



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

Company	GREAT WESTERN OIL & GAS
Well	OTTESEN LE 06-351HNX
Field	WATTENBERG
County	WELD
State	COLORADO

Location:	API # : 05-123-48287	Other Services 2', 6SPF GUN
Permanent Datum	GL	Elevation 5076.5'
Log Measured From	KB	
Drilling Measured From	KB	

Date	JAN-29-2019
Run Number	TWO
Depth Driller	17750'
Depth Logger	17348'
Bottom Logged Interval	17346'
Top Log Interval	9800'
Open Hole Size	NA
Type Fluid	WATER
Density / Viscosity	8.4PPG
Max. Recorded Temp.	N/A
Estimated Cement Top	SEE LOG
Time Well Ready	17:30
Time Logger on Bottom	18:30
Equipment Number	34
Location	PLATTEVILLE
Recorded By	C. SCHAAF
Witnessed By	S. BRINAR

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9-5/8"	36#	SURFACE	1862'
Prot. String				
Production String	5-1/2"	17#	SURFACE	17691'
Liner				

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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

LOGGING TOOLS RUN AS PER TOOL DIAGRAM
TOOLS RAN W/ 2-3/4" 7' WEIGHT BAR AND 4.40" PUMPDOWN SUB
TOOLSTRING CENTRALIZED VIA 4 X GEMCO CENTRALIZERS
LOG CORRELATED TO MARKER JOINT @ 16097' - 16107'

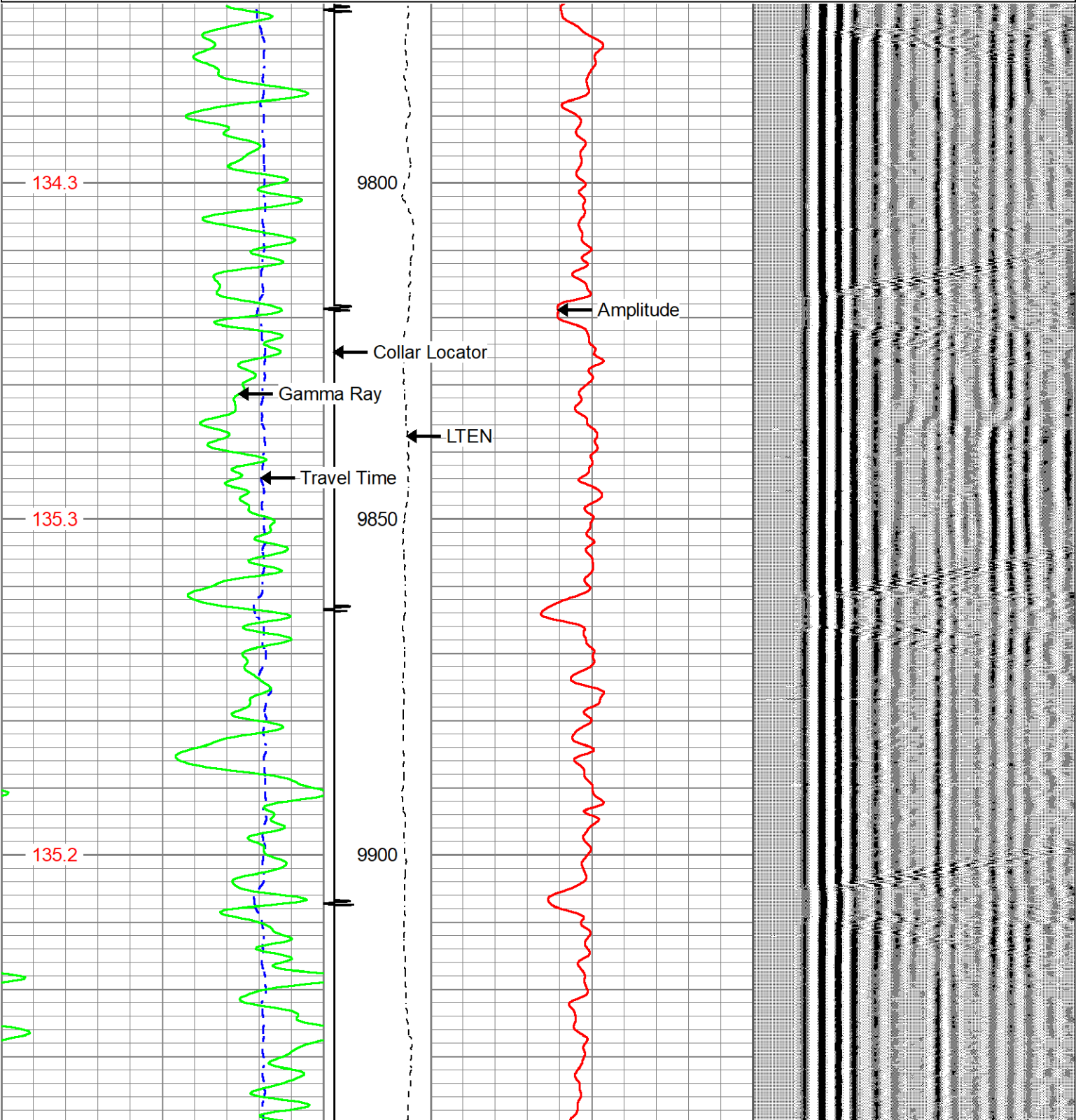
THANK YOU FOR CHOOSING KLX ENERGY SERVICES

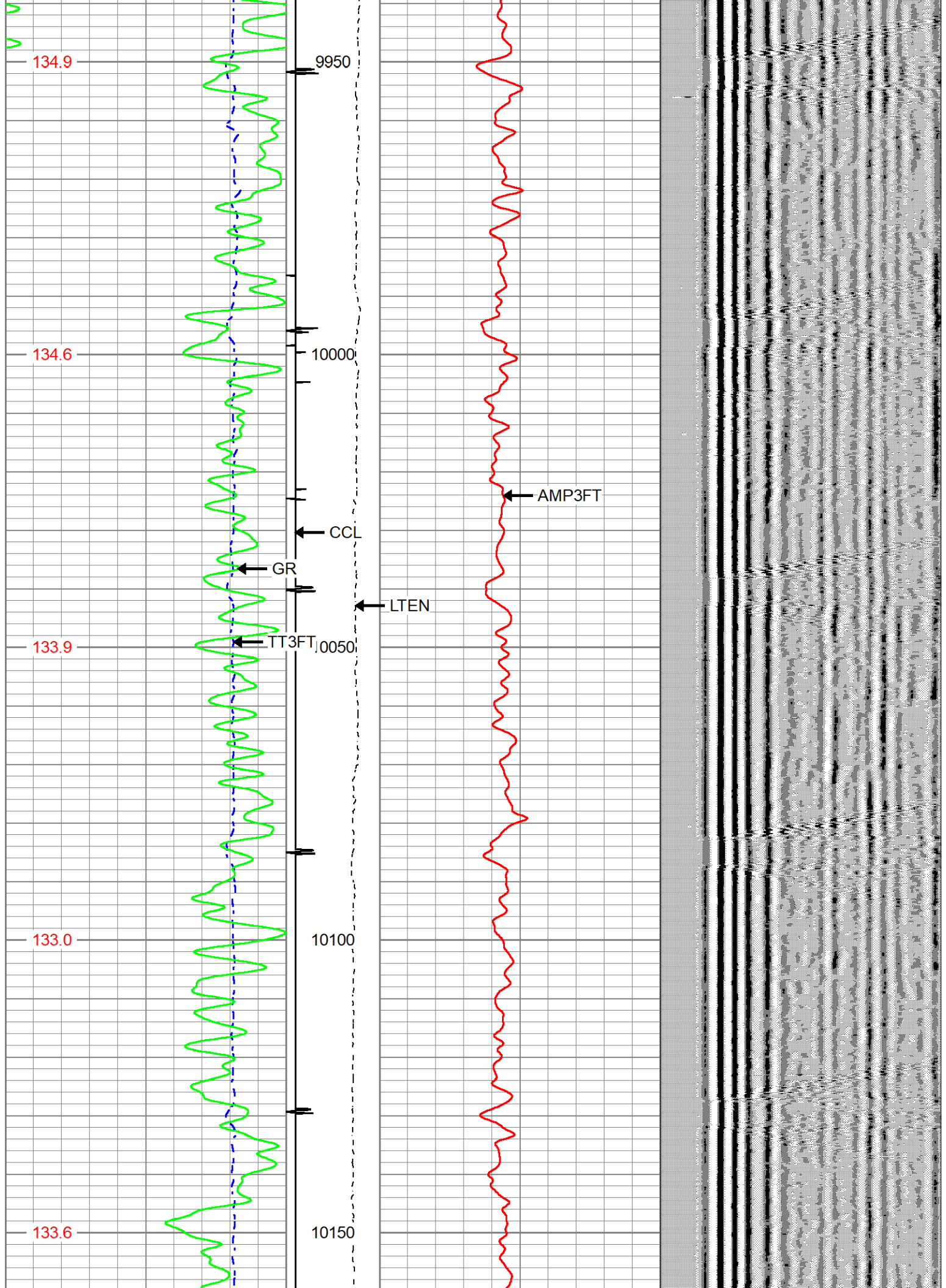


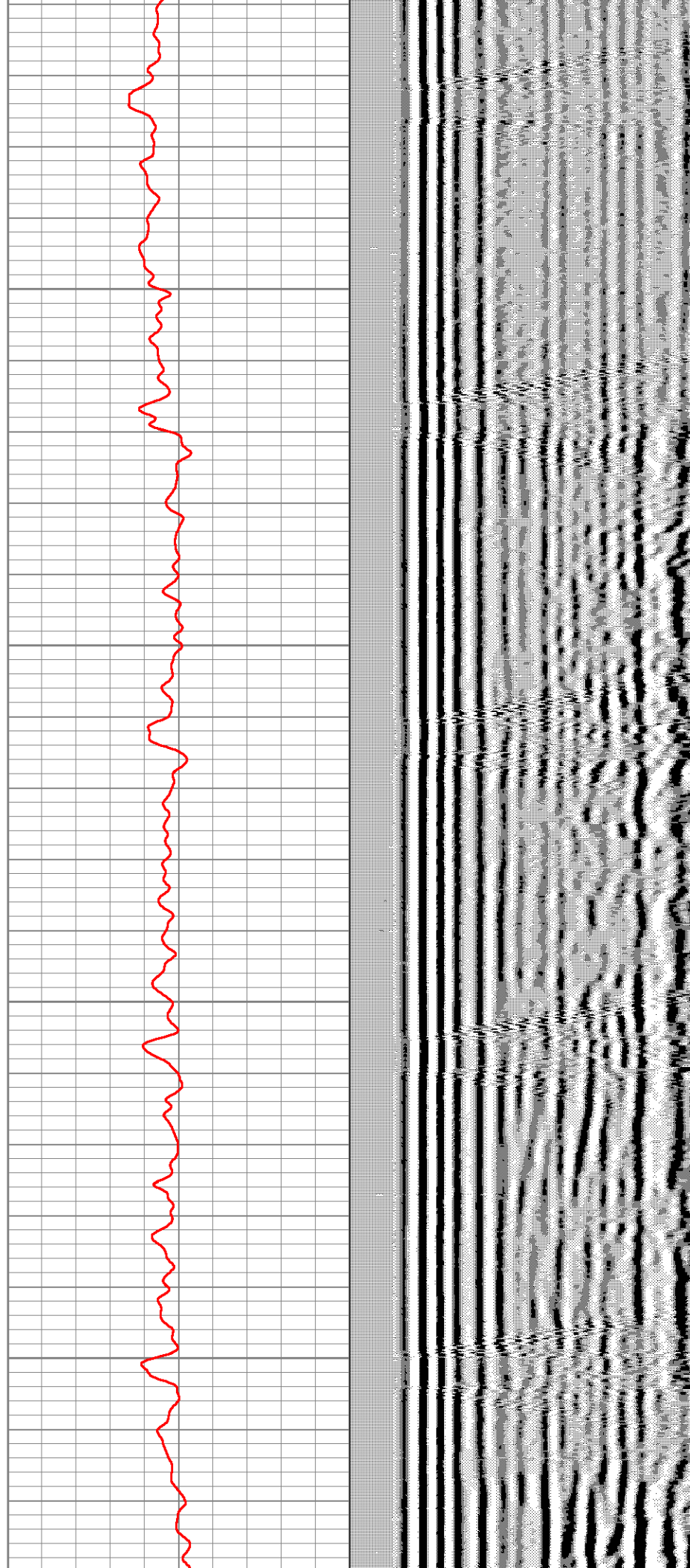
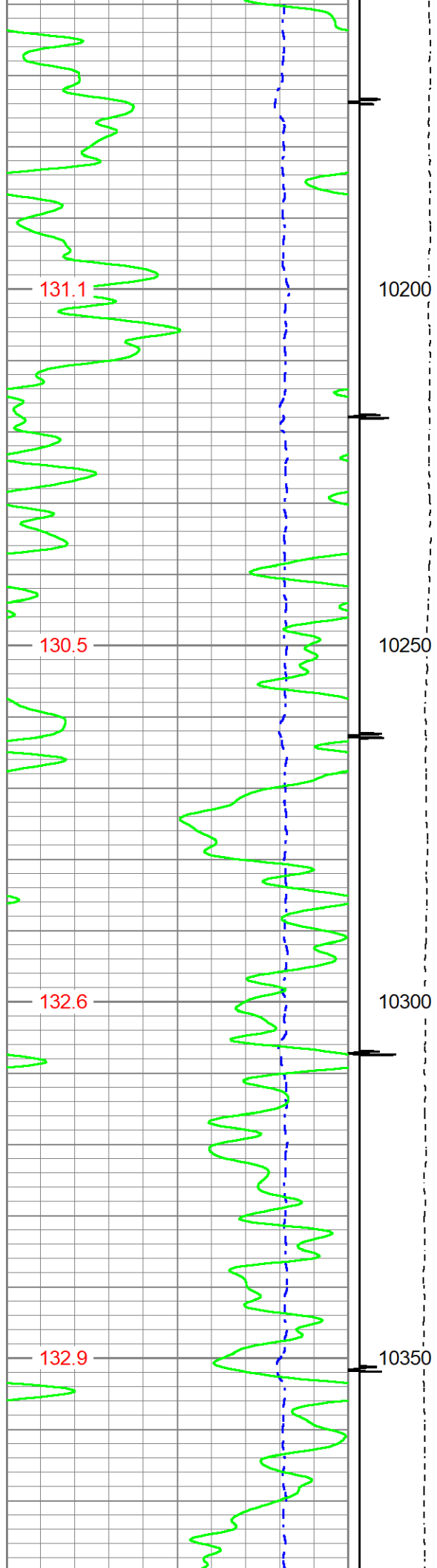
MAIN PASS - 5 INCH

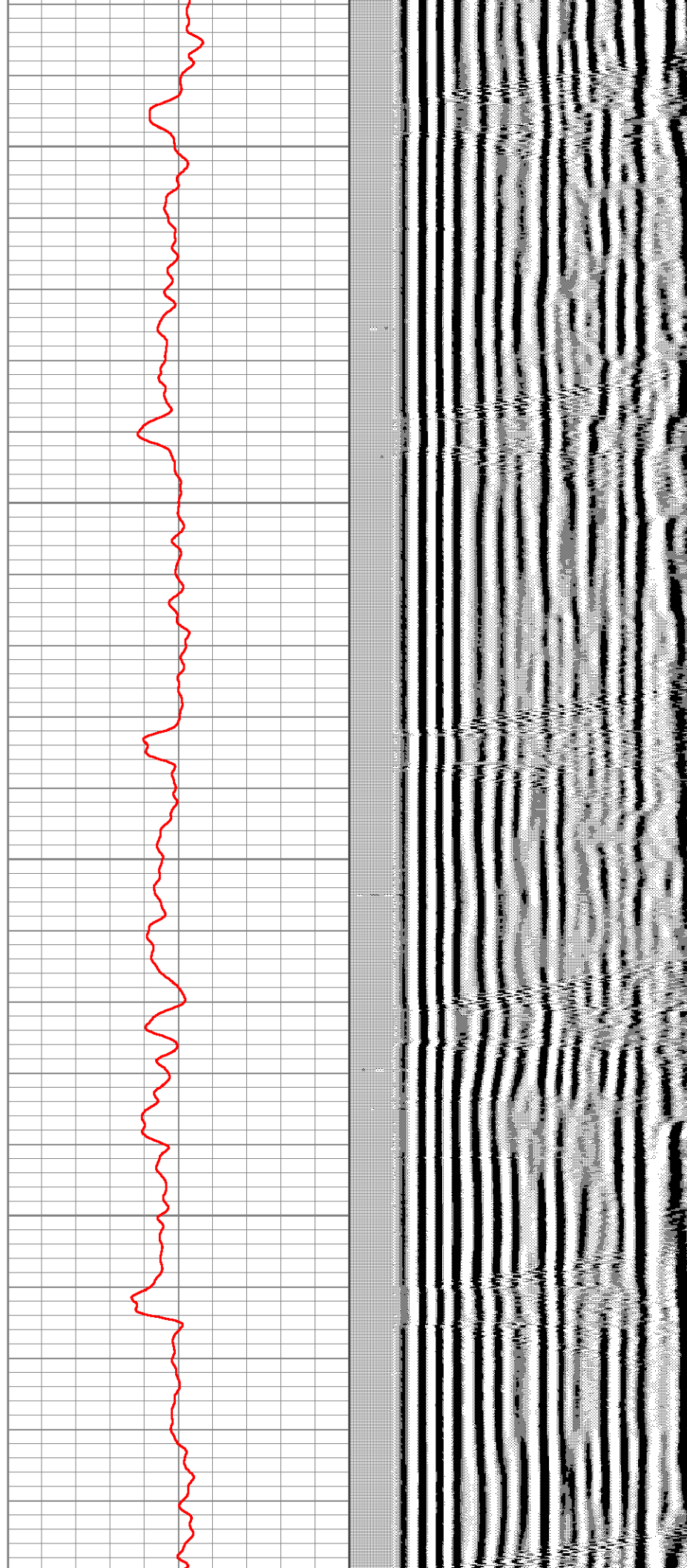
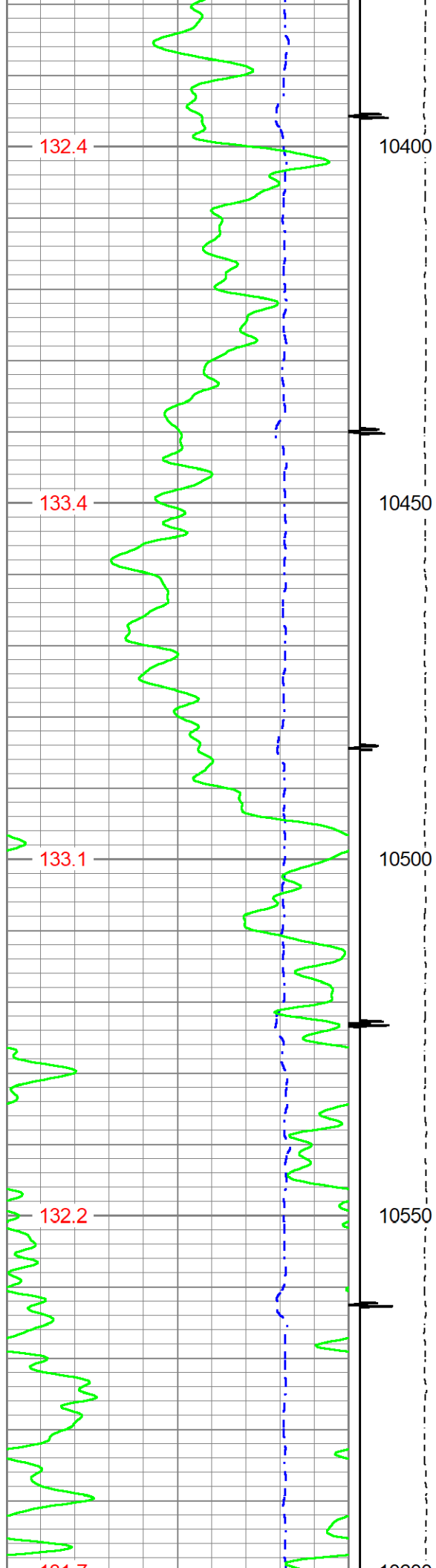
Database File	gw_ottesen.db
Dataset Pathname	06-351HNX/cbl-gr/pass8
Presentation Format	cbl_cs
Dataset Creation	Tue Jan 29 18:43:12 2019
Charted by	Depth in Feet scaled 1:240

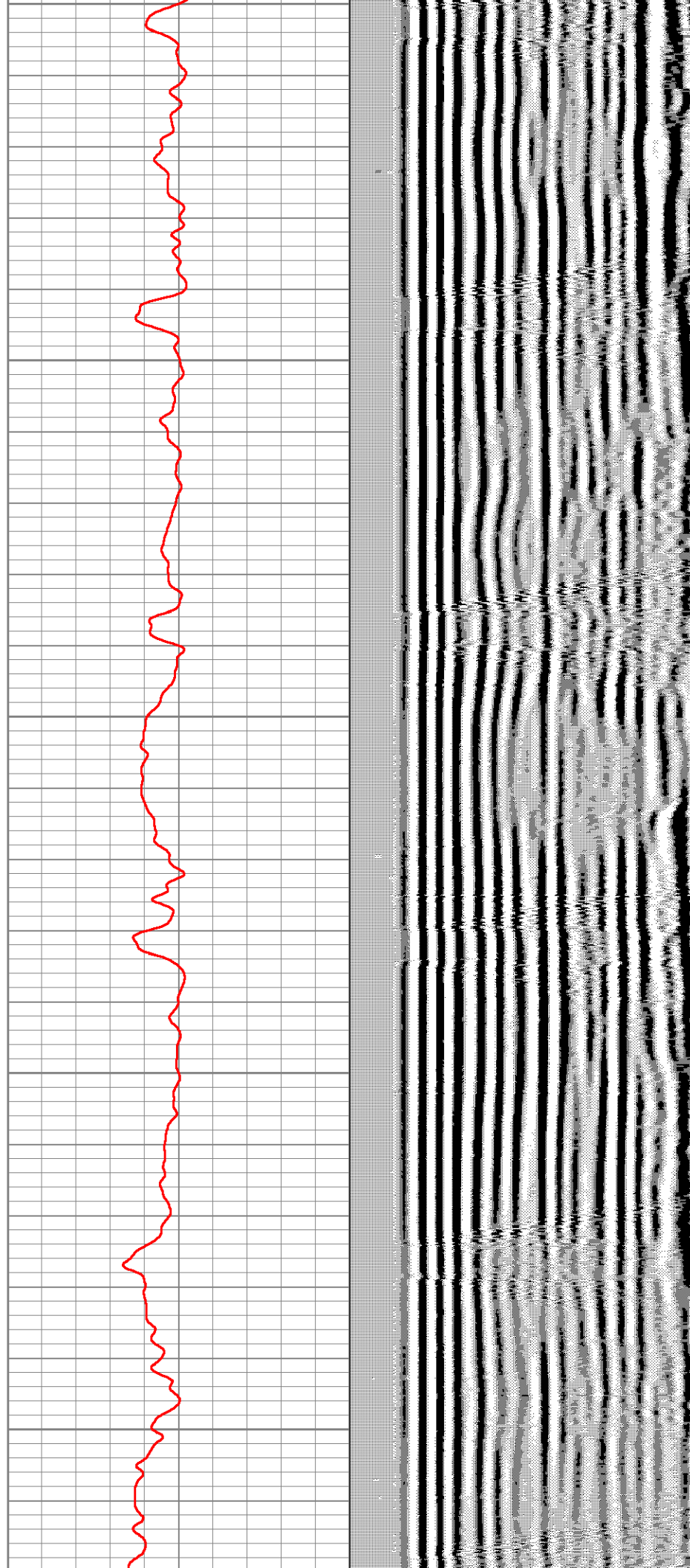
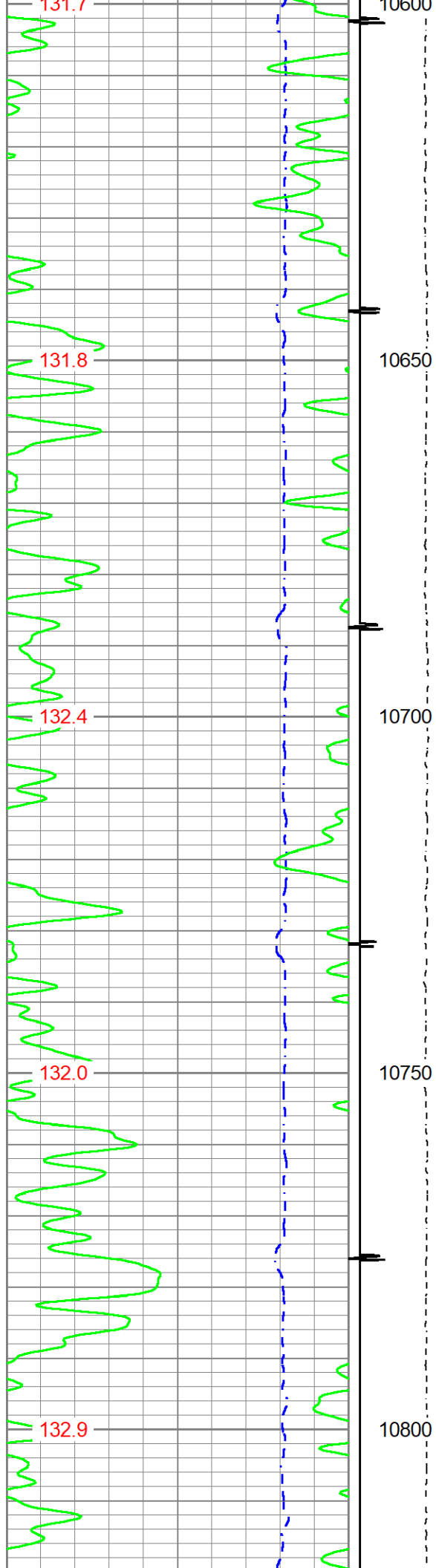
420	Travel Time (usec)	220	Collar Locator	0	Amplified Amplitude (mV)	10	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	-1	9	0	Amplitude (mV)	100		
Temp (degF)		Line Speed (ft/min)							
		0	200						
		LTEN							
		0	(lb2000						

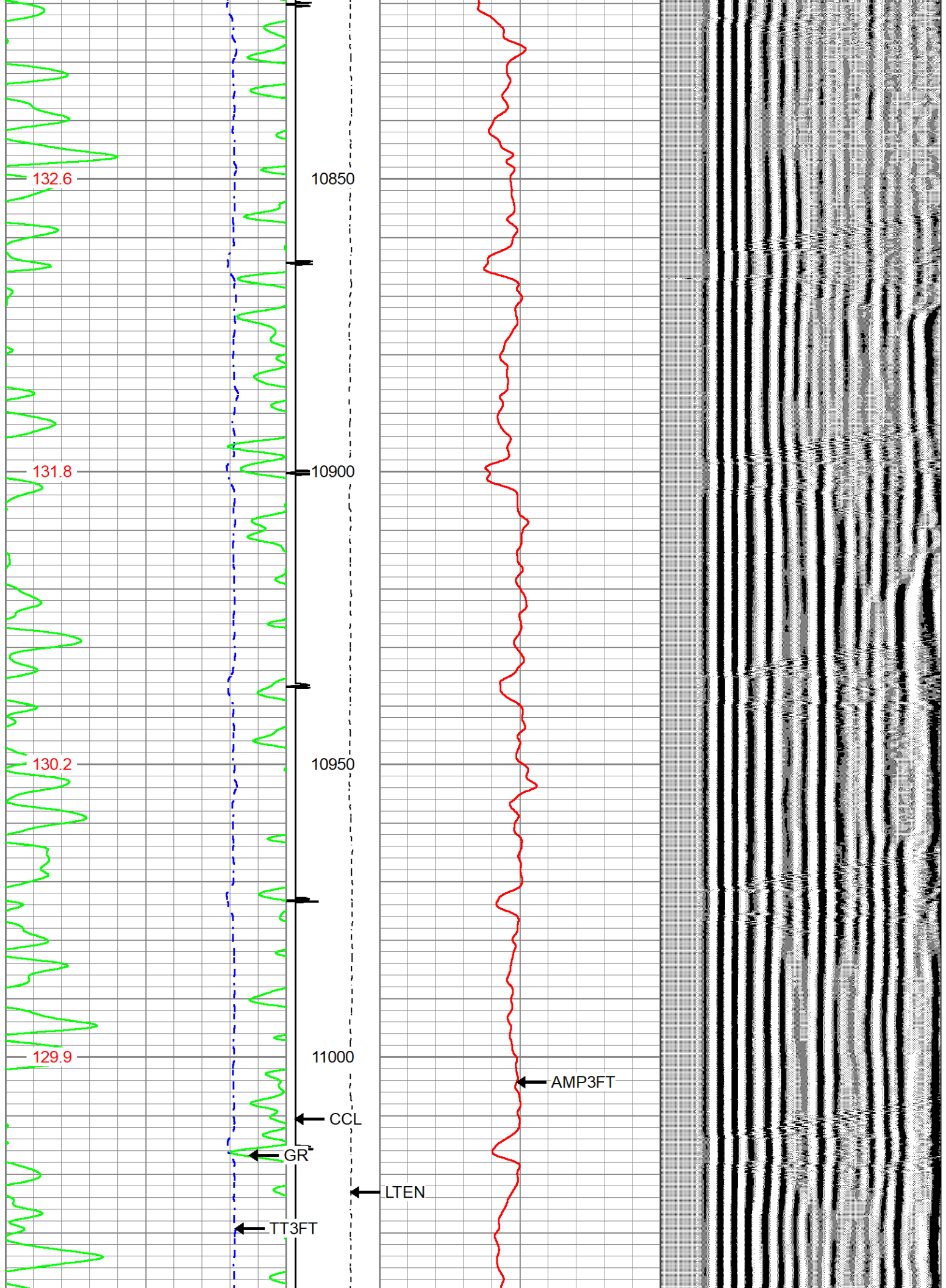


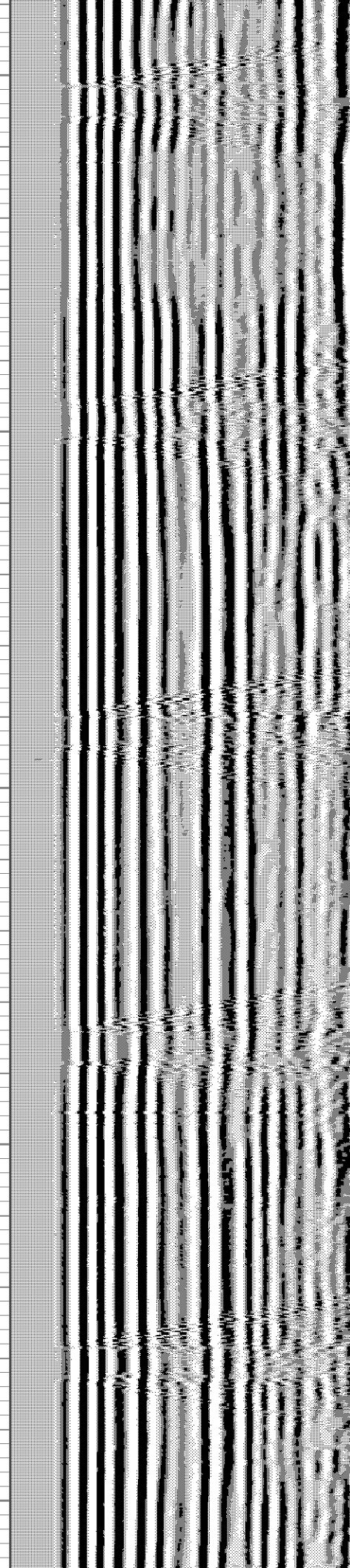
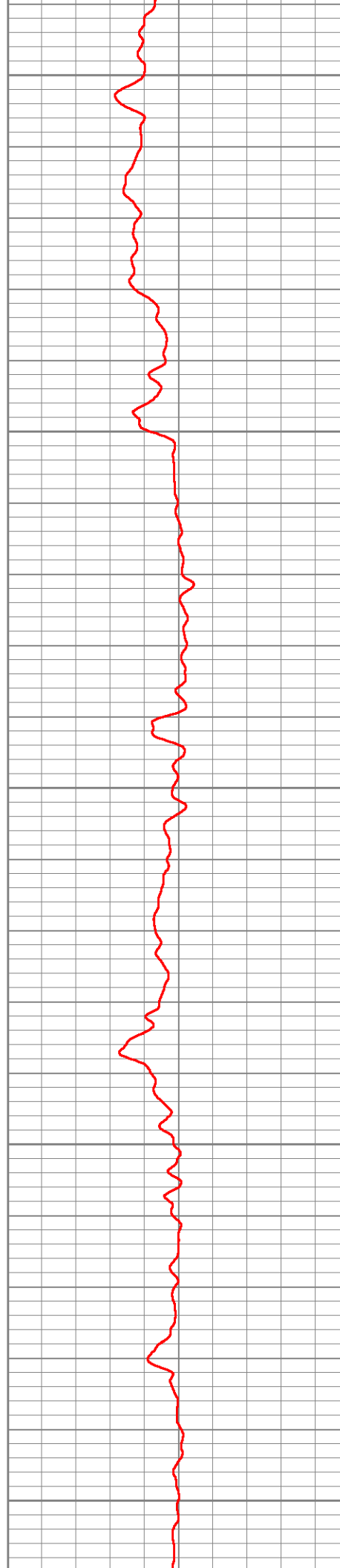
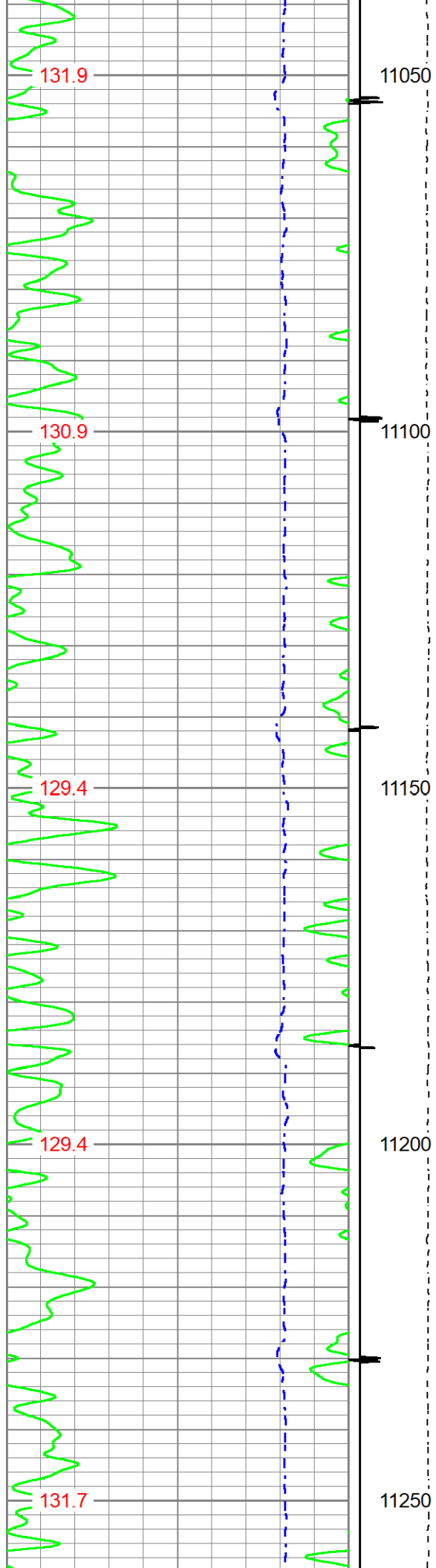


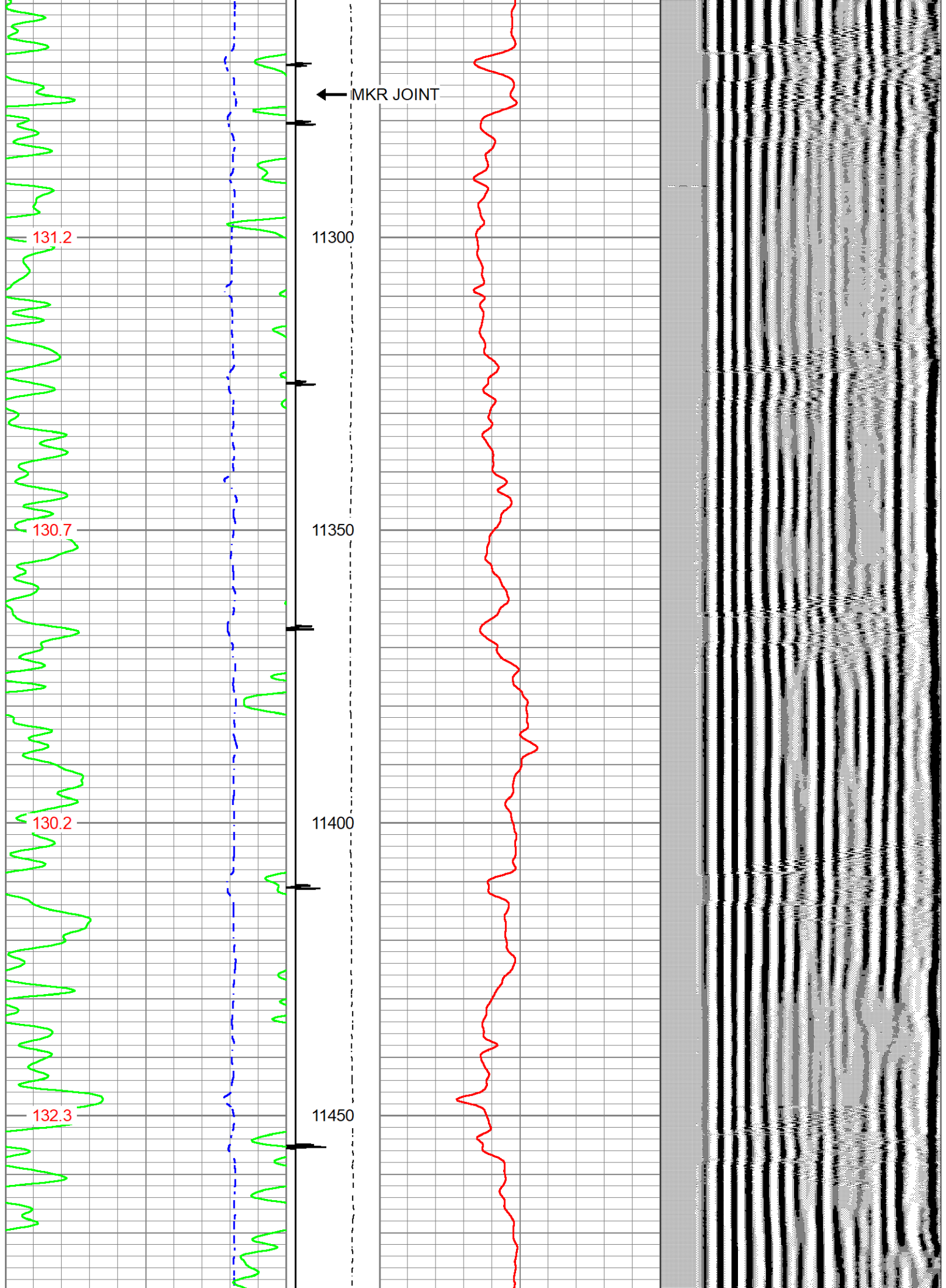


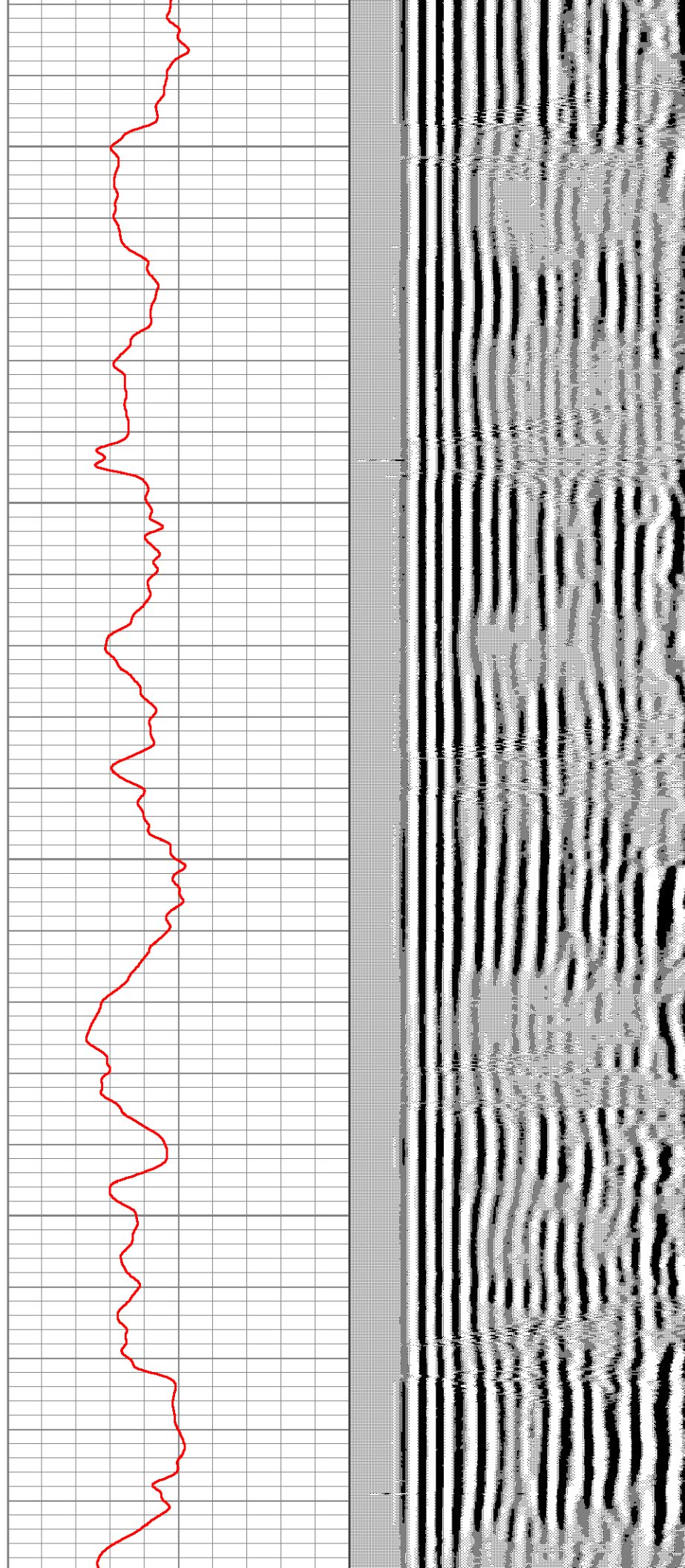
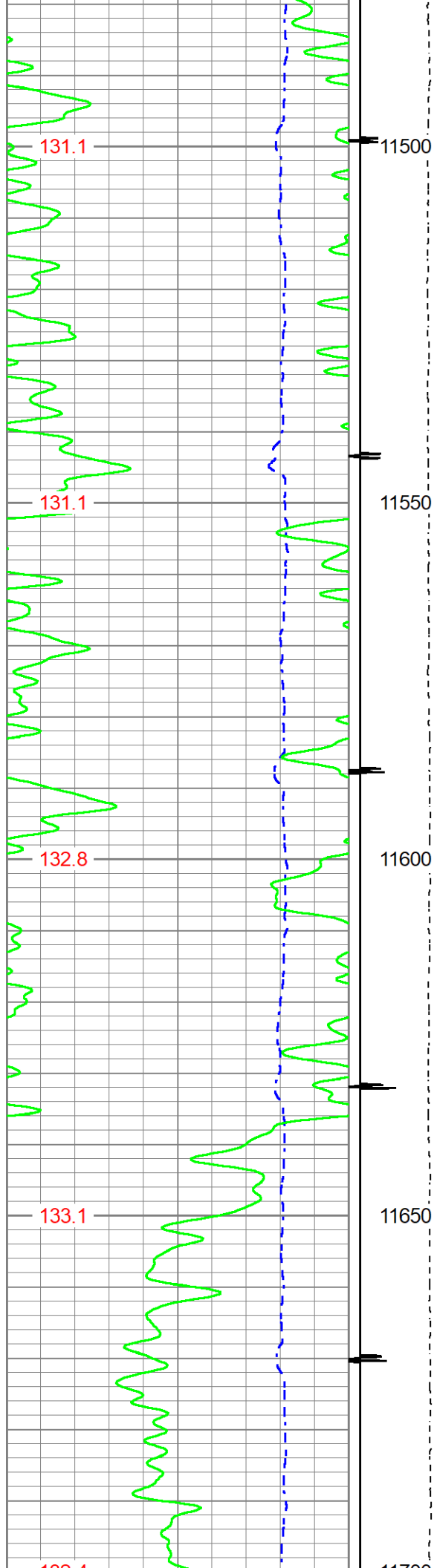


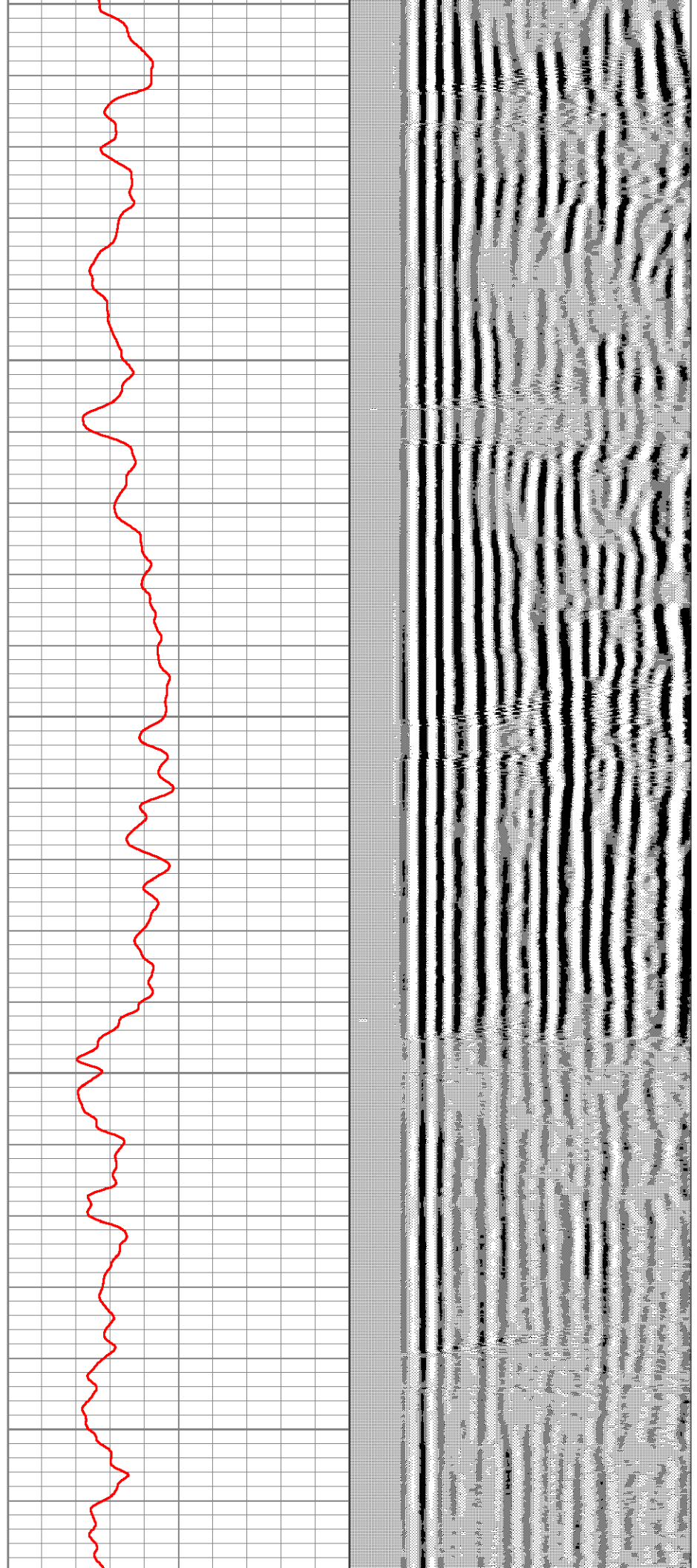
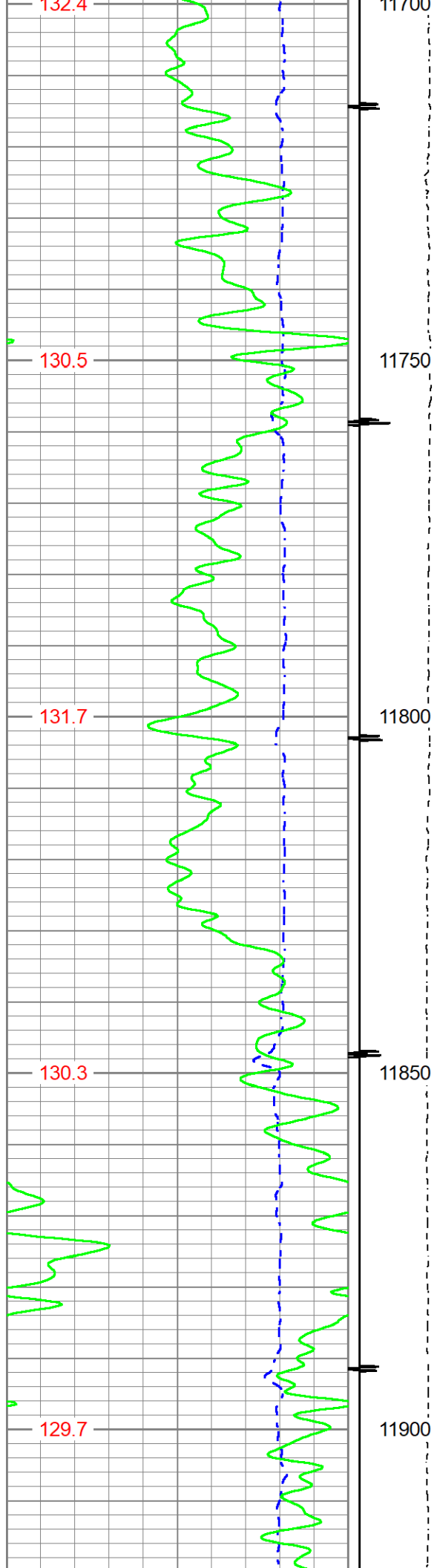


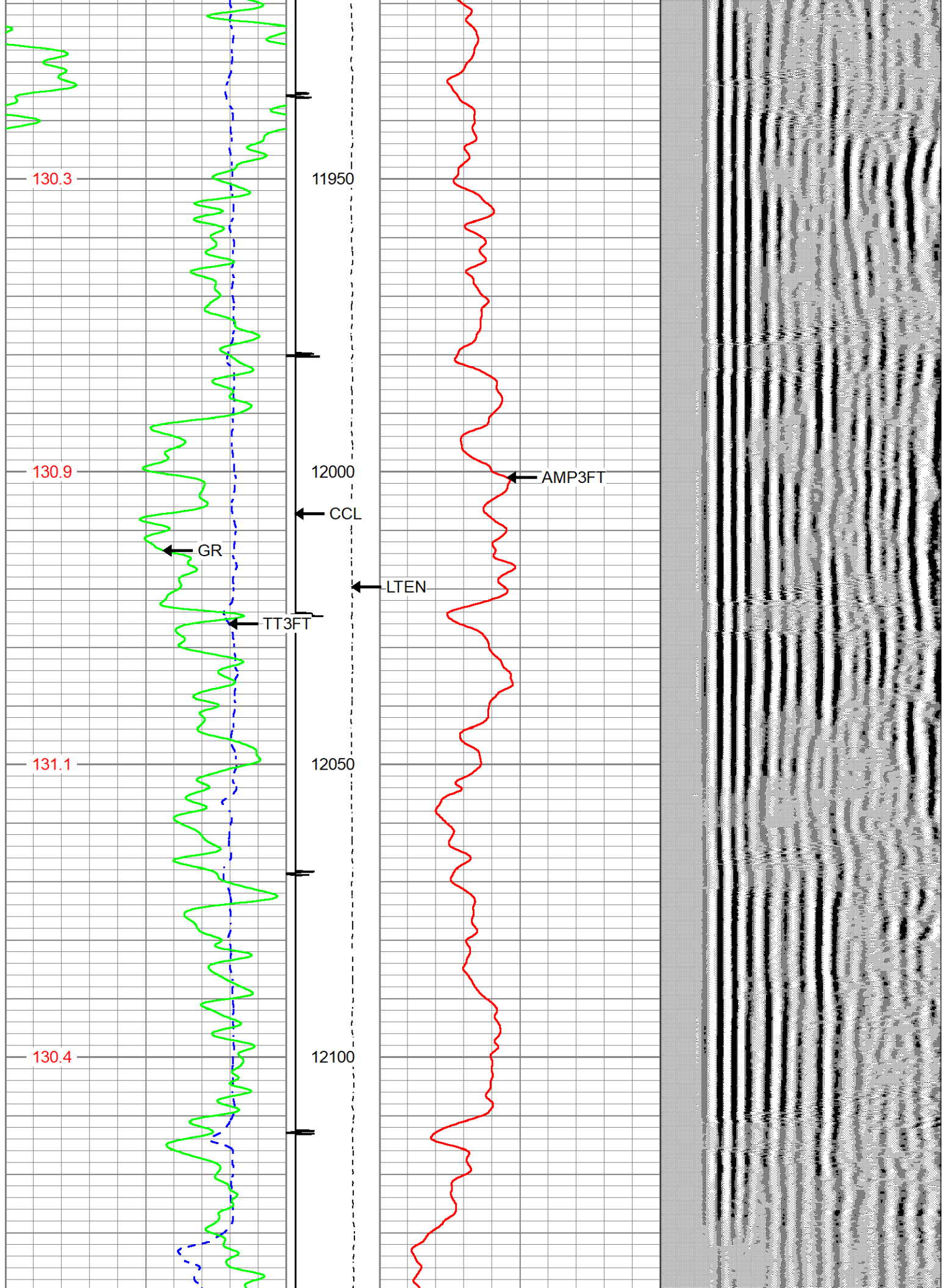


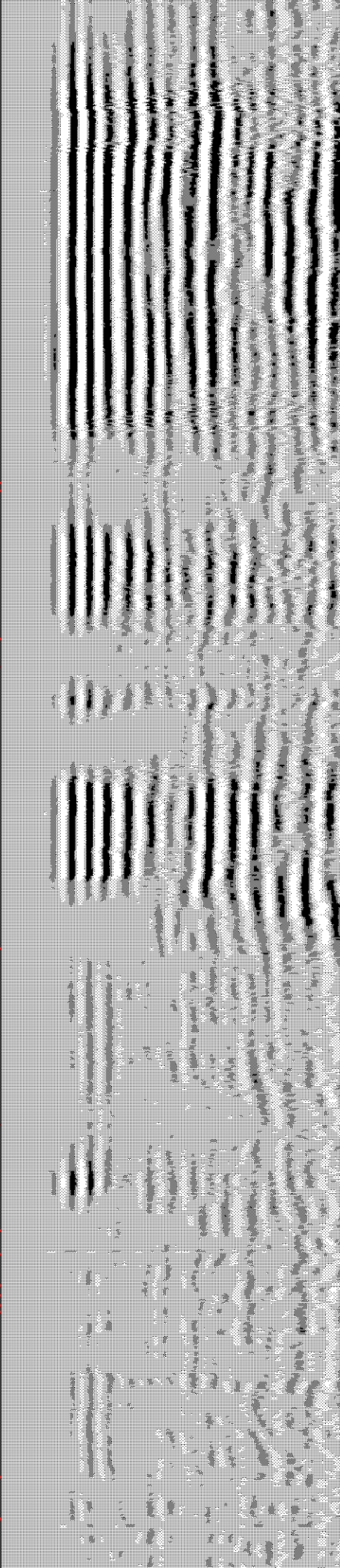
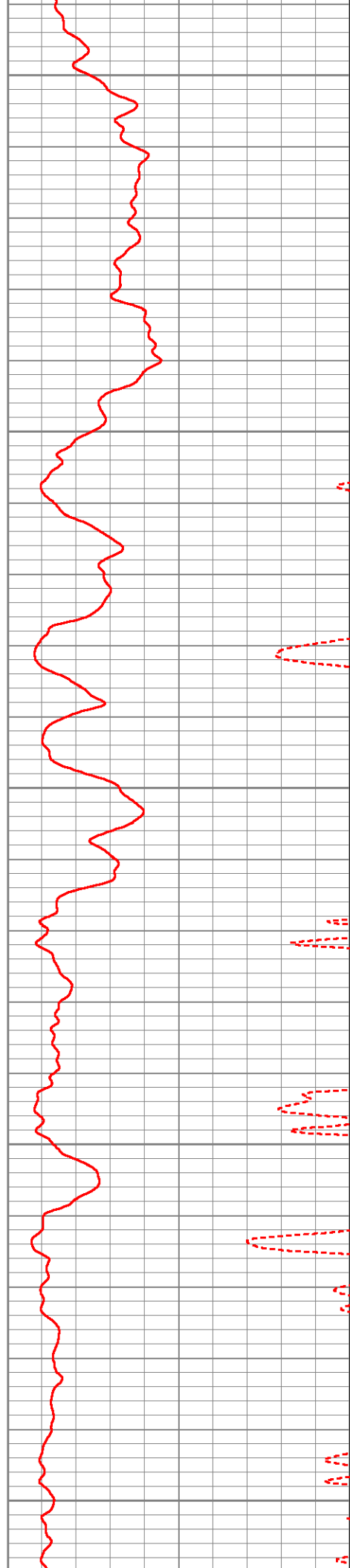
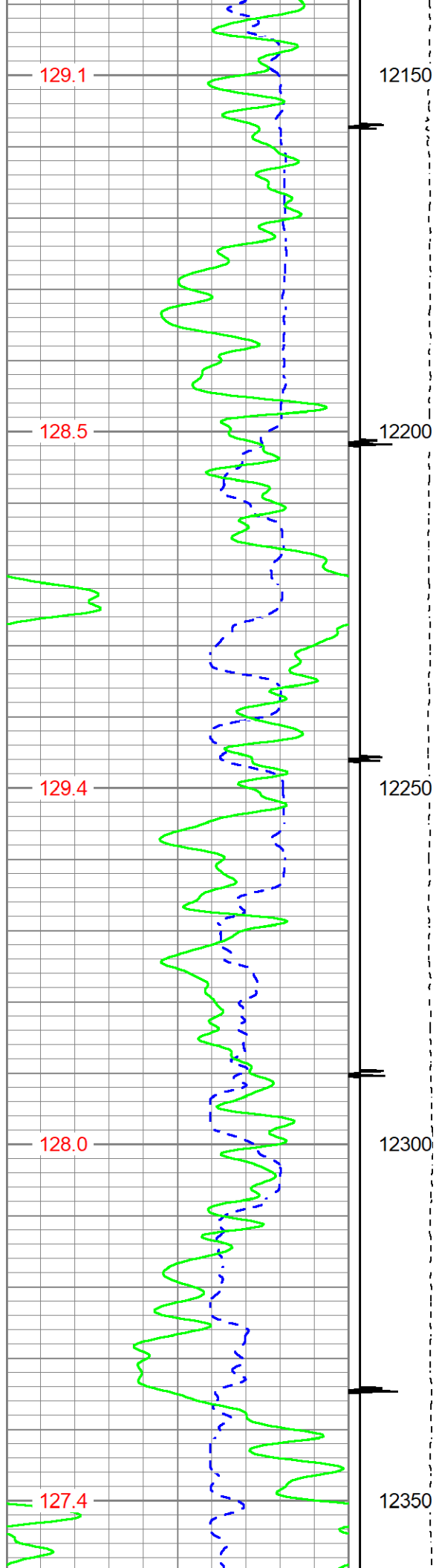


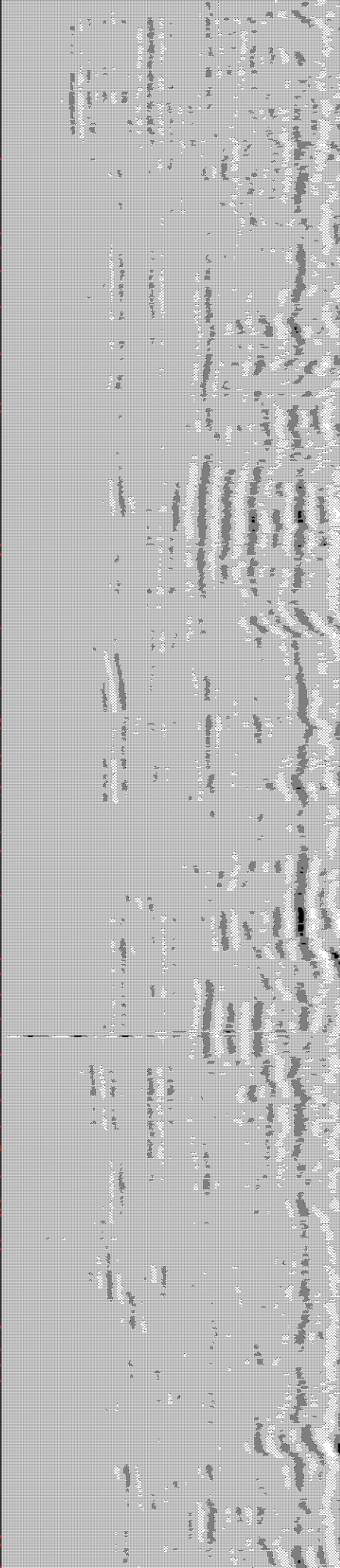
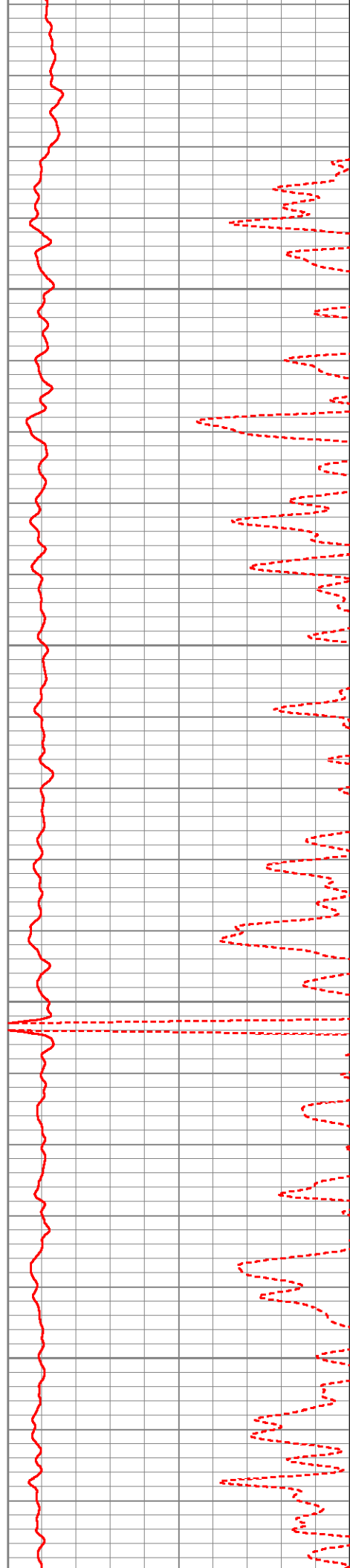
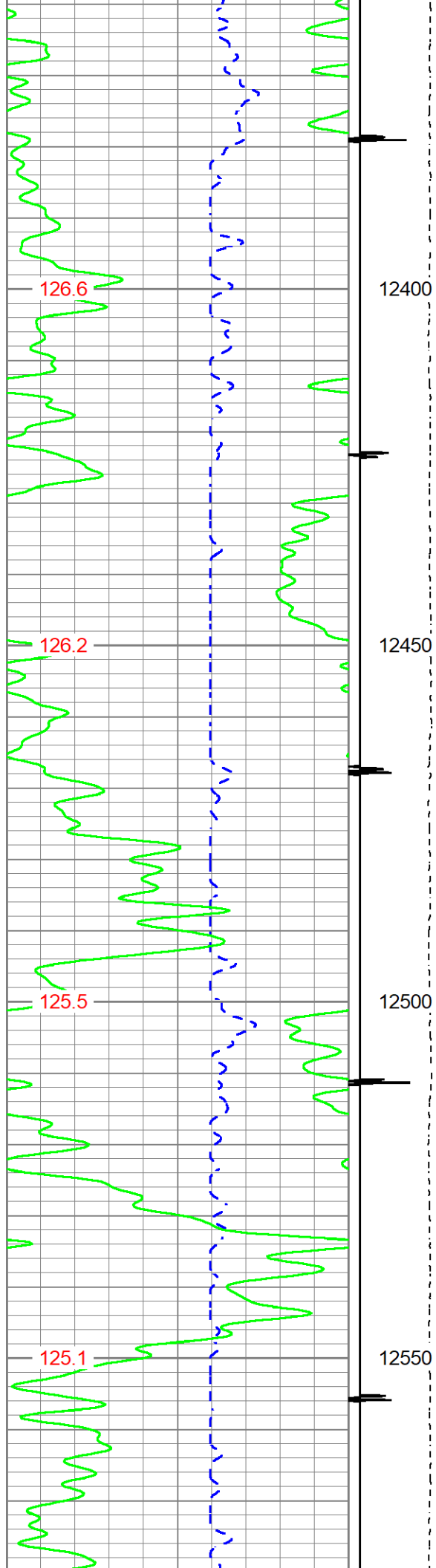


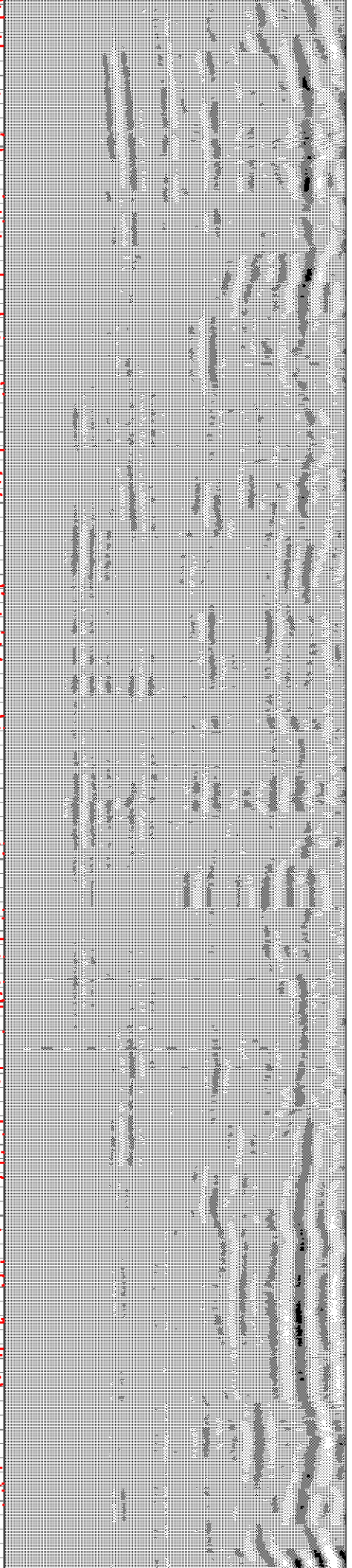
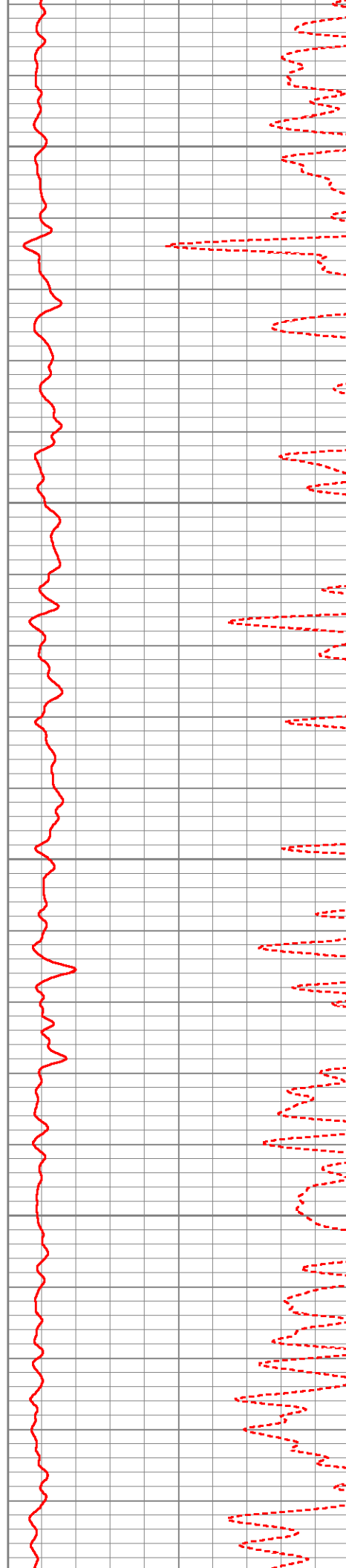
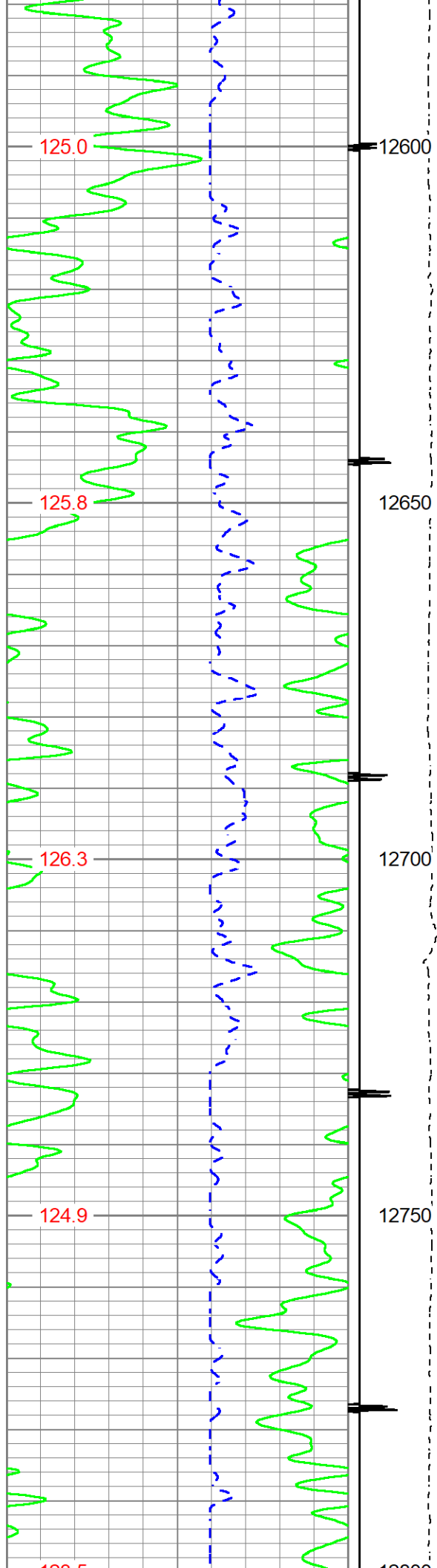


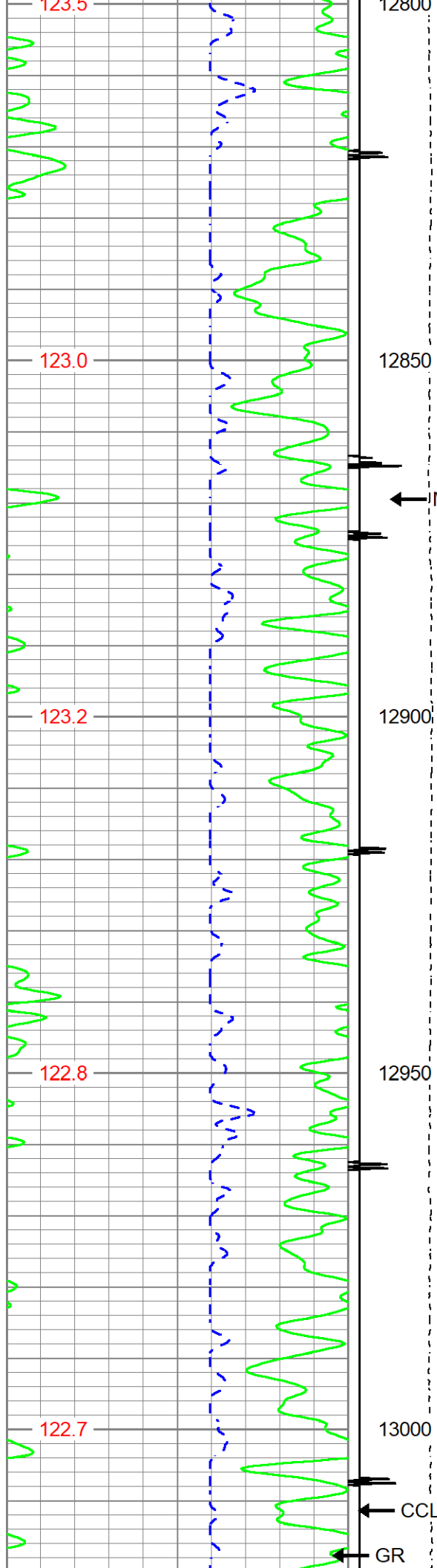








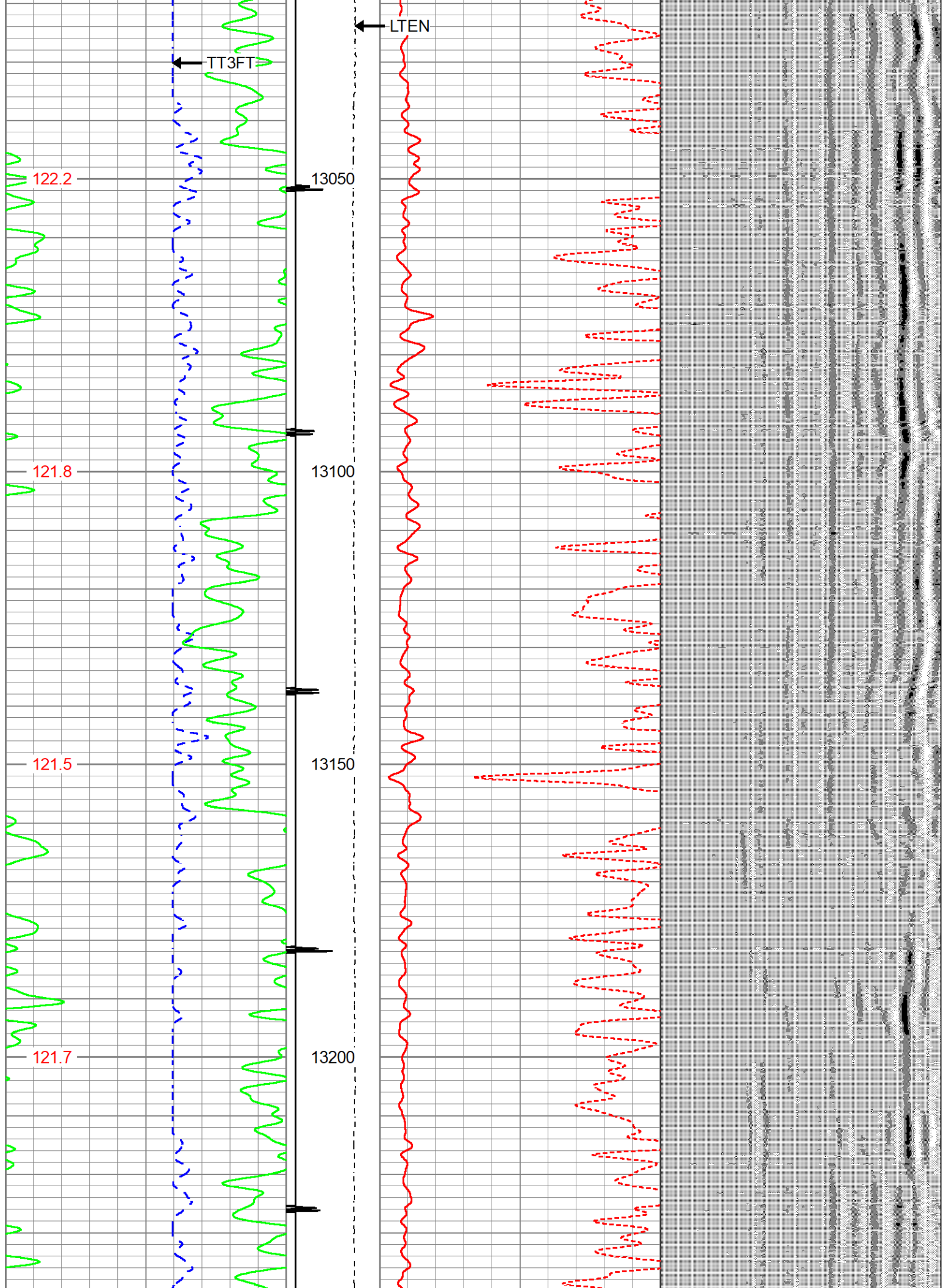


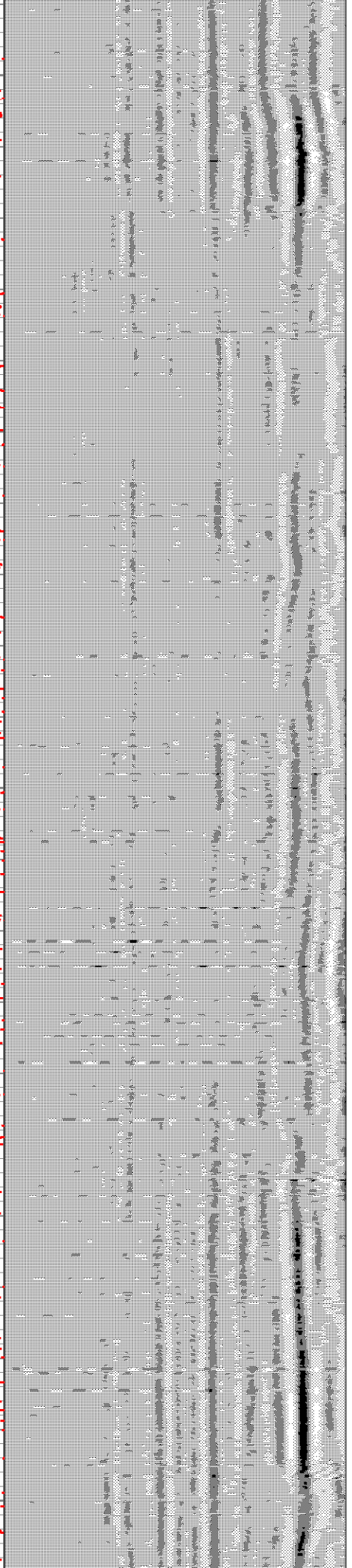
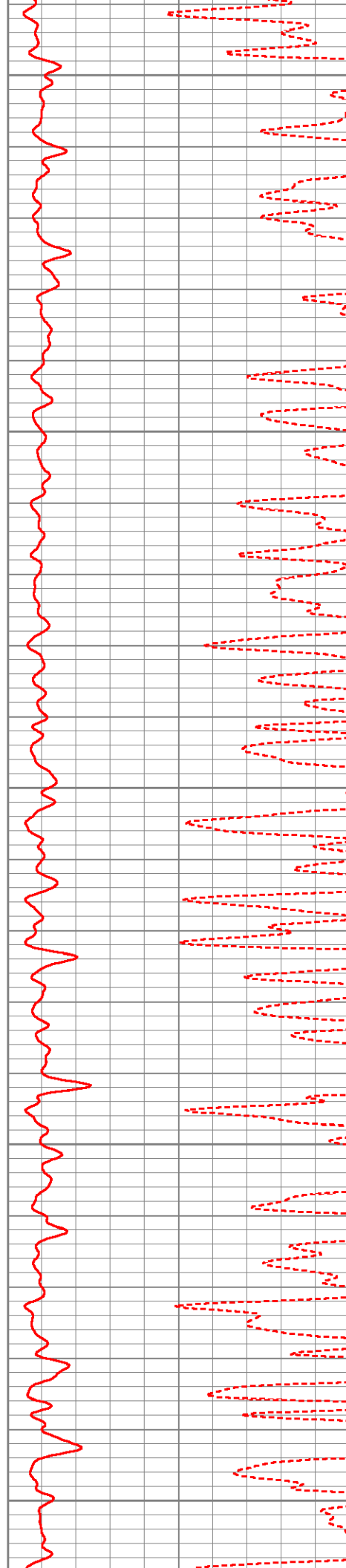
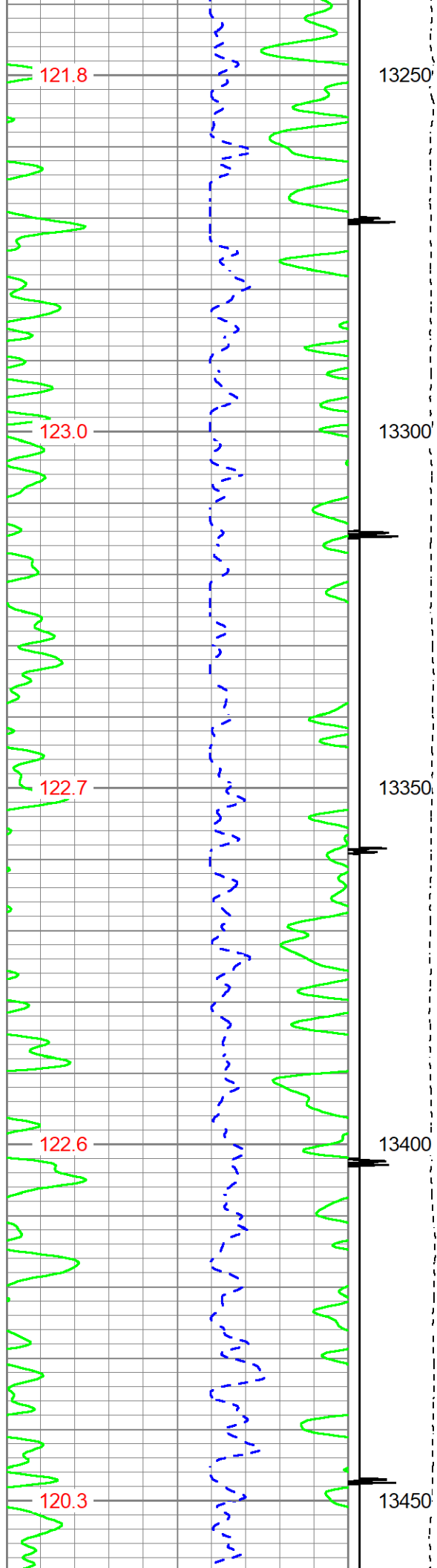


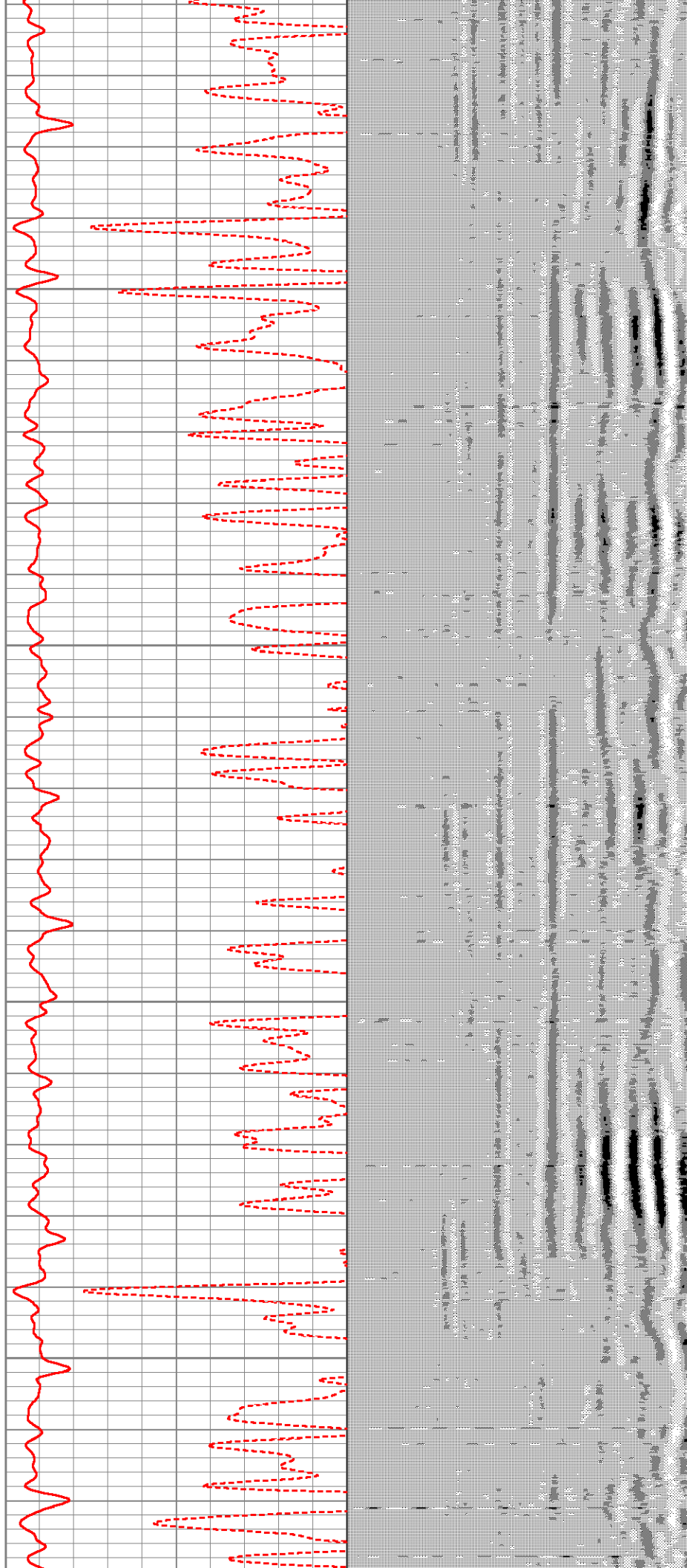
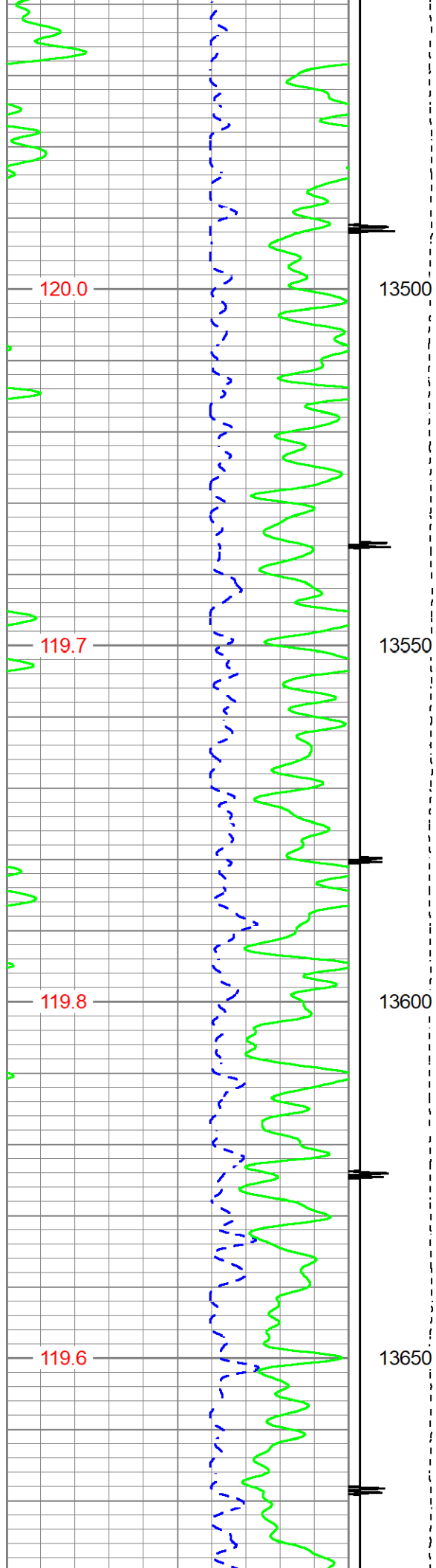
← MKR JOINT

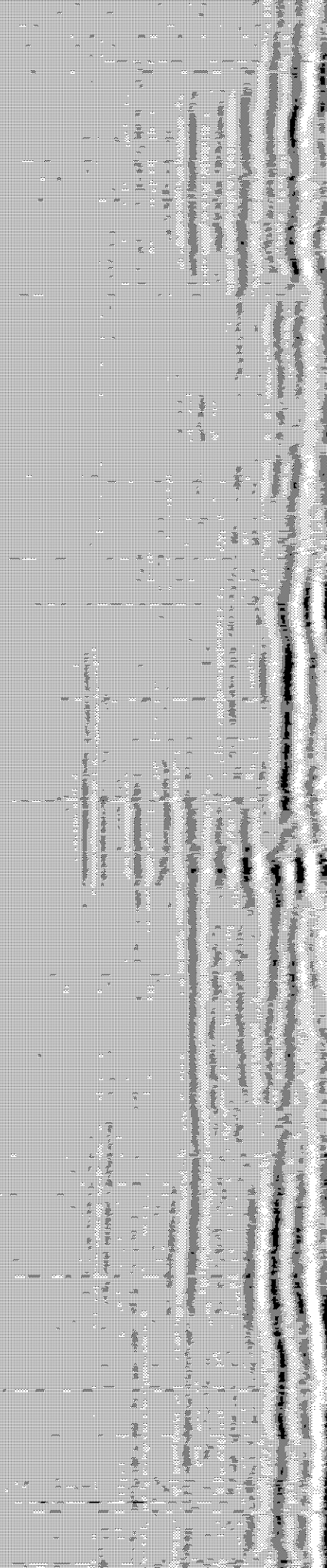
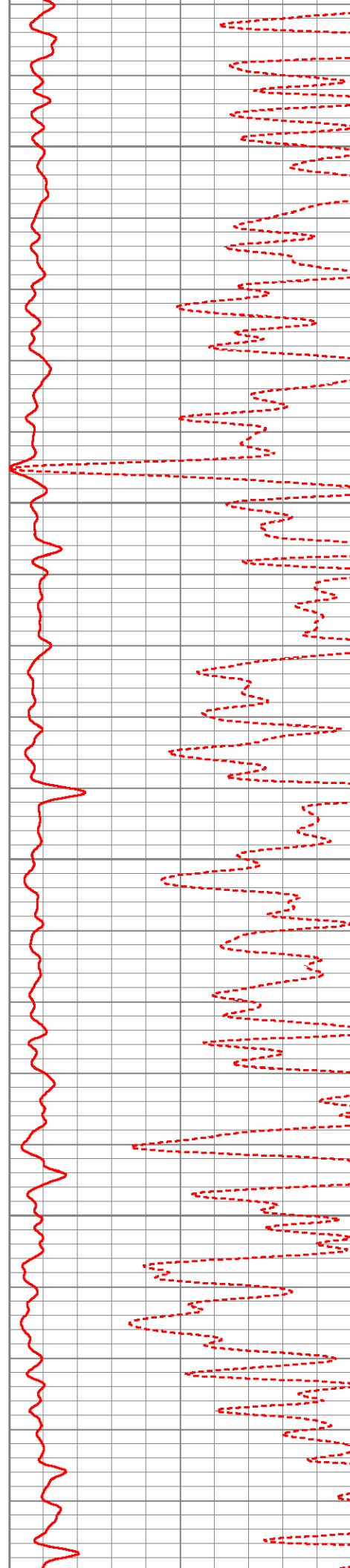
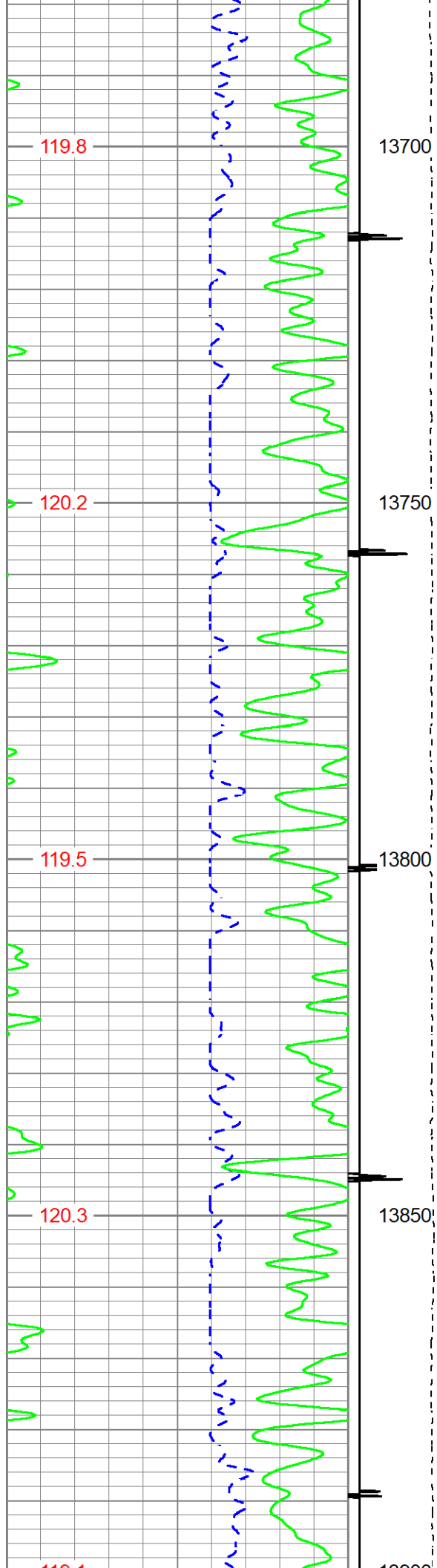
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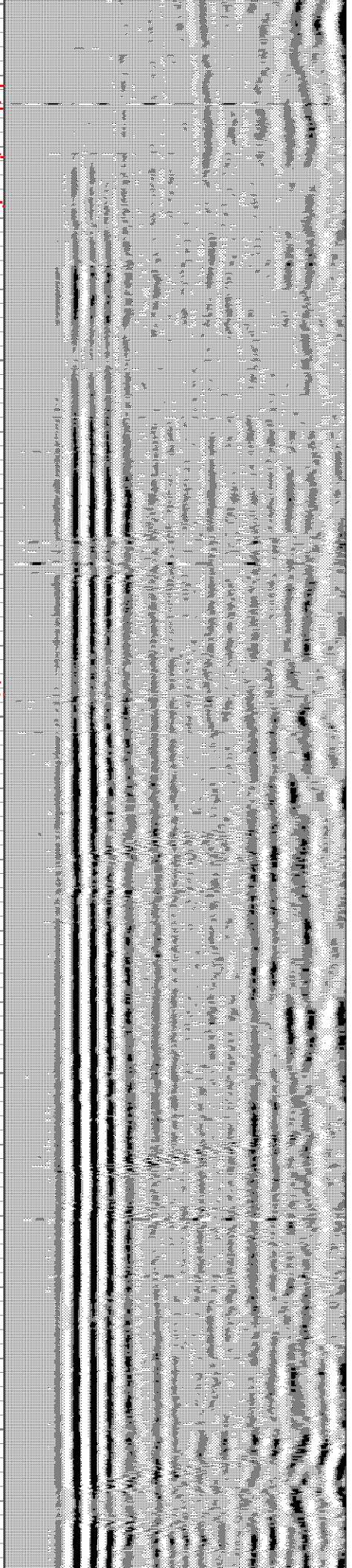
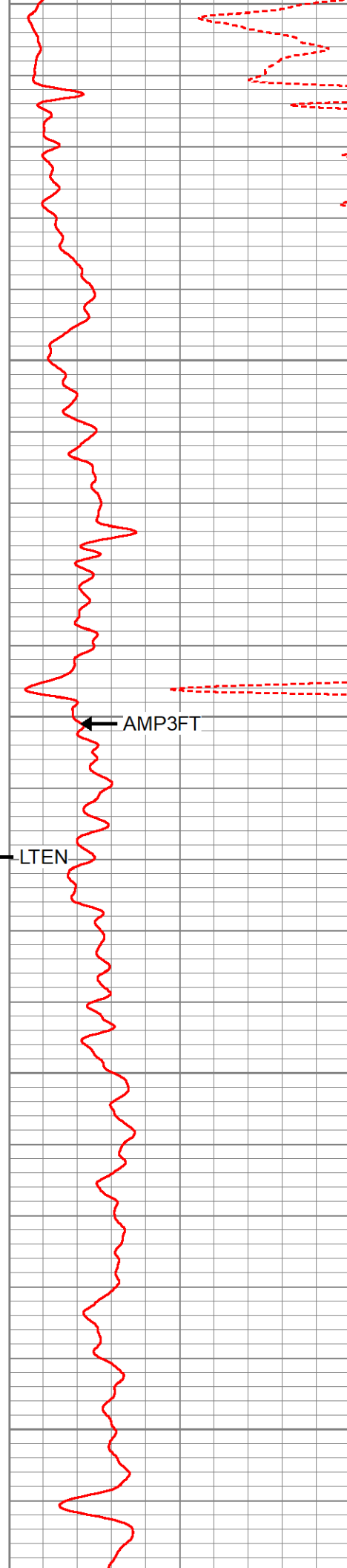
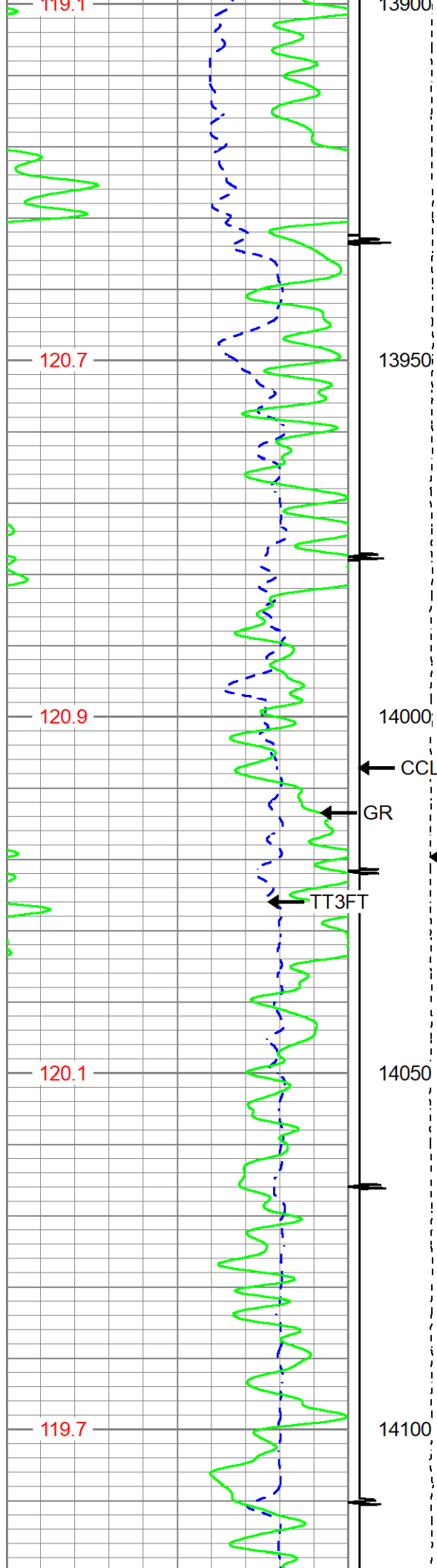
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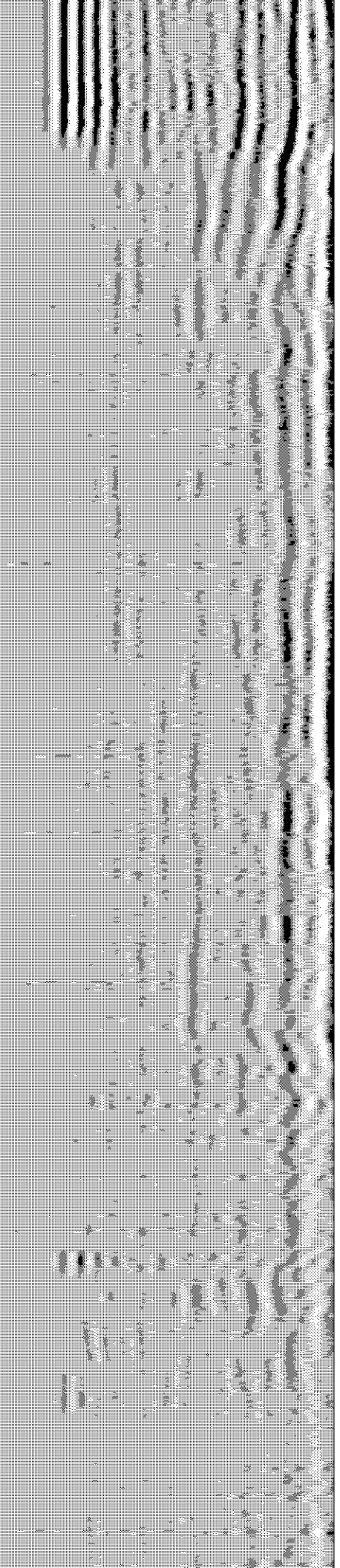
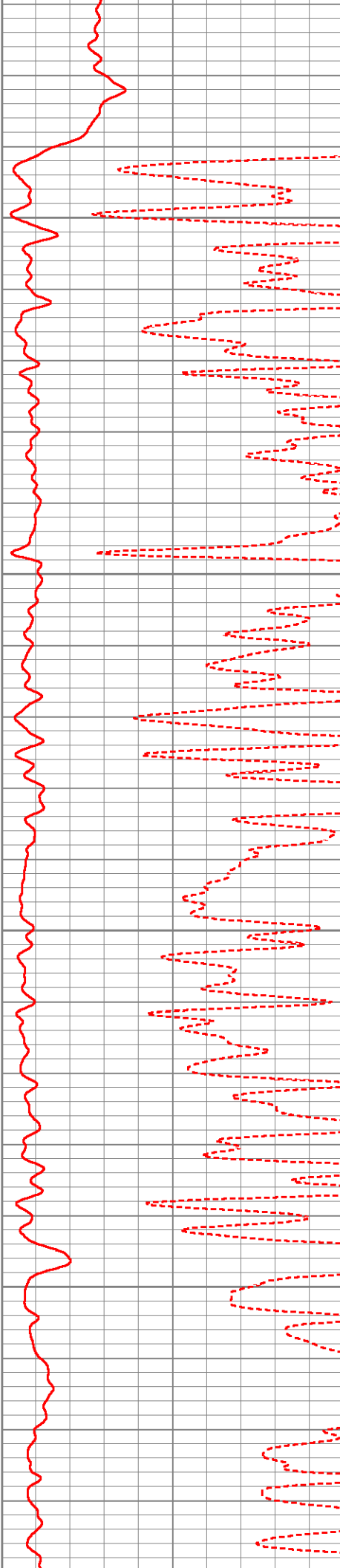
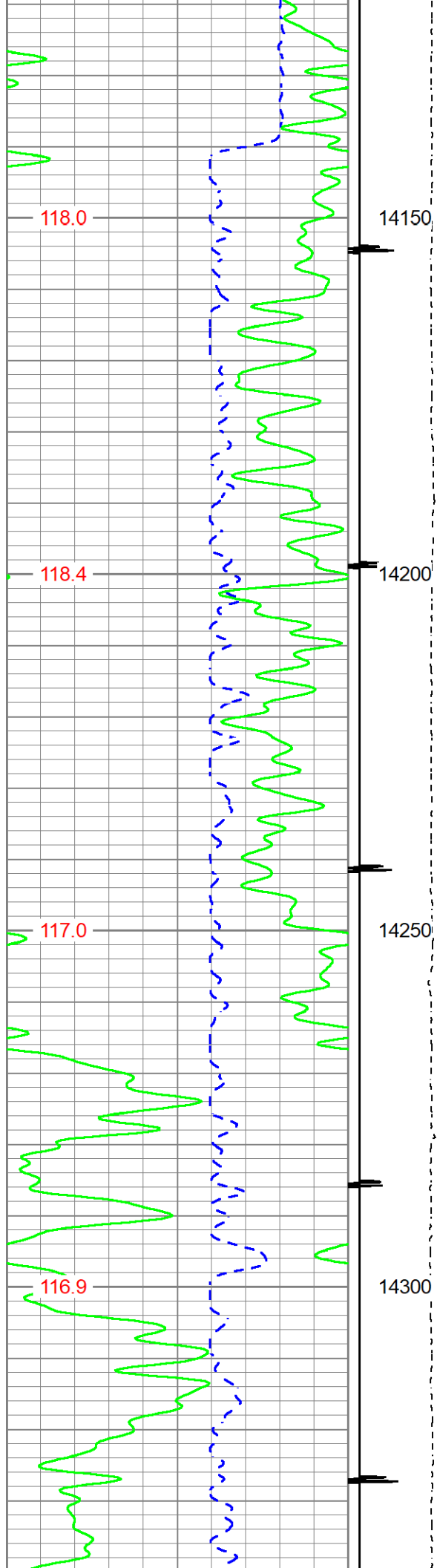


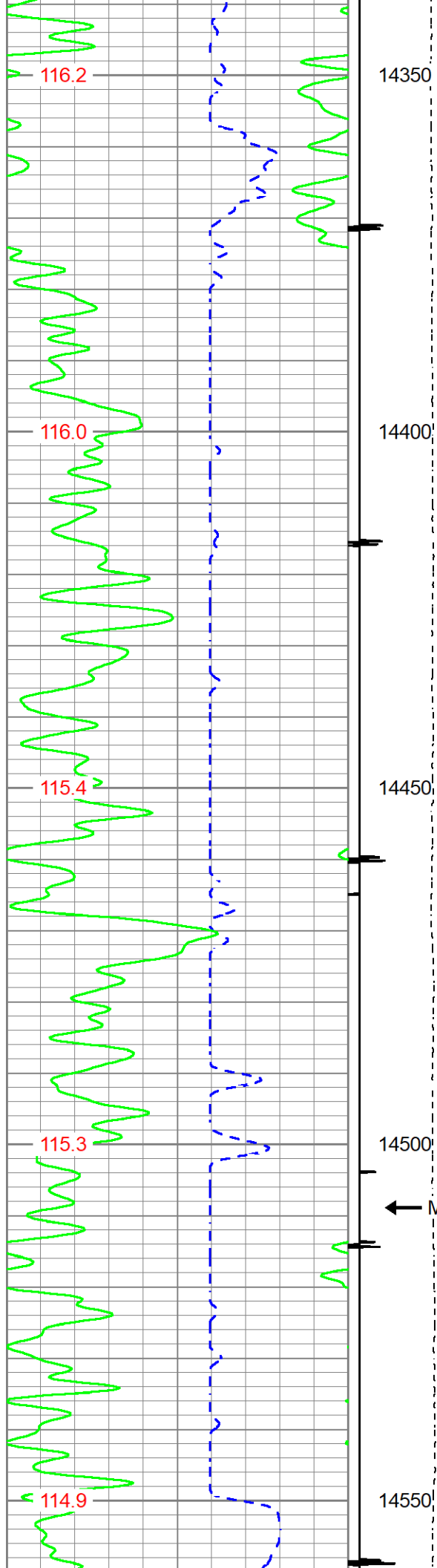




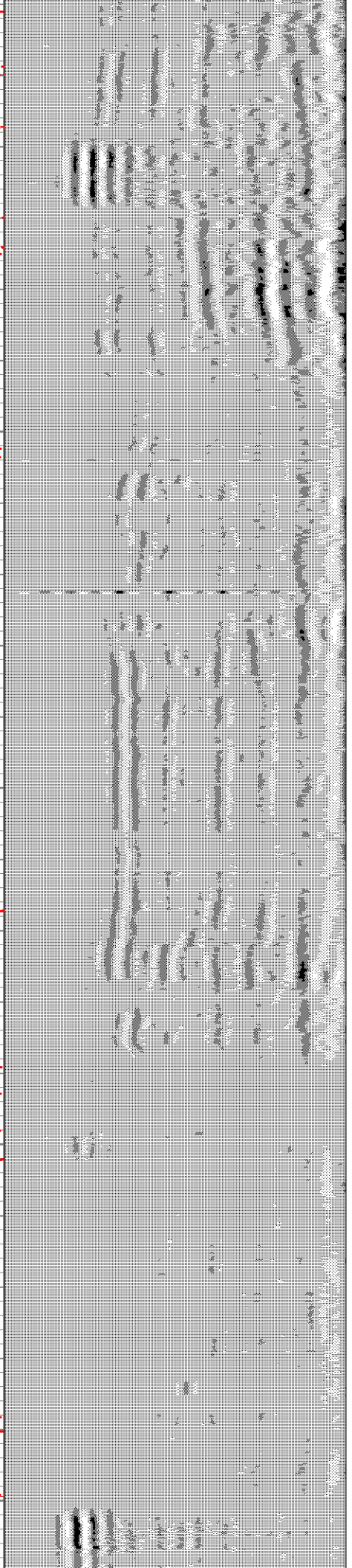
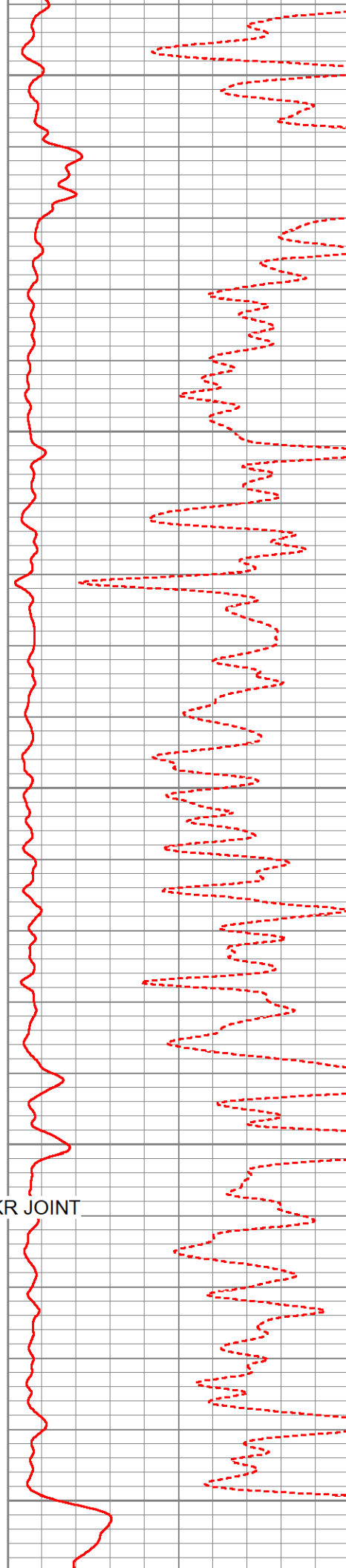


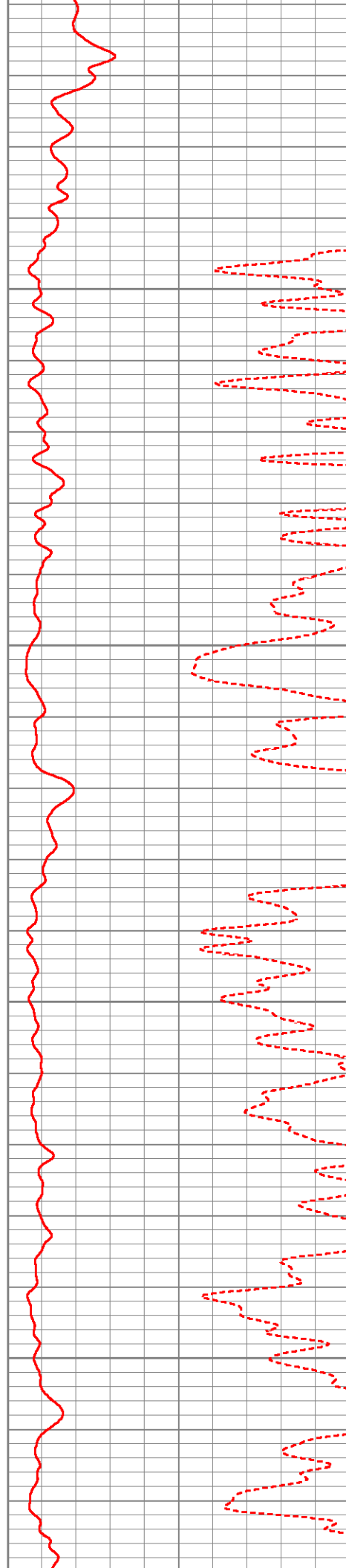
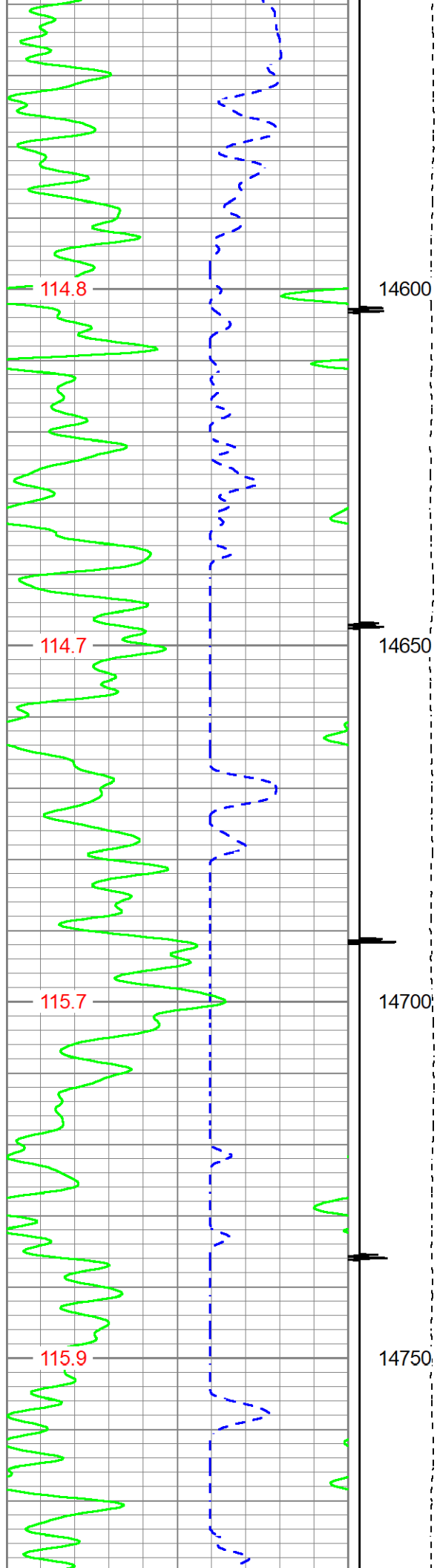


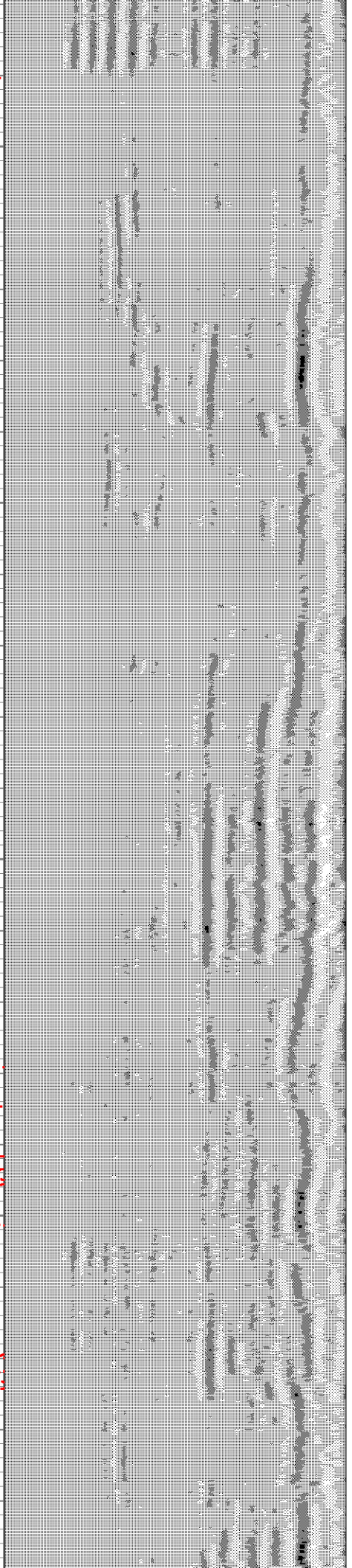
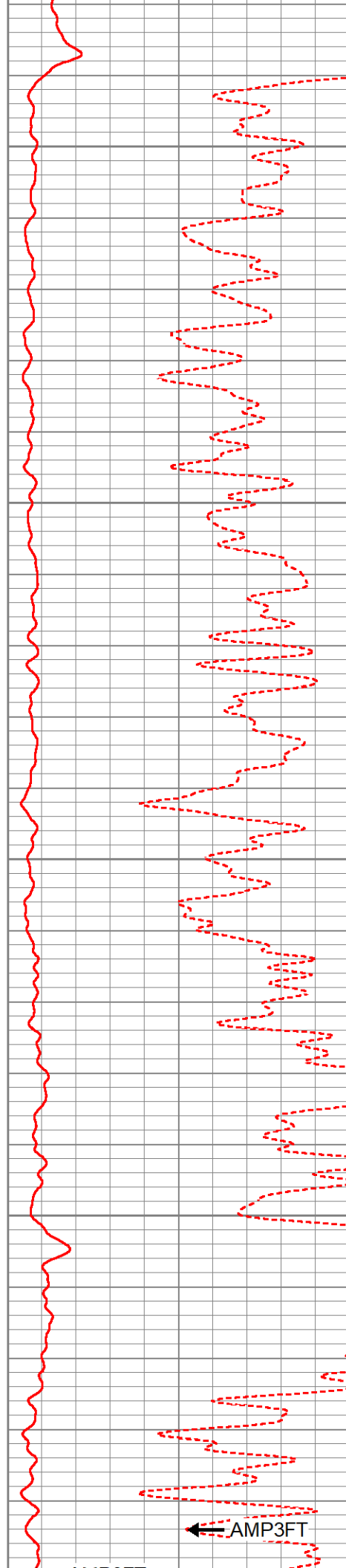
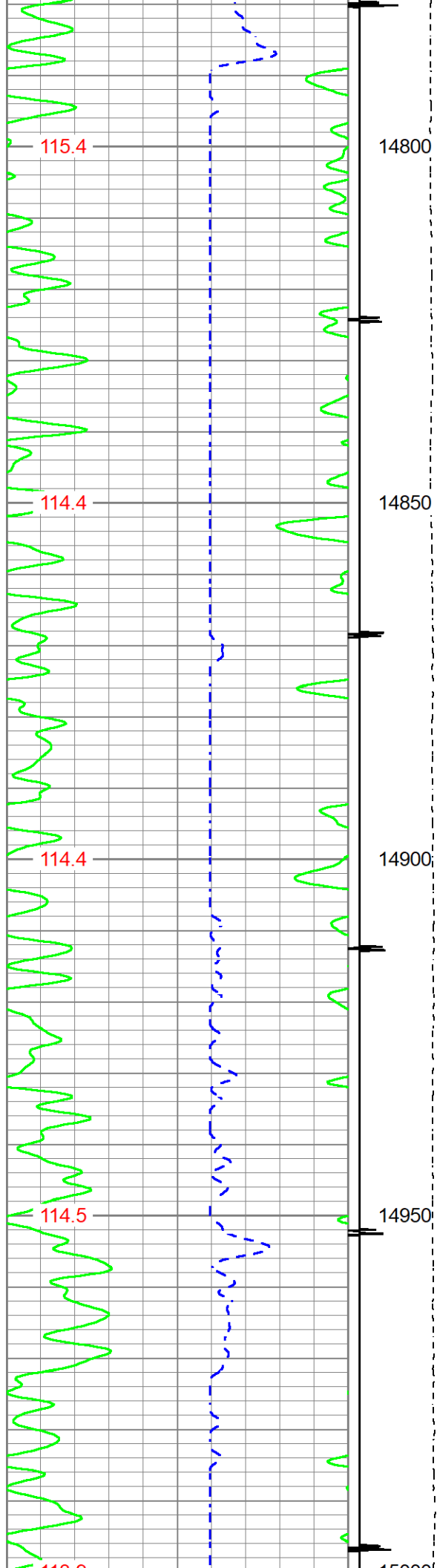


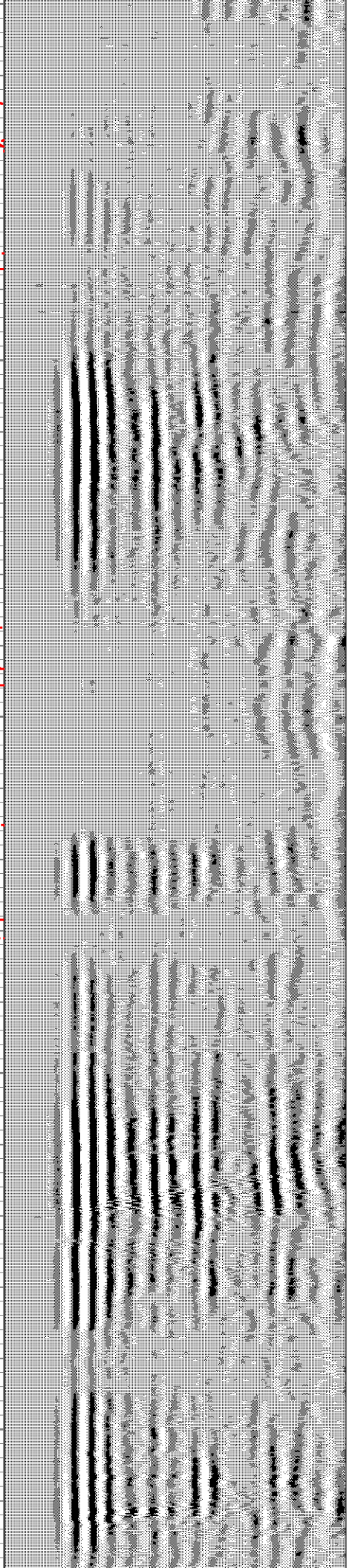
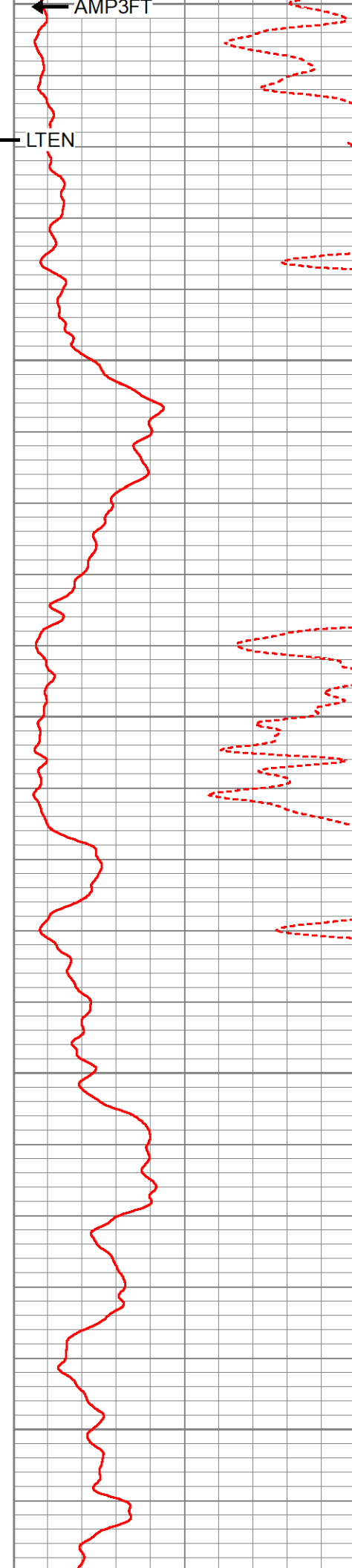
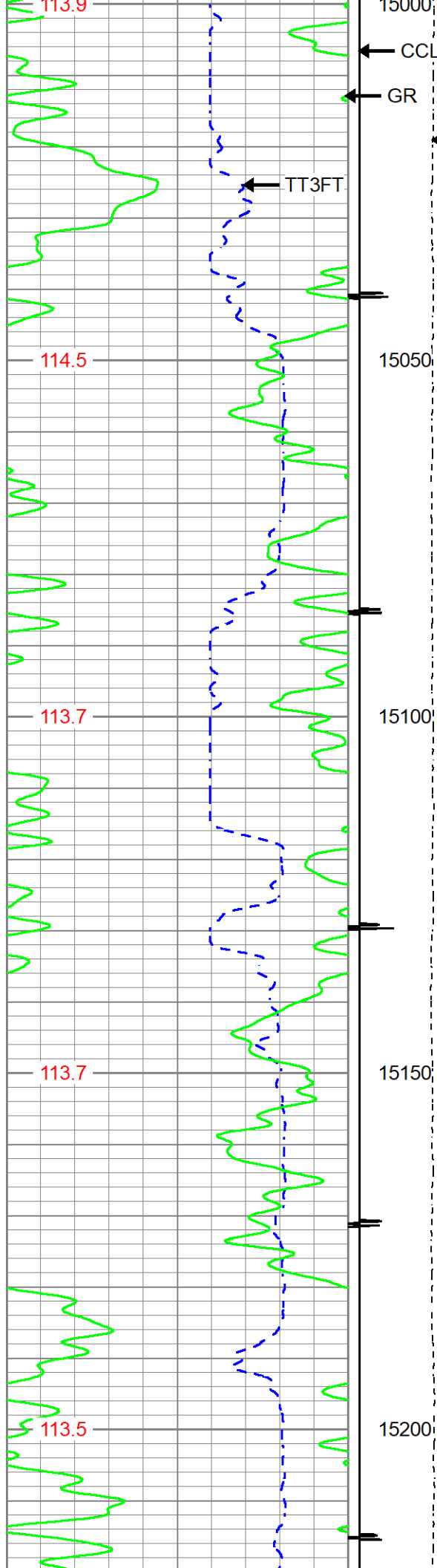


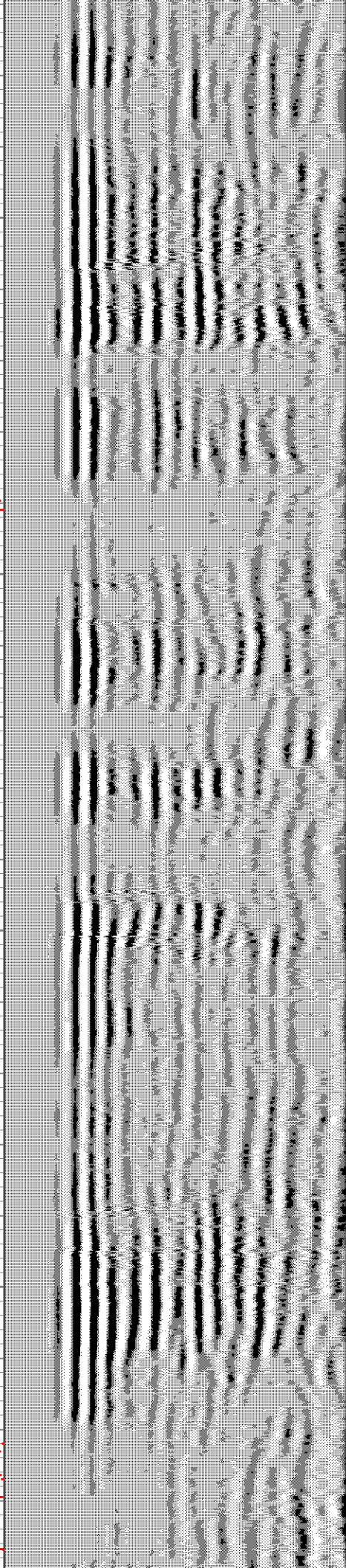
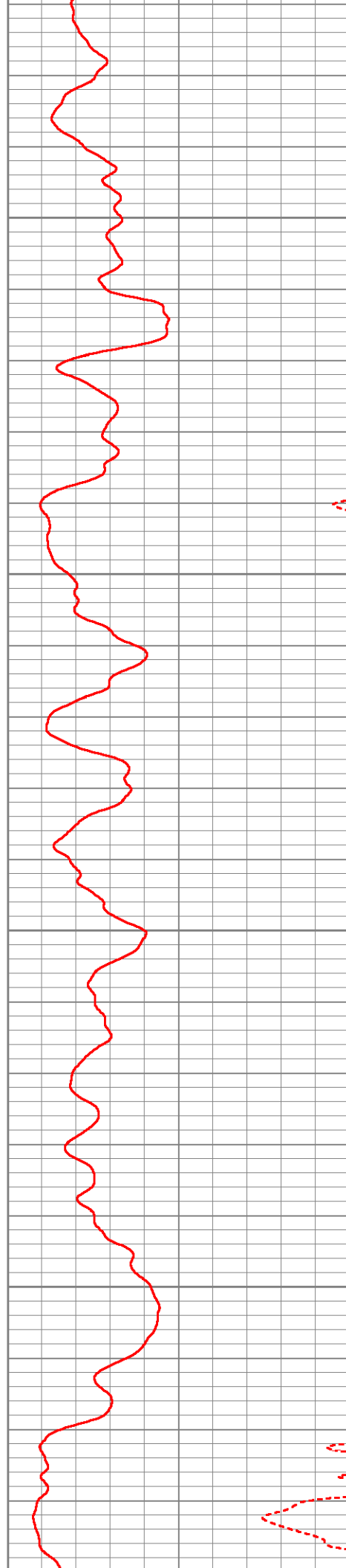
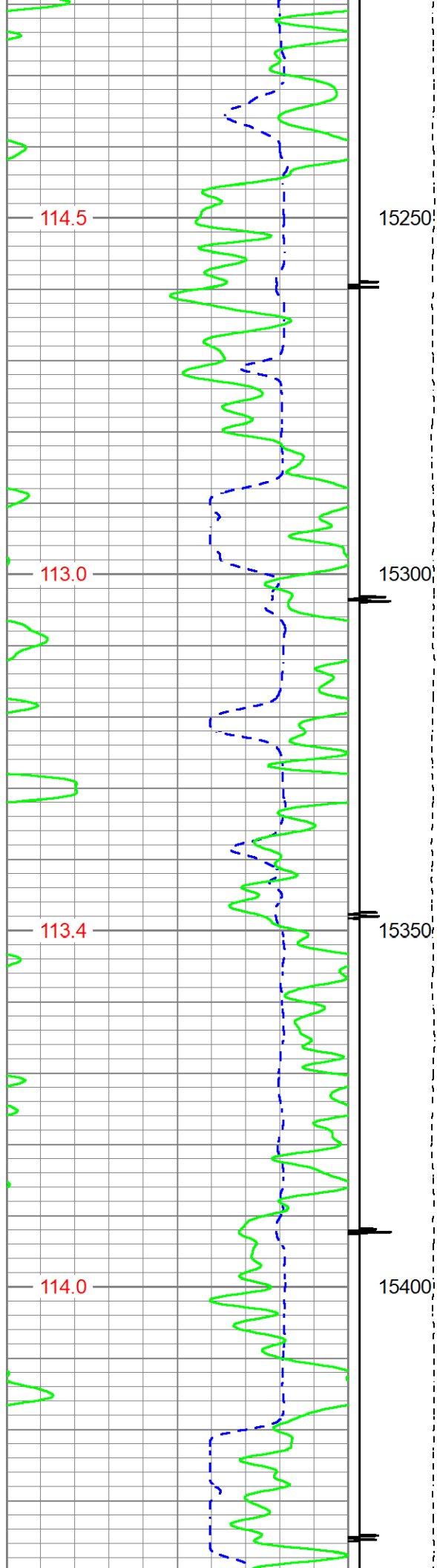
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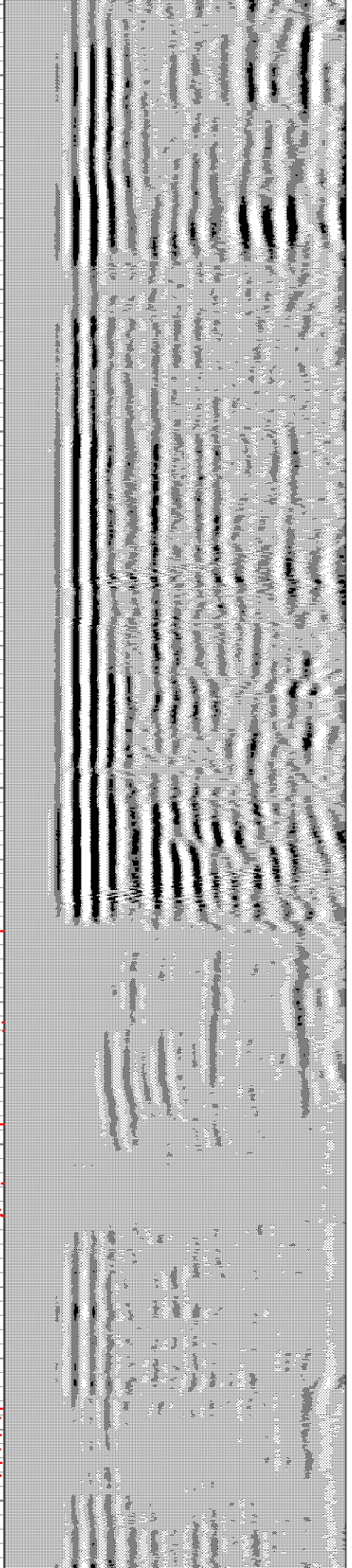
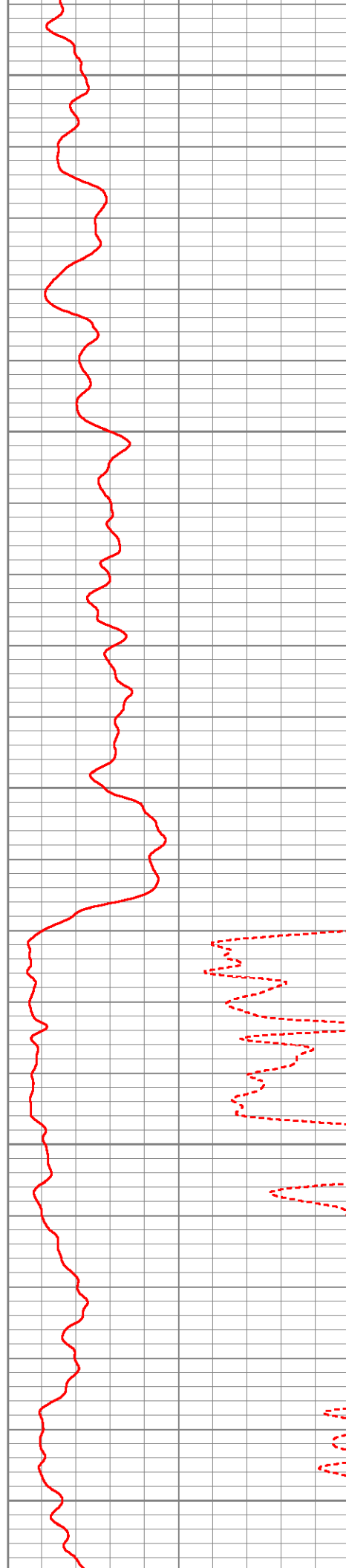
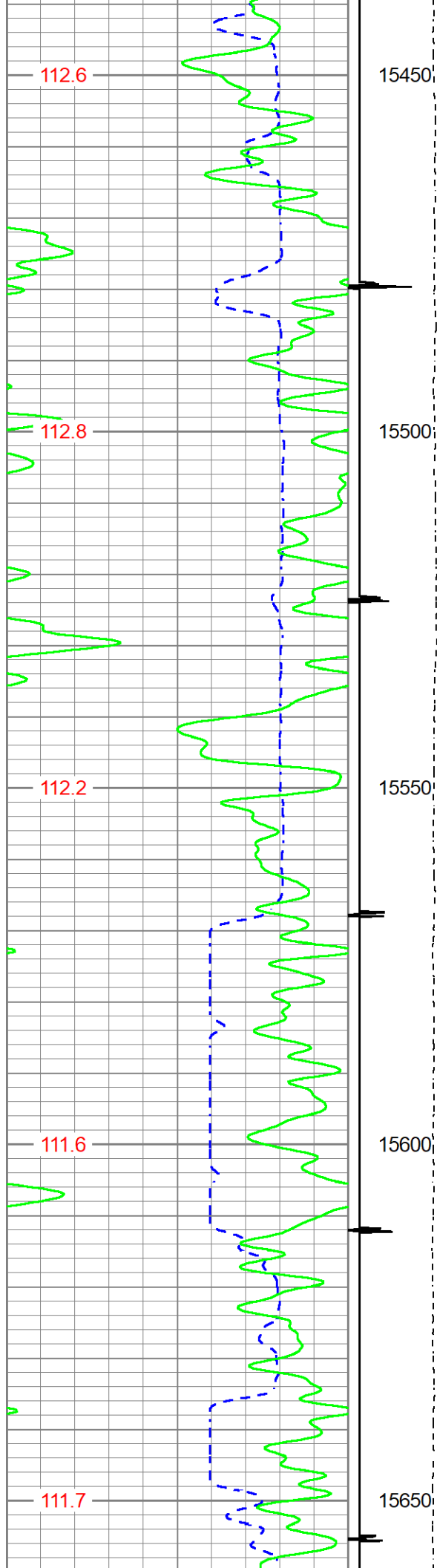


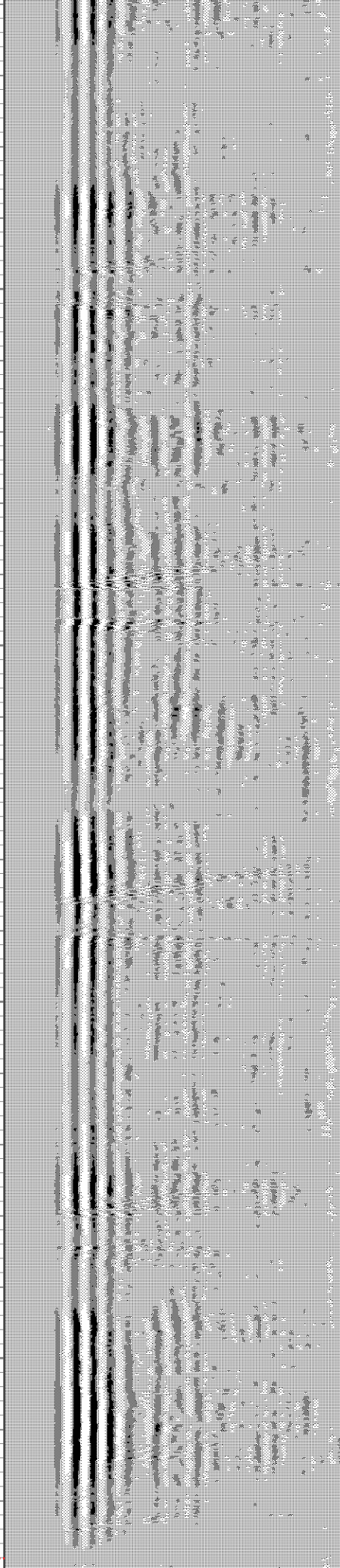
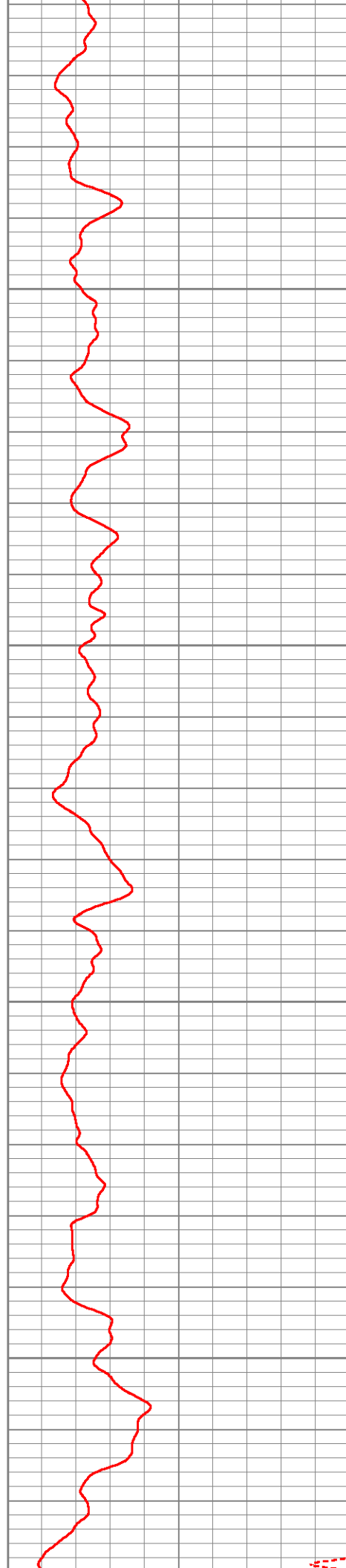
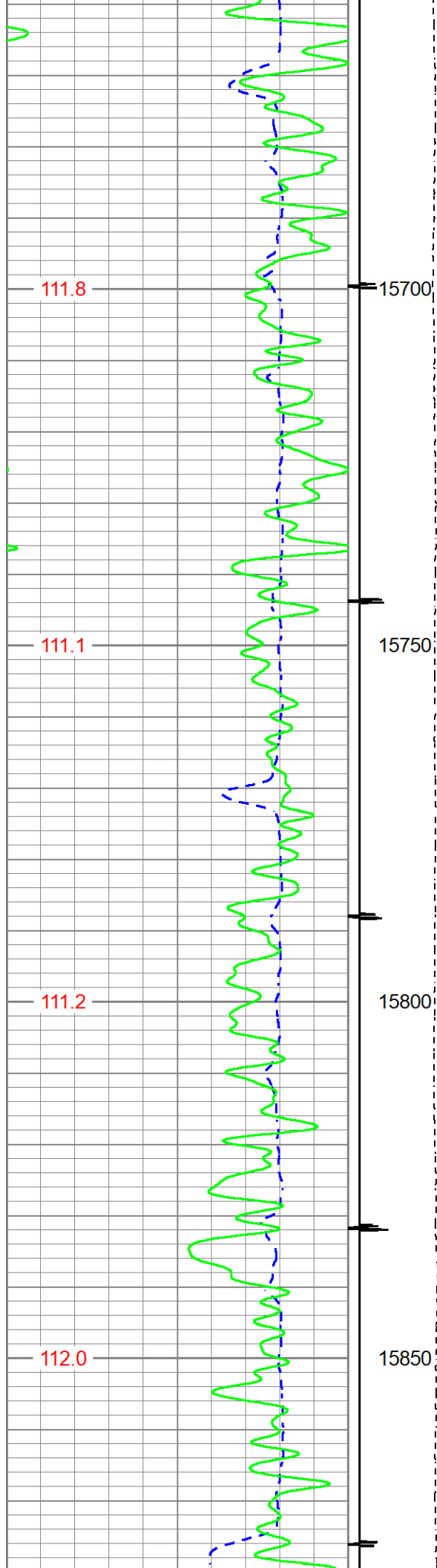


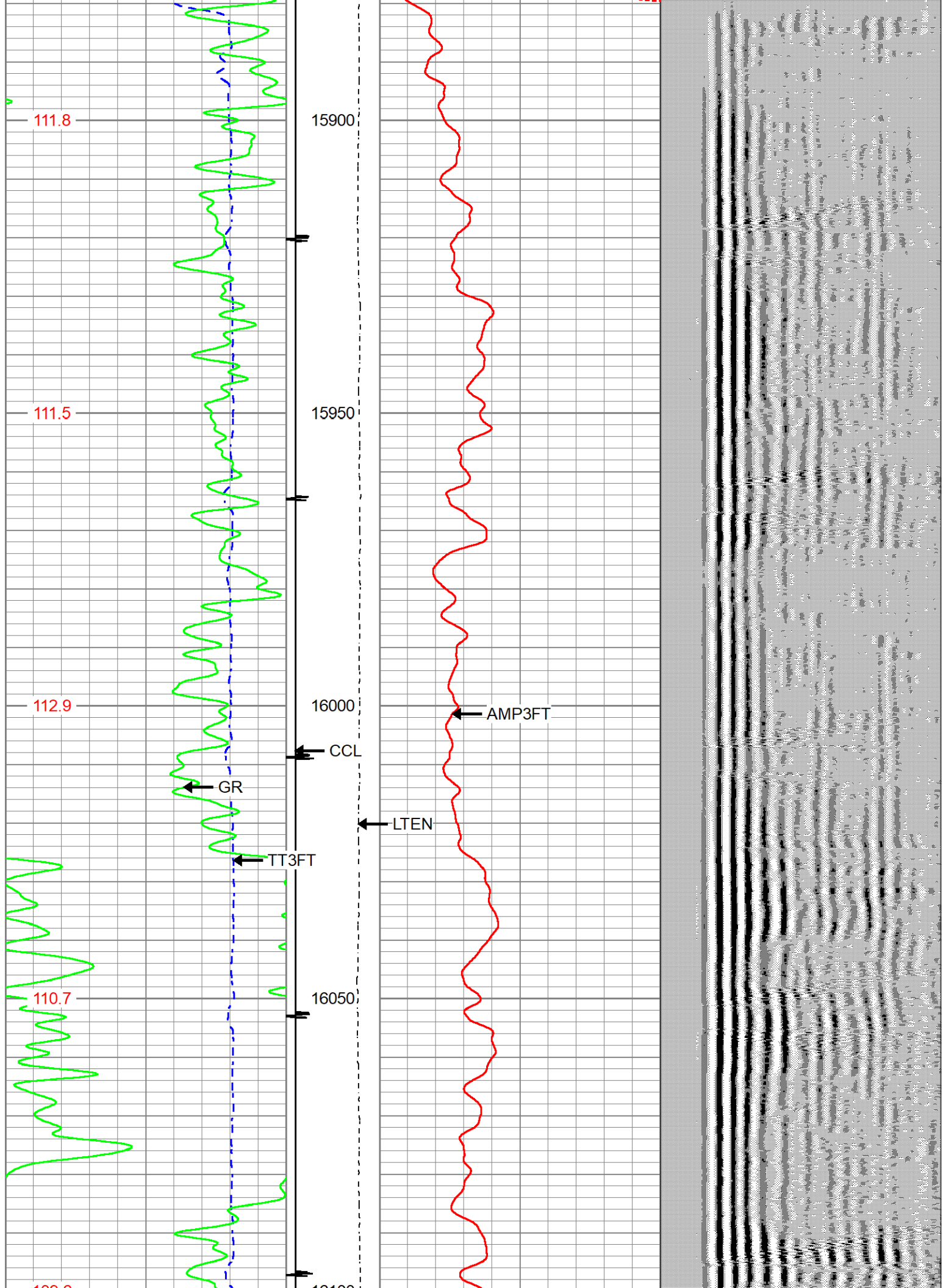


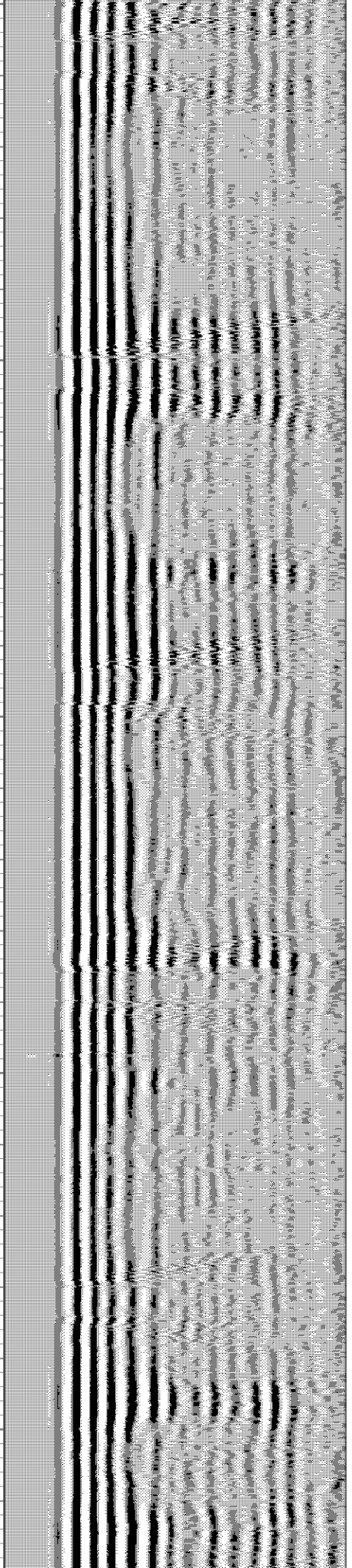
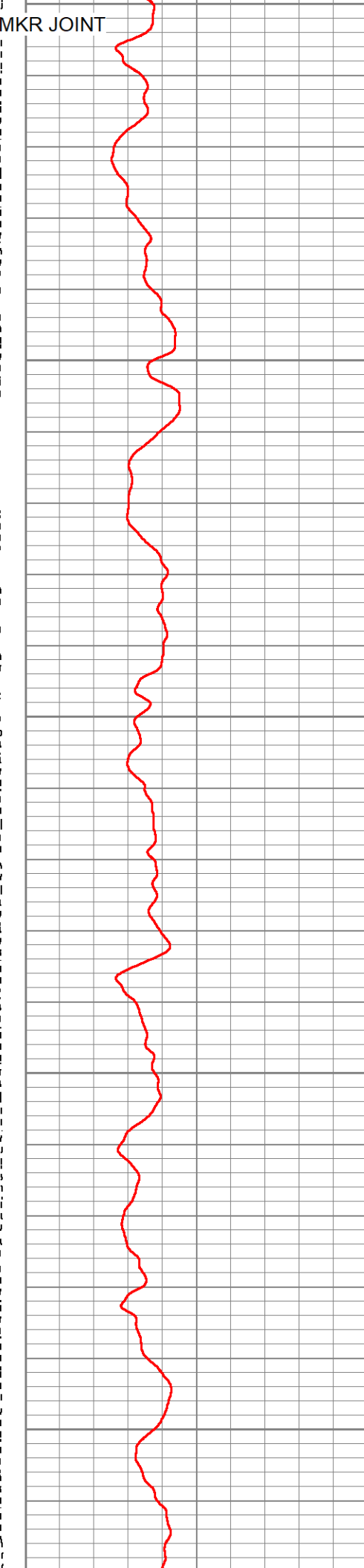
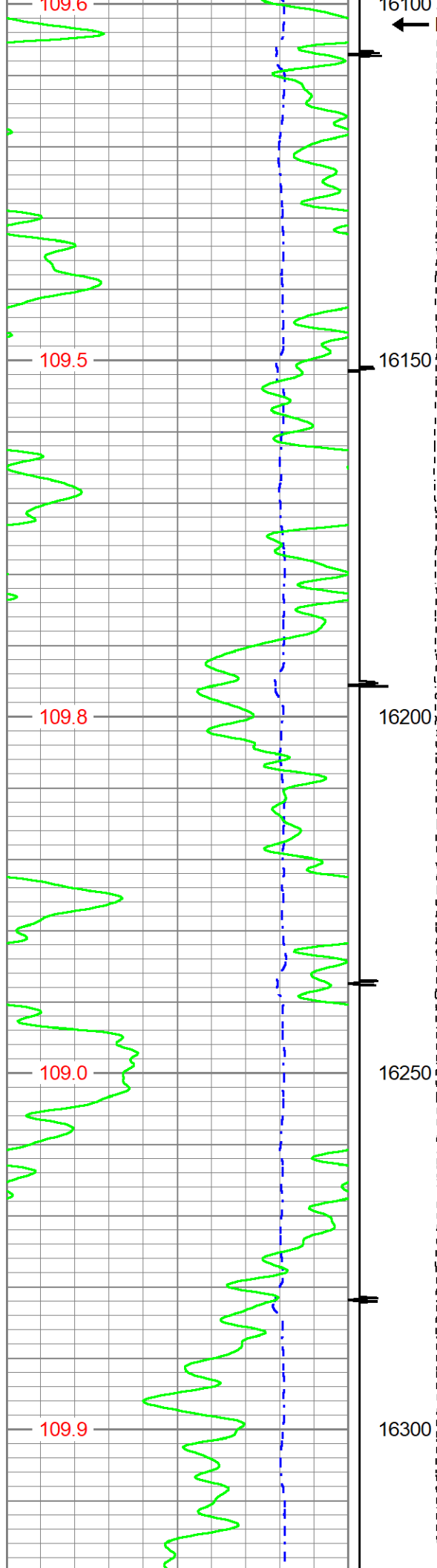


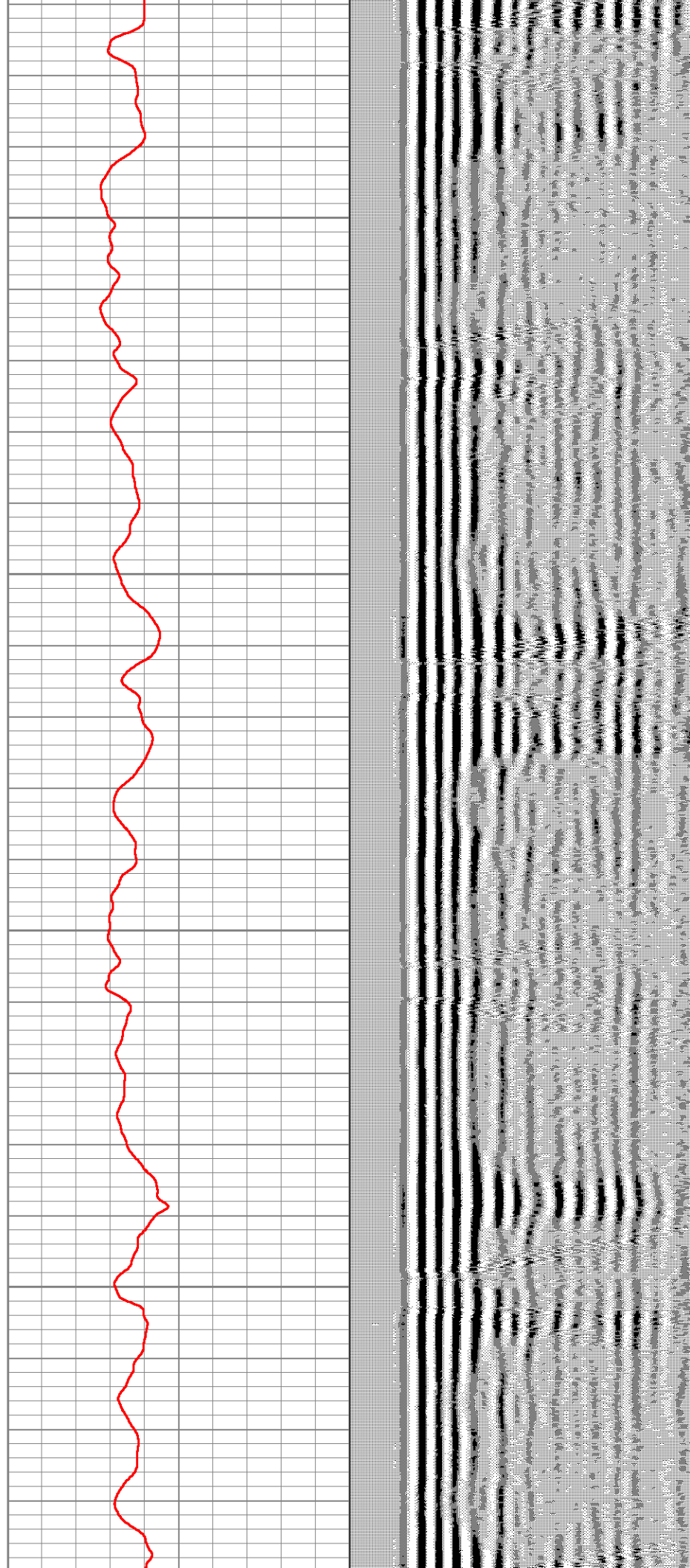
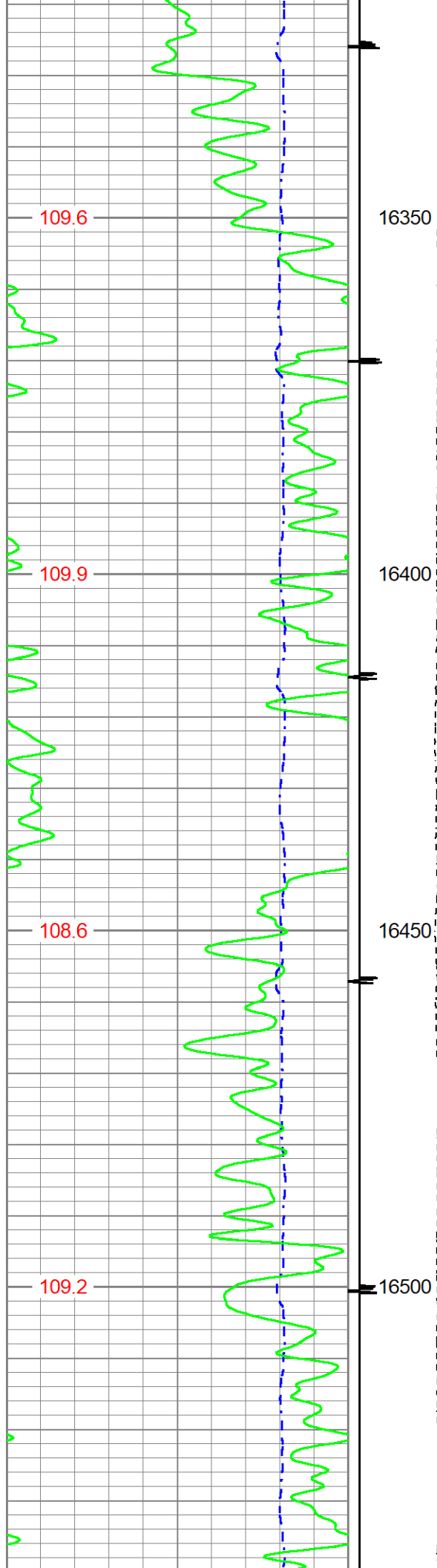


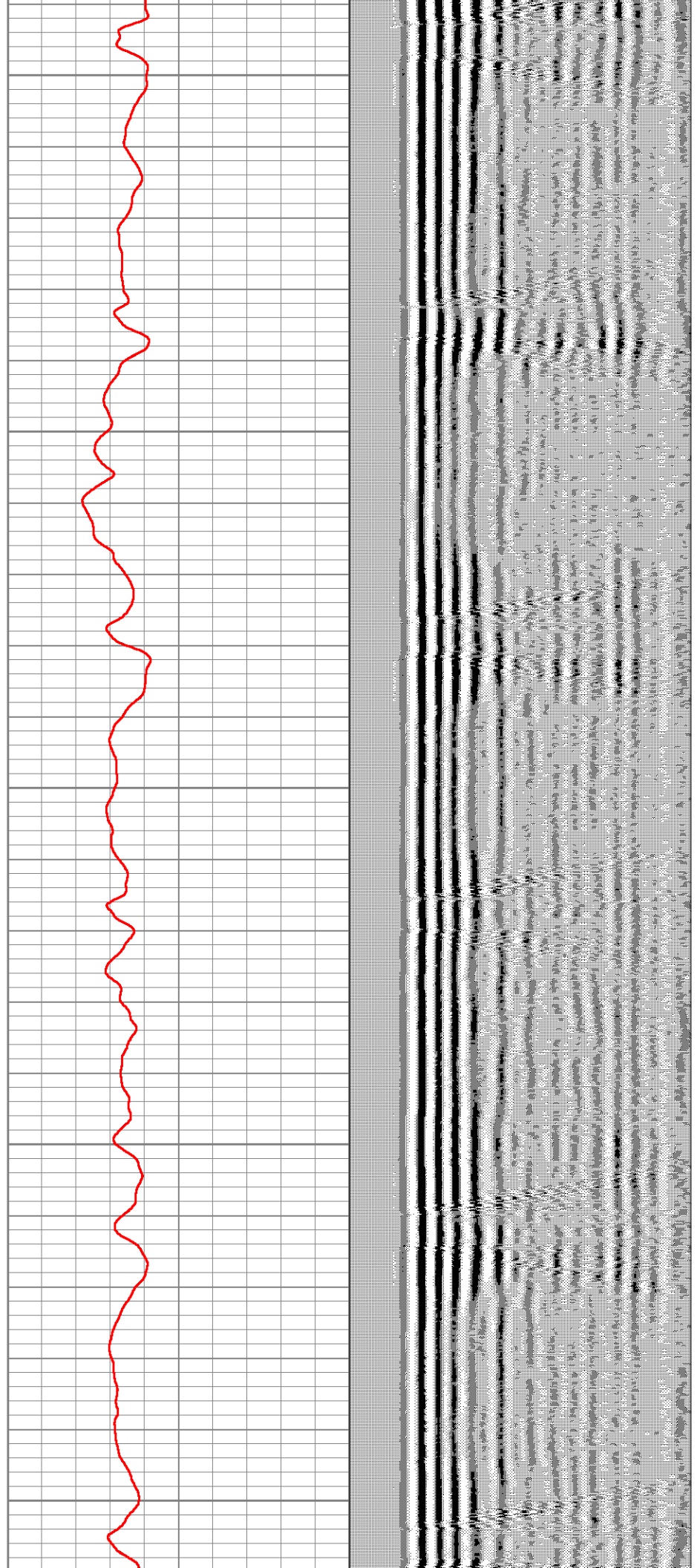
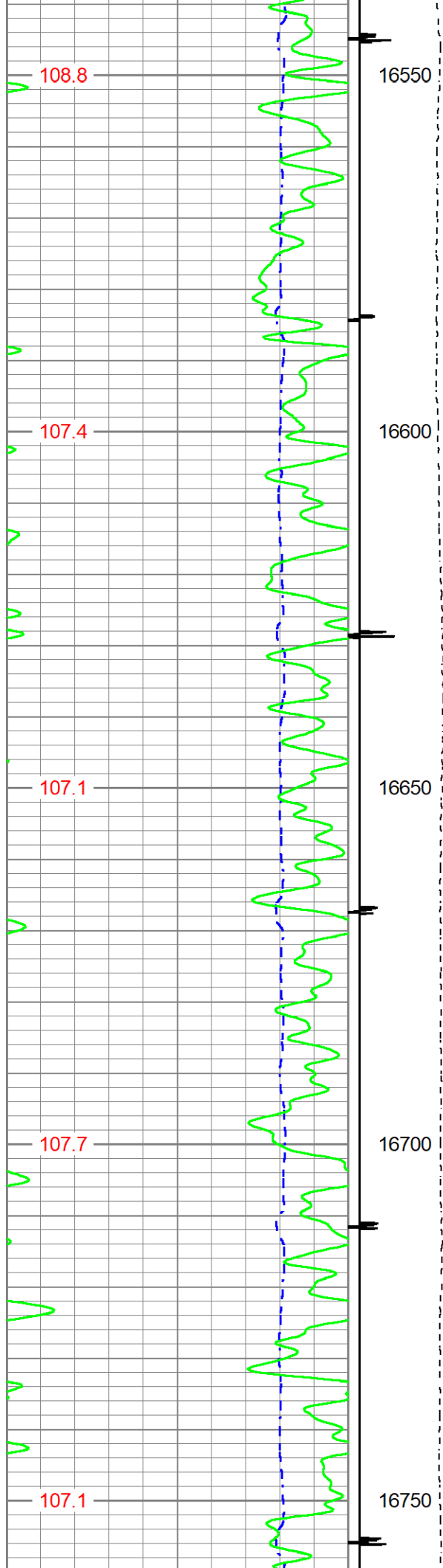


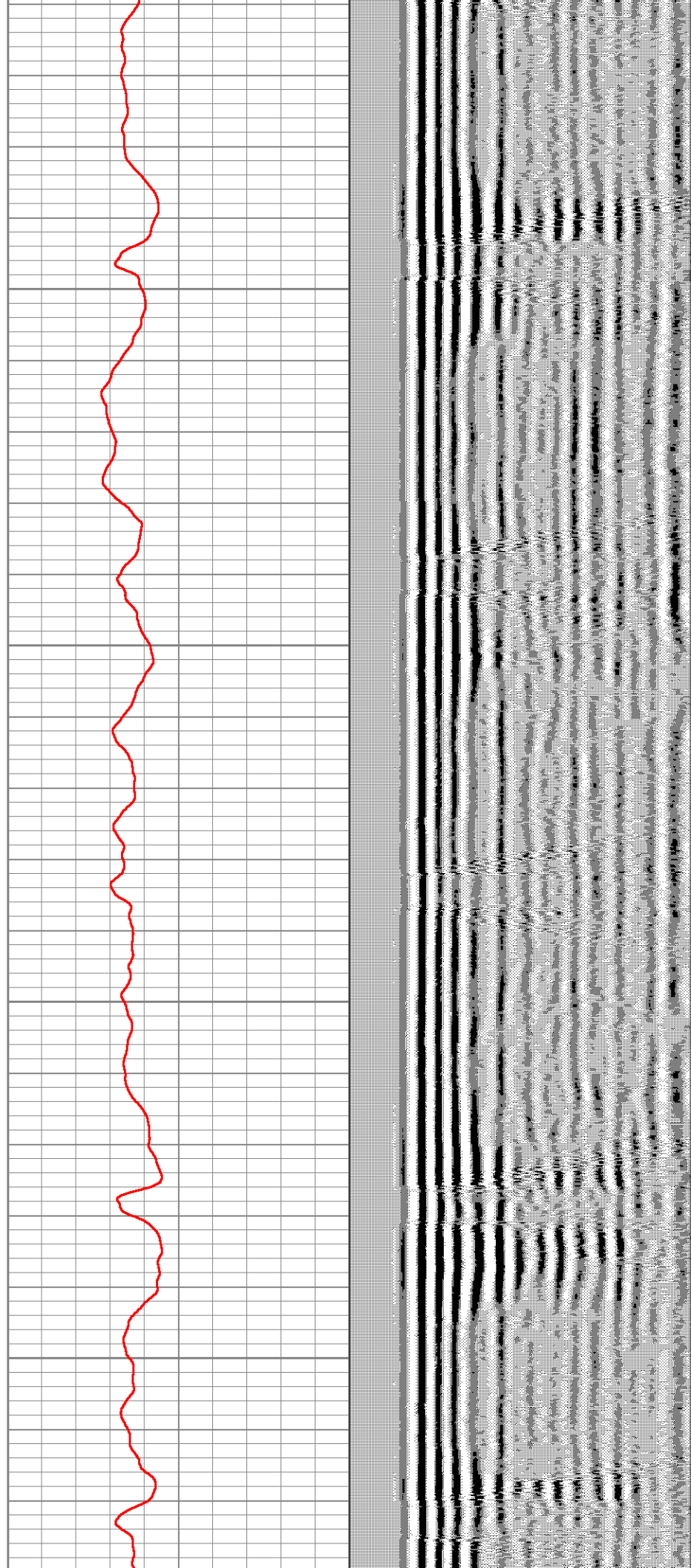
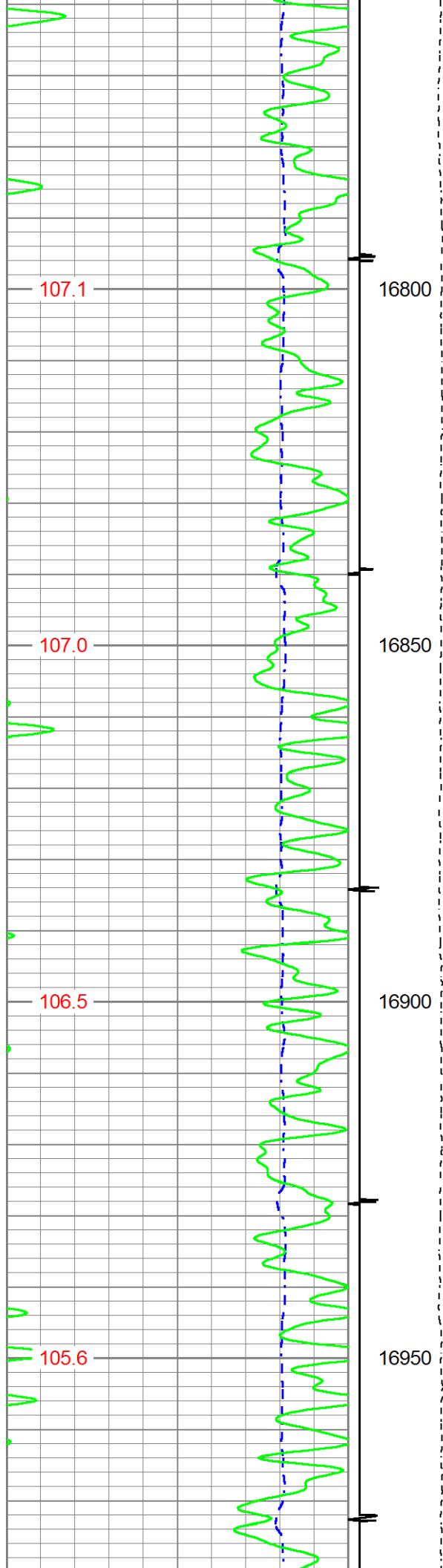


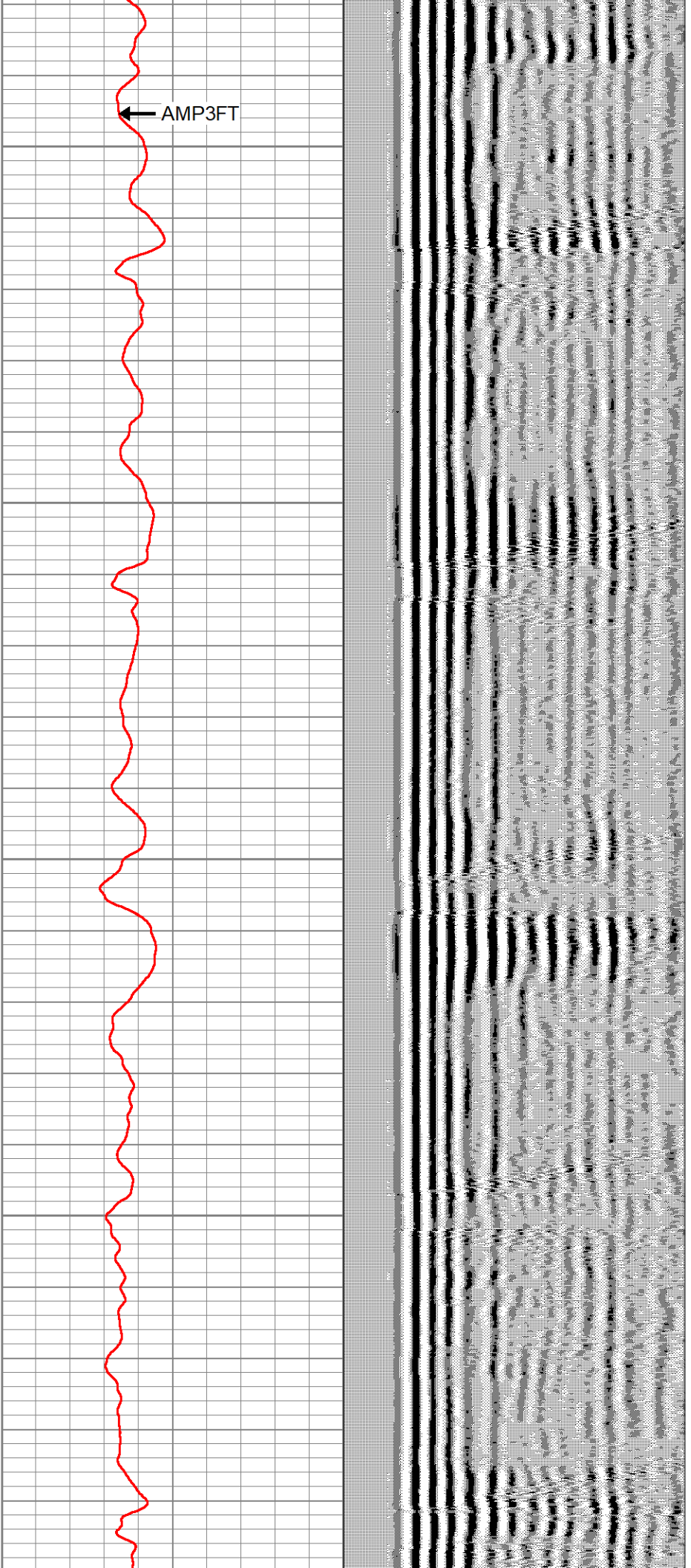
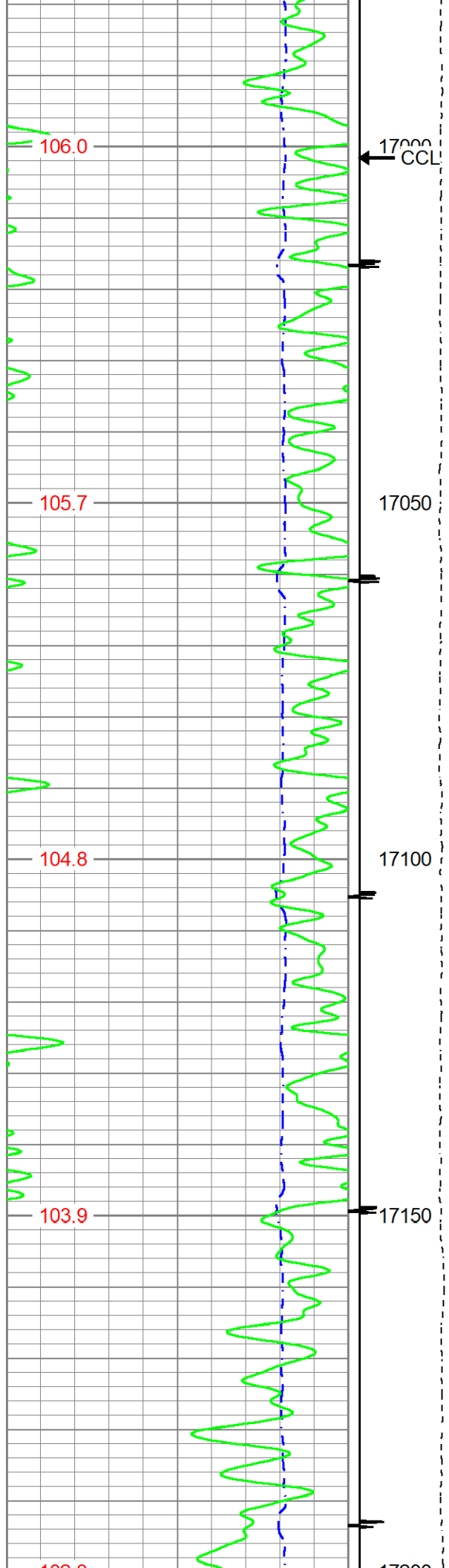


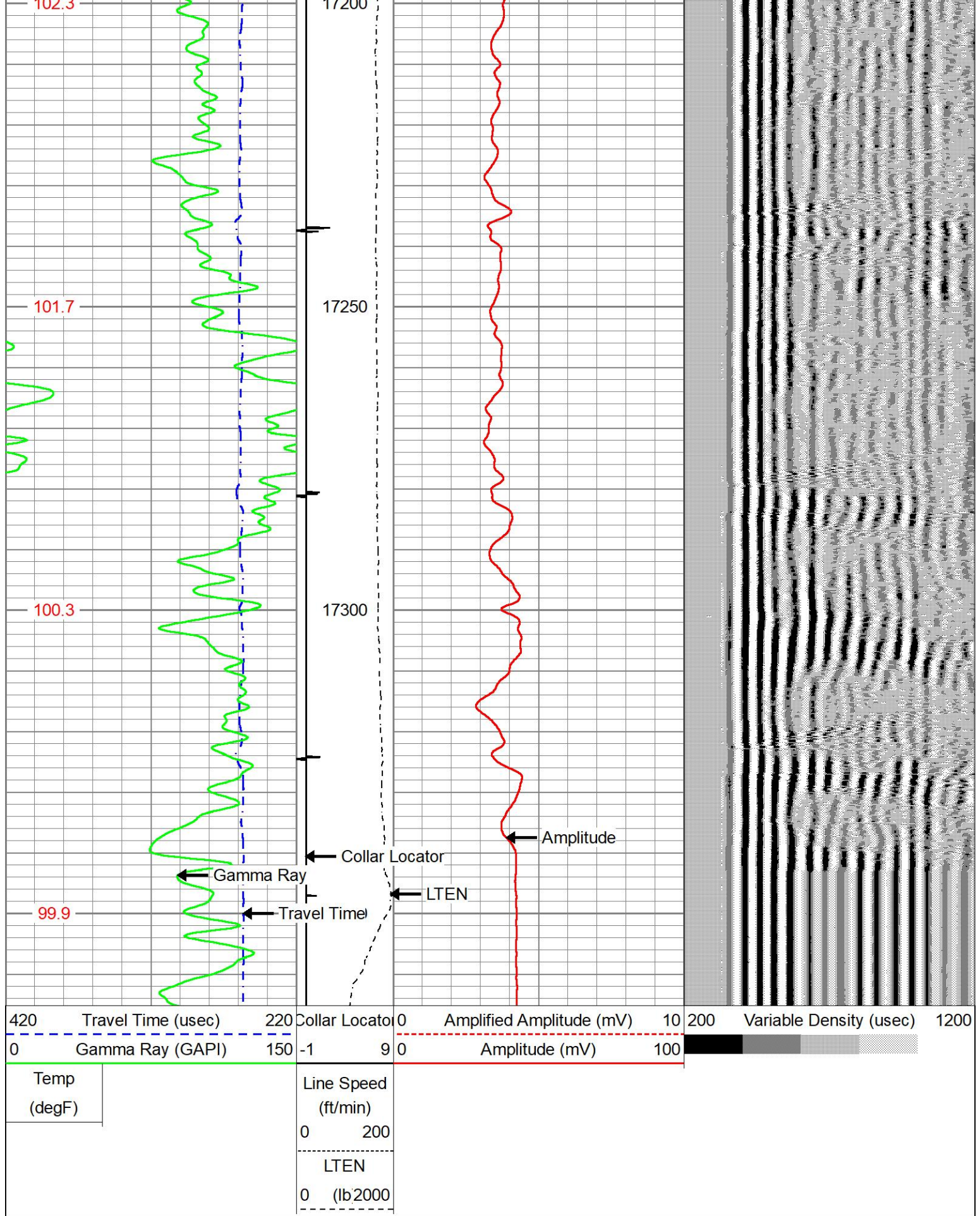






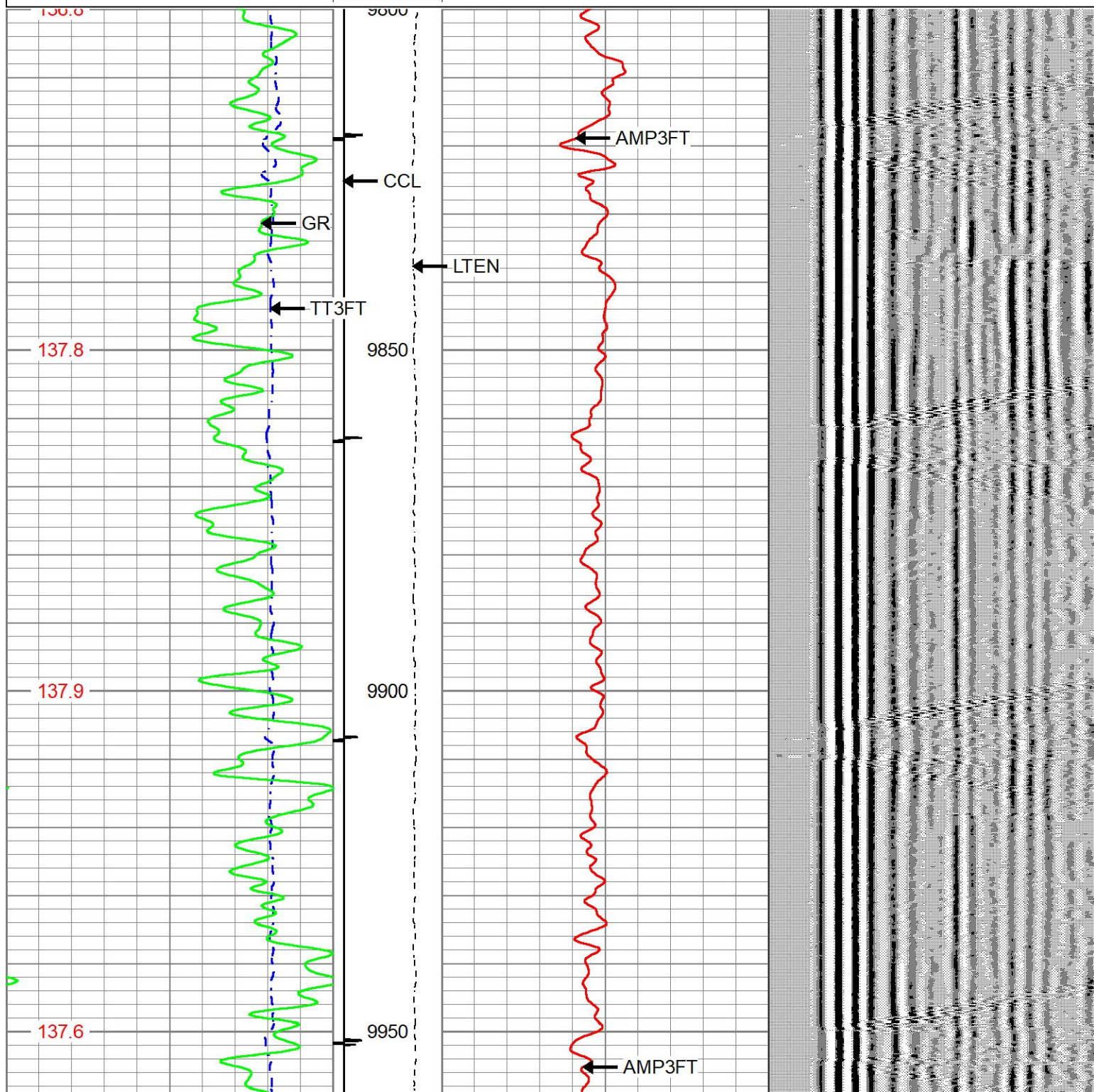


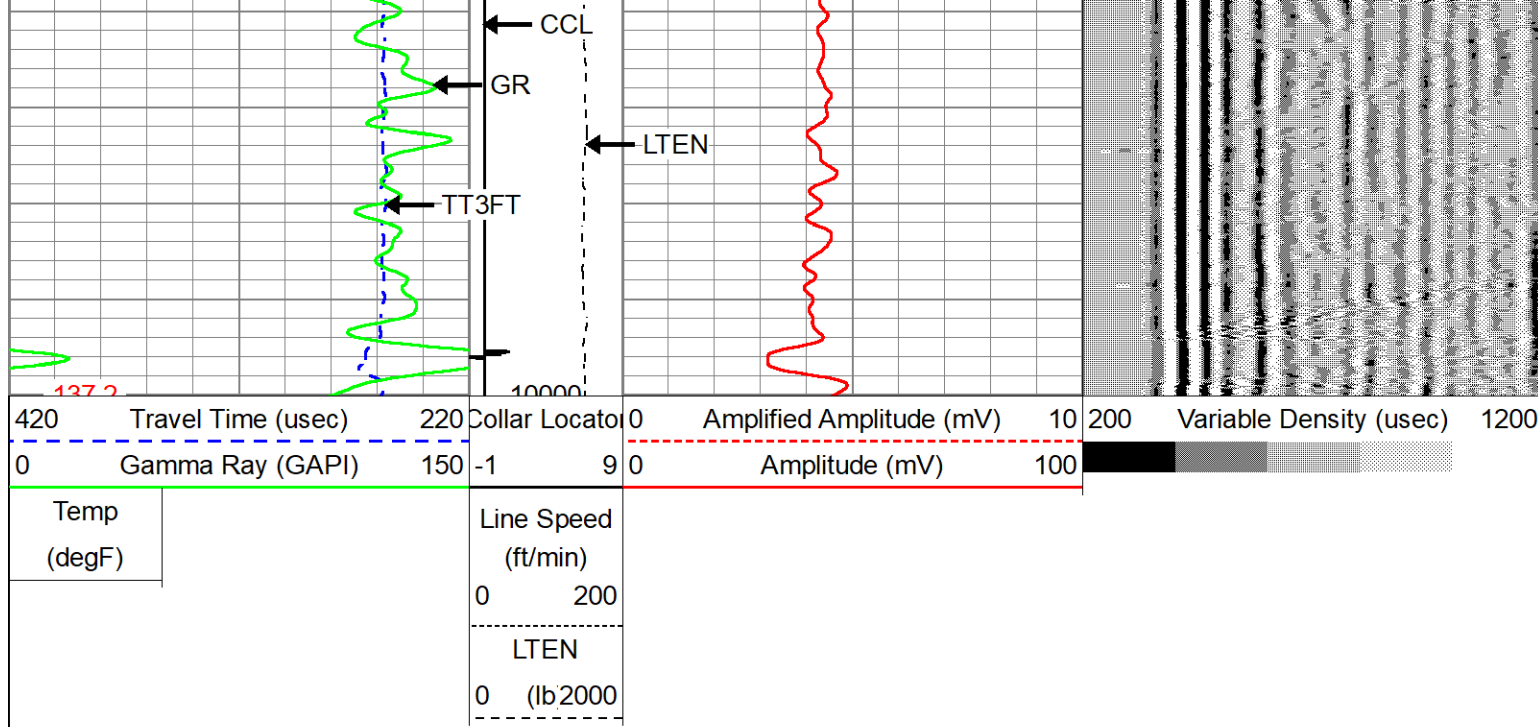




Database File gw_ottesen.db
 Dataset Pathname 06-351HNX/cbl-gr/pass10
 Presentation Format cbl_cs
 Dataset Creation Tue Jan 29 20:14:19 2019
 Charted by Depth in Feet scaled 1:240

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)						





Log Variables

Database: C:\ProgramData\Warrior\Data\gw_ottesen.db
 Dataset: field/06-351HNX/cbl-gr/pass12/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 130	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 17348			

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.db
 Dataset Pathname: 06-351HNX/cbl-gr/pass8
 Dataset Creation: Tue Jan 29 18:43:12 2019

Gamma Ray Calibration Report

Serial Number:	FW1304-44	
Tool Model:	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: 769.475 ft

Master Calibration, performed Sat Jan 26 13:10:15 2019:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.002	0.348	1.000	71.921	205.041	0.559
CAL	0.004	0.679				
5'	0.004	0.316	1.000	71.921	227.045	0.072
SUM						
S1	0.000	0.402	0.000	71.921	179.027	-0.044
S2	-0.003	0.346	0.000	71.921	206.316	0.604
S3	0.001	0.343	0.000	71.921	210.782	-0.298
S4	0.001	0.333	0.000	71.921	216.514	-0.135
S5	-0.002	0.326	0.000	71.921	218.838	0.505
S6	0.000	0.317	0.000	71.921	226.790	-0.080
S7	-0.000	0.327	0.000	71.921	219.776	0.078
S8	0.001	0.329	0.000	71.921	218.952	-0.118


Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	0.679	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)
HeadVolt	14.13		CHD-Titan Titan 1 7/16" GO Cablehead	1.00	1.44	5.00

Temp	11.28					
			RBT-Probe 2.75 Radii W/Temp (FW1808-C9.39) Probe 2.75" Radial with Integral Temperature Sub	2.75	90.00	
WVFS8	9.05					
WVFS7	9.05					
WVFS6	9.05					
WVFS5	9.05					
WVFS4	9.05					
WVFS3	9.05					
WVFS2	9.05					
WVFS1	9.05					
WVFCAL	9.05					
WVF3FT	9.05					
WVF5FT	8.05					
HEADVOLT	4.80					
CCL	3.92					
GR	2.58		GR-Probe275 (FW1304-44) Probe 2 3/4" Logging Gamma Ray 6 Pin	4.80	2.75	57.00
Dataset: gwottesen.db: field/06-351HNX/cbl-gr/pass8 Total length: 15.19 ft Total weight: 152.00 lb O.D.: 2.75 in						



Company GREAT WESTERN OIL & GAS
 Well OTTESEN LE 06-351HNX
 Field WATTENBERG
 County WELD
 State COLORADO

Country USA