



DUAL INDUCTION LOG

Company	BEAR PETROLEUM	Company	BEAR PETROLEUM
Well	RYAN A #1	Well	RYAN A #1
Field	UNNAMED	Field	UNNAMED
County	PAWNEE	County	PAWNEE
State	KANSAS	State	KANSAS
Location:	API # : 15-145-21844-00-00	Other Services	CDL/CNL/MEL SON
Permanent Datum	2240 FSL & 400 FWL	Elevation	
Log Measured From	GROUND LEVEL	K.B. 2229	
Drilling Measured From	KELLY BUSHING 6' A.G.L.	D.F. 2227	
	KELLY BUSHING	G.L. 2223	
Date	02/01/19		
Run Number	ONE		
Depth Driller	4800		
Depth Logger	4799		
Bottom Logged Interval	4798		
Top Log Interval	50		
Casing Driller	8 5/8" @ 1355		
Casing Logger	1355		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.3/64		
pH / Fluid Loss	8.5/11.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.9@60		
Rmt @ Meas. Temp	1.43@60		
Rmc @ Meas. Temp	2.28@60		
Source of Rmt / Rmc	MEASURED		
Rm @ BHT	.94@121		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	///		
Maximum Recorded Temperature	121F		
Equipment Number	1523		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	ROD ANDERSON		

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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, KS. (785) 628-6395

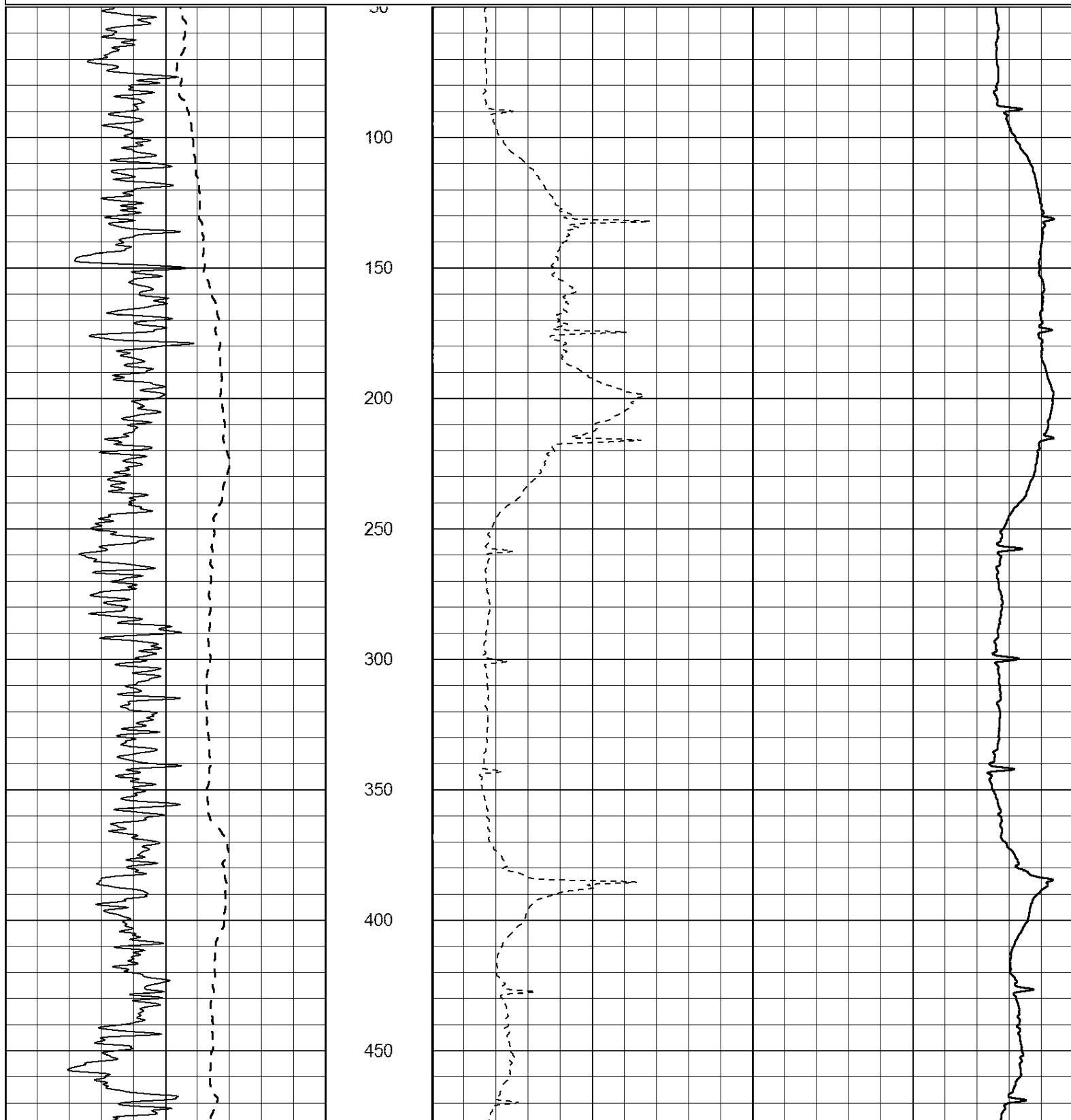
DIRECTIONS
BURDETT EAST TO 340 SOUTH TO N RD.
EAST INTO.

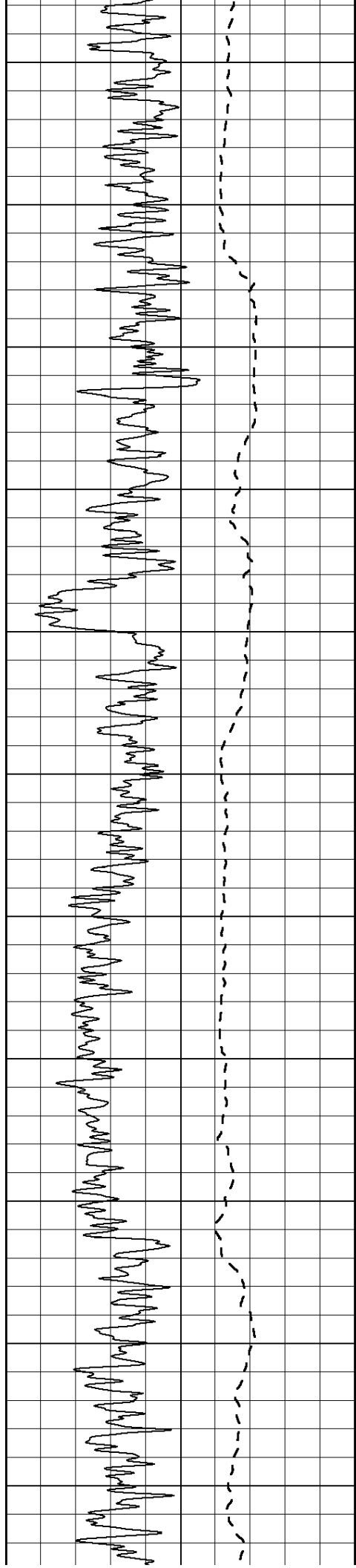


MAIN PASS

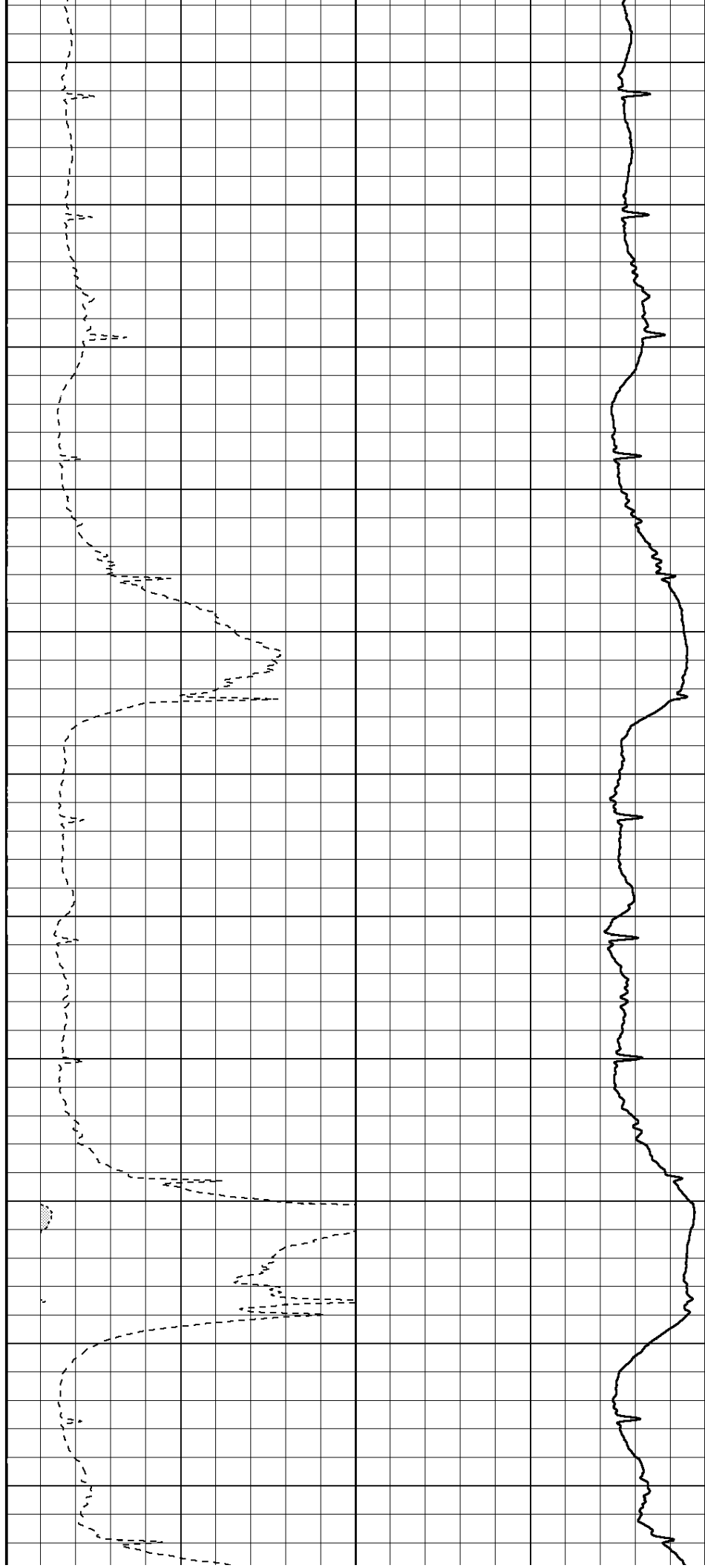
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 Presentation Format: _dil2
 Dataset Creation: Fri Feb 01 06:06:52 2019 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:600

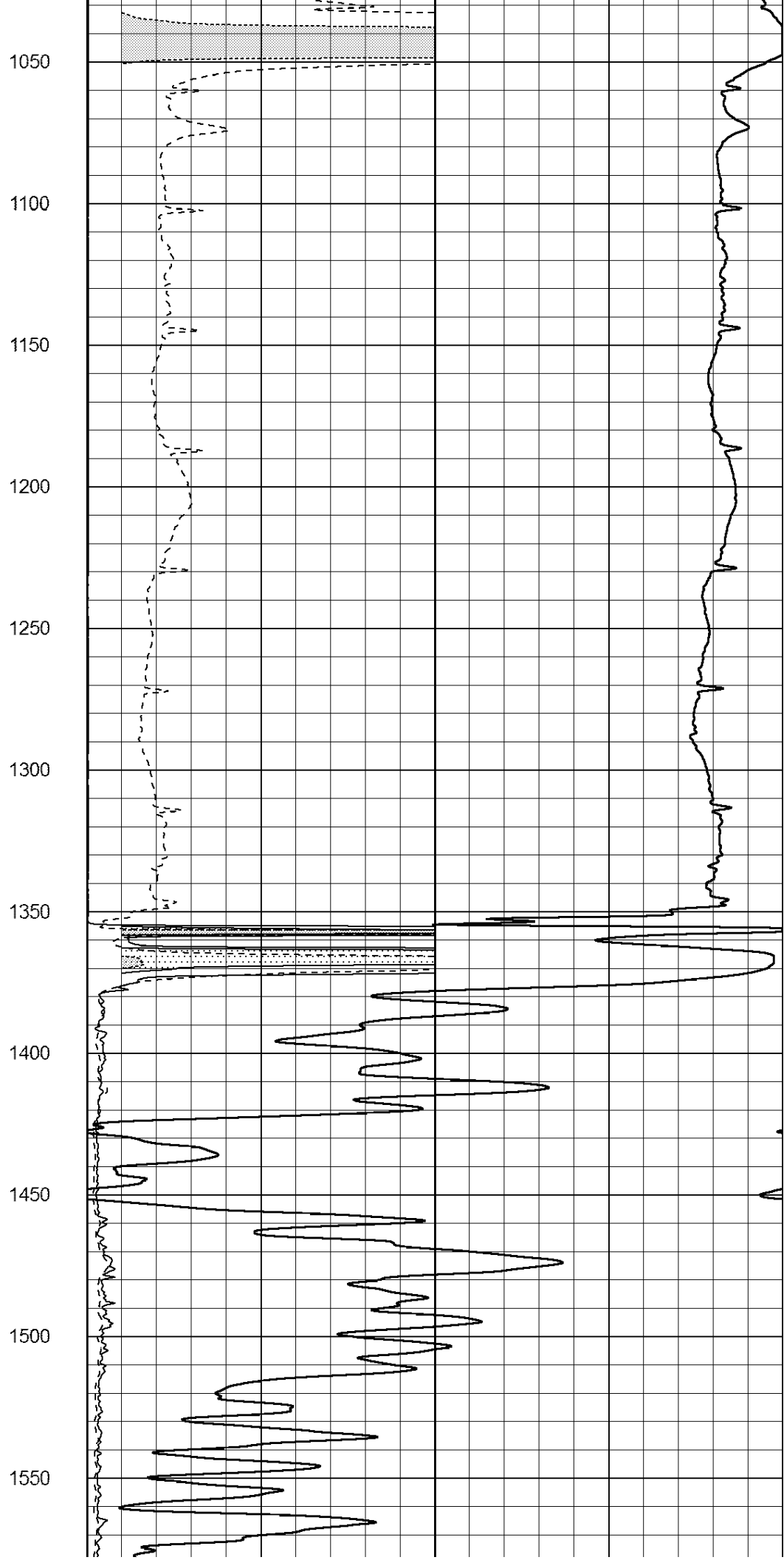
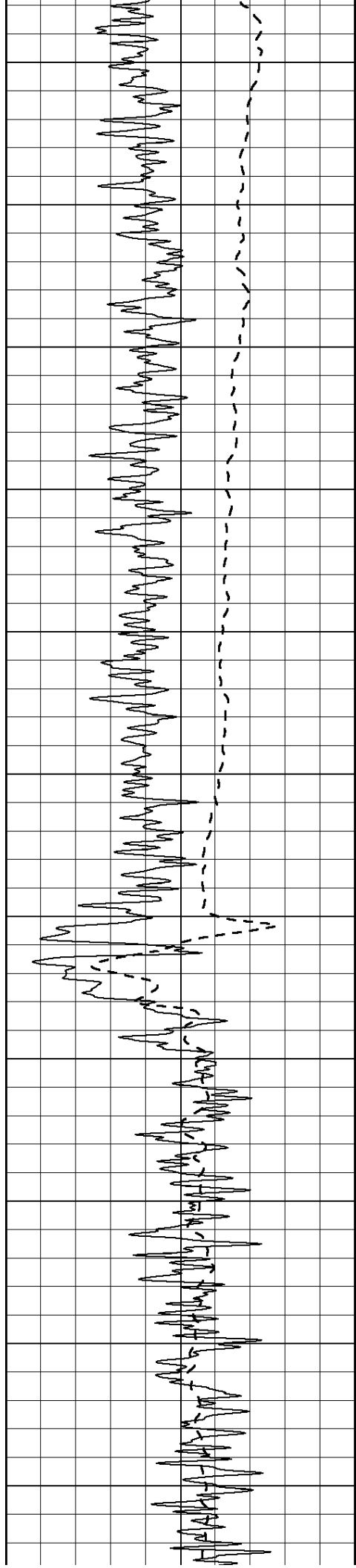
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-100	SP (mV)	100	0	RILD (Ohm-m)	50
-----			-----		
			1000	CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500

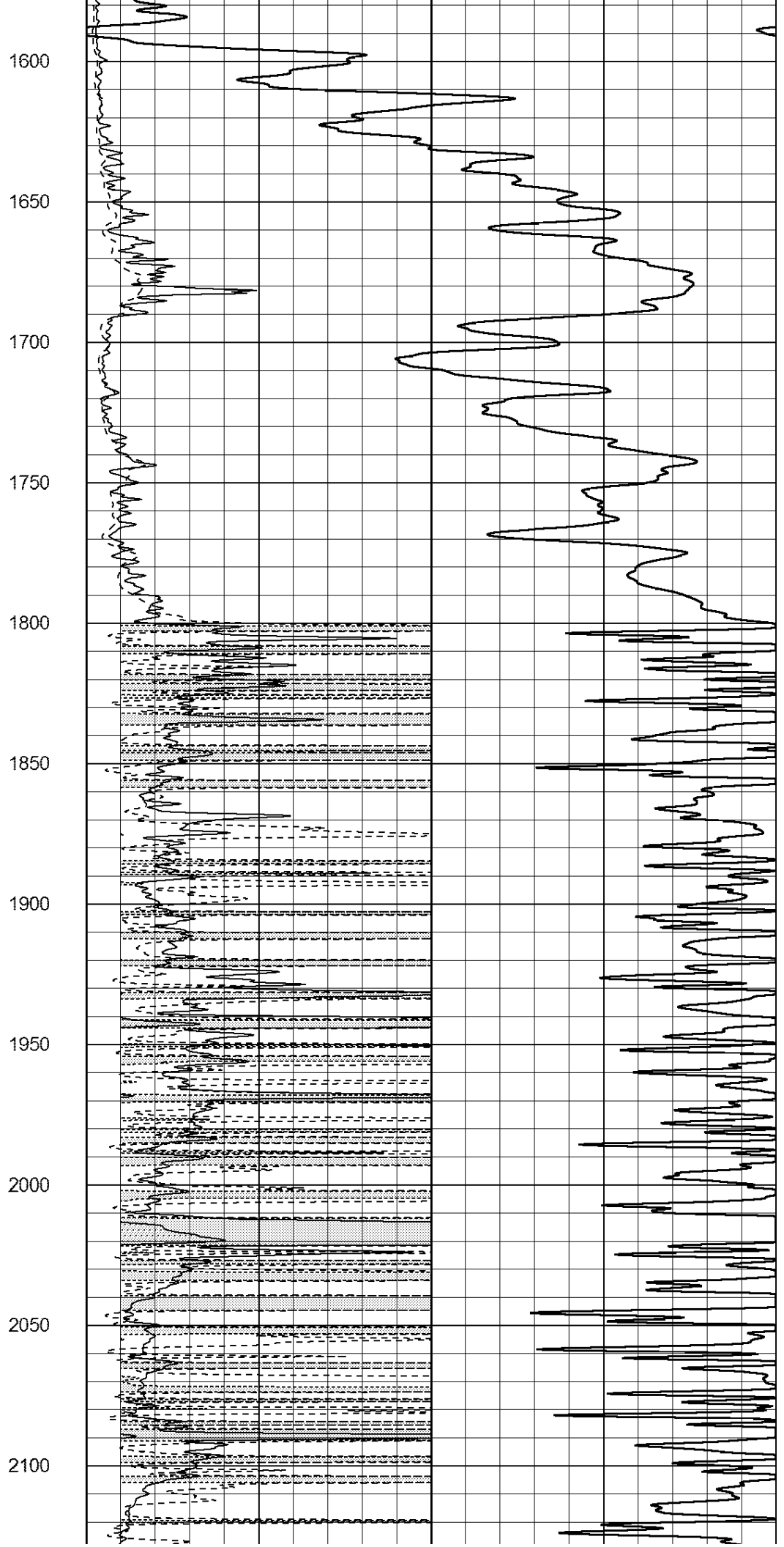
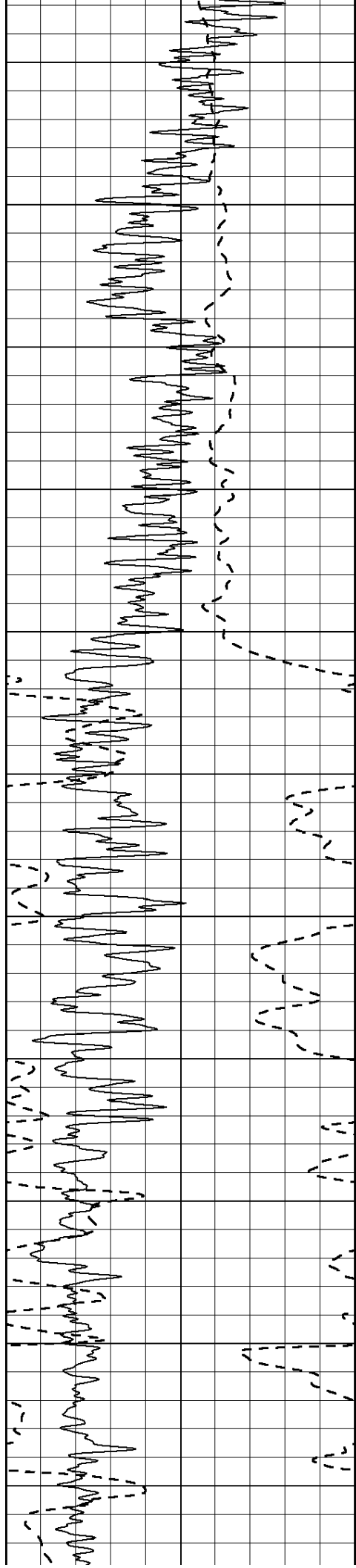


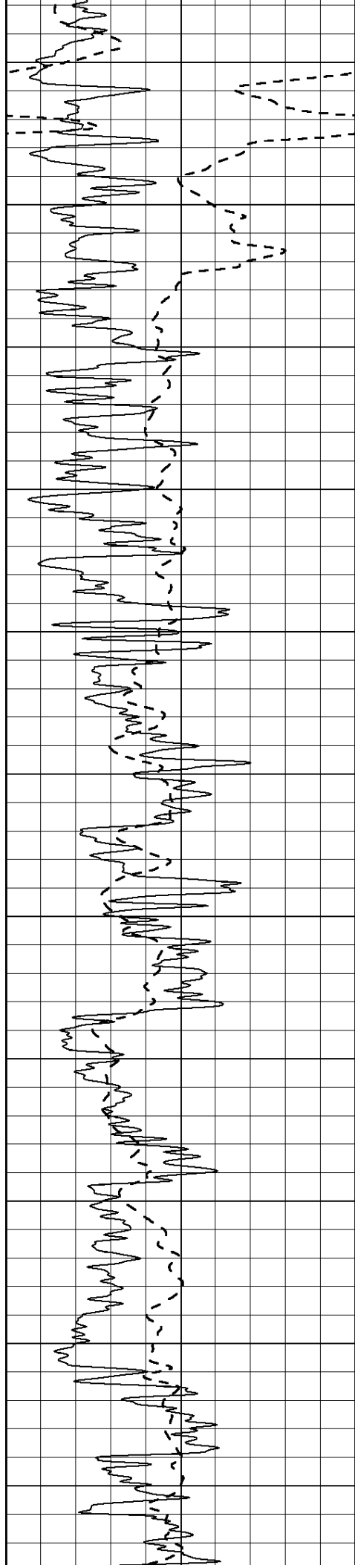


500
550
600
650
700
750
800
850
900
950
1000









2150

2200

2250

2300

2350

2400

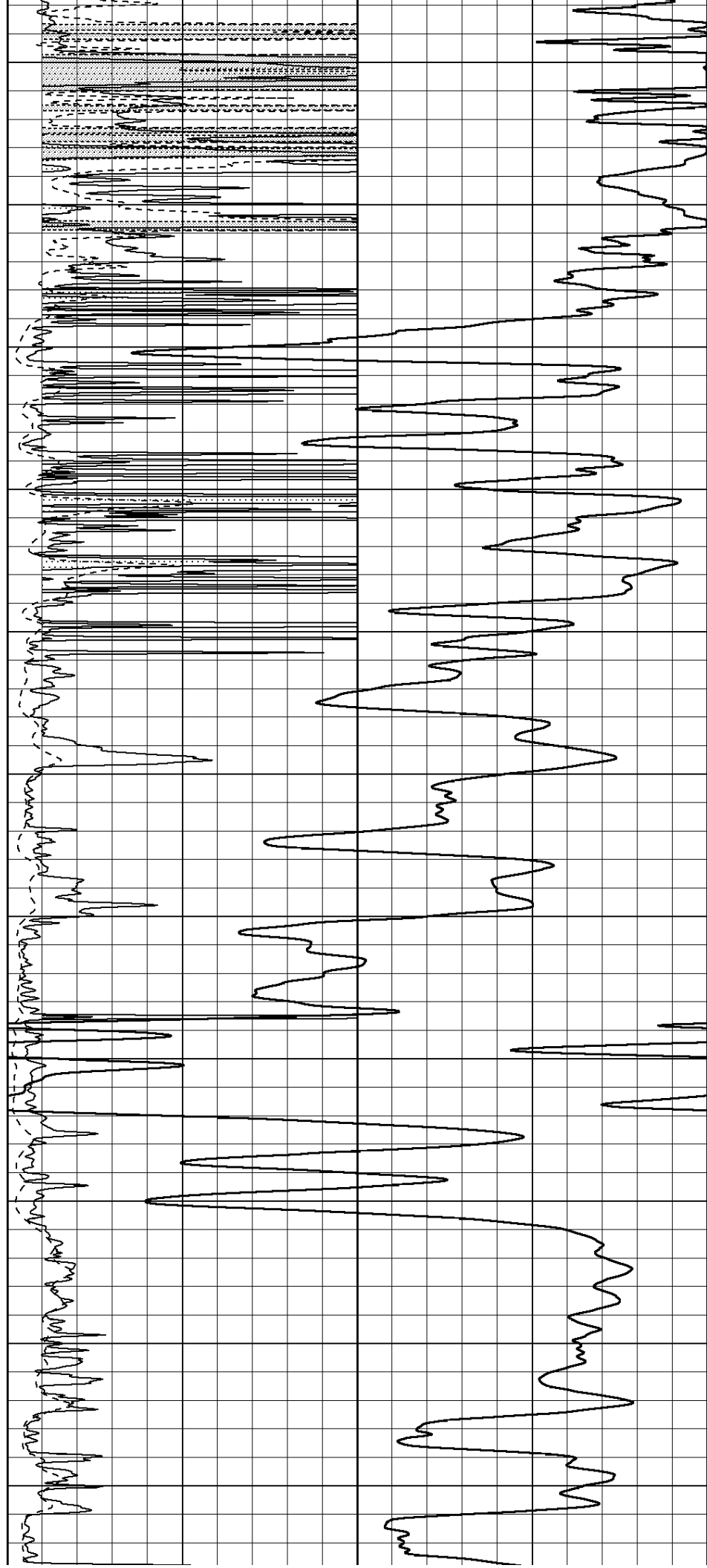
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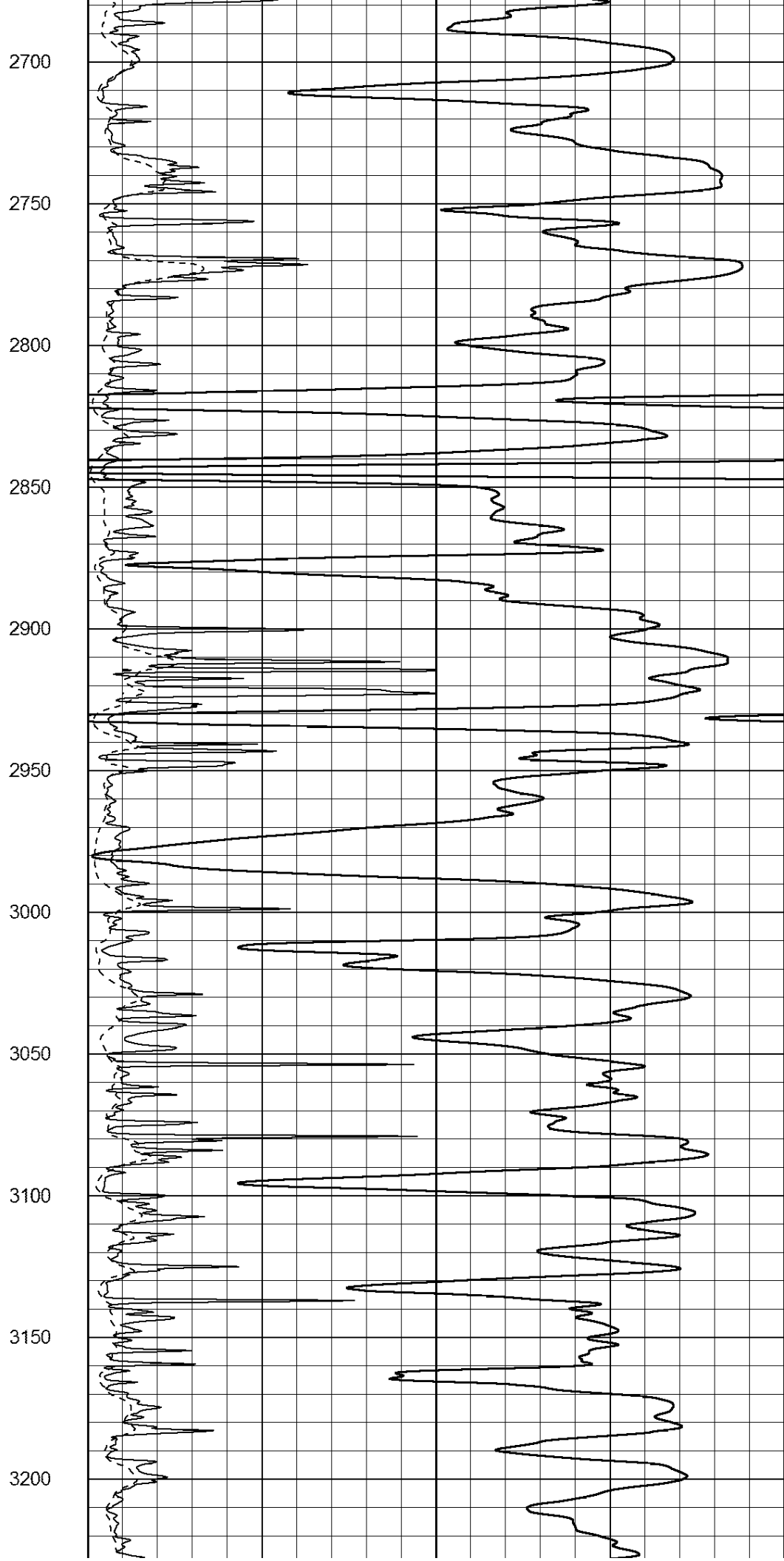
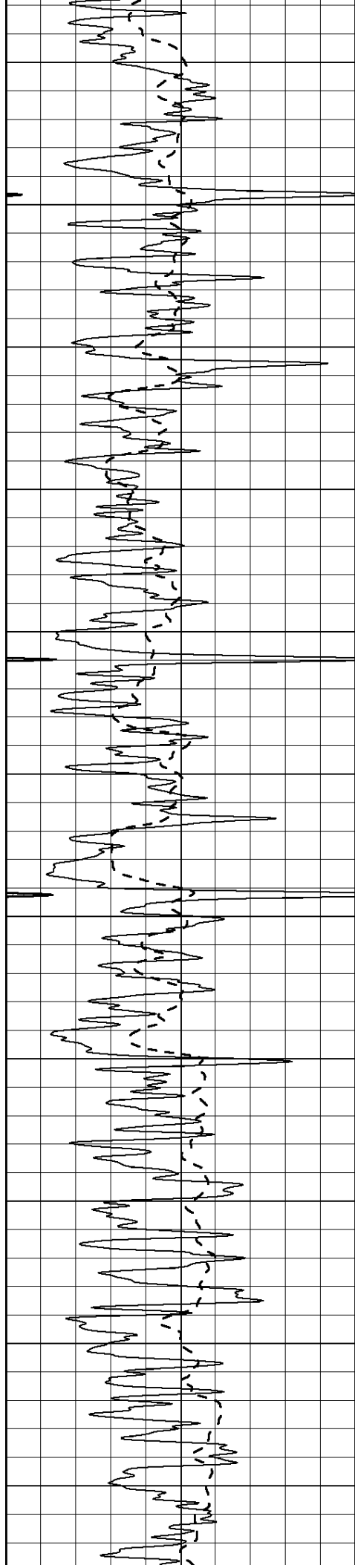
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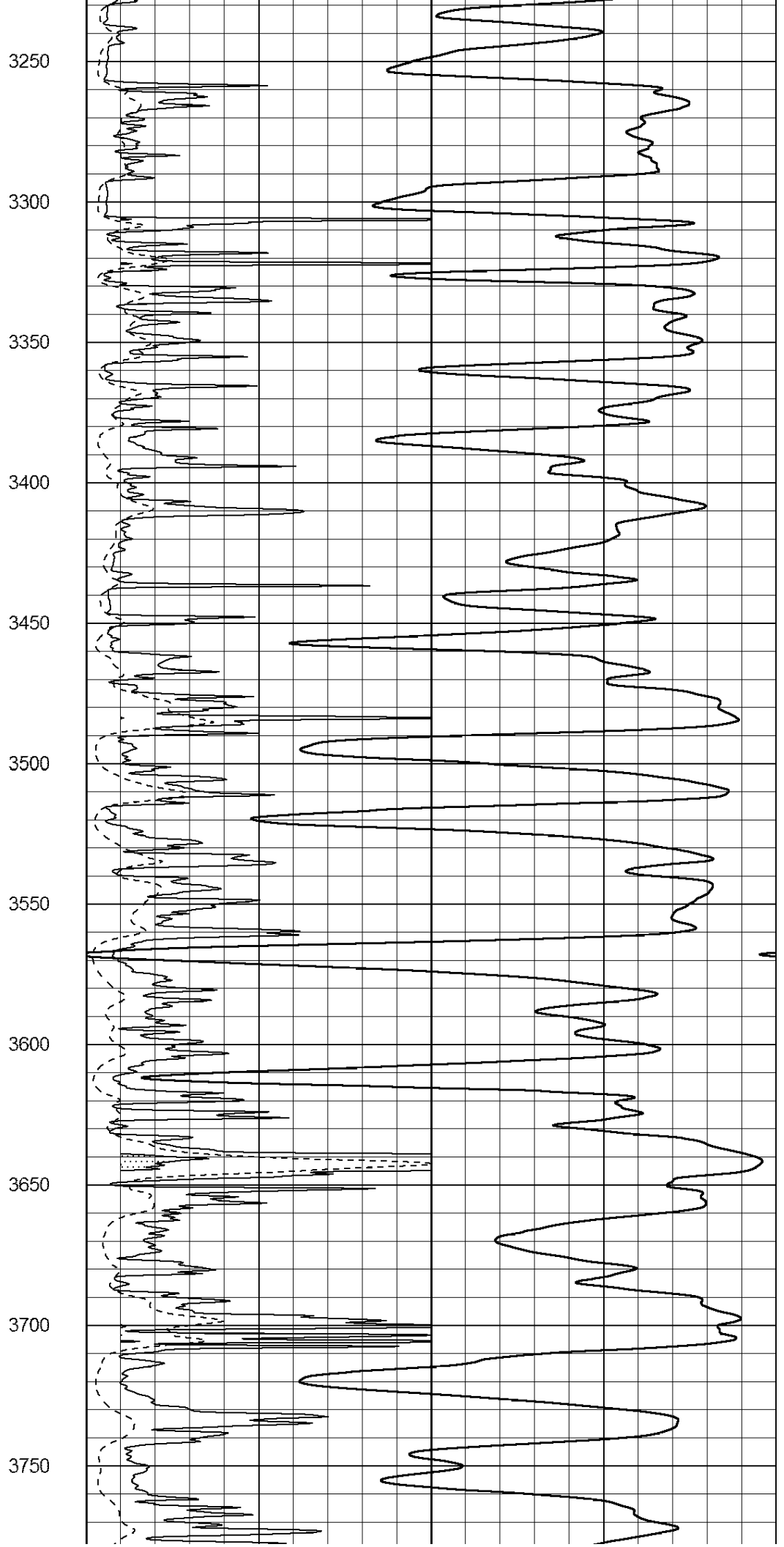
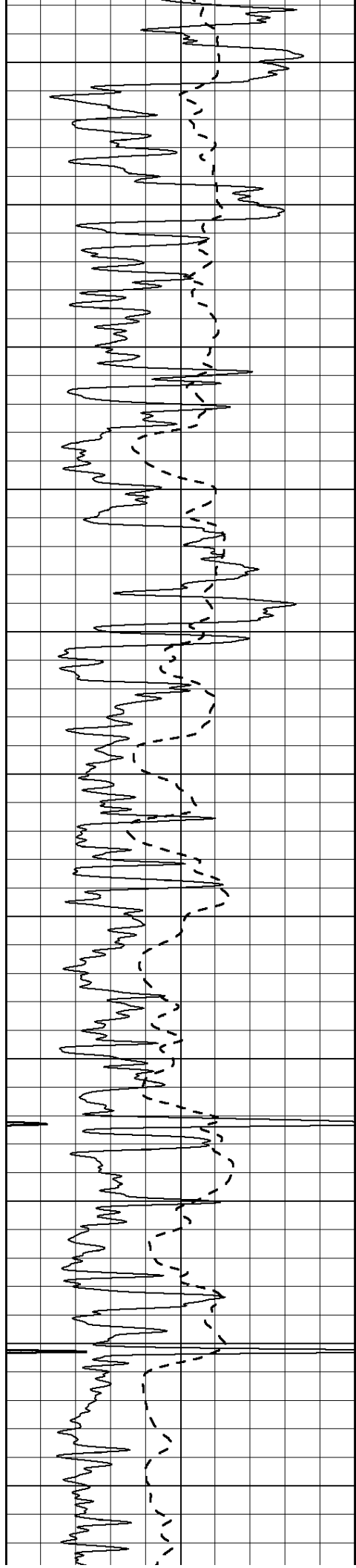
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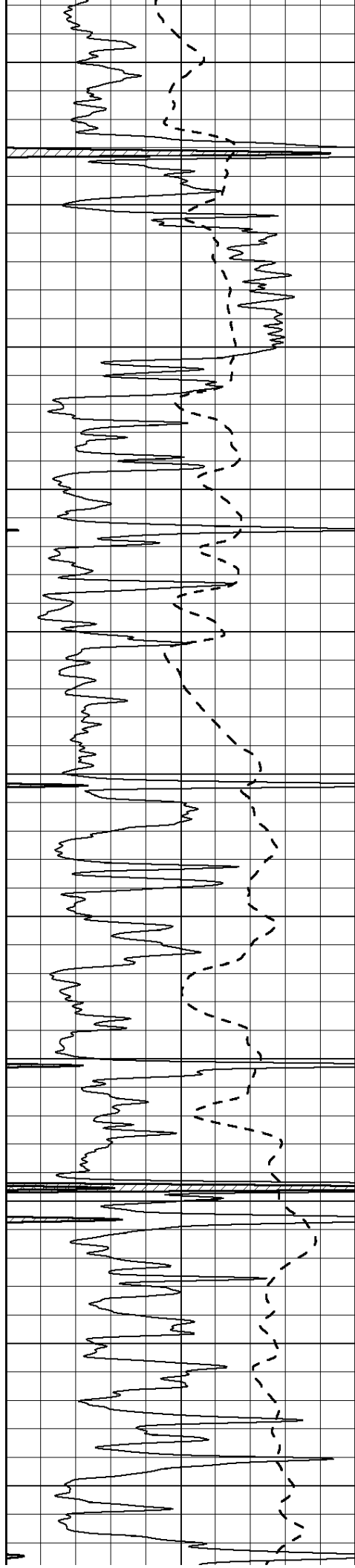
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2650









3800

3850

3900

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4000

4050

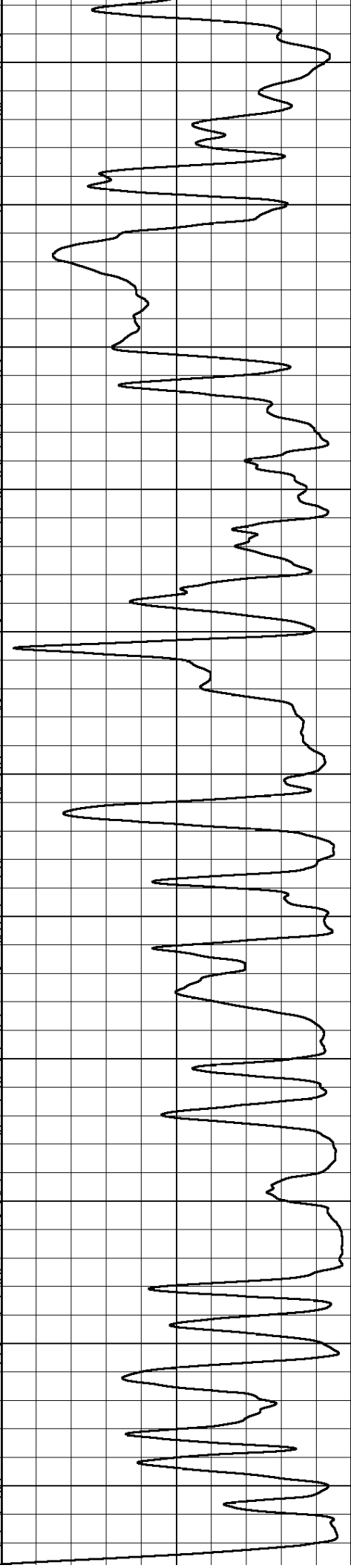
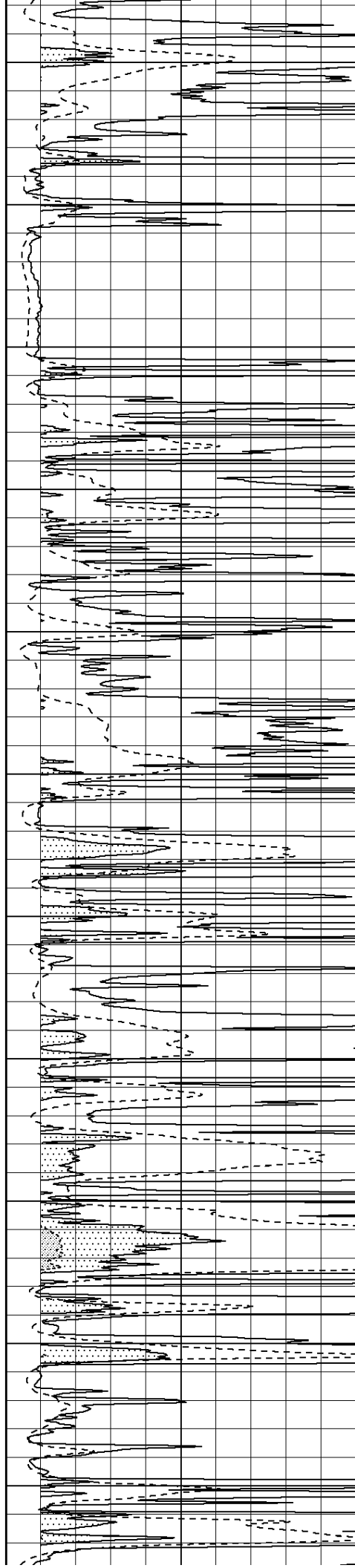
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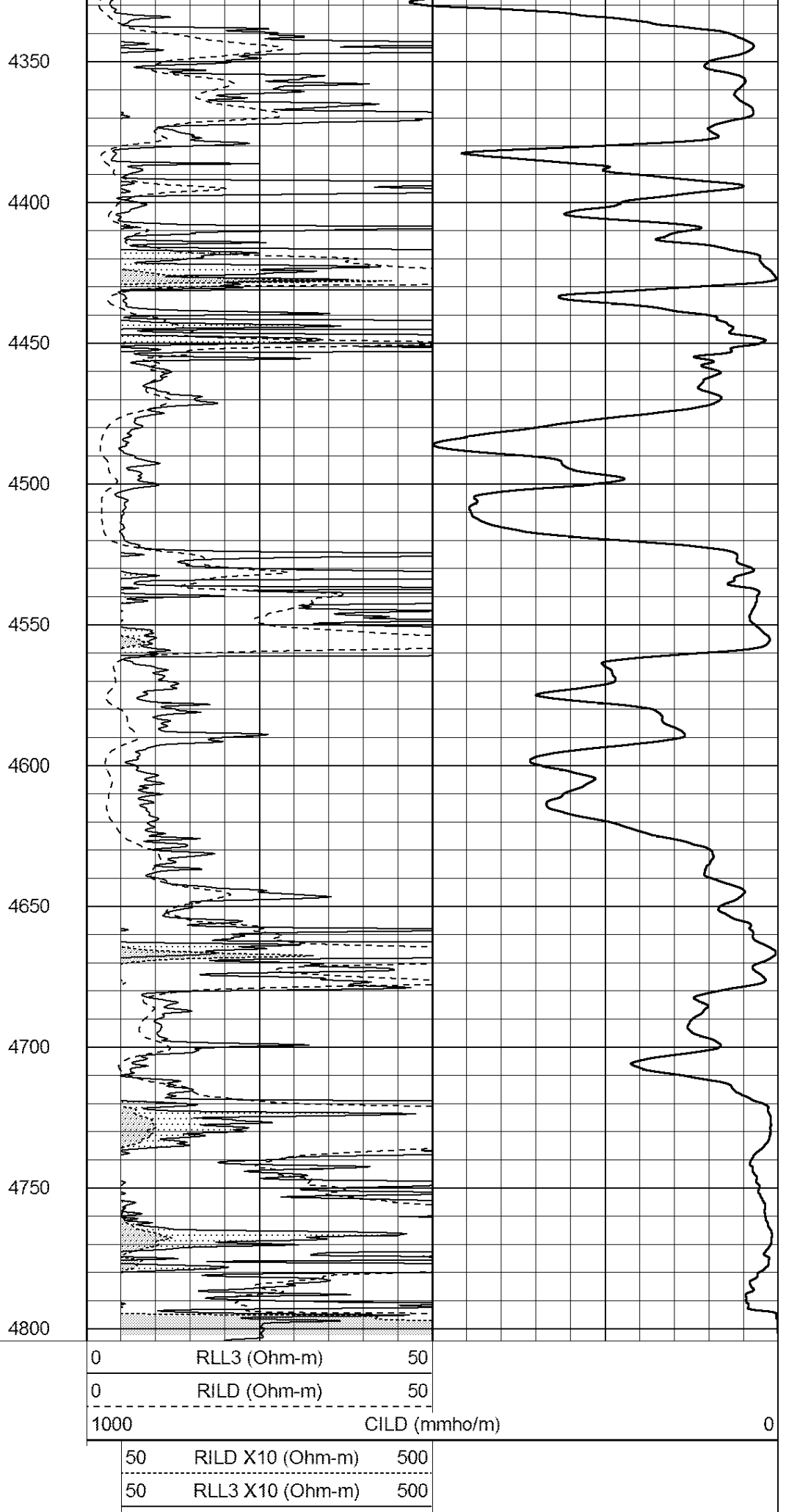
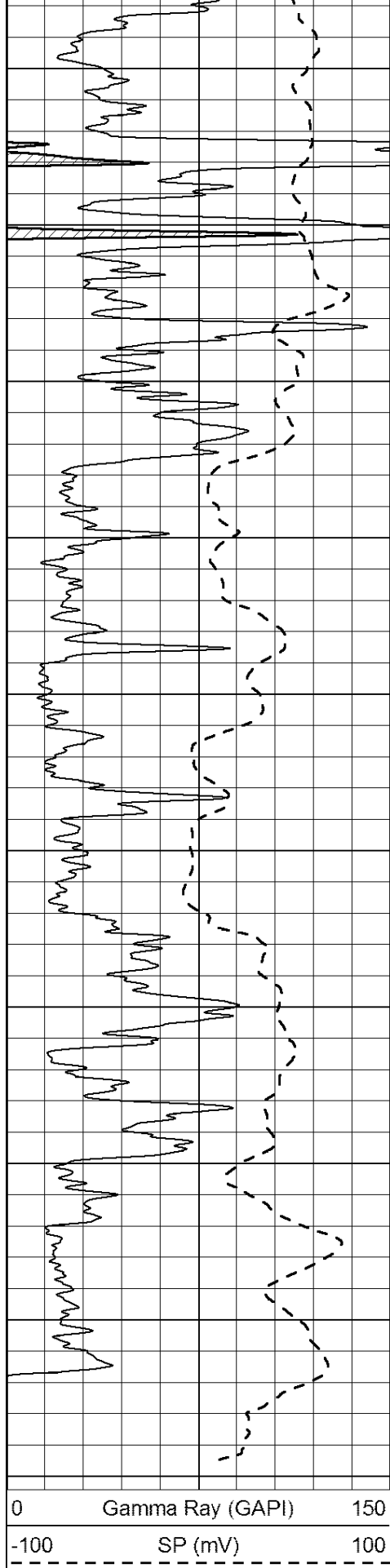
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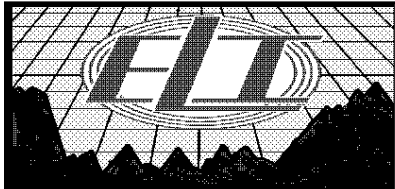
4300





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

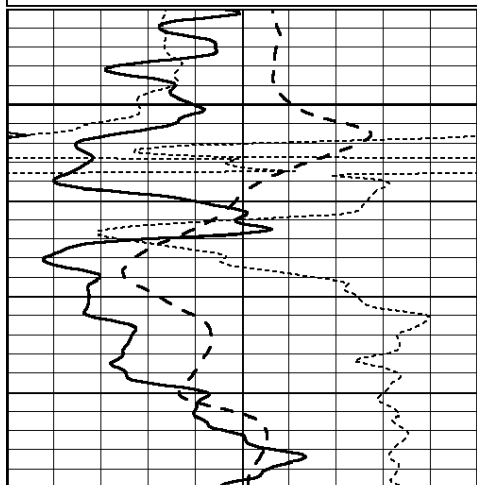


MAIN PASS

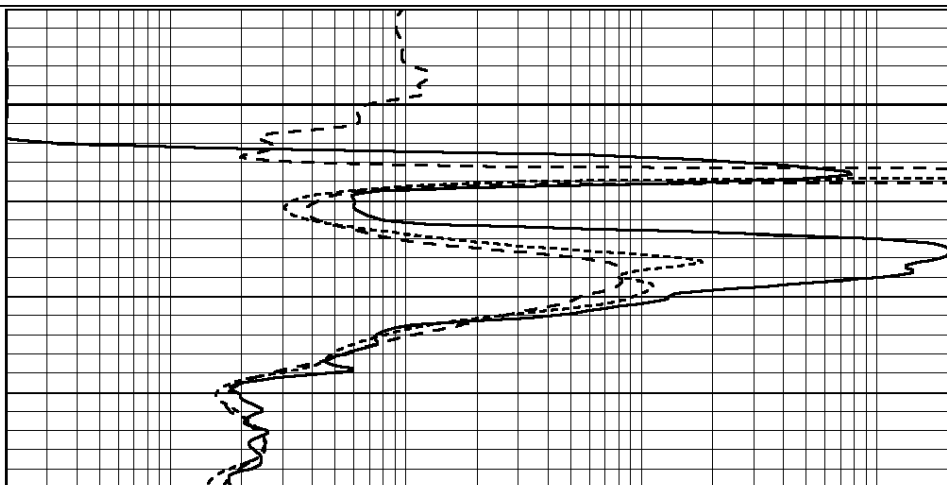
Database File: 3479ddn.db
Dataset Pathname: pass3.1
Presentation Format: _dil
Dataset Creation: Fri Feb 01 06:06:52 2019 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

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

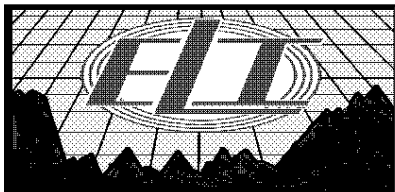


1350



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

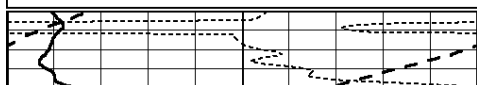


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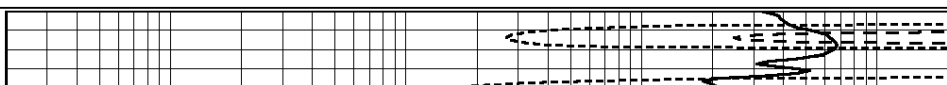
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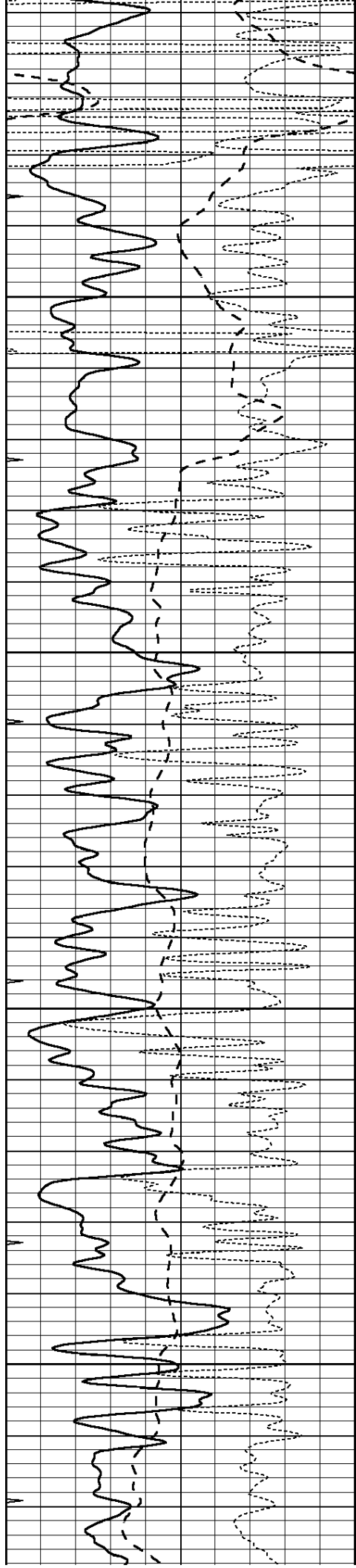
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



2150



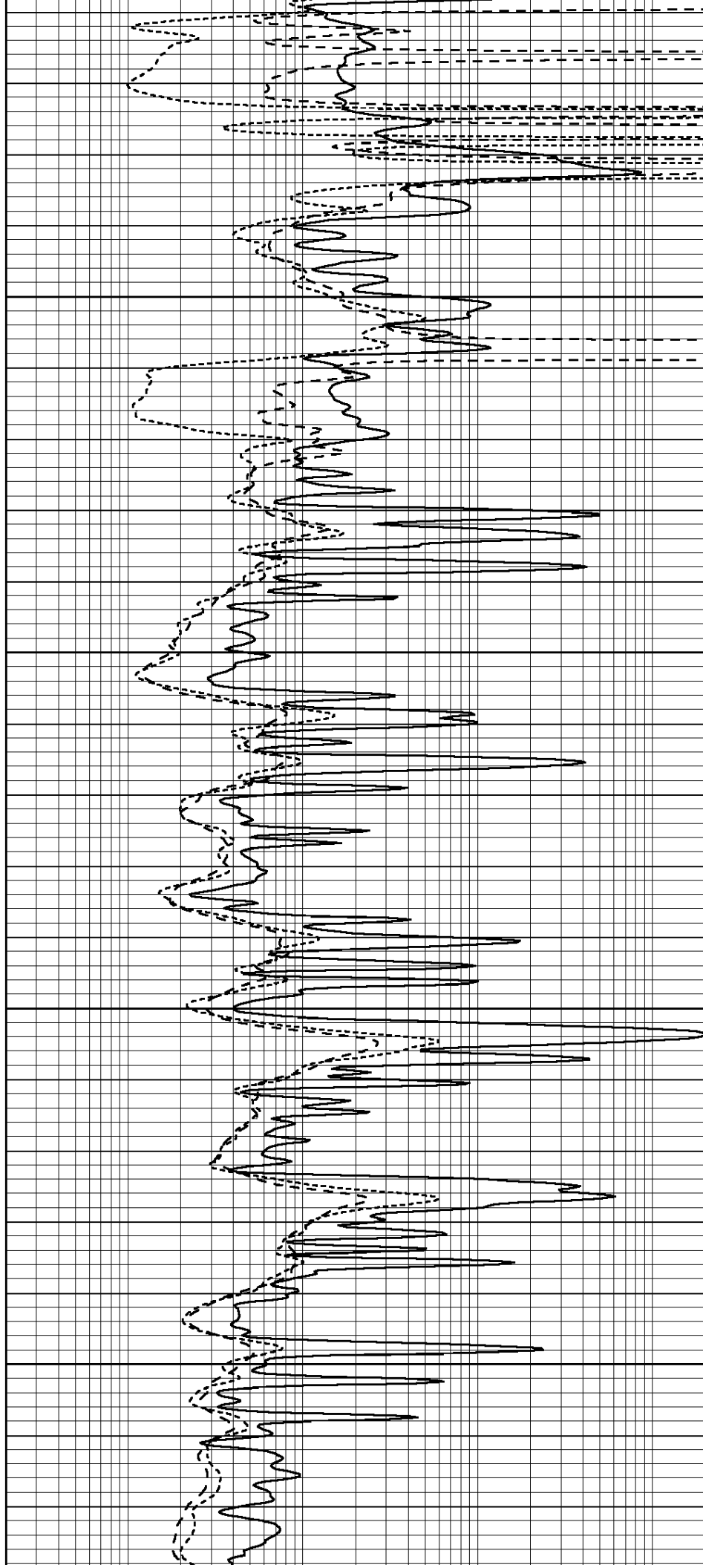


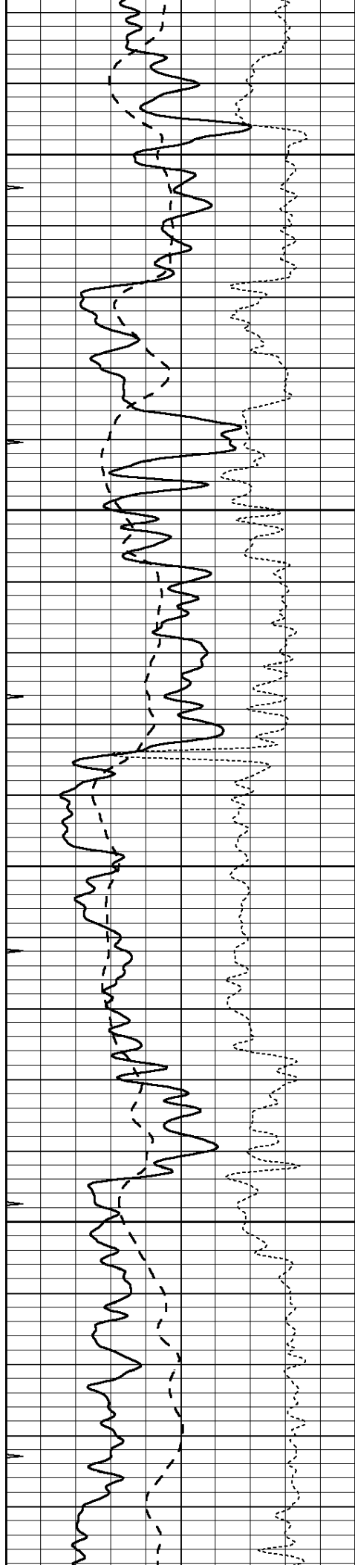
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2300

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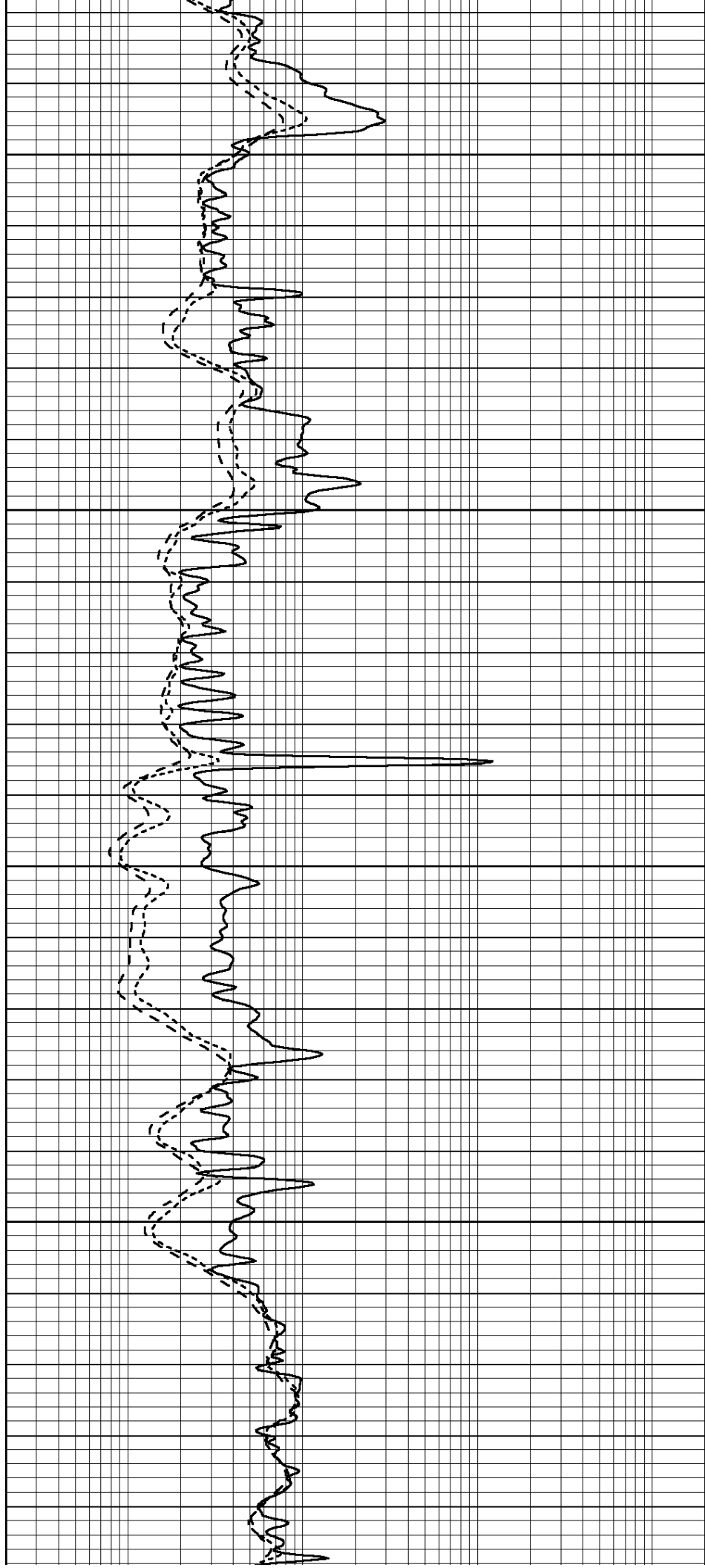


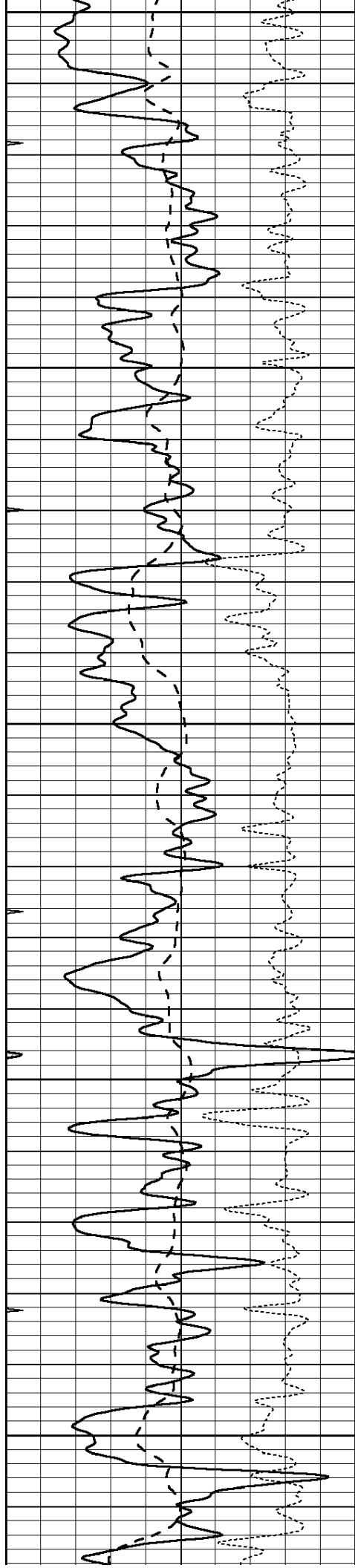
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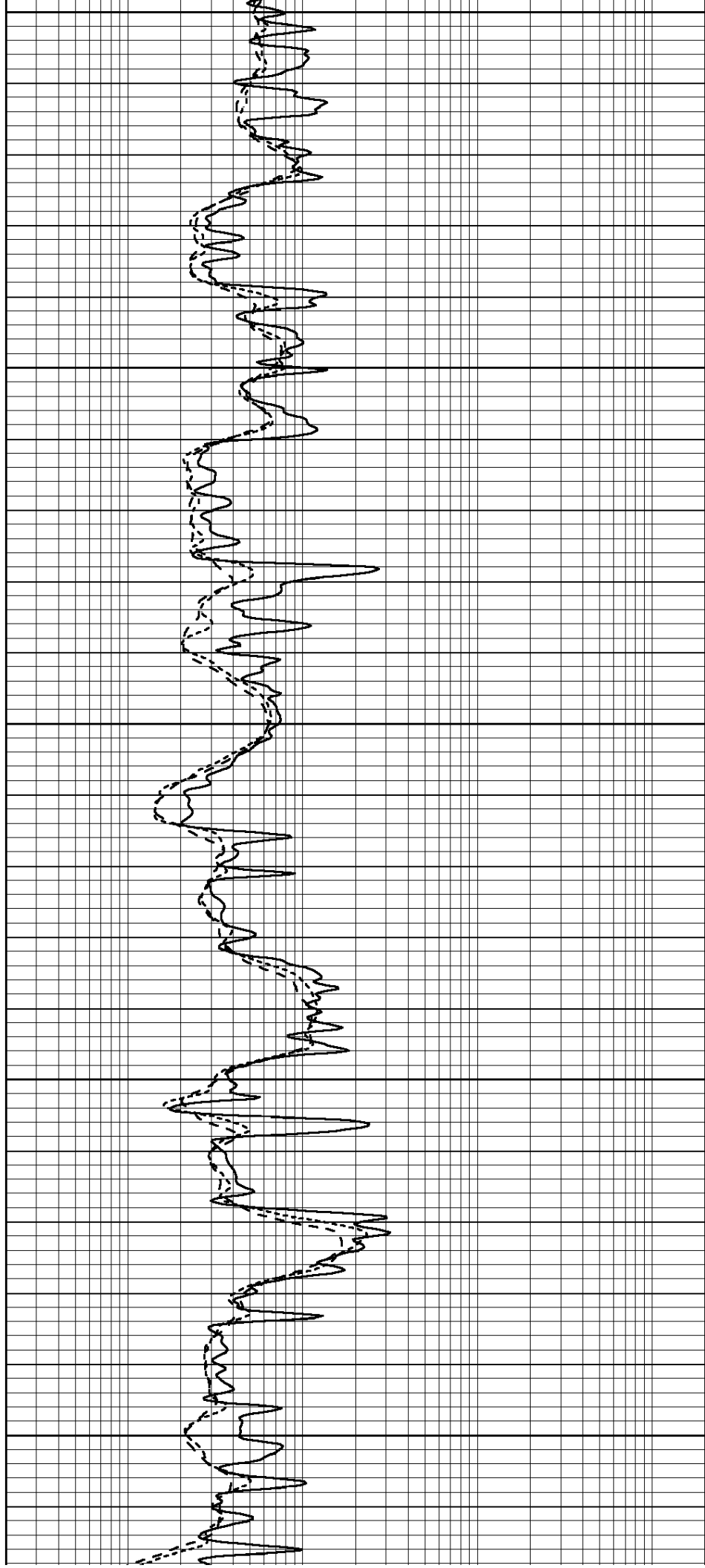
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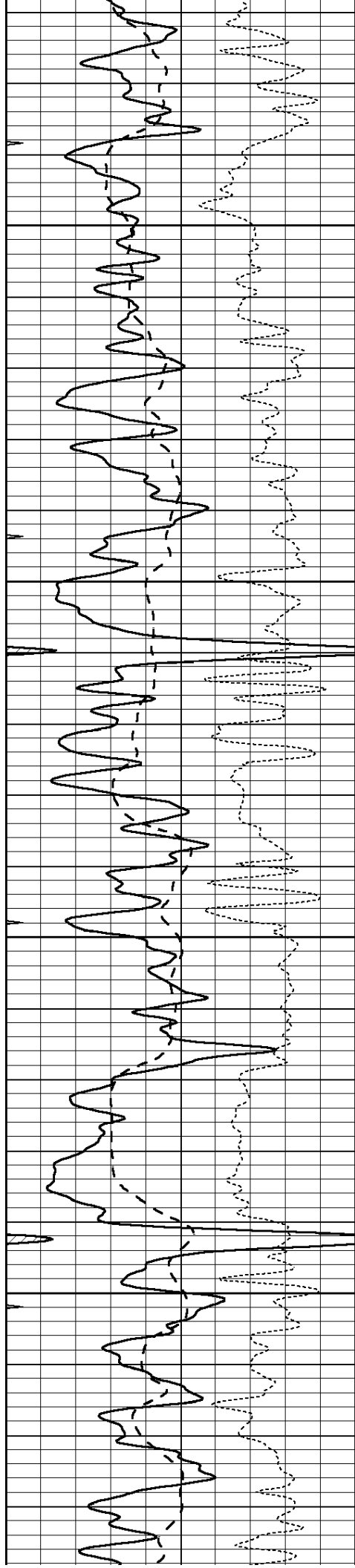
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2750

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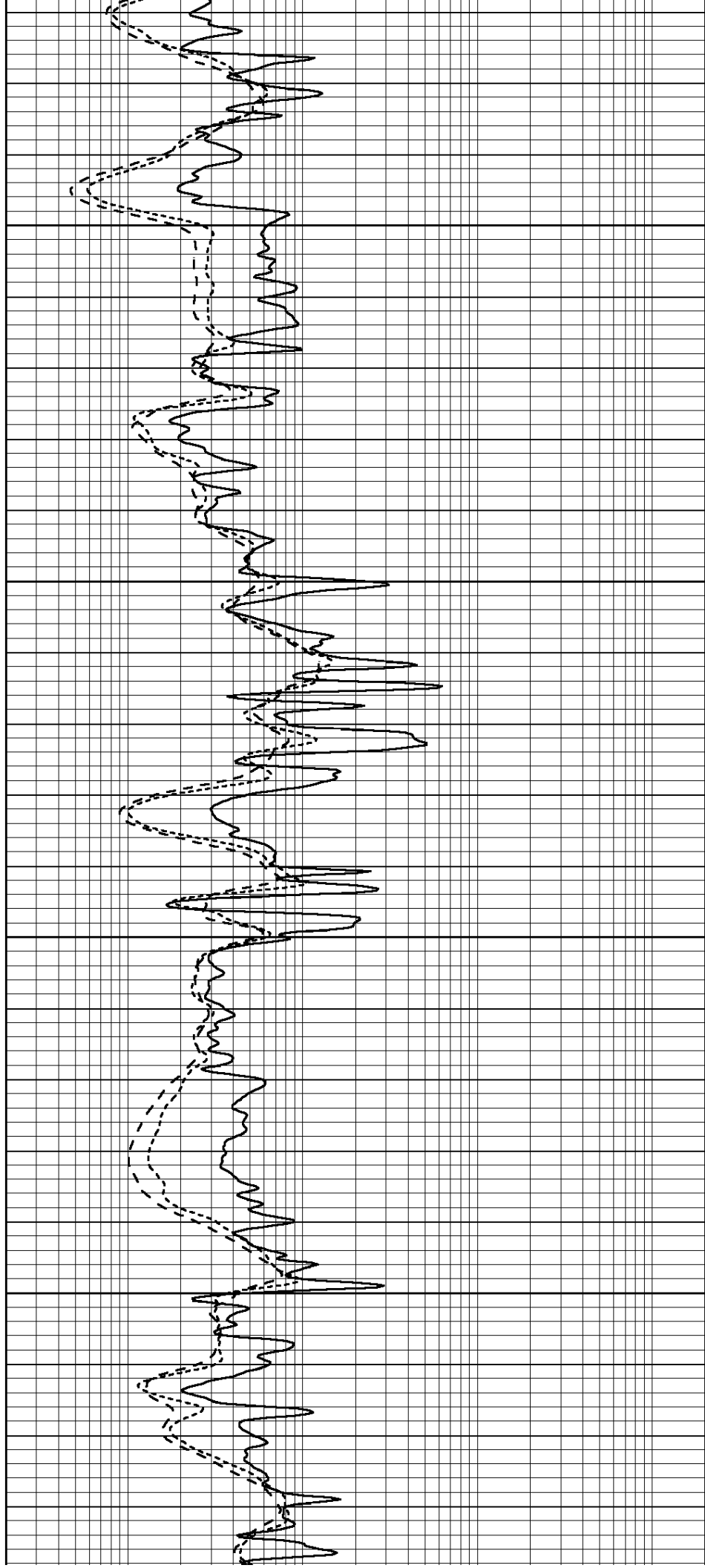


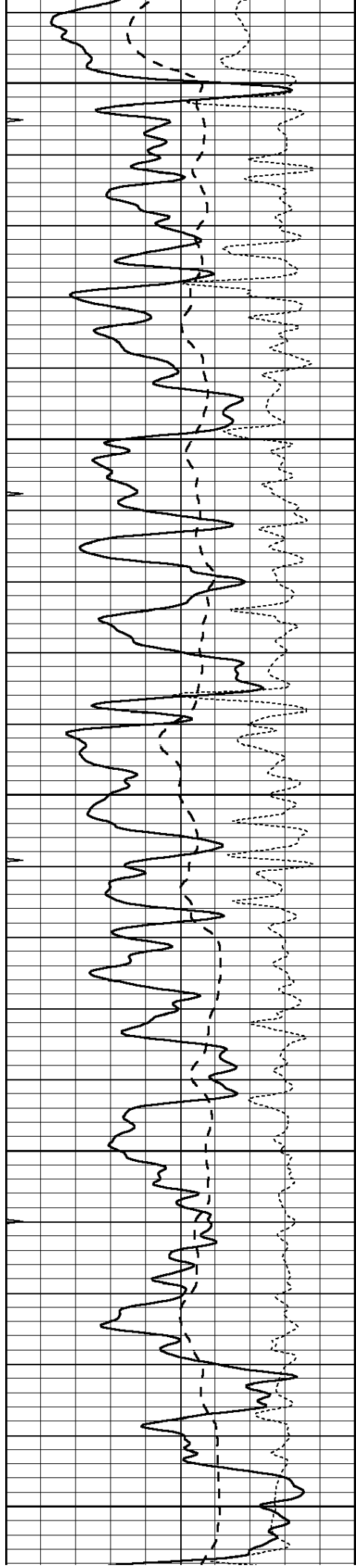
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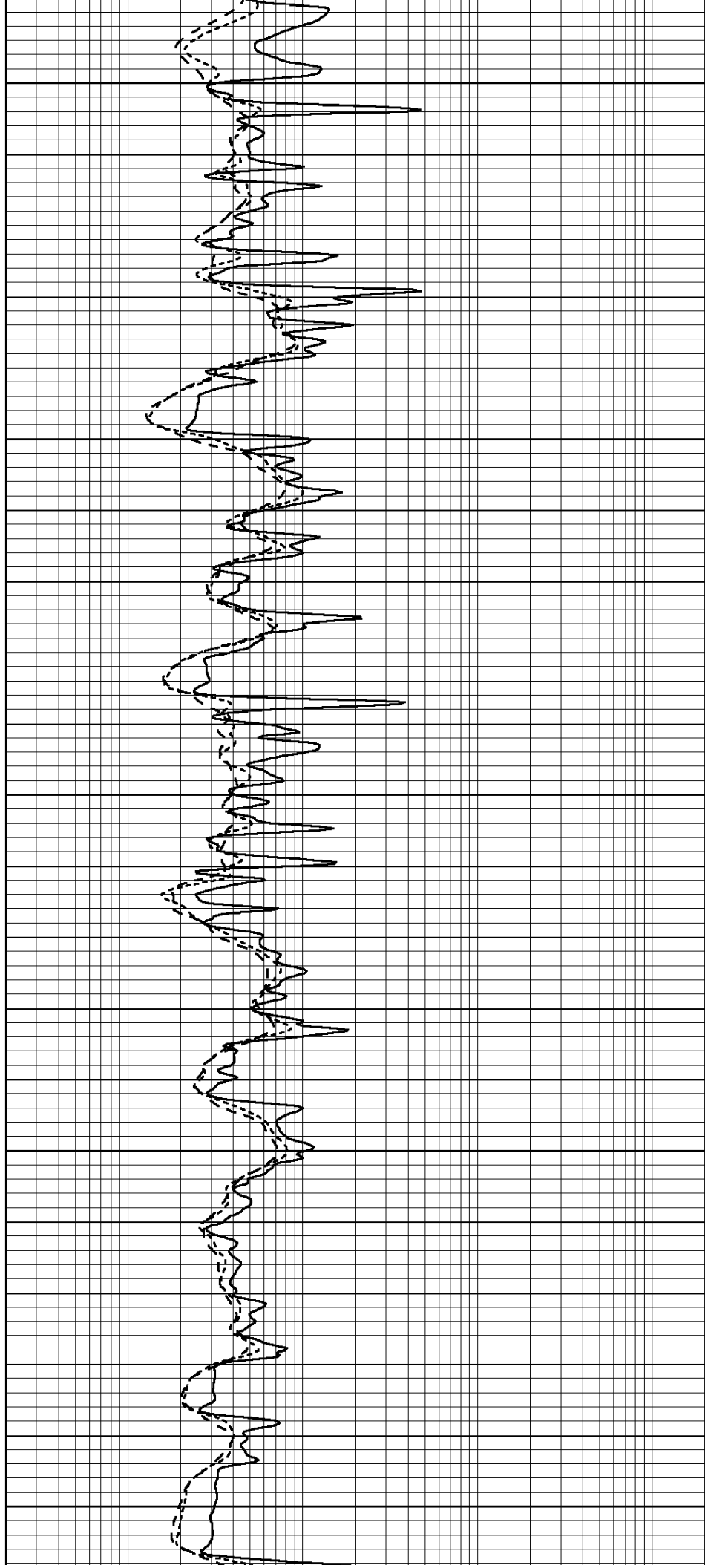
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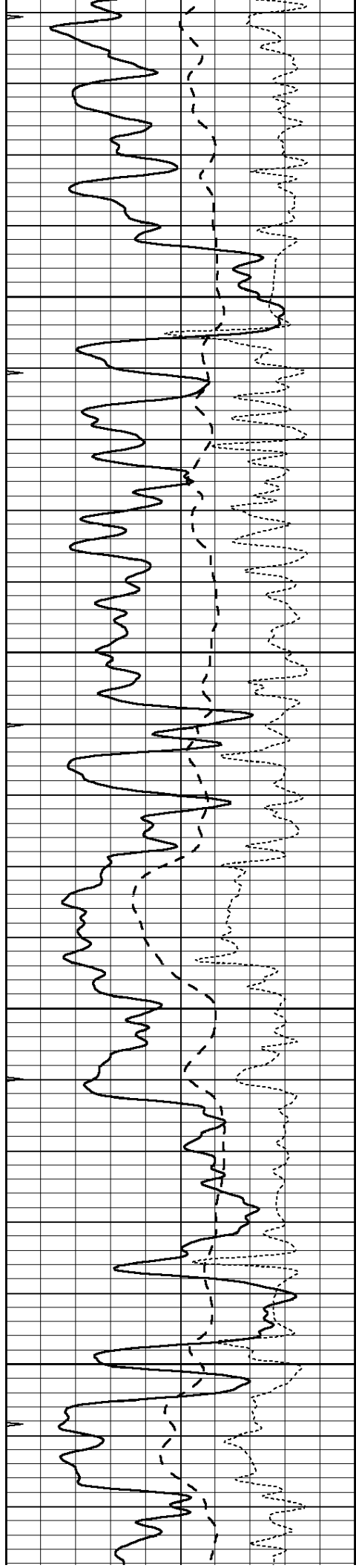
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3150

3200

3250



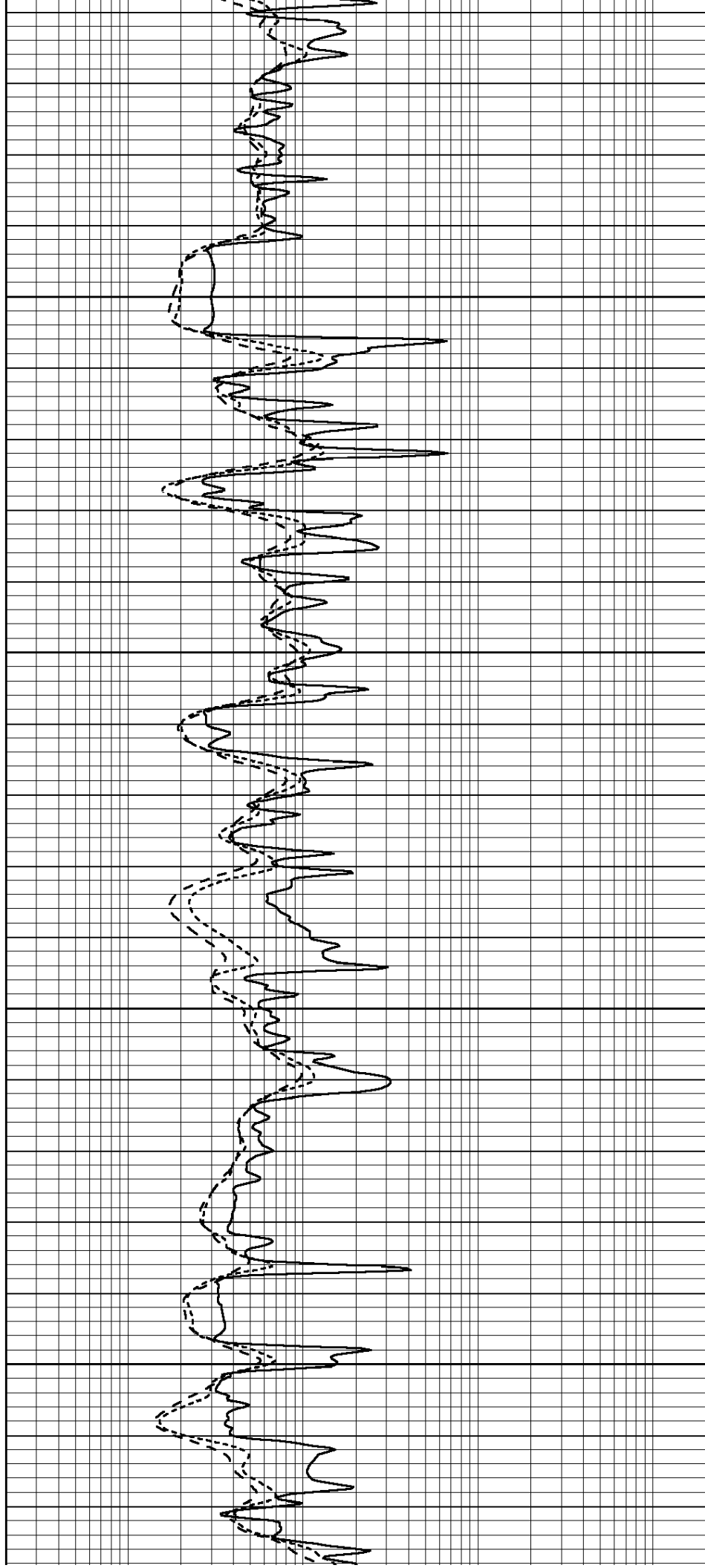


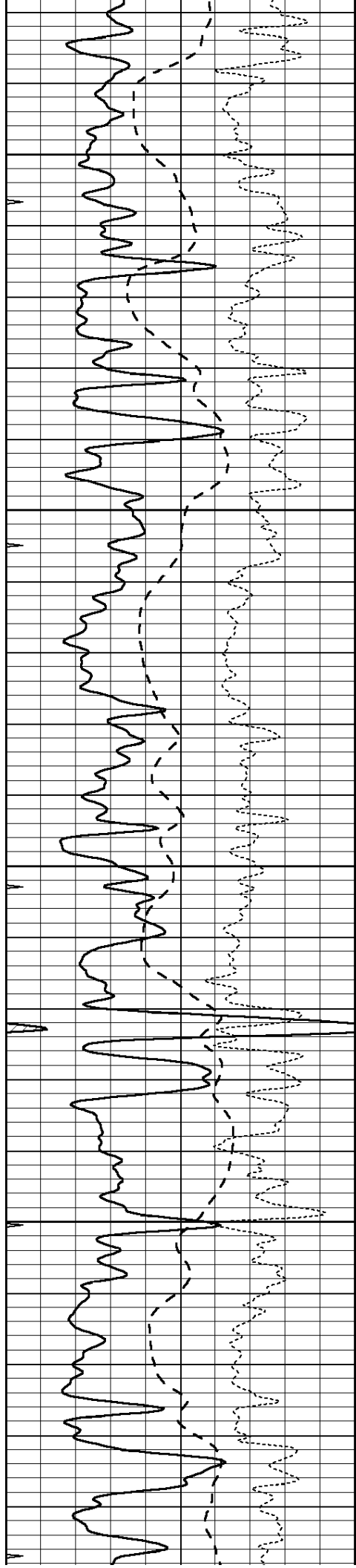
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3350

3400

3450



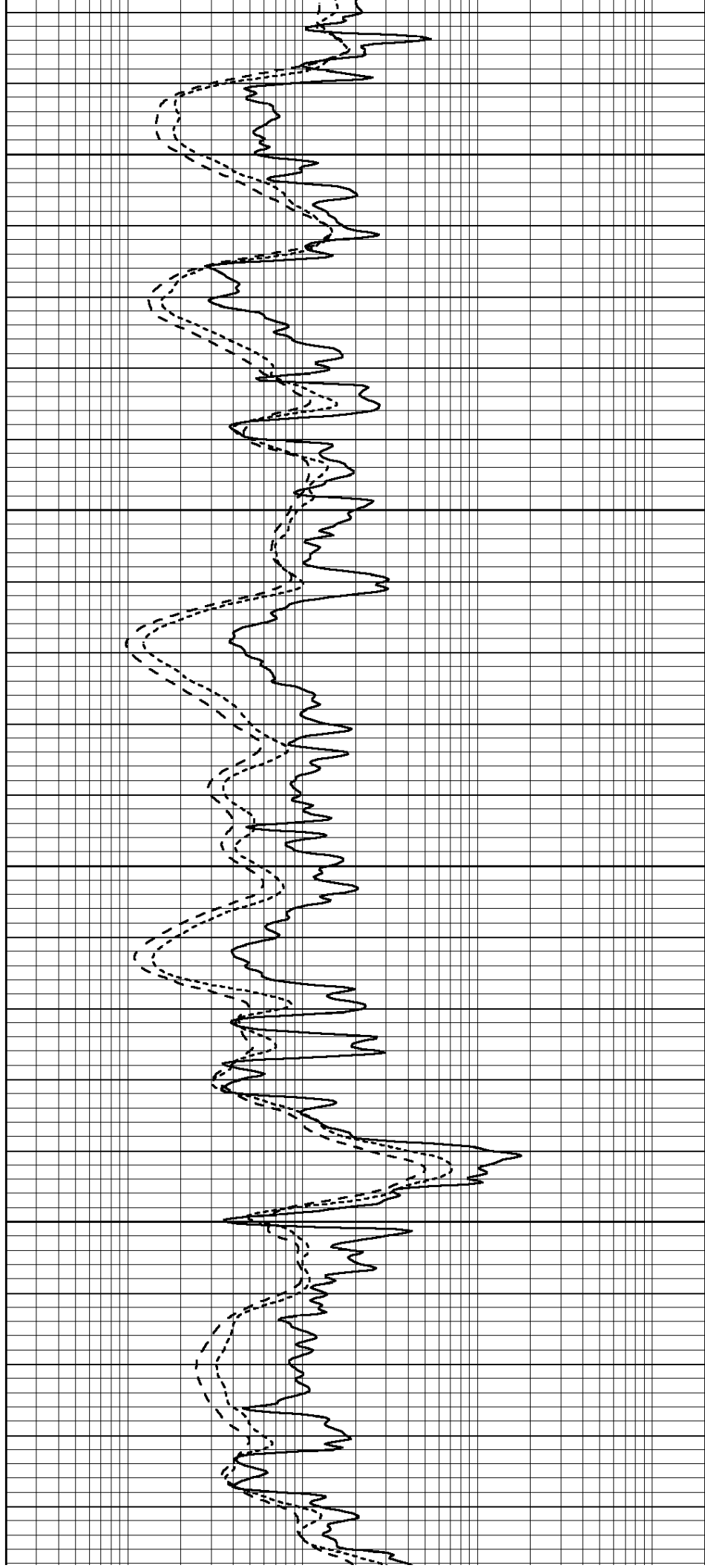


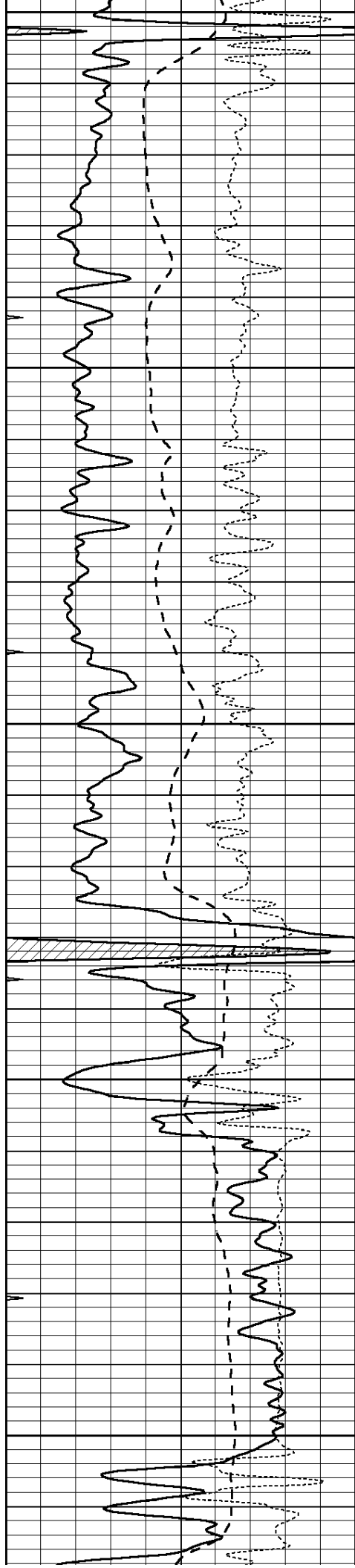
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3550

3600

3650





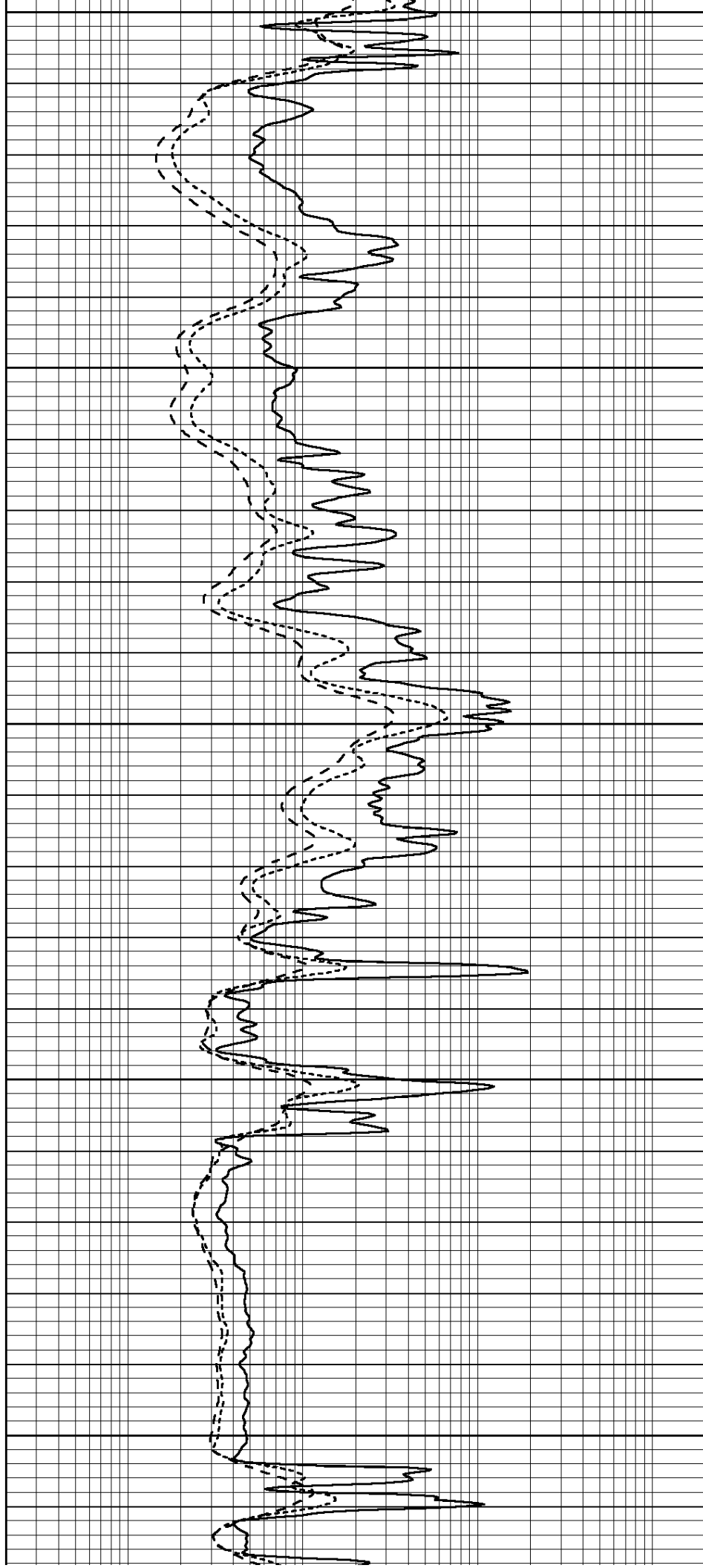
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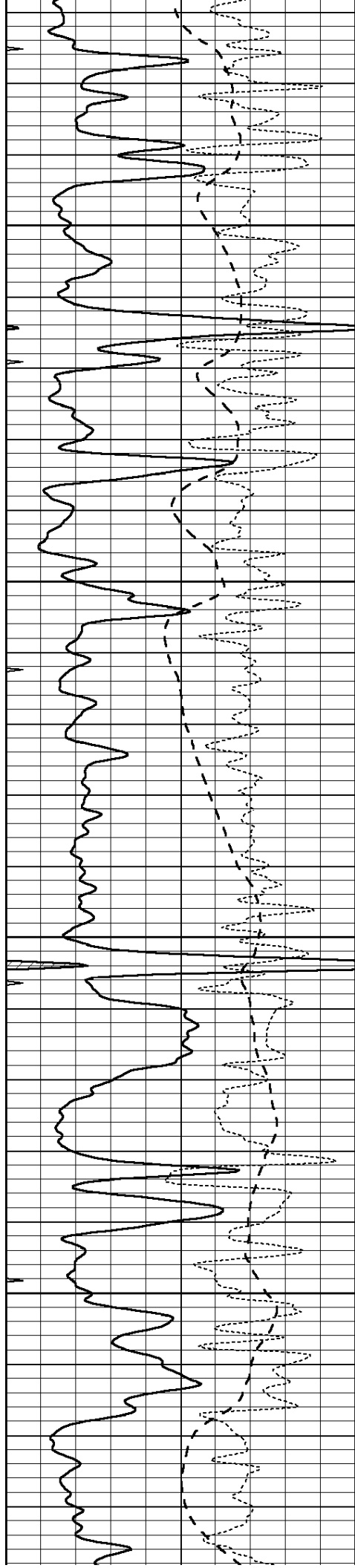
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3800

3850

3900



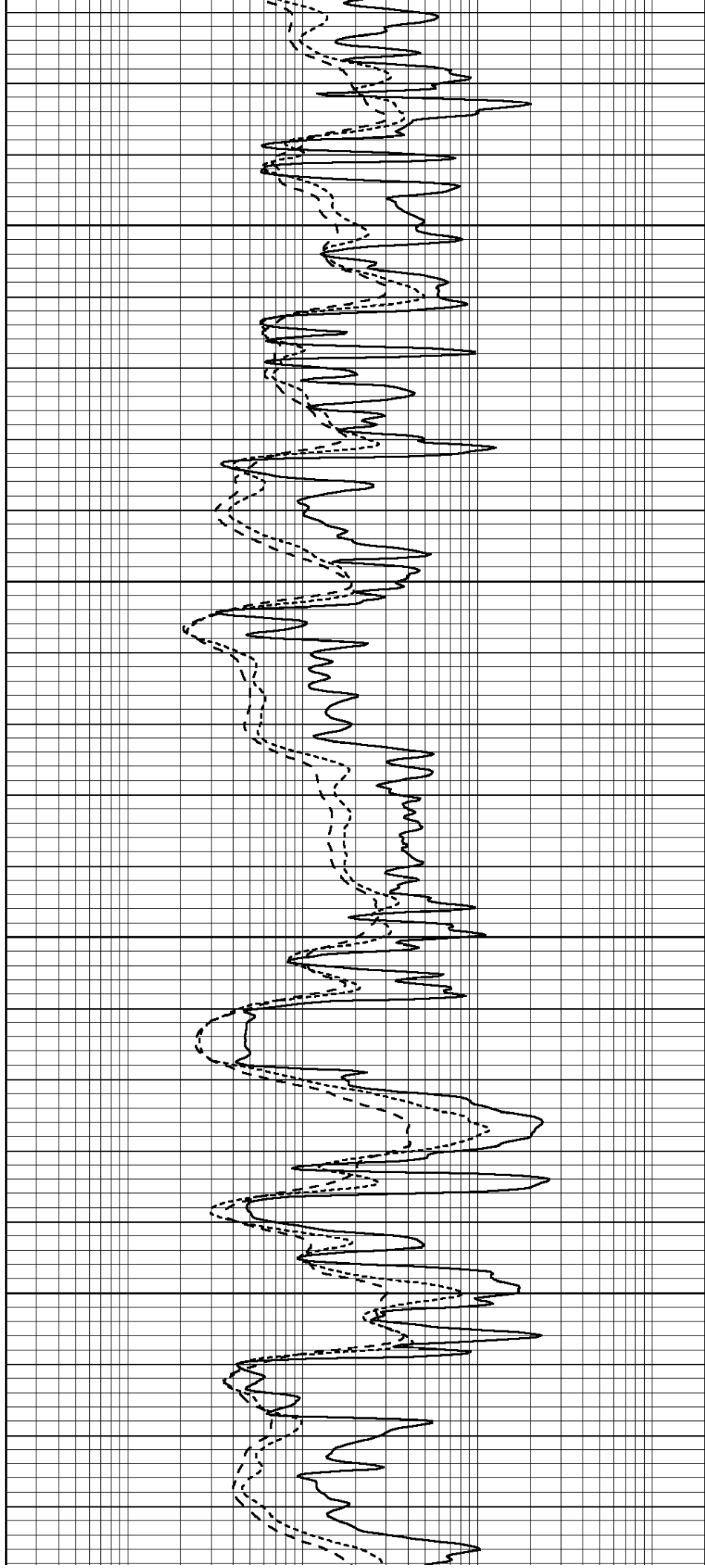


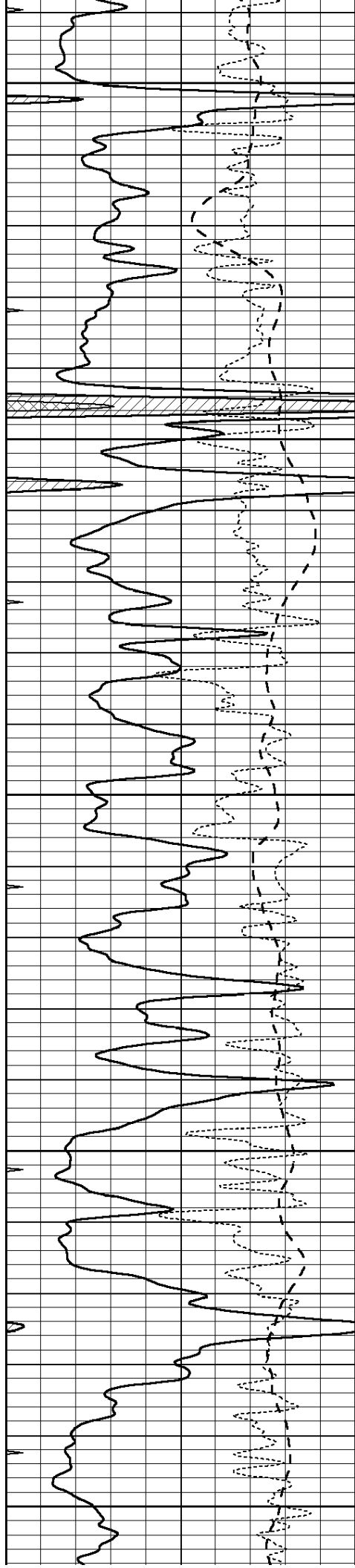
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4000

4050

4100





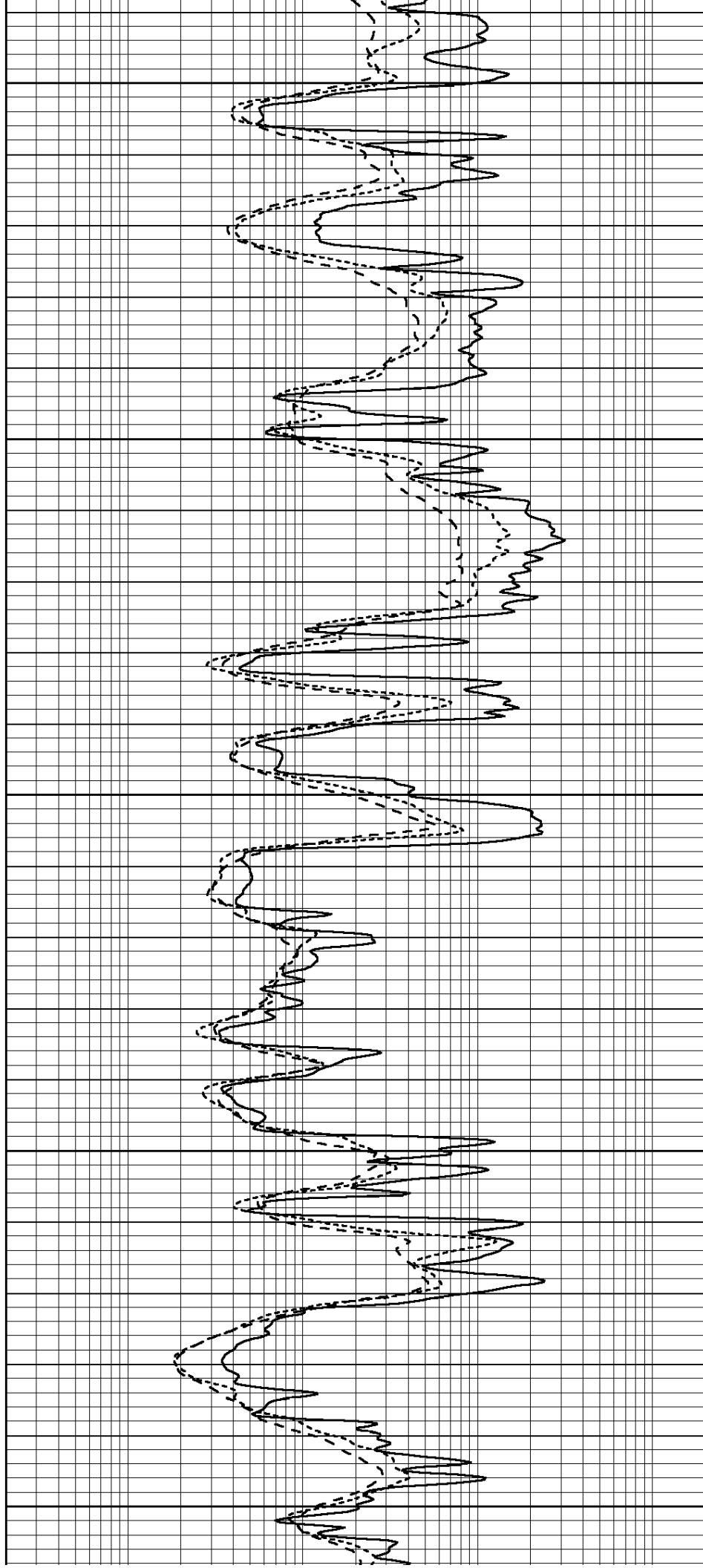
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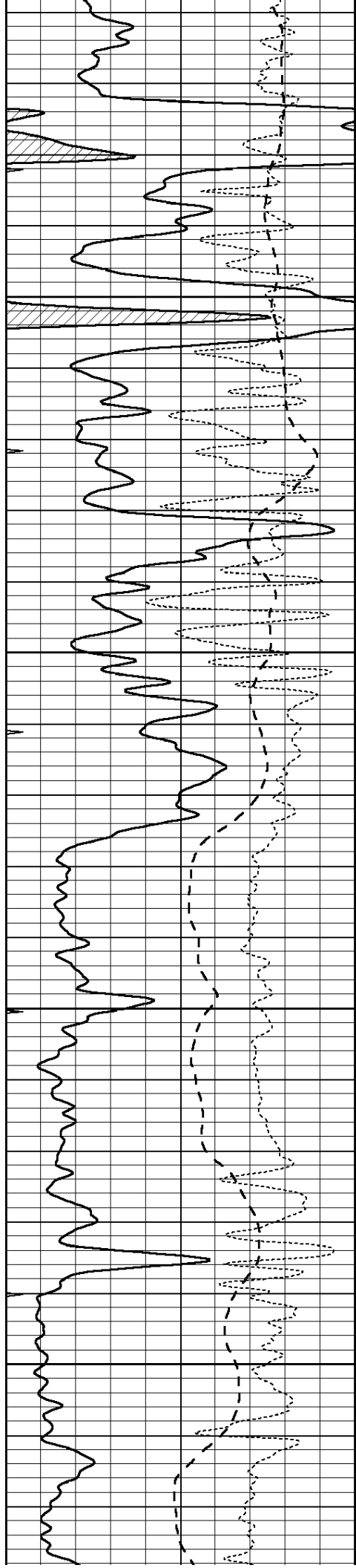
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4250

4300

4350



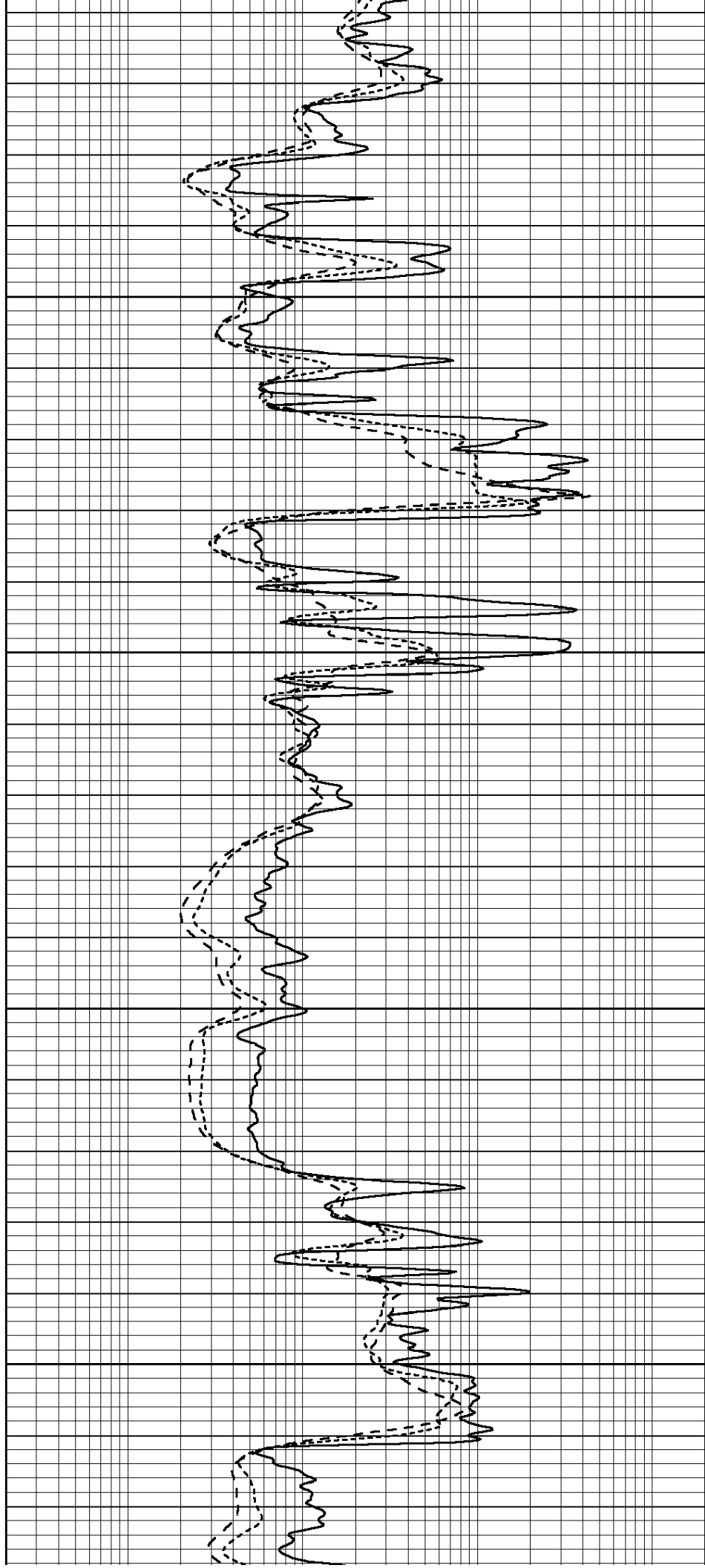


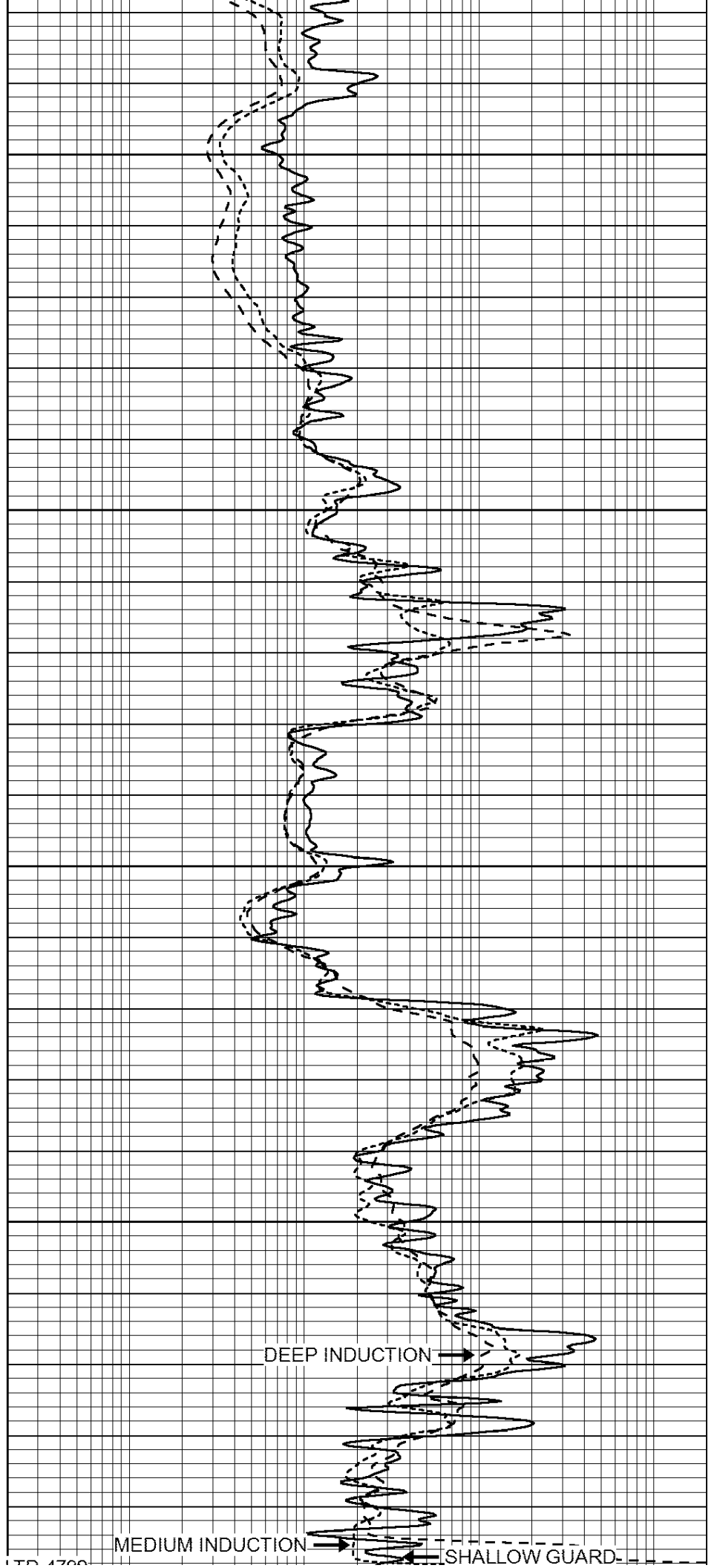
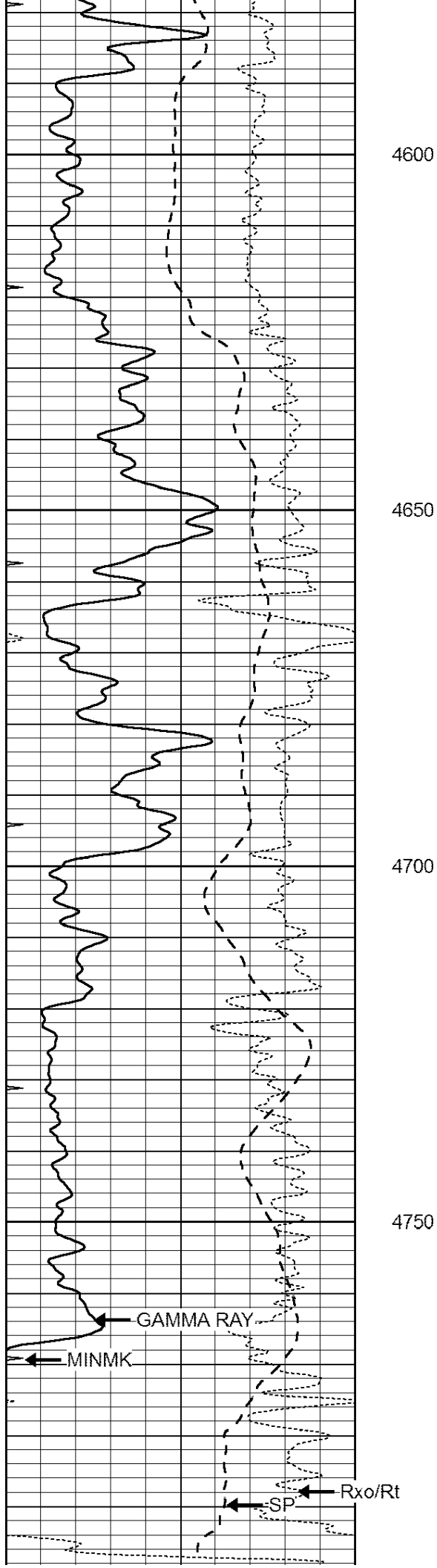
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4450

4500

4550

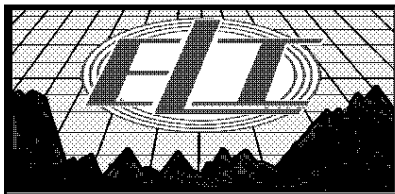




0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

4800

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

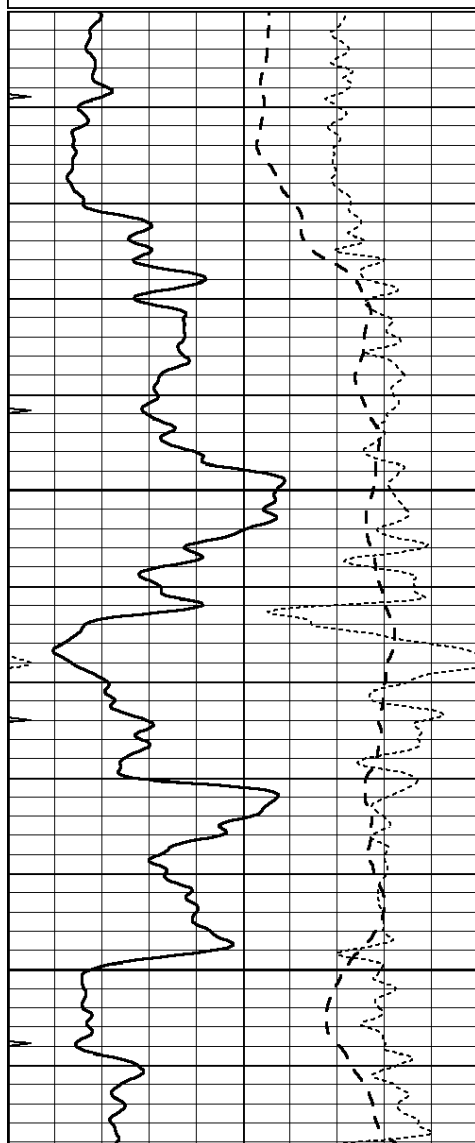


REPEAT SECTION

Database File: 3479ddn.db
Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Fri Feb 01 06:08:49 2019
Charted by: Depth in Feet scaled 1:240

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

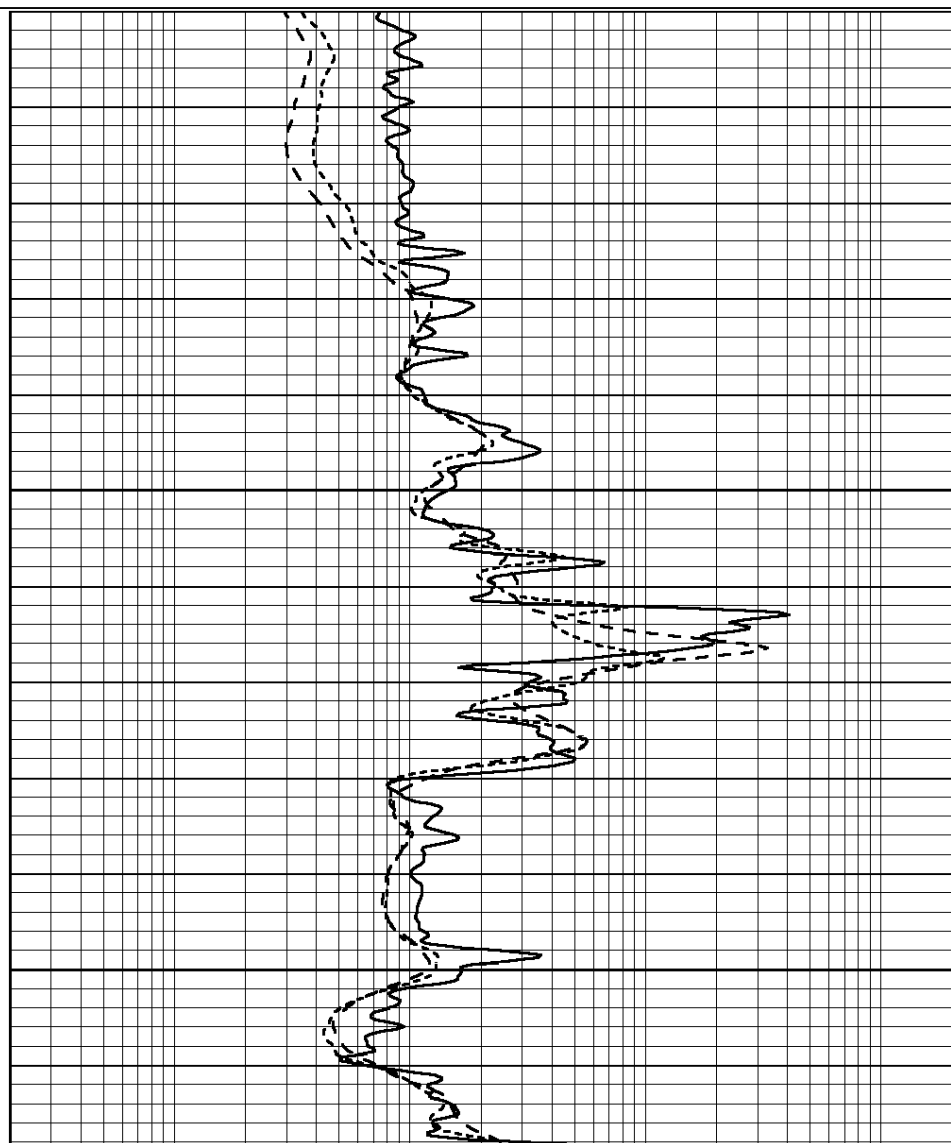
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0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

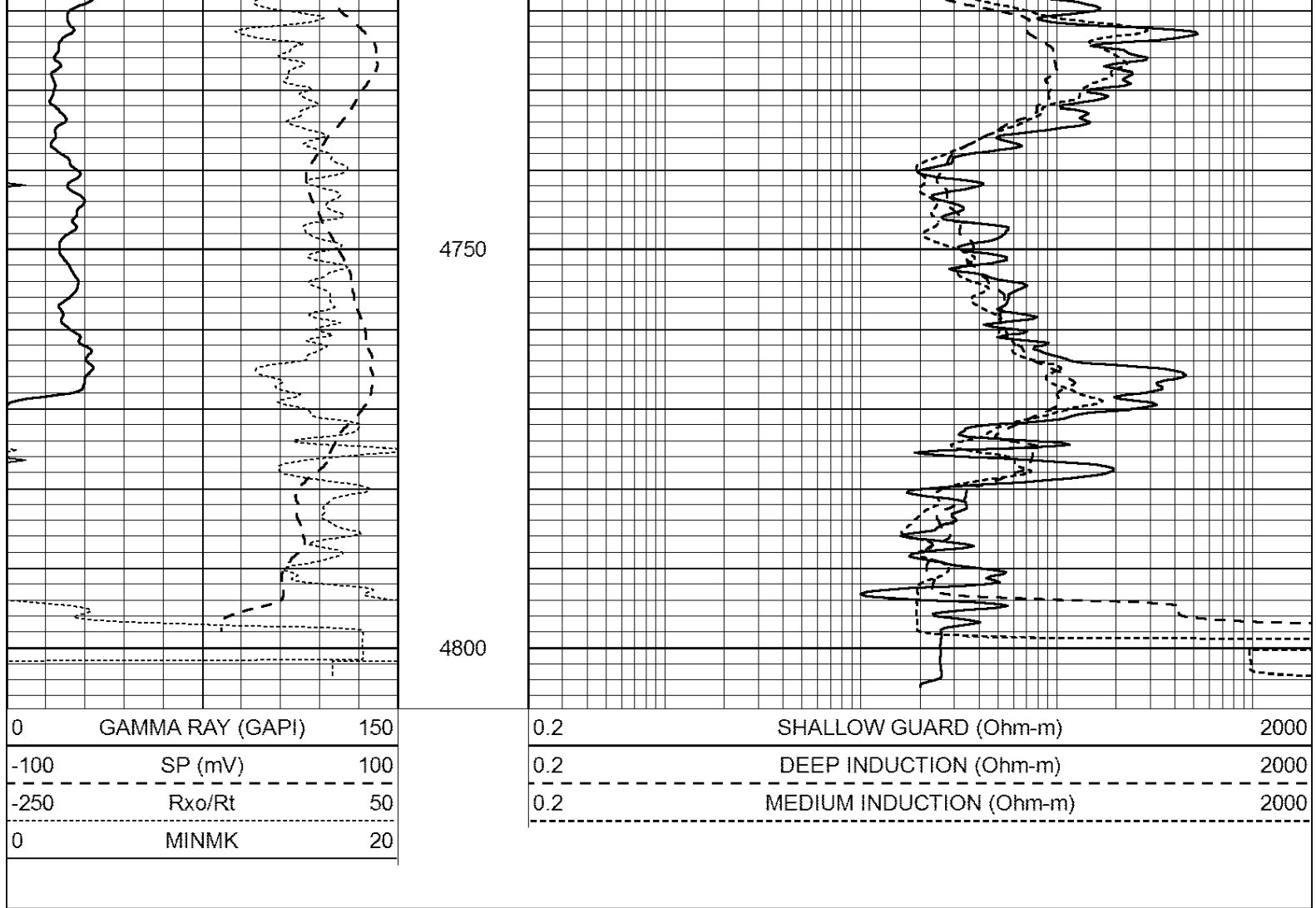


4800

4650

4700





Calibration Report									
Database File:		3479ddn.db							
Dataset Pathname:		pass2.1							
Dataset Creation:		Fri Feb 01 06:08:49 2019							
Dual Induction Calibration Report									
Serial-Model:		PROBE8-DILG							
Surface Cal Performed:		Mon Sep 10 14:28:35 2018							
Downhole Cal Performed:		Mon Sep 10 14:28:38 2018							
After Survey Verification Performed:		Mon Sep 10 14:28:40 2018							
Surface Calibration									
Readings				References			Results		
Loop:	Air	Loop		Air	Loop		m	b	
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000	
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000	
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	2.500	500.000	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		

Litho Density Calibration Report								
Serial: 006 Model: PRB								

Master Calibration					Performed Thu Sep 27 12:07:11 2018			
	Background	Magnesium	Aluminum	Sandstone				
Window 1	1185.6	7077.4	2520.9	8182.4				cps
Window 2	1116.8	5910.1	2163.2	6739.4				cps
Window 3	880.1	3145.8	1325.0	3461.2				cps
Window 4	289.5	295.8	290.8	295.3				cps
Long Space	0.0	4793.3	1046.5	5622.7				cps
Short Space	2.9	1608.0	1038.9	1622.7				cps
Rho		1.7100	2.5960	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 44.0	Rib Slope	: 0.965	Density/Spine Ratio			: 0.560	
Spine Angle	: 74.0	Spine Slope	: 3.484	Spine Intercept			: -17.2	

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								
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Serial Number:					61			
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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:	Mon Sep 10 14:29:23 2018
Calibrator Value:	150.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	276.0 cps
Sensitivity:	0.5500 GAPI/cps