

Company: Noble Energy Inc

Well: Wells Ranch AA35-64-1BHNC  
Field: Wattenberg  
County: Weld State: Colorado

County: Weld		Field: Wattenberg	
Location: NWSW Sec 36. T6N R63W		Well: Wells Ranch AA35-64-1BHNC	
Company: Noble Energy Inc			
USI-LITE		LOCATION	
		Permanent Datum: Log Measured From: Drilling Measured From:	GL KB KB  Elev: K.B. 4796.0 F G.L. 4772.0 F D.F. 4795.0 F
Logging Date	07-May-2014	API Serial No. 05-123-38659-0000	Section 36  Township 6N  Range 63W
Run Number	1		
Depth Driller	6996.0 F		
Schlumberger Depth	6996.0 F		
Bottom Log Interval	6767.0 F		
Top Log Interval	50.0 F		
Casing Fluid Level	0.0 F		
Salinity			
Density	8.40 LB/G		
Fluid Level	0.0 F		
BIT/CASING/TUBING STRING			
Bit Size	8.750 IN		
From	24.0 F		
To	6996.0 F		
Casing Size	7.00 IN		
Weight	26.00 LB/F		
Grade	P110		
From	24.0 F		
To	6986.2 F		
Max Recorded Temp	239.9		
Logger on bottom (date)	07-May-2014		
Location	Fort Morgan CO		
Recorded By	Elizabeth Wilson		
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: Length: 11500.00000

DISCLAIMER

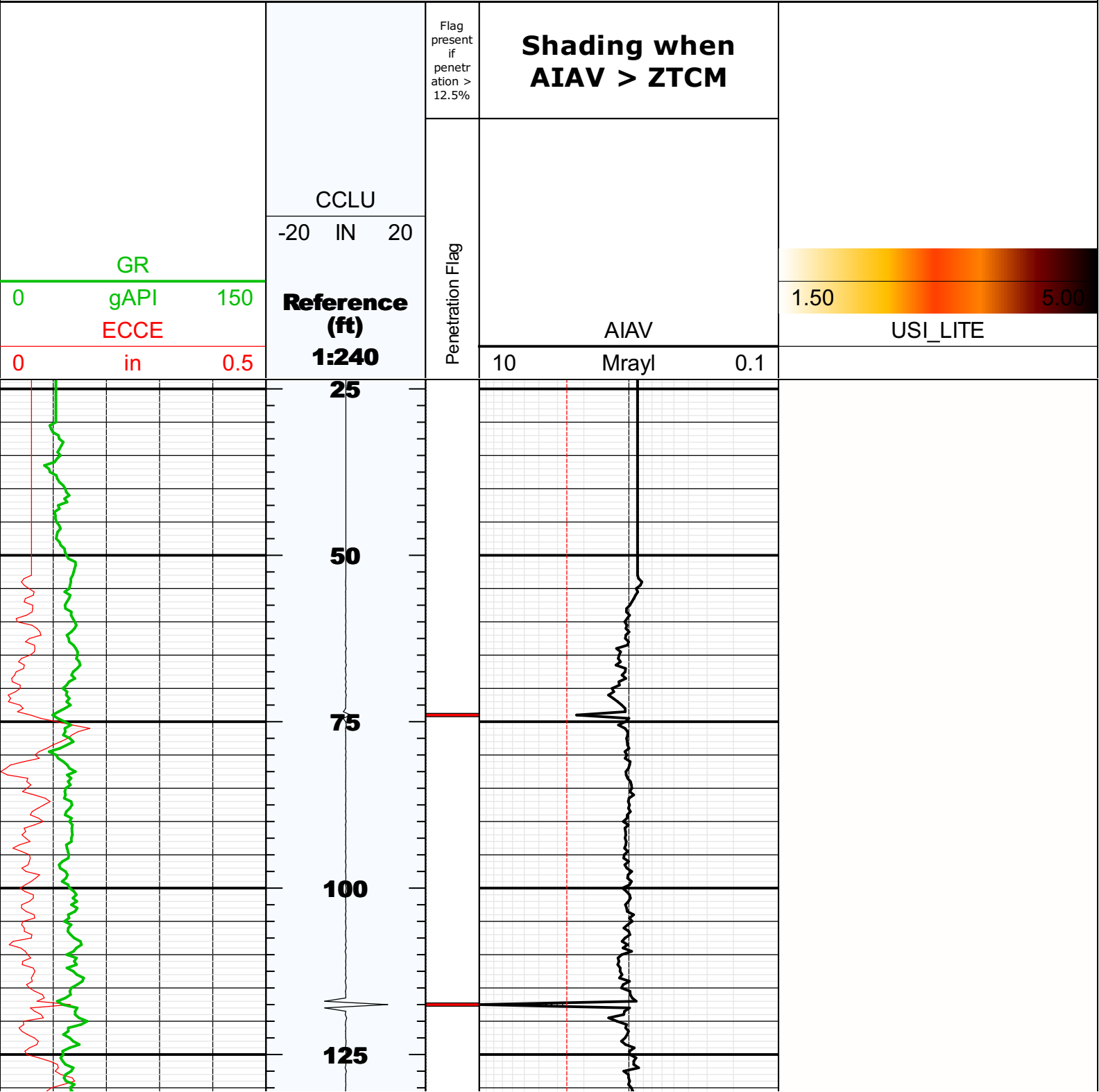
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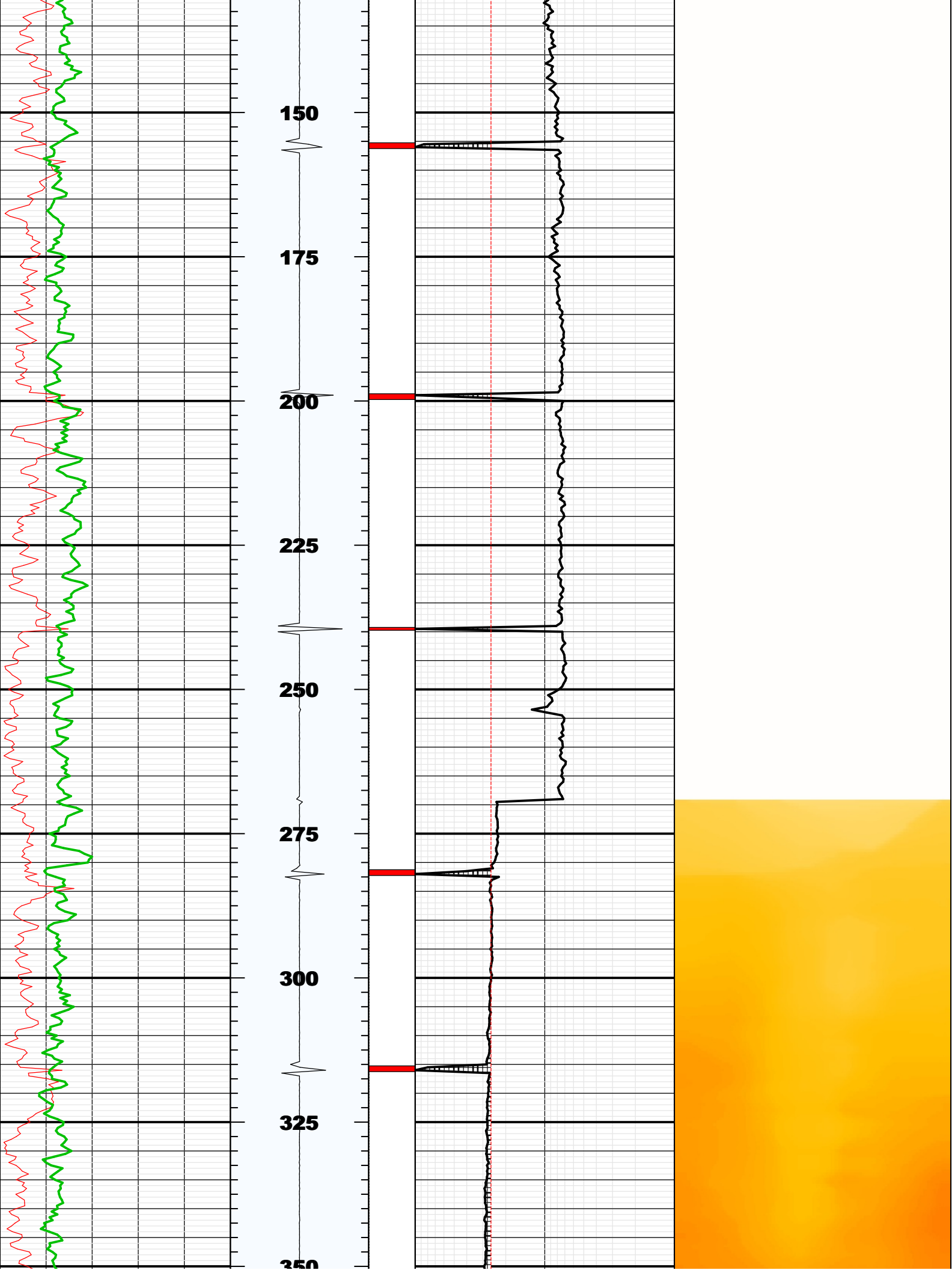
Toolstring ran as per tool sketch  
Bottom log interval limited to 6767 ft due to loss of tension in the curve  
Estimated top of cement 300 ft  
Repeat pass ran at 0 psi  
Main pass ran at 2500 psi  
Lead cement 12.5 ppg  
Tail cement 13.8 ppg

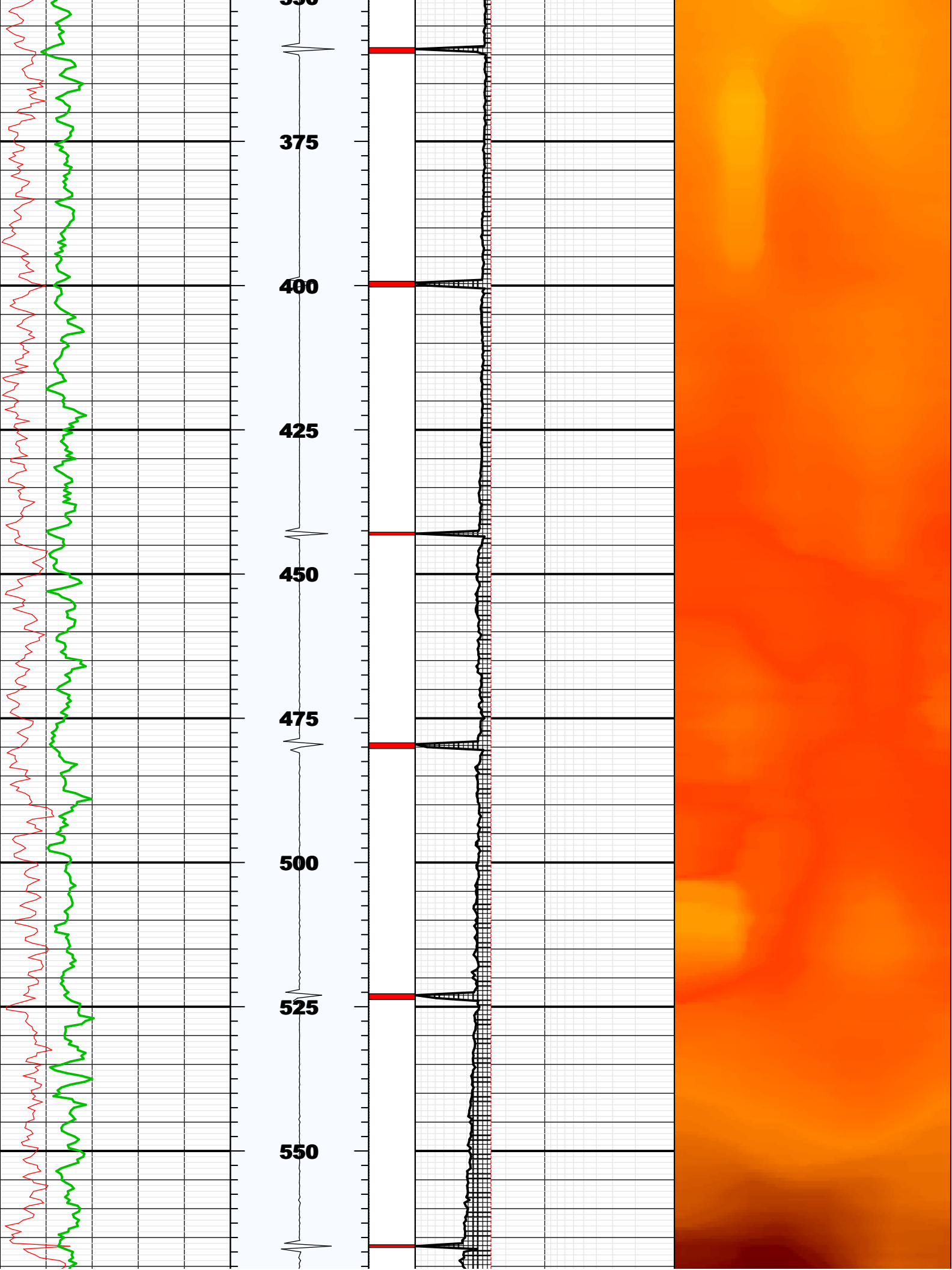
Crew Jay Musgrave Troy Ocanas Keri Ondrus Josh Strand Elizabeth Wilson  
Thank you for choosing Schlumberger Wireline Services

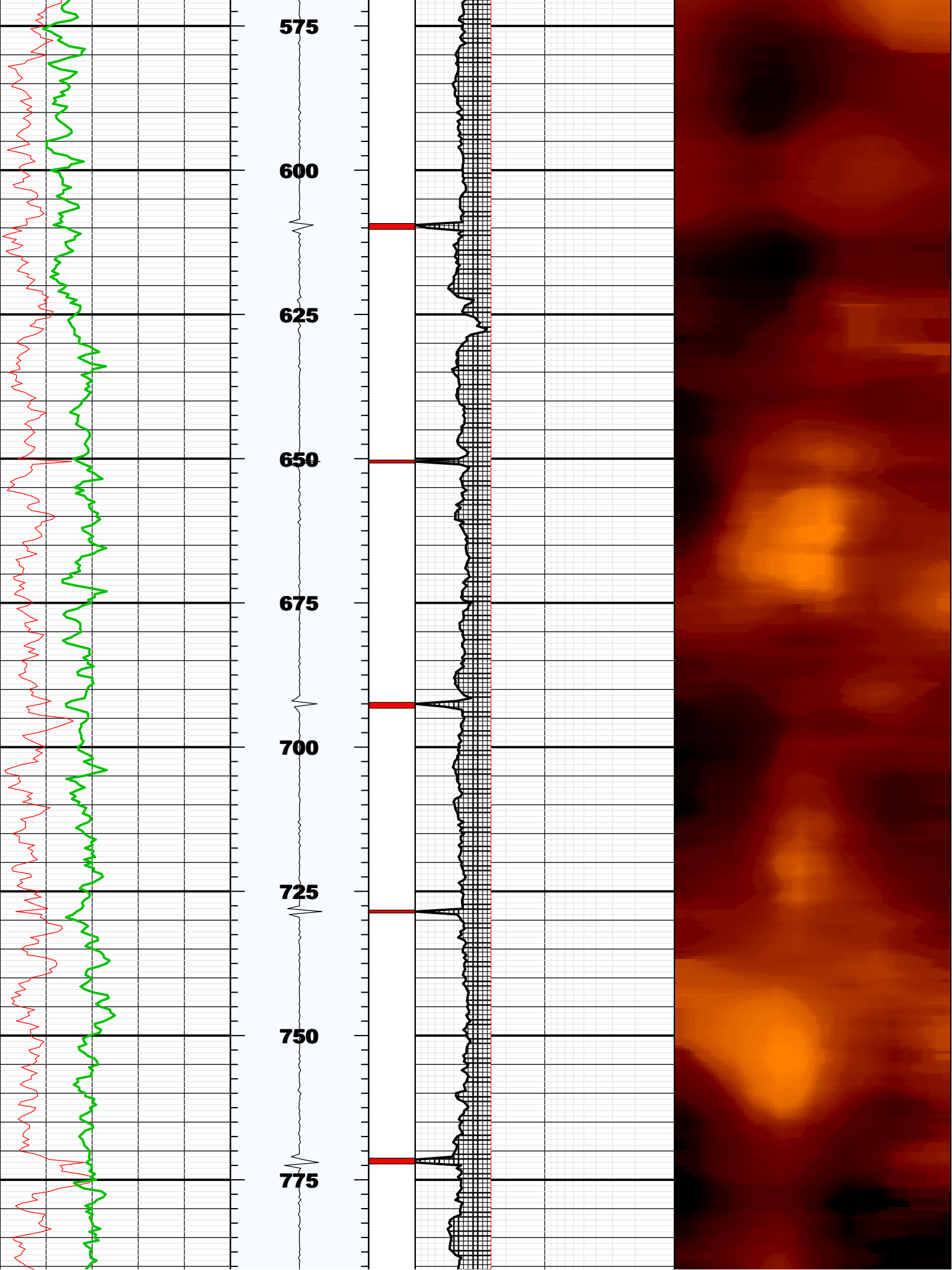
Main Pass

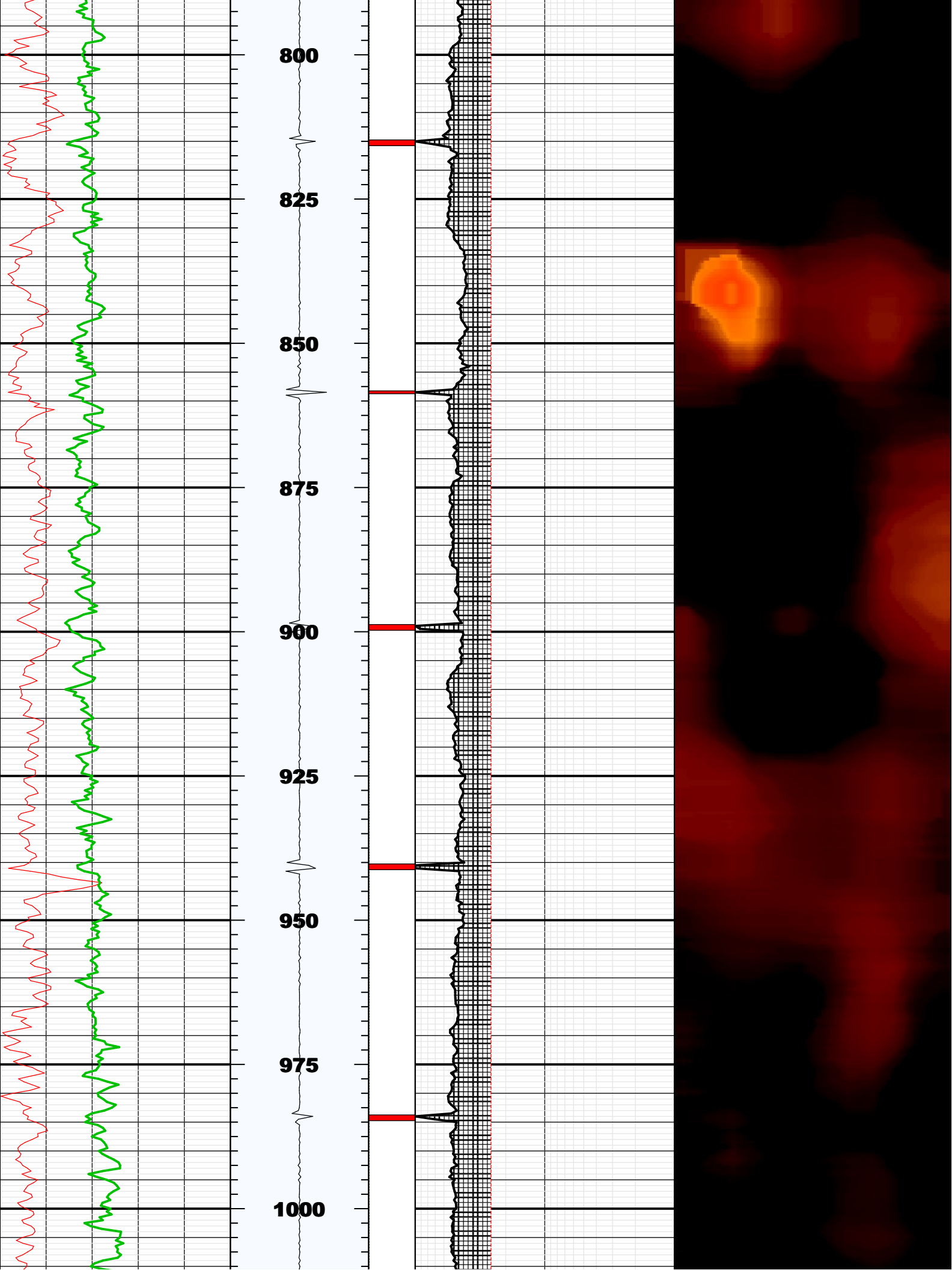
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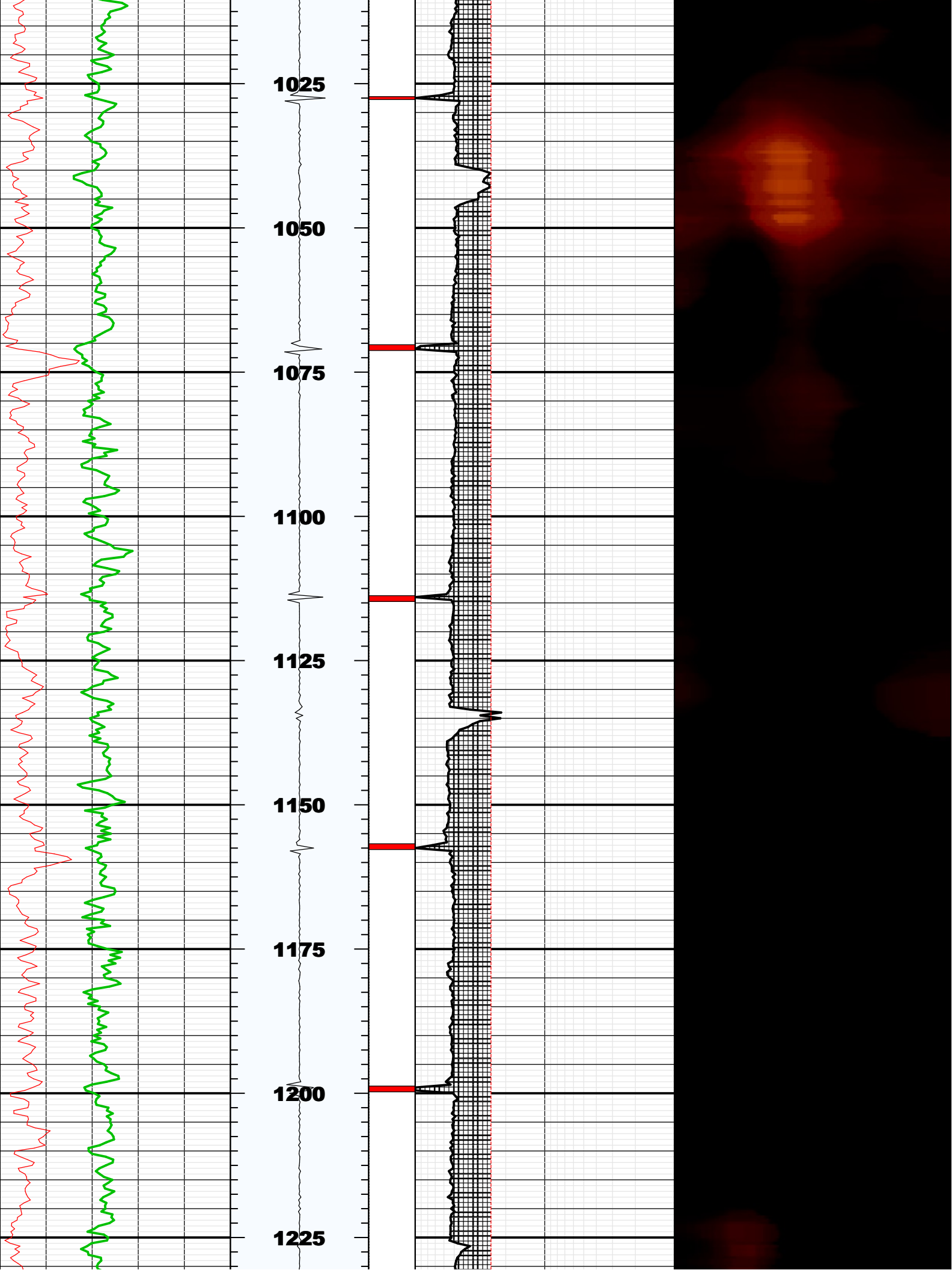




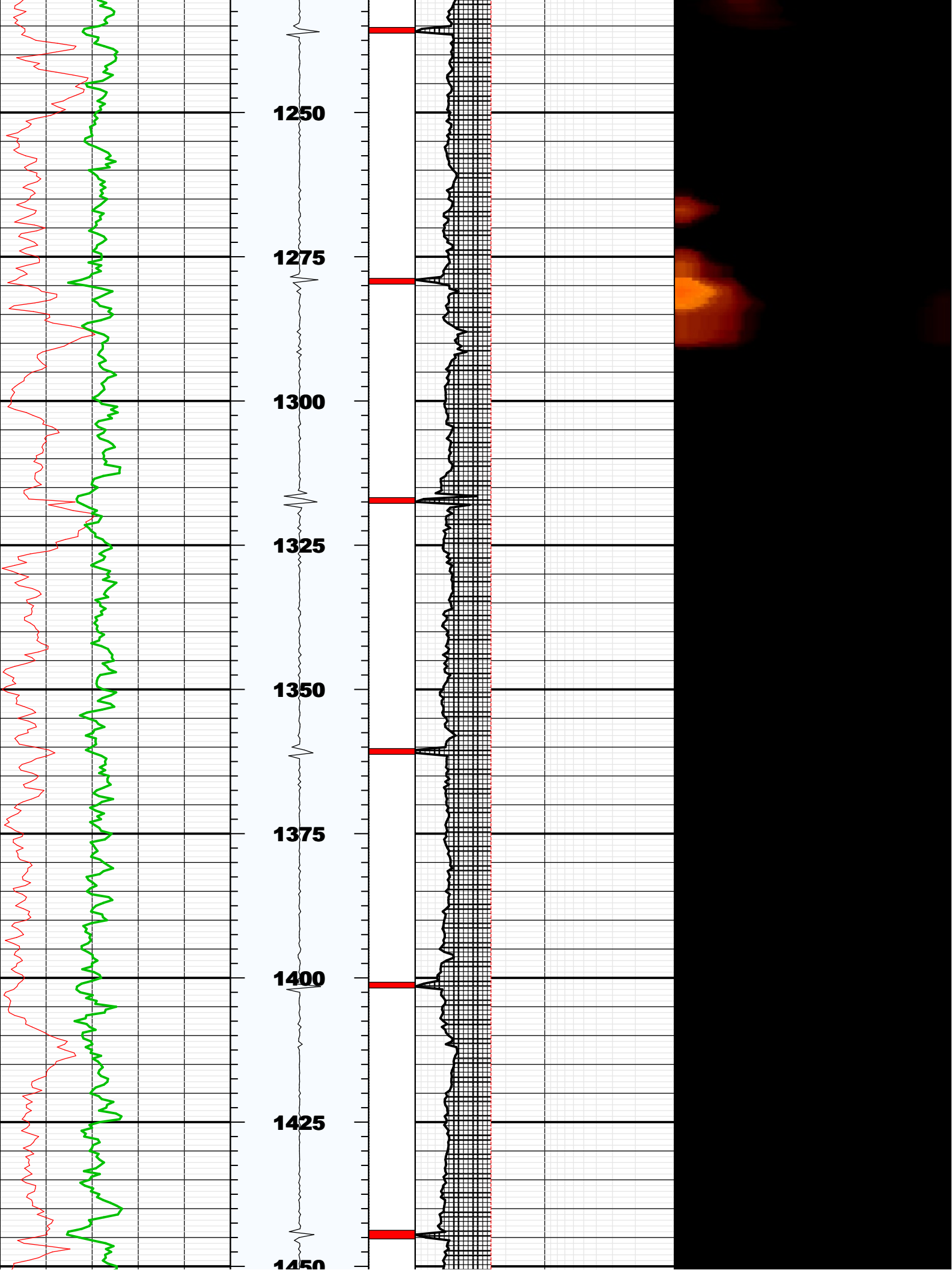


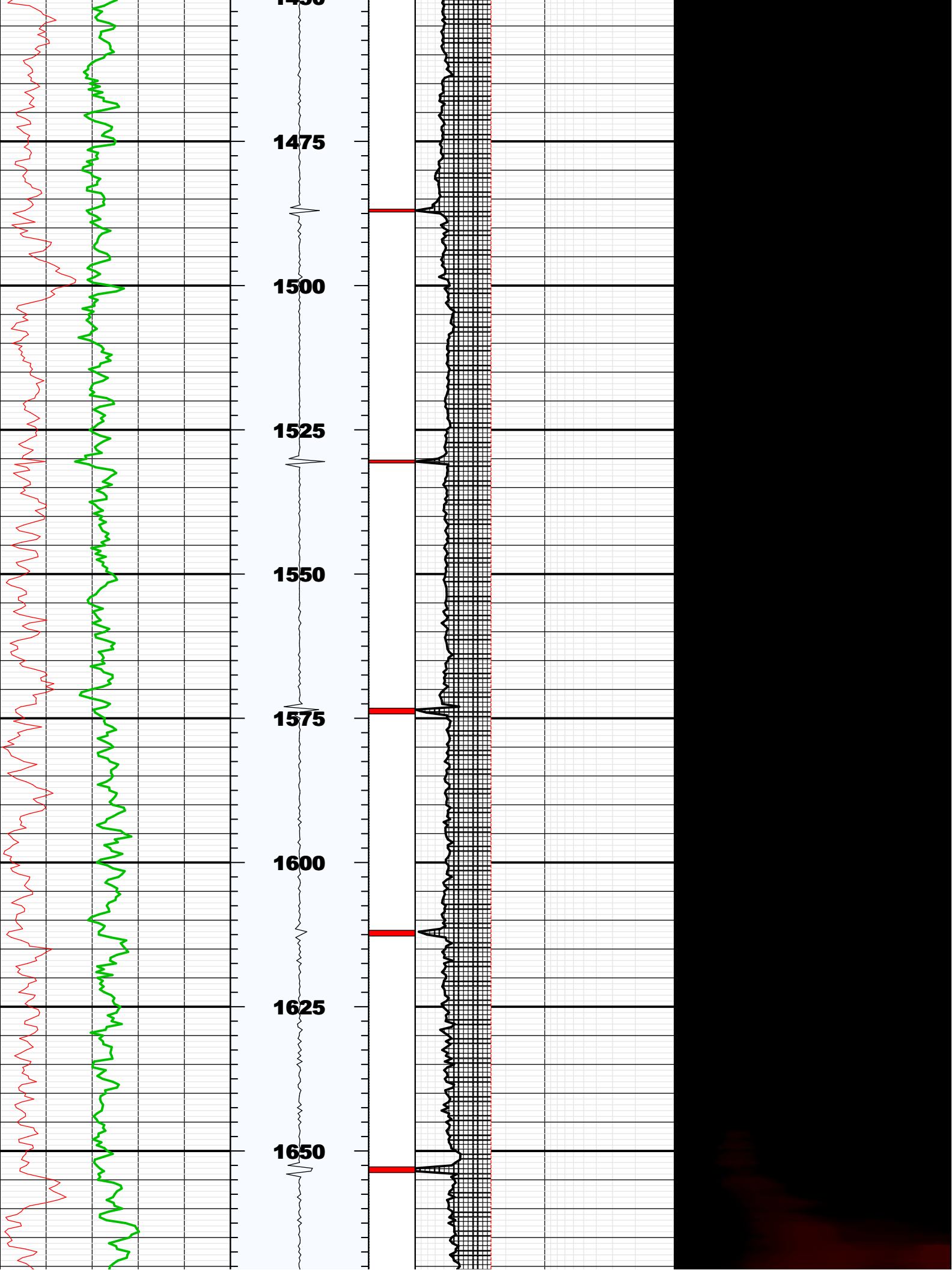


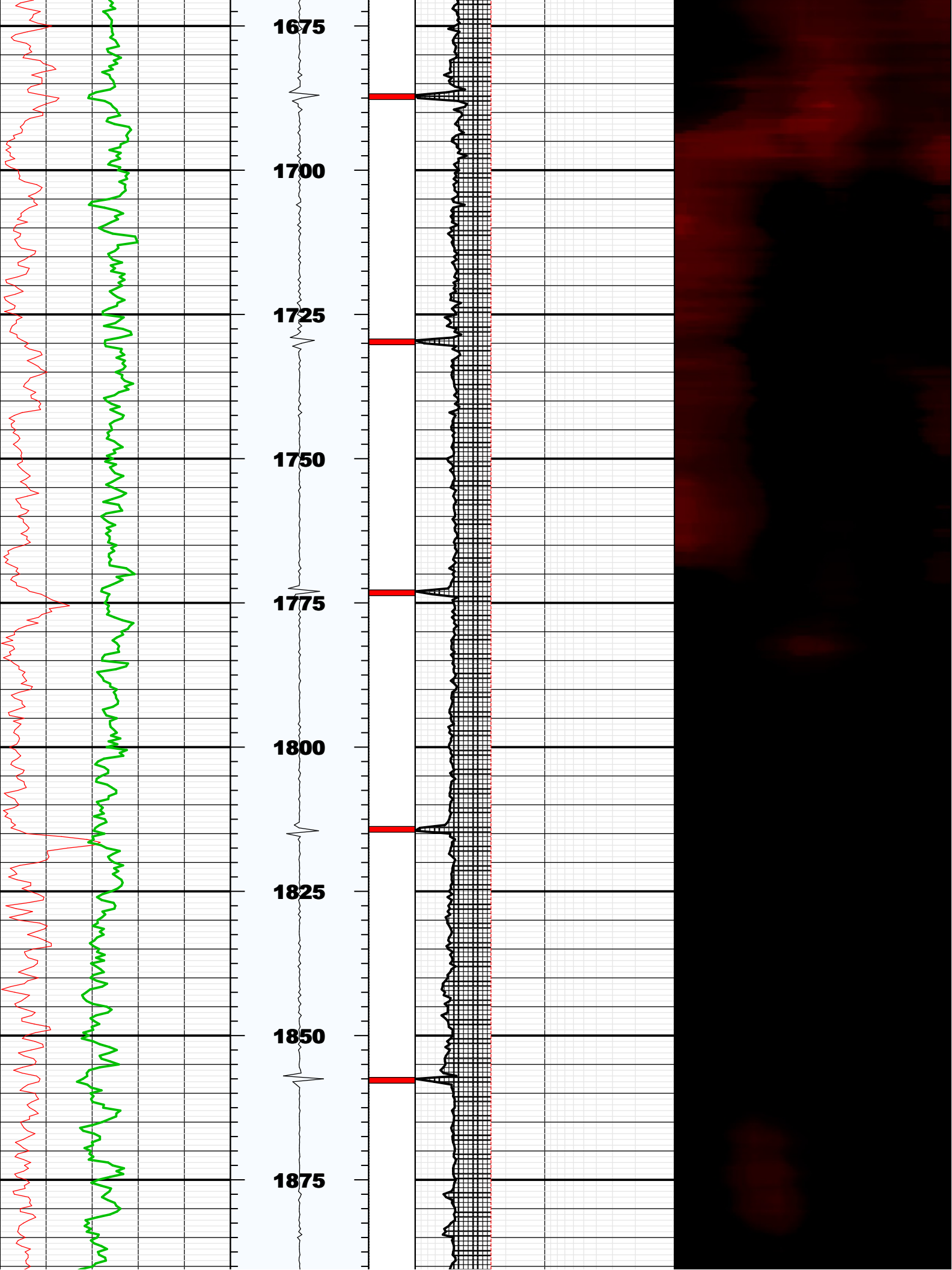


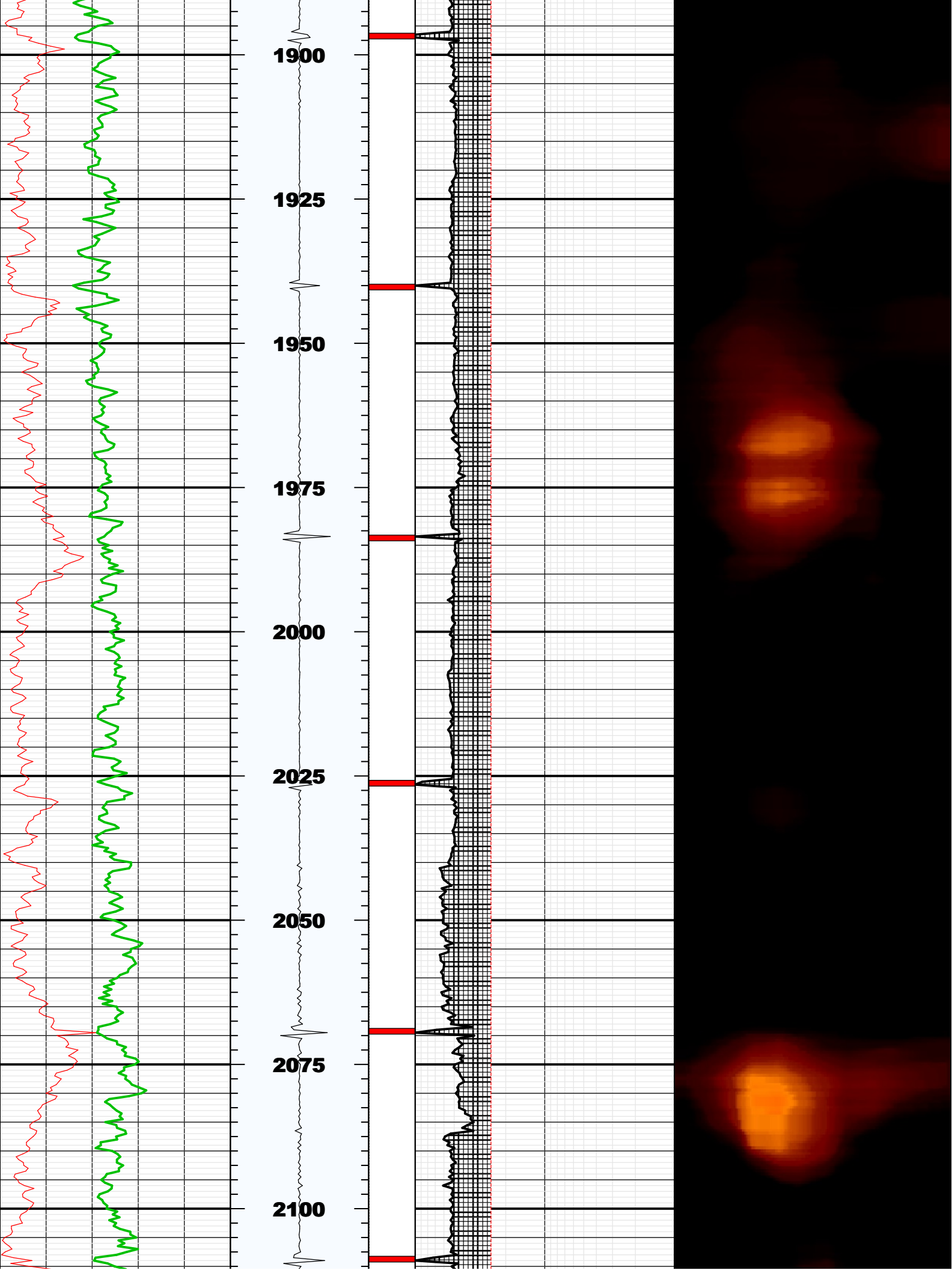


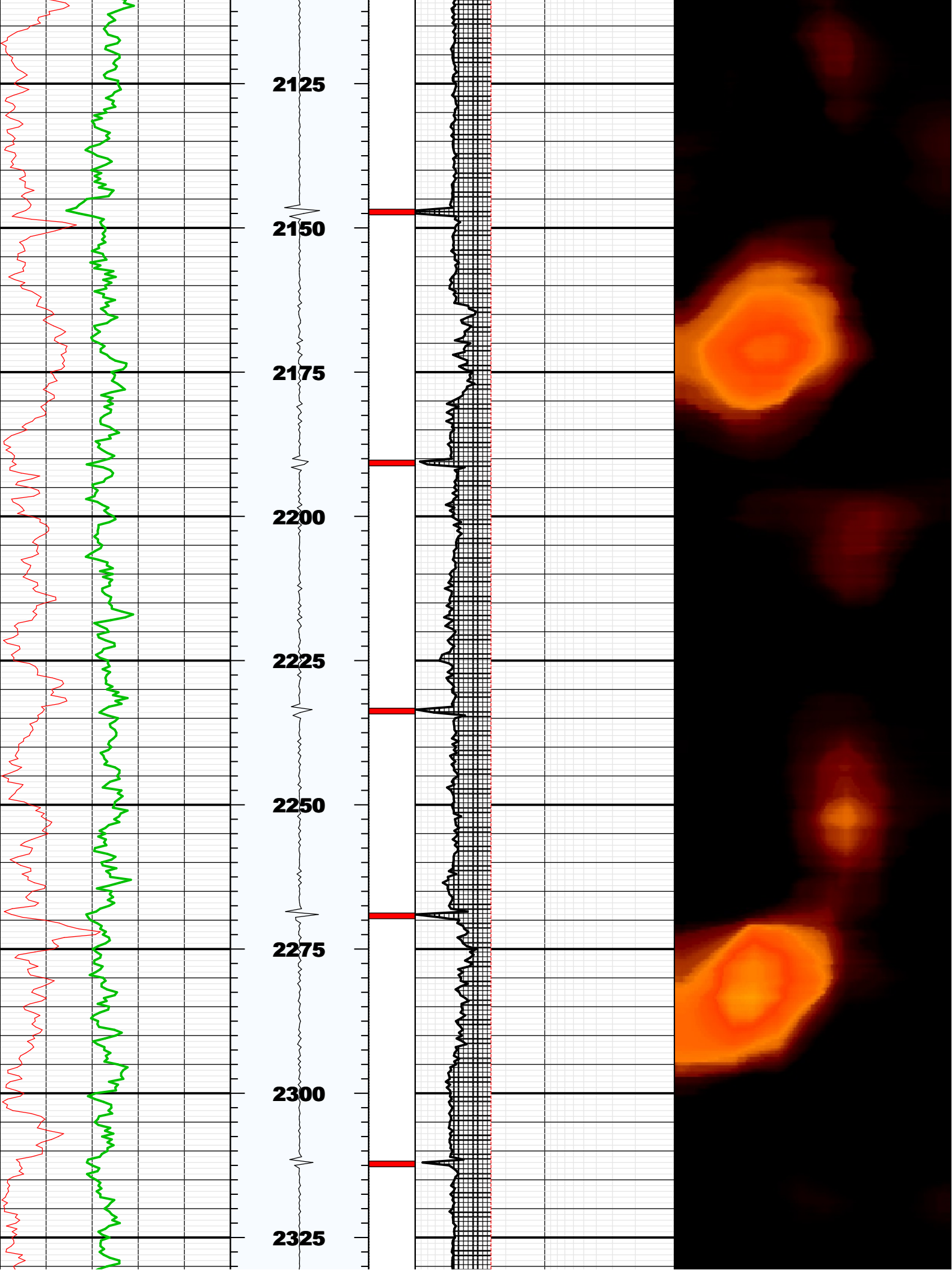


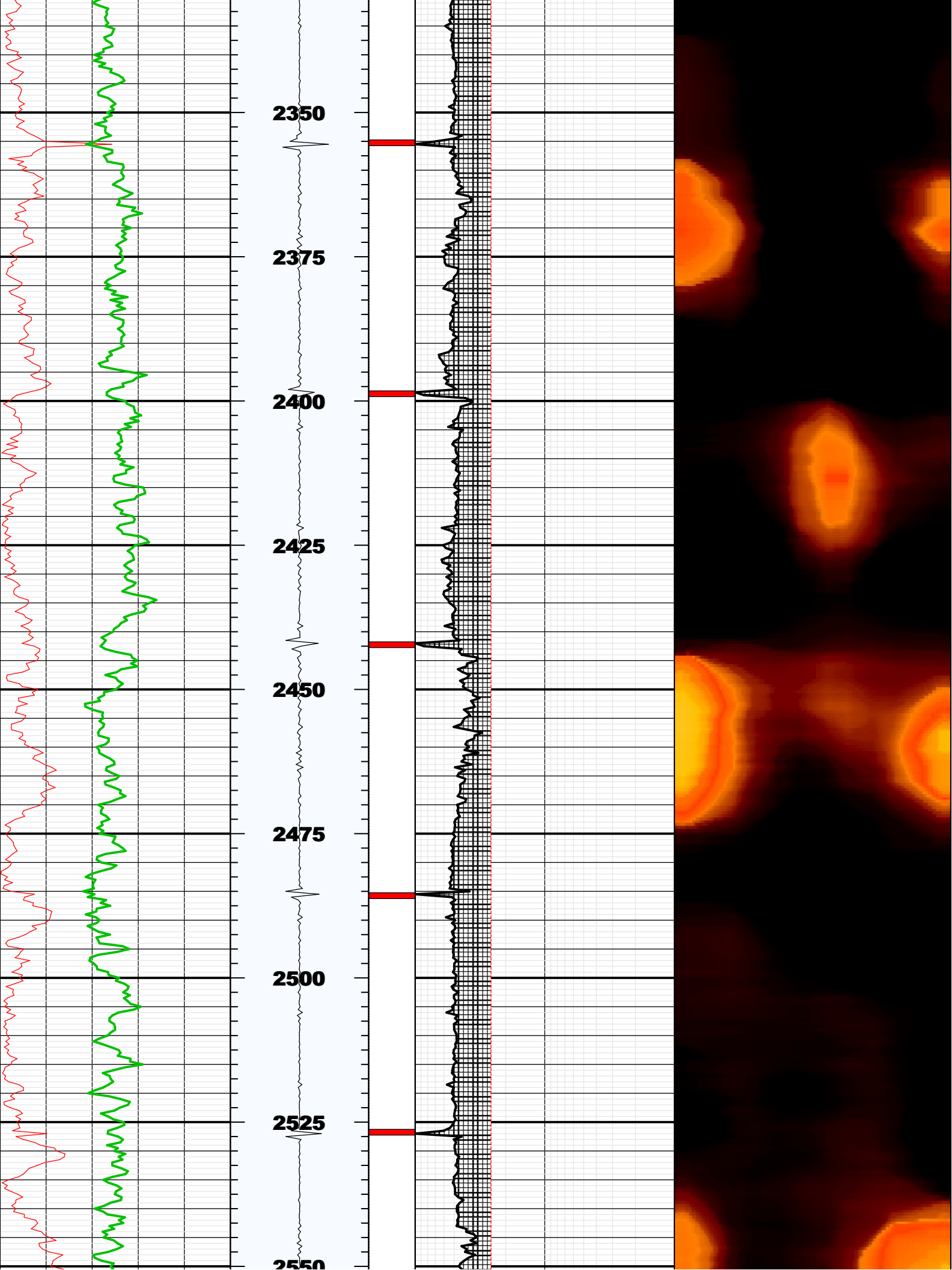




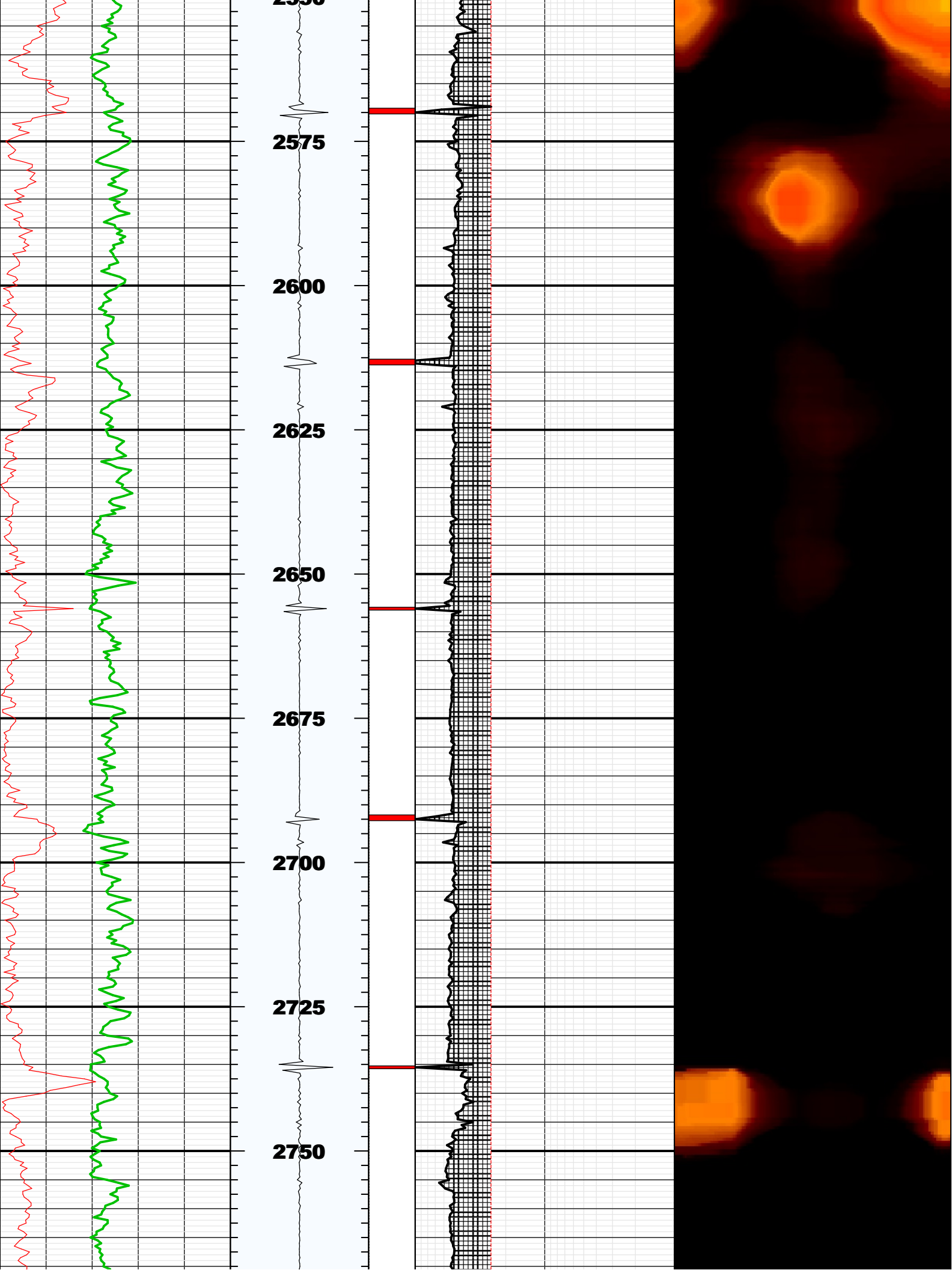


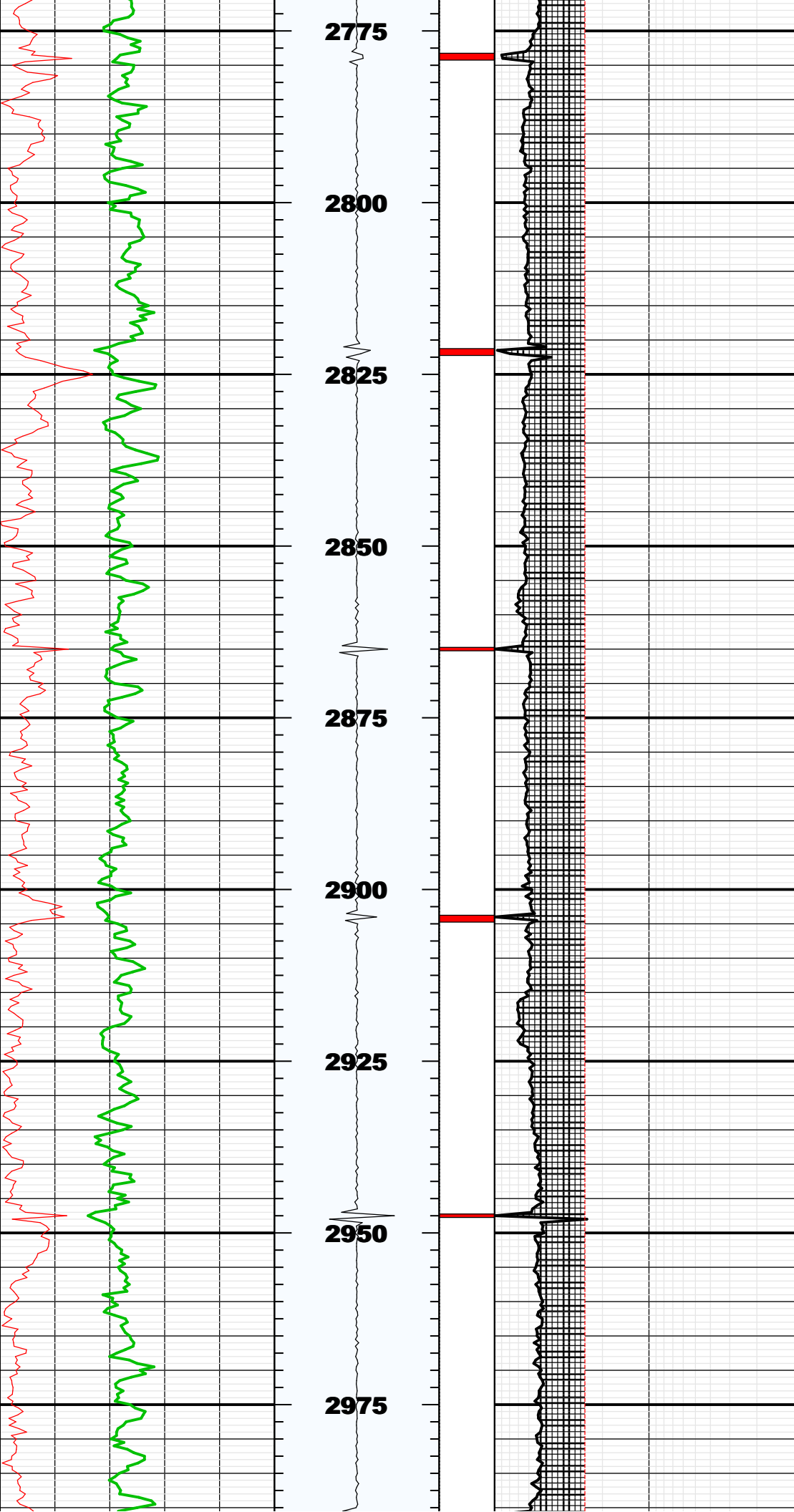




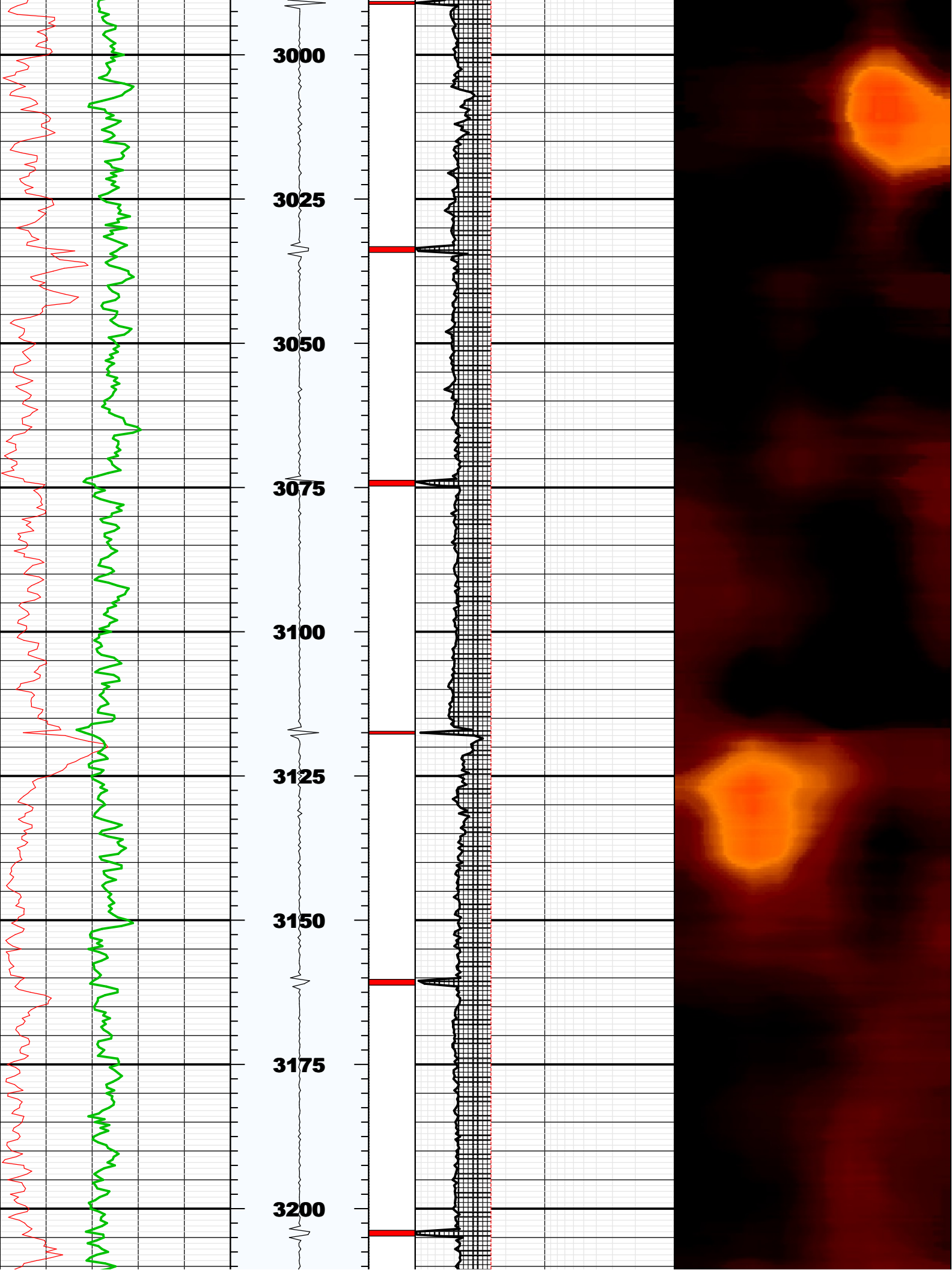


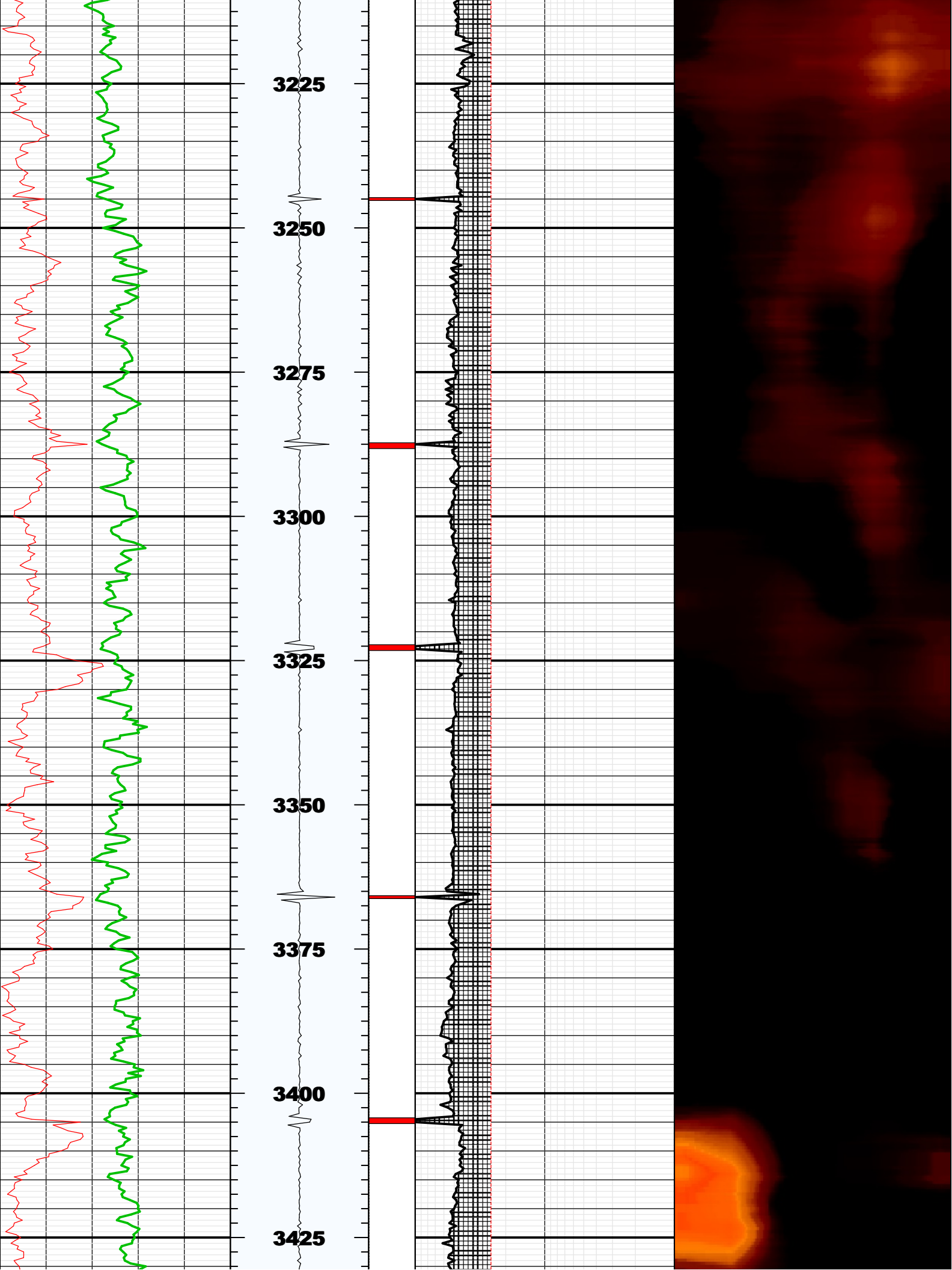


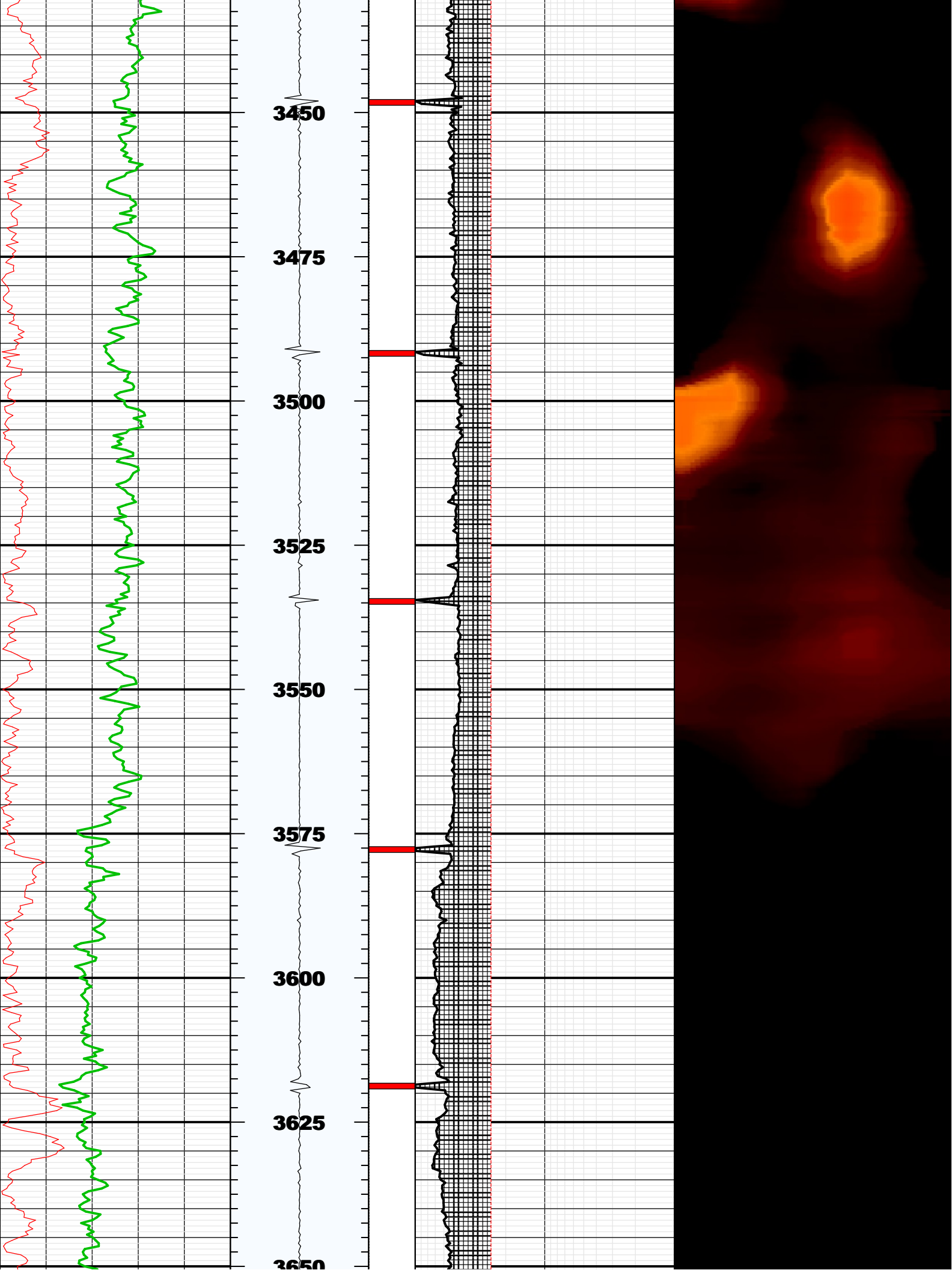


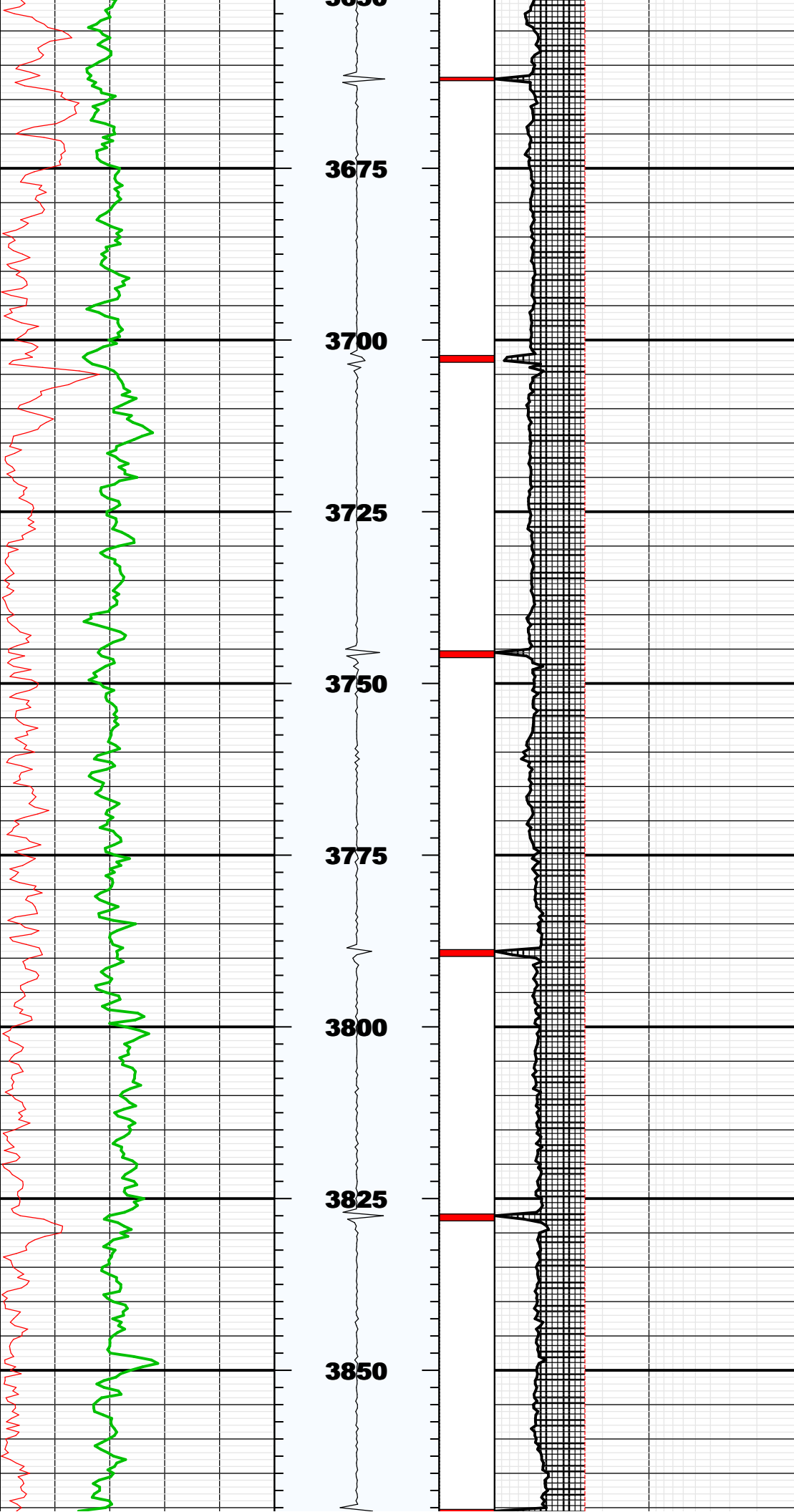


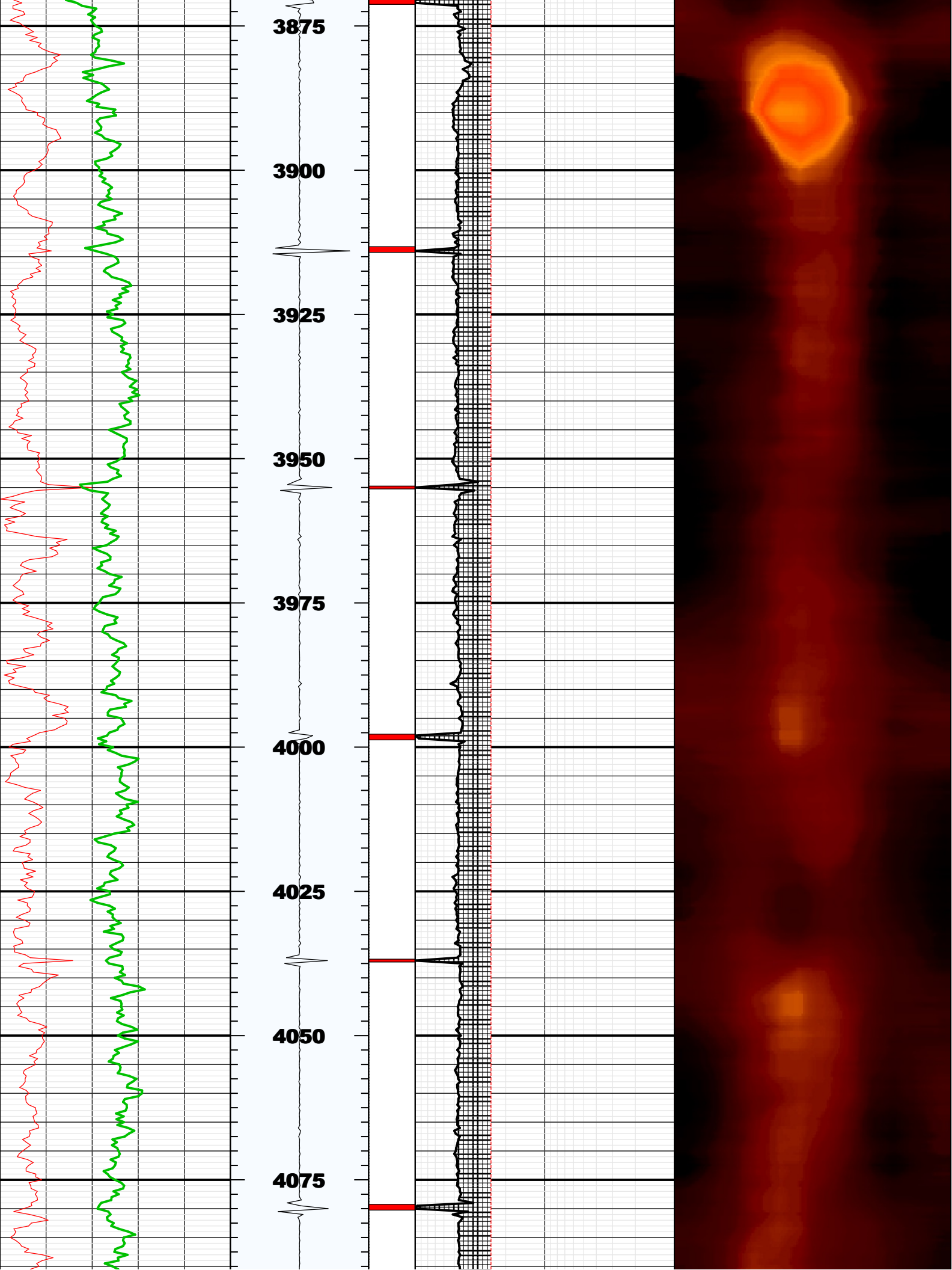




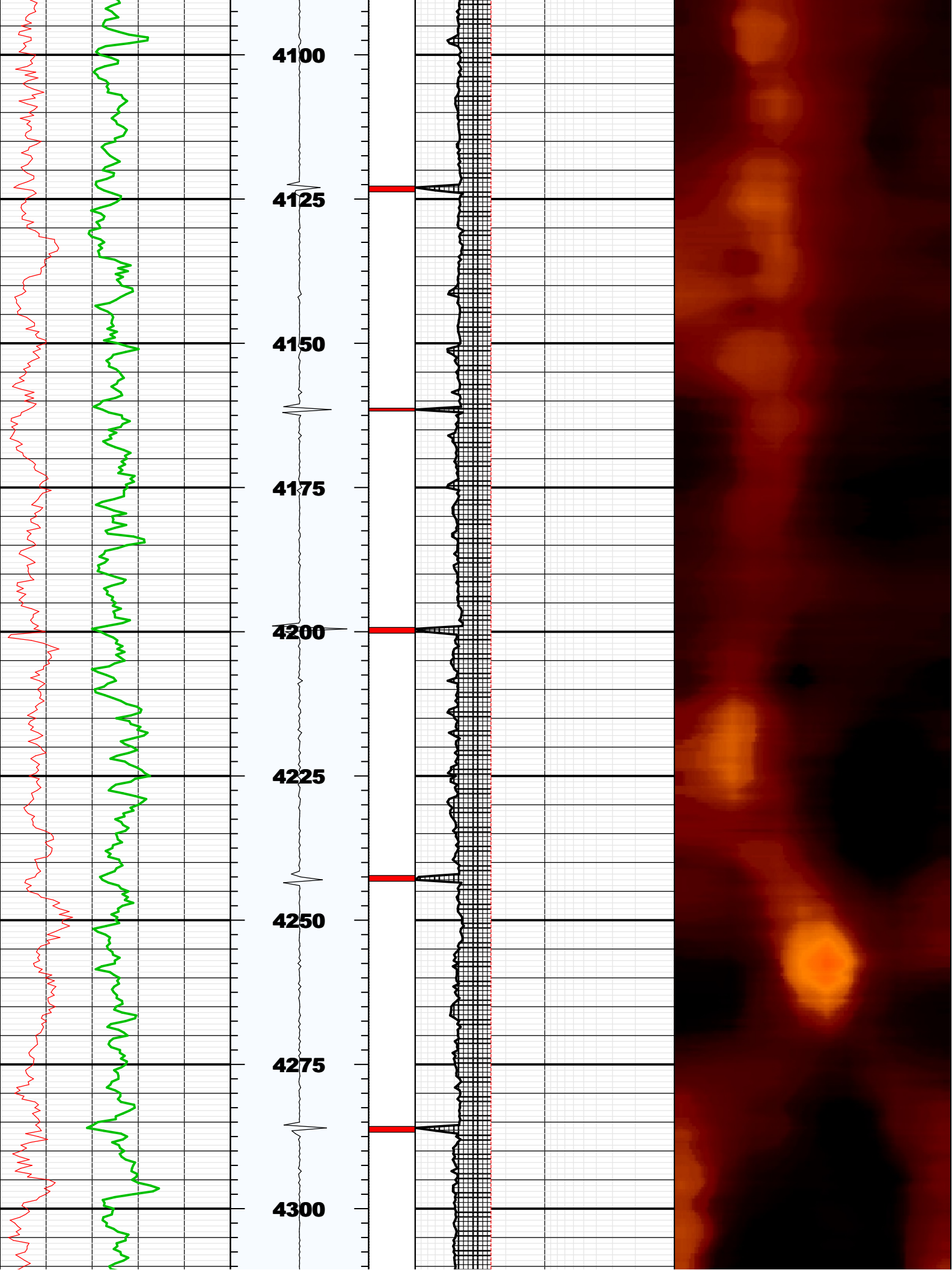


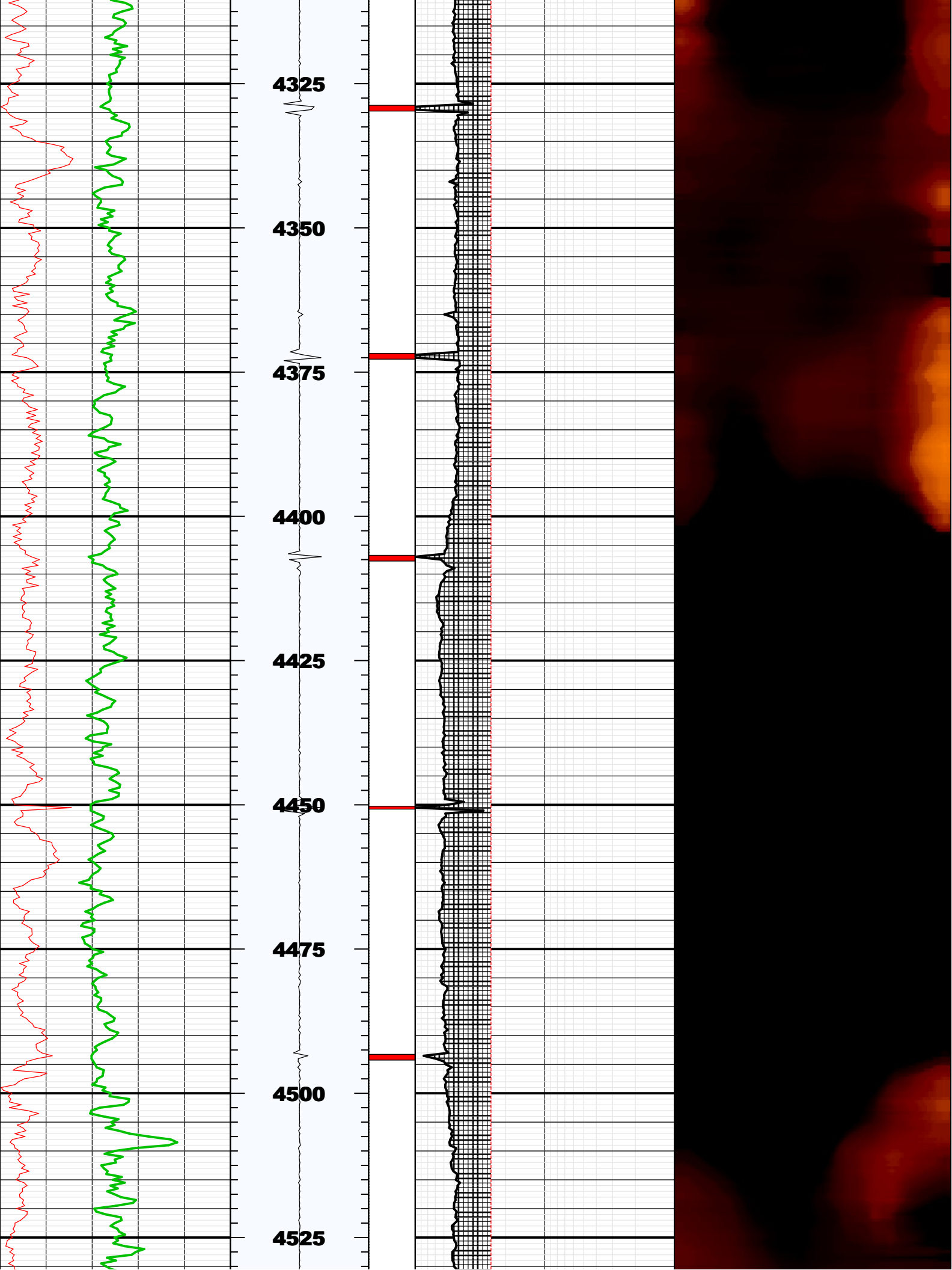


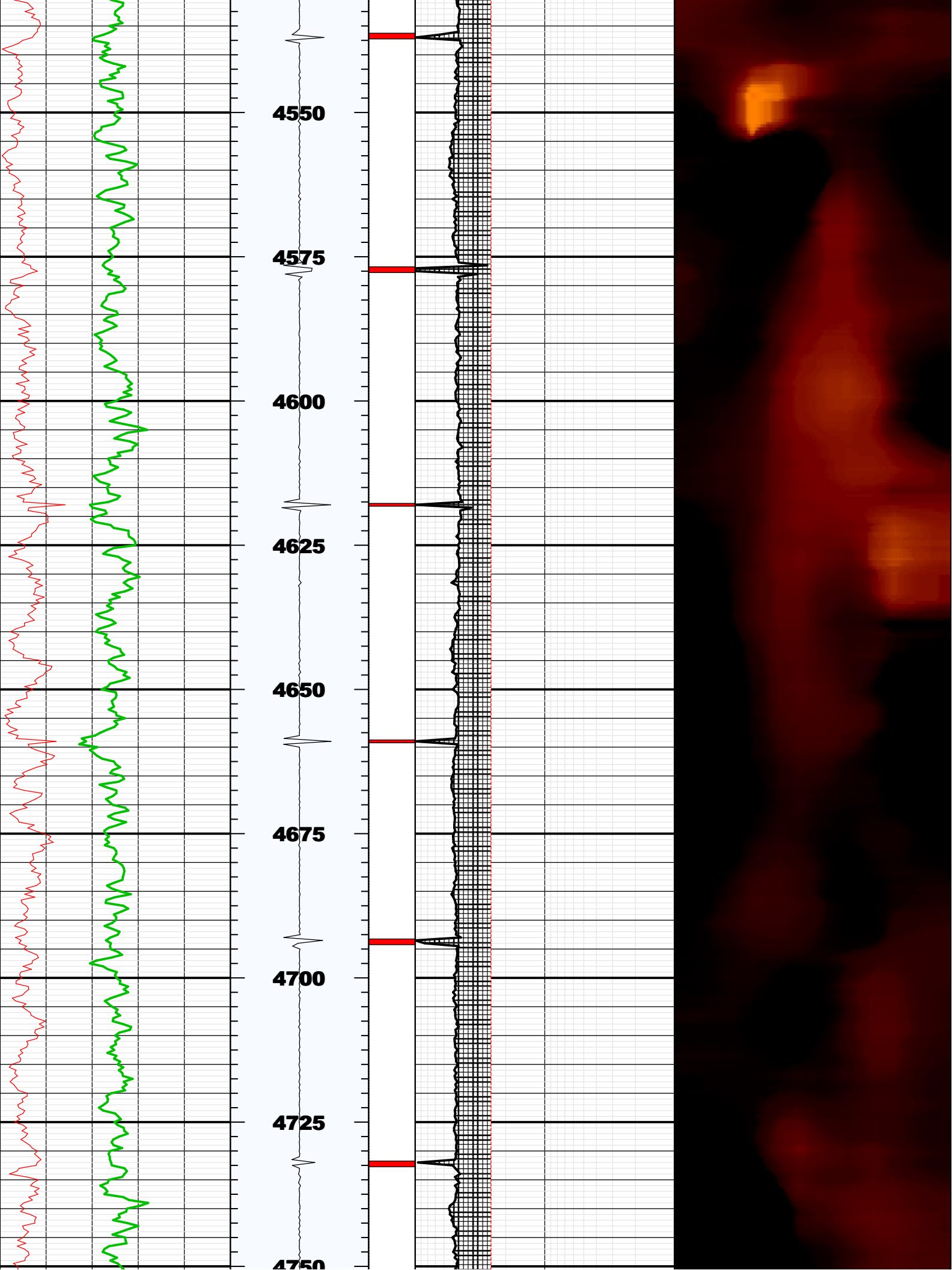




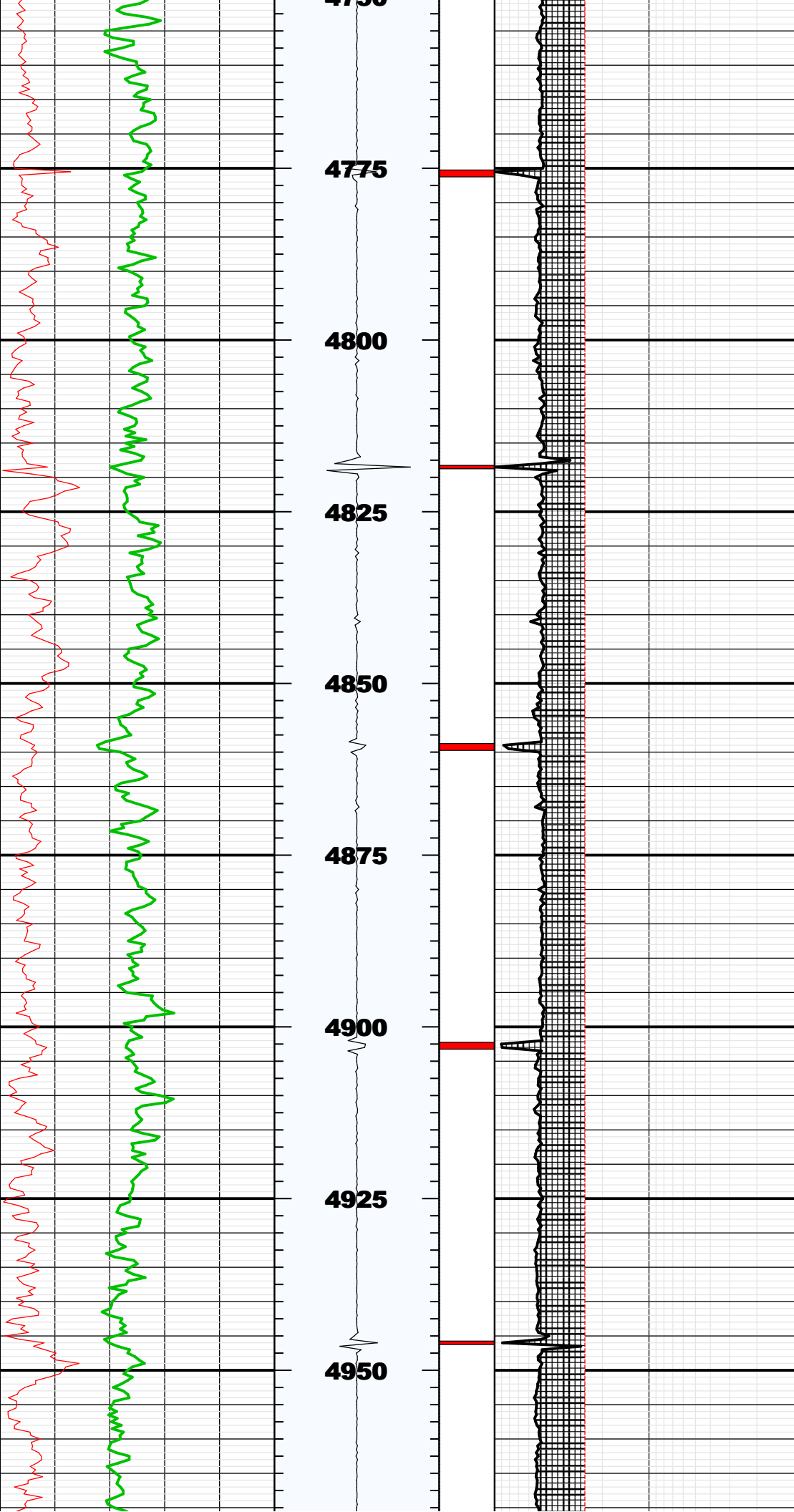


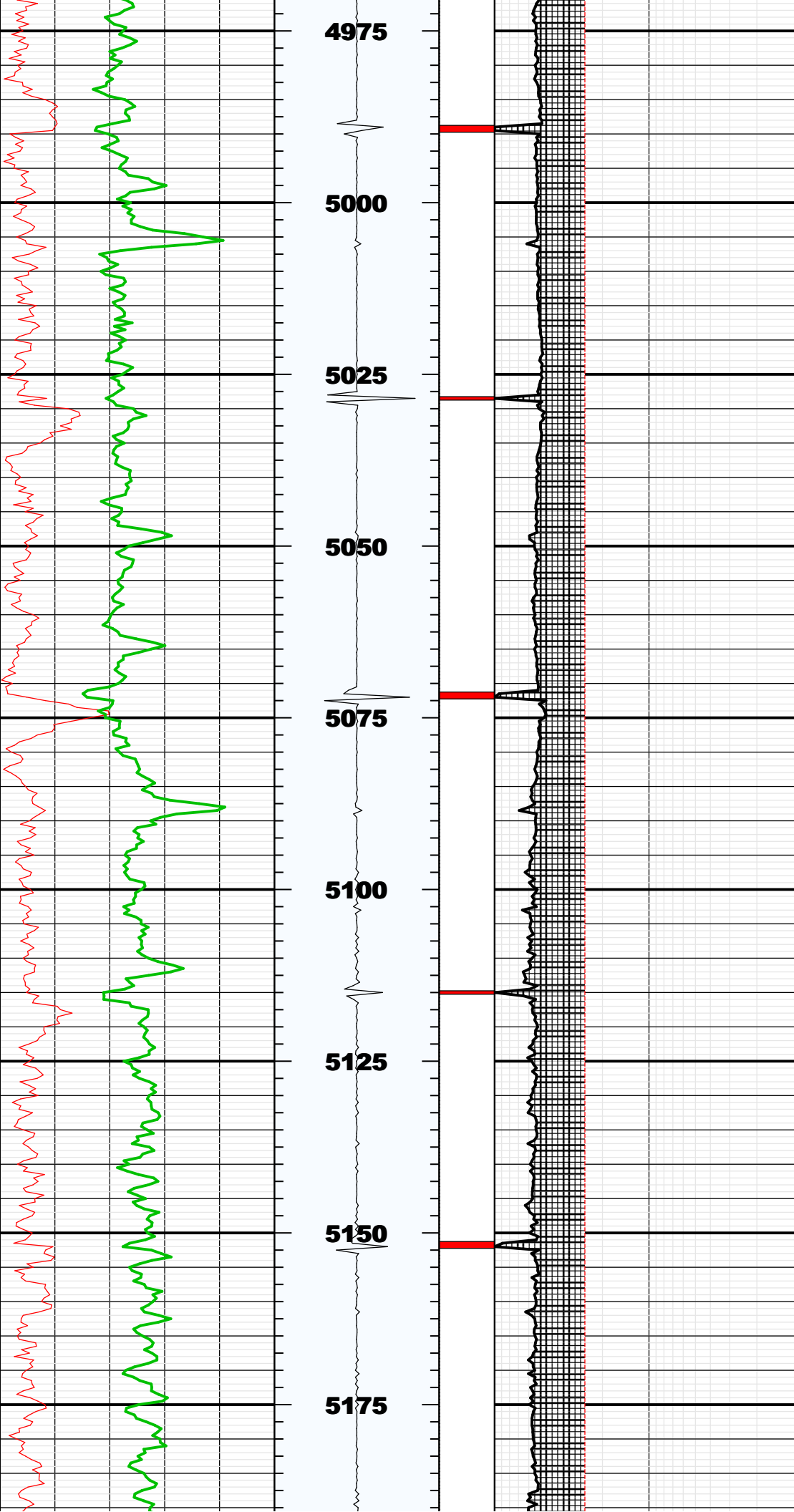


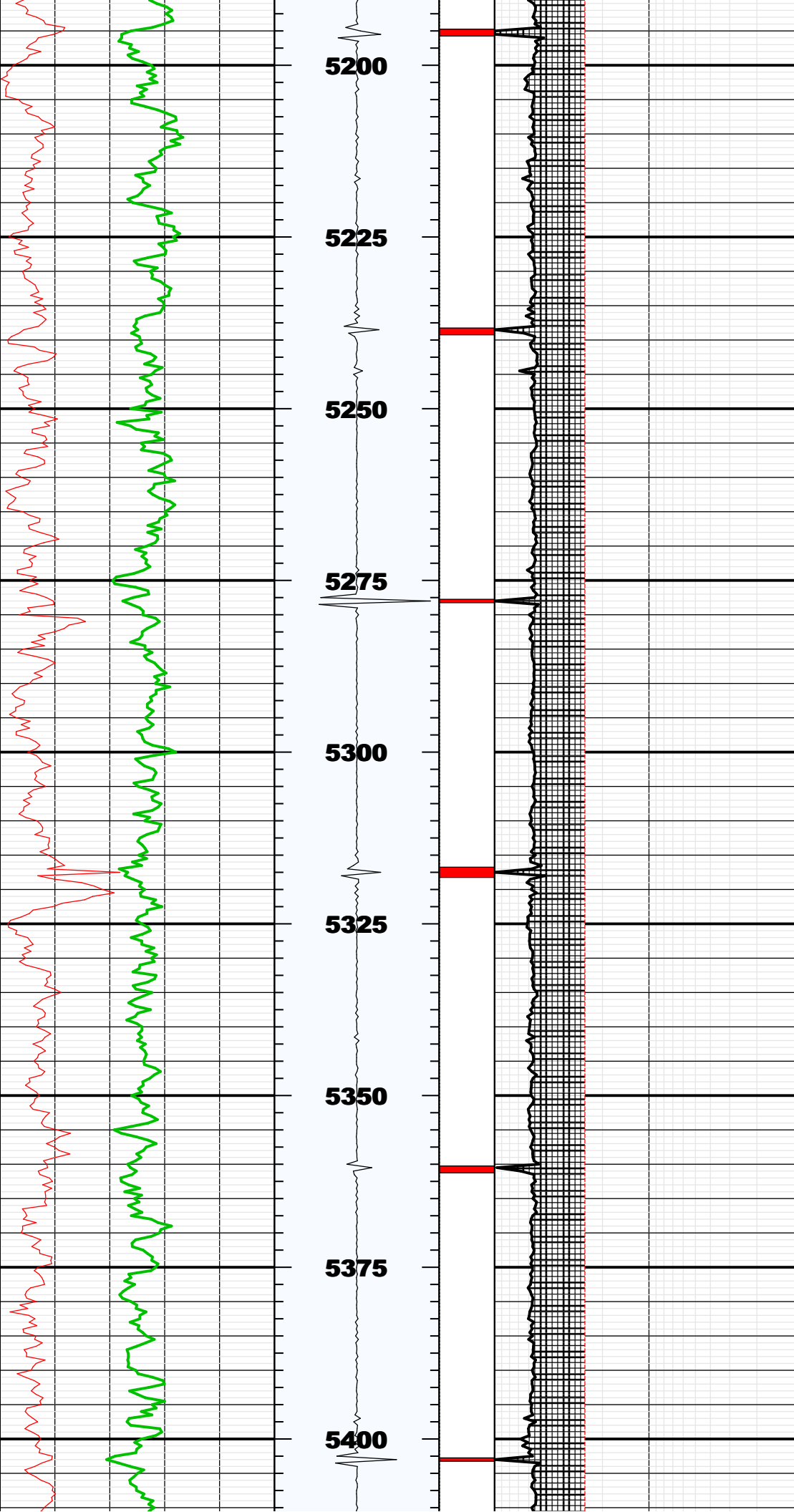


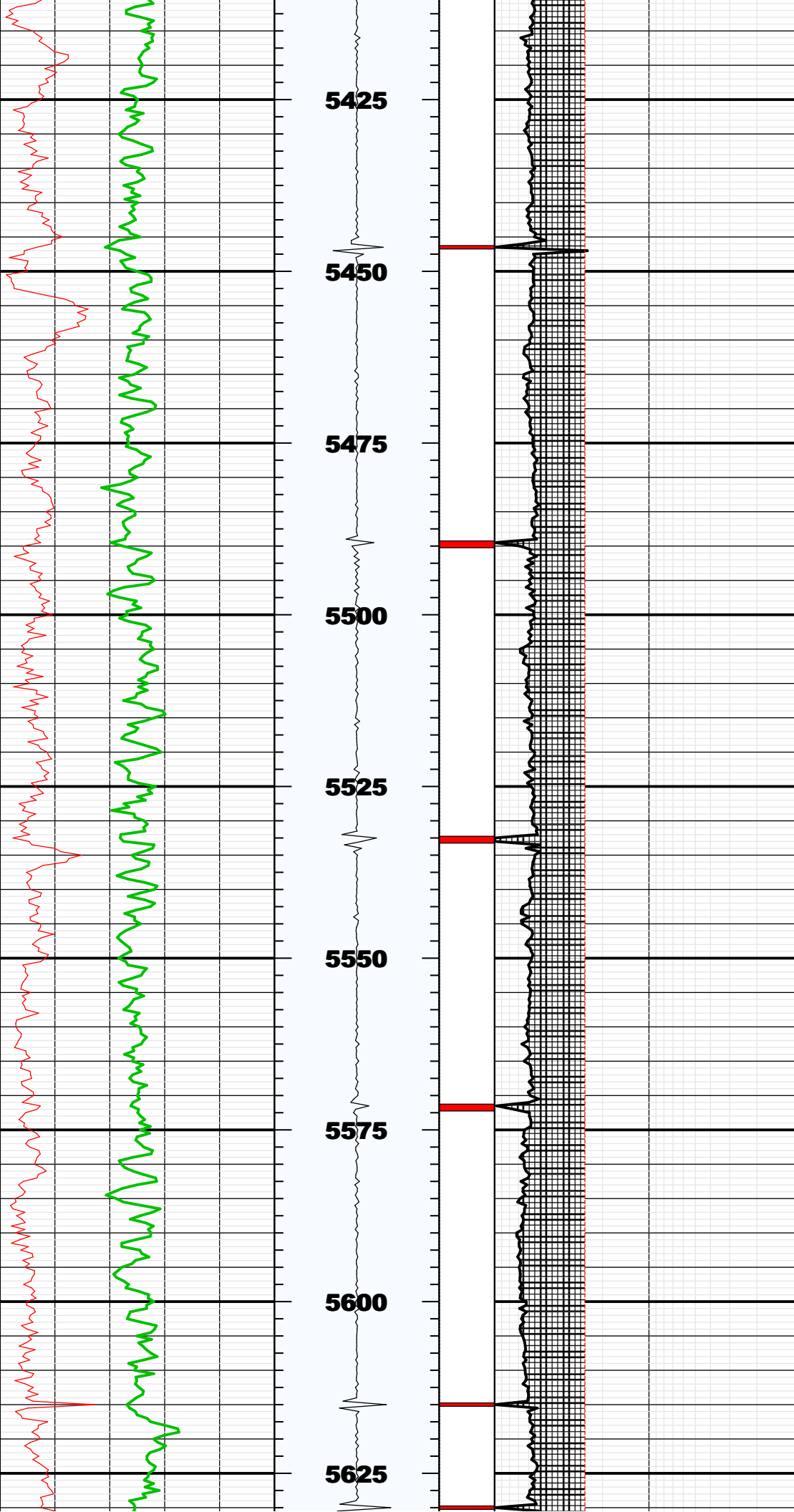


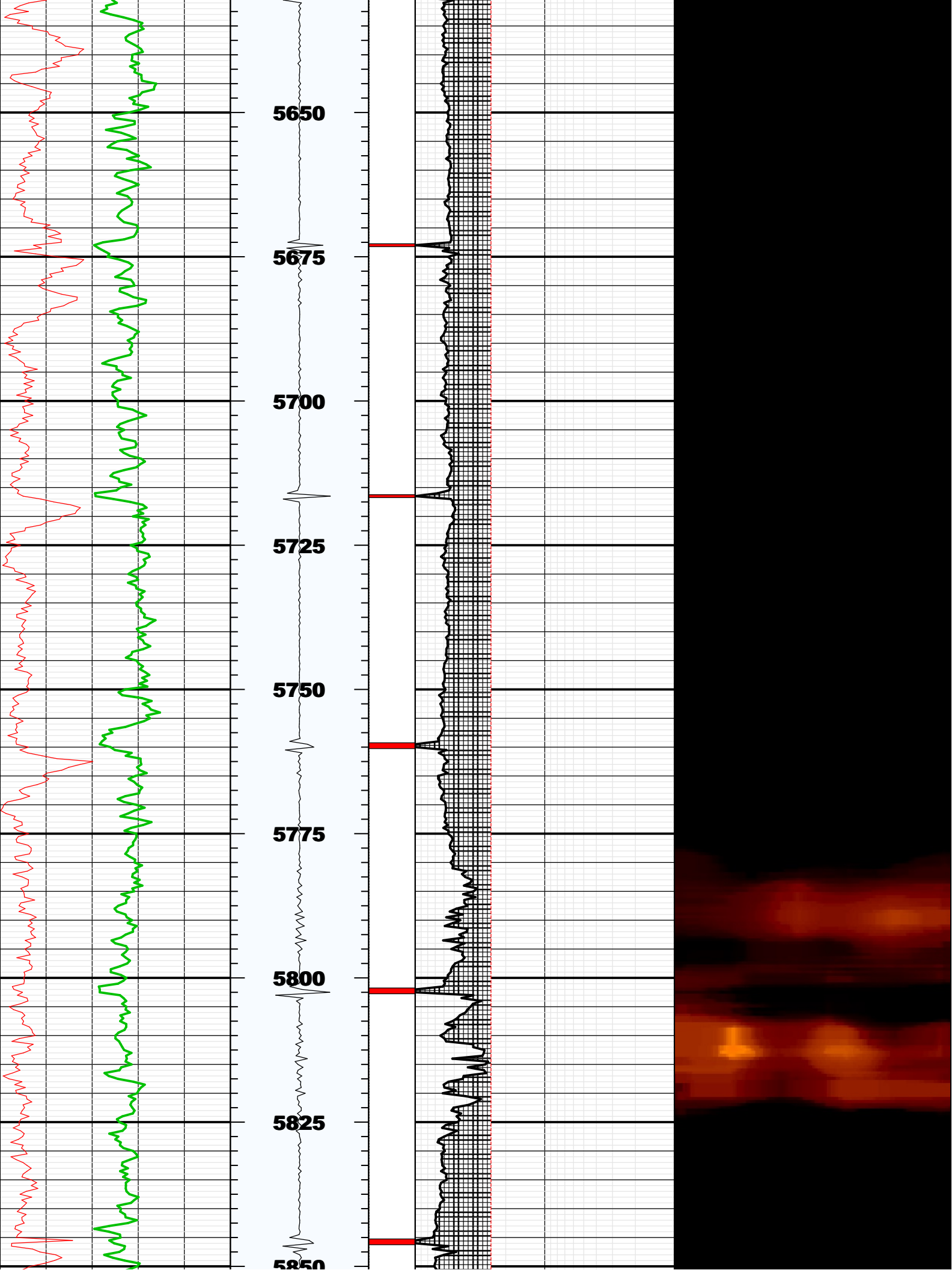


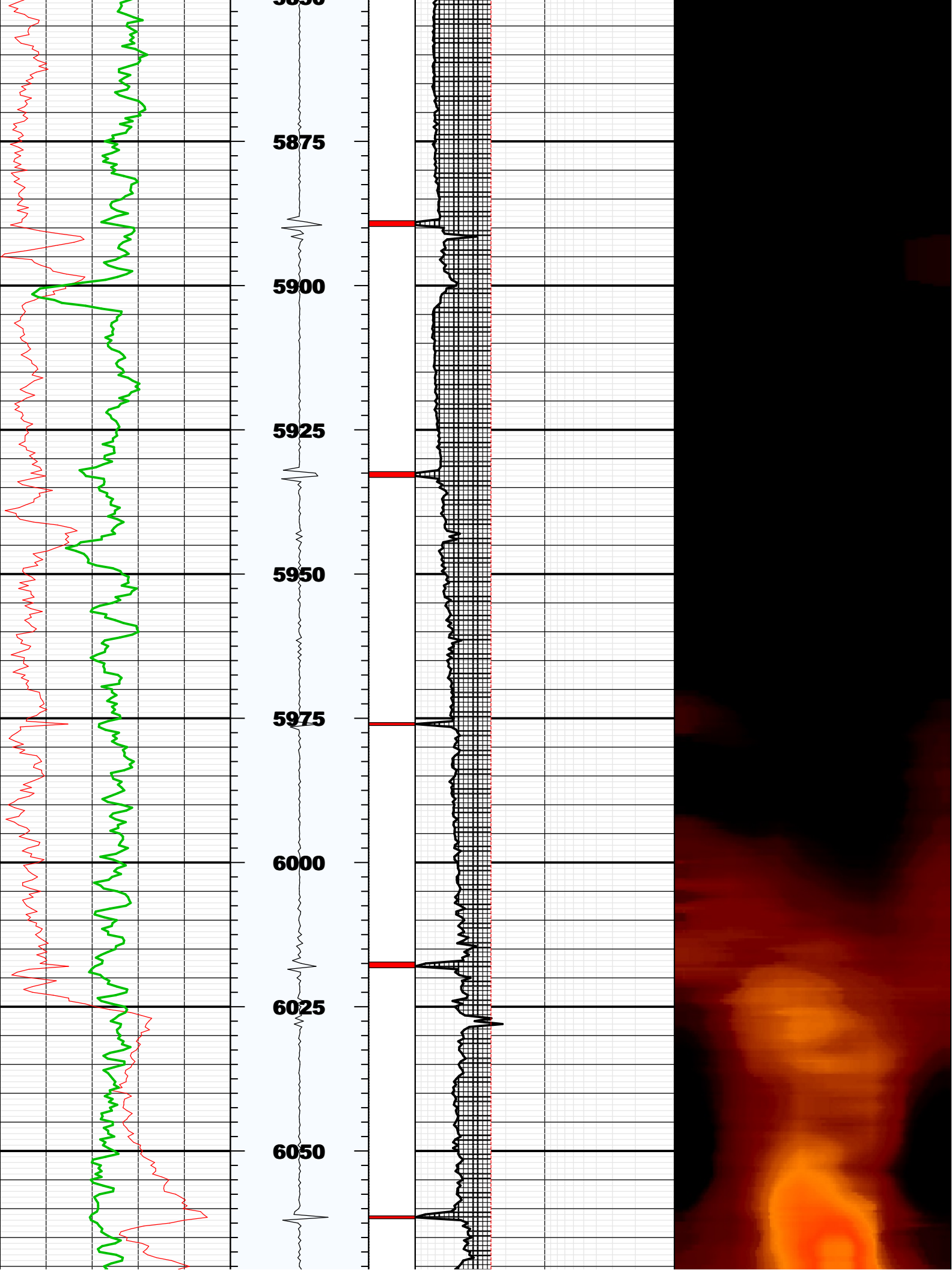




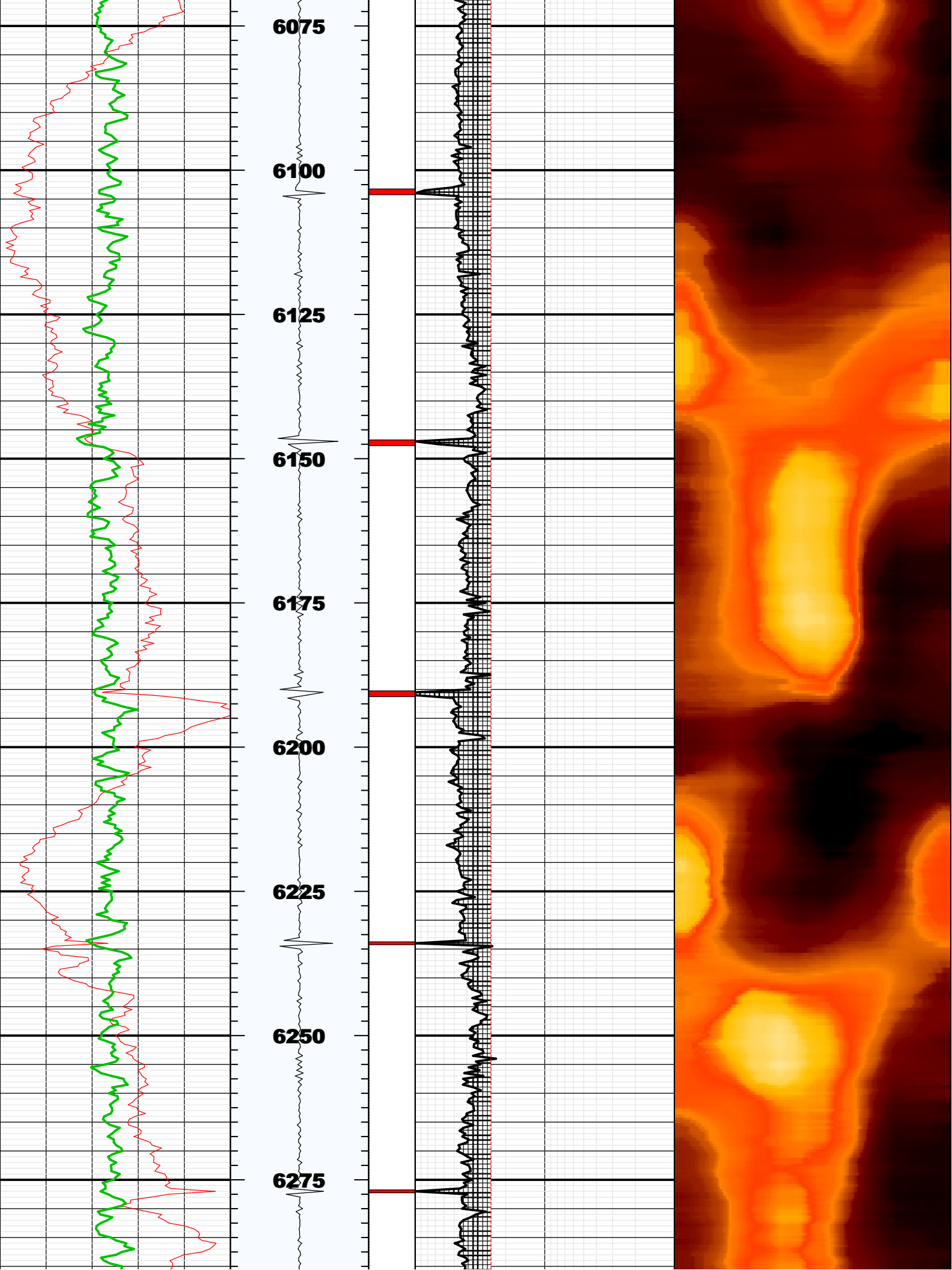


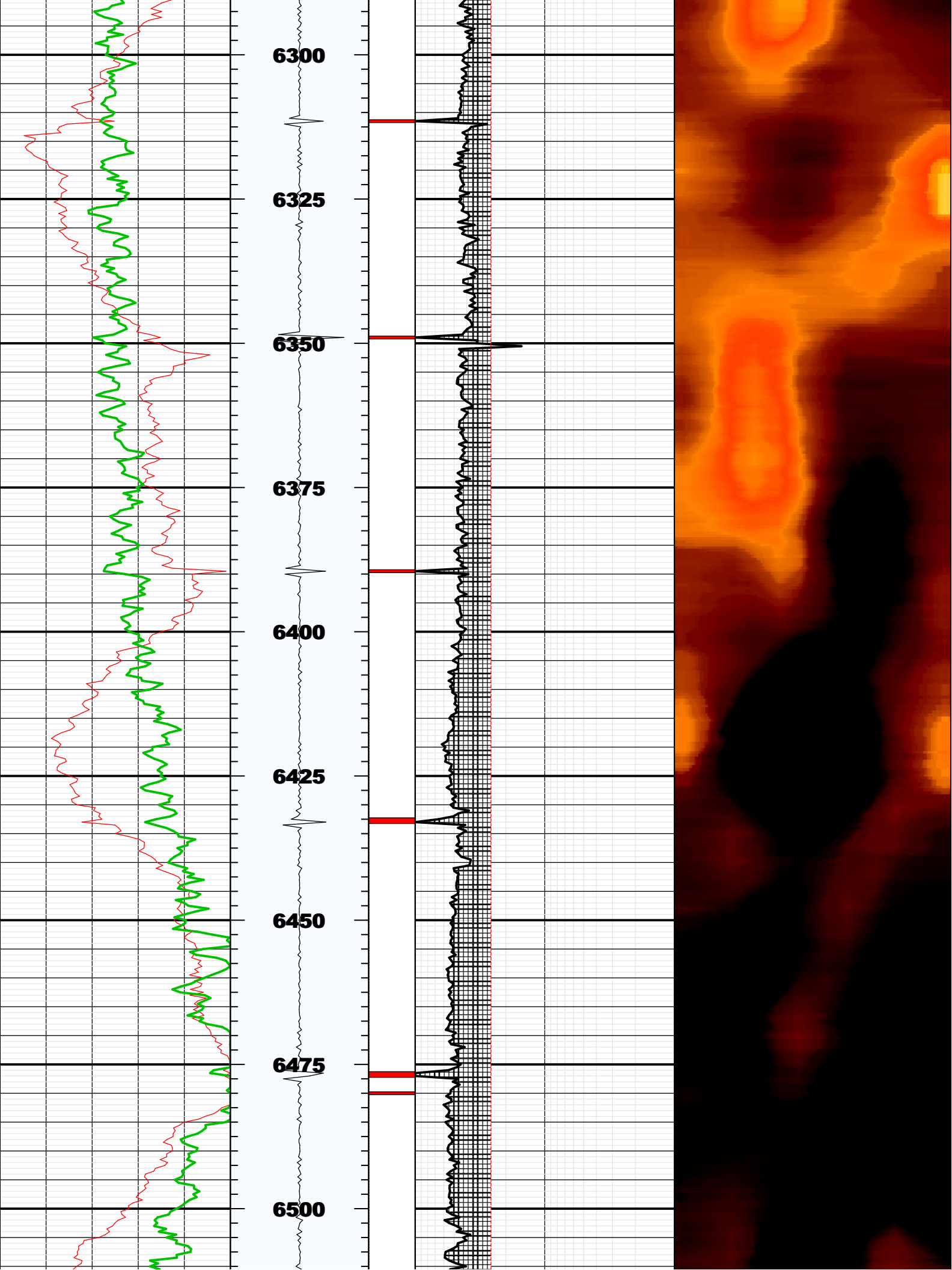




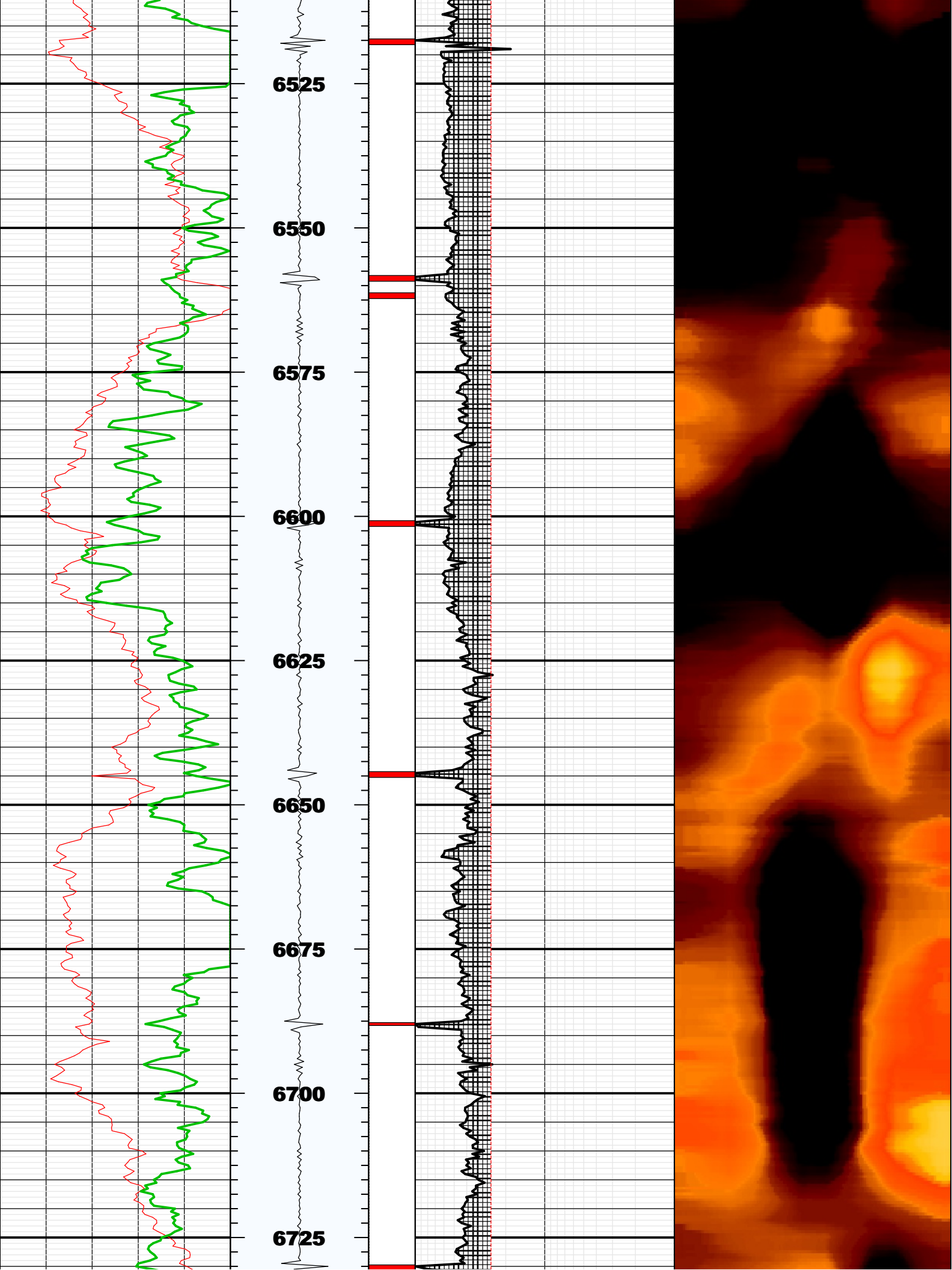


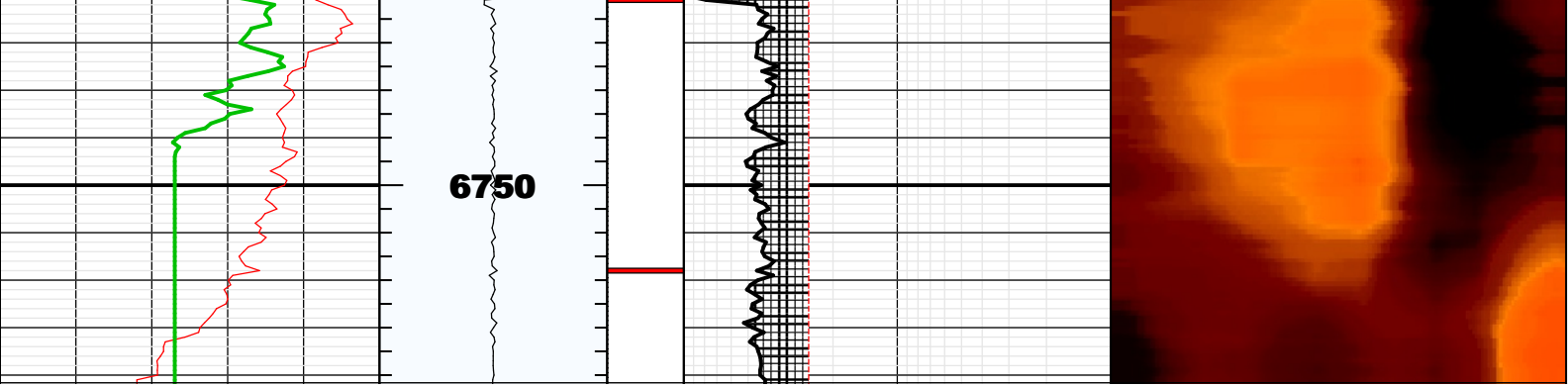








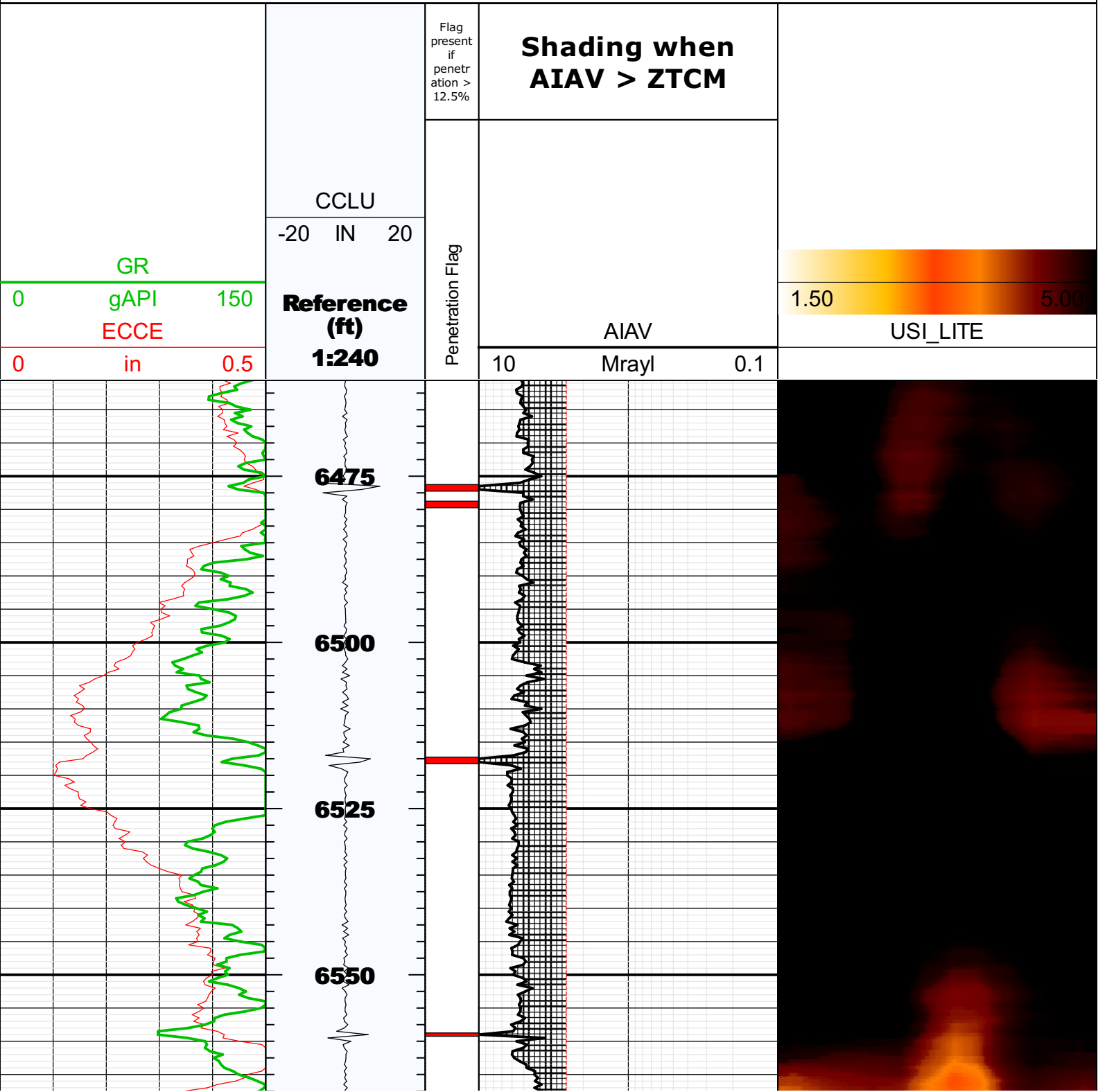


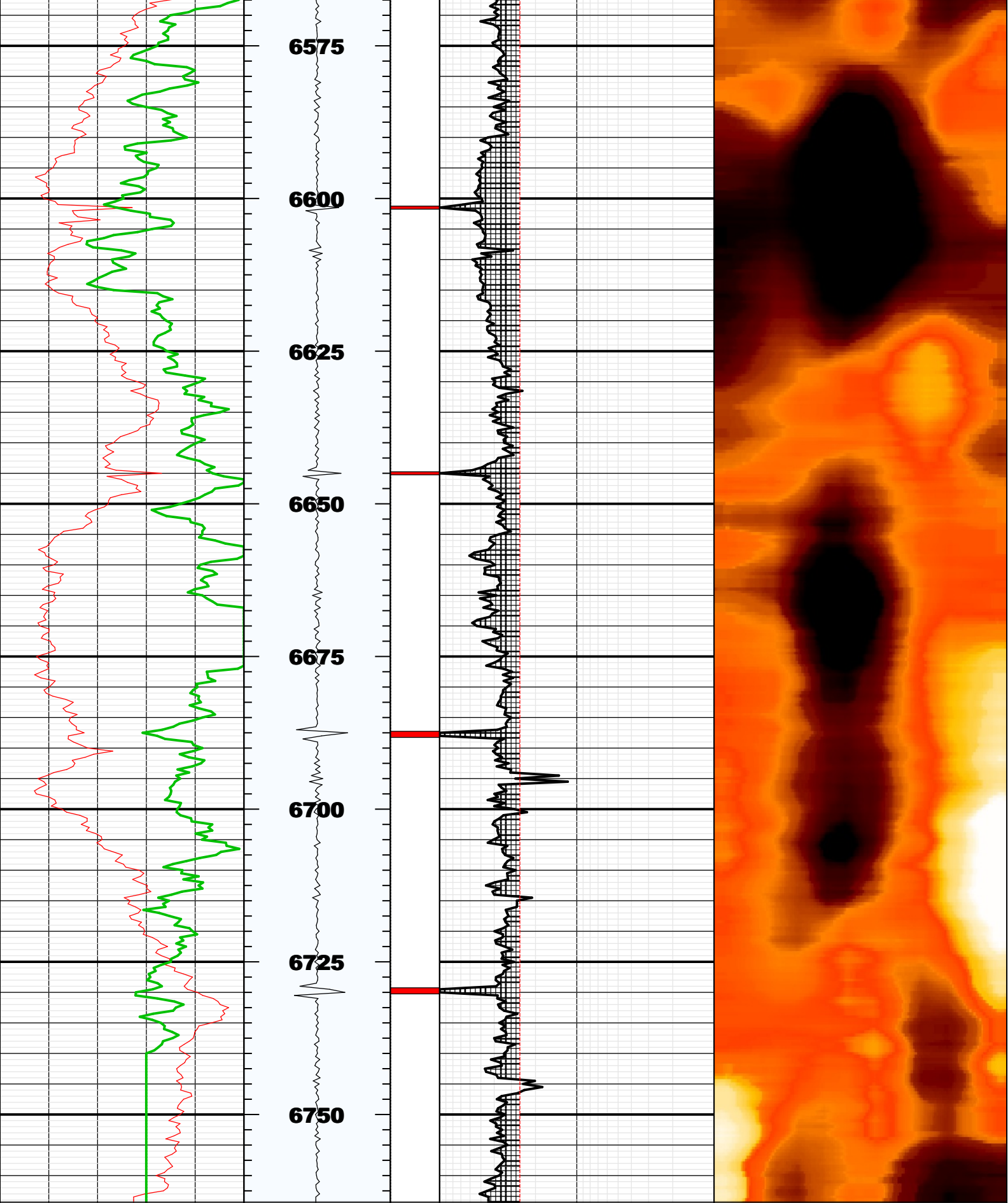


BS	8.75000	IN	Bit Size
CASG	P110		Casing Grade
CDIA	7.00000	IN	Casing Outer Diameter
CSID			
CSIZ	7.00000	IN	Current Casing Size
CWEI	26.00000	LB/F	Casing Weight
DFD	8.40000	LB/G	Drilling Fluid Density
DFVL	190.00000	US/F	Default Fluid Velocity
DO			
DOT	2.87400	IN	Diameter of Transducer Sensor
EMXV	80	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	33.86500	US	Window Begin Time
WINE	73.86501	US	Window End Time
ZCAS	46.25000	MRAY	Acoustic Impedance of Casing
ZINI	-1.00000	MRAY	Initial Estimate of Cement Impedance
ZMUD	1.78000	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 <sup>3</sup> Processing Length

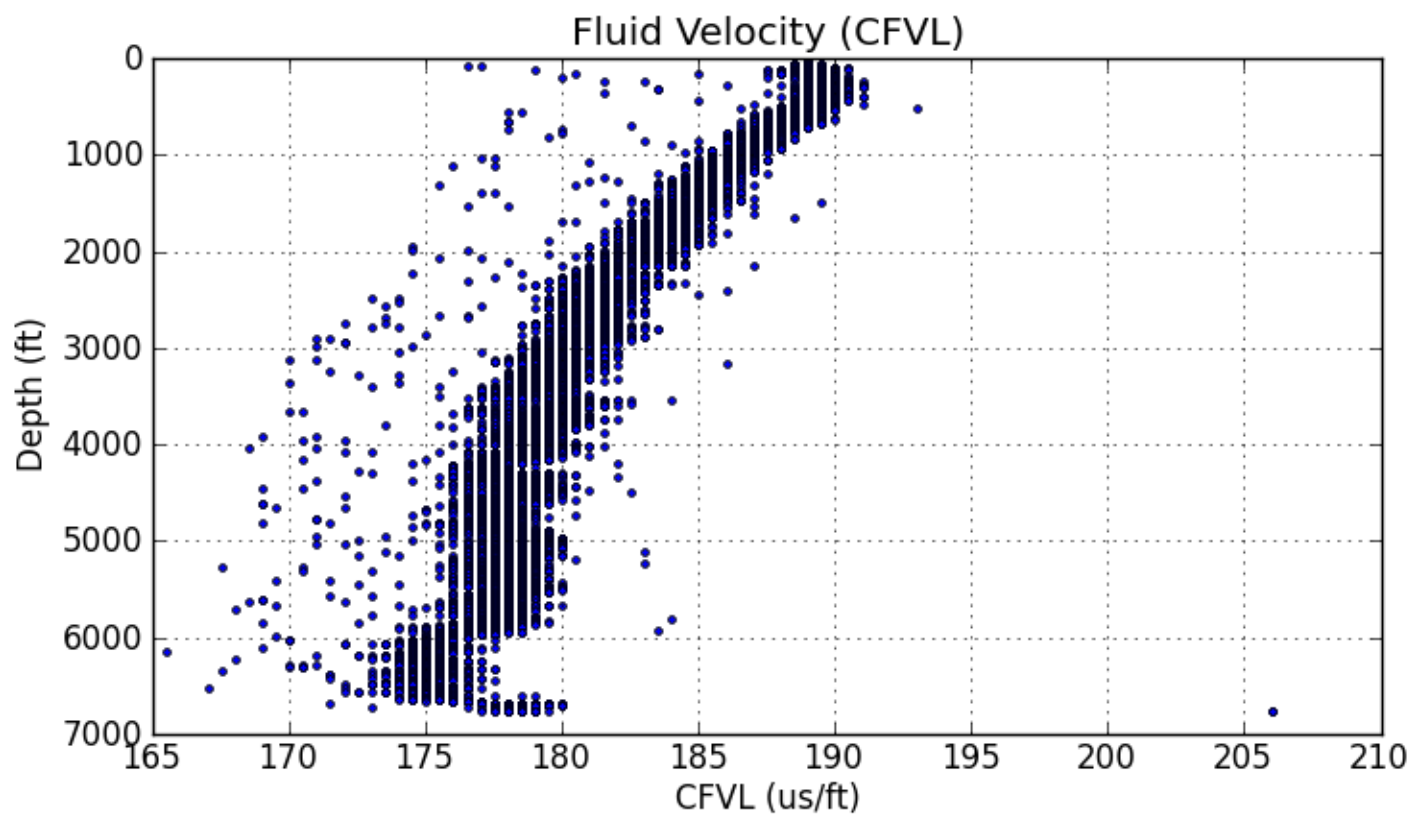
Repeat Pass

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Field: Wattenberg





## Fluid Properties Used for Main Pass



## Acoustic Impedance of Mud (CZMD)

