



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		RITCHIE EXPLORATION, INC.	
Well	#1 IMEL 5C		
Field			
County	FORD	State	KANSAS
Location:		API # : 15-057-20886-00-00	Other Services
Well		#1 IMEL 5C	CNL/CDL
Field			
County		FORD	State KANSAS
Permanent Datum		1685' FEL & 1720' FWL	Elevation
Log Measured From		35' N & 70'E OF SW - NE - SW 1/4	K.B. 2441
Drilling Measured From		SEC 5 TWP 26S RGE 22W	D.F. 2439
		KELLY BUSHING 10' A.G.L.	G.L. 2431
Date	4/13/13		
Run Number	ONE		
Depth Driller	5011		
Depth Logger	5008		
Bottom Logged Interval	5006		
Top Log Interval	00		
Casing Driller	8 5/8" @ 363'		
Casing Logger	360		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 6,700 PPM	
Density / Viscosity	9.3/54		
pH / Fluid Loss	9.5/11.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.70 @ 83F		
Rmt @ Meas. Temp	.53 @ 83F		
Rmc @ Meas. Temp	.45 @ 83F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	.46 @ 125F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	125F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	IAN MABB		
Witnessed By	DAVE WILLIAMS		

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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, HAYS, KS. (785) 628-6395
DIRECTIONS:

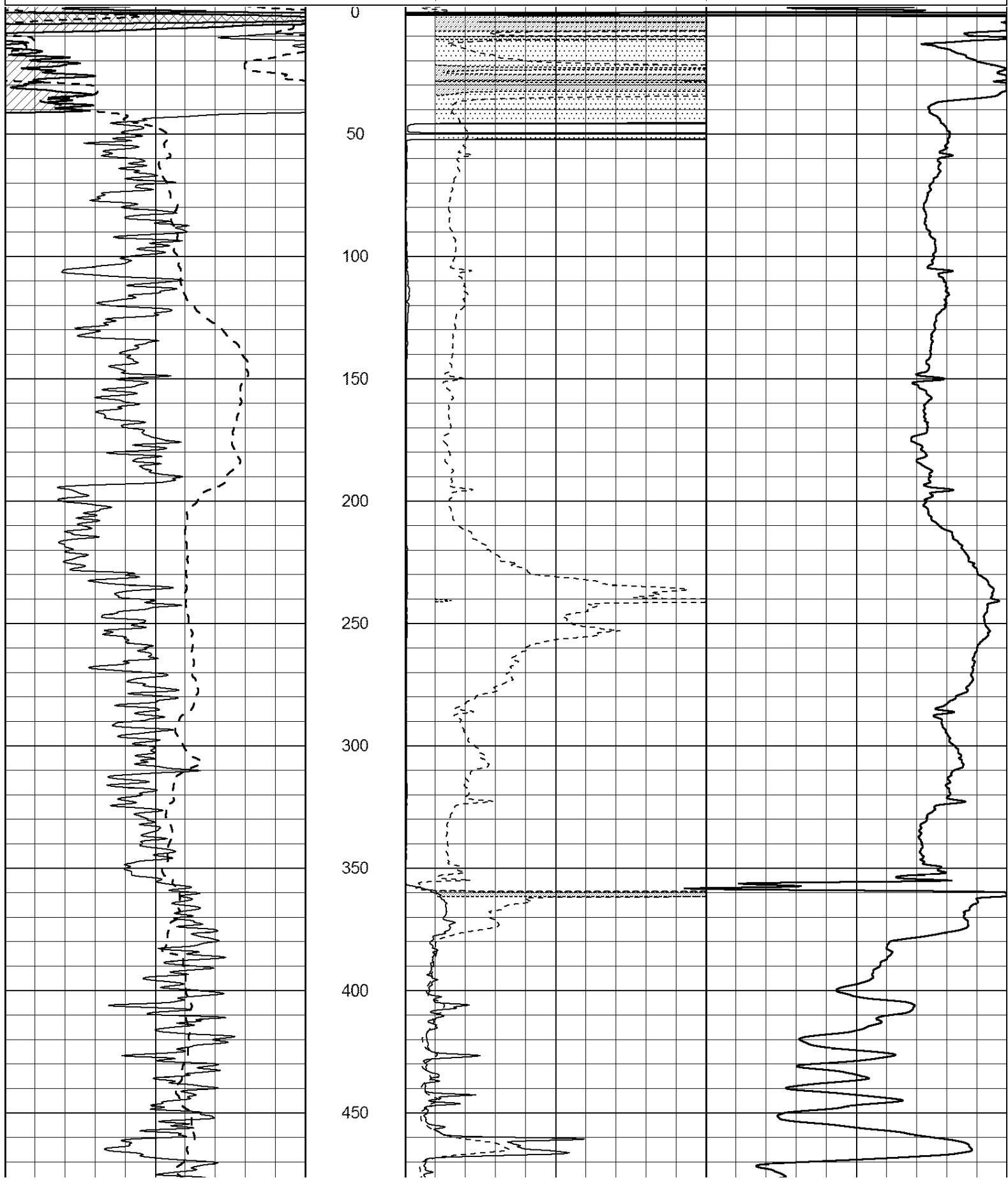
SPEARVILLE, KS. - 1 MILE SOUTH - 1/4 WEST - 1 MILE SOUTH - EAST 1/3 OF A MILE NORTH INTO

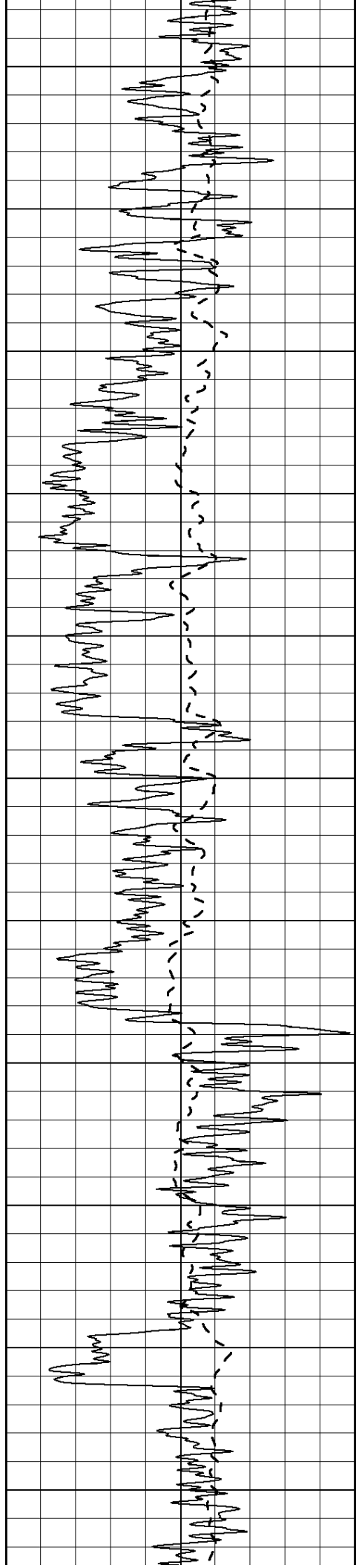
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

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	





500

550

600

650

700

750

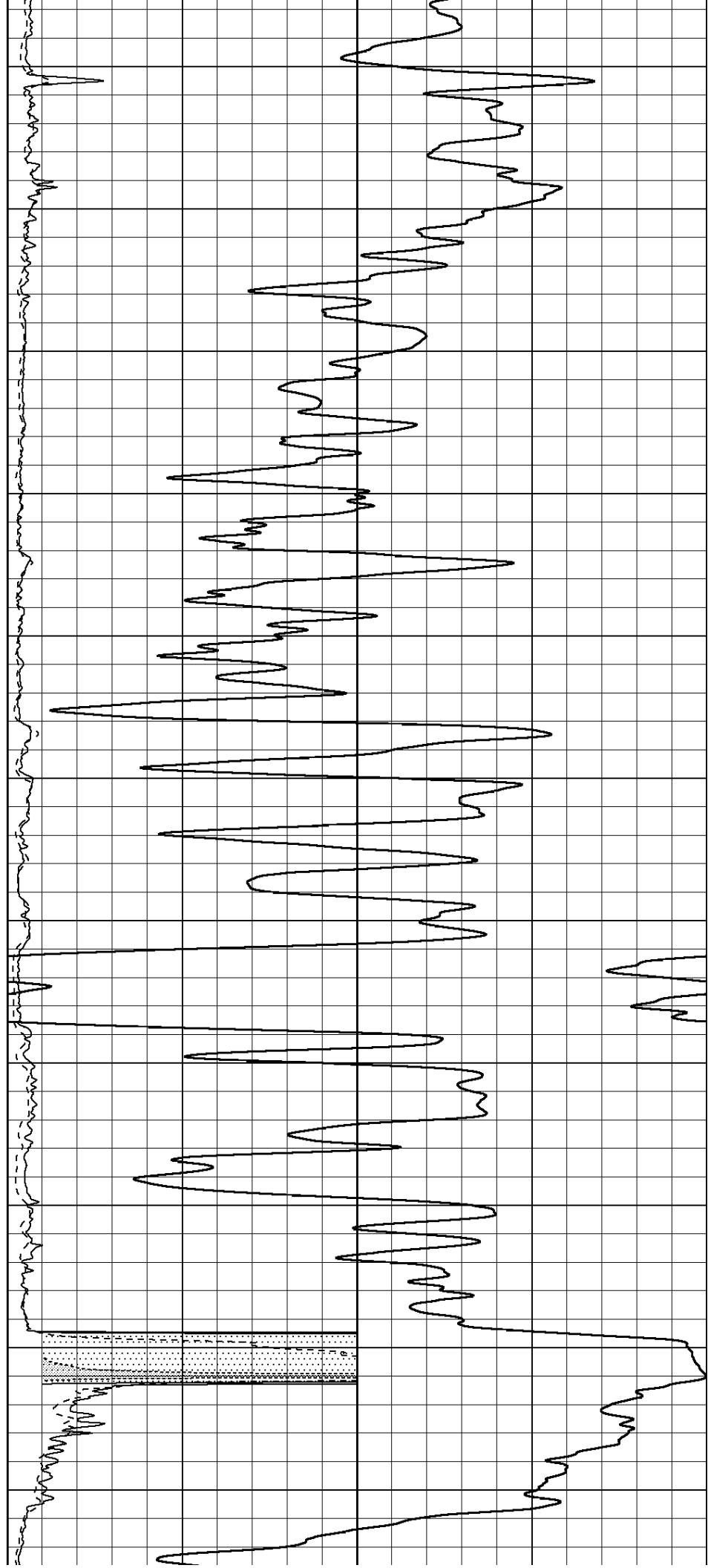
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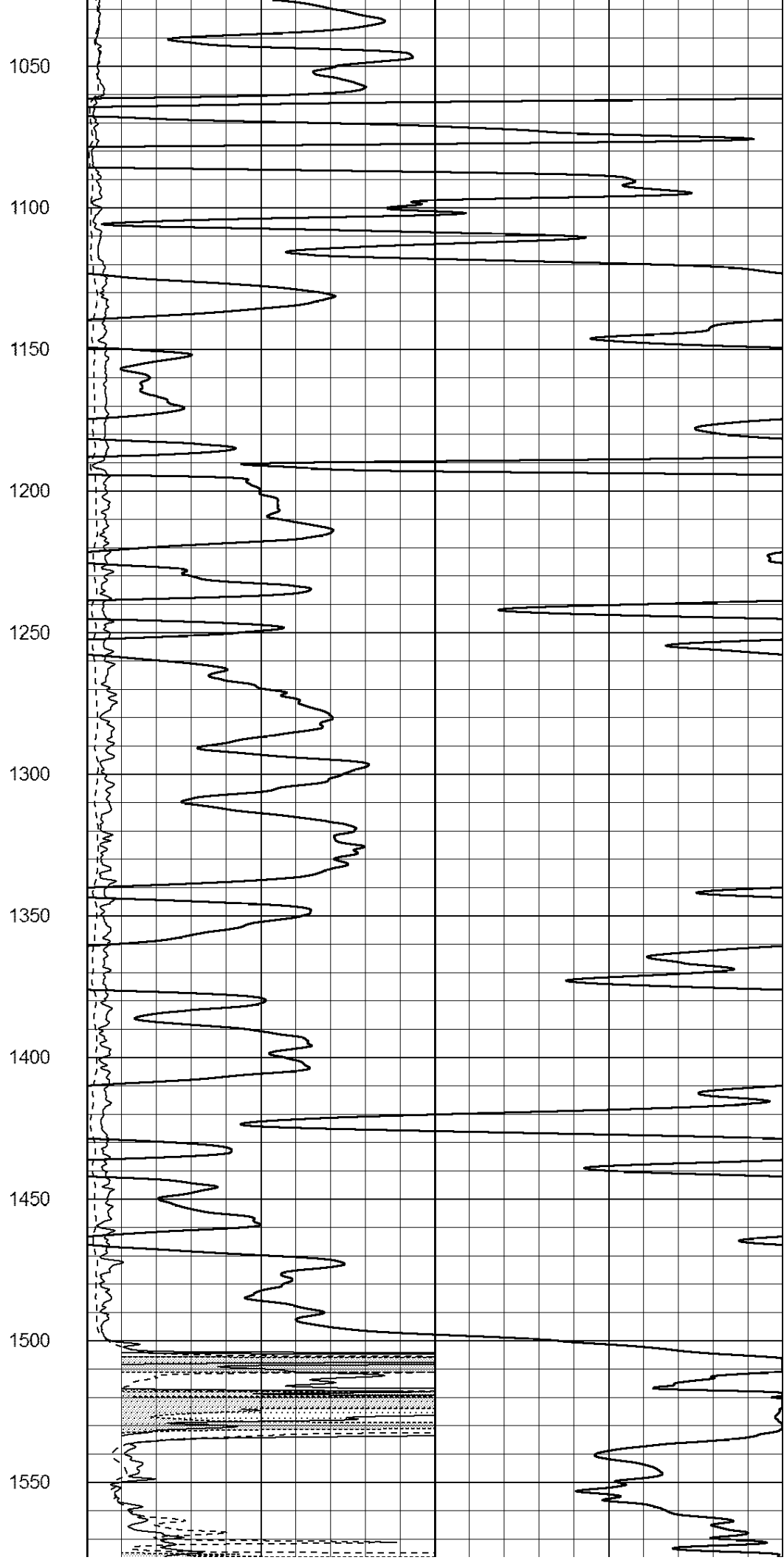
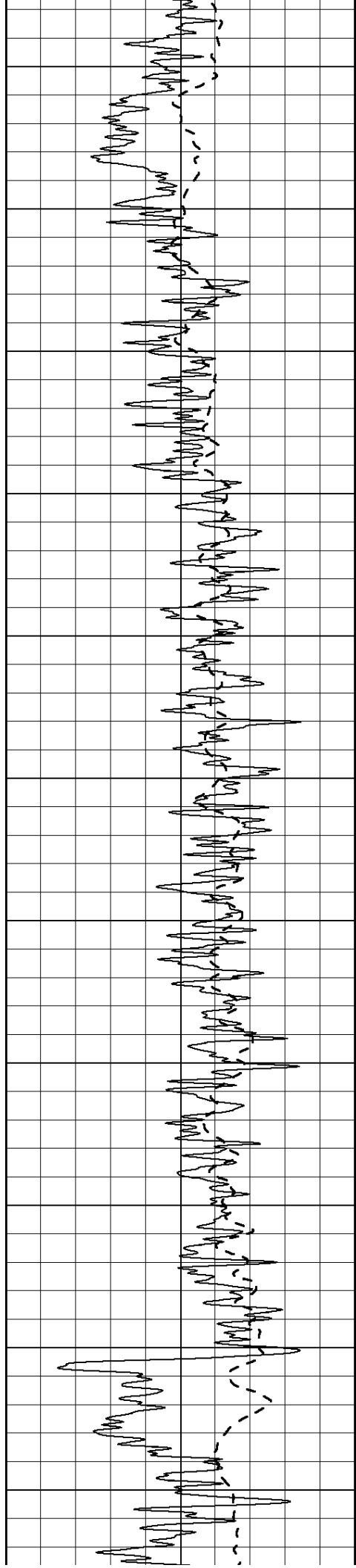
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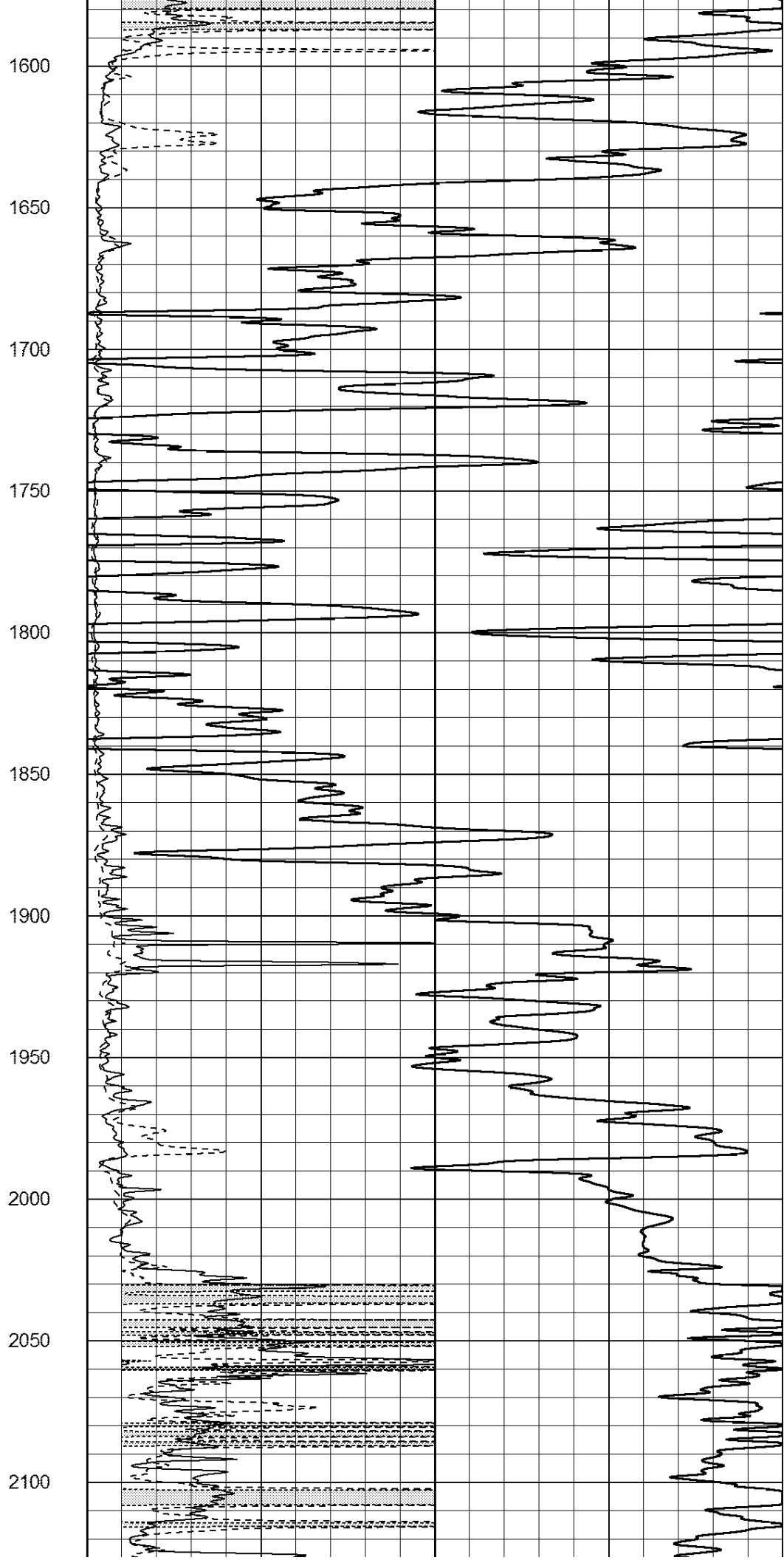
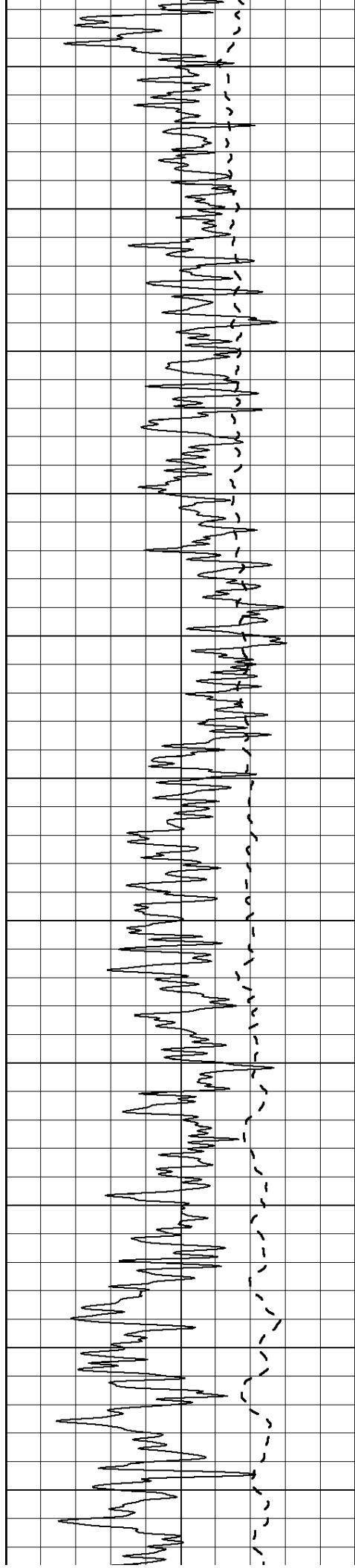
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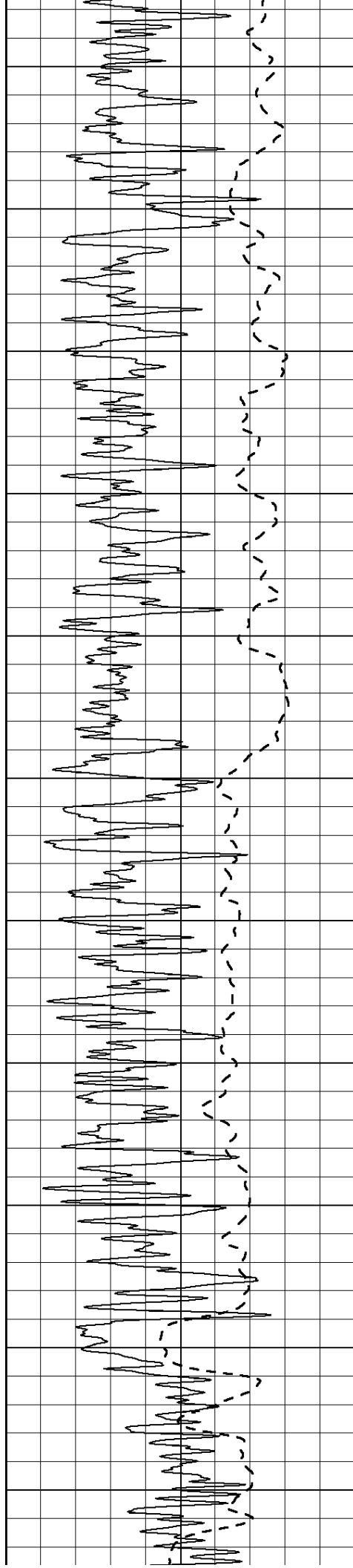
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1000









2150

2200

2250

2300

2350

2400

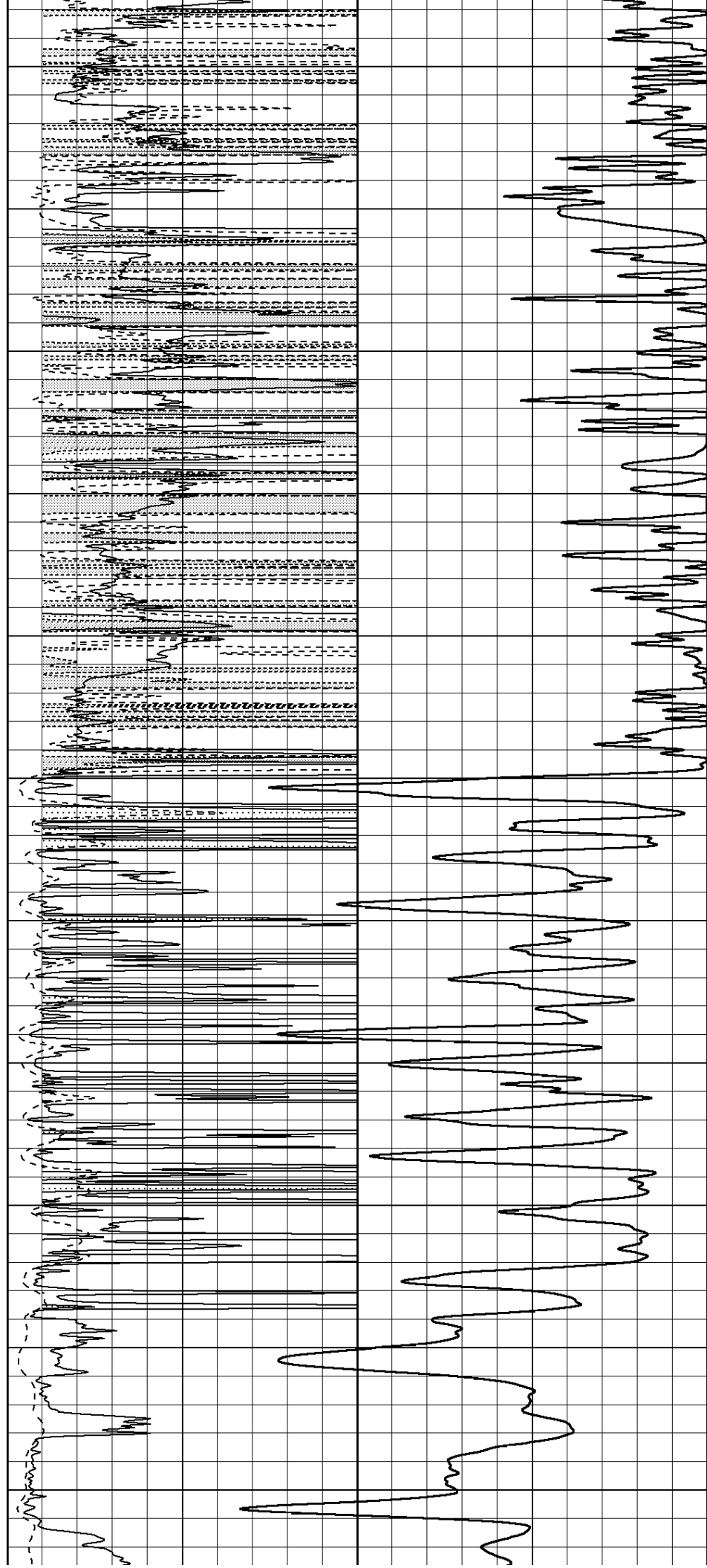
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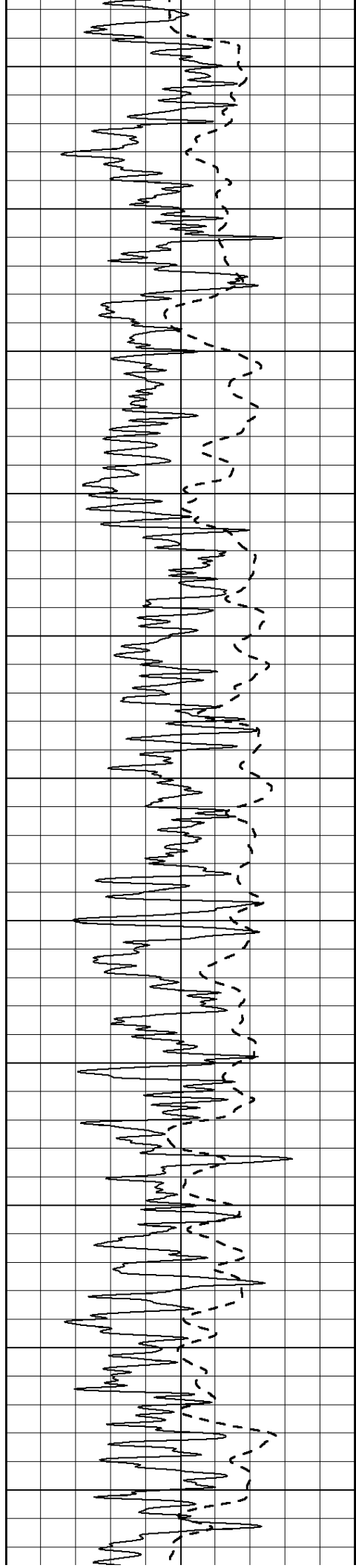
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2650





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2800

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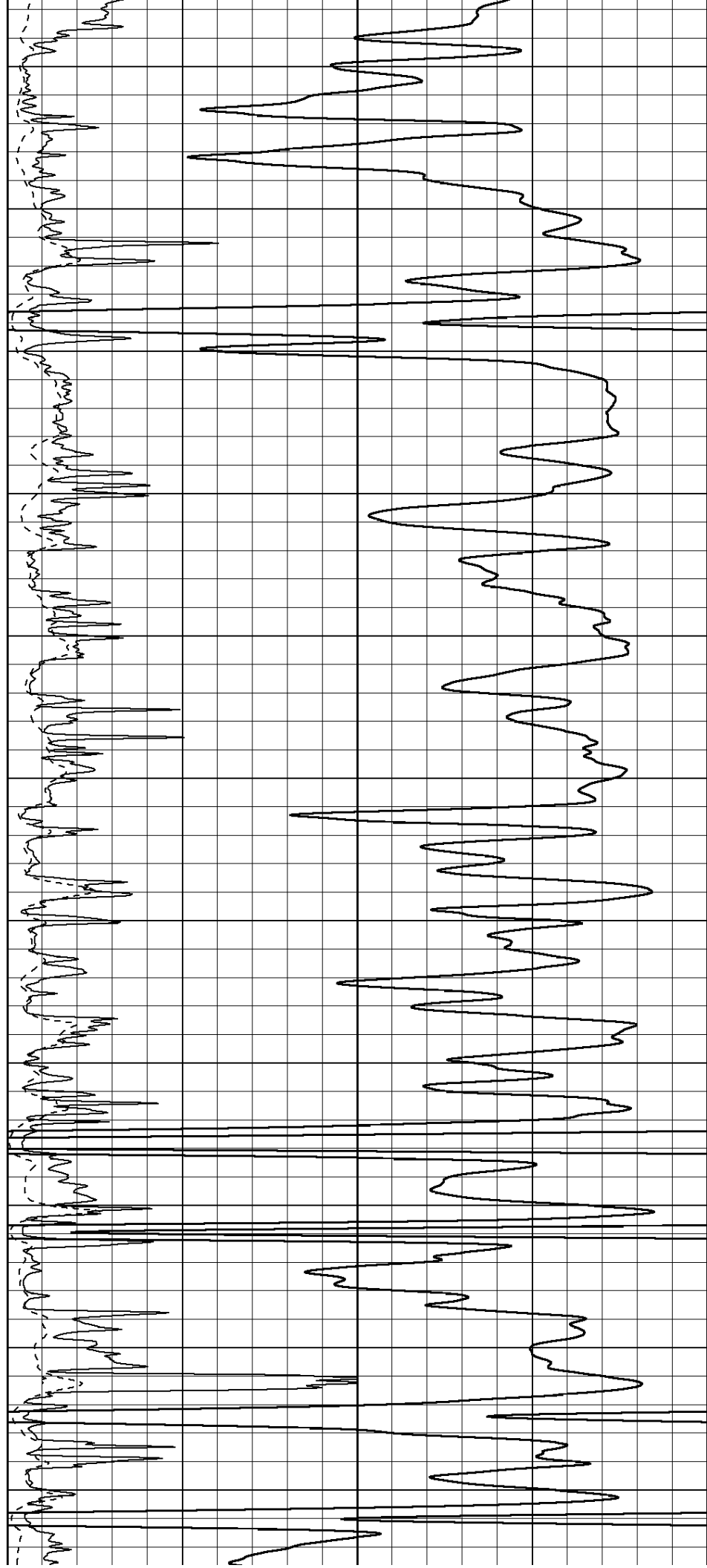
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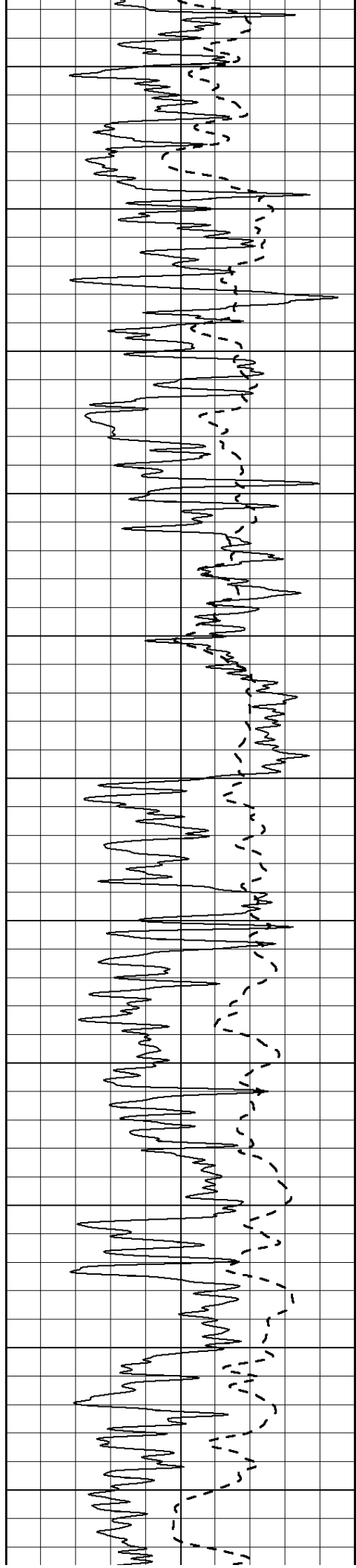
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3150

3200





3250

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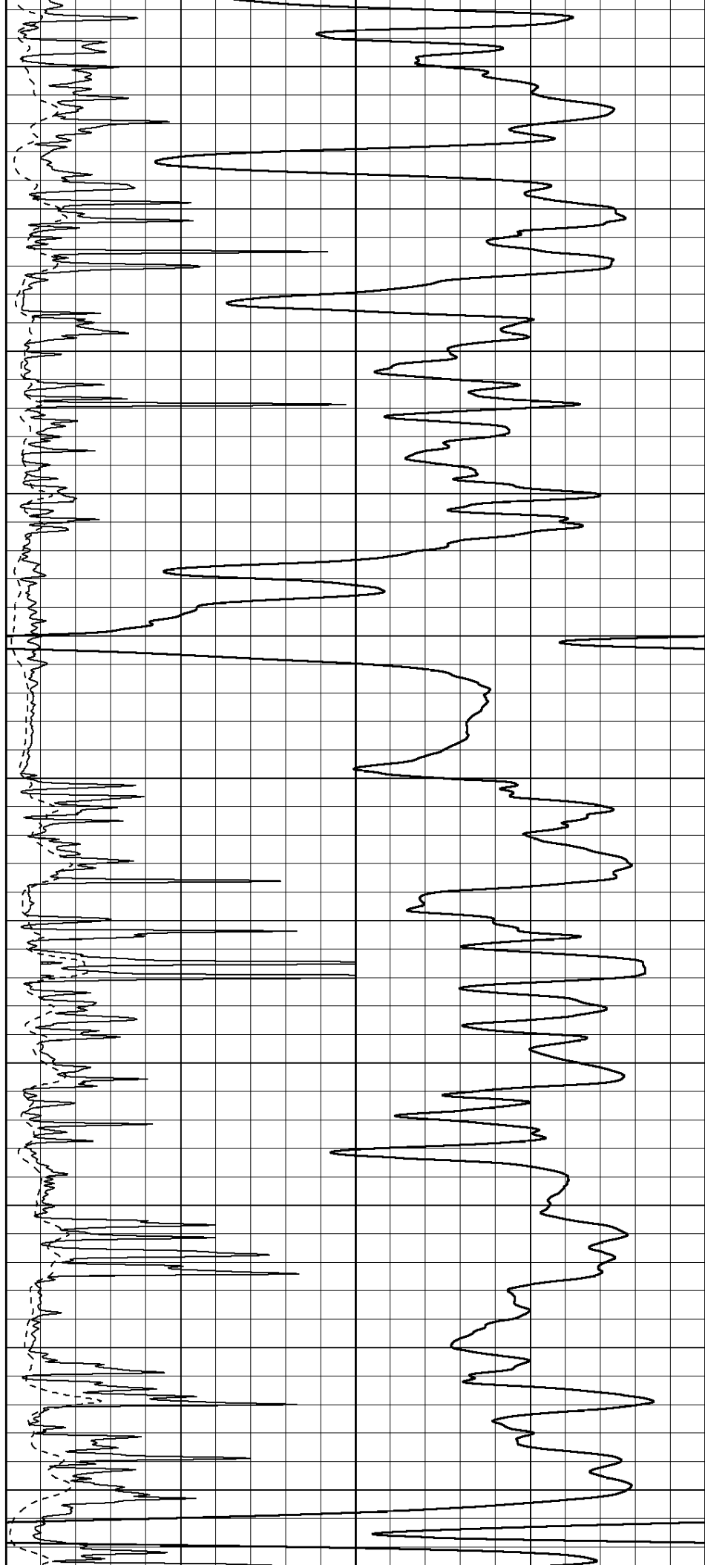
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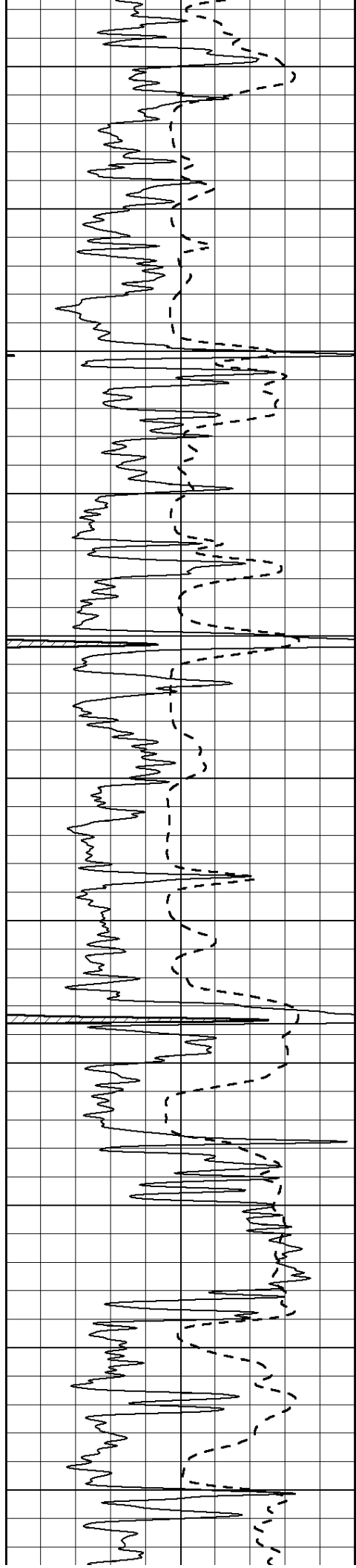
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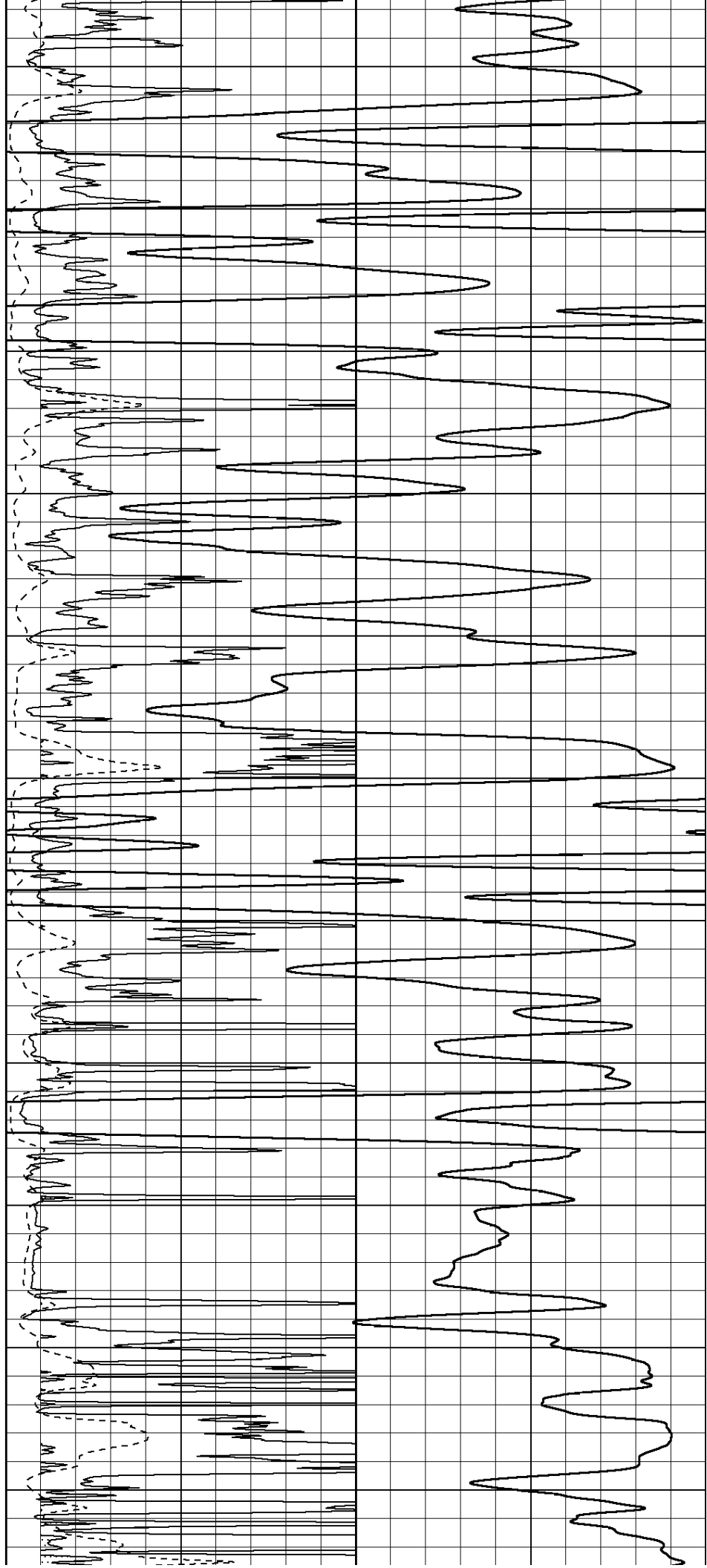
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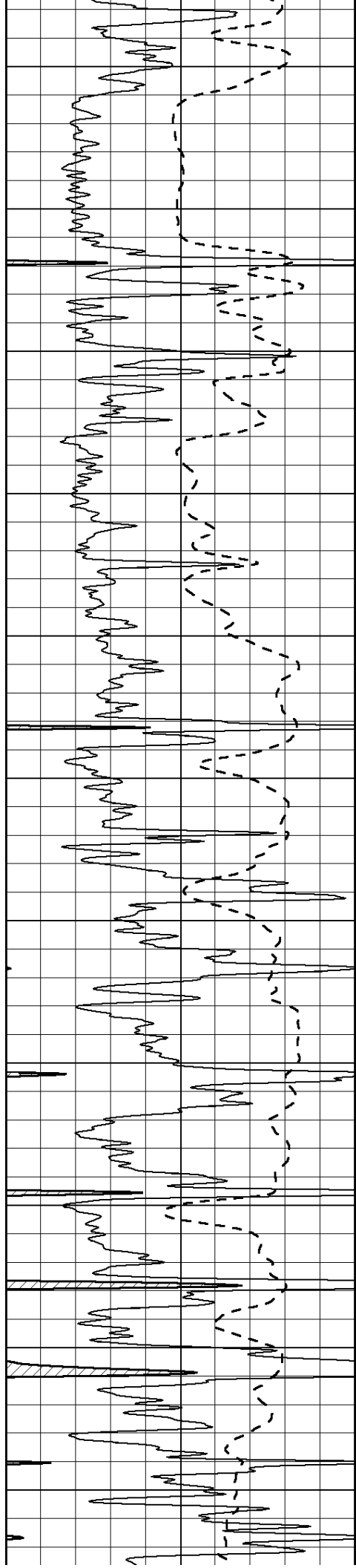
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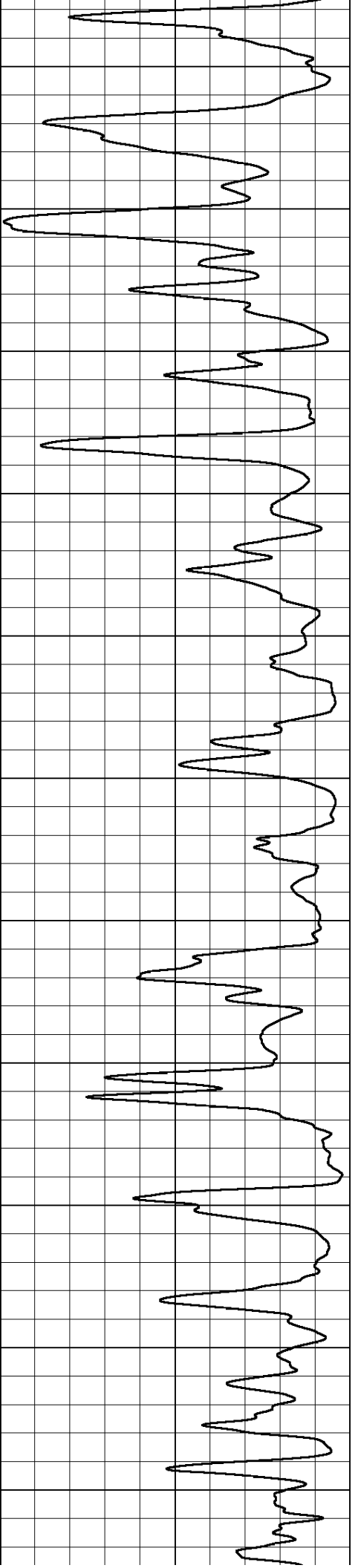
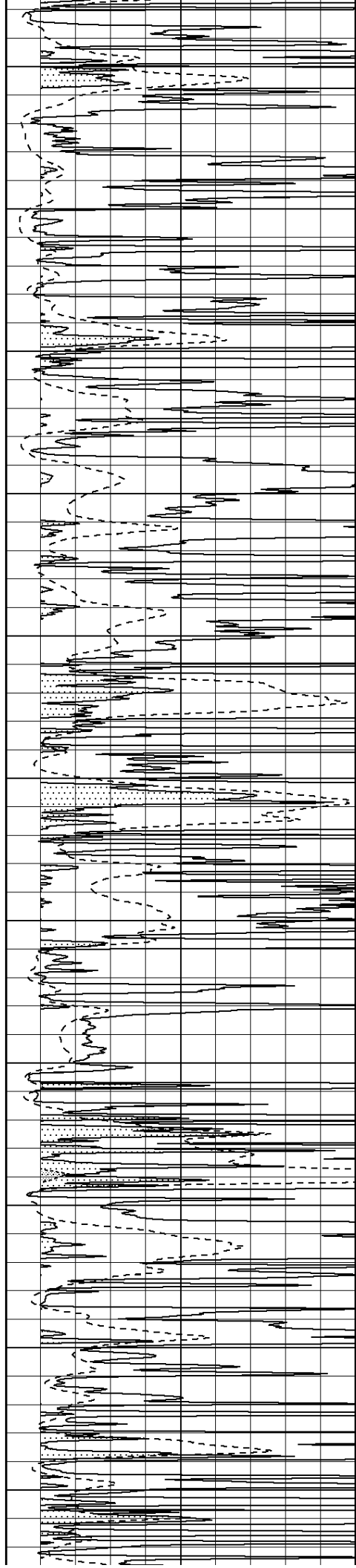
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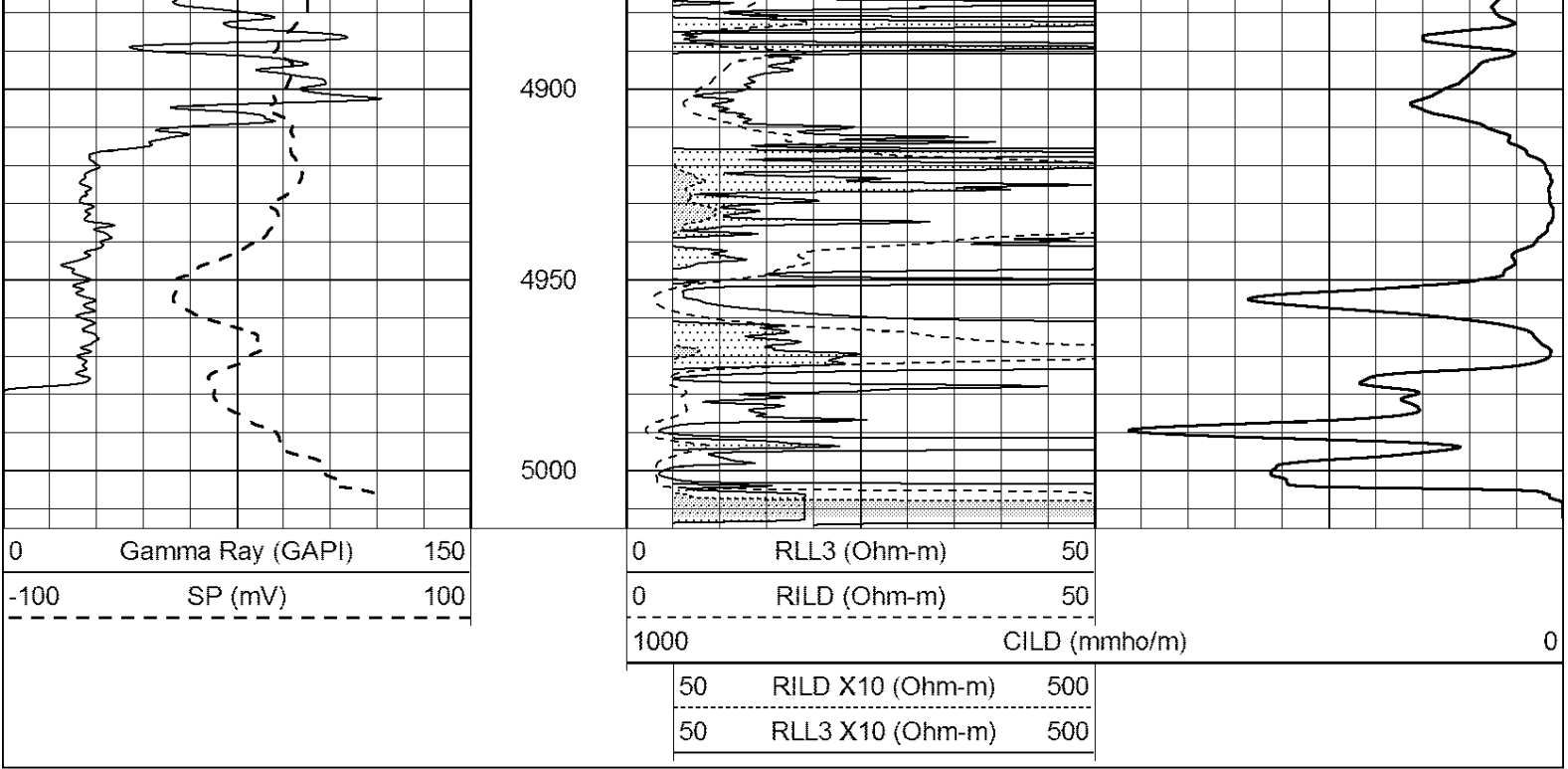
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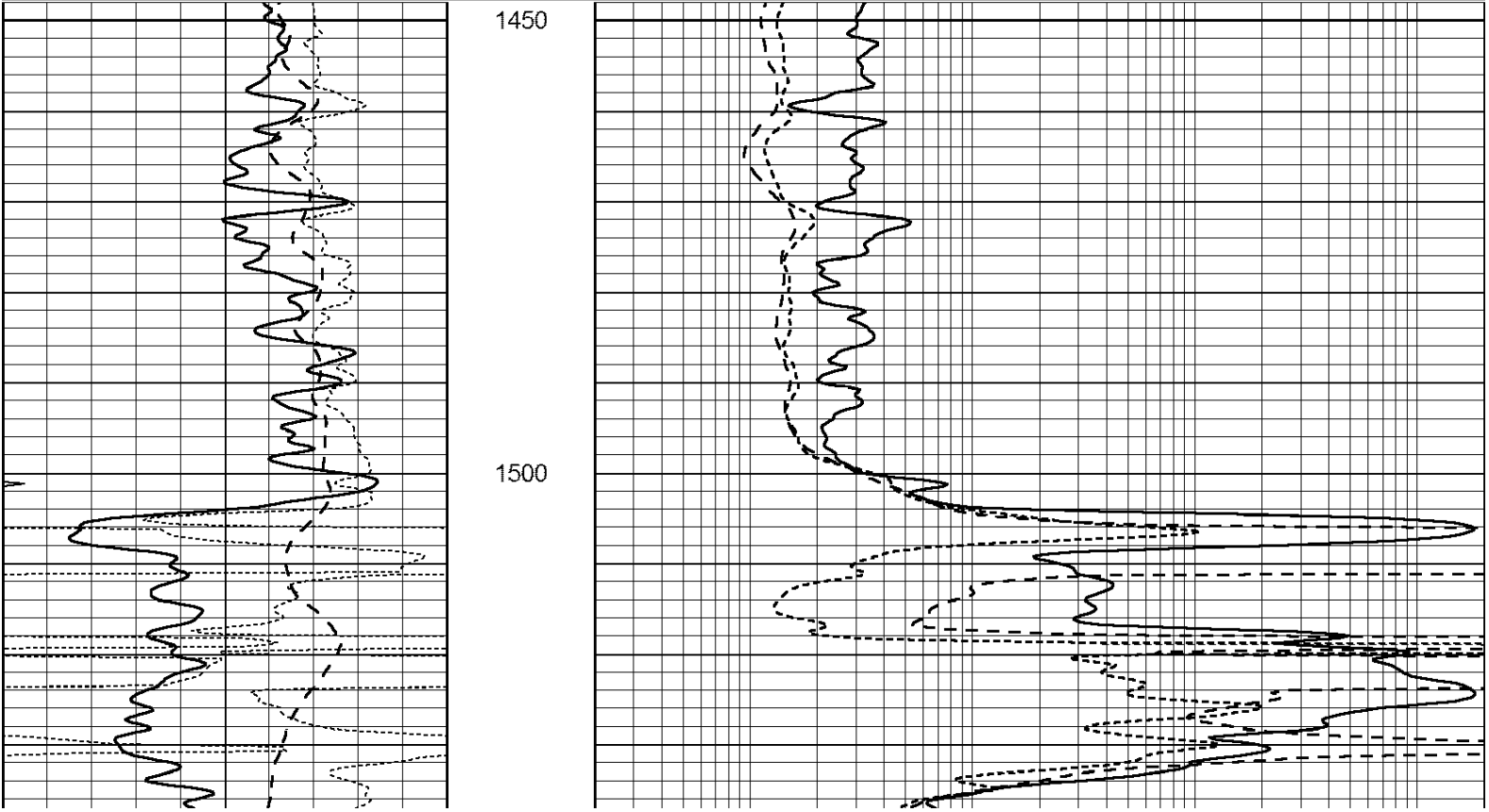
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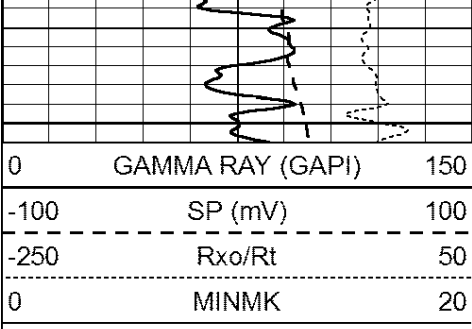
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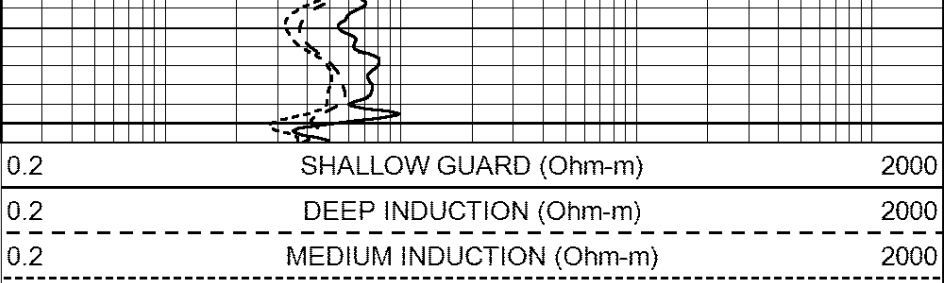


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Charted by: Depth in Feet scaled 1:240					
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			

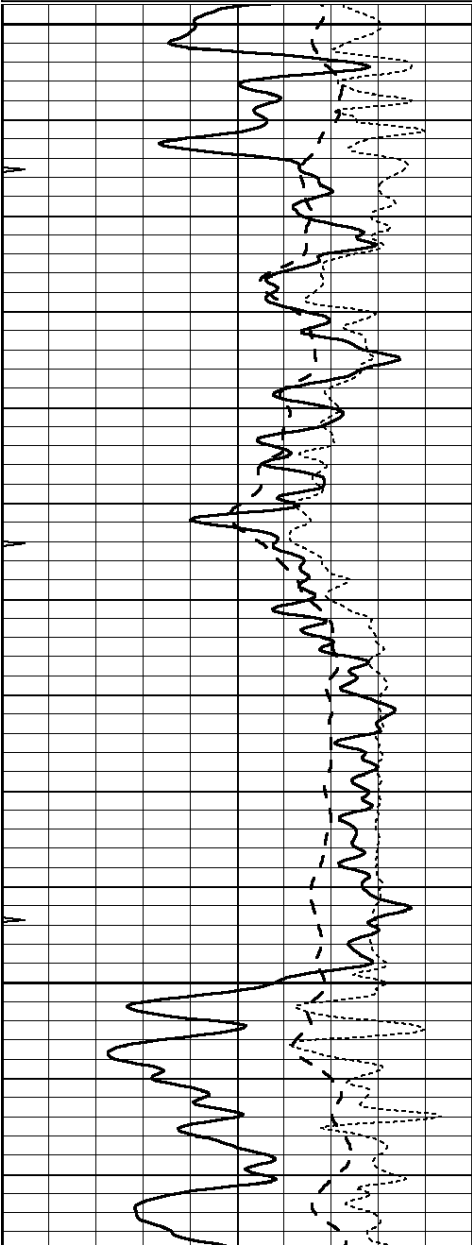
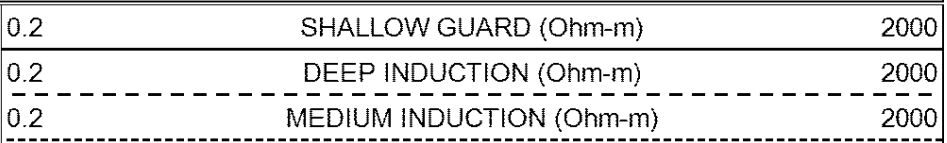
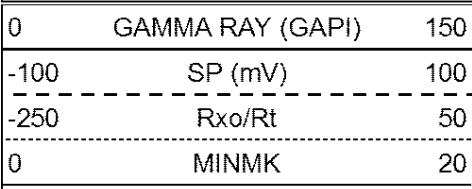




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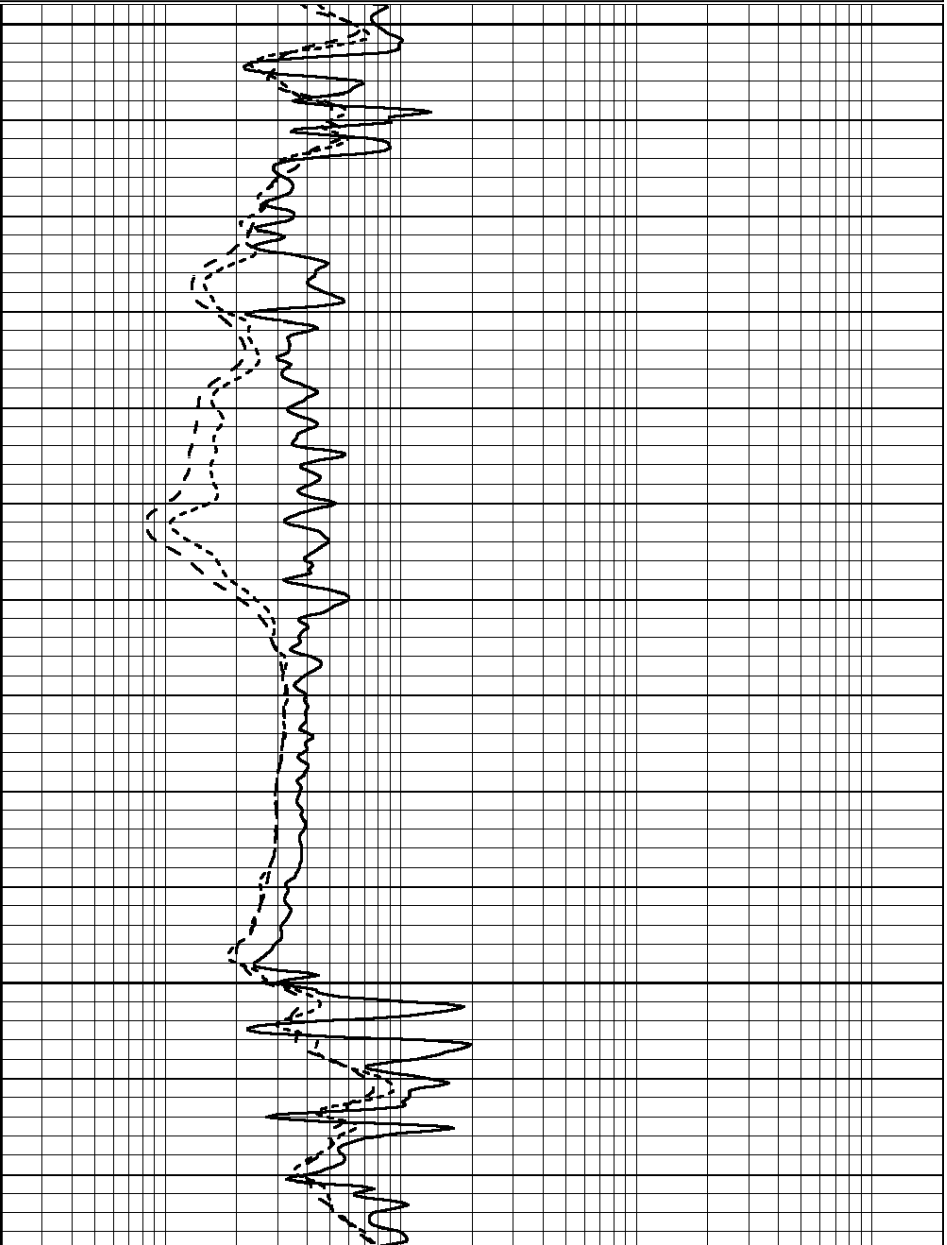
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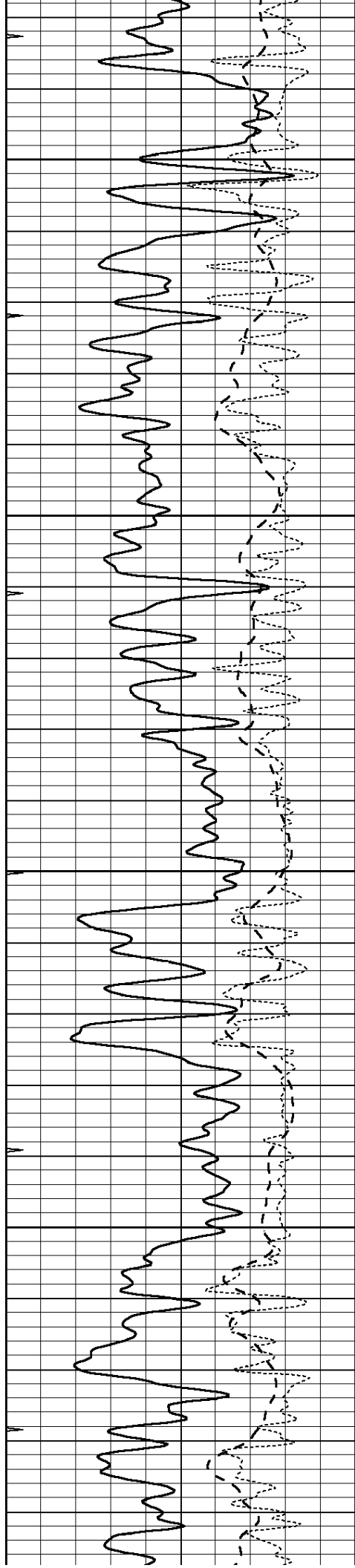


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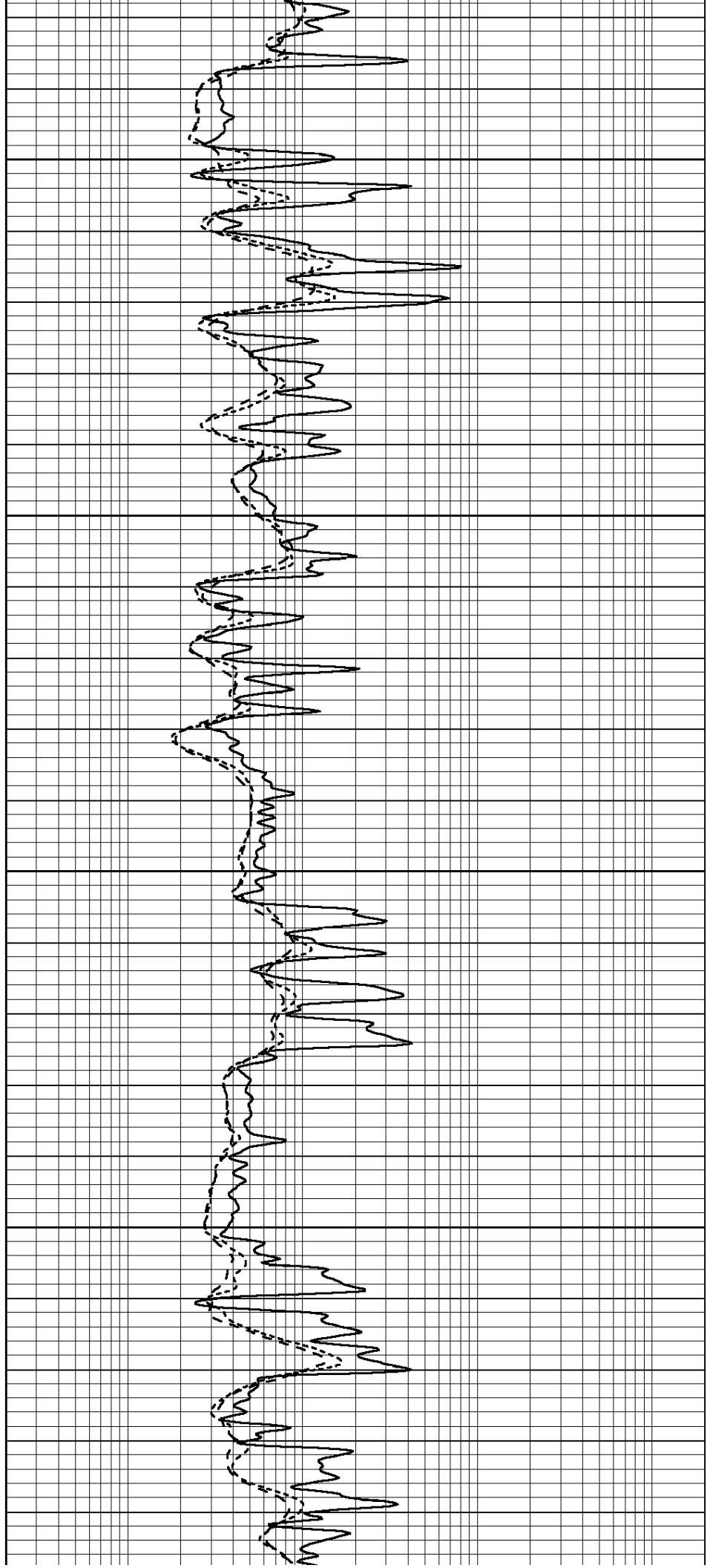


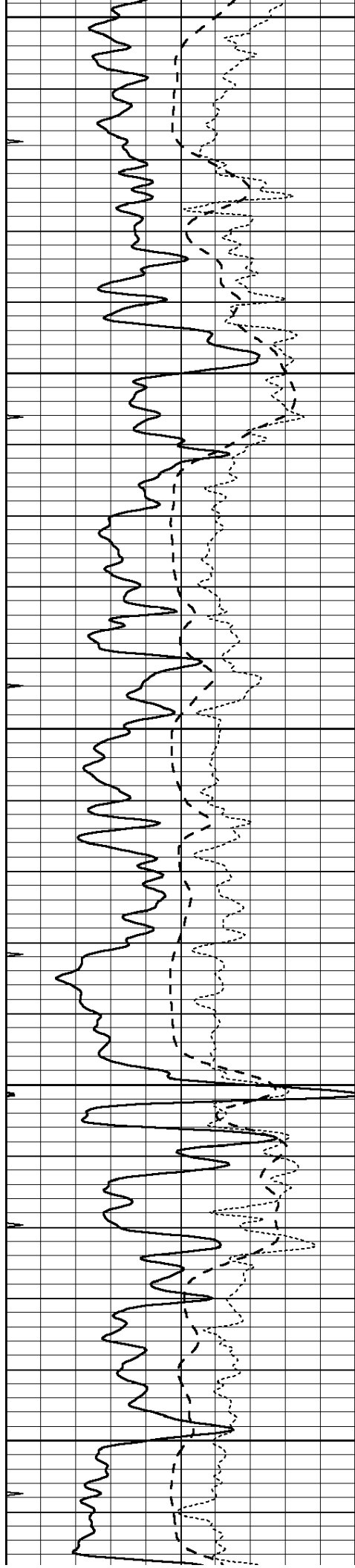
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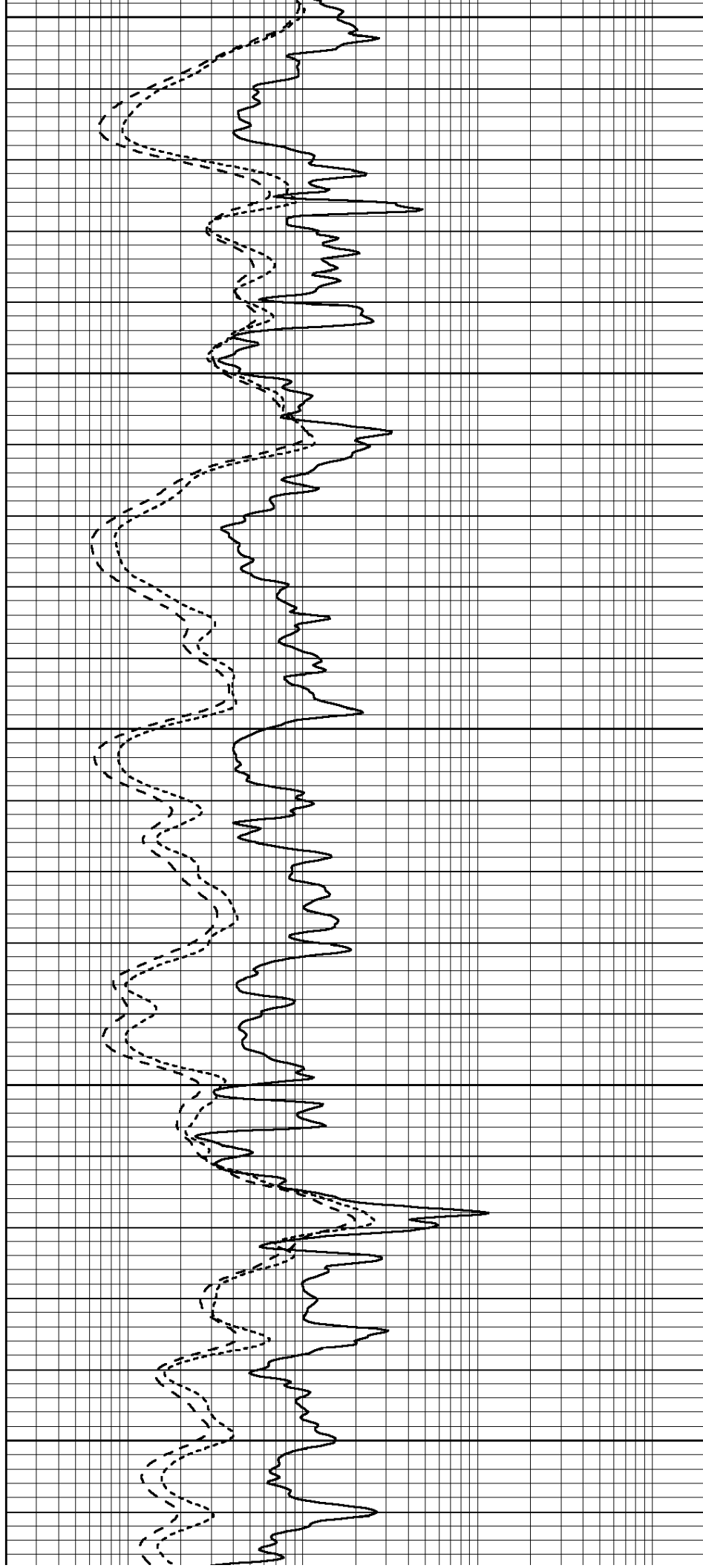
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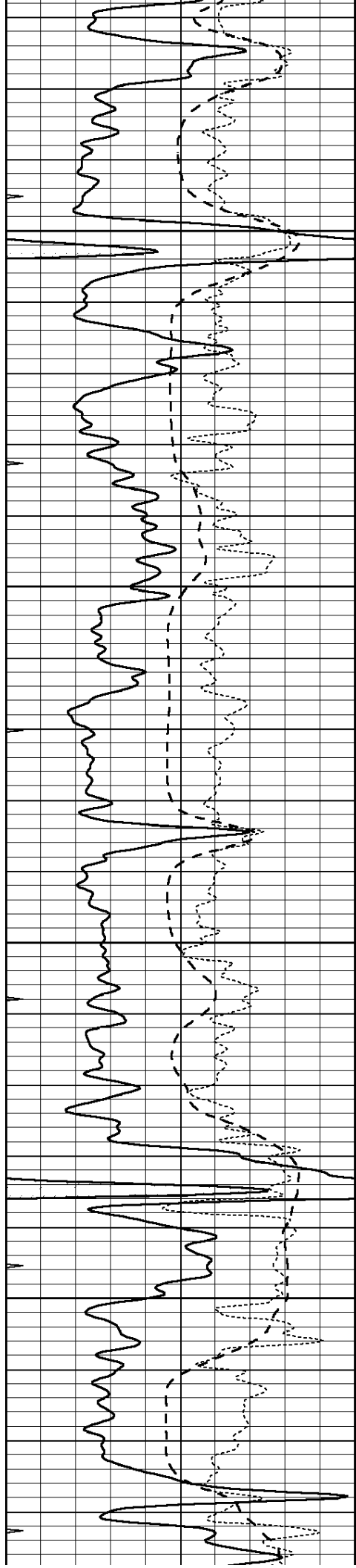
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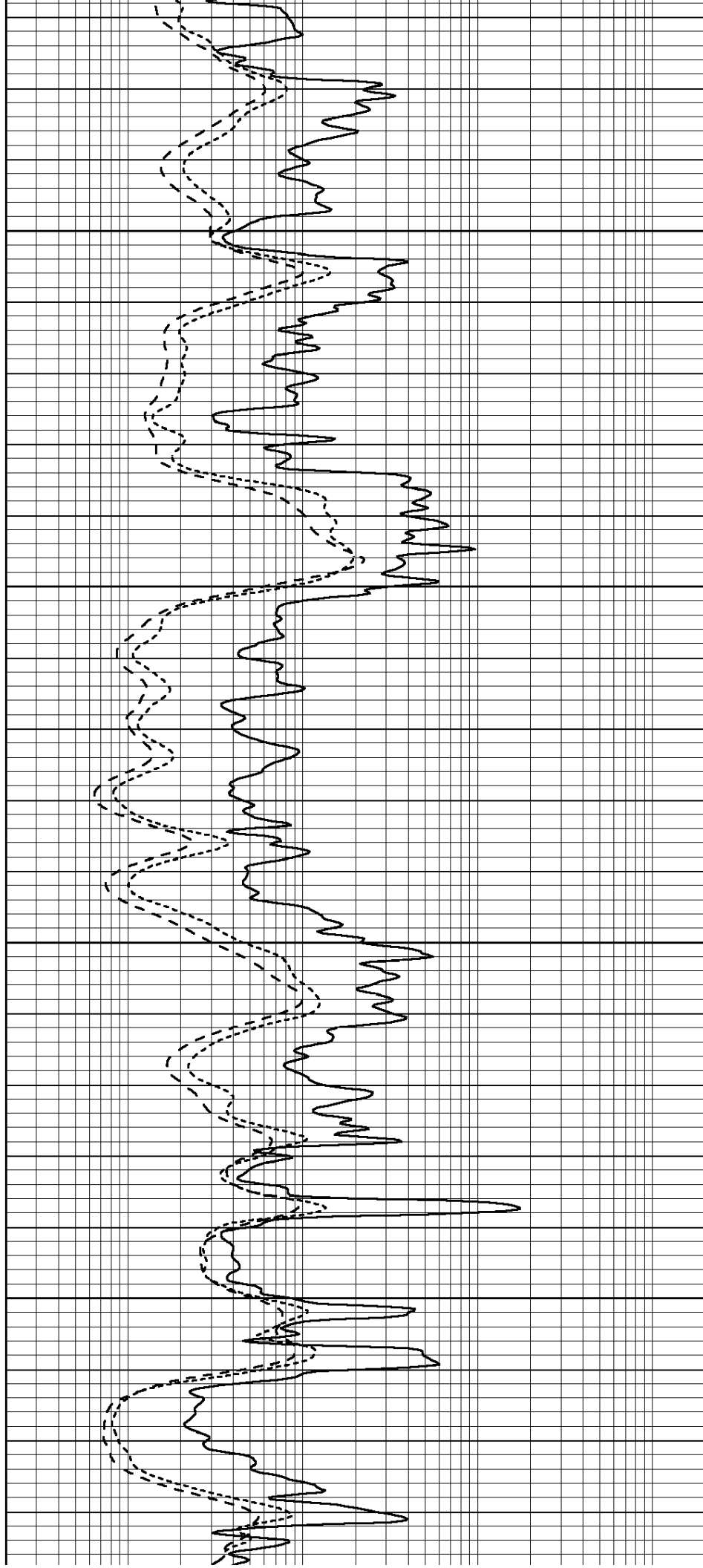


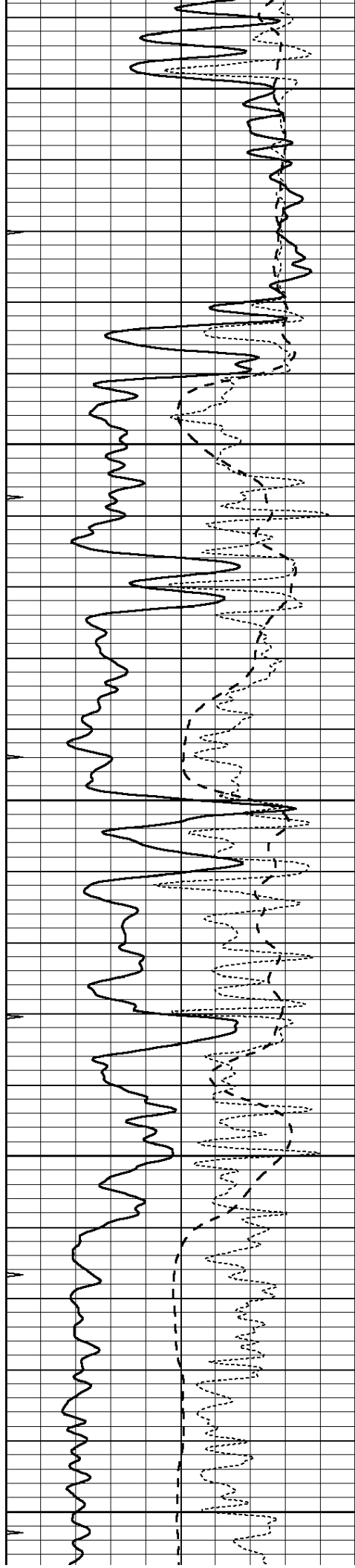
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4100

4150





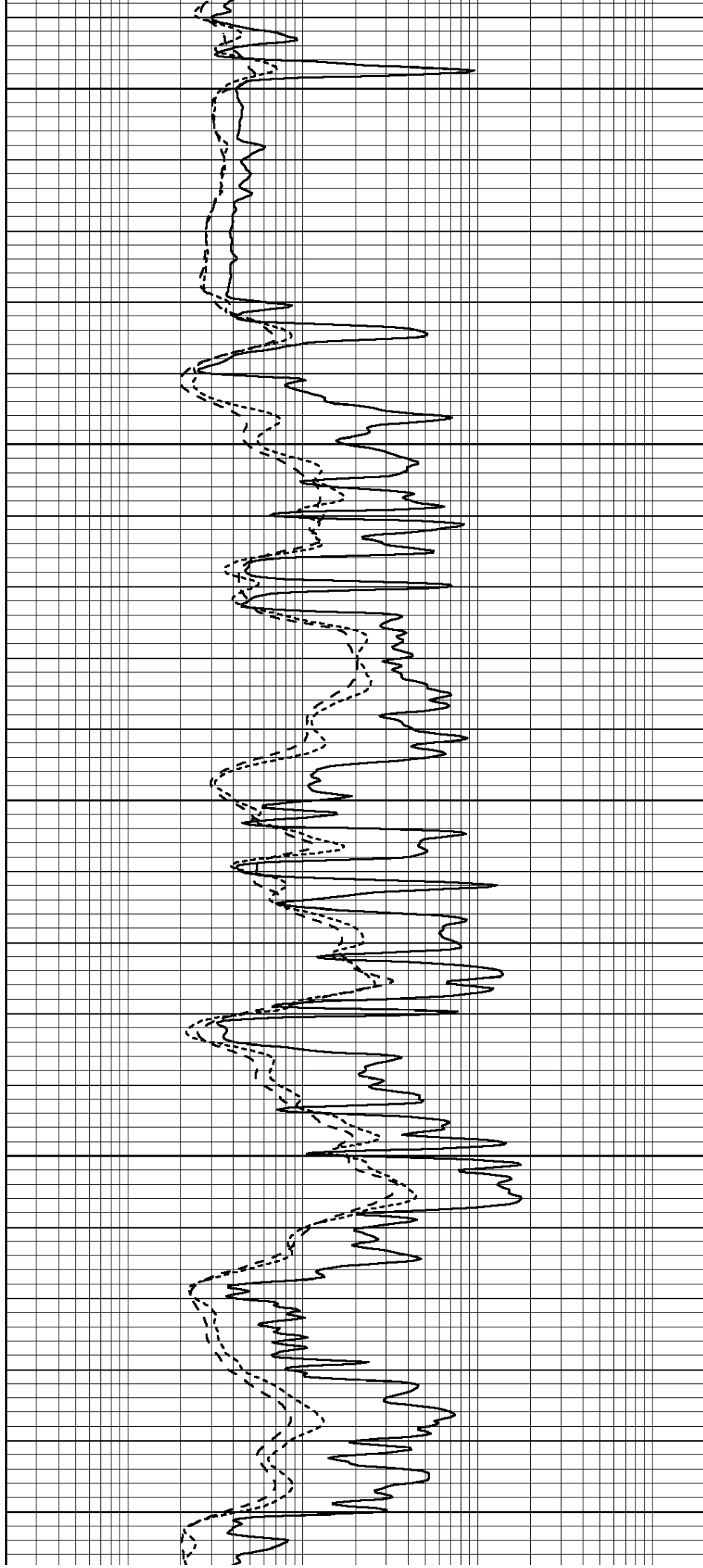
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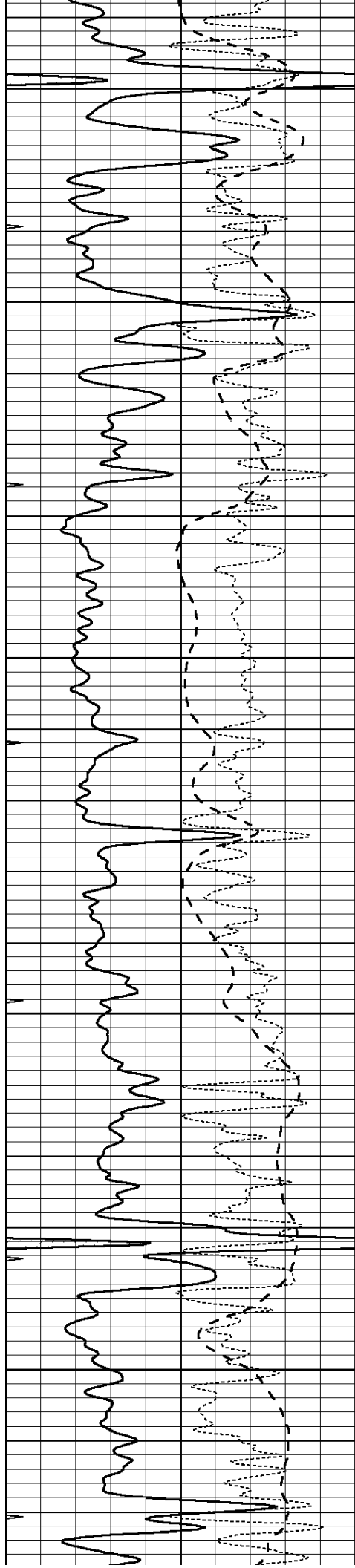
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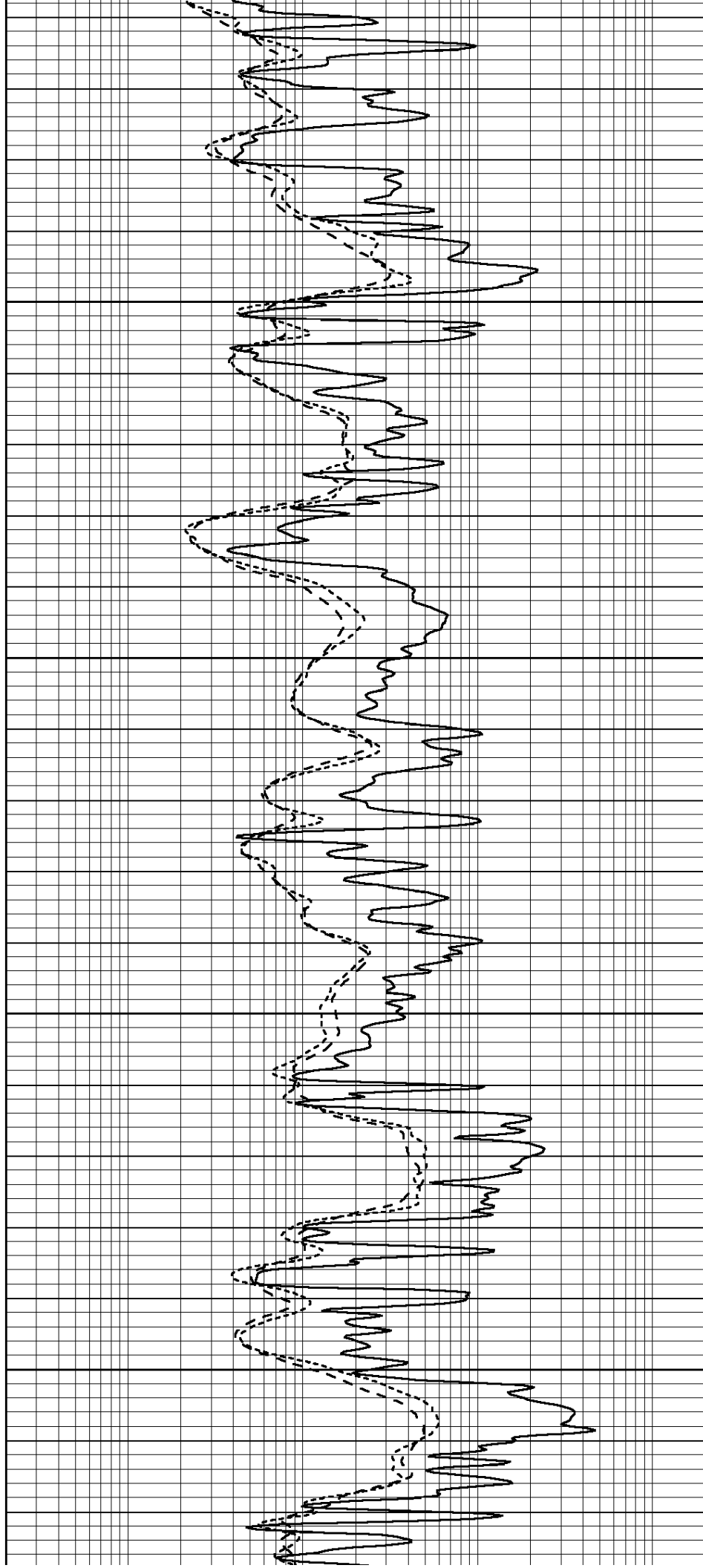


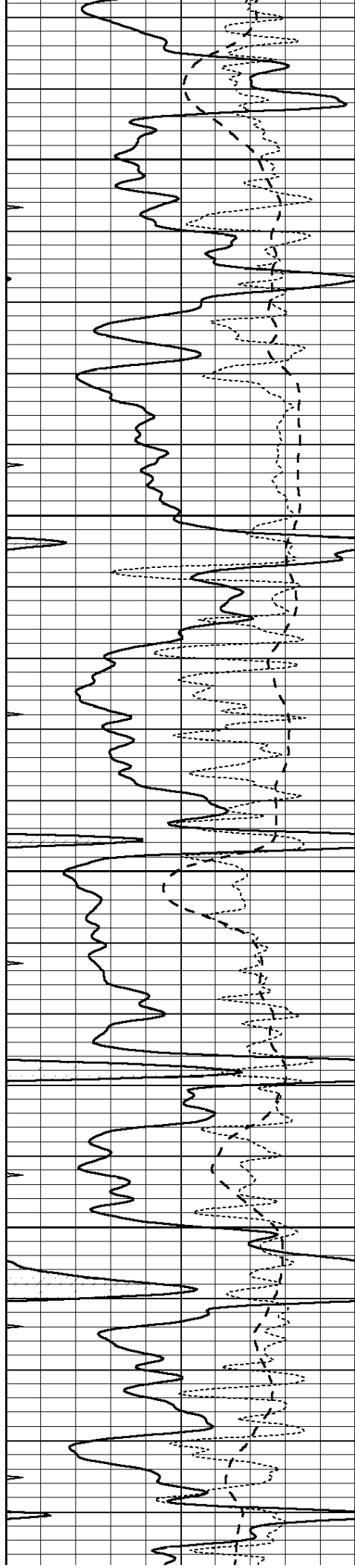
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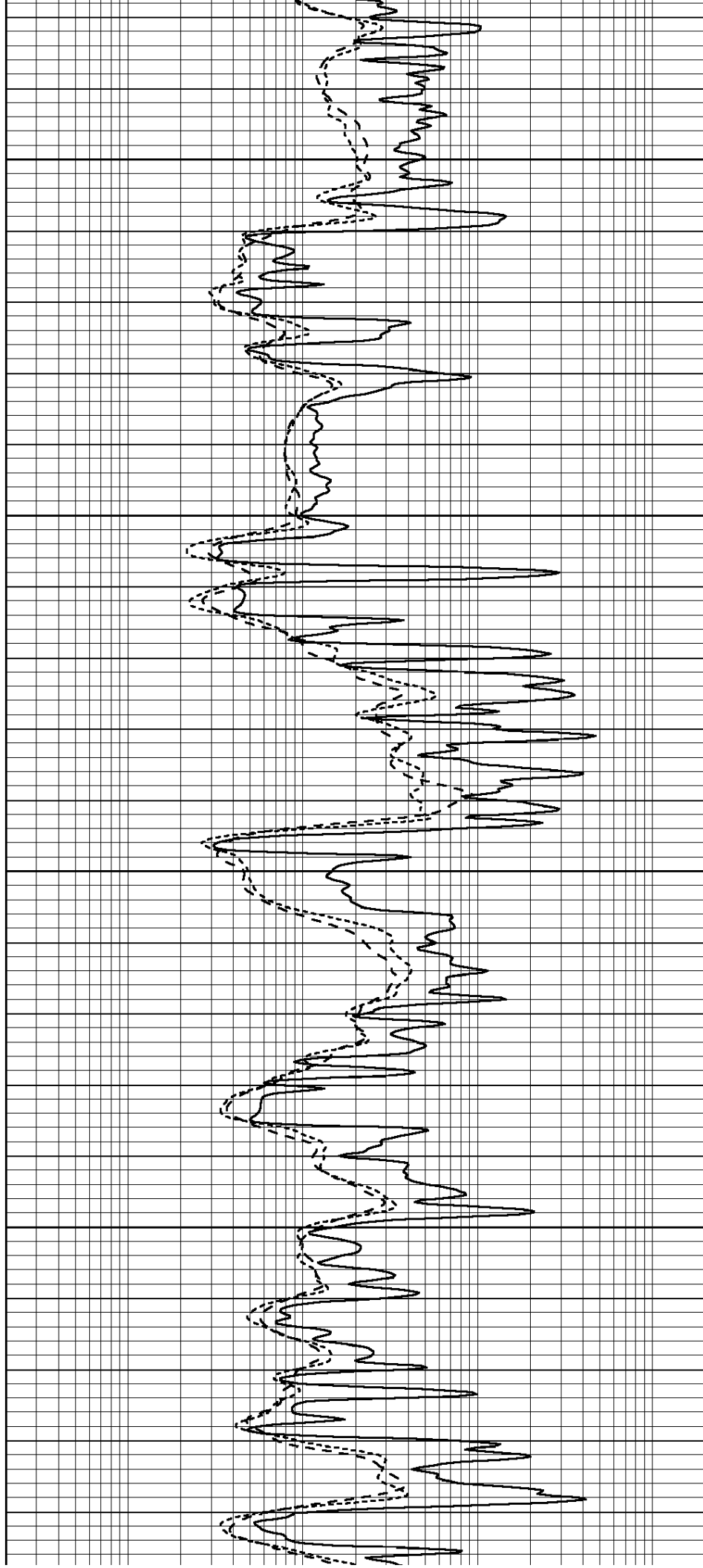


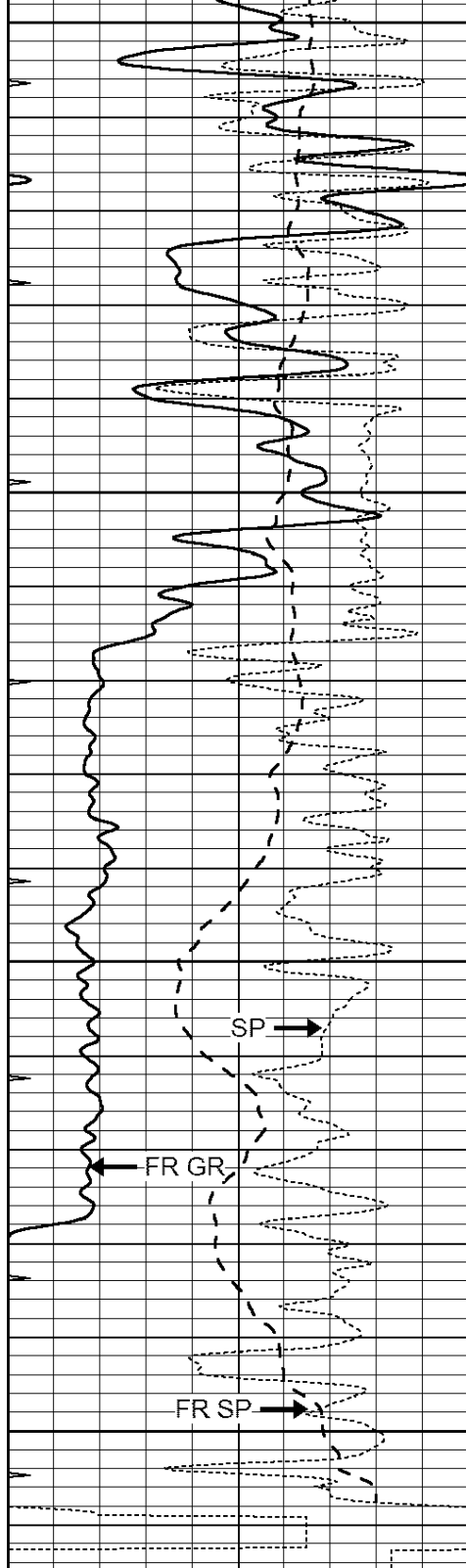
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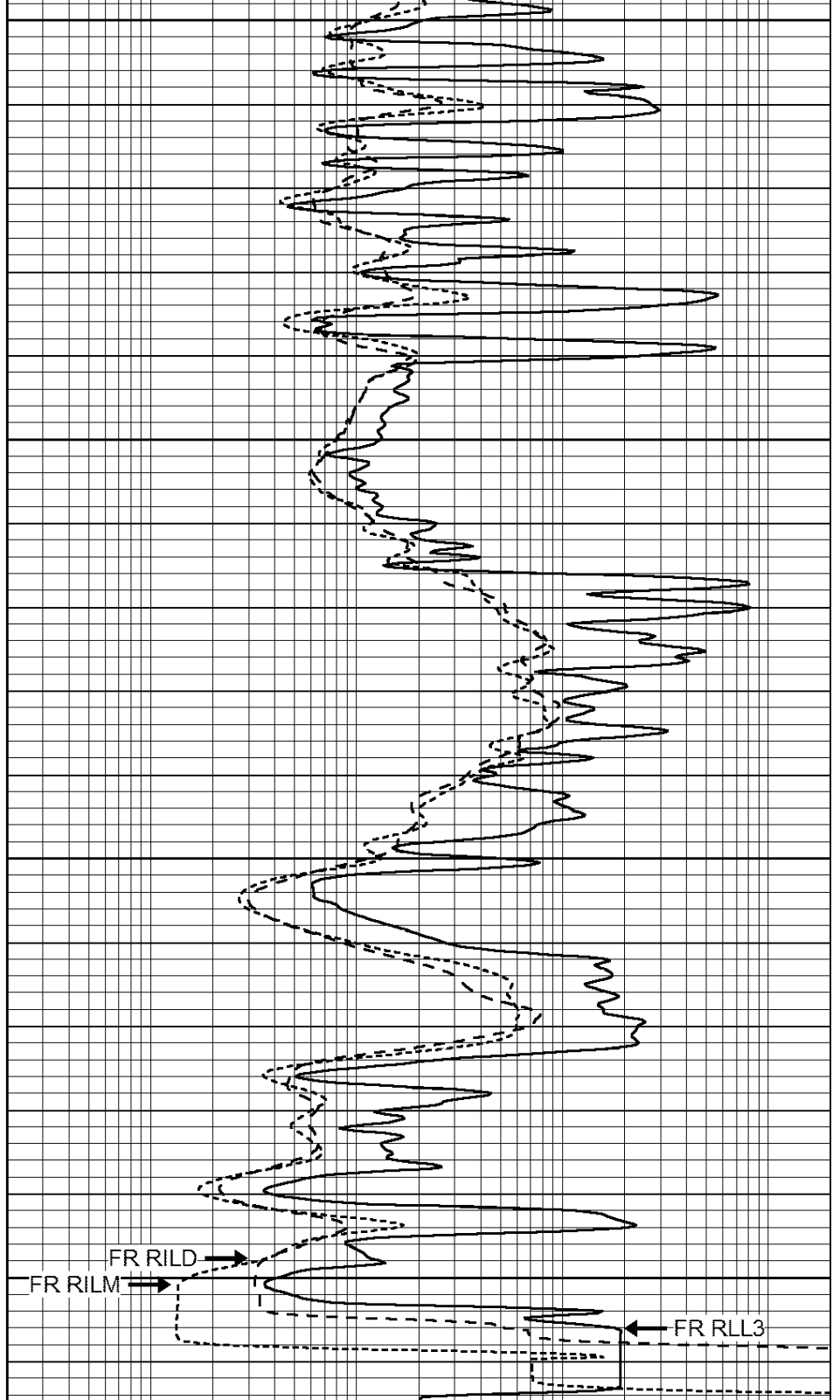
4800





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LTD 5008

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

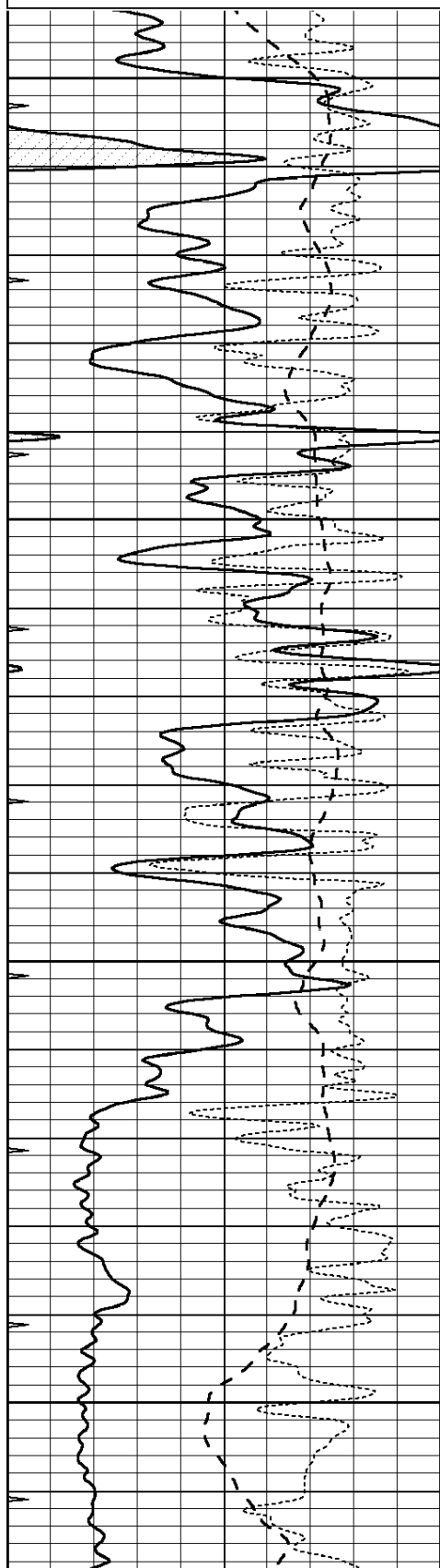


0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Database File: 010871ddn.db
Dataset Pathname: pass2.3
Presentation Format: _dil
Dataset Creation: Sat Apr 13 15:06:24 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	MINMK	20

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

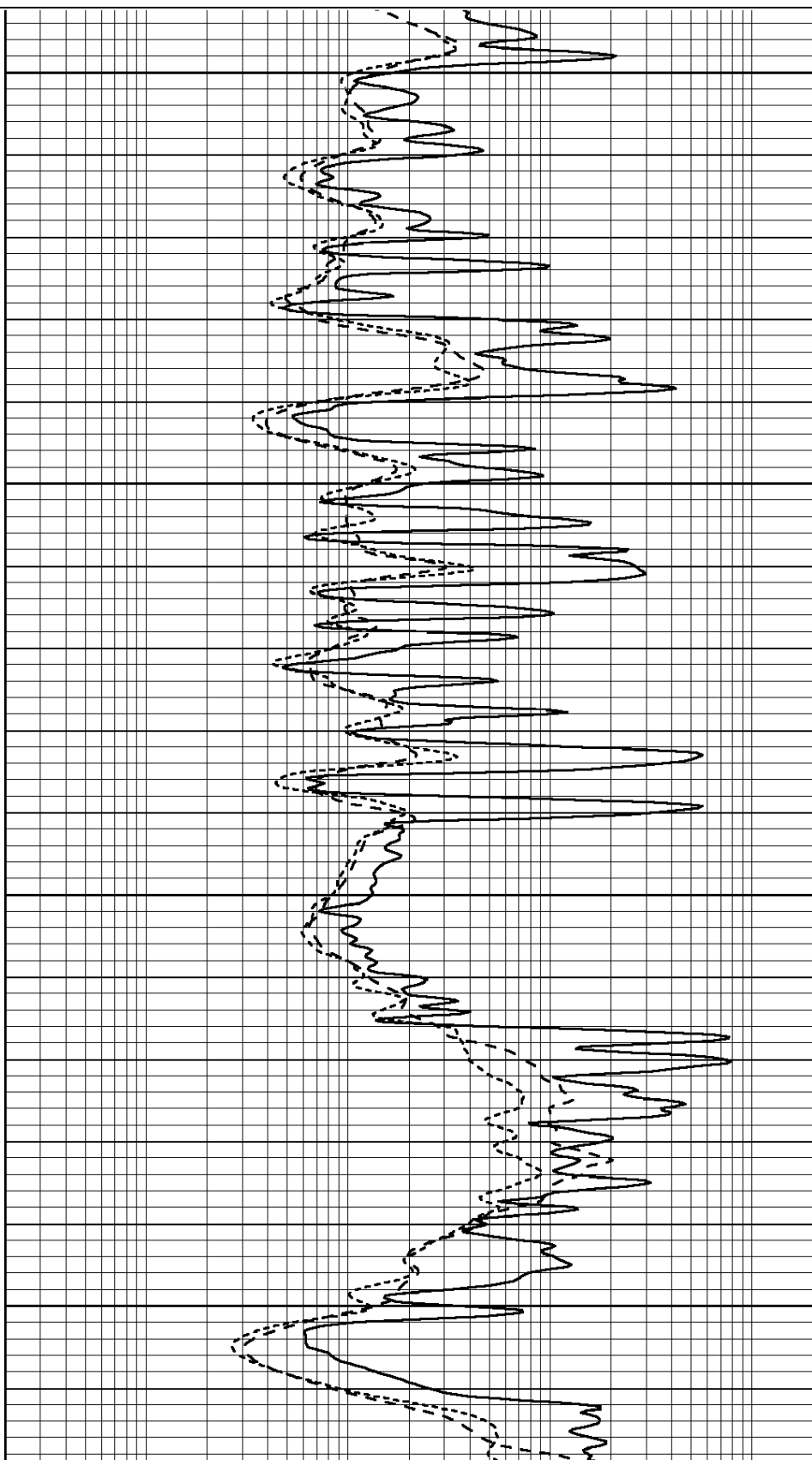


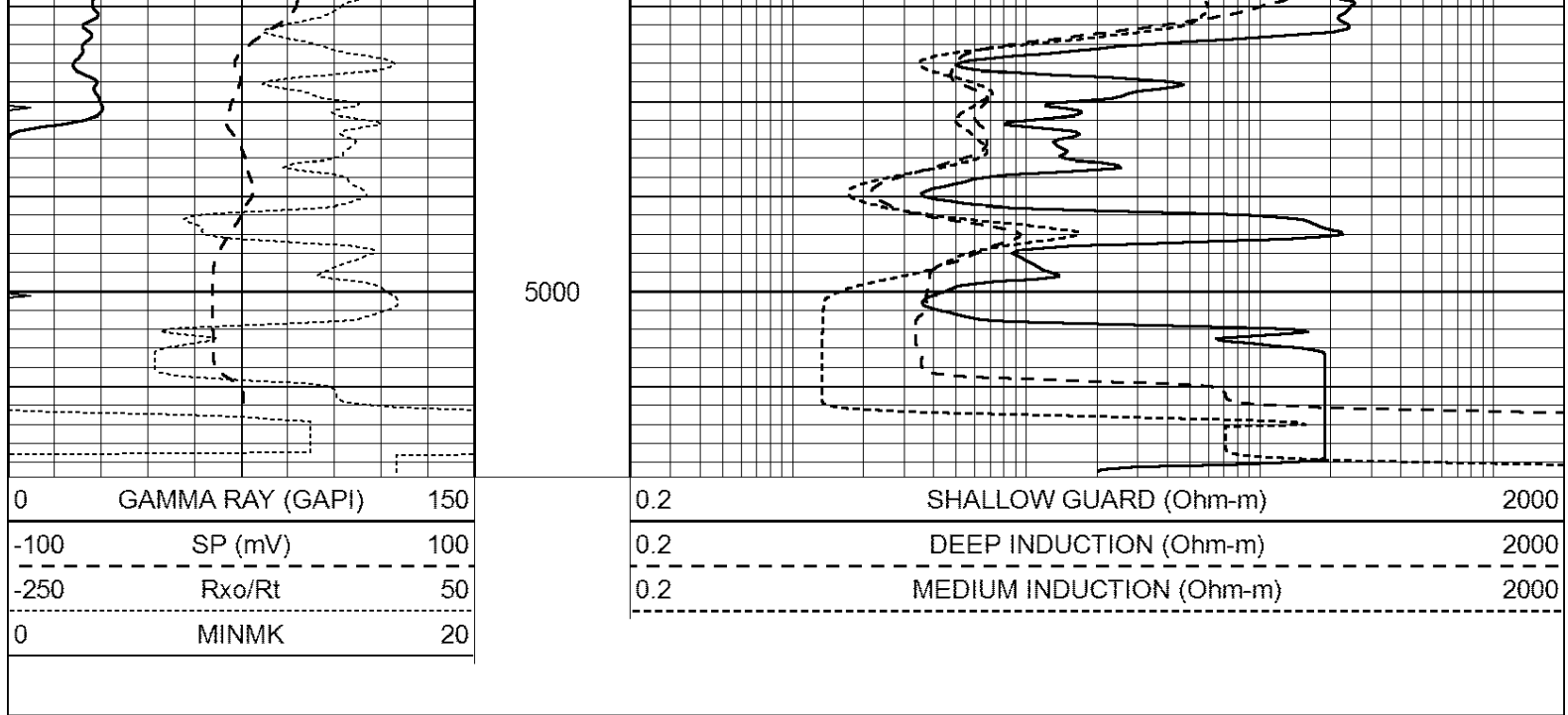
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Calibration Report

Database File: 010871ddn.db
 Dataset Pathname: pass3.4
 Dataset Creation: Sat Apr 13 16:42:17 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

Loop:	Readings			References			Results	
	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

Compensated Density Calibration Report			
Serial-Model:		GEAR3-GEARHART	
Source / Verifier:		143 / 143	
Master Calibration Performed:		Fri Jan 04 15:48:16 2013	
Before Survey Verification Performed:			
After Survey Verification Performed:			

Master Calibration				
	Density		Far Detector	Near Detector
Magnesium	1.710	g/cc	935.36	501.55 cps
Aluminum	2.580	g/cc	209.32	357.01 cps
Spine Angle = 77.21			Density/Spine Ratio = 0.567	
	Size		Reading	
Small Ring	8.00	in	4.29	V
Large Ring	14.00	in	6.24	V

Before Survey Verification				
	Target		Measured	
		g/cc		g/cc
		g/cc		g/cc
		g/cc		g/cc

After Survey Verification				
	Target		Measured	
		g/cc		g/cc
		g/cc		g/cc
		g/cc		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 Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	#8	
Tool Model:	OPEN	
Performed:	Mon Jun 13 16:56:43 2011	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	175.0	cps
Sensitivity:	0.8371	GAPI/cps