



SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company MULL DRILLING COMPANY, INC.
Well #1-14 TT&G
Field TROOPER
County KIOWA
State COLORADO

Company MULL DRILLING COMPANY, INC.
Well #1-14 TT&G
Field TROOPER
County KIOWA State COLORADO

Location: API #: 05-061-06837-0000

958' FNL & 1048' FWL

SEC 14 TWP 18S RGE 45W

Permanent Datum GROUND LEVEL Elevation 3951
Log Measured From KELLY BUSHING 13' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services
CDL/CNL
MEL/SONIC
Elevation
K.B. 3964
D.F. 3962
G.L. 3951

Date	12/5/09		
Run Number	CNE		
Depth Driller	4975		
Depth Logger	4972		
Bottom Logged Interval	4970		
Top Log Interval	00		
Casing Driller	8 5/8"@337'		
Casing Logger	335		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2,500 PPM	
Density / Viscosity	9.2/66		
pH / Fluid Loss	9.5/7.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.10@66F		
Rmf @ Meas. Temp	.825@66F		
Rmc @ Meas. Temp	1.32@66F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.581@125F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	5:00 P.M.		
Maximum Recorded Temperature	125F		
Equipment Number	0836		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

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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 SERVICES HAYS, KANSAS (785) 628-6395
DIRECTIONS
BRANDON, CO. & HWY 96 E. EDGE @MM #186, 3 N. ON RD. #59, 1/4 E., N. INTO



SUPERIOR
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MAIN SECTION

Database File: 004382ddn.db
Dataset Pathname: pass3.5
Presentation Format: dil2
Dataset Creation: Sat Dec 05 18:47:06 2009 by Calc Open-Cased 060407
Charted by: Depth in Feet scaled 1:600

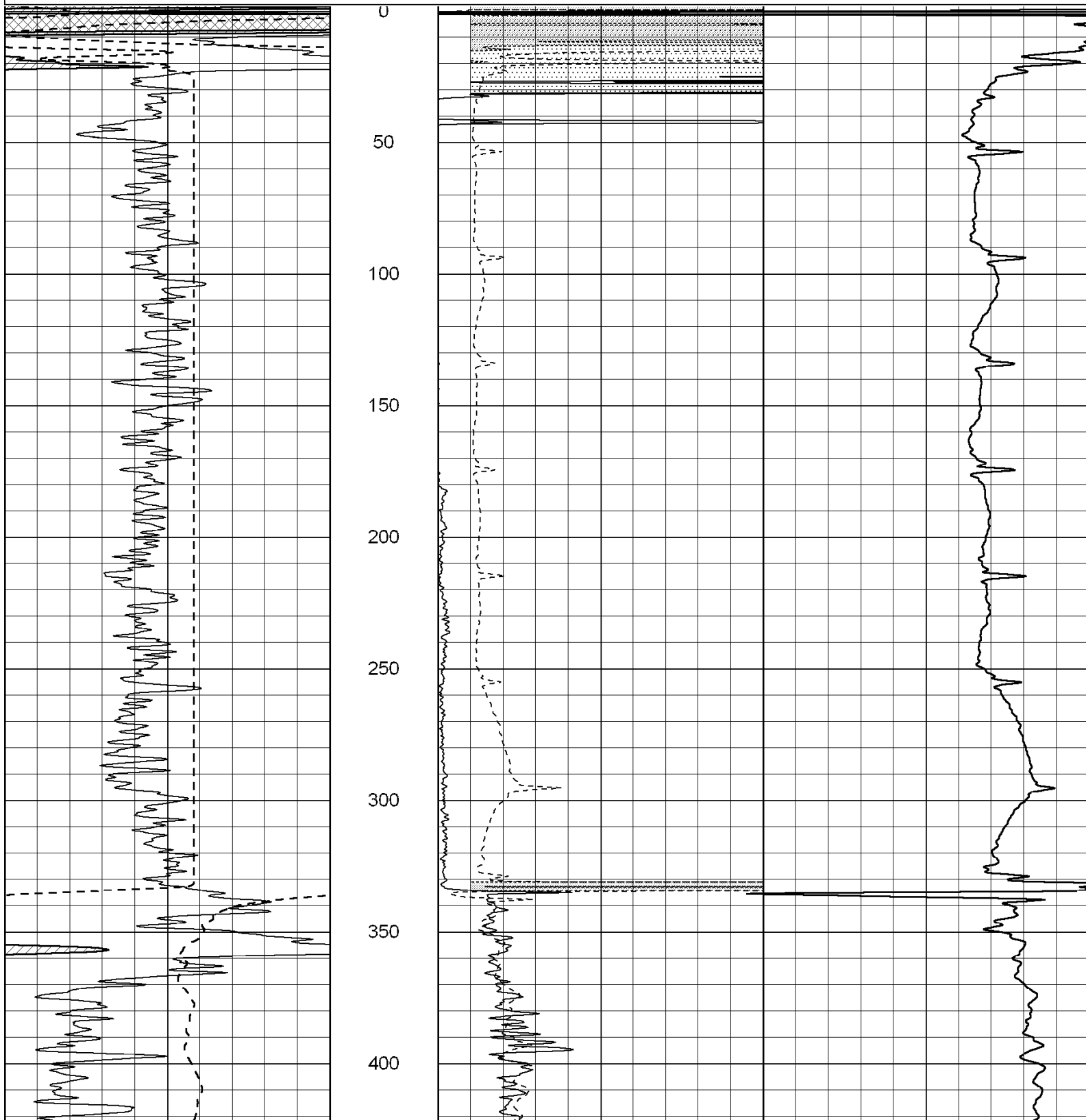
0 Gamma Ray (GAPI) 150
-100 SP (mV) 100

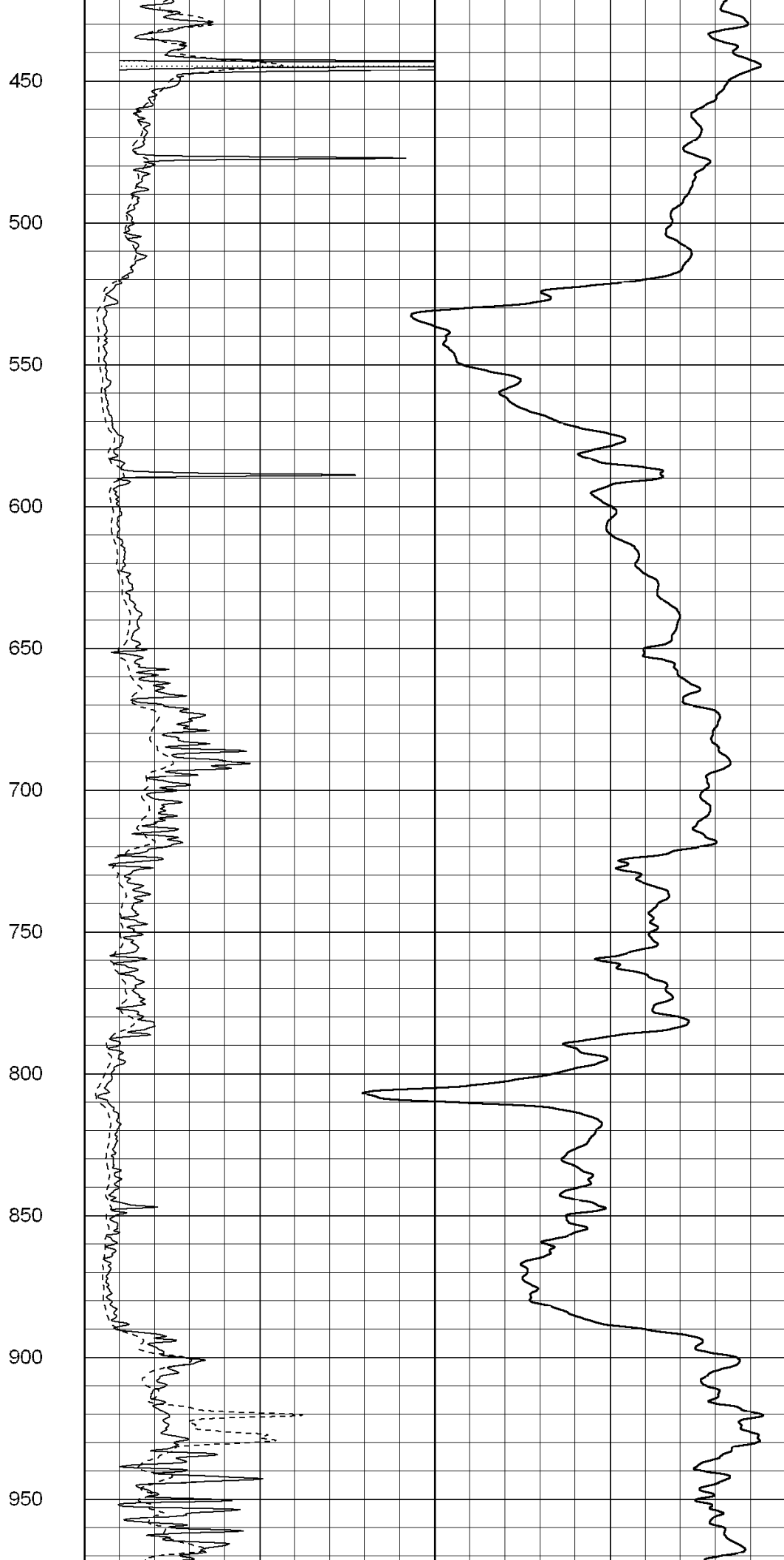
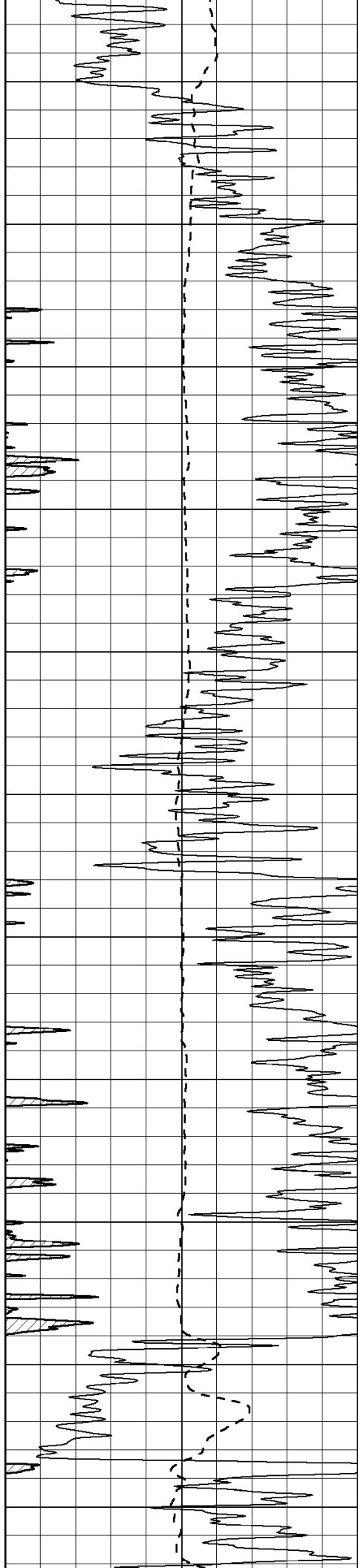
0 RLL3 (Ohm-m) 50
0 RILD (Ohm-m) 50

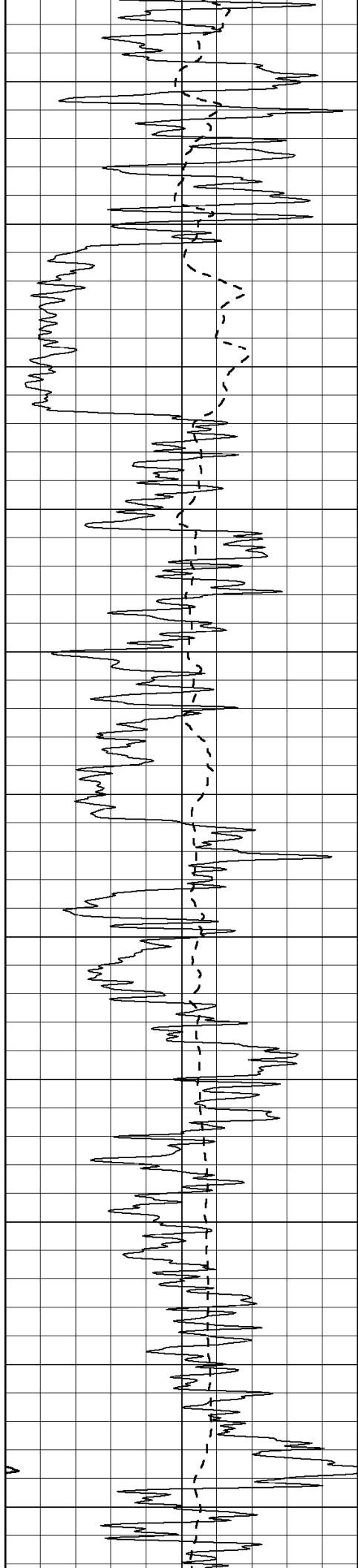
1000 CILD (mmho-m) 0

50 RILD X10 (Ohm-m) 500

50 RLL3 X10 (Ohm-m) 500







1000

1050

1100

1150

1200

1250

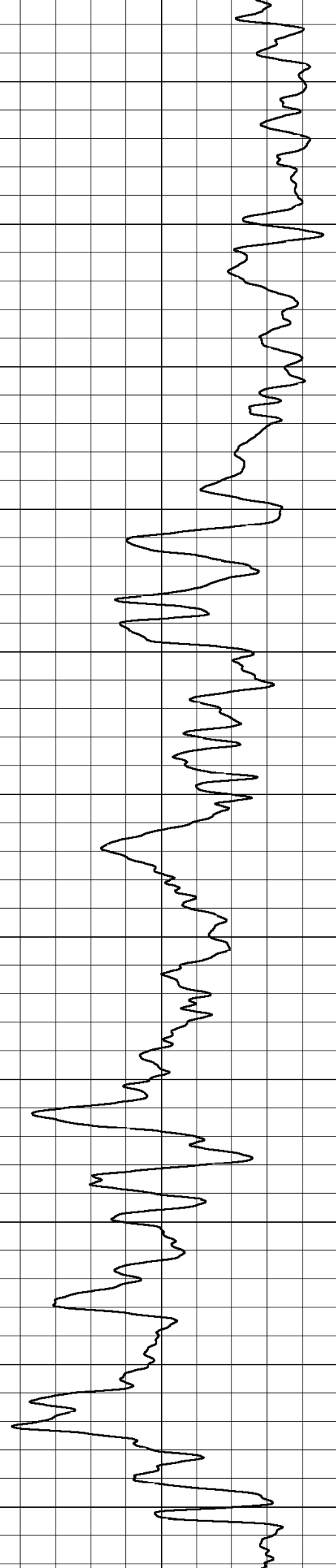
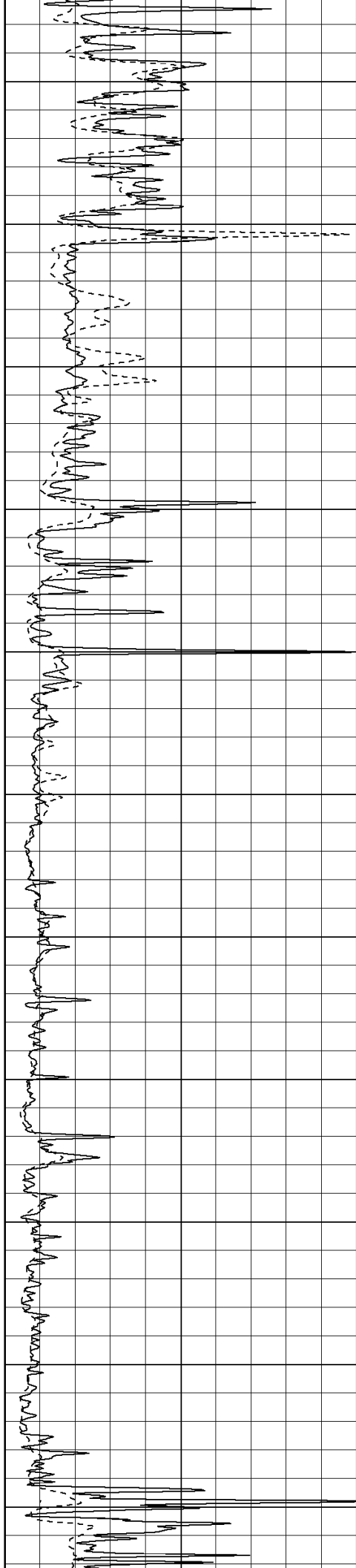
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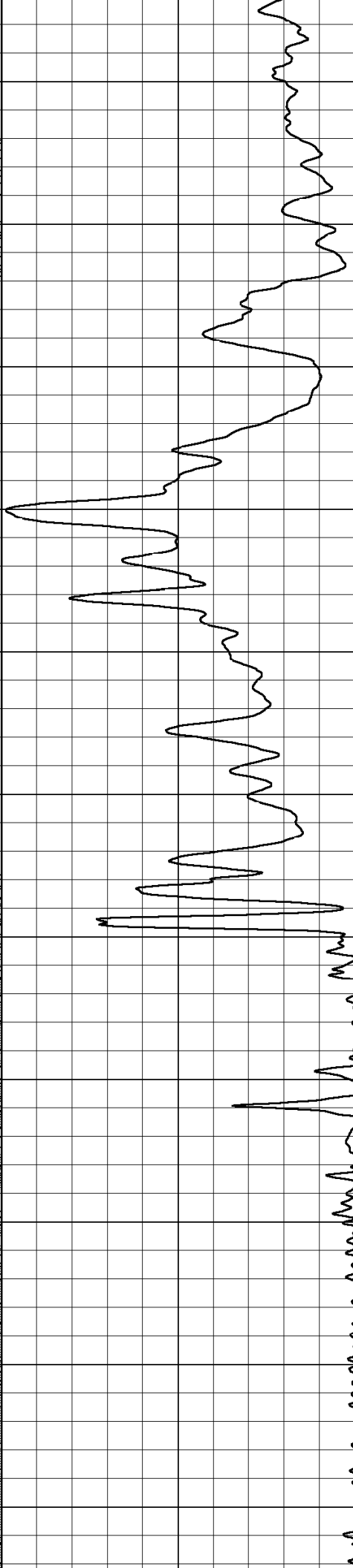
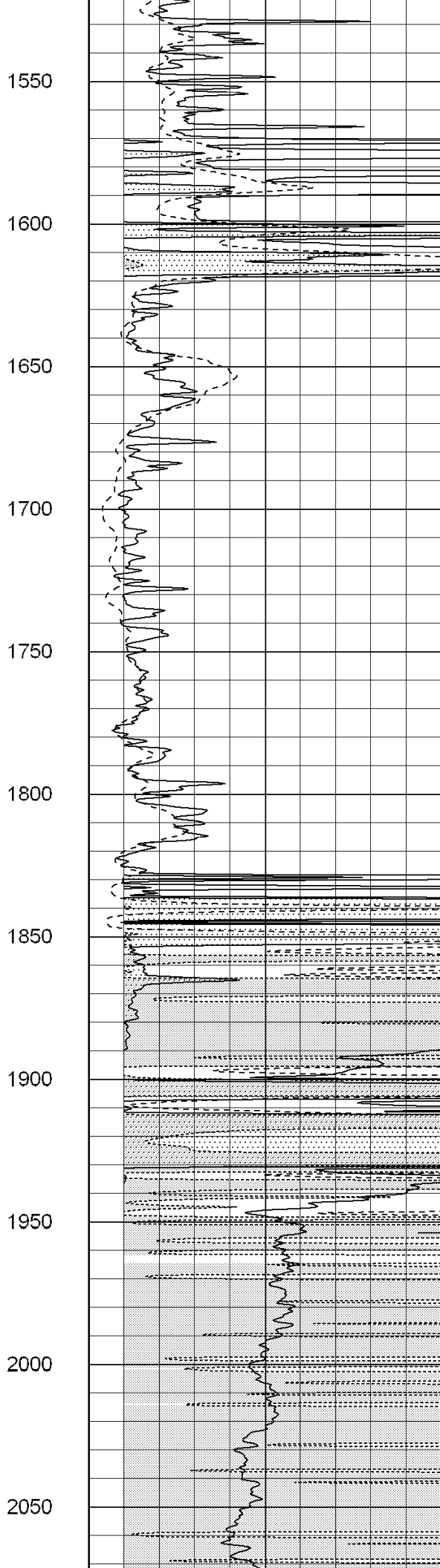
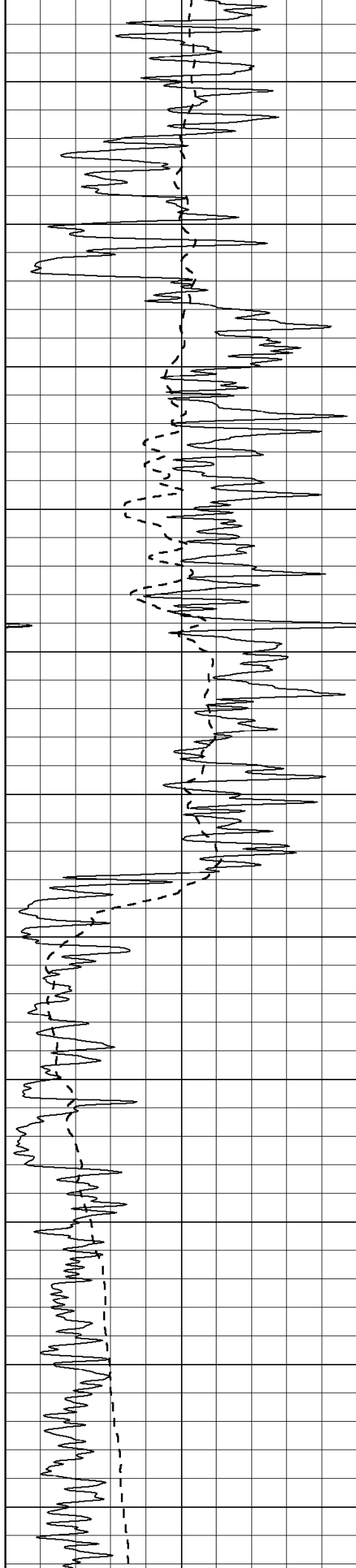
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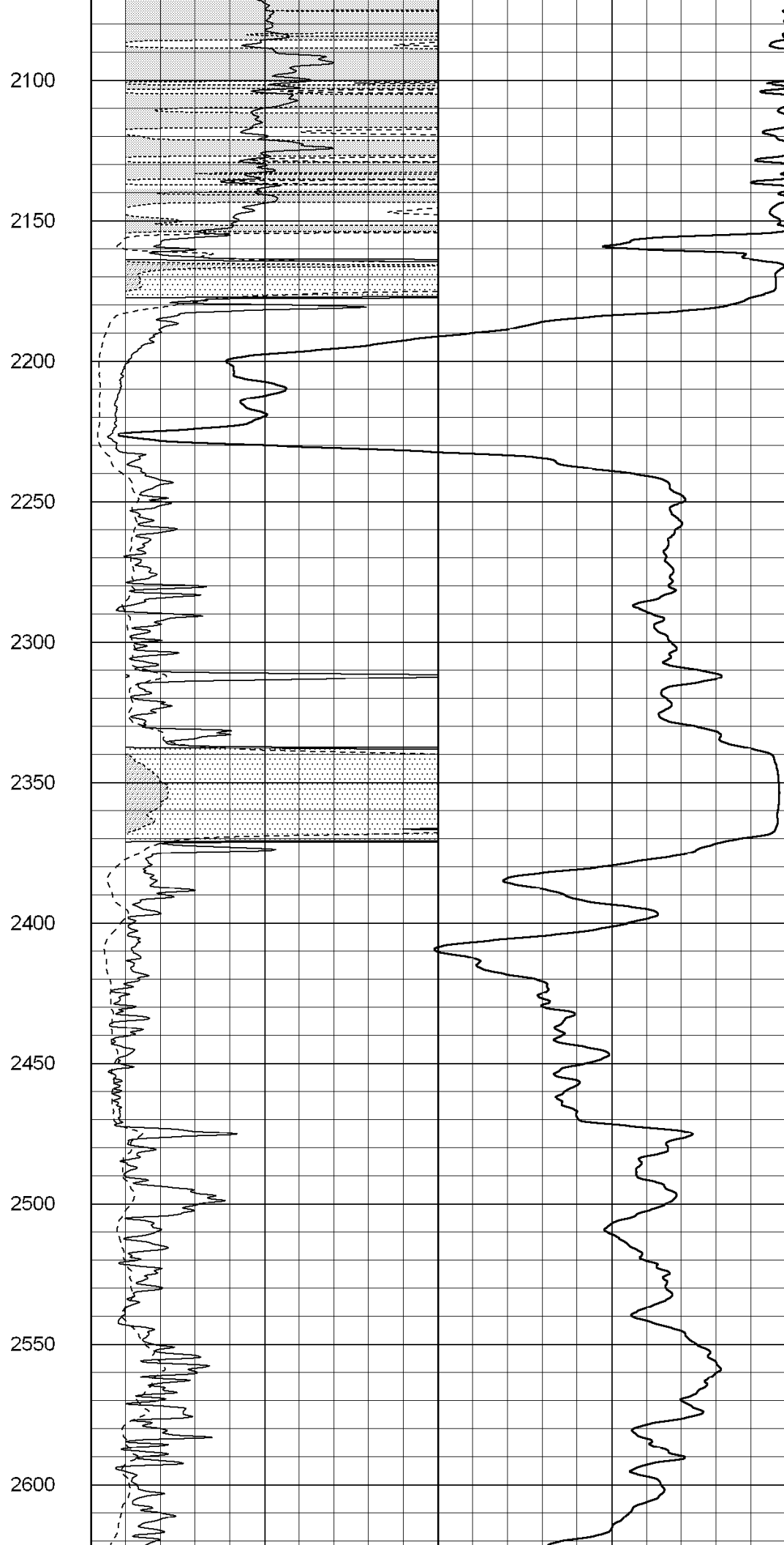
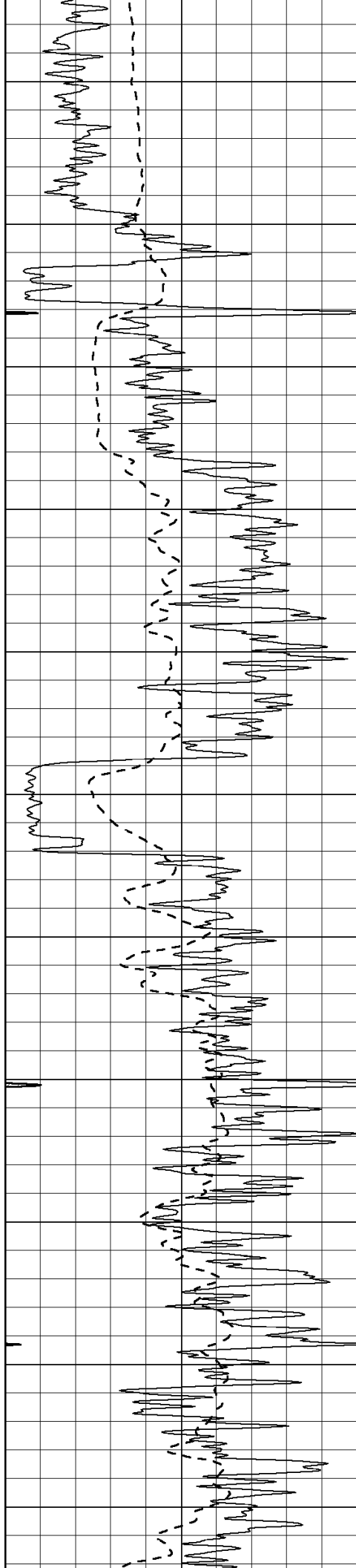
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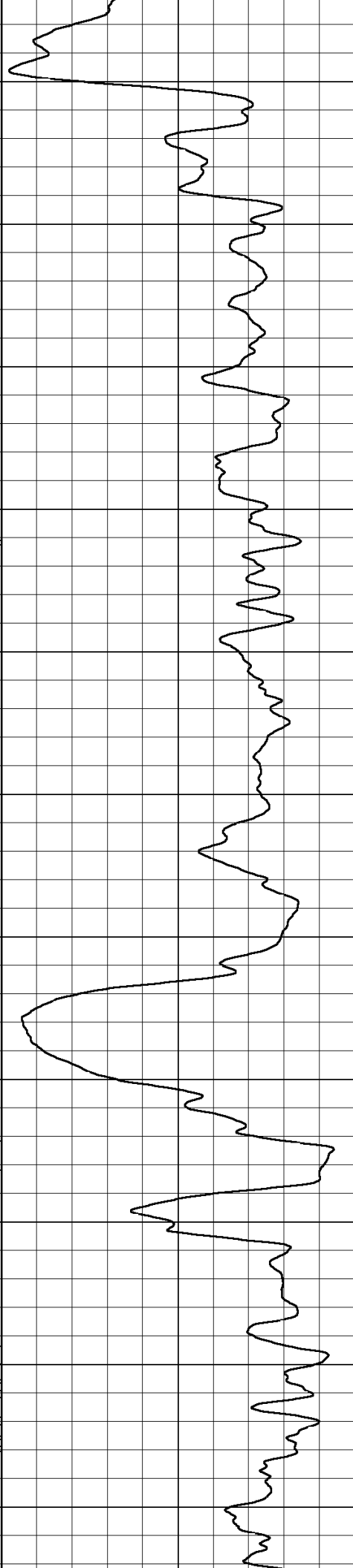
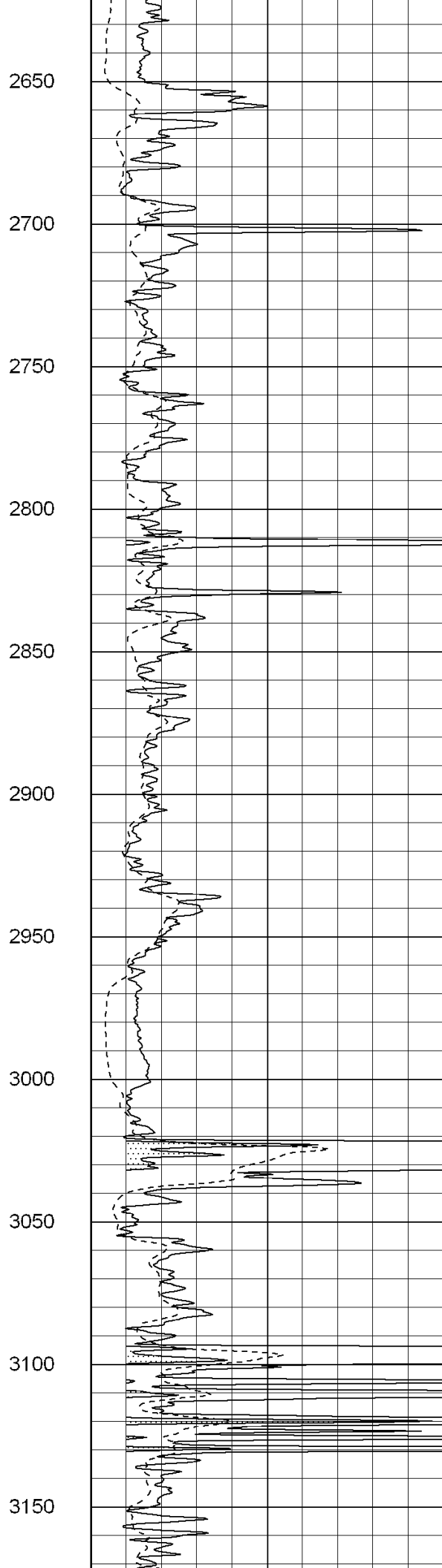
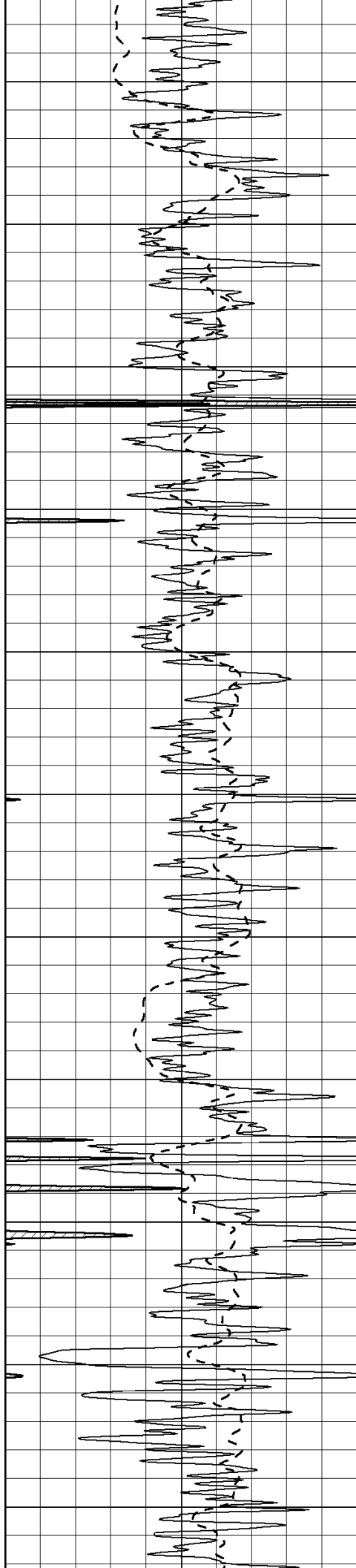
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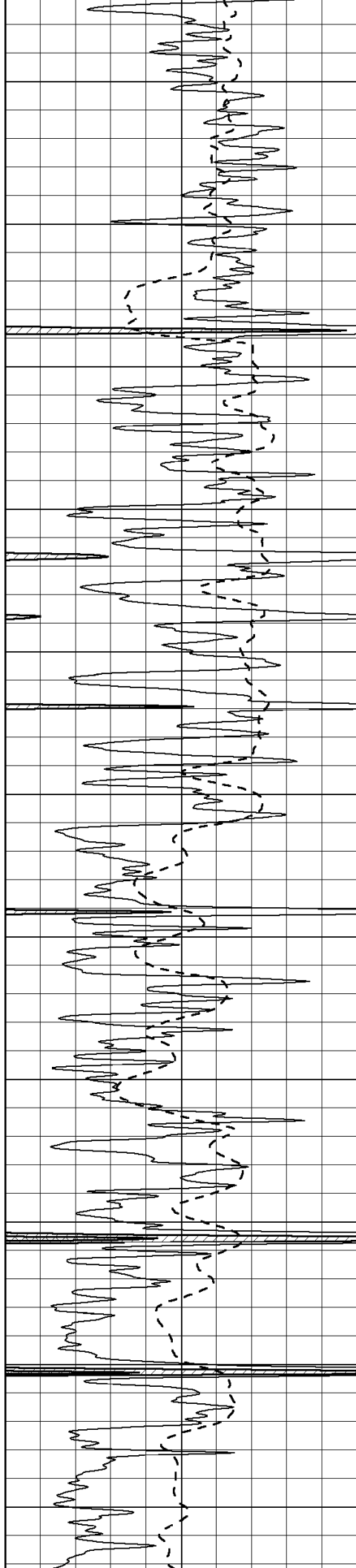
1500











3200

3250

3300

3350

3400

3450

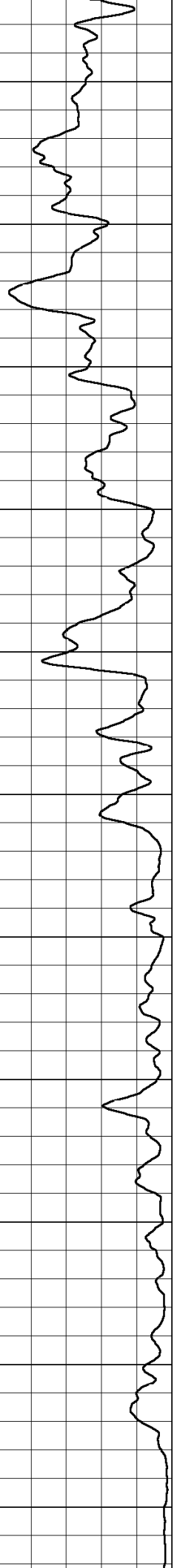
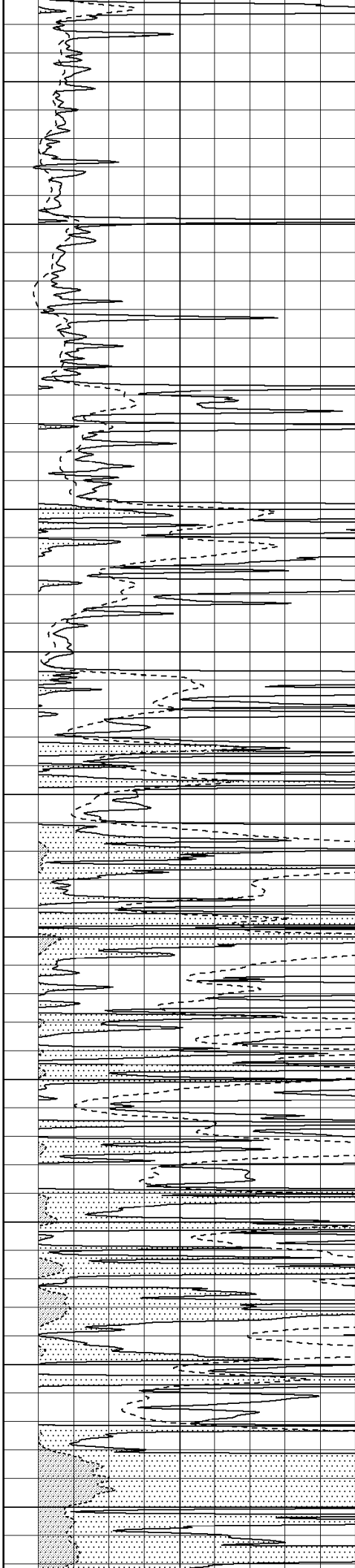
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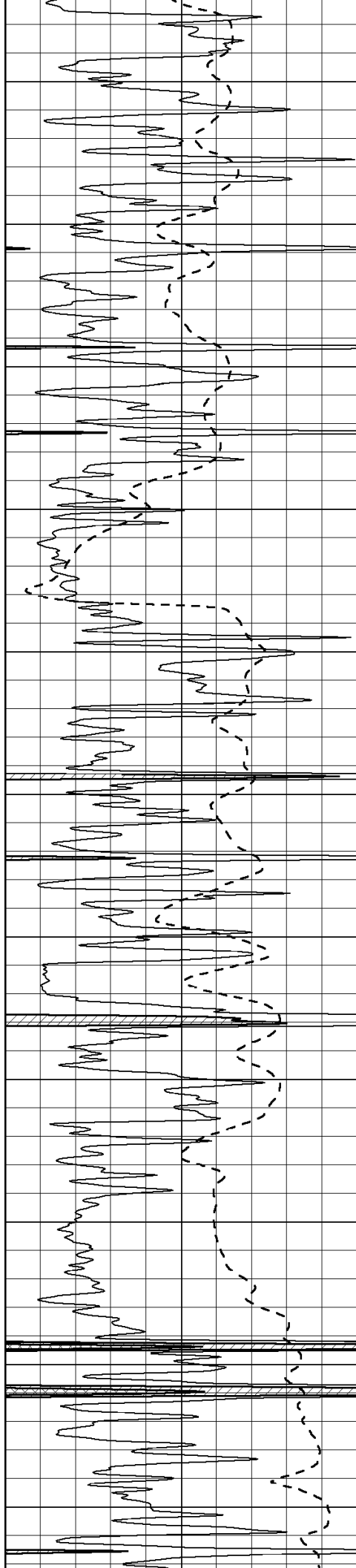
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3600

3650

3700





3750

3800

3850

3900

3950

4000

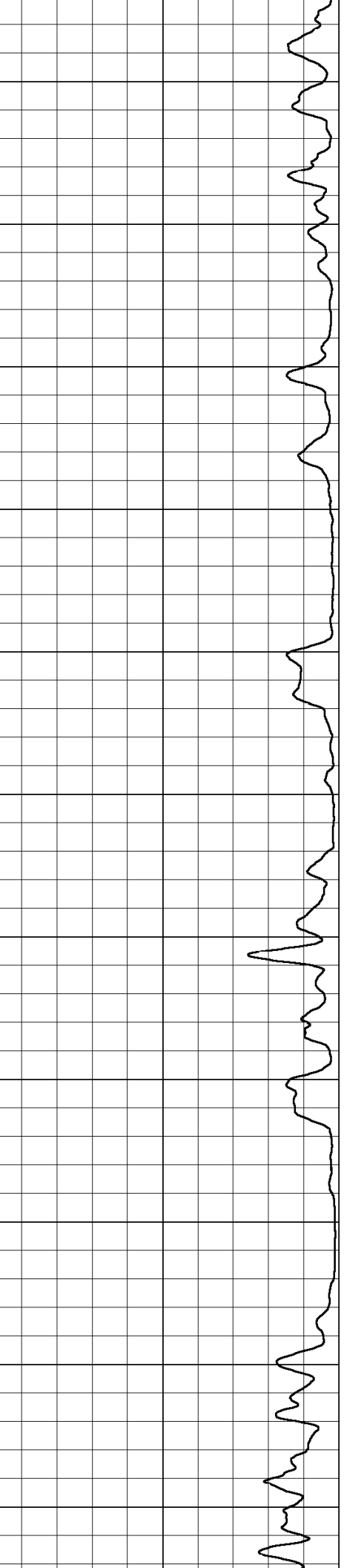
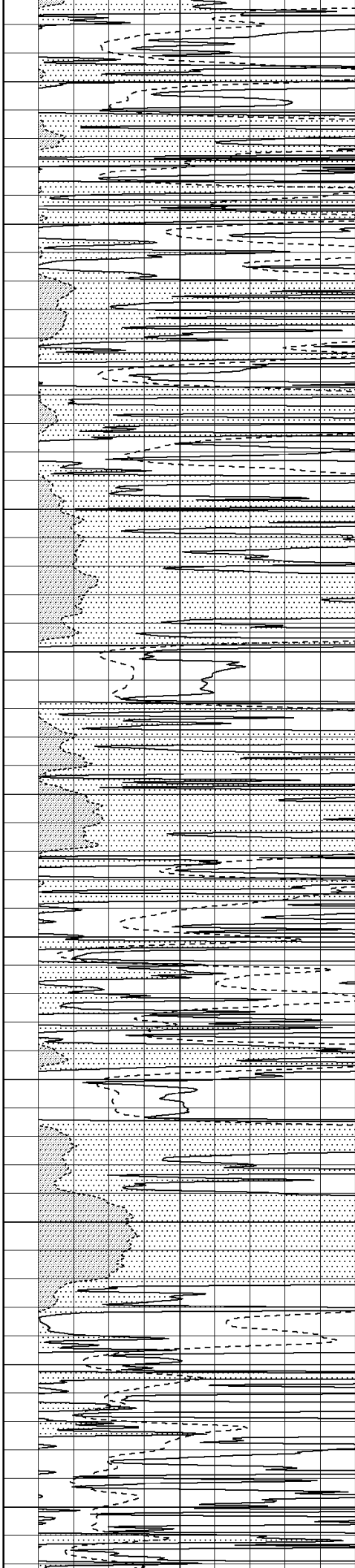
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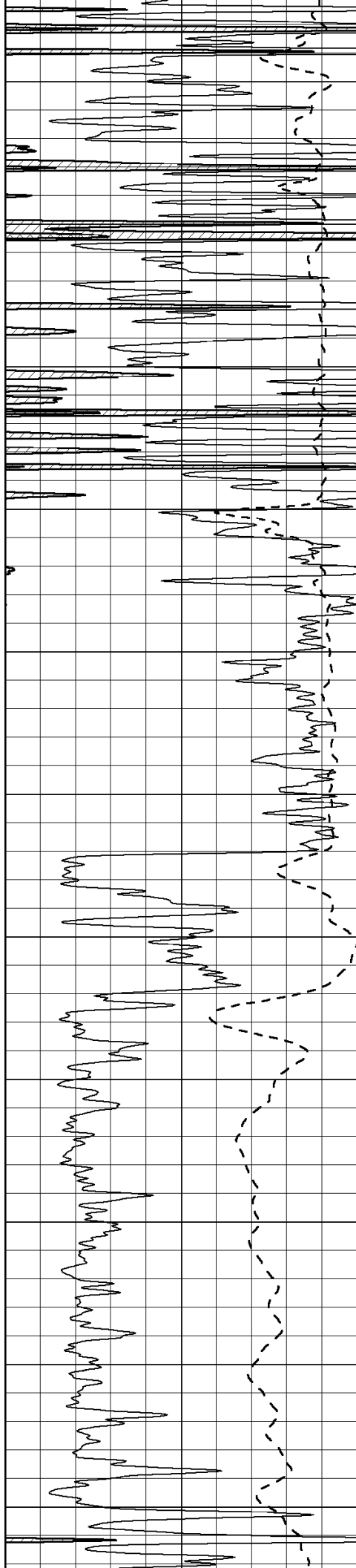
4100

4150

4200

4250





4300

4350

4400

4450

4500

4550

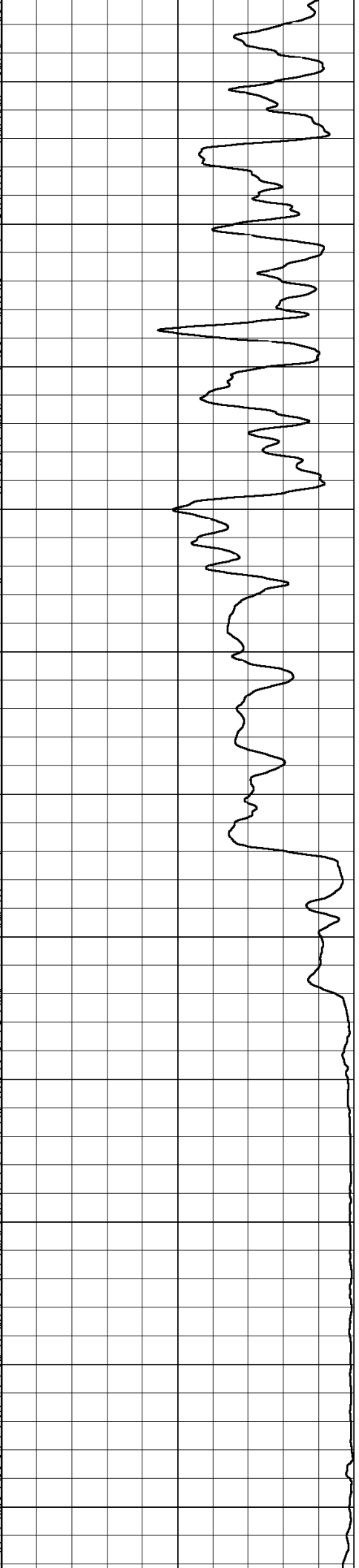
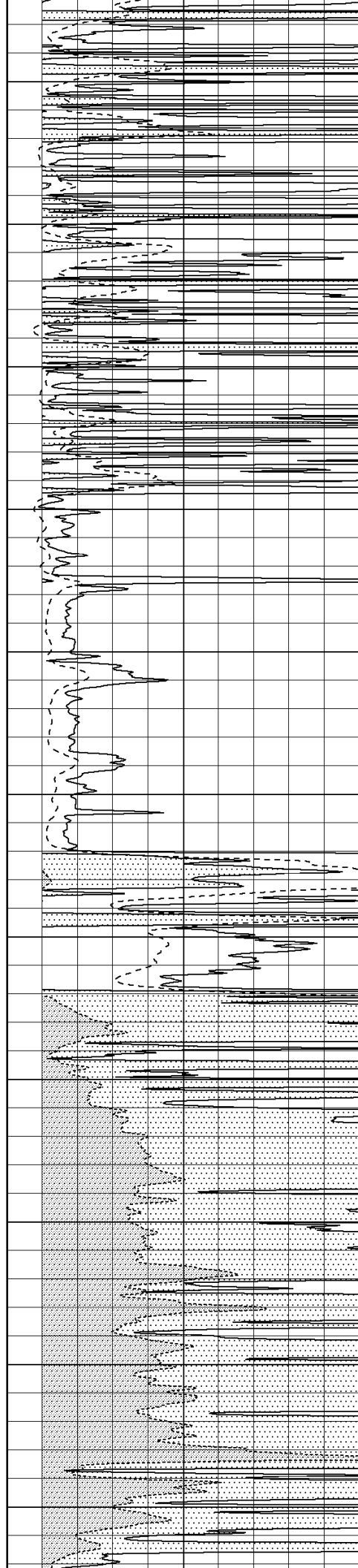
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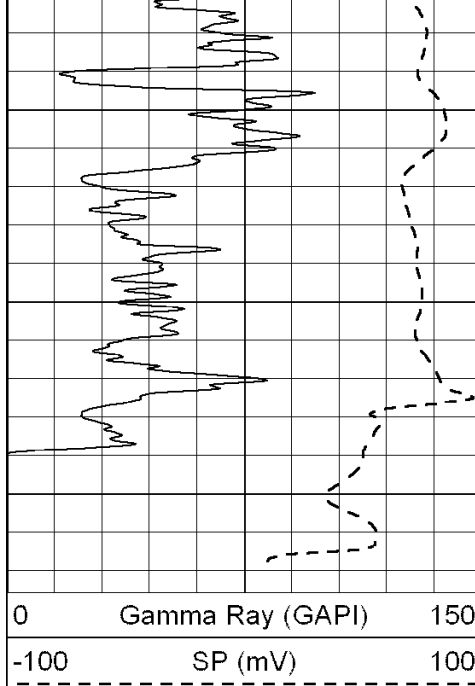
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4700

4750

4800



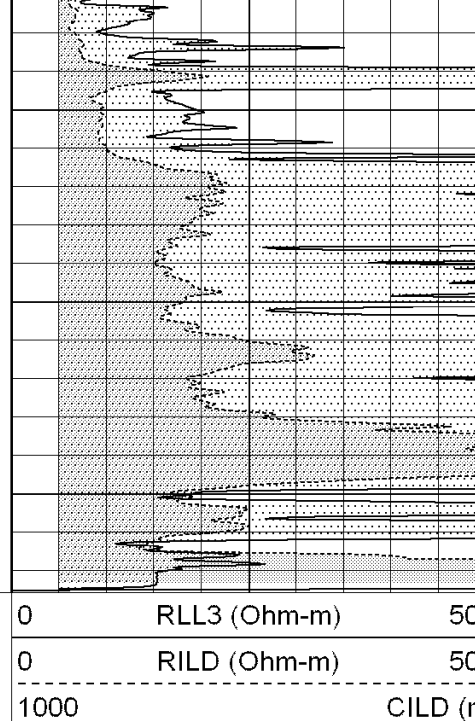


4850

4900

4950

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



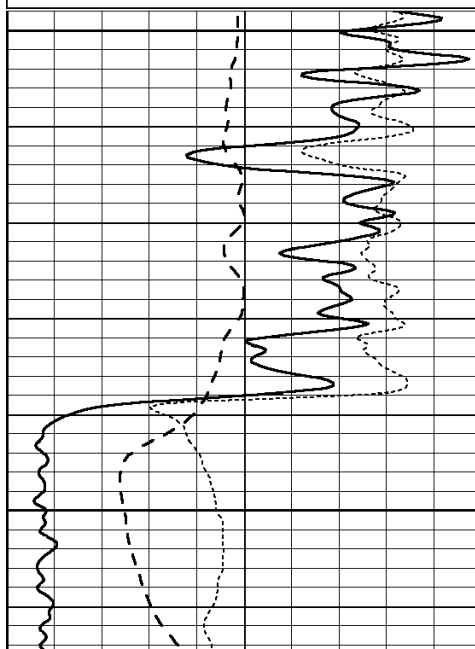
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ANHYDRITE

Database File: 004382ddn.db
 Dataset Pathname: pass3.6
 Presentation Format: dil
 Dataset Creation: Sat Dec 05 18:49:17 2009 by Calc Open-Cased 060407
 Charted by: Depth in Feet scaled 1:240

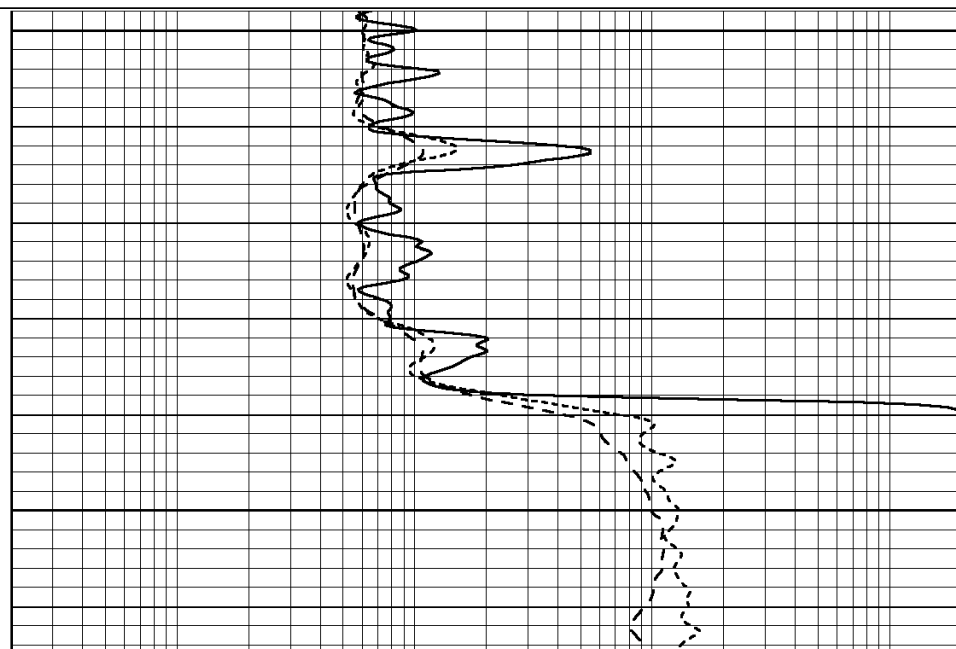
0 GAMMA RAY (GAPI) 150
 -100 SP (mV) 100
 -250 Rxo/Rt 50

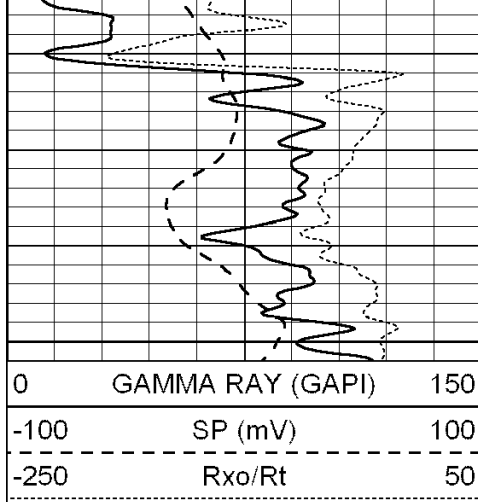
0.2 SHALLOW GUARD (Ohm-m) 2000
 0.2 DEEP INDUCTION (Ohm-m) 2000
 0.2 MEDIUM INDUCTION (Ohm-m) 2000



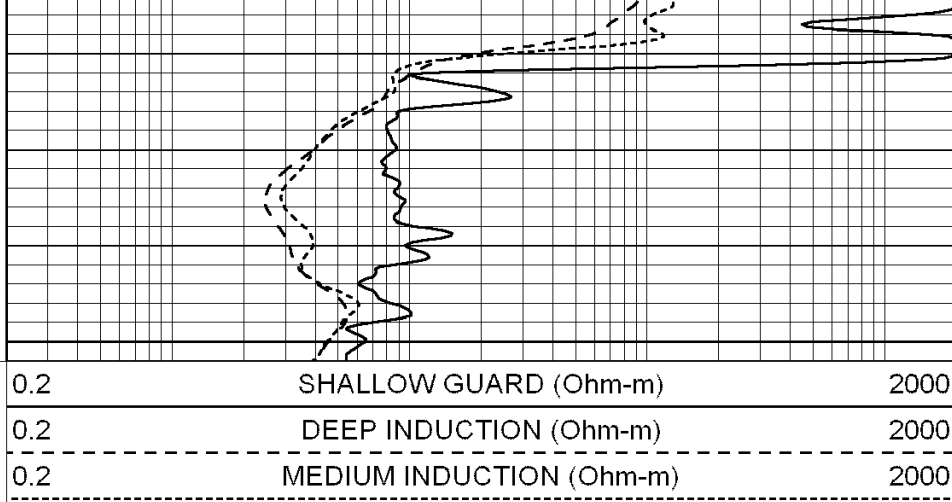
2300

2350





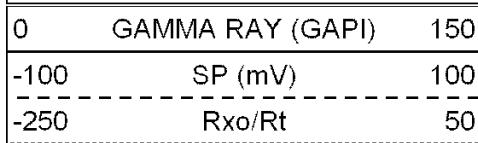
2400



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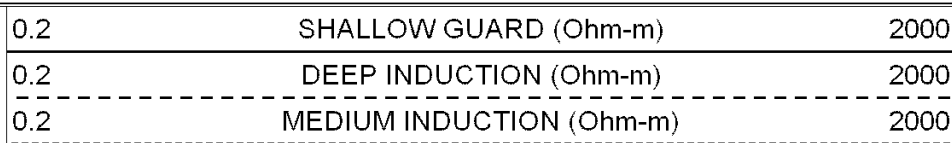
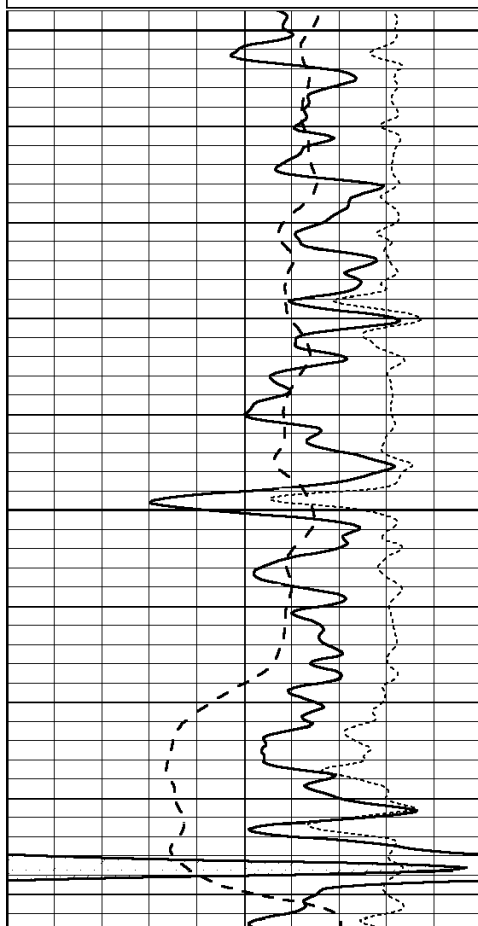
MAIN SECTION

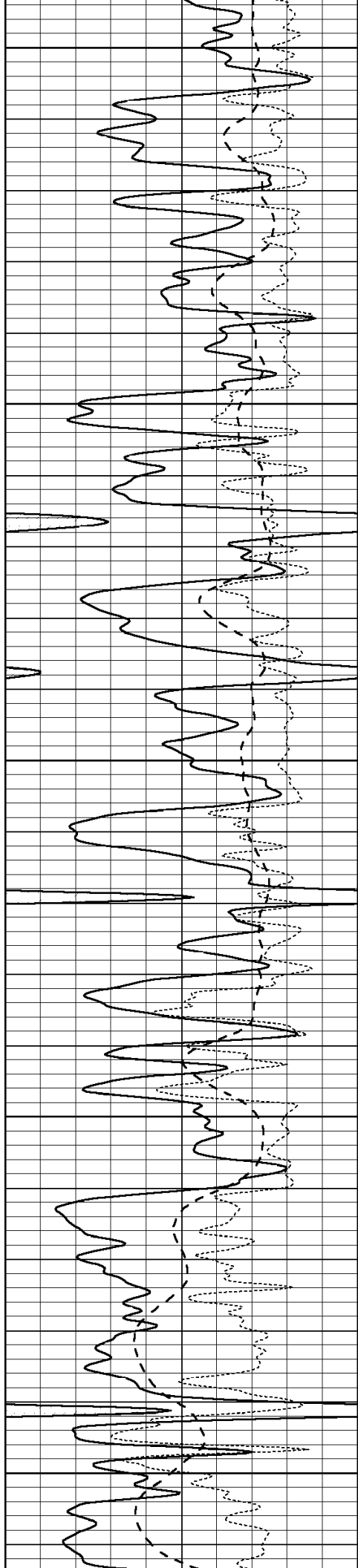
Database File: 004382ddn.db
 Dataset Pathname: pass3.5
 Presentation Format: dil
 Dataset Creation: Sat Dec 05 18:47:06 2009 by Calc Open-Cased 060407
 Charted by: Depth in Feet scaled 1:240



3200

3250





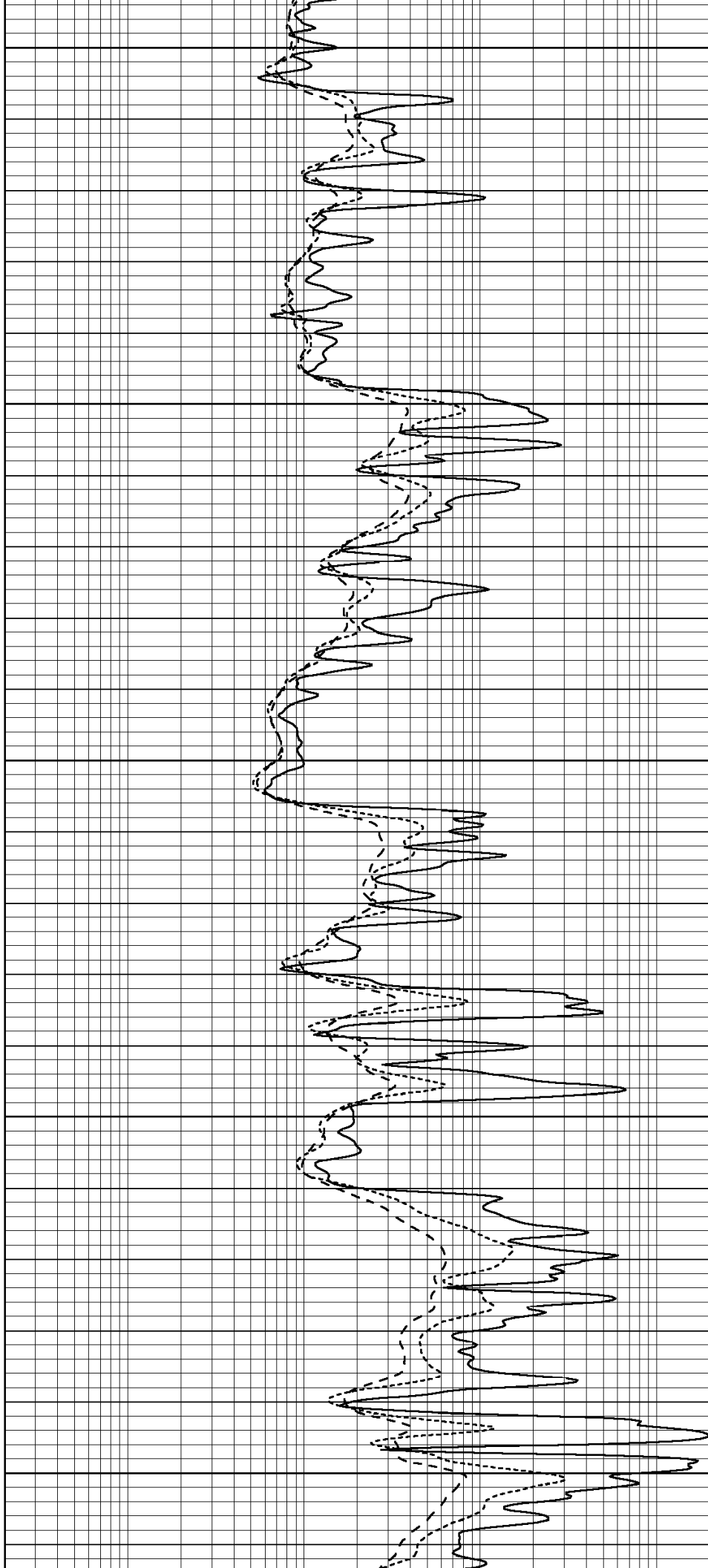
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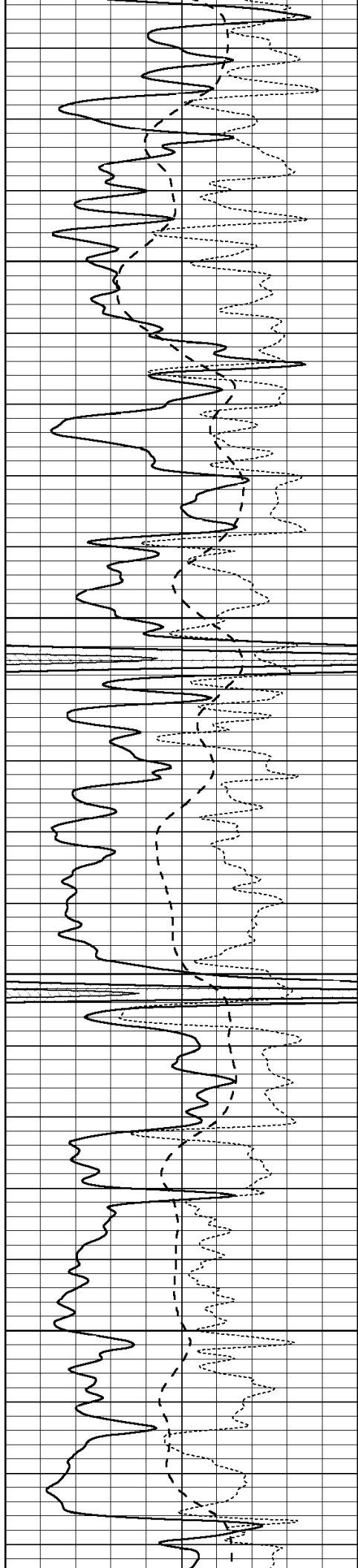
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3400

3450

3500



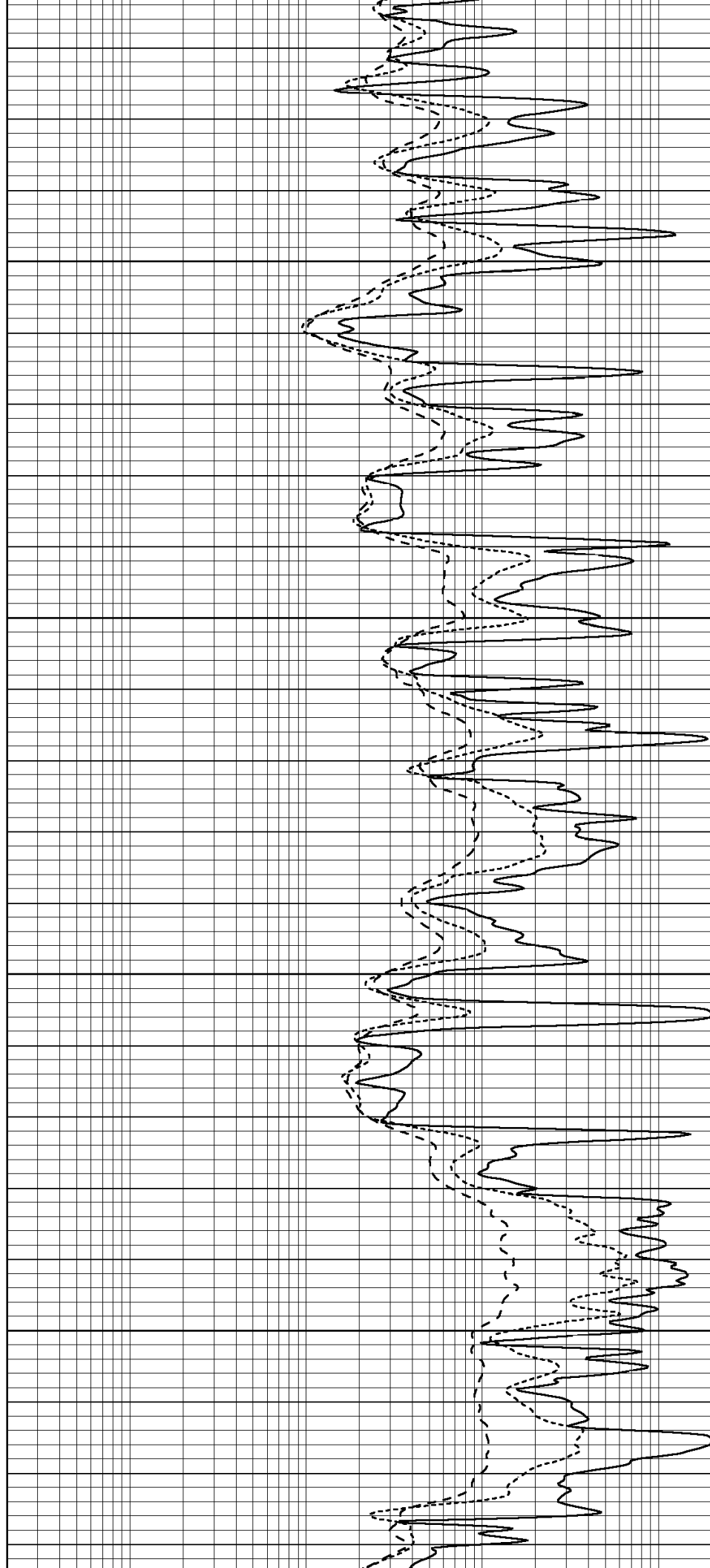


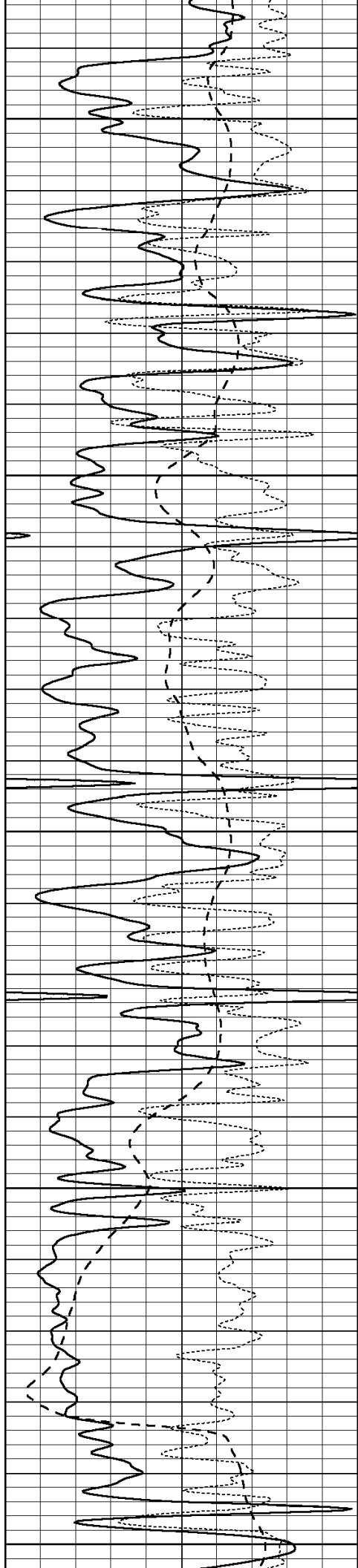
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3600

3650

3700





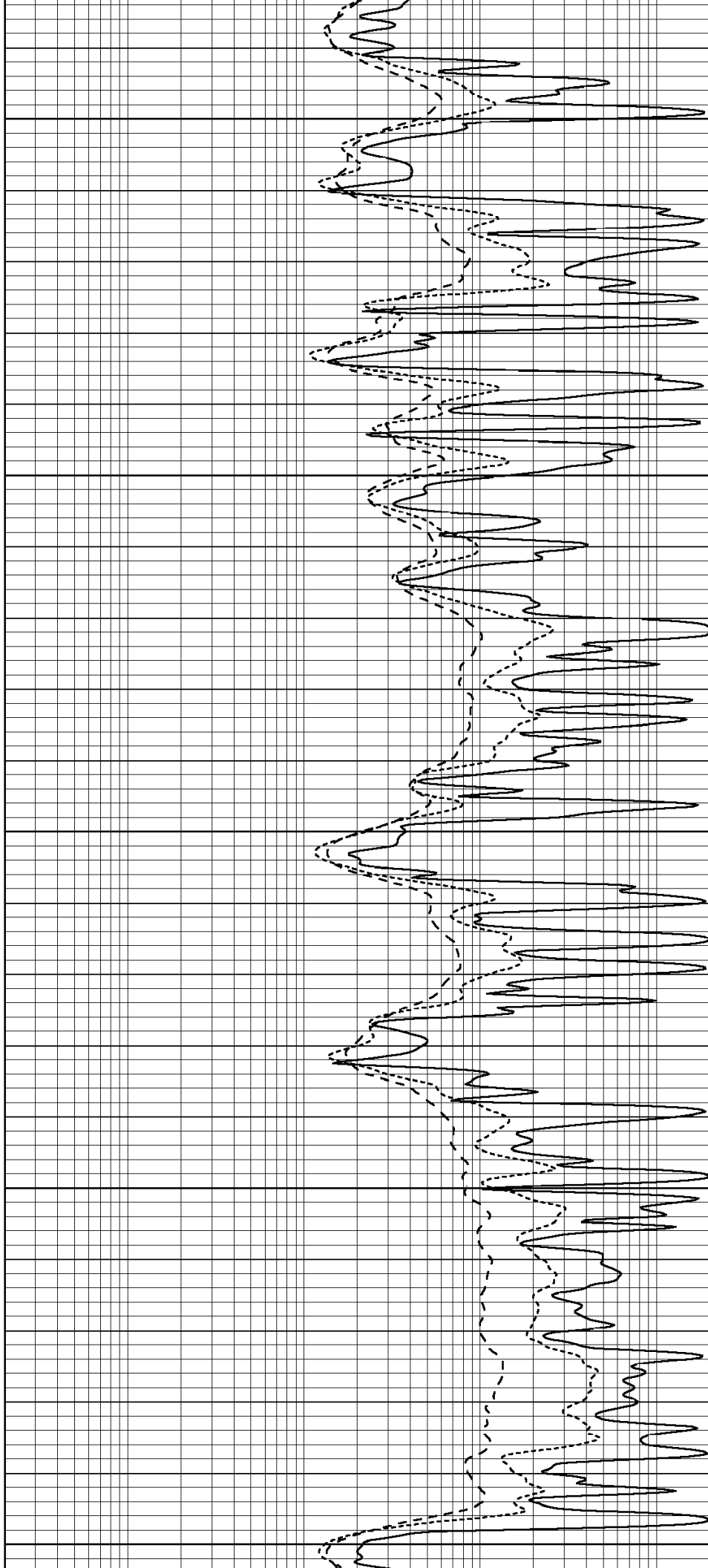
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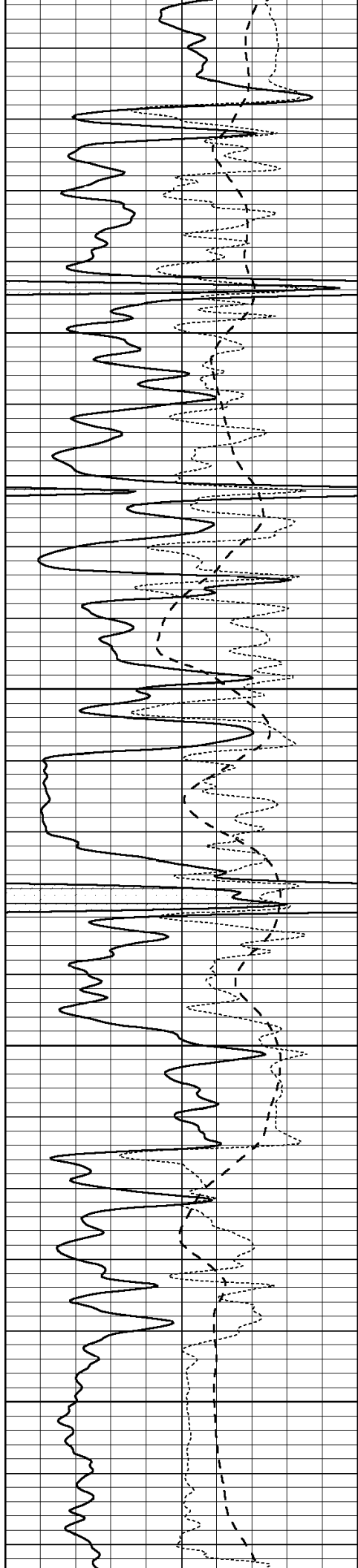
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3850

3900

3950



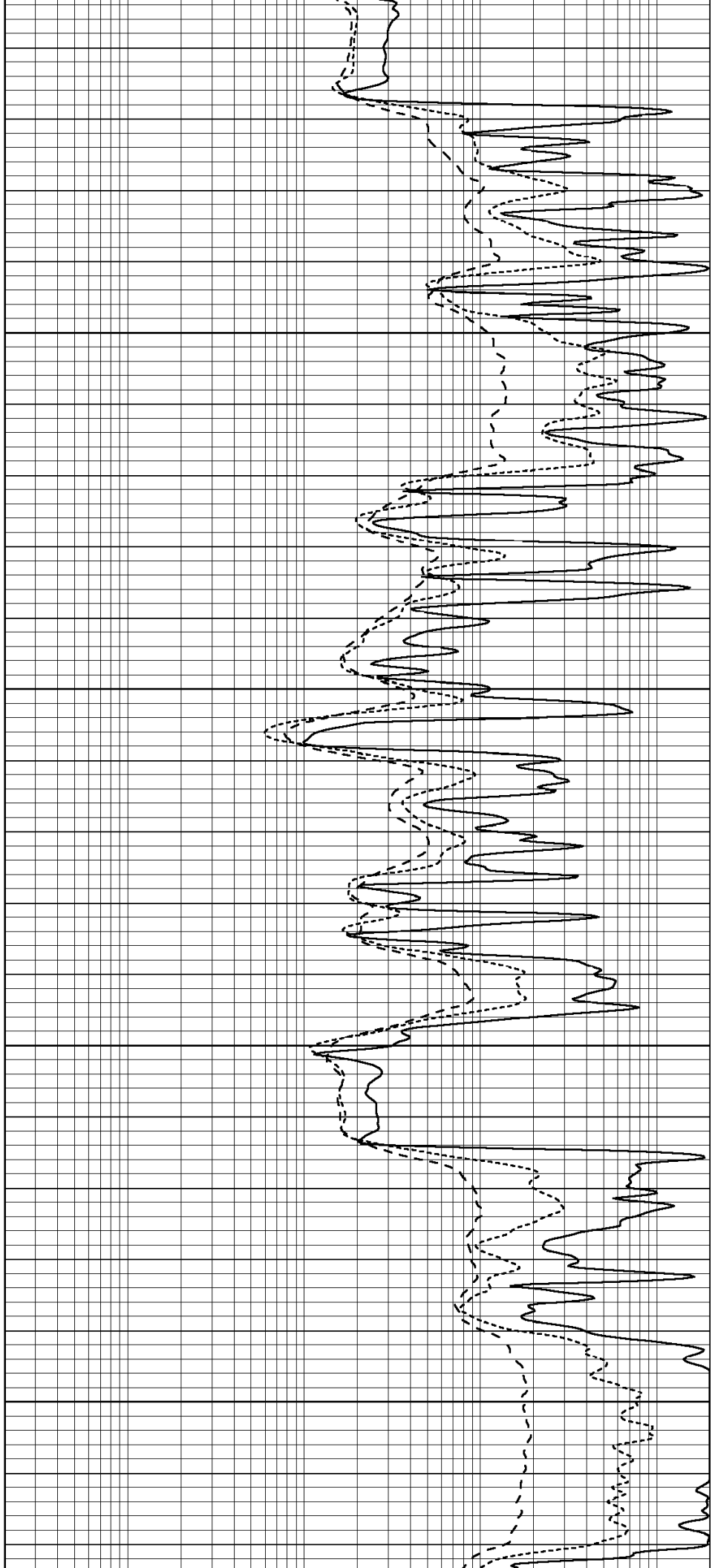


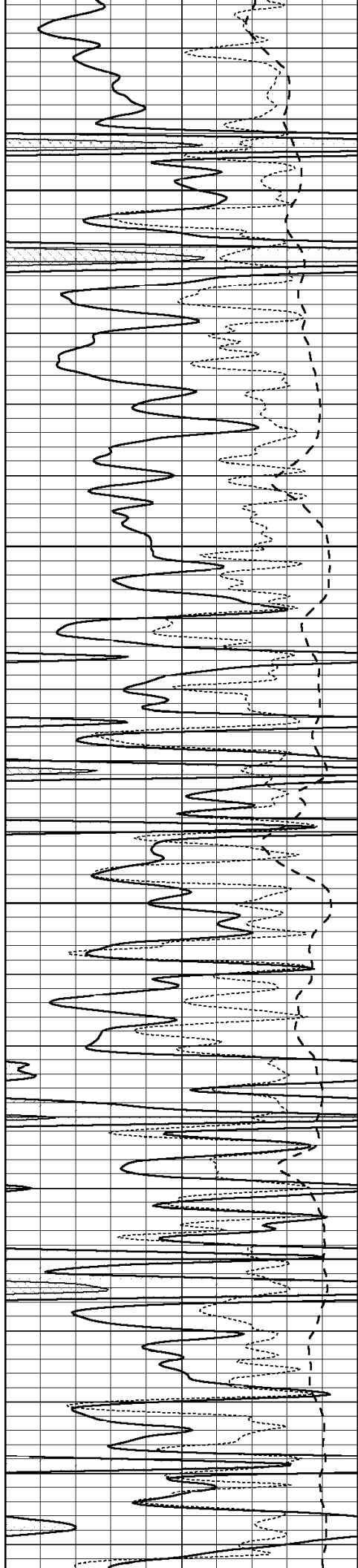
4000

4050

4100

4150



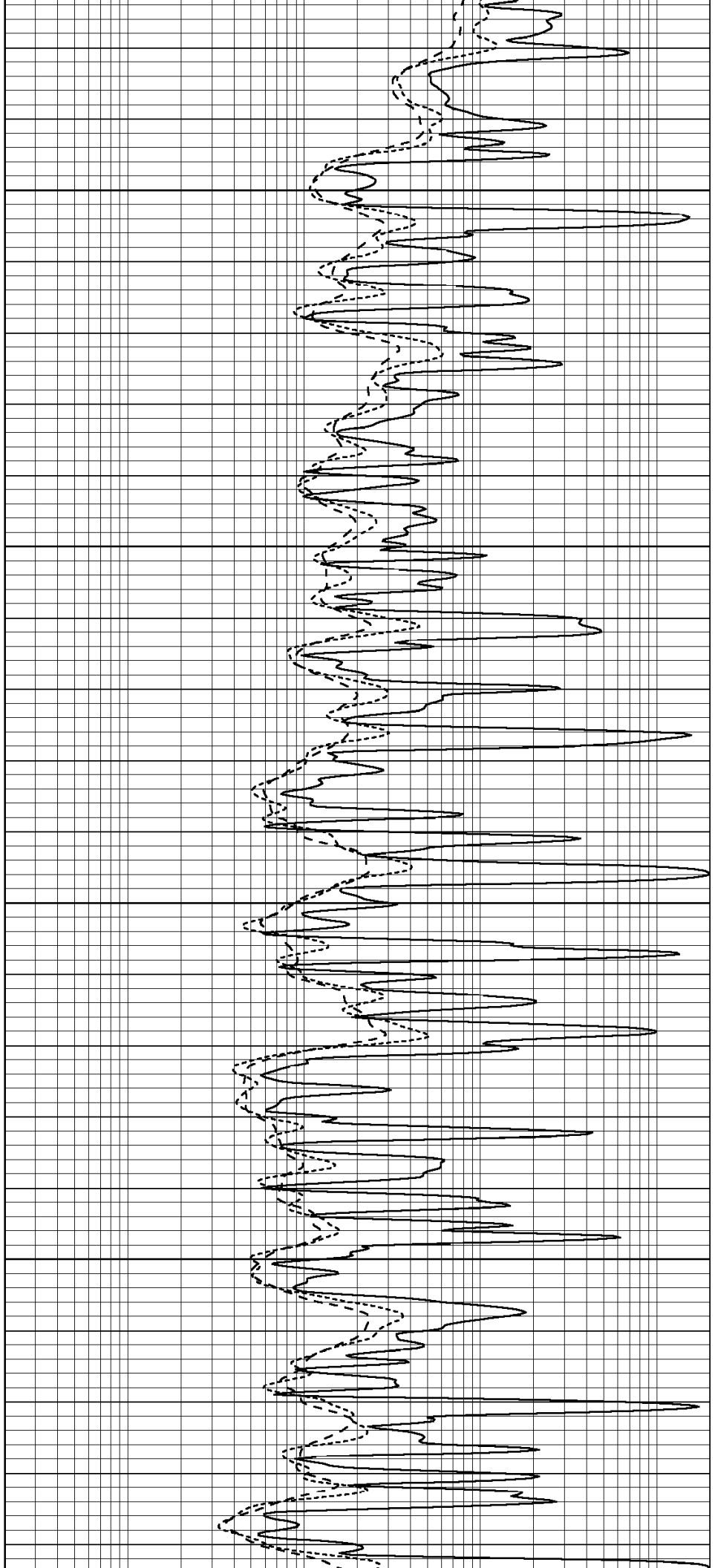


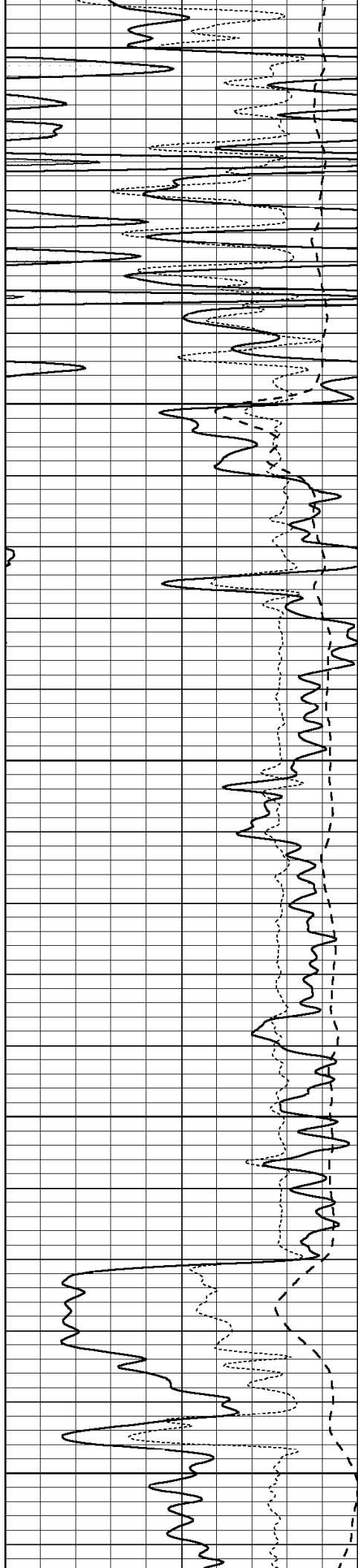
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4250

4300

4350





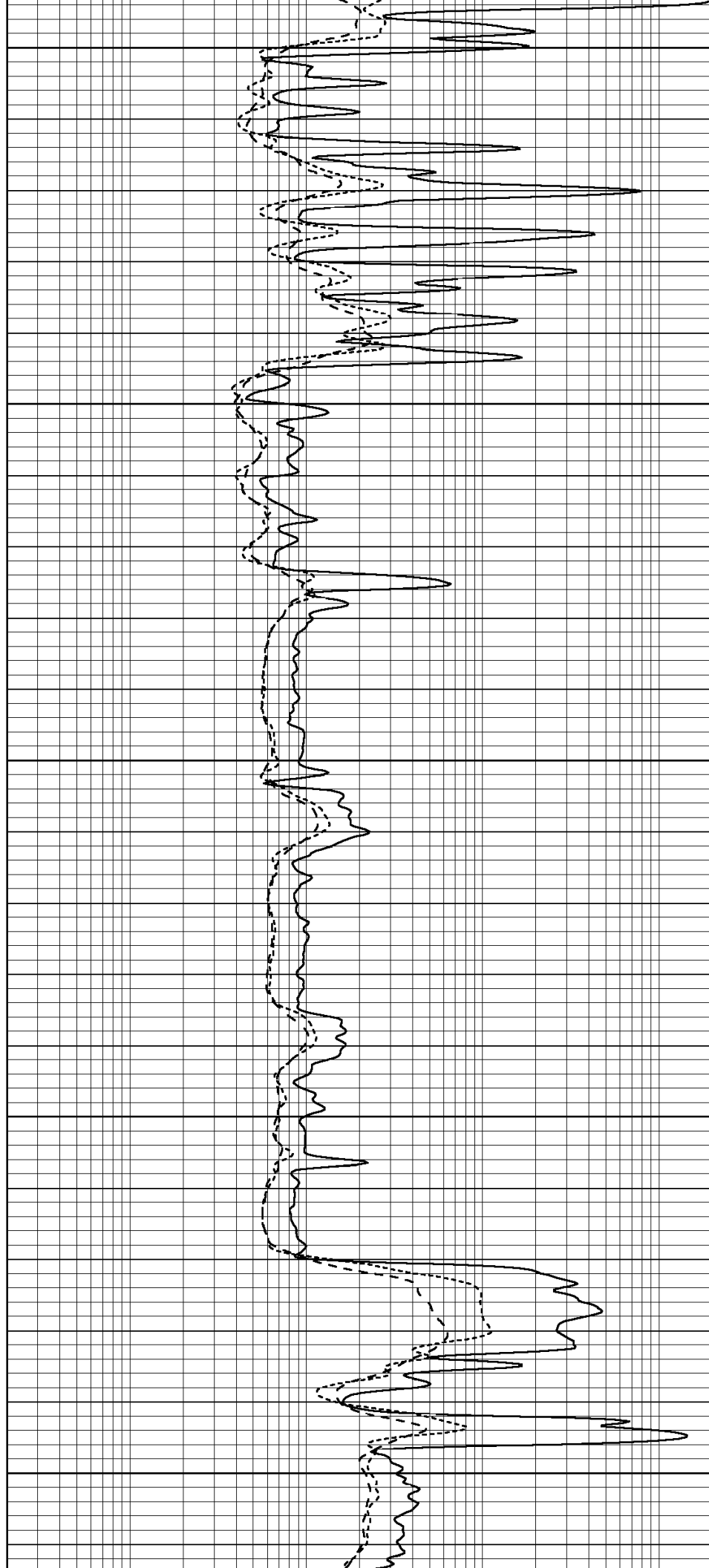
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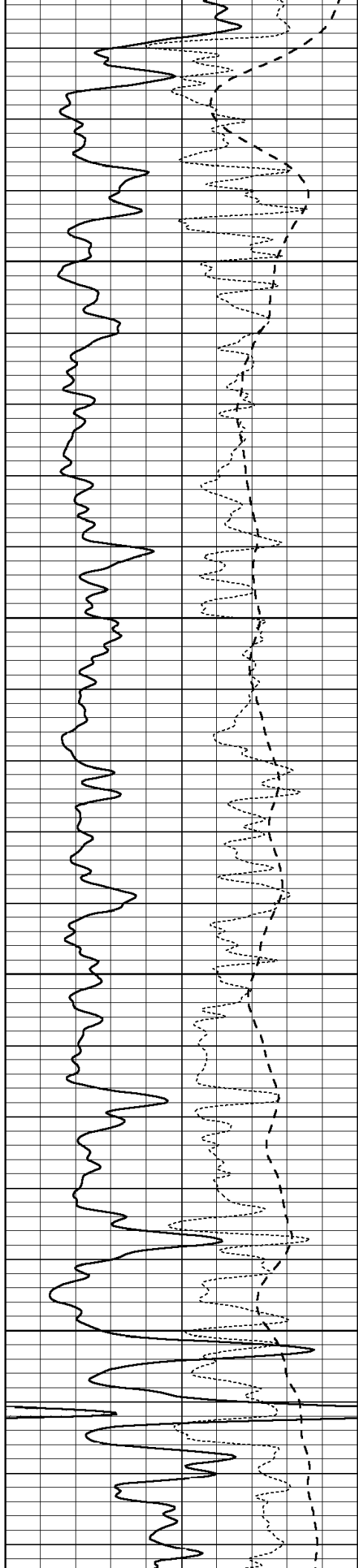
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4600



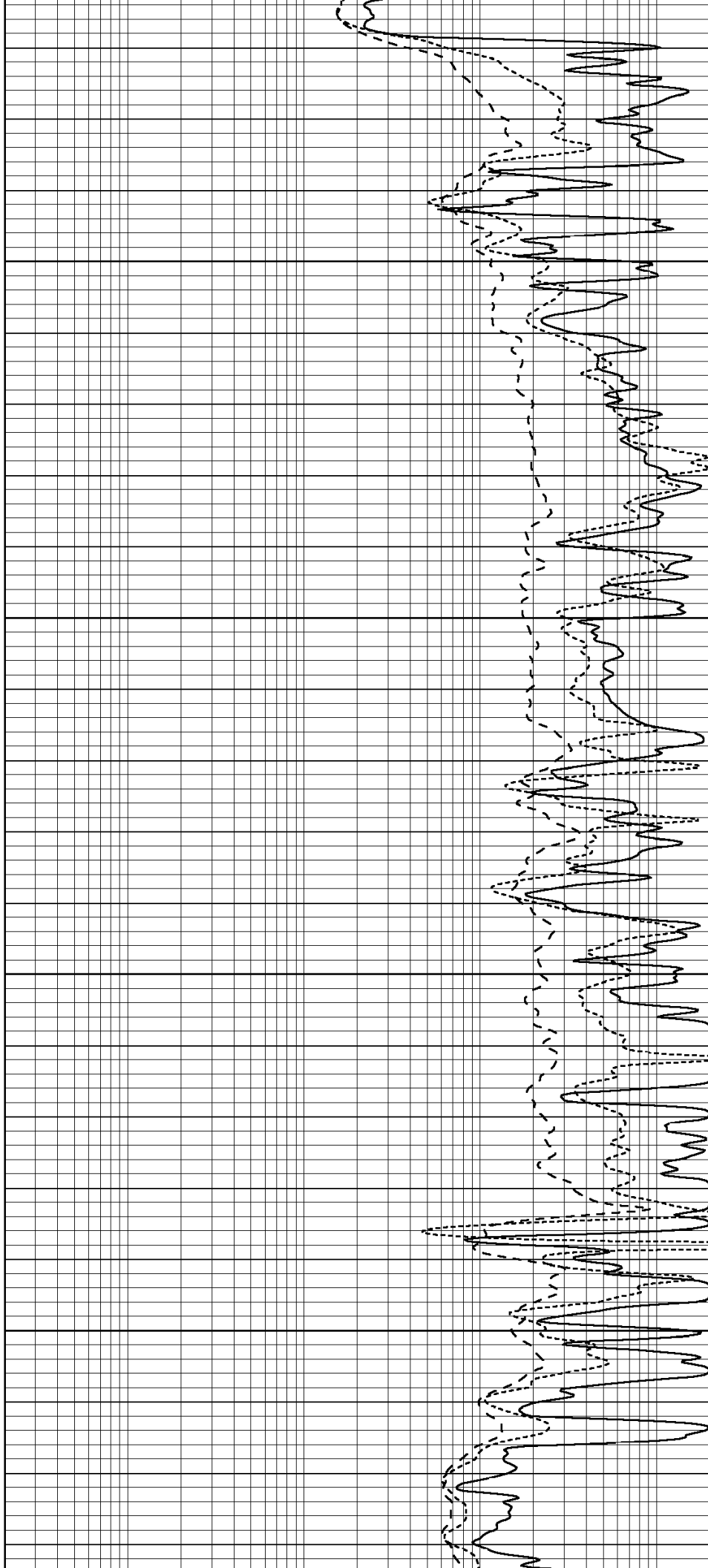


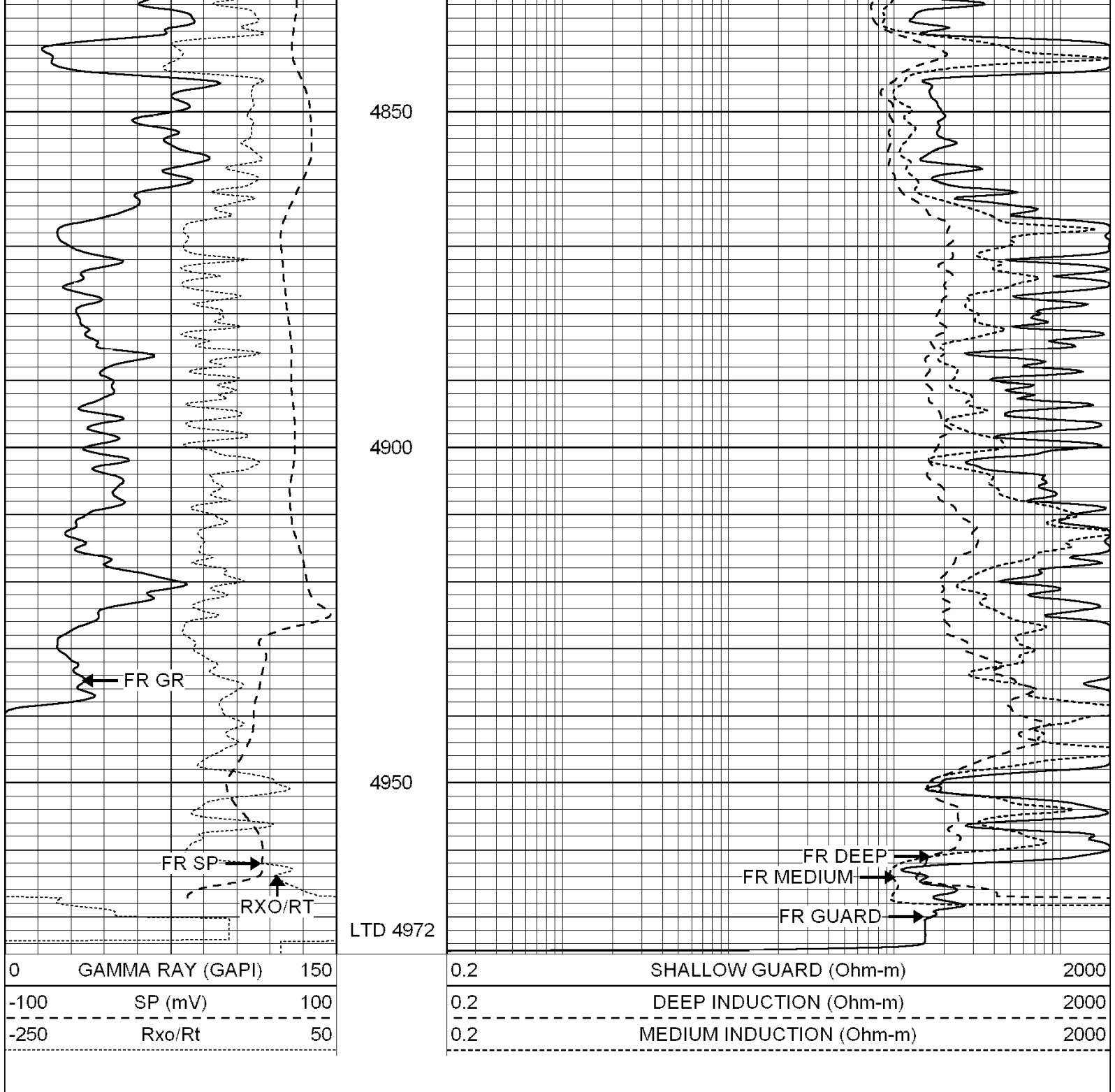
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4700

4750

4800







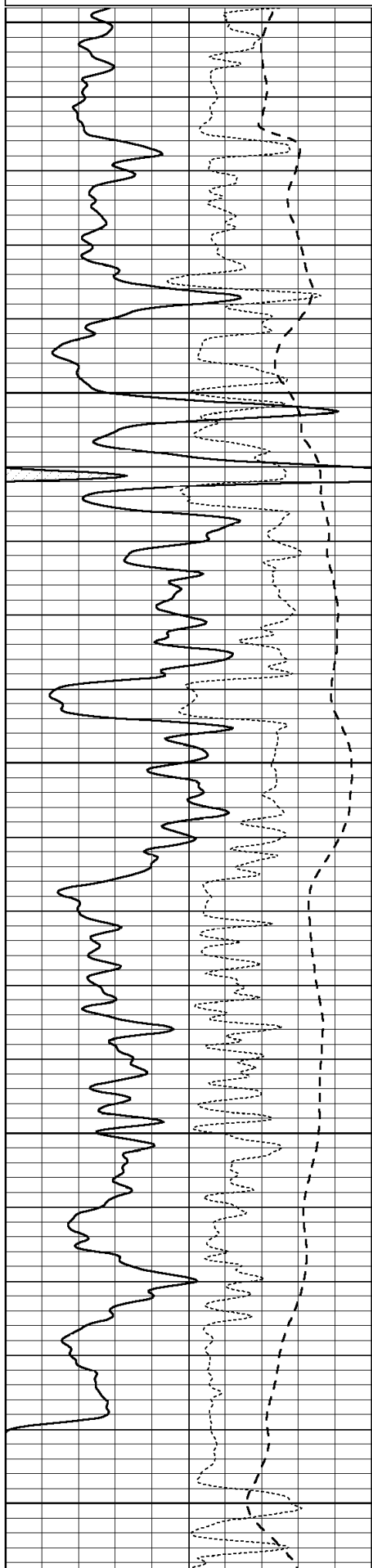
SUPERIOR
WELL SERVICES

SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File:	004382ddn.db
Dataset Pathname:	pass2.12
Presentation Format:	dil
Dataset Creation:	Sat Dec 05 18:42:55 2009
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



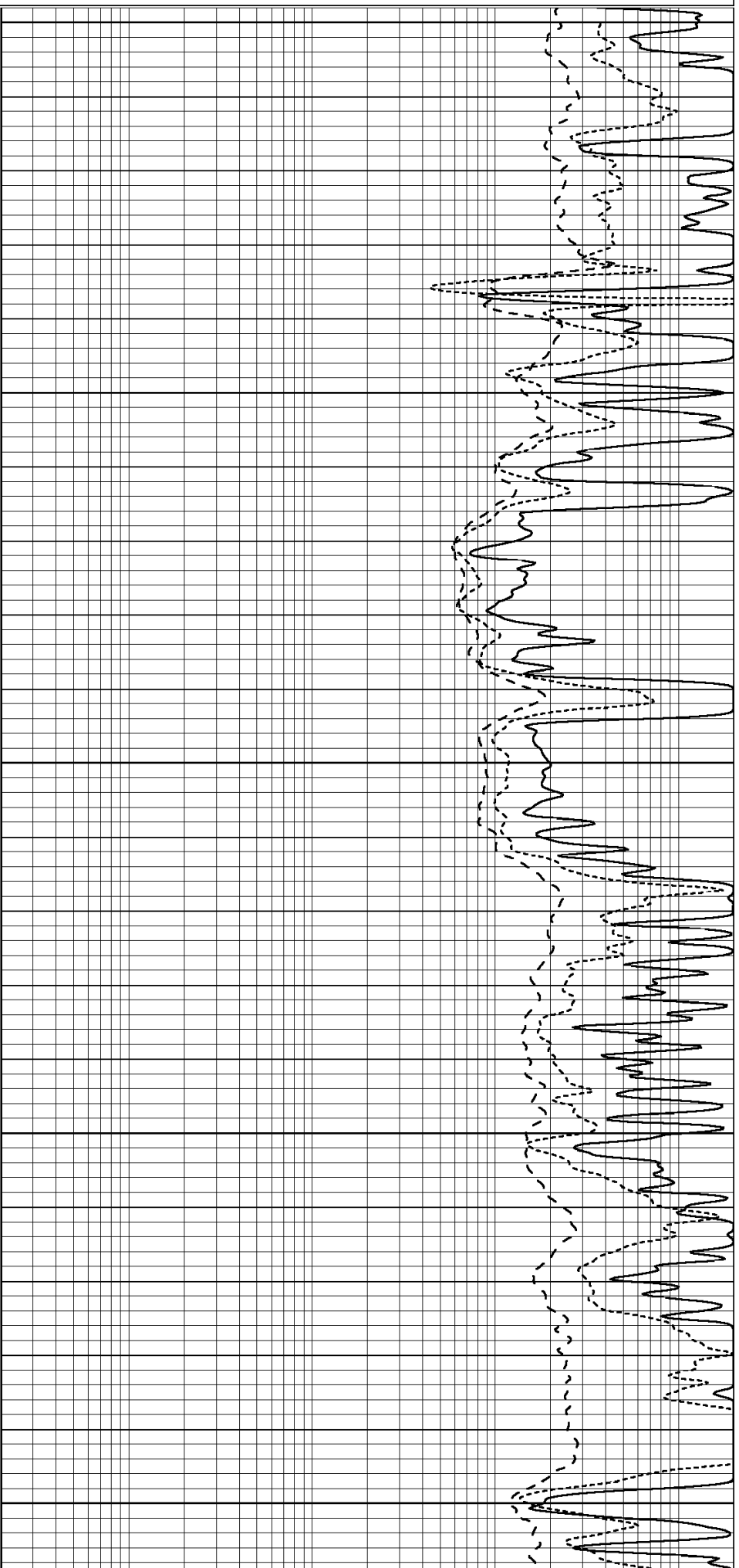
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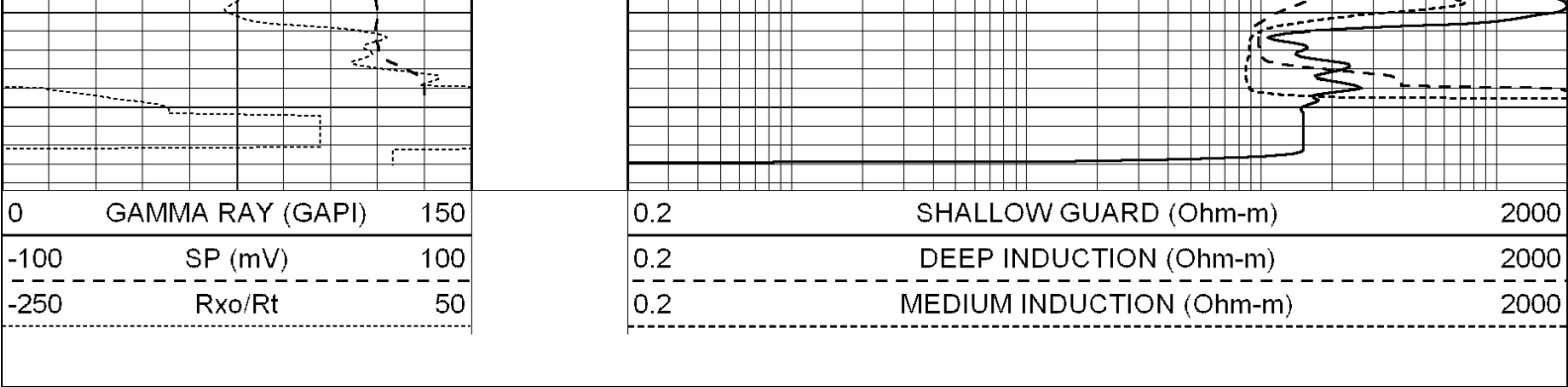
4800

4850

4900

4950





Calibration Report

Database File: 004382ddn.db
Dataset Pathname: pass3.5
Dataset Creation: Sat Dec 05 18:47:06 2009 by Calc Open-Cased 060407

Dual Induction Calibration Report

Serial-Model:
Performed:

DIL6-GEAR
Sat Dec 05 17:38:03 2009

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.001	0.644	V	0.000	400.000	mmho-m	660.000	2.000
Medium	0.020	0.738	V	0.000	462.500	mmho-m	740.000	-21.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000
Medium	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000

Litho Density Calibration Report

Serial: 004N Model: PRB
Performed Tue Sep 08 13:49:55 2009

Litho Density Calibration					
	Background	Magnesium	Aluminum	Sandstone	
Window 1	1535.8	11161.3	3721.6	12498.8	cps
Window 2	1402.6	9435.7	3219.7	10417.7	cps
Window 3	1077.6	4422.0	1779.2	4753.4	cps
Window 4	337.3	342.8	337.4	343.7	cps
Long Space	0.0	8033.1	1817.0	9015.1	cps
Short Space	1.2	1671.8	1138.1	1813.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 45.5	Rib Slope	: 1.017	Density/Spine Ratio	: 0.573
Spine Angle	: 75.5	Spine Slope	: 3.865	Spine Intercept	: -19.7

Caliper		
Low Ref	Readings	Reference
High Ref	1.1	6.7
	3.0	14.0
	Gain: 3.8	Offset: 2.5

Compensated Neutron Calibration Report

Serial Number: NEU_4I
Tool Model: G

CALIBRATION						
Detector		Readings		Target		Normalization
Short Space		996.00	cps	1000.00	cps	1.0000
Long Space		977.00	cps	1000.00	cps	1.0000
Gamma Ray Calibration Report						
Serial Number:		GR4				
Tool Model:		OPEN				
Performed:		Sat Dec 05 17:05:34 2009				
Calibrator Value:		200.0	GAPI			
Background Reading:		0.0	cps			
Calibrator Reading:		189.0	cps			
Sensitivity:		0.7500	GAPI/cps			