



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company		CHIEFTAIN OIL COMPANY, INC.	
Well		MOLZ #22	
Field		STRANATHAN	
County		BARBER	
State		KANSAS	
Location:		API # : 15-007-24102-0000 2004' FNL & 579' FEL	
SEC 10 TWP 35S RGE 12W Permanent Datum Log Measured From Drilling Measured From		GROUND LEVEL KELLY BUSHING 10' A.G.L. KELLY BUSHING Elevation 1396 K.B. 1406 D.F. 1404 G.L. 1396	
Date	11/4/13		
Run Number	ONE		
Depth Driller	5621		
Depth Logger	5621		
Bottom Logged Interval	5619		
Top Log Interval	00		
Casing Driller	8 5/8" @ 312'		
Casing Logger	310		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4/59	CHLORIDES 4400 PPM	
pH / Fluid Loss	9.5/7.8		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.80 @ 83F		
Rmf @ Meas. Temp	.60 @ 83F		
Rmc @ Meas. Temp	.96 @ 83F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	.50 @ 131F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	131F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	ARDEN RATZLAFF		

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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 NABORS COMPLETION & PRODUCTION SVCS. (785) 628-6395

DIRECTIONS:
HARDTNER, KS. - 2 MILES EAST - NORTH INTO

Database File:

012083pe.db

Dataset Pathname:

pass3.2

Presentation Format:

_dil2

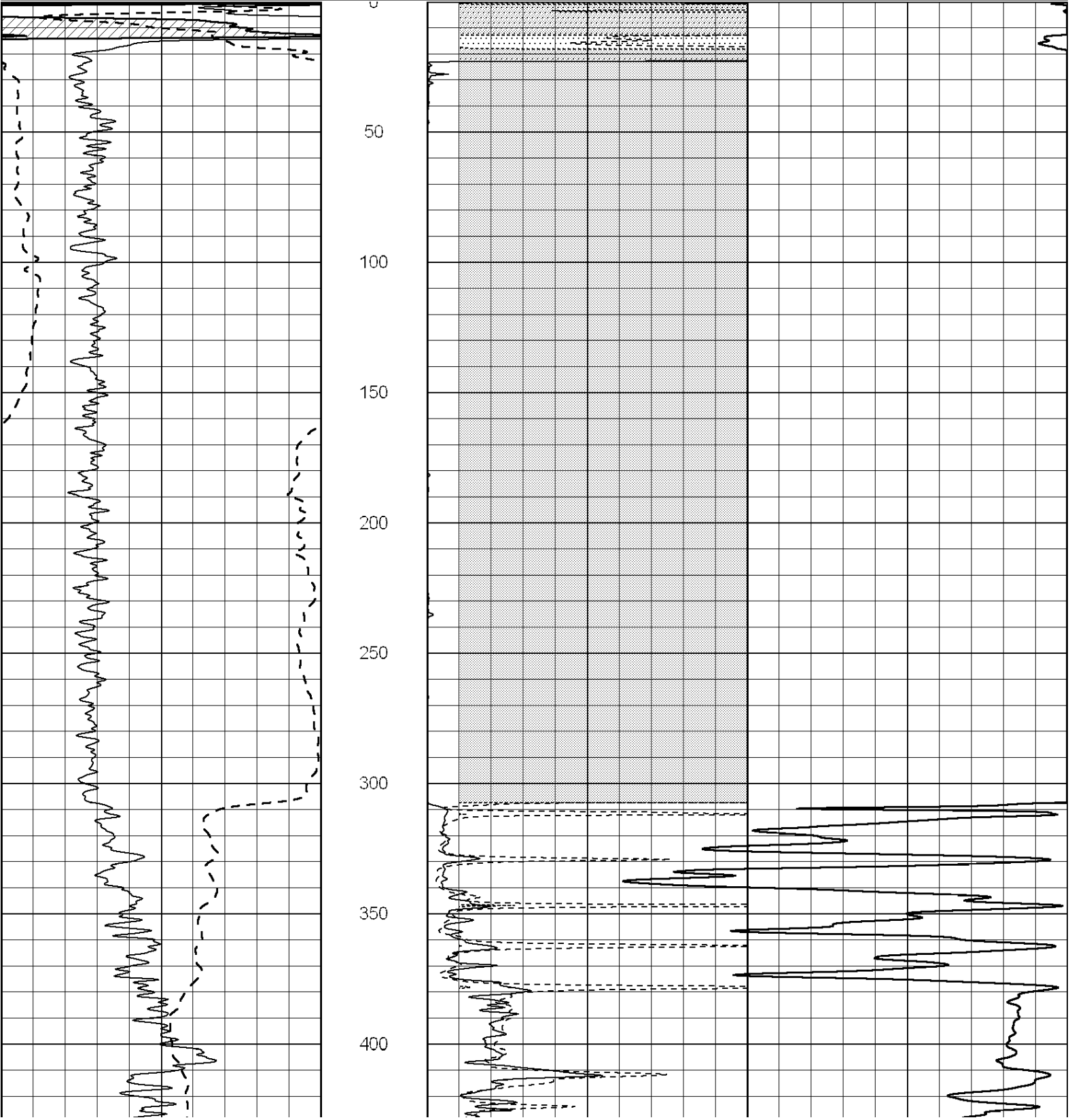
Dataset Creation:

Mon Nov 04 20:41:18 2013 by Calc Open-Cased 090629

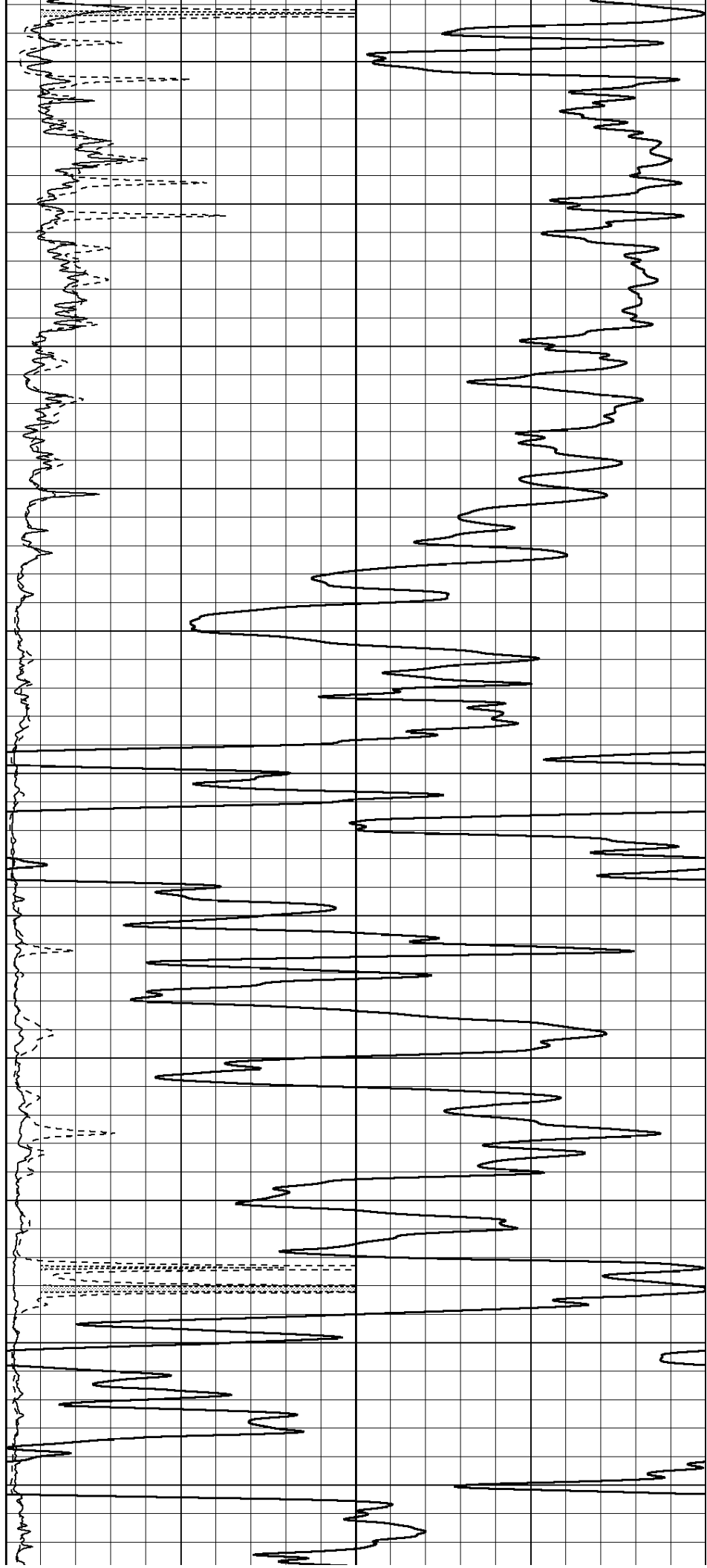
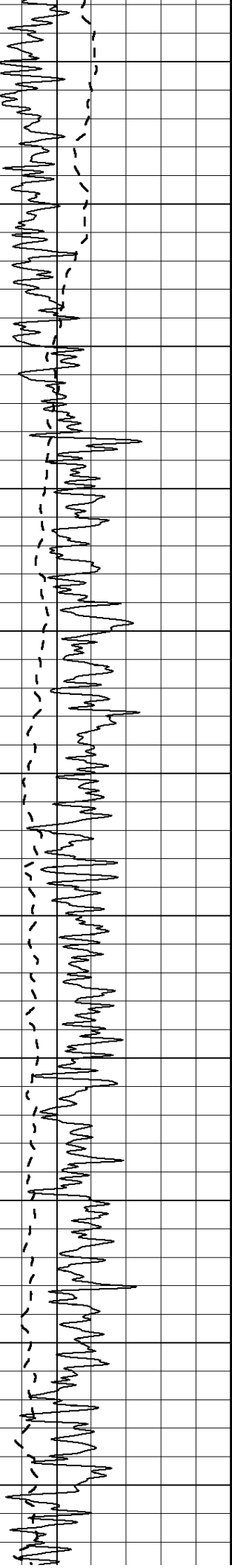
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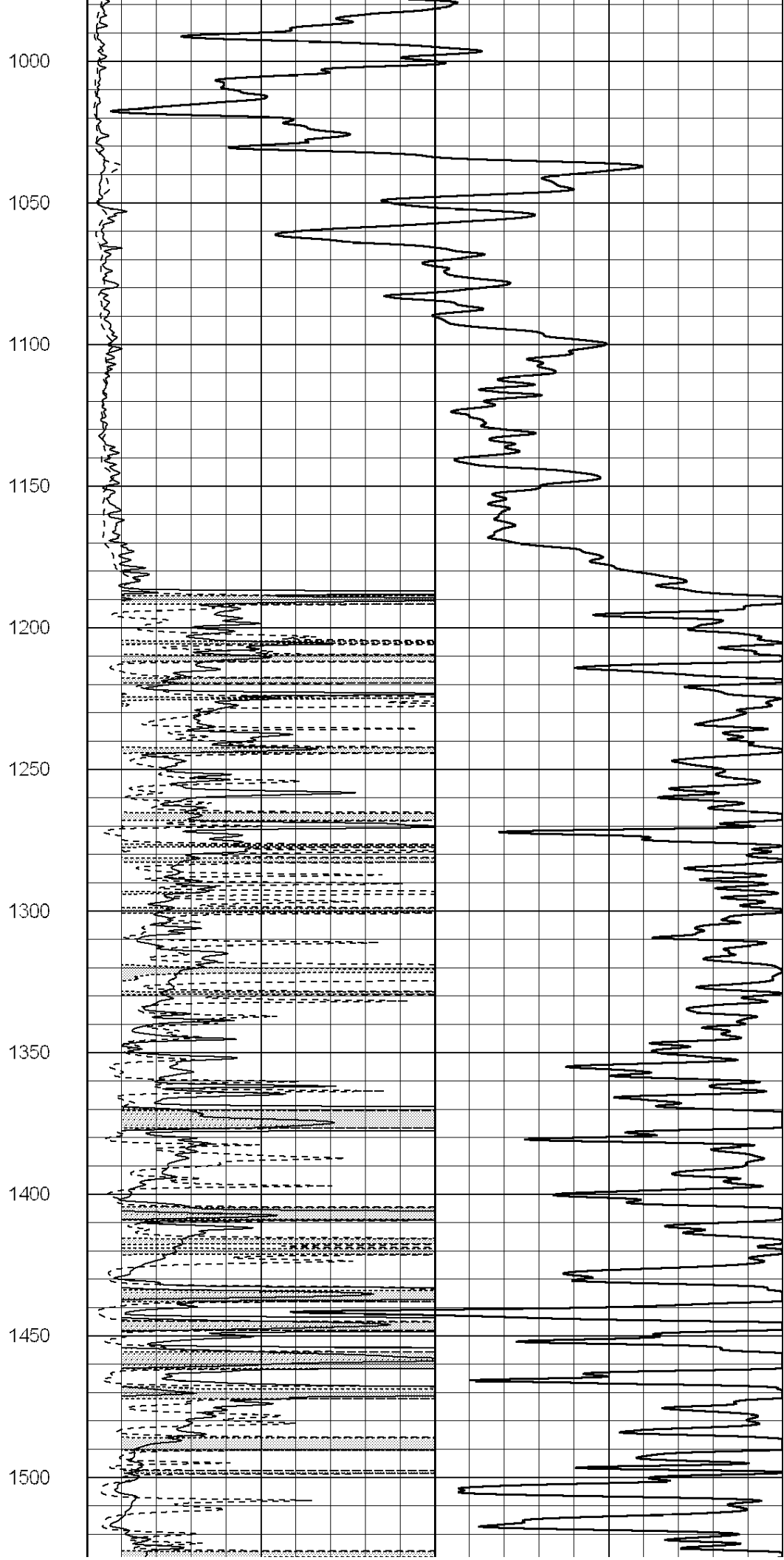
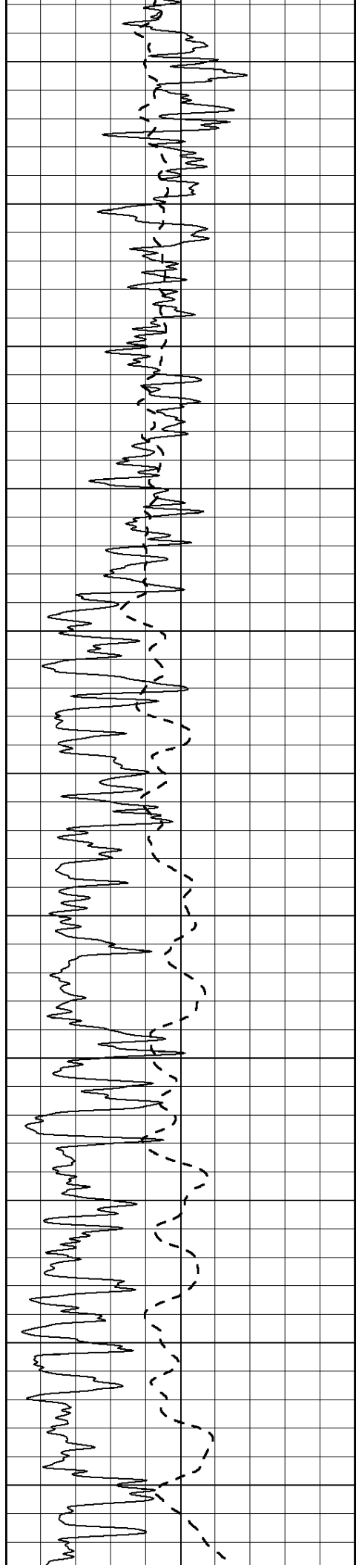
Depth in Feet scaled 1:600

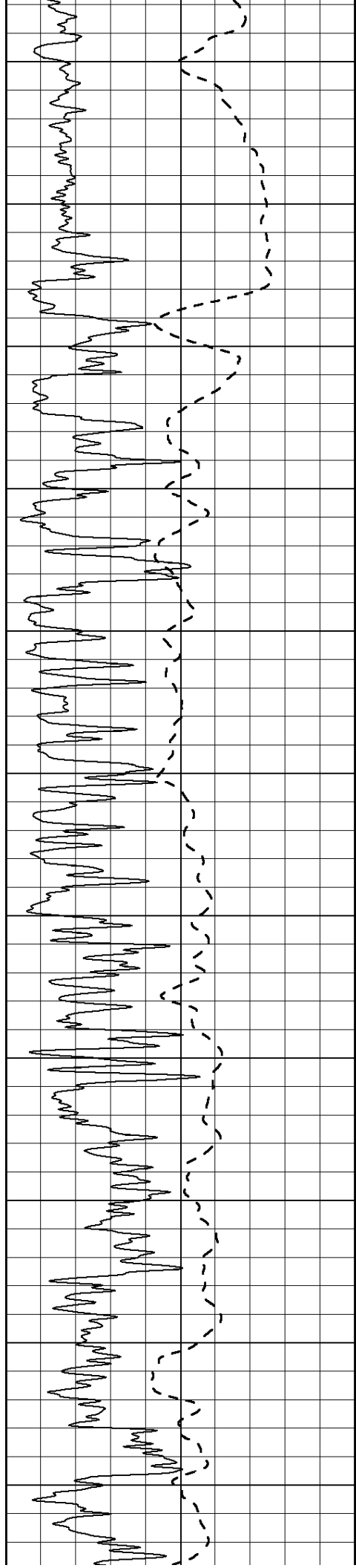
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-100	SP (mV)	100	0	Deep Induction (Ohm-m)	50	
-----			-----			
			1000		CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	



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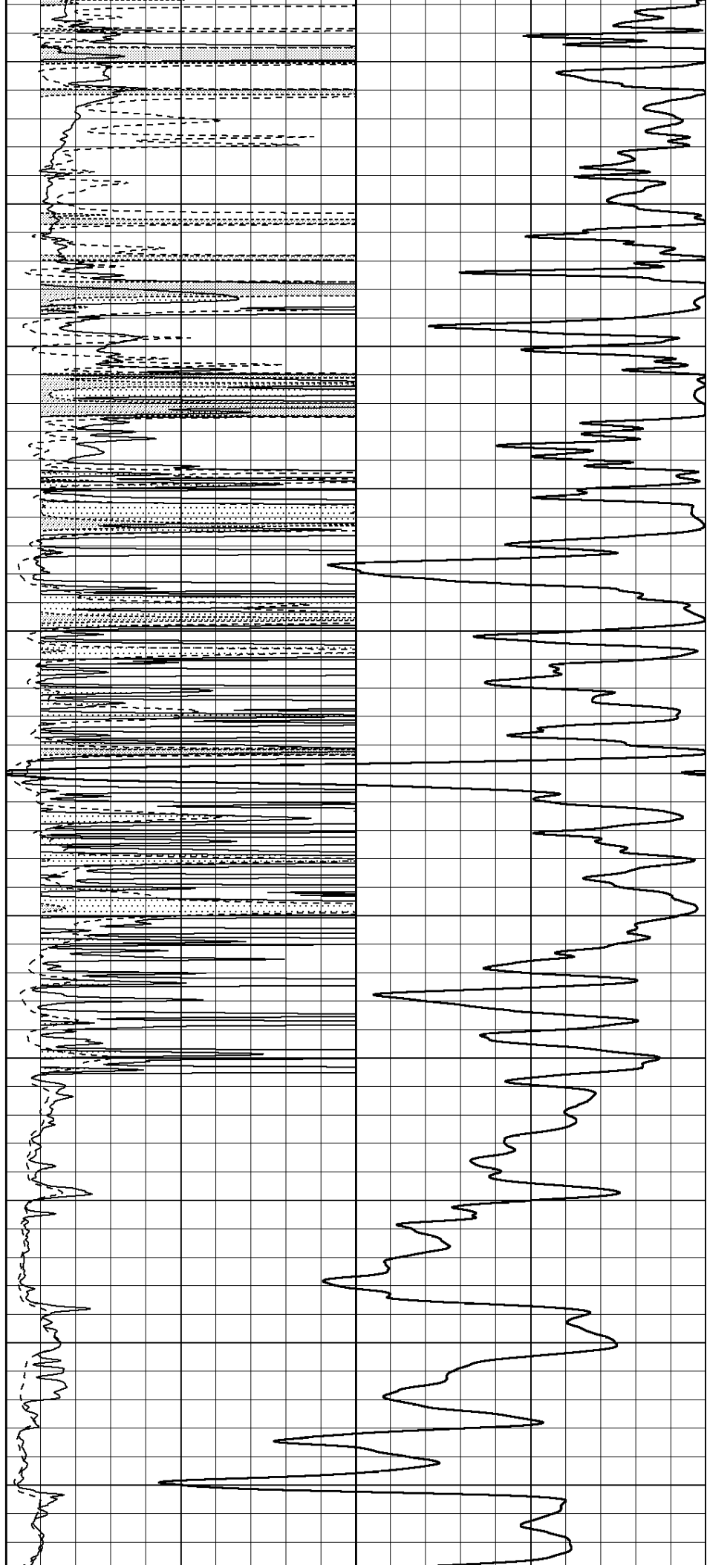
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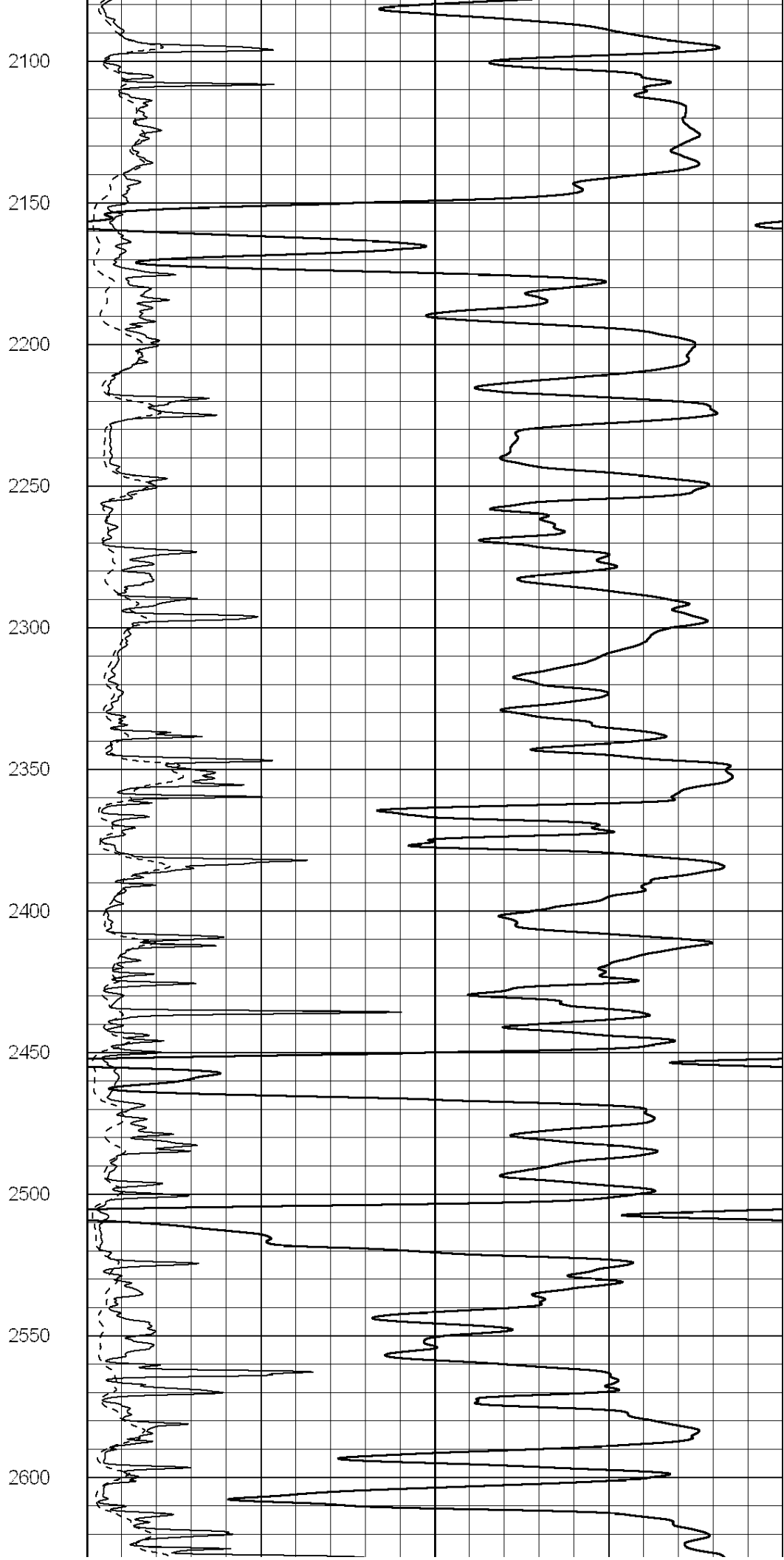
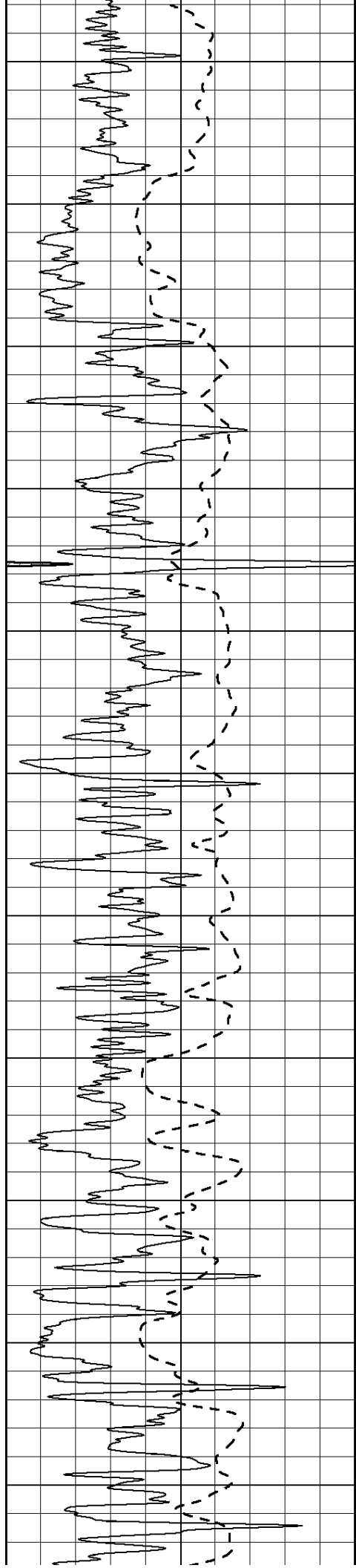
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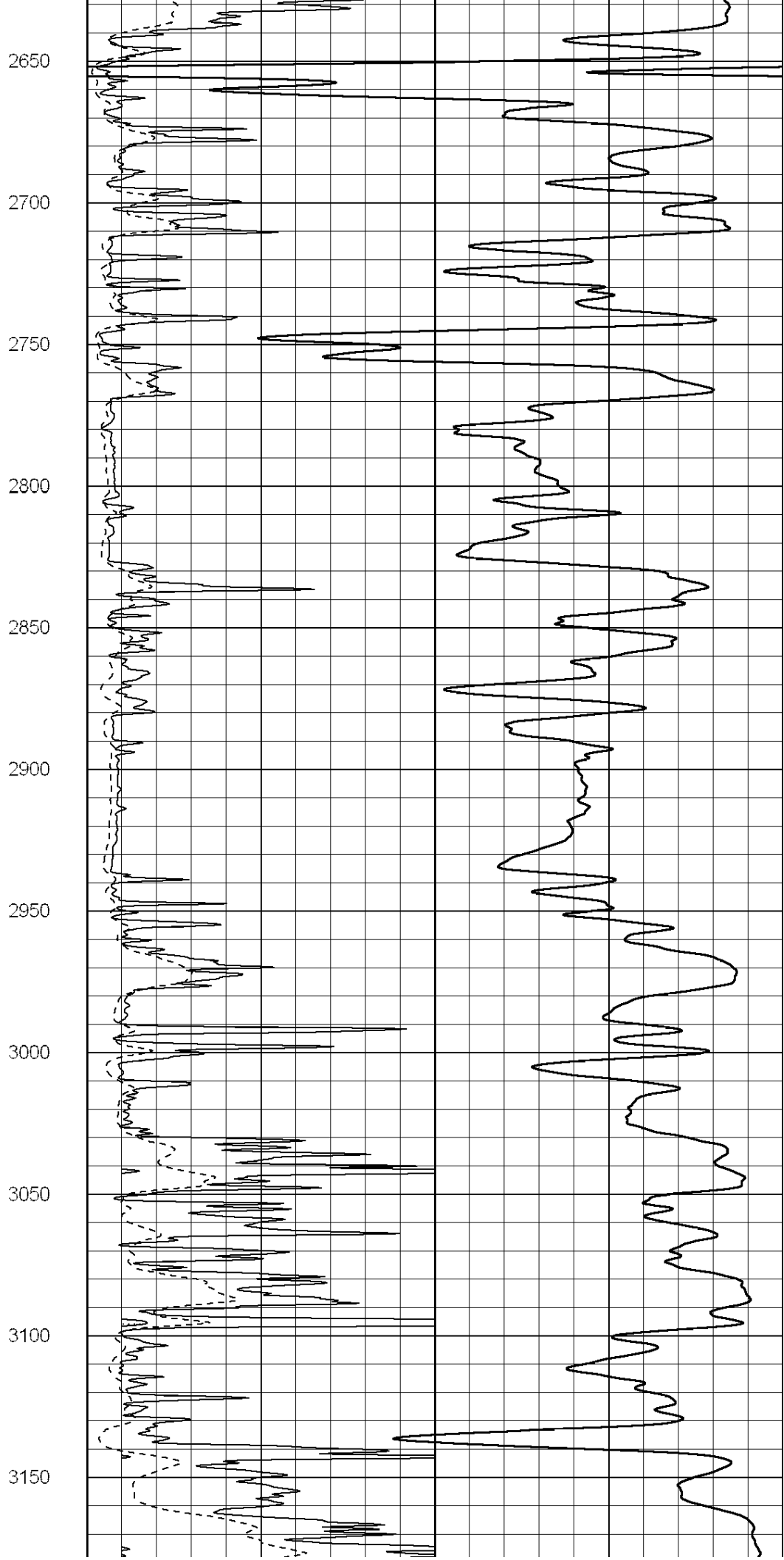
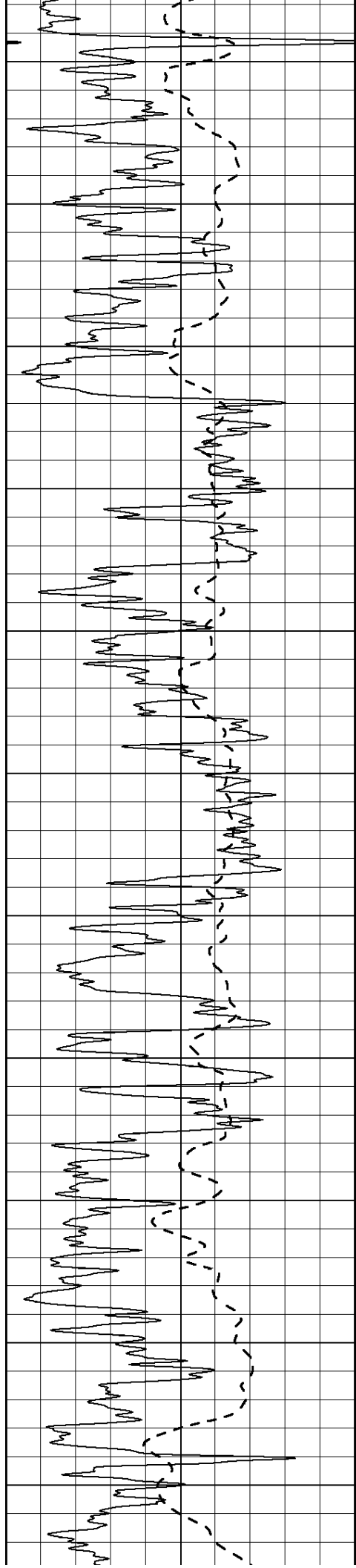
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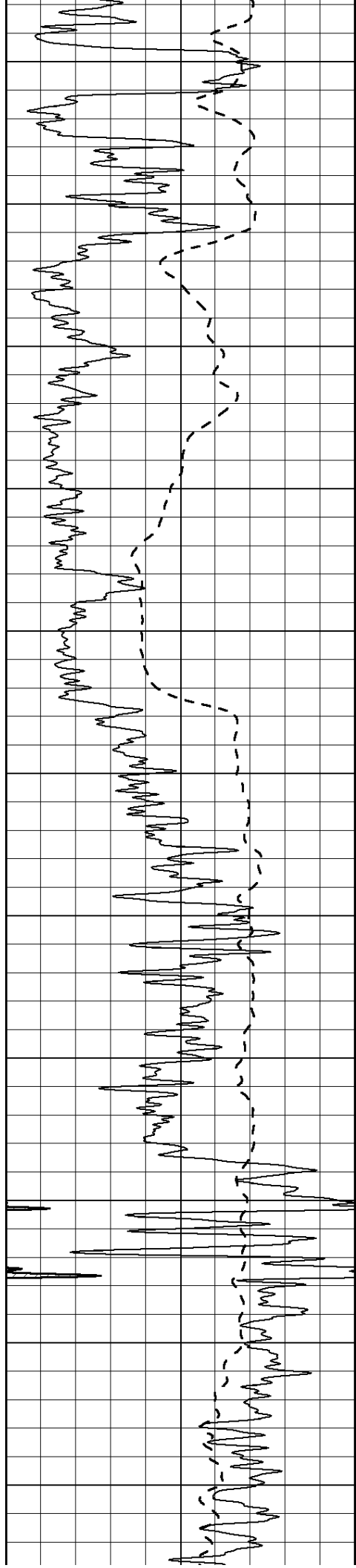
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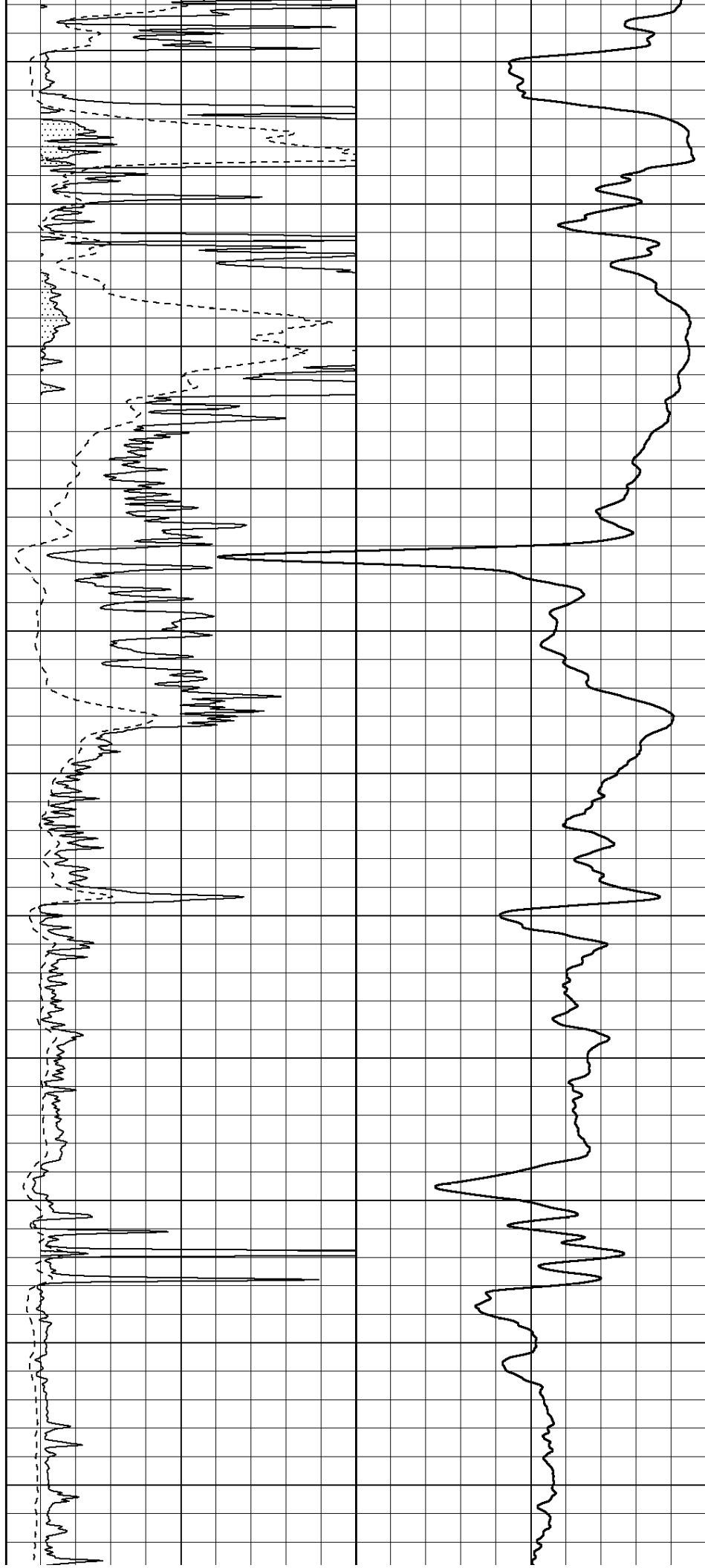


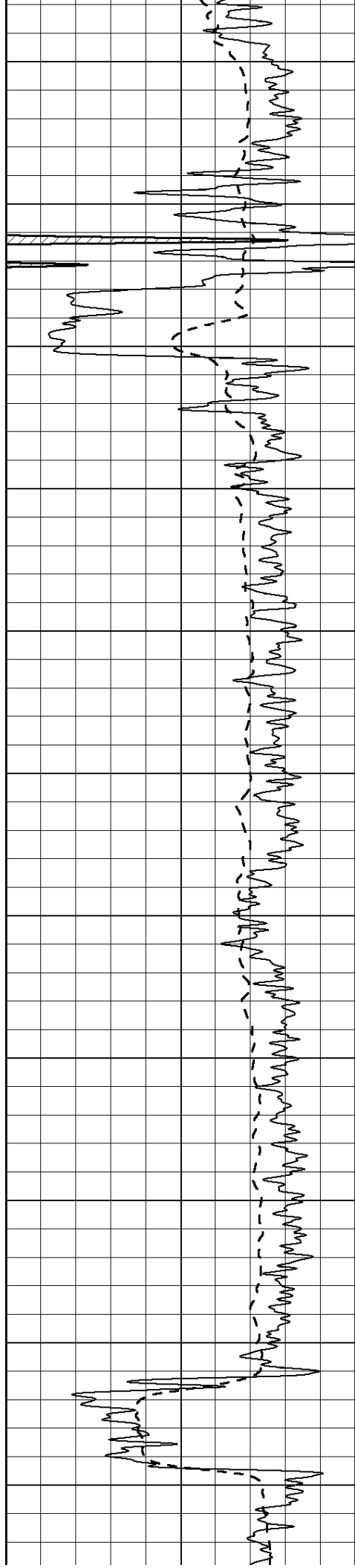






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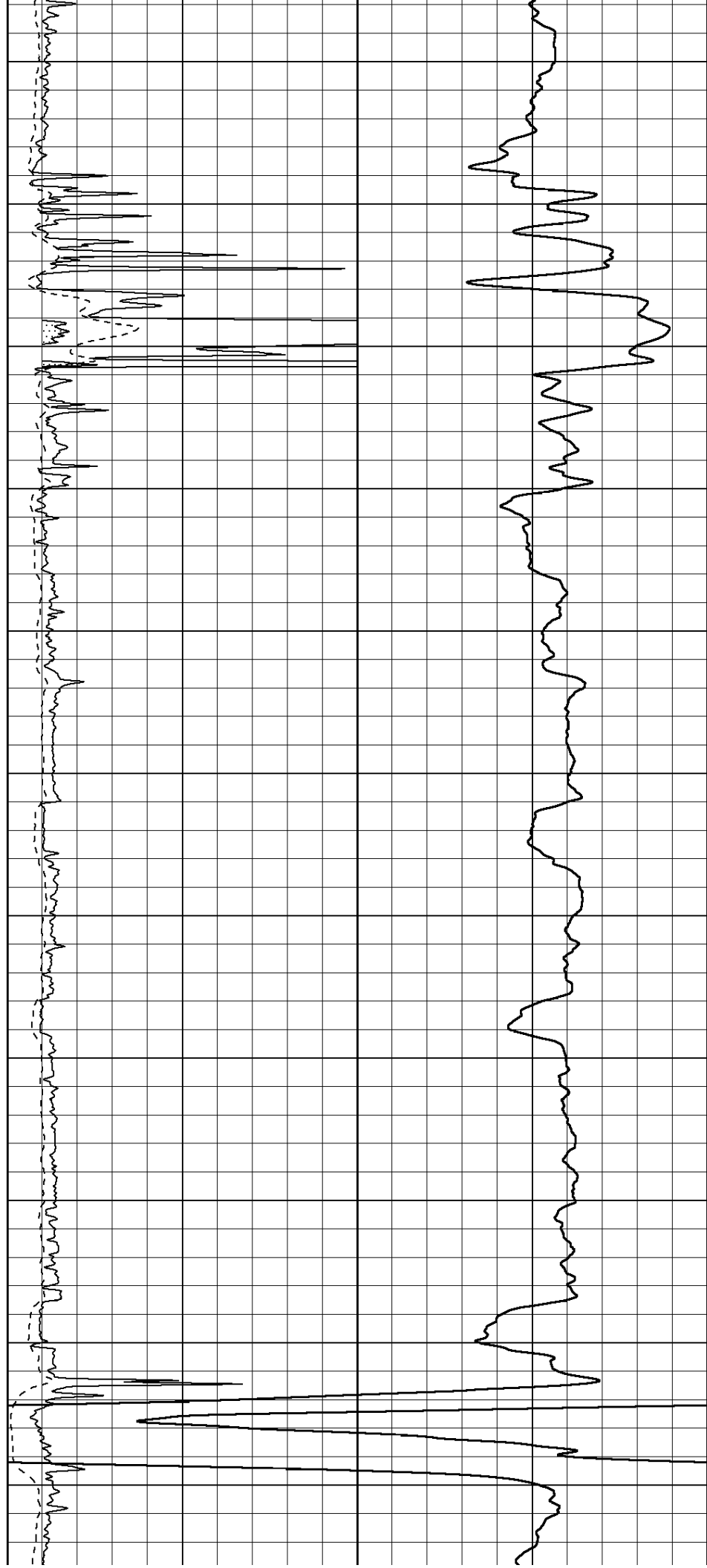
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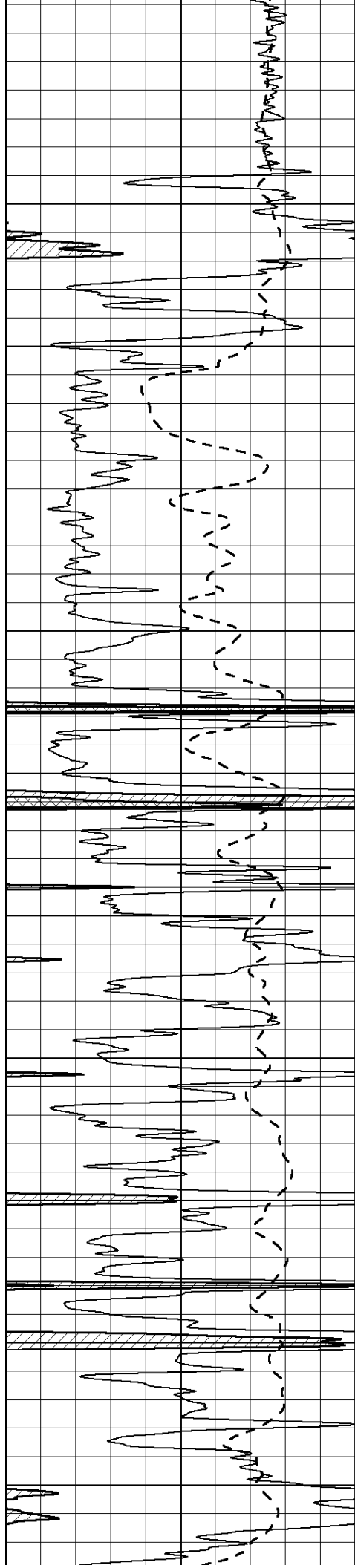
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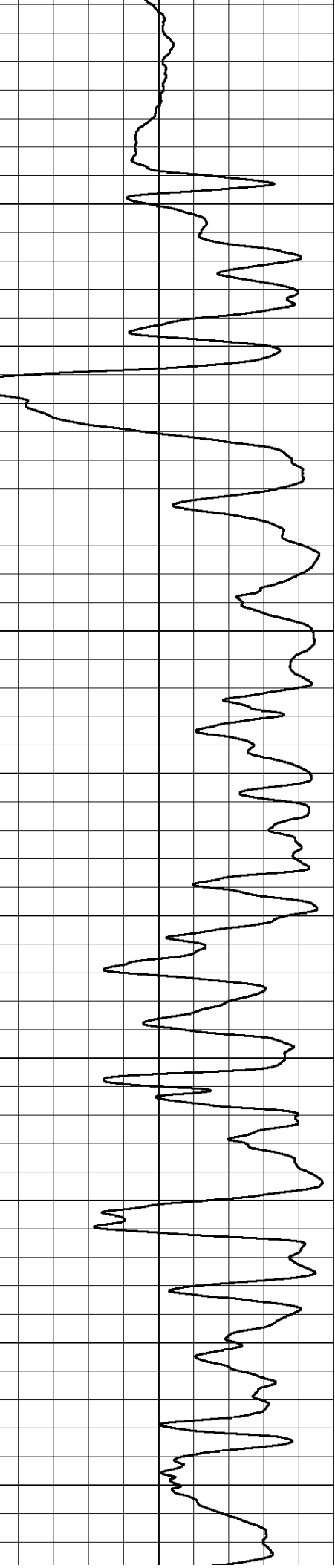
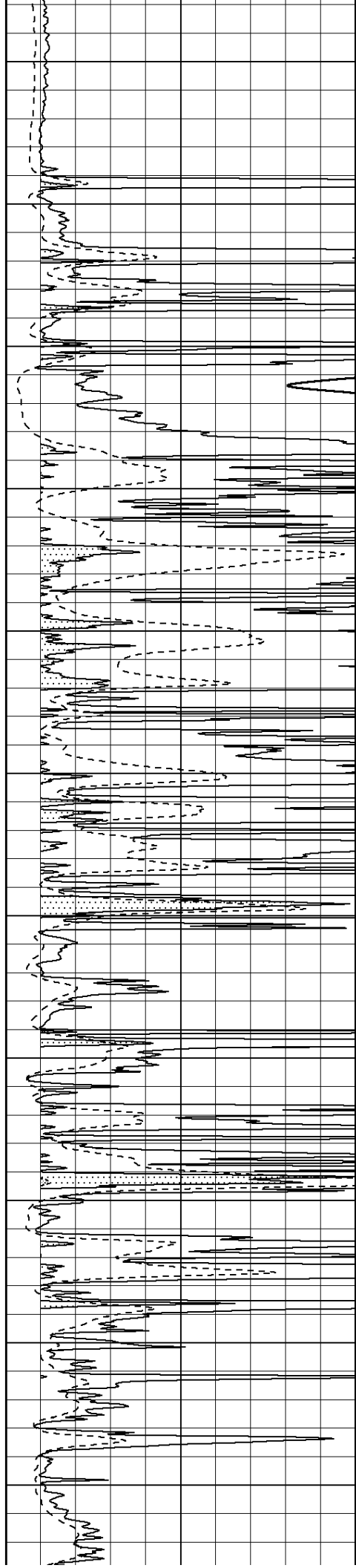
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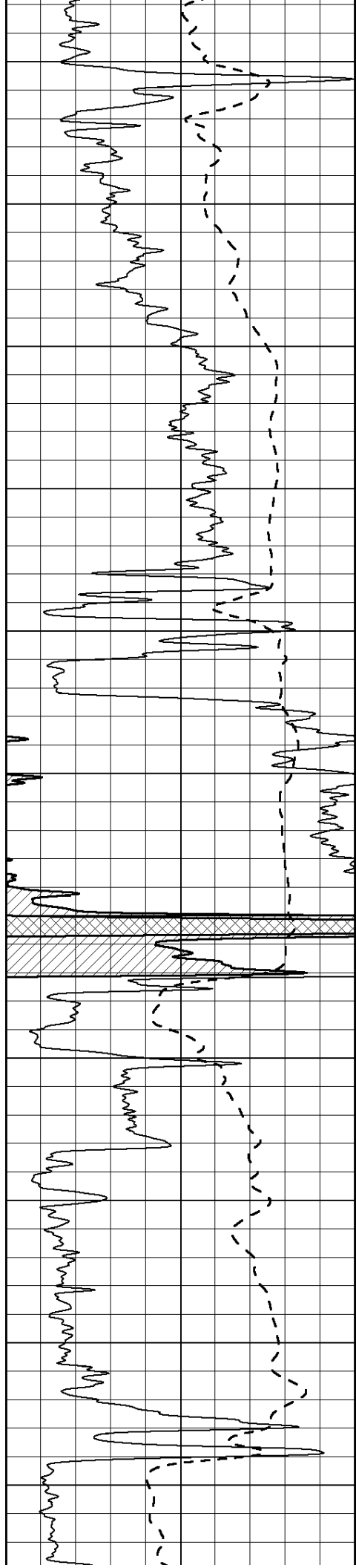
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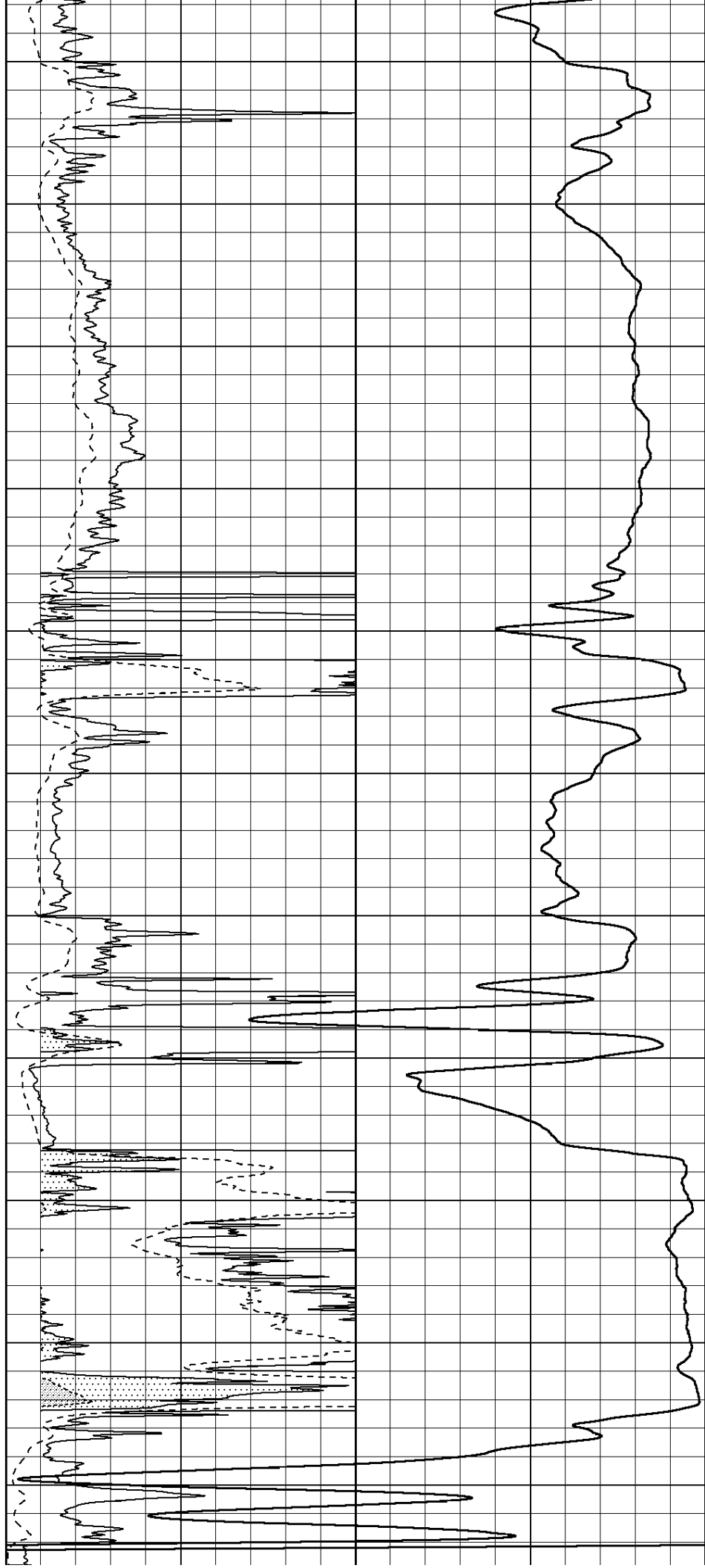
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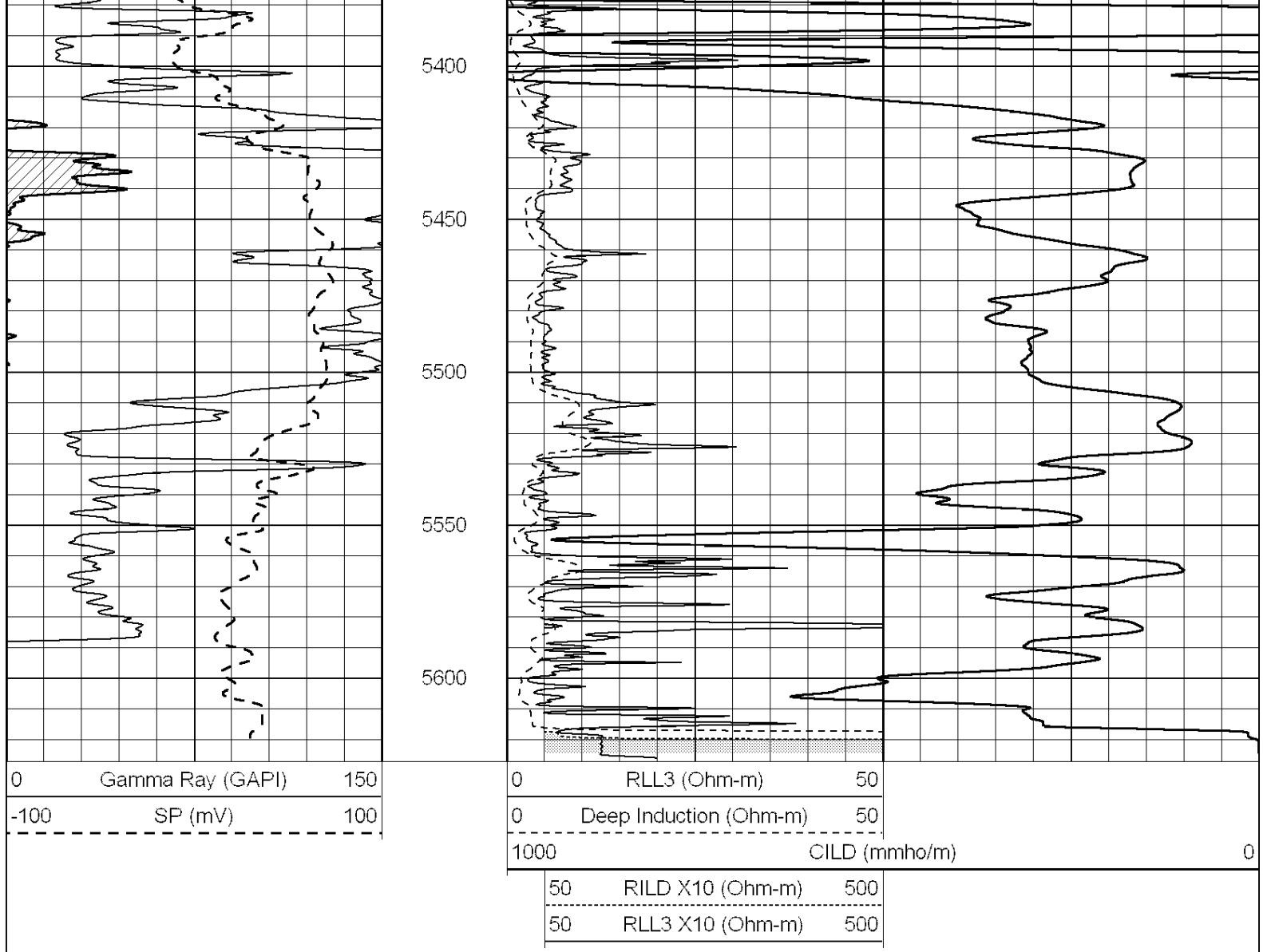
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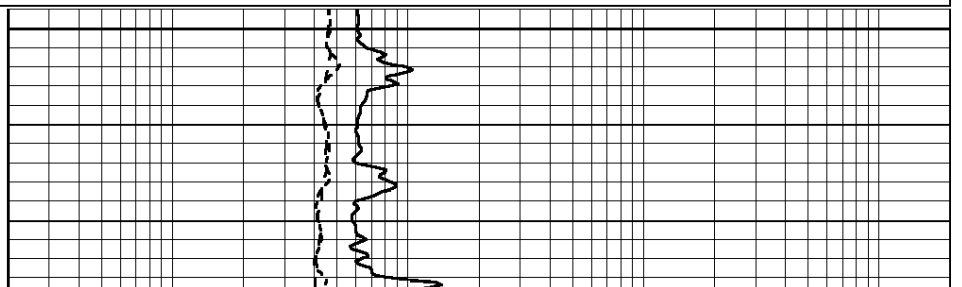
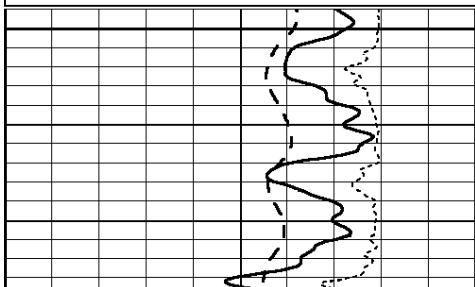
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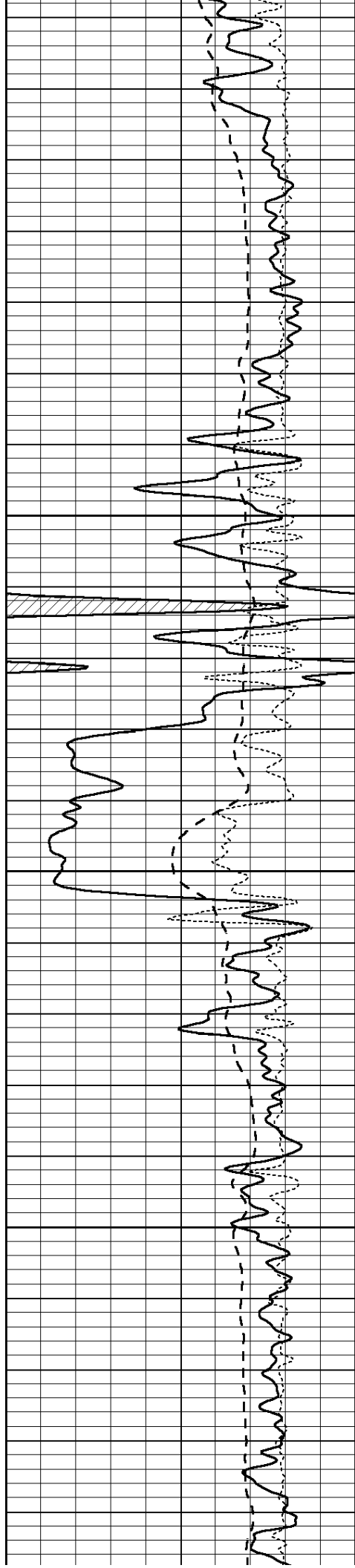
MAIN SECTION

Database File: 012083pe.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Mon Nov 04 19:52:16 2013 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

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



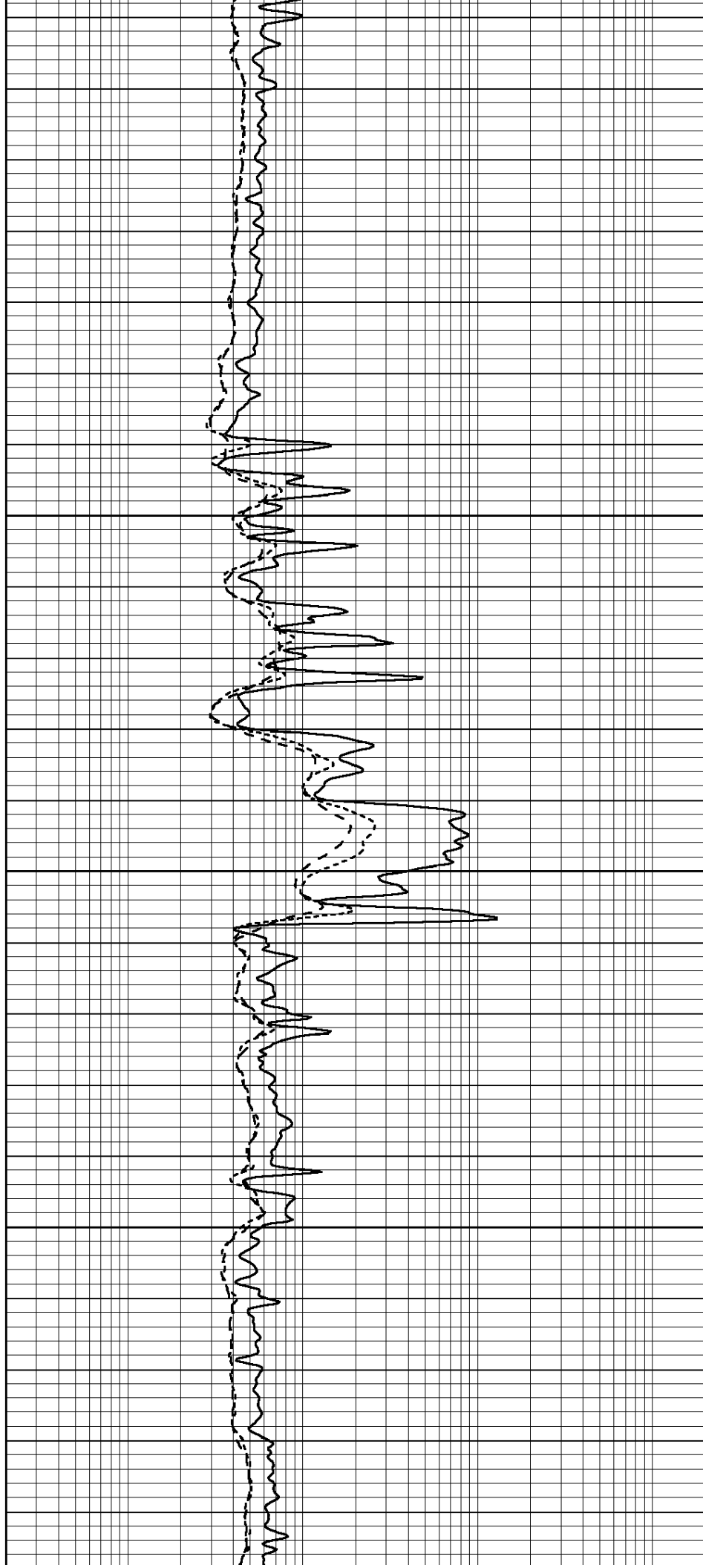


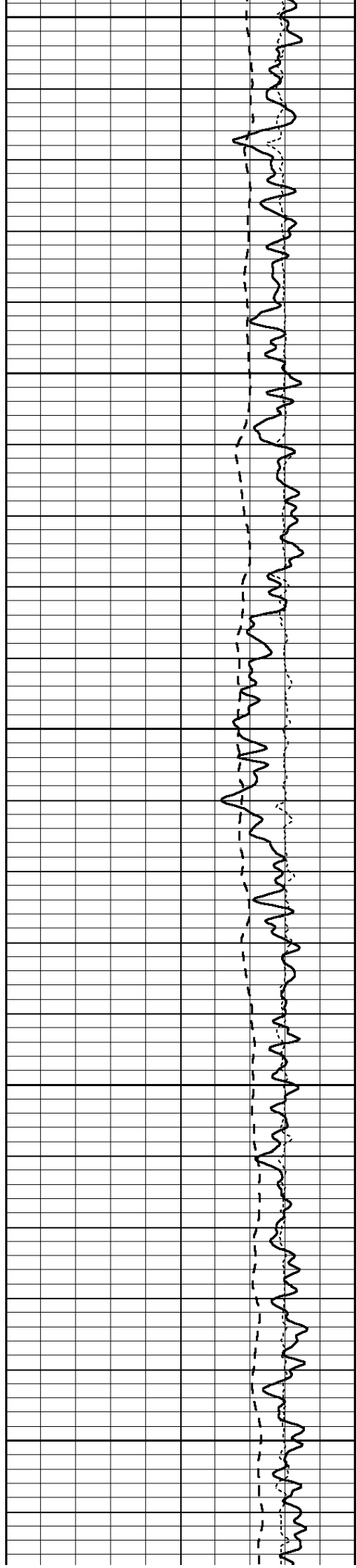
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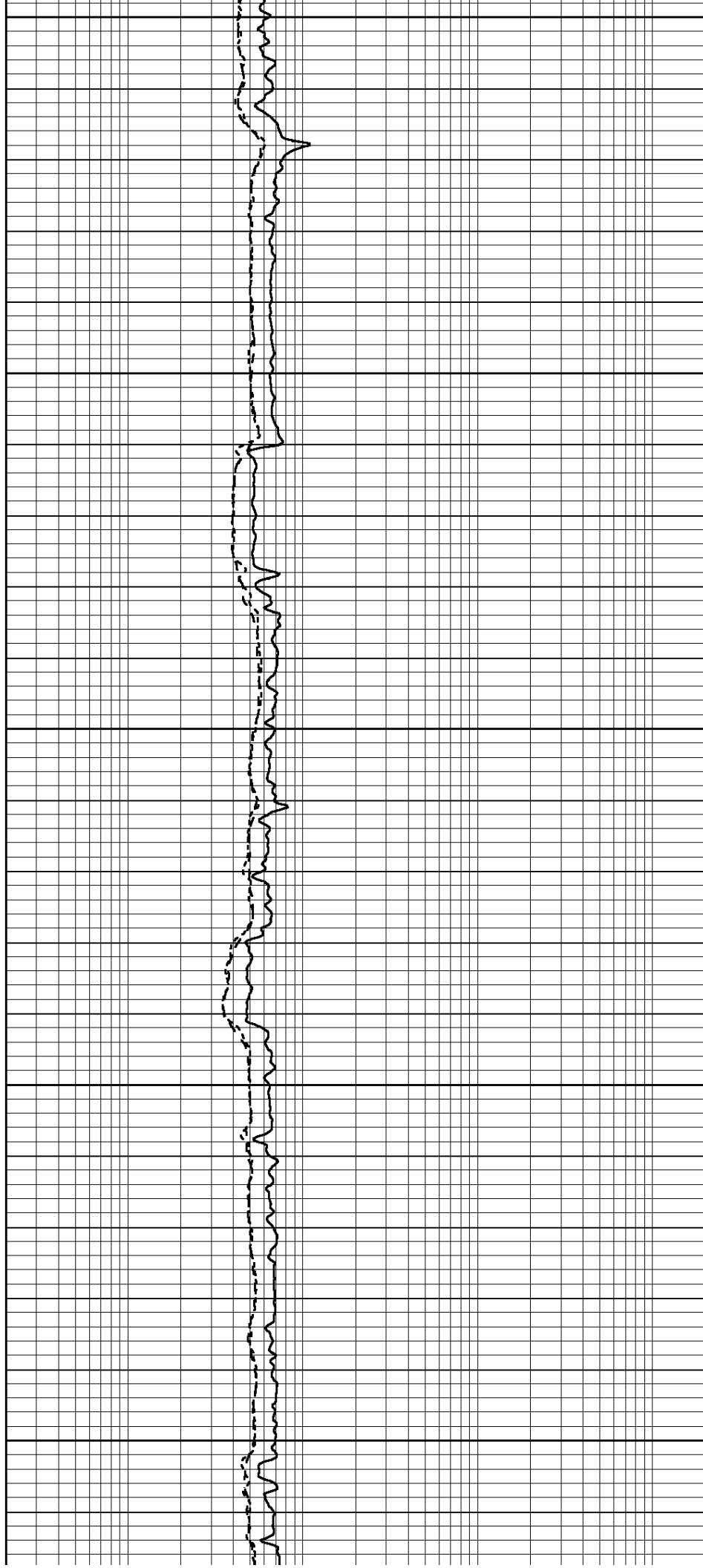
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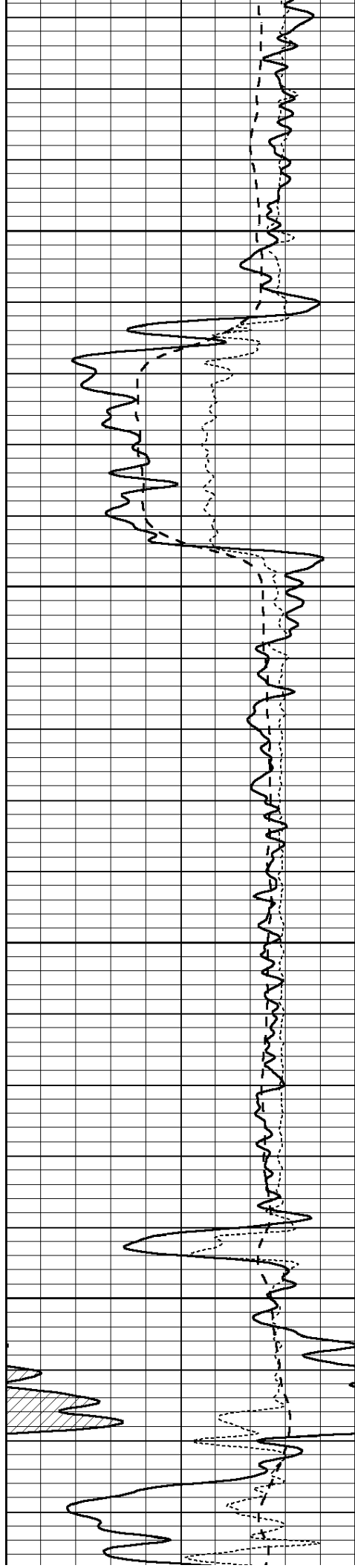
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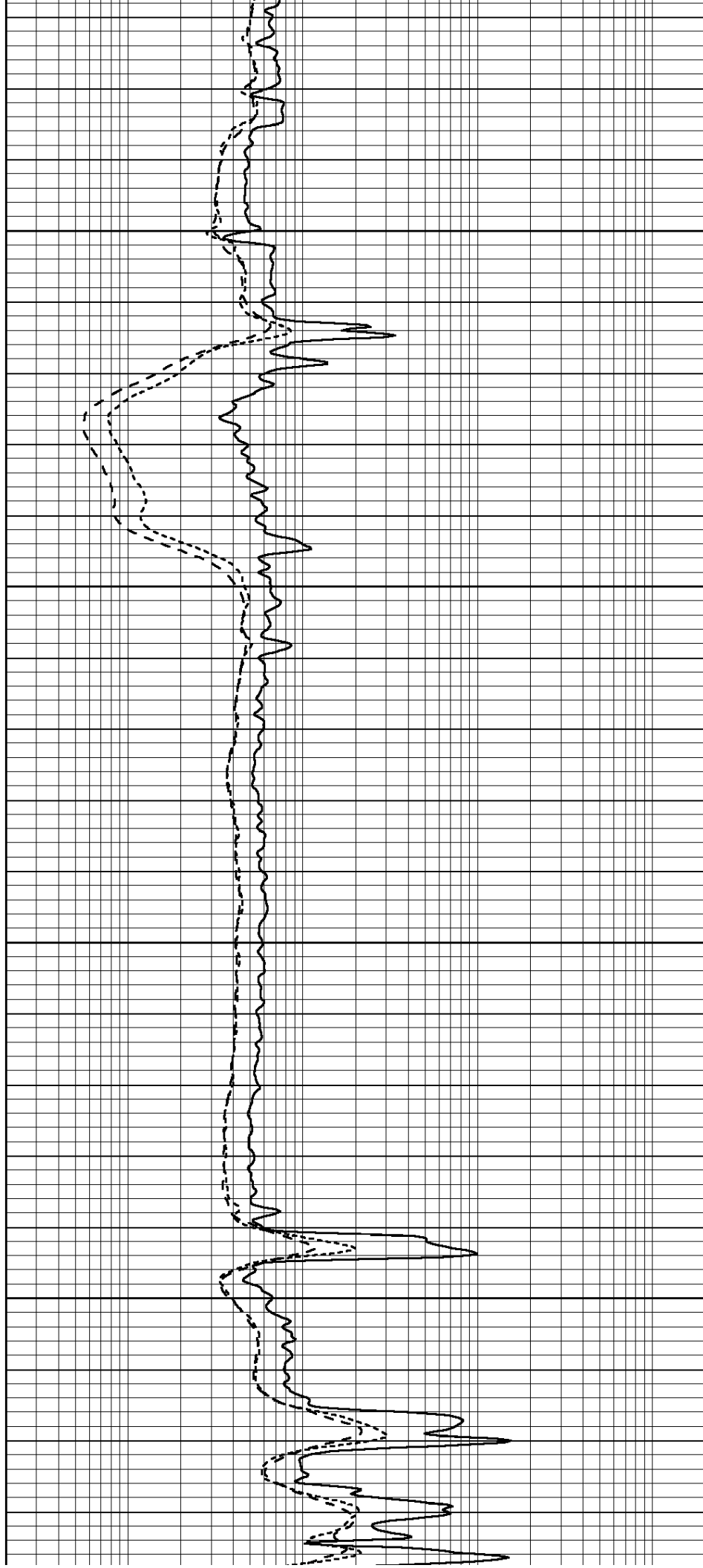


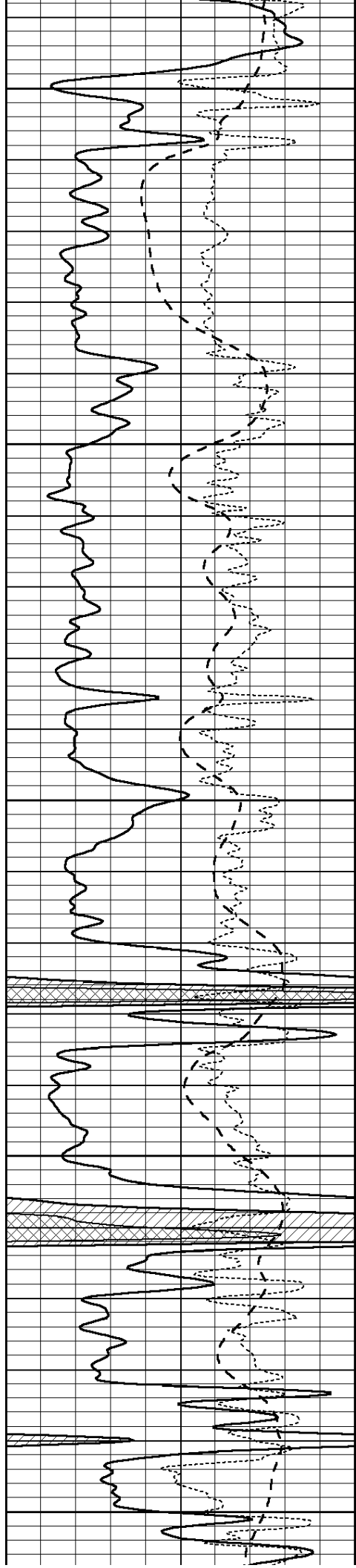
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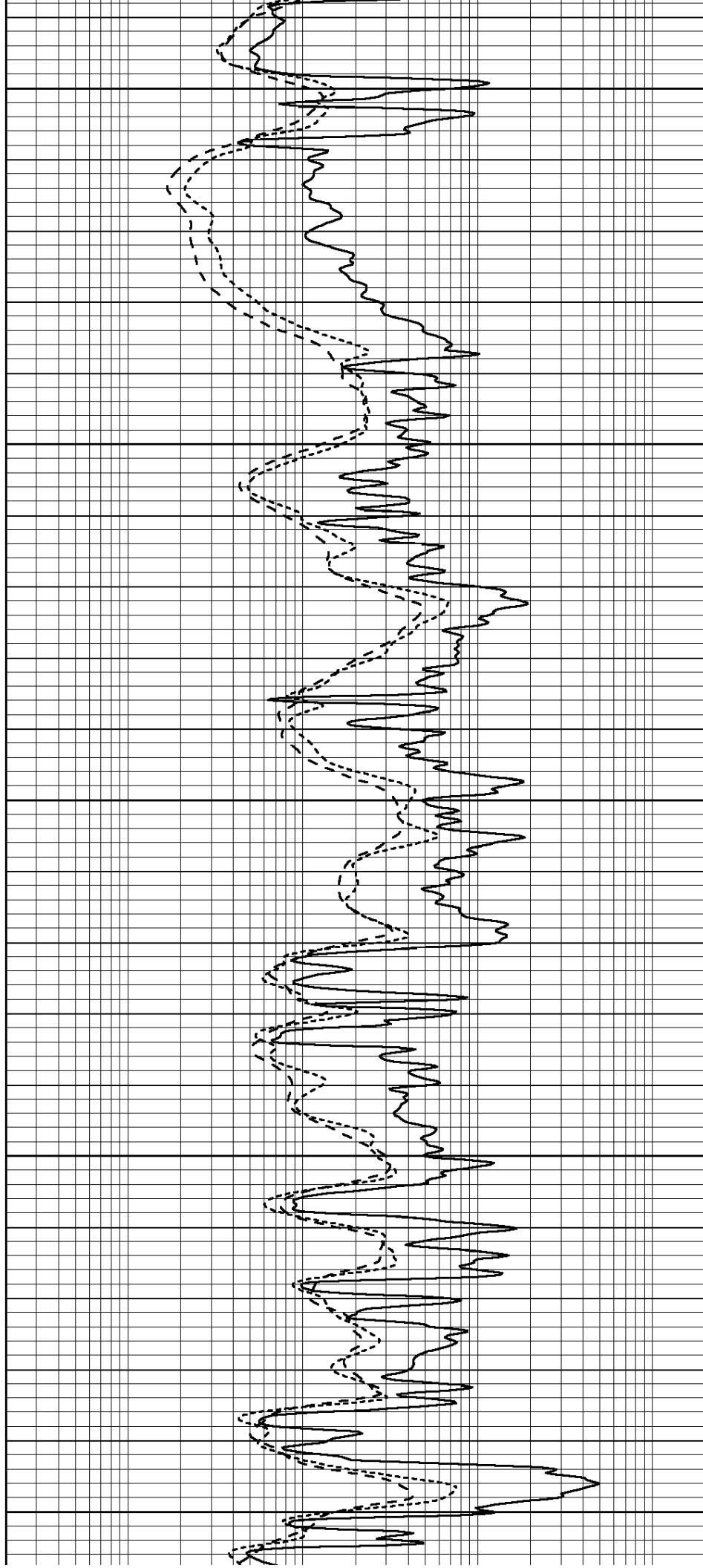
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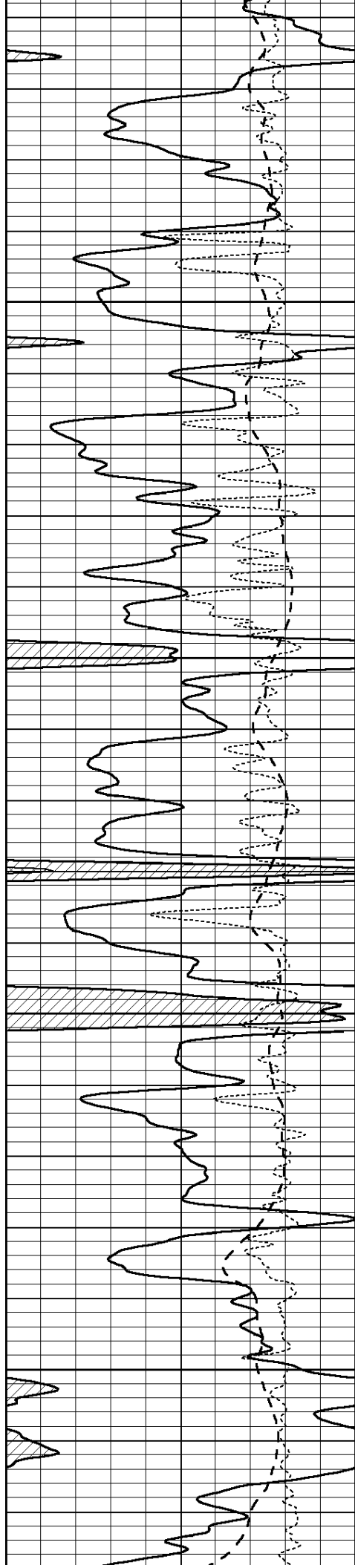
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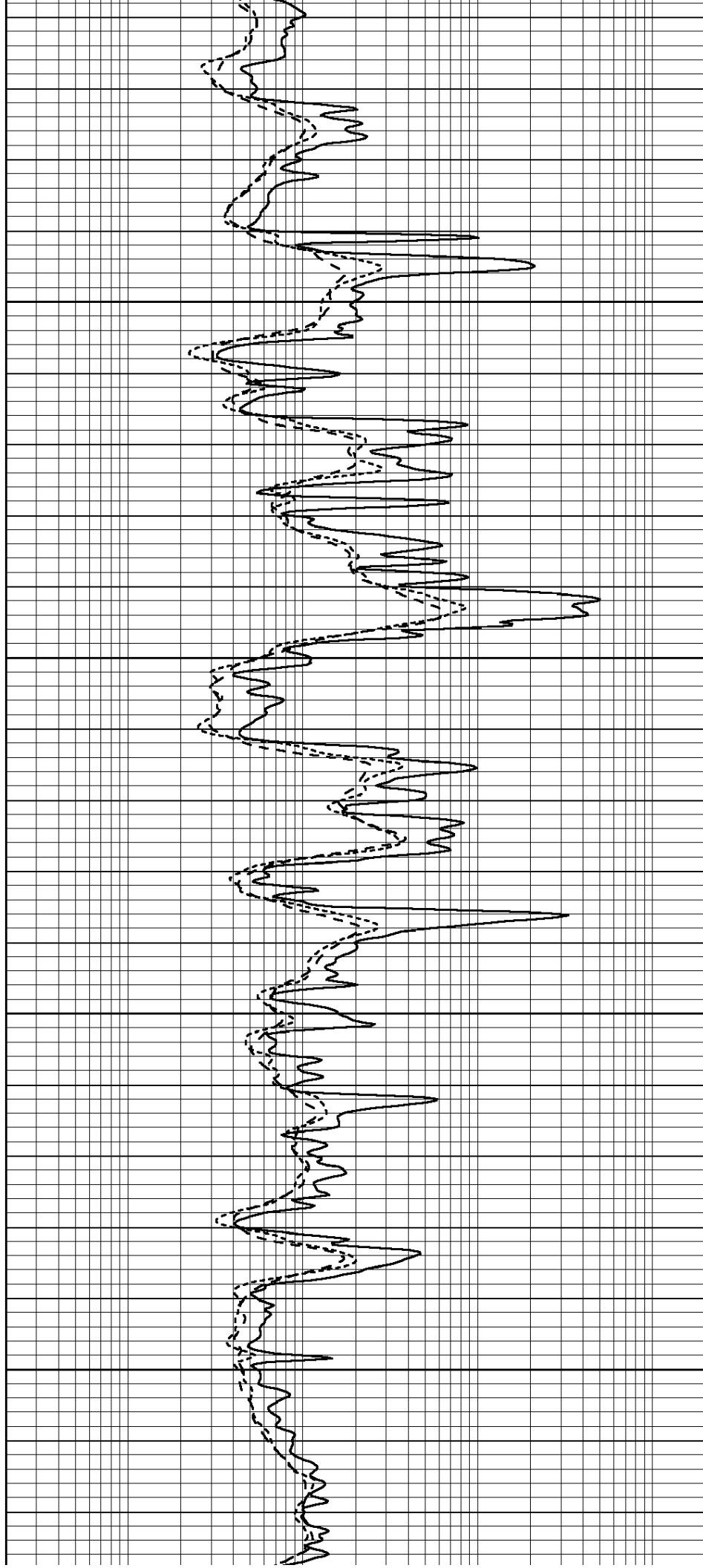


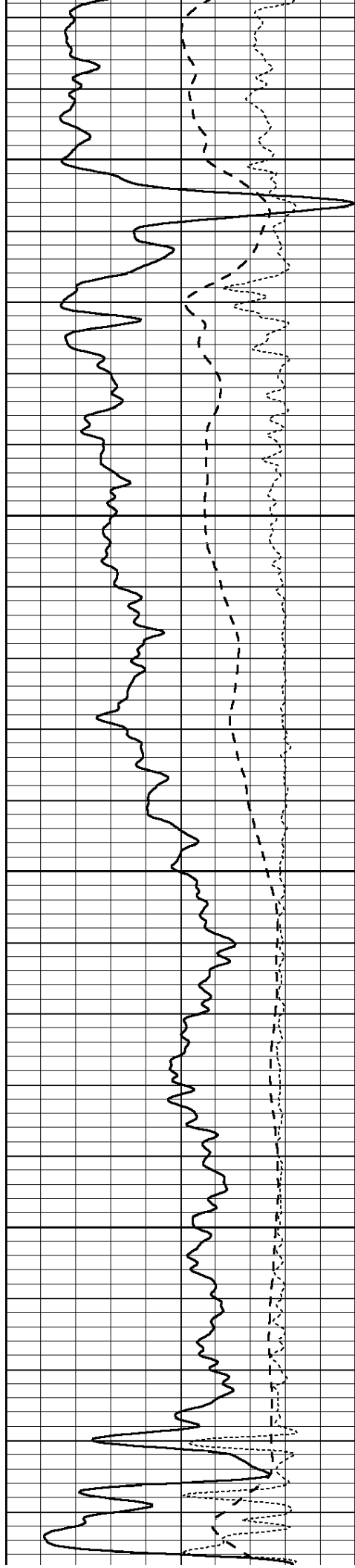
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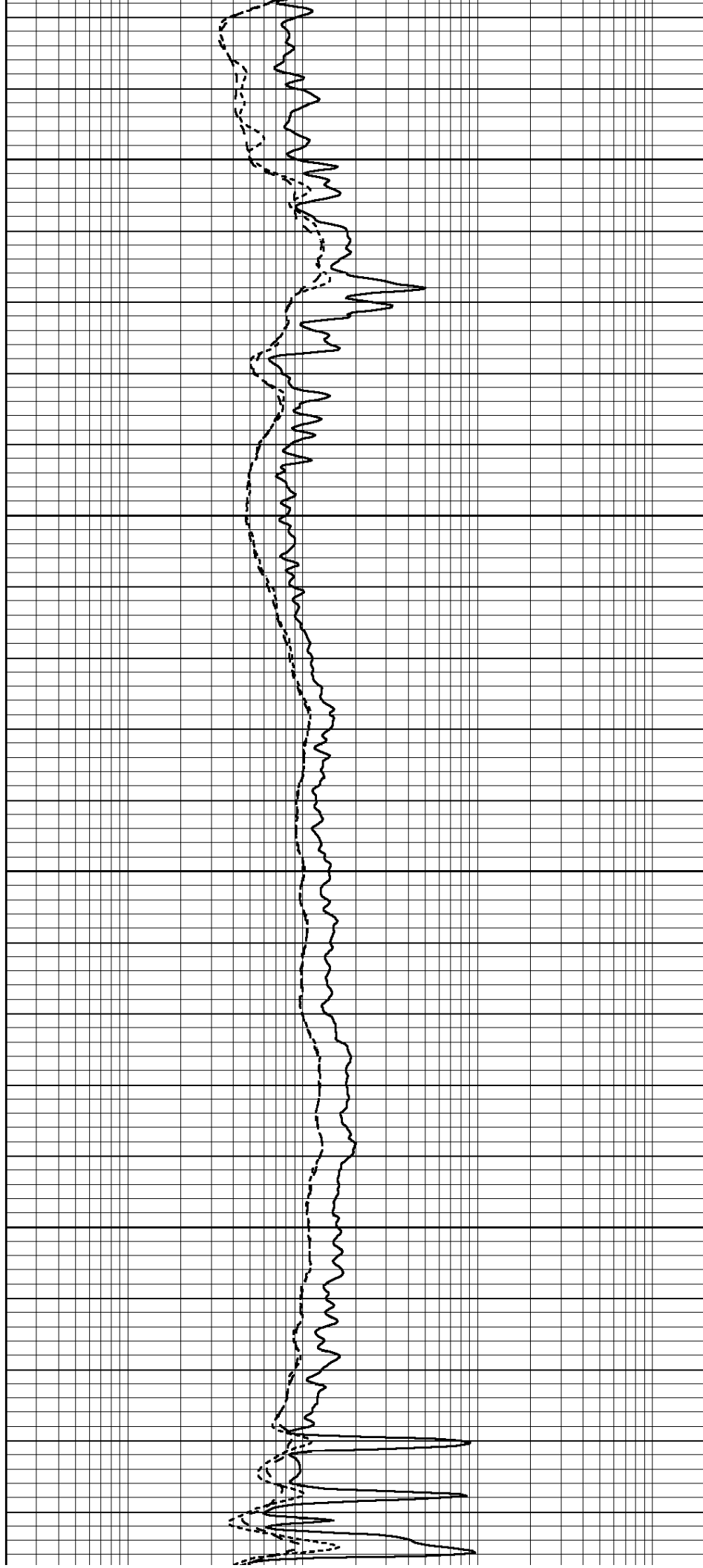


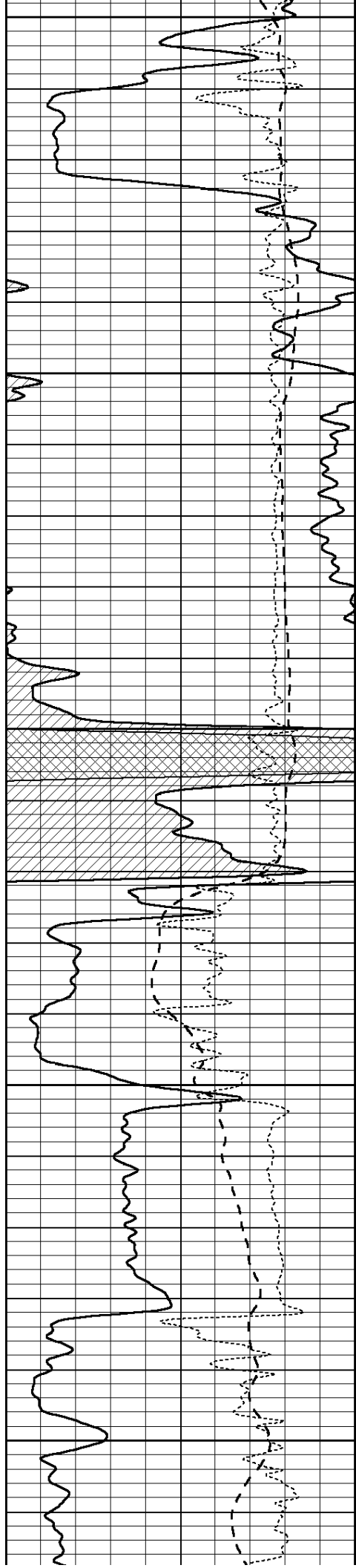
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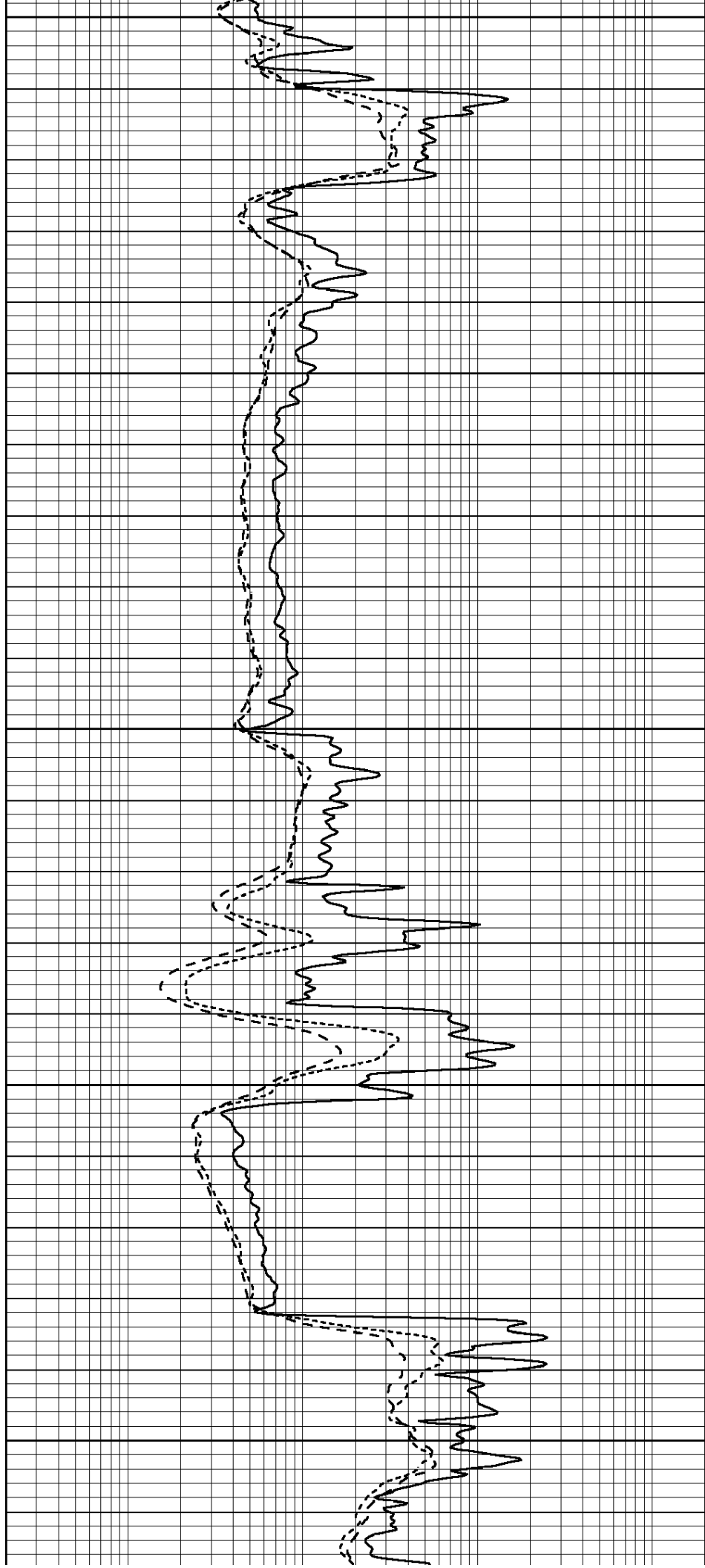
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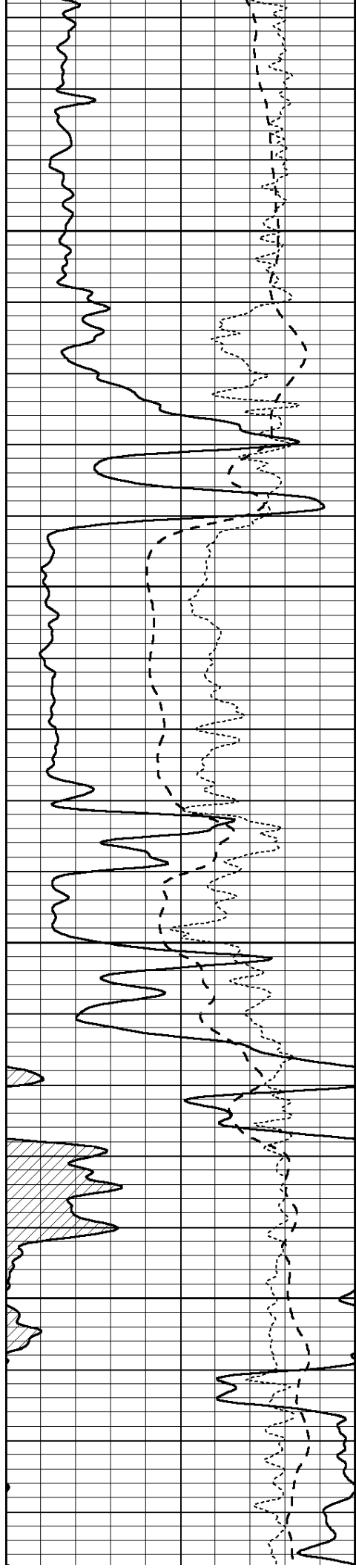
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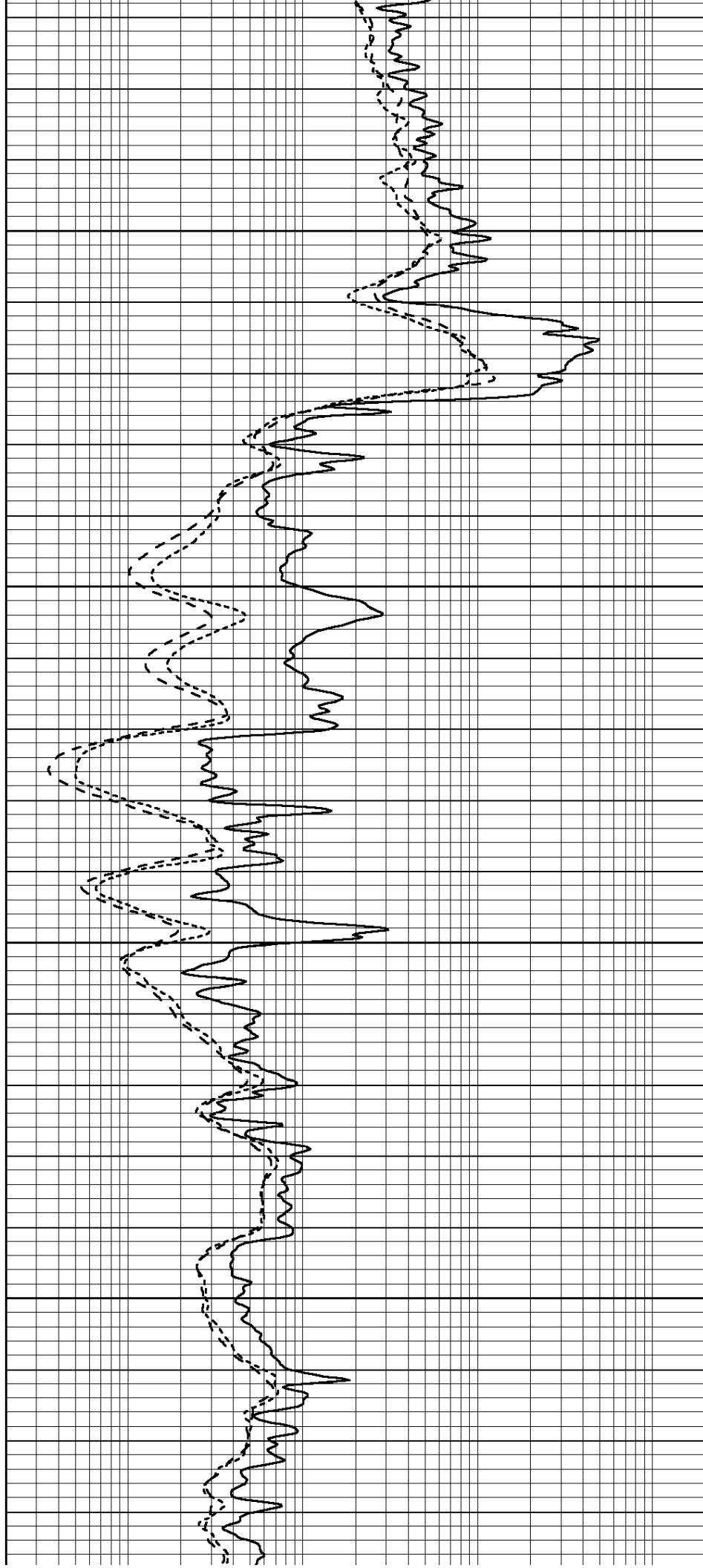


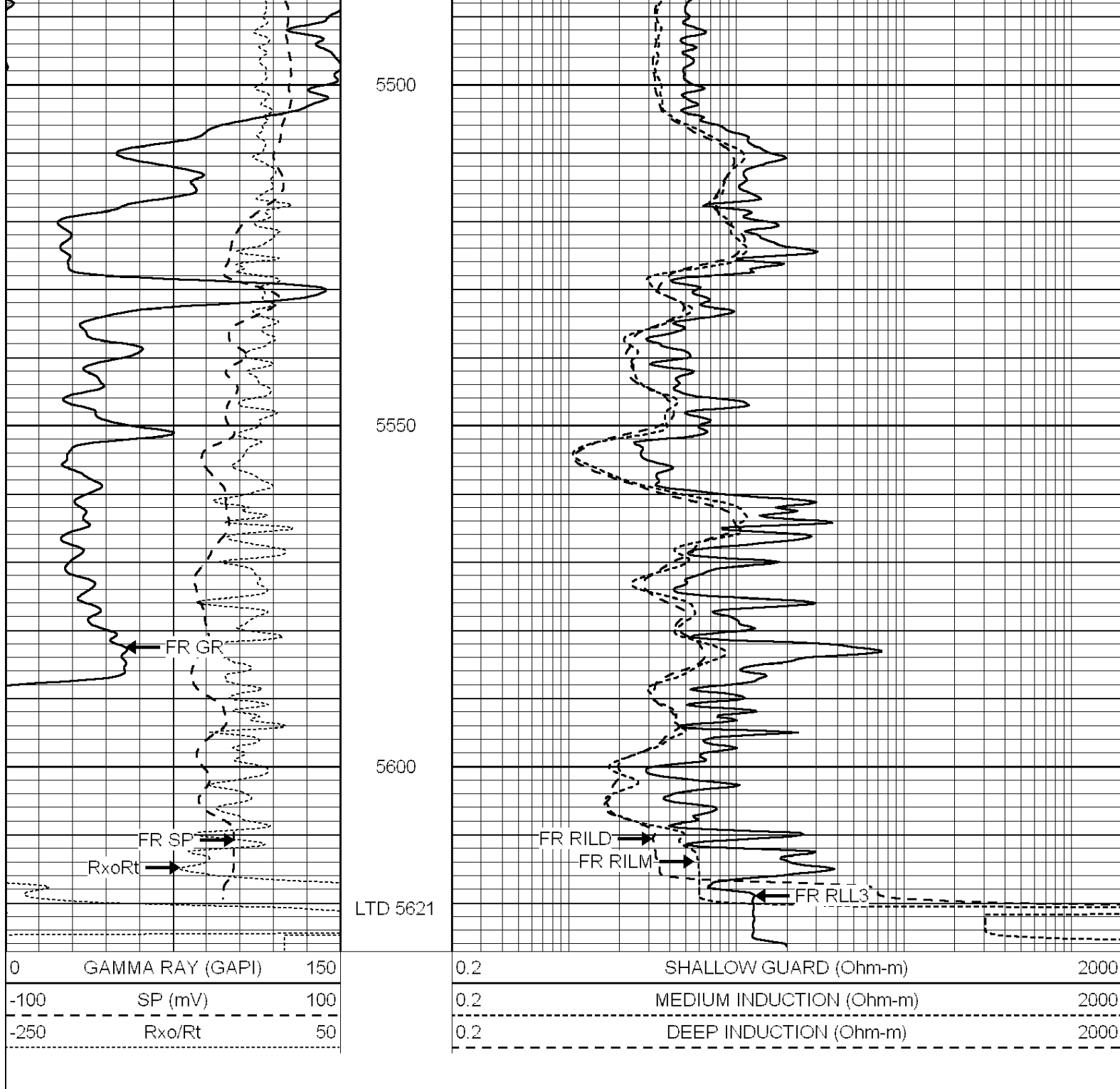
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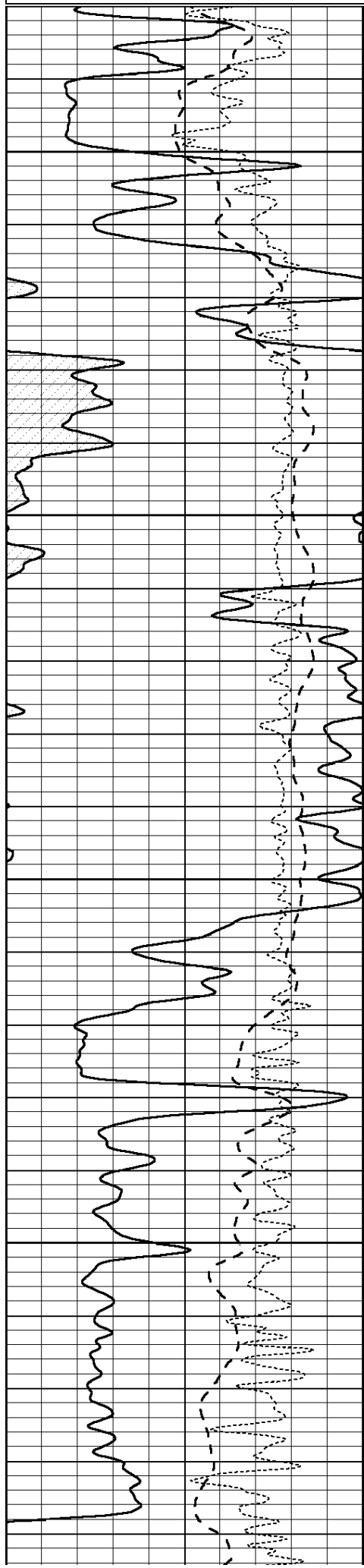


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REPEAT SECTION

Database File: 012083pe.db
Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Mon Nov 04 19:24:42 2013 by Calc Open-Cased 090629
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	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

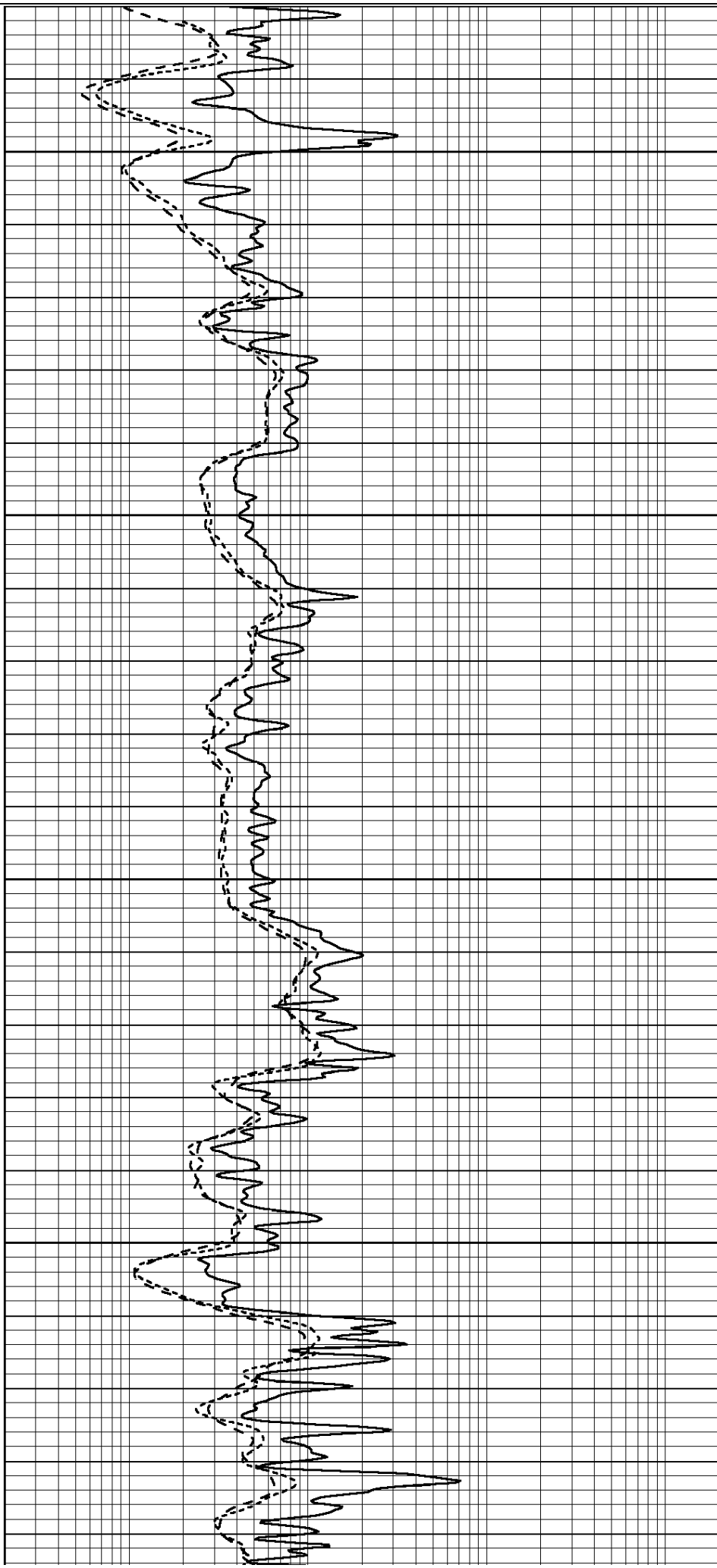


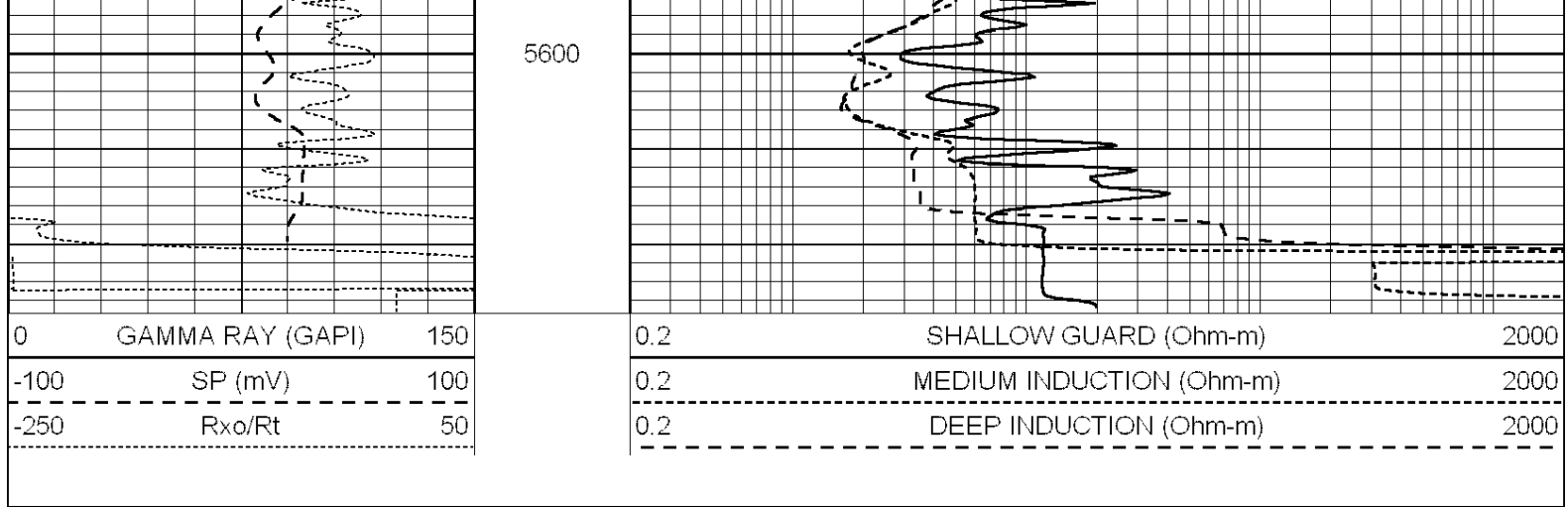
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Calibration Report

Database File: 012083pe.db
 Dataset Pathname: pass3.1
 Dataset Creation: Mon Nov 04 19:52:16 2013 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Fri Aug 01 06:33:19 2008
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680
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: 001 Model: PRB
 Performed Thu Sep 17 09:57:21 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2056.0	9796.8	3673.1	10821.3	cps
Window 2	1920.0	8541.1	3303.5	9307.2	cps
Window 3	1563.1	4735.7	2212.8	5017.5	cps
Window 4	466.0	466.1	465.6	471.5	cps
Long Space	0.0	6621.1	1383.5	7387.2	cps
Short Space	2.5	2361.7	1523.2	2534.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 44.4	Rib Slope	: 0.978	Density/Spine Ratio	: 0.541
Spine Angle	: 74.4	Spine Slope	: 3.570	Spine Intercept	: -18.9

Caliper

	Readings	Reference	
Low Ref	3.1	8.4	
High Ref	4.3	14.3	
	Gain: 4.6		Offset: -5.3

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: 080327
Tool Model: Probe1
Performed: Sun Jun 13 14:33:21 1993

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.4300 GAPI/cps