



PIONEER

Pioneer Energy Services

**RADIAL BOND LOG
WITH GAMMA RAY**

Company **NGL WATER SOLUTIONS DJ LLC**
Well **WELD SOUTH SWD #1**
Field **WATTENBERG**
County **WELD** State **COLORADO**

Comp. **NGL WATER SOLUTIONS DJ LLC**
Well **WELD SOUTH SWD #1**
Field **WATTENBERG**
Co. **WELD**
State **COLORADO**

Location: **API # : 05-123-47682**
1615 FNL & 1713 FEL
SW NE
SEC 30 TWP 1N RGE 66W
Permanent Datum **GL** Elevation **4952'**
Log Measured From **KB** 25' Above Perm. Datum
Drilling Measured From **KB** **GL** 4952'

NONE

Date of Service **01 APRIL 2019**

Run Number **ONE**

Depth Driller or FBTD **11022'**

Depth Logger **10966'**

Bottom Log Interval **10966'**

Top Log Interval **2000'**

Open Hole Size **9.875"**

Type Fluid **WATER**

Fluid Level **FULL**

Fluid Density **N/A**

Max. Recorded Temperature **280 F**

Max. Wellhead Pressure **ZERO**

Wellhead Connection **OPEN**

Estimated Cement Top **N/A**

Unit Number **P-132**

Wireline Size **9/32"**

Location **FORT MORGAN**

Recorded By **SCHOENROGGE**

Witnessed By **MR. SHERWOOD**

Size **W/F** **Top** **Bottom**

Tubing Record **10.75** **40.5#** **SURFACE** **1212'**

Surface Casing **7.625"** **29.7#** **SURFACE** **9192'**

Production Casing **5.5"** **17#** **9132'** **11019'**

Liner Record

>>> Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

CORRELATED TO WEATHERFORD OPEN HOLE LOG RAN 15 FEBRUARY 2019

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew

Engineer: **SCHOENROGGE / COOPER**
Operator: **IGOR**
Operator:
Operator:

Tool Data - Services

Serial Number

SEE DIAGRAM

Log Variables

DatabaseC:\ProgramData\WarnonData\ngl_weld south swd 2_05123_20190401_sebl.db
Dataset field/well/run1/pass7/_vars_

Top - 9135.00 ft

BOREID in 9.875	BOTTEMP degF 280	CASEOD in 7.625	CASETHCK in 0.375	CASEWGHT lb/ft 29.7	MAXAMPL mV 59	MINAMPL mV 1.8
MINATTN db/ft 0.8	PERFS 0	PPT usec 295	SRFTEMP degF 50	TDEPTH ft 11000		

9135.00 ft - Bottom



BOREID in 6.75	BOTTEMP degF 280	CASEOD in 5.5	CASETHCK in 0.304	CASEWGHT lb/ft 17	MAXAMPL mV 71.9	MINAMPL mV 1
MINATTN db/ft 0.8	PERFS 0	PPT usec 263	SRFTEMP degF 50	TDEPTH ft 11000		

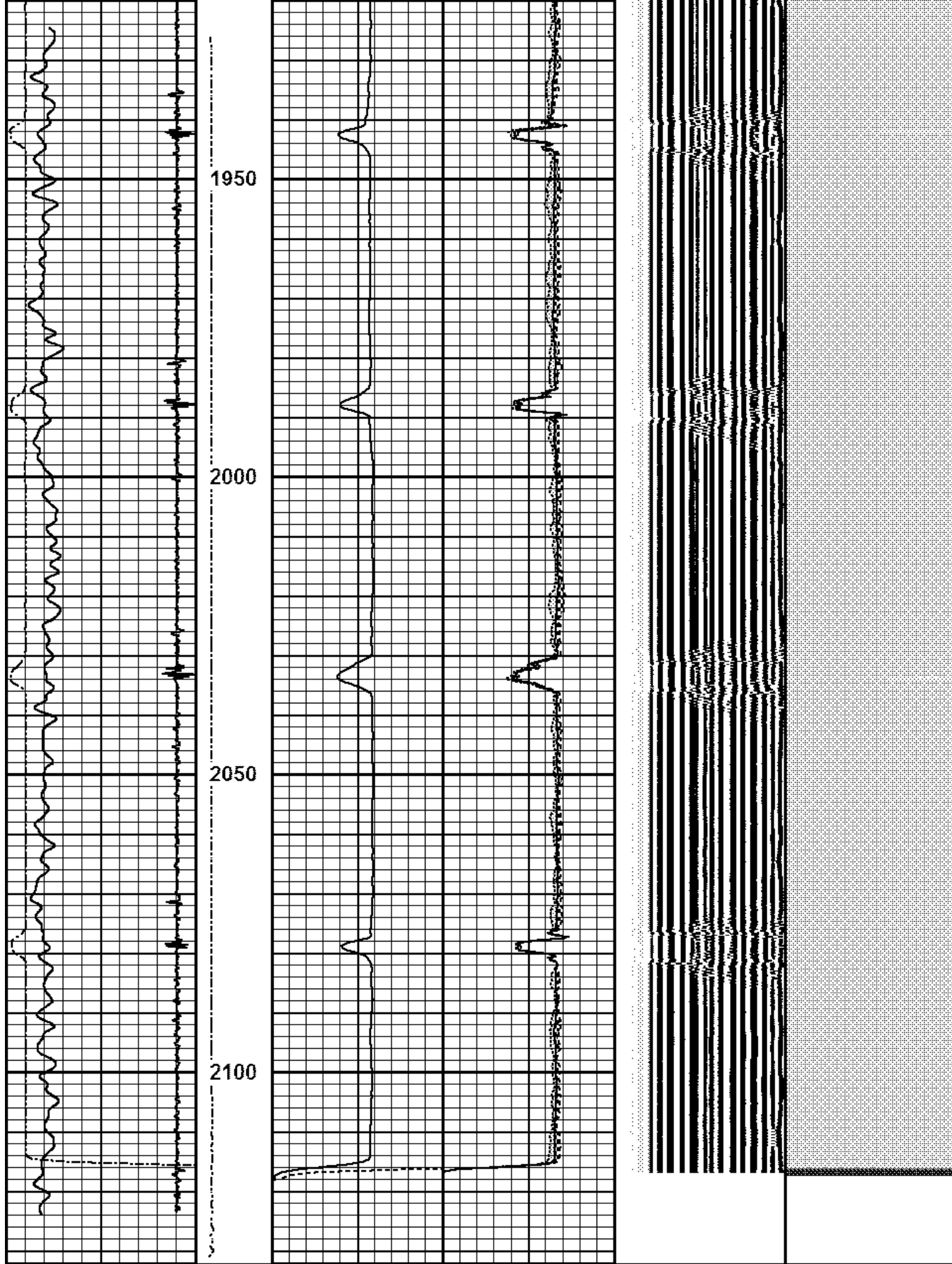
Variable Description

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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Cable Head-Titan_144 1 7/16" Titan Cable Head	1.03	1.44	2.00
			Centralizer-275 Roller 2.75" Roller Centralizer	2.50	2.75	15.00
			PROBE-RBT-DIGITAL-RBL-DC (FW1304-3) Probe 2 3/4" Radii Bond-Corrosion Package	348.75	2.75	100.00
WVFS8	15.09					
WVFS7	15.09					
WVFS6	15.09					
WVFS5	15.09					
WVFS4	15.09					
WVFS3	15.09					
WVFS2	15.09					
WVFS1	15.09					
WVFCAL	15.09					
WVF3FT	15.09					
WVF5FT	14.09					
HEADVOLT	10.01					



305 (usec) 205	(lb) 0	(mV) 100	Amplitude Averag	(usec) 200	1200
Collar Locator	0 2000	3' Amplified	0 150		
-9 1		Amplitude X 5			
Gamma Ray		(mV) 20	Sector		
0 (GAPI) 150			Amplitude Maximum		
			0 150		
			Sector		
			Amplitude Minimum		
			0 150		

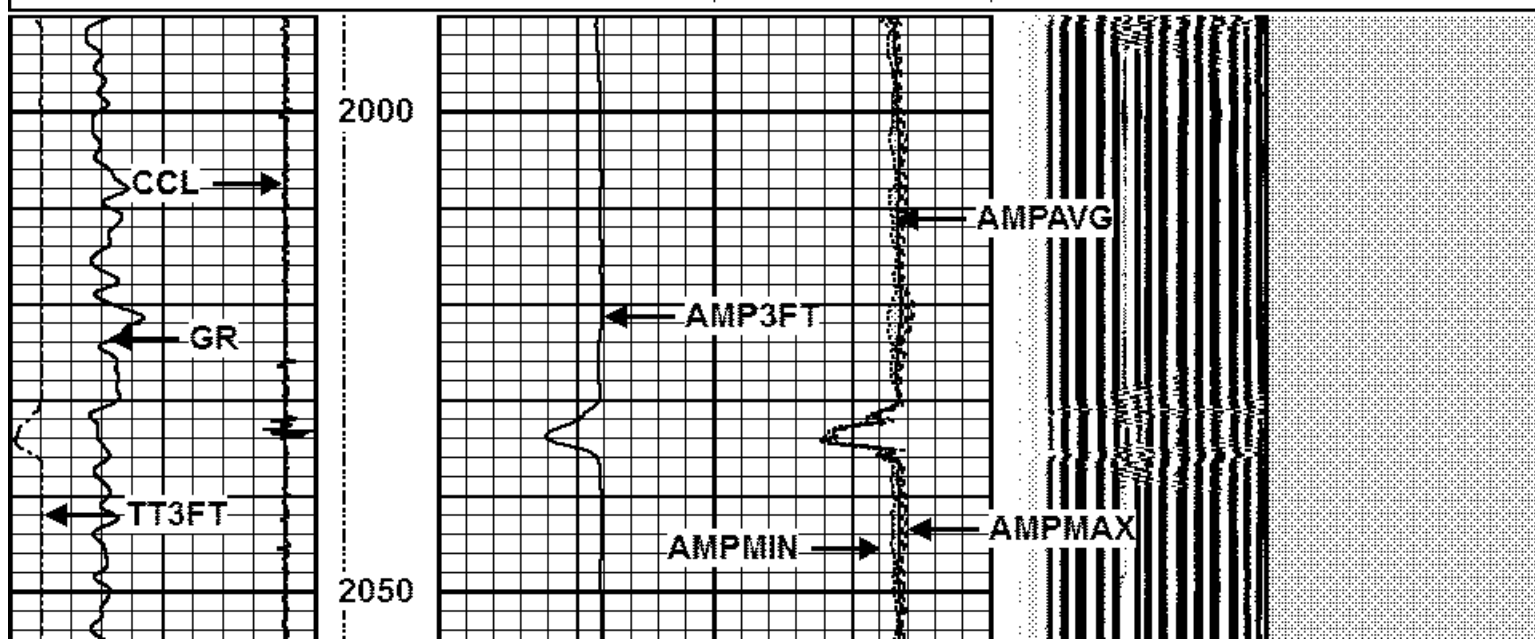


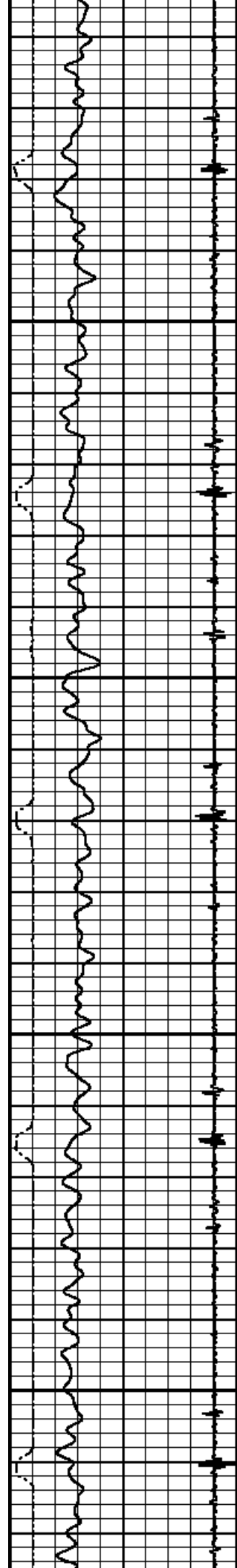
MAIN LOG

ZERO PSI APPLIED AT SURFACE

Database File	ngl_weld south swd 2_05123_20190401_scbl.db
Dataset Pathname	pass7
Presentation Format	pinr_scbl
Dataset Creation	Mon Apr 01 08:53:37 2019
Charted by	Depth in Feet scaled 1:240

3Ft Travel Time	neTensio	3' Amplitude	Sector	VDL	1 Sector Map 8
305 (usec) 205	(lb) 0	(mV) 100	Amplitude Averag	(usec) 200	1200
Collar Locator	0 2000	3' Amplified	0 150		
-9 1		Amplitude X 5	Sector		
Gamma Ray		(mV) 20	Amplitude Maximum		
0 (GAPI) 150			0 150		
			Sector		
			Amplitude Minimum		
			0 150		





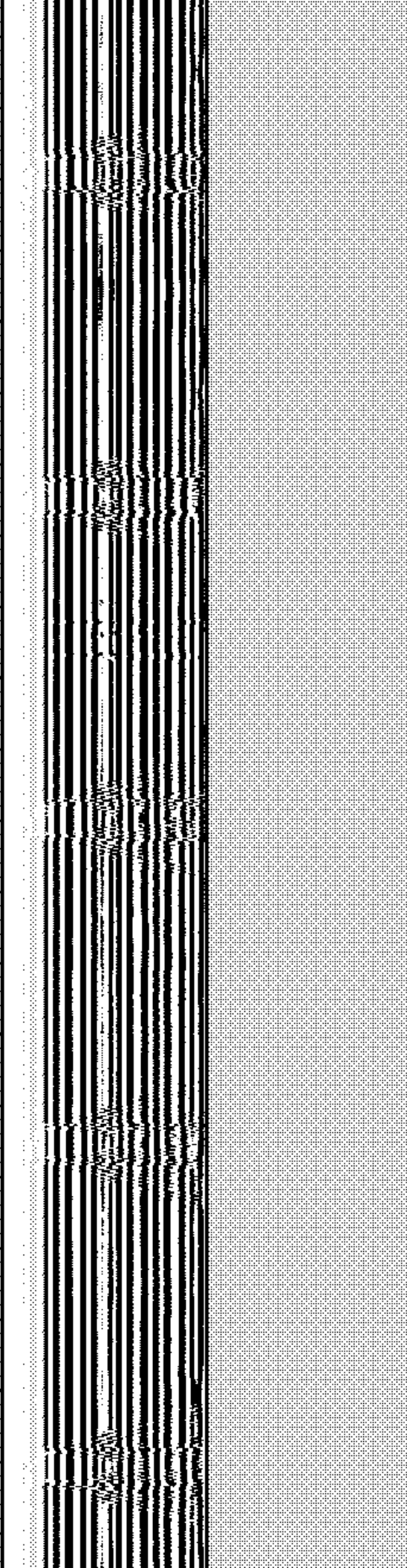
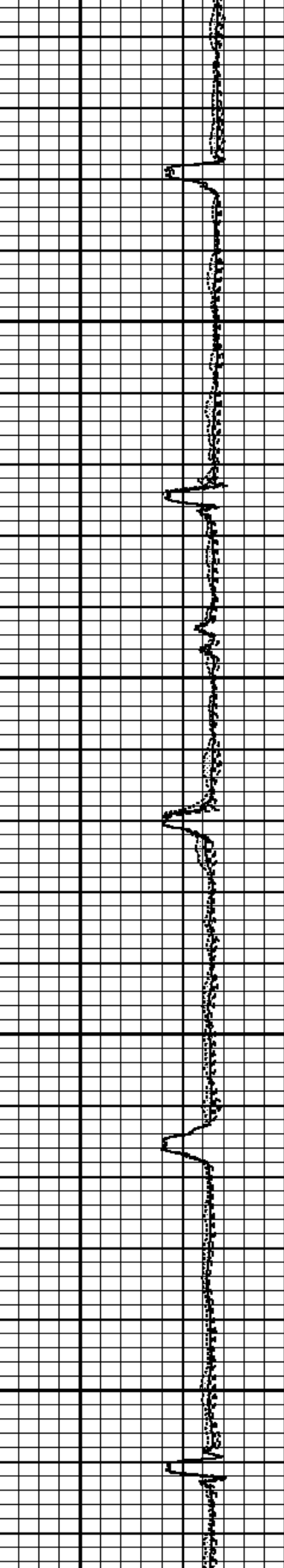
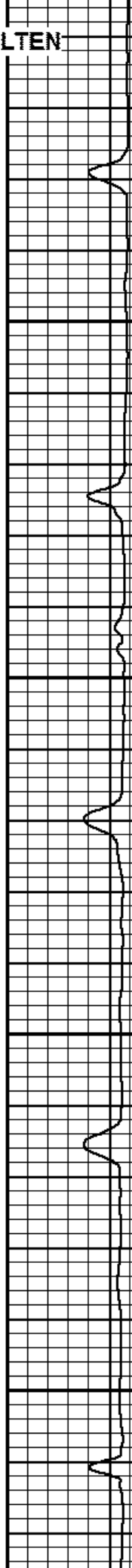
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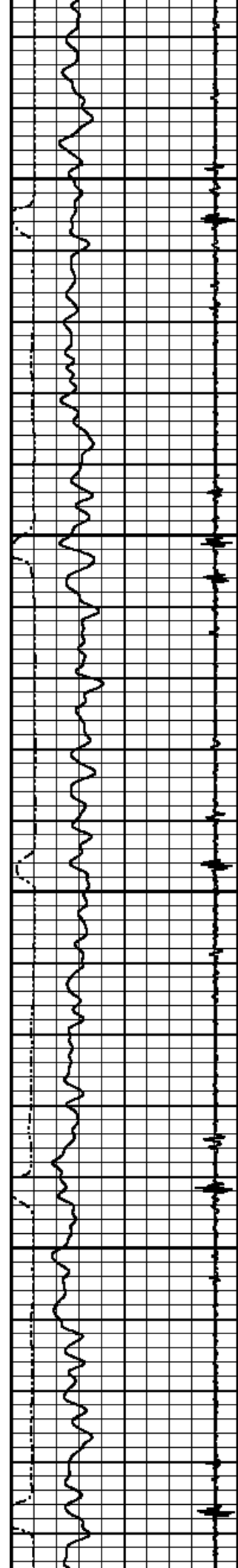
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2200

2250

LTEN



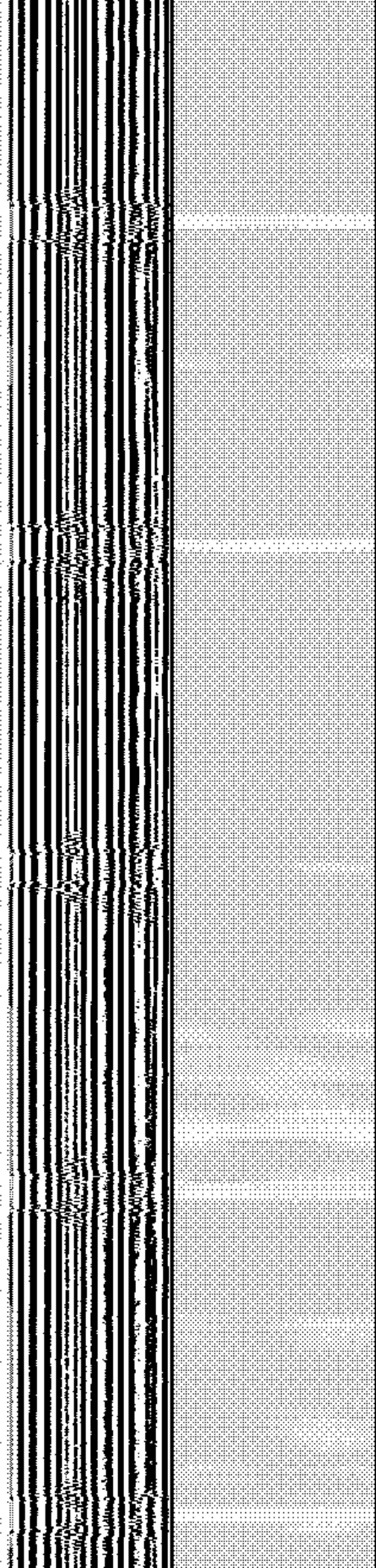
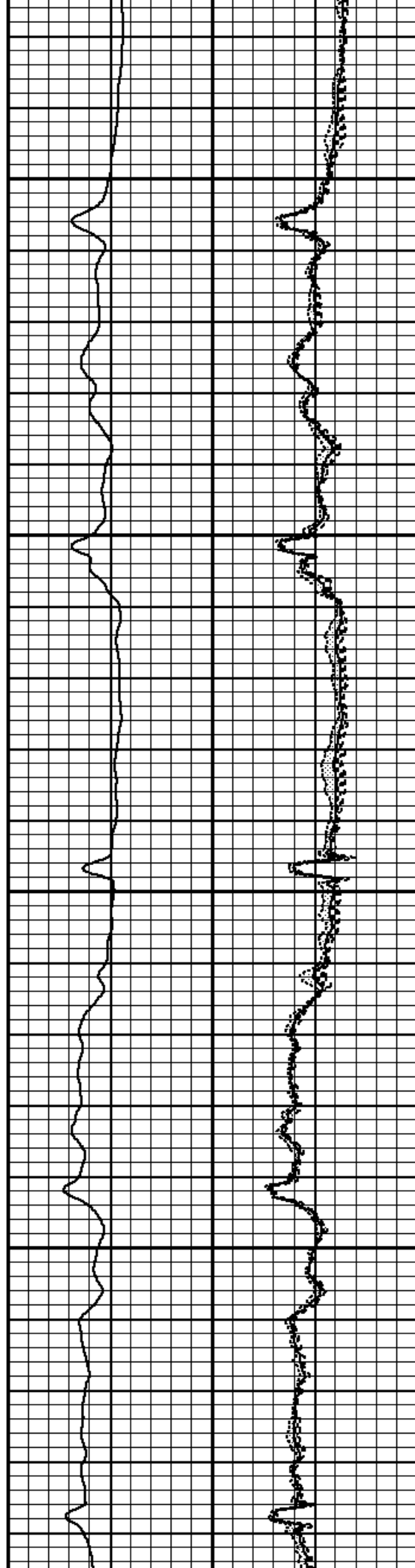


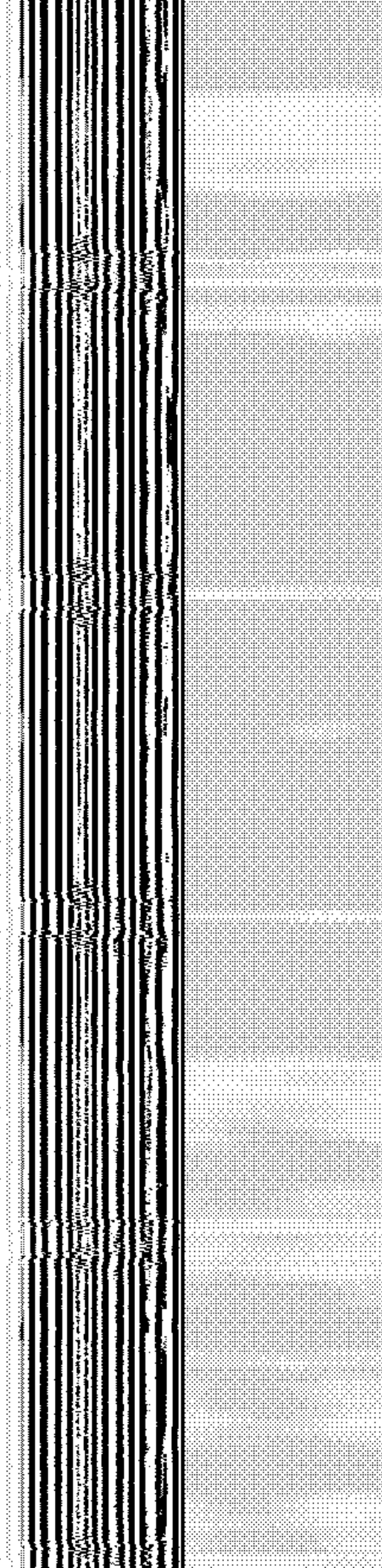
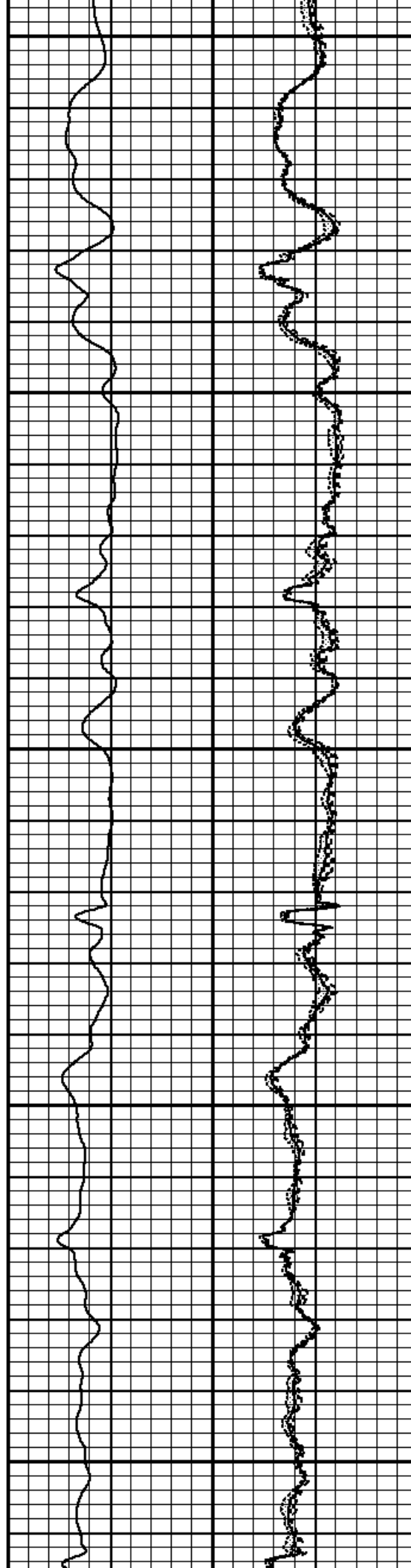
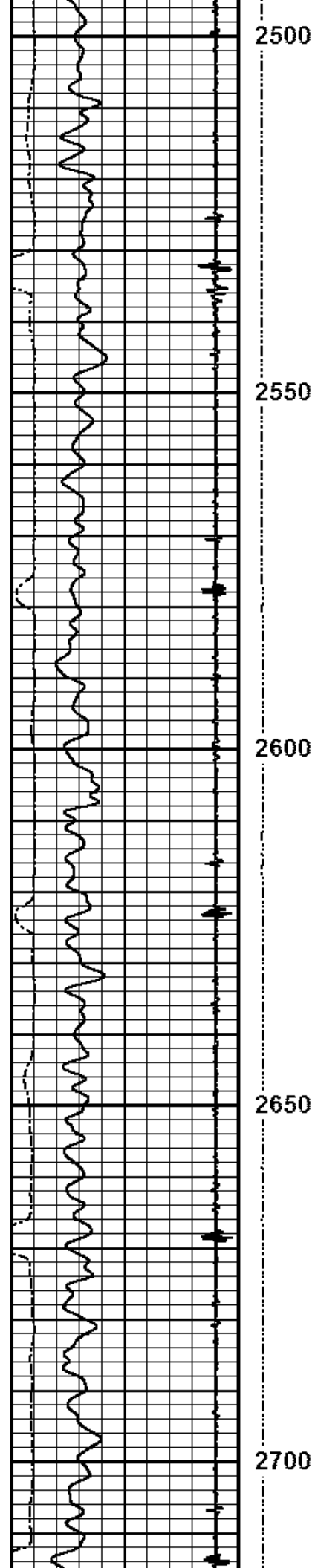
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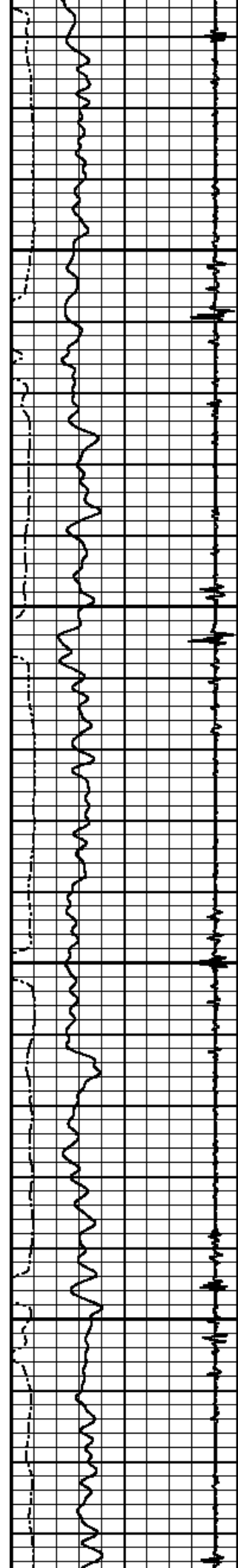
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2450





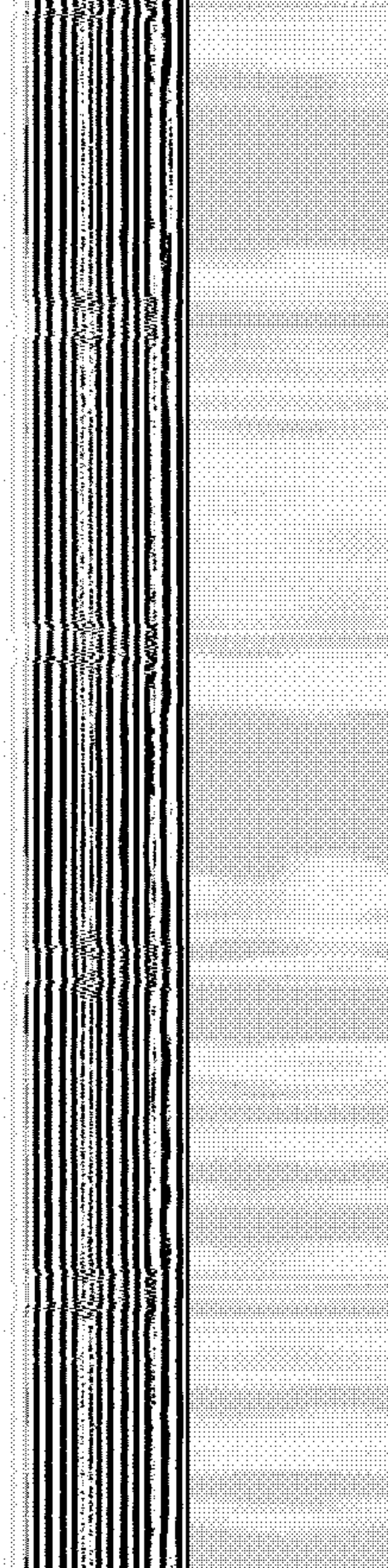
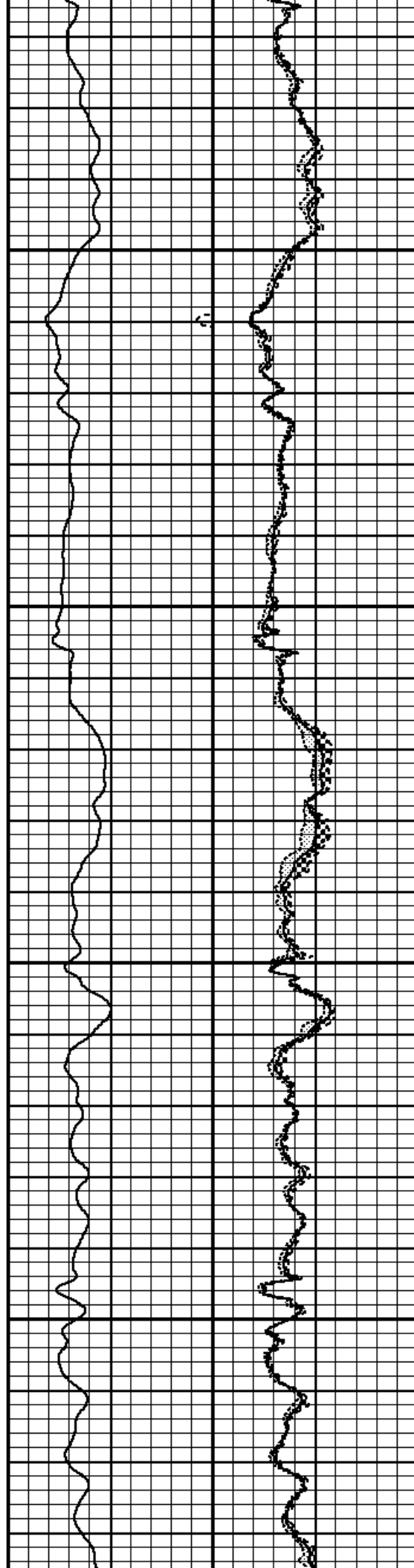


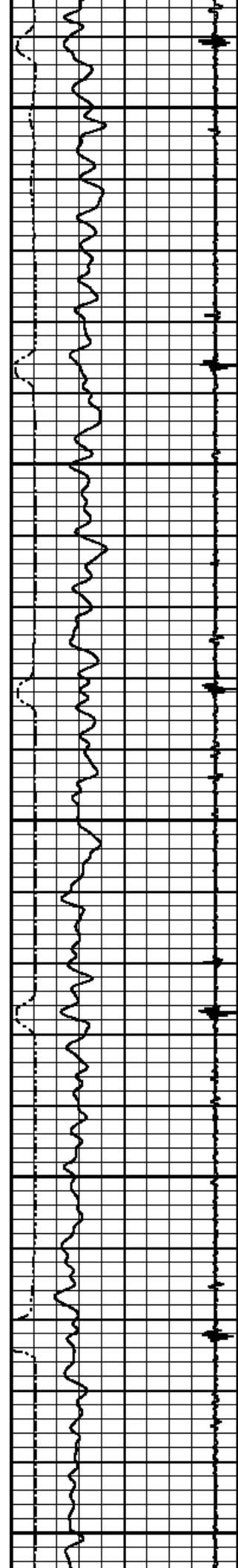
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2850

2900





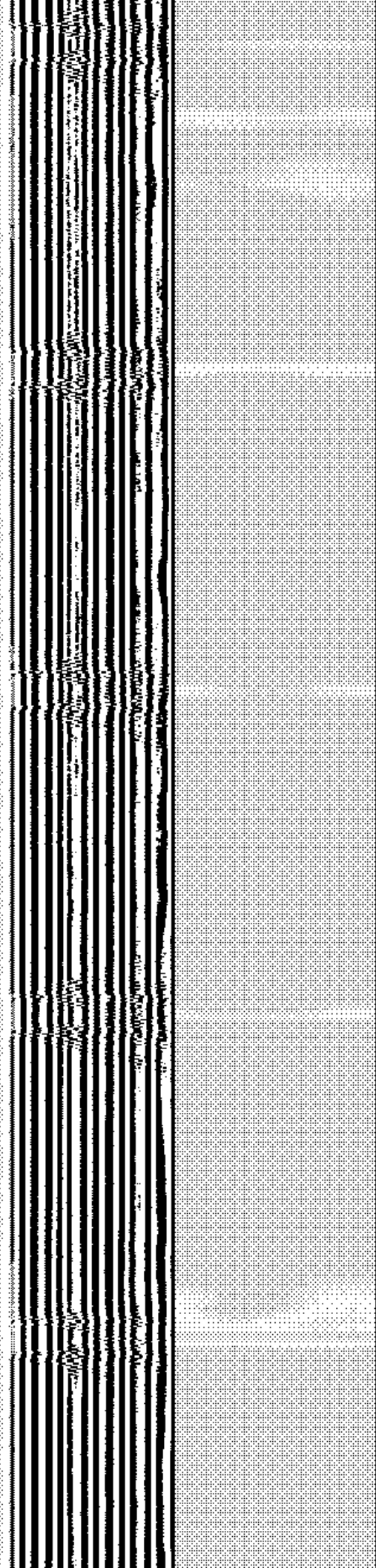
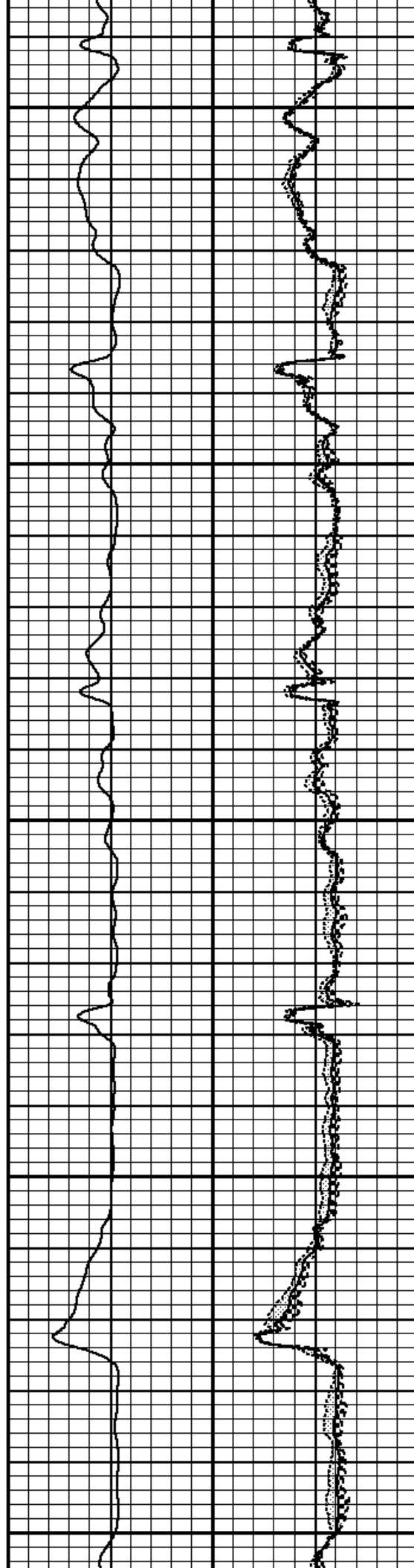
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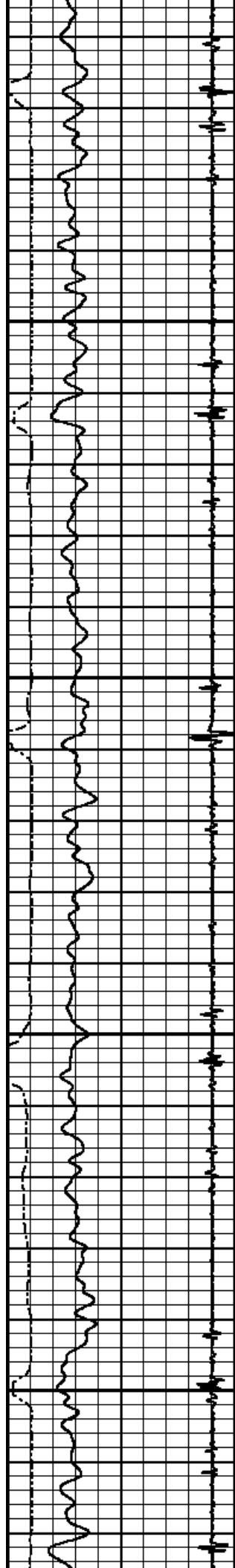
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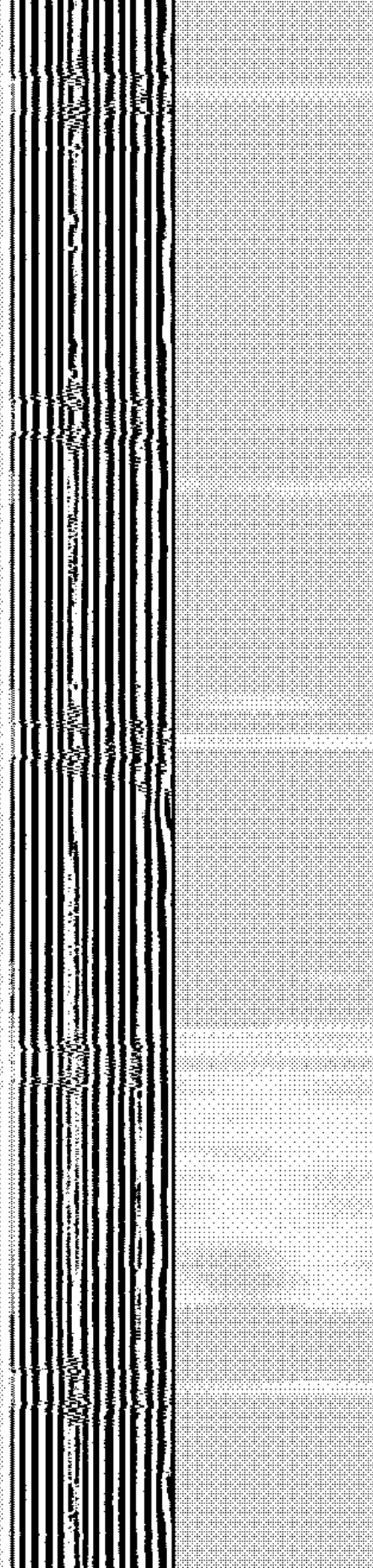
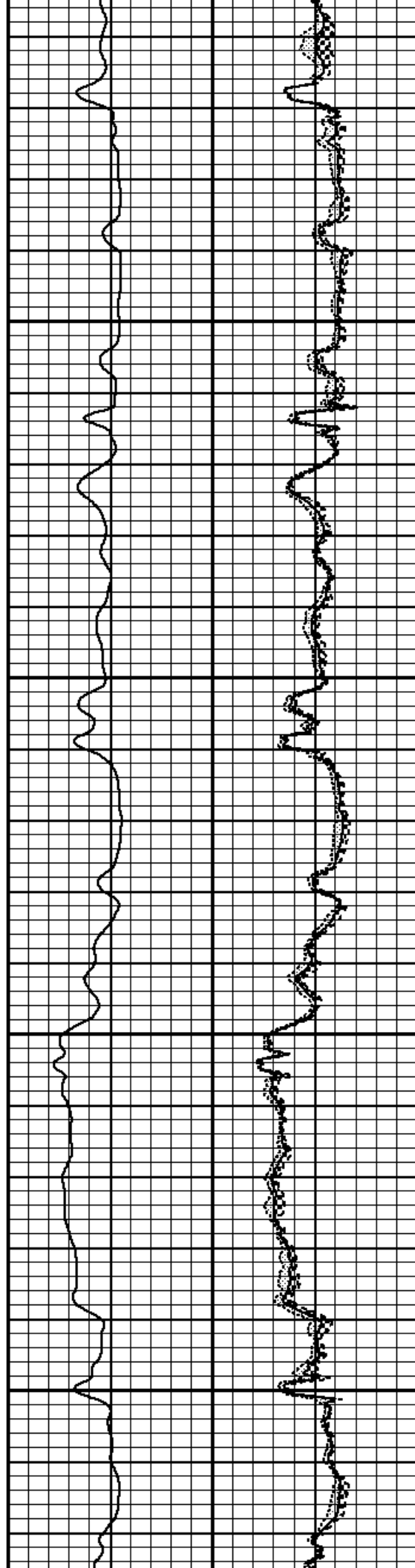


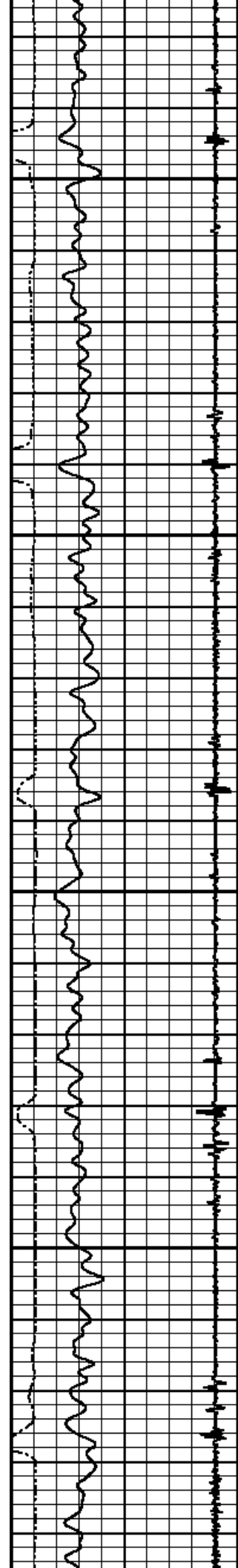
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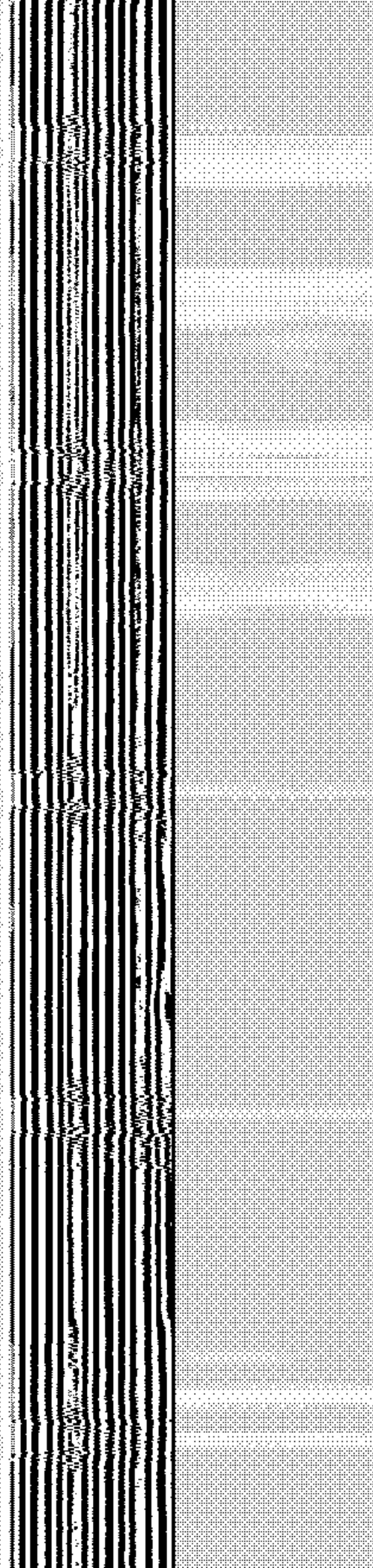
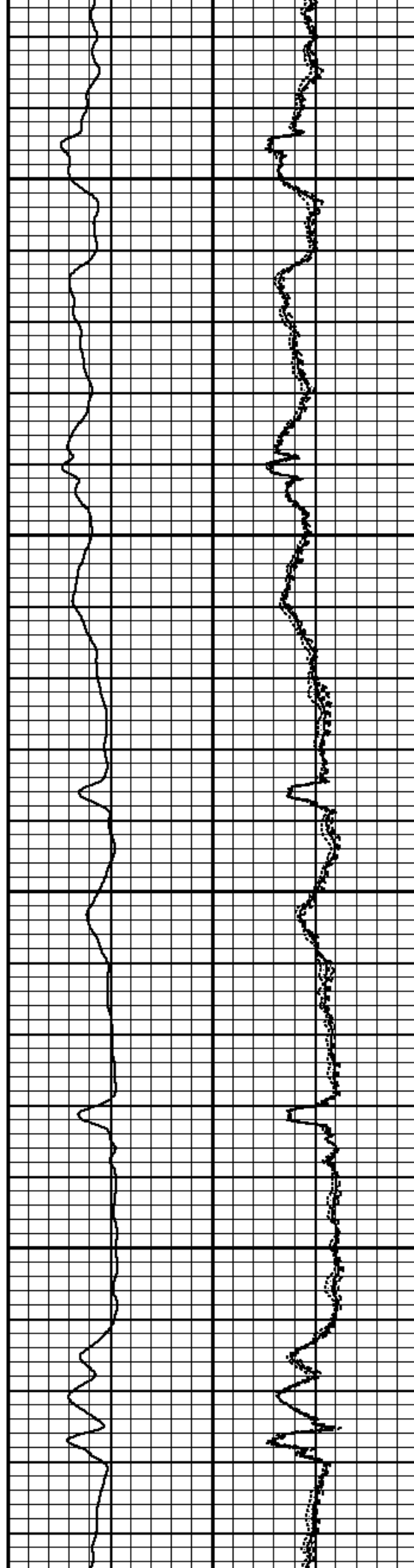


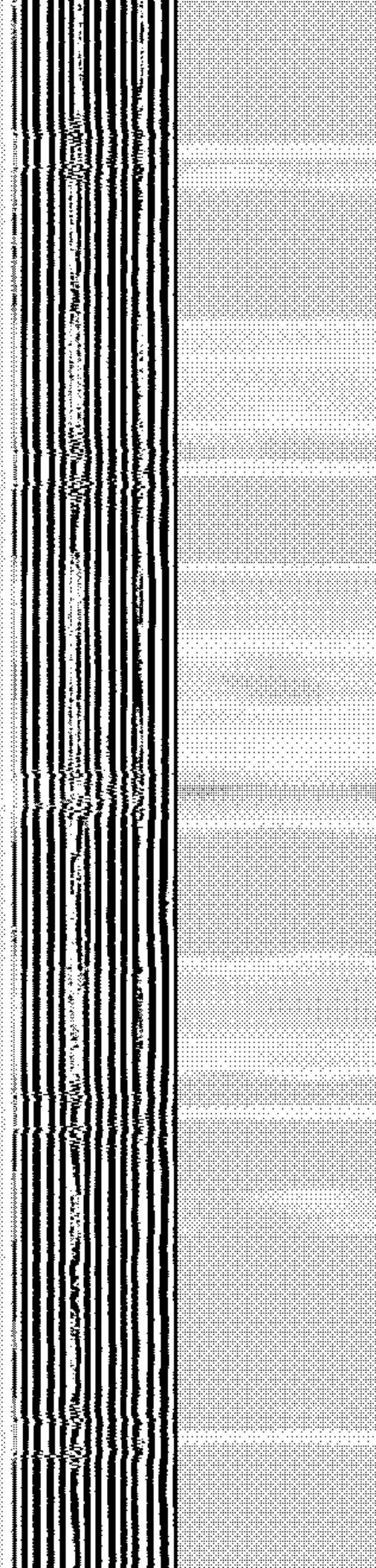
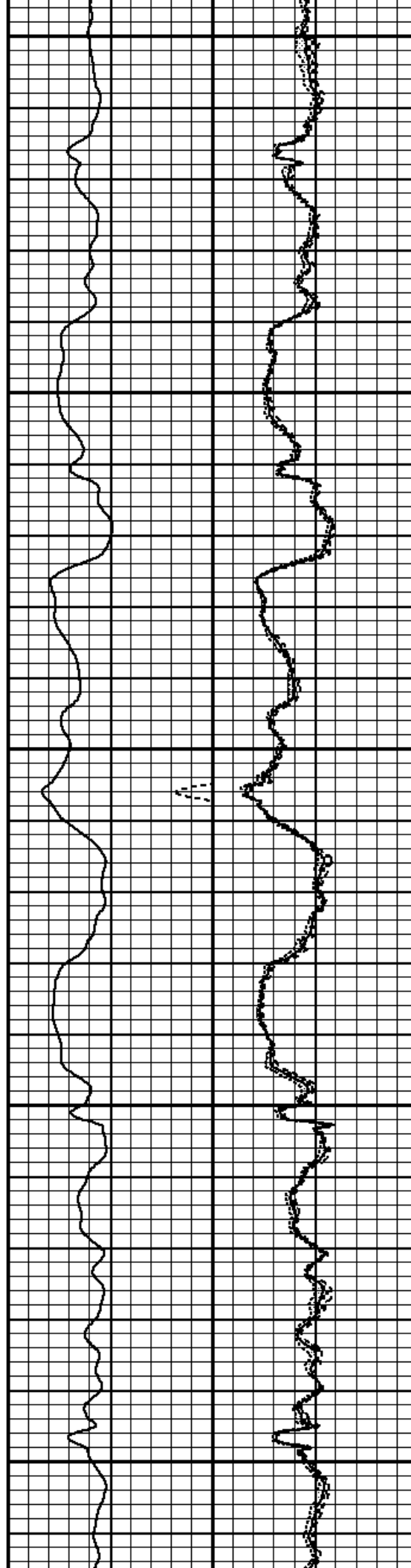
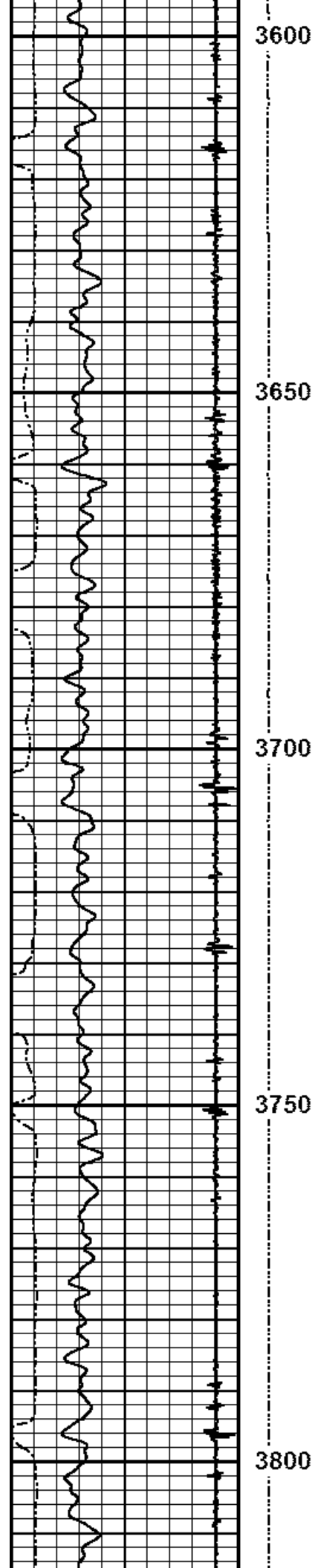
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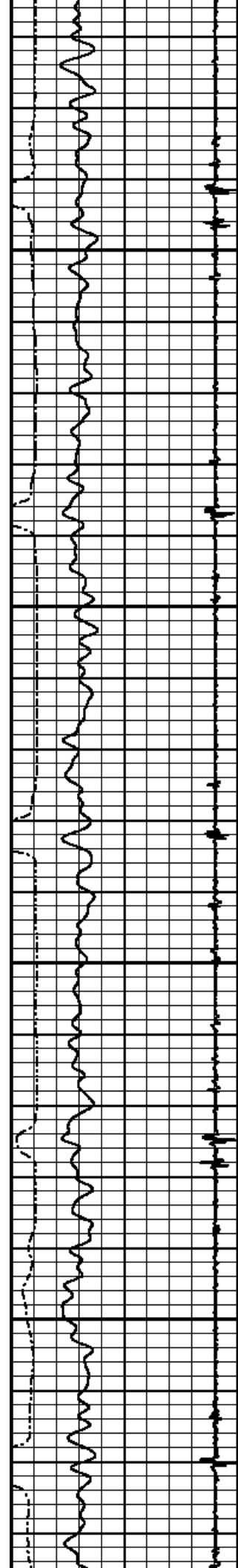
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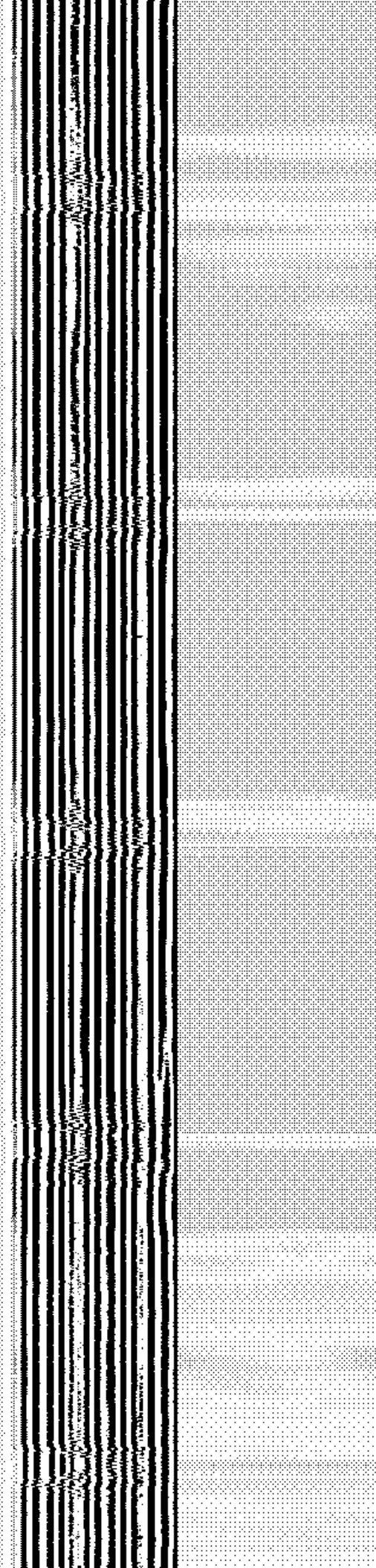
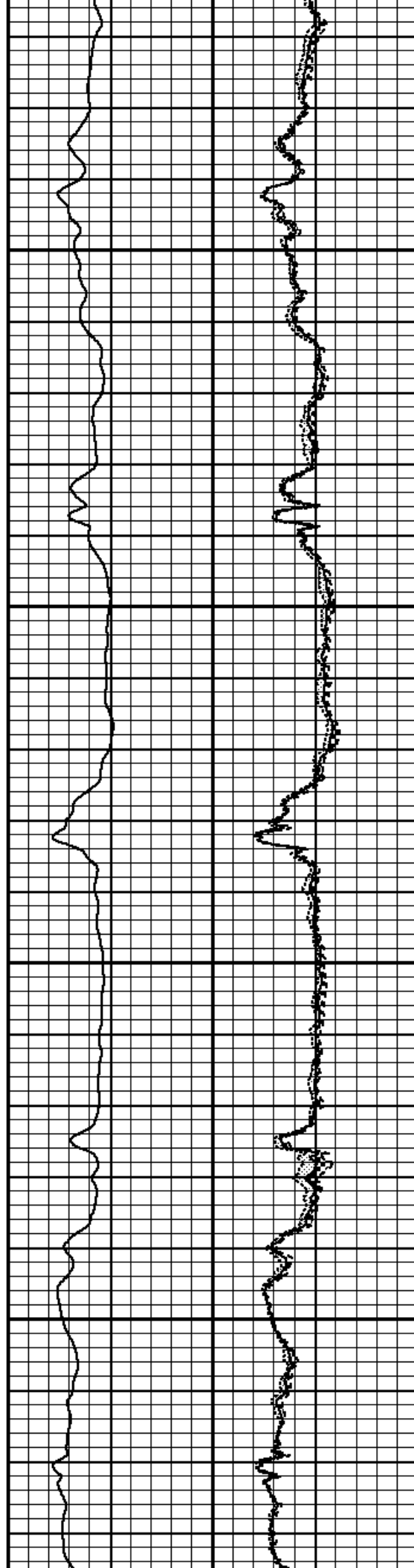


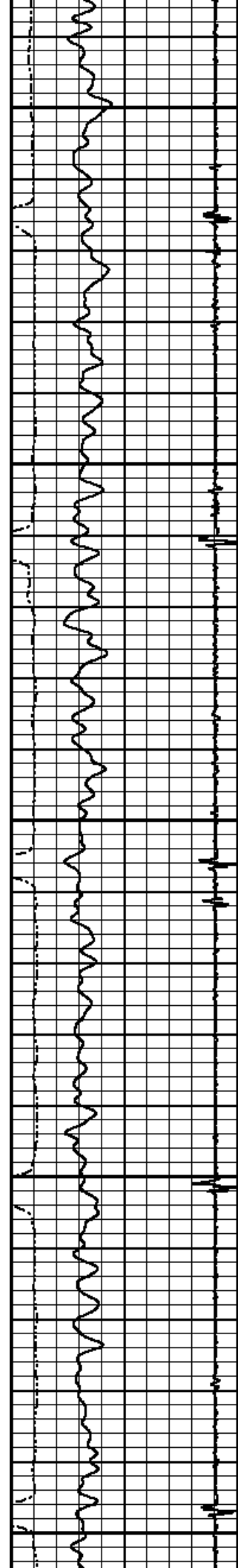
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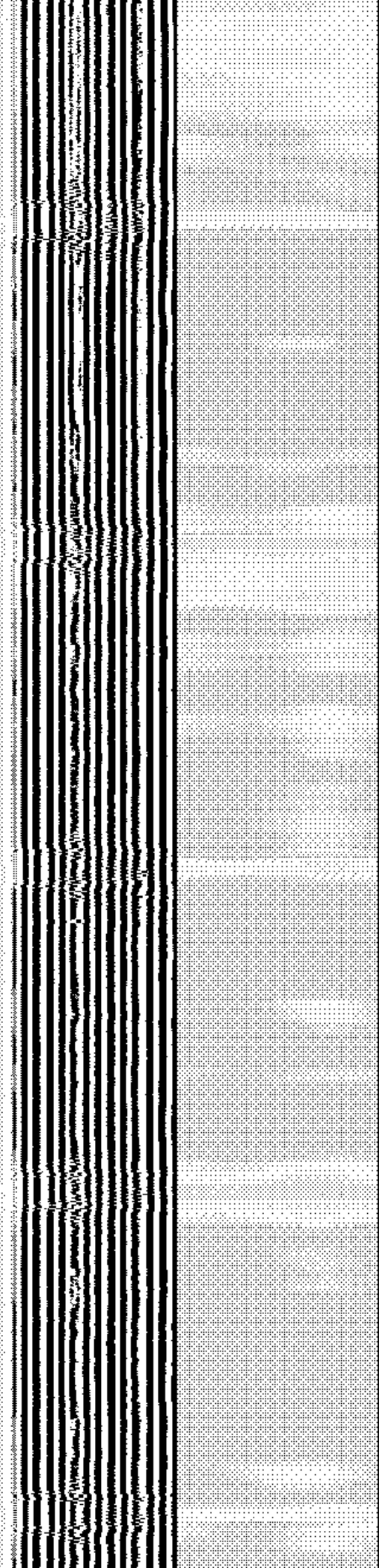
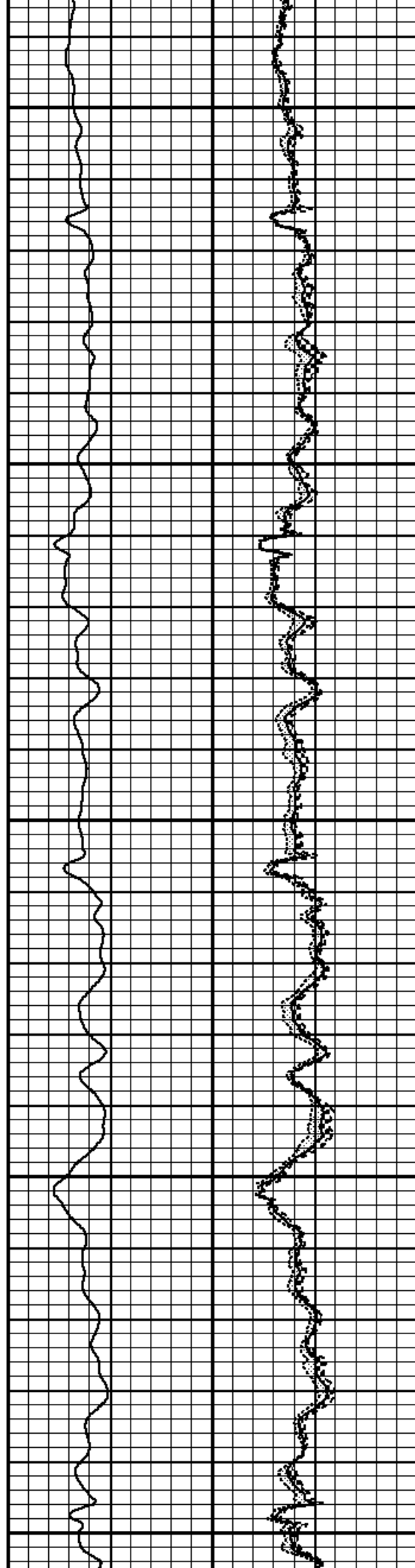
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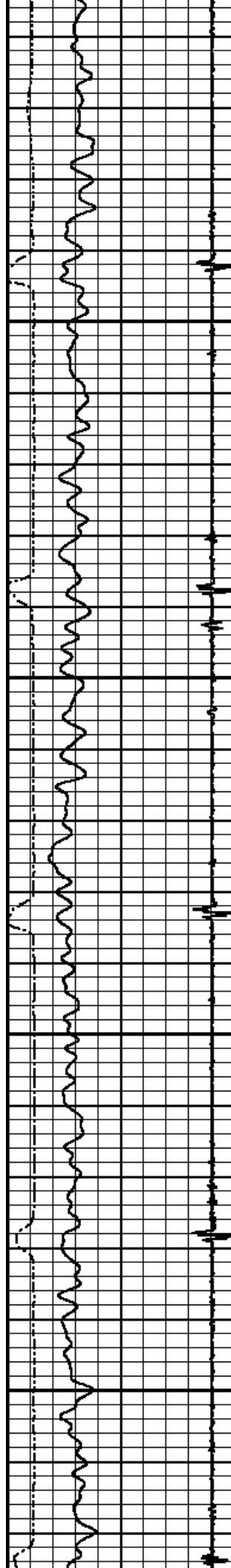
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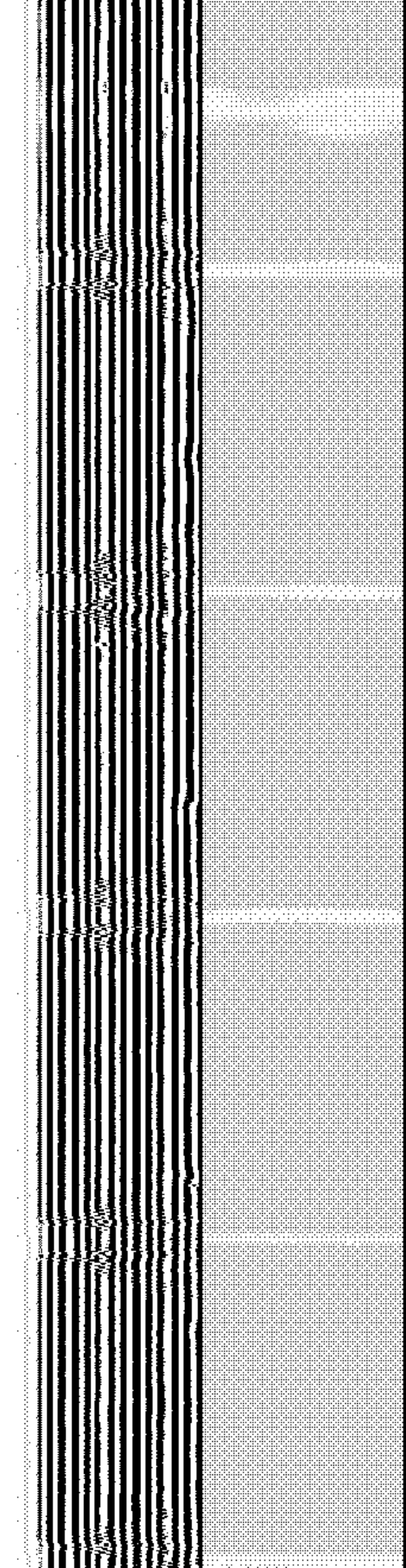
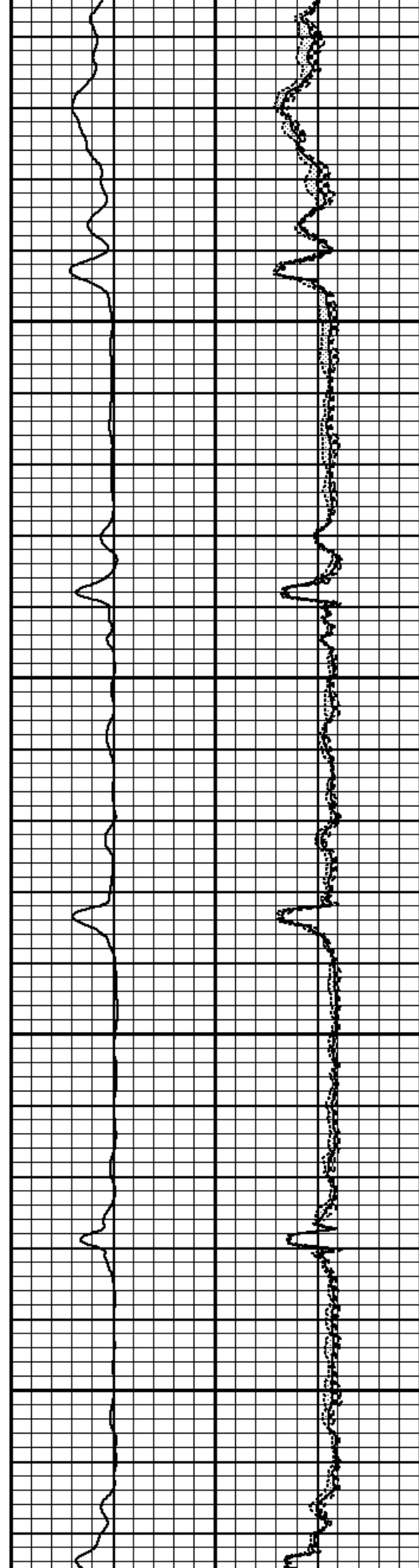


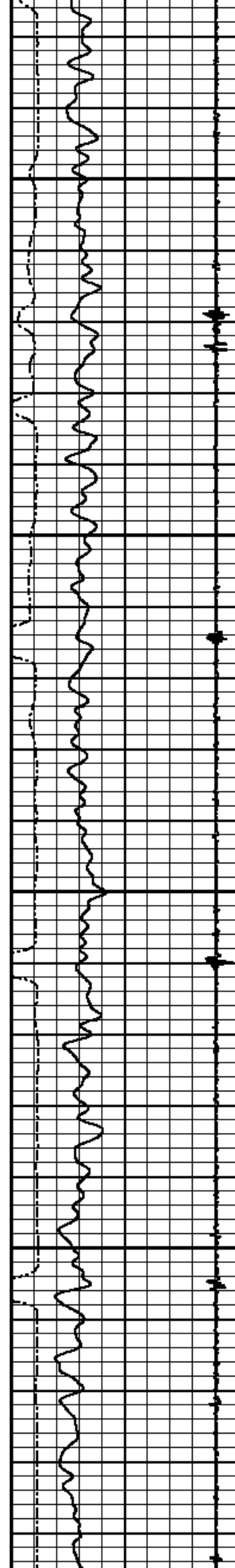
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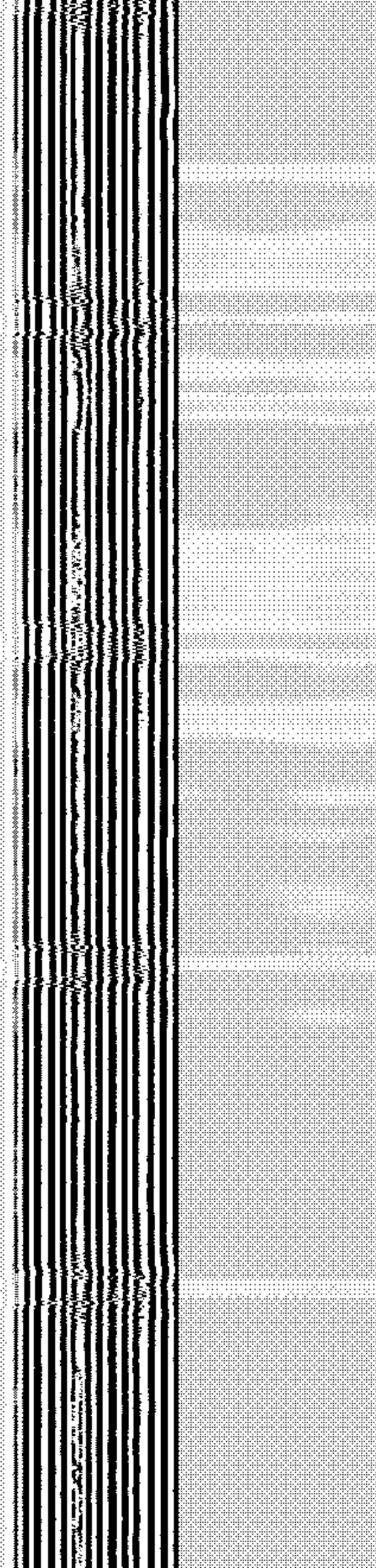
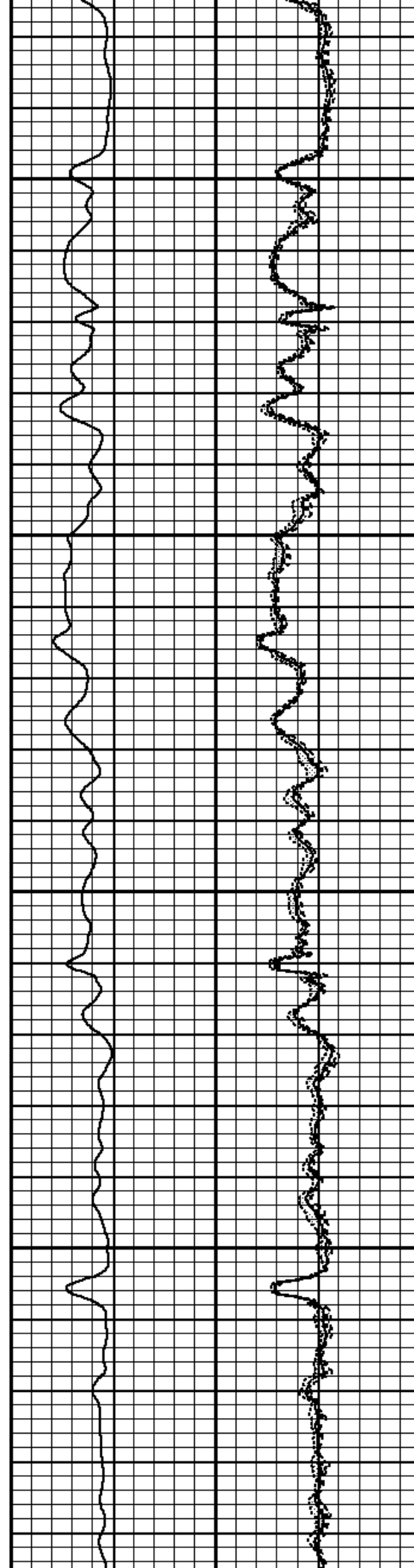


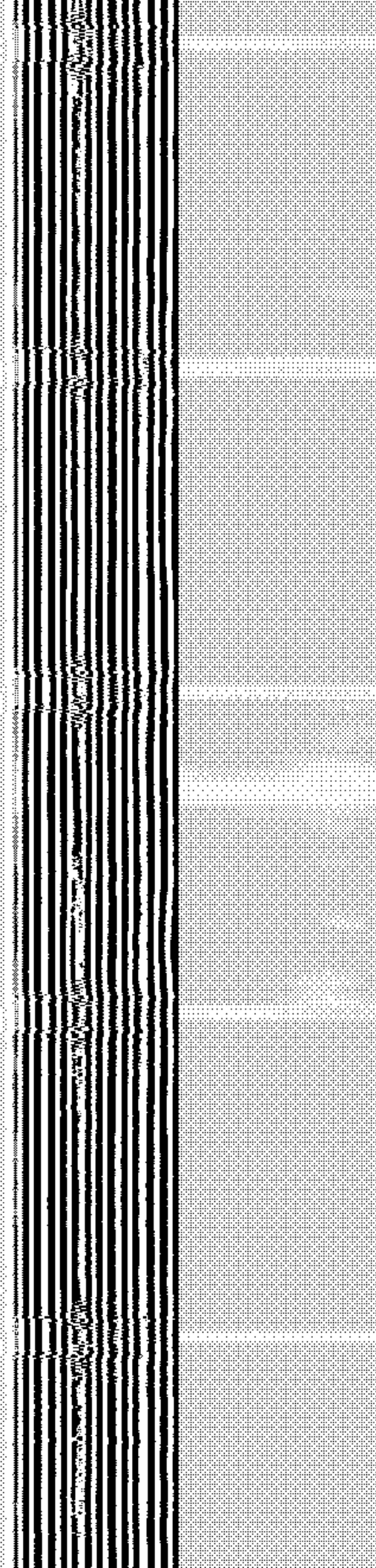
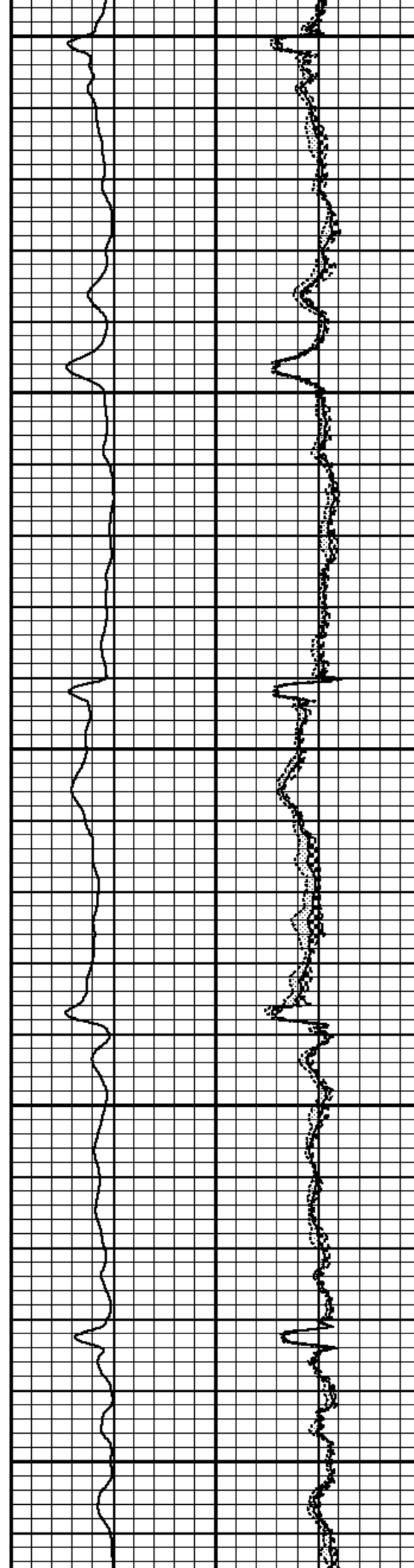
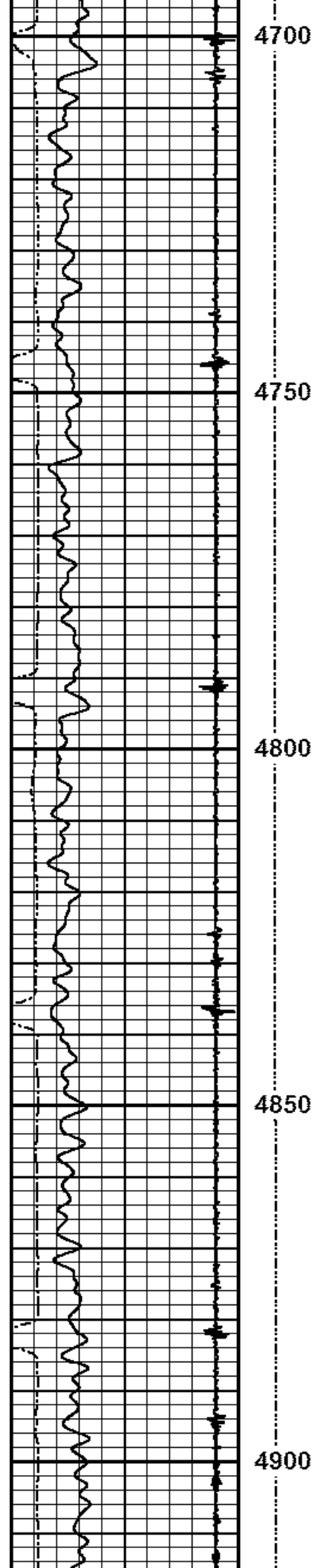
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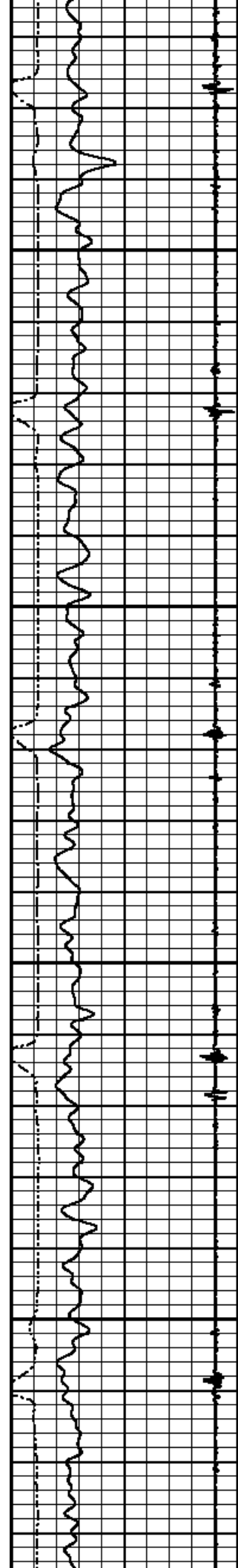
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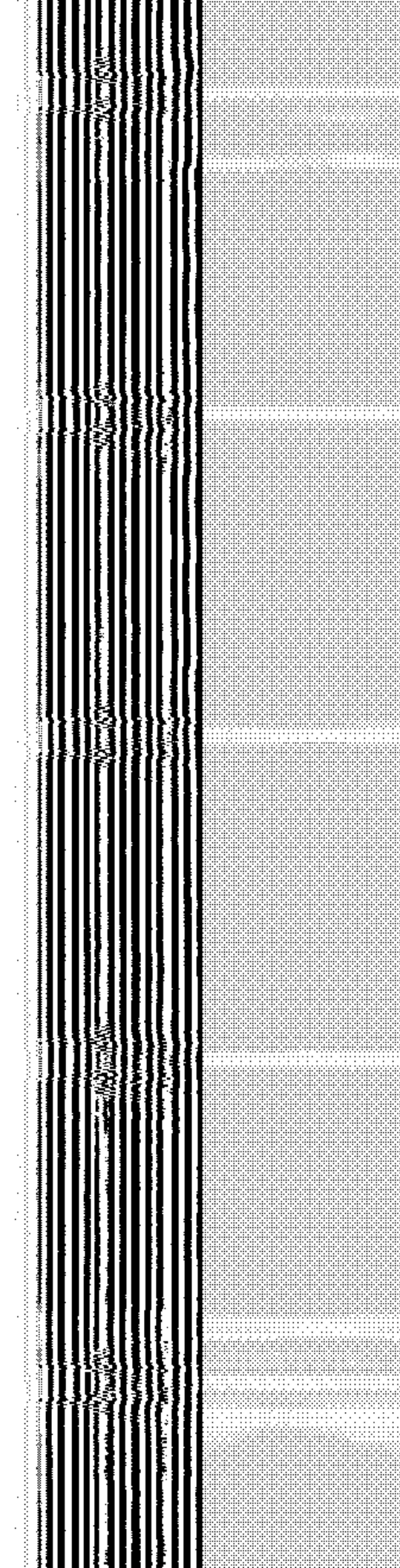
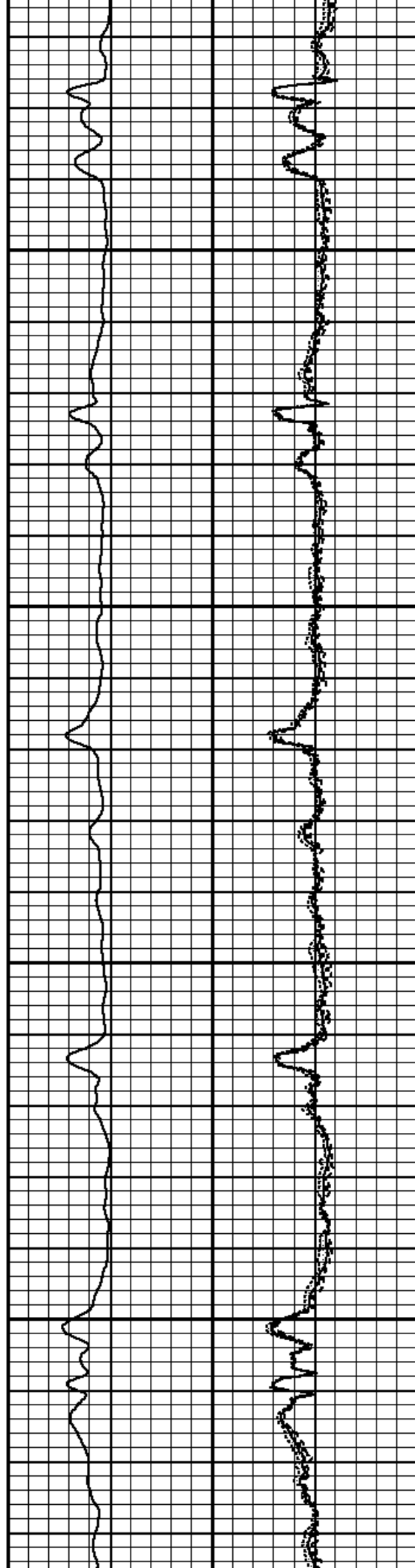


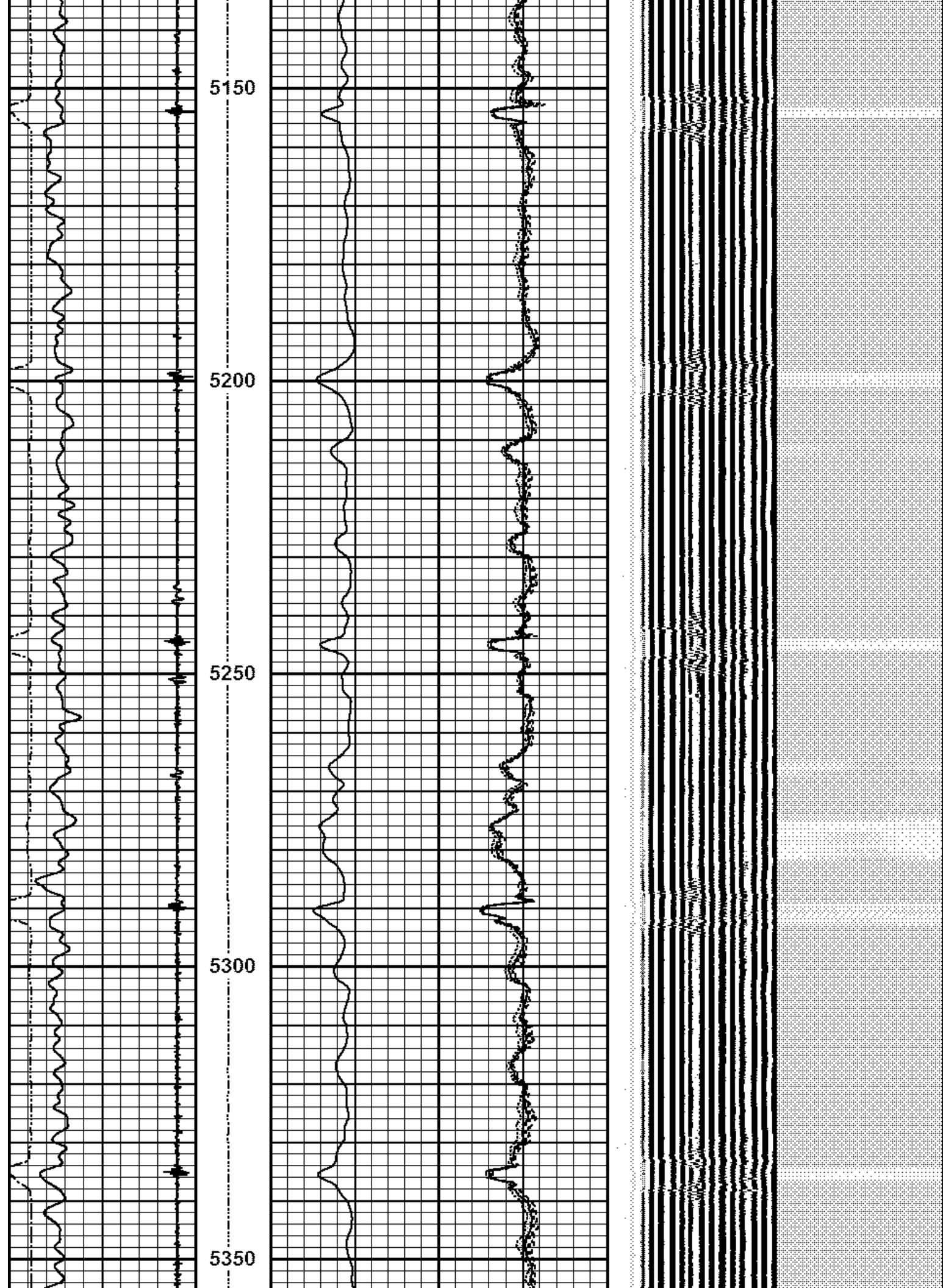
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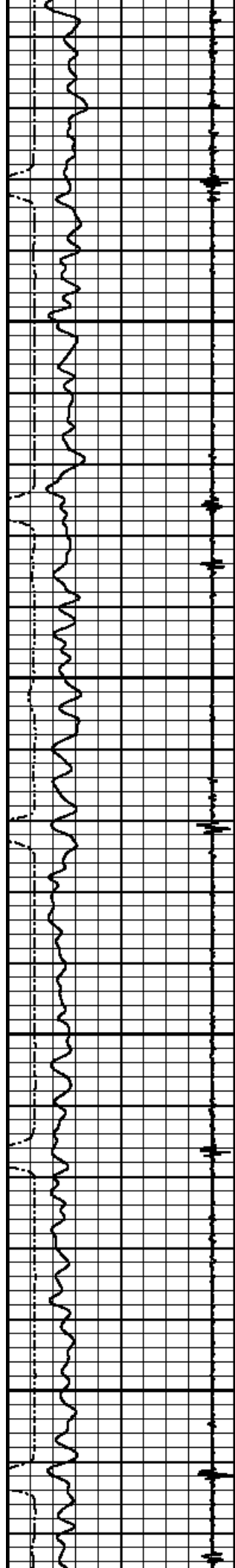
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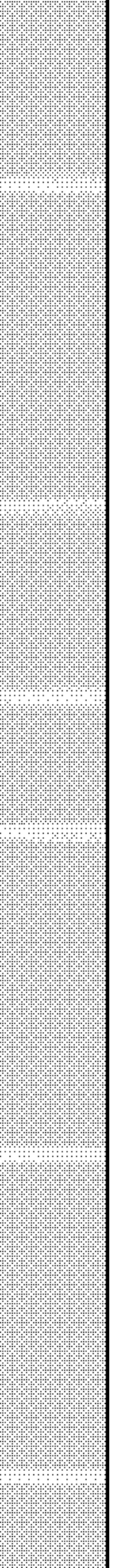
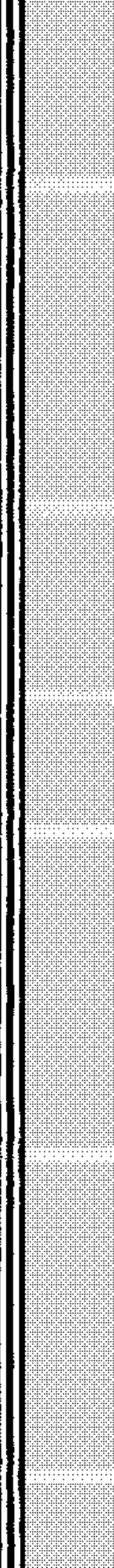
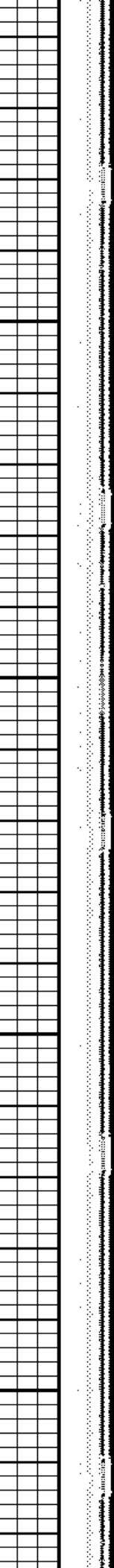
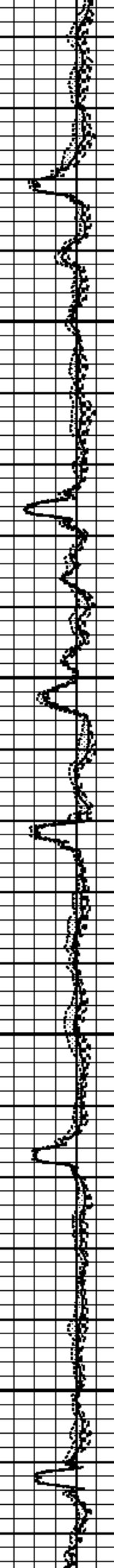
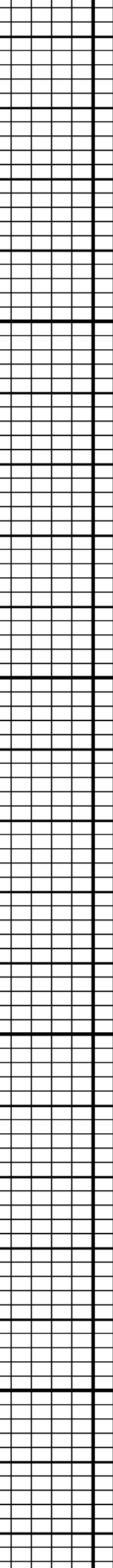
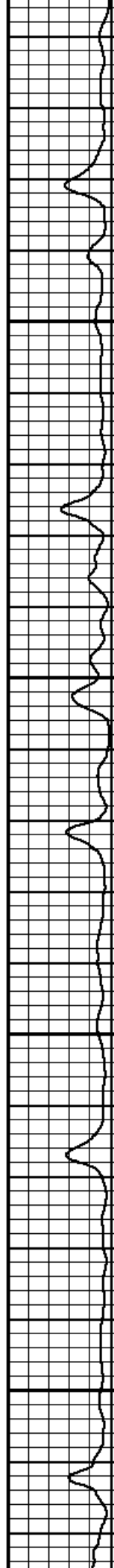


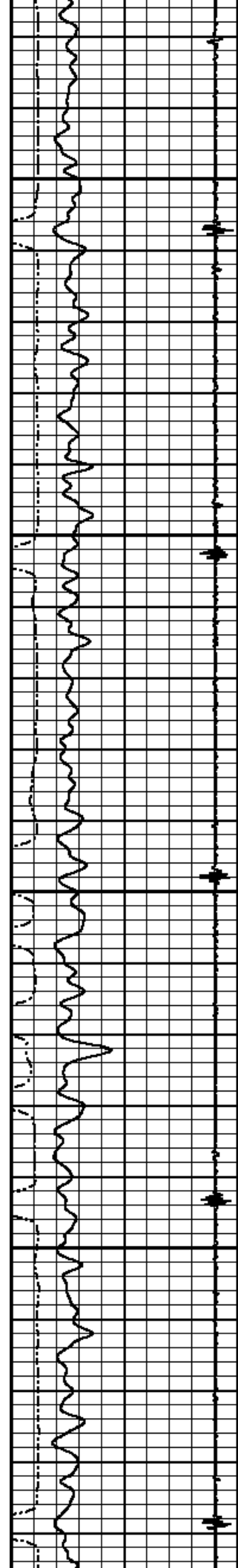
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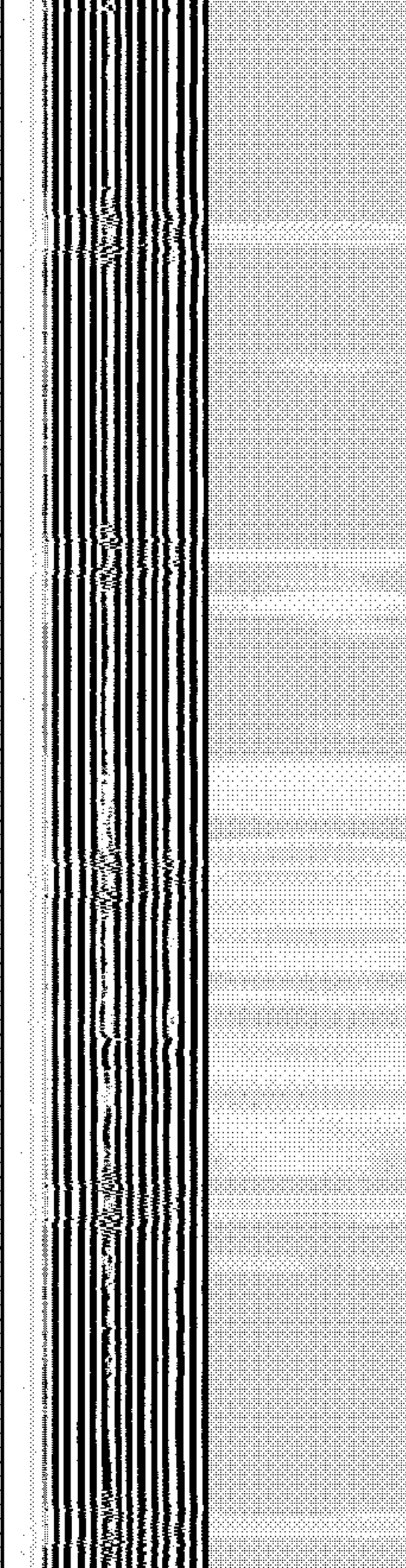
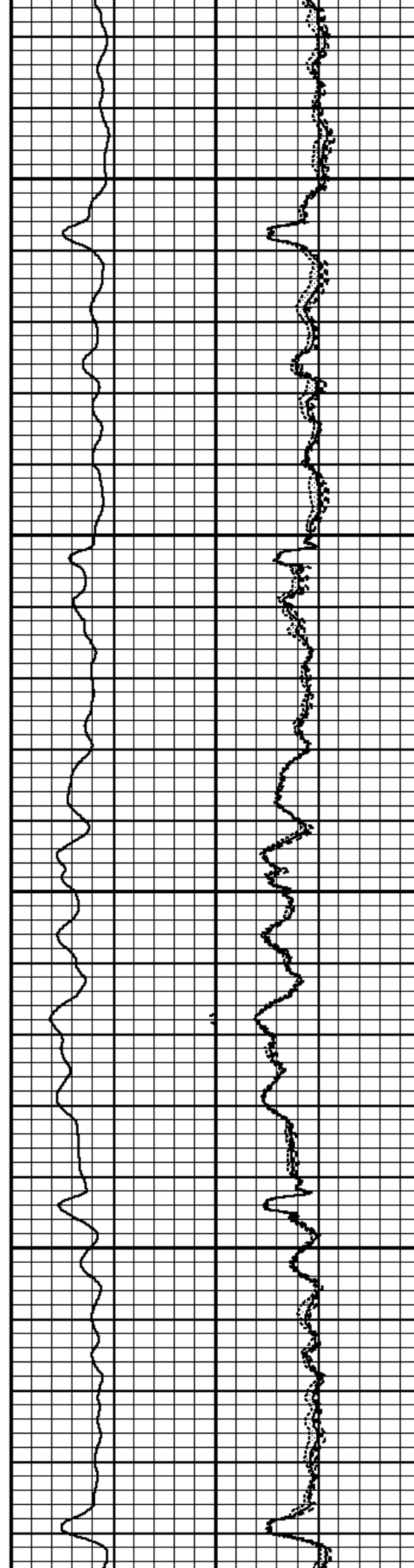


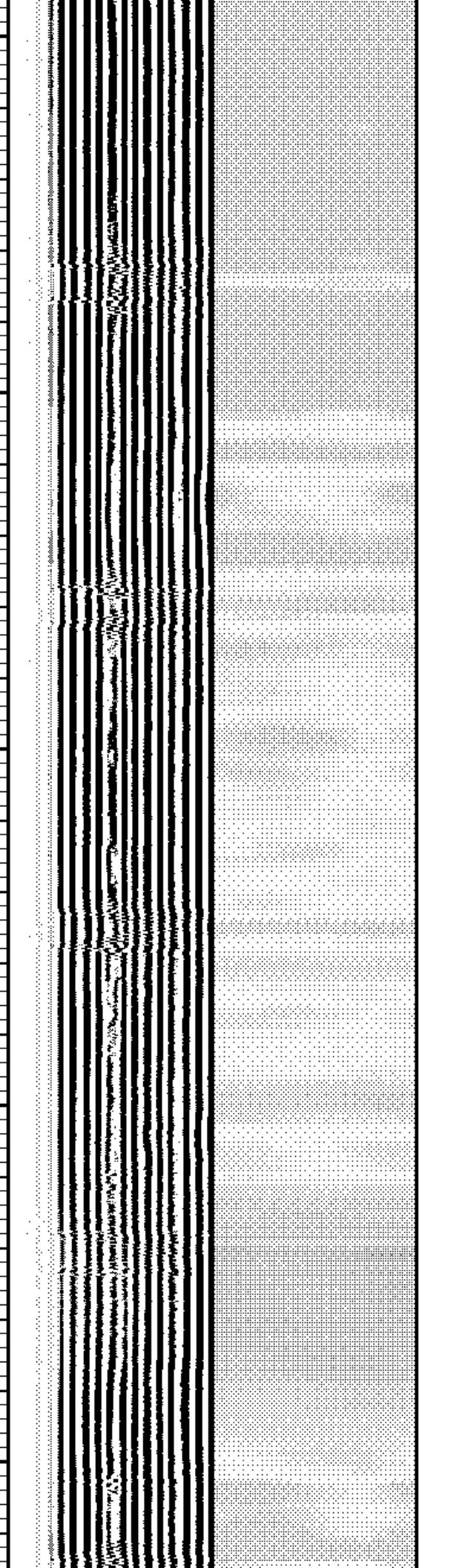
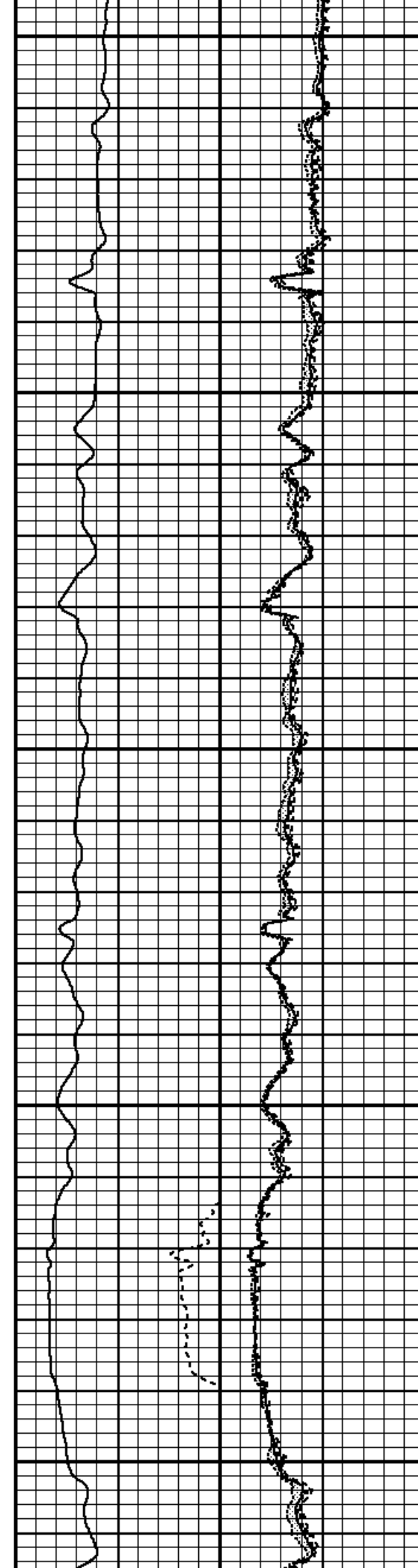
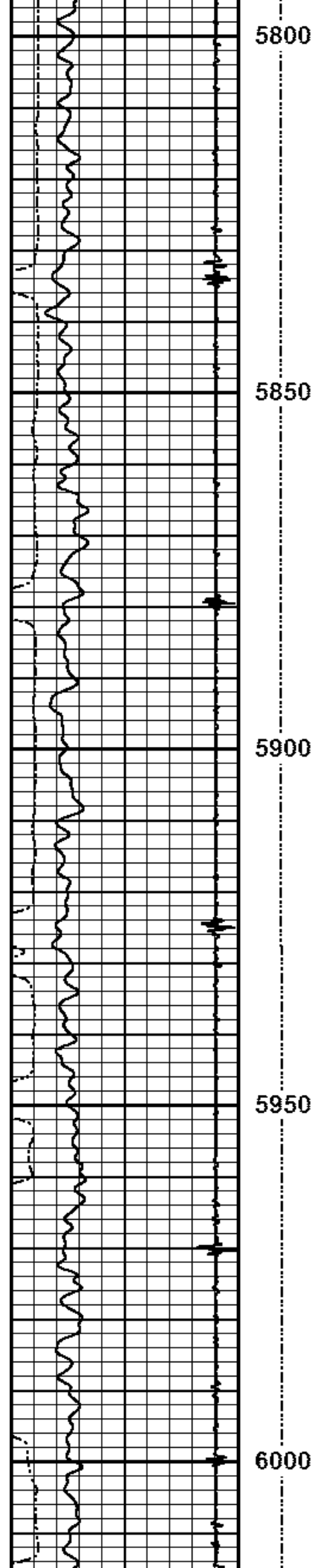
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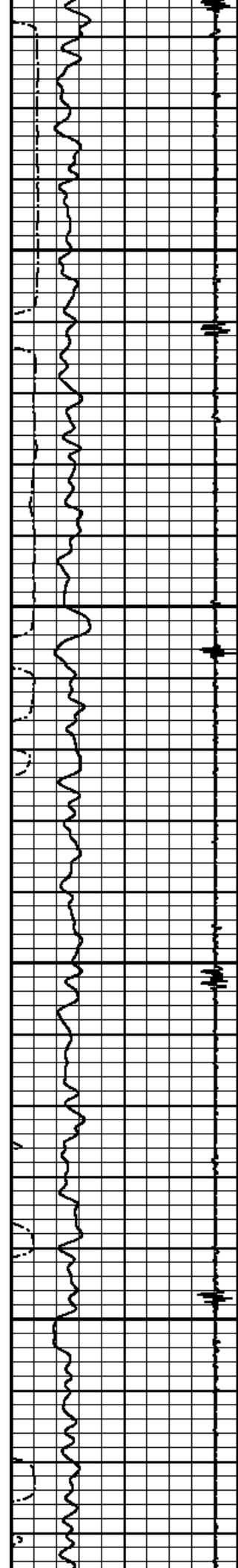
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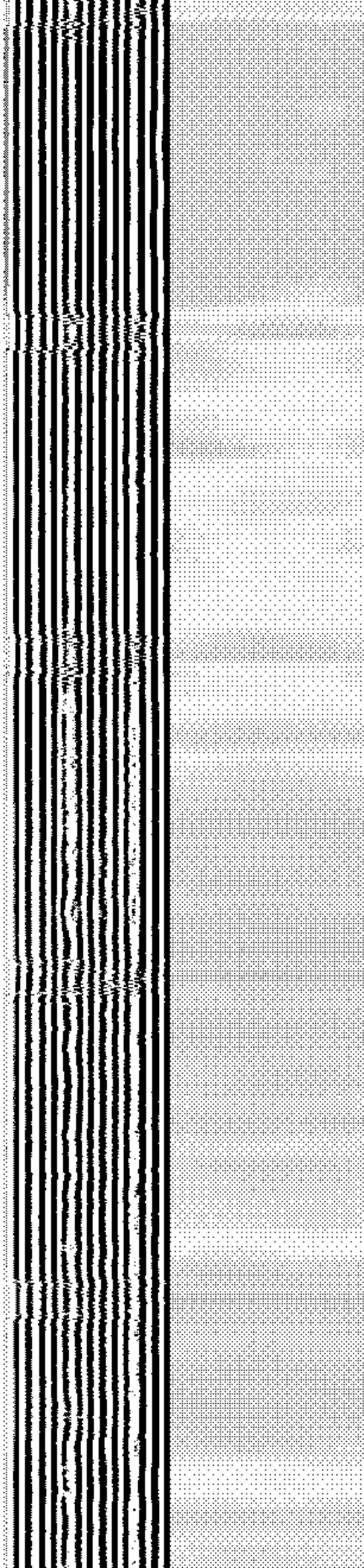
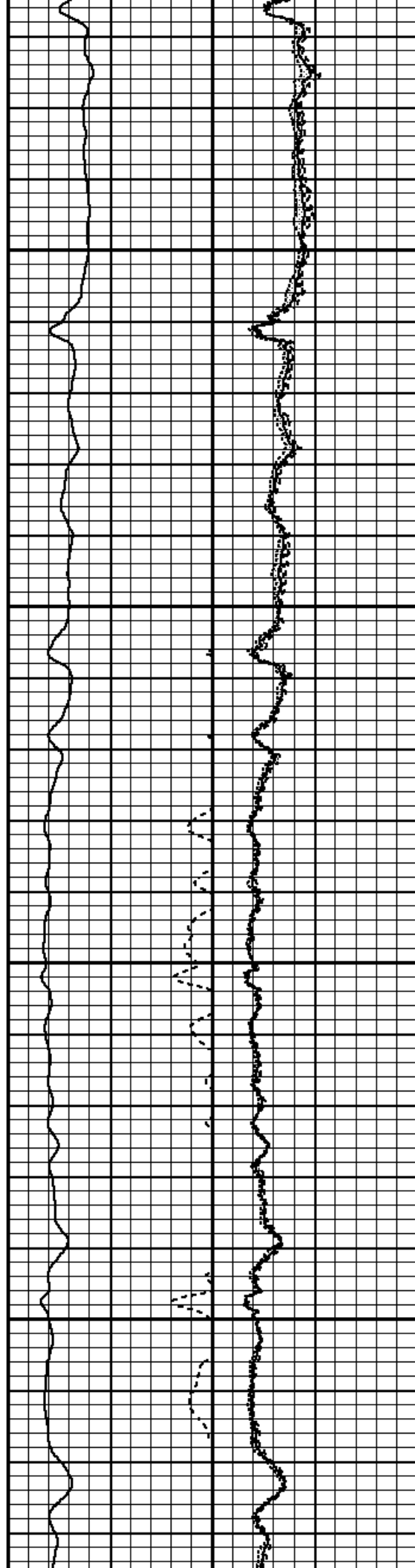


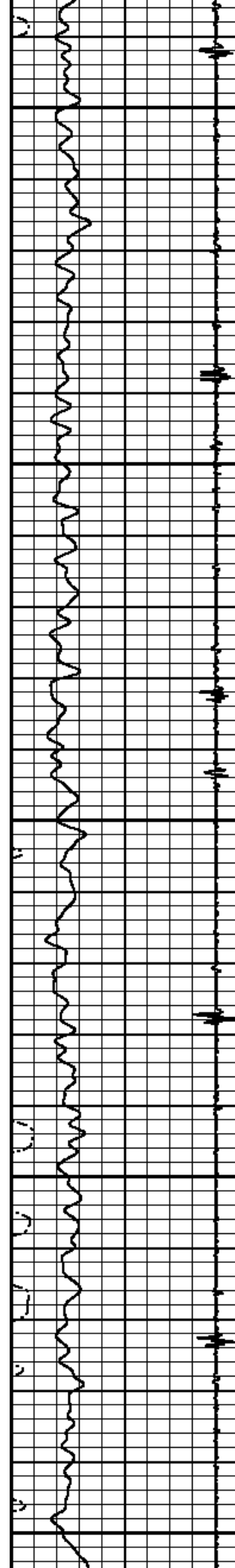
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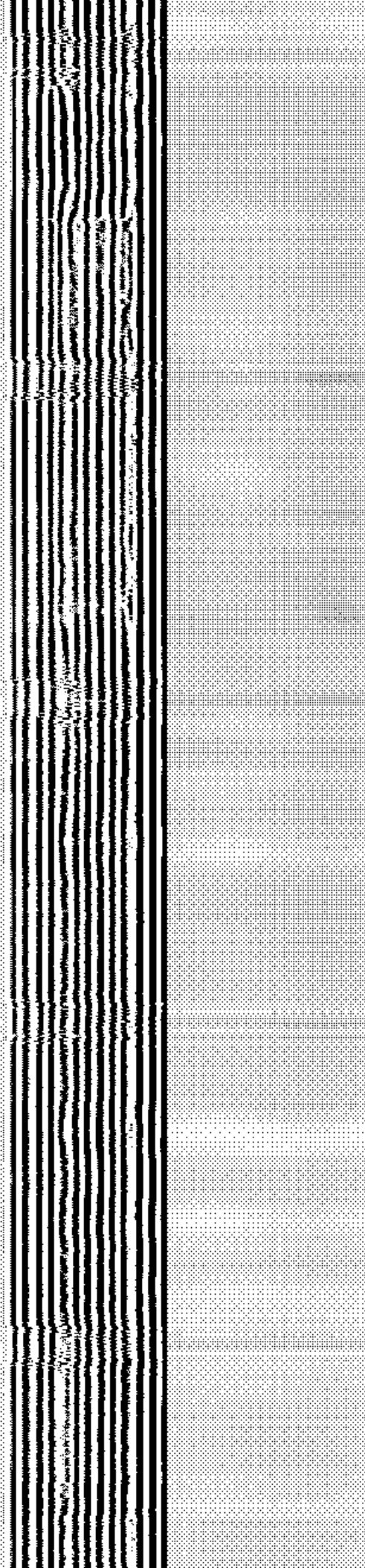
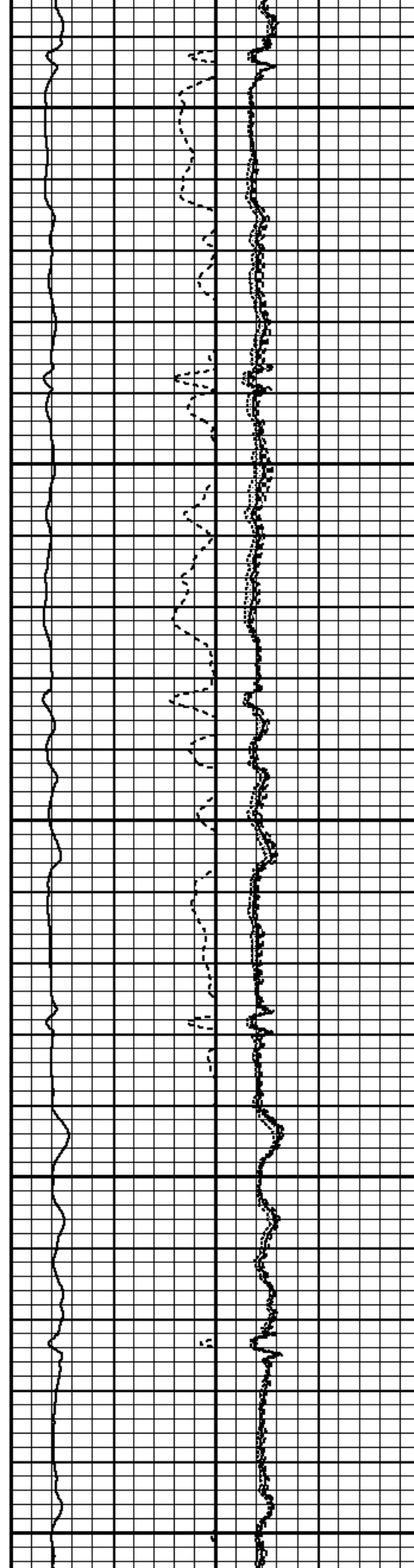
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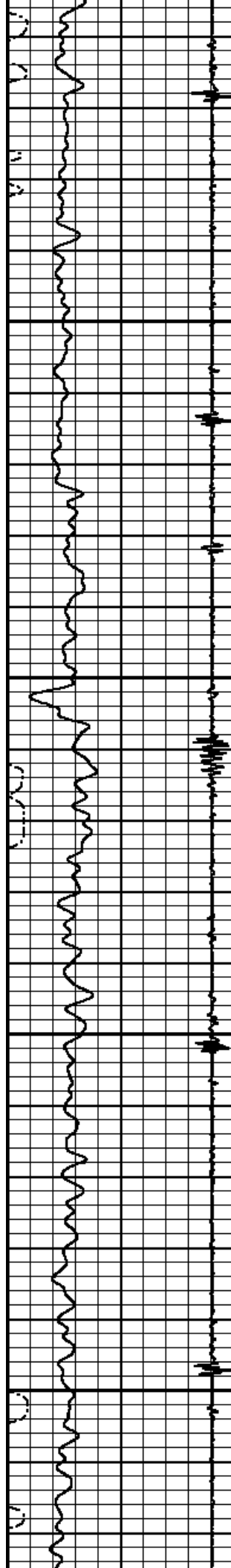
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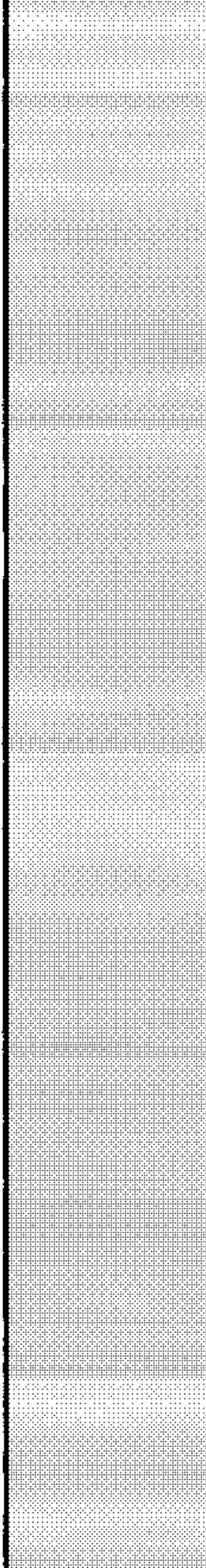
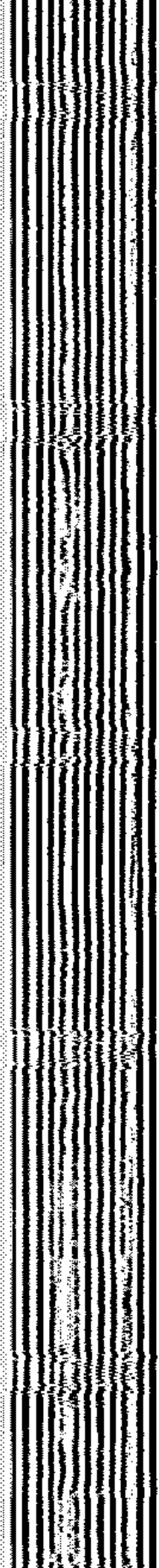
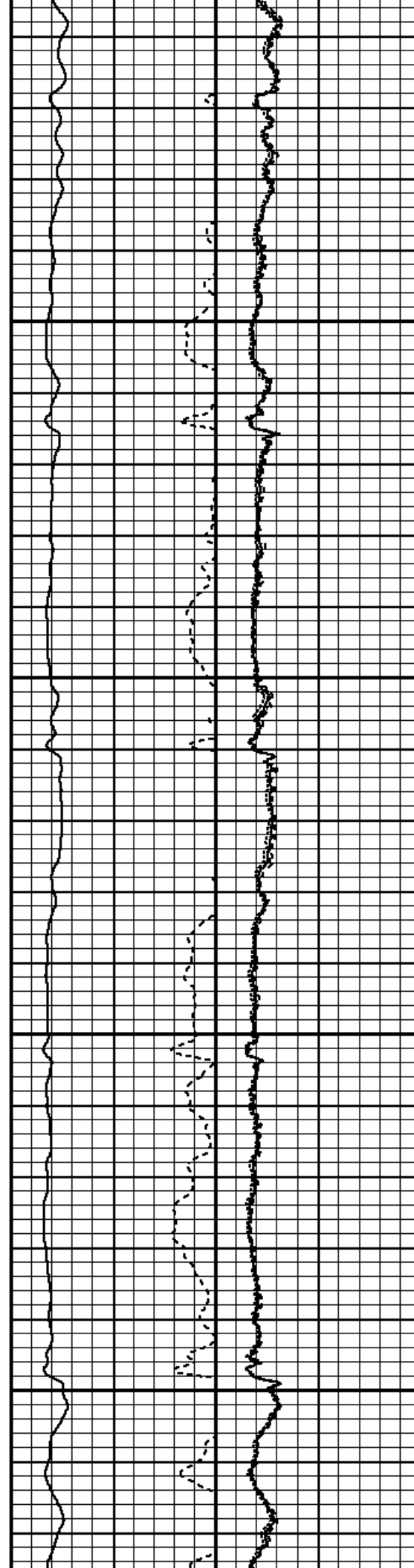


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6650



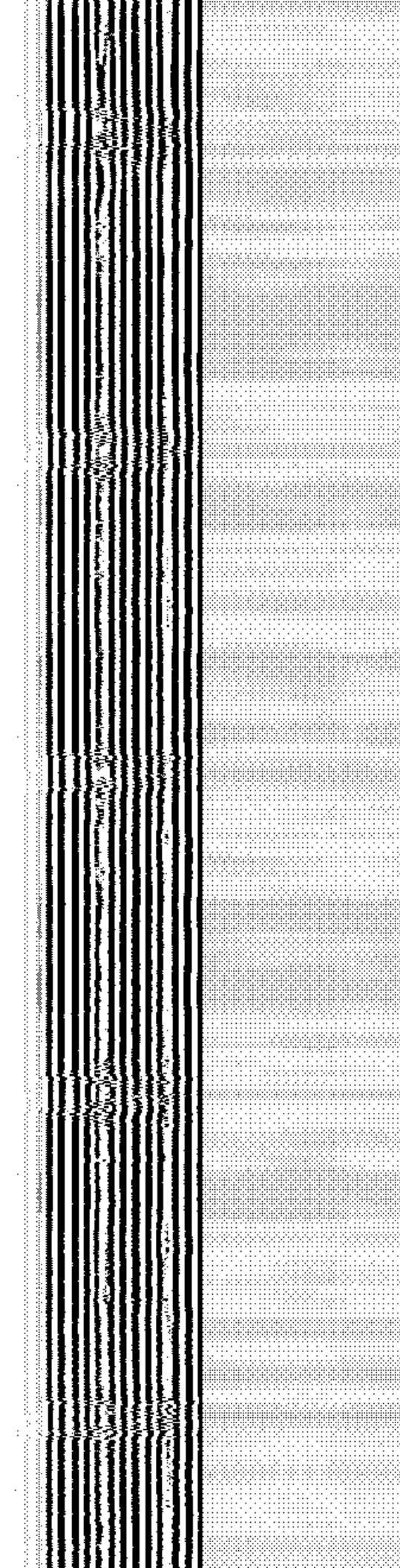
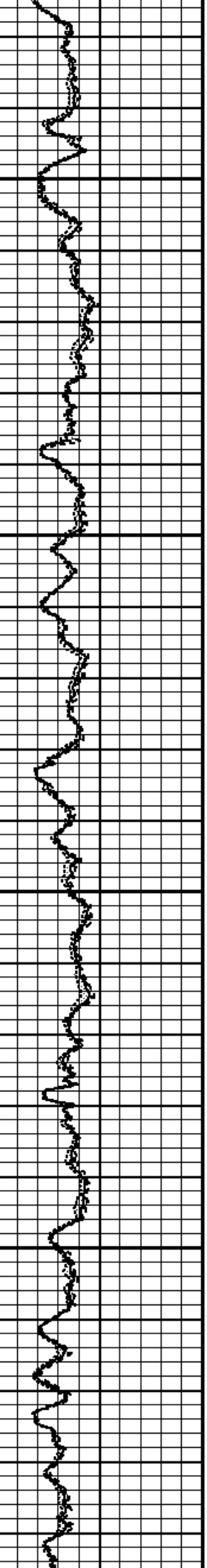
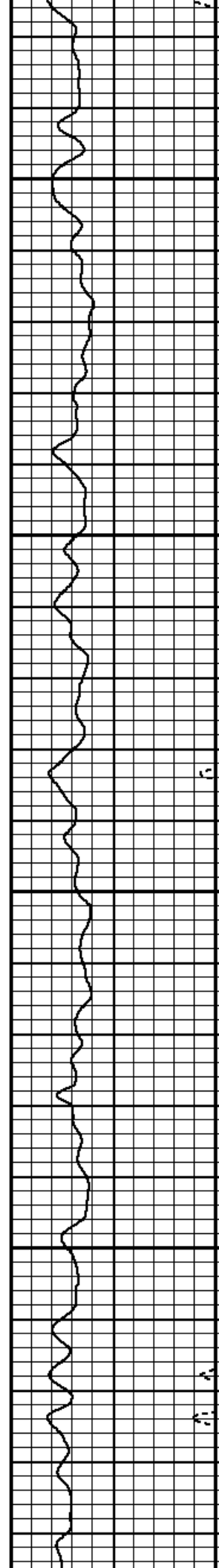


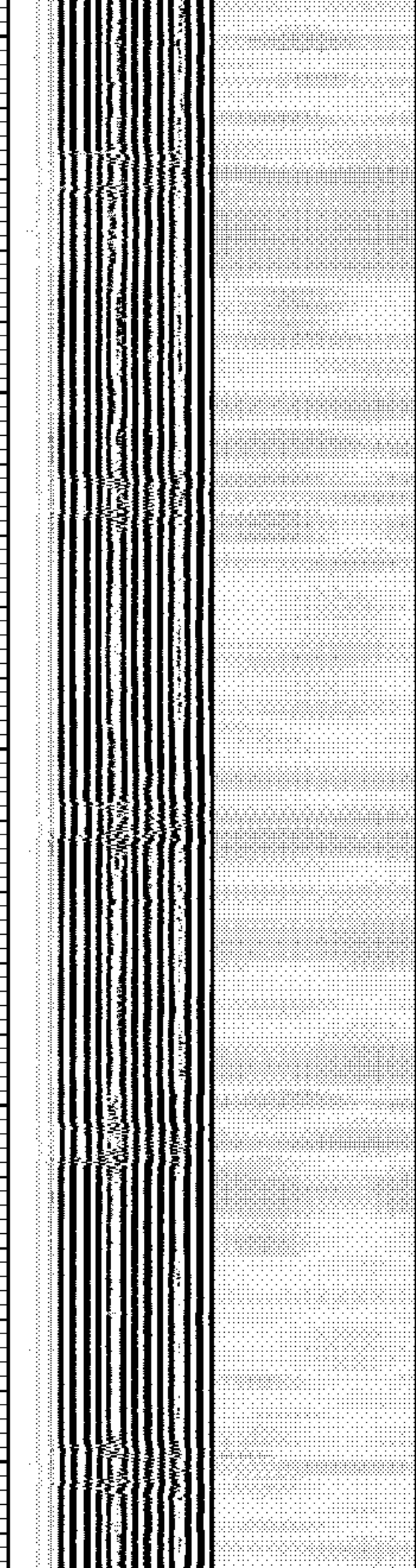
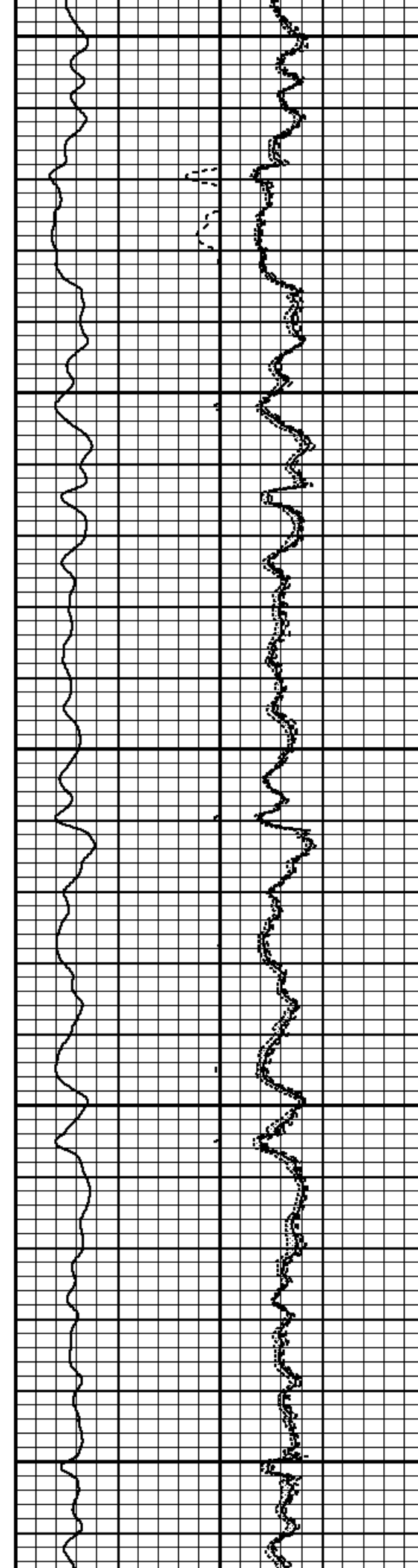
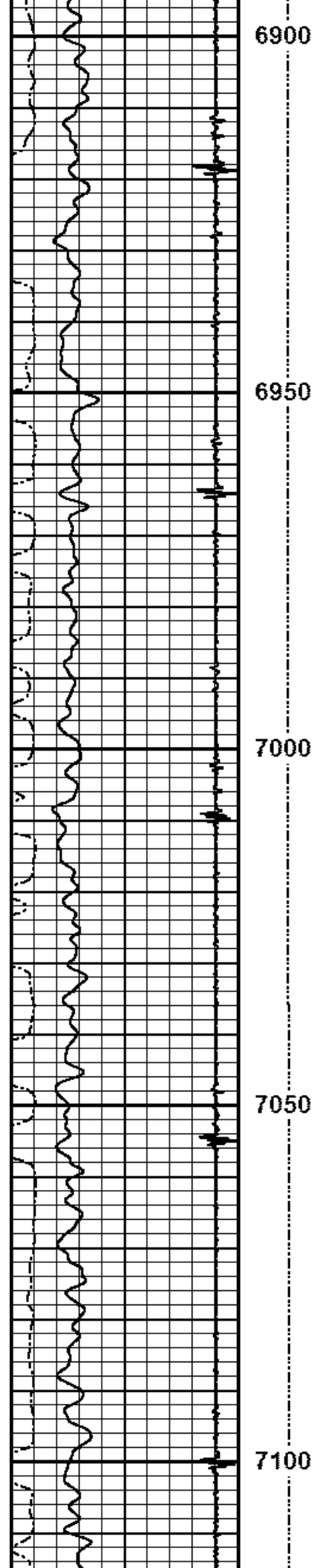
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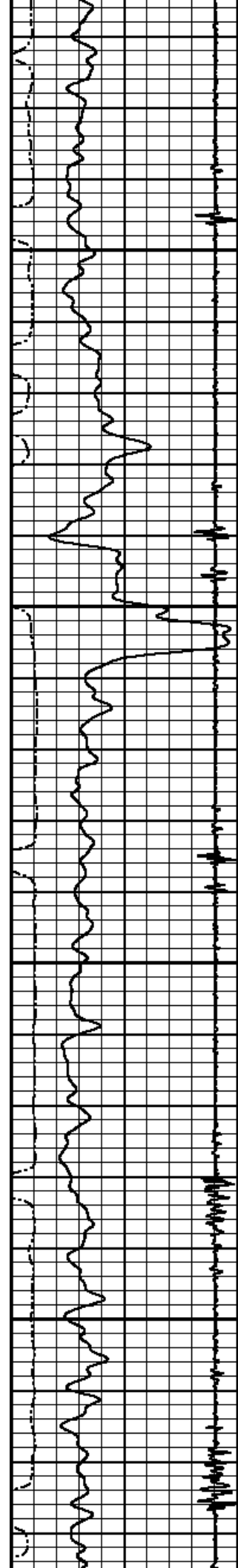
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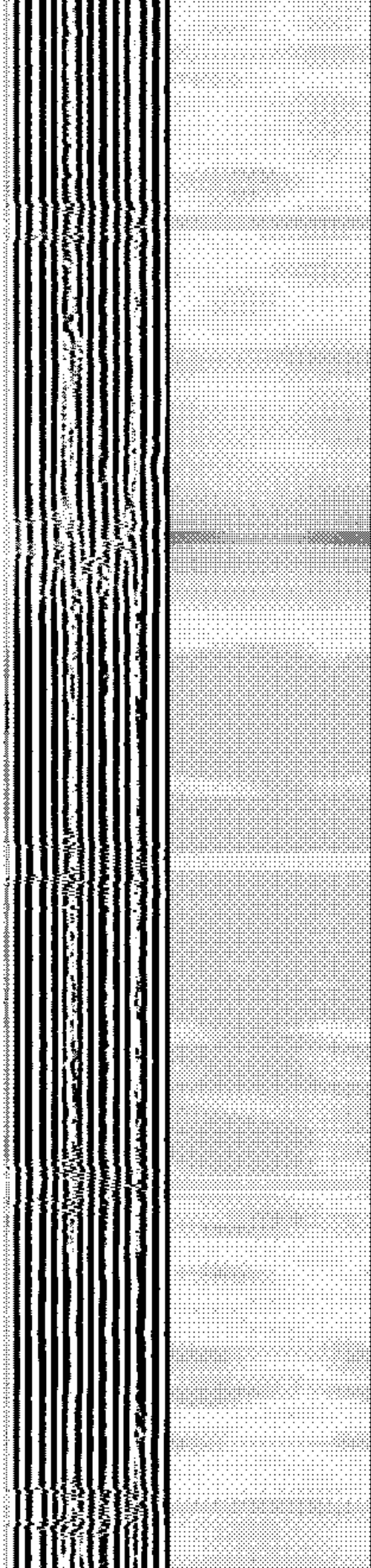
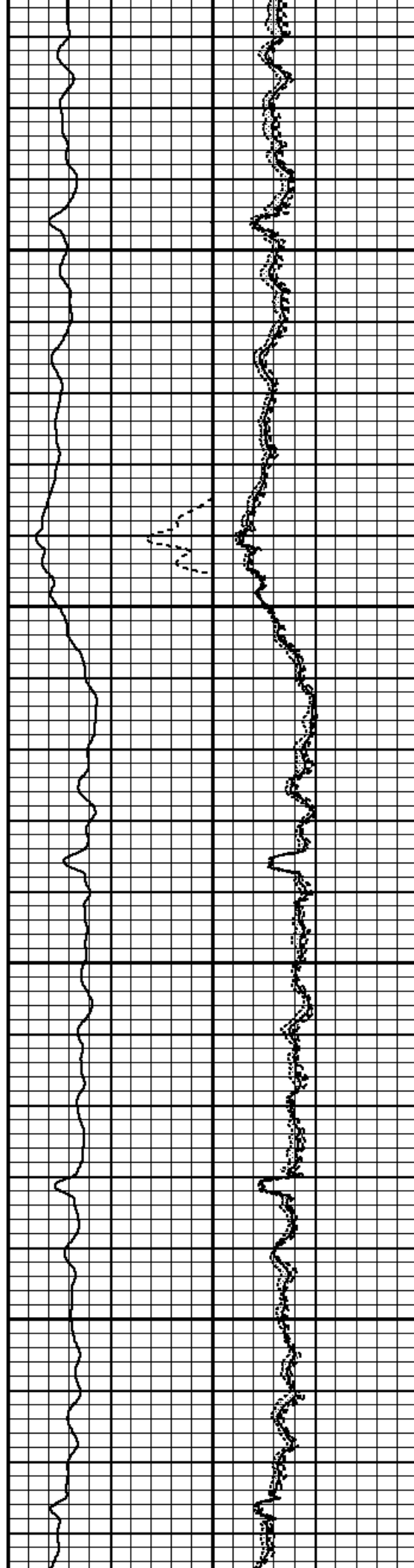


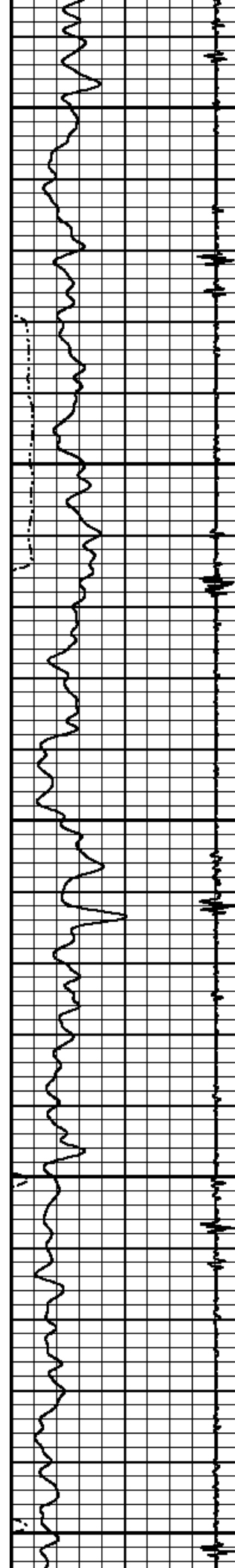
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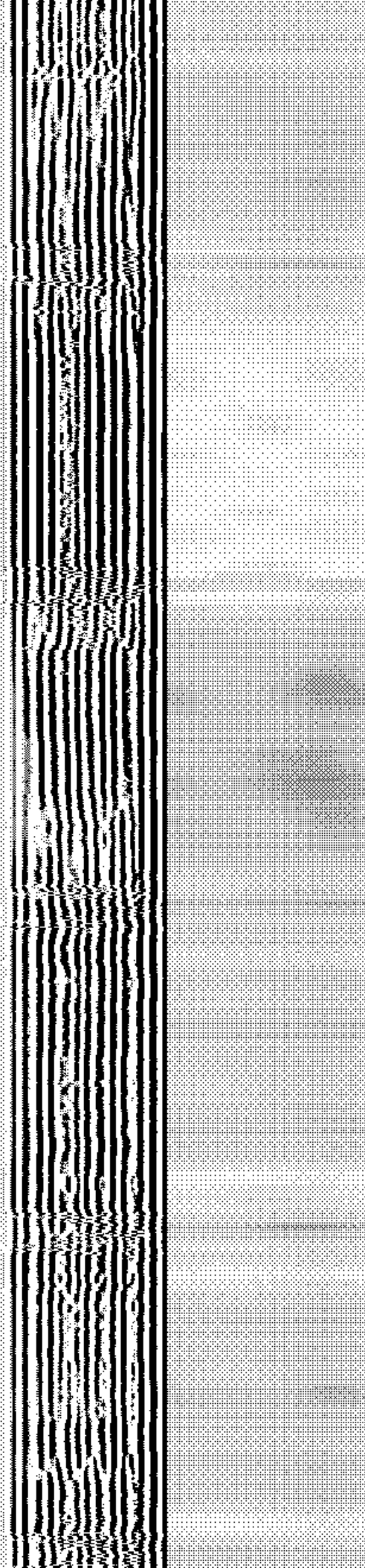
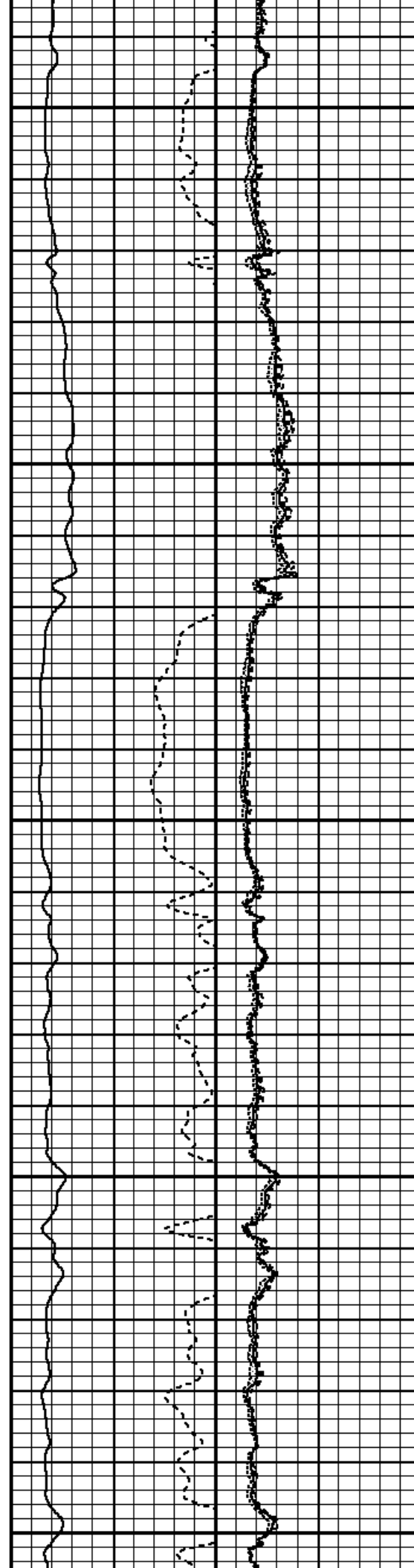
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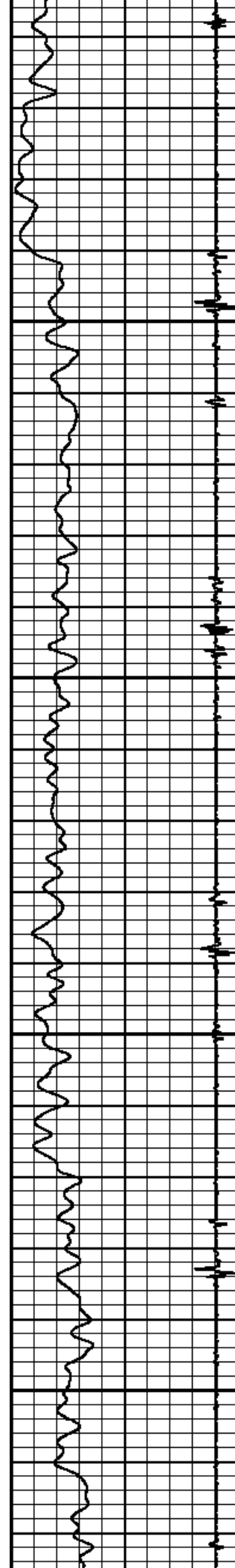
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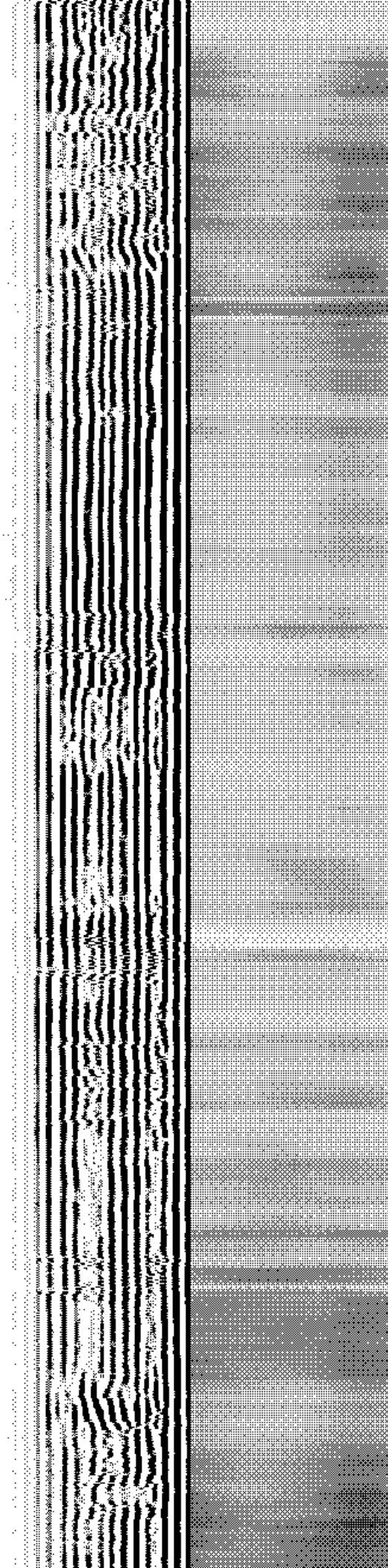
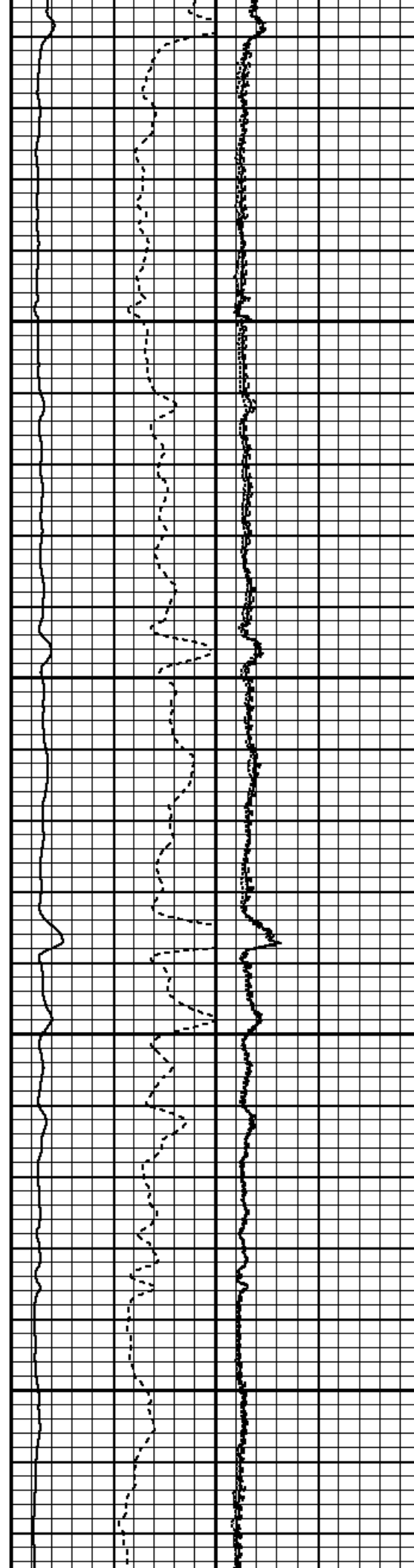


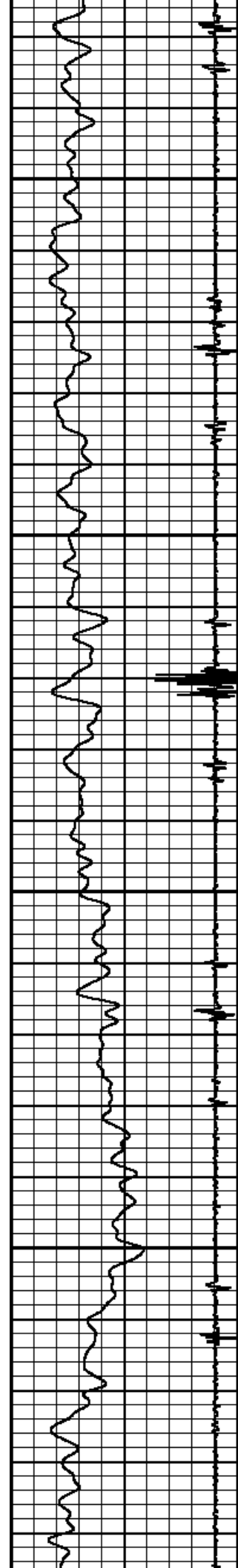
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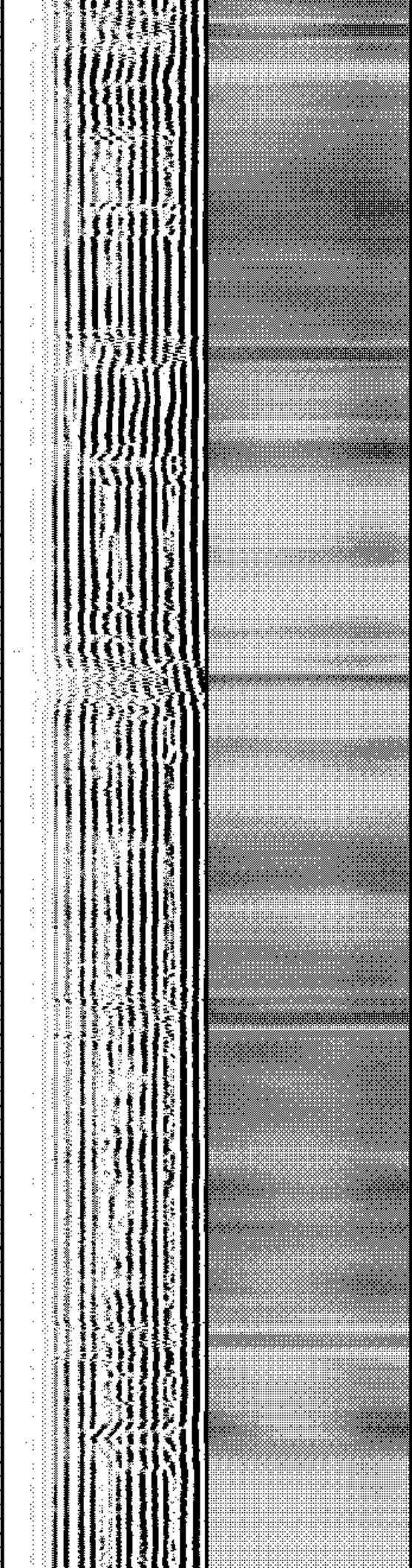
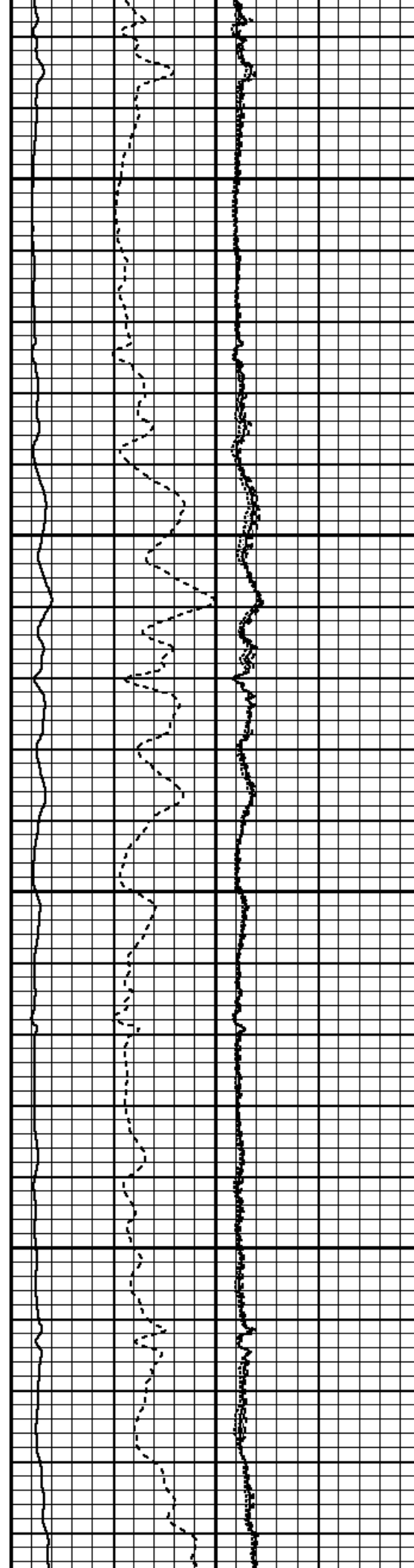


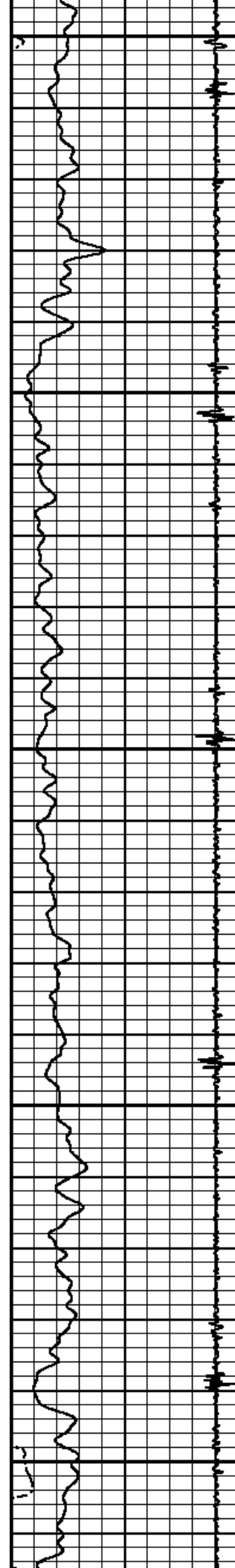
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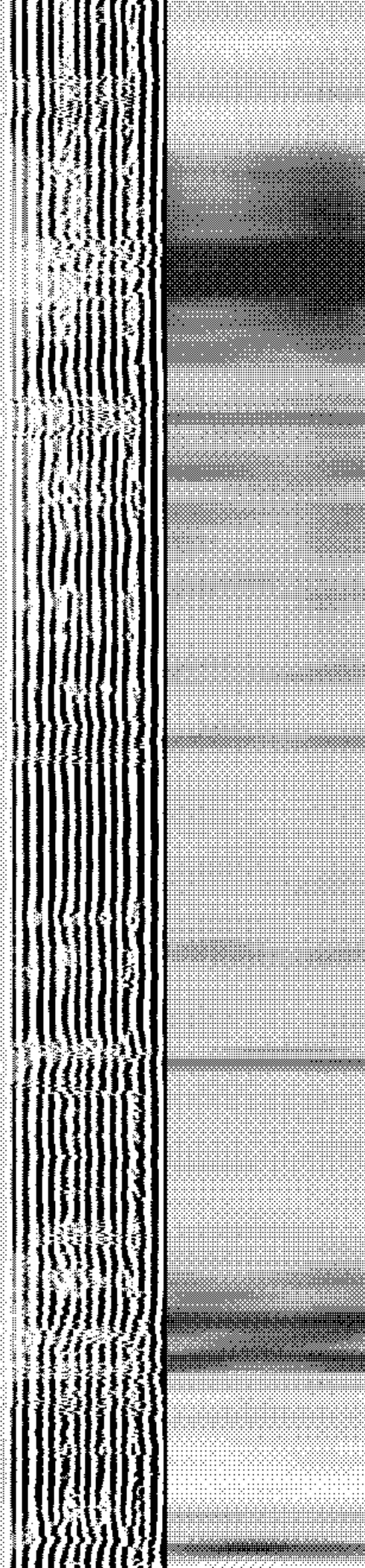
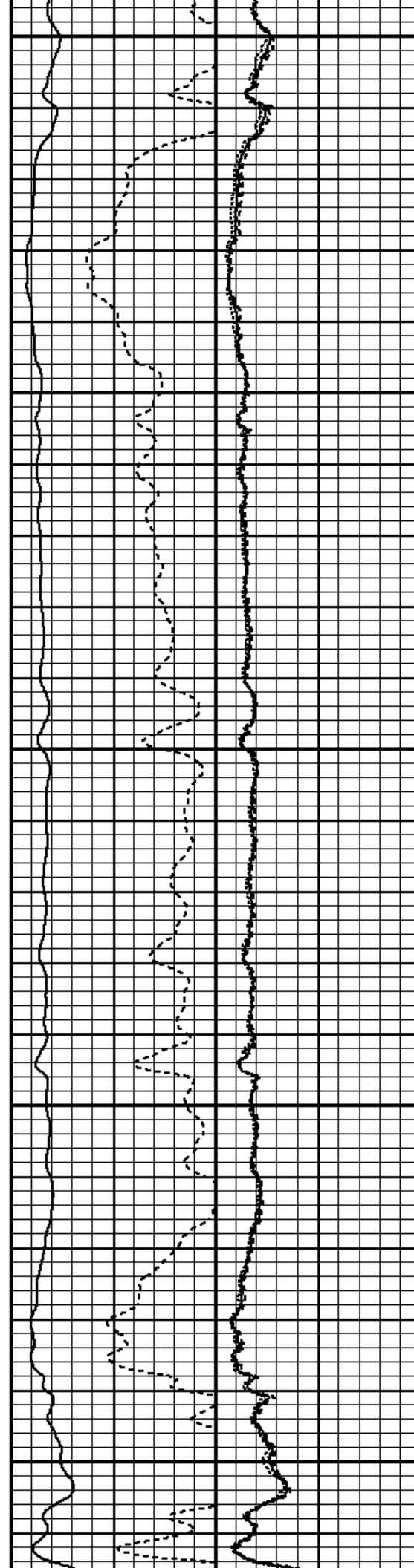
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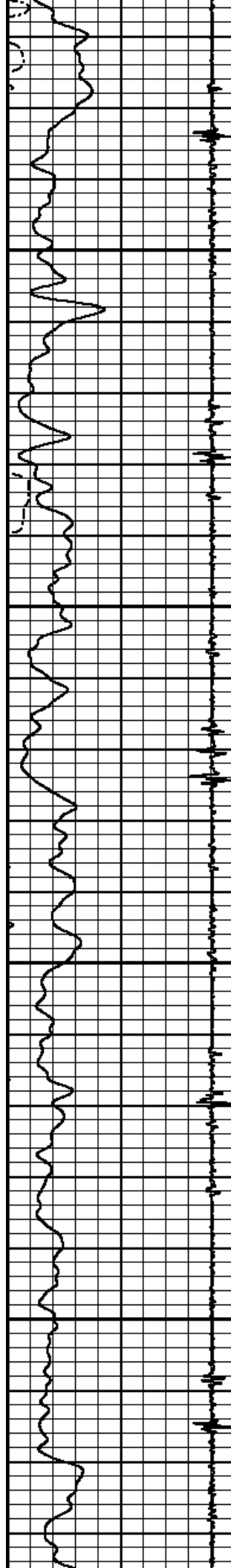
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8200



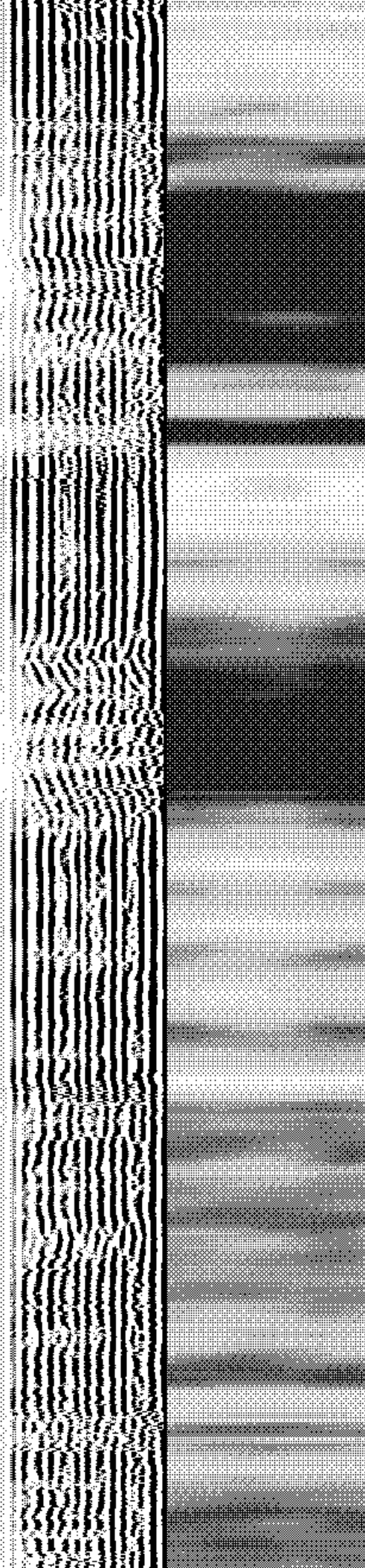
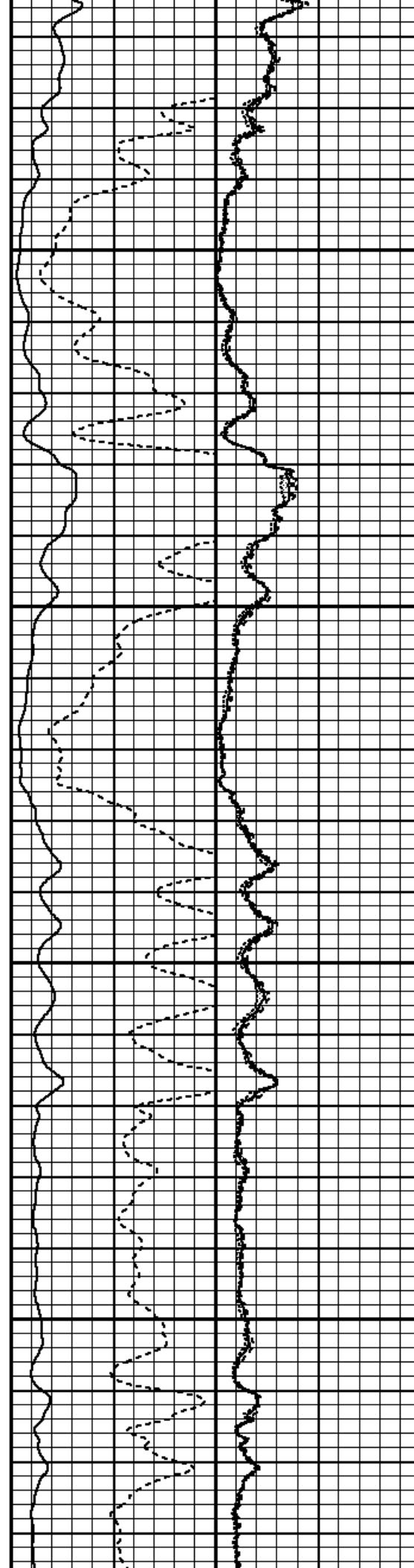


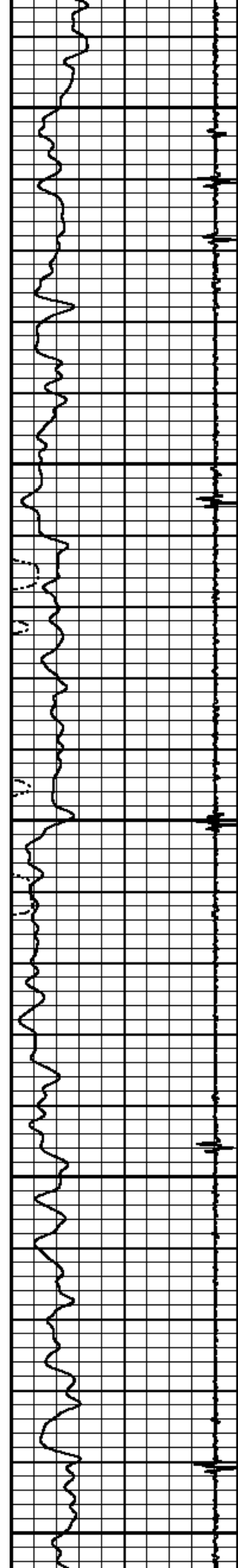
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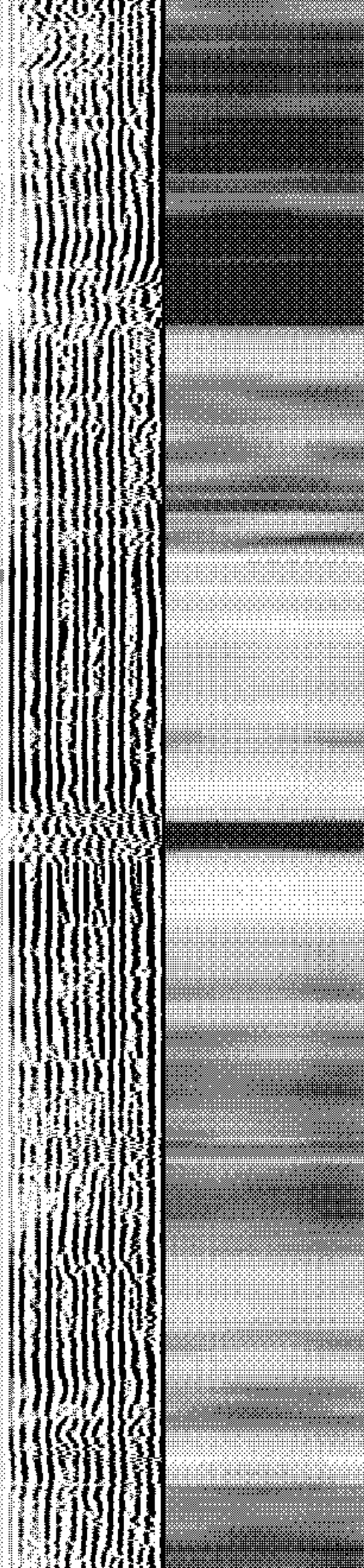
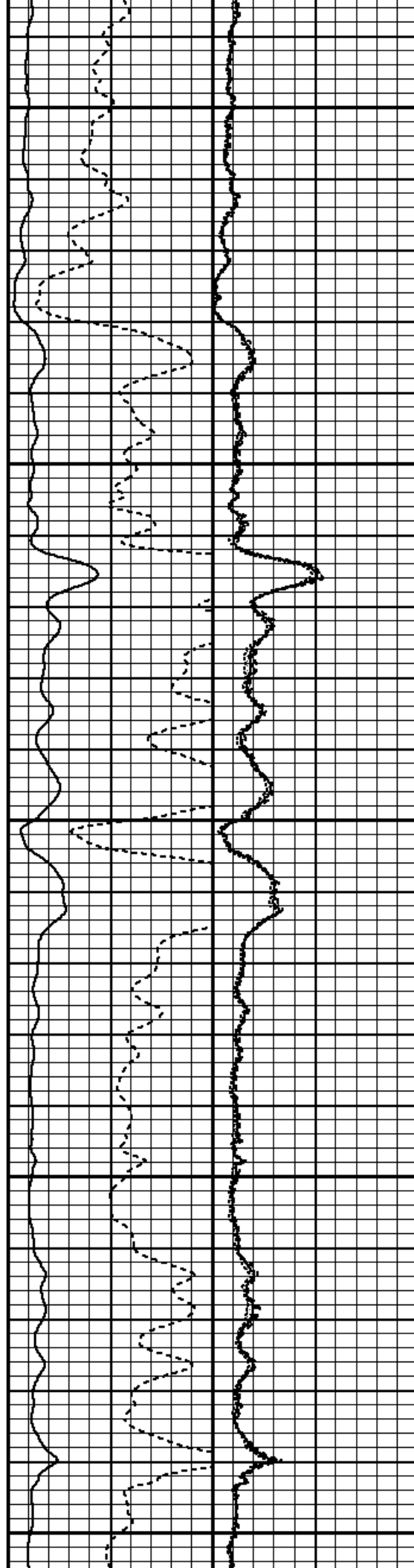
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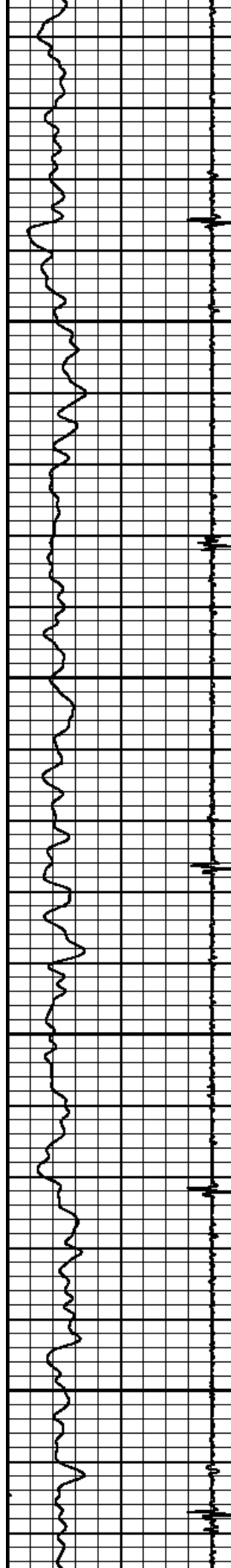
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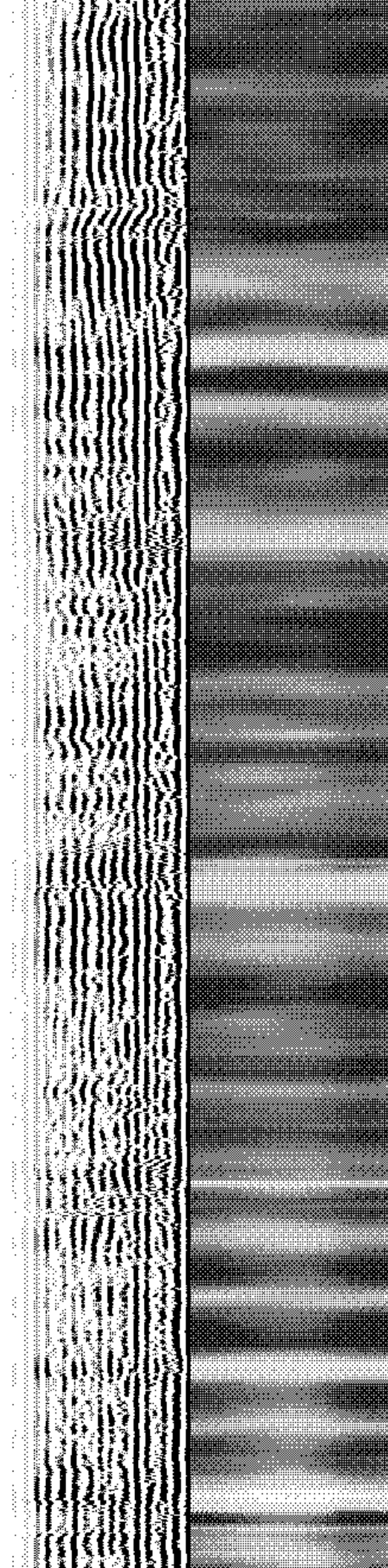
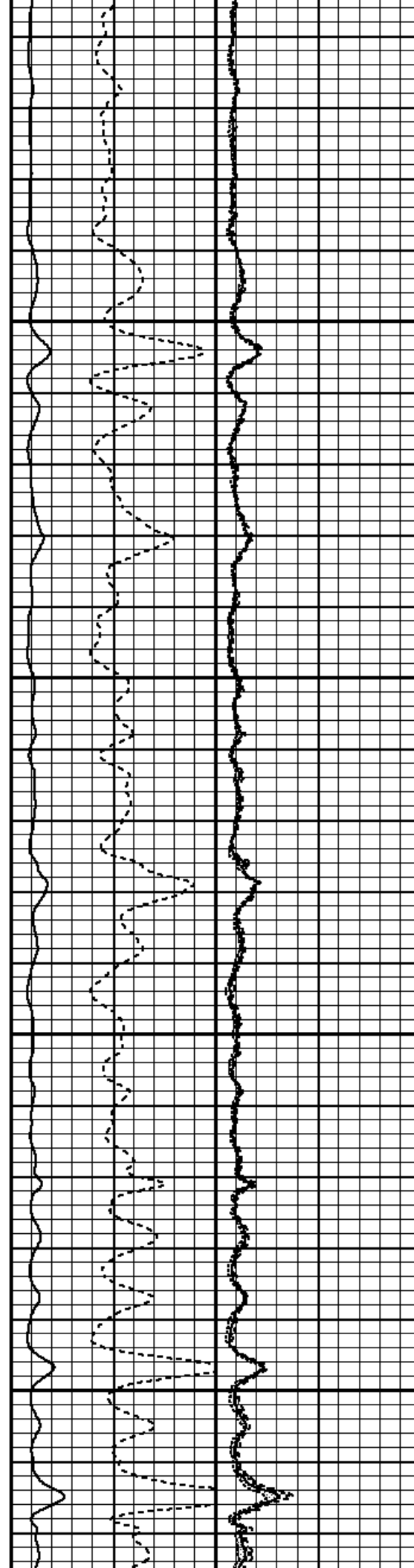


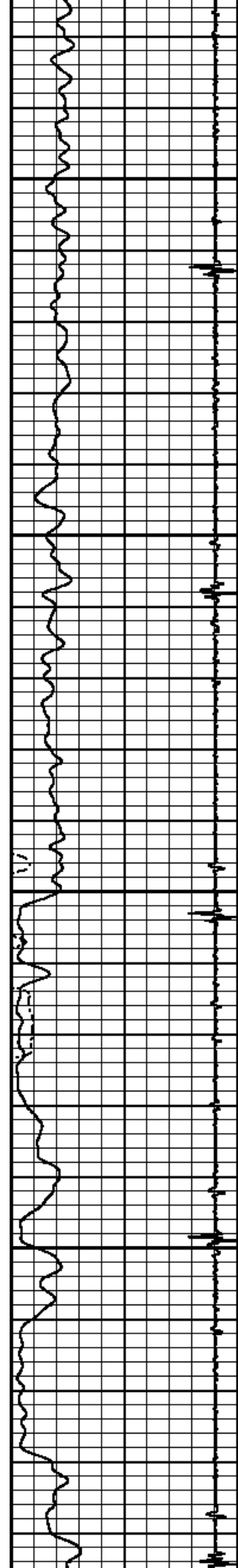
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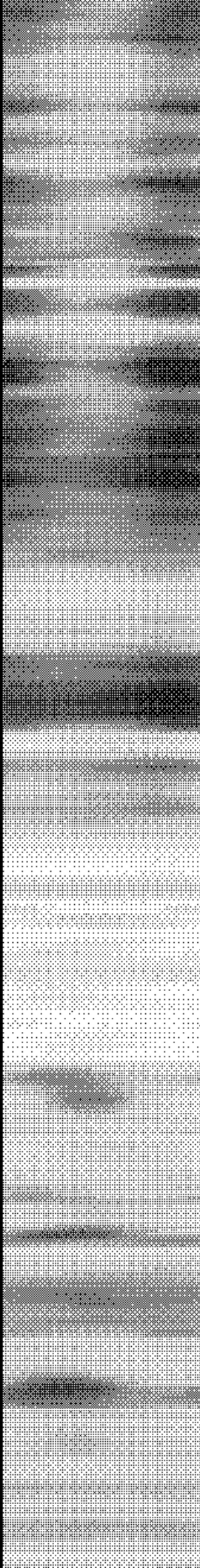
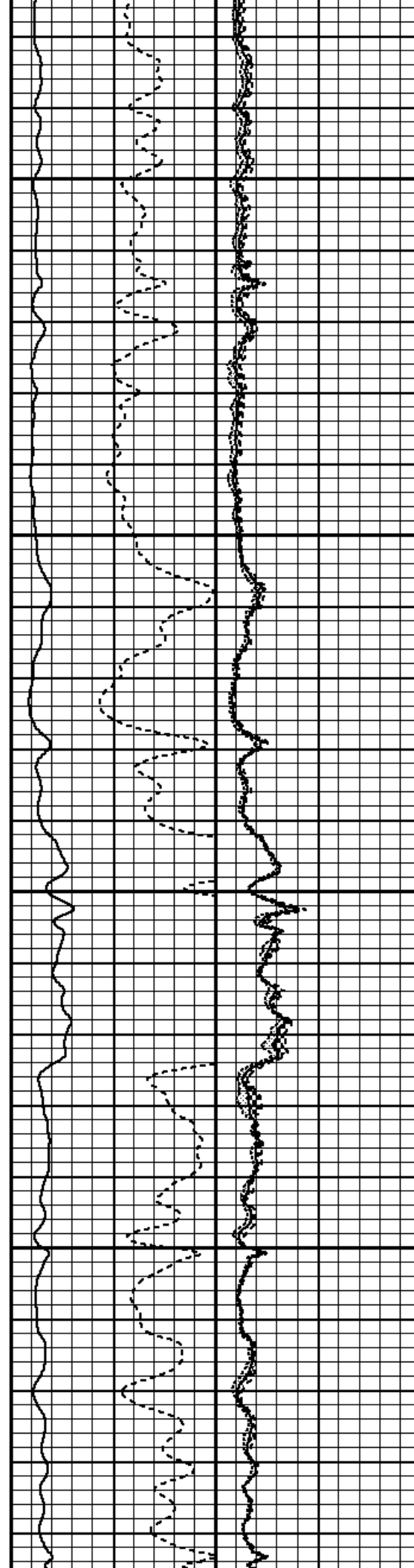


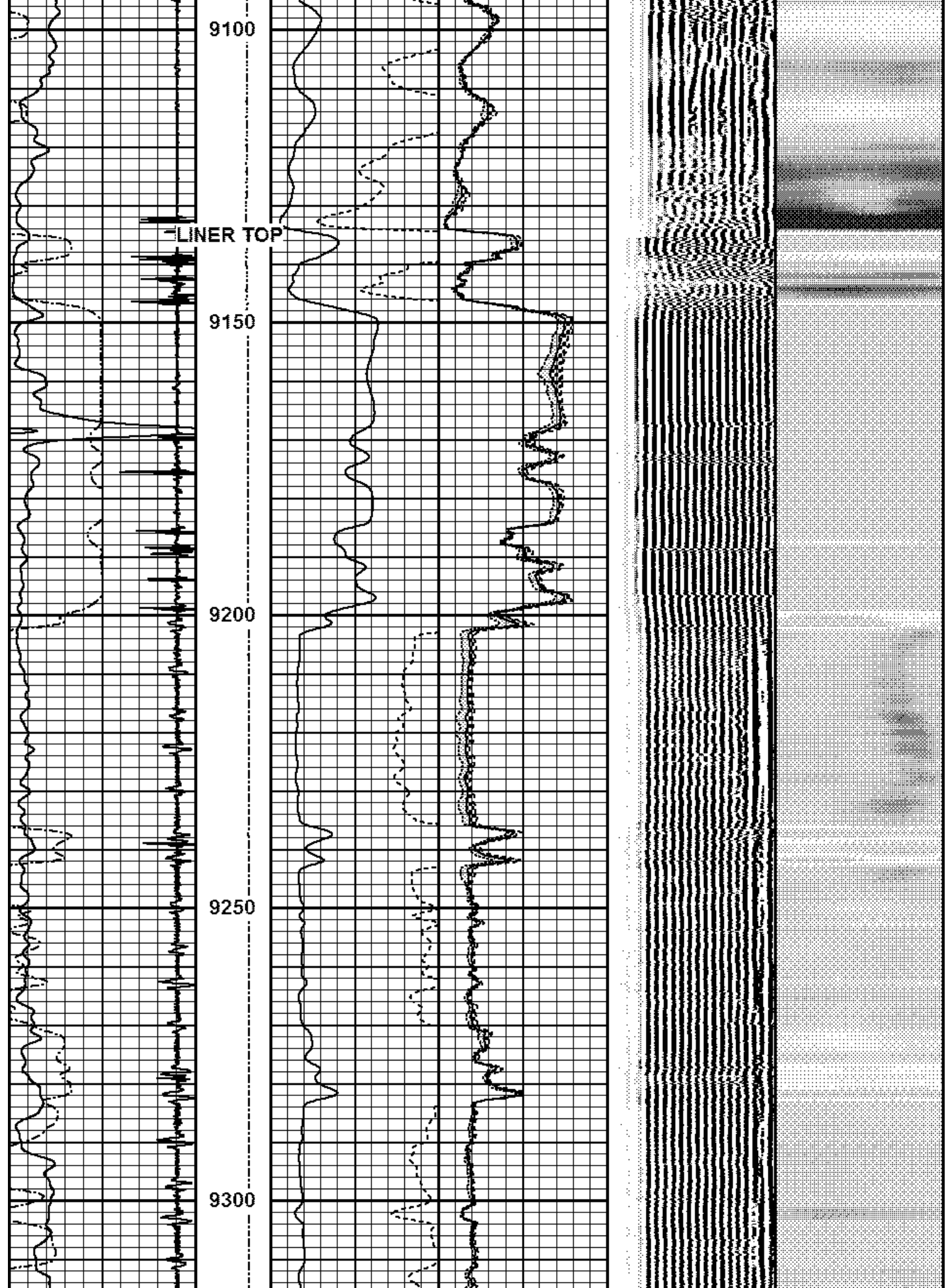
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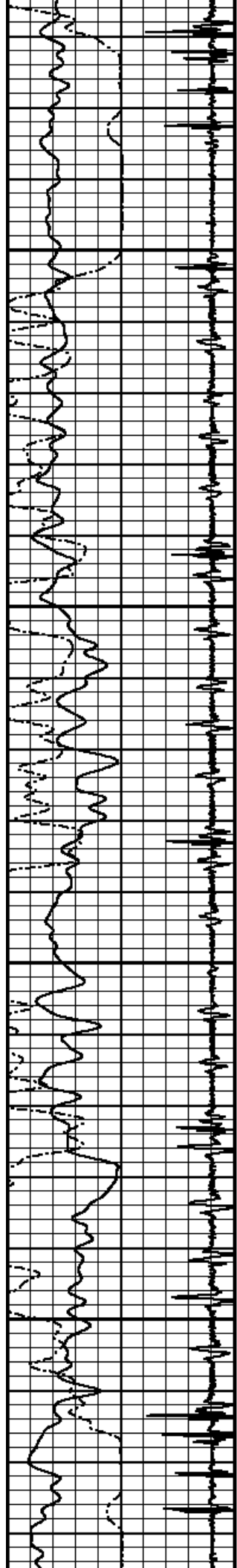
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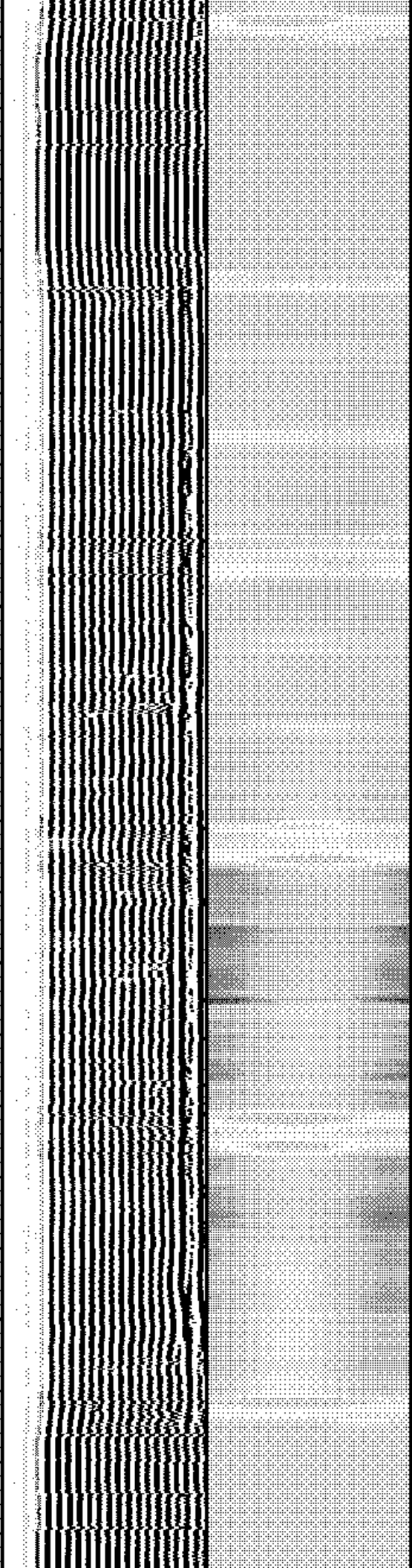
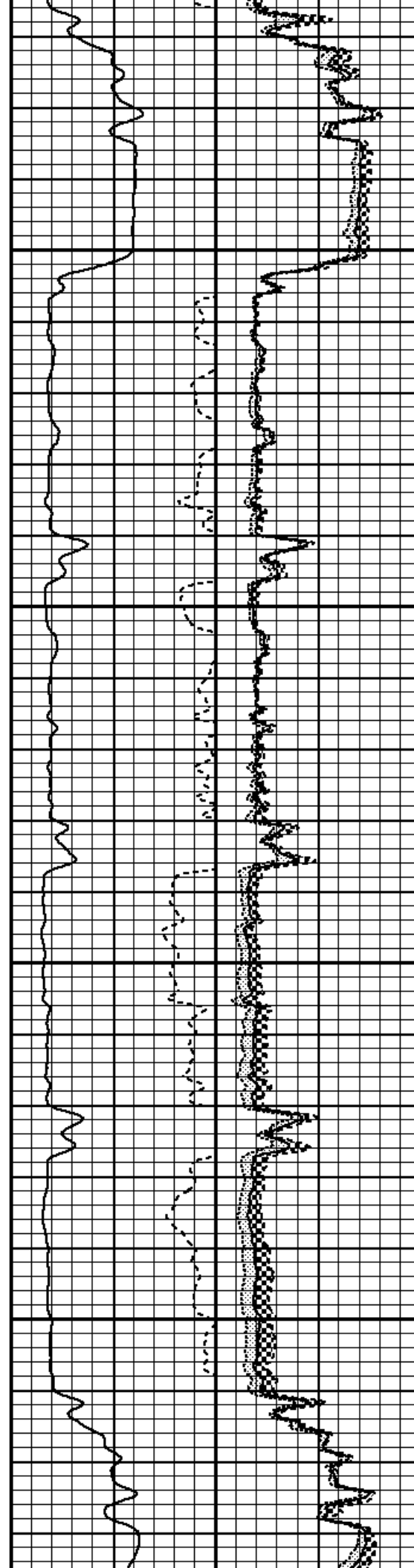


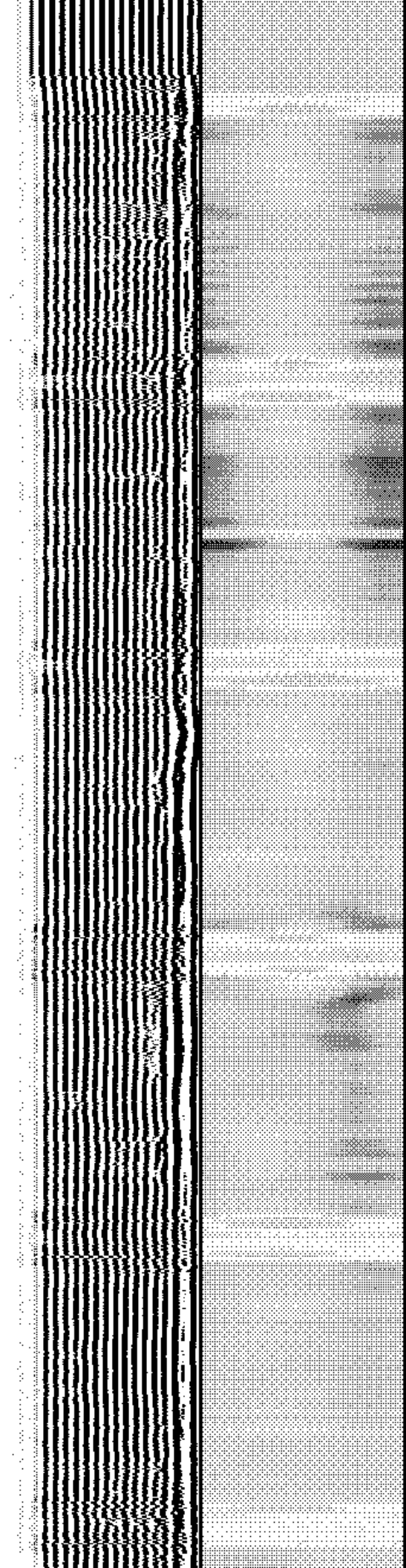
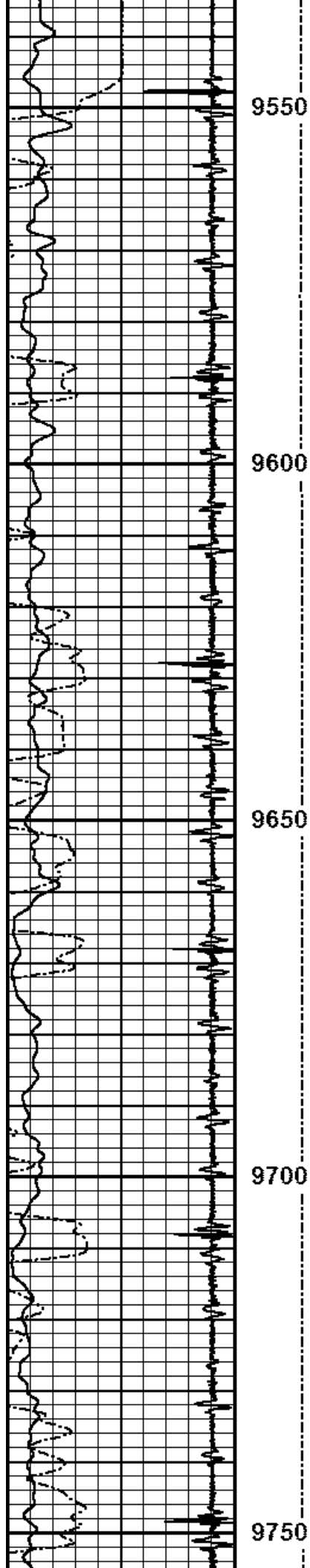
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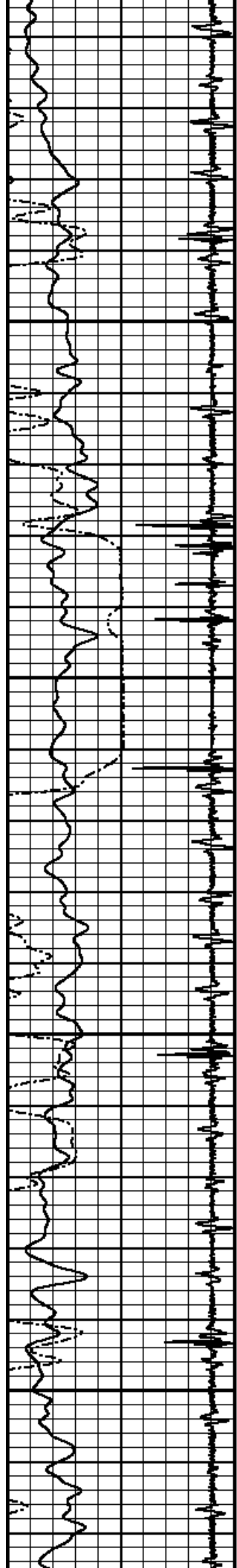
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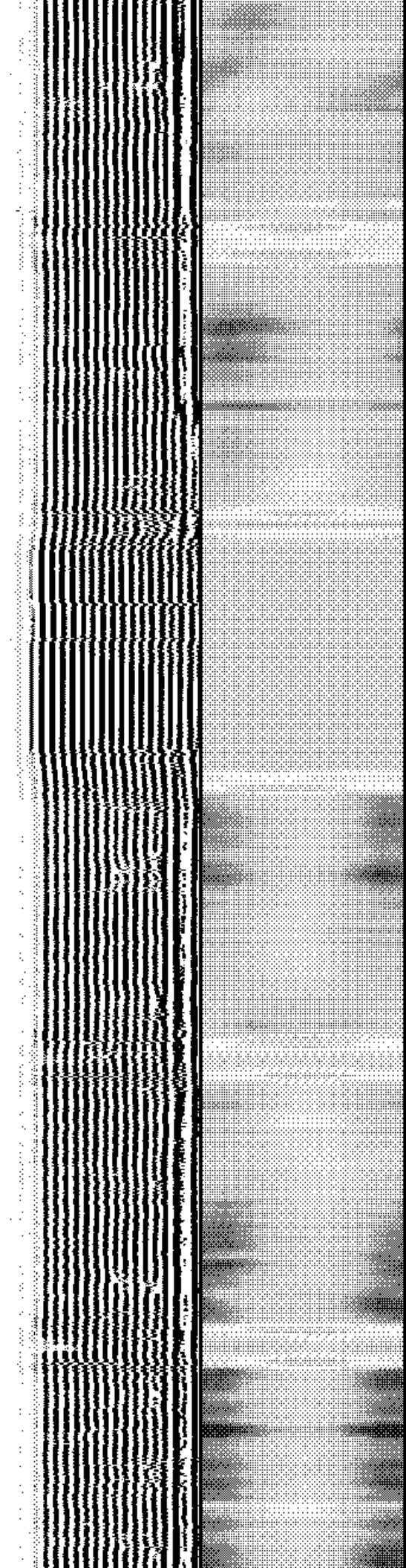
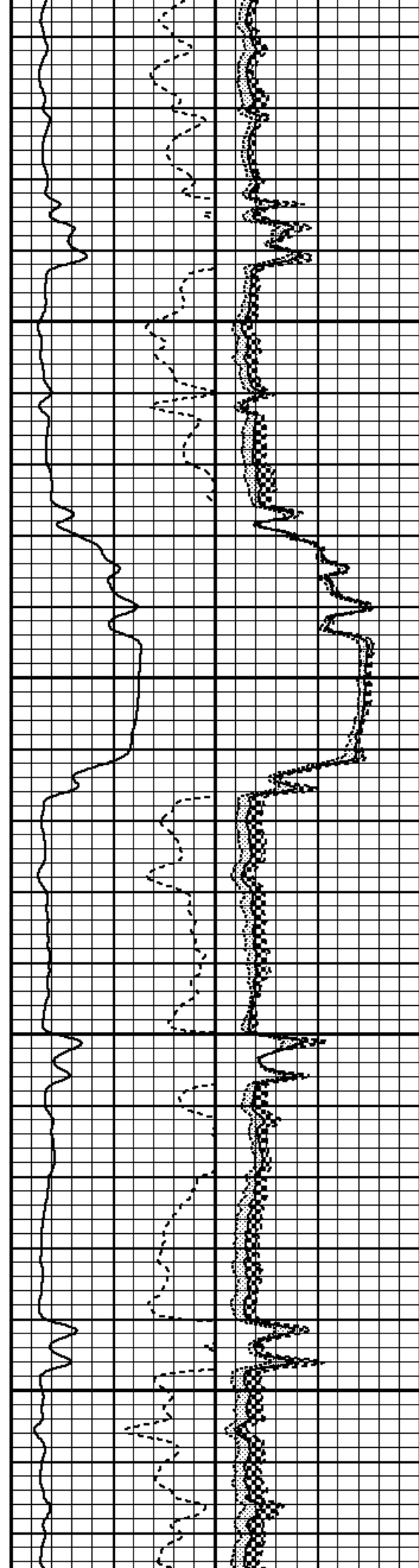


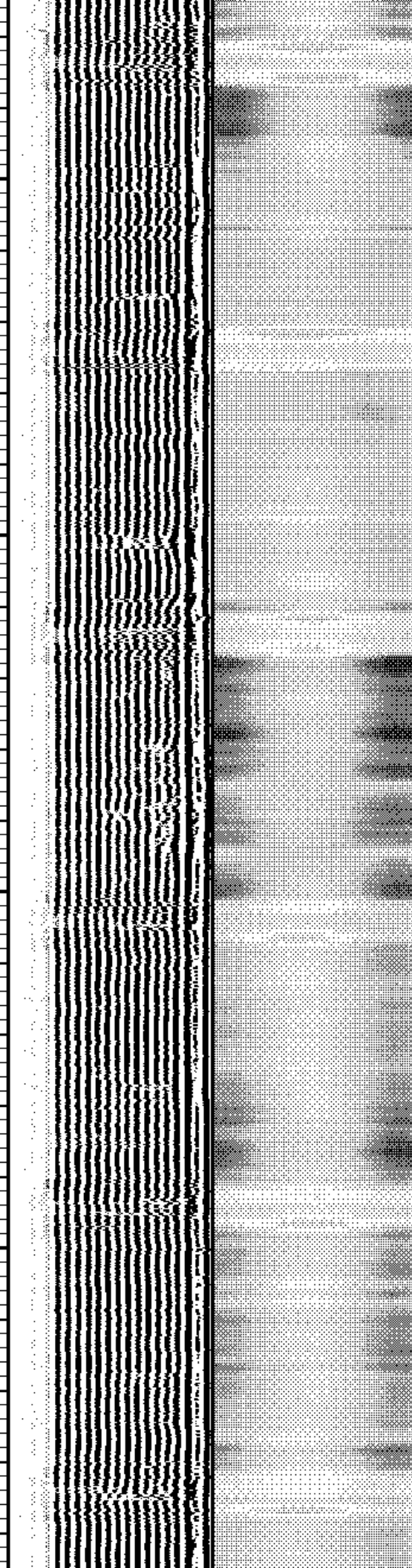
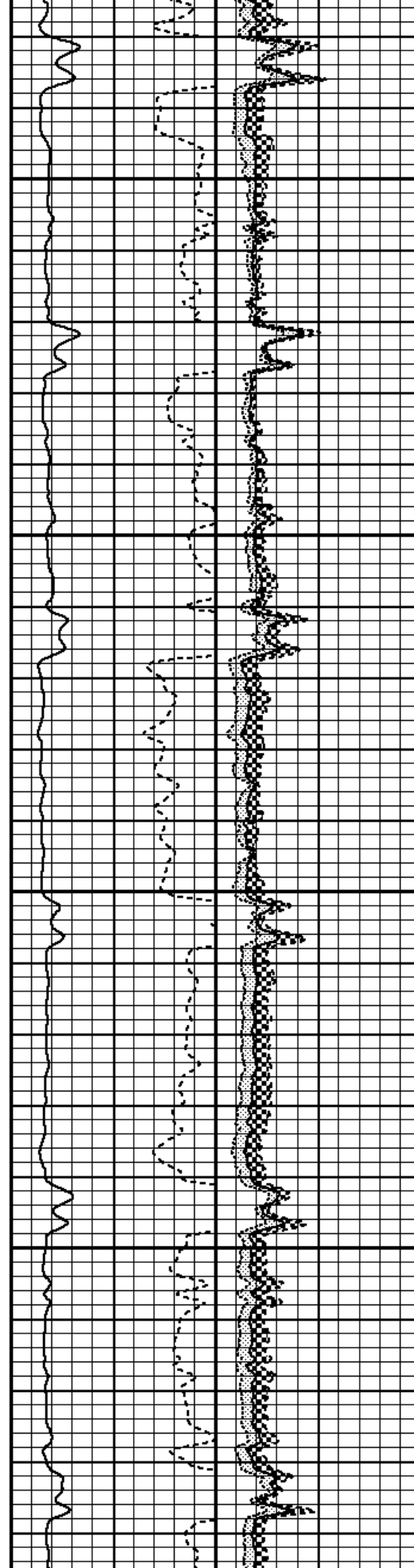
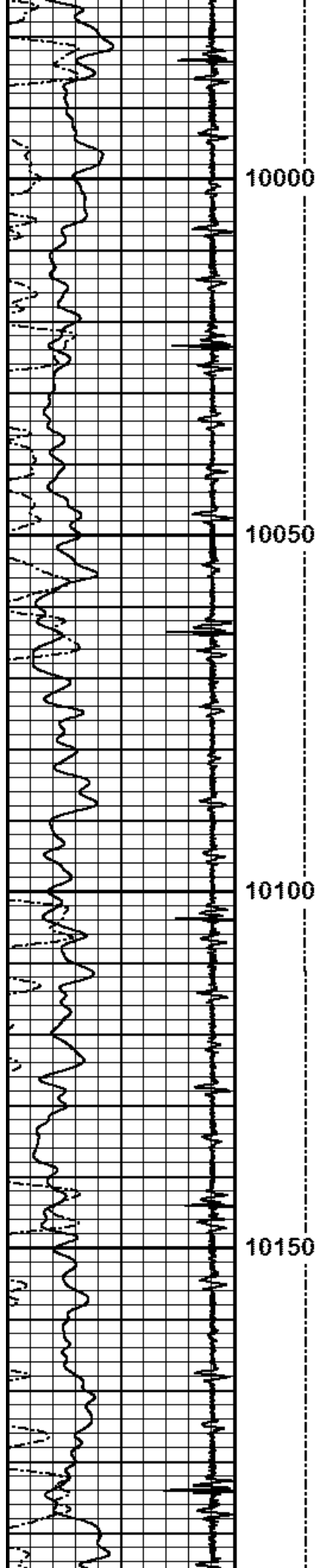
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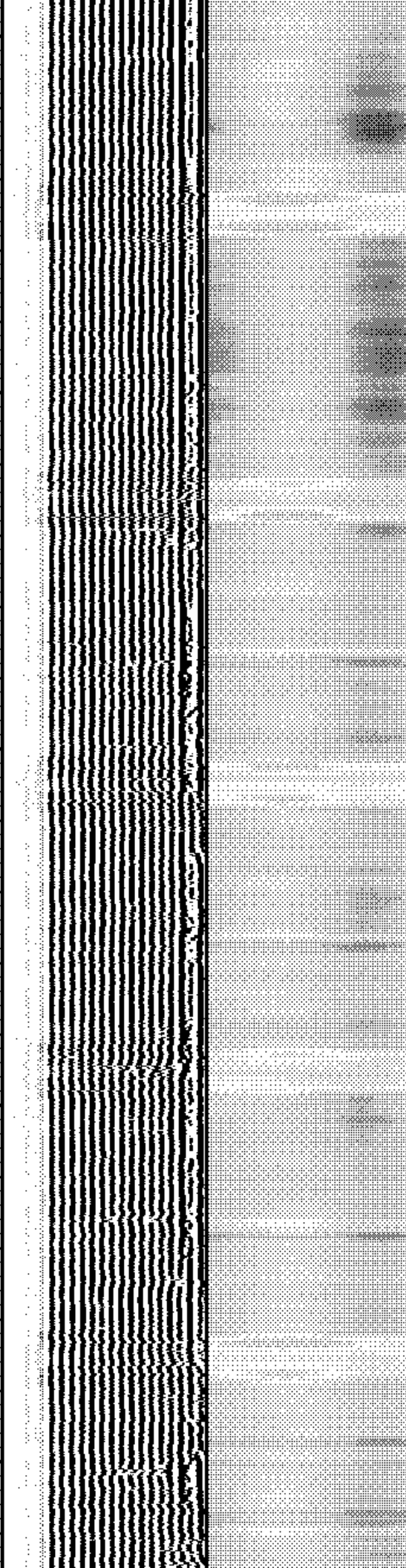
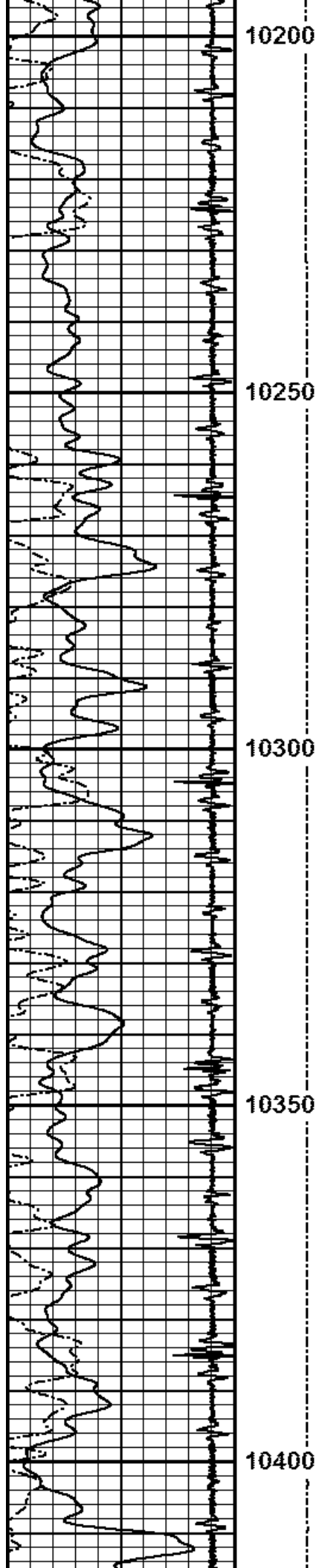
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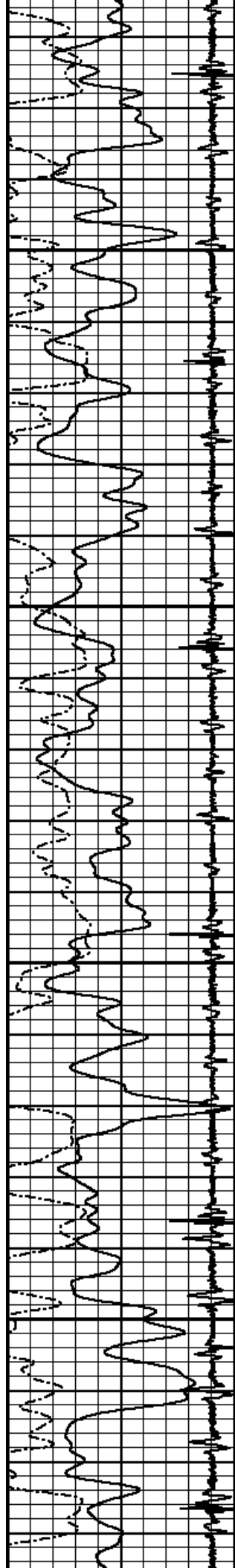
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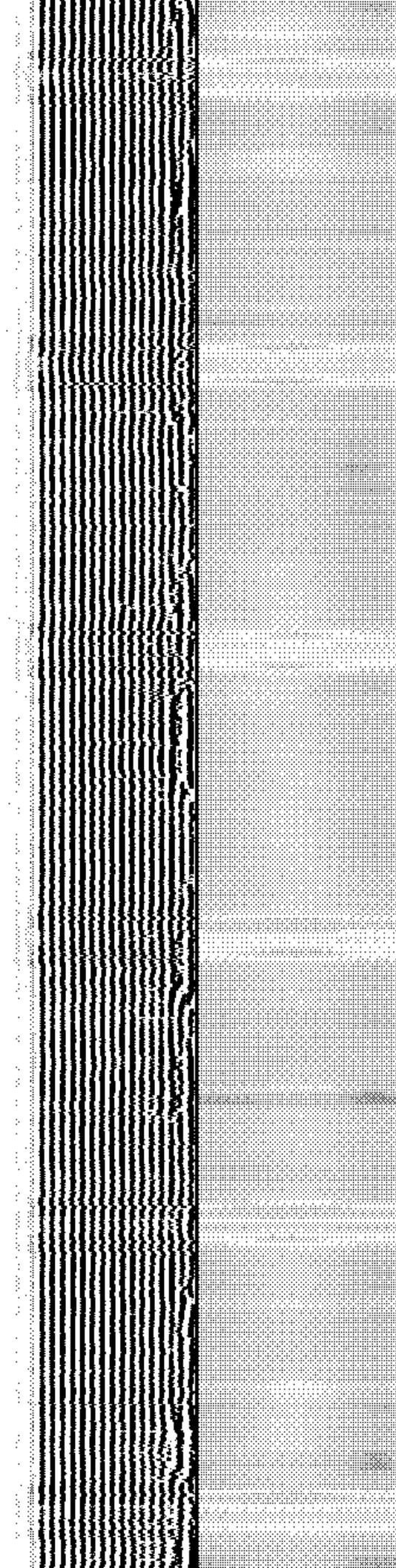
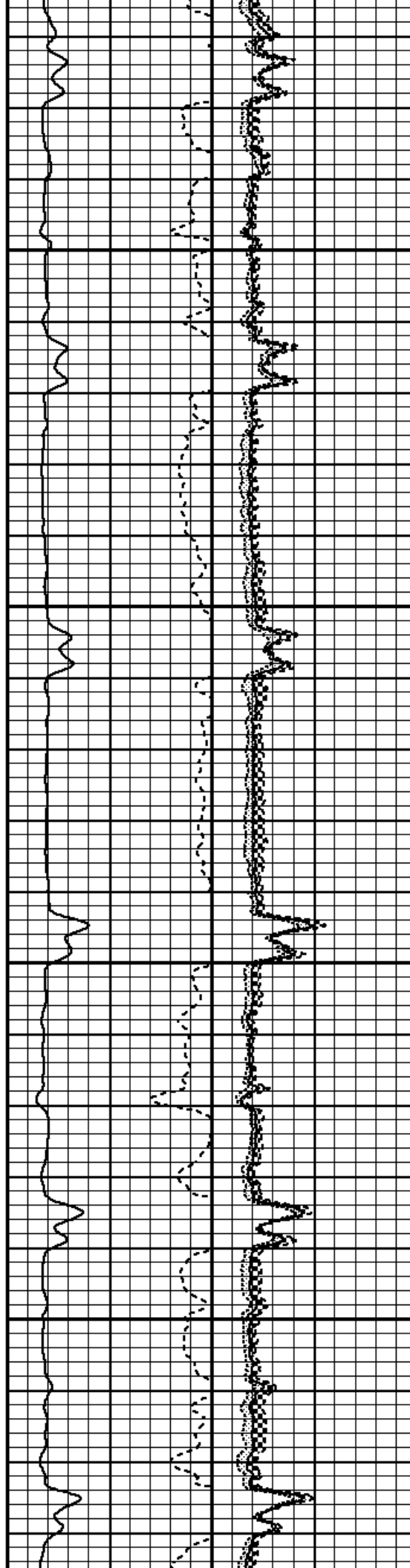


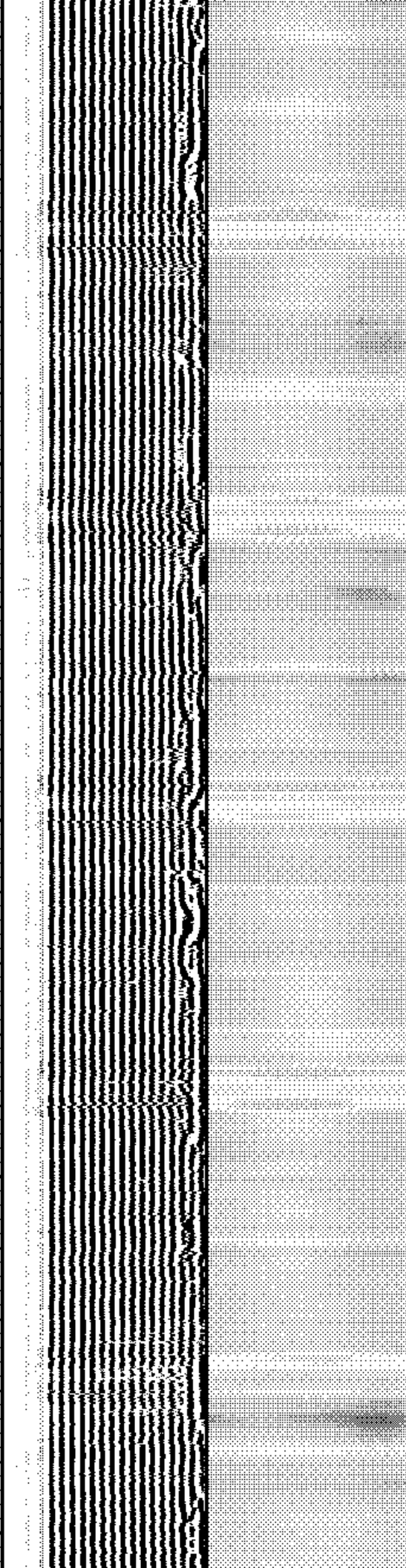
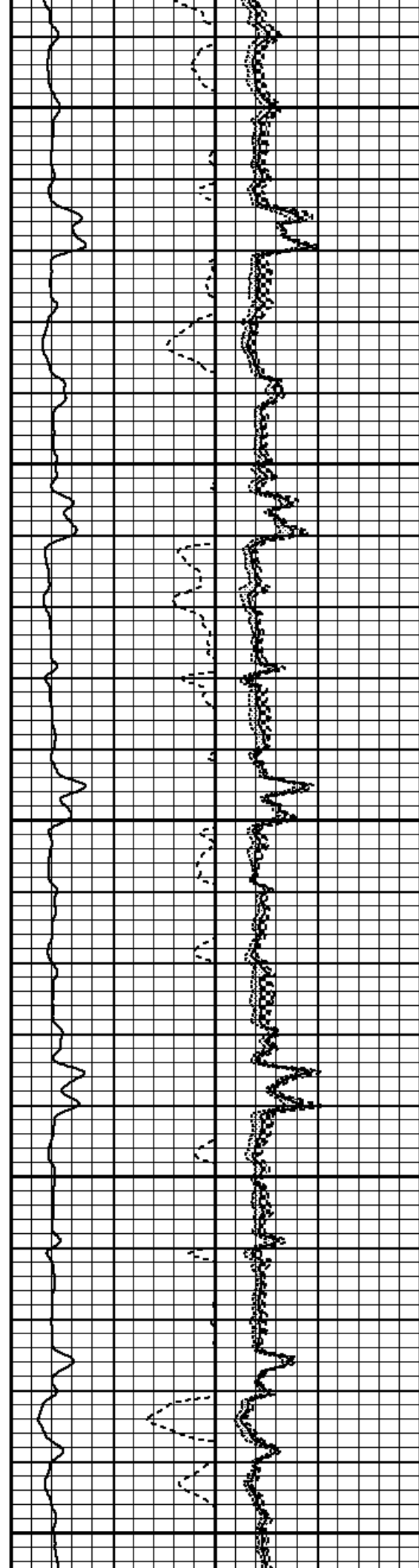
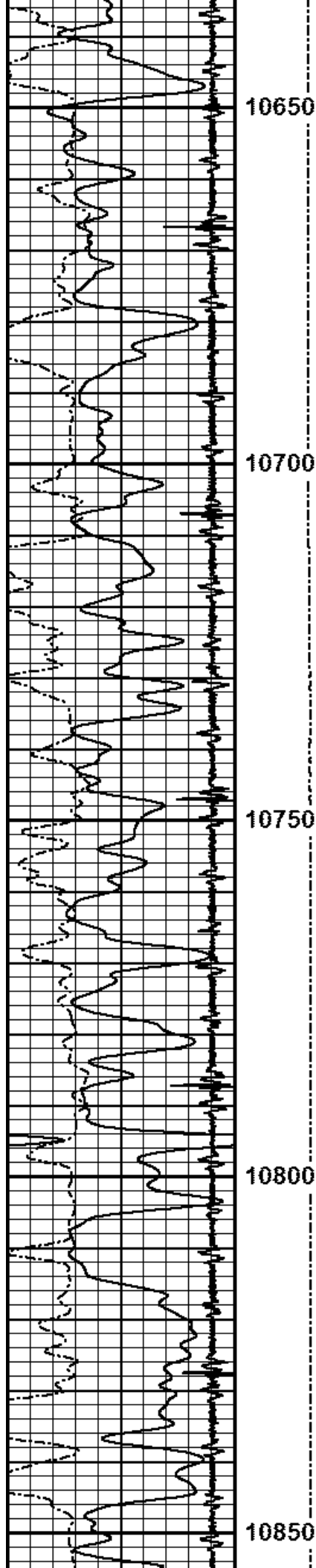
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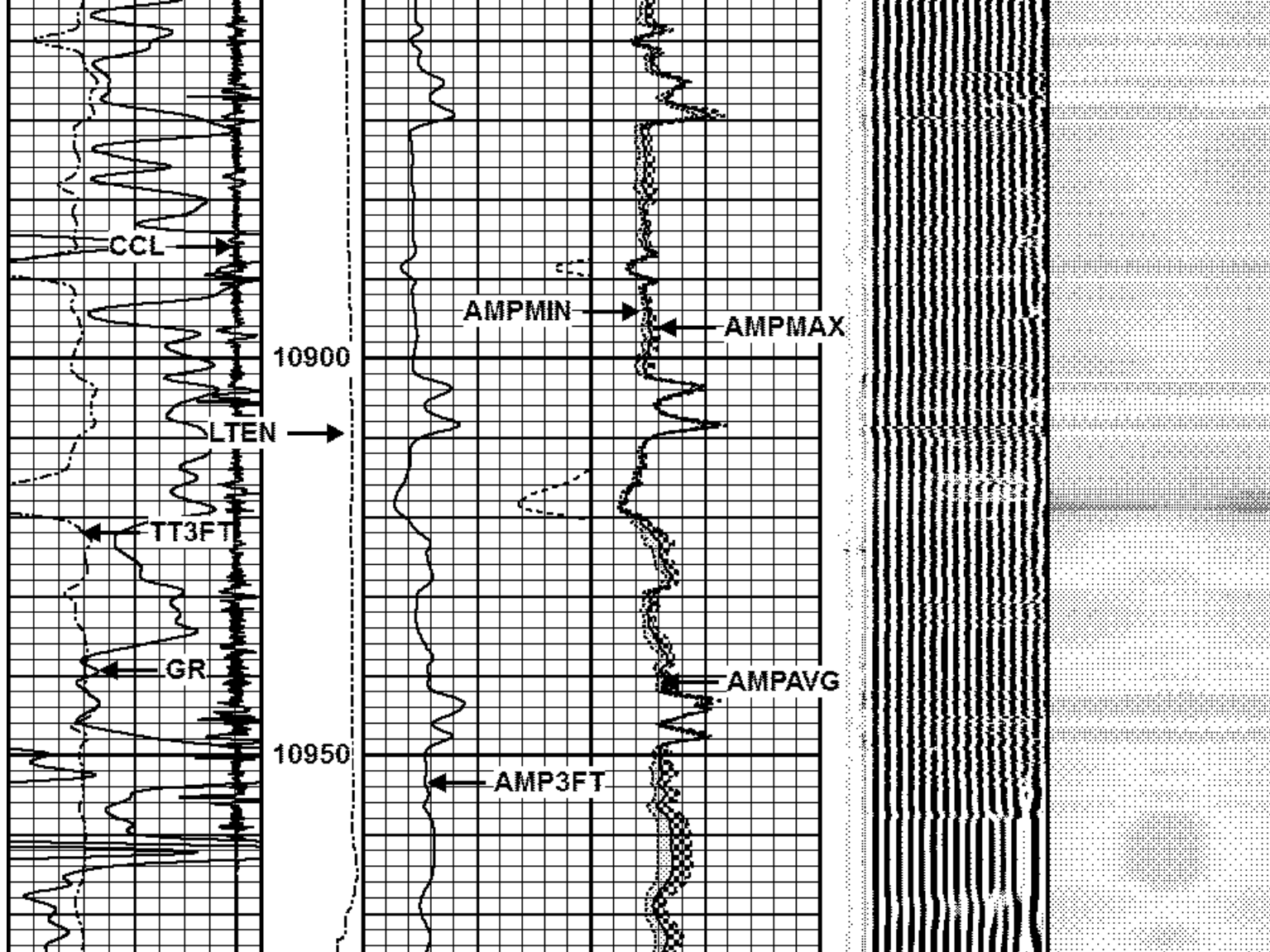
10500

10550

10600







3Ft Travel Time	305 (usec) 205	3' Amplitude	0 (mV) 100	Sector	VDL	1 Sector Map 8
Collar Locator	-9 1	3' Amplified	0 (mV) 20	Amplitude Average	(usec)	
Gamma Ray	0 (GAPI) 150	Amplitude X 5		0 150 200 1200		
				Sector		
				Amplitude Maximum		
				0 150		
				Sector		
				Amplitude Minimum		
				0 150		



MAIN LOG

ZERO PSI APPLIED AT SURFACE

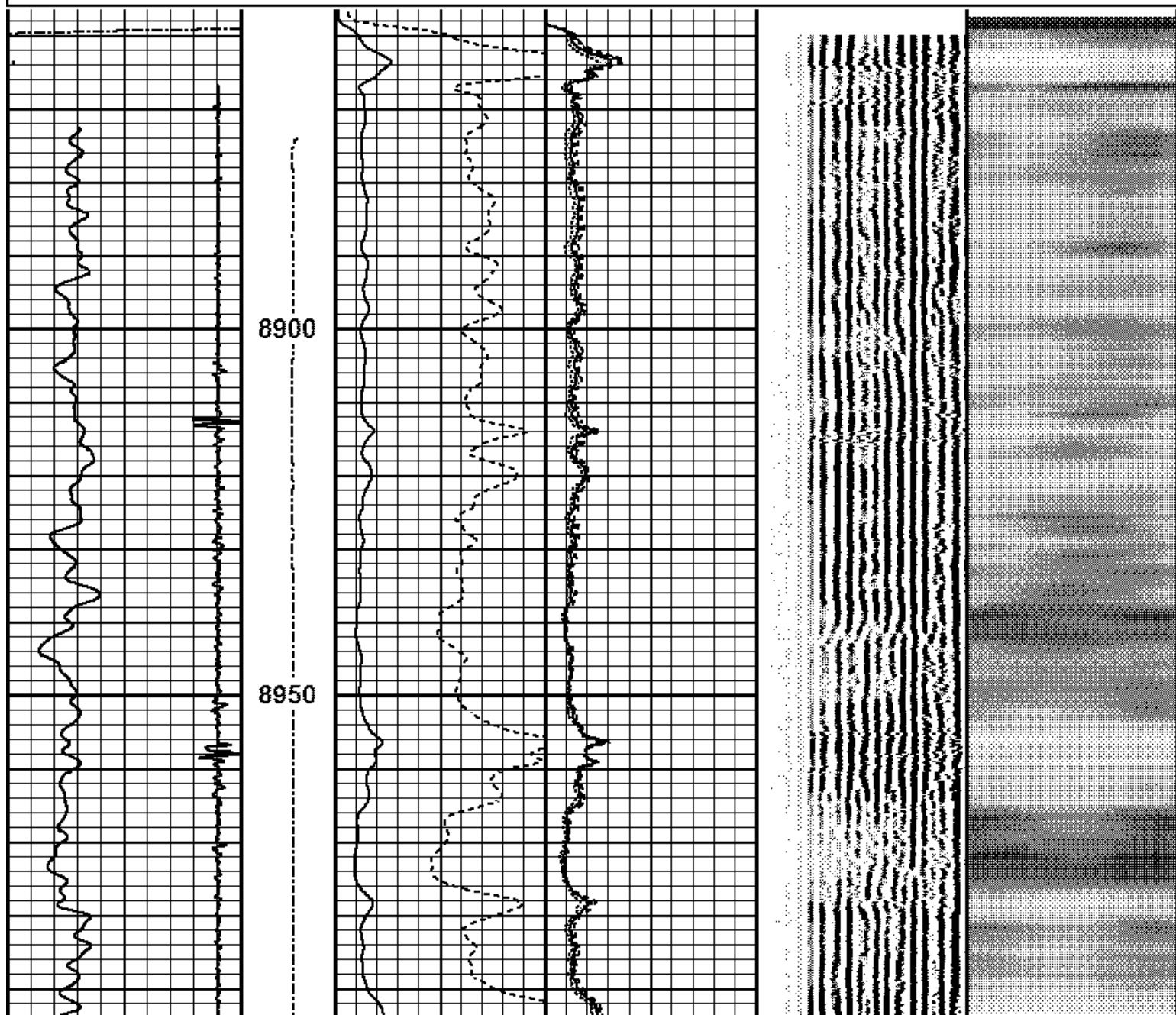


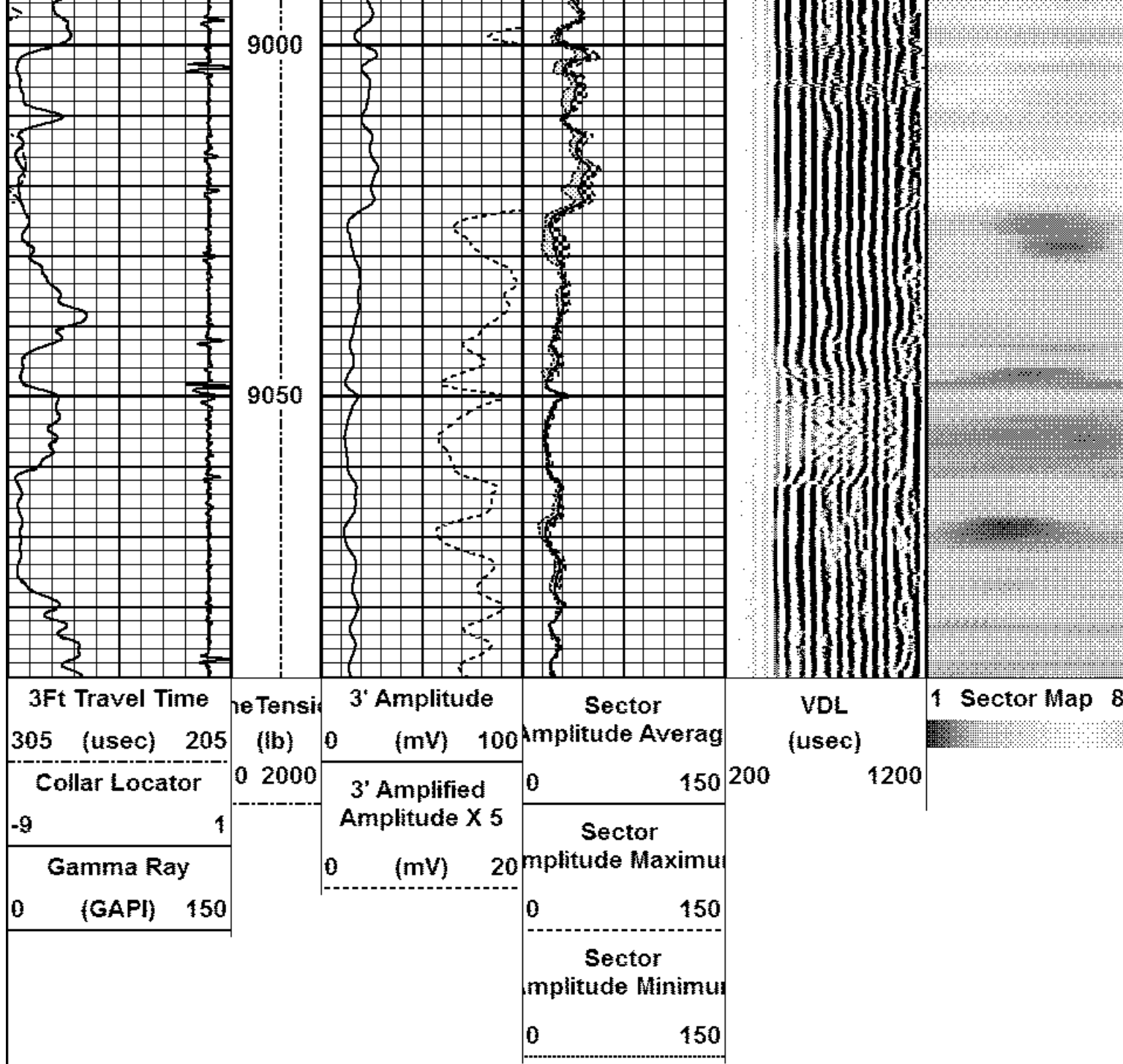
REPEAT SECTION

ZERO PSI APPLIED AT SURFACE

Database File	ngl_weld south swd 2_05123_20190401_scbl.db
Dataset Pathname	pass5
Presentation Format	pinr_scbl
Dataset Creation	Mon Apr 01 08:36:05 2019
Charted by	Depth in Feet scaled 1:240

3Ft Travel Time	ne Tensi	3' Amplitude	Sector	VDL	1 Sector Map 8
305 (usec) 205	(lb)	0 (mV) 100	Amplitude Averag	(usec)	
Collar Locator	0 2000	3' Amplified	0 150 200 1200		
-9 1		Amplitude X 5			
Gamma Ray		0 (mV) 20	Sector		
0 (GAPI) 150			Amplitude Maximum		
			0 150		
			Sector		
			Amplitude Minimum		
			0 150		





Calibration Report		
Database File	ngl_weld south swd 2_05123_20190401_scbf.db	
Dataset Pathname	pass5	
Dataset Creation	Mon Apr 01 08:36:05 2019	
Gamma Ray Calibration Report		
Serial Number:	080629	
Tool Model:	275 Probe	
Performed:	Sat Dec 08 10:03:15 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6700	GAPI/cps

Serial Number: FW1304-34
Tool Model: RBL-DC

Calibration Casing Diameter: 7.625 in
Calibration Depth: 2078.462 ft

Master Calibration, performed Mon Apr 01 08:12:06 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.012	1.187	1.800	59.033	48.717	1.195
CAL	0.017	1.510				
5'	0.038	1.409	1.800	59.033	41.724	0.226
SUM						
S1	0.008	1.054	0.000	100.000	95.638	-0.802
S2	0.015	1.139	0.000	100.000	88.990	-1.345
S3	0.016	1.212	0.000	100.000	83.657	-1.375
S4	0.017	1.322	0.000	100.000	76.595	-1.276
S5	0.019	1.365	0.000	100.000	74.294	-1.427
S6	0.016	1.297	0.000	100.000	78.061	-1.252
S7	0.016	1.197	0.000	100.000	84.642	-1.336
S8	0.019	1.086	0.000	100.000	93.730	-1.780

Air Zero Calibration, performed Mon Apr 01 07:34:08 2019:

	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	



PIONEER

Pioneer Energy Services

Company NGL WATER SOLUTIONS DJ LLC
Well WELD SOUTH SWD #1
Field WATTENBERG
County WELD
State COLORADO