



**SUPERIOR**  
Hays,  
Kansas

**DUAL INDUCTION  
LOG**

Company WOOLSEY OPERATING CO. LLC.  
Well WECKWORTH #1  
Field HARDTNER  
County BARBER  
State KANSAS

Company WOOLSEY OPERATING COMPANY, LLC.  
Well WECKWORTH #1  
Field HARDTNER  
County BARBER State KANSAS

Location: API #: 15-007-23476-0000  
2310' FSL & 1650' FWL  
NW - NE - SW  
SEC 9 TWP 35S RGE 12W  
Permanent Datum GROUND LEVEL Elevation 1417  
Log Measured From KELLY BUSHING 9' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
CDL/CNL/PE  
Elevation  
K.B. 1426  
D.F. 1424  
G.L. 1417

Date	12/1/09
Run Number	ONE
Depth Driller	5507
Depth Logger	5510
Bottom Logged Interval	5508
Top Log Interval	00
Casing Driller	10 3/4"@219'
Casing Logger	220
Bit Size	7 7/8
Type Fluid In Hole	CHEMICAL MUD
Density / Viscosity	9.2/55
pH / Fluid Loss	10.5/9.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.870@74F
Rmf @ Meas. Temp	.653@74F
Rmc @ Meas. Temp	1.04@74F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.495@130F
Time Circulation Stopped	3 HOURS
Time Logger on Bottom	1:00 A.M.
Maximum Recorded Temperature	130F
Equipment Number	0836
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	CURTIS COVEY

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

**Comments**

THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
HARDTNER, KS. 1/2 E. ON HWY, S. INTO@CATTLE GUARD



**SUPERIOR**  
Hays,  
Kansas

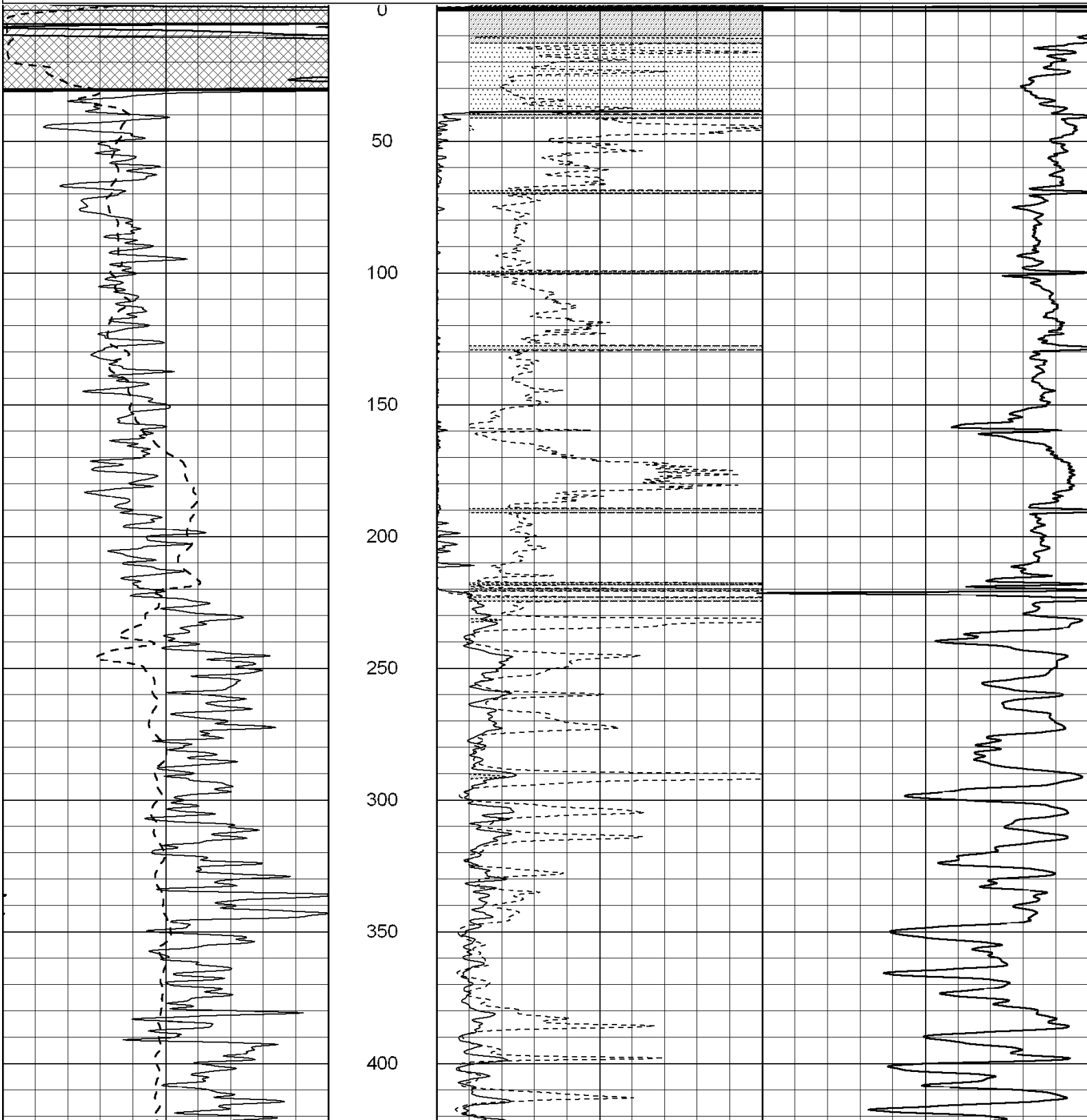
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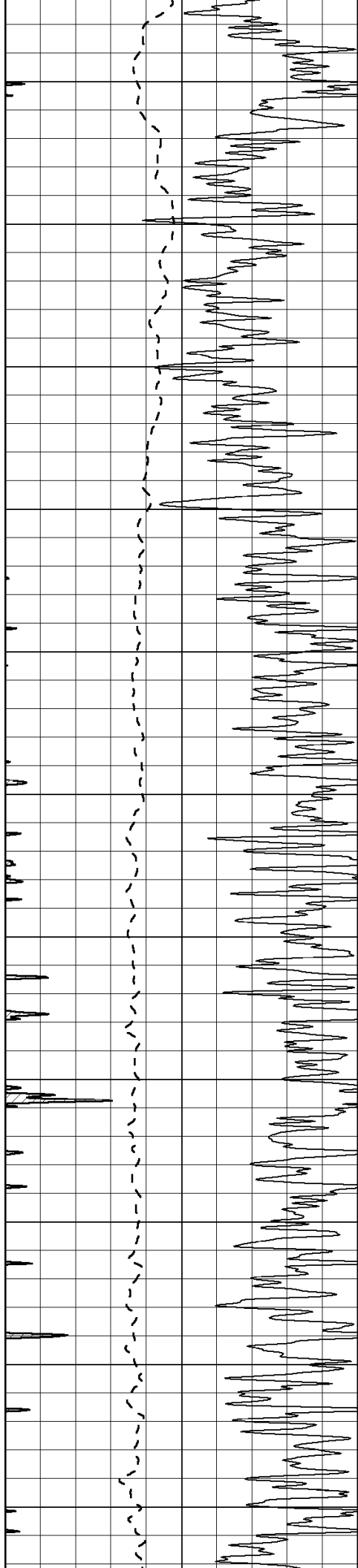
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 Dataset Pathname: pass3.9  
 Presentation Format: dil2  
 Dataset Creation: Wed Dec 02 03:24:29 2009 by Calc Open-Cased 060407  
 Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50

1000	CILD (mmho-m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500





450

500

550

600

650

700

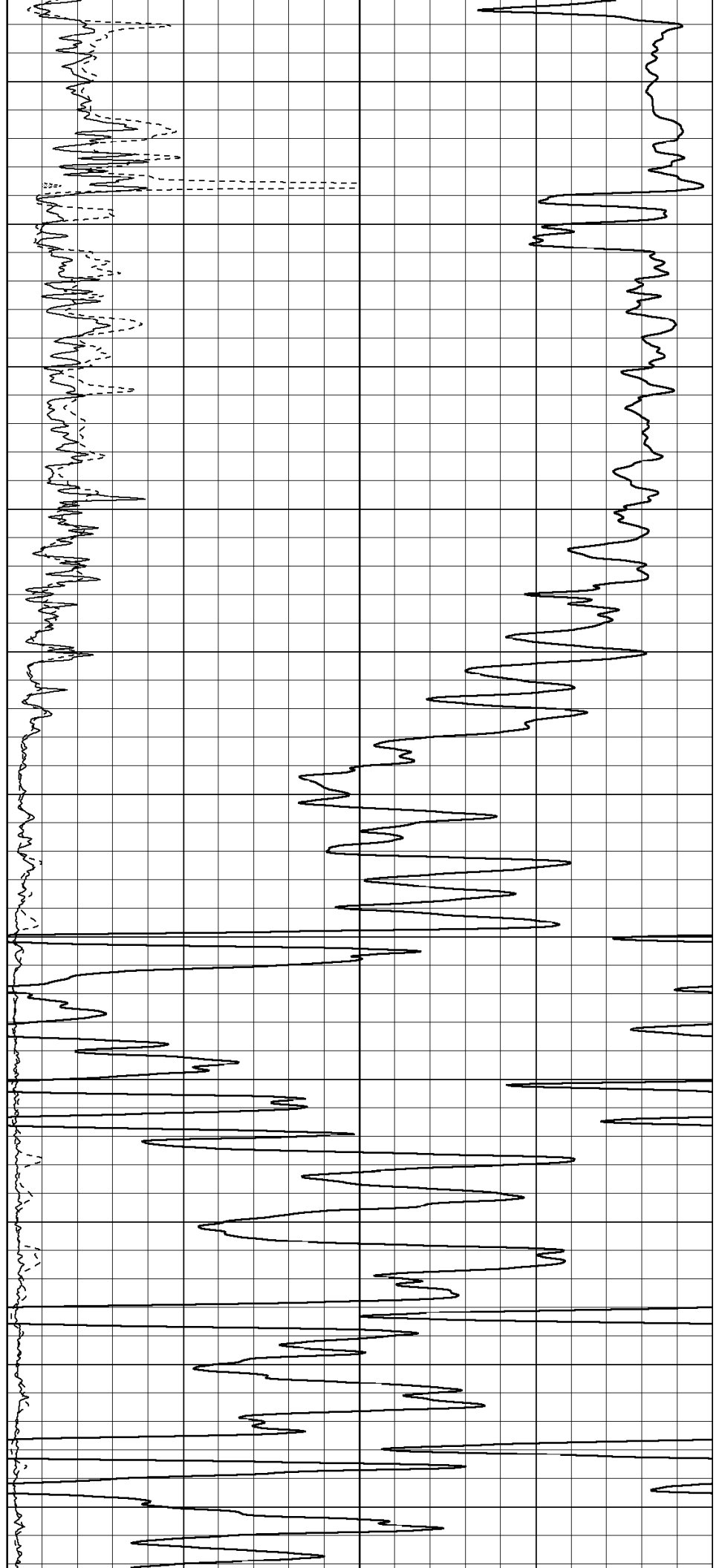
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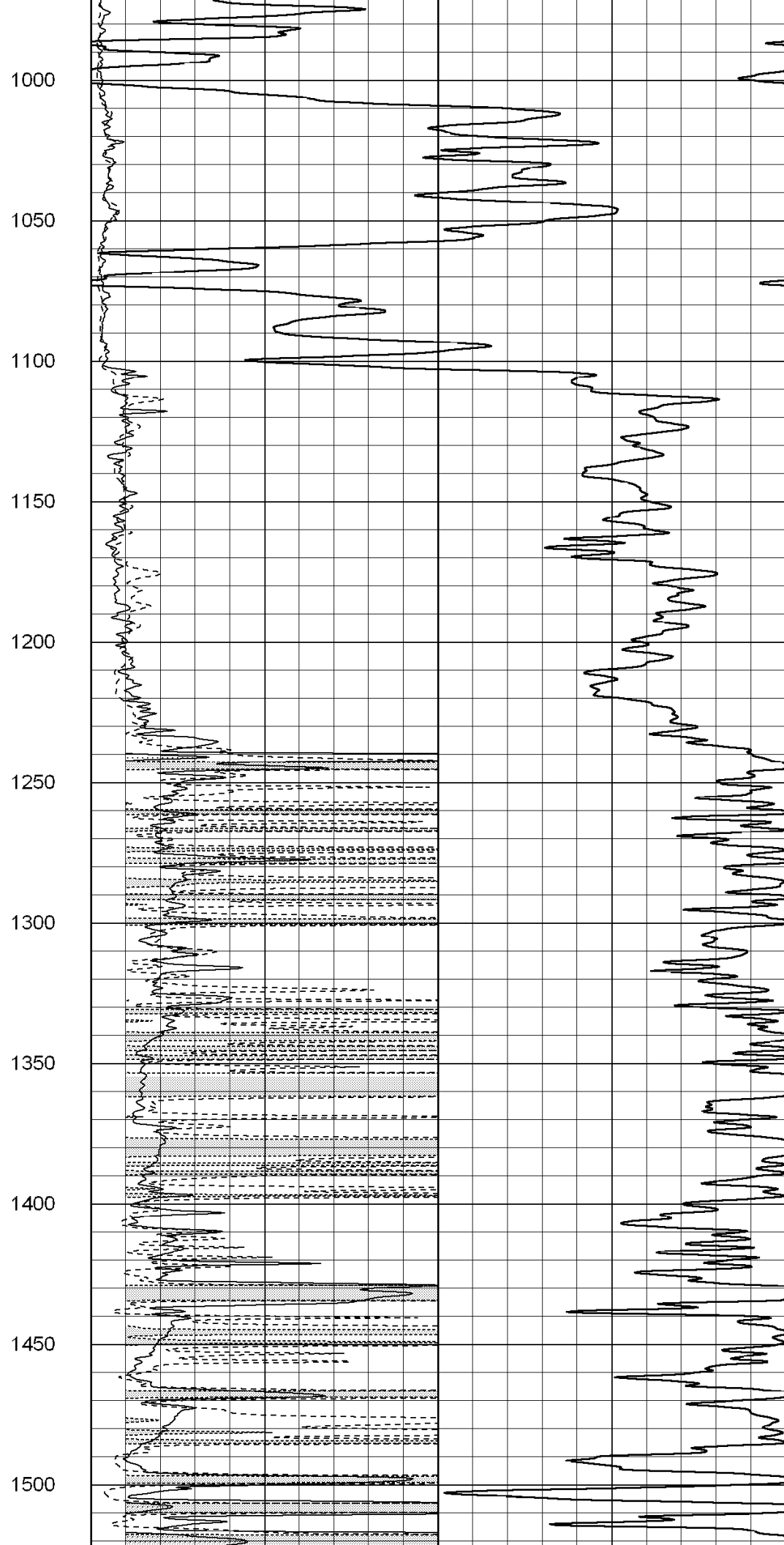
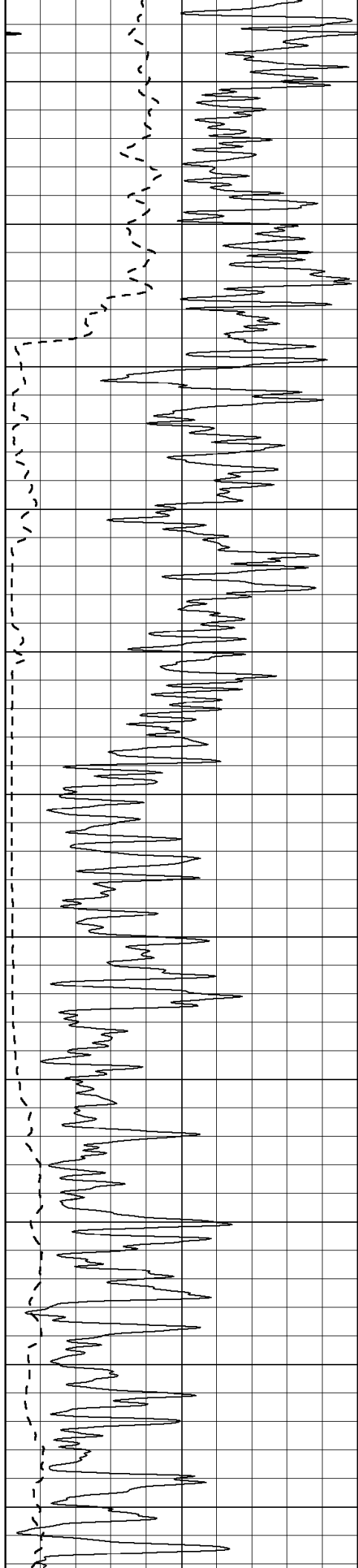
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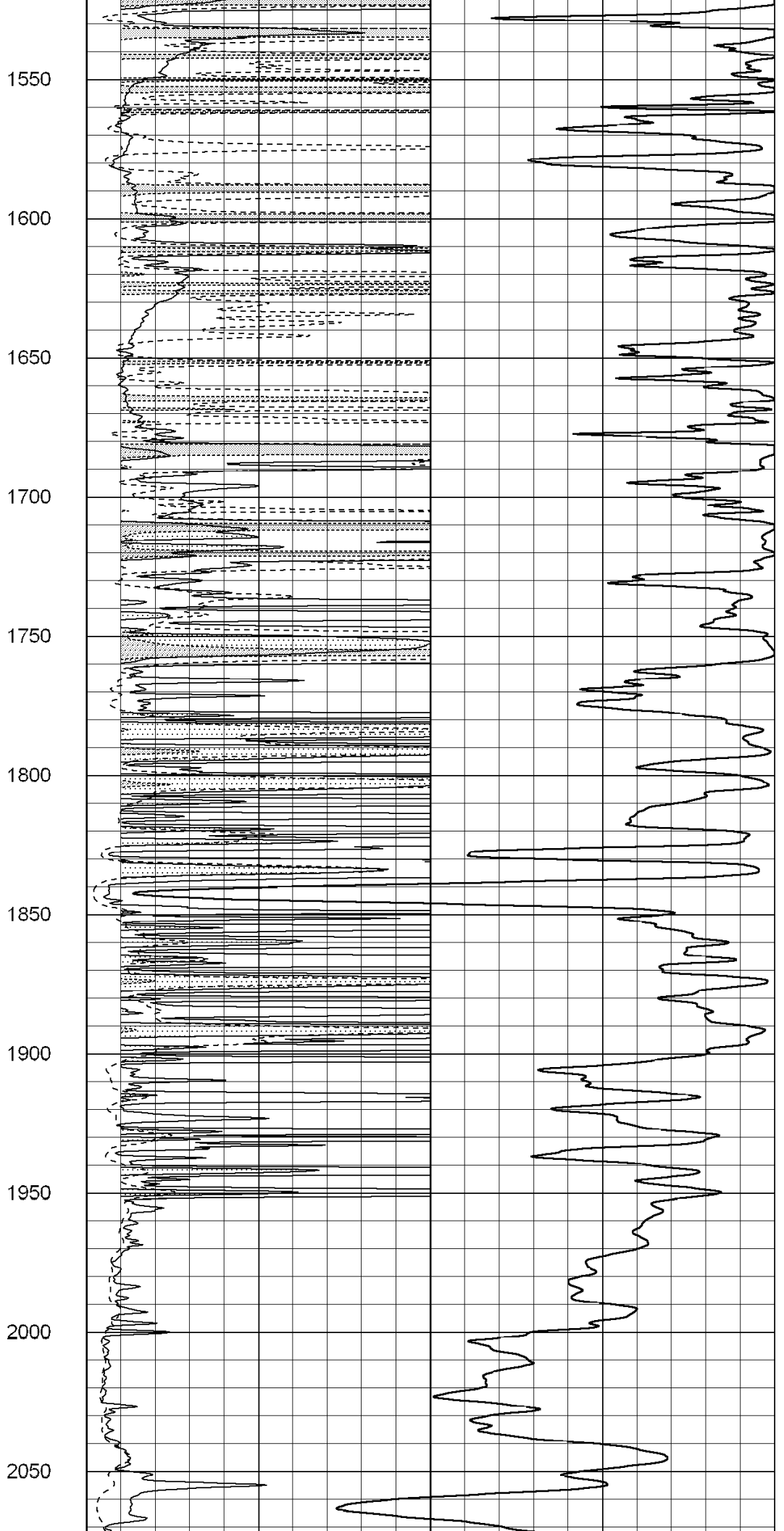
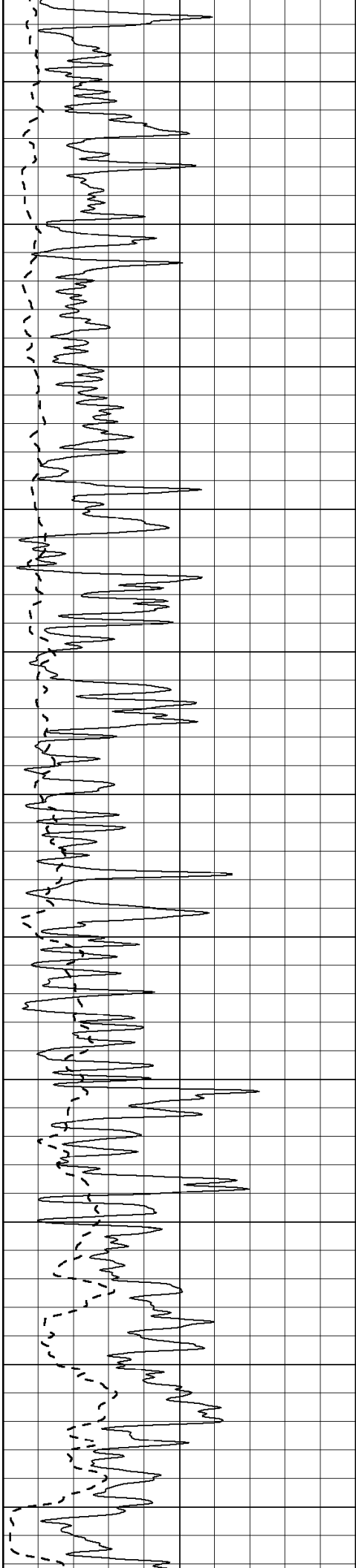
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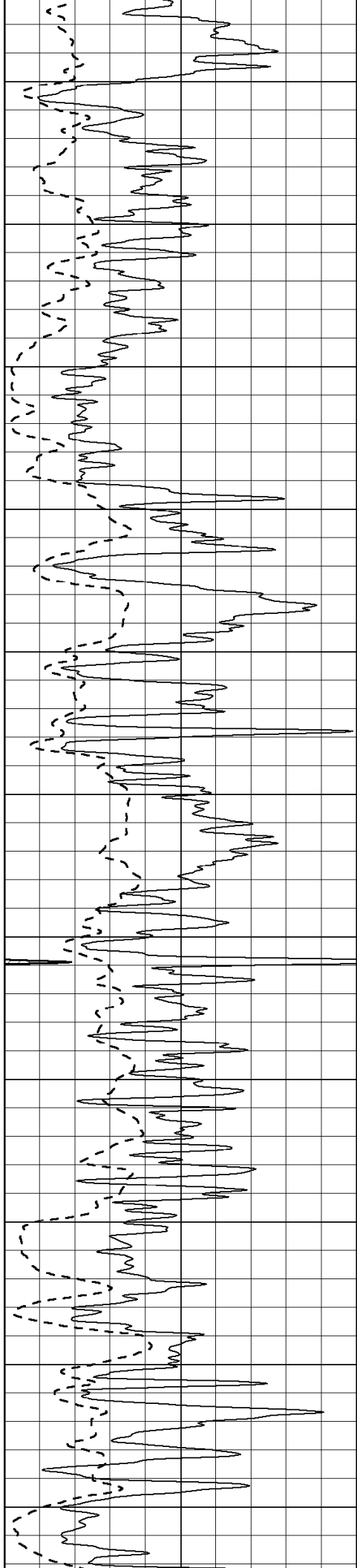
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2150

2200

2250

2300

2350

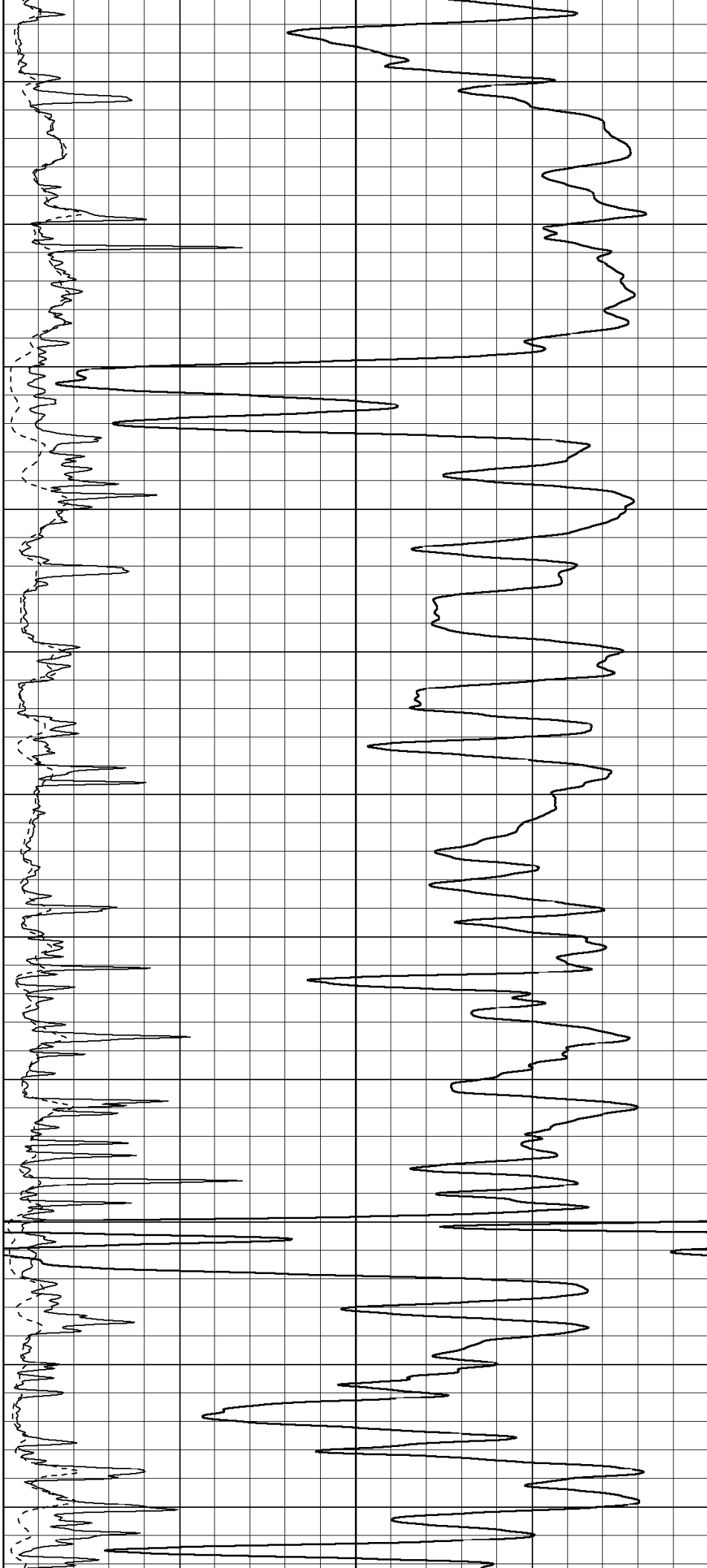
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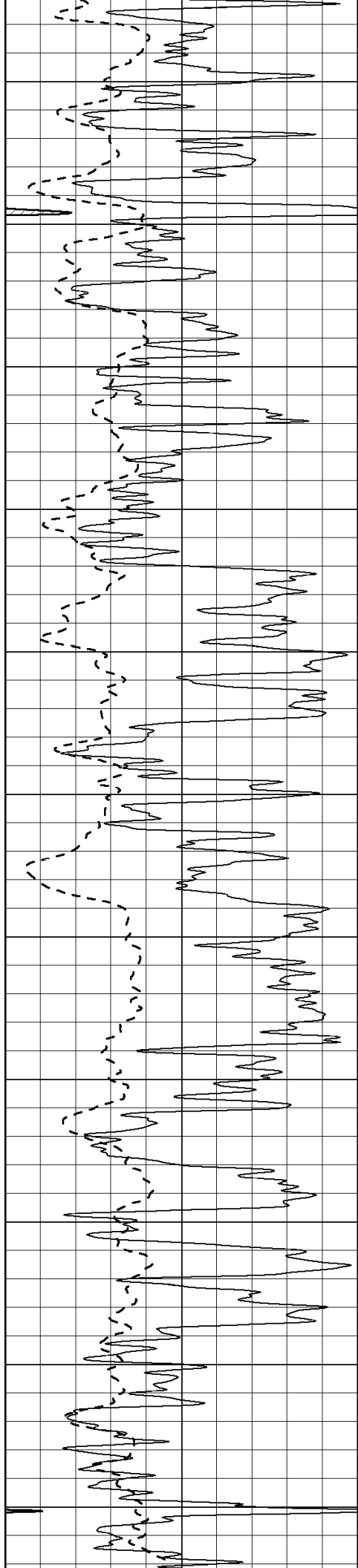
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2550

2600





2650

2700

2750

2800

2850

2900

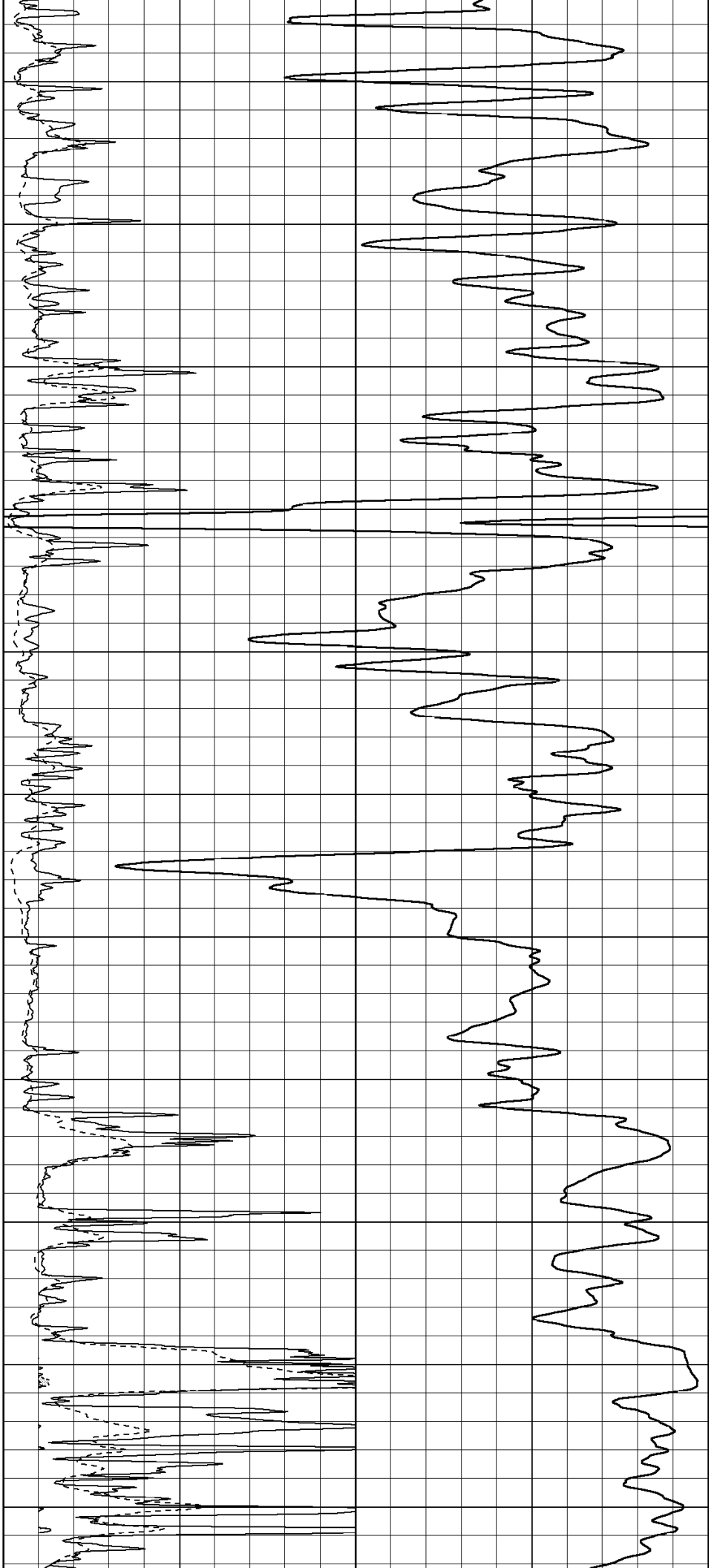
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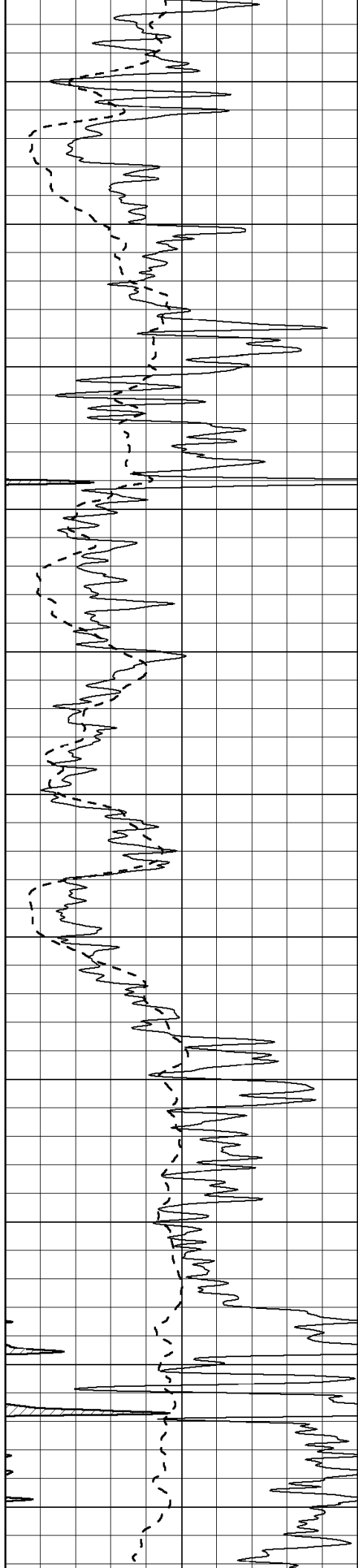
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3100

3150





3200

3250

3300

3350

3400

3450

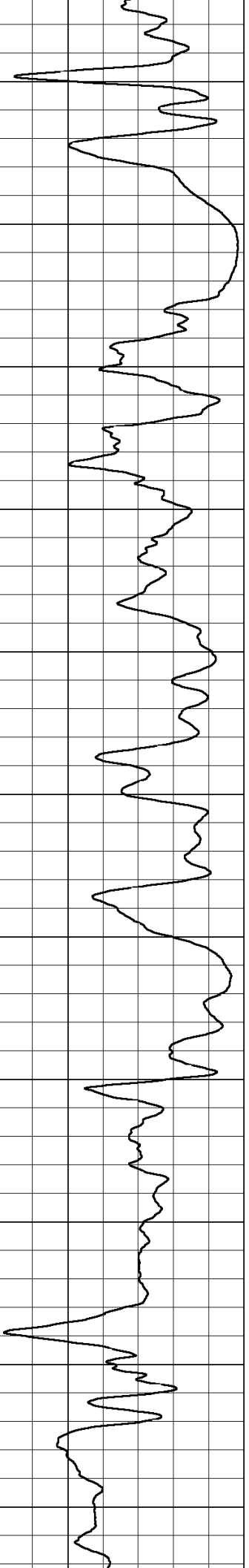
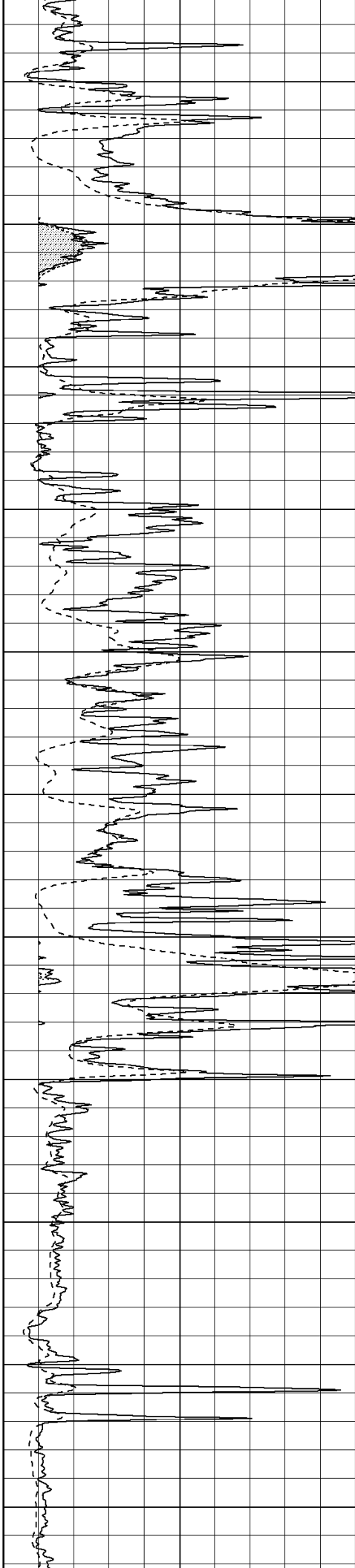
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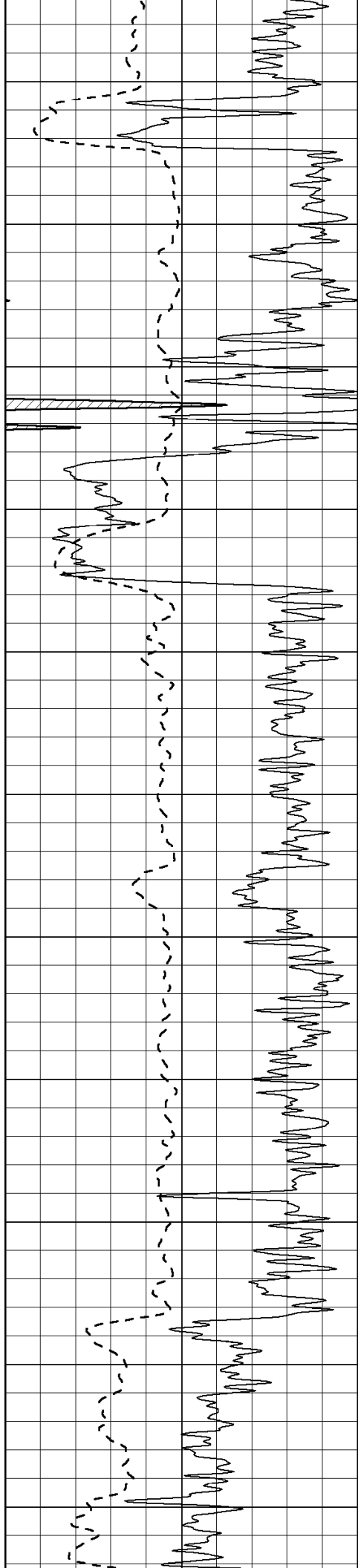
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3750

3800

3850

3900

3950

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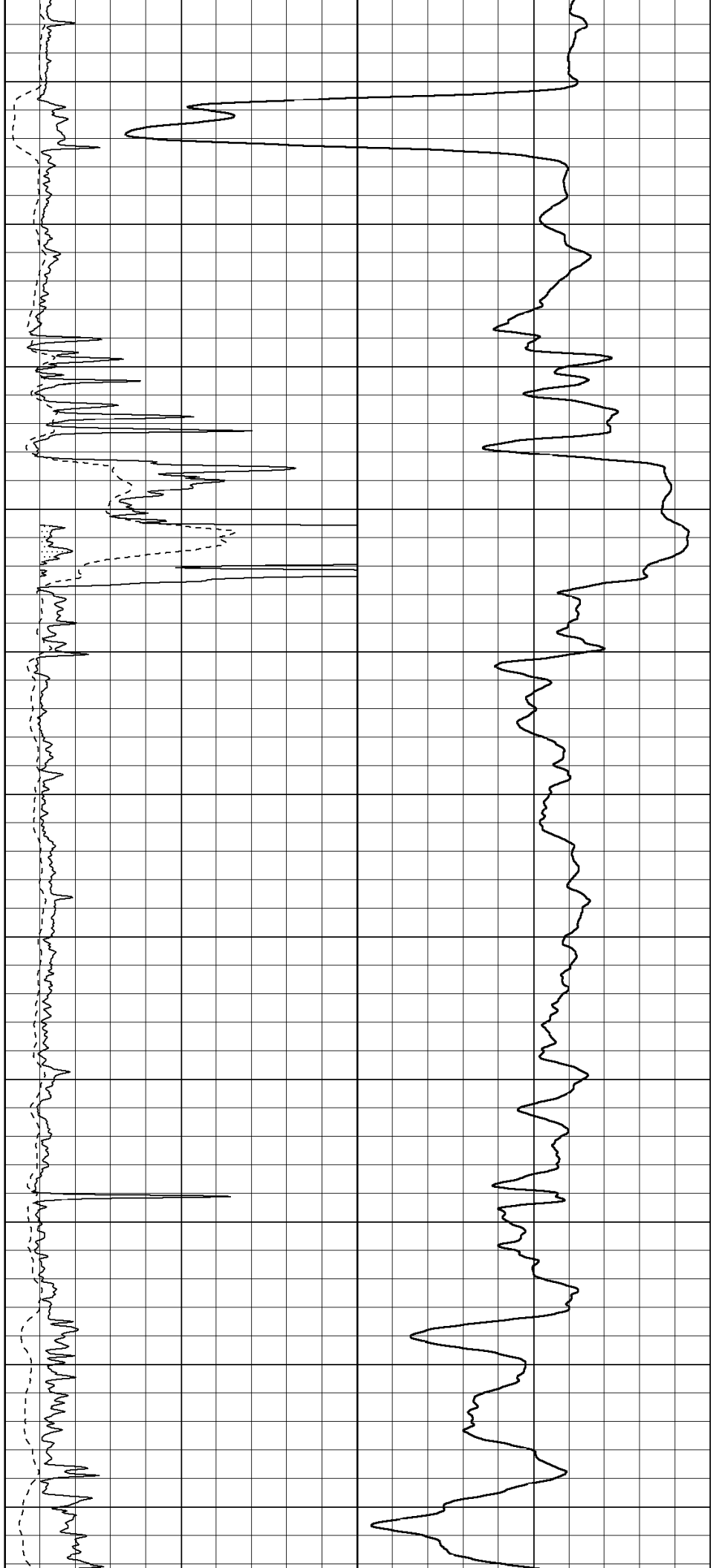
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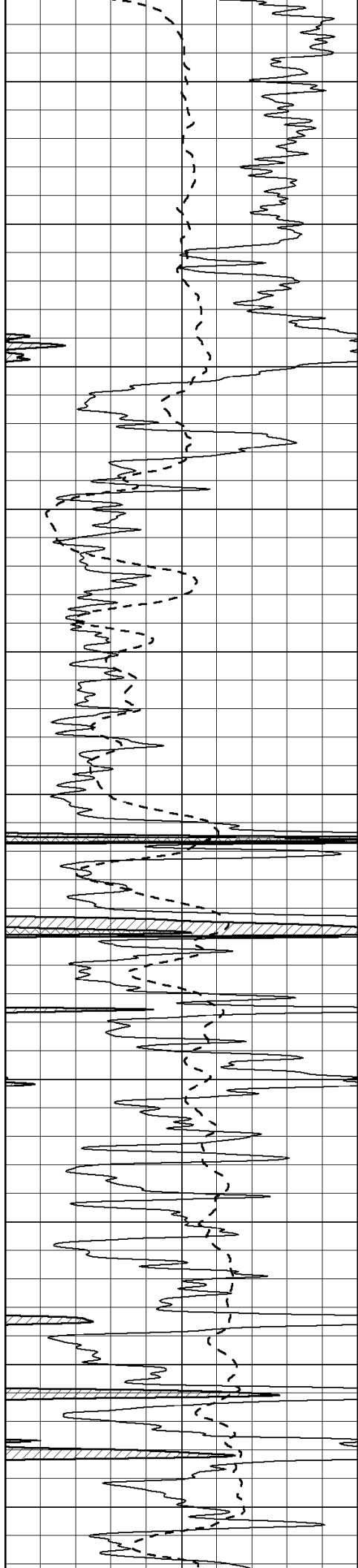
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4350

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4450

4500

4550

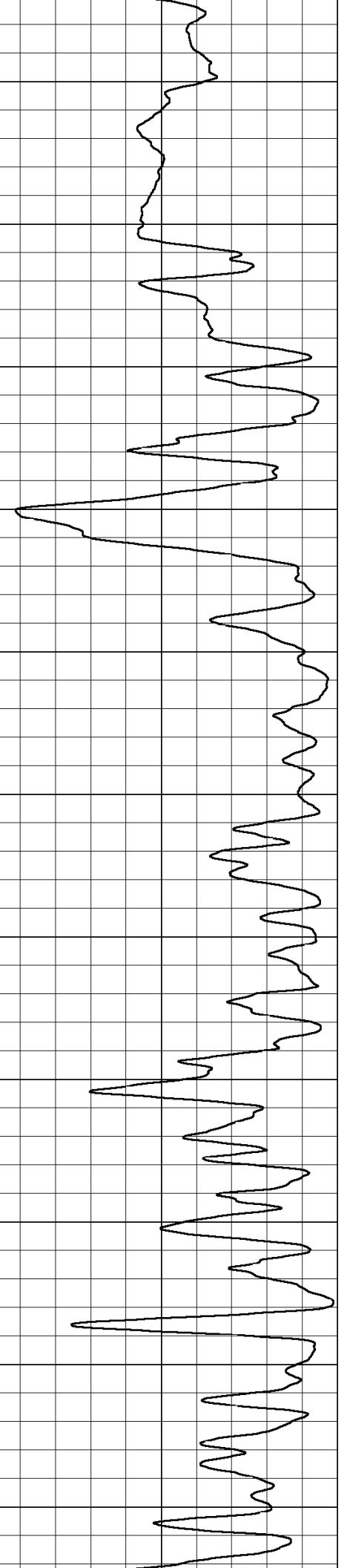
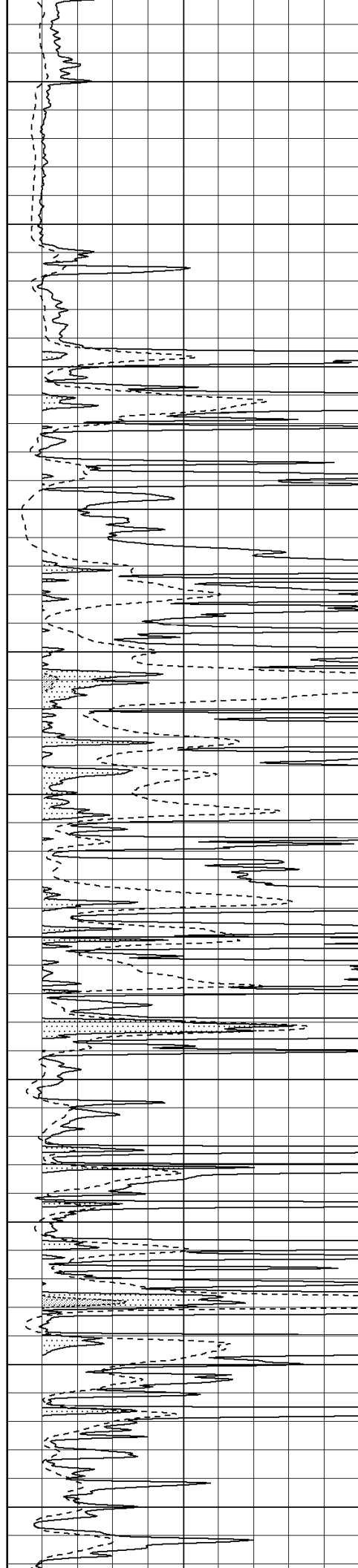
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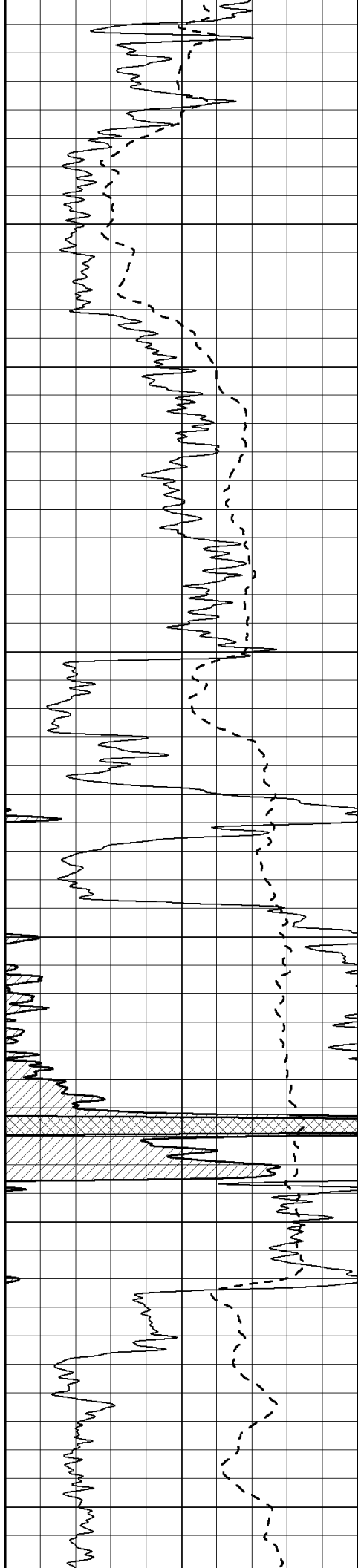
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4850

4900

4950

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5050

5100

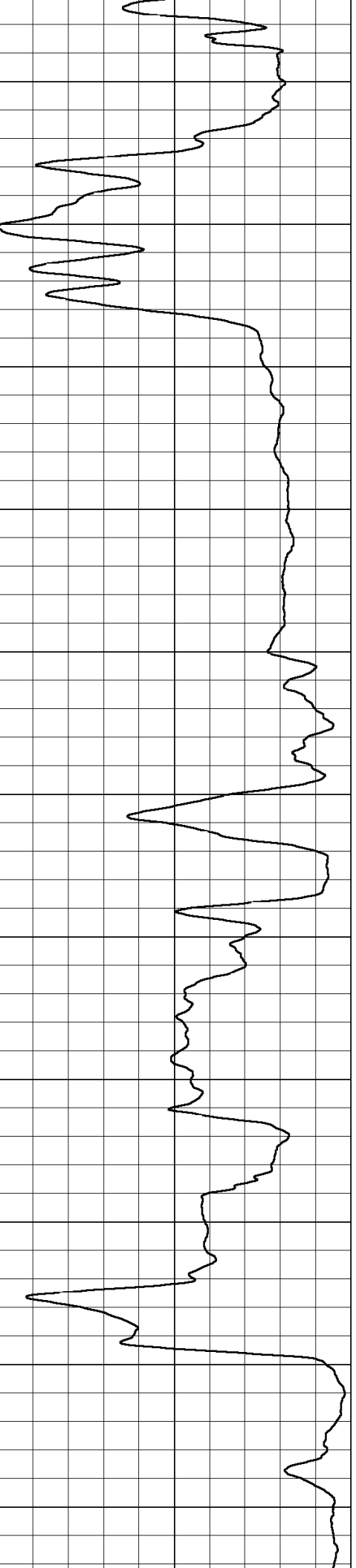
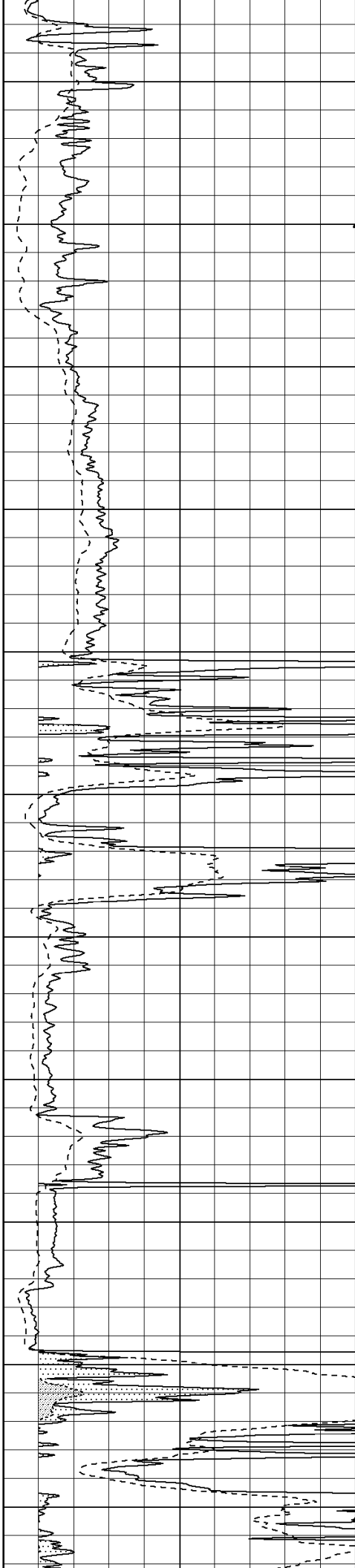
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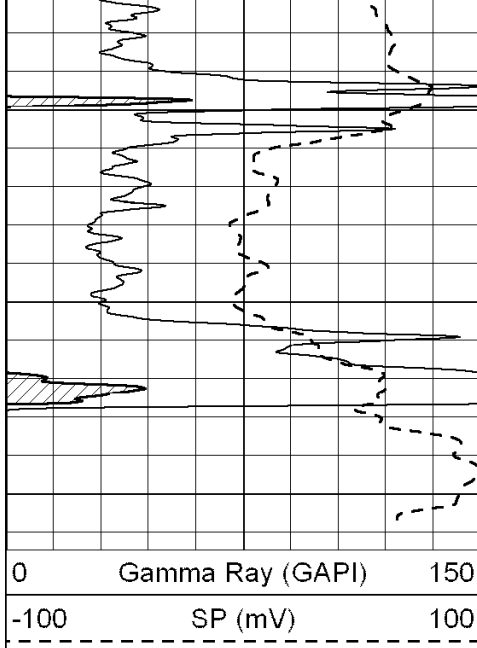
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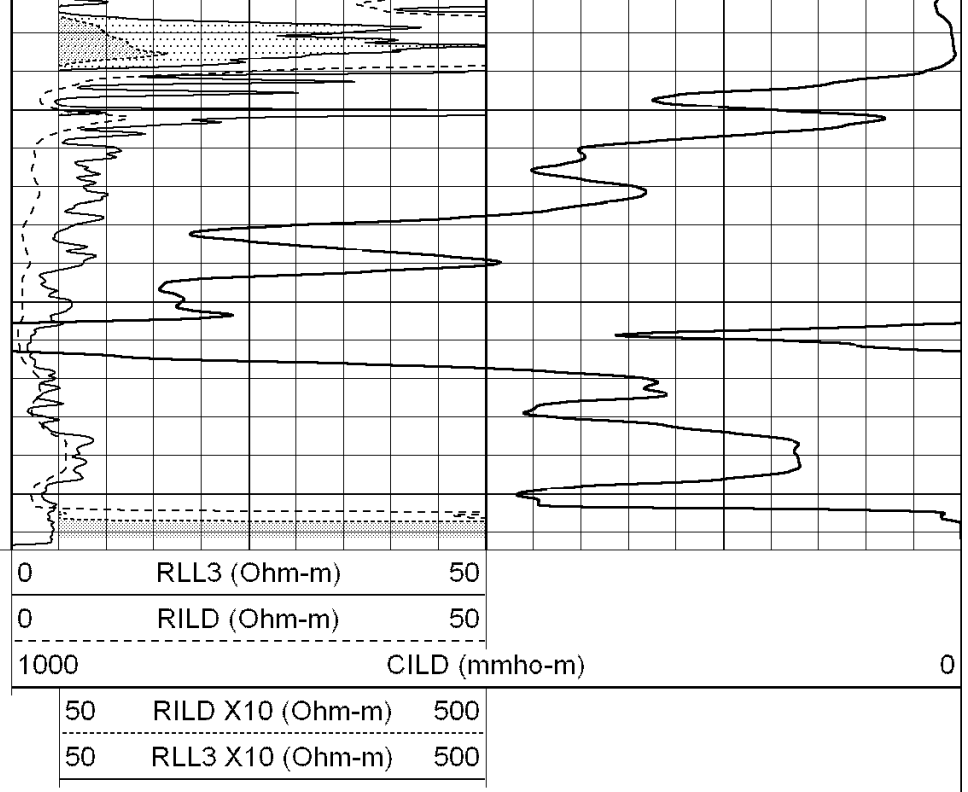


5400

5450

5500

0 Gamma Ray (GAPI) 150  
 -100 SP (mV) 100



0 RLL3 (Ohm-m) 50  
 0 RILD (Ohm-m) 50  
 1000 CILD (mmho-m) 0  
 50 RILD X10 (Ohm-m) 500  
 50 RLL3 X10 (Ohm-m) 500

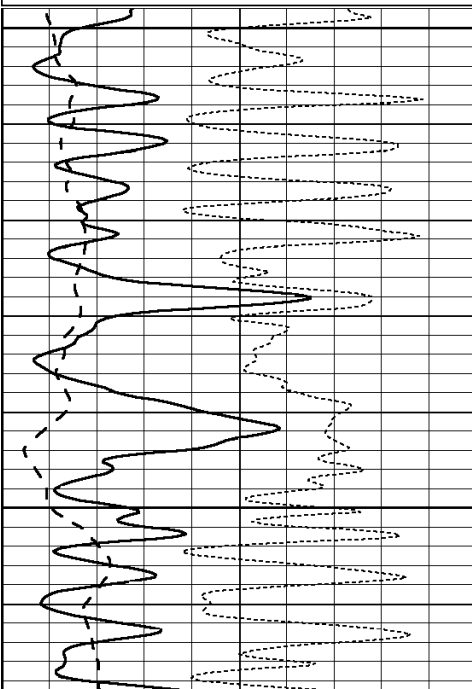


# MAIN SECTION

Database File: 004378pe.db  
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 Presentation Format: dil  
 Dataset Creation: Wed Dec 02 03:24:29 2009 by Calc Open-Cased 060407  
 Charted by: Depth in Feet scaled 1:240

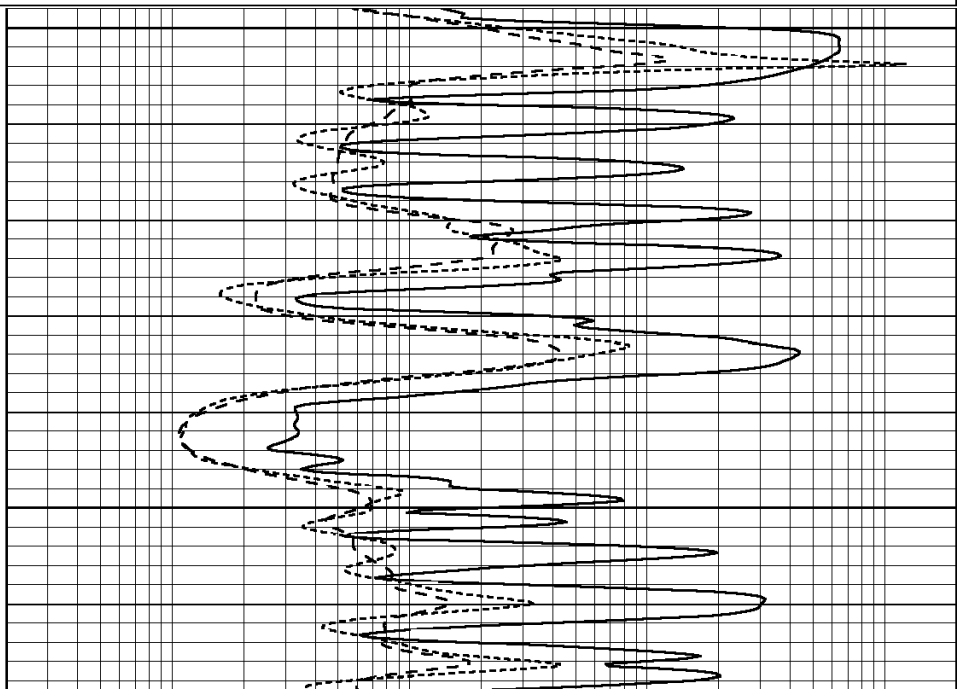
0 GAMMA RAY (GAPI) 150  
 -100 SP (mV) 100  
 -250 Rxo/Rt 50

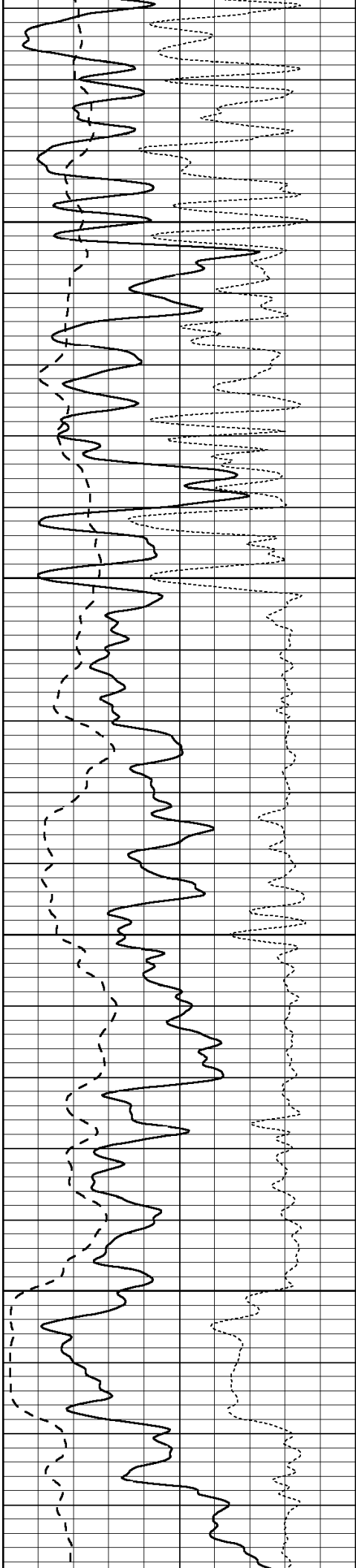
0.2 SHALLOW GUARD (Ohm-m) 2000  
 0.2 DEEP INDUCTION (Ohm-m) 2000  
 0.2 MEDIUM INDUCTION (Ohm-m) 2000



1800

1850



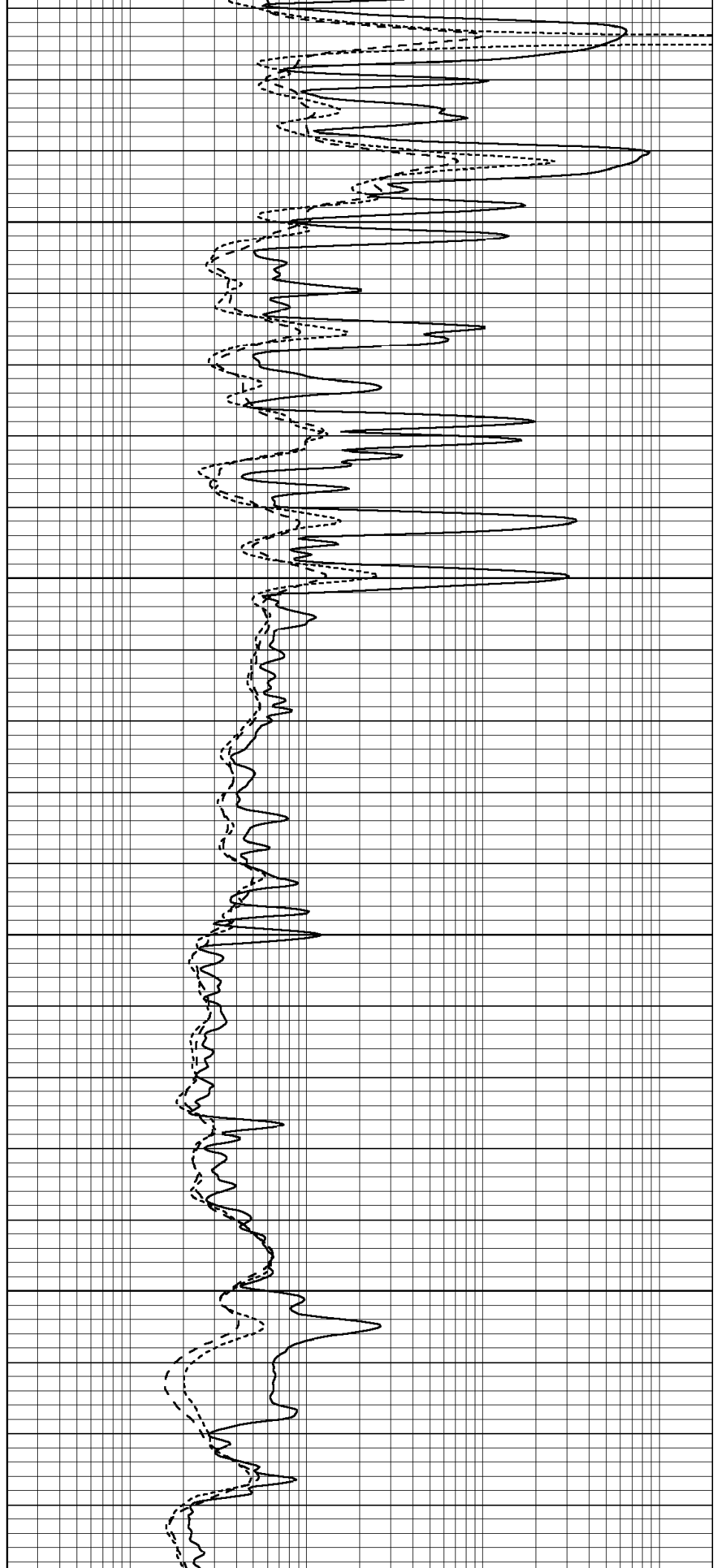


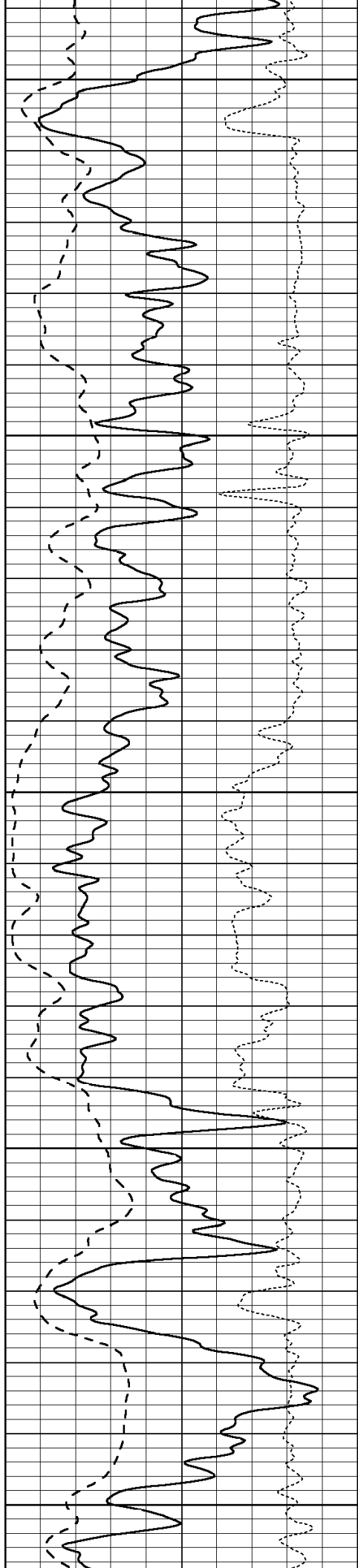
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2000

2050





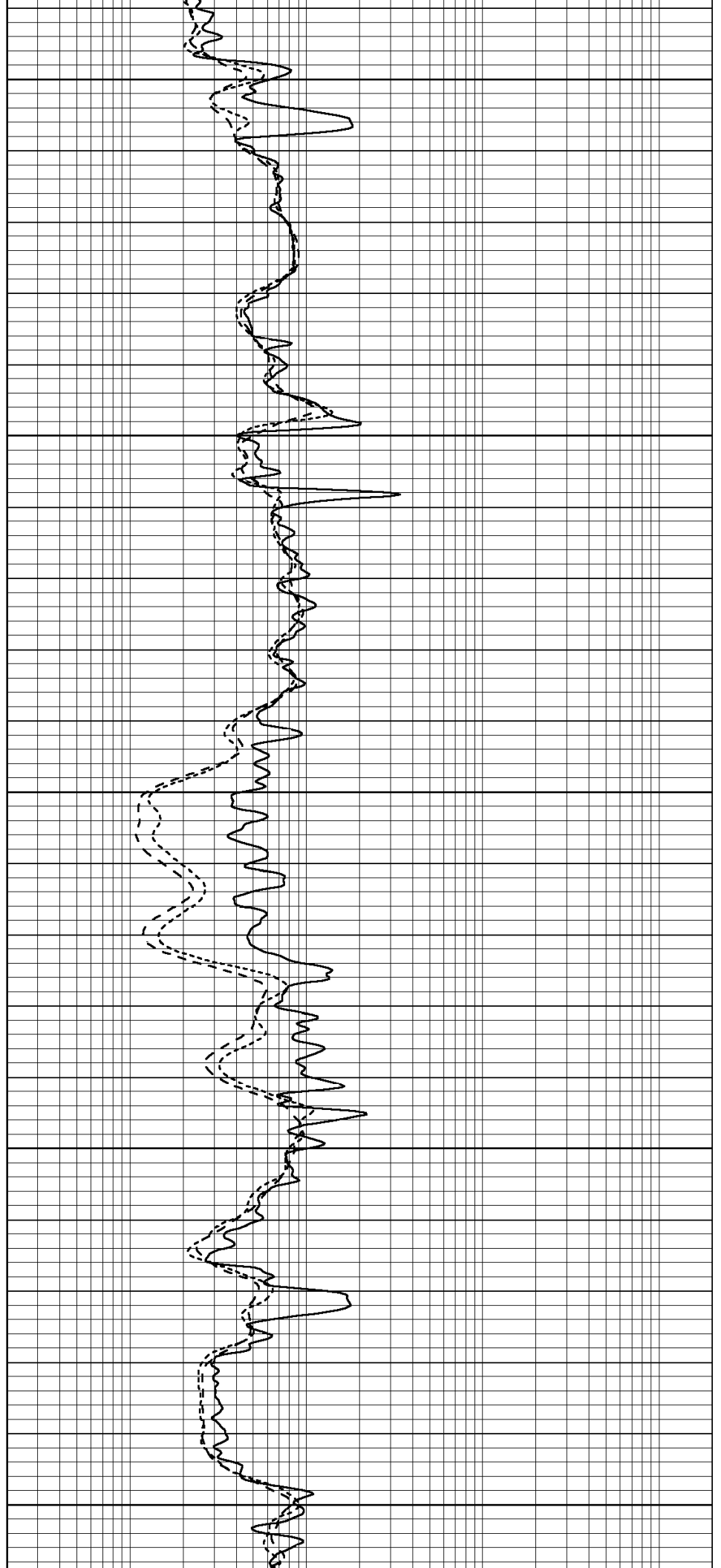
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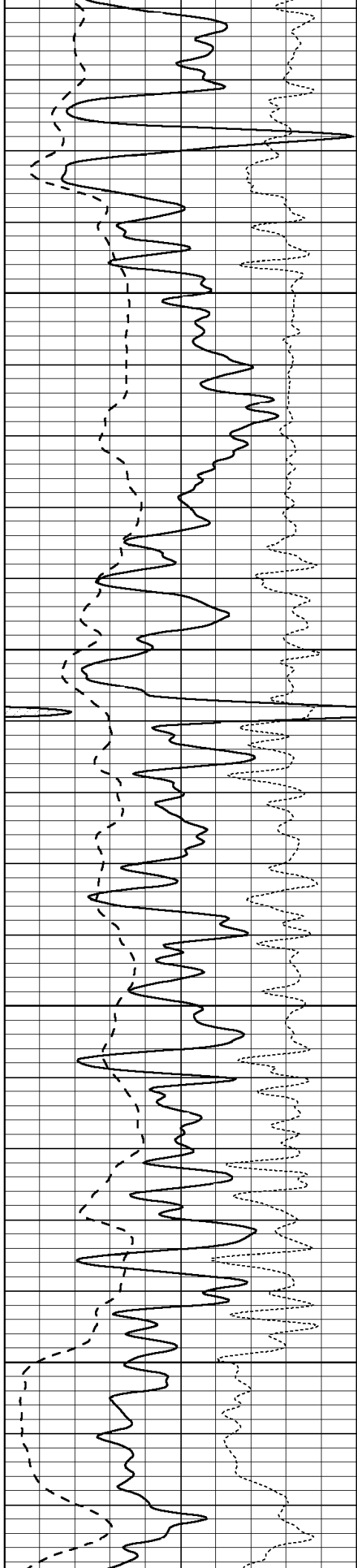
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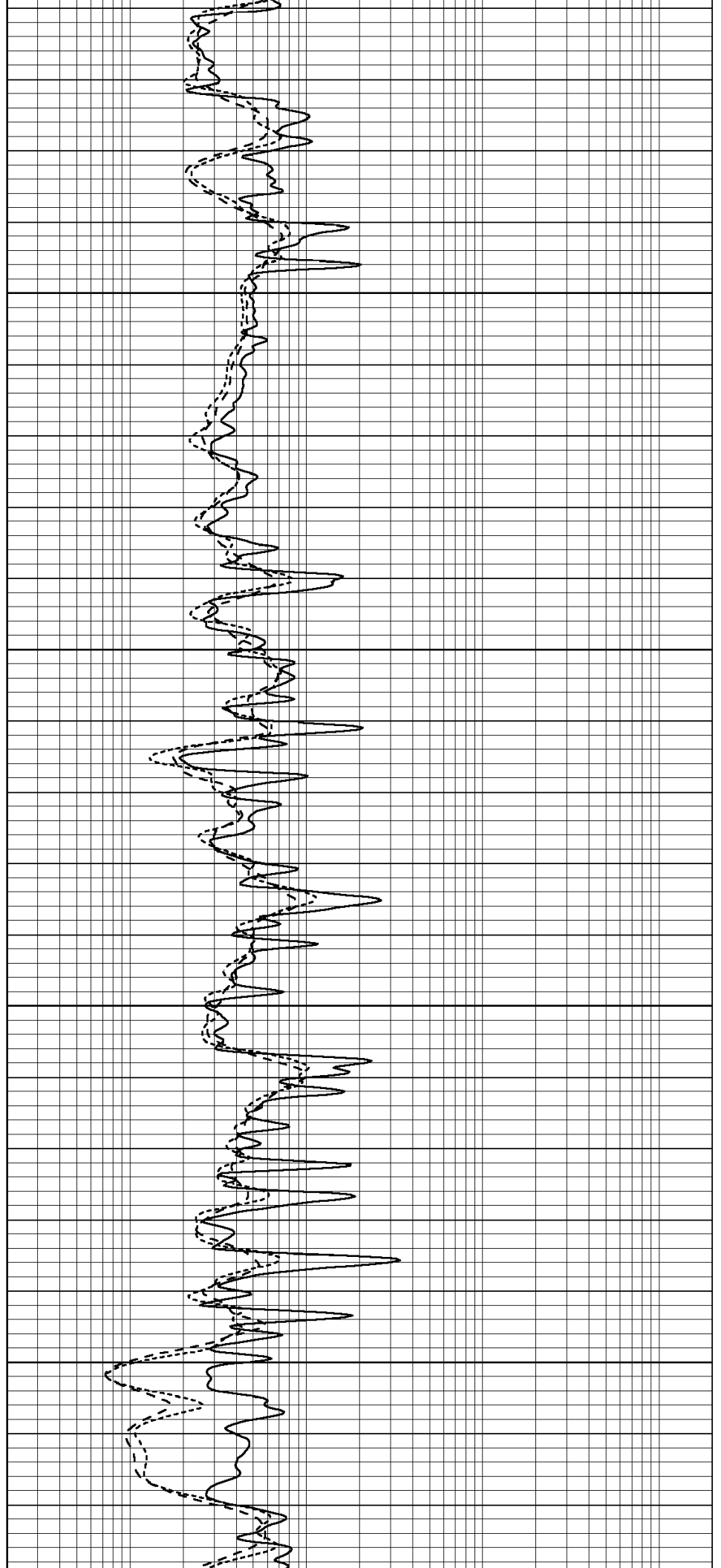


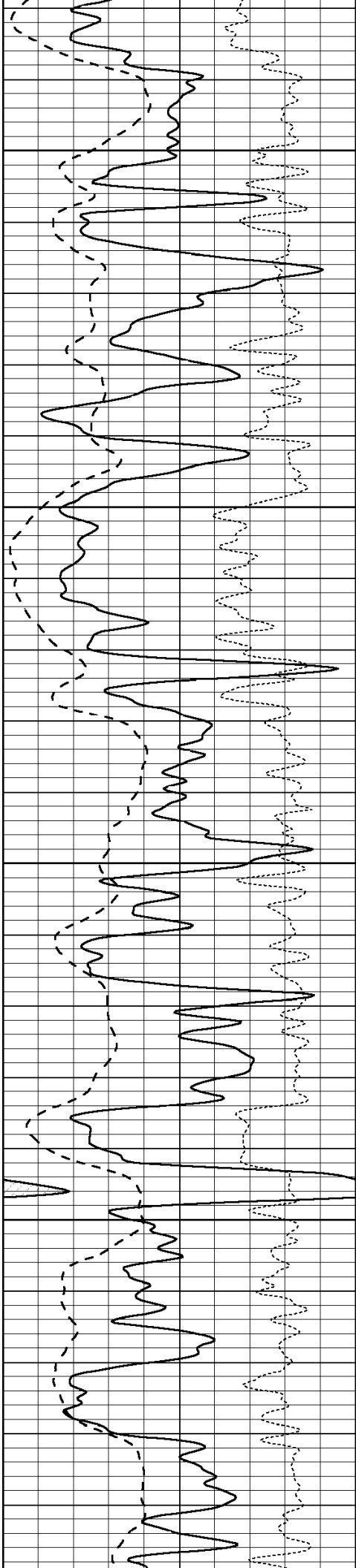
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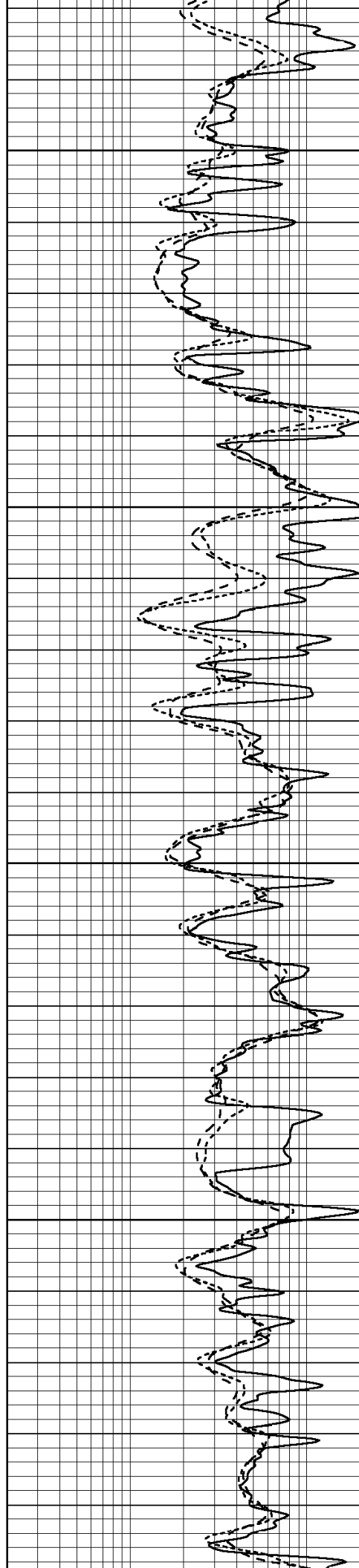


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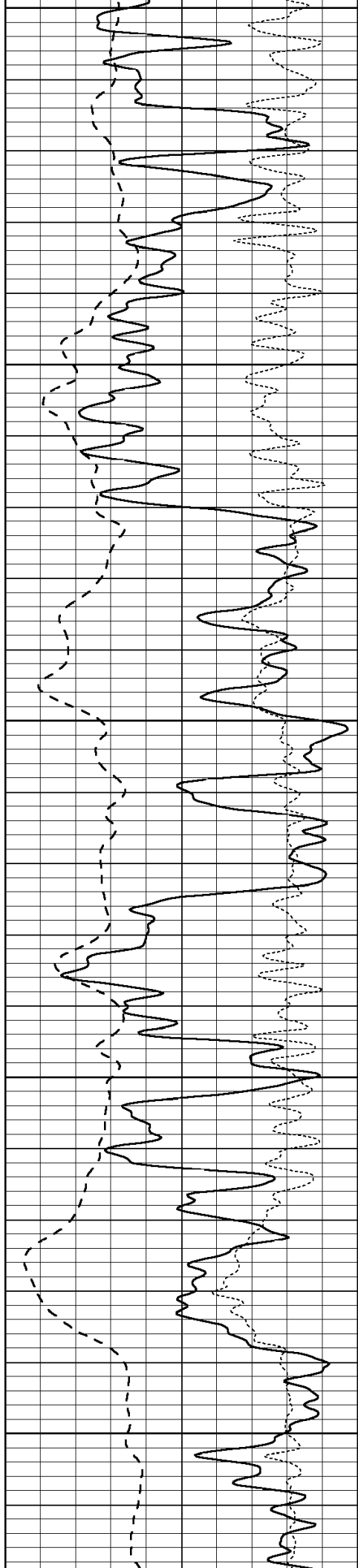
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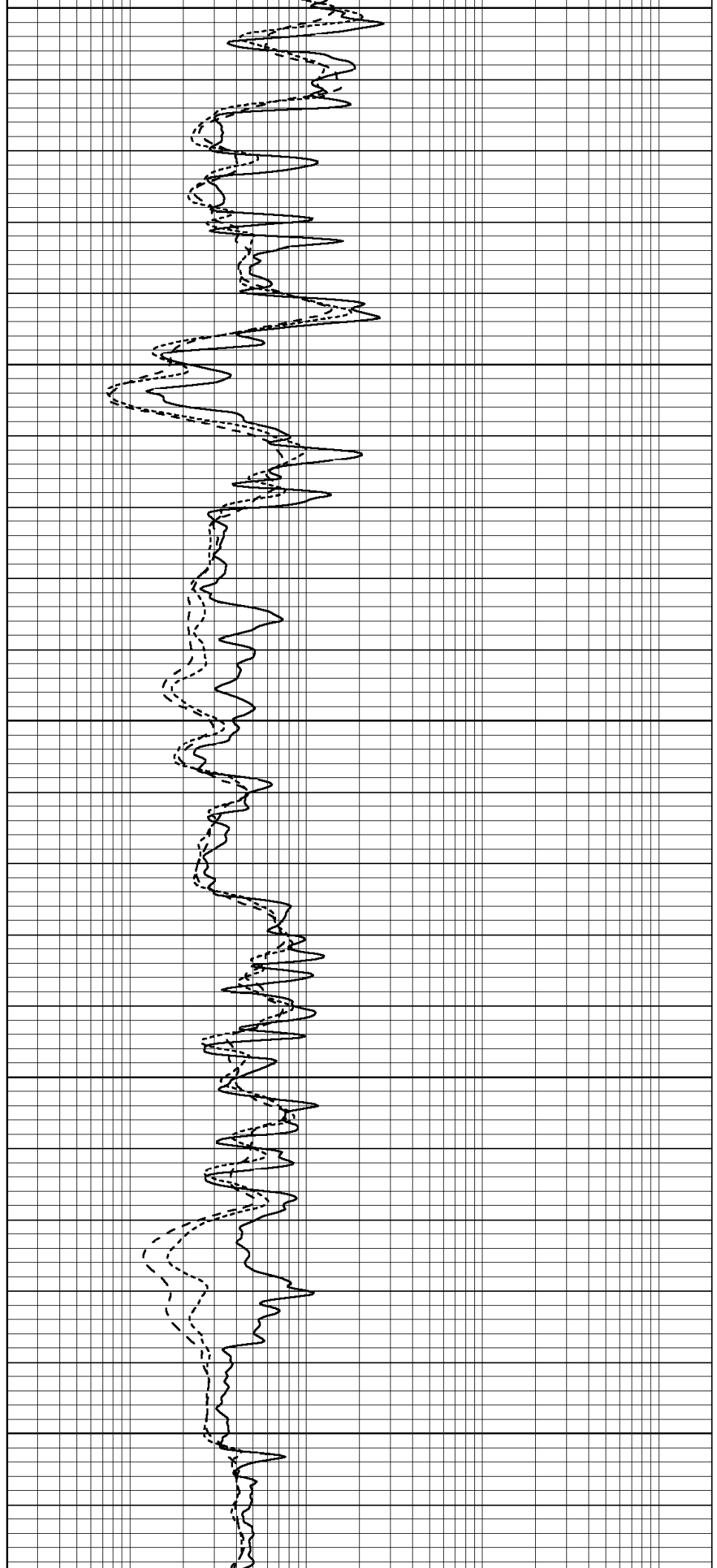
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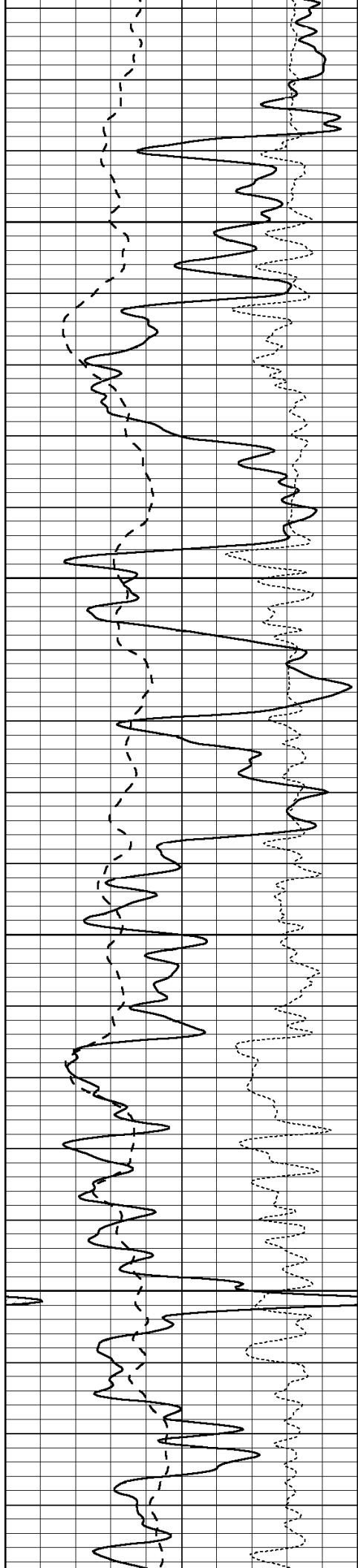
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2900

2950



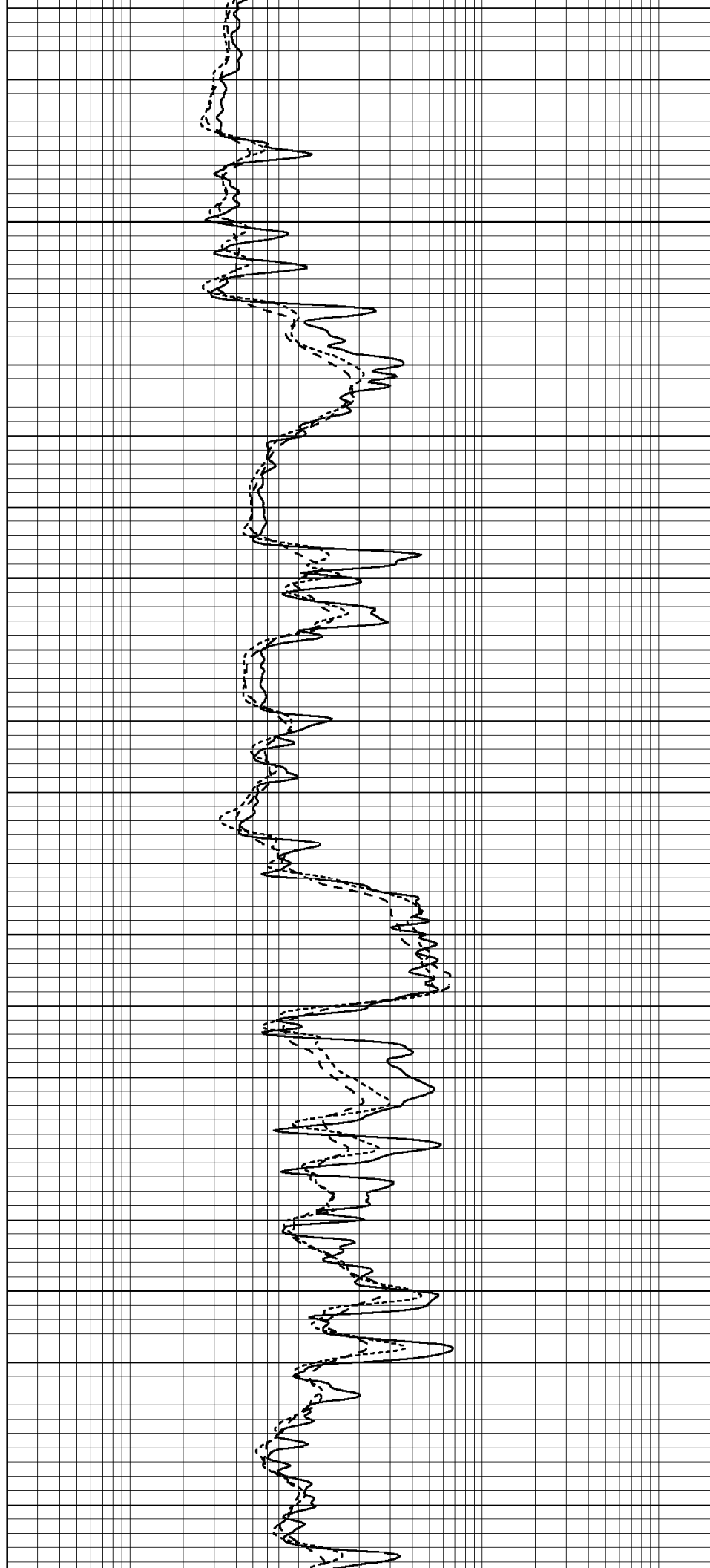


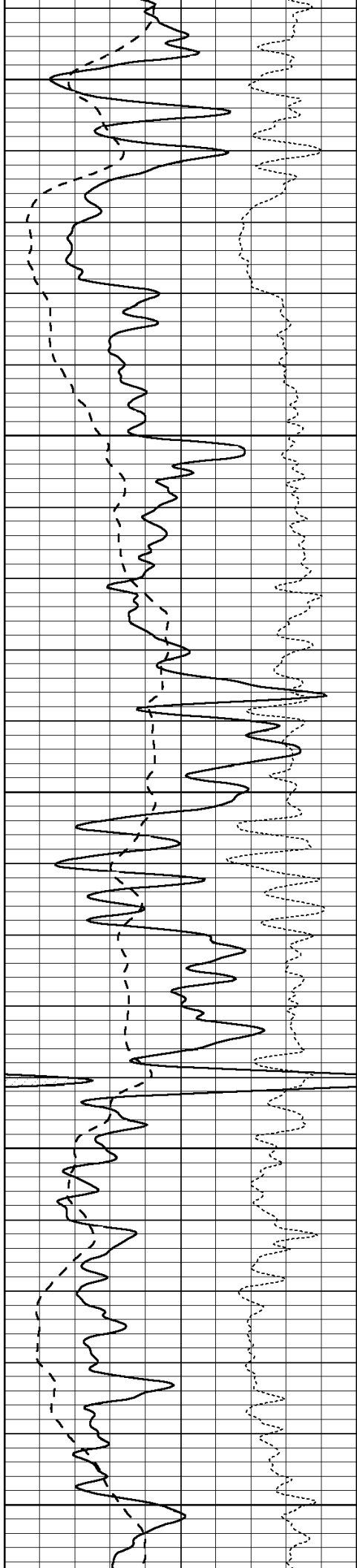
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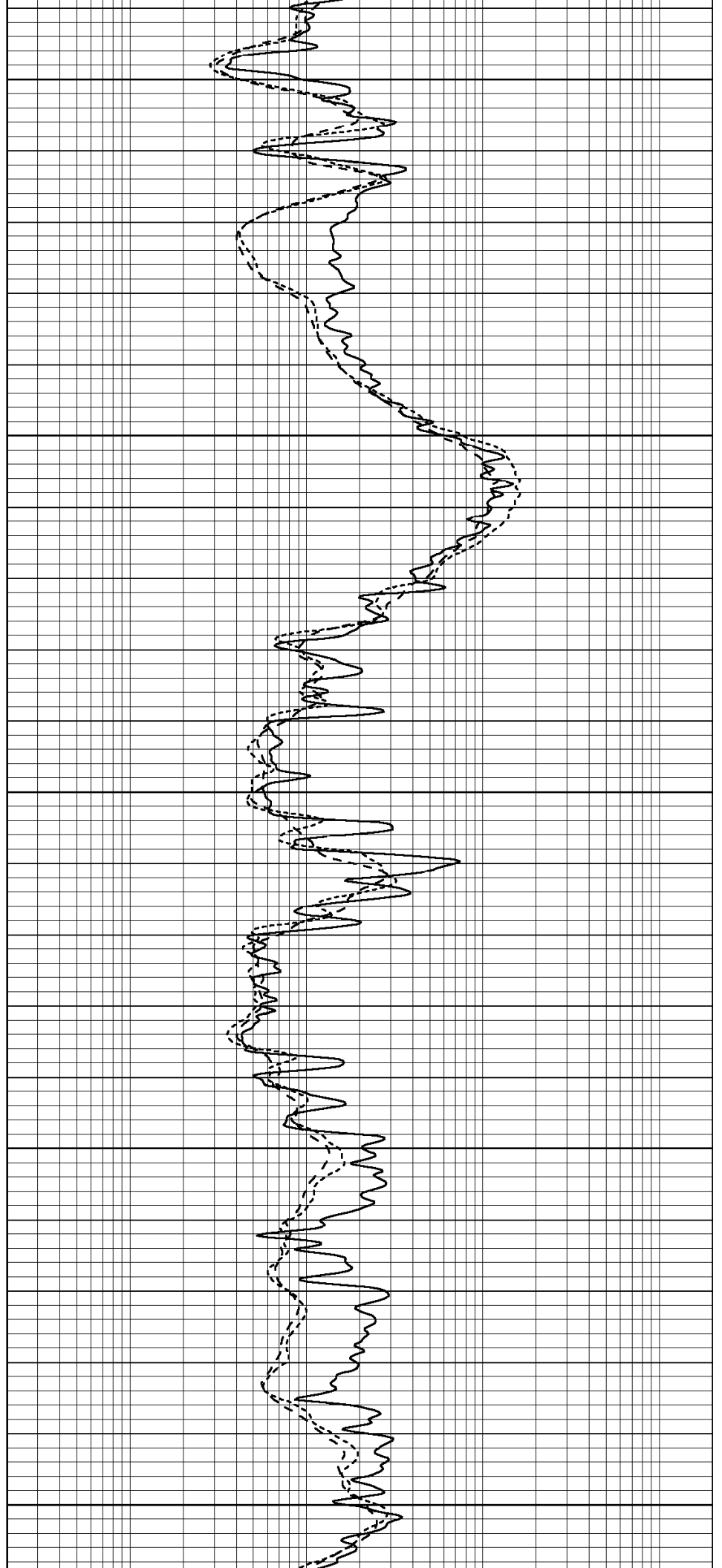
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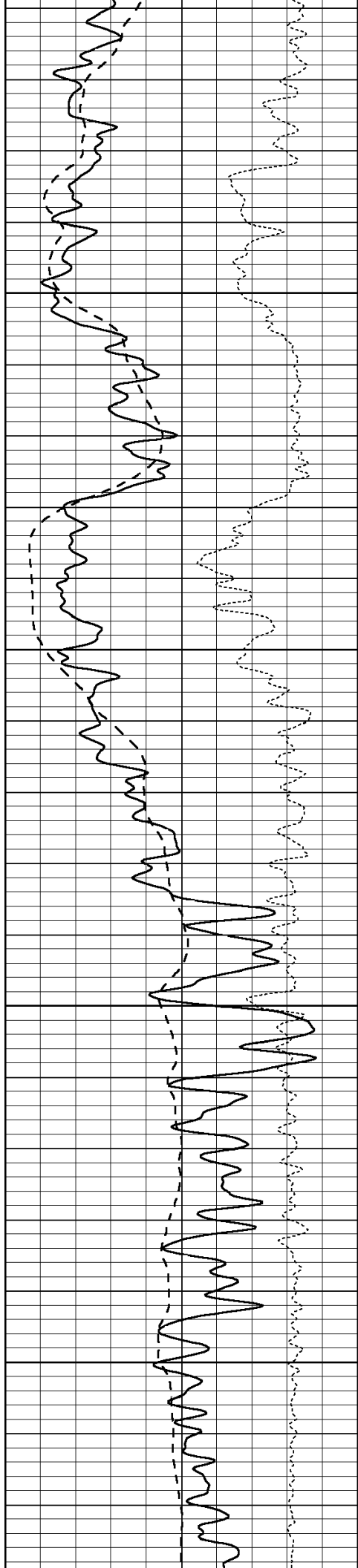
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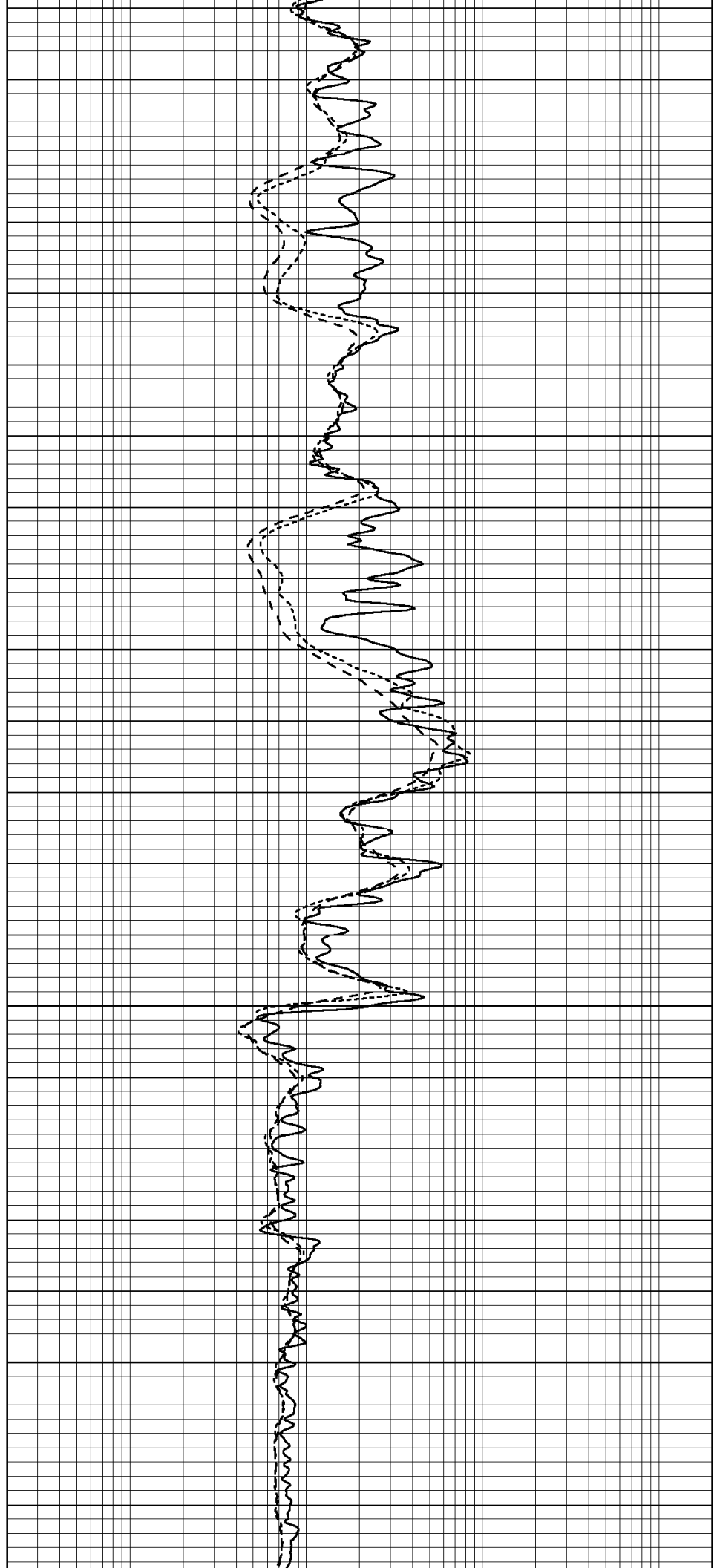


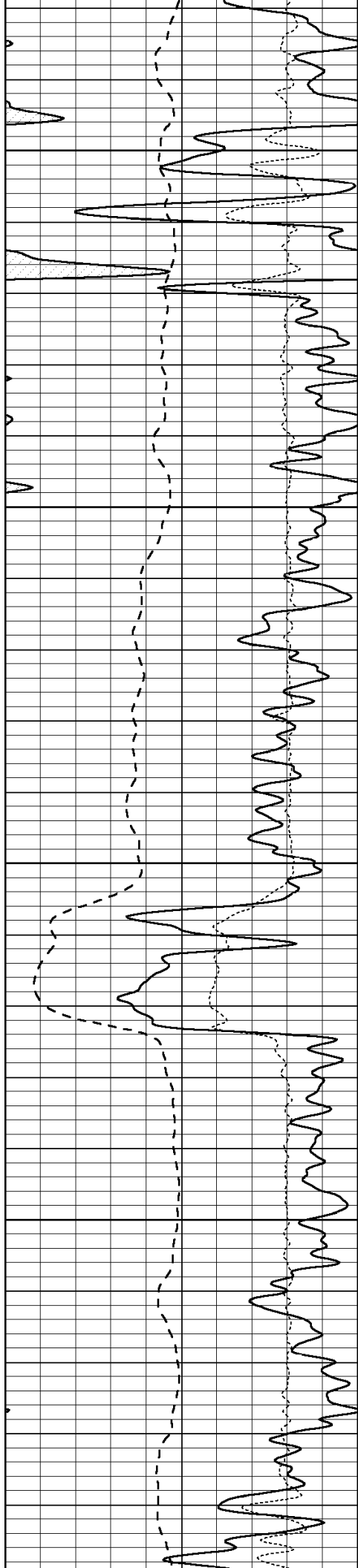
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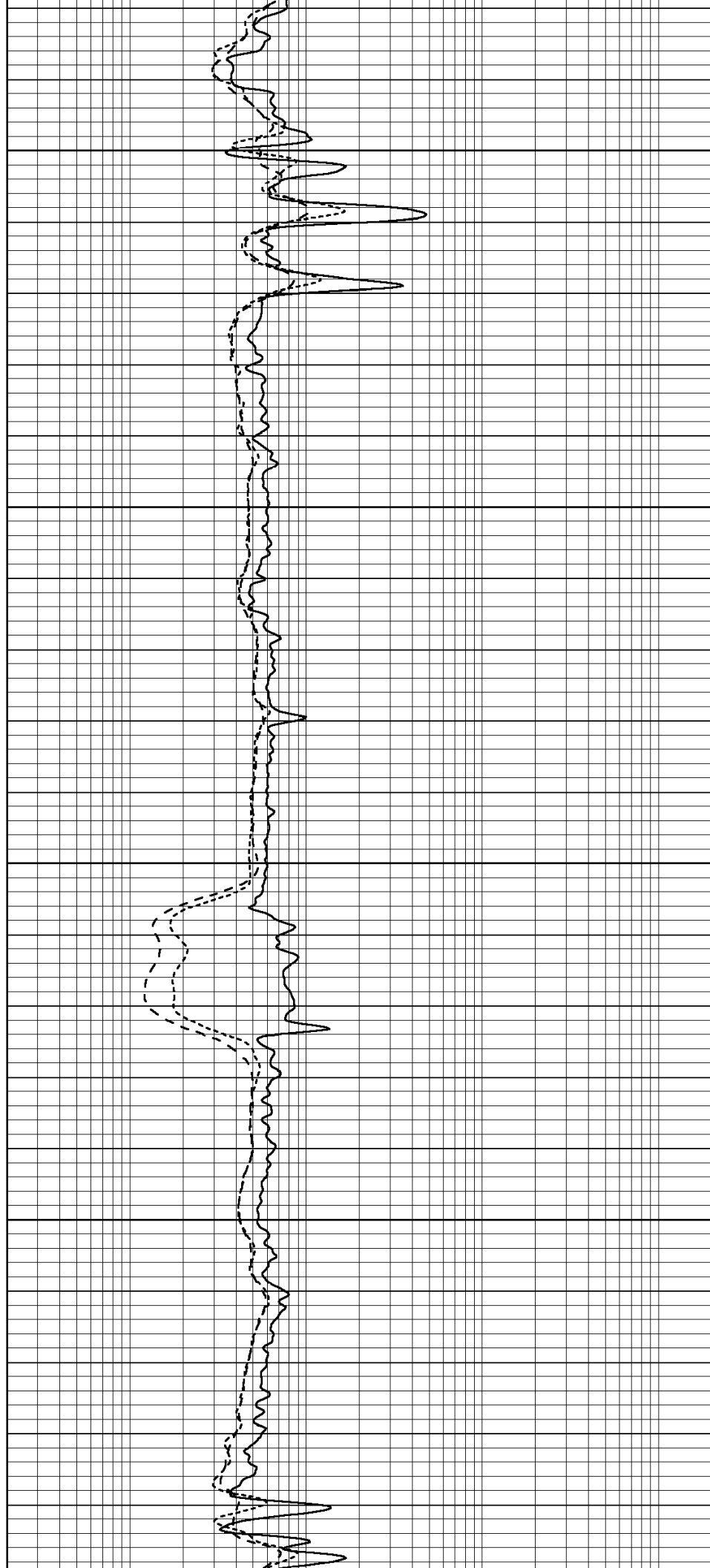


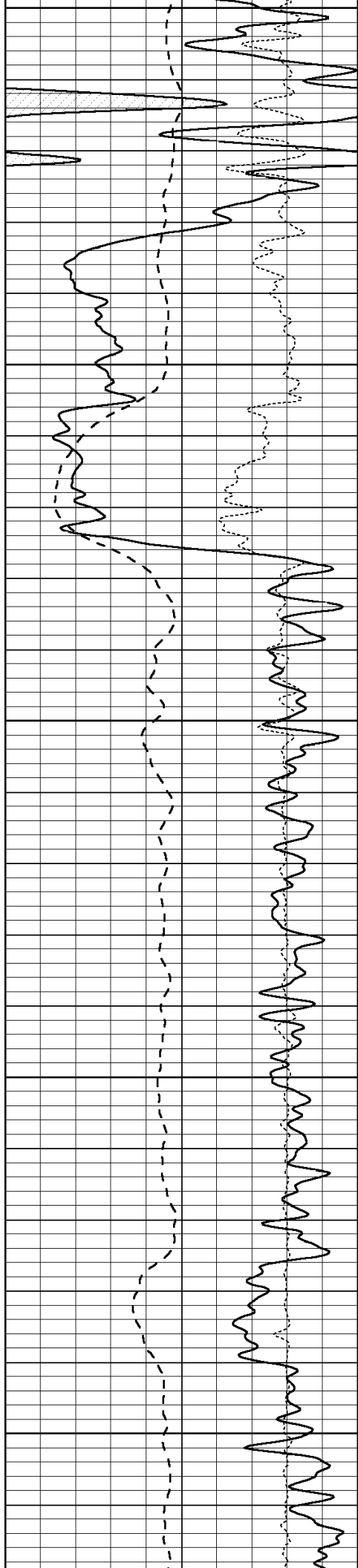
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3800





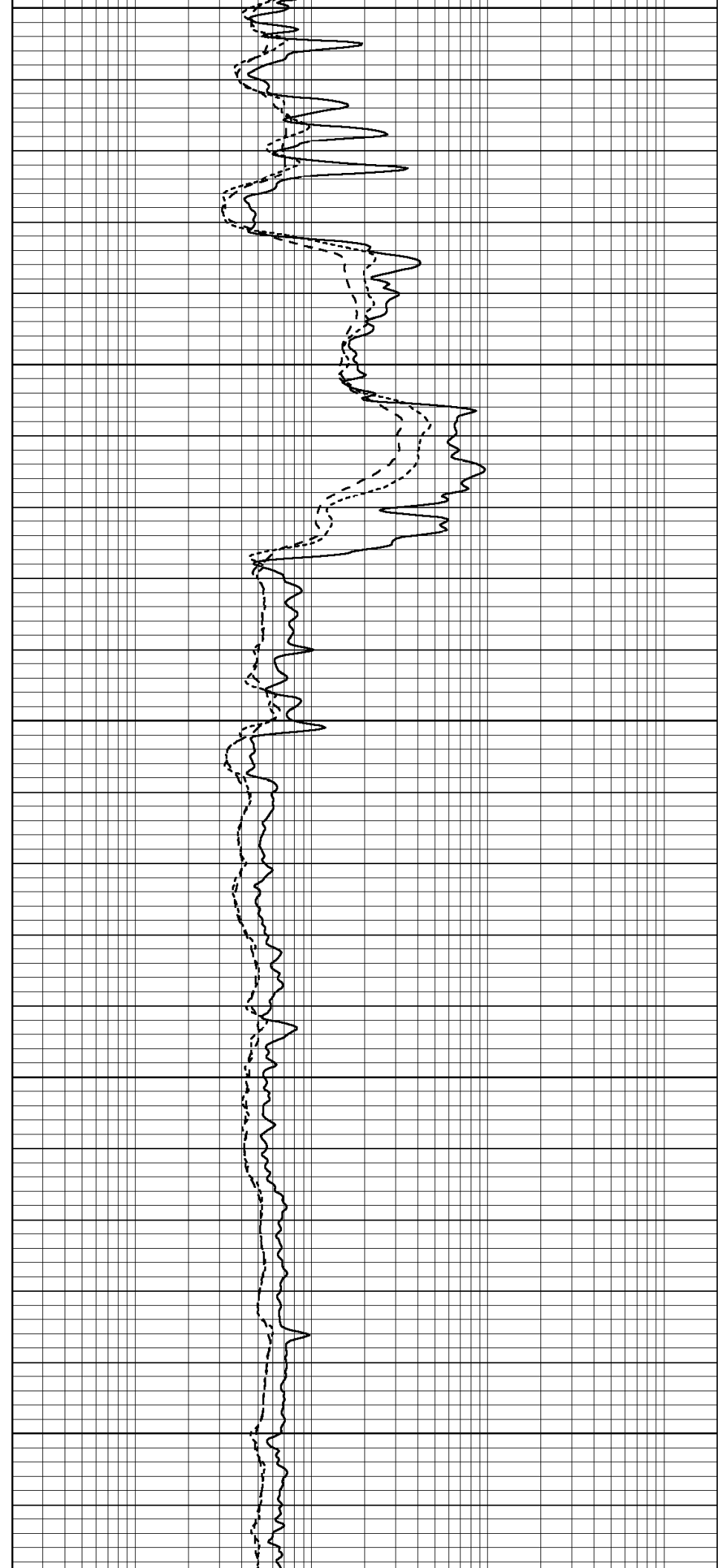
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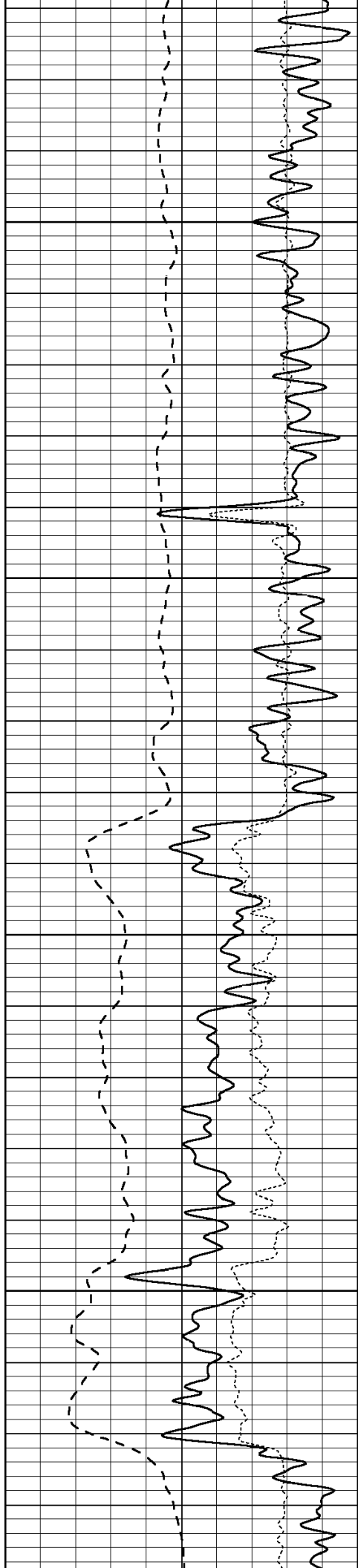
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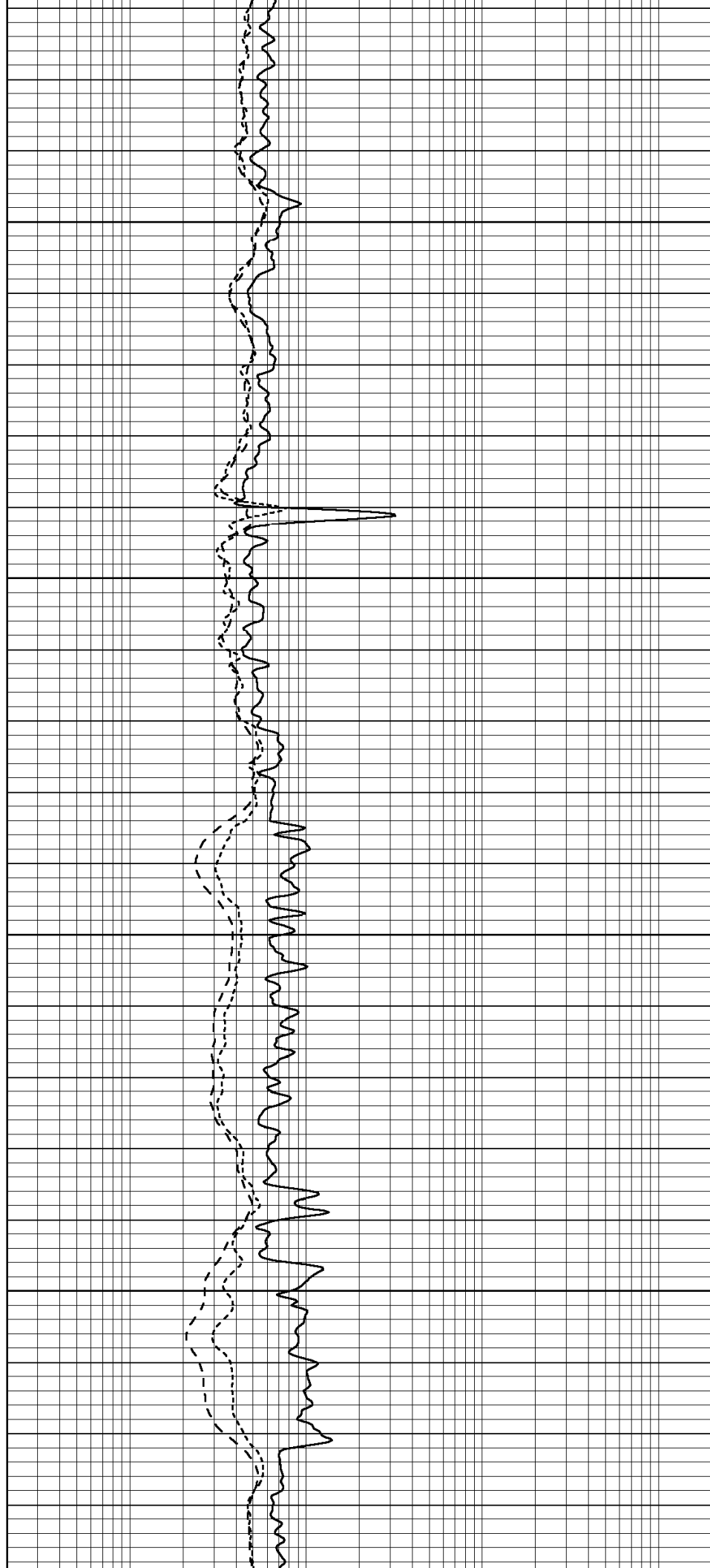


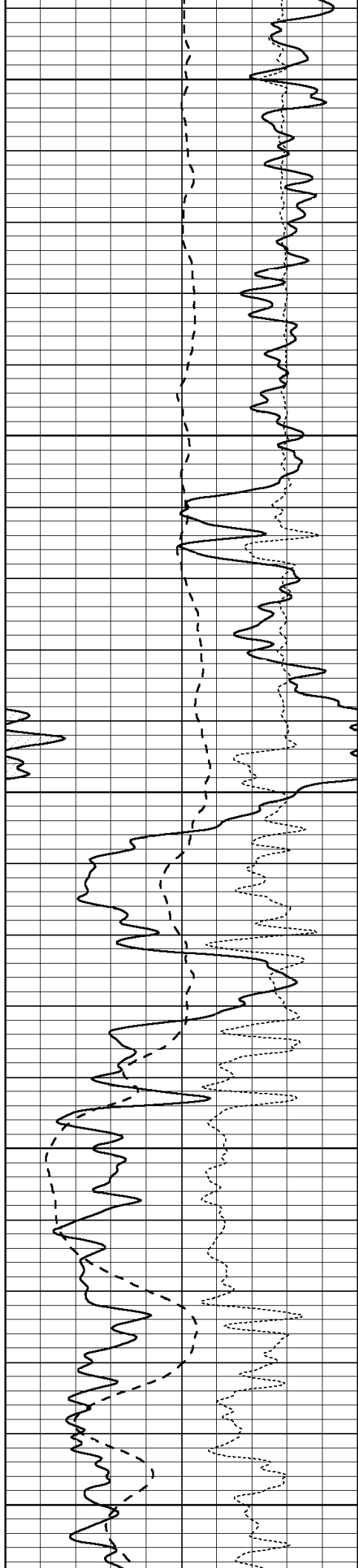
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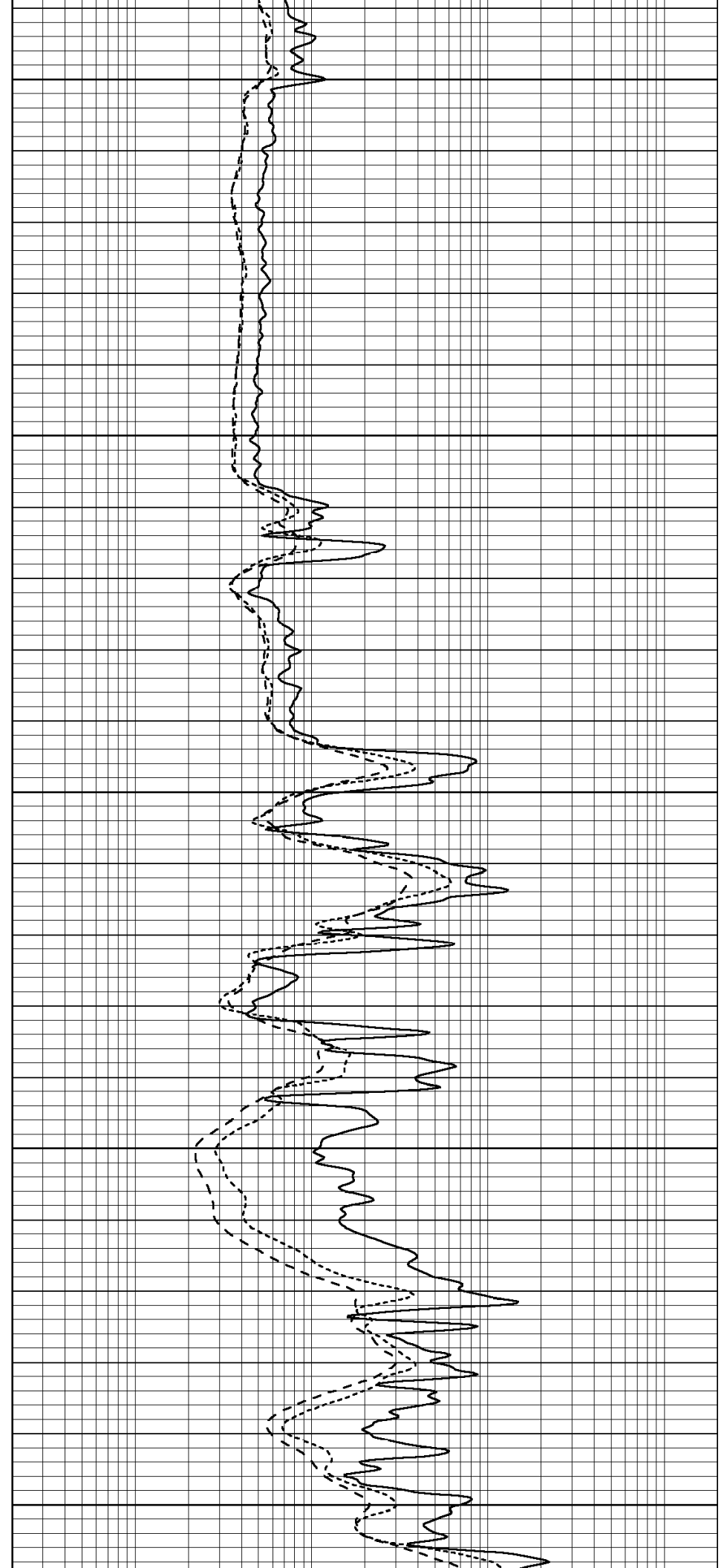
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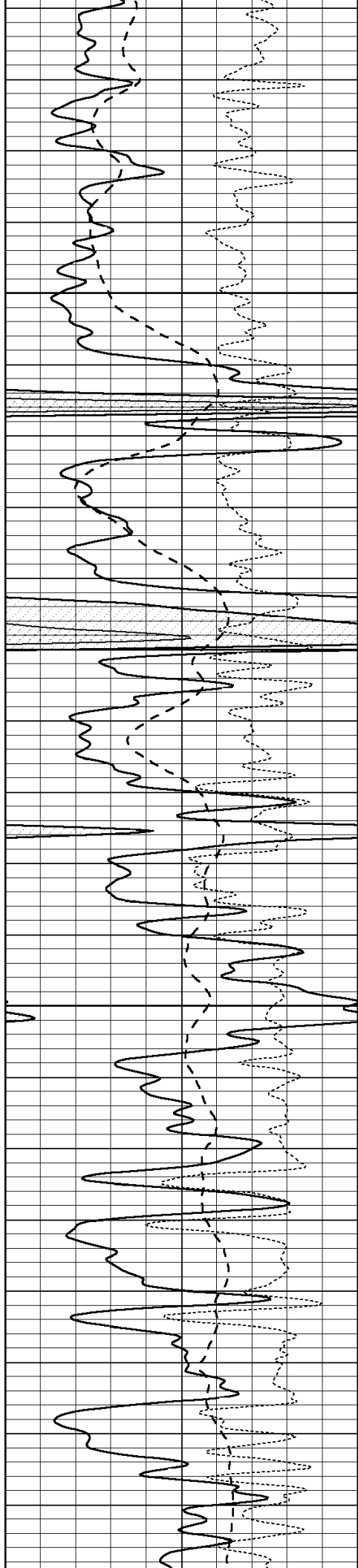
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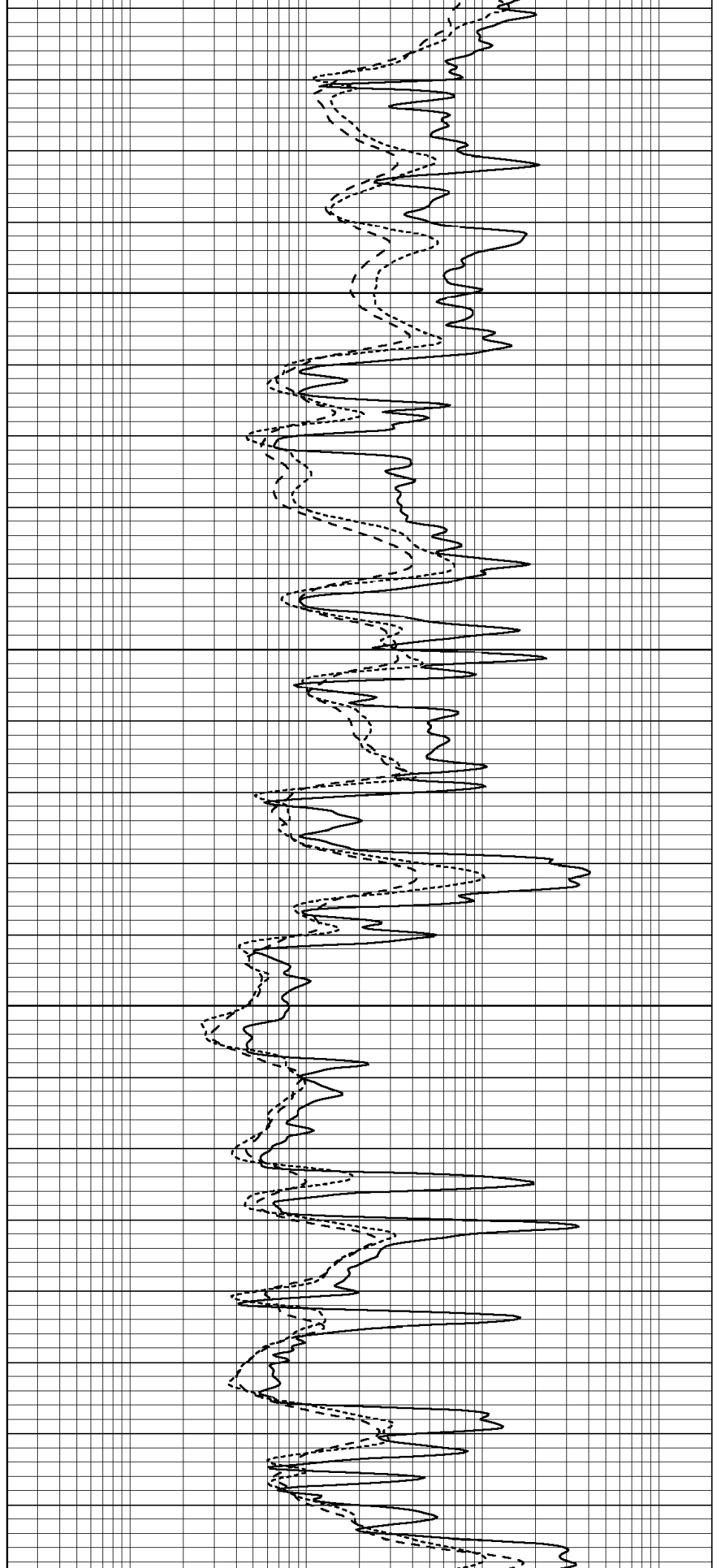


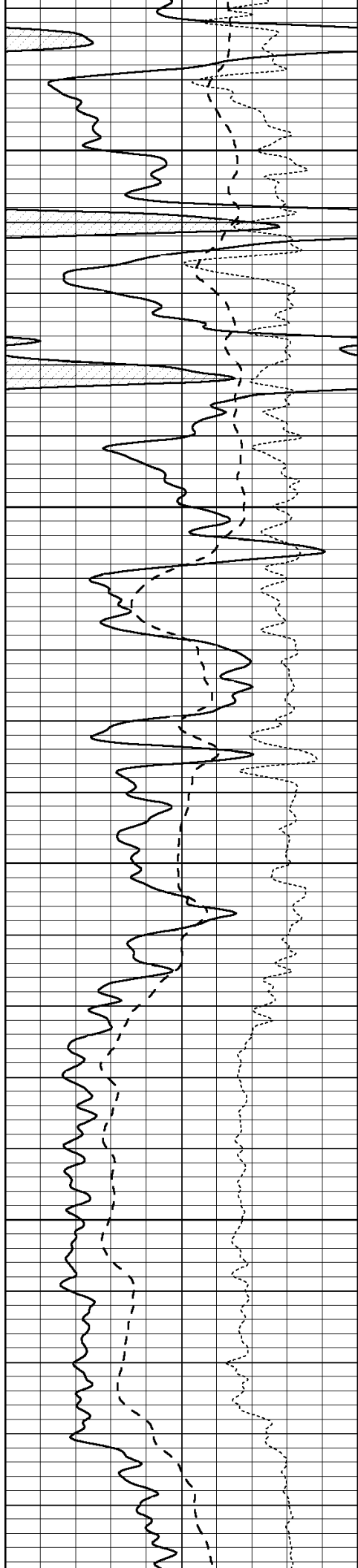
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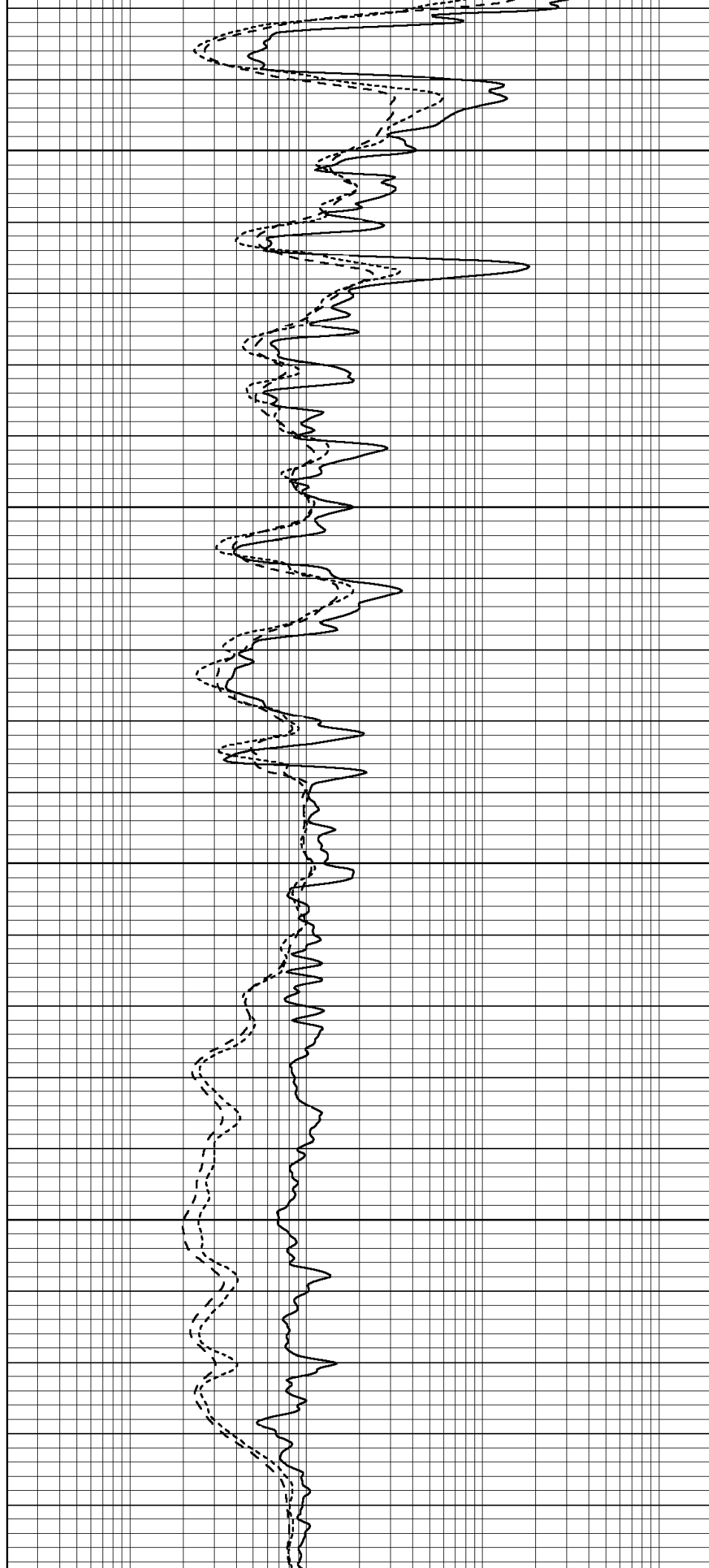


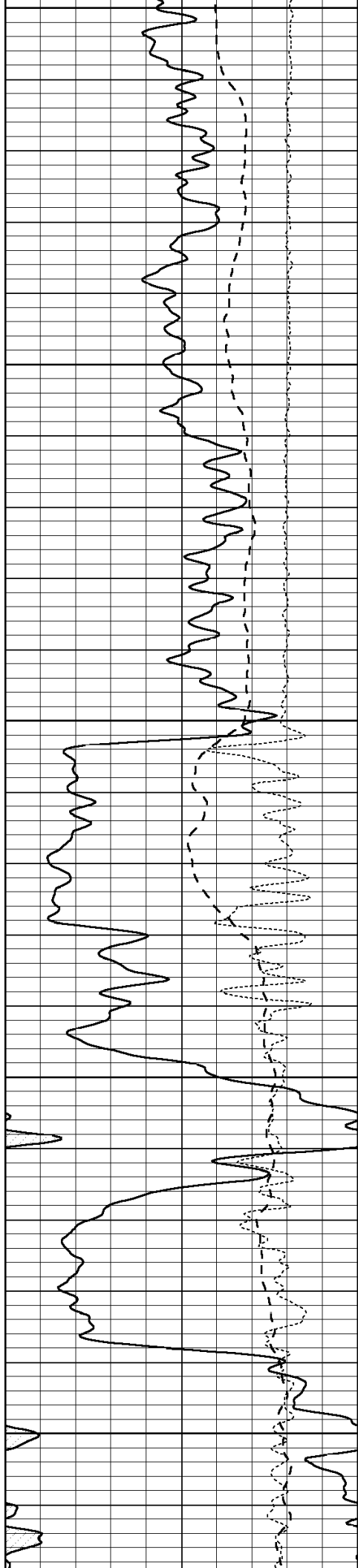
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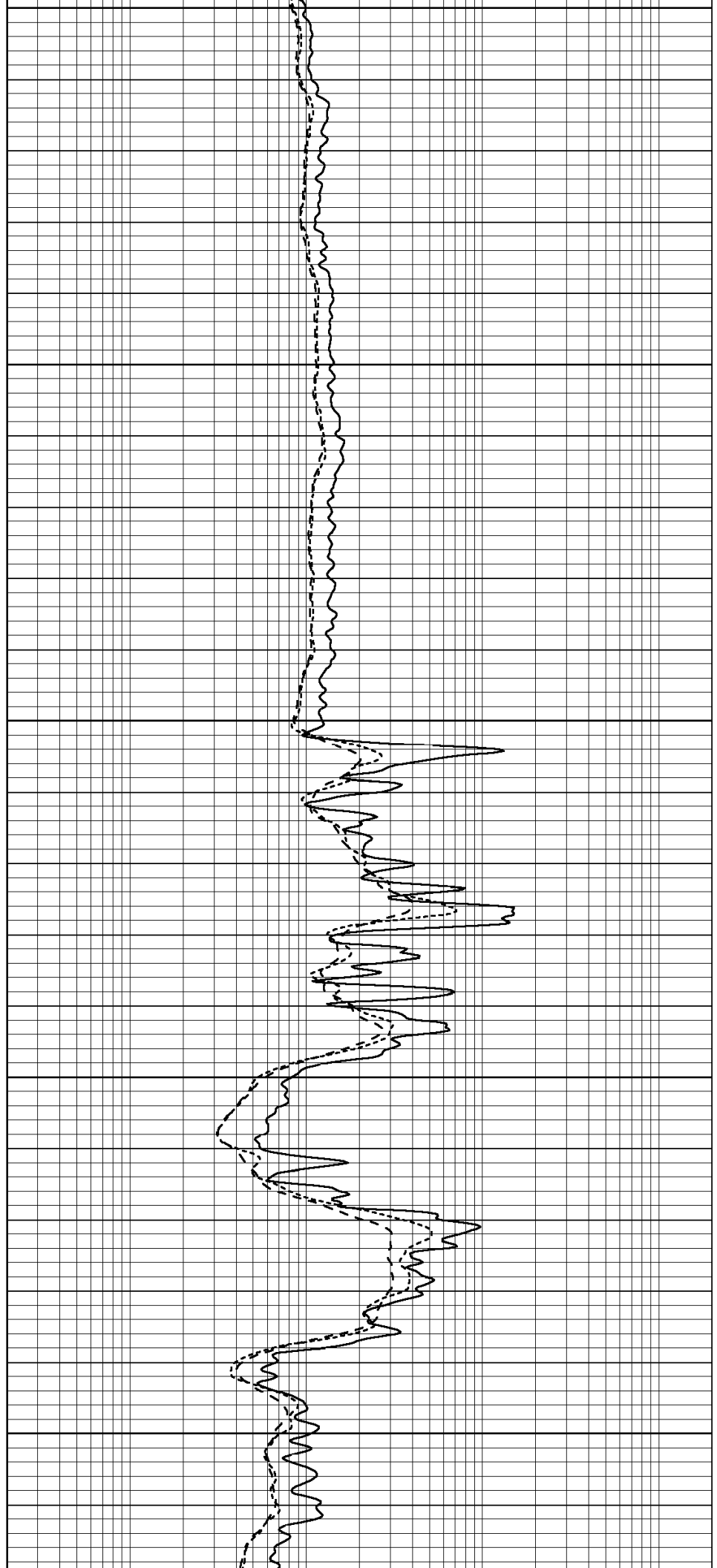
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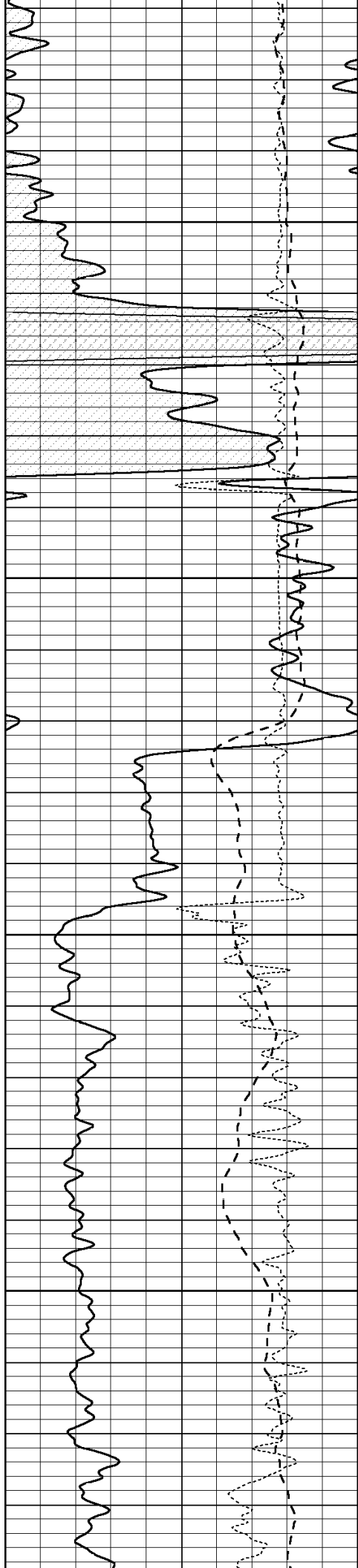
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5050

5100

5150



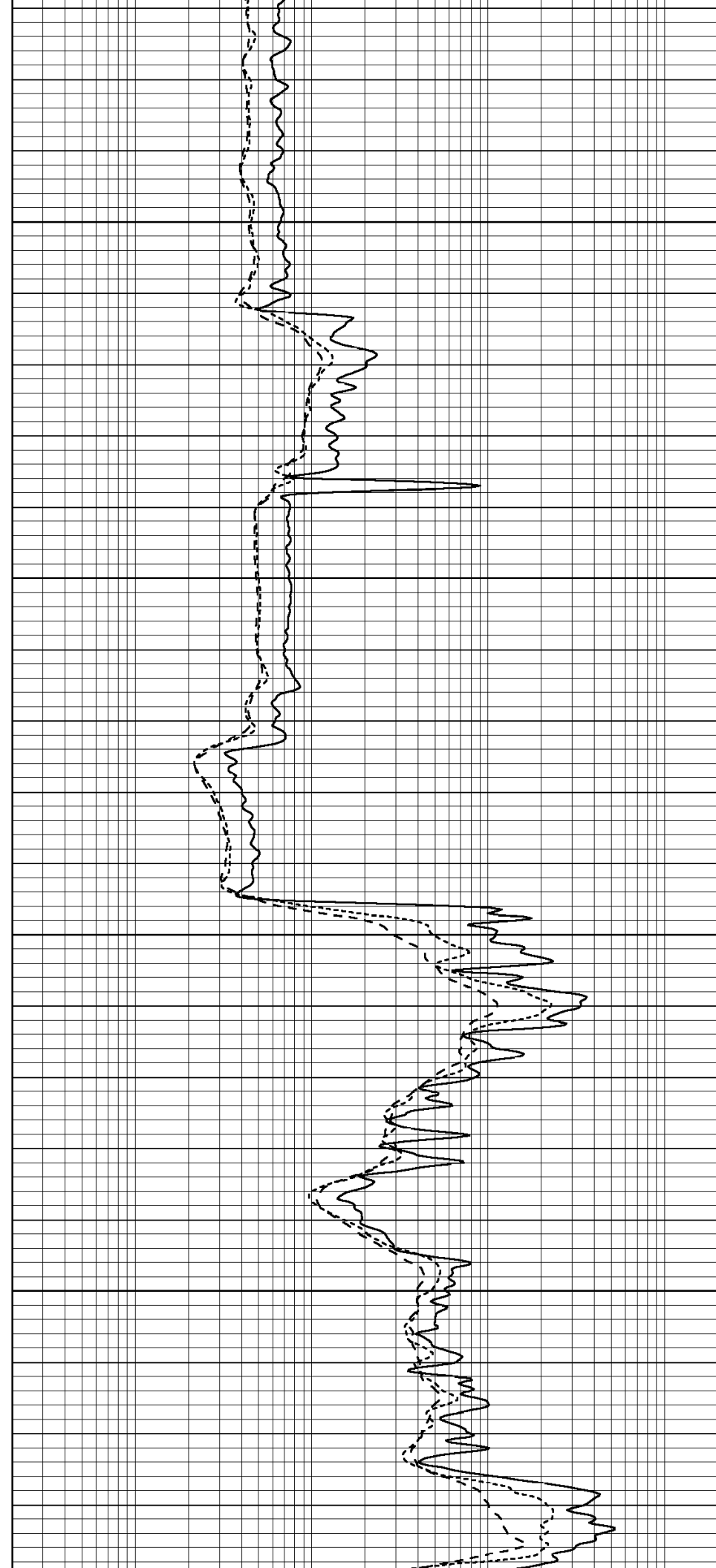


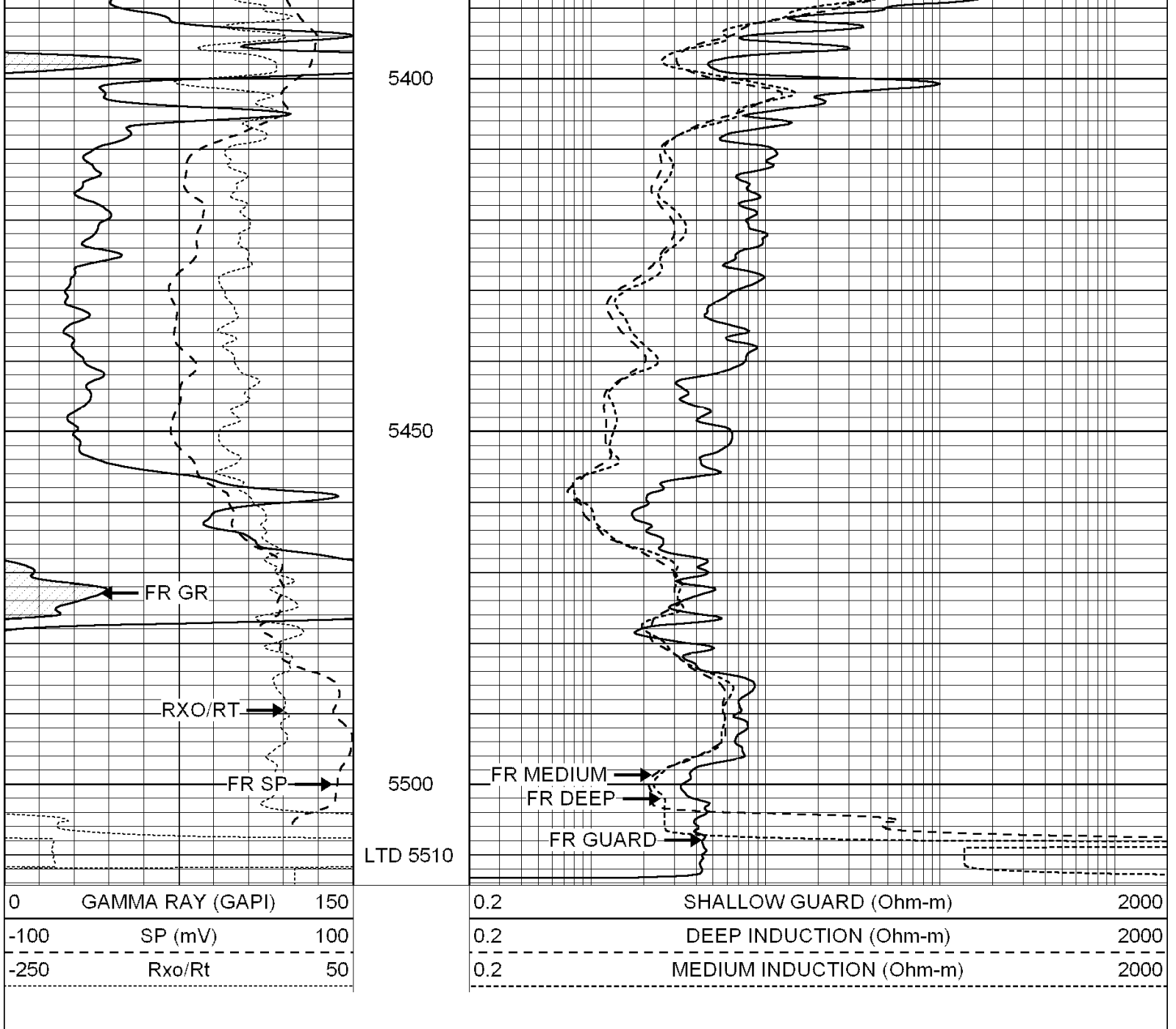
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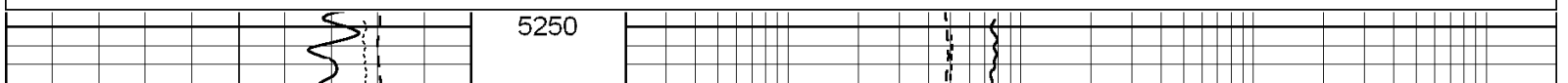


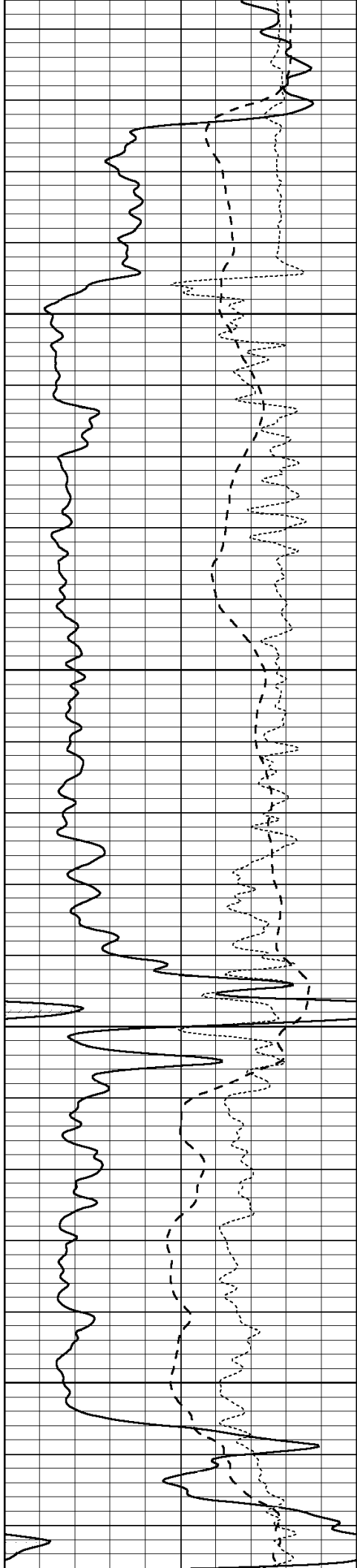
SUPERIOR  
Hays,  
Kansas

# REPEAT SECTION

Database File: 004378pe.db  
 Dataset Pathname: pass2.10  
 Presentation Format: dil  
 Dataset Creation: Wed Dec 02 03:28:03 2009 by Calc Open-Cased 060407  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000



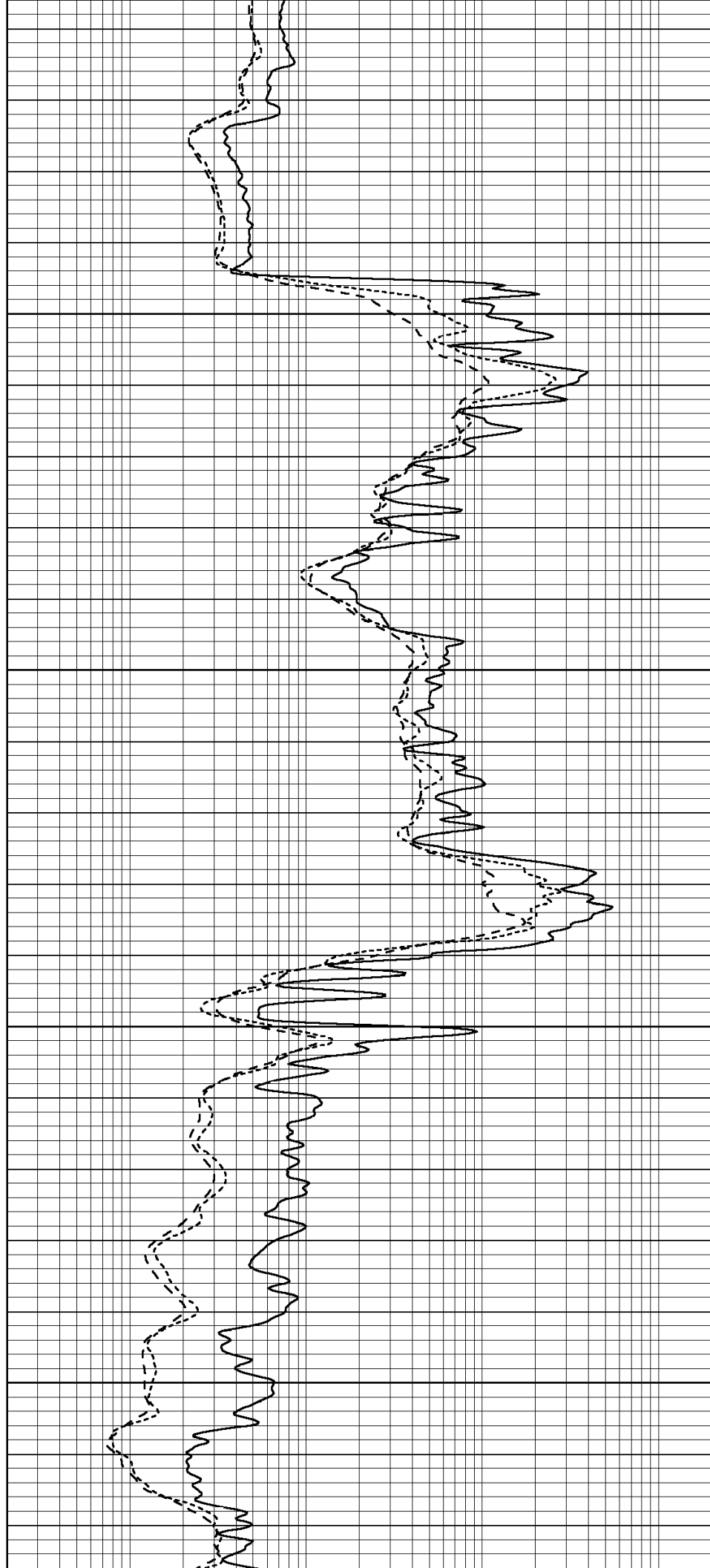


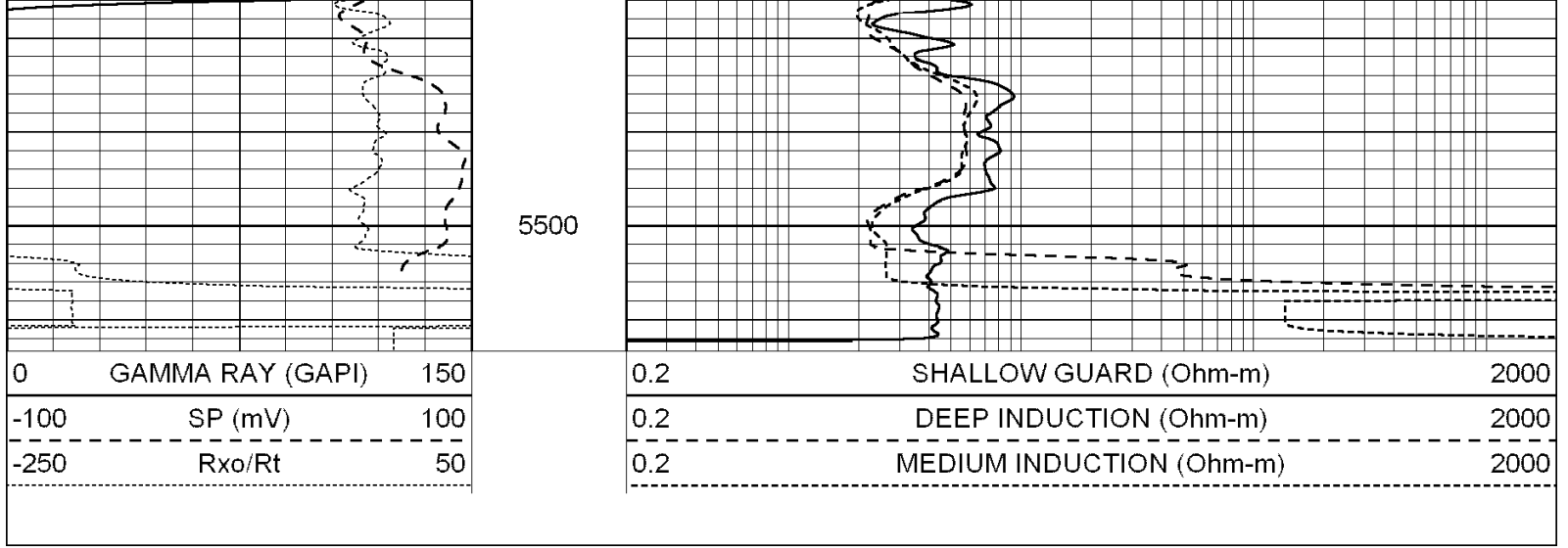
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5450





**Calibration Report**

Database File: 004378pe.db  
 Dataset Pathname: pass3.9  
 Dataset Creation: Wed Dec 02 03:24:29 2009 by Calc Open-Cased 060407

**Dual Induction Calibration Report**

Serial-Model: DIL3-GEAR  
 Performed: Wed Dec 02 01:29:03 2009

Loop:	Readings				References			Results	
	Air	Loop			Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho-m	640.000	-4.000	
Medium	0.013	0.740	V	0.000	462.500	mmho-m	700.000	-13.000	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.002	0.645	V	0.000	400.000	mmho-m	622.059	-1.071	
Medium	0.007	0.740	V	0.000	462.500	mmho-m	631.393	-4.555	

**Litho Density Calibration Report**  
 Serial: 003N Model: PRB  
 Performed Tue Sep 08 14:14:44 2009

**Litho Density Calibration**

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2042.6	12312.8	4225.8	13758.4	cps
Window 2	1855.8	10134.7	3624.2	11113.1	cps
Window 3	1639.4	6760.2	2716.3	7260.3	cps
Window 4	466.4	469.2	466.1	476.5	cps
Long Space	0.0	8278.9	1768.4	9257.4	cps
Short Space	2.2	2377.3	1544.1	2574.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept	: -18.8

**Caliper**

	Readings	Reference	
Low Ref	1.8	7.3	
High Ref	4.2	14.0	
Gain:	2.8		Offset: 2.2

# Compensated Neutron Calibration Report

Serial Number: NEU\_3I  
Tool Model: G

## CALIBRATION

Detector	Readings	Target	Normalization
Short Space	997.00 cps	1000.00 cps	1.0000
Long Space	986.00 cps	1000.00 cps	1.0000

## Gamma Ray Calibration Report

Serial Number: GR3  
Tool Model: OPEN  
Performed: Wed Dec 02 00:45:17 2009

Calibrator Value: 200.0 GAPI

Background Reading: 3.0 cps  
Calibrator Reading: 186.0 cps

Sensitivity: 0.6000 GAPI/cps