



Pioneer Energy Services

## HIGH RESOLUTION INDUCTION

Company	Wiekking-Fullerton Energy LLC	Location:	API # : 05073065910000	Other Services Density Neutron
Well	Ma-State #8			
Field	Wildcat			
County	Lincoln			
State	Colorado			
Permanent Datum	GL	Elevation	5267	Elevation
Log Measured From	KB			K.B. 5280
Drilling Measured From	KB			D.F. 5279
				G.L. 5267
Date	May 31, 2014			
Run Number	1			
Depth Driller	8075			
Depth Logger	8065			
Bottom Logged Interval	8065			
Top Log Interval	Casing			
Casing Driller	336			
Casing Logger	336			
Bit Size	7-7/8"			
Type Fluid in Hole	Chem Gel			
Density / Viscosity	9.7 / 87			
pH / Fluid Loss	9.5 / 8.8			
Source of Sample	Flowline			
Rm @ Meas. Temp	1.47 @ 70 F			
Rmf @ Meas. Temp	1.18 @ 70 F			
Rmc @ Meas. Temp	1.76 @ 70 F			
Source of Rmf / Rmc	Measure / Calc			
Rm @ BHT	0.52 @ 199 F			
Time Circulation Stopped	0115			
Time Logger on Bottom	0900			
Maximum Recorded Temperature	199 F			
Equipment Number	49			
Location	Ft. Morgan, CO			
Recorded By	Clint Christensen			
Witnessed By	Gregg Smith			

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

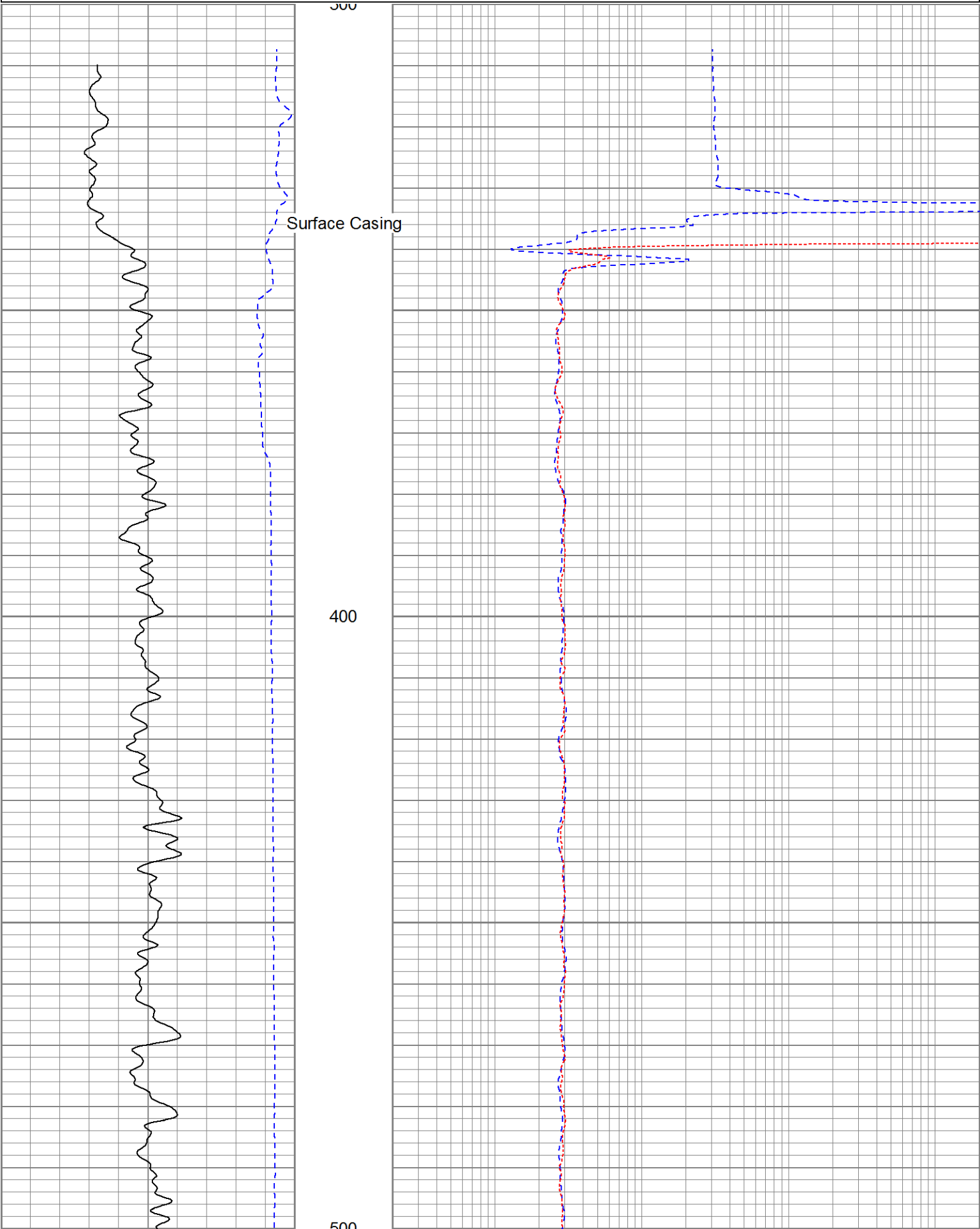
### Comments

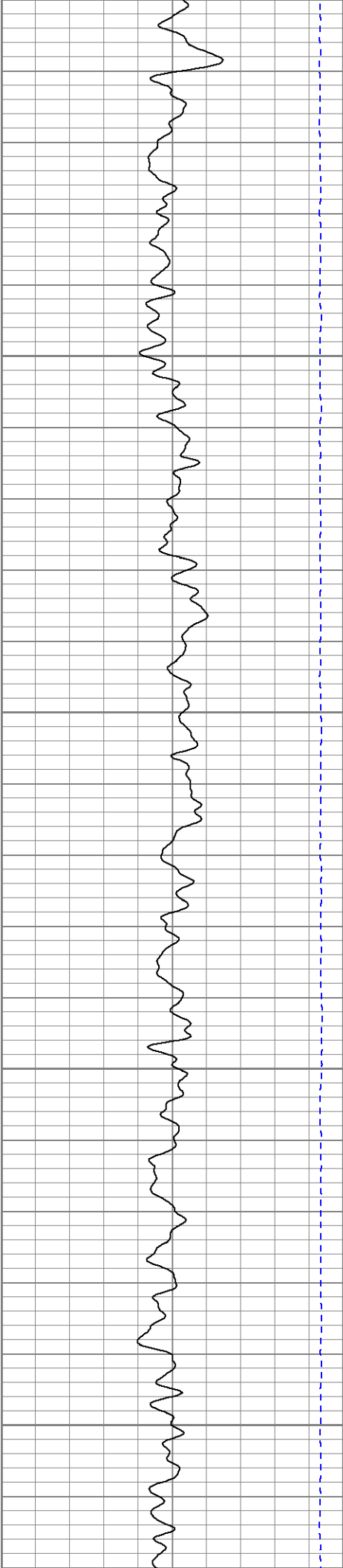
Annular volume calculated for 5.5" casing  
Murfin Drilling Rig 25  
Thank you for using Pioneer Energy Services

Database File: 13507.db  
Dataset Pathname: Final  
Presentation Format: dil  
Dataset Creation: Sat May 31 13:06:12 2014  
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	200
0	SP (mV)	200

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Rt (Ohm-m)	2000

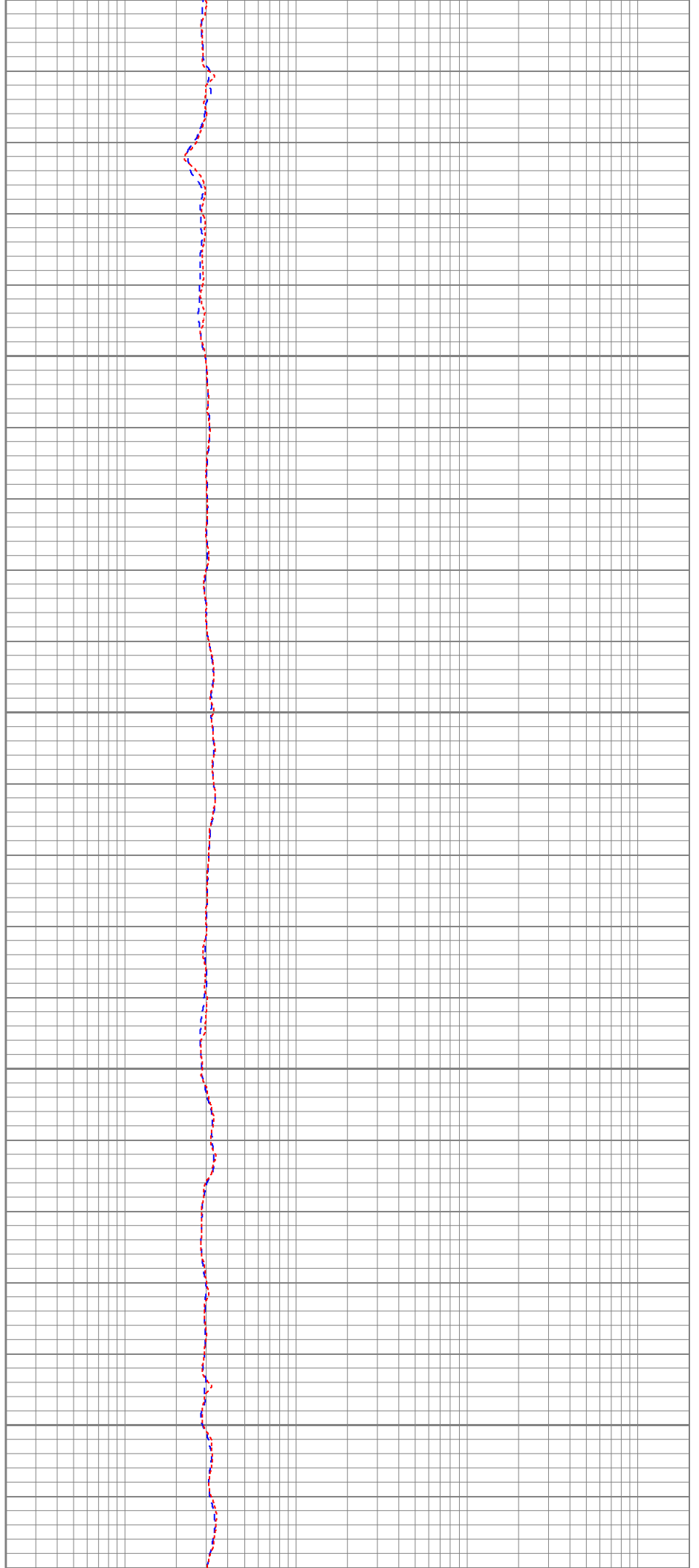




500

600

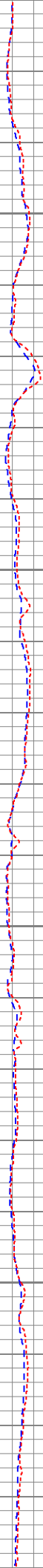
700

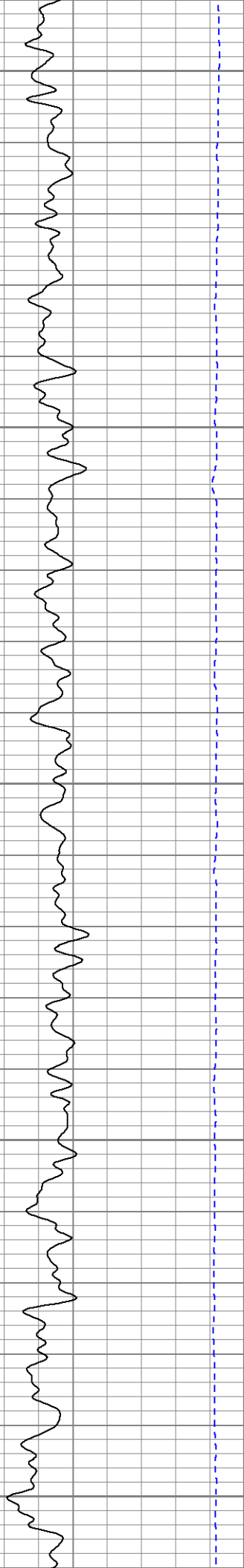




800

900

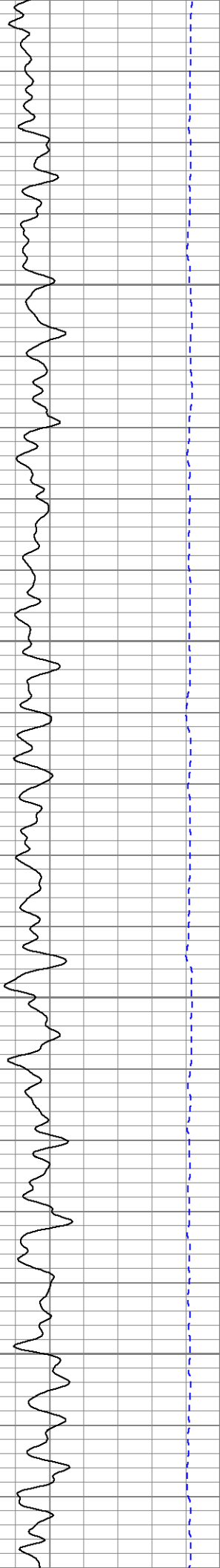




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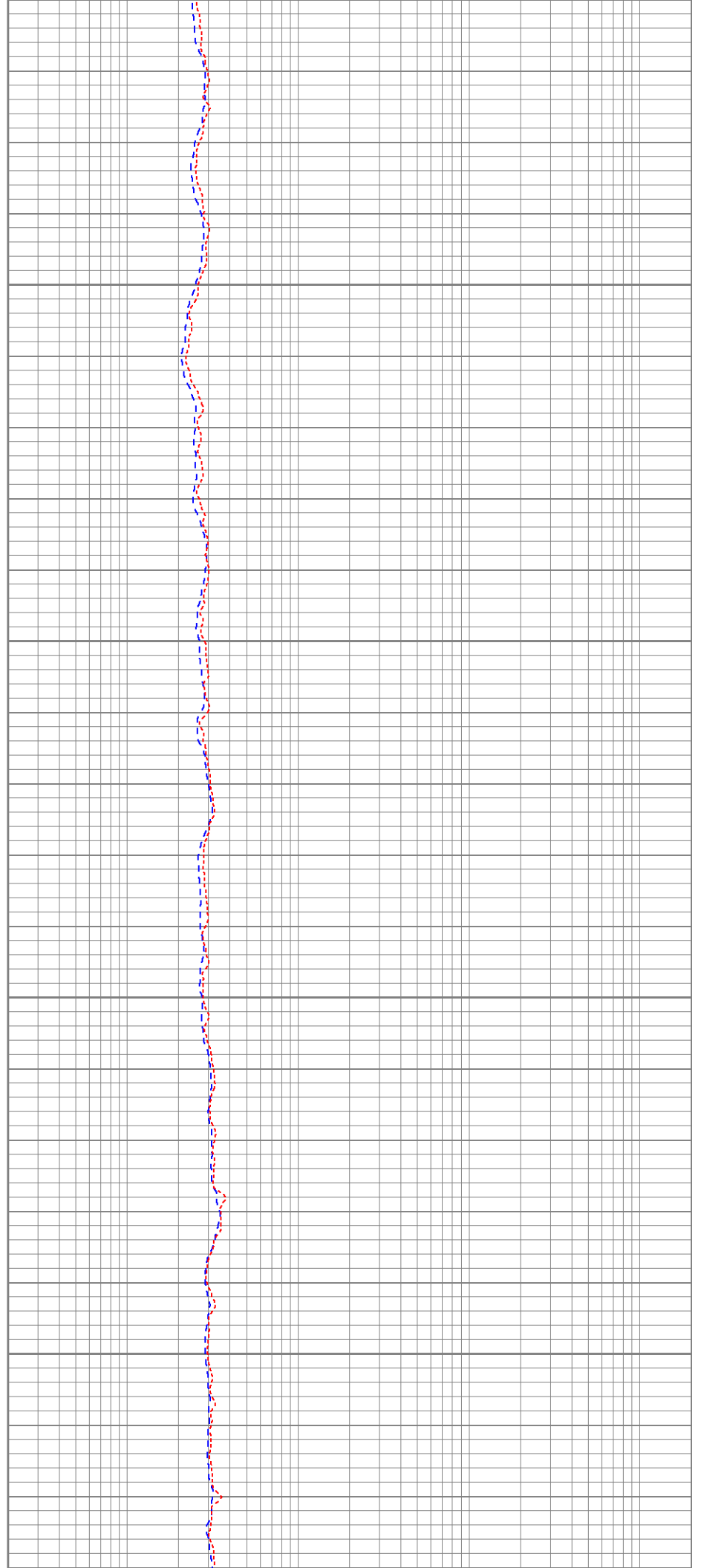
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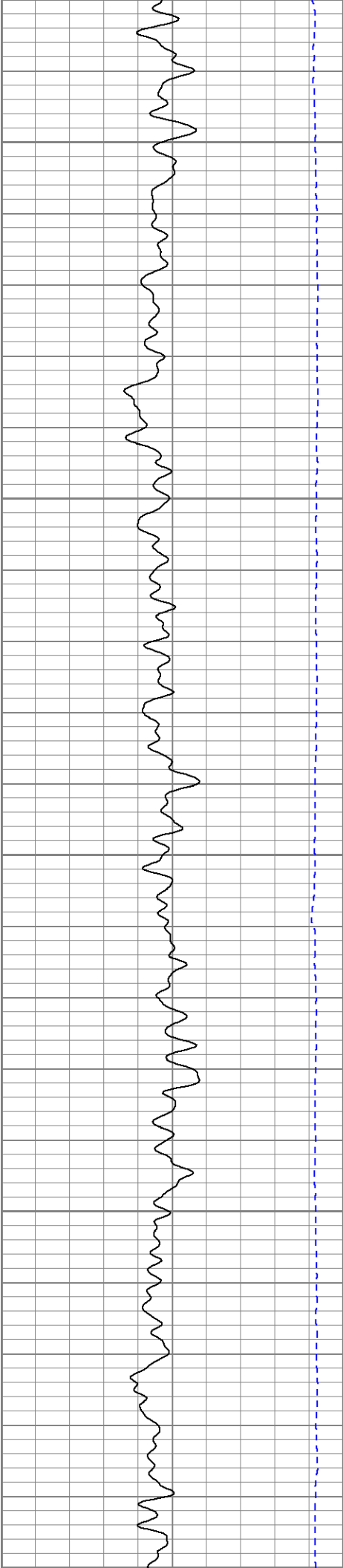




1200

1300

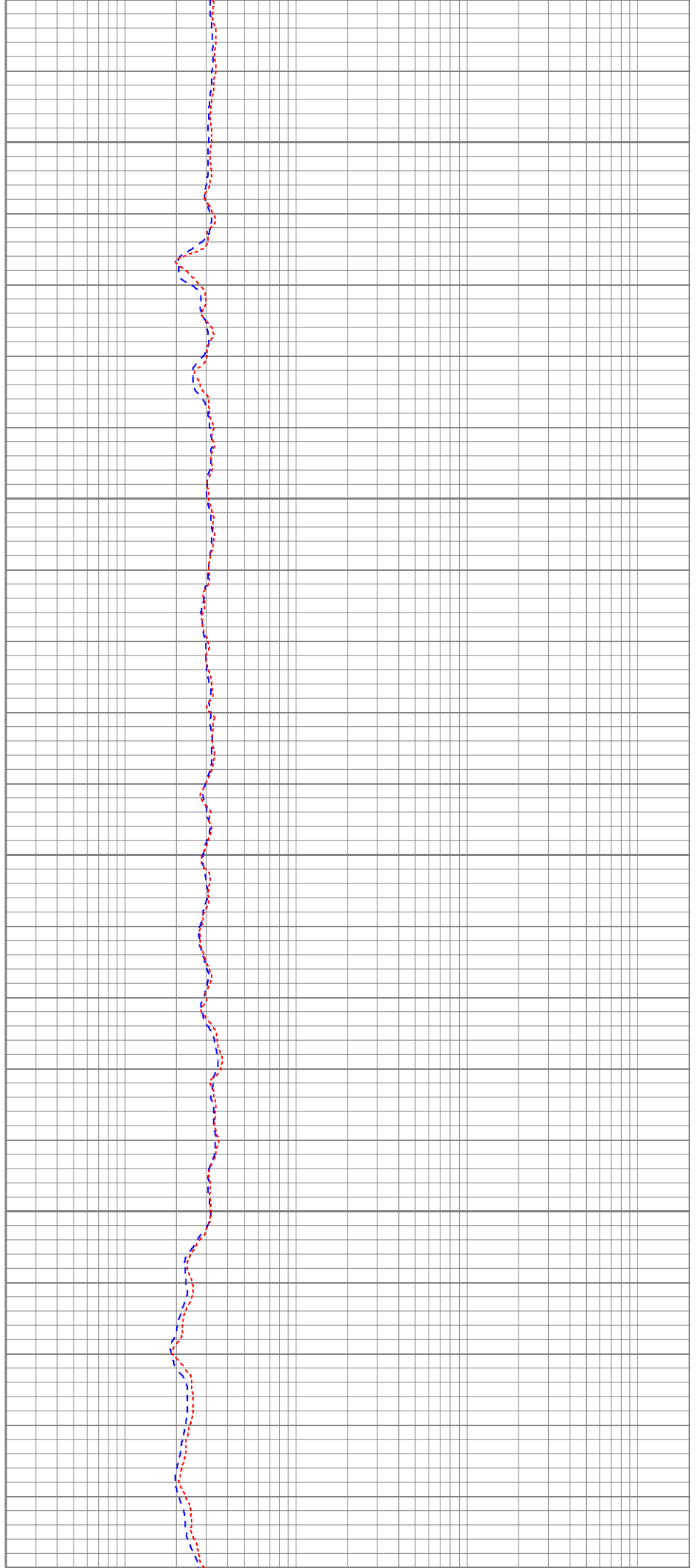


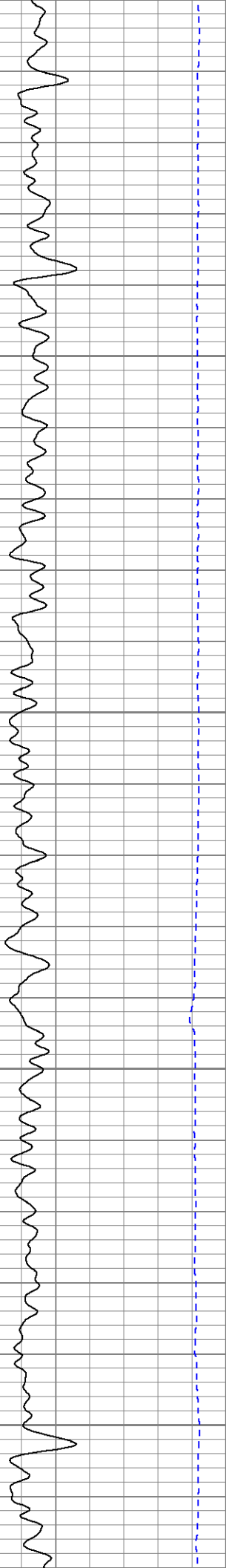


1400

1500

1600

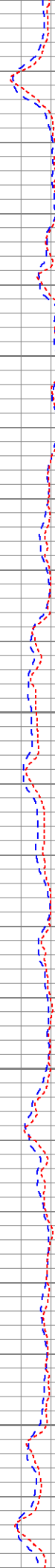




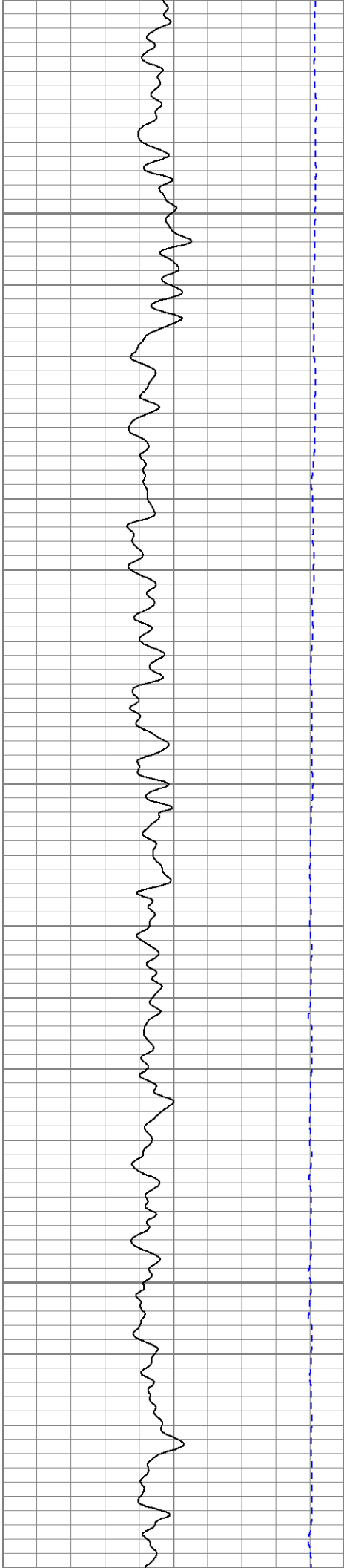
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1700

1800

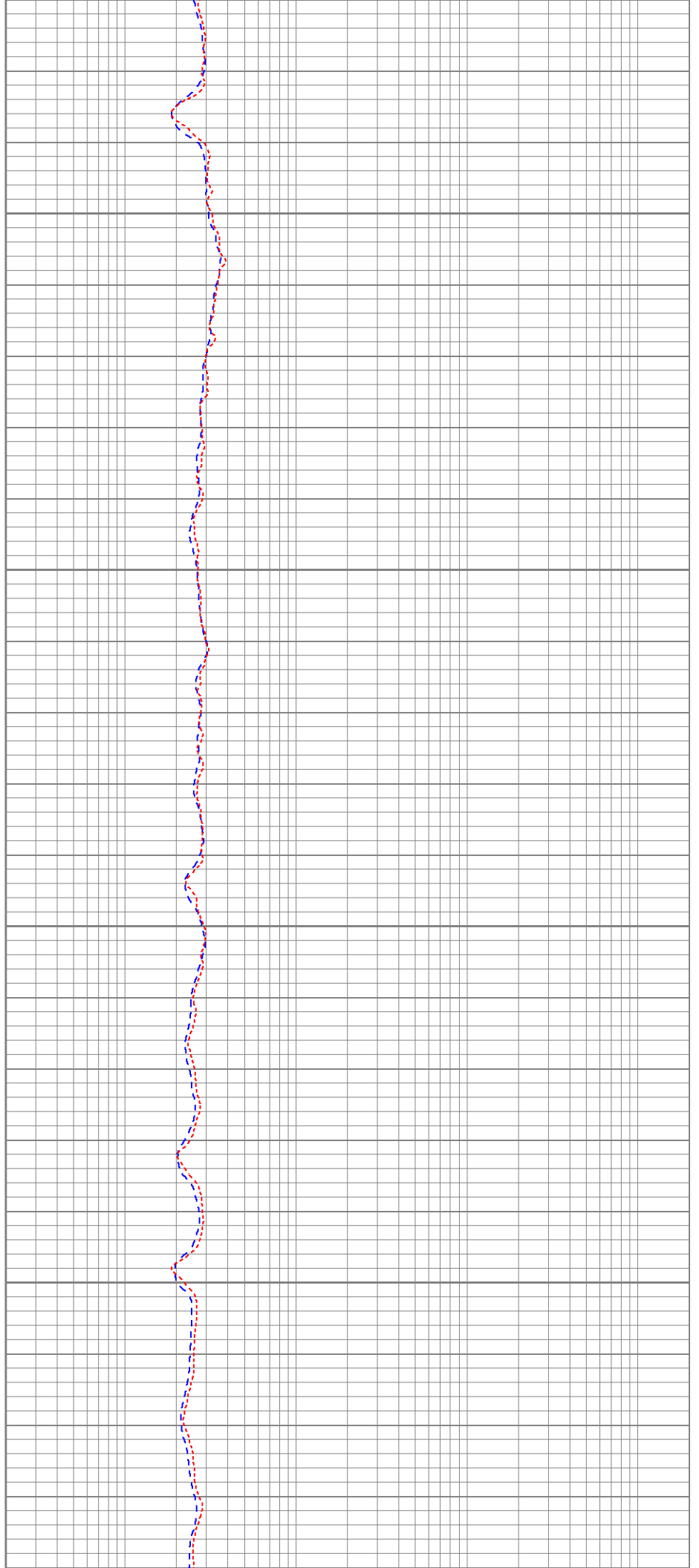


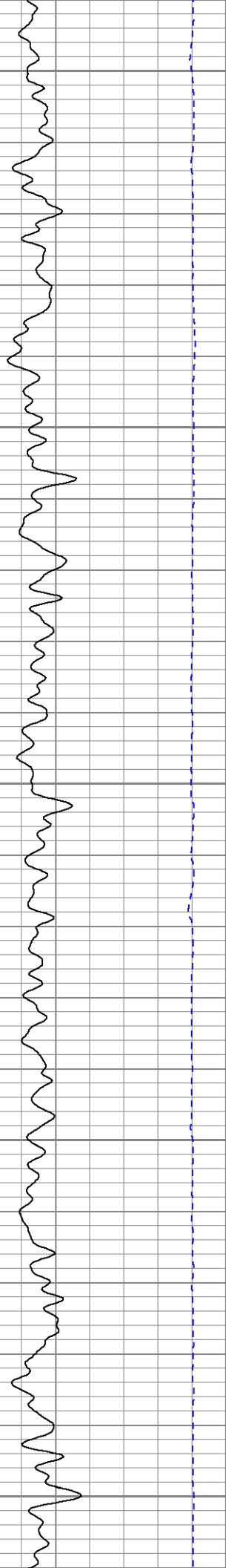




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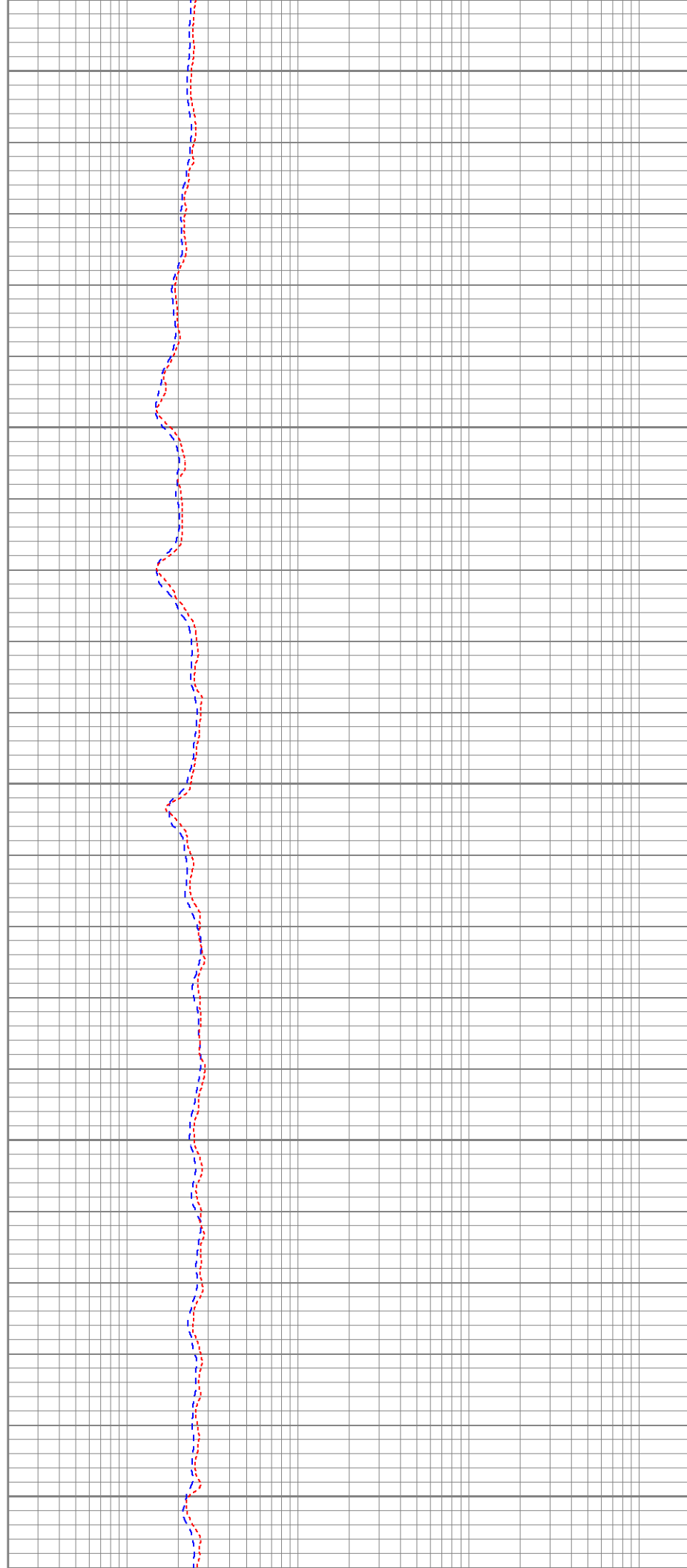
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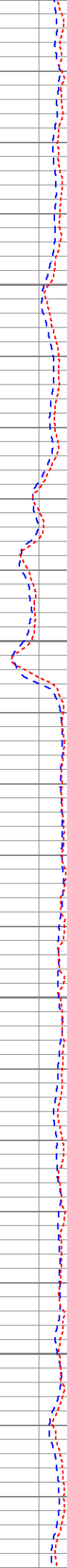
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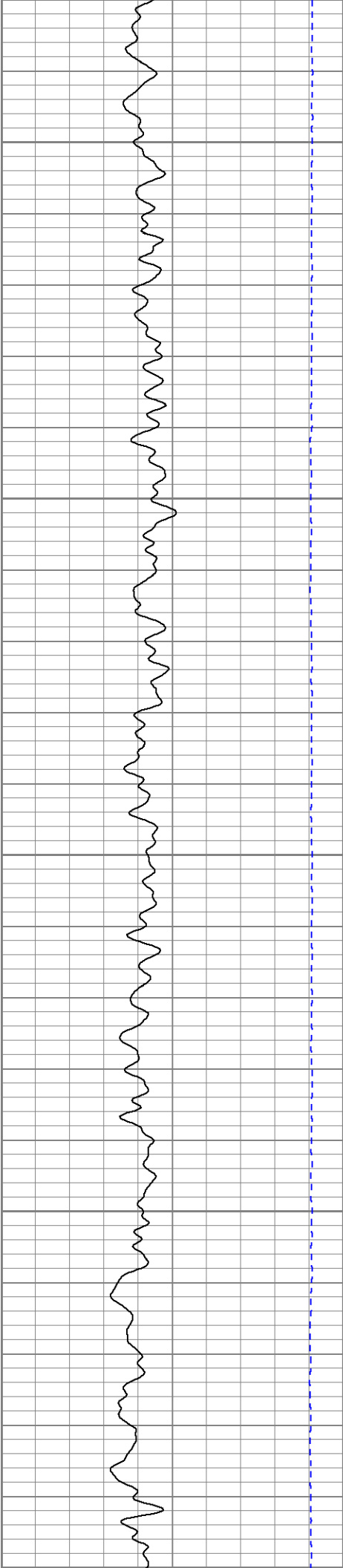




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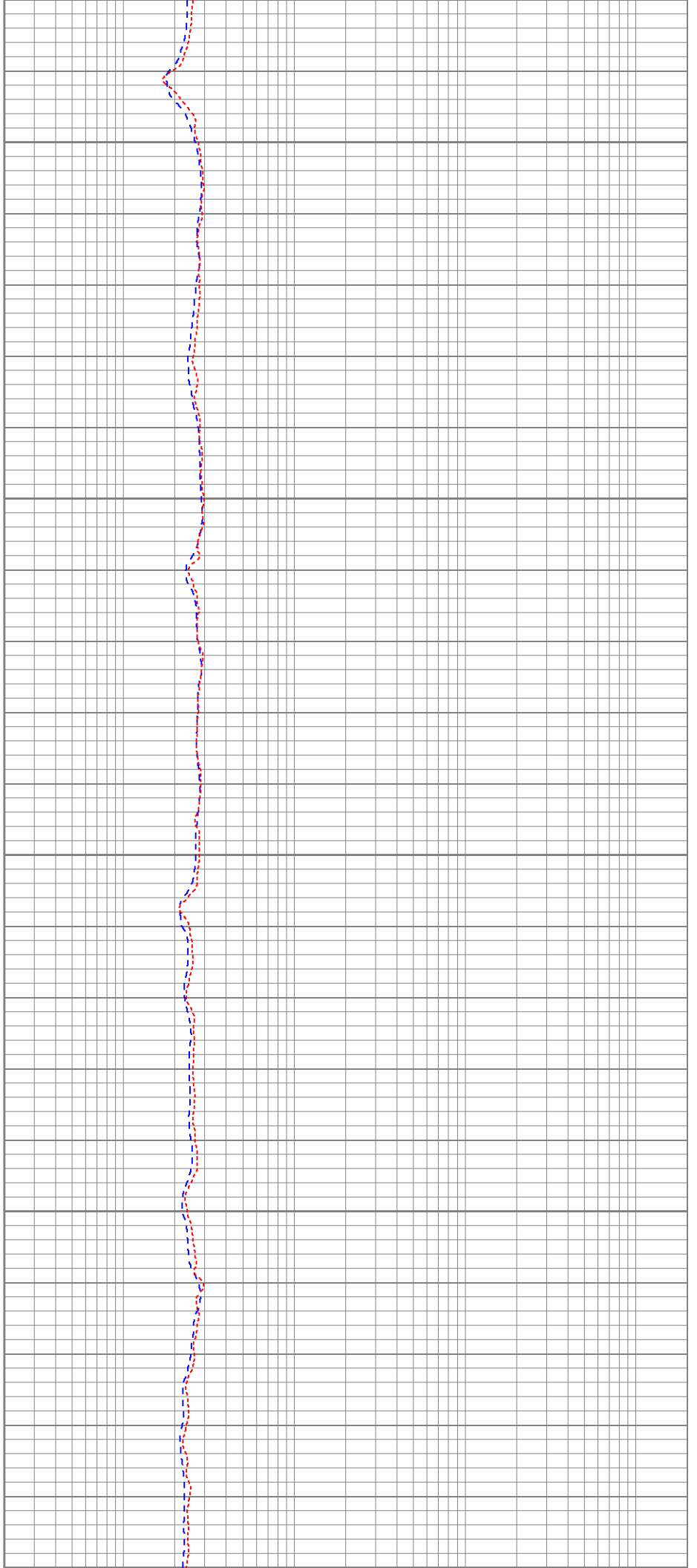


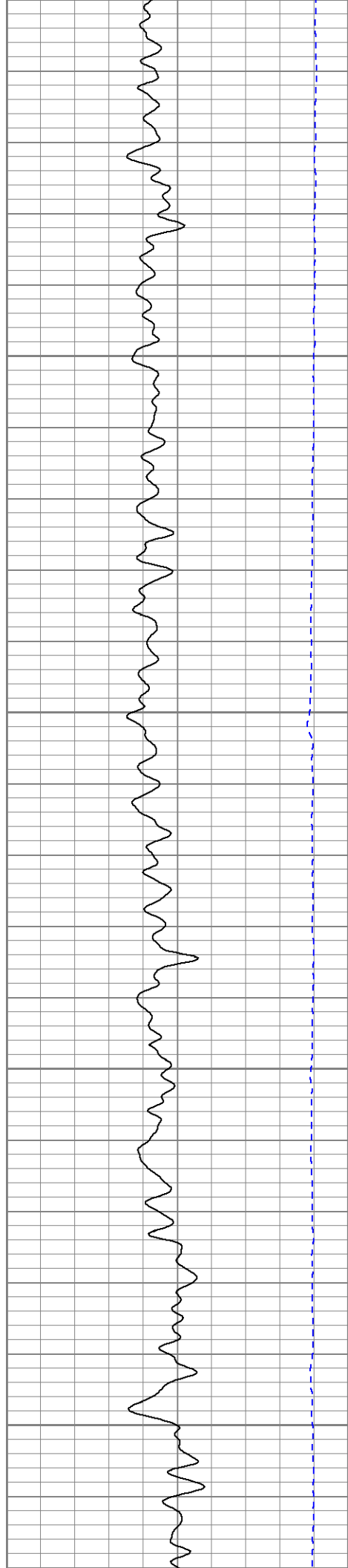


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2600

2700

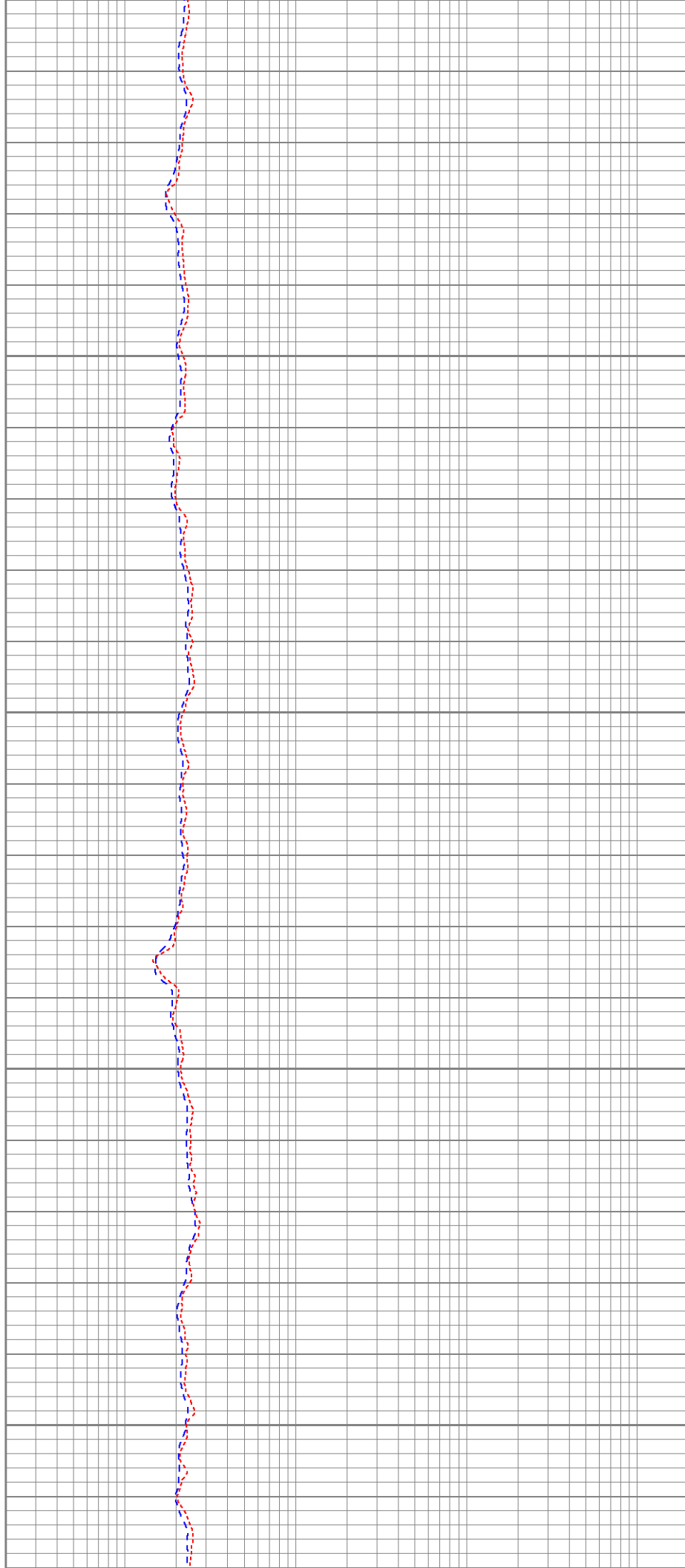


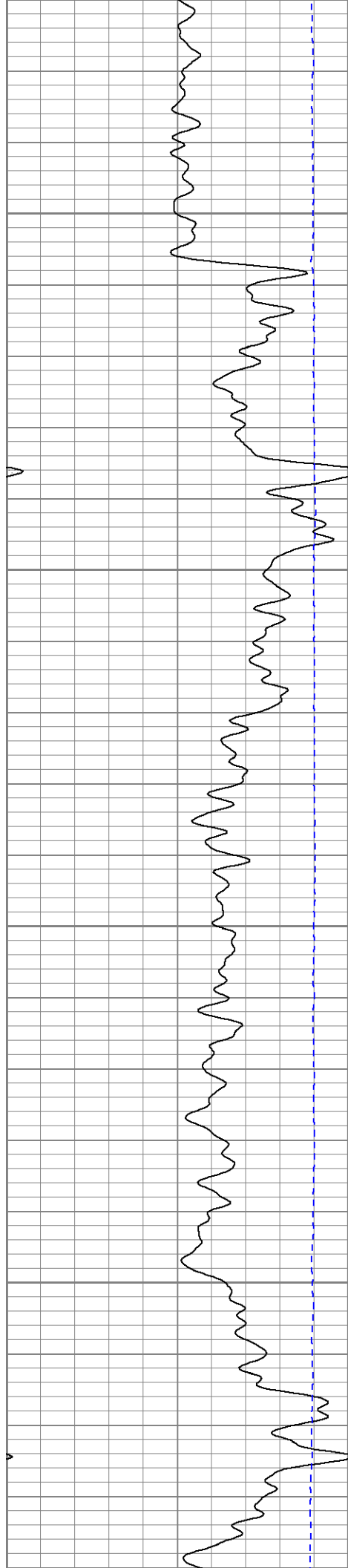


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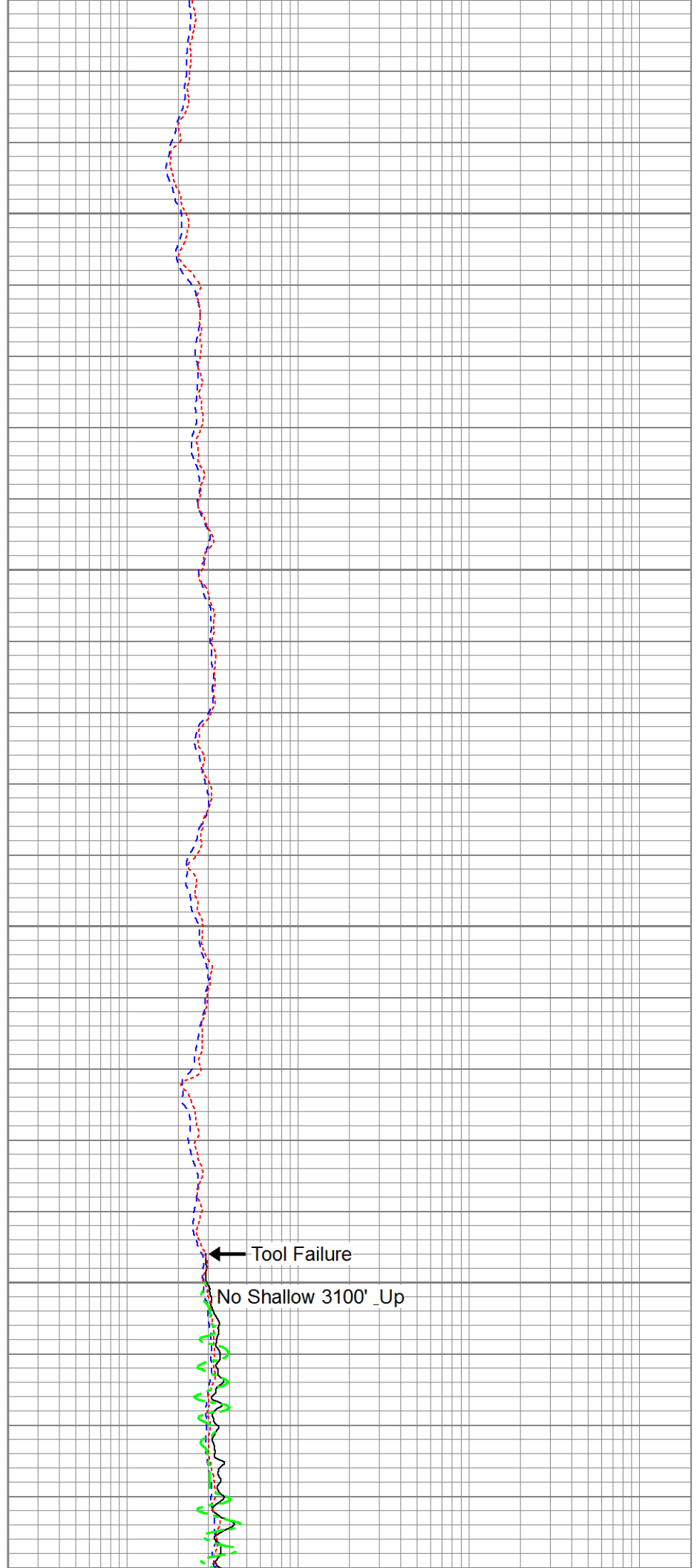
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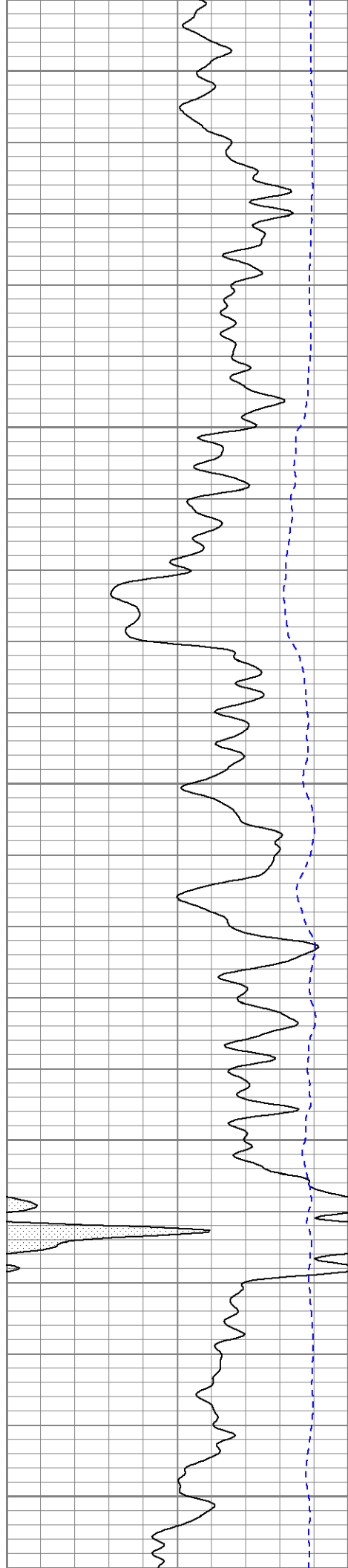
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3100



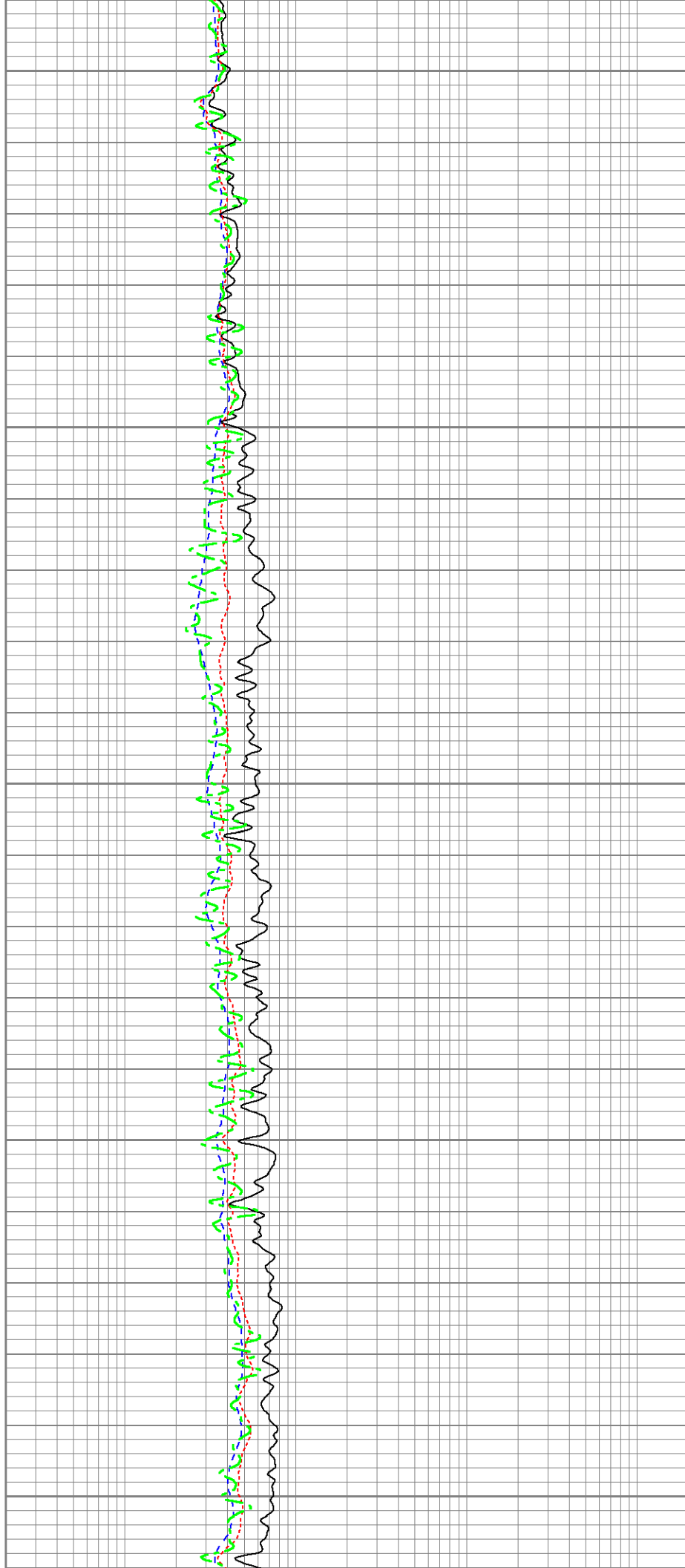
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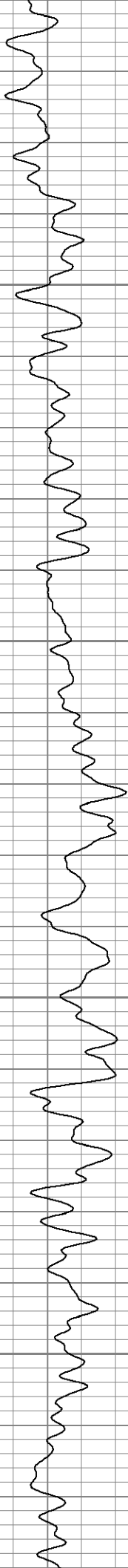
No Shallow 3100' Up



3200

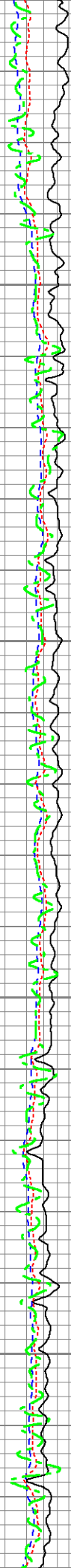
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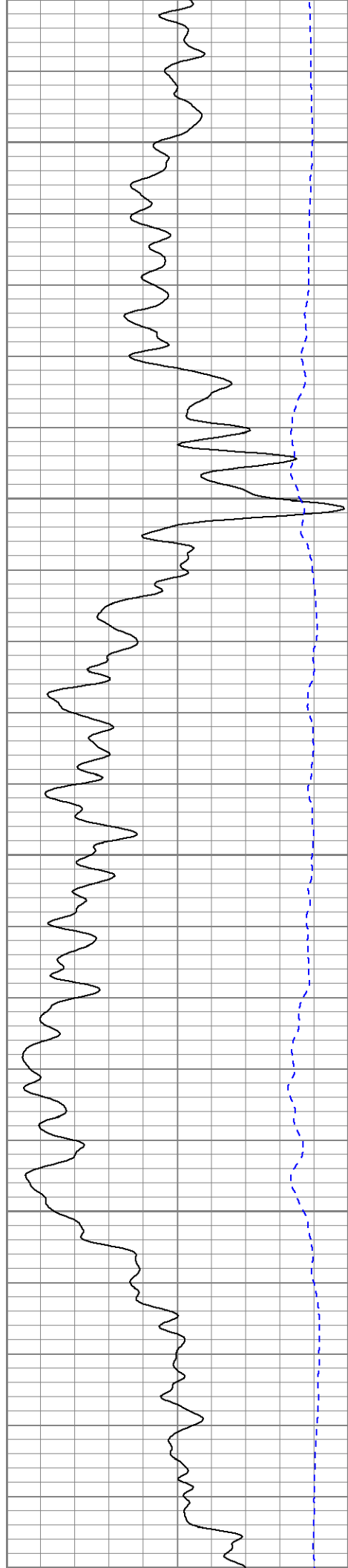


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3500



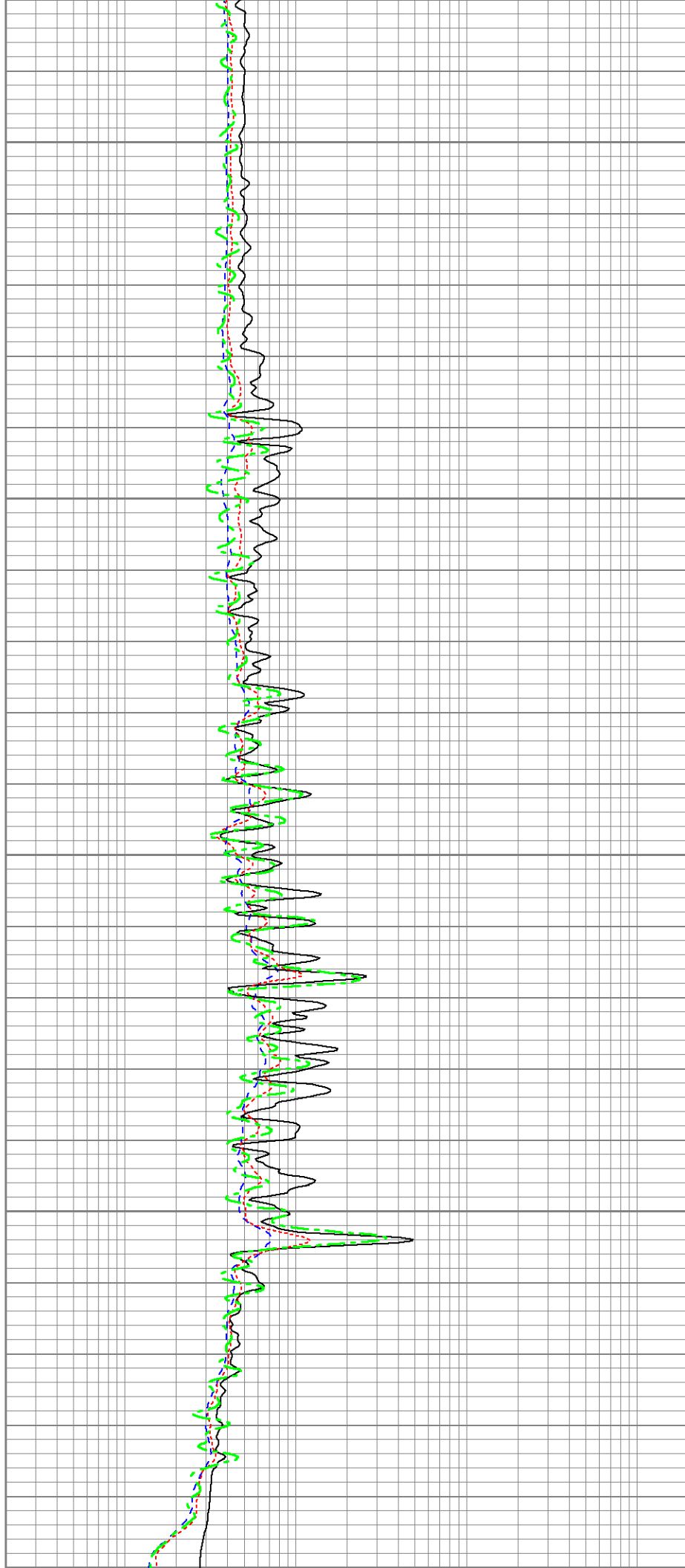




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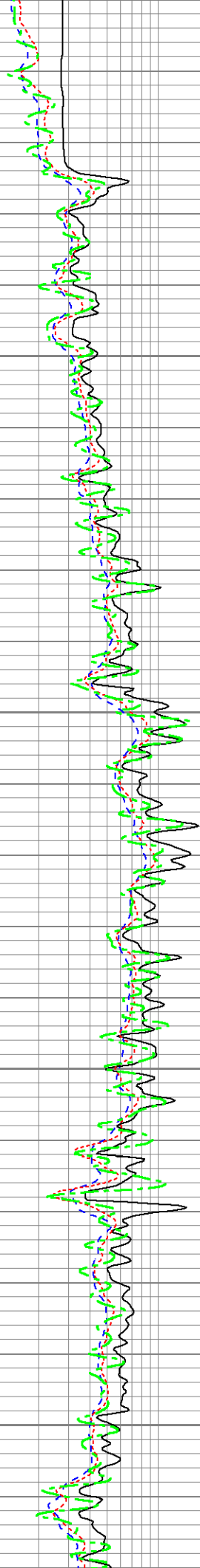
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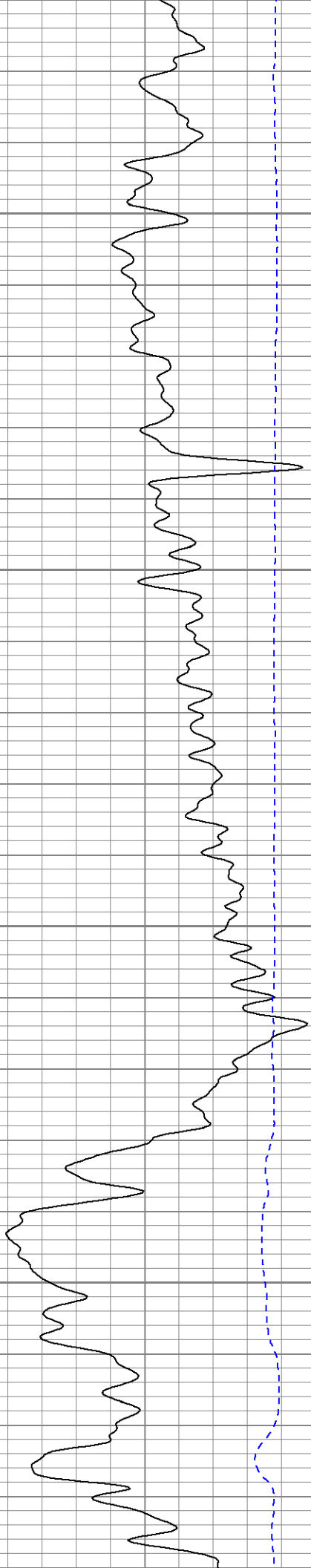


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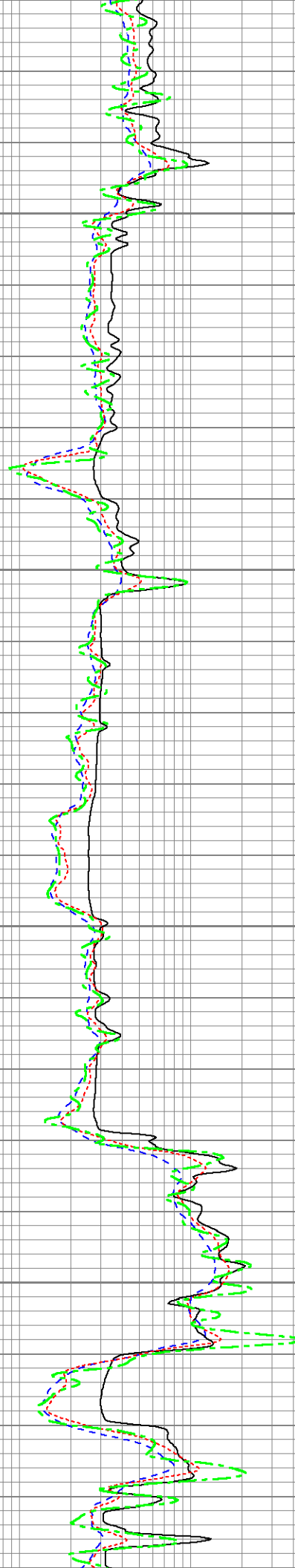
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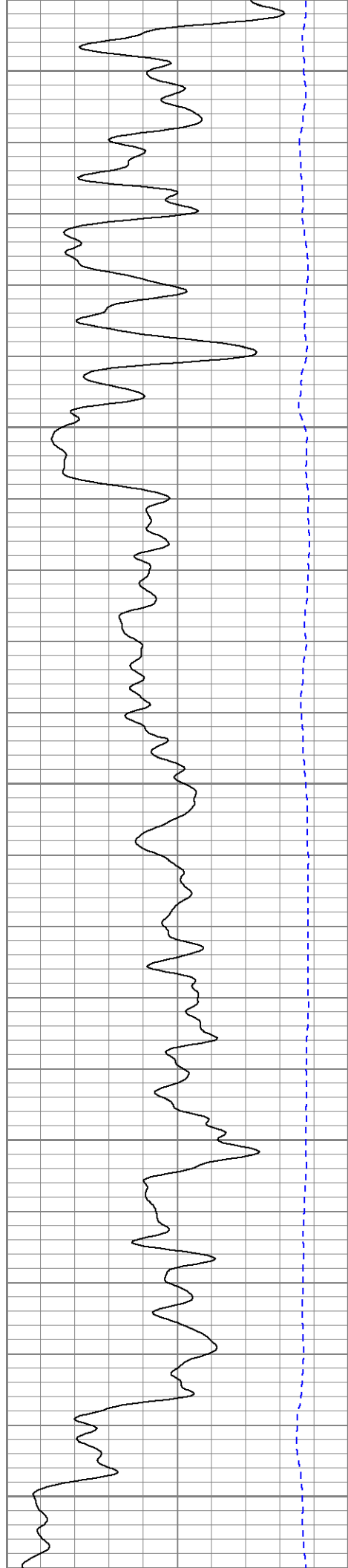




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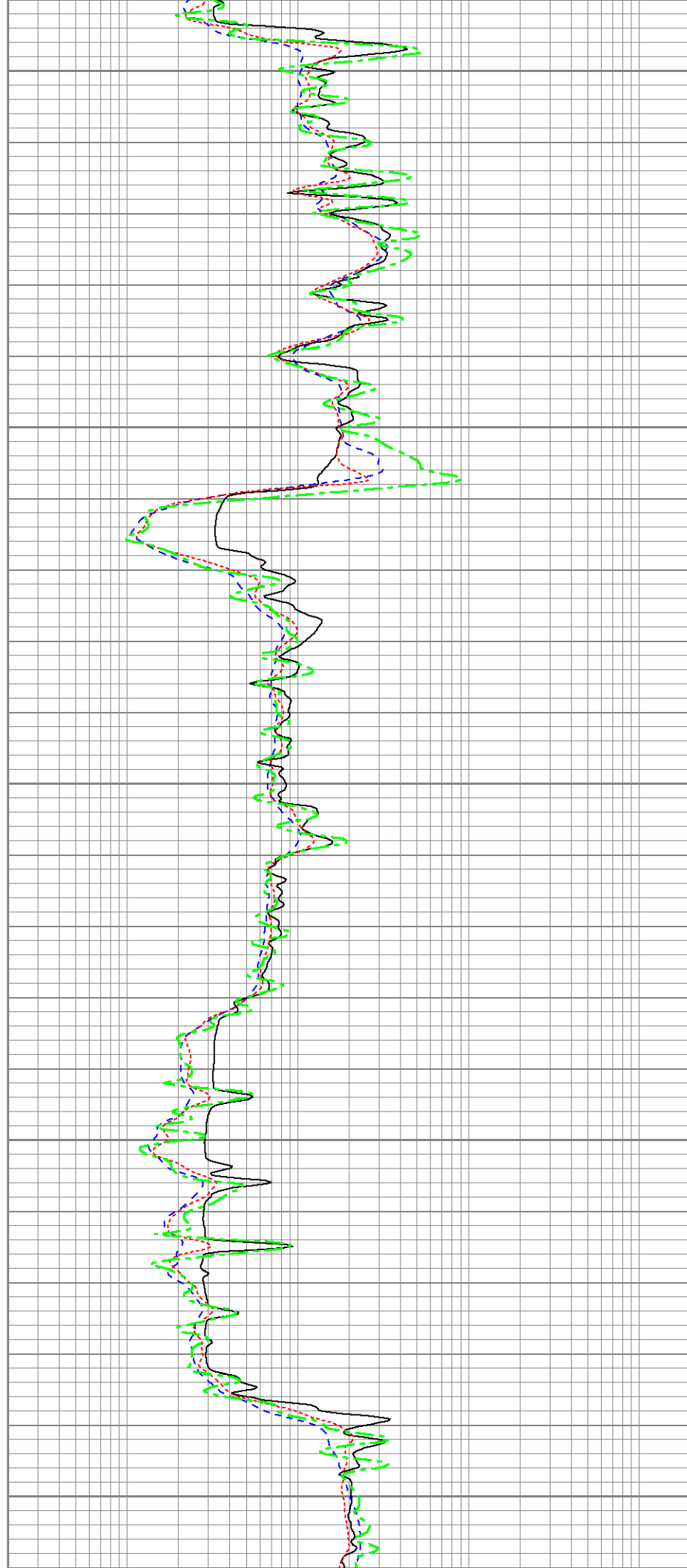
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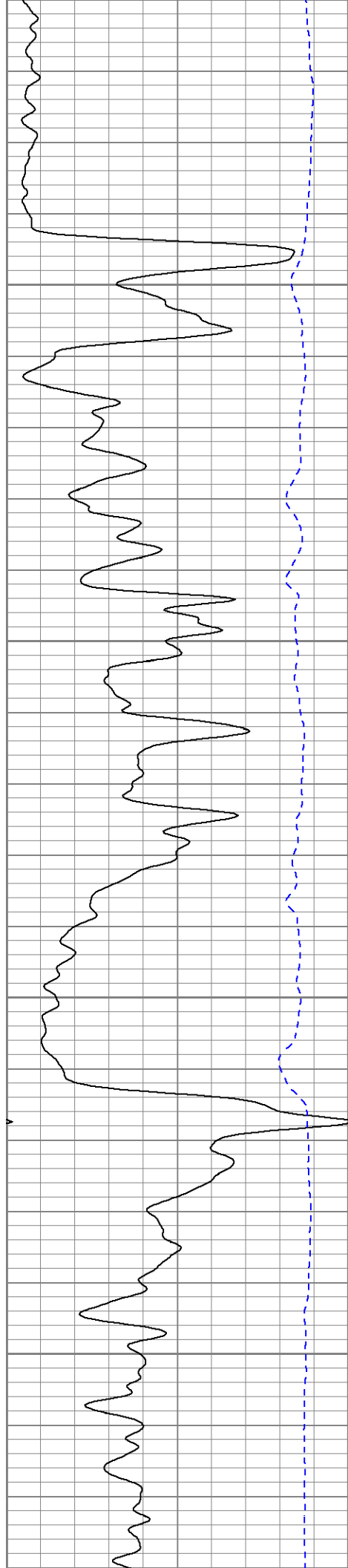




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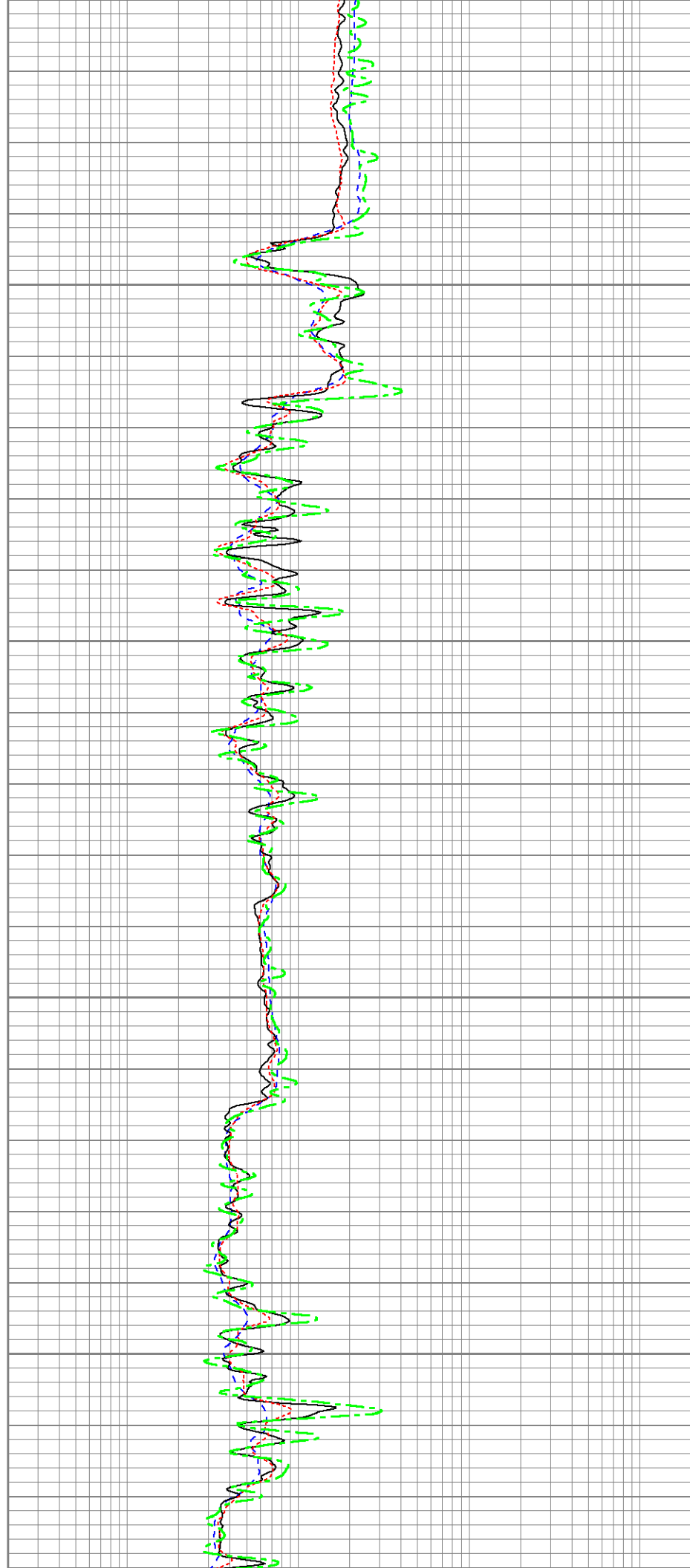
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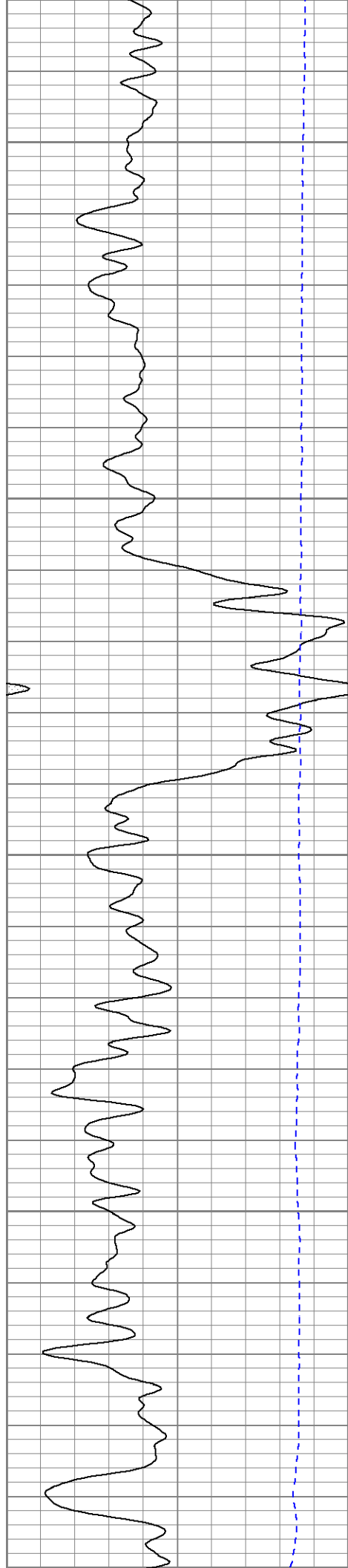




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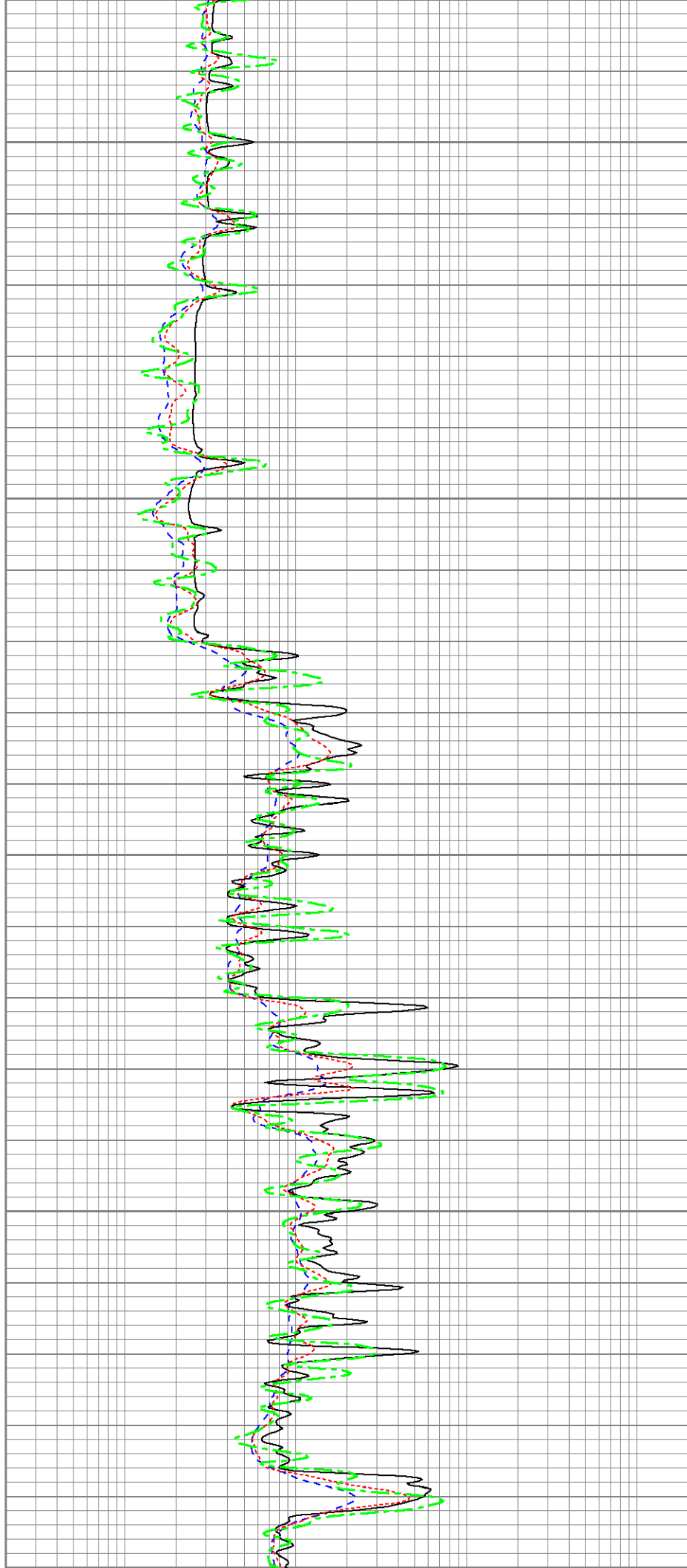




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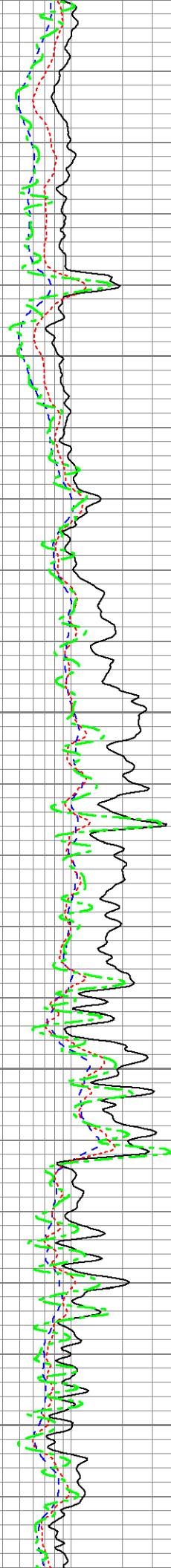
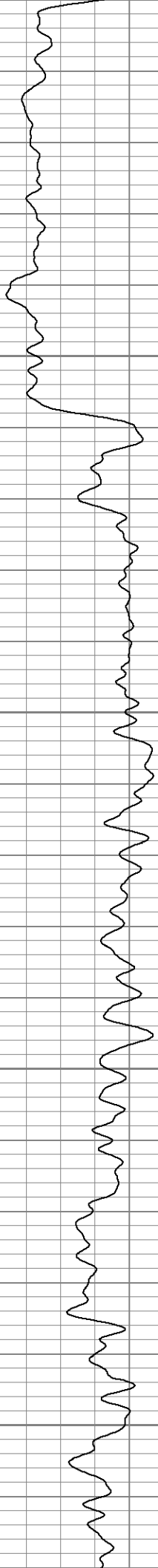
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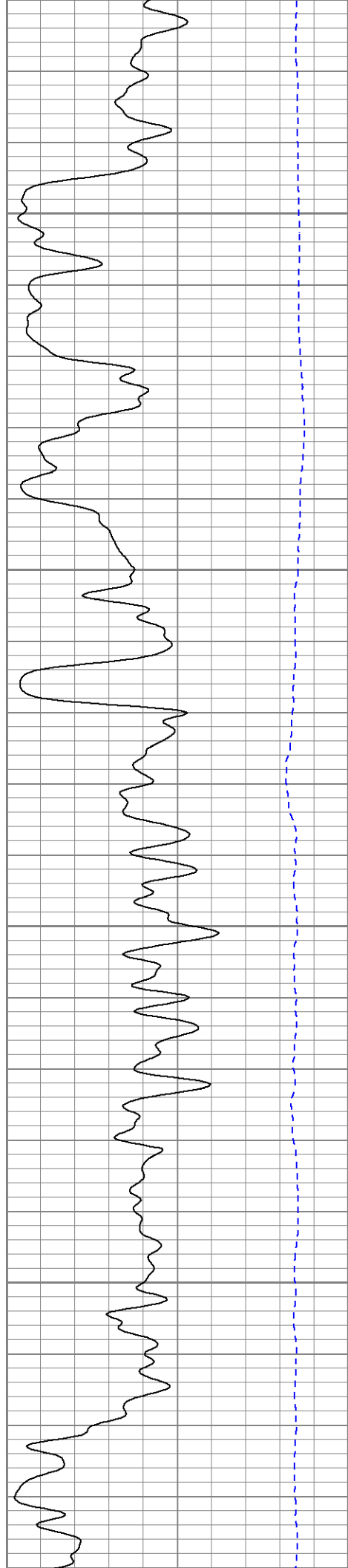


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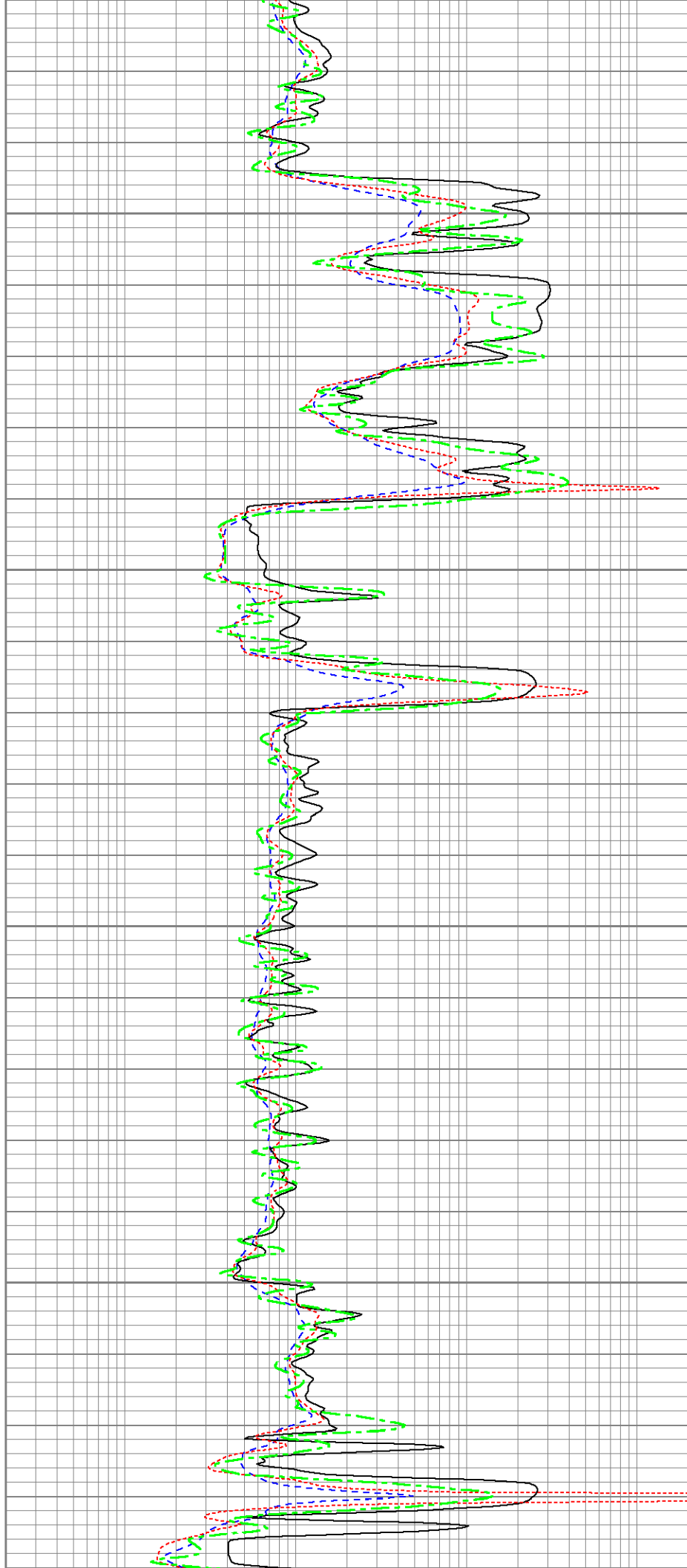
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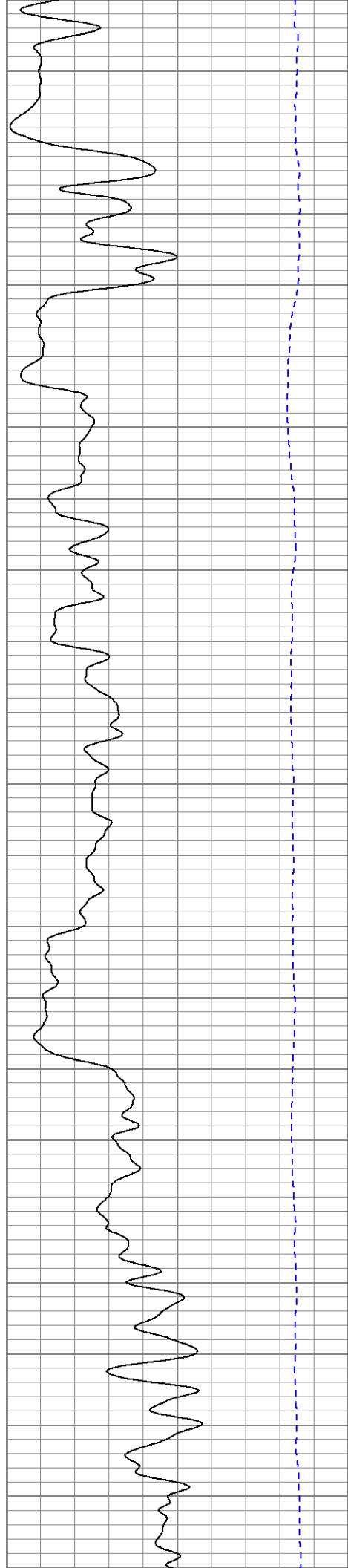


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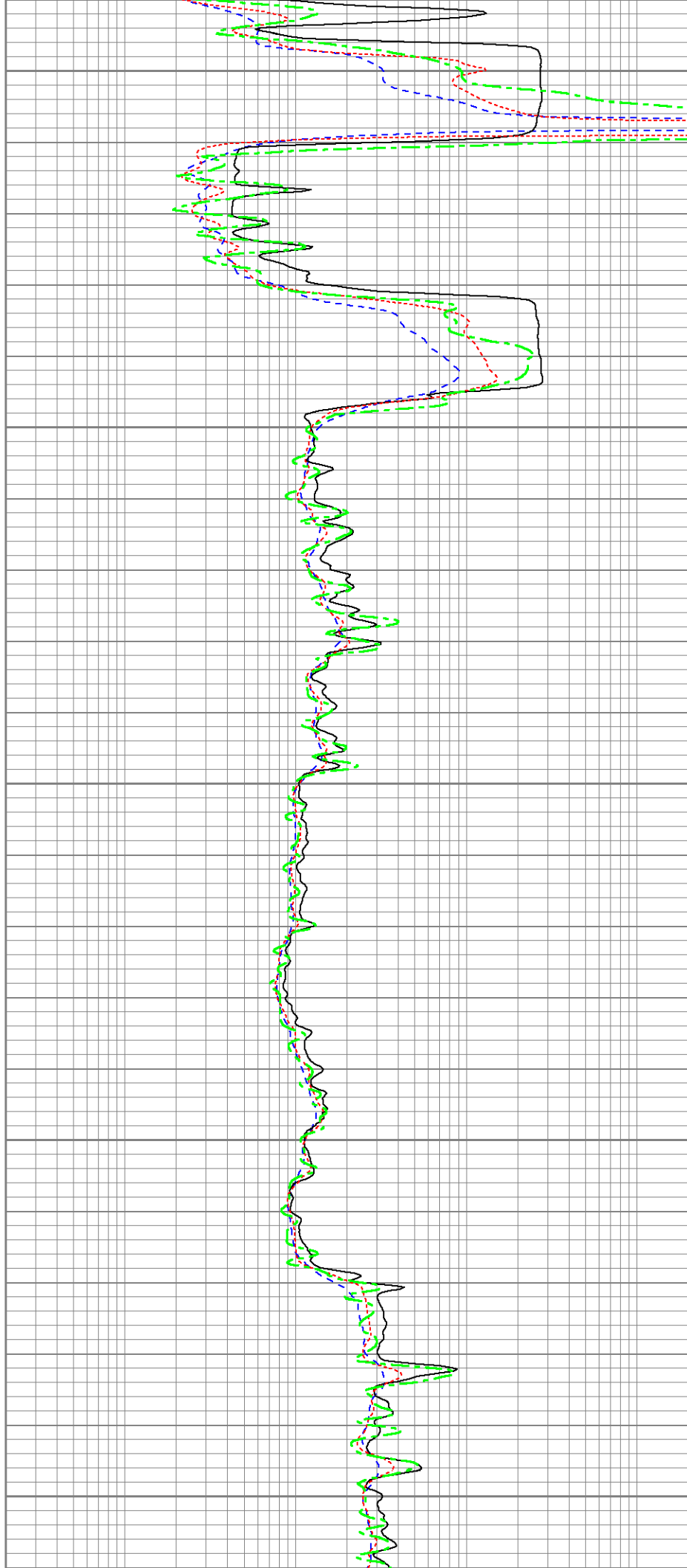


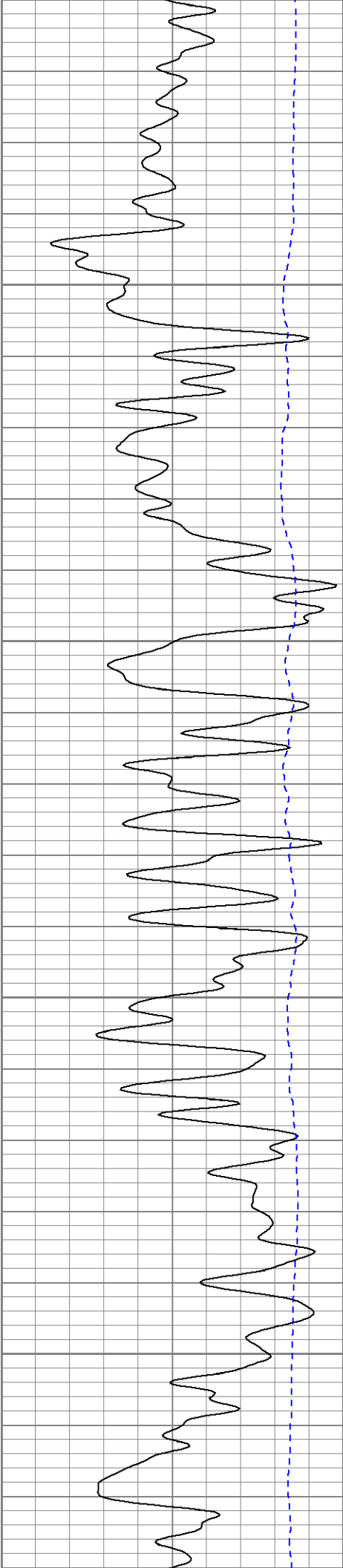




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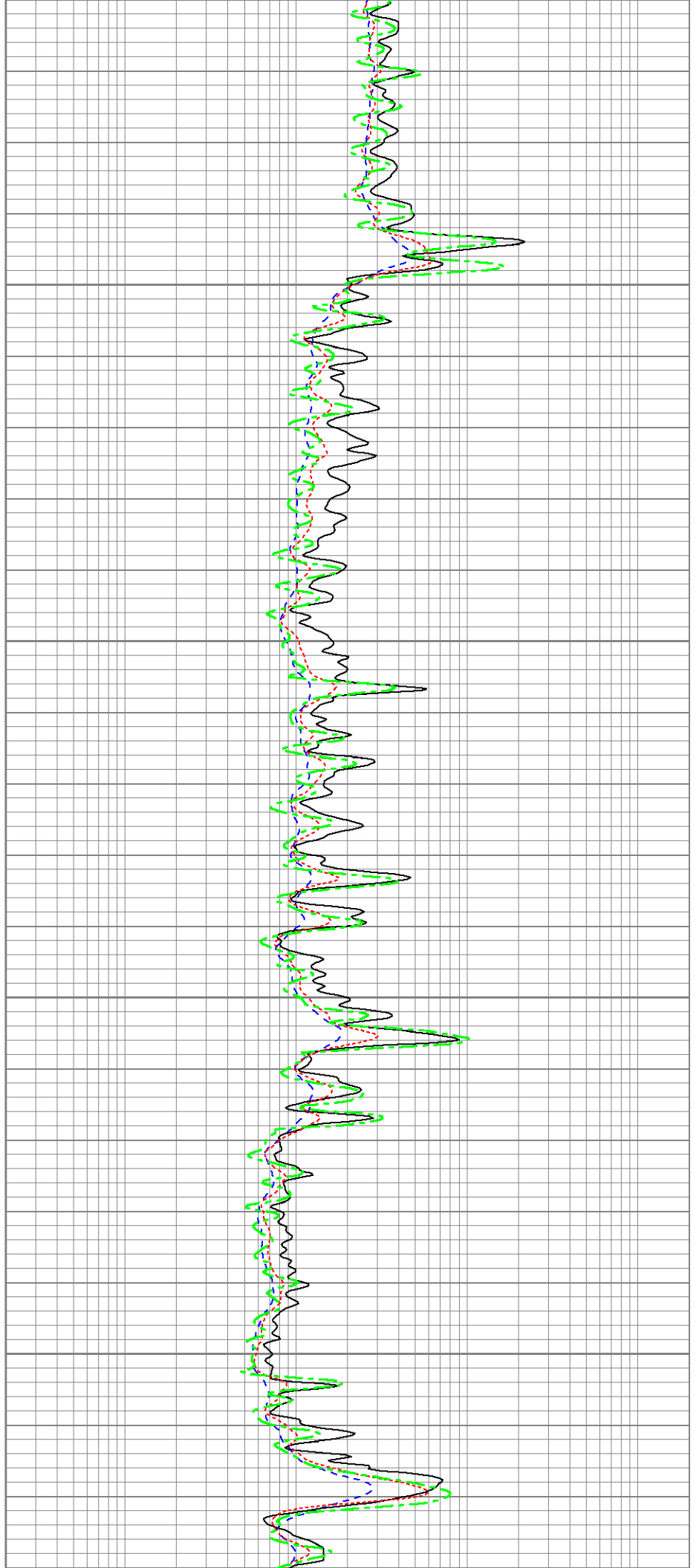
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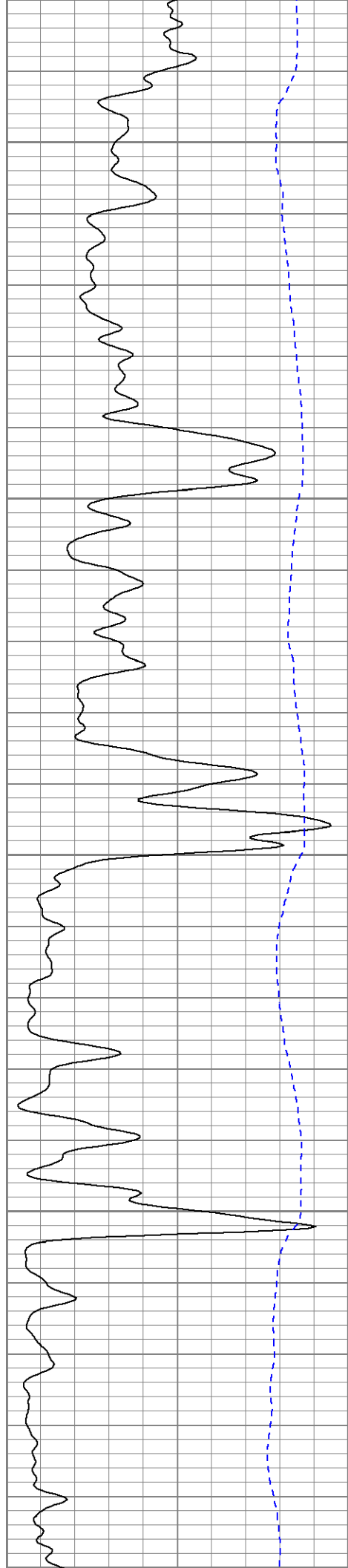




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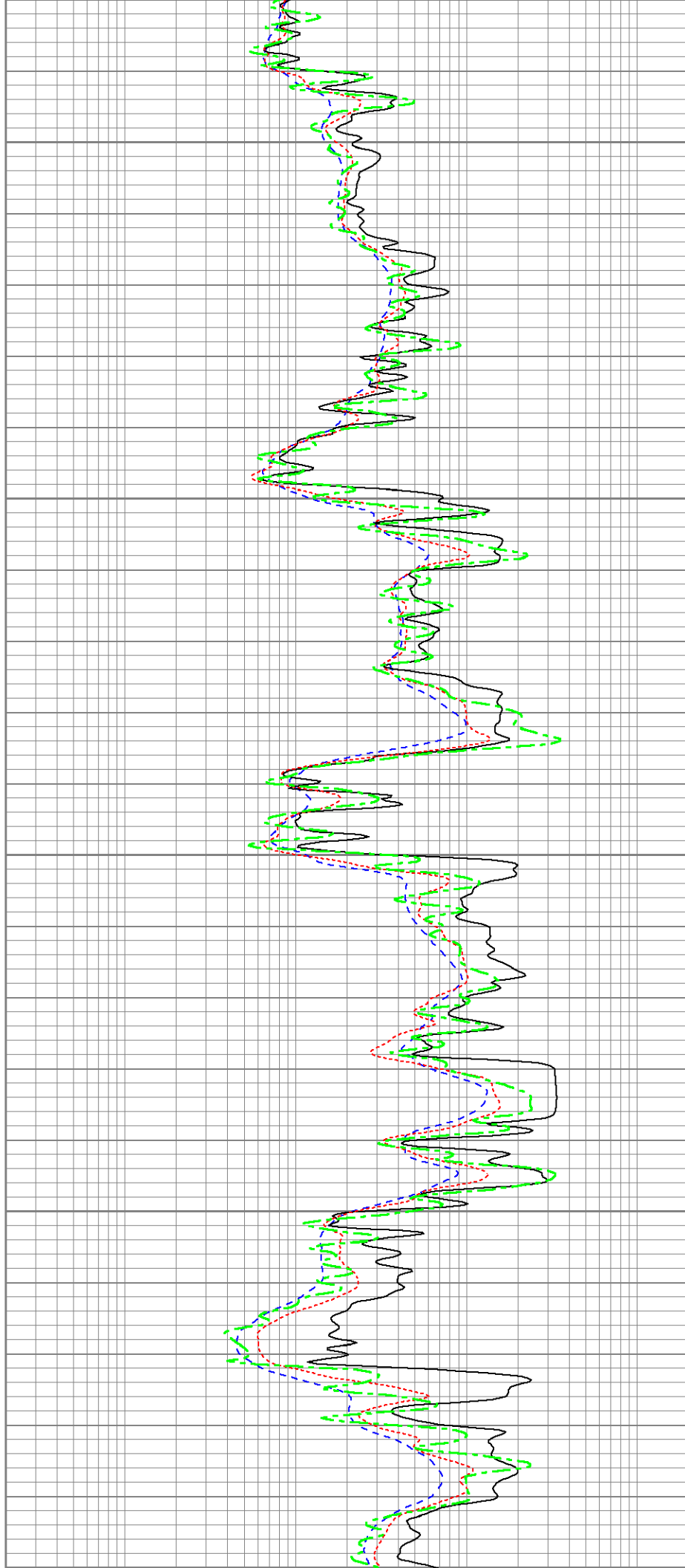




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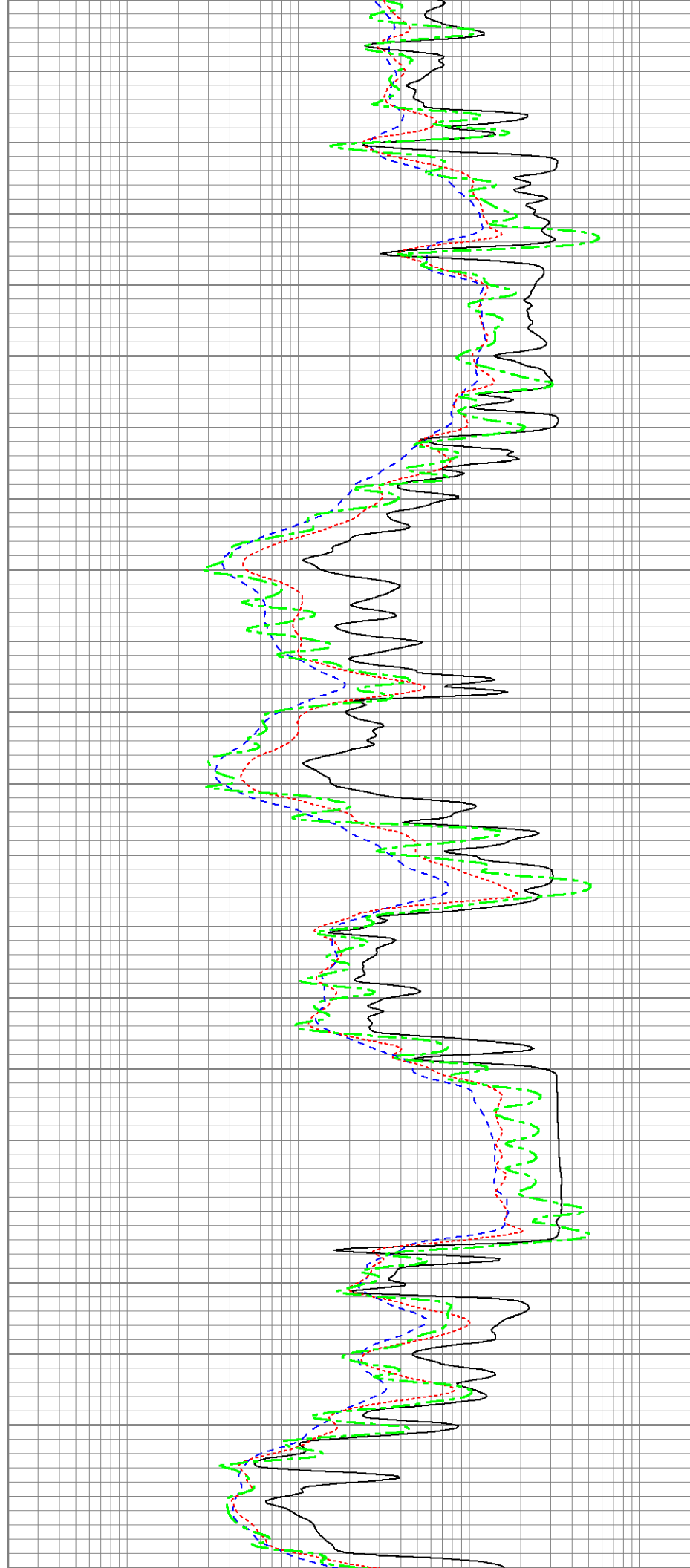
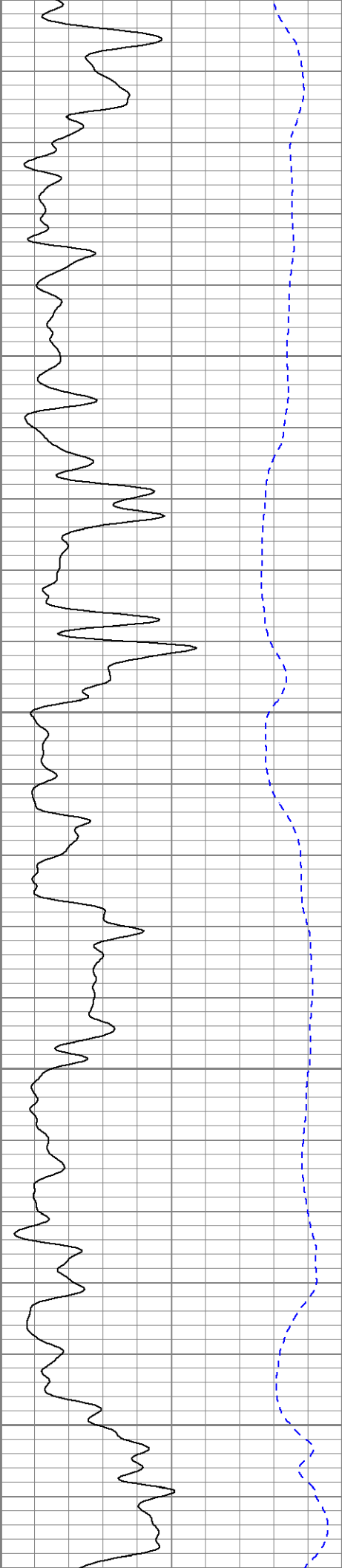
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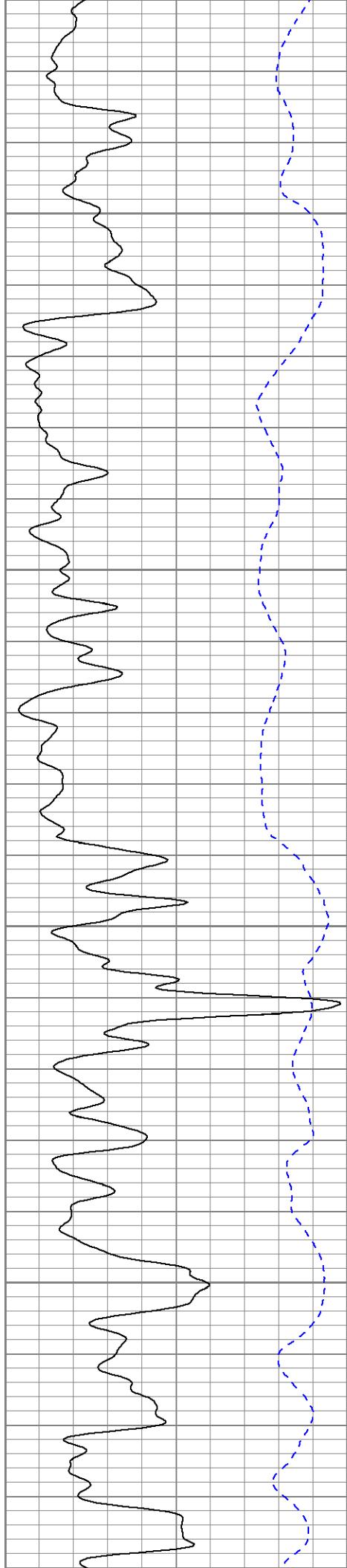


6000

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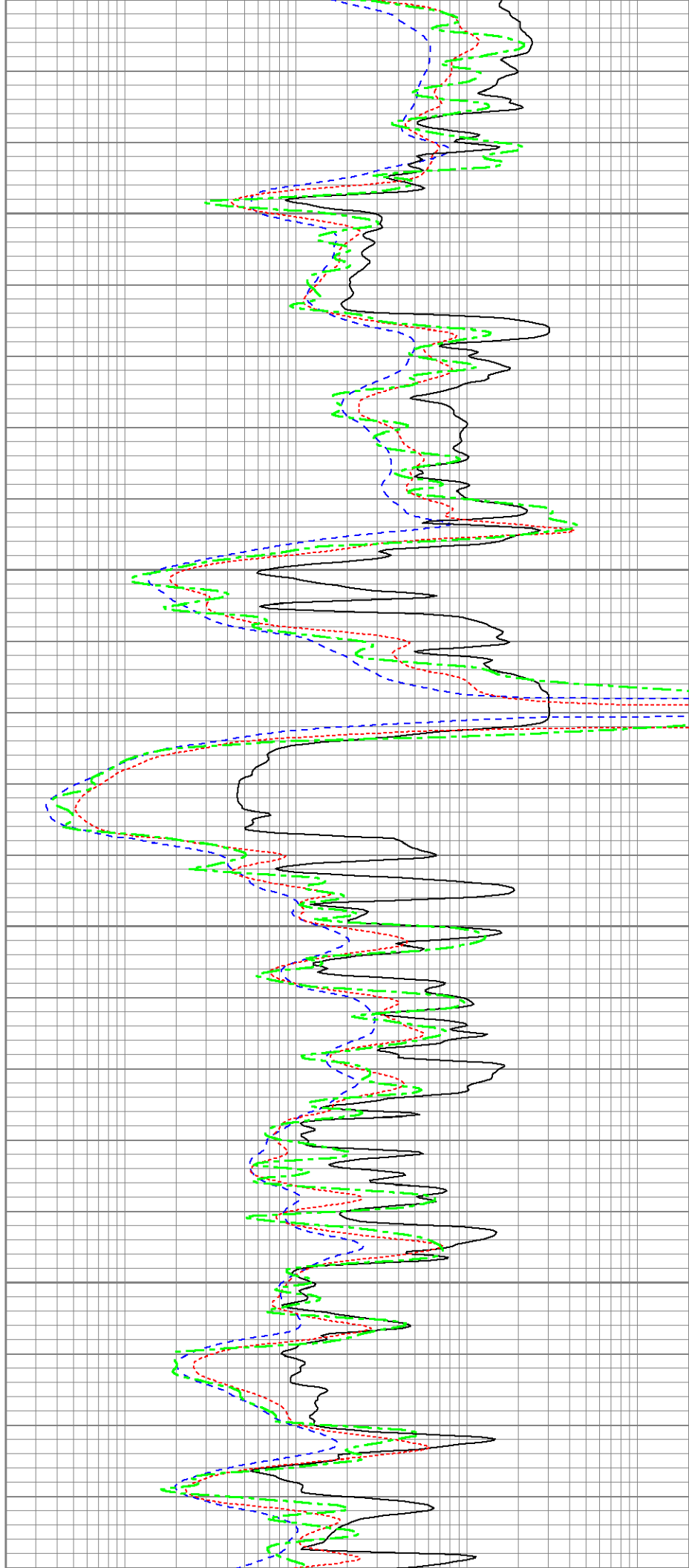
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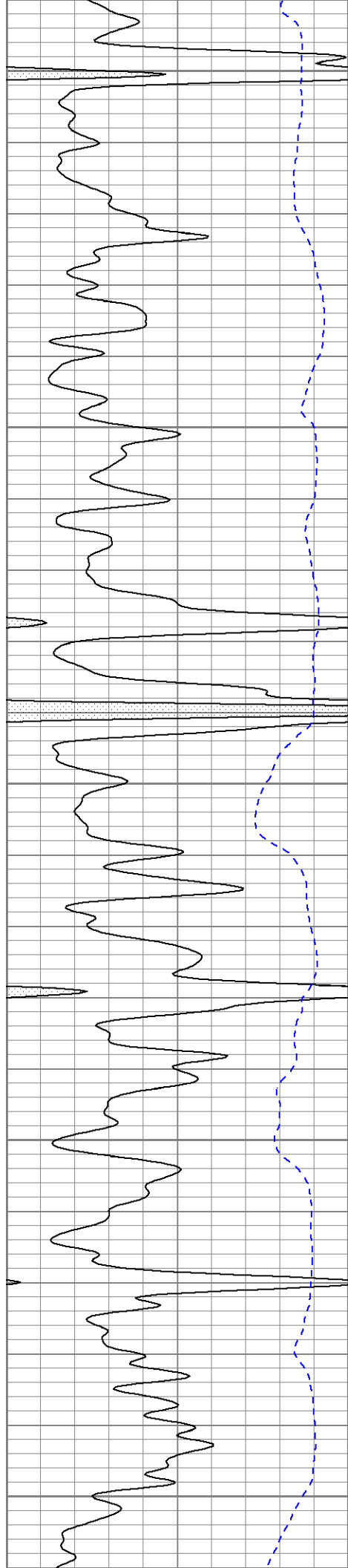




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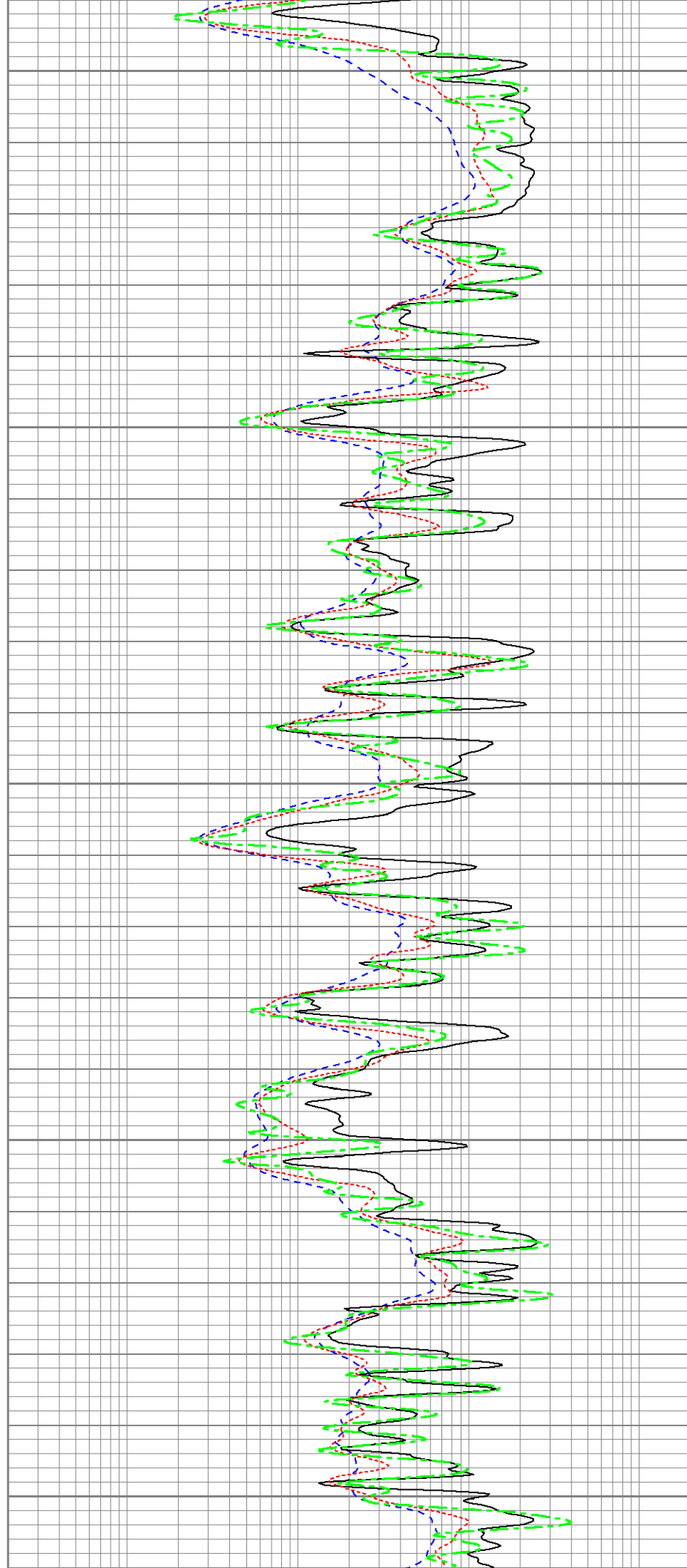
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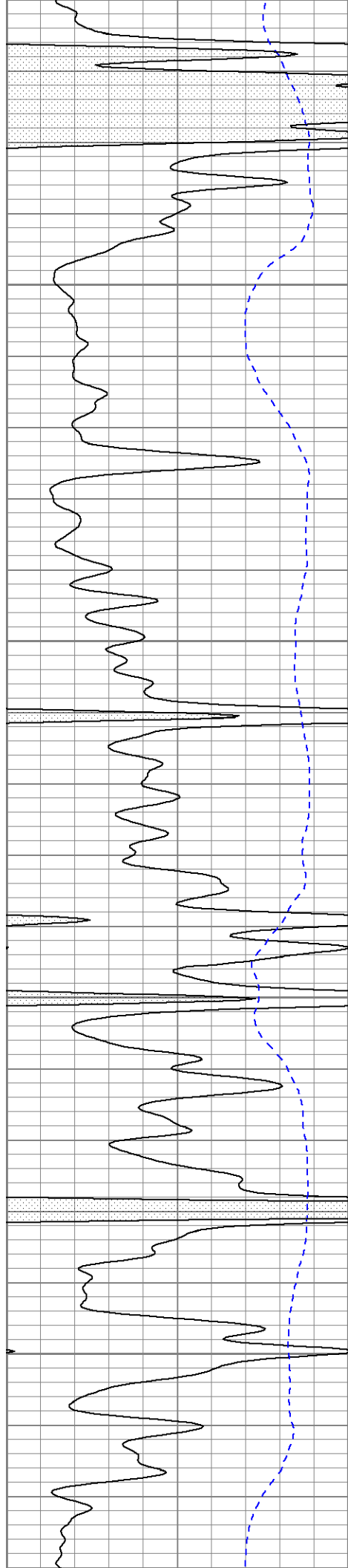




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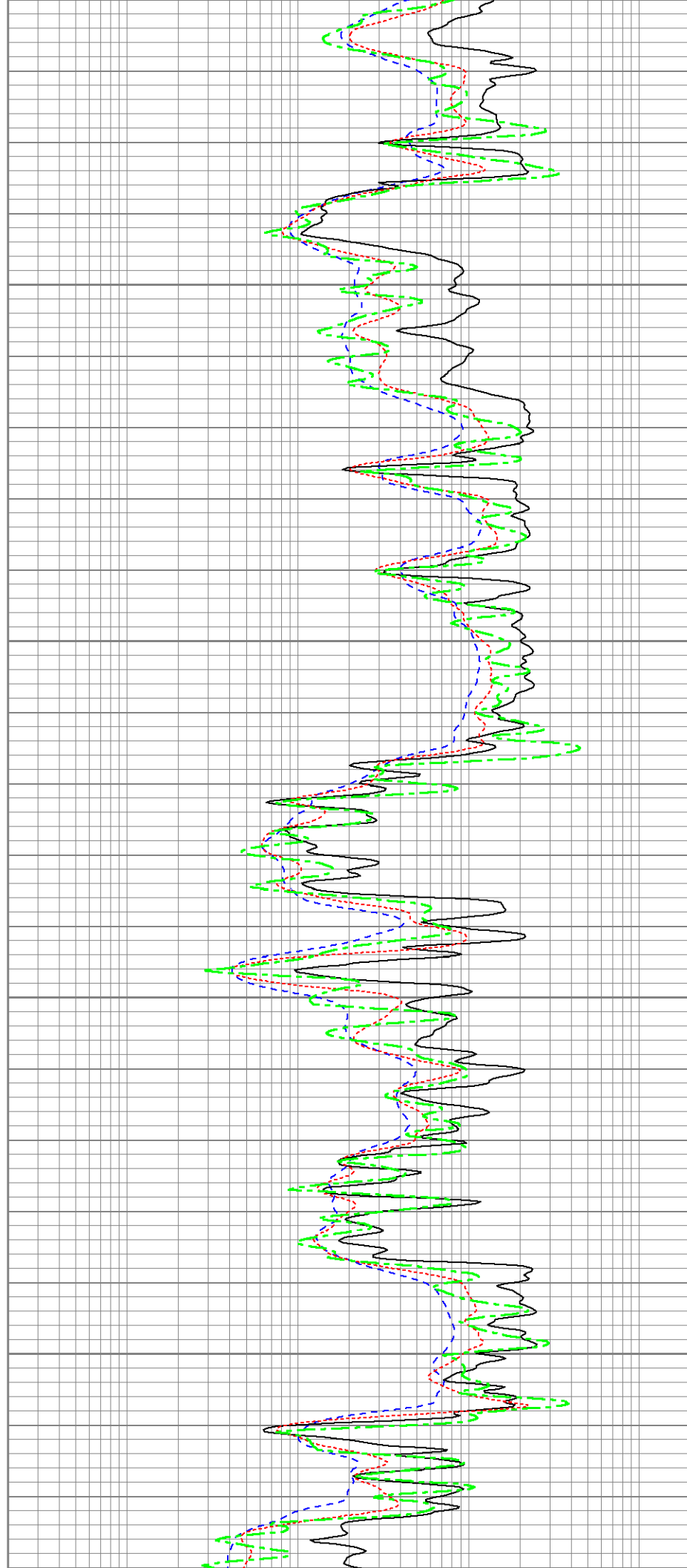
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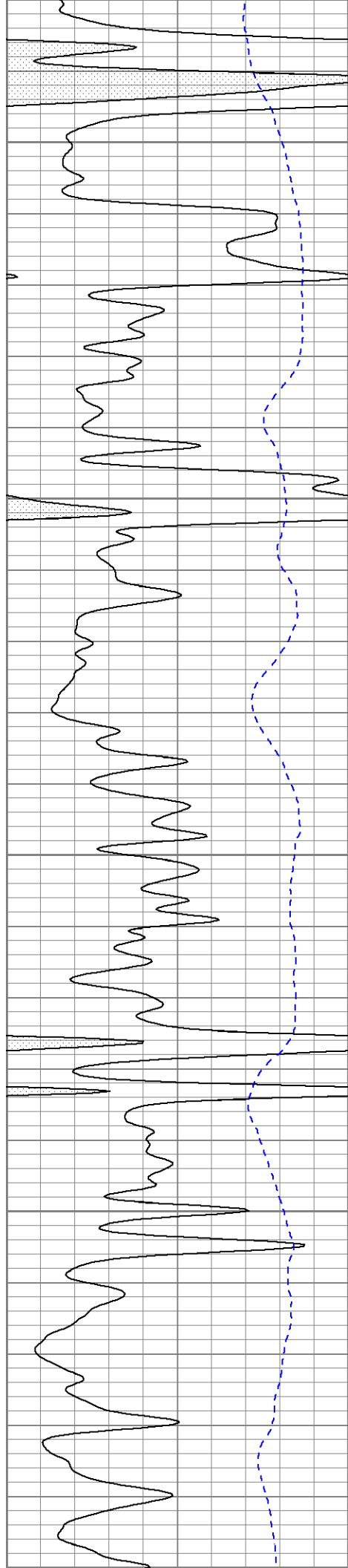




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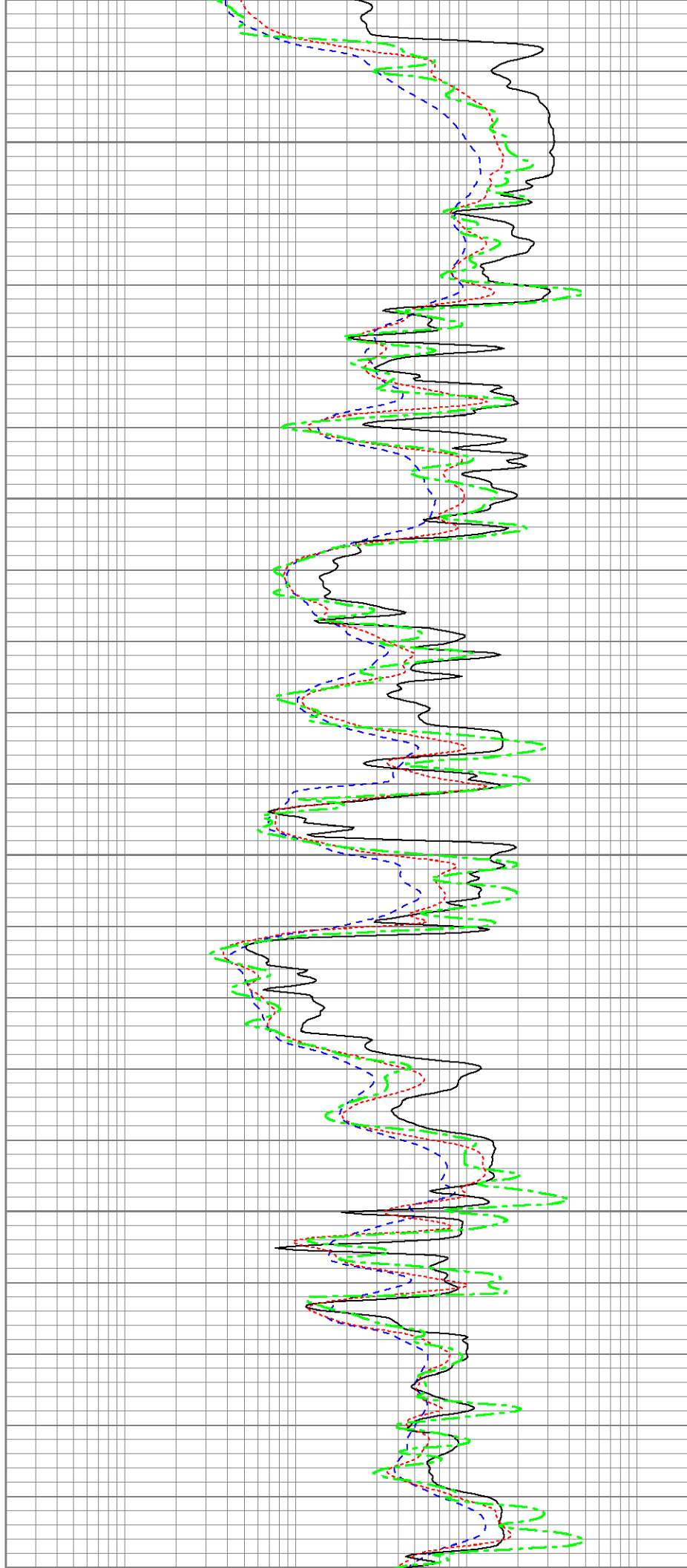




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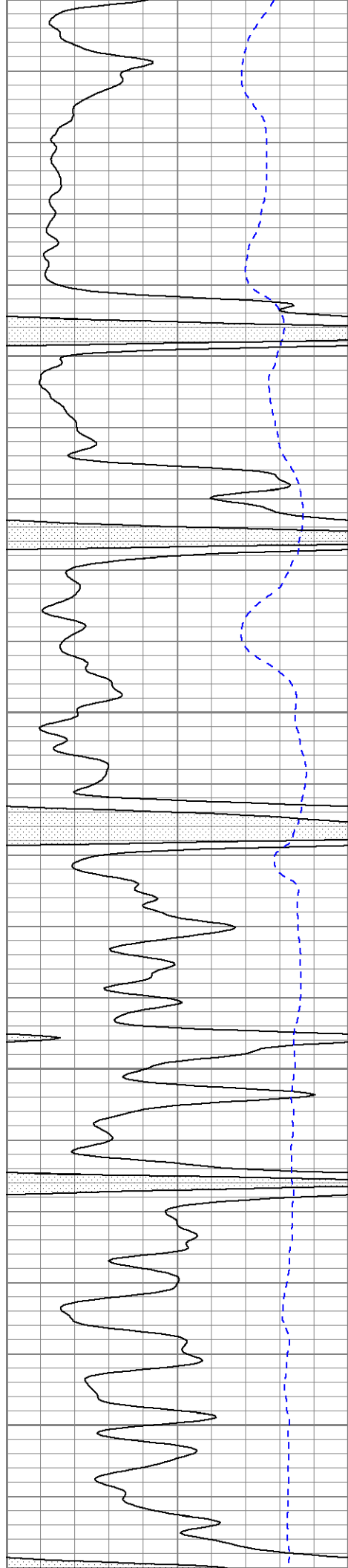
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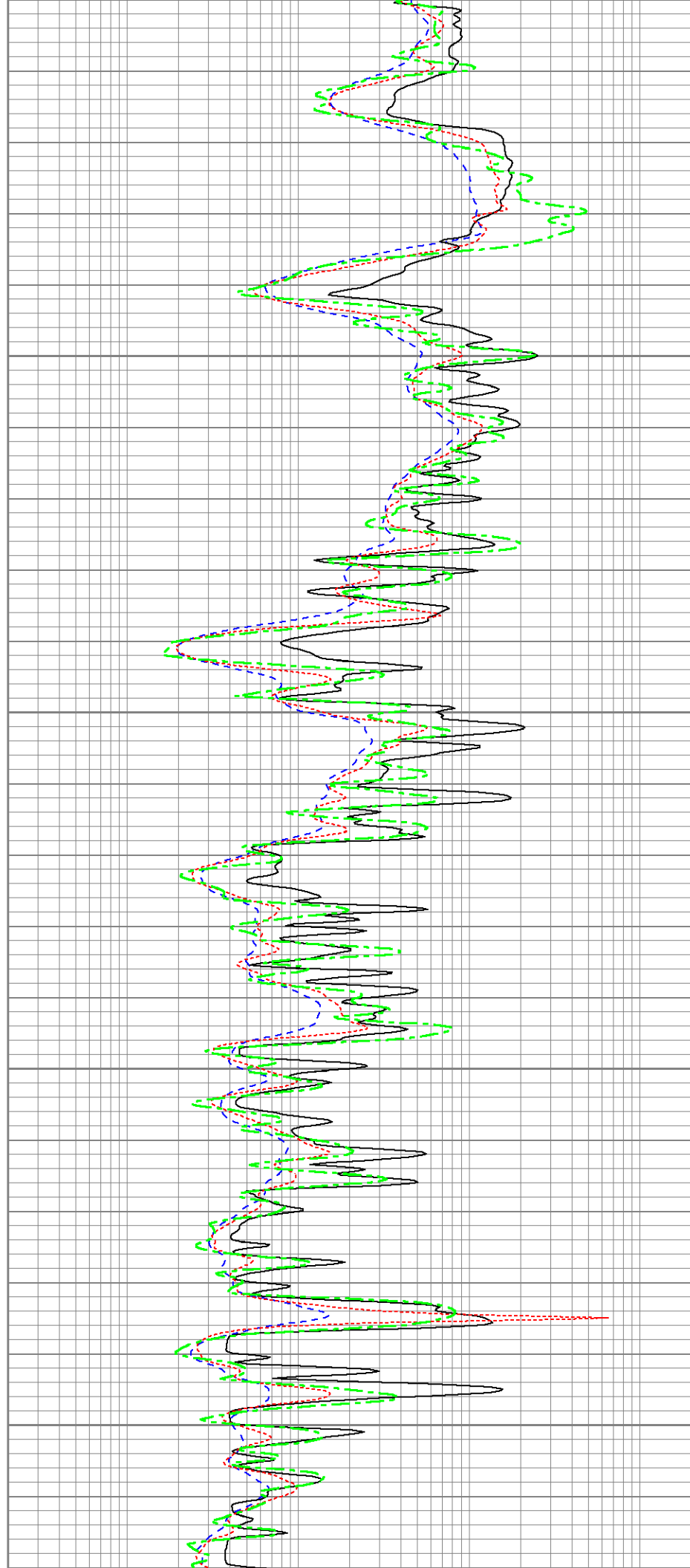


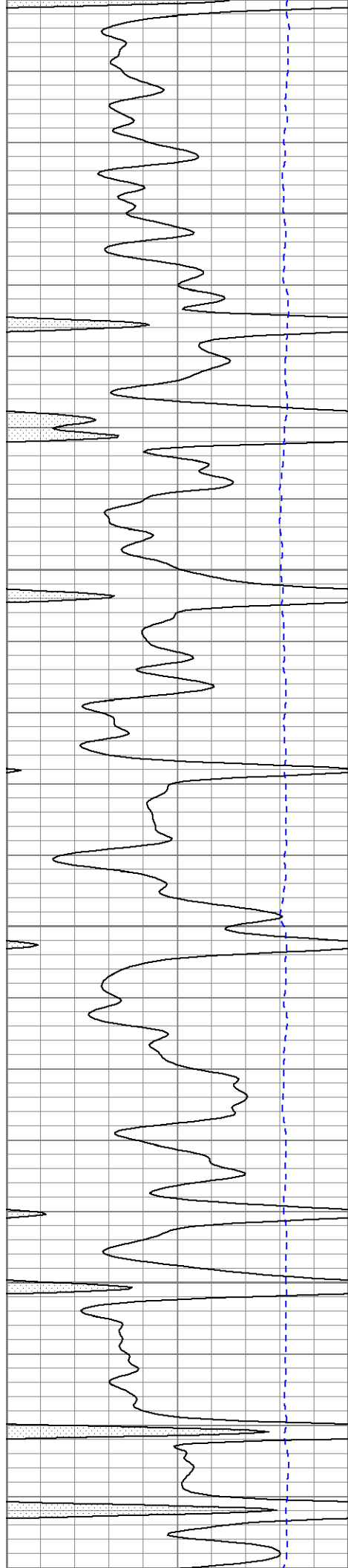
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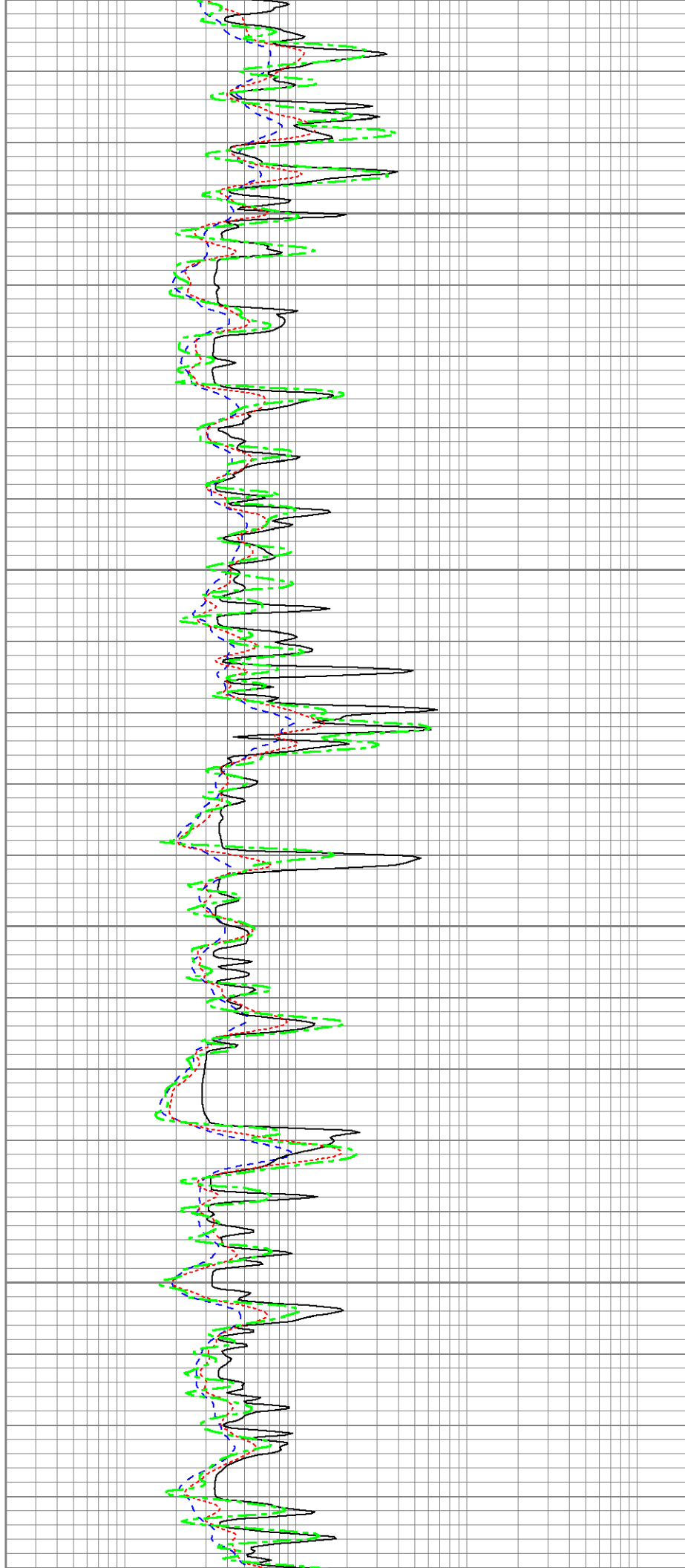
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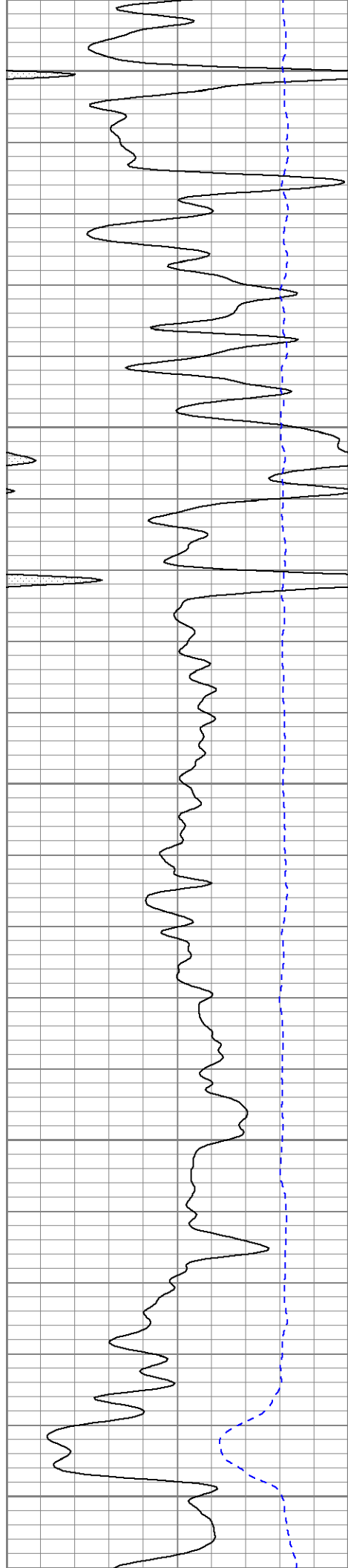




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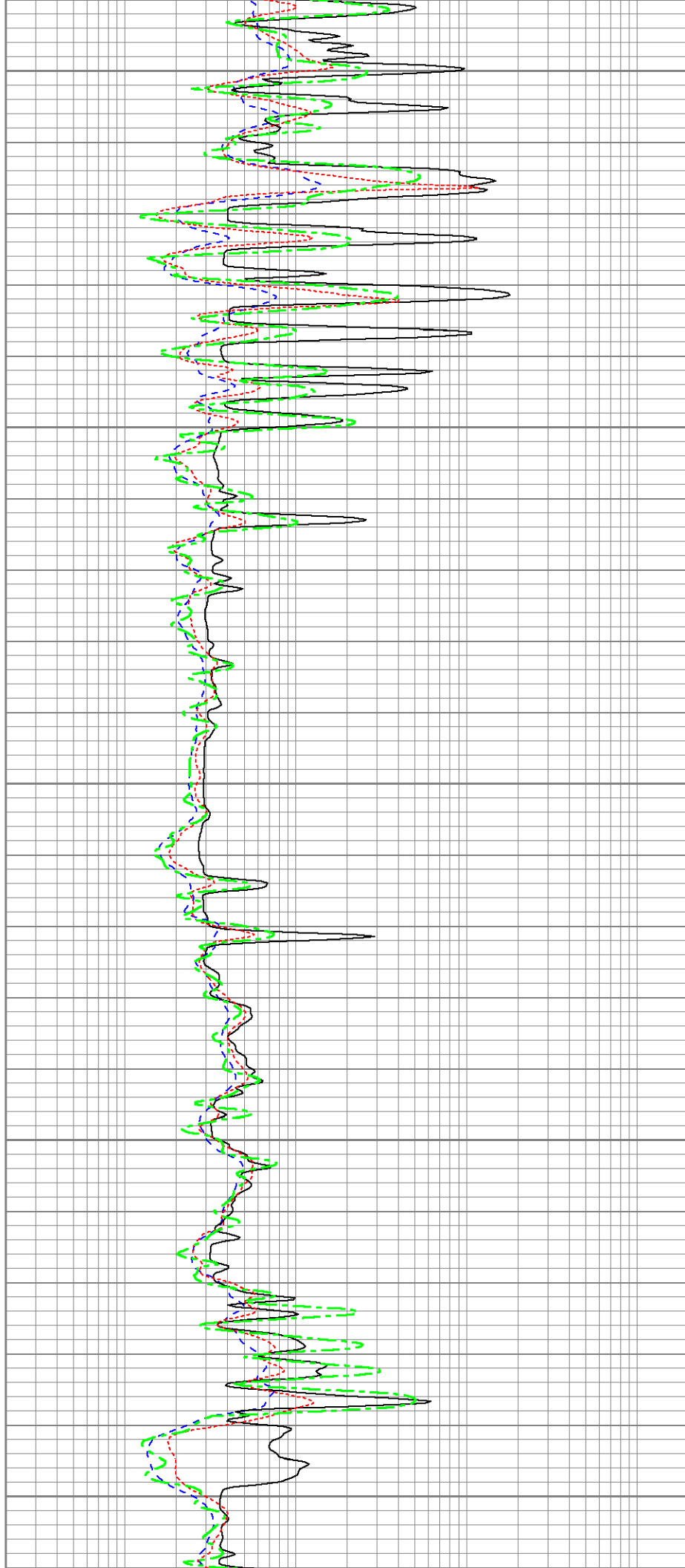
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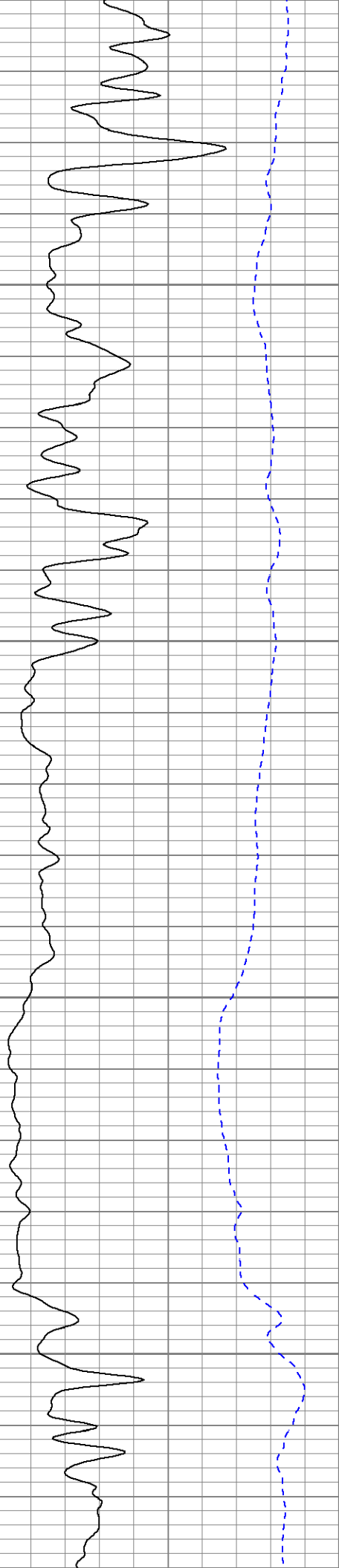




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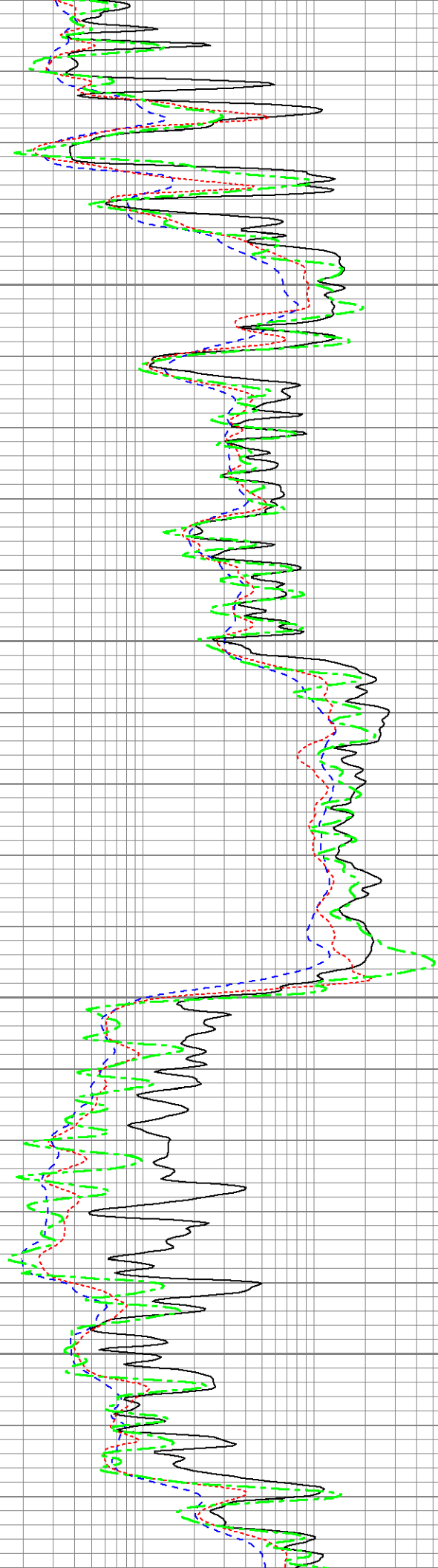
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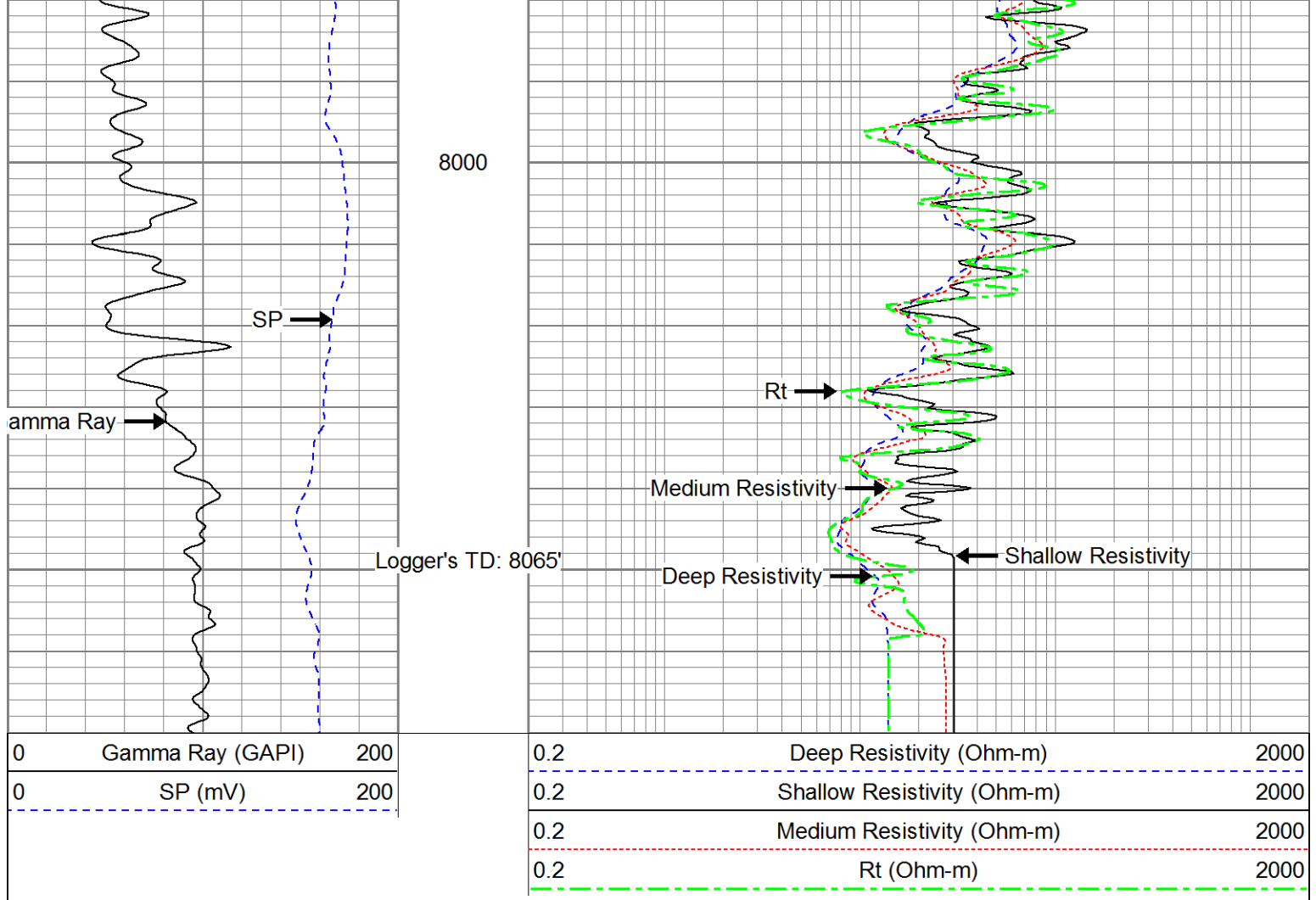




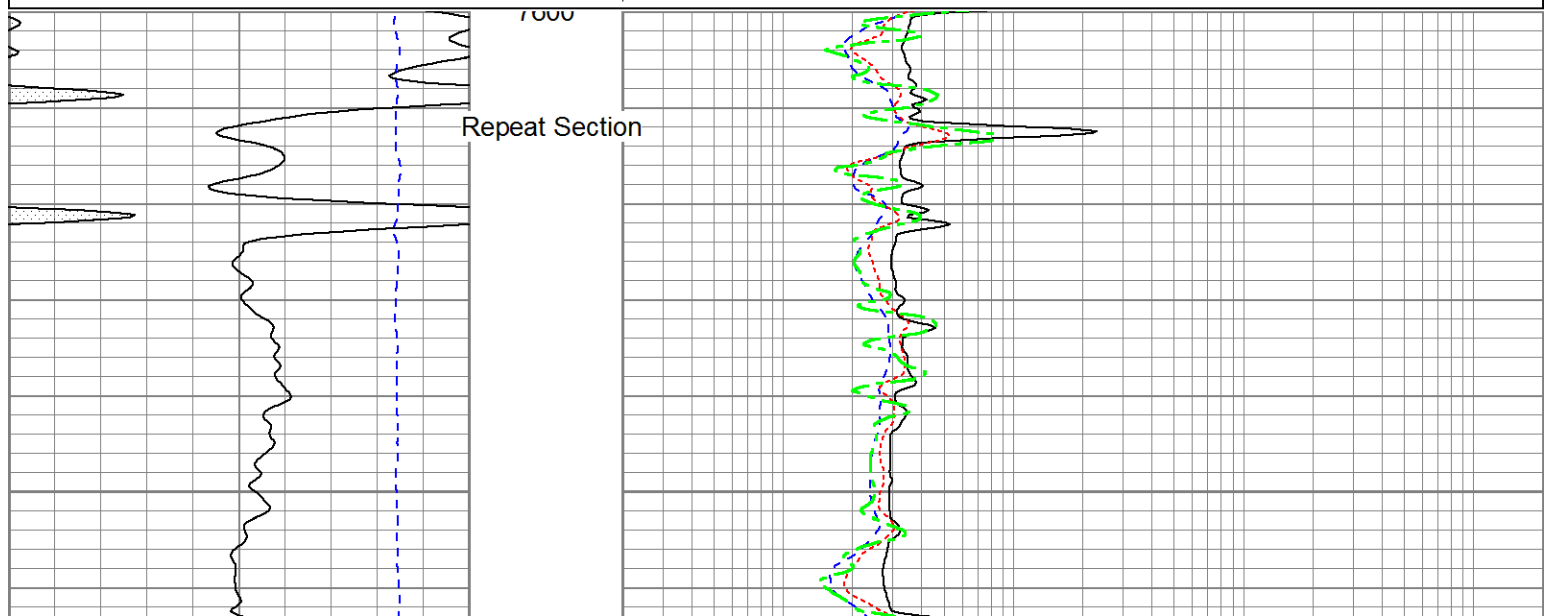
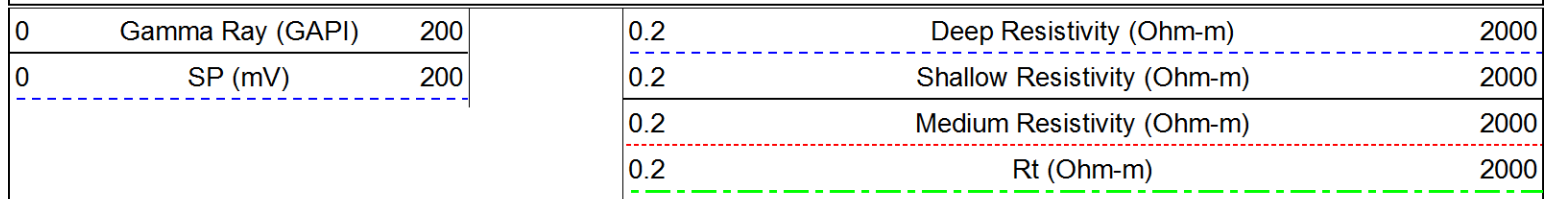
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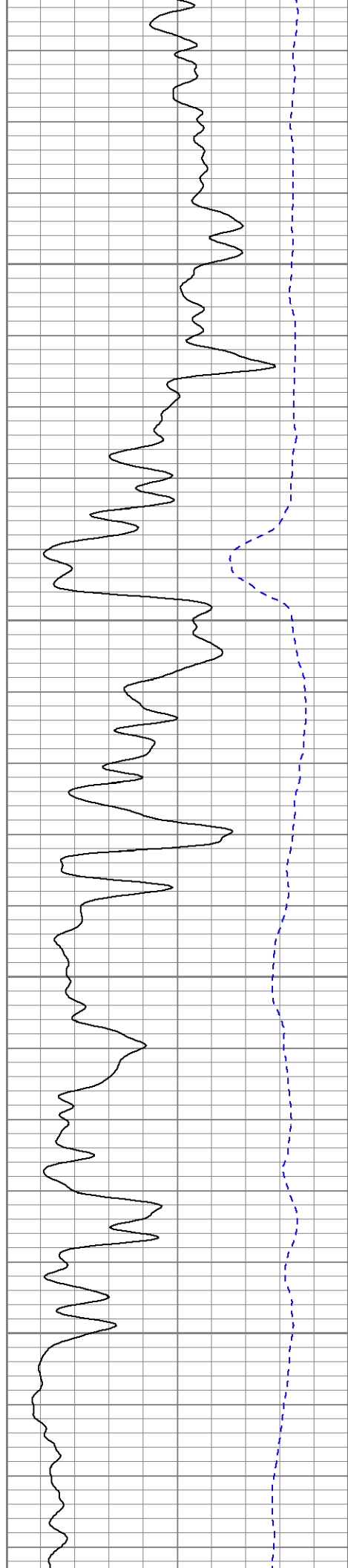
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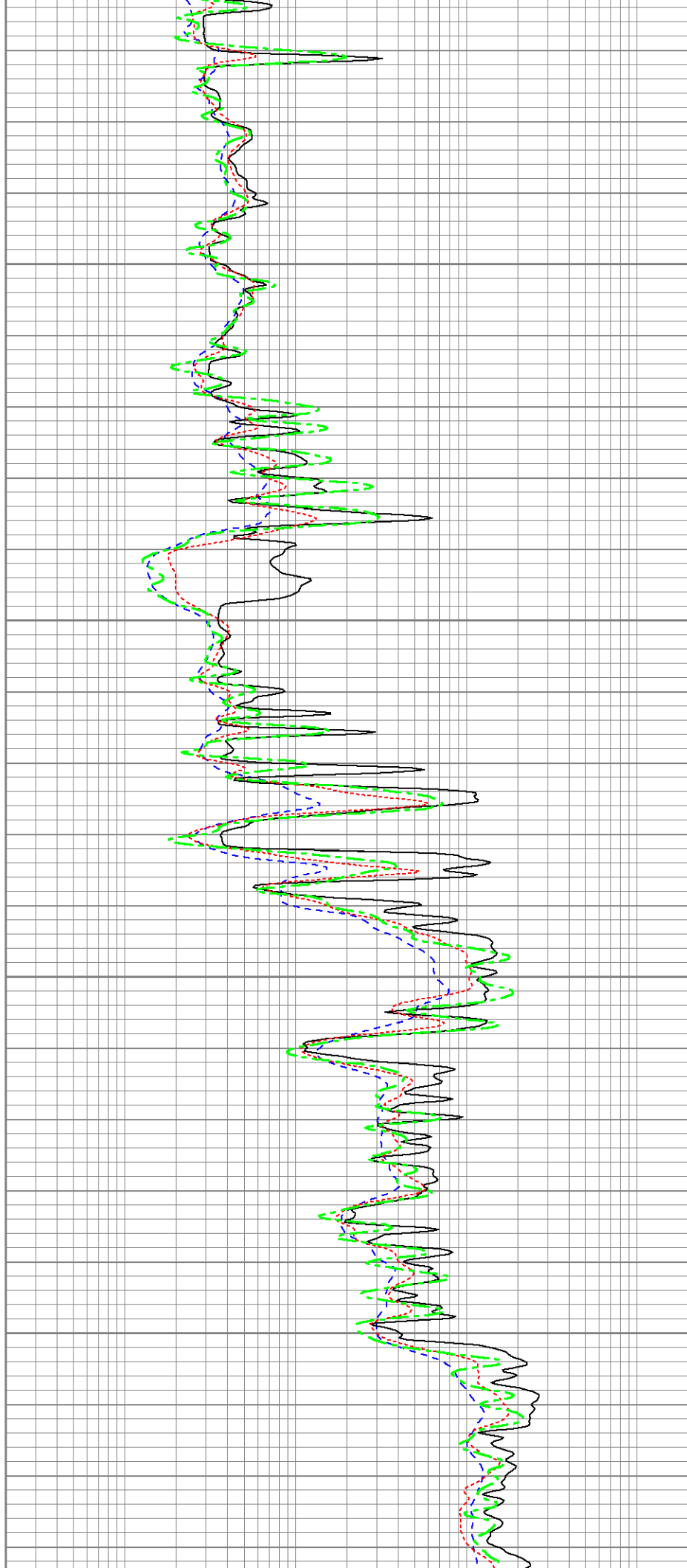
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 Dataset Pathname: repeat  
 Presentation Format: dil  
 Dataset Creation: Sat May 31 13:23:18 2014 by Calc 0  
 Charted by: Depth in Feet scaled 1:240

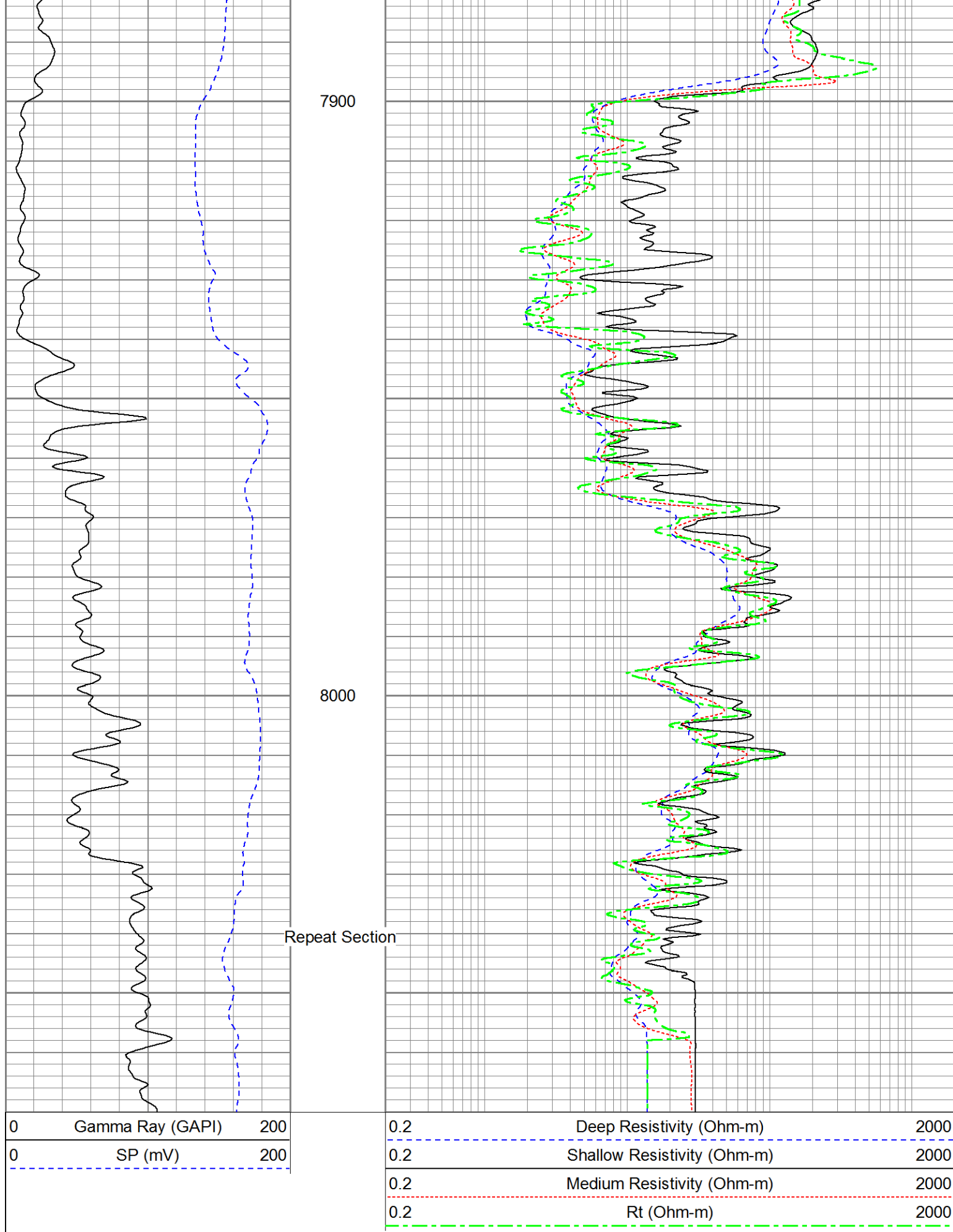




7700

7800





Database File: 15507.db  
Dataset Pathname: pass1  
Dataset Creation: Sat May 31 06:19:10 2014 by Log 0

## Dual Induction Calibration Report

Serial-Model: 860-PSI  
Surface Cal Performed:

		Readings		References		Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	0.000	1.000	0.000	1.000	mmho/m	0.630	-46.000
Medium	0.000	1.000	0.000	1.000	mmho/m	0.410	-31.000

## Compensated Density Calibration Report

Serial-Model: 934-PSI  
Source / Verifier: 4400 / PSI  
Master Calibration Performed: Fri May 30 3:25:35 2014  
Before Survey Verification Performed:  
After Survey Verification Performed:

## Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	4883.27	3645.80	cps
Aluminum	2.690	g/cc	915.83	2377.06	cps
Spine Angle = 75.67			Density/Spine Ratio = 0.544		
	Size		Reading		
Small Ring	4.50	in	1.80		
Large Ring	13.00	in	1.46		

### Before Survey Verification

Target	Measured
<i>g/cc</i>	<i>g/cc</i>
<i>g/cc</i>	<i>g/cc</i>
<i>g/cc</i>	<i>g/cc</i>

### After Survey Verification

Target	Measured
g/cc	g/cc
g/cc	g/cc
g/cc	g/cc

## Compensated Neutron Calibration Report

Serial Number: 856  
Tool Model: PSI

## CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.9000
Long Space	1.00	cps	1.00	cps	2.1700

## PRE-SURVEY VERIFICATION



	Detector	Readings	Measured	Target
1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	
3)	Short Space Long Space	cps 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:	923		
	Tool Model:	PSI		
	Performed:	Fri May 30 2:55:35 2014		
	Calibrator Value:	1.0	GAPI	
	Background Reading:	0.0	cps	
	Calibrator Reading:	1.0	cps	
	Sensitivity:	0.6000	GAPI/cps	