



DUAL INDUCTION LOG

Company MAI OIL OPERATIONS, INC.
 Well TIEPERMAN #1
 Field MUELLER
 County STAFFORD
 State KANSAS

Company MAI OIL OPERATIONS, INC.
 Well TIEPERMAN #1
 Field MUELLER
 County STAFFORD State KANSAS

Location: API # : 15-185-23973-0000
 393' FSL & 1113' FWL
 NE - SE - SW - SW

Permanent Datum GROUND LEVEL Elevation 1859
 Log Measured From KELLY BUSHING 8' A.G.L.
 Drilling Measured From KELLY BUSHING

SEC 29 TWP 21S RGE 12W

Other Services
 CDL/CNL
 MEL

Elevation
 K.B. 1867
 D.F. 1865
 G.L. 1859

Date	12/2/16
Run Number	ONE
Depth Driller	3710
Depth Logger	3710
Bottom Logged Interval	3708
Top Log Interval	00
Casing Driller	8 5/8" @ 647'
Casing Logger	657
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/8.1
pH / Fluid Loss	9.5/9.6
Source of Sample	FLOWLINE
Rim @ Meas. Temp	.800 @ 60F
Rmf @ Meas. Temp	.600 @ 60F
Rmc @ Meas. Temp	.960 @ 60F
Source of Rmf / Rmc	MEASUREMENT
Rim @ BHT	.425 @ 113F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	1:15 A.M.
Maximum Recorded Temperature	113F
Equipment Number	922339
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	JIM MUSGROVE

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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
 GREAT BEND, KS., 12S. ON HWY 281 TO "160TH RD.", 4E. TO STOP SIGN, JOG N. ON BLKTOP, E. INTO



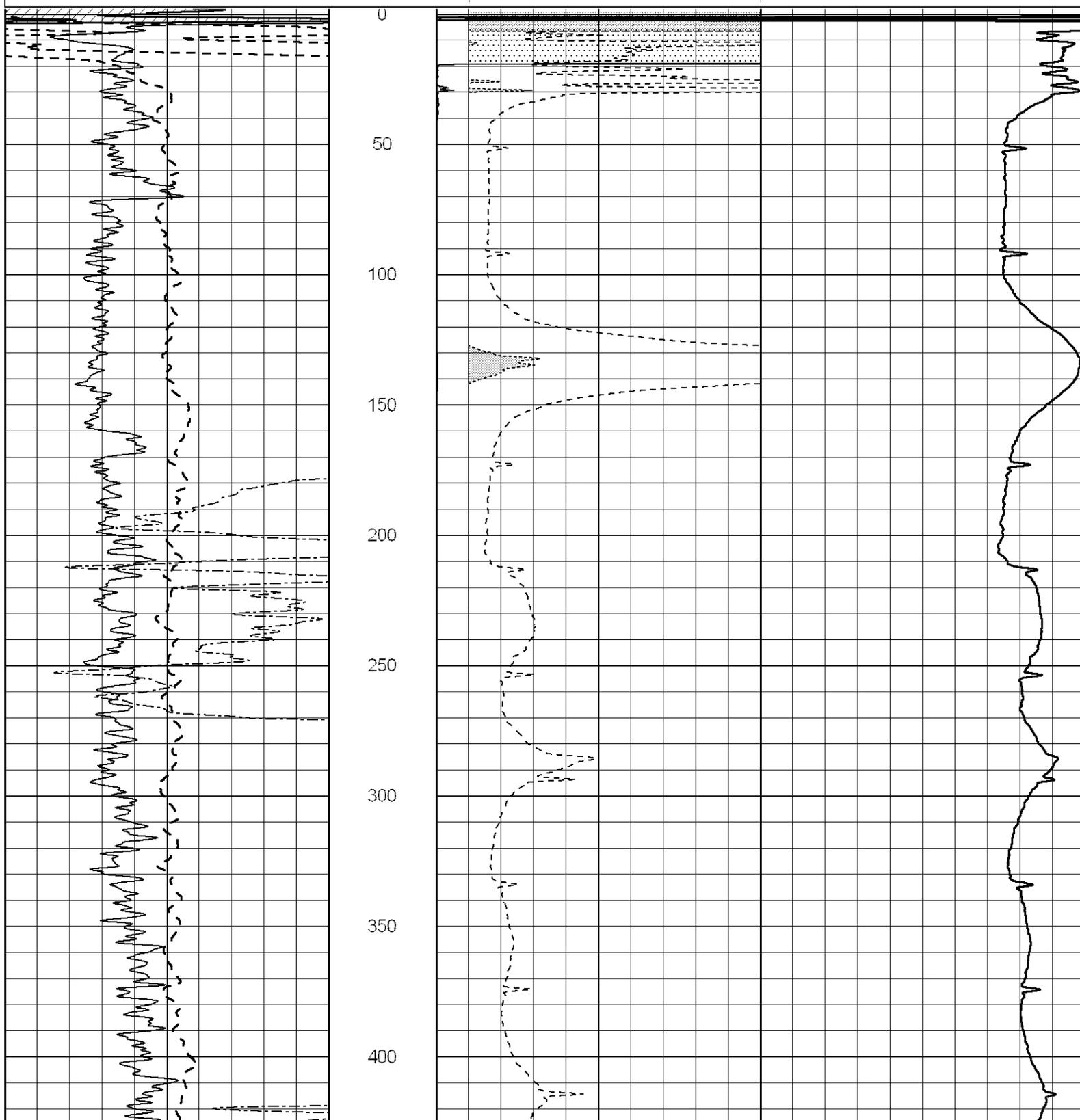
MAIN SECTION

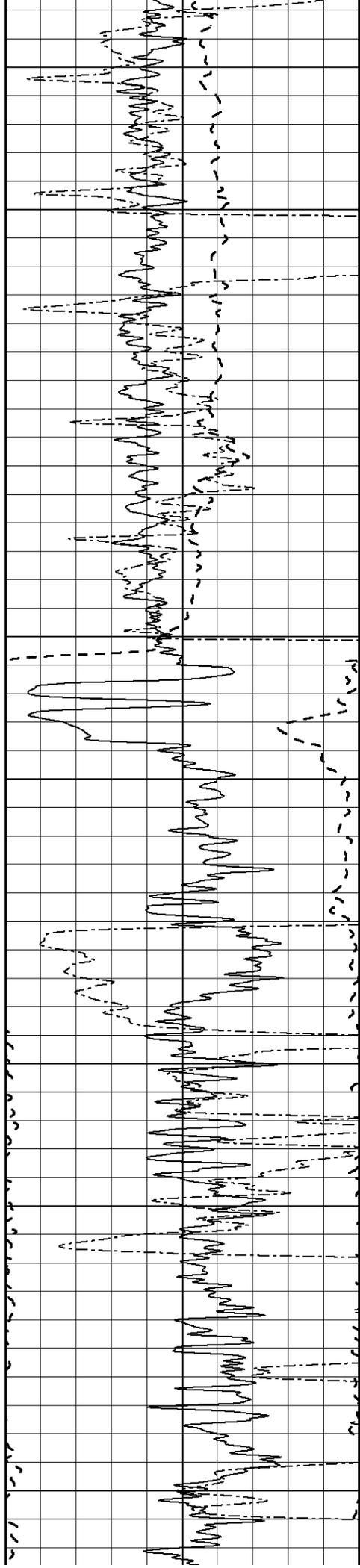
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 Dataset Pathname: pass3.3
 Presentation Format: dil2
 Dataset Creation: Fri Dec 02 02:47:56 2016
 Charted by: Depth in Feet scaled 1:600

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

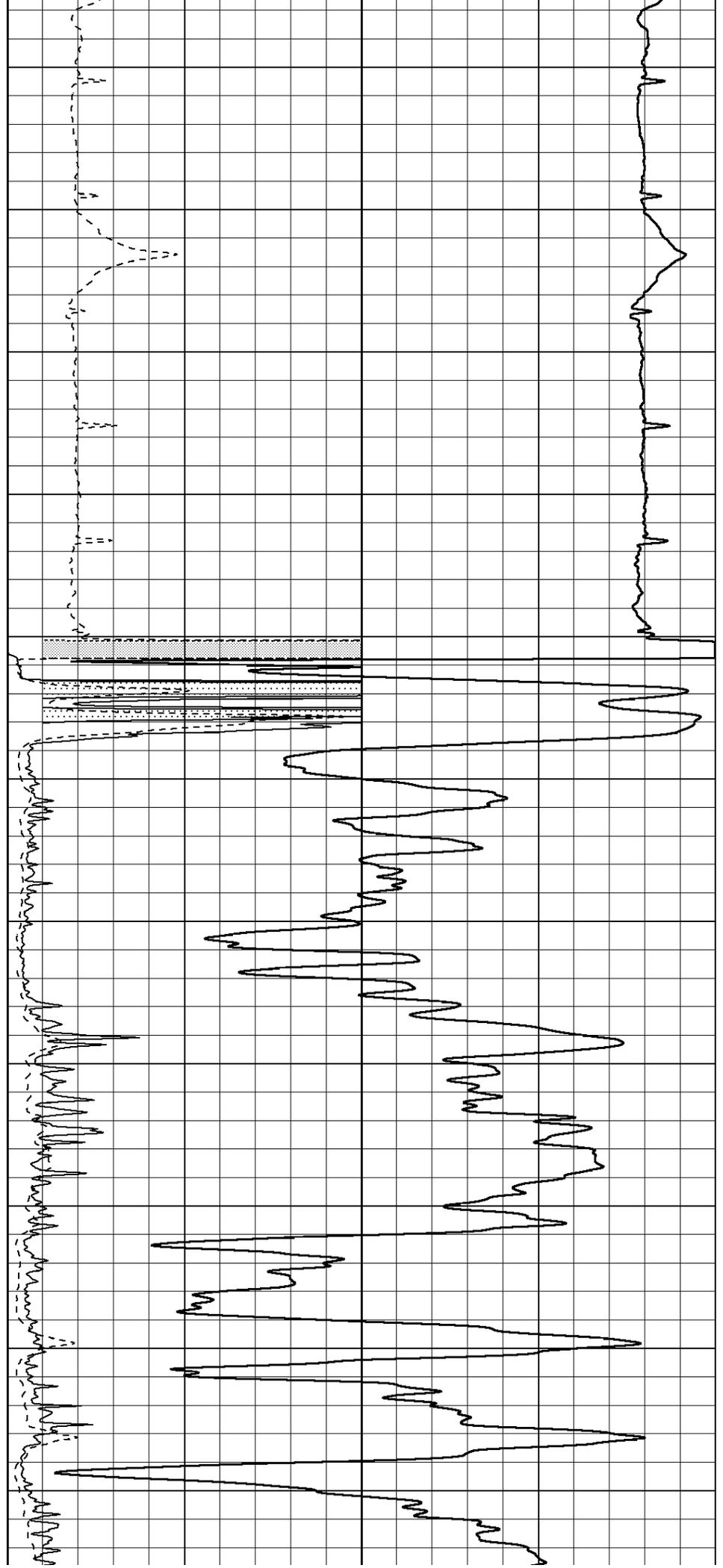
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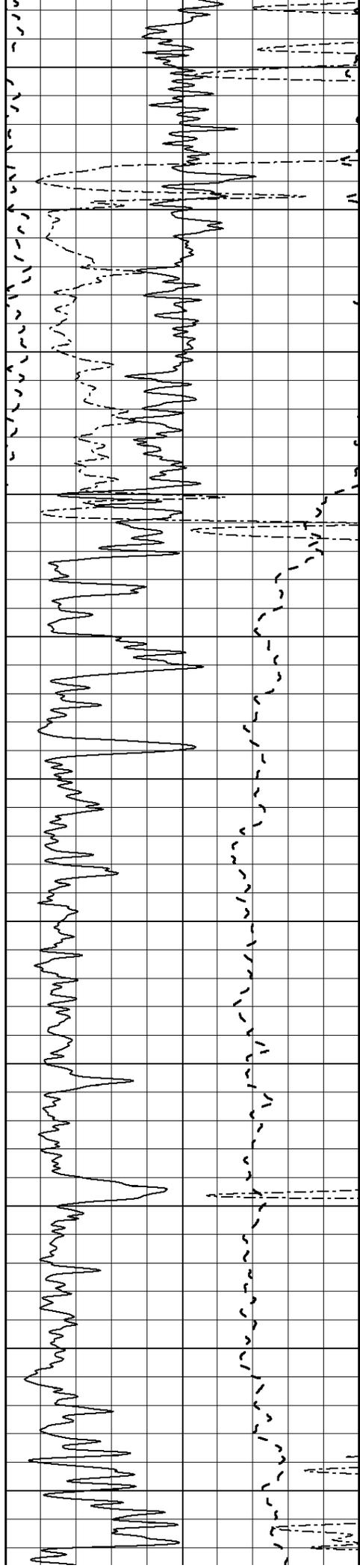
800

850

900

950





1000

1050

1100

1150

1200

1250

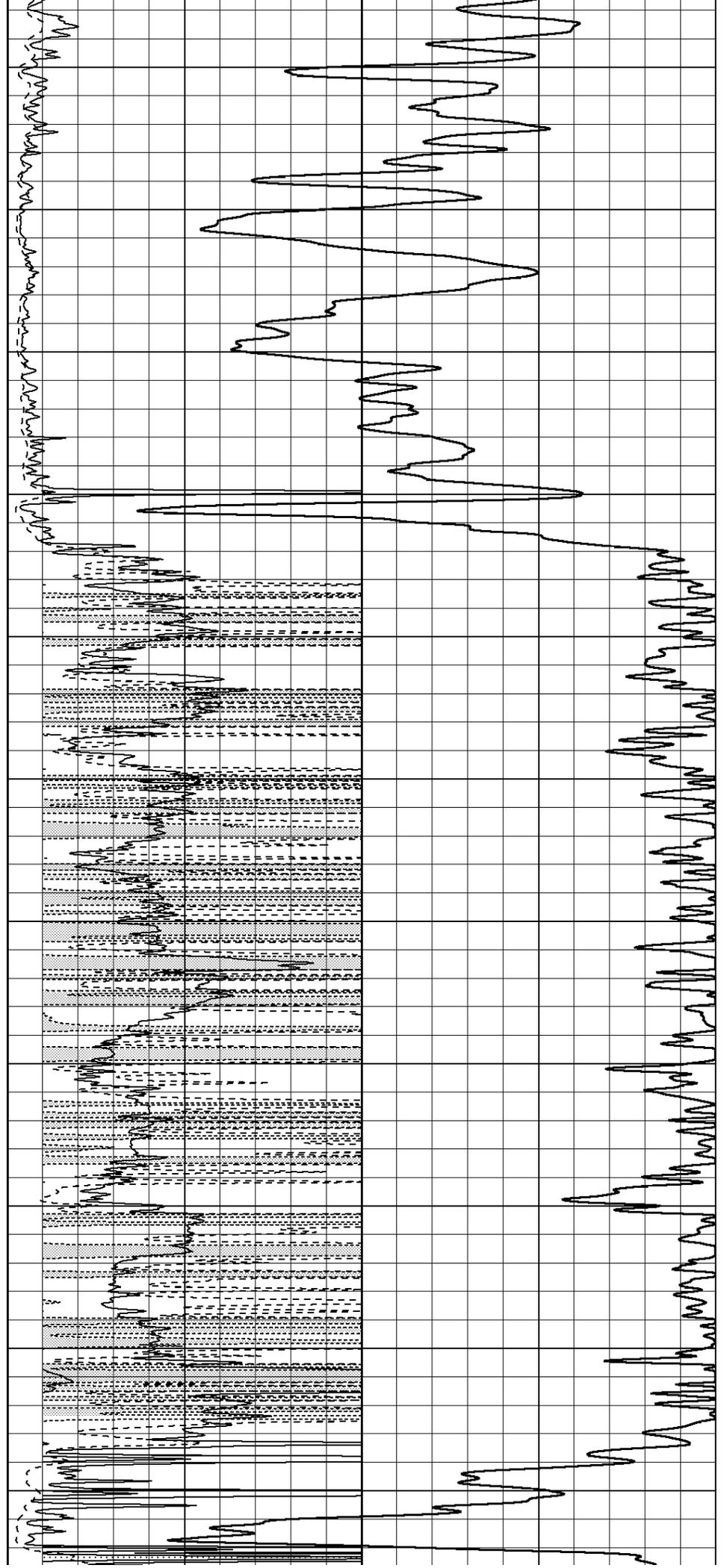
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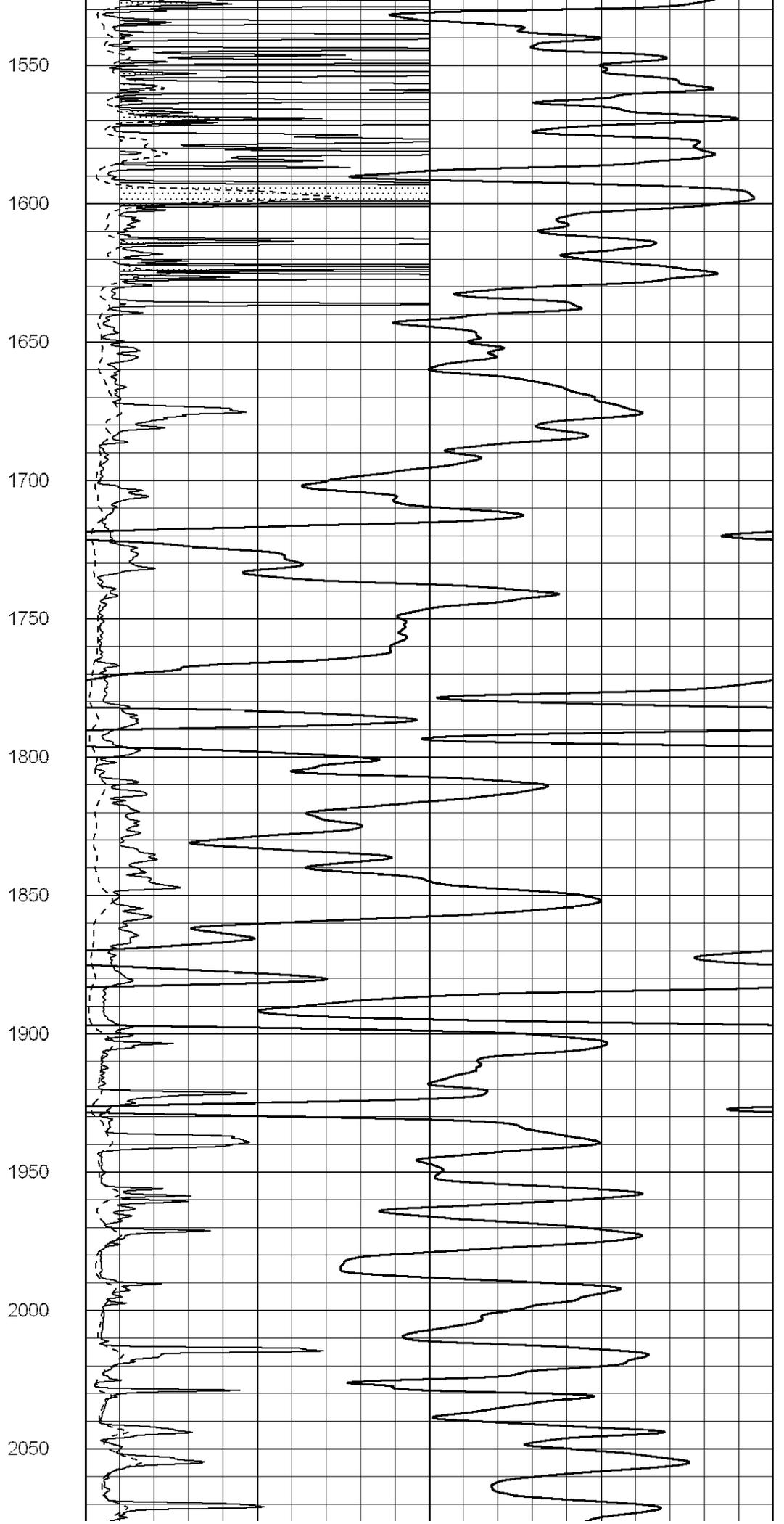
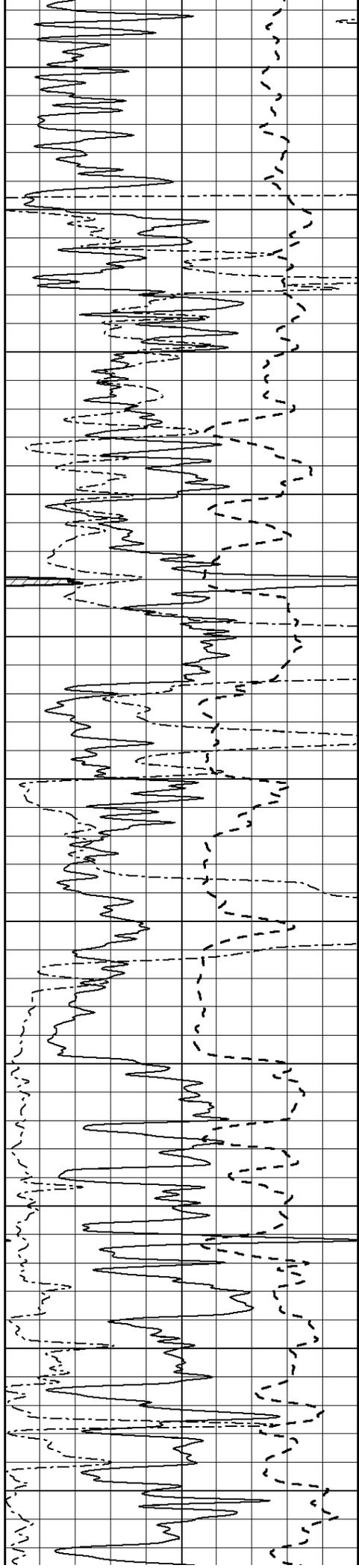
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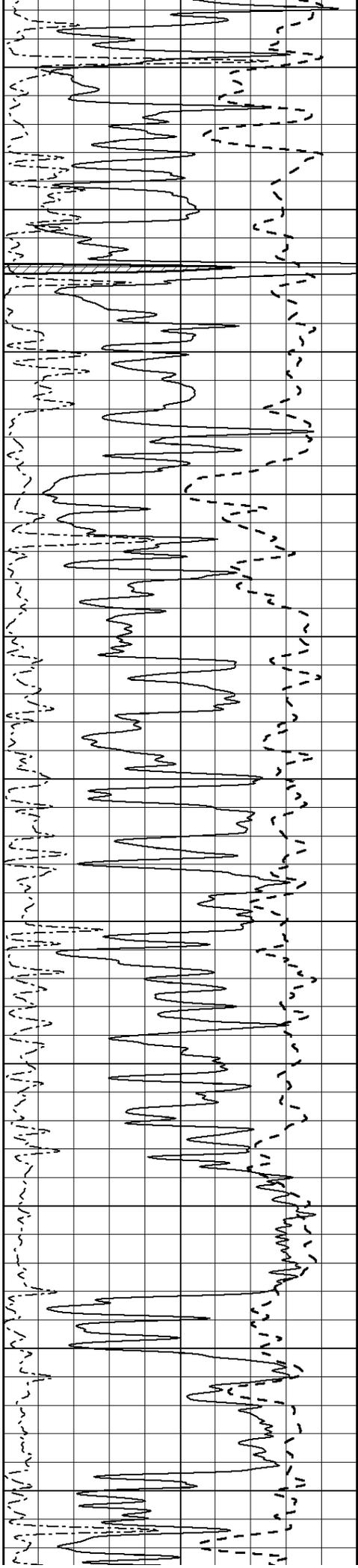
1400

1450

1500







2100

2150

2200

2250

2300

2350

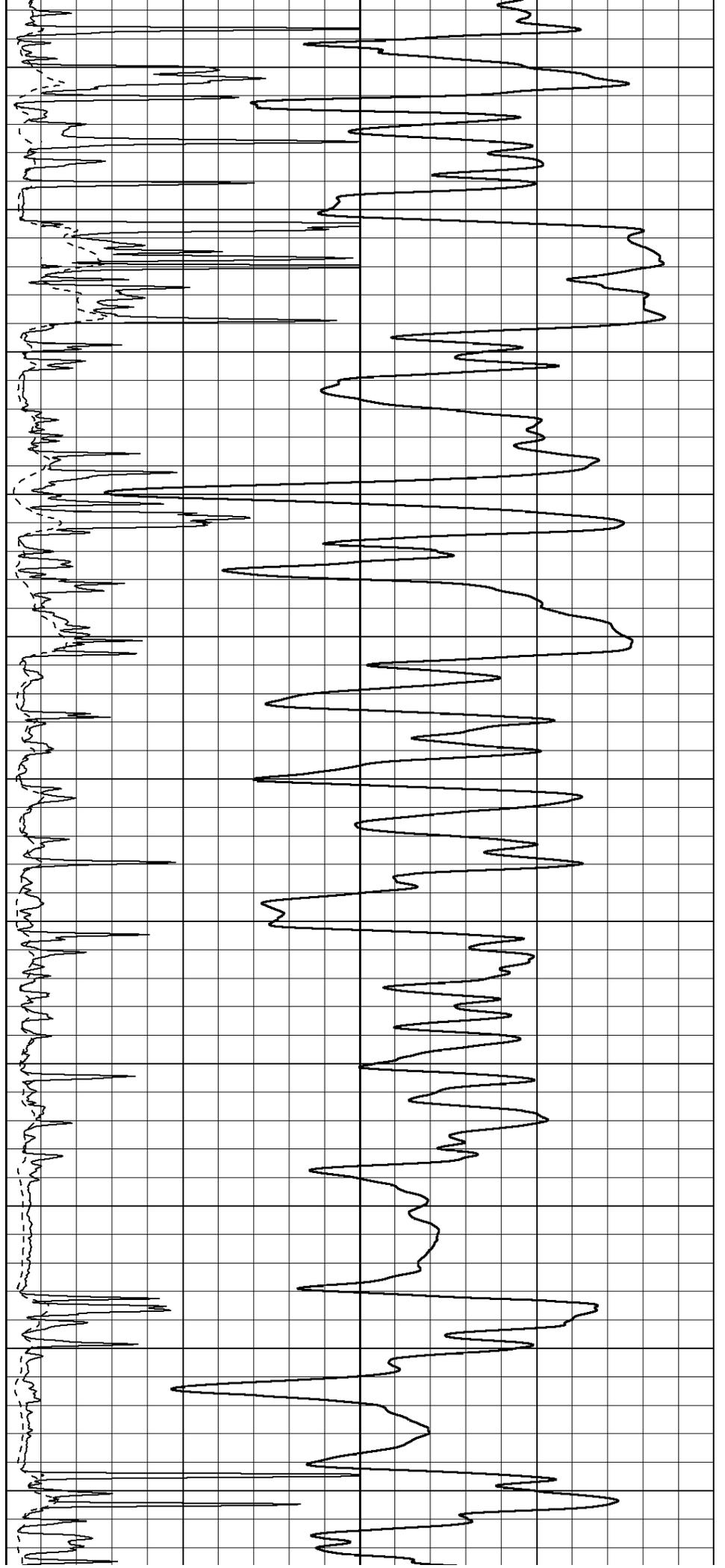
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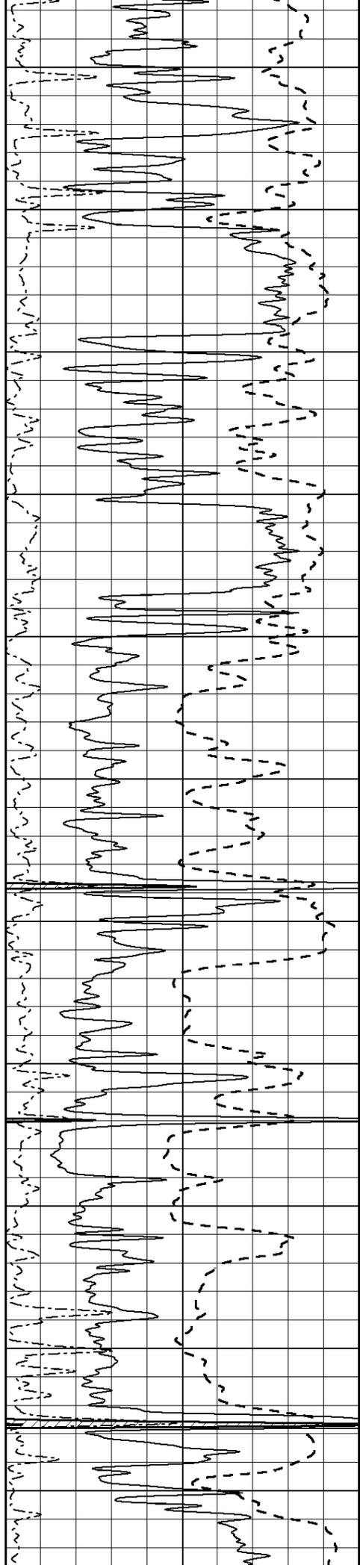
2450

2500

2550

2600





2650

2700

2750

2800

2850

2900

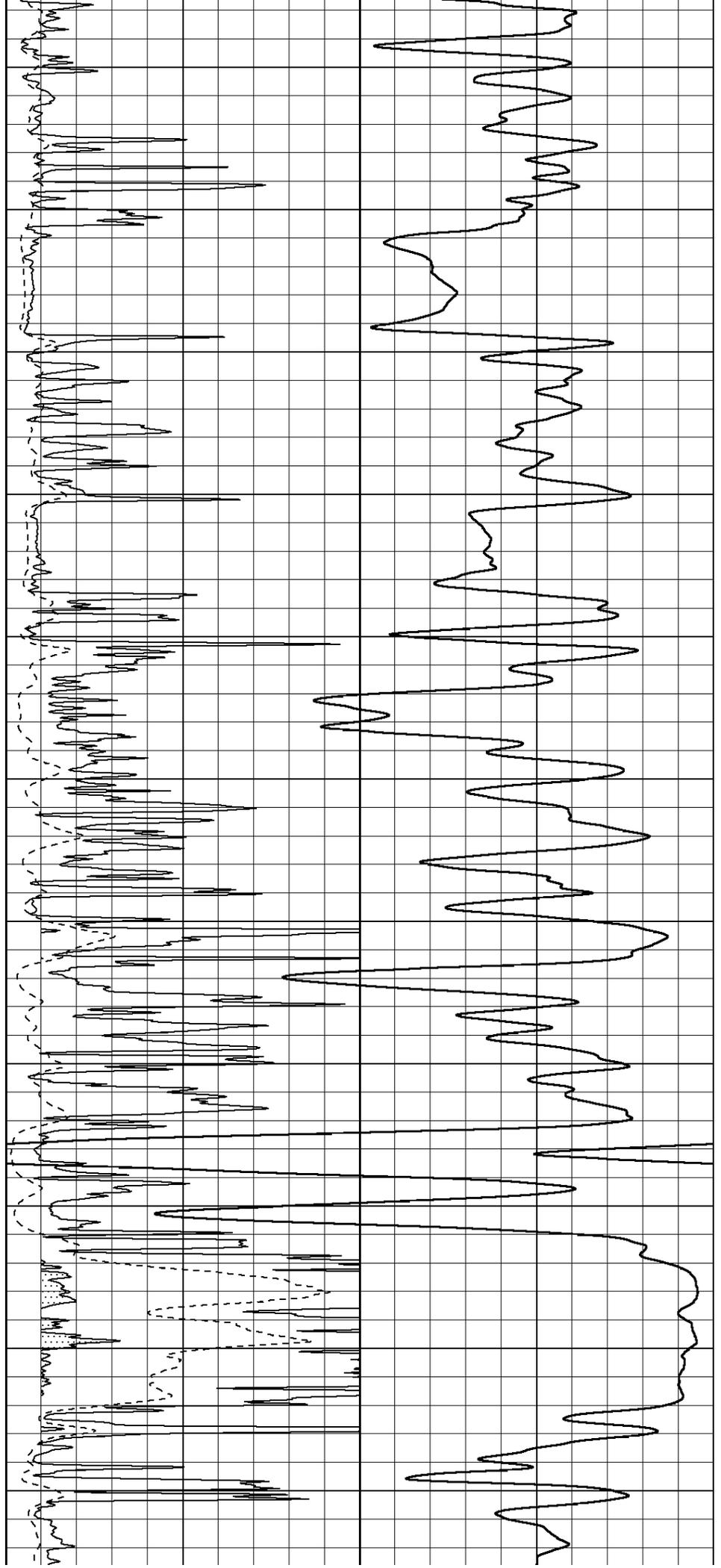
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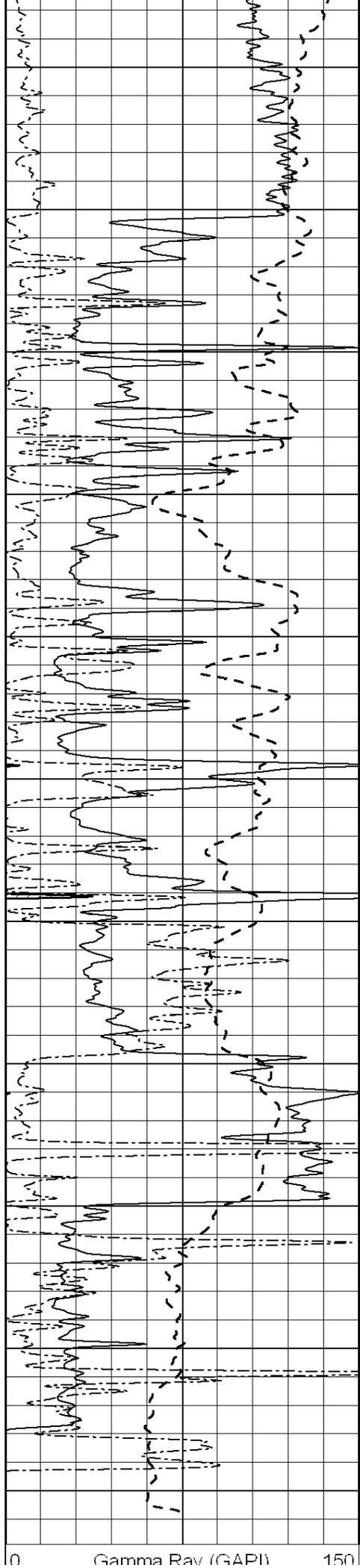
3000

3050

3100

3150





3200

3250

3300

3350

3400

3450

3500

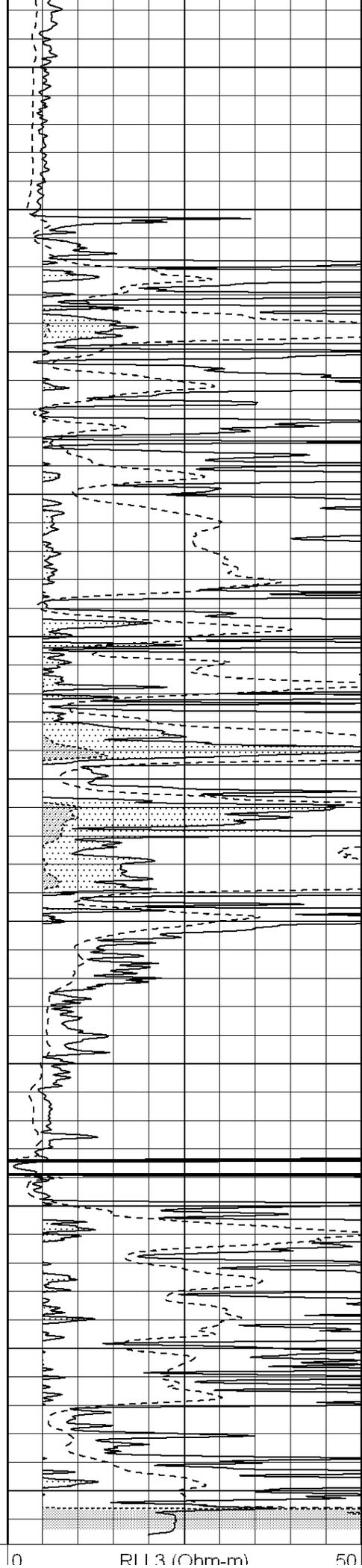
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3600

3650

3700

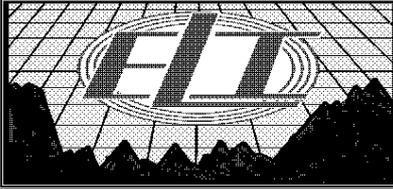
0 Gamma Ray (GAPI) 150



0 RI 1.3 (Ohm-m) 50

-100	SP (mV)	100
0	RWA (Ohm-m)	1

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

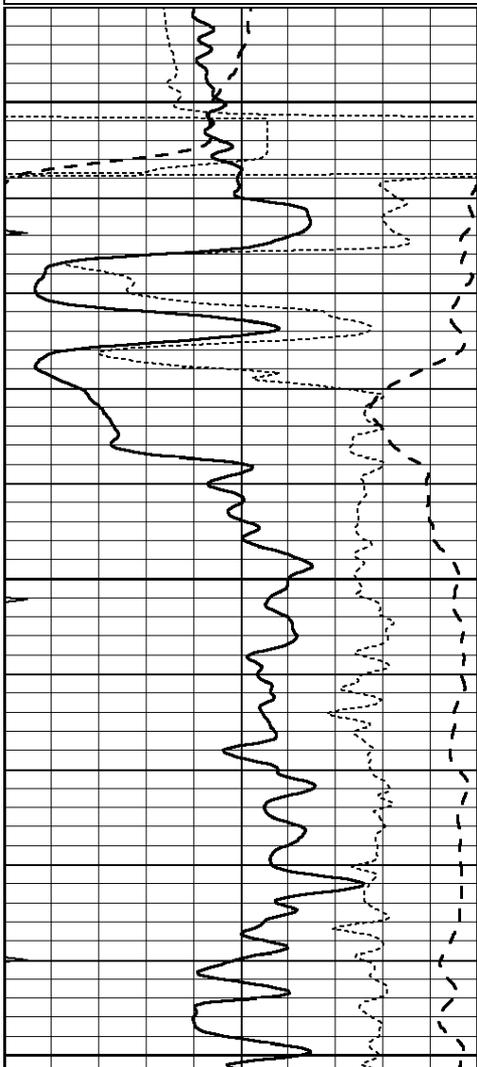


ANHYDRITE

Database File: 1330ddn.db
 Dataset Pathname: pass3.4
 Presentation Format: dil
 Dataset Creation: Fri Dec 02 02:48:17 2016
 Charted by: Depth in Feet scaled 1:240

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

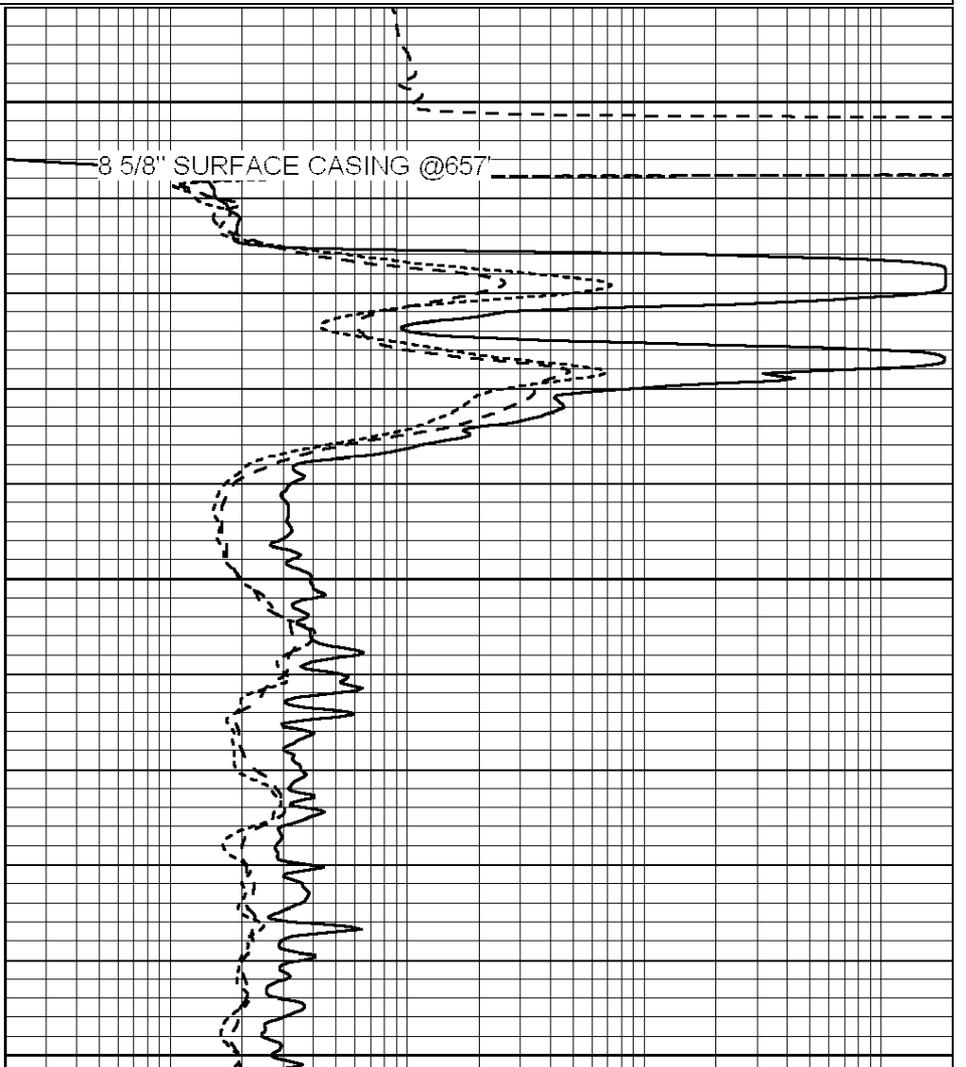
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



650

700

750



8 5/8" SURFACE CASING @657

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

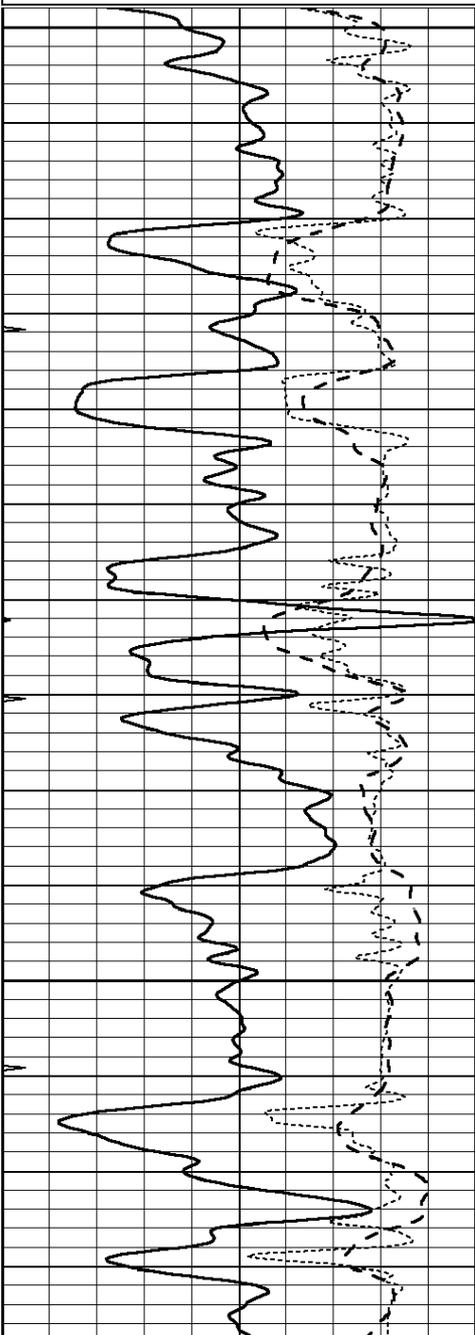


MAIN SECTION

Database File: 1330ddn.db
 Dataset Pathname: pass3.3
 Presentation Format: _dil
 Dataset Creation: Fri Dec 02 02:47:56 2016
 Charted by: Depth in Feet scaled 1:240

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

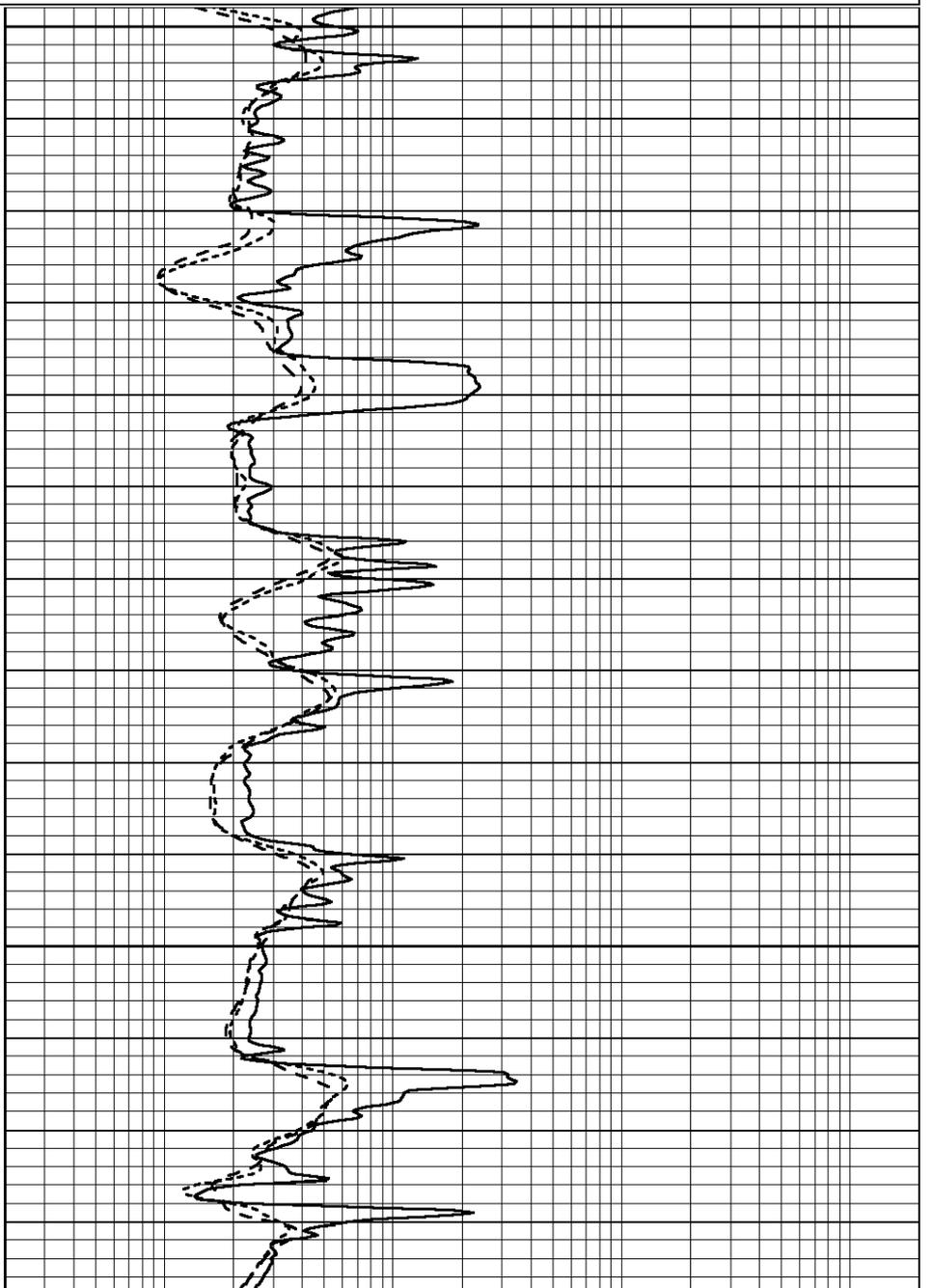
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

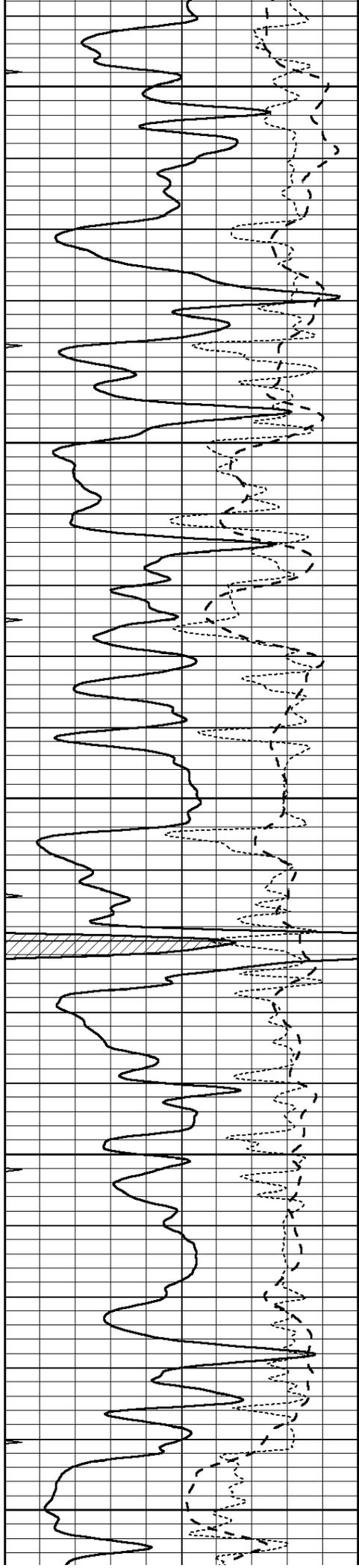


1900

1950

2000





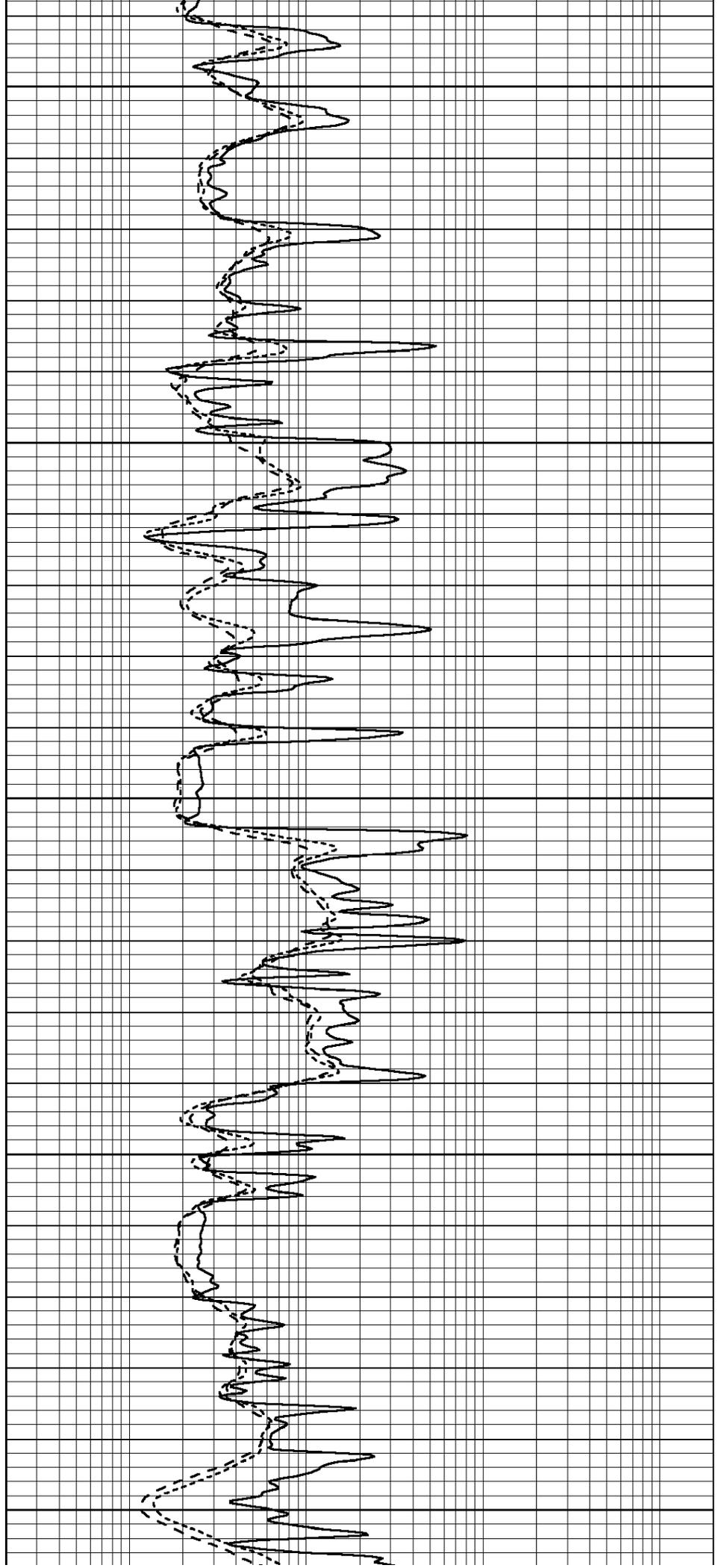
2050

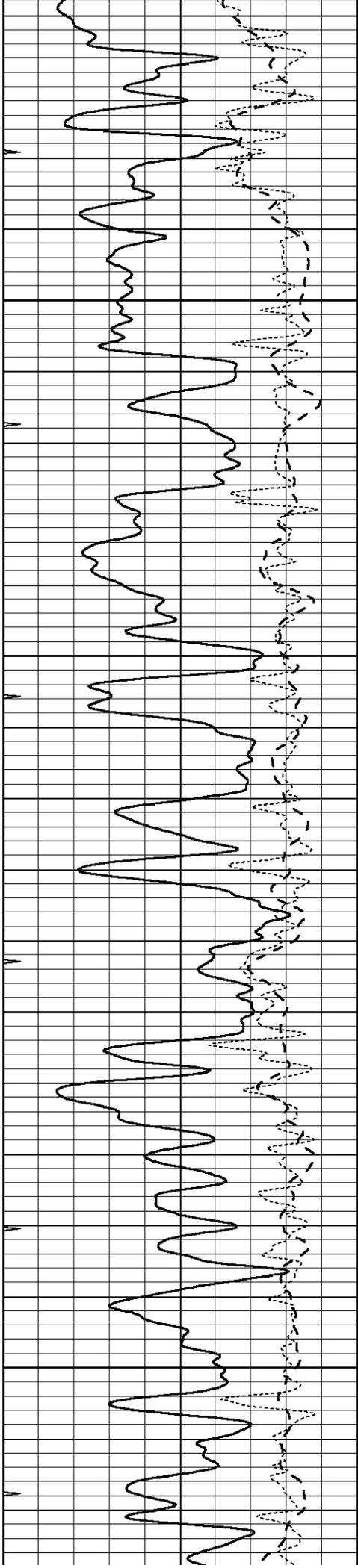
2100

2150

2200

2250



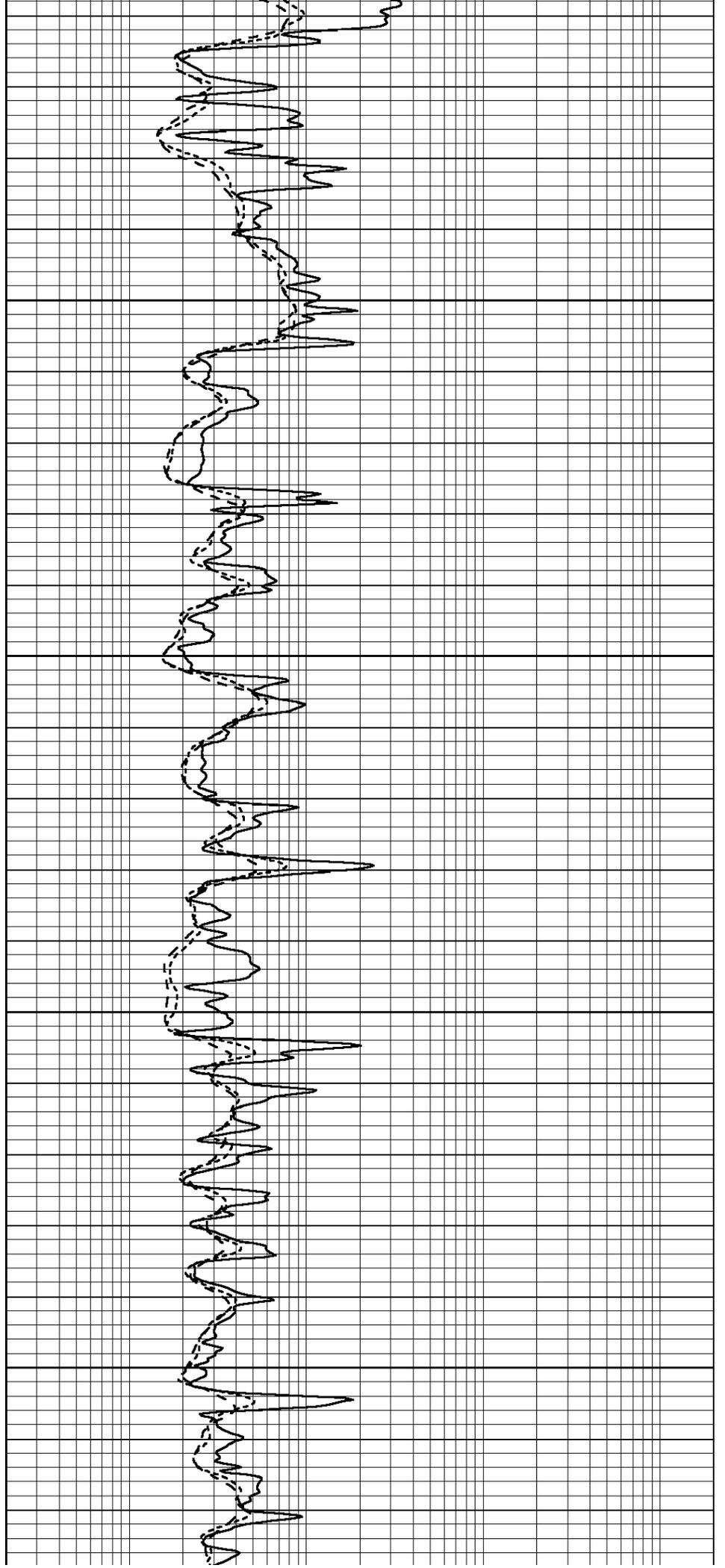


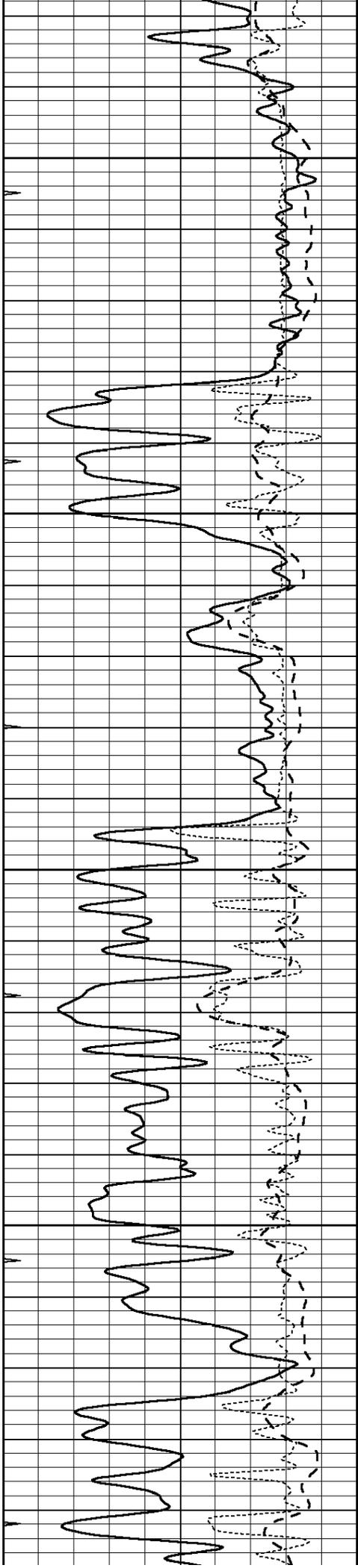
2300

2350

2400

2450



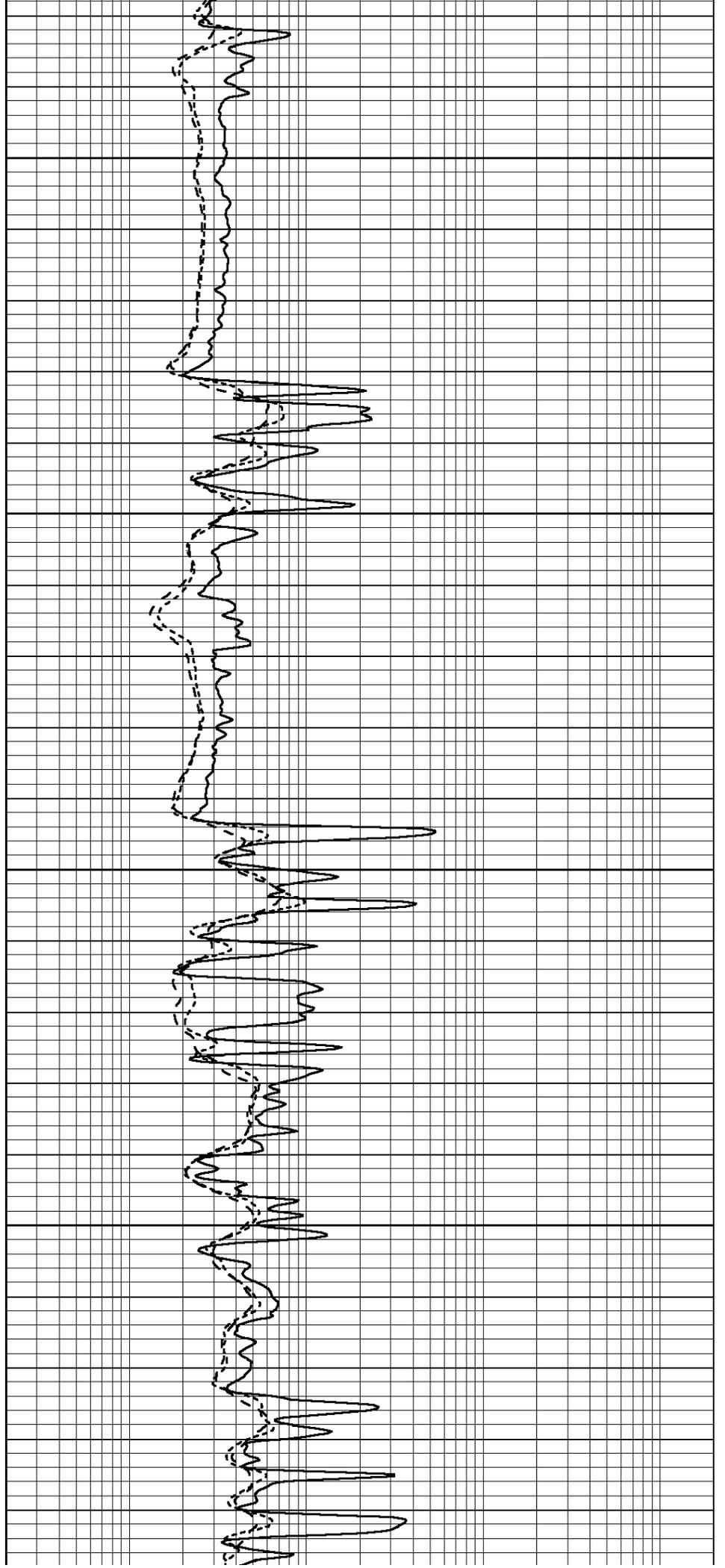


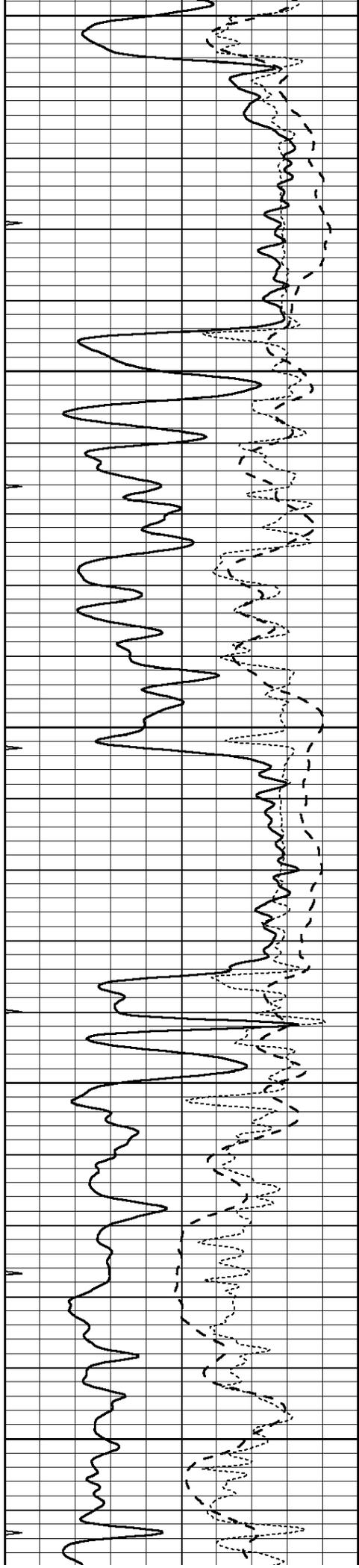
2500

2550

2600

2650





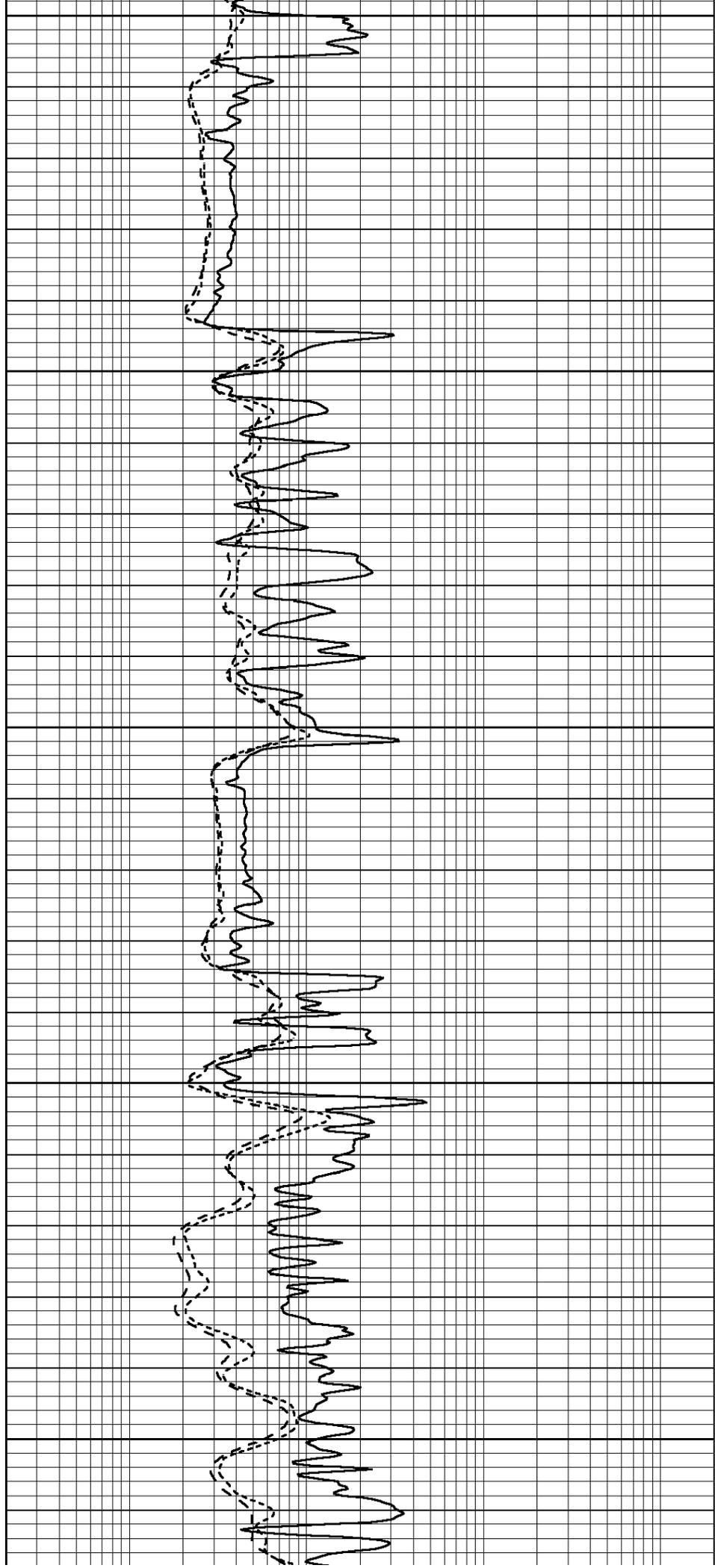
2700

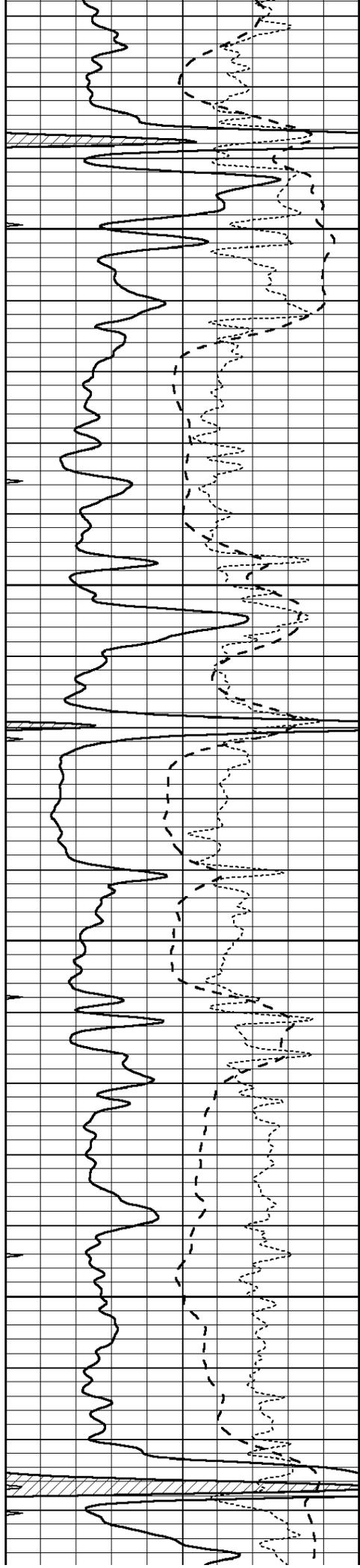
2750

2800

2850

2900



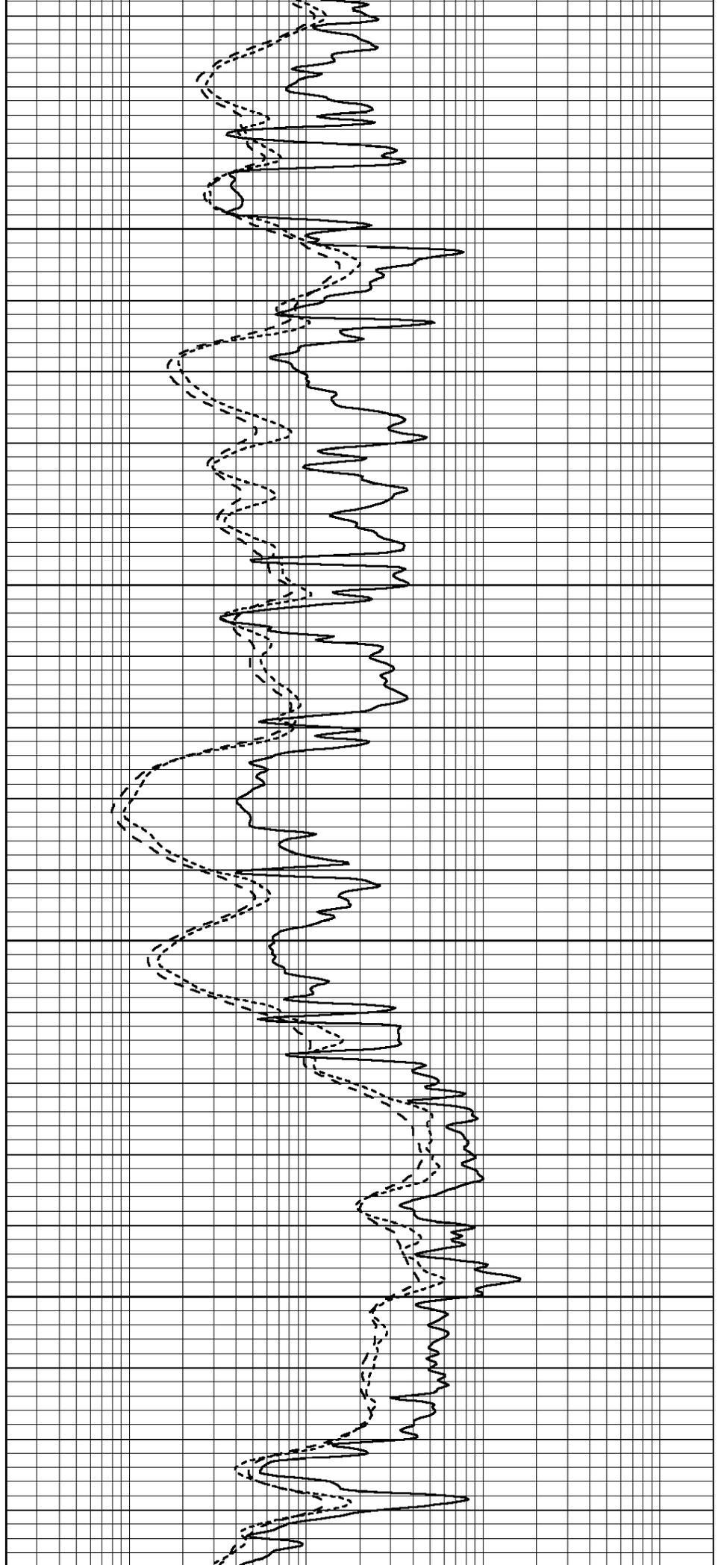


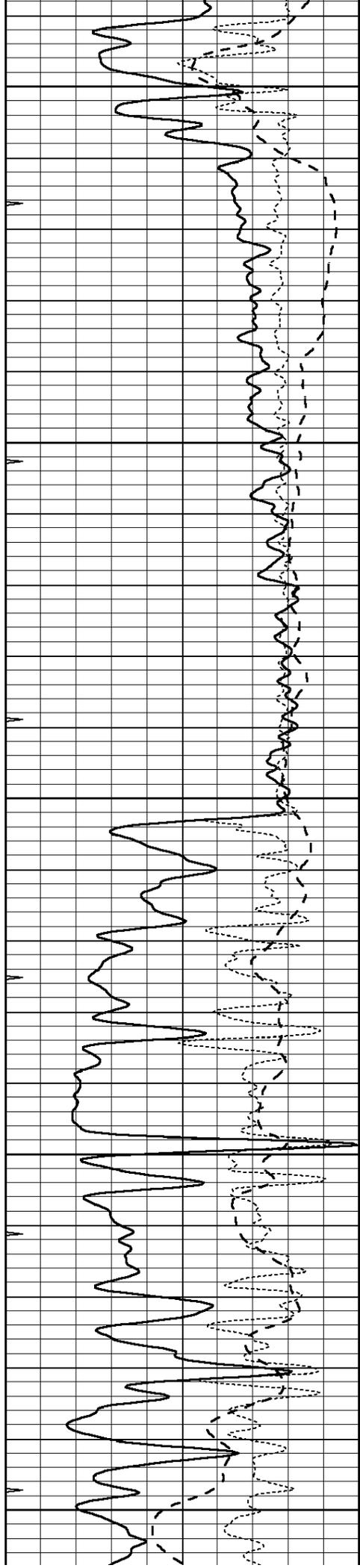
2950

3000

3050

3100





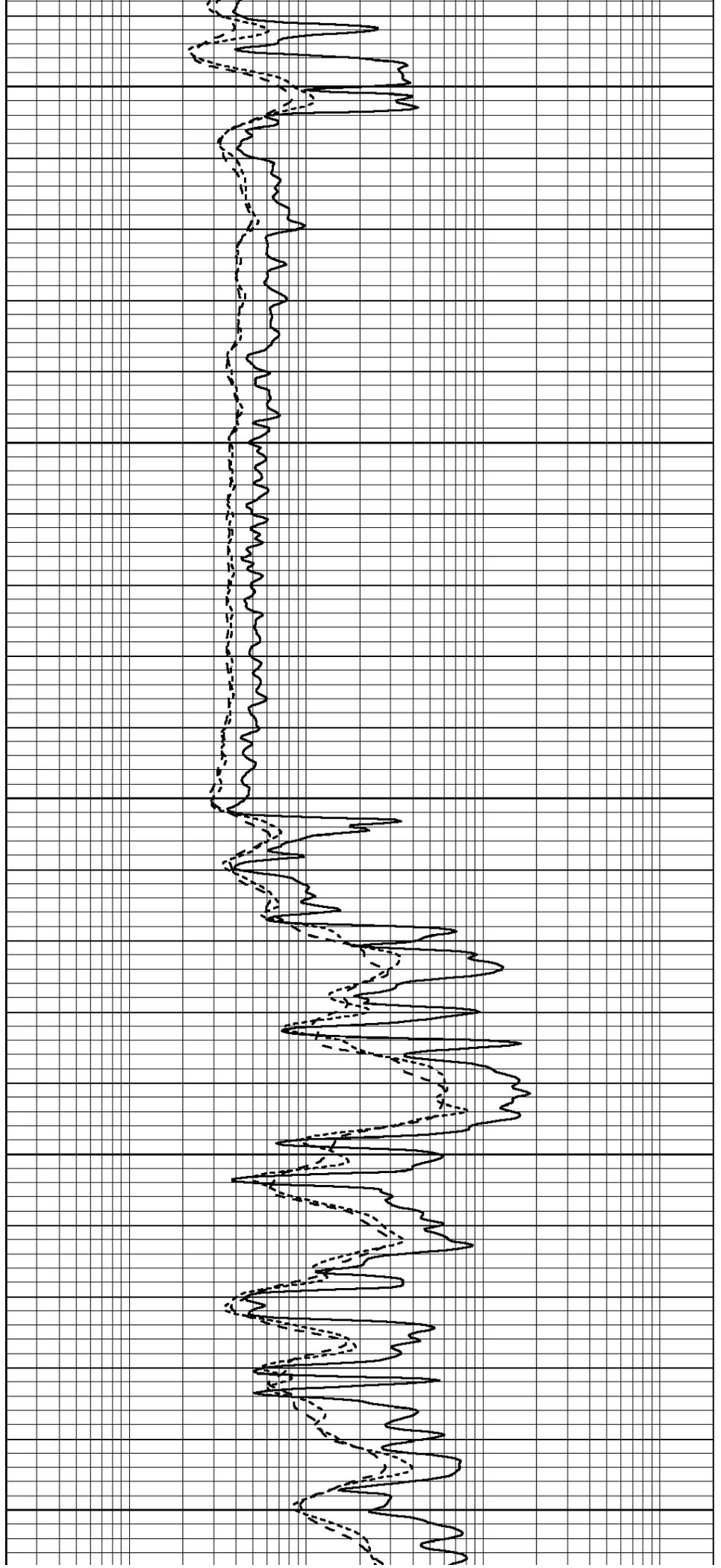
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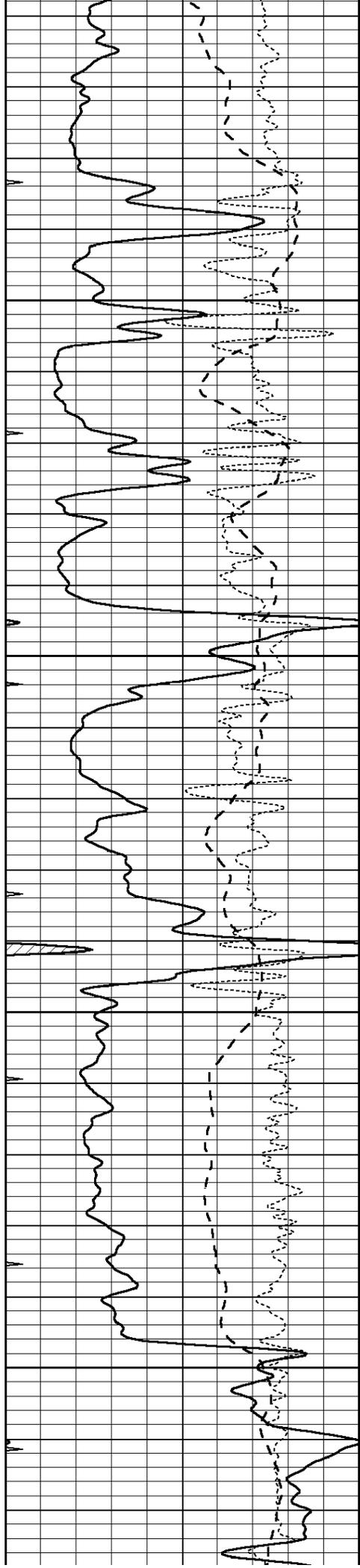
3200

3250

3300

3350



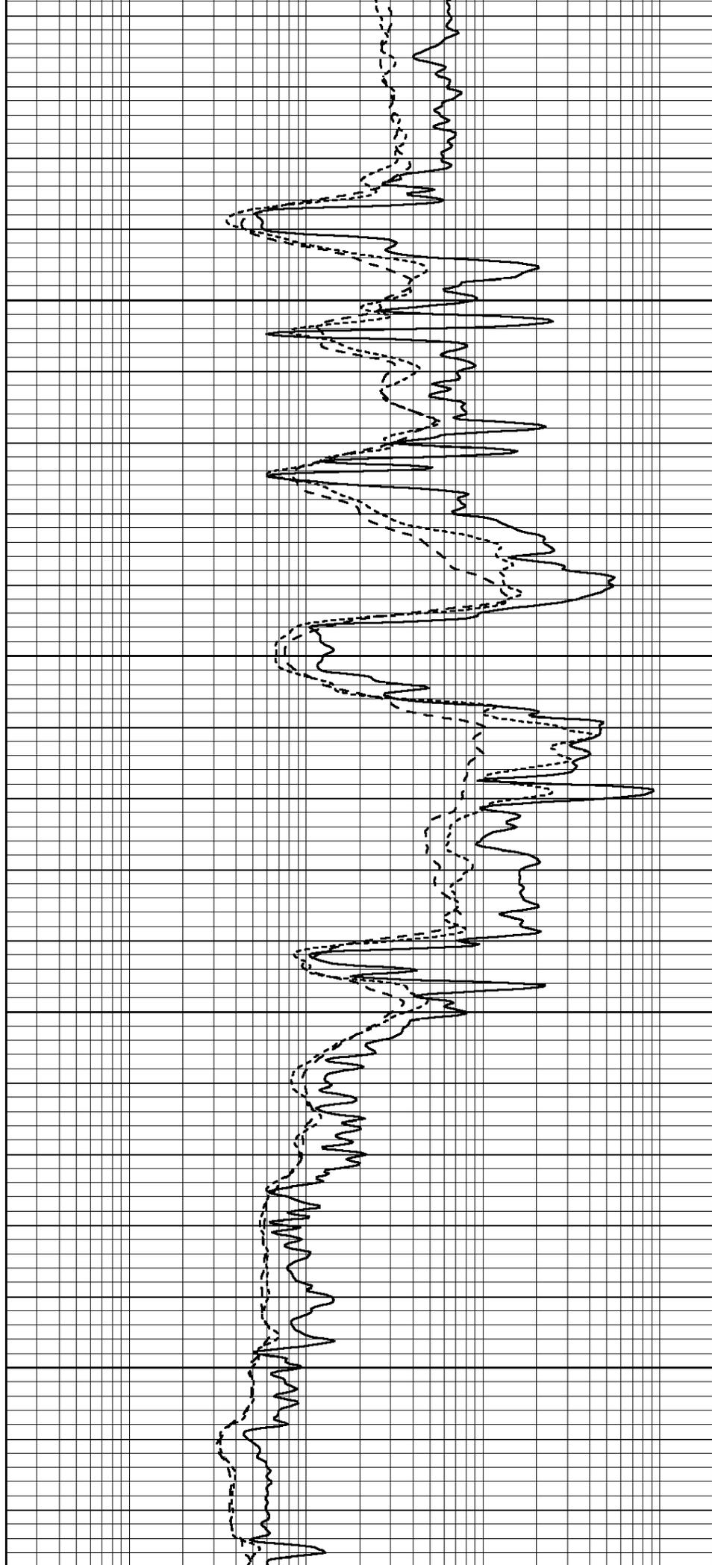


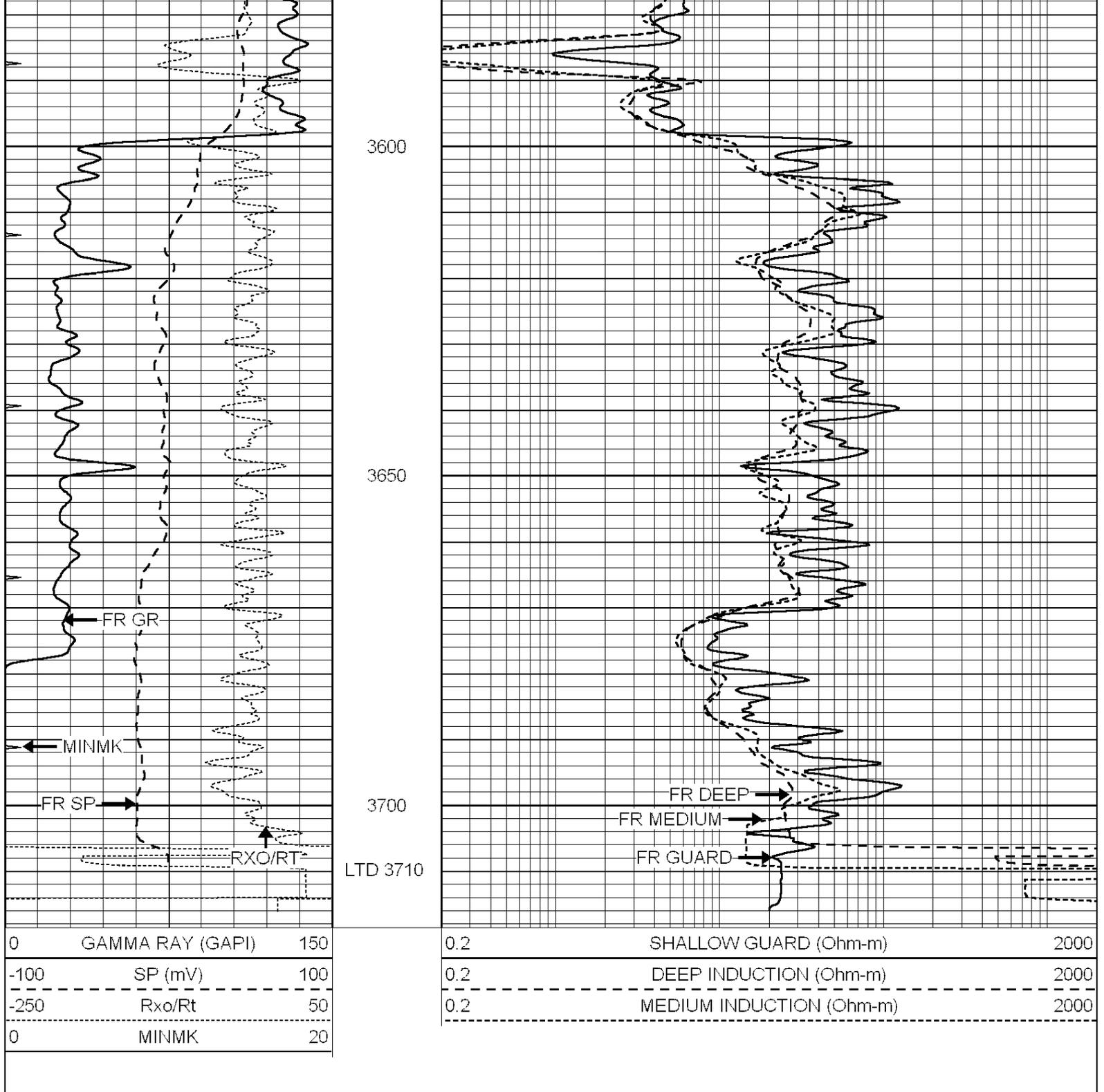
3400

3450

3500

3550





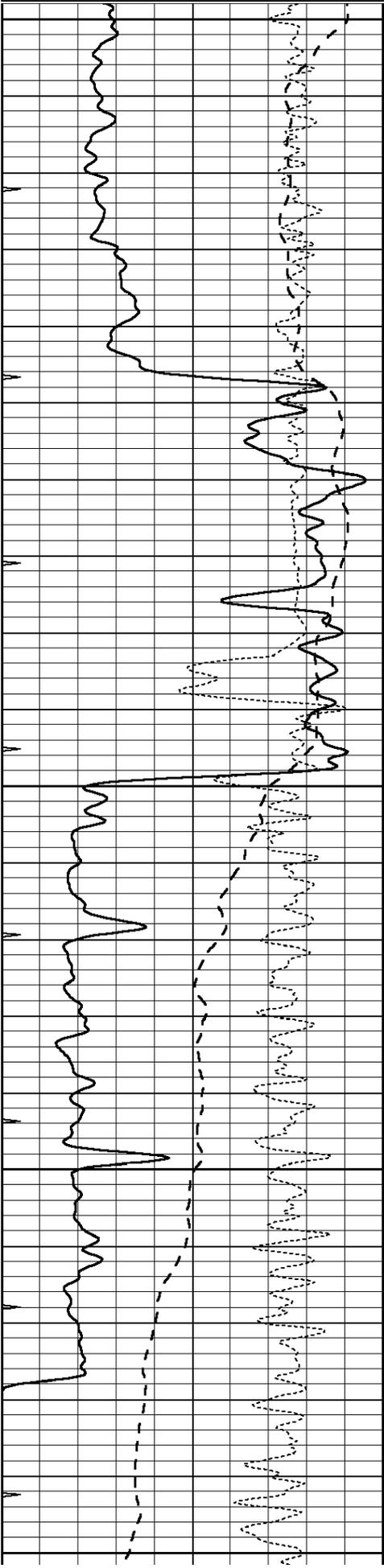
REPEAT SECTION

Database File: 1330ddn.db
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 Presentation Format: _dil
 Dataset Creation: Fri Dec 02 01:54:43 2016
 Charted by: Depth in Feet scaled 1:240

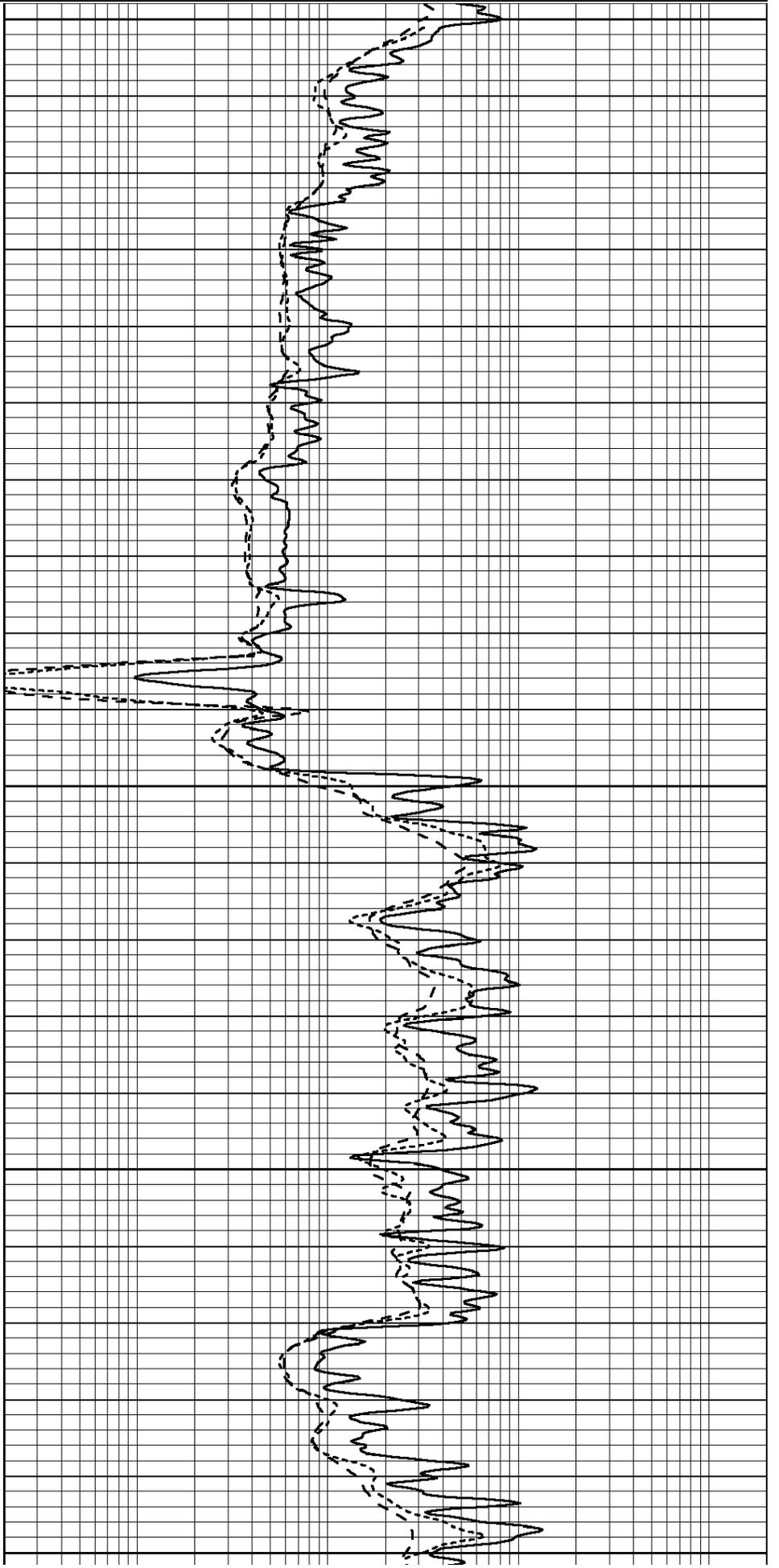
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000

-250 Rxo/Rt 50
0 MINMK 20

0.2 MEDIUM INDUCTION (Ohm-m) 2000



3500
3550
3600
3650
3700



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
0	MINMK	20			

Calibration Report

Database File: 1330ddn.db
Dataset Pathname: pass3.3
Dataset Creation: Fri Dec 02 02:47:56 2016

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
Surface Cal Performed: Thu Nov 03 11:12:55 2016
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	625.000	-6.000	
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-50.000	
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

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	

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

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps