



DUAL INDUCTION LOG

Company	AGV CORPORATION	Company	AGV CORPORATION
Well	SPRAGUE #1	Well	SPRAGUE #1
Field	PAUL SOUTH	Field	PAUL SOUTH
County	BUTLER	County	BUTLER
State	KANSAS	State	KANSAS
Location:	API # : 15-015-24136-0000	Location:	1310' FSL & 1395' FEL
Permanent Datum	GROUND LEVEL	Elevation	1304
Log Measured From	KELLY BUSHING 9' A.G.L.	Other Services	CDL/CNL/MEL SON
Drilling Measured From	KELLY BUSHING	Elevation	K.B. 1313 D.F. 1311 G.L. 1304
Date	11/01/19	SEC 35	TWP 25S RGE 3E
Run Number	ONE		
Depth Driller	2830		
Depth Logger	2832		
Bottom Logged Interval	2830		
Top Log Interval	00		
Casing Driller	8 5/8" @ 265		
Casing Logger	265		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.6/50		
pH / Fluid Loss	9.5/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.1 @ 55F		
Rmt @ Meas. Temp	.83 @ 55F		
Rmc @ Meas. Temp	1.32 @ 55F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.57 @ 106F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	///		
Maximum Recorded Temperature	106F		
Equipment Number	1523		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	KENT ROBERTS		

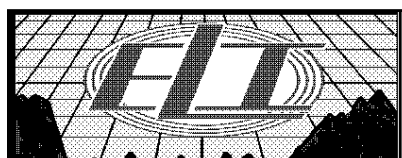
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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
WEST SIDE OF BENTON TO MEADOWLARK RD., 2 NORTH,
1 1/2 E, NORTH INTO.

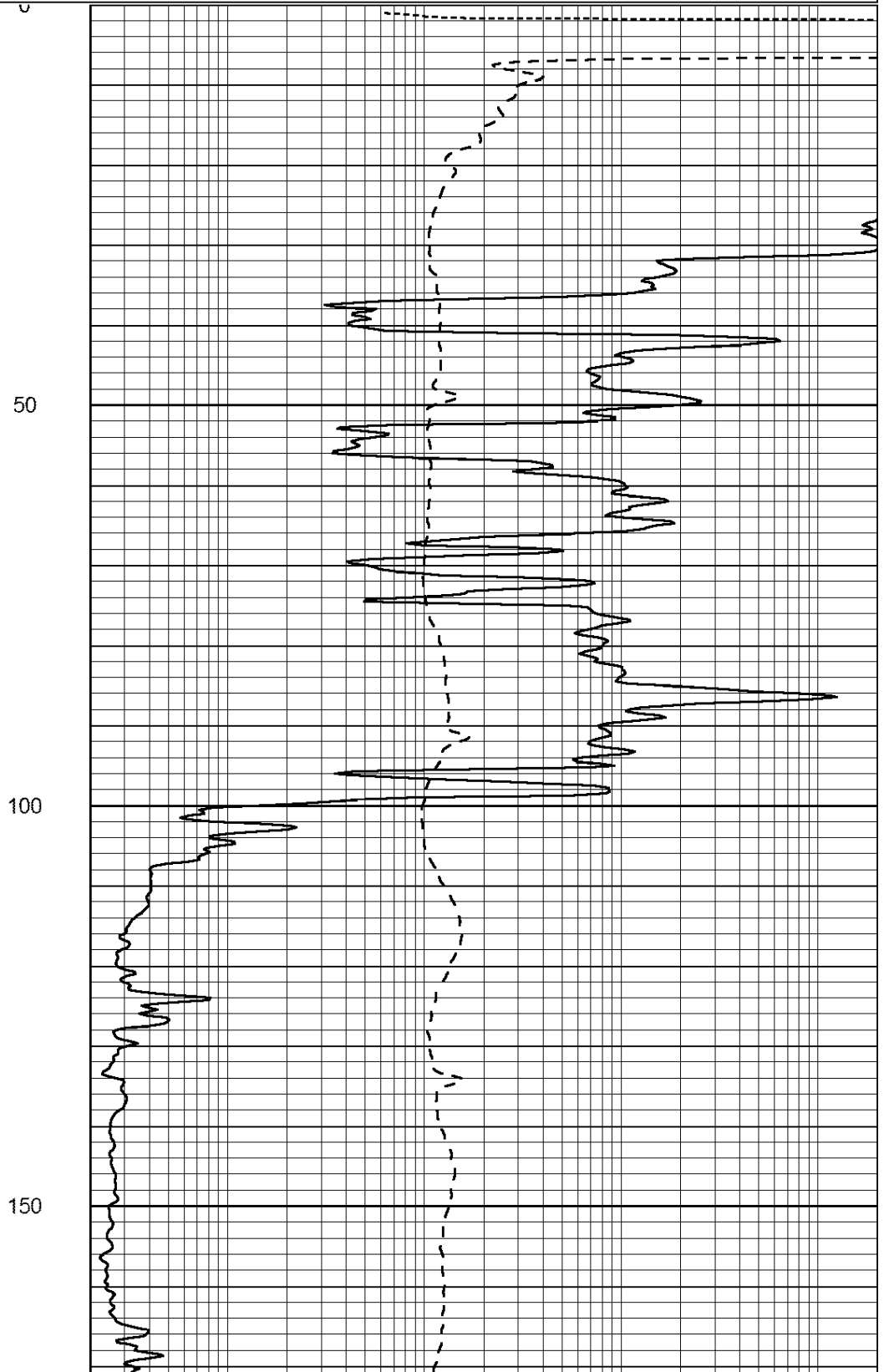
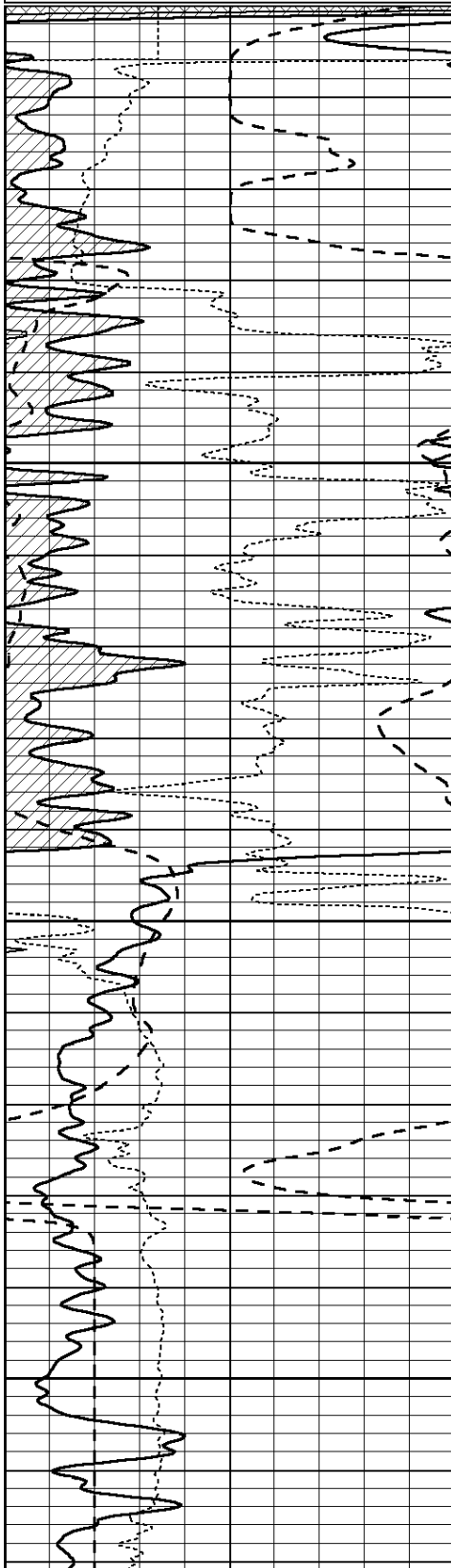


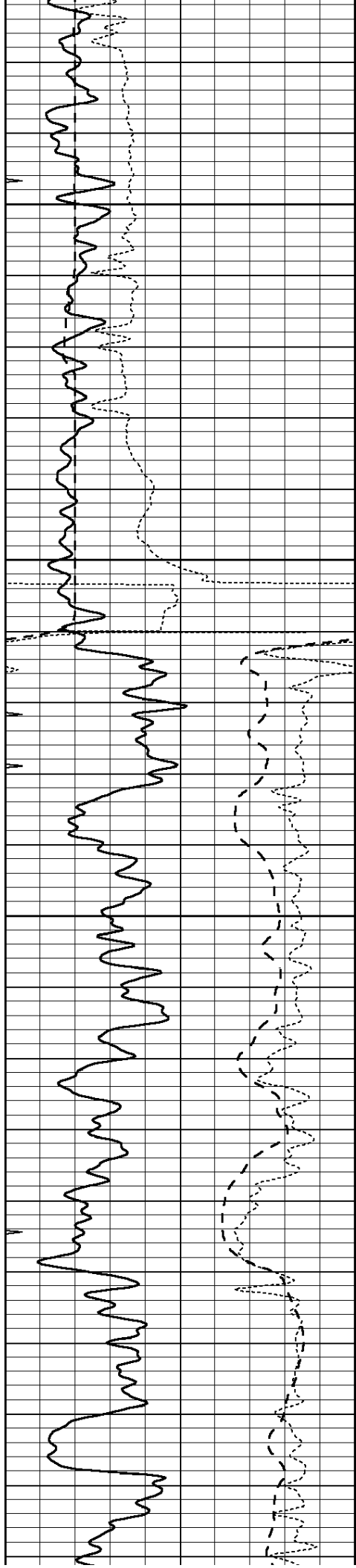
MAIN PASS

Database File: 4455pe.db
 Dataset Pathname: pass6.1
 Presentation Format: _dil
 Dataset Creation: Fri Nov 01 11:43:17 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

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



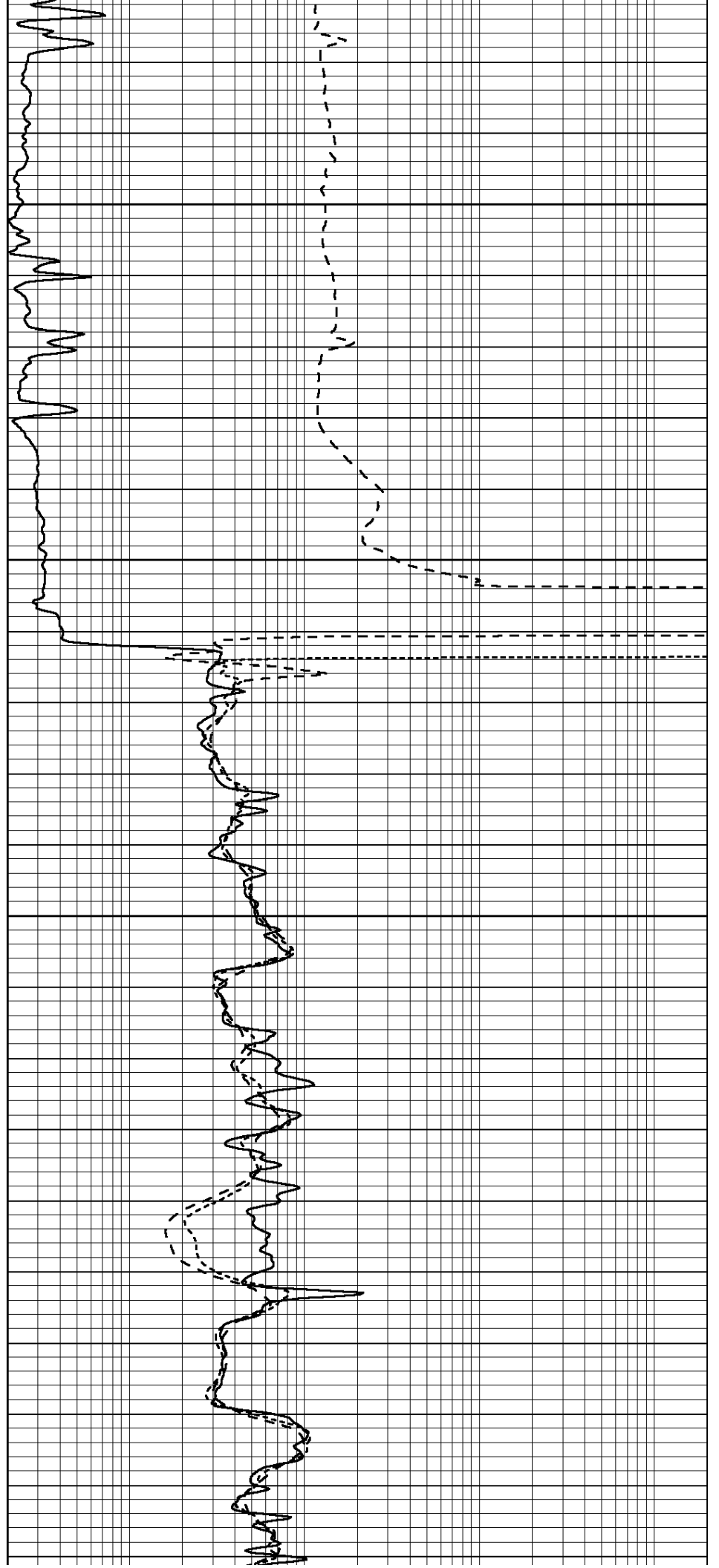


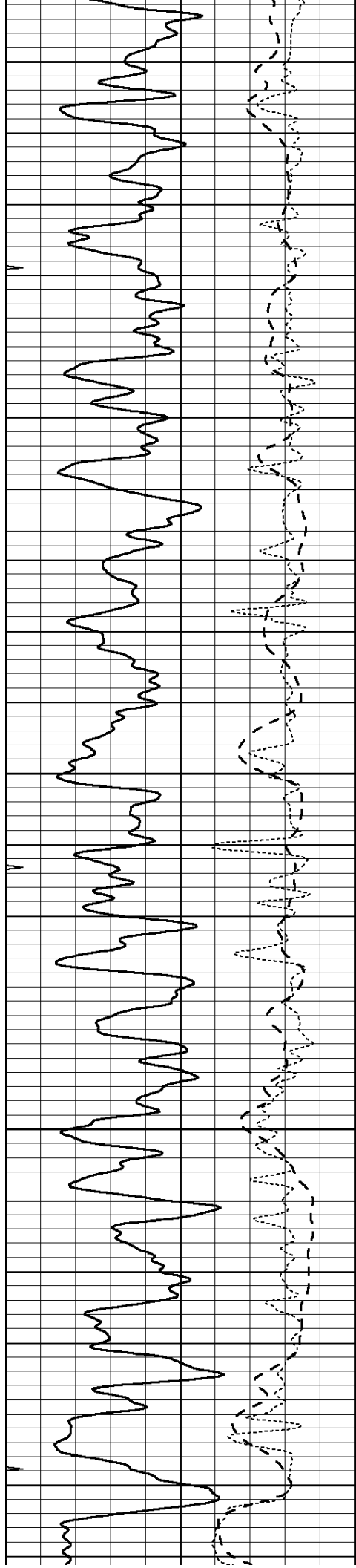
200

250

300

350





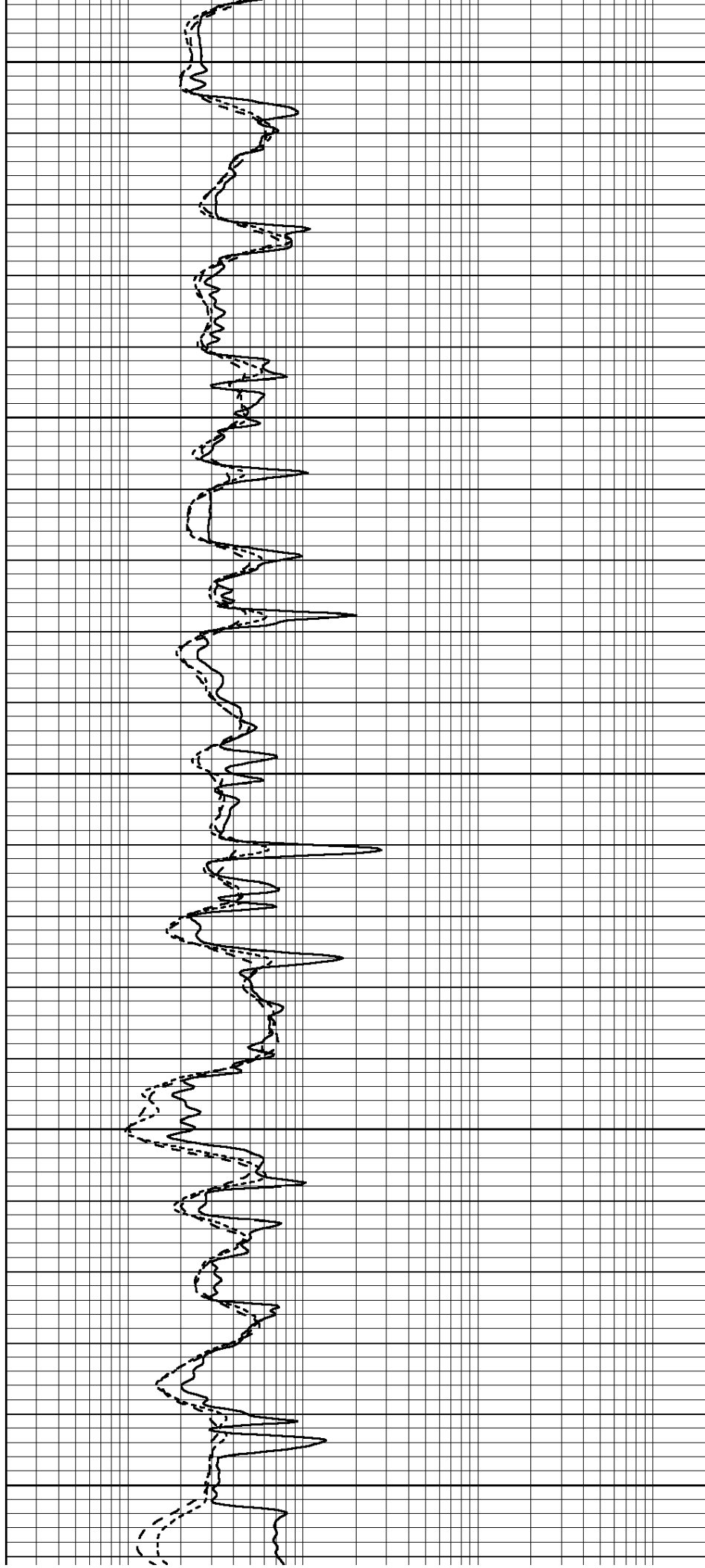
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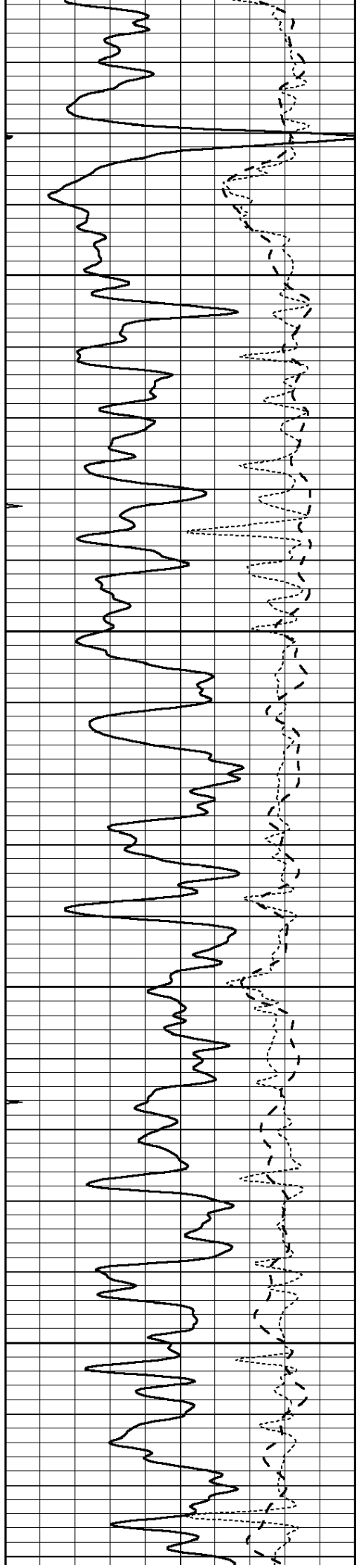
450

500

550

600



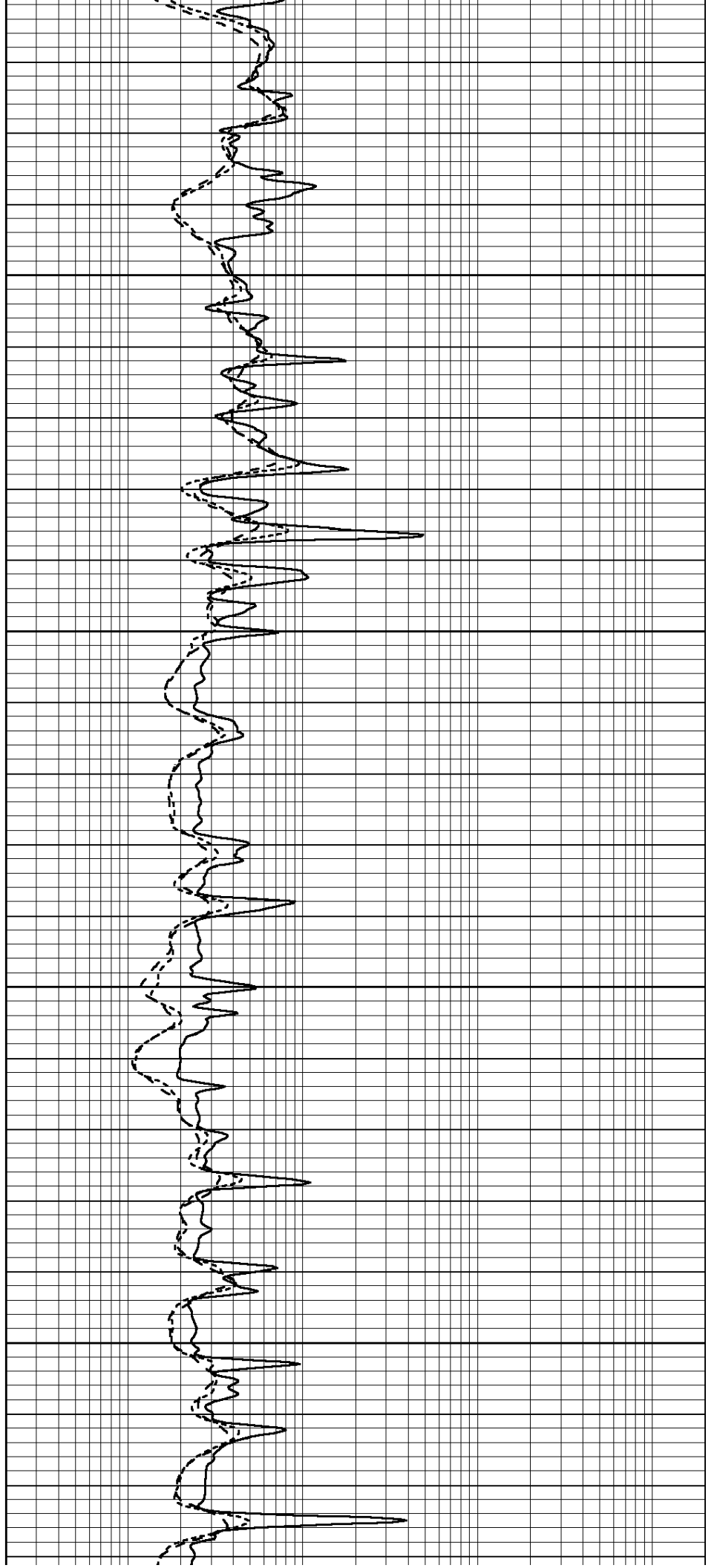


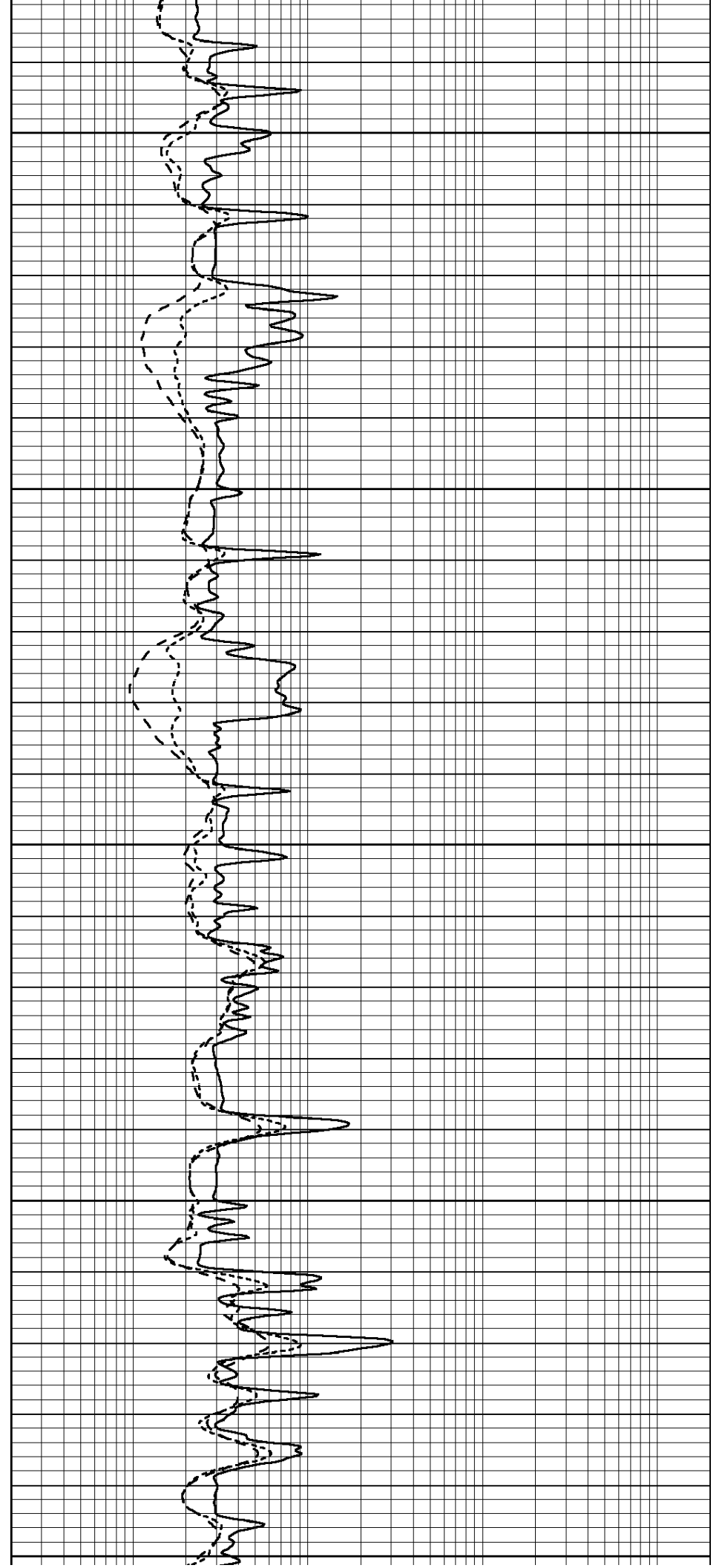
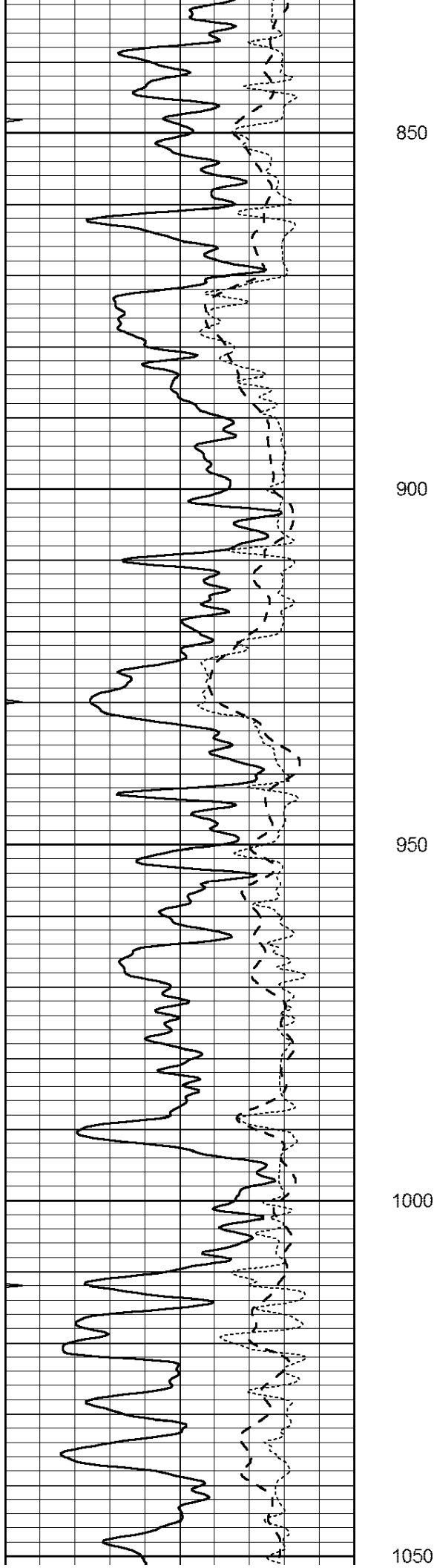
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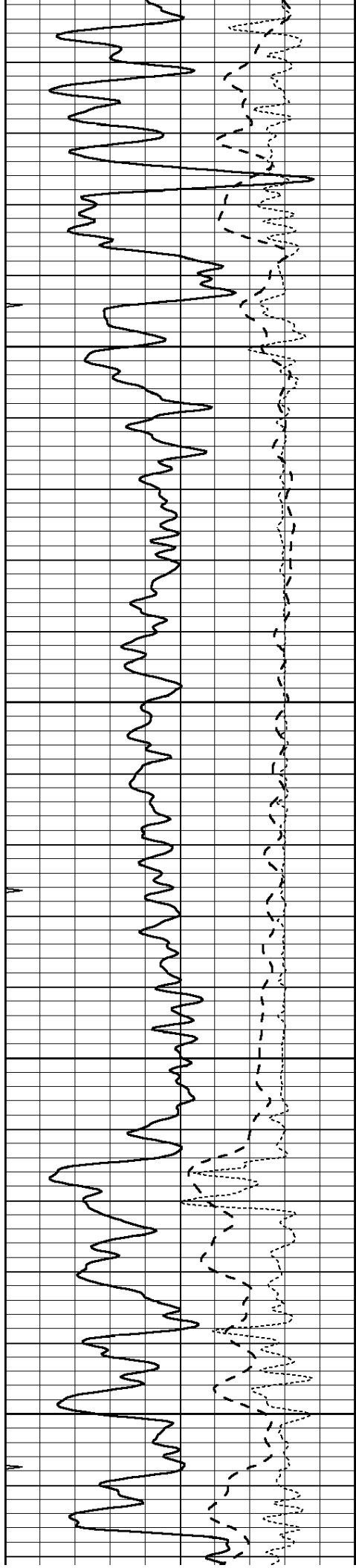
700

750

800





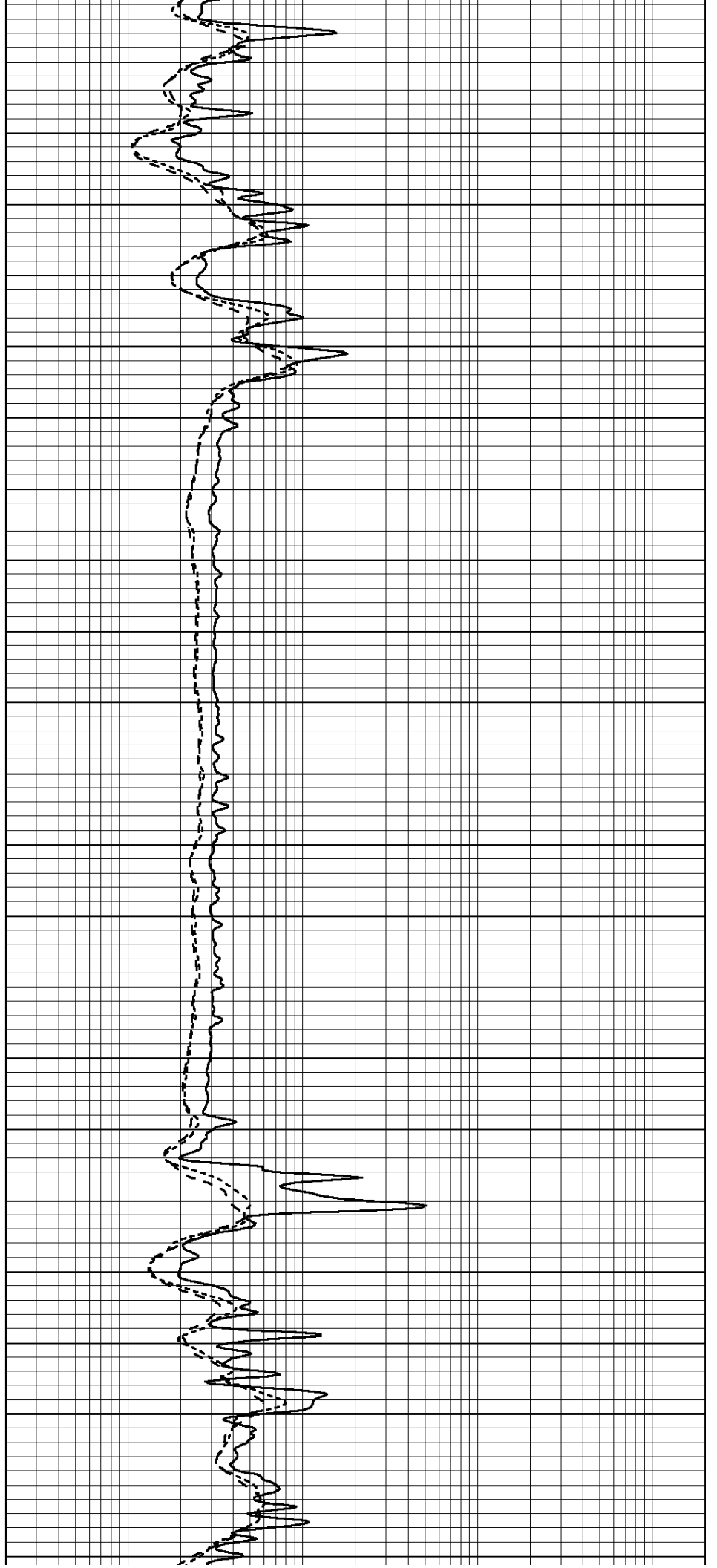


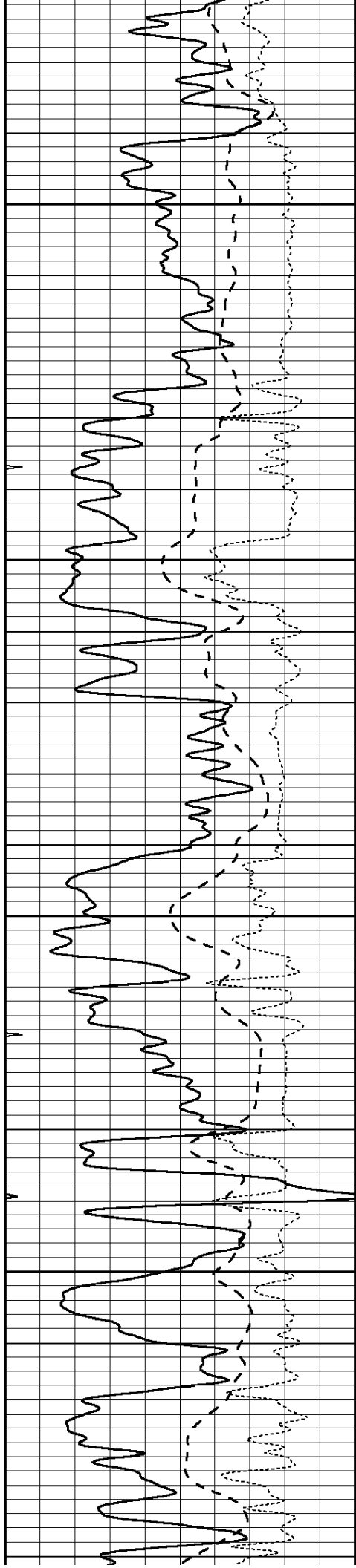
1100

1150

1200

1250



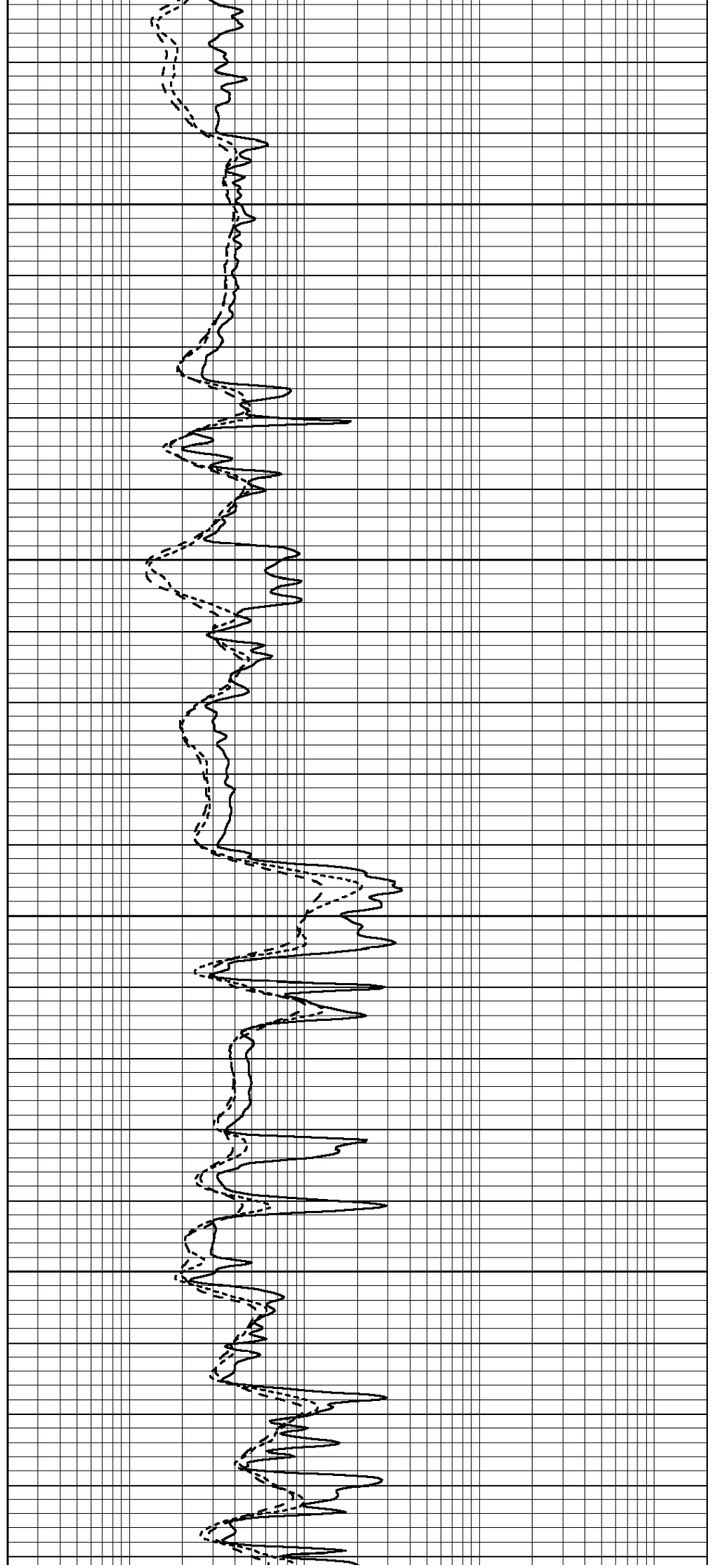


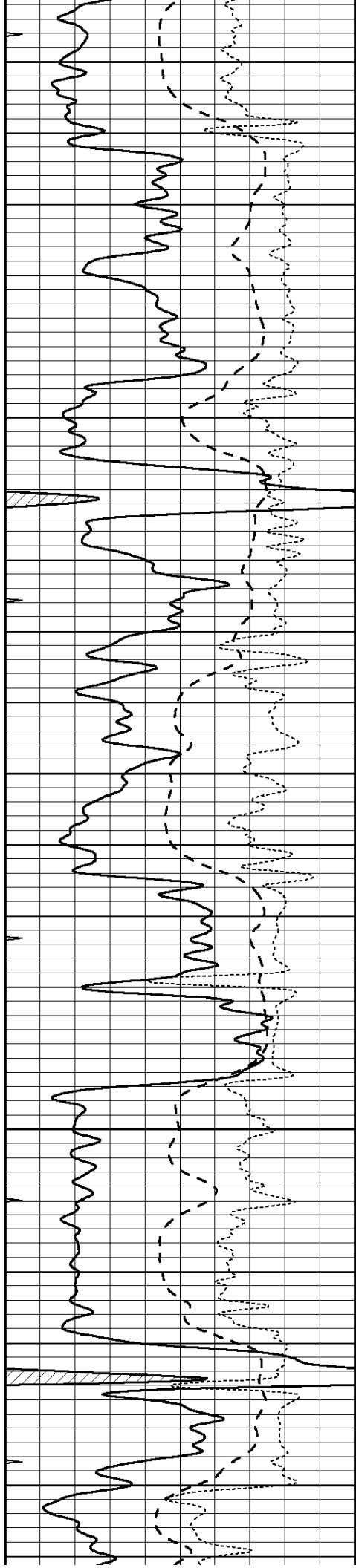
1300

1350

1400

1450





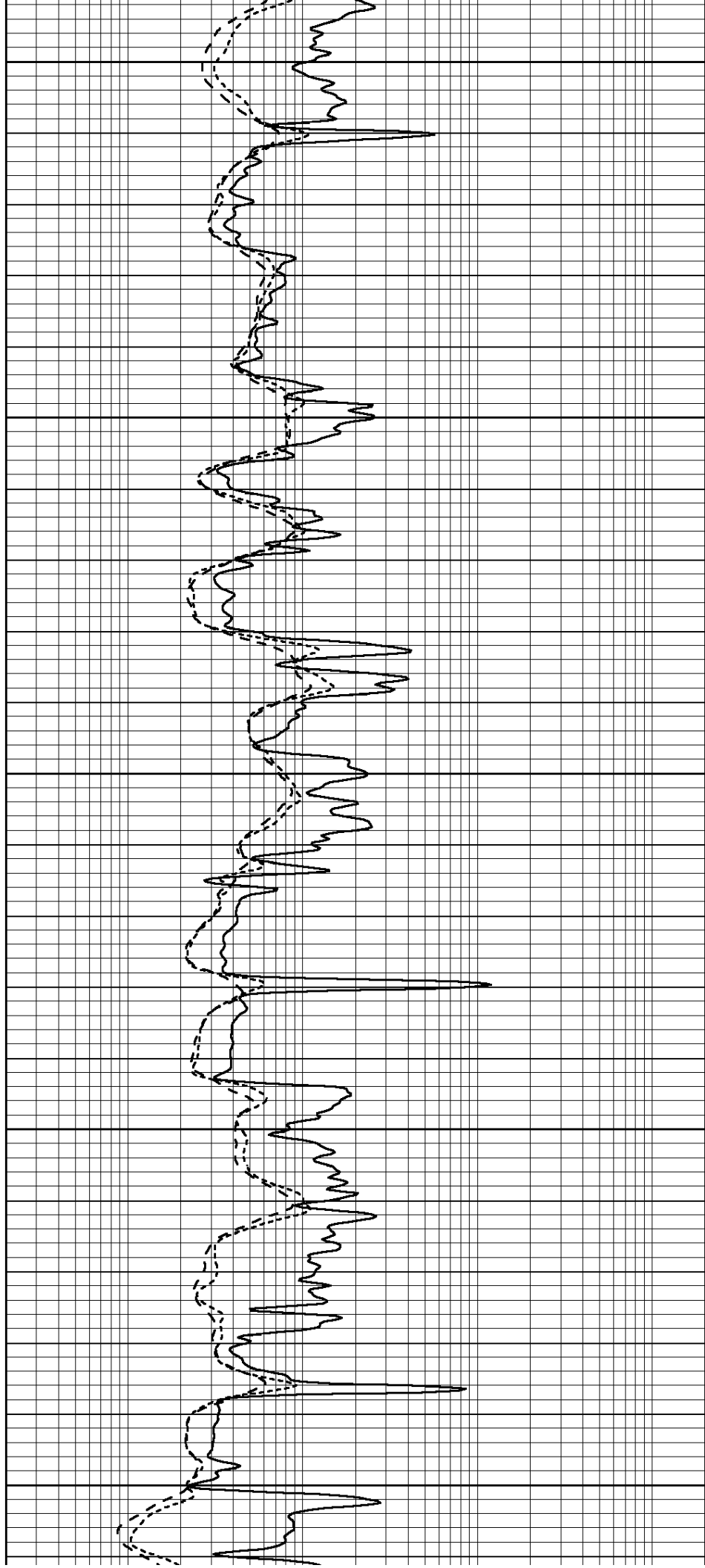
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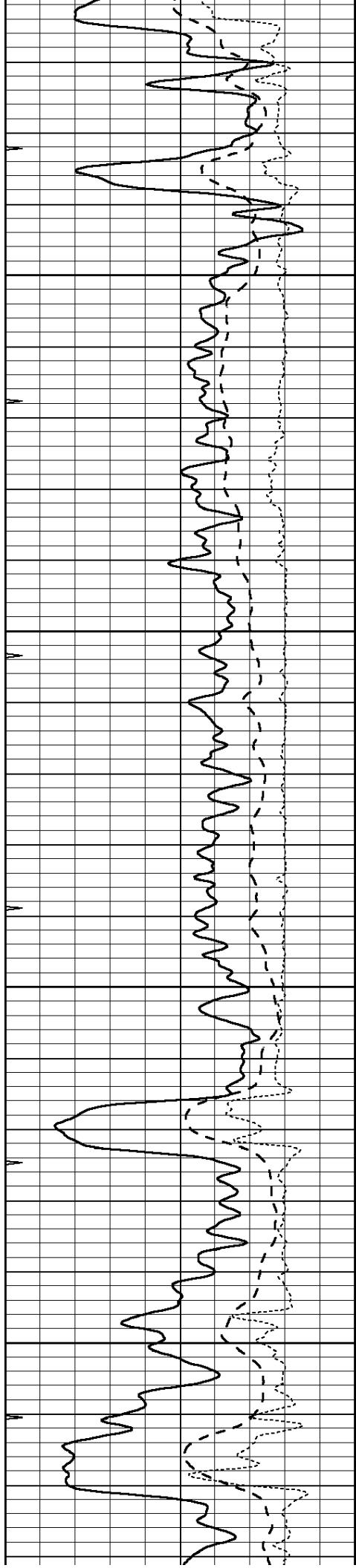
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1600

1650

1700



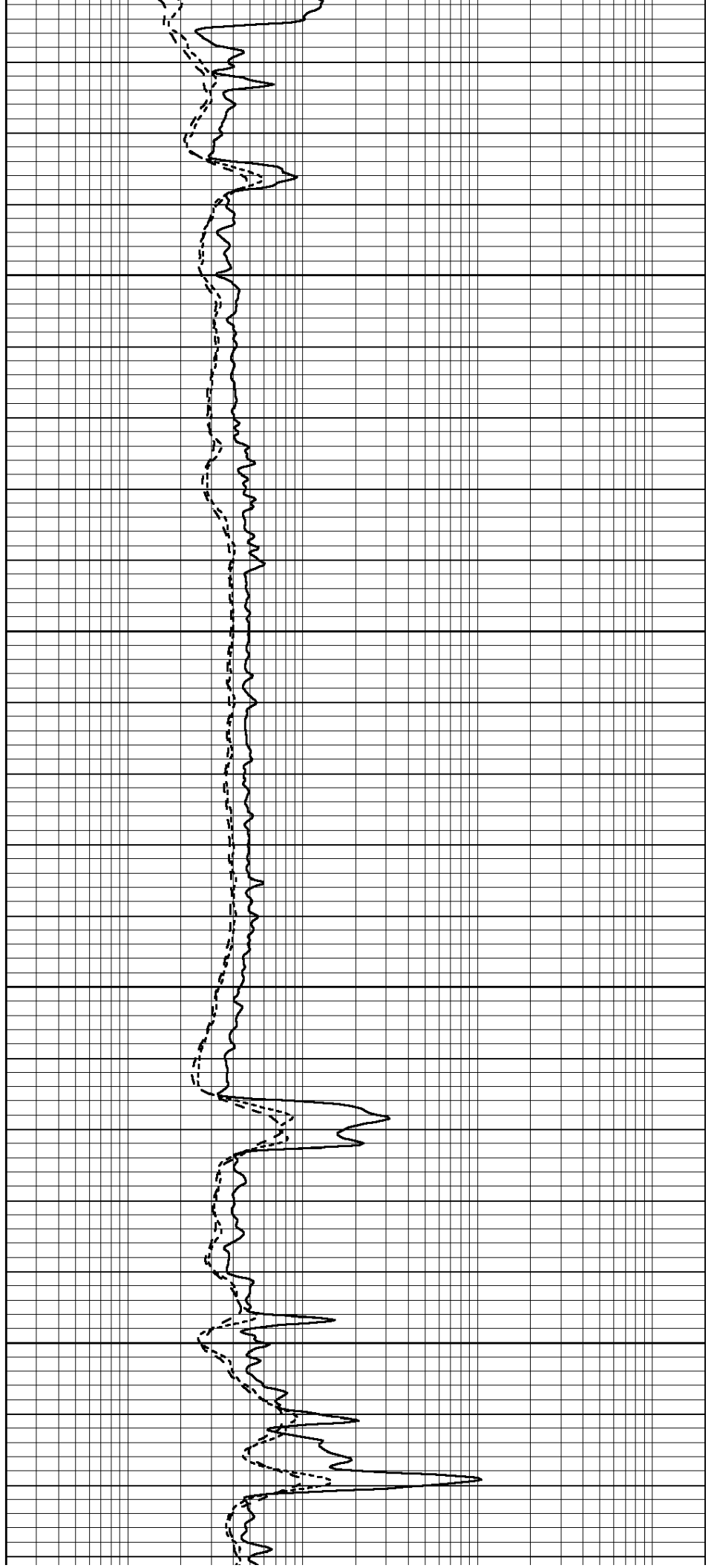


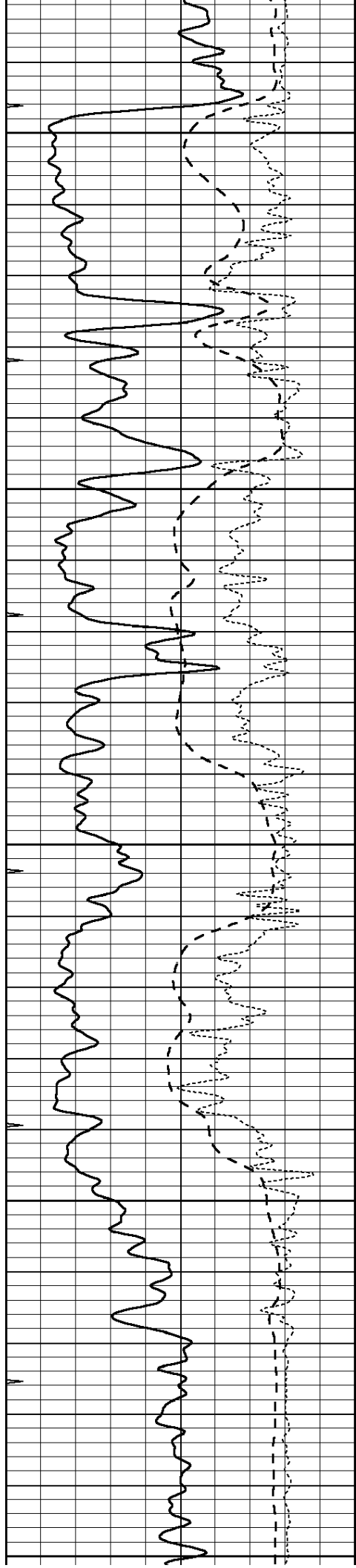
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1800

1850

1900





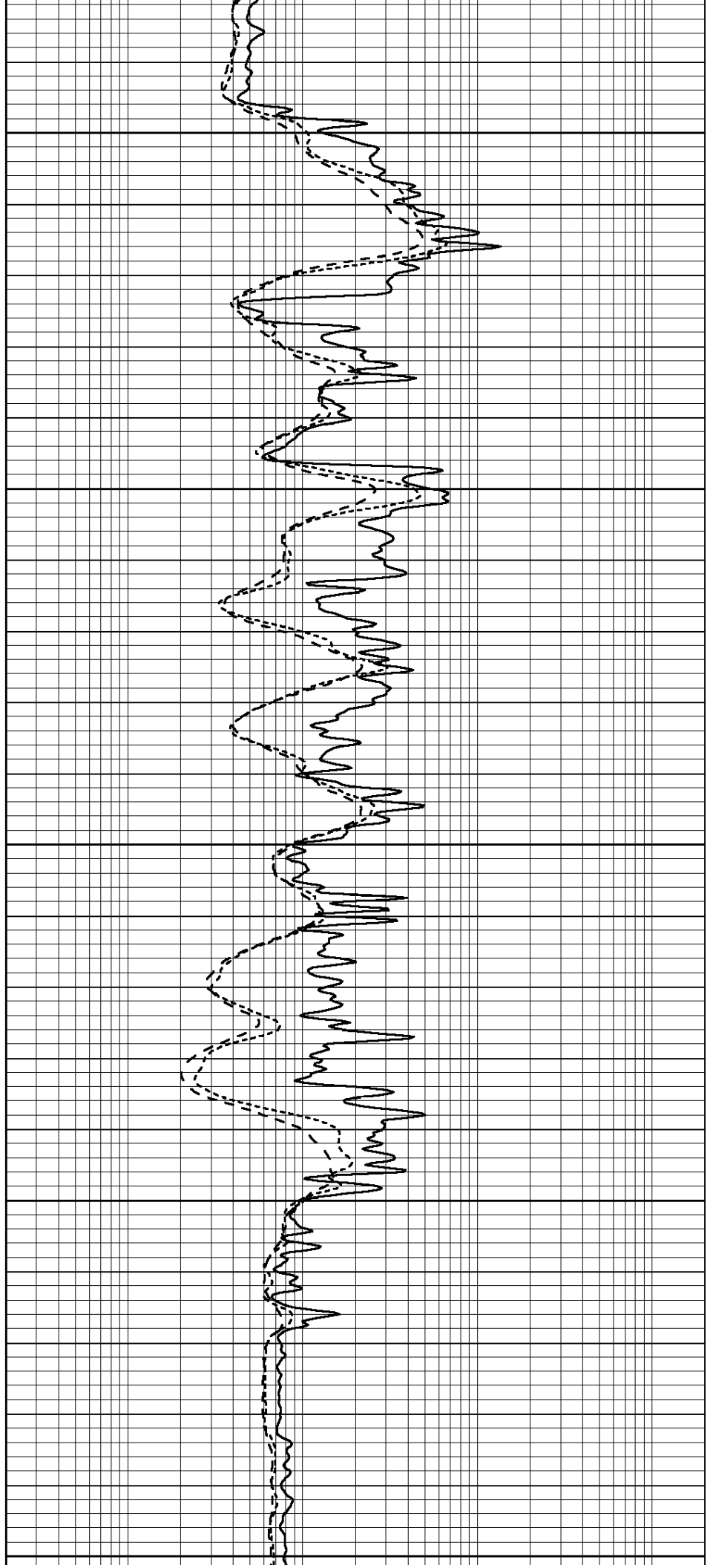
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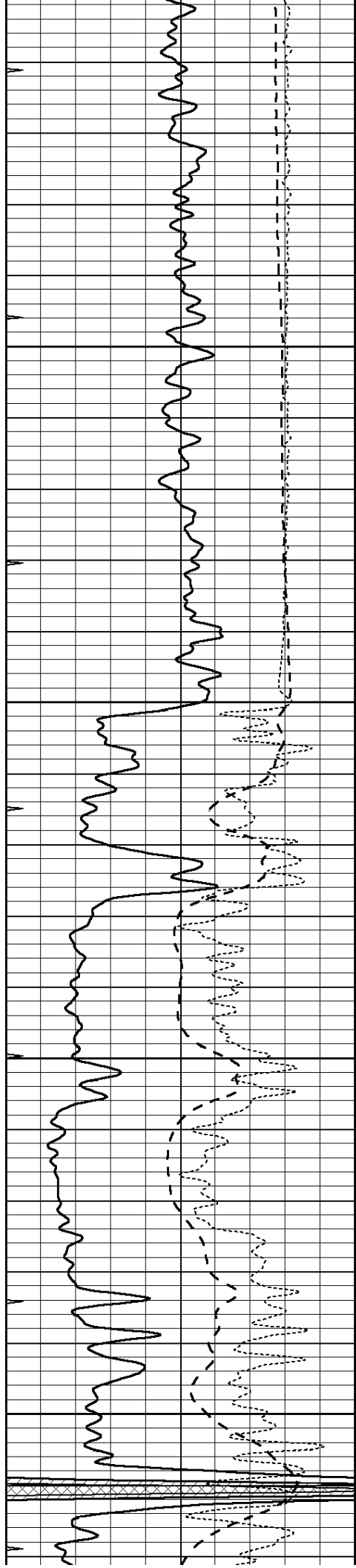
2000

2050

2100

2150



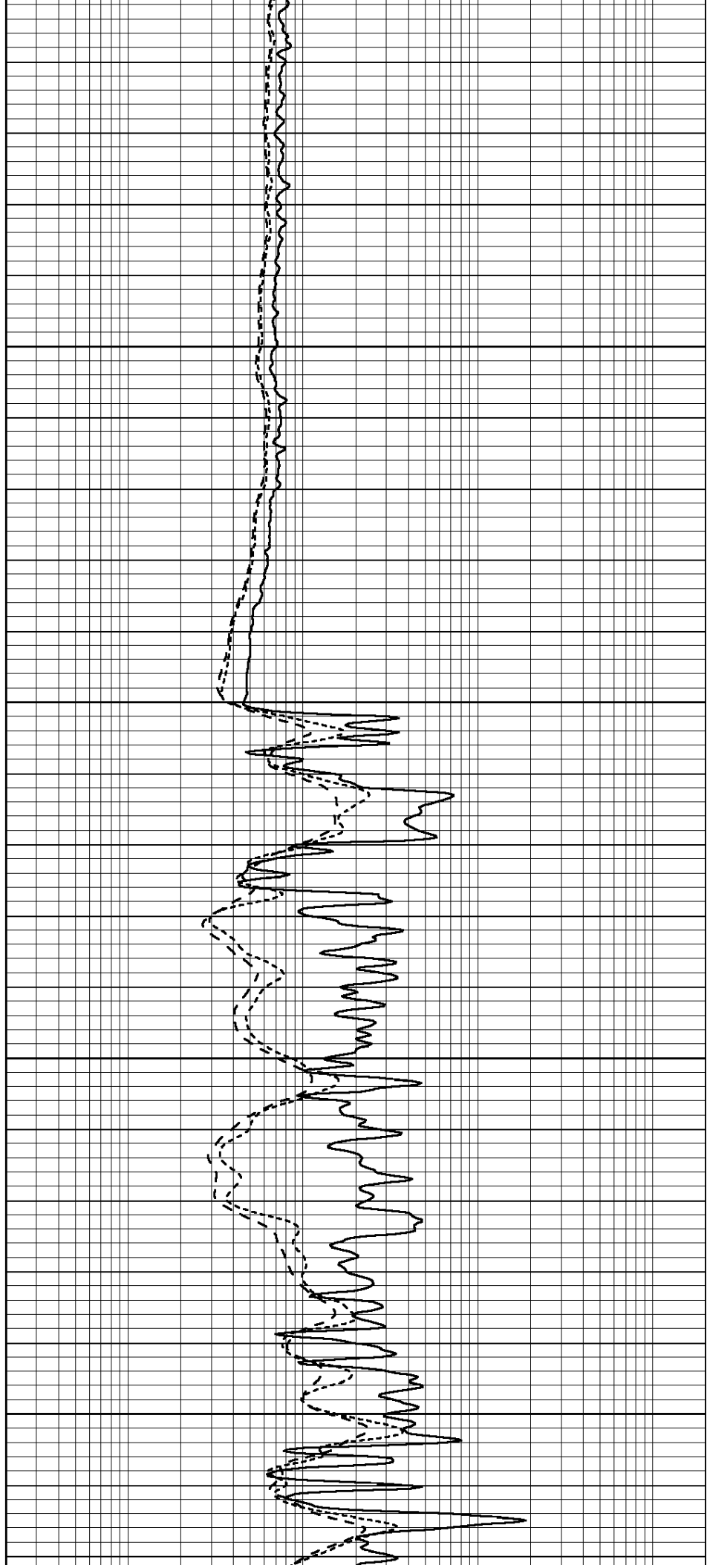


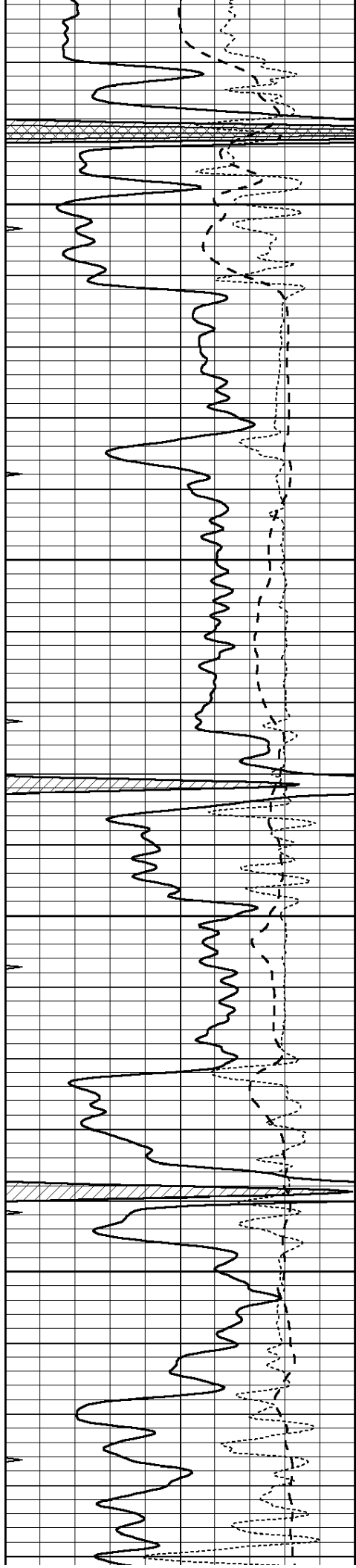
2200

2250

2300

2350



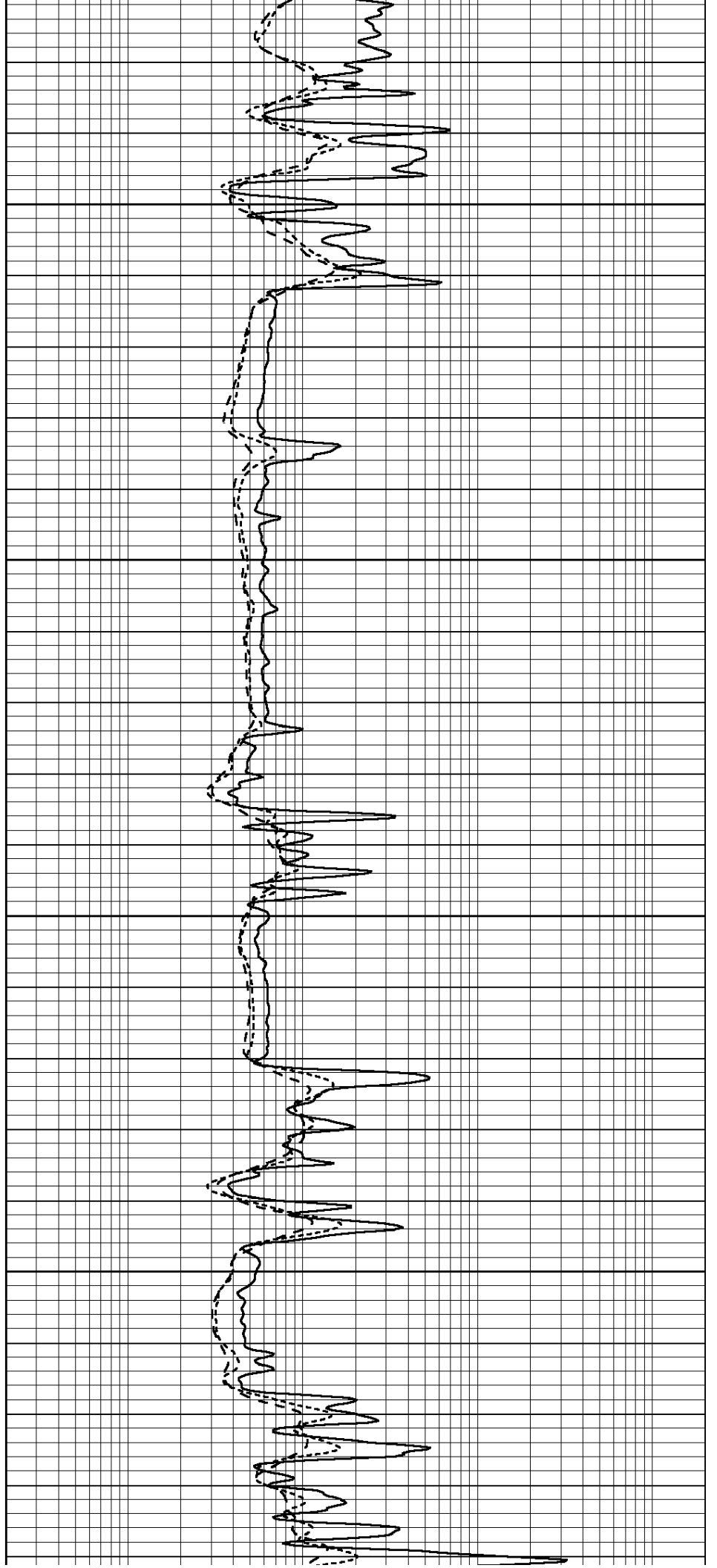


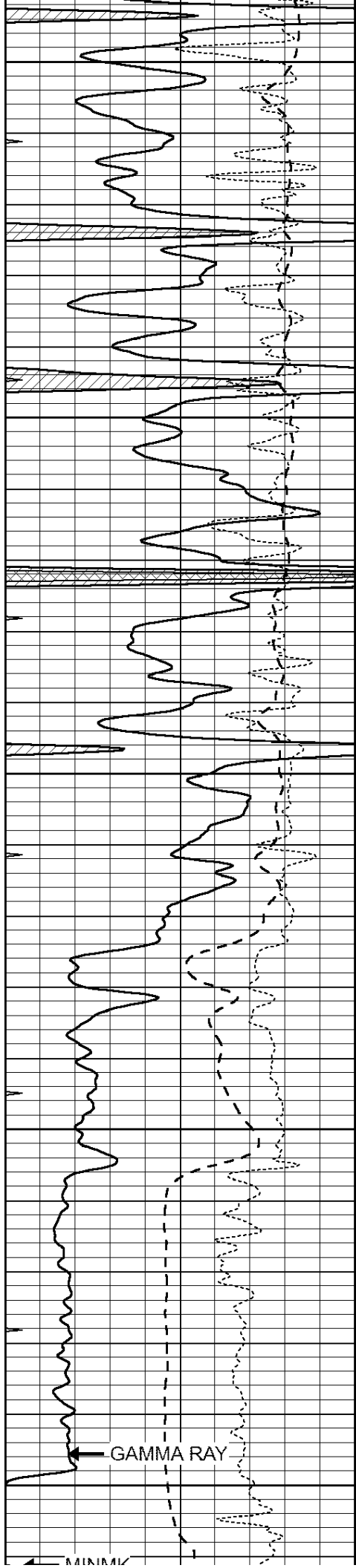
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2450

2500

2550





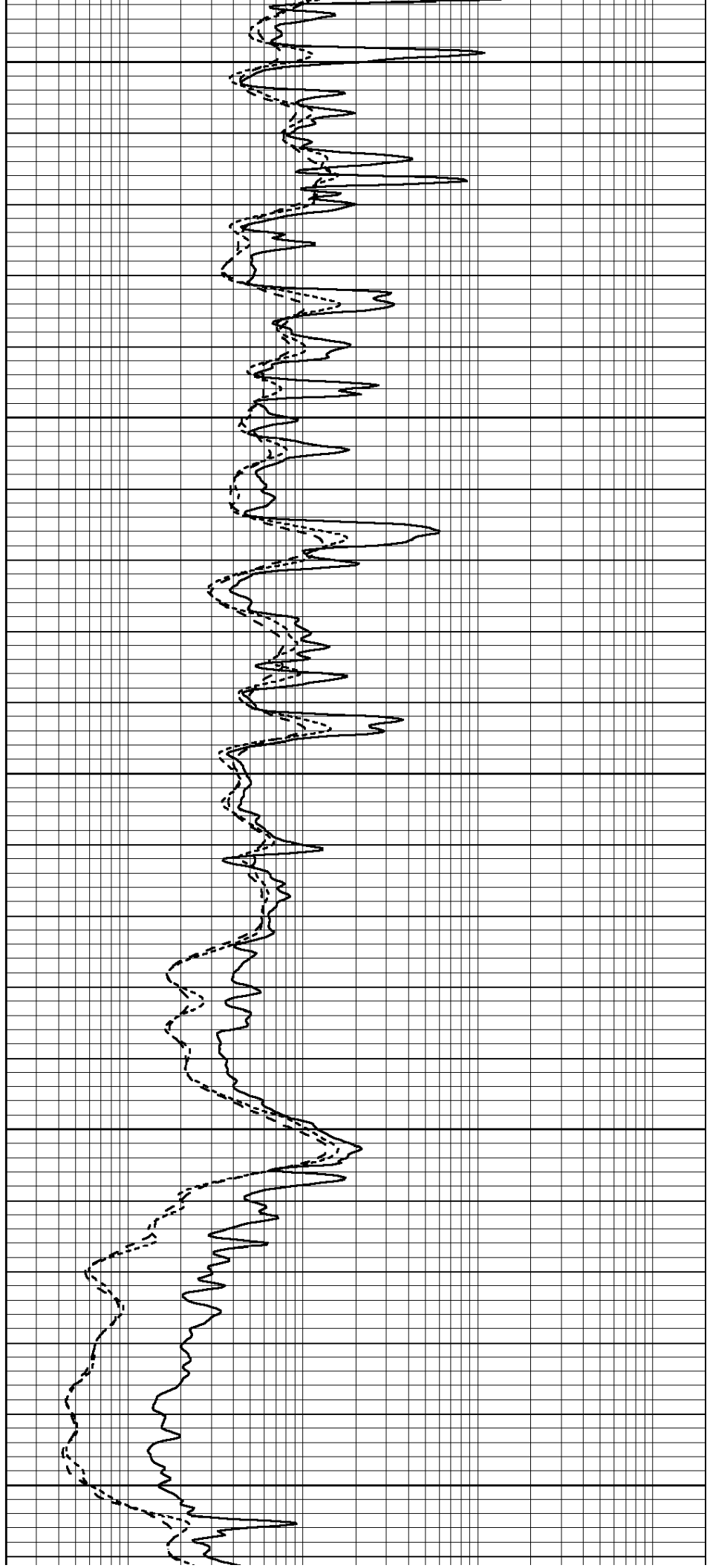
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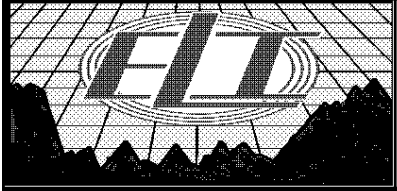
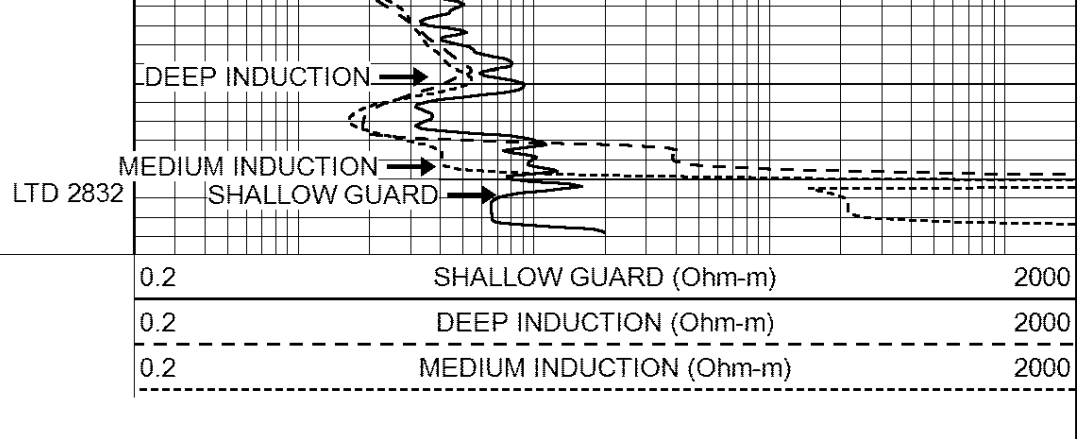
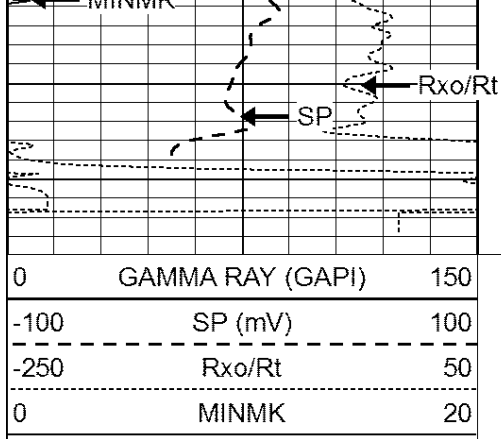
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2700

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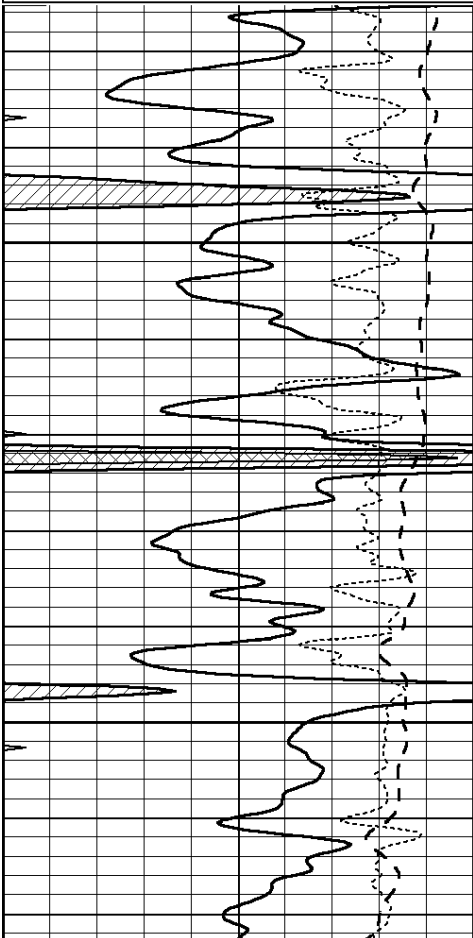
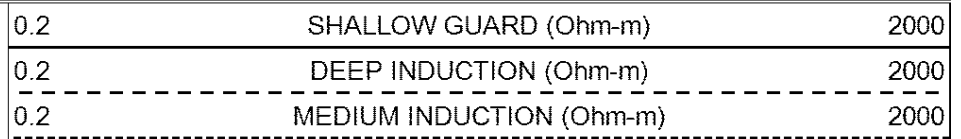
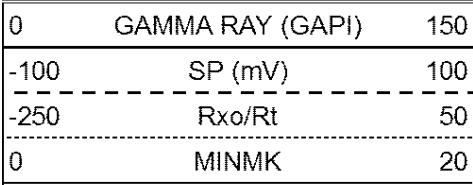
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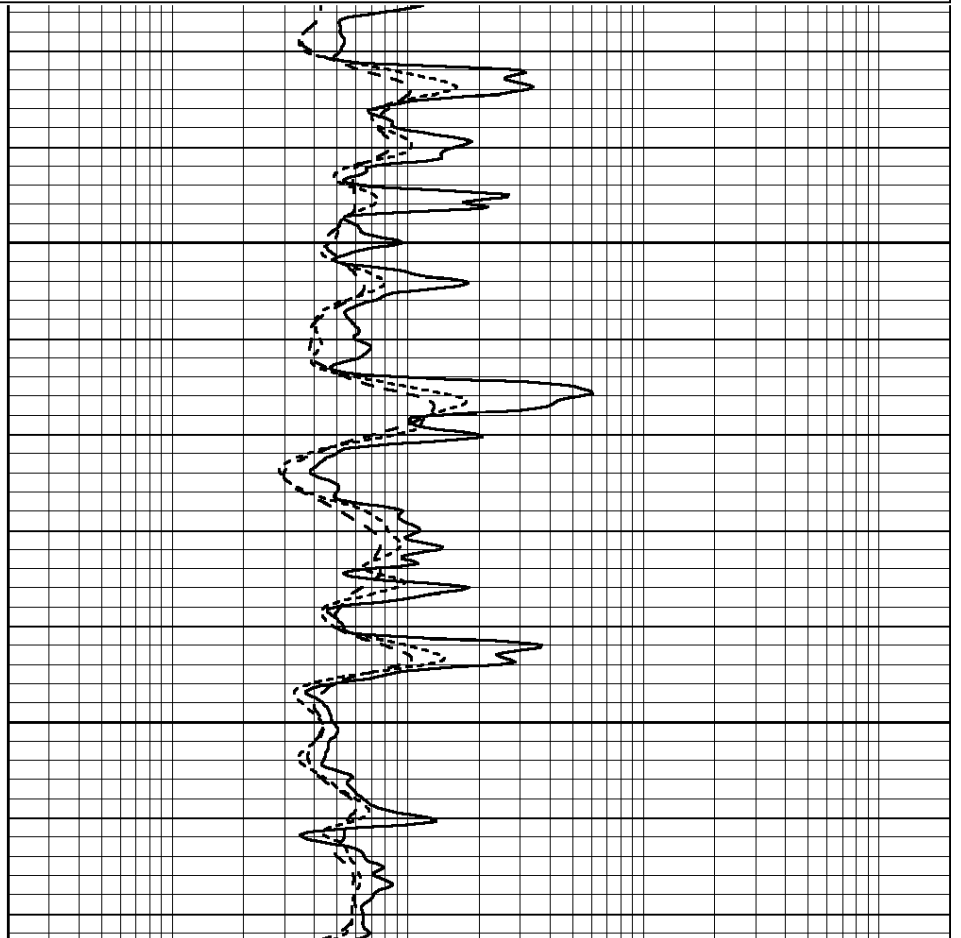
REPEAT SECTION

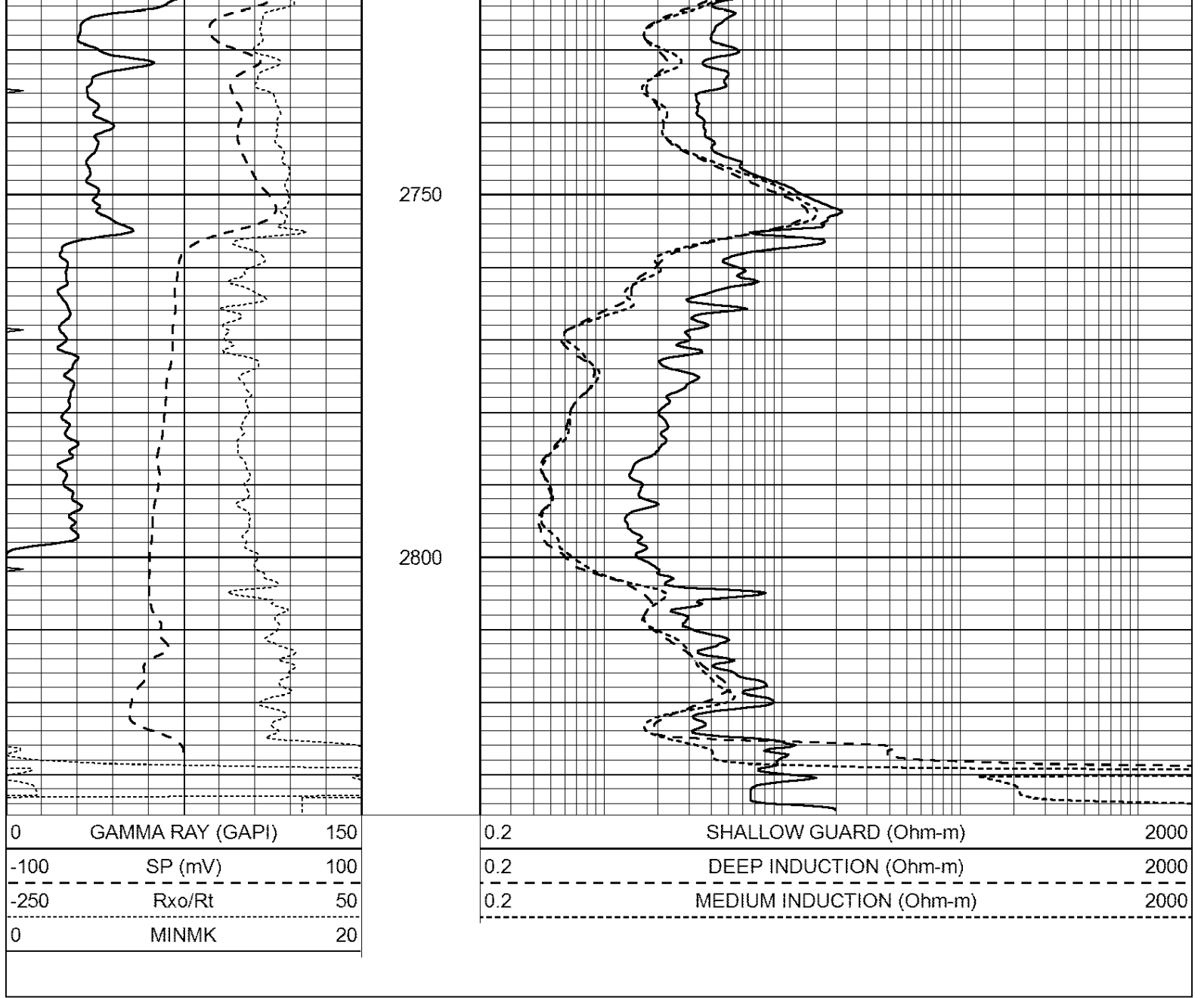
Database File: 4455pe.db
 Dataset Pathname: pass5.1
 Presentation Format: _dil
 Dataset Creation: Fri Nov 01 11:08:37 2019 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240



2650

2700





Calibration Report

Database File: 4455pe.db
 Dataset Pathname: pass5.1
 Dataset Creation: Fri Nov 01 11:08:37 2019 by Calc Open-Cased 090629

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

Loop:	Readings				References		Results	
	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	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 Fri Feb 22 09:59:16 2019			
	Background	Magnesium	Aluminum	Sandstone				
Window 1	1164.1	7287.2	2529.1	8656.3				cps
Window 2	1091.2	5350.1	2037.8	6279.8				cps
Window 3	821.7	2635.2	1183.7	2961.9				cps
Window 4	277.9	276.4	275.2	279.7				cps
Long Space	0.0	4355.6	946.5	5188.6				cps
Short Space	1.6	1496.1	994.4	1563.6				cps
Rho		1.7100	2.5960	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 44.8	Rib Slope	: 0.993	Density/Spine Ratio				: 0.569
Spine Angle	: 74.8	Spine Slope	: 3.682	Spine Intercept				: -18.6

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 Correction
Measured Pe

0.0000

0.0000
0.0000

0.0000
0.0000

g/cc

Compensated Neutron Calibration Report

Serial Number: 6I
Tool Model: G

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: Wed Jul 03 12:57:34 2019

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity: 0.5700 GAPI/cps