



DUAL INDUCTION LOG

Company R L INVESTMENT, LLC.
 Well SCHWARTZ "A" #2
 Field SCHWARTZ
 County THOMAS
 State KANSAS

Company R L INVESTMENT, LLC.
 Well SCHWARTZ "A" #2
 Field SCHWARTZ
 County THOMAS State KANSAS

Location: API # : 15-193-20993-0000
 Permanent Datum GROUND LEVEL Elevation 2944
 Log Measured From KELLY BUSHING 7' A.G.L.
 Drilling Measured From KELLY BUSHING
 SEC 1 TWP 9S RGE 31W
 335' FSL & 882' FWL
 NW - SE - SW - SW
 Other Services
 CDL/CNL
 MEL
 Elevation
 K.B. 2951
 D.F. 2949
 G.L. 2944

Date	4/29/17
Run Number	ONE
Depth Driller	4620
Depth Logger	4620
Bottom Logged Interval	4618
Top Log Interval	00
Casing Driller	8 5/8"@234'
Casing Logger	232
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/73
pH / Fluid Loss	10.5/7.2
Source of Sample	FLOWLINE
Rim @ Meas. Temp	1.50@80F
Rmf @ Meas. Temp	1.13@80F
Rmc @ Meas. Temp	1.80@80F
Source of Rmf / Rmc	MEASUREMENT
Rim @ BHT	.984@122F
Time Circulation Stopped	2.5 HOURS
Time Logger on Bottom	2:15 A.M.
Maximum Recorded Temperature	122F
Equipment Number	922339
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	PAT DEENIHAN

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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 ELI WIRELINE HAYS, KANSAS (785) 628-6395
 DIRECTIONS
 MENLO, KS., 4S., 3/4W., N. INTO



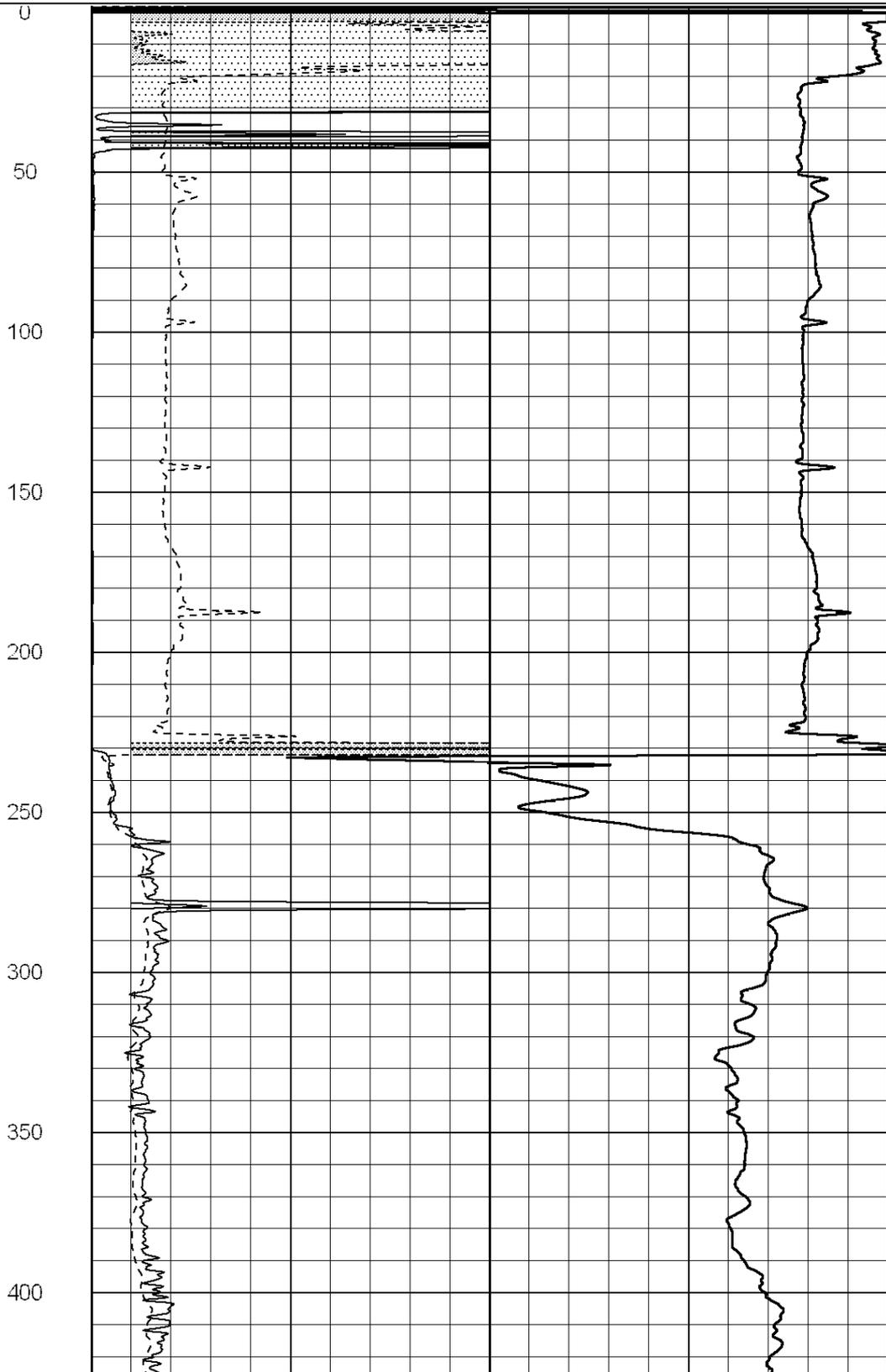
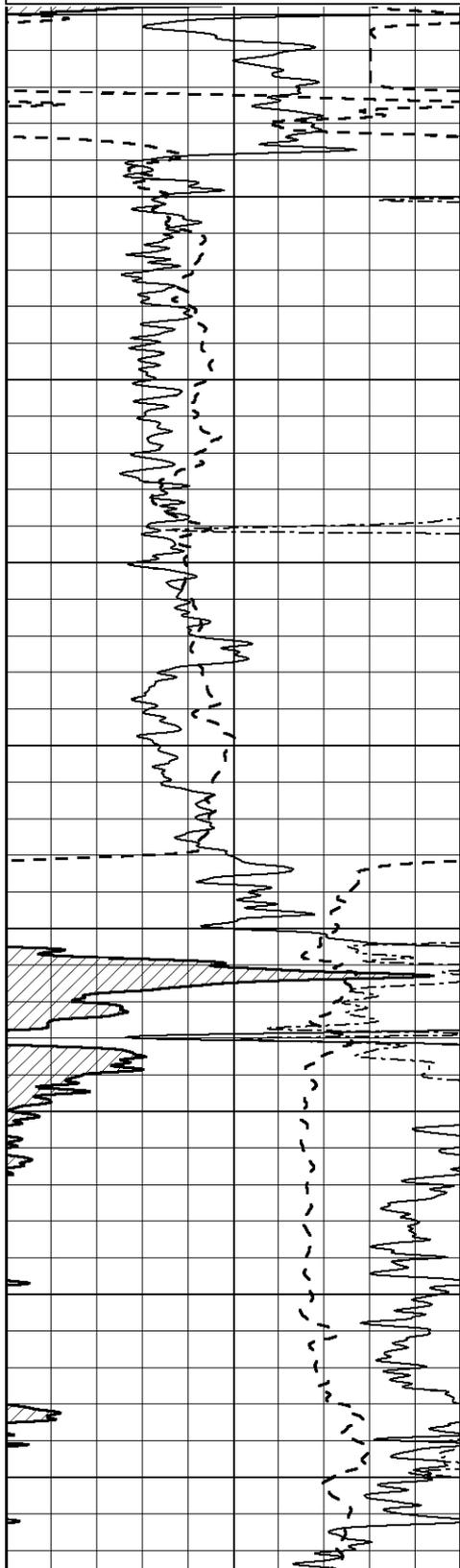
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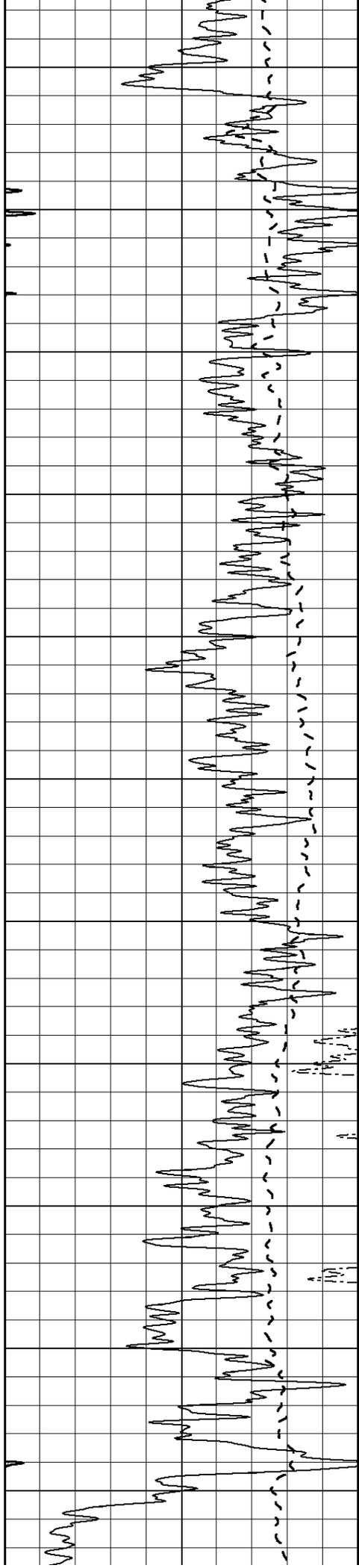
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 Dataset Pathname: pass3.5
 Presentation Format: dil2
 Dataset Creation: Sat Apr 29 03:45:05 2017 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

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

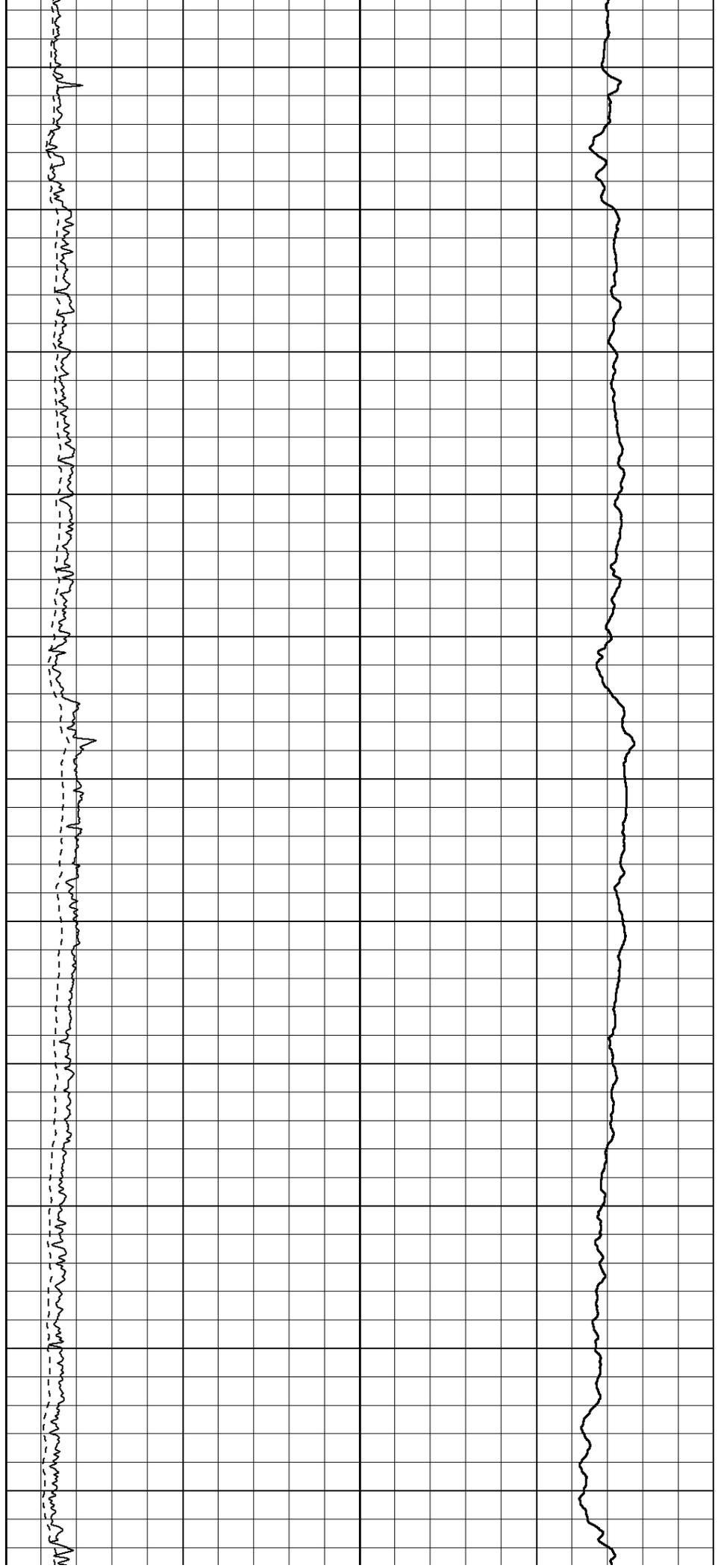
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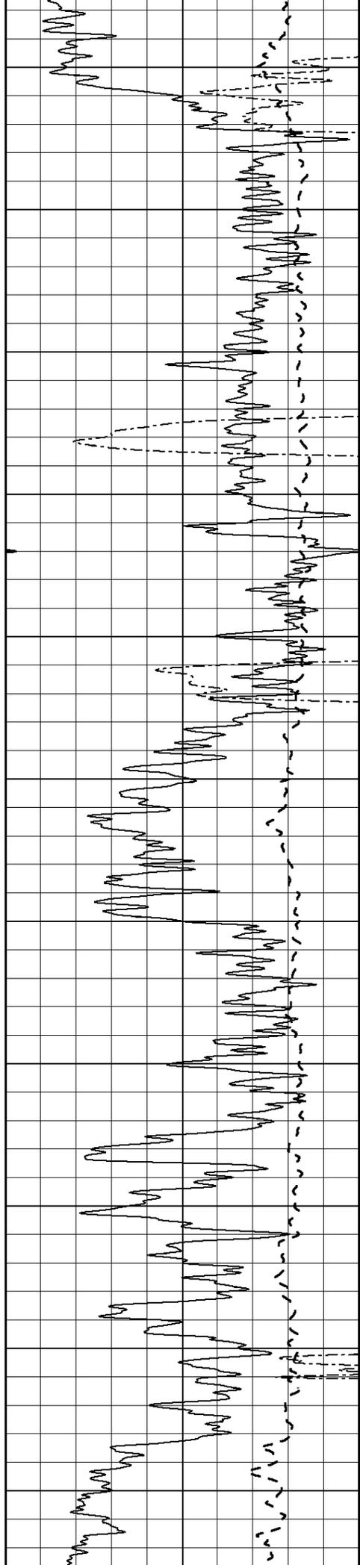
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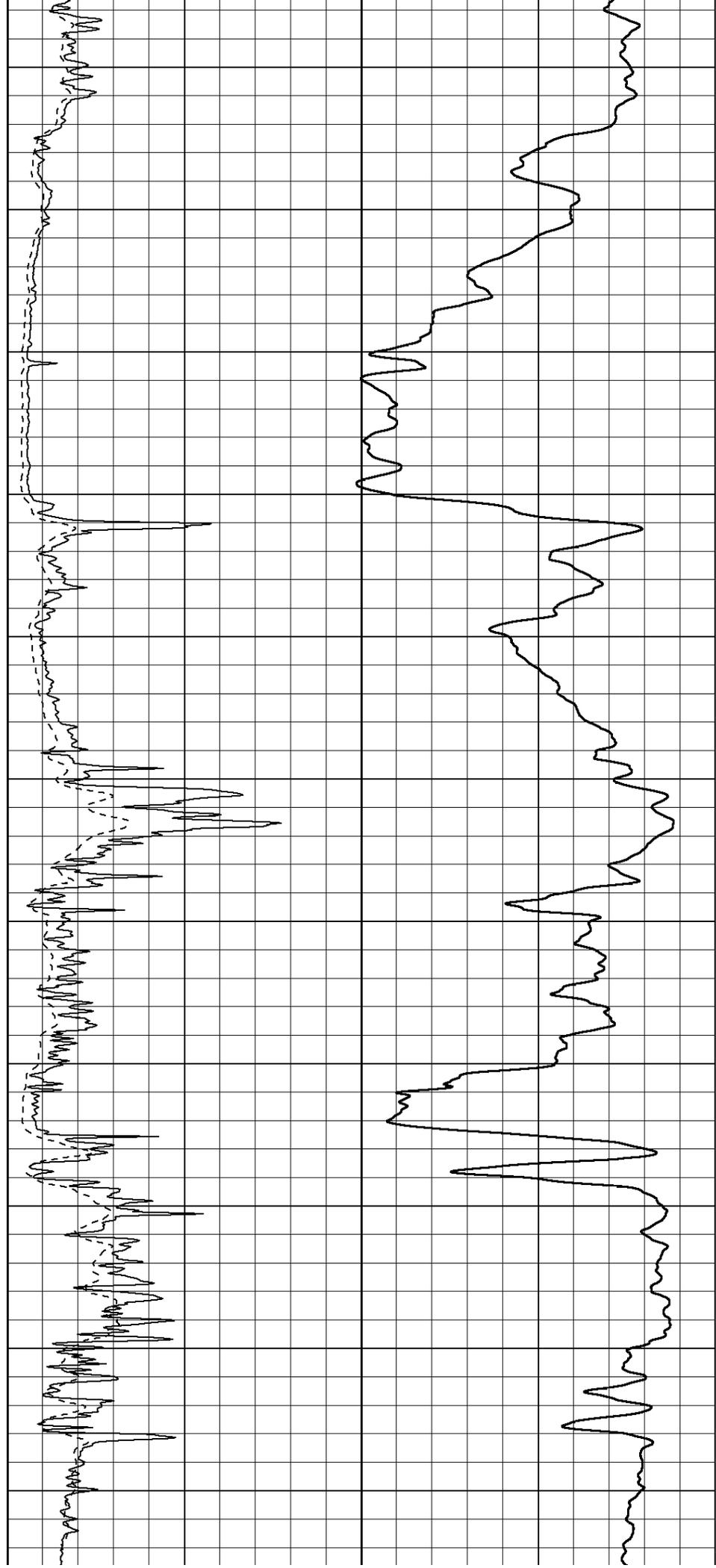
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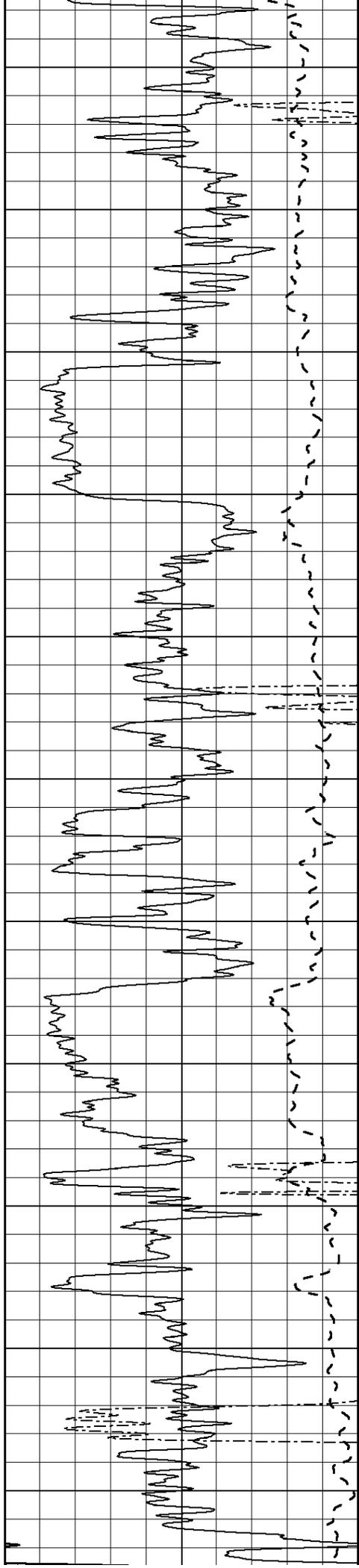
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1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500





1550

1600

1650

1700

1750

1800

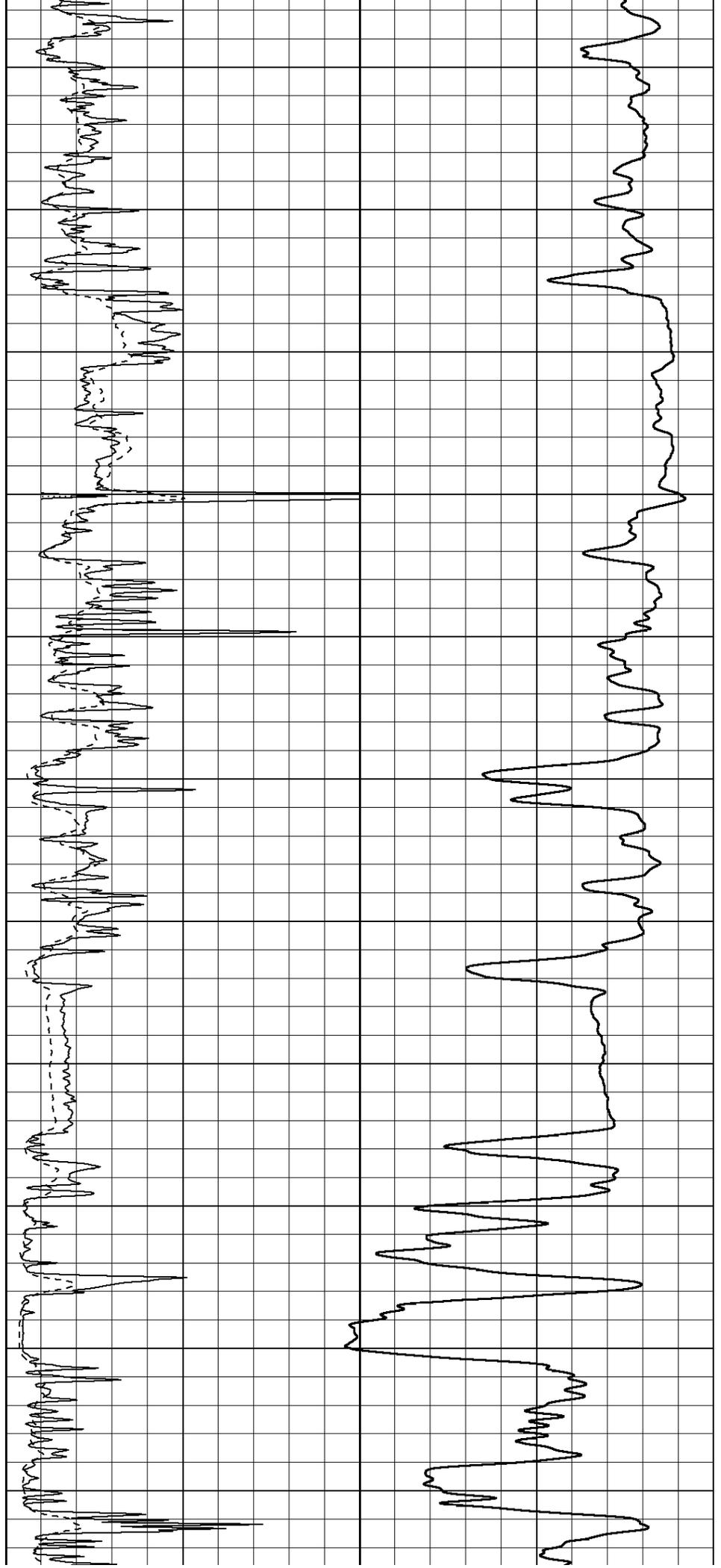
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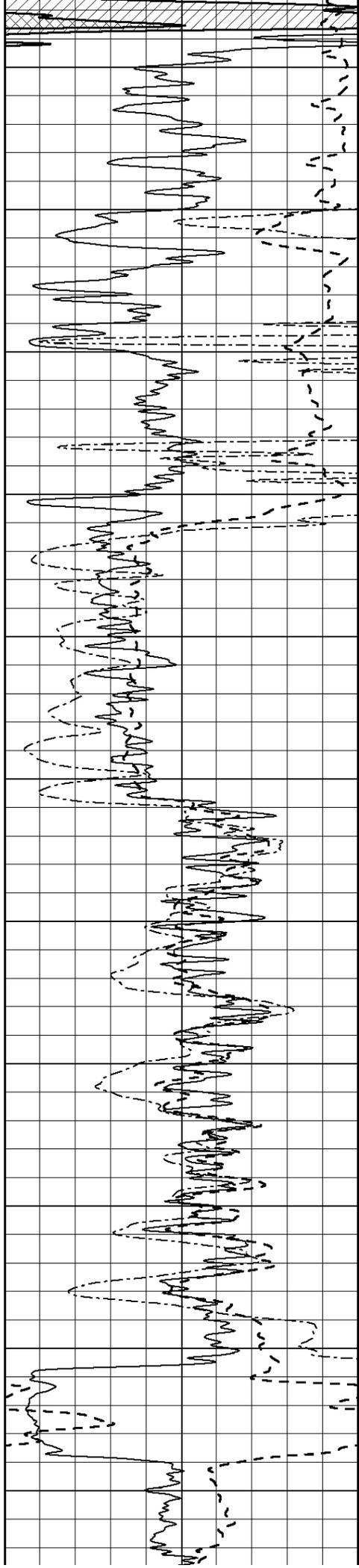
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1950

2000

2050





2100

2150

2200

2250

2300

2350

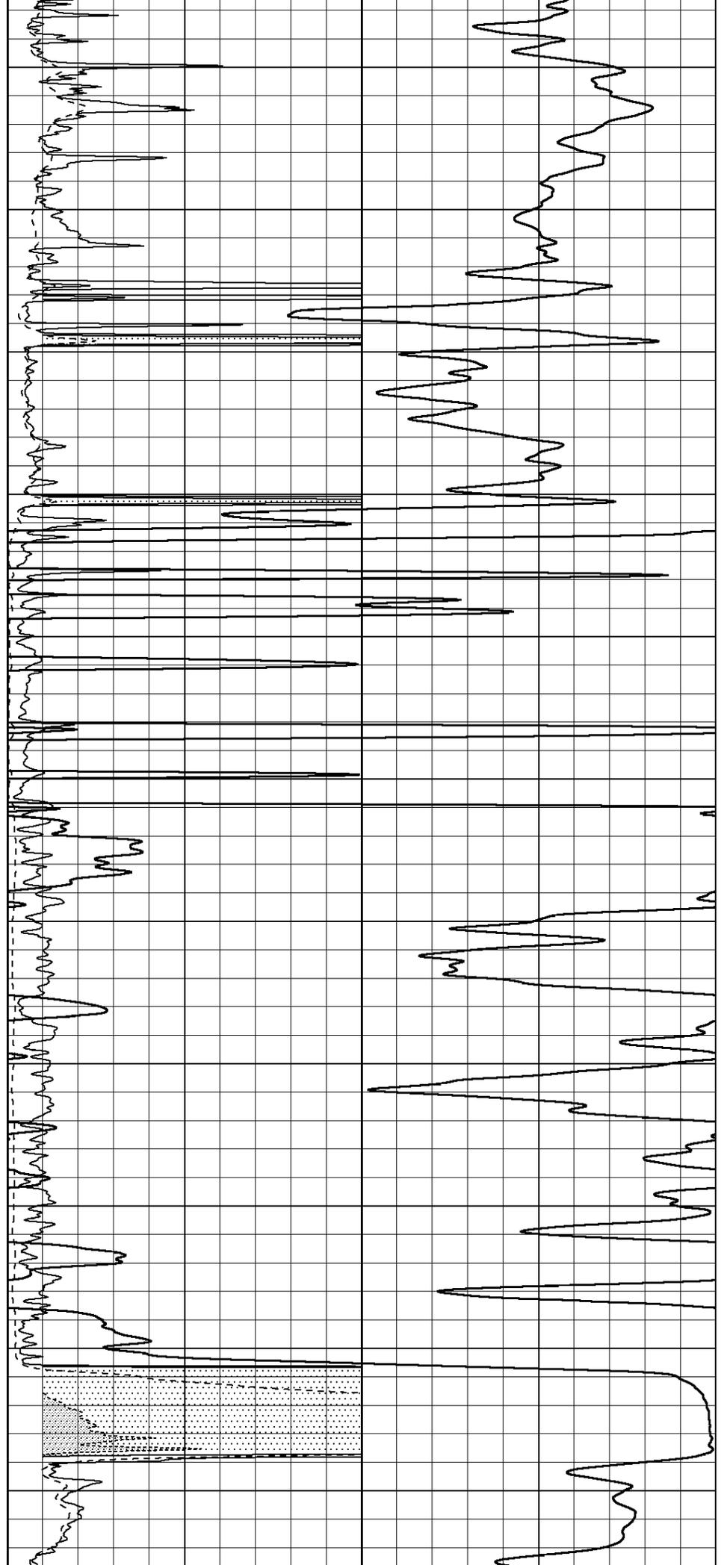
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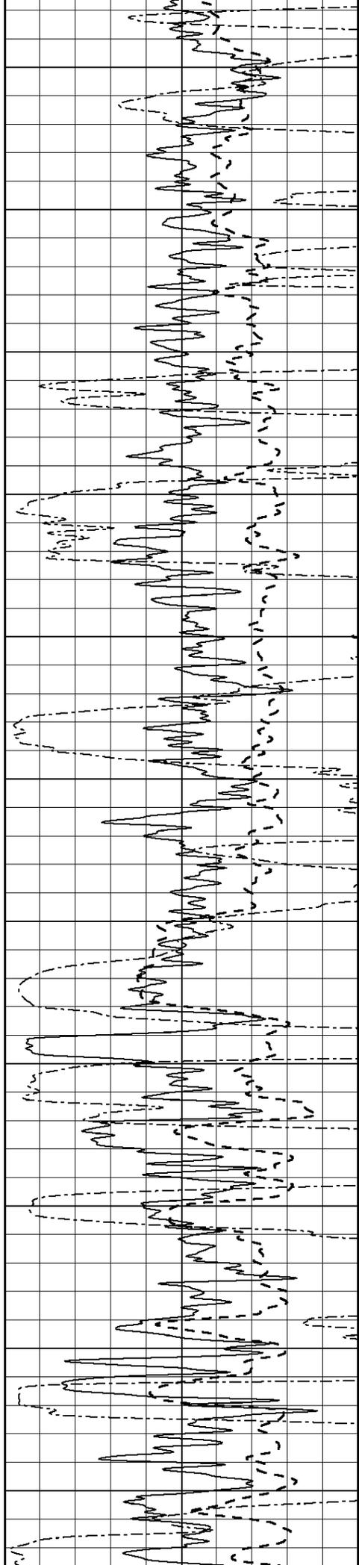
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2500

2550

2600





2650

2700

2750

2800

2850

2900

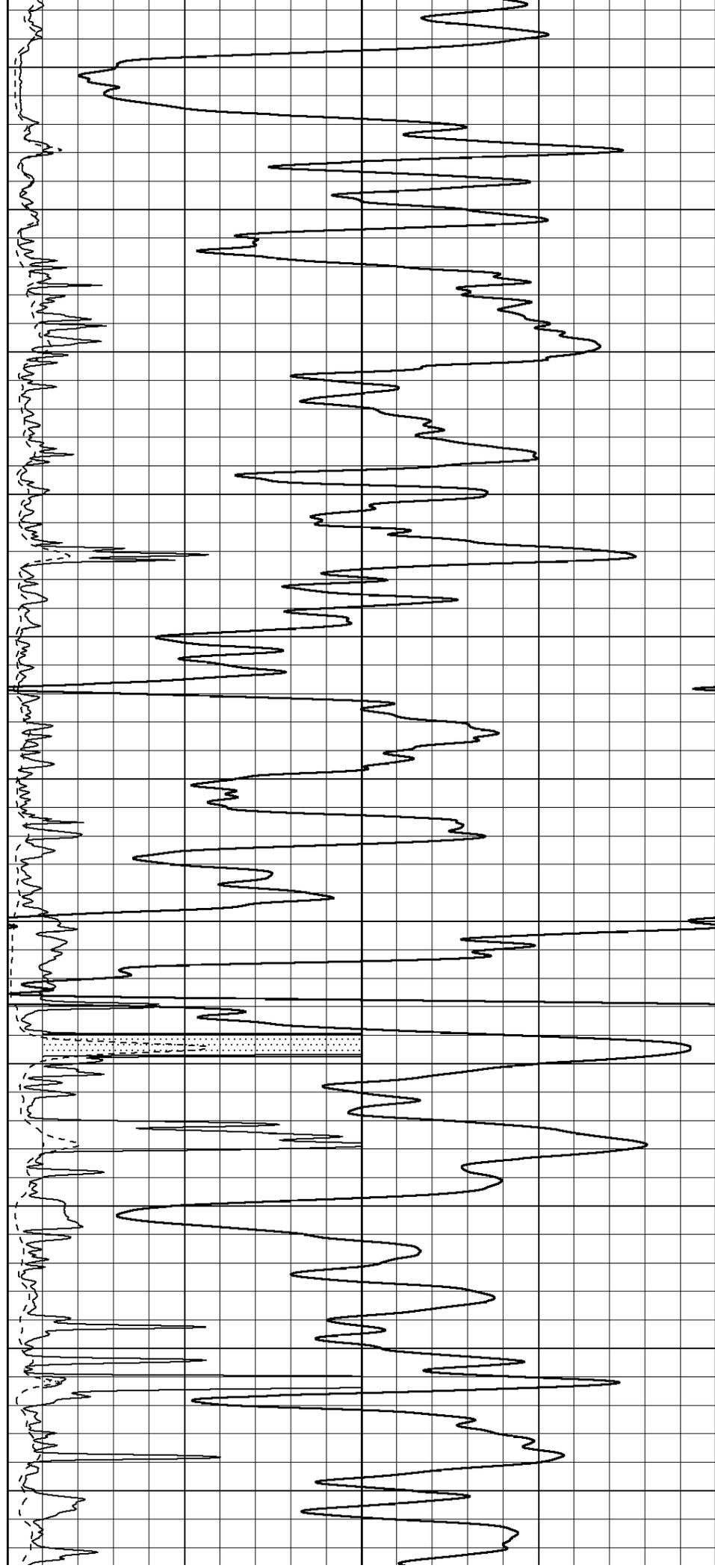
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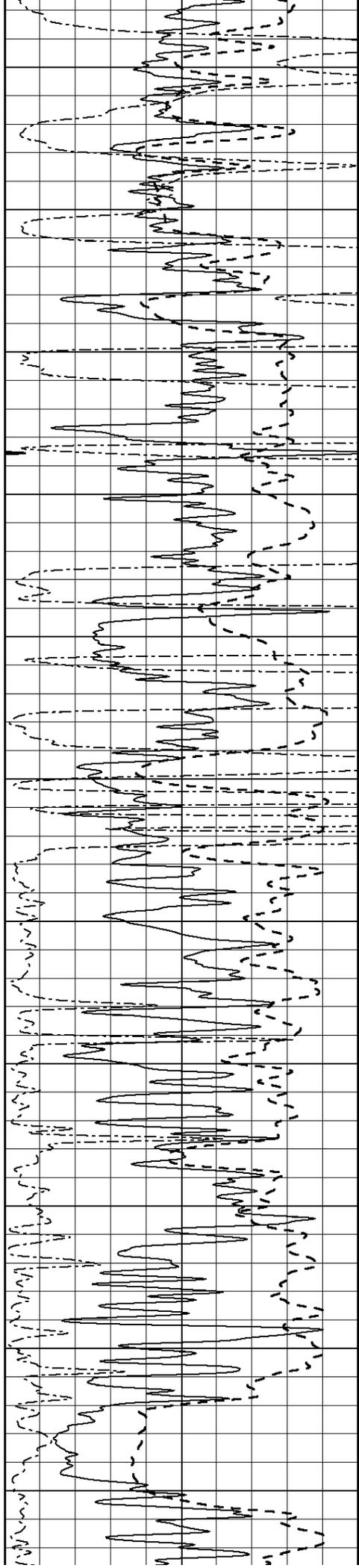
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3050

3100

3150





3200

3250

3300

3350

3400

3450

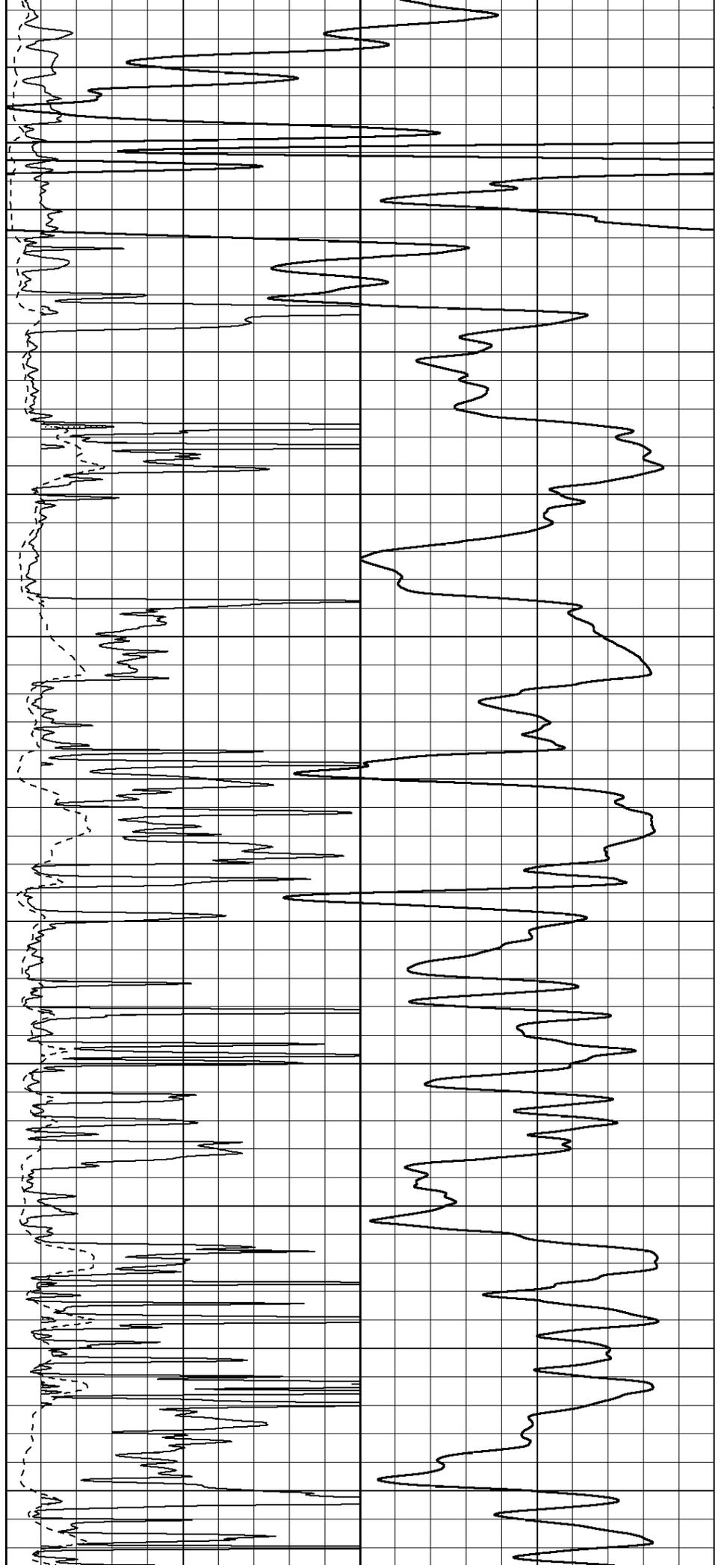
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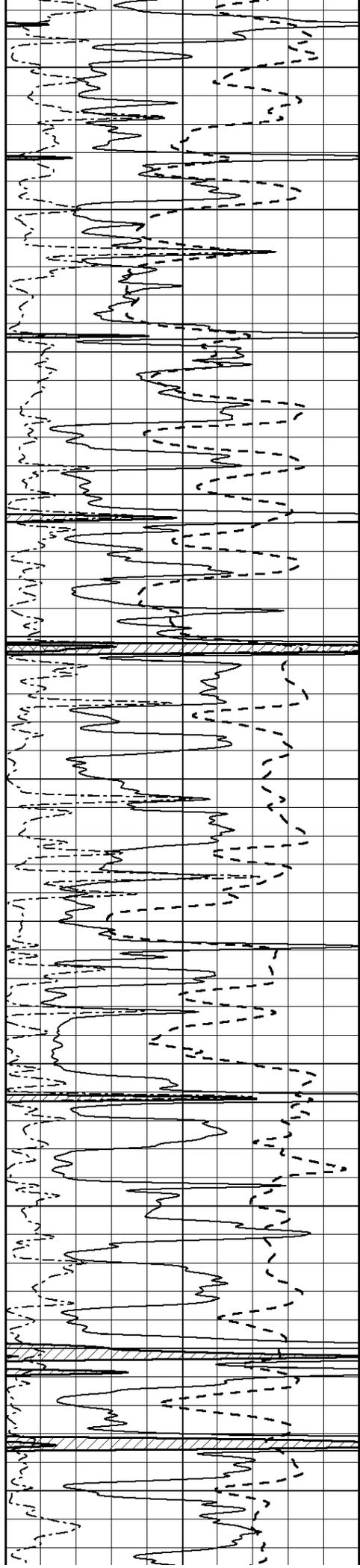
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3600

3650

3700





3750

3800

3850

3900

3950

4000

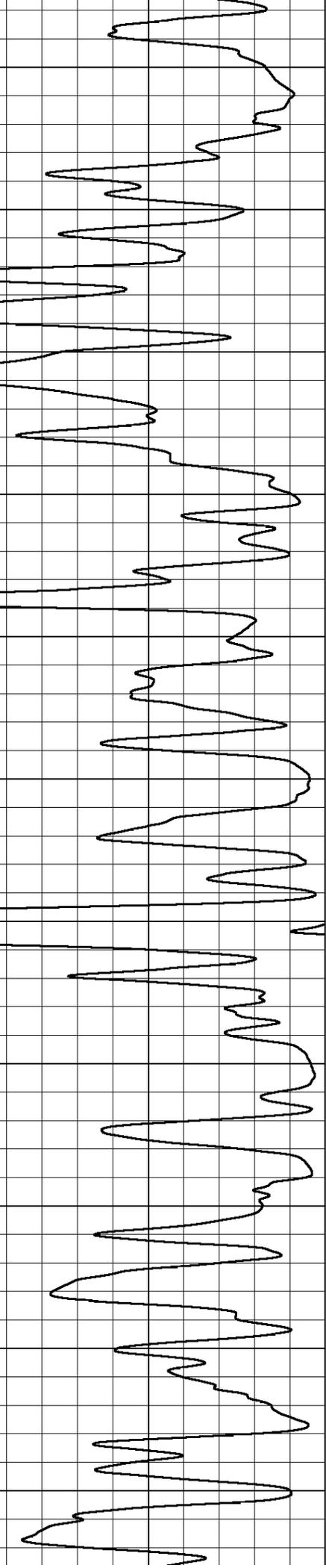
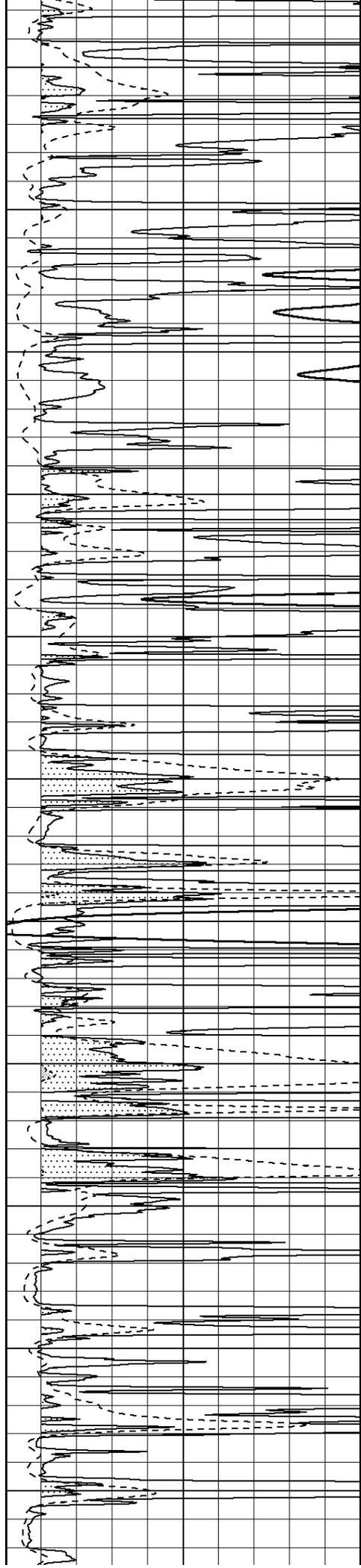
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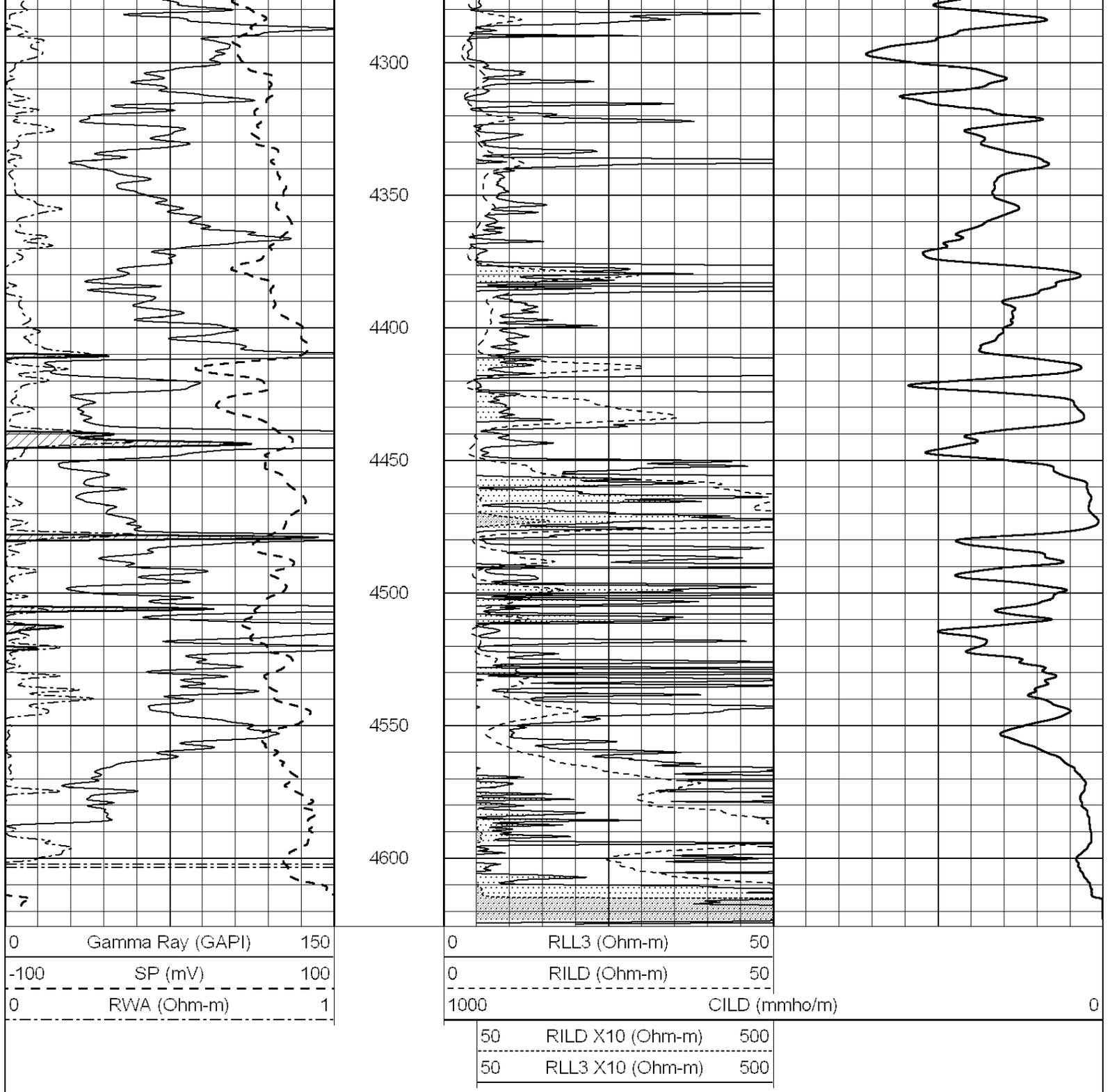
4100

4150

4200

4250





ANHYDRITE

Database File: 1417ddn.db
 Dataset Pathname: pass3.6
 Presentation Format: _dil
 Dataset Creation: Sat Apr 29 03:47:37 2017 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

0 GAMMA RAY (GAPI) 150
 -100 SP (mV) 100

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

-250	Rxo/Rt	50
0	MINMK	20

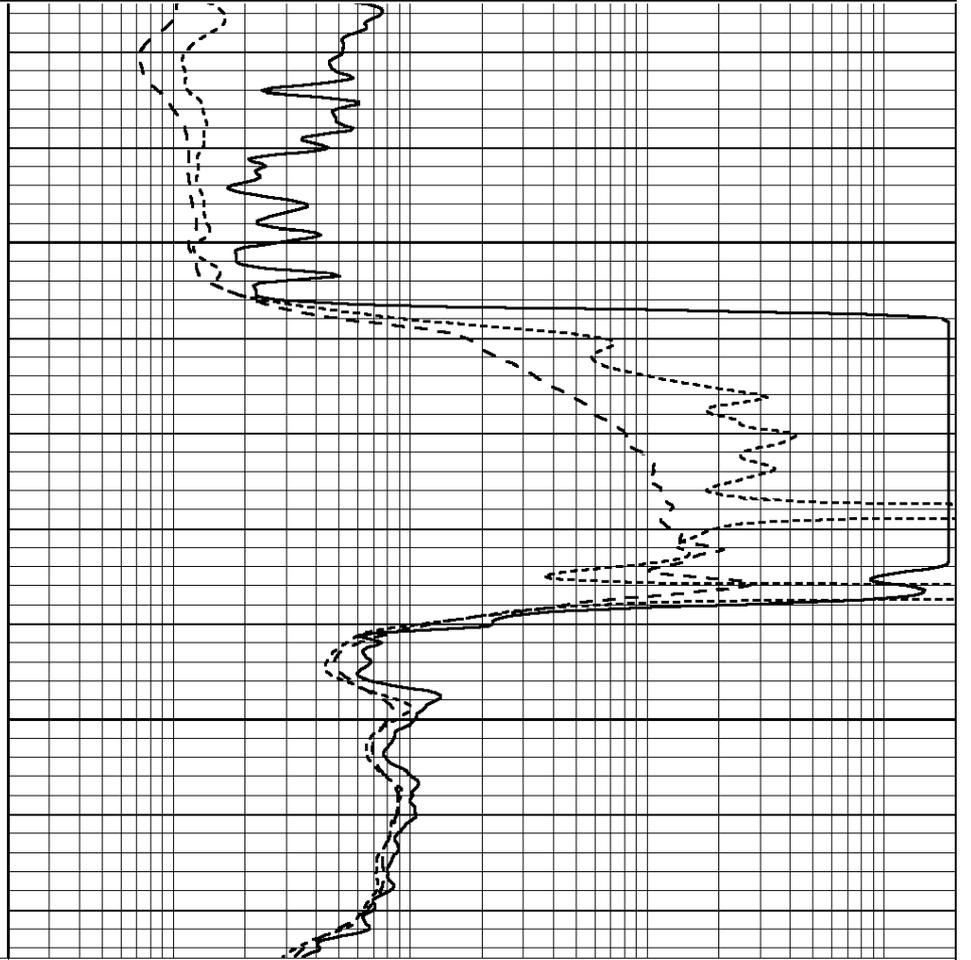
0.2 MEDIUM INDUCTION (Ohm-m) 2000



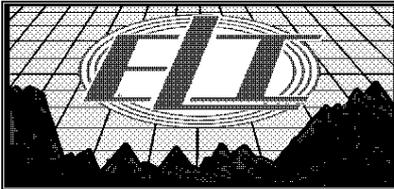
2550

2600

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

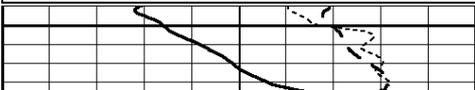


MAIN SECTION

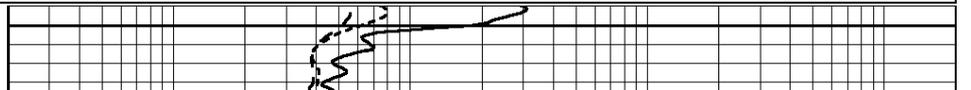
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 Charted by: Depth in Feet scaled 1:240

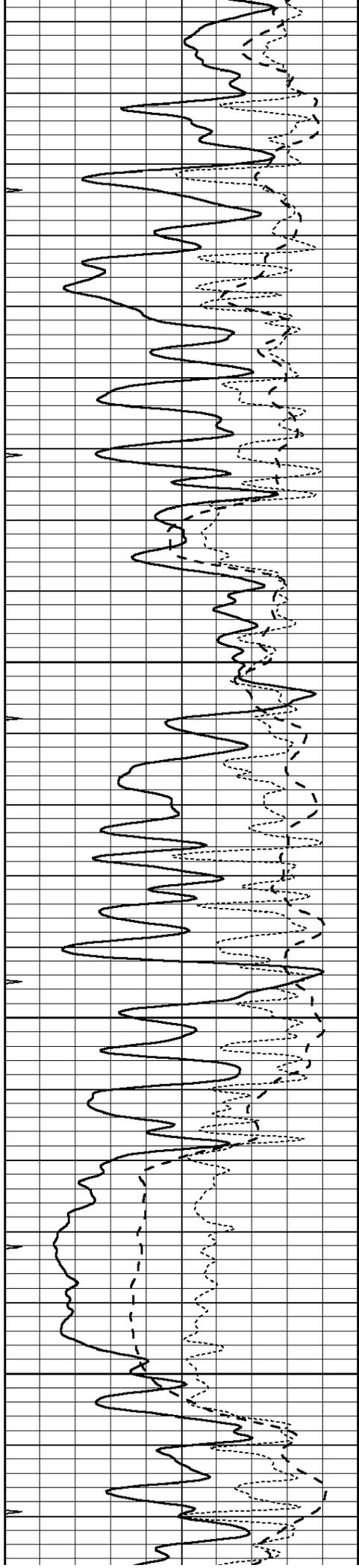
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



3500



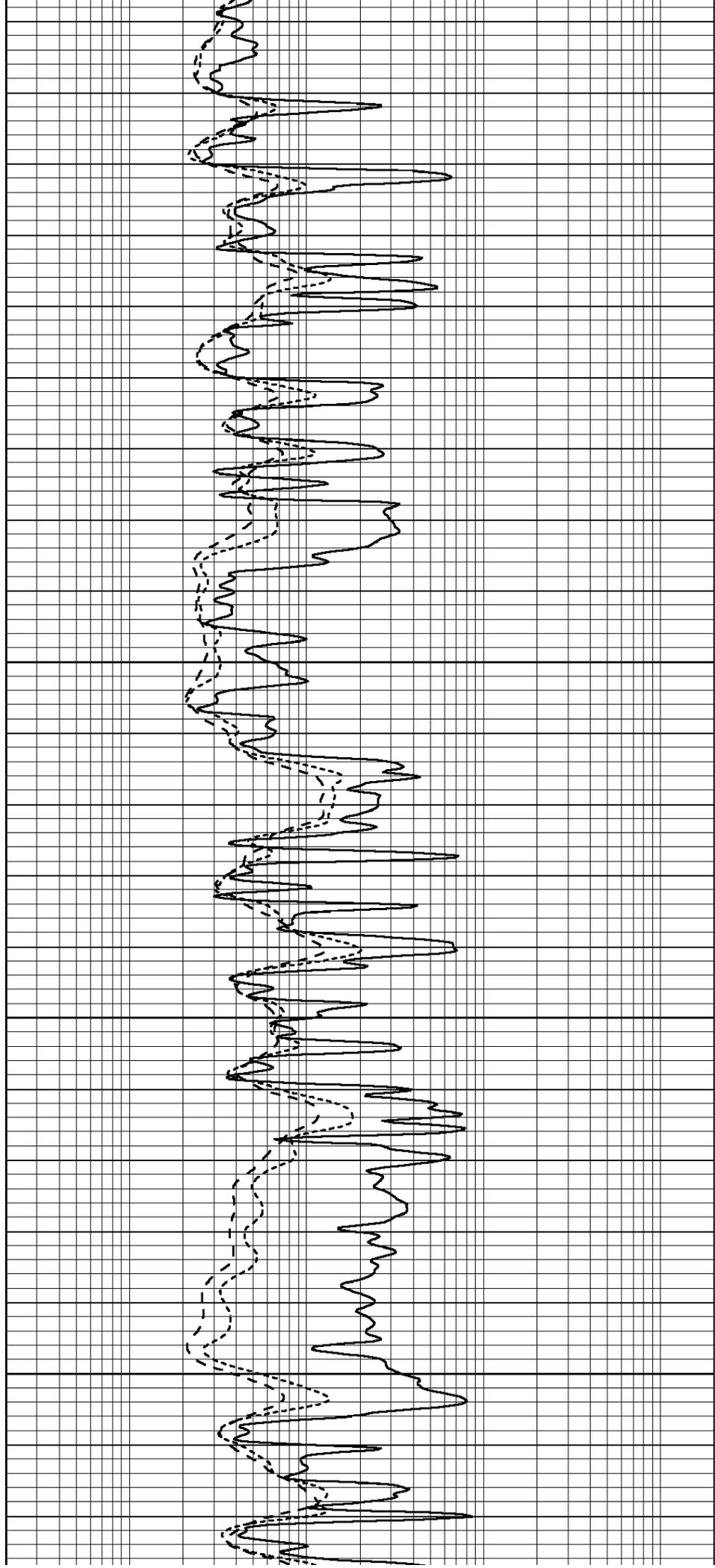


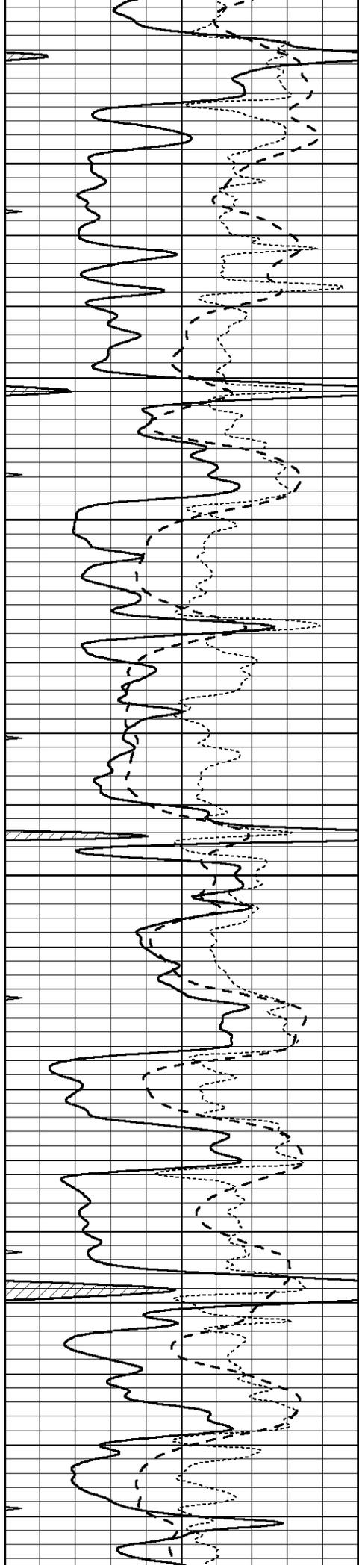
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3600

3650

3700



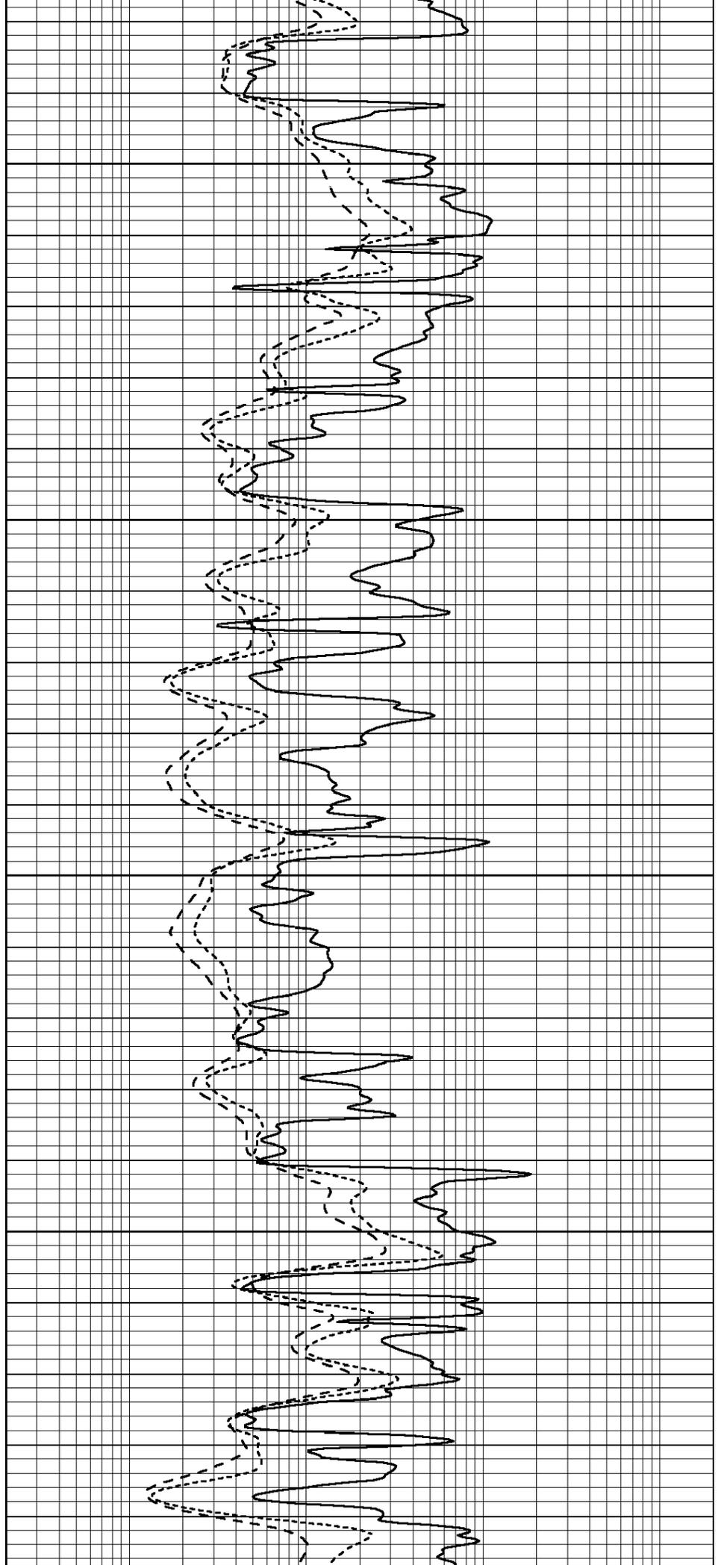


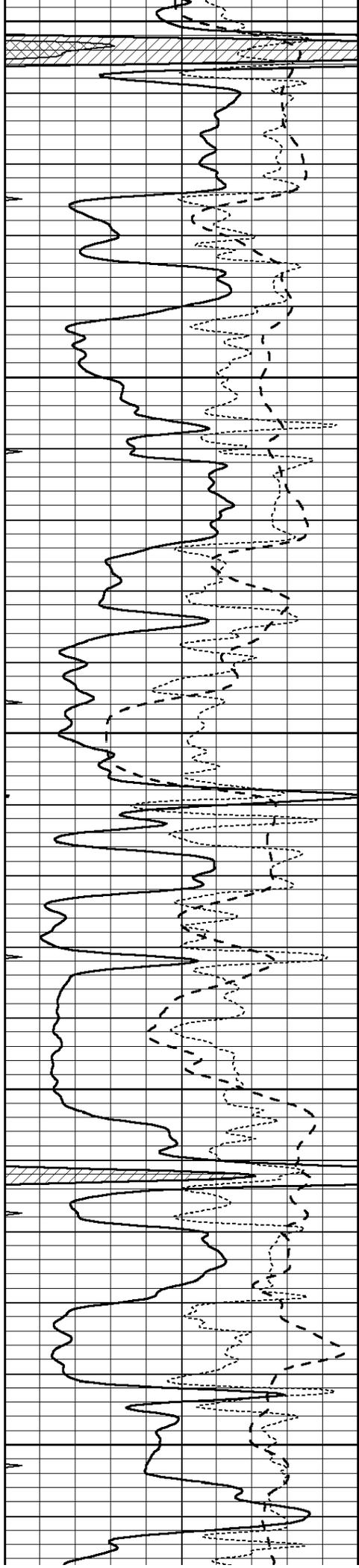
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3800

3850

3900





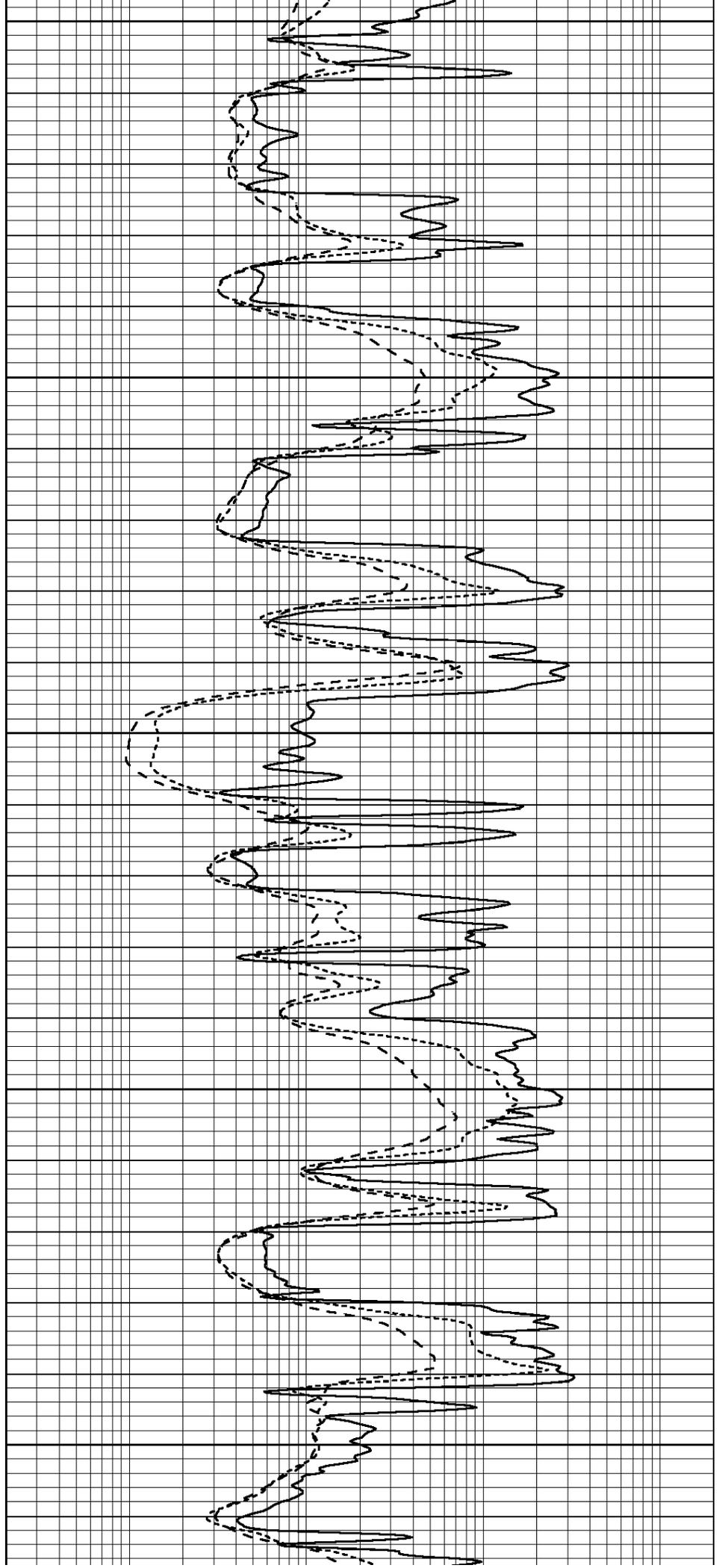
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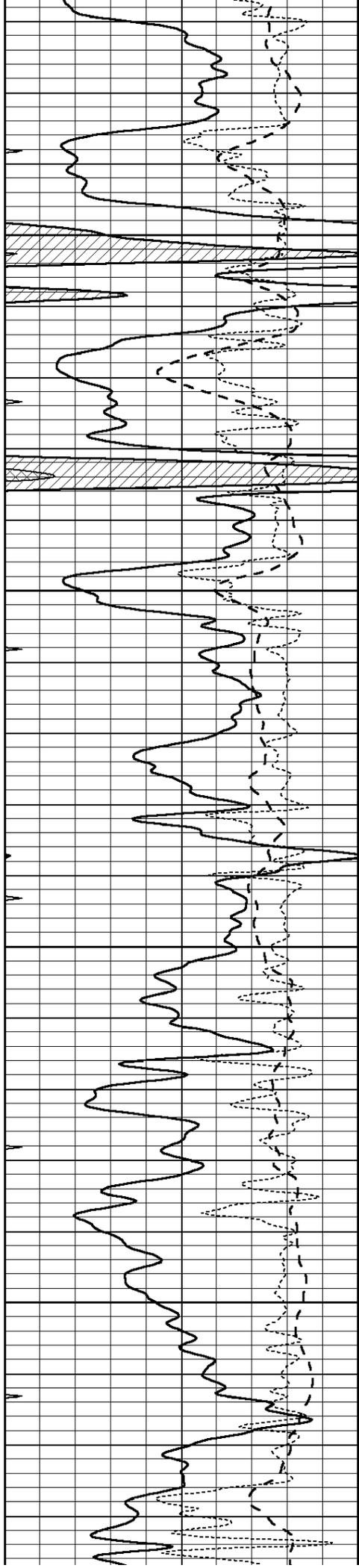
4000

4050

4100

4150



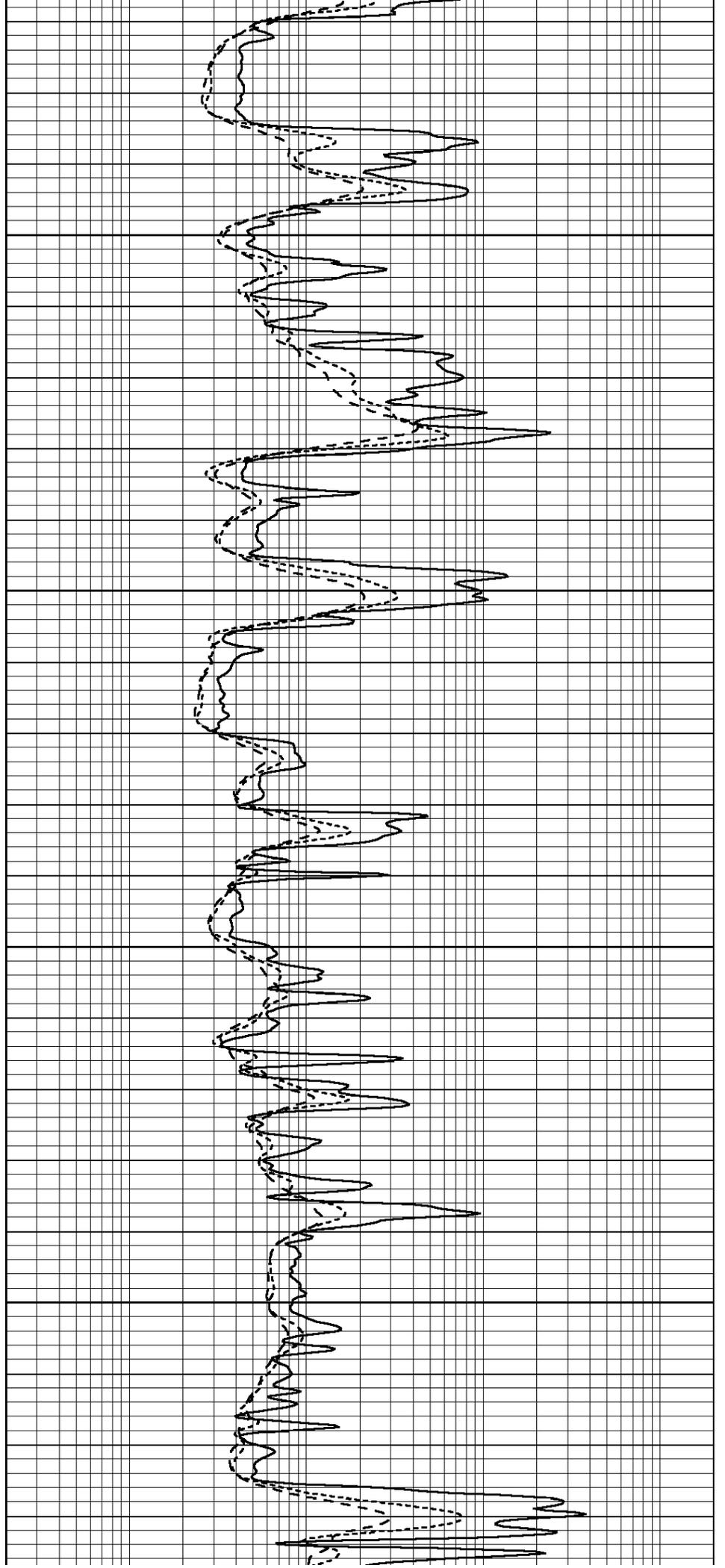


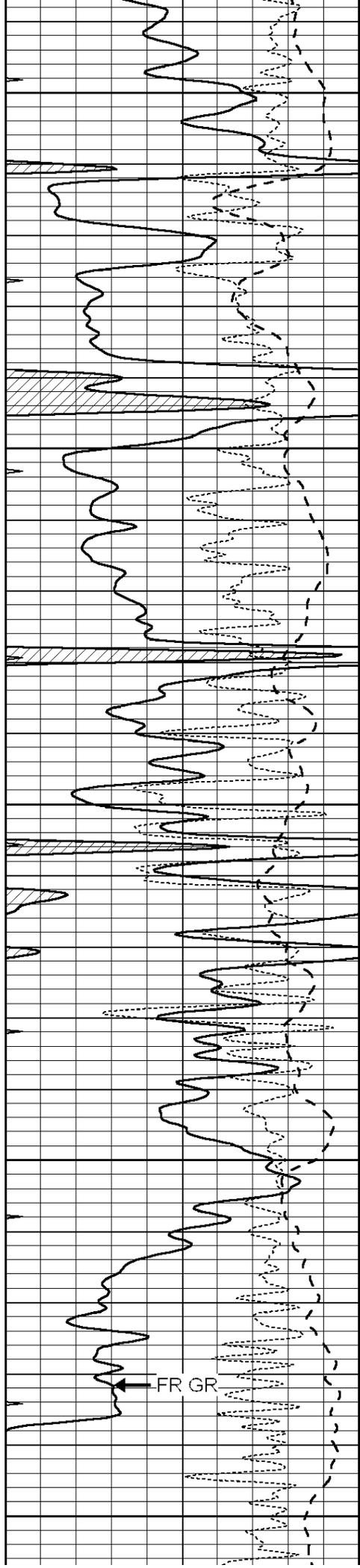
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4250

4300

4350





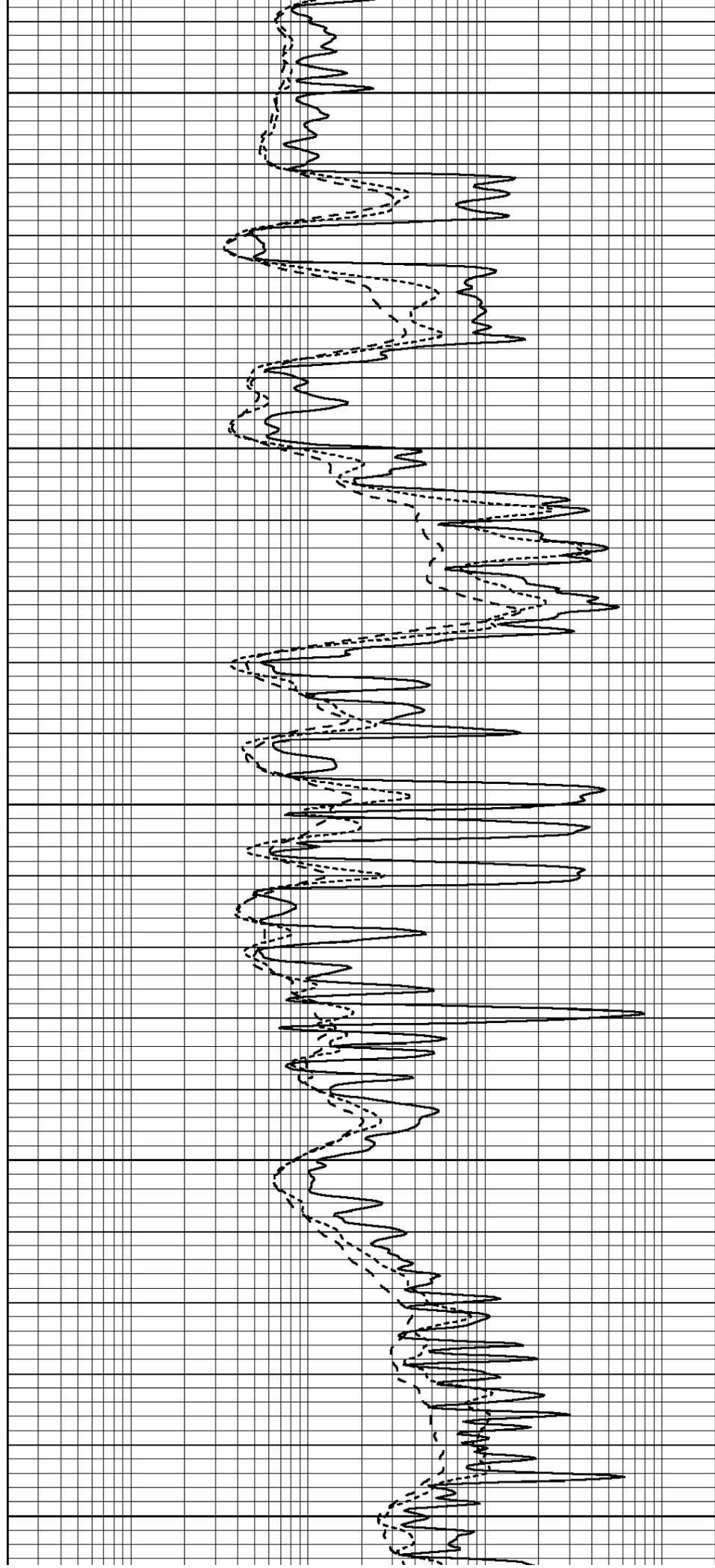
4400

4450

4500

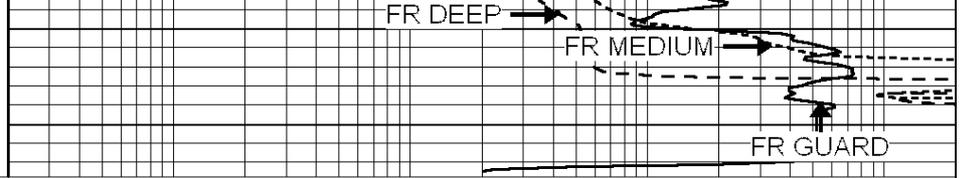
4550

4600



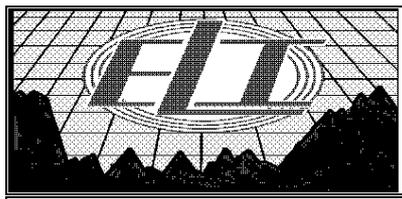


LTD 4620



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

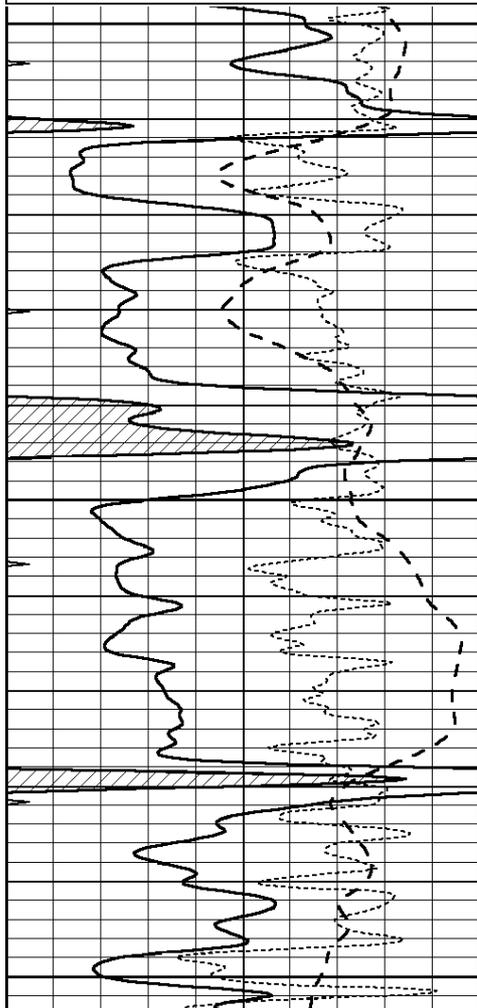


REPEAT SECTION

Database File: 1417ddn.db
 Dataset Pathname: pass2.3
 Presentation Format: _dil
 Dataset Creation: Sat Apr 29 03:05:27 2017 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

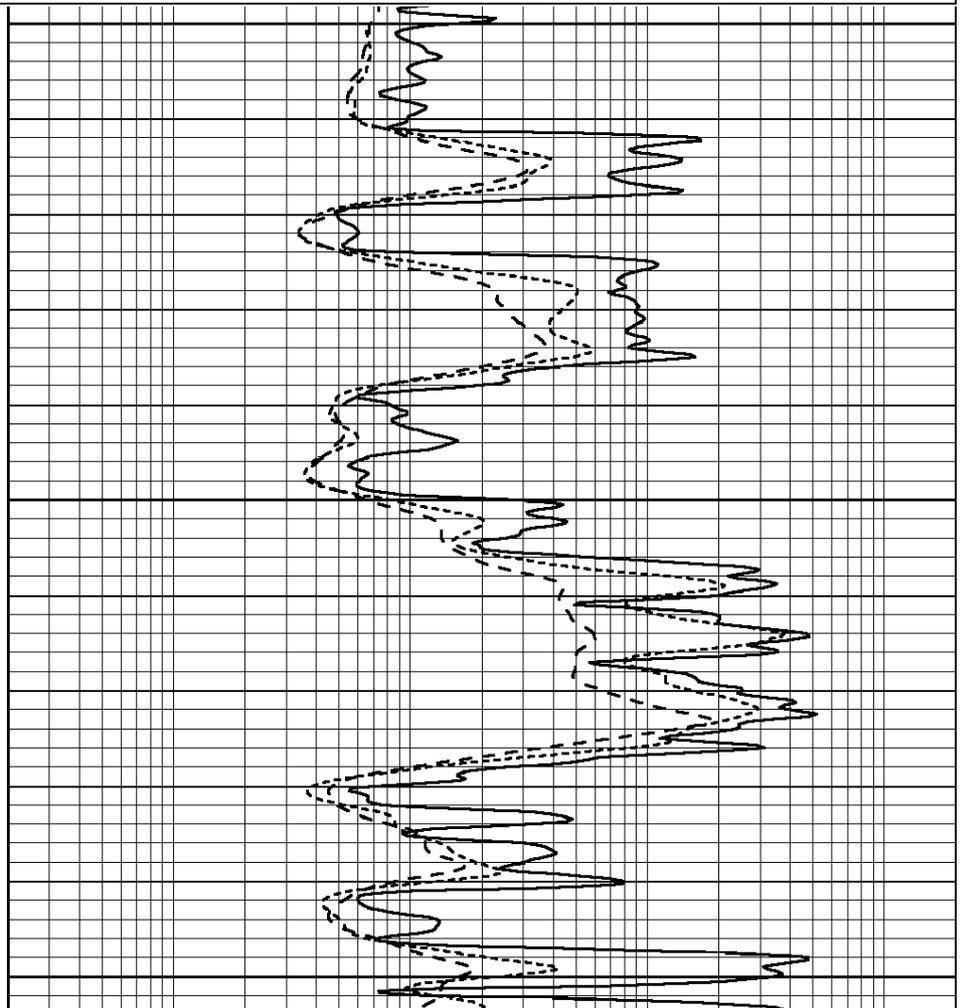
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

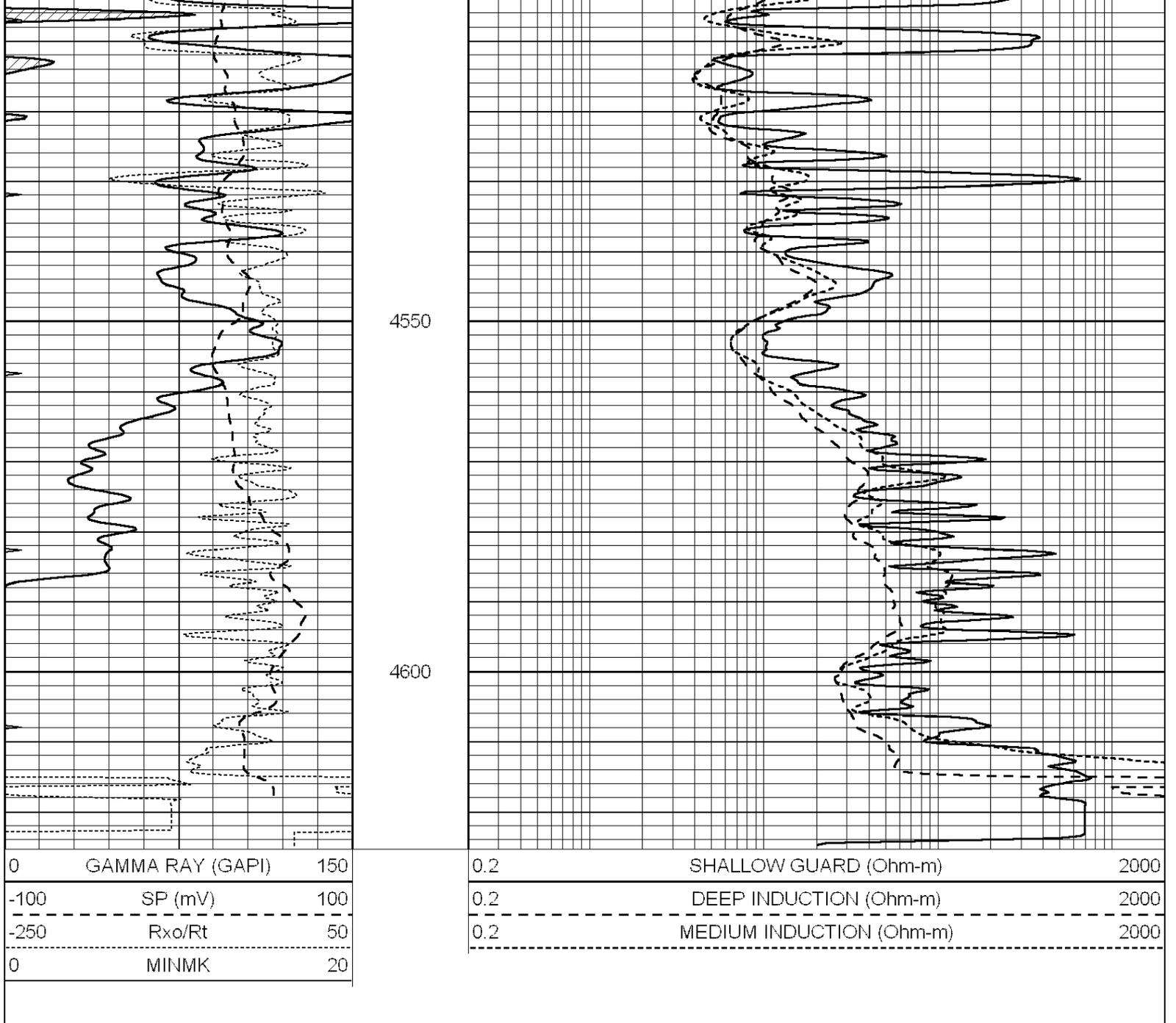


4400

4450

4500





Calibration Report

Database File: 1417ddn.db
 Dataset Pathname: pass3.5
 Dataset Creation: Sat Apr 29 03:45:05 2017 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Tue Apr 18 12:30:40 2017
 Downhole Cal Performed: Mon Jul 28 12:02:56 2008
 After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	620.000	-6.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-54.000
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		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report
Serial: 004N Model: PRB

Master Calibration		Performed Fri May 30 11:01:00 2014						
	Background	Magnesium	Aluminum	Sandstone				
Window 1	1378.8	10804.6	3492.0	12453.4			cps	
Window 2	1262.4	9313.5	3076.7	10594.7			cps	
Window 3	1077.6	5668.7	2076.0	6314.8			cps	
Window 4	306.4	313.0	306.4	315.6			cps	
Long Space	0.0	8051.0	1814.3	9332.3			cps	
Short Space	1.9	1706.1	1146.0	1707.6			cps	
Rho		1.7100	2.5900	1.3800			g/cc	
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 45.0	Rib Slope	: 1.002	Density/Spine Ratio			: 0.571	
Spine Angle	: 75.0	Spine Slope	: 3.745	Spine Intercept			: -18.9	

Before Survey Verification		Performed Wed Dec 31 18:00:00 1969						
	Background	Magnesium	Aluminum	Sandstone				
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						
	Background	Magnesium	Aluminum	Sandstone				
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	

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: 070558
Tool Model: OPEN_GR
Performed: Mon Aug 22 01:00:15 2016

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.2800 GAPI/cps