

County: RIO BLANCO

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Company: EXXON MOBIL CORPORATION

Well: PCU 296-6A8

Field: PICEANCE CREEK

County: RIO BLANCO

State: CO

Location: 485' FSL & 1908' FWL

Well: PCU 296-6A8

Company: EXXON MOBIL CORPORATION

CORRELATION PRINT
GAMMA RAY
CASING COLLAR LOCATOR

LOCATION		485' FSL & 1908' FWL		Elev.: K.B. 7393.00 ft G.L. 7366.00 ft D.F. 7392.00 ft	
Permanent Datum:	GROUND LEVEL	Elev.: 7366.00 ft			
Log Measured From:	KELLY BUSHING	27.00 ft above Perm. Datum			
Drilling Measured From:	KELLY BUSHING				
API Serial No. 051031147900	Section 6	Township 2S	Range 96W		

Logging Date 18-May-2010

Run Number 1

Depth Driller 9742 ft

Schlumberger Depth 9600 ft

Bottom Log Interval 9600 ft

Top Log Interval 3500 ft

Casing Fluid Type WBM

Fluidity

Density 11.5 lbm/gal

Fluid Level 10 ft

BIT/CASING/TUBING STRING

Size 9.875 in

From 4431 ft

To 9742 ft

Casing/Tubing Size 7.000 in

Weight 26 lbm/ft

Grade

From 0 ft

To 9742 ft

Maximum Recorded Temperatures 184 degF

Logger On Bottom 18-May-2010

Unit Number 2379

Location VERNAL

Recorded By RYAN STEWART

Witnessed By ADAM SIEGEL

PVT DATA

Oil Density

Water Salinity

Gas Gravity

Bo

Bw

1/Bg

Bubble Point Pressure

Bubble Point Temperature

Solution GOR

Maximum Deviation

CEMENTING DATA

Primary/Squeeze

Casing String No

Lead Cement Type

Volume

Density

Water Loss

Additives

Tail Cement Type

Volume

Density

Water Loss

Additives

Expected Cement Top

Logging Date

Run Number

Depth Driller

Schlumberger Depth

Bottom Log Interval

Top Log Interval

Casing Fluid Type

Salinity

Density

Fluid Level

BIT/CASING/TUBING STRING

Bit Size

From

To

Casing/Tubing Size

Weight

Grade

From

To

Maximum Recorded Temperatures

Logger On Bottom

Unit Number

Location

Recorded By

Witnessed By

Run 1

Run 2

Run 3

DEPTH SUMMARY LISTING

Date Created: 18-MAY-2010 12:22:17

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46V XS
Serial Number:	6214	Serial Number:	8093	Serial Number:	709025
Calibration Date:	26-JAN-2010	Calibration Date:	30-APR-201	Length:	29167 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	100518	Conveyance Method: Wireline Rig Type: LAND	
Calibration Cable Type:	7-46P	Number of Calibration Points:	10		
Wheel Correction 1:	-8	Calibration RMS:	3		
Wheel Correction 2:	-7	Calibration Peak Error:	32		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	327.50 FT
Rig Up Length At Bottom:	326.90 FT
Rig Up Length Correction:	0.60 FT
Stretch Correction:	6.00 FT
Tool Zero Check At Surface:	0.40 FT

Depth Control Remarks

1. ALL SCHUMBERGER DEPTH POLICIES FOLLOWED
2. IDW USED AS PRIMARY METHOD OF DEPTH CONTROL; Z-CHART AS SECONDAR
3.
4.
5.
6.


DISCLAIMER

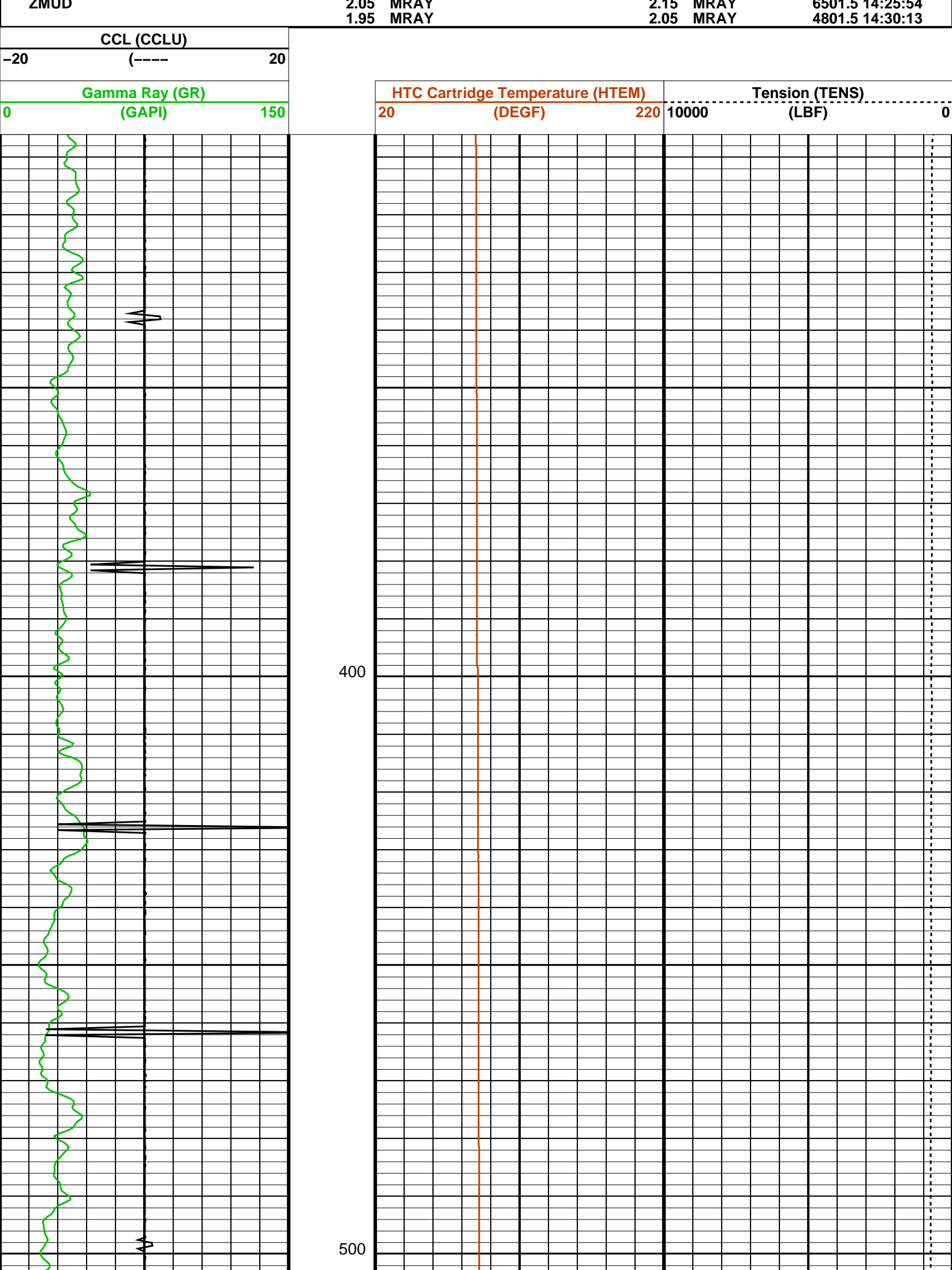
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

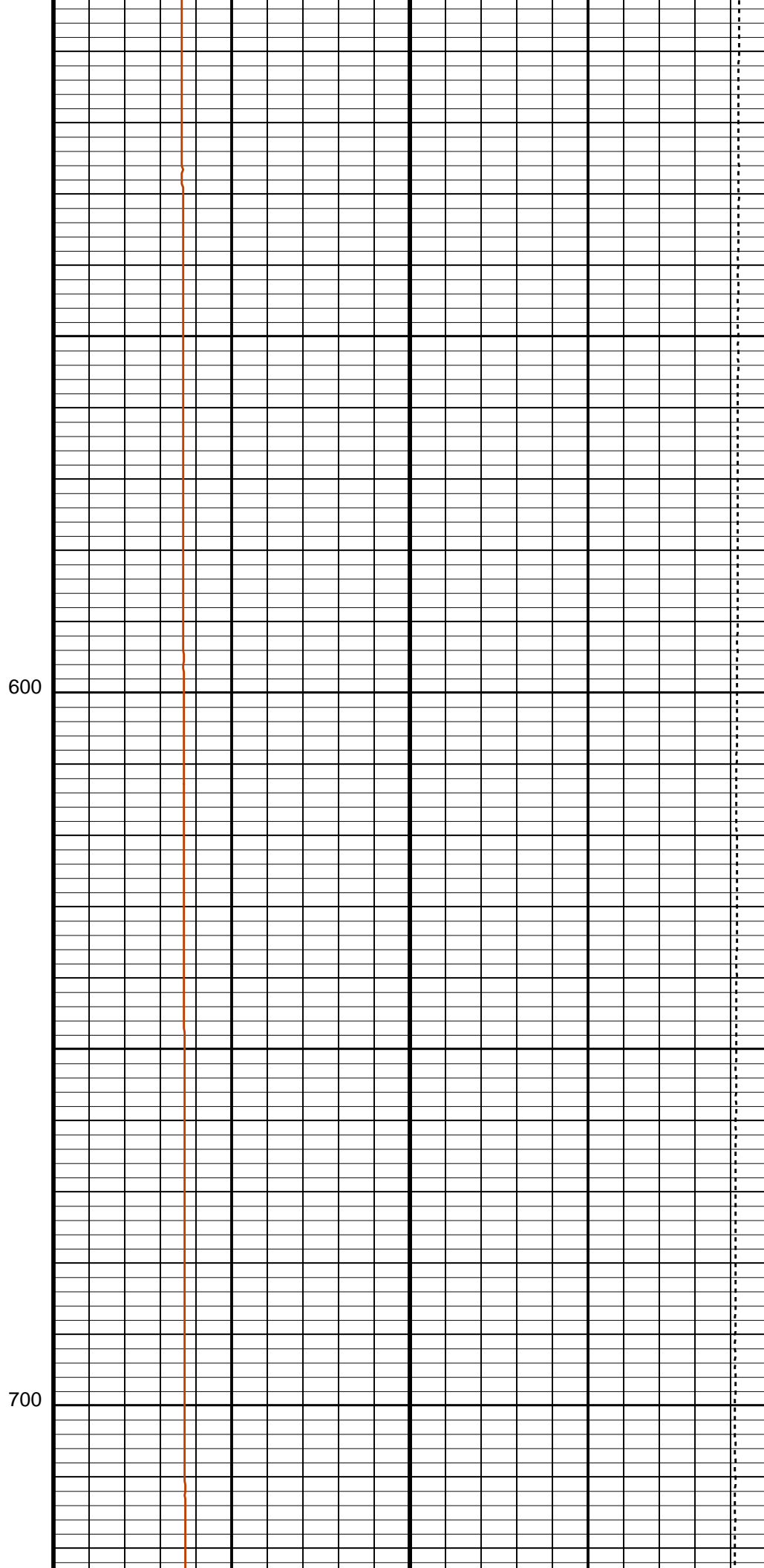
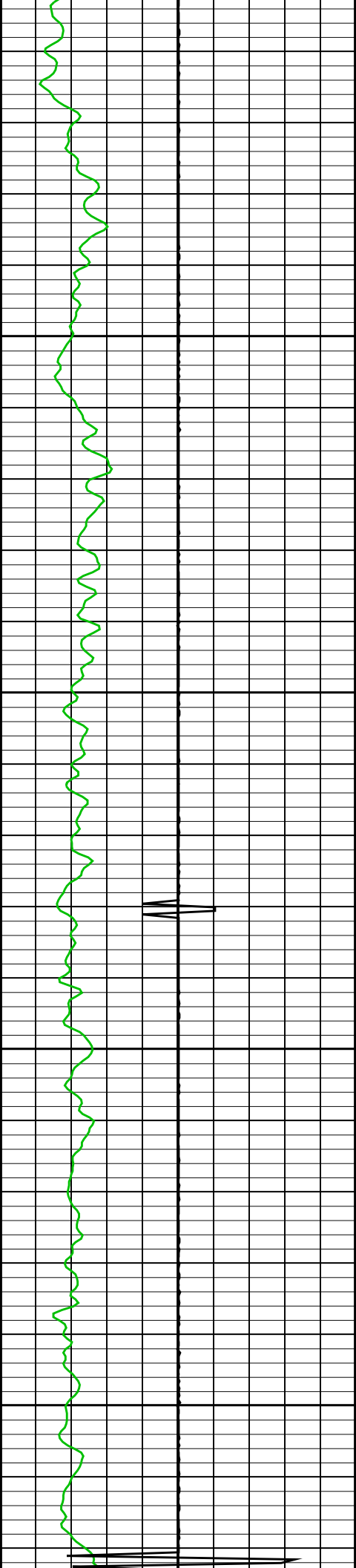
OTHER SERVICES1 OS1: NONE OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
TOOL RAN AS PER TOOL SKETCH	
TOOL CENTRALIZED USING 1 X GEMCO AND 2 X ILC	
UFAO: 8 DB/M	
EXPECTED FLEXURAL ATTENUATION IN FREE PIPE = 59 DB/M	
EXPECTED CASING ID = 6.276 INCH	
EXPECTED CASING THICKNESS = 0.362 INCH	
ECCENTERING AFFECTS NOTED ABOVE 5500 FT	
LOG CONDUCTED FROM 9600 FT TO 3500 FT AT CLIENTS REQUEST	
LOG CORRELATED TO DOWNLOG AT 9500 FT	

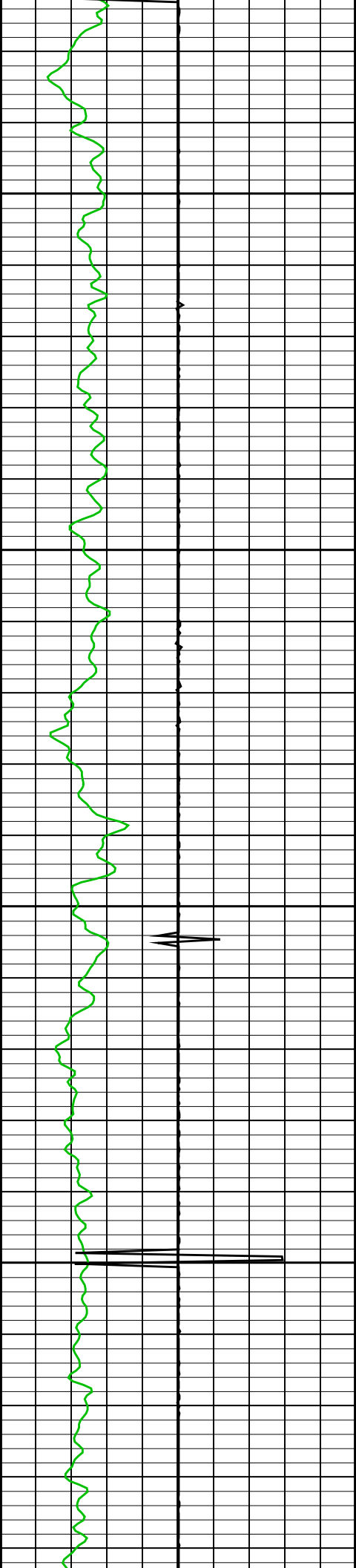


Elevation: 7366.0 ft

Production String	(in)		(ft)	Well Schematic	(ft)	(in)		Casing String
	OD	ID				MD	MD	
					0.0	7.000		Casing String
					4431.0	9.875		Borehole Segment

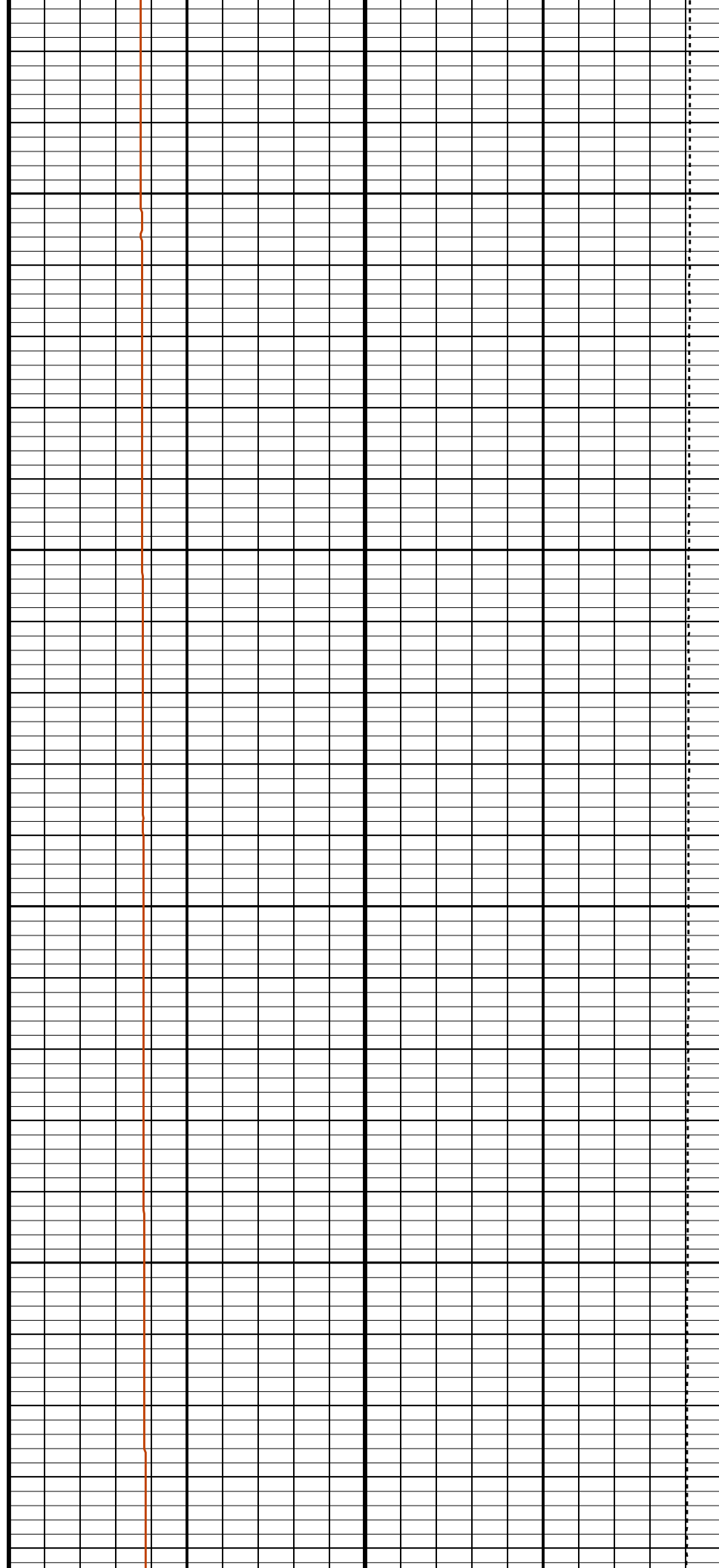


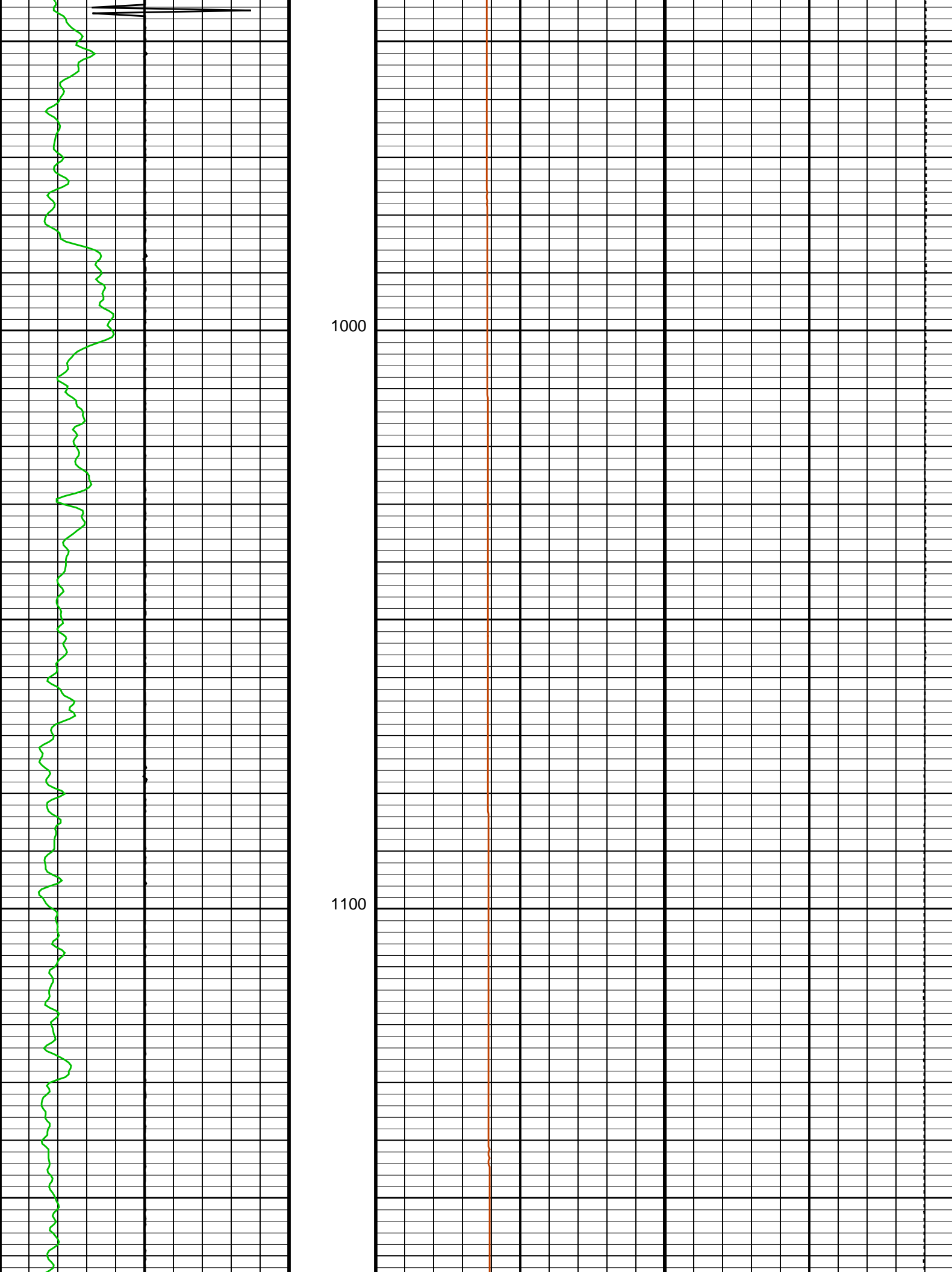


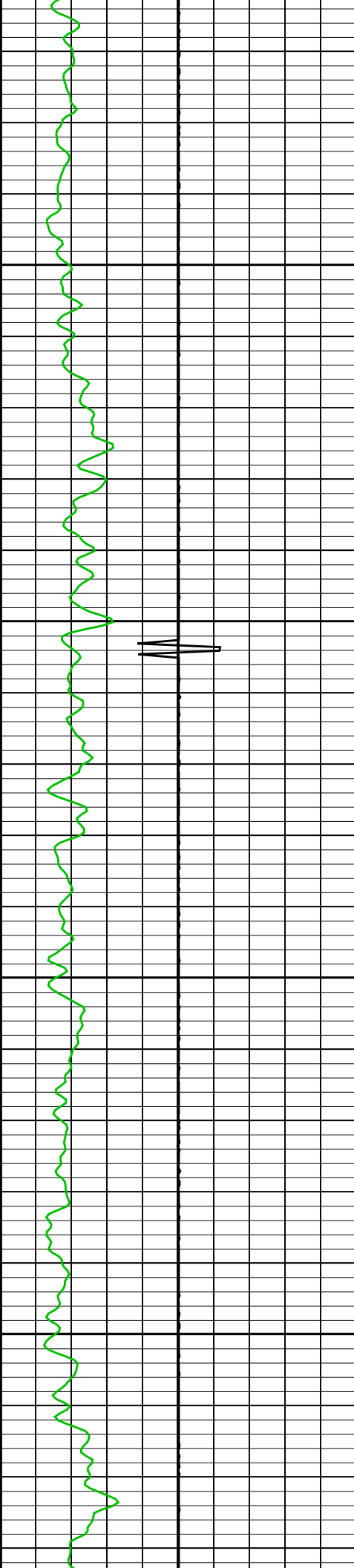


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900

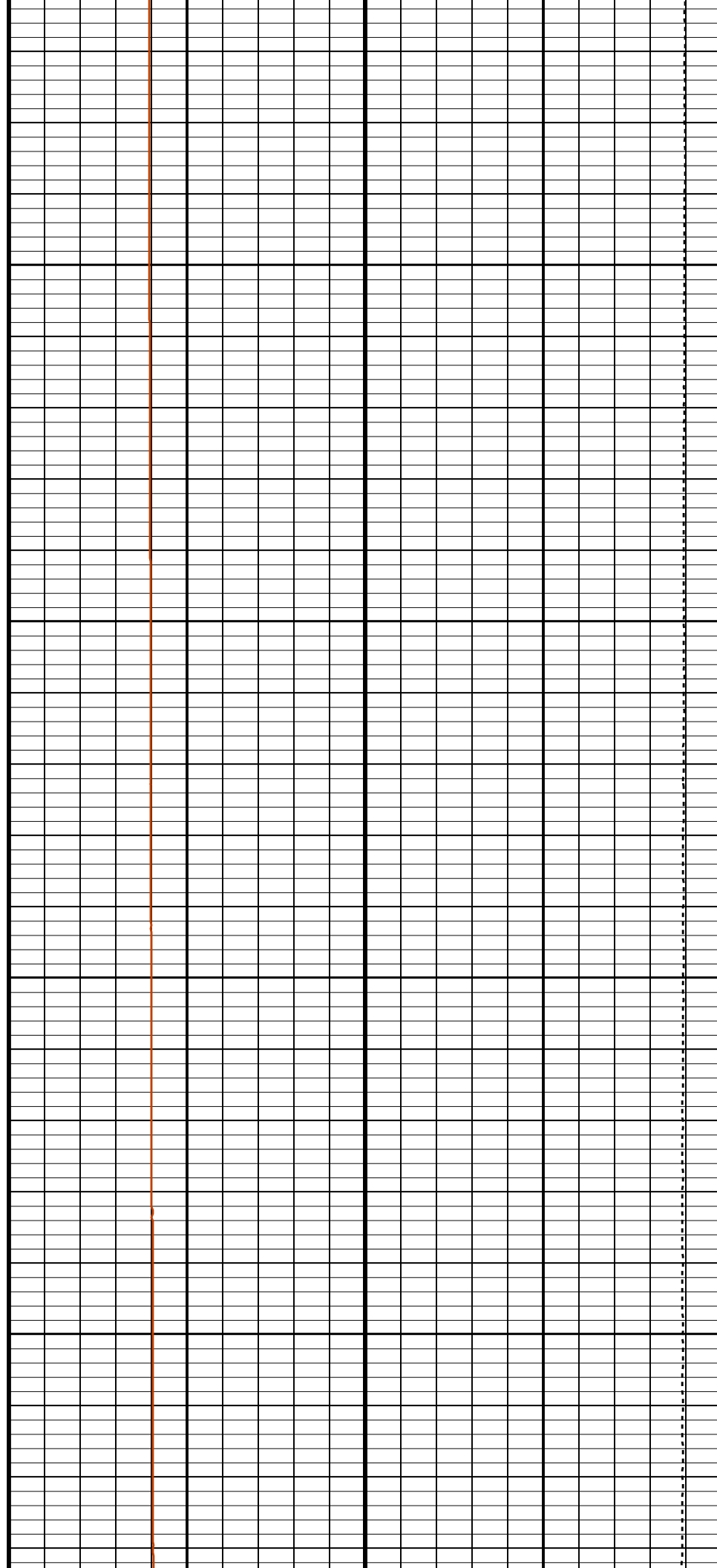


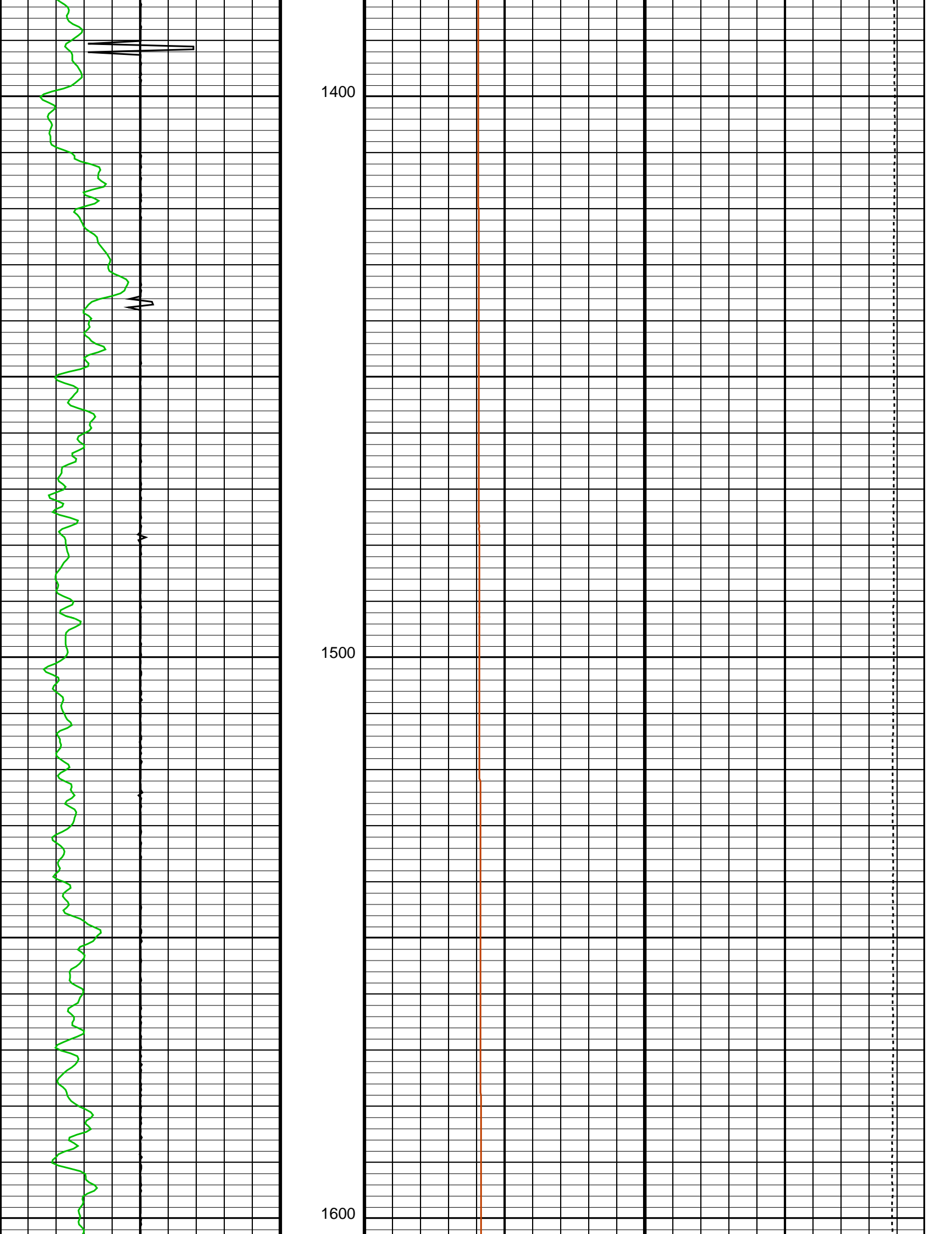


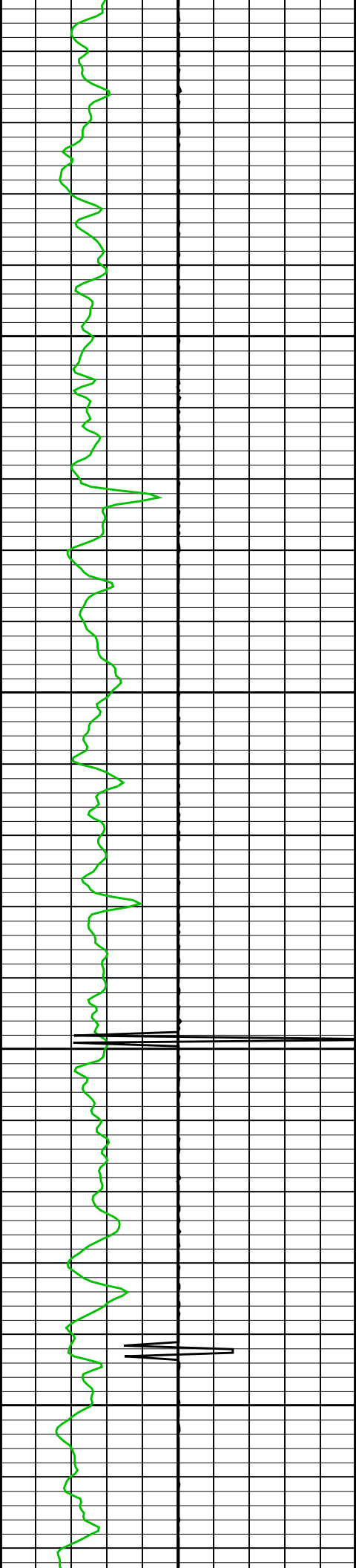


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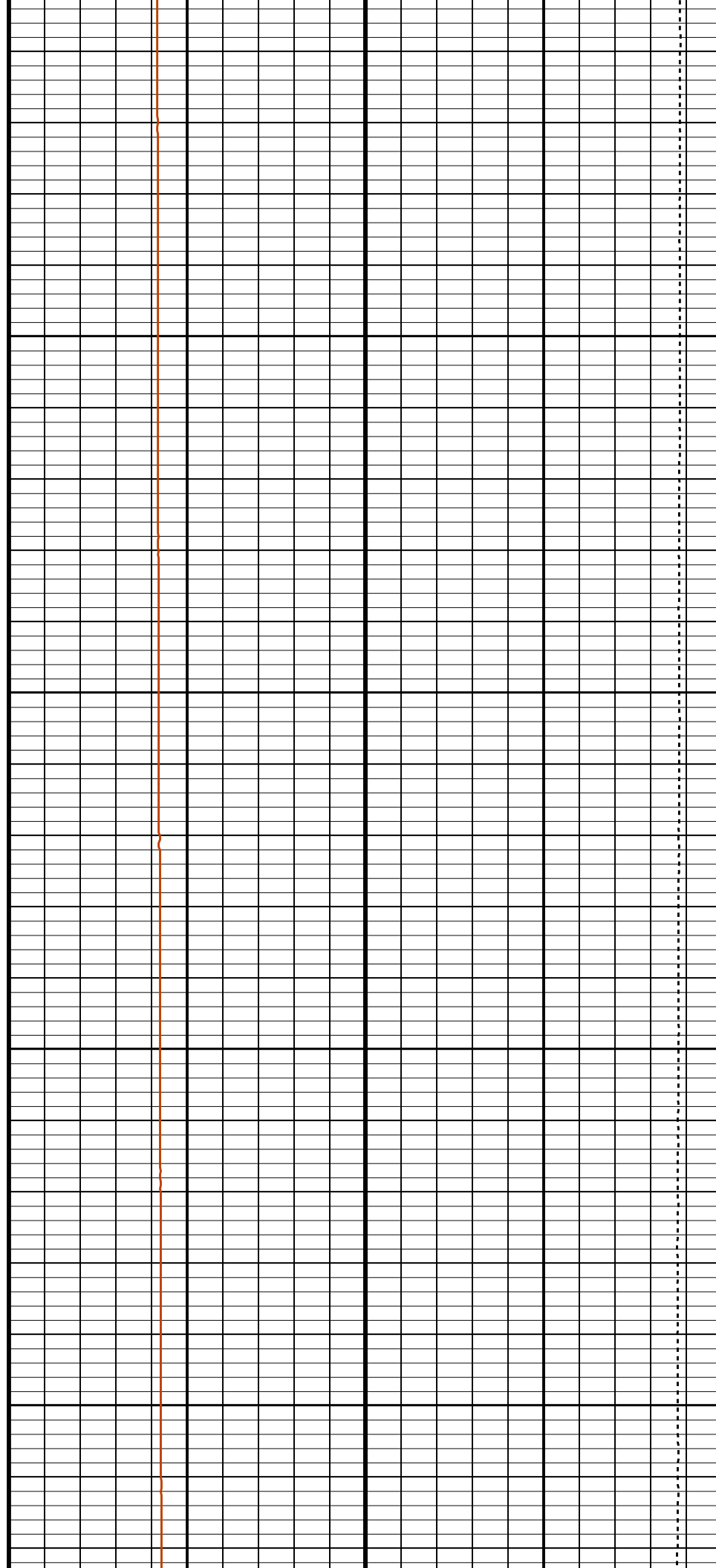


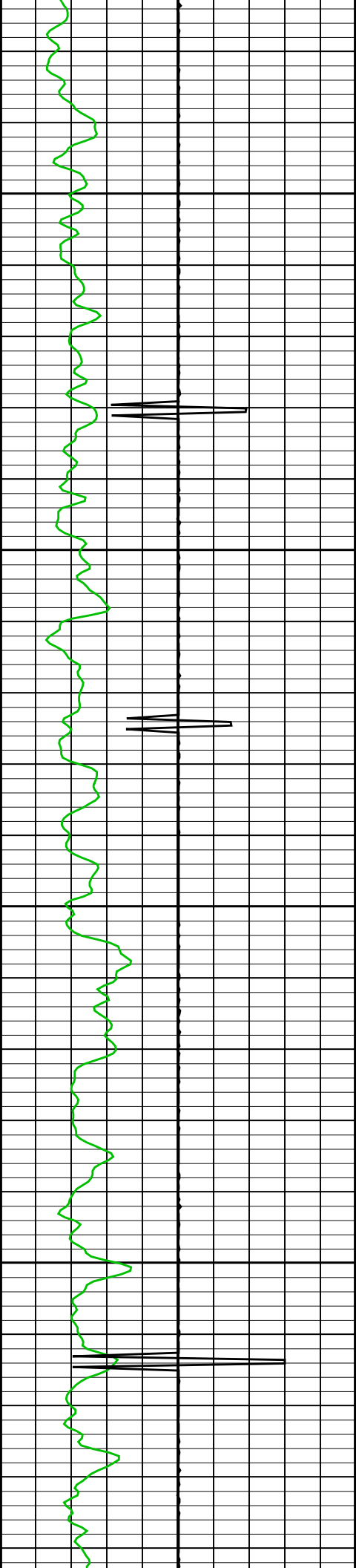




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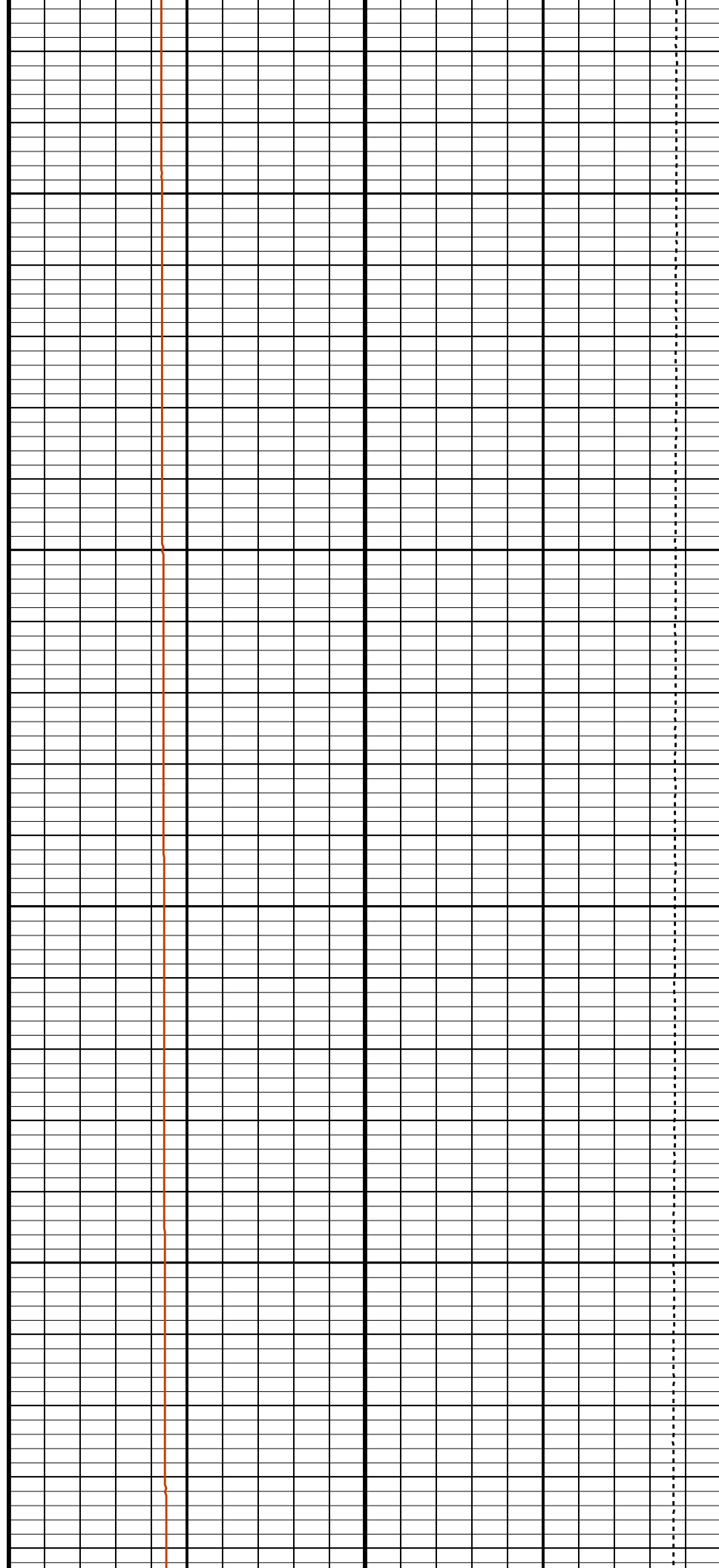
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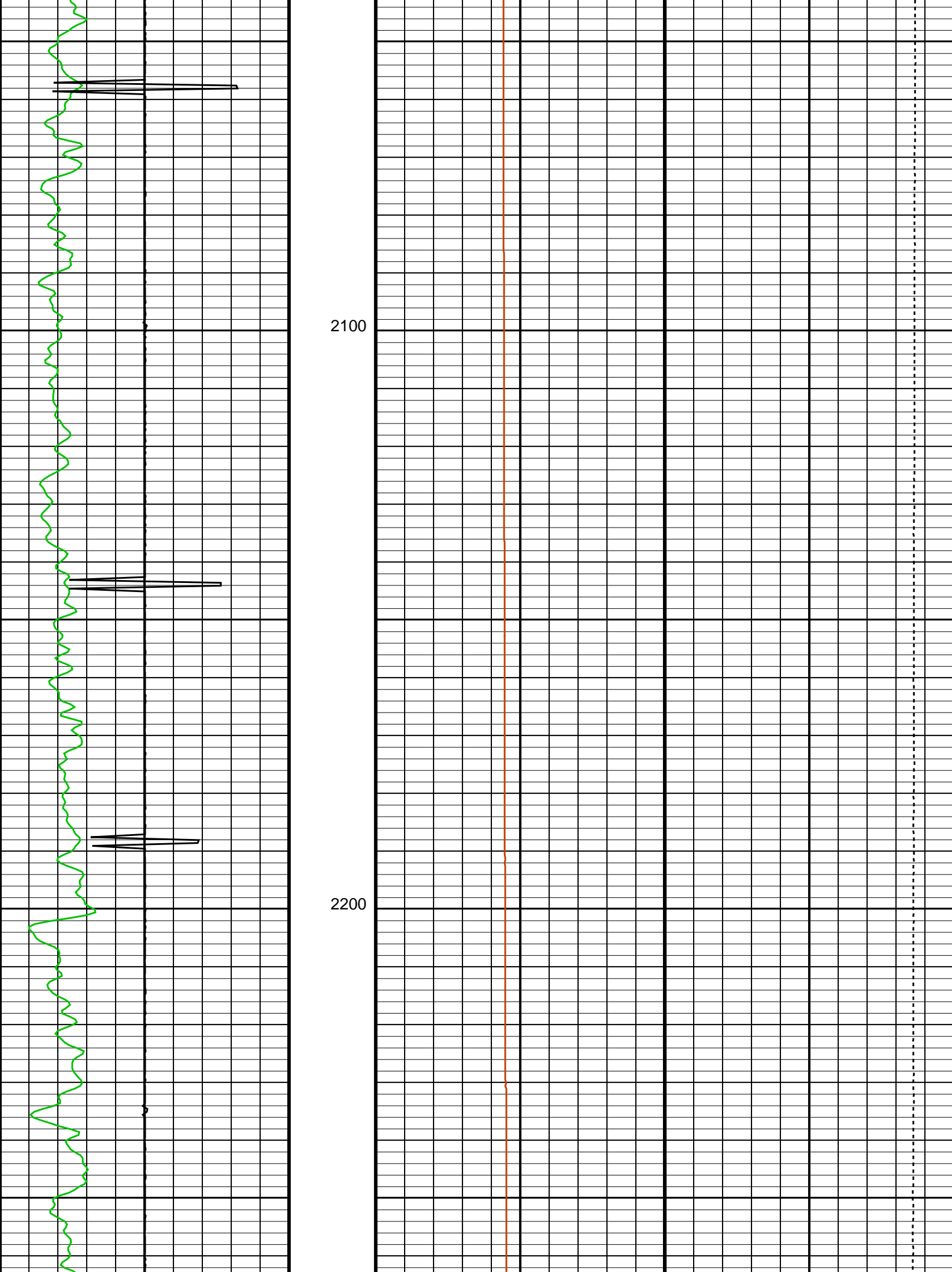


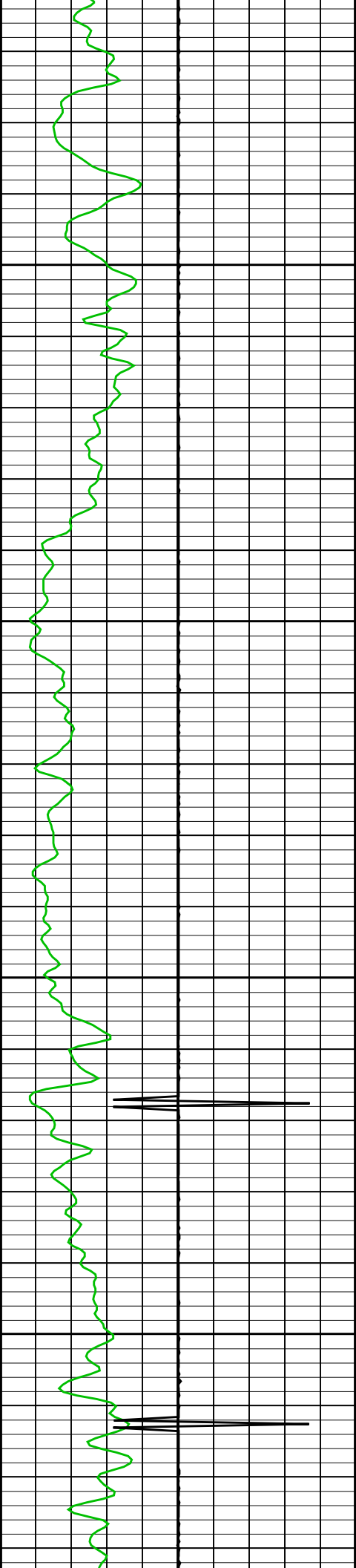


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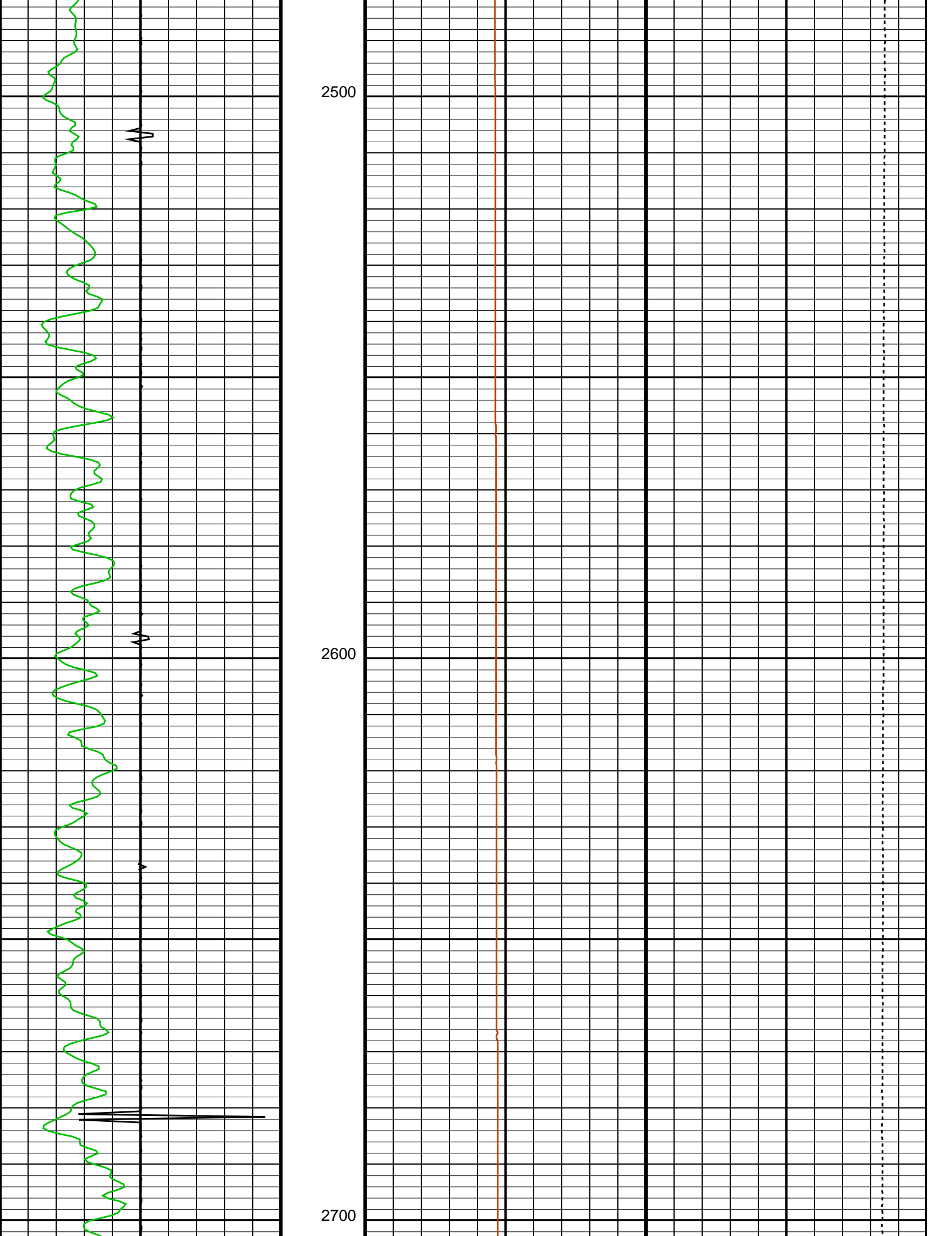


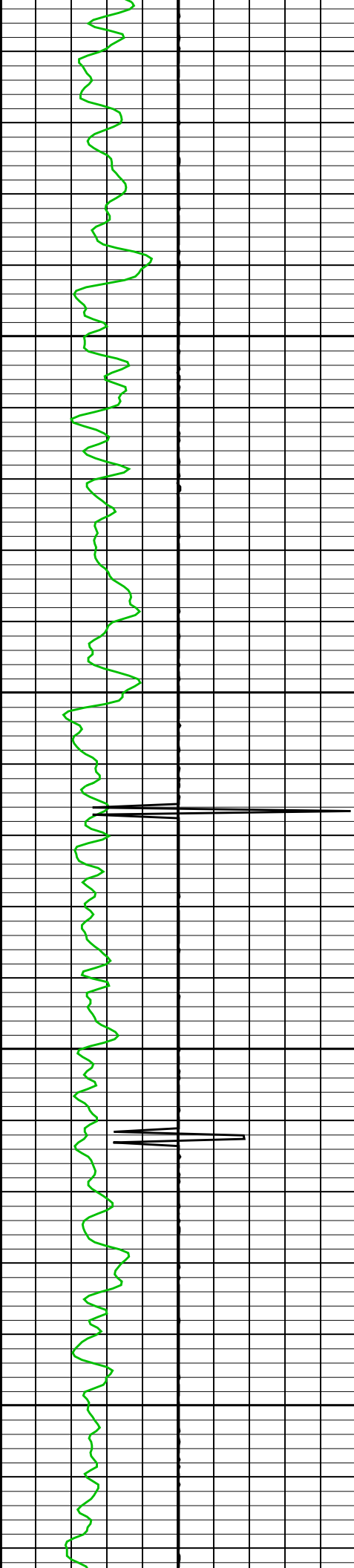




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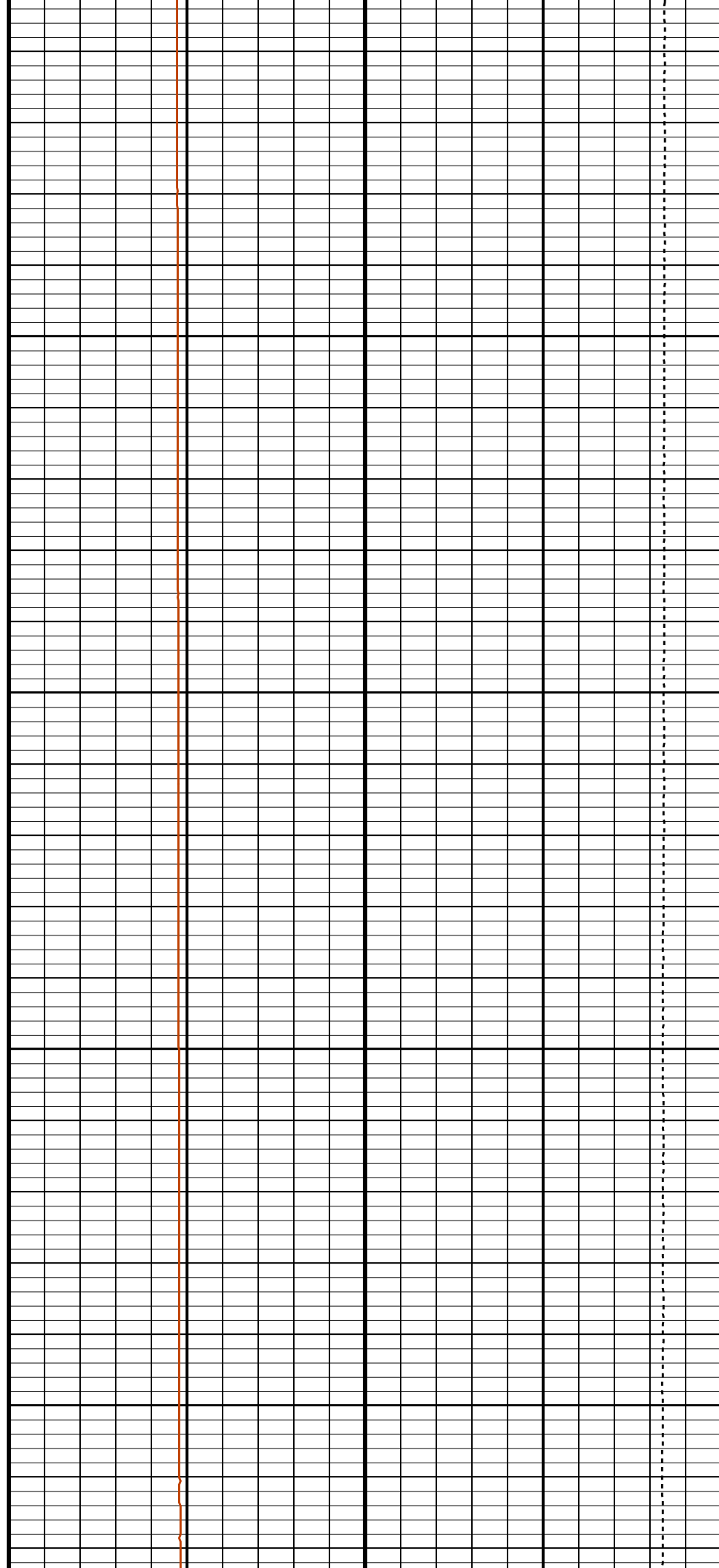
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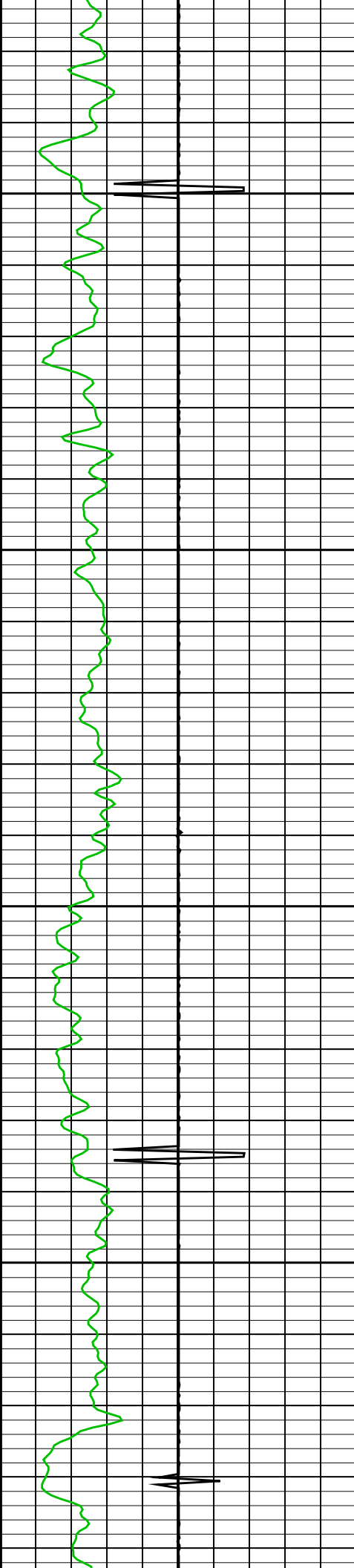




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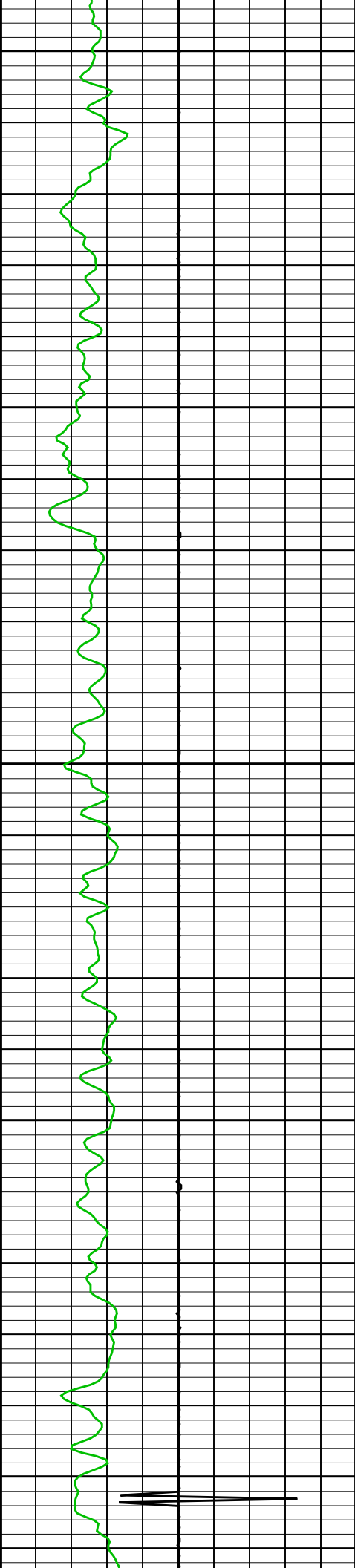
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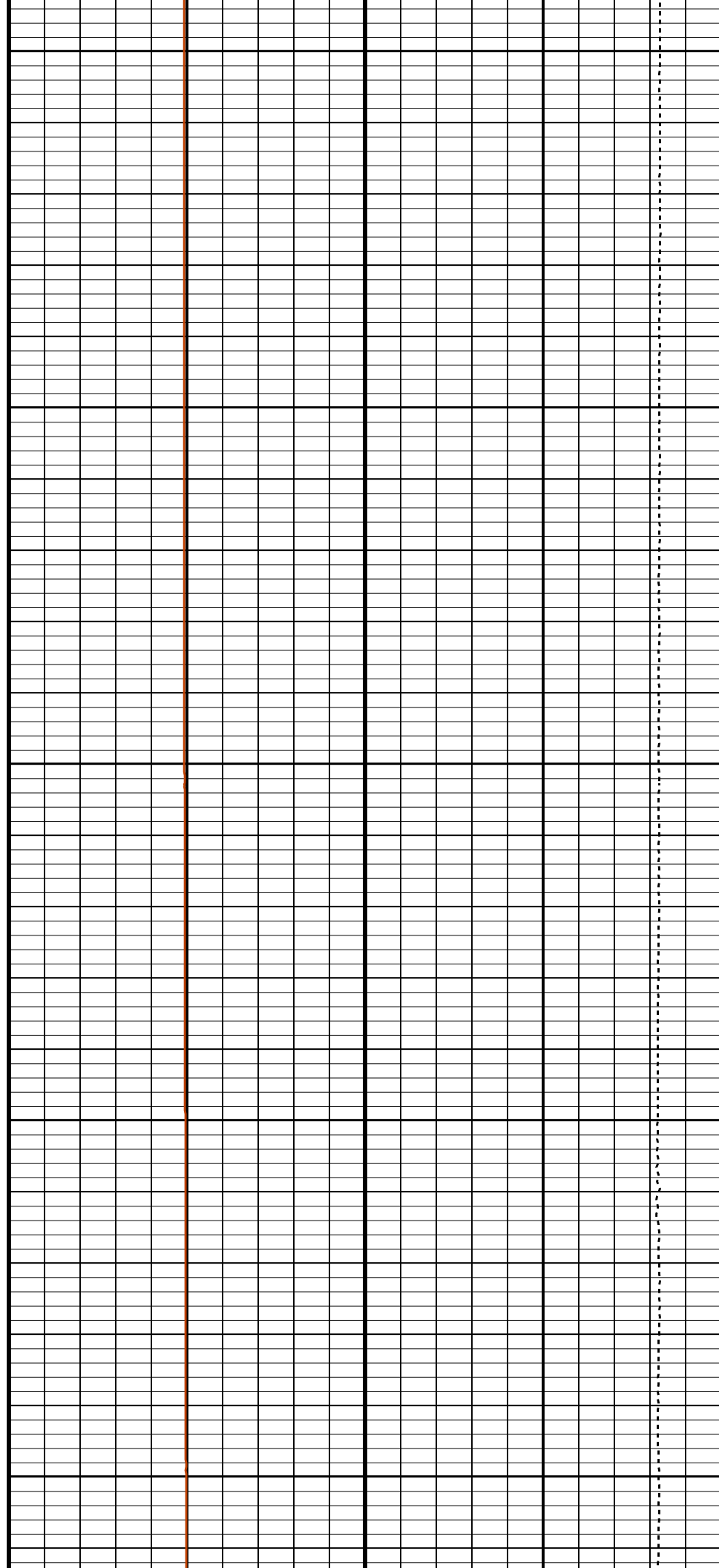
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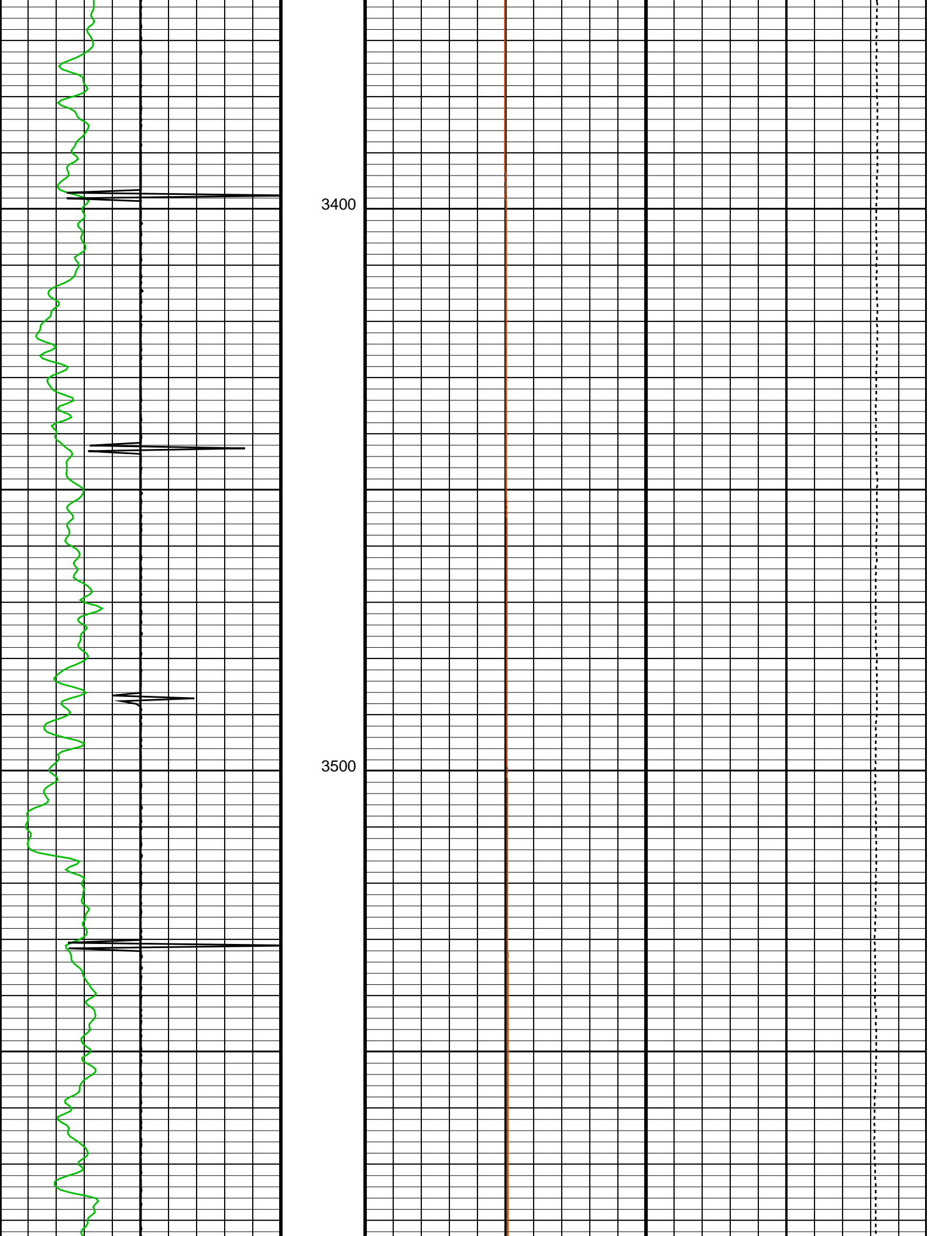
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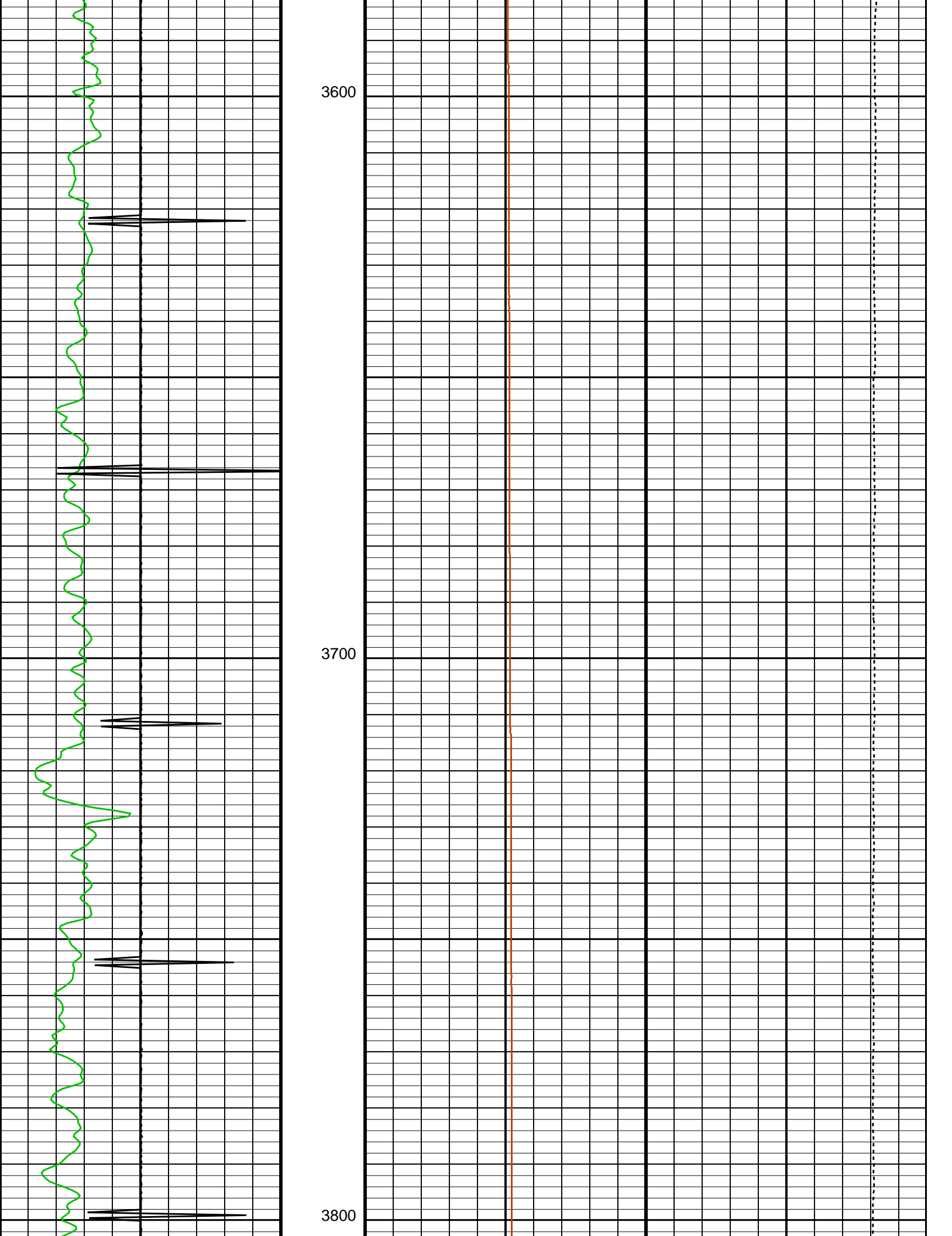


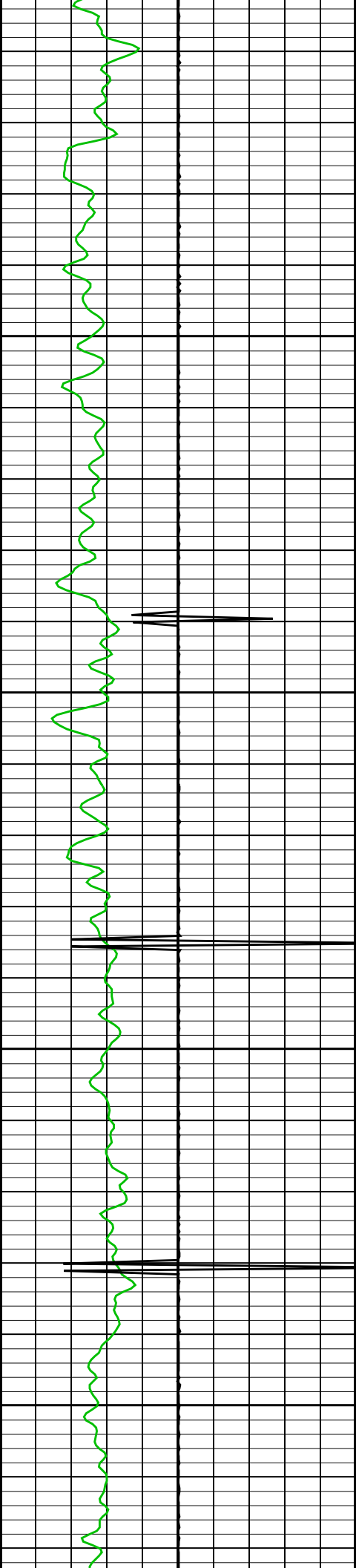
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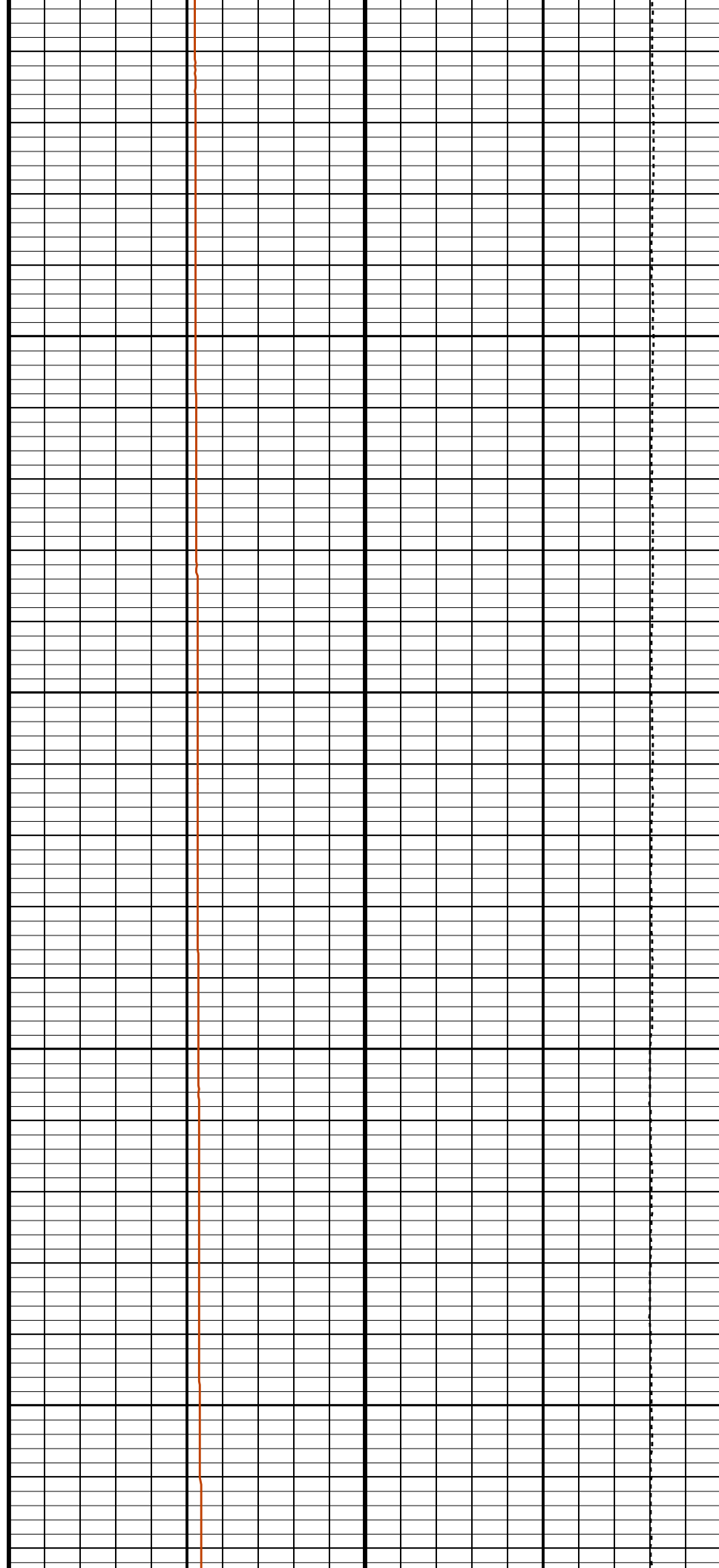


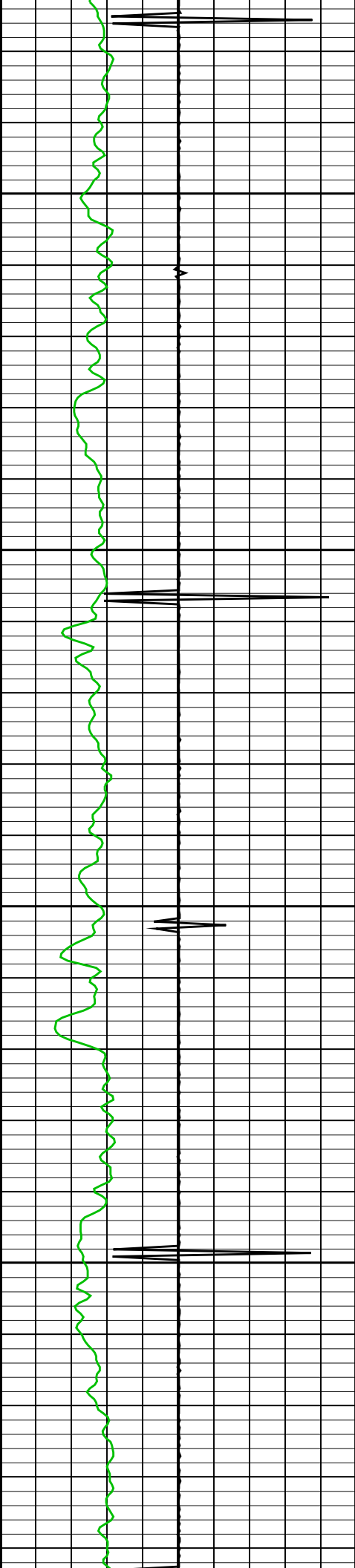




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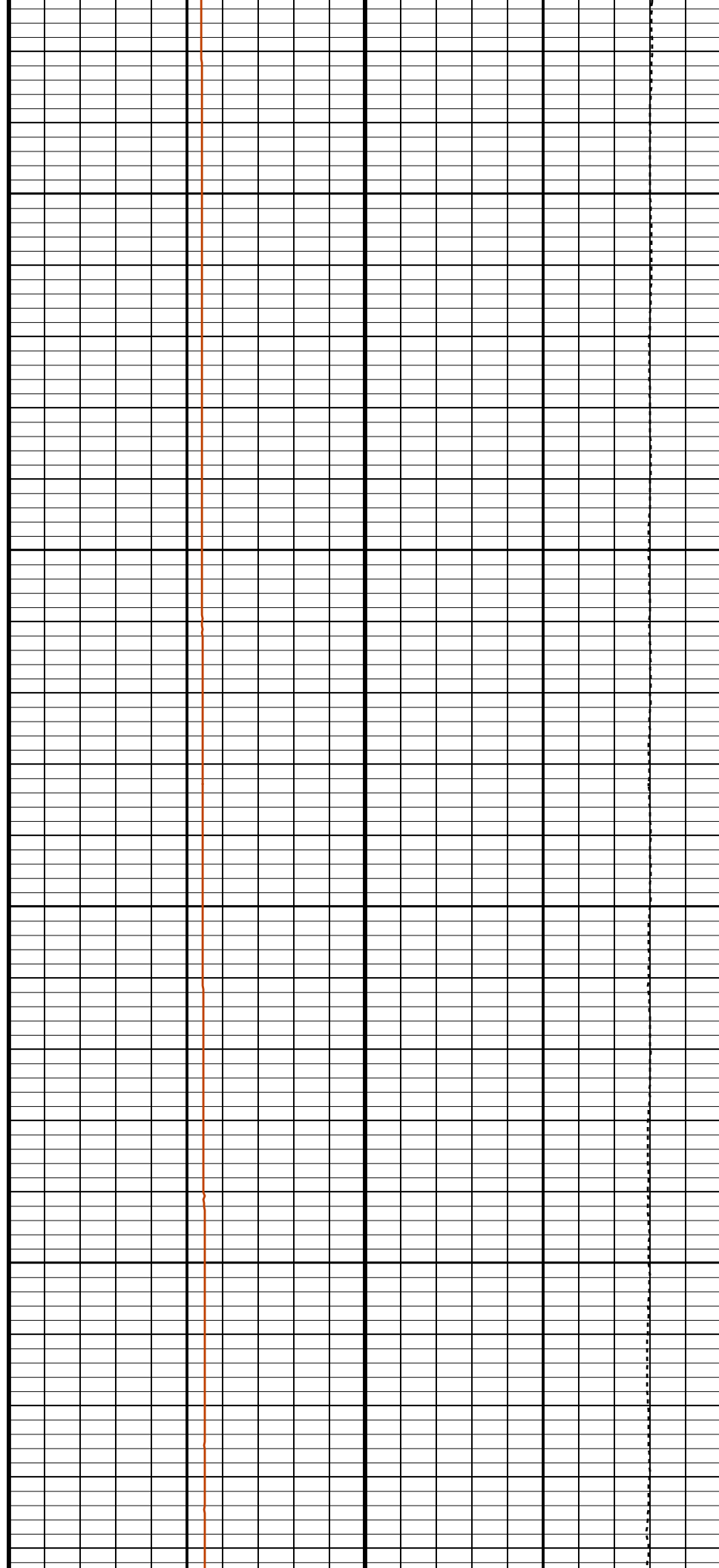
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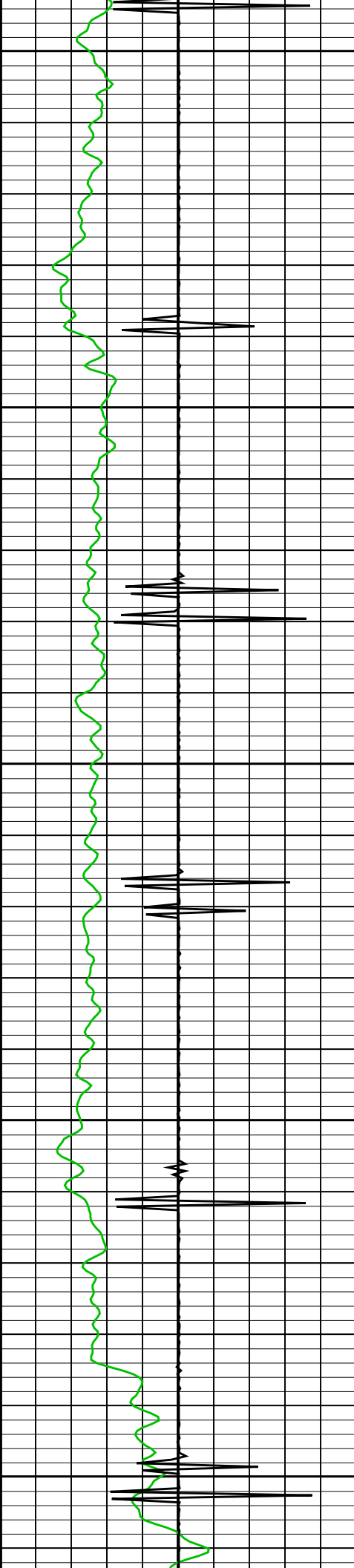




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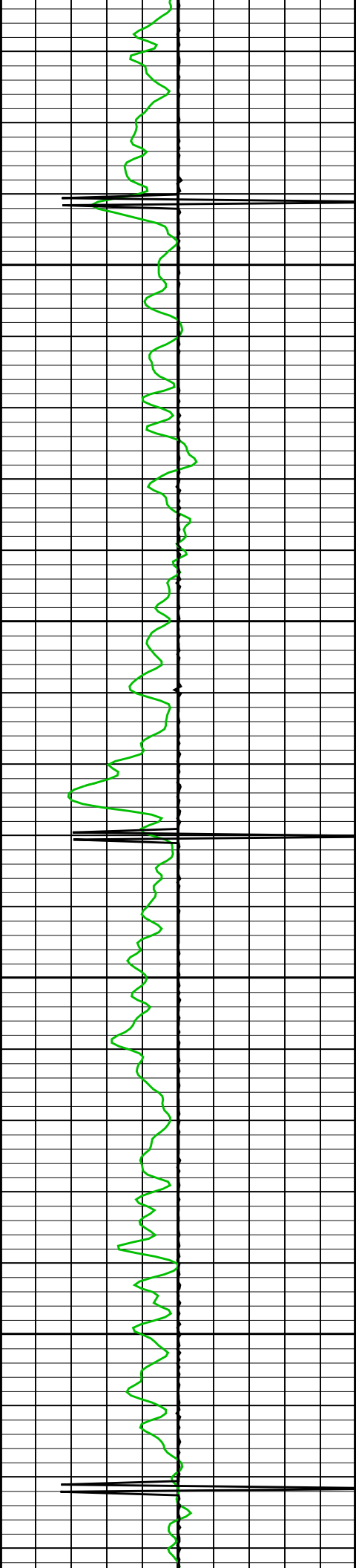
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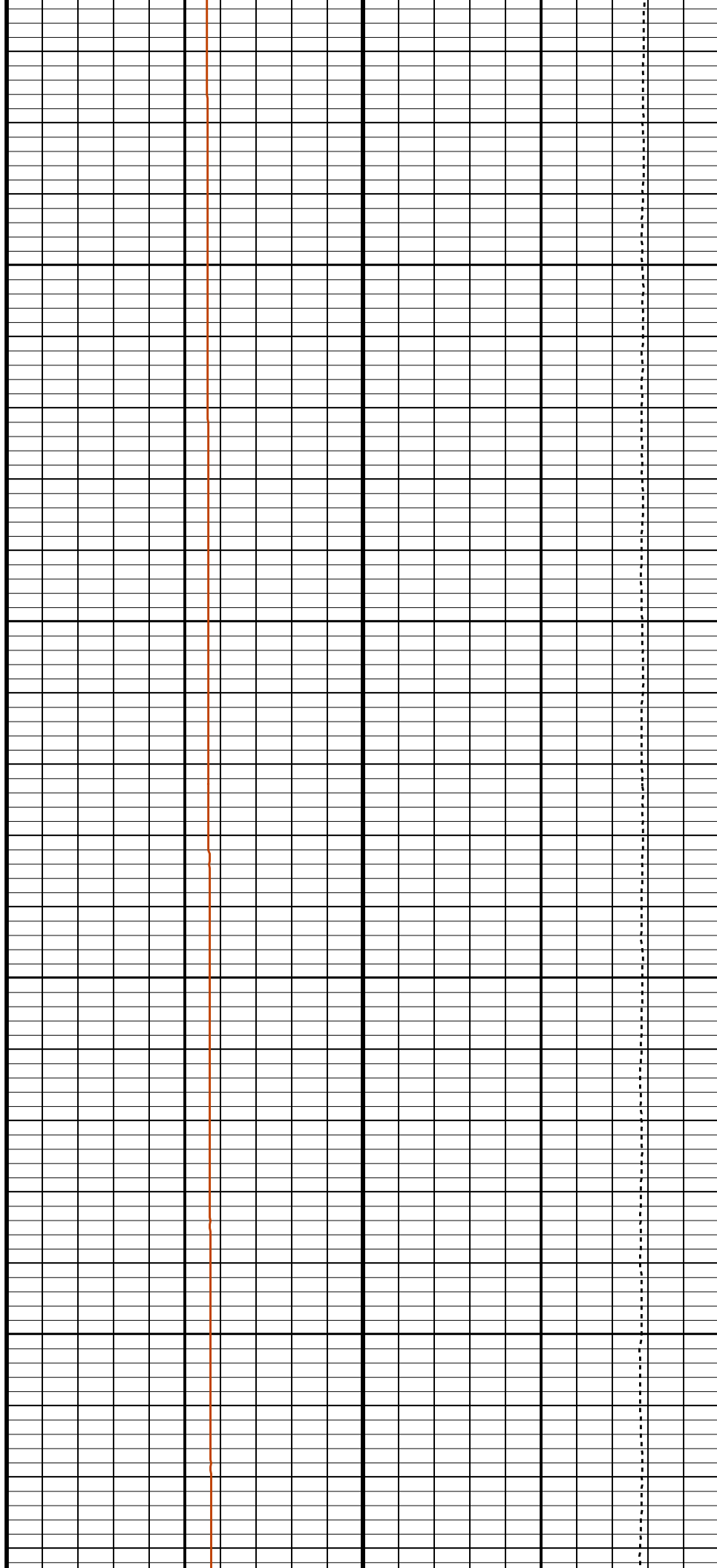
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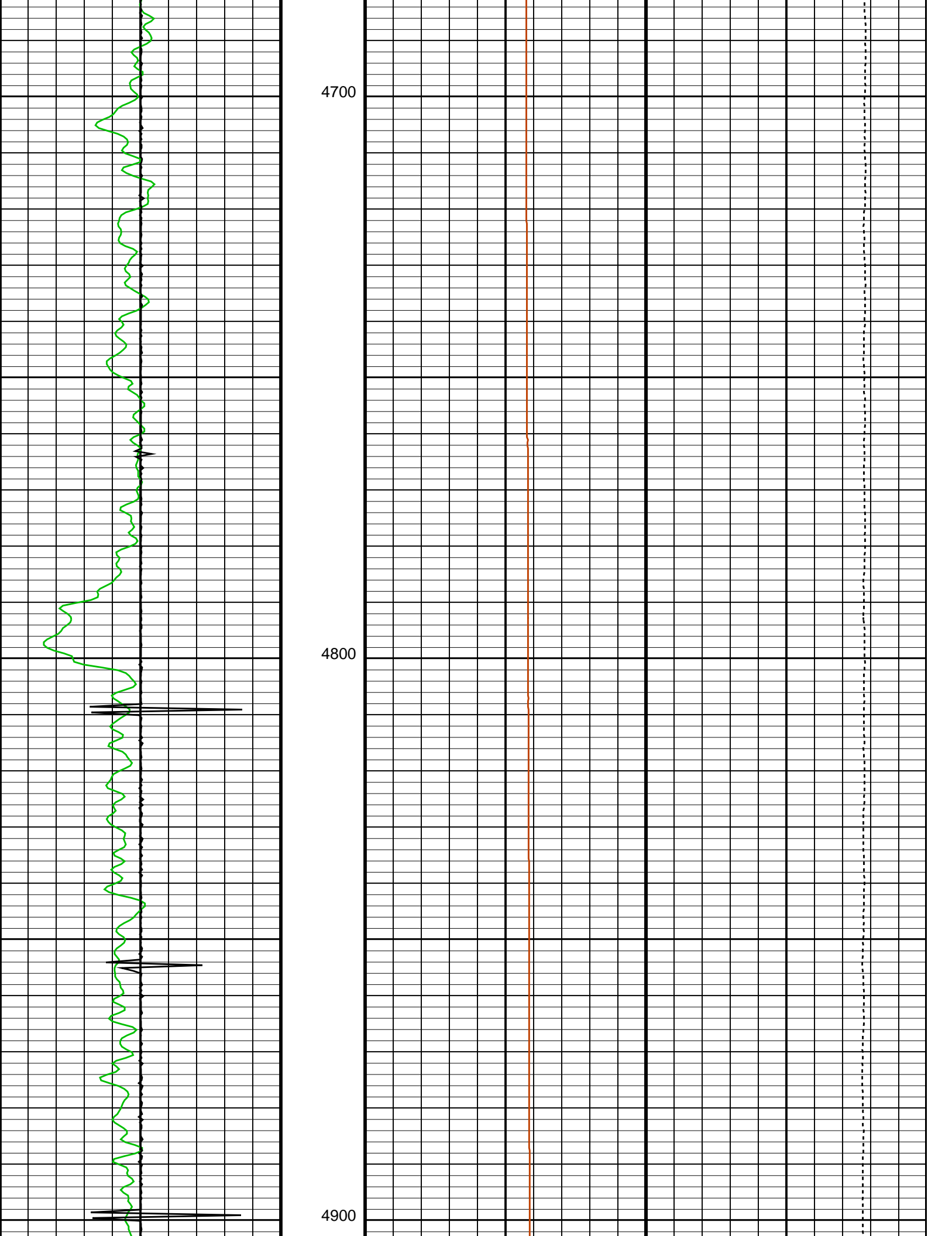
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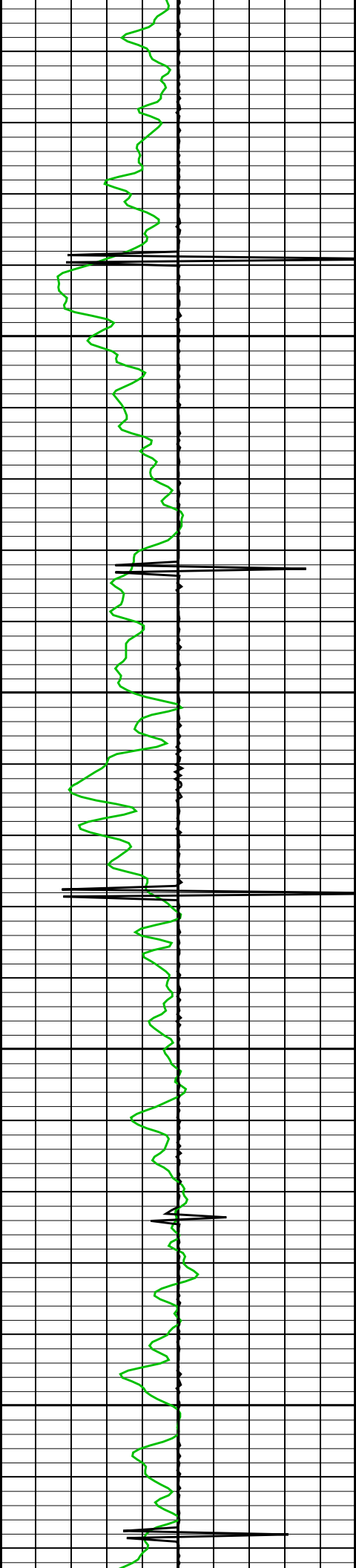


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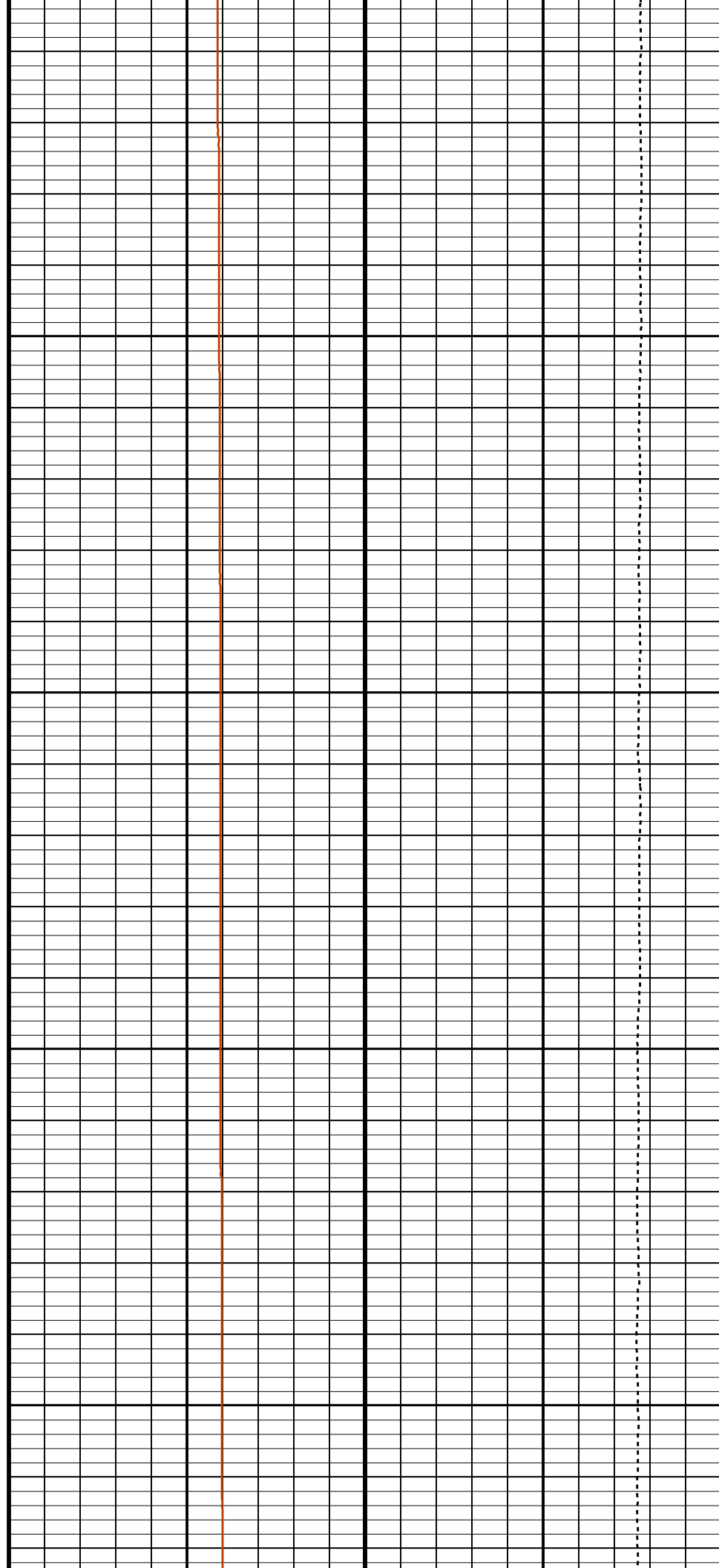


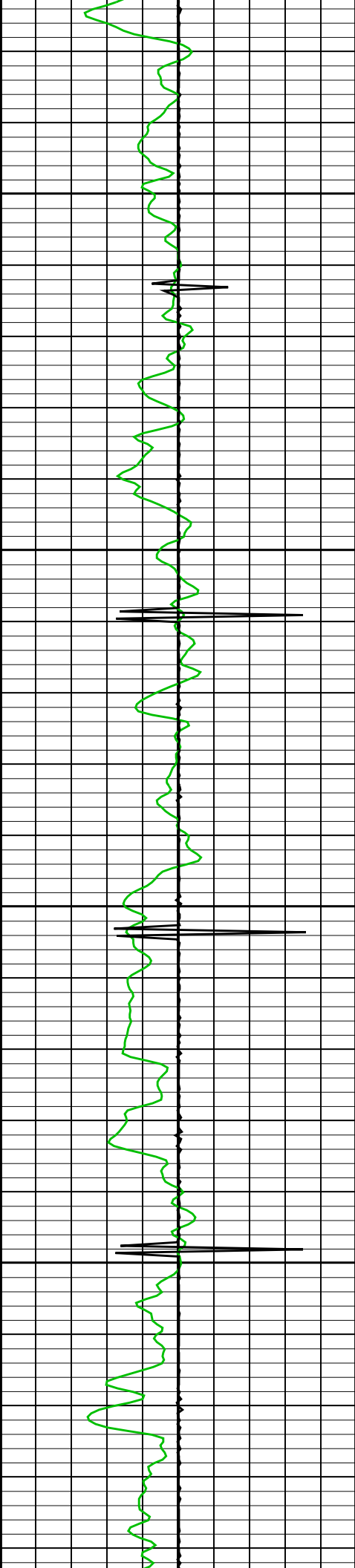




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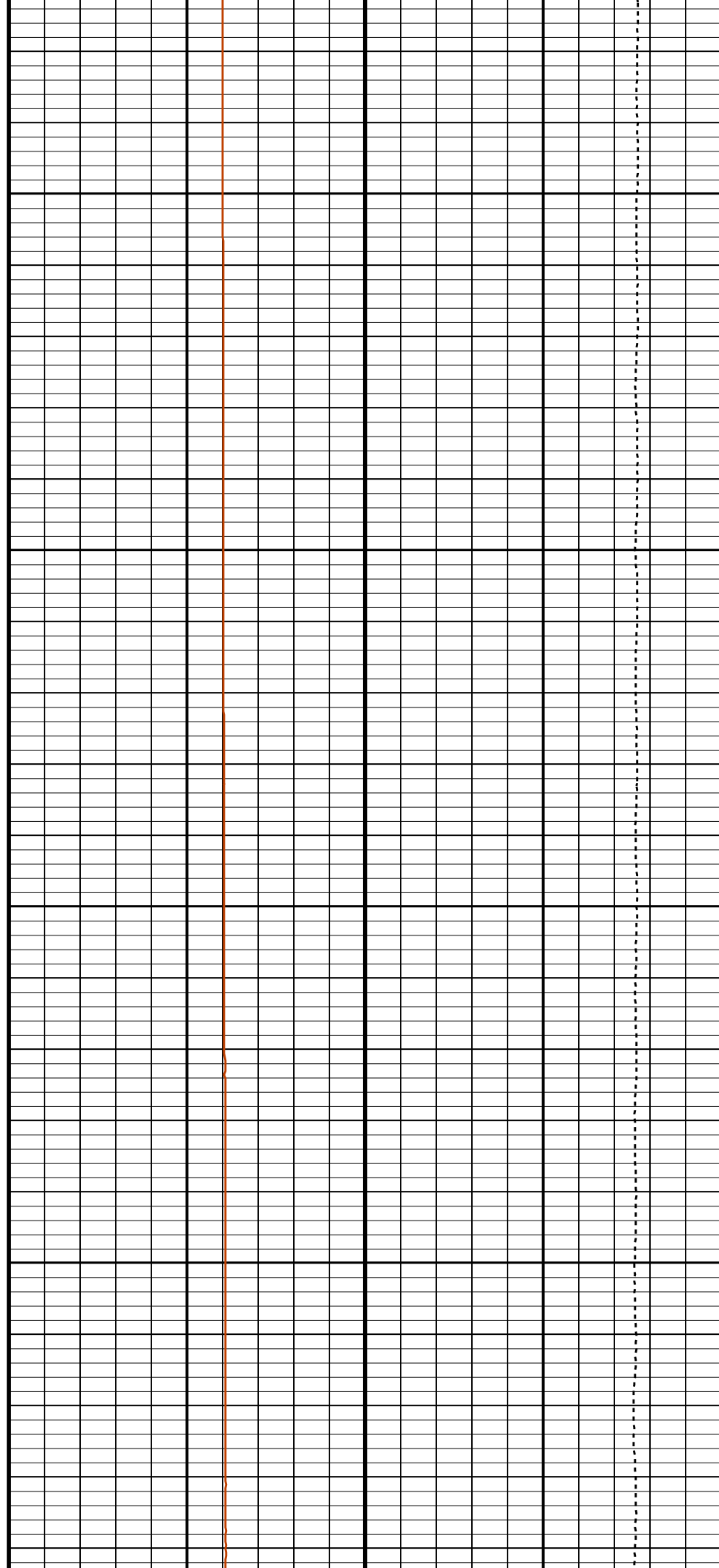
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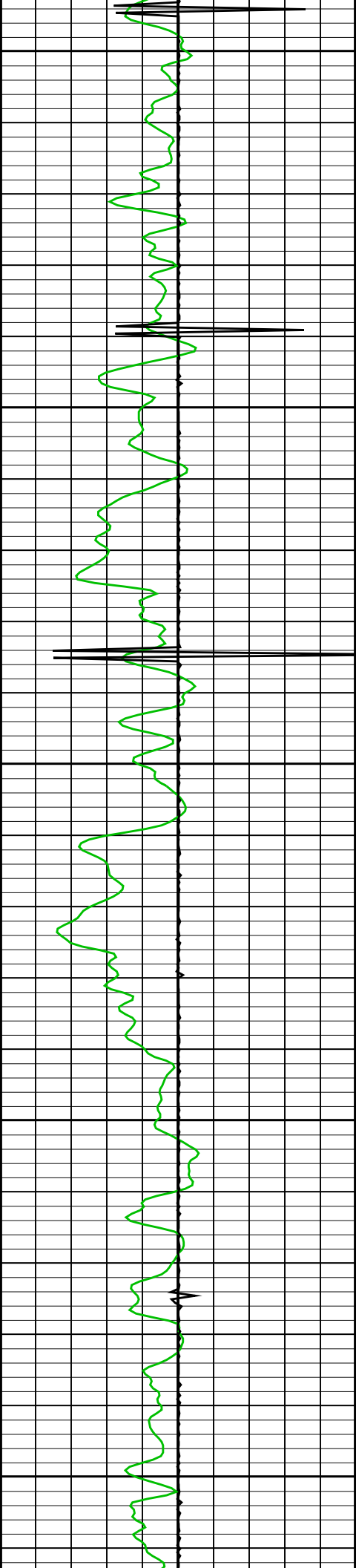




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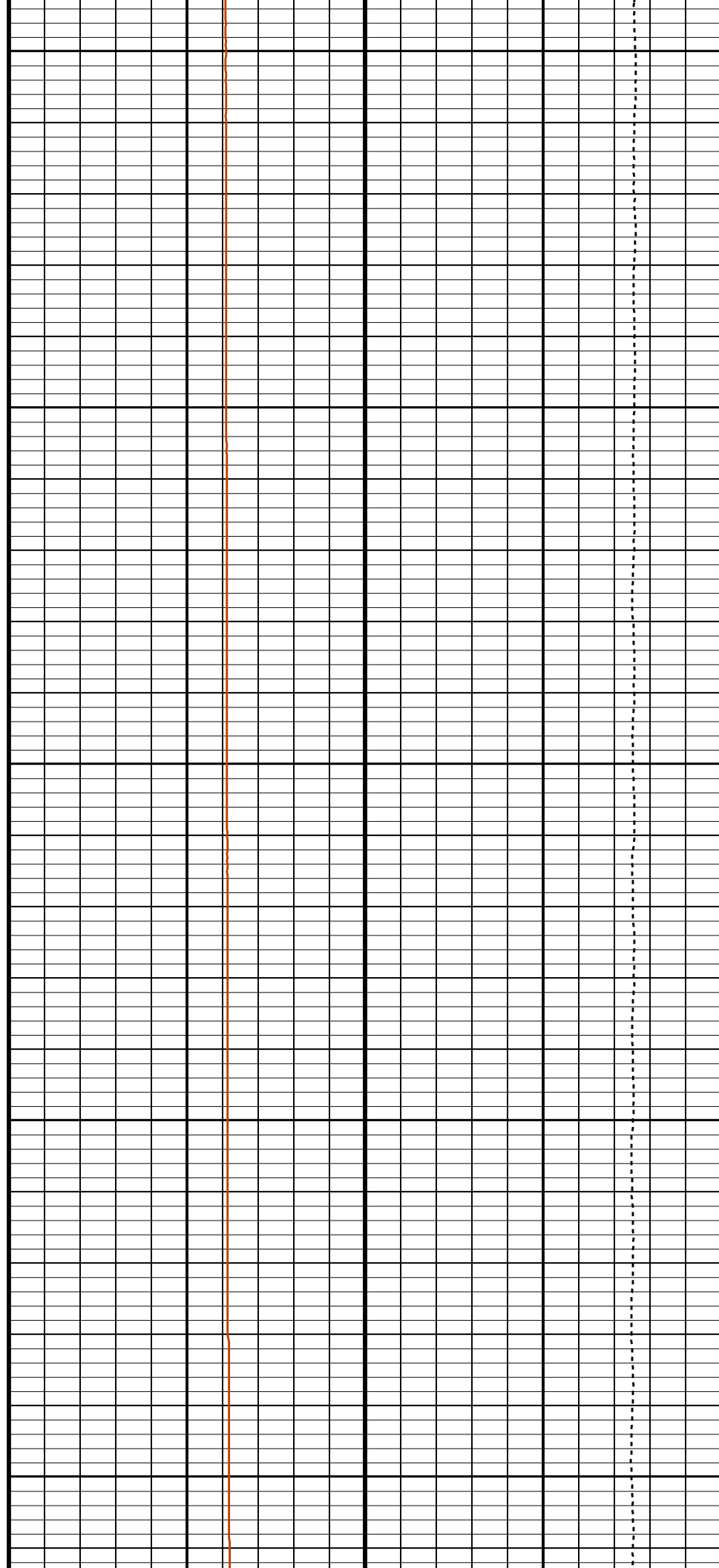
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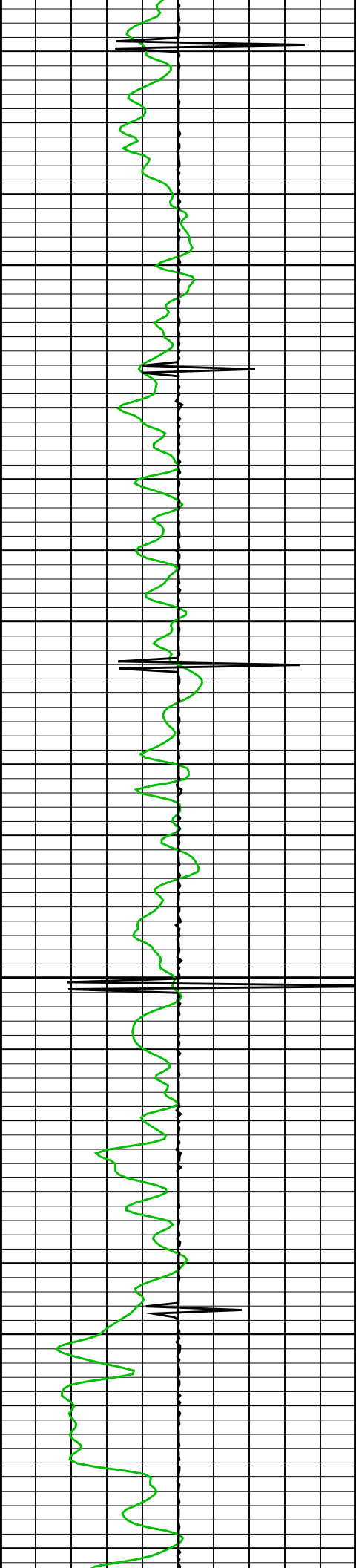




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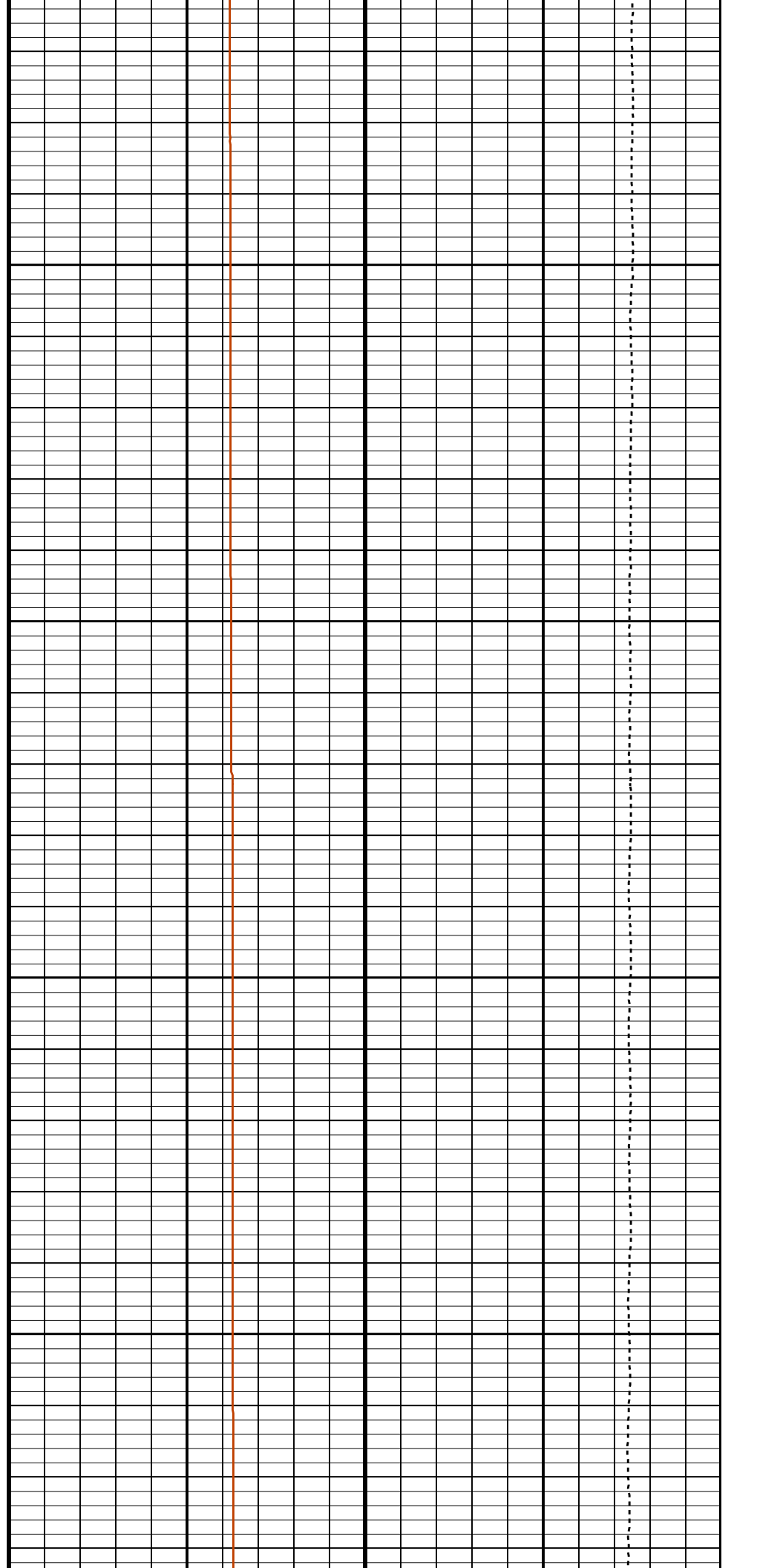
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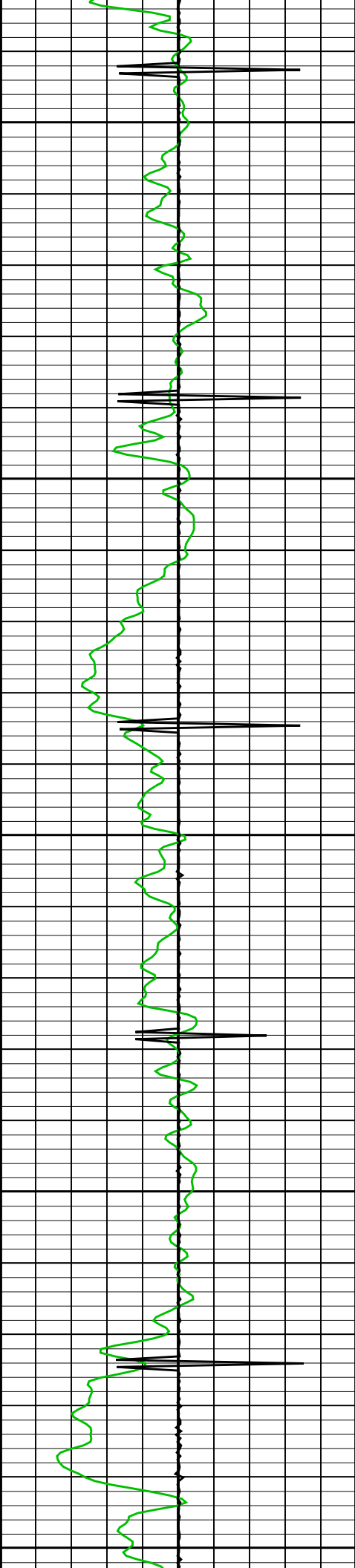




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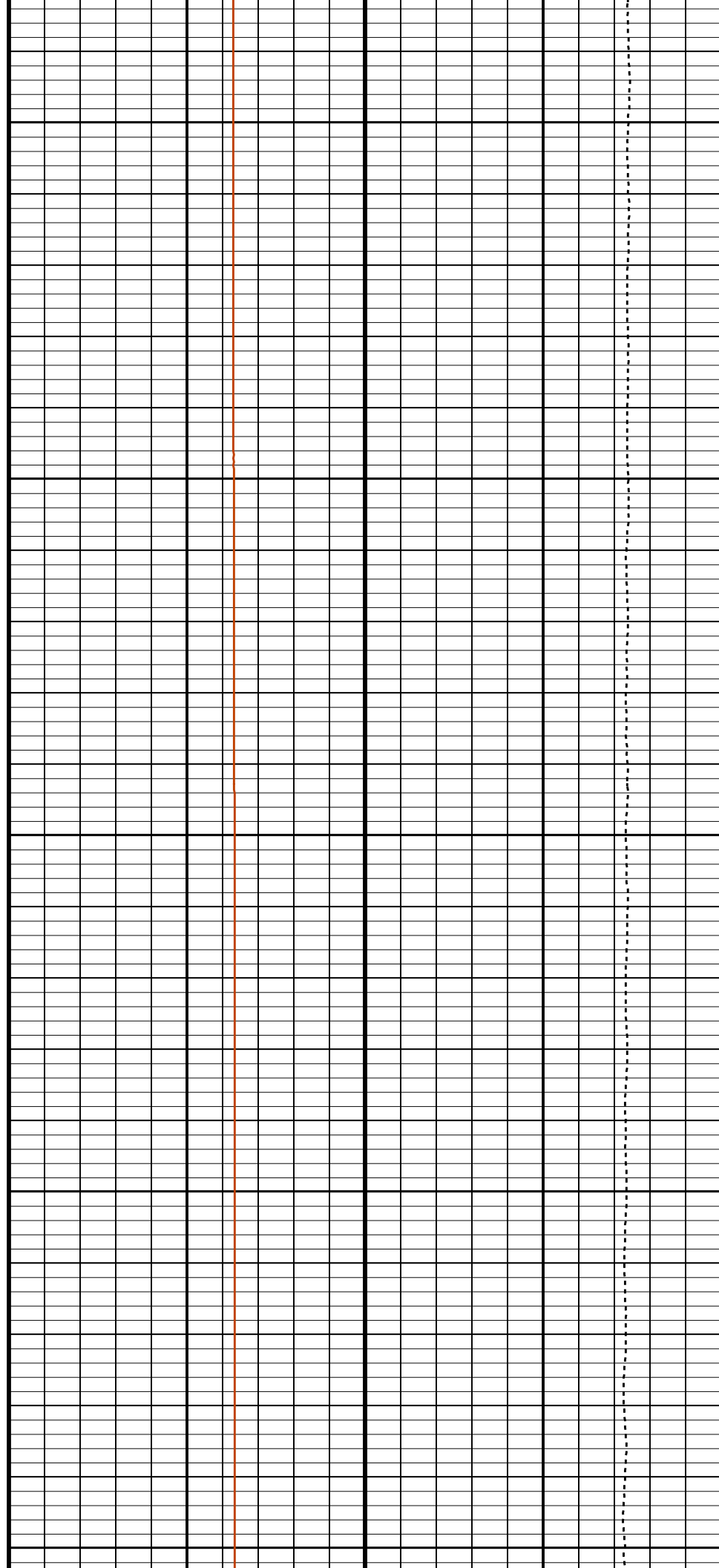


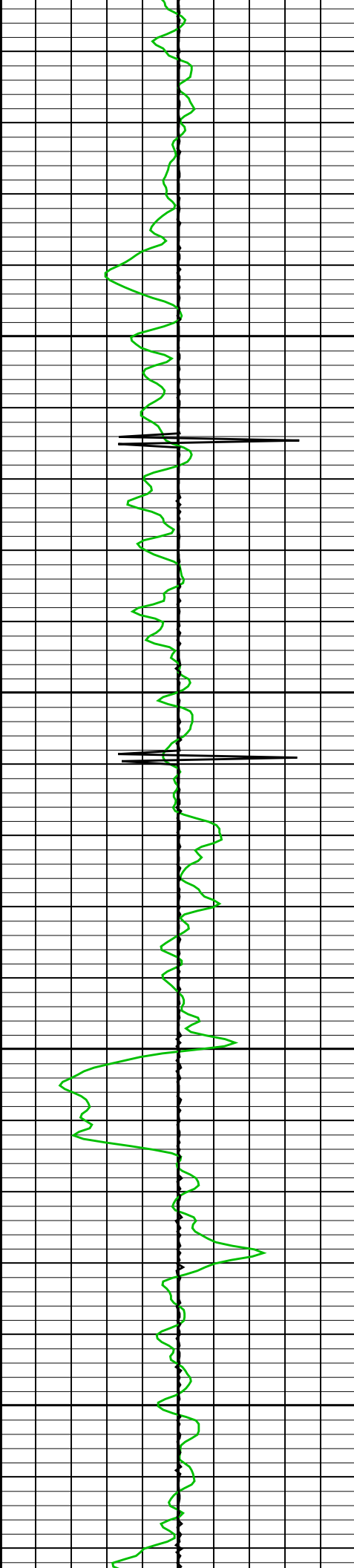


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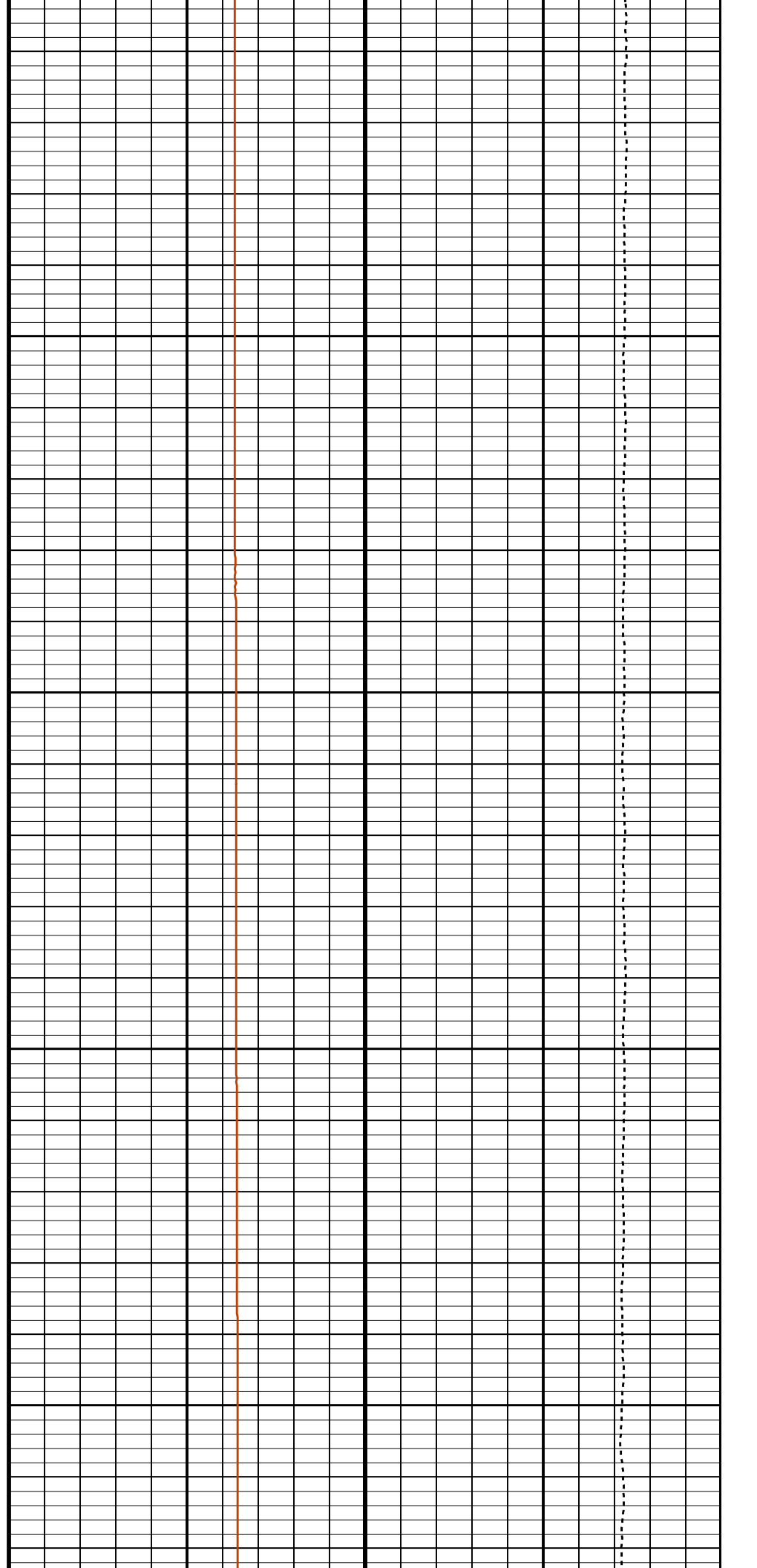
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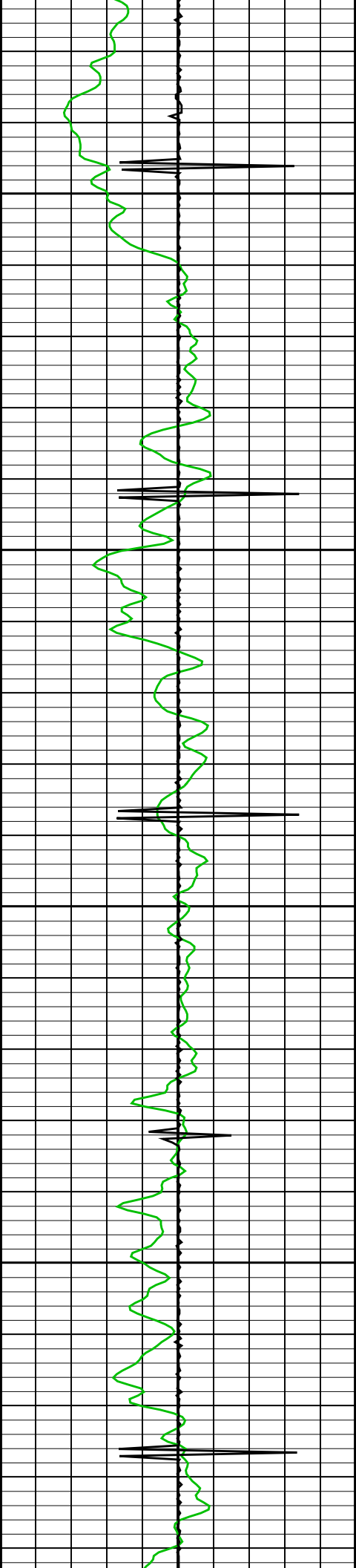




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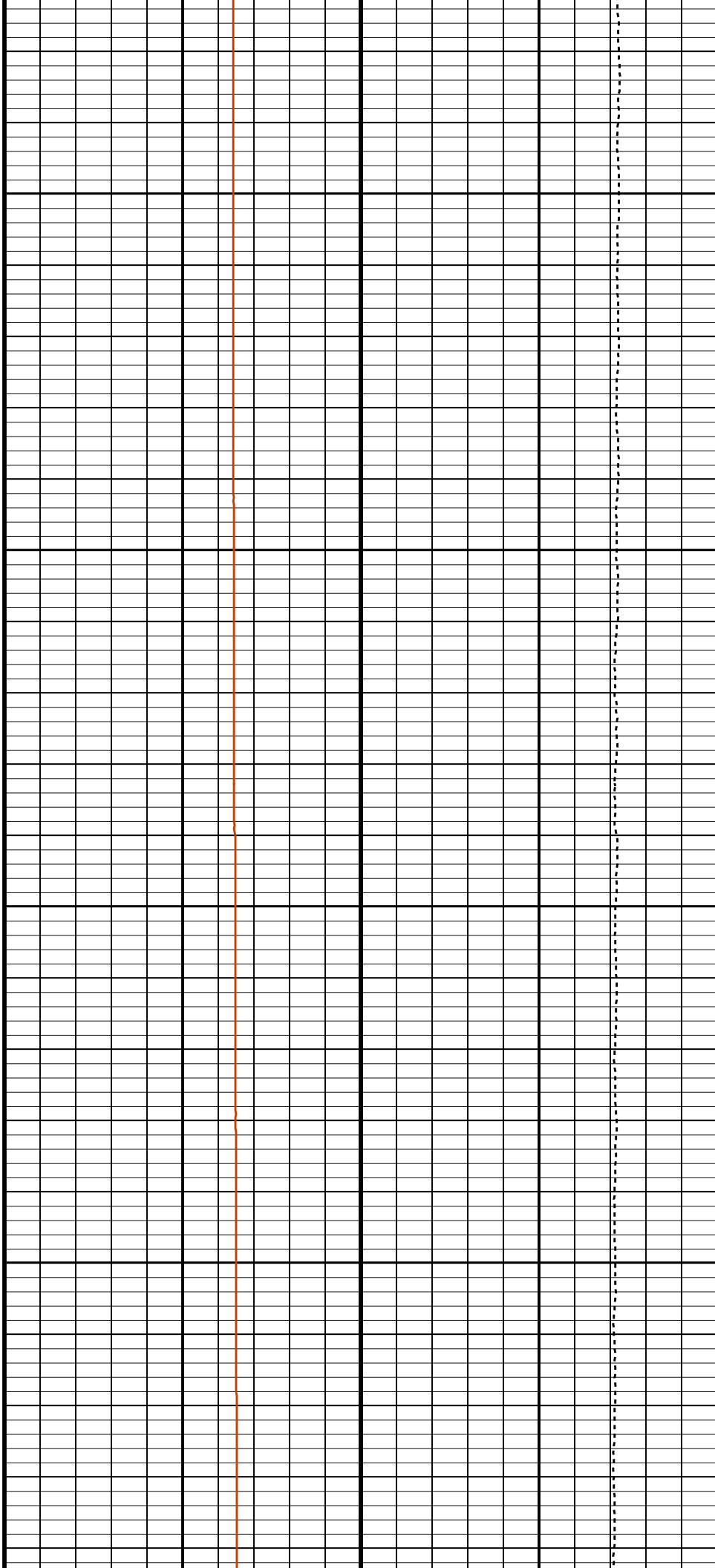
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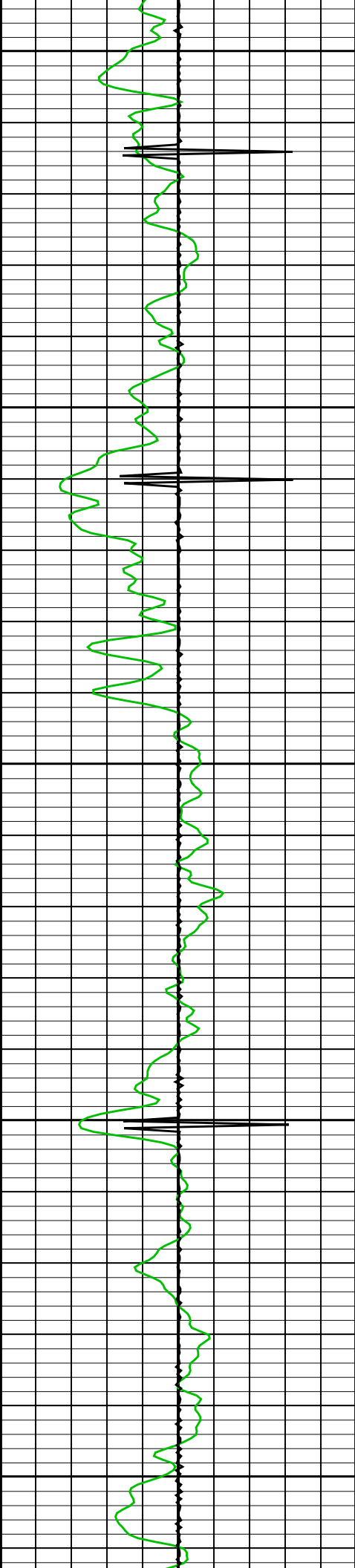




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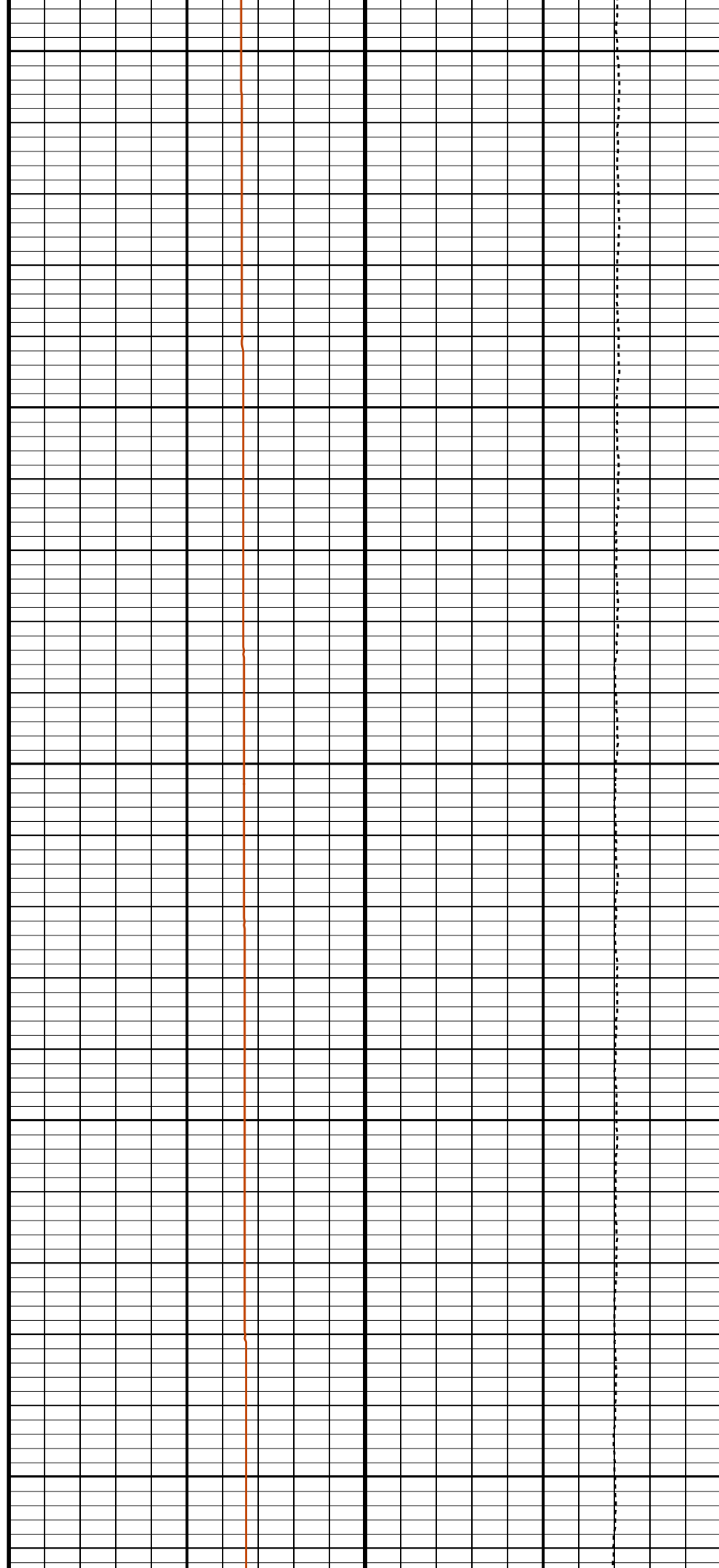
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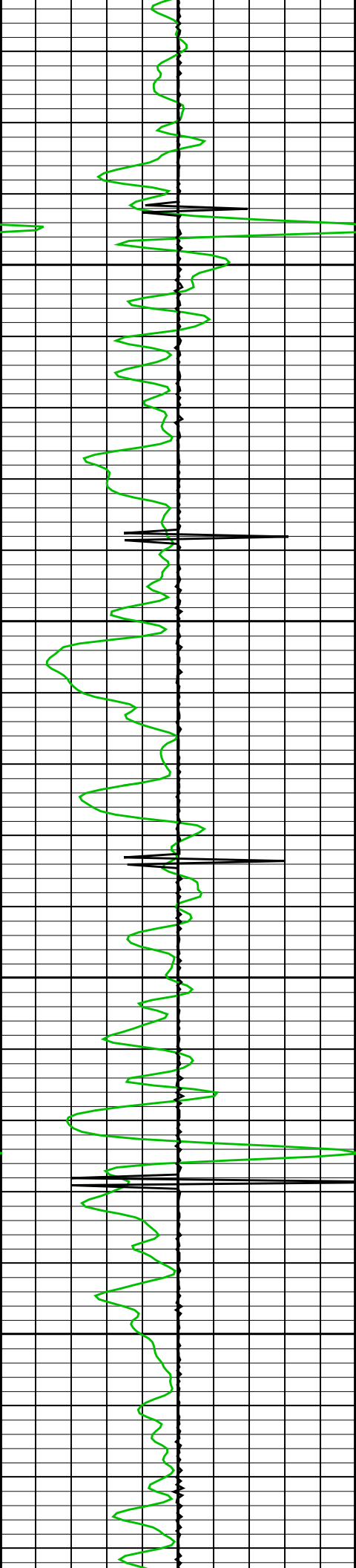




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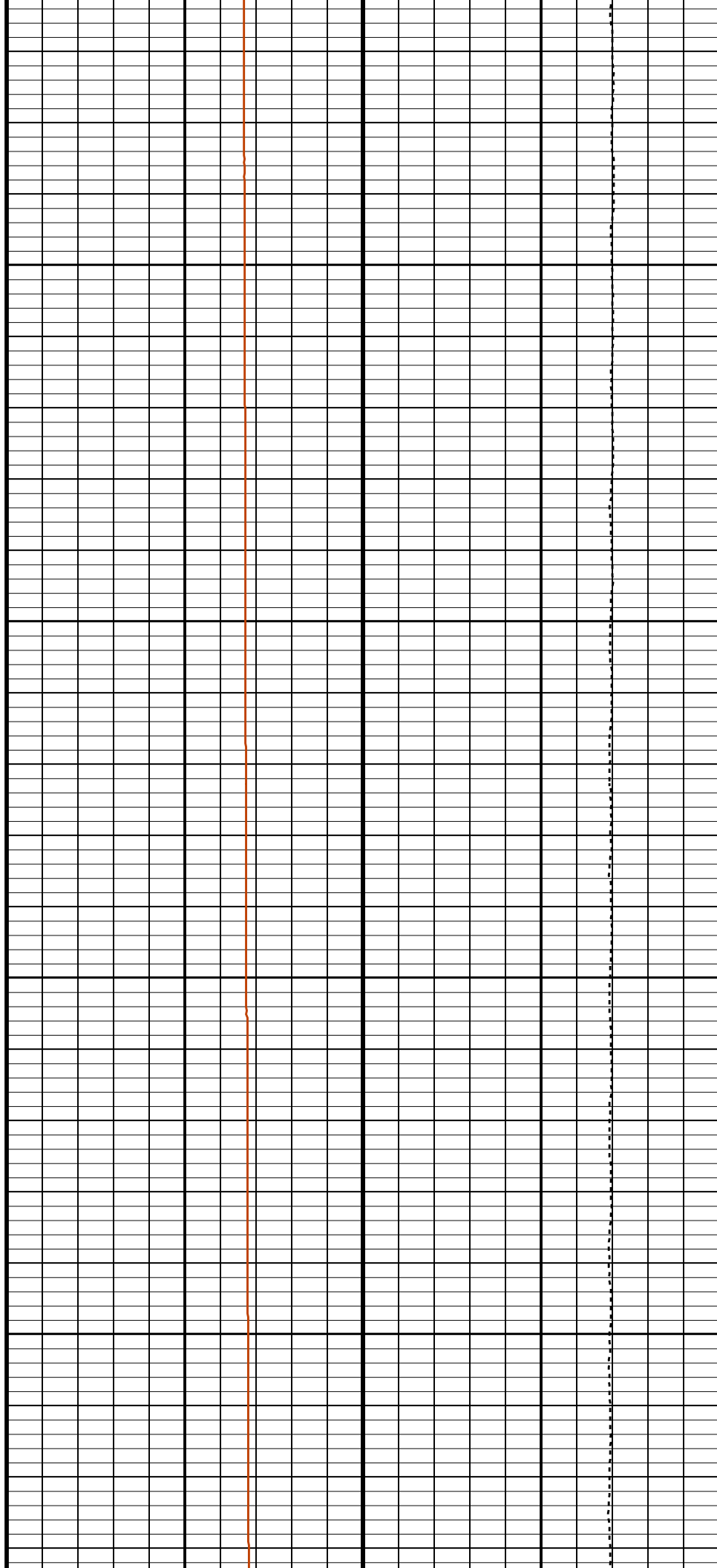
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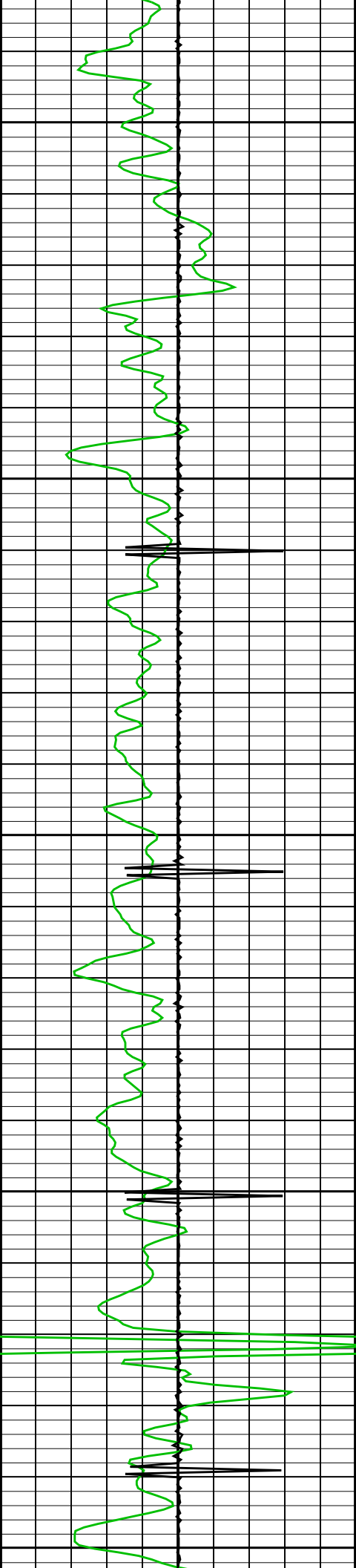




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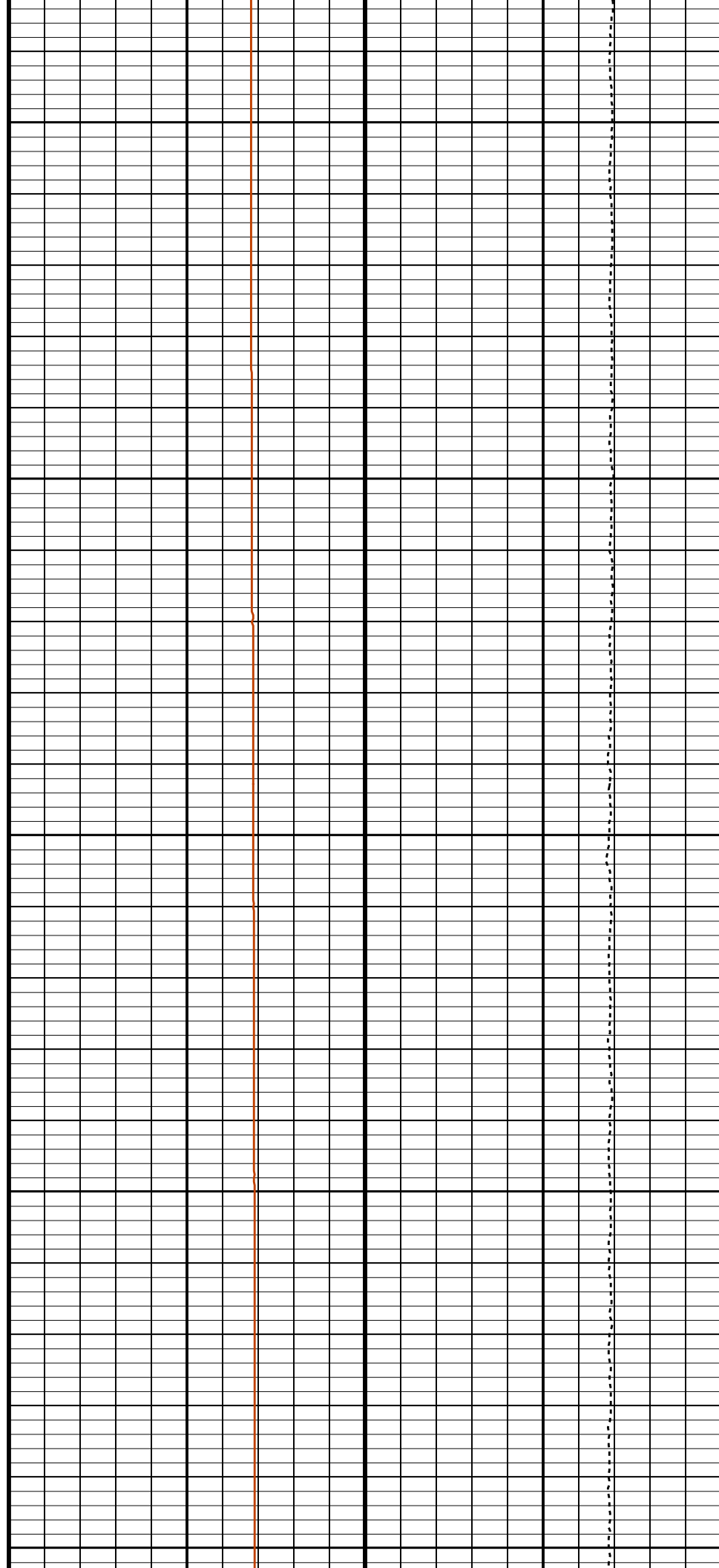


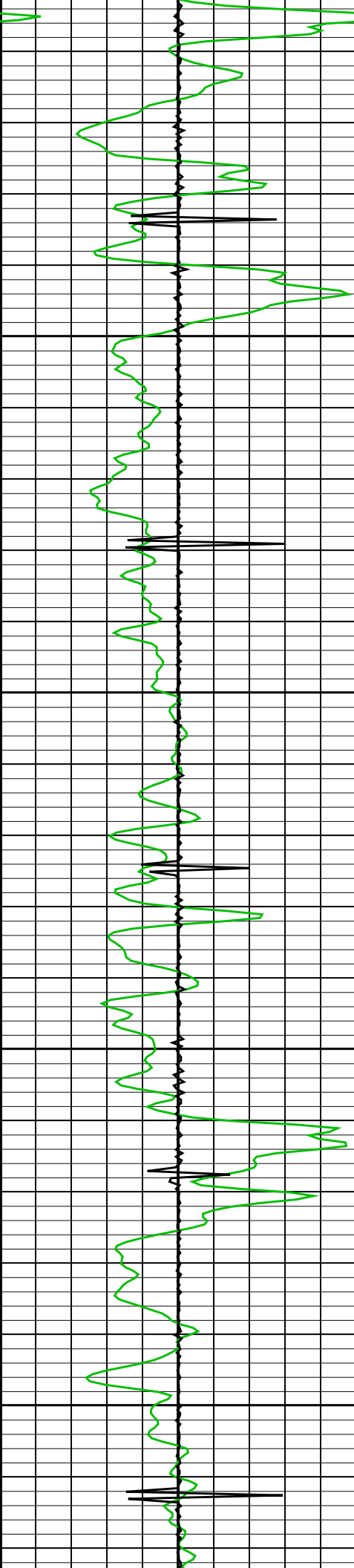


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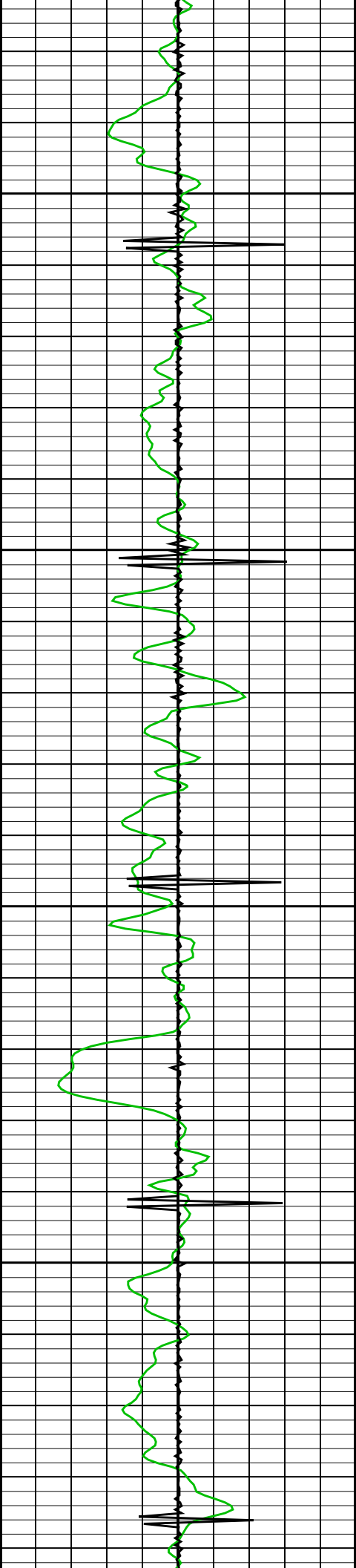
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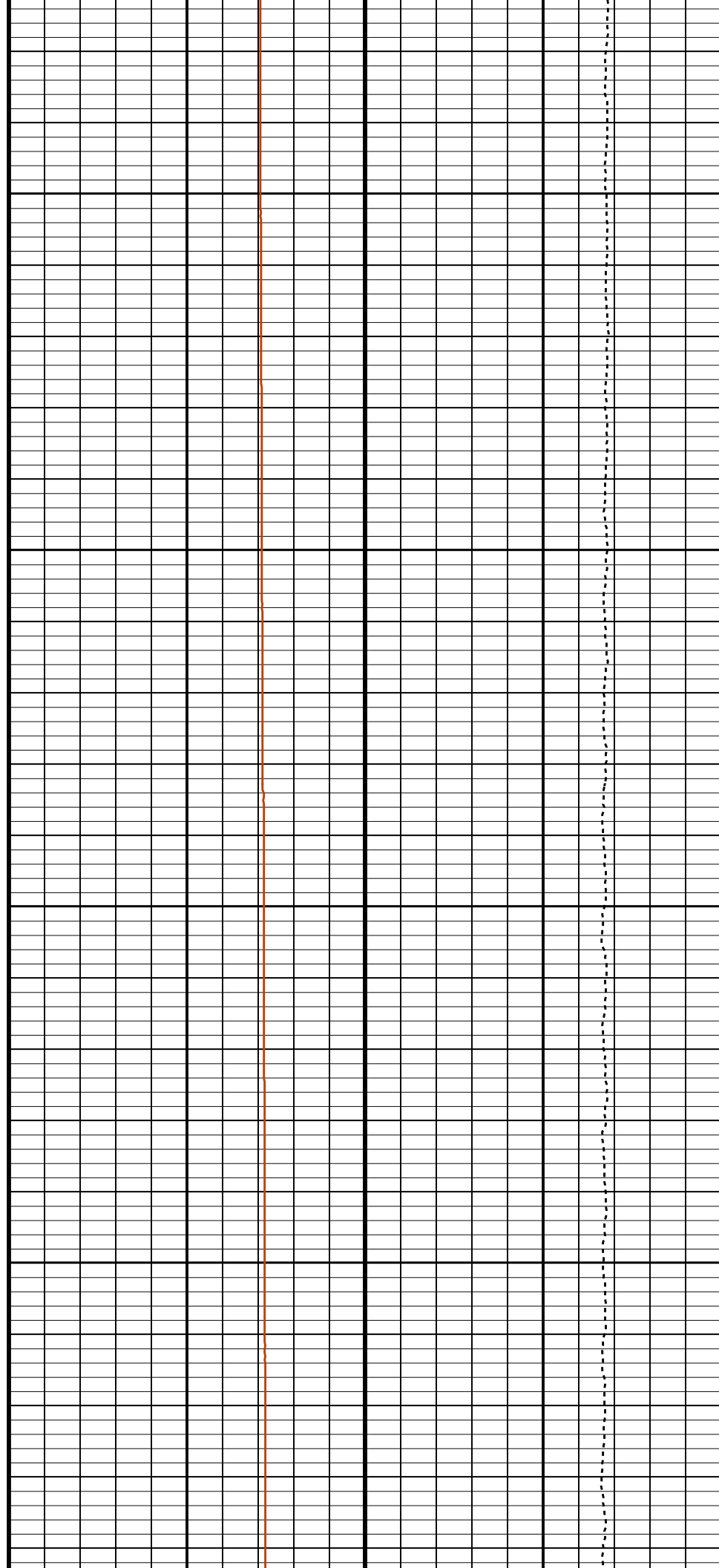
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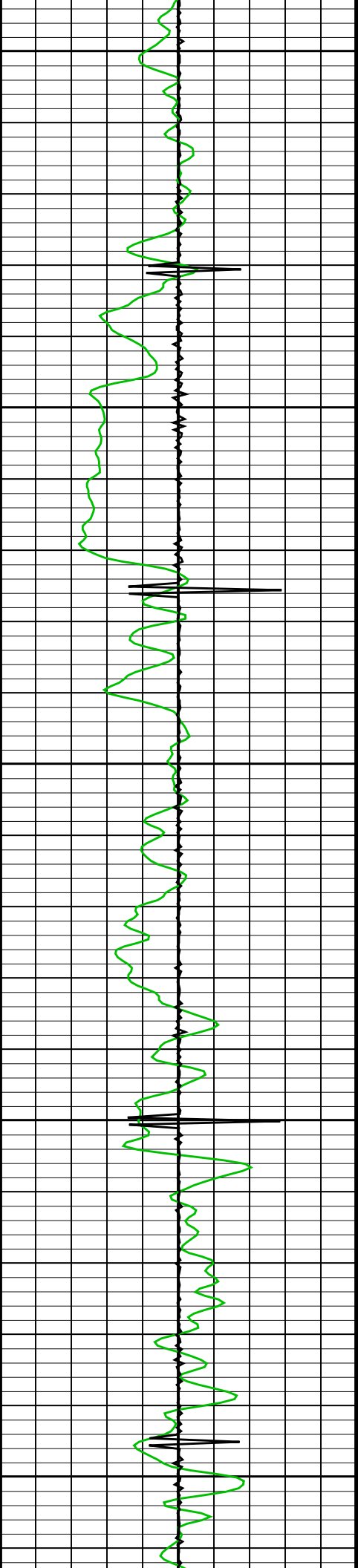
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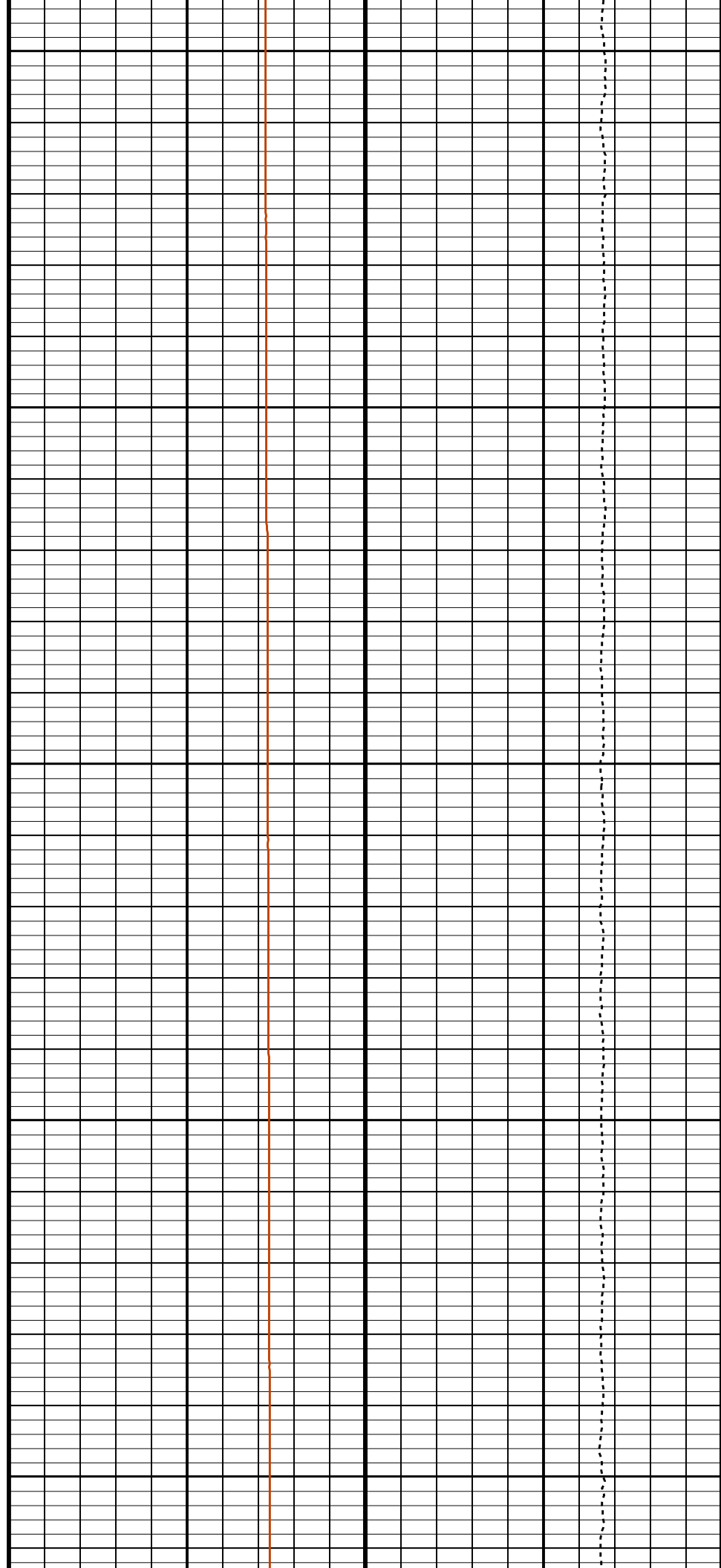
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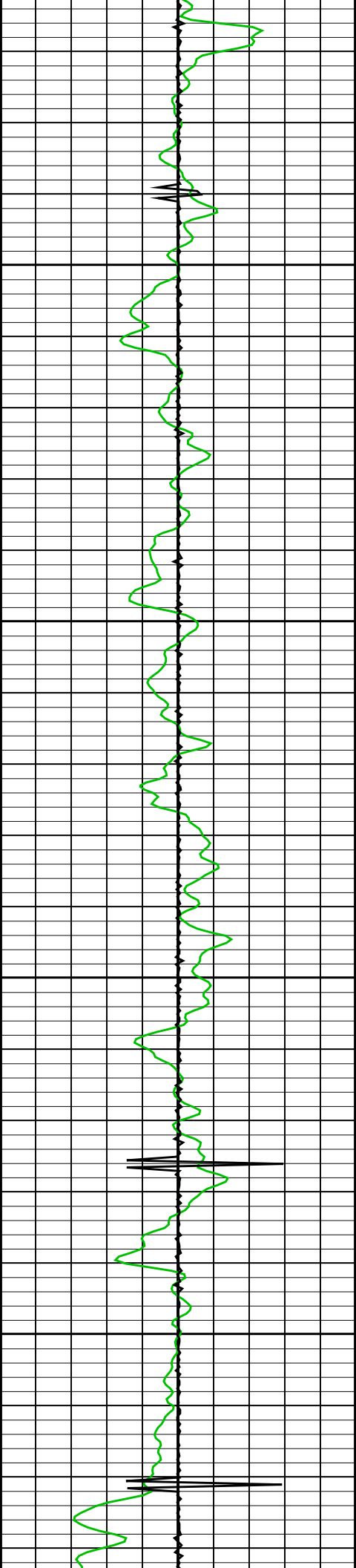




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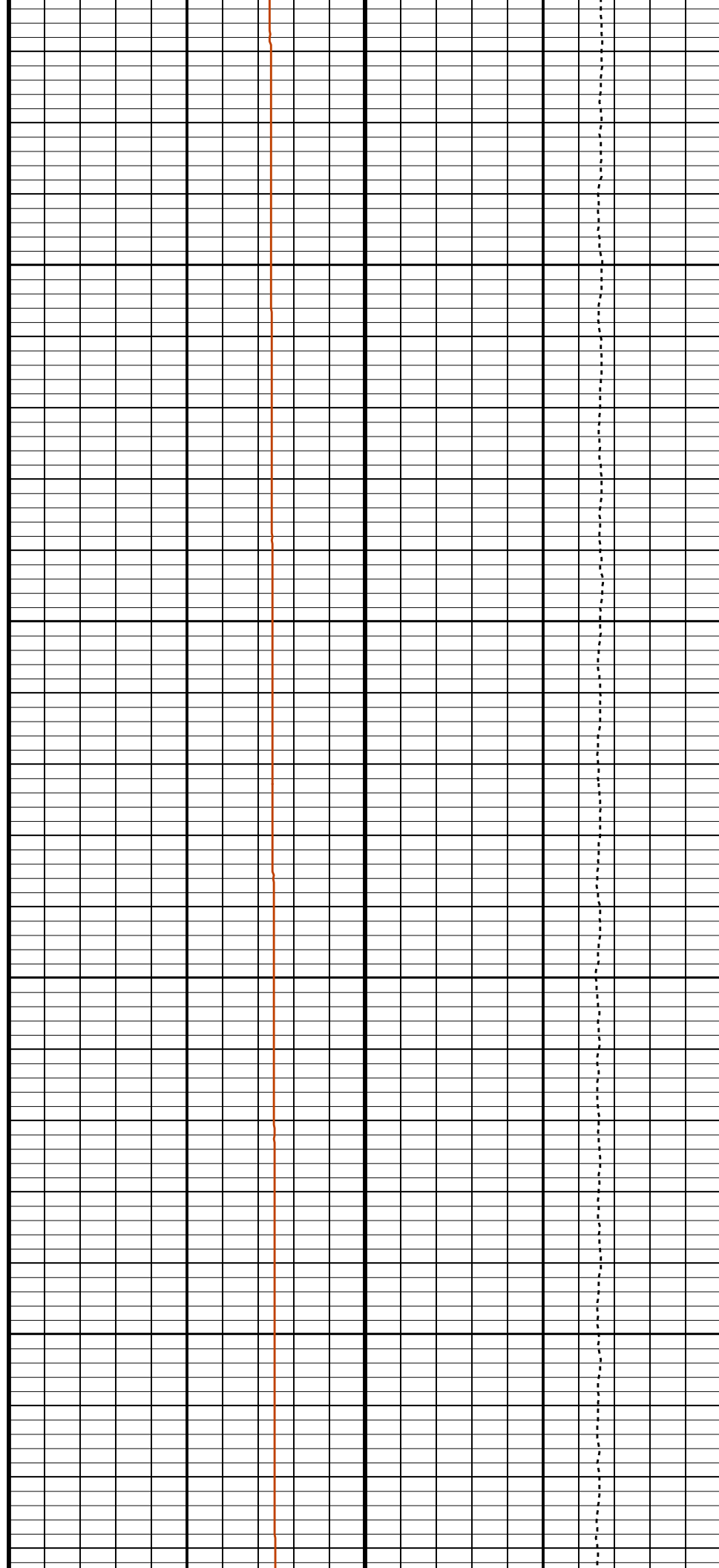
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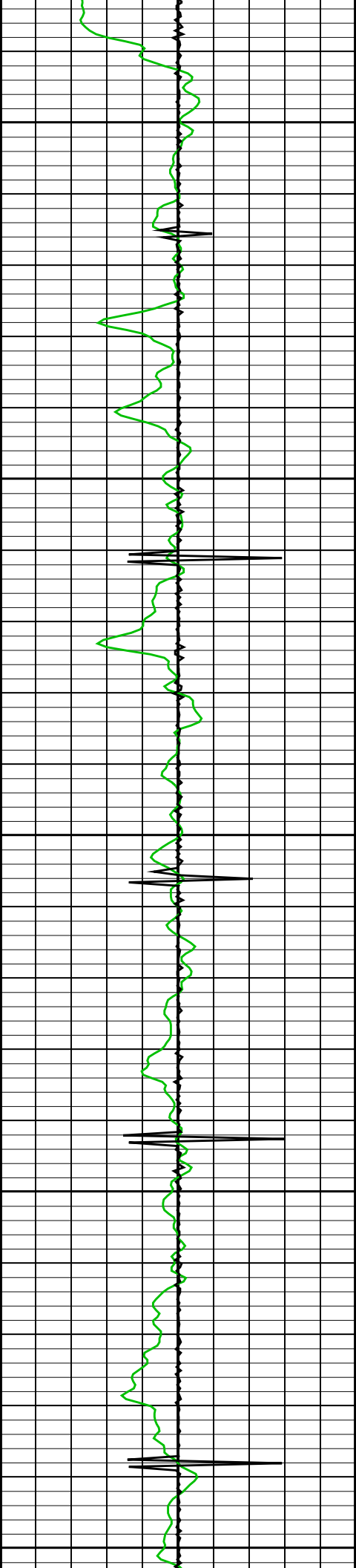




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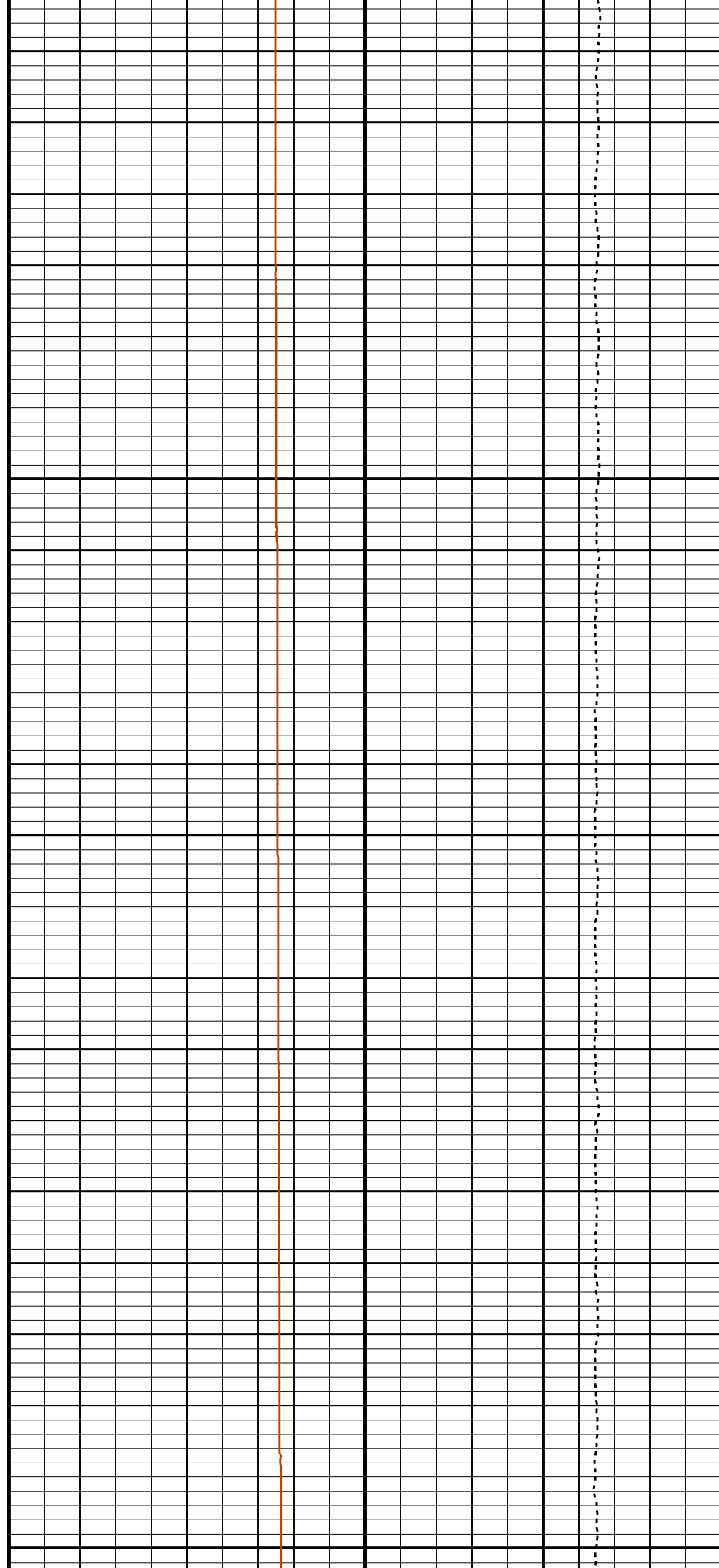


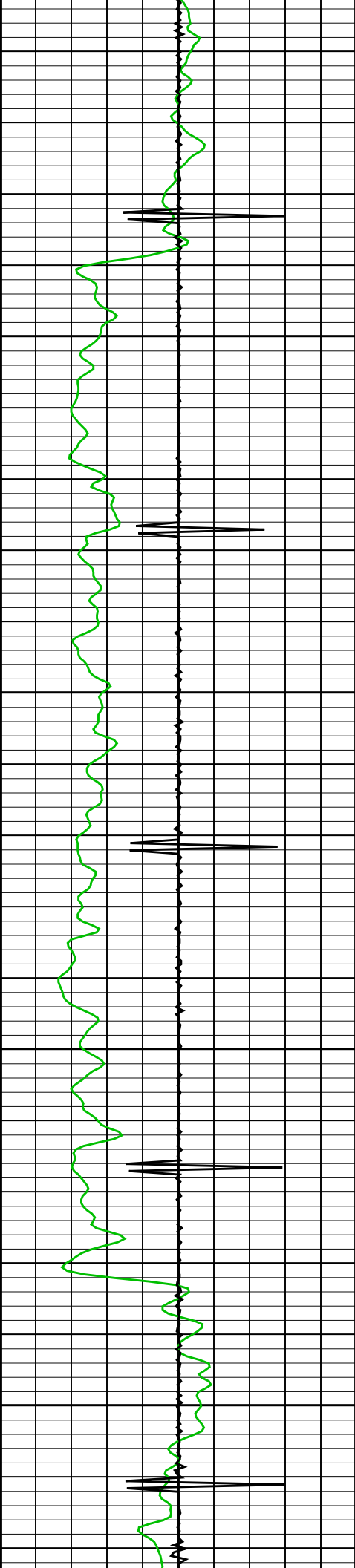


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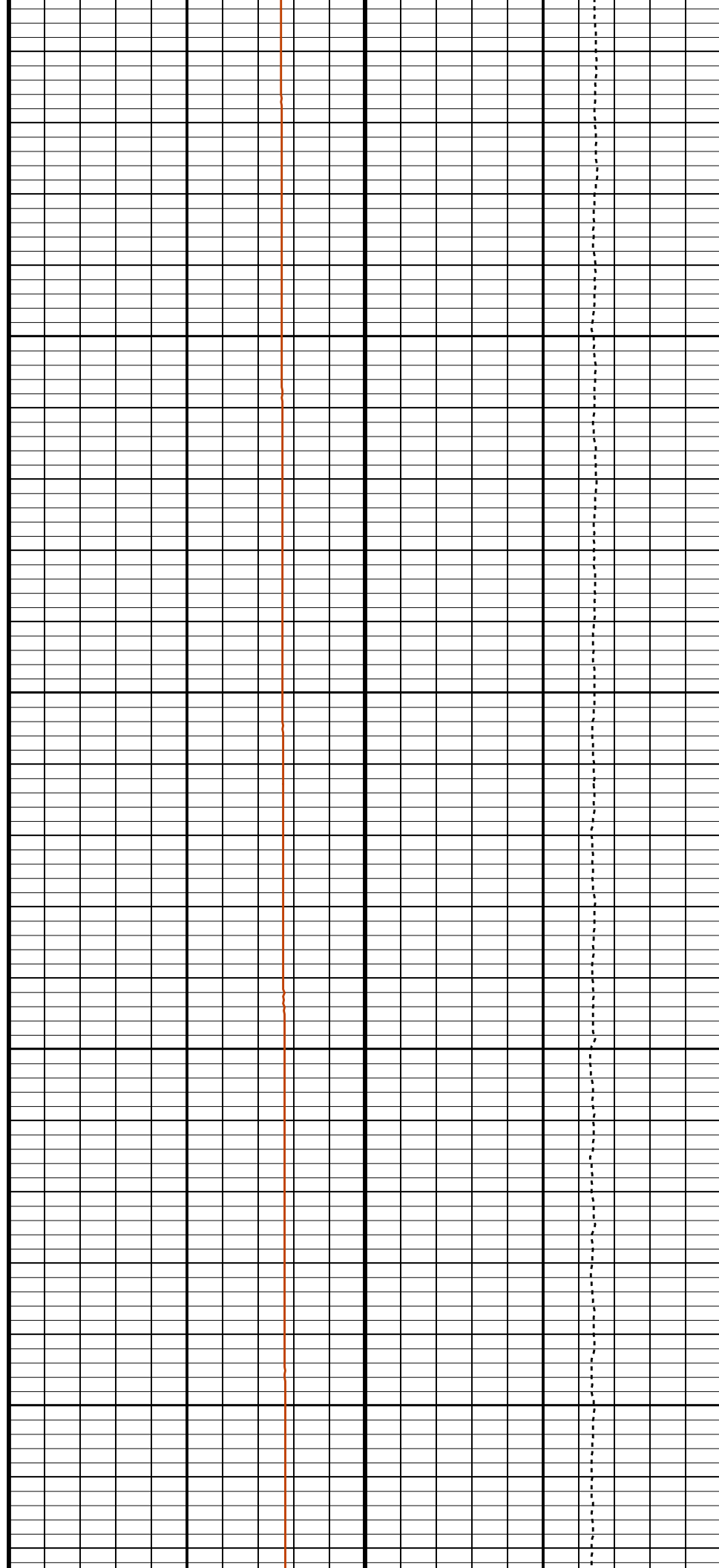
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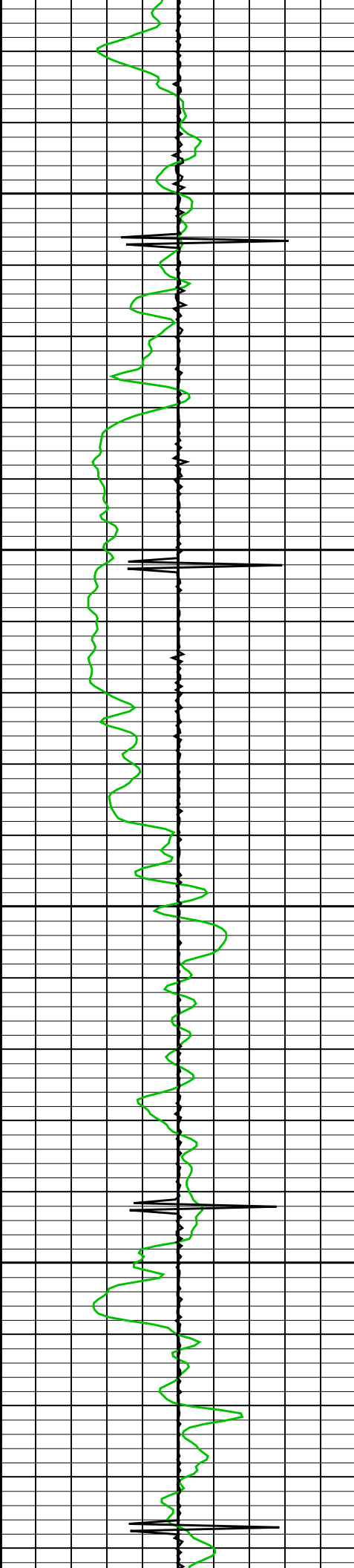




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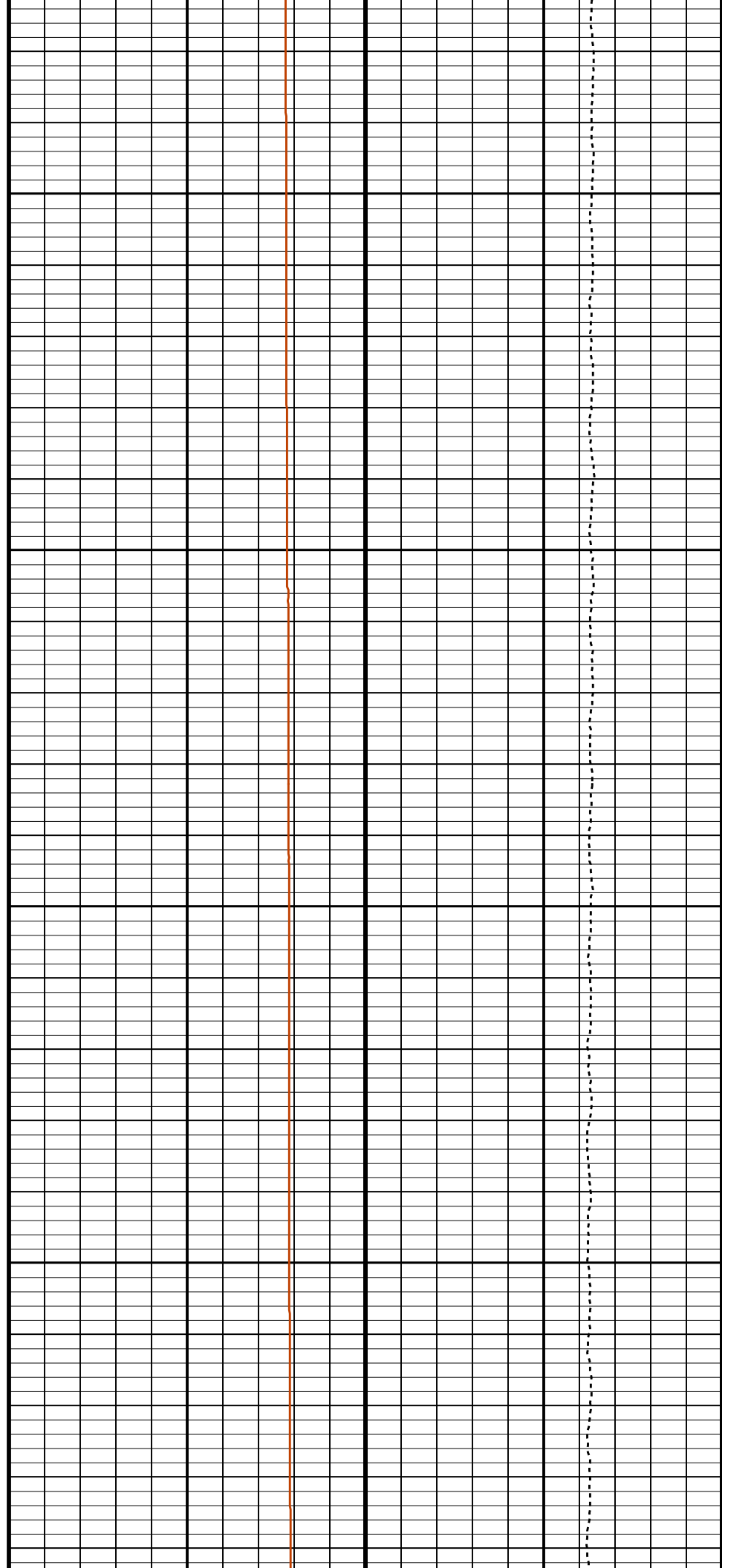
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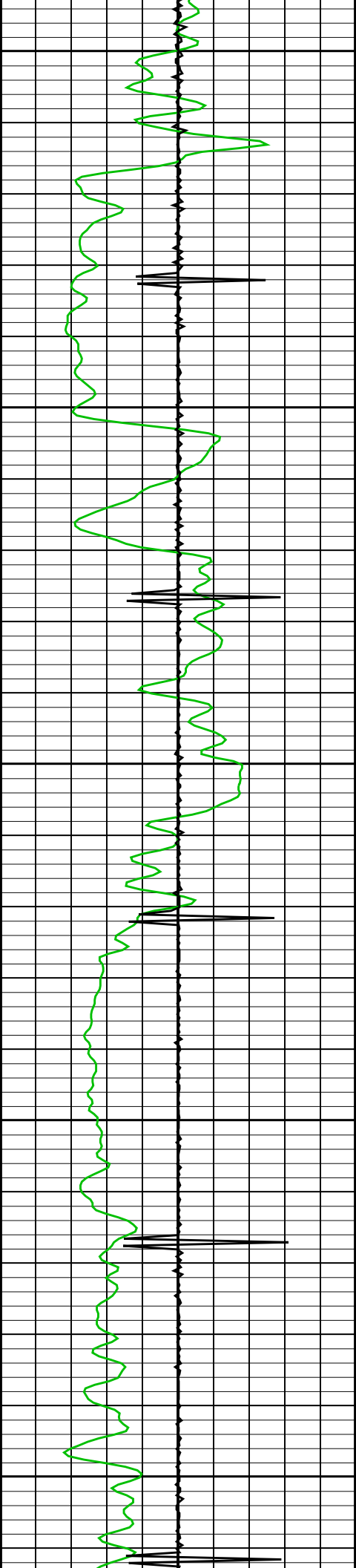




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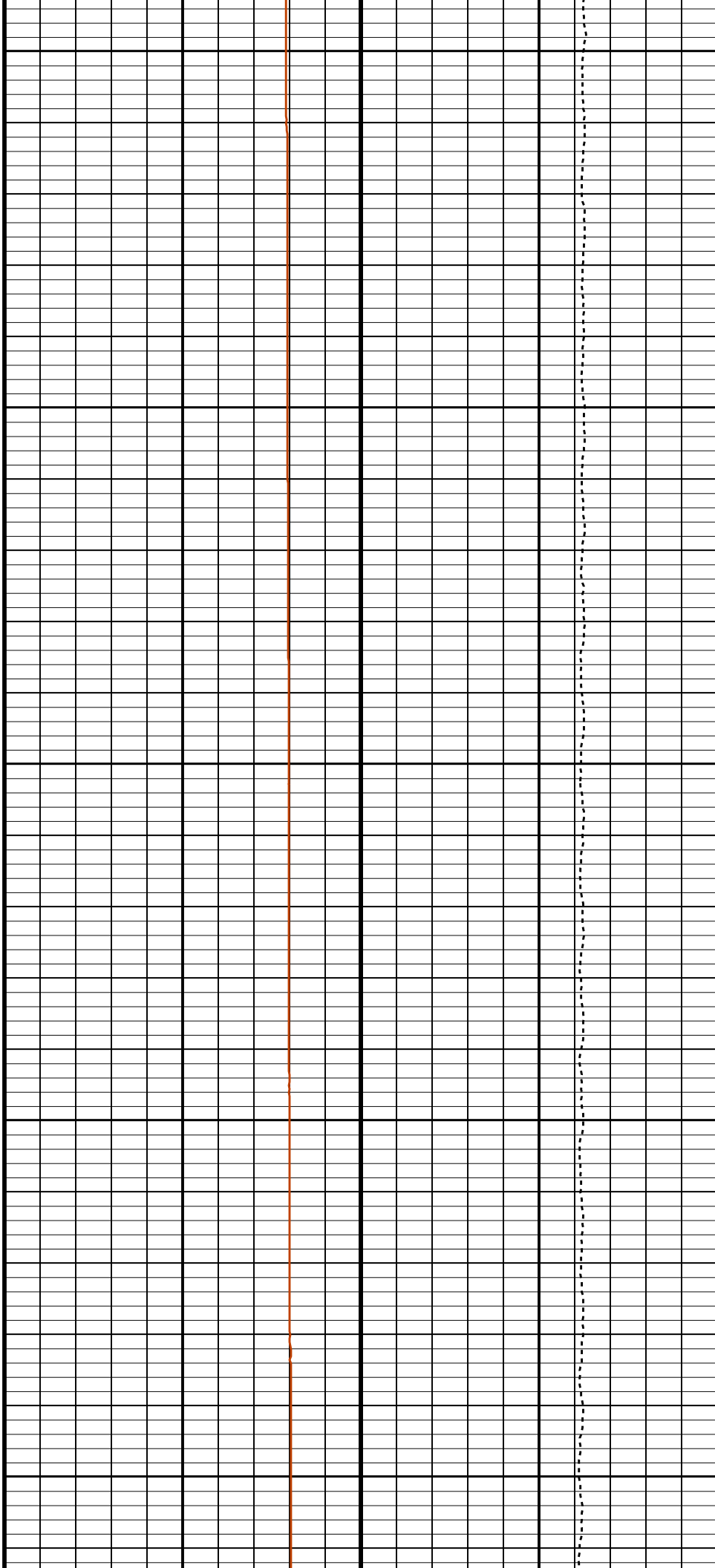
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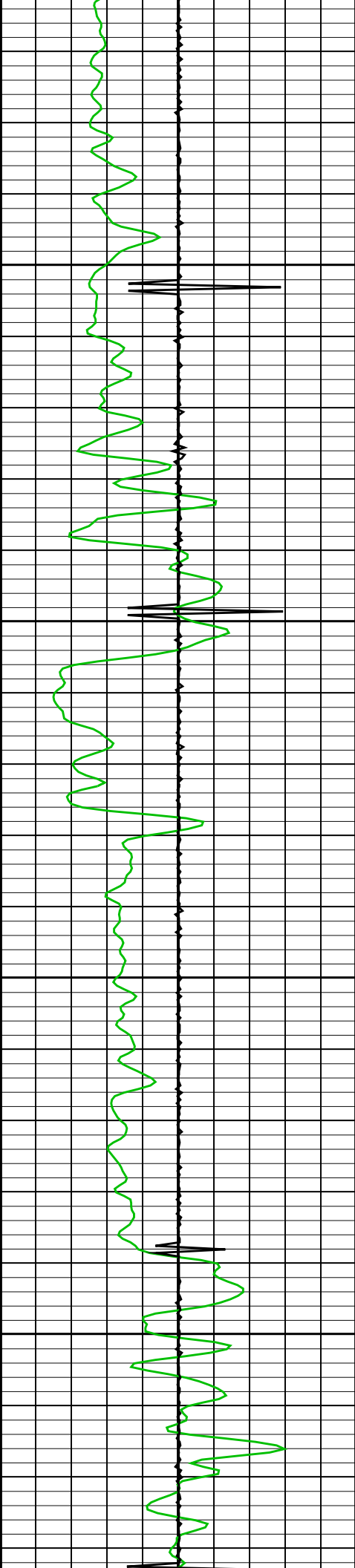




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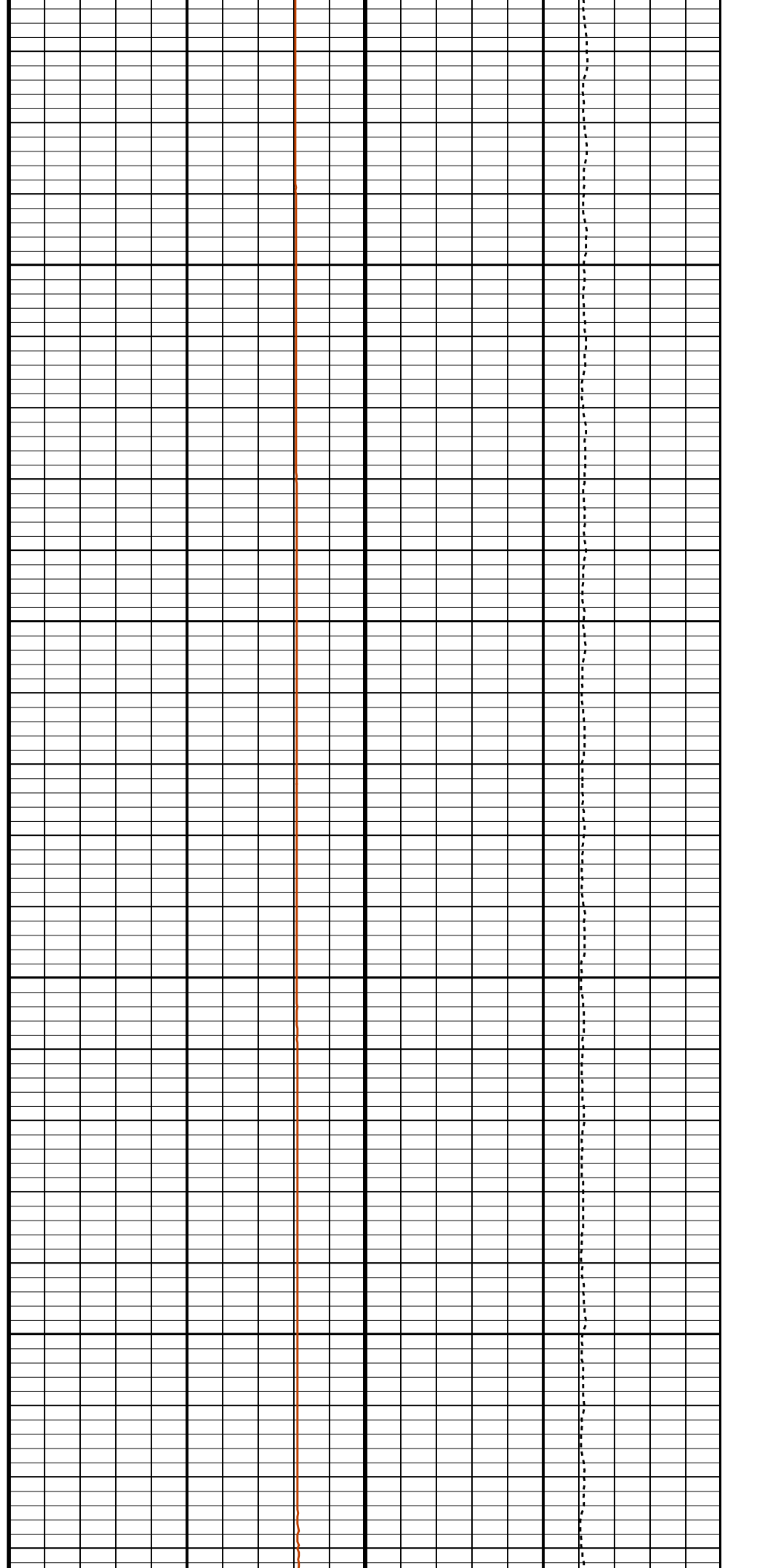
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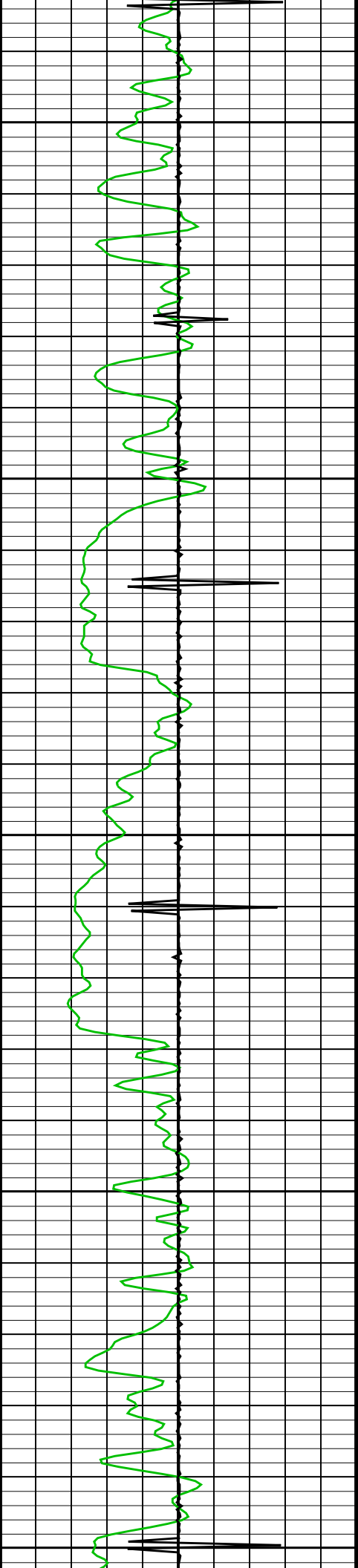




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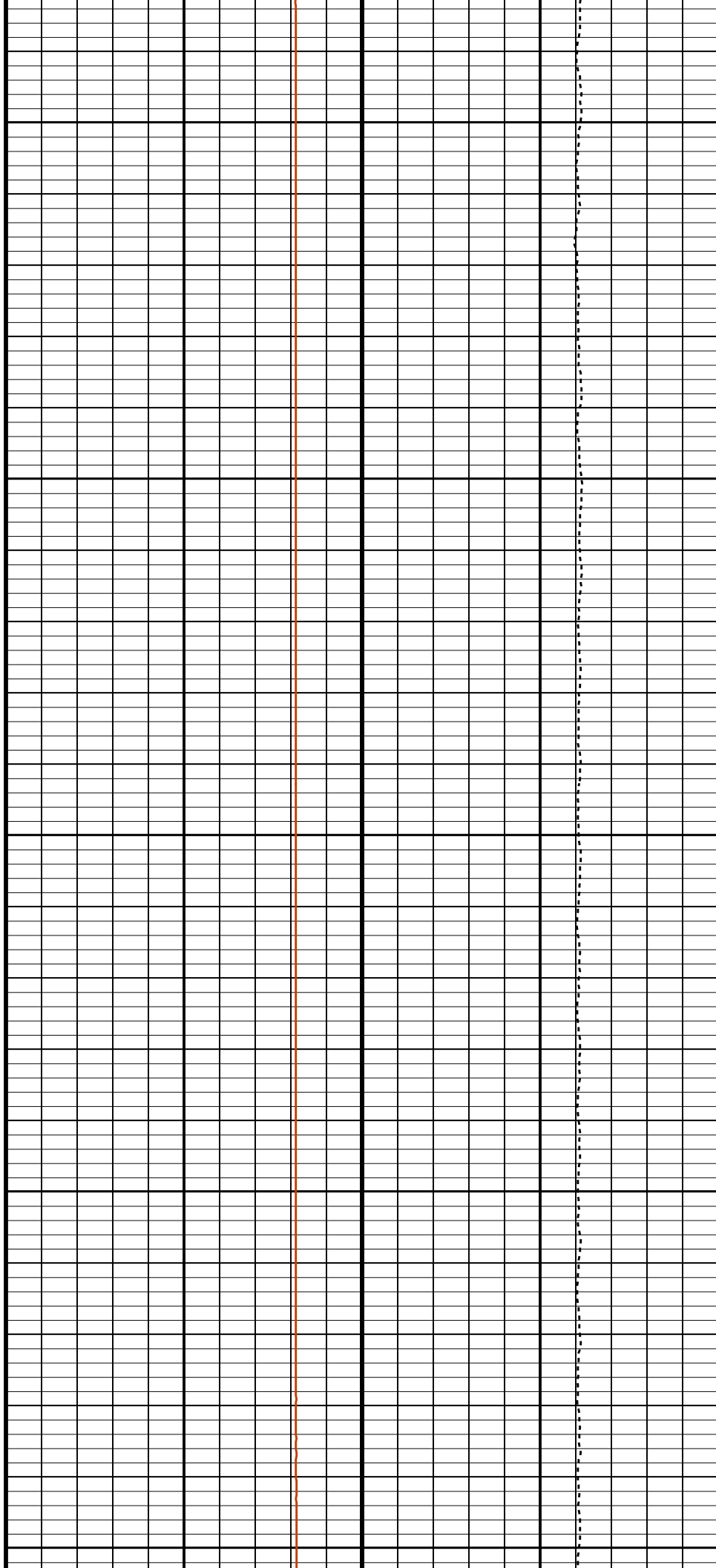


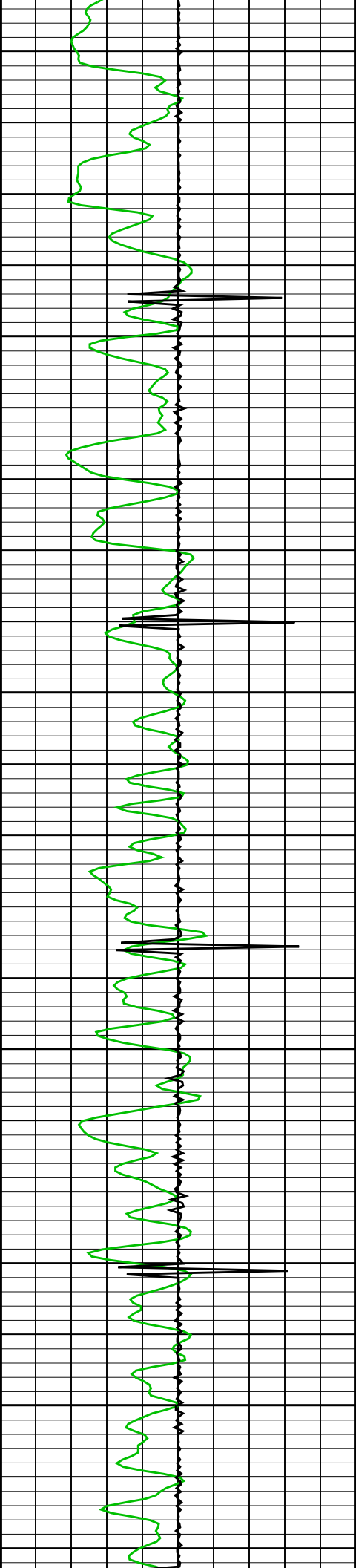


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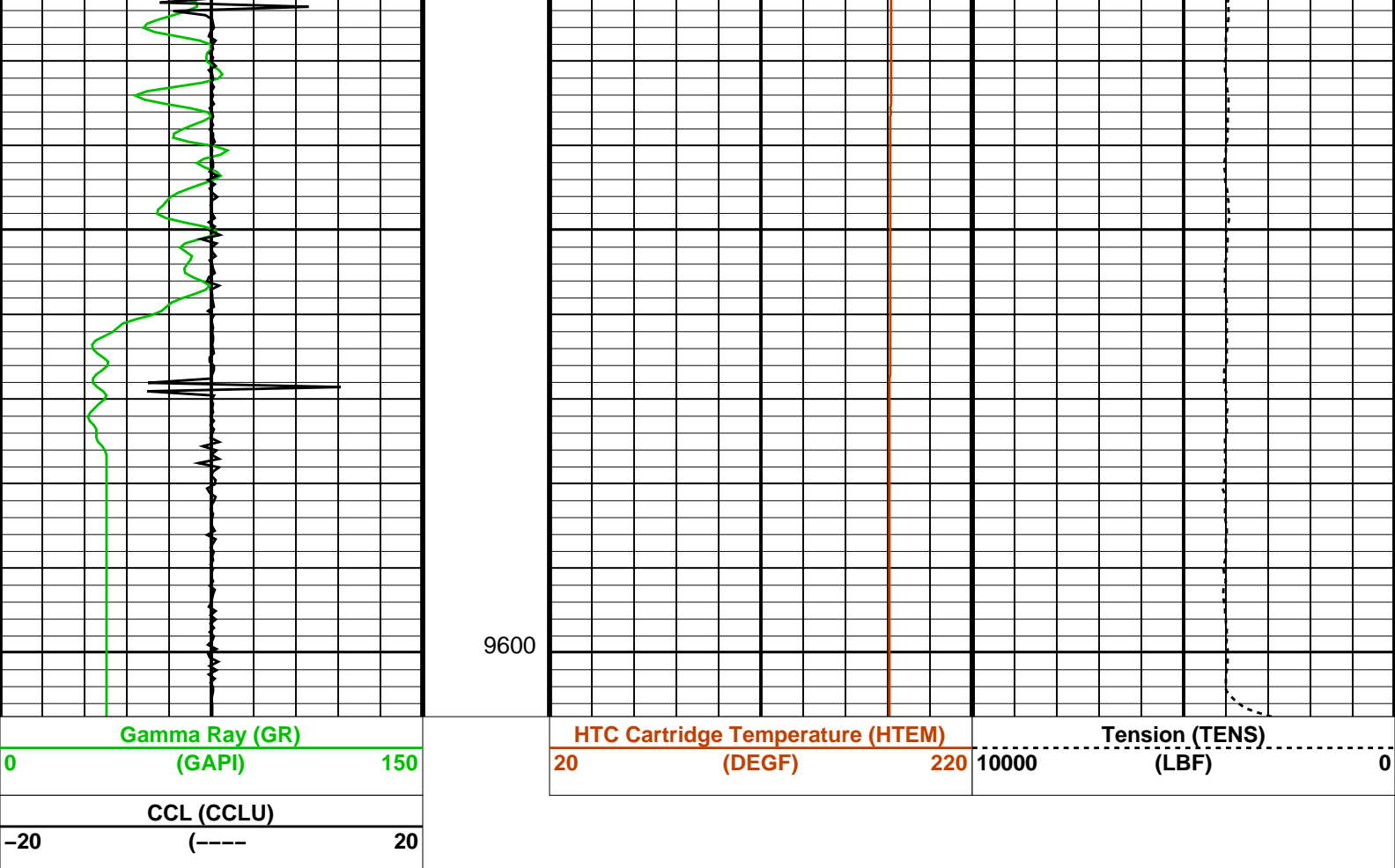
9300





9400

9500



Parameters


DLIS Name	Description	Value
USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	206 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	110 V
MW	Mud Weight	11.5 LB/G
RCOD	Reference Calibrator Outer Diameter	7 IN
RCSO	Reference Calibrator Standoff	1.1811 IN
RCTH	Reference Calibrator Thickness	0.2952 IN
TCUB	T^3 Processing Level	Vax_Loop
THDH	Maximum Search Thickness (percentage of nominal)	130
THDL	Minimum Search Thickness (percentage of nominal)	70
THDP	Thickness Detection Policy	Fundamental
THNO	Nominal Thickness of Casing	0.362 IN
USTO	Ultrasonic Time Offset	-2 US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF
VCAS	Ultrasonic Transversal Velocity in Casing	51.4 US/F
WLEN	T^3 Processing Length	21.7078 US
ZCAS	Acoustic Impedance of Casing	46.25 MRAY
ZINI	Initial Estimate of Cement Impedance	-1 MRAY
ZMUD	Acoustic Impedance of Mud	2.15 MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6 MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3 MRAY
System and Miscellaneous		
CWEI	Casing Weight	26.00 LB/F
DO	Depth Offset for Playback	6.0 FT
DORL	Depth Offset for Repeat Analysis	0.0 FT
PP	Playback Processing	RECOMPUTE

Format: CORRELATION

Vertical Scale: 5" per 100'

Graphics File Created: 18-May-2010 14:19

Input DLIS Files						
DEFAULT	USI_TLD_MCFL_CNL_013LUP	FN:12	PRODUCER	18-May-2010 09:11	9601.5 FT	300.0 FT
Output DLIS Files						
DEFAULT	USI_TLD_MCFL_CNL_008PUP	FN:7	PRODUCER	18-May-2010 14:19		



Correlation Repeat

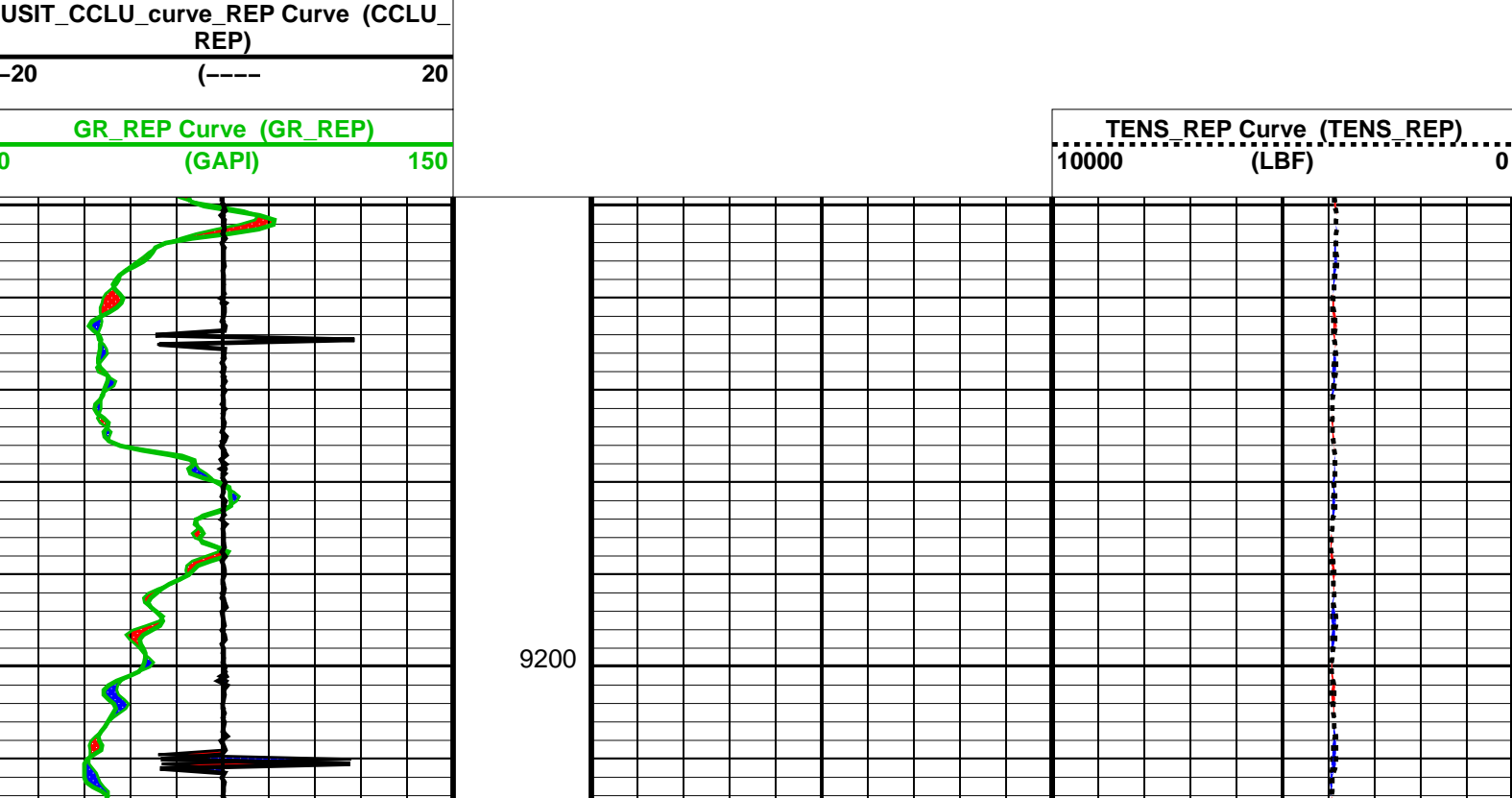
MAXIS Field Log

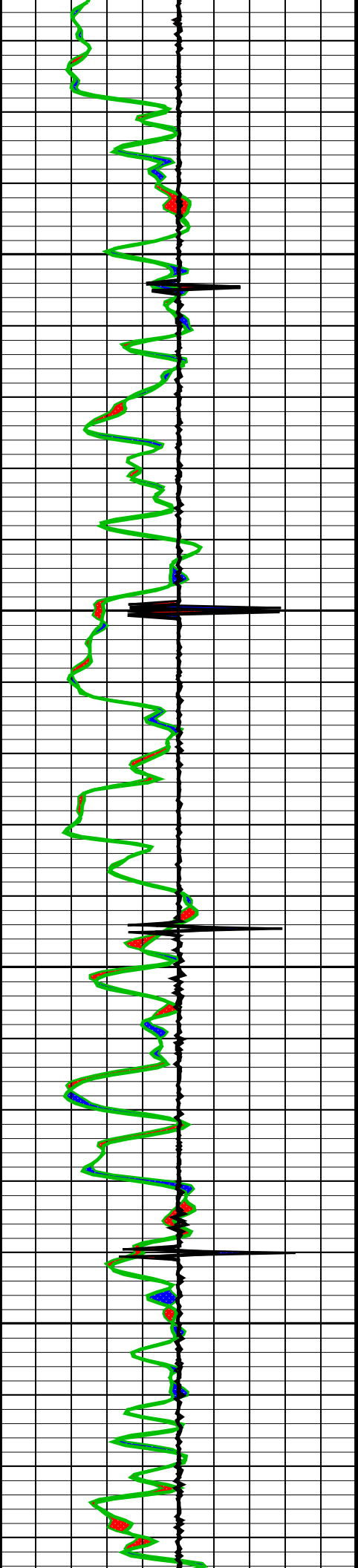
Company: EXXON MOBIL CORPORATION

Well: PCU 296-6A8

Input DLIS Files						
DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	18-May-2010 14:07	9568.0 FT	9149.0 FT
DEFAULT	USI_TLD_MCFL_CNL_013LUP	FN:12	PRODUCER	18-May-2010 09:11	9601.5 FT	300.0 FT
Output DLIS Files						
DEFAULT	USI_TLD_MCFL_CNL_008PUP	FN:7	PRODUCER	18-May-2010 14:19		

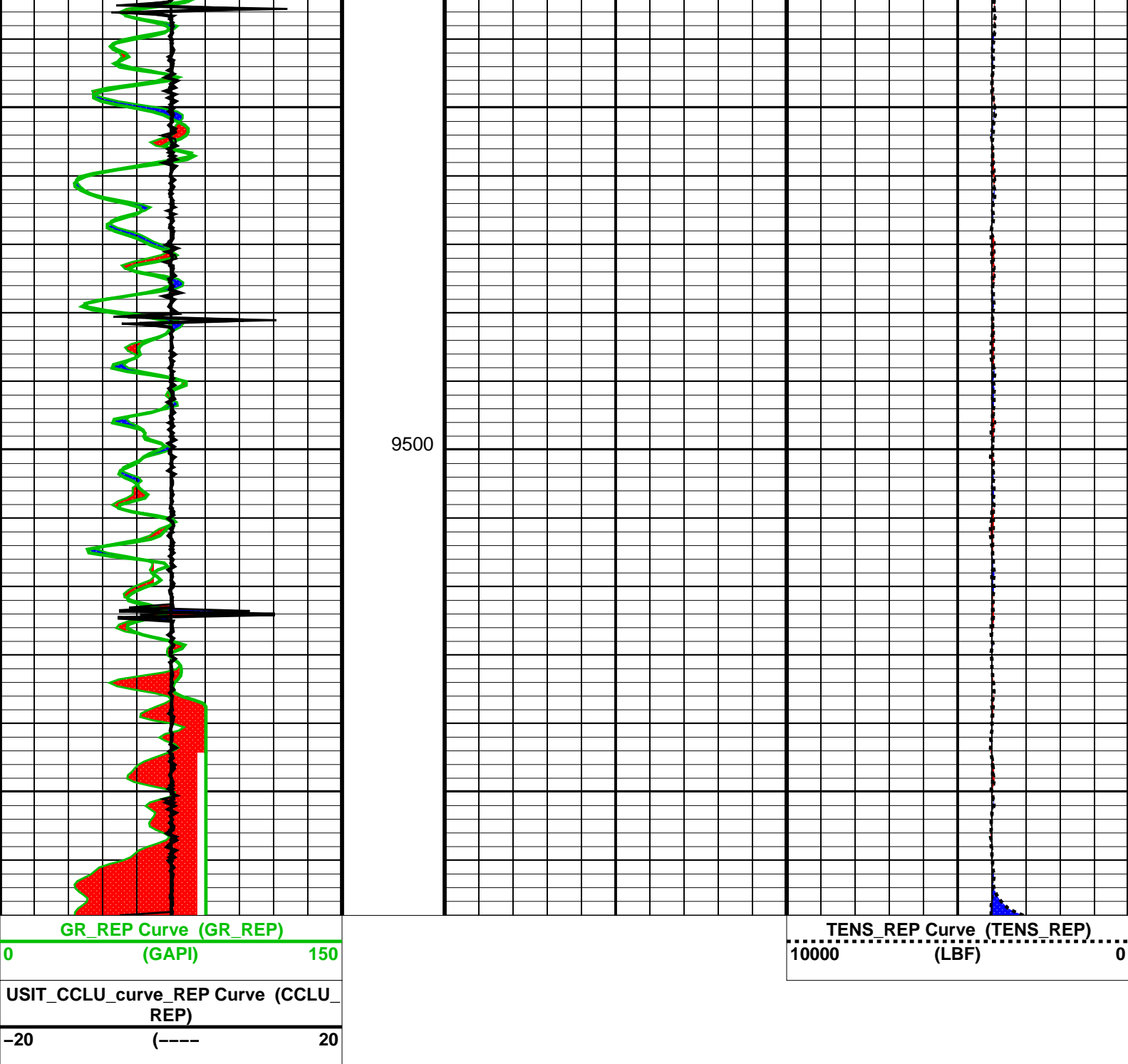
OP System Version: 17C0-154			
USIT-D DTC-H	17C0-154 17C0-154	HILTH-FTB	17C0-154





9300

9400



Parameters

DLIS Name

Description

Value

USIT-D: Ultrasonic Imaging - D		
AGMN	Minimum Gain of Cartridge	-4 DB
AGMX	Maximum Gain of Cartridge	20 DB
BERJ	Bad Echo Rejection	ON
CDIA	Casing Outer Diameter	7 IN
CSDE	Casing Density	486.94 LBCF
CSID	Casing Inner Diameter	6.276 IN
DFVL	Default Fluid Velocity	206 US/F
DOT	Diameter of Transducer Sensor	2.874 IN
EMXV	EMEX Voltage	110 V
MW	Mud Weight	11.5 LB/G
RCOD	Reference Calibrator Outer Diameter	7 IN
RCSO	Reference Calibrator Standoff	1.1811 IN
RCTH	Reference Calibrator Thickness	0.2952 IN
TCUB	T^3 Processing Level	Vax_Loop
THDH	Maximum Search Thickness (percentage of nominal)	130
THDL	Minimum Search Thickness (percentage of nominal)	70
THDP	Thickness Detection Policy	Fundamental
THNO	Nominal Thickness of Casing	0.362 IN

USTO	Ultrasonic Time Offset	-2	US
USUB	Ultrasonic Subassembly Identifier	Sub_7_inch	
UWKM	Ultrasonic Working Mode	5DEG_6IN_136UNF_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.7078	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	-1	MRAY
ZMUD	Acoustic Impedance of Mud	2.15	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
System and Miscellaneous			
CWEI	Casing Weight	26.00	LB/F
DO	Depth Offset for Playback	6.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	

Format: CORRELATION_REP Vertical Scale: 5" per 100' Graphics File Created: 18-May-2010 14:19

OP System Version: 17C0-154

USIT-D	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

Input DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	18-May-2010 14:07	9568.0 FT	9149.0 FT
DEFAULT	USI_TLD_MCFL_CNL_013LUP	FN:12	PRODUCER	18-May-2010 09:11	9601.5 FT	300.0 FT

Output DLIS Files

DEFAULT	USI_TLD_MCFL_CNL_008PUP	FN:7	PRODUCER	18-May-2010 14:19
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Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Detector Calibration							
Before: 17-May-2010 19:37							
Gamma Ray Background	30.00	N/A	28.00	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	167.3	N/A	167.3	N/A	N/A	15.21	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Zero Measurement							
Master: 19-Feb-2010 15:58 Before: 17-May-2010 19:46							
CNTC Background	26.67	26.67	27.18	N/A	N/A	4.001	CPS
CFTC Background	29.55	29.55	27.93	N/A	N/A	4.432	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Ratio Measurement							
Master: 19-Feb-2010 15:58							
Thermal Near Corr. (Tank)	5800	5258	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2175	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.417	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration							
Before: 18-May-2010 7:53							
Z-Axis Acceleration	32.19	N/A	32.17	N/A	N/A	N/A	F/S2

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 59.4 DEGF.
Thermal Housing Size 3.374 IN.
NSR-F serial number 0

High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:

HILT Gamma-Ray Neutron Sonde-DTS
HGNS Gamma-Ray Device
HGNS Neutron Detector with Alpha Source
Z-Axis Accelerometer
Compensated Neutron Box
HTBC Communication Assembly DTS Mode

HGNS - H
HGR -
HCNT - H
HACC - H
CNB - AB
HMCA - H

3577




Auxiliary Equipment:

Neutron Calibration Tank
Gamma Source Radioactive
HGNS Housing

NCT - B
GSR - U/Y
HGNH -

High resolution Integrated Logging Tool-DTS Wellsite Calibration





Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		28.00	Before		167.3	Before		165.0
0 (Minimum)	30.00 (Nominal) 120.0 (Maximum)		152.1 (Minimum)	167.3 (Nominal) 182.5 (Maximum)		150.0 (Minimum)	165.0 (Nominal) 180.0 (Maximum)	

Before: 17-May-2010 19:37

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Zero Measurement



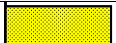
Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		26.67	Master		29.55
Before		27.18	Before		27.93
5.000 (Minimum)	26.67 (Nominal) 40.00 (Maximum)		5.000 (Minimum)	29.55 (Nominal) 40.00 (Maximum)	

Master: 19-Feb-2010 15:58

Before: 17-May-2010 19:46

High resolution Integrated Logging Tool-DTS Wellsite Calibration


Ratio Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5258	Master		2175	Master		2.417
4700 (Minimum)	5800 (Nominal) 6900 (Maximum)		1900 (Minimum)	2400 (Nominal) 2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal) 2.540 (Maximum)	

Master: 19-Feb-2010 15:58

High resolution Integrated Logging Tool-DTS Wellsite Calibration



Accelerometer Calibration

Phase	Z-Axis Acceleration F/S2	Value
Before		32.17
31.53 (Minimum)	32.19 (Nominal) 32.84 (Maximum)	

Before: 18-May-2010 7:53

High resolution Integrated Logging Tool-DTS Master Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		26.67	Master		29.55
5.000 (Minimum)	26.67 (Nominal) 40.00 (Maximum)		5.000 (Minimum)	29.55 (Nominal) 40.00 (Maximum)	

Master: 19-Feb-2010 15:58

High resolution Integrated Logging Tool-DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC/CFTC (Tank)		Value
Master	<div><div></div></div>		5258	Master	<div><div></div></div>		2175	Master	<div><div></div></div>		2.417
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 19-Feb-2010 15:58											

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge
DTC-H Telemetry Cartridge

DTCH - A
DTCH - A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH - KC

Company: **EXXON MOBIL CORPORATION**

Schlumberger

Well: **PCU 296-6A8**

Field: **PICEANCE CREEK**

County: **RIO BLANCO**

State: **CO**

CORRELATION PRINT
GAMMA RAY
CASING COLLAR LOCATOR