



**PIONEER**  
Pioneer Energy Services

## CEMENT BOND LOG WITH GAMMA RAY

Comp. EAST CHEYENNE GAS STORAGE  
Well DOROTHY STRANGE #1 WP-DO11  
Field WEST PEETZ  
Co. LOGAN  
State COLORADO

Company **EAST CHEYENNE GAS STORAGE**  
Well **DOROTHY STRANGE #1 WP-DO11**  
Field **WEST PEETZ**  
County **LOGAN** State **COLORADO**

Location: API #: 05-075-07146

Other Services

SHL: 2304' FSL x 1639' FEL  
SEC 6 TWP 11N RGE 52W

SET RBP  
PULLED RBP

Permanent Datum GL  
Log Measured From KB 13' Elevation 4547'  
Drilling Measured From KB Above Perm. Datum

Elevation  
K.B. 4560'  
D.F. 4559'  
G.L. 4547'

Date of Service 19-May-2016

Run Number

One

Depth Driller or PBTD

5335'

Depth Logger

5112'

Bottom Log Interval

5100'

Top Log Interval

Surface

Open Hole Size

N/A

Type Fluid

Water / Packer fluid

Fluid Level

260'

Fluid Density

N/A

Max. Recorded Temperature

N/A

Max. Wellhead Pressure

0 PSI

Wellhead Connection

Open

Estimated Cement Top

N/A

Unit Number

P129

Wireline Size

9/32"

Location

Fort Morgan

Recorded By

Randy Azevedo

Witnessed By

Gary Olman

Size

9-5/8"

Wt/Ft

25.4#

Top

Surface

Bottom

215'

5298'

Surface

5-1/2"

15.5#

Surface

5298'

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

### Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Log Ran as per customer request.

Log ran under 0 PSI surface induced pressure.

Depth reference to DV tool @ 4818'

Log ran from 5112' to surface

Well topped off with foamy packer fluid.

Gas suspected in well during logging

Limited Header information.

SO # 2-310154

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew

Engineer: Randy Azevedo

Operator: Josh King

Operator: Dave Hollis

Operator:

Tool Data - Services

Probe Radi Bond Tool

Serial Number

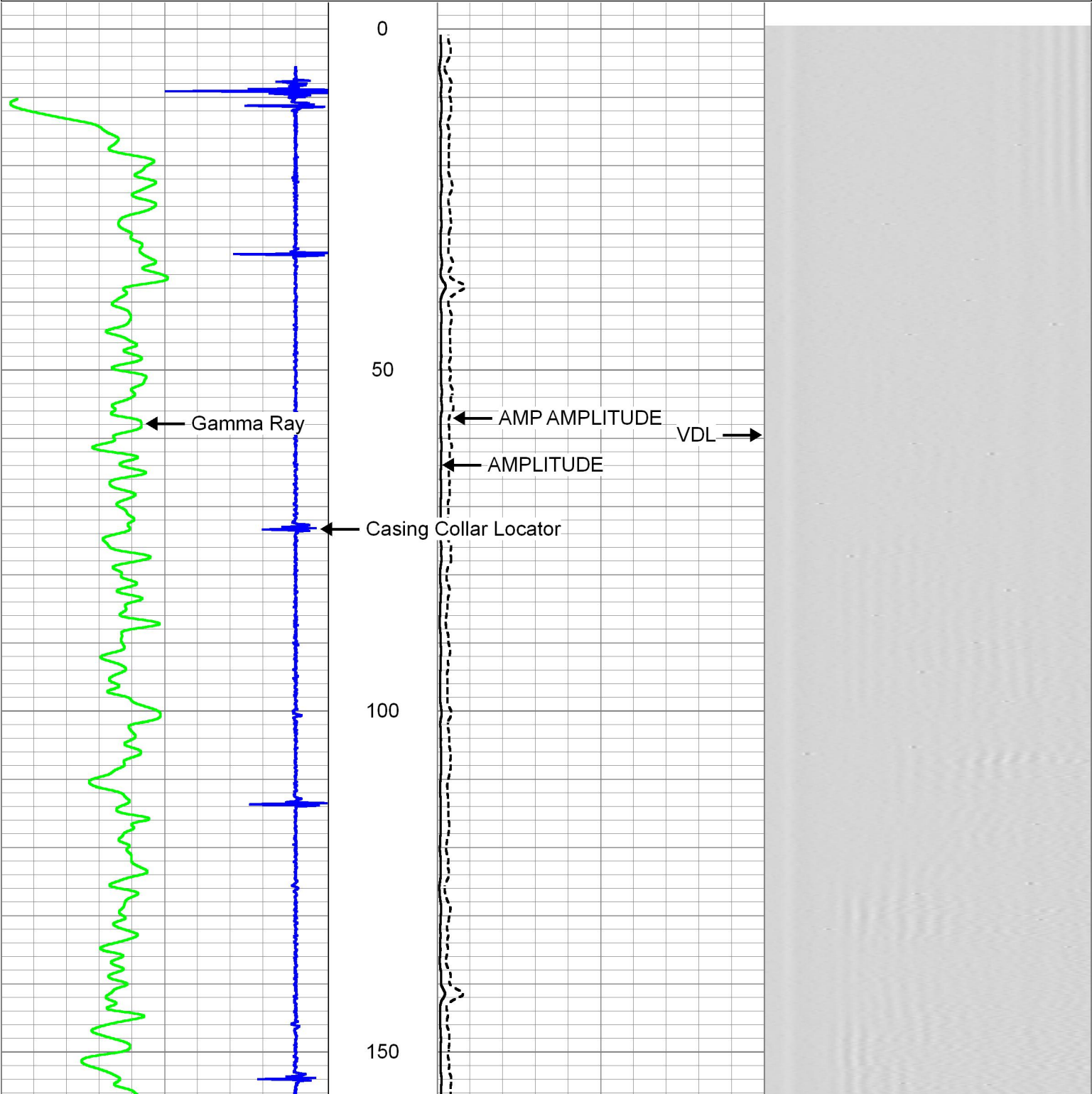
Sensor	Onset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	13.46		Cable Head-Titan 143 1 7/16" Titan Cable Head	1.03	1.43	2.00
			Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
			SCBL-275 Probe w Temp New Mod (0702)	9.17	2.75	95.00
			Probe Radii Bond Tool with Temperature			
WVFS8	11.23					
WVFS7	11.23					
WVFS6	11.23					
WVFS5	11.23					
WVFS4	11.23					
WVFS3	11.23					
WVFS2	11.23					
WVFS1	11.23					
WVFCAL	11.23					
WVF3FT	11.23					
WVF5FT	10.23					
HEADVOLT	6.98					
CCL	3.91		Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
			GR_CCL-275 Probe GR-CCL Corrosion (F4.54)	10.8	102.75	60.00
GR	1.17		Probe 2 3/4" Gamma Ray / CCL Corrosion Digital			
			Bullnose-Titan GO Pin Pressure Cap	0.27	1.38	1.00
Dataset: 2-310154 ecgs rbl.db: field/well/run1/pass2 Total length: 19.34 ft Total weight: 202.00 lb O.D.: 2.88 in						

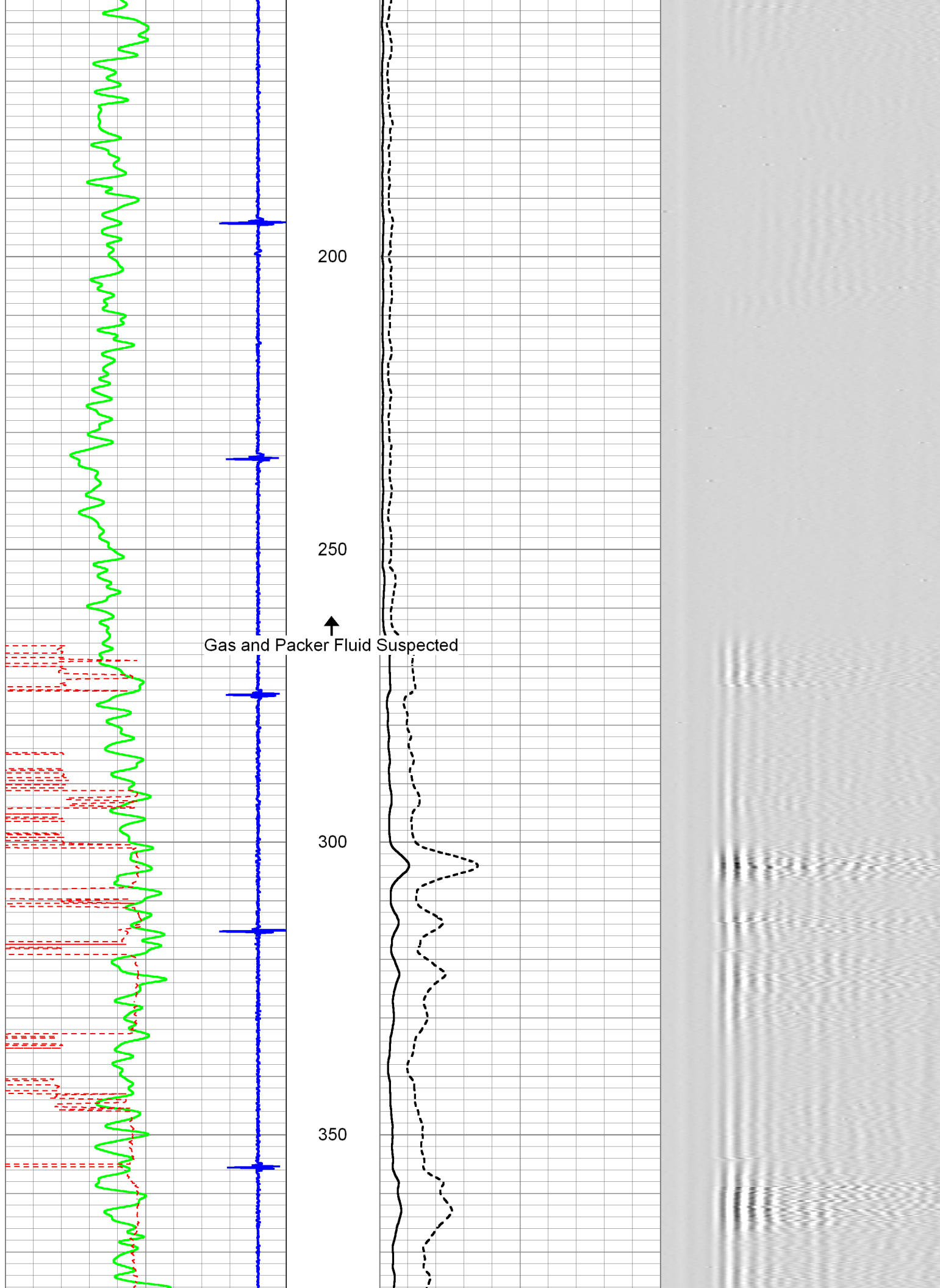
# 5.5 Main Pass

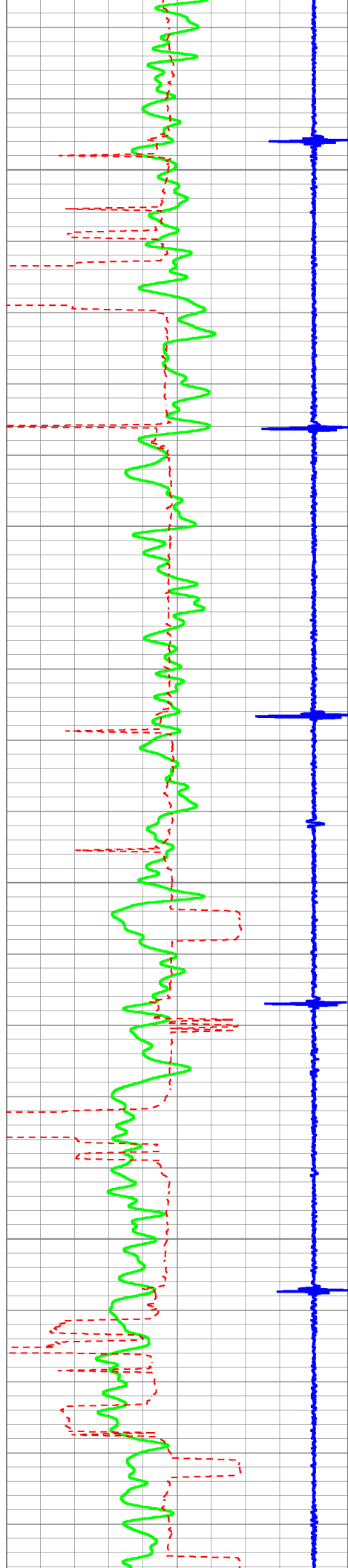
Log ran with 0 PSI surface induced pressure.

Database File 2-310154 ecgs rbl.db  
 Dataset Pathname pass2  
 Presentation Format cbl\_drs  
 Dataset Creation Thu May 19 09:14:04 2016  
 Charted by Depth in Feet scaled 1:240

9	Collar Locator	-1	0	AMP AMPLITUDE (mV)	30	200	VDL	1200
0	Gamma Ray (GAPI)	200	0	AMPLITUDE (mV)	100			
400	TT3FT (usec)	200						





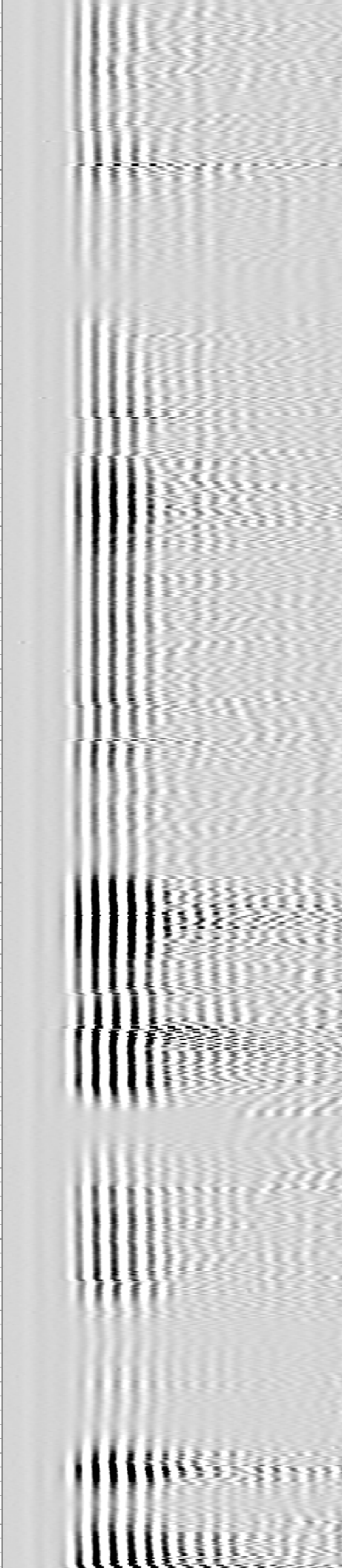
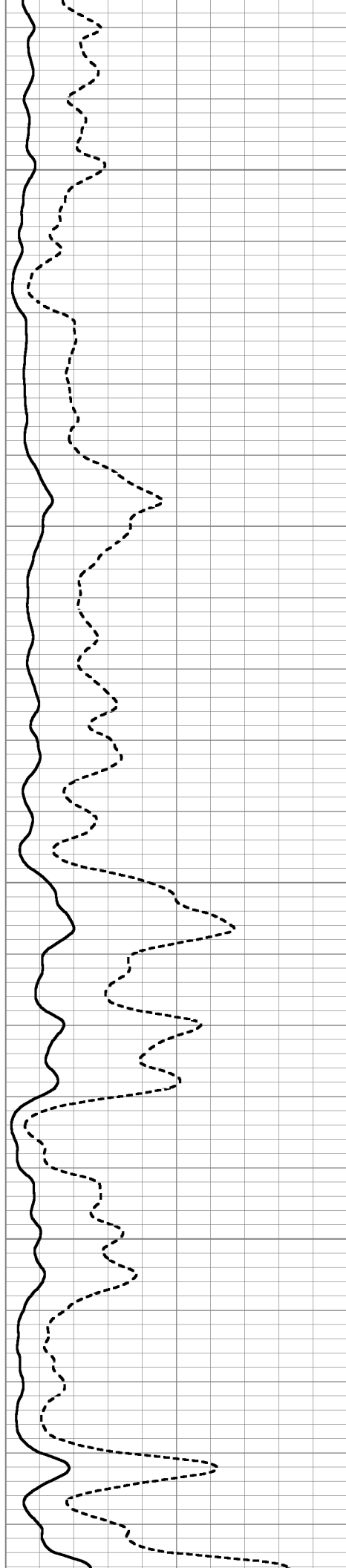


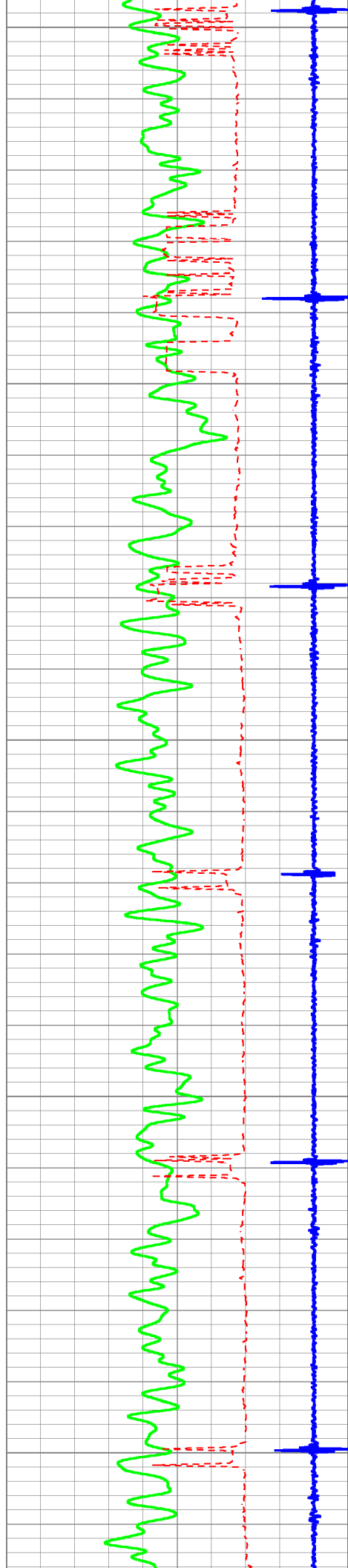
400

450

500

550





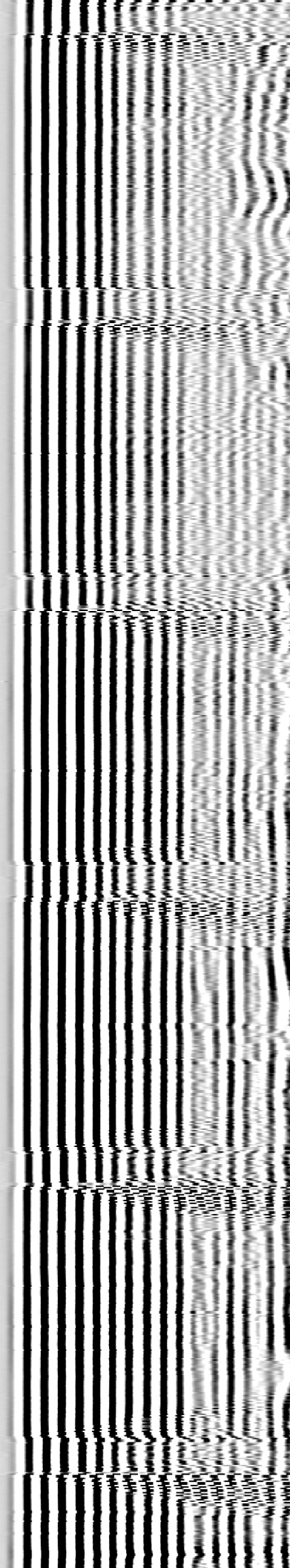
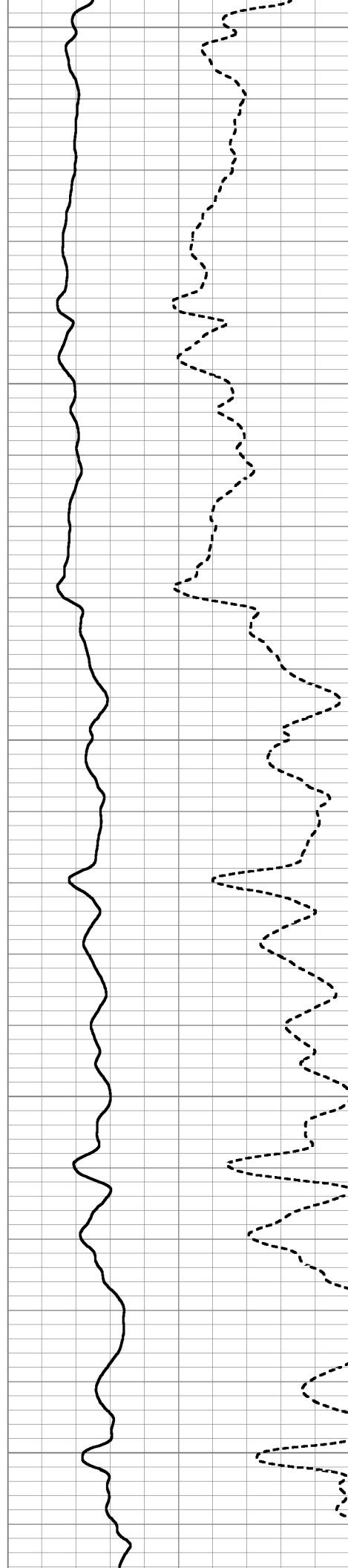
600

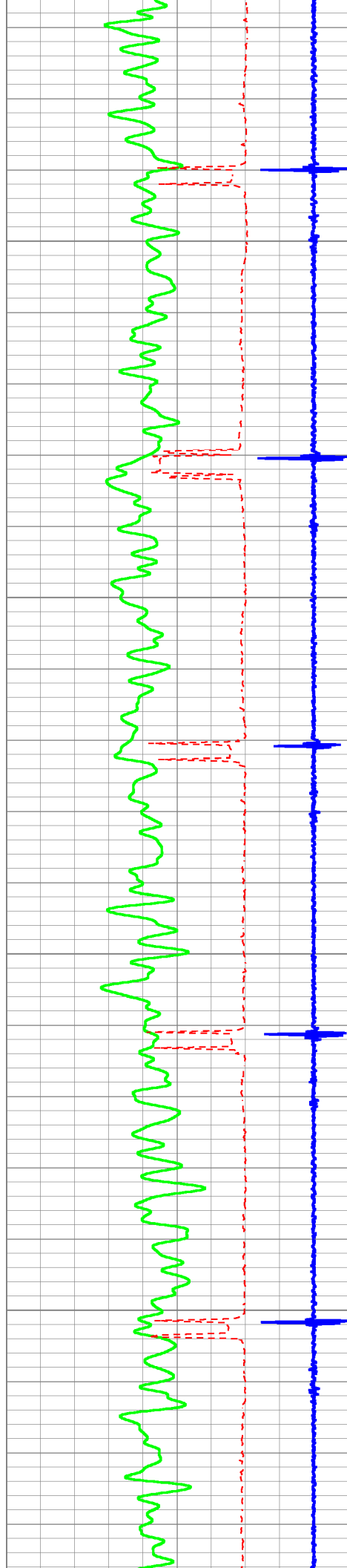
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750

800



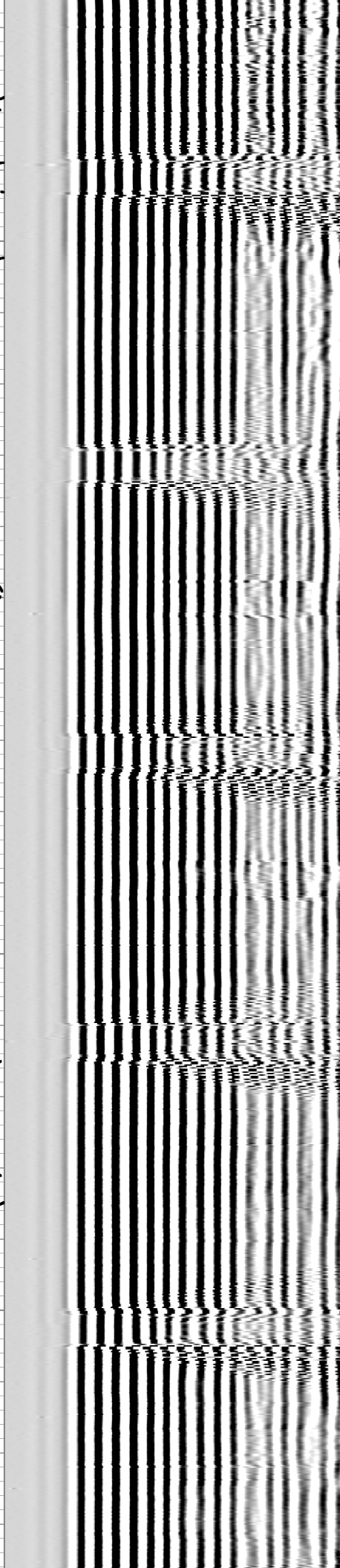
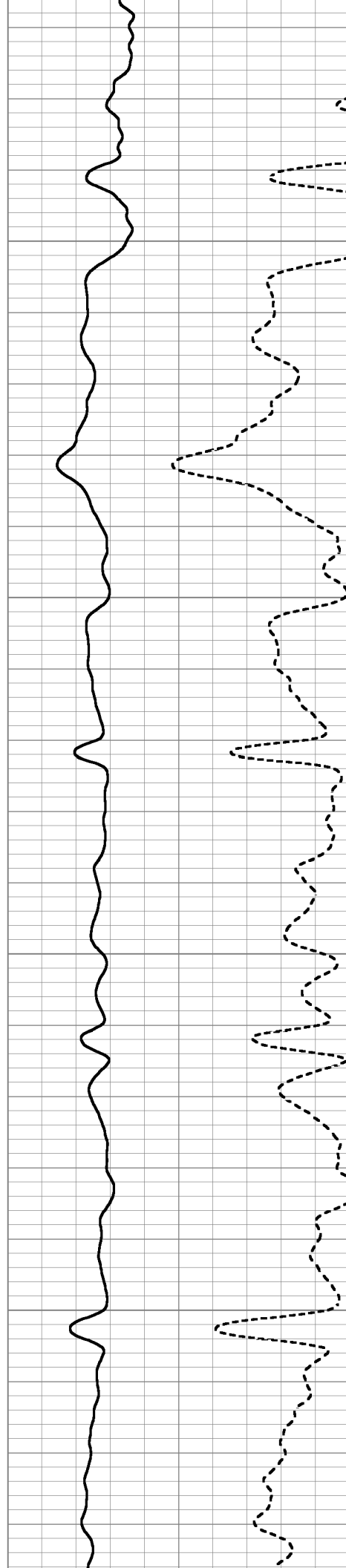


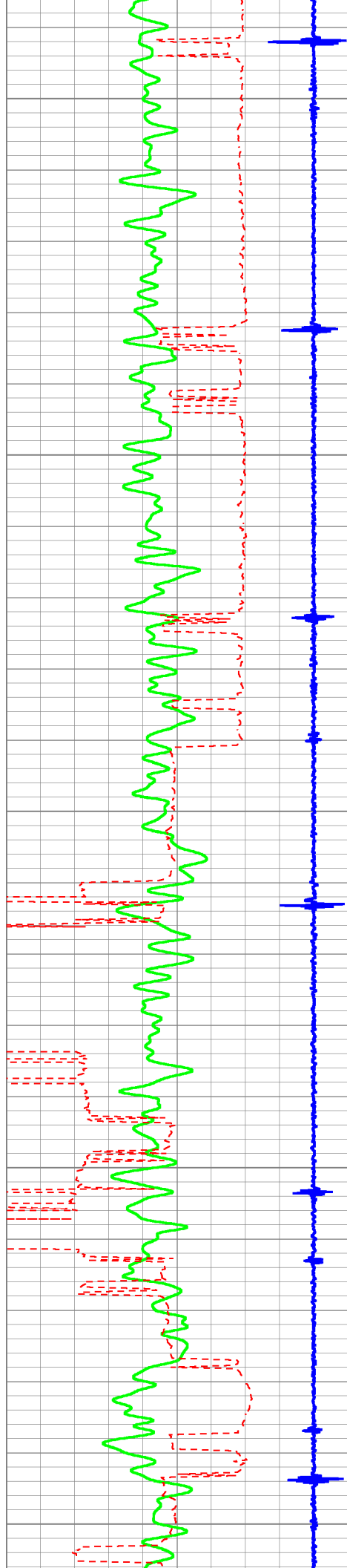
850

900

950

1000





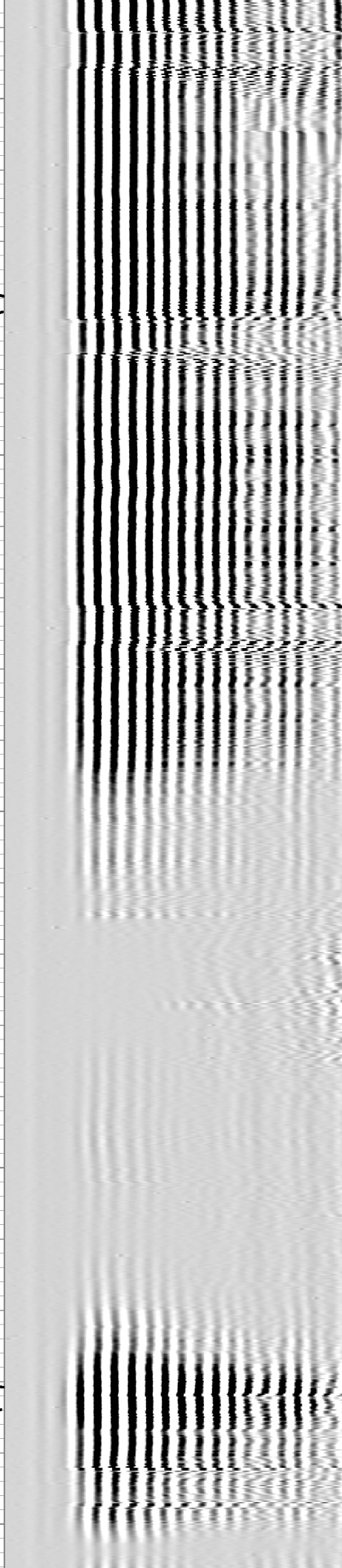
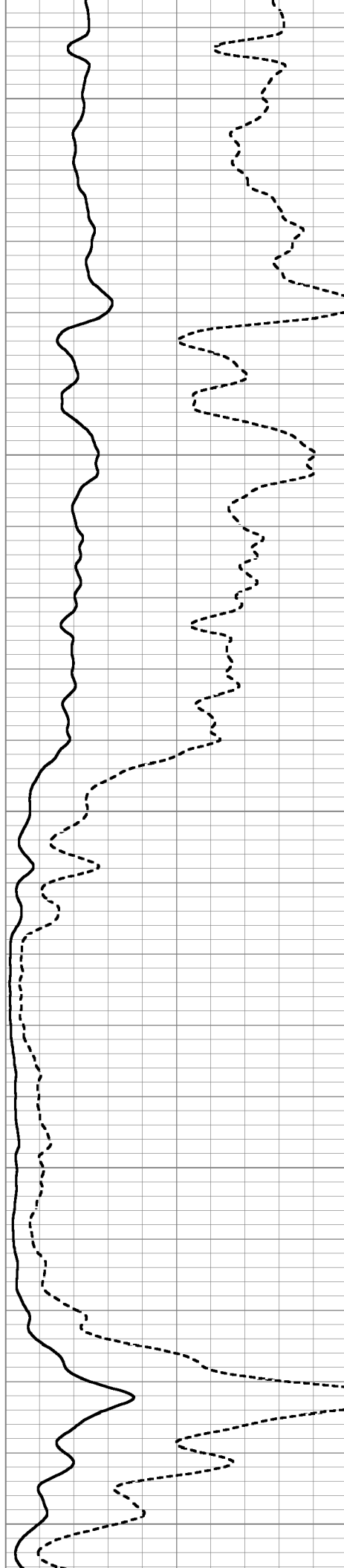
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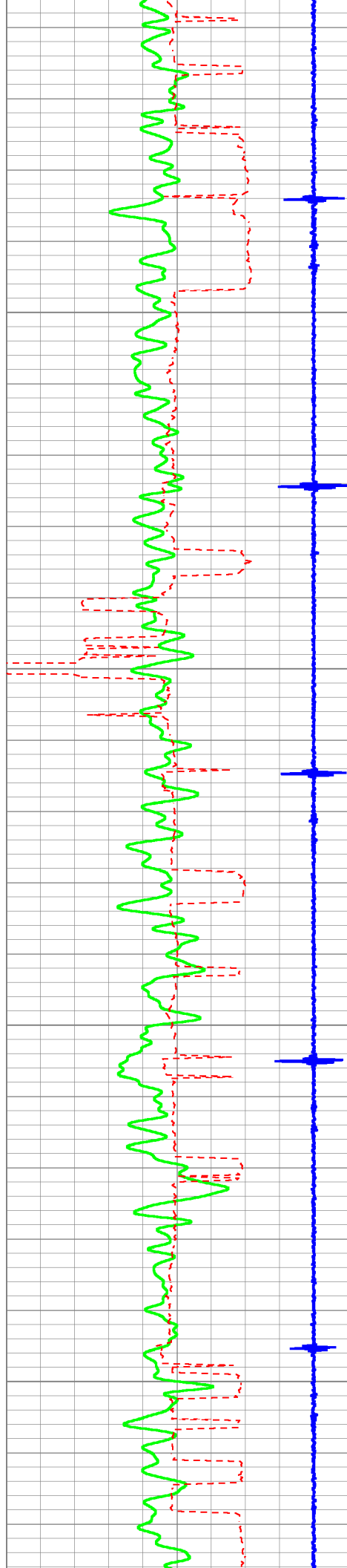
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1150

1200

1250



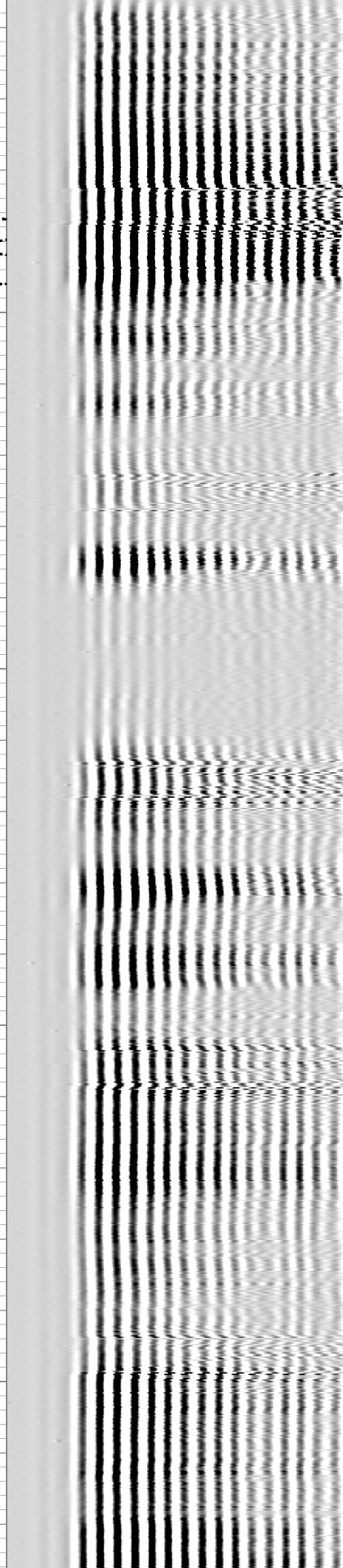
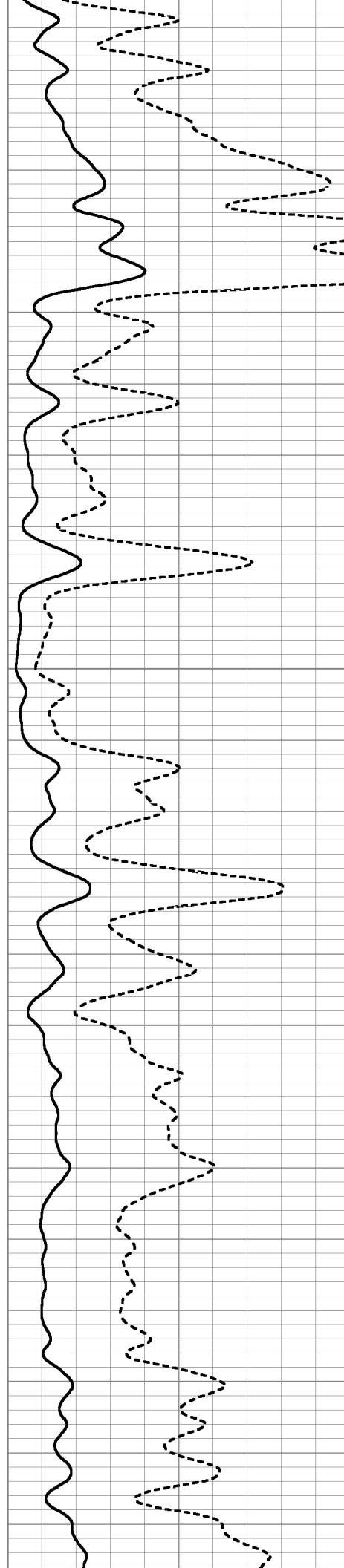


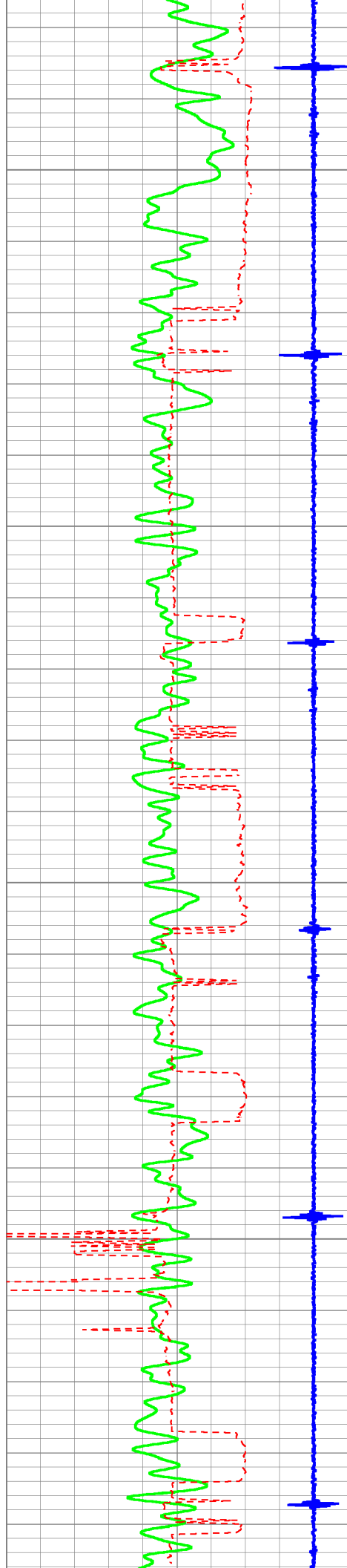
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1350

1400

1450



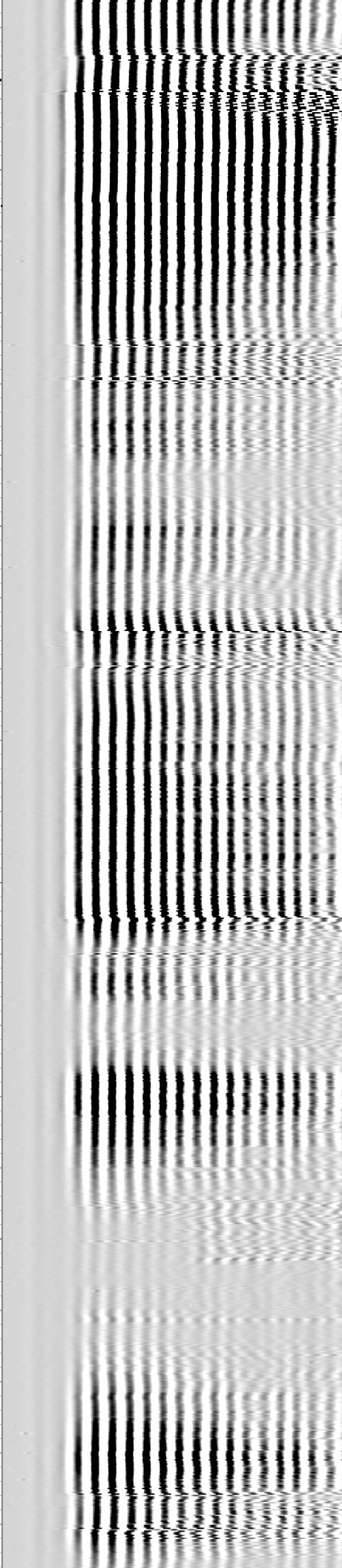
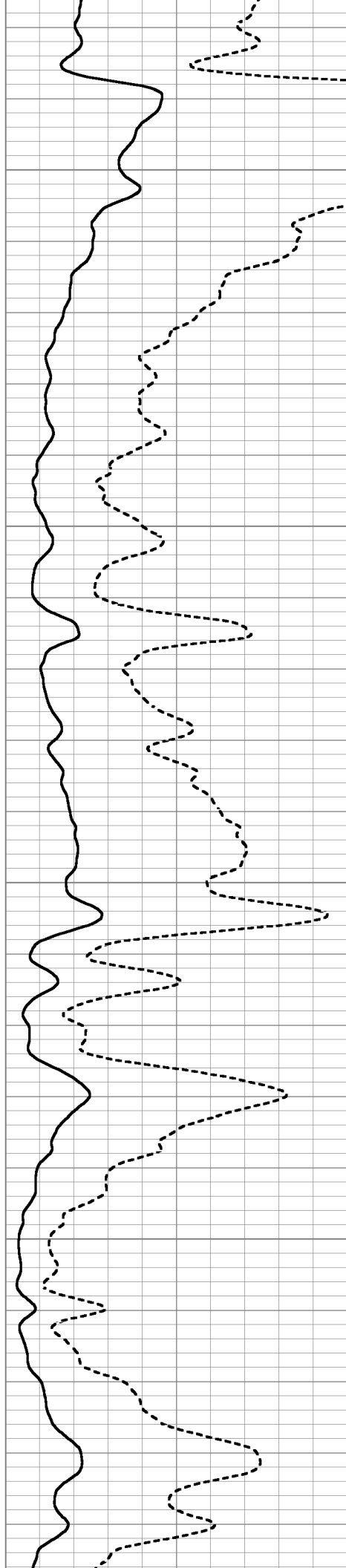


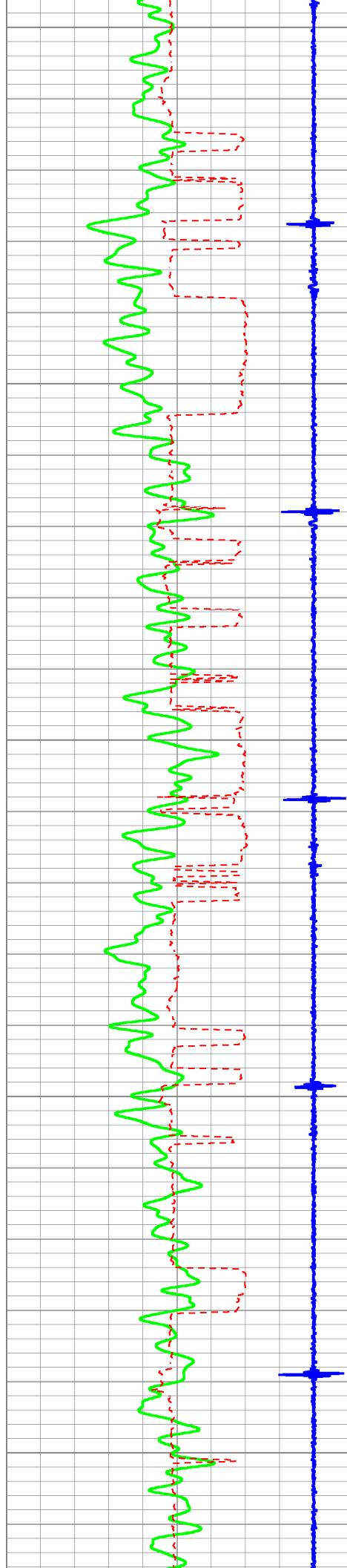
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1550

1600

1650





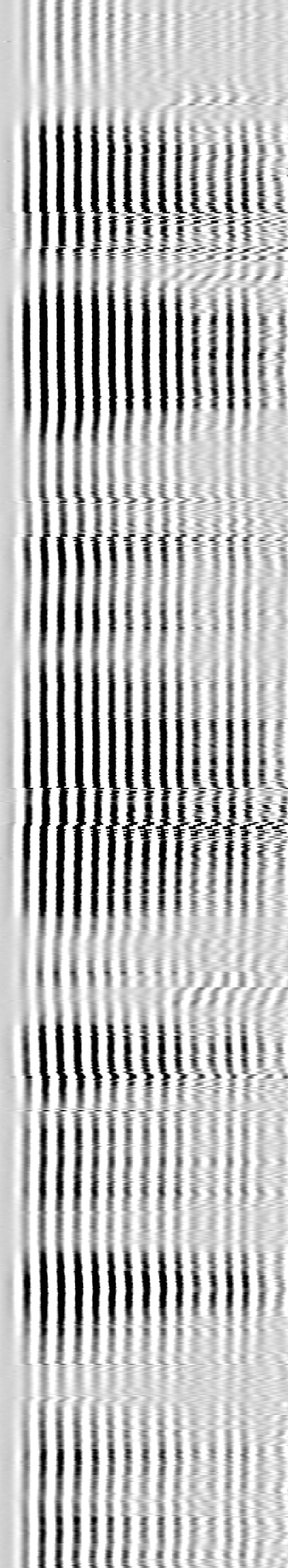
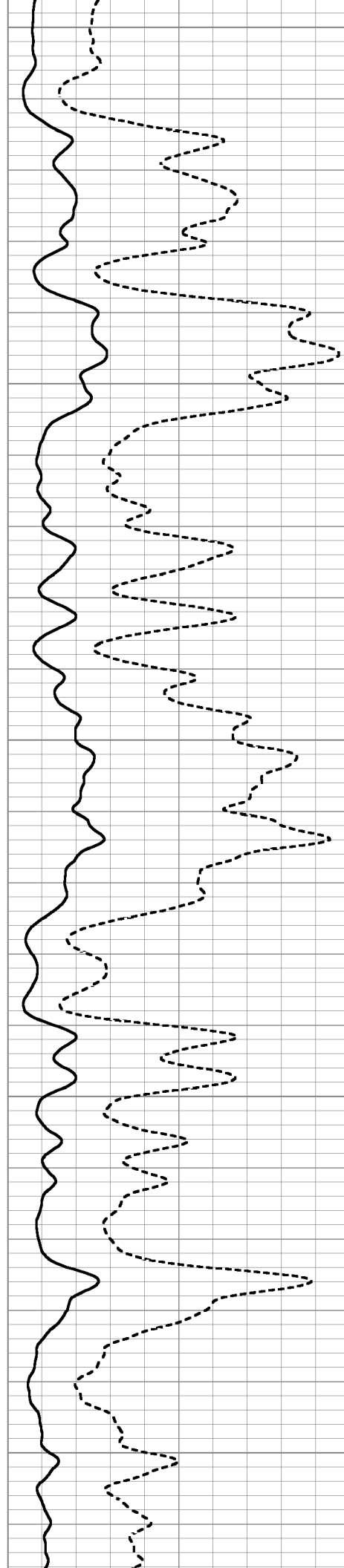
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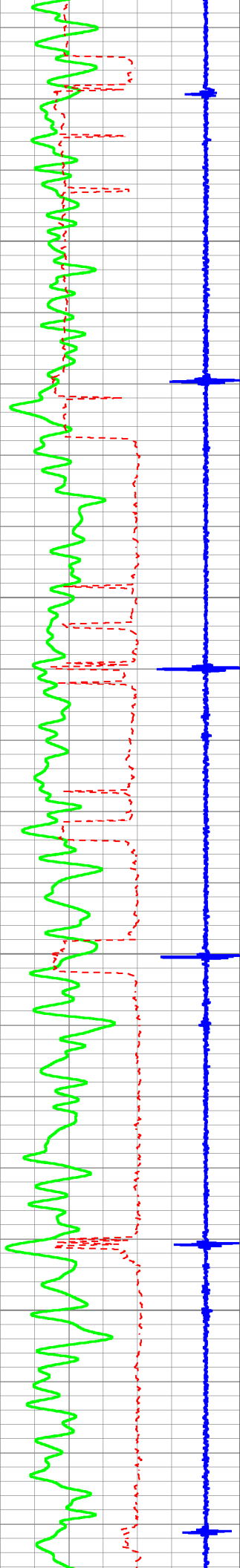
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1800

1850

1900



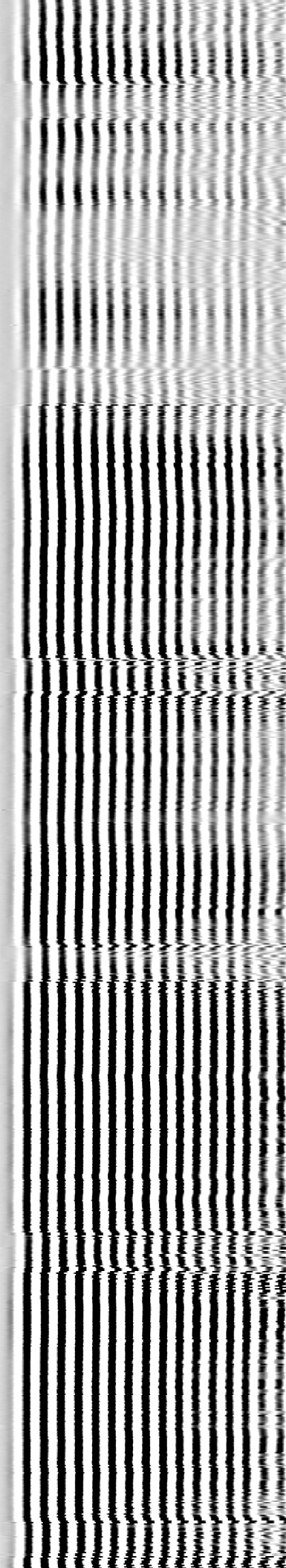
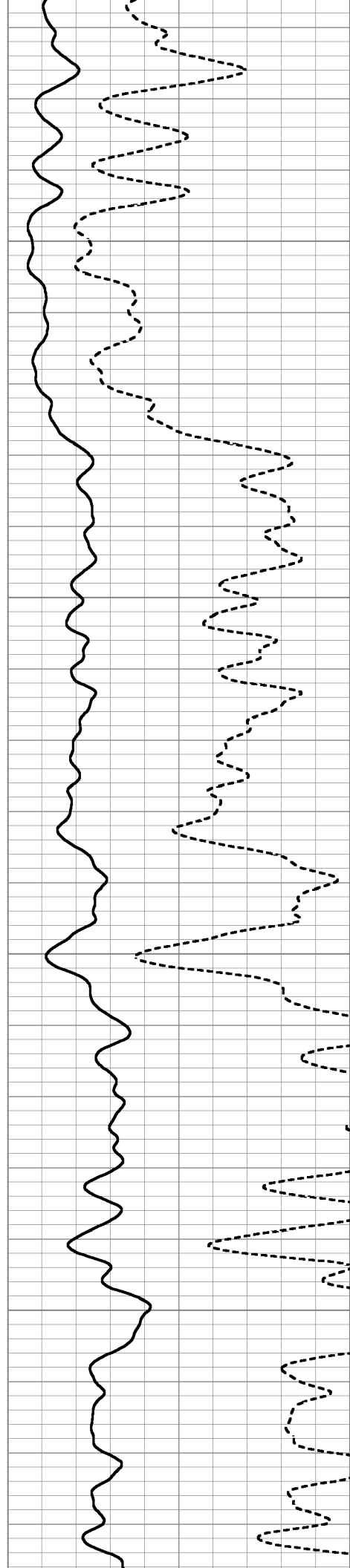


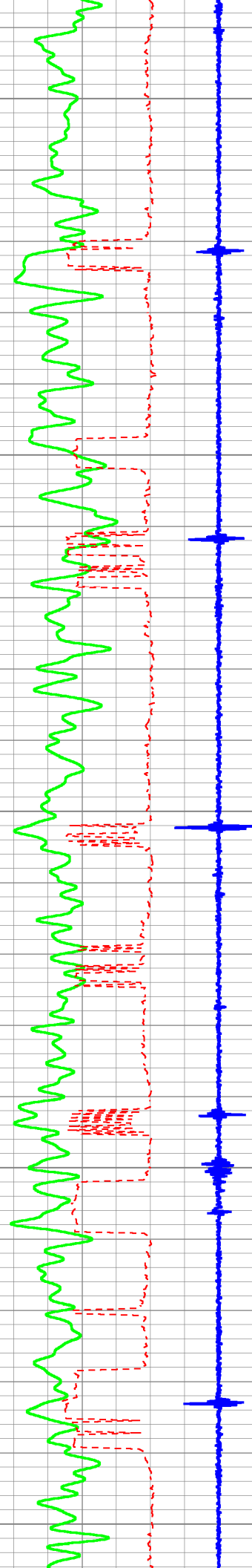
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2000

2050

2100





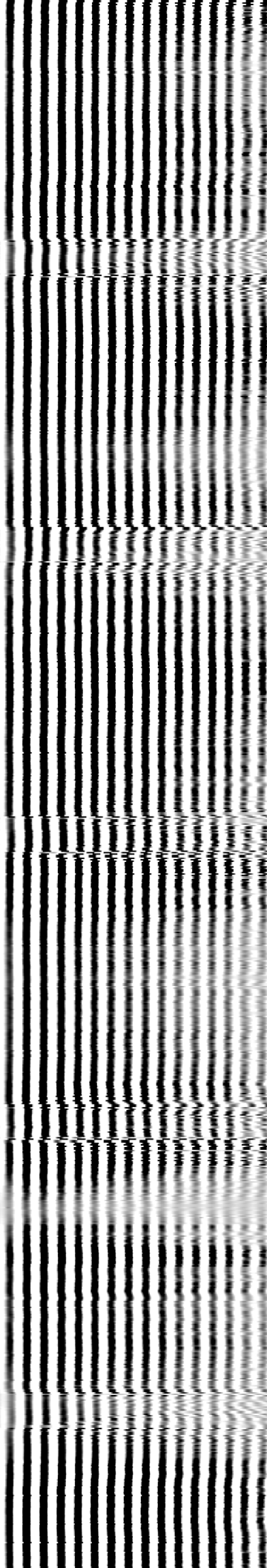
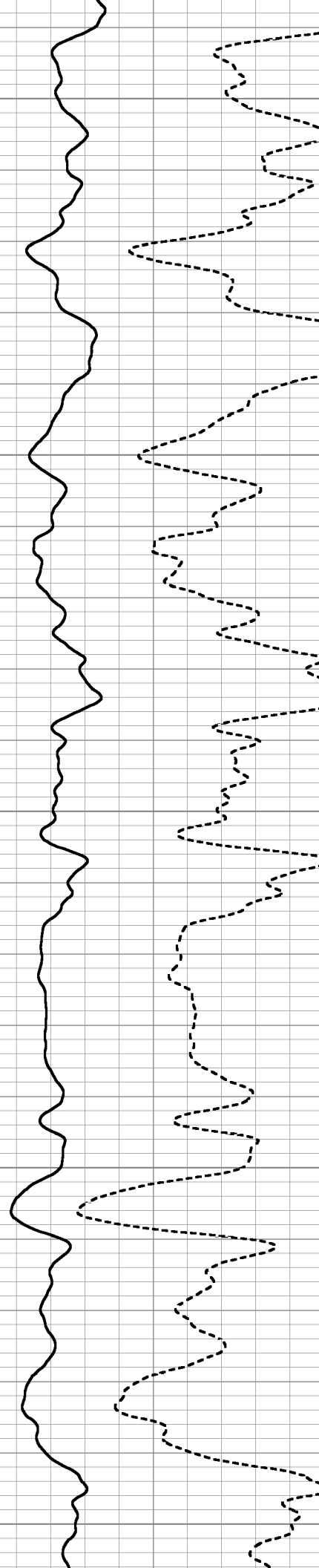
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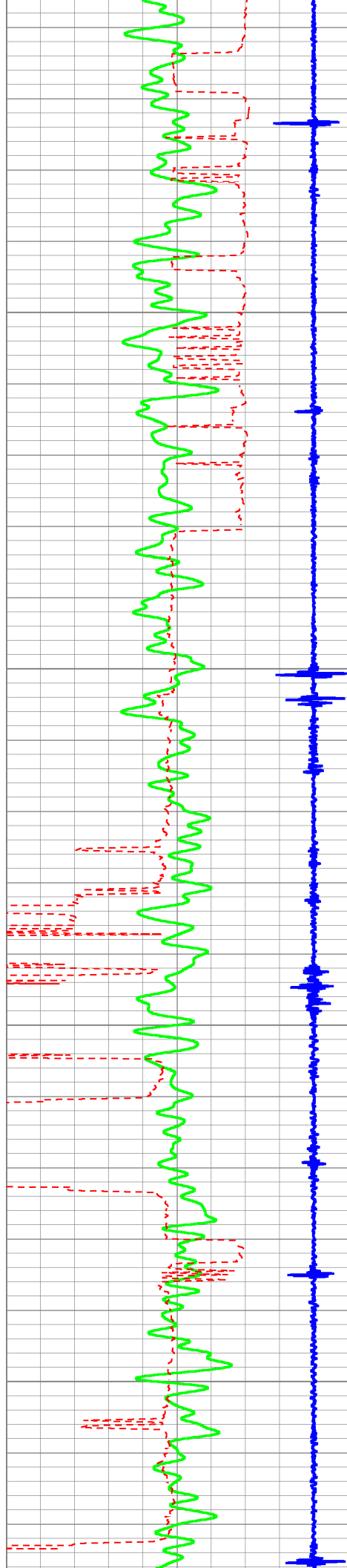
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2250

2300

2350



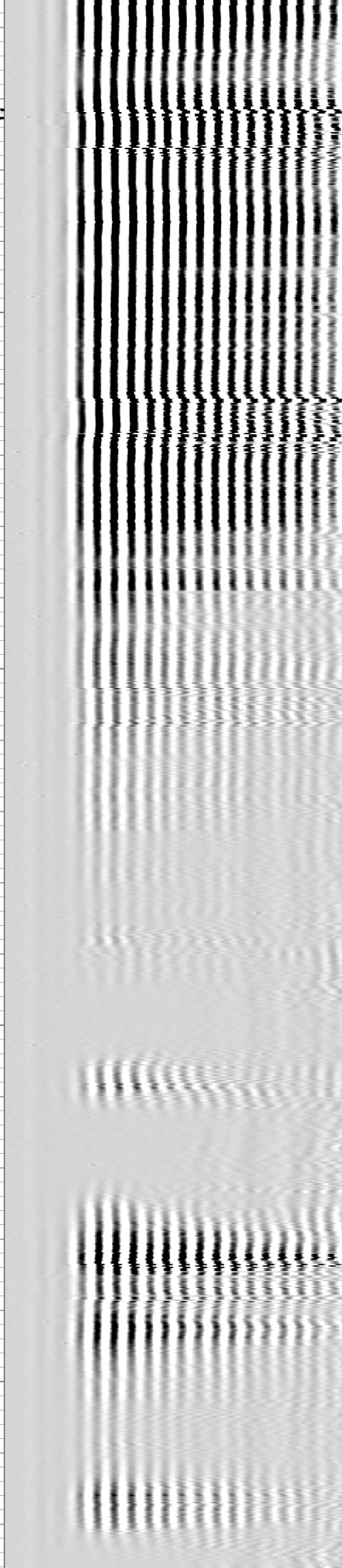
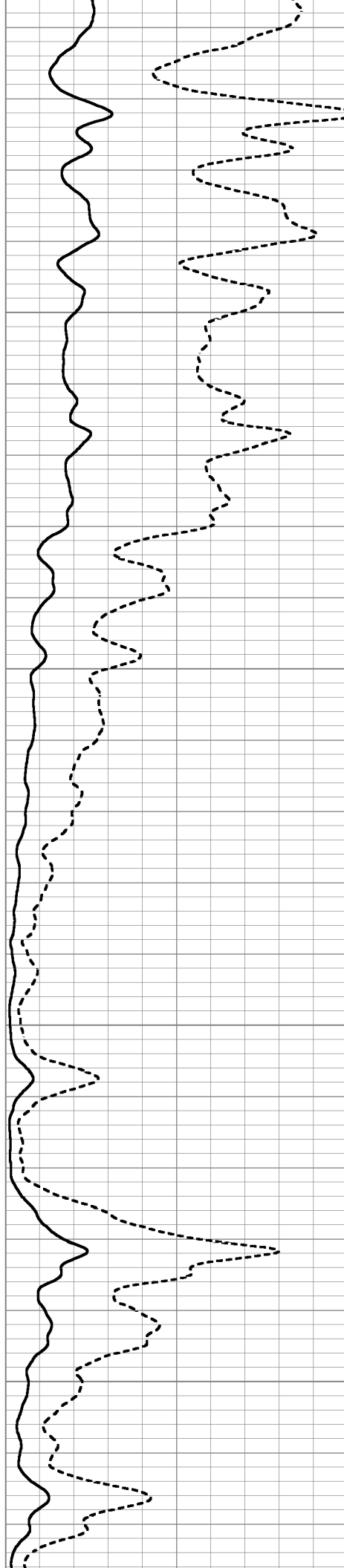


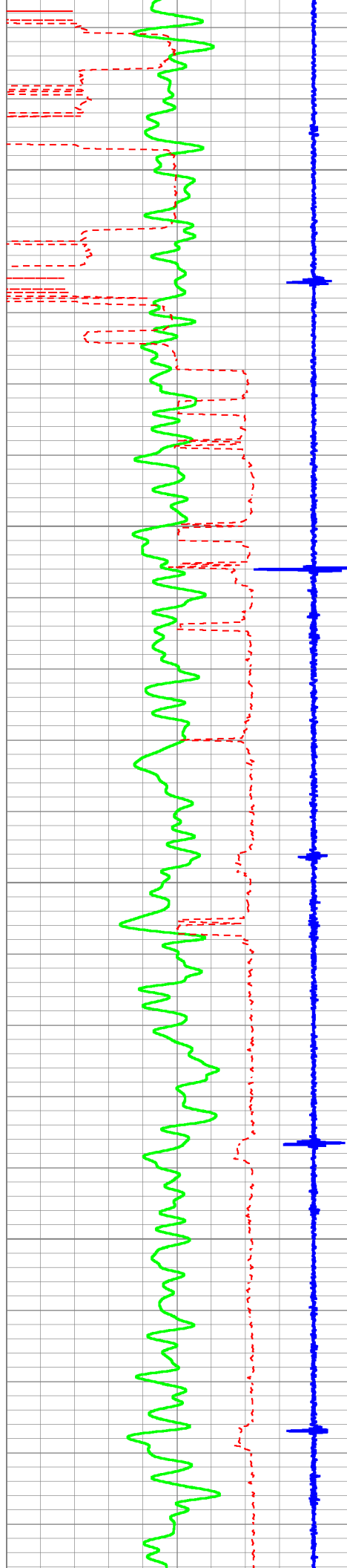
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2450

2500

2550



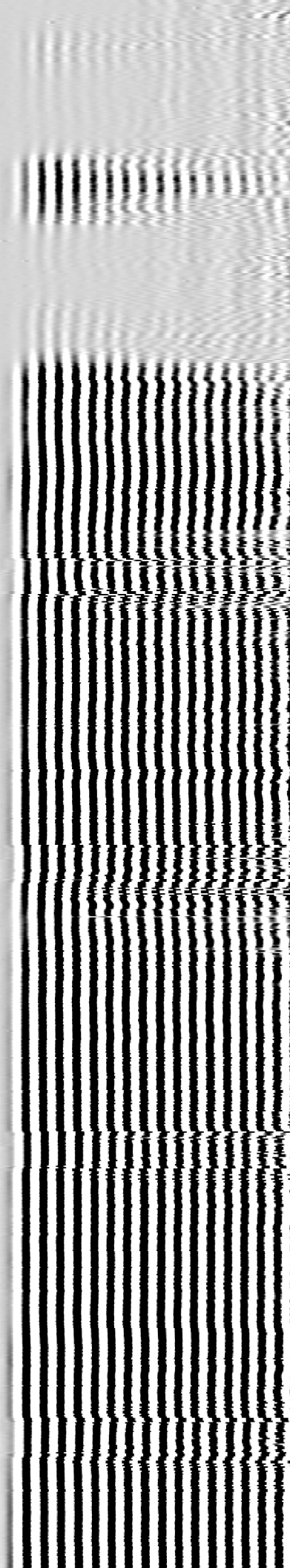
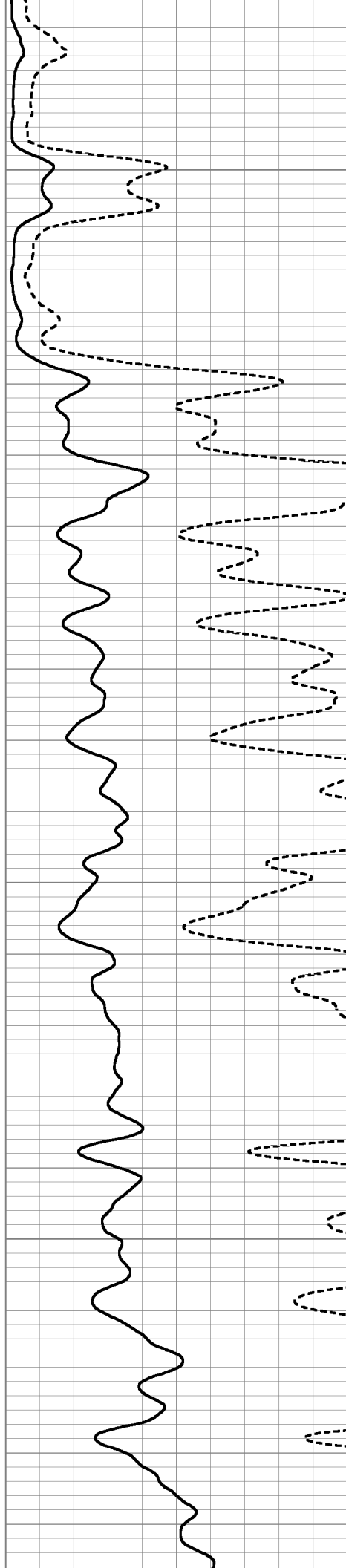


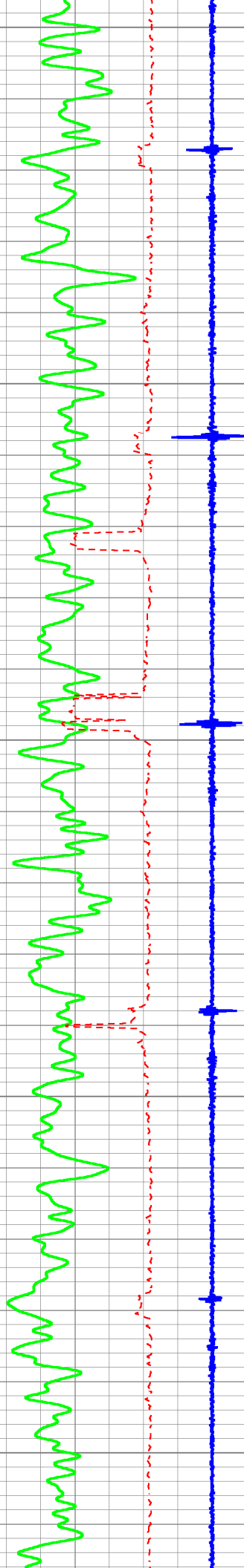
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2750





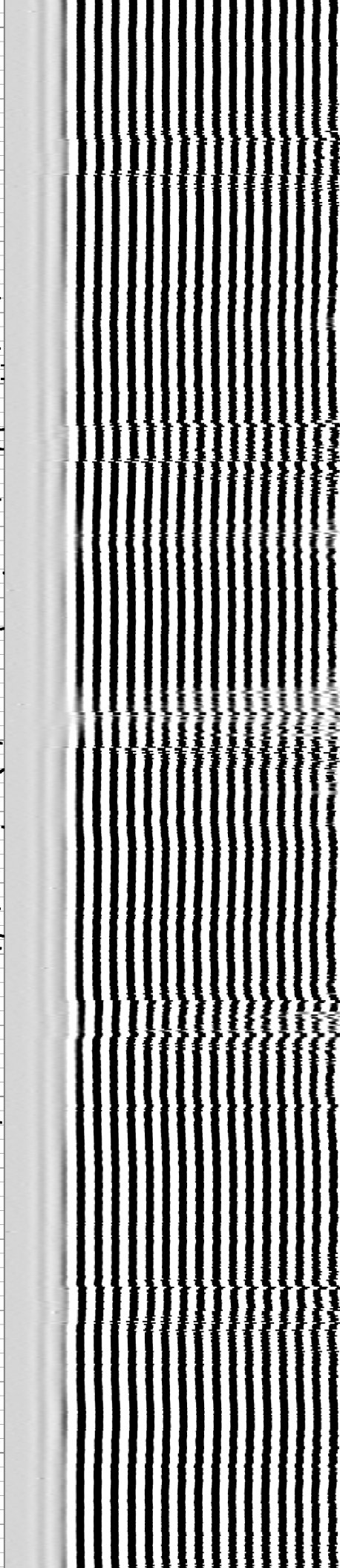
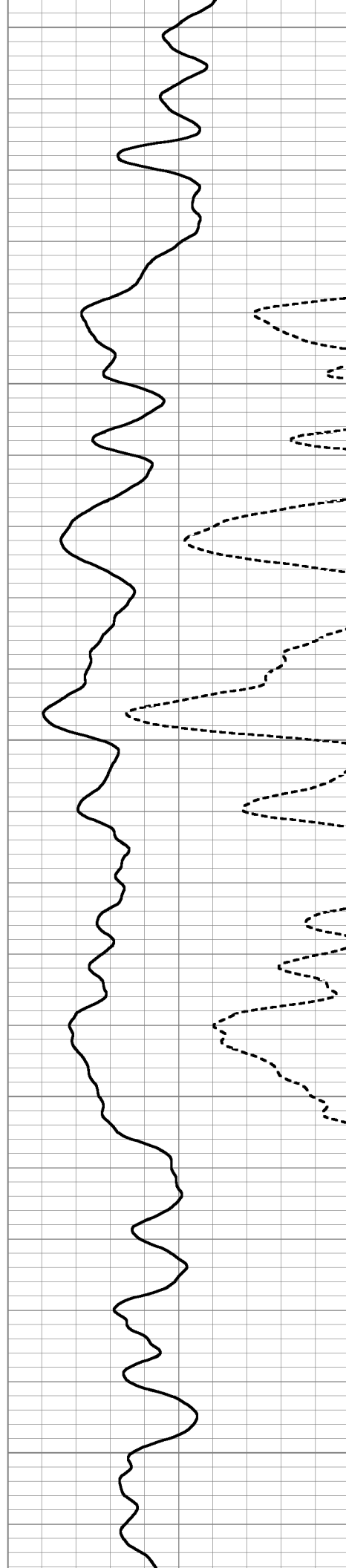
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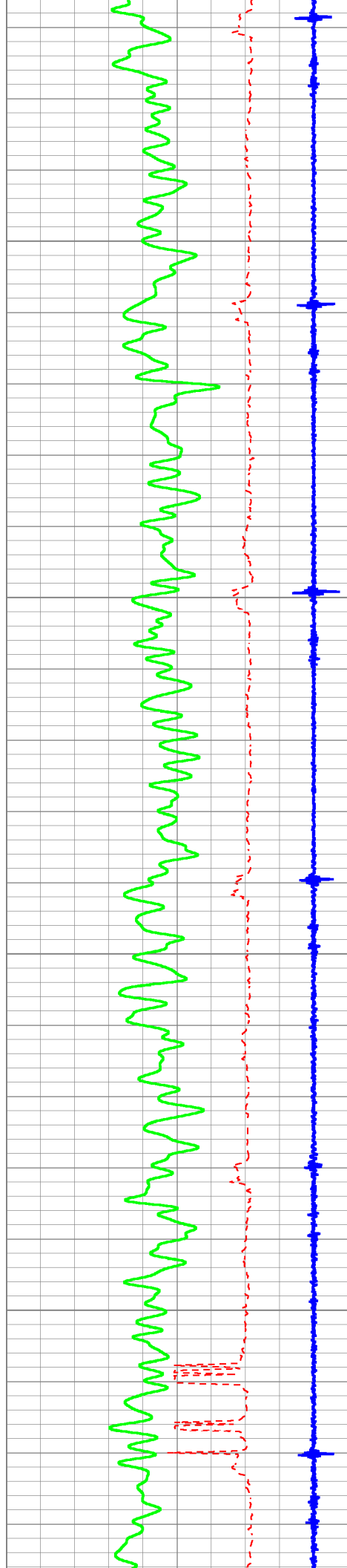
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2900

2950

3000



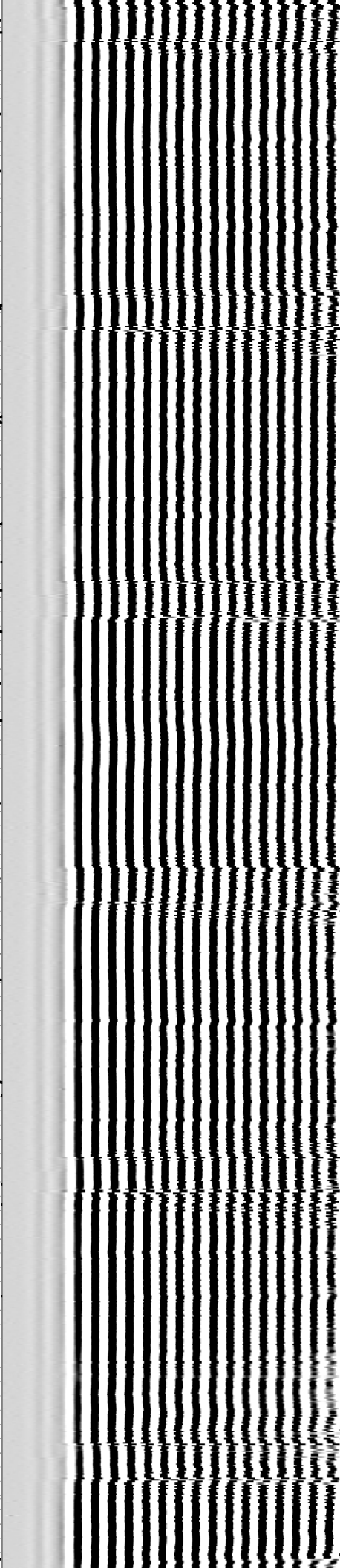
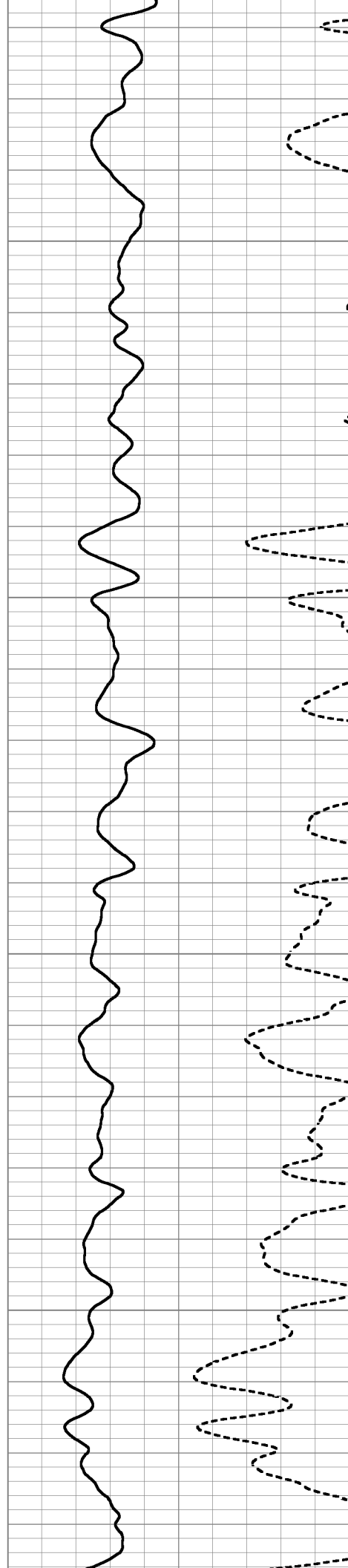


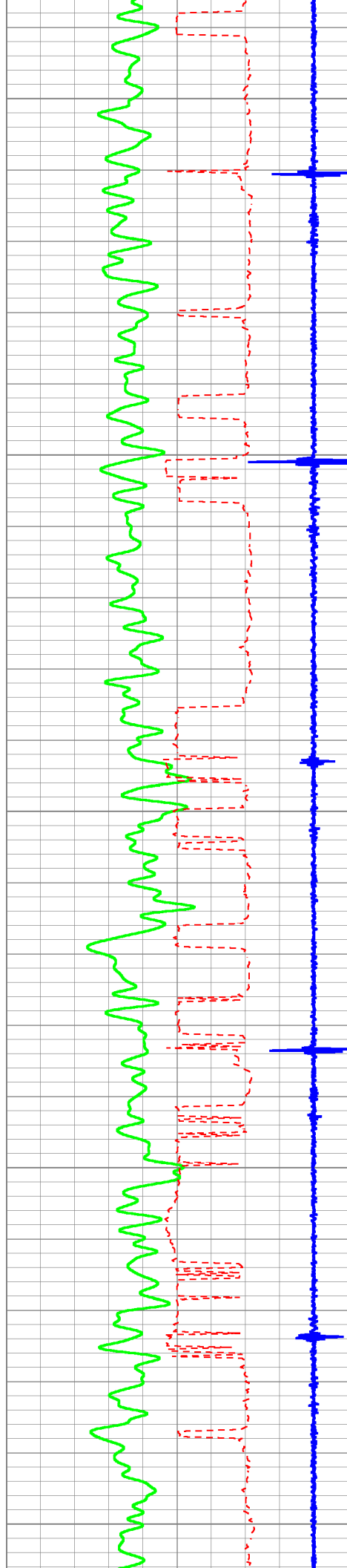
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3100

3150

3200





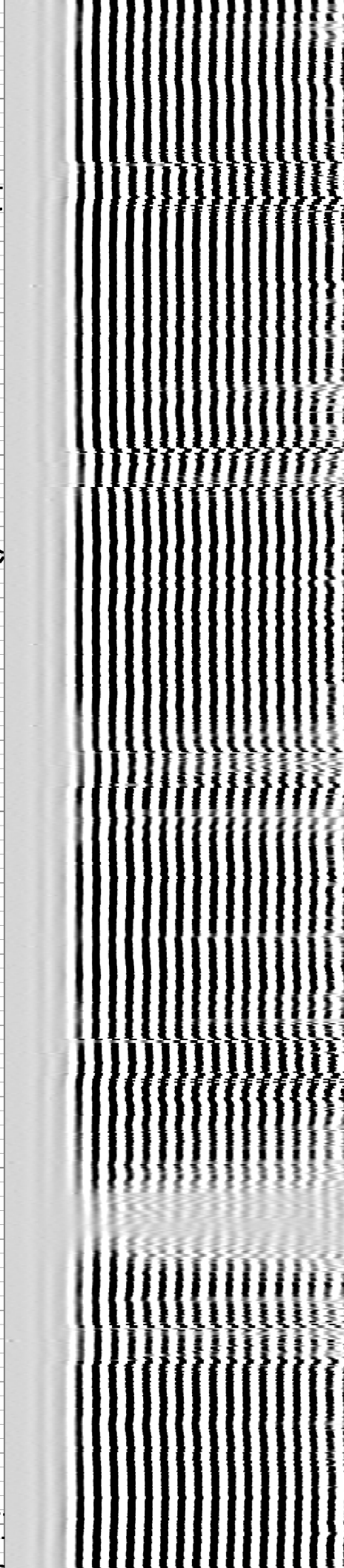
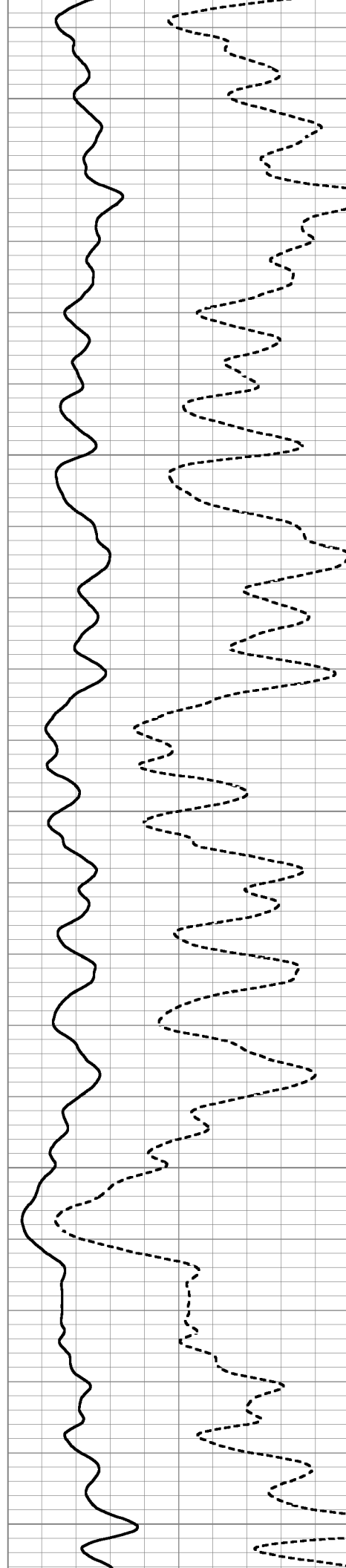
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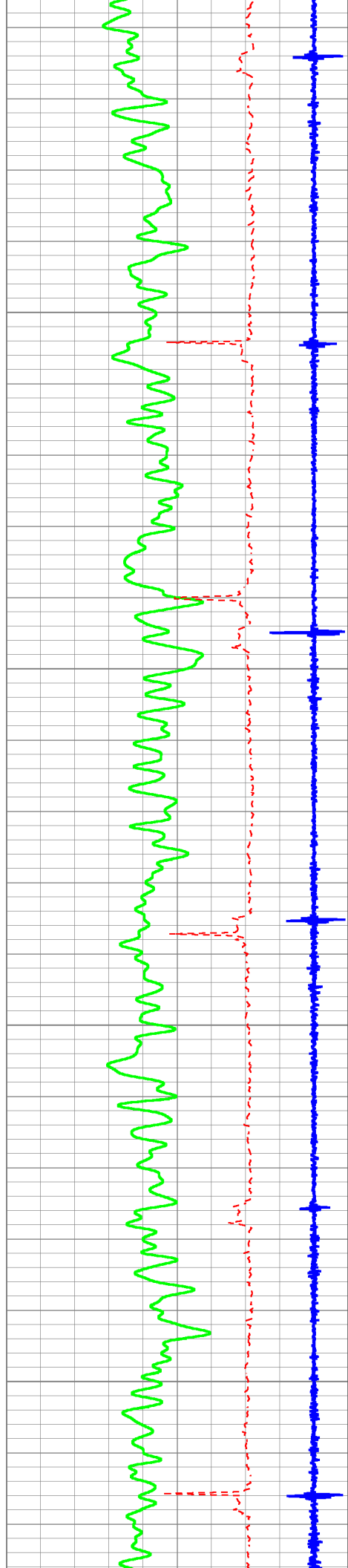
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3400

3450



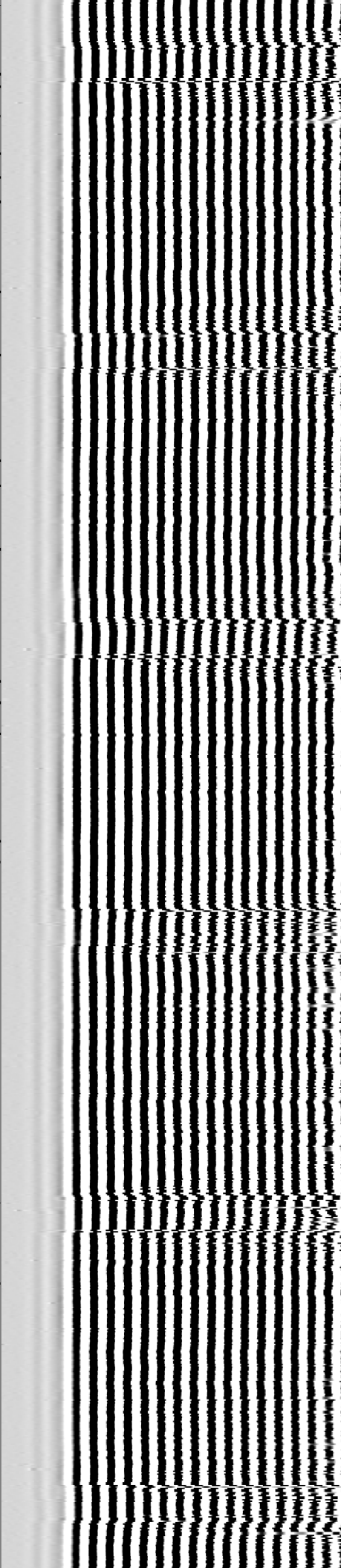
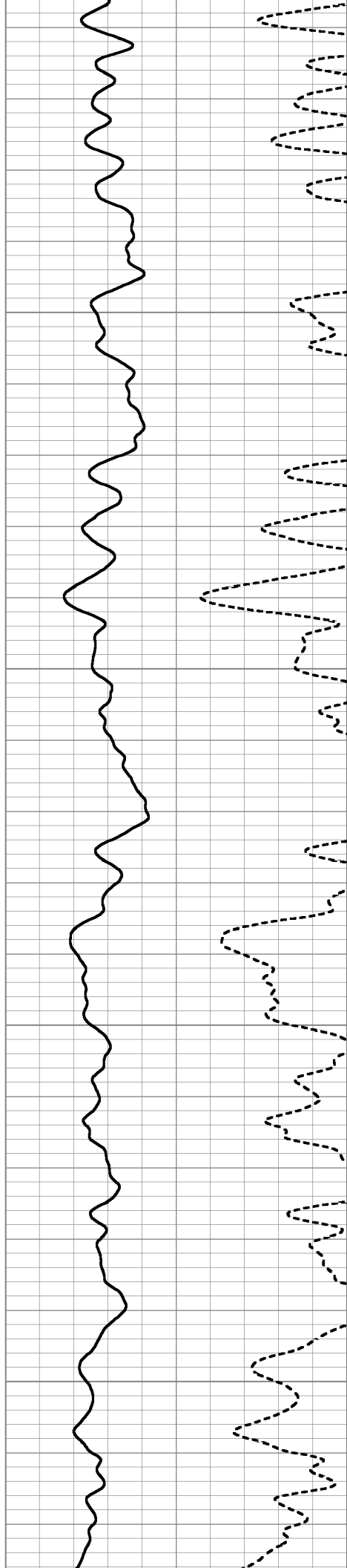


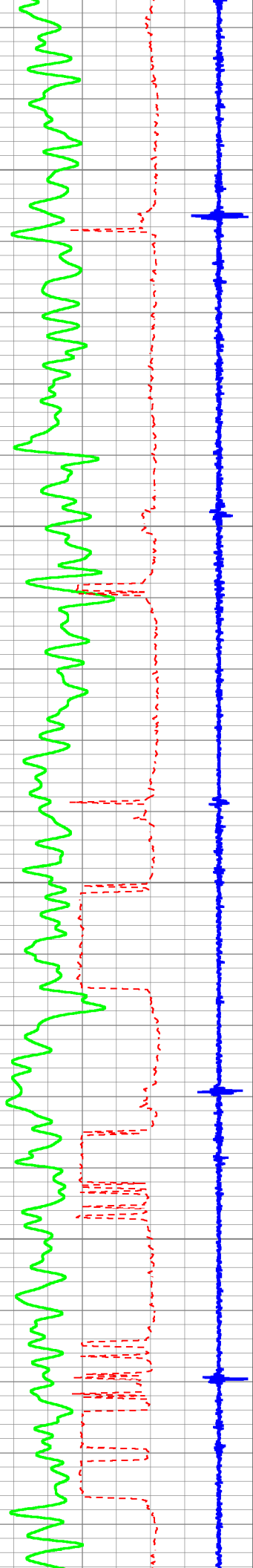
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3650



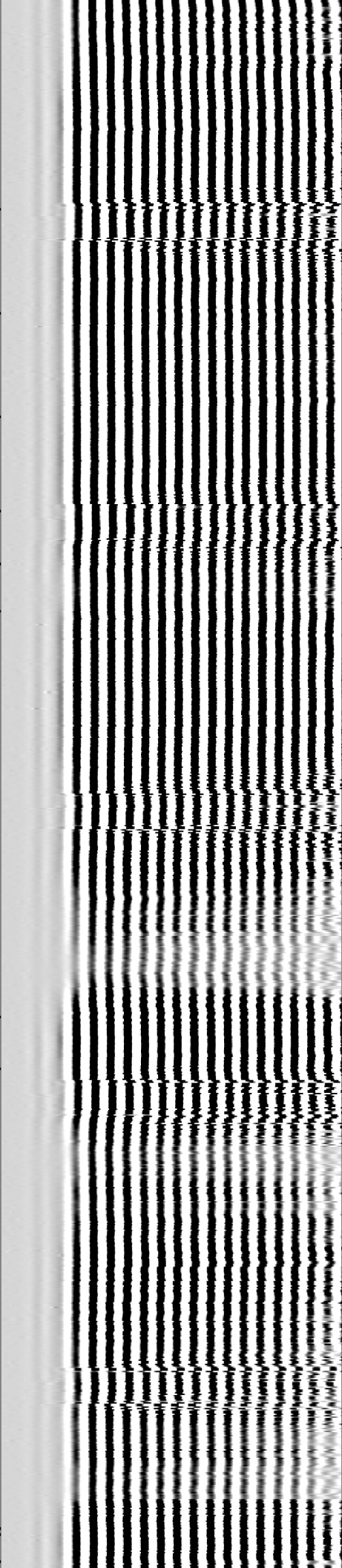
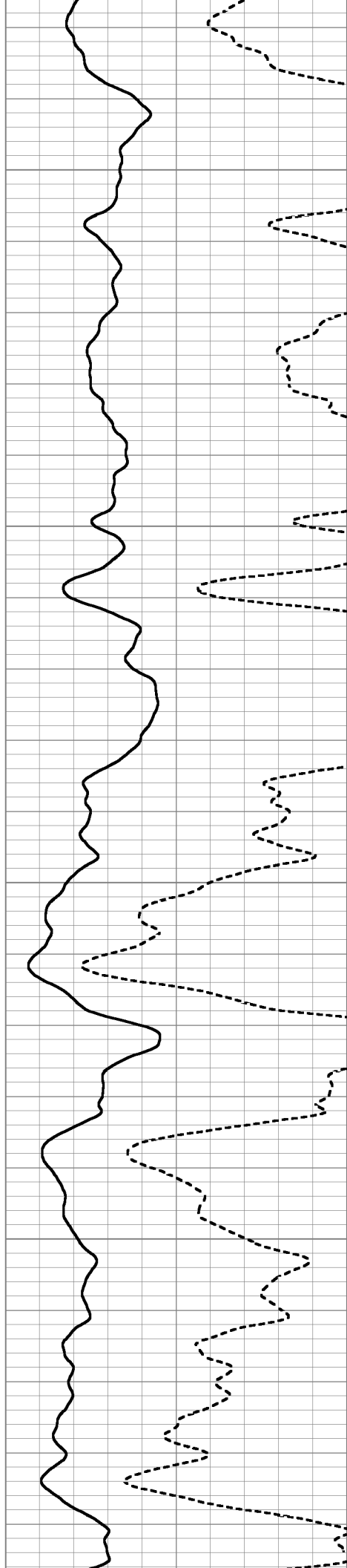


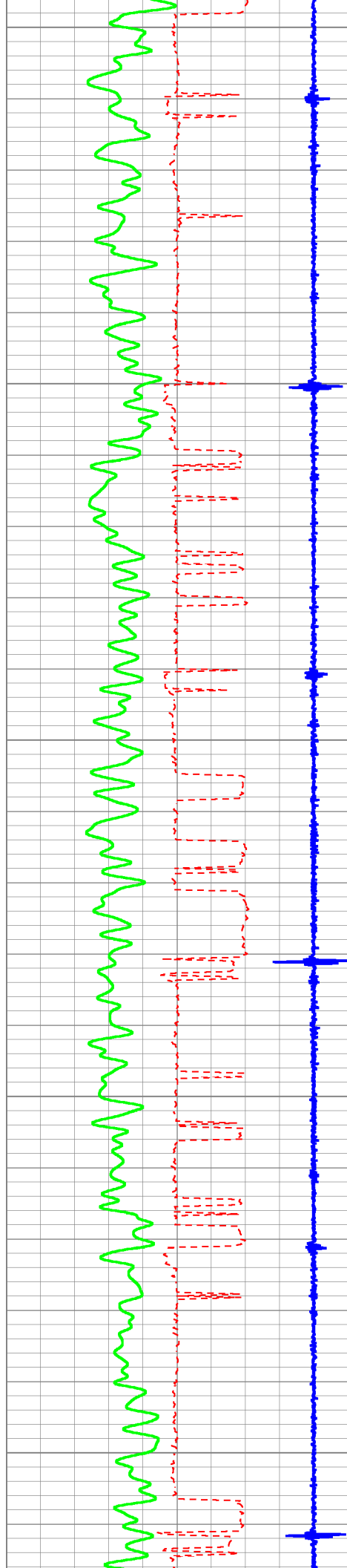
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3850





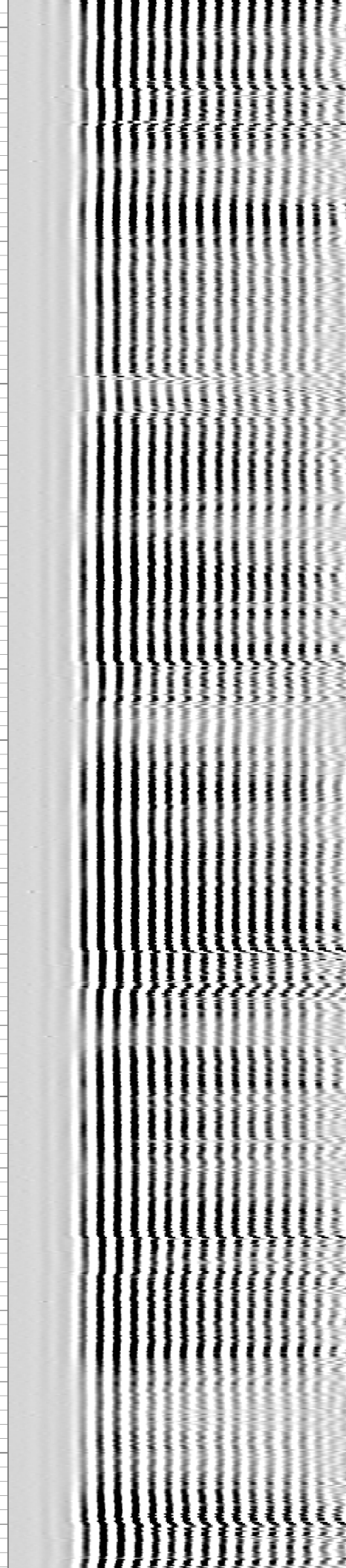
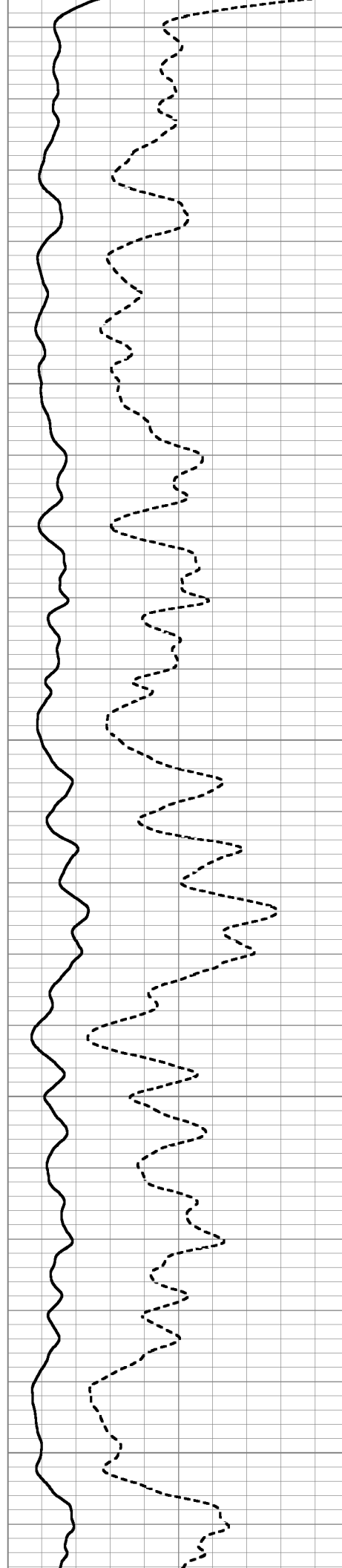
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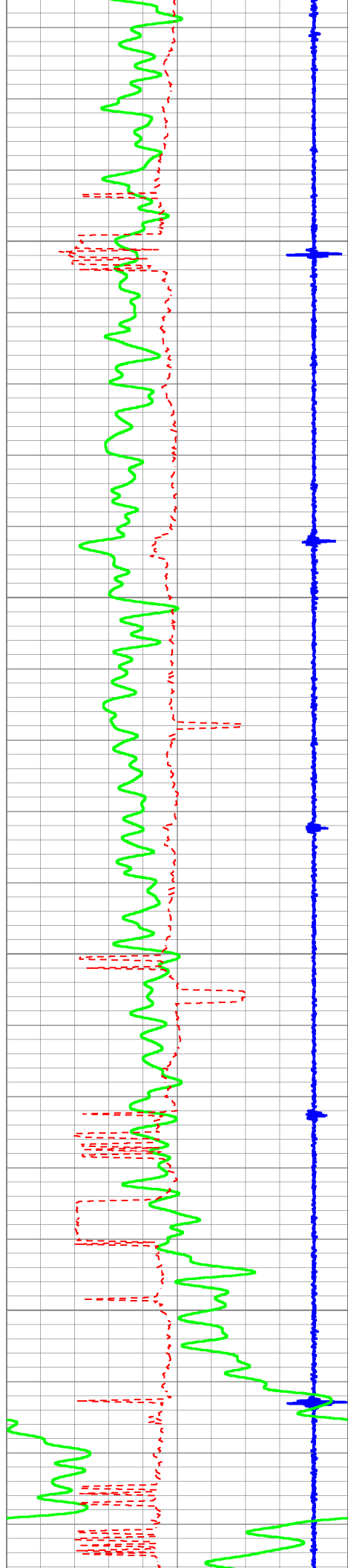
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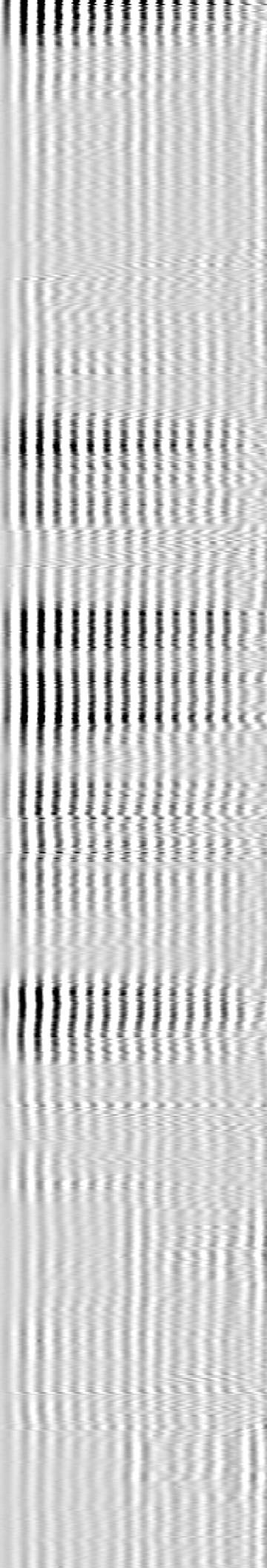
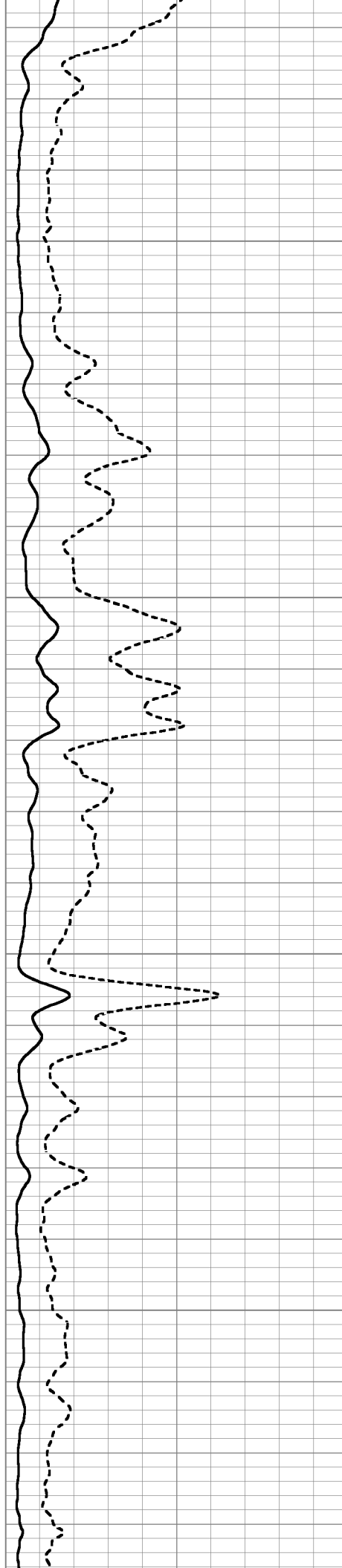


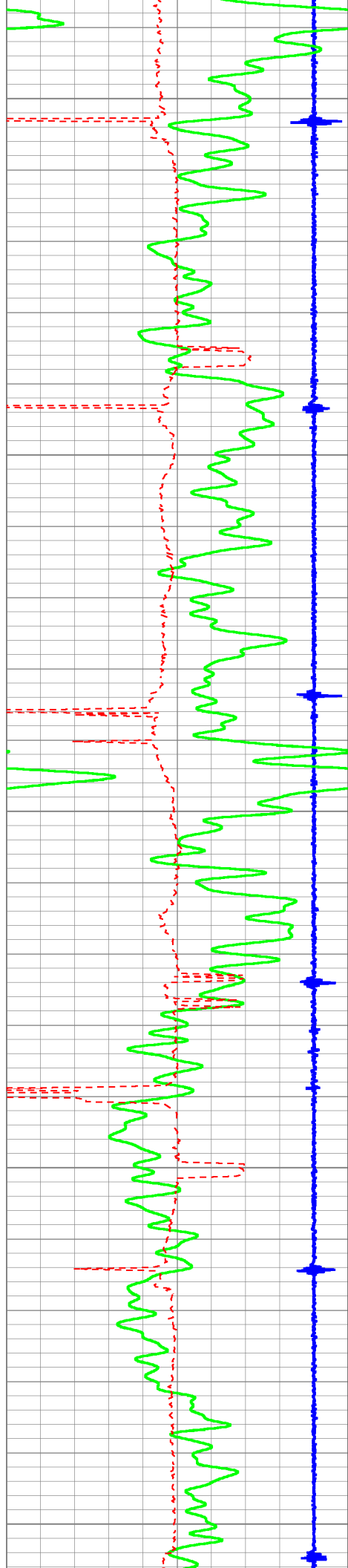
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4300





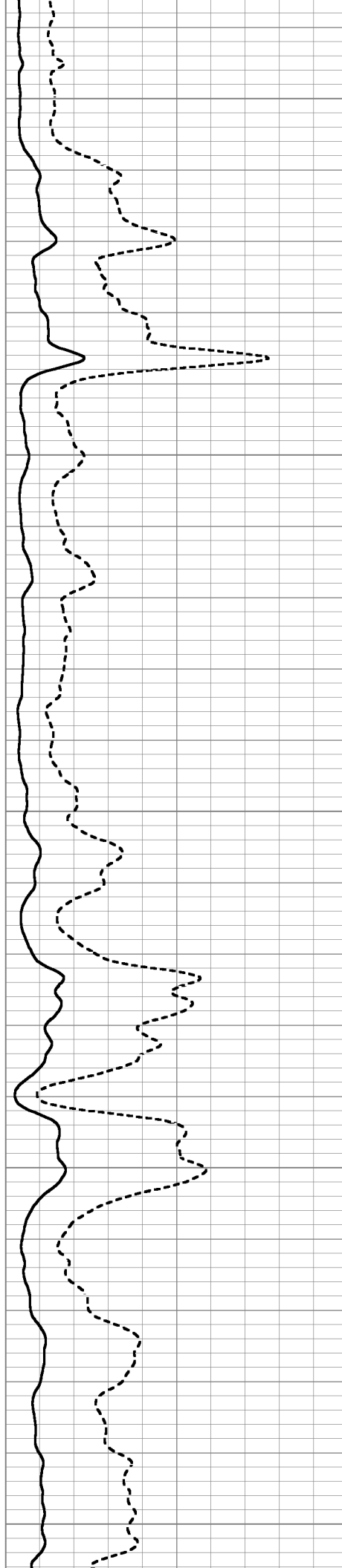
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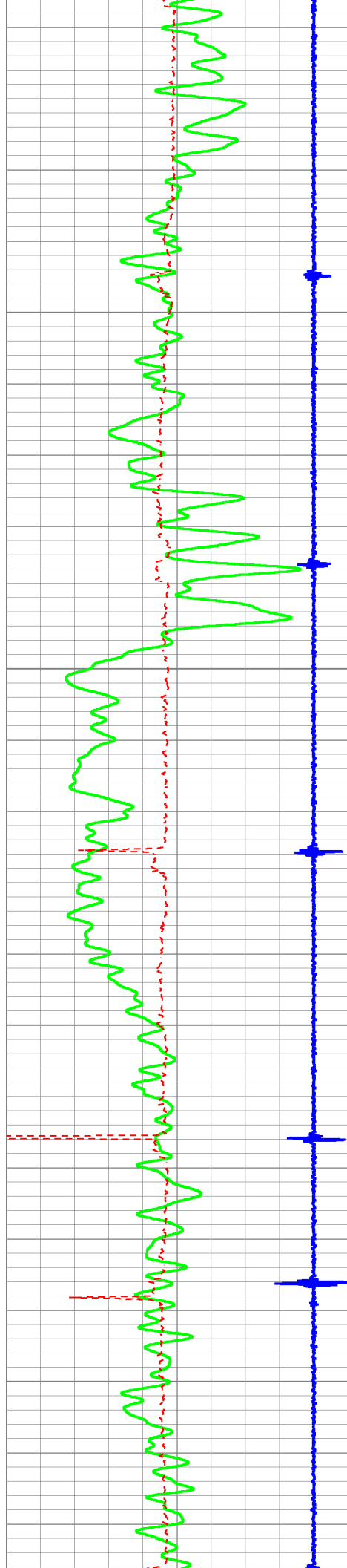
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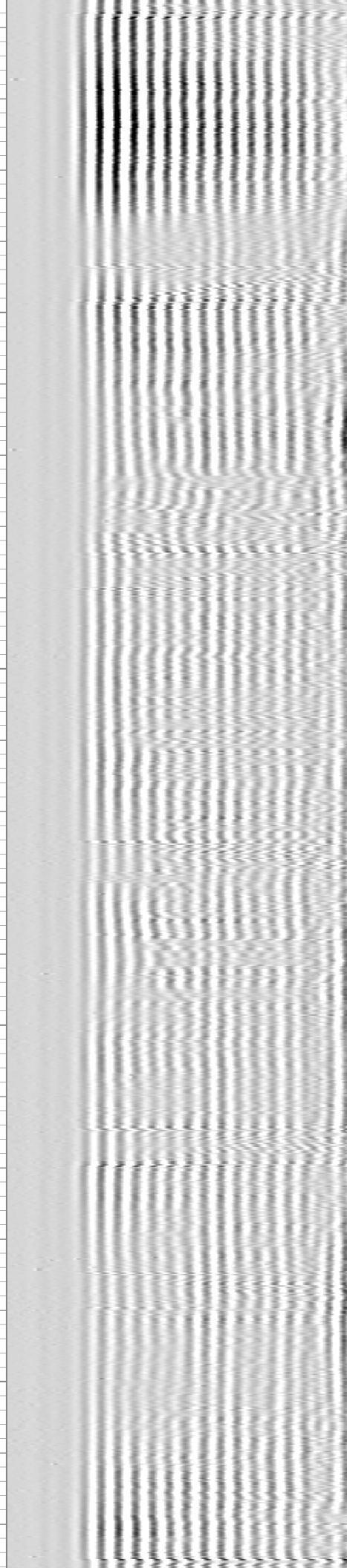
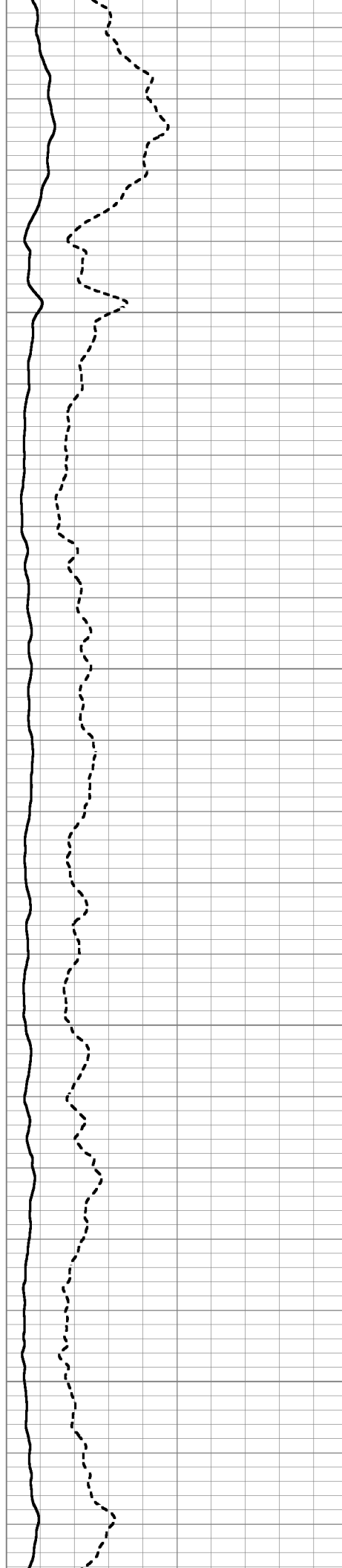


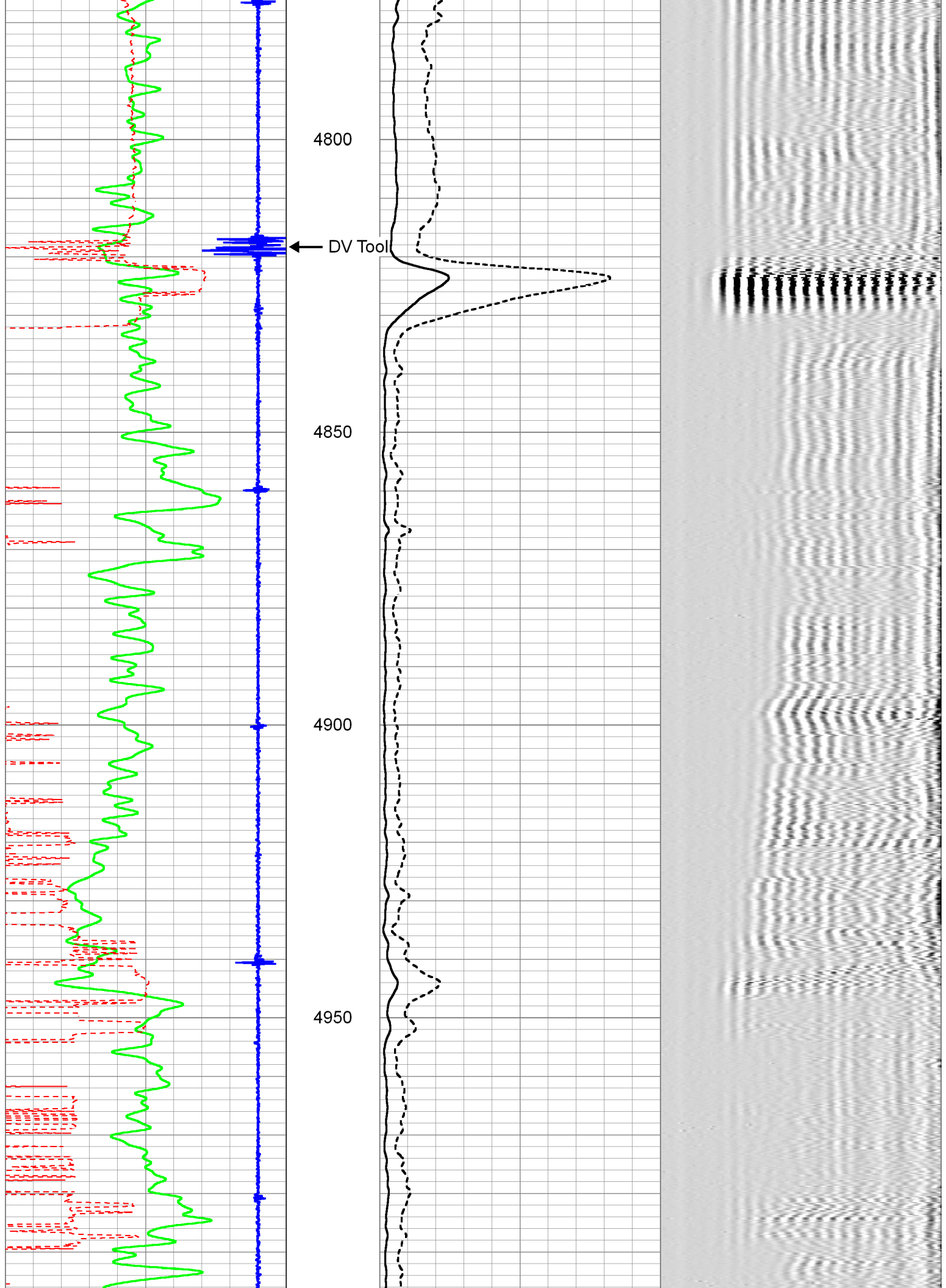
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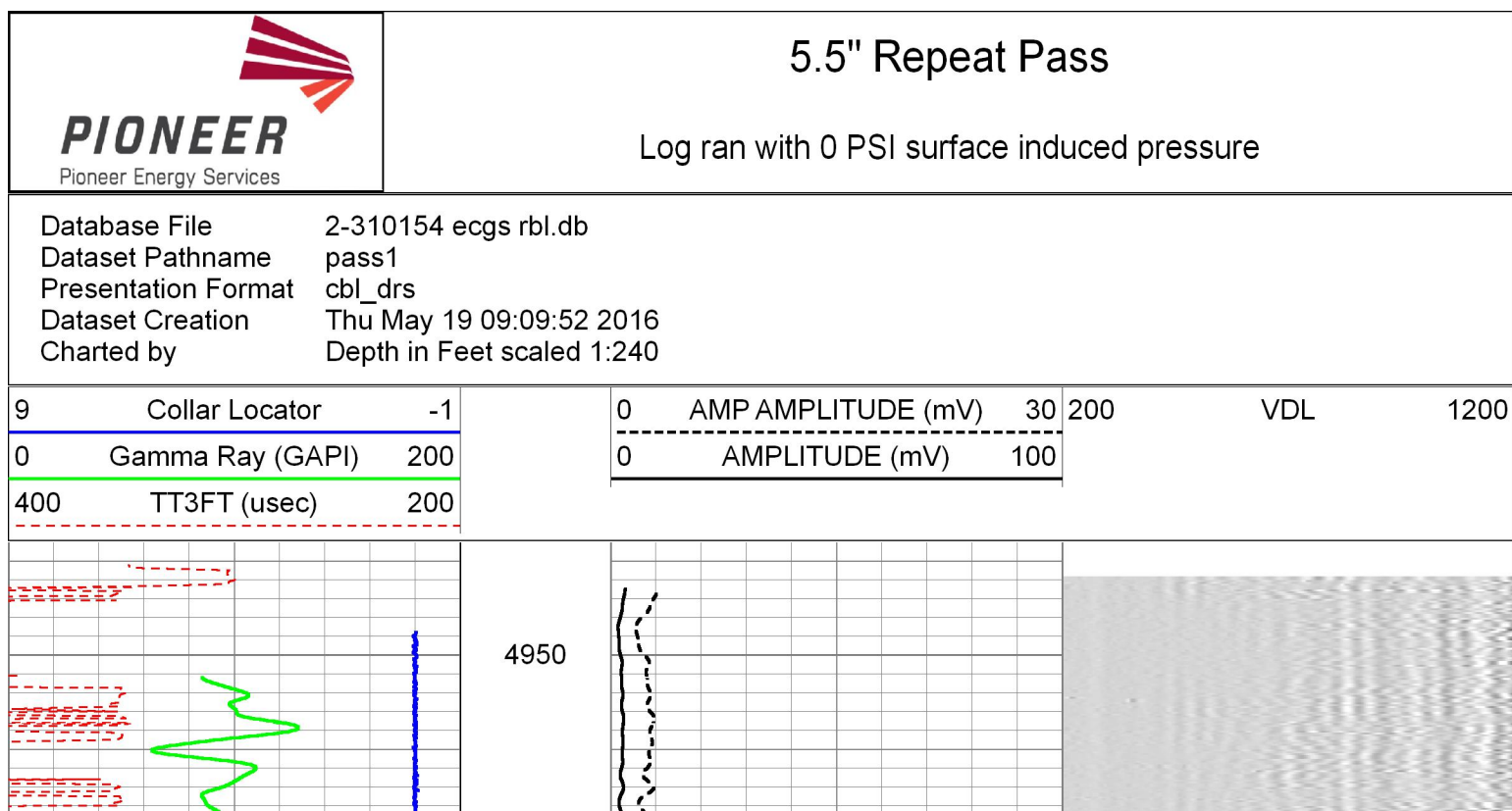
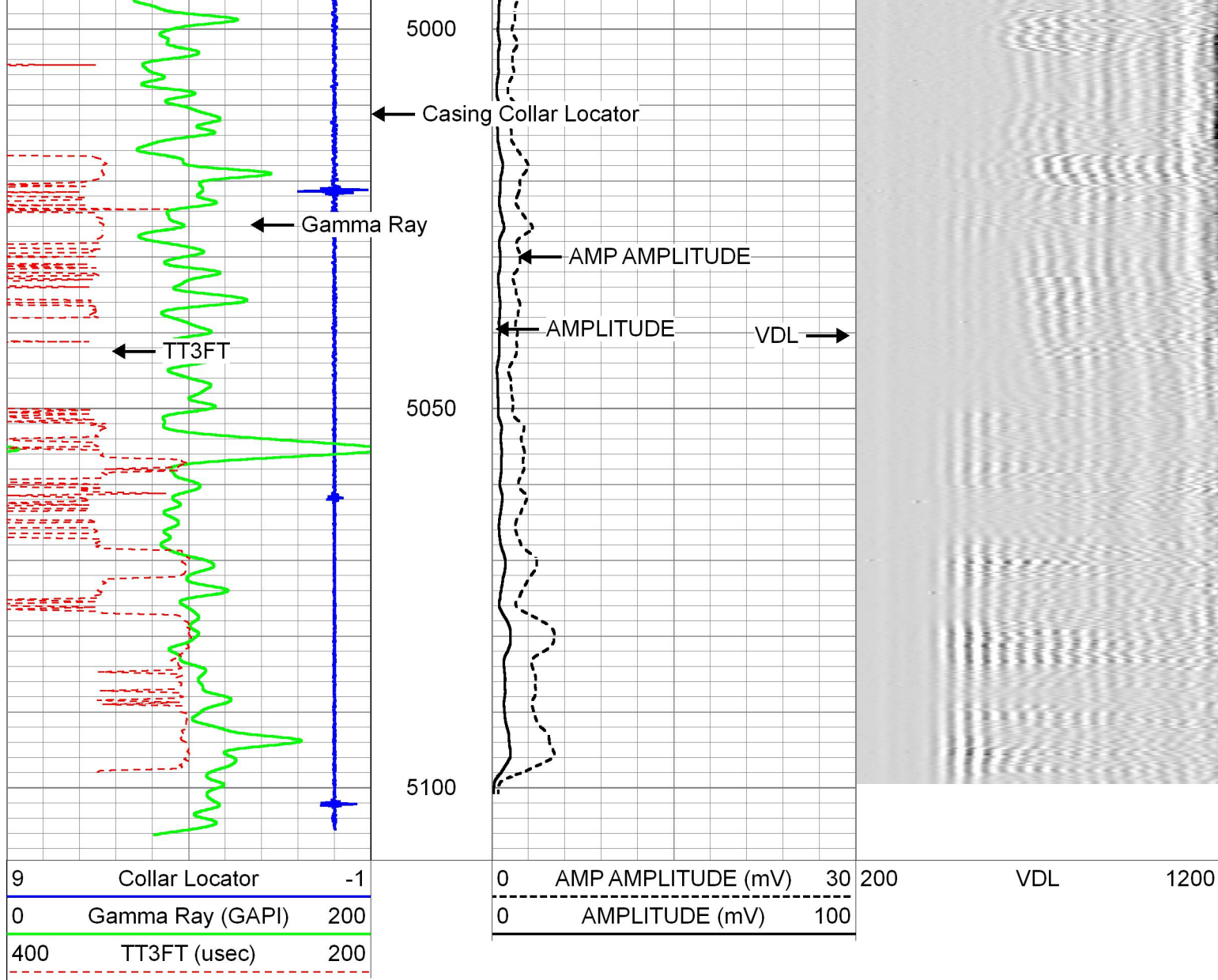
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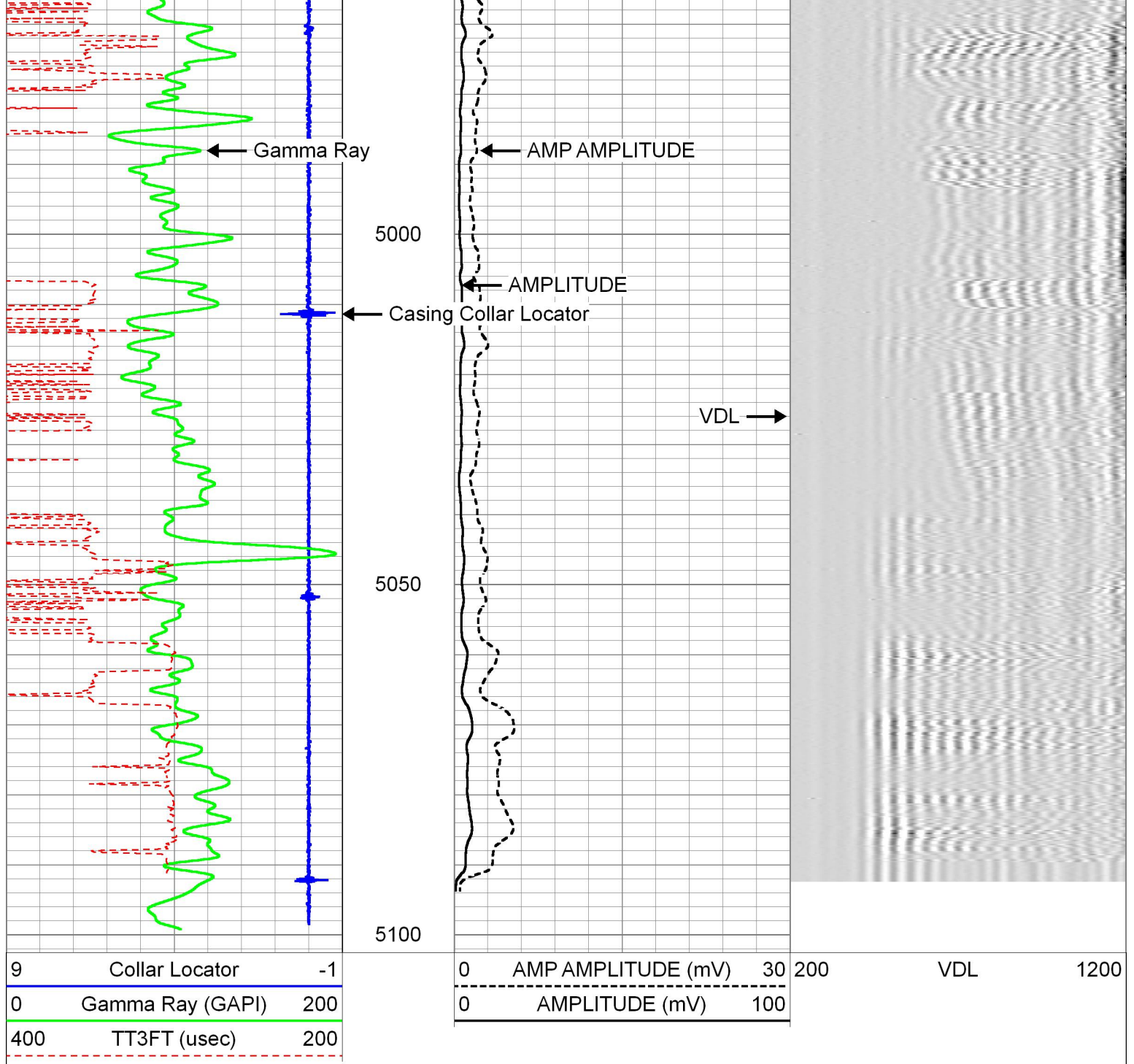
4700

4750









### Calibration Report

Database File 2-310154 ecgs rbl.db  
 Dataset Pathname pass2  
 Dataset Creation Thu May 19 09:14:04 2016

### Gamma Ray Calibration Report

Serial Number: FW1408-106  
 Tool Model: 275 Probe GR-CCL Corrosion  
 Performed: Thu May 19 08:54:09 2016

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

## Segmented Cement Bond Log Calibration Report

Serial Number: 070230  
 Tool Model: 275 Probe w Temp New Mod

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 927.575 ft

Master Calibration, performed Thu May 19 08:46:48 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.006	0.973	1.000	71.921	73.364	0.541
CAL	0.005	1.000				
5'	0.002	0.879	1.000	71.921	80.879	0.823
SUM						
S1	0.021	0.951	0.000	100.000	107.502	-2.232
S2	0.008	0.953	0.000	100.000	105.766	-0.840
S3	0.005	0.959	0.000	100.000	104.855	-0.575
S4	0.006	0.975	0.000	100.000	103.243	-0.616
S5	0.007	0.961	0.000	100.000	104.752	-0.693
S6	0.006	0.968	0.000	100.000	104.020	-0.668
S7	0.006	0.962	0.000	100.000	104.605	-0.645
S8	0.006	0.962	0.000	100.000	104.687	-0.665

## Temperature Calibration Report

Serial Number: 070230  
 Tool Model: 275 Probe w Temp New Mod  
 Performed: Thu Oct 29 10:31:02 2015

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



Company EAST CHEYENNE GAS STORAGE  
 Well DOROTHY STRANGE #1 WP-DO11  
 Field WEST PEETZ  
 County LOGAN  
 State COLORADO