

# CEMENT BOND LOG GAMMA RAY CCL V D L

Company Noble Energy INC.  
Well WASHBURN LE22-78HN  
Field Wattenberg  
County Weld State Colorado

Location: API #: 05123350600000 Other Services

SEC 22 TWP 8N RGE 61W

Permanent Datum GL Elevation 4985  
Log Measured From KB 30'  
Drilling Measured From KB

Date April 25, 2012

Run Number	One	
Depth Driller	10,813 est.	
Depth Logger	6615	
Bottom Logged Interval	6614	
Top Log Interval	Surface	
Casing Size	7.0"	
Type Fluid	Water	
Max. Recorded Temp.	207 deg F	
Estimated Cement Top	960	
Time Well Ready	Crane	
Time Logger On Bottom	AM	
Unit Number	4367	3839
Tool Size / ID Number	2.75 Probe 101010	2.75 probe 110802
Location	Platteville, CO	
Recorded By	K. Monaghan	
Witnessed By	B. Mansfield	

Borehole Record Bit From To Size Weight From To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9 5/8"	36 lb/ft J-55	Surface	1059.1
Prot. String				
Production String	7.0"	26 lb/ft P-110	Surface	6958.7
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

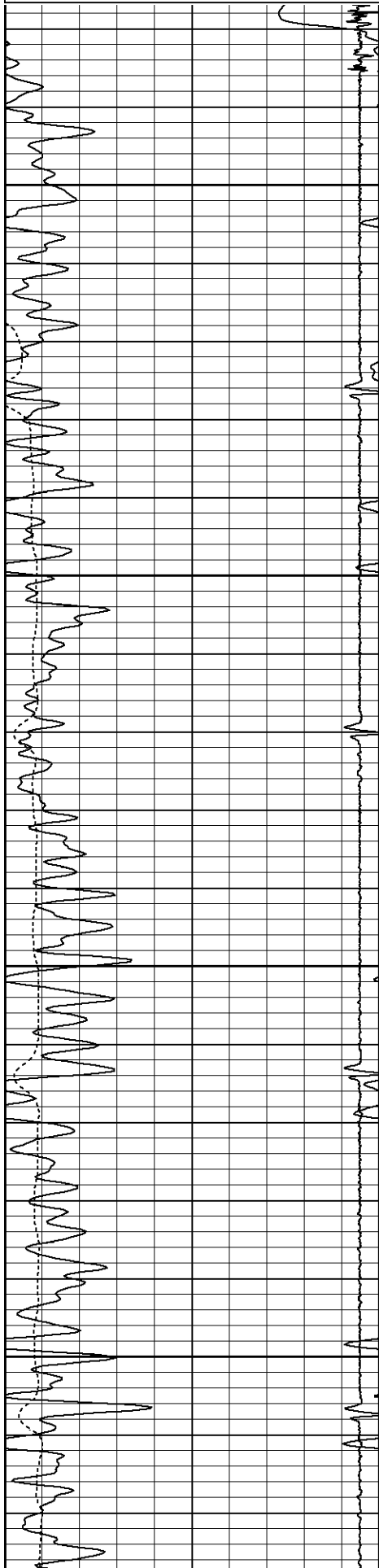
Thank You For Choosing Superior Well Services!!  
API# 05-123-35060-0000  
Wireline Zero @ 30' KB  
Directions: HWY 14 & 89, E 1mi, N 1mi Into

Database File: cblwashburn le22-78hn.db  
Dataset Pathname: pass3  
Presentation Format: noble en  
Dataset Creation: Wed Apr 25 07:23:58 2012 by Log SCH 120126  
Charted by: Depth in Feet scaled 1:240

95	CCL	-5
30	Gamma Ray (GAPI)	130
340	TT3 (usec)	240

0	Amplified Amplitude (mV)	30	200
0	Amplitude (mV)	100	

Variable Density	1200
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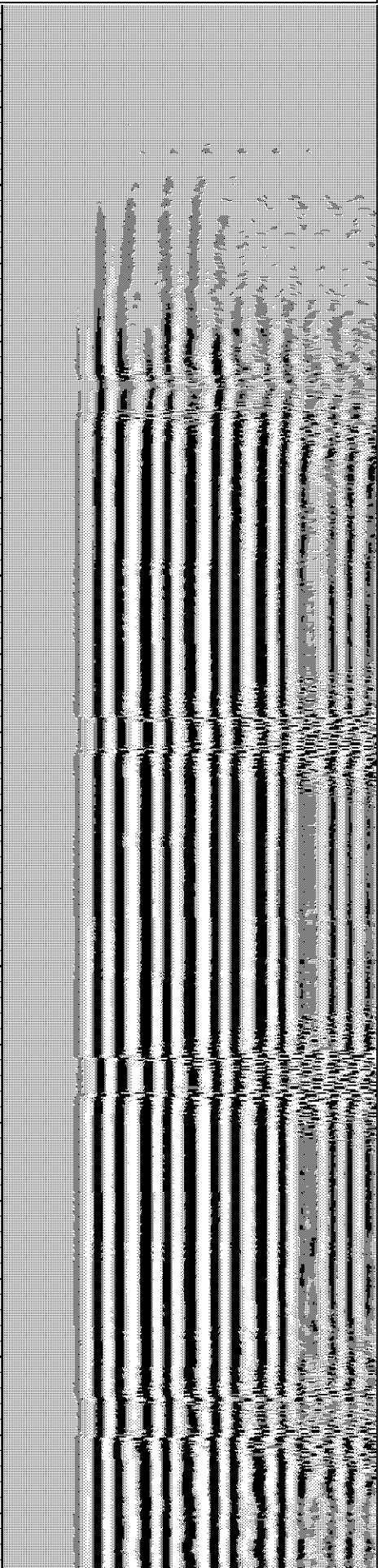
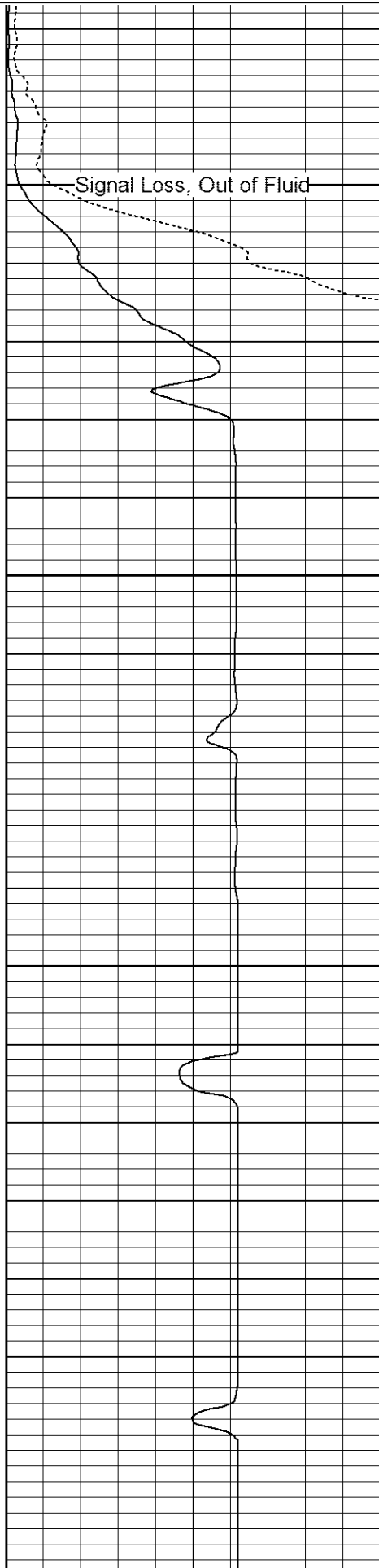


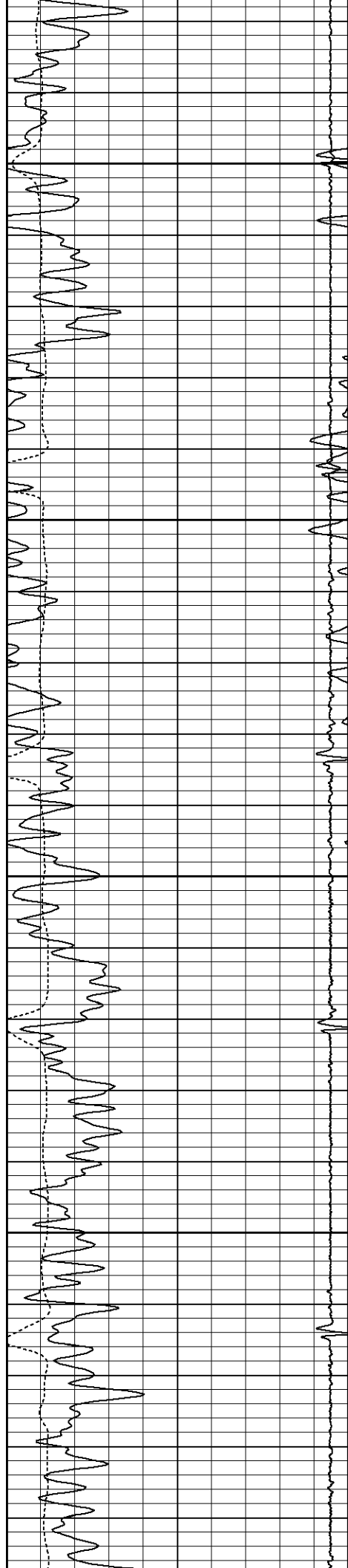
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100

150

200



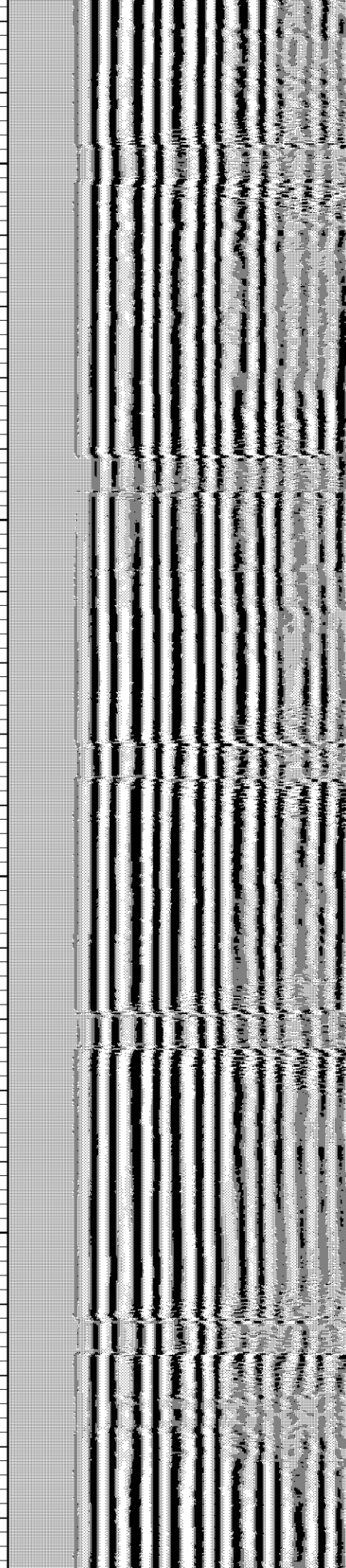
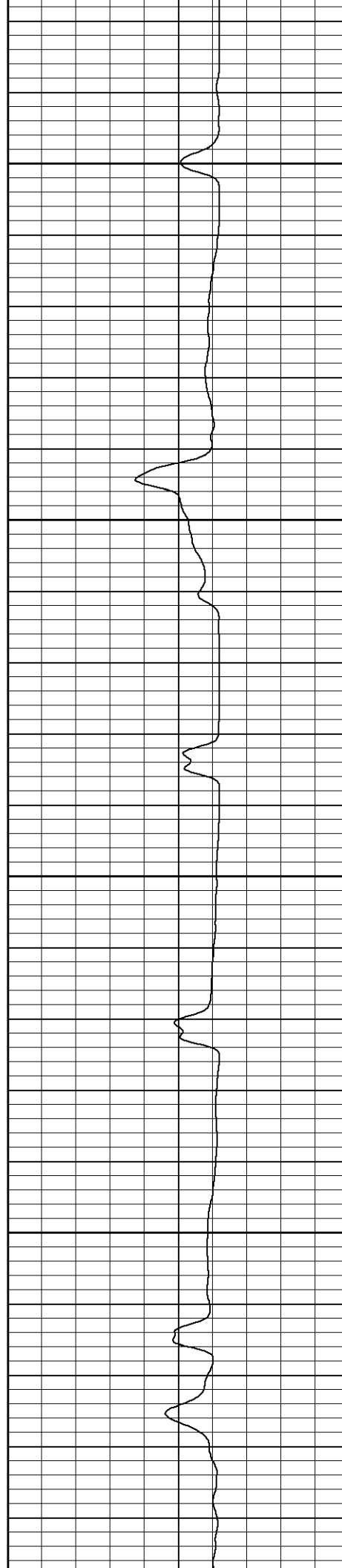


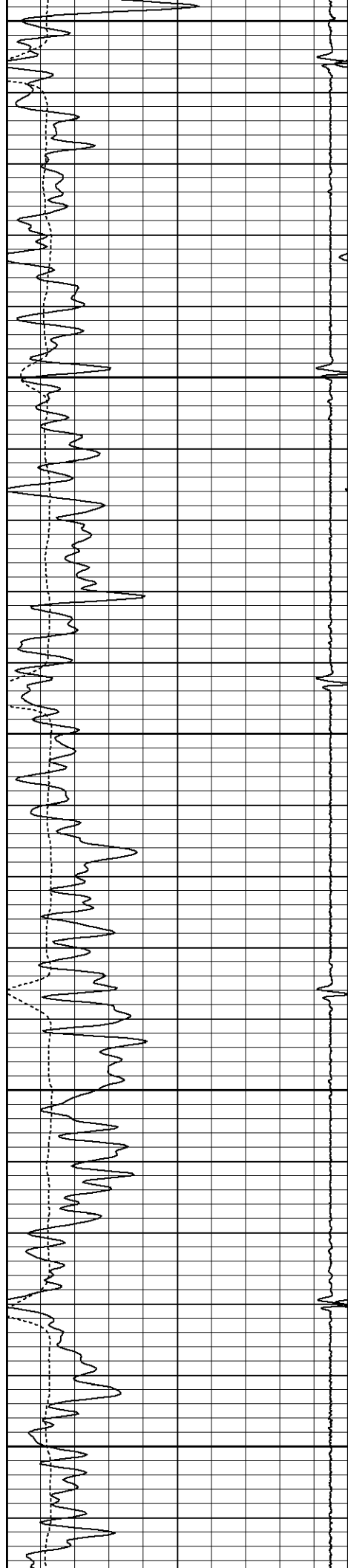
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300

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400





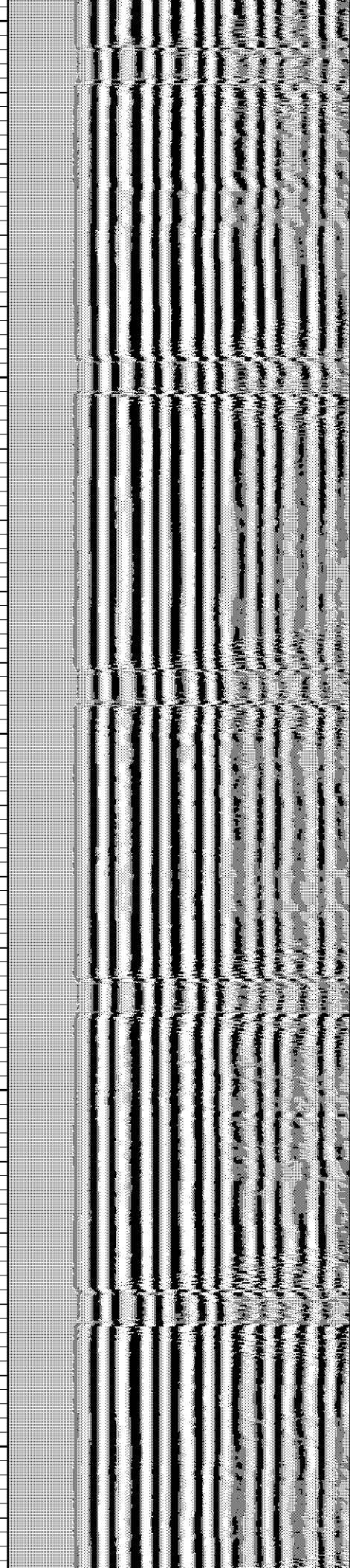
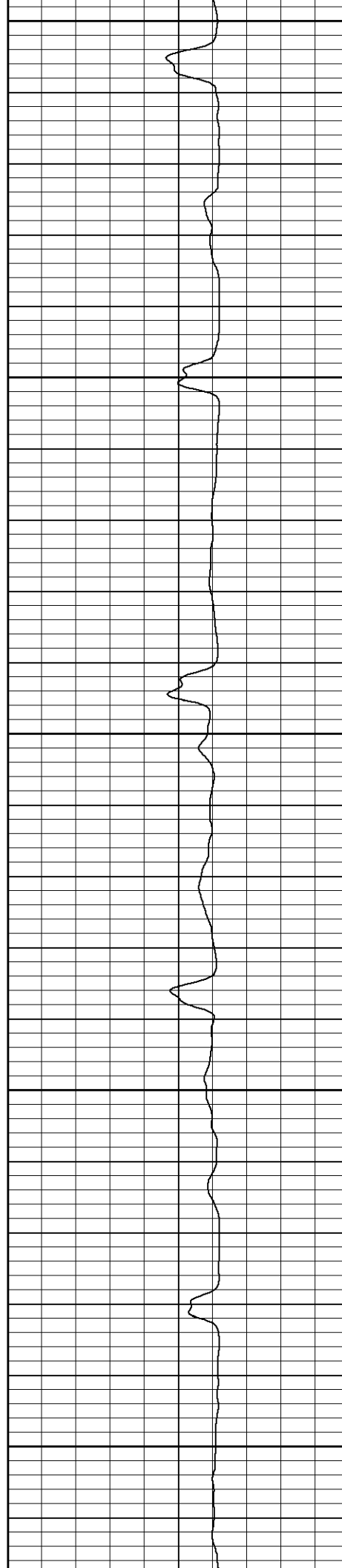
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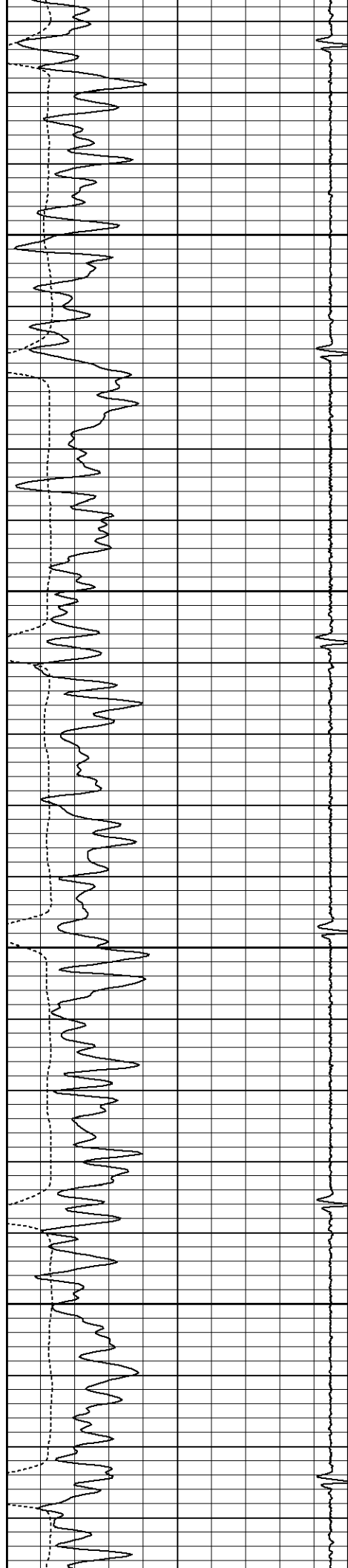
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550

600

650



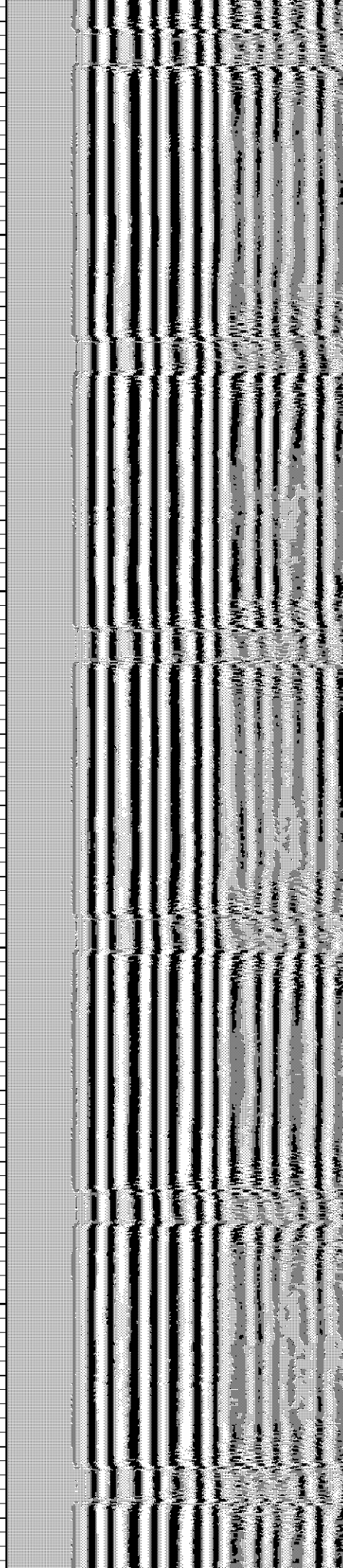
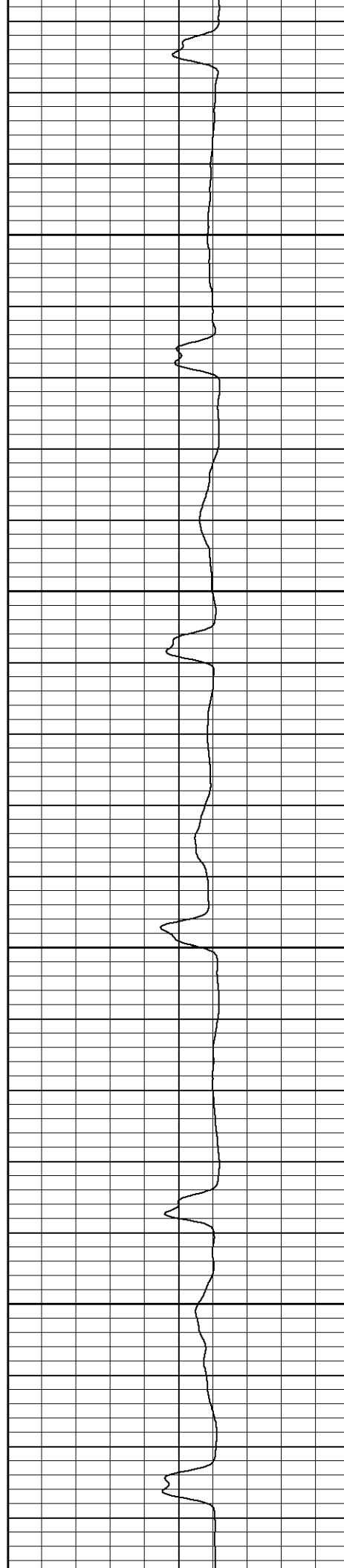


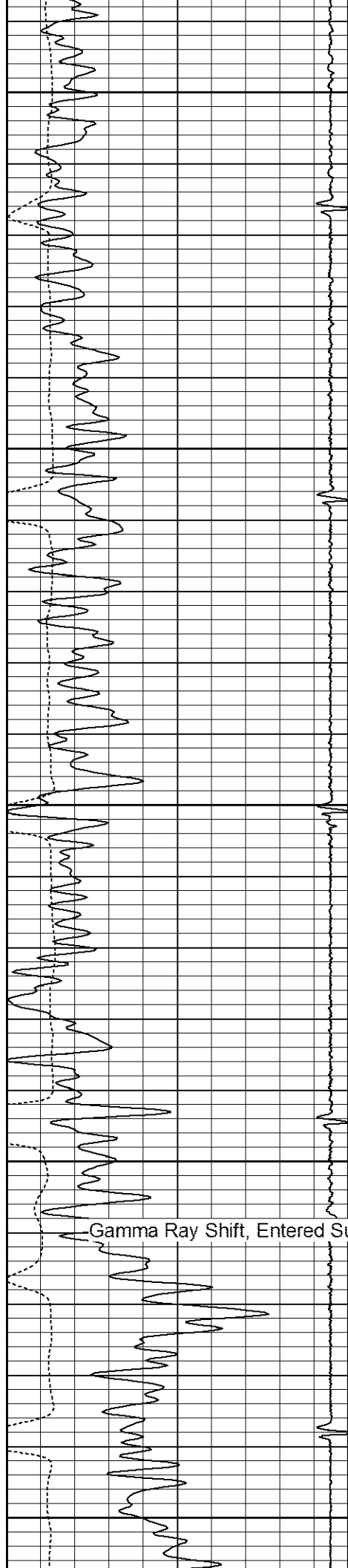
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750

800

850





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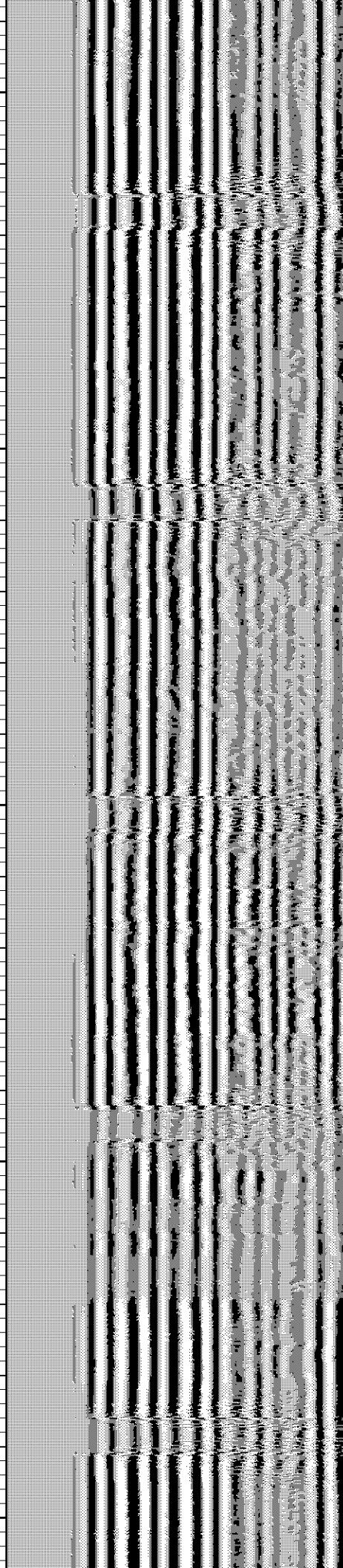
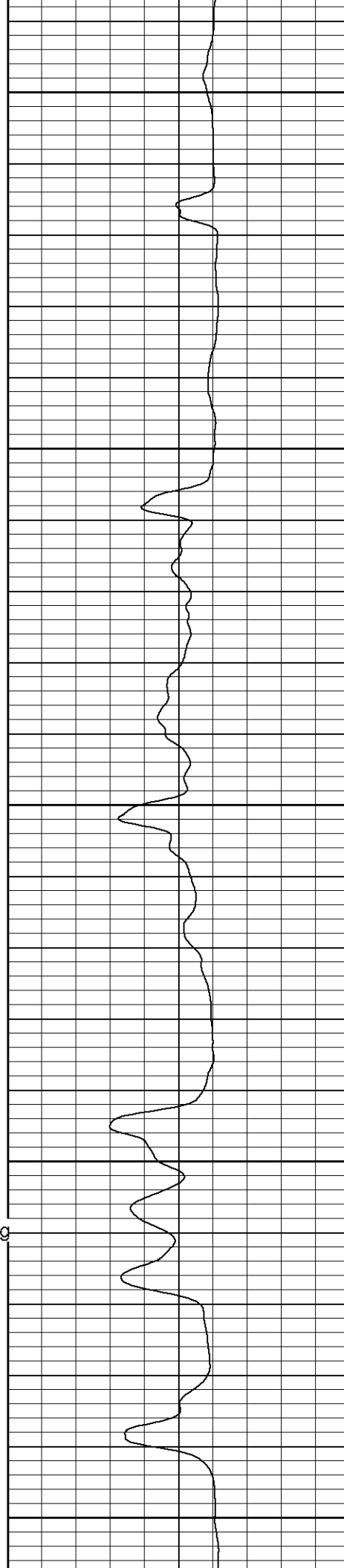
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1000

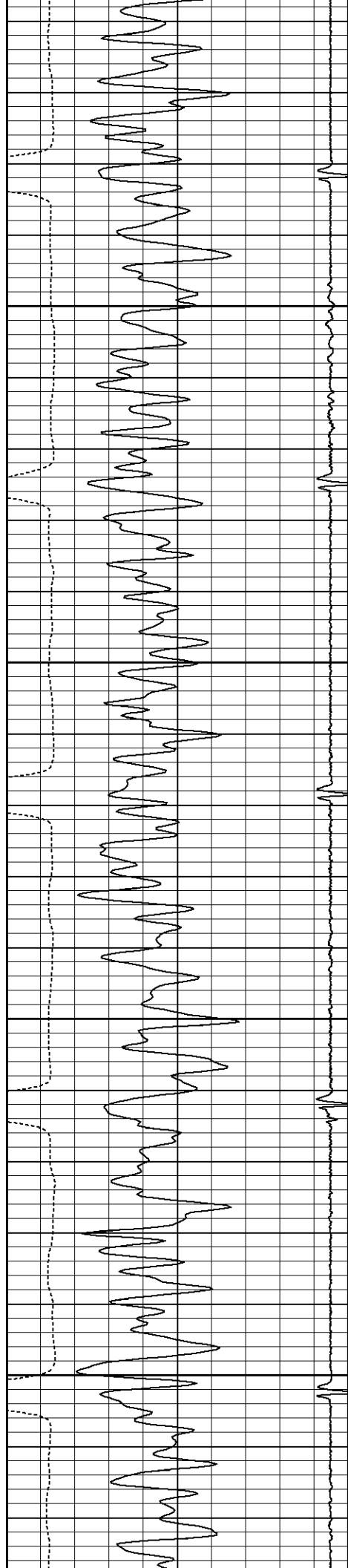
1050

1100

Gamma Ray Shift, Entered Surface Casing





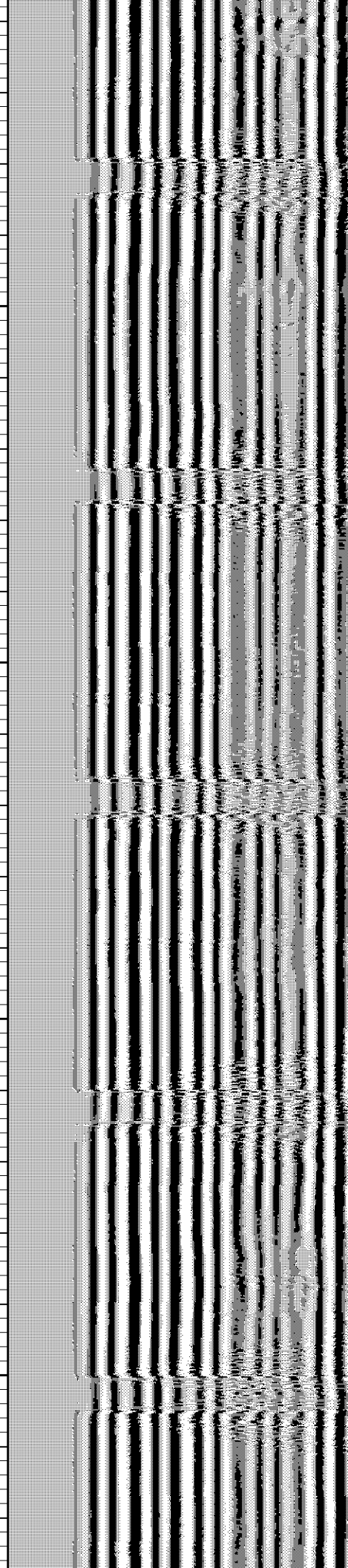
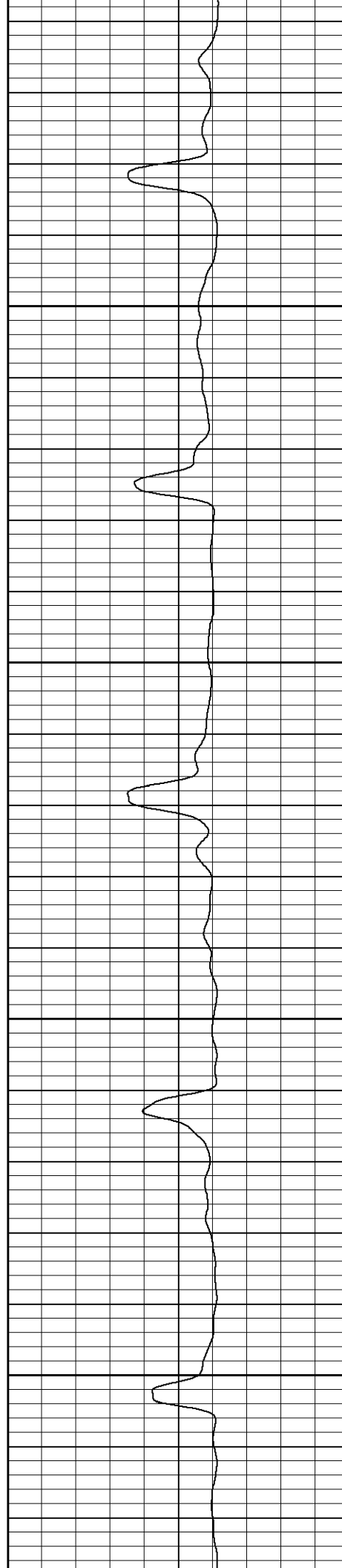


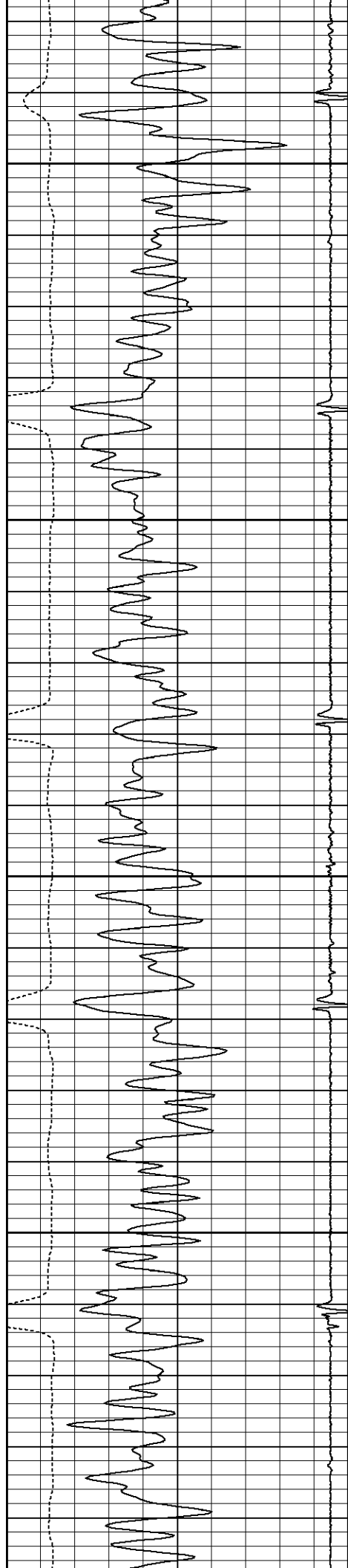
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1200

1250

1300



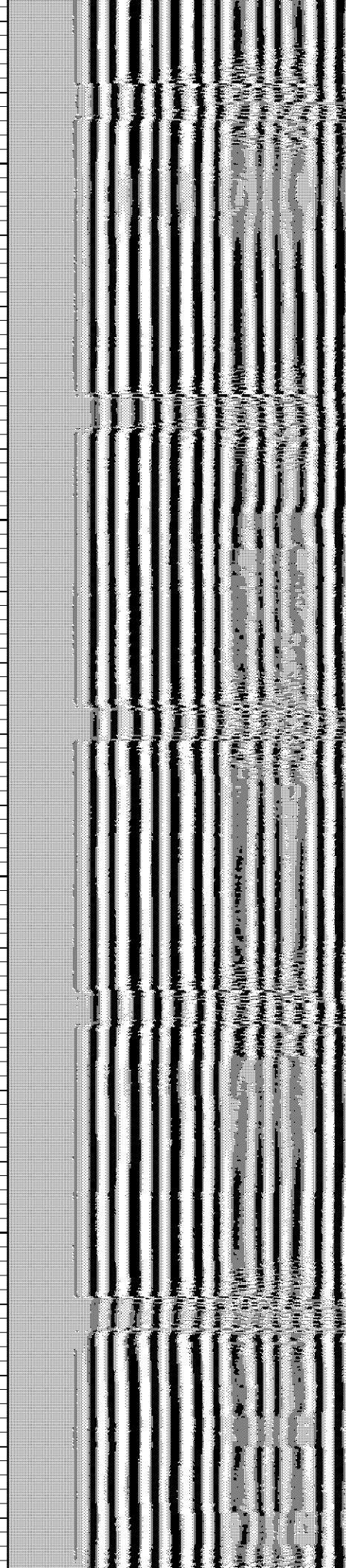
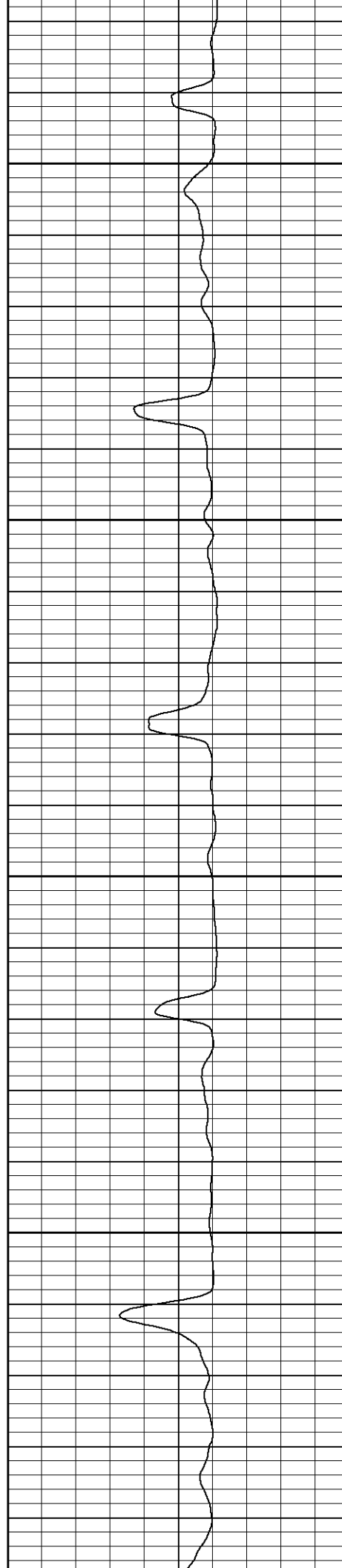


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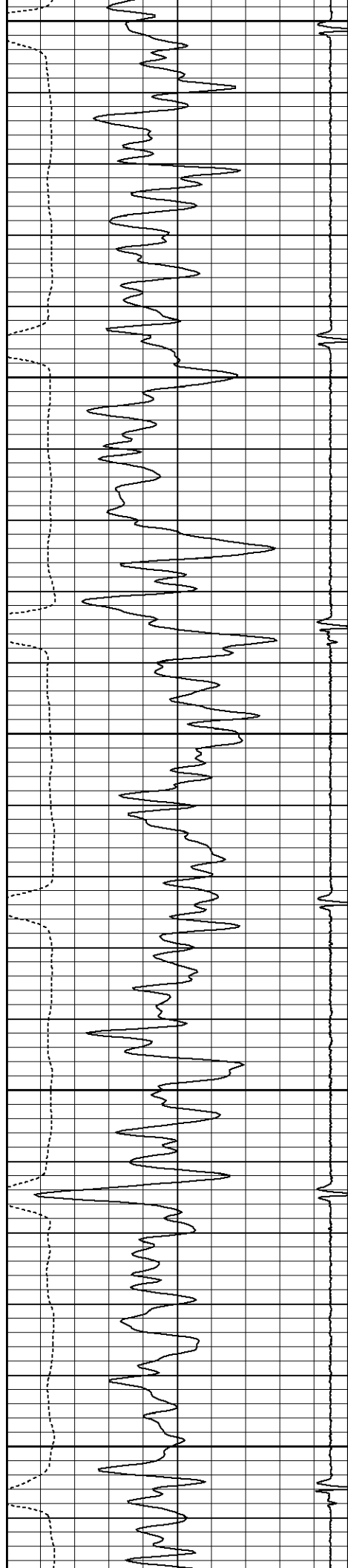
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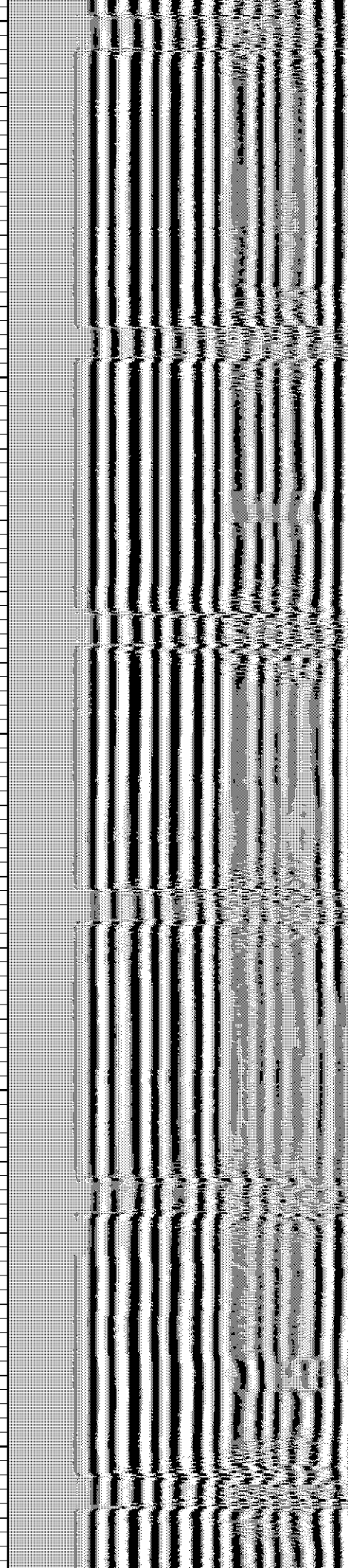
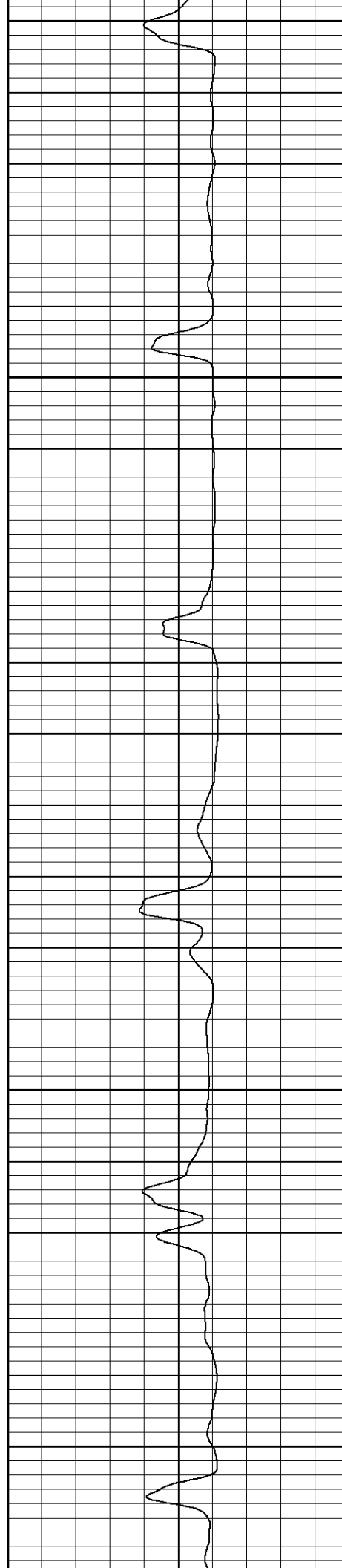
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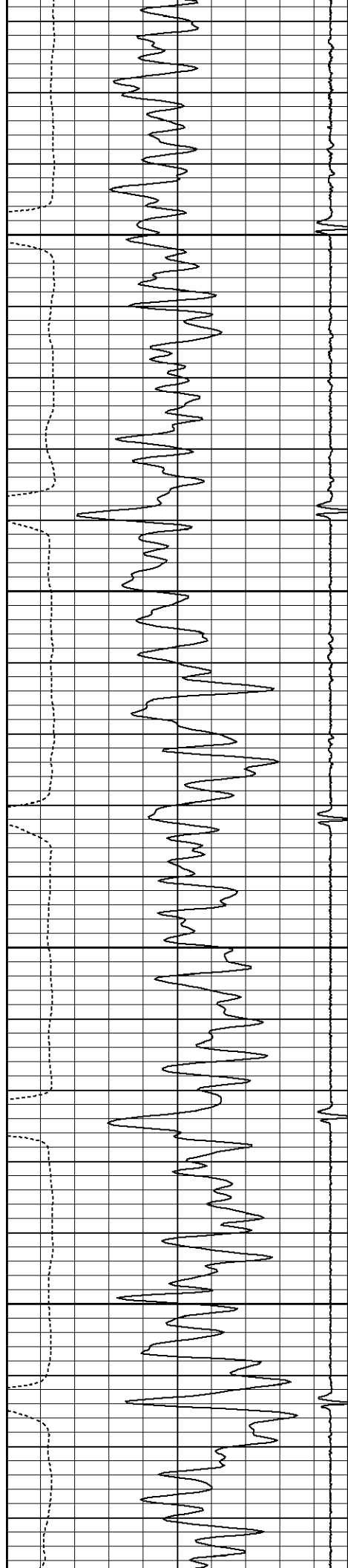
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1750



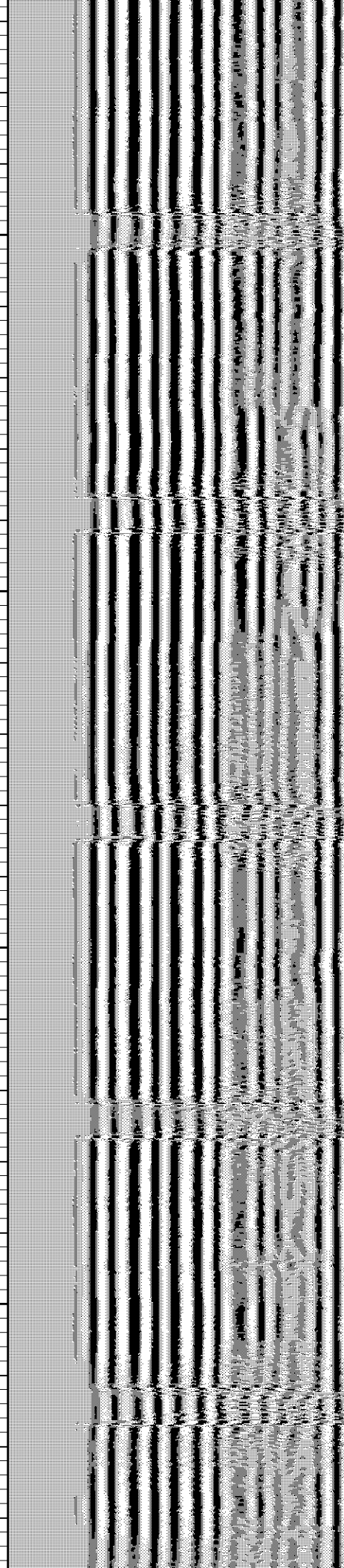
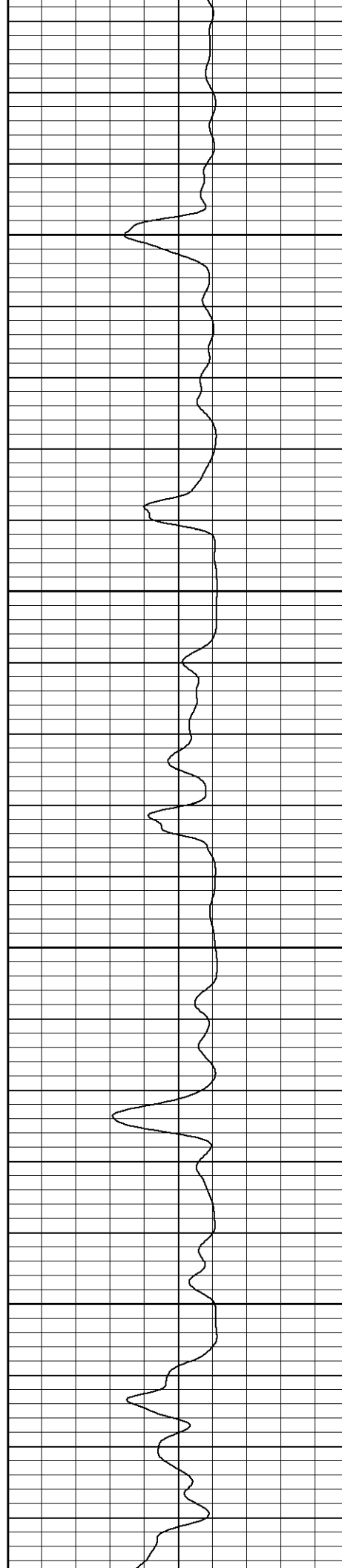


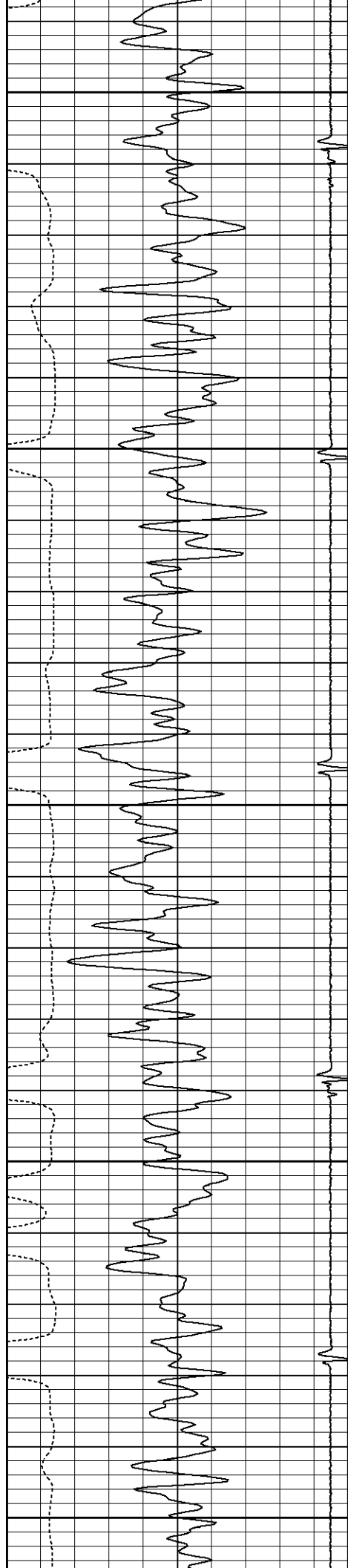
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1850

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1950





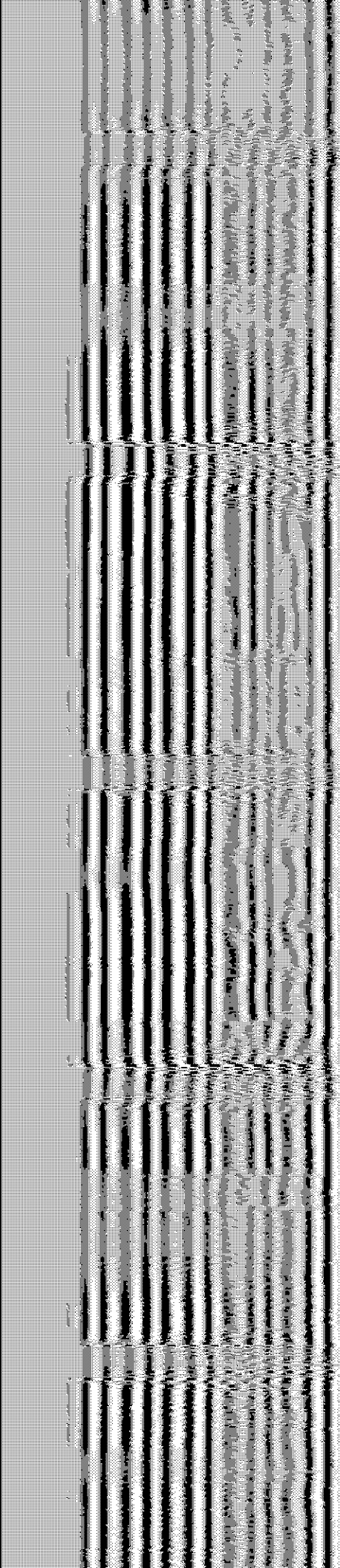
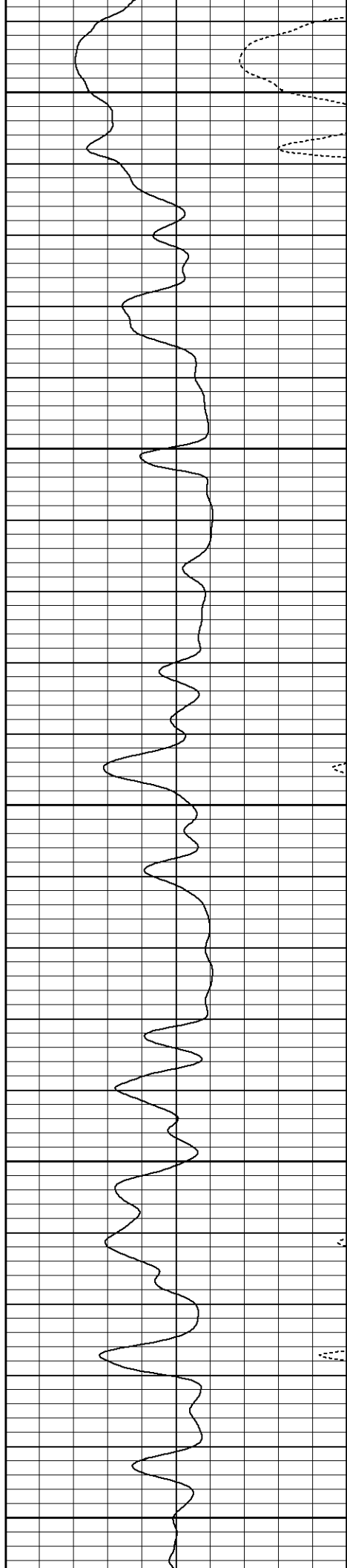
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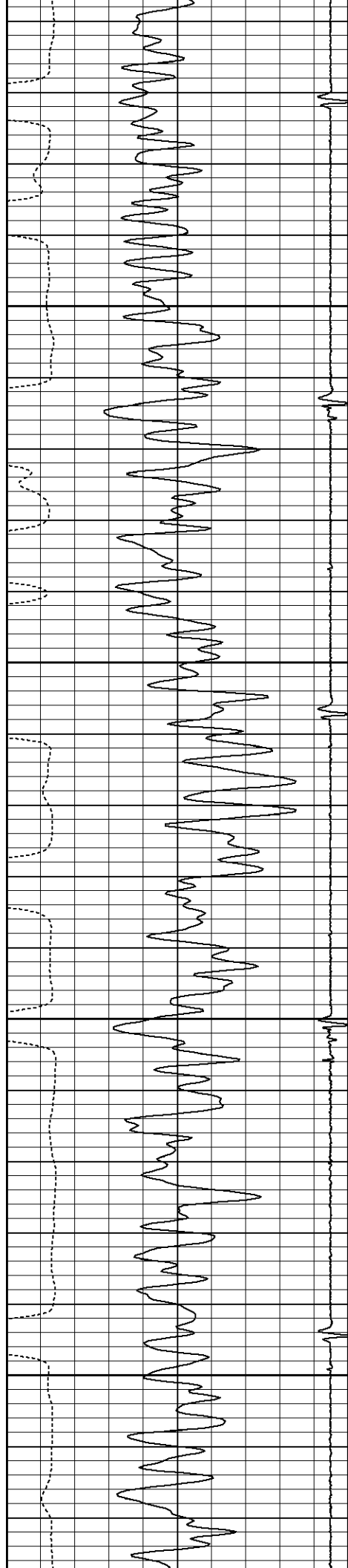
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2200



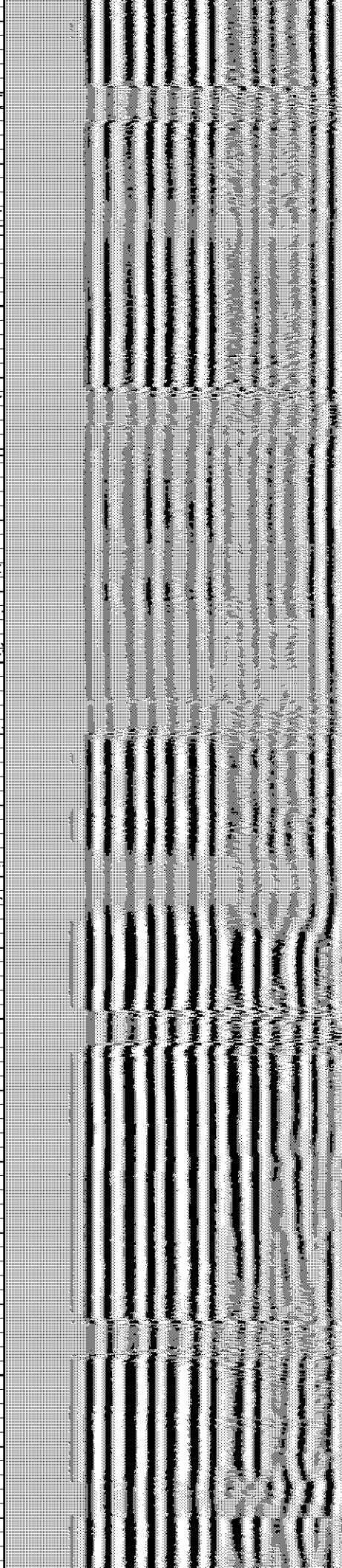
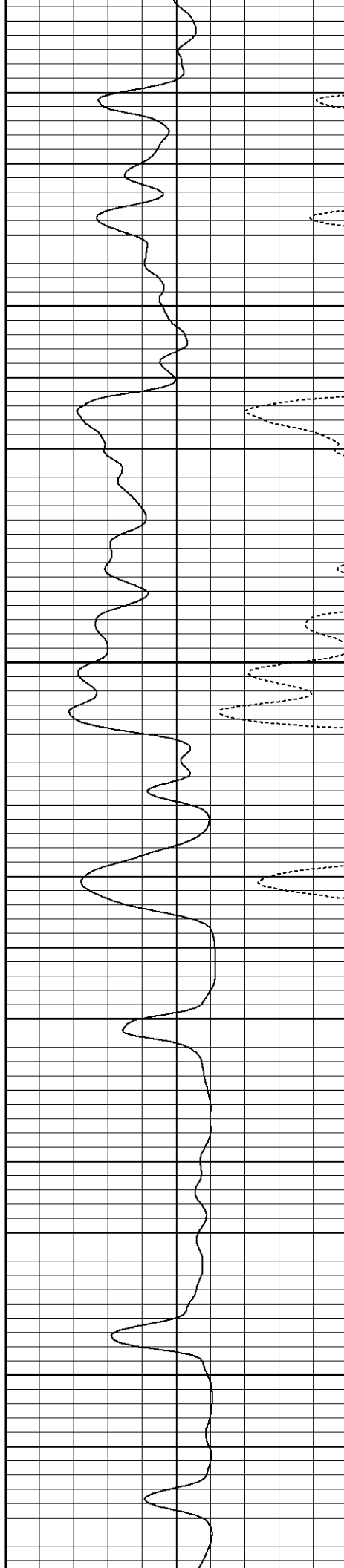


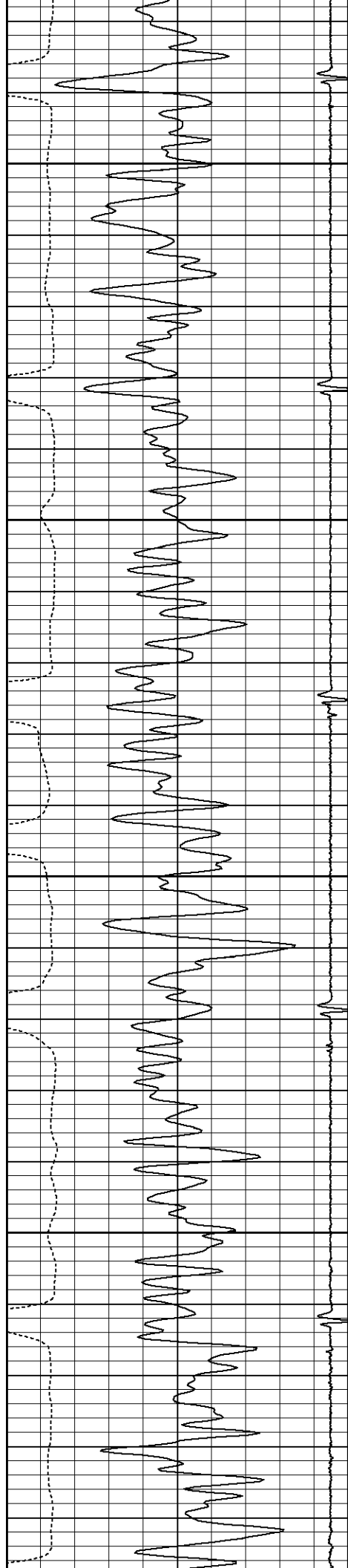
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2350

2400



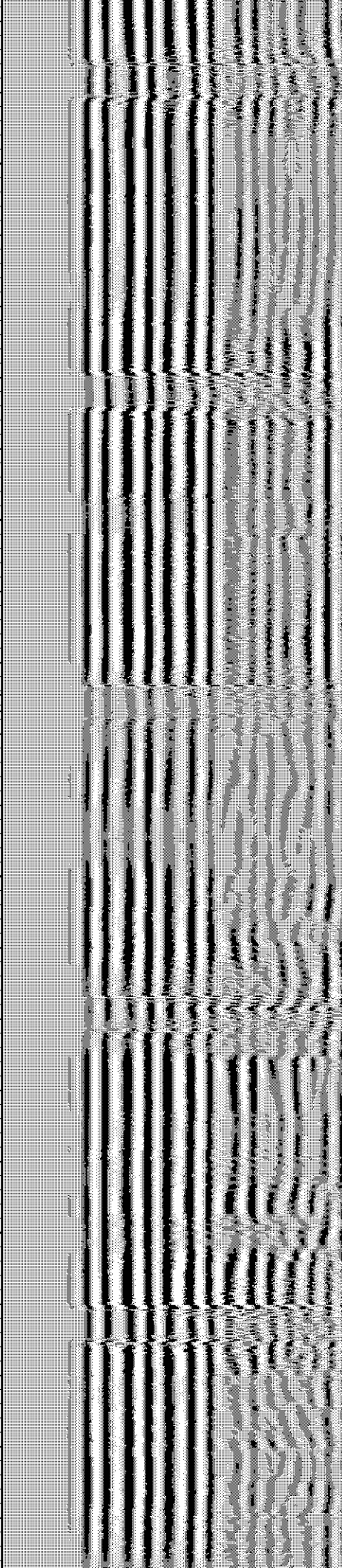
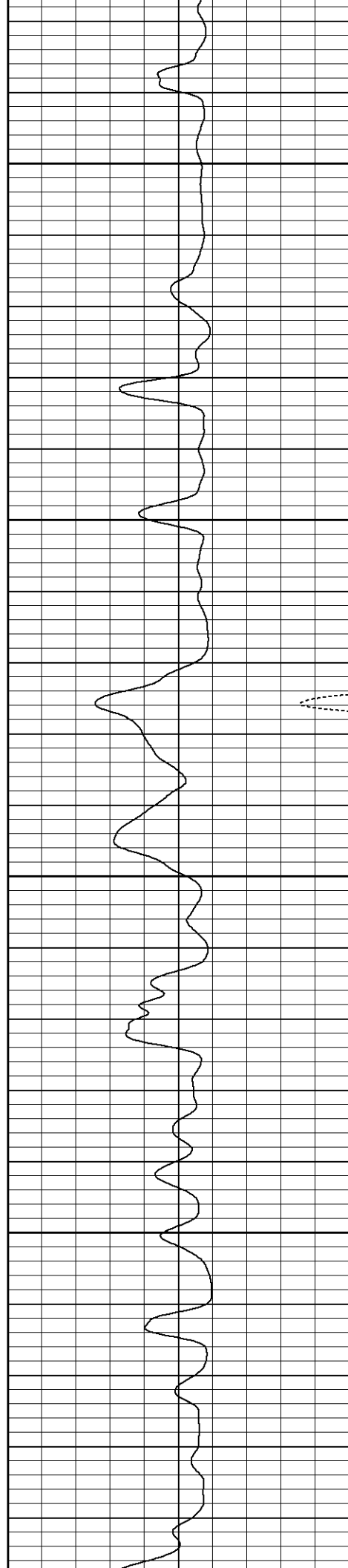


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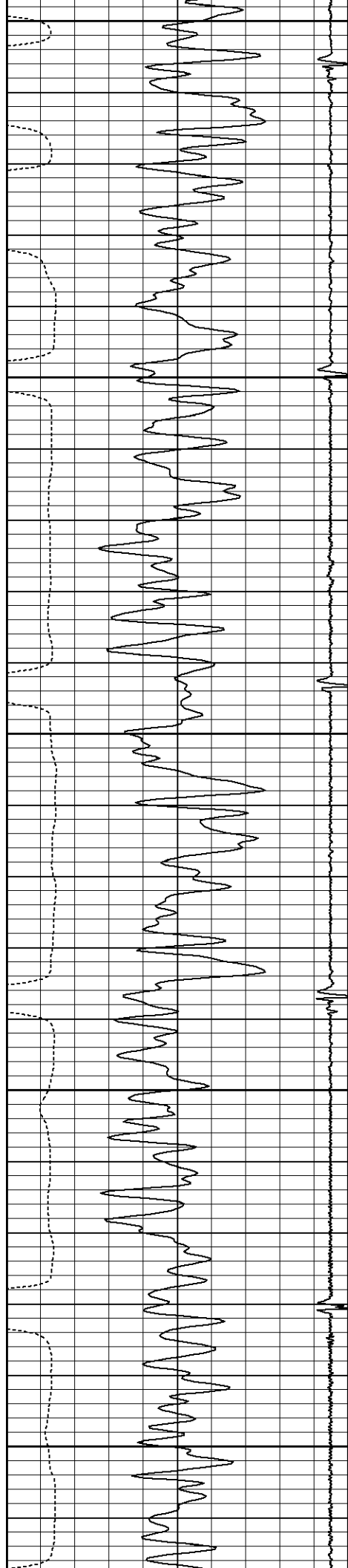
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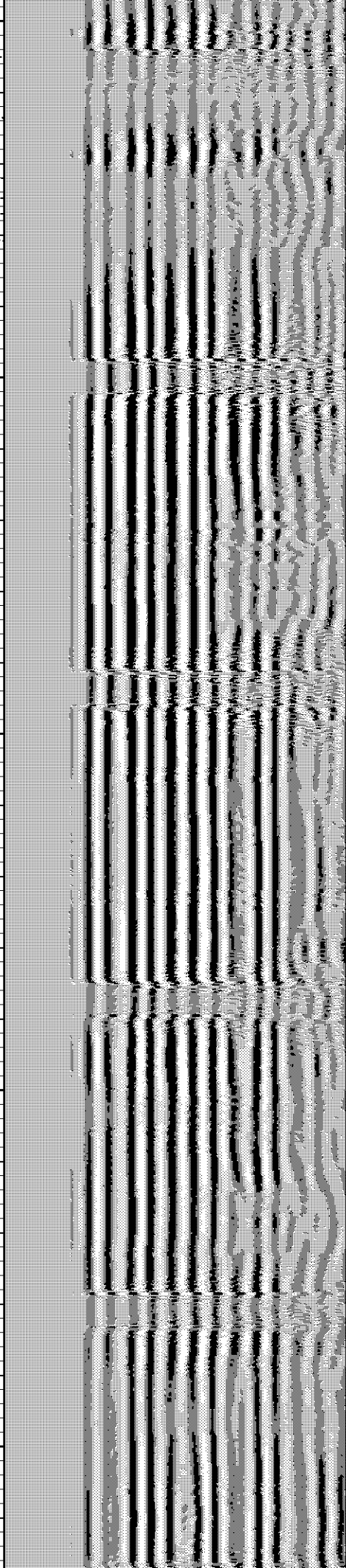
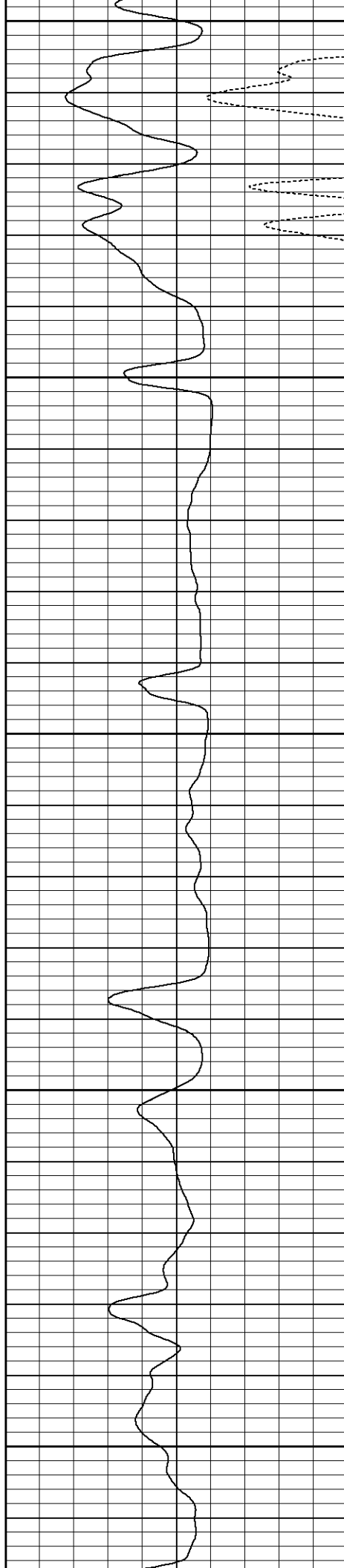
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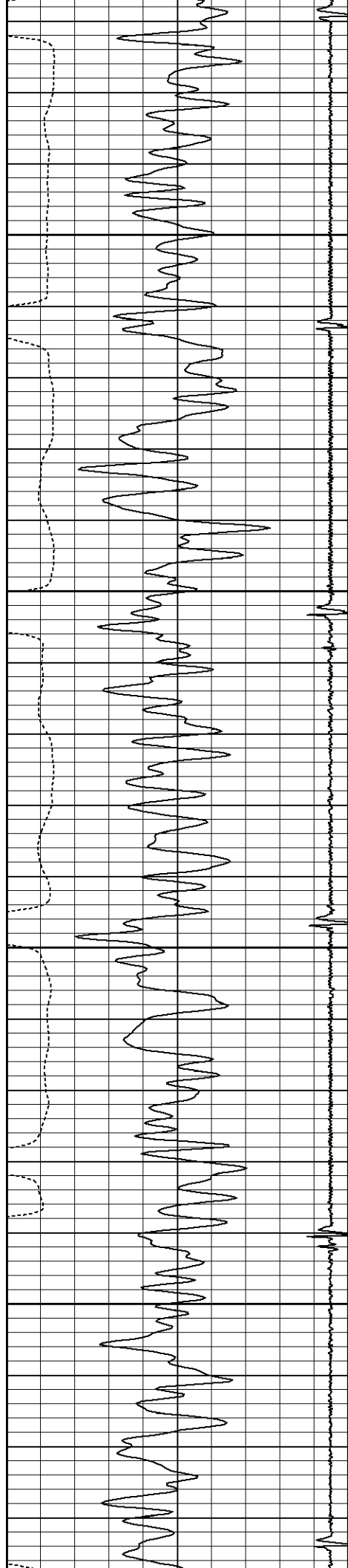
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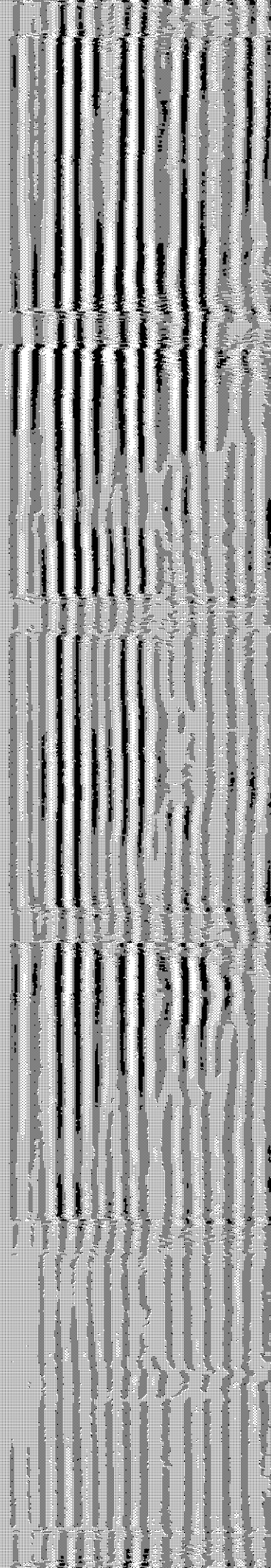
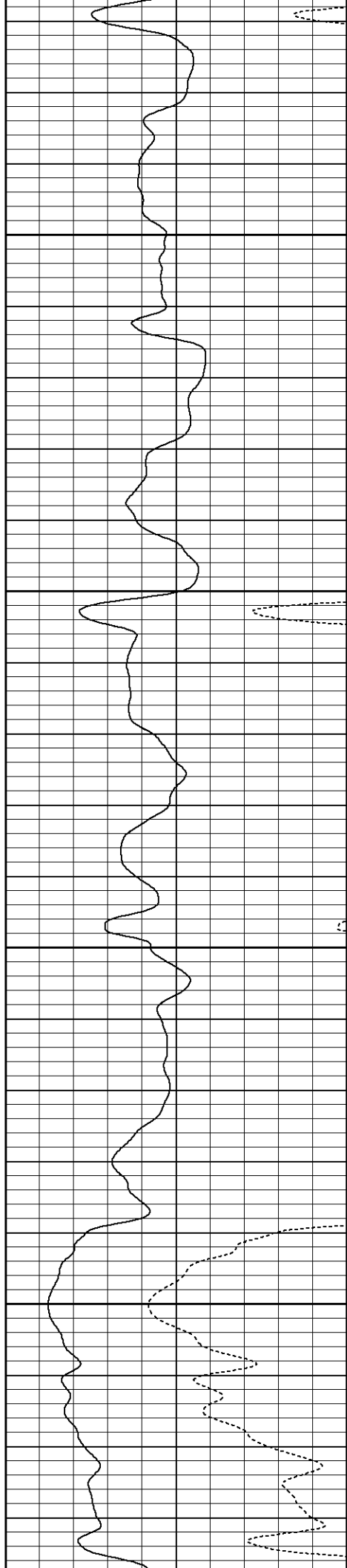


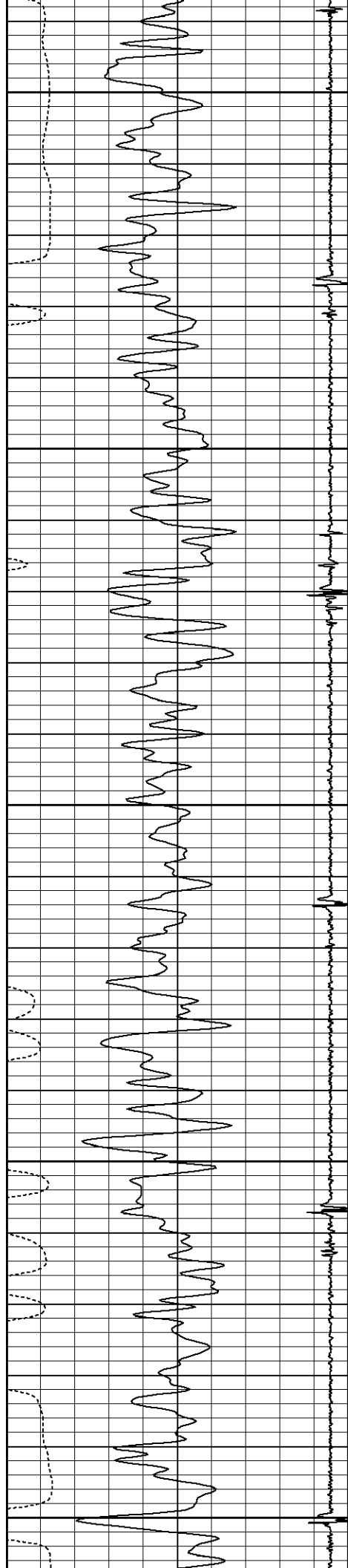
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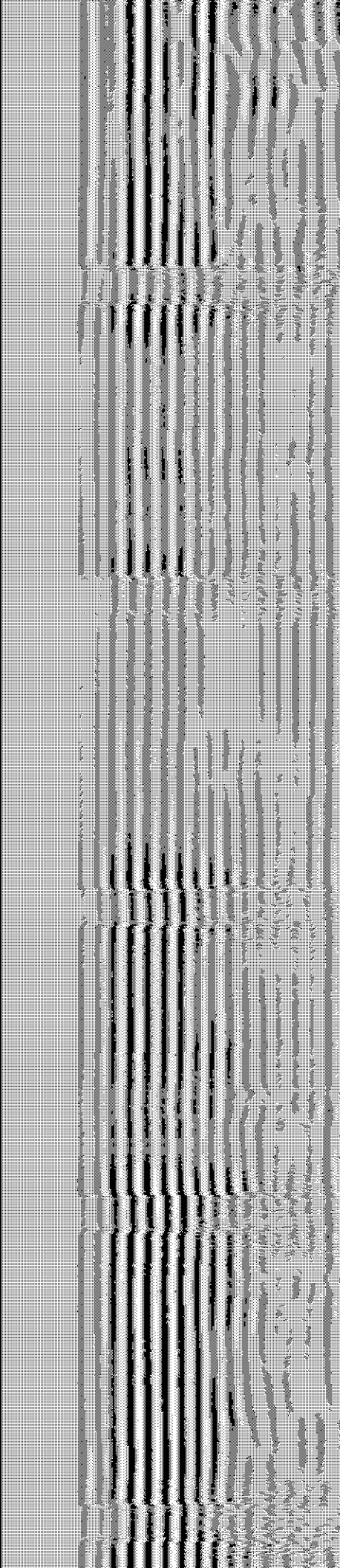
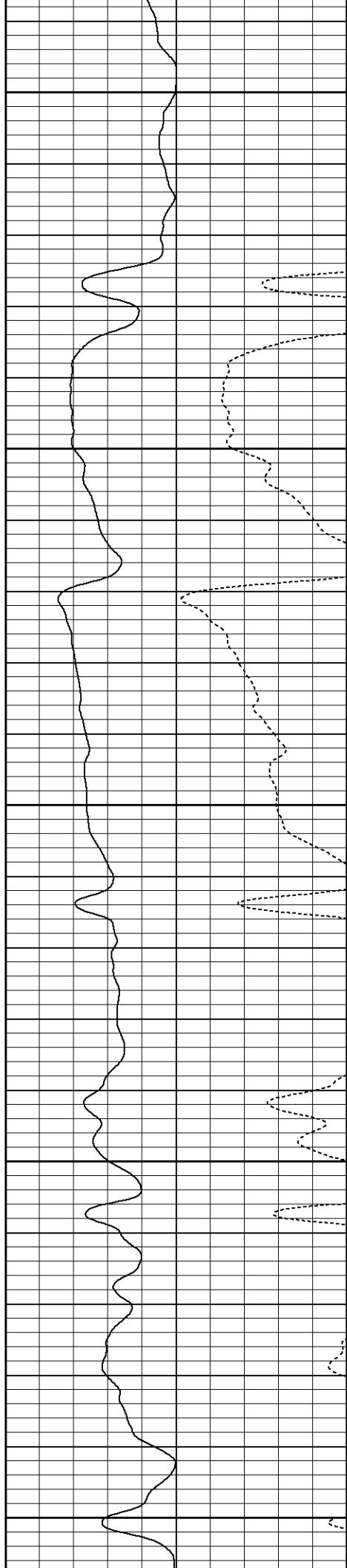
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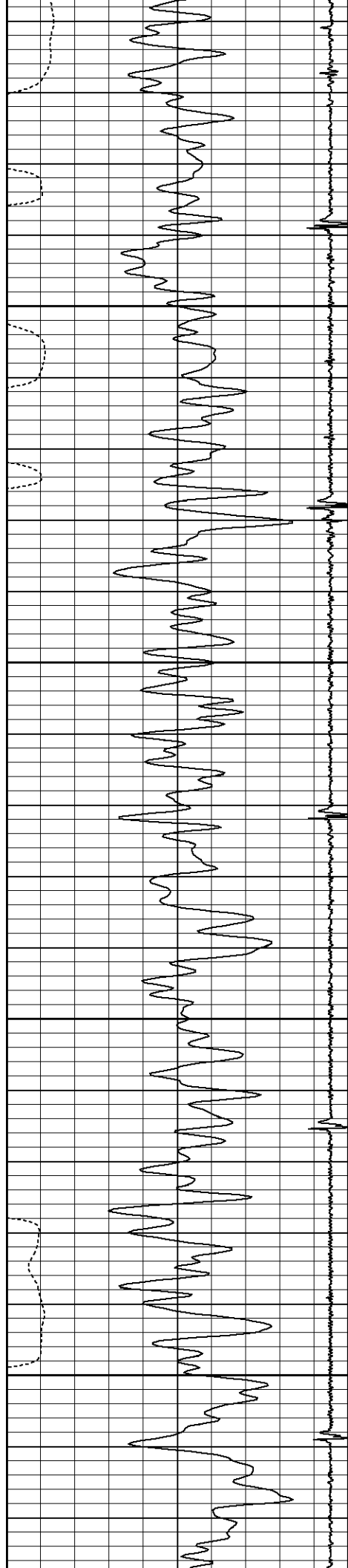
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3300



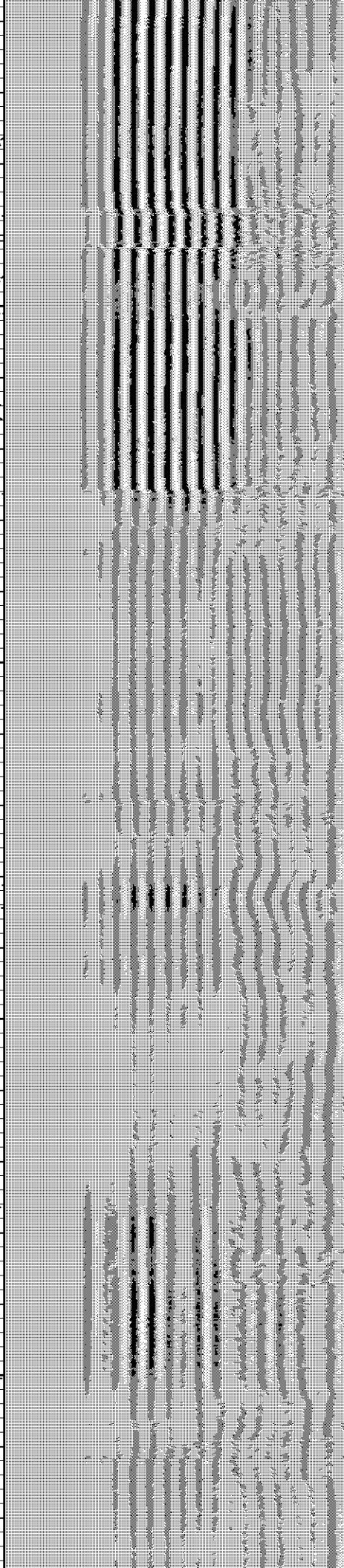
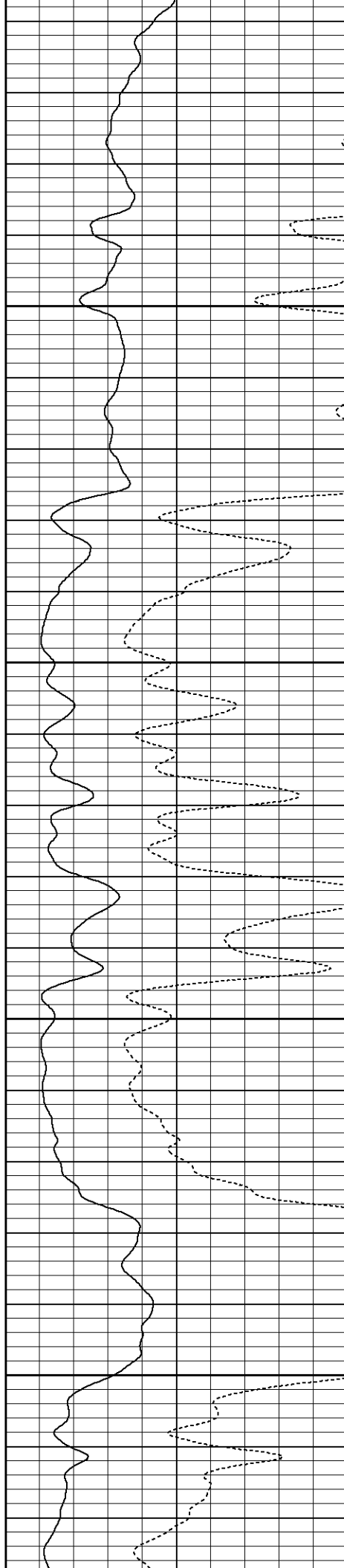


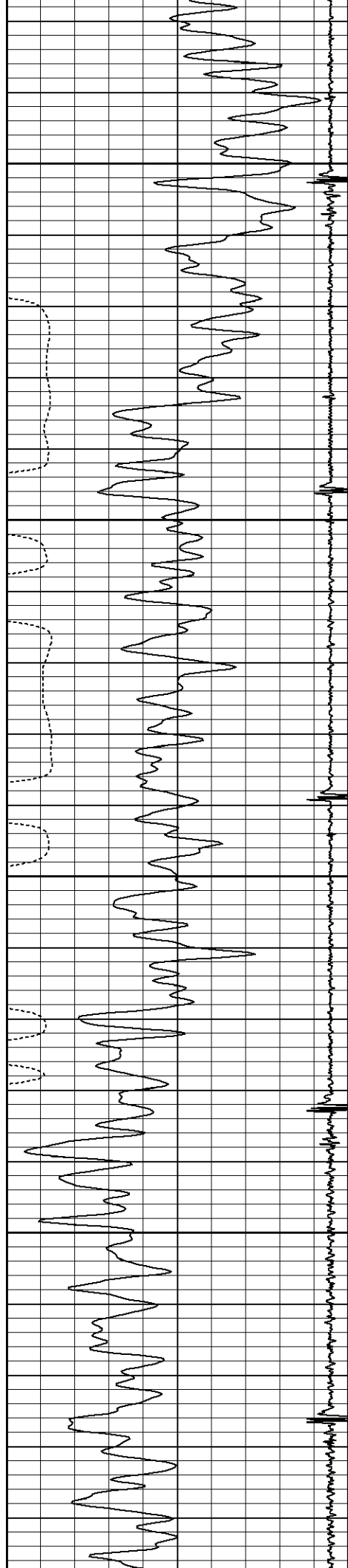
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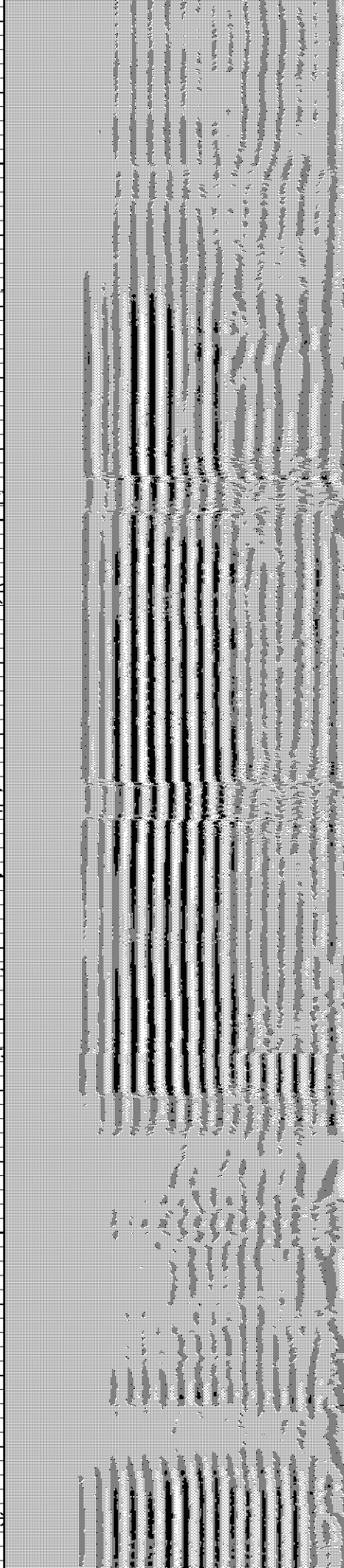
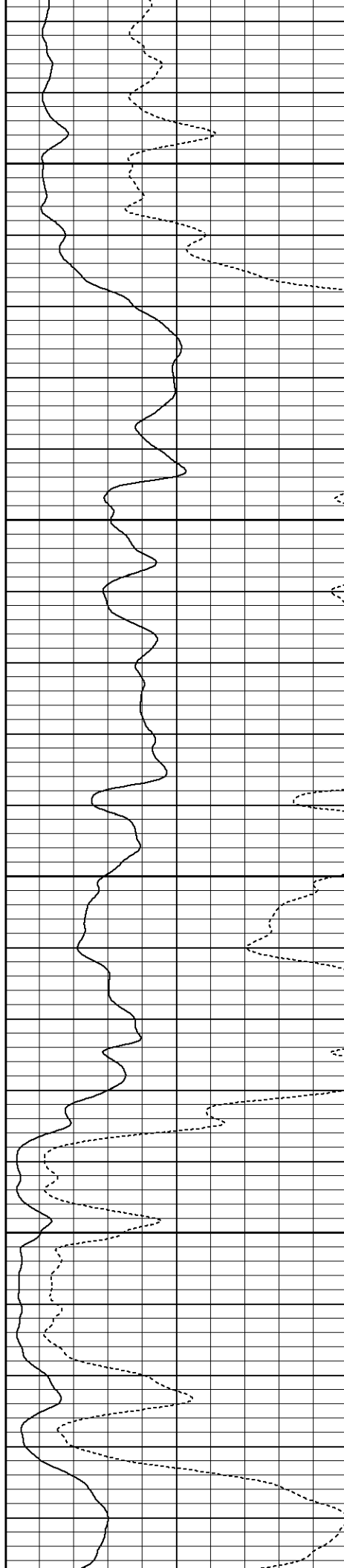


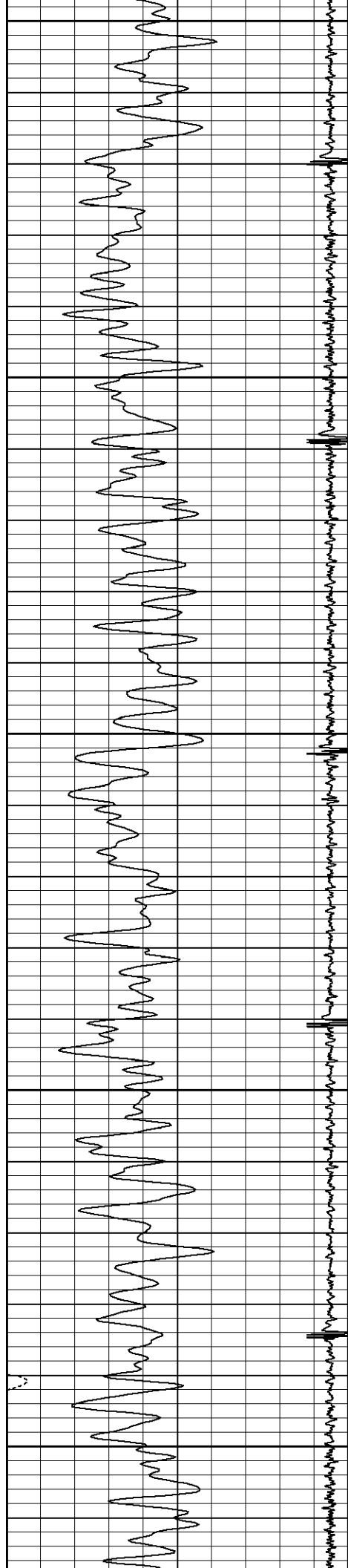
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3700





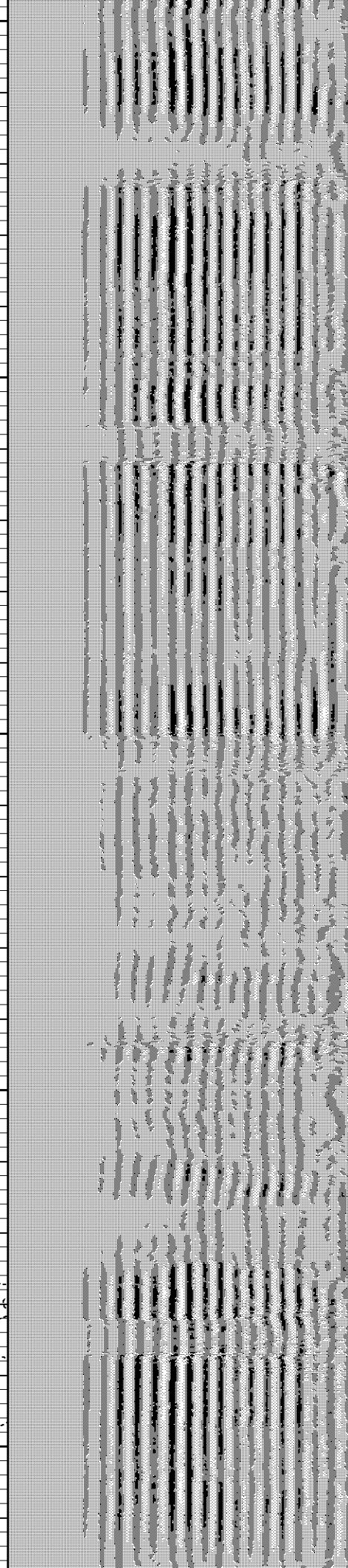
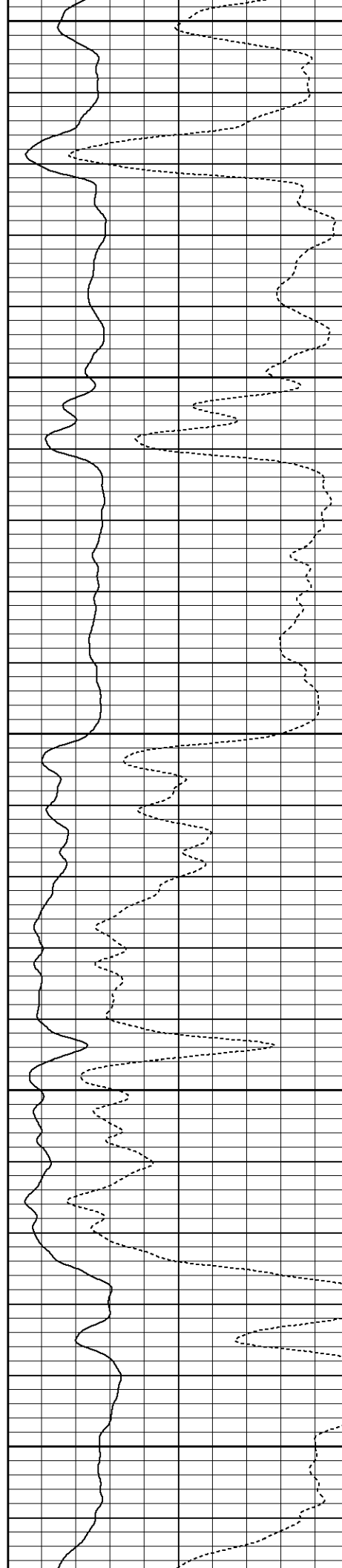
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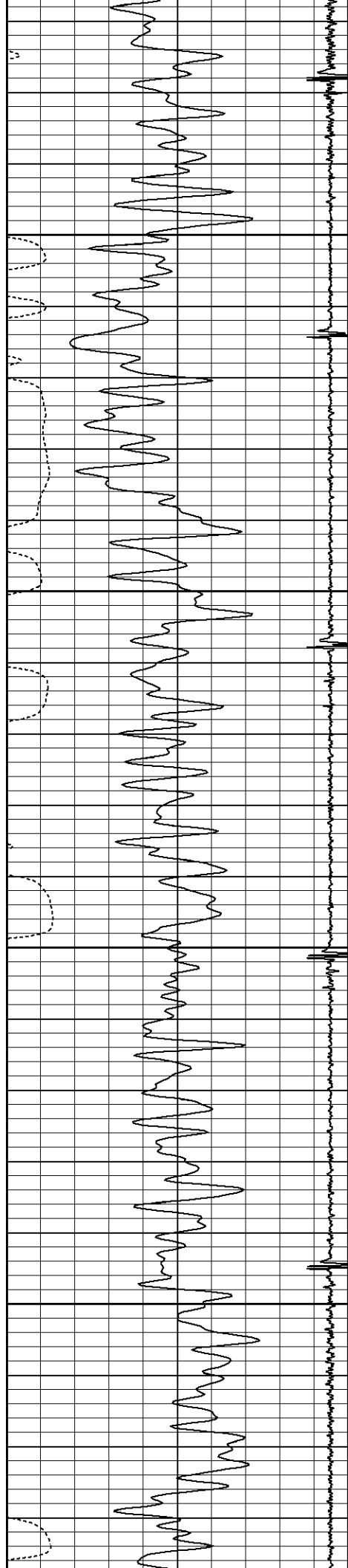
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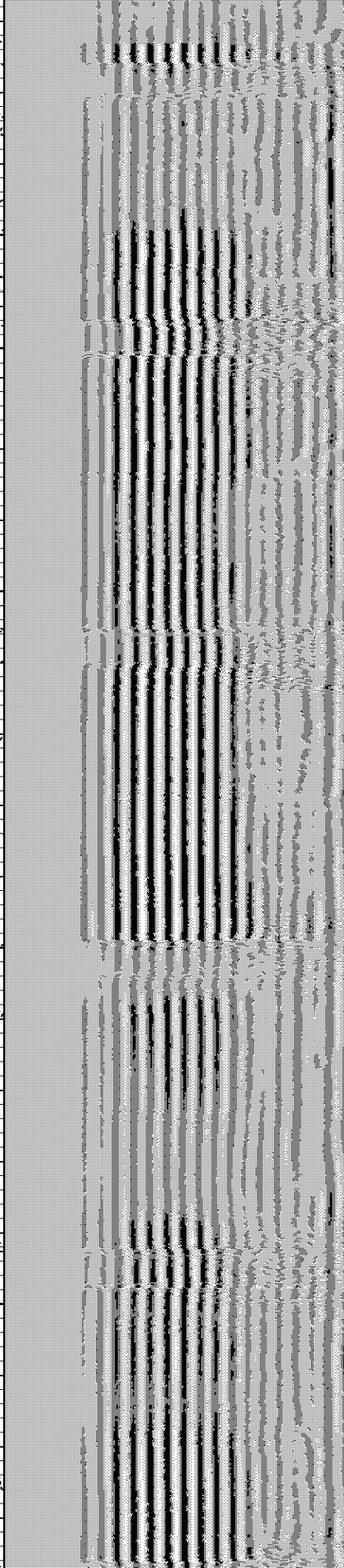
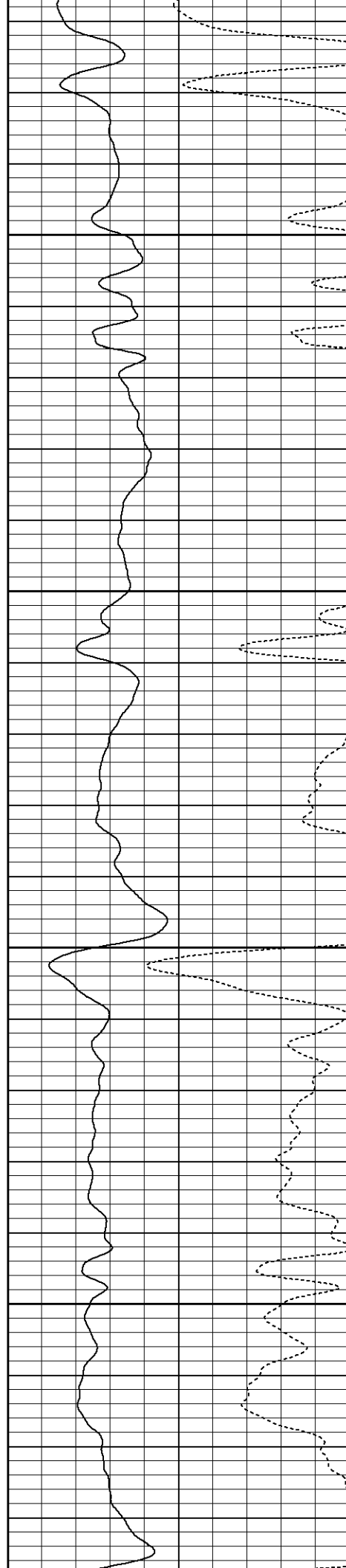


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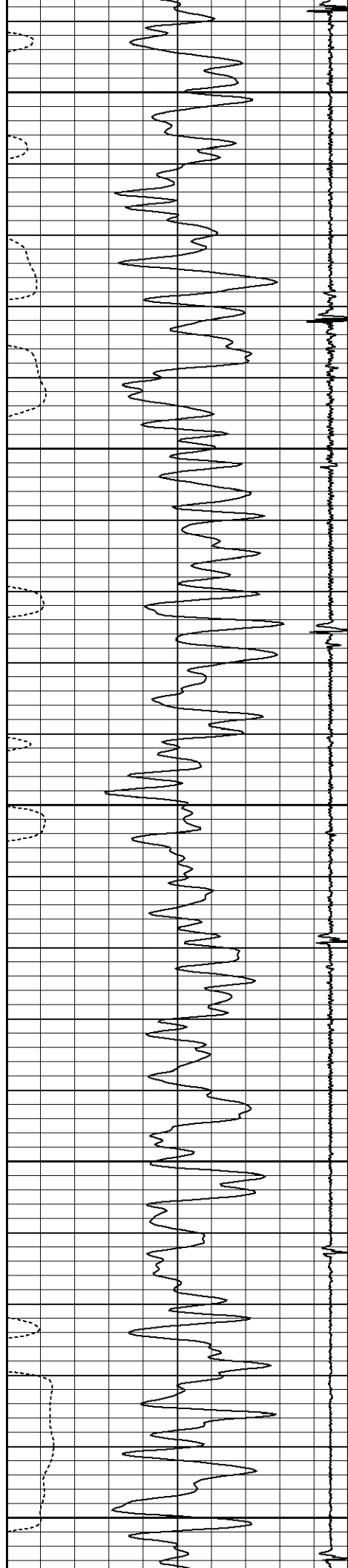
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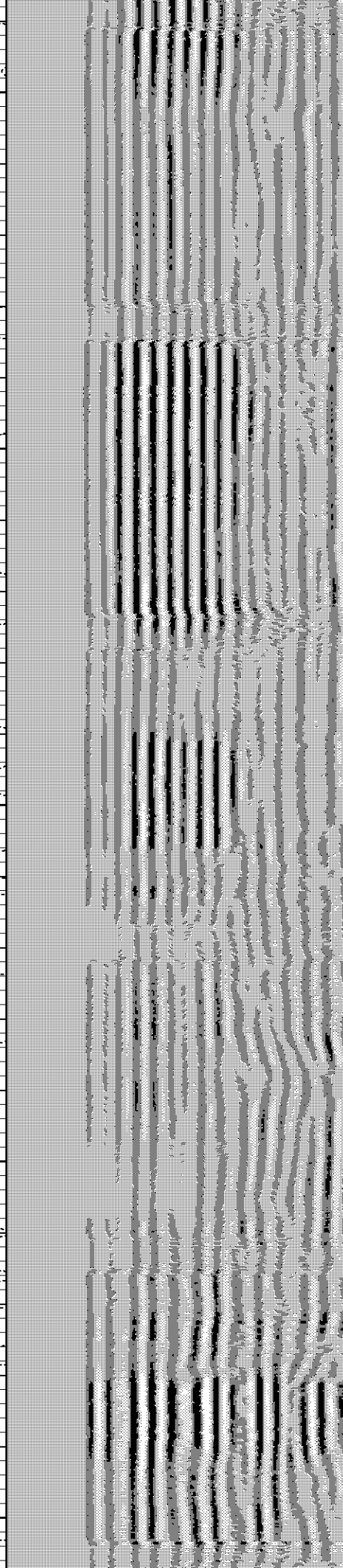
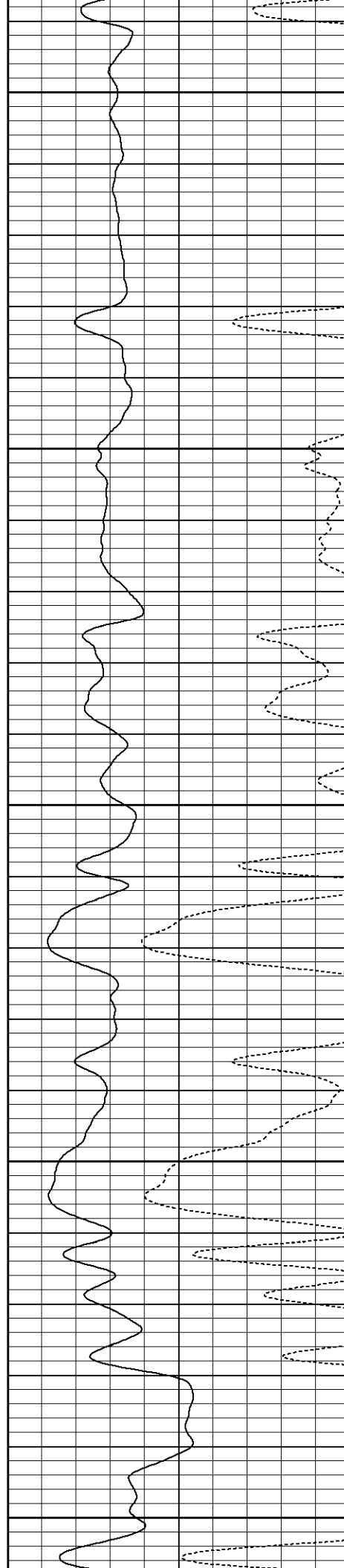
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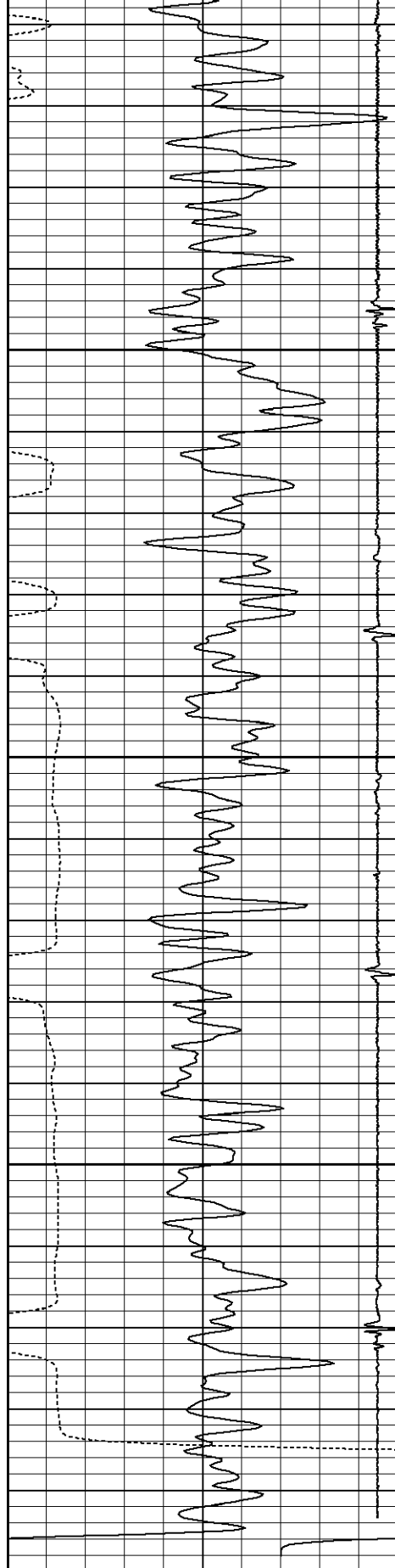
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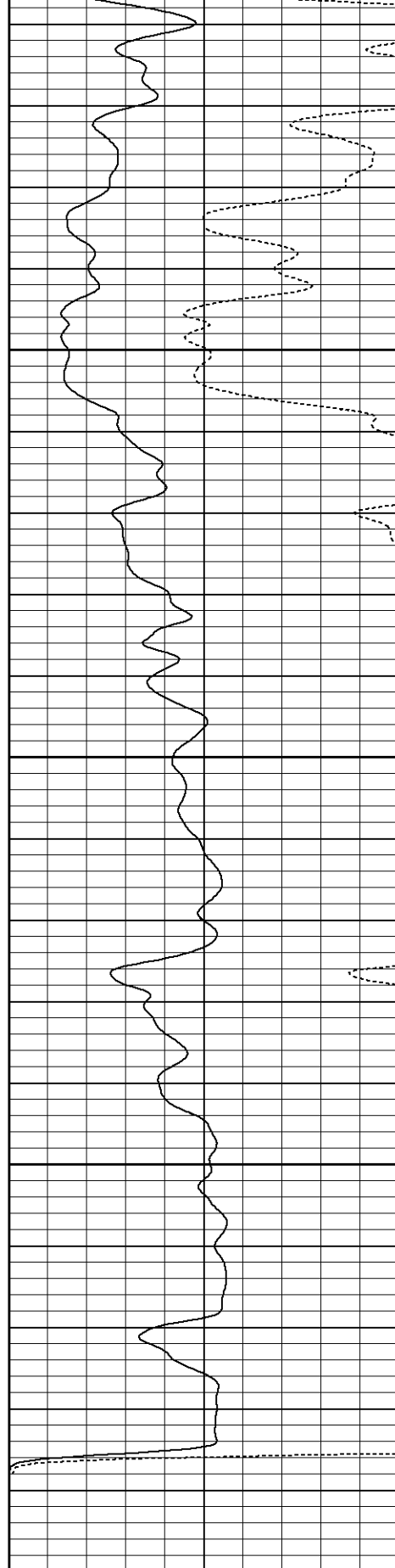
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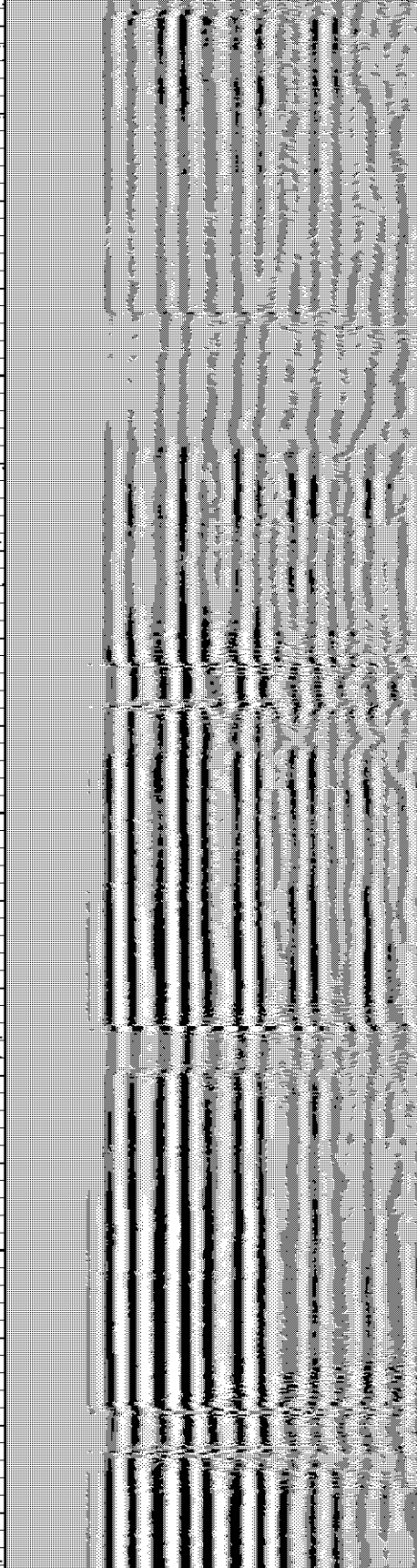
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95	CCL	-5
30	Gamma Ray (GAPI)	130
340	TT3 (usec)	240



0	Amplified Amplitude (mV)	30
0	Amplitude (mV)	100

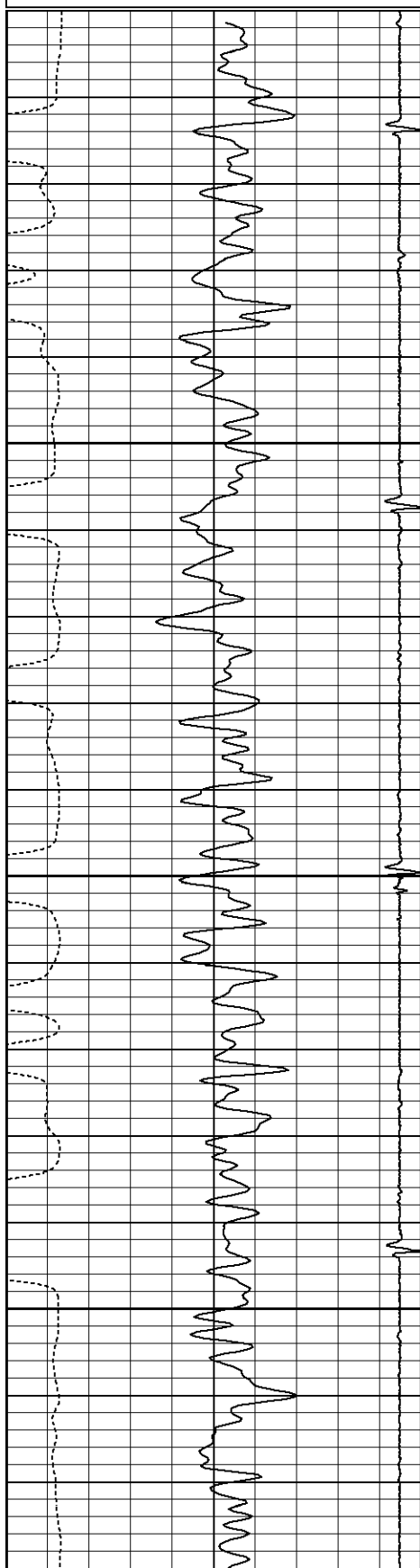
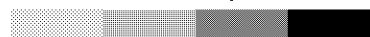


Database File: cblwashburn le22-78hn.db  
Dataset Pathname: pass2  
Presentation Format: noble en  
Dataset Creation: Wed Apr 25 07:06:50 2012 by Log SCH 120126  
Charted by: Depth in Feet scaled 1:240

95	CCL	-5
0	Gamma Ray (GAPI)	150
340	TT3 (usec)	240

0	Amplified Amplitude (mV)	30
0	Amplitude (mV)	100

200 Variable Density 1200

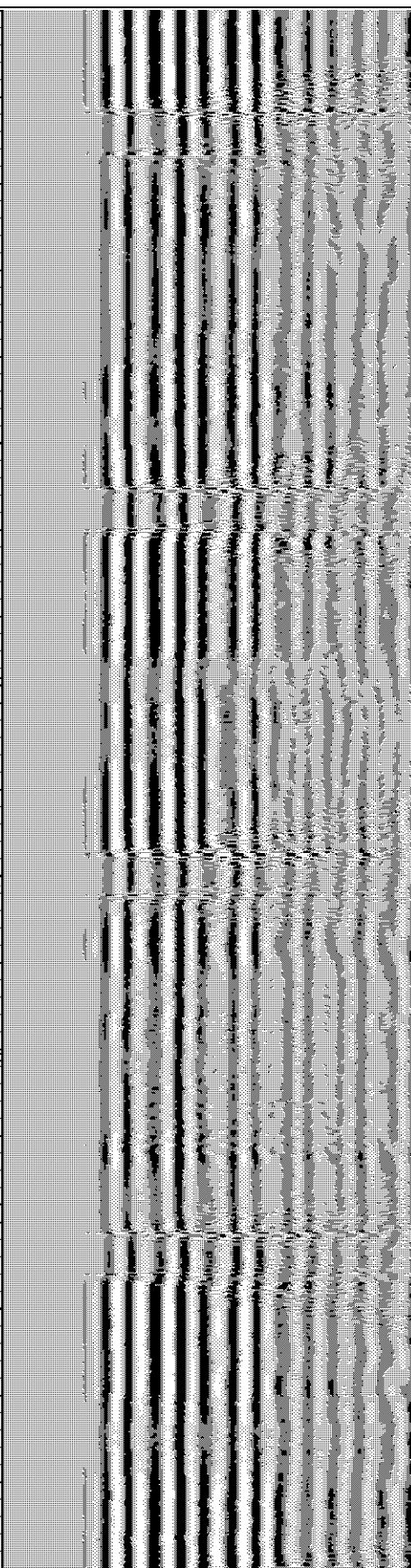
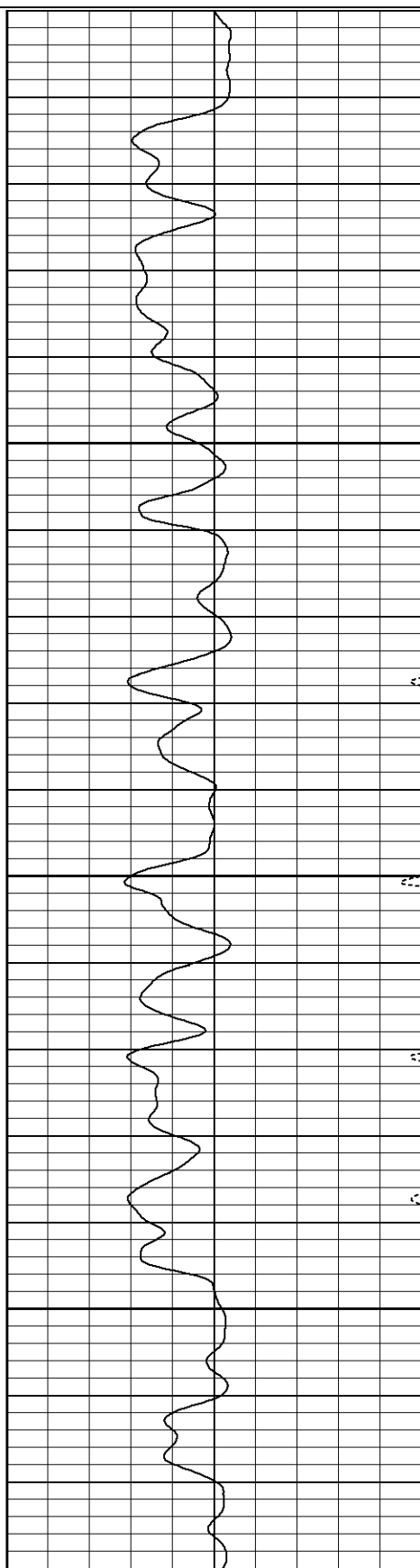


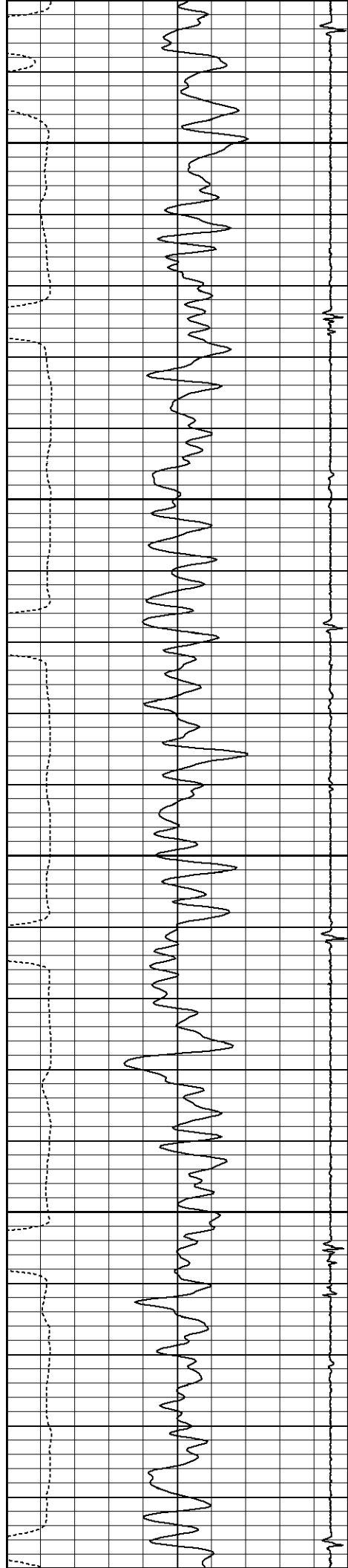
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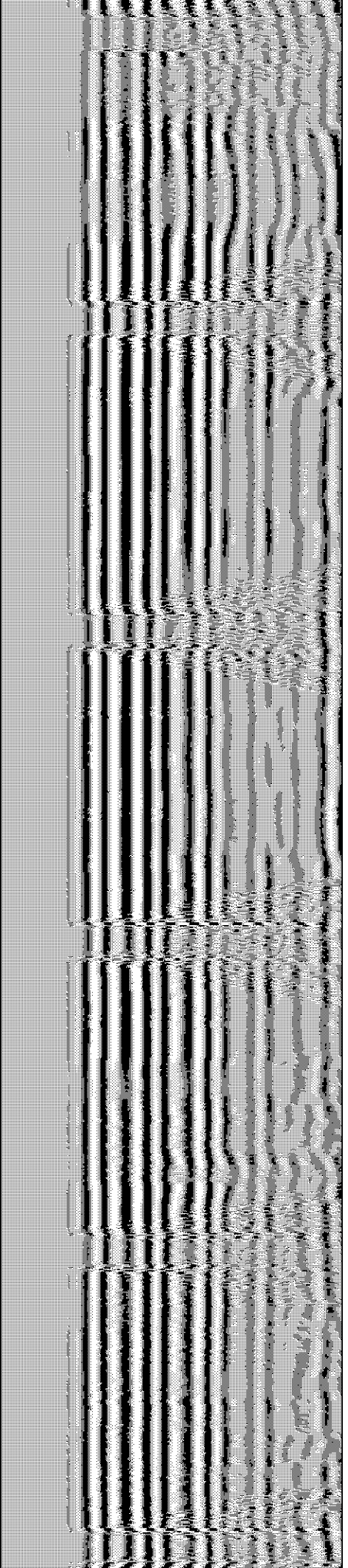
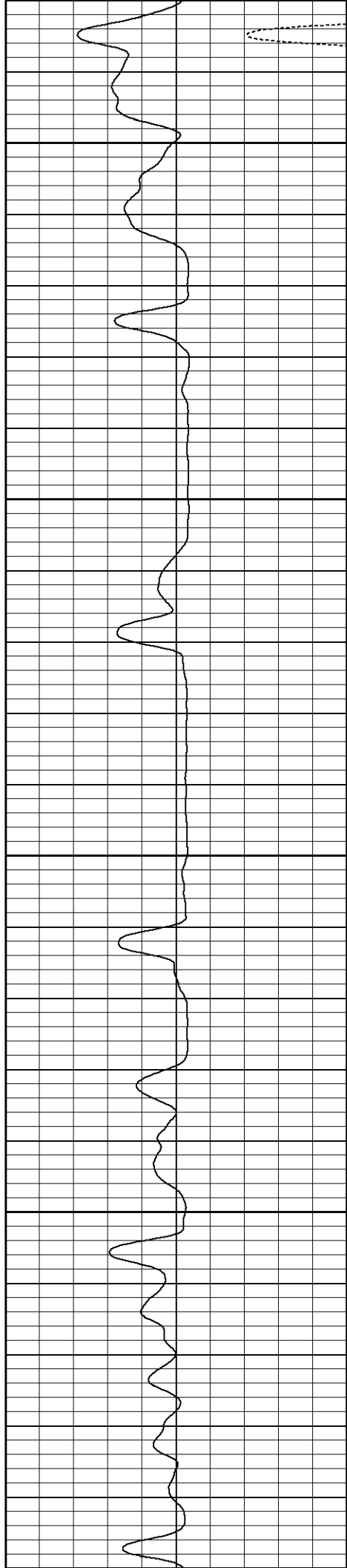
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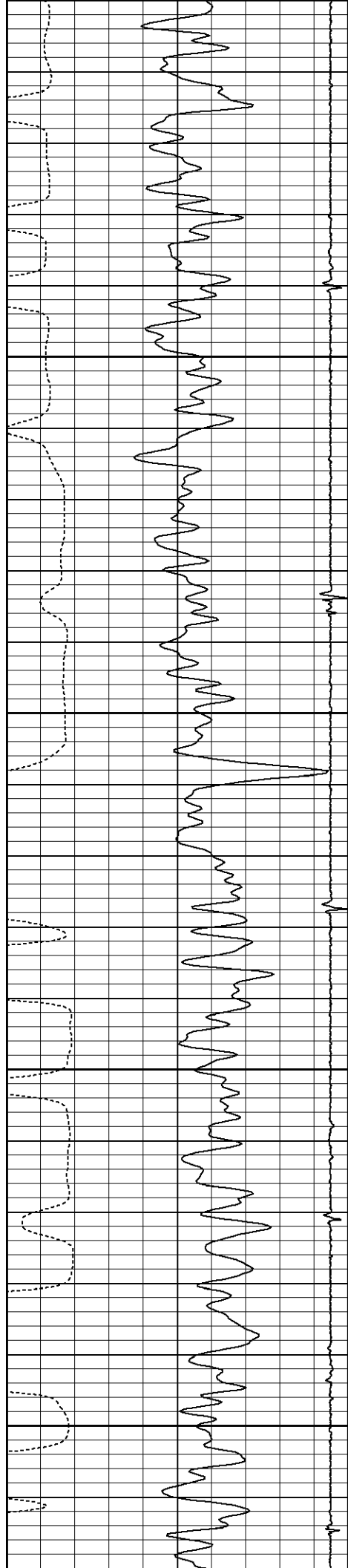
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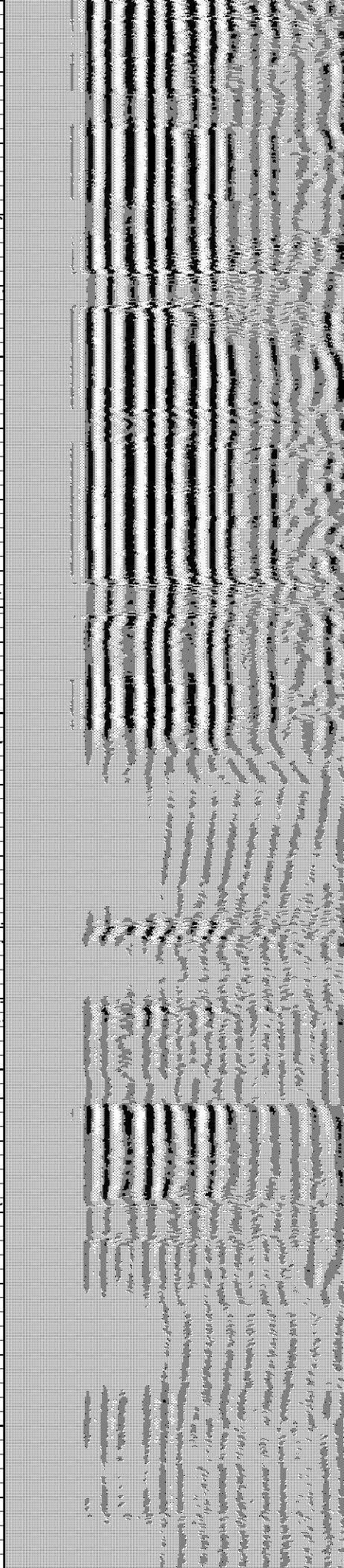
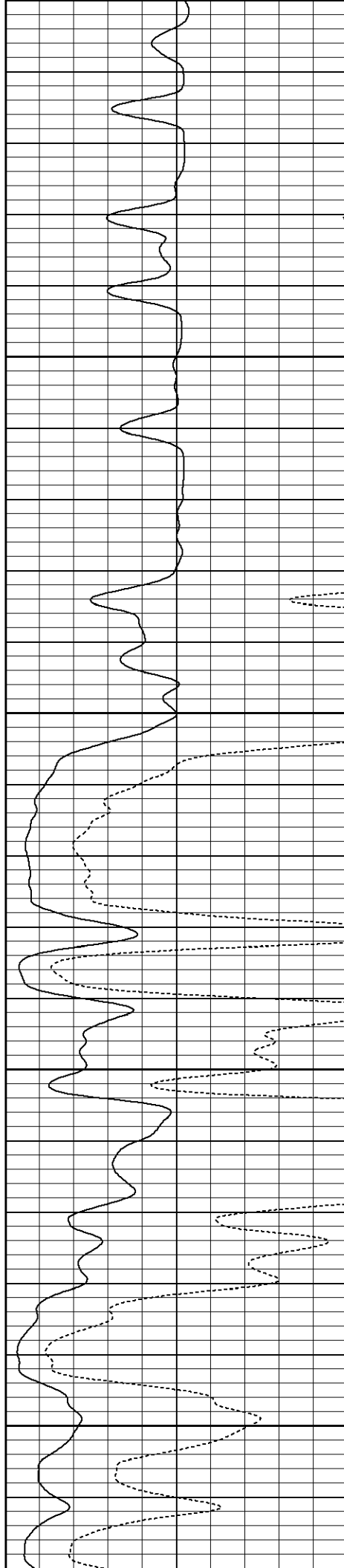
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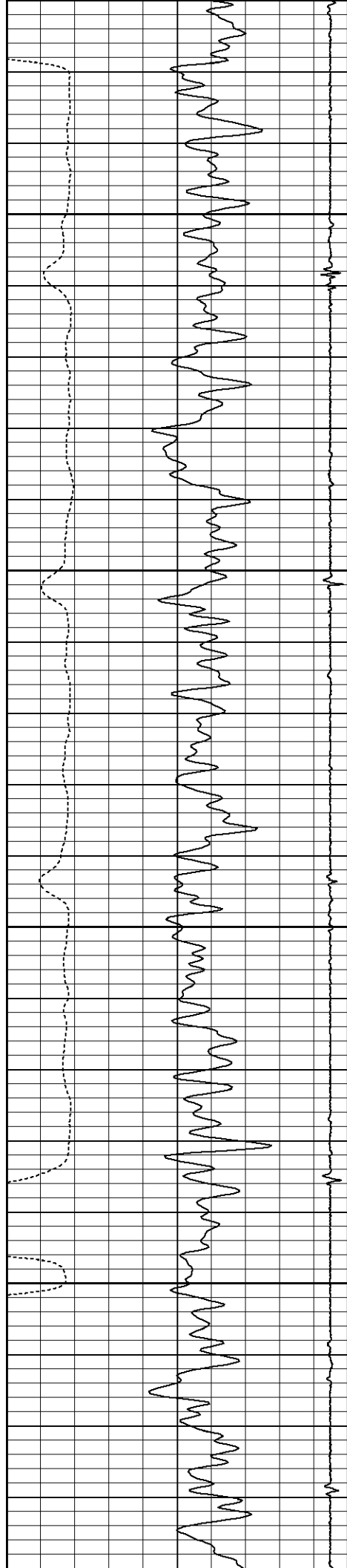
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5050  
5100  
5150  
5200



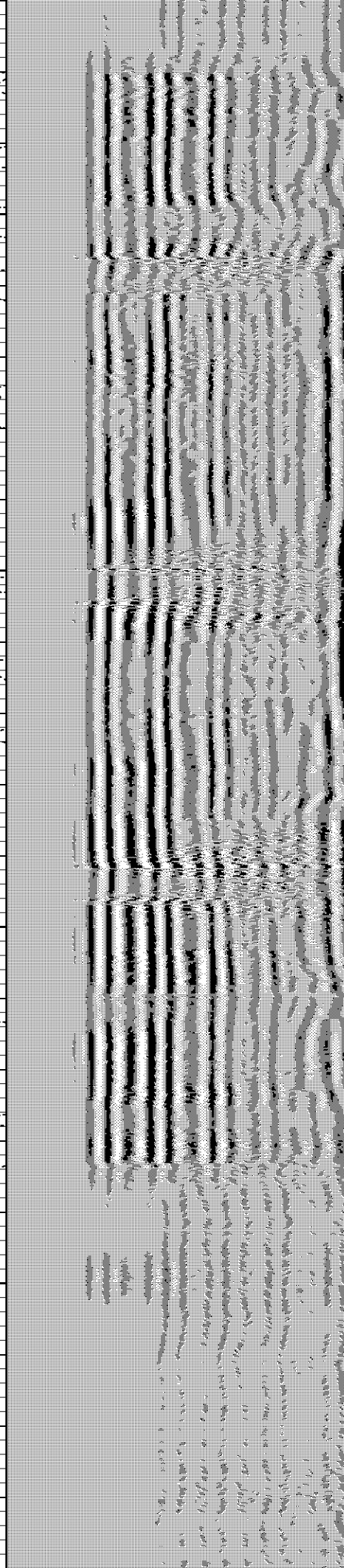
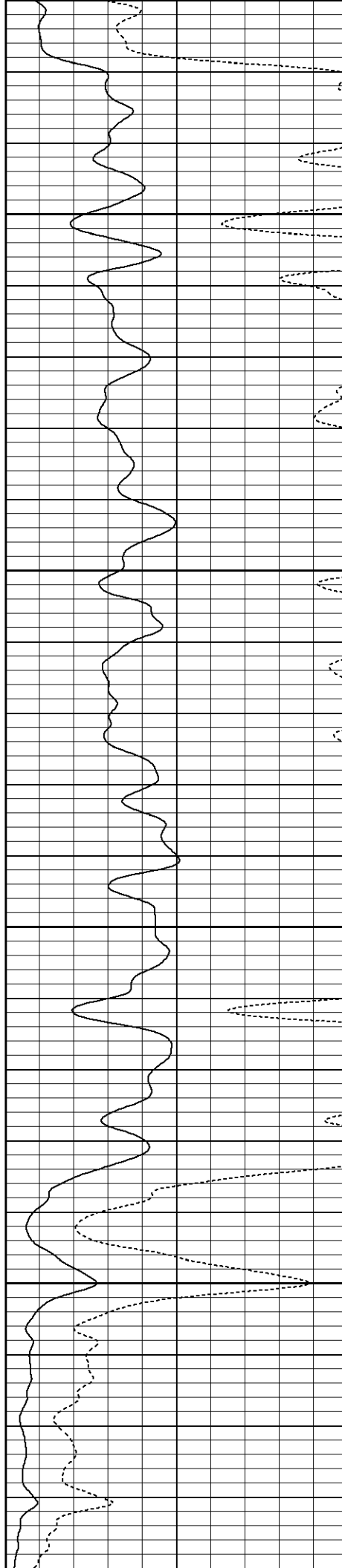


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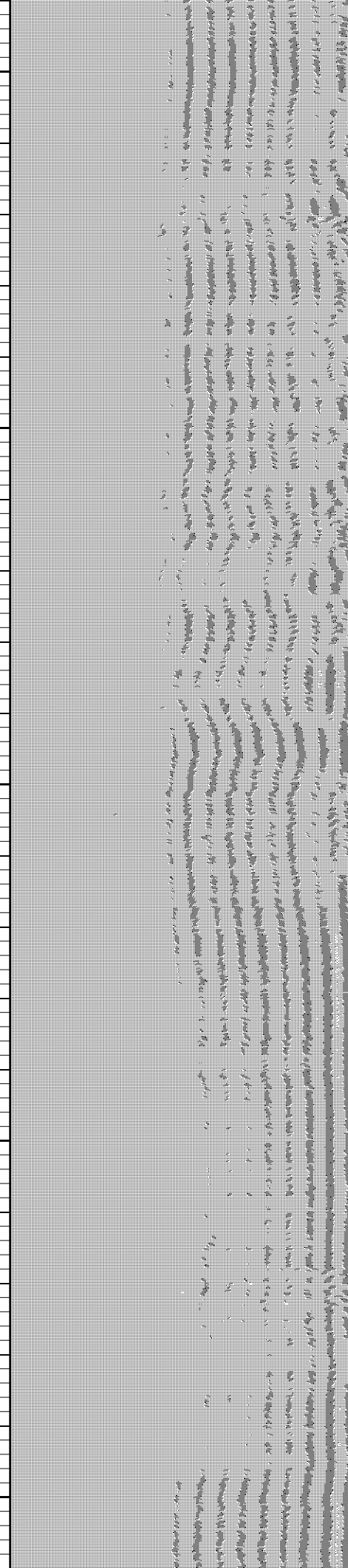
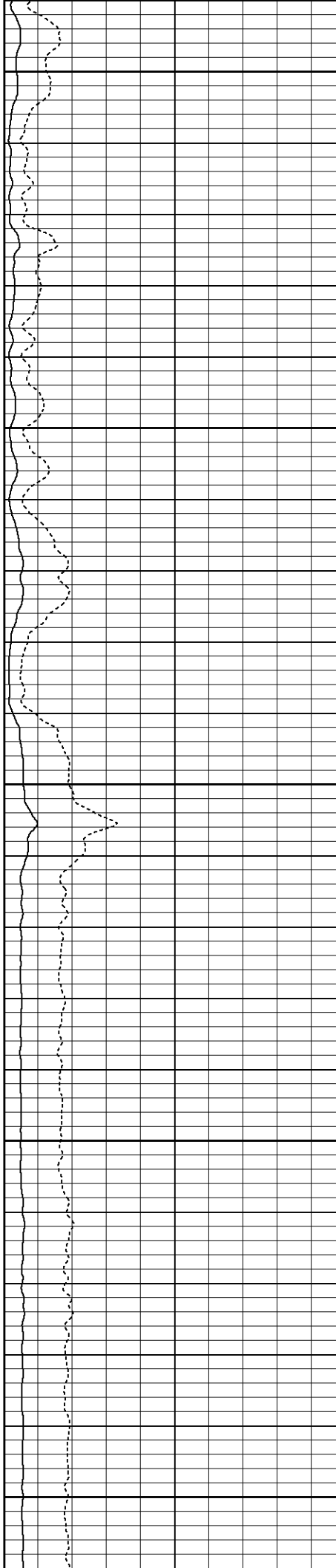
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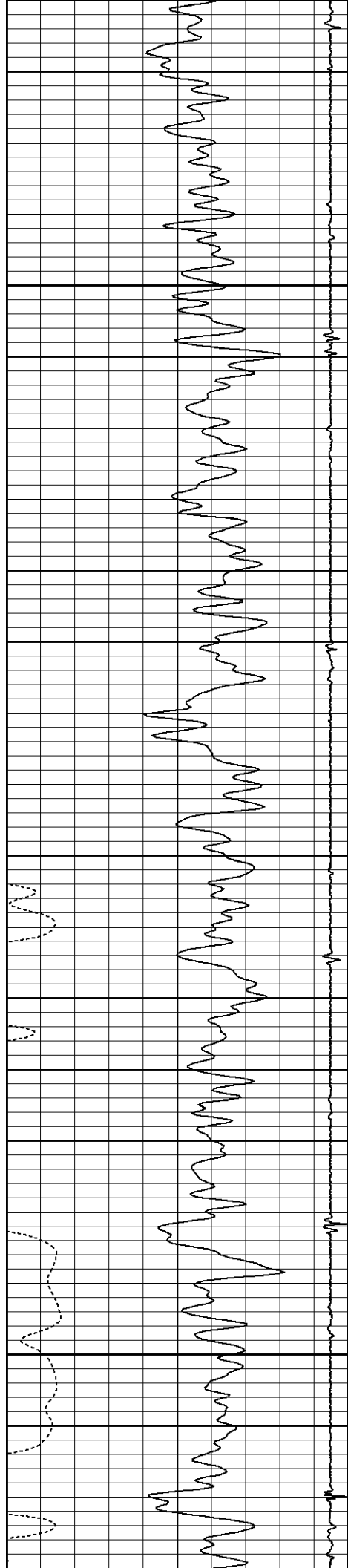
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Flag Joint

5600

5650



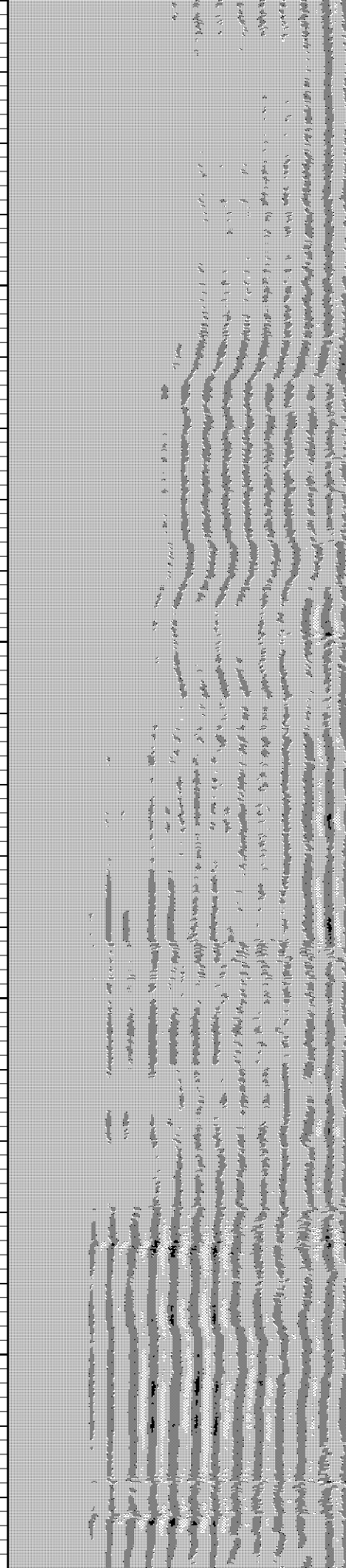
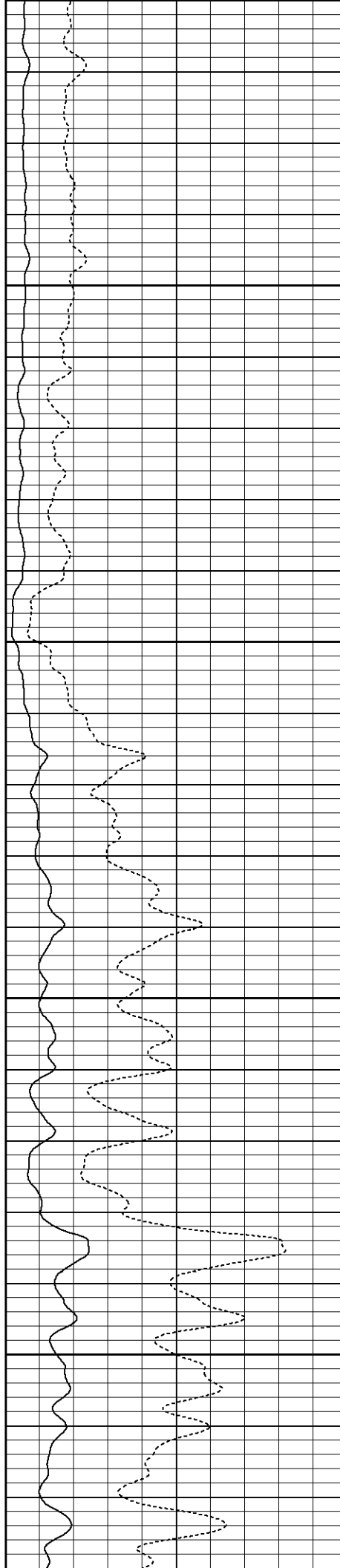


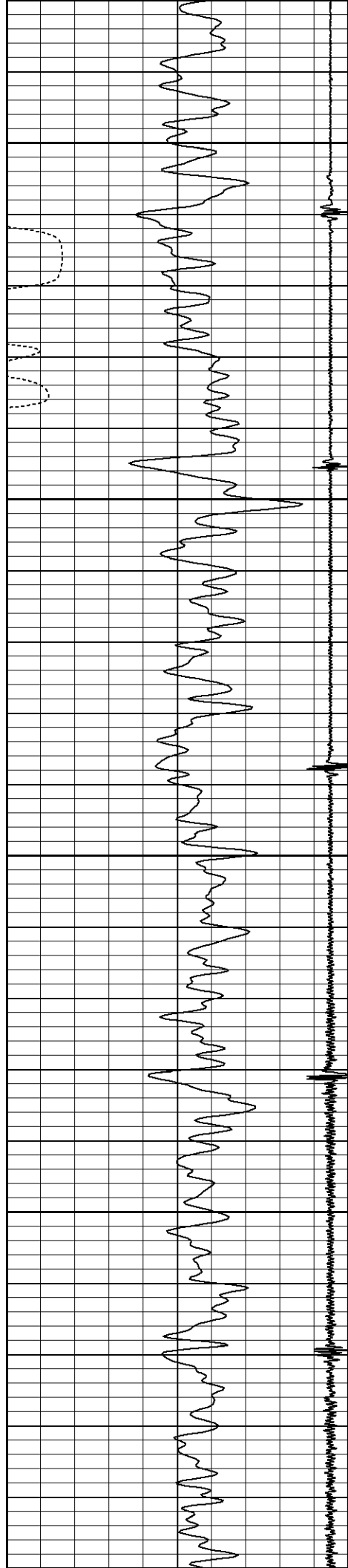
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5800

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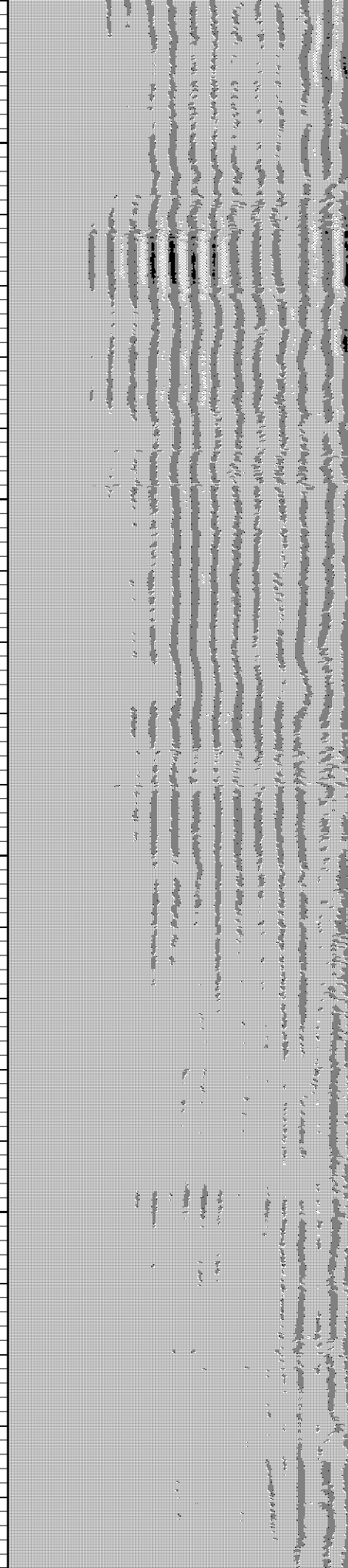
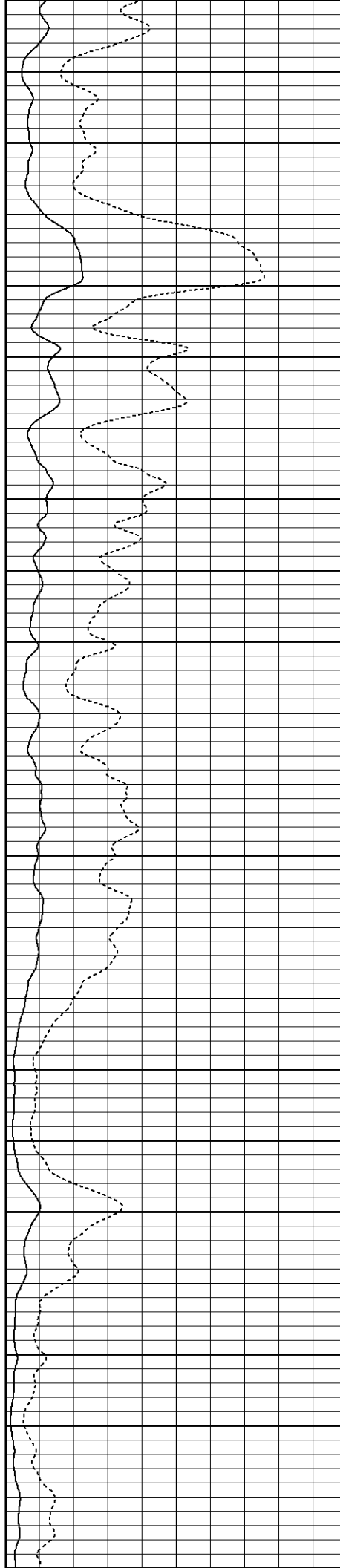
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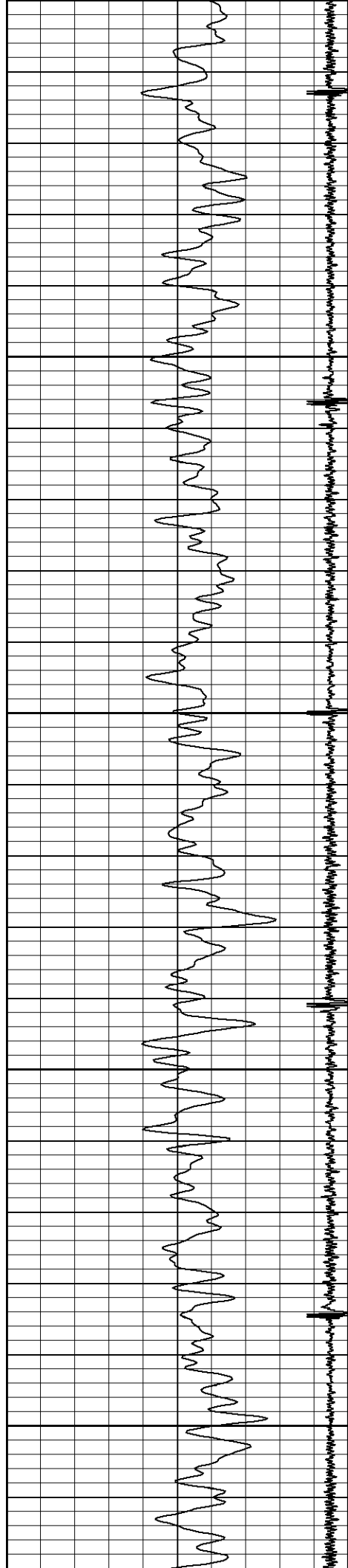
5950

6000

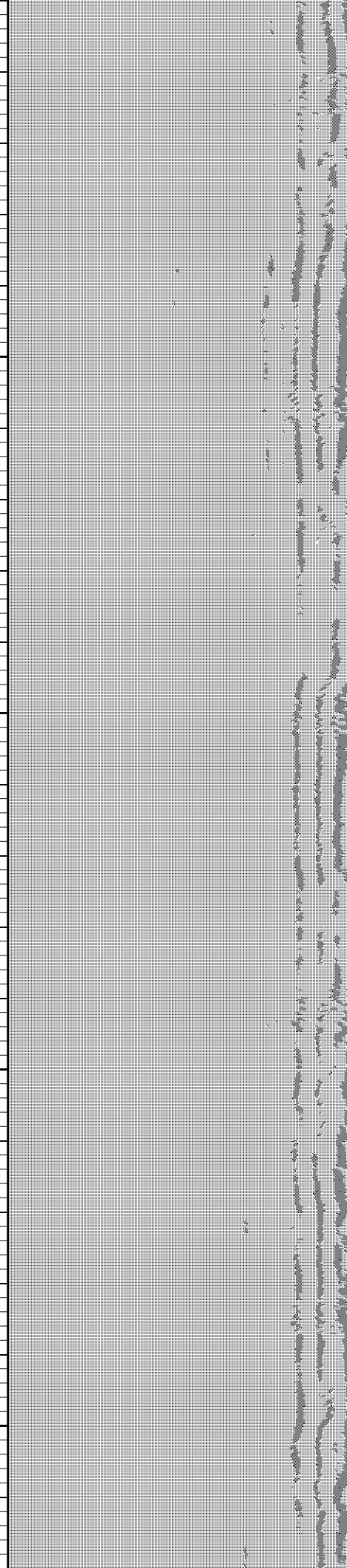
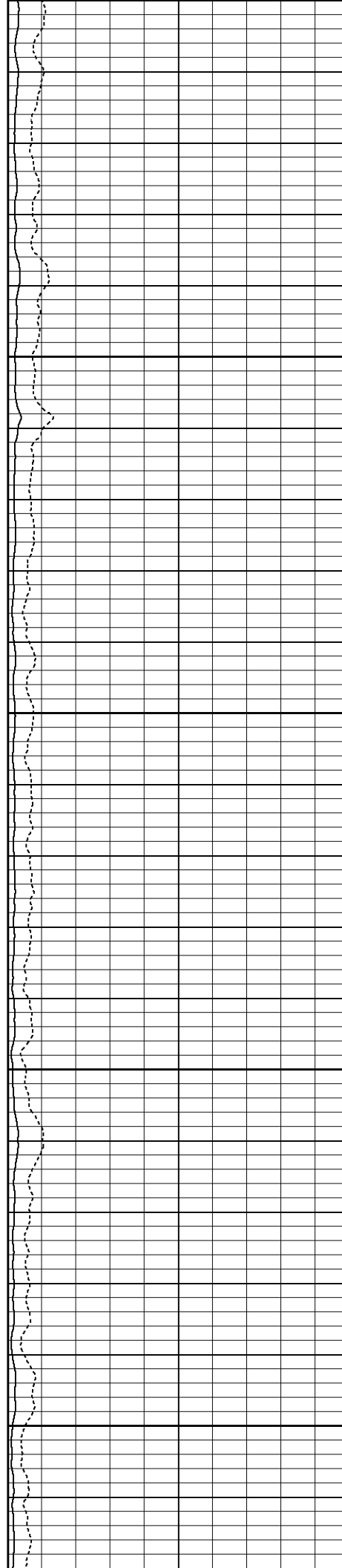
6050

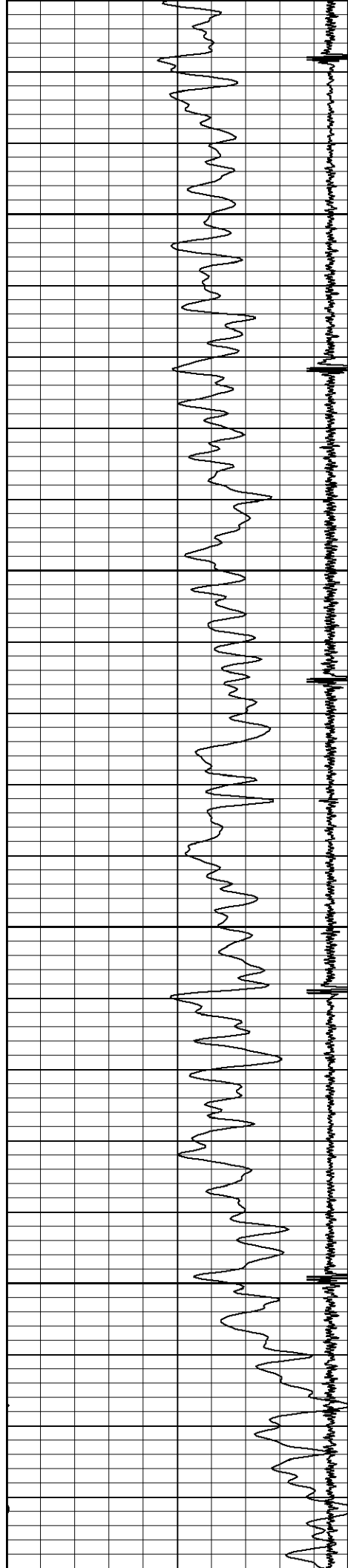
6100





6100  
6150  
6200  
6250  
6300



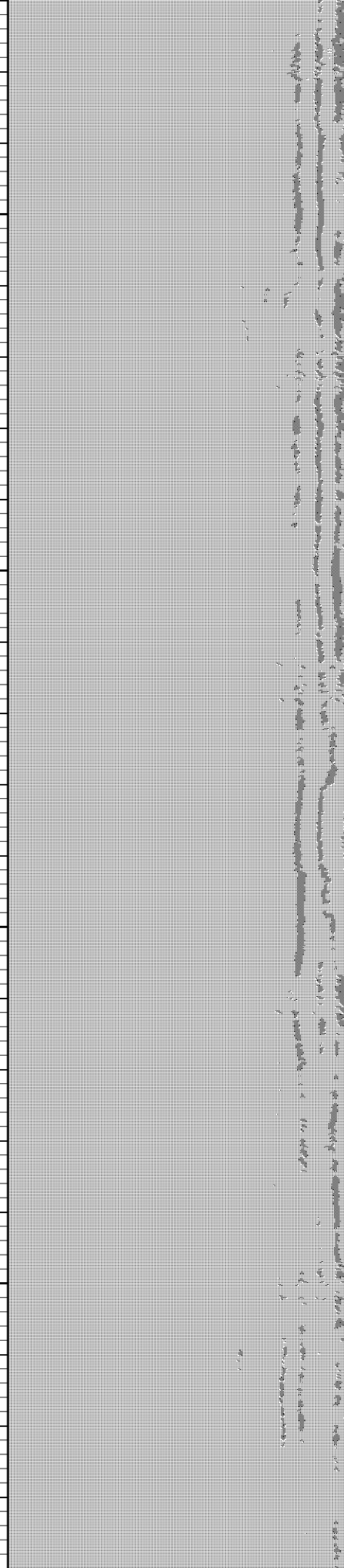
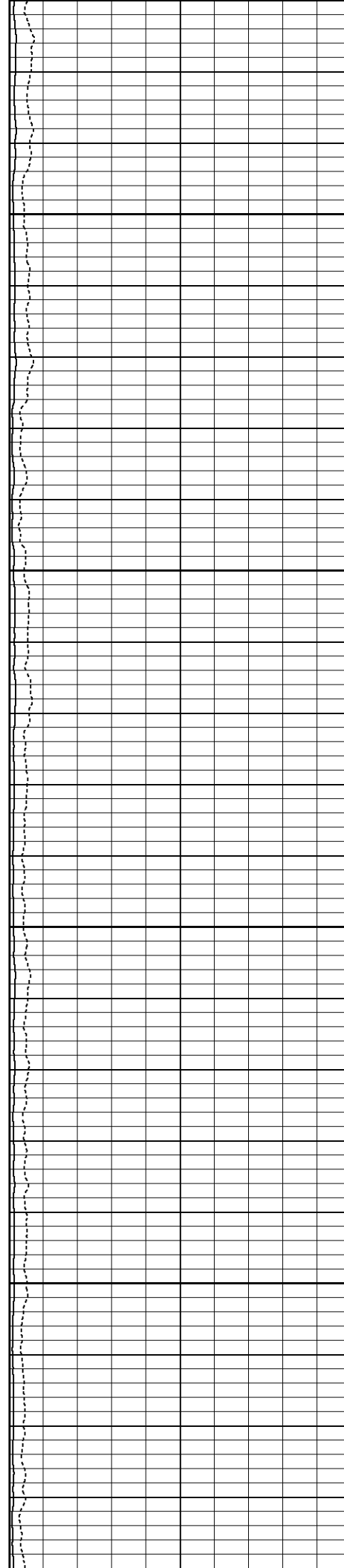


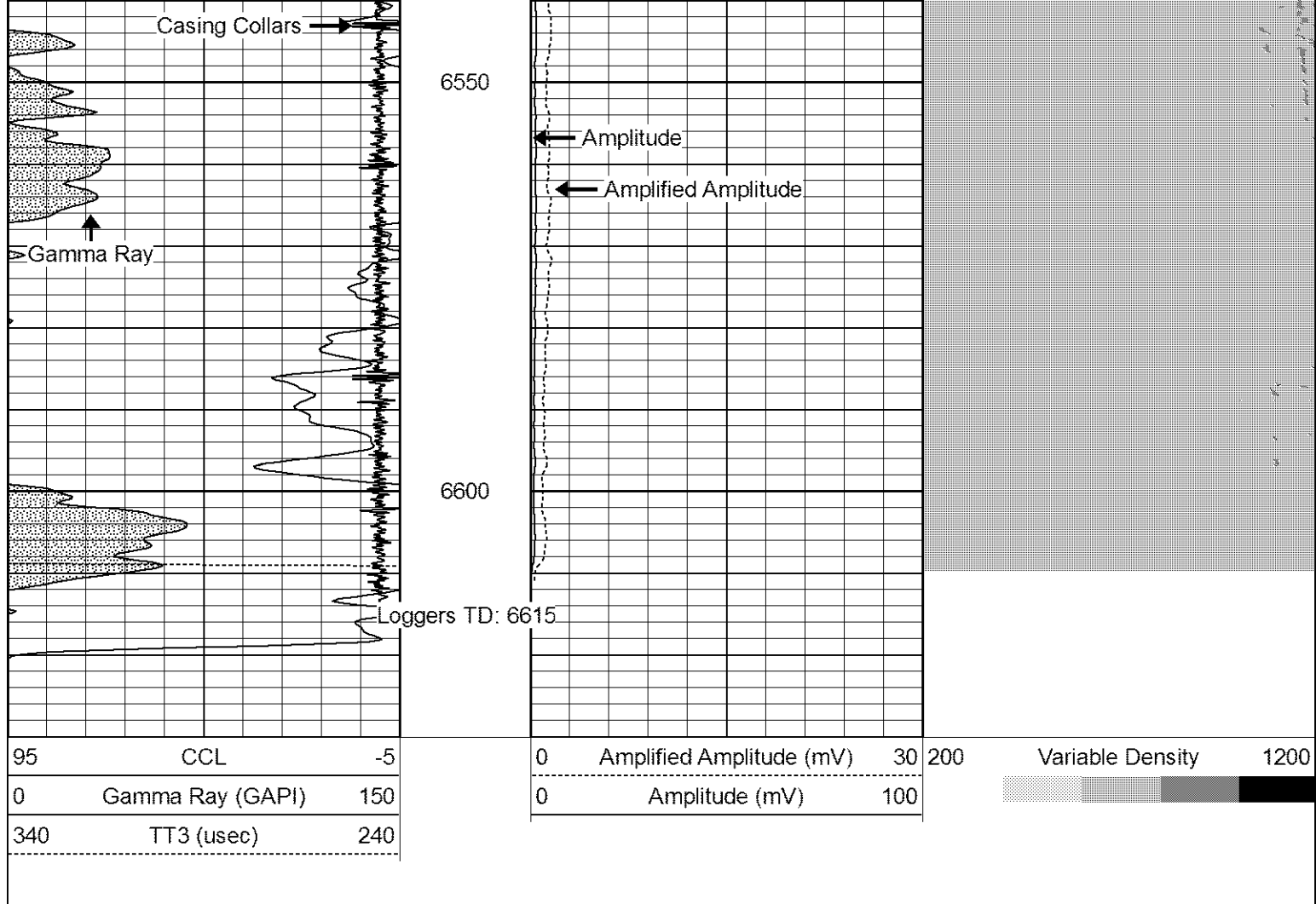
6350

6400

6450

6500





### Calibration Report

Database File: cblwashburn le22-78hn.db  
 Dataset Pathname: pass3  
 Dataset Creation: Wed Apr 25 07:23:58 2012 by Log SCH 120126

### Gamma Ray Calibration Report

Type / Serial: Probe275dig / 101010

#### SHOP CALIBRATION

Wed Apr 25 06:50:11 2012

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.7500			GAPI/cps

#### PRIMARY VERIFICATION

	Counts/Sec.	Units
Background	0.0	cps
Calibrator	0.0	cps
Difference		GAPI

#### BEFORE SURVEY VERIFICATION

	Counts/Sec.	Units
Background	0.0	cps
Calibrator	0.0	cps
Difference		GAPI

#### AFTER SURVEY VERIFICATION

	Counts/Sec.	Units
Background	0.0	cps
Calibrator	0.0	cps



Difference

0.0

GAPI

## Cement Bond Log Calibration Report

Serial Number: 110802  
Tool Model: Probe275Digital  
Performed: Wed Apr 25 06:49:36 2012

Depth: 273.175 ft  
Casing Diameter: 7 in

3' Spacing 5' Spacing

Signal Zero: 0.7 0 mV  
Calibrated Amplitude: 62.1651 62.1651 mV  
Reading at Signal Zero: 0.0134033 0.0135498 V  
Reading in Free Pipe: 2.49878 2.47039 V

Gain: 24.7307 25.3029  
Offset: 0.368526 -0.342849