



**RBOND LOG**  
**GAMMA RAY**  
**CCL**

**Company** NOBLE ENERGY, INC.  
**Well** OSH D 22-11  
**Field** WATTENBERG  
**County** WELD  
**State** COLORADO  
**1/4'S** NESW  
**SEC.** 22  
**TWP.** 3N  
**RGE.** 64W  
 AP#: 05-123-17314-00  
 WBS:  
 1/4'S: NESW SEC: 22 TWP: 3N RGE: 64W

**Permanent Datum** Ground Level Elev K.B. 4839'  
 Log Measured From Ground Level Elev D.F. 4838'  
 Drill Measured From Kelly Bushing 1' Foot Above Datum Elev G.L. 4829'

Date	4-23-2019	Gun Type	NA	Gun Size	NA
Run Number	1	Charge Type	NA	Gram Wt.	NA
Ranger Depth	6082'	Shots / Foot		Shots Fired	To
Driller Depth	7600'				
First Reading	6075'				
Last Reading	SURFACE				
Max Temperature	NA				
Est. Cement Top	NA				
Fluid Type	WATER				
Fluid density	8.3#				
Est. fluid level	89'				
Service Order	70001618				
Truck No	233	<b>Casing Data</b>			
Recorded By	J. MICHAEL	Size Inches	Weight Lb/Ft	From	To
Witnessed By	MR. ERIC PETERSON	8-5/8"	24#	0'	679'
Ranger Contact	JOEL JOHNSON (307) 680-6021	4-1/2"	11.6#	0'	7258'

Other Services					
Service	Type	Size	Depth	Comments	
				THANK YOU FOR CHOOSING RANGER ENERGY SERVICES.	
				YOUR CREW: J. MICHAEL	
				D. VALENZUELA, T. VAN NEST	

Remarks: NO CORRELATION LOG AVAILABLE

Previous Well Information	
Depth Control Log	NO DEPTH CORRECTIONS MADE
Perforated	
Bridge Plug Set At	
Cement Retainer Set At	
Production Packer Set At	

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 interpretations, 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 as set out in our current price schedule.

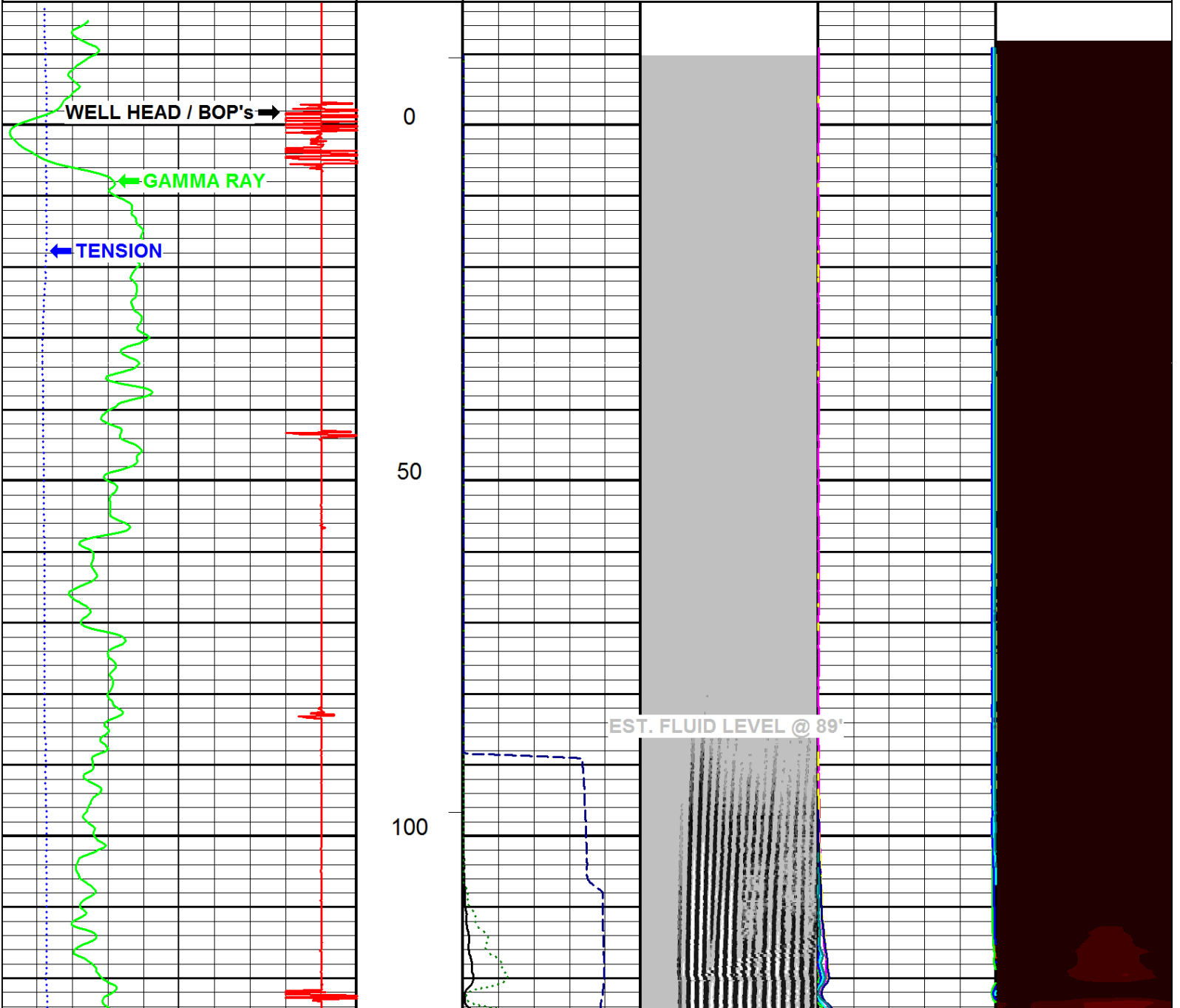
### Calibration Summary

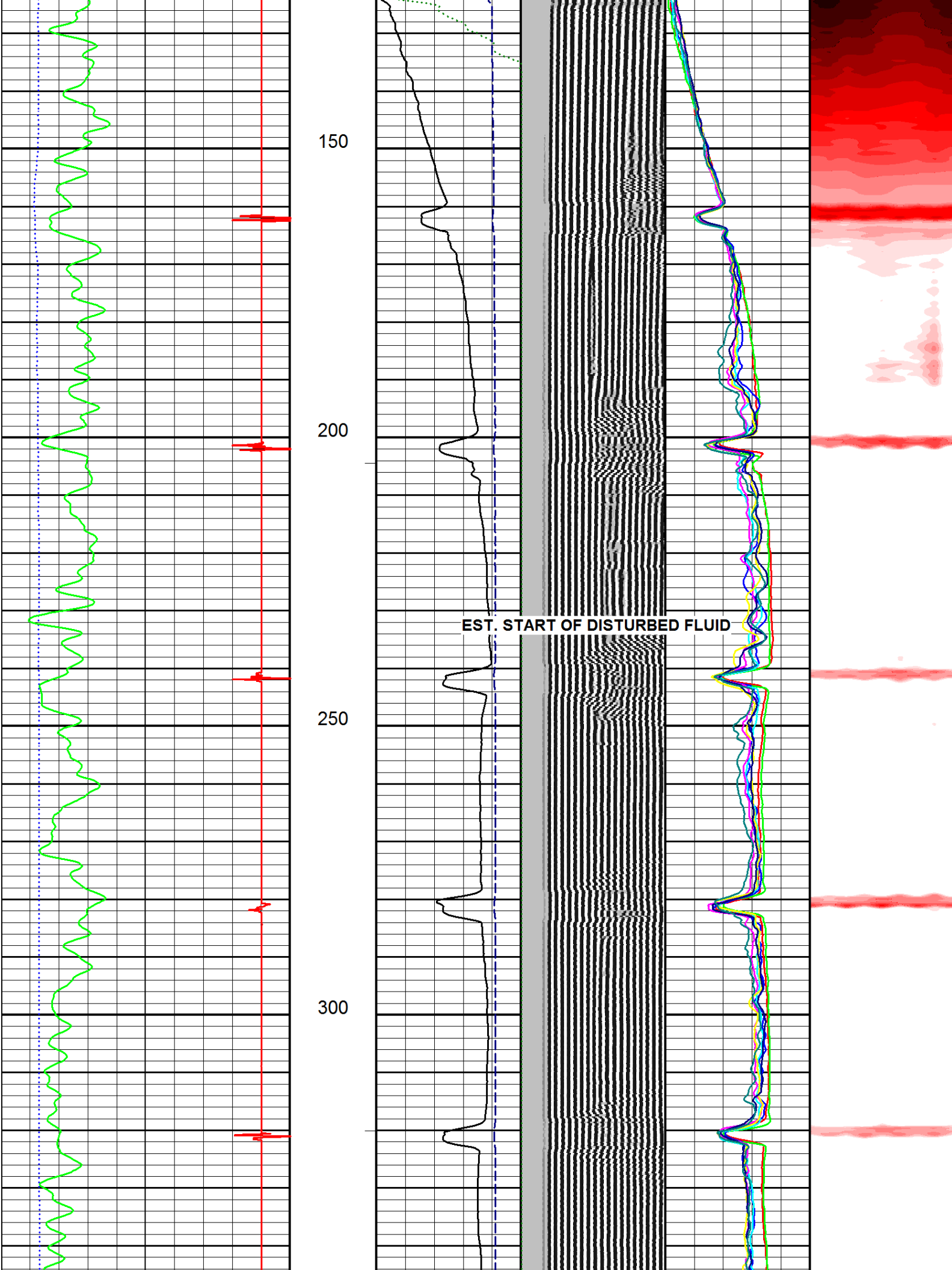
Serial Number: DSSH20MAGNA --- 0.000in ---  
 Calibration Date: 2016-09-07

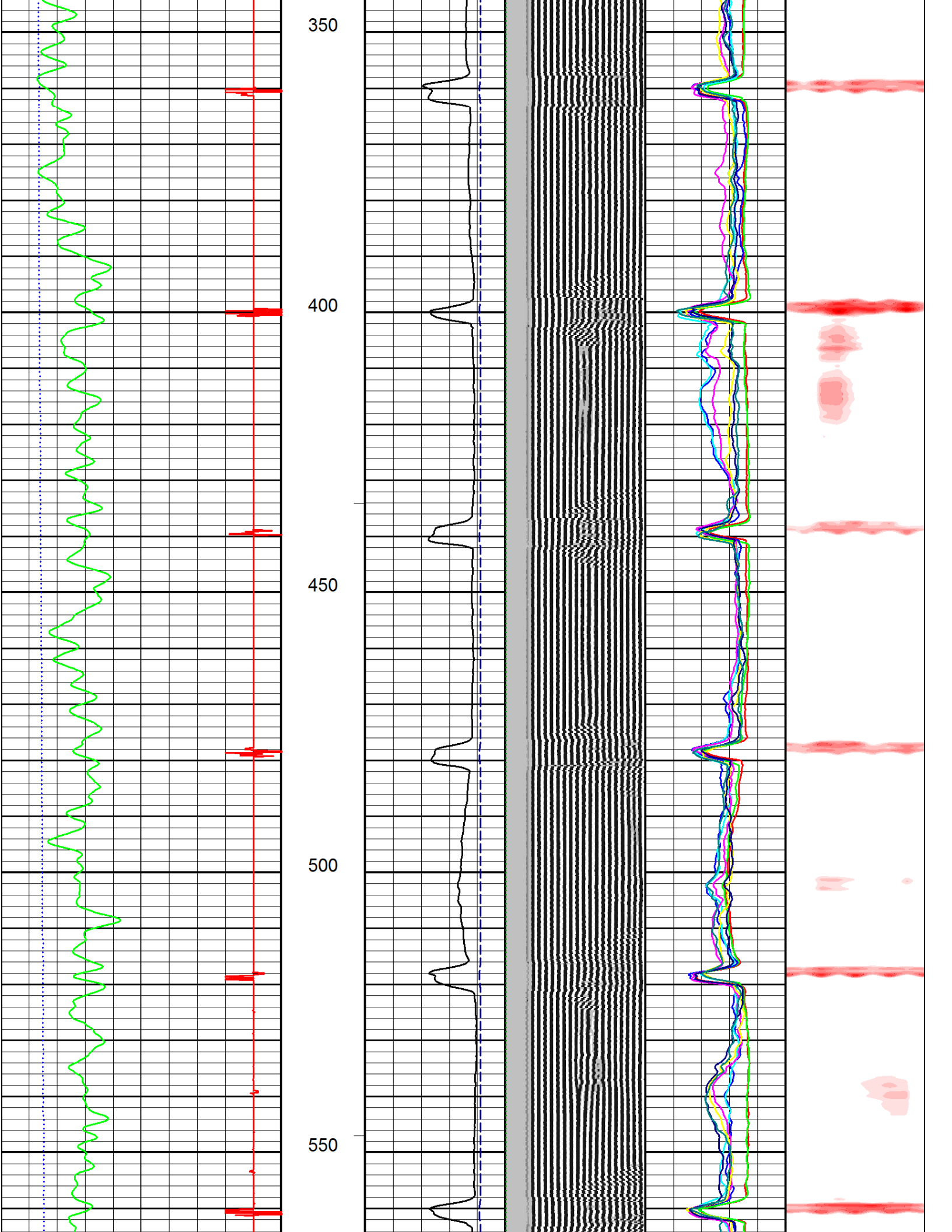
Waveforms	Free Pipe (mV)	Gain	Shift	Gate (us)	Width (us)	Polarity
Cal Pulse	100	1	0	453	50	Normal
3 Foot	81	0.0785197	1.5295	265	30	Normal
5 Foot	81	0.0943863	-0.135326	379	30	Normal
2 Foot	81	-0.148685	0.530364	200	50	Normal
Map1	81	0.0759618	14.9679	205	30	Normal
Map2	81	0.0754156	14.6249	205	30	Normal
Map3	81	0.0740081	-2.04464	210	30	Normal
Map4	81	0.0695092	-0.943237	209	30	Normal
Map5	81	0.0727442	-0.0939274	210	30	Normal
Map6	81	0.0674995	0.413975	210	30	Normal

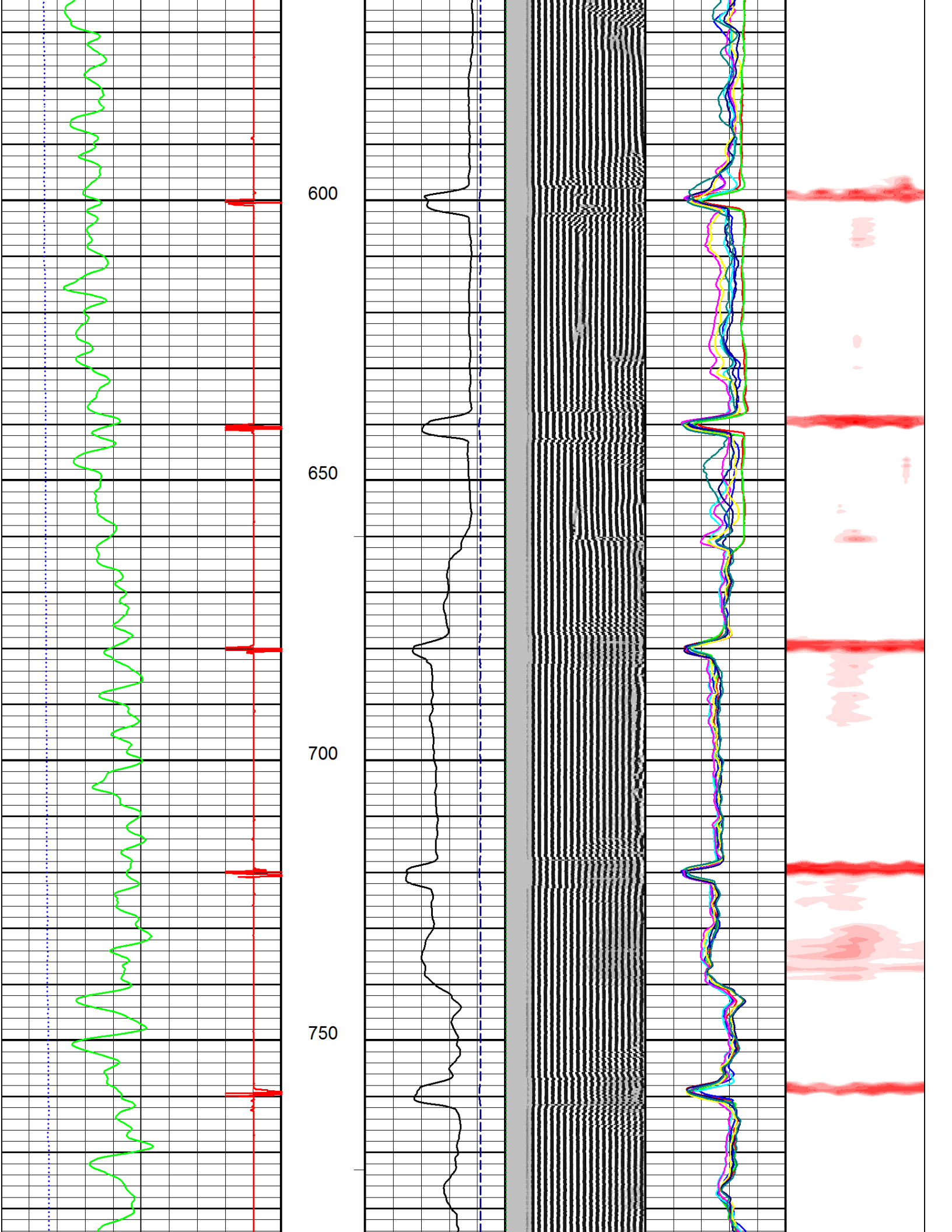
Map6	81	0.0071963	-0.413673	210	30	Normal
Map7	81	0.0666286	-0.762808	210	30	Normal
Map8	81	0.0790881	-0.788026	208	30	Normal

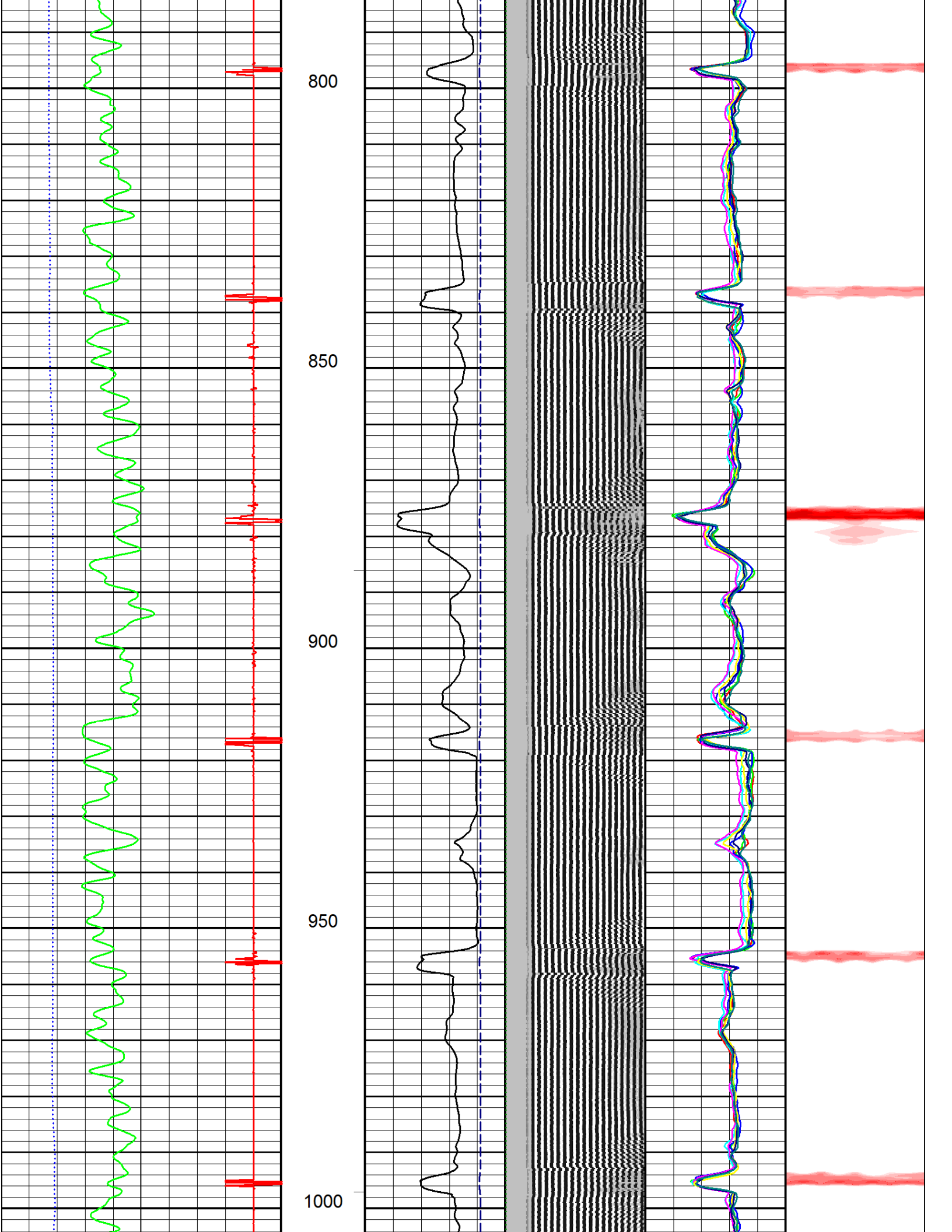
2015-04-23 07:31 Tension (lbF) 0.00 2000.00 <hr/> COLLAR LOCATOR 0.0 10.0 <hr/> GAMMA RAY 0.0 150.0 Pass No. 2	FEET 1:240  -17.25	<b>3' AMPLITUDE (mV)</b> 5' VARIABLE DENSITY (μs)	<b>Map1 Amplitude (mV)</b>	<b>RADIAL MAPPING (mV)</b>
		0.0 100.0 200.00 1200.00	0.00 100.00	0.00 10.00
		<b>AMPLITUDE X 5 (mV)</b> 0.0 20.0	<b>Map2 Amplitude (mV)</b> 0.00 100.00	
		<b>3' TRAVEL TIME (μs)</b> 800.0 150.0	<b>Map3 Amplitude (mV)</b> 0.00 100.00	
			<b>Map4 Amplitude (mV)</b> 0.00 100.00	
			<b>Map5 Amplitude (mV)</b> 0.00 100.00	
			<b>Map6 Amplitude (mV)</b> 0.00 100.00	
			<b>Map7 Amplitude (mV)</b> 0.00 100.00	
			<b>Map8 Amplitude (mV)</b> 0.00 100.00	
		Logging Up Shutin	File 3500SURF FINAL.pre	Rev. 2015.05.29

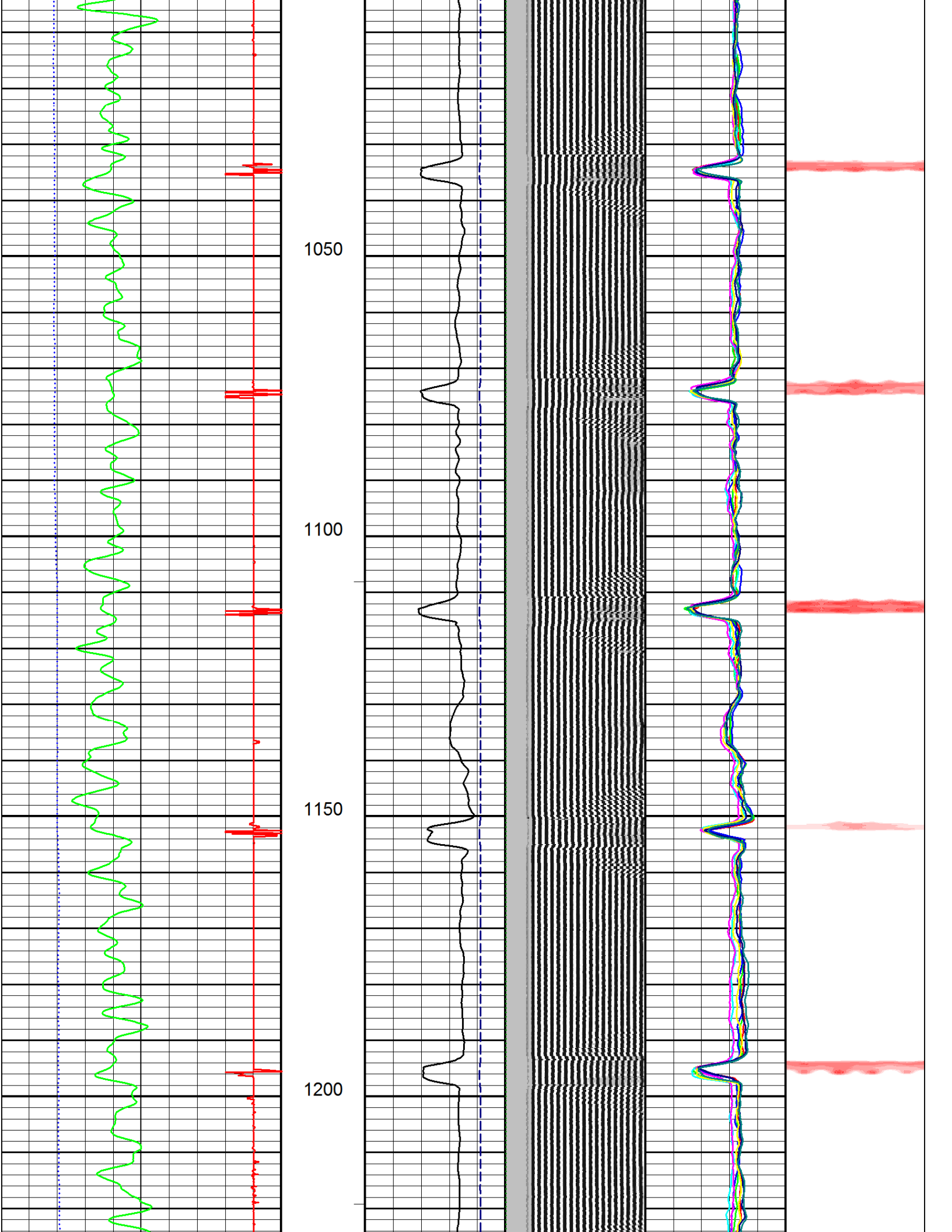


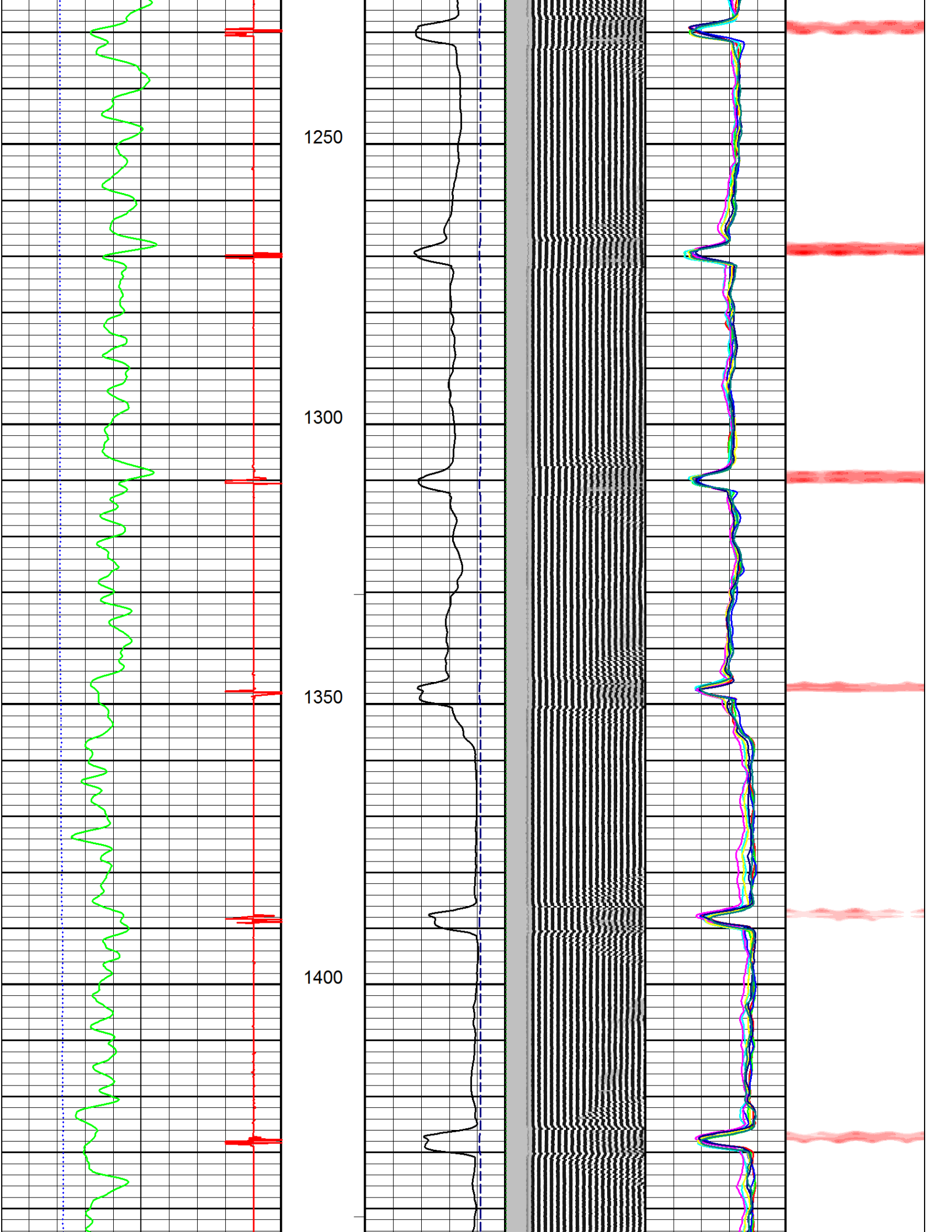


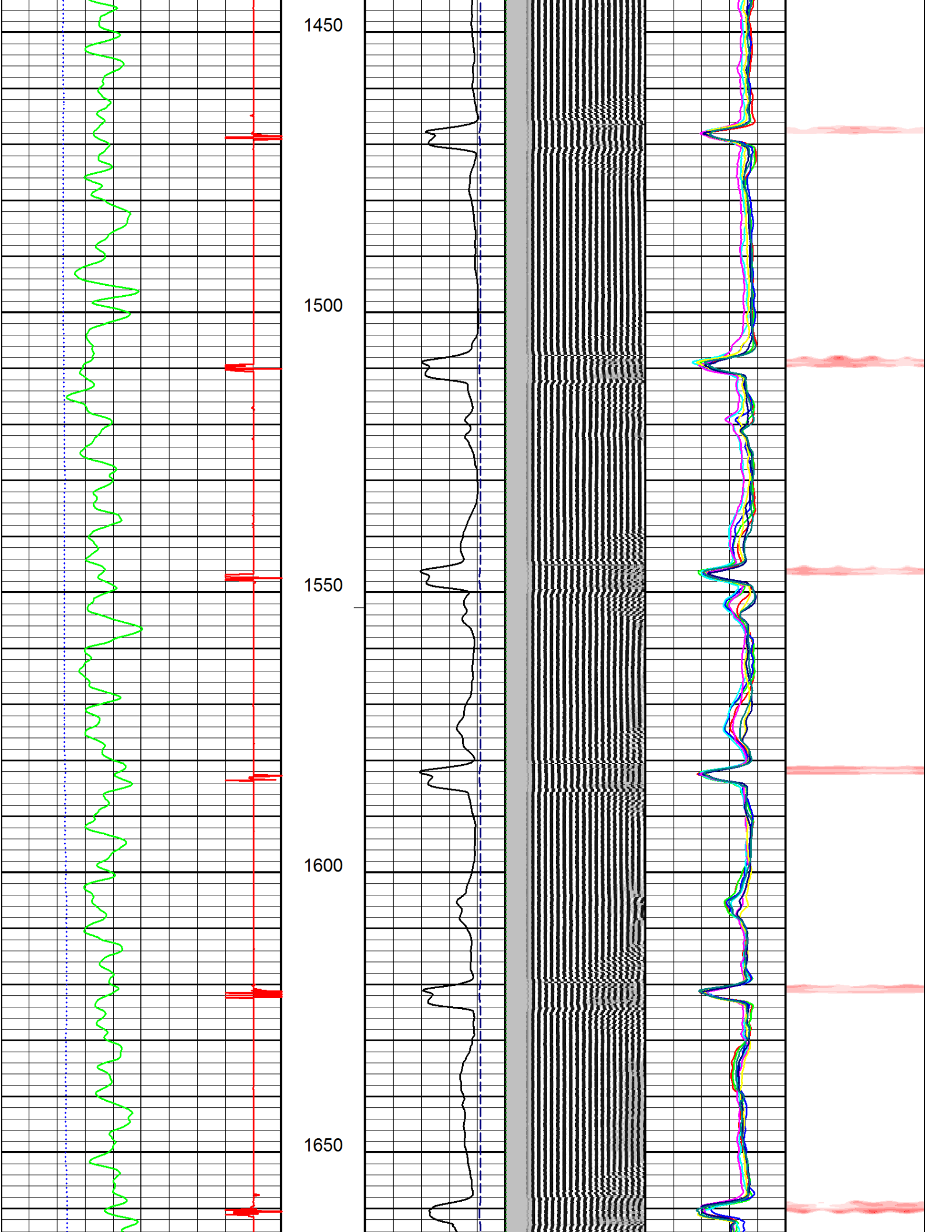


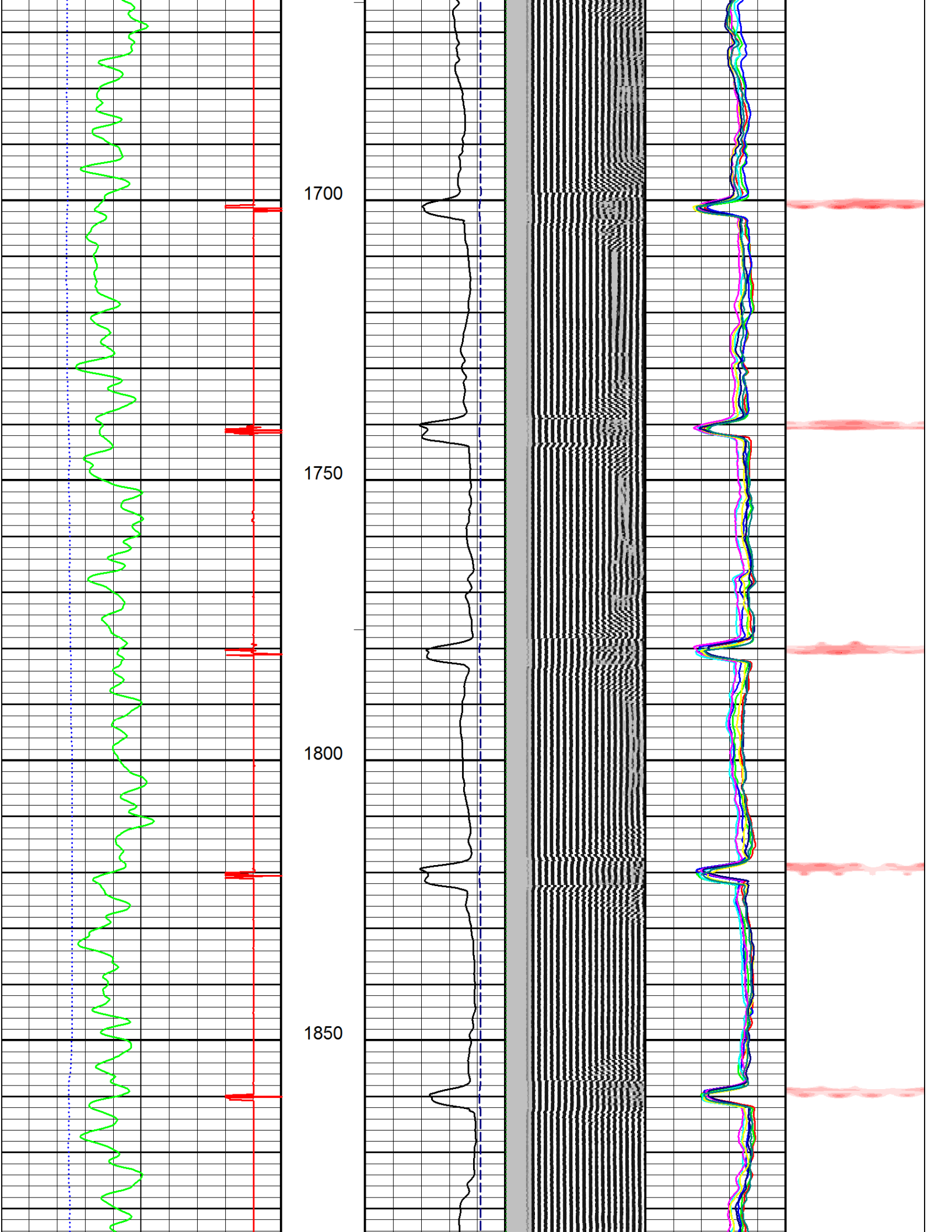


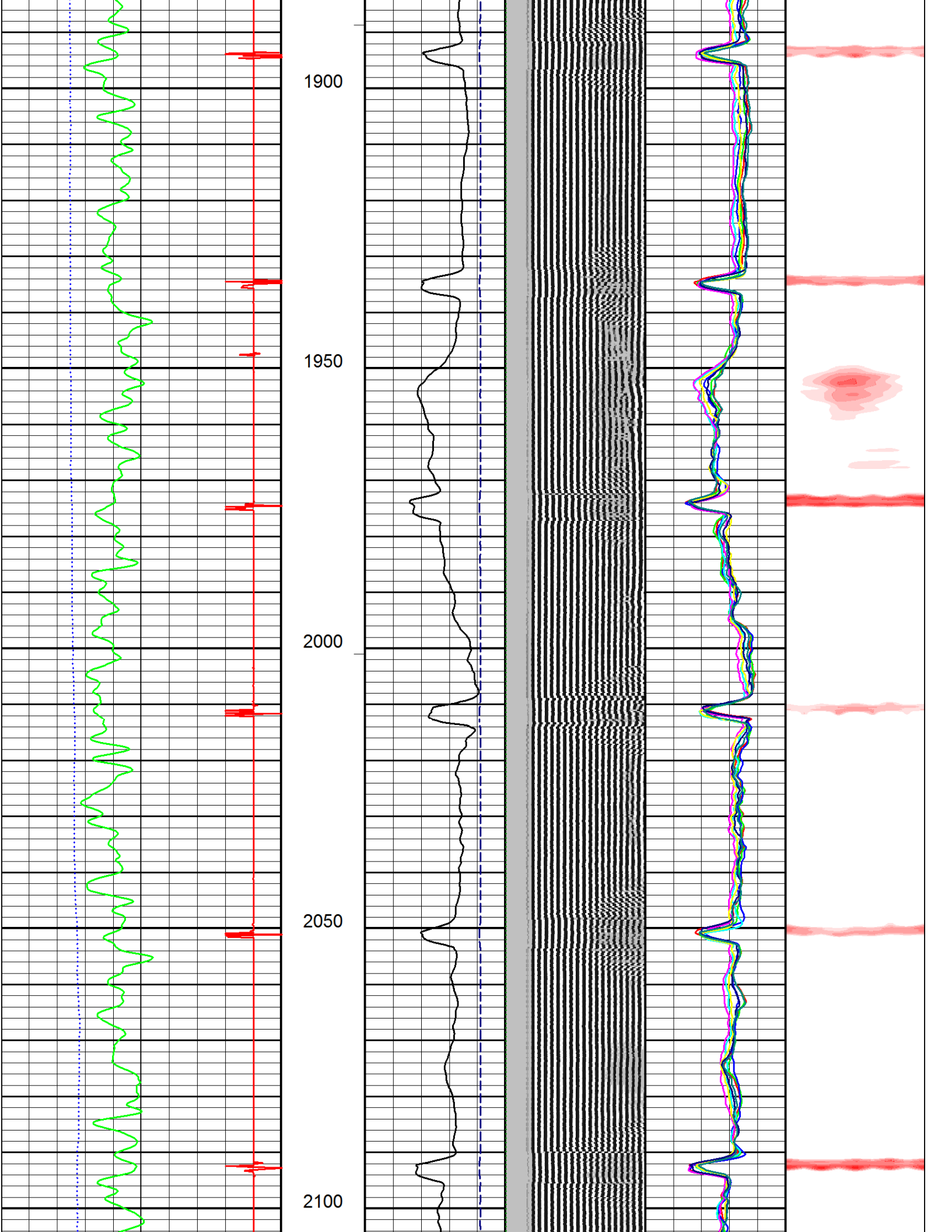


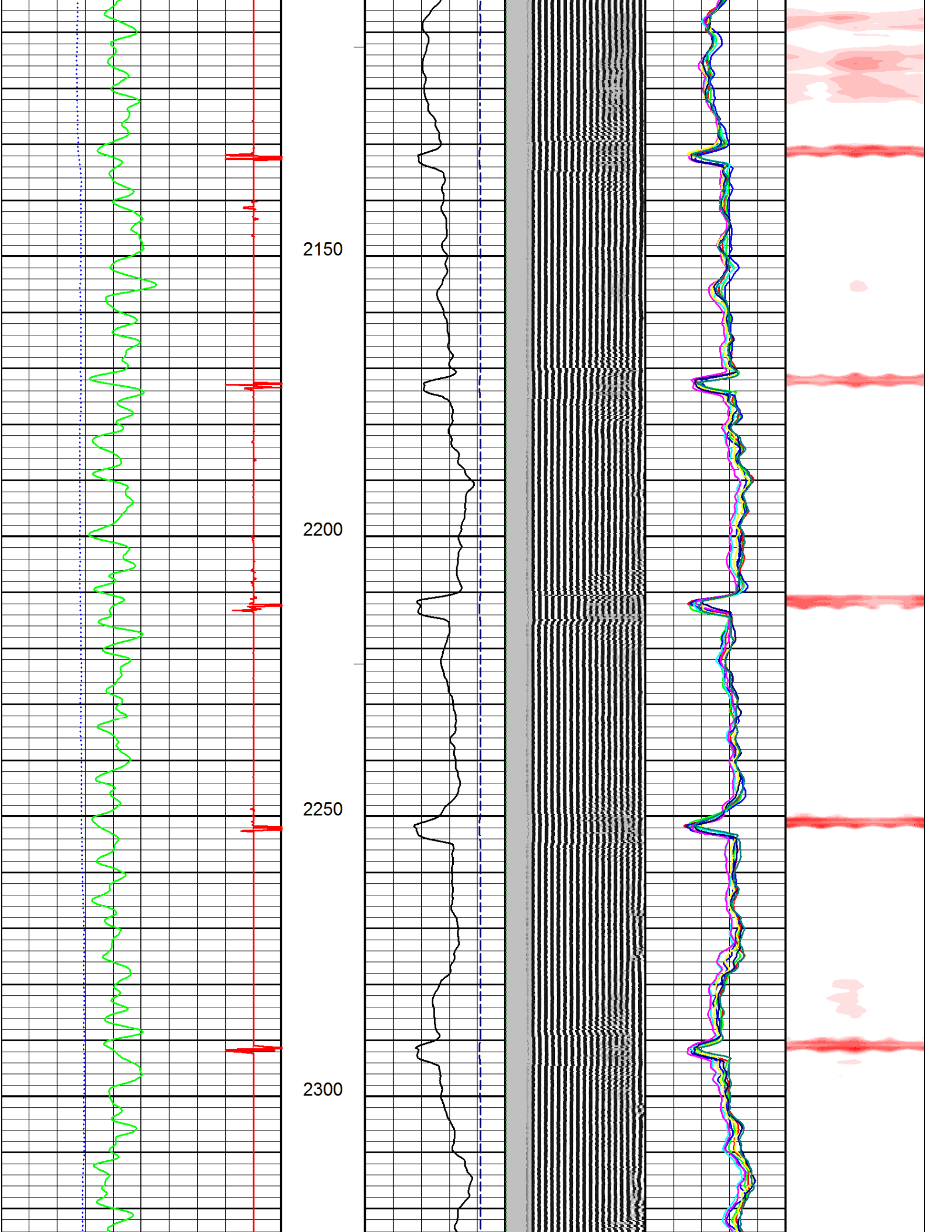


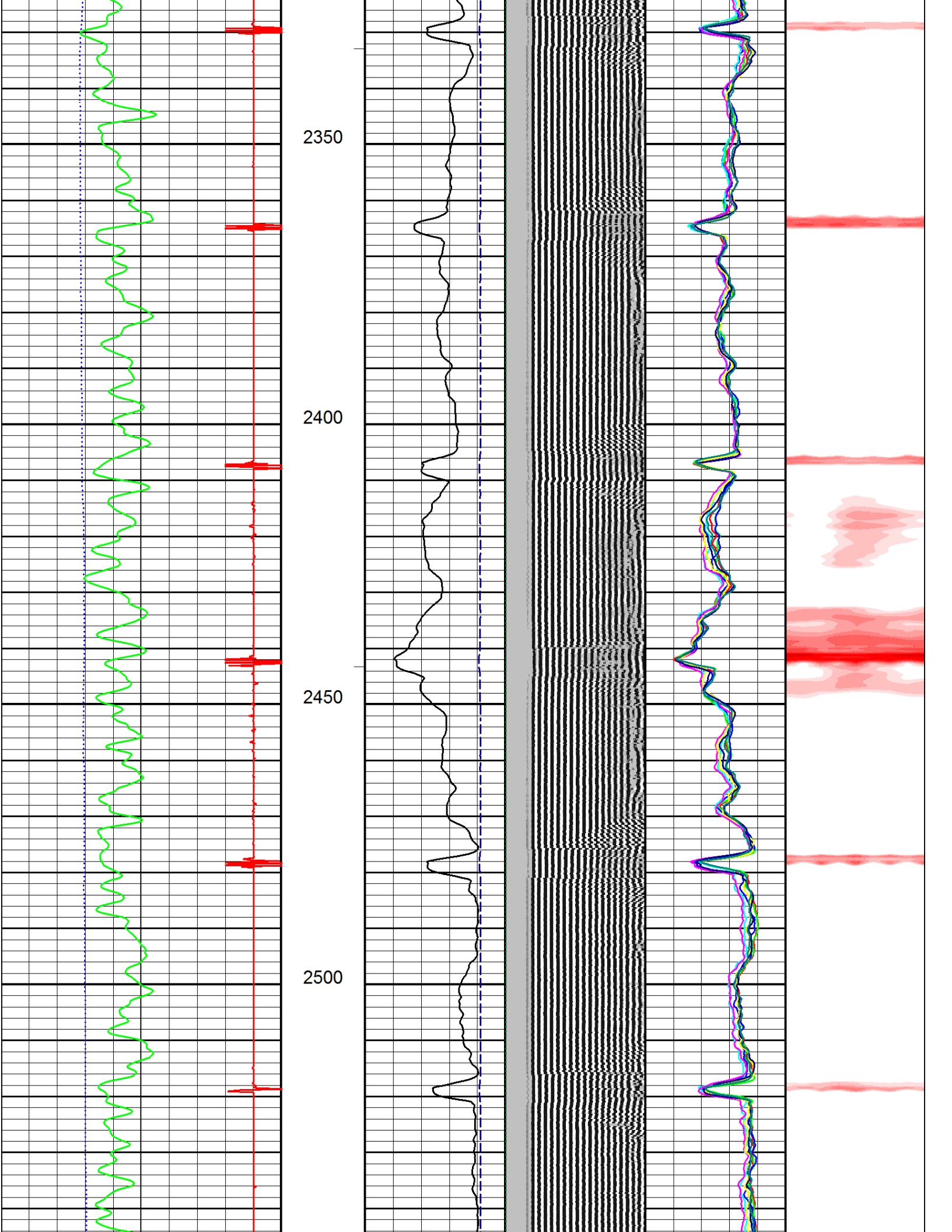


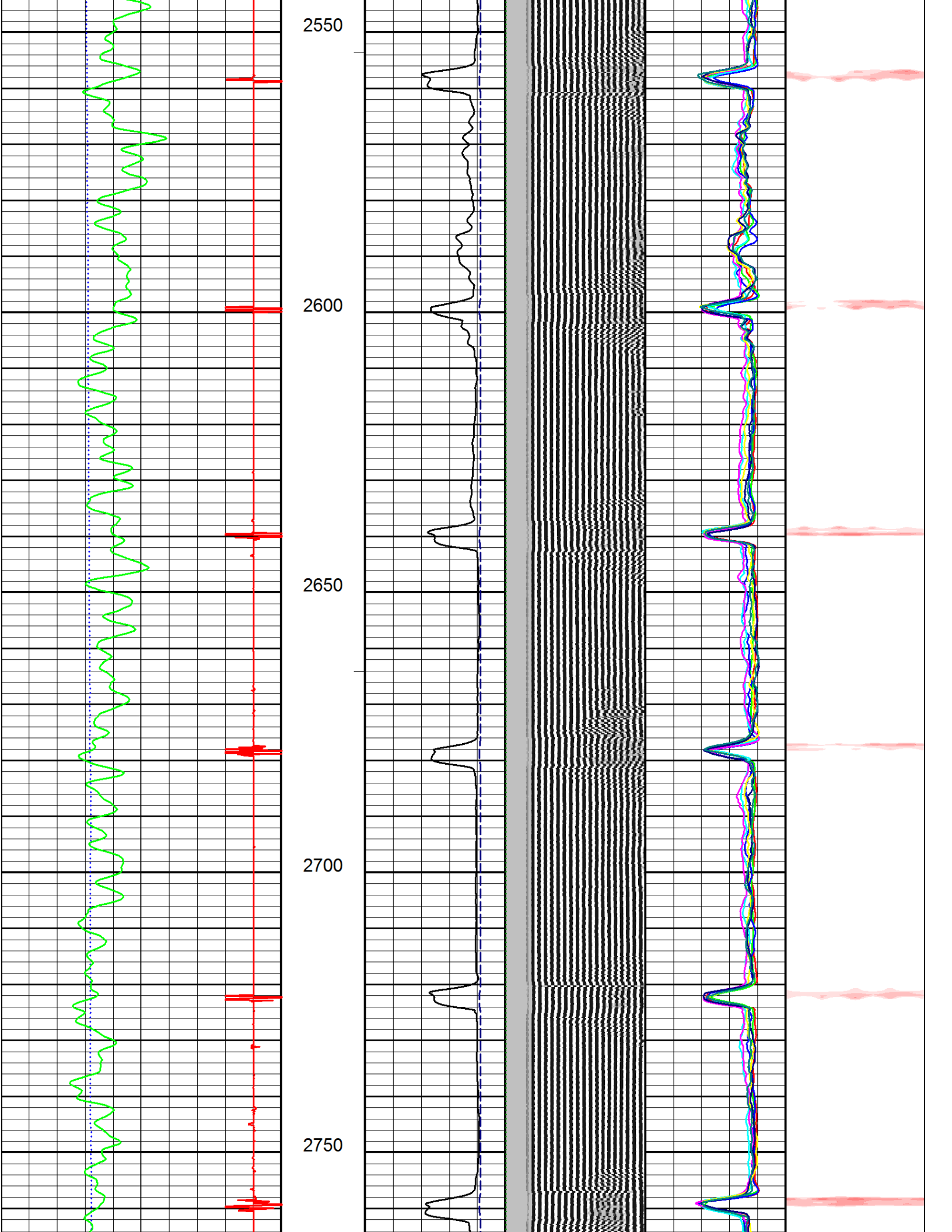


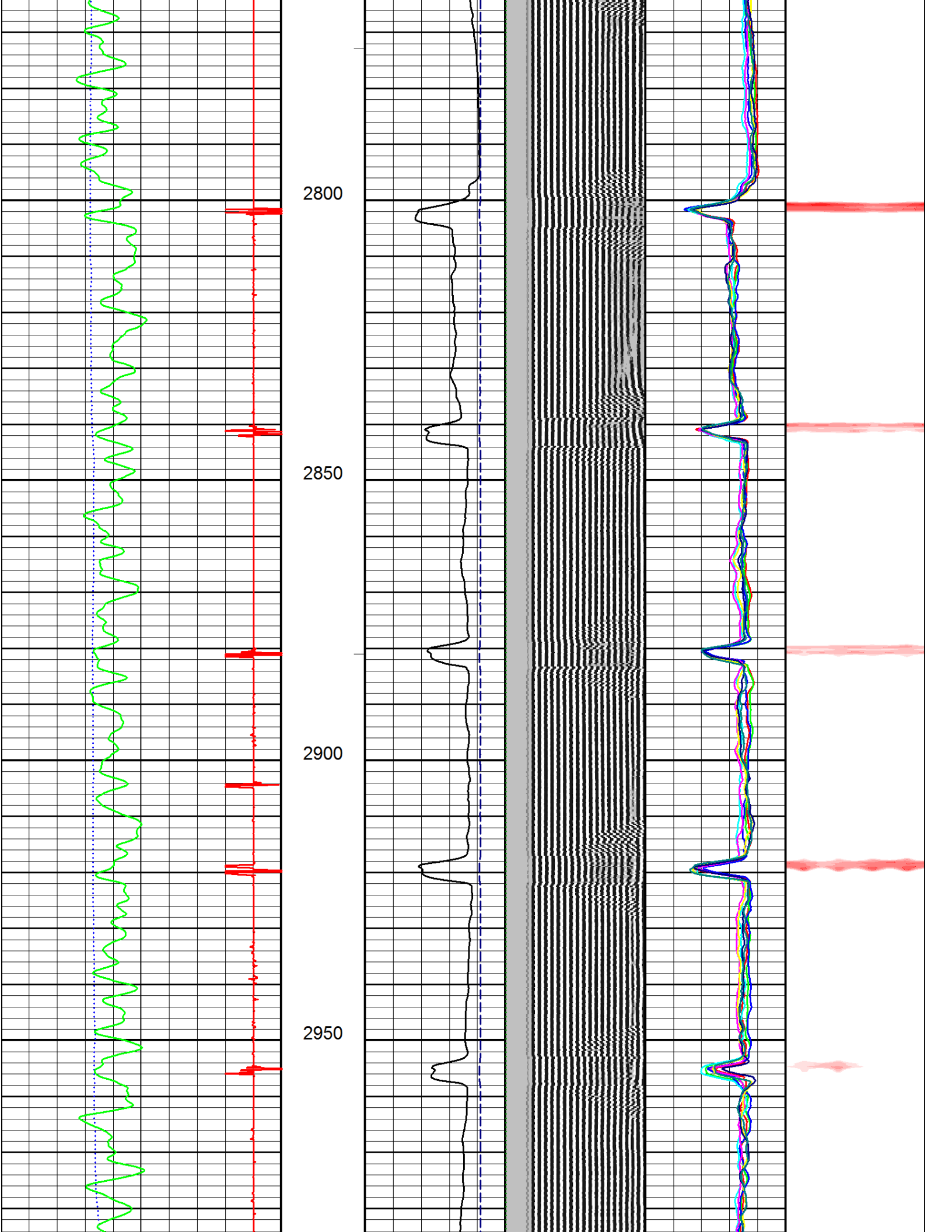


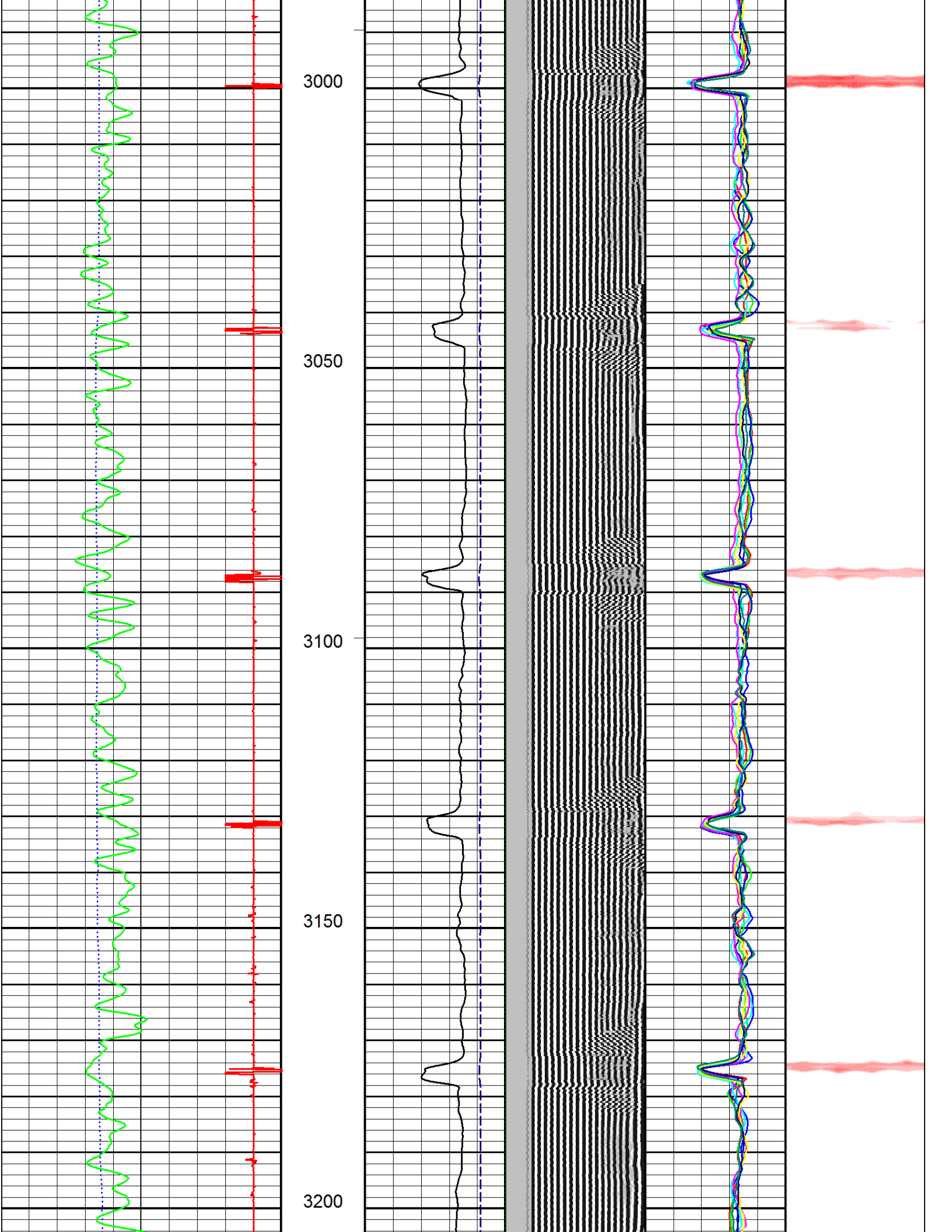


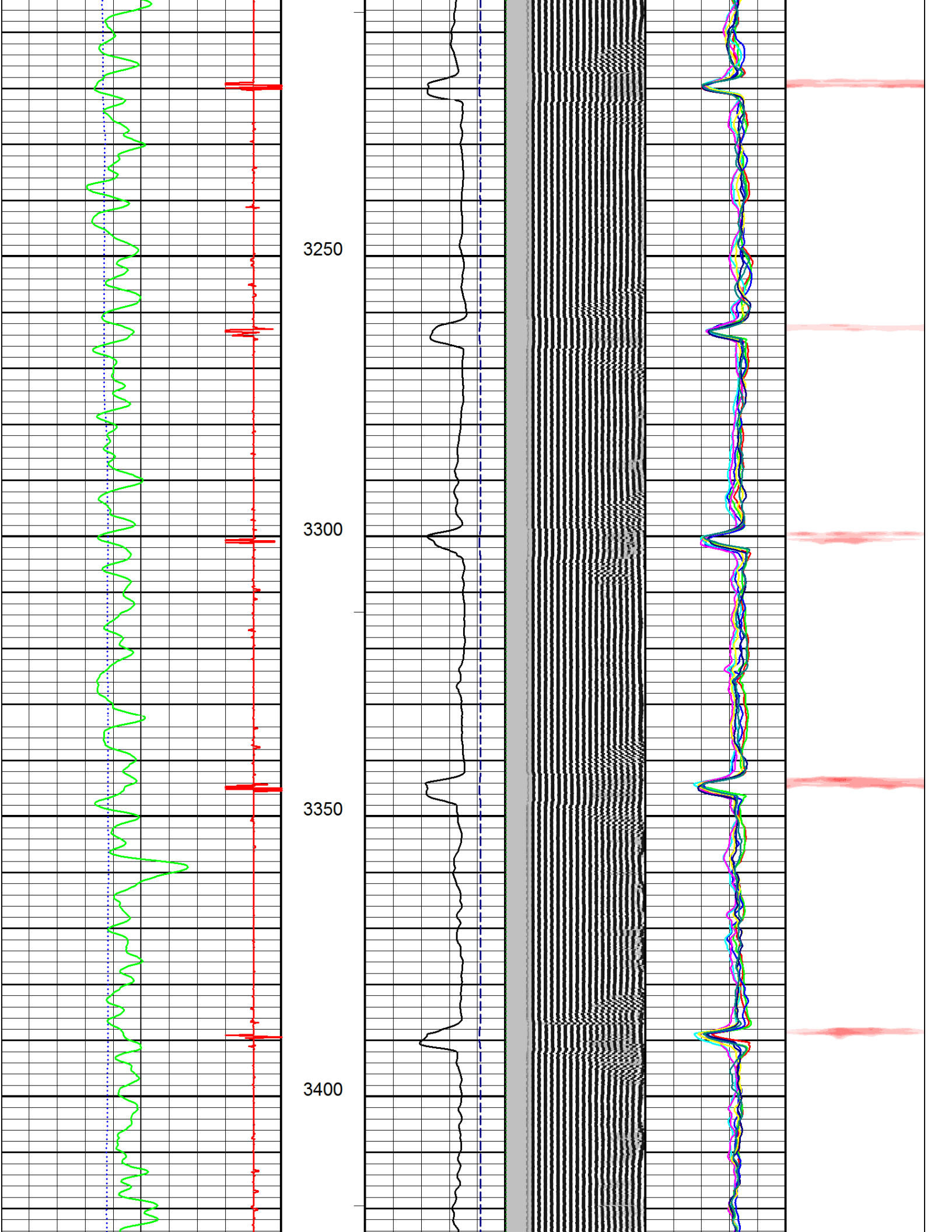


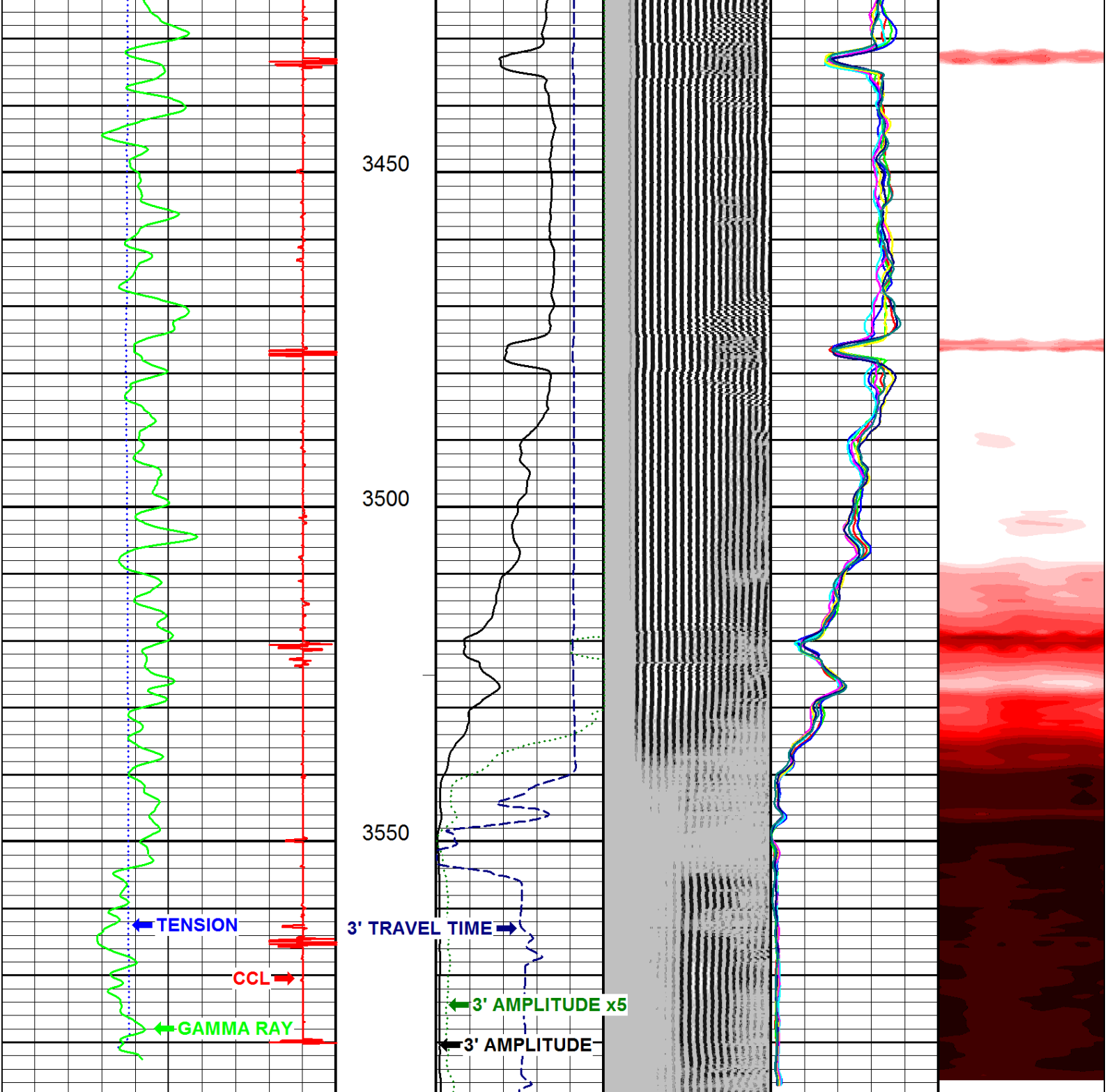












2015-04-23 07:31

Tension (lbF)	
0.00	2000.00
<b>COLLAR LOCATOR</b>	
0.0	10.0
<b>GAMMA RAY</b>	
0.0	150.0
Pass No. 2	

3587.76

FEET  
1:240

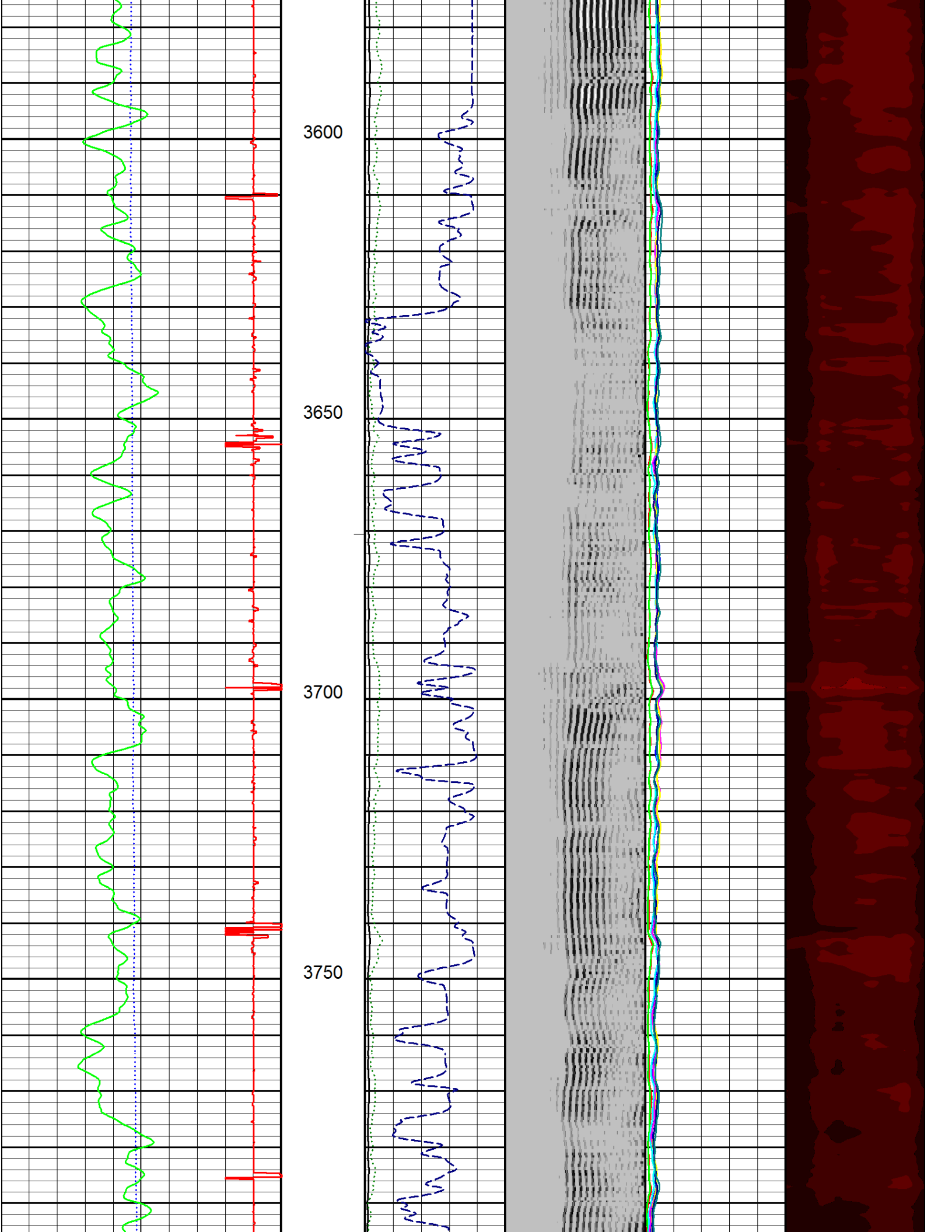
<b>3' AMPLITUDE (mV)</b>	0.0	100.0
<b>AMPLITUDE X 5 (mV)</b>	0.0	20.0
<b>3' TRAVEL TIME (μs)</b>	800.0	150.0

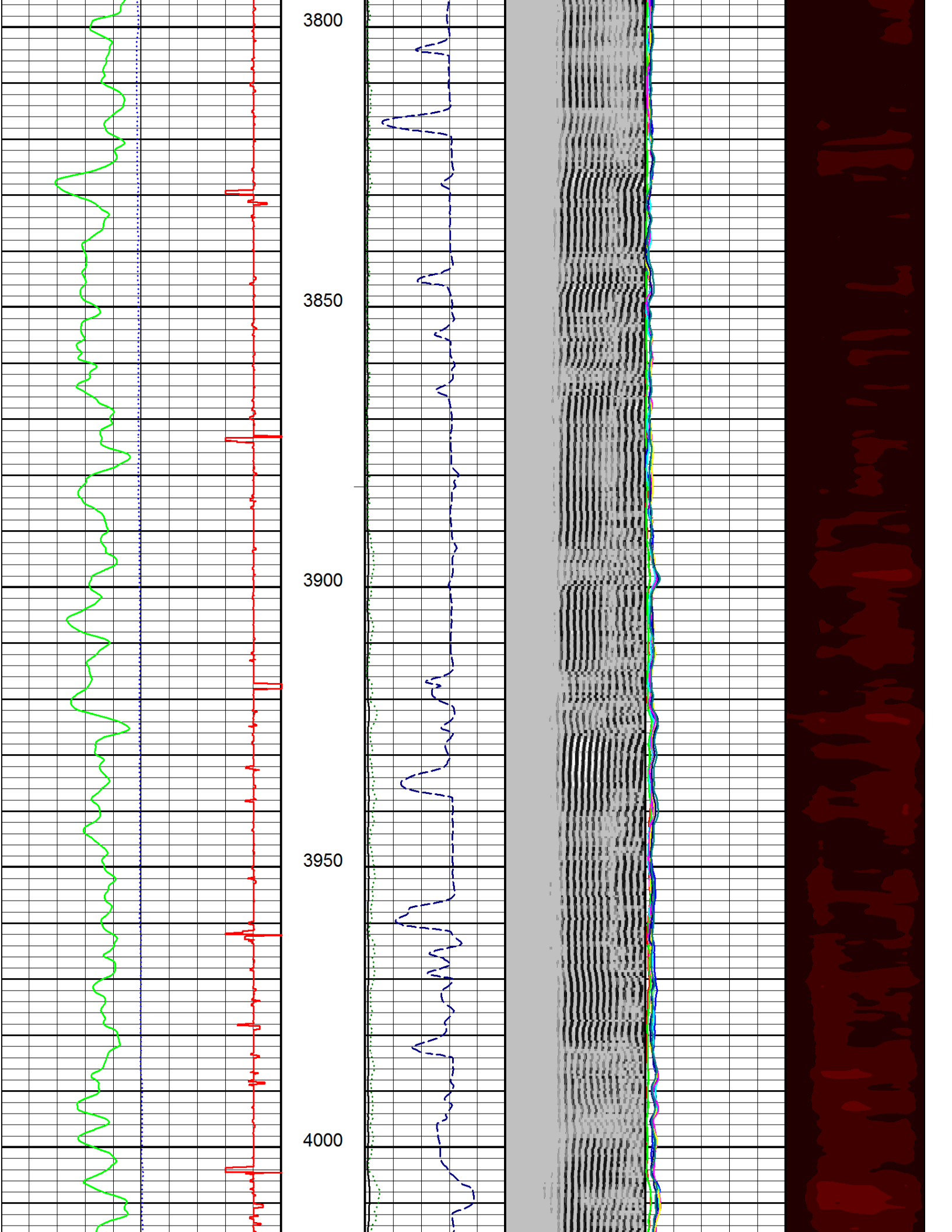
Logging Up  
Shutin

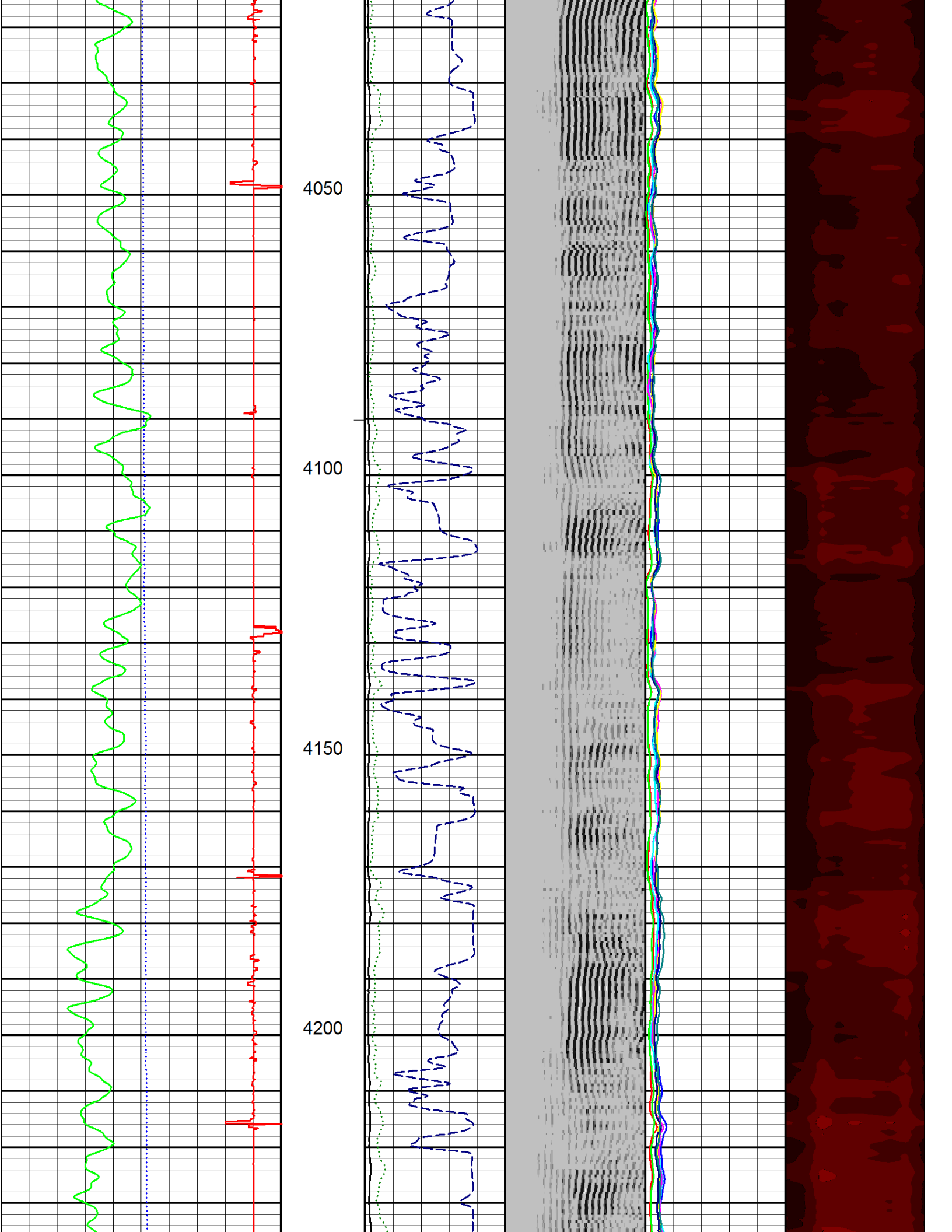
<b>5' VARIABLE DENSITY (μs)</b>	200.00	1200.00
<b>Map1 Amplitude (mV)</b>	0.00	100.00
<b>Map2 Amplitude (mV)</b>	0.00	100.00
<b>Map3 Amplitude (mV)</b>	0.00	100.00
<b>Map4 Amplitude (mV)</b>	0.00	100.00
<b>Map5 Amplitude (mV)</b>	0.00	100.00
<b>Map6 Amplitude (mV)</b>	0.00	100.00
<b>Map7 Amplitude (mV)</b>	0.00	100.00
<b>Map8 Amplitude (mV)</b>	0.00	100.00
<b>RADIAL MAPPING (mV)</b>	0.00	10.00

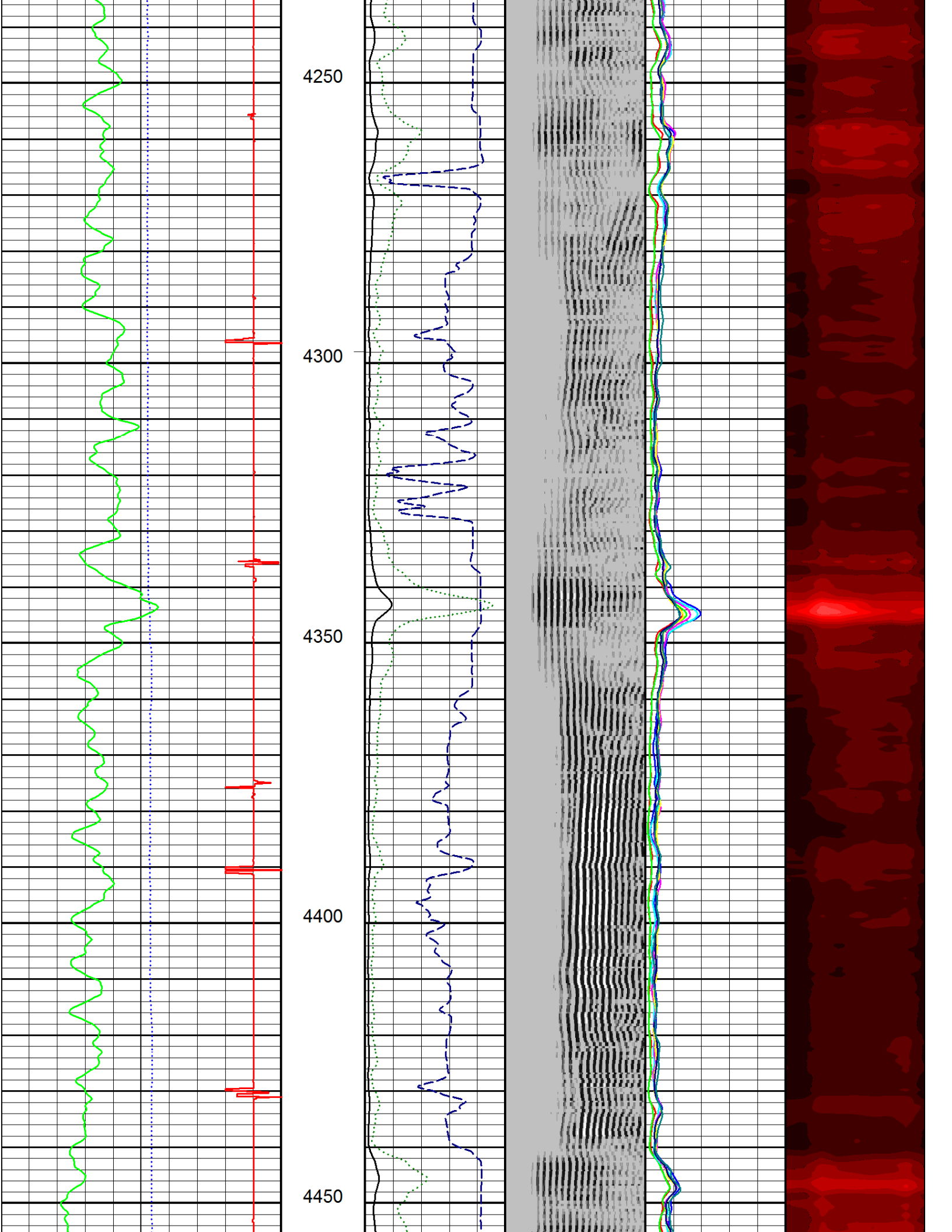
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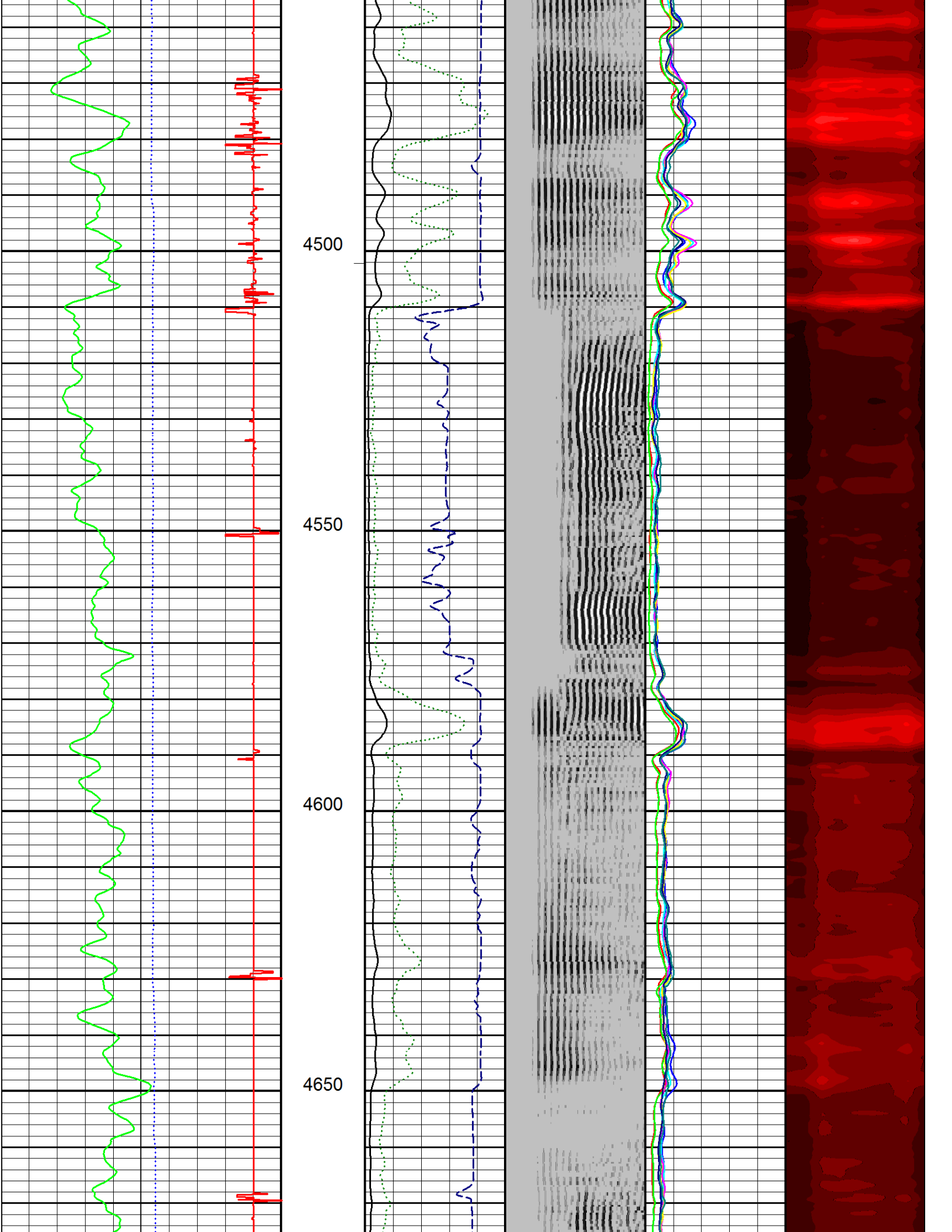


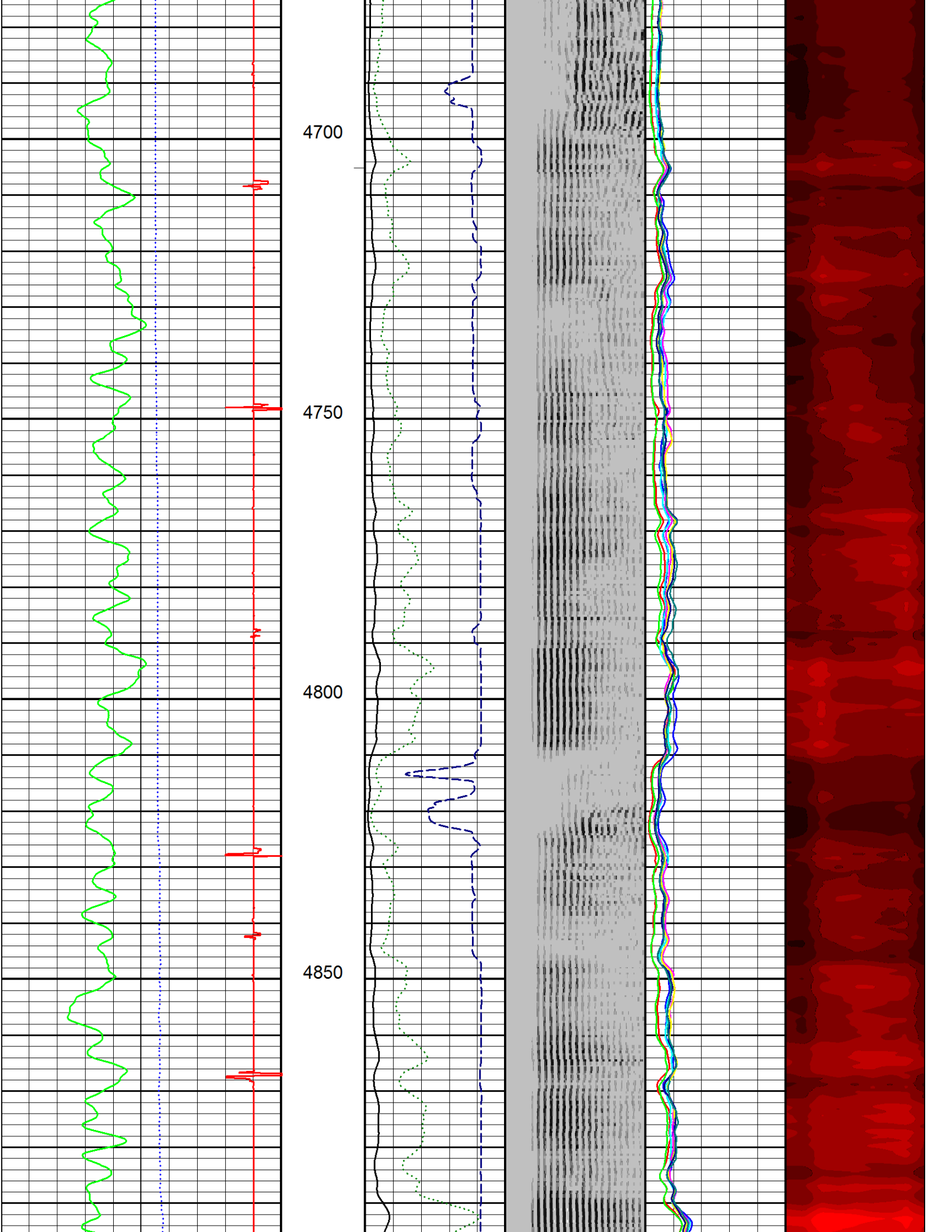


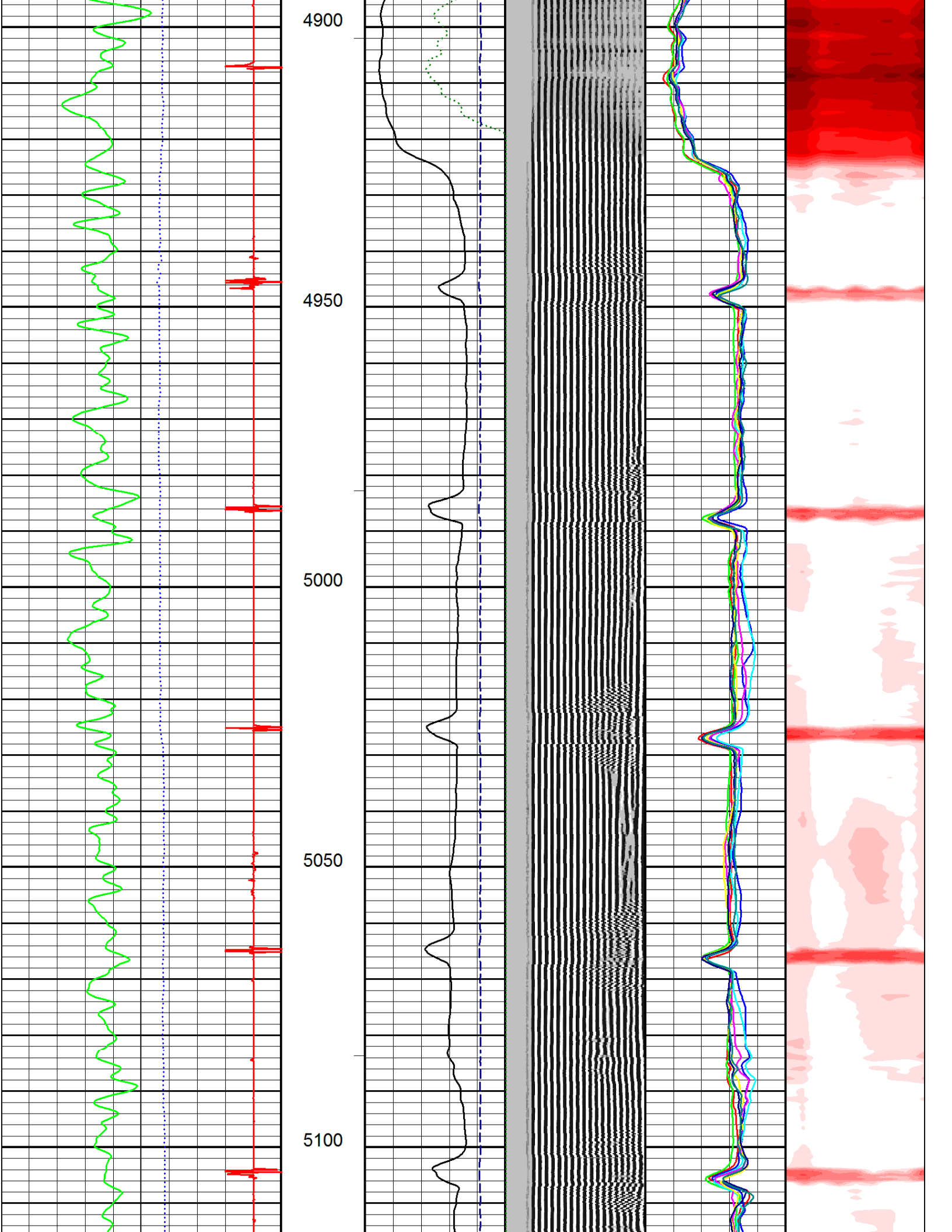


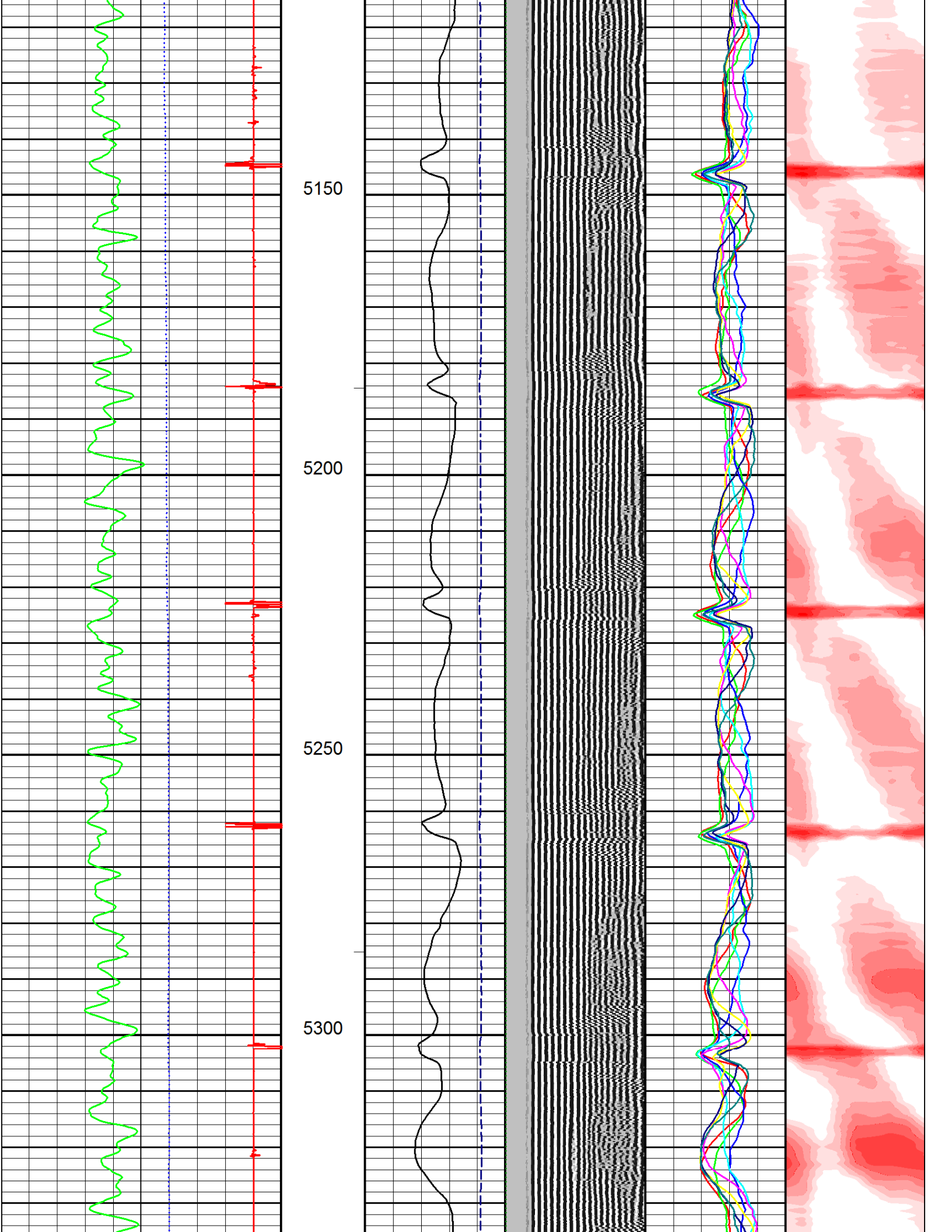


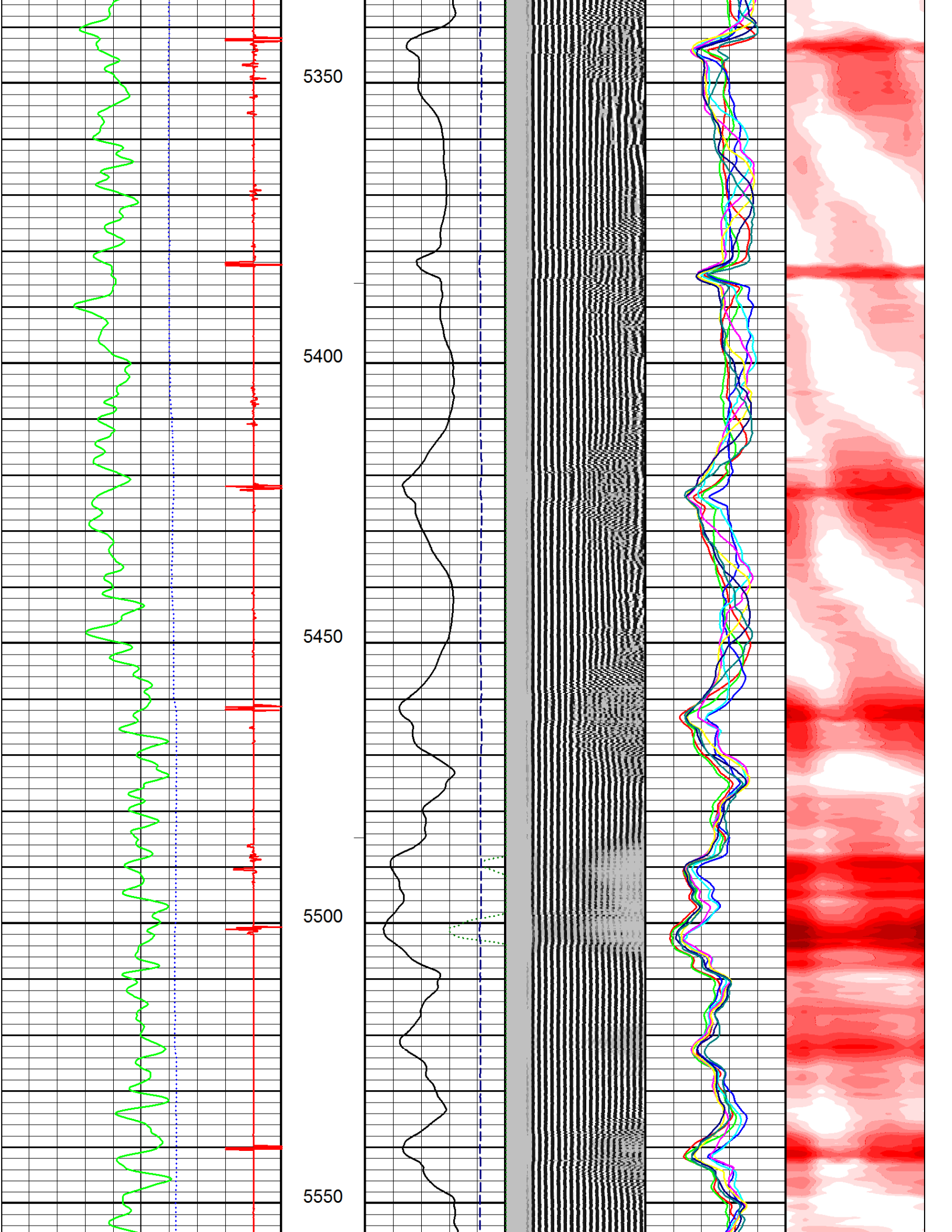


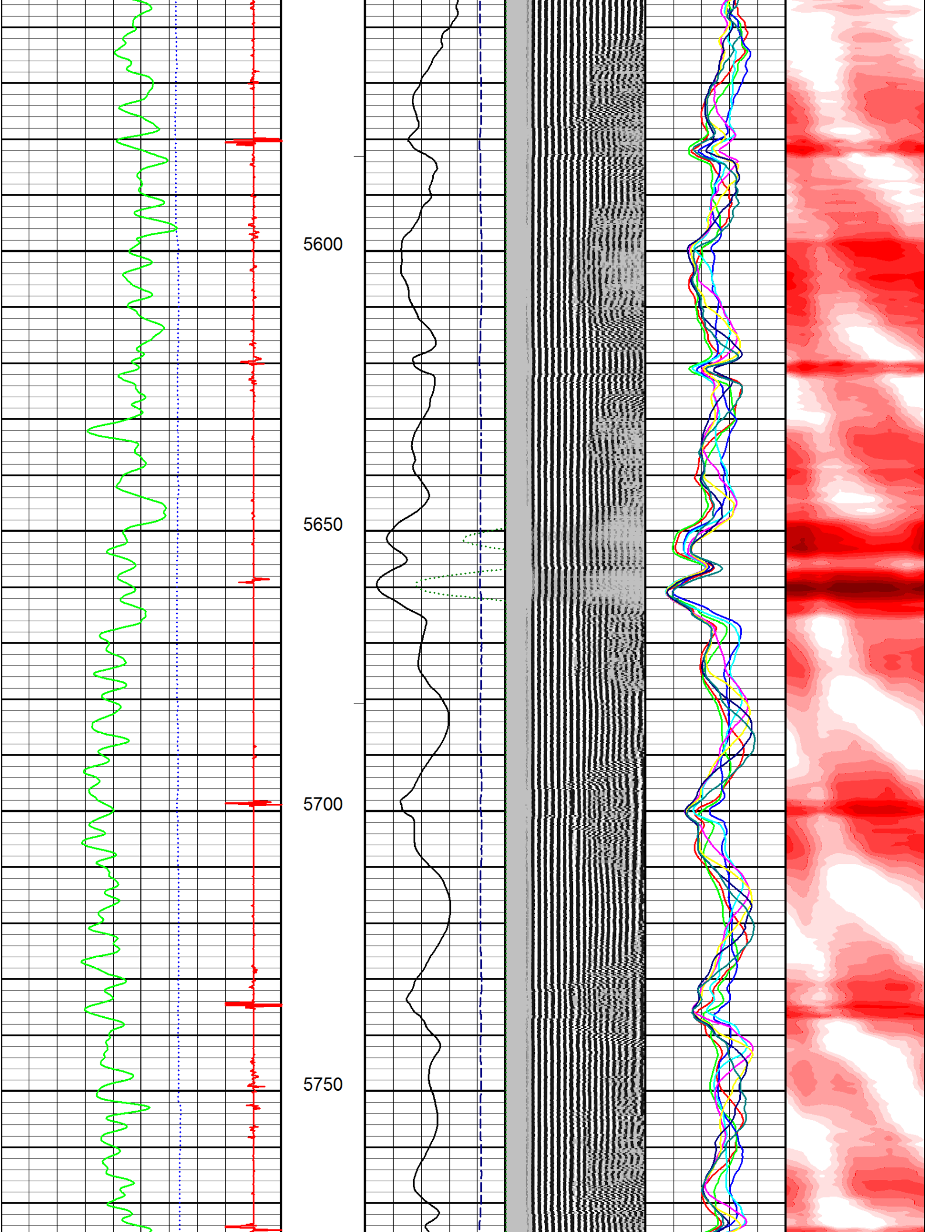


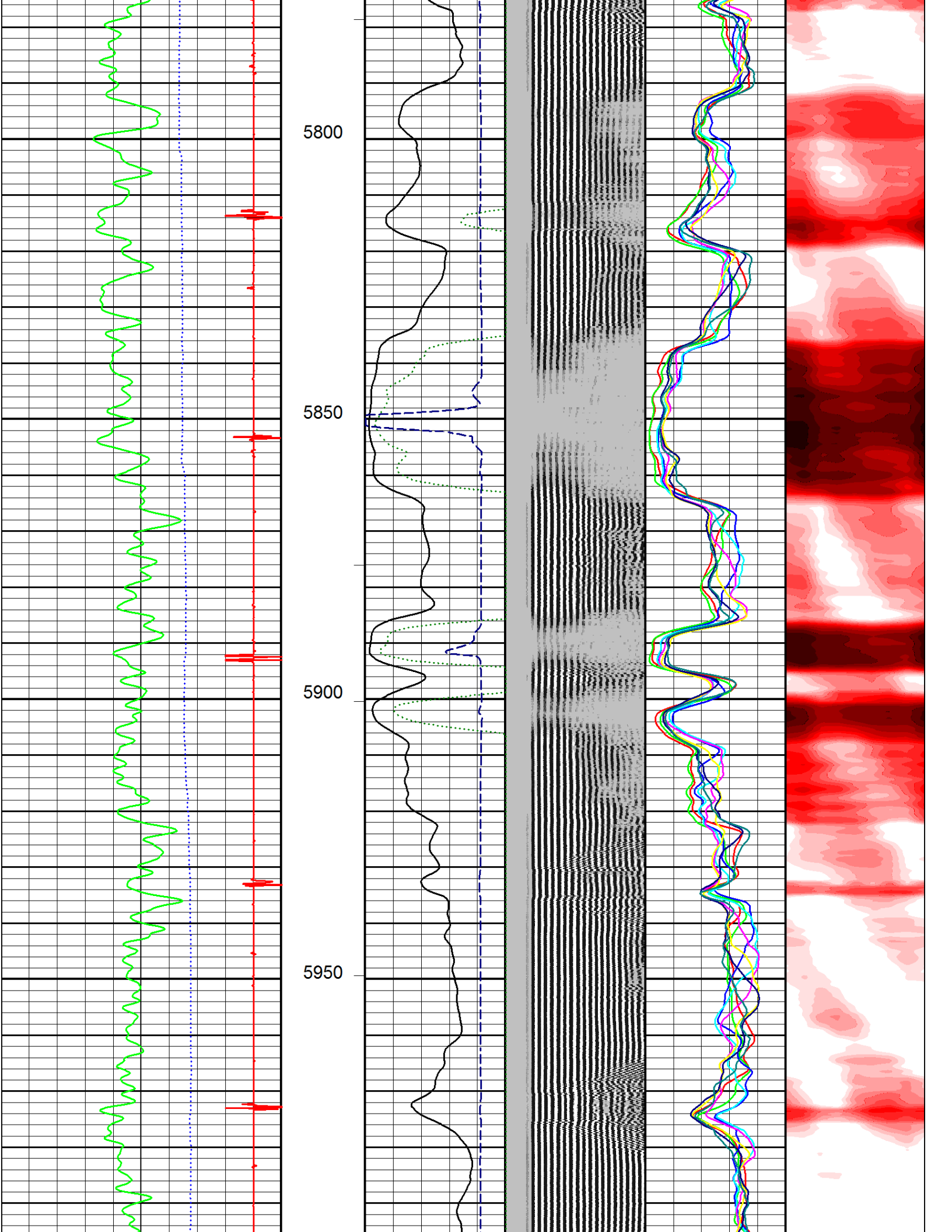


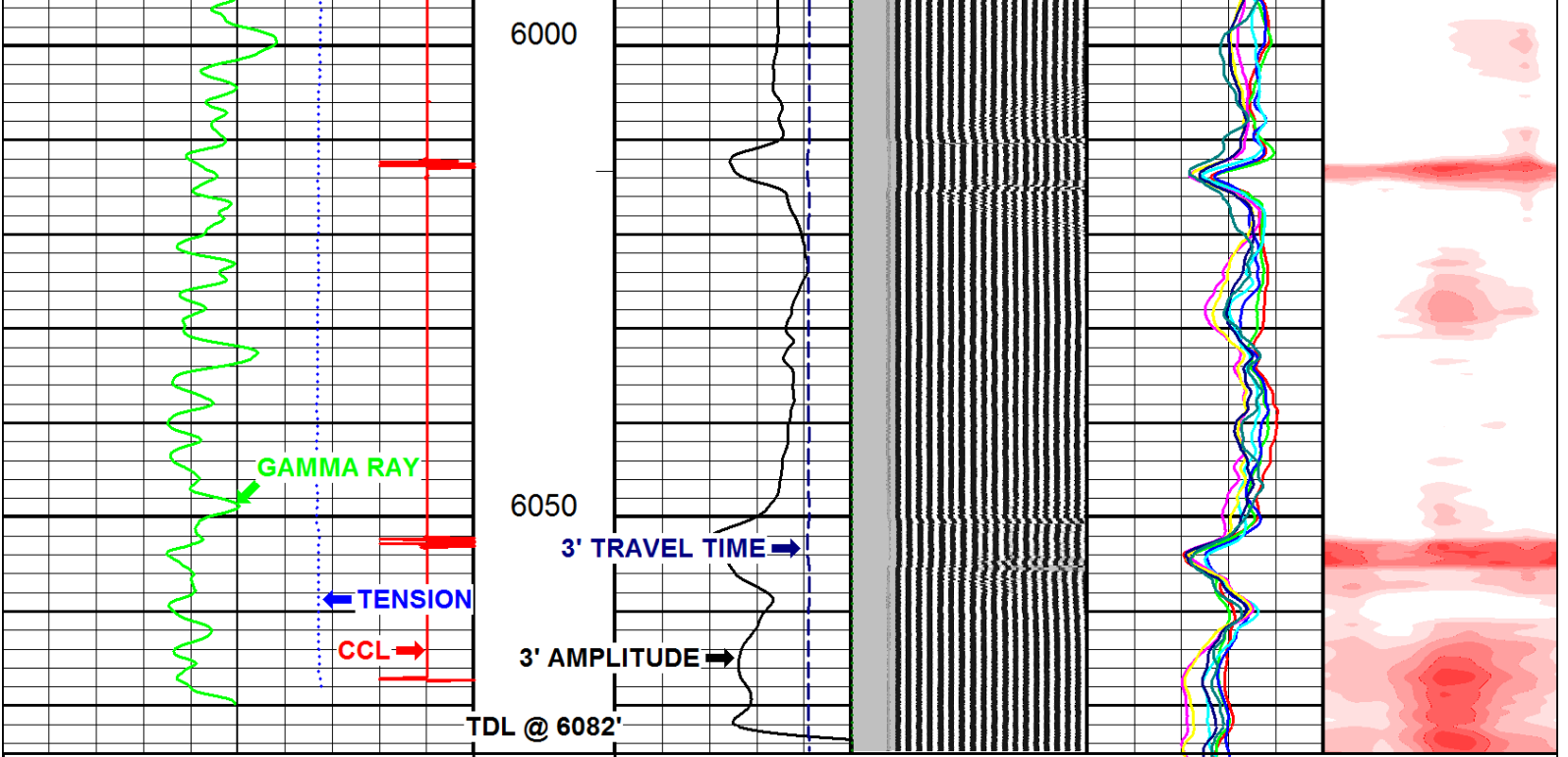












2015-04-22 10:59  
Tension (lbF)

0.00	2000.00
<b>COLLAR LOCATOR</b>	
0.0	10.0
<b>GAMMA RAY</b>	
0.0	150.0
Pass No. 5	

6075.00  
FEET  
1:240

<u>3' AMPLITUDE (mV)</u>	0.0	100.0	200.00	1200.00
<u>AMPLITUDE X 5 (mV)</u>	0.0	20.0		
<u>3' TRAVEL TIME (µs)</u>	800.0	150.0		

Logging Up  
Shutin

<u>5' VARIABLE DENSITY (µs)</u>			
<u>Map1 Amplitude (mV)</u>	0.00	100.00	
<u>Map2 Amplitude (mV)</u>	0.00	100.00	
<u>Map3 Amplitude (mV)</u>	0.00	100.00	
<u>Map4 Amplitude (mV)</u>	0.00	100.00	
<u>Map5 Amplitude (mV)</u>	0.00	100.00	
<u>Map6 Amplitude (mV)</u>	0.00	100.00	
<u>Map7 Amplitude (mV)</u>	0.00	100.00	
<u>Map8 Amplitude (mV)</u>	0.00	100.00	

File TD3500FINAL.pre

Rev. 2015.05.29



Company NOBLE ENERGY, INC.  
Well O'SH D 22-11  
Field WATTENBERG  
County WELD State COLORADO  
1/4'S NESW SEC 22 TWP. 3N RGE. 64W