

# HALLIBURTON

## ACOUSTIC CEMENT BOND LOG

Company URSA OPERATING COMPANY  
 Well YATER 42D-17-07-95  
 Field PARACHUTE  
 County GARFIELD State CO

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 Field PARACHUTE  
 County GARFIELD State CO

Sec: 17 Twp: 07S Rge: 95W  
 GROUND LEVEL Elevation 5519'  
 KB , 17 Ft. above perm. datum  
 KB  
 BOTTOM HOLE LOCATION:  
 2516' FNL & 0660' FEL  
 RMT  
 GAUGE RING

API No.: 05-045-22757-0000 Serv. #: 902310059  
 Location: SURFACE HOLE LOCATION:  
 1729' FSL & 1107' FWL  
 Other Services

Permanent Datum		GROUND LEVEL Elevation 5519'		Elevation			
Log Measured From		KB		K.B. 5536'			
Drilling Measured From		KB		D.F. 5535'			
				G.L. 5519'			
Date @ Time Logged	12 APR 2015	Type Fluid in Hole	WATER				
Run No.	ONE	Density of Fluid	8.4#				
Depth - Driller	7098'	Fluid Level	62'				
Depth - Logger	7012'	Cement Top Est. Logged	2080'				
Bottom - Logged Interval	SURFACE	Equipment / Location	1097/1668 / G.J.				
Top - Log Interval		Recorded by	D. SOLIS				
Max. Recorded Temp.	233 DEG F	Witnessed by	R. TOLLE				
CEMENTING DATA		Surface	Protection	Production	Liner		
		String	String	String			
		N/A	N/A	N/A	N/A		
Date / Time Cemented							
Primary / Squeeze							
Expected Compressive Strength	psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs		
Cement Volume	/	/	/	/	/		
Cement Type / Weight Formulation	/	/	/	/	/		
Mud Type / Mud Wgt.	/	/	/	/	/		
Borehole Record		Casing & Tubing Record					
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25"	SURFACE	1854'	8.625"	32.0#	SURFACE	1854'
TWO	7.875"	1854'	7098'	4.5"	11.6#	SURFACE	7098'

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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 CBL LOG DATED 12 APR 2015 IS THE PRIMARY DEPTH REFERENCE FOR THIS WELL.  
 GR-CBL-RMT RAN IN COMBINATION.  
 LOG INTERVALS PER CUSTOMER REQUEST.  
 SHORT JOINTS @: 4490' - 4500', 5520' - 5530', AND 6551' - 6561'.  
 \*\*\*THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.\*\*\*

Service Ticket No. 902310059      API No. 05-045-22757-0000      PGM Ver 14.11.12001

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

**EQUIPMENT DATA**

TELEMETRY		CEMENT BOND LOG		RESERVOIR MONITOR TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	12159411	Serial No.	11794522	Serial No.	12270722
Model No.	TTTC-U-002	Model No.	CBL-M	Model No.	RMT3D-A
Diameter	1.688"	Diameter	2.75"	Diameter	2.125"

**LOGGING DATA**

**General Data**

Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

ONE	7012'	SURFACE	0	REC	MAIN LOG SECTION			
	GAMMA RAY		TRAVEL TIME		AMPLITUDE		MSG	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	410	210	0	100	200	1060
DIRECTIONAL INFORMATION								
Maximum Deviation	N/A	deg. @	N/A	KOP	302'			

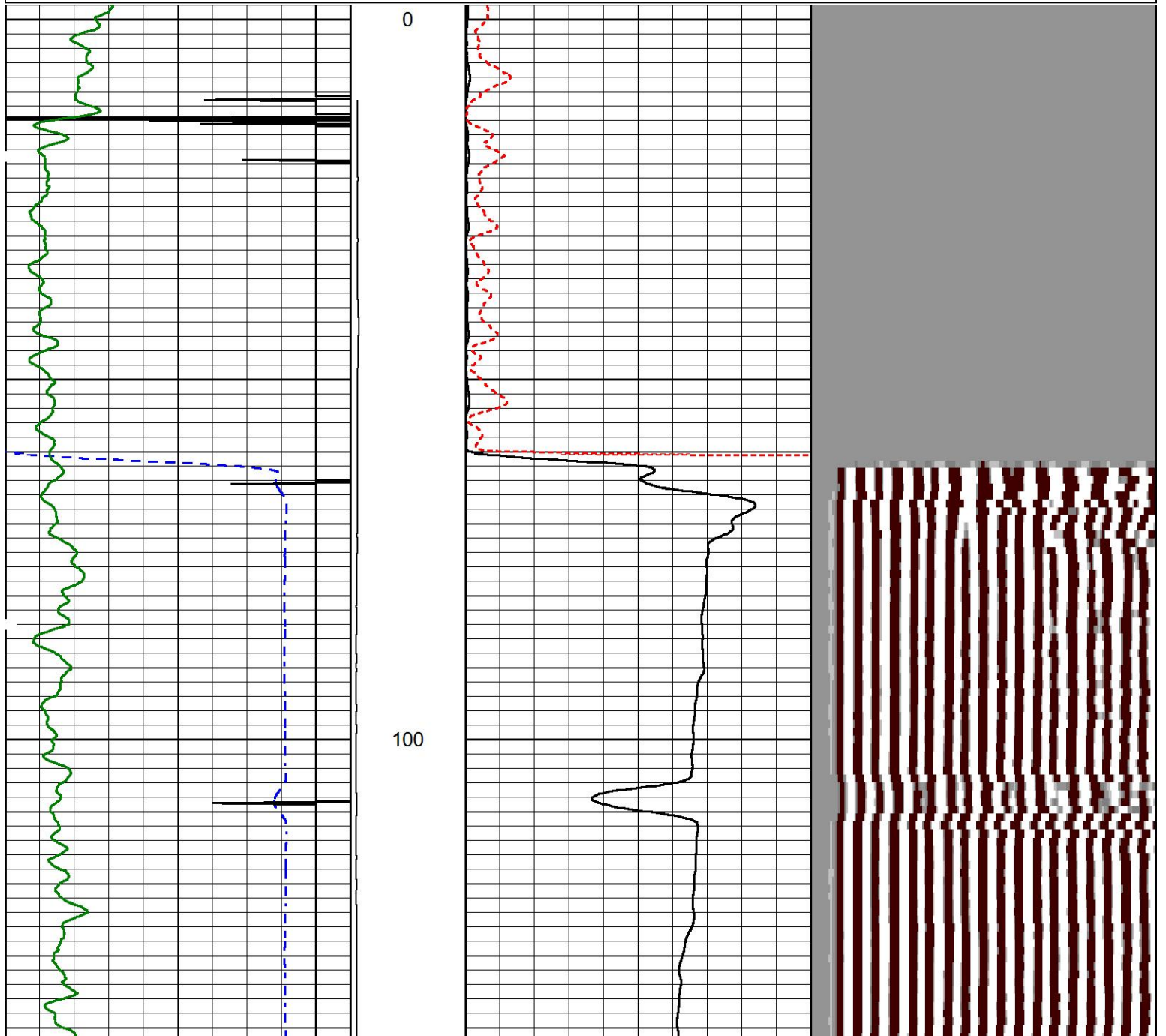
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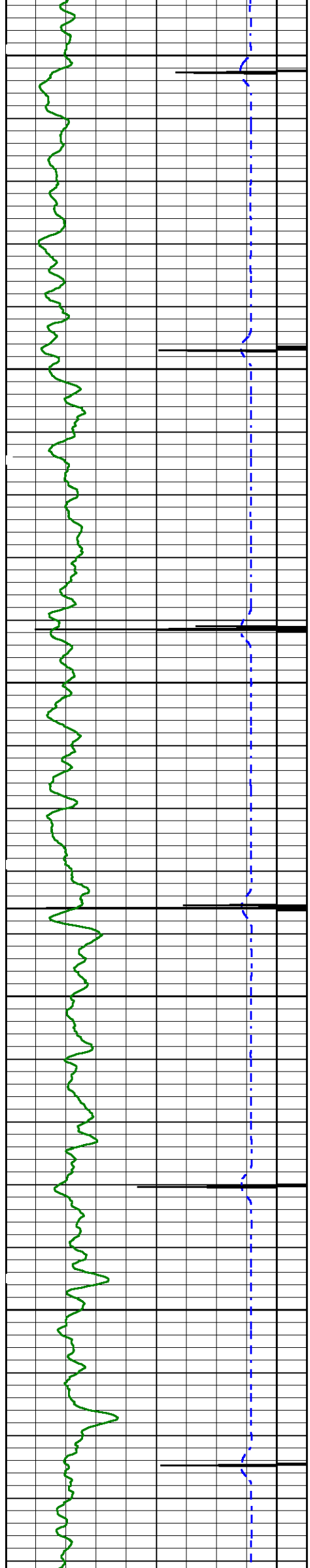
**HALLIBURTON**

5" = 100'

Database File        yater\_42d\_3dcombo.db  
Dataset Pathname    MAIN1  
Presentation Format   hcbg  
Dataset Creation     Sun Apr 12 15:02:31 2015  
Charted by            Depth in Feet scaled 1:240

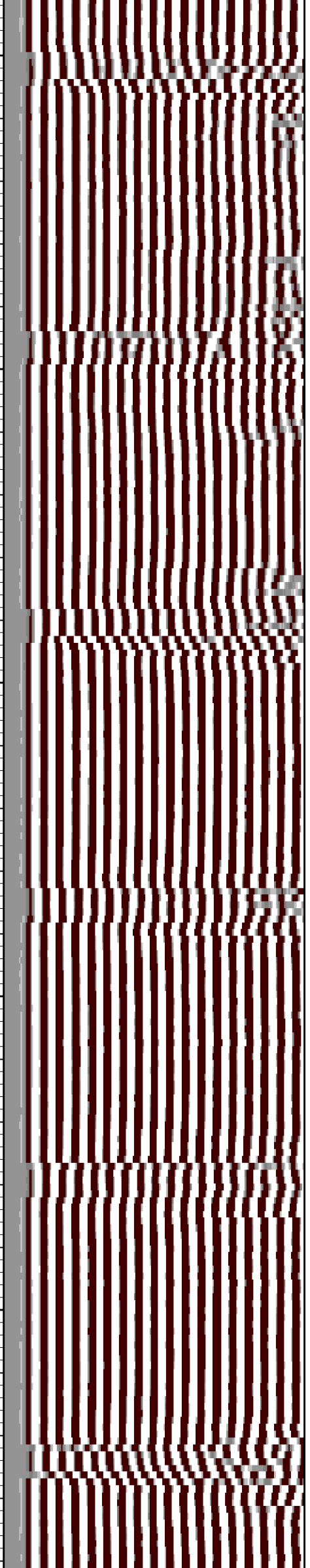
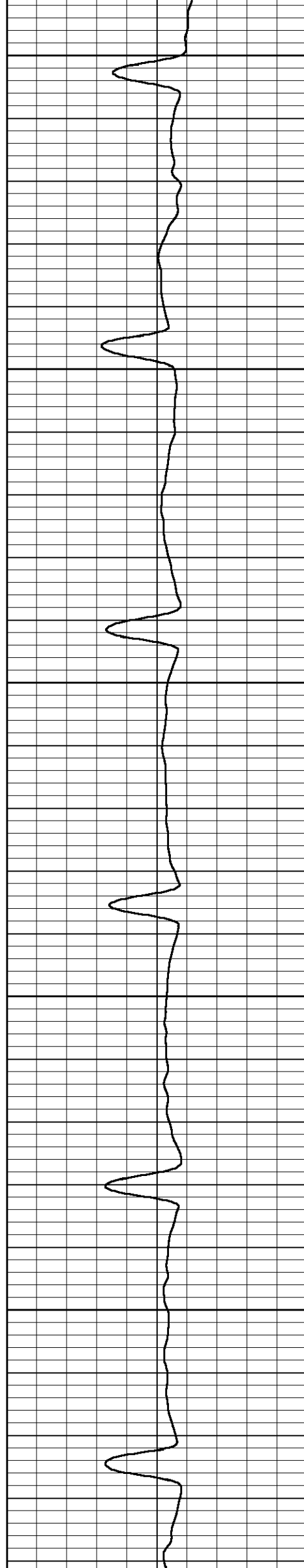
410	3' Travel Time (usec)	210	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-540	CCL	60	(lb6000)	0	3' Amplitude X5 (mV)	10			
0	GR (GAPI)	200							

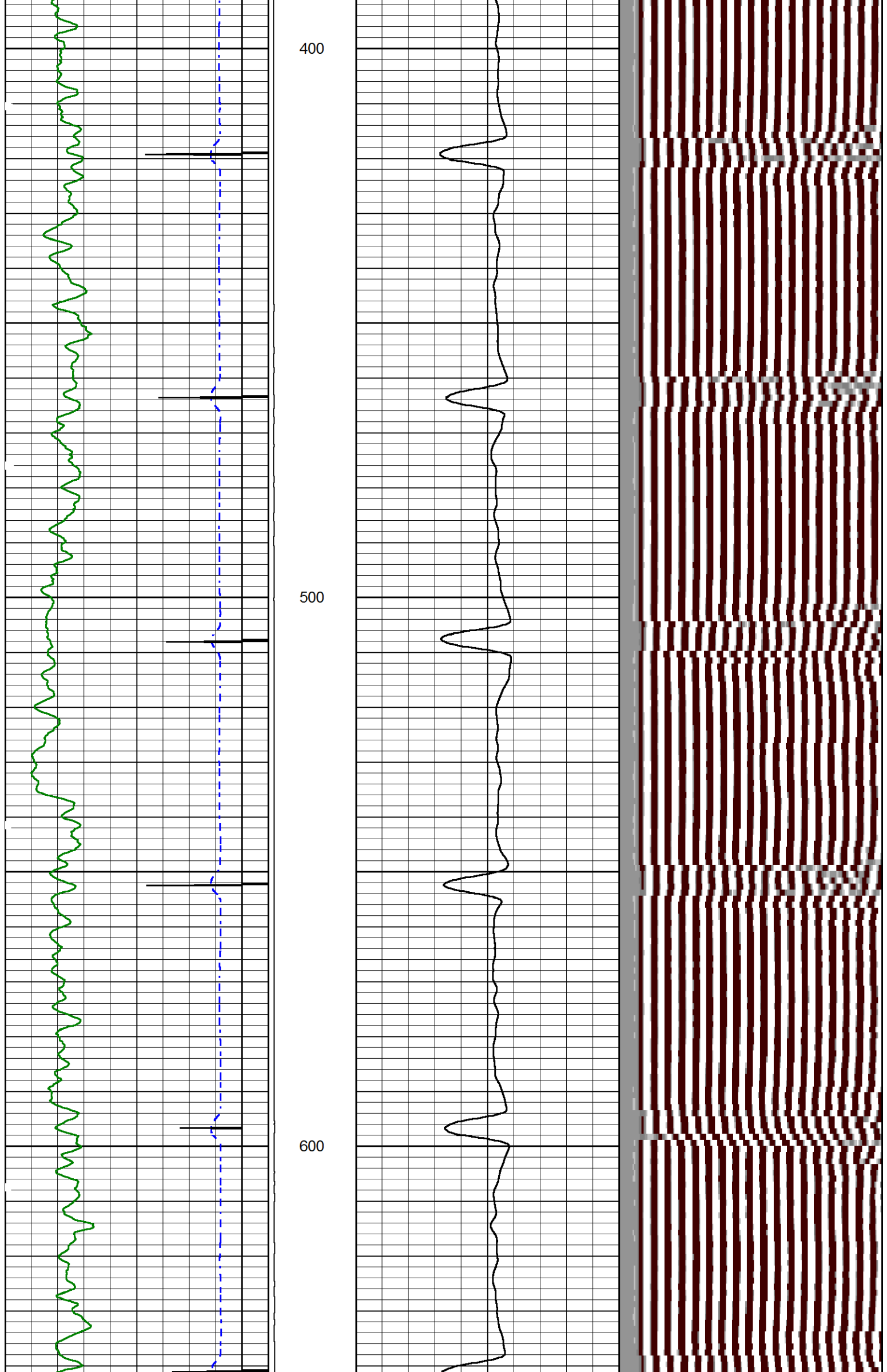


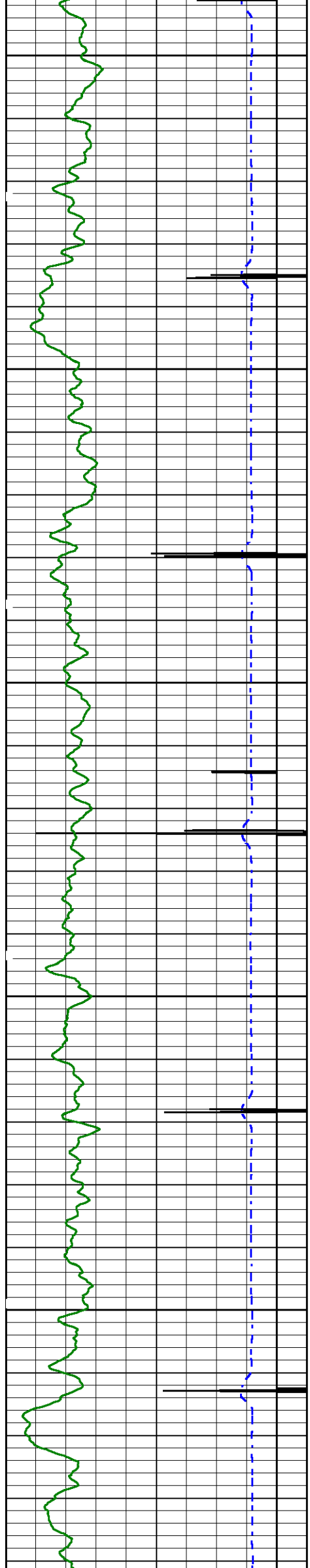


200

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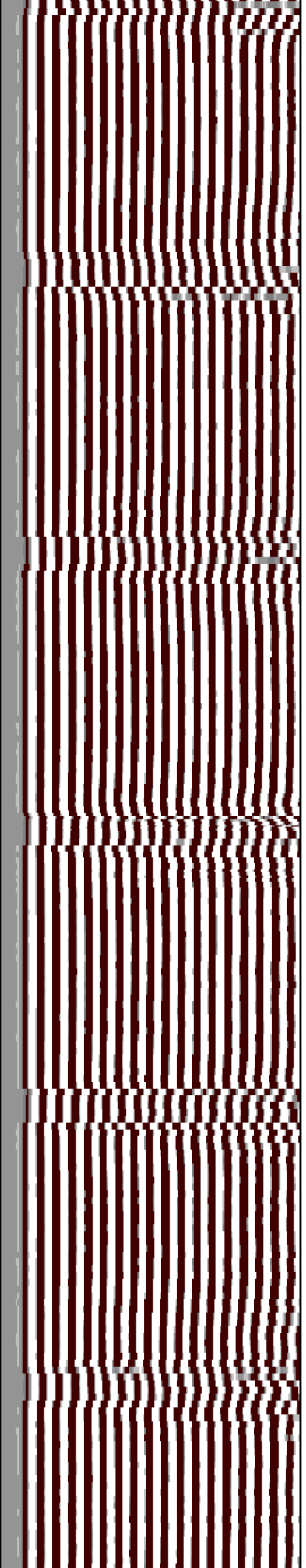
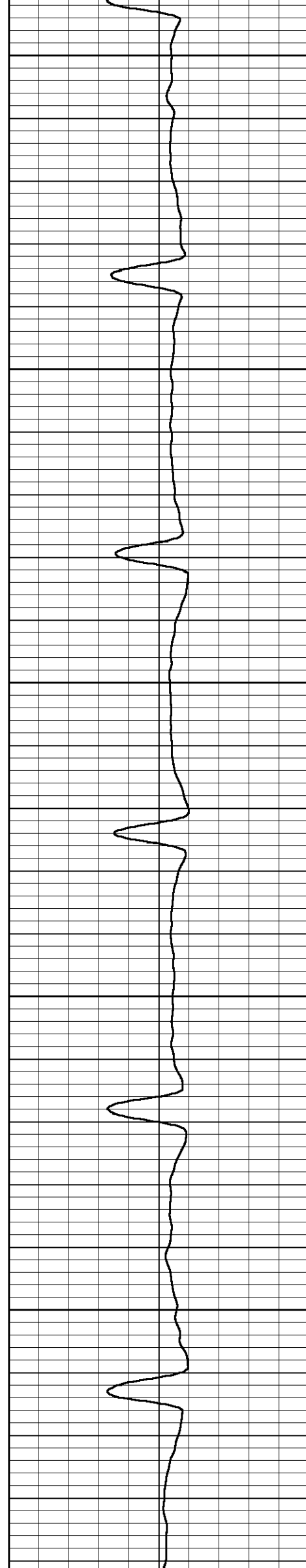


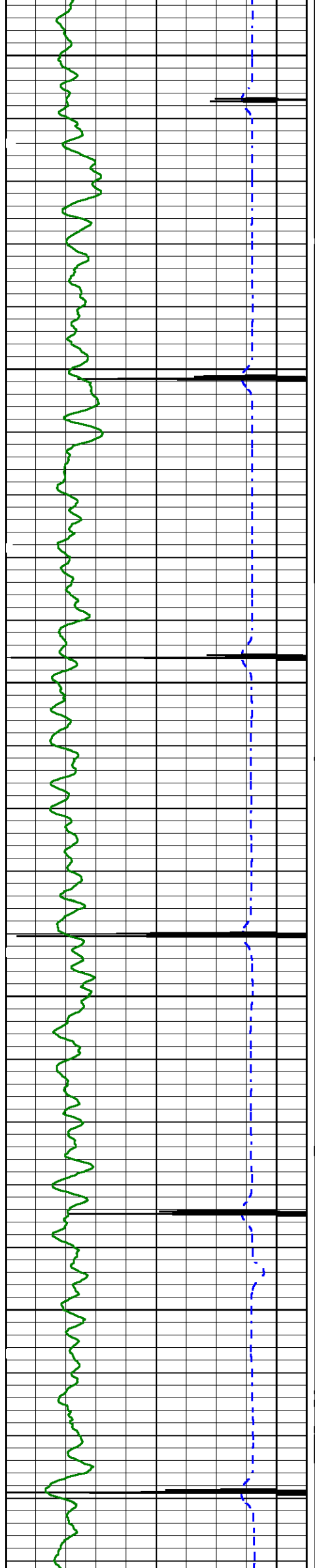




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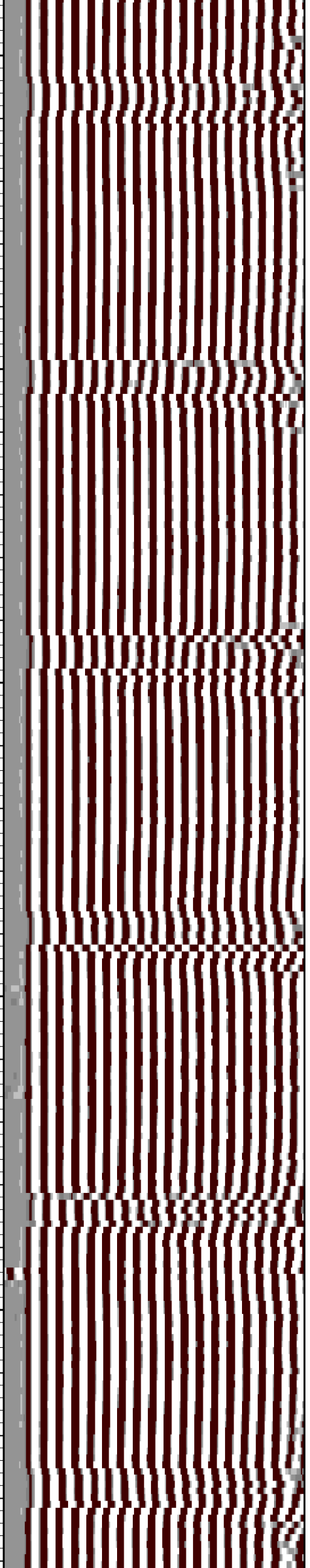
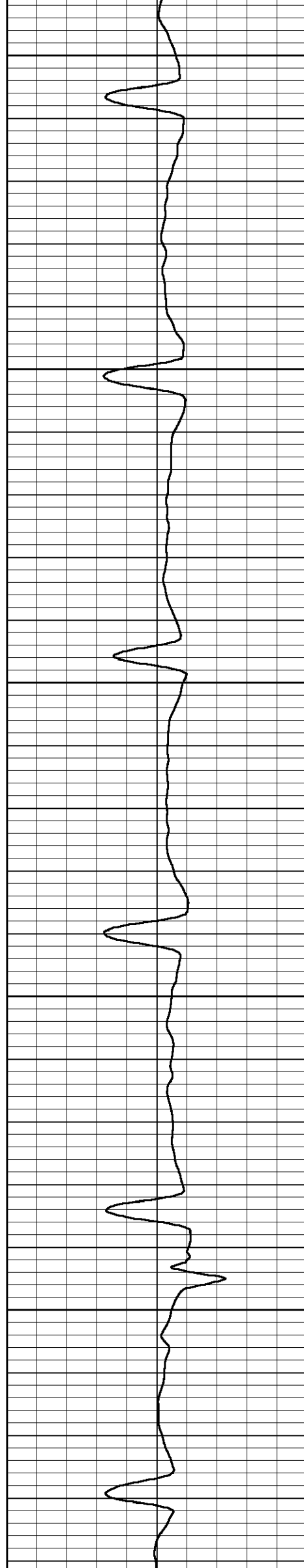


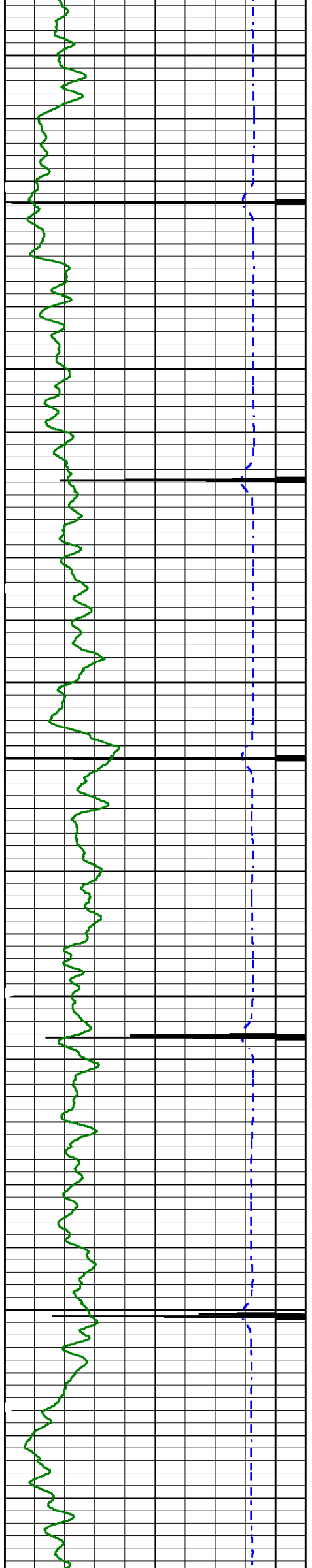


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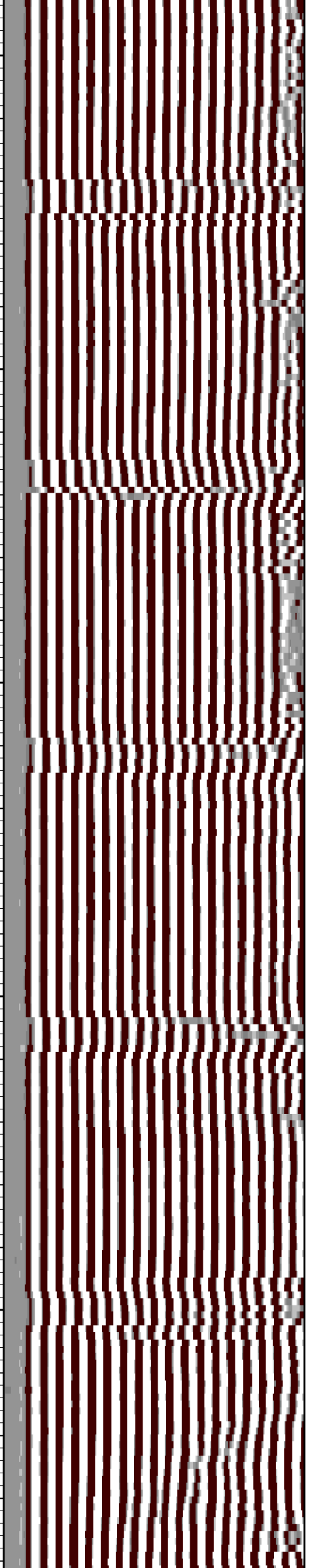
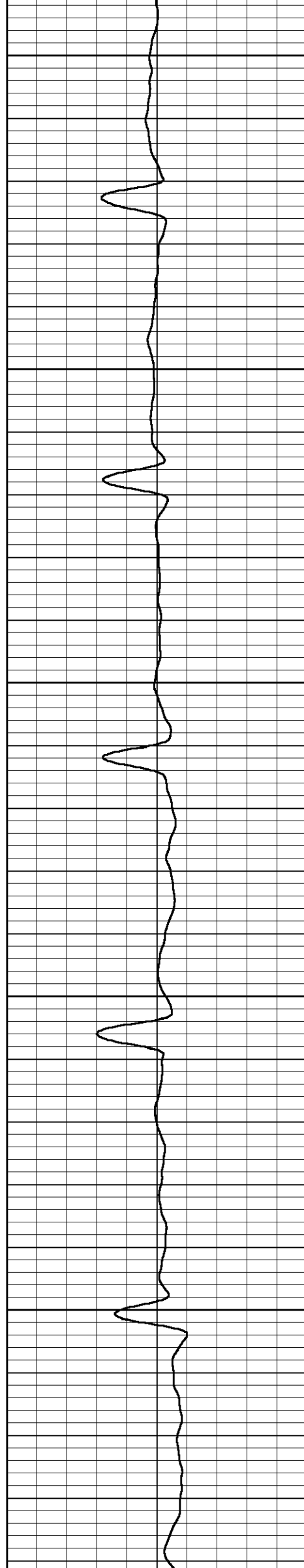
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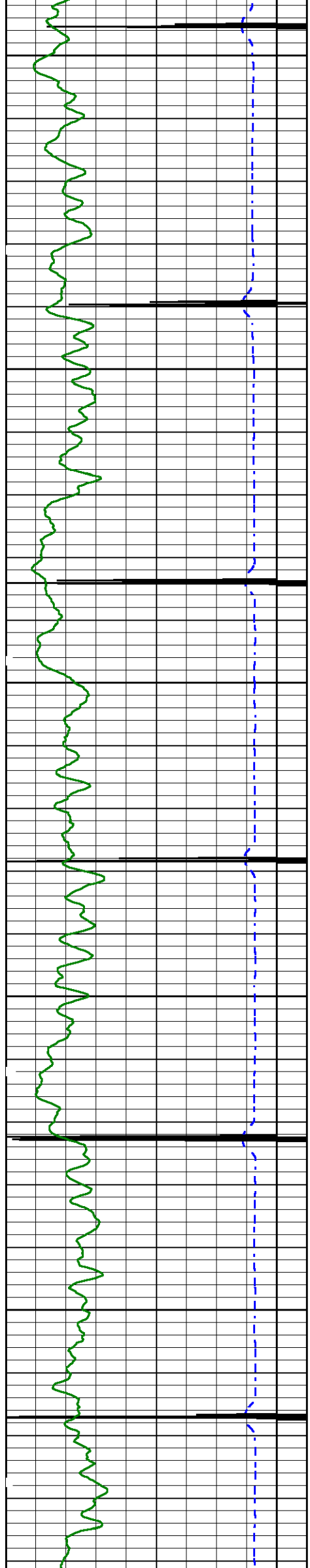




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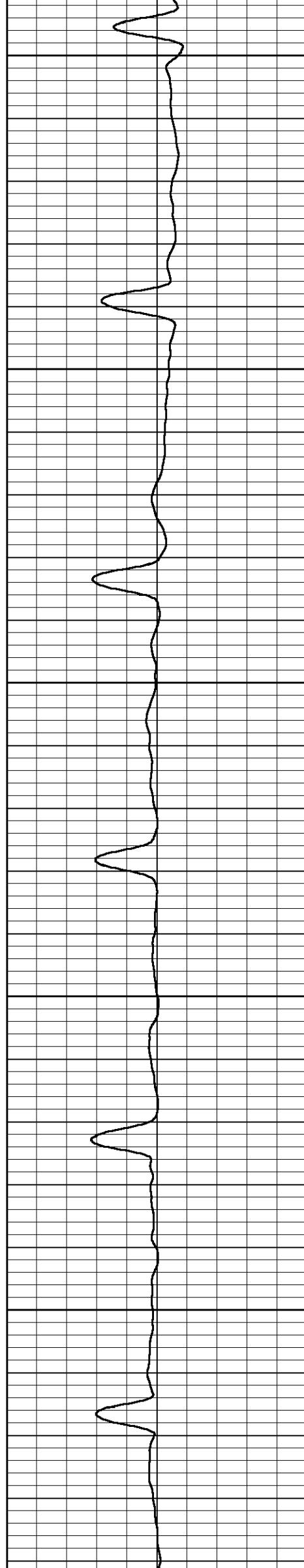


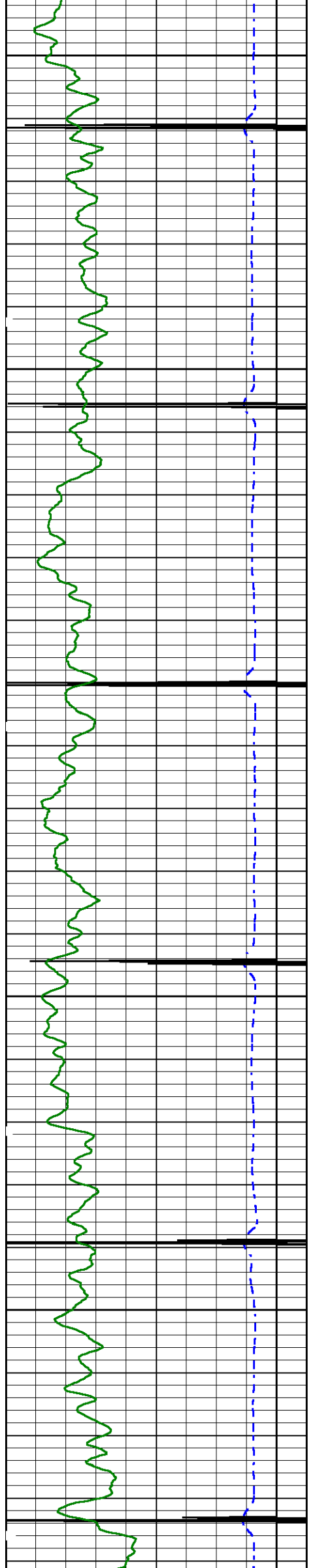


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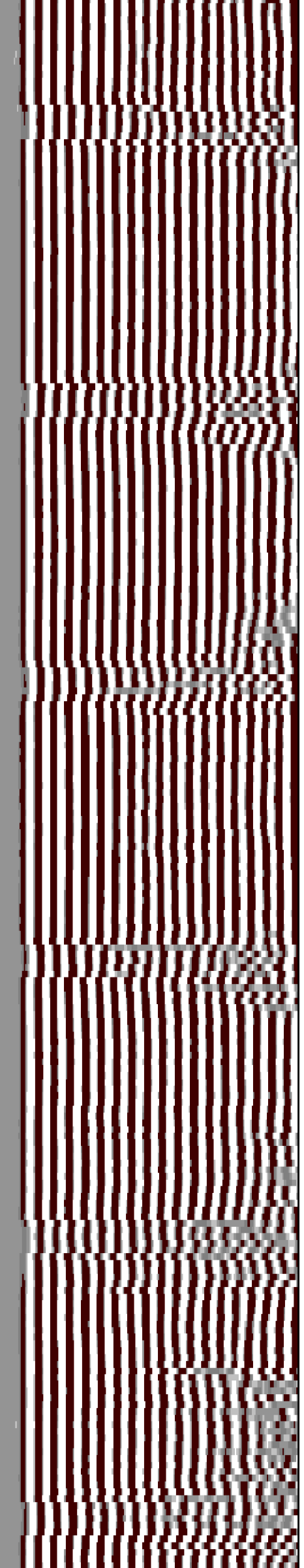
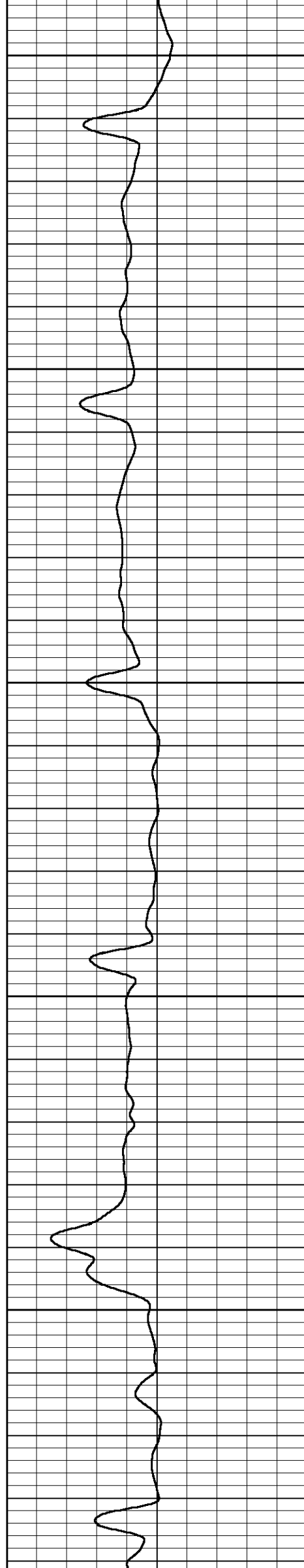
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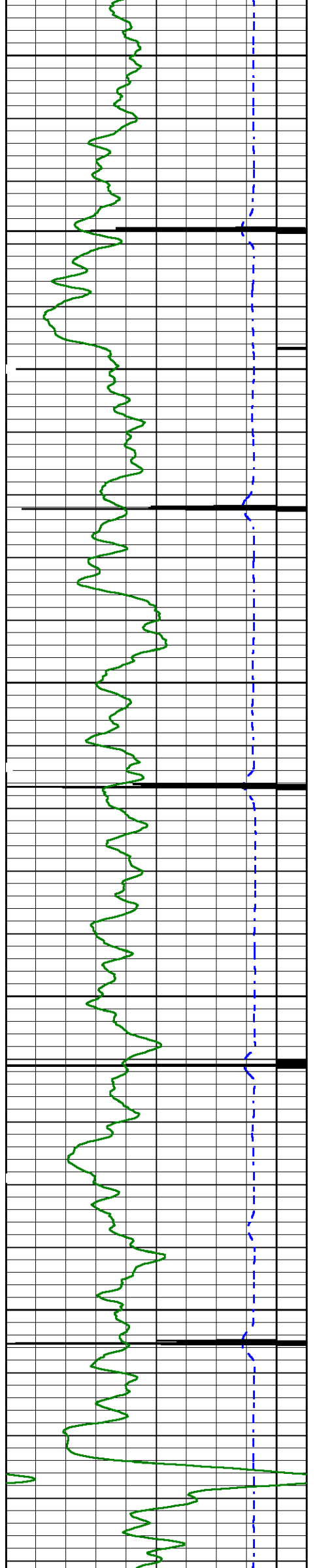




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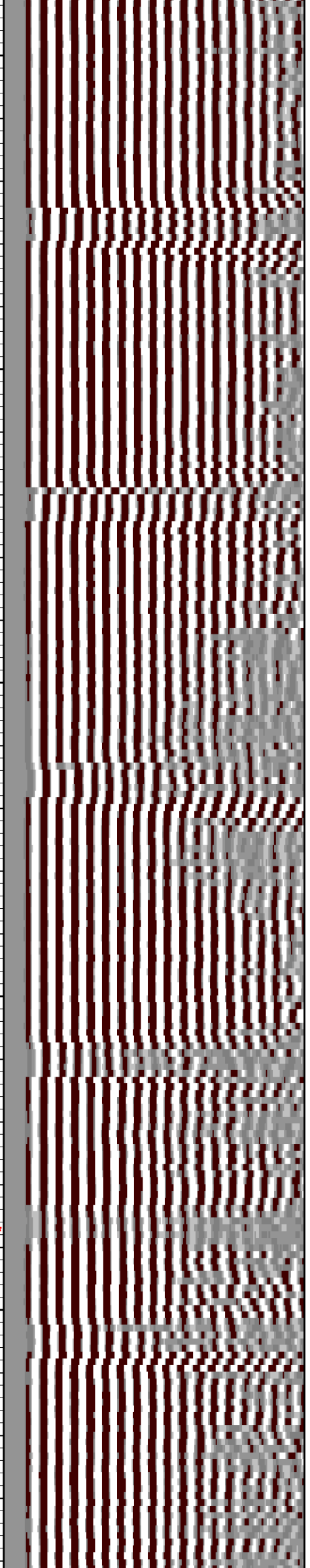
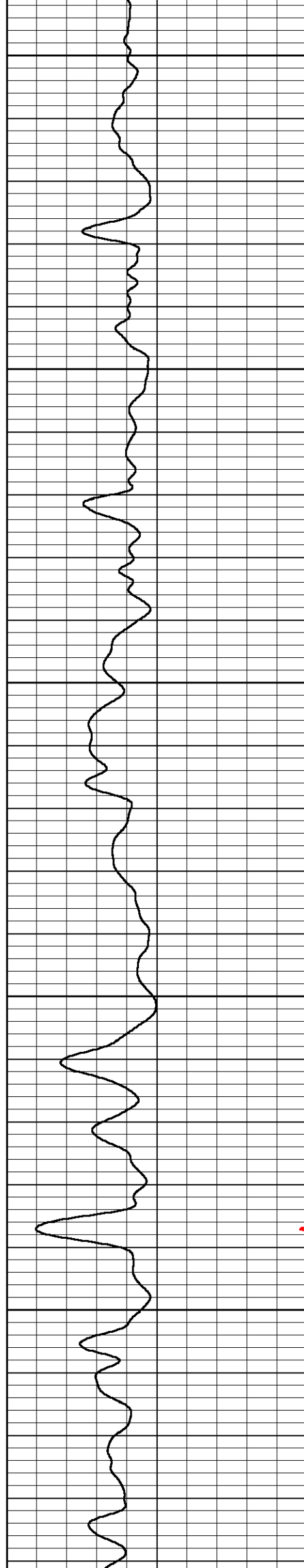


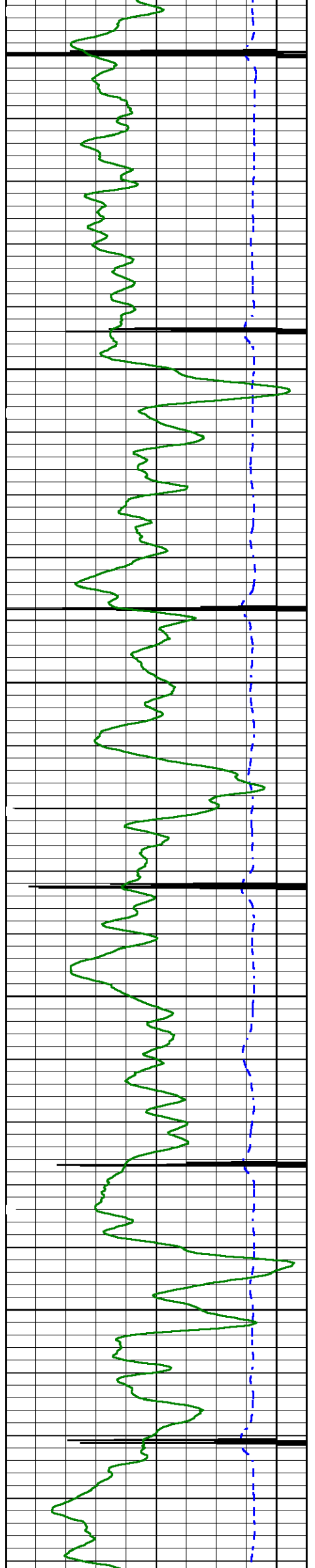


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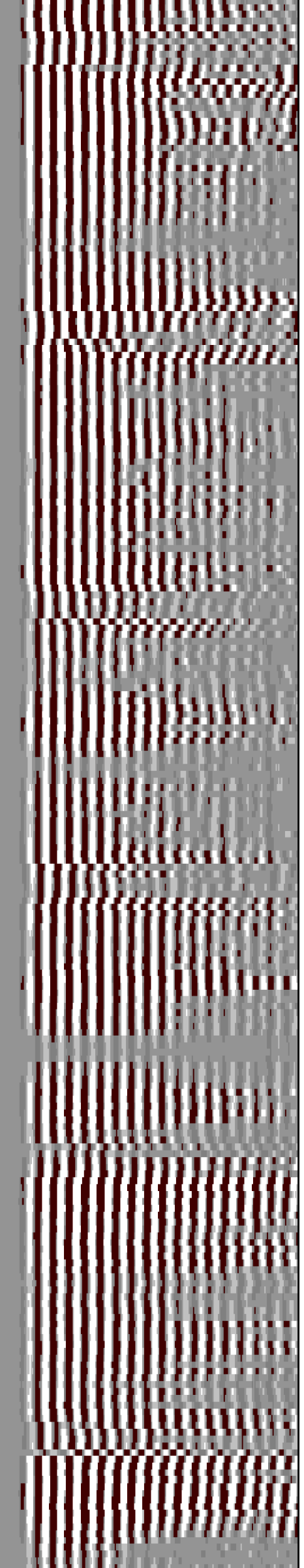
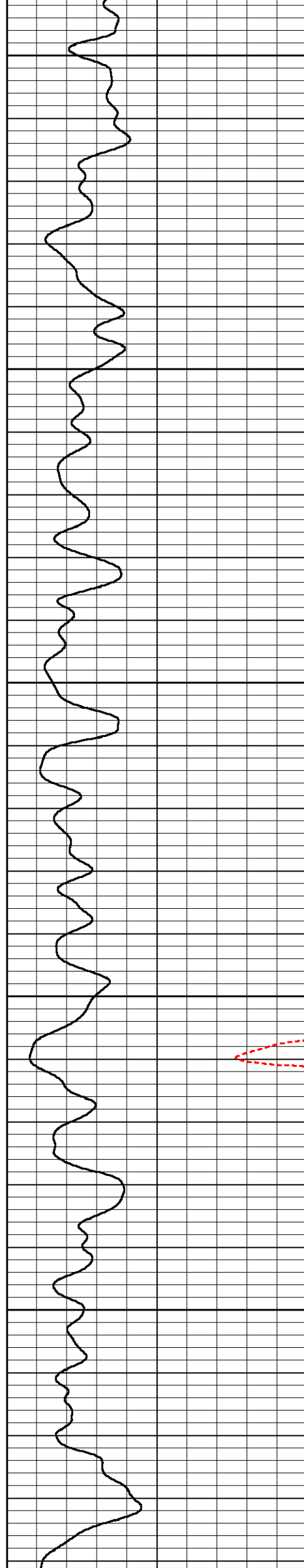
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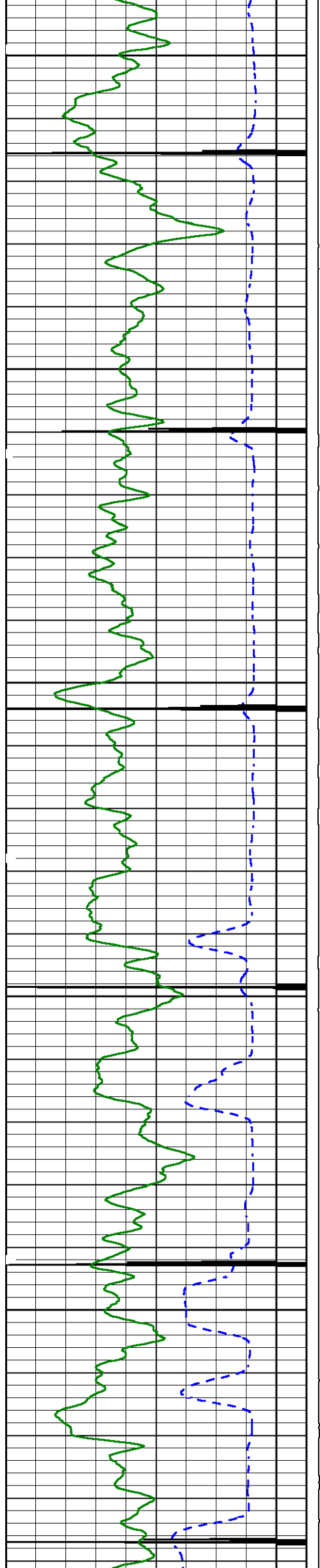




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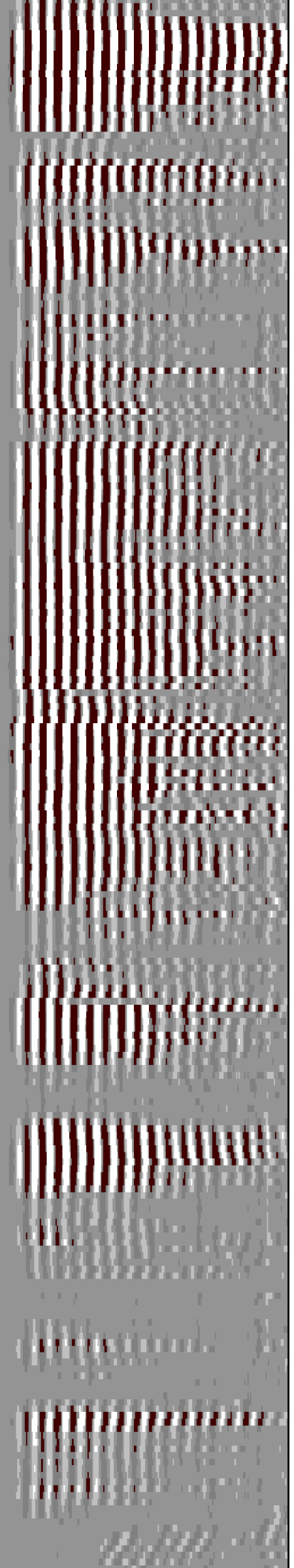
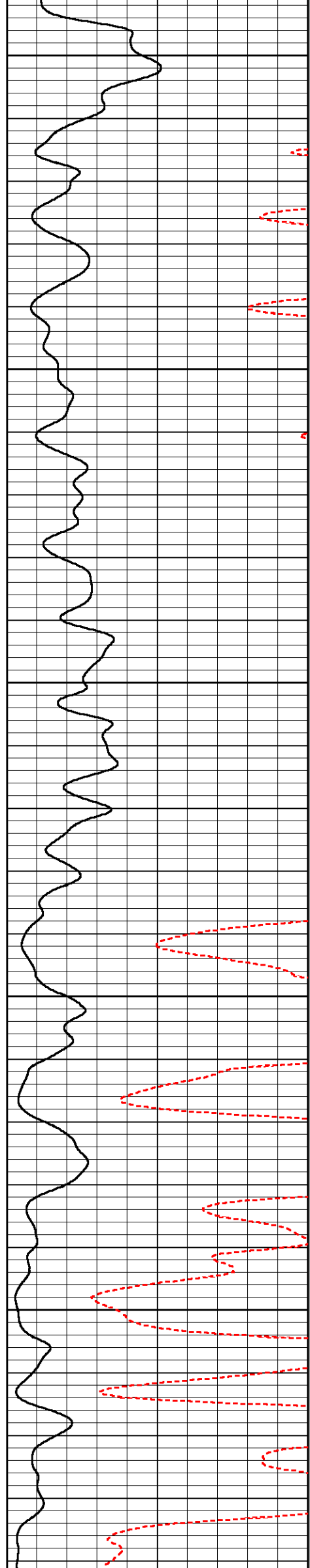


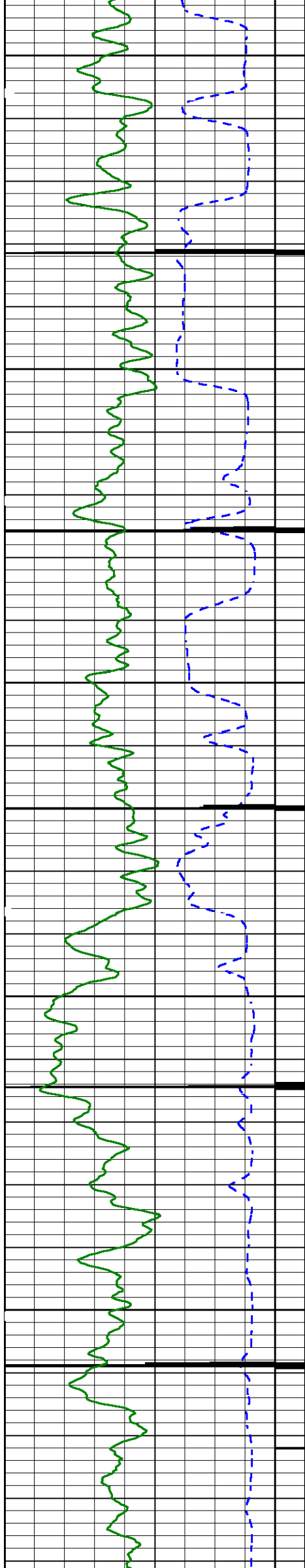


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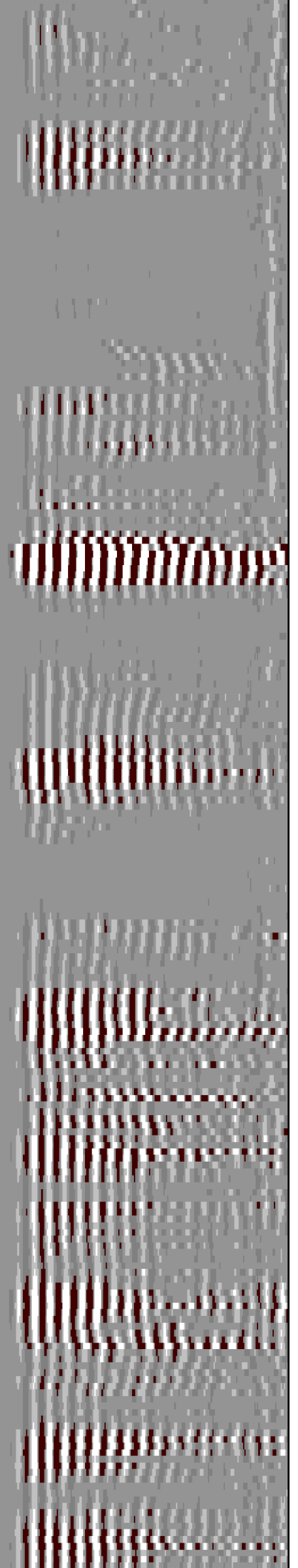
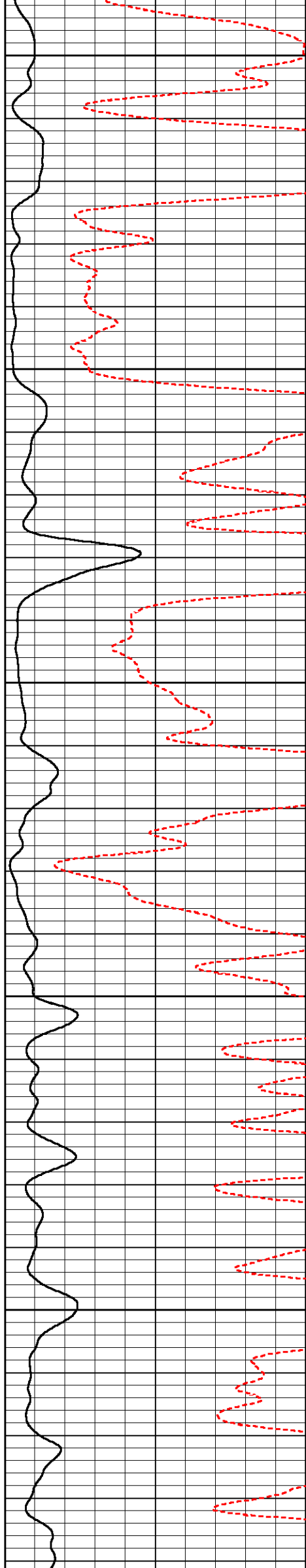
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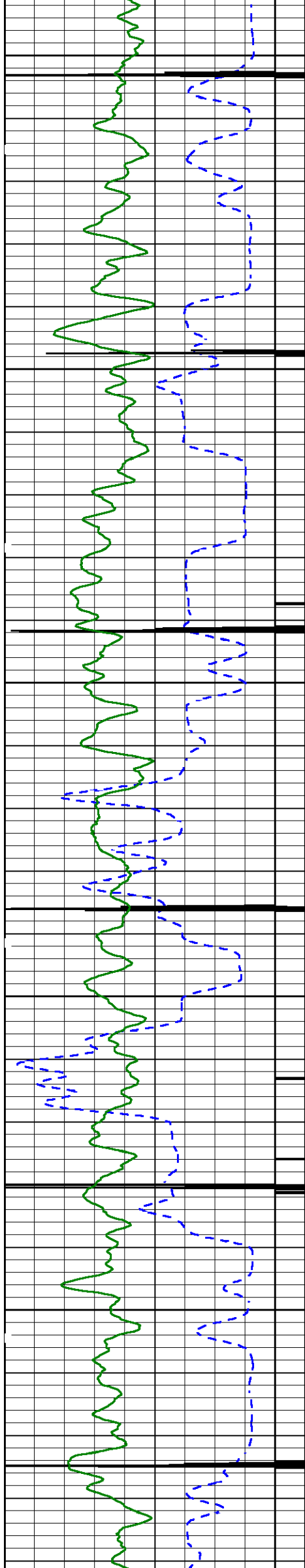




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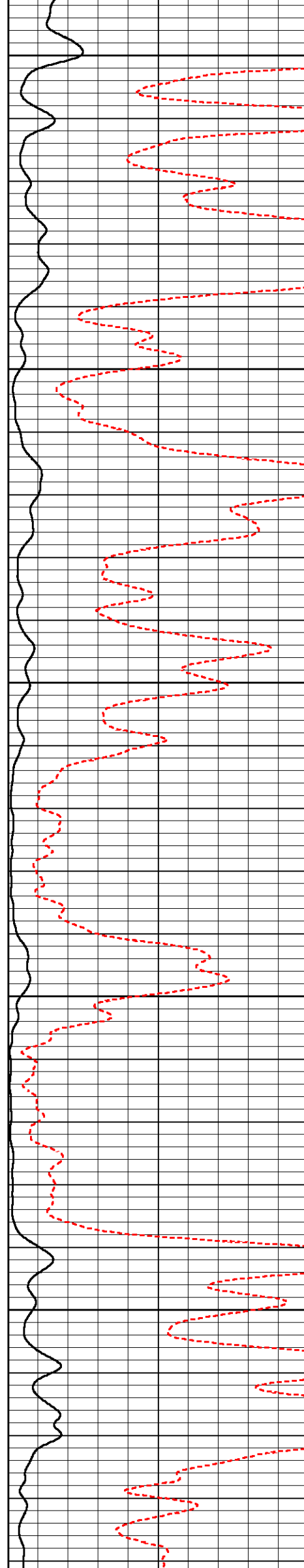


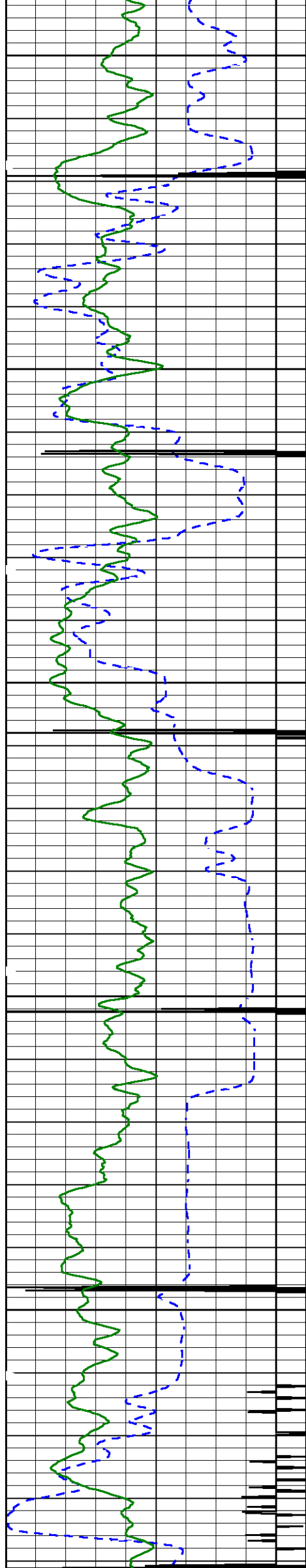


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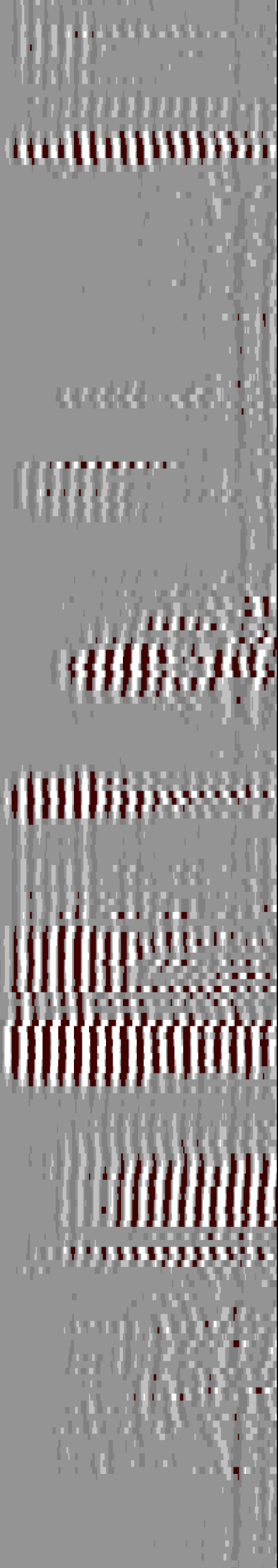
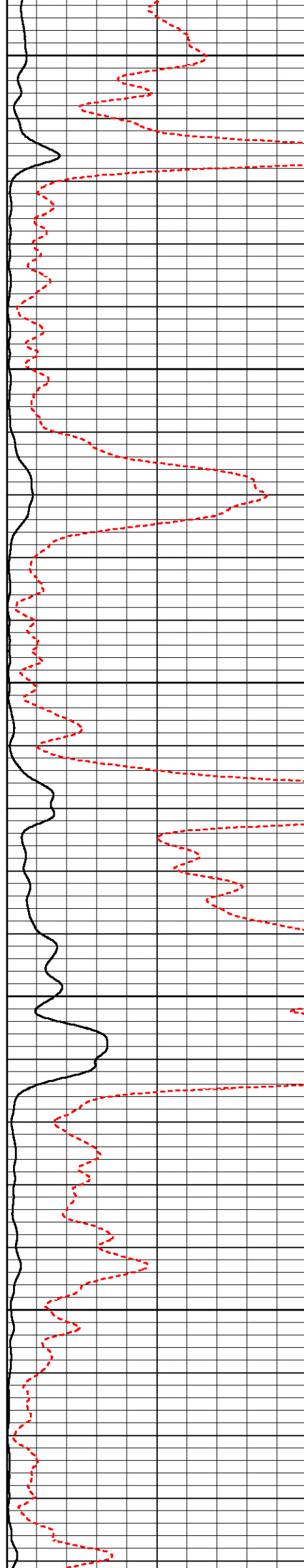
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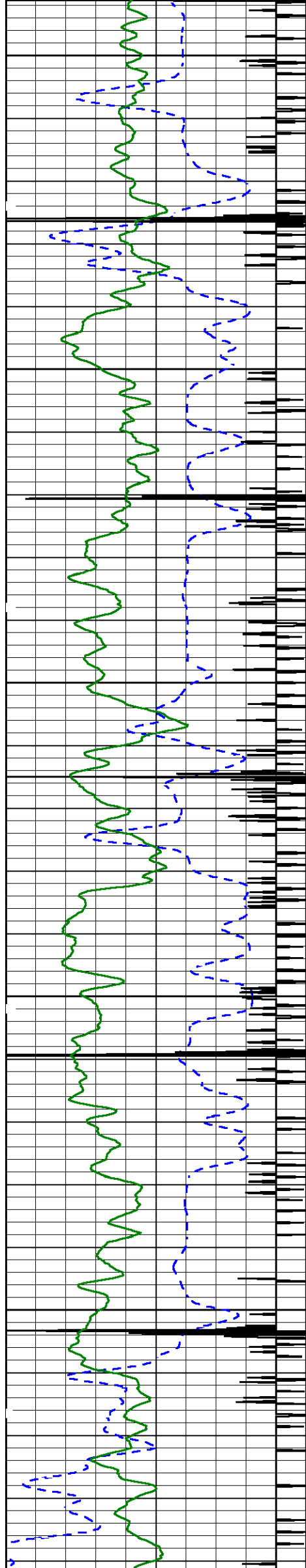




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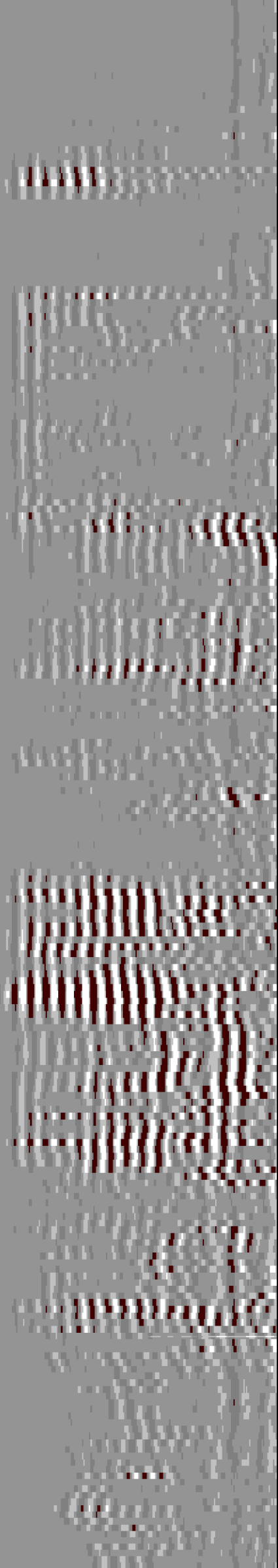
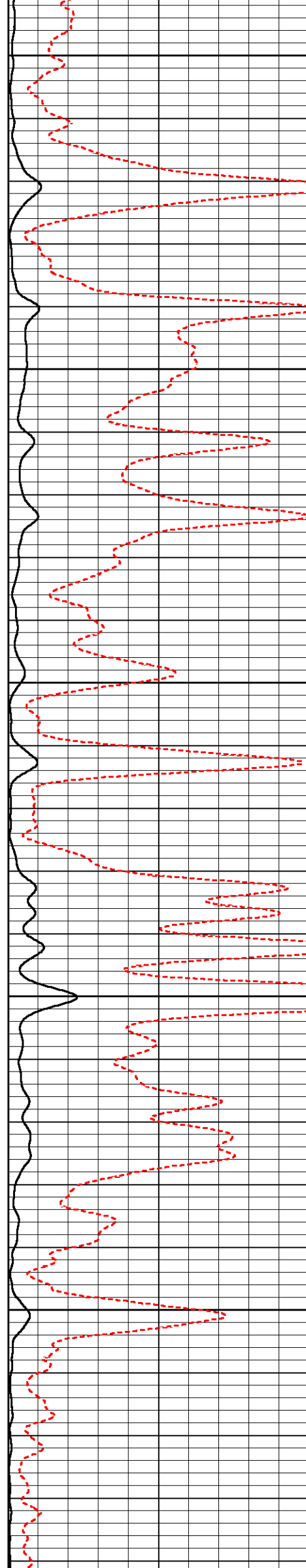


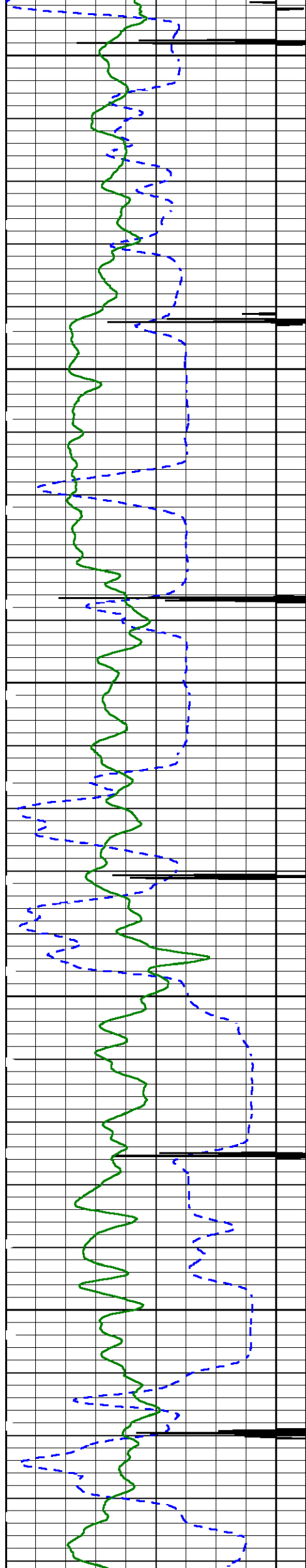


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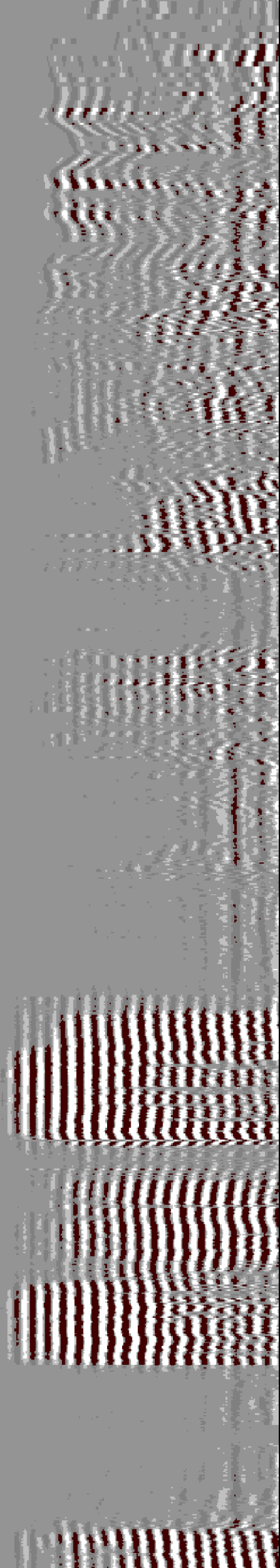
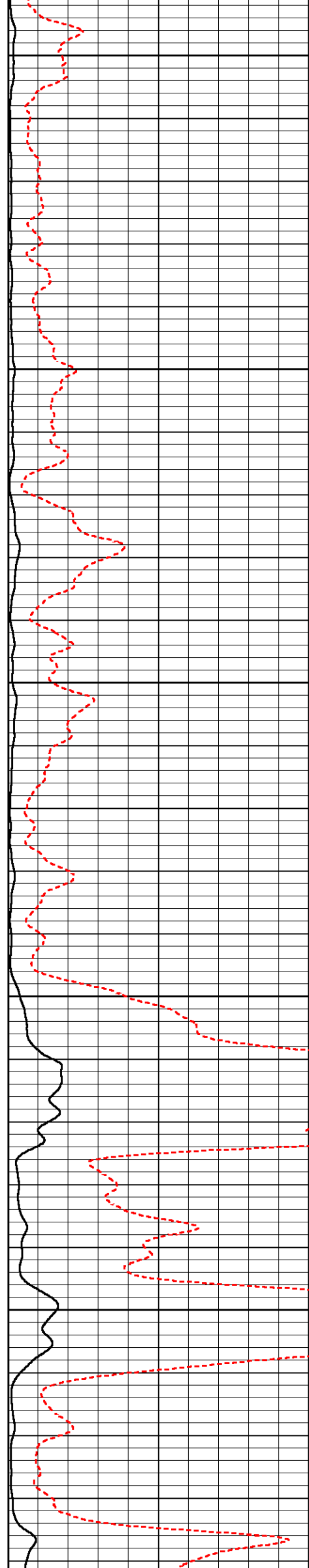
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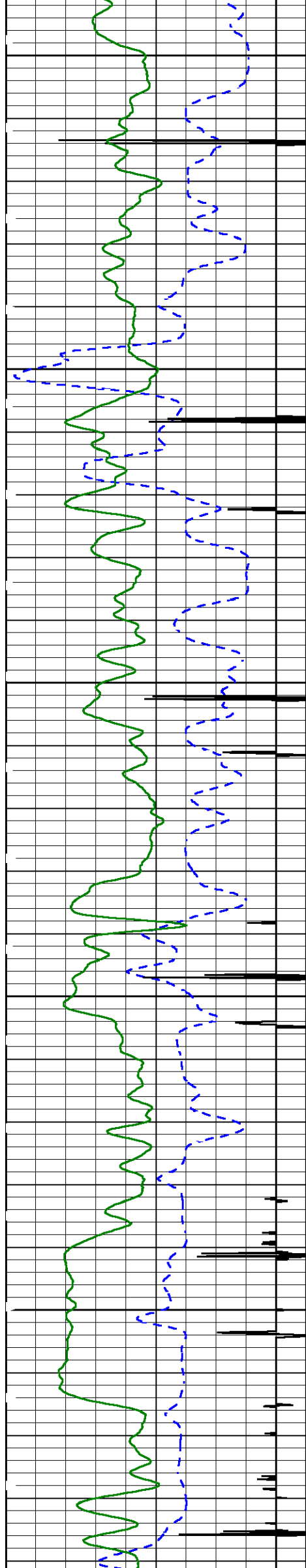




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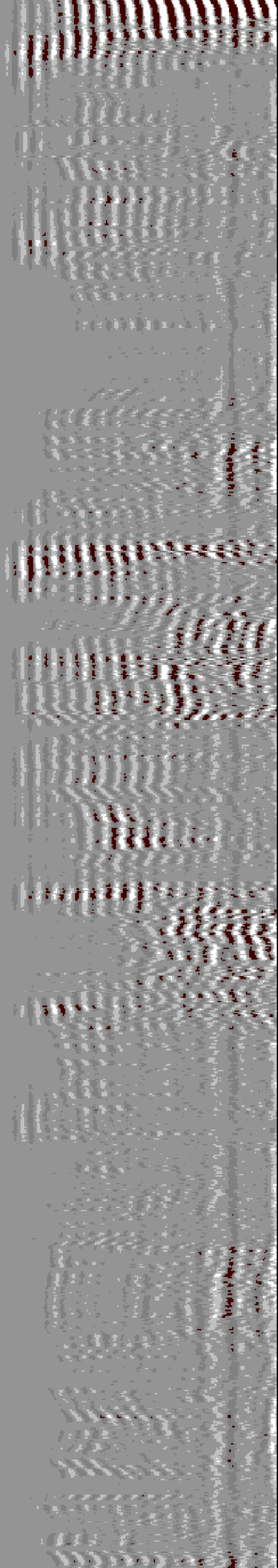
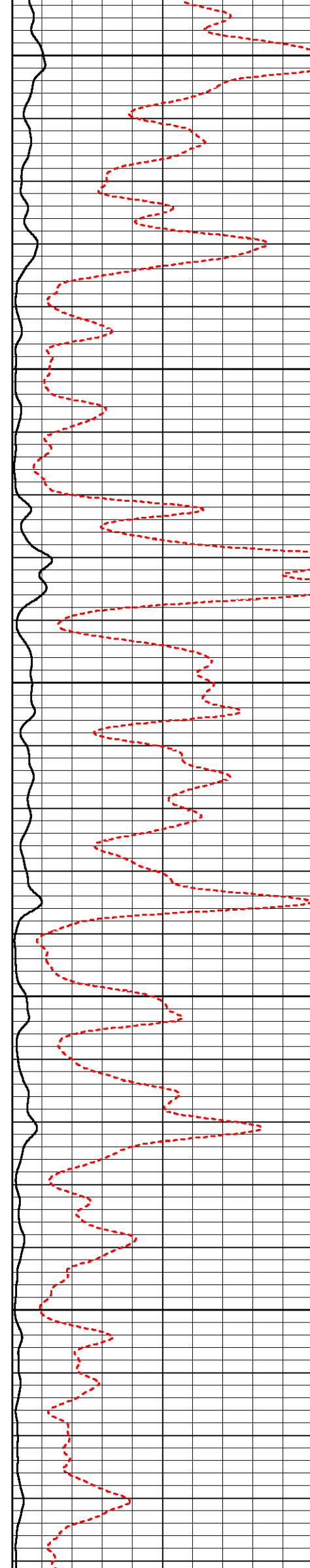


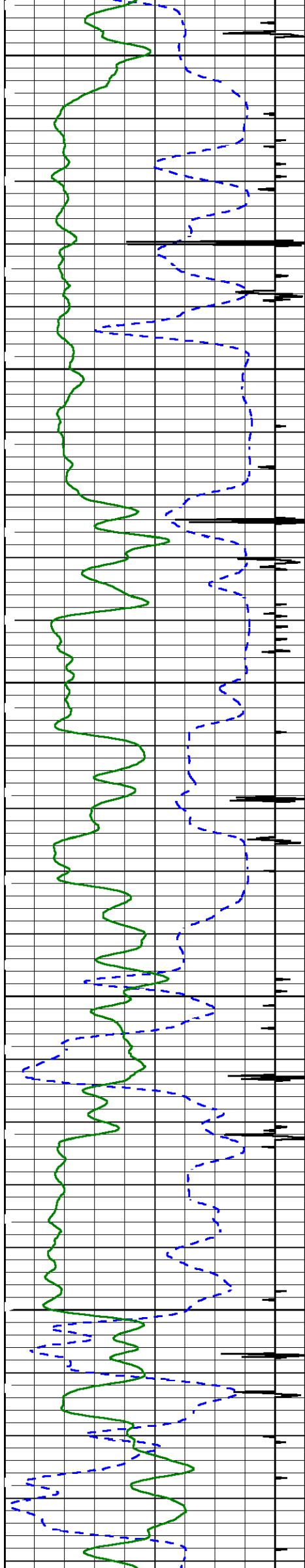


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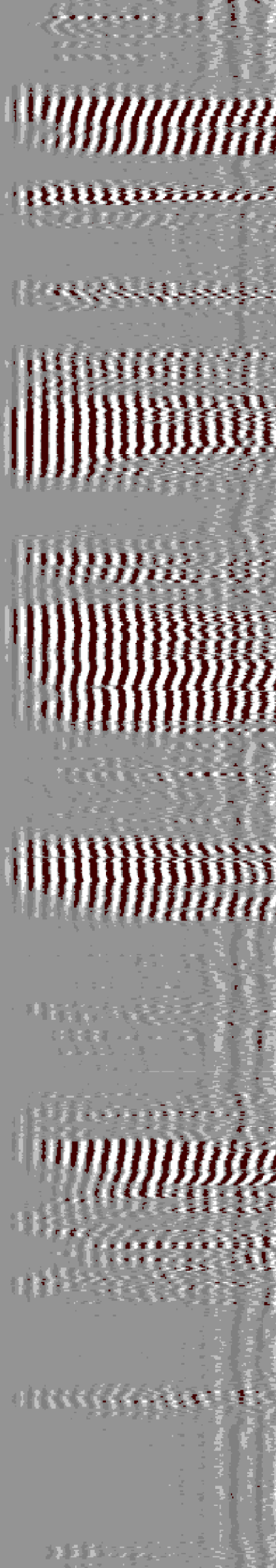
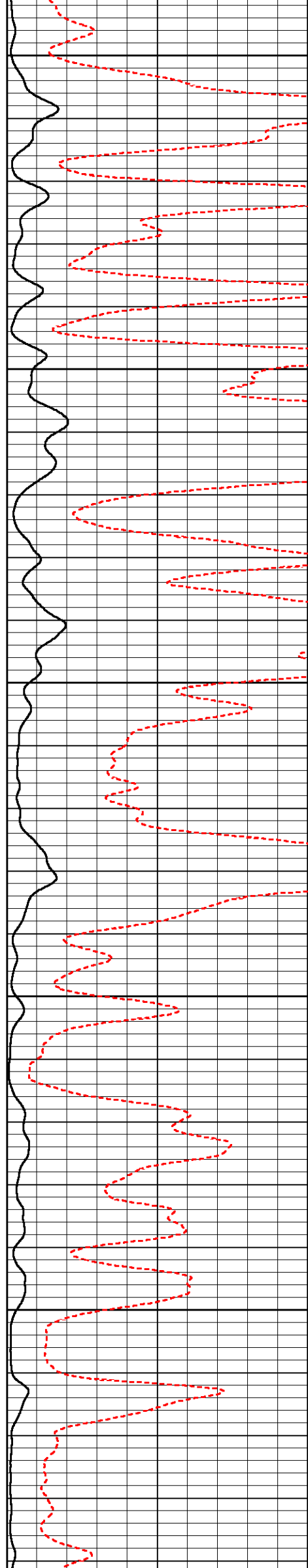
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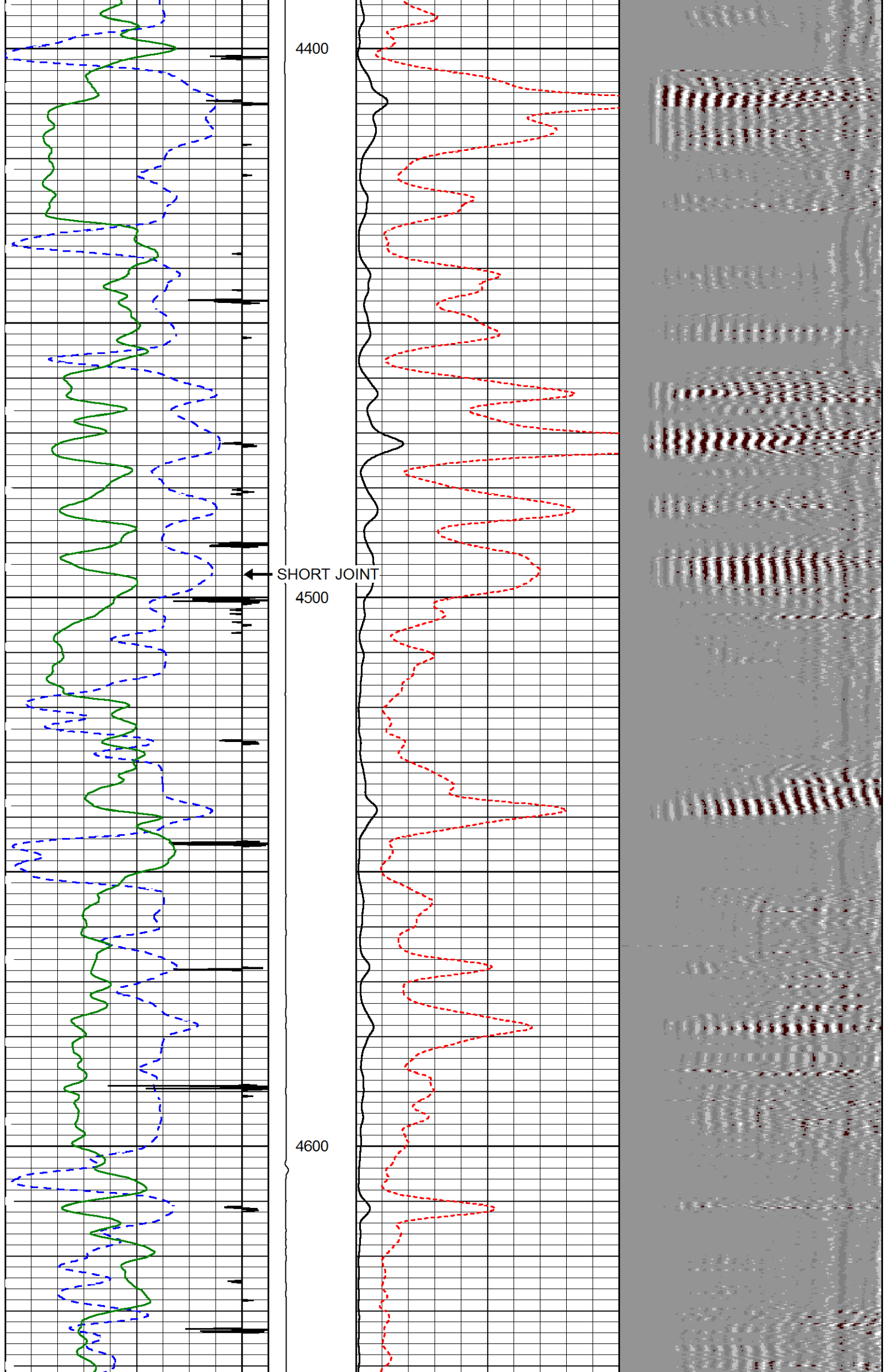




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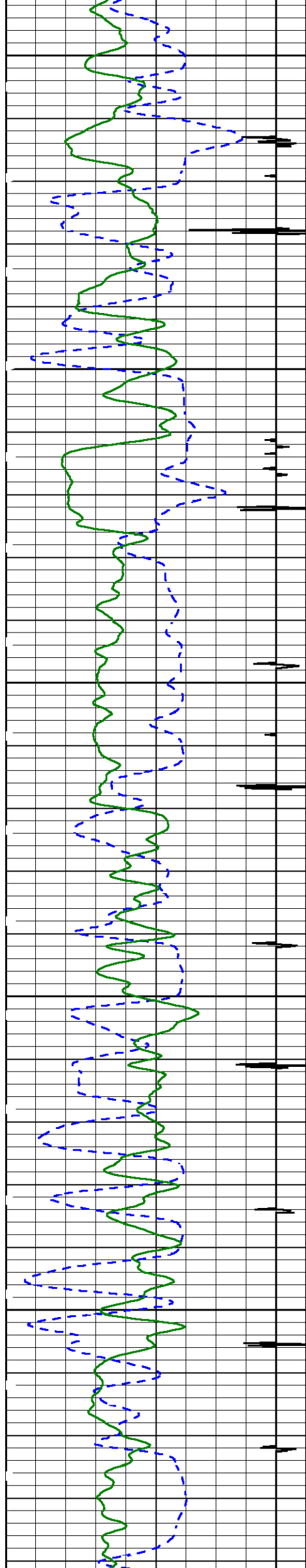


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SHORT JOINT

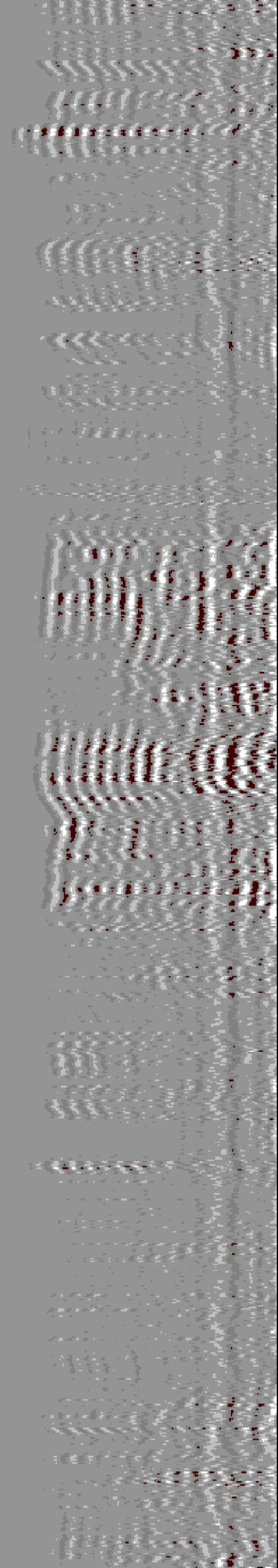
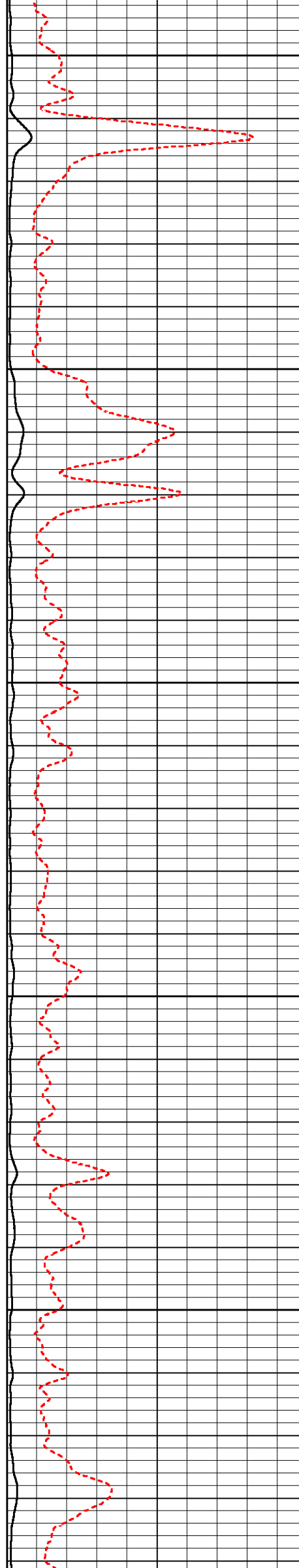
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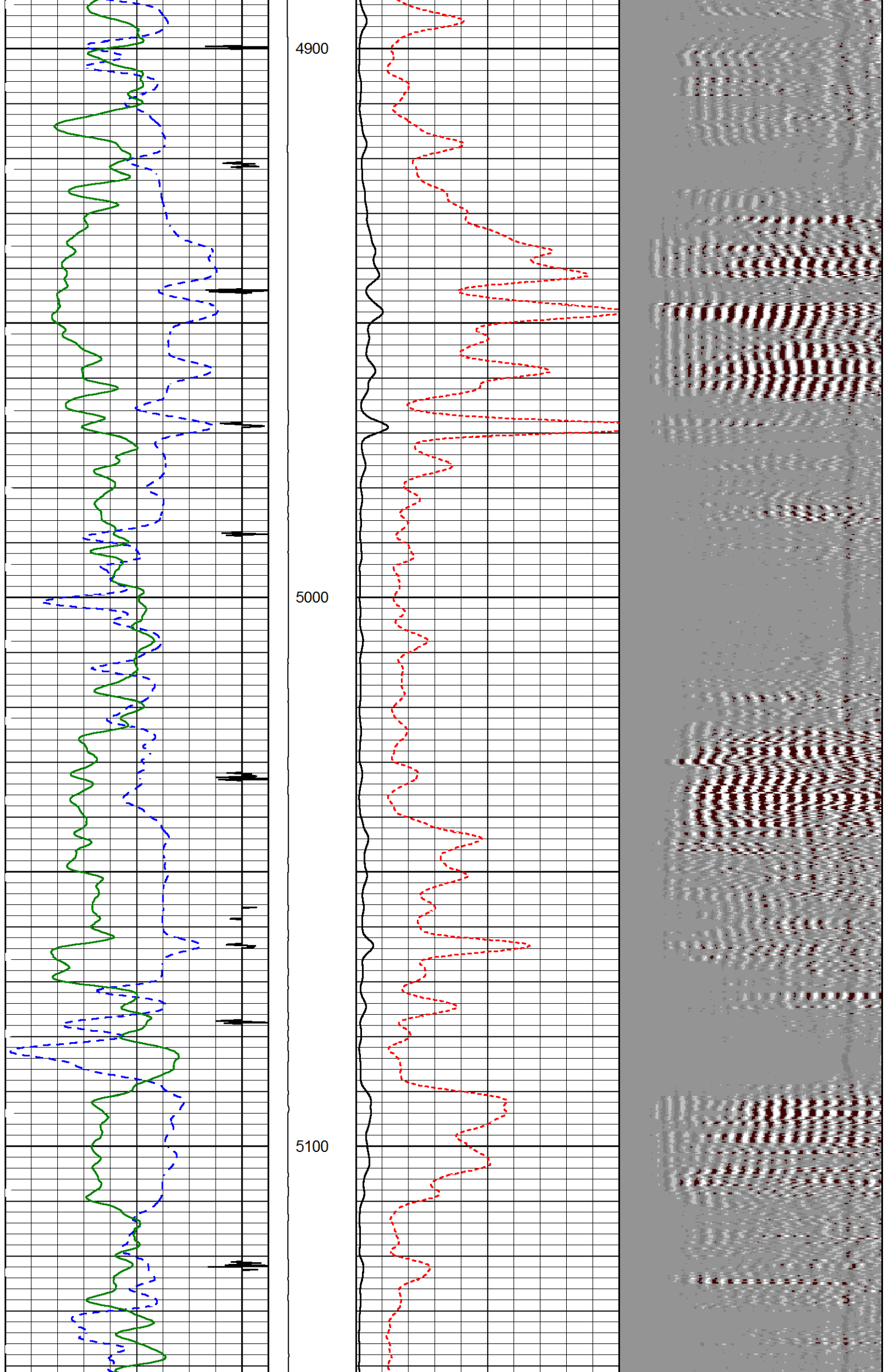
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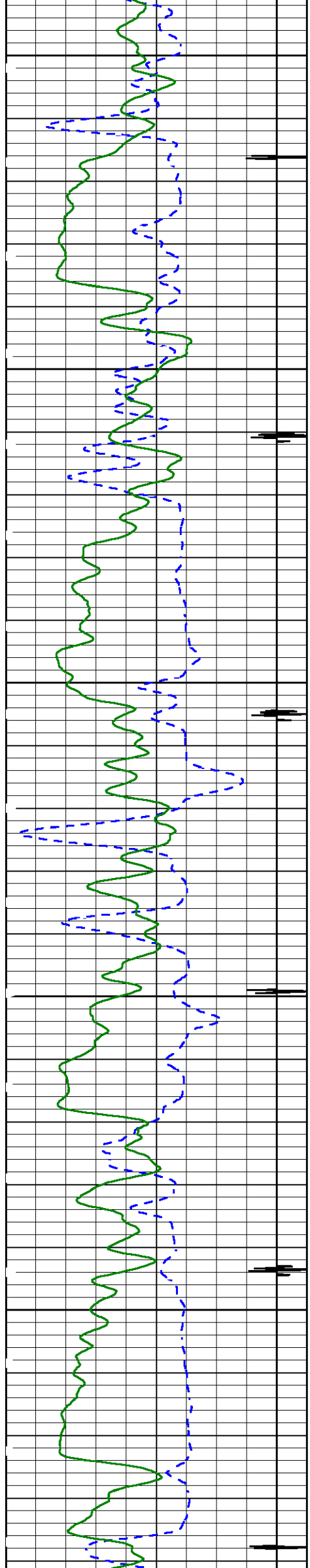


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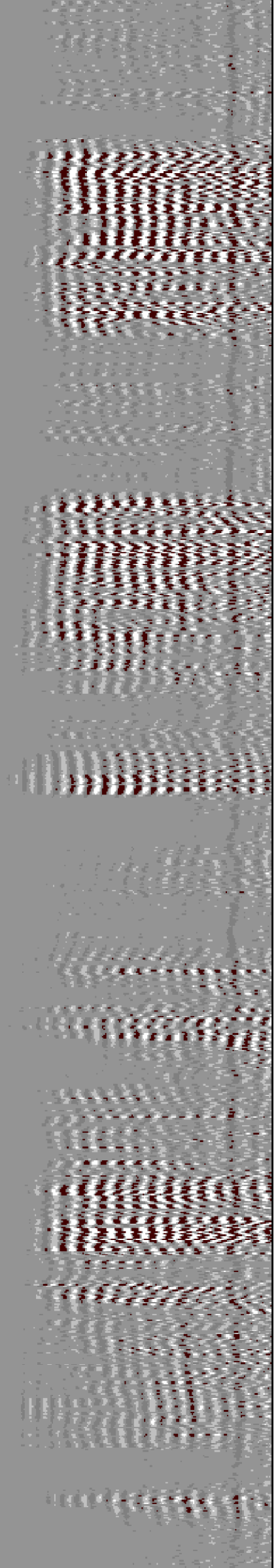
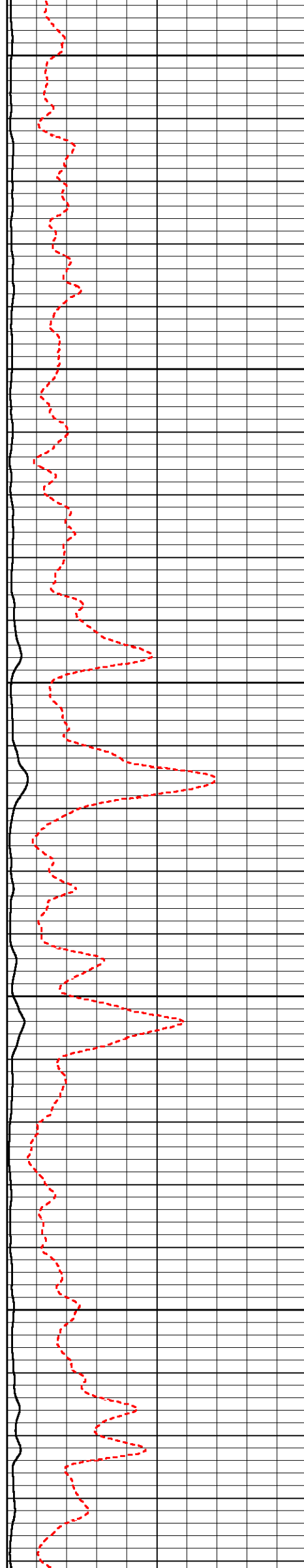


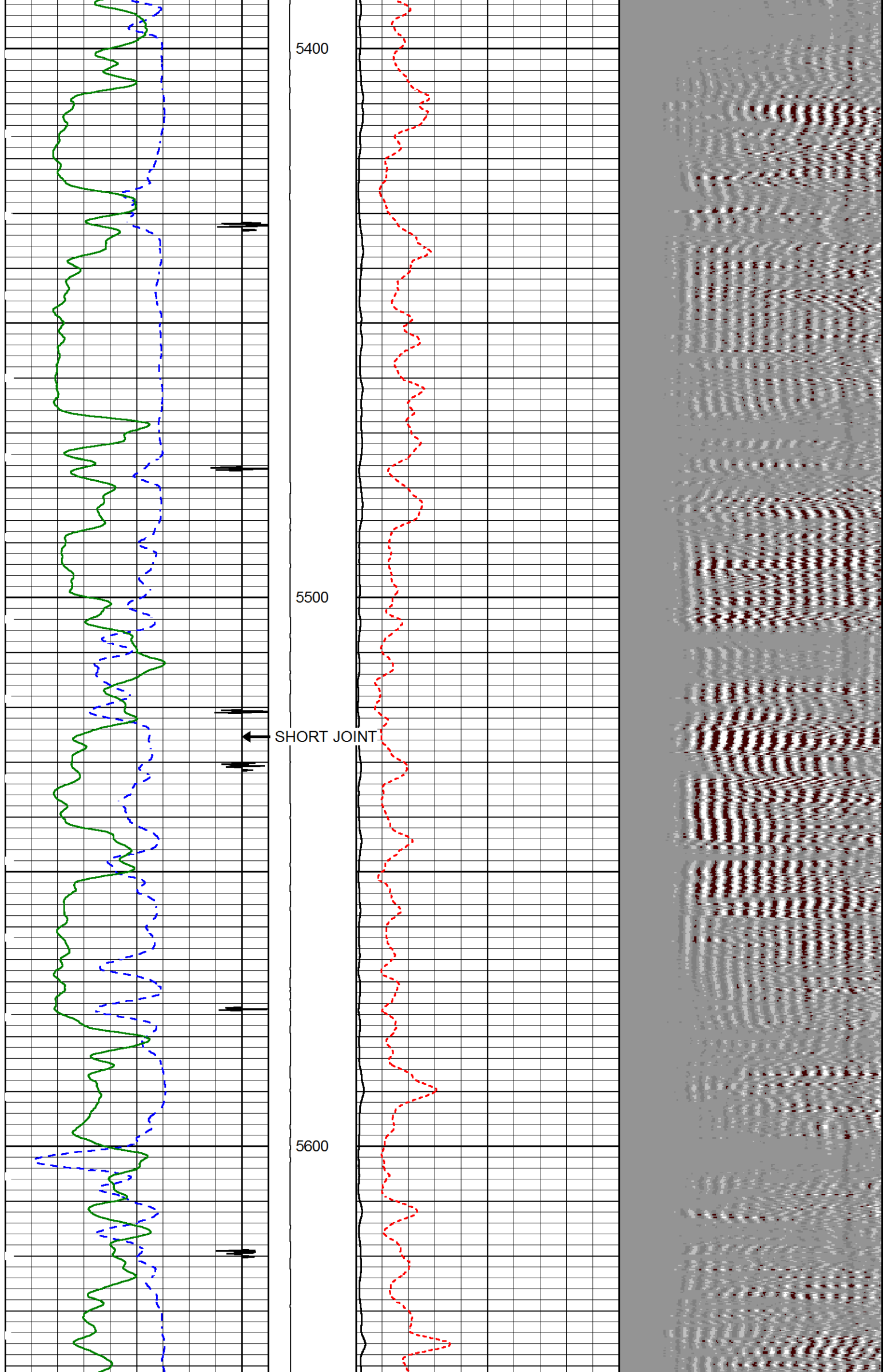


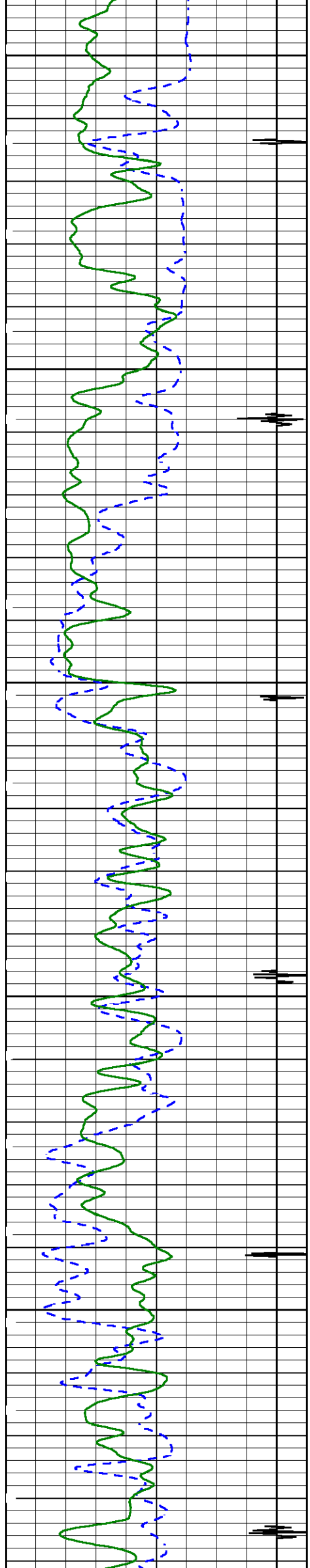


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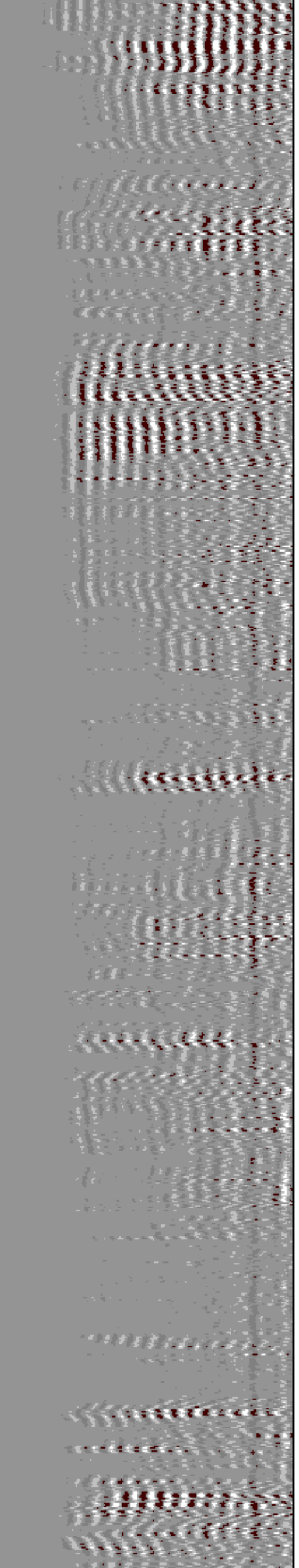
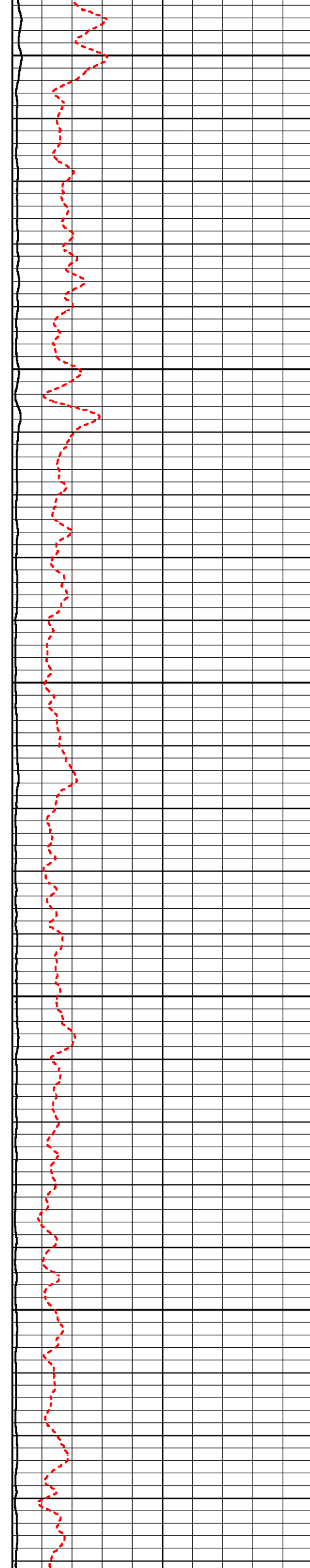


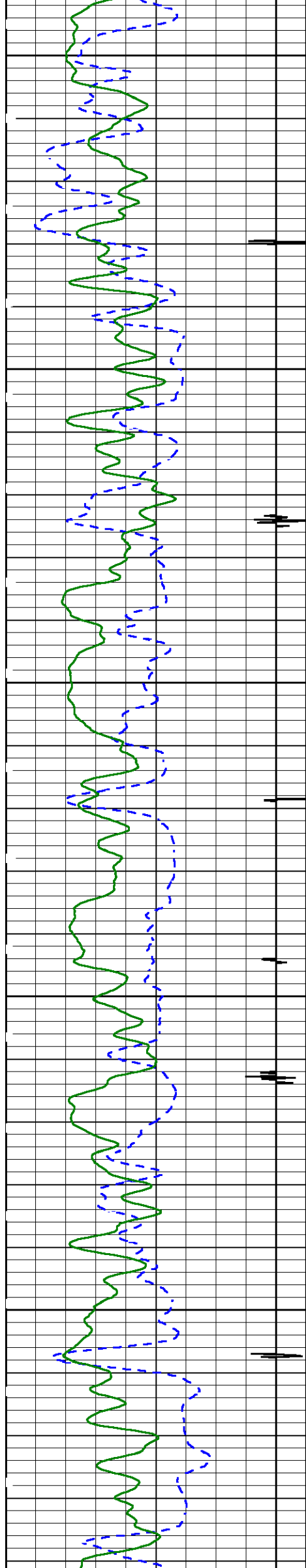




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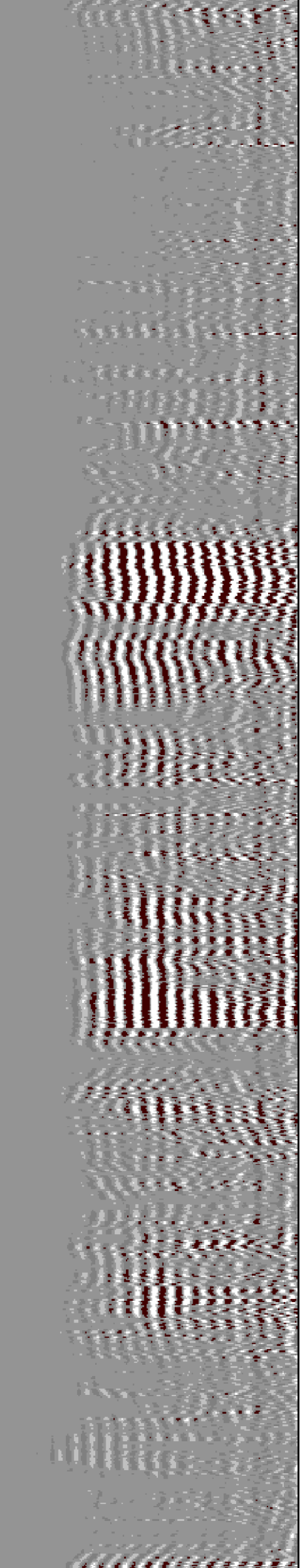
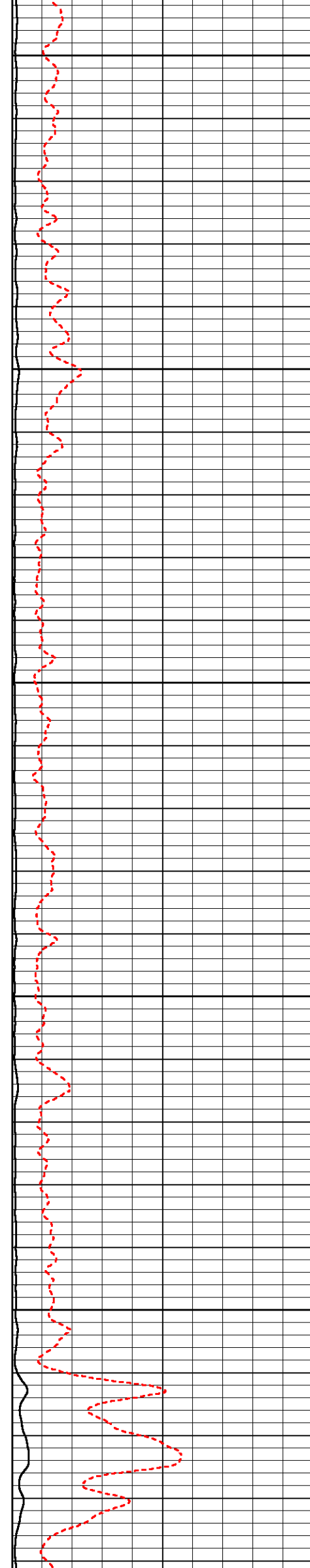


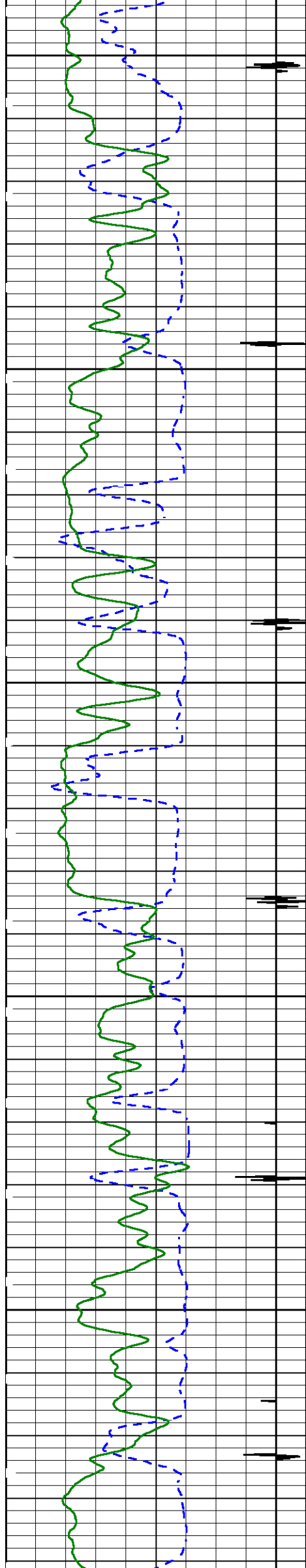


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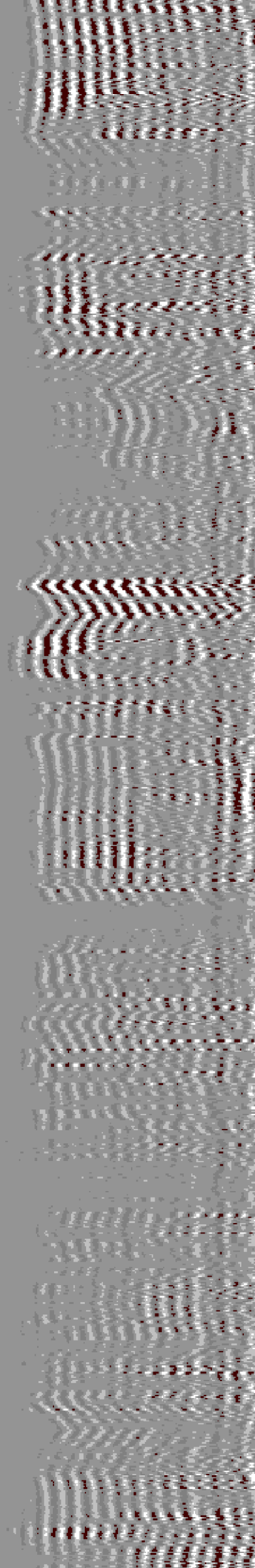
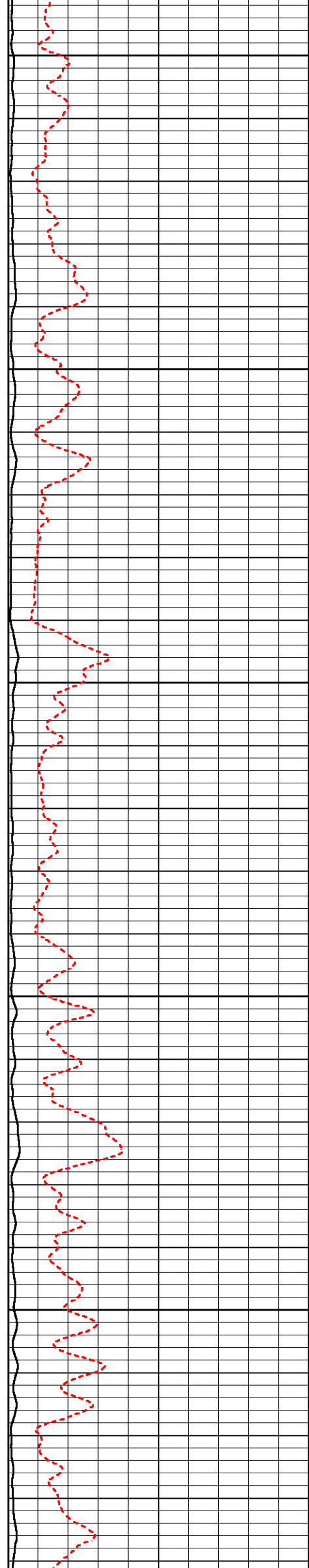
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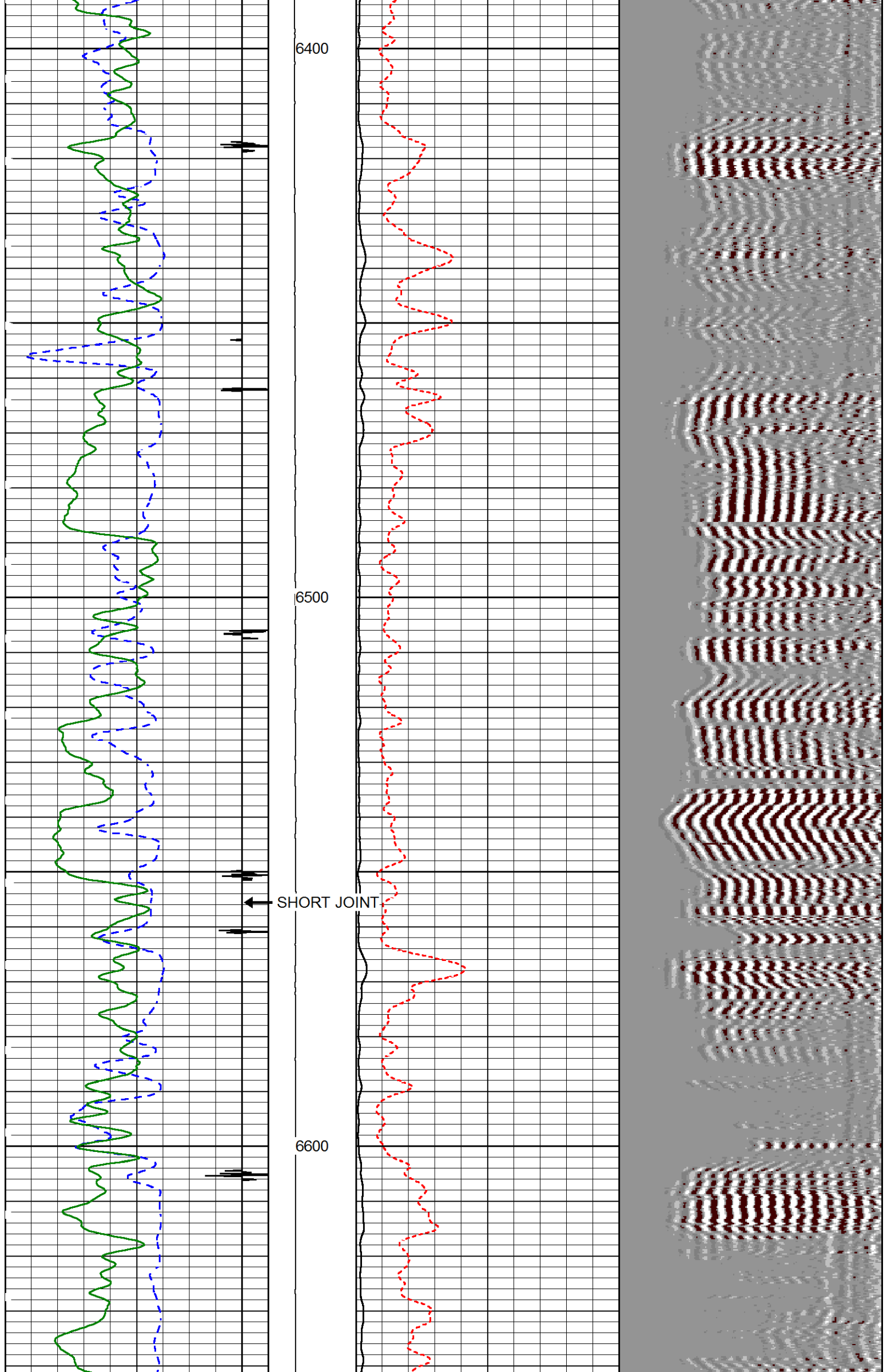


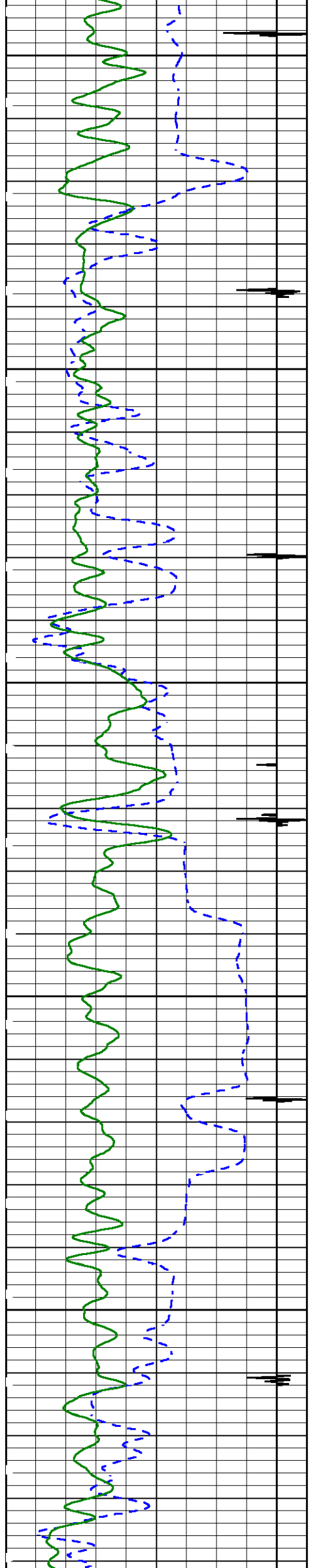


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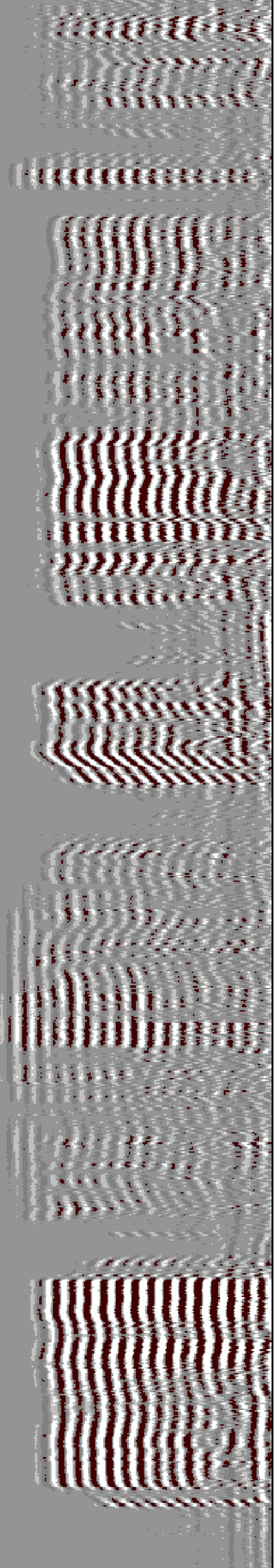
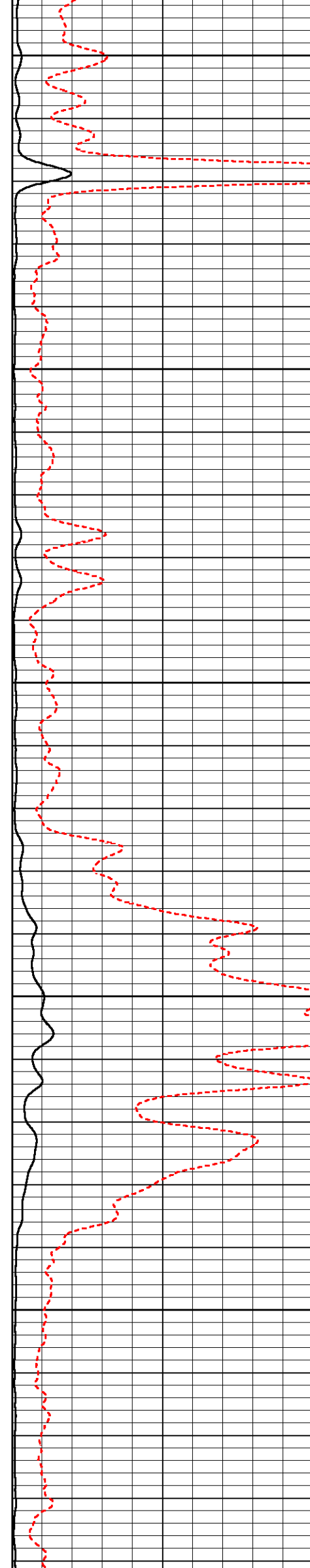


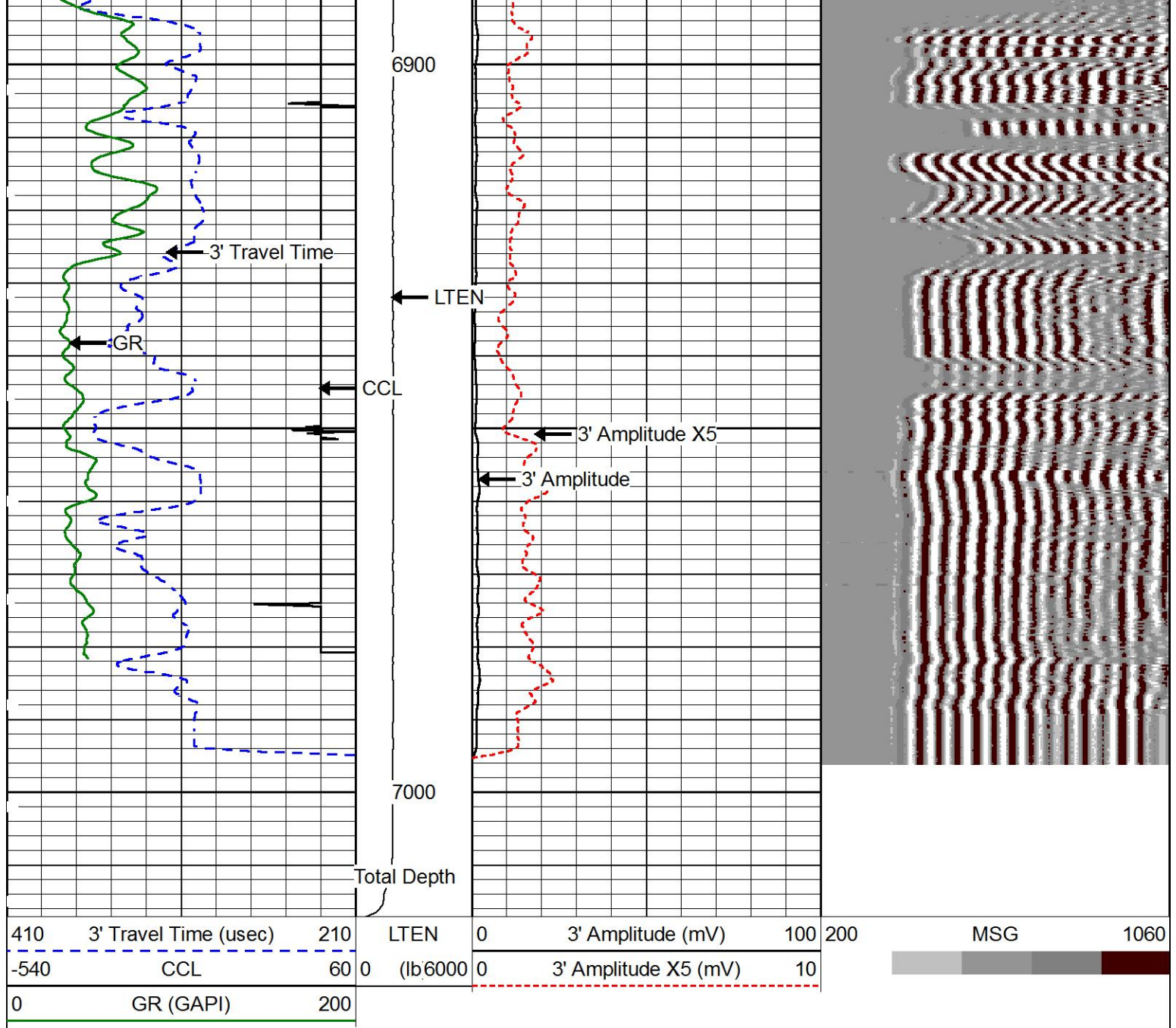




6700

6800





### MAIN LOG SECTION

**HALLIBURTON**

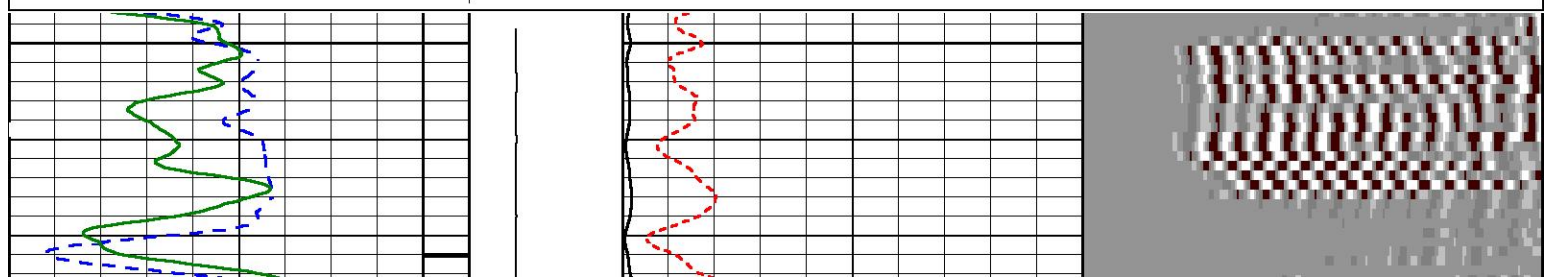
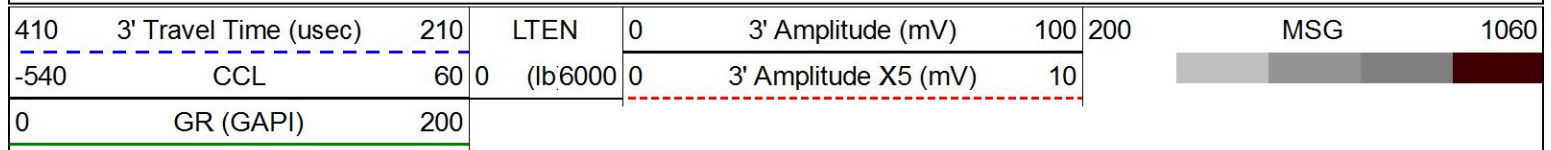
5" = 100'

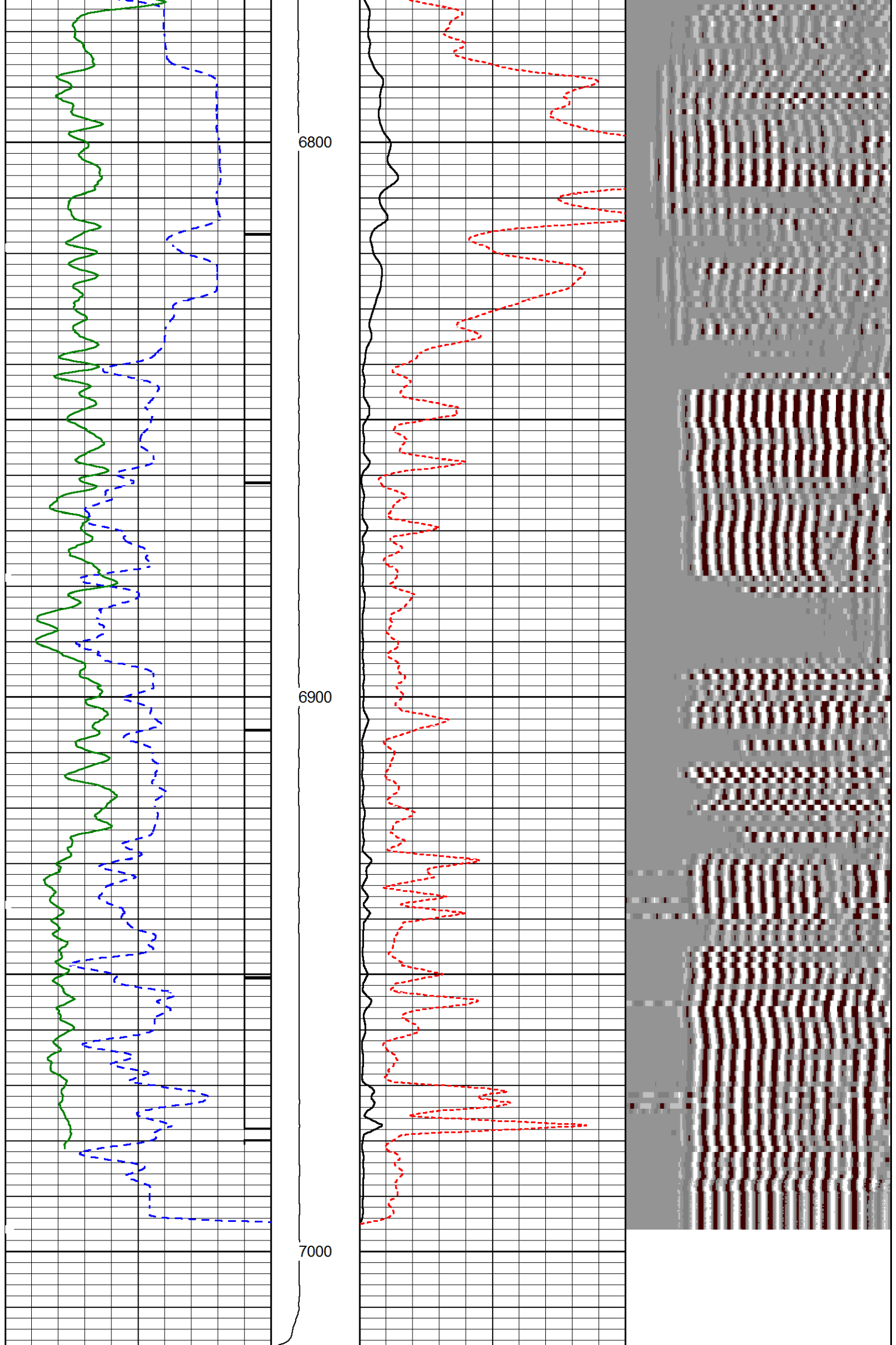
### REPEAT LOG SECTION

**HALLIBURTON**

5" = 100'

Database File yater\_42d\_3dcombo.db  
 Dataset Pathname CBLRPT1  
 Presentation Format hcblg  
 Dataset Creation Sun Apr 12 14:50:48 2015  
 Charted by Depth in Feet scaled 1:240





410 3' Travel Time (usec) 210 LTEN 0 3' Amplitude (mV) 100 200 MSG 1060  
 -540 CCI 60 0 (lb6000) 0 3' Amplitude X5 (mV) 10

0	GR (GAPI)	200
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## REPEAT LOG SECTION

**HALLIBURTON**

5" = 100'

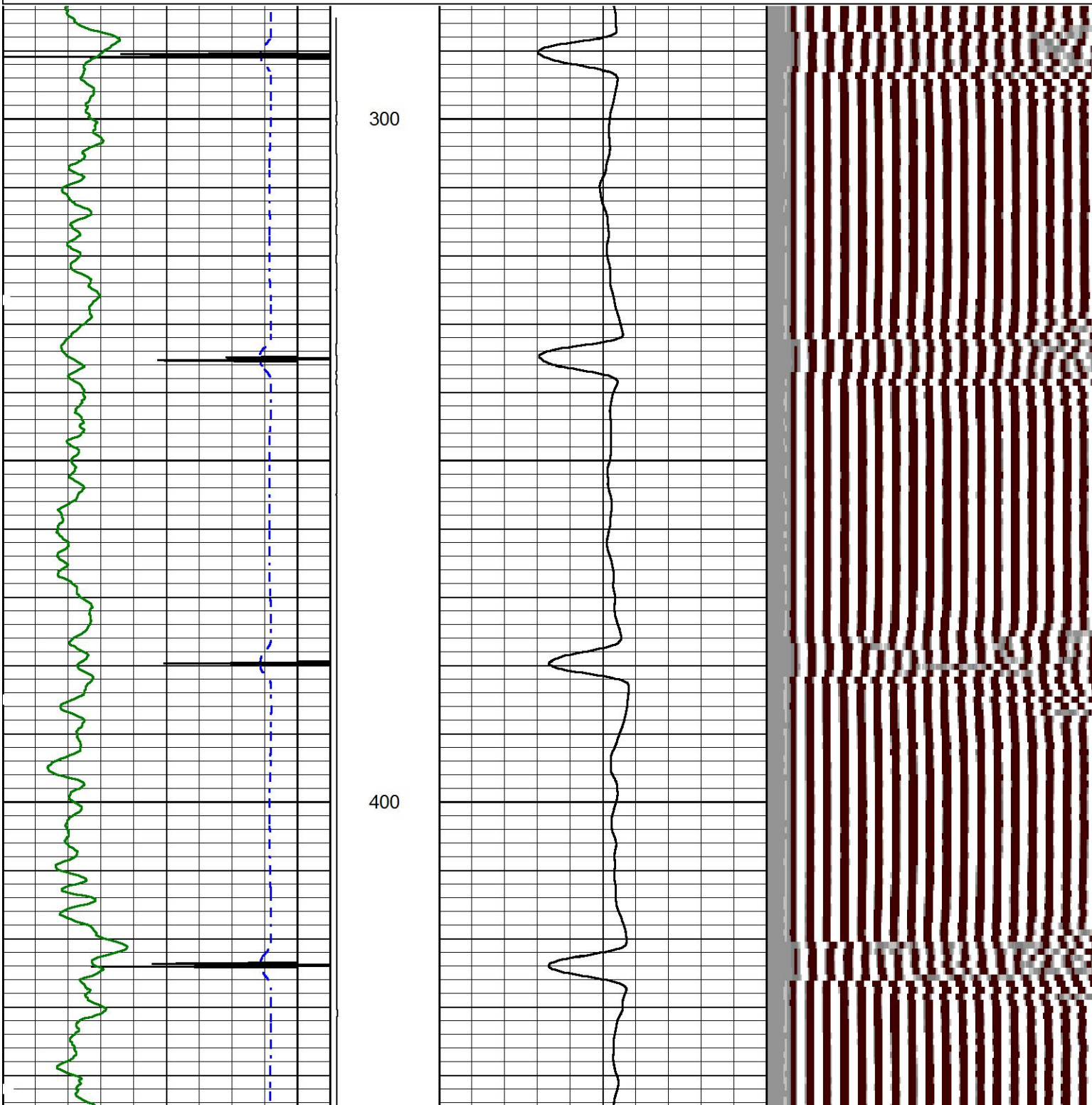
## FREE PIPE LOG SECTION

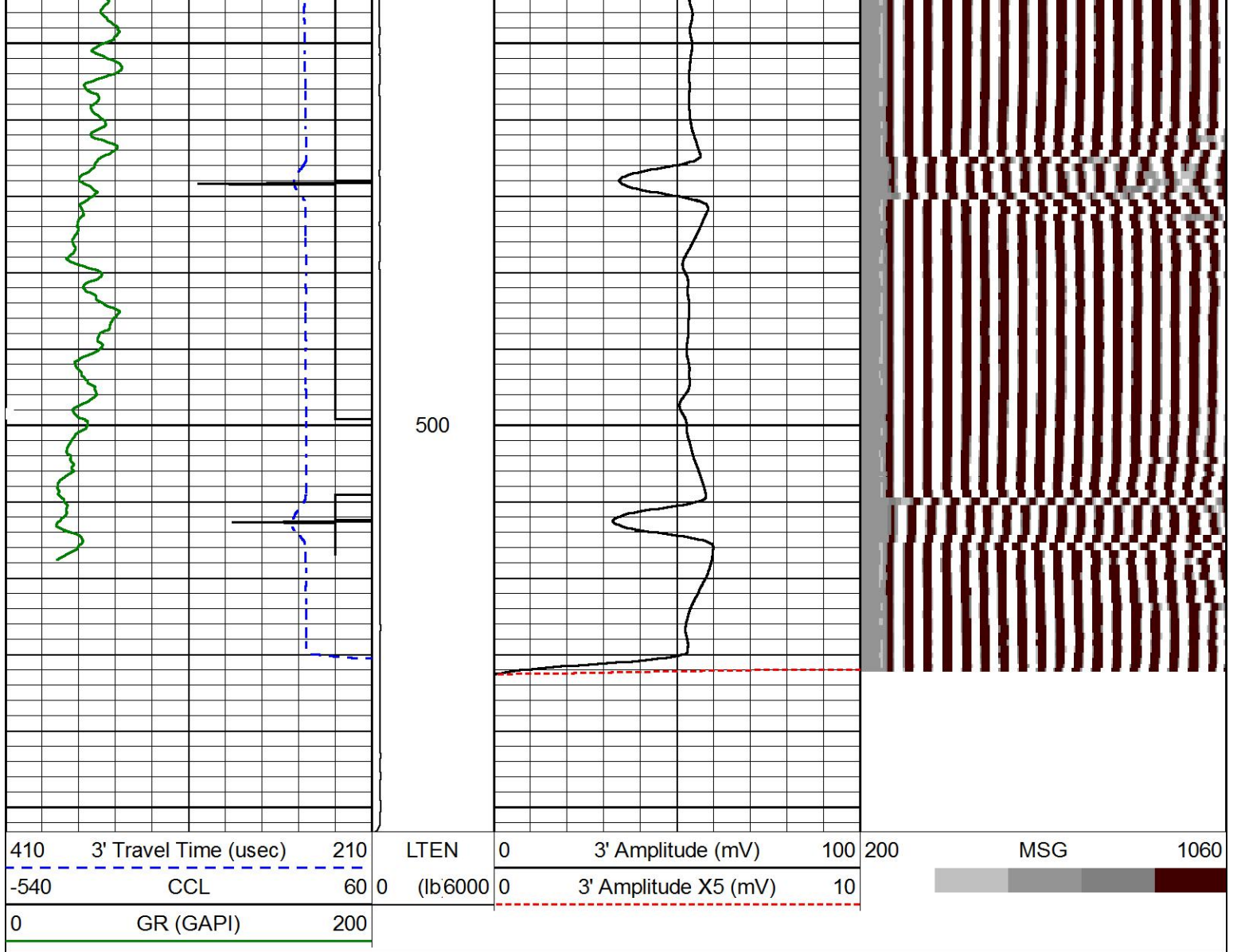
**HALLIBURTON**

5" = 100'

Database File        yater\_42d\_3dcombo.db  
 Dataset Pathname    FREE1  
 Presentation Format   hcbg  
 Dataset Creation     Sun Apr 12 13:36:06 2015  
 Charted by            Depth in Feet scaled 1:240

410	3' Travel Time (usec)	210	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-540	CCL	60	0	(lb 6000)	0	3' Amplitude X5 (mV)	10		
0	GR (GAPI)	200							





## FREE PIPE LOG SECTION

**HALLIBURTON**

5" = 100'

### Log Variables

Database: C:\ProgramData\Warrior\Data\yater\_42d\_3dcombo.db  
Dataset: field/well/run1/MAIN1/\_vars\_

#### Top - 17.00 ft

BHTEMP_Src	BHSAL2	BHSAL1	RUN3D?	POROSL2	POROSL1	POROS2	POROS1
TEMP	0	1	No	0	1	0	1
LTH	UHSGC	RHOCFL	RHOFCF	SO in	BORSAL kppm	CASED?	MSGGN
Sandstone	NONE	0.15	0.25	0	150	Yes	1
USERFTT usec/ft	ZREF MRayl	CASEWGHT lb/ft	SRFTEMP degF	MudWgt lb/gal	CASETHCK in	CASEOD in	PERFS
0	1.7	11.6	0	8.4	0.25	4.5	0
TDEPTH ft	BOTTEMP degF	BITSIZE in					
0	100	10					

#### 17.00 ft - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	<b>RUN3D?</b>	POROSL2	POROSL1	POROS2	POROS1
TEMP	0	1	<b>Yes</b>	0	1	0	1
LTH	UHSGC	RHOCFL	RHOFCF	SO in	BORSAL kppm	CASED?	MSGGN






Background	55.1		cps
Calibrator	468.8		cps
Difference		413.6	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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
CCL	36.04		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00	
GR	33.78						
Temp	24.06						
TT3FT	21.81						
AMP3FT	21.81						
Rm3TLGT	8.75						
Rm3LBACK	8.75						
Rm3LCAPT	8.75			TTTCU-002 (12159411) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
Rm3LINEL	8.75						
Rm3TFGT	8.25						
Rm3FBACK	8.25						
Rm3FCAPT	8.25						
Rm3FINEL	8.25						
Rm3TNGT	7.75						
Rm3NBACK	7.75			XHU-003 (11899561) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
Rm3NCAPT	7.75						
Rm3NINEL	7.75			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
Rm3ImpBTEST	0.00						
Rm3ImpBCYC	0.00						
Rm3ImpBRGW	0.00						
Rm3ImpBRGO	0.00						
Rm3ImpState	0.00						
Rm3ImpPhase	0.00						
Rm3ImpCyc	0.00						
Rm3GenClamp\0	0.00			HCBLM-A (11794522) Halliburton HCBLM Tool	9.38	2.75	116.00
Rm3LTemp	0.00						
Rm3LPMHV	0.00						
Rm3LPMI	0.00						
Rm3LPrgSt1	0.00						
Rm3LDetStat	0.00						
Rm3FTemp	0.00						
Rm3FPMHV	0.00						
Rm3FPMI	0.00						
Rm3FPrgSt1	0.00		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00	
Rm3FDetStat	0.00						
Rm3NTemp	0.00						
Rm3NPMHV	0.00						
Rm3NPMI	0.00						
Rm3NPrGSt1	0.00						
Rm3NDetStat	0.00						
Rm3Genlonl	0.00						
Rm3Gen15Bus\0	0.00						
Rm3GenLvdsV	0.00						
Rm3GenSyncV	0.00						
Rm3GenClamp\0	0.00						
Rm3GenP5V	0.00		RMT3D-A (12270722) RMT3D - 3 Detector RMT-I	15.17	2.13	86.00	
Rm3GenP33V	0.00						

Rm3Gen200V	0.00			
Rm3GenP15VI	0.00			
Rm3GenTemp	0.00			
Rm3GenP5VI	0.00			
Rm3GenI	0.00			
Rm3GenPv	0.00			
Rm3GenCmd	0.00			
Rm3GenIspI	0.00			
Rm3GenIspPv	0.00			
Rm3GenIspCmc	0.00			
Rm3GenRepPv	0.00	Dataset:	yater_42d_3dcombo.db: field/well/run1/MAIN1	
Rm3GenRepV	0.00	Total length:	39.61 ft	
Rm3GenRepSv	0.00	Total weight:	360.00 lb	
Rm3GenContSt	0.00	O.D.:	3.13 in	

Company	URSA OPERATING COMPANY			
Well	YATER 42D-17-07-95			
Field	PARACHUTE			
County	GARFIELD	State	CO	
<b>HALLIBURTON</b>	ACOUSTIC CEMENT BOND LOG			