



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		RITCHIE EXPLORATION, INC.	
Well		#1 REYNOLDS - POTOSI	
Field		THUNDER	
County		FORD	
State		KANSAS	
Location:		API # : 15-057-20881-0000 2580' FSL & 2080' FEL N/2 - NW - SE SEC 13 TWP 27S RGE 24W	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 10' A.G.L.	
Drilling Measured From		KELLY BUSHING	
Other Services		CDL/CNL	
Elevation		2432	
Date		3/20/13	
Run Number		ONE	
Depth Driller		5100	
Depth Logger		5100	
Bottom Logged Interval		5098	
Top Log Interval		00	
Casing Driller		8 5/8" @ 409'	
Casing Logger		409	
Bit Size		7 7/8"	
Type Fluid in Hole		CHEMICAL MUD	
Density / Viscosity		9.3/55	
pH / Fluid Loss		9.5/10.4	
Source of Sample		FLOWLINE	
Rim @ Meas. Temp		.700 @ 90F	
Rinf @ Meas. Temp		.525 @ 90F	
Rinc @ Meas. Temp		.840 @ 90F	
Source of Rinf / Rinc		MEASUREMENT	
Rim @ BHT		.500 @ 126F	
Time Circulation Stopped		3 HOURS	
Time Logger on Bottom		2:15 P.M.	
Maximum Recorded Temperature		126F	
Equipment Number		4854	
Location		HAYS, KANSAS	
Recorded By		JEFF LUEBBERS	
Witnessed By		MIKE ENGELBRECHT	

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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, KANSAS (785) 628-6395
DIRECTIONS

FT. DODGE, KS. 1 E. ON HWY 400 TO "RD. 117", 1 1/4S. TO BLKTOP, 1E. PAST ELEVATOR, S. PAST E.
SIDE OF FARM YARD THEN W. INTO AFTER FENCE



NABORS
COMPLETION
& PRODUCTION

MAIN SECTION

Database File:

010728ddn.db

Dataset Pathname:

pass3.6

Presentation Format:

dil2

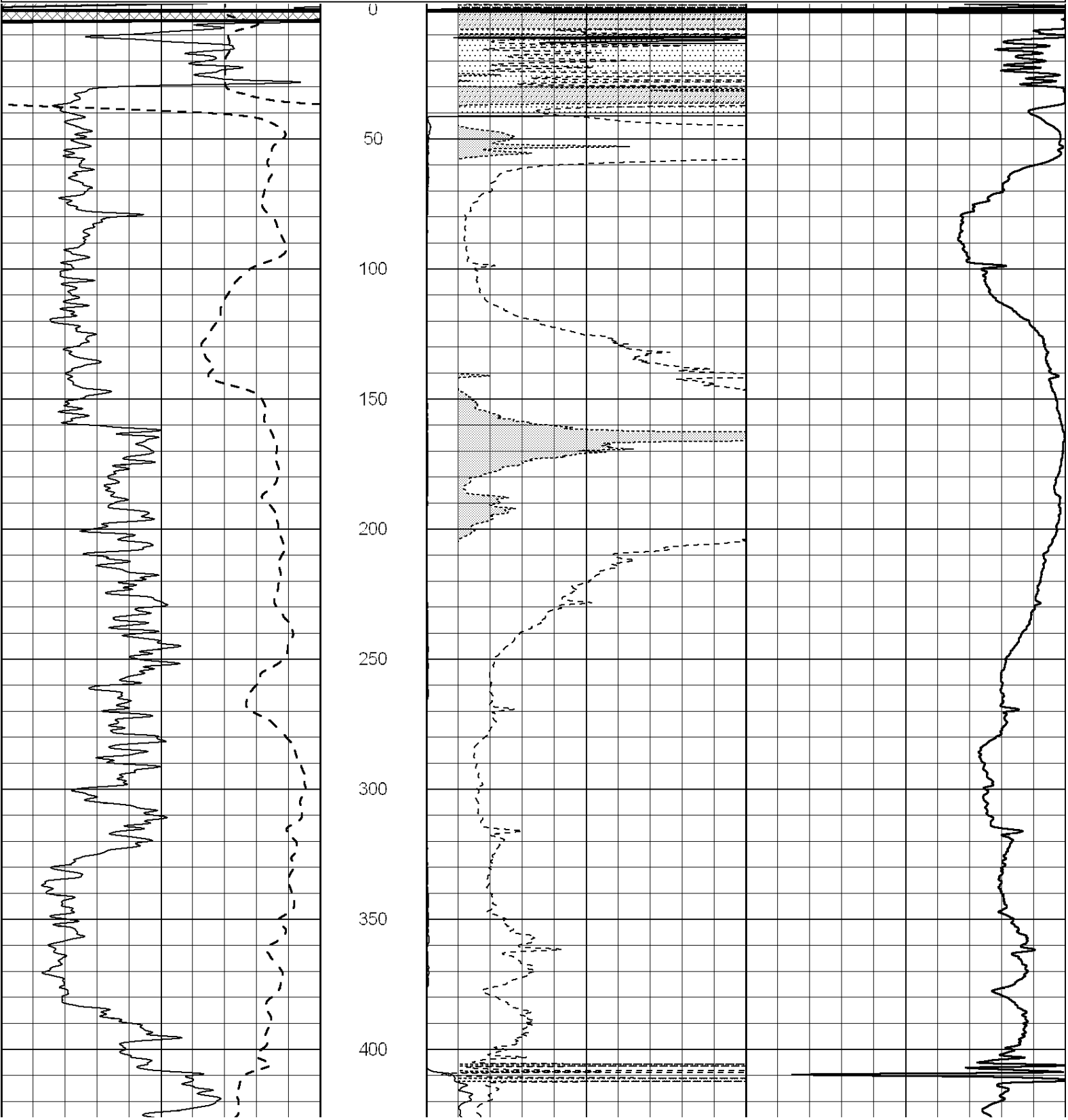
Dataset Creation:

Wed Mar 20 15:55:41 2013 by Calc SOC 120430

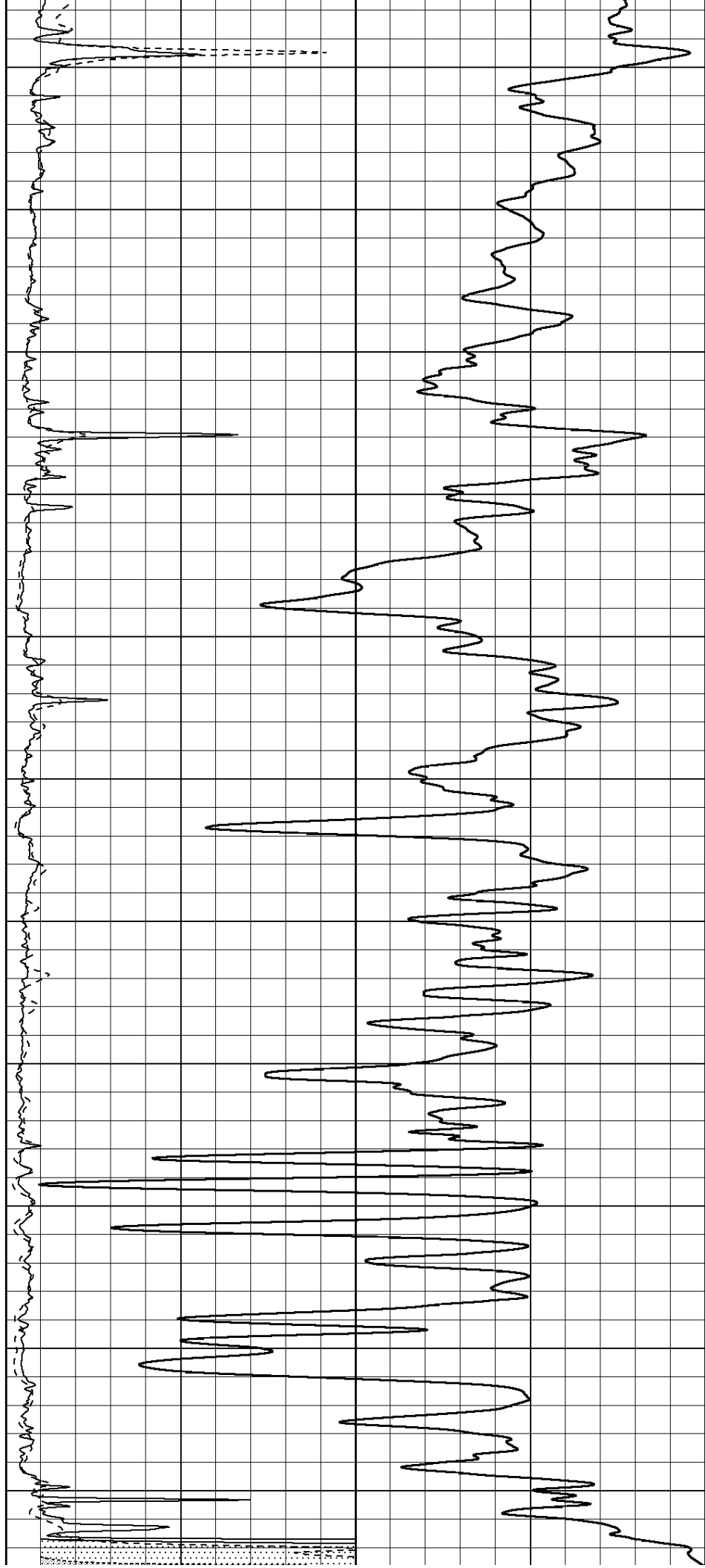
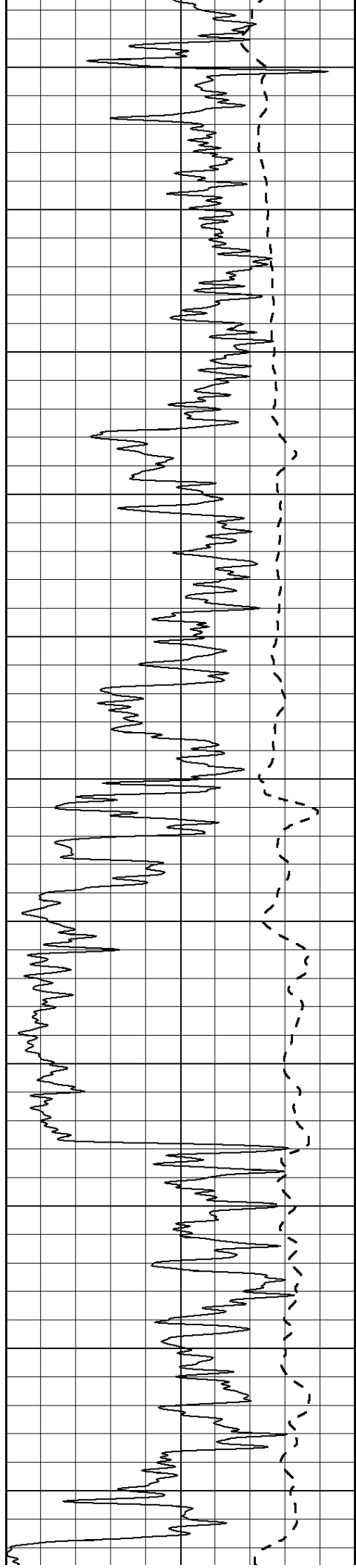
Charted by:

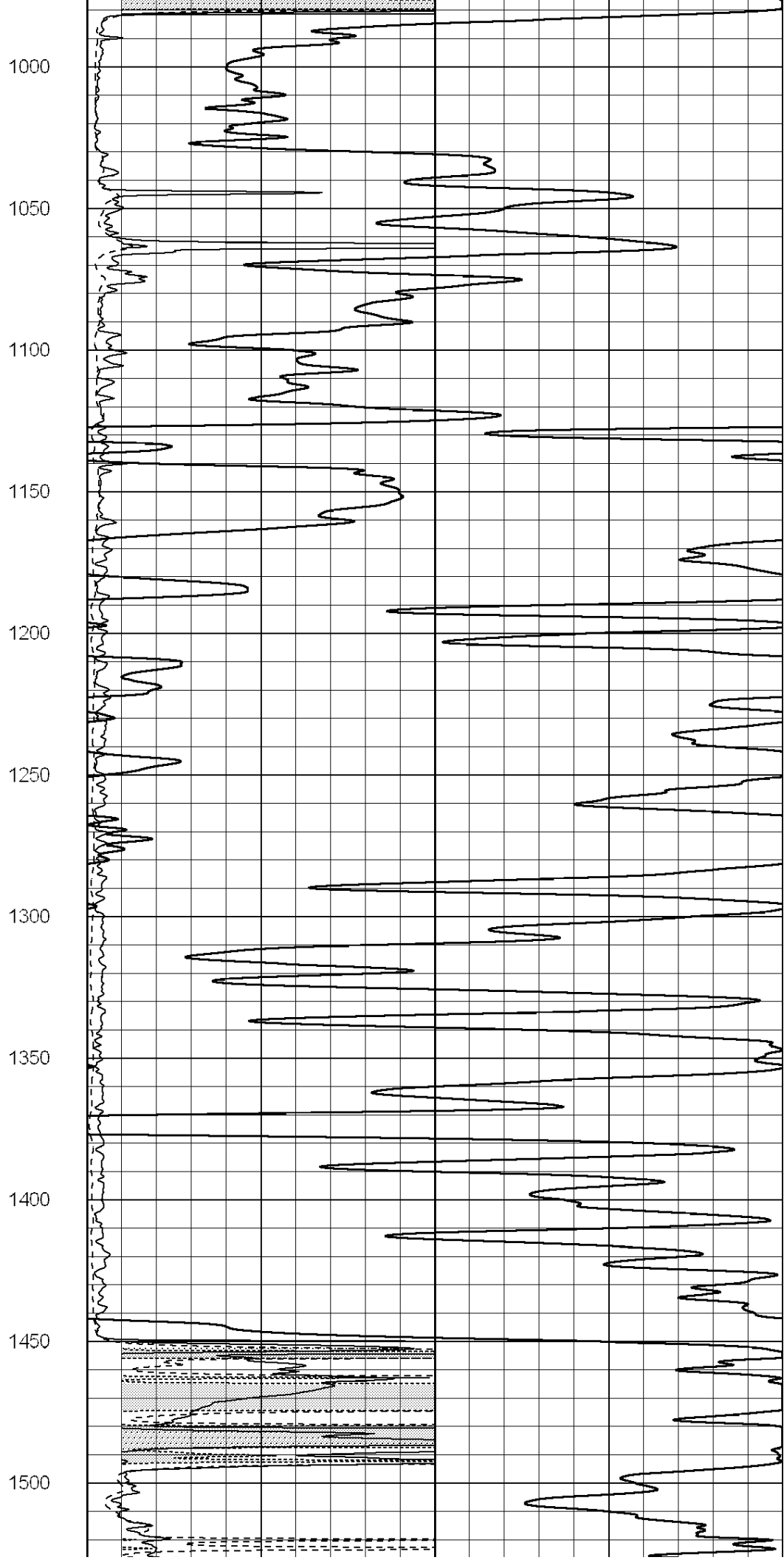
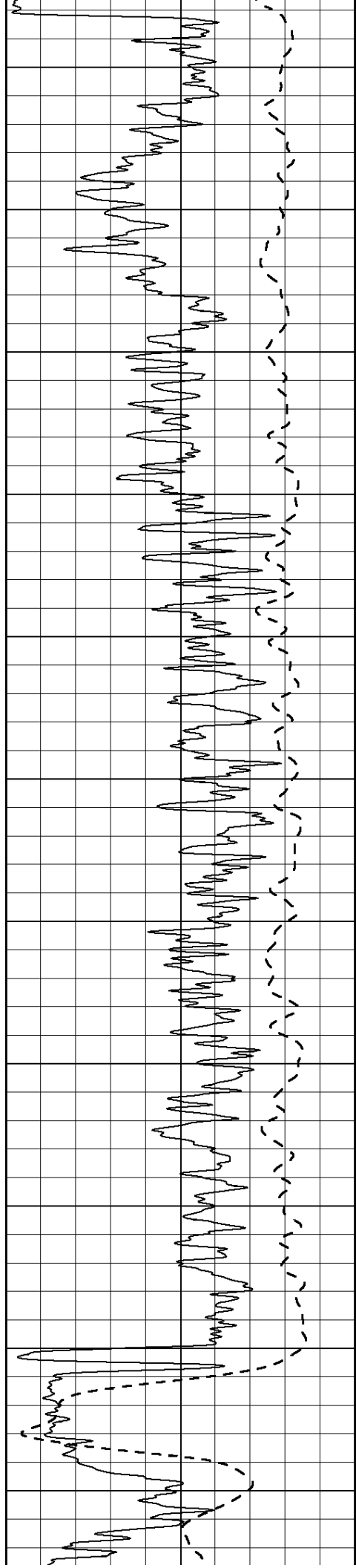
Depth in Feet scaled 1:600

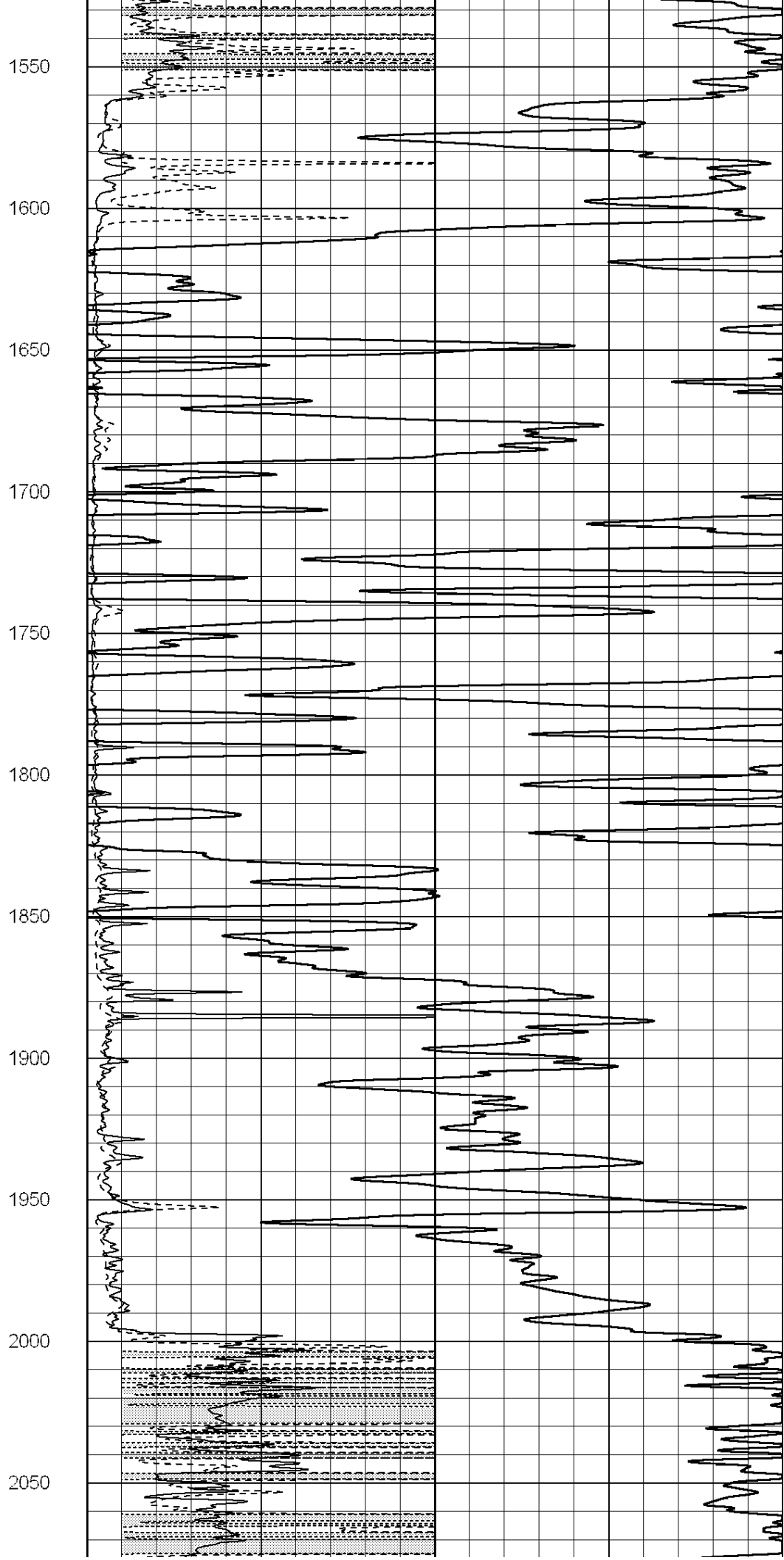
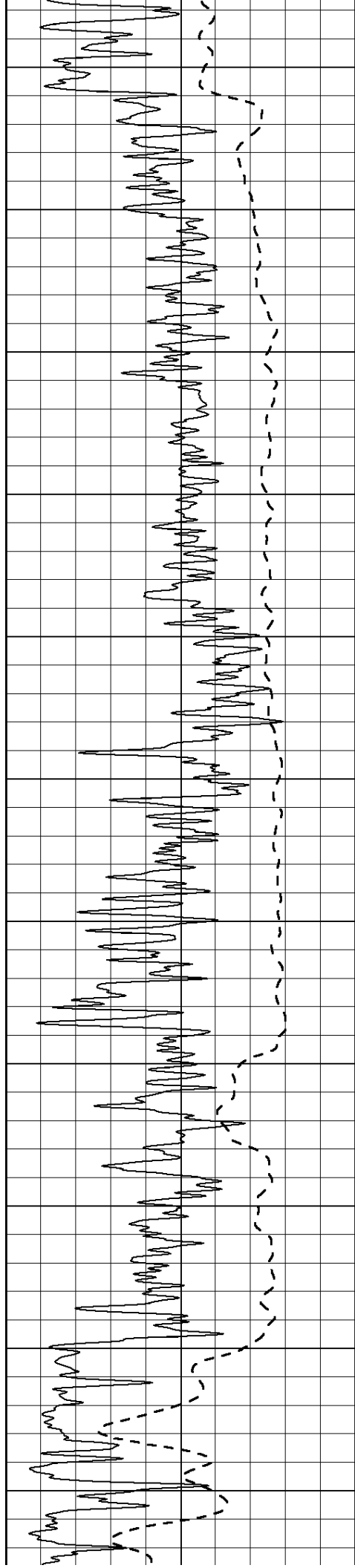
0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
-100	SP (mV)	100	0	RILD (Ohm-m)	50	
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			1000		CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	

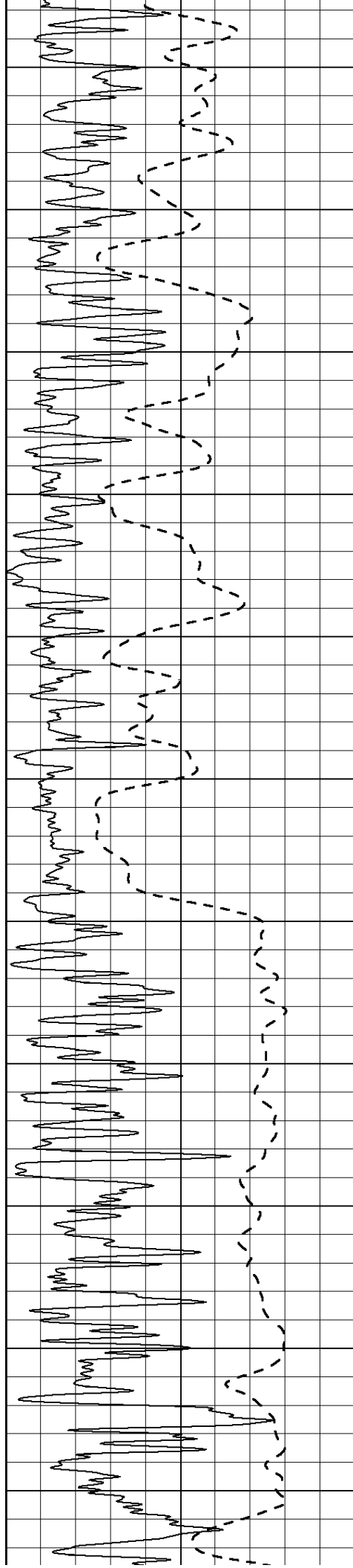


450 500 550 600 650 700 750 800 850 900 950









2100

2150

2200

2250

2300

2350

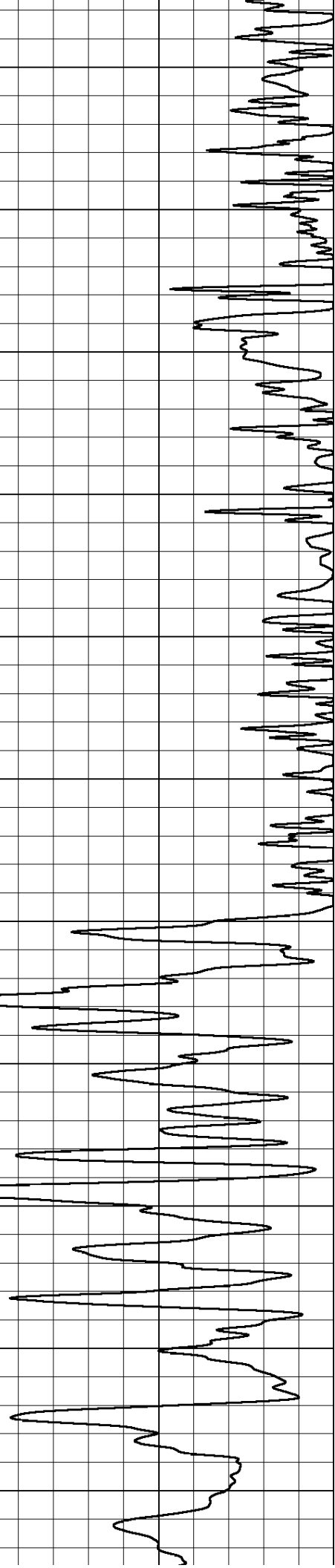
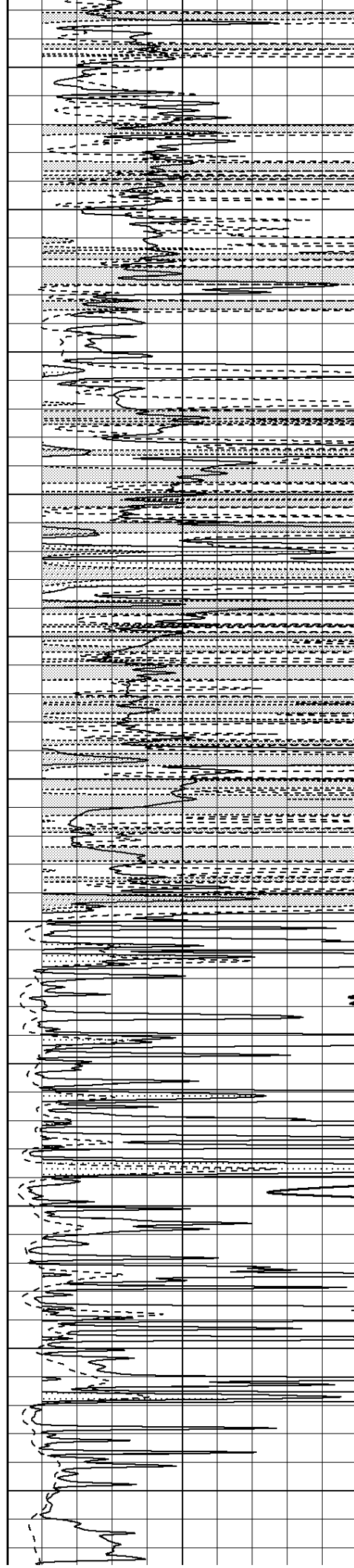
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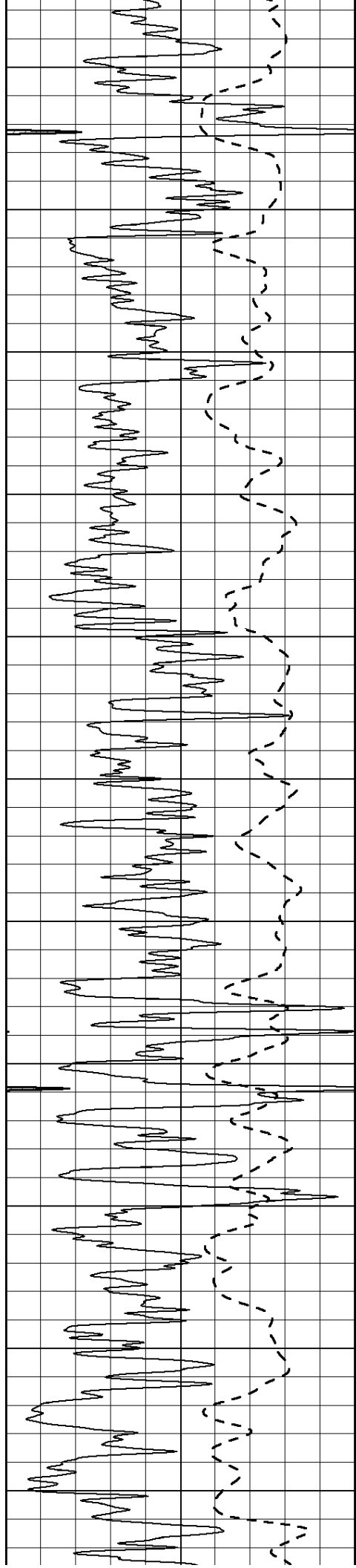
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2500

2550

2600





2650

2700

2750

2800

2850

2900

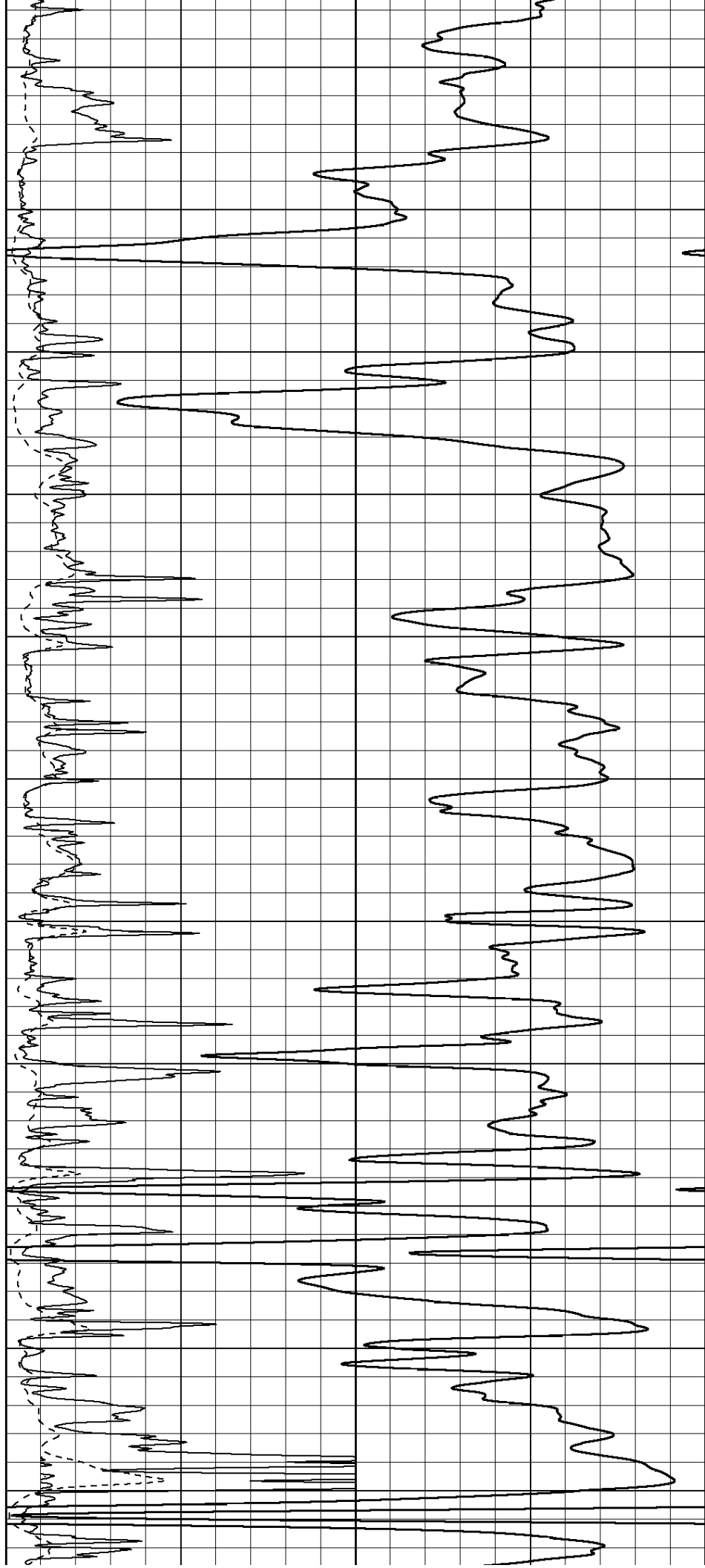
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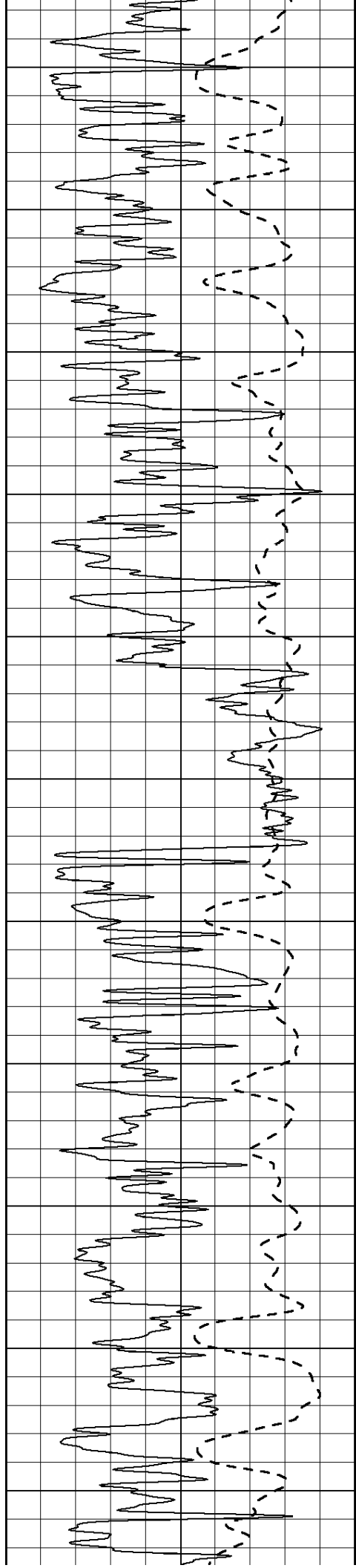
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3050

3100

3150





3200

3250

3300

3350

3400

3450

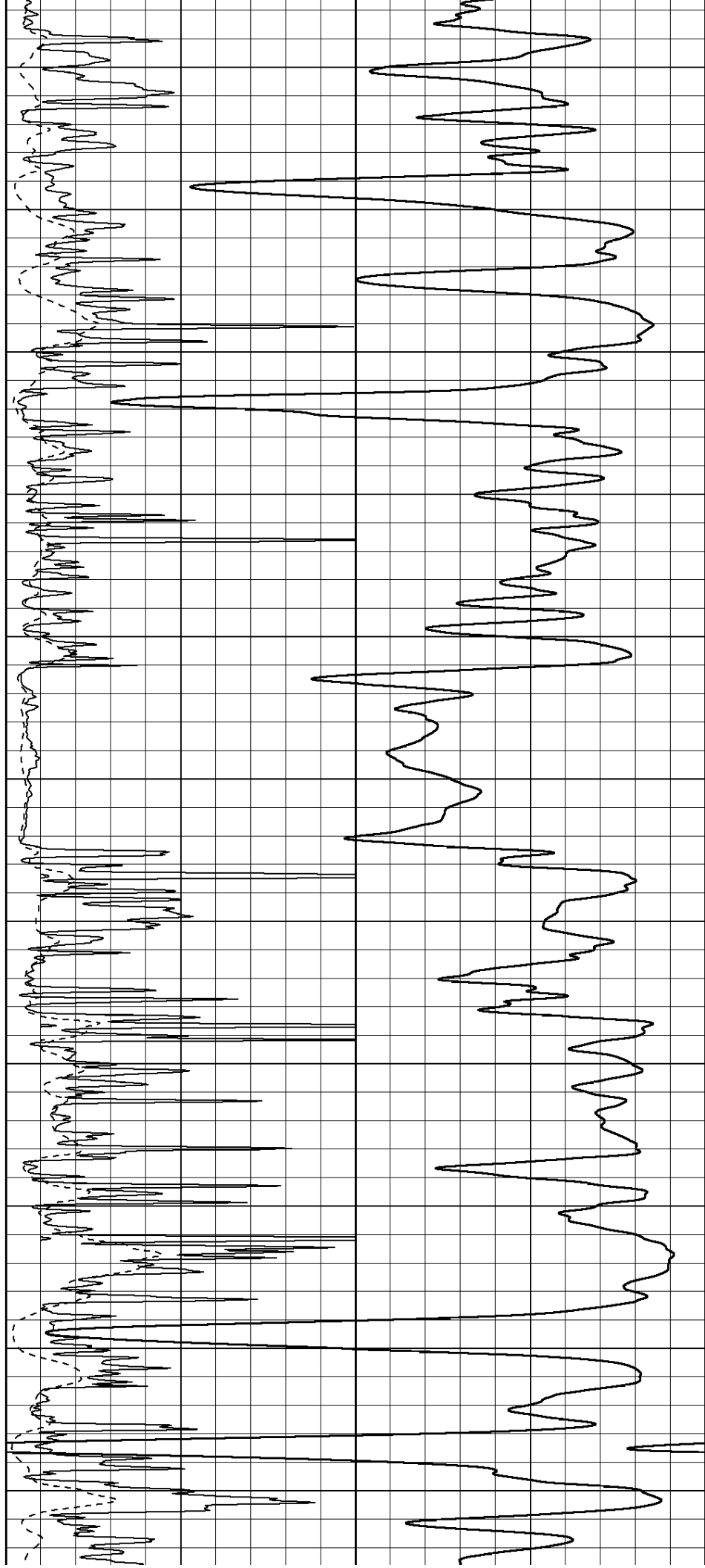
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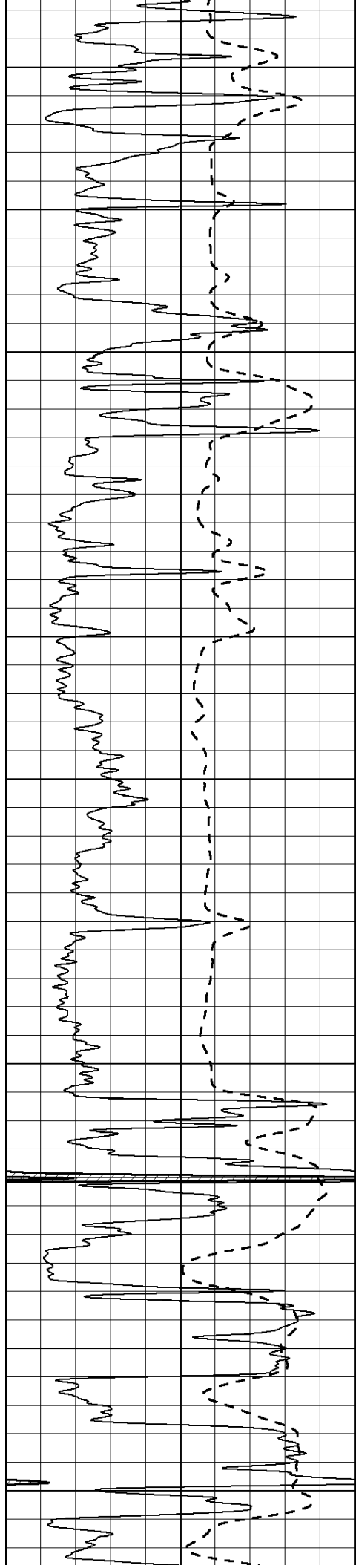
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3600

3650

3700





3750

3800

3850

3900

3950

4000

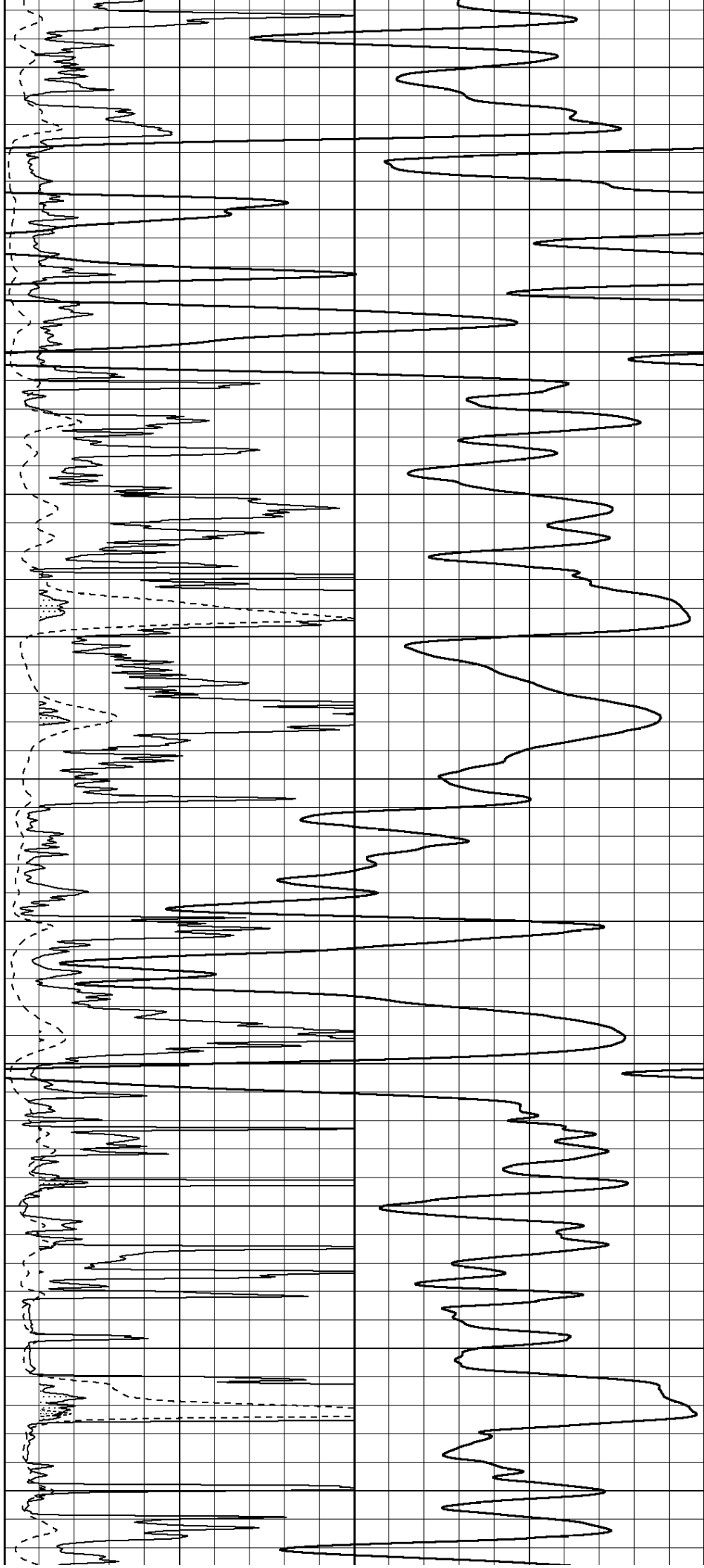
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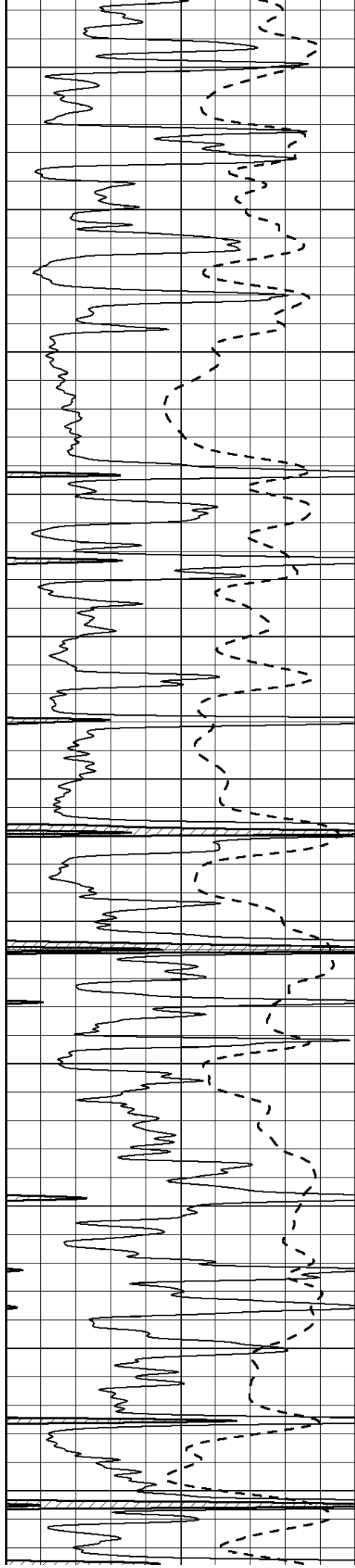
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4150

4200

4250





4300

4350

4400

4450

4500

4550

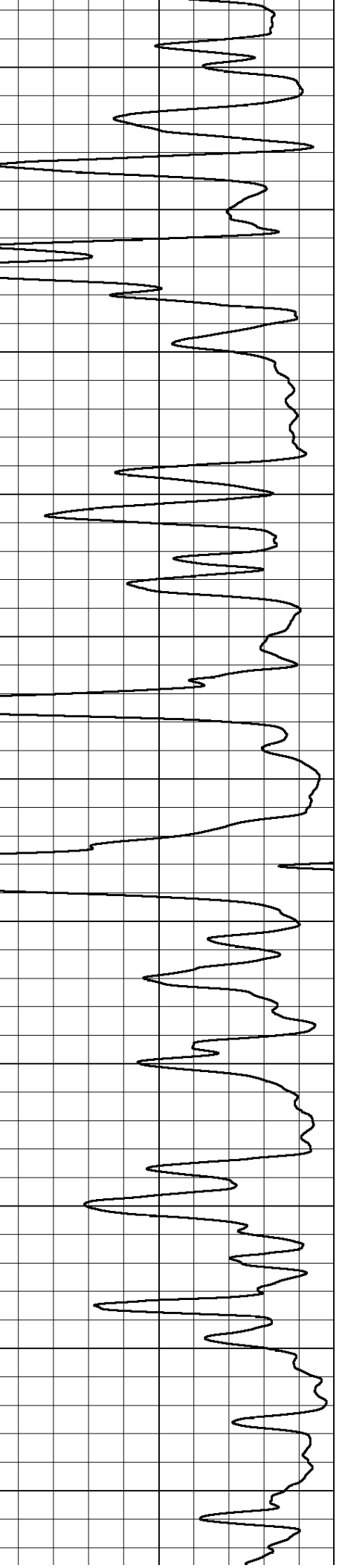
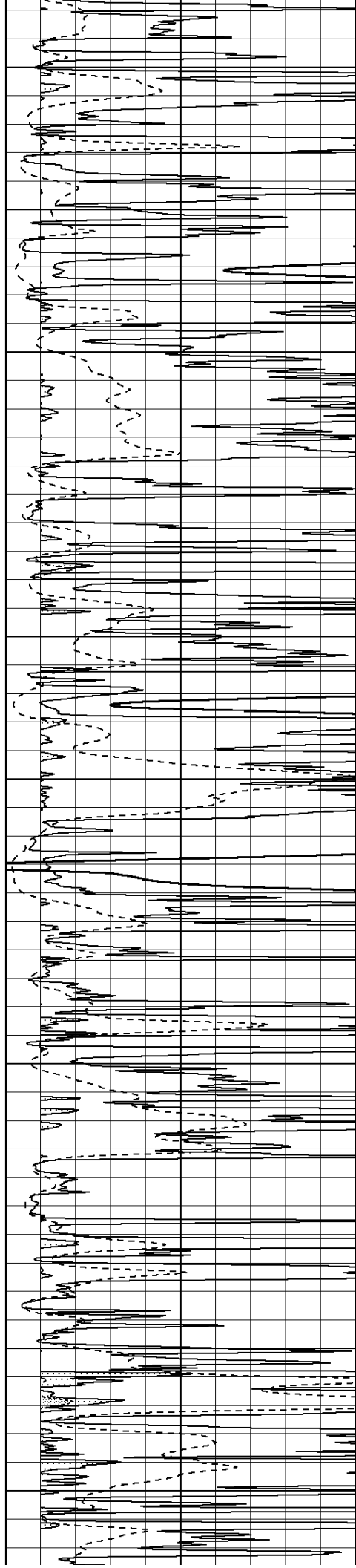
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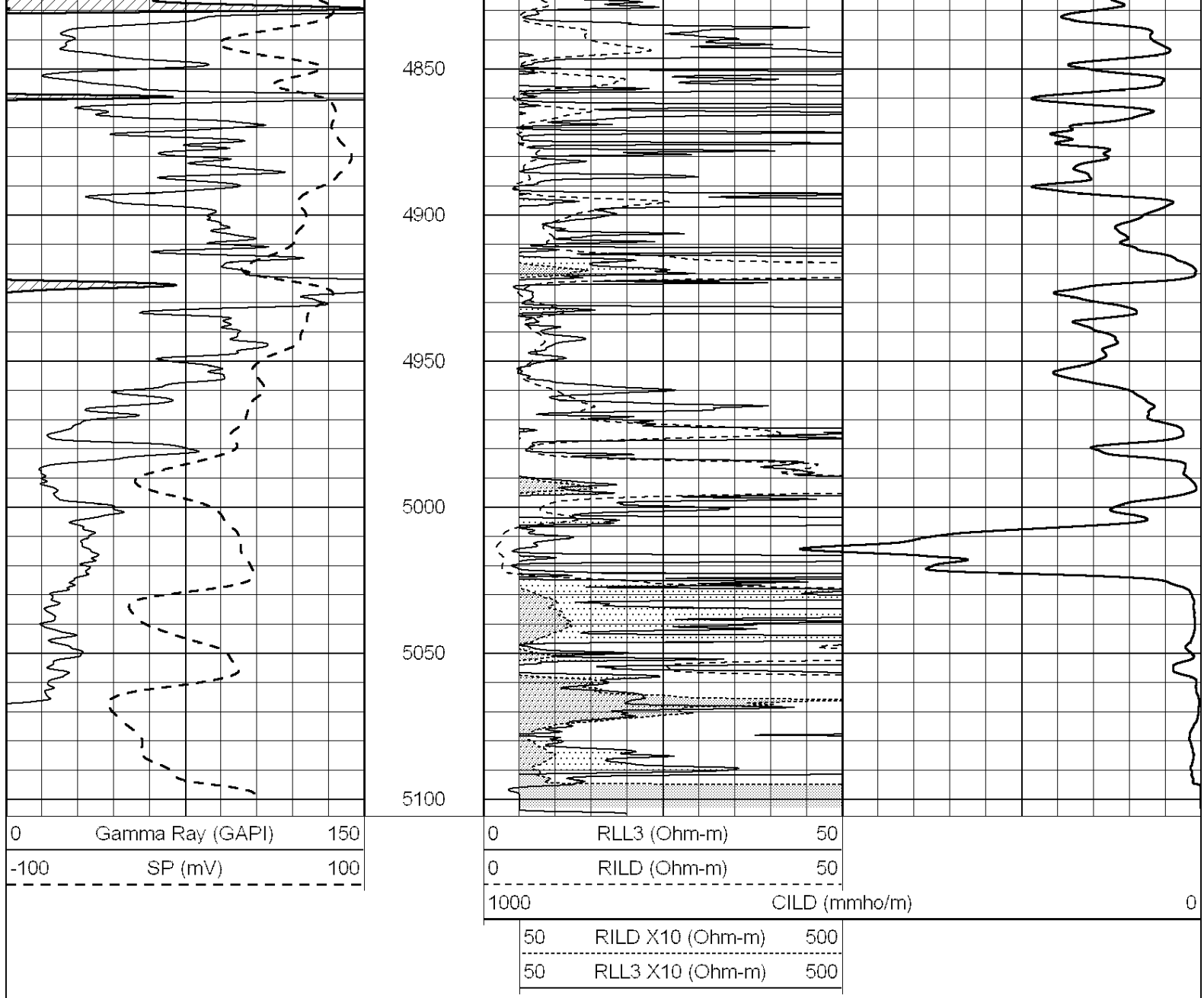
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4700

4750

4800





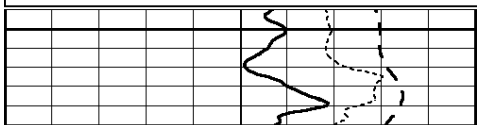
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ANHYDRITE

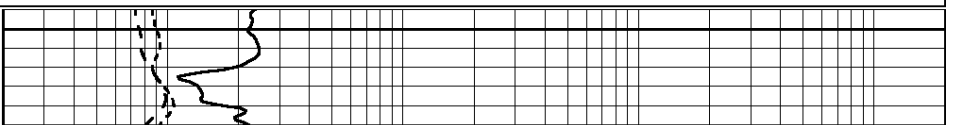
Database File: 010728ddn.db
Dataset Pathname: pass3.7
Presentation Format: _dil
Dataset Creation: Wed Mar 20 15:56:35 2013 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240

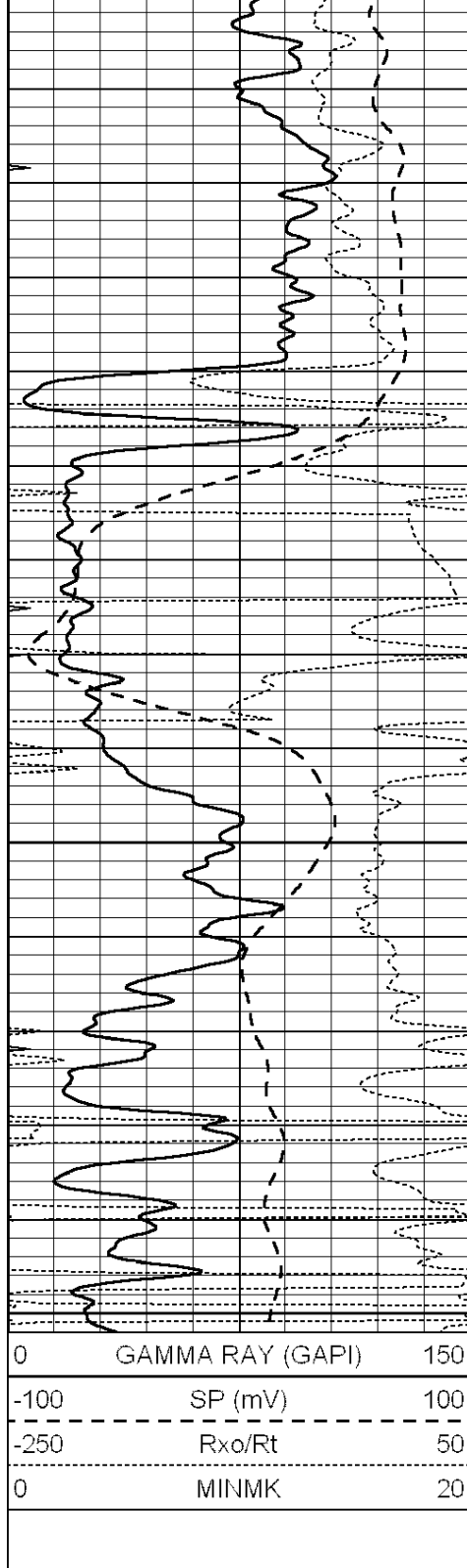
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



1400

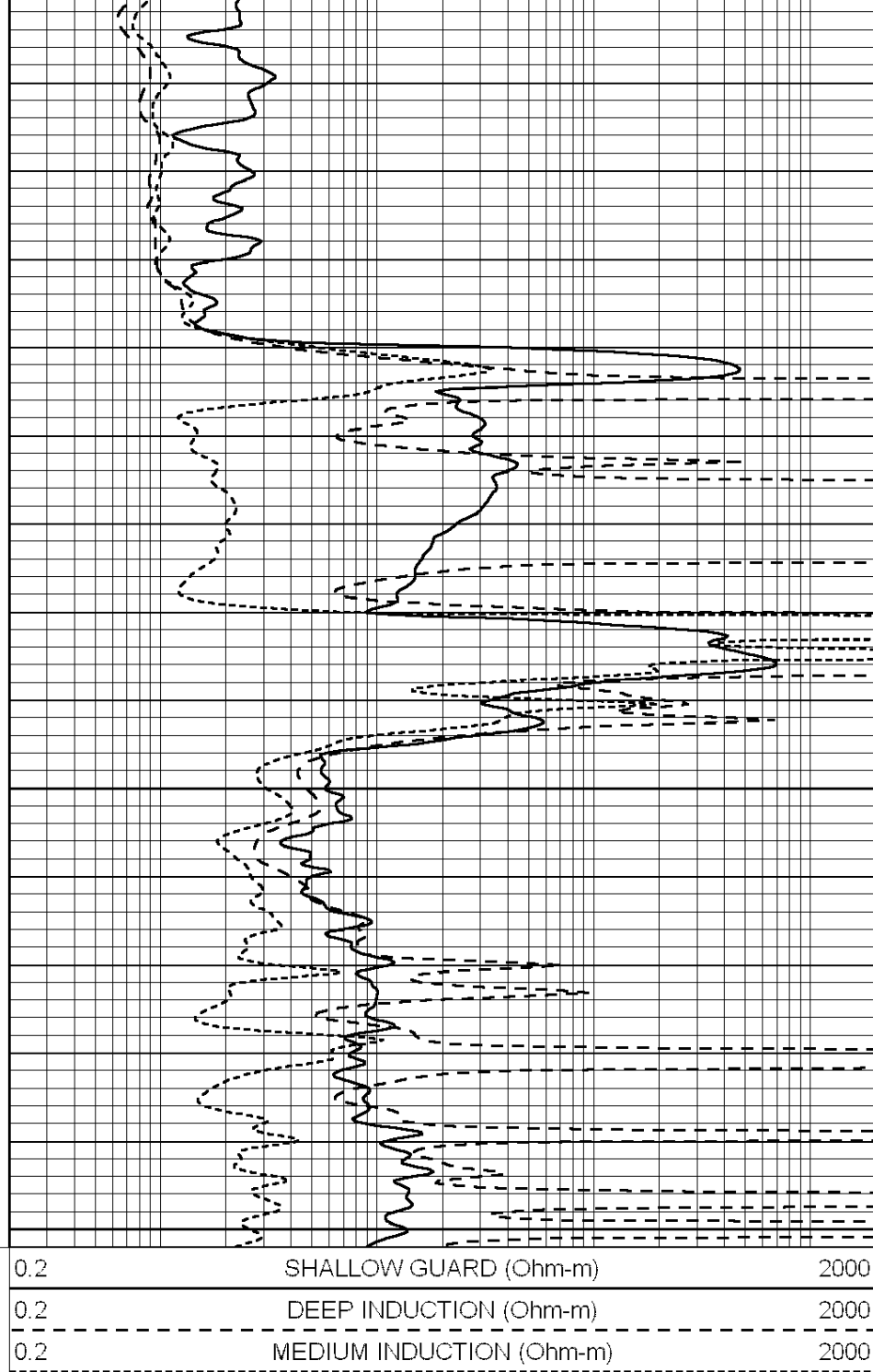




1450

1500

1550



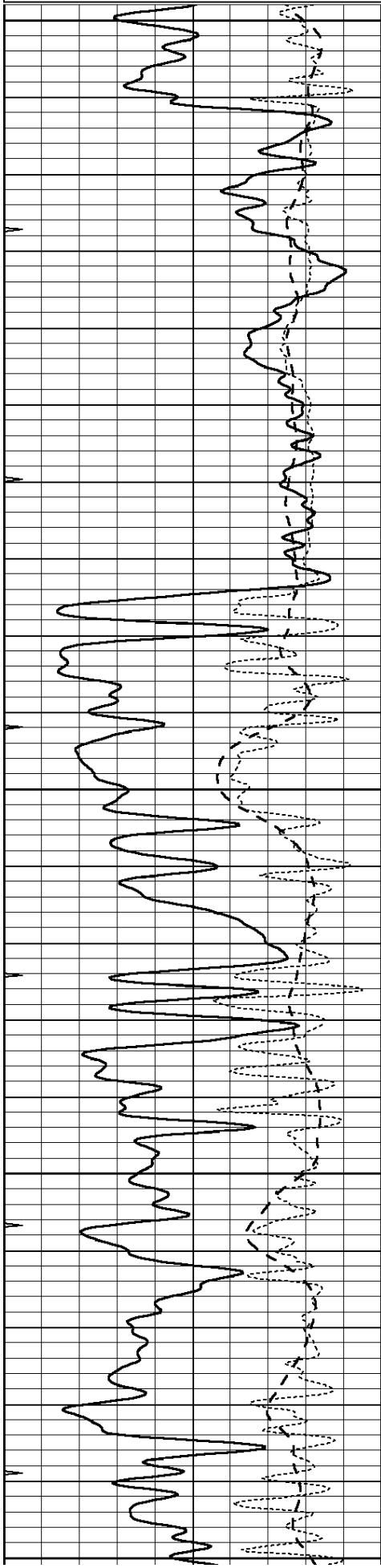
MAIN SECTION

Database File: 010728ddn.db
 Dataset Pathname: pass3.6
 Presentation Format: _dil
 Dataset Creation: Wed Mar 20 15:55:41 2013 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240



-250	Rxo/Rt	50
0	MINMK	20

0.2	MEDIUM INDUCTION (Ohm-m)	2000
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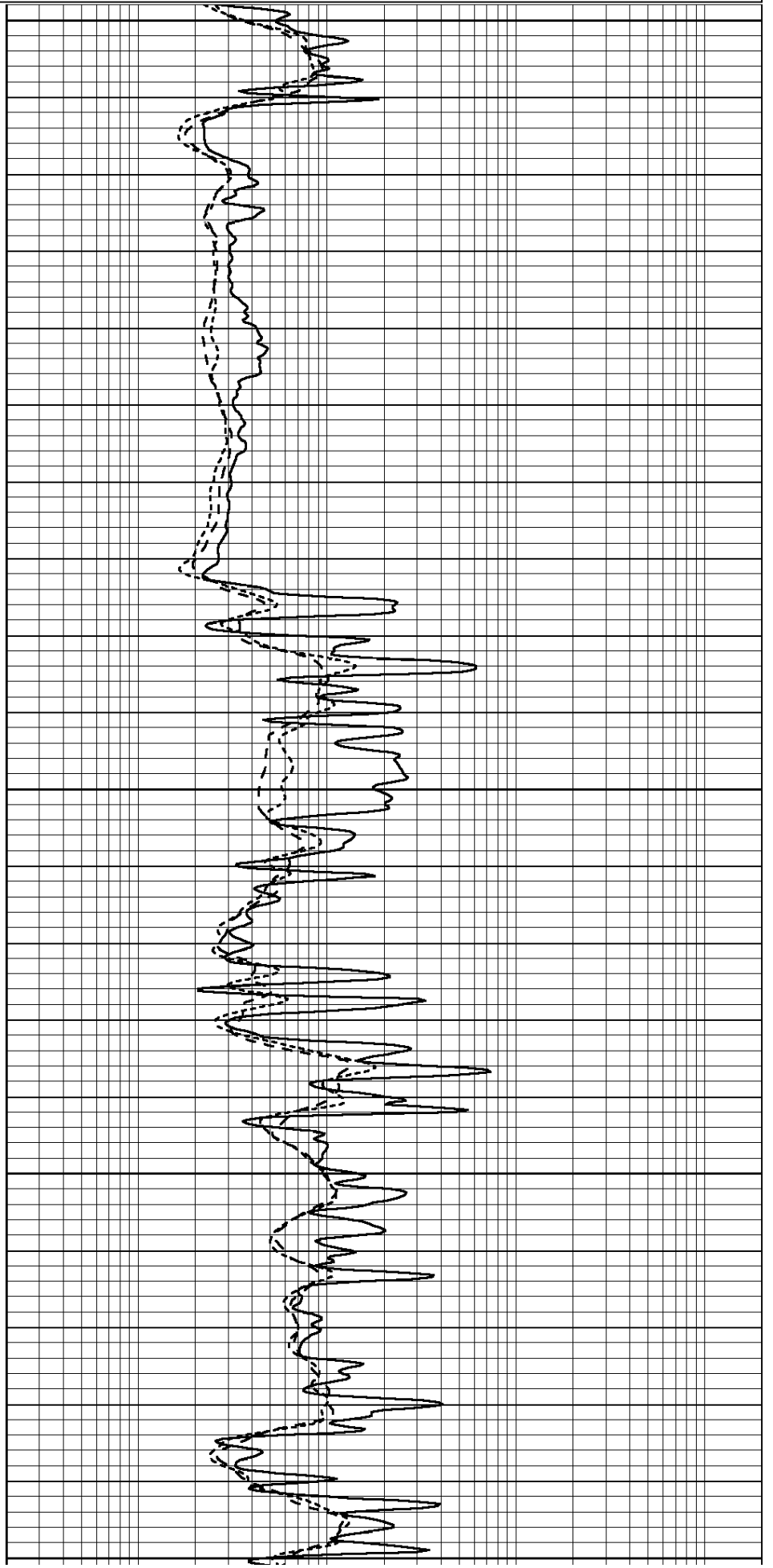
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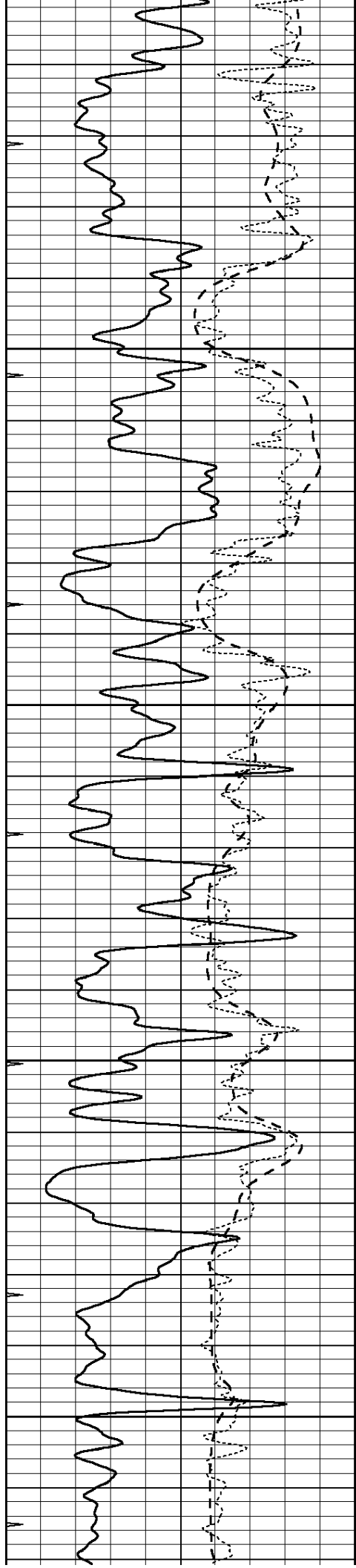
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3500

3550

3600



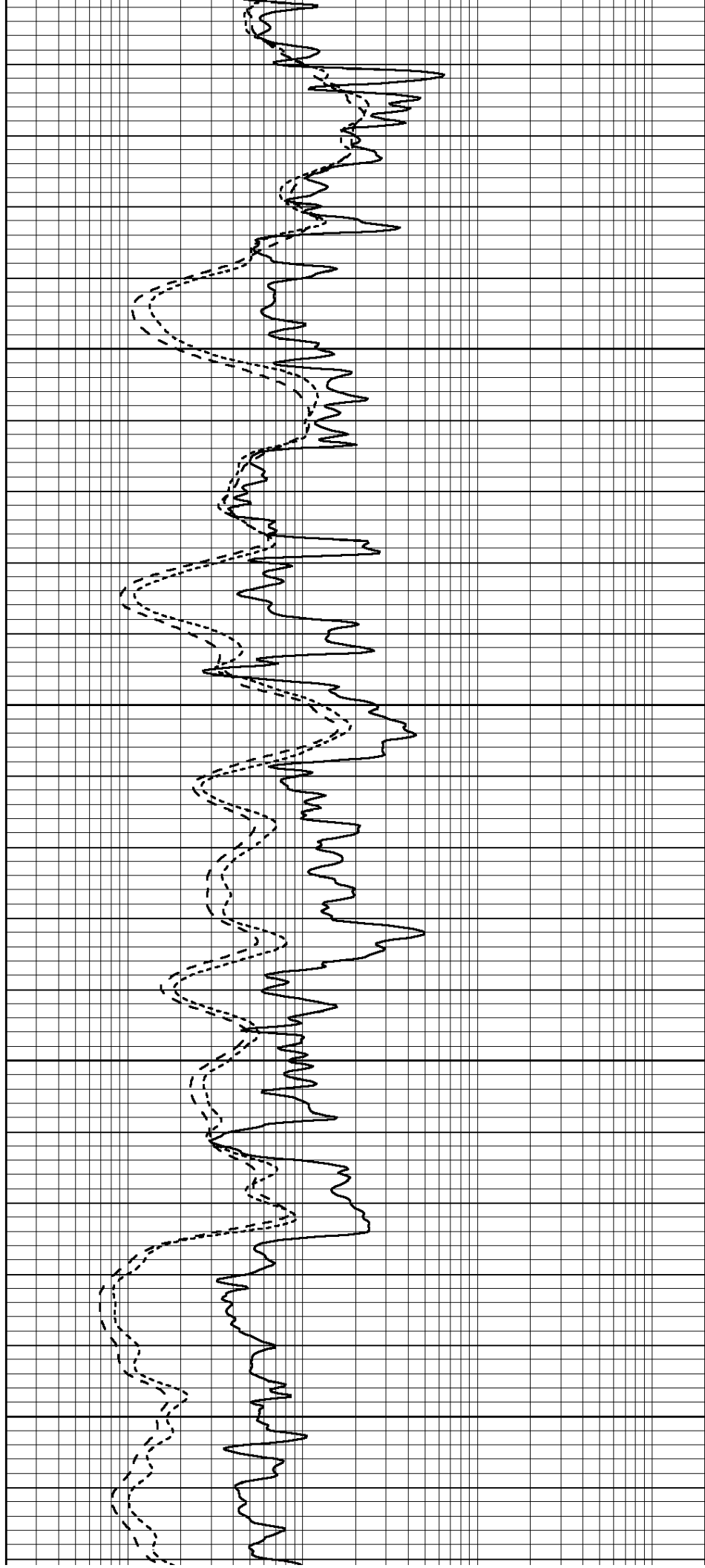


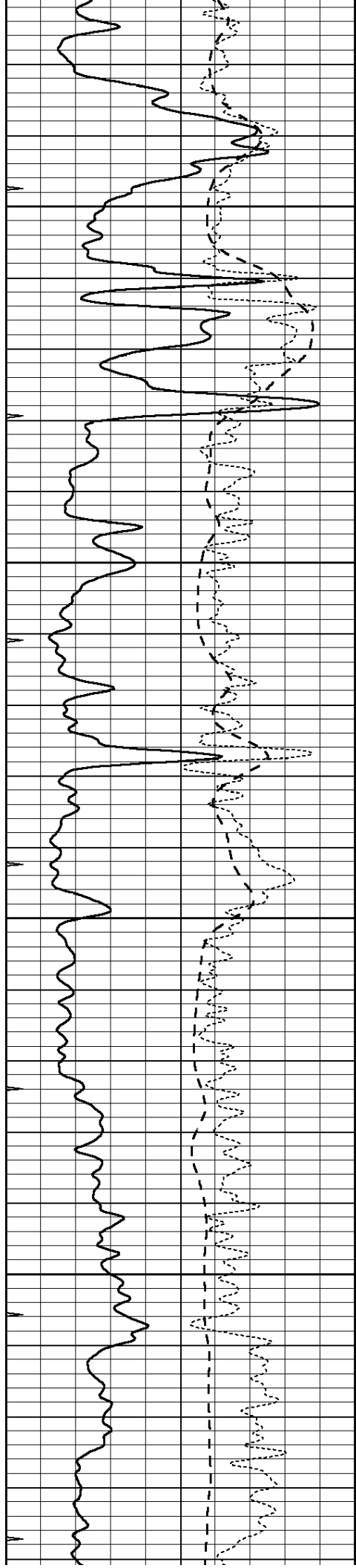
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3700

3750

3800



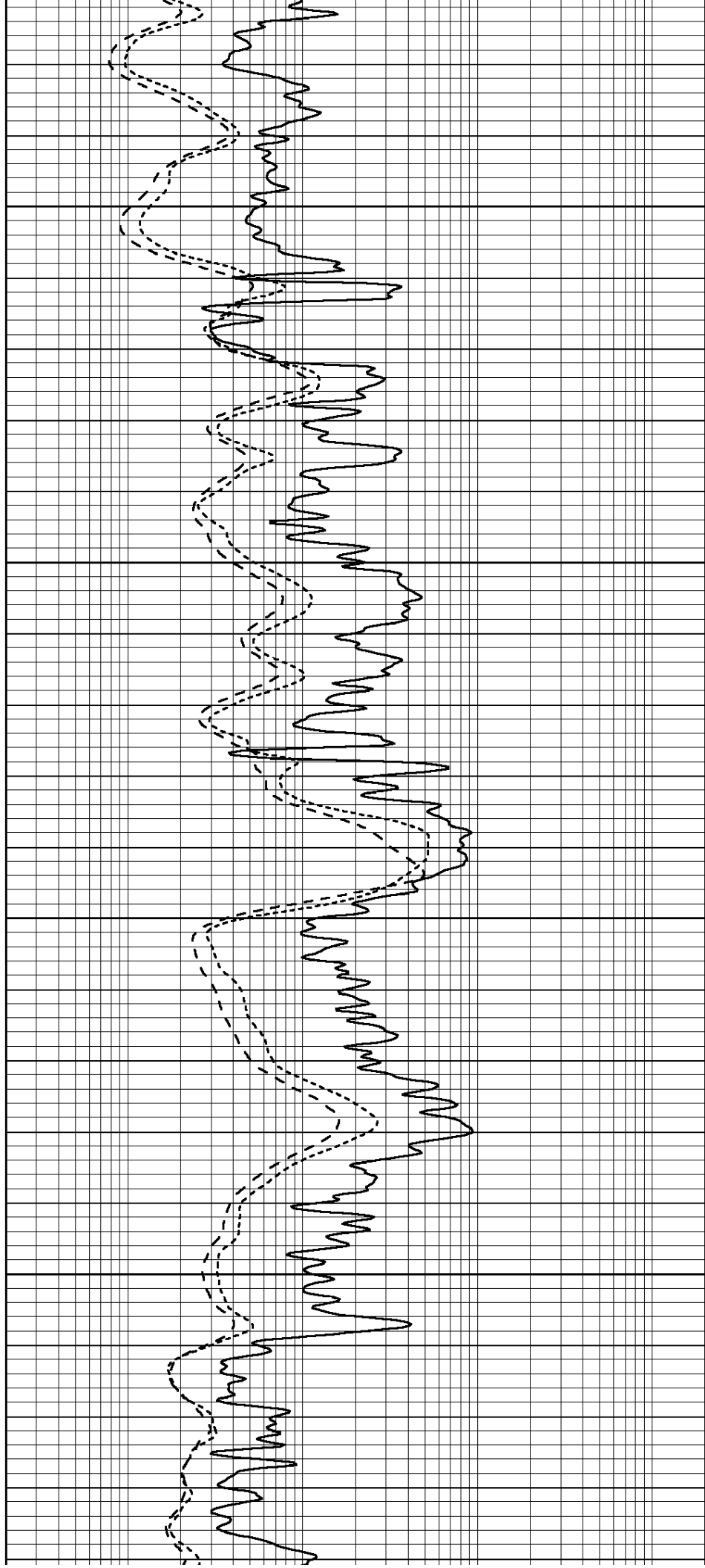


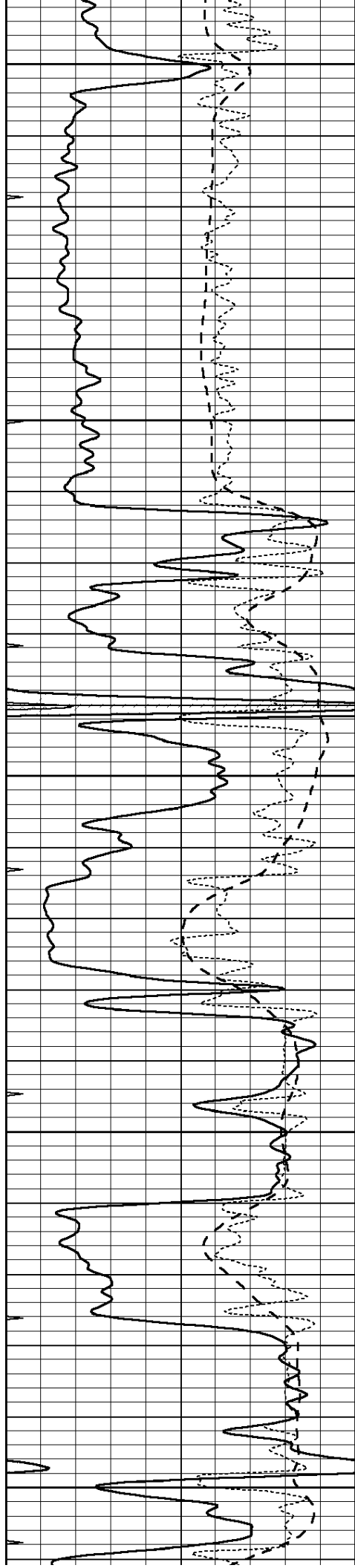
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3900

3950

4000





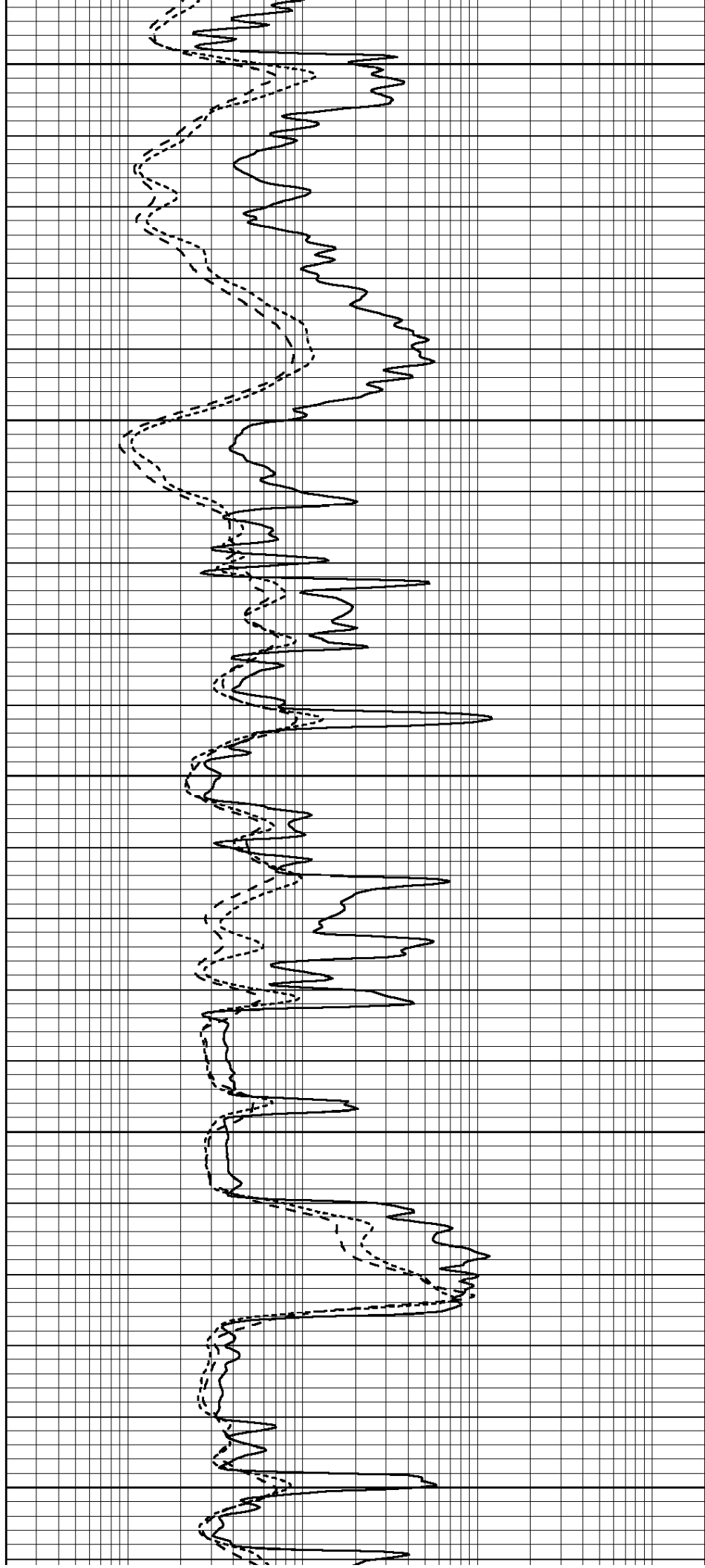
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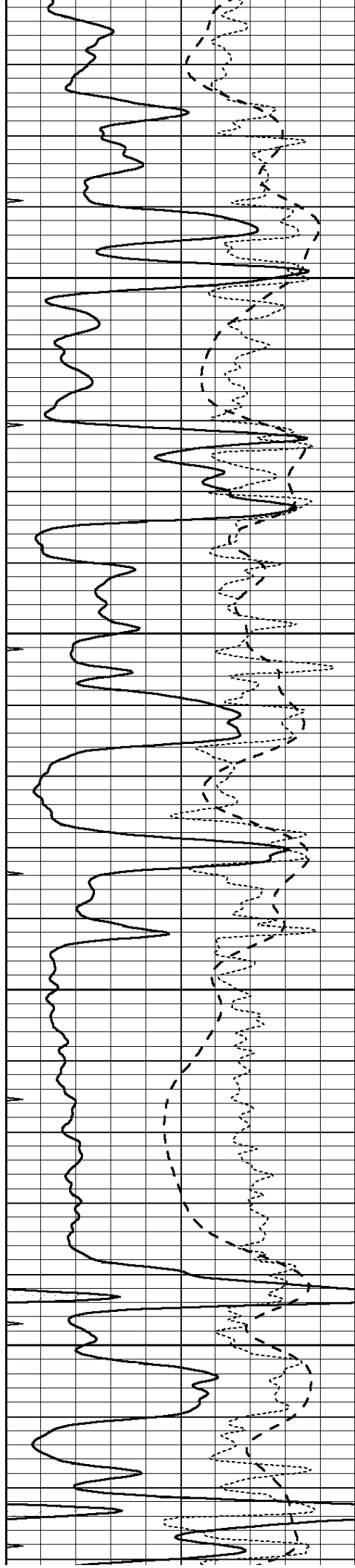
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4150

4200

4250



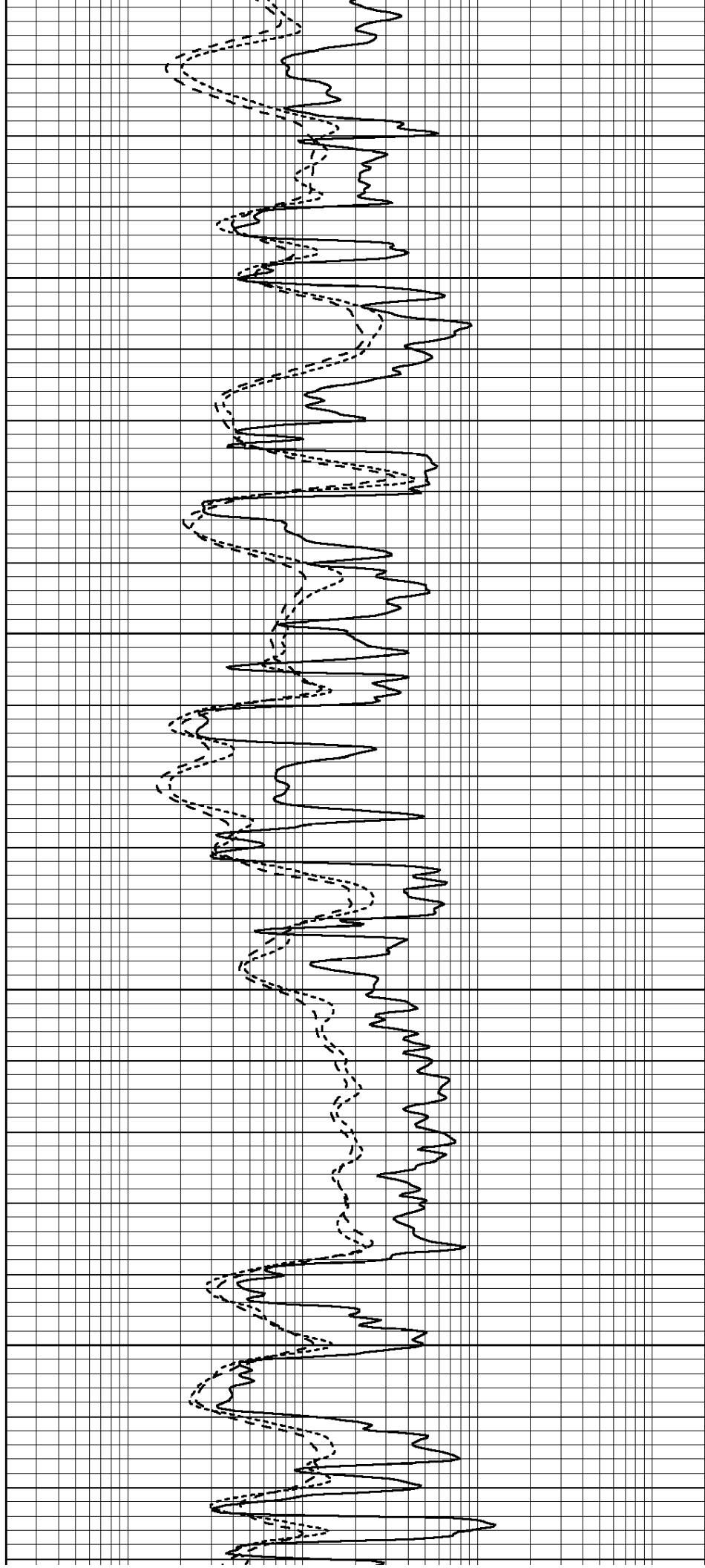


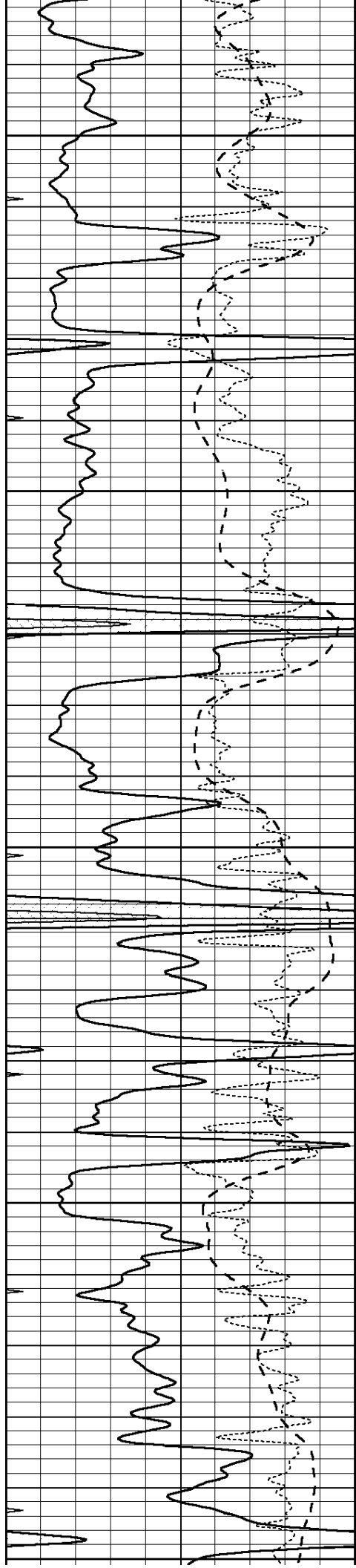
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4350

4400

4450





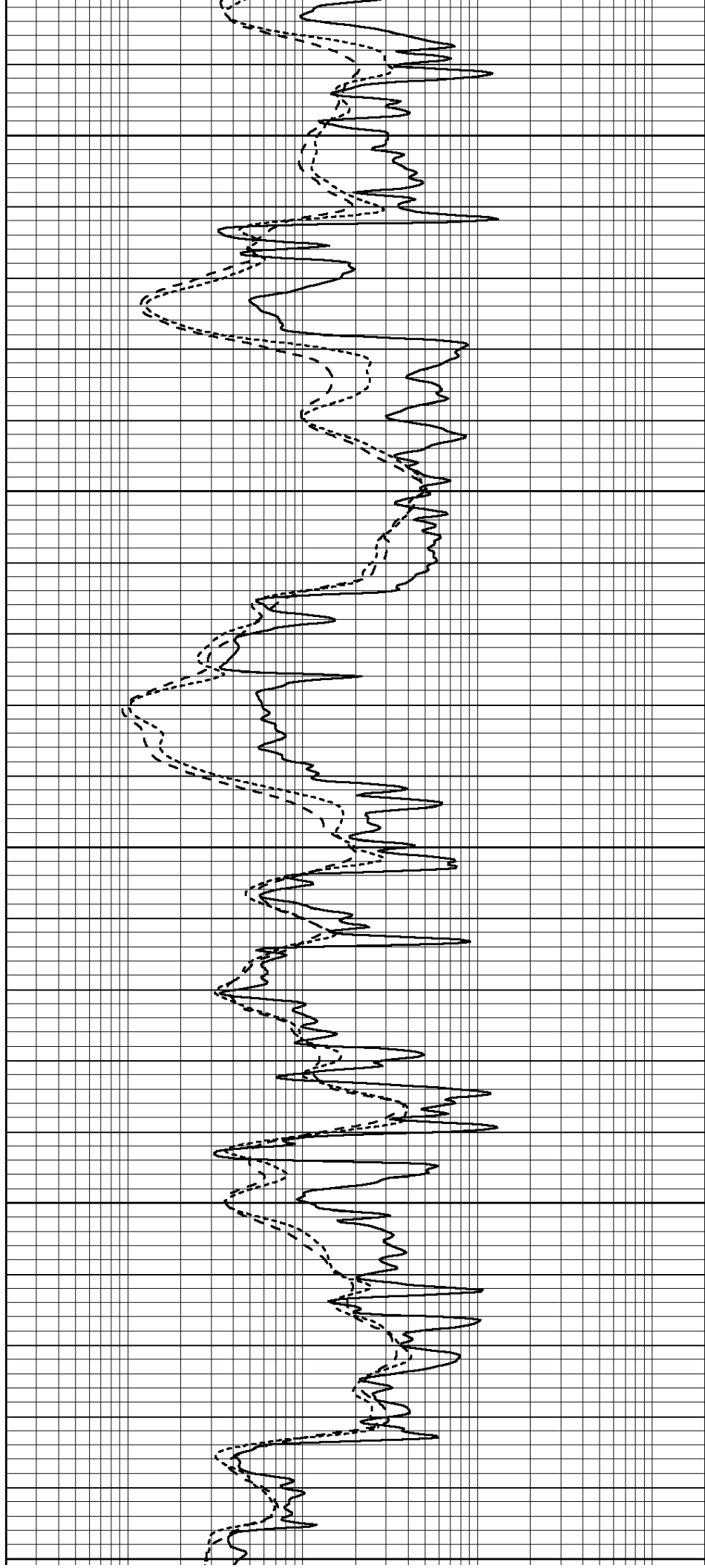
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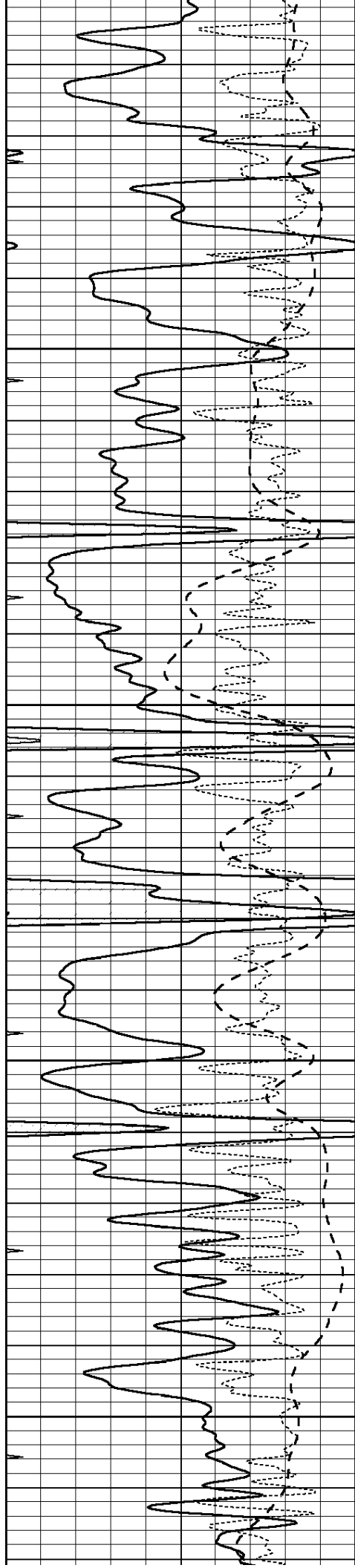
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4600

4650

4700



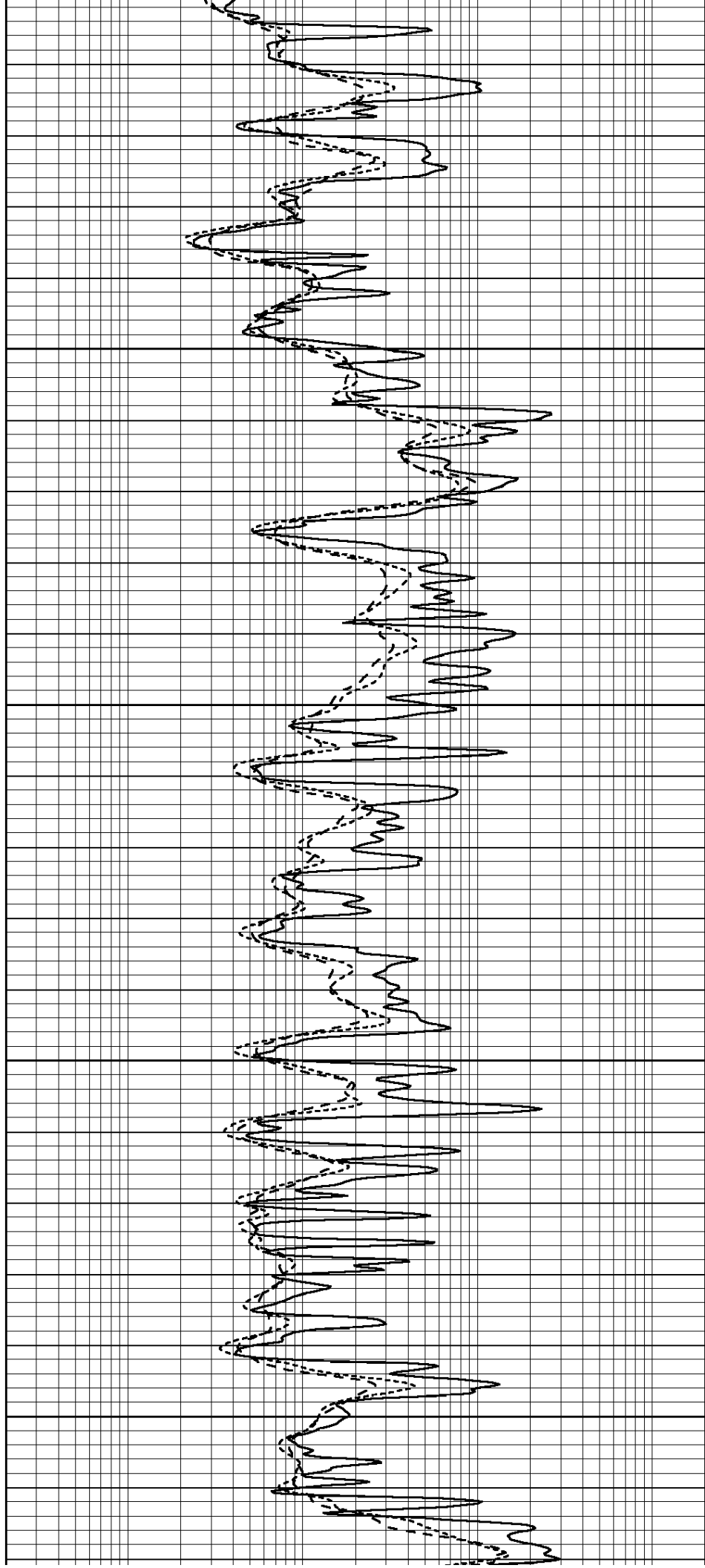


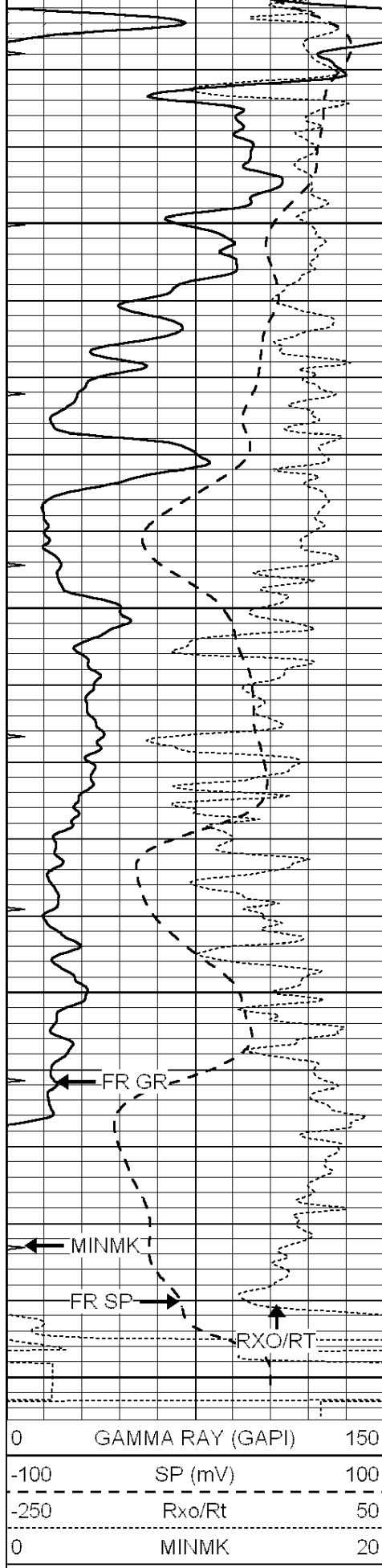
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4900



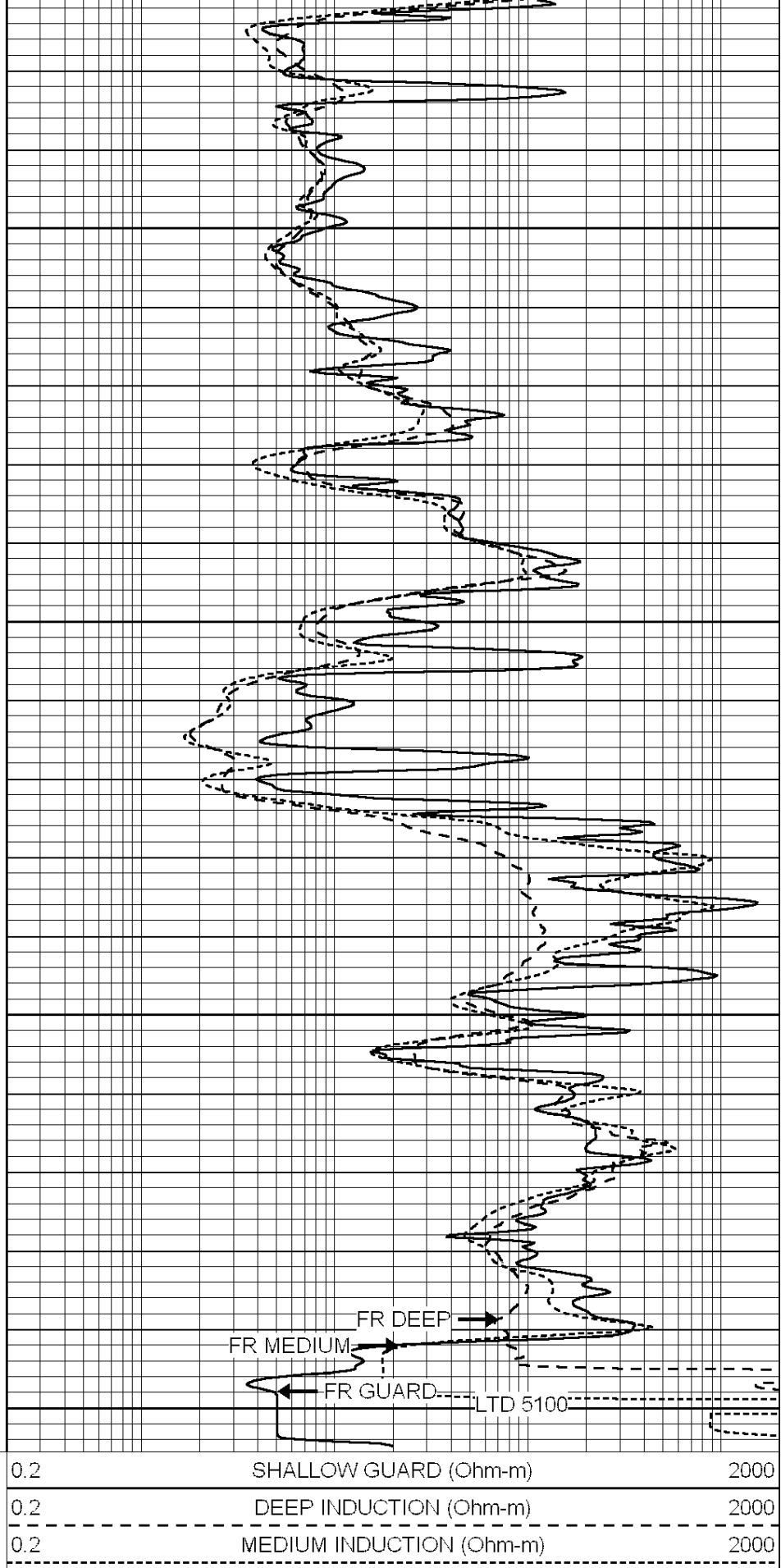


4950

5000

5050

5100



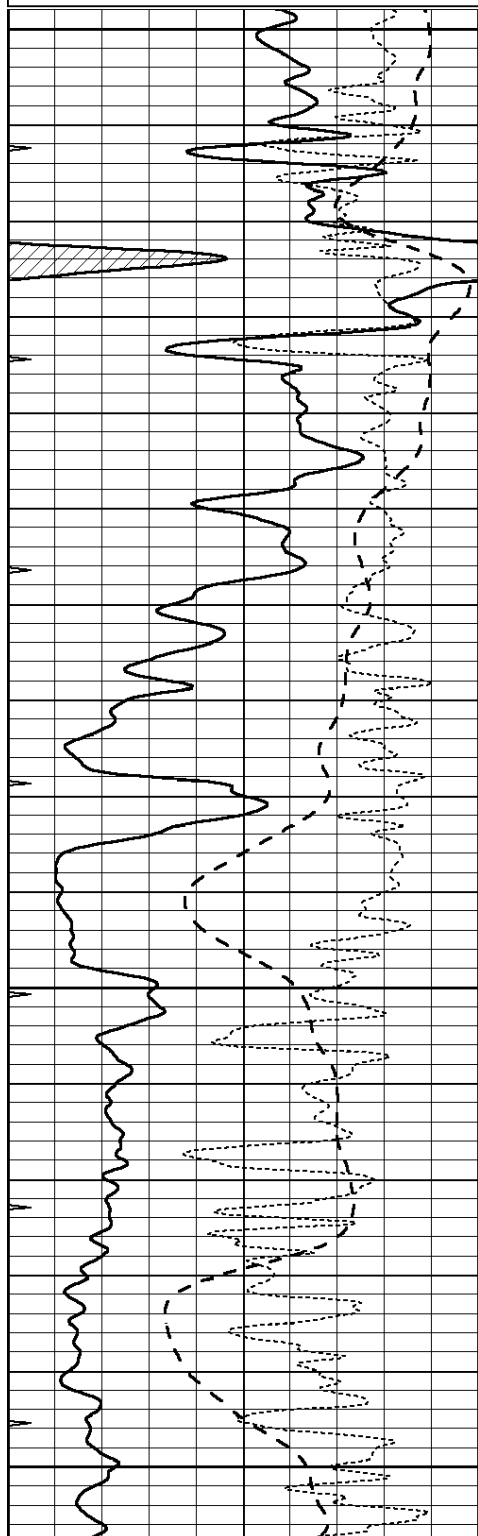
REPEAT SECTION

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Database File: 010728ddn.db
 Dataset Pathname: pass2.5
 Presentation Format: _dil
 Dataset Creation: Wed Mar 20 14:51:26 2013 by Calc SOC 120430
 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

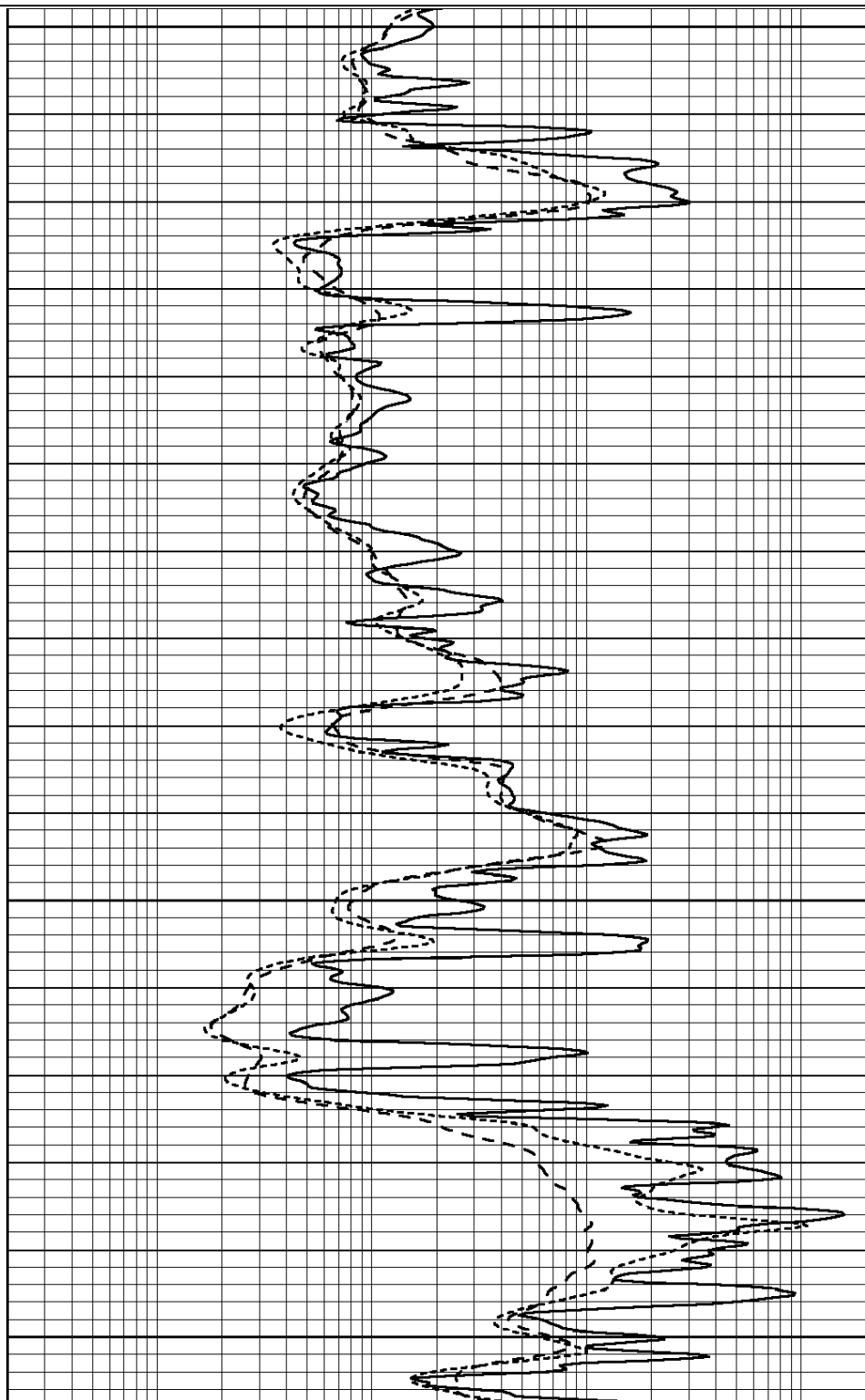


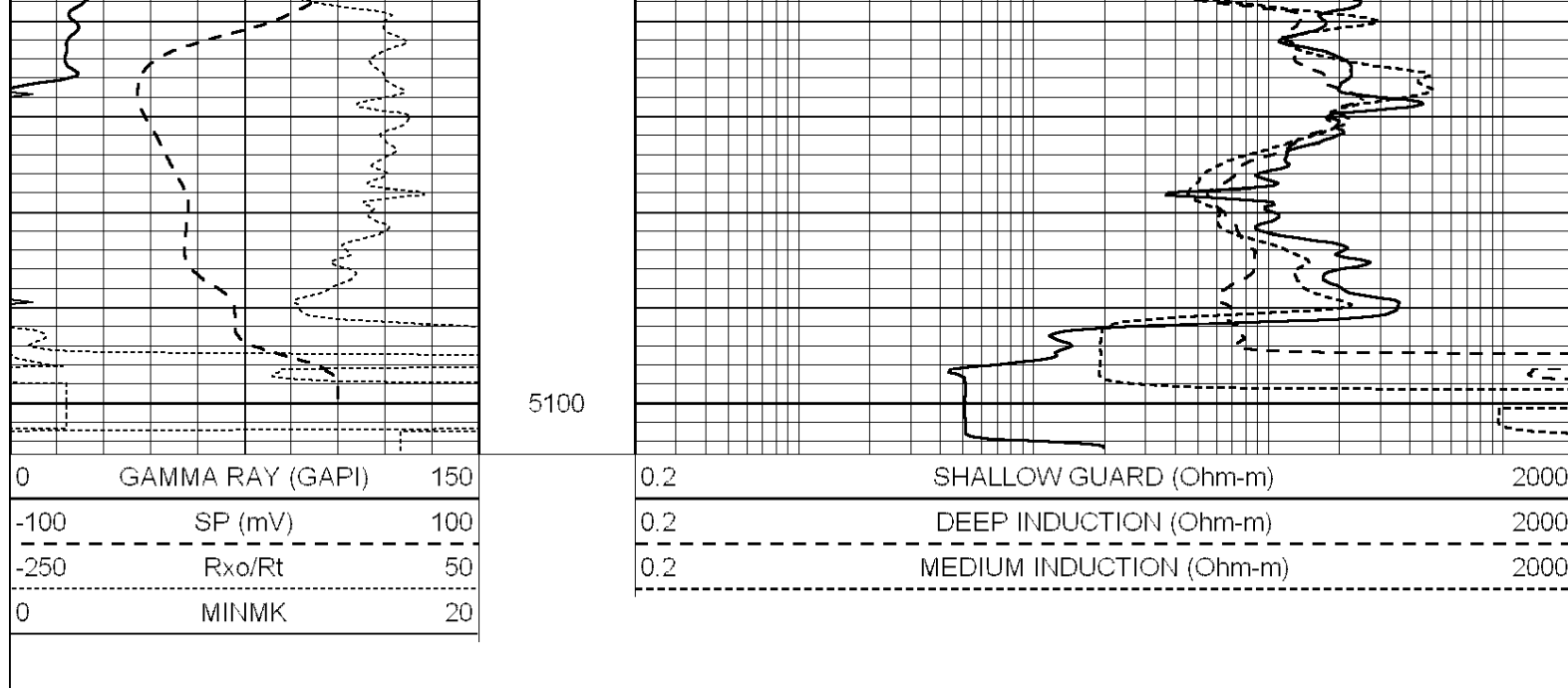
4900

4950

5000

5050





Calibration Report

Database File: 010728ddh.db
Dataset Pathname: pass3.6
Dataset Creation: Wed Mar 20 15:55:41 2013 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
Surface Cal Performed: Sun Mar 10 00:44:14 2013
Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration								
Readings			References				Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	621.923	-14.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	640.000	-17.500
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration								
Readings			References				Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	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		

Litho Density Calibration Report
Serial: 006Model: PRB

Master Calibration		Performed Sun Aug 15 09:48:41 2010			
	Background	Magnesium	Aluminum	Sandstone	
Window 1	1686.6	11612.8	3932.0	12718.8	cps
Window 2	1531.4	9204.7	3267.8	9851.9	cps
Window 3	1198.3	4733.6	1952.5	4920.6	cps
Window 4	317.3	321.2	325.9	303.6	cps
Long Space	0.0	7673.3	1736.4	8320.4	cps
Short Space	1.7	2548.5	1657.2	2628.8	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 43.8	Rib Slope	: 0.961	Density/Spine Ratio	: 0.569
Spine Angle	: 73.8	Spine Slope	: 3.453	Spine Intercept	: -18.1

Before Survey Verification		Performed Wed Dec 31 18:00:00 1969			
Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

After Survey Verification		Performed Wed Dec 31 18:00:00 1969			
Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

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Compensated Neutron Calibration Report

Serial Number:	070808
Tool Model:	Probe

PRE-SURVEY VERIFICATION			
Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION			
Detector	Readings	Measured	Target

Short Space	cps		
Long Space	cps	pu	pu
Gamma Ray Calibration Report			
Serial Number:	070559		
Tool Model:	OPEN_GR		
Performed:	Sun Mar 10 00:43:54 2013		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.3500	GAPI/cps	