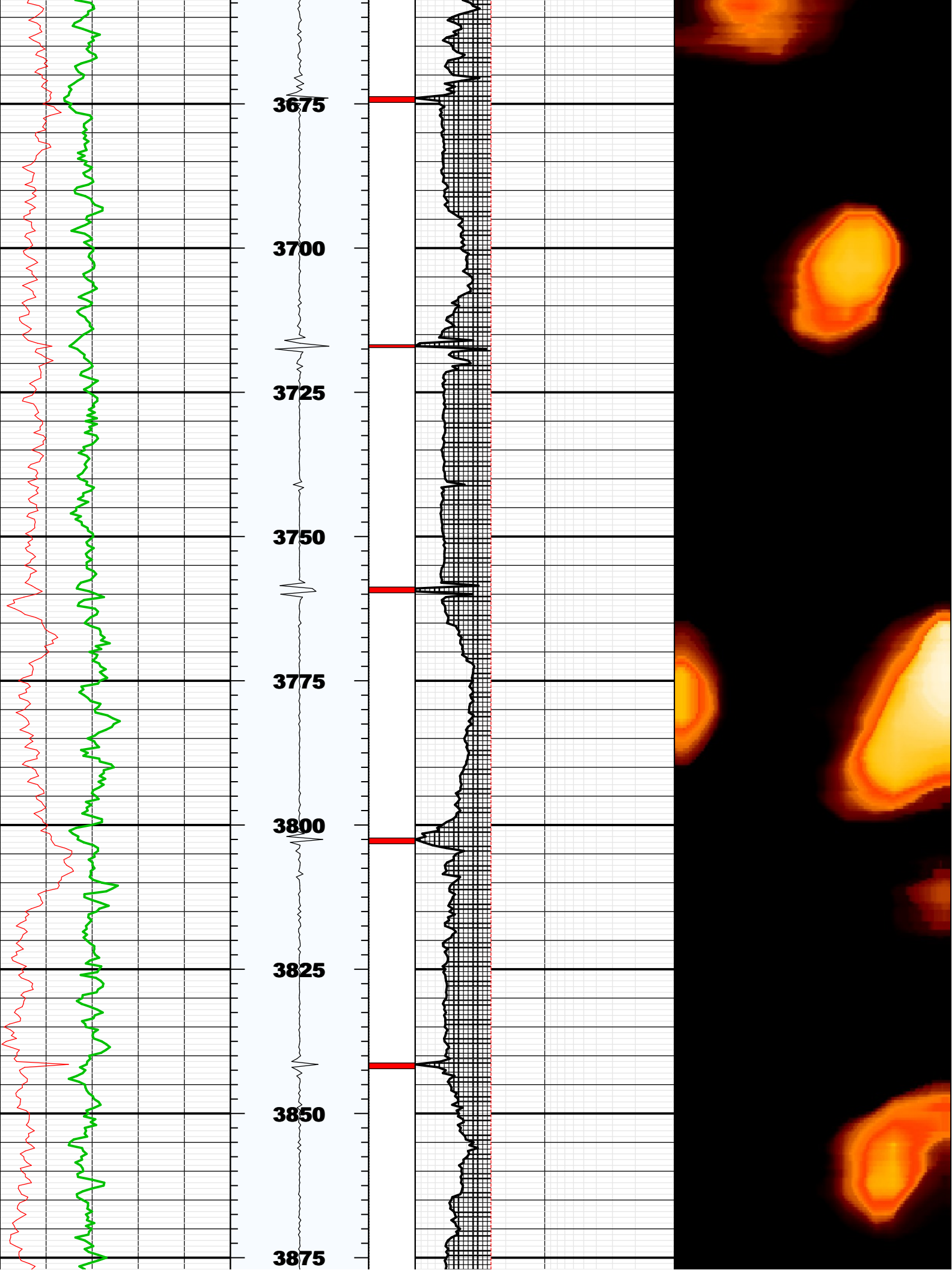


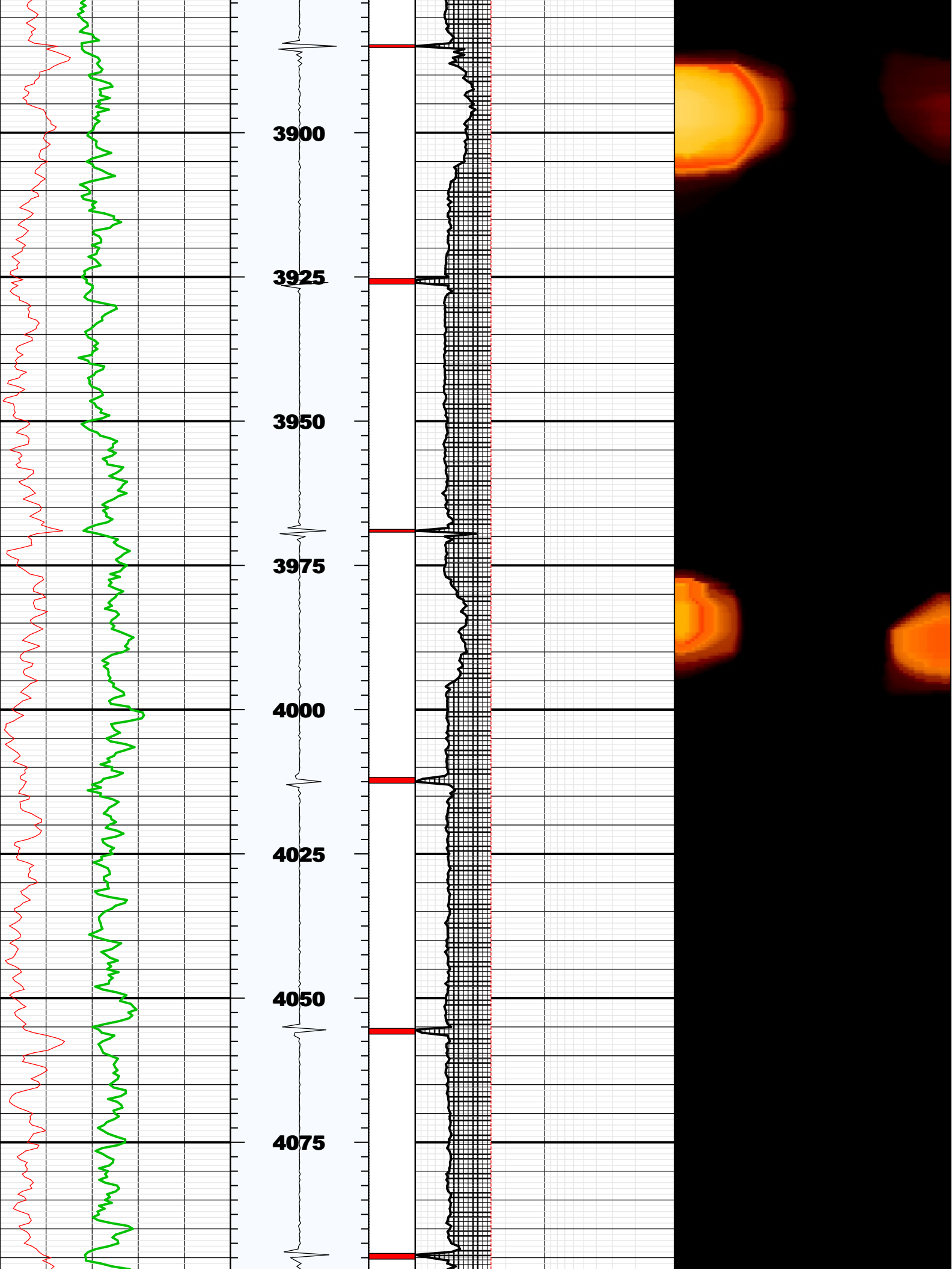


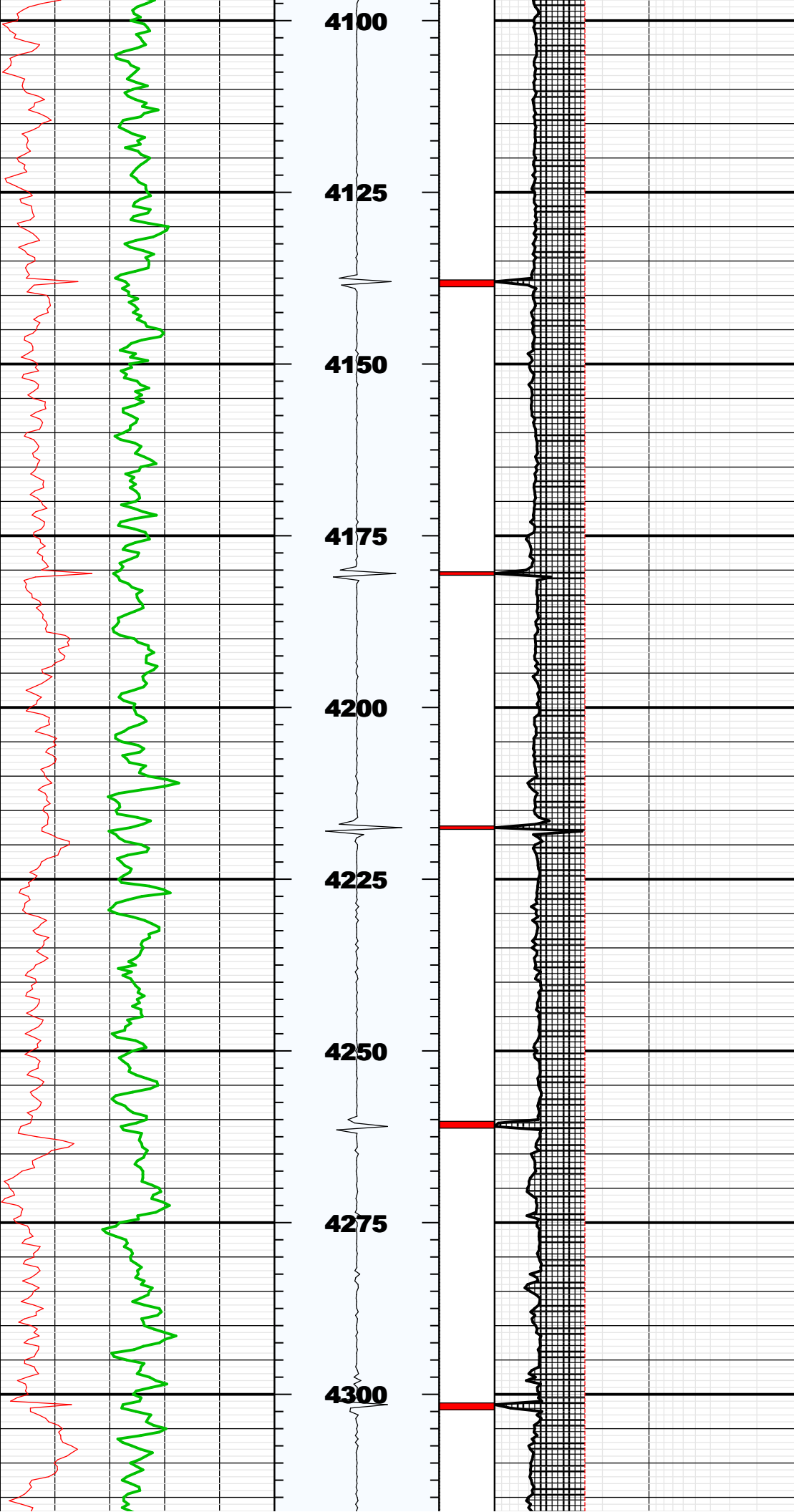


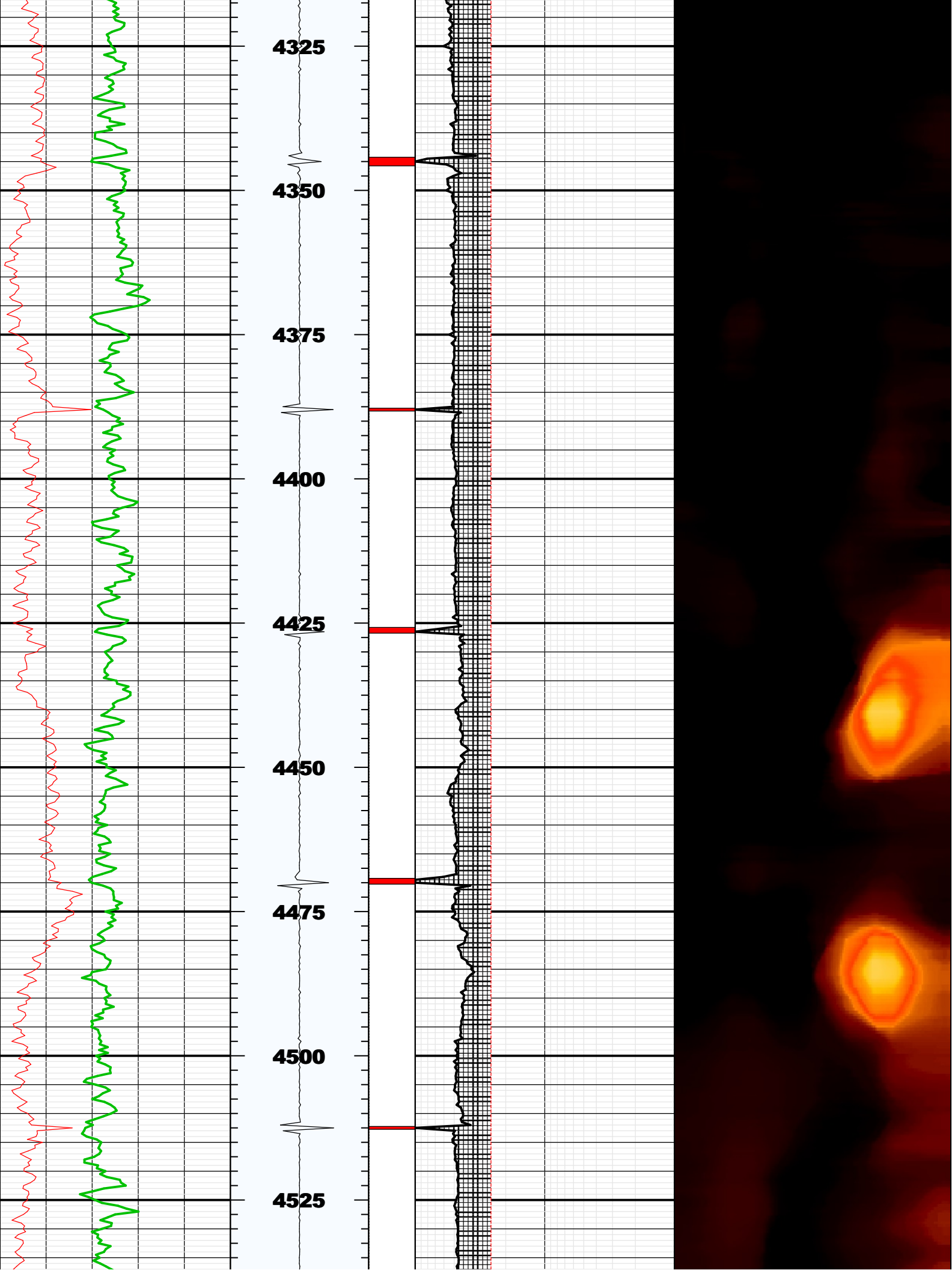


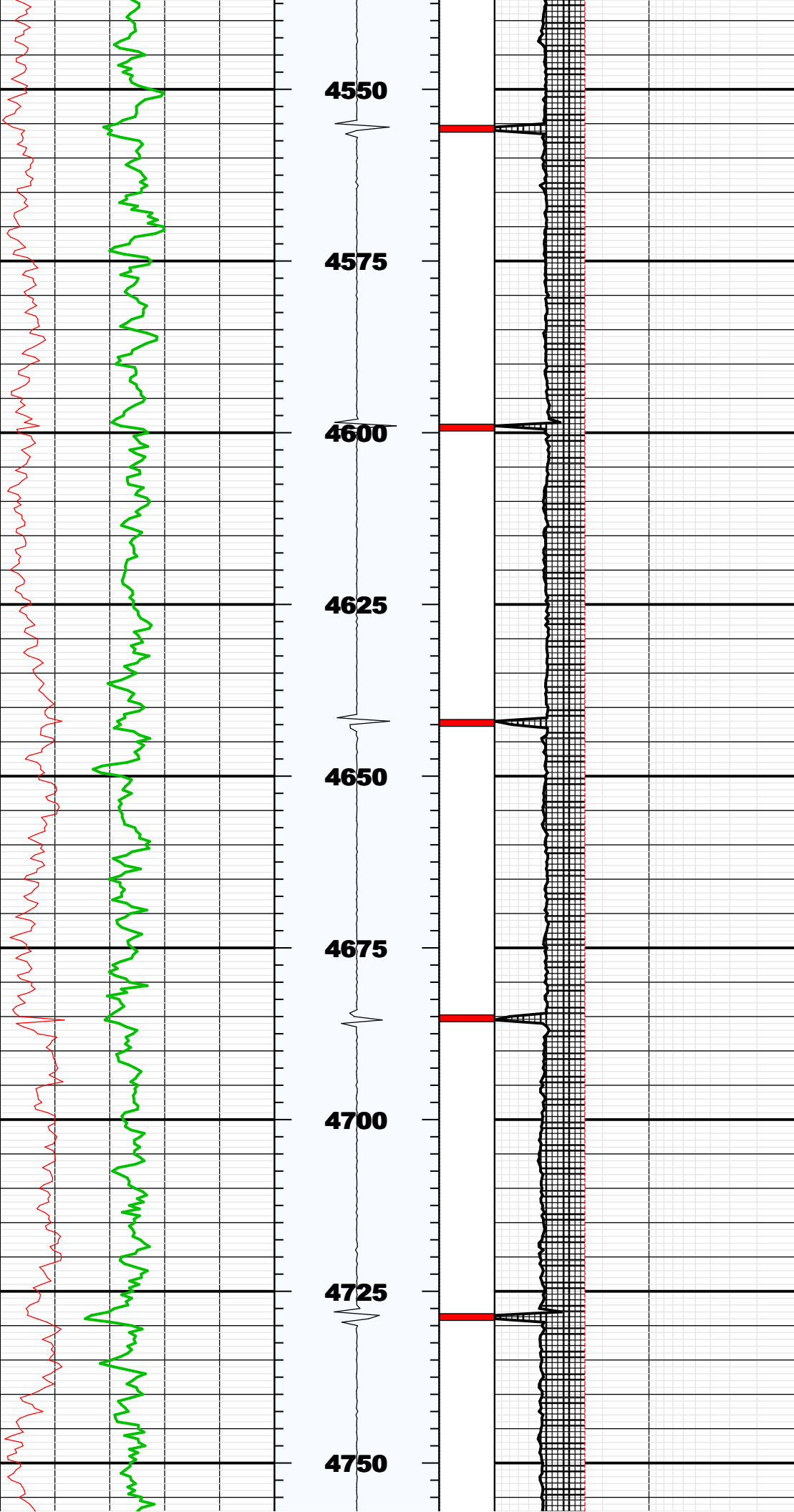


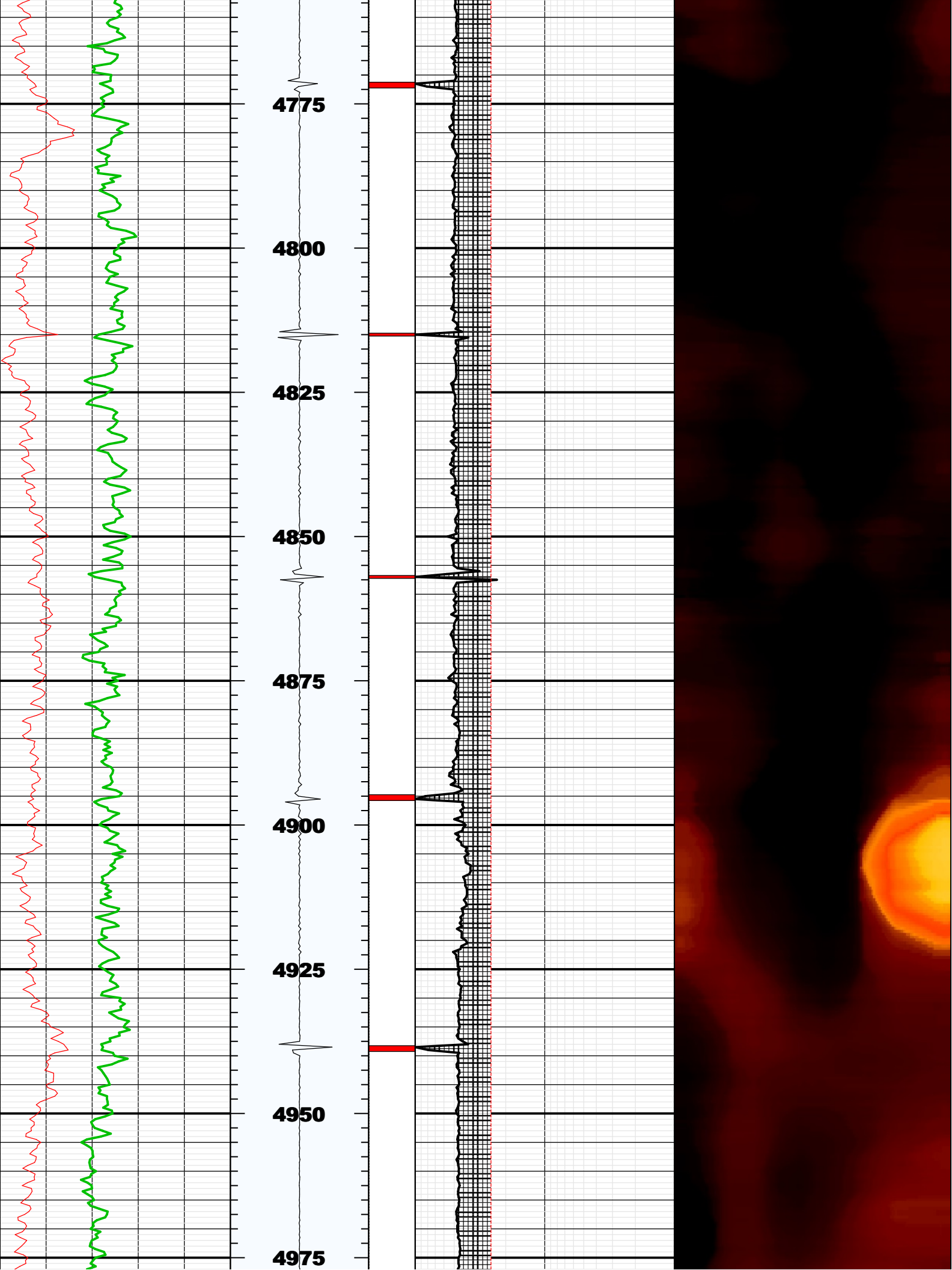


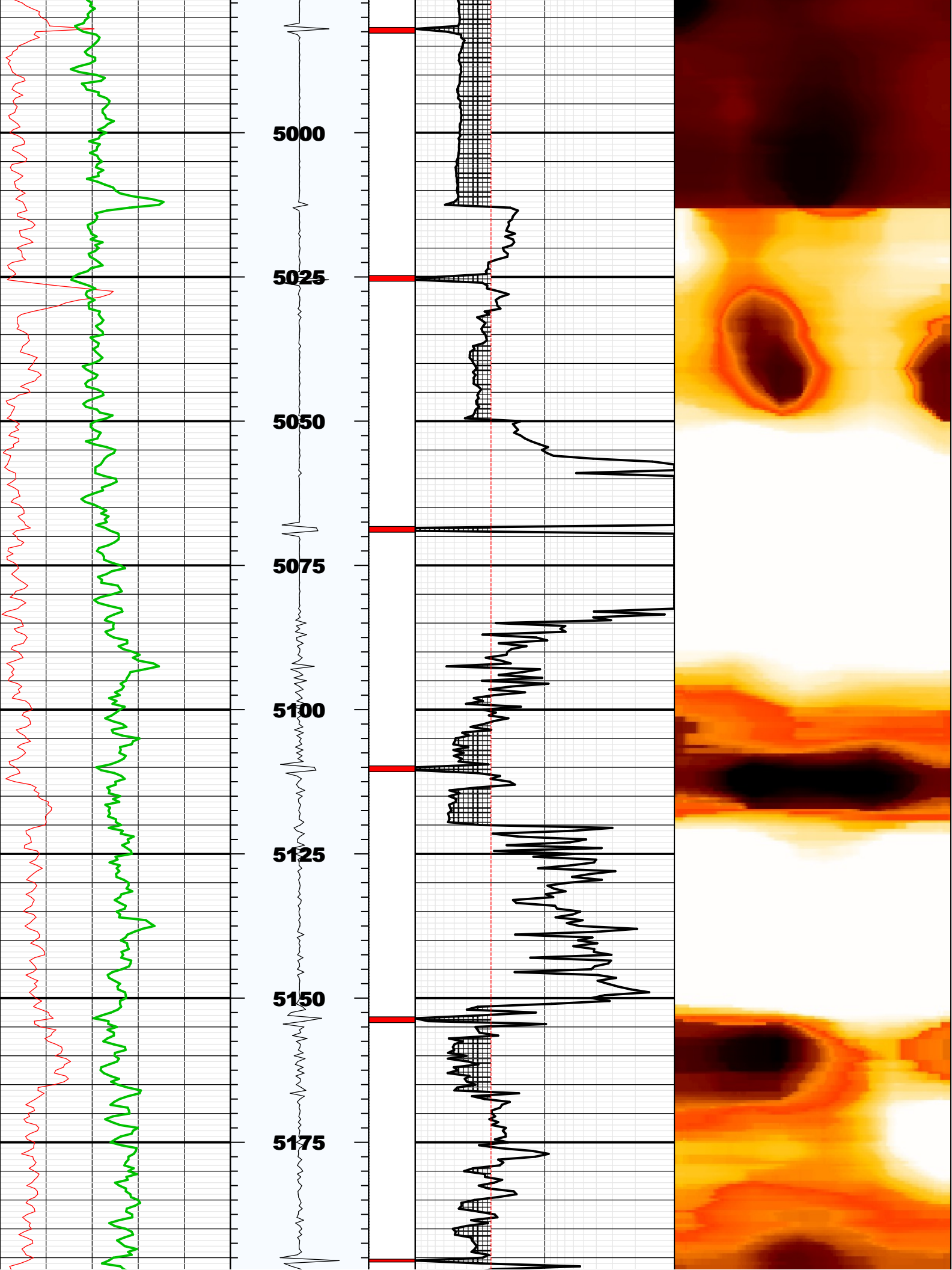


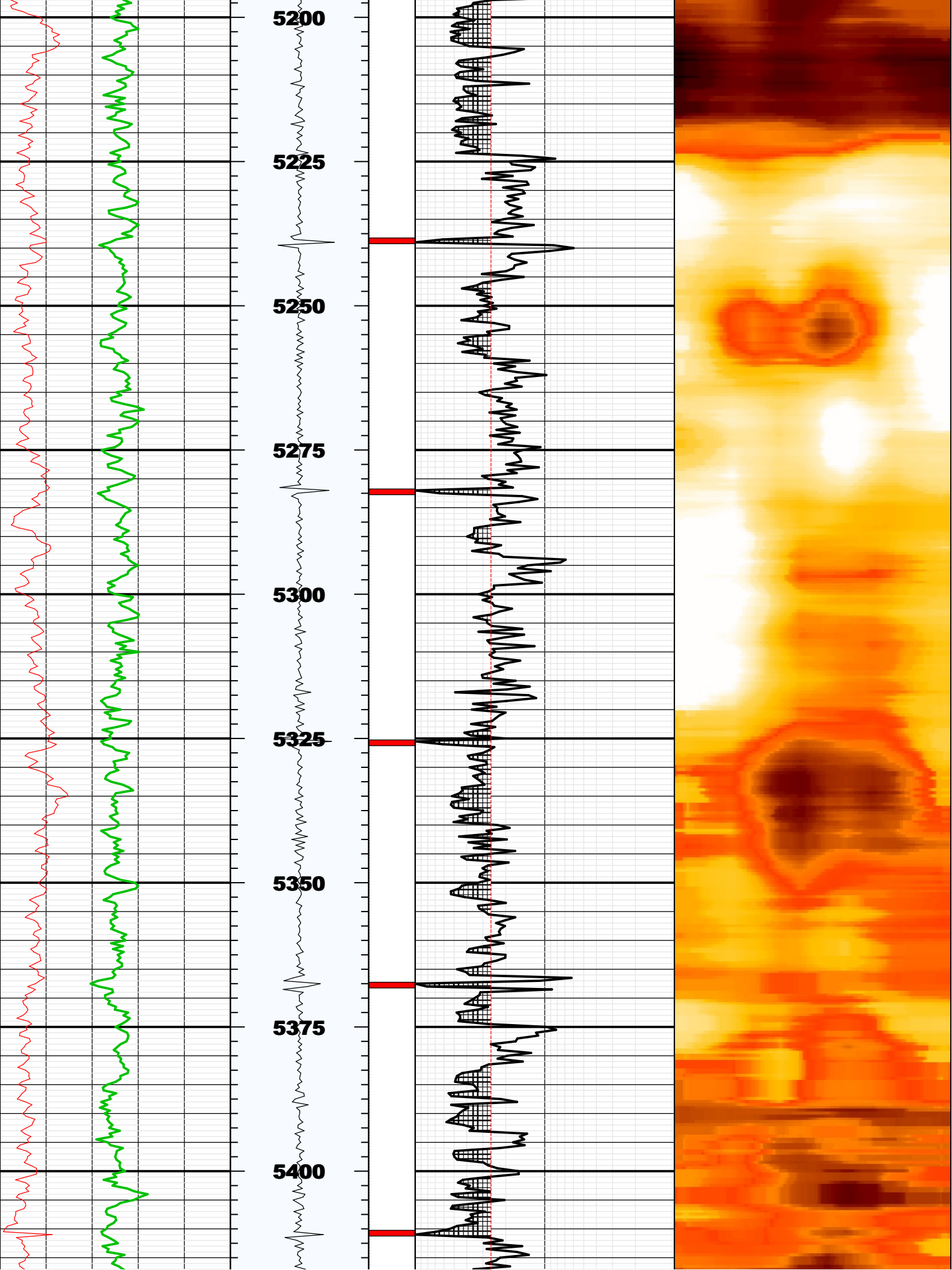


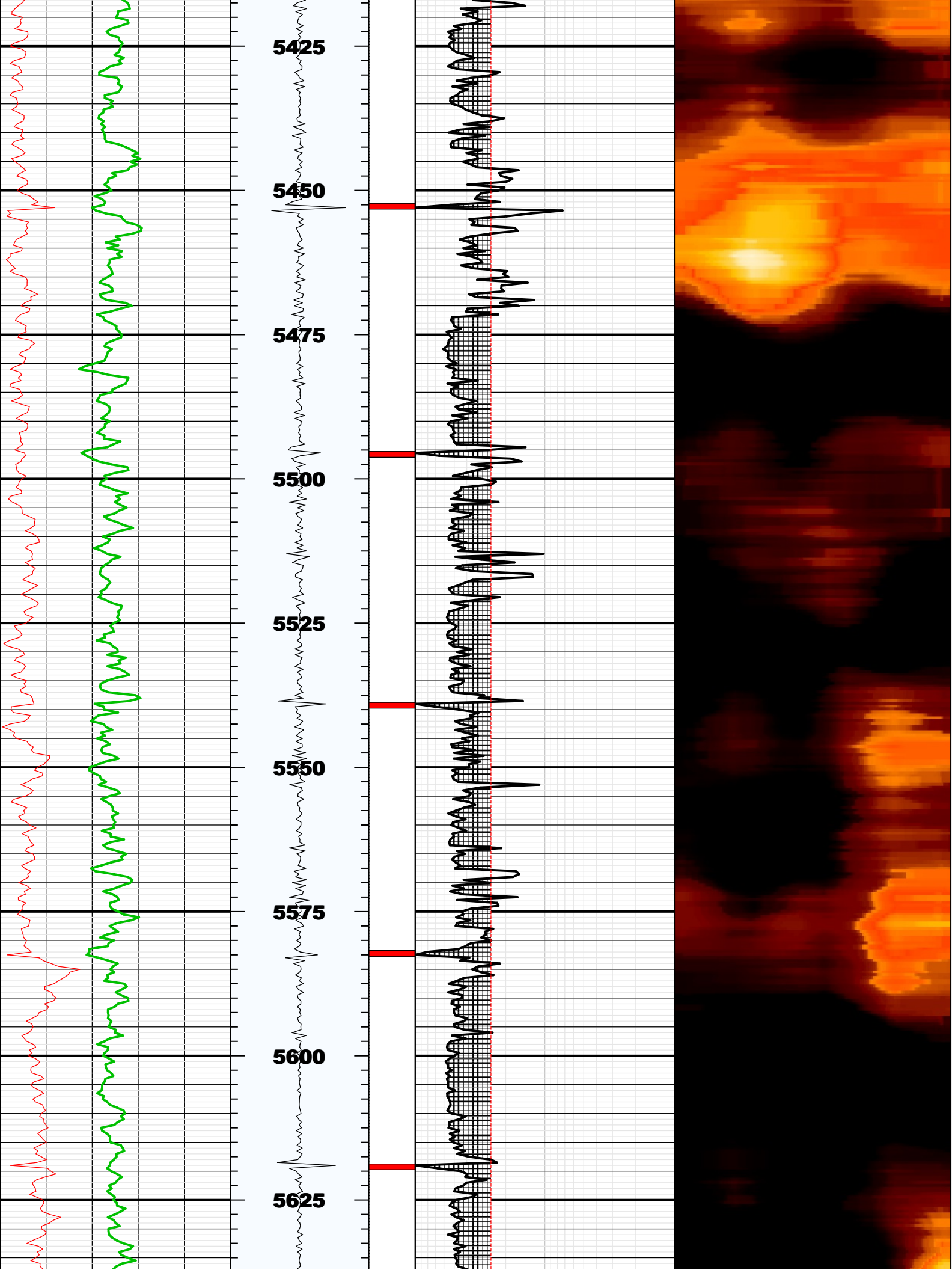


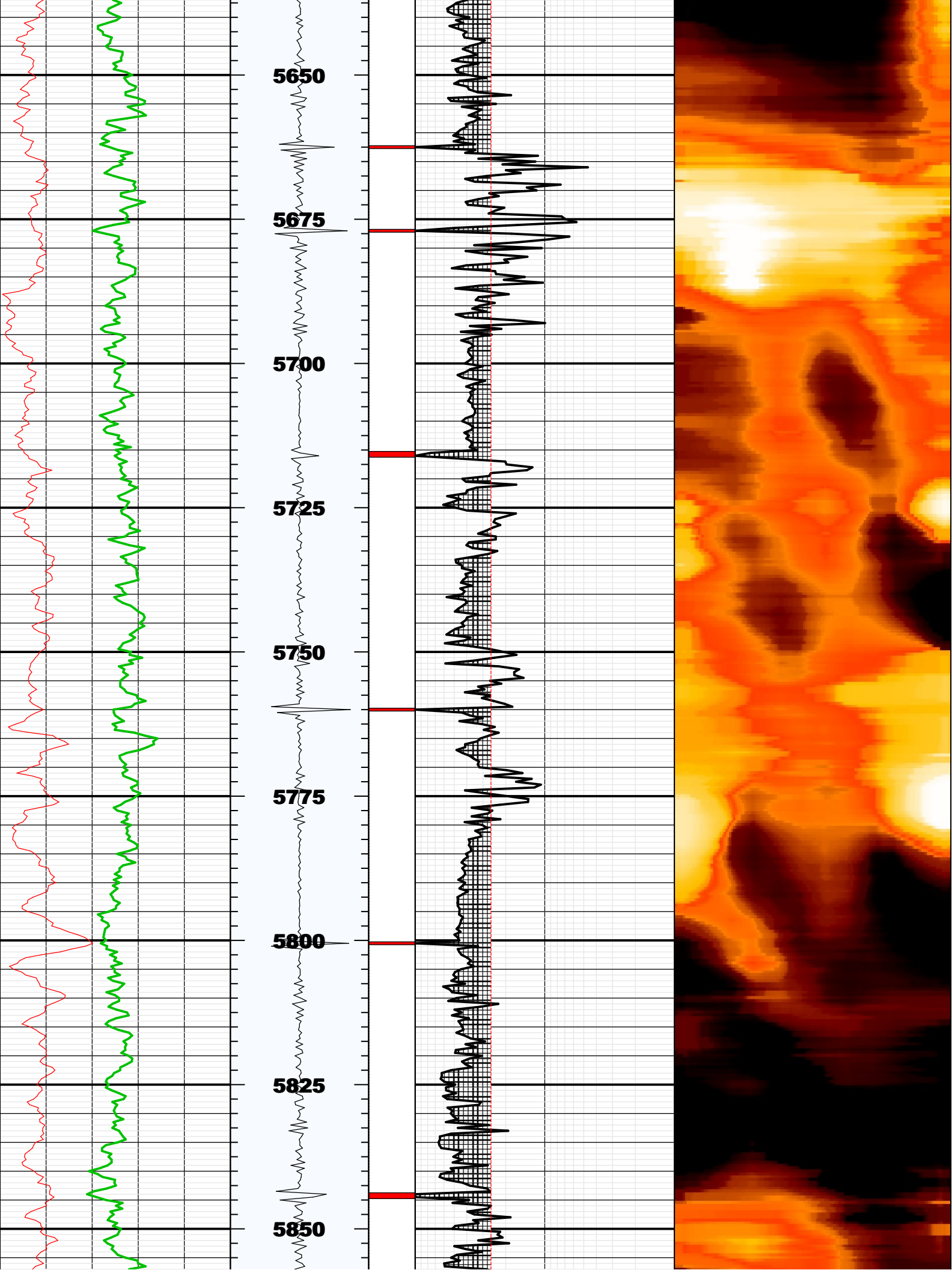


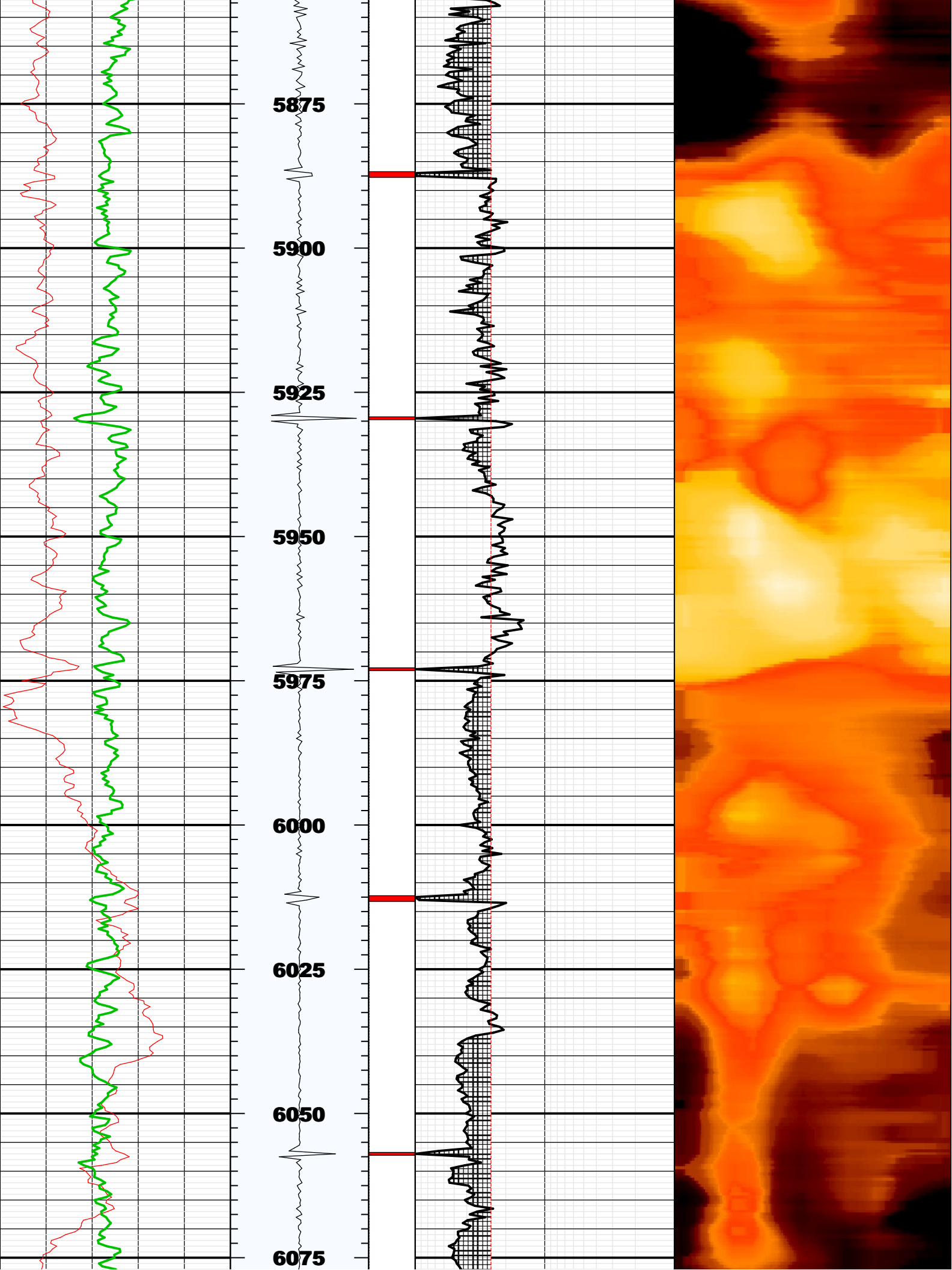


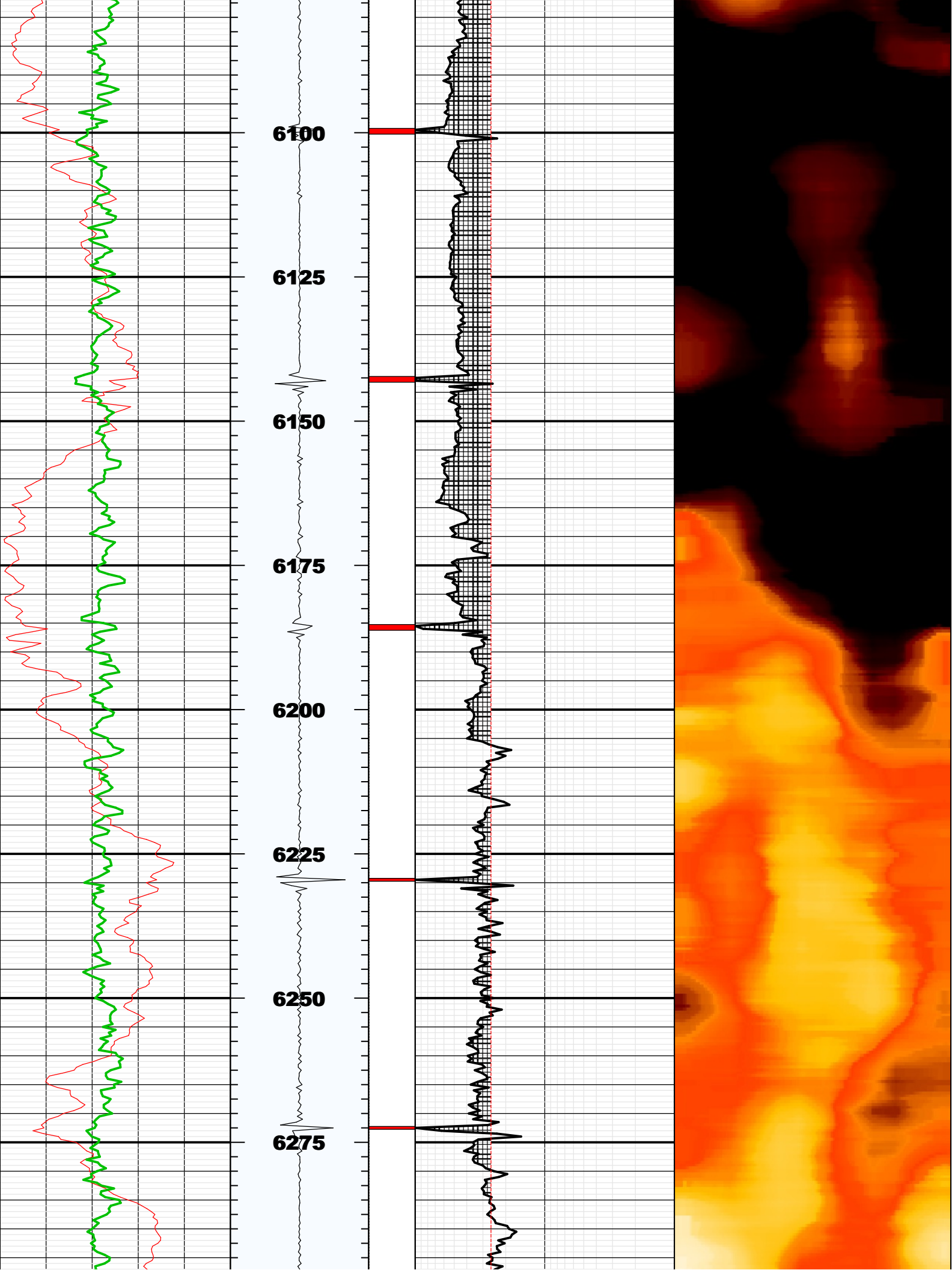


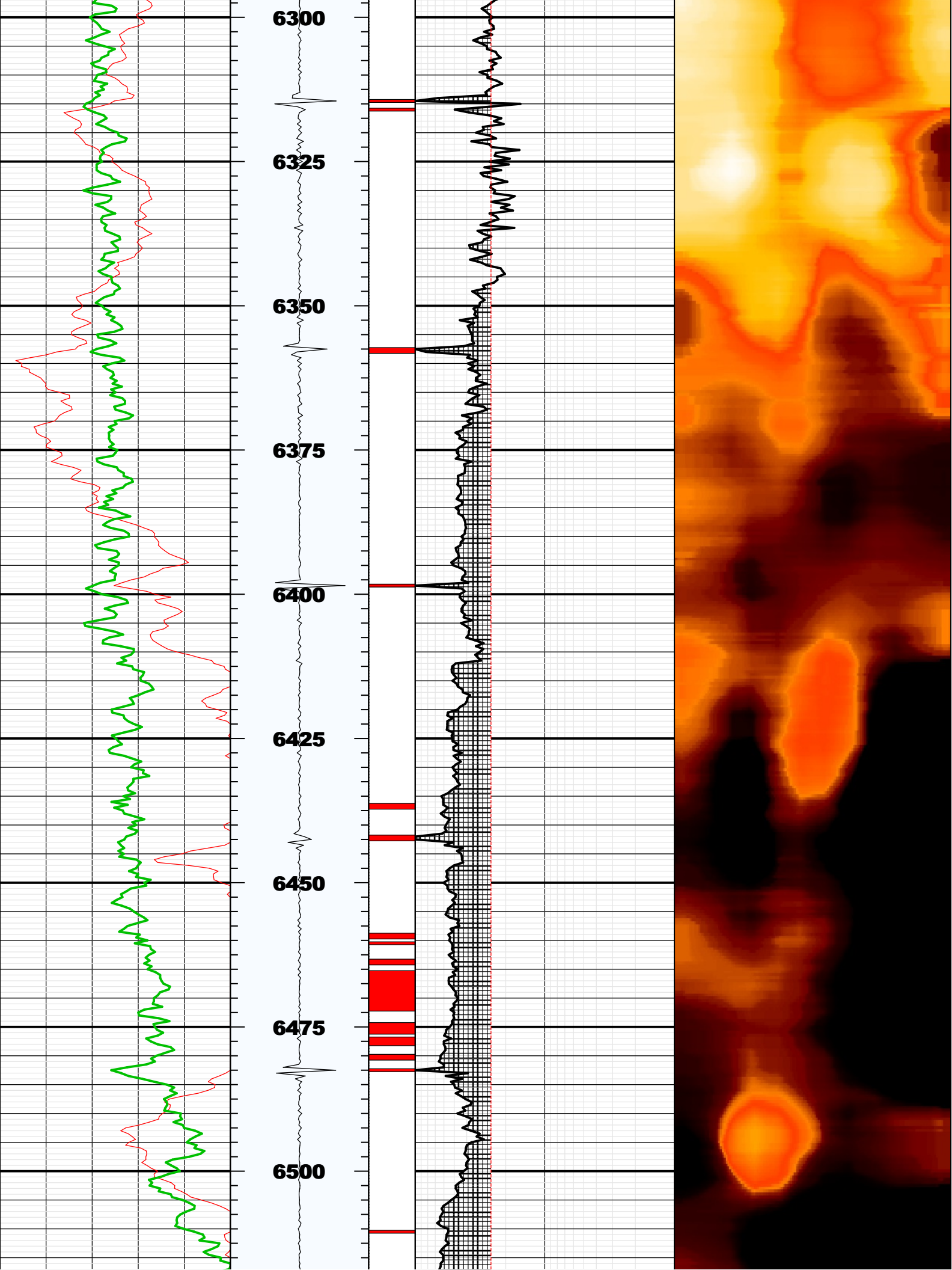


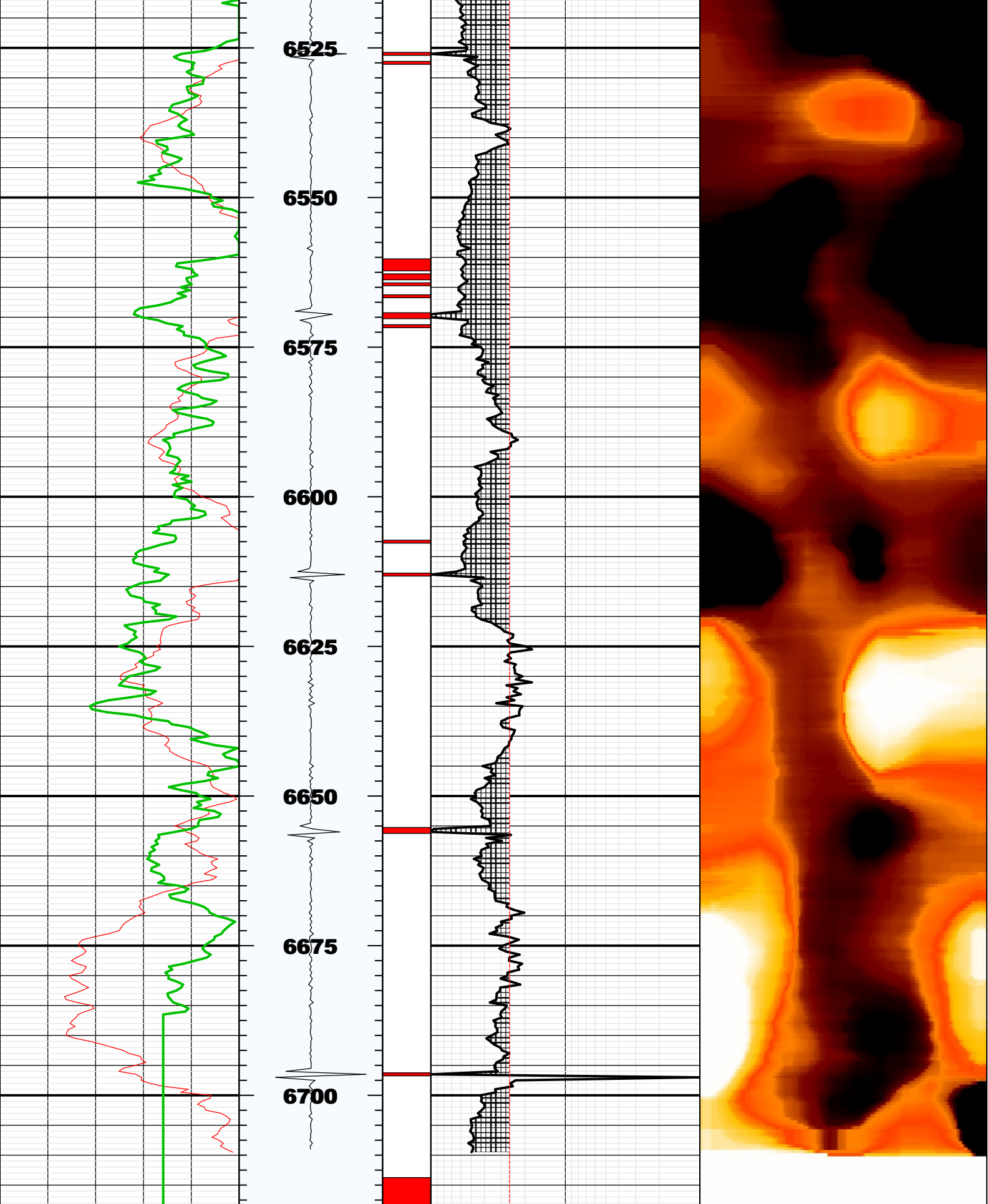








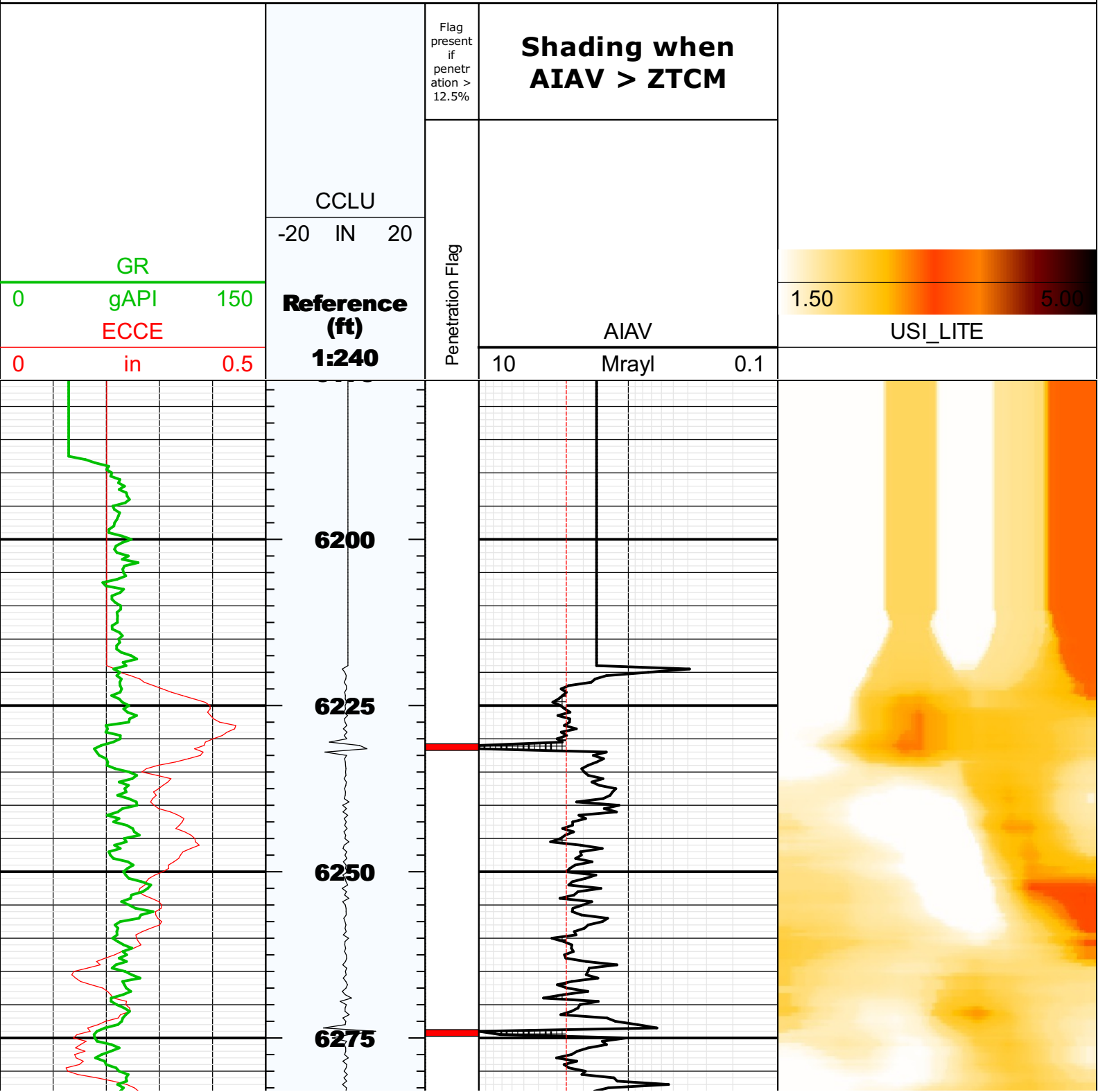


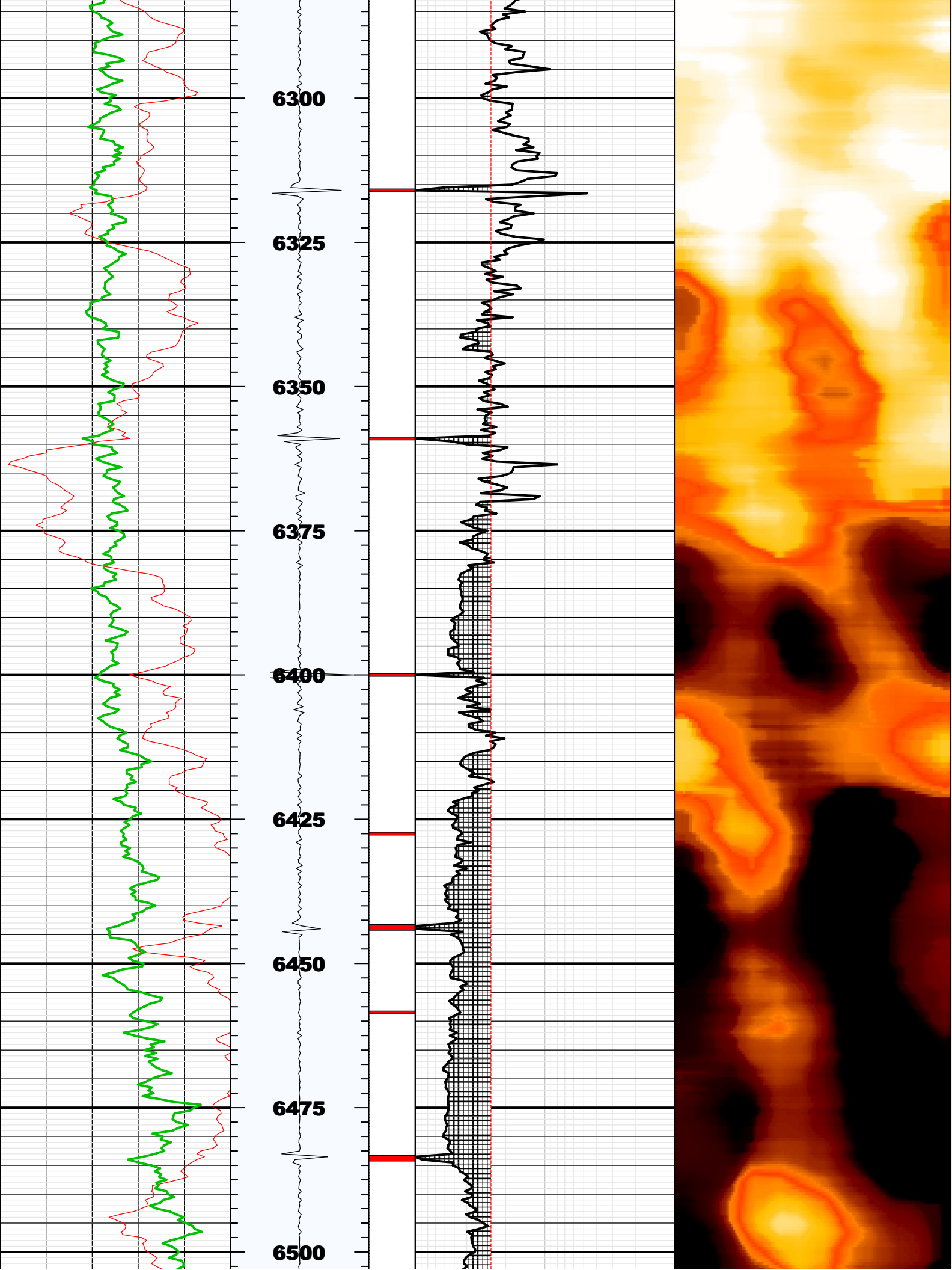


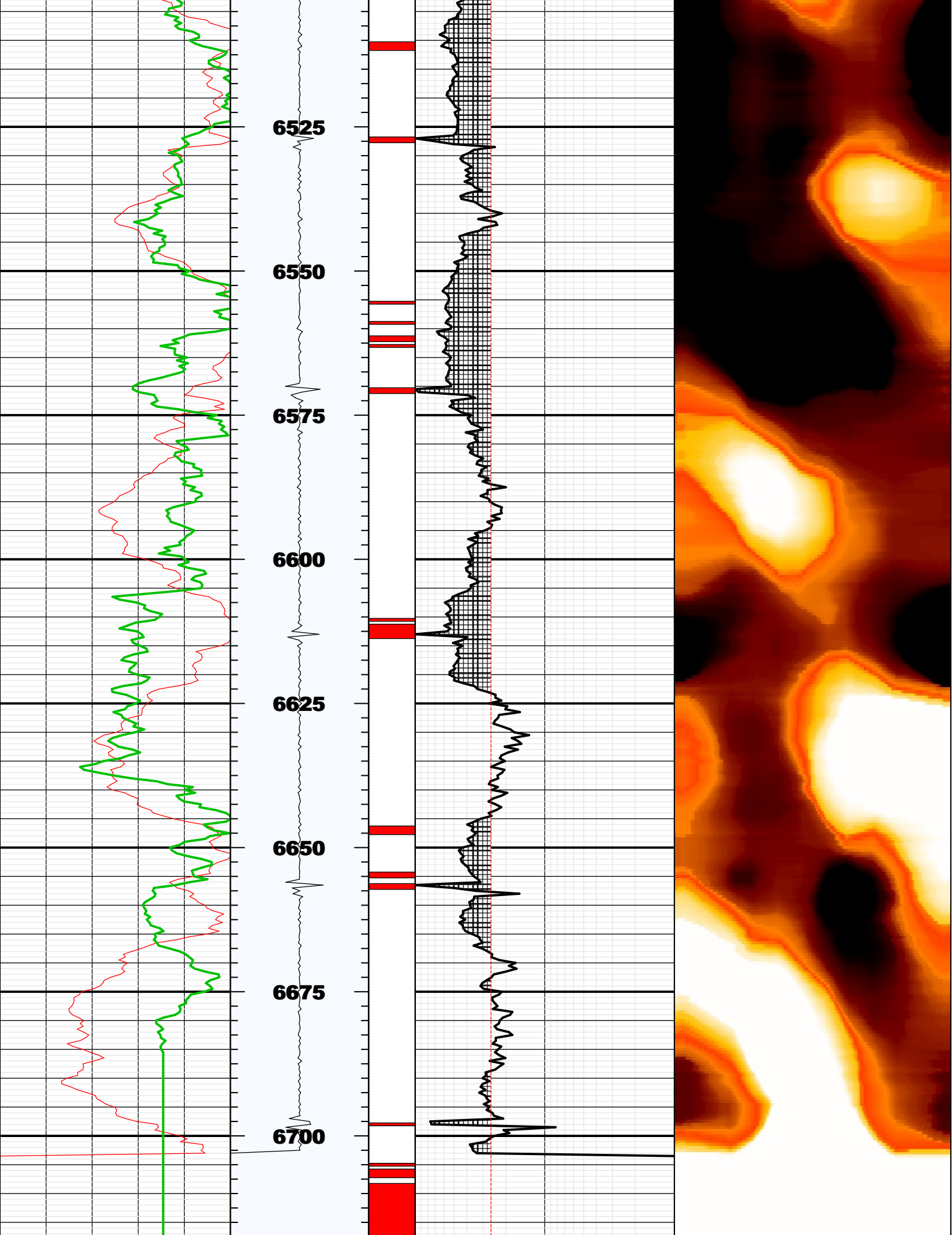
BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID	6.27600	IN	Casing Inner Diameter
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.70000	LB/G	Drilling Fluid Density
DFVL	206.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	95	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	93.99418	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.81000	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

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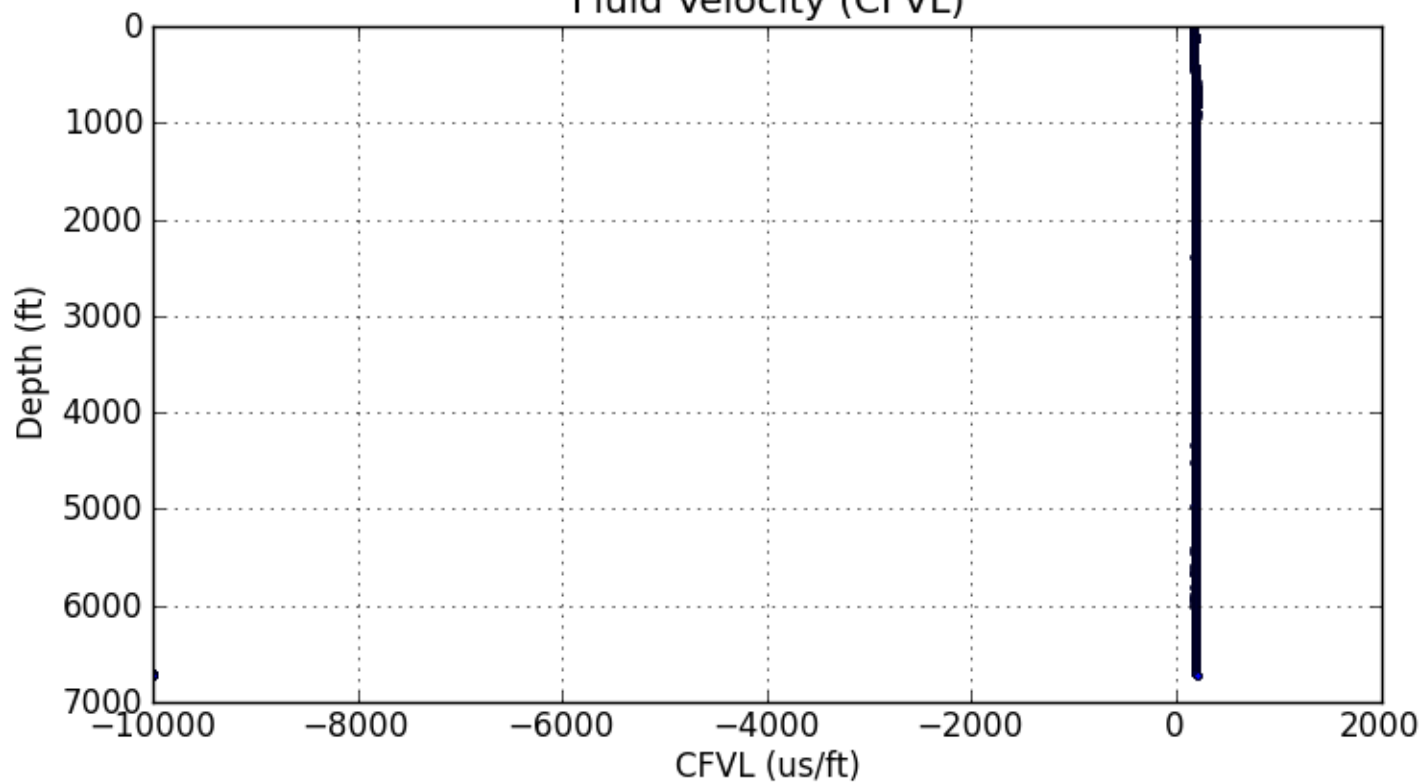






Fluid Properties Used for Main Pass

Fluid Velocity (CFVL)



Acoustic Impedance of Mud (CZMD)

