

HALLIBURTON										ACOUSTIC CEMENT BOND LOG									
Company URSA OPERATING COMPANY Well YATER 12D-17-07-95 Field PARACHUTE County GARFIELD State CO										Company URSA OPERATING COMPANY Well YATER 12D-17-07-95 Field PARACHUTE County GARFIELD State CO									
API No.: 05-045-22761-0000 Serv #: 902306456 Location: SURFACE HOLE LOCATION: 1742' FSL AND 1107' FWL BOTTOM HOLE LOCATION: 2371' FNL AND 0660' FWL Sec: 17 Twp: 07S Rge: 95W										Other Services RMT GAUGE RING									
Permanent Datum Log Measured From KB Drilling Measured From KB										GROUND LEVEL Elevation 5519' KB 17 Ft. above perm. datum KB									
Date @ Time Logged 11 APR 2015										Type Fluid in Hole WATER									
Run No. ONE										Density of Fluid 8.4 #									
Depth - Driller 6856'										Fluid Level 72'									
Depth - Logger 6798'										Cement Top Est. Logged 1550'									
Bottom - Logged Interval SURFACE										Equipment / Location 10971668 / G.J.									
Top - Log Interval SURFACE										Recorded by D. SOLIS									
Max. Recorded Temp. 235 DEG F										Witnessed by UNATTENDED									
CEMENTING DATA										Protection String									
Date / Time Cemented String										Production String									
Primary / Squeeze N/A										String N/A									
Expected Compressive Strength 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 1742' 8.625" 32.0# SURFACE 1742'									
TWO 7.875" 1742' 6856' 4.5" 11.6# SURFACE 6846'																			
<<< Fold Here >>>																			
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																			
CORRELATED TO HES DENSITY-NEUTRON-RESISTIVITY LOG DATED 18-MAR-15.																			
GR-CBL-RMT RAN IN COMBINATION.																			
LOG INTERVALS AS PER CUSTOMER REQUEST.																			
SHORT JOINTS @: 4250' - 4260', 5277' - 5287', AND 6307' - 6317'.																			
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.																			

Service Ticket No.	902306456	API No.	05-045-22761-0000	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	6798'	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	700'		

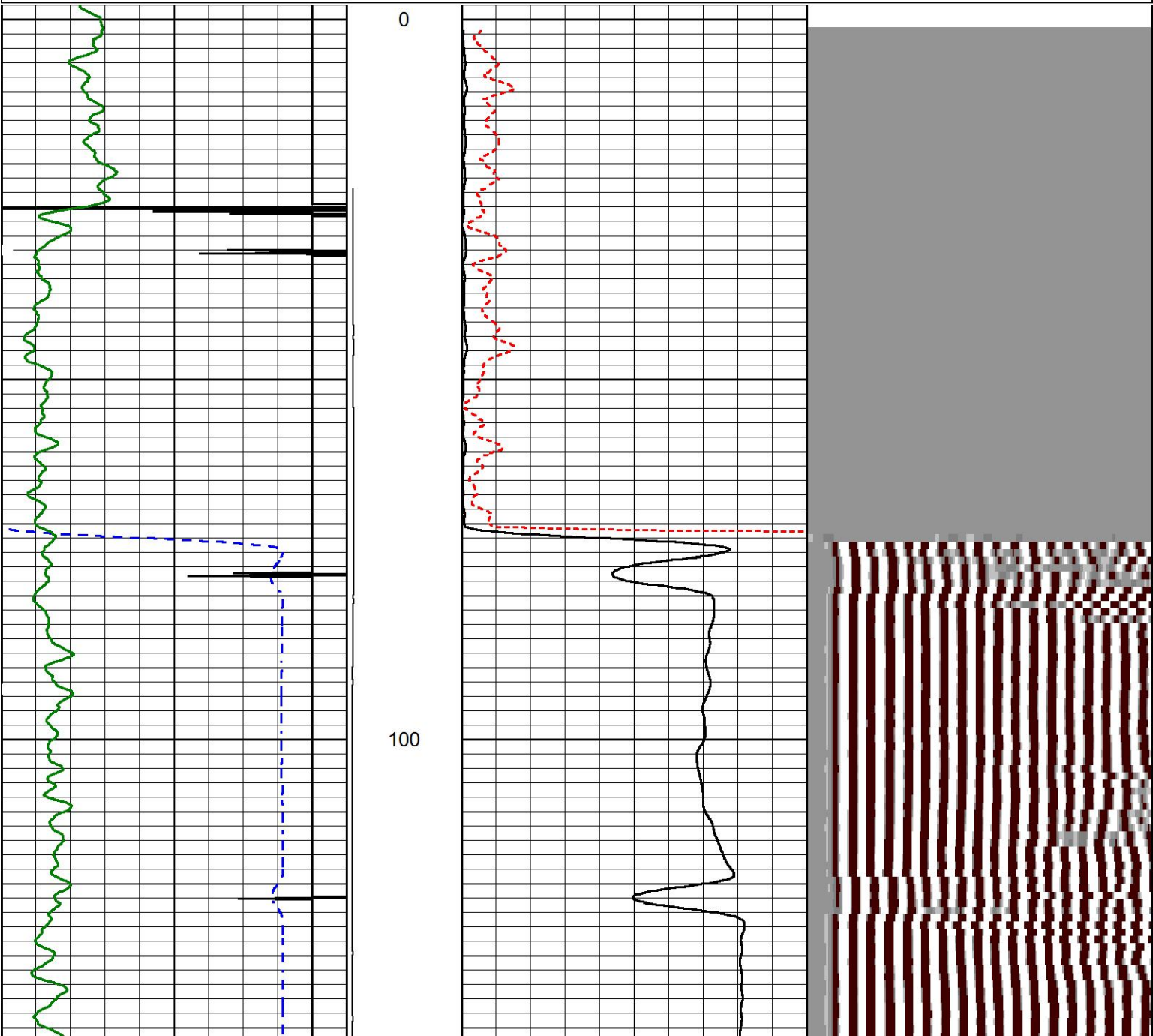
HALLIBURTON

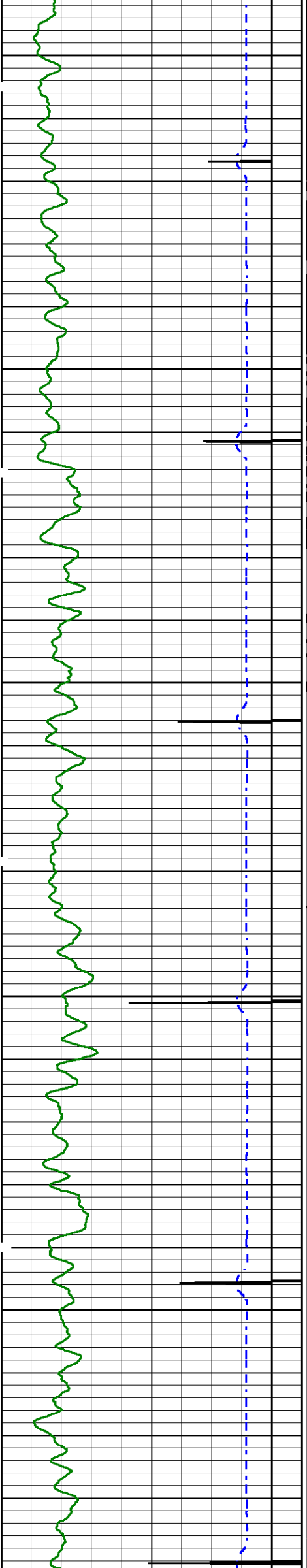
MAIN LOG SECTION

5" = 100'

Database File	yater_12d_3dcombo.db
Dataset Pathname	MAIN1
Presentation Format	hcbtg
Dataset Creation	Sat Apr 11 13:02:49 2015
Charted by	Depth in Feet scaled 1:240

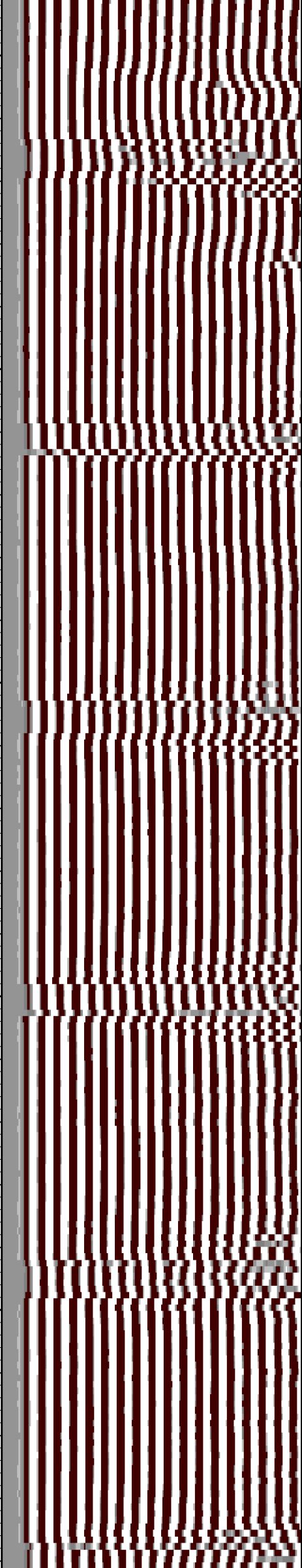
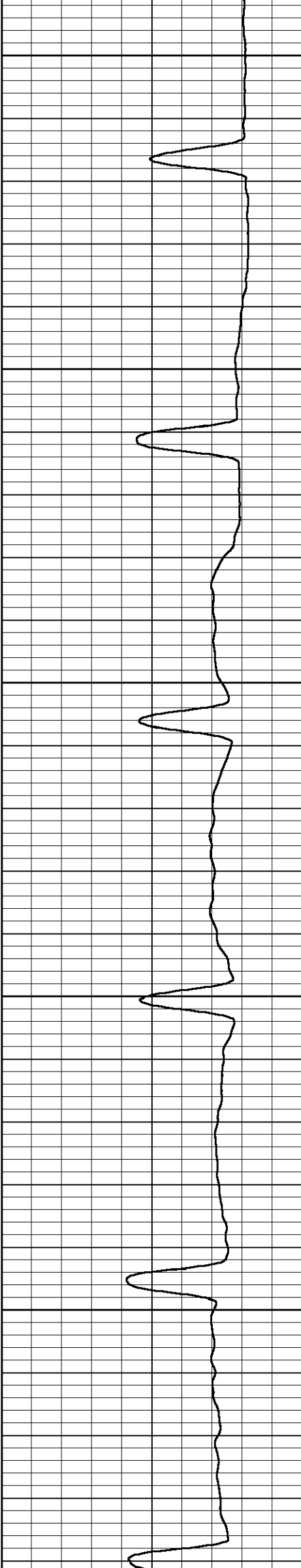
410	3' Travel Time (usec)	210	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-540	CCL	60	0	(lb)6000	0	3' Amplitude X5 (mV)	10		
0	GR (GAPI)	200							

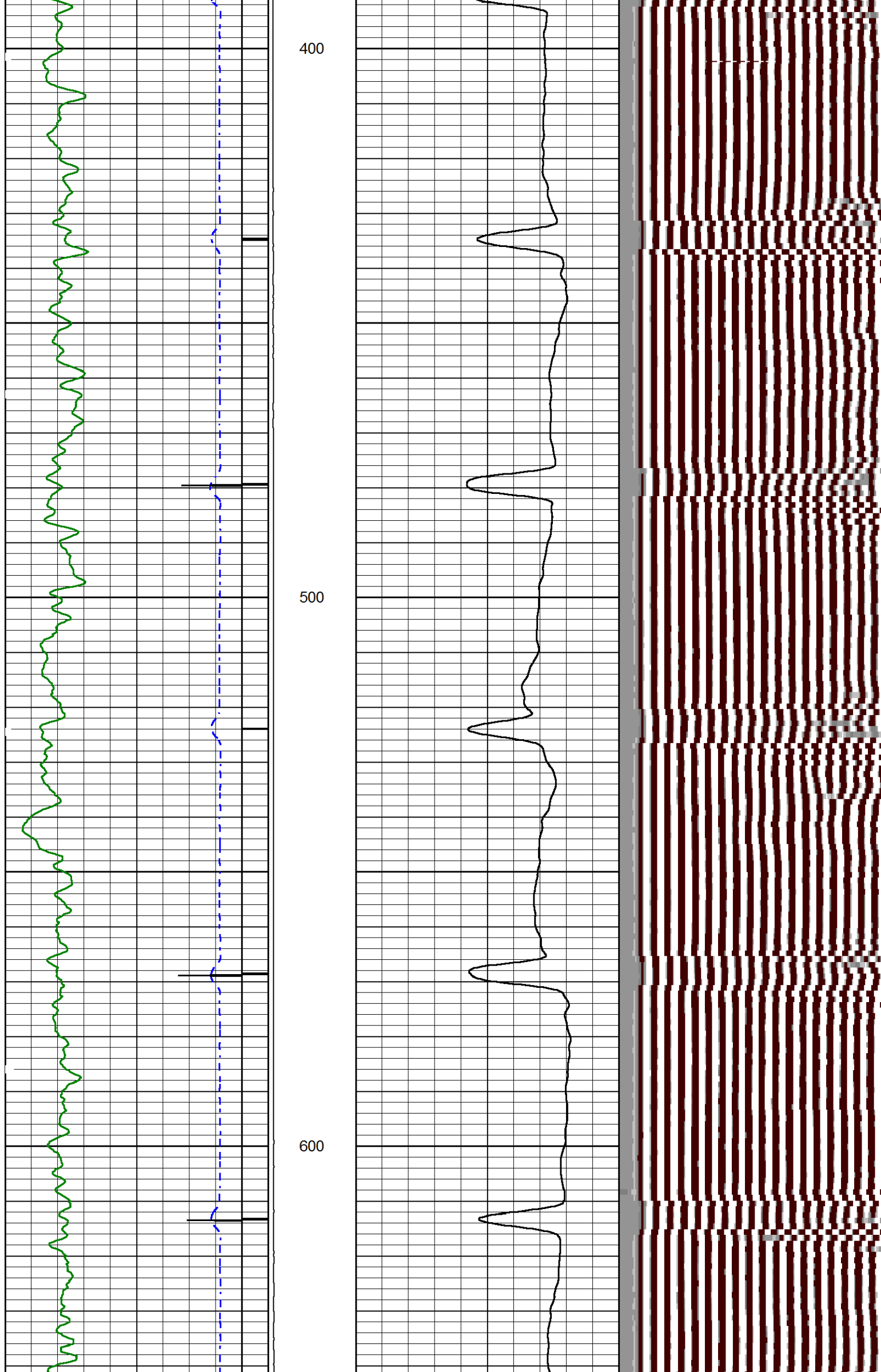


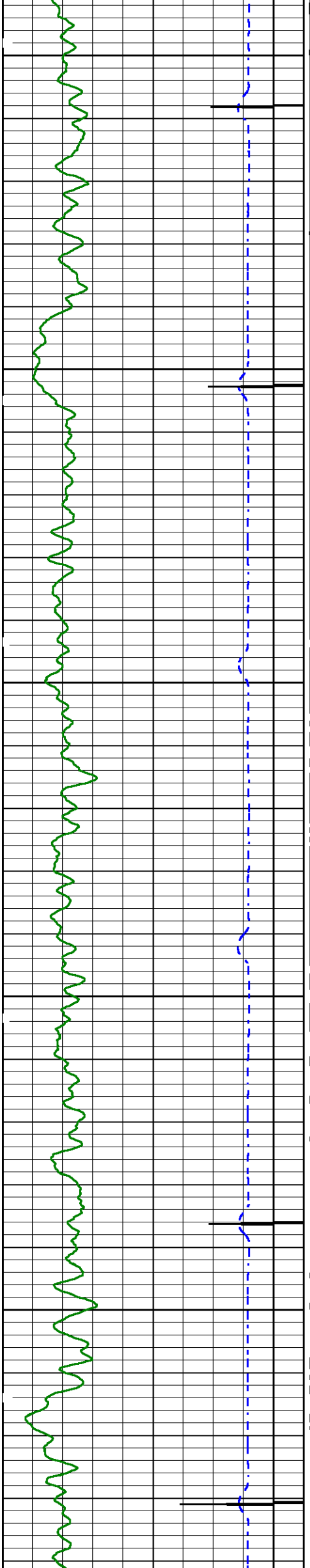


200

300

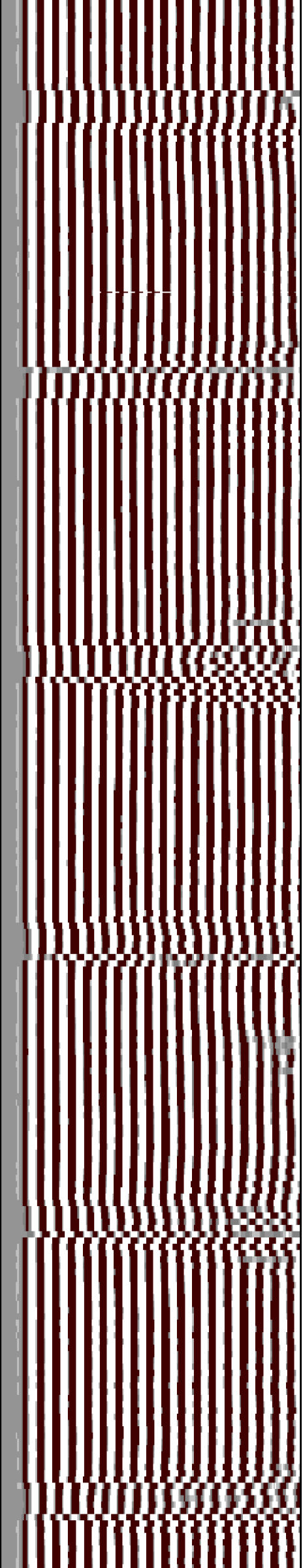
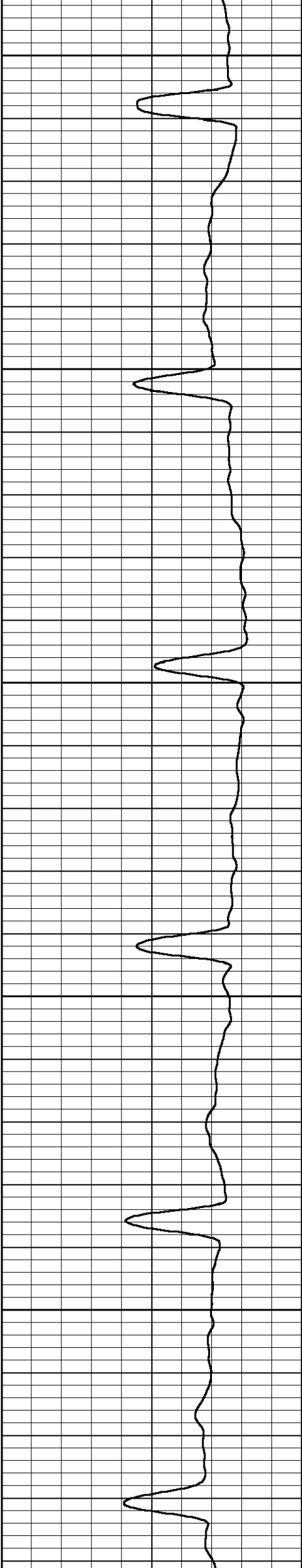


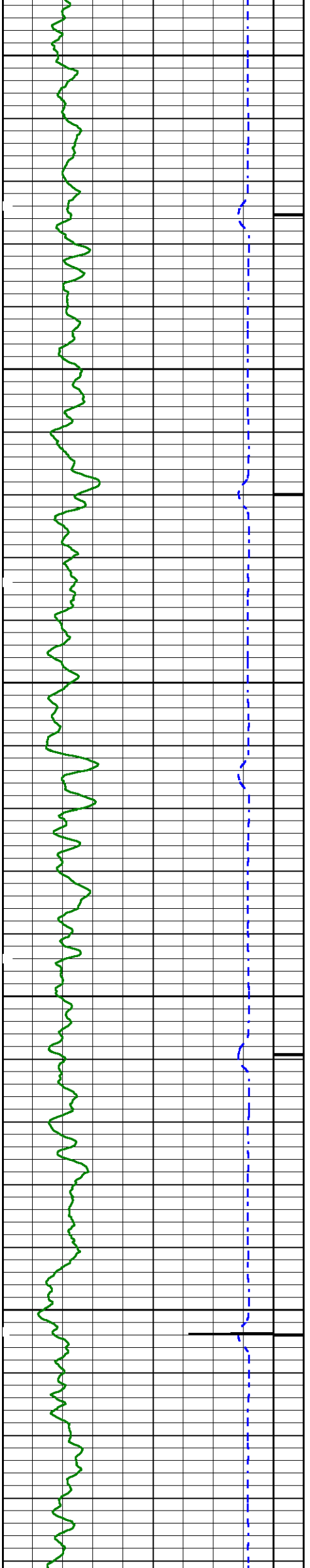




700

800

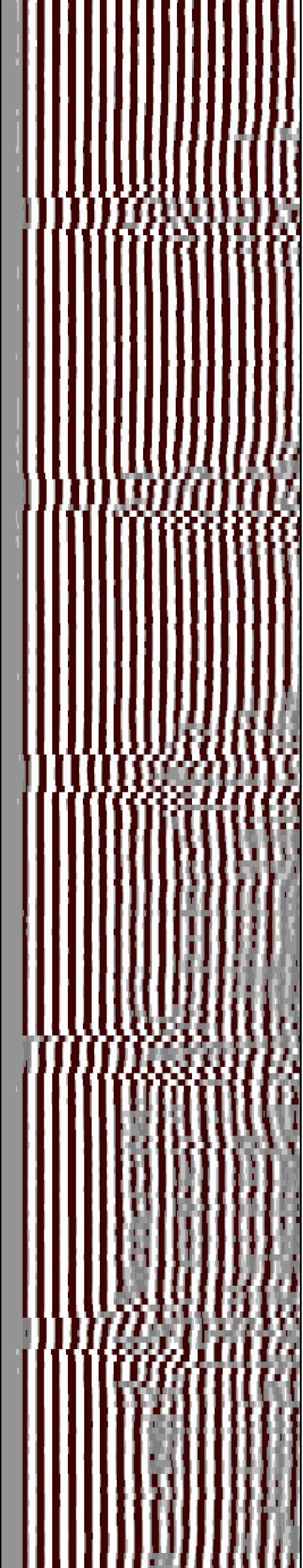
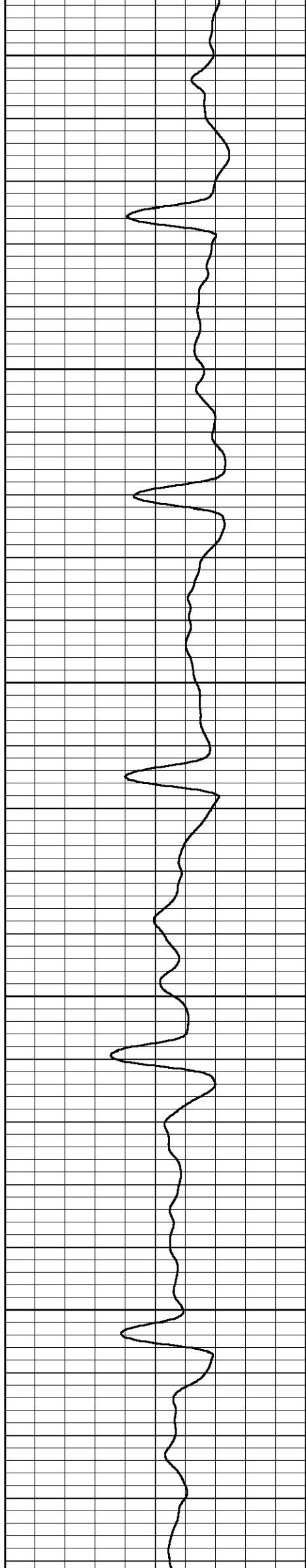


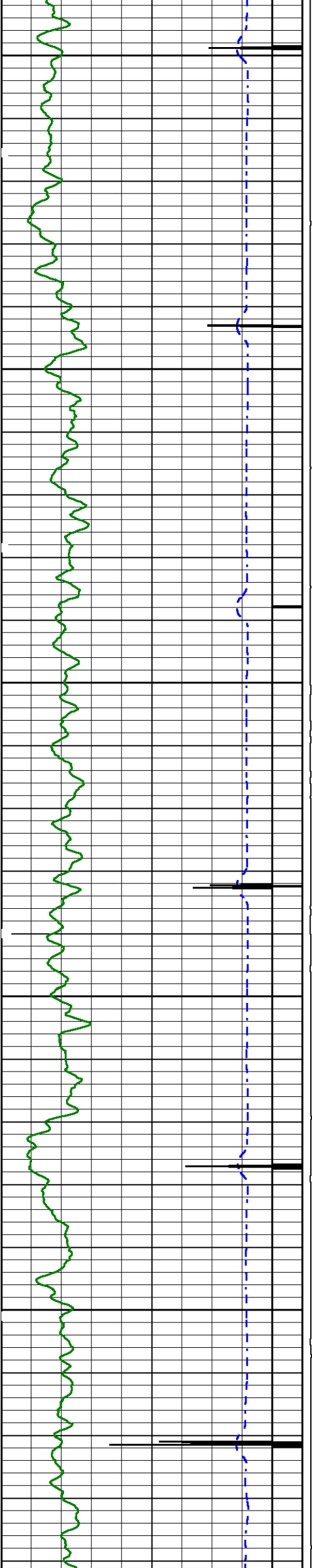


900

1000

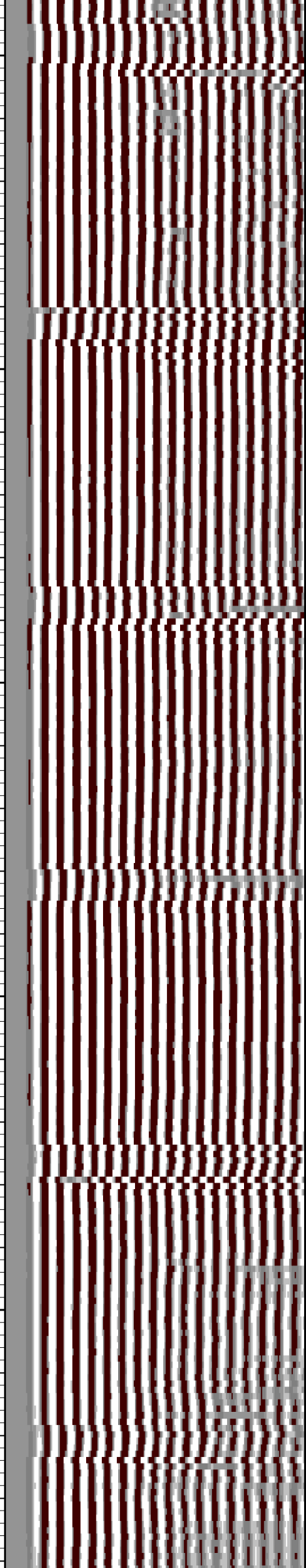
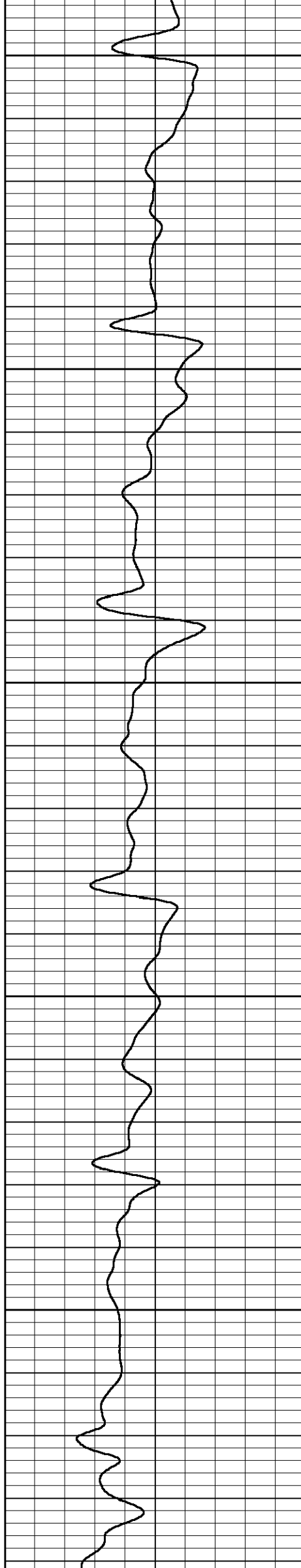
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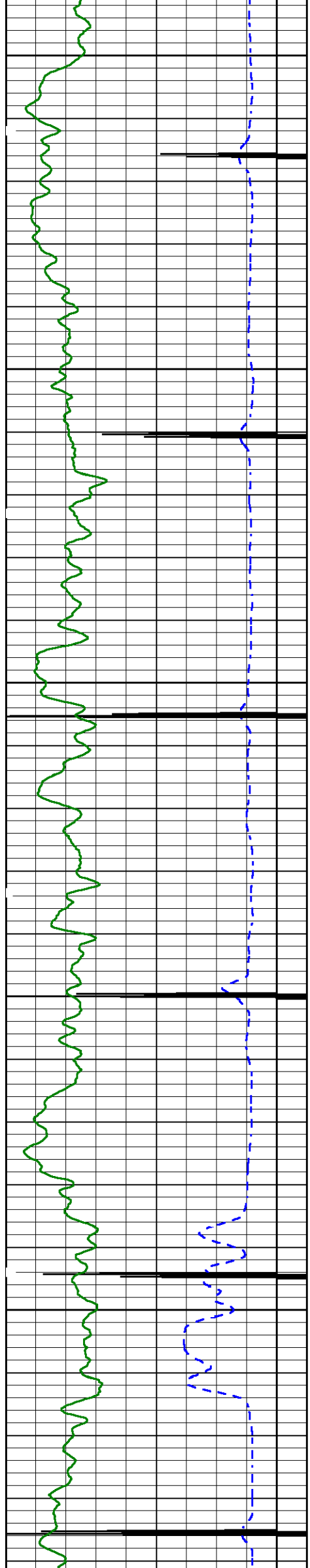




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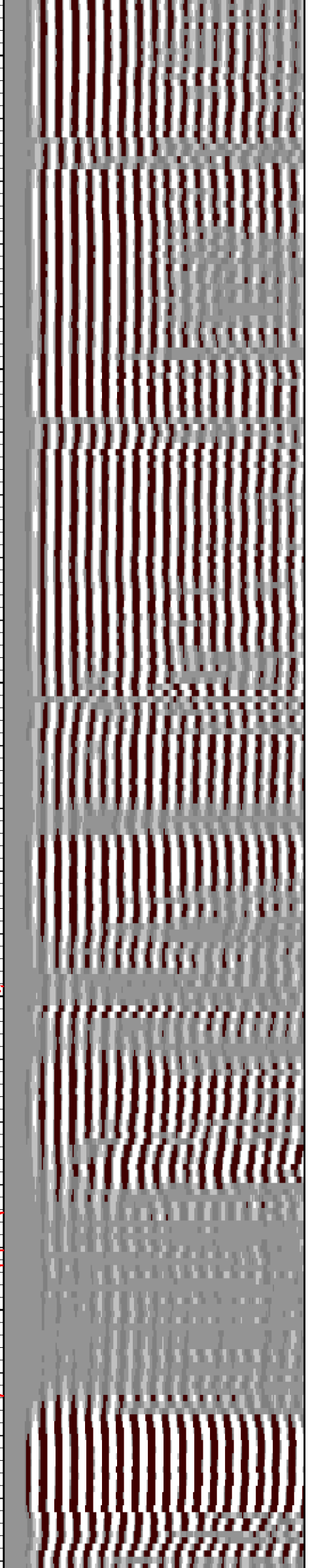
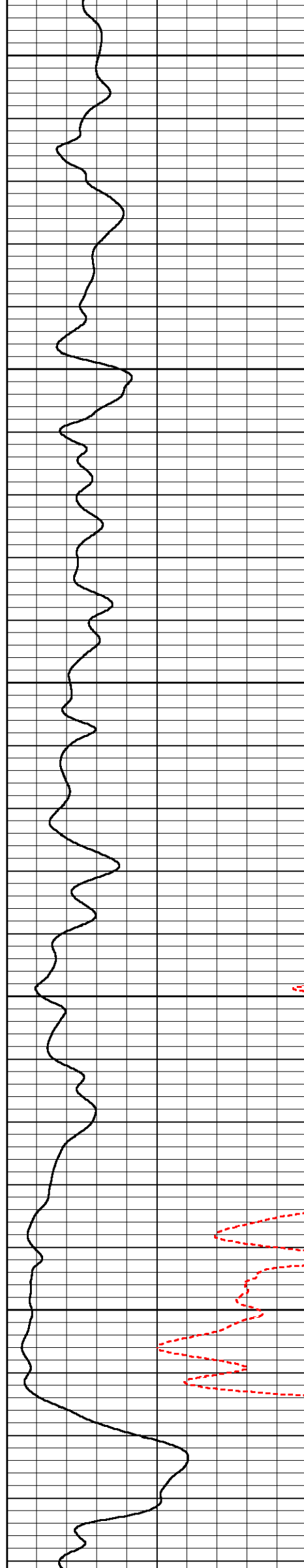


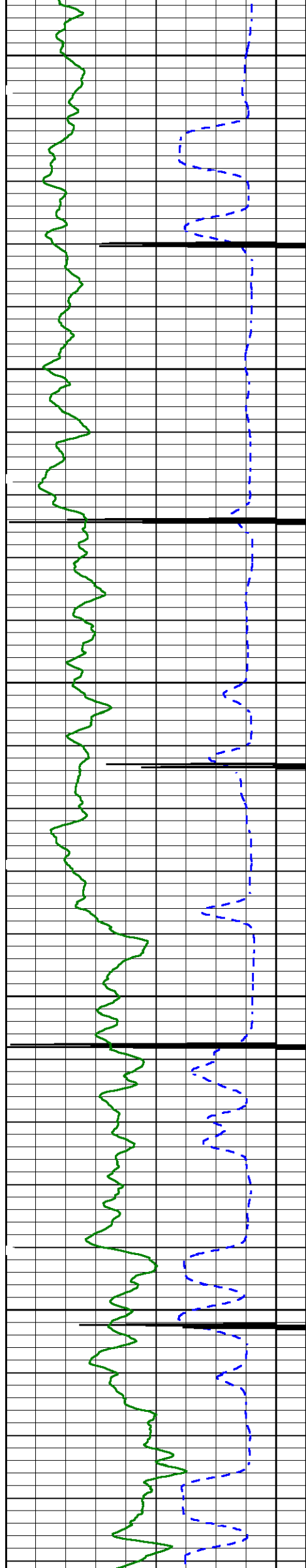


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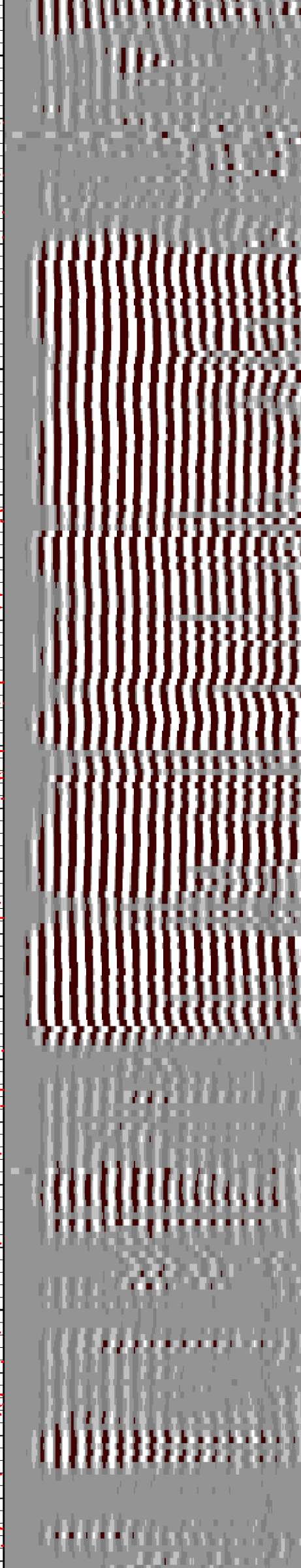
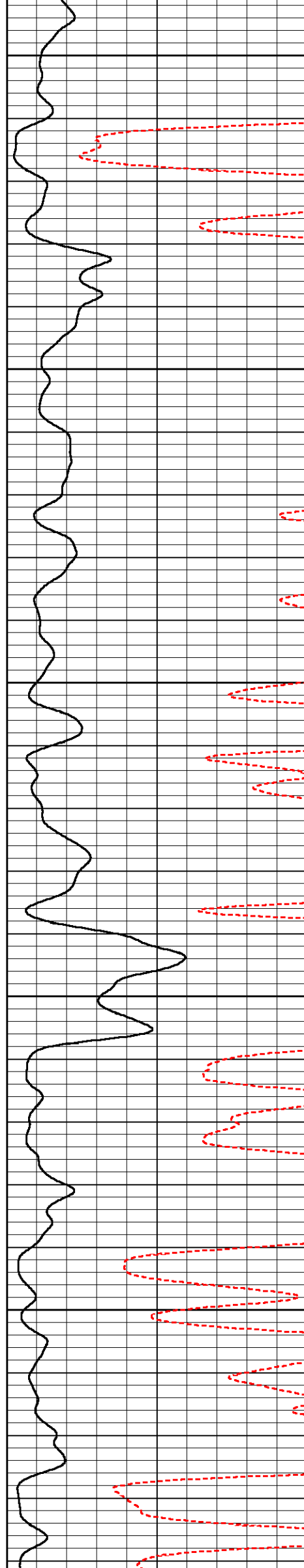
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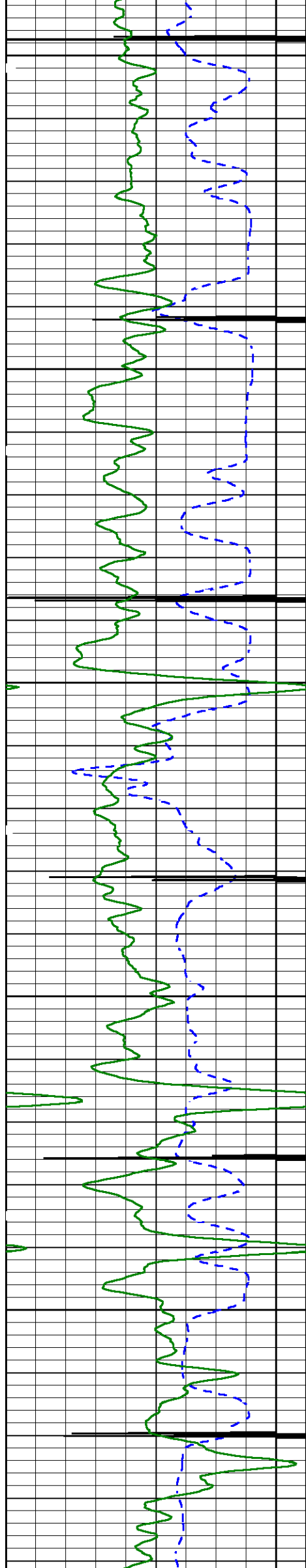




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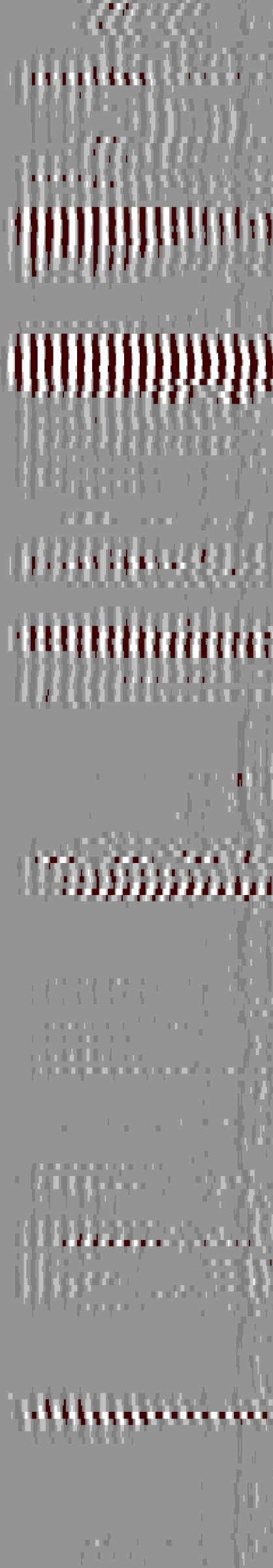
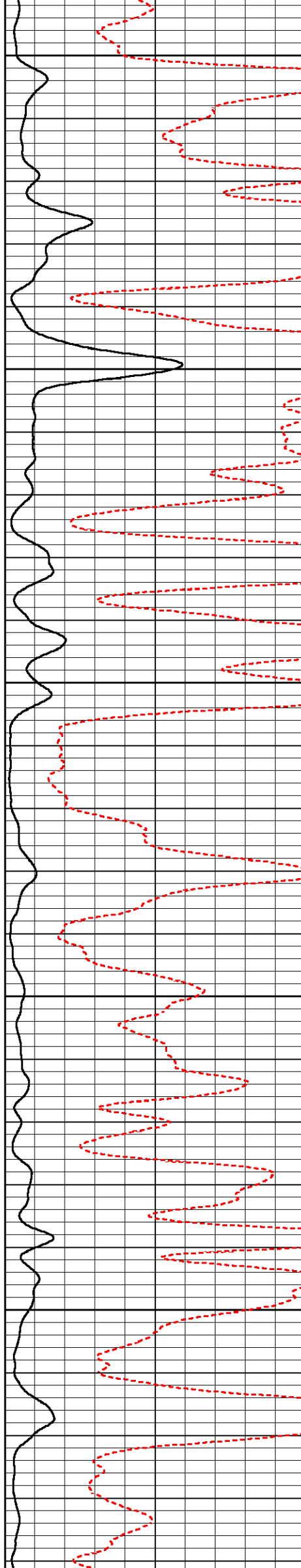


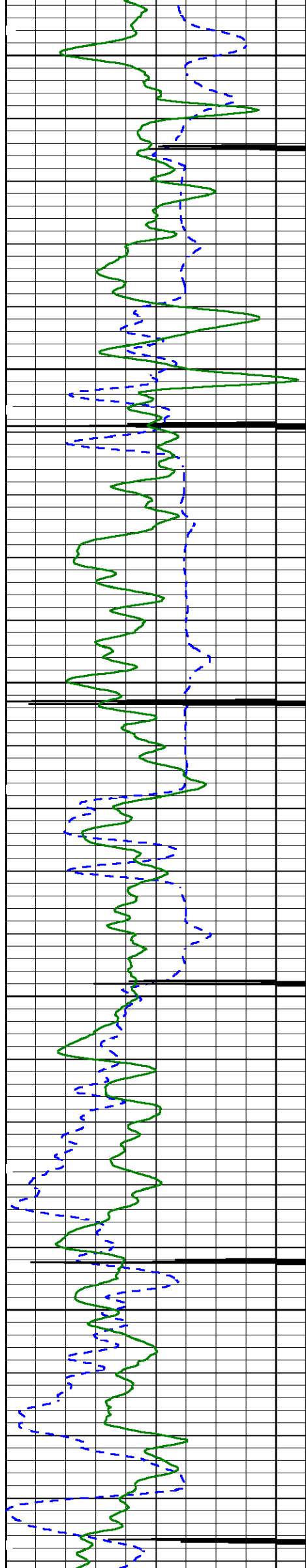


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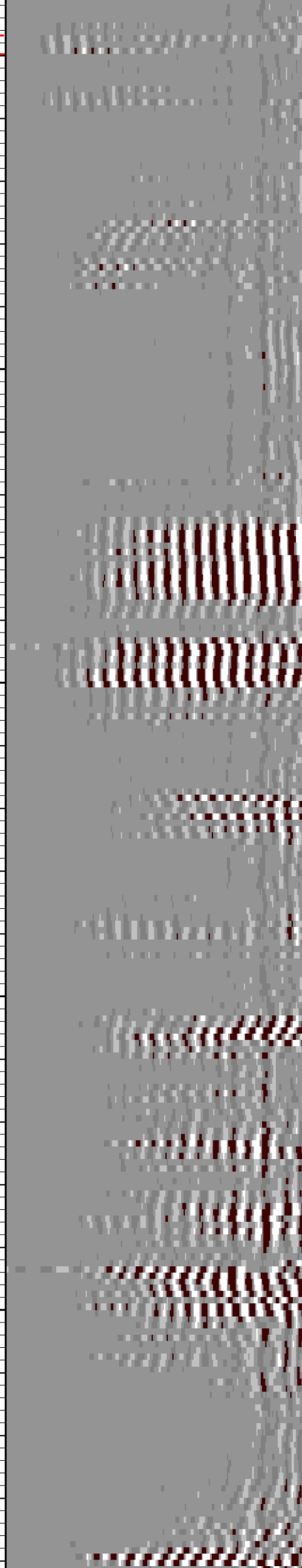
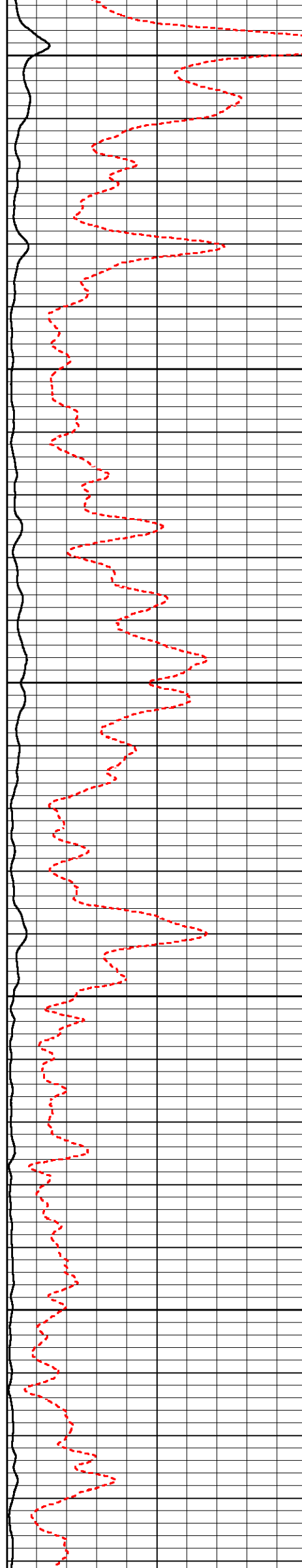
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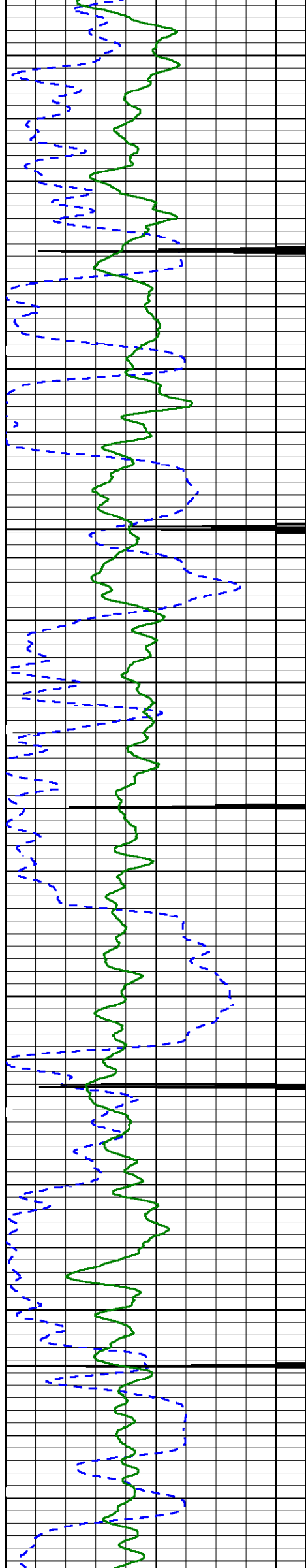




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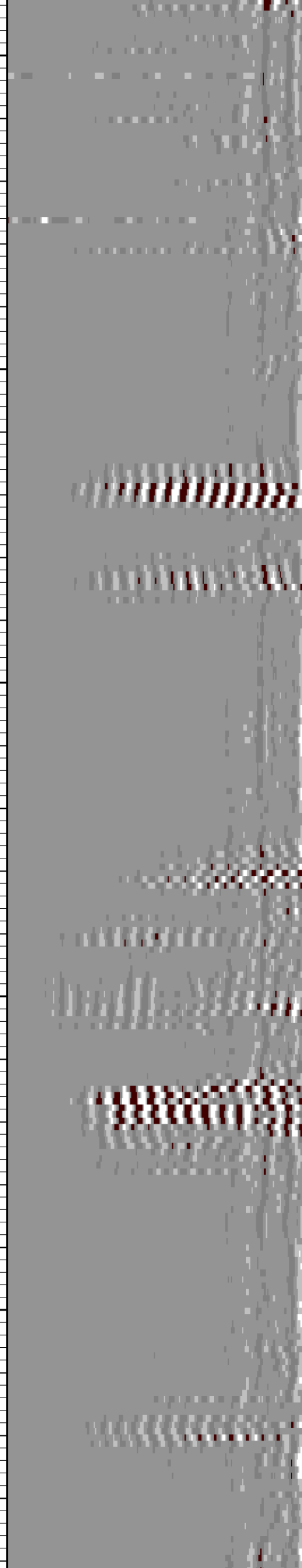


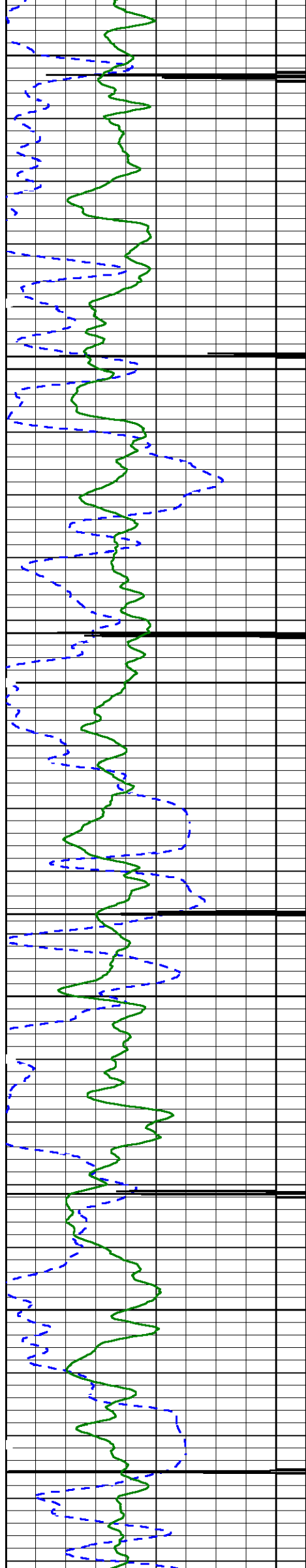


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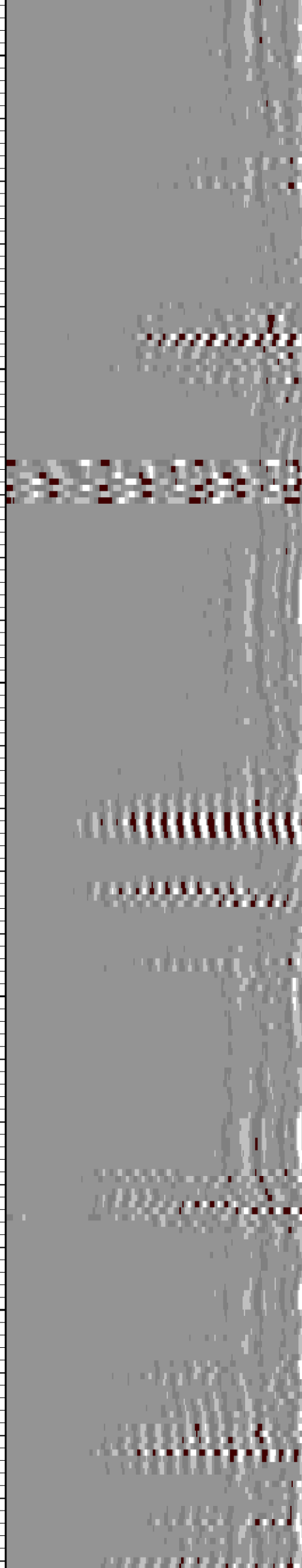
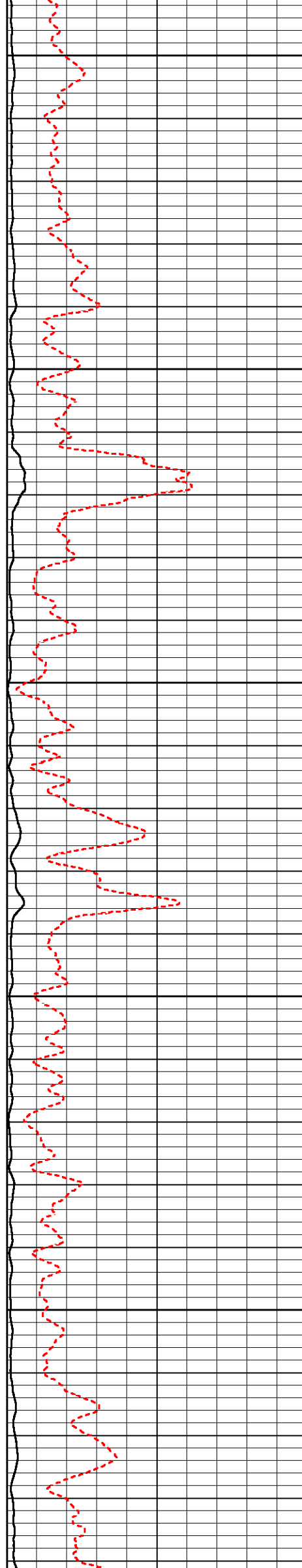
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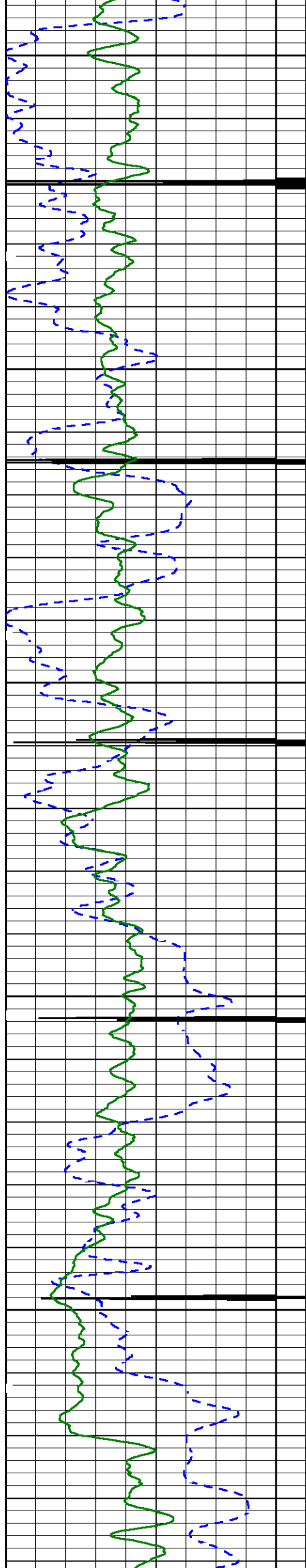




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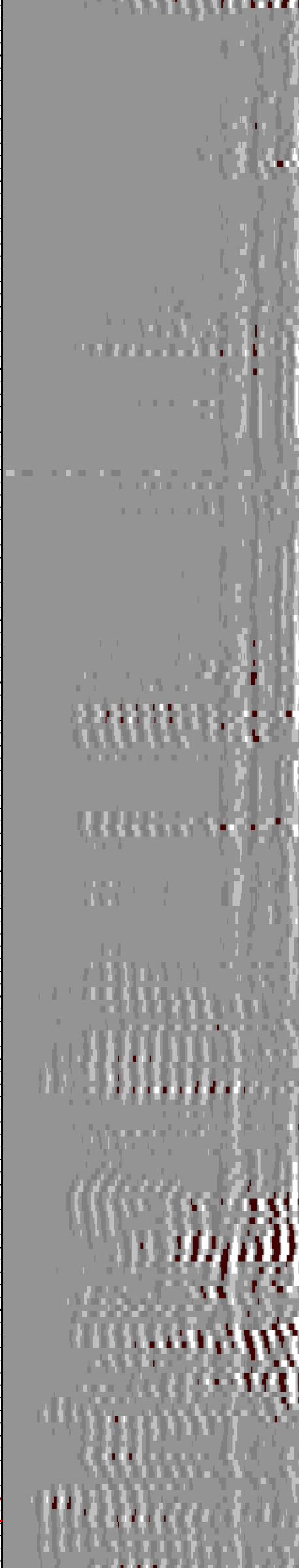
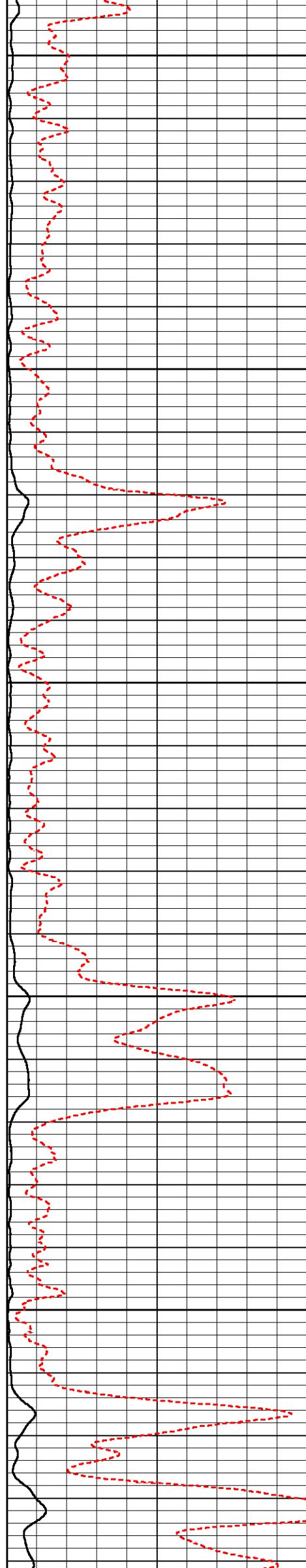


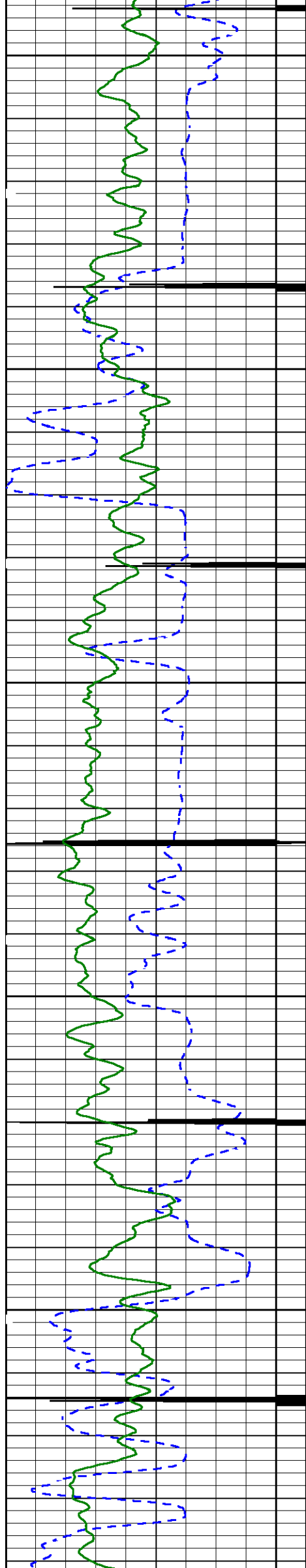


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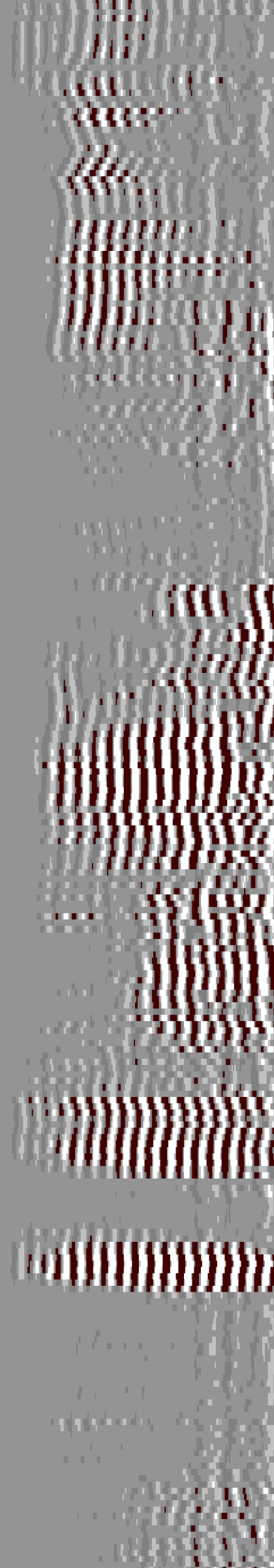
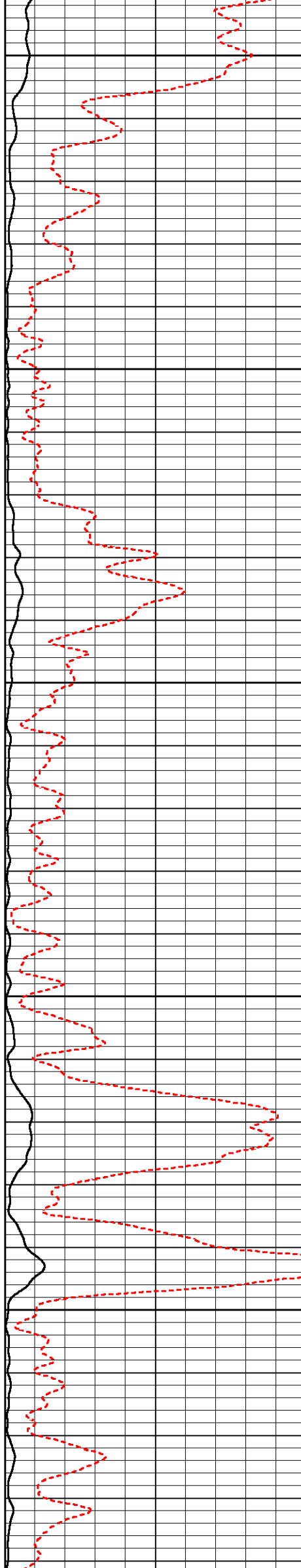
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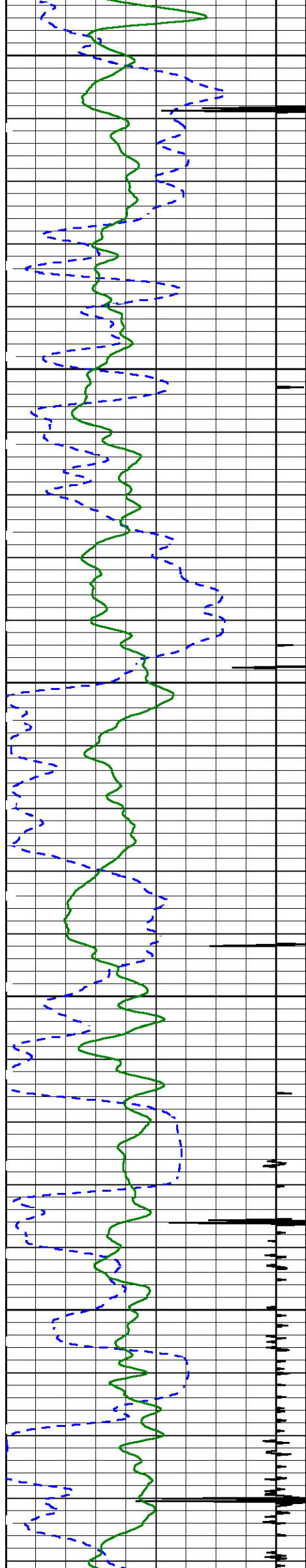




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3300

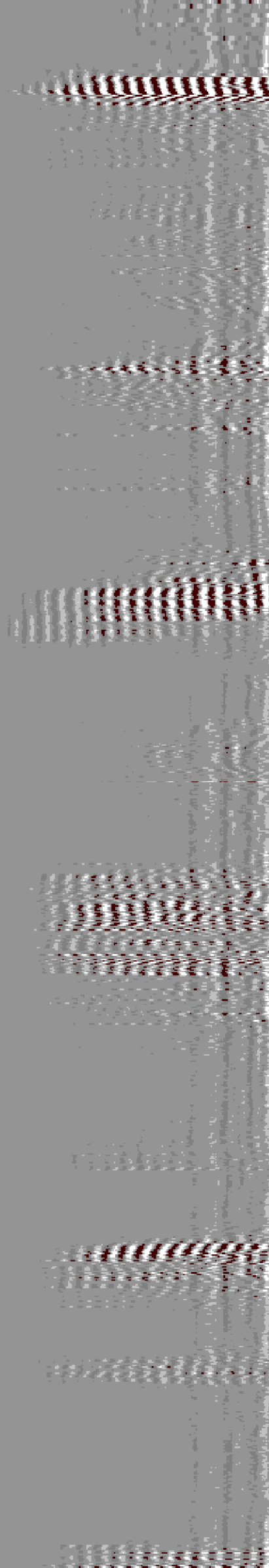
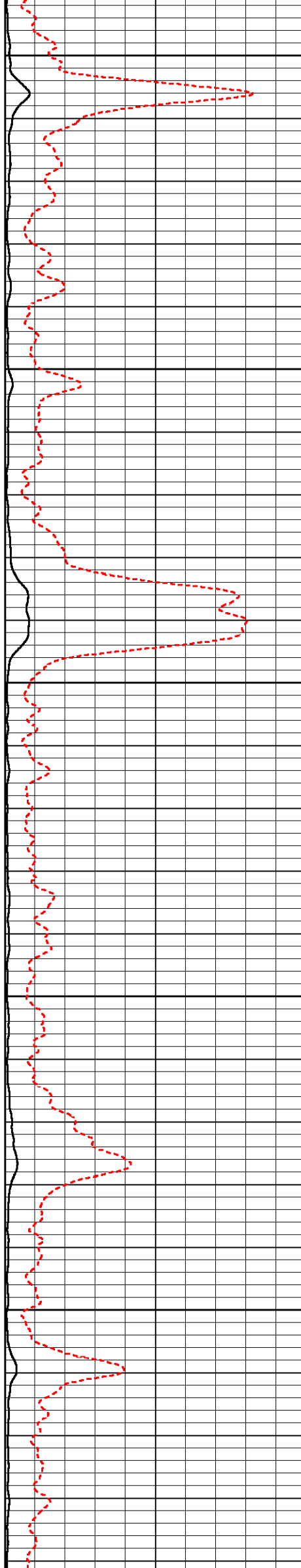


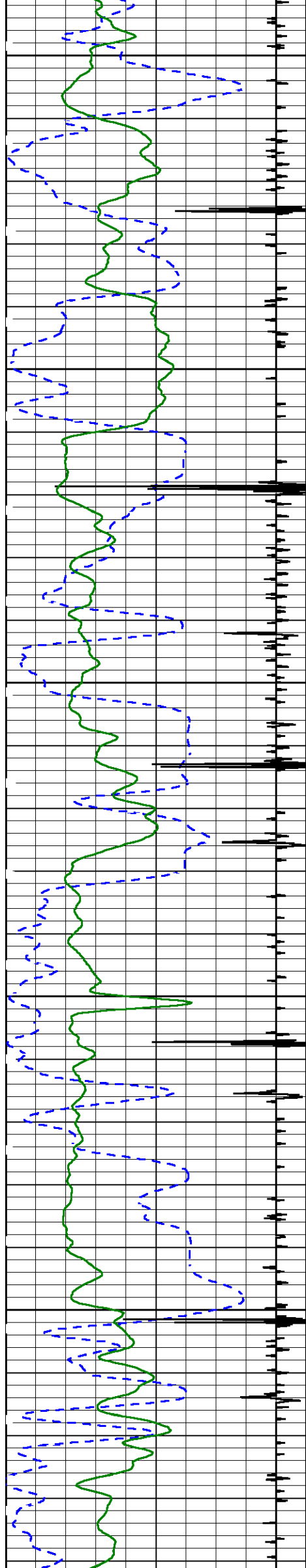


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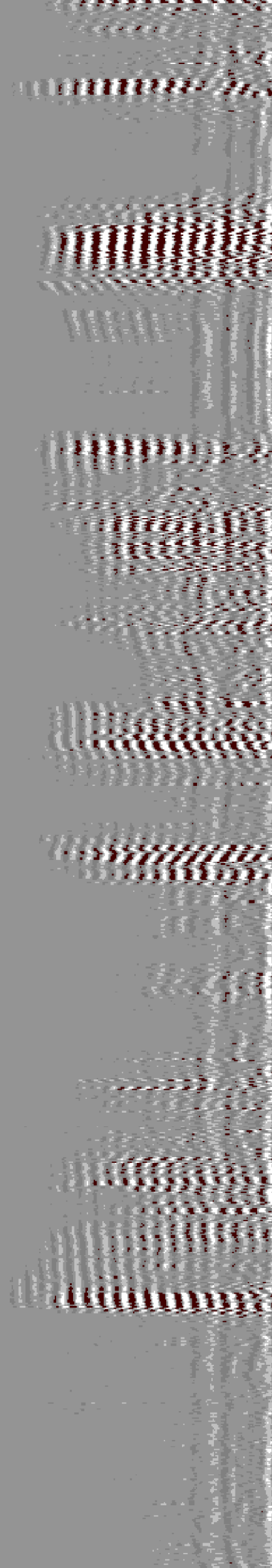
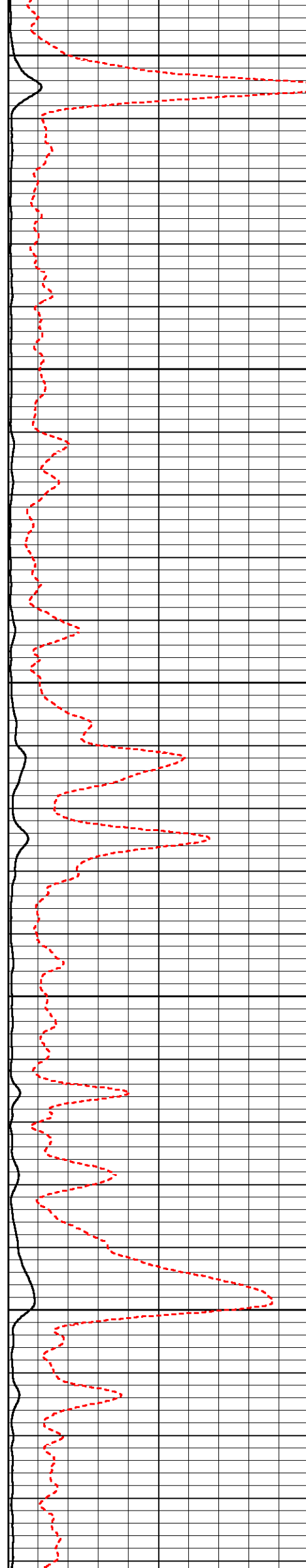
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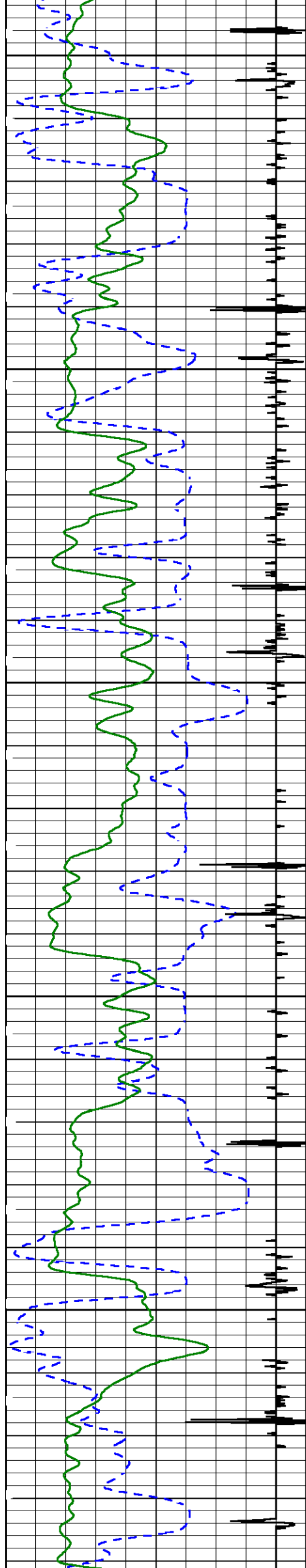




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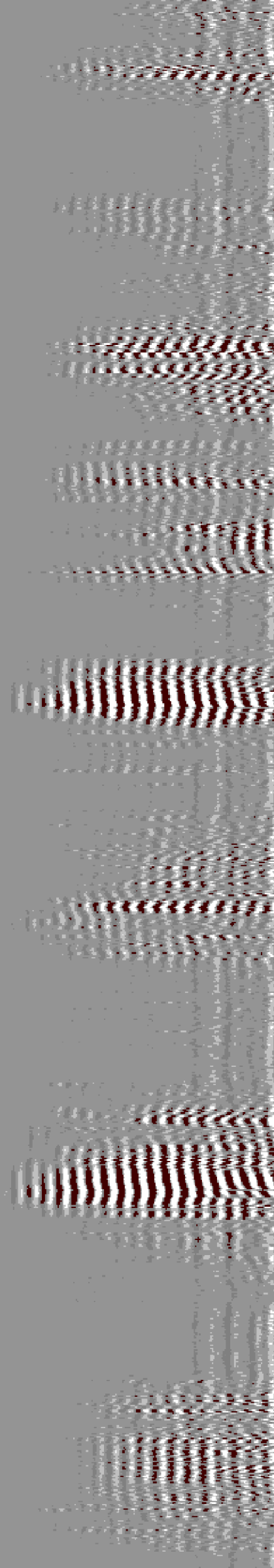
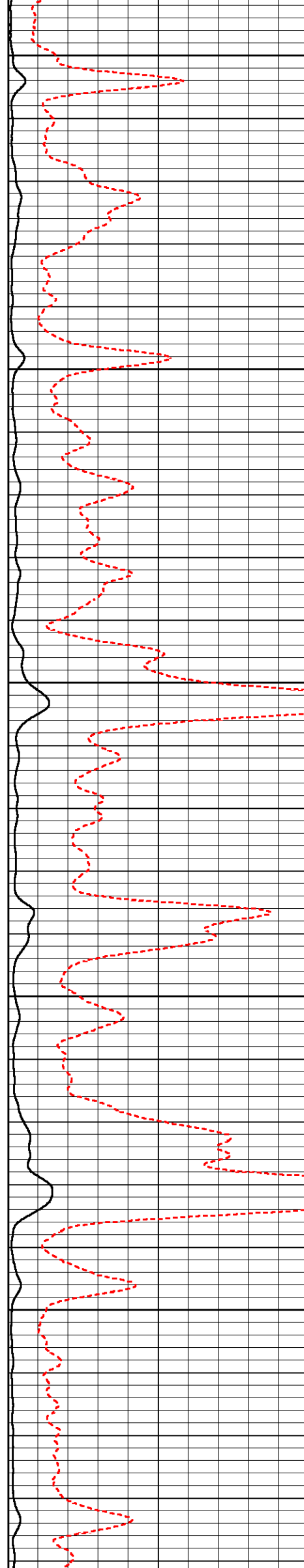


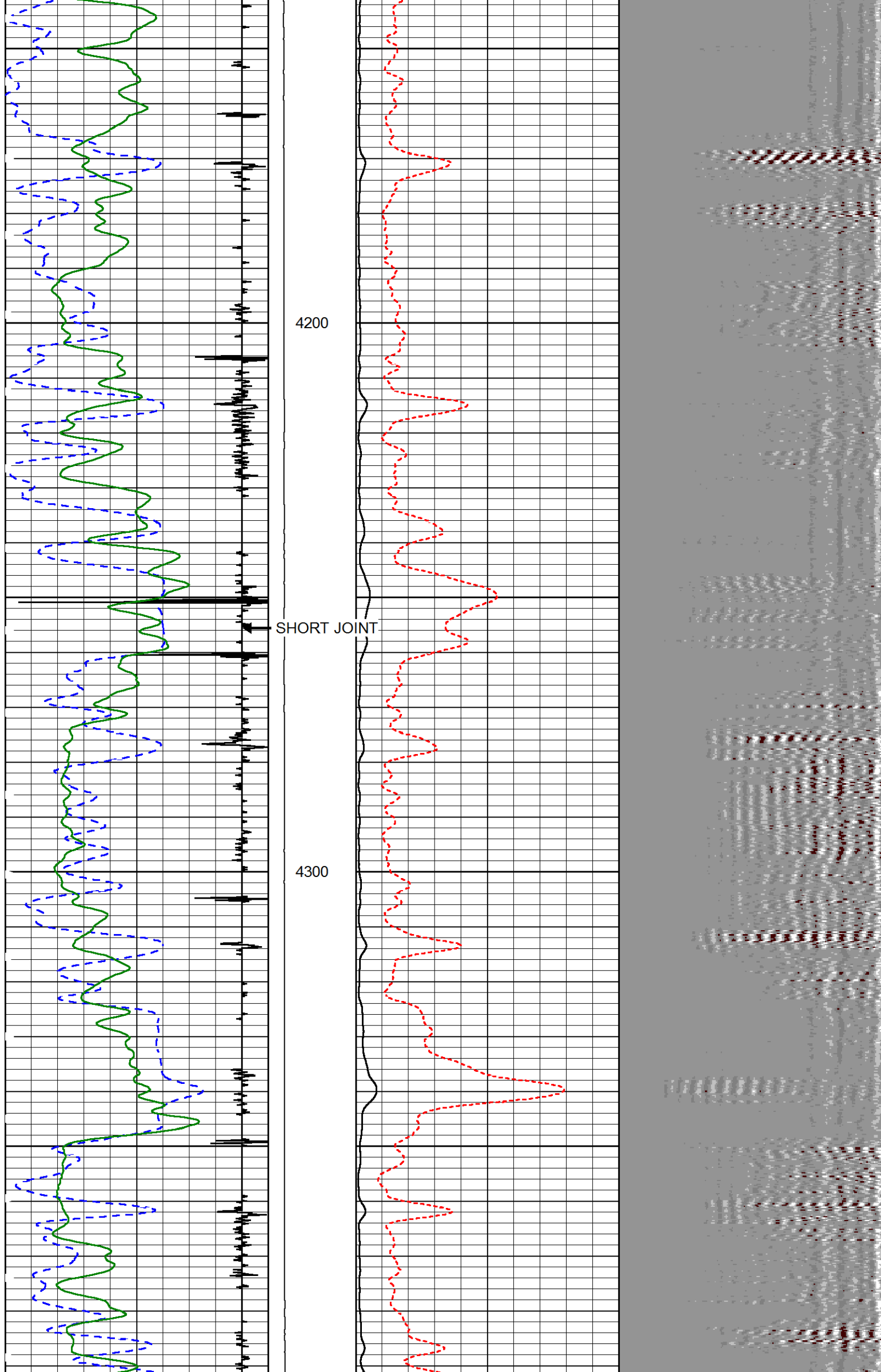


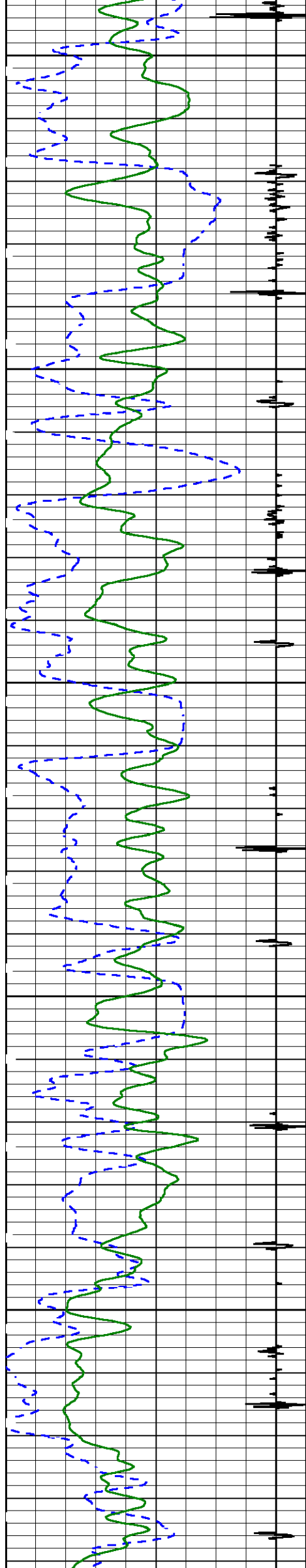
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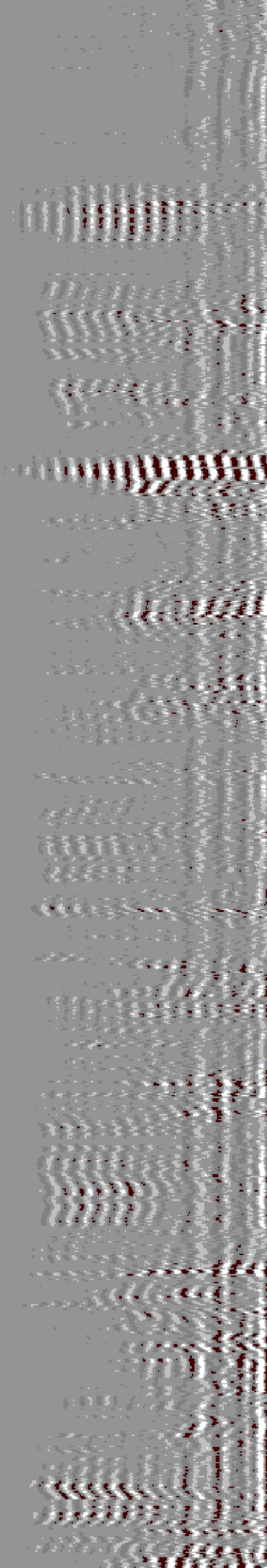
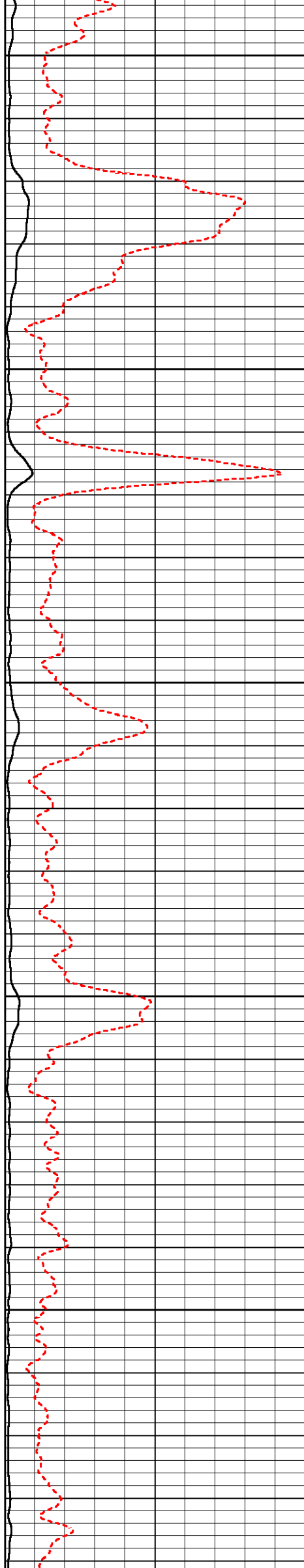


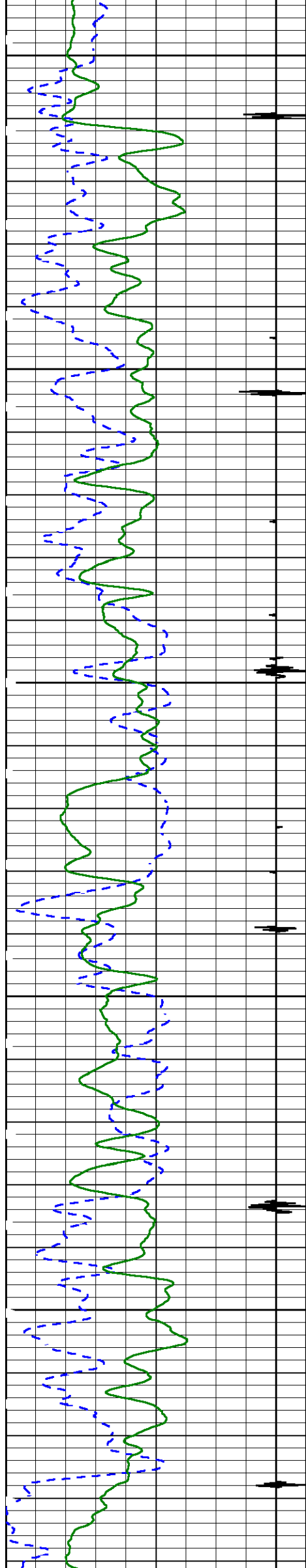


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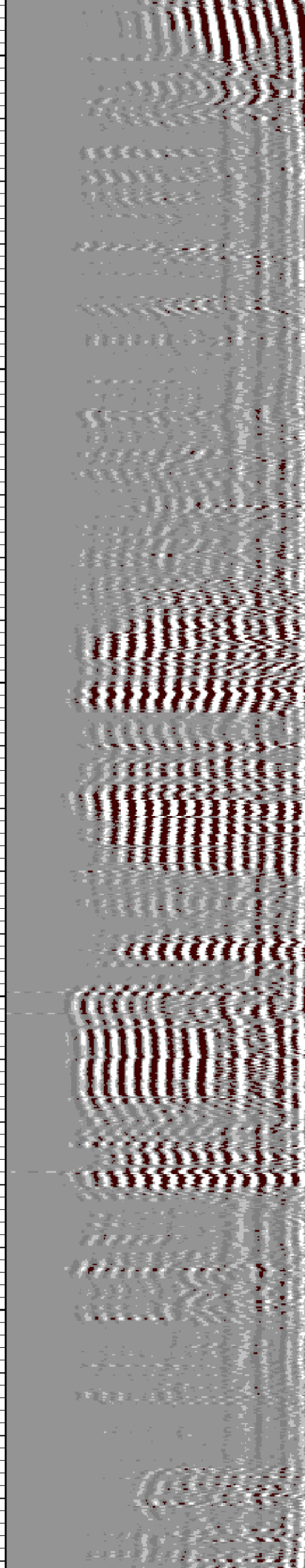
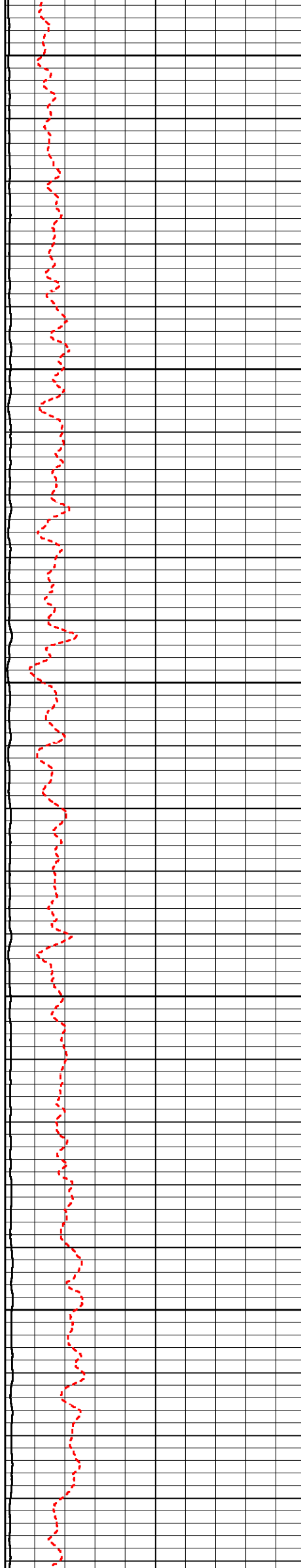
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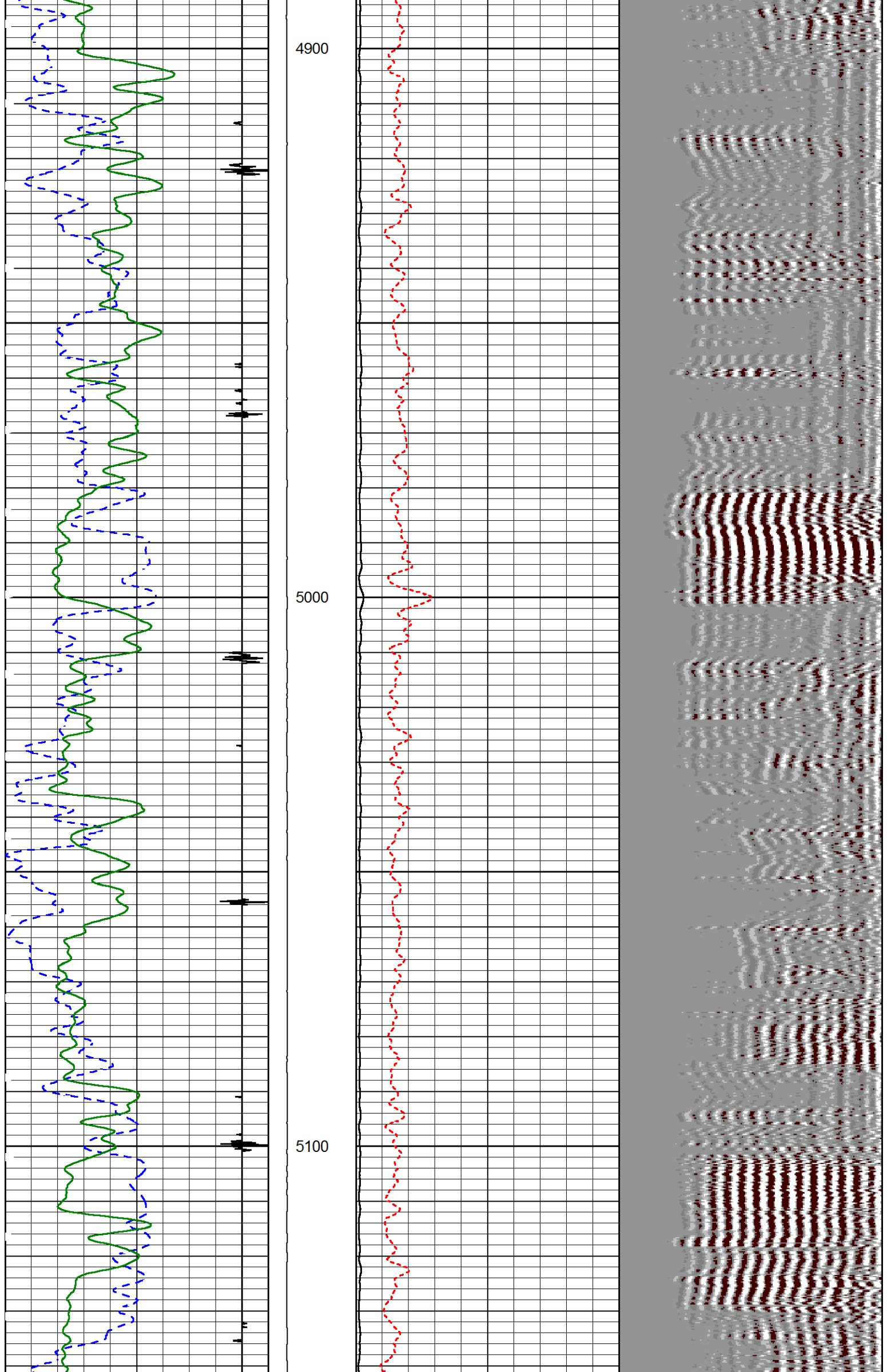


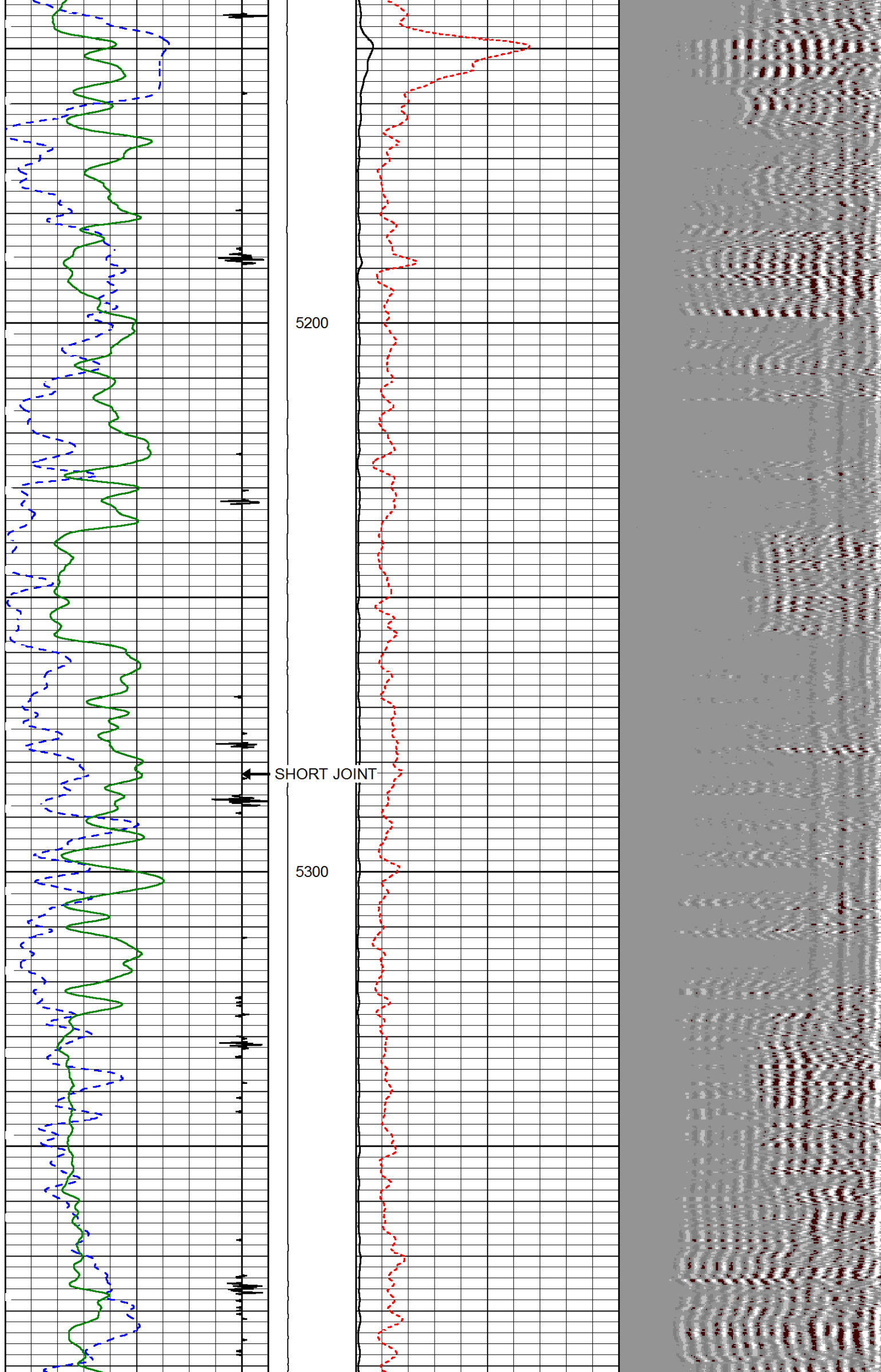


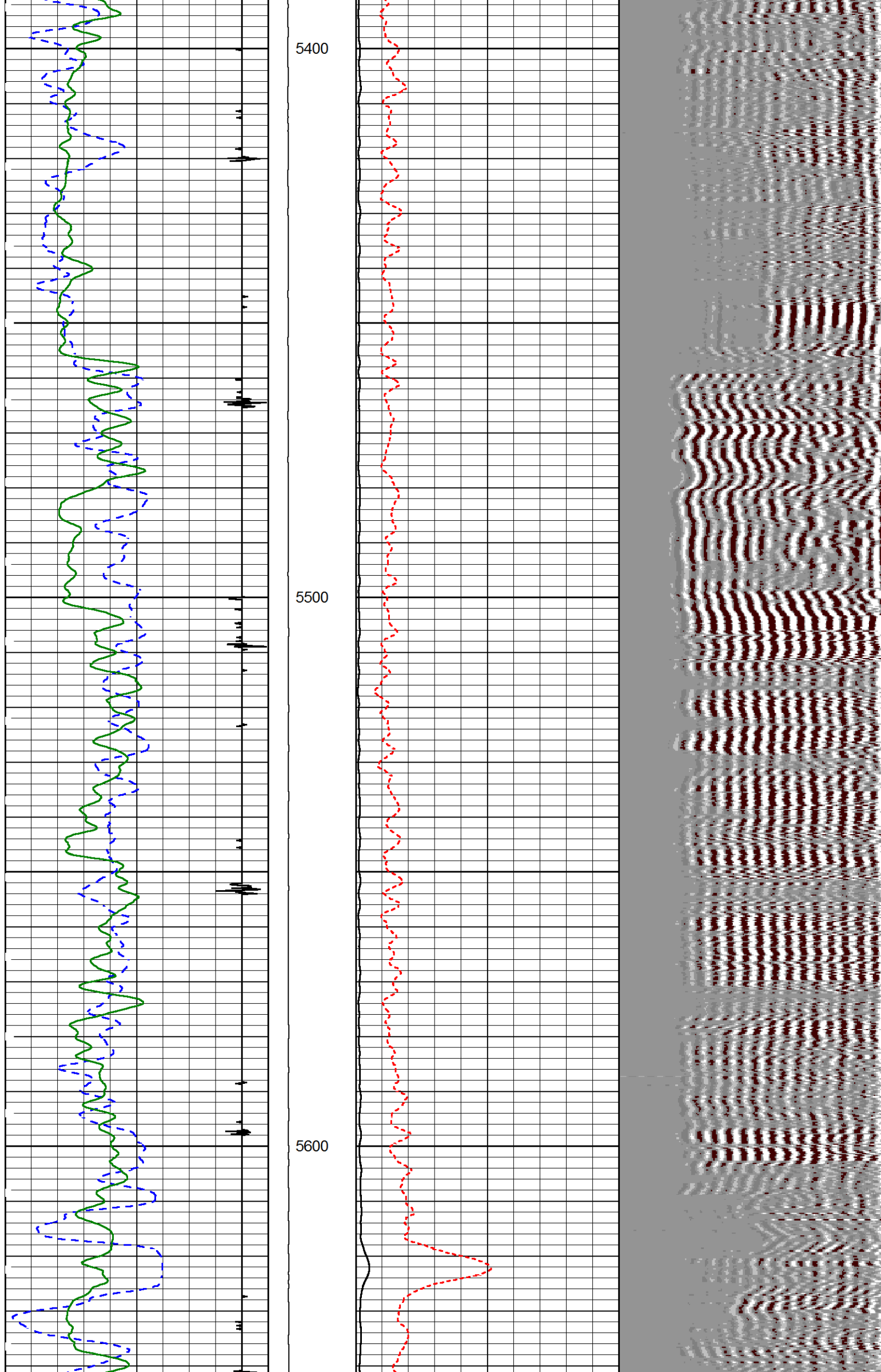
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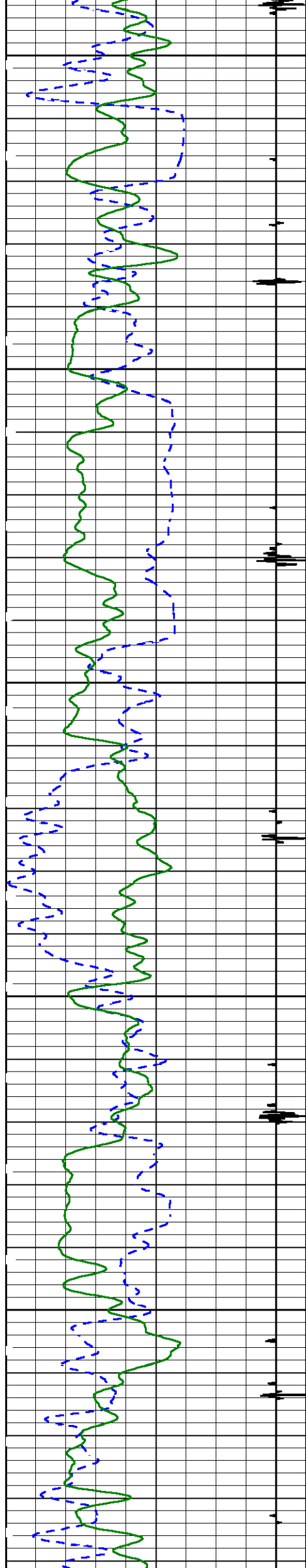
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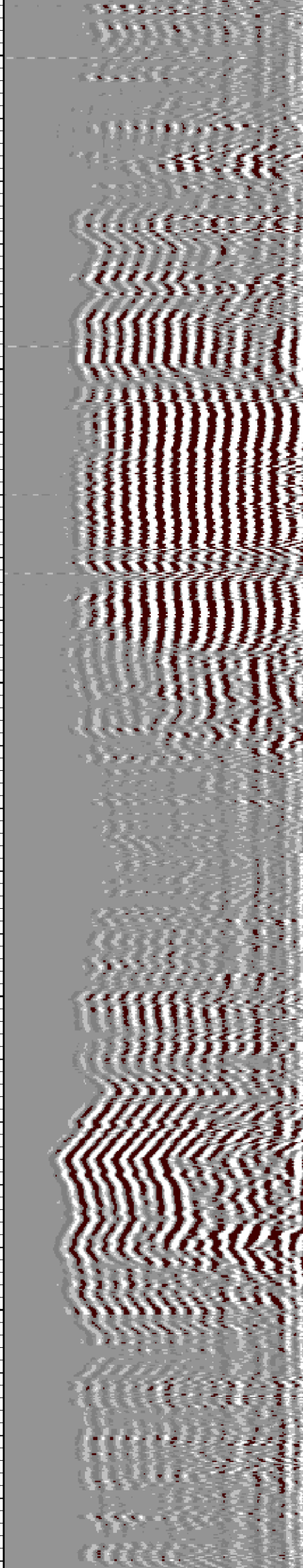
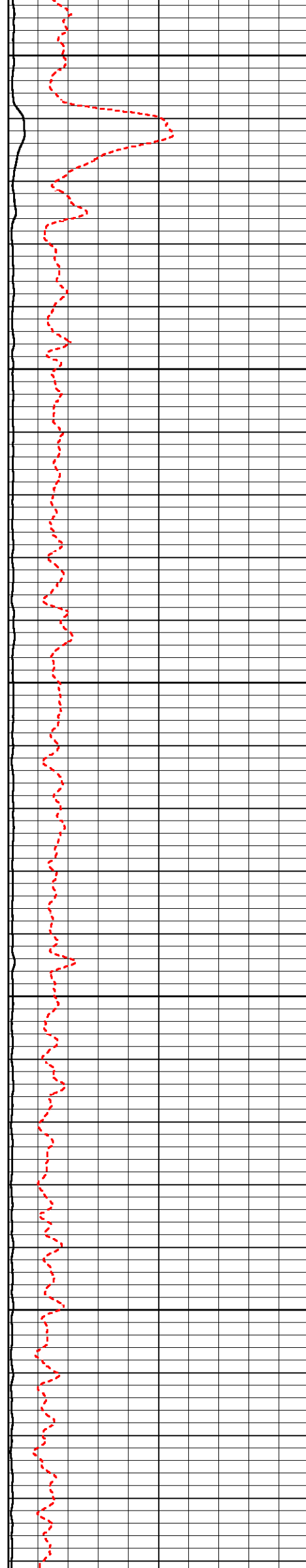


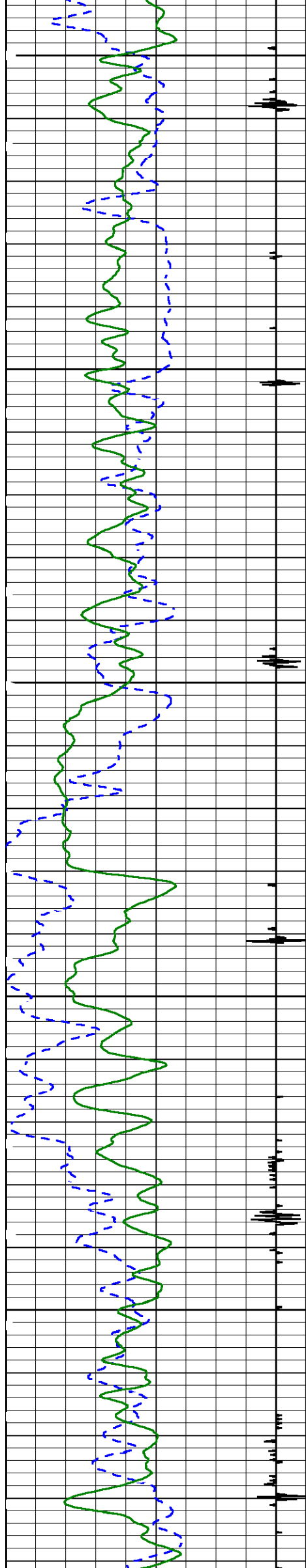




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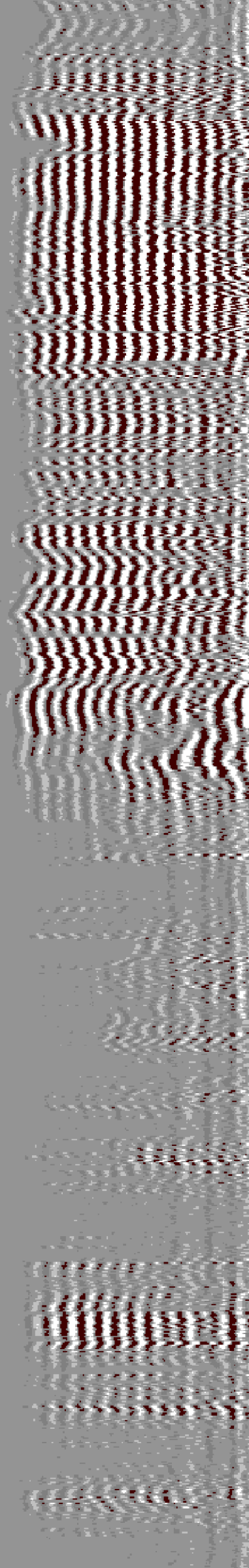
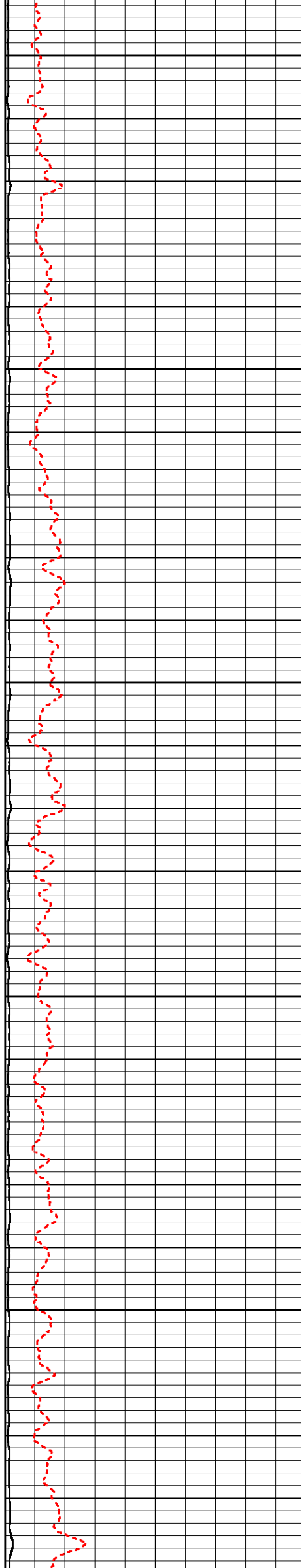


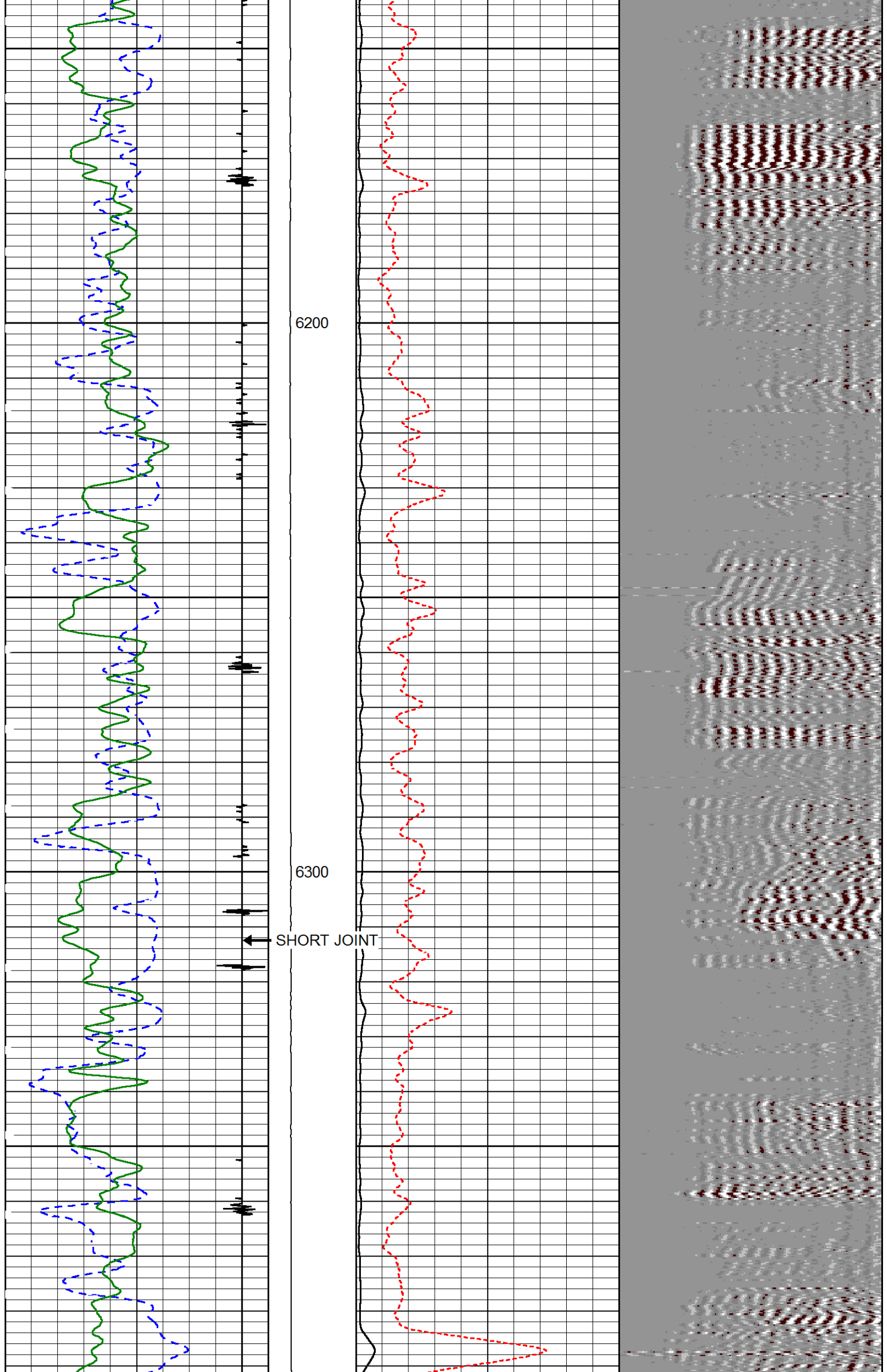


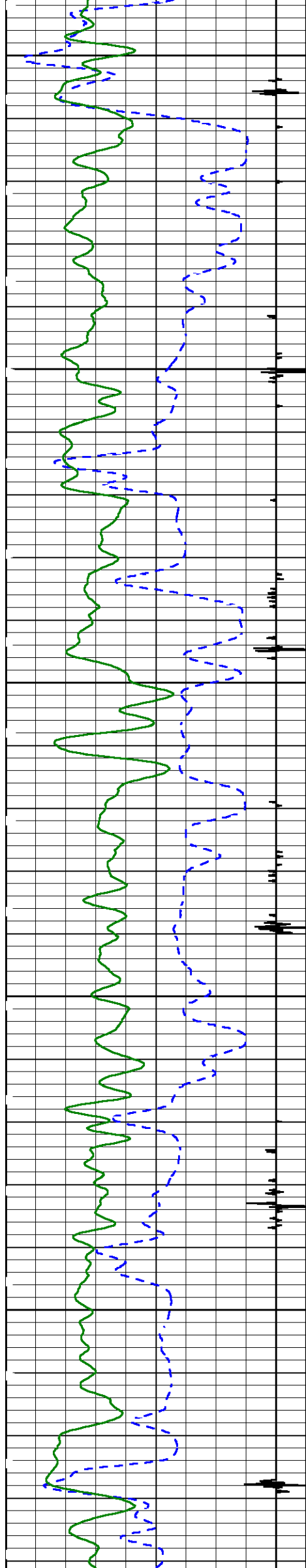
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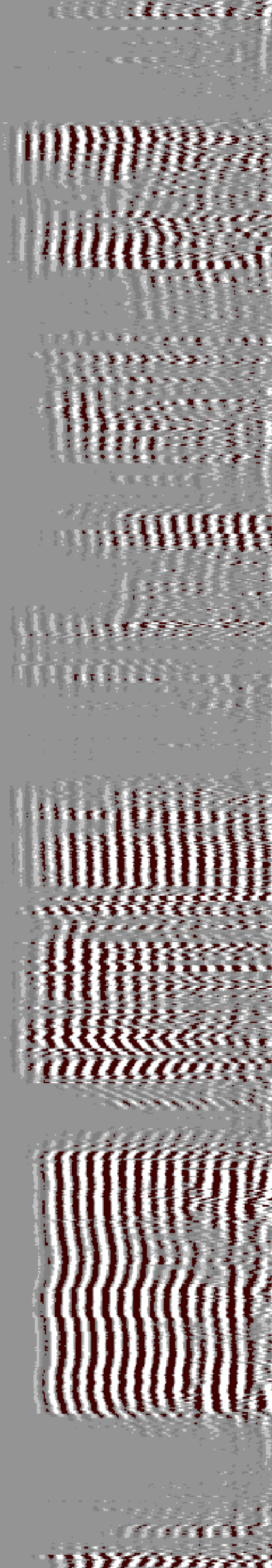
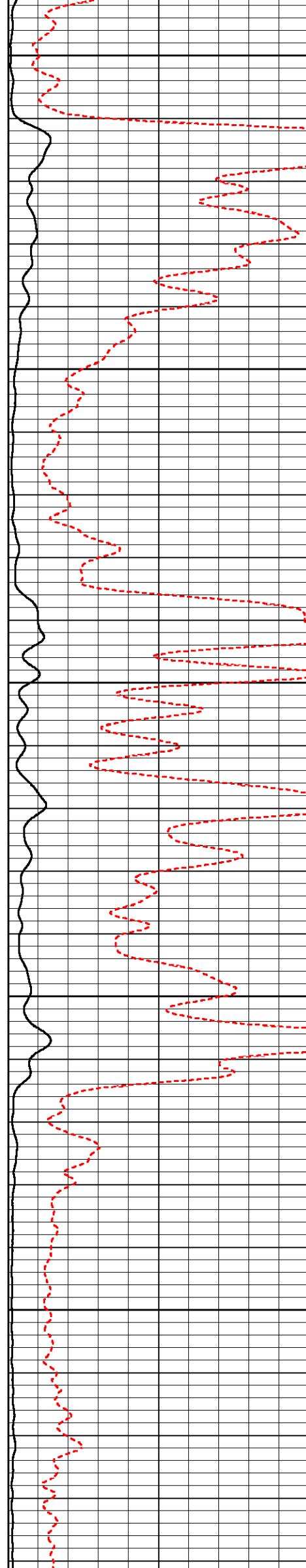


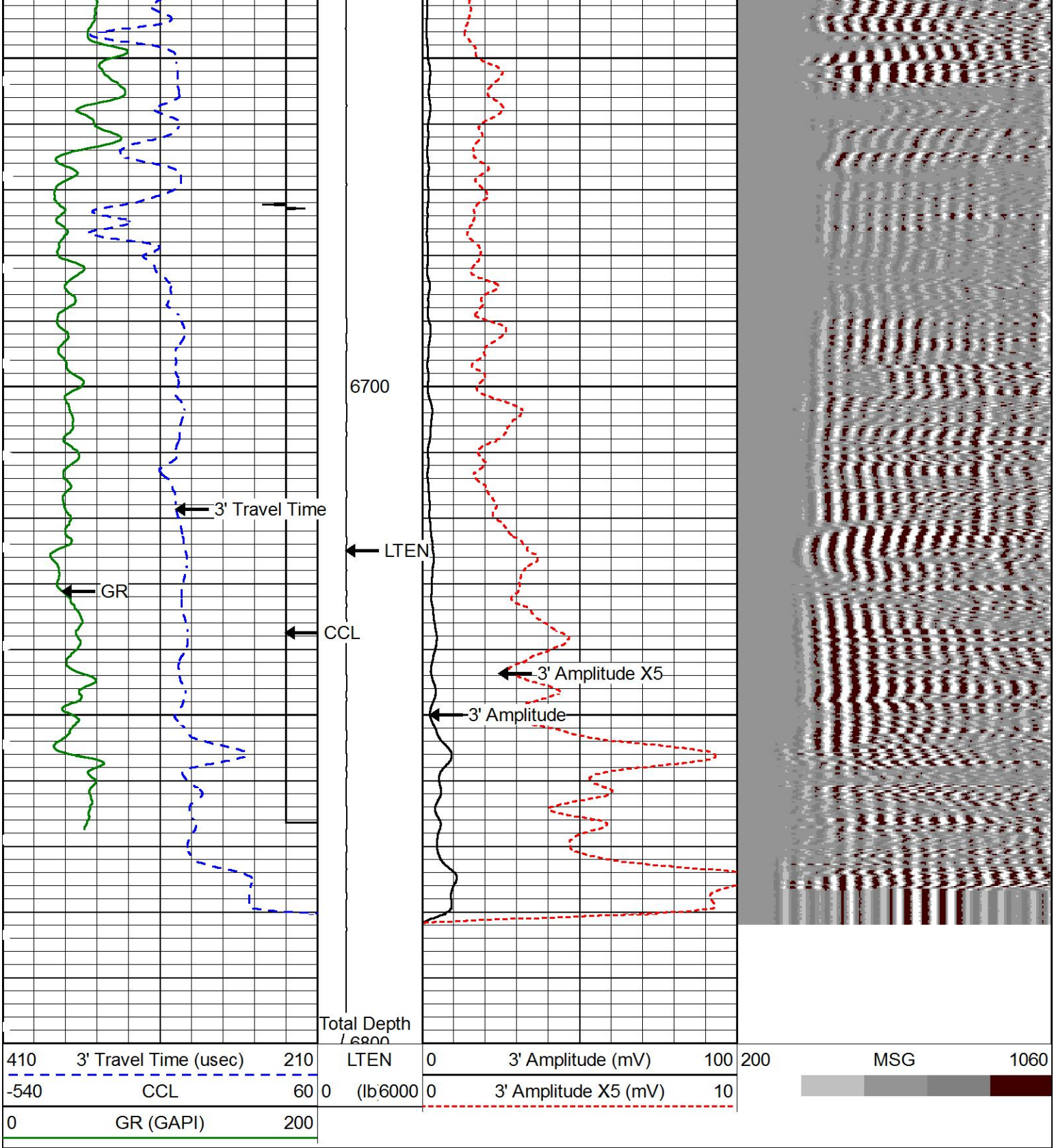


6400

6500

6600





MAIN LOG SECTION

5" = 100'

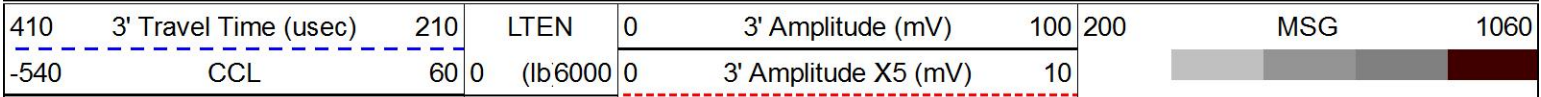
HALLIBURTON

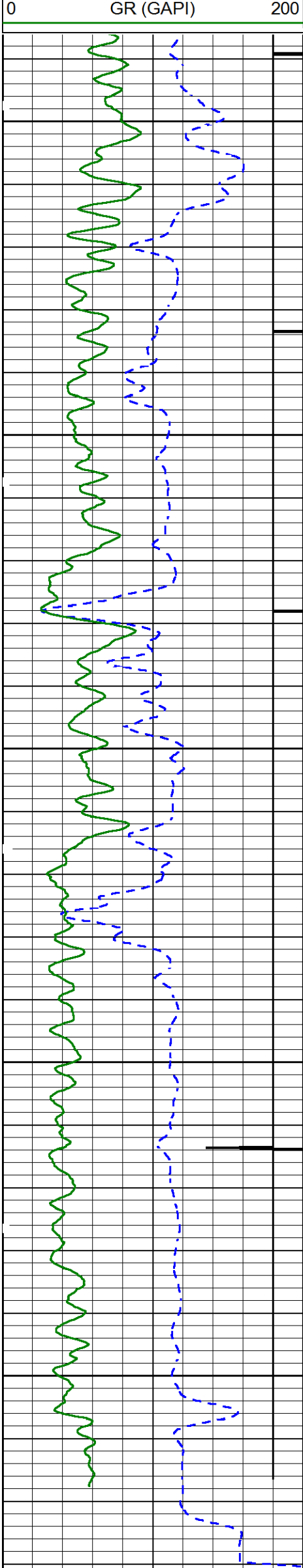
REPEAT LOG SECTION

5" = 100'

HALLIBURTON

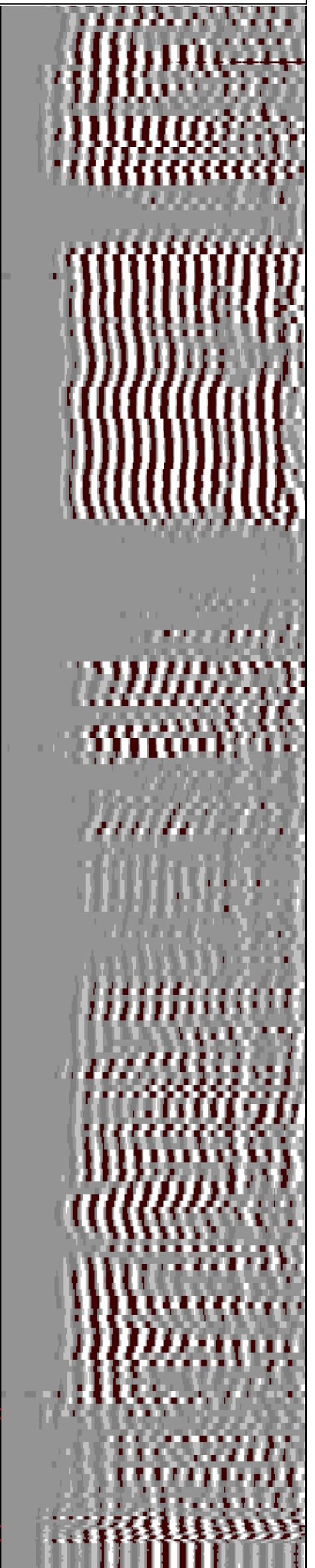
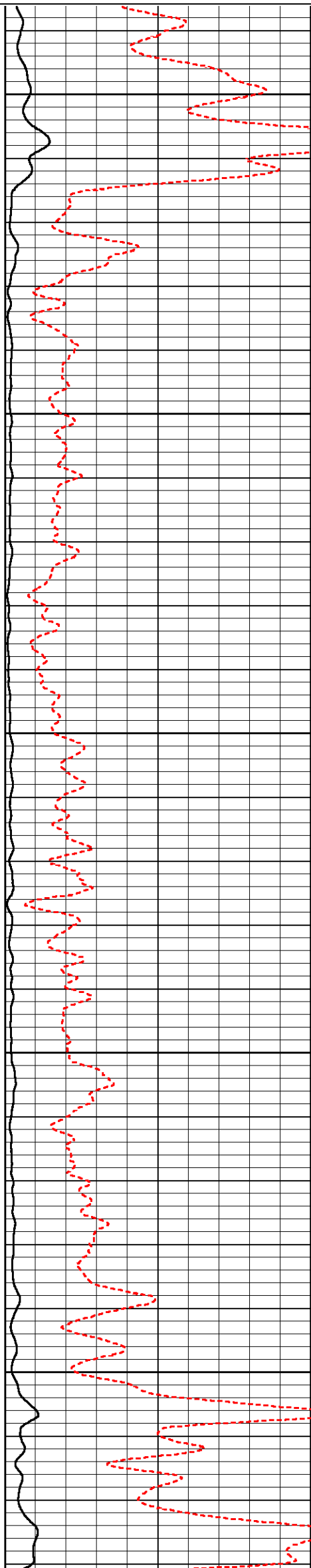
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Dataset Pathname CBLRPT1
Presentation Format hcbg
Dataset Creation Sat Apr 11 12:50:18 2015
Charted by Depth in Feet scaled 1:240

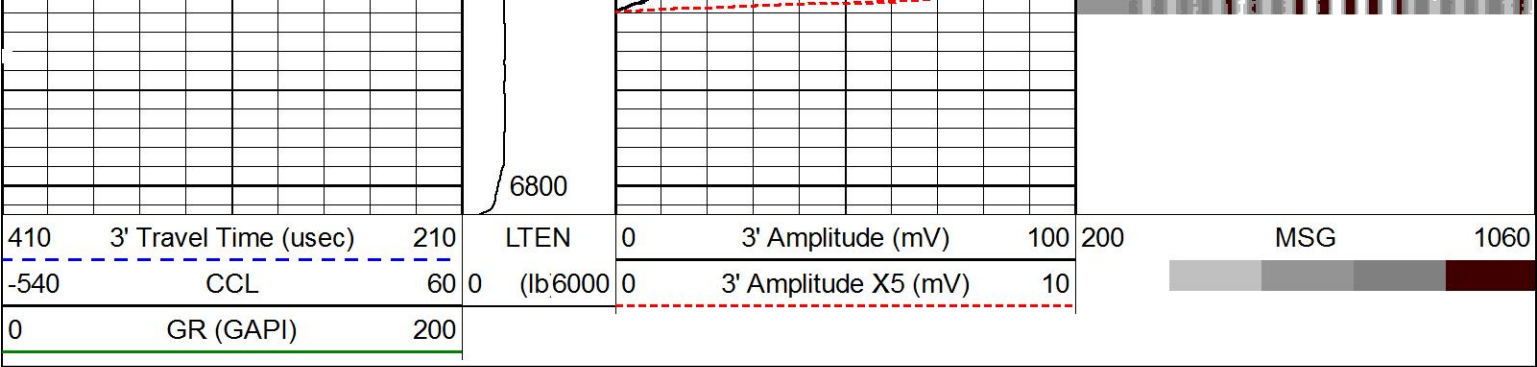




6600

6700





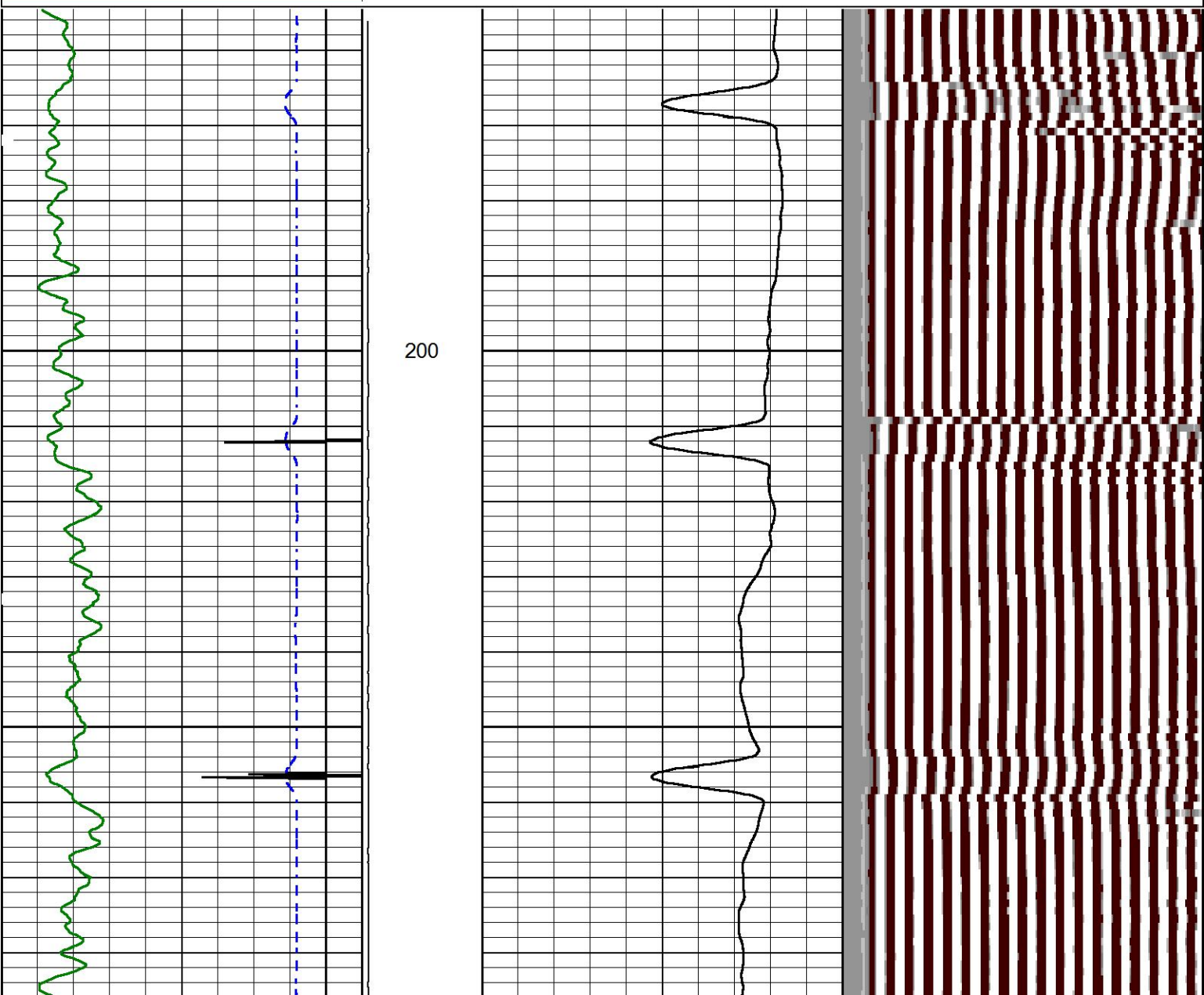
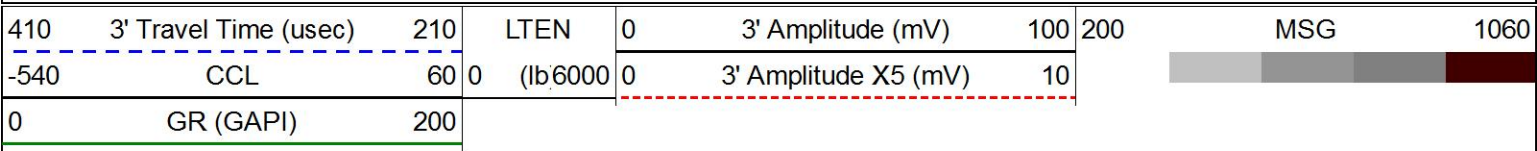
REPEAT LOG SECTION

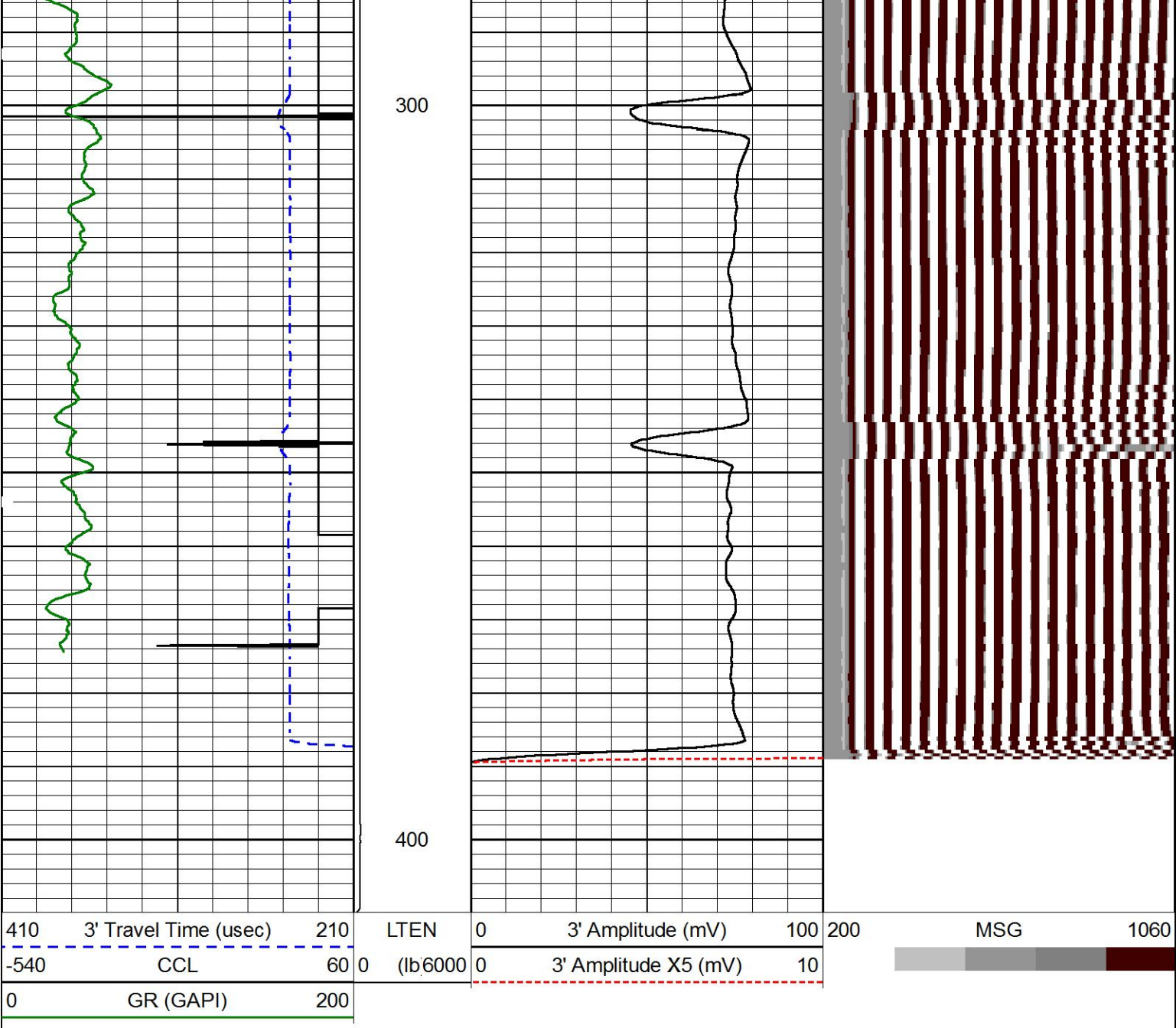
HALLIBURTON

5" = 100'



Database File	yater_12d_3dcombo.db
Dataset Pathname	free1
Presentation Format	hcbtg
Dataset Creation	Sat Apr 11 11:39:01 2015
Charted by	Depth in Feet scaled 1:240





FREE PIPE LOG SECTION

HALLIBURTON

5" = 100'

Log Variables

Database C:\ProgramData\Warrior\Data\water_12d_3dcombo.db
Dataset field\well\run1\MAIN1_vars_

Top - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	RUN3D?	POROSL2	POROSL1	POROS2	POROS1
TEMP	0	1	Yes	0	1	0	1
LTH	UHSGC	RHOCFL	RHOCF	SO	BORSAL	CASED?	MSGGN
Sandstone	NONE	0.15	0.25	in	kppm	Yes	1
				0	150		
USERFTT	ZREF	CASEWGHT	SRFTEMP	MudWgt	CASETHCK	CASEOD	PERFS
uSec/ft	MRayl	lb/ft	degF	lb/gal	in	in	
0	1.7	11.6	0	8.4	0.25	4.5	0
TDEPTH	BOTTEMP	BITSIZE					
ft	degF	in					
0	100	7.875					

Database File yater_12d_3dcombo.db
Dataset Pathname MAIN1
Dataset Creation Sat Apr 11 13:02:49 2015

Reservoir Monitor Tool I (3 Detector) Calibration Report

Serial-Model: 12270722-A
Shop Calibration Performed: Thu Apr 09 15:04:28 2015

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	87.00	80.00	7.00	+/-15.00	V
ITCR2	3296	3250	46	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0275	5.26	<6.00
Fe	206	206 +/-2	0.0969	-----	-----
NGAIN = 0.996		NZOFF = 0.5			

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0396	5.02	<6.50
Fe	209	208 +/-2	0.0913	-----	-----
FGAIN = 0.993		FZOFF = 0.0			

Flask Temperature 64.9 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
NFER	2.14	2.10	0.04	+/-0.10	
FFER	1.81	1.80	0.01	+/-0.30	
LFER	1.13	1.60	-0.47	+/-0.60	
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.64	1.64	0.00	+/-0.05	
TCCR2	5198	5000	198	+/-1000	cps
ITCR2	3265	3200	65	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	86.00	80.00	6.00	+/-15.00	V
FCAP	9873	10000	-127	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
NFER	2.15	2.10	0.05	+/-0.10	
FFER	1.92	1.80	0.12	+/-0.30	
LFER	2.38	1.60	0.78	+/-0.60	
N/F Normalizer	0.946	0.935	0.011		
N/L Normalizer	0.106	0.111	-0.005		
N/F Inel Norm	0.610	0.610	-0.000		
N/L Inel Norm	0.056	0.055	0.001		
RNF	1.057	1.070	-0.013	+/-0.120	
RNL	9.420	9.000	0.420	+/-1.000	
RINC	1.640	1.640	-0.000	+/-0.180	
RINCL	18.001	18.000	0.001	+/-2.000	
SGFN	24.10	24.00	0.10	+/-0.50	cu

SGFF	22.94	22.85	0.09	+/-0.50	cu
SGFL	22.01	22.00	0.01	+/-1.00	cu
FSIN	23703	24000	-297	+/-2000	cps
LSIN	2207	2400	-193	+/-500	cps
FCAP	9992	10000	-8	+/-1000	cps
LCAP	1122	1200	-78	+/-200	cps
NFTR	0.83			<5.00	
FFTR	0.87			<5.00	
LFTR	1.18			<5.00	
NBKG	186			<500	cps
FBKG	99			<500	cps
LBKG	13			<500	cps
RTN	0.419	0.400	0.019	+/-0.100	usec
RTF	0.442	0.400	0.042	+/-0.100	usec

Calibration Software Modules					
HRMT3D Module	2015.3.19.0				
RMT3D Module	2015.3.19.1				
Log Data Acquisition Software Modules					
HRMT3D Module	2015.3.19.0				
RMT3D Module	2015.3.19.1				

Cement Bond Log Shop Calibration Report


Serial-Model:	11794522-A
Calibration Performed:	Sat Apr 11 11:37:02 2015

Free Pipe Calibration		
TT	Measured	Units
Amplitude	246.4	usec
Log Base Line	472.3	mV
	8.4	mV
Calibration References and Gain		
Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.175	

Gamma Ray Calibration Report

Type / Serial:	002 / 12159411
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SHOP CALIBRATION		Sat Apr 11 11:13:47 2015			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	39.6				cps
Calibrator	328.2				cps
		1.4140			GAPI/cps
PRIMARY VERIFICATION		Sat Apr 11 11:15:49 2015			
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					
Rm3GenClampV	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					
Rm3GenIonI	0.00					
Rm3Gen15BusV	0.00					
Rm3GenLvdsV	0.00					
Rm3GenSyncV	0.00					
Rm3GenClampV	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					
Rm3GenIspl	0.00					
Rm3GenIsPv	0.00					
Rm3GenIsPcmc	0.00					
Rm3GenRepPv	0.00	Dataset: yater_12d_3dcombo.db: field/well/run1/MAIN1 Total length: 39.61 ft Total weight: 360.00 lb				
Rm3GenRepV	0.00					
Rm3GenRepSv	0.00					

Company	URSA OPERATING COMPANY		
Well	YATER 12D-17-07-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
HALLIBURTON		ACOUSTIC CEMENT BOND LOG	