

HALLIBURTON

ACOUSTIC CEMENT BOND LOG

Company WILLIAMS PRODUCTION CO				Company WILLIAMS PRODUCTION CO			
Well SG 431-32				Well SG 431-32			
Field GRAND VALLEY				Field GRAND VALLEY			
County GARFIELD				County GARFIELD			
State CO				State CO			
API No.: 05045172000000				Serv #: 6441585			
Location: SURFACE HOLE: 1074' FNL & 1981' FEL				Other Services			
BOTTOM HOLE: 0769' FNL & 2035' FWL				RMTE			
Sec: 32 Twp: 07S Rge: 96W							
Permanent Datum		GL		Elevation		Elevation	
Log Measured From		KB , 25' Ft. above perm. datum				K.B. 5343'	
Drilling Measured From		KB				D.F. 5342'	
						G.L. 5318'	
Date @ Time Logged		17-JAN-09 @ 1630 HRS		Type Fluid in Hole		WATER	
Run No.		ONE		Density of Fluid		8.34 PPG	
Depth - Driller		5182'		Fluid Level		FULL	
Depth - Logger		5105'		Cement Top Est. Logged		4730'	
Bottom - Logged Interval		5105'		Equipment / Location		88022 / GU	
Top - Log Interval		1910'		Recorded by		RETZLAFF / FREEMAN	
Max. Recorded Temp.		176 DEG F		Witnessed by		NONE	
CEMENTING DATA		Surface		Protection		Liner	
		String		String			
Date / Time Cemented							
Primary / Squeeze							
Expected Compressive Strength		psi@ hrs		psi@ hrs		psi@ hrs	
Cement Volume							
Cement Type / Weight		/		/		/	
Formulation							
Mud Type / Mud Wgt.		/		/		/	
Borehole Record							
Run Number		Bit		From		To	
ONE		13.5"		SURFACE		1114'	
TWO		7.875"		1114'		5182'	
Casing & Tubing Record							

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HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

HES BOND LOG DATED 17-JAN-09 IS CORRELATED TO HES HRI/SD/DSN LOG DATED 03-JAN-09

LOGGING DEPTHS PER CUSTOMER REQUEST

SHORT JOINTS LOCATED AT: 4160', 4195'

YOUR HALLIBURTON CREW: RETZLAFF, FREEMAN, NALL

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES GRAND JUNCTION
(970)-523-3600

Service Ticket No. 6441585

API No. 05045172000000

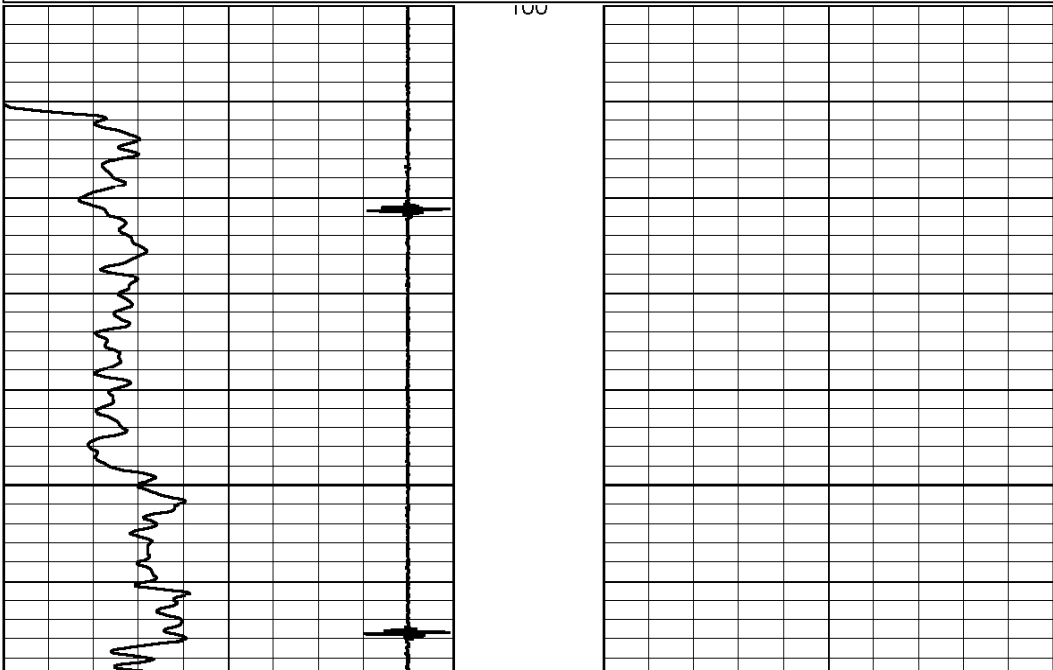
PGM Ver WARRIOR 070213

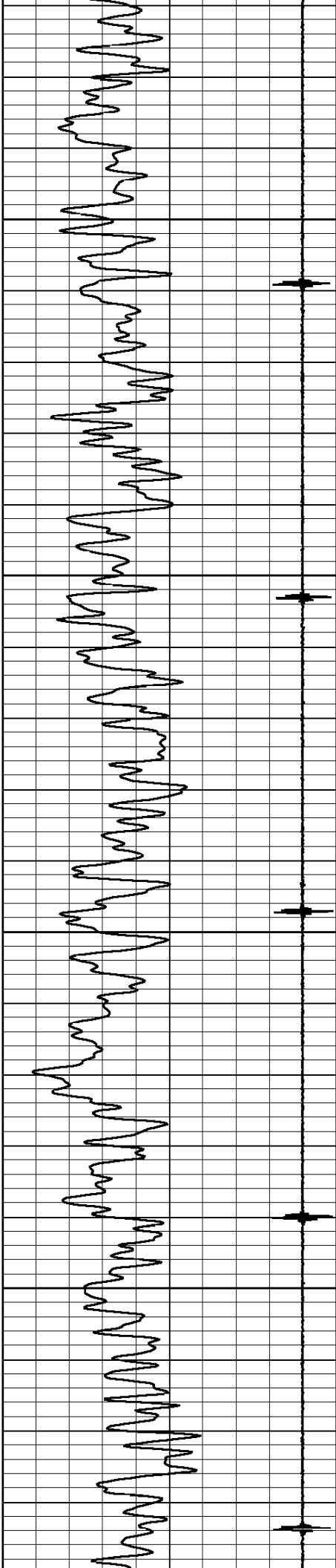
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

CBL		GAMMA RAY					
Run No.	ONE	Run No.	ONE	Run No.		Run No.	
Serial No.	080529	Serial No.	081008	Serial No.		Serial No.	
Model No.	CBL-PROBE	Model No.	GR-PROBE	Model No.		Model No.	
Diameter	2.75"	Diameter	2.75"	Diameter		Diameter	
LOGGING DATA							
General Data							
Pass	Depths		Well Head	Speed	Logging Run Comments		
No.	From	To	Pressure	Ft/Min			
ONE	5105'	1910'	0 PSI	70	MAIN LOG PASS		
TWO	5105'	4890'	0 PSI	70	REPEAT LOG PASS		
Pass	Scale		Scale		Scale		Scale
No.	L	R	L	R	L	R	L
DIRECTIONAL INFORMATION							
Maximum Deviation			deg. @		KOP		

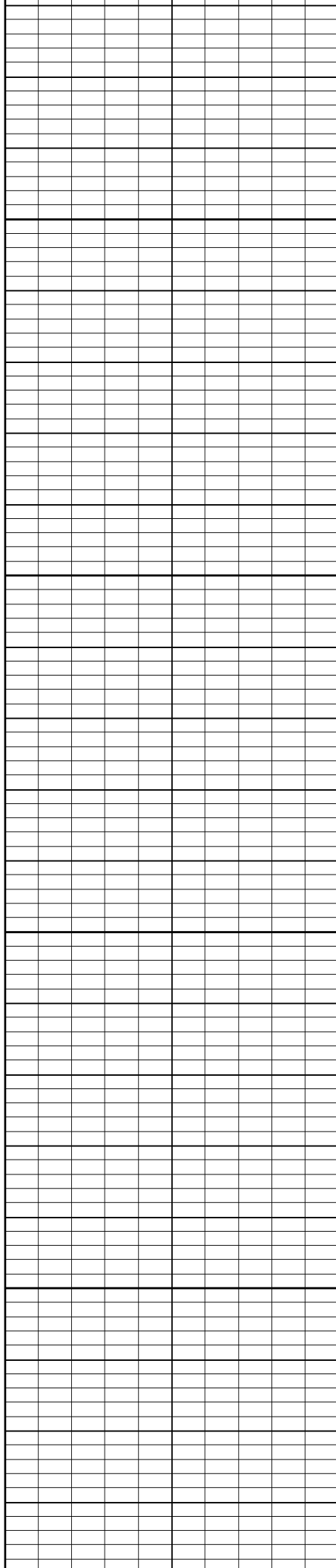
<div> <div>HALLIBURTON</div> <div> <div>ACOUSTIC CEMENT BOND LOG</div> <div>MAIN LOG SECTION</div> <div>SCALE: 5" = 100'</div> </div> </div>	
<div> <div>Database File:</div> <div>w_sg_431_32_cbl.db</div> <div>Dataset Pathname:</div> <div>merge3</div> <div>Presentation Format:</div> <div>prb_cbl</div> <div>Dataset Creation:</div> <div>Sun Jan 18 11:46:38 2009</div> <div>Charted by:</div> <div>Depth in Feet scaled 1:240</div> </div>	
<div> <div>360</div> <div>Travel Time (usec)</div> <div>260</div> </div> <div> <div>9</div> <div>Collar Locator</div> <div>-1</div> </div> <div> <div>0</div> <div>Gamma Ray (GAPI)</div> <div>200</div> </div>	<div> <div>LTEN</div> <div>0</div> <div>(lb)2500</div> </div> <div> <div>Amplified Amplitude (mV)</div> <div>10</div> </div> <div> <div>Amplitude (mV)</div> <div>100</div> </div> <div> <div>200</div> <div>Variable Density</div> <div>1200</div> </div> <div> </div>

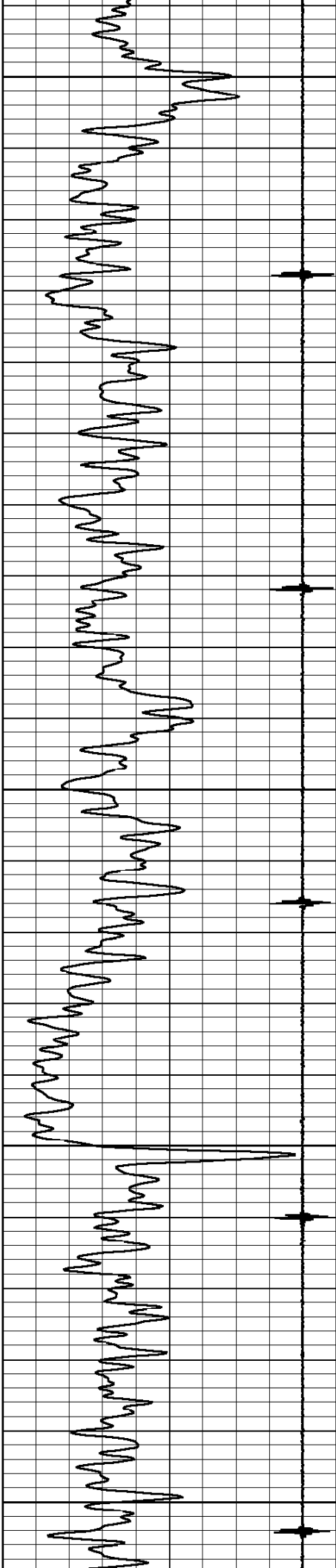




200

300

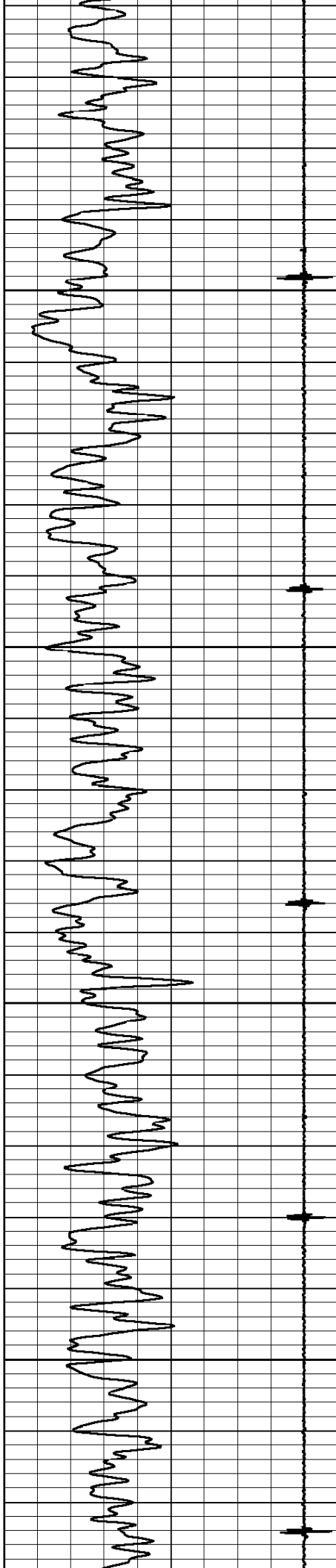




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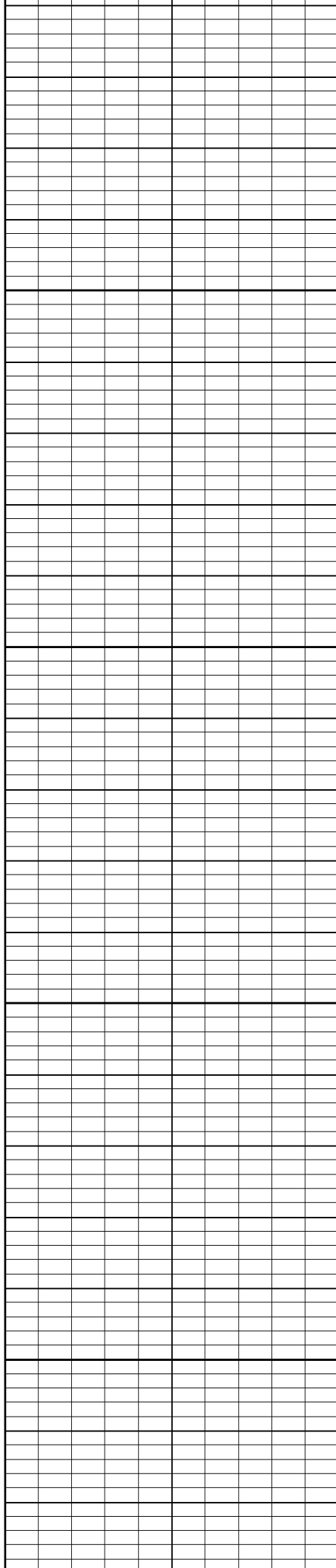
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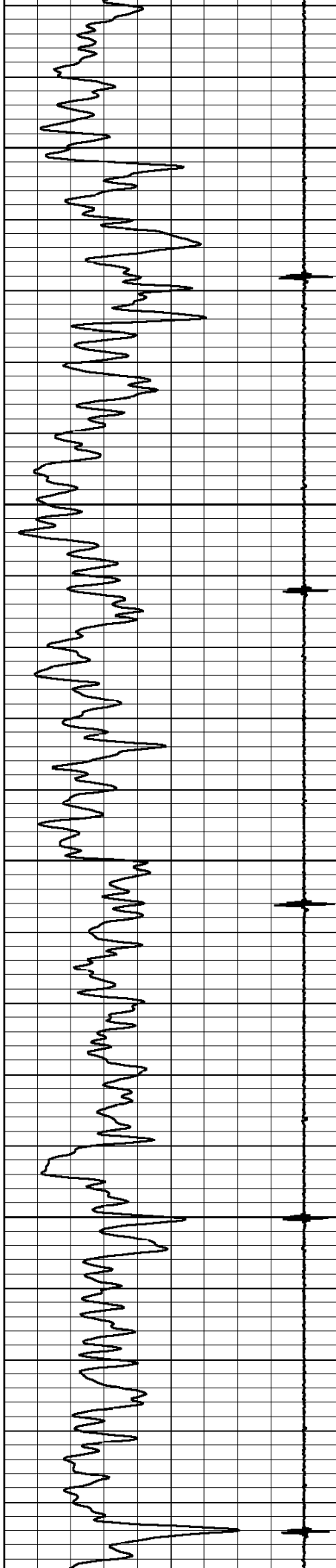
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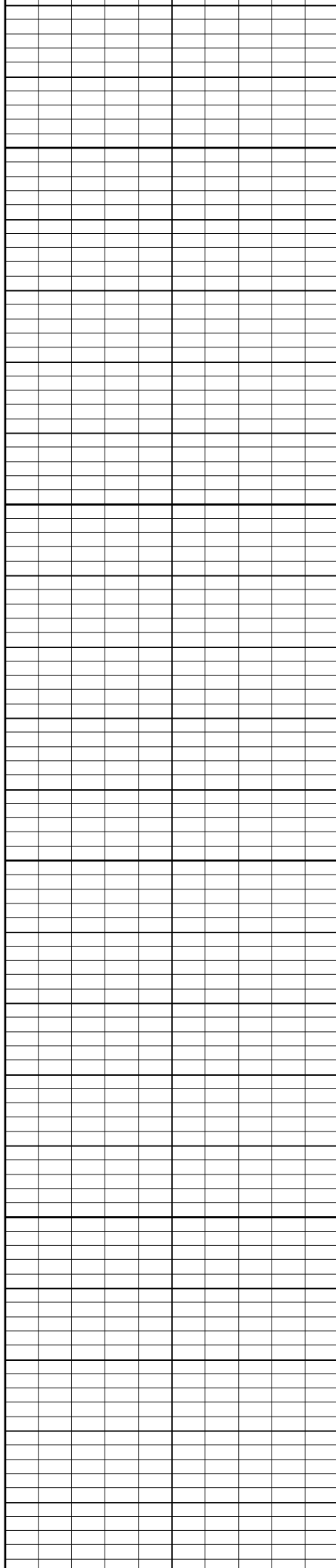
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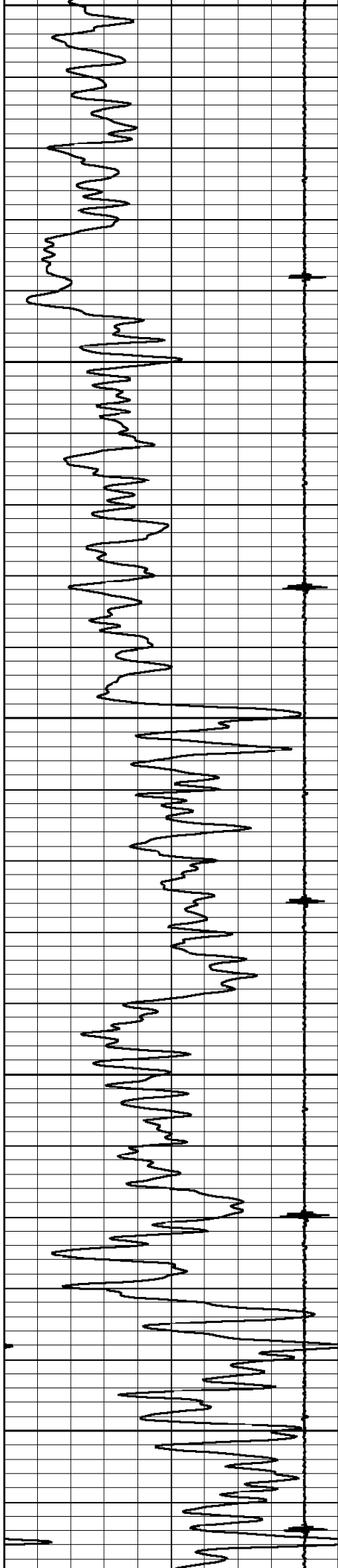




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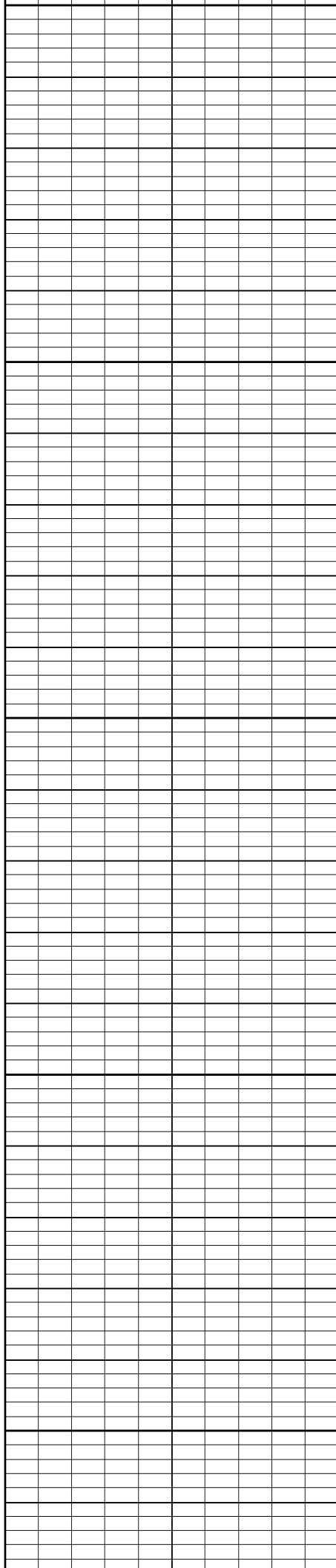
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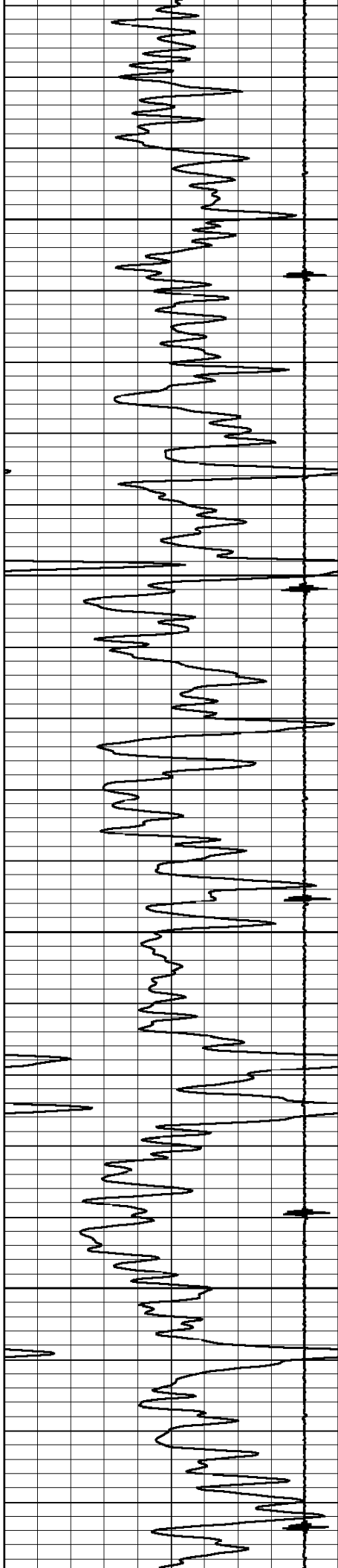




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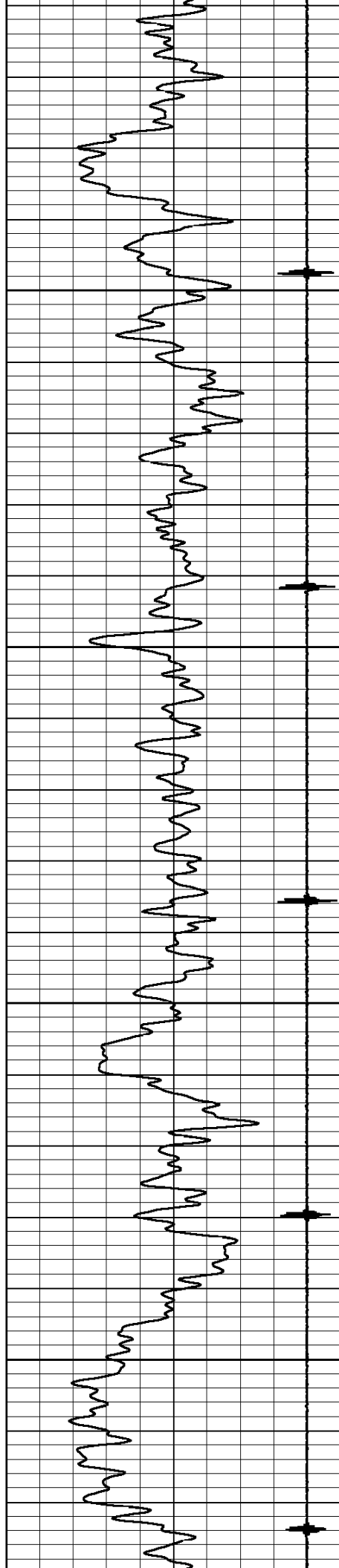
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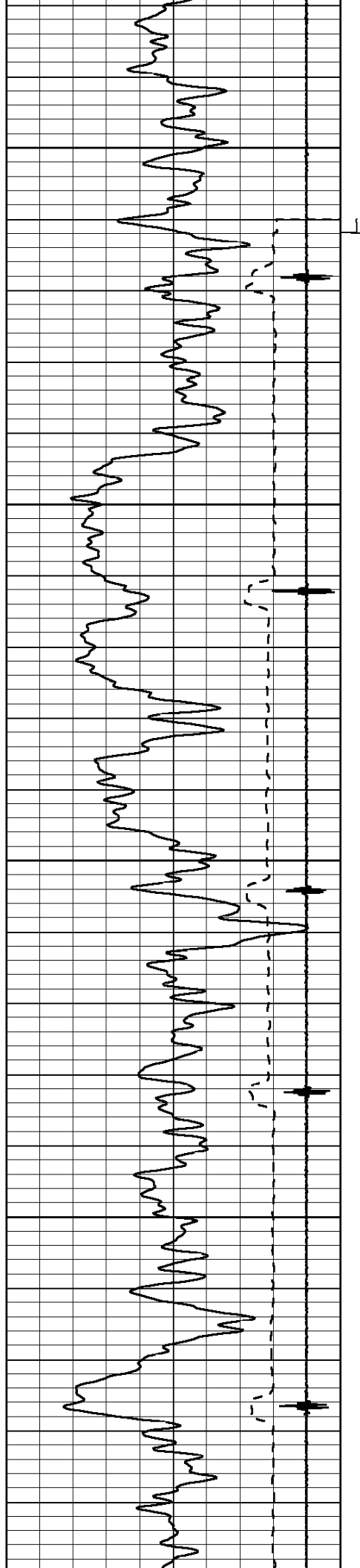
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1400



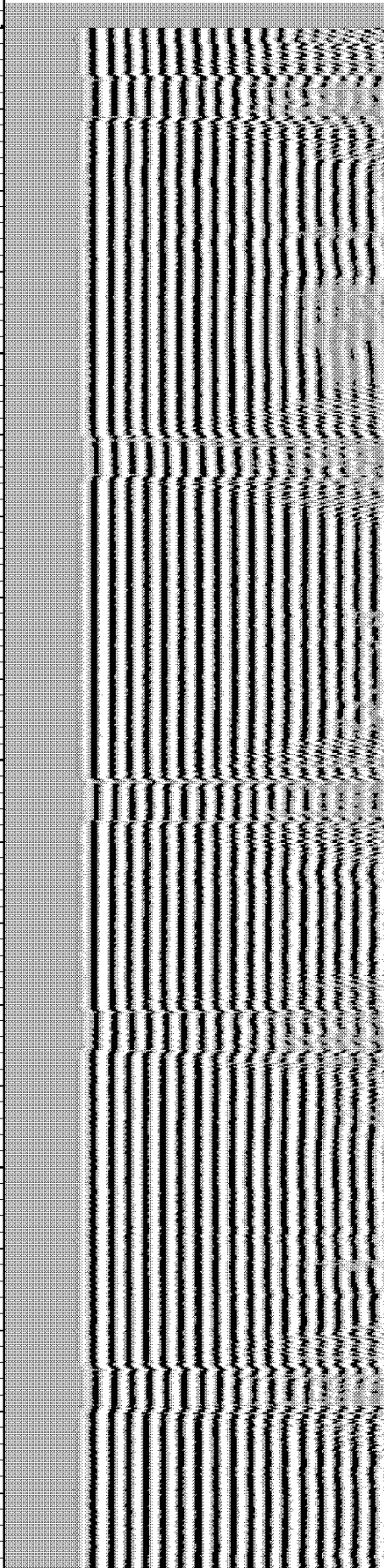
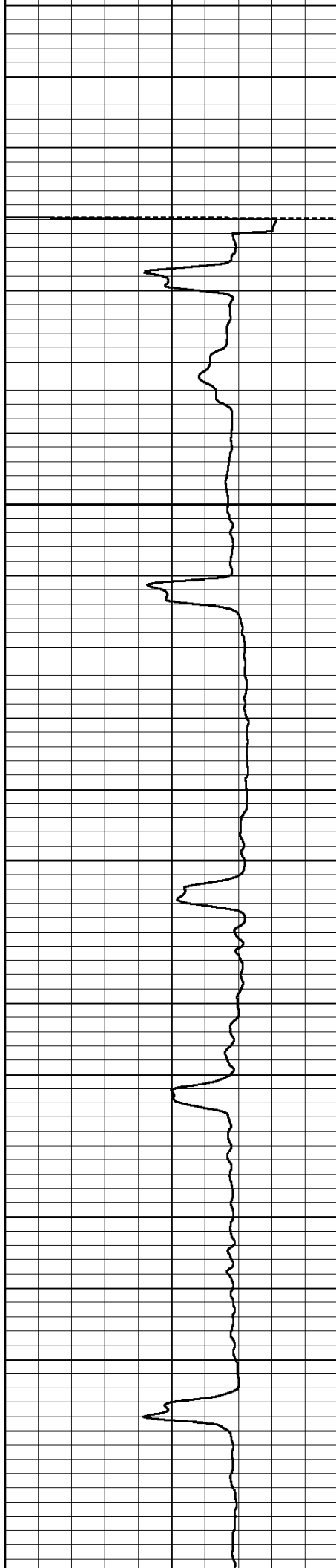
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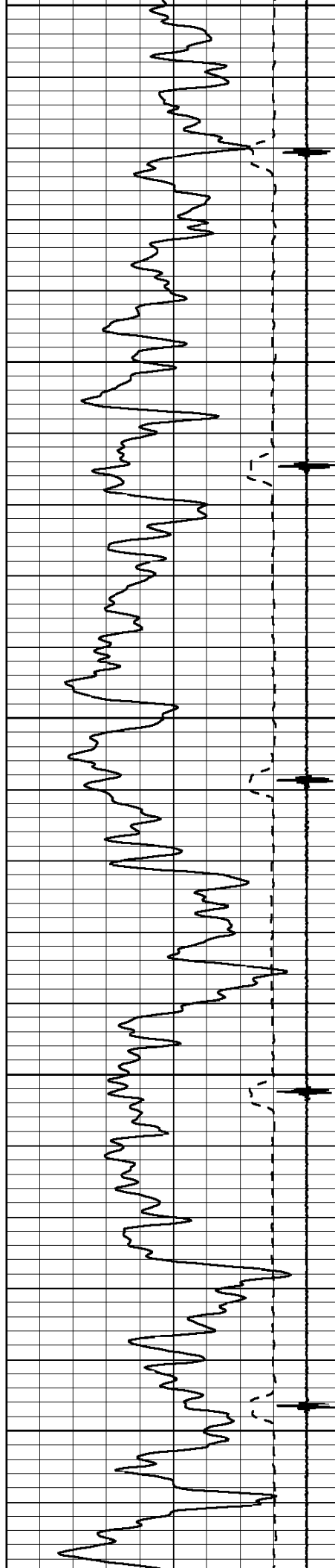
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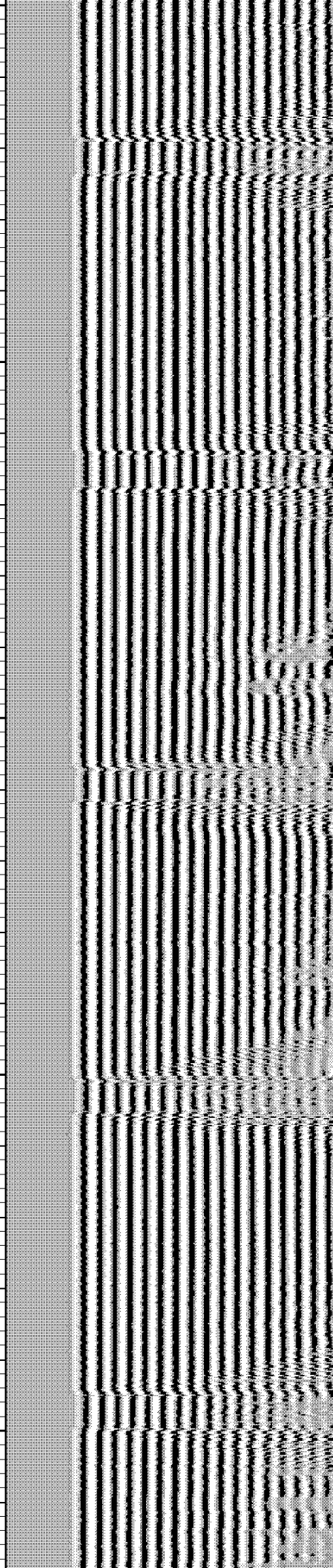
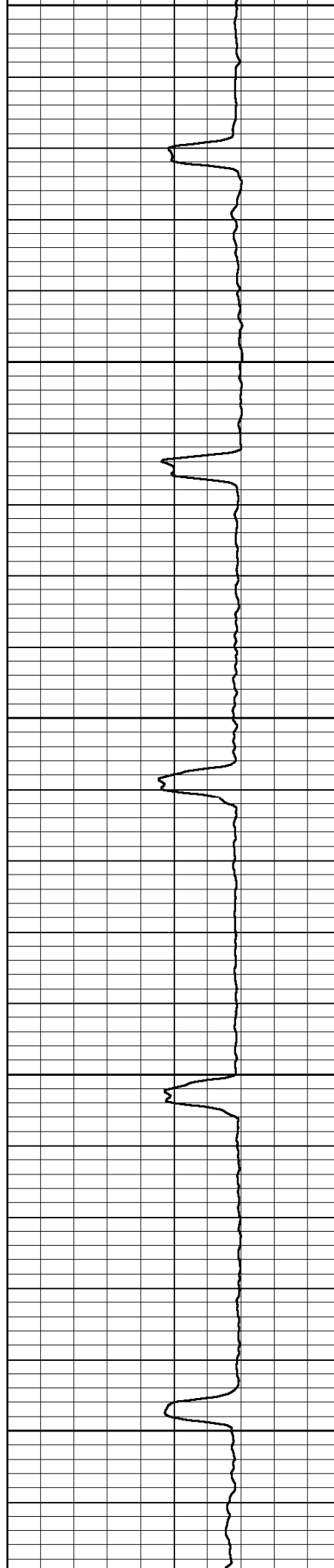
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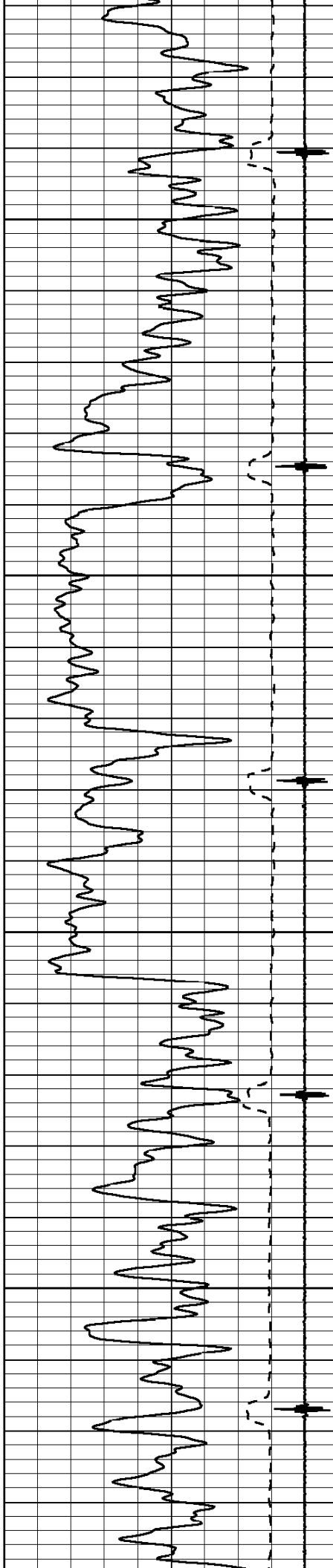




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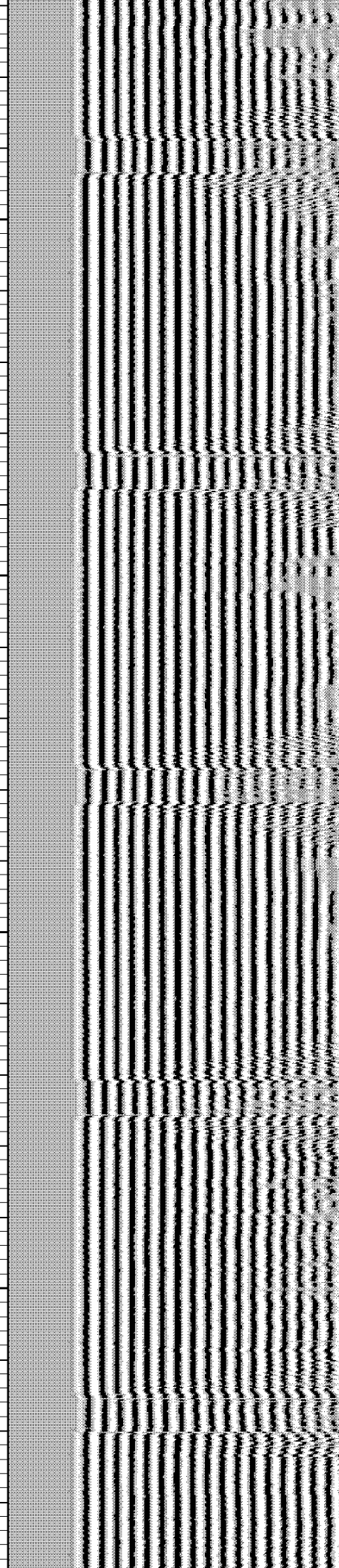
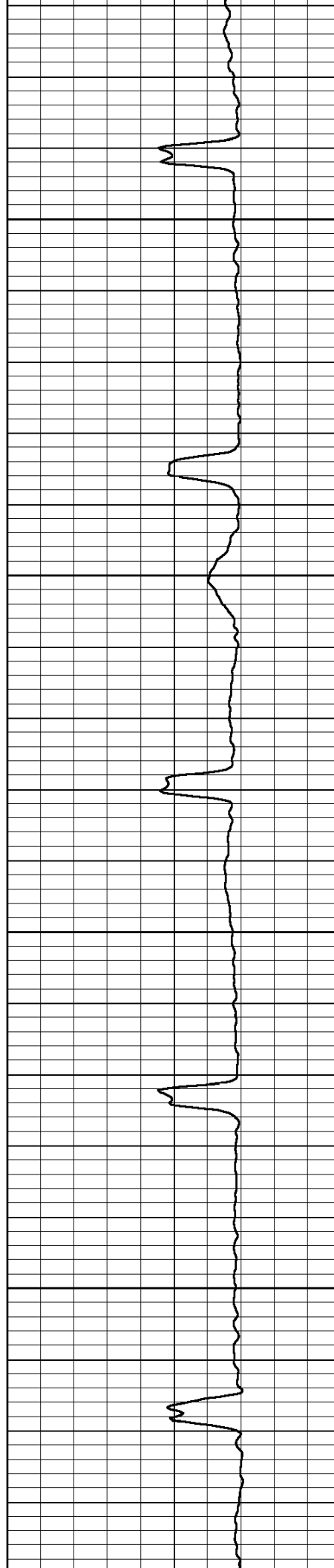
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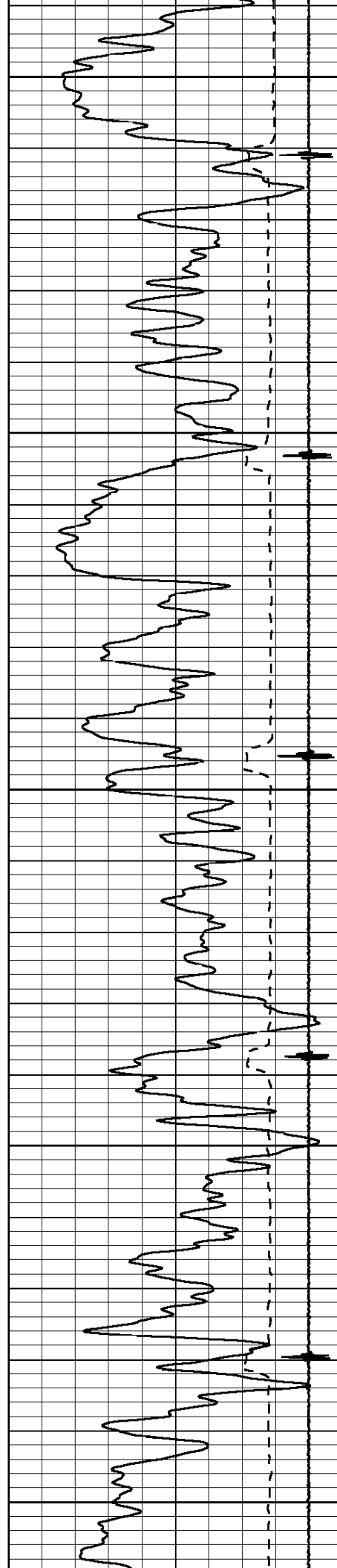




2400

2500

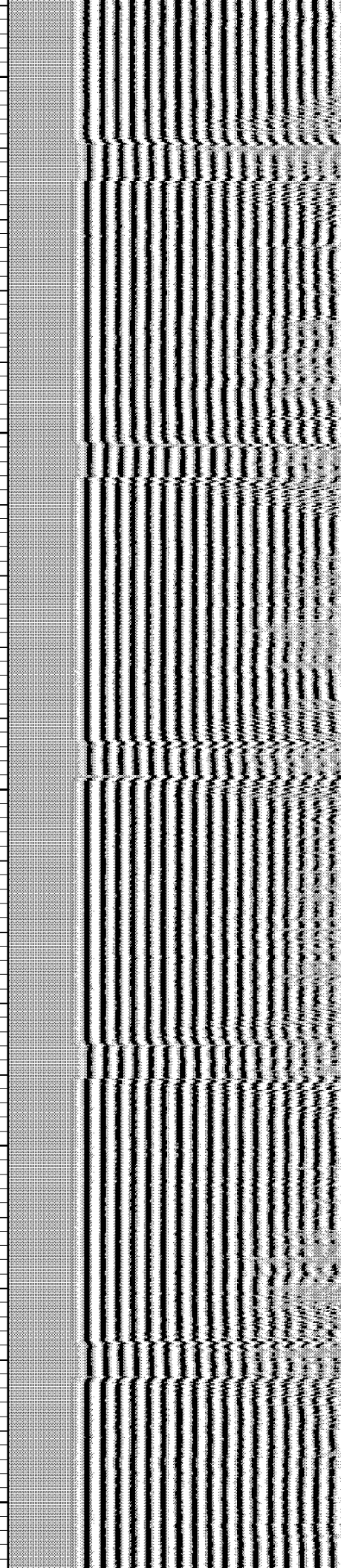
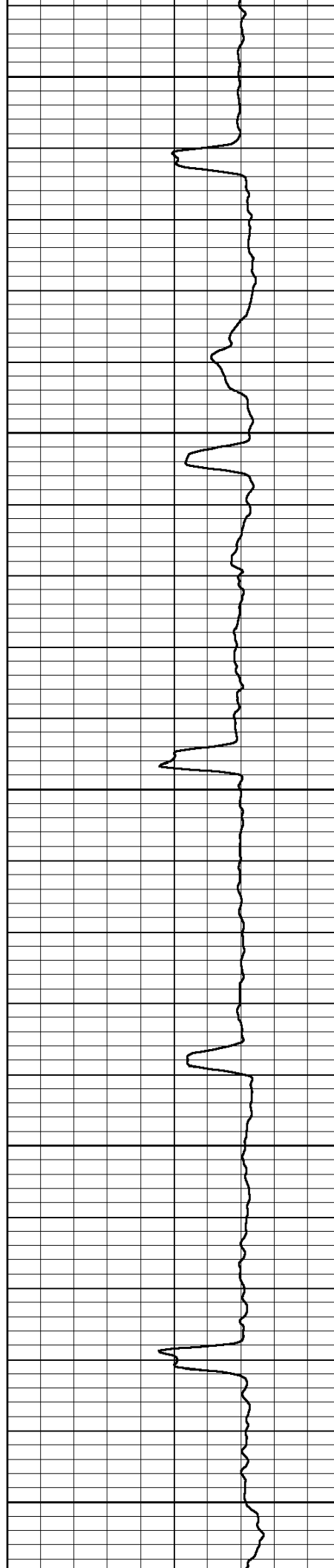


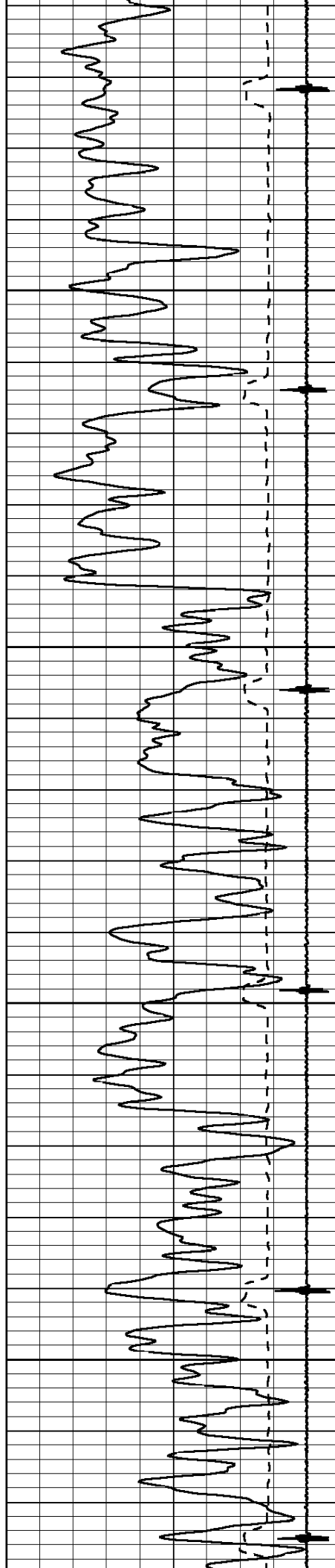


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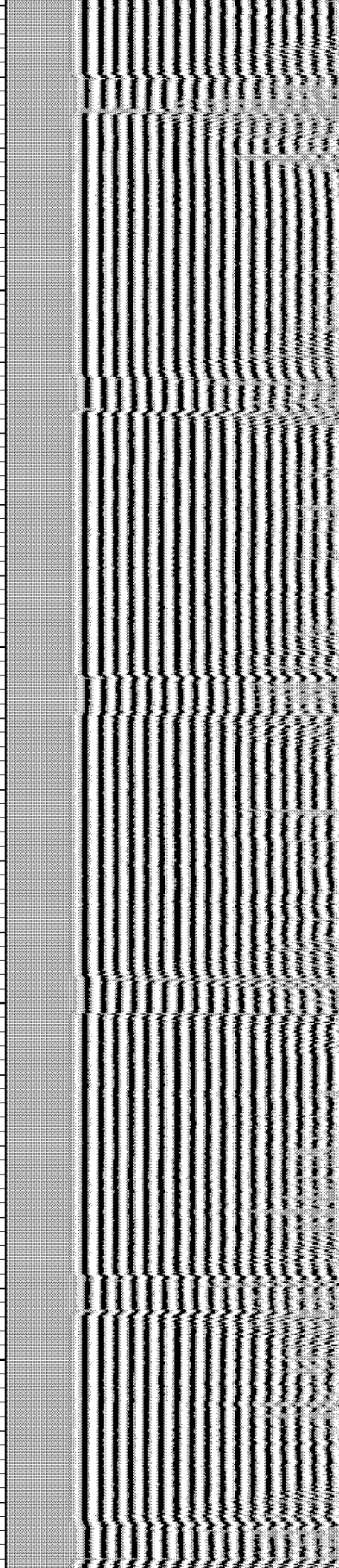
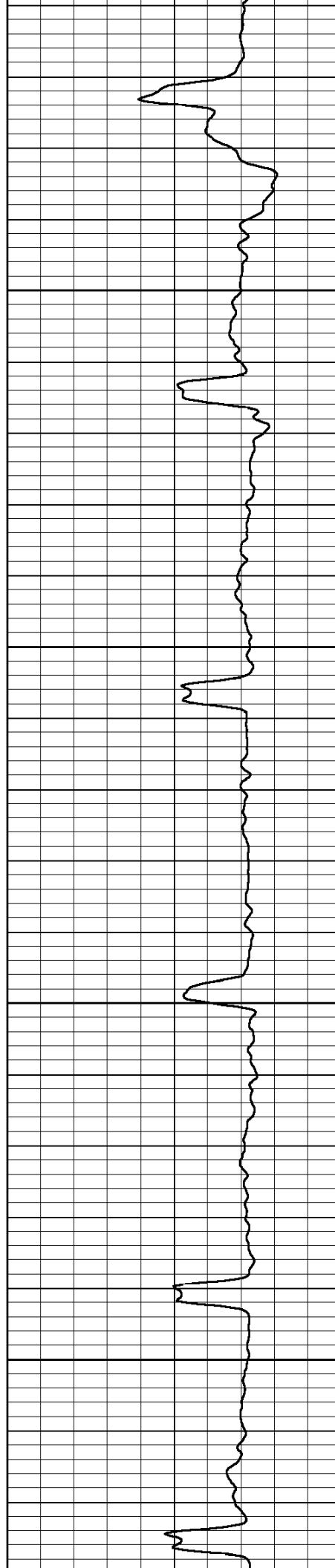
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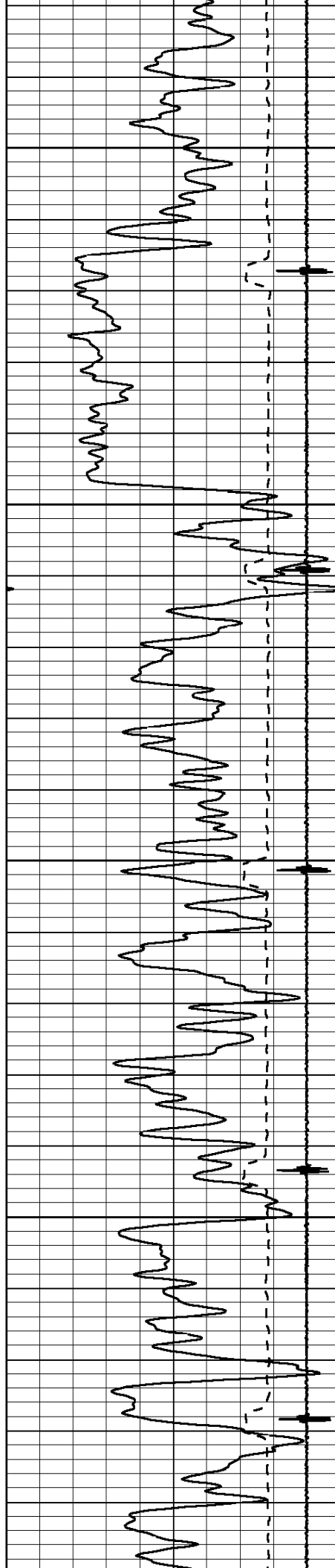




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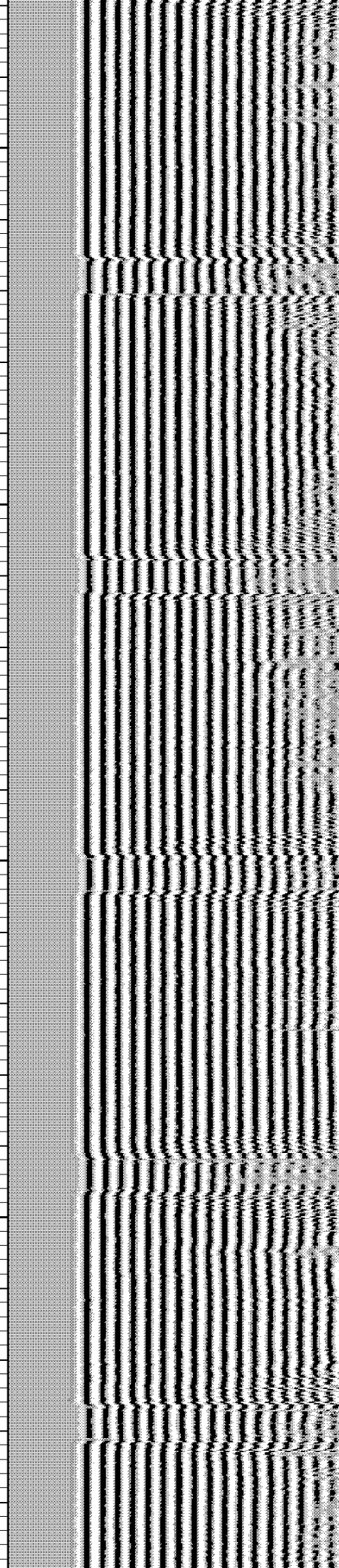
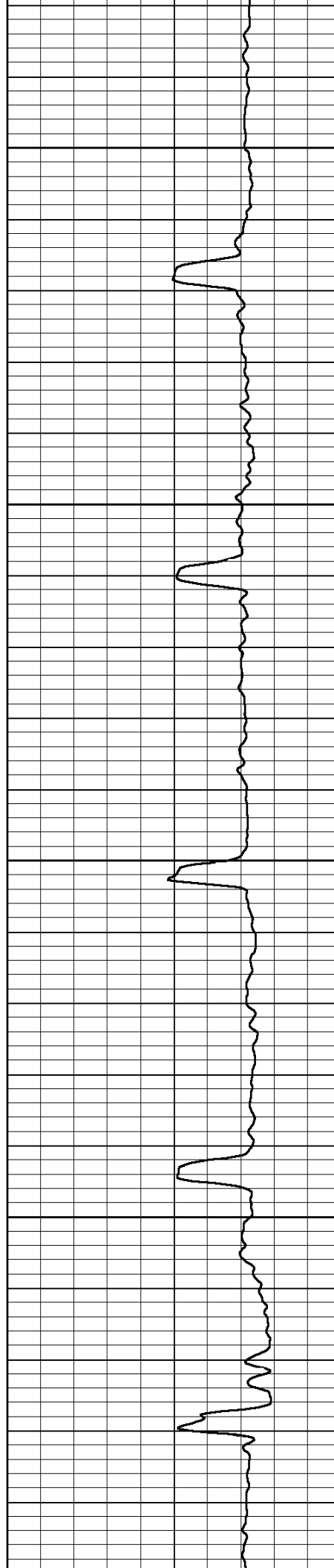
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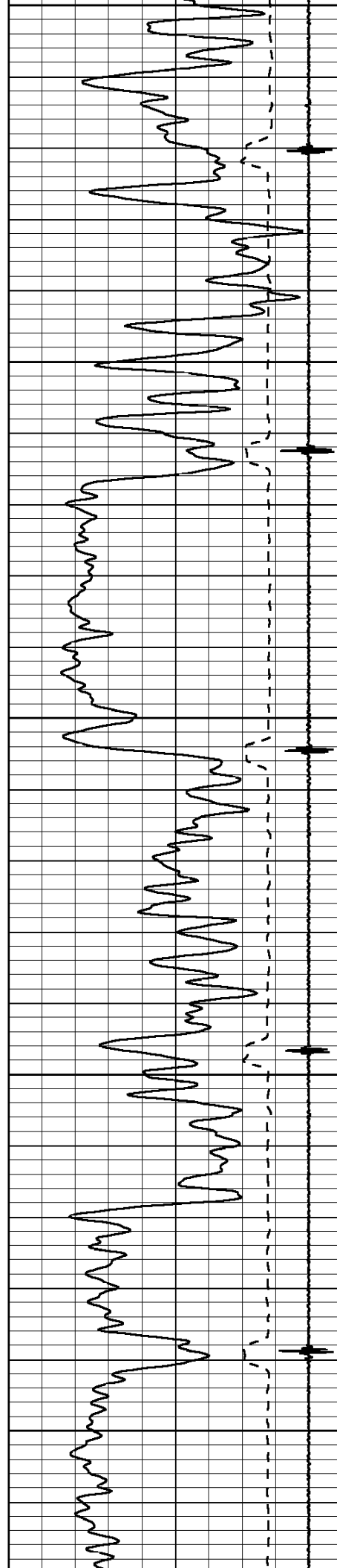




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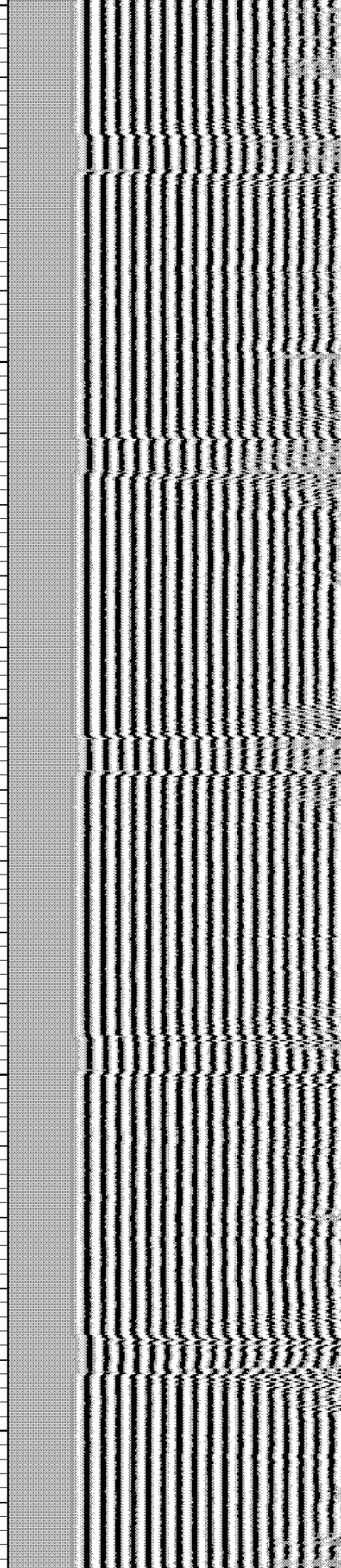
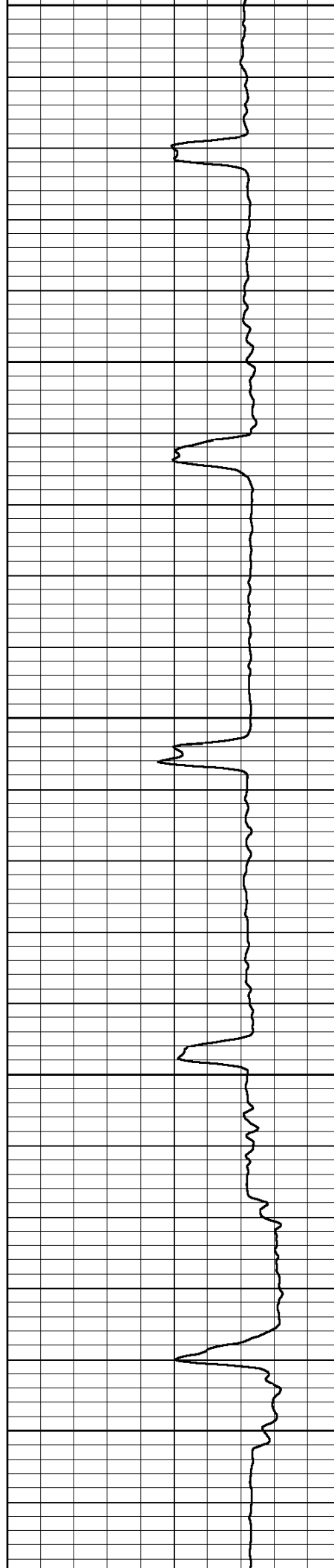
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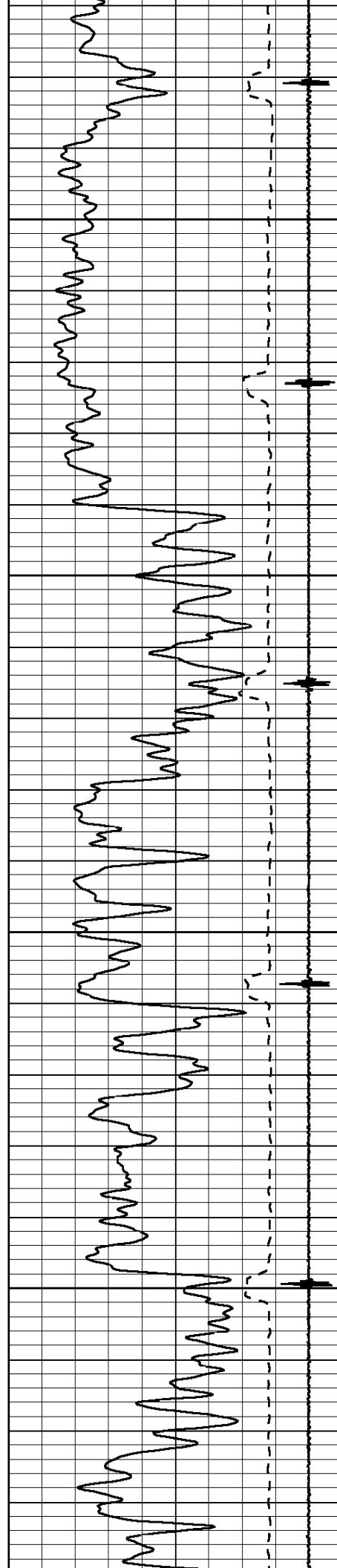




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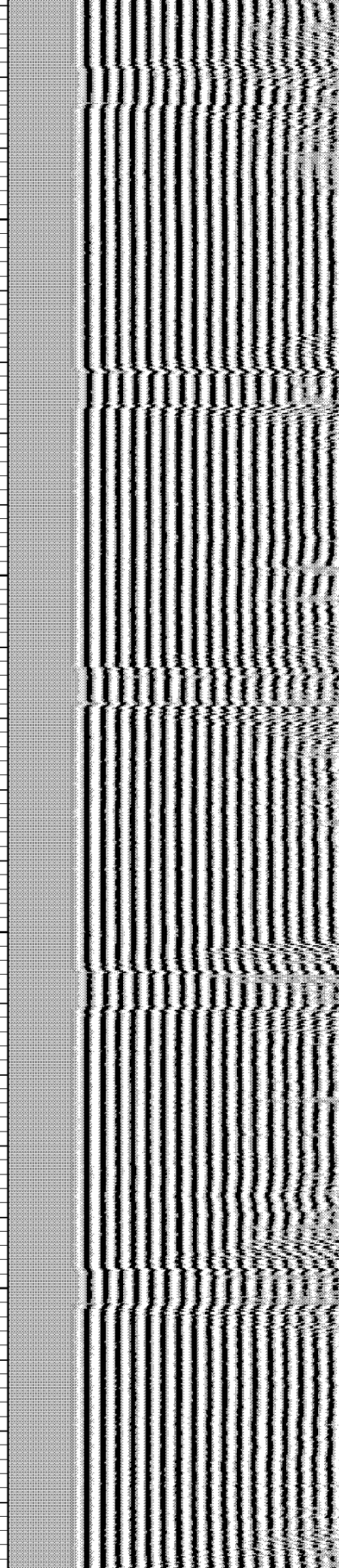
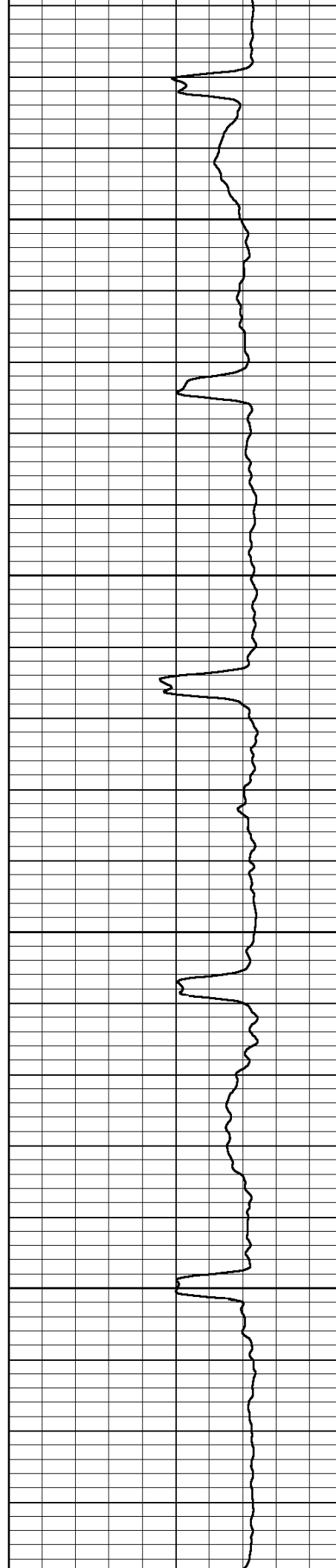
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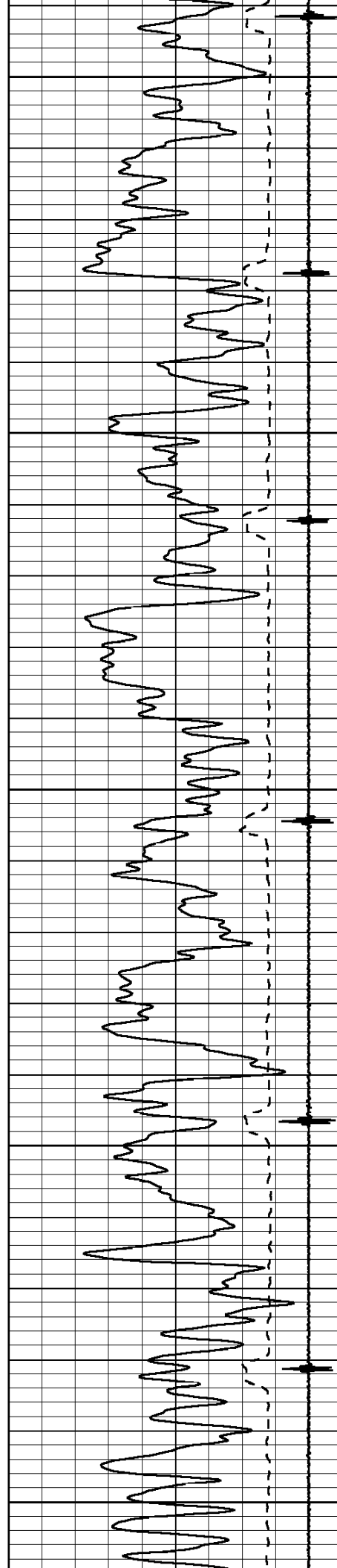




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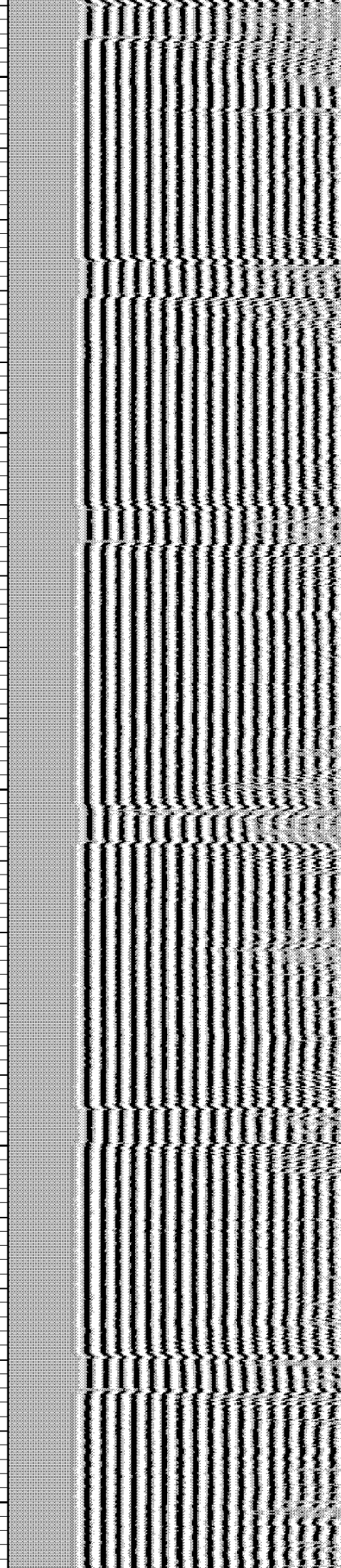
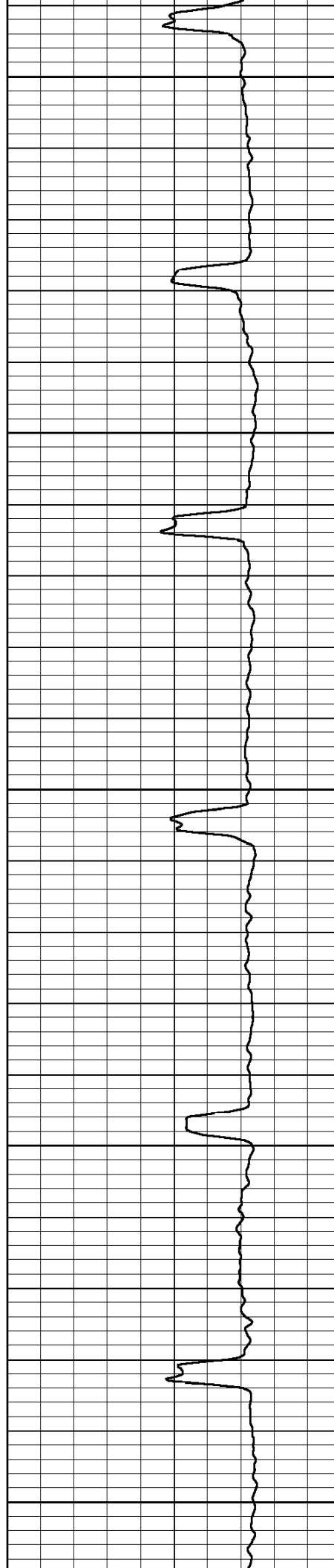


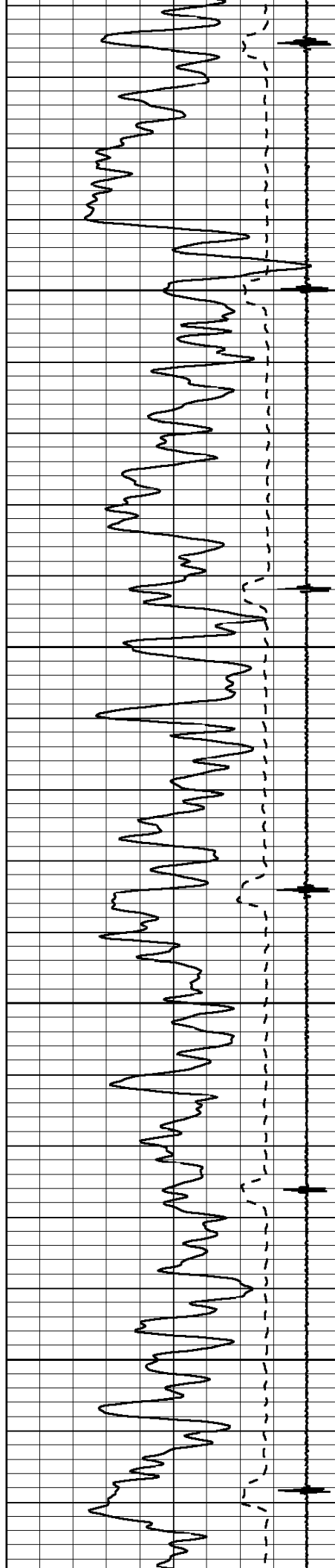


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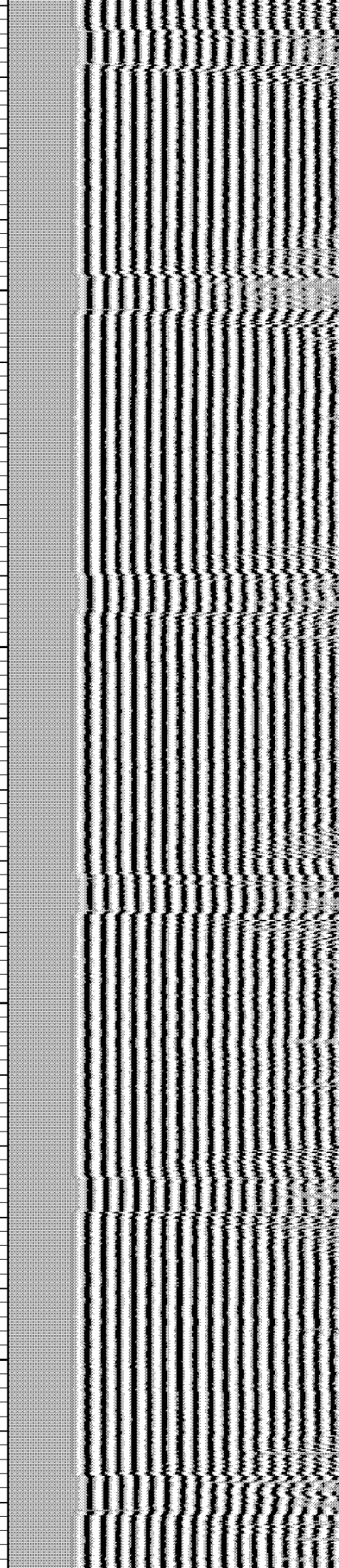
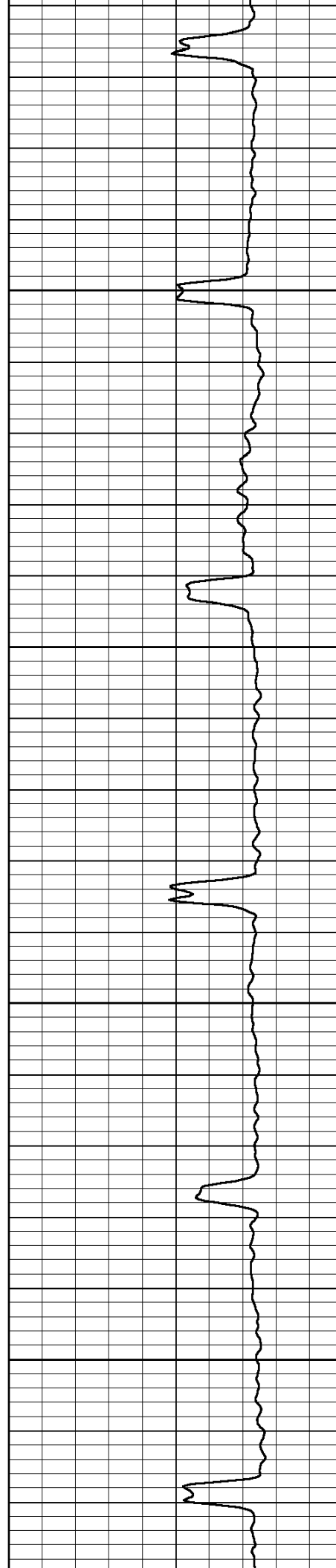
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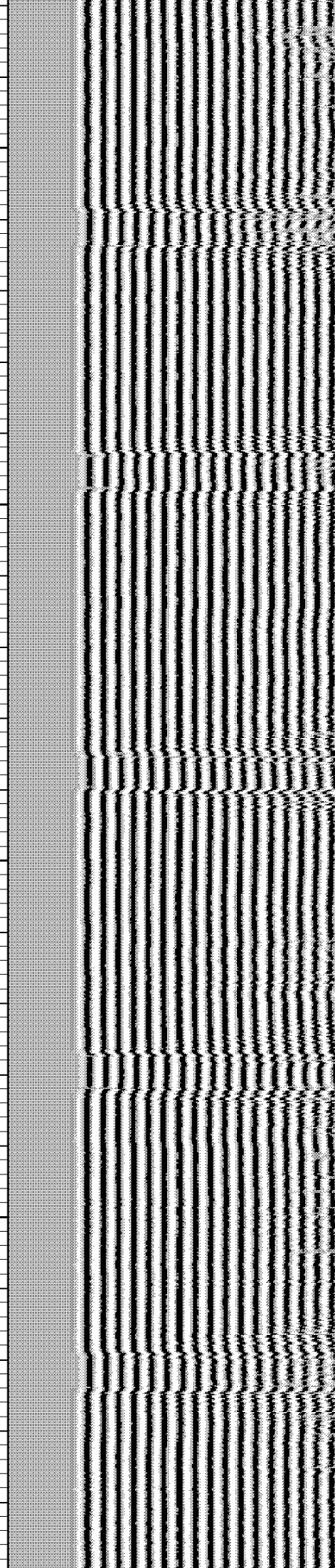
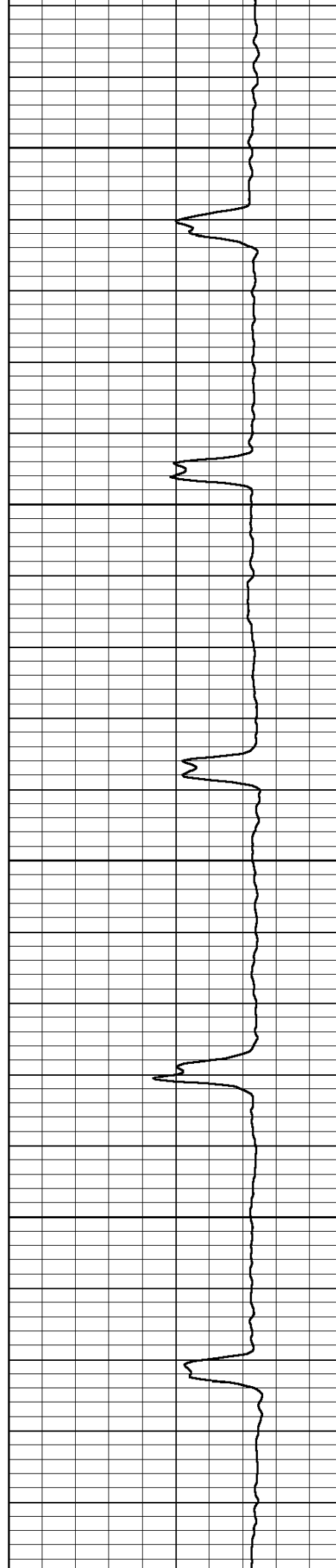
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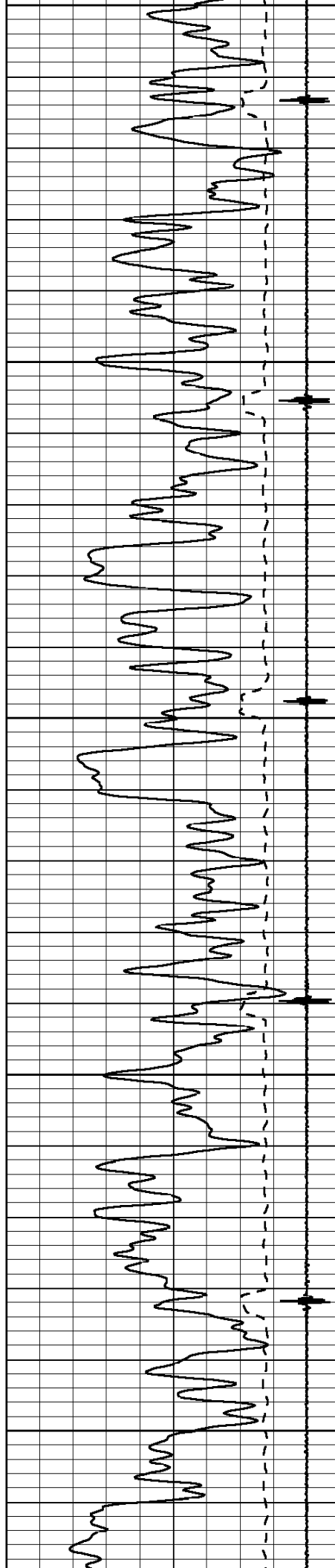




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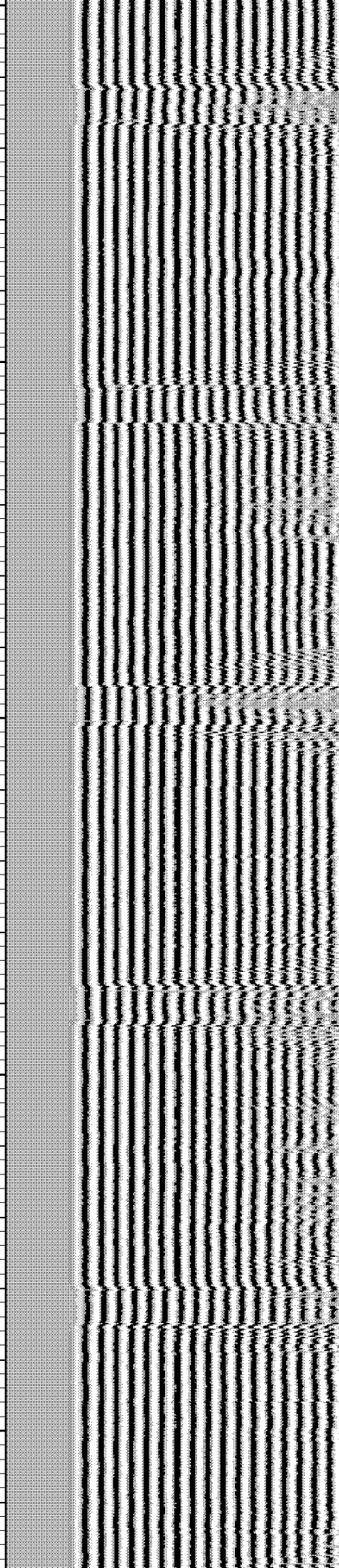
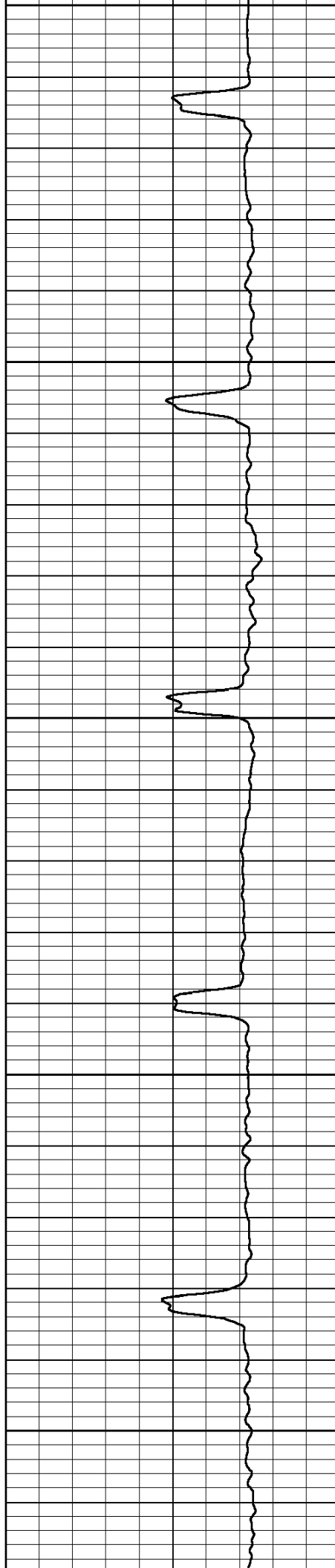
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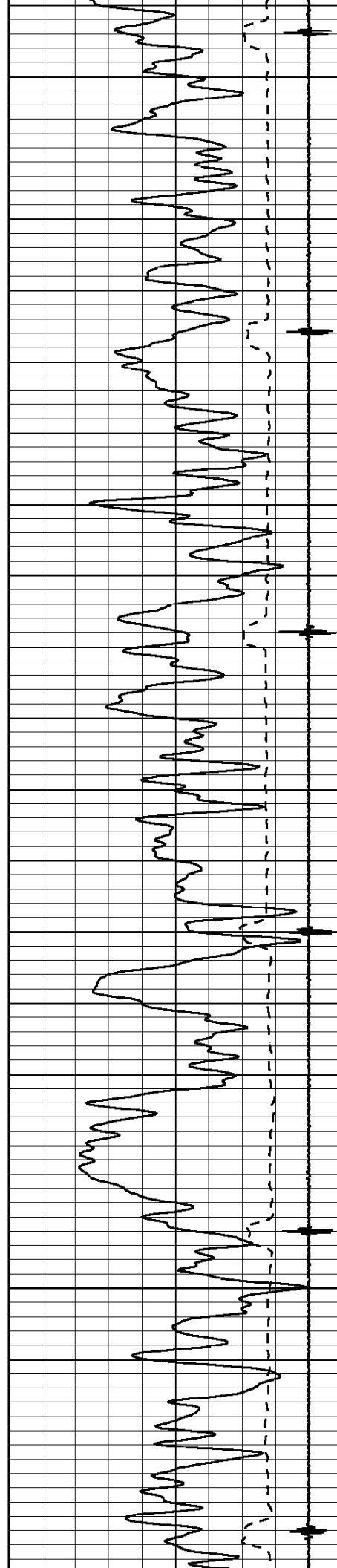




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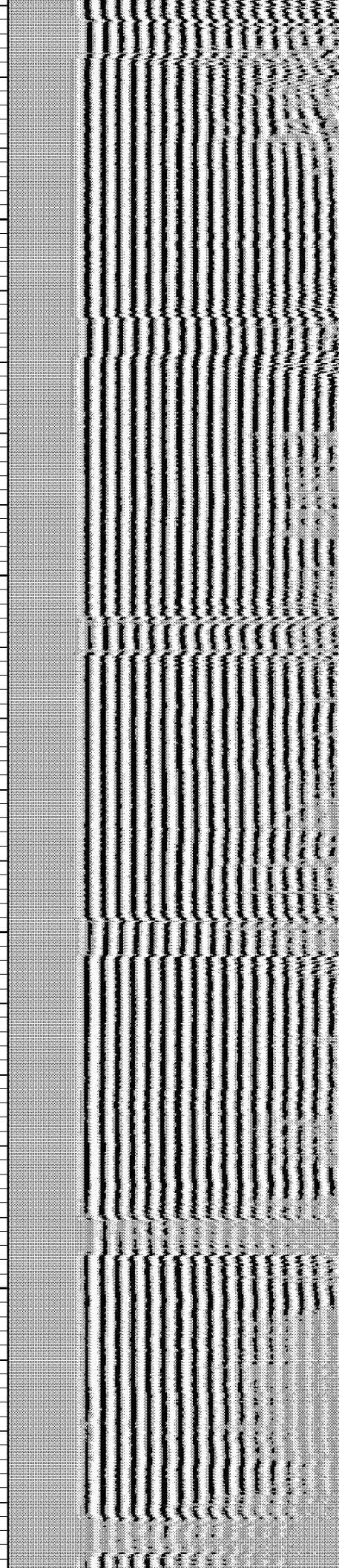
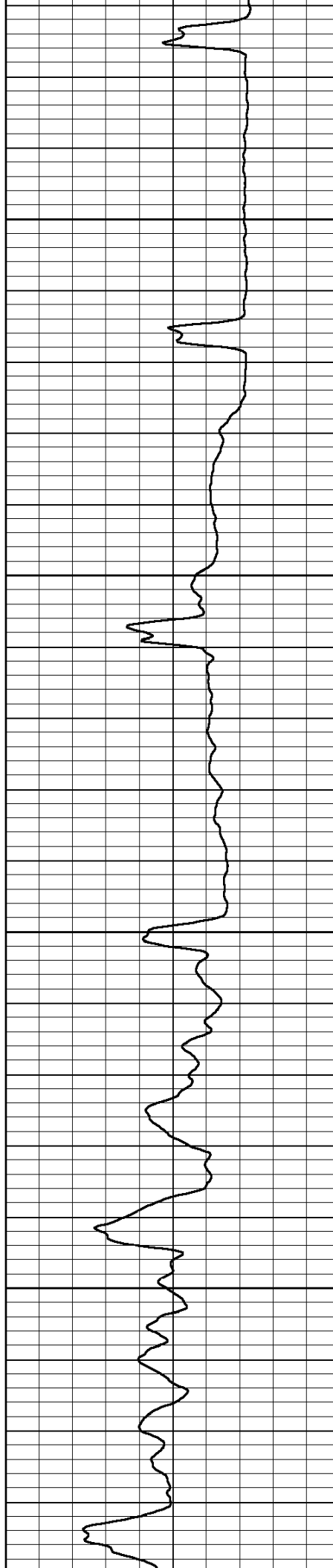
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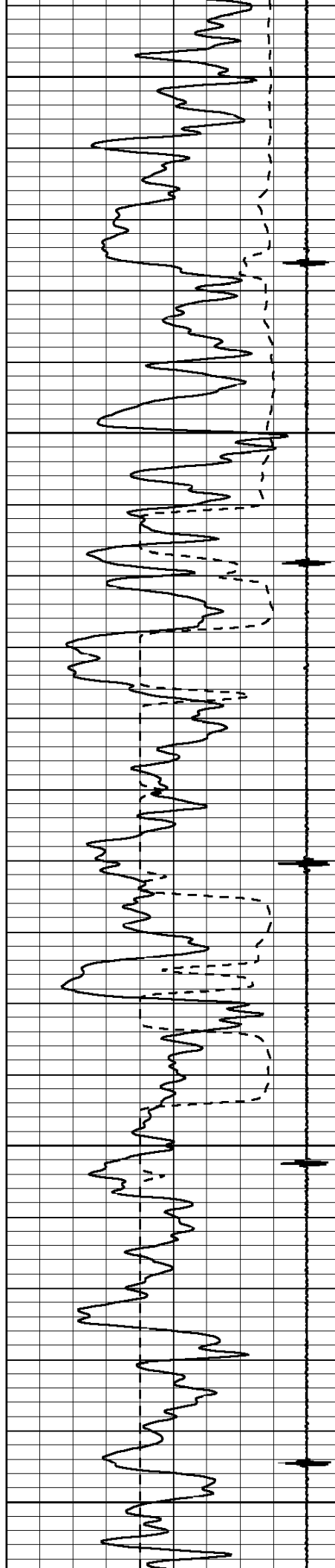




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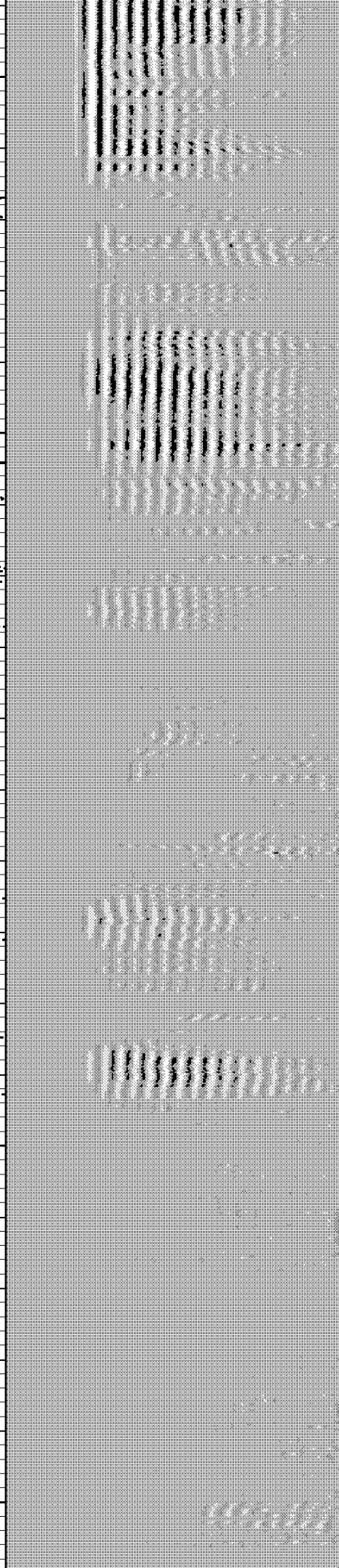
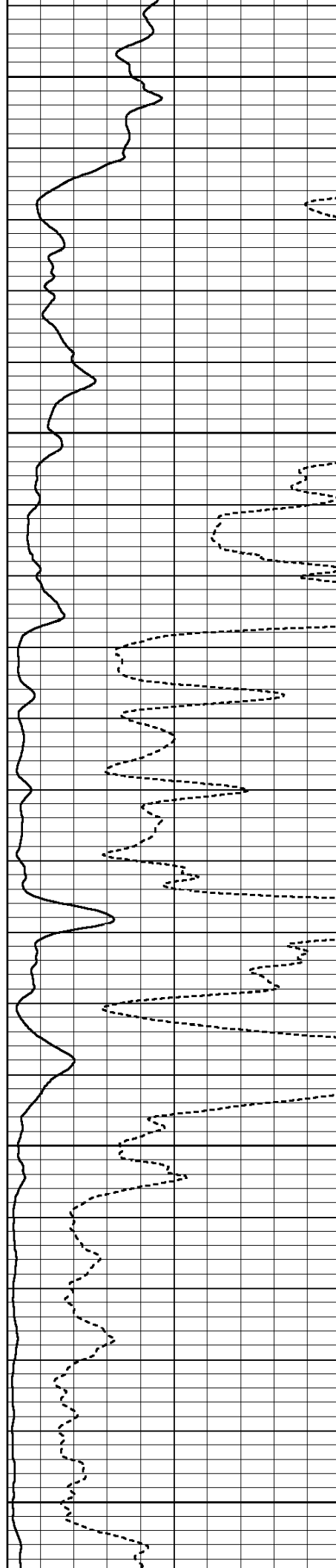


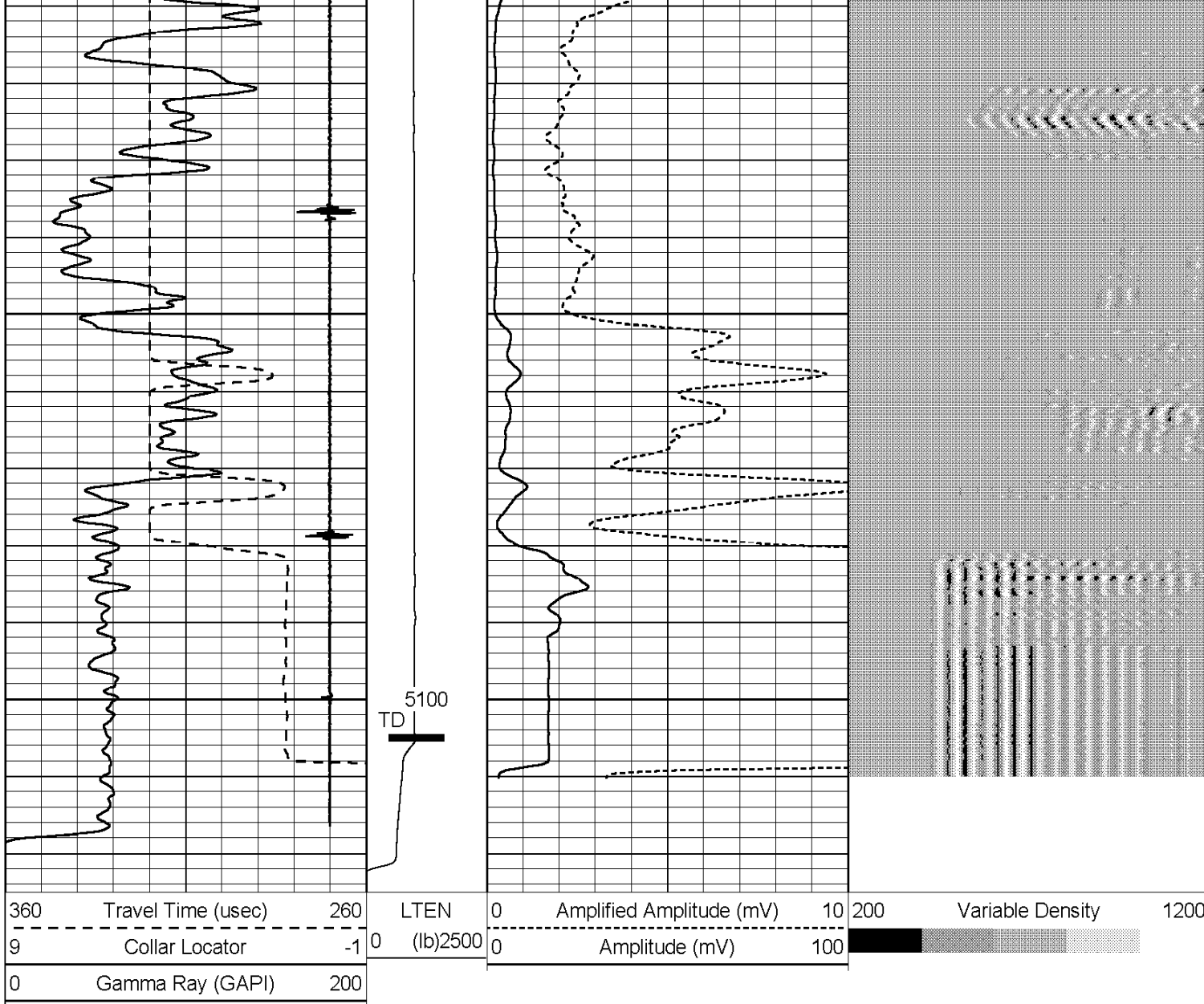


4800

4900

5000





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ACOUSTIC CEMENT BOND LOG

MAIN LOG SECTION

SCALE: 5" = 100'

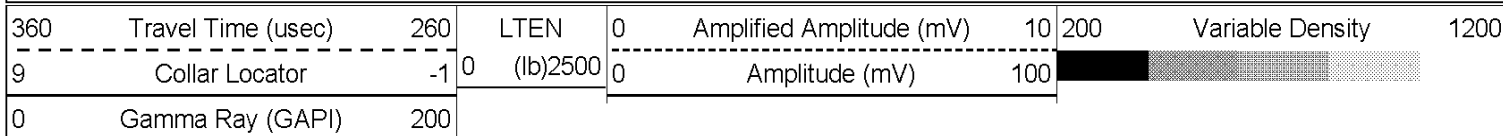
HALLIBURTON

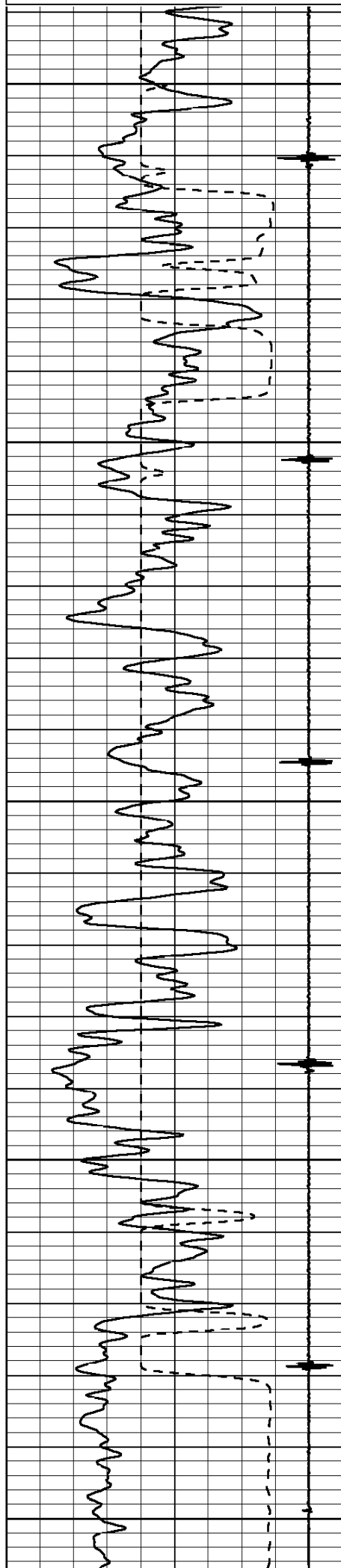
ACOUSTIC CEMENT BOND LOG

REPEAT LOG SECTION

SCALE: 5" = 100'

Database File: w_sg_431_32_cbl.db
 Dataset Pathname: FREEPIPE7
 Presentation Format: prb_cbl
 Dataset Creation: Sat Jan 17 18:47:31 2009 by Log Halliburton Casedho
 Charted by: Depth in Feet scaled 1:240

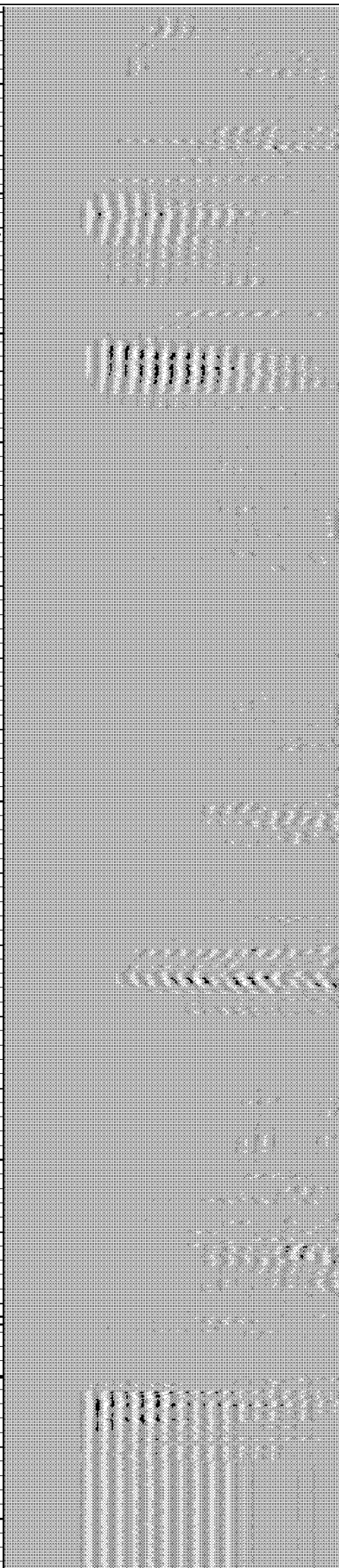
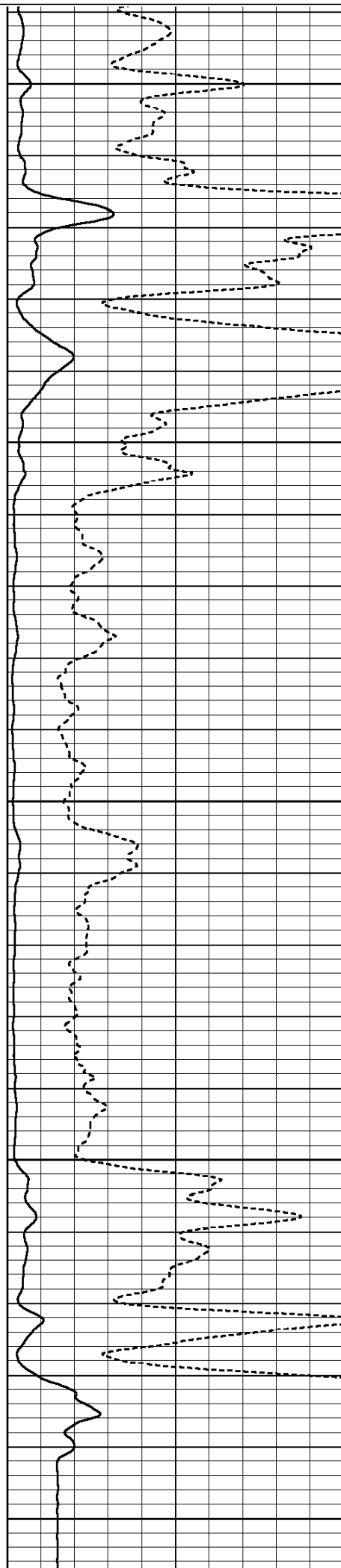


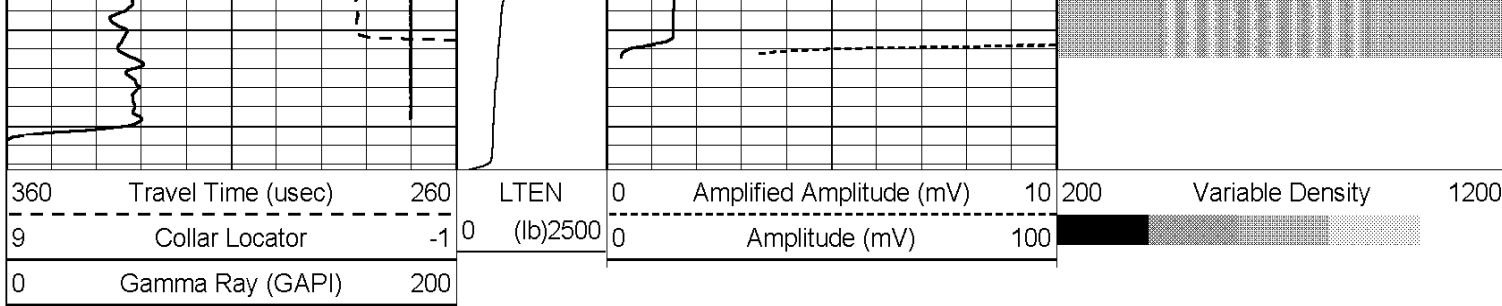


4900

5000

5100





HALLIBURTON

ACOUSTIC CEMENT BOND LOG

REPEAT LOG SECTION

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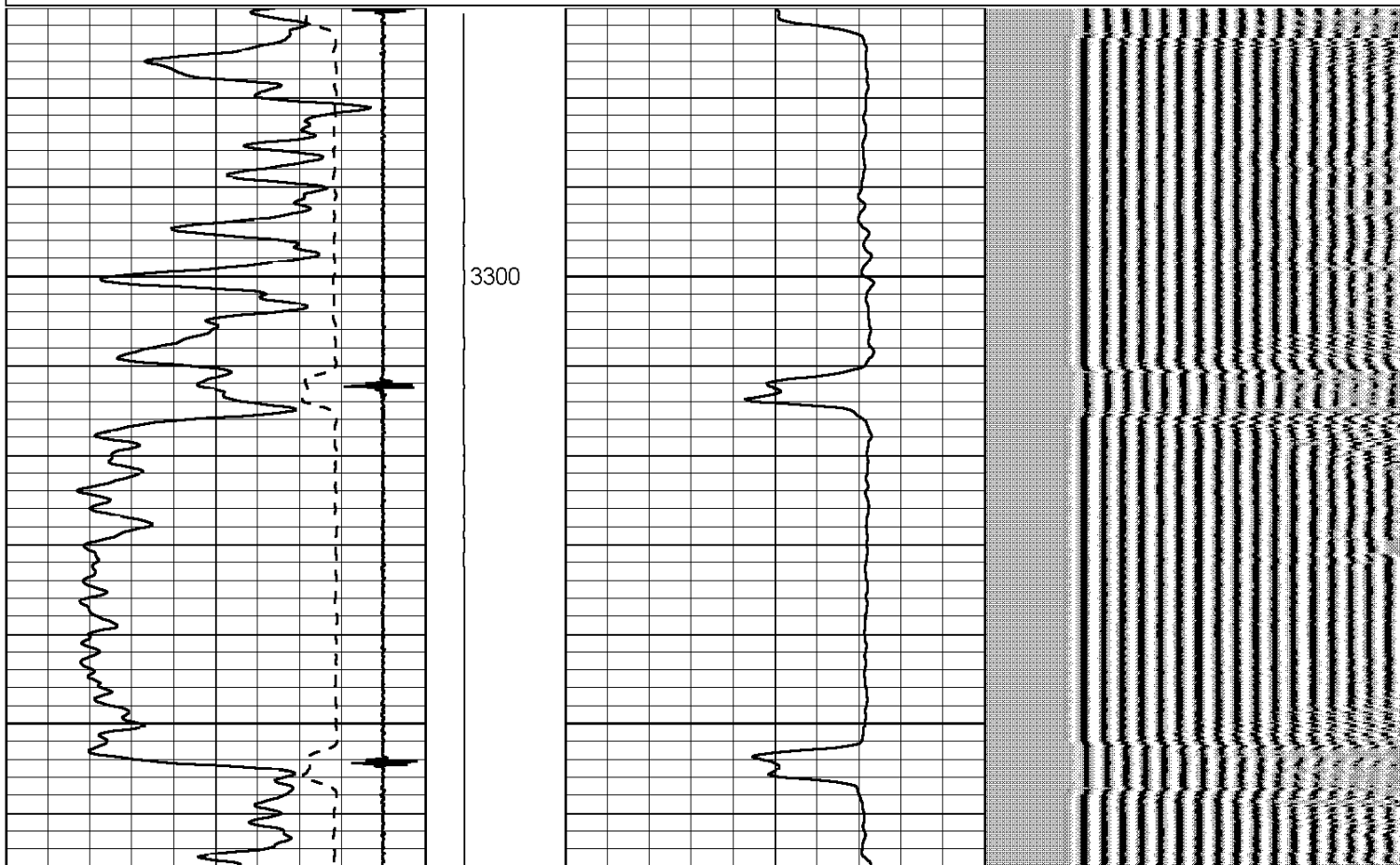
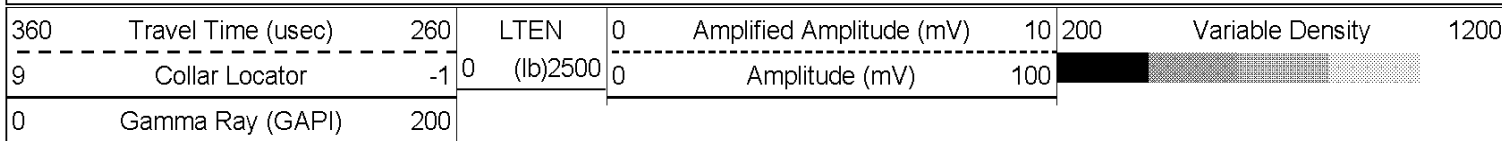
HALLIBURTON

ACOUSTIC CEMENT BOND LOG

FREE PIPE LOG SECTION

SCALE: 5" = 100'

Database File: w_sg_431_32_cbl.db
 Dataset Pathname: FREEPIPE5
 Presentation Format: prb_cbl
 Dataset Creation: Sat Jan 17 18:31:01 2009 by Log Halliburton Casedho
 Charted by: Depth in Feet scaled 1:240



Calibration Report

Database File: w_sg_431_32_cbl.db
 Dataset Pathname: merge3
 Dataset Creation: Sun Jan 18 11:46:38 2009

Temperature Calibration Report

Serial Number: 081013
 Tool Model: 1.375TEMP
 Performed: Fri Jul 05 02:18:21 1996

	Reference	Reading
Low Reference:	0.00 degF	0.00 cps
High Reference:	1.00 degF	1.00 cps
Gain:	0.10	
Offset:	0.00	
Delta Spacing	1	

Gamma Ray Calibration Report

Type / Serial: Probe / 081008

SHOP CALIBRATION

Sat Jan 17 16:11:41 2009

	Counts/Sec.	Gain	Offset	Jig	Units
Background	78.7				cps
Calibrator	366.9				cps
		0.8433			GAPI/cps

PRIMARY VERIFICATION

Sat Jan 17 16:14:07 2009

Background	70.6				cps
Calibrator	310.0				cps
Difference				239.4	GAPI

BEFORE SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Cement Bond Log Calibration Report


Serial Number: 080529
 Tool Model: Probe
 Performed: Sat Jan 17 17:04:42 2009

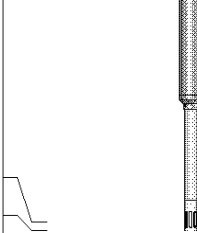
Depth: 1831.12 ft
 Casing Diameter: 4.5 in

3' Spacing 5' Spacing

Signal Zero:	1	1	mV
Calibrated Amplitude:	81.1961	81.1961	mV

Reading at Signal Zero:	-0.0147705	-0.0141602	V
Reading in Free Pipe:	0.412744	0.382373	V
Gain:	187.587	202.243	
Offset:	3.77075	3.86379	

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
WVF3	12.88		STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
			CENT-CBLINLINE (PT_MONO2)	2.89	3.25	
			CBL-Probe (080529) Probe 2.75" Dual Receiver Bond	8.92	2.75	60.00
			CENT-CBLINLINE (PT_MONO2)	2.89	3.25	
			GR-Probe (081008) Probe 2.75" 4 Channel Pulse	4.54	2.75	30.00
WVF5	11.88					
CCL	5.18					
GR	3.80					

TEMP LLMTEN	0.08 0.00		TEMP-1.375TEMP (081013) Temperature Tool	1.26	1.38	5.00
Dataset: w_sg_431_32_cbl.db: field/well/run1/merge3 Total Length: 21.99 ft Total Weight: 96.00 lb O.D. 3.25 in						

Company	WILLIAMS PRODUCTION CO				
Well	SG 431-32				
Field	GRAND VALLEY				
County	GARFIELD			State	CO
HALLIBURTON			ACOUSTIC CEMENT BOND LOG		