

HALLIBURTON

ACOUSTIC CEMENT  
BOND LOG

Company		URSA OPERATING COMPANY	
Well	YATER 22C-17-07-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
Company		URSA OPERATING COMPANY	
Well	YATER 22C-17-07-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
API No.:	05-045-22753-0000	Serv. #:	902311017
Location:		SURFACE HOLE LOCATION: 1767' FSL & 1106' FWL	
Other Services		RMT GAUGE RING	
Sec: 17 Twp: 07S Rge: 95W			
Permanent Datum		GROUND LEVEL Elevation 5519'	
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	6940'	Fluid Level	60'
Depth - Logger	6875'	Cement Top Est. Logged	1150'
Bottom - Logged Interval	6875'	Equipment / Location	10971668 / G.J.
Top - Log Interval	SURFACE	Recorded by	D. SOLIS
Max. Recorded Temp.	237 DEG F	Witnessed by	UNATTENDED
CEMENTING DATA	Surface	Protection	Liner
	String	String	
Date / Time Cemented	N/A	String	N/A
Primary / Squeeze			
Expected Compressive Strength	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
ONE	12.25"	SURFACE 1784'	Size 8.625"
TWO	7.875"	1784' 6940'	Weight 32.0#
			From SURFACE 1784'
			To 6940'

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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 @: 4316' - 4326', 5343' - 5353', AND 6370' - 6380'.

\*\*\*THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.\*\*\*

Service Ticket No.	902311017	API No.	05-045-22753-0000	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	6875'	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	SURFACE		

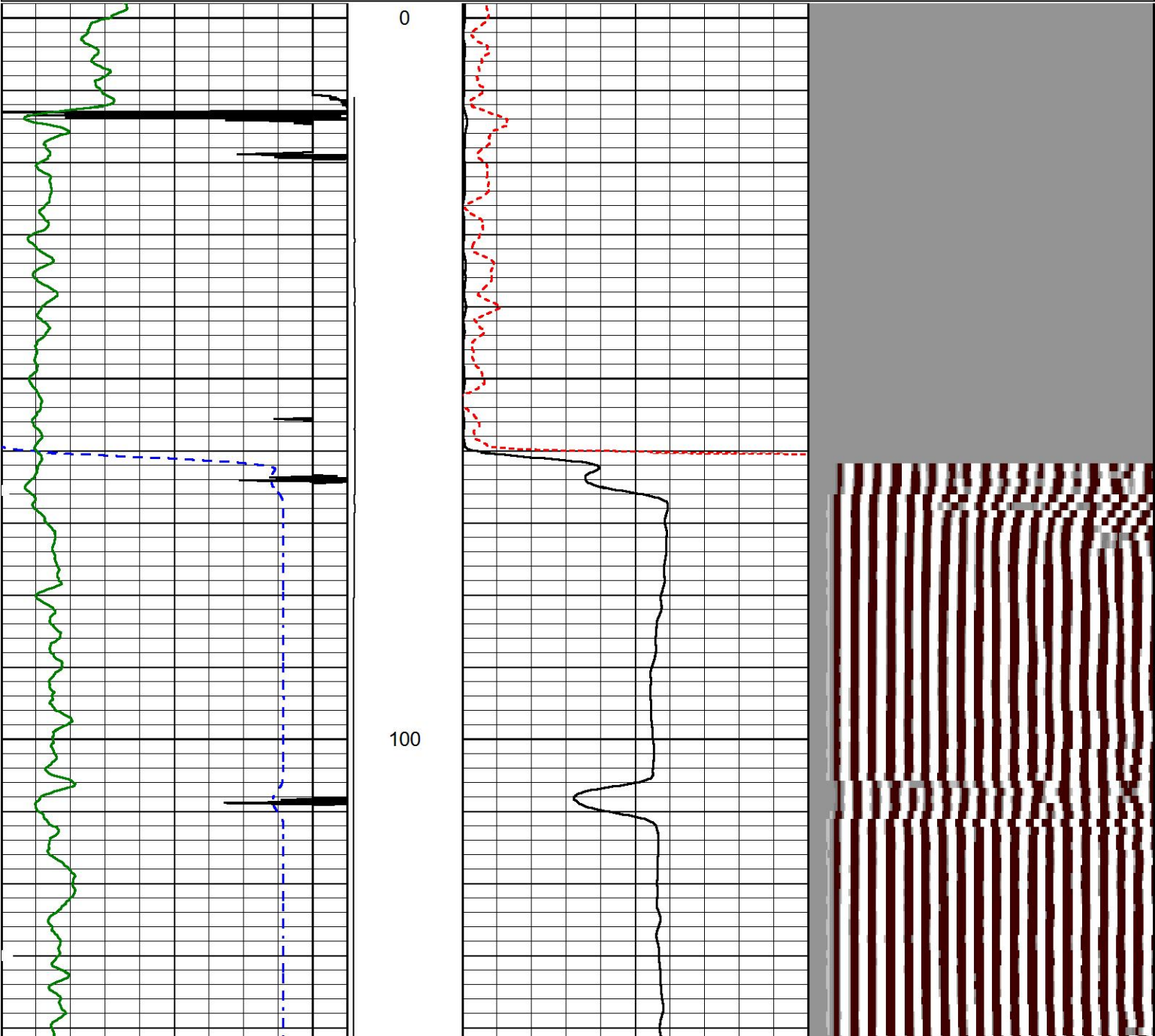
HALLIBURTON

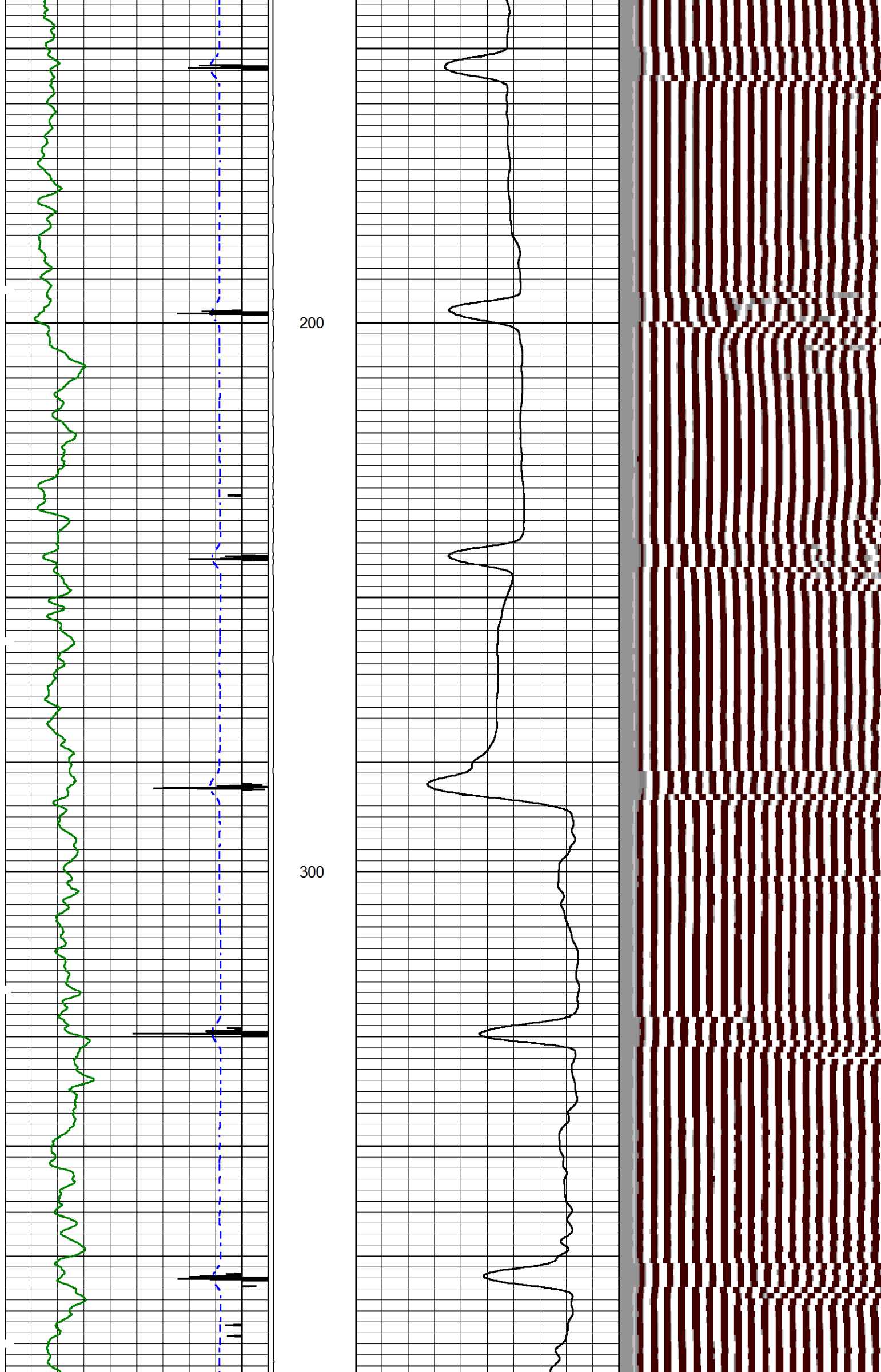
MAIN LOG SECTION

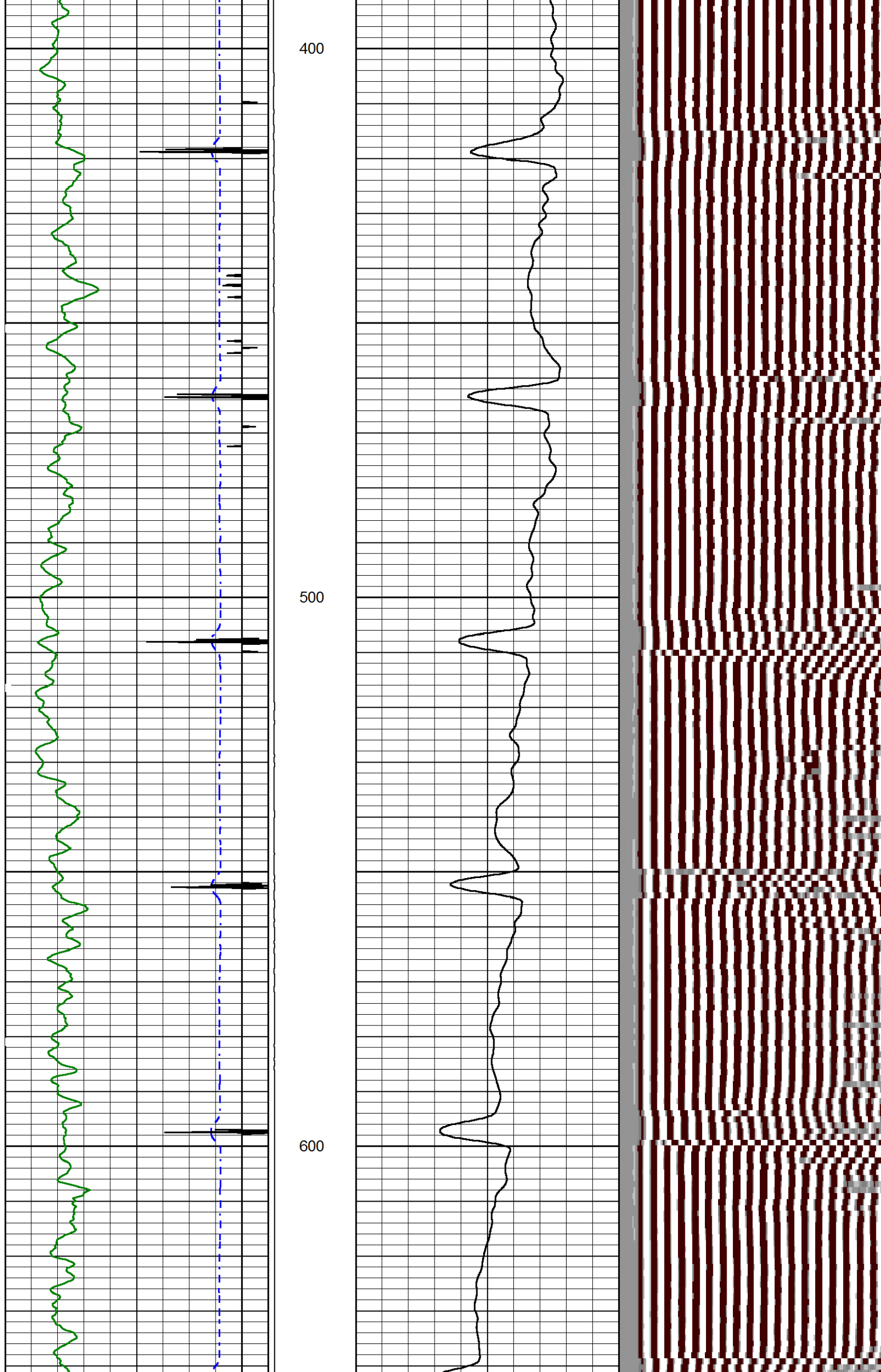
5" = 100'

Database File	yater_22c_3dcombo.db
Dataset Pathname	MAIN1
Presentation Format	hcb1g
Dataset Creation	Sun Apr 12 01:58:15 2015
Charted by	Depth in Feet scaled 1:240

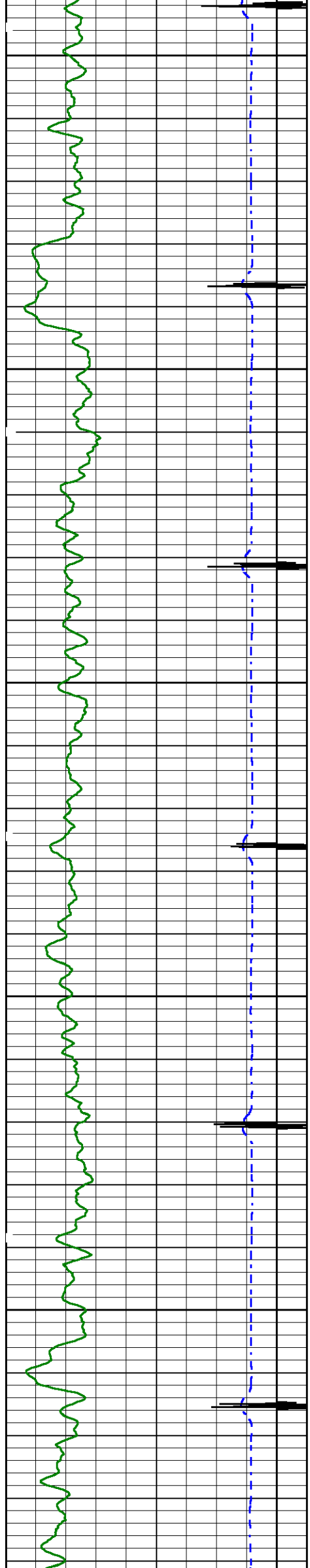
410	3' Travel Time (usec)	210	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-540	CCL	60	0 (lb.6000	0	3' Amplitude X5 (mV)	10	<div><div></div><div></div><div></div><div></div></div>		
0	GR (GAPI)	200							





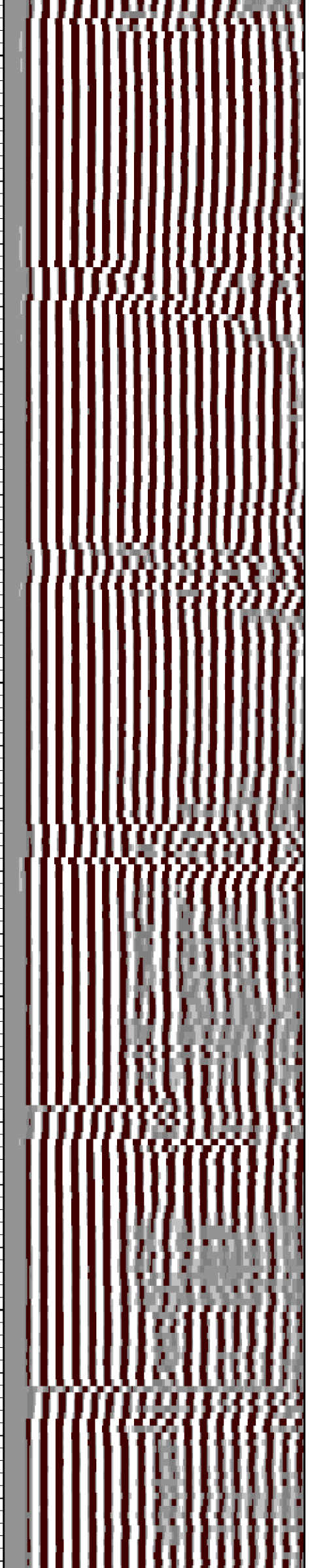
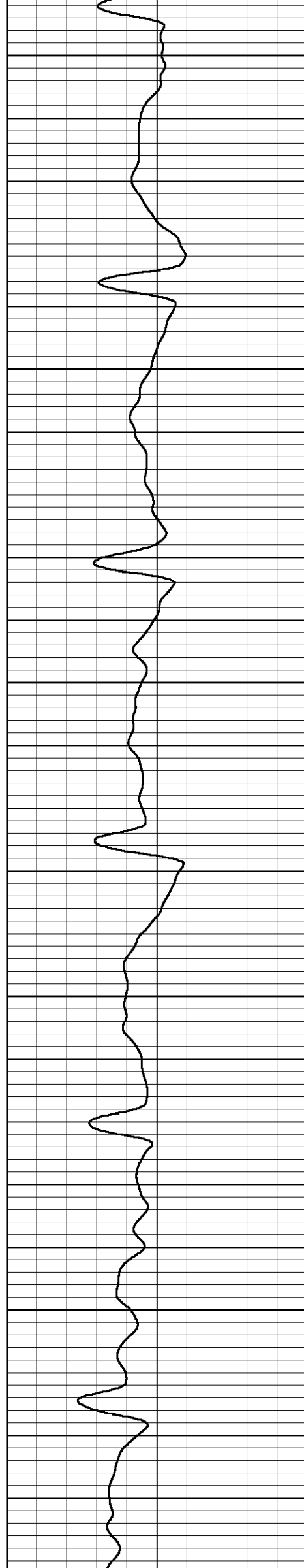


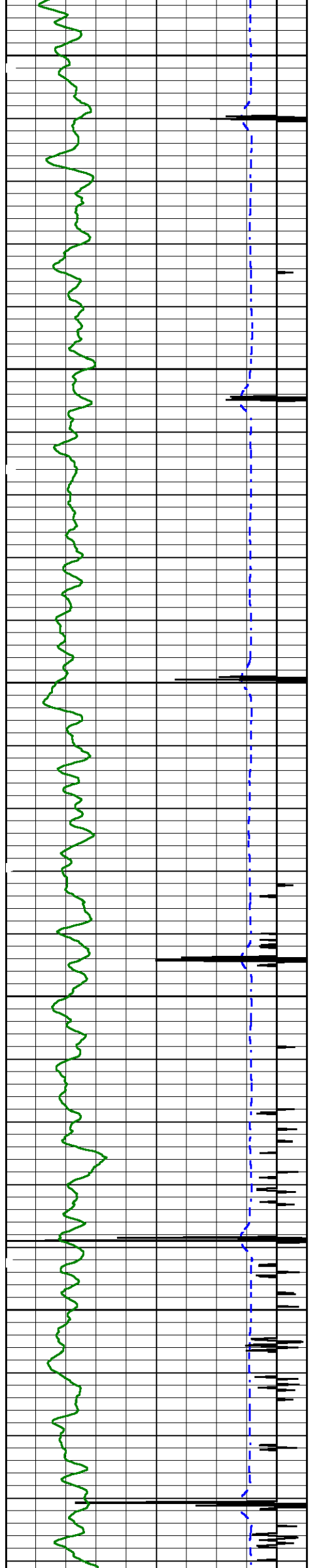




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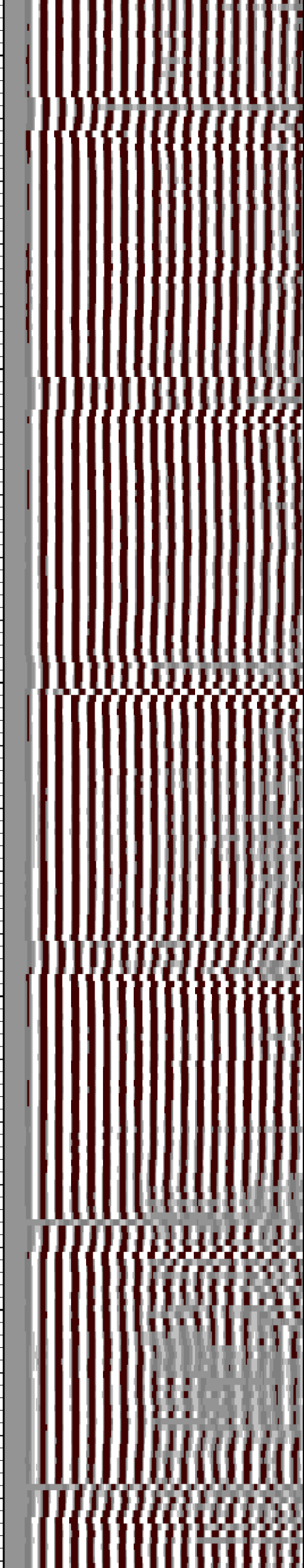
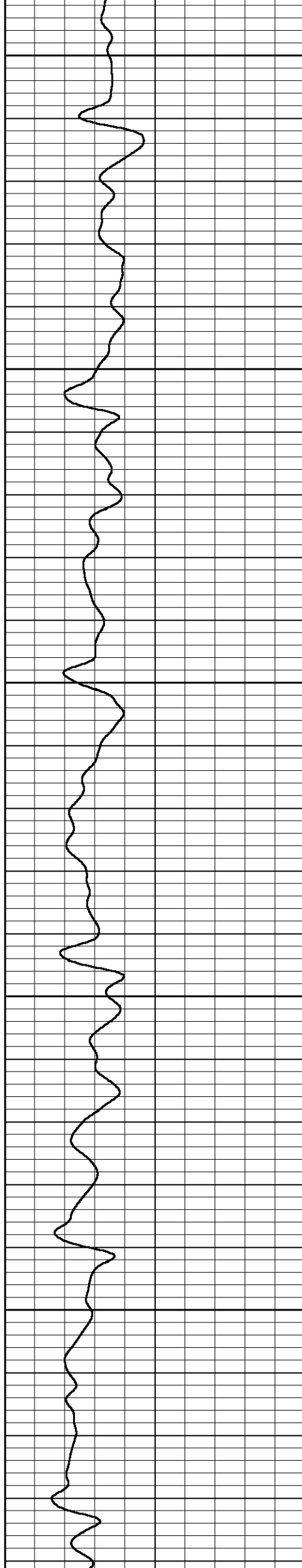


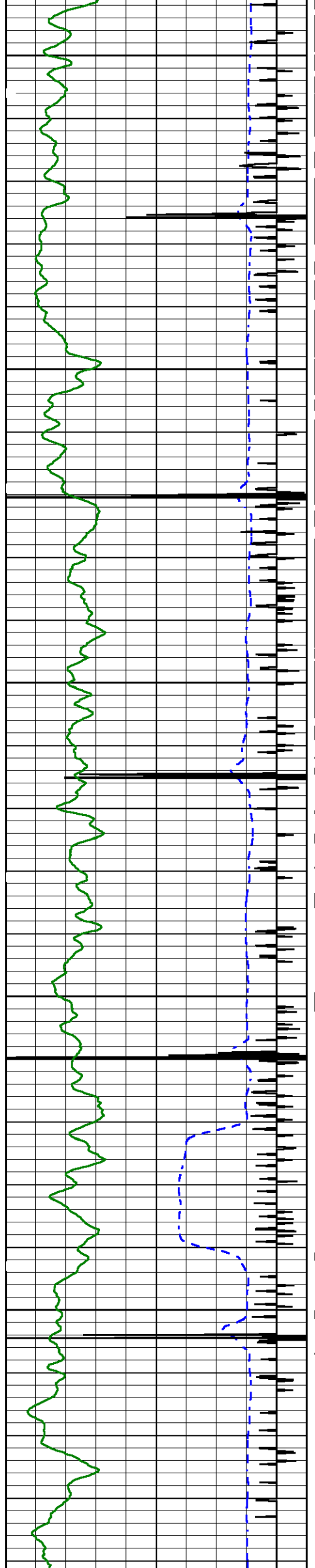


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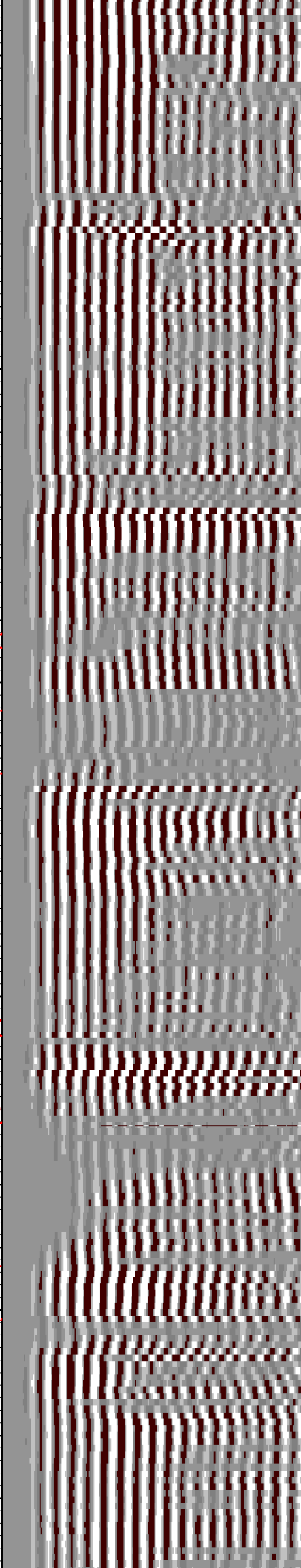
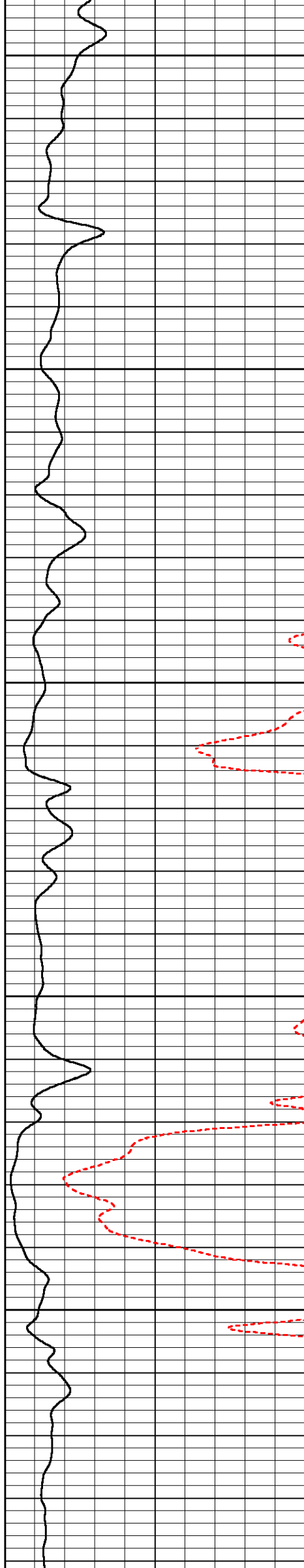
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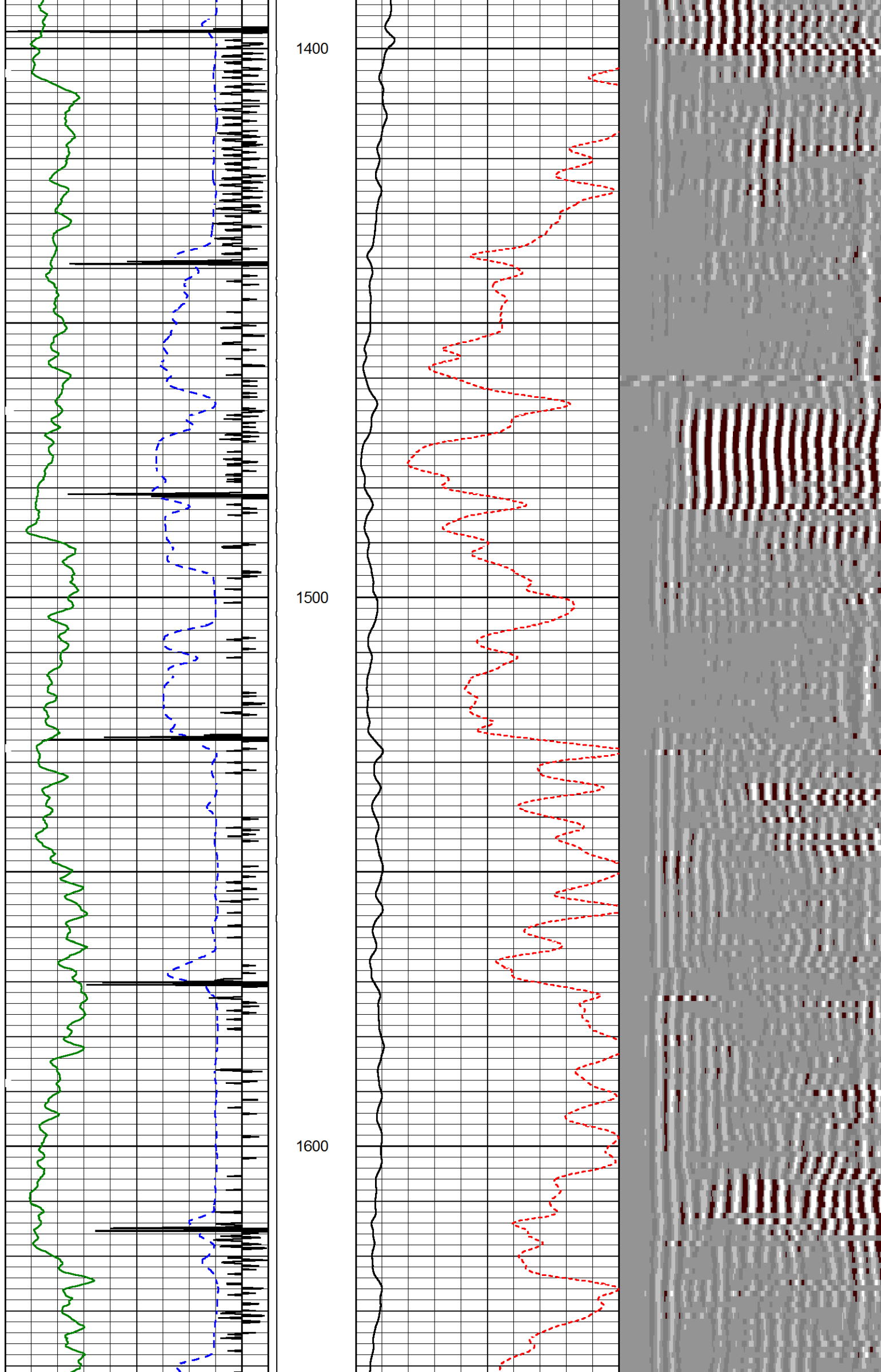




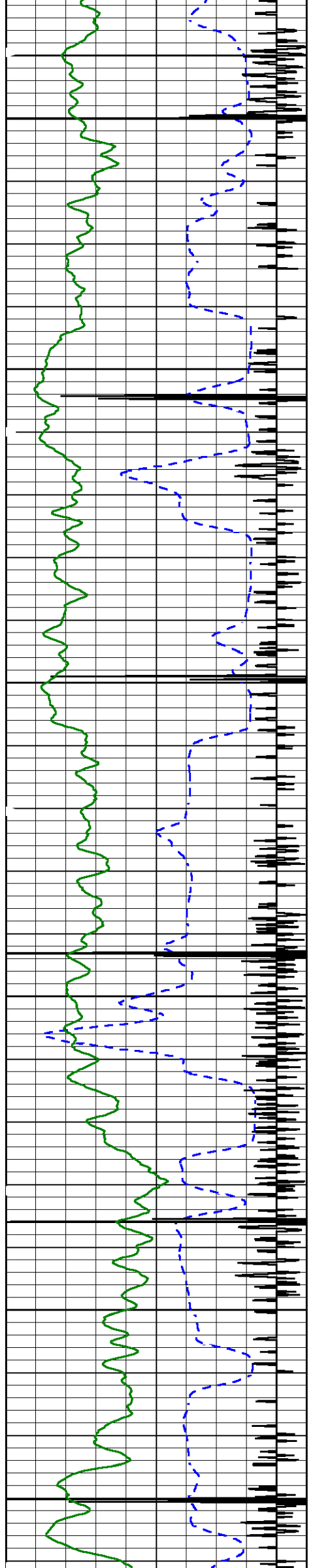
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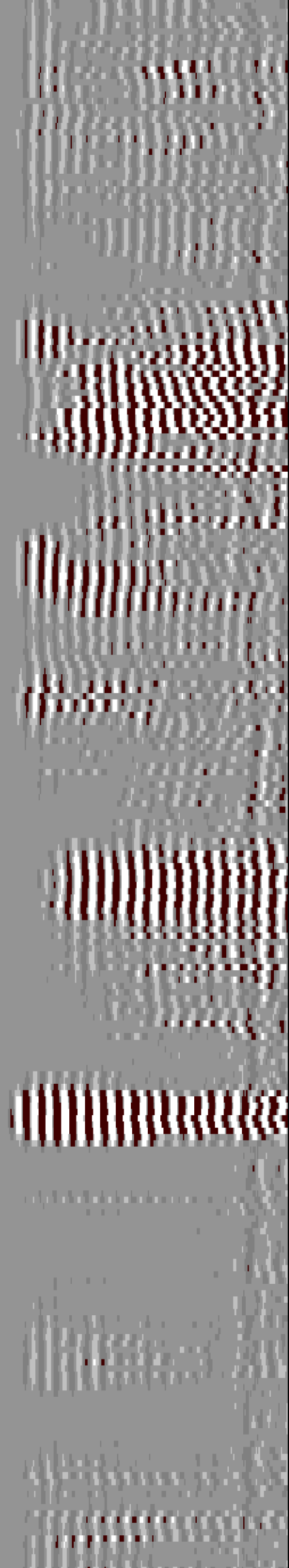
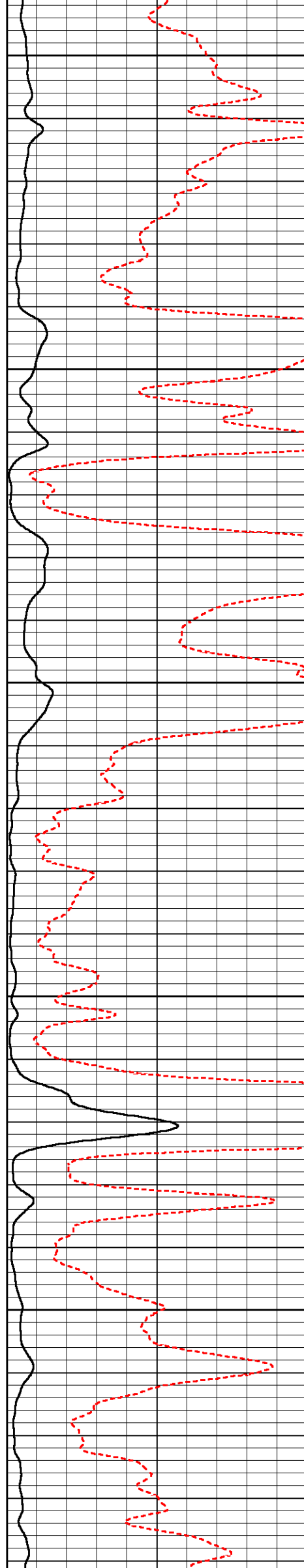


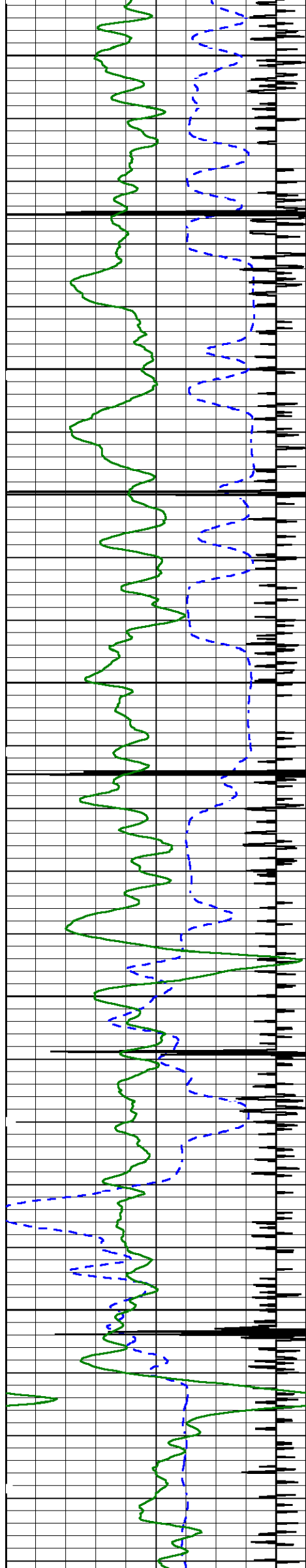




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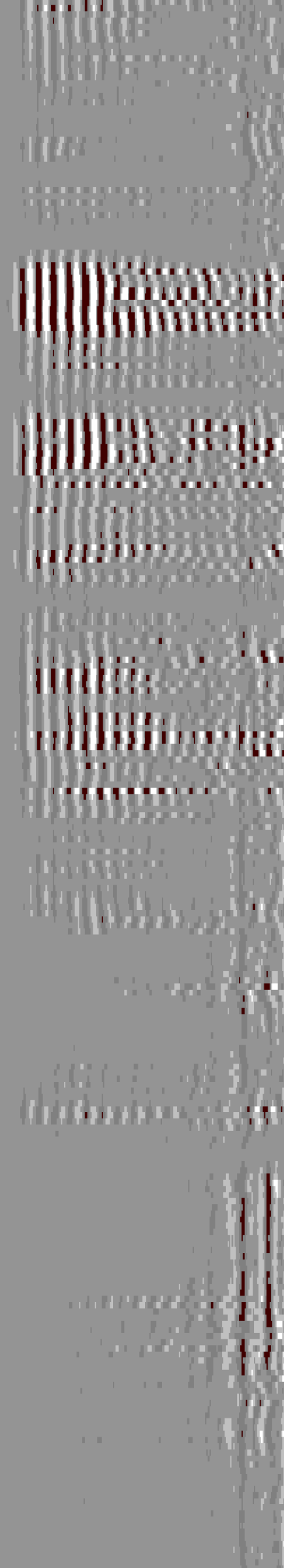
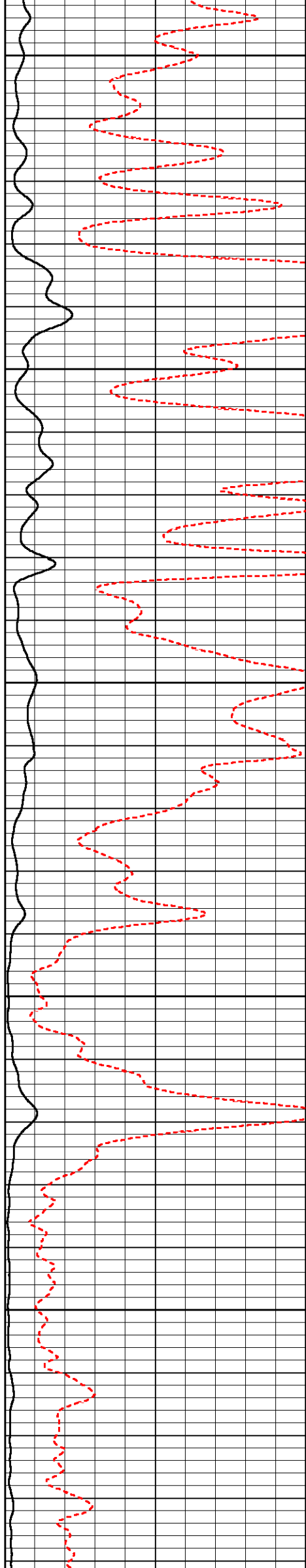


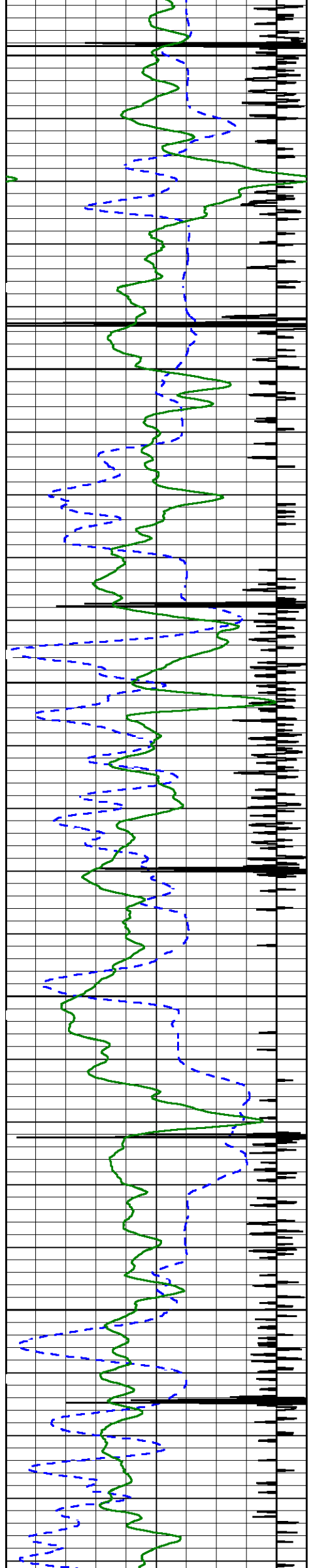


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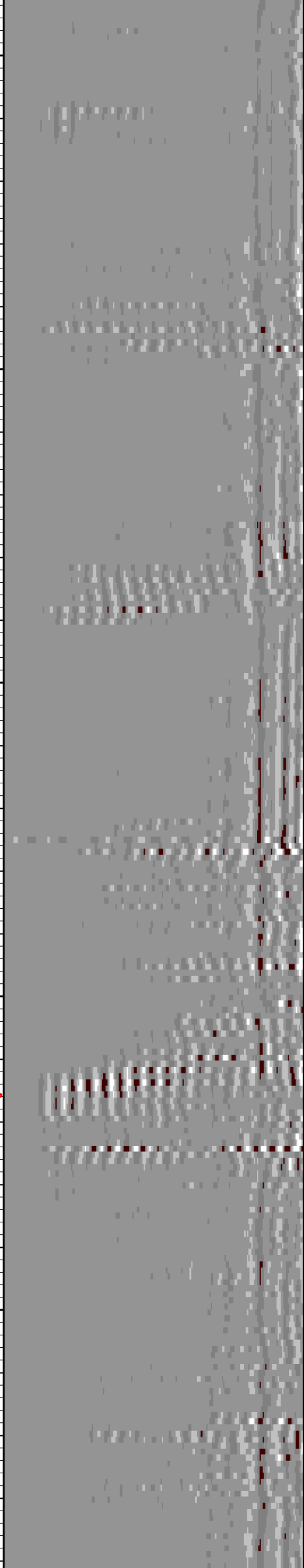
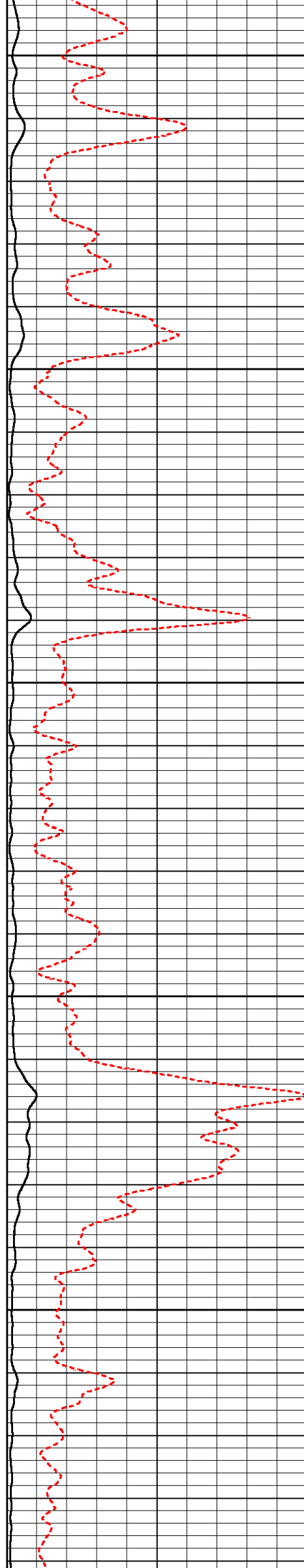
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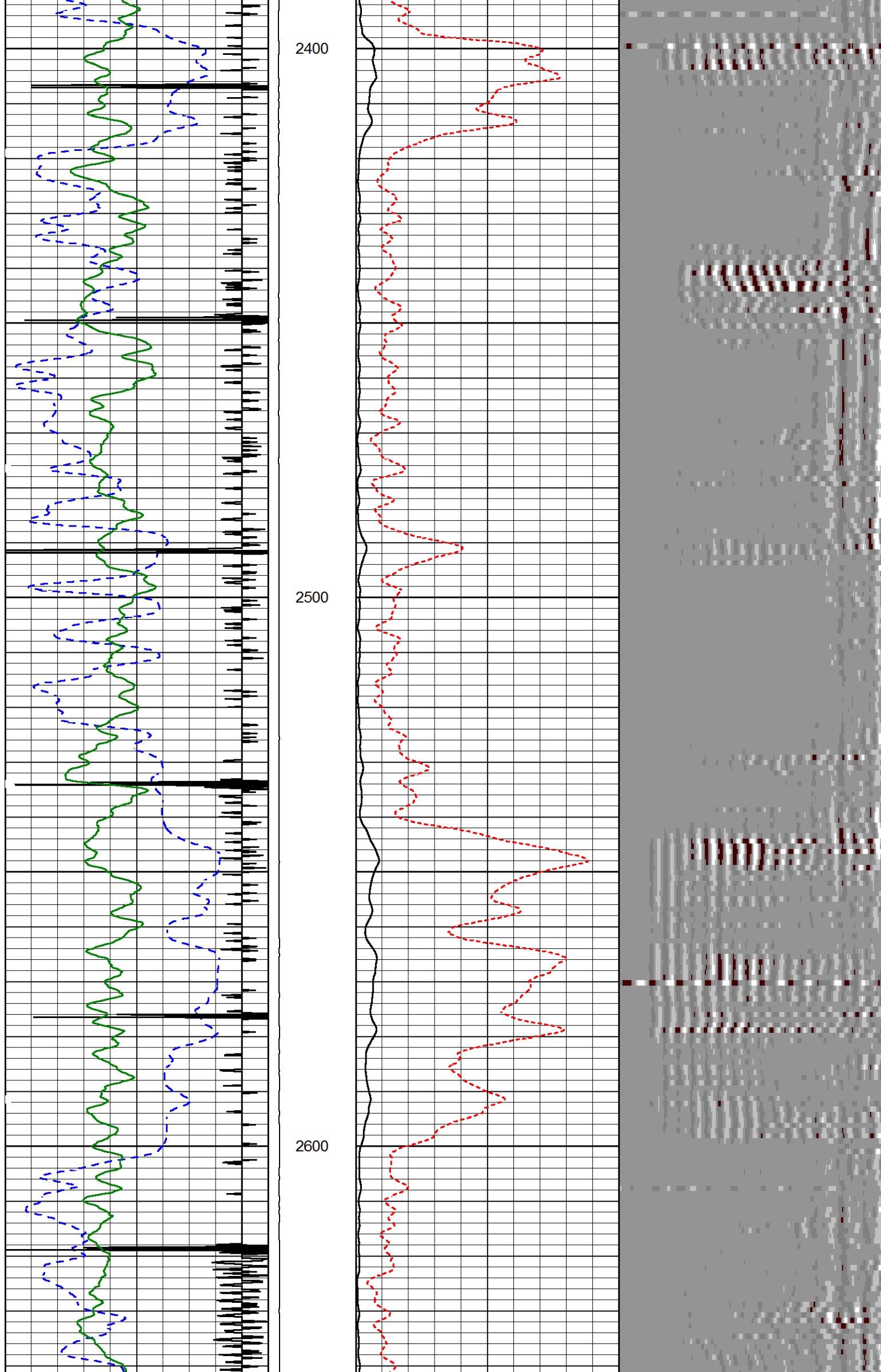


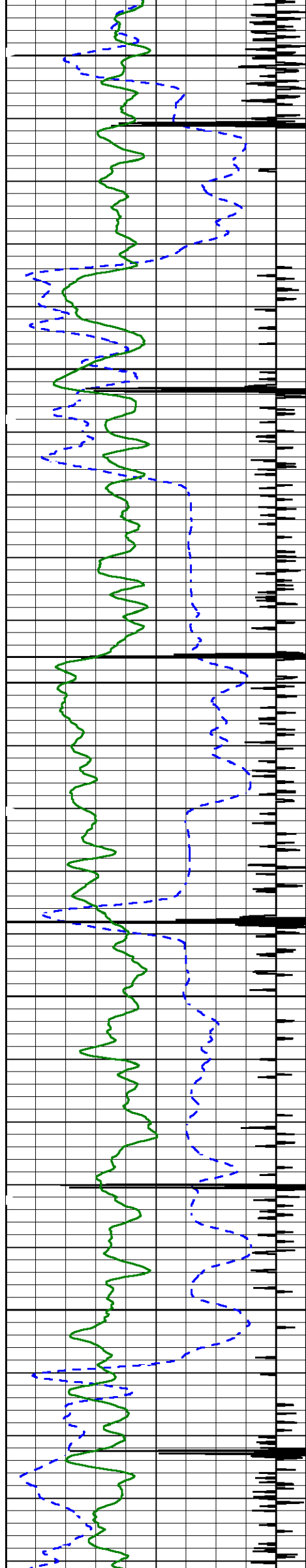


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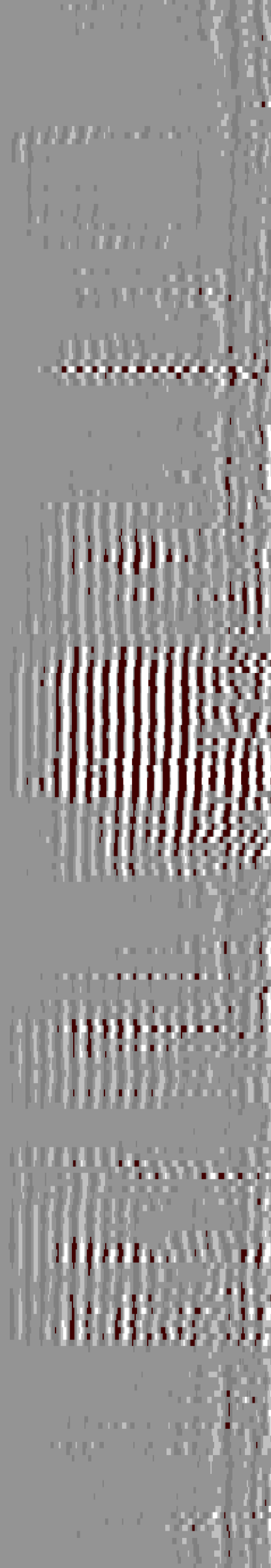
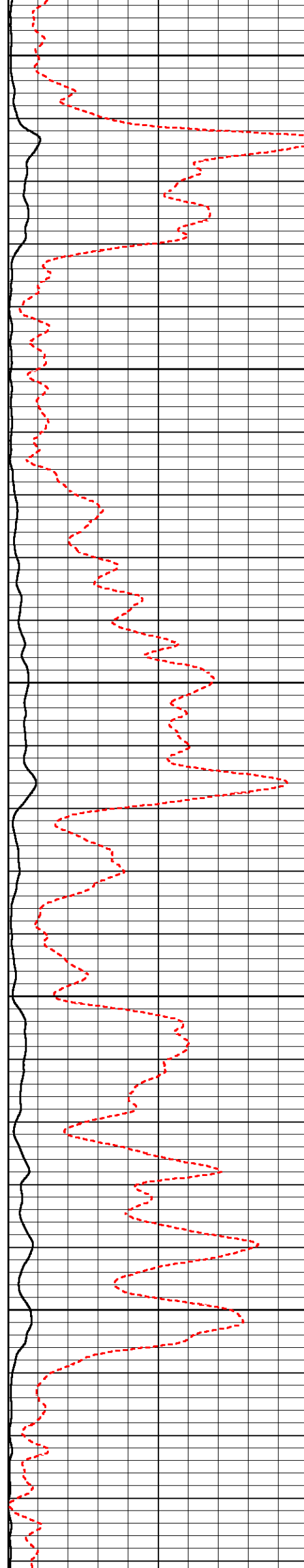




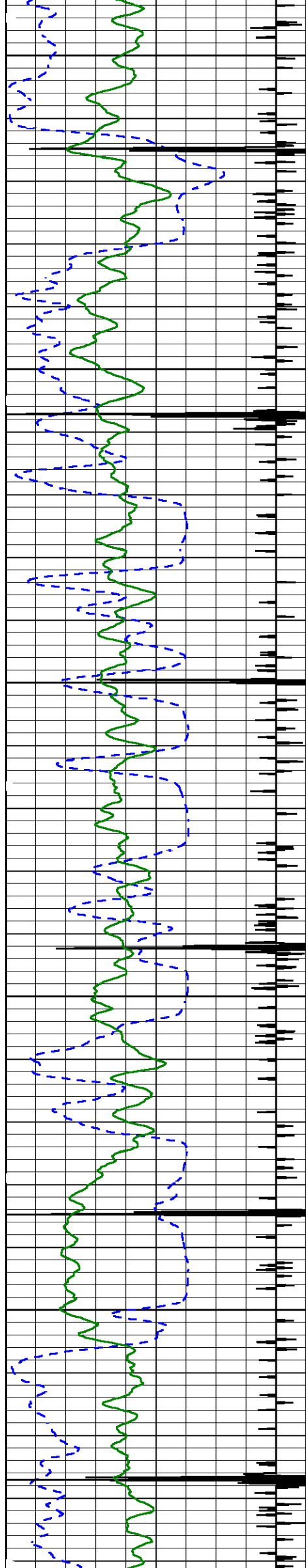


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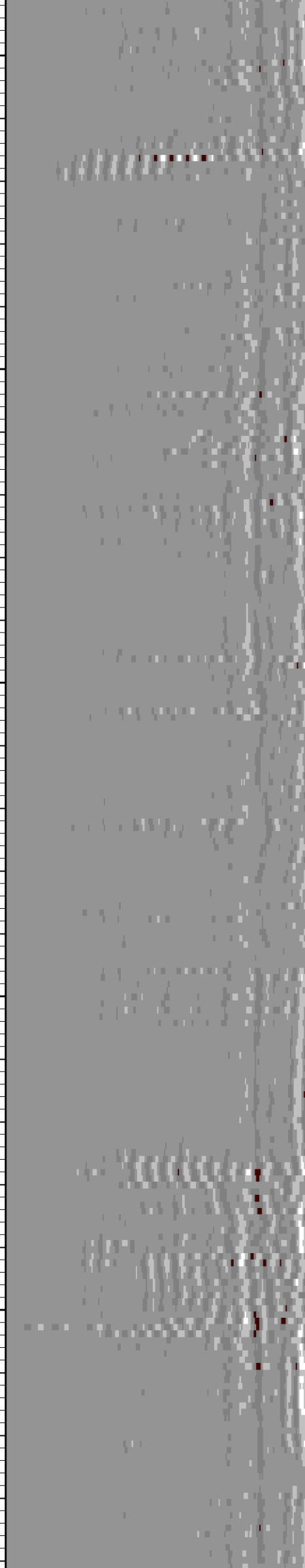
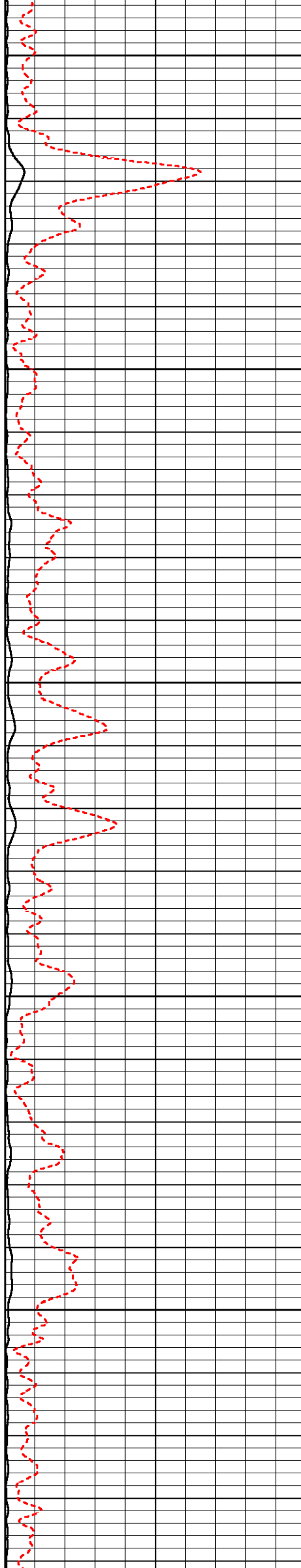


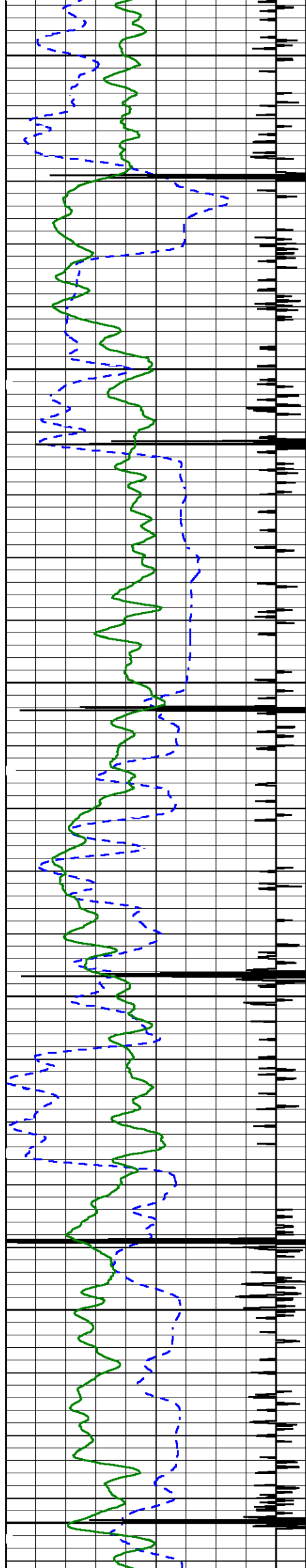


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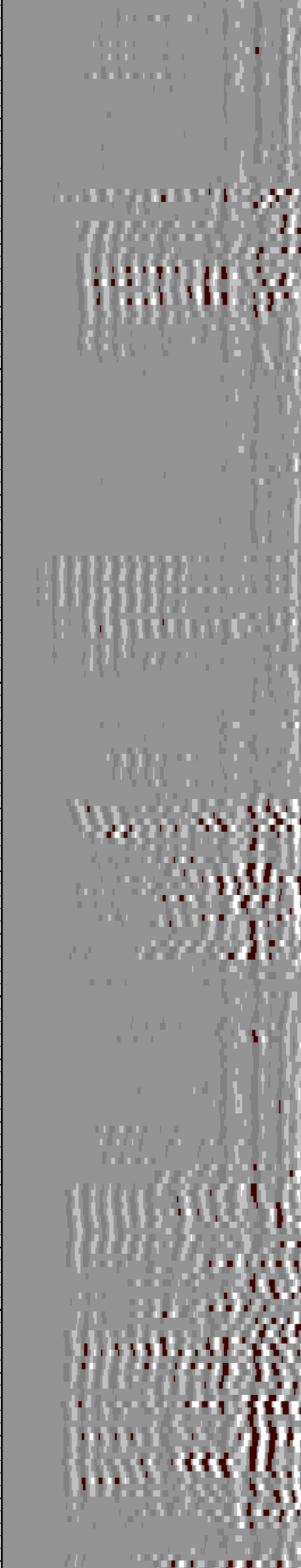
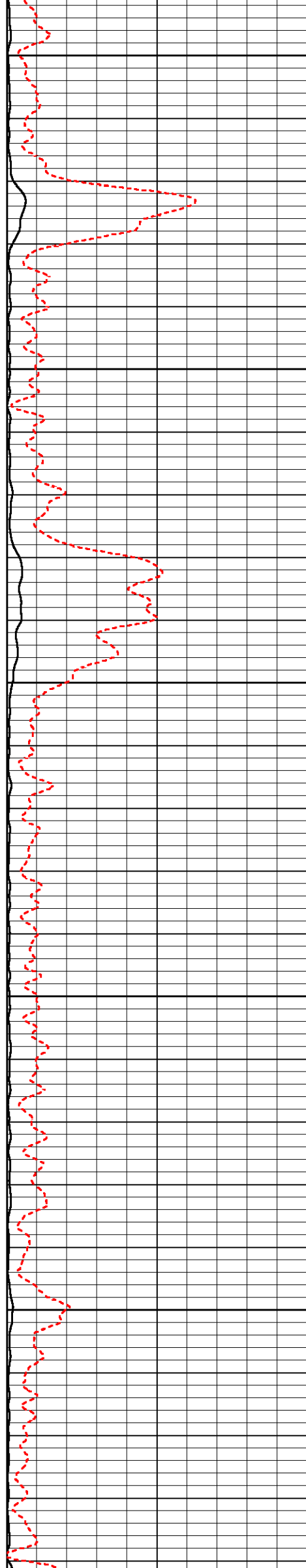
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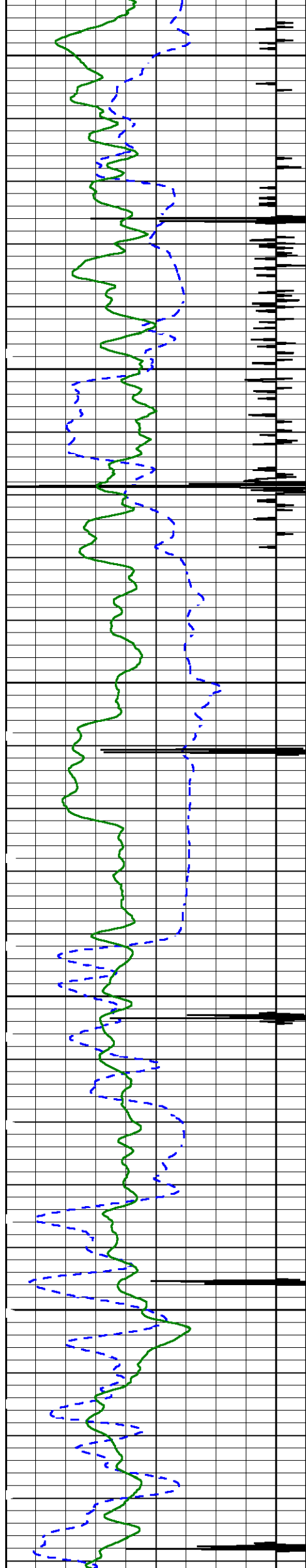




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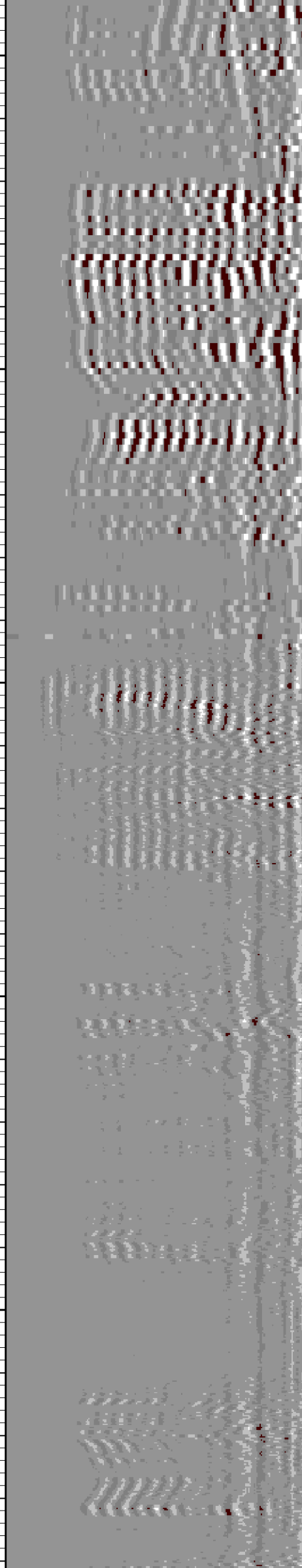
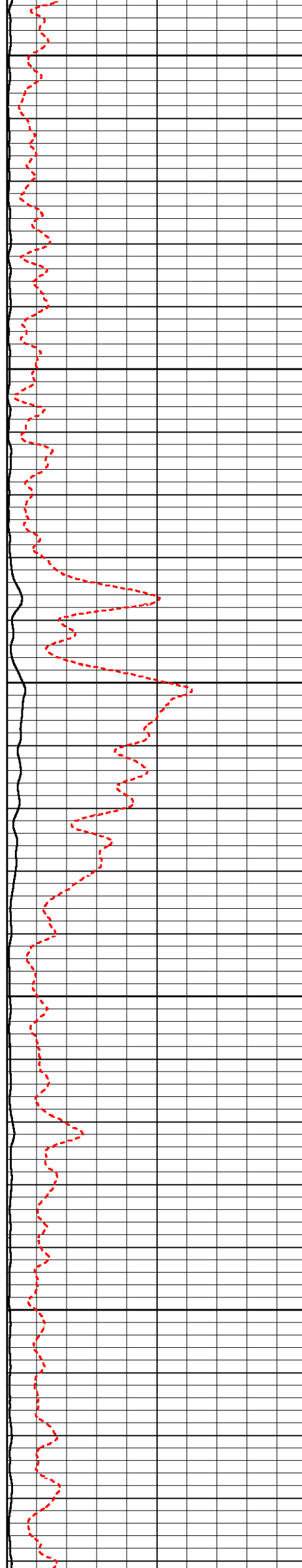


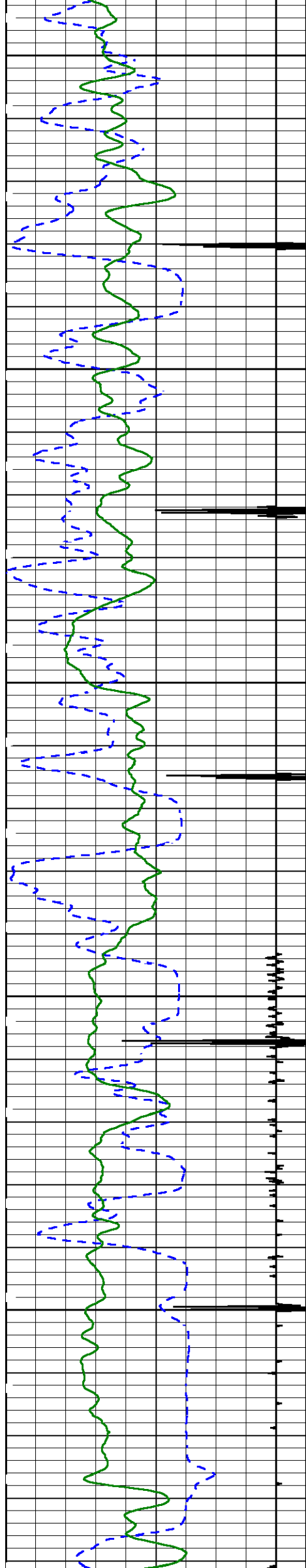


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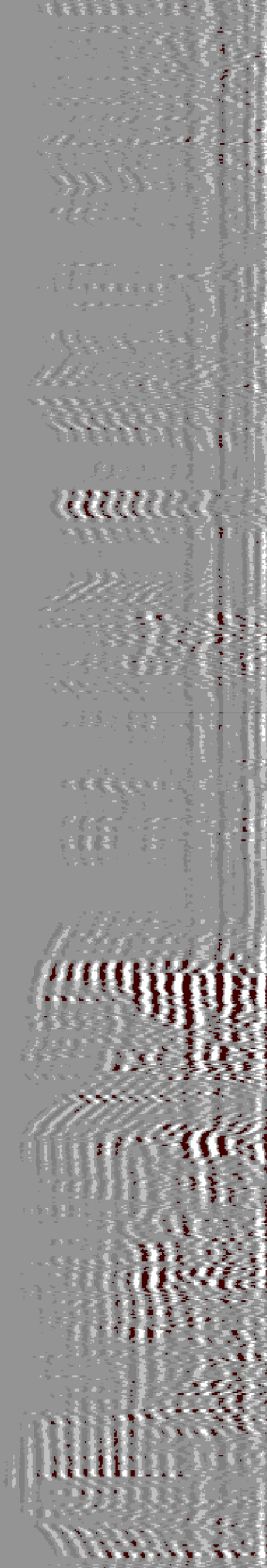
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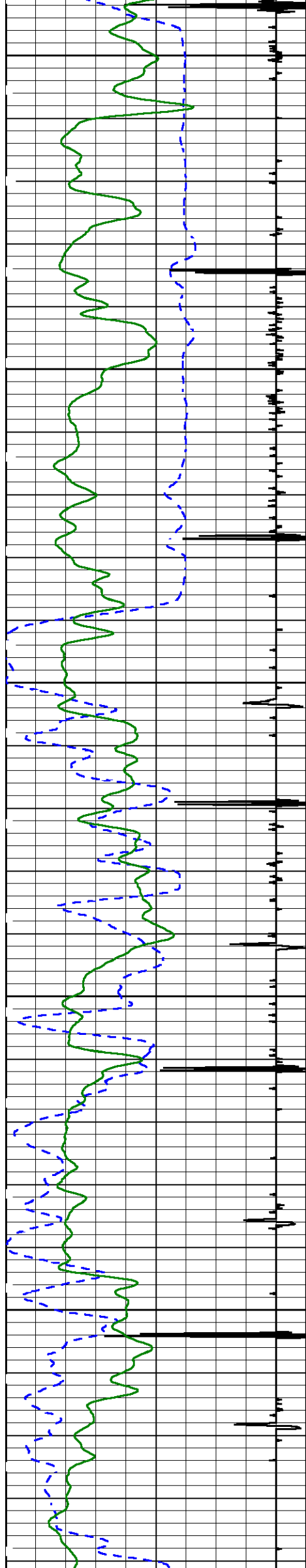




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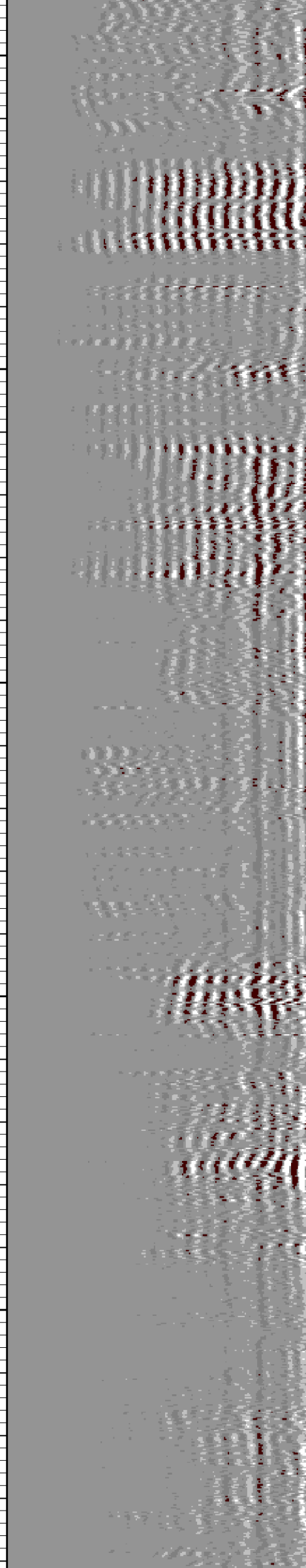
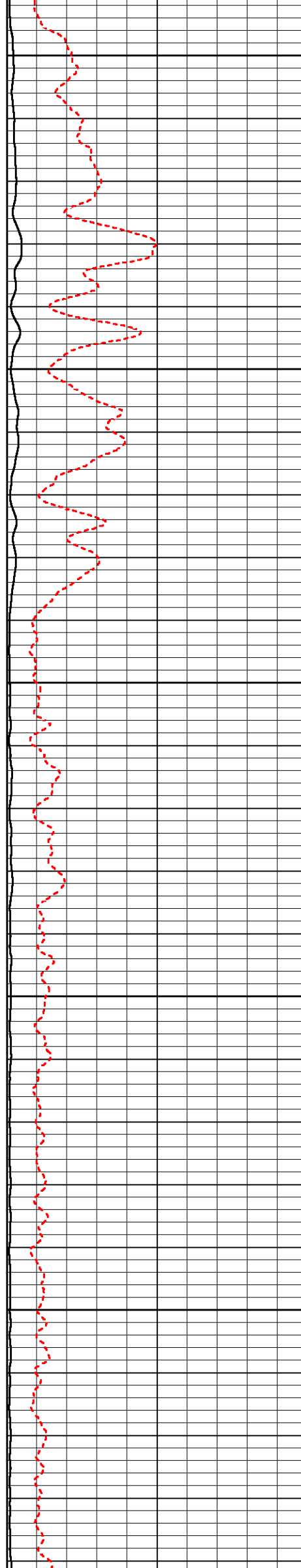




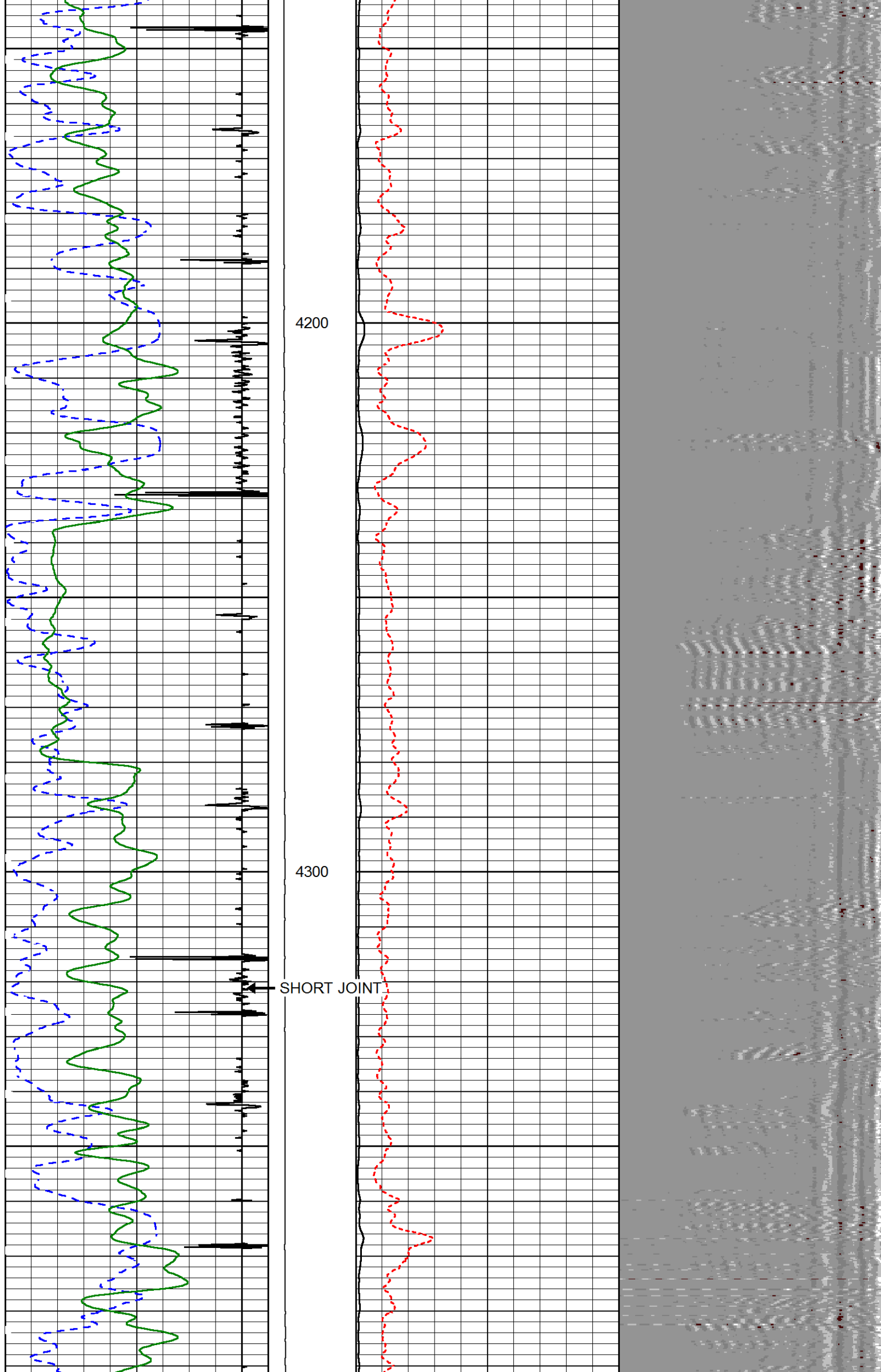
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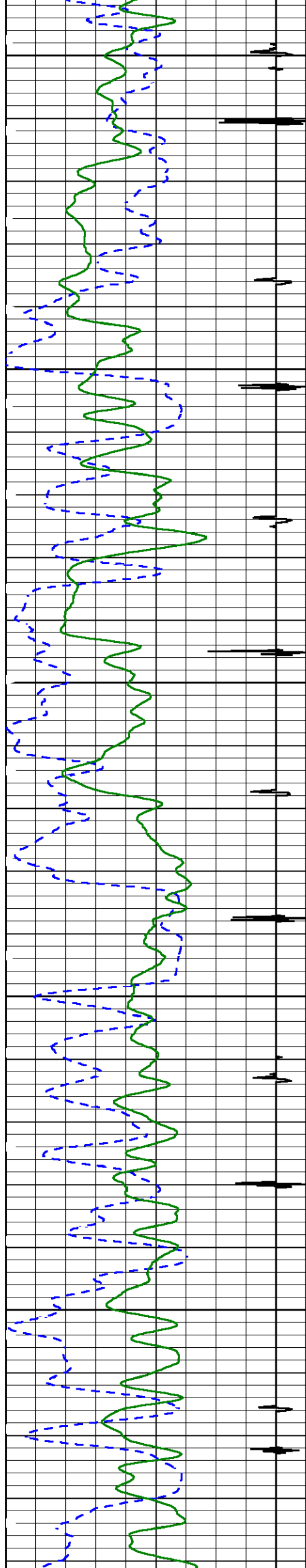
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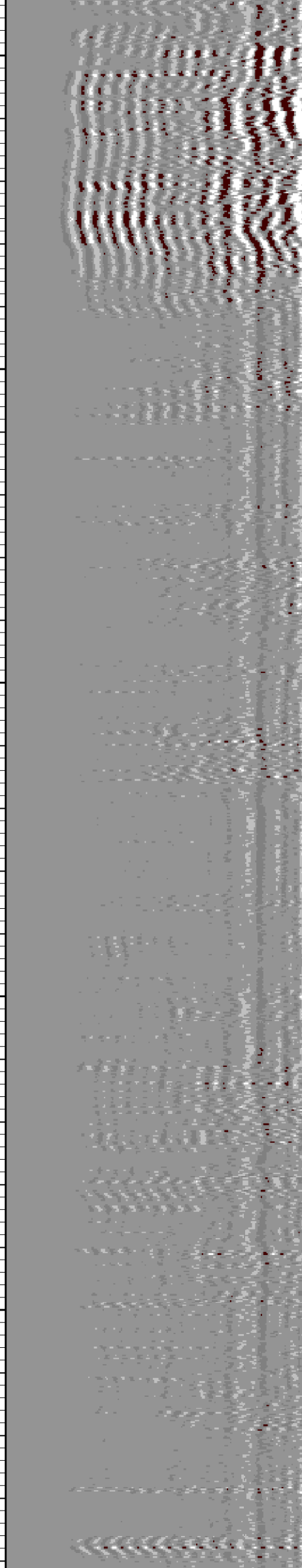
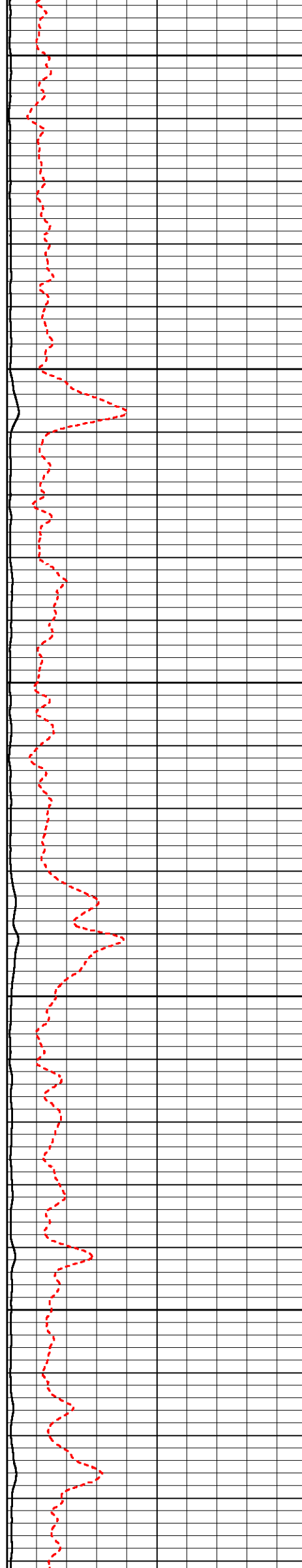


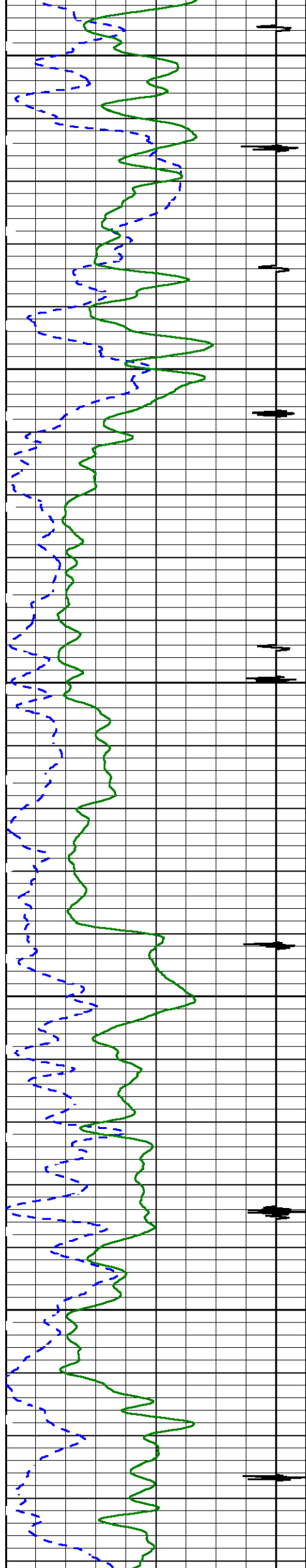


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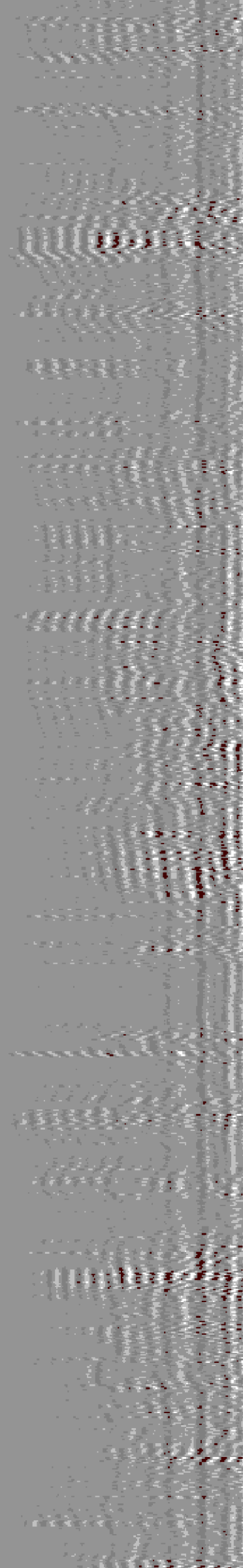
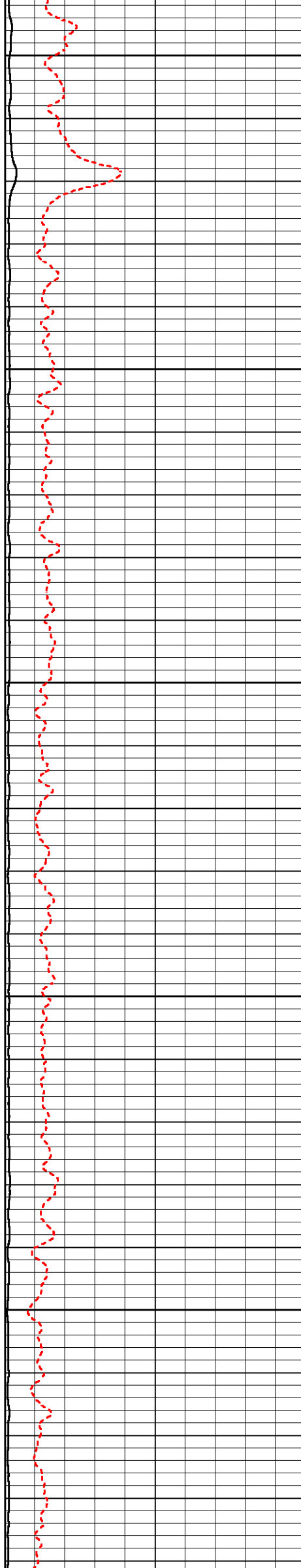
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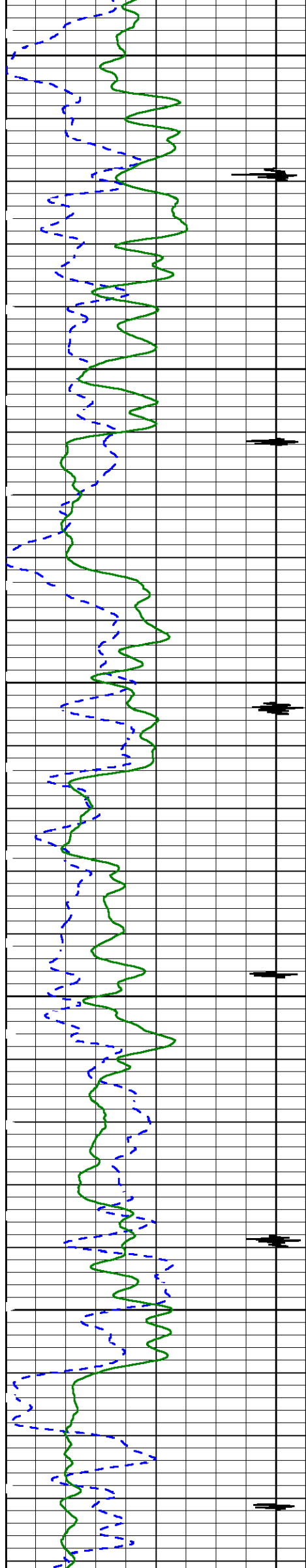




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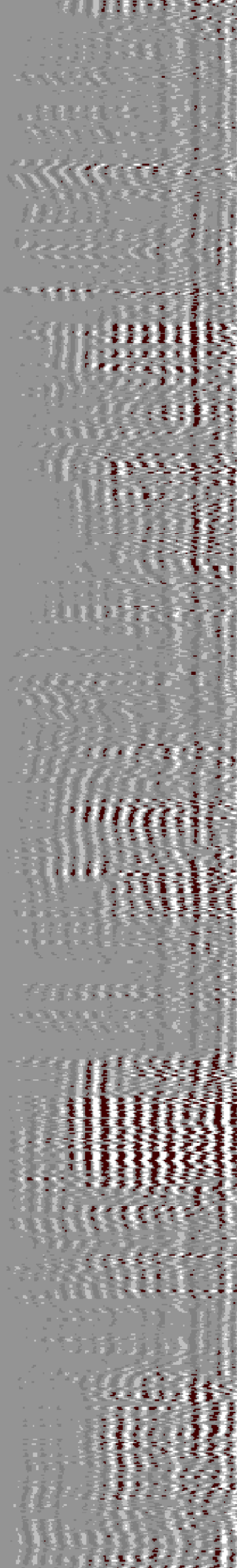
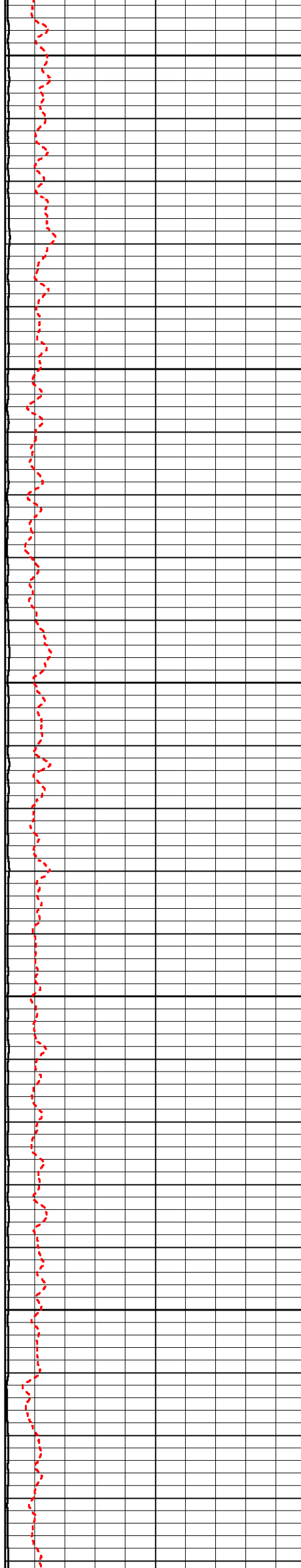


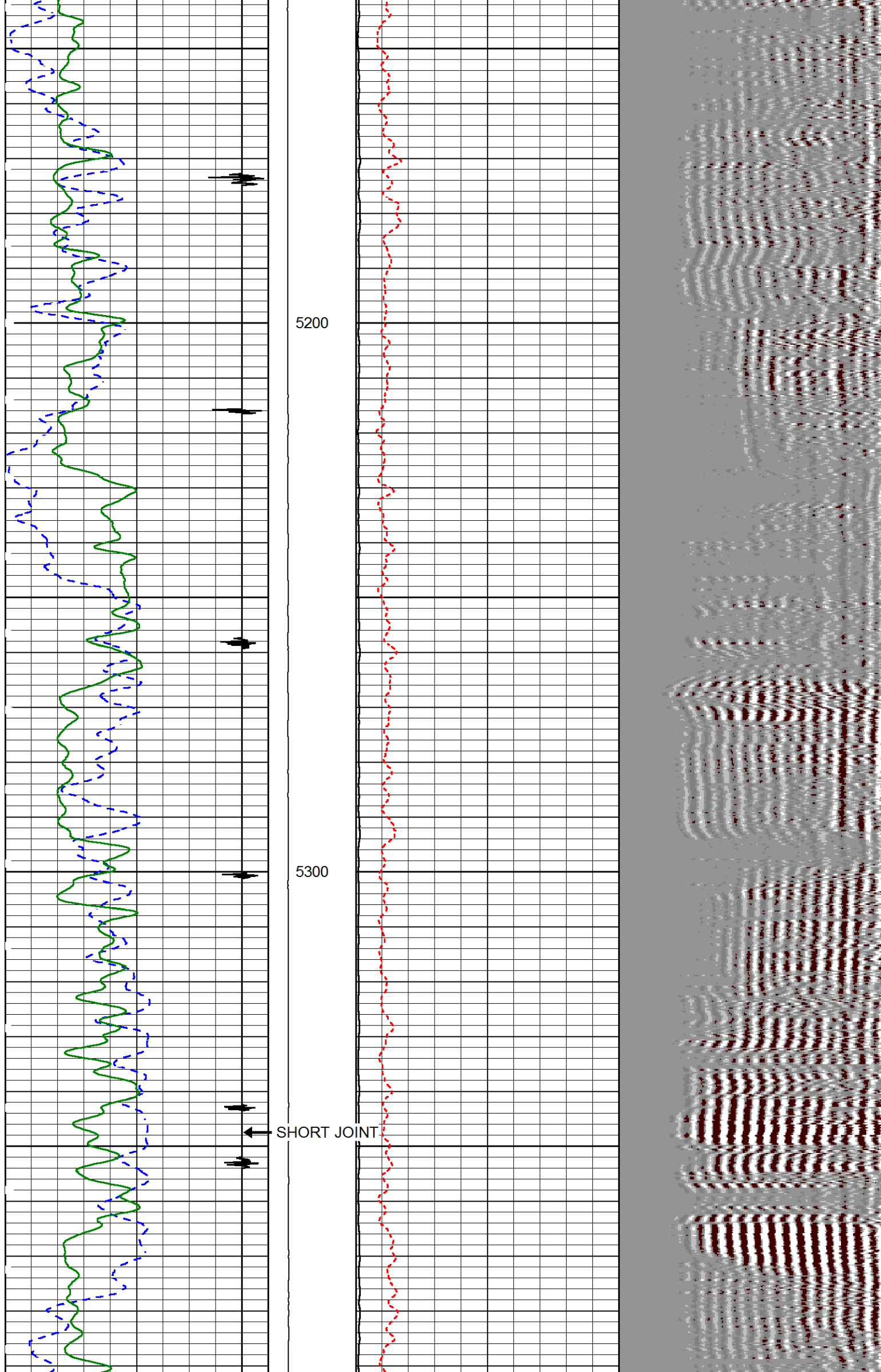


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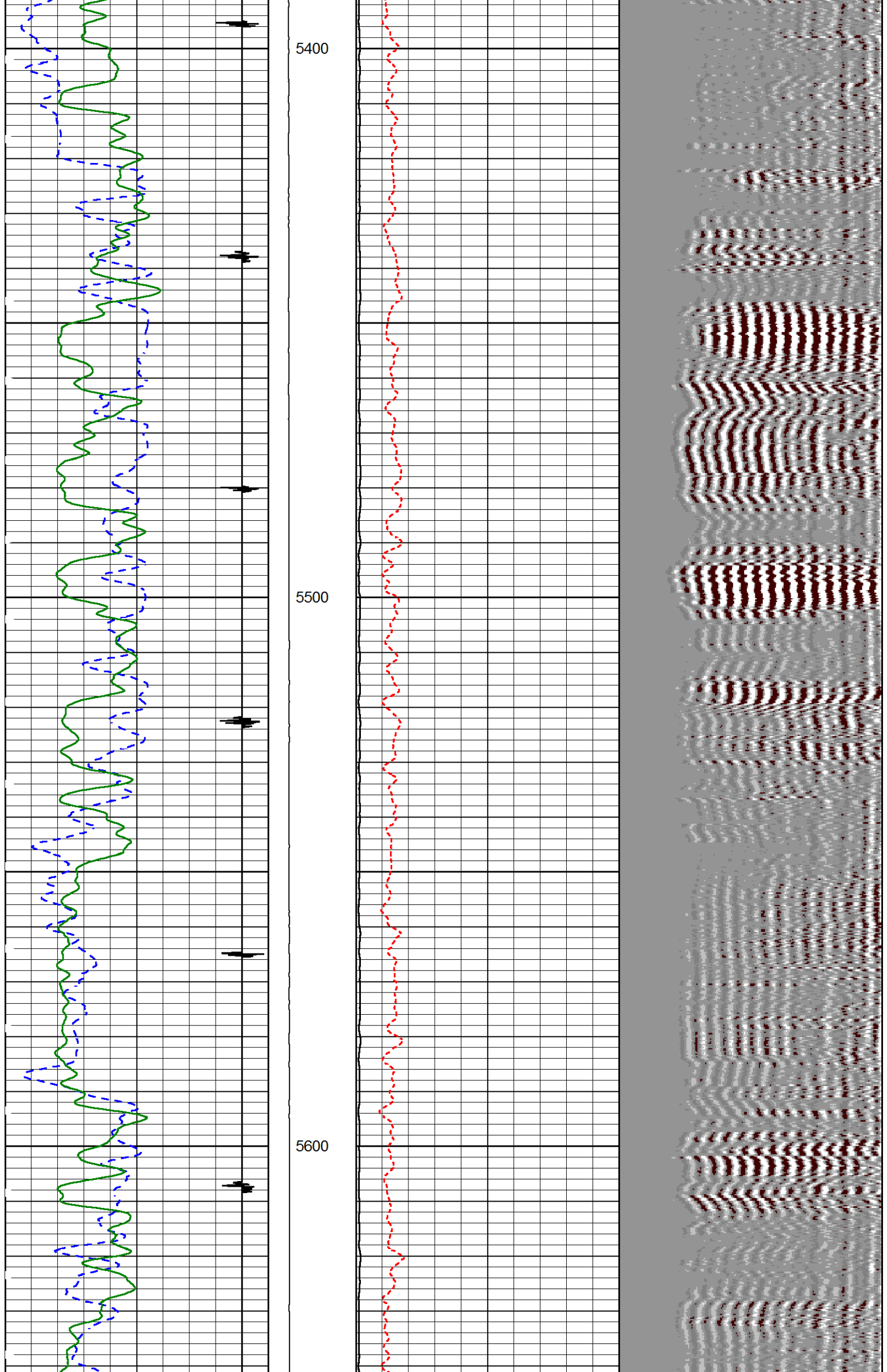
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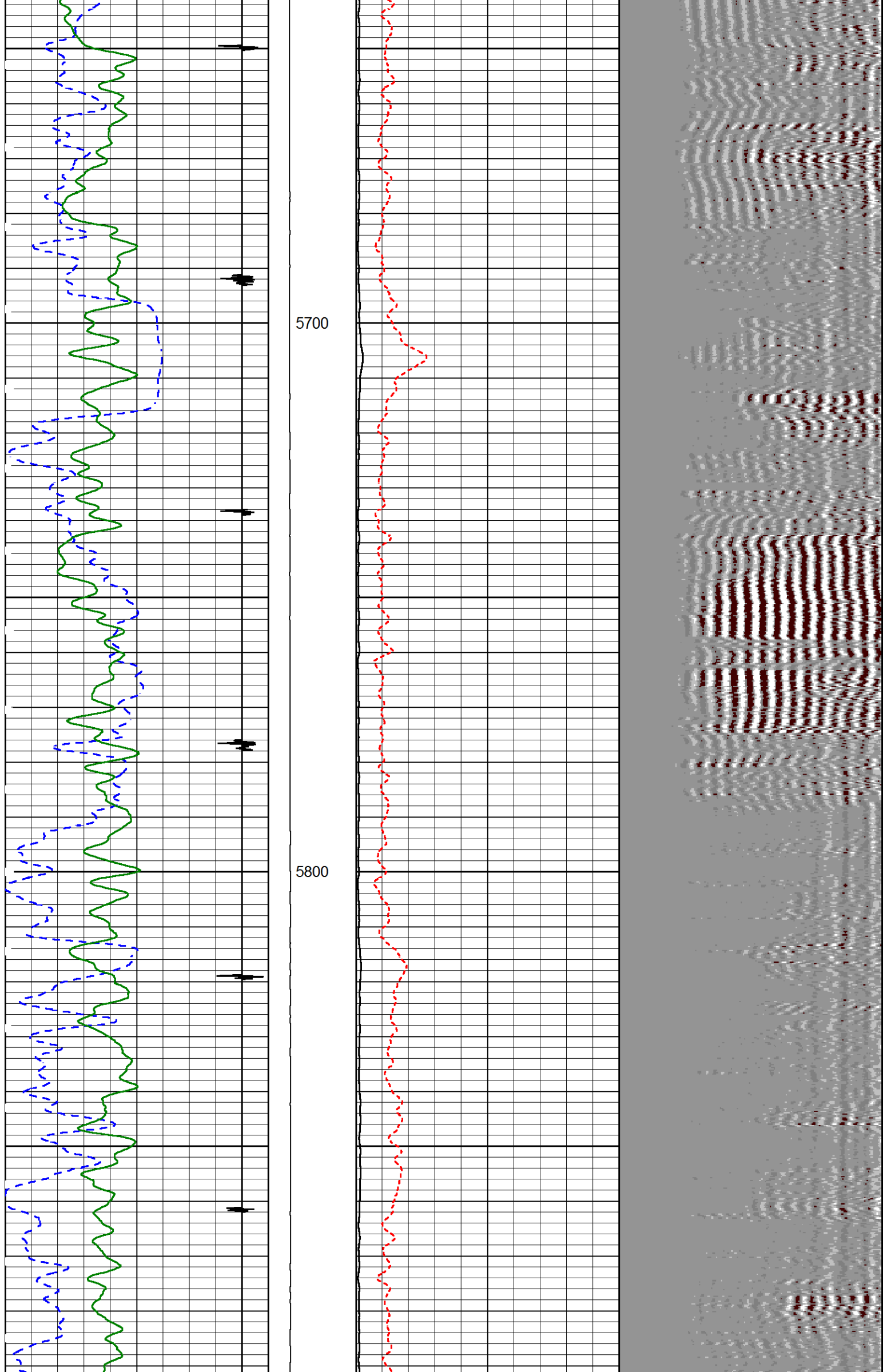
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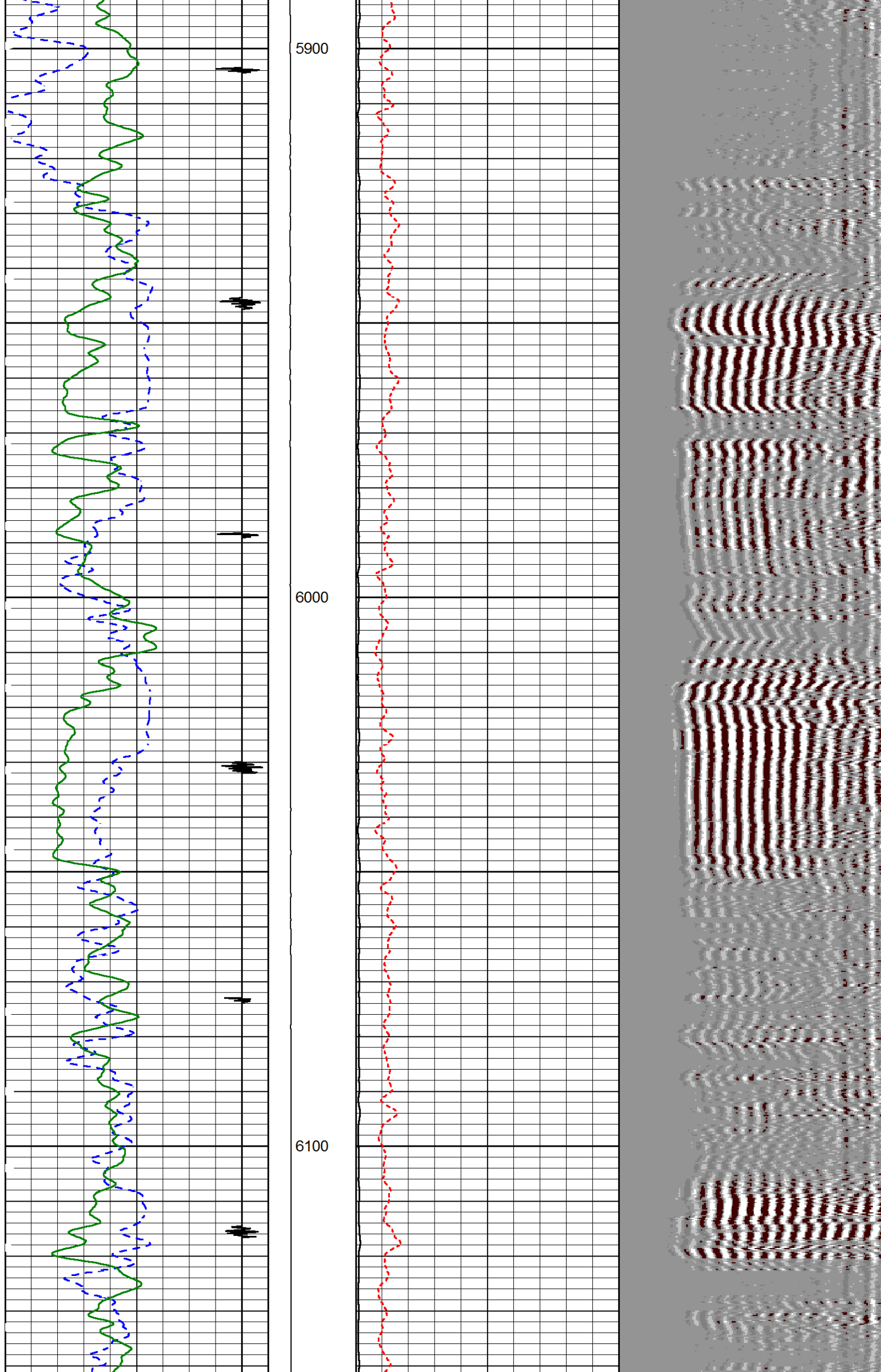


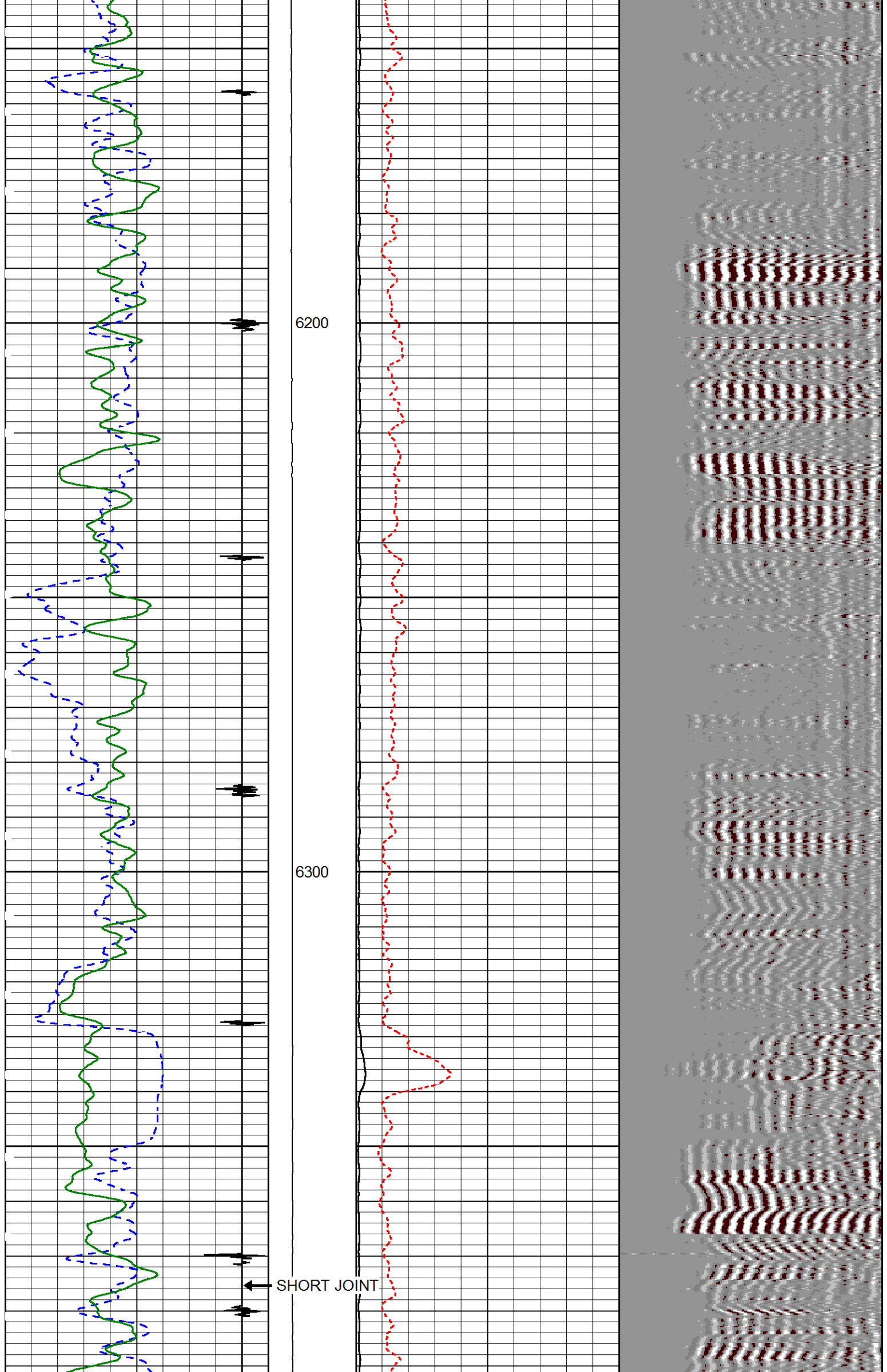


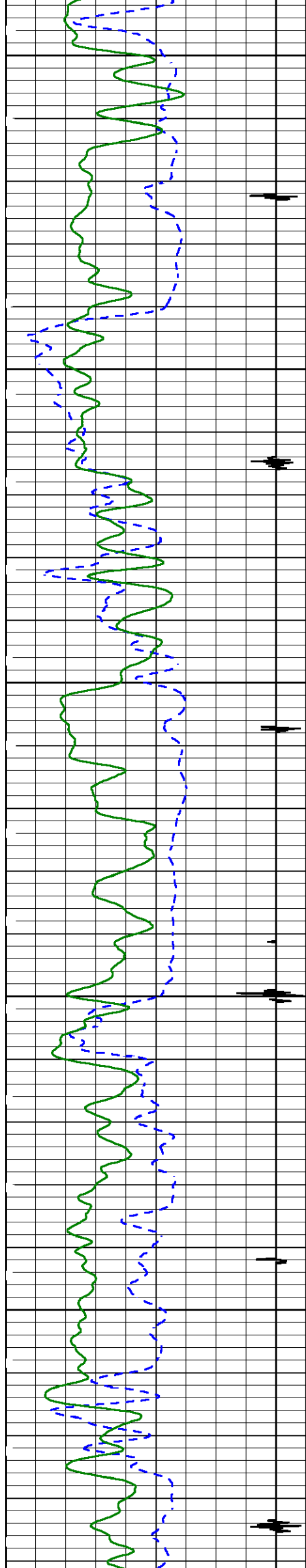








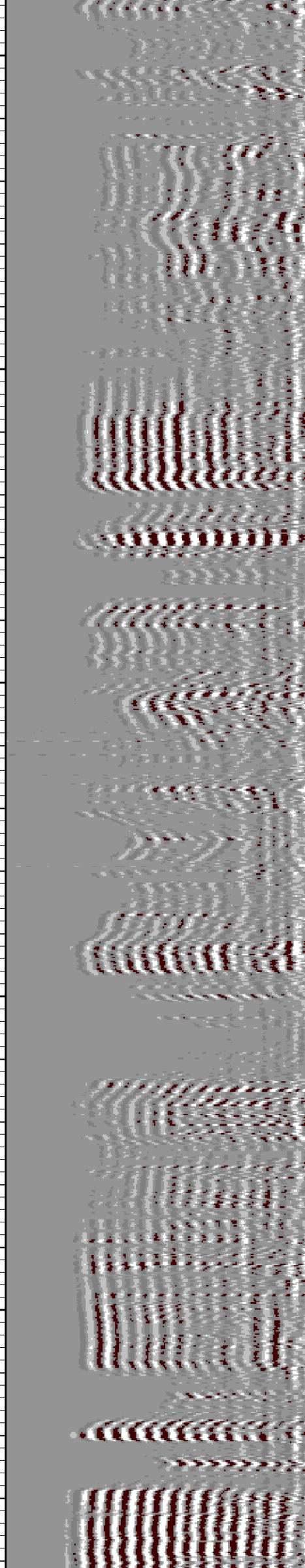
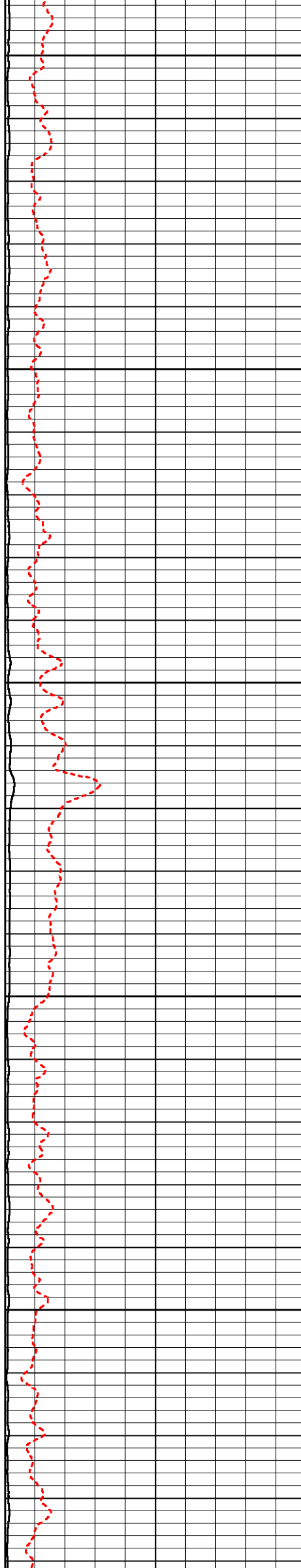




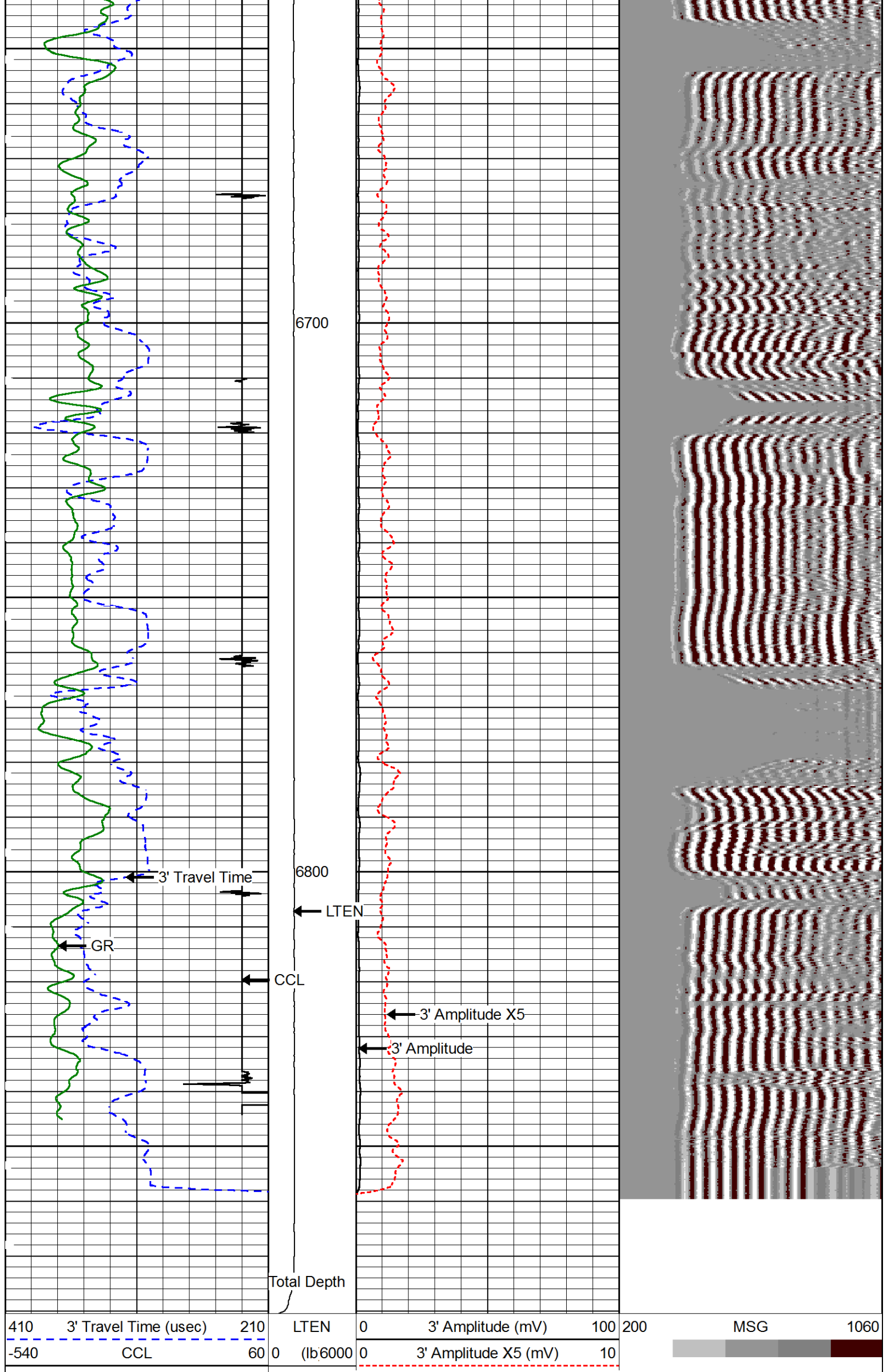
6400

6500

6600







MAIN LOG SECTION

HALLIBURTON

5" = 100'

REPEAT LOG SECTION

HALLIBURTON

5" = 100'

Database File

yater\_22c\_3dcombo.db

Dataset Pathname

CBLRPT1

Presentation Format

hcbg

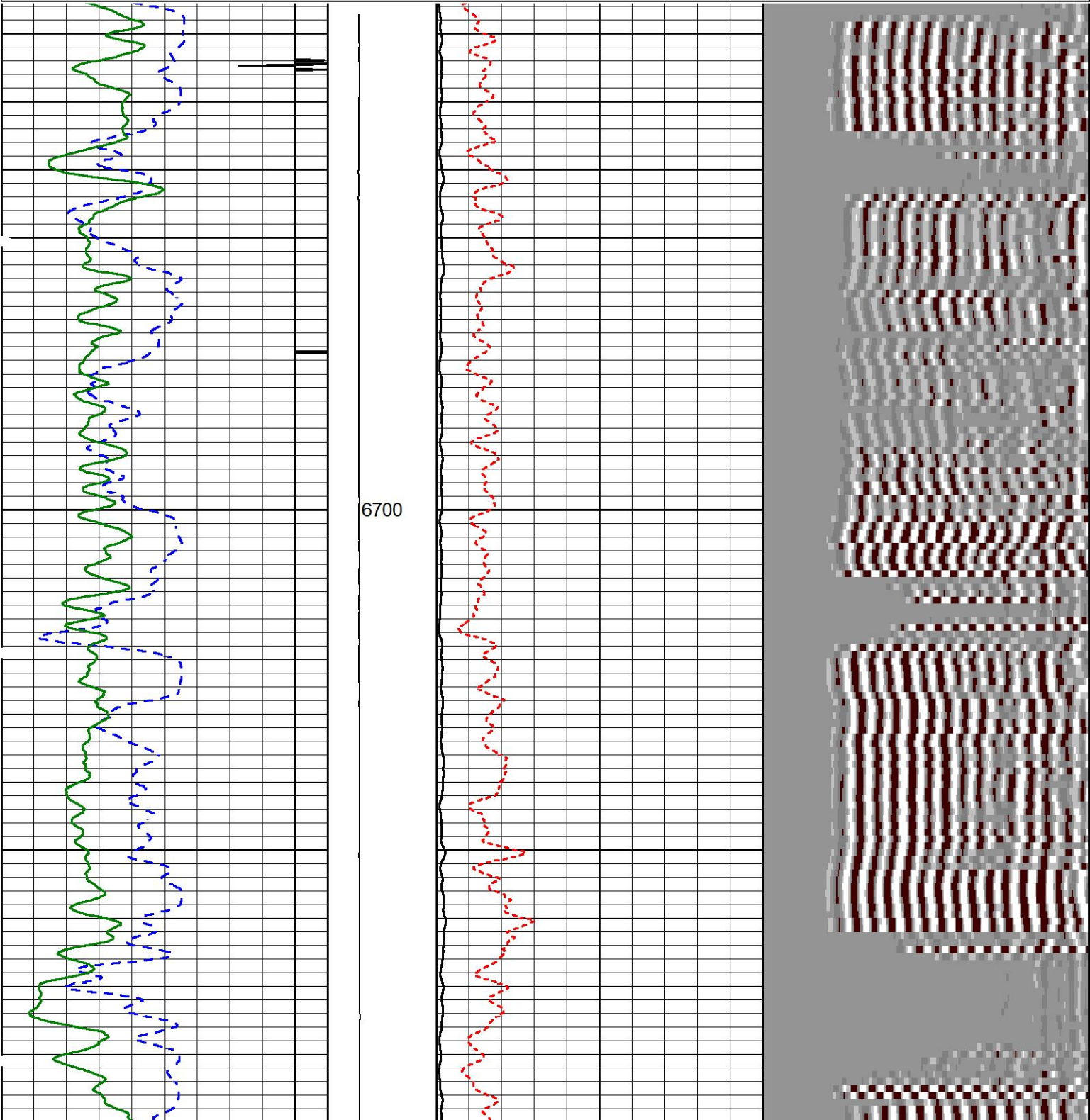
Dataset Creation

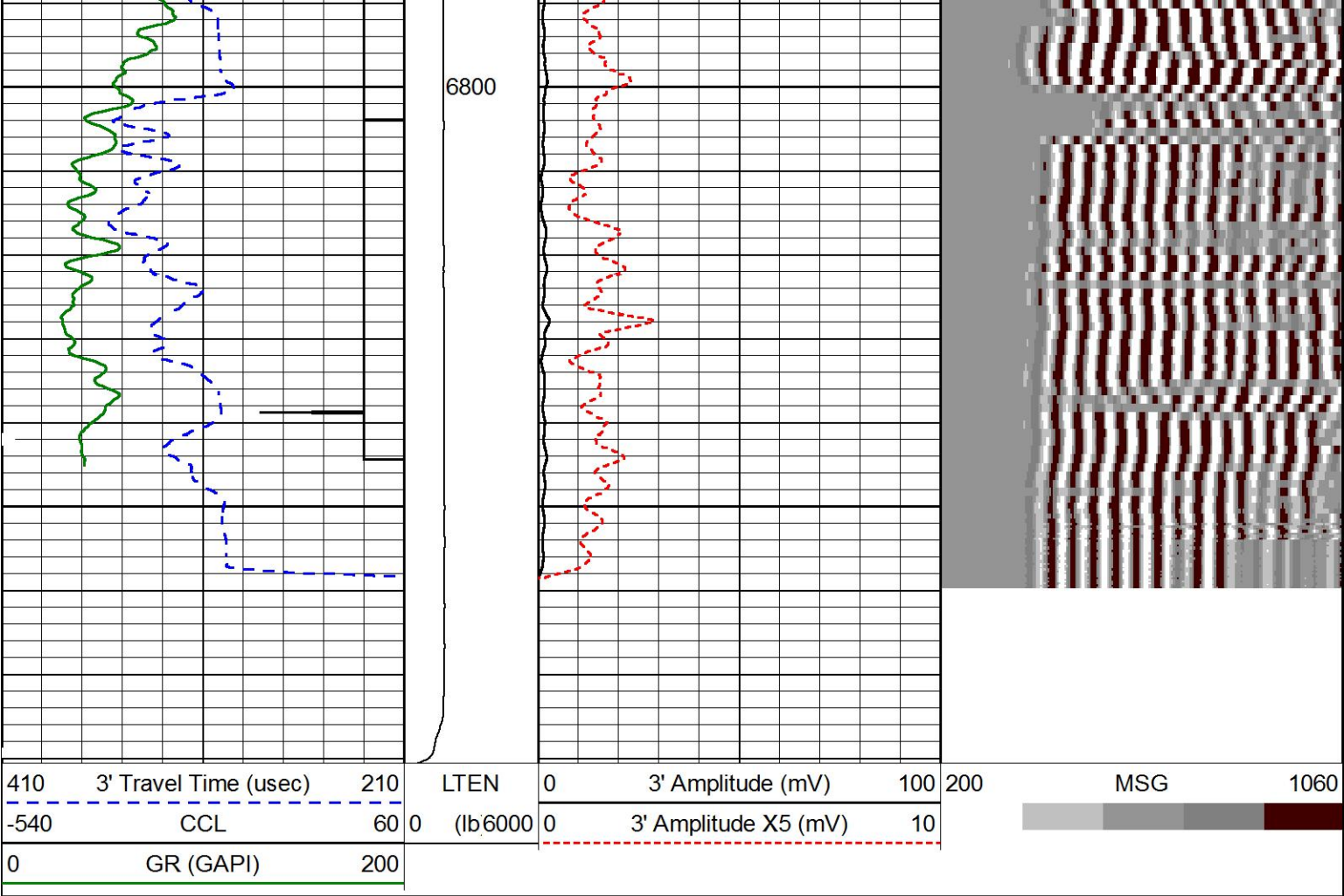
Sun Apr 12 01:47:35 2015

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							





REPEAT LOG SECTION

HALLIBURTON

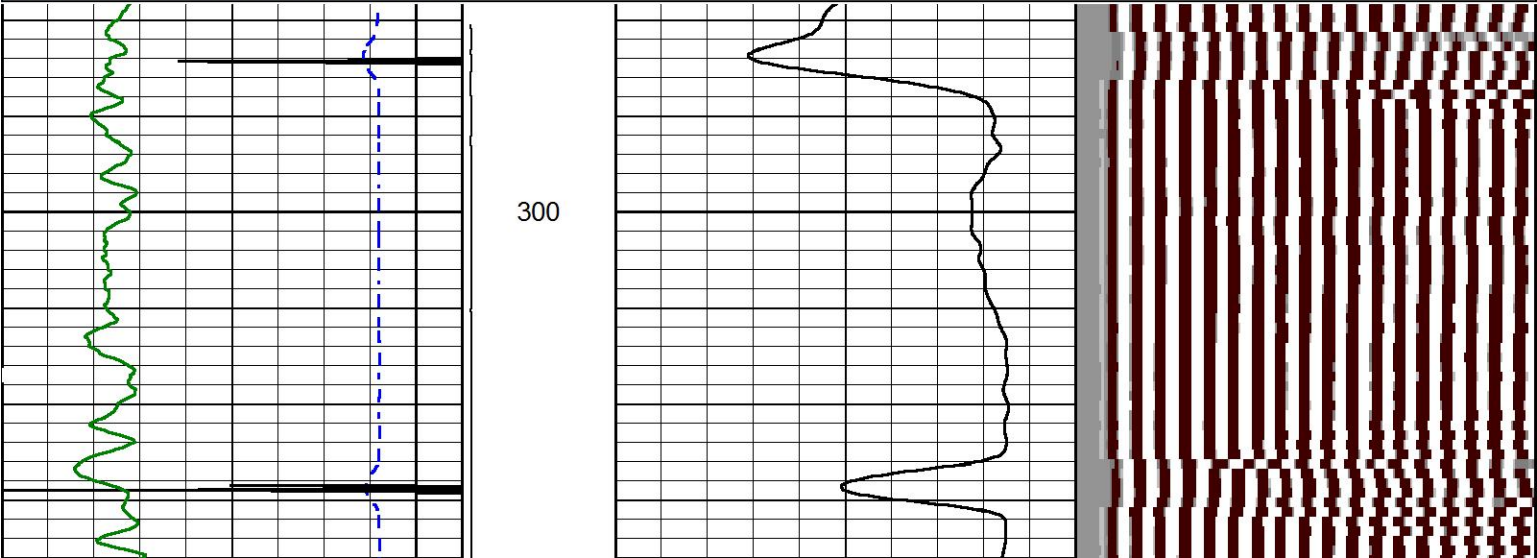
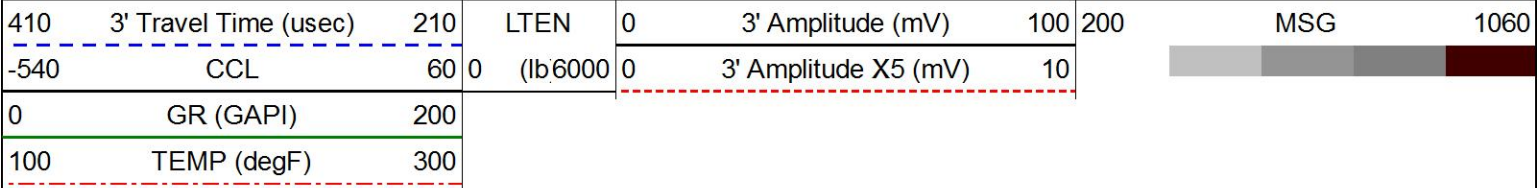
5" = 100'

FREE PIPE LOG SECTION

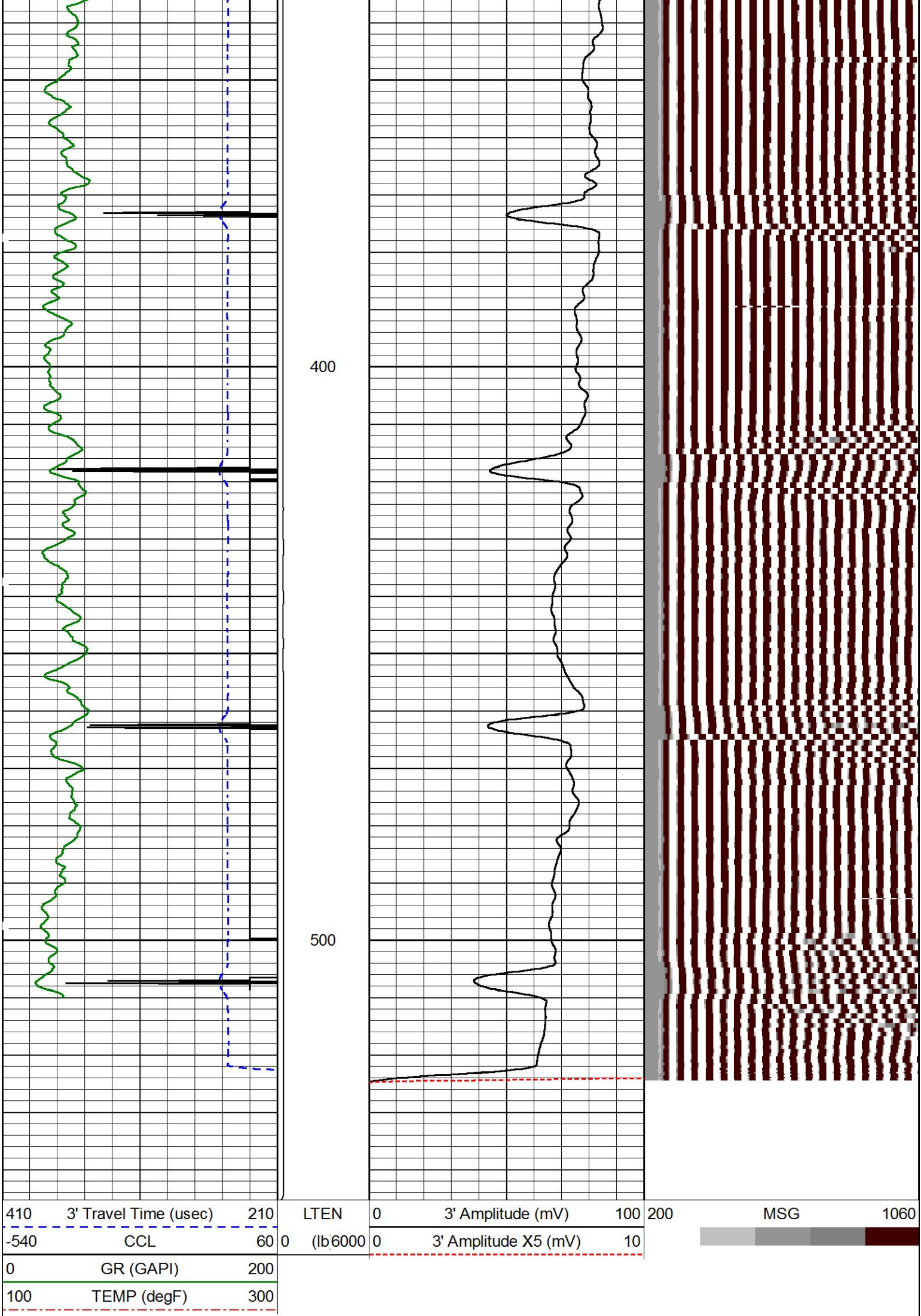
HALLIBURTON

5" = 100'

Database File yater\_22c\_3dcombo.db  
Dataset Pathname FREE1  
Presentation Format hcbg  
Dataset Creation Sun Apr 12 00:42:28 2015  
Charted by Depth in Feet scaled 1:240







FREE PIPE LOG SECTION

HALLIBURTON

5" = 100'

Top - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	RUN3D?	POROSL2	POROSL1	POROS2	POROS1
TEMP	0	1	Yes	0	1	0	1
LTH	UHSGC	RHOCFL	RHO CF	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	7.875					

Calibration Report

Database File yater\_22c\_3dcombo.db  
Dataset Pathname MAIN1  
Dataset Creation Sun Apr 12 01:58:15 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 18:23:08 2015			
Free Pipe Calibration					
TT	Measured	Units			
	245.7	usec			
Amplitude	609.7	mV			
Log Base Line	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	0.135				

Type / Serial:

002 / 12159411

## SHOP CALIBRATION

Sat Apr 11 11:13:47 2015

Background  
CalibratorCounts/Sec.  
39.6  
328.2Gain  
  
1.4140

Offset

Jig

Units  
cps  
cps  
GAPI/cps

## PRIMARY VERIFICATION

Sat Apr 11 11:15:49 2015

Background  
Calibrator  
Difference55.1  
468.8

413.6

cps  
cps  
GAPI

## BEFORE SURVEY VERIFICATION

Background  
Calibrator  
Difference0.0  
0.0

0.0

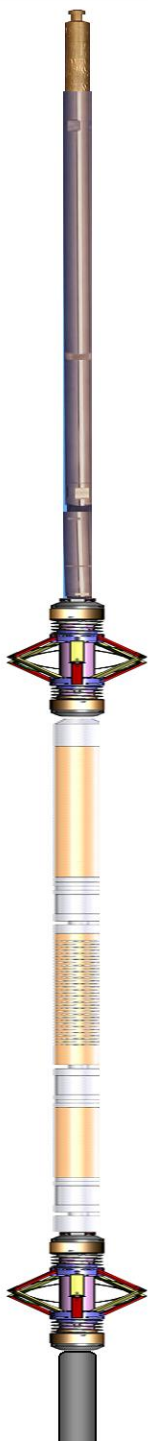
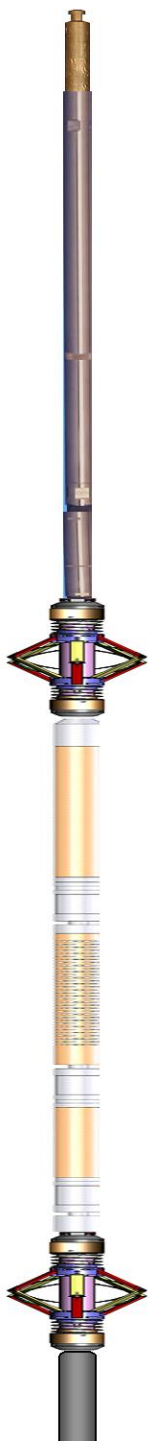
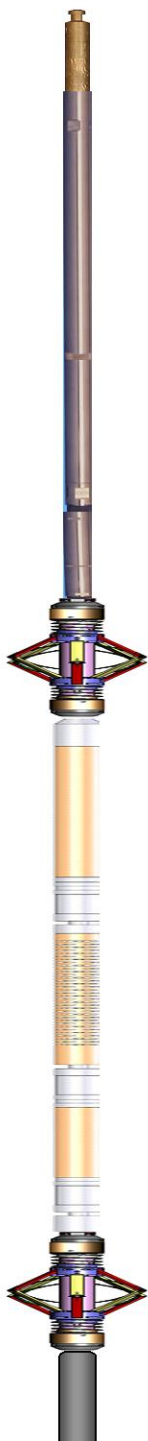
cps  
cps  
GAPI

## AFTER SURVEY VERIFICATION

Background  
Calibrator  
Difference0.0  
0.0

0.0

cps  
cps  
GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	36.04		STNDCH-STND_CH	1.50	1.44	1.00
GR	33.78		1.4375 IN CABLE HEAD			
Temp	24.06					
TT3FT	21.81					
AMP3FT	21.81					
Rm3TLGT	8.75					
Rm3LBACK	8.75					
Rm3LCAPT	8.75		TTTCU-002 (12159411)	7.65	1.69	100.00
Rm3LINEL	8.75		Through Tubing Telemetry Cartridge - Ultrawire			
Rm3TFGT	8.25					
Rm3FBACK	8.25					
Rm3FCAPT	8.25					
Rm3FINEL	8.25					
Rm3TNGT	7.75					
Rm3NBACK	7.75		XHU-003 (11899561)	1.58	1.69	7.00
Rm3NCAPT	7.75		Crossover Halliburton 1553 to Ultrawire			
Rm3NINEL	7.75					
Rm3ImpBTEST	0.00		CENT-CASTM-CENT	2.16	3.13	25.00
Rm3ImpBCYC	0.00		CAST M INLINE CENTRALIZER			
Rm3ImpBRGW	0.00					
Rm3ImpBRGO	0.00					
Rm3ImpState	0.00					
Rm3ImpPhase	0.00					
Rm3ImpCyc	0.00					
Rm3GenClamp	0.00					
Rm3LTemp	0.00		HCBLM-A (11794522)	9.38	2.75	116.00
Rm3LPMHV	0.00		Halliburton HCBLM Tool			
Rm3LPMI	0.00					
Rm3LPrgSt1	0.00					
Rm3LDetStat	0.00					
Rm3FTemp	0.00					
Rm3FPMHV	0.00					
Rm3FPMI	0.00					
Rm3FPrgSt1	0.00		CENT-CASTM-CENT	2.16	3.13	25.00
Rm3FDetStat	0.00		CAST M INLINE CENTRALIZER			
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)	15.17	86.00
Rm3GenP33V	0.00		RMT3D - 3 Detector RMT-I	2.13	
Rm3Gen200V	0.00				
Rm3GenP15VI	0.00				
Rm3GenTemp	0.00				
Rm3GenP5V	0.00				
Rm3GenI	0.00				
Rm3GenPv	0.00				
Rm3GenCmd	0.00				
Rm3GenSpl	0.00				
Rm3GenIspPv	0.00				
Rm3GenIspCmc	0.00				
Rm3GenRepPv	0.00				
Rm3GenRepV	0.00	Dataset:	yater_22c_3dcombo.db: field/well/run1/MAIN1		
Rm3GenRepSv	0.00	Total length:	39.61 ft		
Rm3GenContSt	0.00	Total weight:	360.00 lb		
		O.D.:	3.13 in		

Company	URSA OPERATING COMPANY				
Well	YATER 22C-17-07-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	ACOUSTIC CEMENT BOND LOG				