

Schlumberger

Company: ENCANA OIL & GAS (USA) INC

Well: RENNINGER 30-7-2 (NGG30NE)

Field: DIVIDE CREEK

County: MESA

State: COLORADO

CBL  
CEMENT BOND LOG  
GAMMA RAY

SHL: 1609' FNL & 2136' FEL

Elev: K.B. 7269.00 ft  
G.L. 7247.00 ft  
D.F. 7268.00 ft

Permanent Datum: GROUND LEVEL Elev: 7247.00 ft

Log Measured From: KELLY BUSHING 22.00 ft above Perm. Datum

Drilling Measured From: KELLY BUSHING

AP1 Serial No.  
05-077-10210-0000

Section  
30

Township  
8S

Range  
91W

Logging Date  
17-Sep-2013

Run Number  
ONE

Depth Driller  
8520 ft

Schlumberger Depth  
8402 ft

Bottom Log Interval  
8402 ft

Top Log Interval  
100 ft

Casing Fluid Type  
WATER BASE MUD

Salinity  
10.4 lbm/gal

Density  
0 ft

Fluid Level  
0 ft

BIT/COASING/TUBING STRING  
9.875 in

Bit Size  
9.875 in

From  
To

Casing/Tubing Size  
7.625 in

Weight  
26.4 lbm/ft

Grade  
HCP 110

From  
To

Maximum Recorded Temperatures  
Logger On Bottom 17-Sep-2013 14:00

Unit Number 6631 2267

Recorded By MANIDA P./ STEVEN V.

Witnessed By HAROLD ANDERSON

PVT DATA

Oil Density	Run 1	Run 2	Run
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bq			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			

Maximum Deviation  
5.8 deg

CEMENTING DATA

Primary/Squeeze	Primary
Casing String No	
Lead Cement Type	
Volume	
Density	
Water Loss	
Additives	
Tail Cement Type	
Volume	
Density	
Water Loss	
Additives	
Expected Cement Top	

Logging Date

Run Number

Depth Driller

Schlumberger Depth

Bottom Log Interval

Top Log Interval

Casing Fluid Type

Salinity

Density

Fluid Level

BIT/COASING/TUBING STRING

Bit Size

From

To

Casing/Tubing Size

Weight

Grade

From

To

Maximum Recorded Temperatures

Logger On Bottom

Unit Number

Recorded By

Witnessed By

**DEPTH SUMMARY LISTING**

Date Created: 17-SEP-2013 17:50:52

**Depth System Equipment**

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B/A Serial Number: Calibration Date: Calibrator Serial Number: Calibration Cable Type: 7-48ZA-XXS Wheel Correction 1: 1 Wheel Correction 2: 0	Type: CMTD-B/A Serial Number: 5069 Calibration Date: 27-AUG-2013 Calibrator Serial Number: 88310 Number of Calibration Points: 10 Calibration RMS: 20 Calibration Peak Error: 41	Type: 7-48ZA-XXS Serial Number: Length: 21250 FT Conveyance Method: Wireline Rig Type: LAND

**Depth Control Parameters**

Log Sequence: First Log In the Well  
Rig Up Length At Surface: 216.30 FT  
Rig Up Length At Bottom: 216.30 FT  
Rig Up Length Correction: 0.00 FT  
Stretch Correction: 5.00 FT  
Tool Zero Check At Surface:

**Depth Control Remarks**

1. IDW USED AS PRIMARY DEPTH CONTROL
2. Z-CHART USED AS SECONDARY DEPTH CONTROL
- 3.
- 4.
- 5.
- 6.

**DISCLAIMER**

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

**OTHER SERVICES1**

OS1:  
OS2:  
OS3:  
OS4:  
OS5:

**OTHER SERVICES2**

OS1:  
OS2:  
OS3:  
OS4:  
OS5:

**REMARKS: RUN NUMBER 1**

1. THIS IS THE FIRST RUN IN HOLE.
2. TOOL RUN AS PER TOOL SKETCH.
3. FOUR INLINE CENTRALIZERS USED FOR CENTRALIZATION
4. AH-107 KNUCKLE PLACED BETWEEN IBC SONDE AND CARTERIDGE.
5. 38 DEGREE USED FOR IBCB-A SUB.

**REMARKS: RUN NUMBER 2**











THANK YOU FOR CHOOSING ROCK SPRINGS WIRELINE!!!!

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
	19C1-222	0 ft			
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
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SURFACE EQUIPMENT
GSR-U/Y WITM (DTS)-A

DOWNHOLE EQUIPMENT
<div> <div> <div>LEH-QT</div> <div>LEH-QT</div> </div> <div> <div> <div>63.8</div> <div>  </div> </div> </div> </div>
<div> <div> <div>DTC-H</div> <div>ECH-KC 10440</div> <div>DTCH0-A</div> </div> <div> <div>CTEM</div> <div>TelStatus</div> <div>ToolStatu</div> </div> <div> <div> <div>60.0</div> <div>60.9</div> <div>57.9</div> </div> <div>  </div> </div> </div>
<div> <div> <div>SGT-N</div> <div>SGH-K 3032</div> <div>SGC-TB 10283</div> <div>SGD-TAB</div> </div> <div> <div>Gamma Ray</div> </div> <div> <div> <div>57.0</div> <div>57.9</div> </div> <div>  </div> </div> </div>
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<div> <div> <div>DSLT-FTB</div> <div>DSLC-B 8317</div> <div>ECH-KH 8378</div> <div>SLS-W 8033</div> </div> <div> <div> <div>48.4</div> </div> <div>  </div> </div> </div>
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<div> <div> <div>AH-INLINE</div> <div>AH-INLINE</div> </div> <div> <div> <div>27.7</div> </div> <div>  </div> </div> </div>

USI T-D  
 ECH-MPA 3931  
 USIC-D 1805  
 AH-107 3837  
 USIS-A 1804  
 USSC-B  
 IBCS A-100158201 852  
 Top Transducer  
 Middle Top Transducer  
 Middle Bottom Transducer  
 Bottom Transducer

23.7

Far Incid  
 Near Inci  
 Normal In  
 Control  
 DF  
 USI Relat HV  
 Tension

TOOL ZERO

MAXIMUM STRING DIAMETER 3.63 IN  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN FEET

**Schlumberger**

## CBL VDL MAIN PASS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: RENNINGER 30-7-2 (NGG30NE)

### Input DLIS Files

DEFAULT	USI_SONIC_023 PUP	FN:38	PRODUCER	17-Sep-2013 21:11	8367.0 FT	99.5 FT
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### Output DLIS Files

DEFAULT	USI_SONIC_024 PUP	FN:40	PRODUCER	17-Sep-2013 21:33	8365.0 FT	97.5 FT
RTB	USI_SONIC_024 PUP	FN:41	PRODUCER	17-Sep-2013 21:27	8365.0 FT	97.5 FT

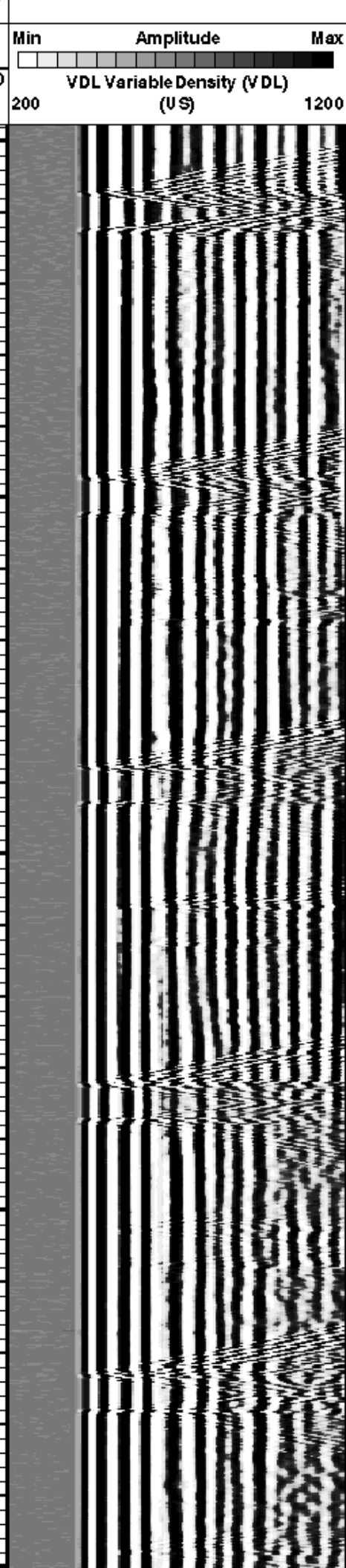
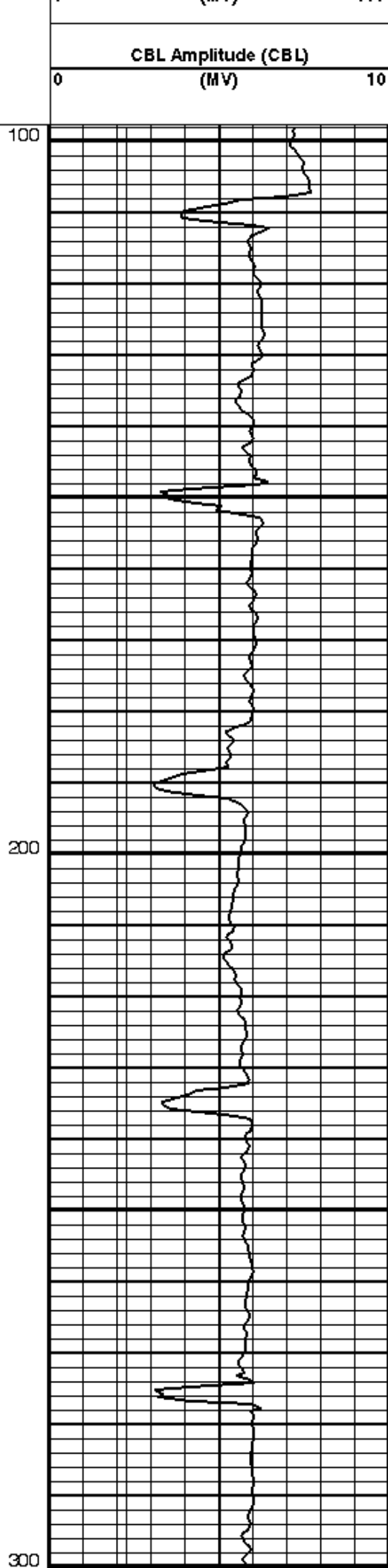
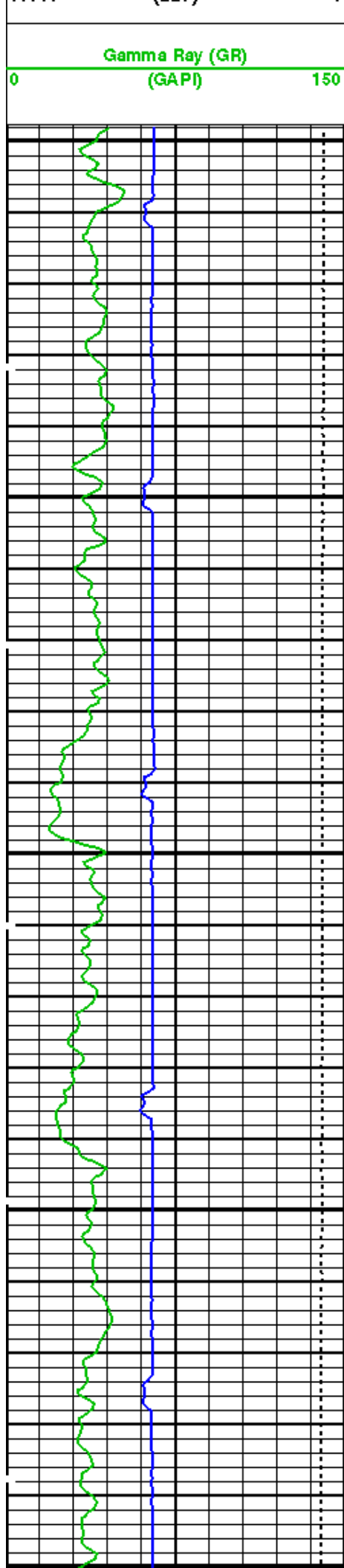
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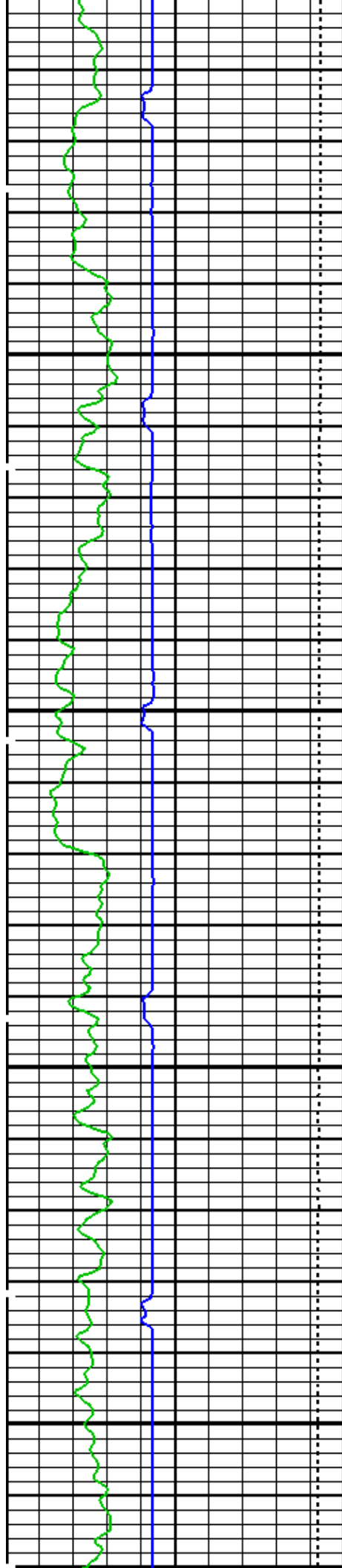
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SGT-N	19C1-222	DTC-H	19C1-222

### PIP SUMMARY

Time Mark Every 60 S

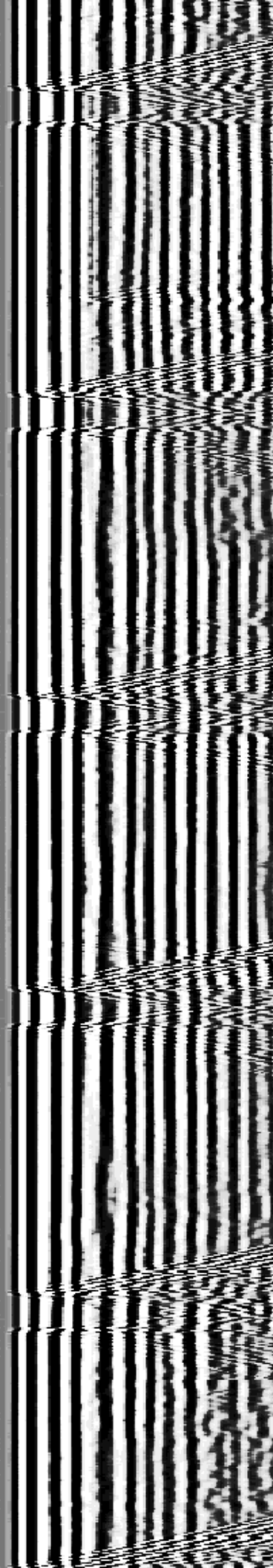
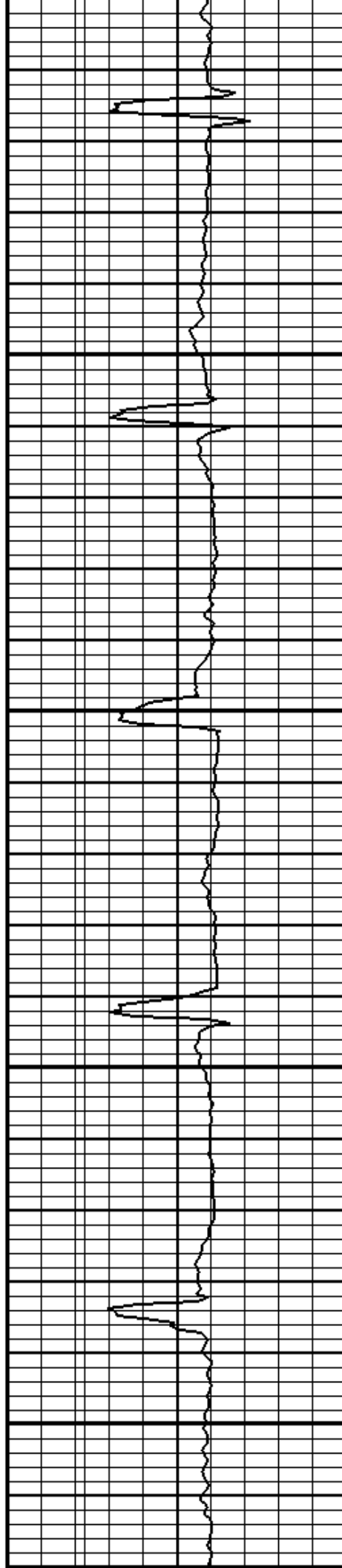
		GoodBond From ACBL to GOBO	
Transit Time (TT)		Good Bond (GOBO)	
400	(US)	200	
Tension (TENS)		CBL Amplitude (CBL)	
10000	(LBF)	0	100

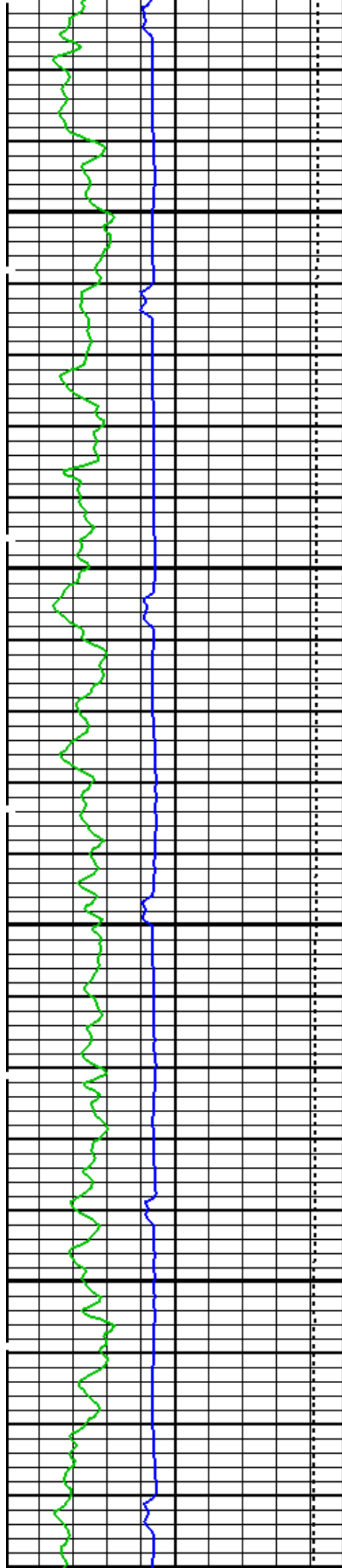




400

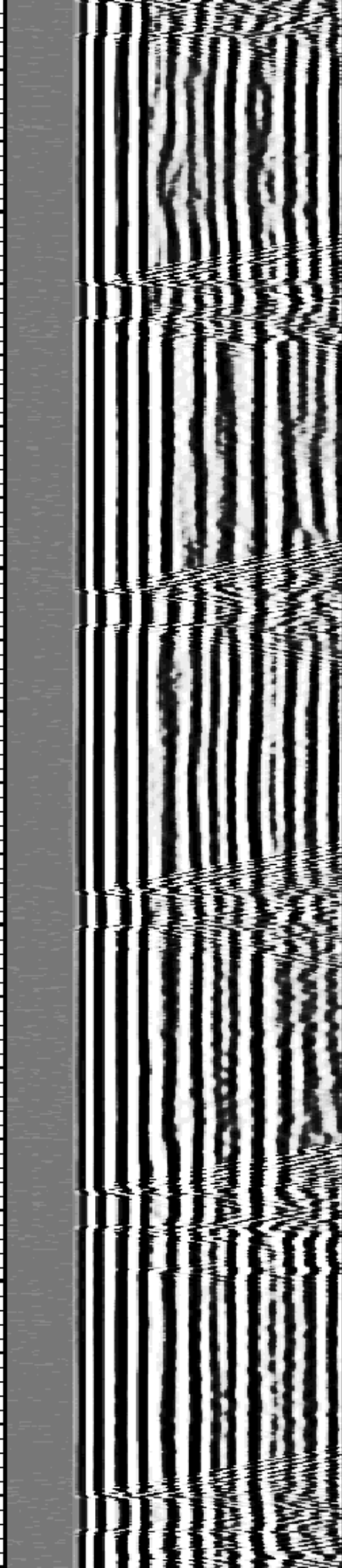
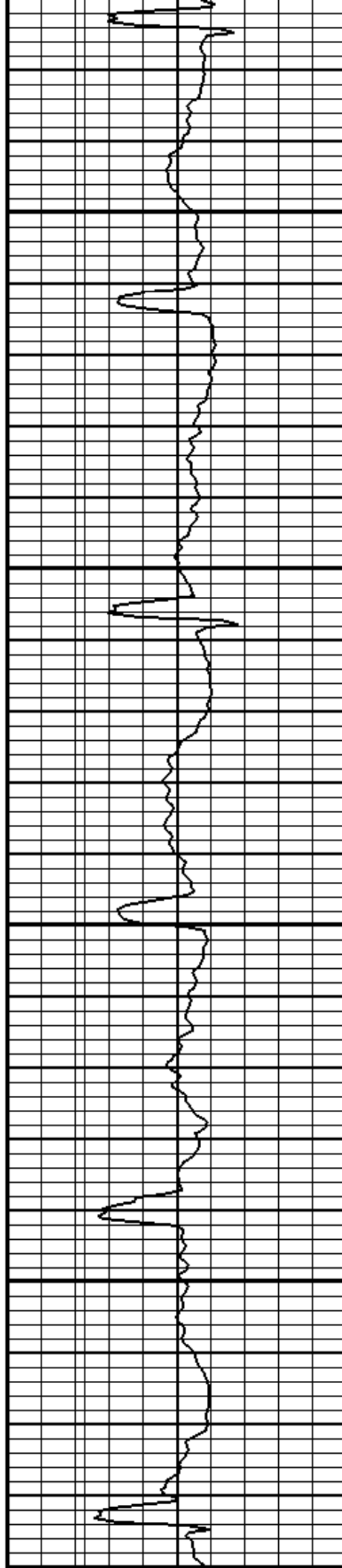
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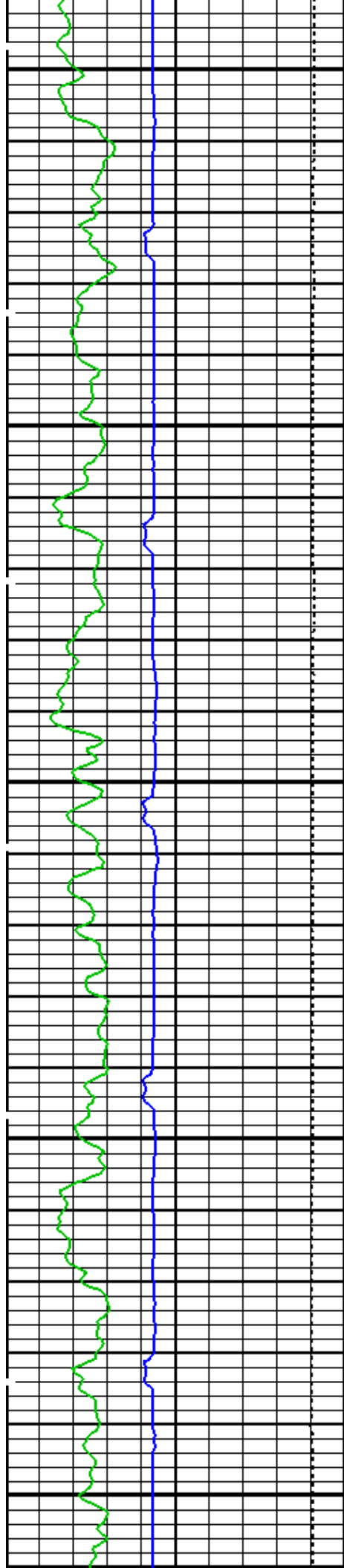


600

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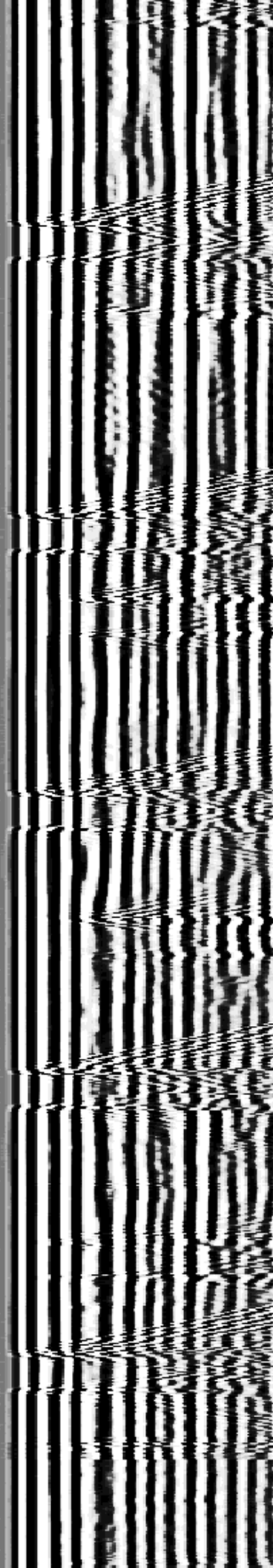
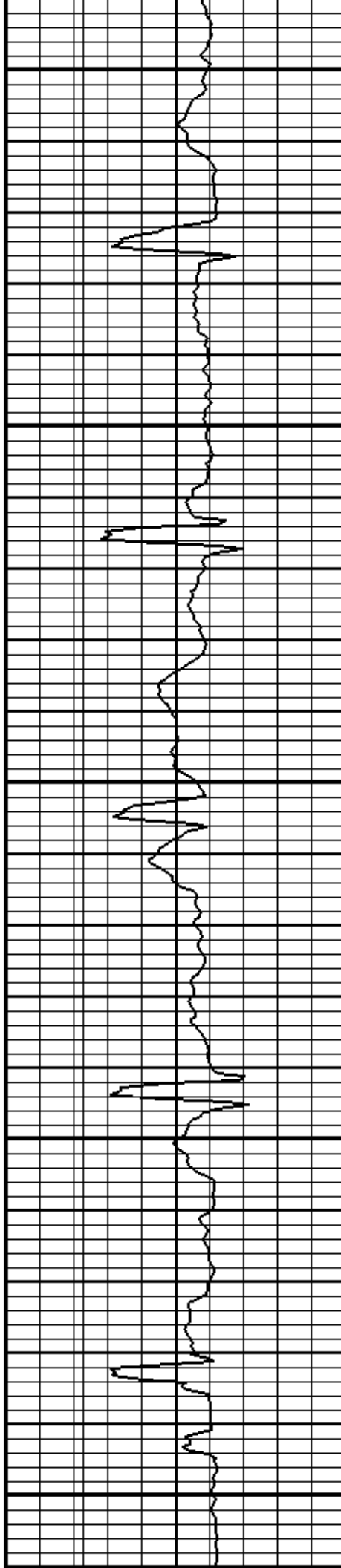




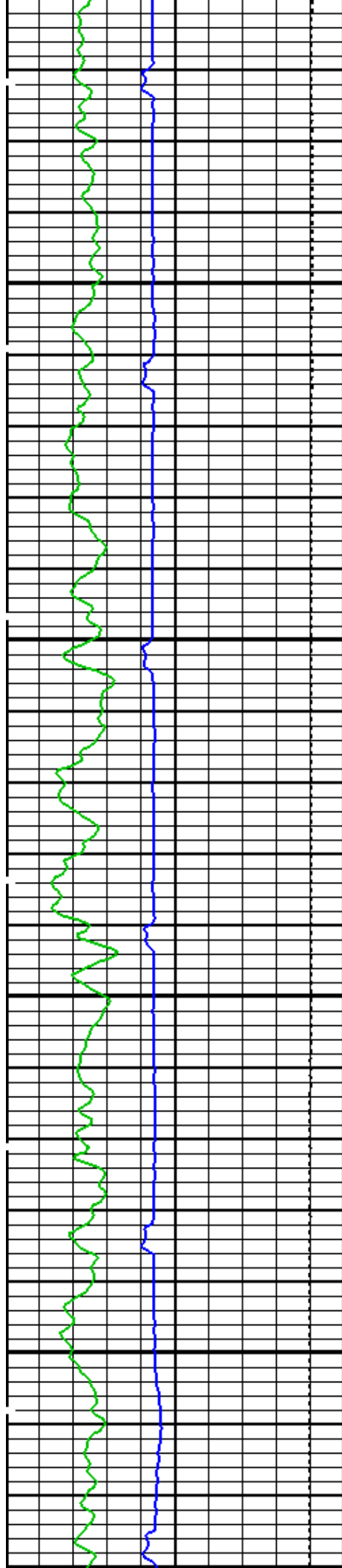


800

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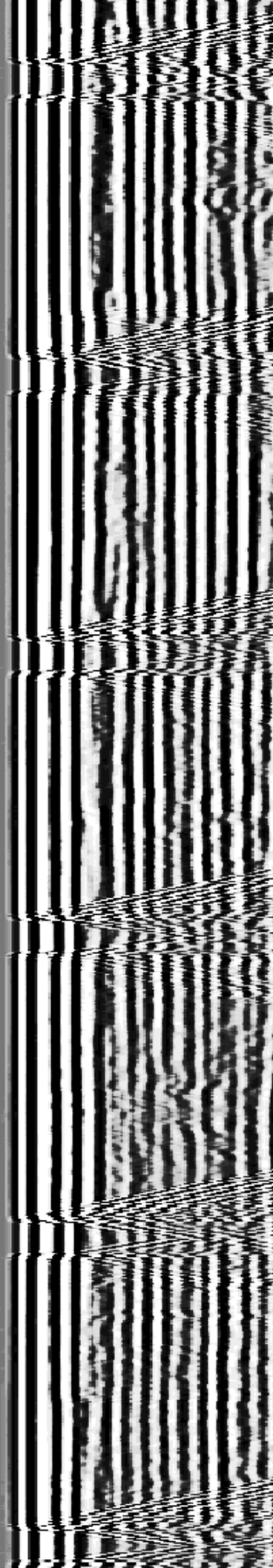
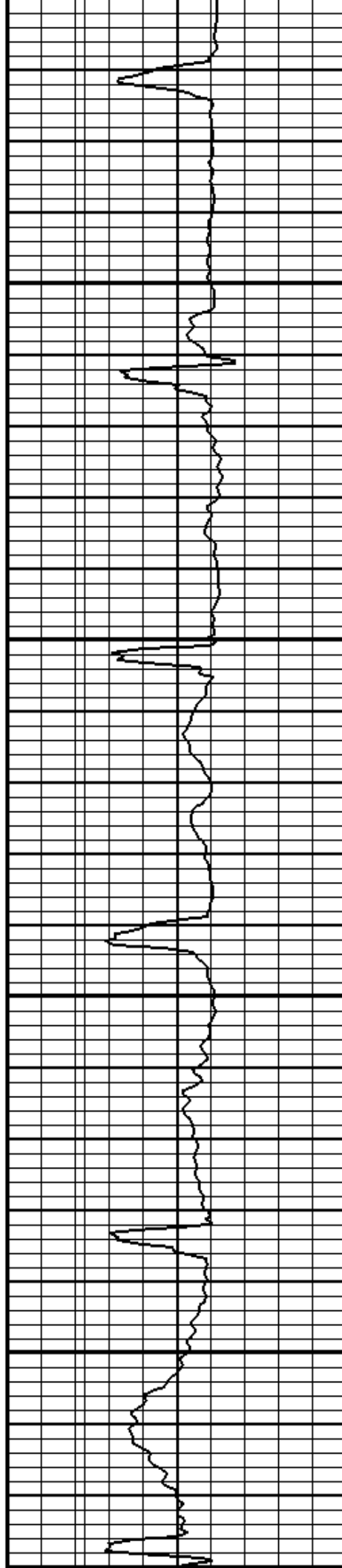


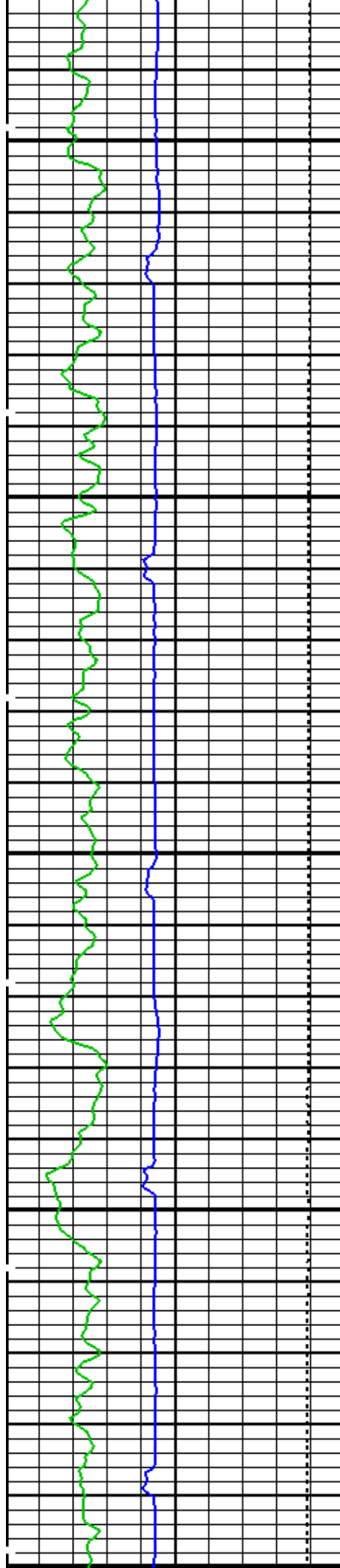




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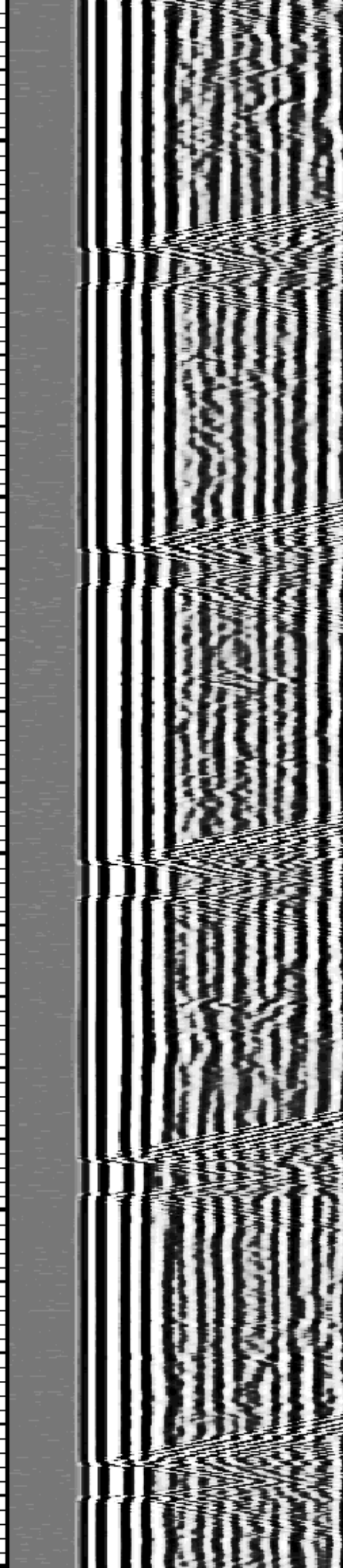
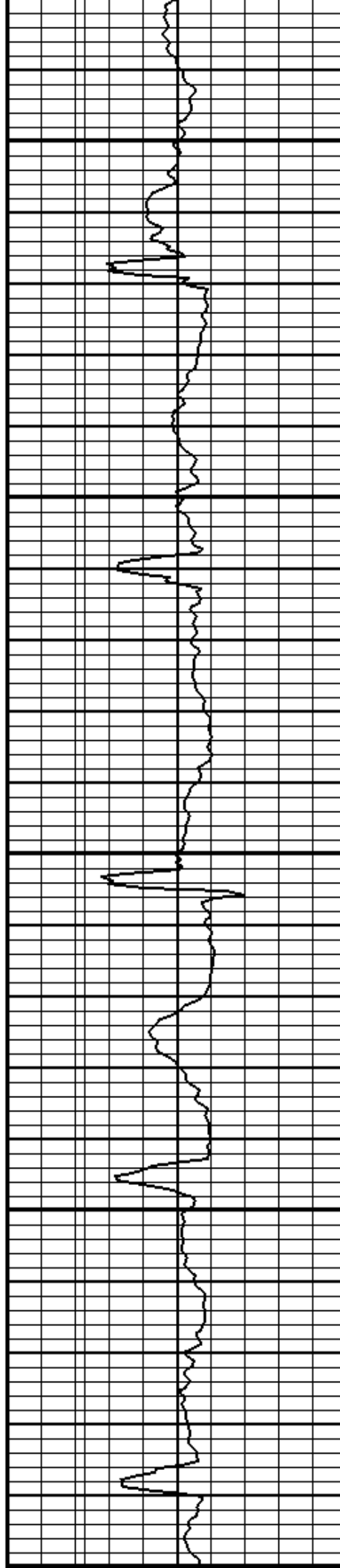


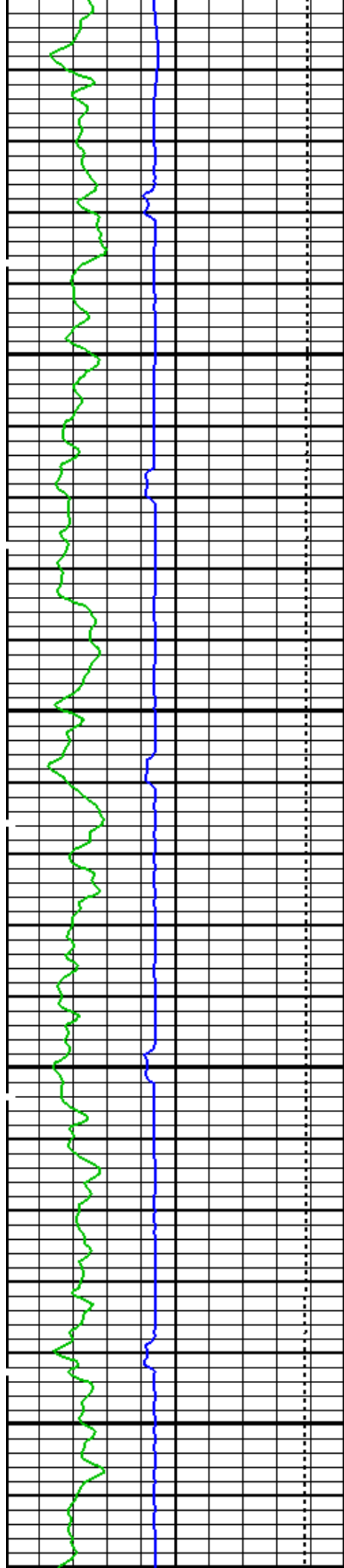


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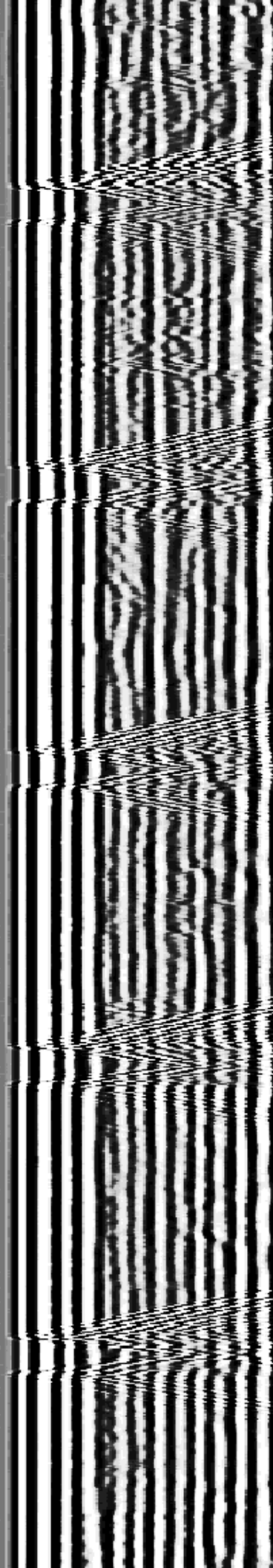
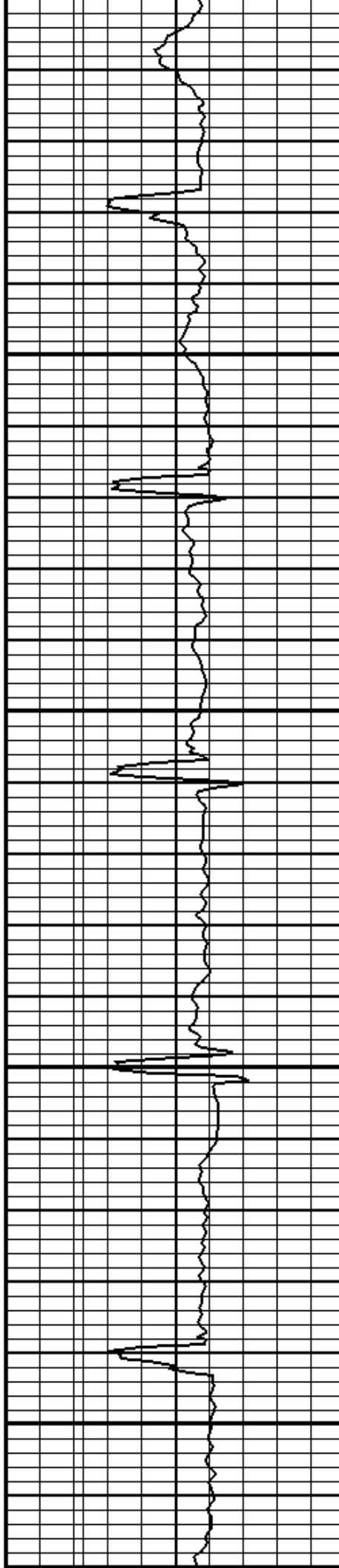
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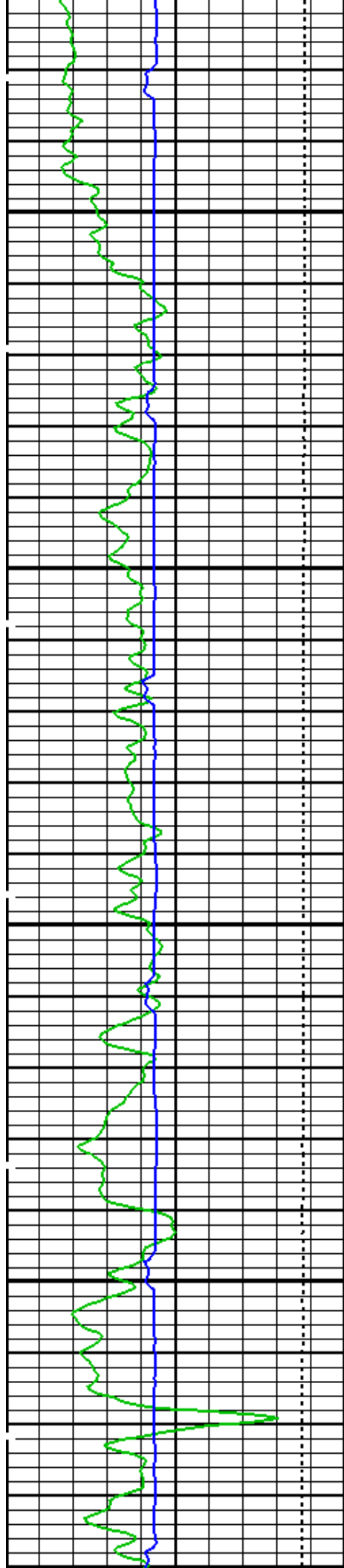


1500

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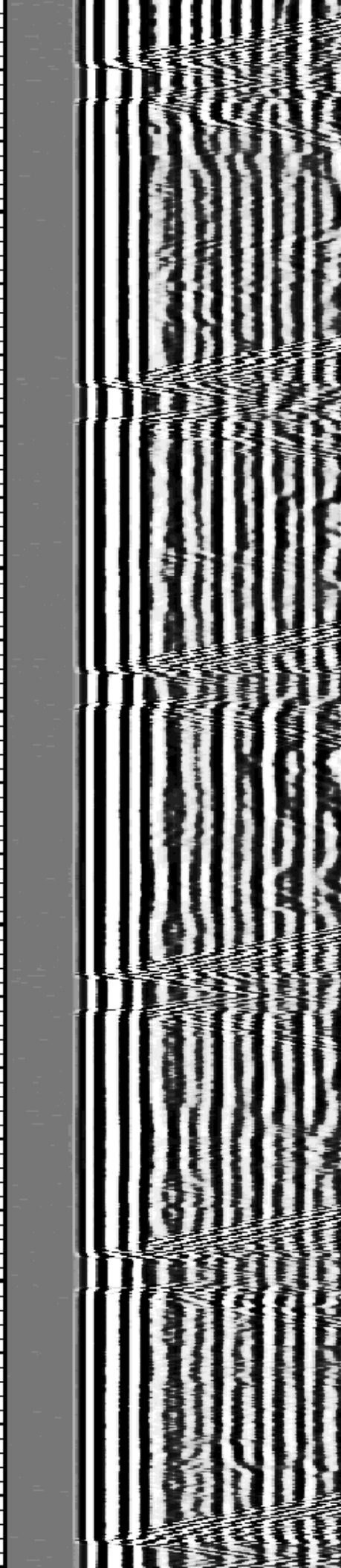
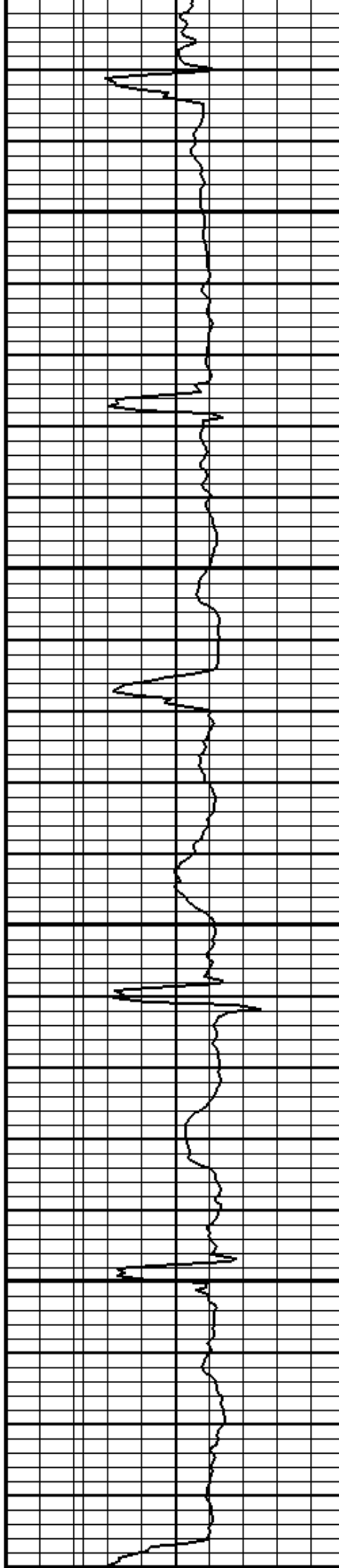


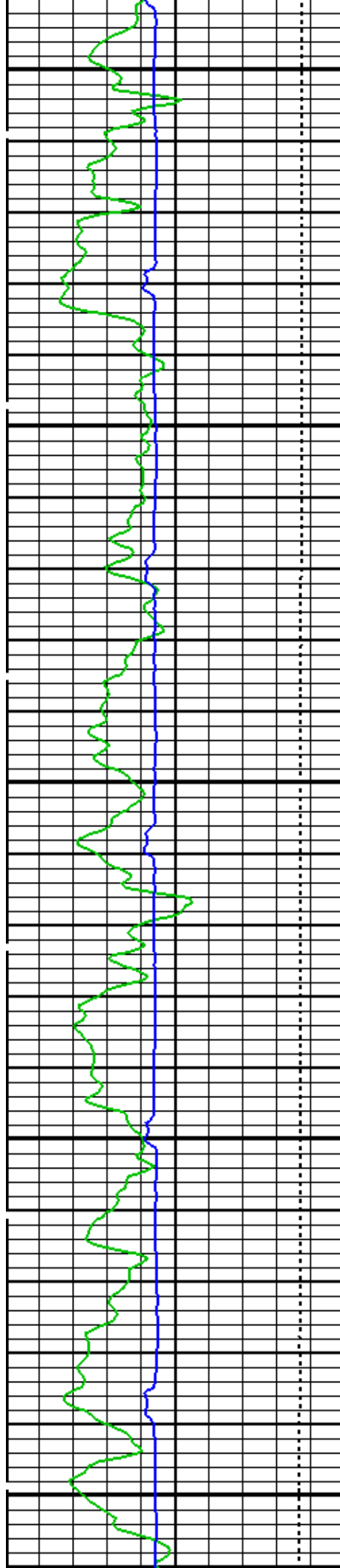




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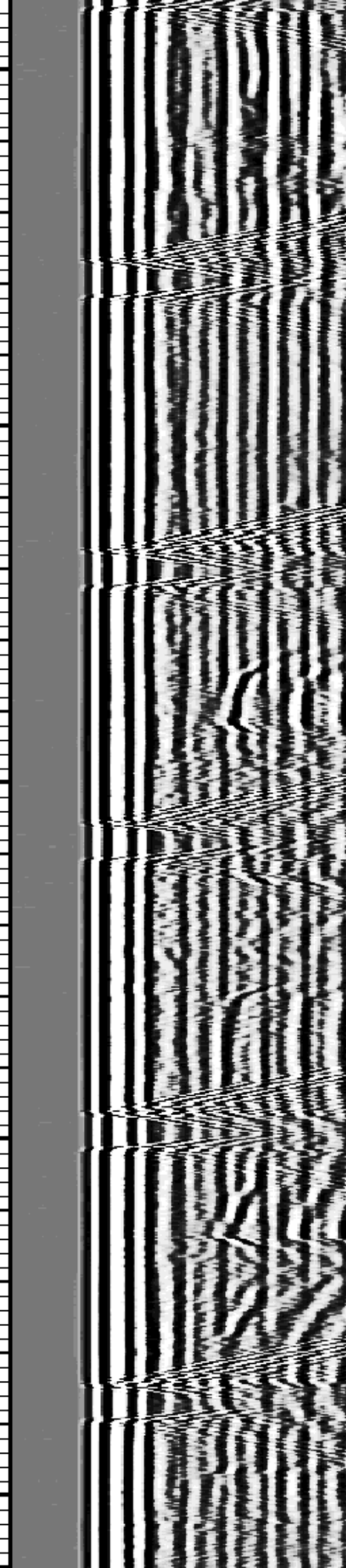
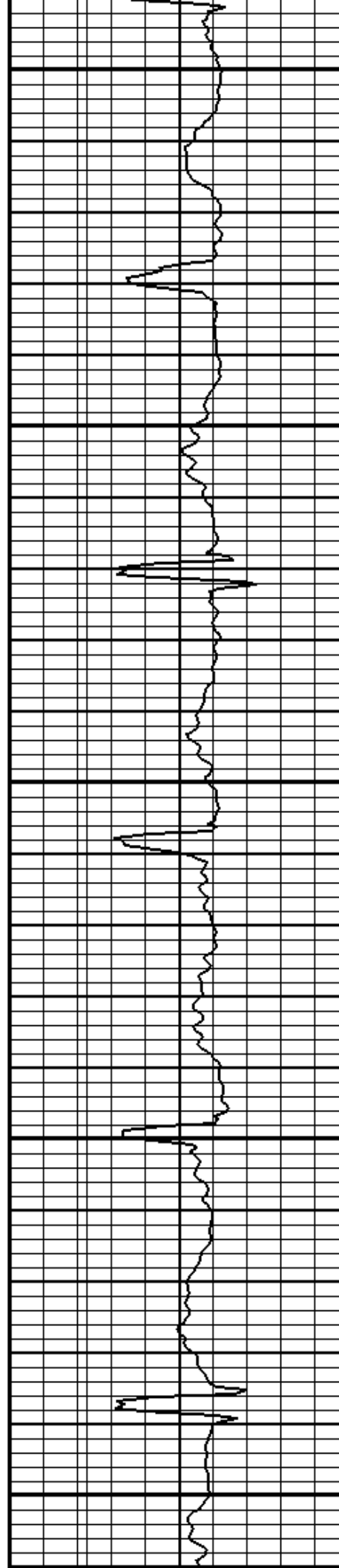
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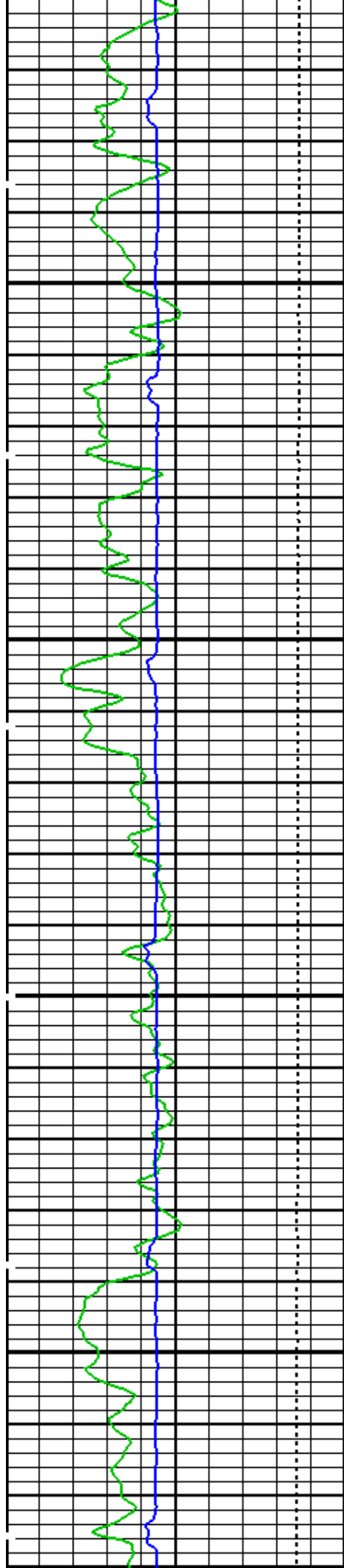




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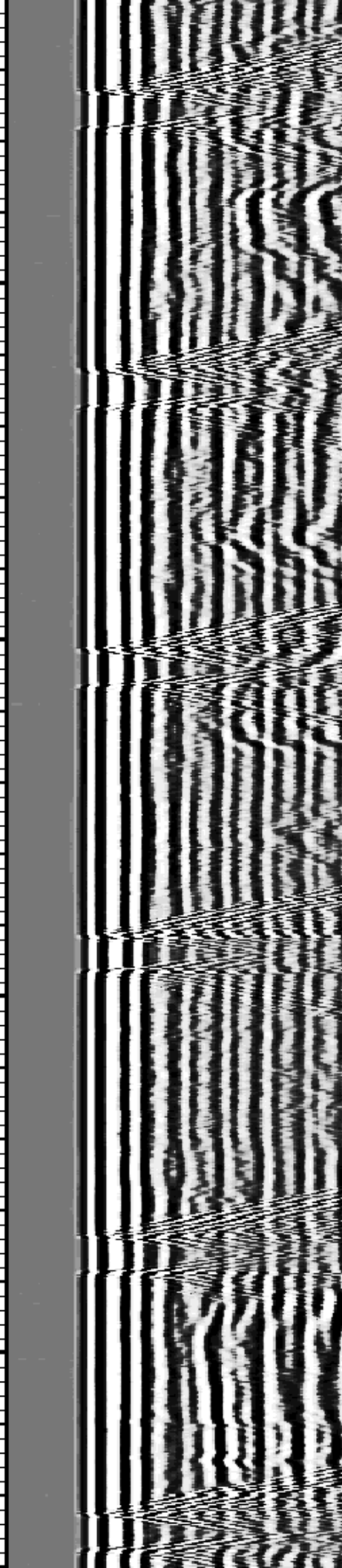
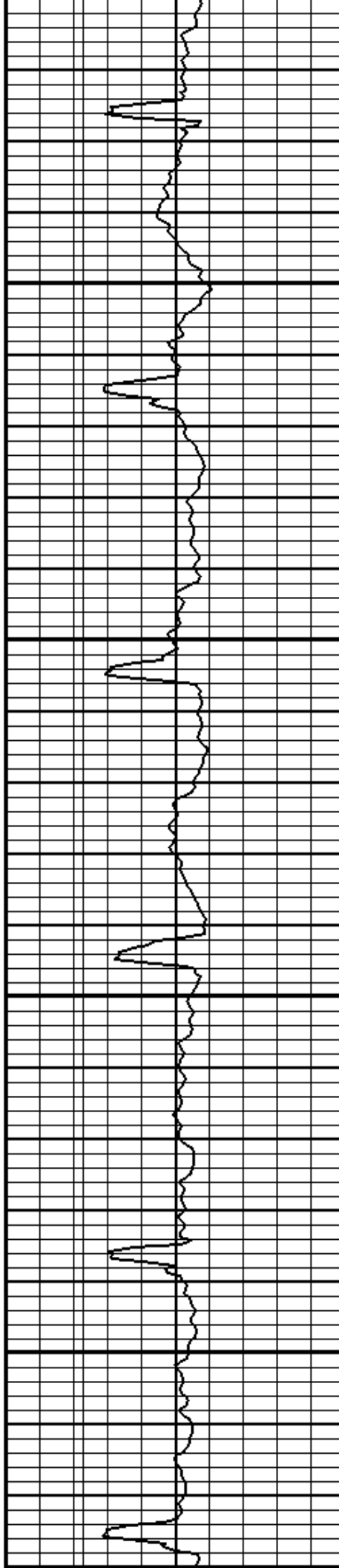
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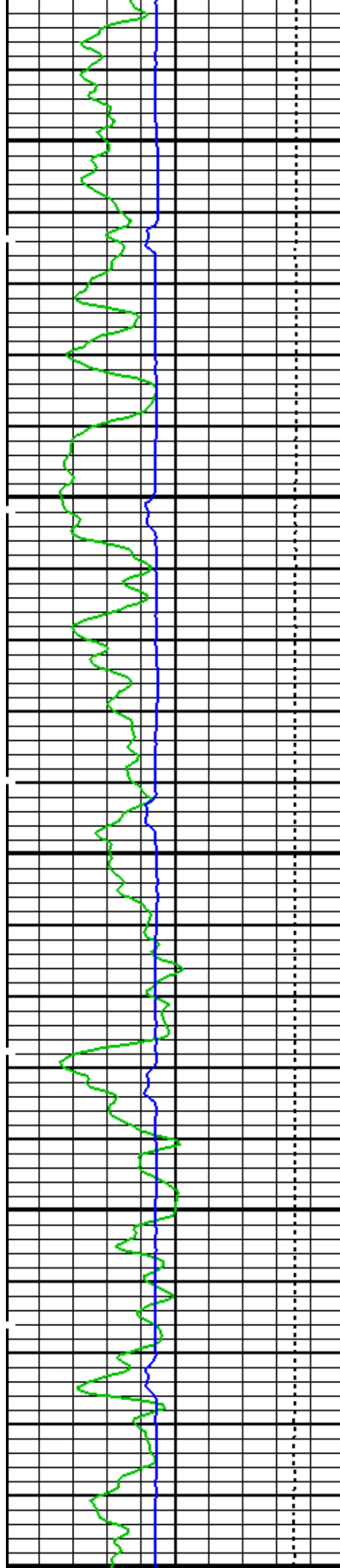


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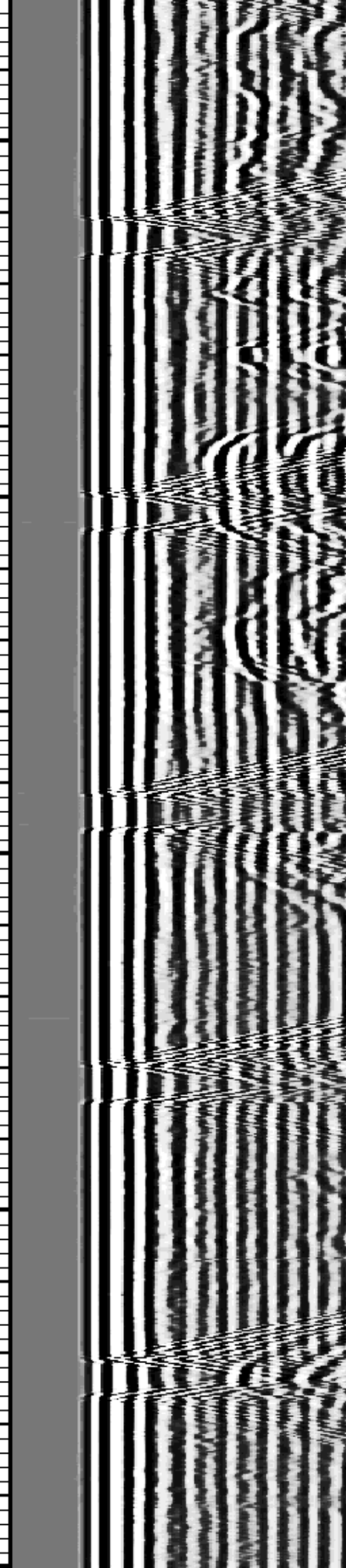
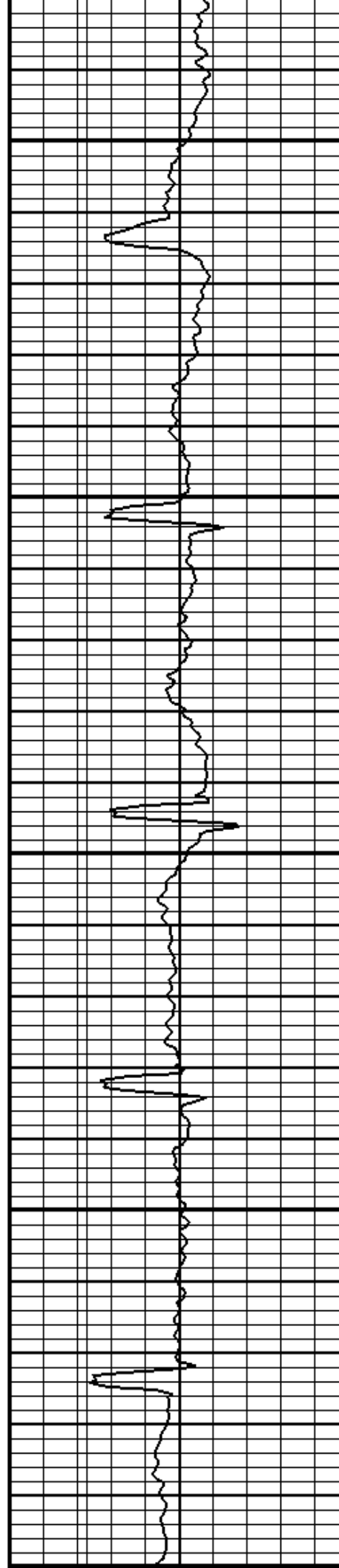


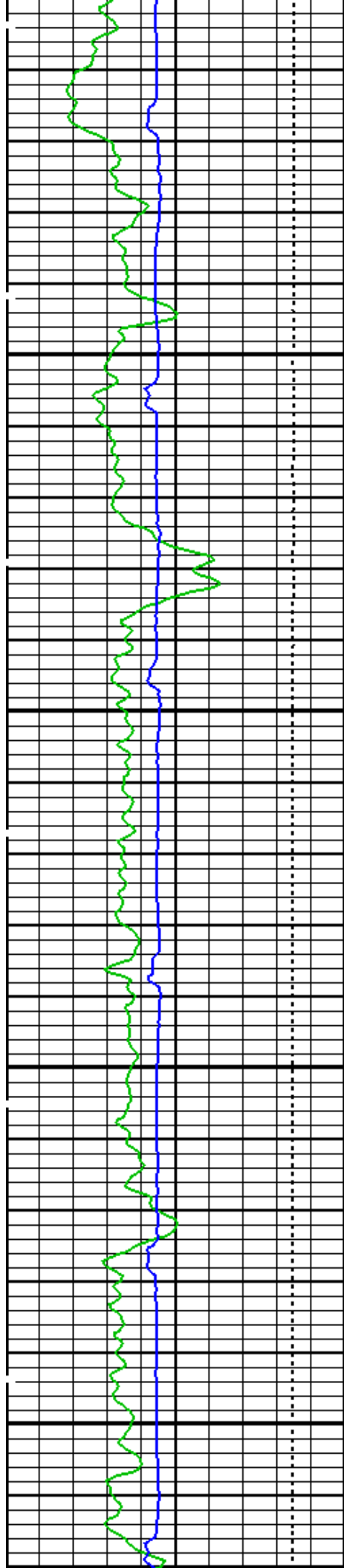


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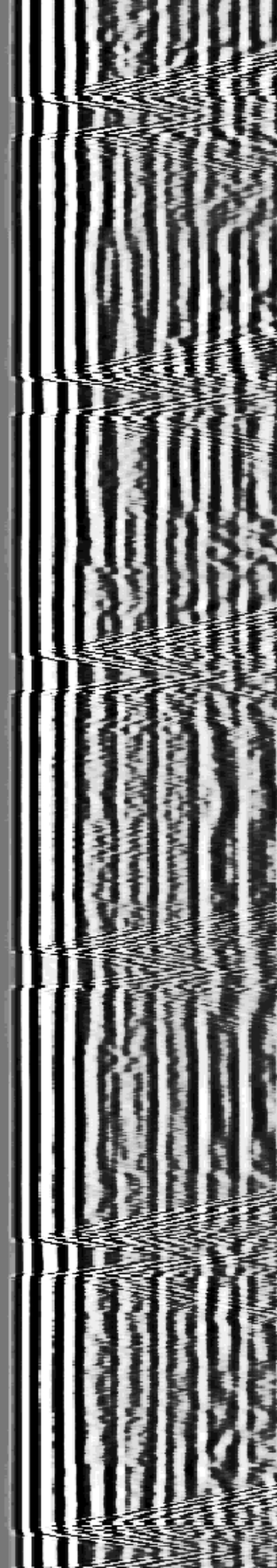
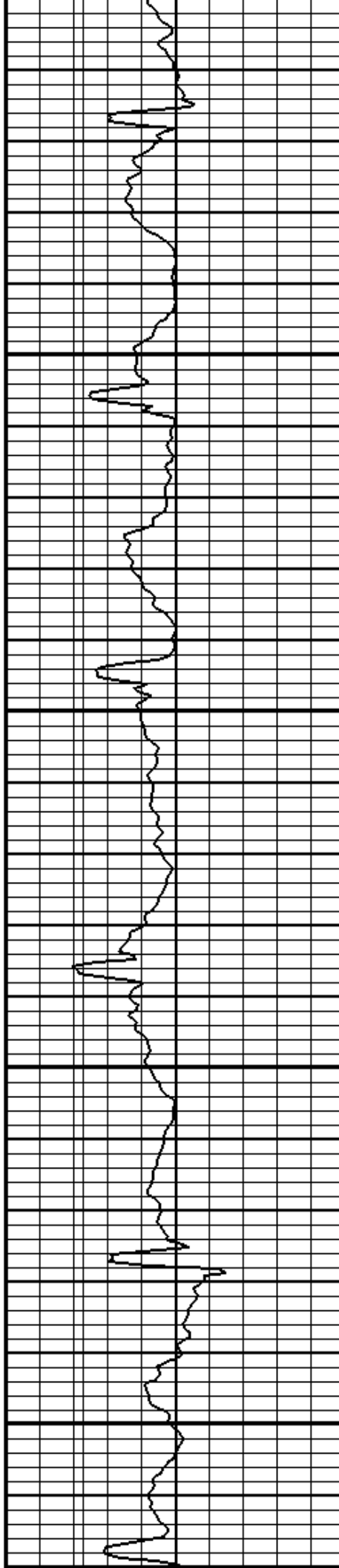
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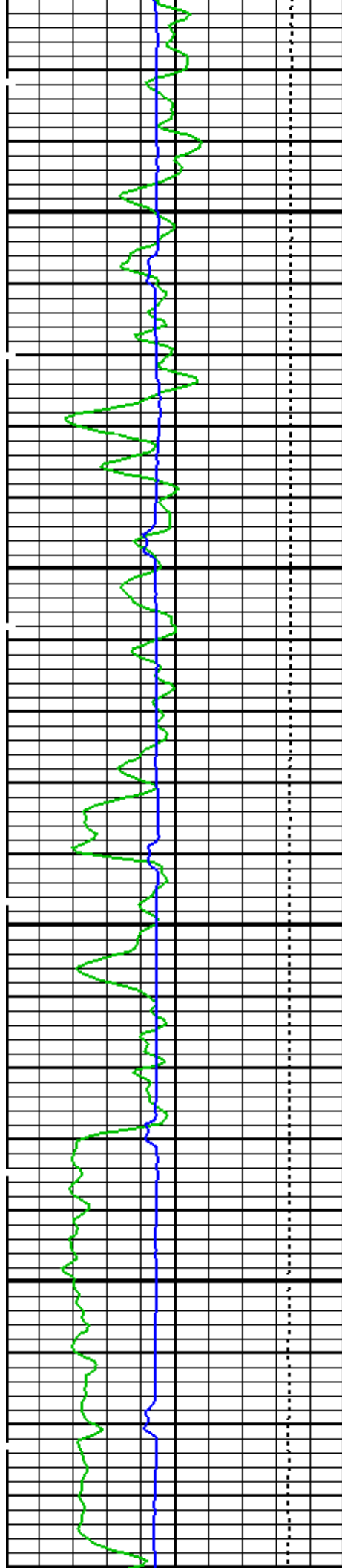




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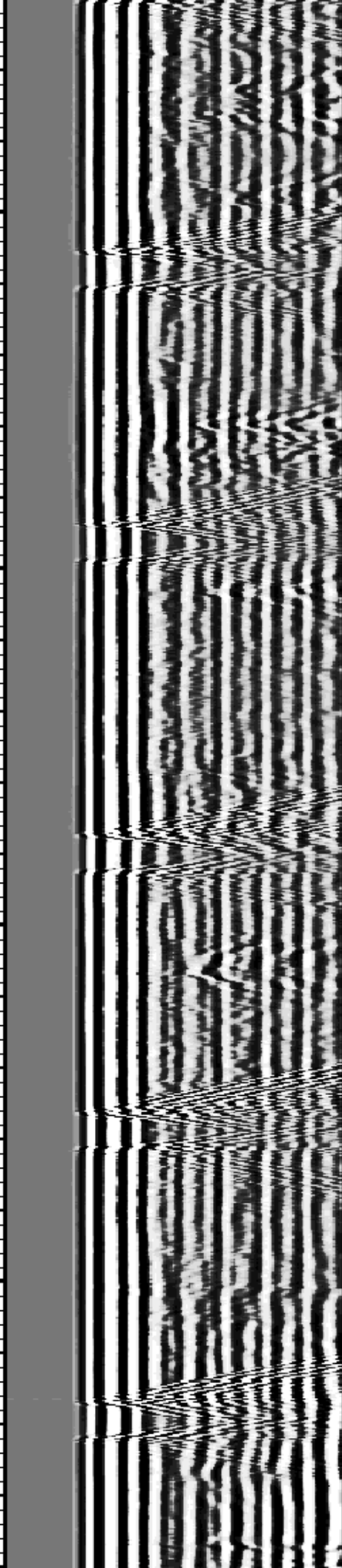
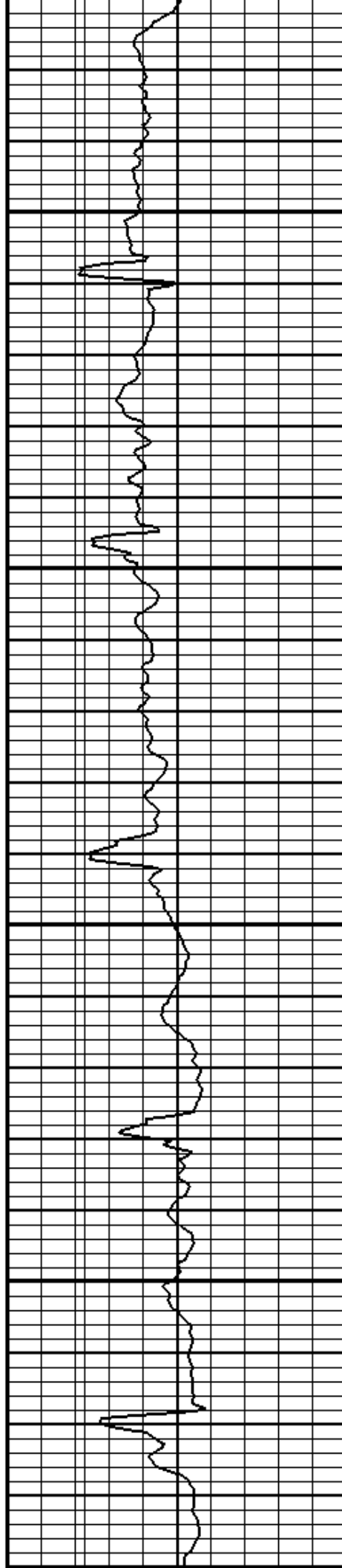
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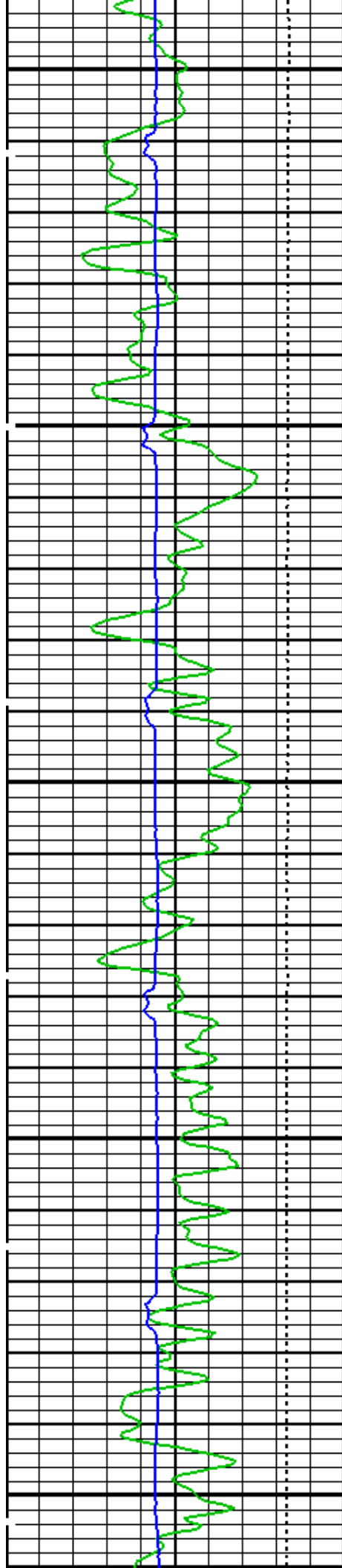


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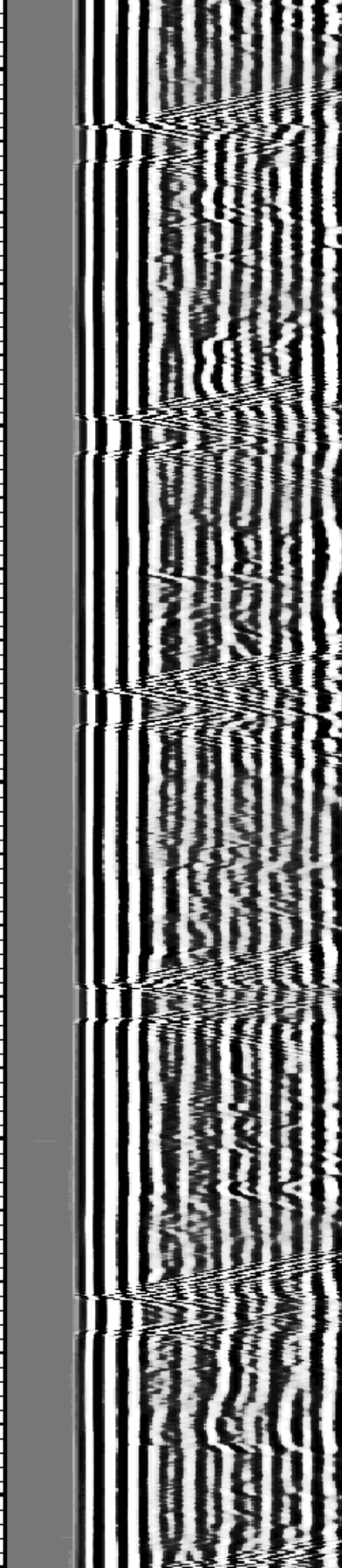
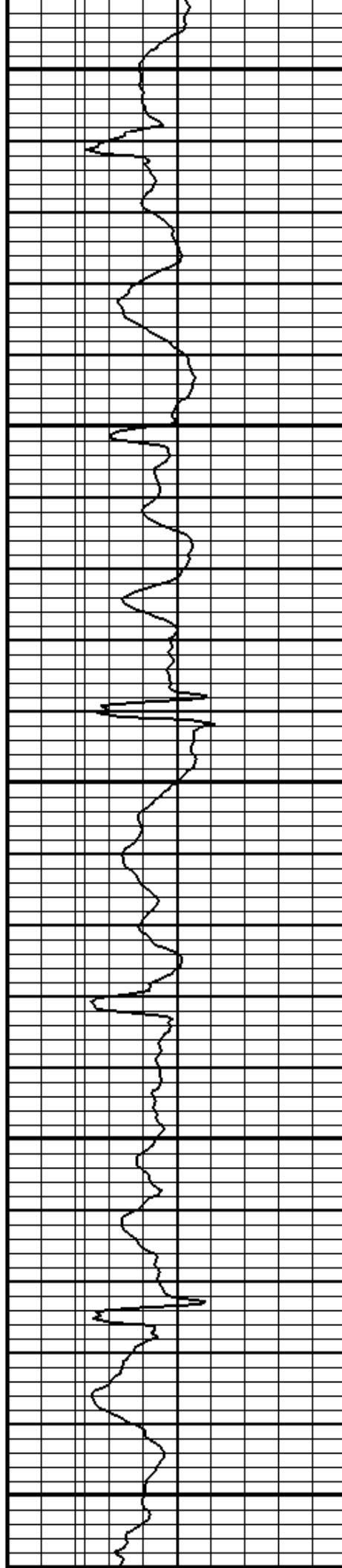


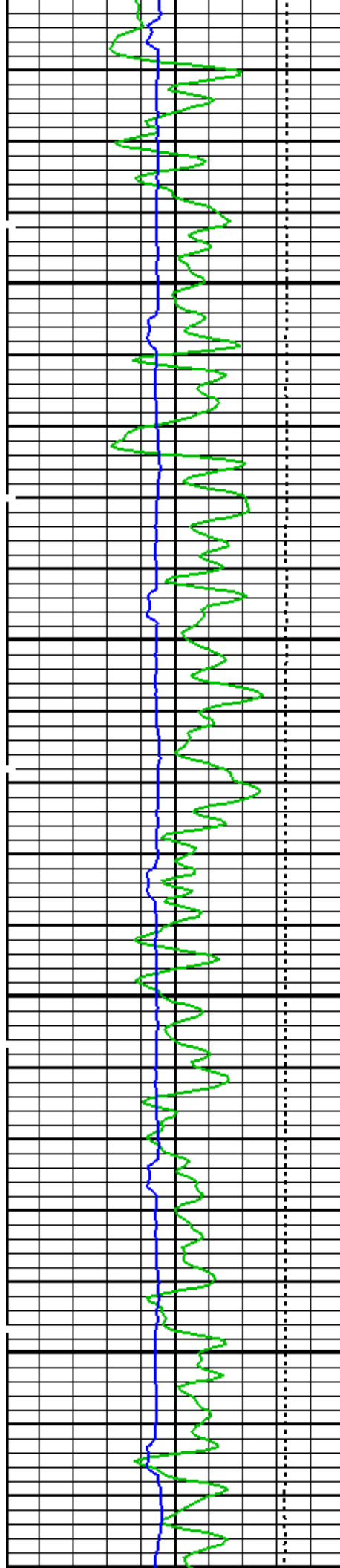




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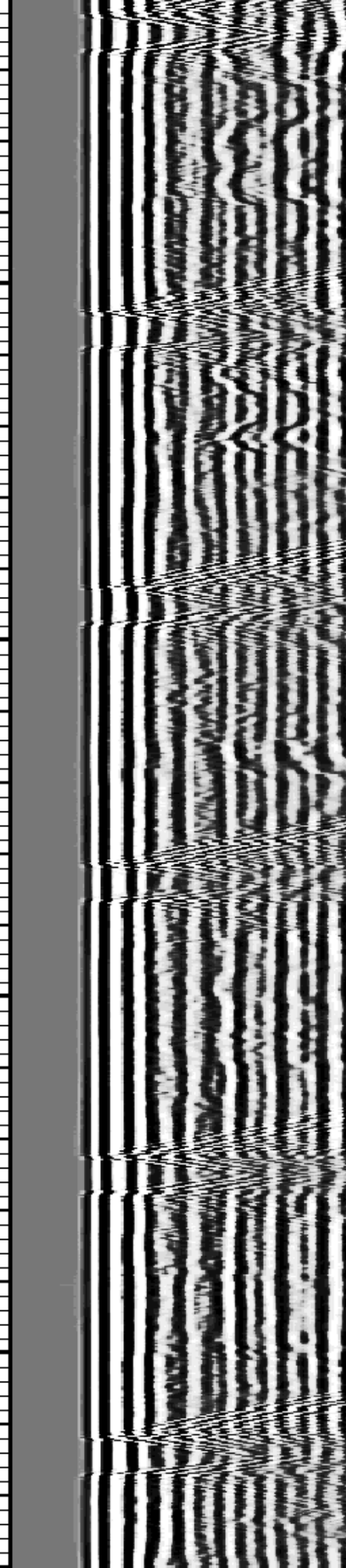
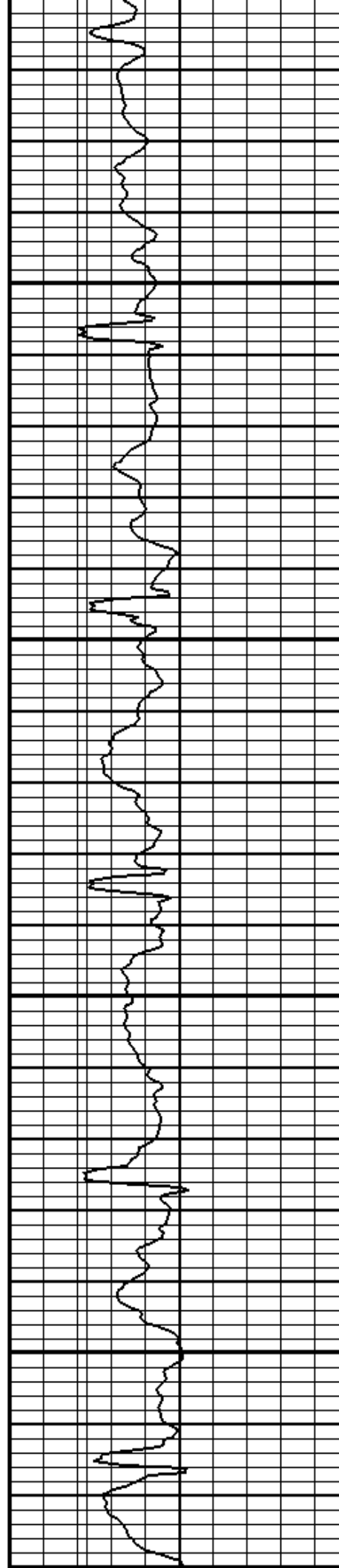
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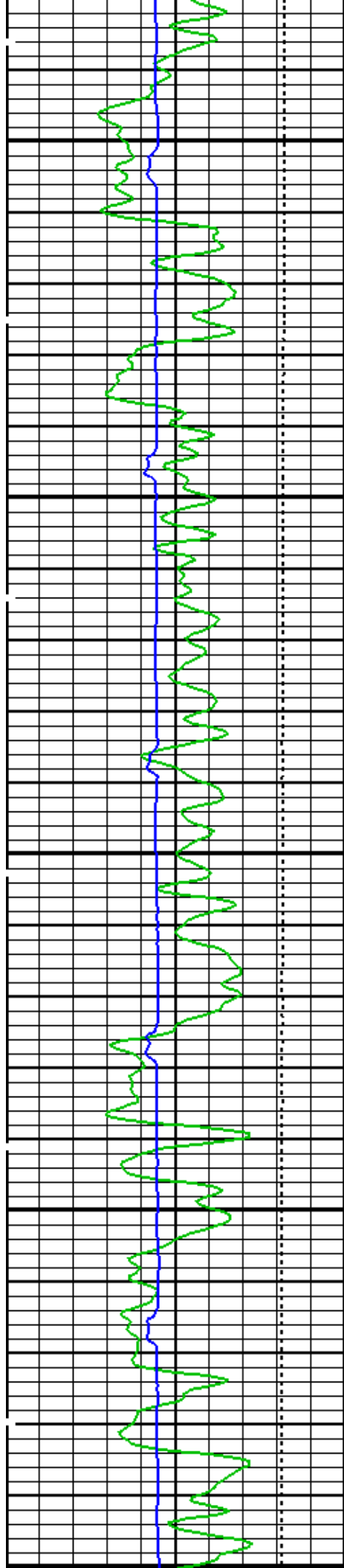




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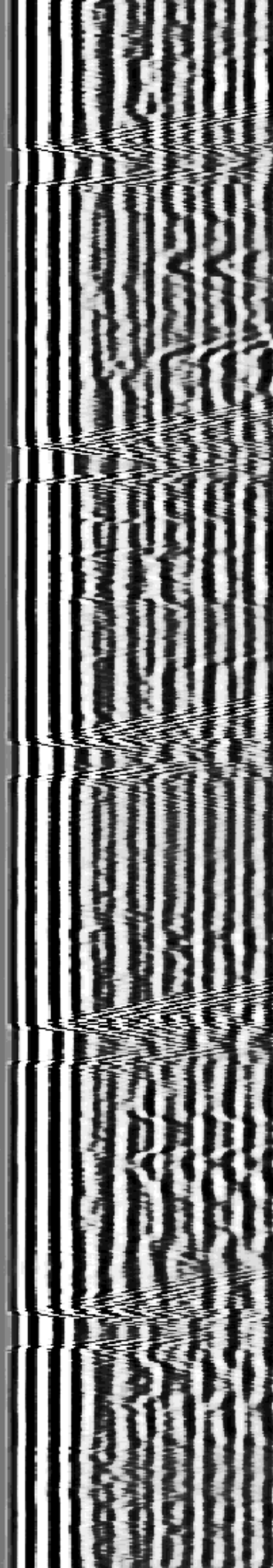
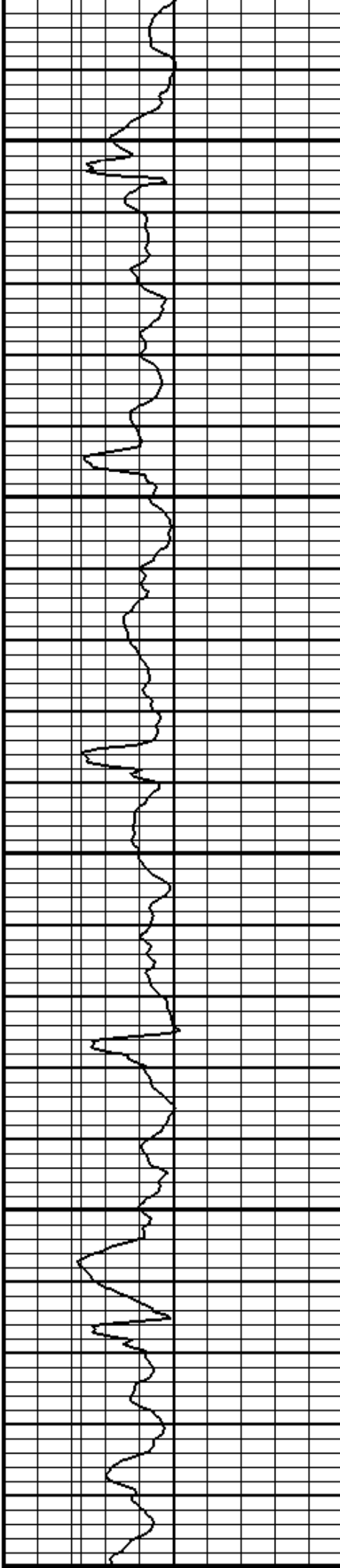




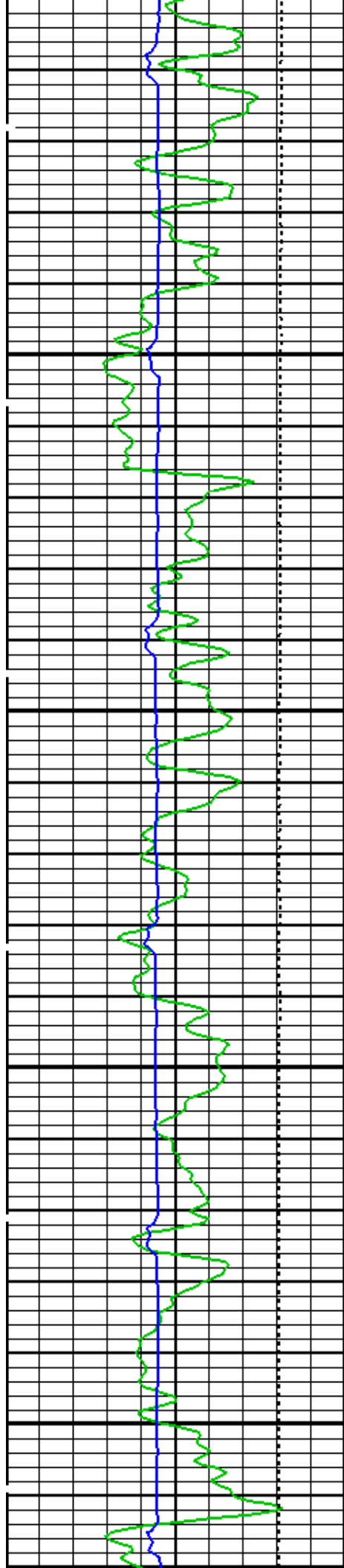
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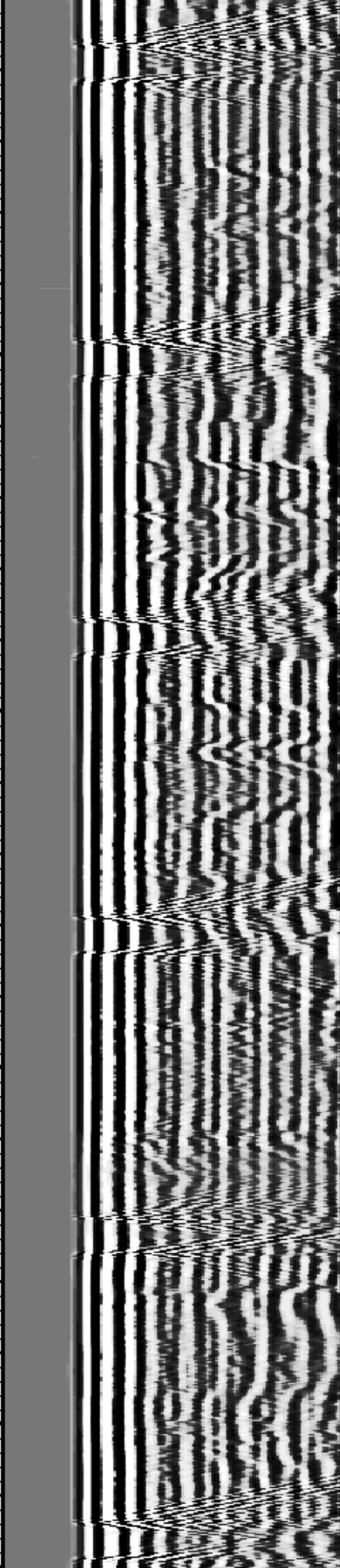
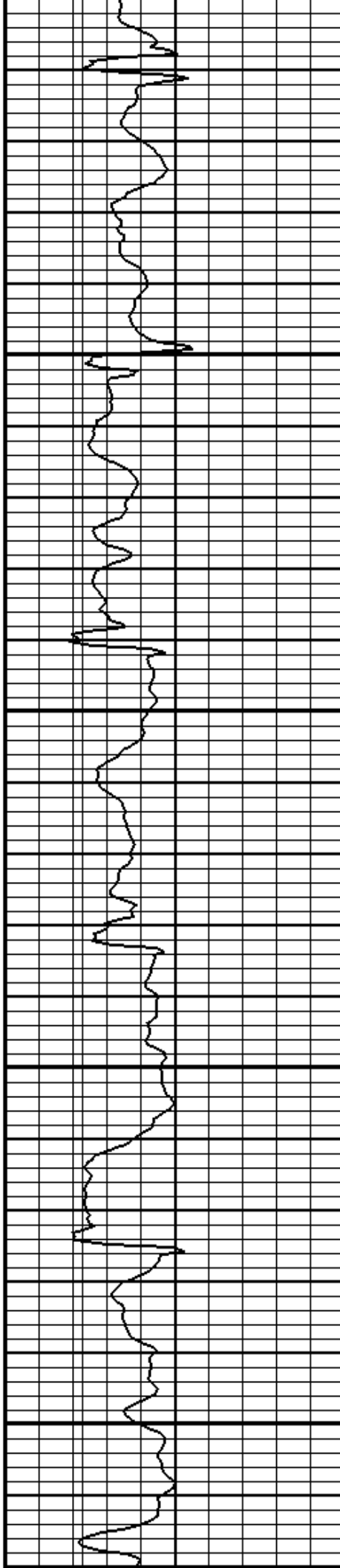


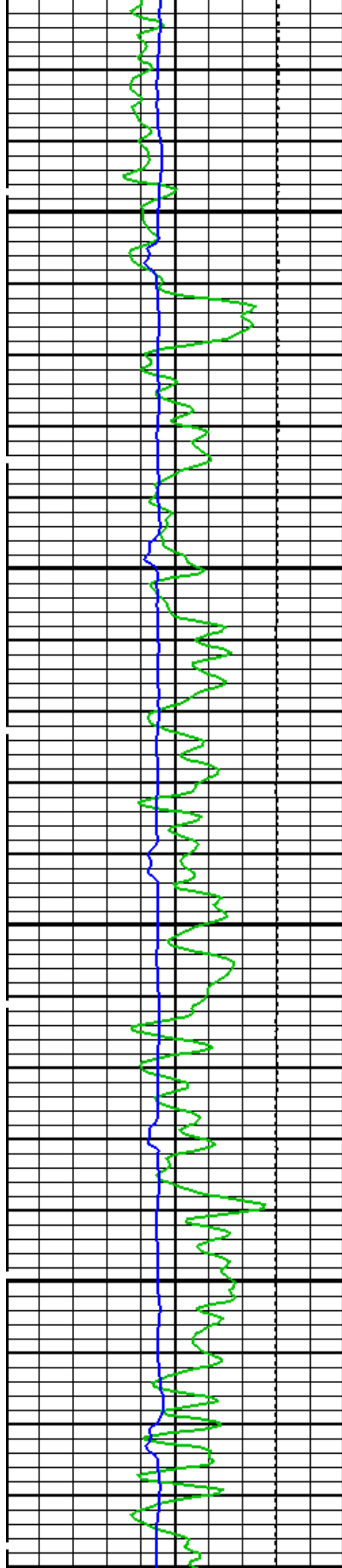




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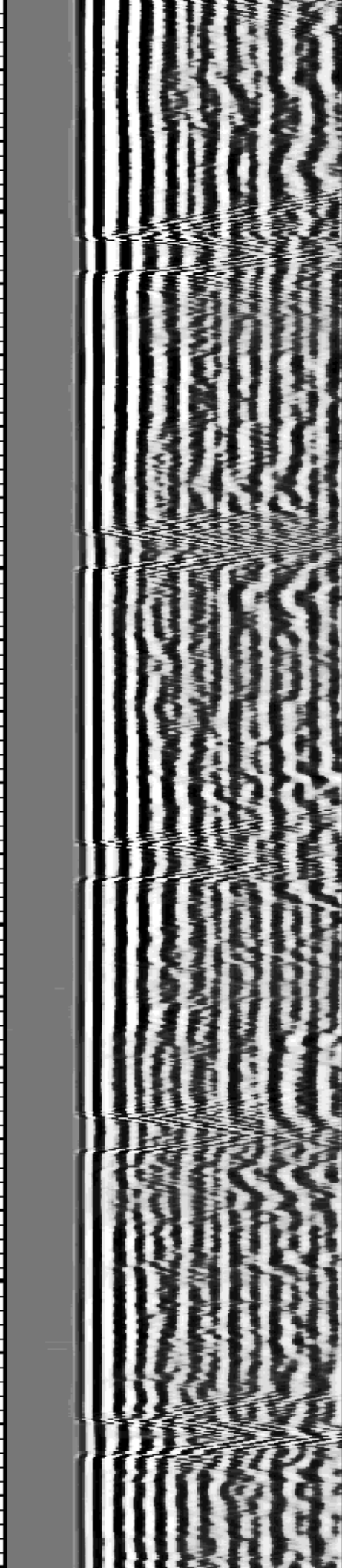
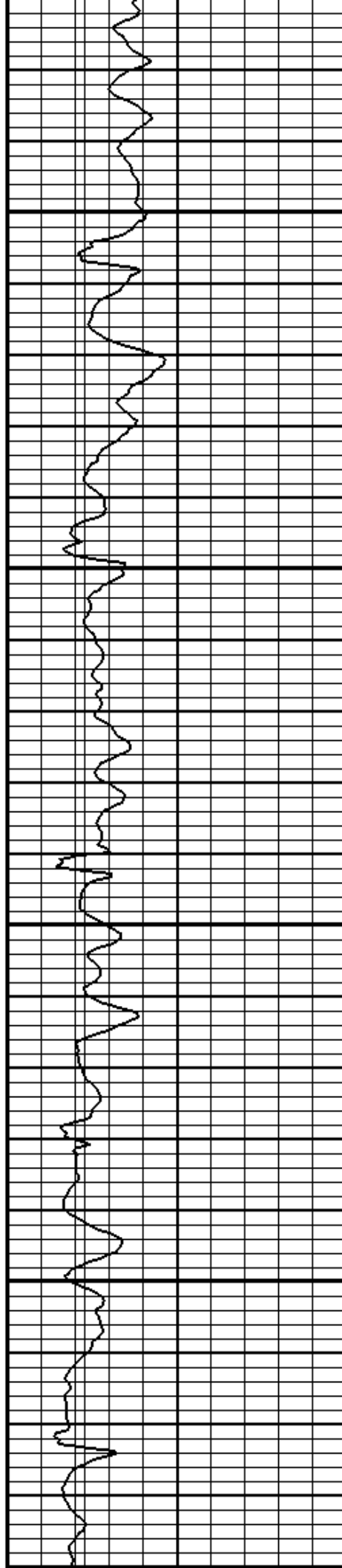
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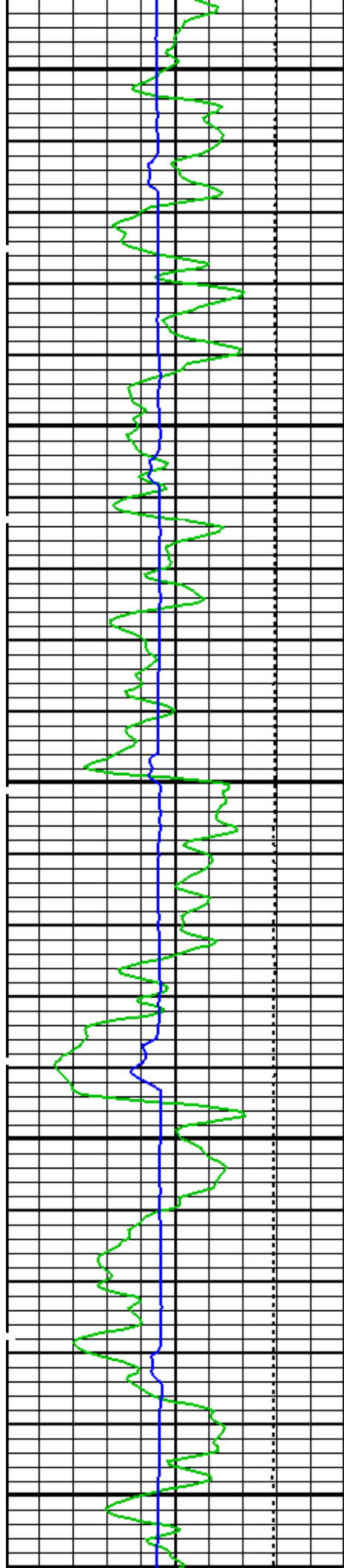




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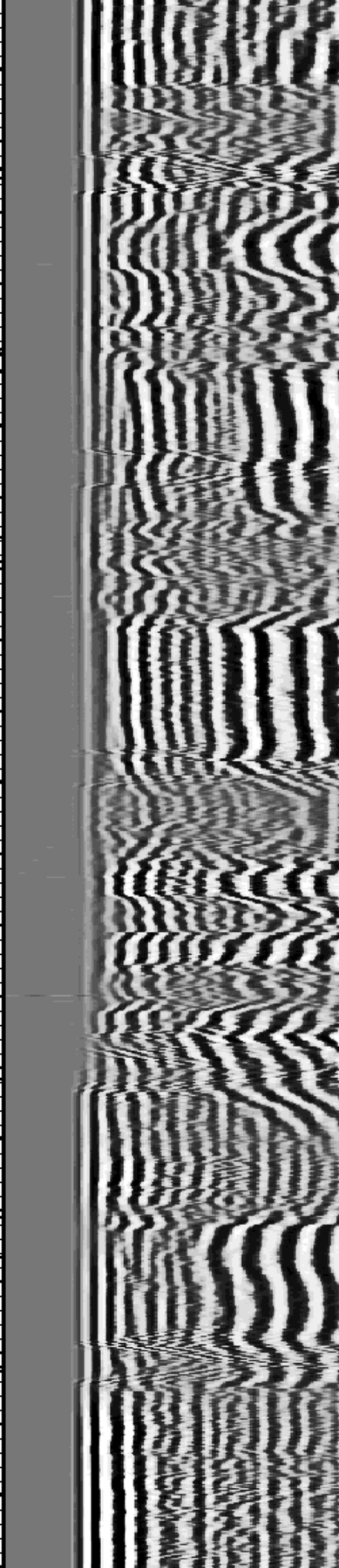
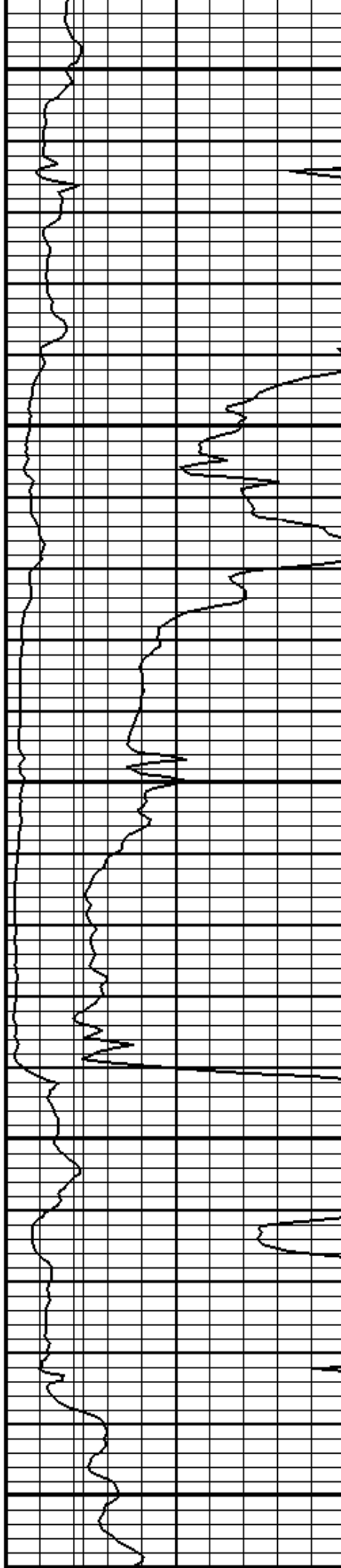
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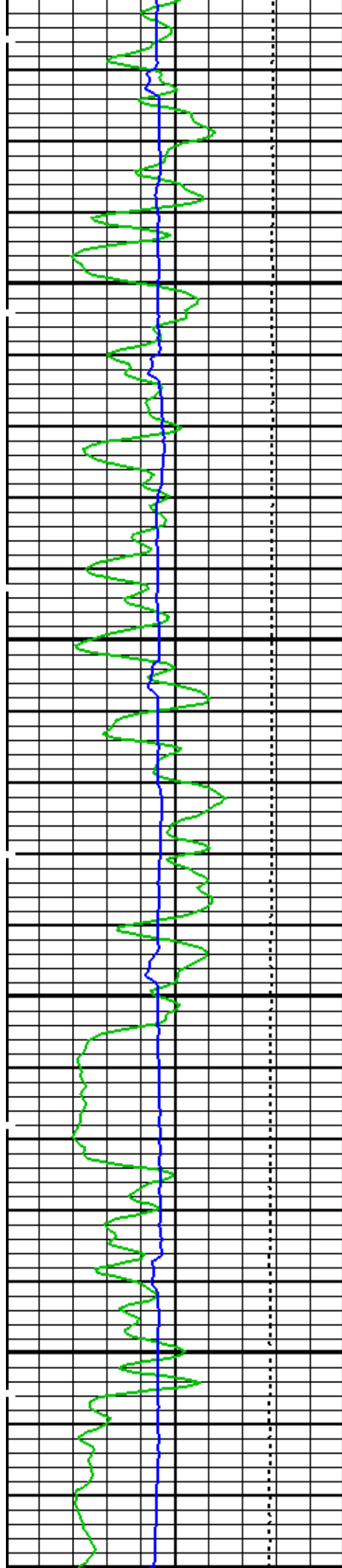


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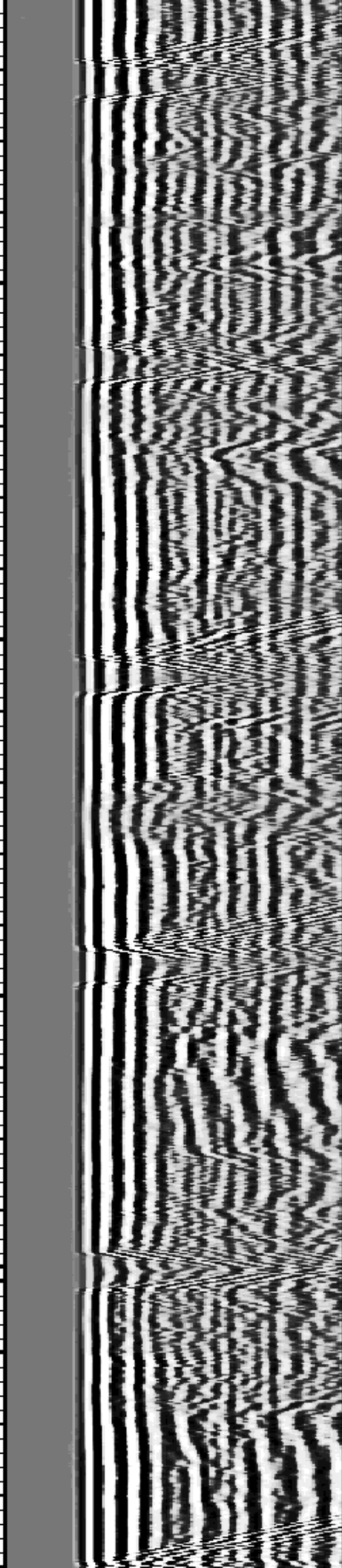
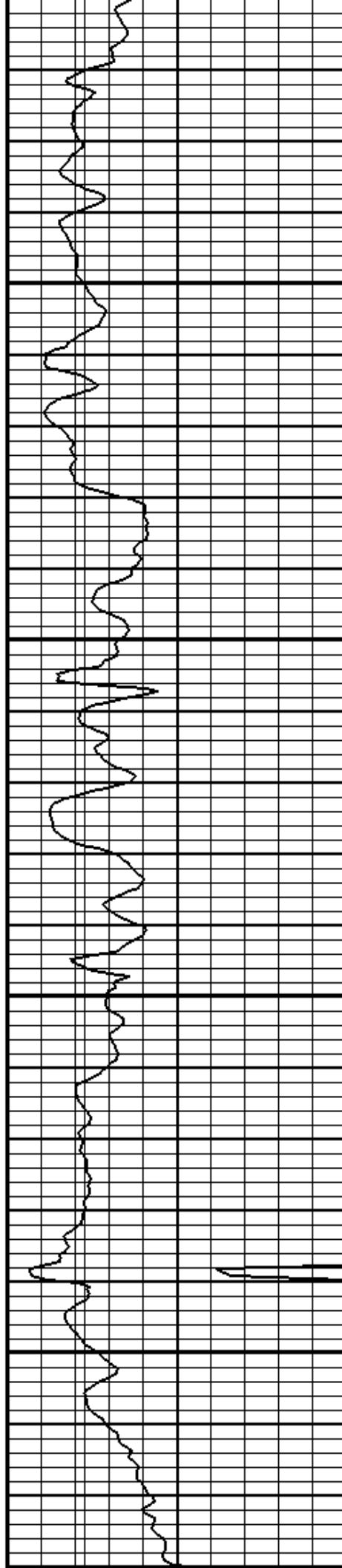


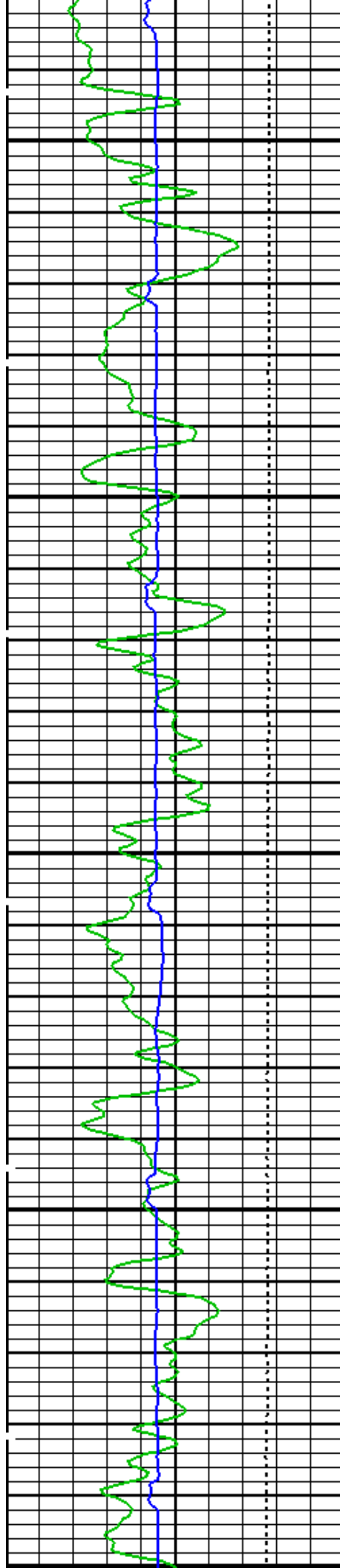




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4400

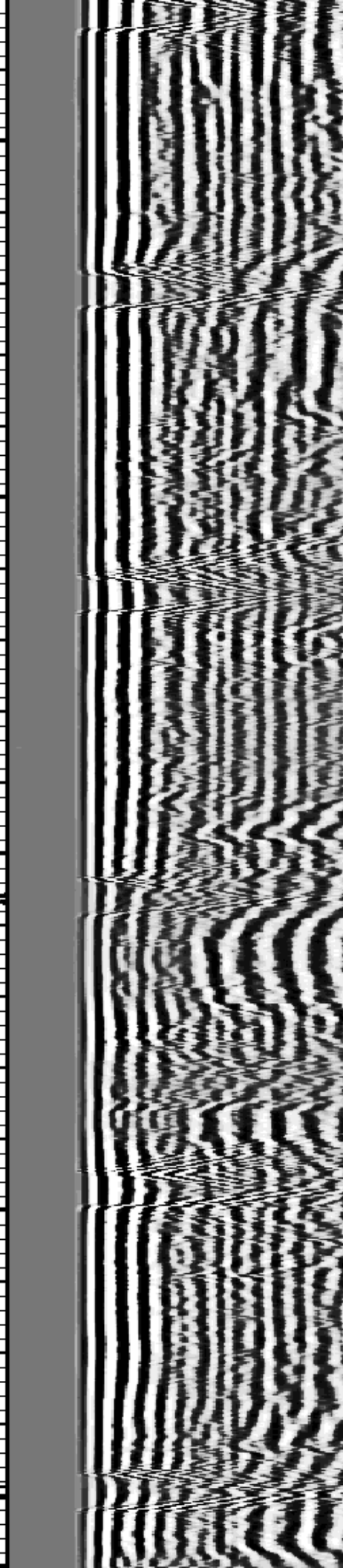
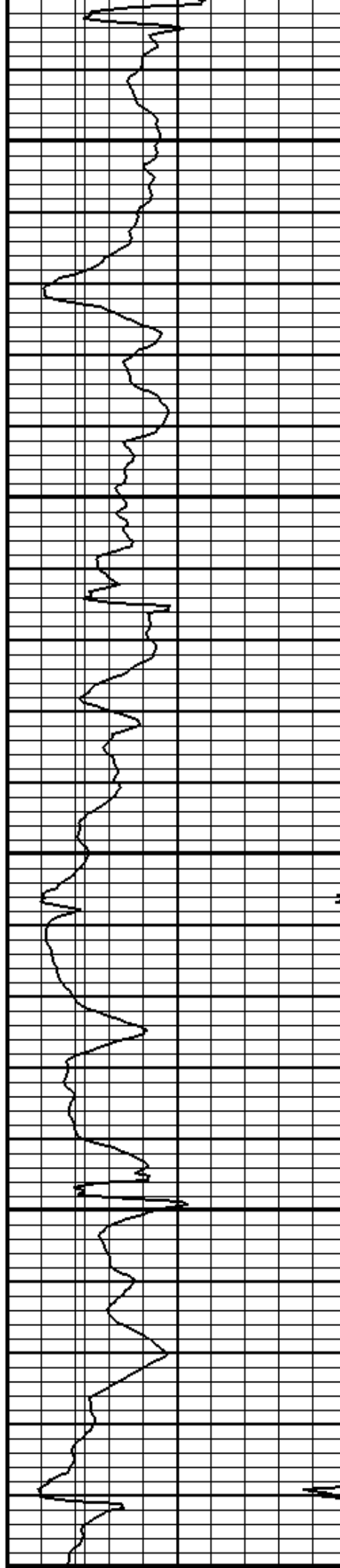


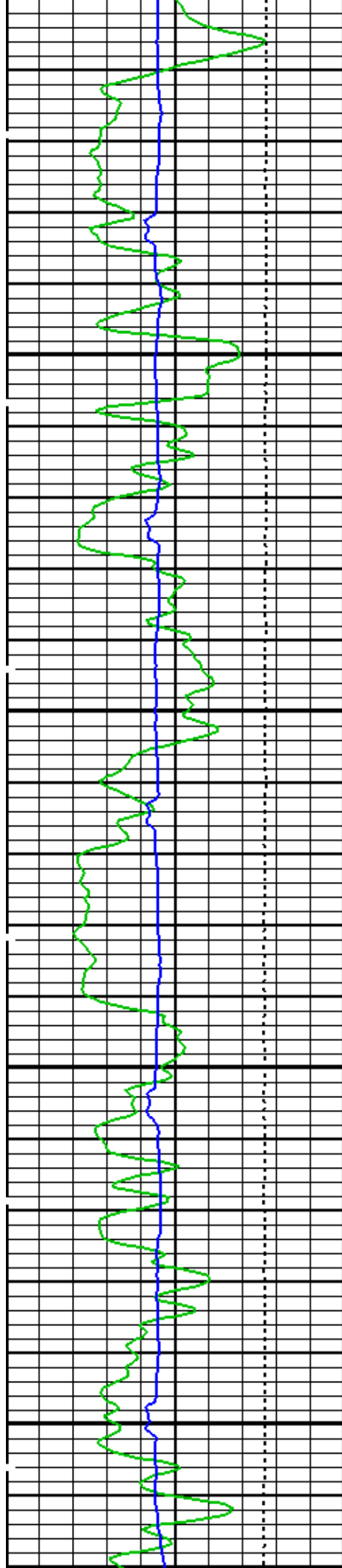


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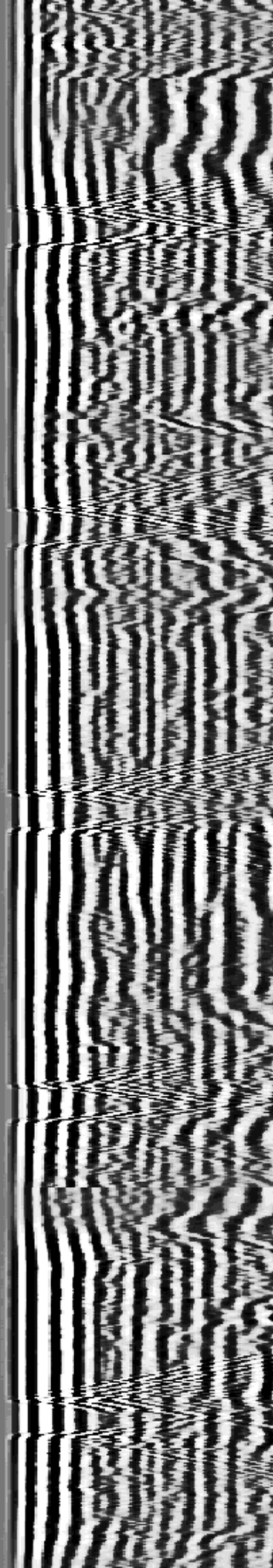
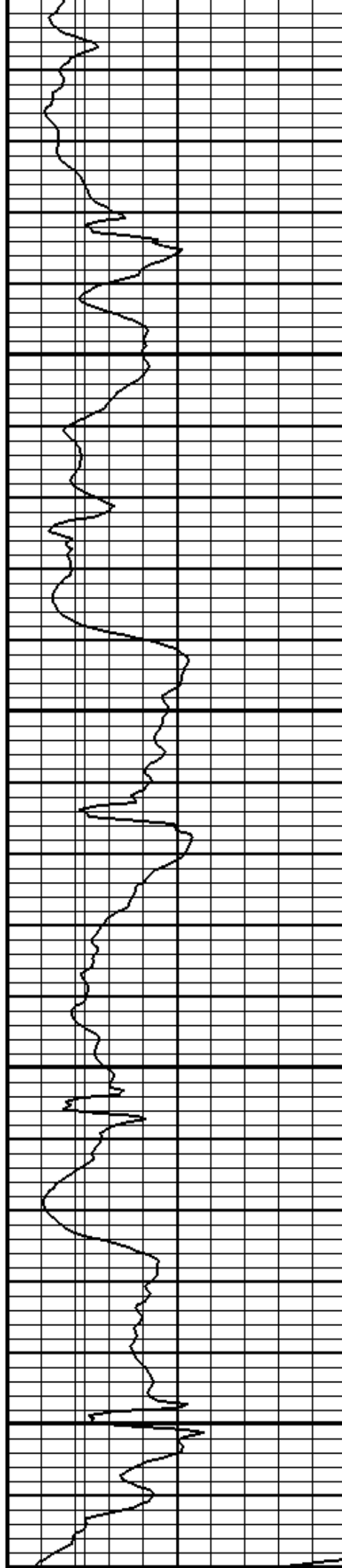
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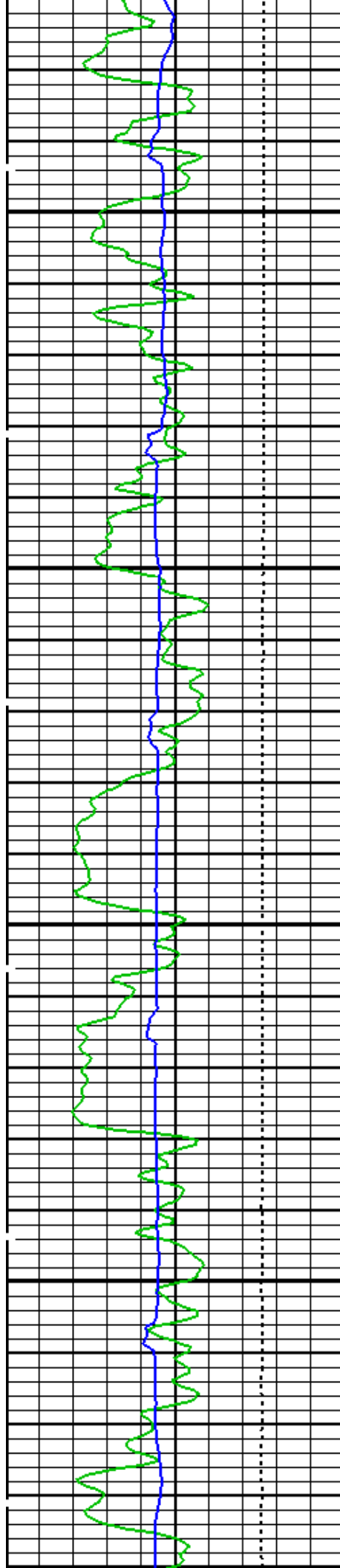


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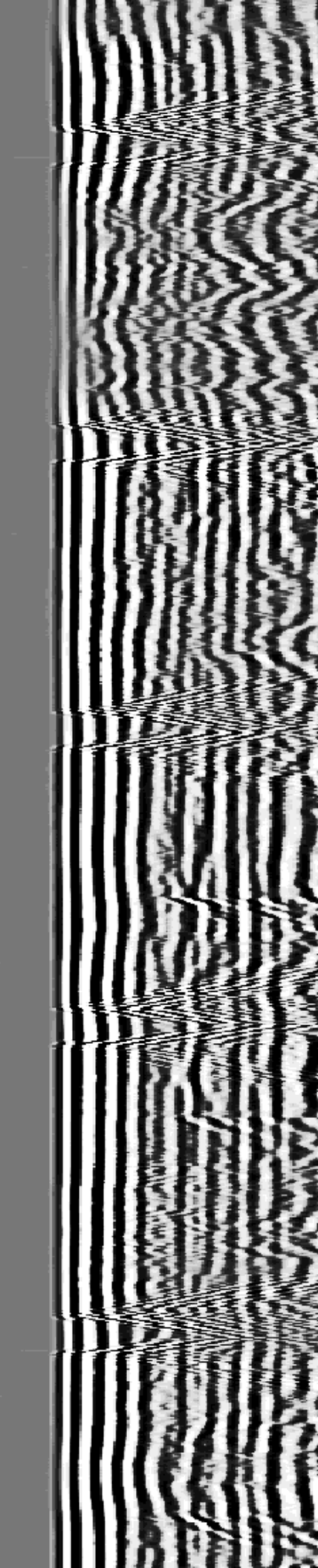
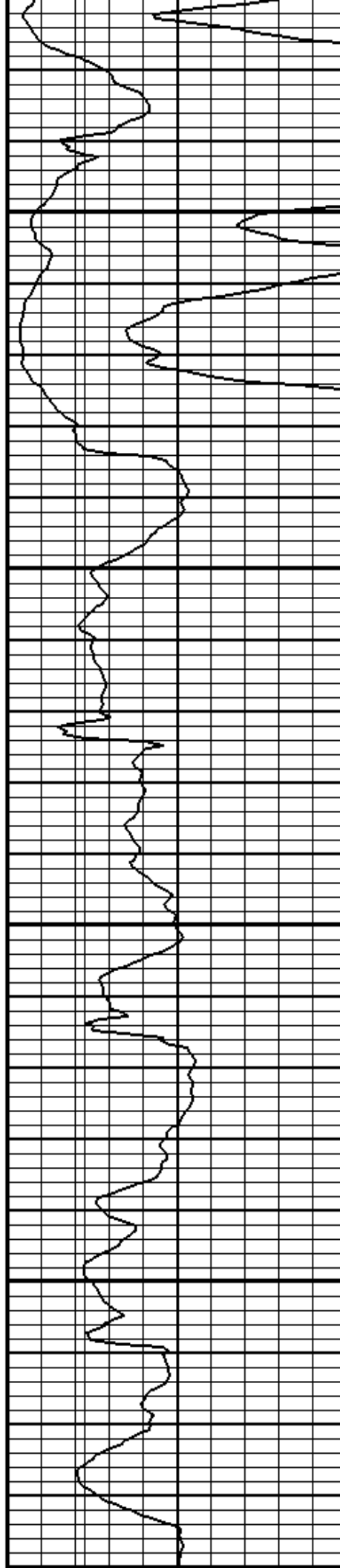


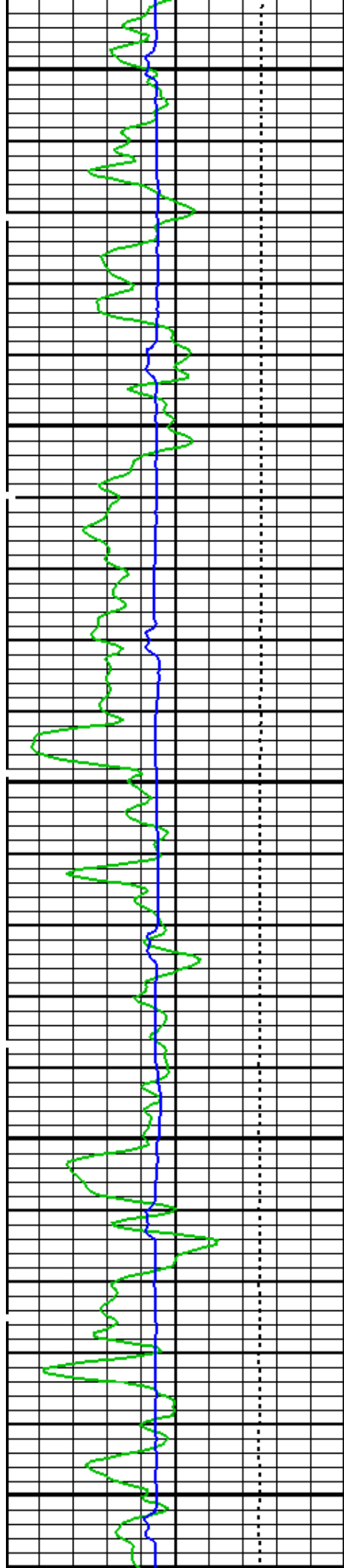




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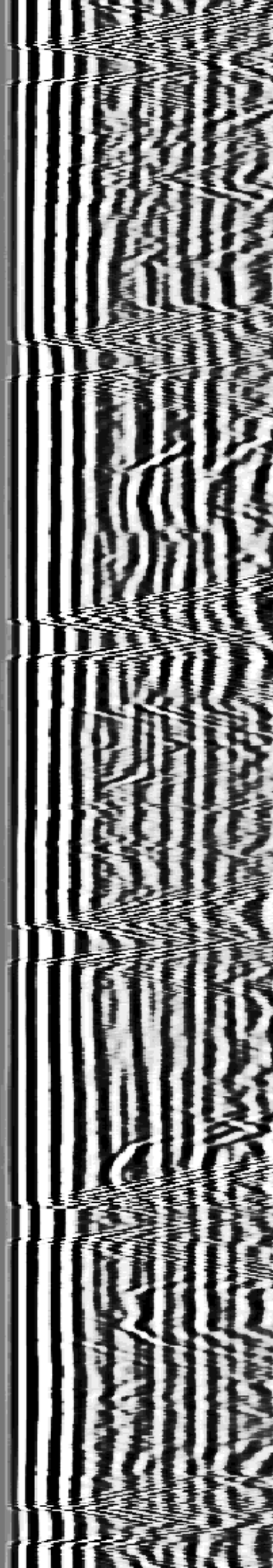
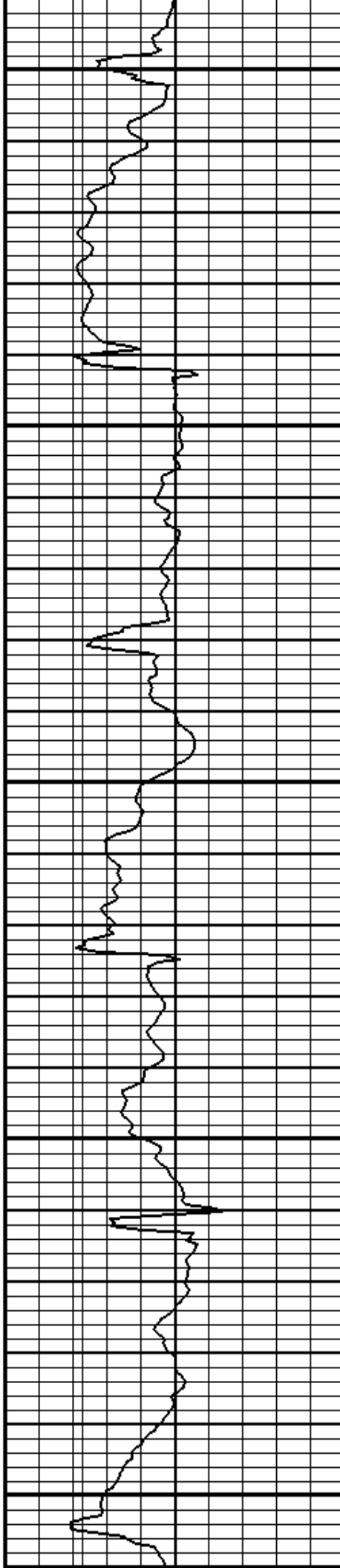
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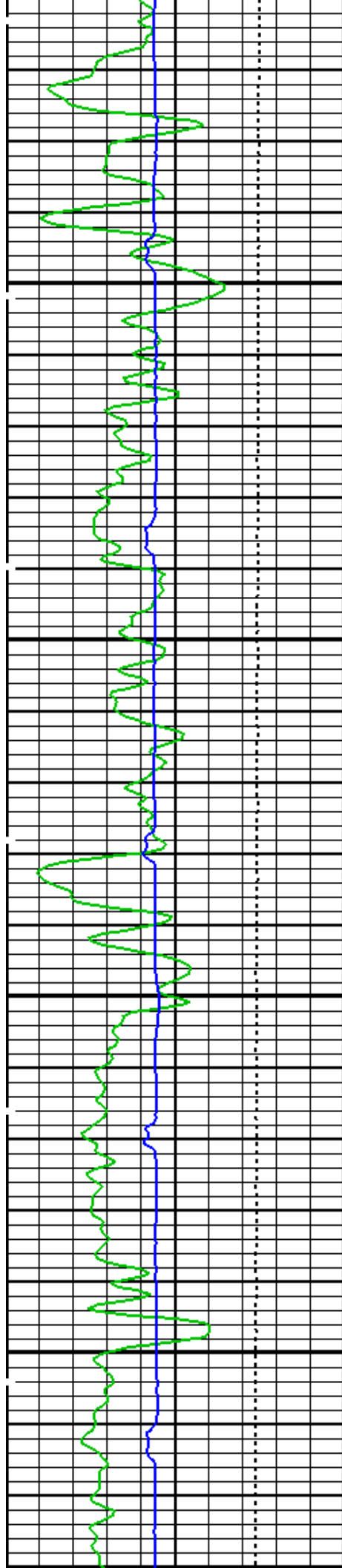




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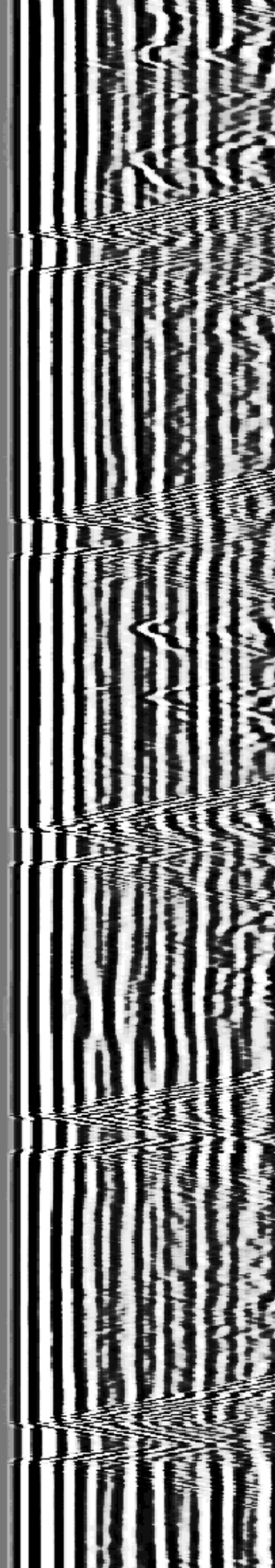
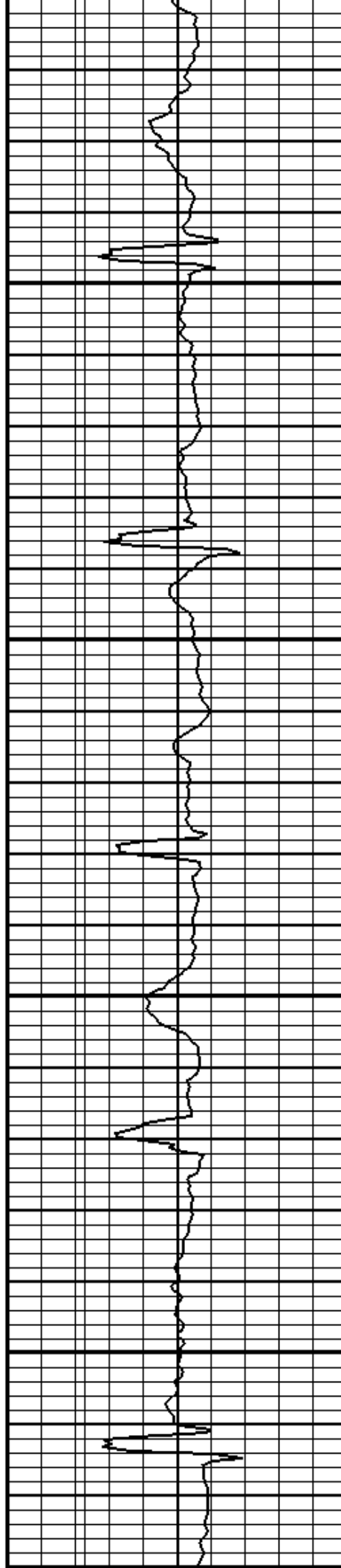
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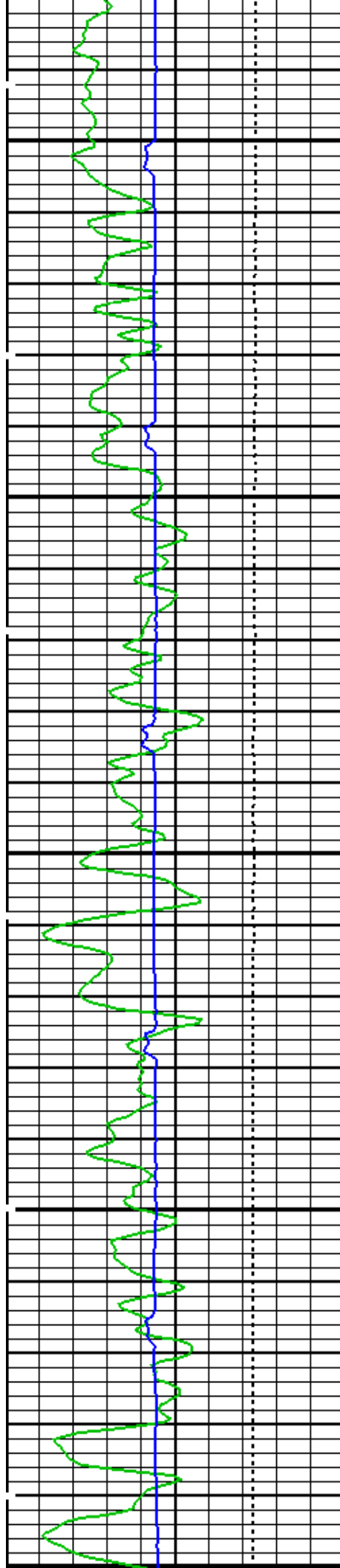


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5500



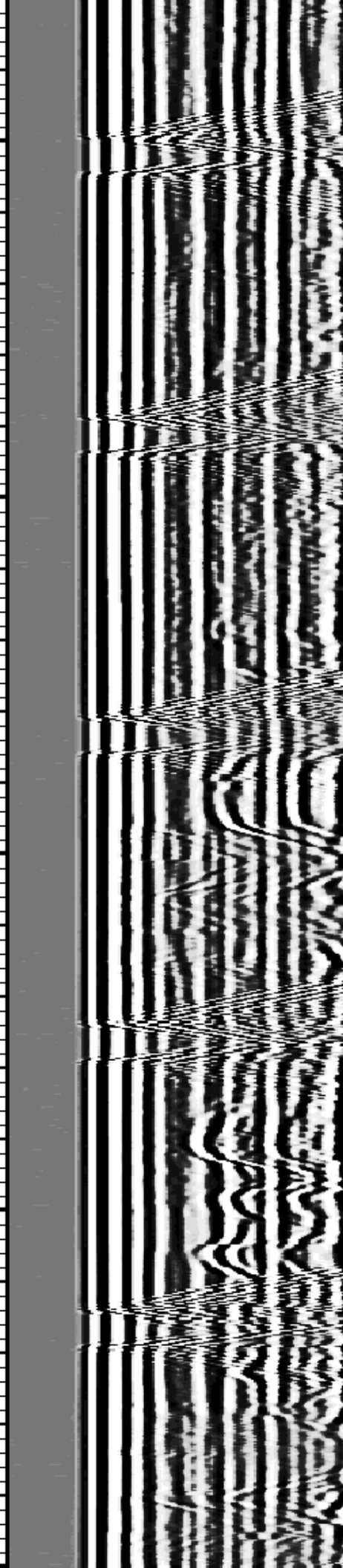
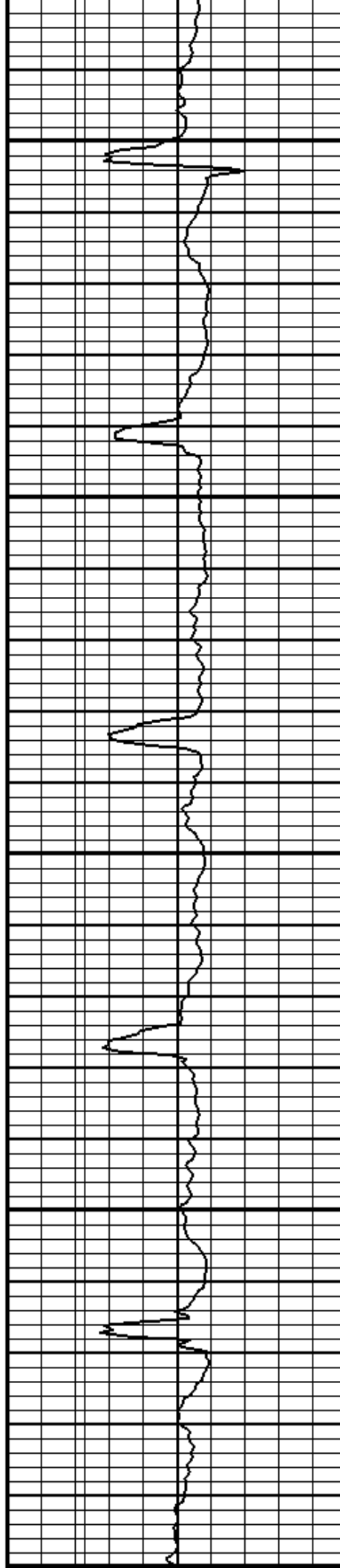


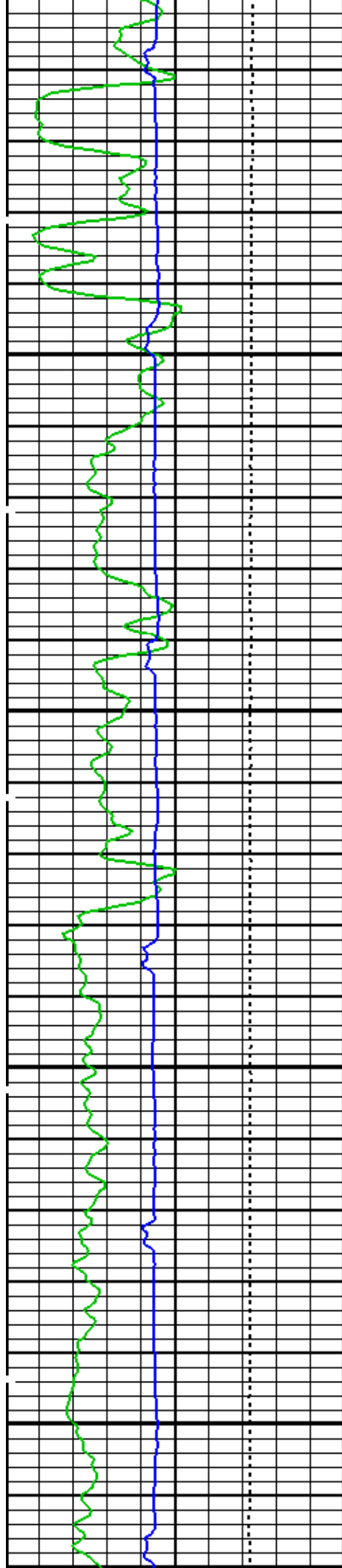


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5700

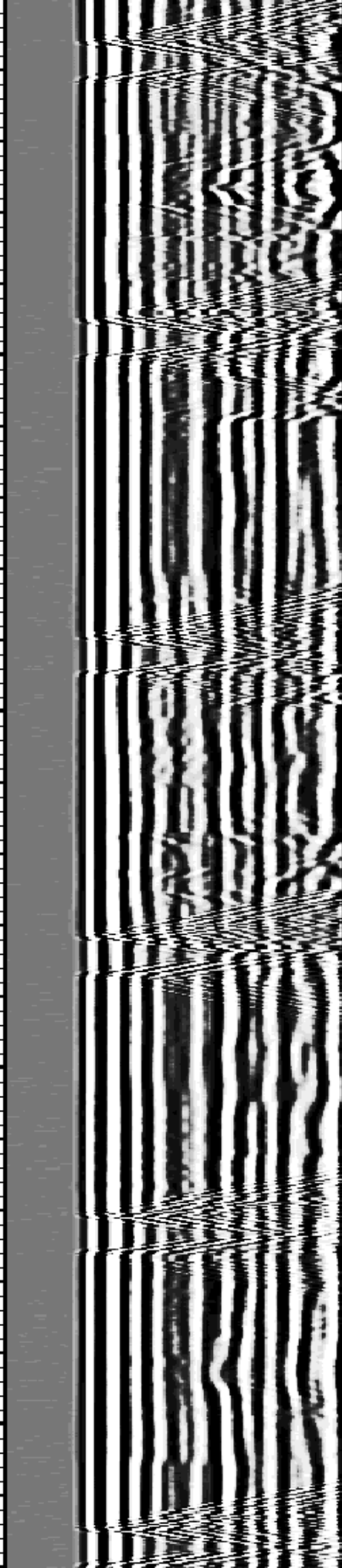
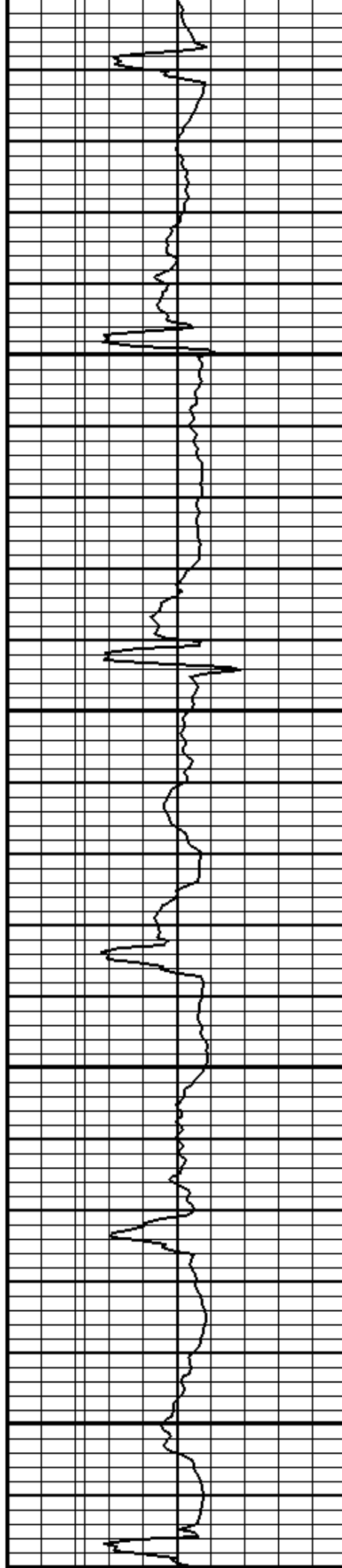
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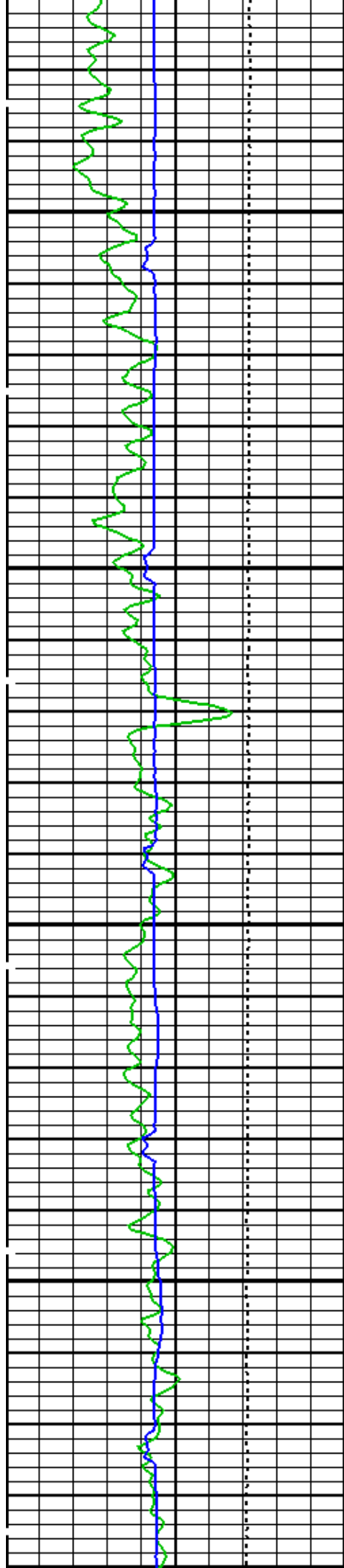




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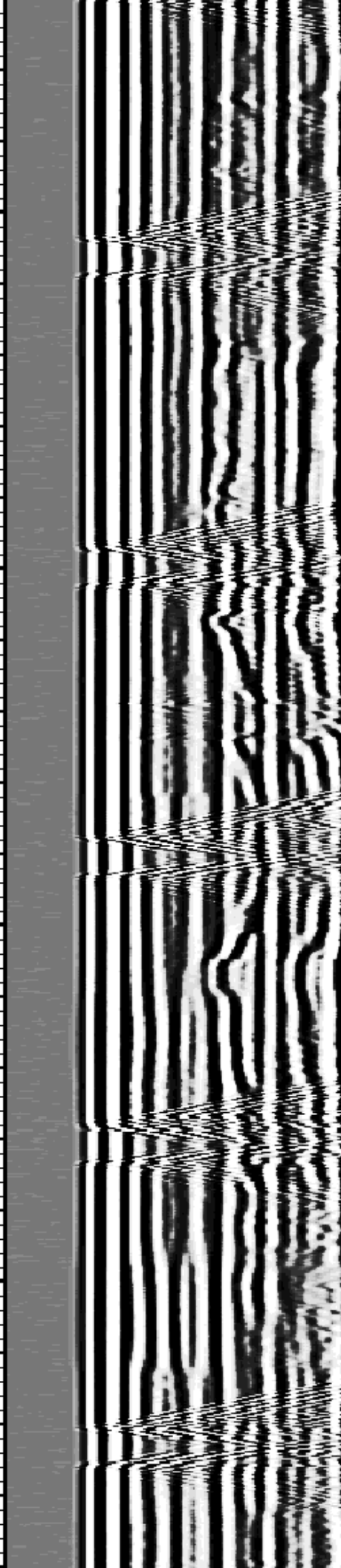
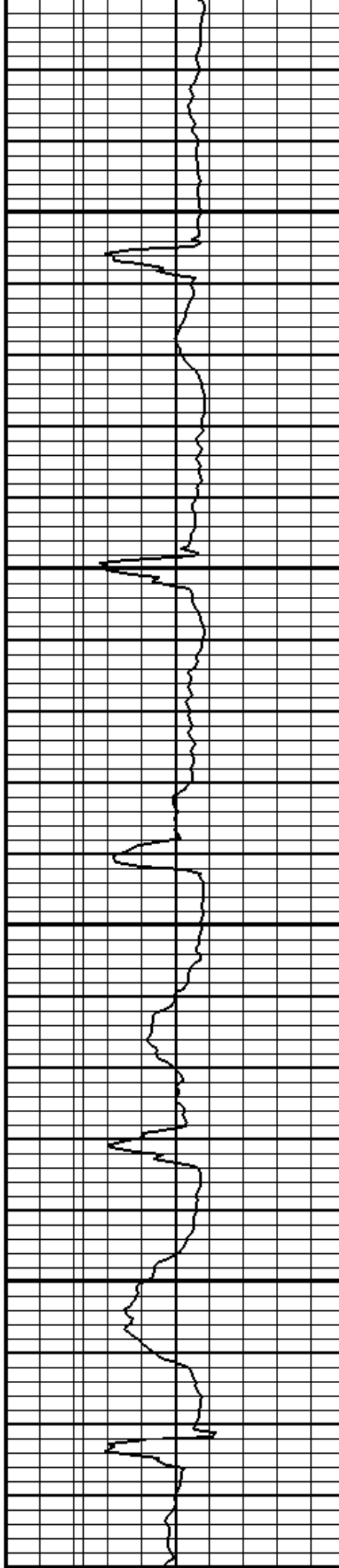
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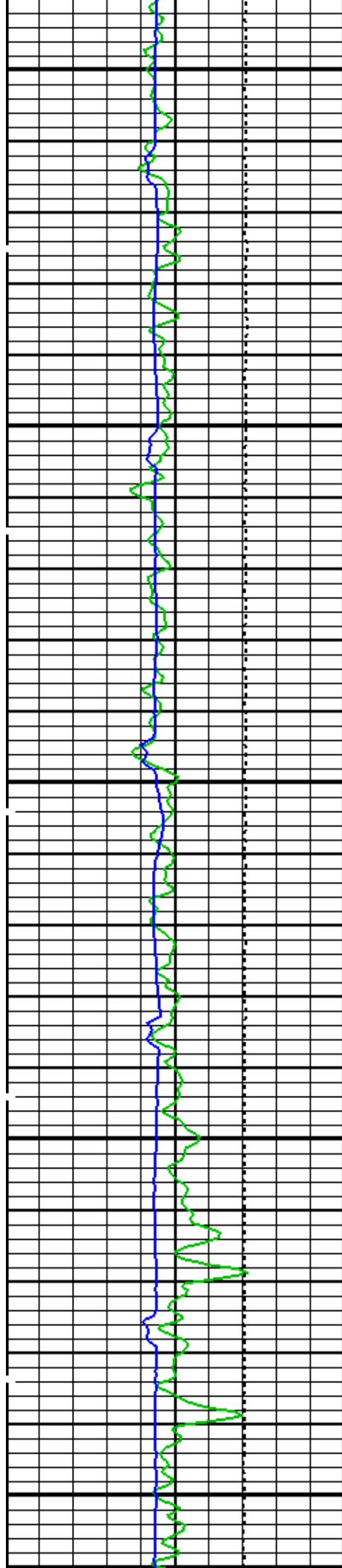


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6200

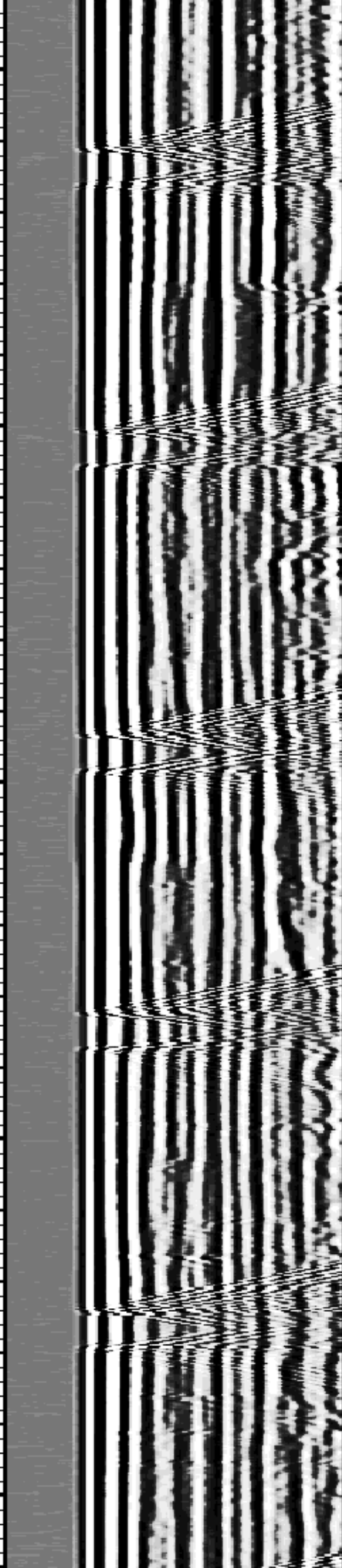
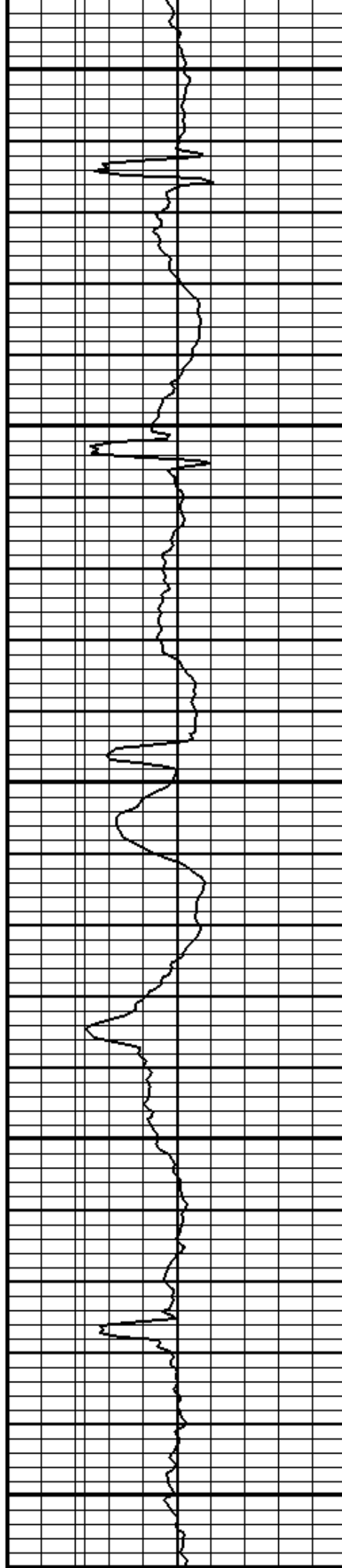


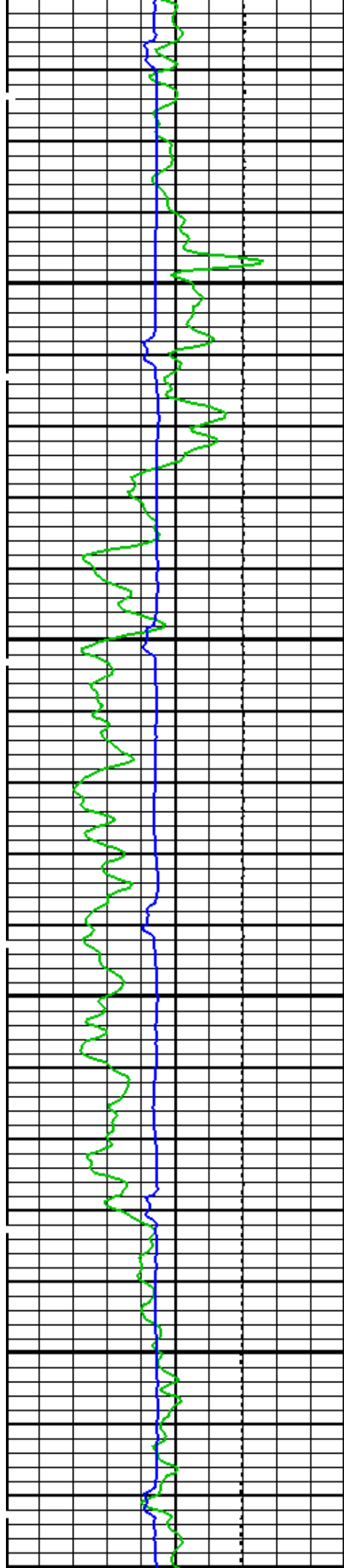




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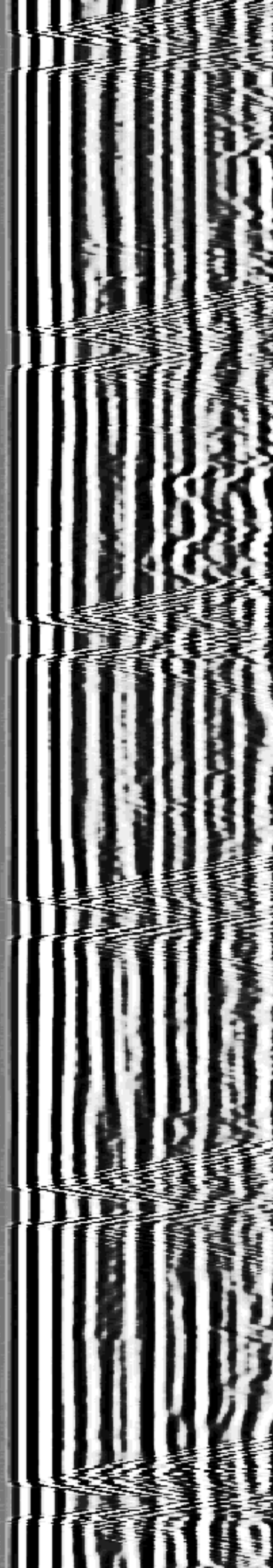
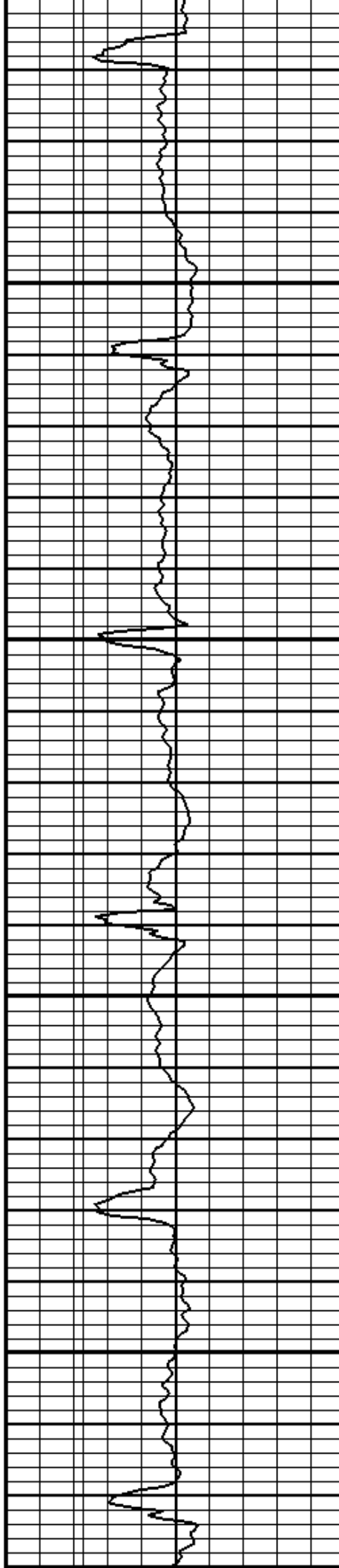
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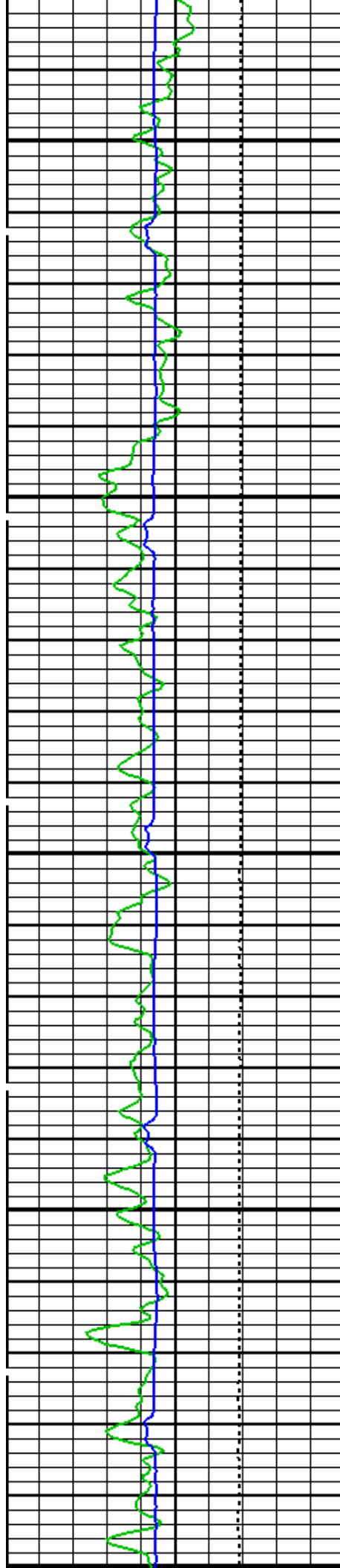




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6600

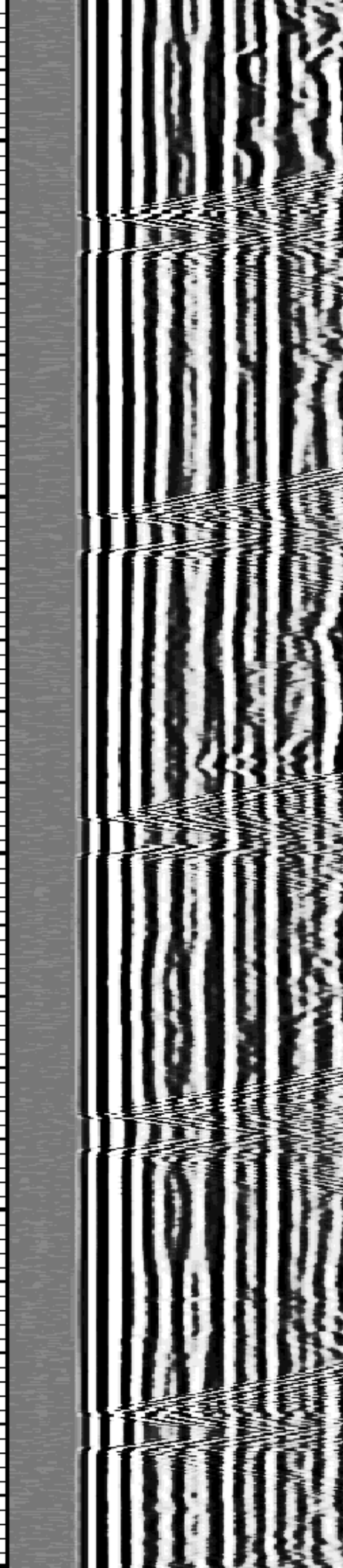
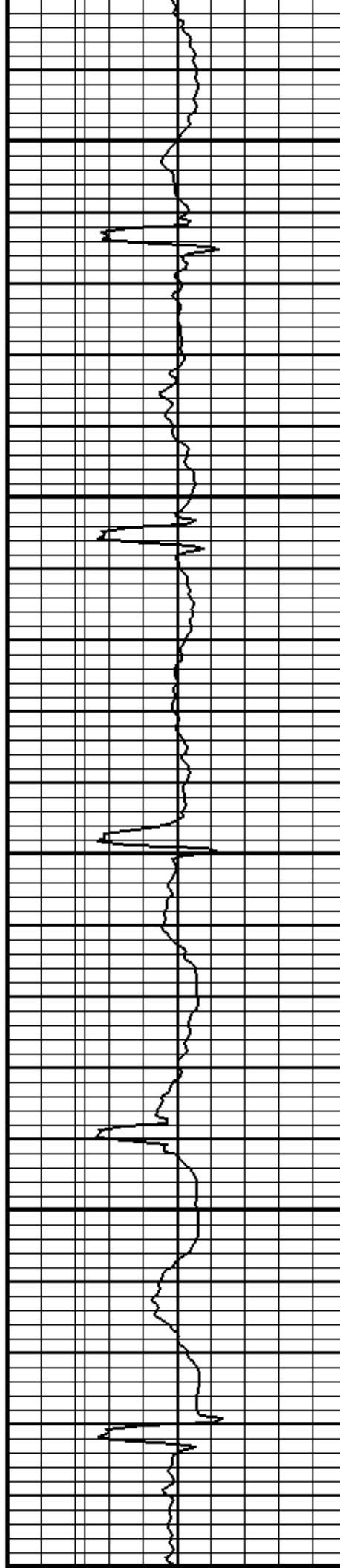




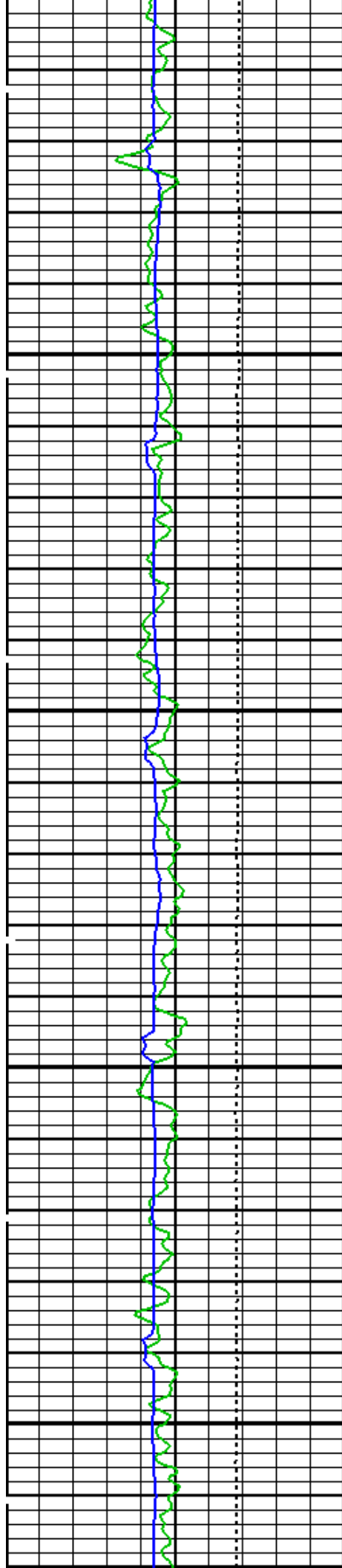
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6800

6900

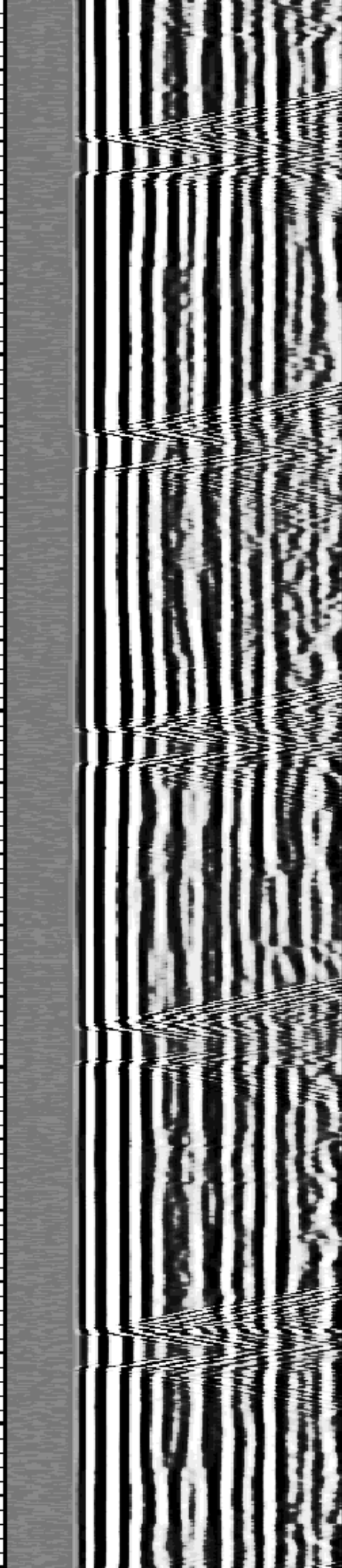
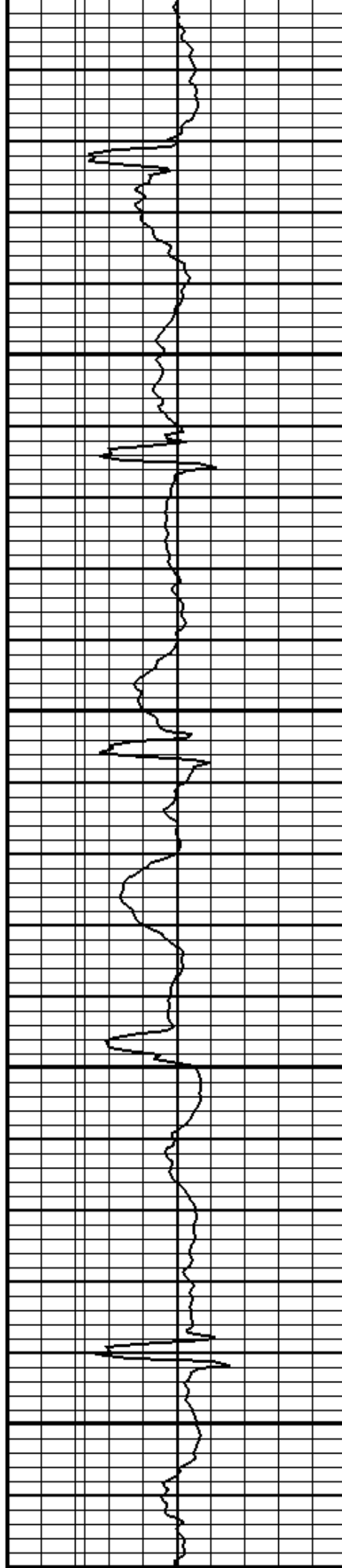




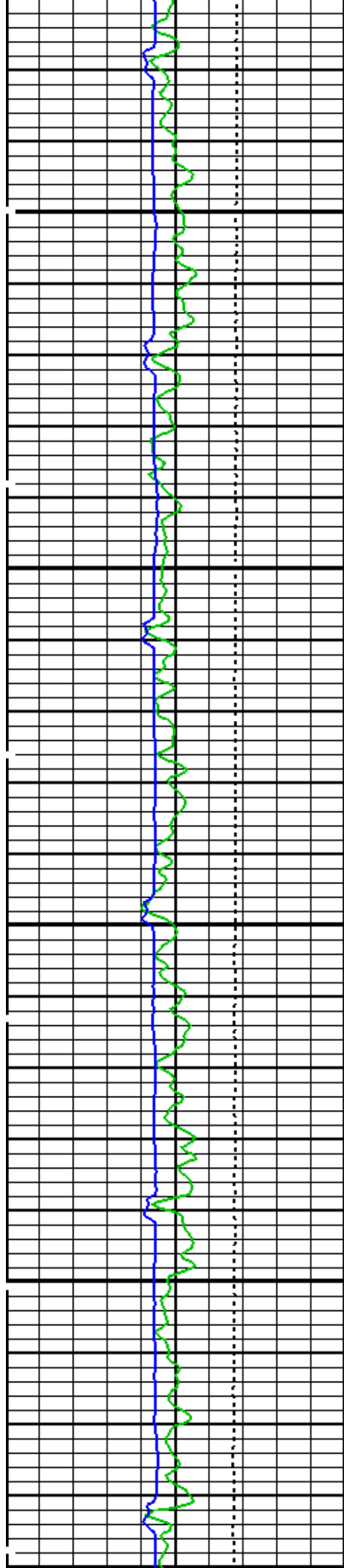


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71 00

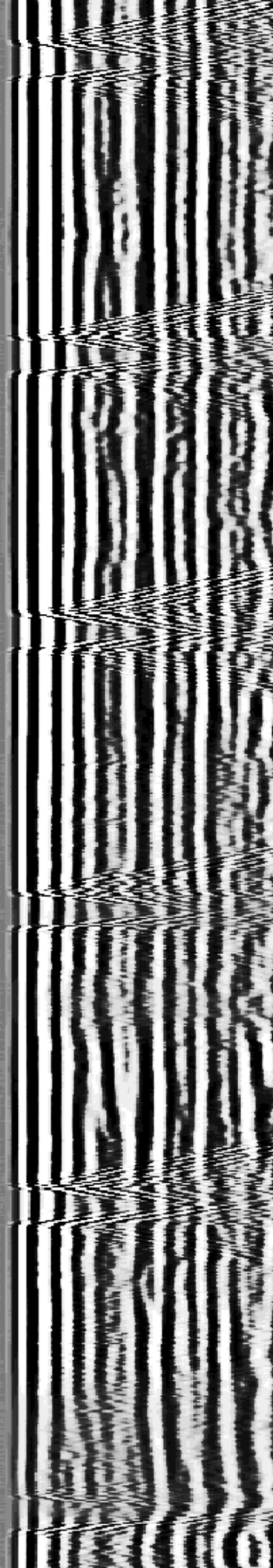
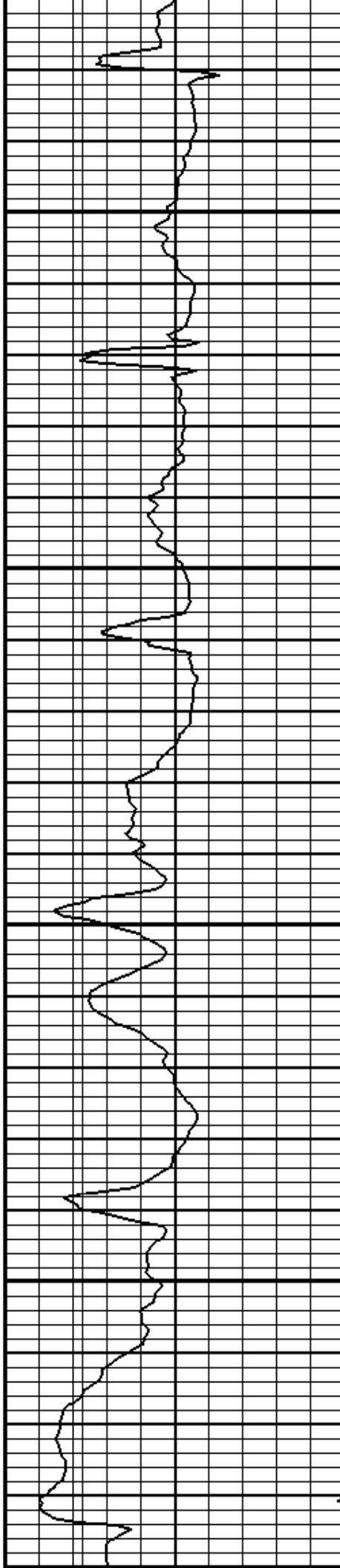


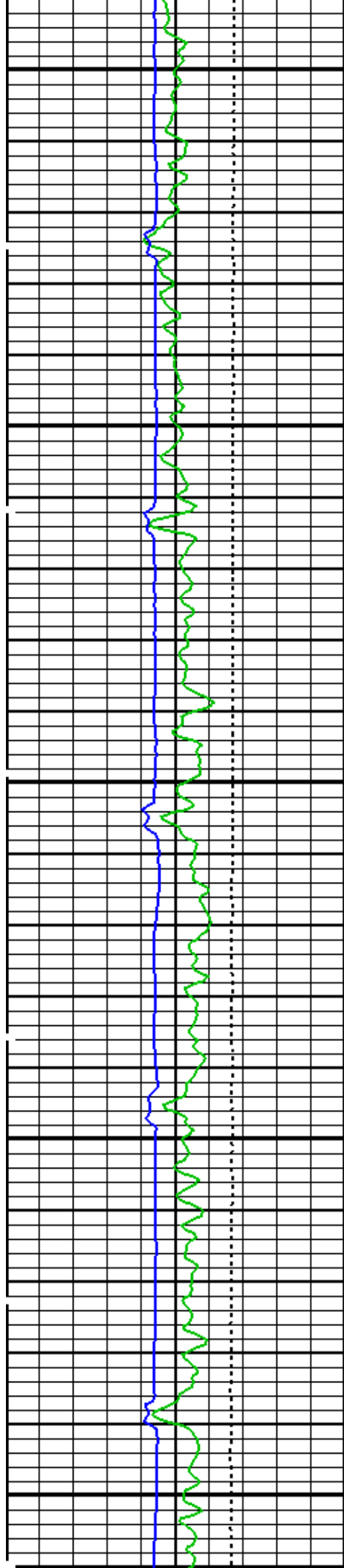




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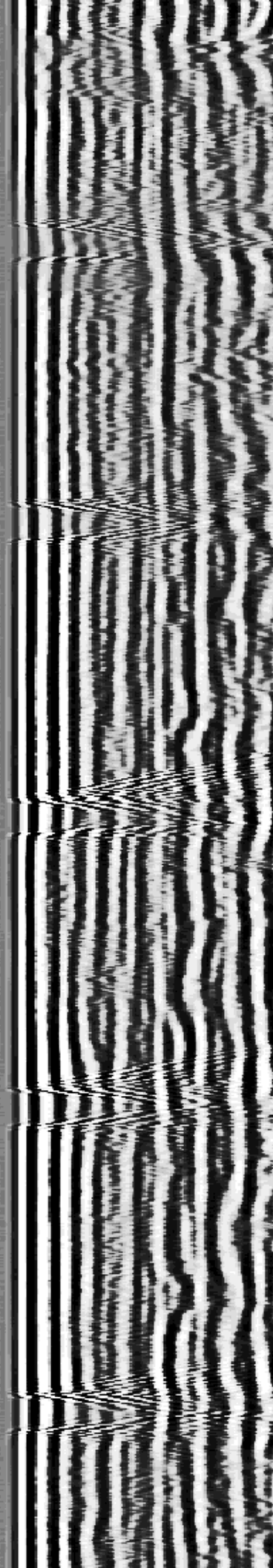
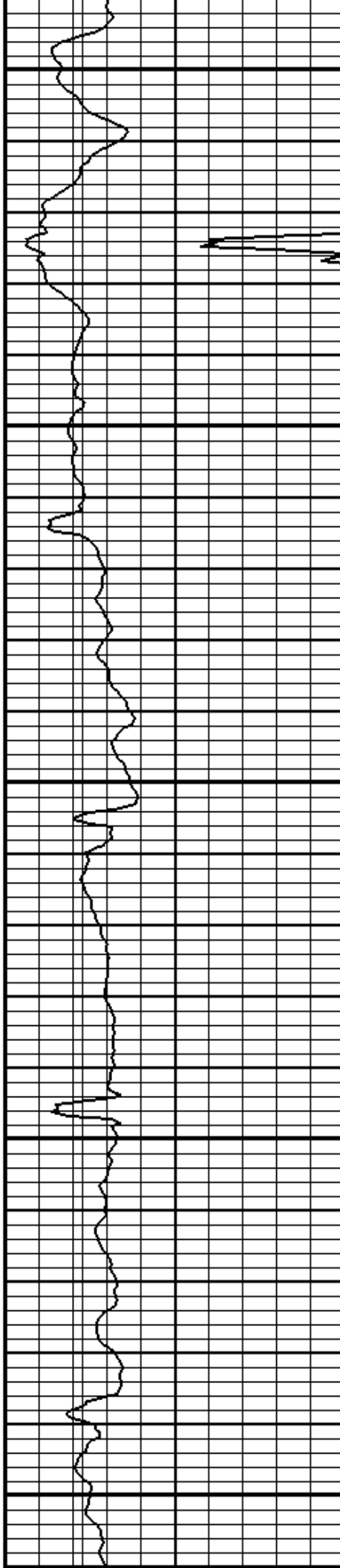
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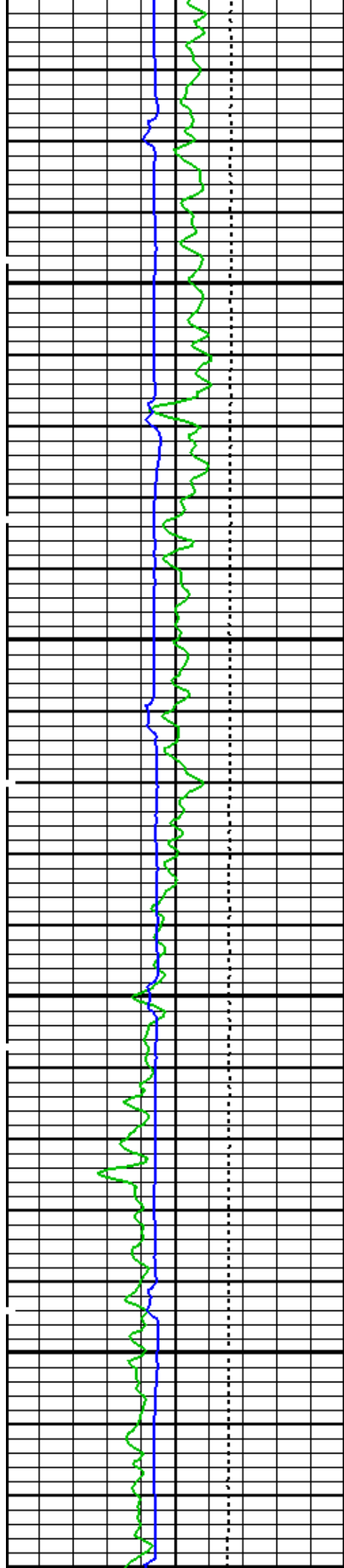




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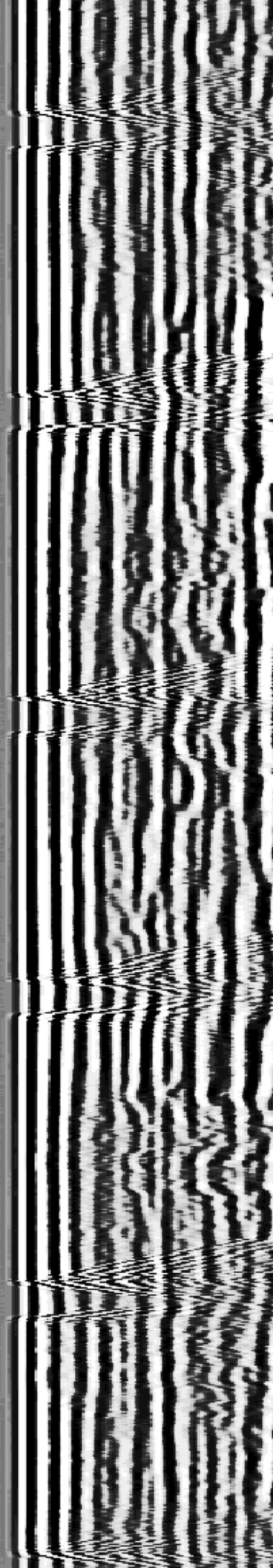
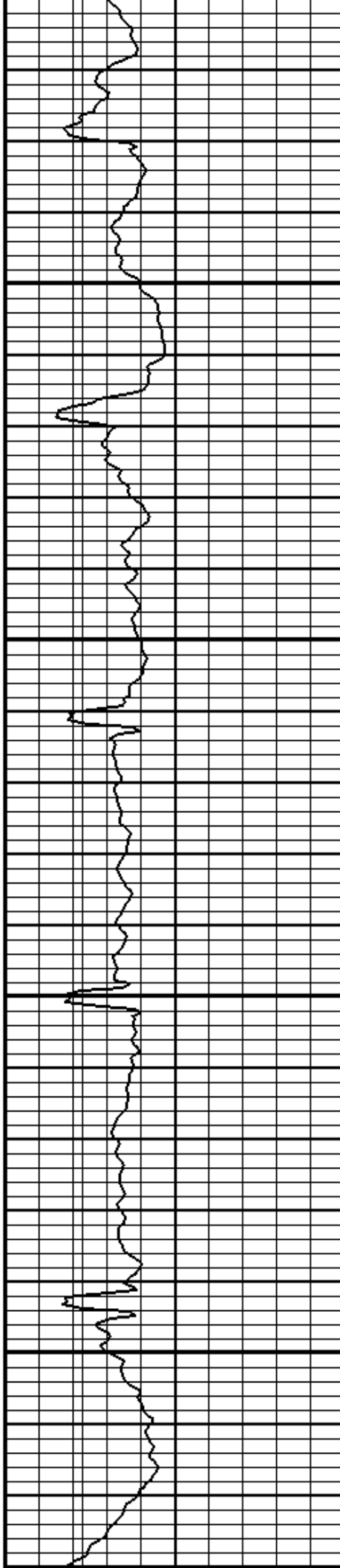
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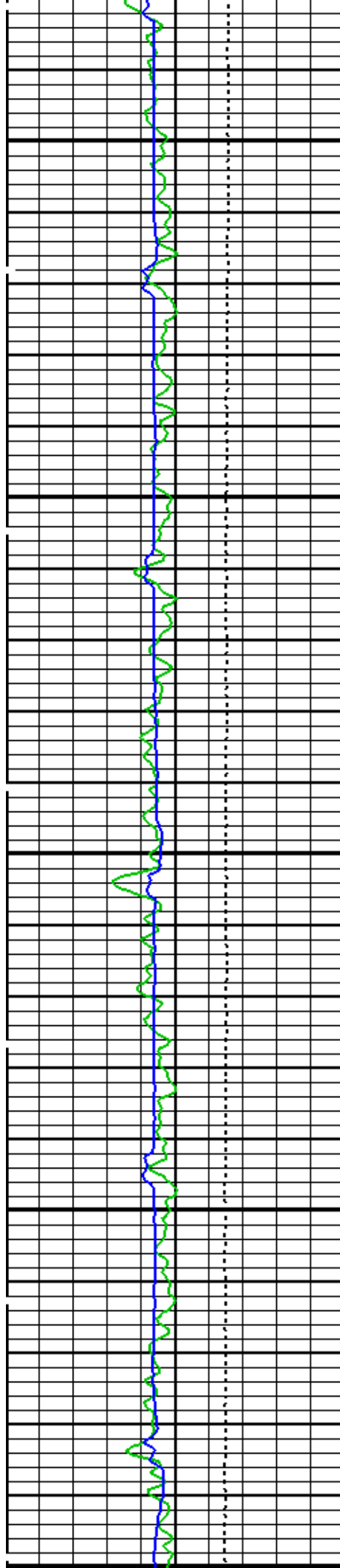


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7700



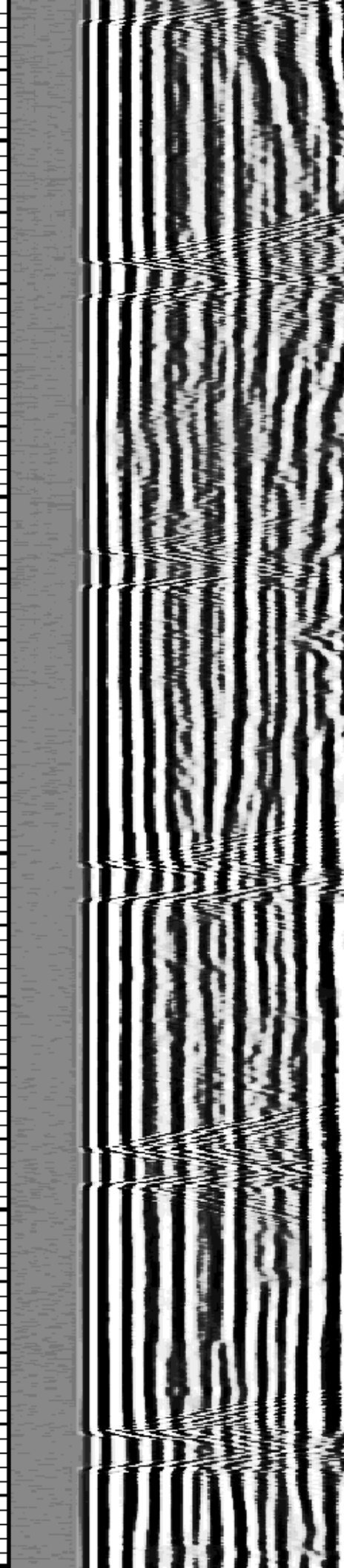
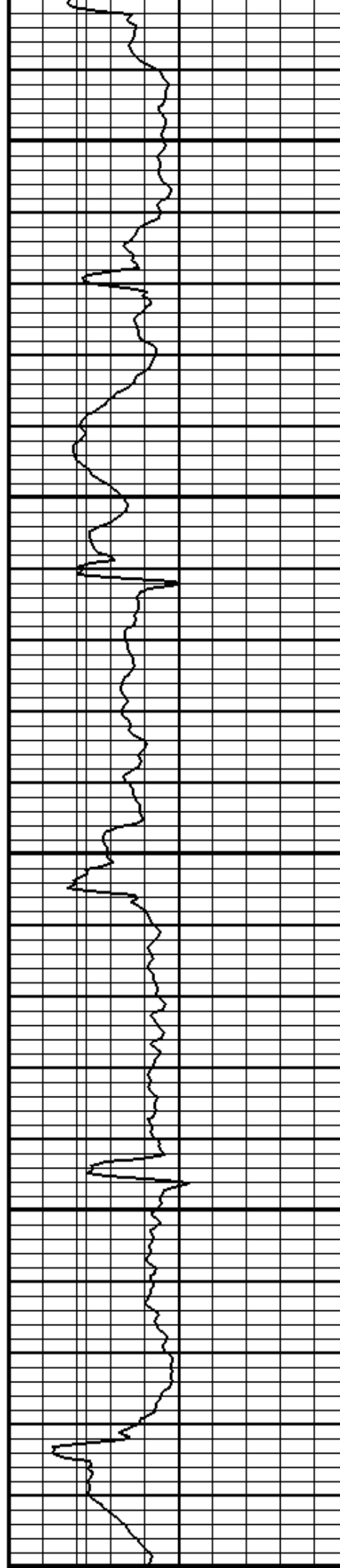




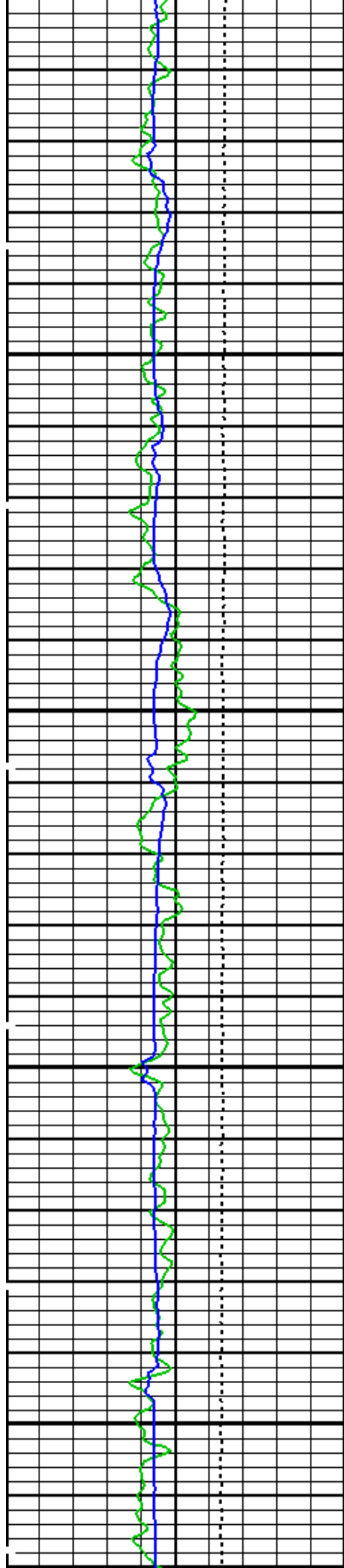
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7900

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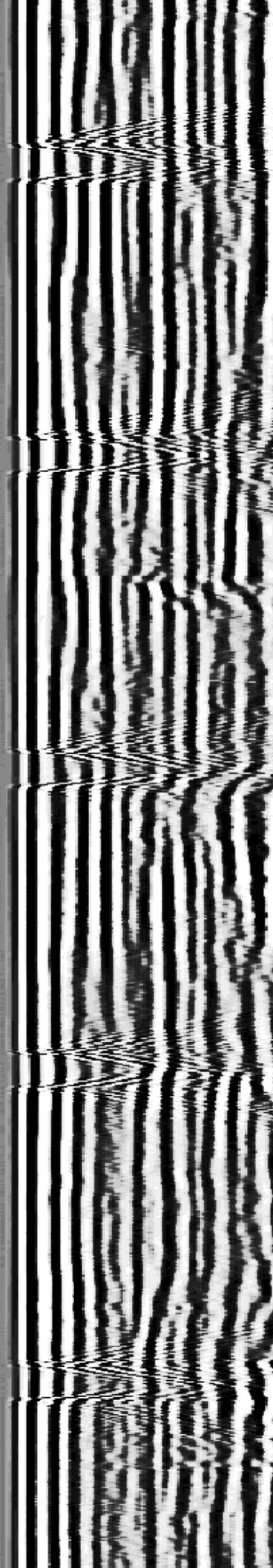
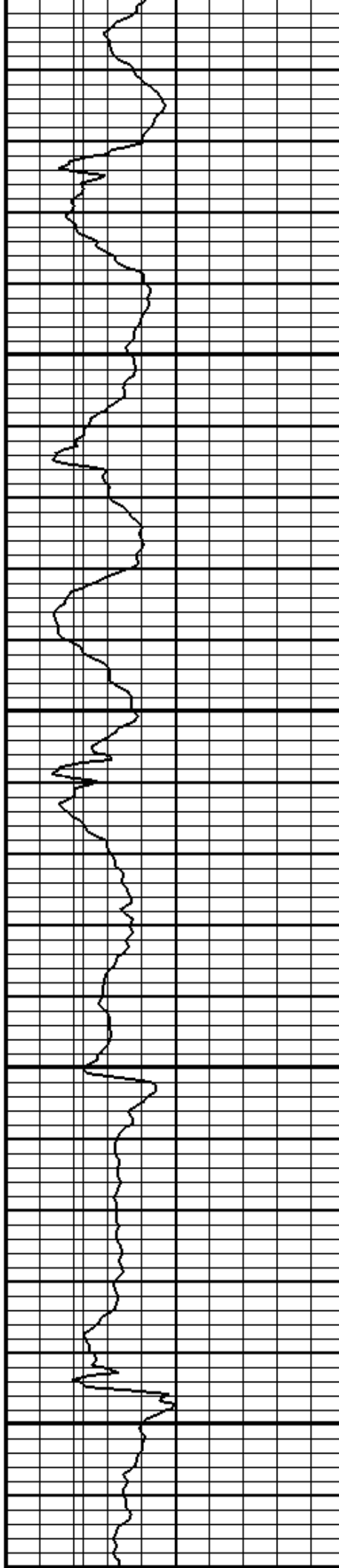


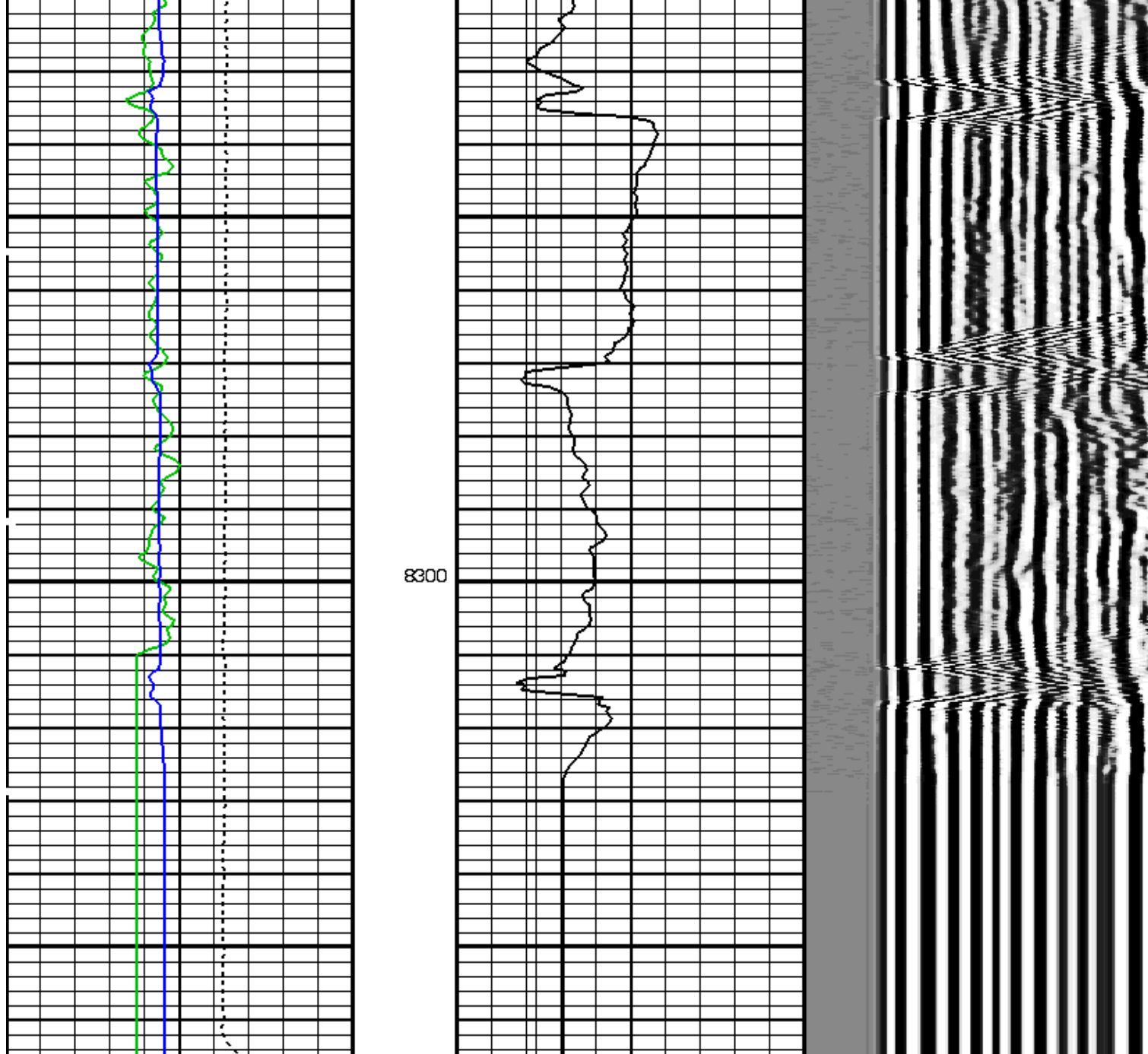




8100

8200





Gamma Ray (GR)		
(GAPI)		
0		150
Tension (TENS)		
(LBF)		
10000		0
Transit Time (TT)		
(US)		
400		200

8300

CBL Amplitude (CBL)		
(MV)		
0		10
CBL Amplitude (CBL)		
(MV)		
0		100
Good Bond (GOBO)		
(MV)		
0		10
GoodBond		
From ACBL to GOBO		

Min	Amplitude	Max
VDL Variable Density (VDL)		
(US)		
200		1200

Time Mark Every 60 S

Format: CBL\_VDL Vertical Scale: 5" per 100'

Graphics File Created: 17-Sep-2013 21:33

## OP System Version: 19C1-222

USIT-D 19C1-222  
SGT-N 19C1-222

DSL-FTB 19C1-222  
DTC-H 19C1-222

### Information for DSLT Sonde Status and Casing Features ###

Sonde Type	Not Recorded
Sonde Serial Number	Not Recorded (0)
Casing Size (CSIZ)	7.62500 IN
Casing Weight (CWEI)	26.4000 LB/F
Expected CBL Amplitude in Free Pipe Section (CBRA)	59.0 MV
Minimum Sonic Amplitude (MSA : 100% Cement)	0.980294 MV
Minimum Sonic Amplitude (MSA : 80% Cement)	2.22462 MV
Date of Master Calibration	Not Recorded
CBL Correction Factor (Master Calibration)	2.50000
Depth of Before Calibration (BDEP)	1294.72 FT
CBL Adjustment Factor (CBAF : Before Calibration)	1.48425

### Parameters

DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging - D			
	T 3 Processing Length for FPM	15.508	US
	Corrosion range maximum	0.076	IN
	Corrosion range minimum	-0.076	IN
DSLT-FTB: Digitizing Sonic Logging Tool			
	Telemetry Mode	DSLC FTB	
	DSLT Firing Mode	CBL W	
AMSG	Auxiliary Minimum Sliding Gate	120	US
CBAF	CBL Adjustment Factor	1.48425	
CBLG	CBL Gate Width	100	US
DDEL	Digitizing Delay	0	US
DRCS	DSLT DLIS Recording Size	120	
DSIN	Digitizing Sample Interval	10	
DTFS	DSLC Telemetry Frame Size	236	
DWCO	Digitizing Word Count	120	
GAI	Manual Gain	40	
GOBO	Good Bond	2.22462	MV
MAHTR	Manual High Threshold Reference	40	
MGAJ	Maximum Gain	1000	
MNHTR	Minimum High Threshold Reference	30	
NMSG	Near Minimum Sliding Gate	245	US
NMXG	Near Maximum Sliding Gate	750	US
RATE	Firing Rate	R7	
SFAF	Sonic Formation Attenuation Factor	0	DB/F
SGCL	Sliding Gate Closing Delta-T	250	US/F
SGDT	Sliding Gate Delta-T	76	US/F
SGW	Sliding Gate Width	80	US
SLEV	Signal Level for AGC	5000	
VDLG	VDL Manual Gain	5	
WAGC	Waveform AGC Allow/Disallow	OFF	
WMOD	Waveform Firing Mode	FULL	
System and Miscellaneous			
DO	Depth Offset for Playback	-2.0	FT
PP	Playback Processing	NORMAL	

### Input DLIS Files

DEFAULT	USI_SONIC_023.PUP	FN:38	PRODUCER	17-Sep-2013 21:11	8367.0 FT	99.5 FT
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### Output DLIS Files

DEFAULT	USI_SONIC_024.PUP	FN:40	PRODUCER	17-Sep-2013 21:33
RTB	USI_SONIC_024.PUP	FN:41	PRODUCER	17-Sep-2013 21:27

Company: ENCAN OIL &amp; GAS (USA) INC

Well: RENNIGER 30-7-2 (NGG30NE)

## Input DLIS Files

DEFAULT	USI_SONIC_006 LUP	FN:9	PRODUCER	17-Sep-2013 14:51	8401.5 FT	7947.5 FT
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## Output DLIS Files

DEFAULT	USI_SONIC_025 PUP	FN:42	PRODUCER	17-Sep-2013 21:52	8406.5 FT	7952.5 FT
RTB	USI_SONIC_025 PUP	FN:43	PRODUCER	17-Sep-2013 21:46	8406.5 FT	7952.5 FT

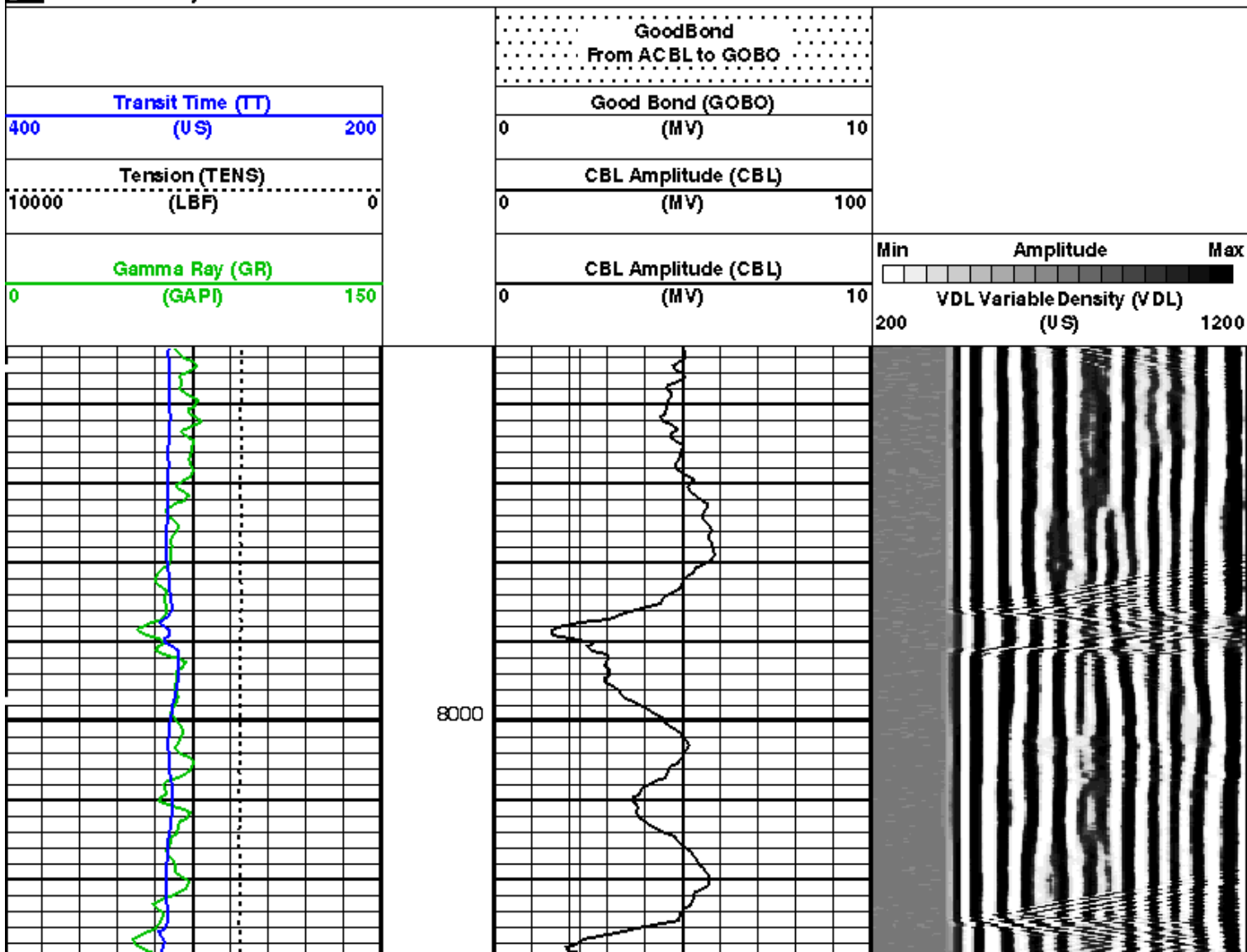
## OP System Version: 19C1-222

USIT-D	19C1-222
SGT-N	19C1-222

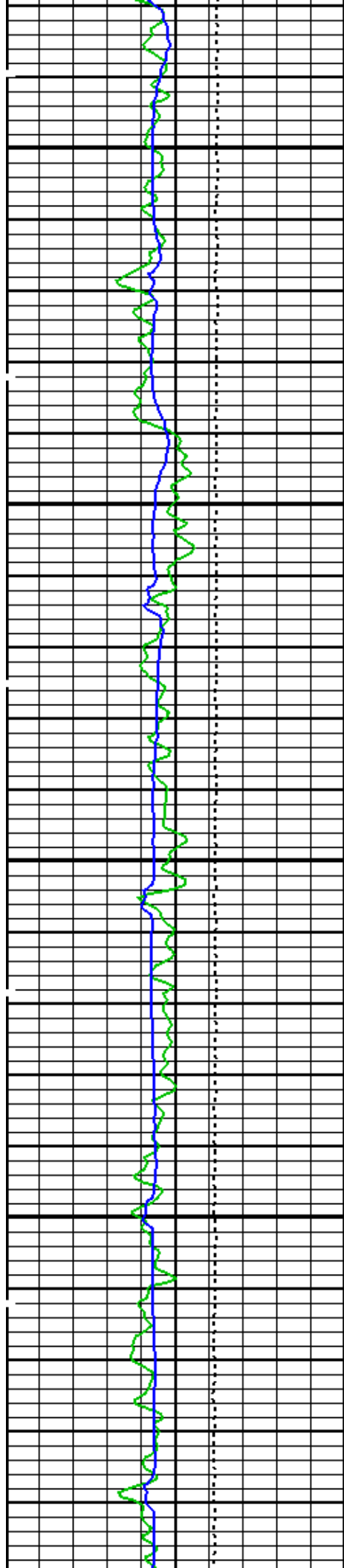
DSL-FTB	19C1-222
DTC-H	19C1-222

## PIP SUMMARY

Time Mark Every 60 S

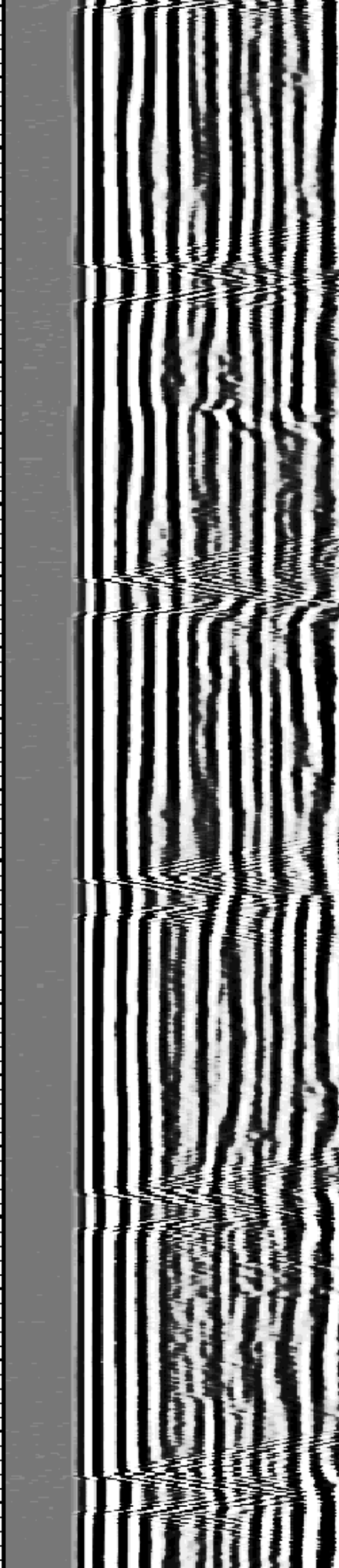
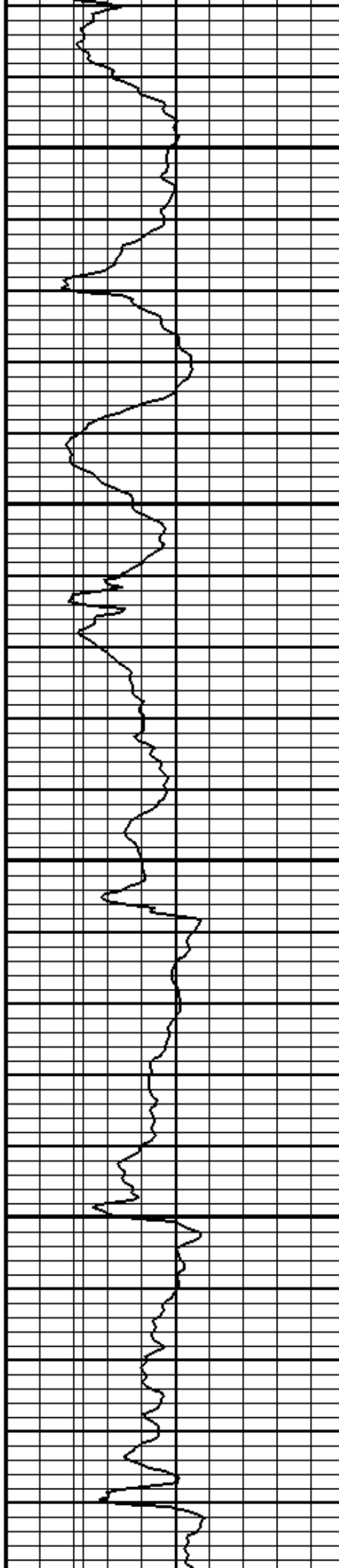


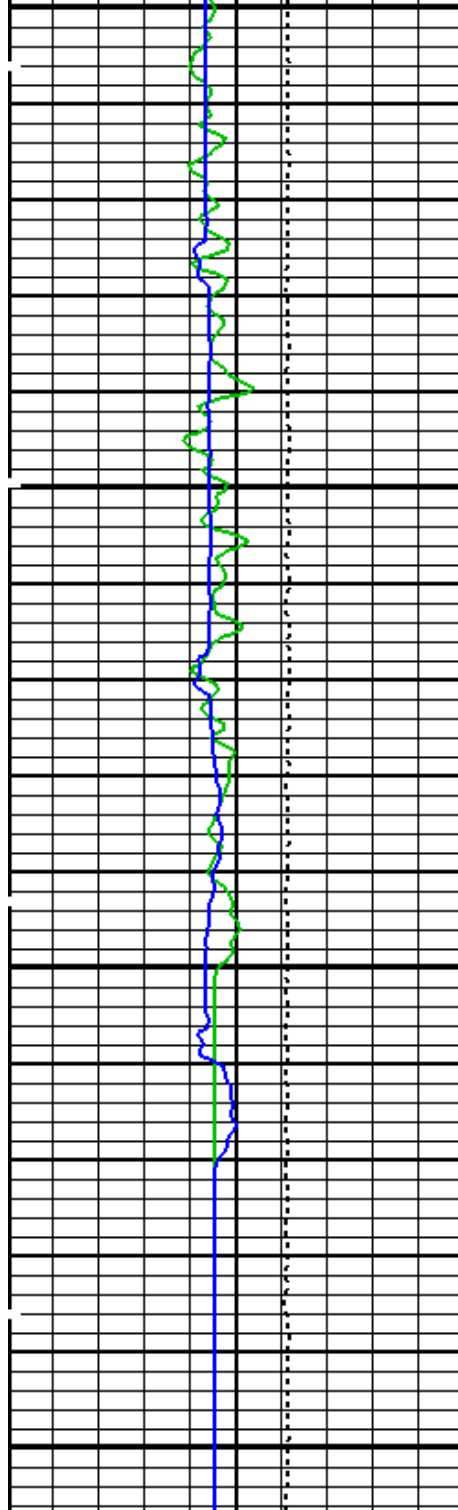




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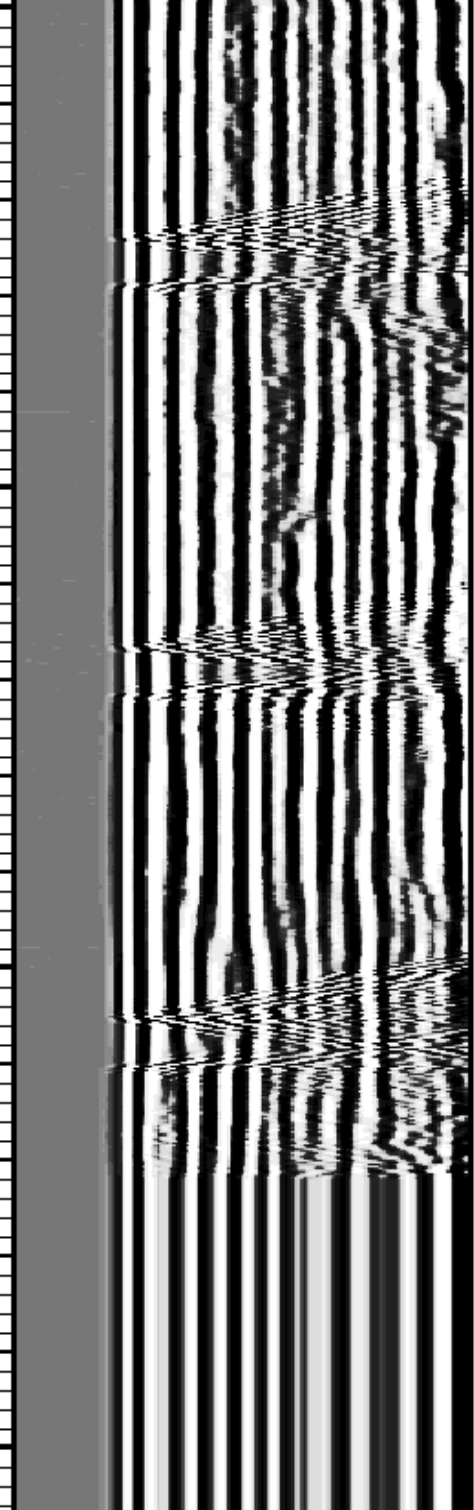
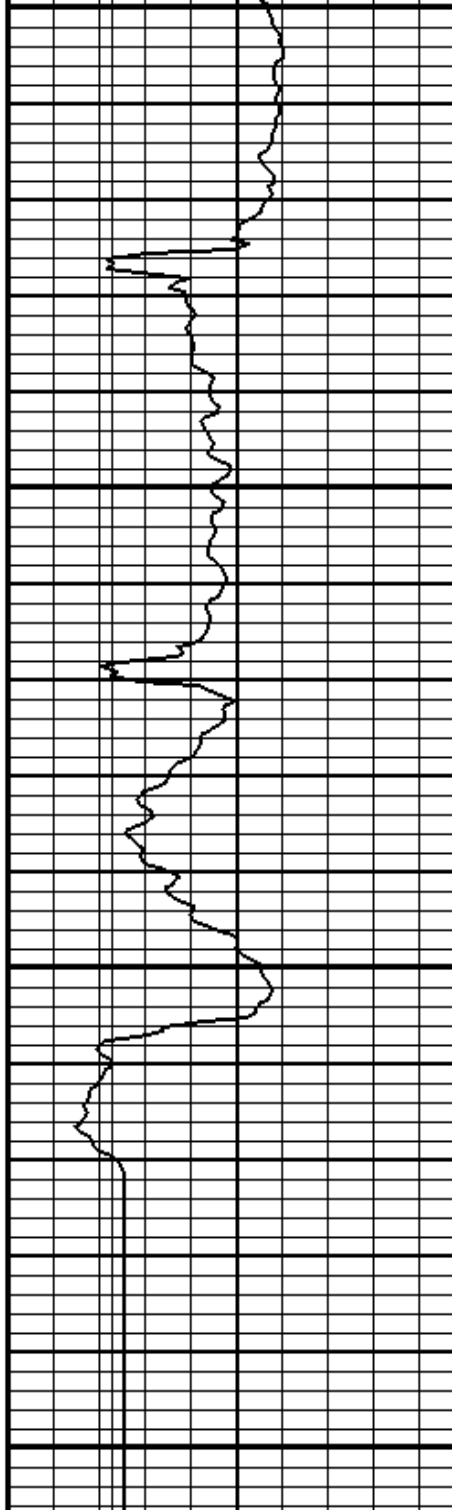
8200





8300

8400



Gamma Ray (GR)		
0	(GAPI)	150
Tension (TENS)		
10000	(LBF)	0
Transit Time (TT)		
400	(US)	200

CBL Amplitude (CBL)		
0	(MV)	10
CBL Amplitude (CBL)		
0	(MV)	100
Good Bond (GOBO)		
0	(MV)	10
GoodBond From ACBL to GOBO		

Min	Amplitude	Max
200	VDL Variable Density (VDL)	1200
	(US)	

# PIP SUMMARY

Time Mark Every 60 S

Format: CBL\_VDL Vertical Scale: 5" per 100'

Graphics File Created: 17-Sep-2013 21:52

USIT-D	19C1-222	DSLTL-FTB	19C1-222
SGT-N	19C1-222	DTC-H	19C1-222

### Information for DSLT Sonde Status and Casing Features ###

Sonde Type	Not Recorded
Sonde Serial Number	Not Recorded (0)
Casing Size (CSZ)	7.62500 IN
Casing Weight (CWEI)	26.4000 LB/F
Expected CBL Amplitude in Free Pipe Section (CBRA)	59.0 MV
Minimum Sonic Amplitude (MSA : 100% Cement)	0.980294 MV
Minimum Sonic Amplitude (MSA : 80% Cement)	2.22462 MV
Date of Master Calibration	Not Recorded
CBL Correction Factor (Master Calibration)	2.50000
Depth of Before Calibration (BDEP)	1294.72 FT
CBL Adjustment Factor (CBAF : Before Calibration)	1.48425

## Parameters

DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
	T 3 Processing Length for FPM	15.508 US
	Corrosion range maximum	0.076 IN
	Corrosion range minimum	-0.076 IN
DSLTL-FTB: Digitizing Sonic Logging Tool		
	Telemetry Mode	DSLTL FTB
	DSLTL Firing Mode	CBL W
AMSG	Auxiliary Minimum Sliding Gate	120 US
CBAF	CBL Adjustment Factor	1.48425
CBLG	CBL Gate Width	100 US
DDEL	Digitizing Delay	0 US
DRCS	DSLTL DLIS Recording Size	120
DSIN	Digitizing Sample Interval	10
DTFS	DSLTL Telemetry Frame Size	236
DWCO	Digitizing Word Count	120
GAI	Manual Gain	40
GOBO	Good Bond	2.22462 MV
MAHTR	Manual High Threshold Reference	40
MGAI	Maximum Gain	1000
MNHTR	Minimum High Threshold Reference	30
NMSG	Near Minimum Sliding Gate	245 US
NMXG	Near Maximum Sliding Gate	750 US
RATE	Firing Rate	R7
SFAF	Sonic Formation Attenuation Factor	0 DB/F
SGCL	Sliding Gate Closing Delta-T	250 US/F
SGDT	Sliding Gate Delta-T	76 US/F
SGW	Sliding Gate Width	80 US
SLEV	Signal Level for AGC	5000
VDLG	VDL Manual Gain	5
WAGC	Waveform AGC Allow/Disallow	OFF
WMOD	Waveform Firing Mode	FULL
System and Miscellaneous		
DO	Depth Offset for Playback	5.0 FT
PP	Playback Processing	NORMAL

## Input DLIS Files

DEFAULT	USI_SONIC_006LUP	FN:9	PRODUCER	17-Sep-2013 14:51	8401.5 FT	7947.5 FT
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## Output DLIS Files

DEFAULT	USI_SONIC_025PUP	FN:42	PRODUCER	17-Sep-2013 21:52
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Company: **ENCANA OIL & GAS (USA) INC**

**Schlumberger**

Well: **RENNINGER 30-7-2 (NGG30NE)**

Field: **DIVIDE CREEK**

County: **MESA**

State: **COLORADO**

CBL  
CEMENT BOND LOG  
GAMMA RAY