



CEMENT BOND LOG W/
VARIABLE DENSITY,
GAMMA RAY, CCL, TEMP

Company	GREAT WESTERN OIL & GAS	
Well	OTTESEN LE 06-351HN	
Field	WATTENBERG	
County	WELD	State
State	COLORADO	
Location:	API # : 05-123-44347	Other Services
	NWSE, 40.004325 / -104.778592	4.5" GR
Permanent Datum	SEC 33 TWP 1N RGE 66W	Elevation
Log Measured From	KB	5076.5'
Drilling Measured From	KB	K.B. 5096.5'
		D.F. 5095.5'
		G.L. 5076.5'

Date	26-JAN-2019
Run Number	ONE
Depth Driller	18170'
Depth Logger	10300'
Bottom Logged Interval	10298'
Top Log Interval	SURFACE
Open Hole Size	7-7/8"
Type Fluid	WATER
Density / Viscosity	8.4PPG
Max. Recorded Temp.	258 F
Estimated Cement Top	SEE LOG
Time Well Ready	7.05
Time Logger on Bottom	7.45
Equipment Number	34
Location	PLATTEVILLE
Recorded By	C. SCHAAF
Witnessed By	D. POZAS
Borehole Record	
Run Number	Bit
	From
	To
	Size
	Weight
	From
	To
Tubing Record	
Casing Record	Size
Surface String	9-5/8"
Prot. String	36#
Production String	5-1/2"
Liner	17#
	Top
	Bottom

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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 interpretation, 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 set out in our current Price Schedule.

Comments

TOOLS RUN AS PER TOOL DIAGRAM
TOOLSTRING CENTRALIZED VIA 2 X GEMCO CENTRALIZERS
LOG CORRELATED TO MARKER JOINT @ 9879' - 9889'

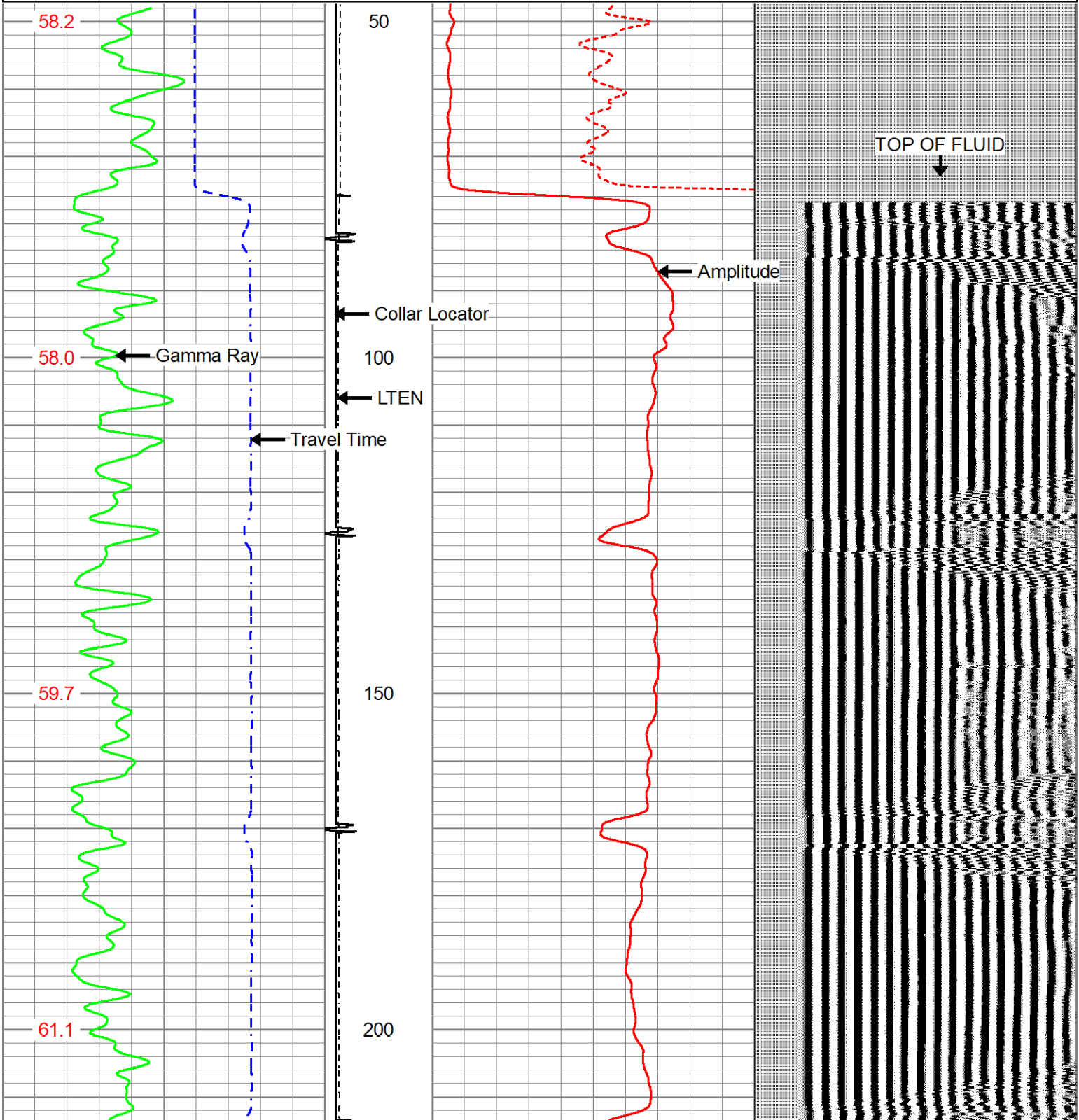
THANK YOU FOR CHOOSING KLX ENERGY SERVICES

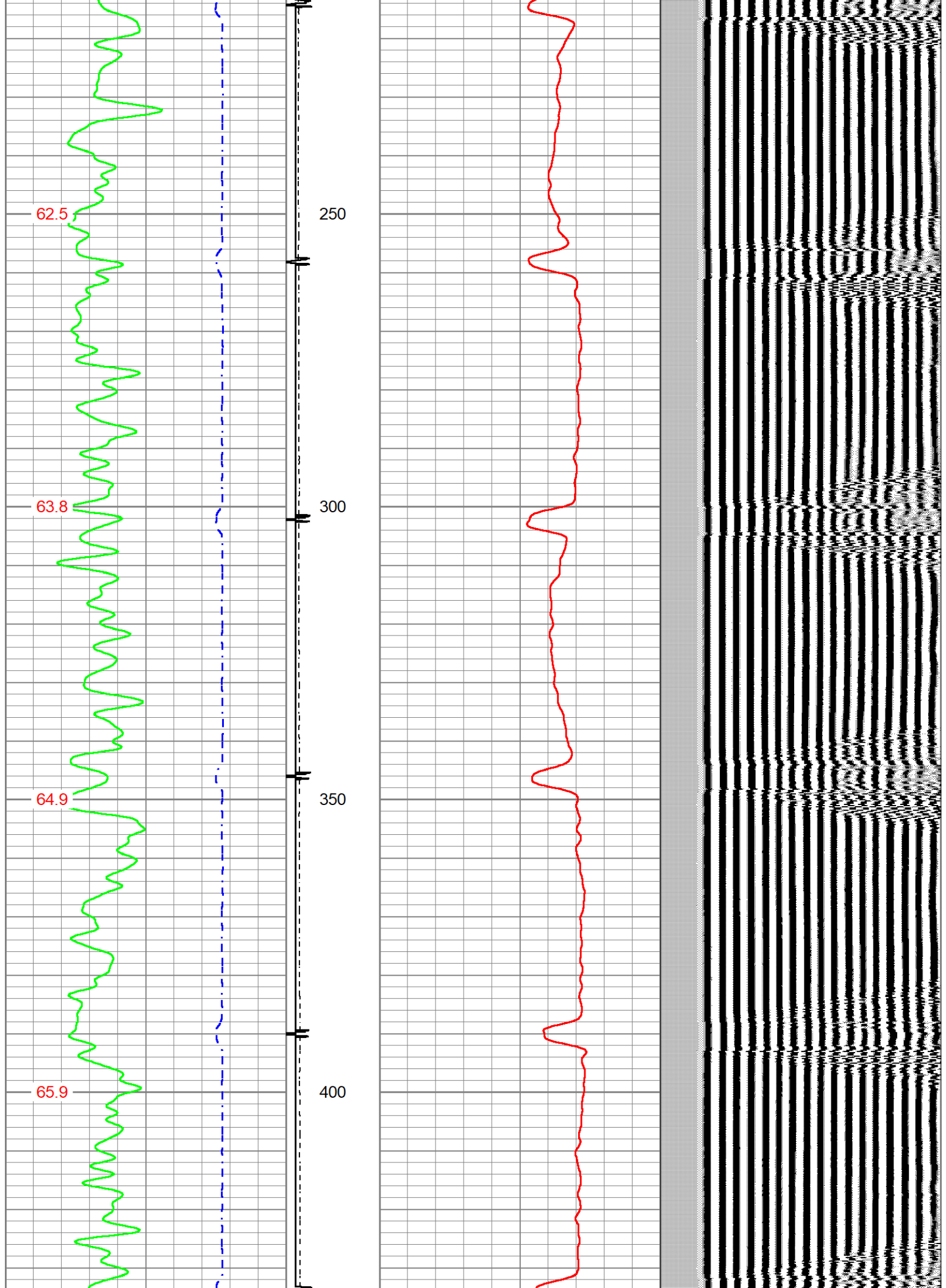


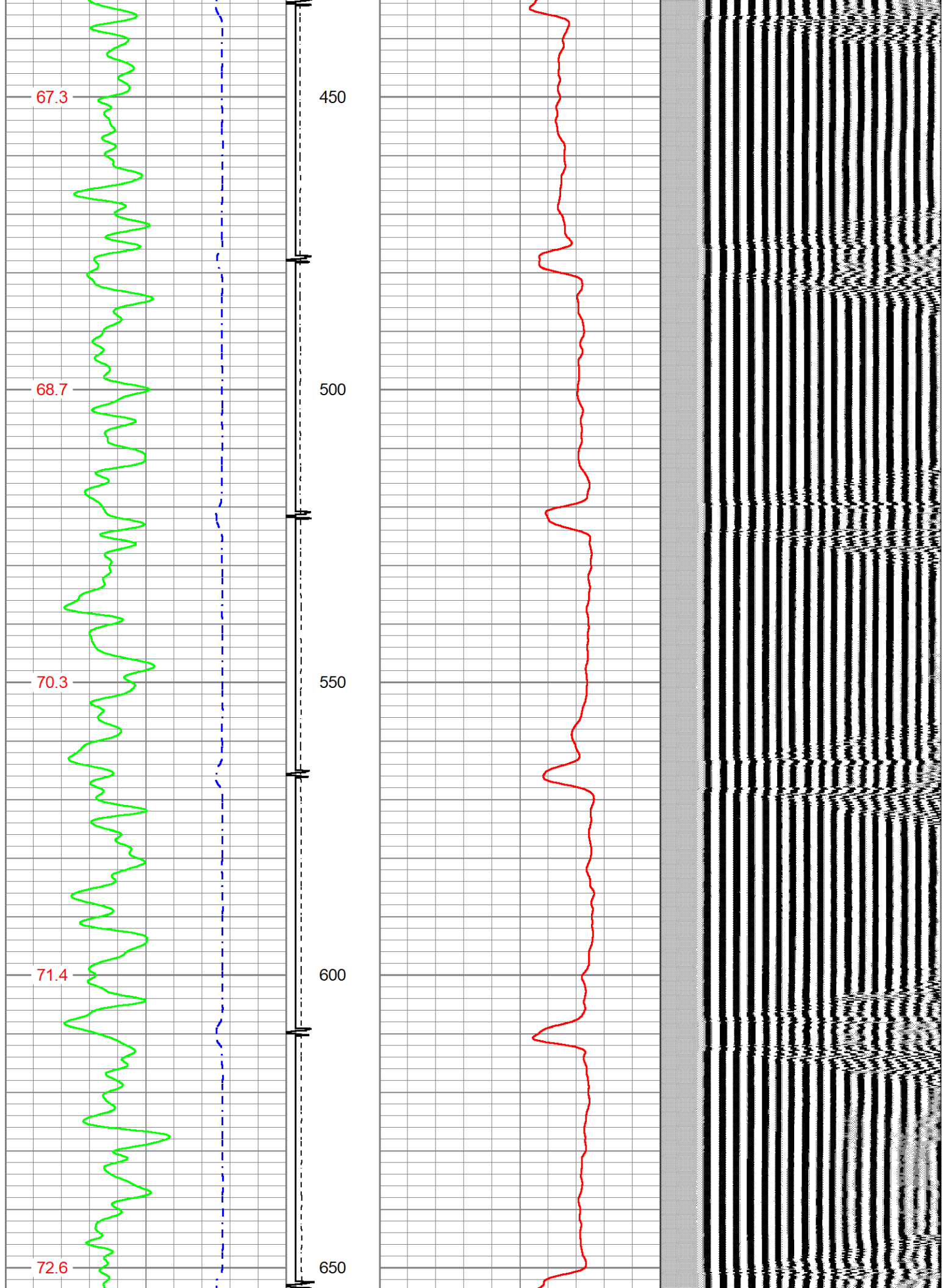
MAIN PASS - 5 INCH

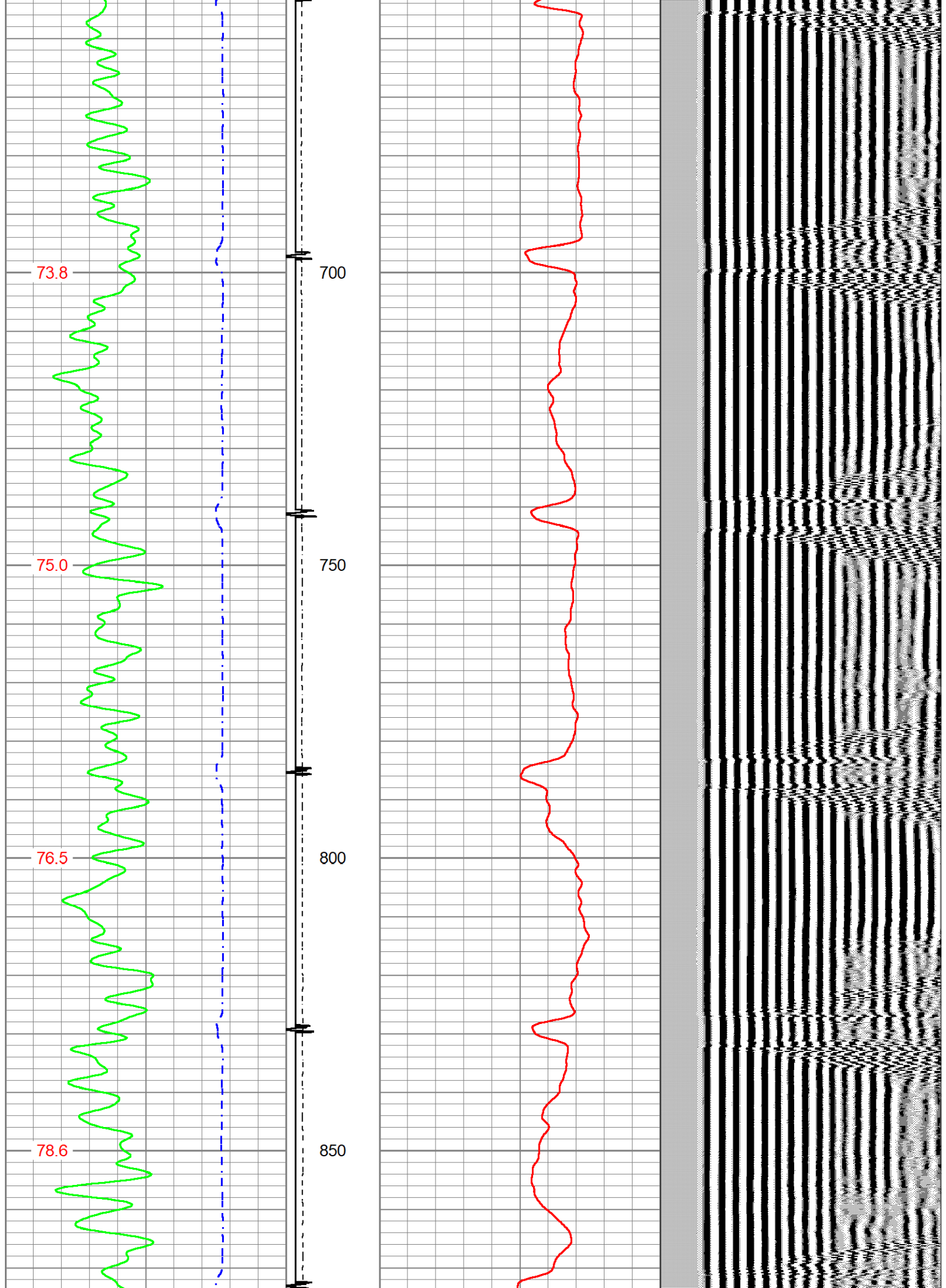
Database File	gwottesen_351hn.db
Dataset Pathname	run2CBL/pass7
Presentation Format	cbl_cs
Dataset Creation	Sat Jan 26 08:02:00 2019
Charted by	Depth in Feet scaled 1:240

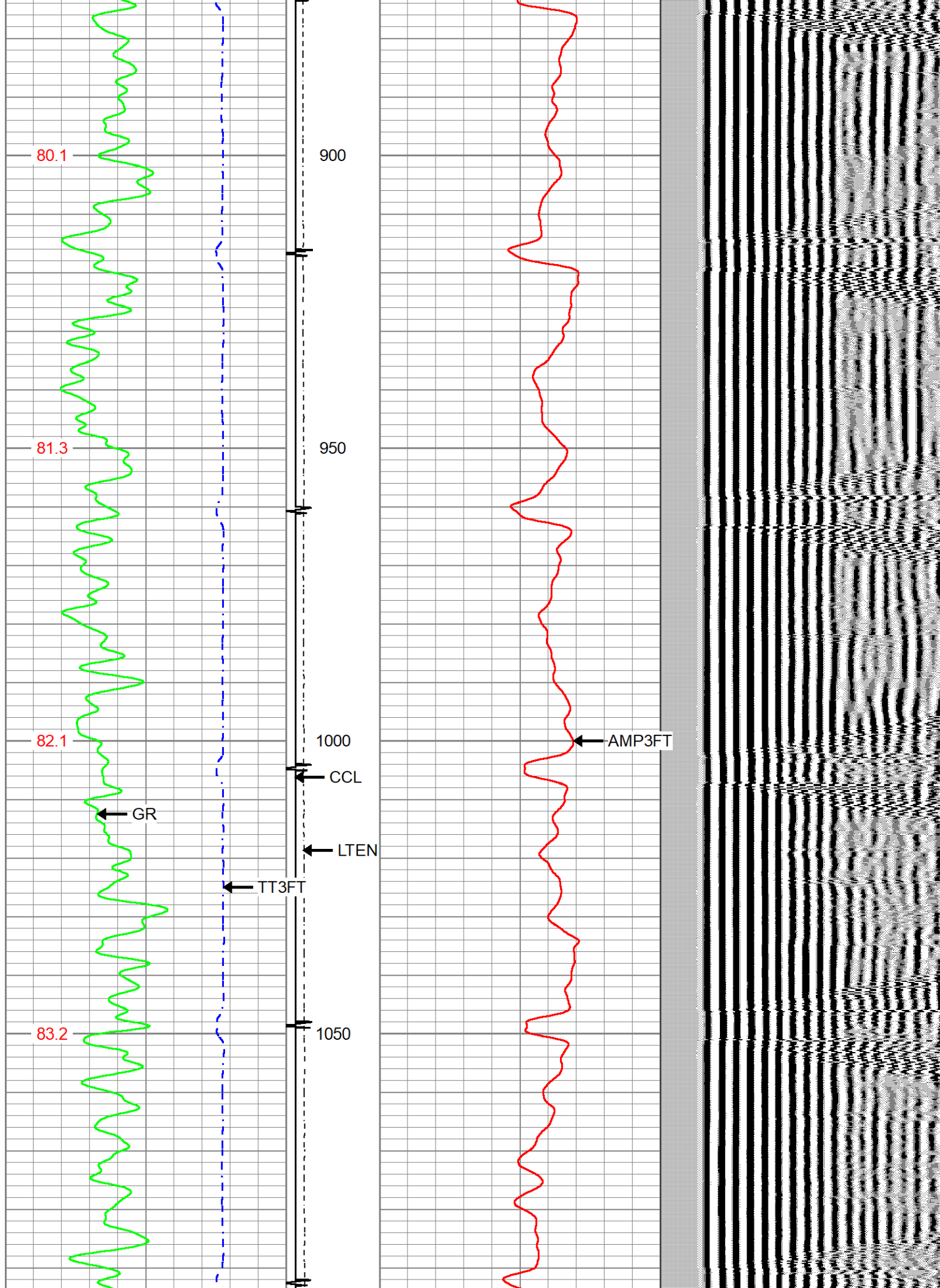
420	Travel Time (usec)	220	Collar Locator	0	Amplified Amplitude (mV)	10	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	-1	9	0	Amplitude (mV)	100		
Temp (degF)		Line Speed (ft/min)							
		0	200						
		LTEN							
		0	(lb2000						

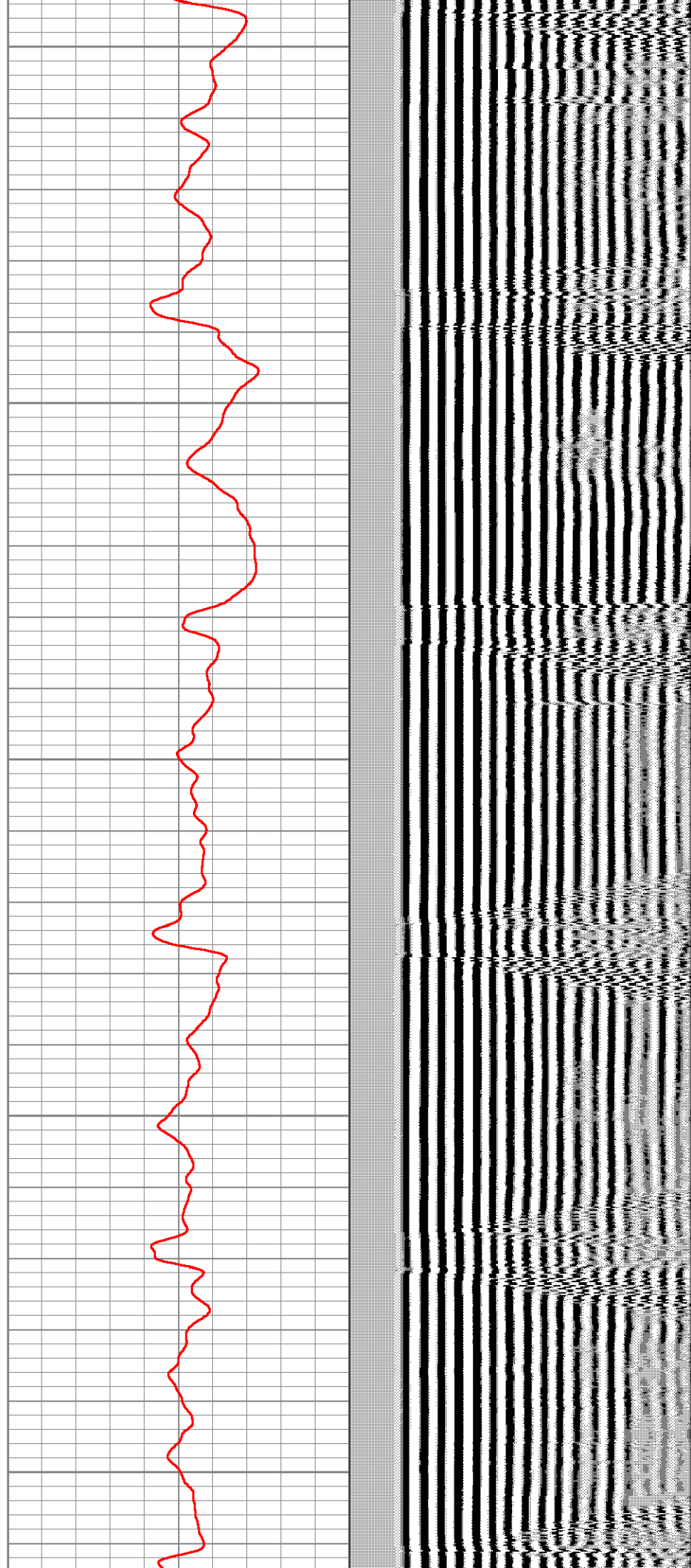
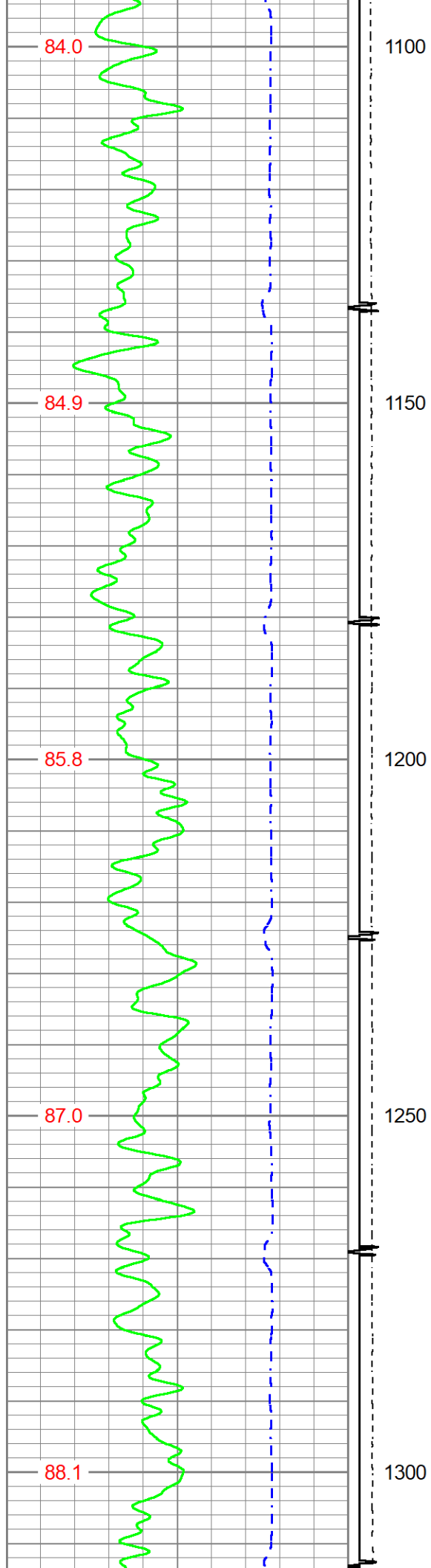


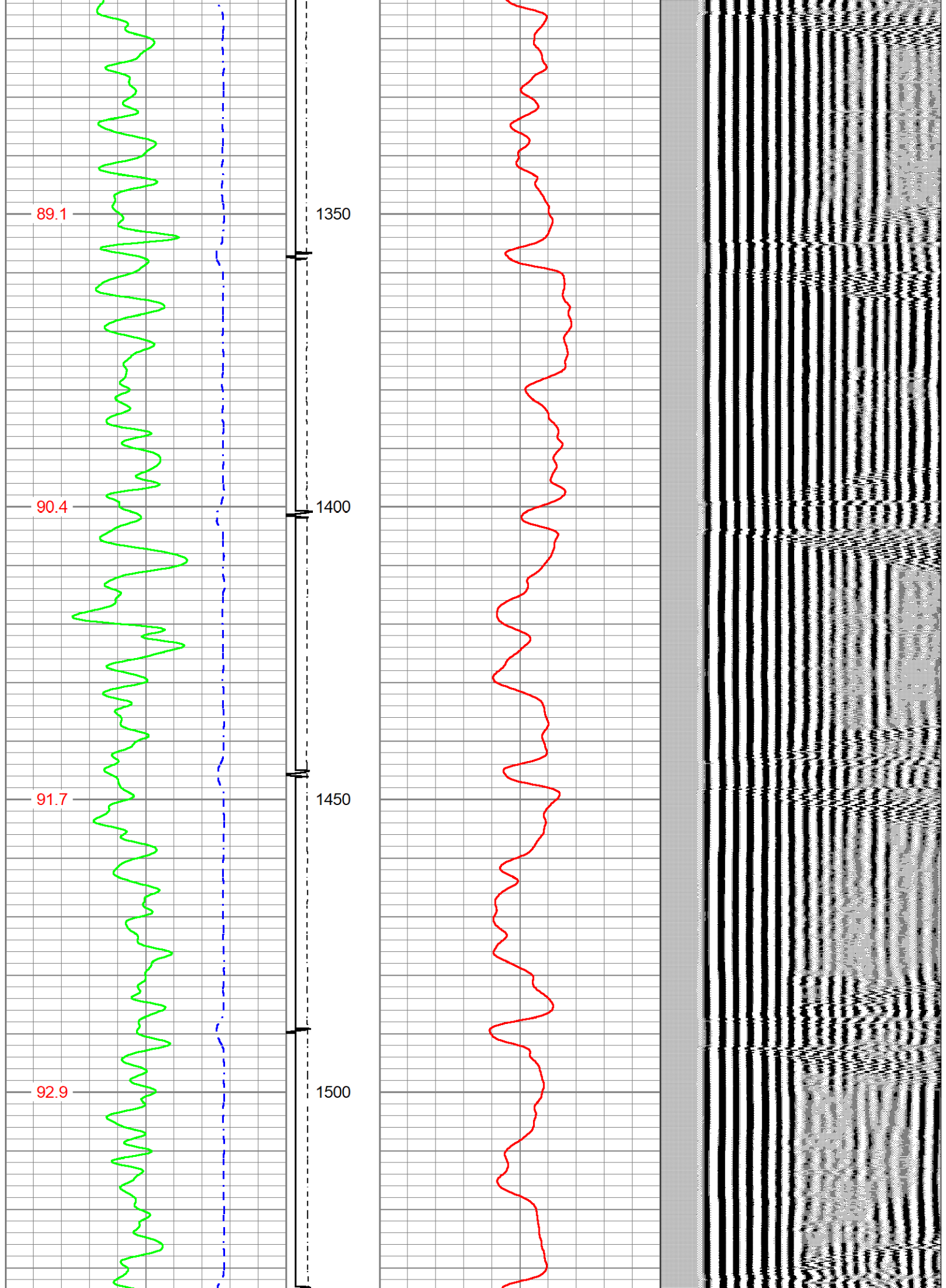


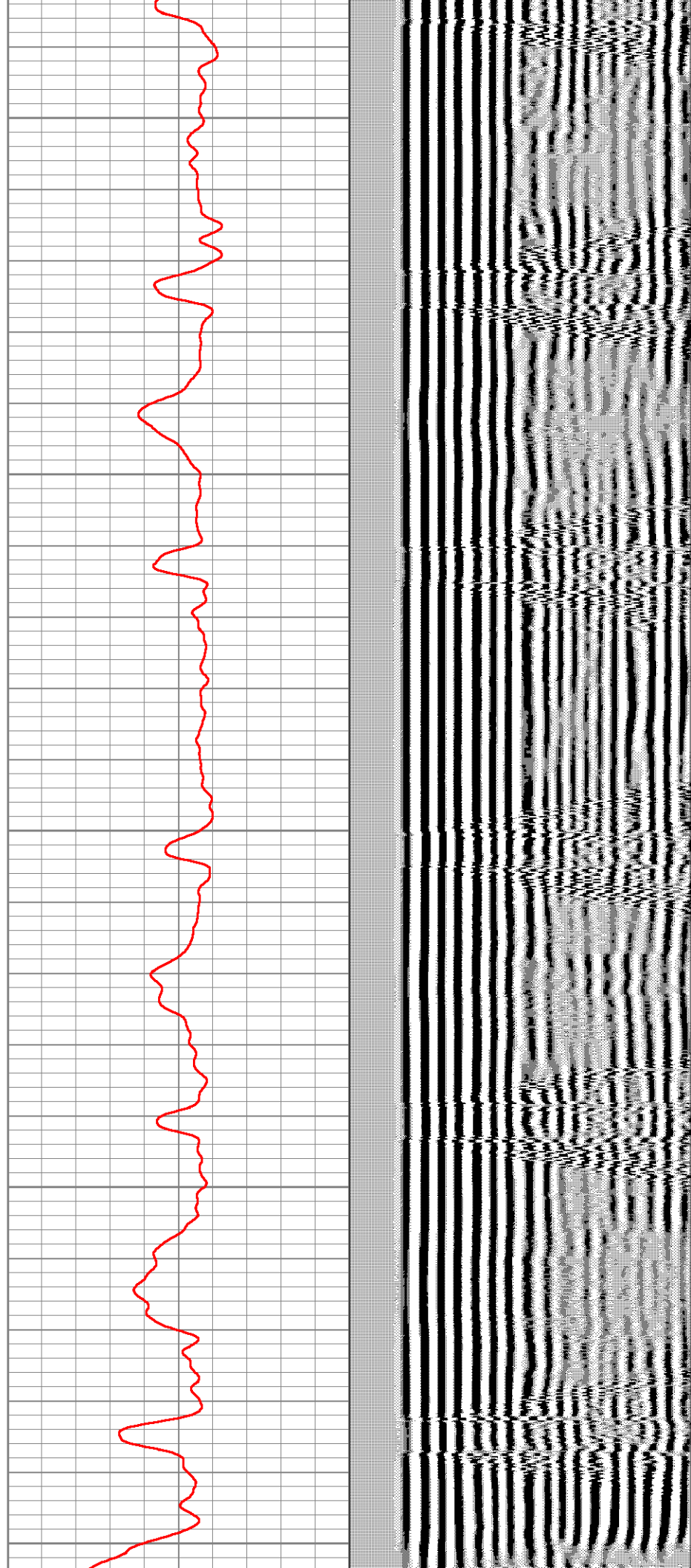
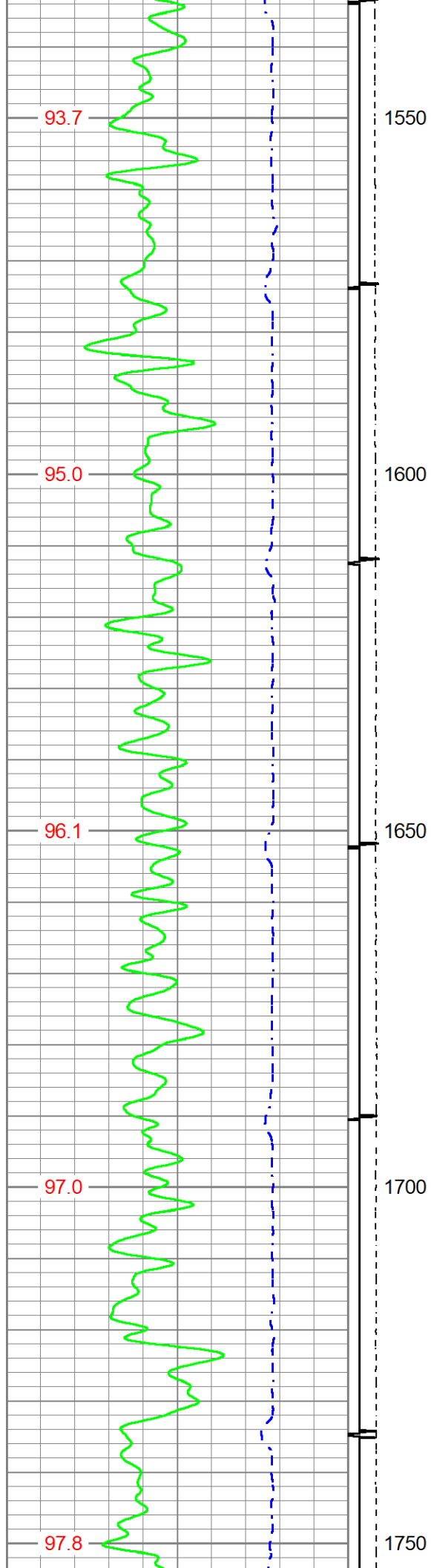


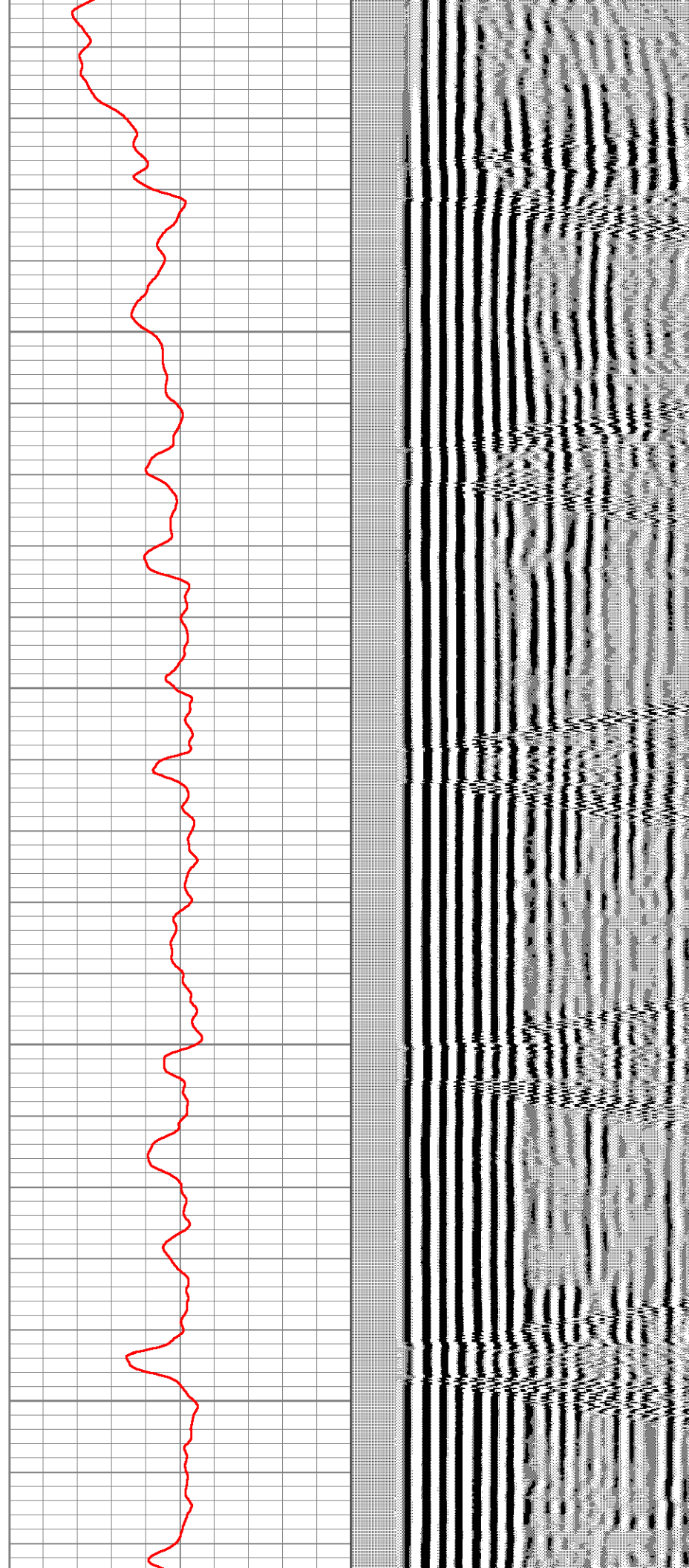
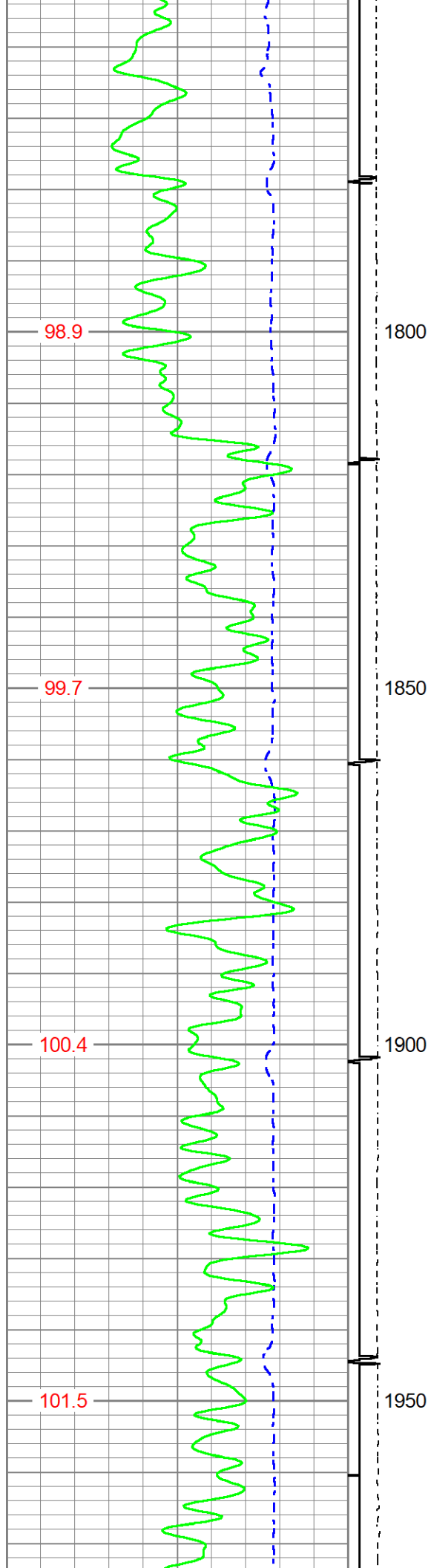


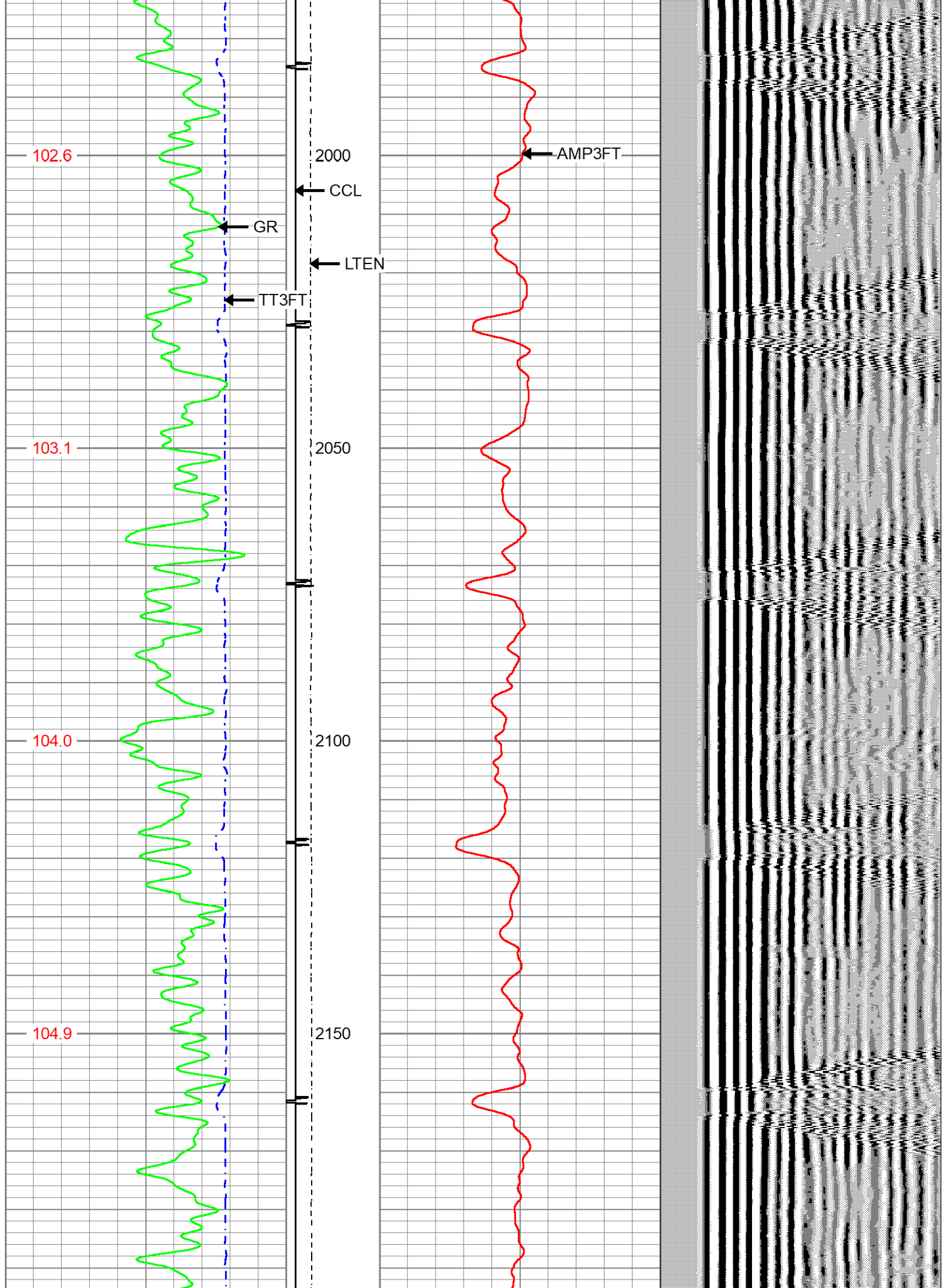


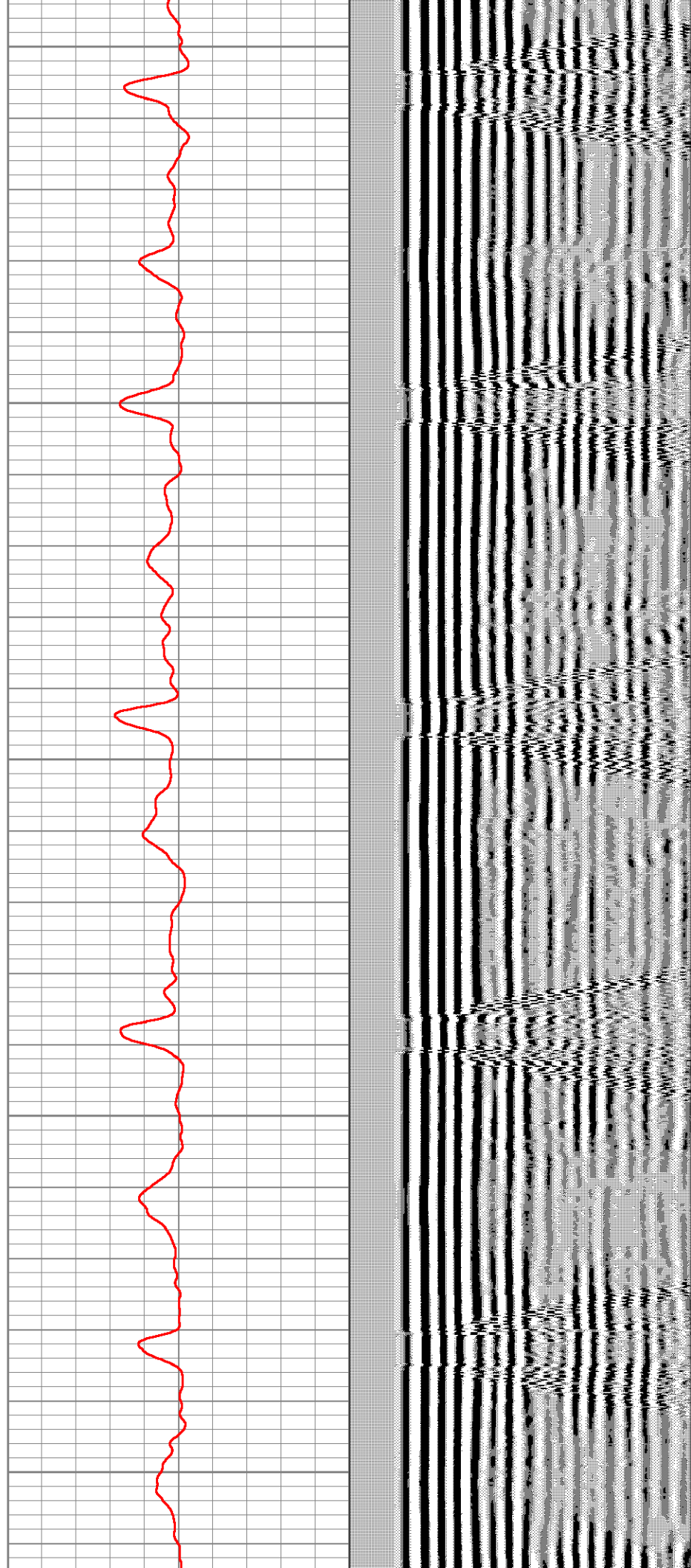
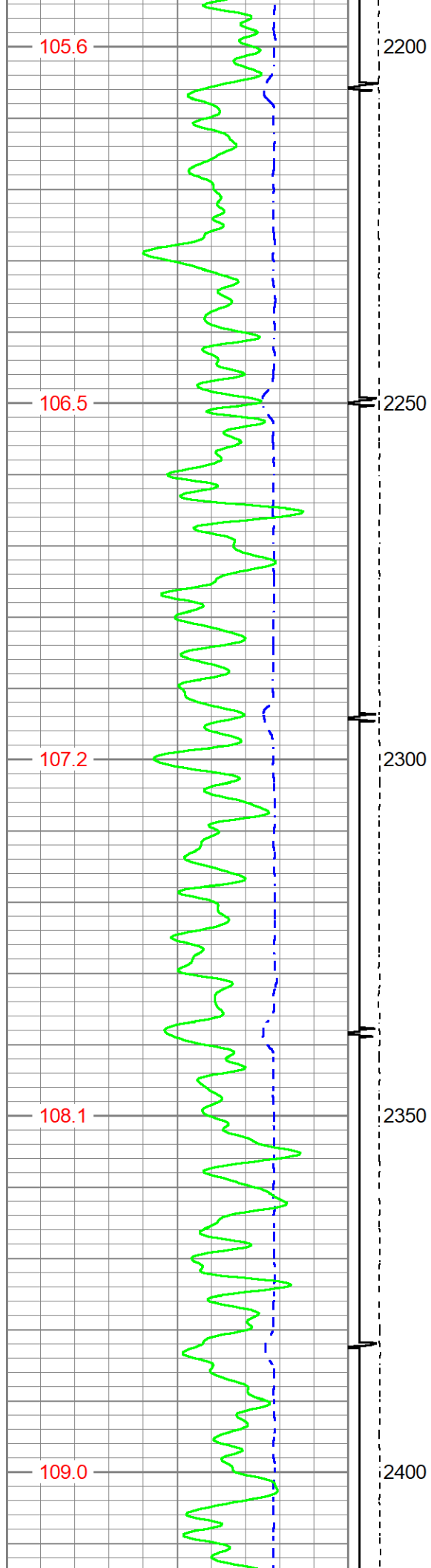


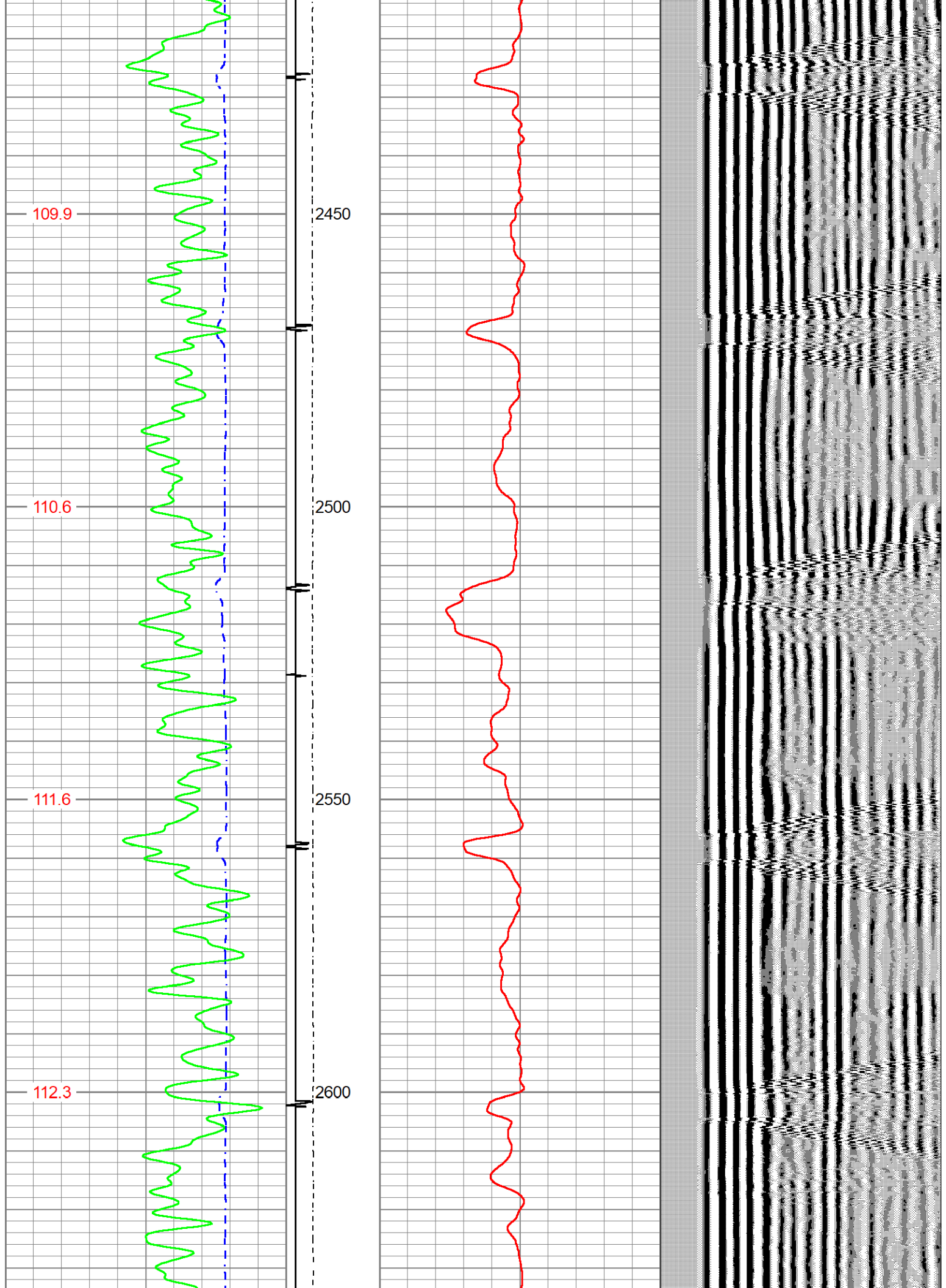


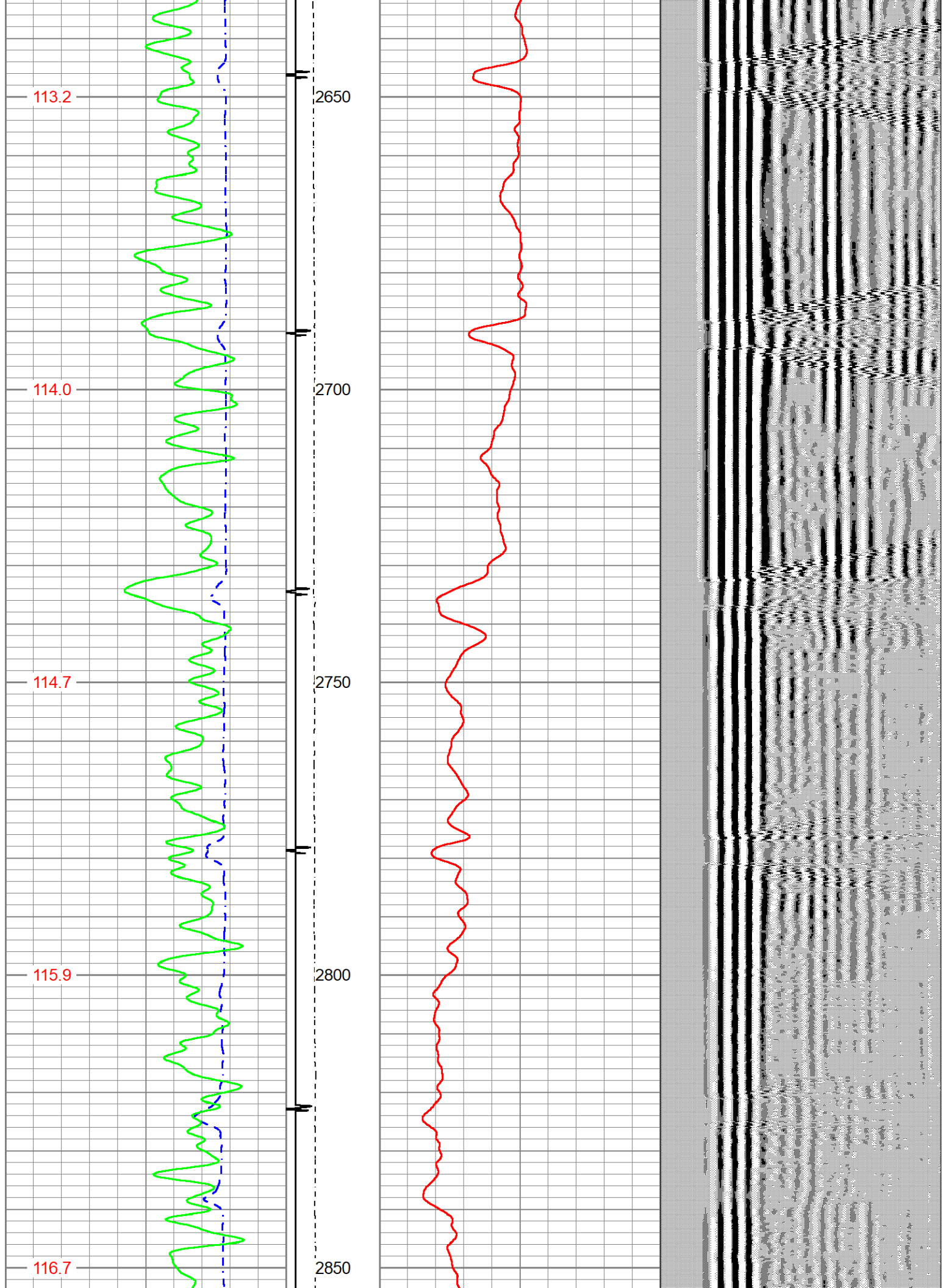


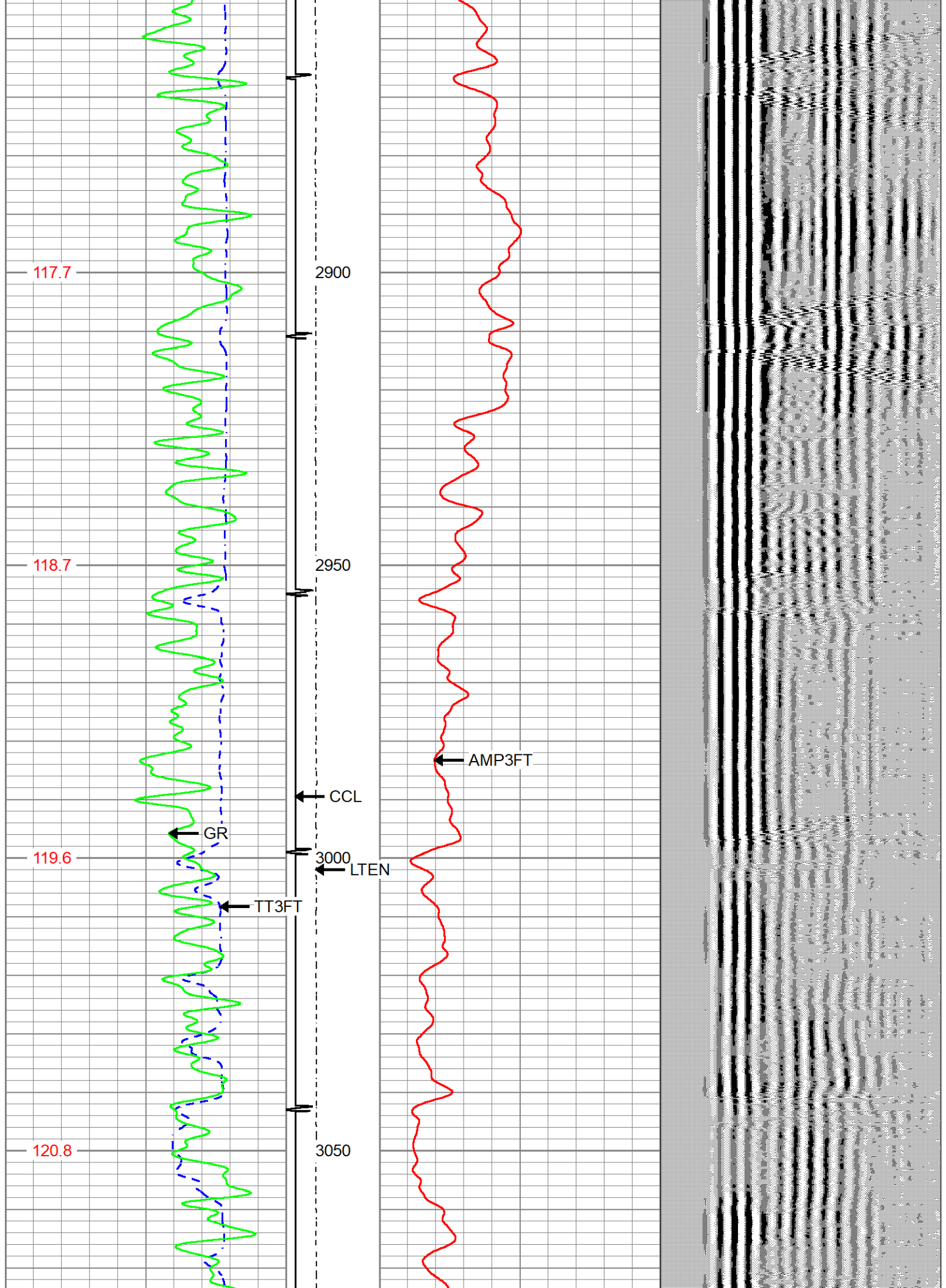


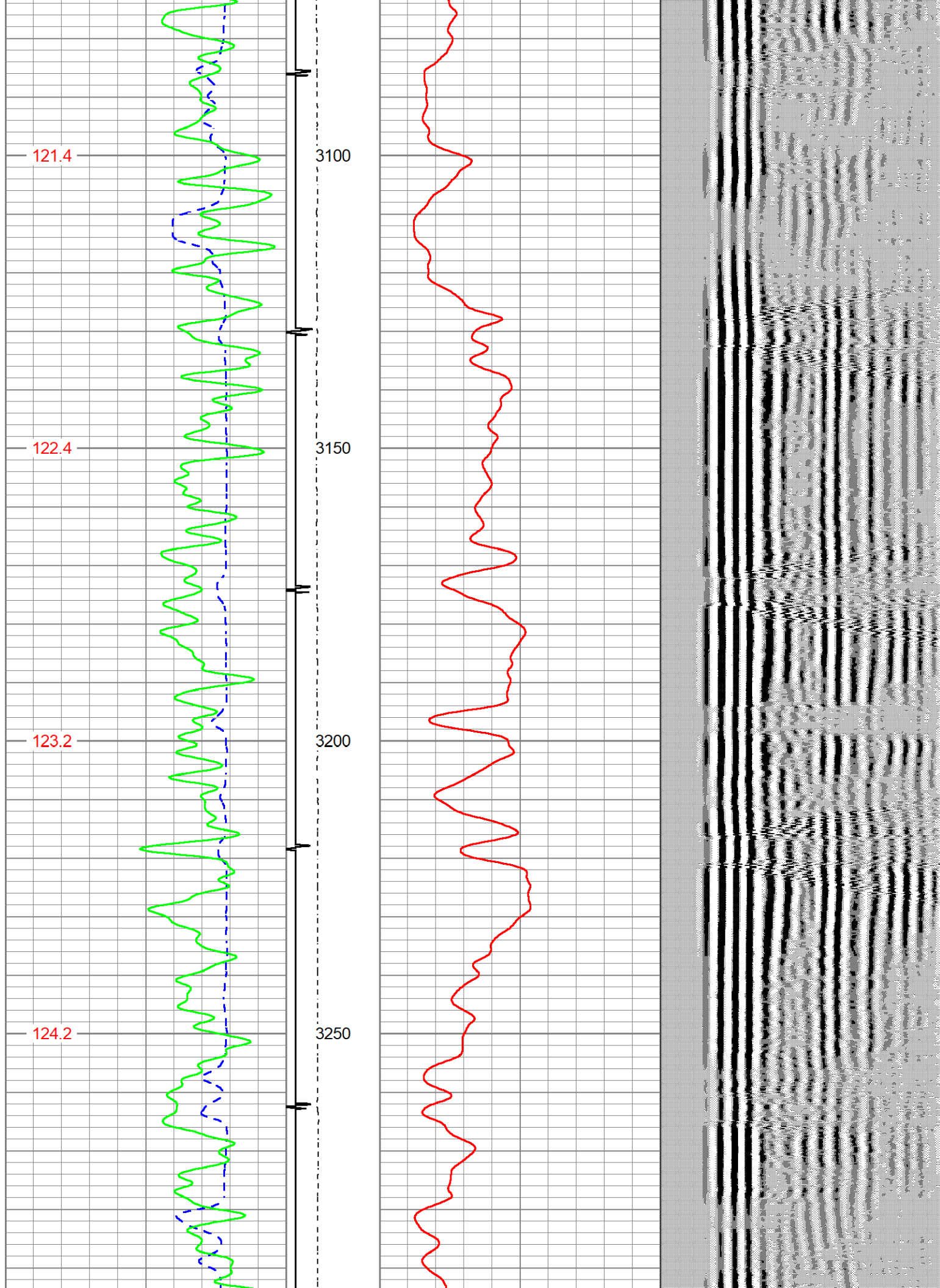


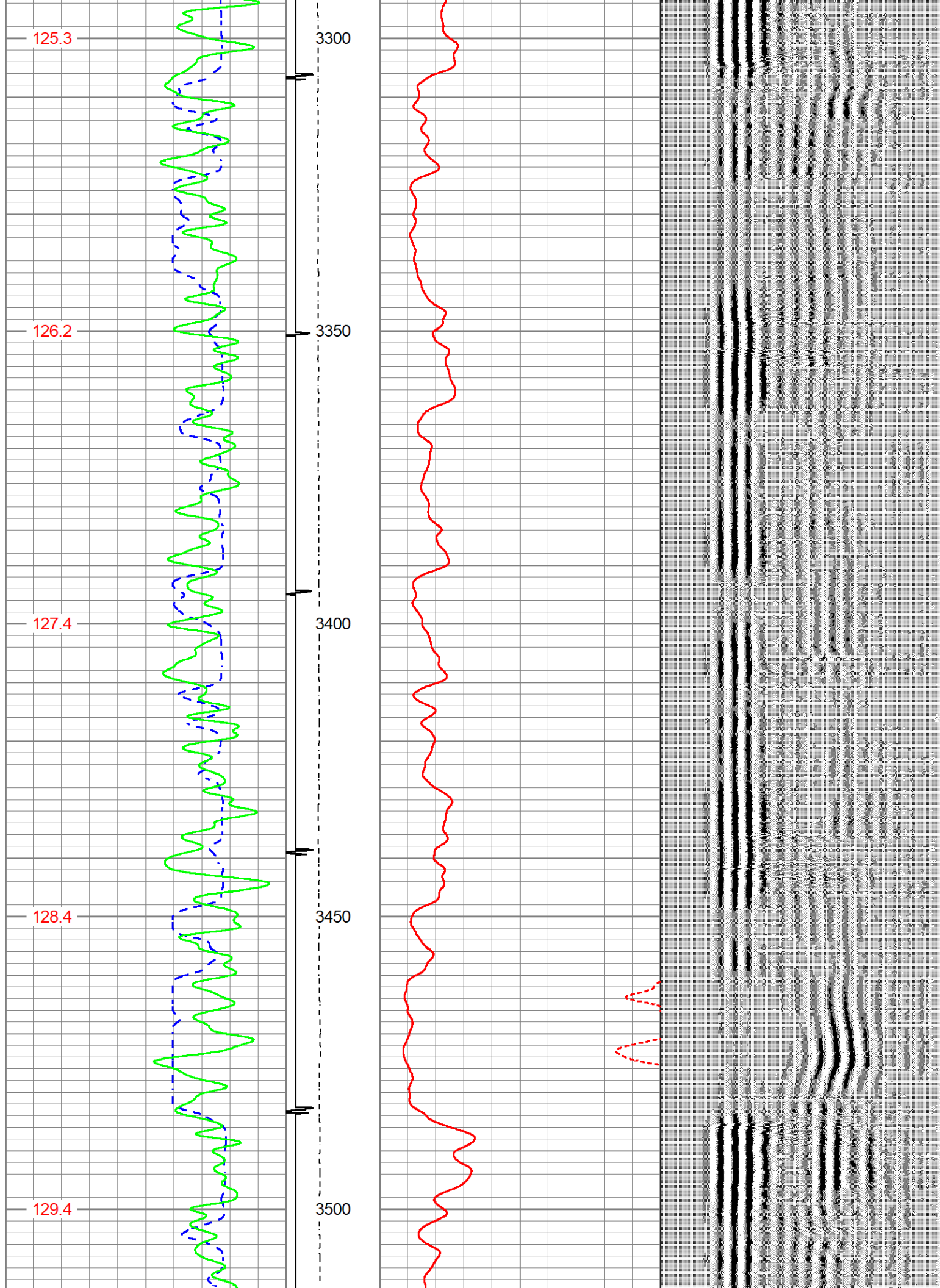


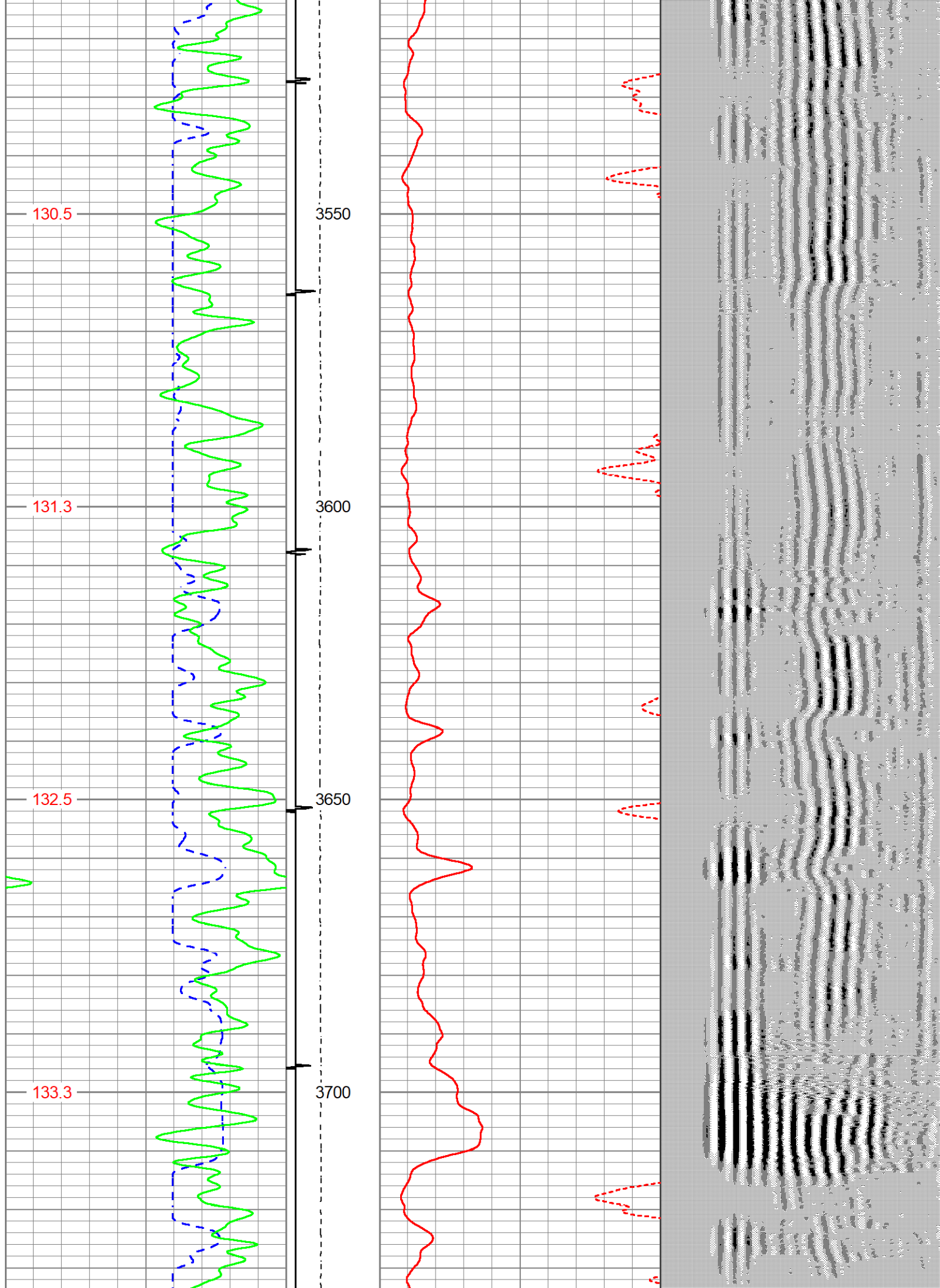


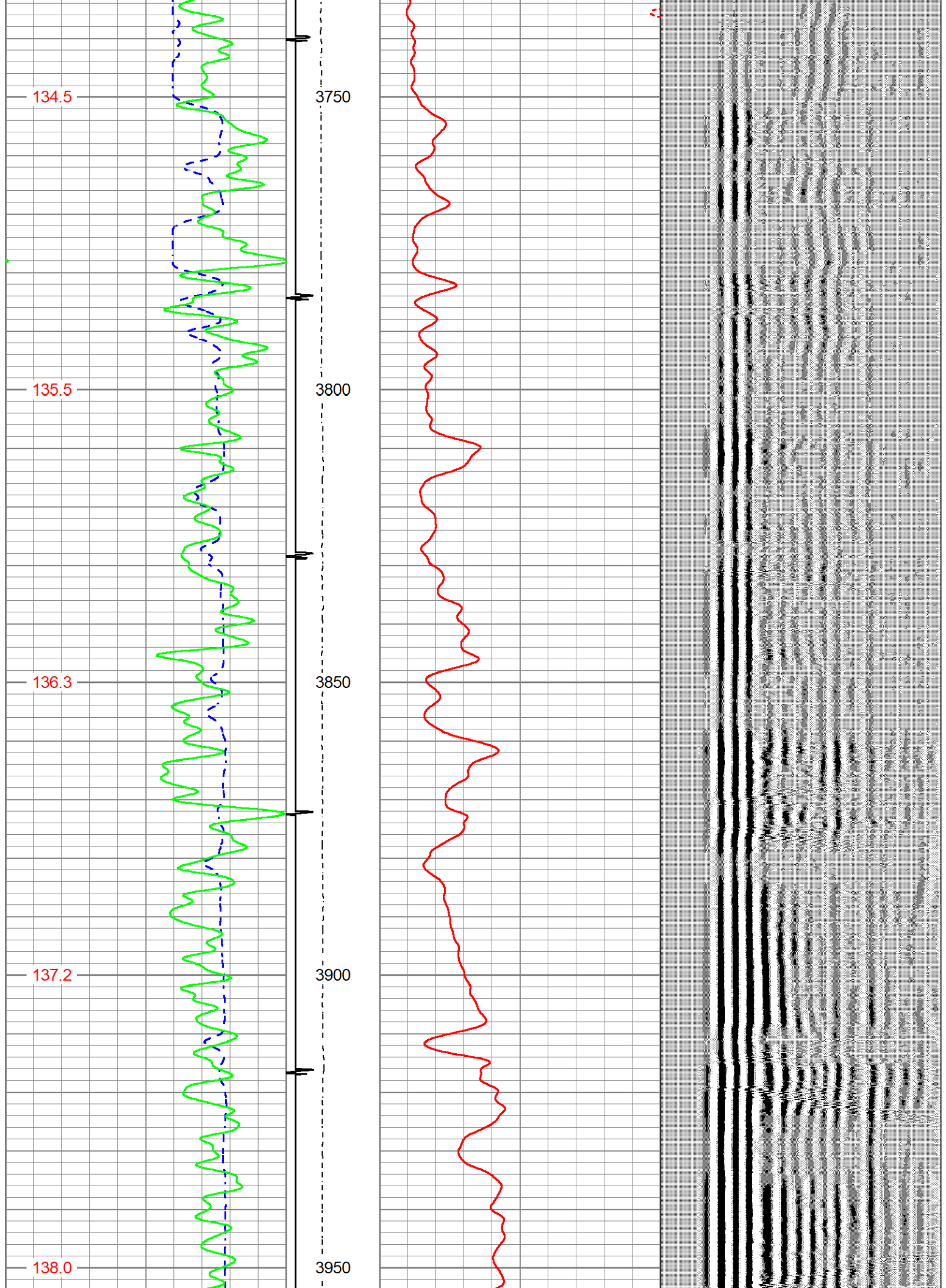


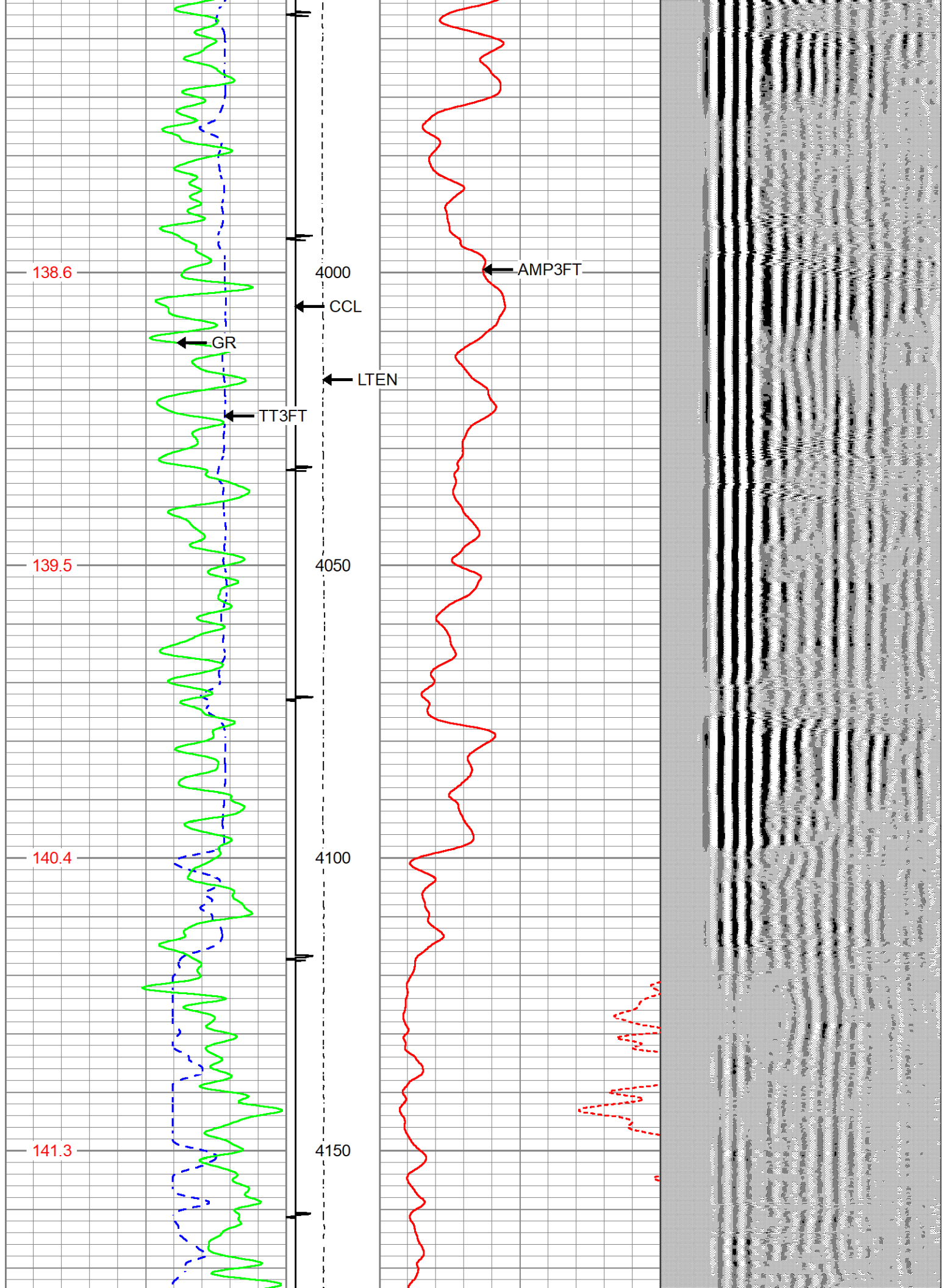


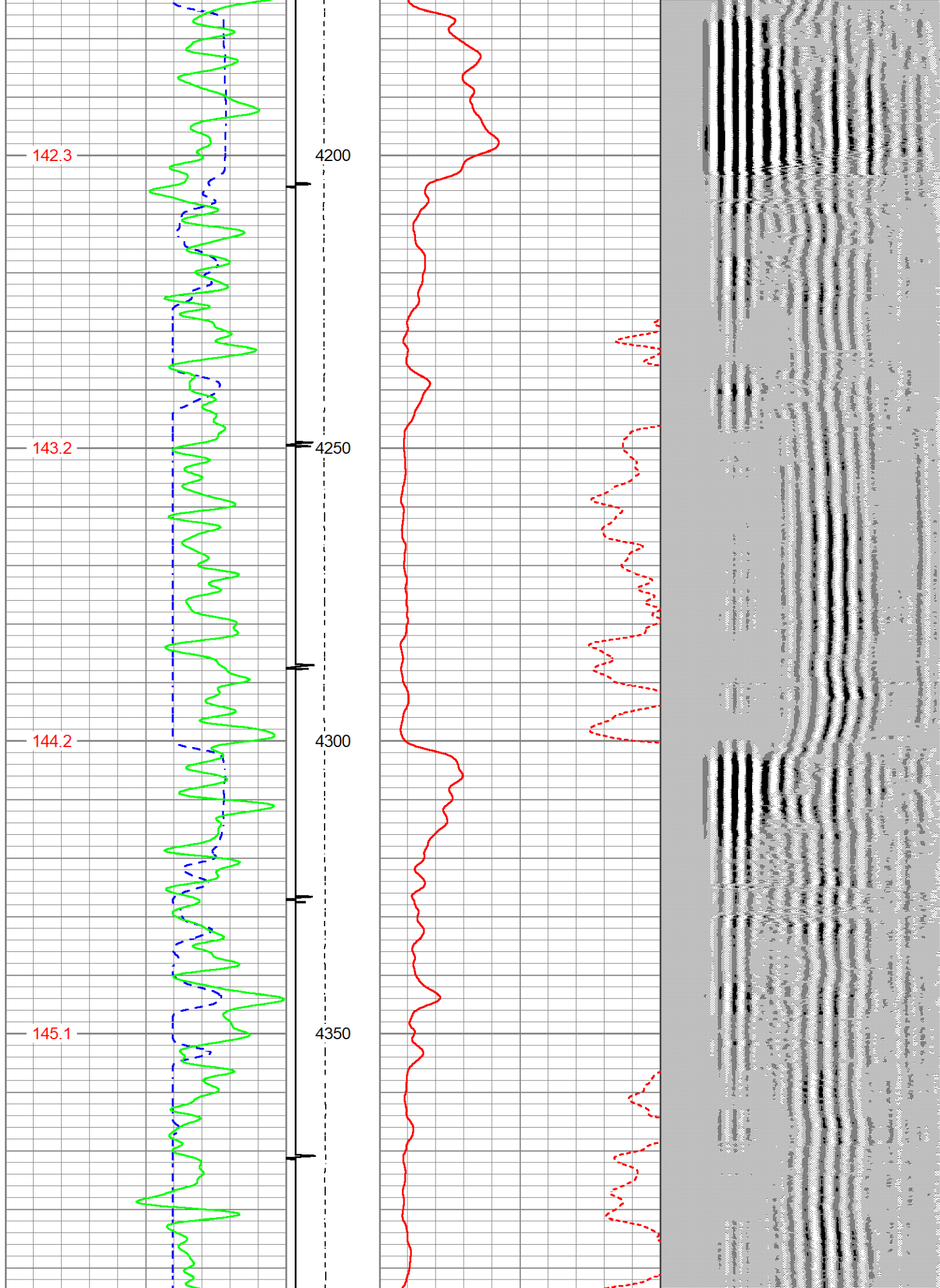


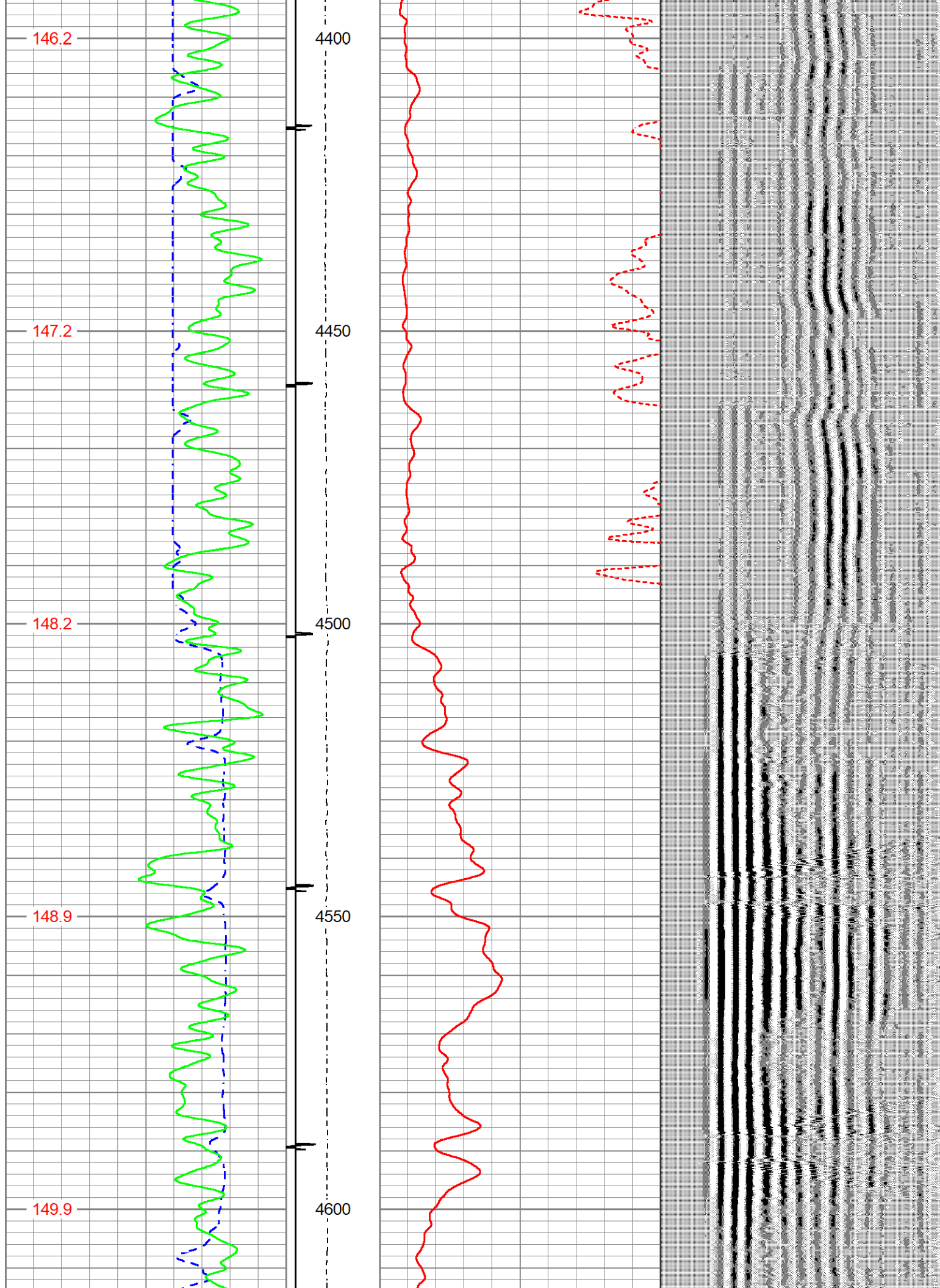


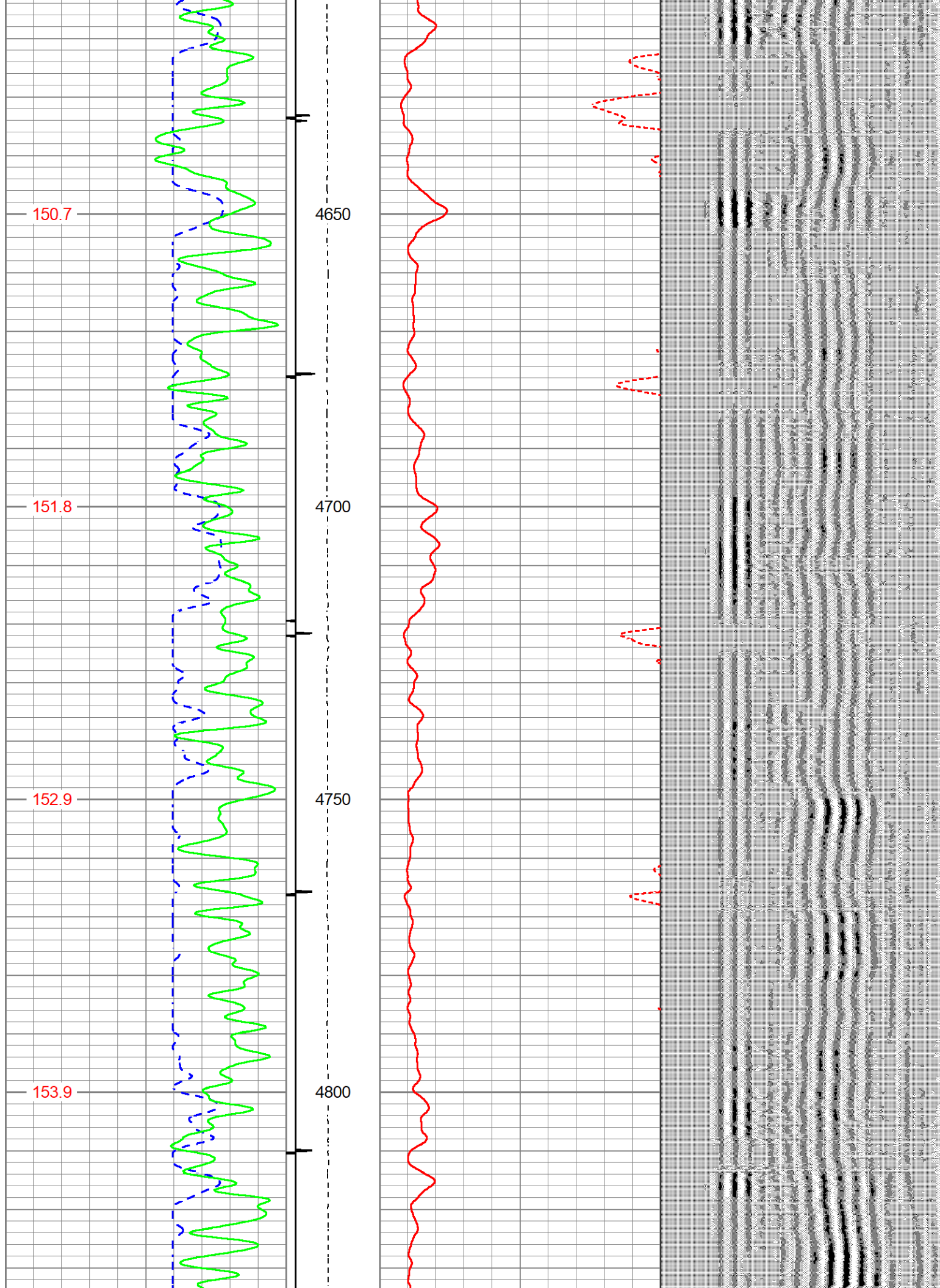


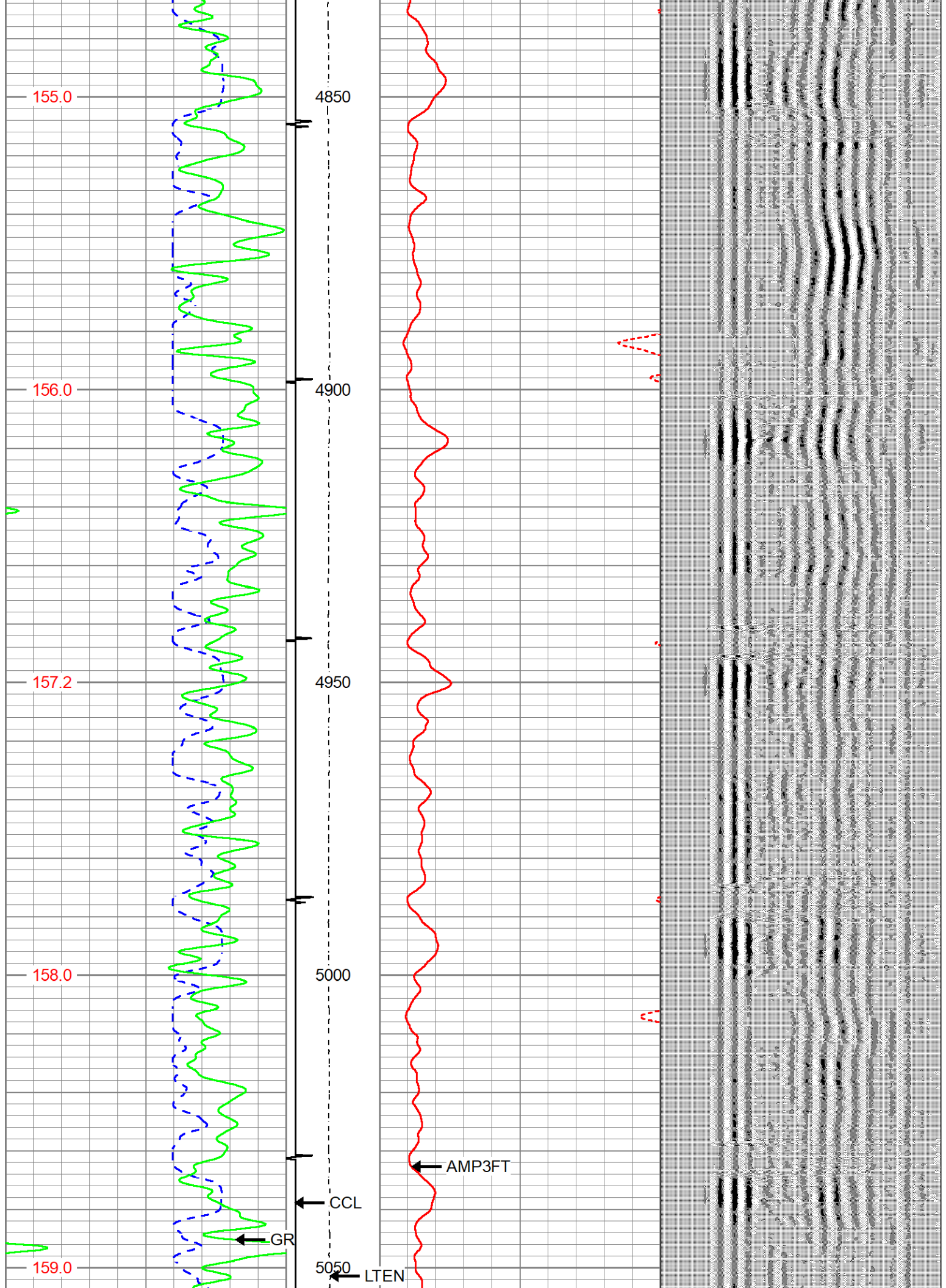


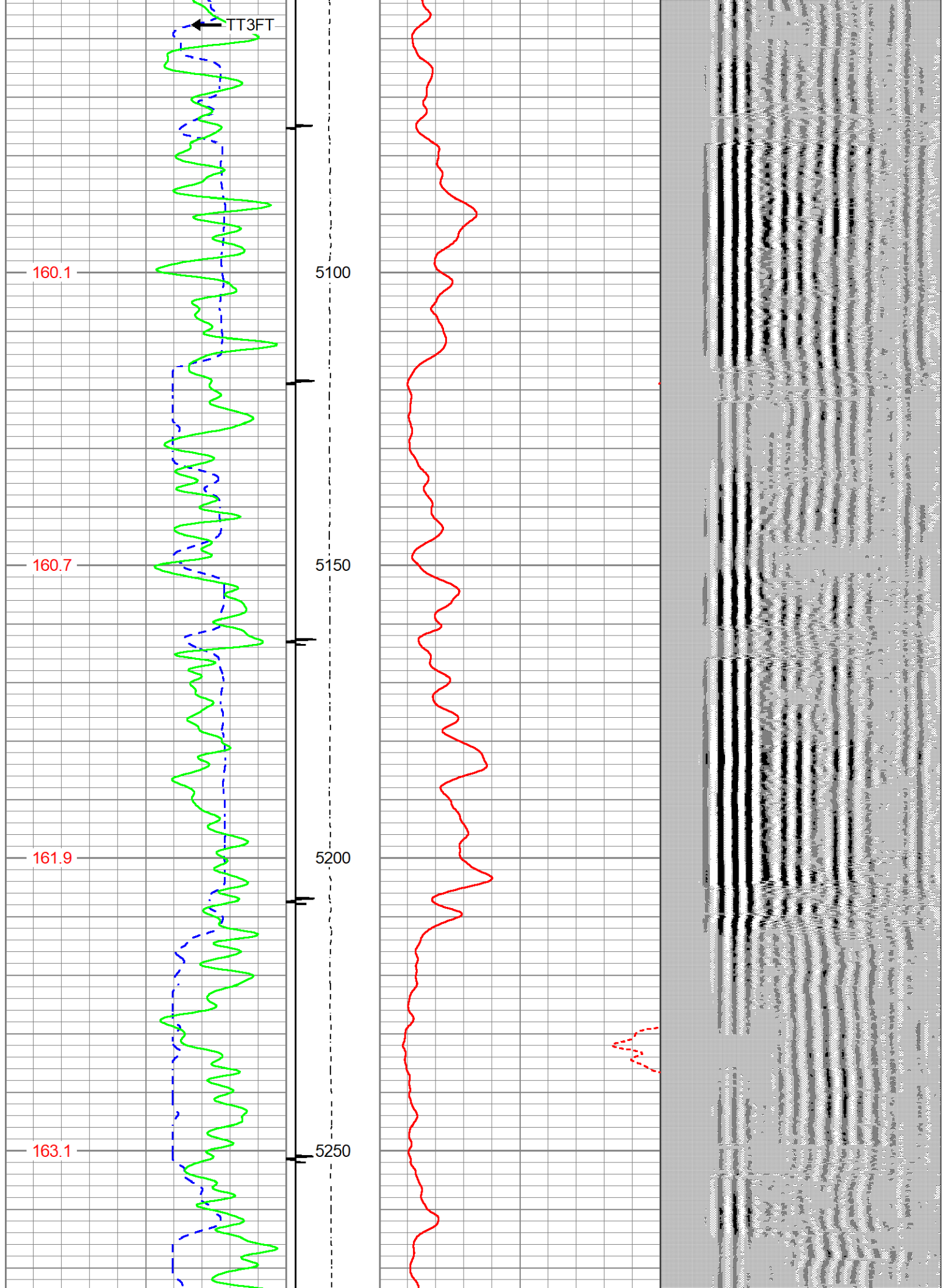


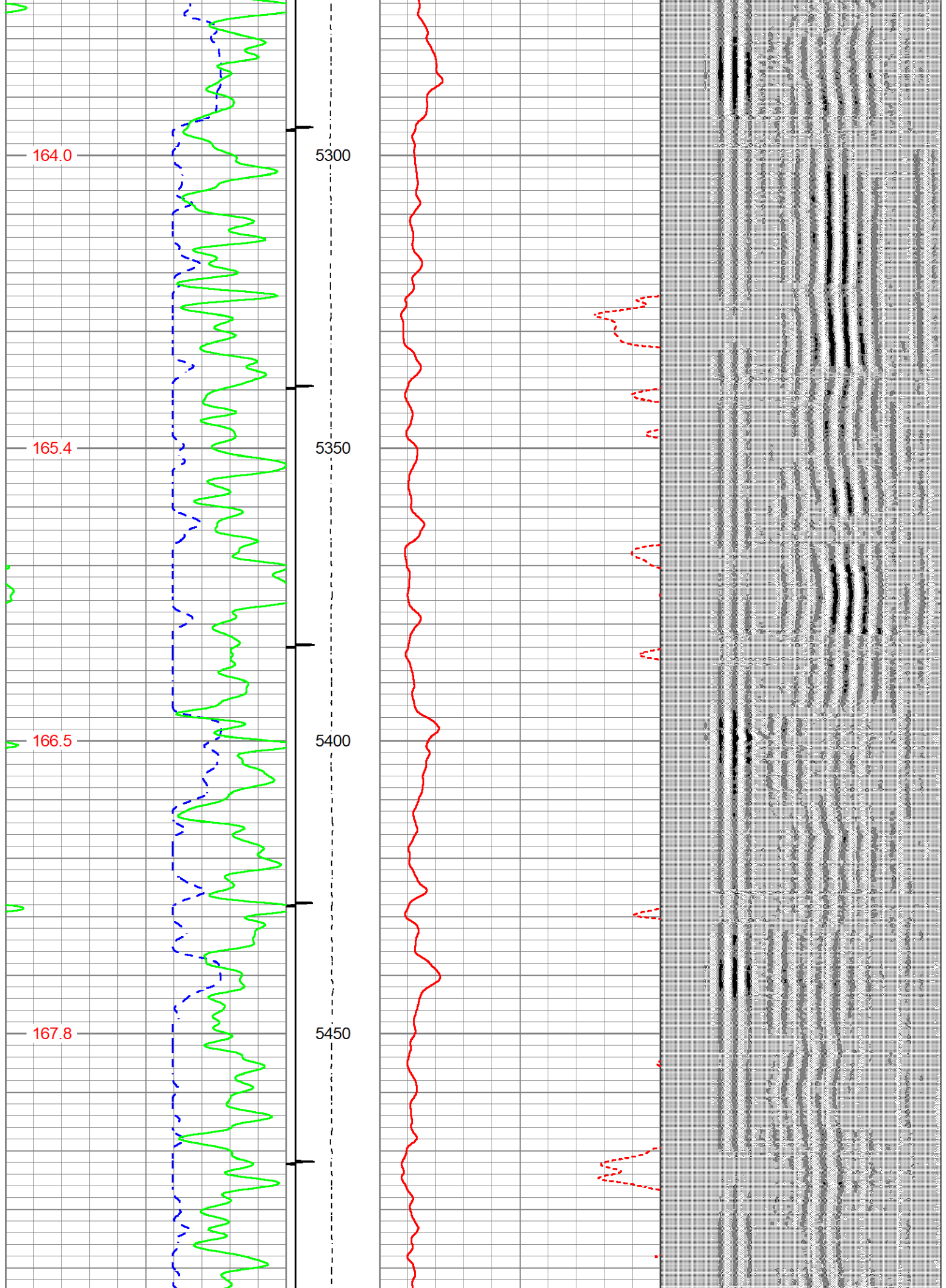


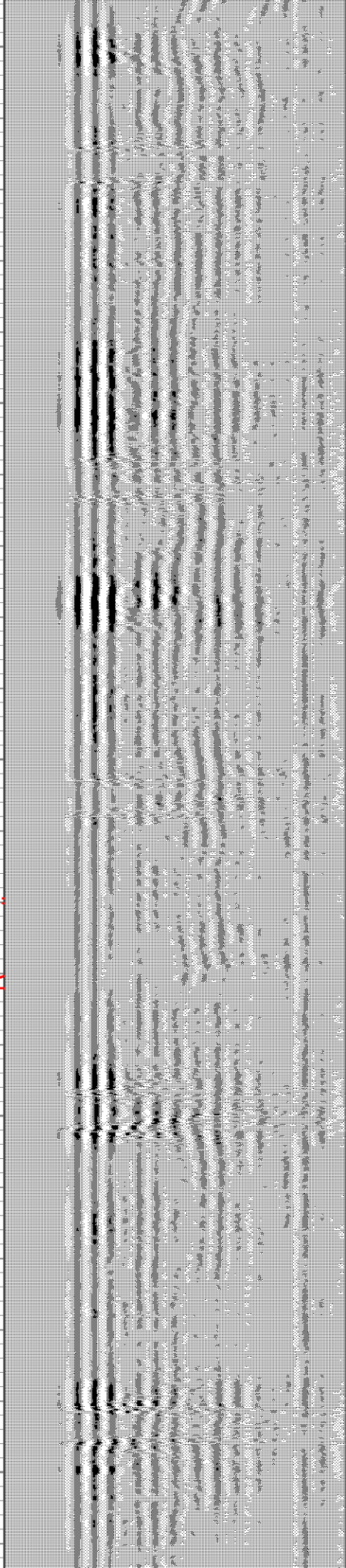
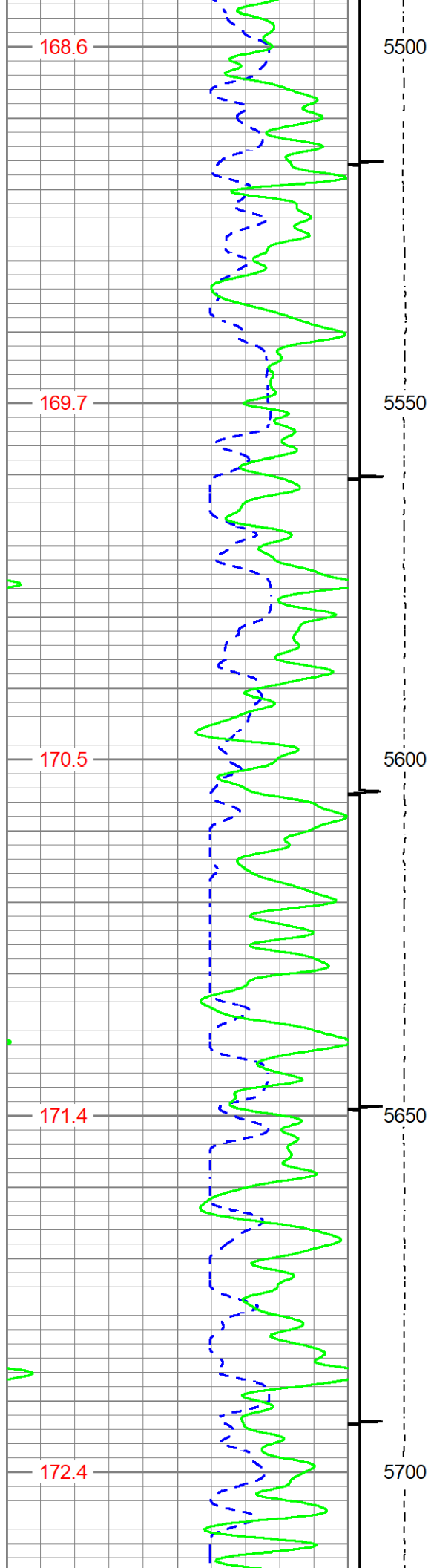


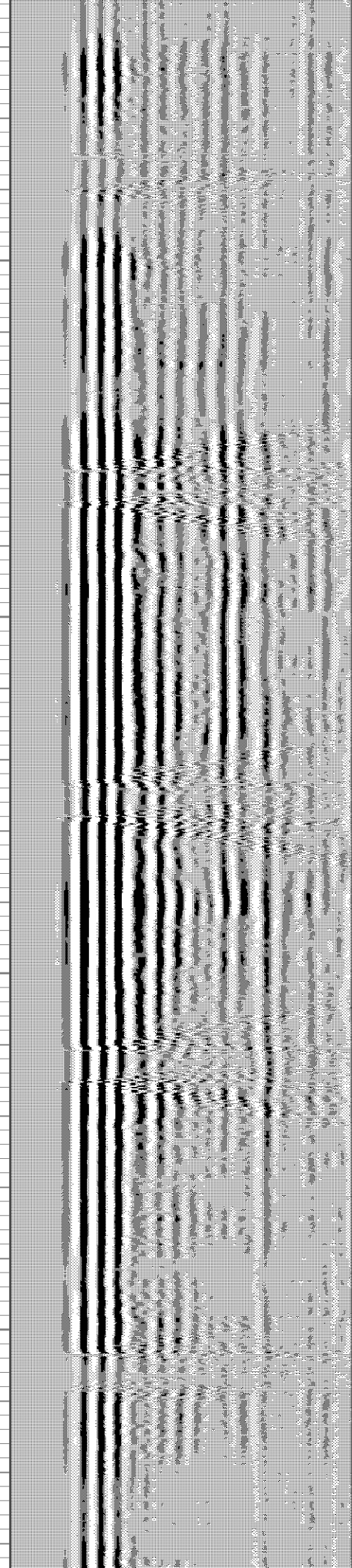
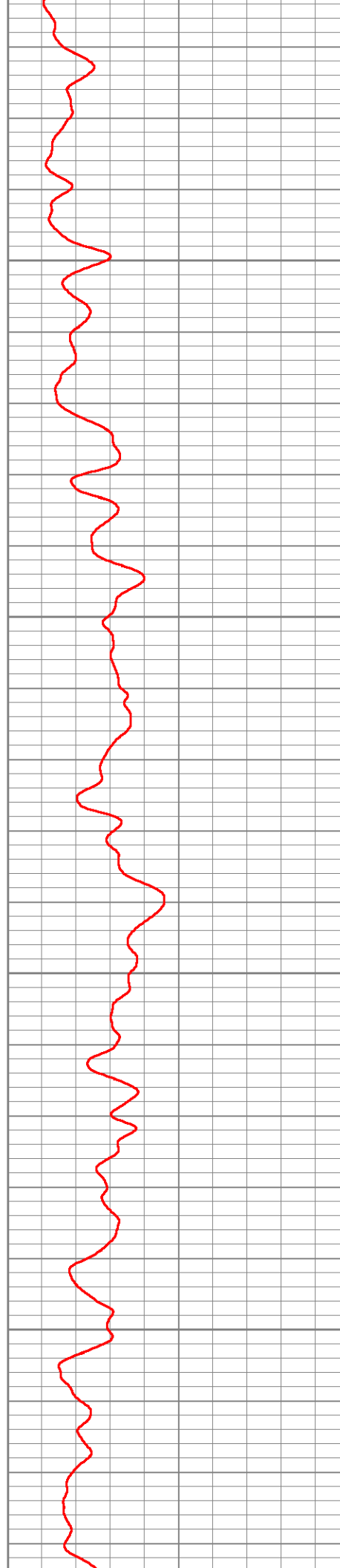
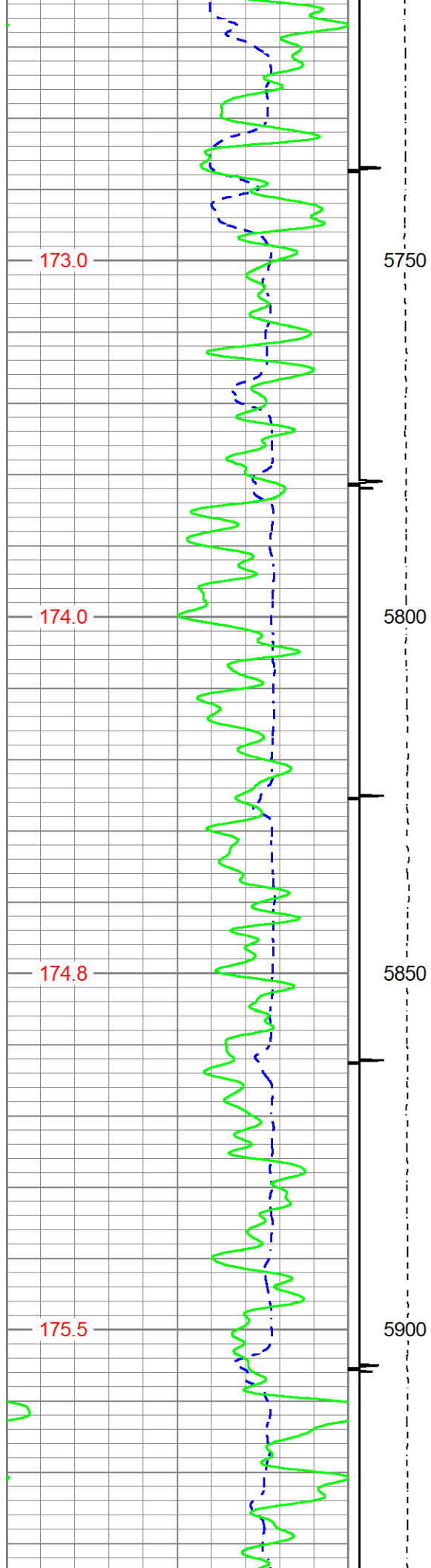


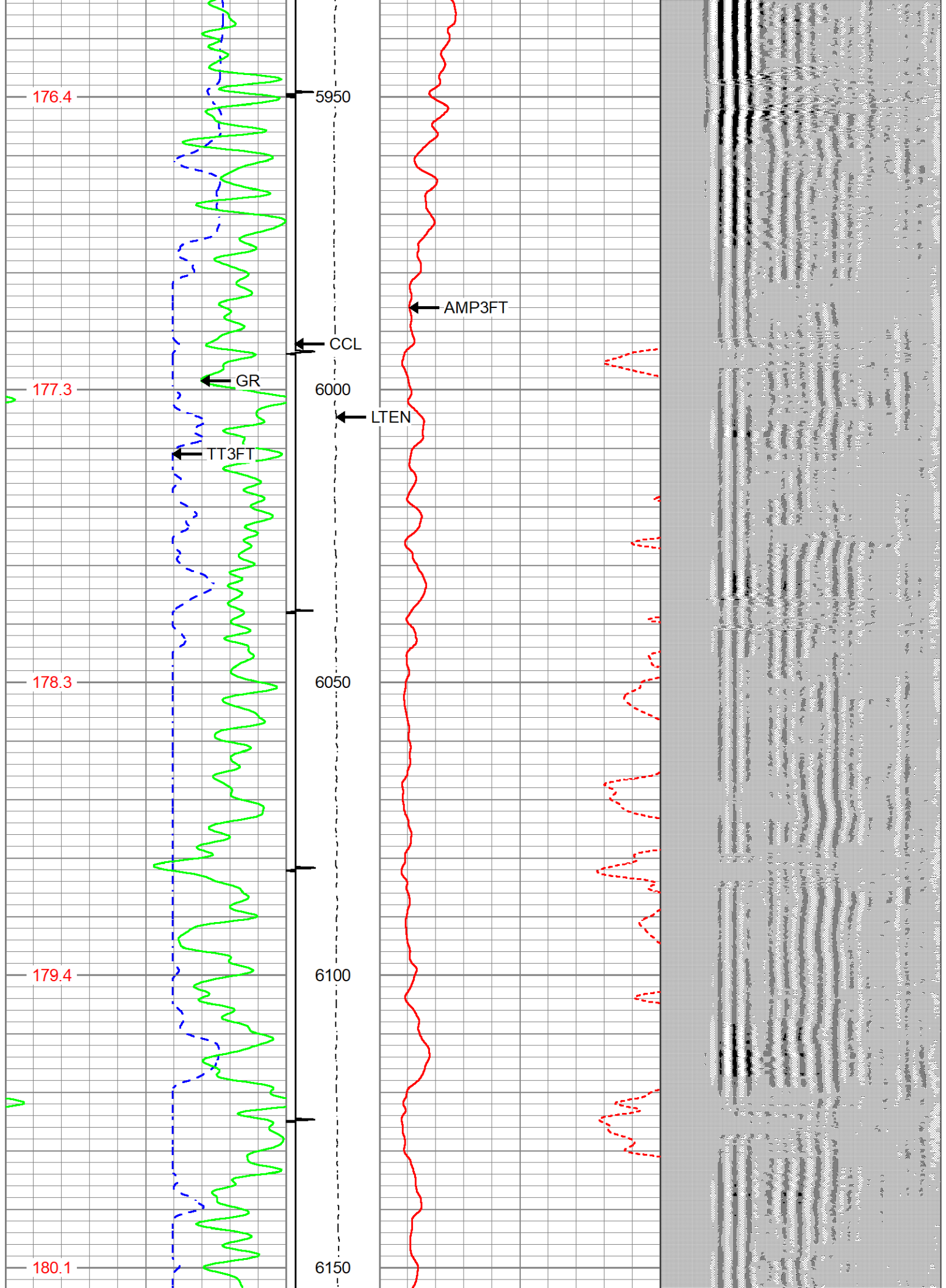


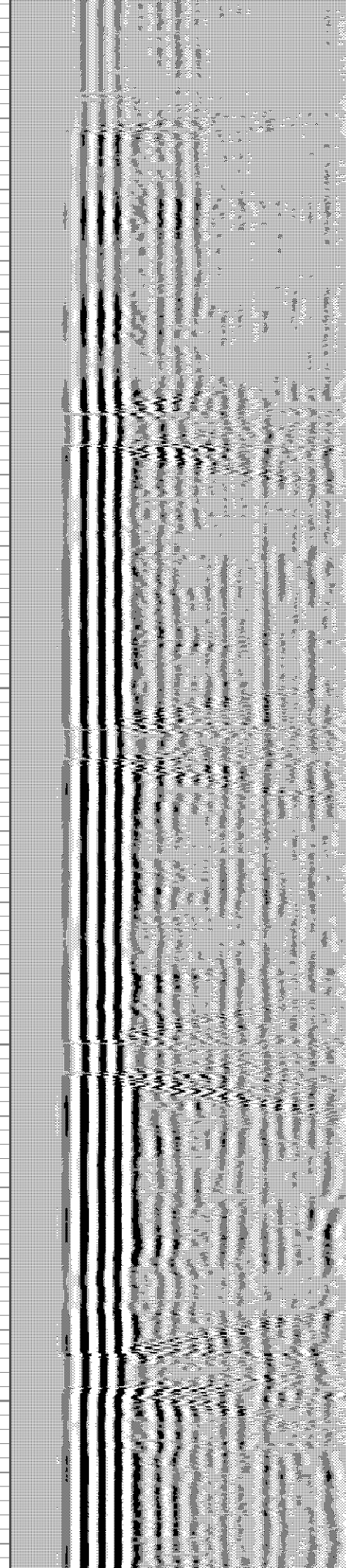
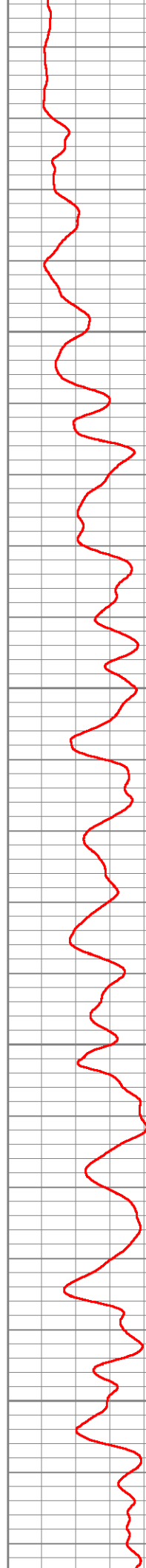
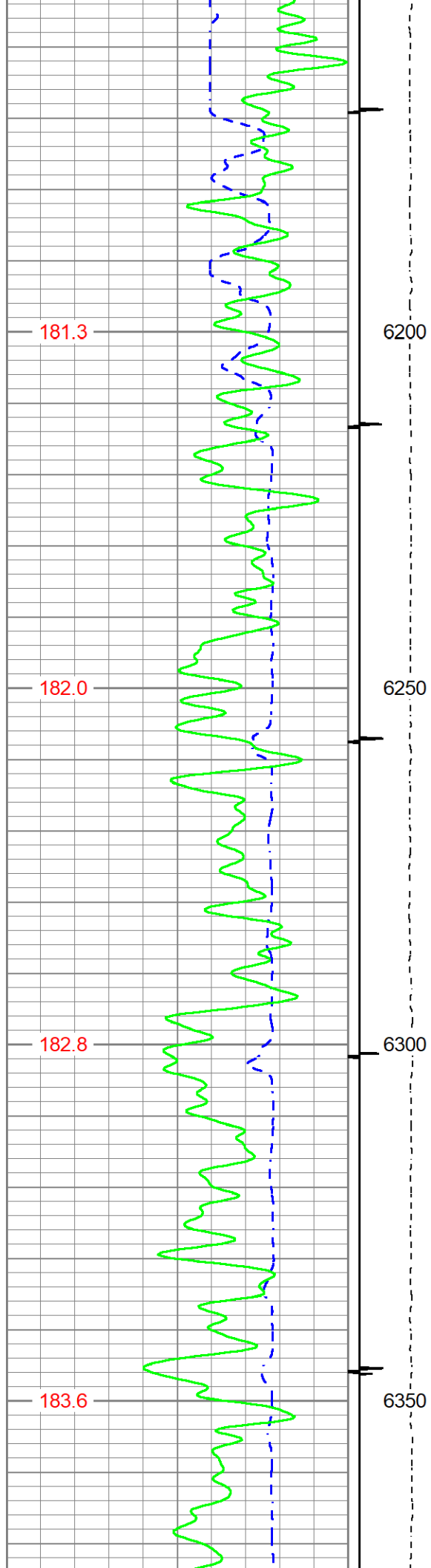


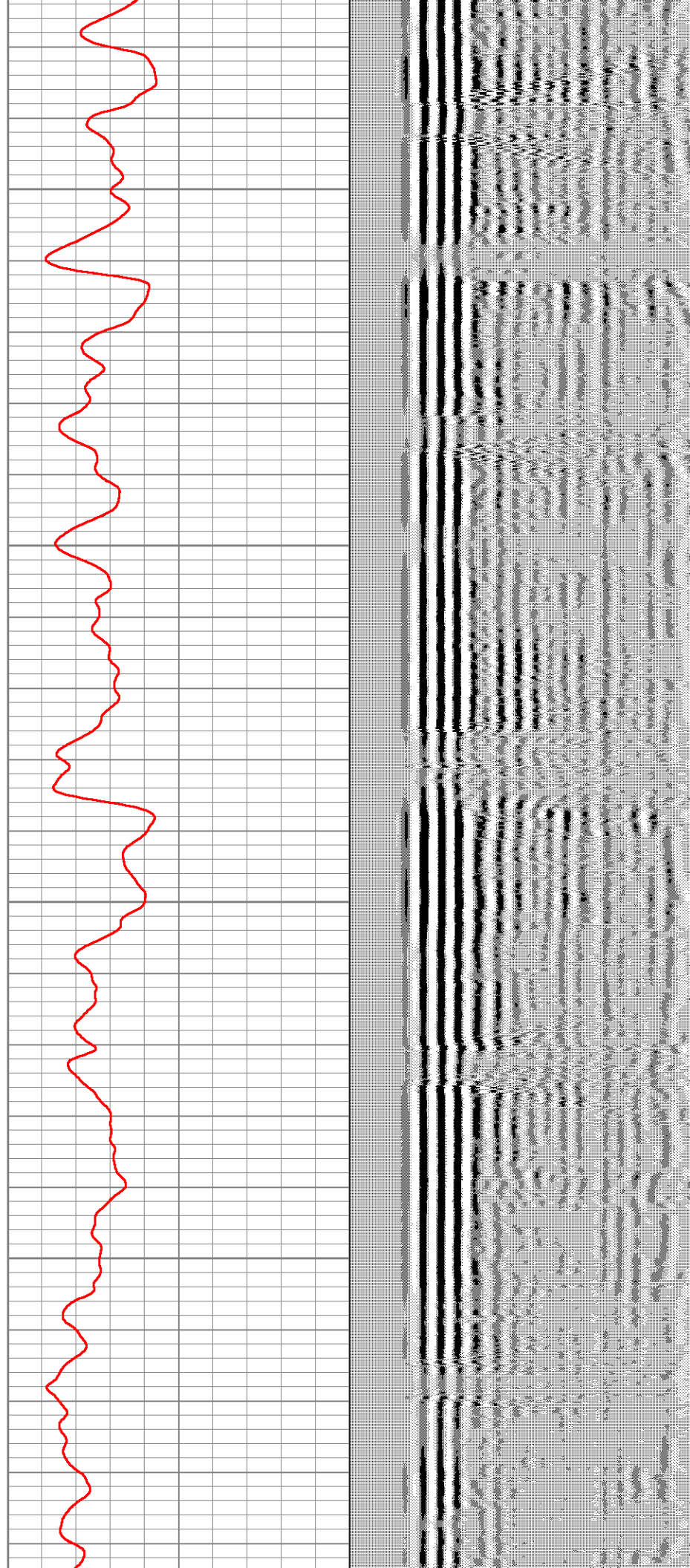
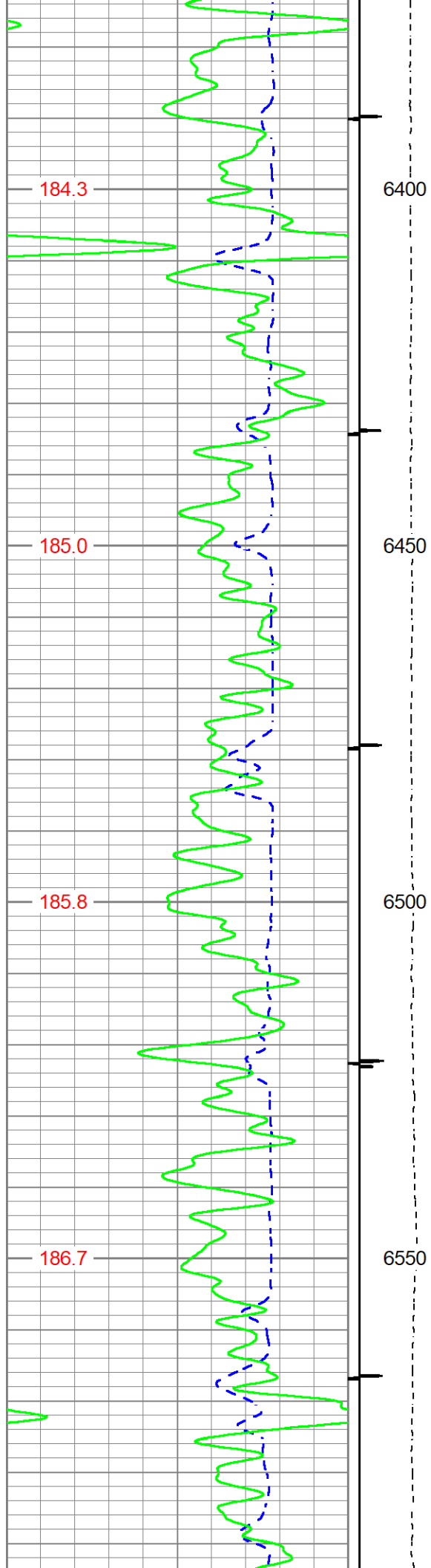


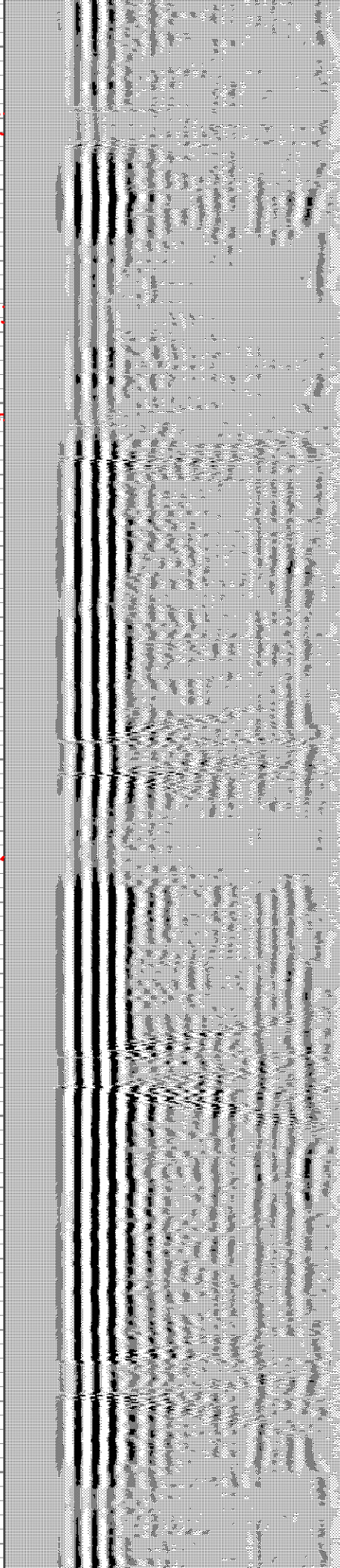
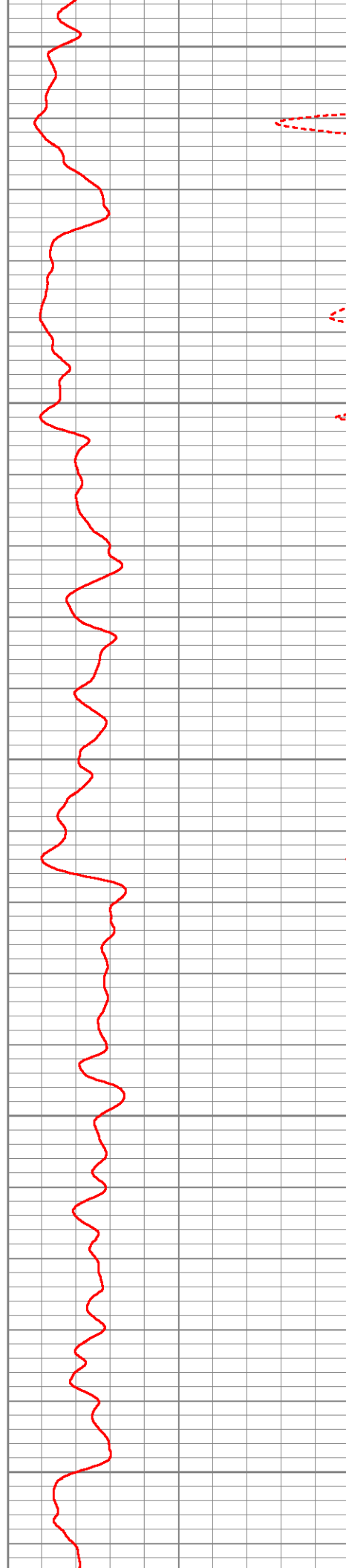
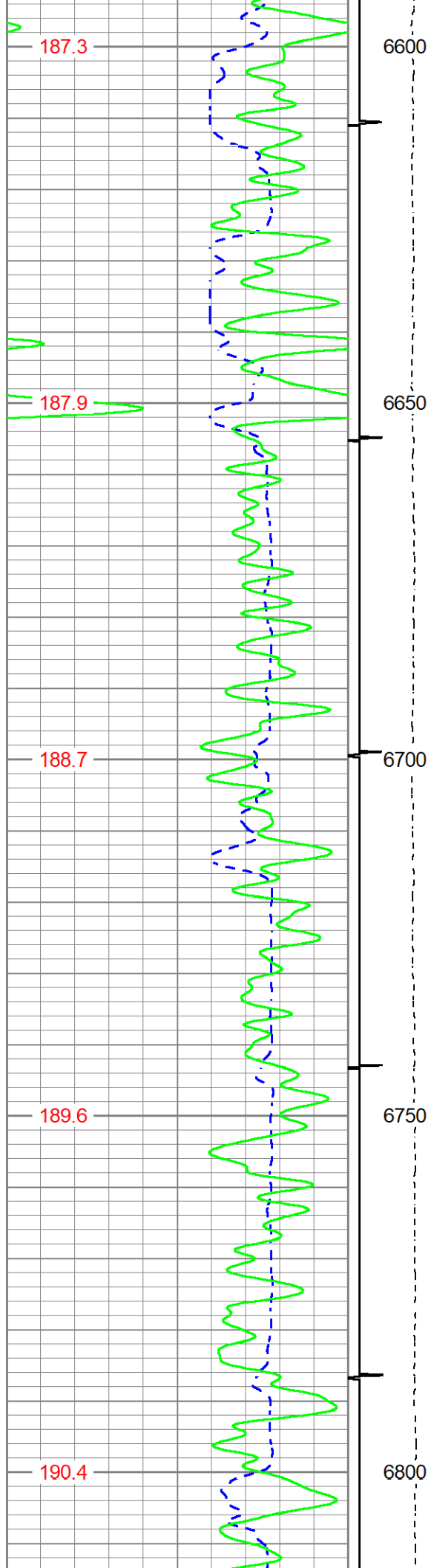


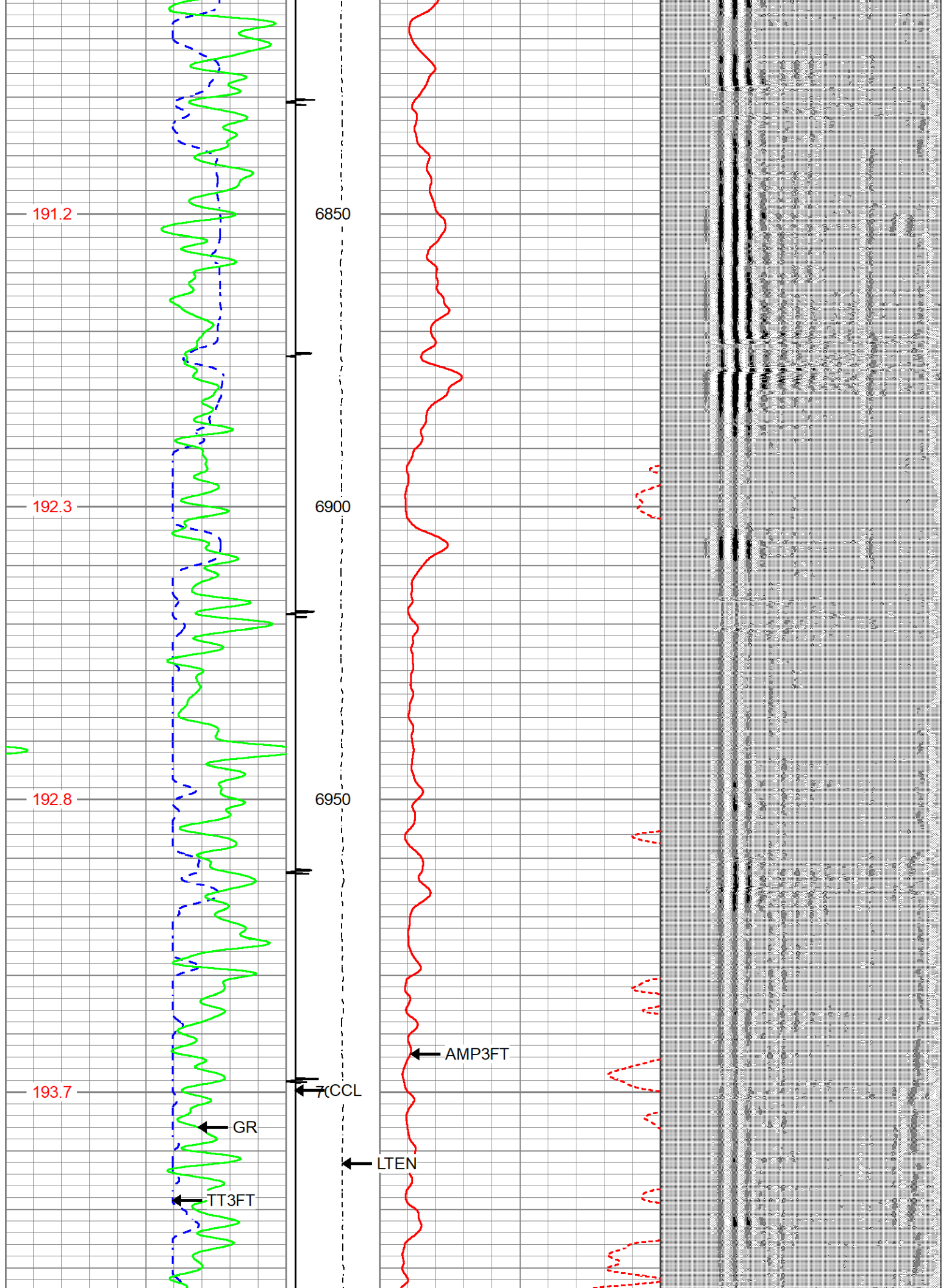


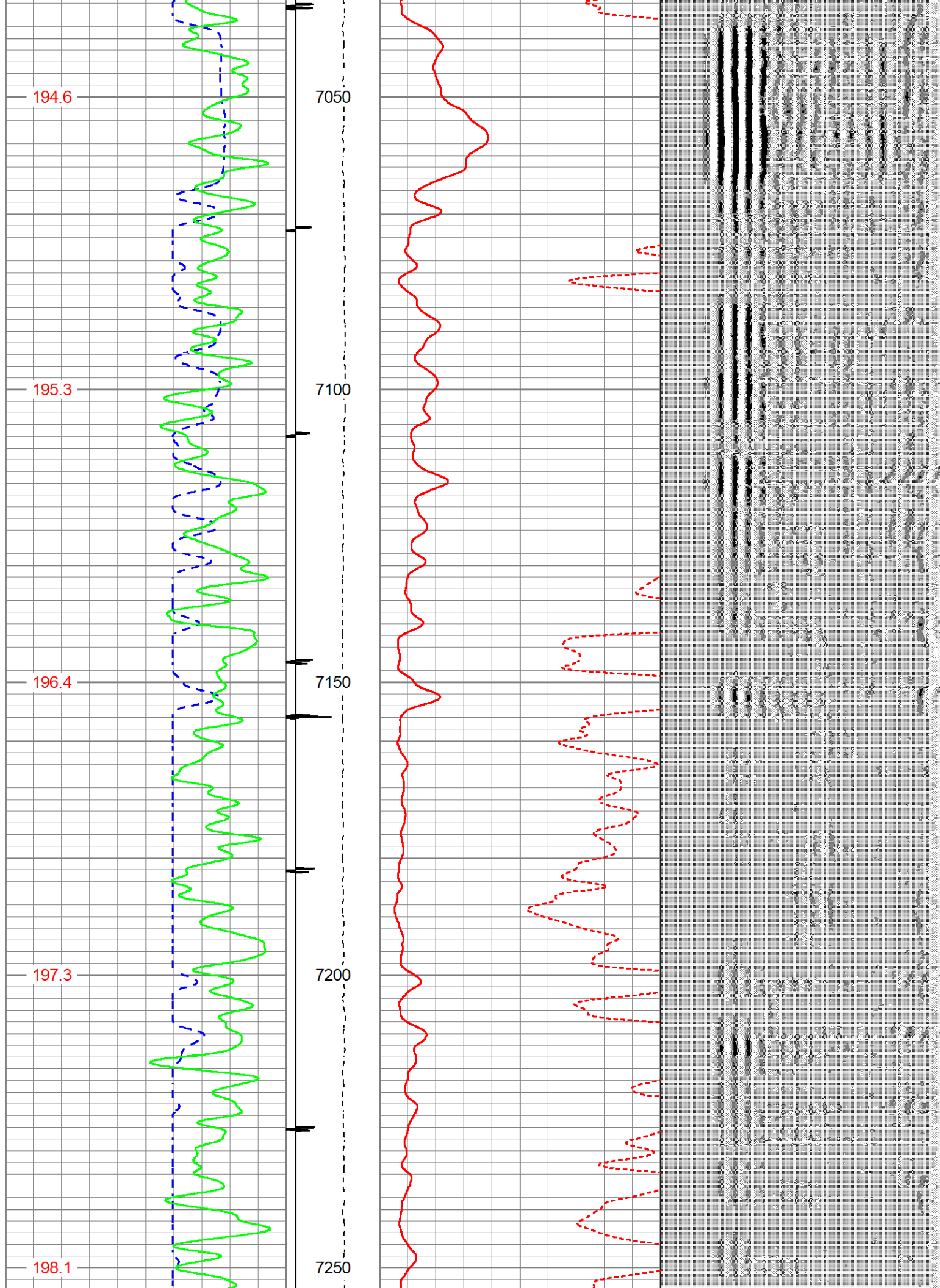


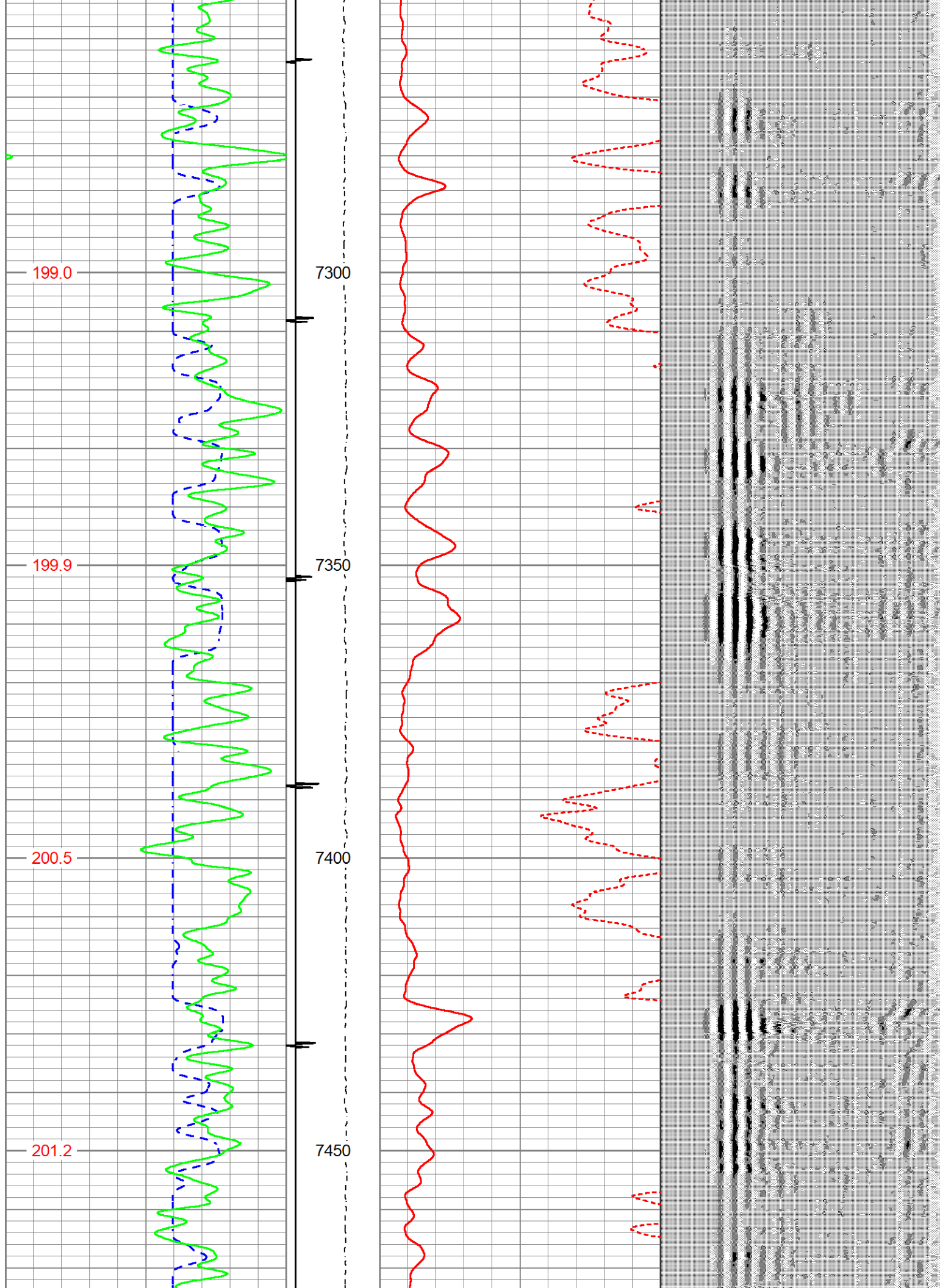


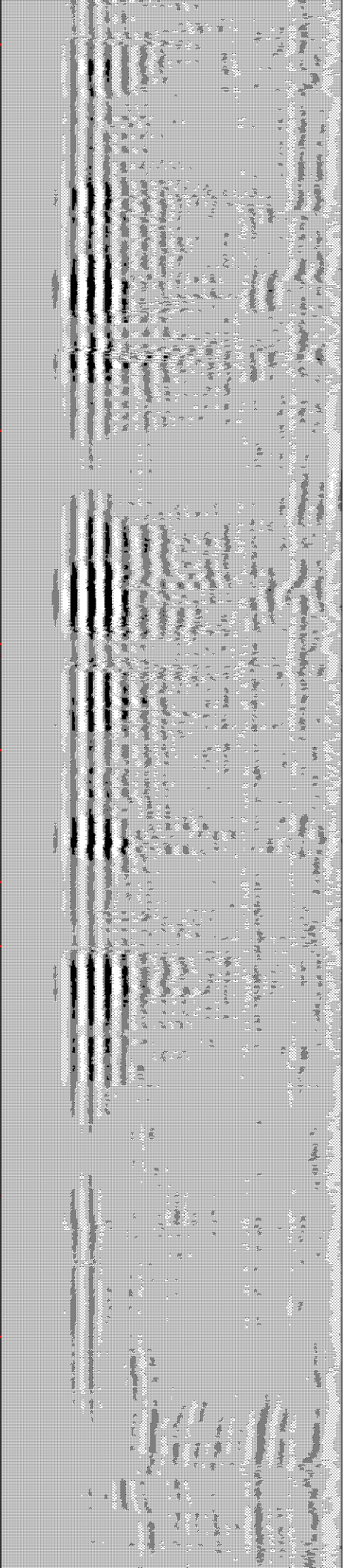
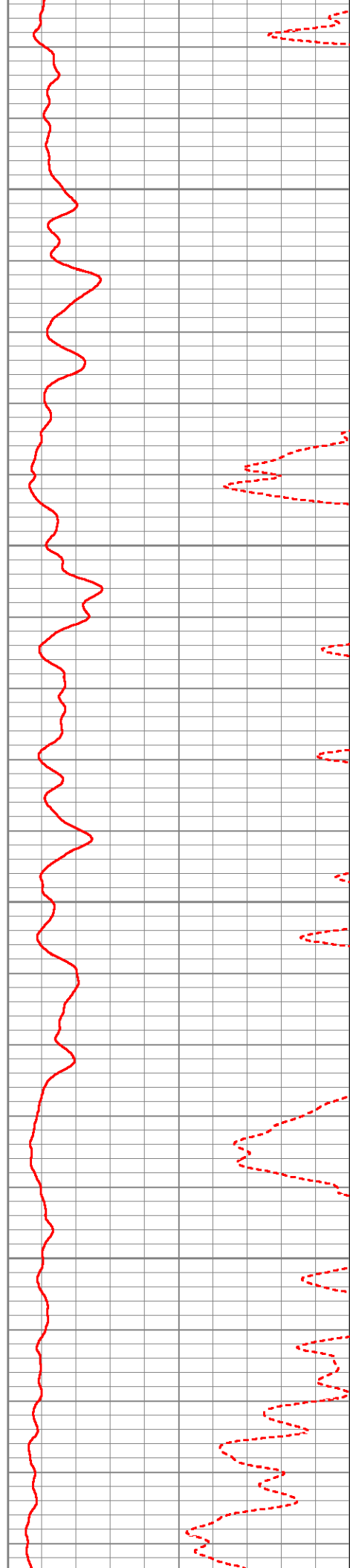
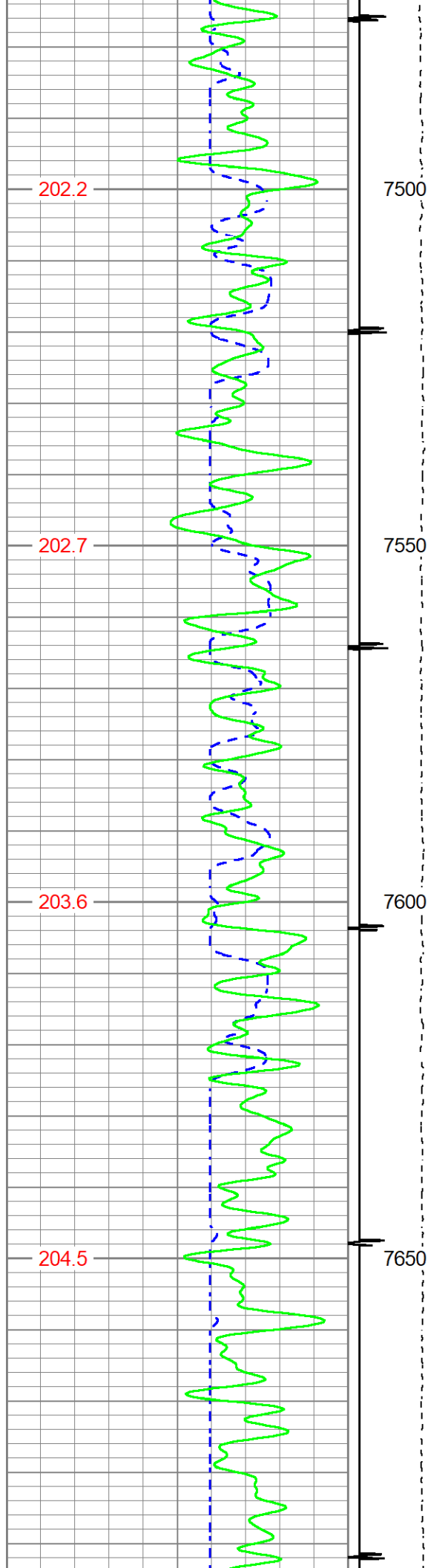


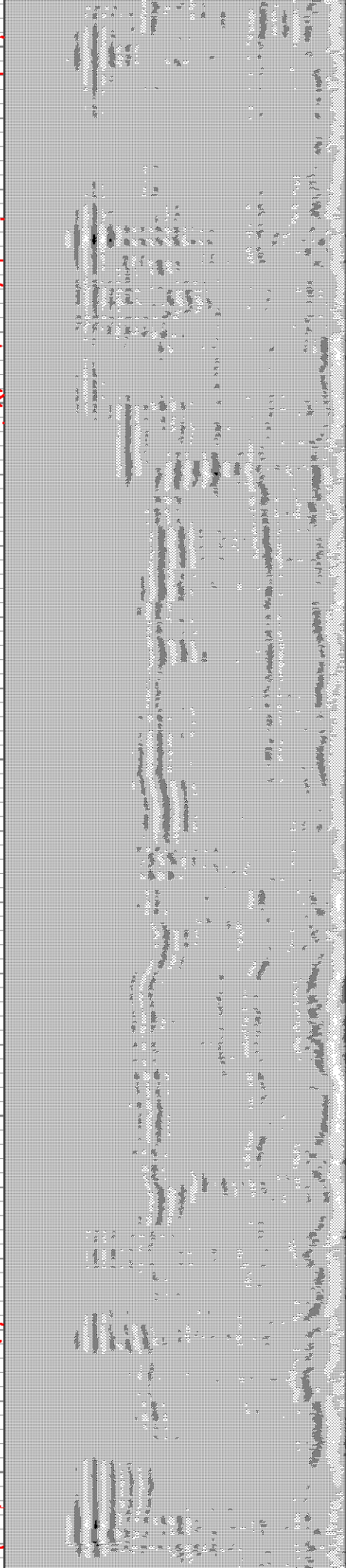
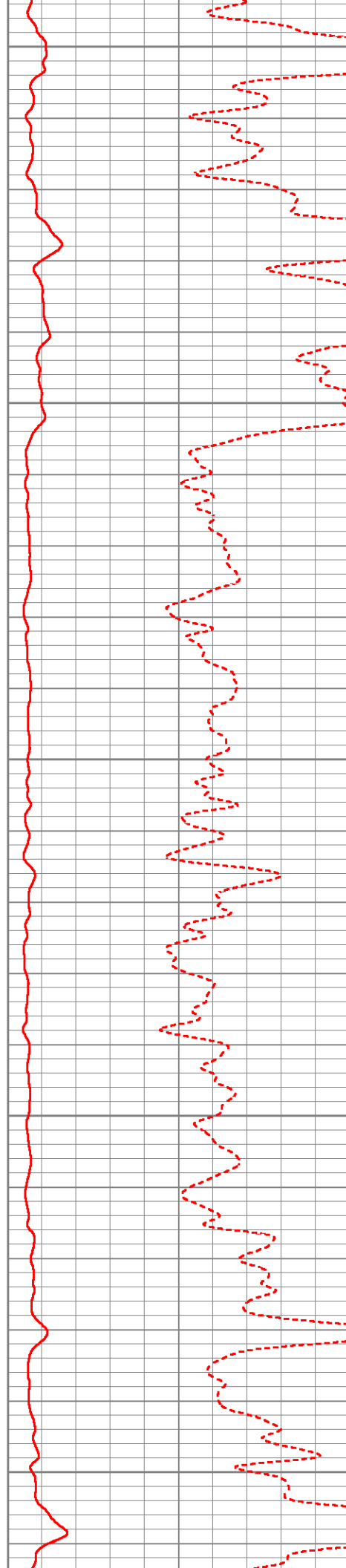
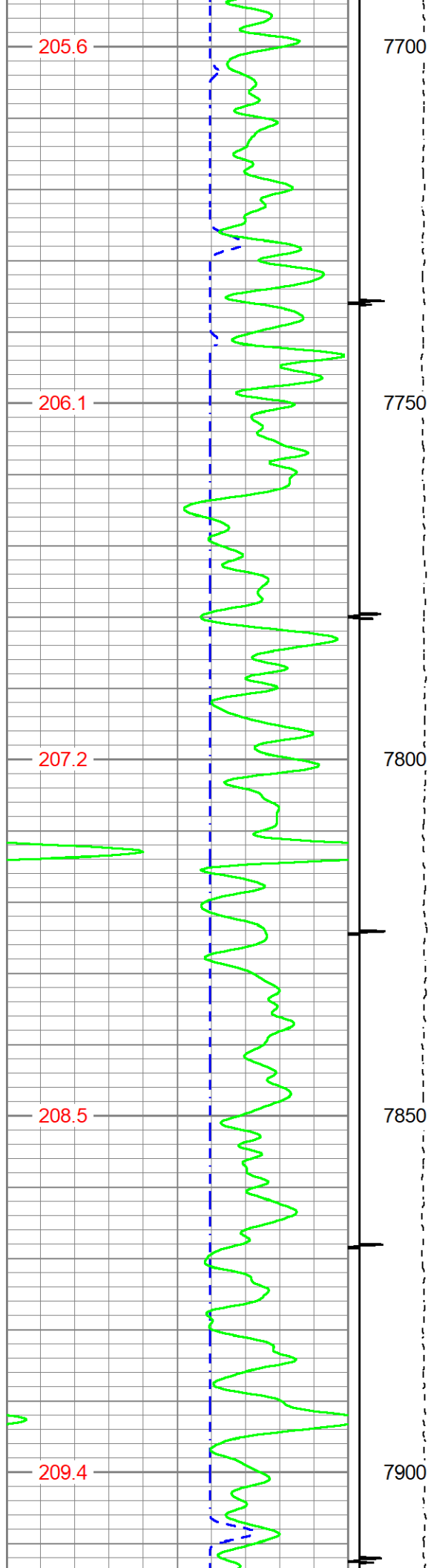


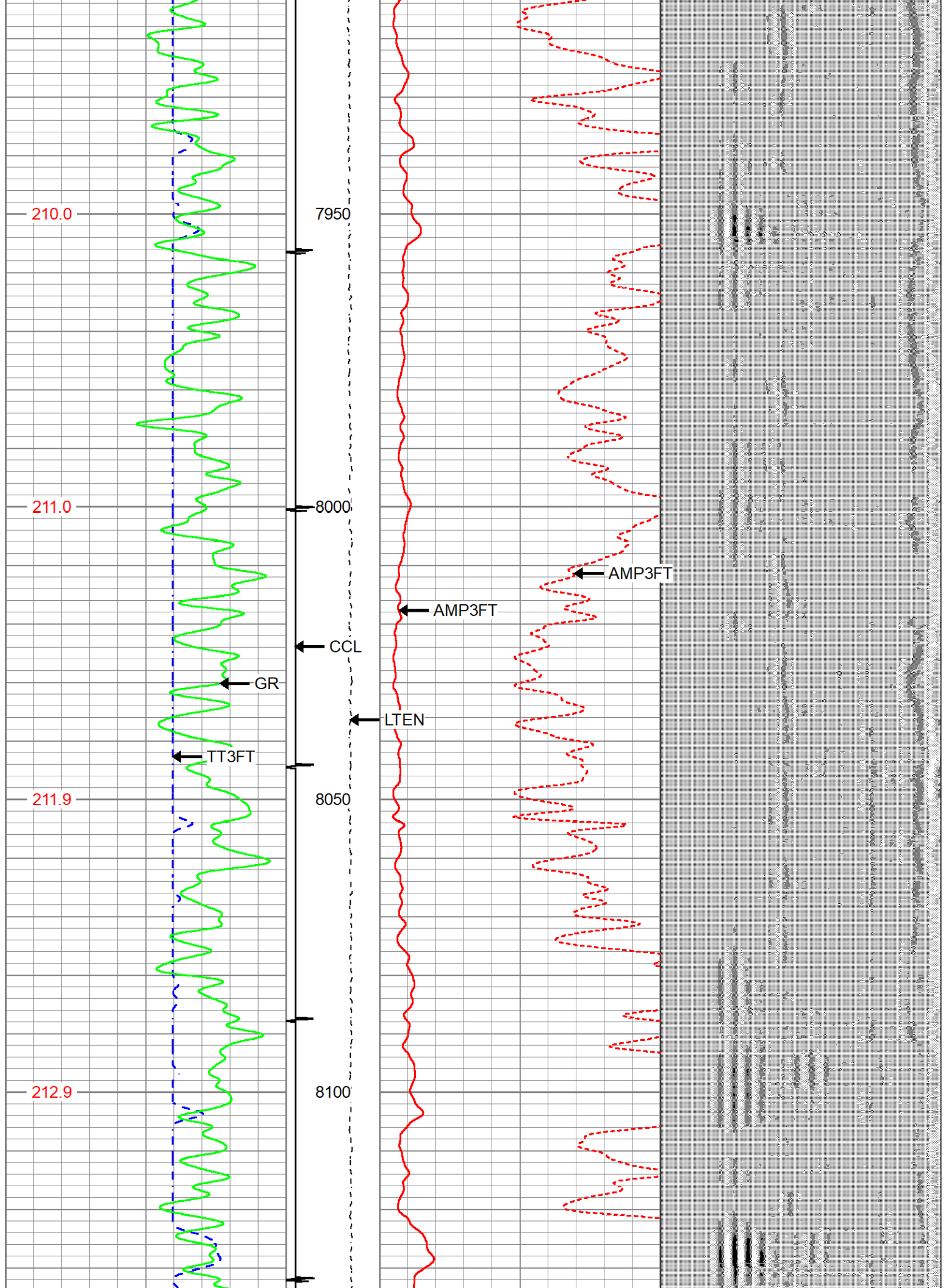


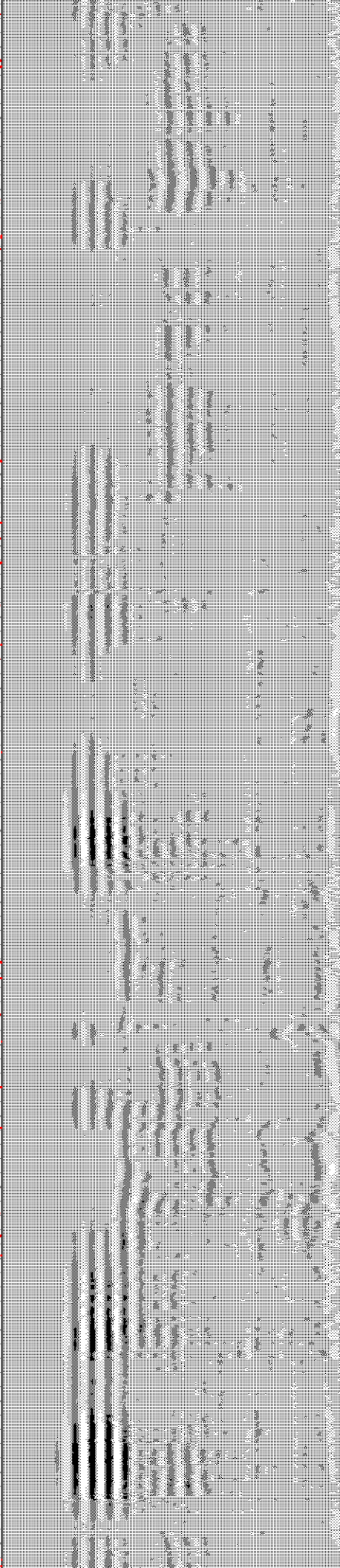
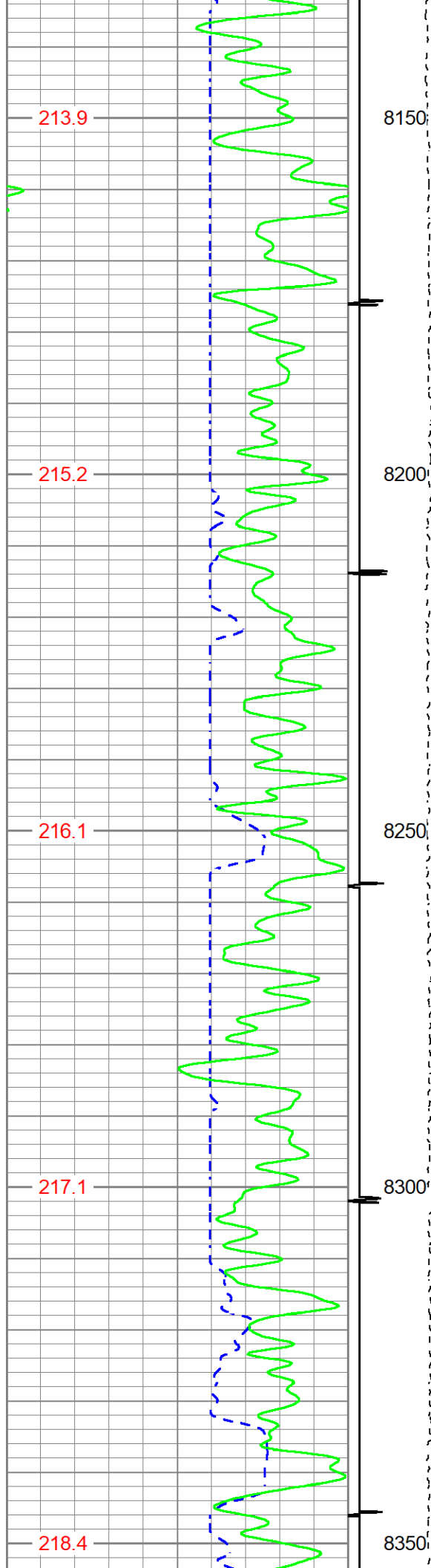


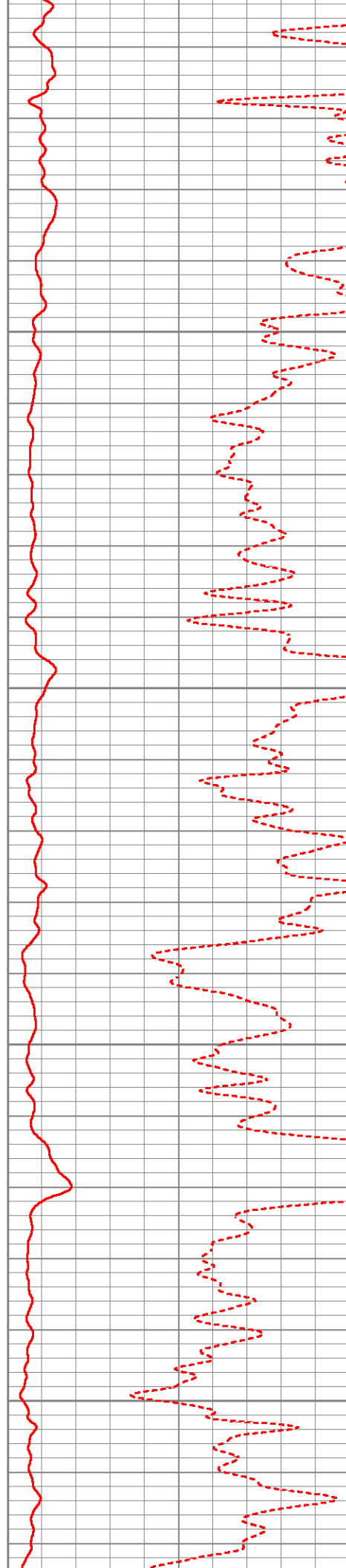
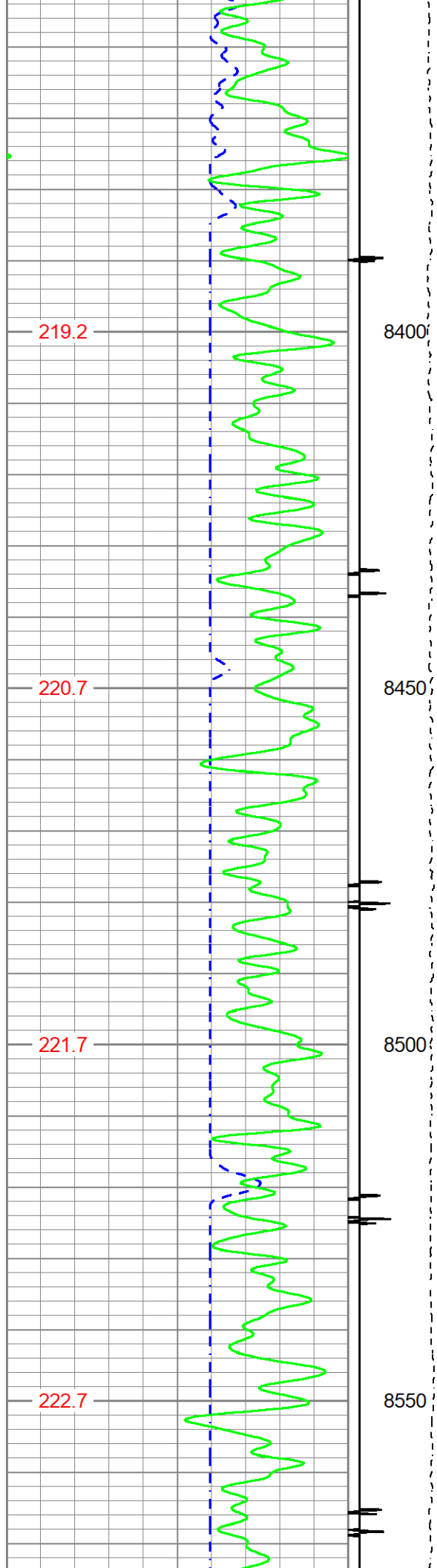


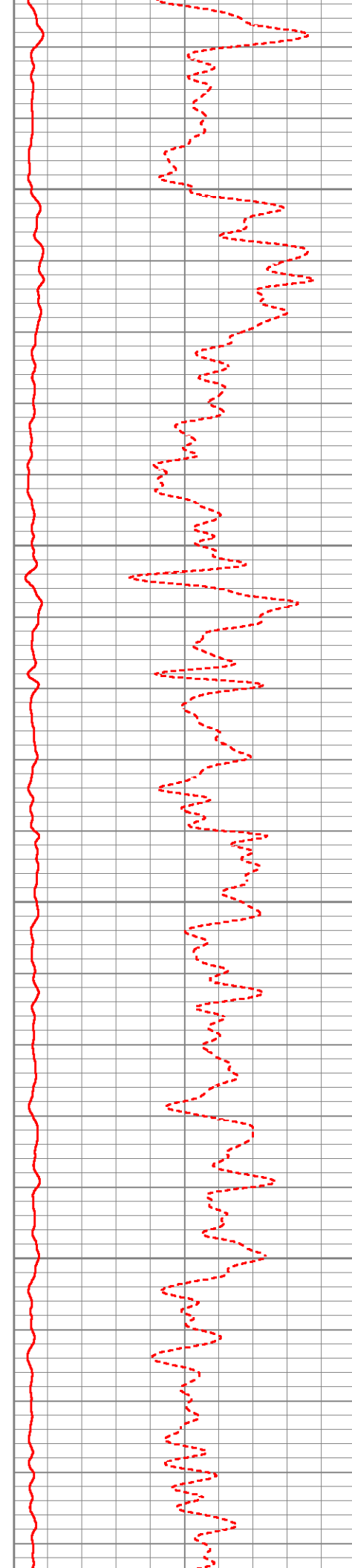
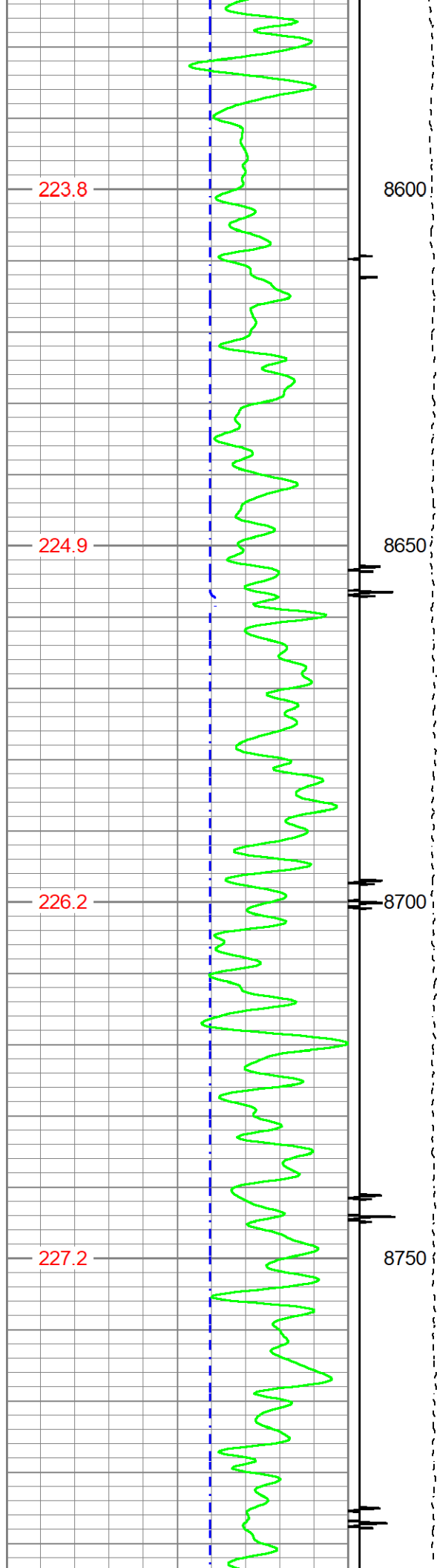


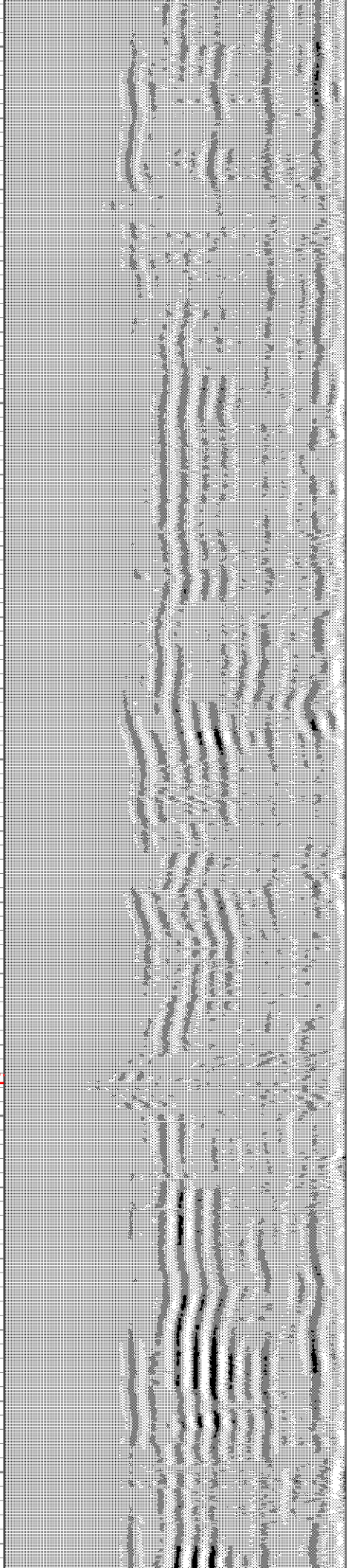
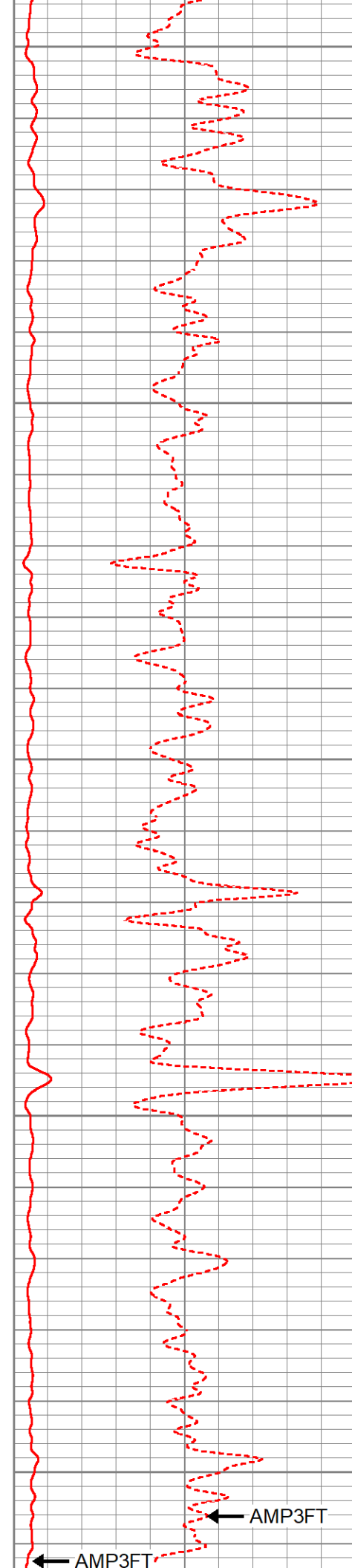
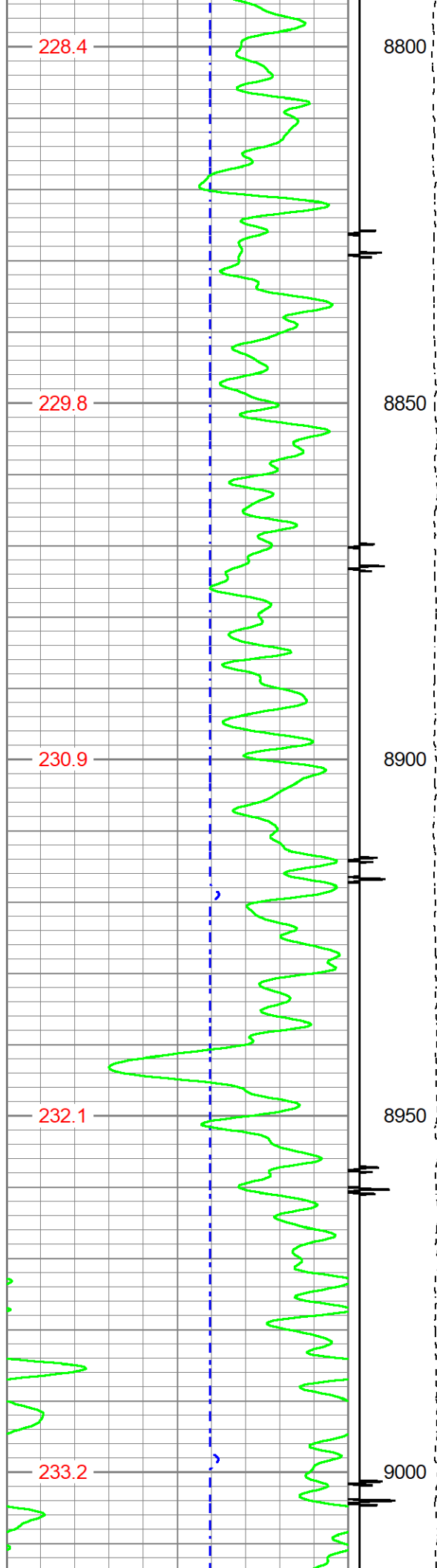


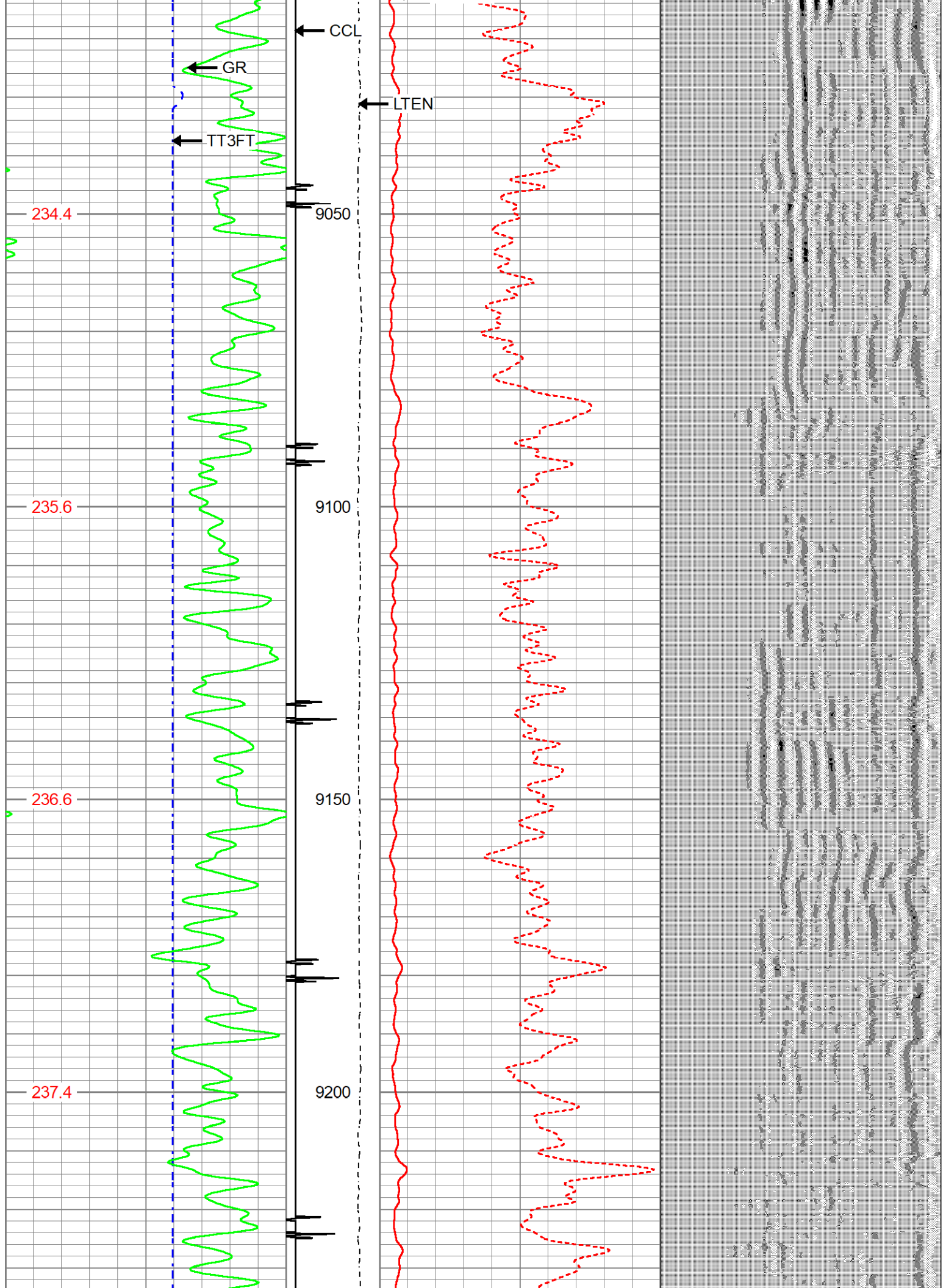


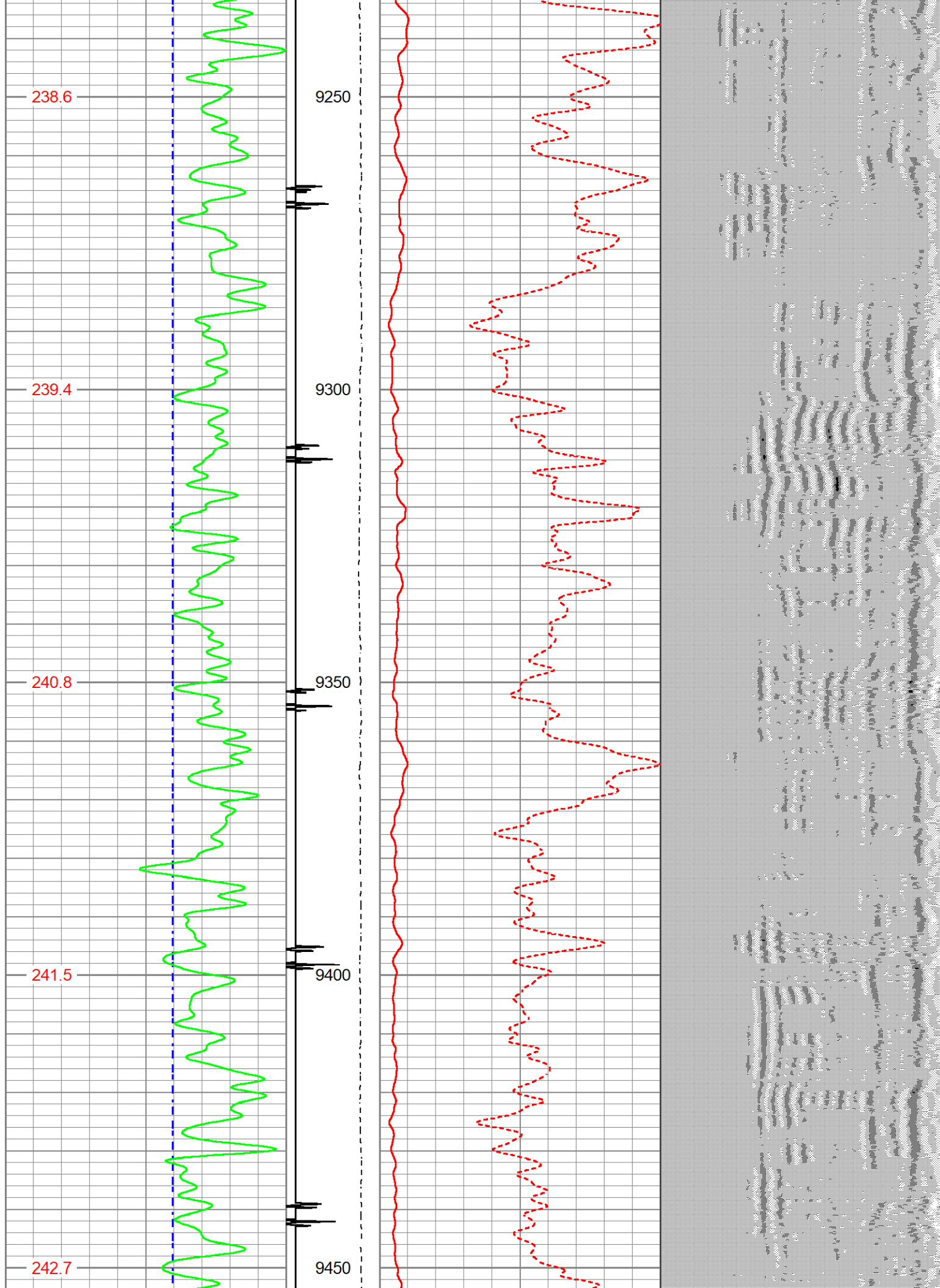


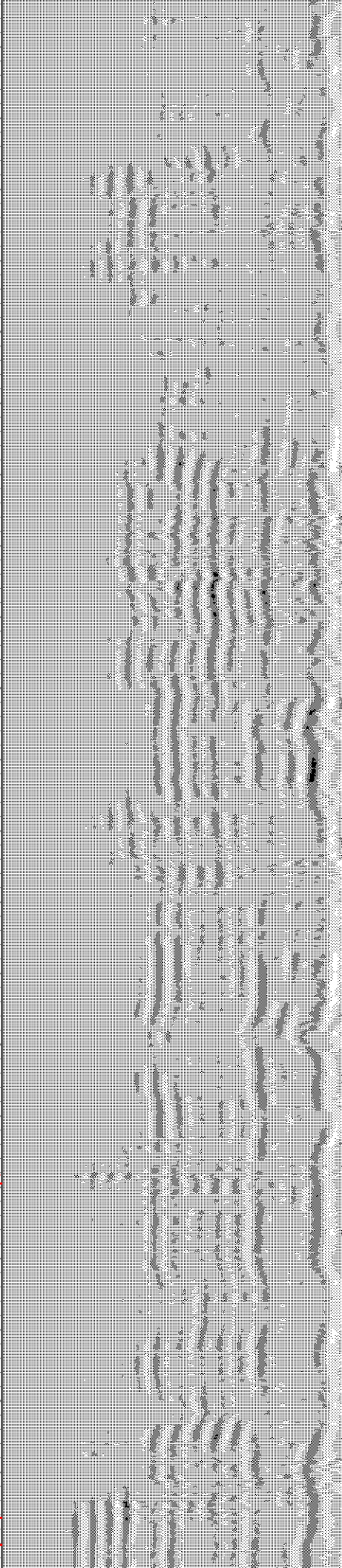
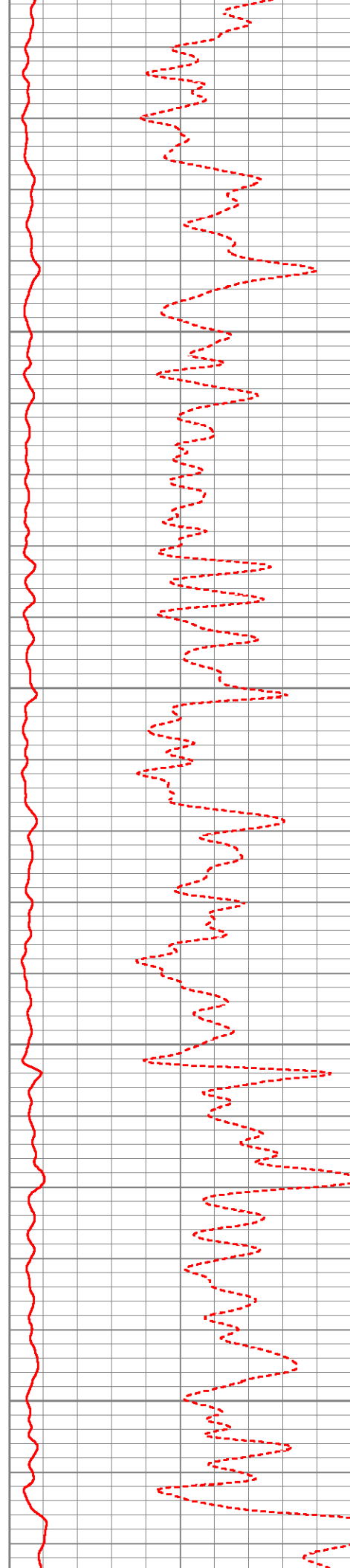
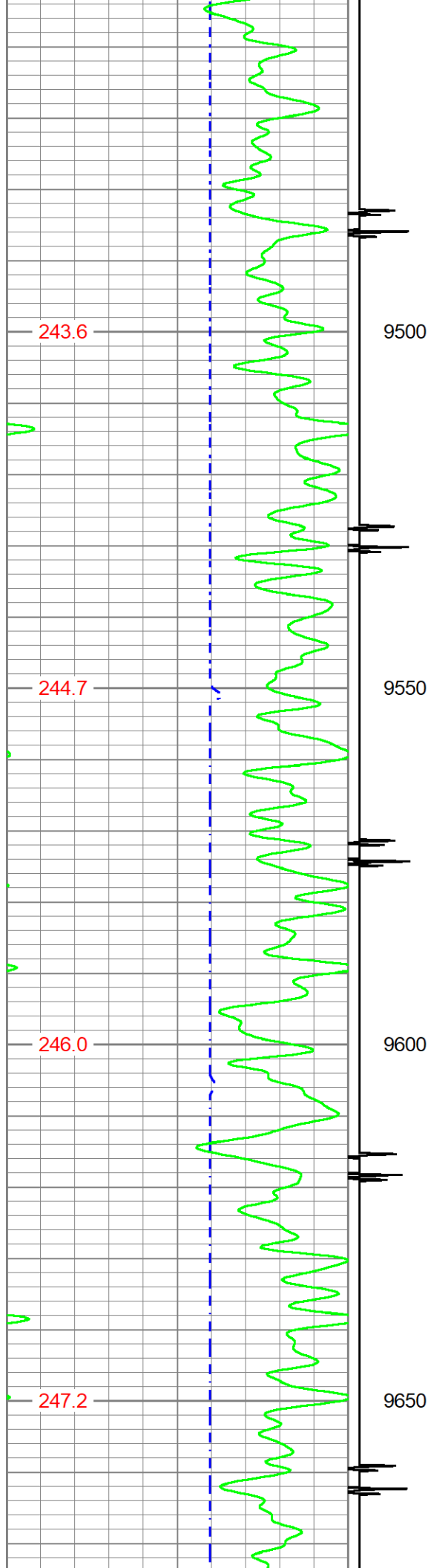


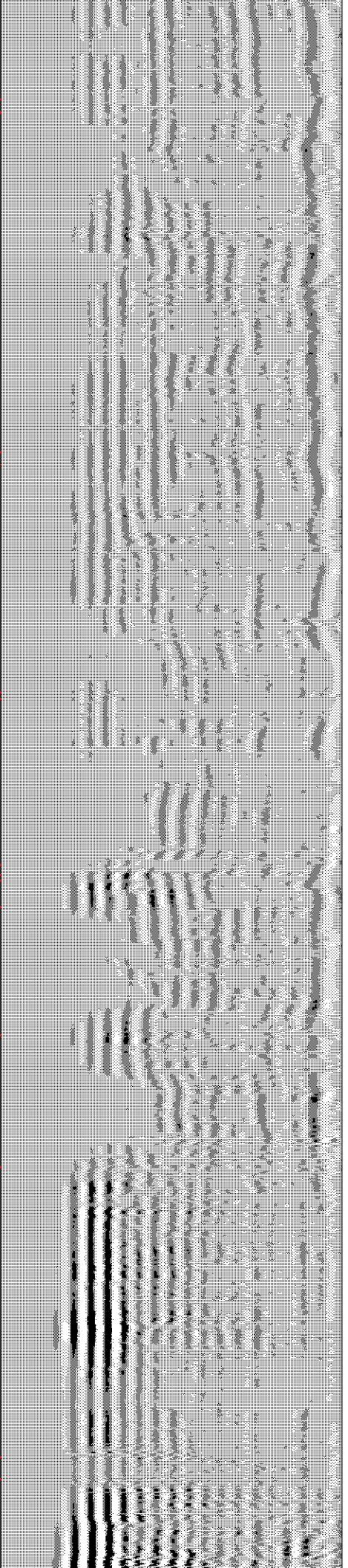
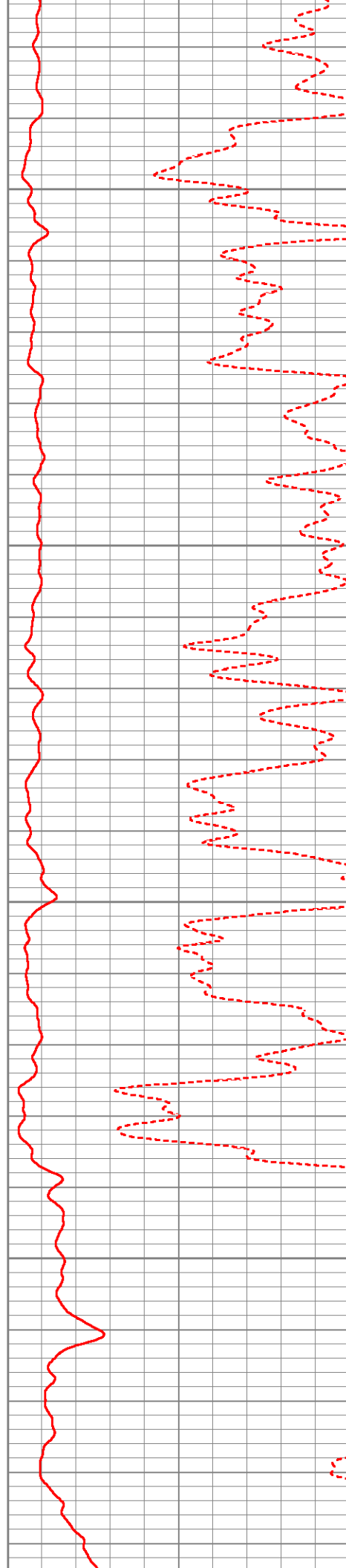
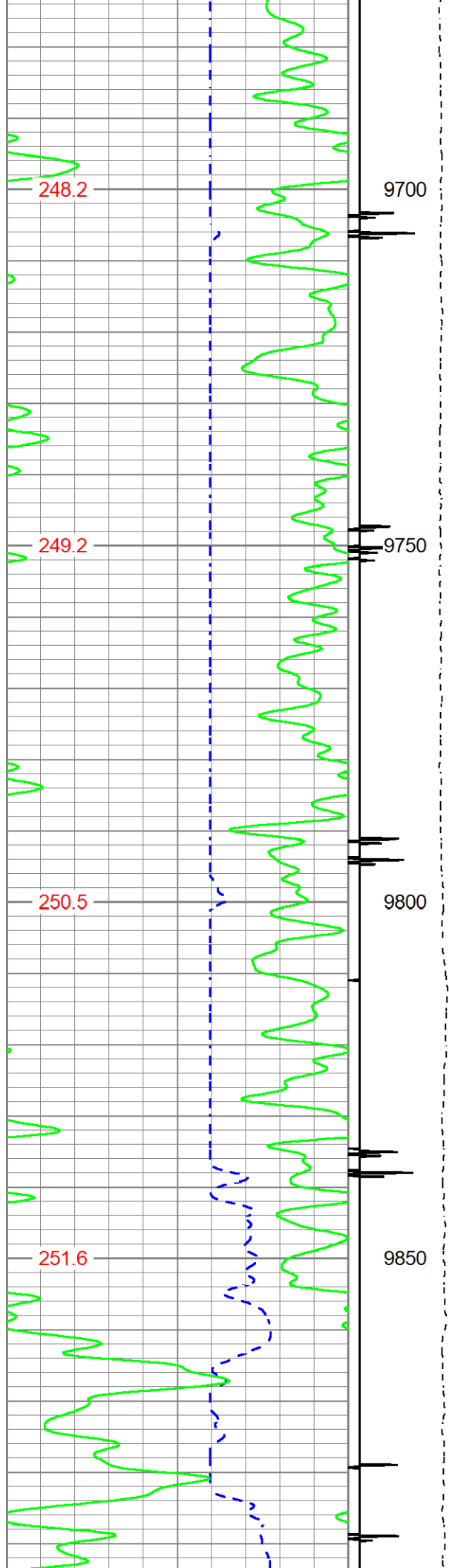


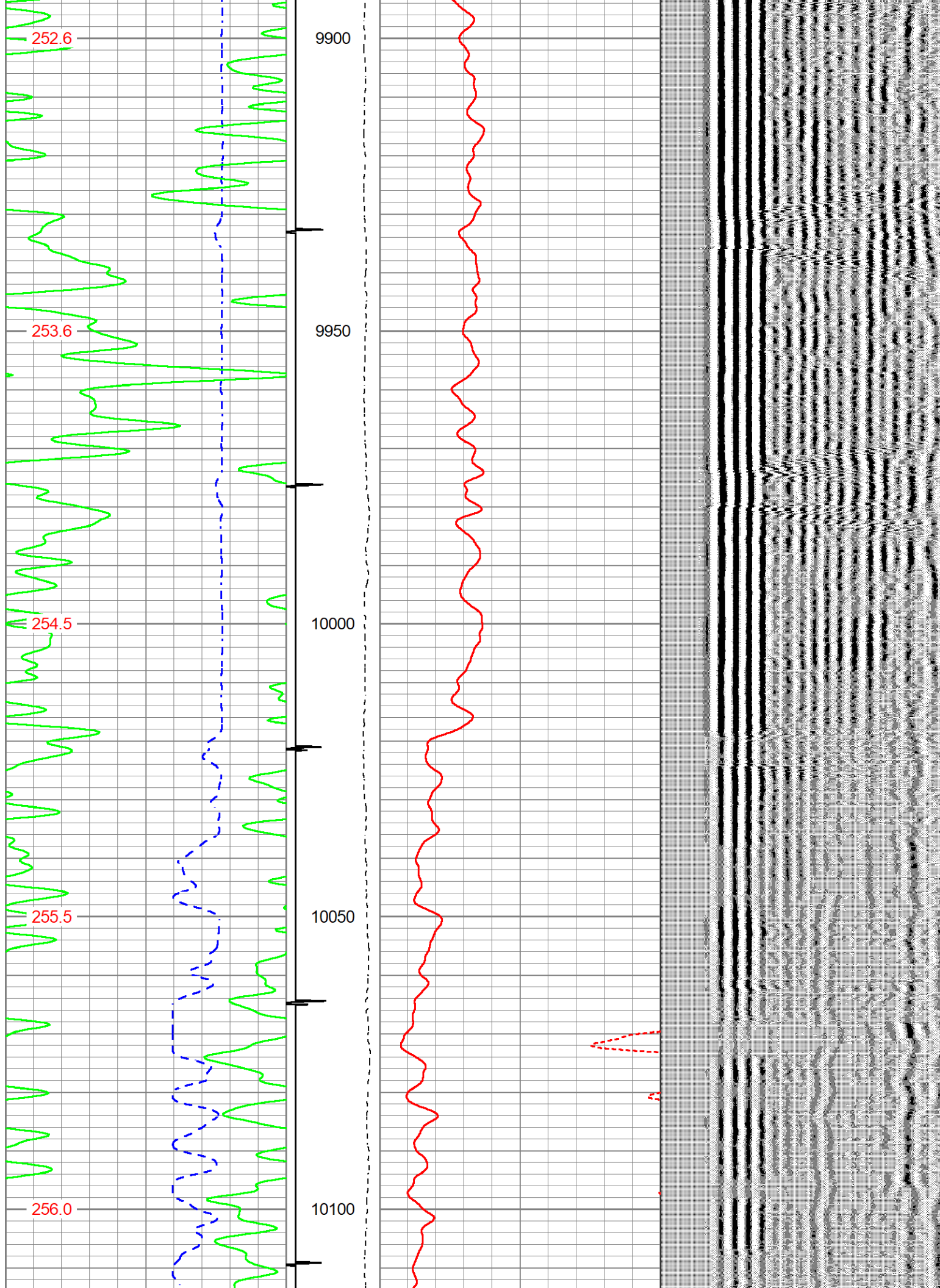


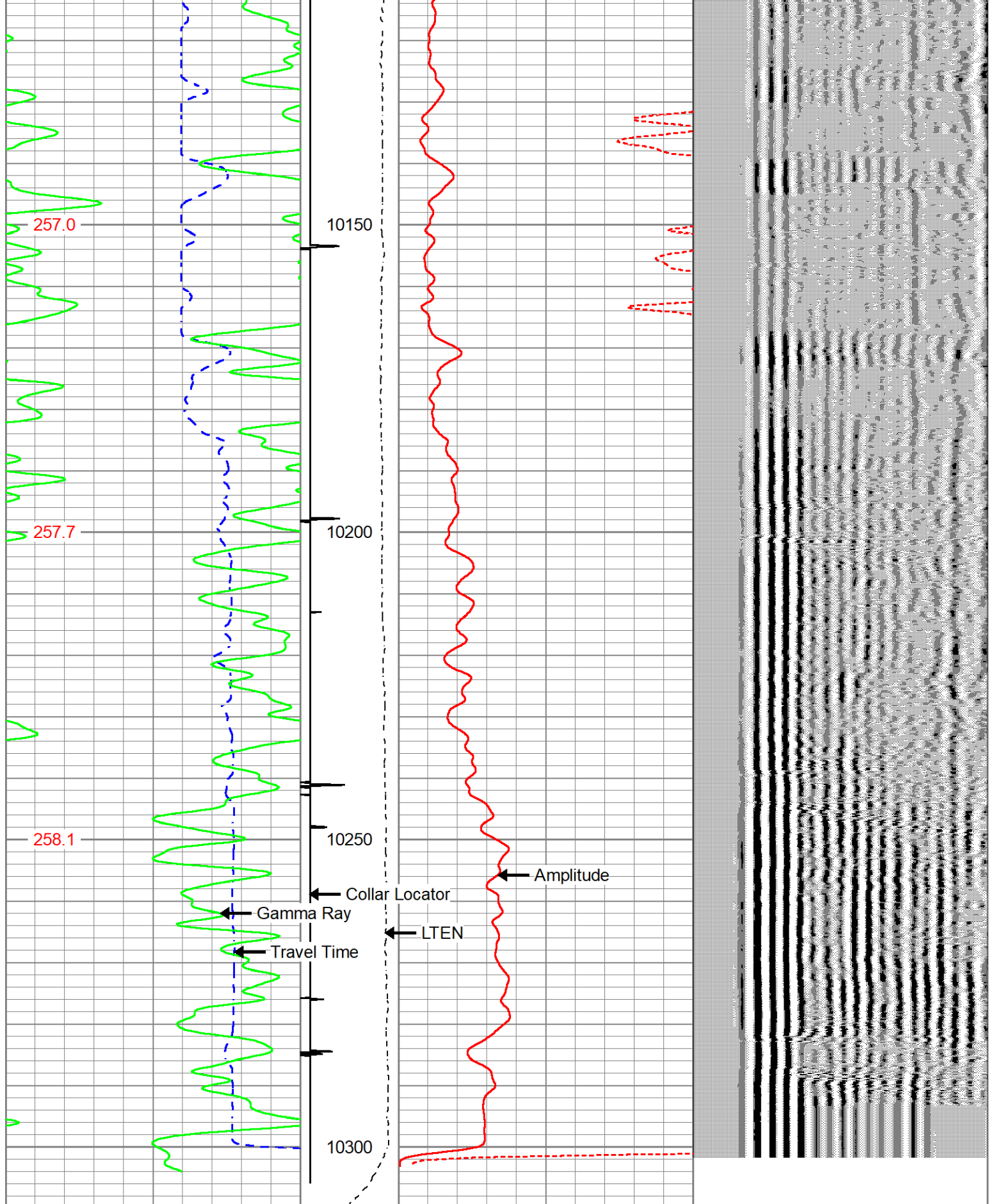












420	Travel Time (usec)	220	Collar Locator	0	Amplified Amplitude (mV)	10	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	-1	9	0	100			

Temp (degF)	Line Speed (ft/min)
	0 200

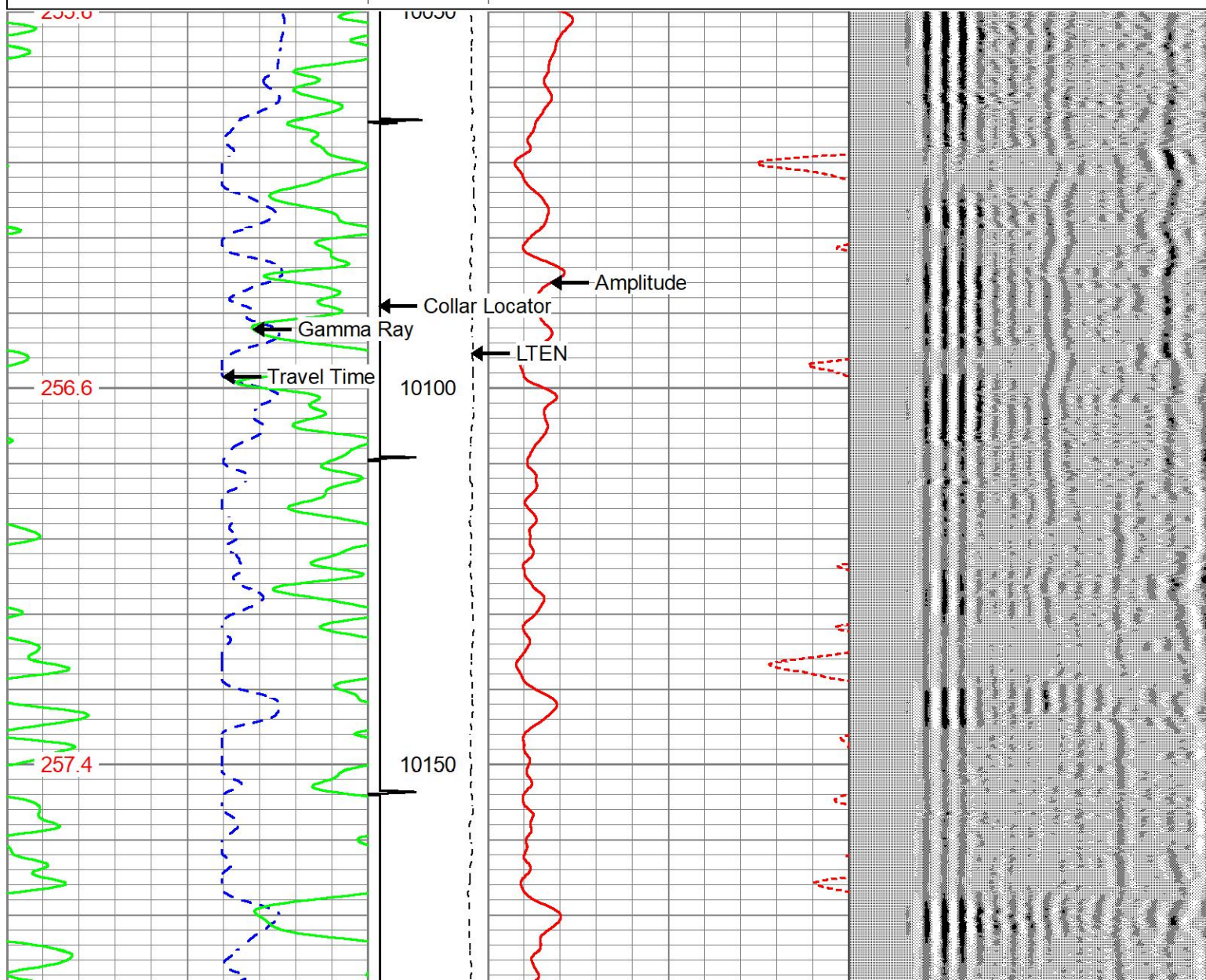
LTEN
0 (lb)2000

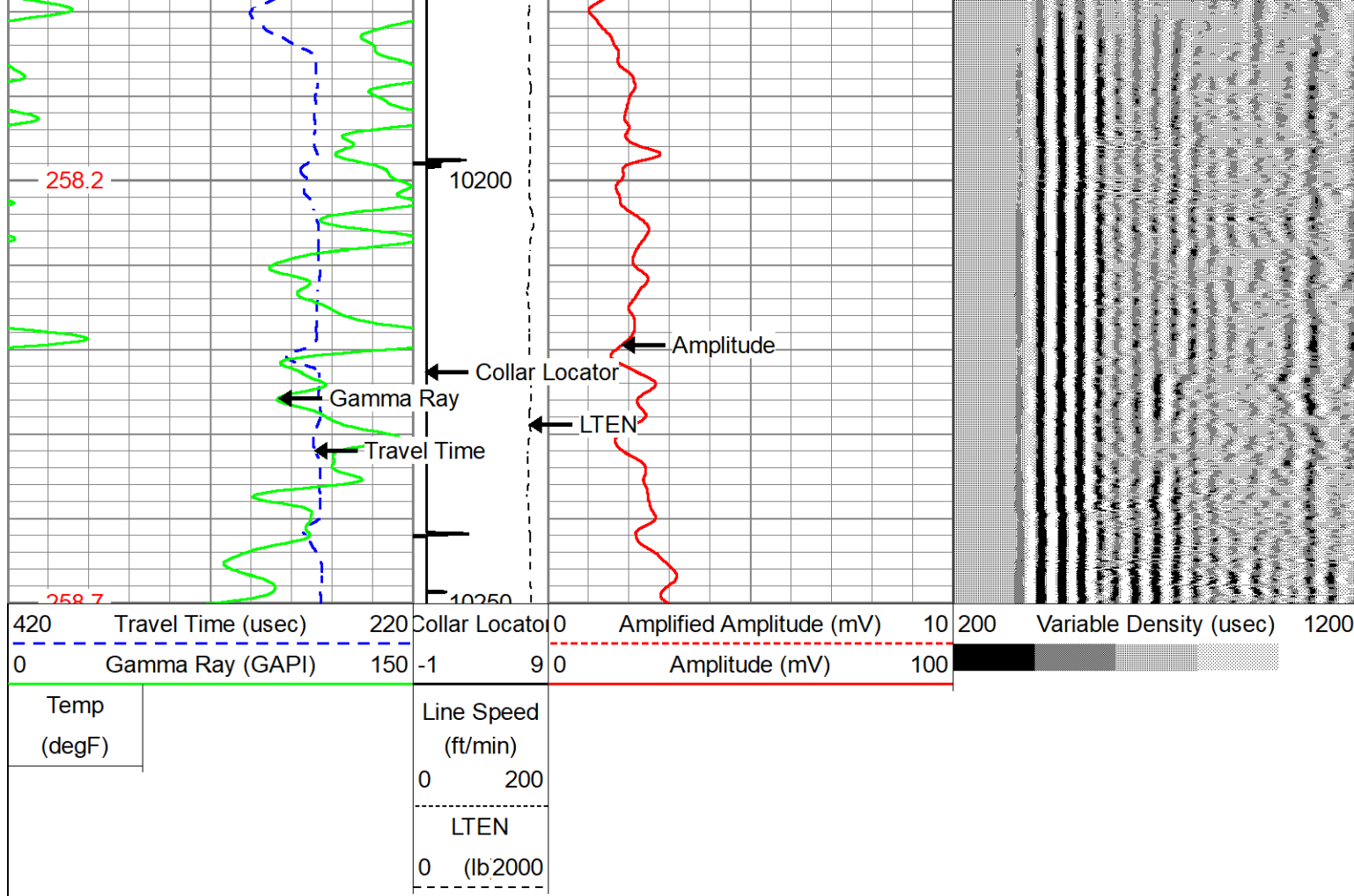


REPEAT PASS - 5 INCH

Database File gw_ottesen_351hn.db
Dataset Pathname run2CBL/pass5
Presentation Format cbl_cs
Dataset Creation Sat Jan 26 07:56:09 2019
Charted by Depth in Feet scaled 1:240

420	Travel Time (usec)	220	Collar Locator	0	Amplified Amplitude (mV)	10	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	-1	9	0	100			
Temp (degF)		Line Speed (ft/min)							
		0	200						
		LTEN							
		0	(lb)2000						





Log Variables

Database C:\ProgramData\Warrior\Data\gw_ottesen_351hn.db
Dataset field/well/run2CBL/pass7/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 260	in 5.5	in 0	lb/ft 17	mV 71.9	mV 1
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 0.8	No	uSec 0	degF 20	ft 10200			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time
SRFTEMP : Surface Temperature
TDEPTH : Total Depth

Calibration Report

Database File gw_ottesen_351hn.db
Dataset Pathname run2CBL/pass7
Dataset Creation Sat Jan 26 08:02:00 2019

Gamma Ray Calibration Report

Serial Number:

FW1304-44

Tool Model:	FW1808-069	Probe275
Performed:		(Not Performed)
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1808-069
Tool Model:	Probe 2.75 Radii W/Temp
Calibration Casing Diameter:	5.500 in
Calibration Depth:	553.708 ft

Master Calibration, performed Fri Jan 25 14:02:43 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	0.347	1.000	71.921	205.804	0.432
CAL	0.004	0.716				
5'	0.049	0.321	1.000	71.921	260.228	-11.697
SUM						
S1	0.002	0.386	0.000	71.921	187.278	-0.290
S2	-0.003	0.324	0.000	71.921	220.162	0.570
S3	0.003	0.332	0.000	71.921	218.968	-0.668
S4	0.003	0.331	0.000	71.921	219.498	-0.691
S5	0.001	0.328	0.000	71.921	219.883	-0.126
S6	0.004	0.333	0.000	71.921	218.724	-0.929
S7	0.004	0.331	0.000	71.921	219.686	-0.839
S8	0.003	0.327	0.000	71.921	222.163	-0.626

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	0.716	1.000	0.000

Air Zero Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1	0.000		0.000		0.000	
S2	0.000		0.000		0.000	
S3	0.000		0.000		0.000	
S4	0.000		0.000		0.000	
S5	0.000		0.000		0.000	
S6	0.000		0.000		0.000	
S7	0.000		0.000		0.000	
S8	0.000		0.000		0.000	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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Company	GREAT WESTERN OIL & GAS	
Well	OTTESEN LE 06-351HN	
Field	WATTENBERG	
County	WELD	
State	COLORADO	Country USA