



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company	DOWNING NELSON OIL COMPANY	Company	DOWNING NELSON OIL COMPANY
Well	KRAMER UNIT #1-24	Well	KRAMER UNIT #1-24
Field	WILDCAT	Field	WILDCAT
County	CHEYENNE	County	CHEYENNE
State	KANSAS	State	KANSAS
Location:	API # : 15-023-21394-0000	Other Services	CDL/CNL MEL/SON
	317' FSL & 1085' FWL	Elevation	K.B. 3289 D.F. 3287 G.L. 3276
	SEC 24 TWP 5S RGE 37W		
Permanent Datum	GROUND LEVEL	Elevation	3276
Log Measured From	KELLY BUSHING 13' A.G.L.		
Drilling Measured From	KELLY BUSHING		

Date	7/18/14		
Run Number	ONE		
Depth Driller	5129		
Depth Logger	5134		
Bottom Logged Interval	5132		
Top Log Interval	00		
Casing Driller	8 5/8" @ 480		
Casing Logger	476		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES	500 PPM
Density / Viscosity	9.3/49		
pH / Fluid Loss	10.5/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.20 @ 88F		
Rmt @ Meas. Temp	.90 @ 88F		
Rmc @ Meas. Temp	1.44 @ 88F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.83 @ 126F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	126F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	RON NELSON		

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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 NABORS, HAYS, KS. (785) 628-6395  
DIRECTIONS:  
BREWSTER, KS. - 17 NORTH TO CURVE - 3 WEST - 2 NORTH - 1/4 EAST  
SOUTH INTO

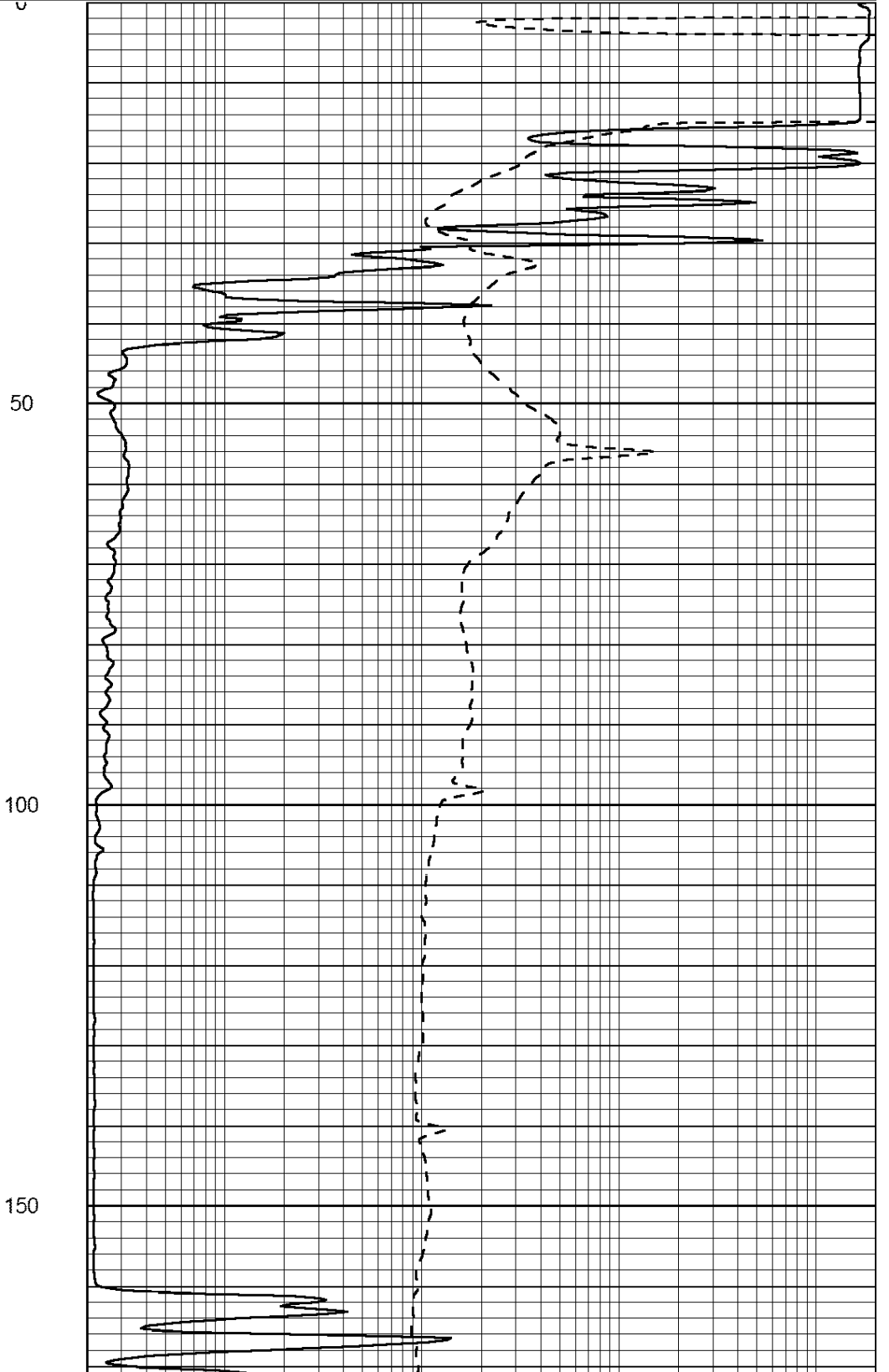
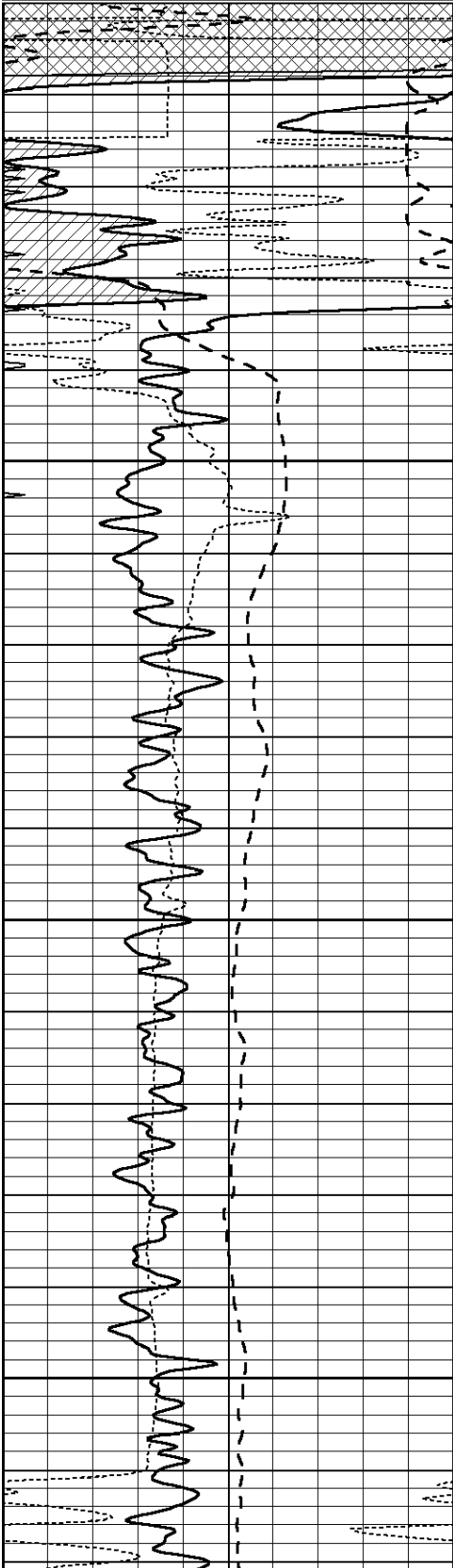


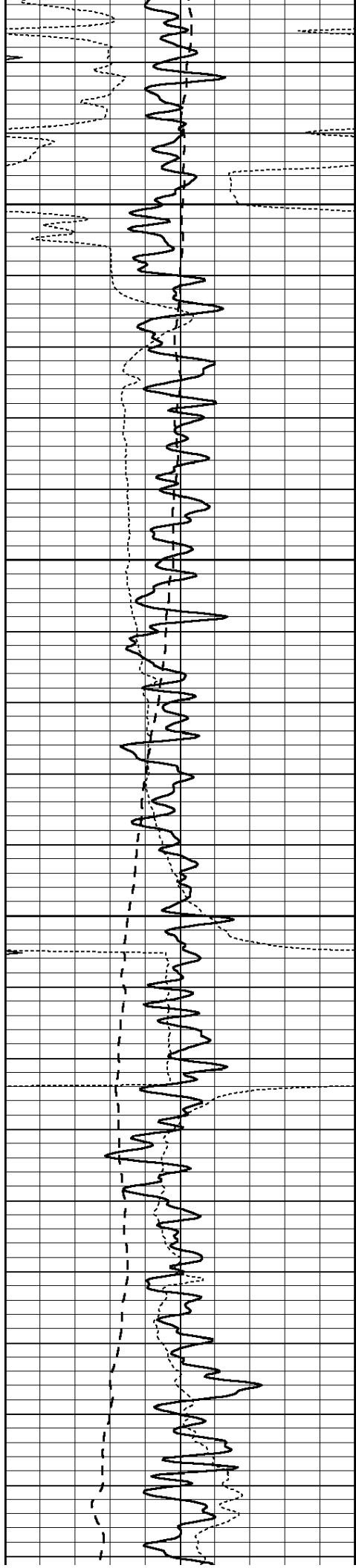
**MAIN SECTION**

Database File: 24064ddn.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_dil  
 Dataset Creation: Fri Jul 18 13:39:35 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



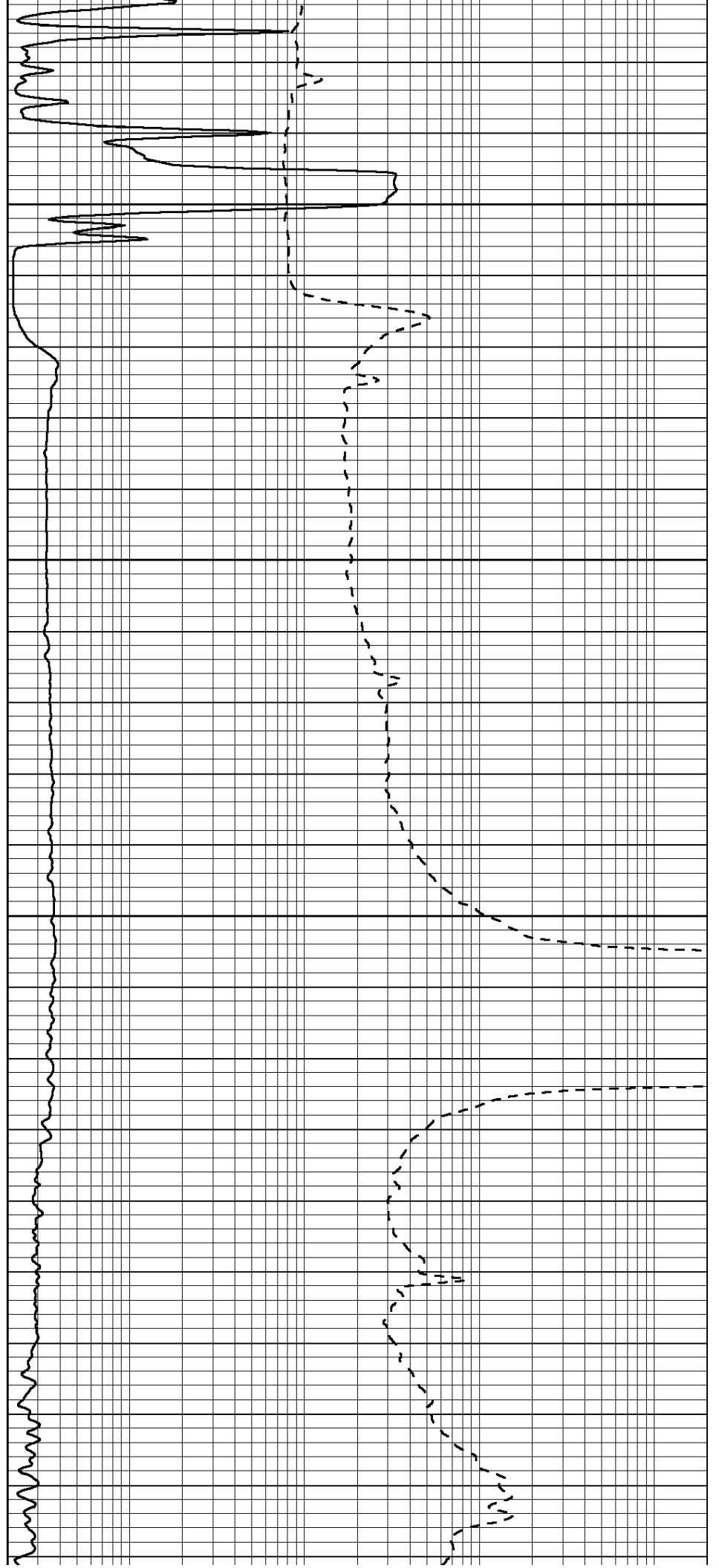


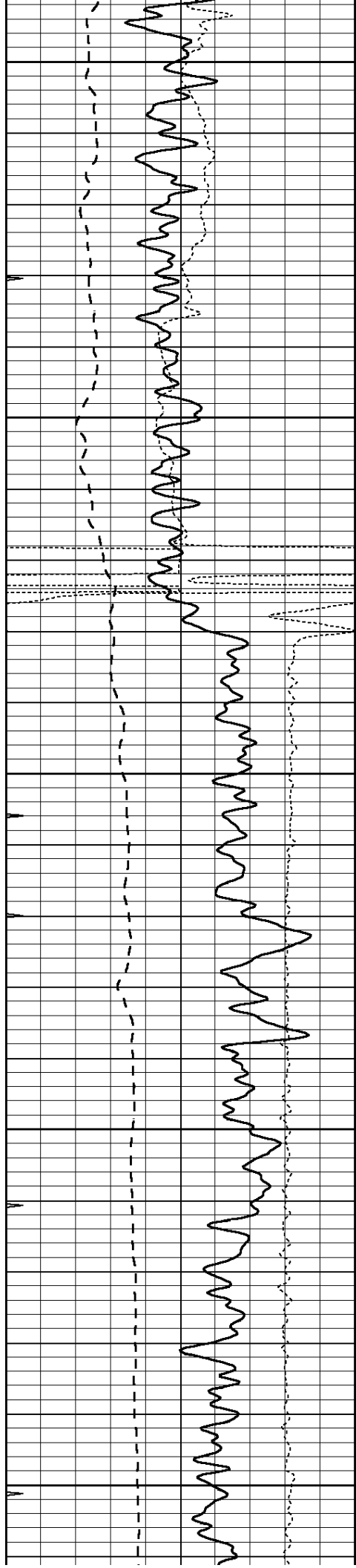
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250

300

350





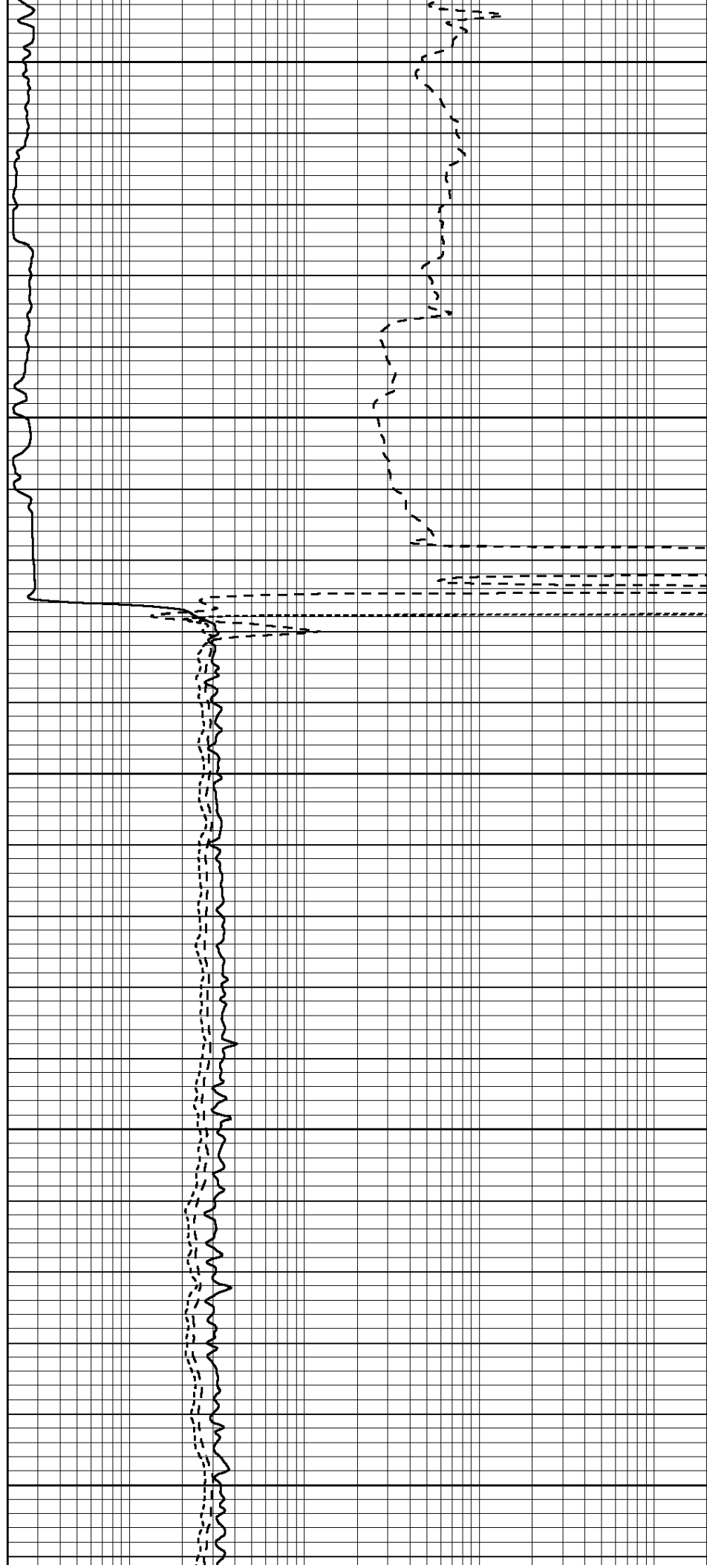
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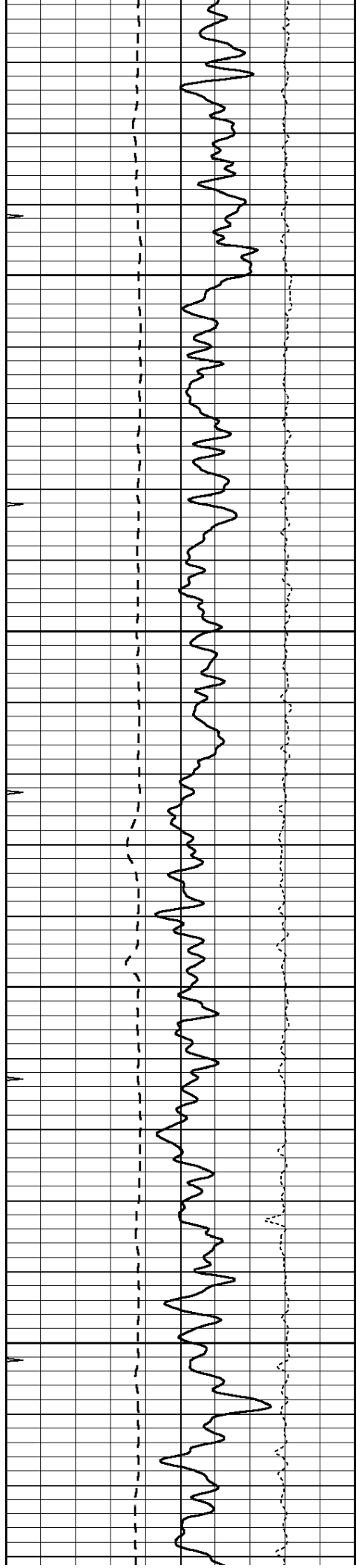
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500

550

600



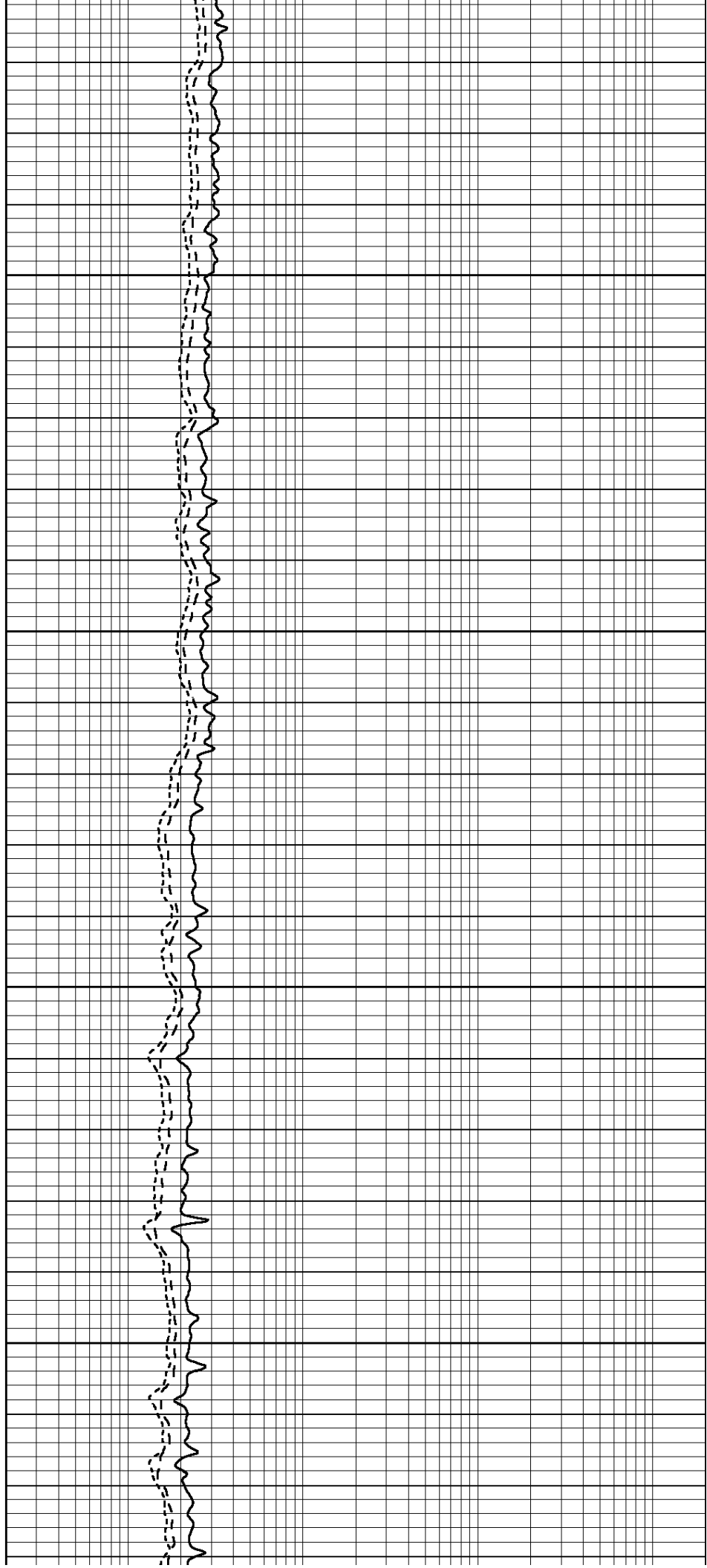


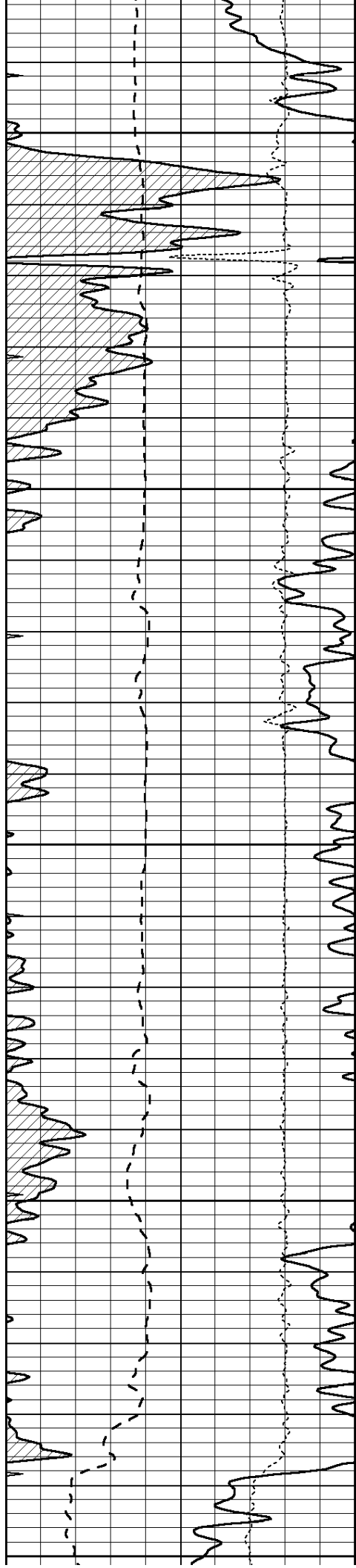
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700

750

800





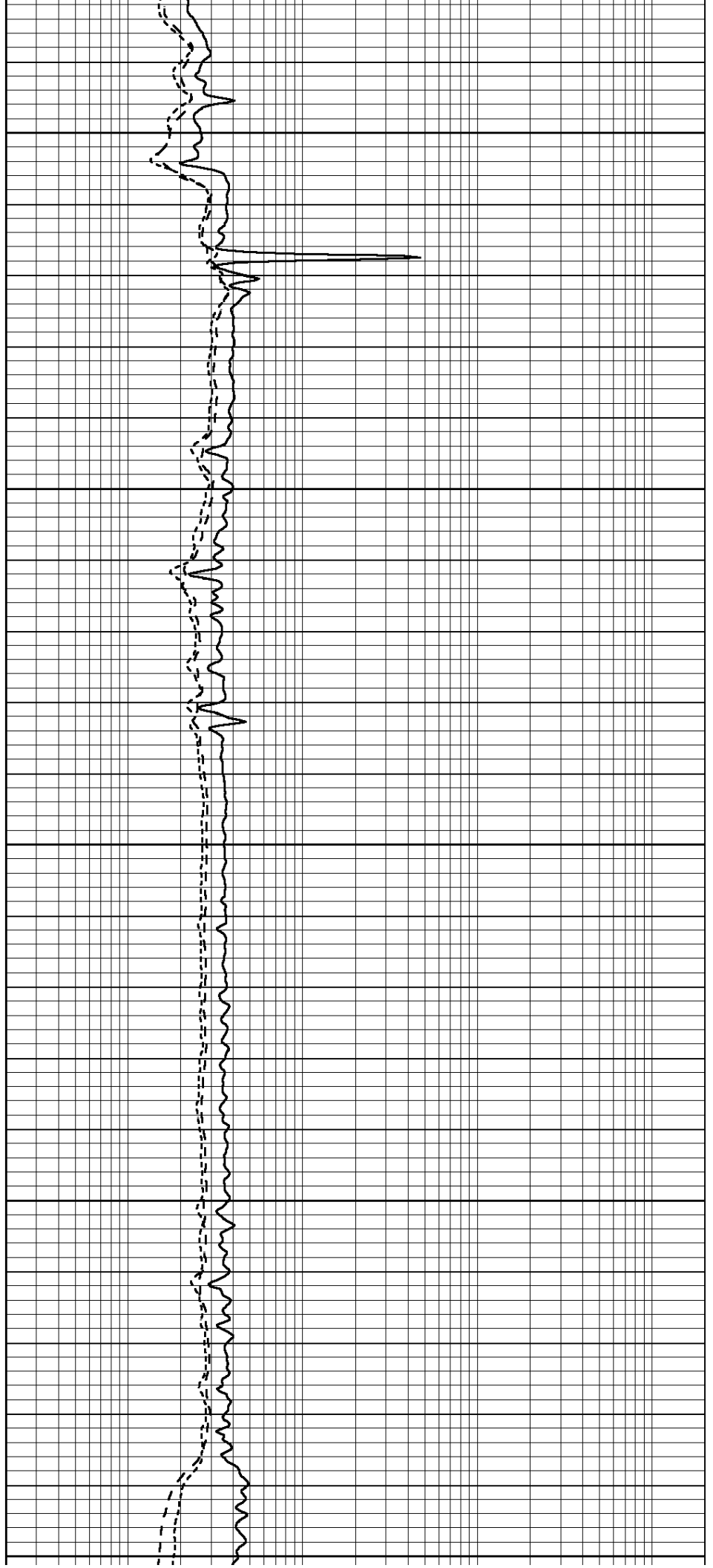
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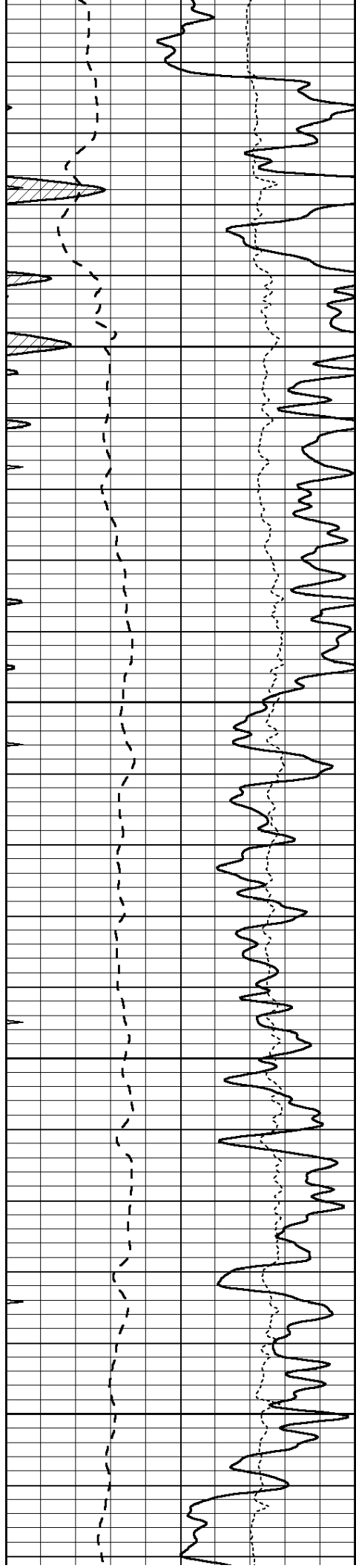
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950

1000

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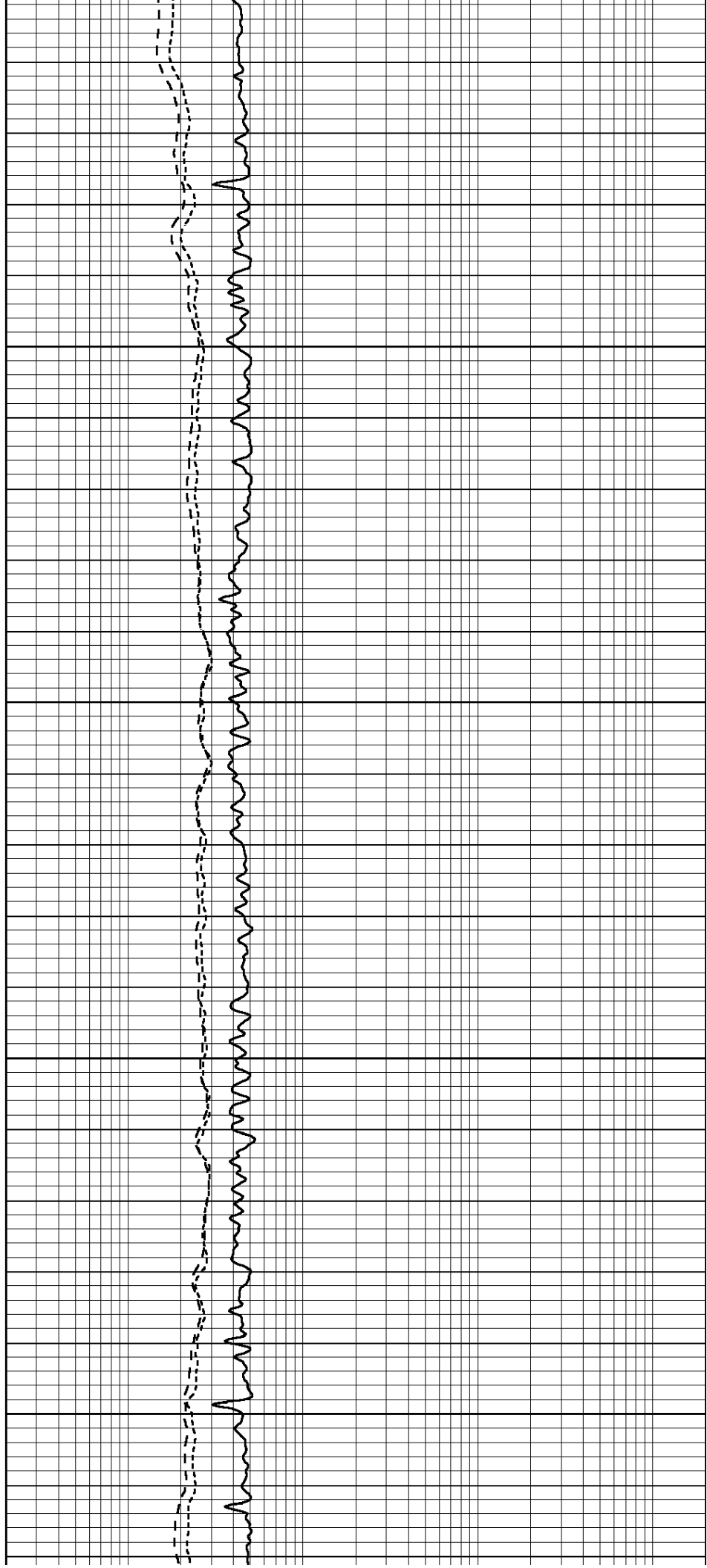


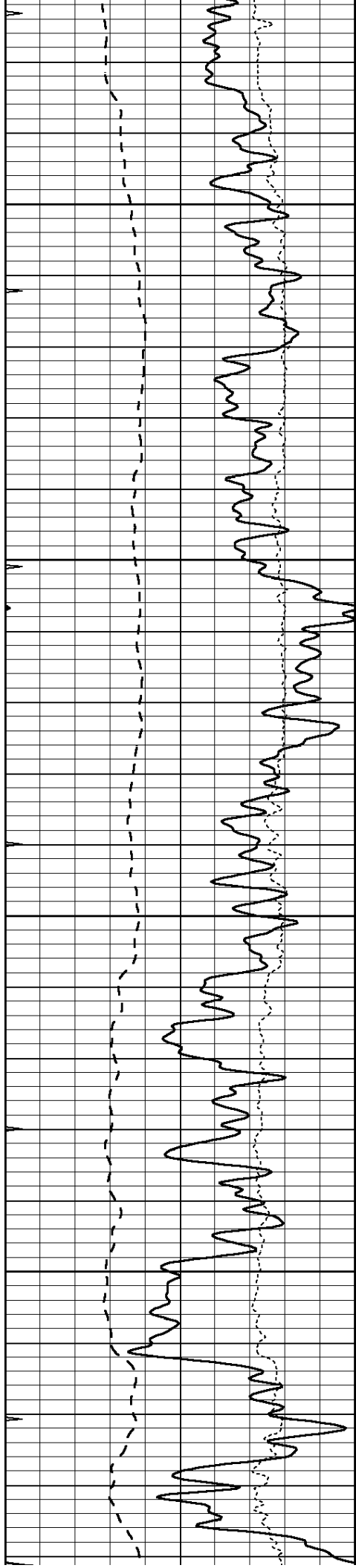
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1150

1200

1250



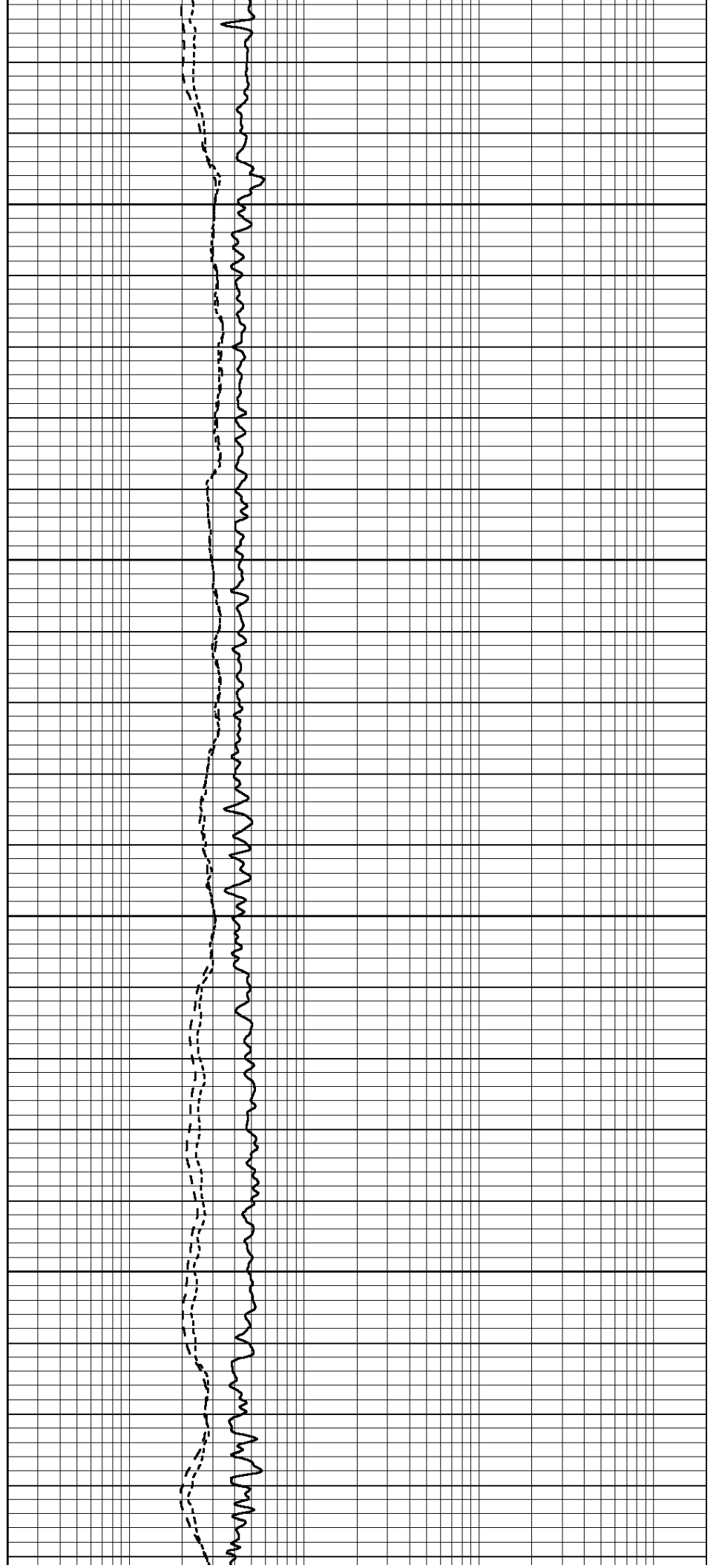


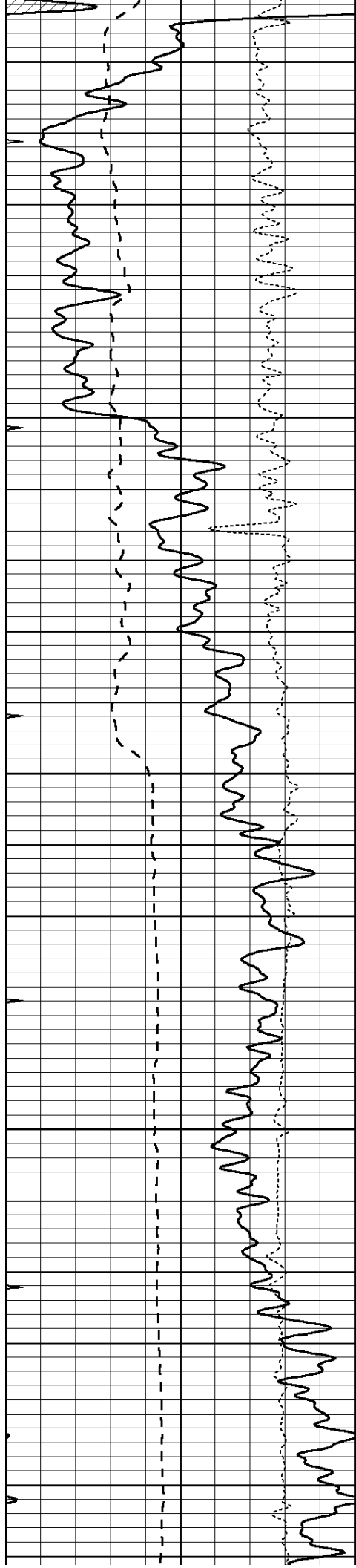
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1350

1400

1450





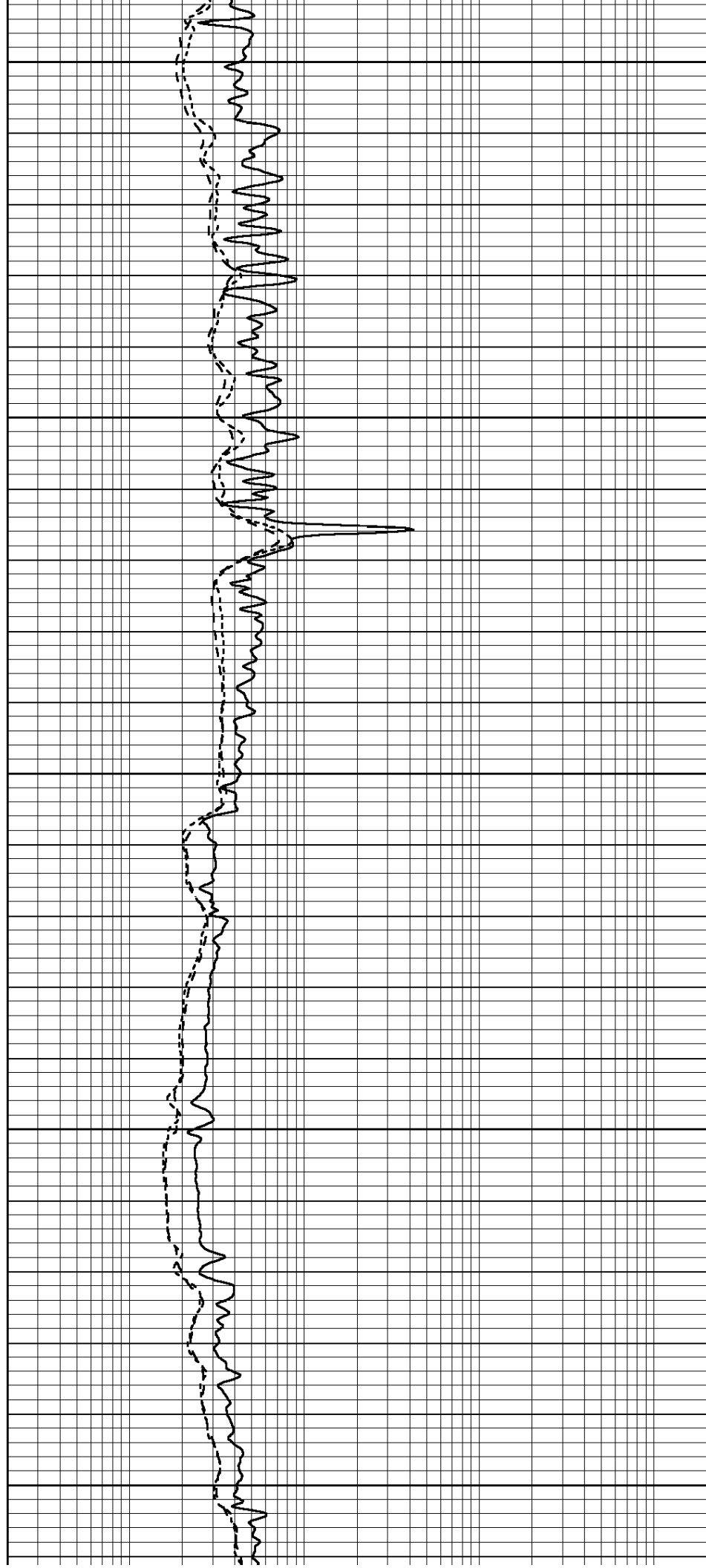
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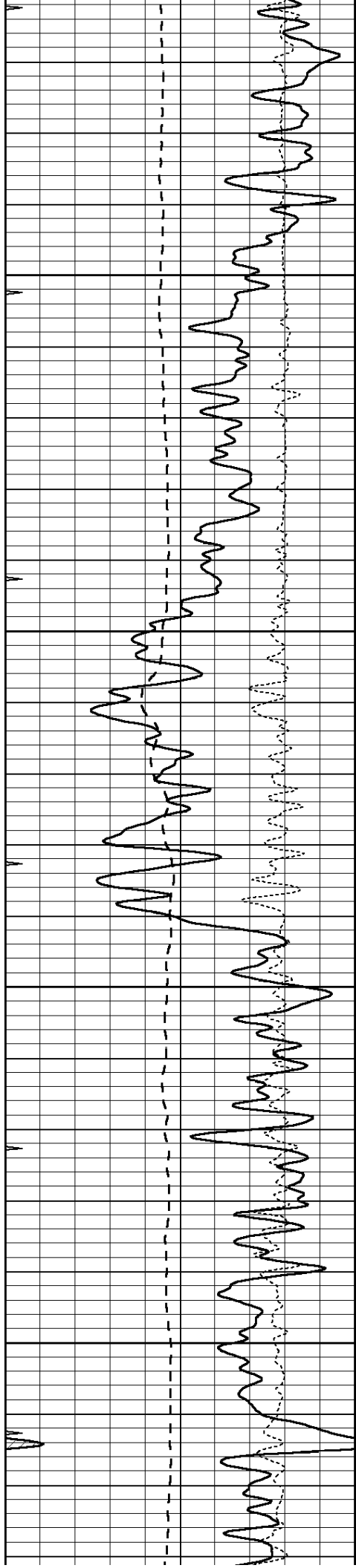
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1600

1650

1700



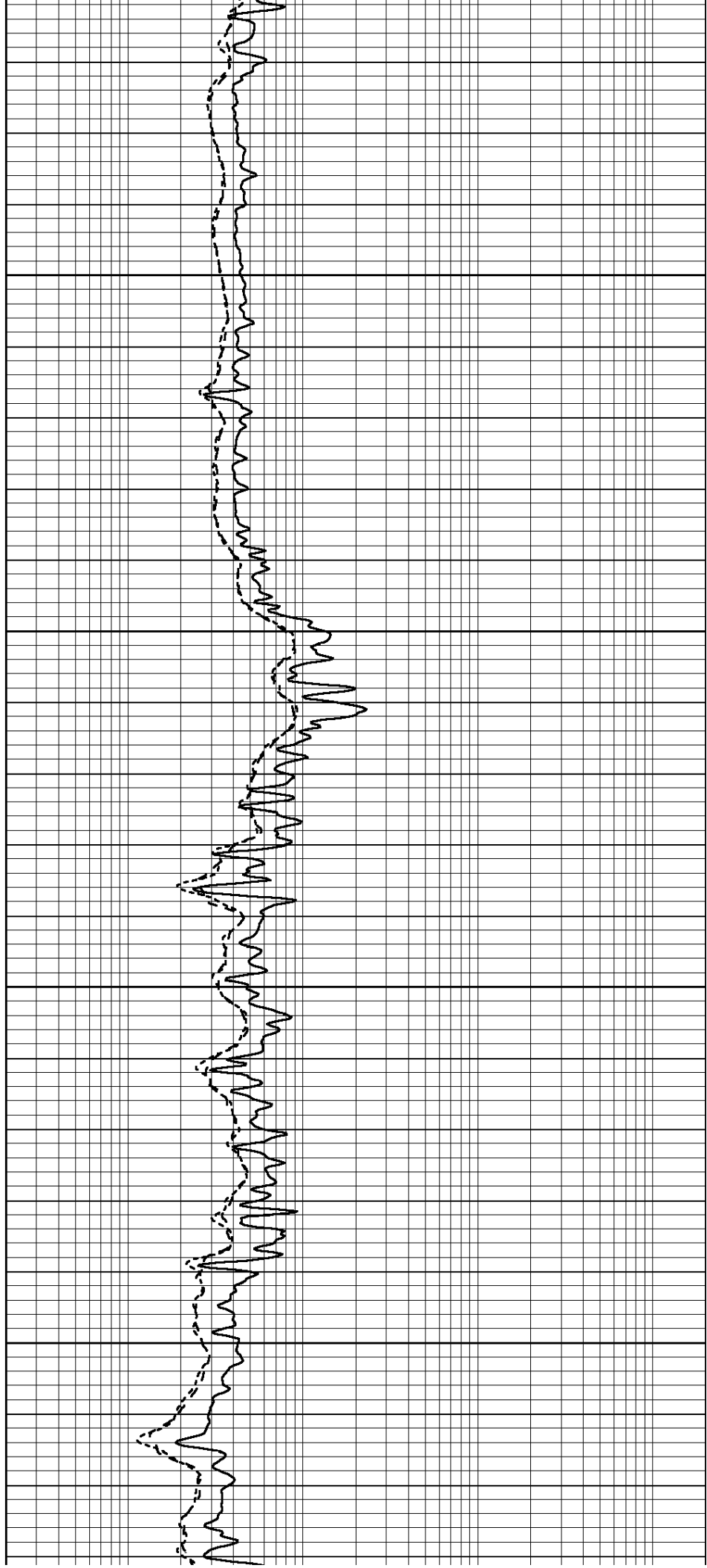


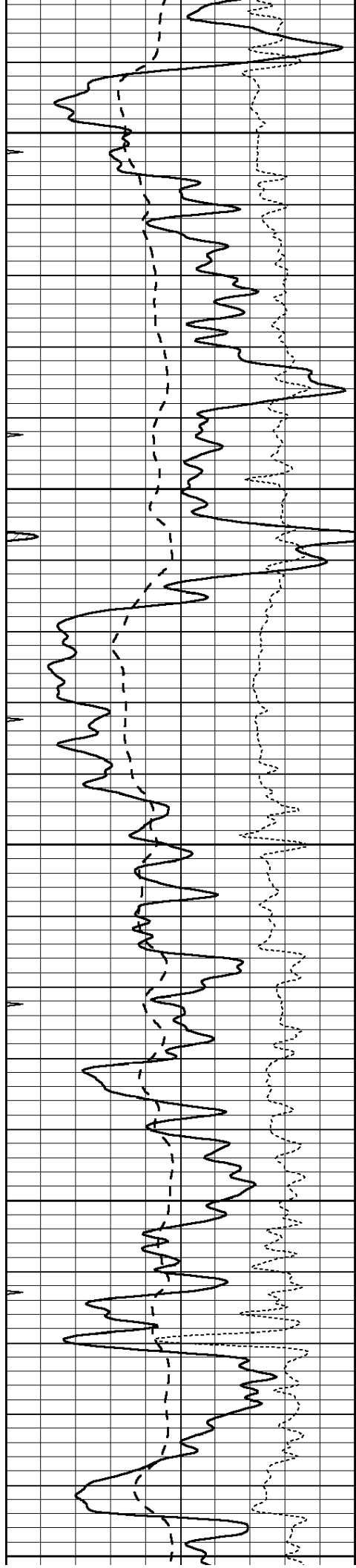
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1850

1900





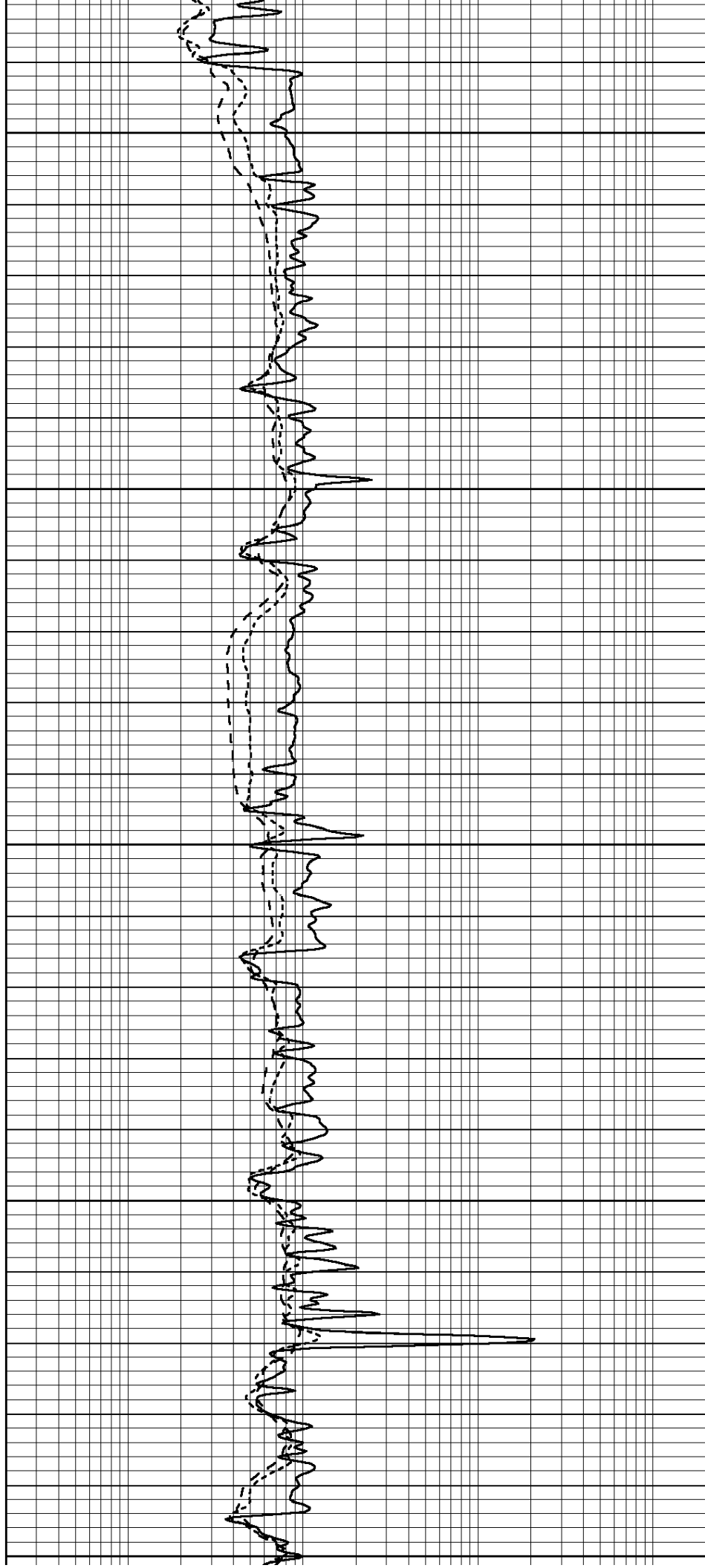
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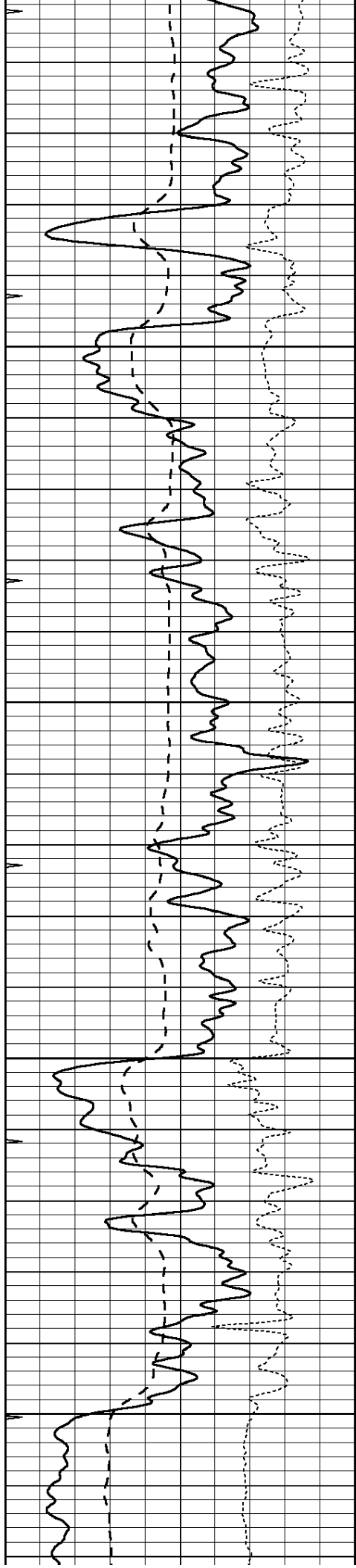
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2050

2100

2150



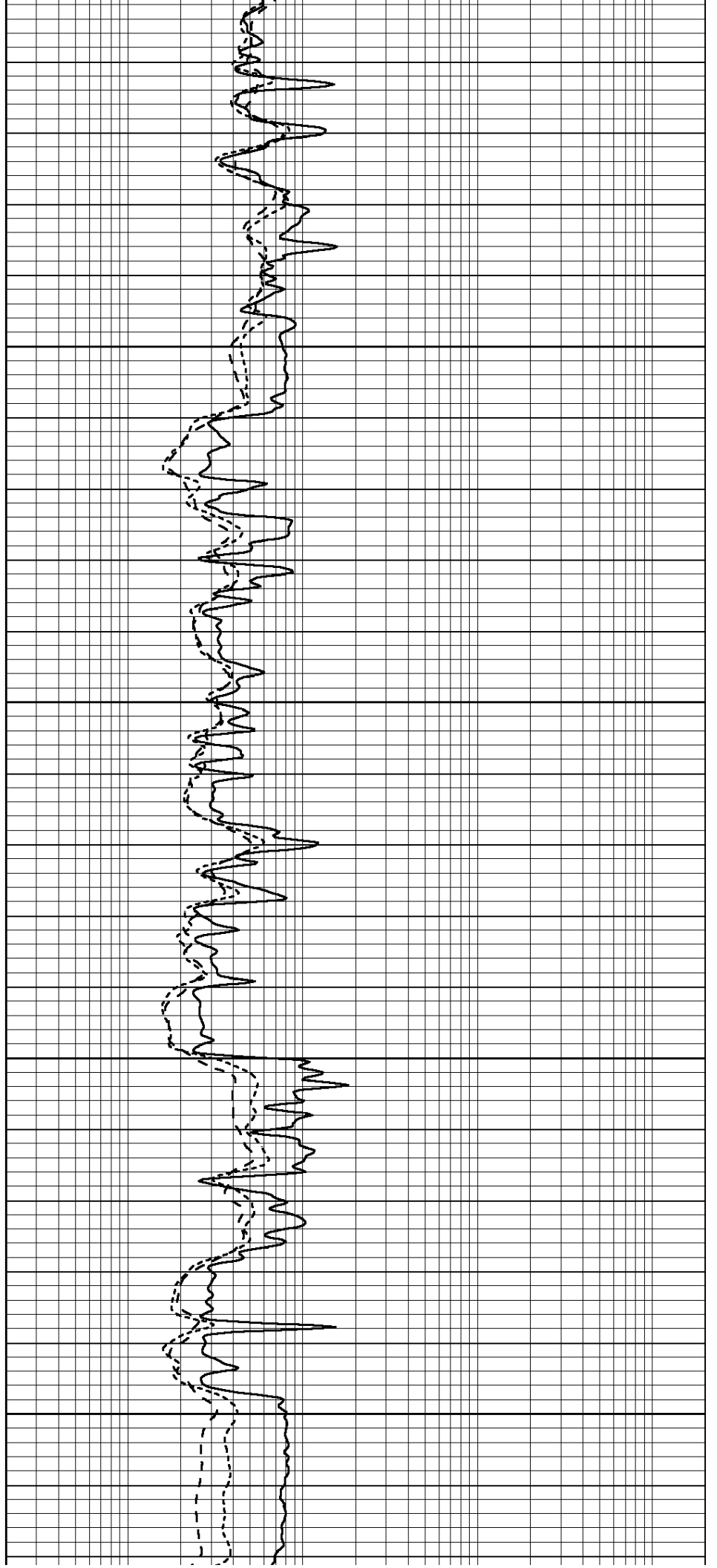


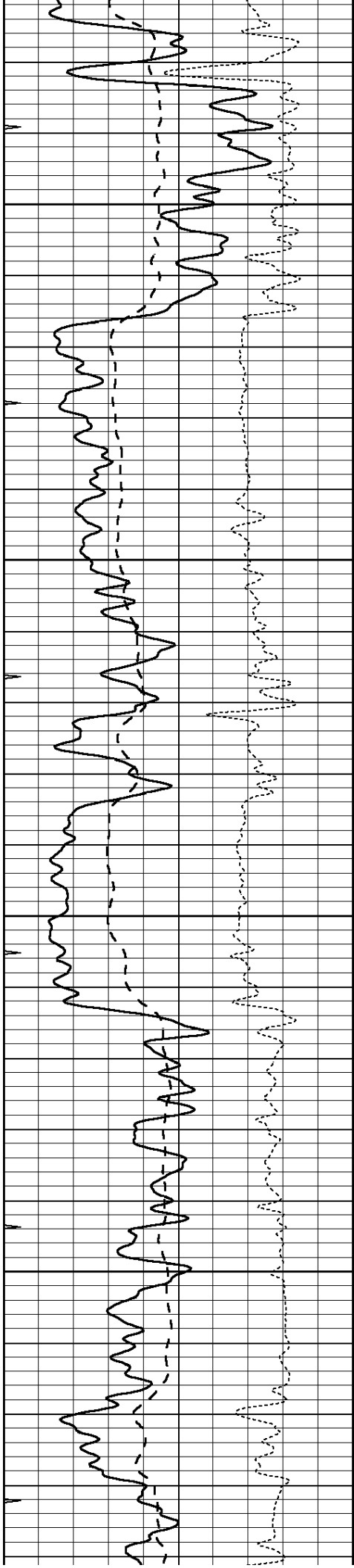
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2250

2300

2350



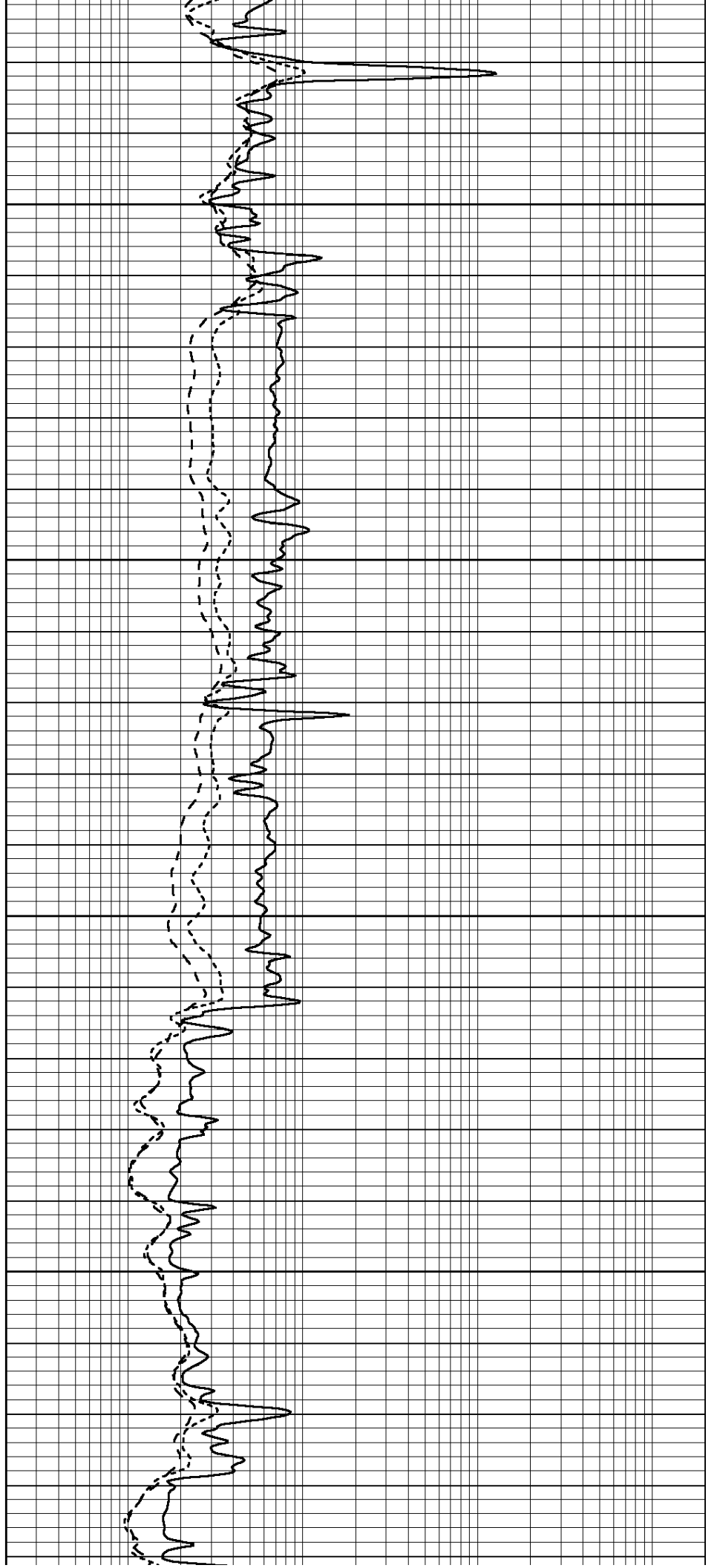


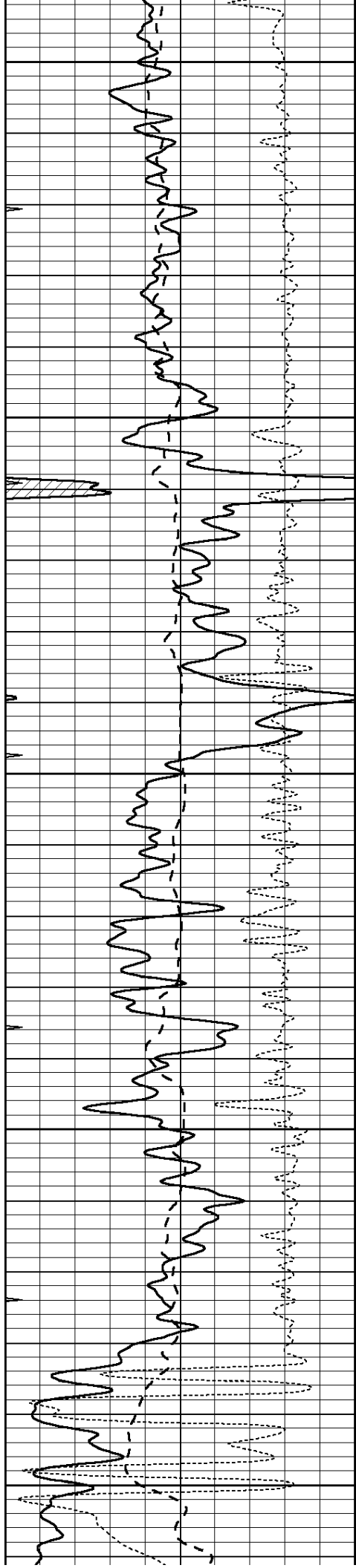
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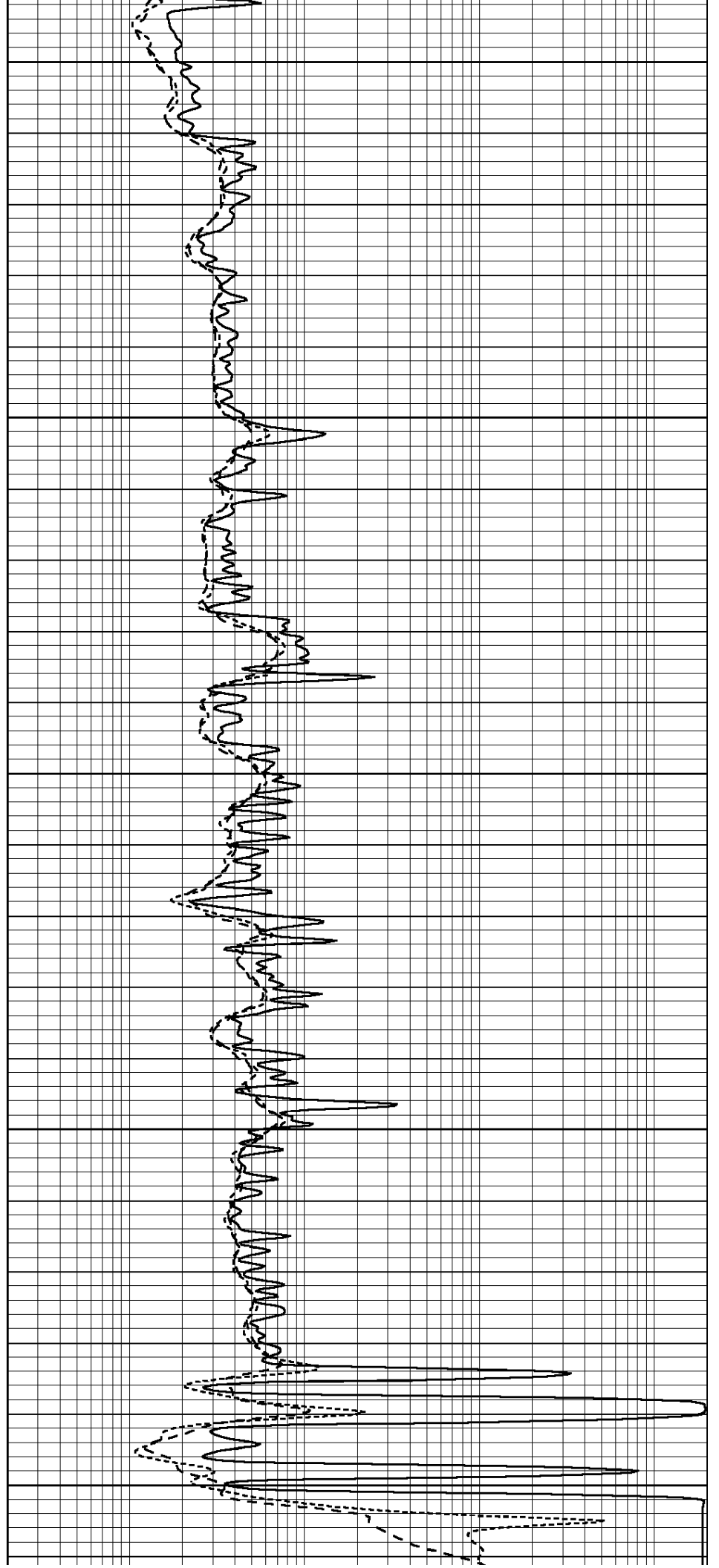
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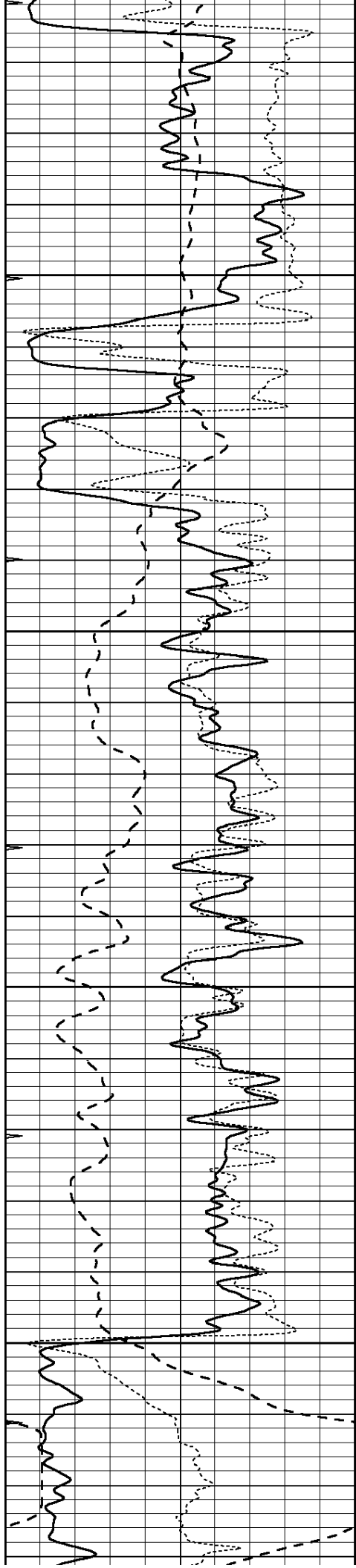
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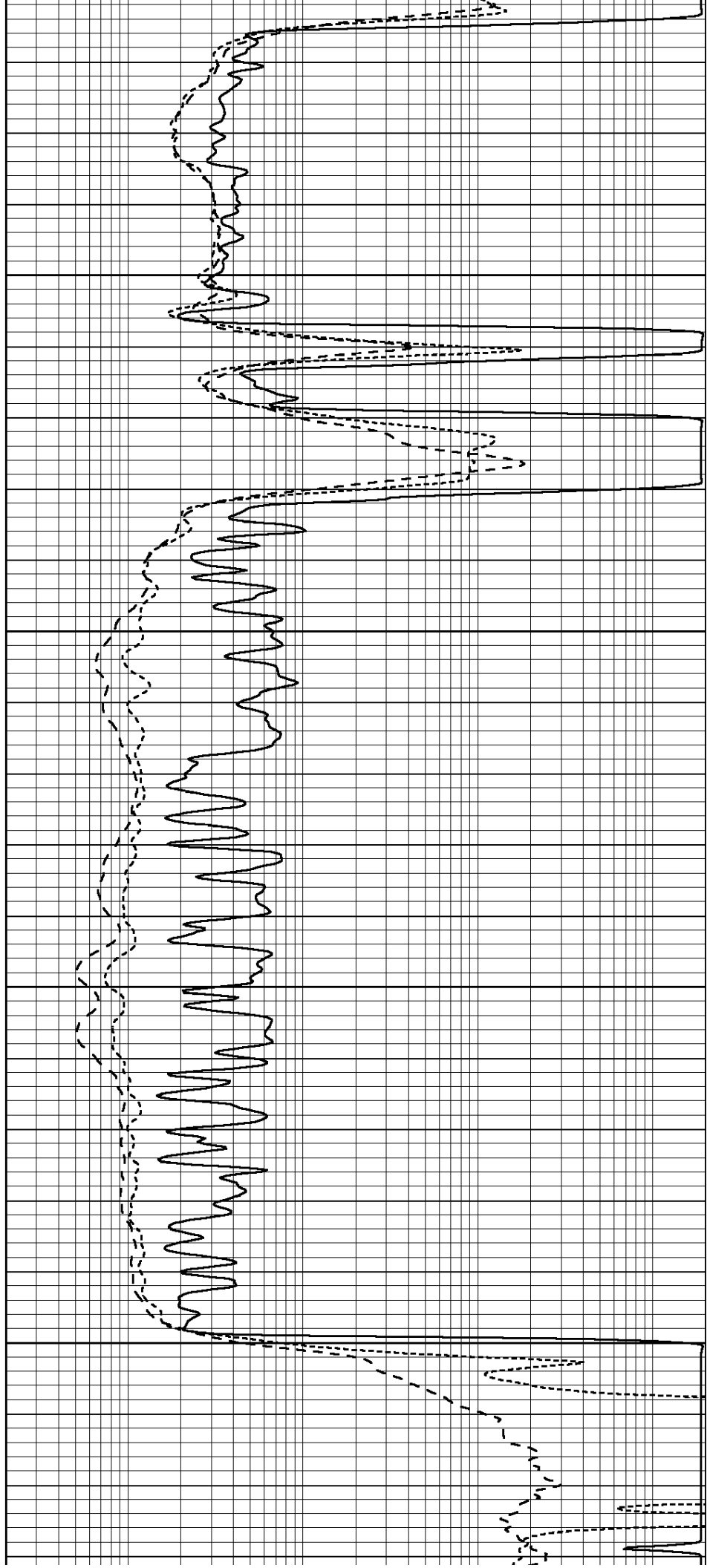


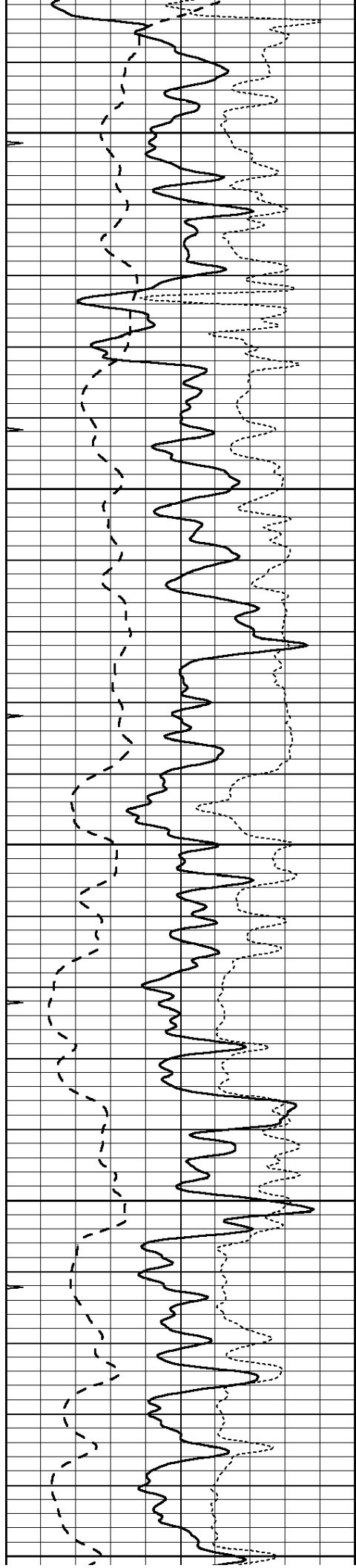
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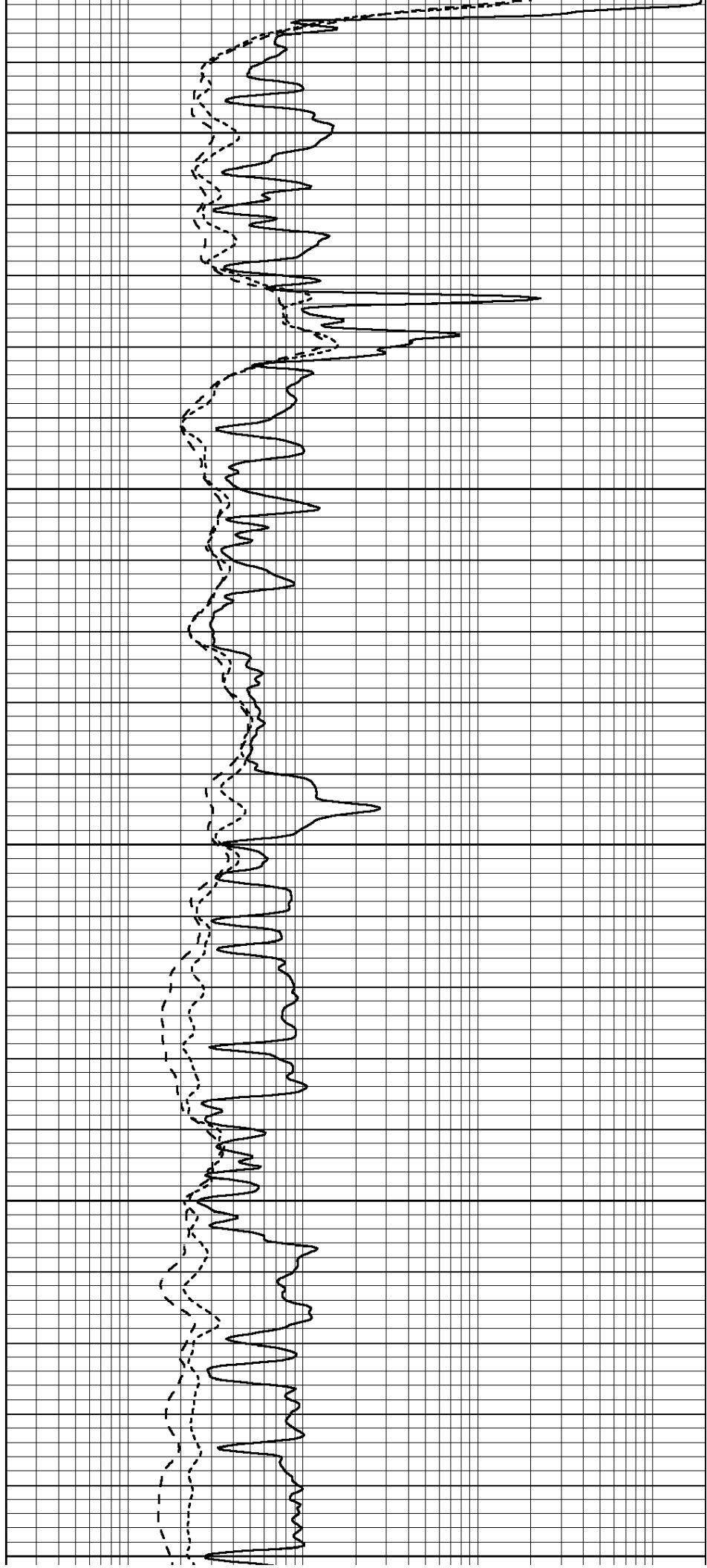
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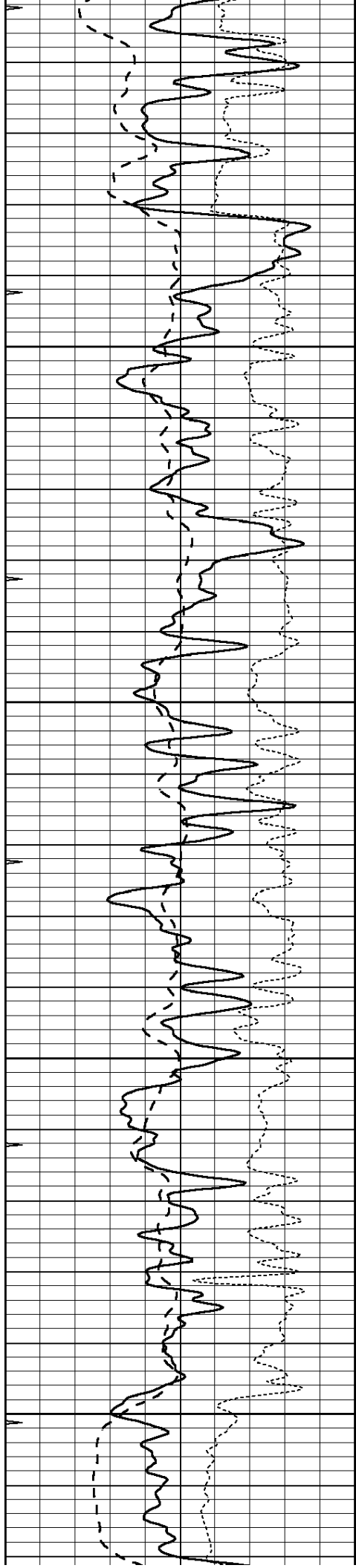
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3150

3200

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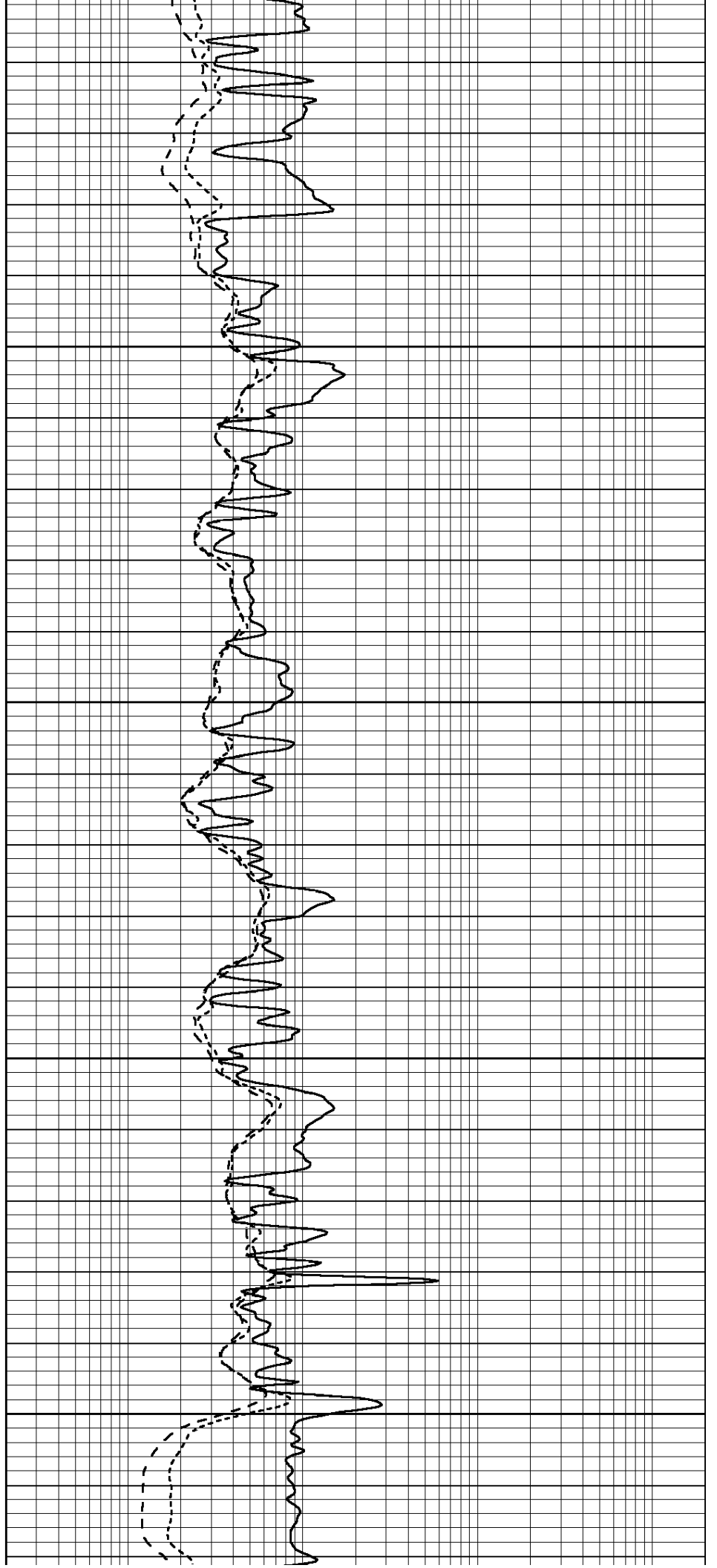


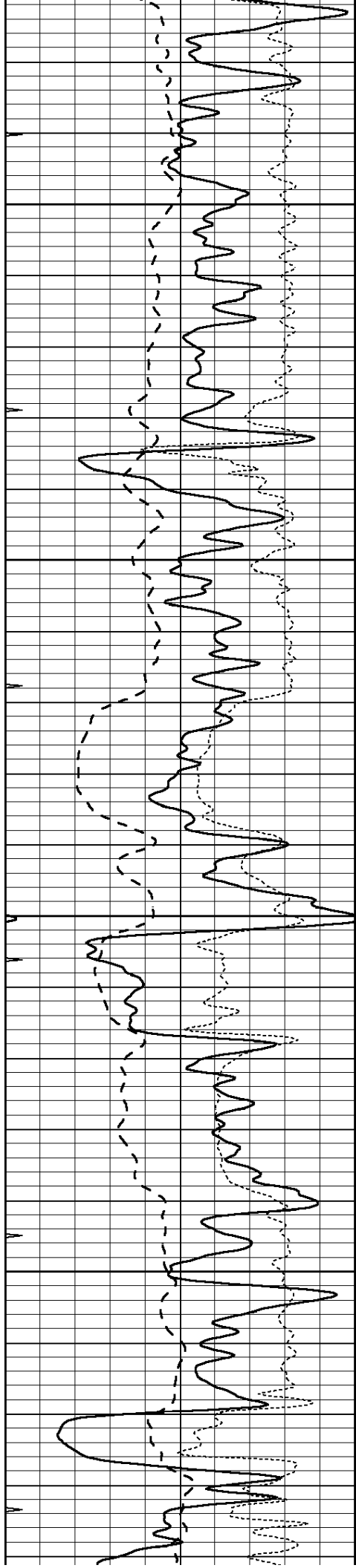
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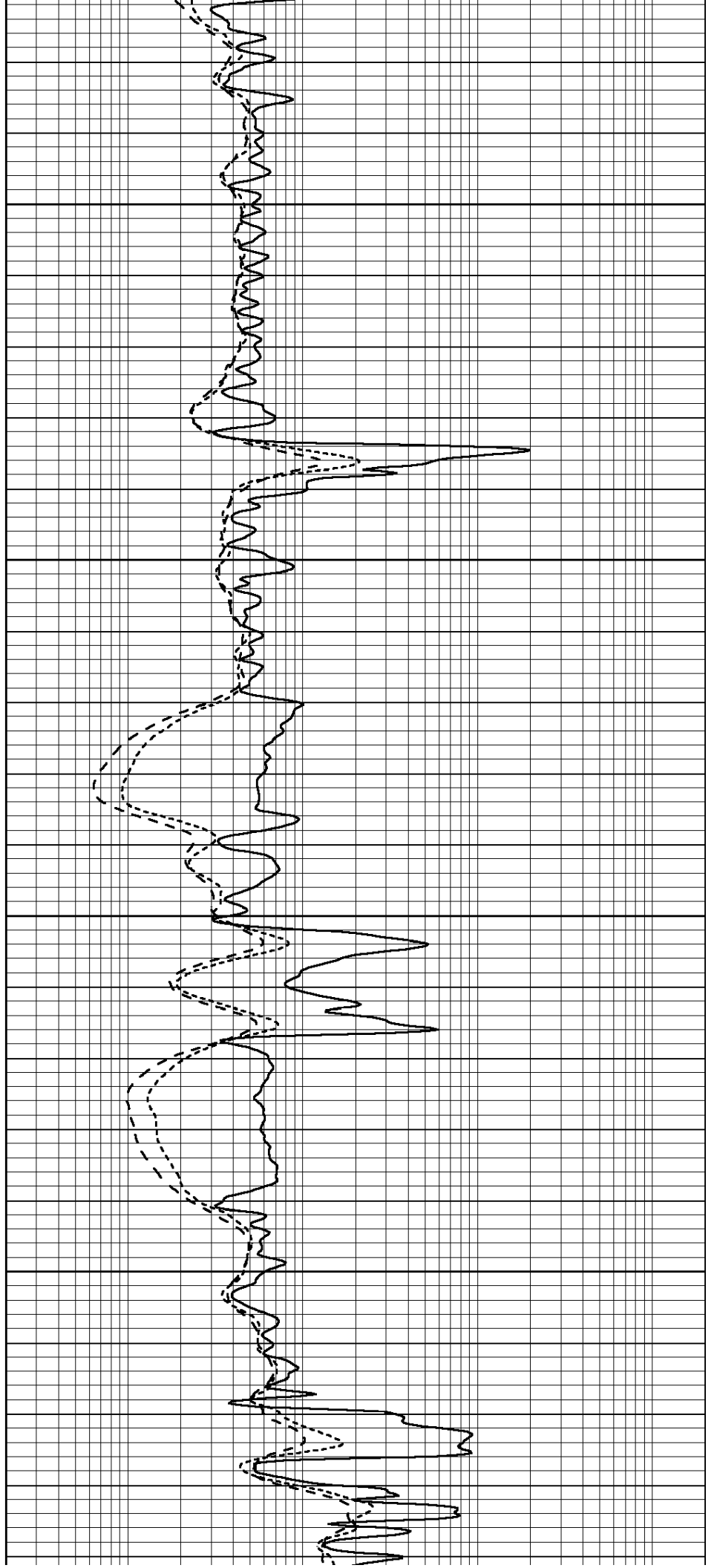


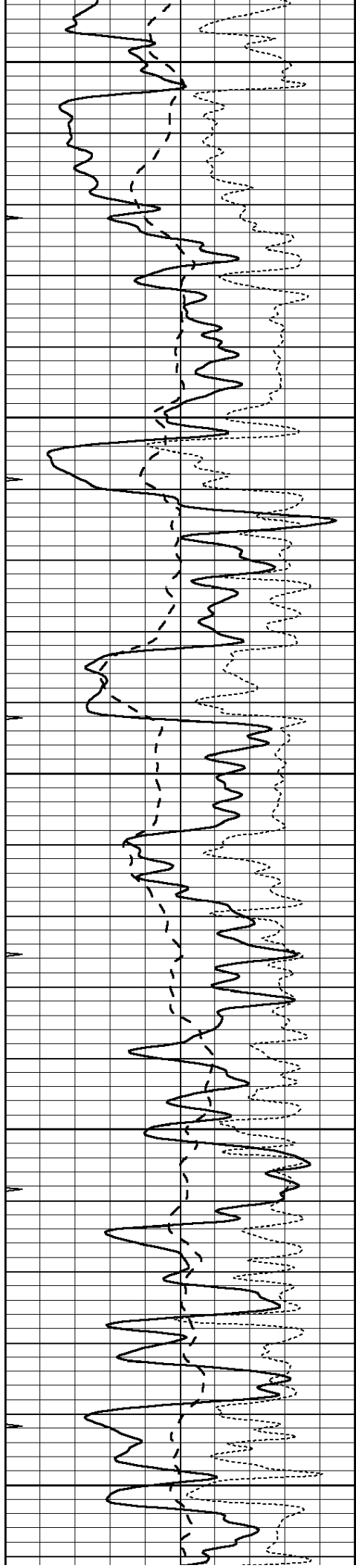
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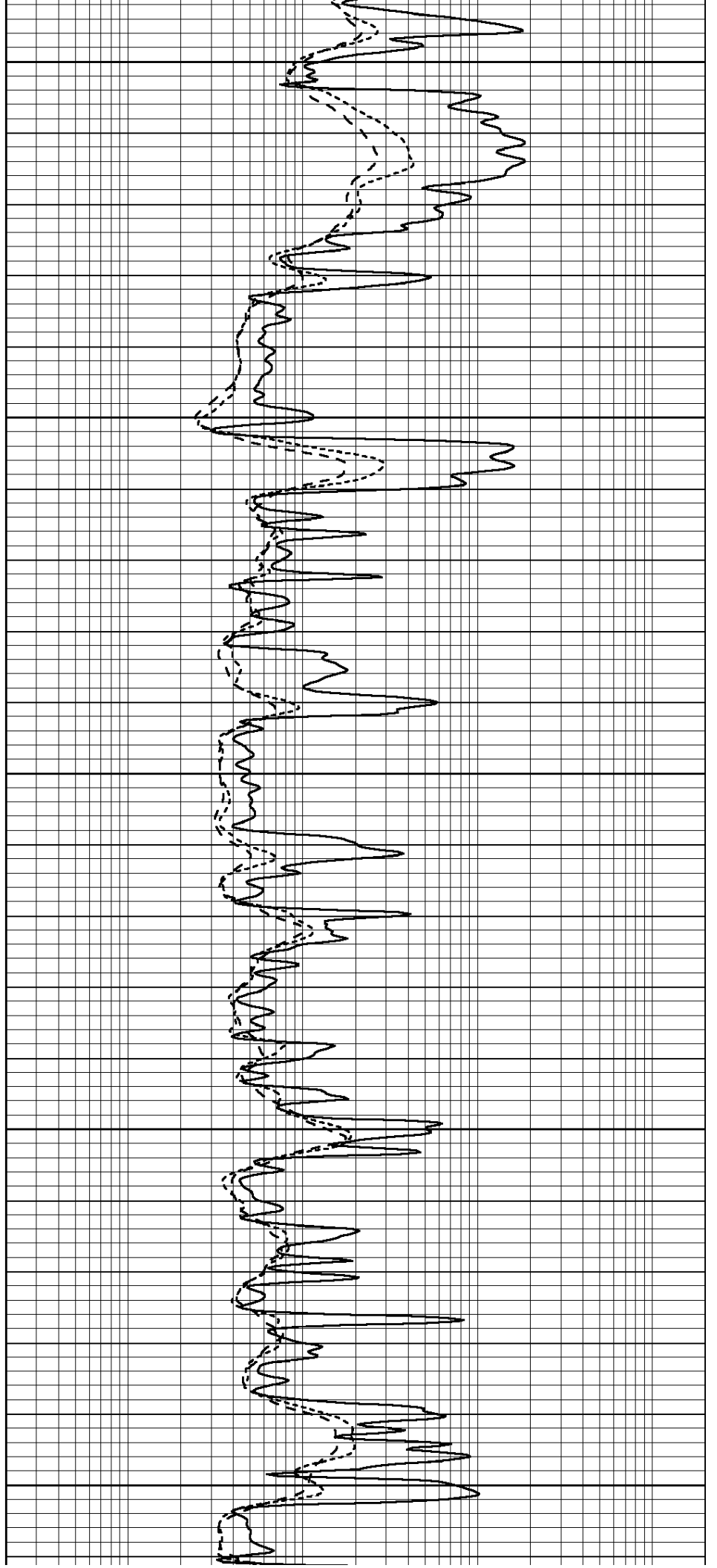
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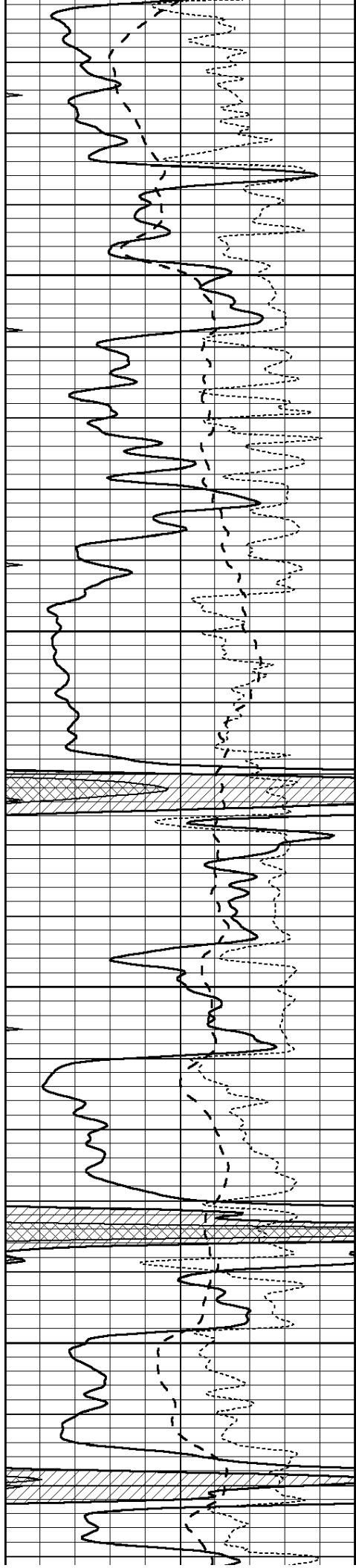
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3800

3850

3900



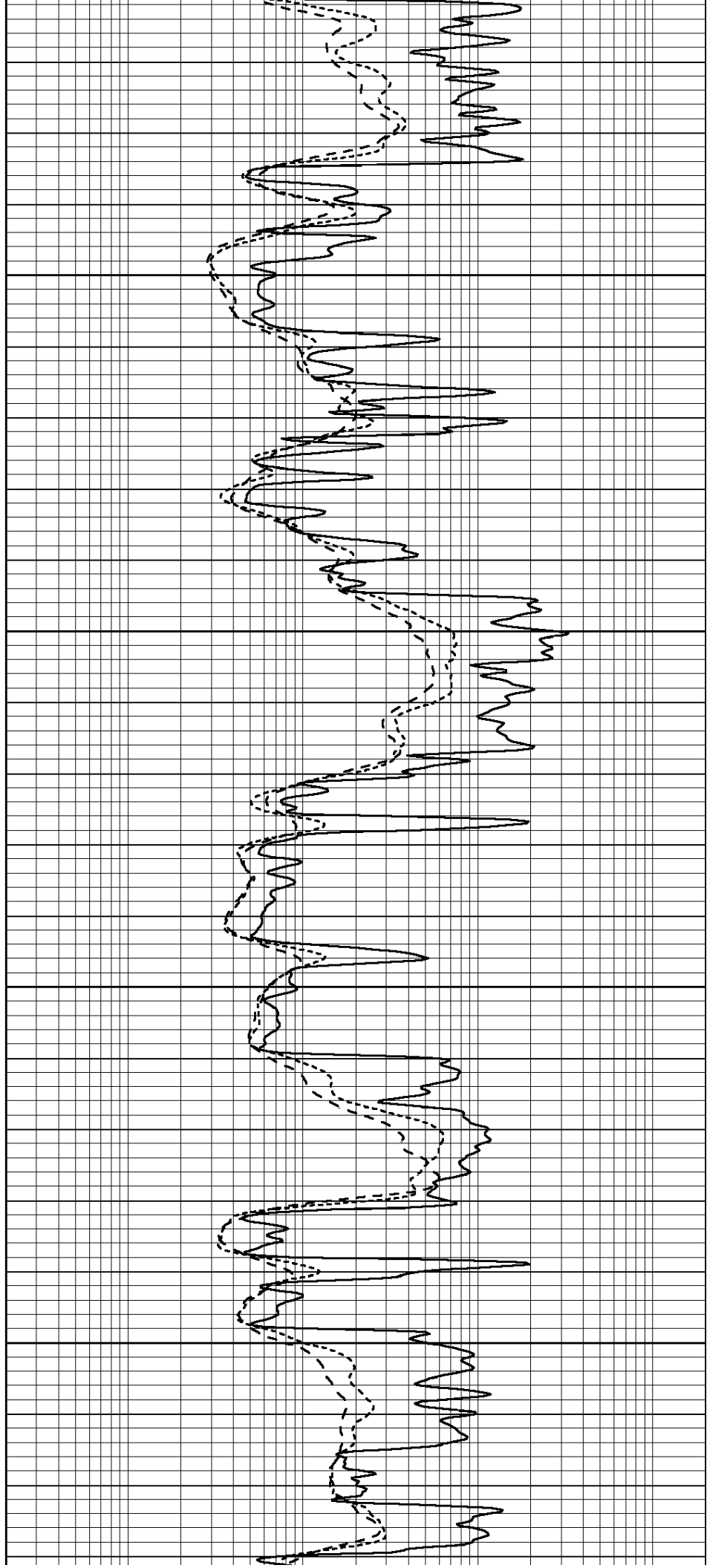


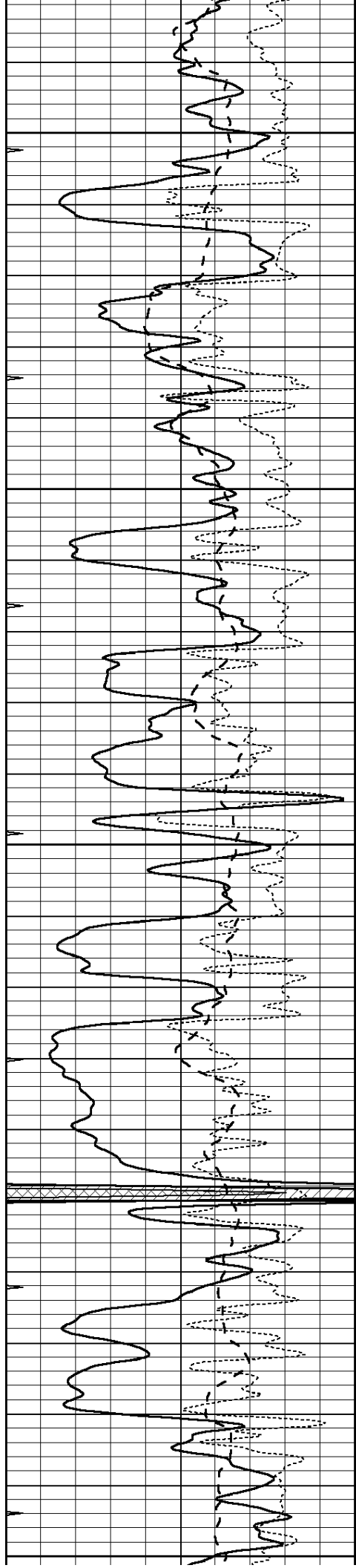
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4000

4050

4100





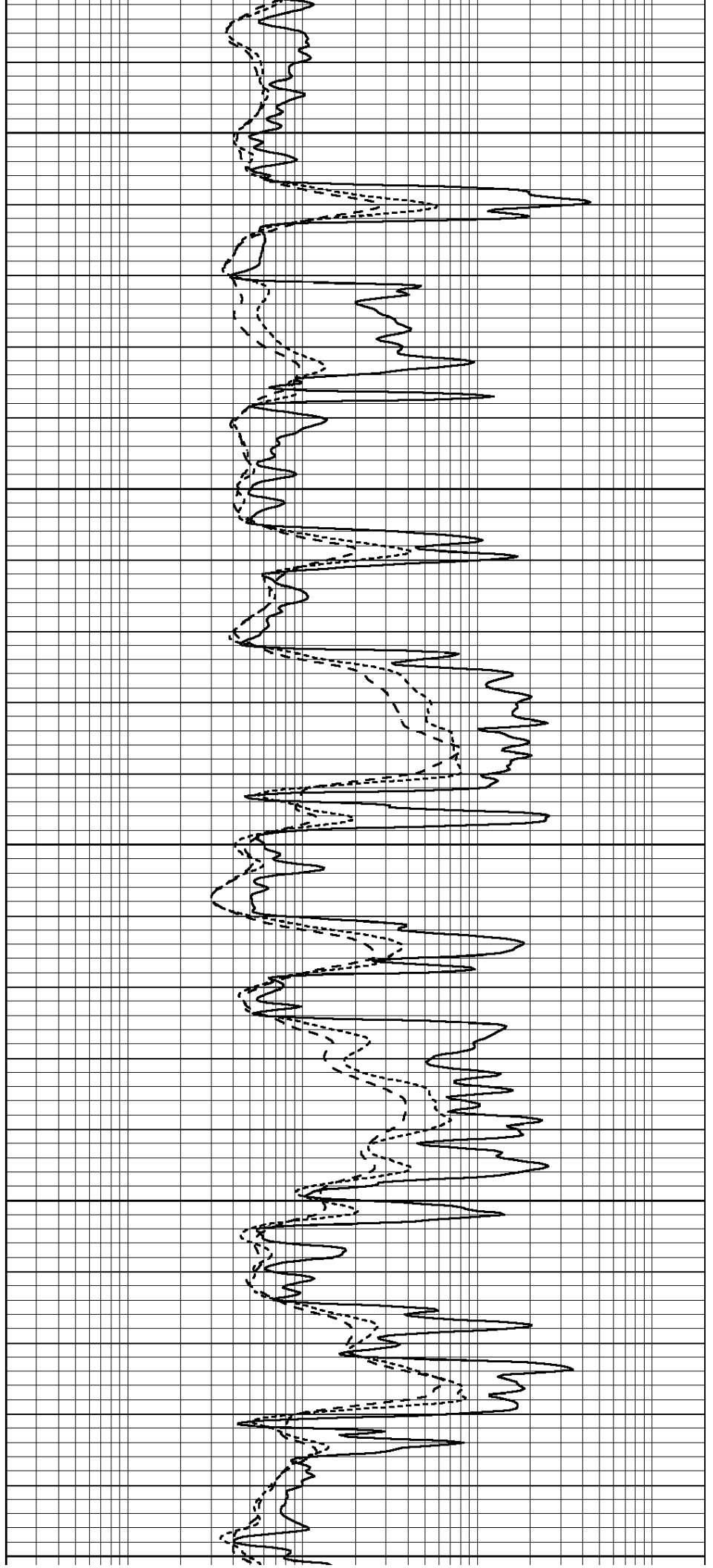
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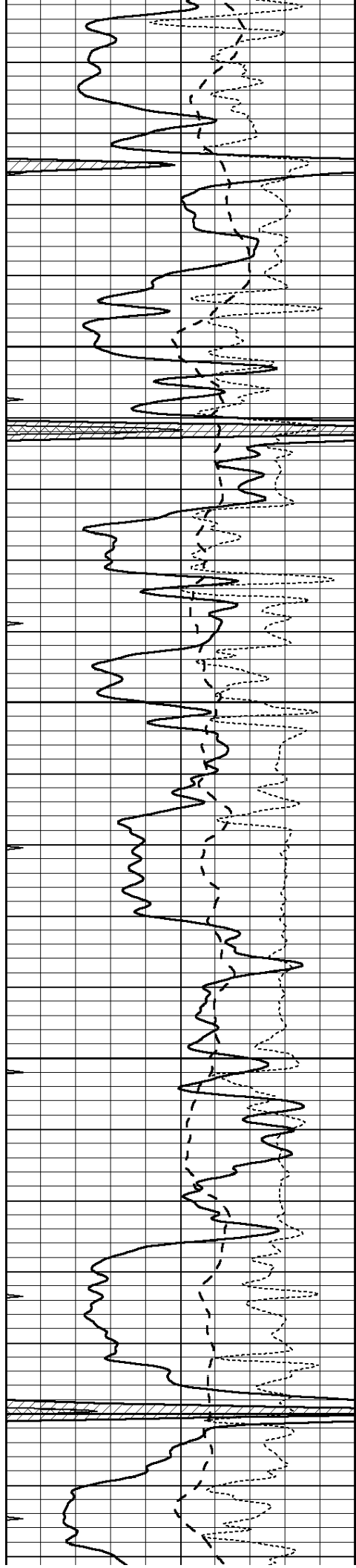
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4250

4300

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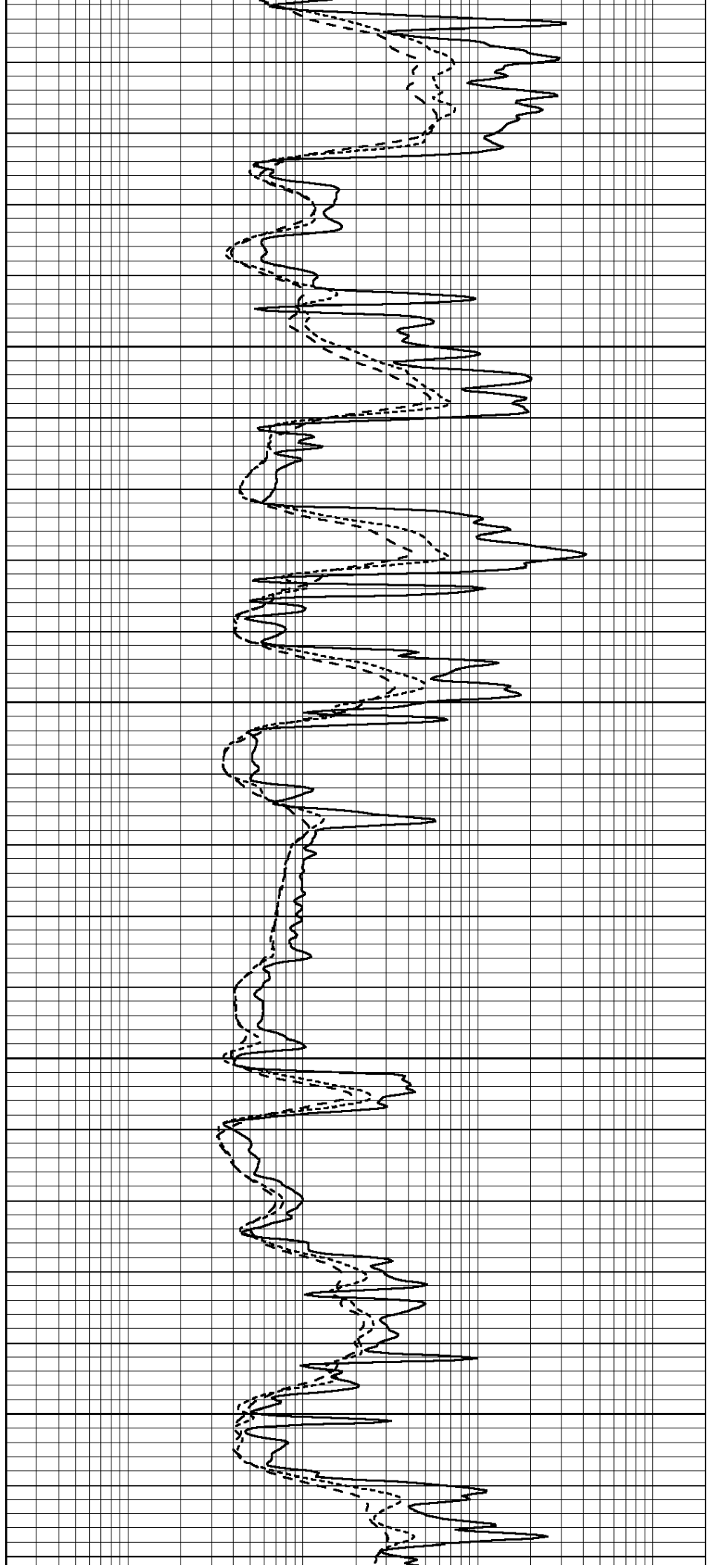


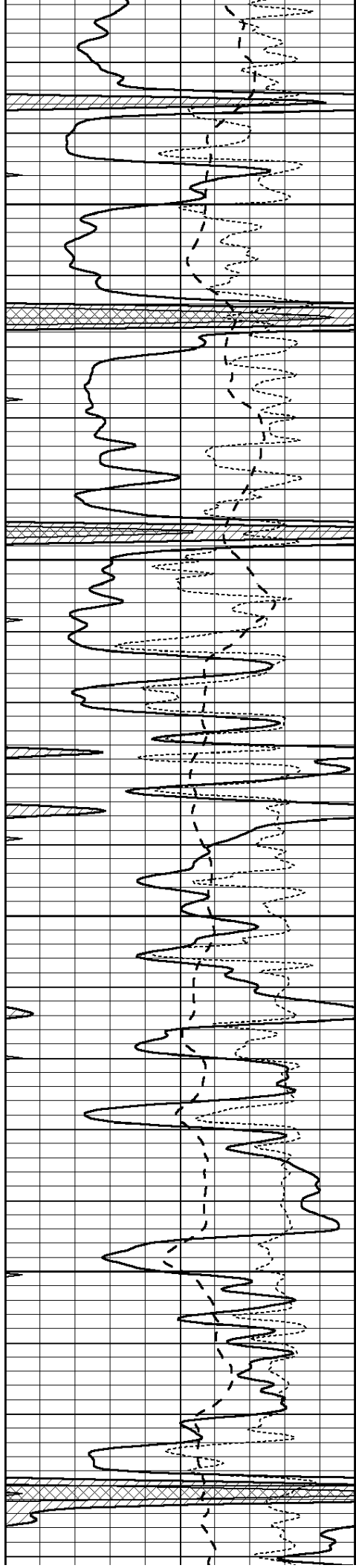
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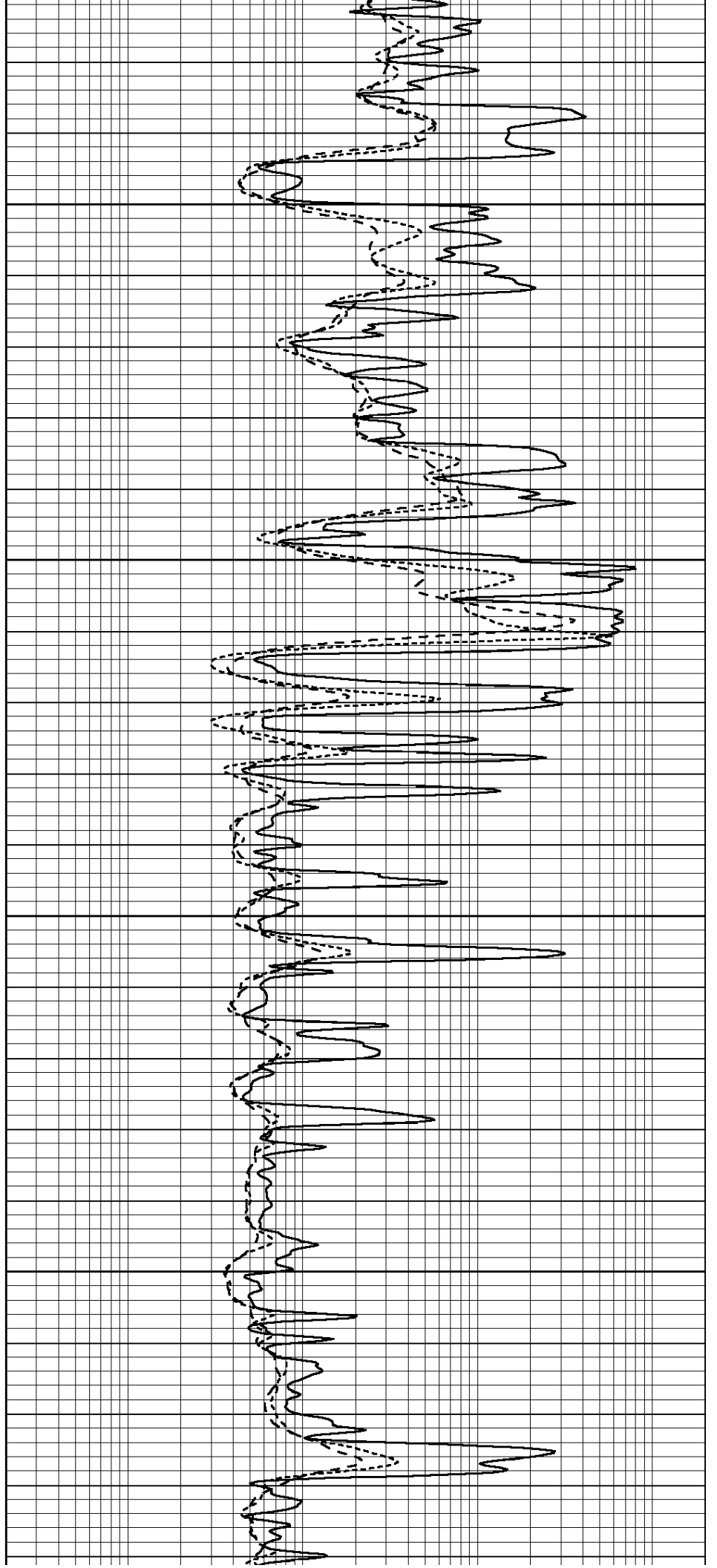


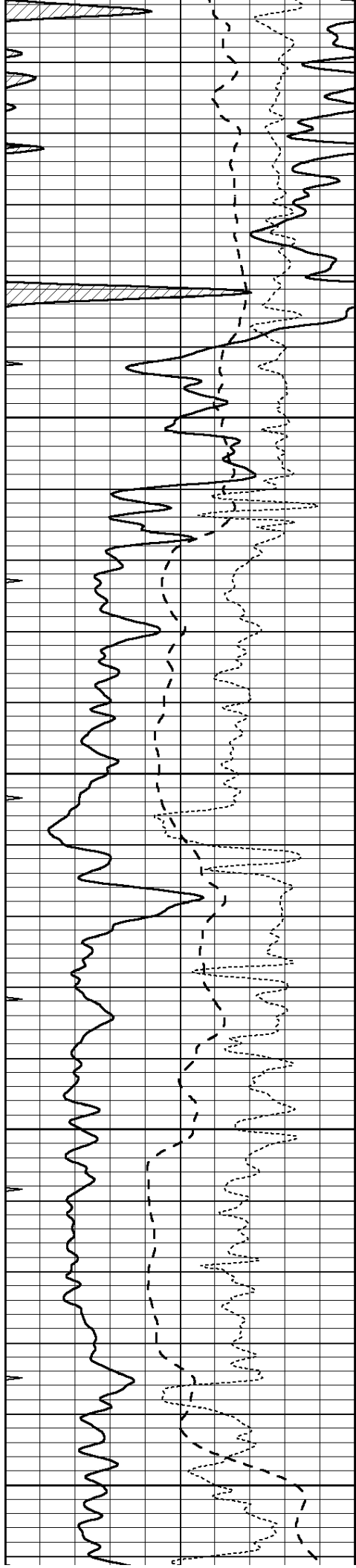
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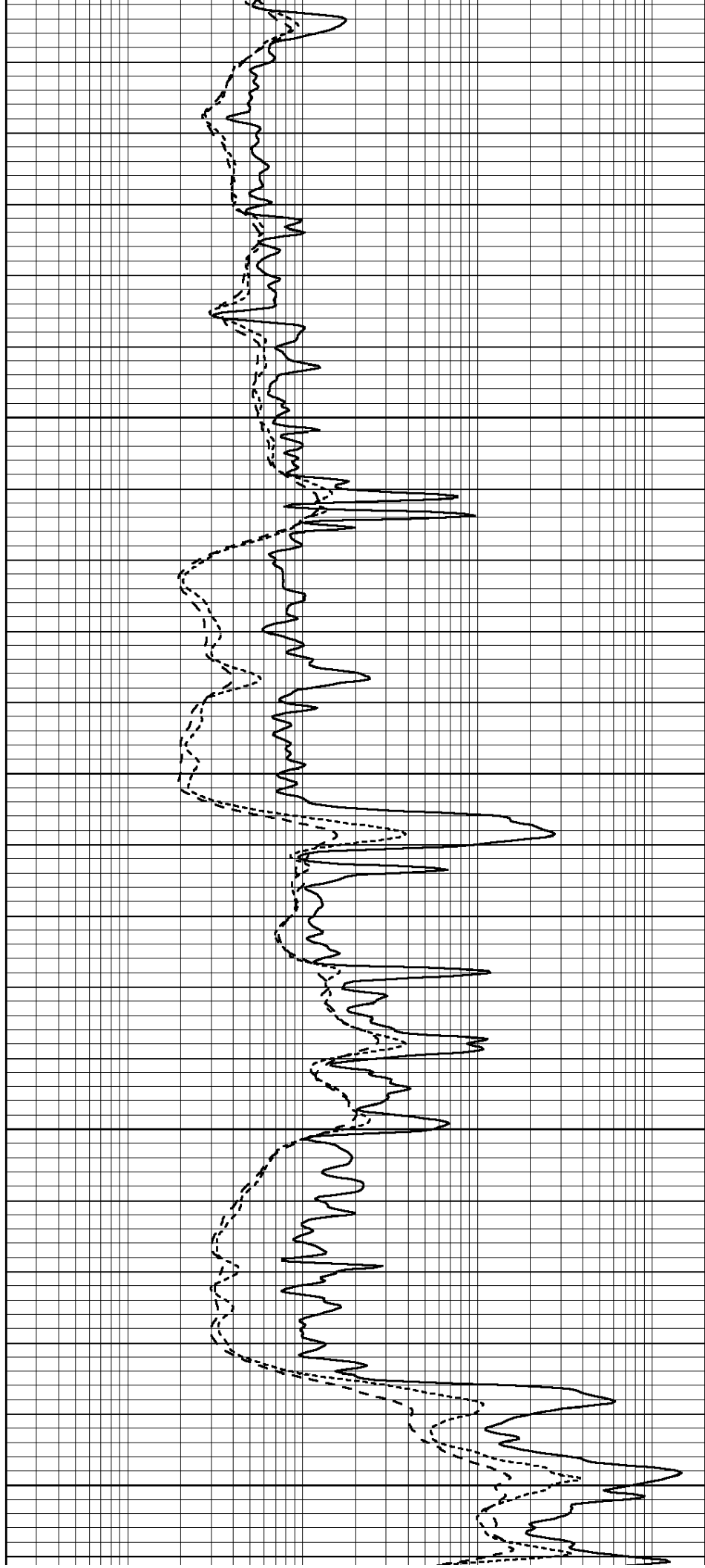
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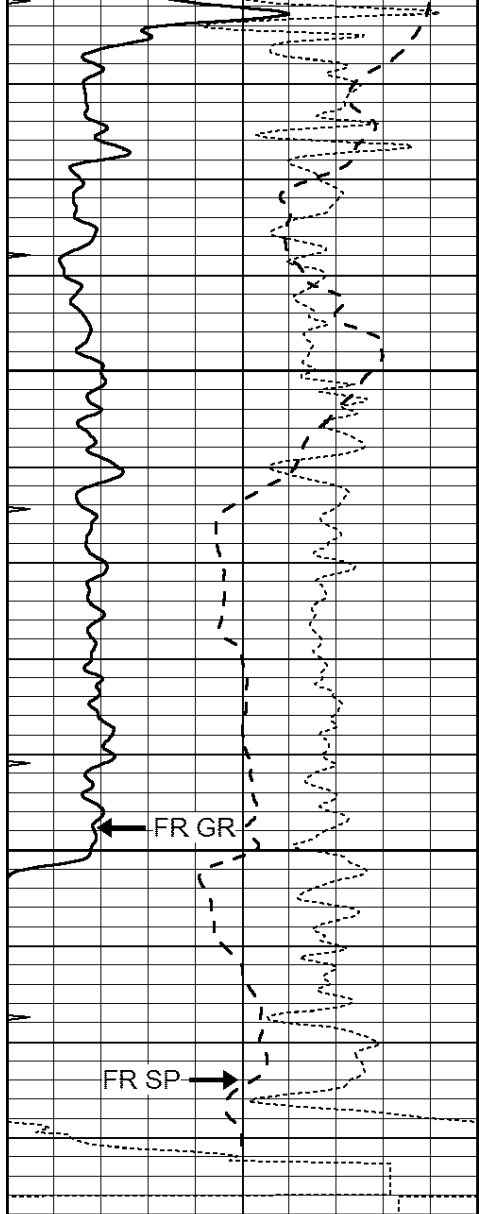
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4900

4950

5000



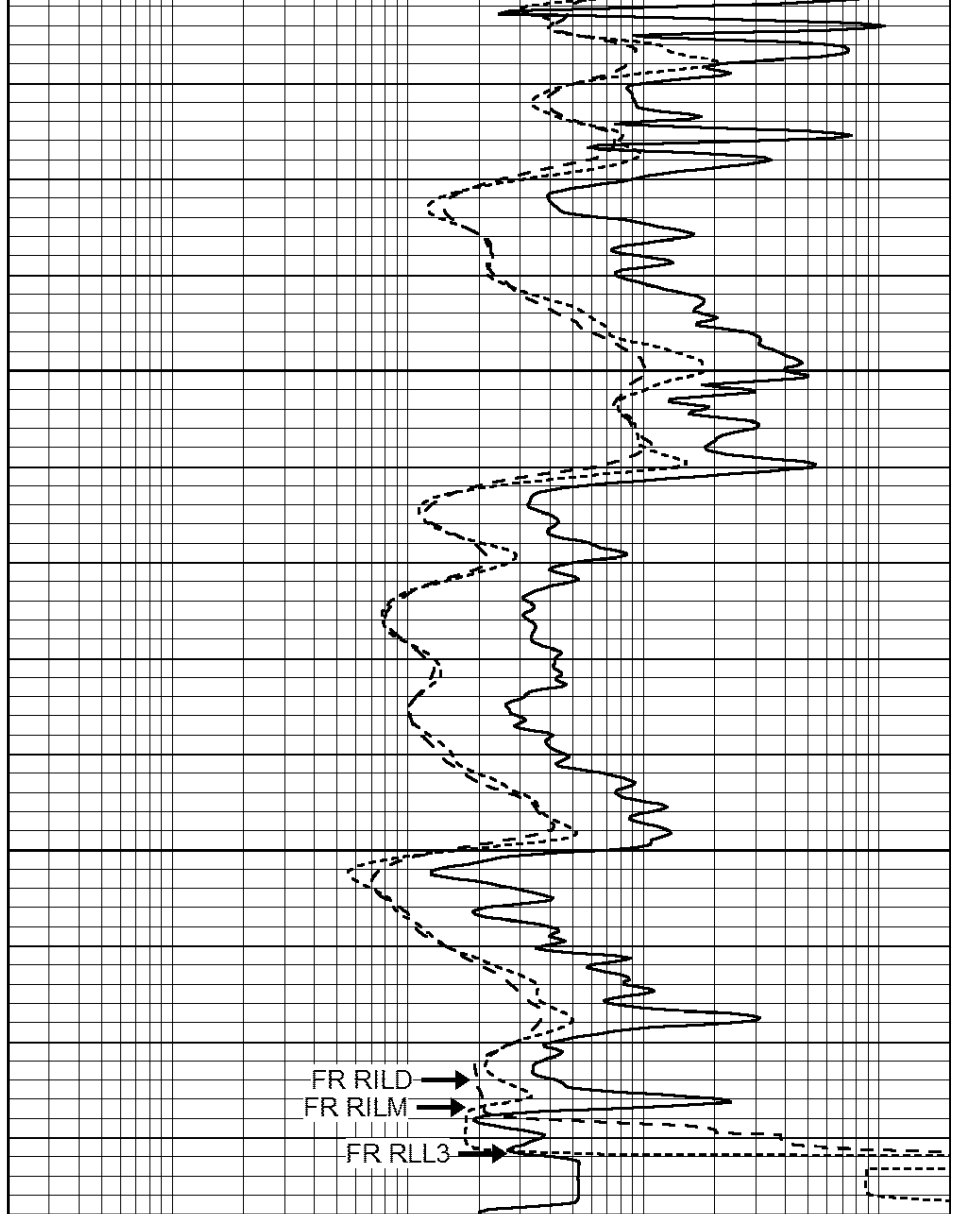


5050

5100

LTD 5134

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



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

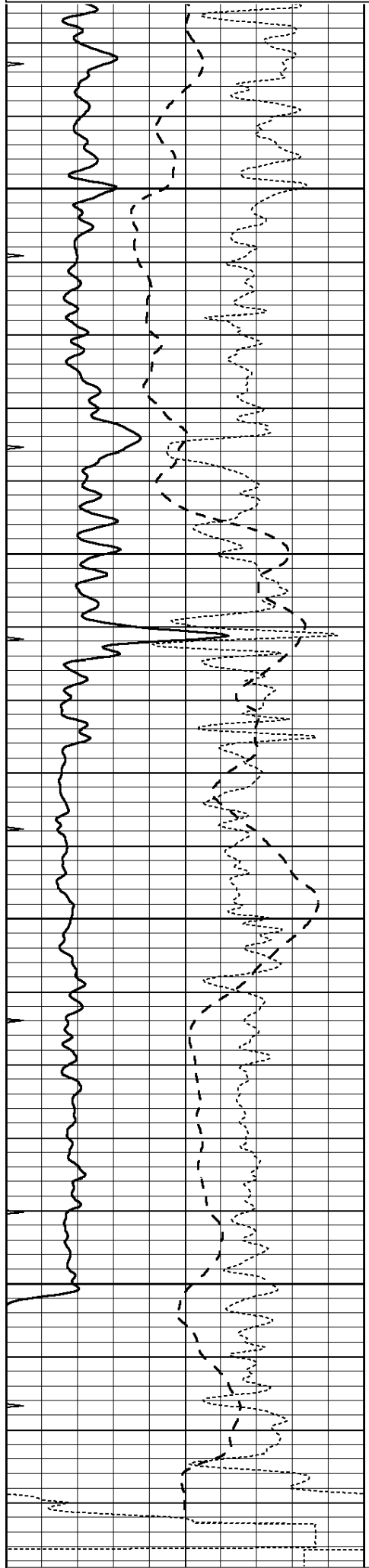


# REPEAT SECTION

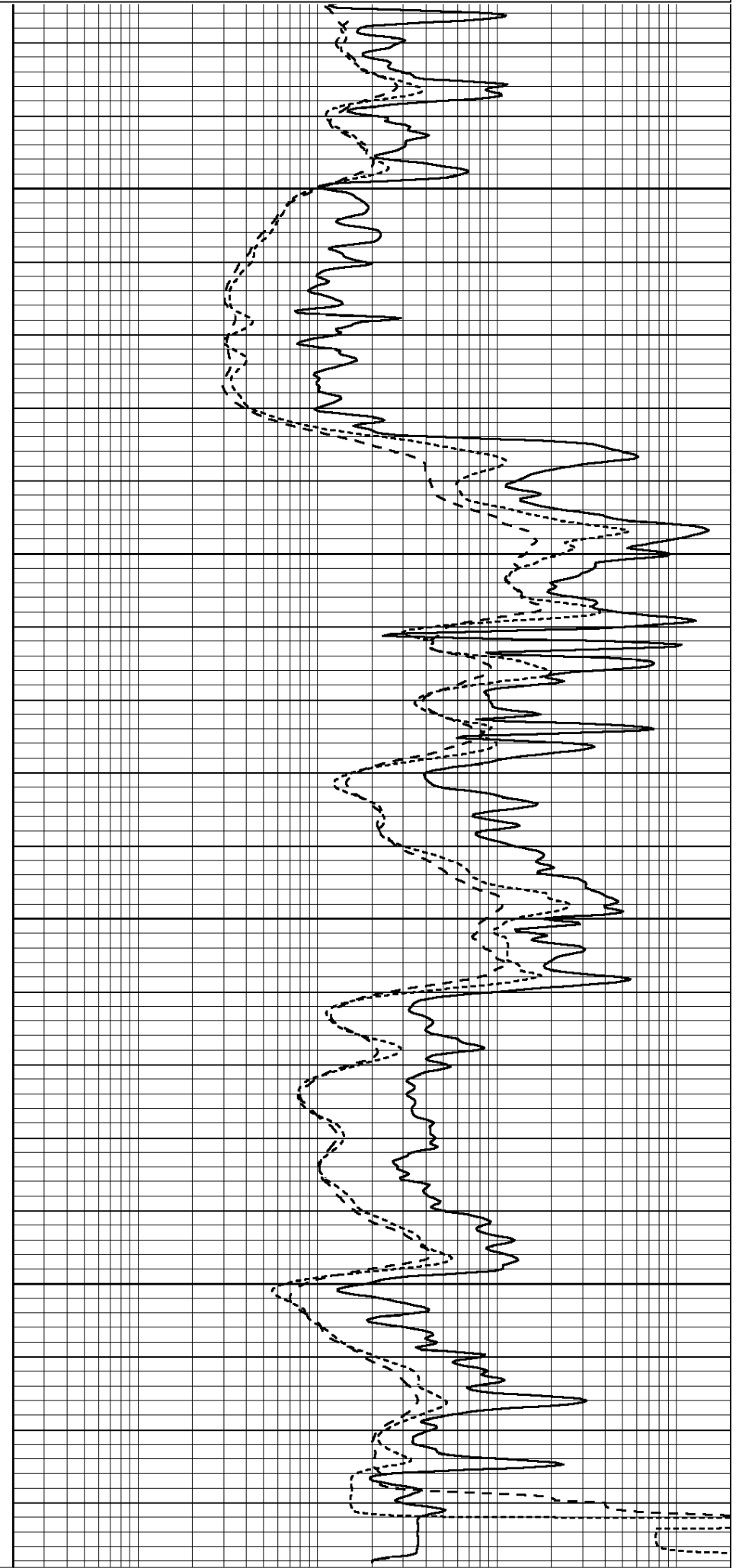
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 Dataset Pathname: pass2.1  
 Presentation Format: \_dil  
 Dataset Creation: Fri Jul 18 13:07:44 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



4950  
5000  
5050  
5100



0.2 2000

-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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

### Calibration Report

Database File: 24064ddn.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Fri Jul 18 13:07:44 2014 by Calc Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Fri Aug 01 06:33:19 2008  
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008  
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

#### Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

#### Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	mmho-m		

#### After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

### Compensated Density Calibration Report

Serial-Model: GEAR3-GEARHART  
 Source / Verifier: 143 / 143  
 Master Calibration Performed: Fri Jan 04 15:48:16 2013  
 Before Survey Verification Performed:  
 After Survey Verification Performed:

#### Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	935.36	501.55	cps
Aluminum	2.500	g/cc	800.00	257.01	cps

Aluminum

2.380 g/cc

209.32

357.01 cps

Spine Angle = 77.21

Density/Spine Ratio = 0.567

Size

Reading

Small Ring  
Large Ring

8.00 in  
14.00 in

4.29 V  
6.24 V

Before Survey Verification

Target

Measured

g/cc  
g/cc  
g/cc

g/cc  
g/cc  
g/cc

After Survey Verification

Target

Measured

g/cc  
g/cc  
g/cc

g/cc  
g/cc  
g/cc

Compensated Neutron Calibration Report

Serial Number: 6I  
Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	1.00 cps	1.00 cps	1.0000
Long Space	1.00 cps	1.00 cps	1.0000

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
1) Short Space	cps		
Long Space	cps	pu	pu
2) Short Space	cps		
Long Space	cps	pu	
3) Short Space	cps		
Long Space	cps	pu	

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
1) Short Space	cps		
Long Space	cps	pu	pu
2) Short Space	cps		
Long Space	cps	pu	pu
3) Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: GR6  
Tool Model: OPEN  
Performed: Sat May 31 01:22:06 2014

Calibrator Value: 150.0 GAPI

Background Reading:  
Calibrator Reading:

0.0  
276.0

cps  
cps

Sensitivity:

0.7535

GAPI/cps