



MIDWEST WIRELINE

DUAL INDUCTION LOG

Company **Murfin Drilling Company, Inc.**

Well **Keller B #1-36**

Field

County **Cheyenne** State **Kansas**

Location: API #: 15-023-21564-00-00

1320 FSL 500 FEL

SEC 36 TWP 2S RGE 39W

CNL/CDL
MEL/BHCS

Other Services

Date 1/24/2022

Run Number One

Depth Driller 5200

Depth Logger 5204

Bottom Logged Interval 5203

Top Log Interval 0

Casing Driller 8.625 @ 322

Casing Logger 322

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity, ppm CL 900

Density / Viscosity 9.2 56

pH / Fluid Loss 11.0 6.8

Source of Sample FLOWLINE

Rm @ Meas. Temp 1.10 @ 50

Rmt @ Meas. Temp 0.83 @ 50

Rmc @ Meas. Temp 1.49 @ 50

Source of Rmf / Rmc CHARTS

Rm @ BHT 0.43 @ 128

Operating Rig Time 6 Hours

Max Rec. Temp. F 128

Equipment Number P-24

Location Hays

Recorded By D. Schmidt

Witnessed By Wes Hansen

<<< Fold Here >>>

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

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Bird City,
5 West to 23 Rd, 5 1/4 North,
West into

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew

Engineer: D. Schmidt
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: Wes Hansen
Secondary Witness:
Secondary Witness:
Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (101)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (207-MW)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (305-05)	8.50	4.00	250.00
ML-PSIML (402)			ML-PSIML (402)	7.58	4.00	65.00
MCAL MI MN	19.58 19.58 19.58					
RLL3F RLL3	15.50 15.50					
DIL-M&W (501 HT)			DIL-M&W (501 HT)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: murfin_keller b 1-36.db: field/well/stkml/pass3.1
 Total length: 42.33 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_keller b 1-36.db
 Dataset field/well/stkml/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	129	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	480	40	Off	5204

Variable Description

A : Cement Factor (a)
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.
 CASETHCK : Casing Thickness
 FLUIDDEN : Fluid Density
 M : Cement Exp (m)
 MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
 PERFS : Perforation Flag
 SNDERR : Deep Sonde Error Correction
 SNDERRM : Medium Sonde Error Correction
 SPSHIFT : S.P. Baseline Offset
 SRFTEMP : Surface Temperature
 SZCOR : CN Size Cor. ?
 TDEPTH : Total Depth

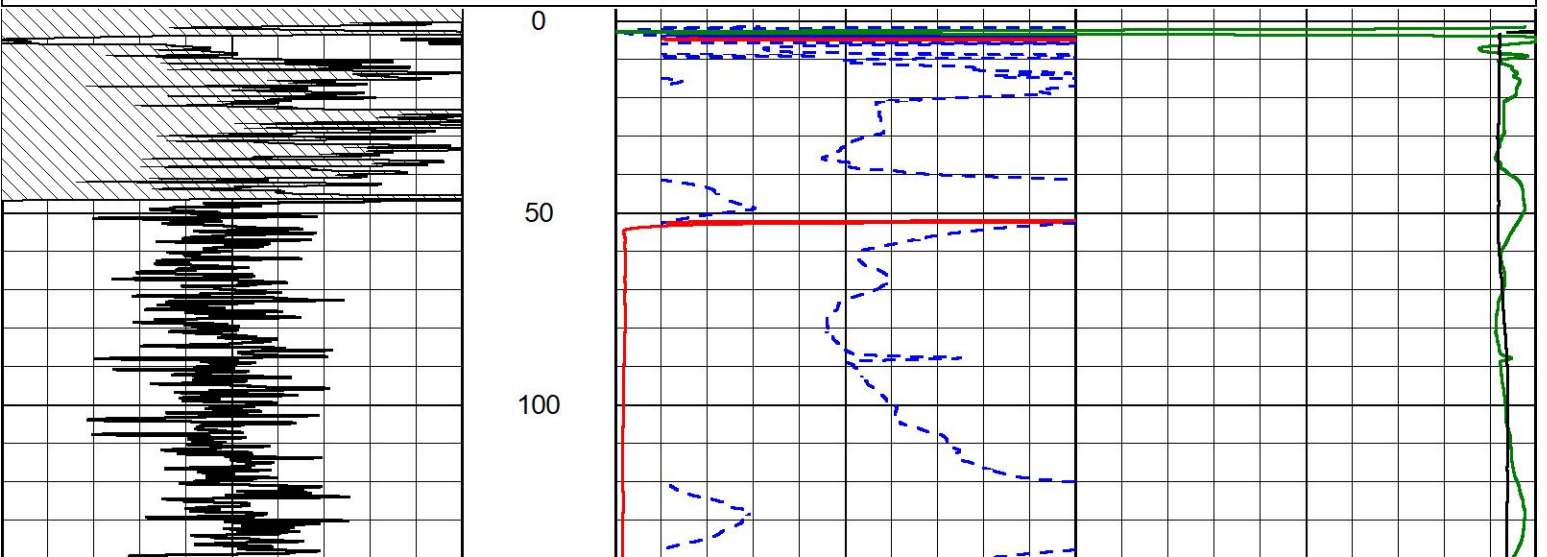


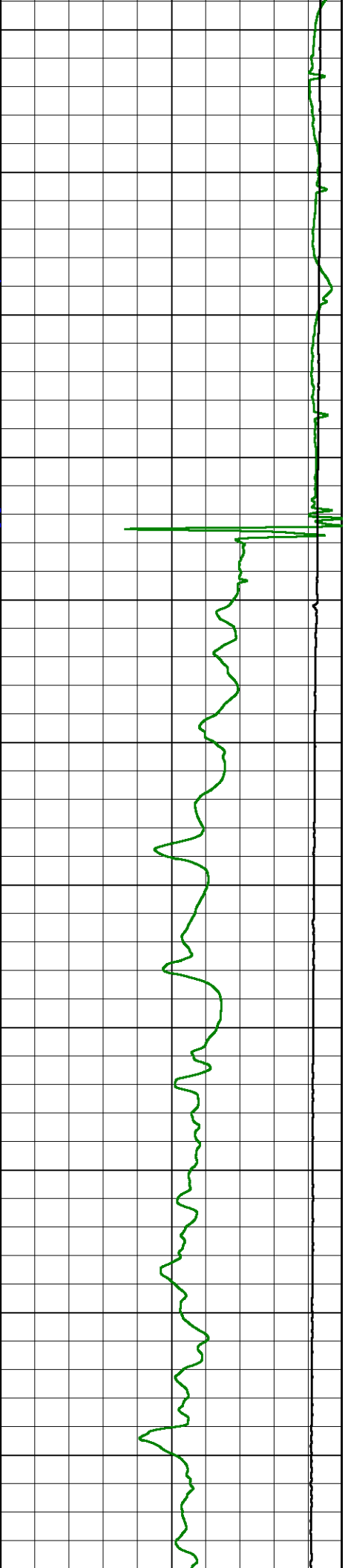
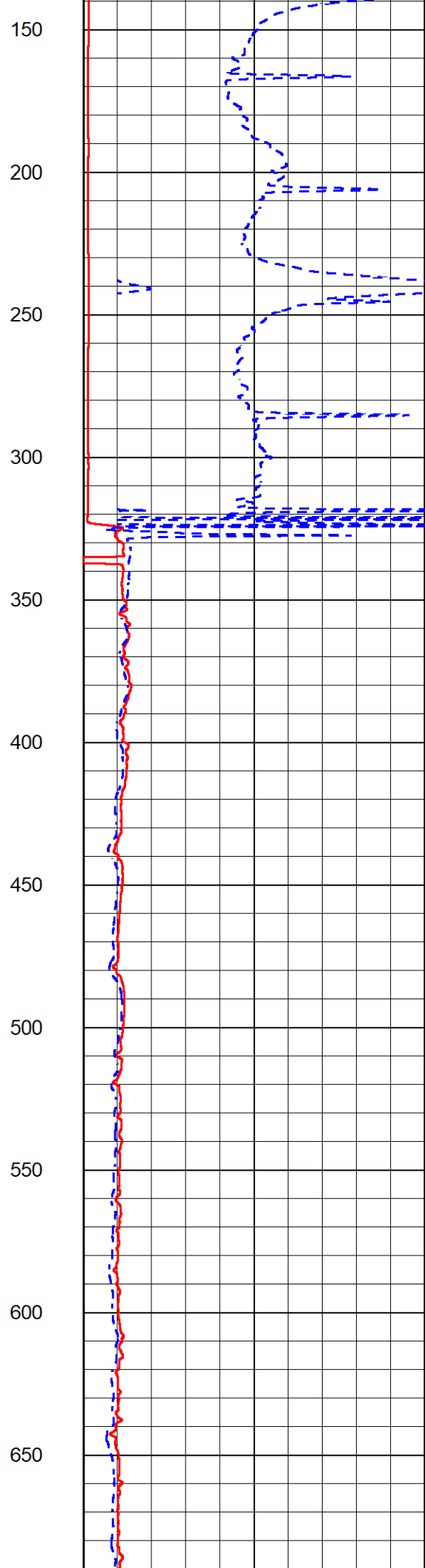
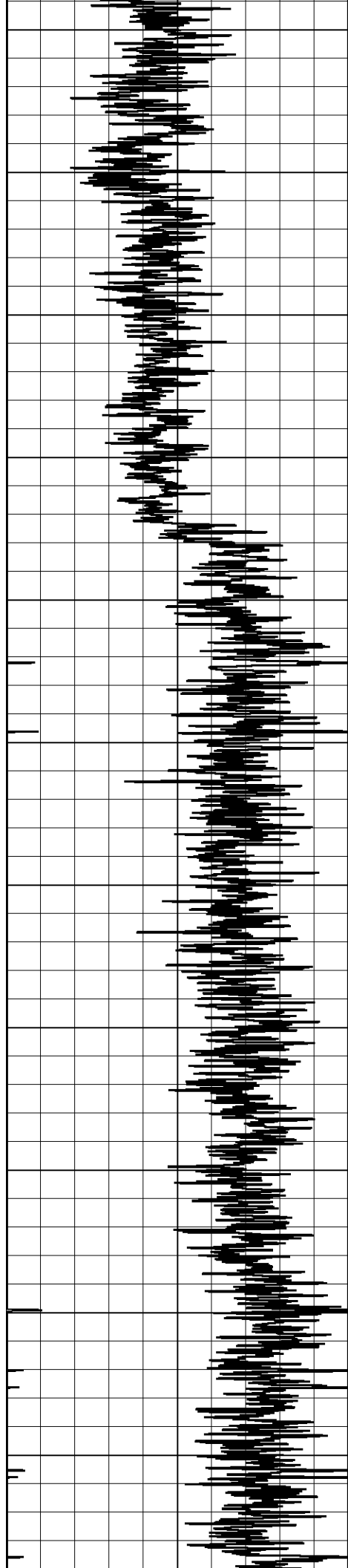
2" SCALE RESISTIVITY

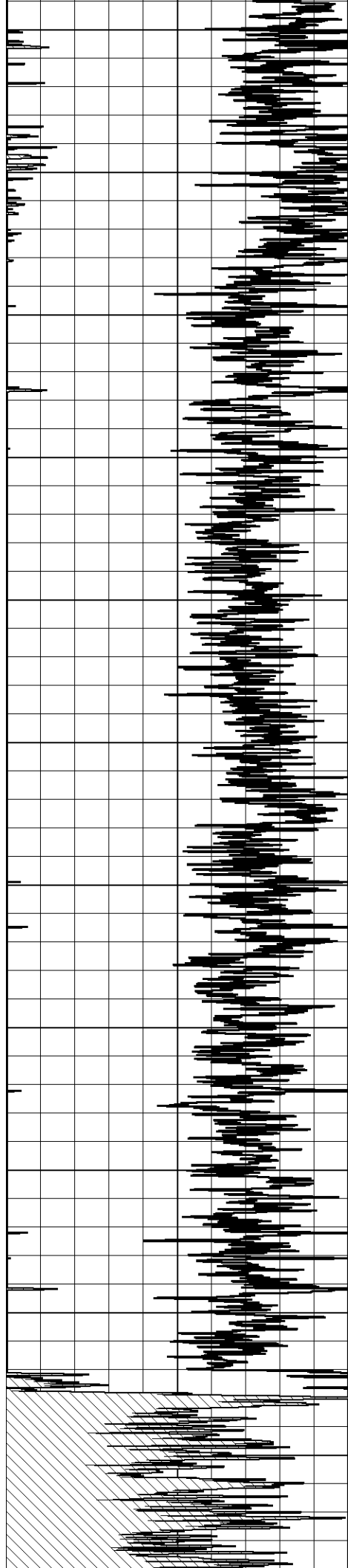
MAIN PASS

Database File murfin_keller b 1-36.db
 Dataset Pathname stkml/pass3.3
 Presentation Format _dil2in
 Dataset Creation Mon Jan 24 22:50:14 2022
 Charted by Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	1000	Conductivity (mmho/m)	0
			15000	Line Tension (lb)	0
0	Shallow Resistivity (Ohm-m)	50			
0	Deep Resistivity (Ohm-m)	50			
	Shallow Resistivity				
50	(Ohm-m)	200			
50	Deep Resistivity (Ohm-m)	200			

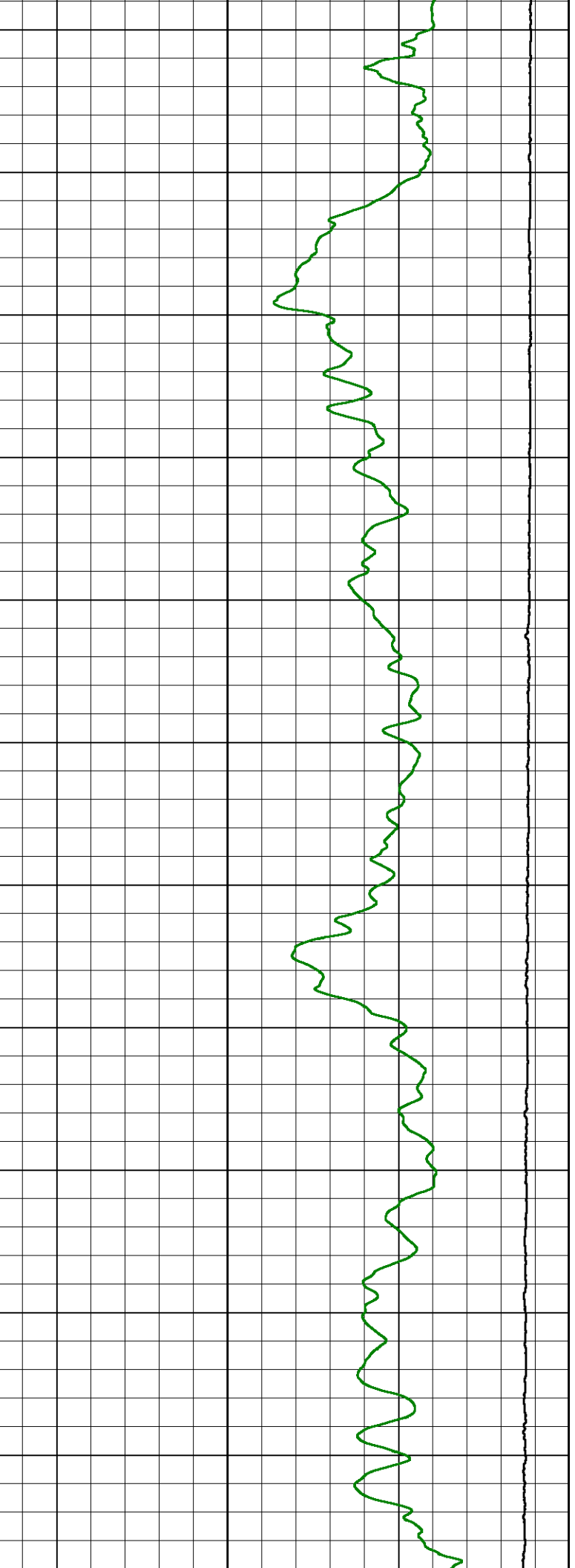
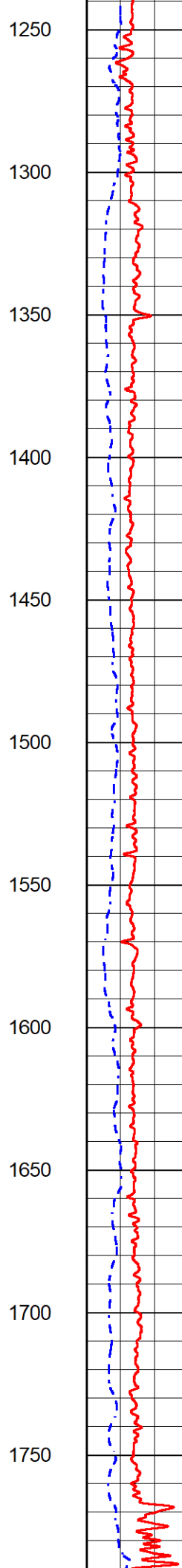
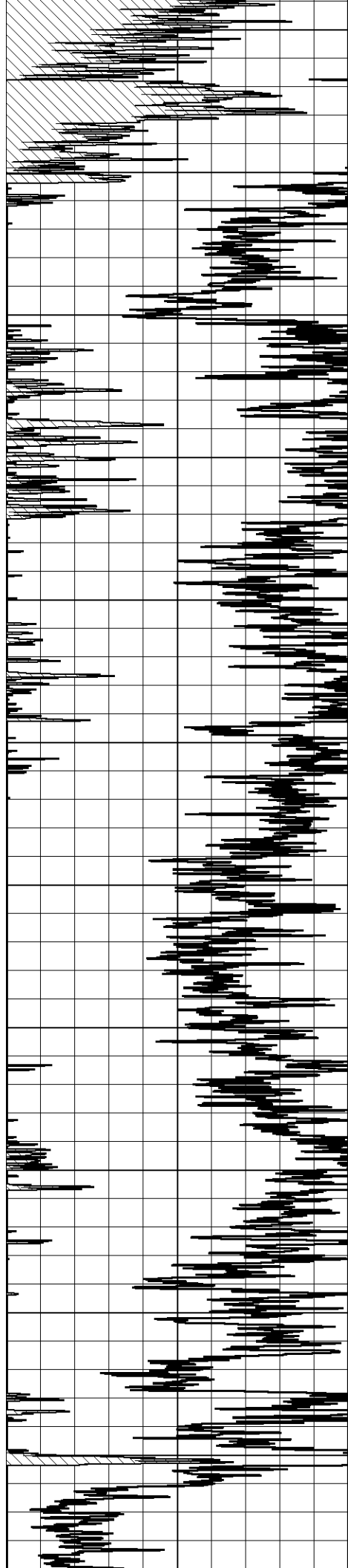


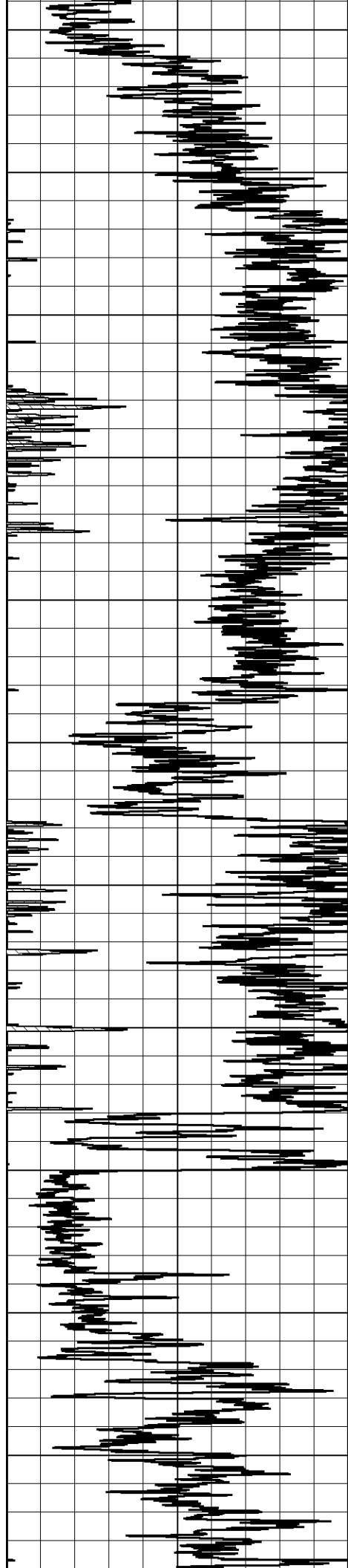




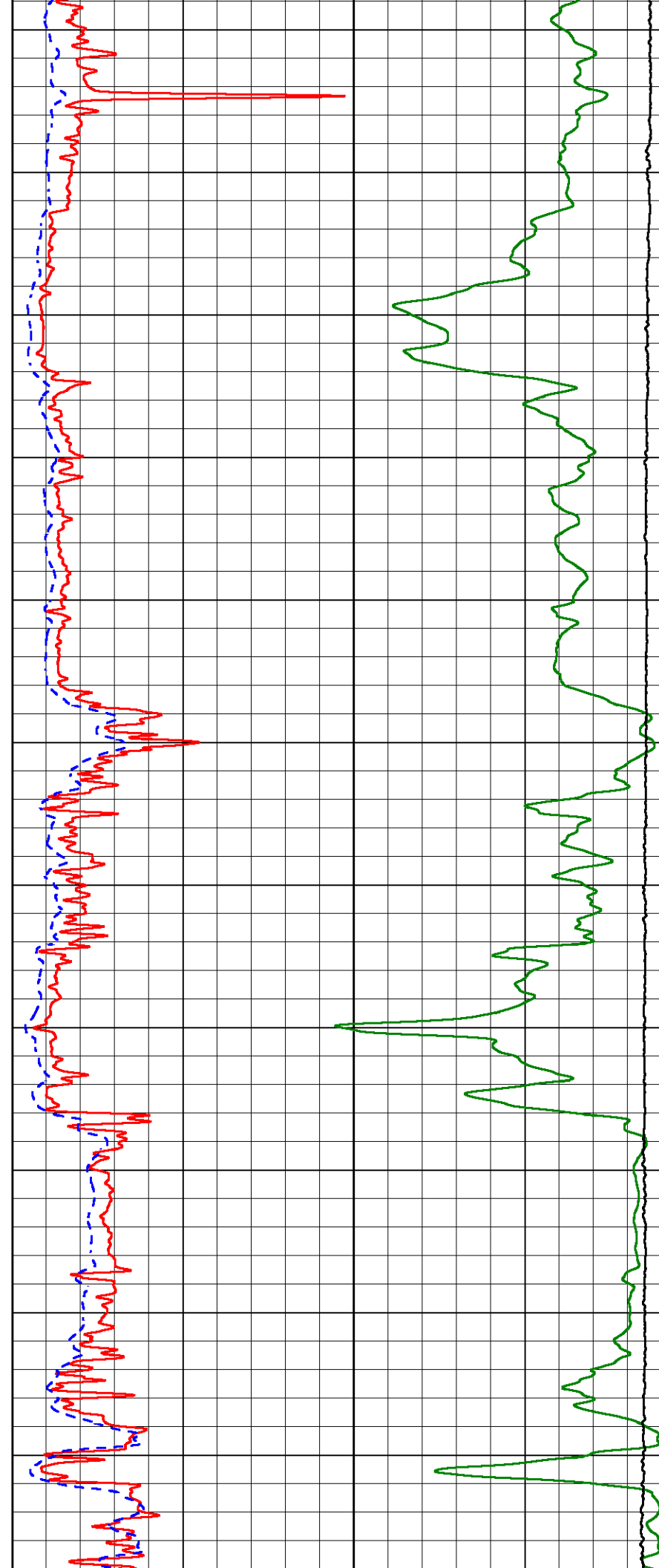
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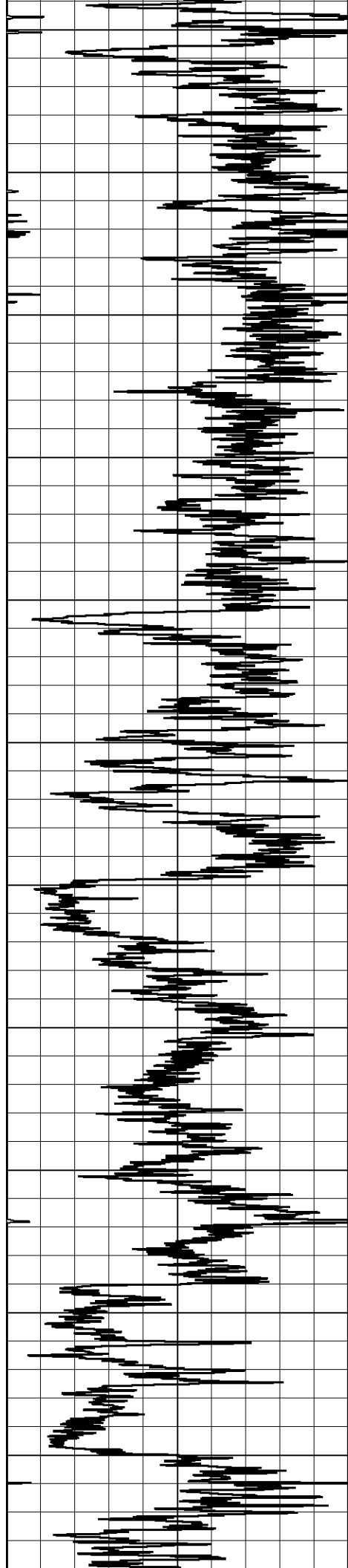




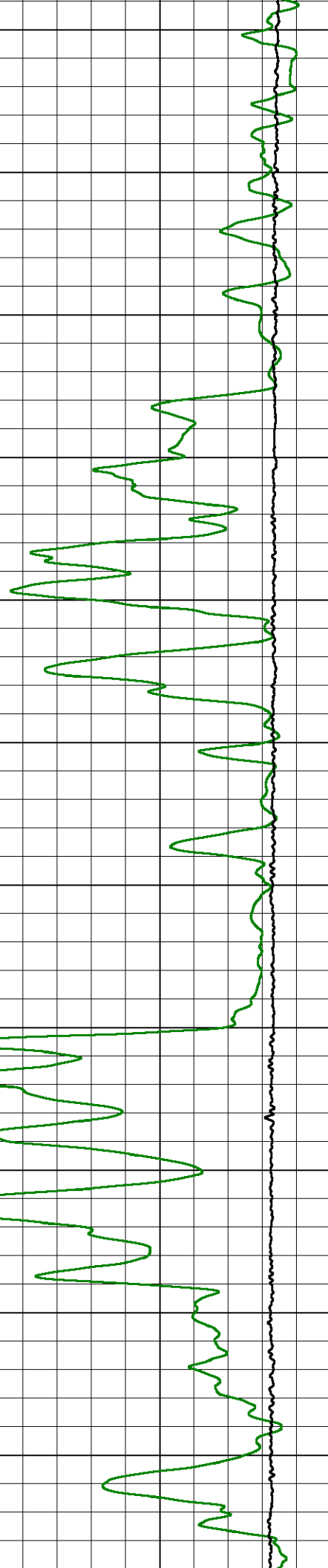
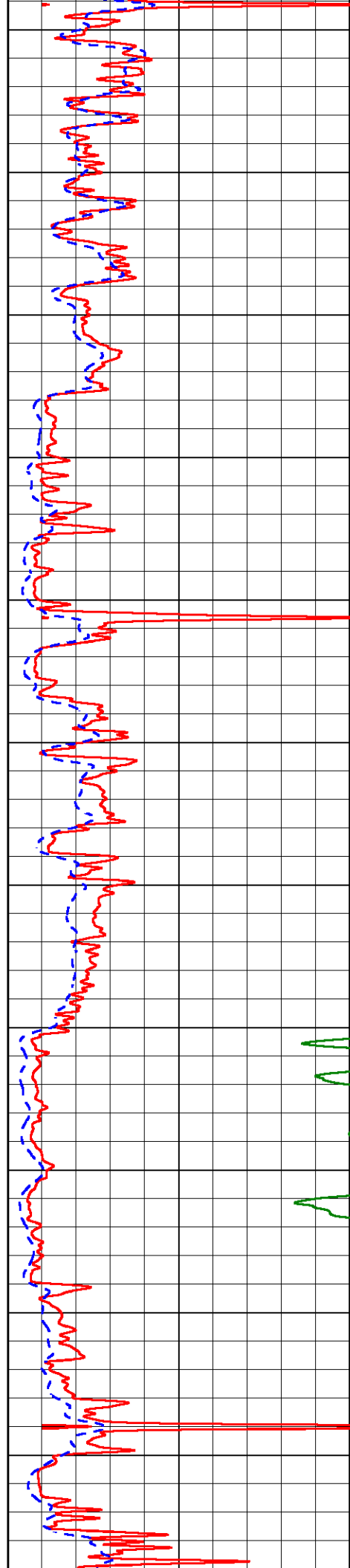


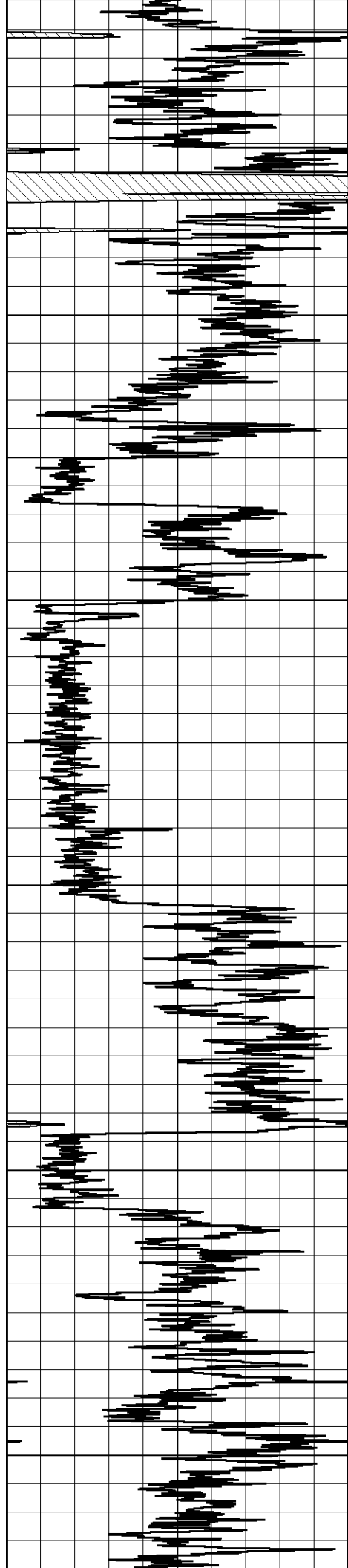
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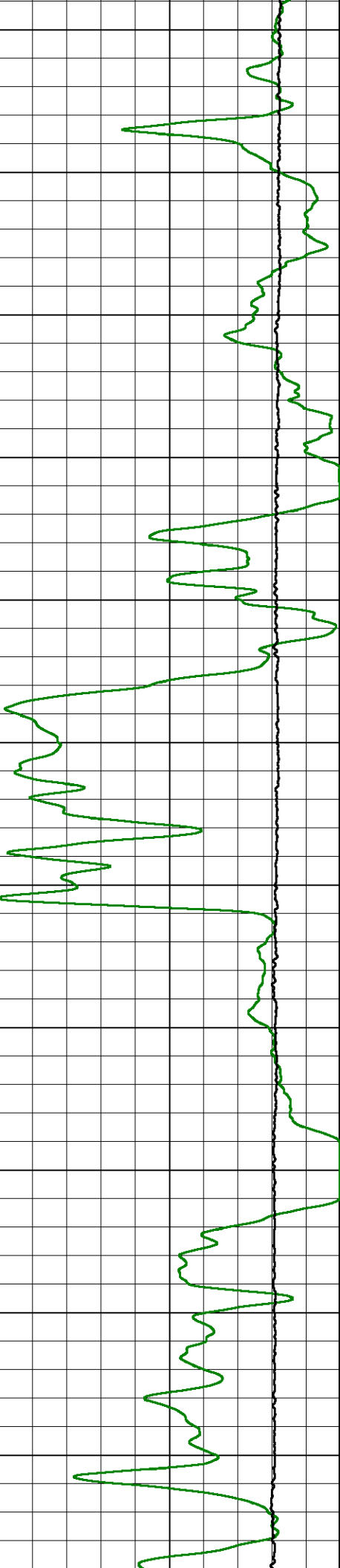
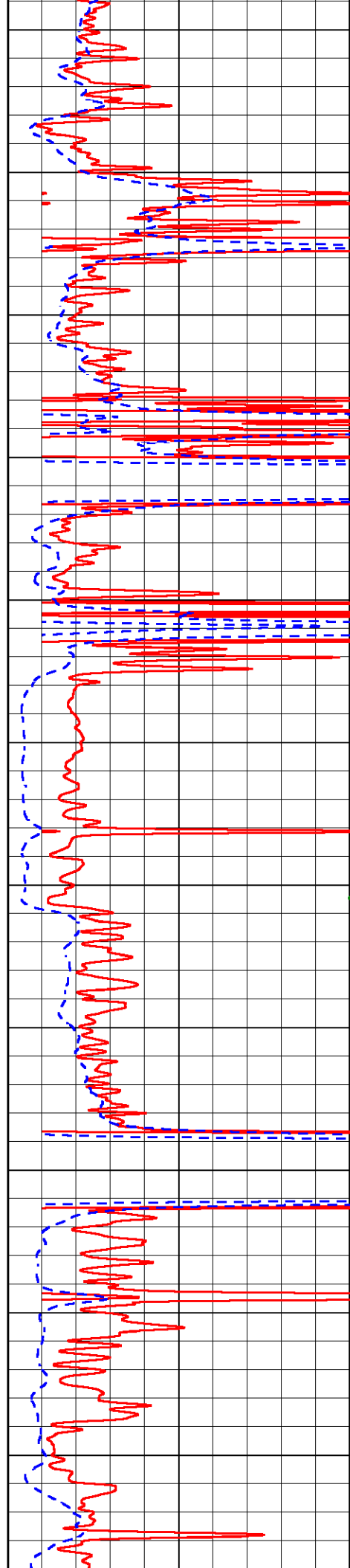
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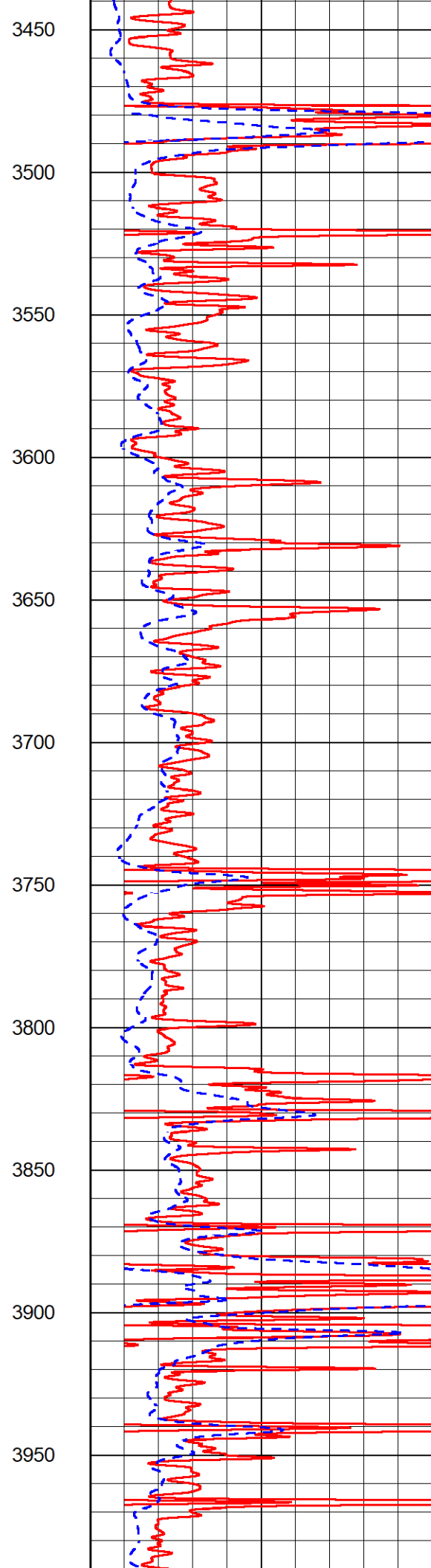
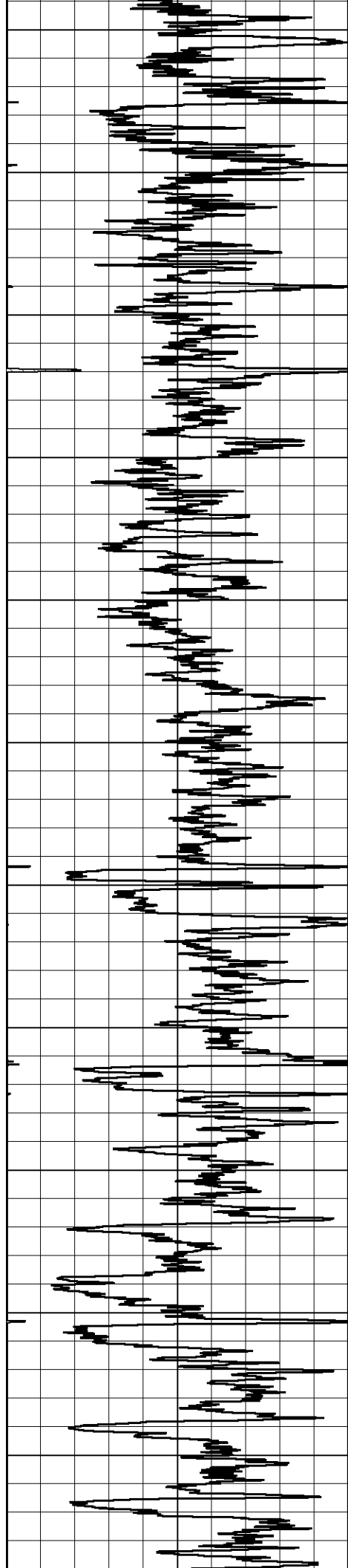
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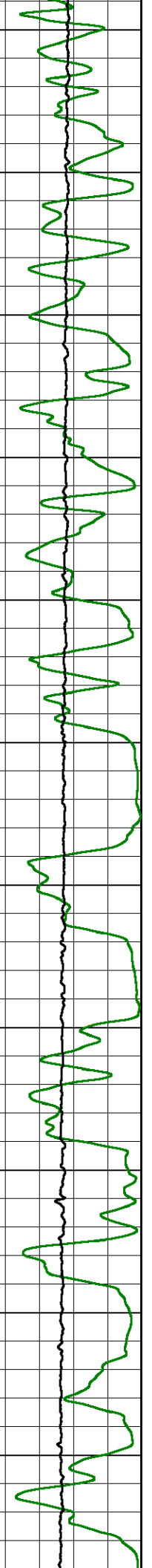
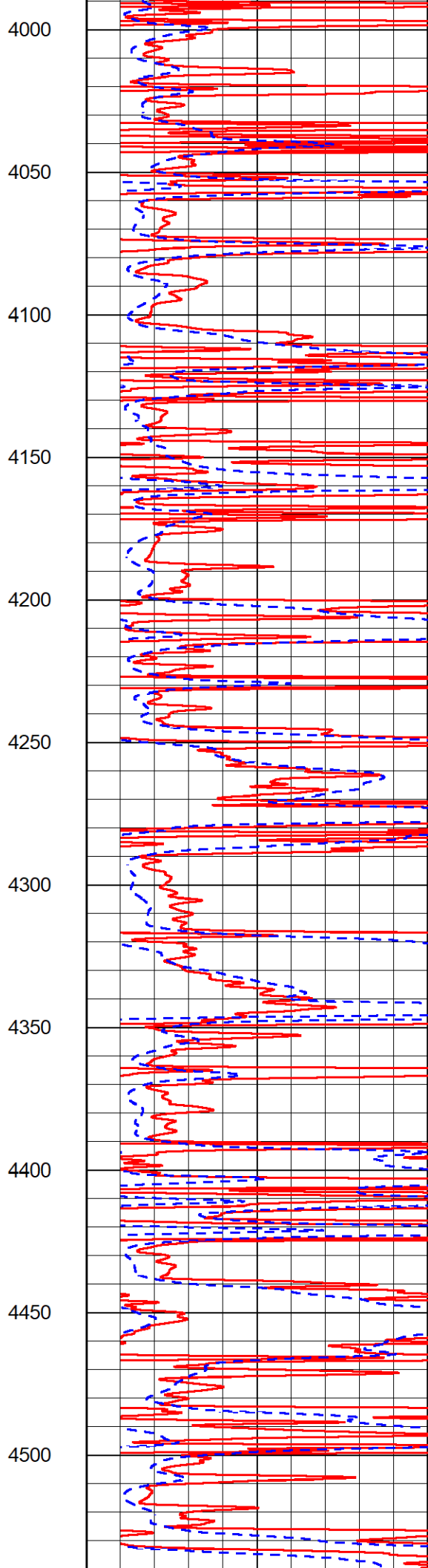
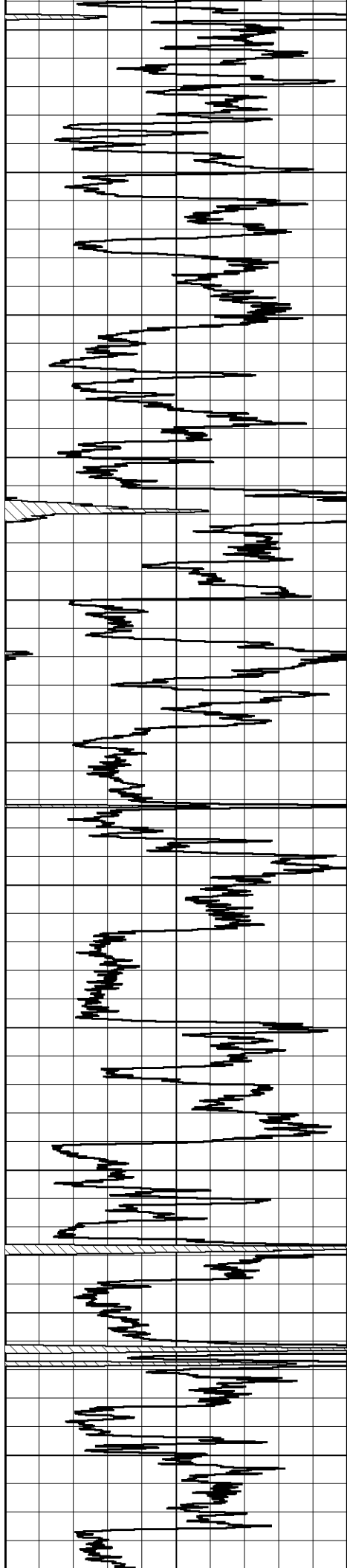
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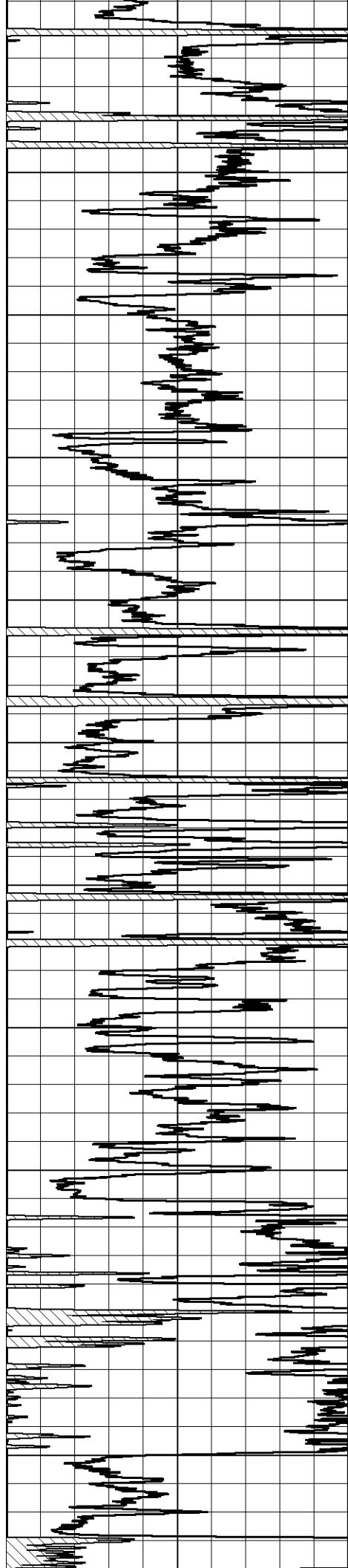
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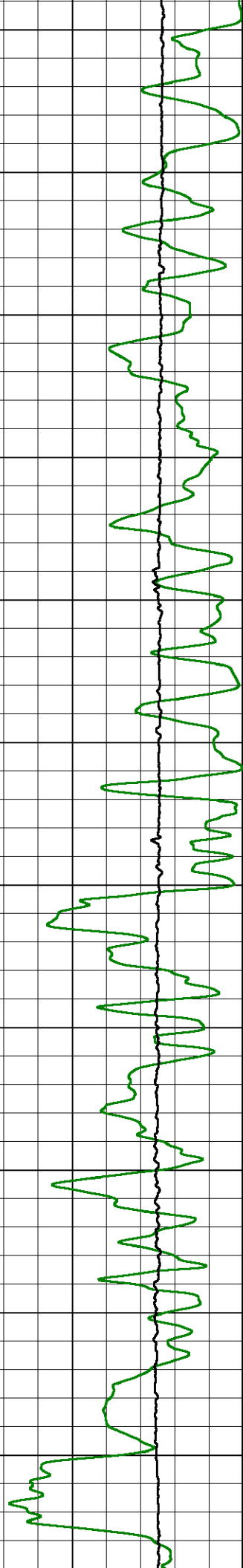
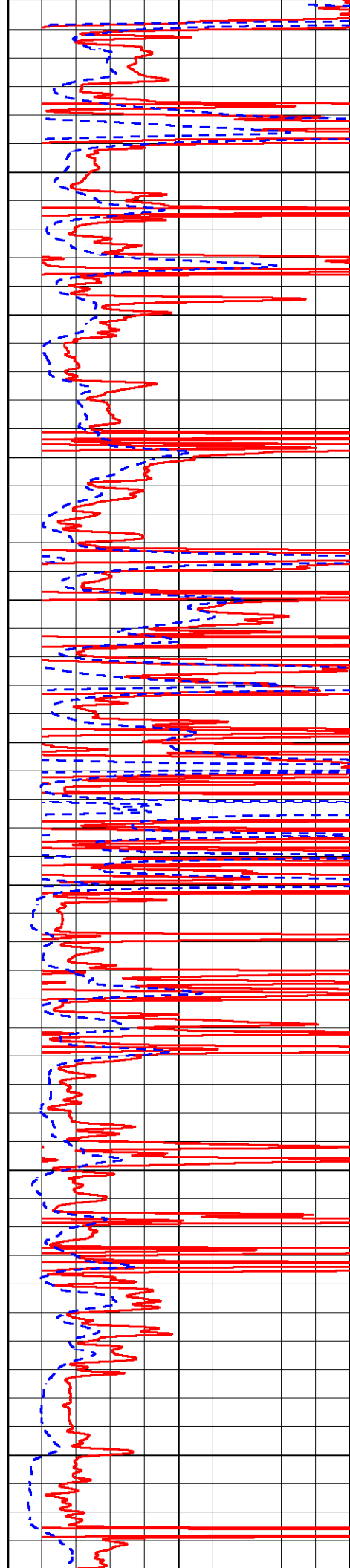


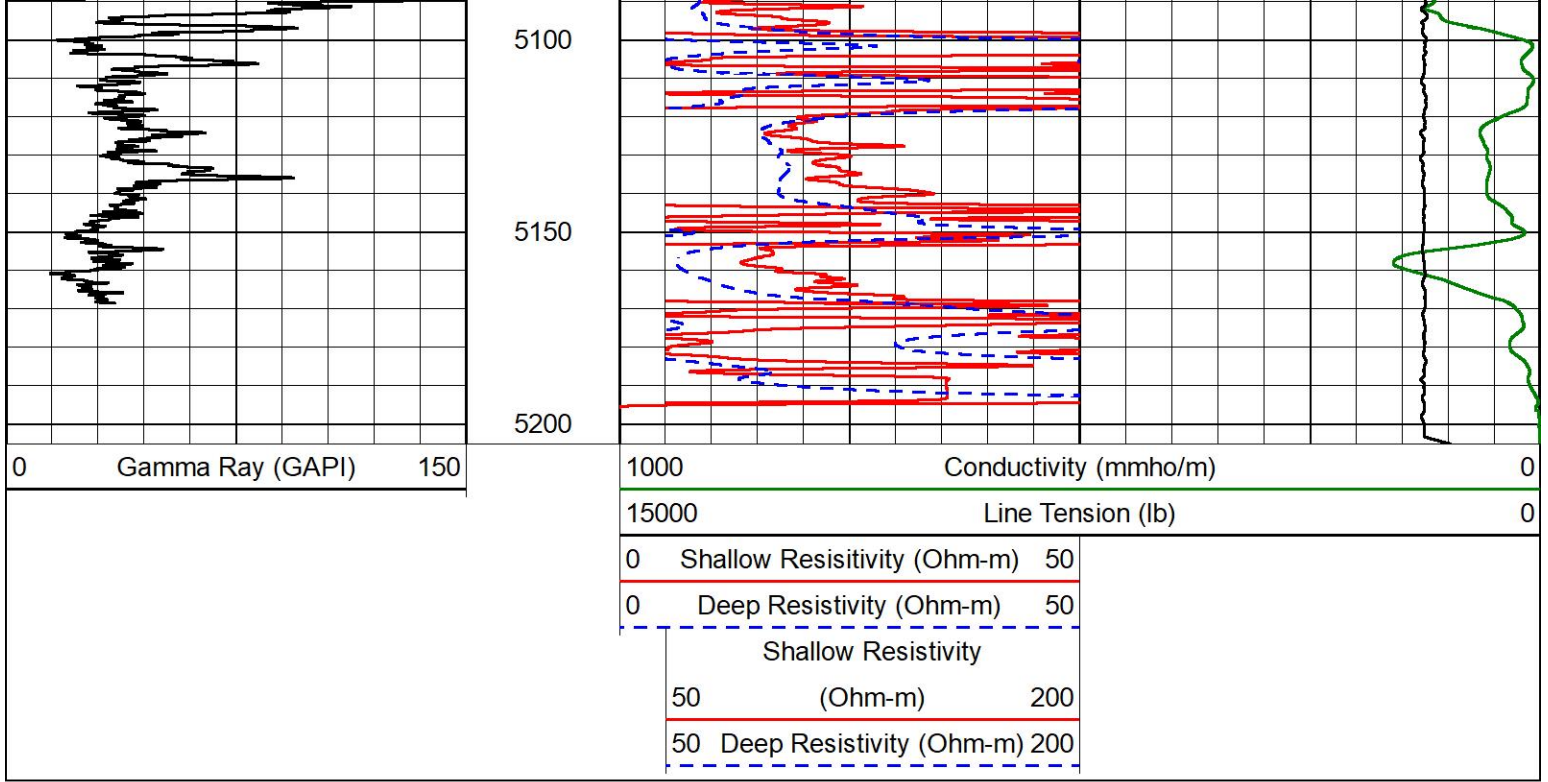






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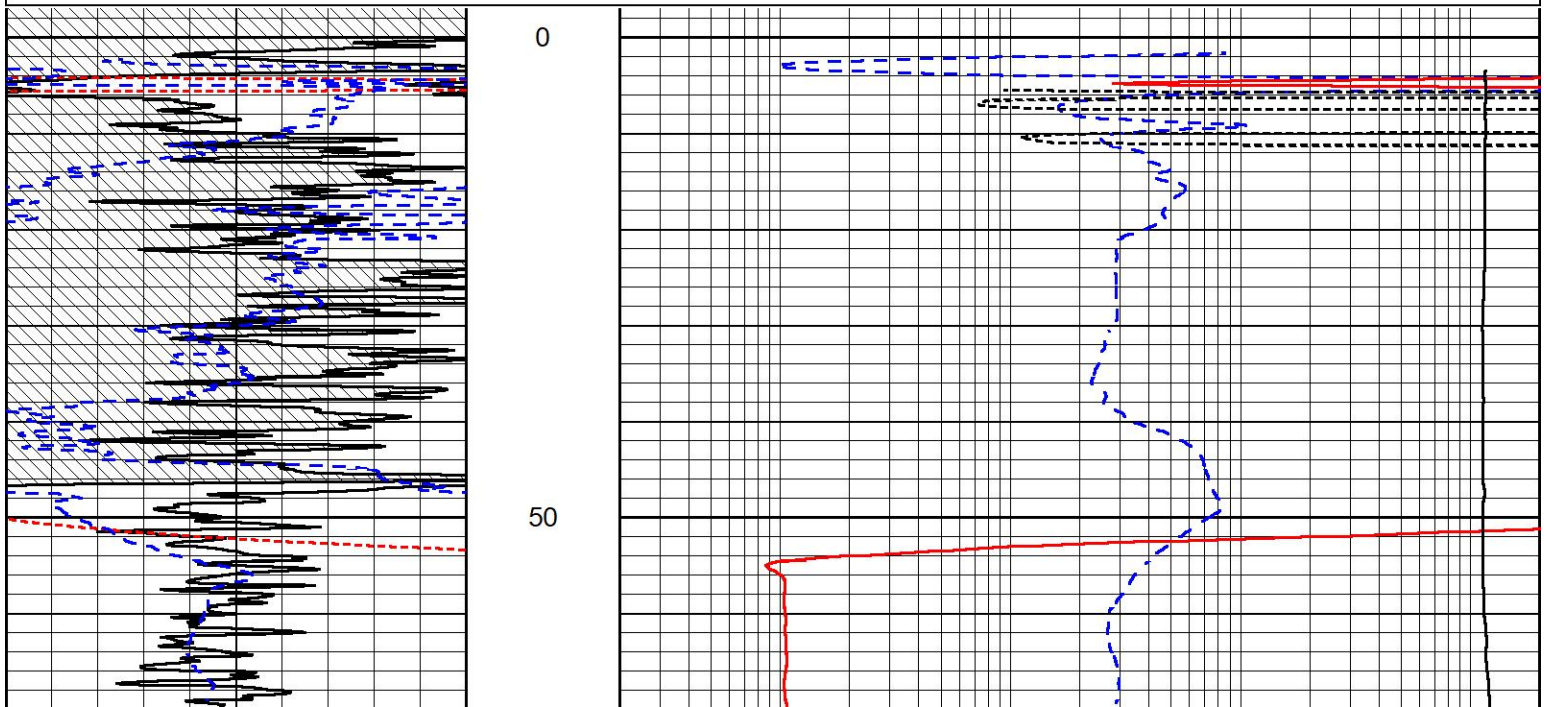
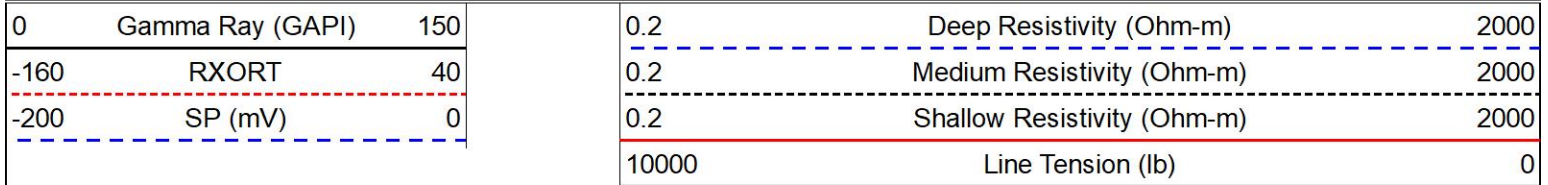


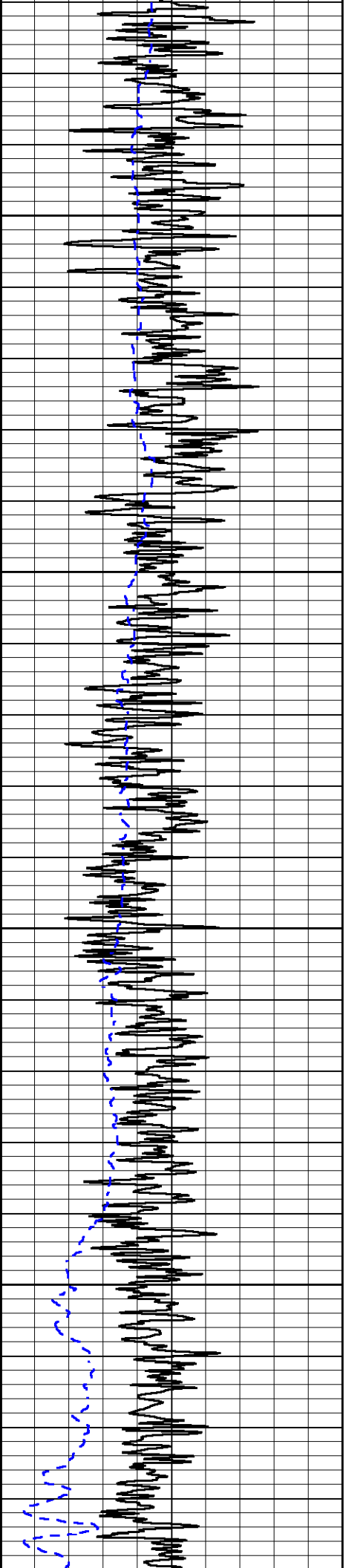


DETAIL SECTION

MAIN PASS

Database File murfin_keller b 1-36.db
 Dataset Pathname stkml/pass3.4
 Presentation Format _dil
 Dataset Creation Mon Jan 24 22:50:28 2022
 Charted by Depth in Feet scaled 1:240



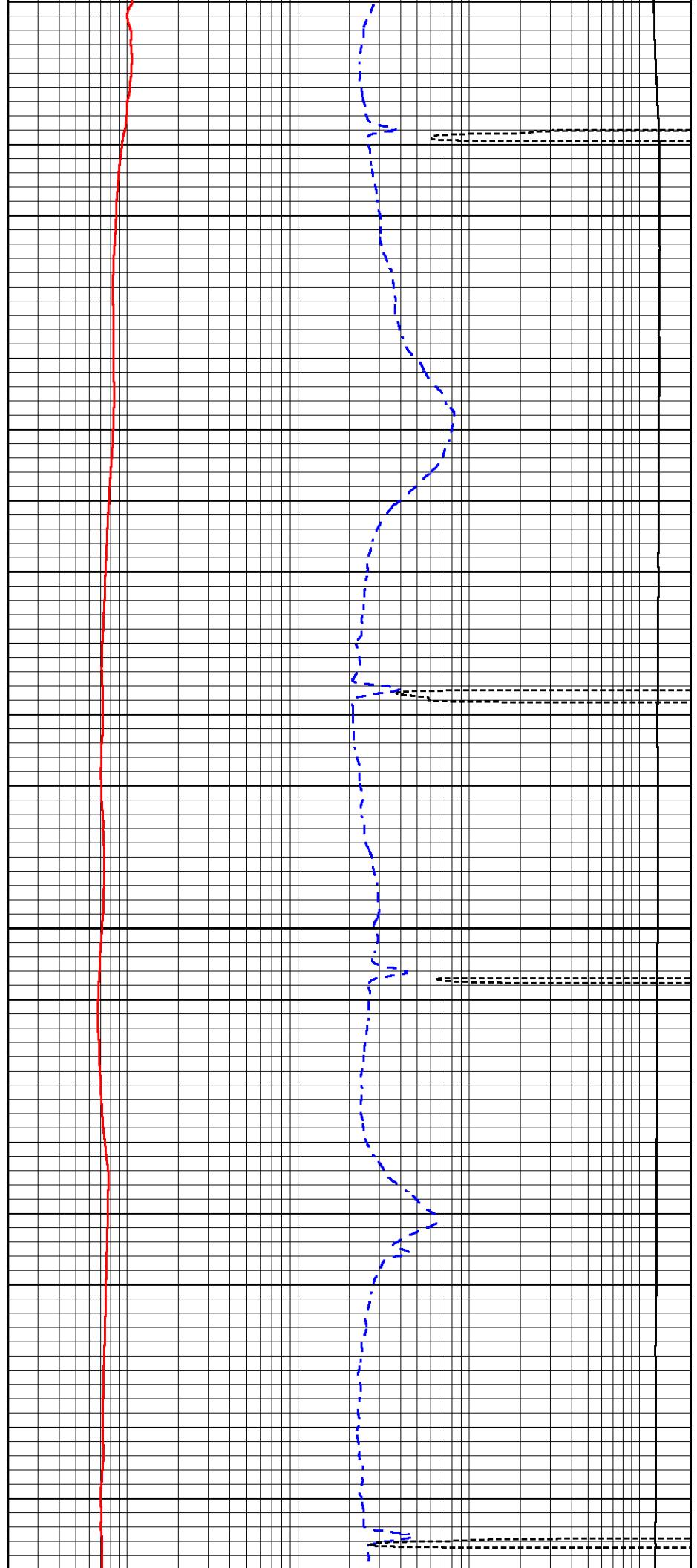


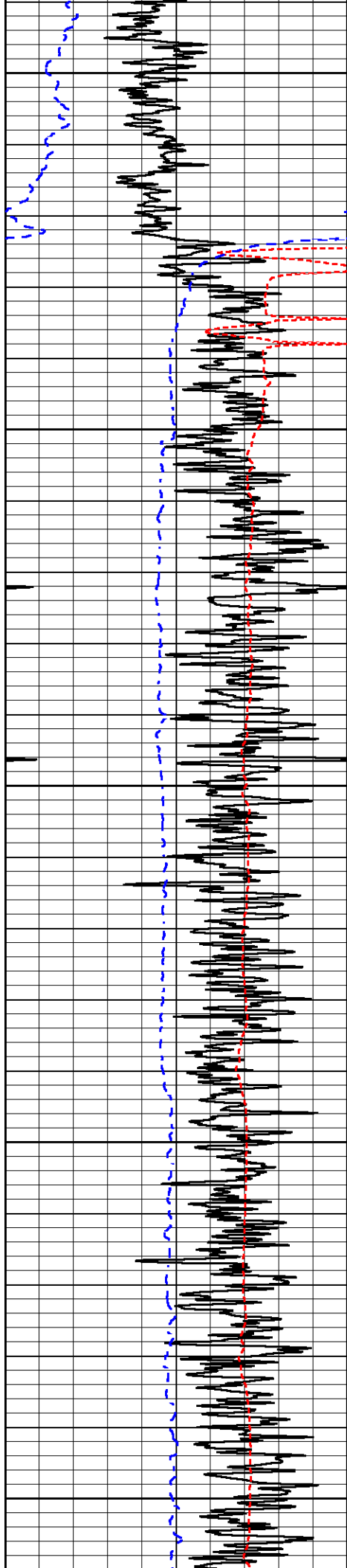
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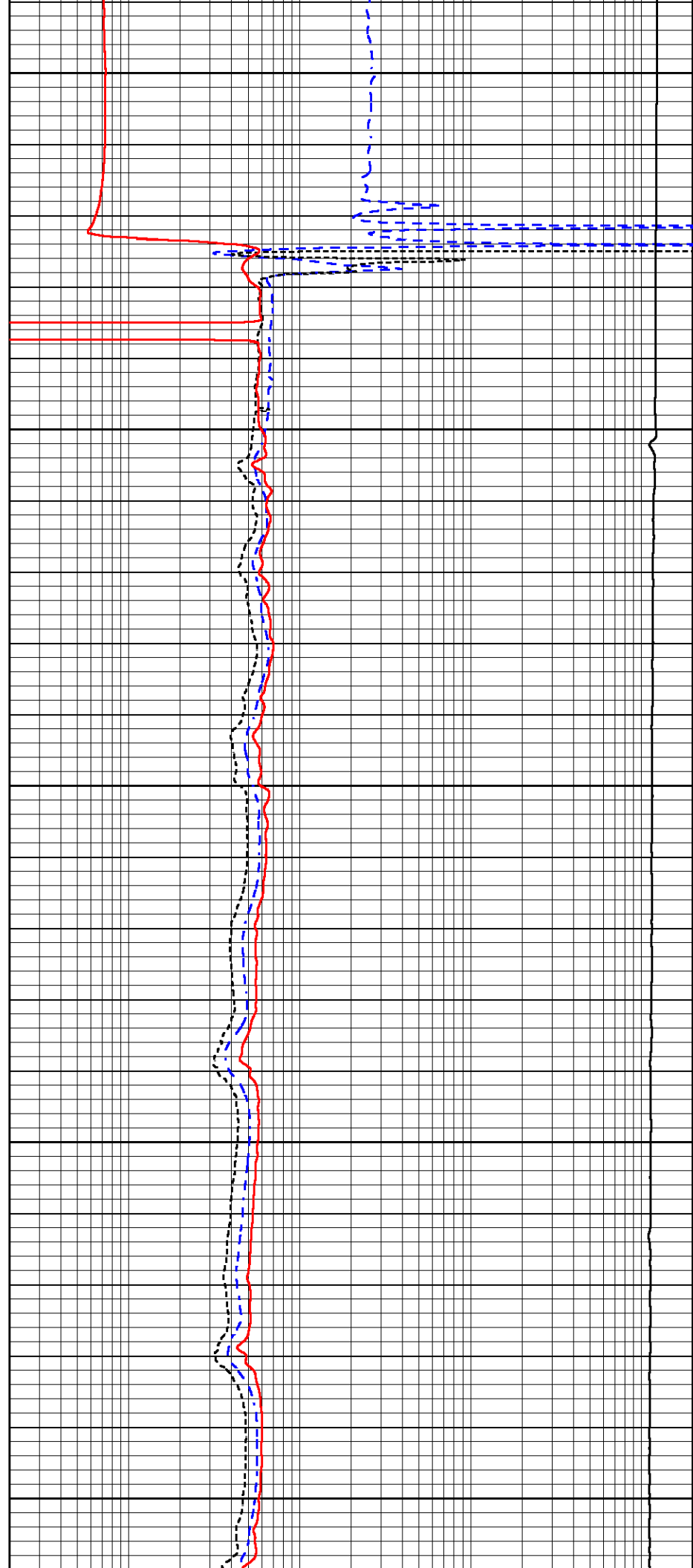
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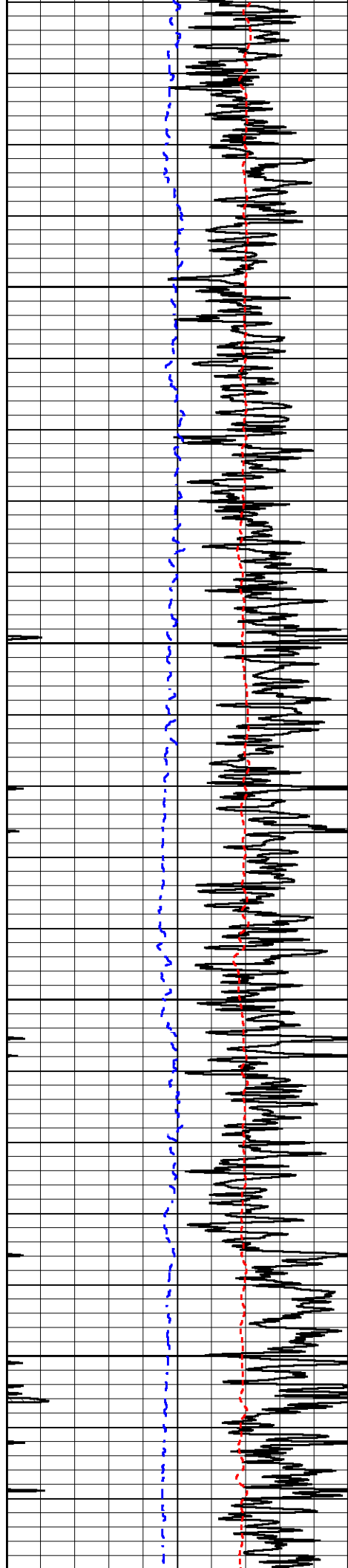
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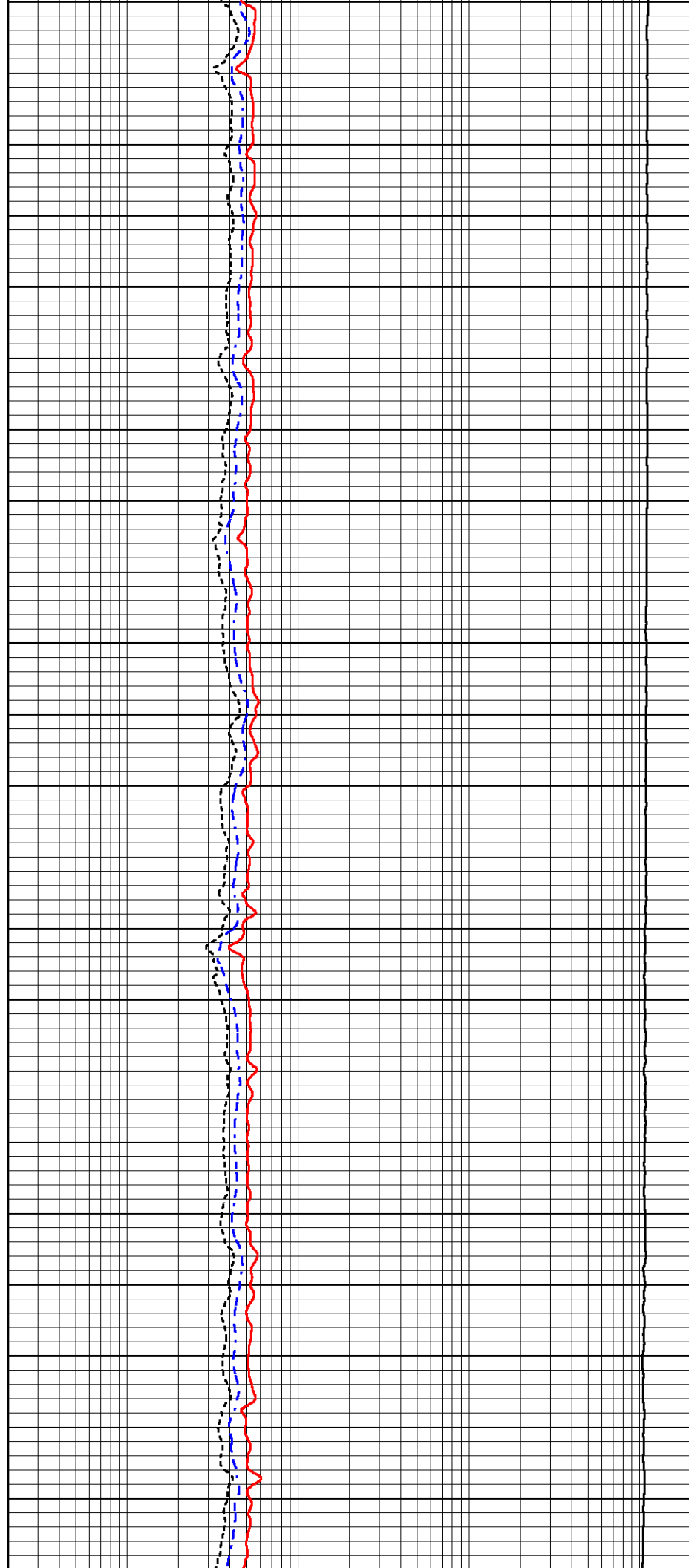


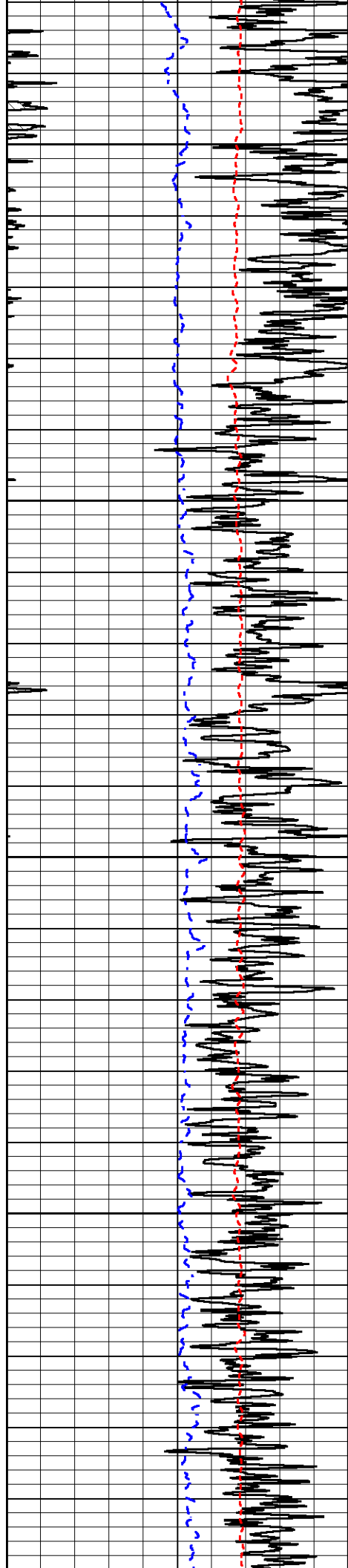
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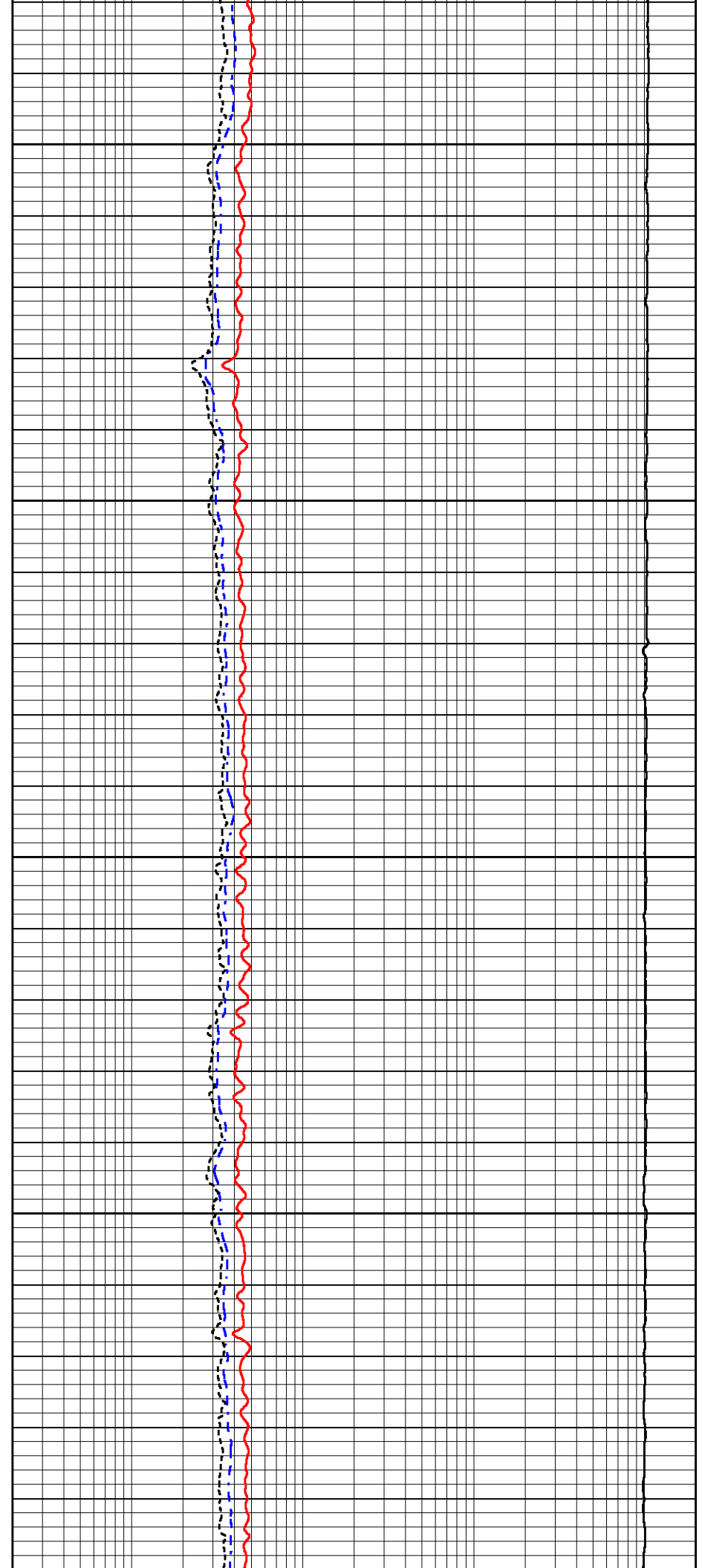
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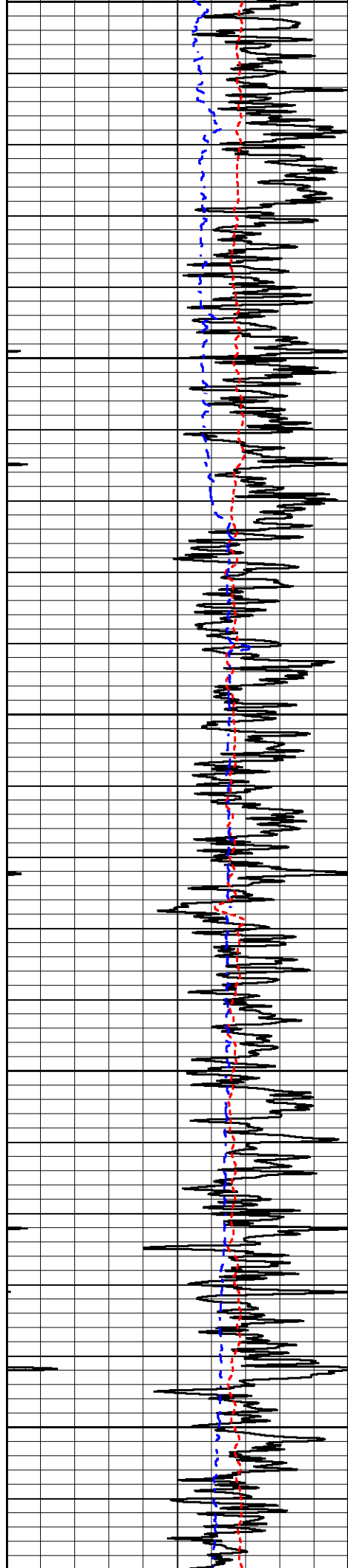
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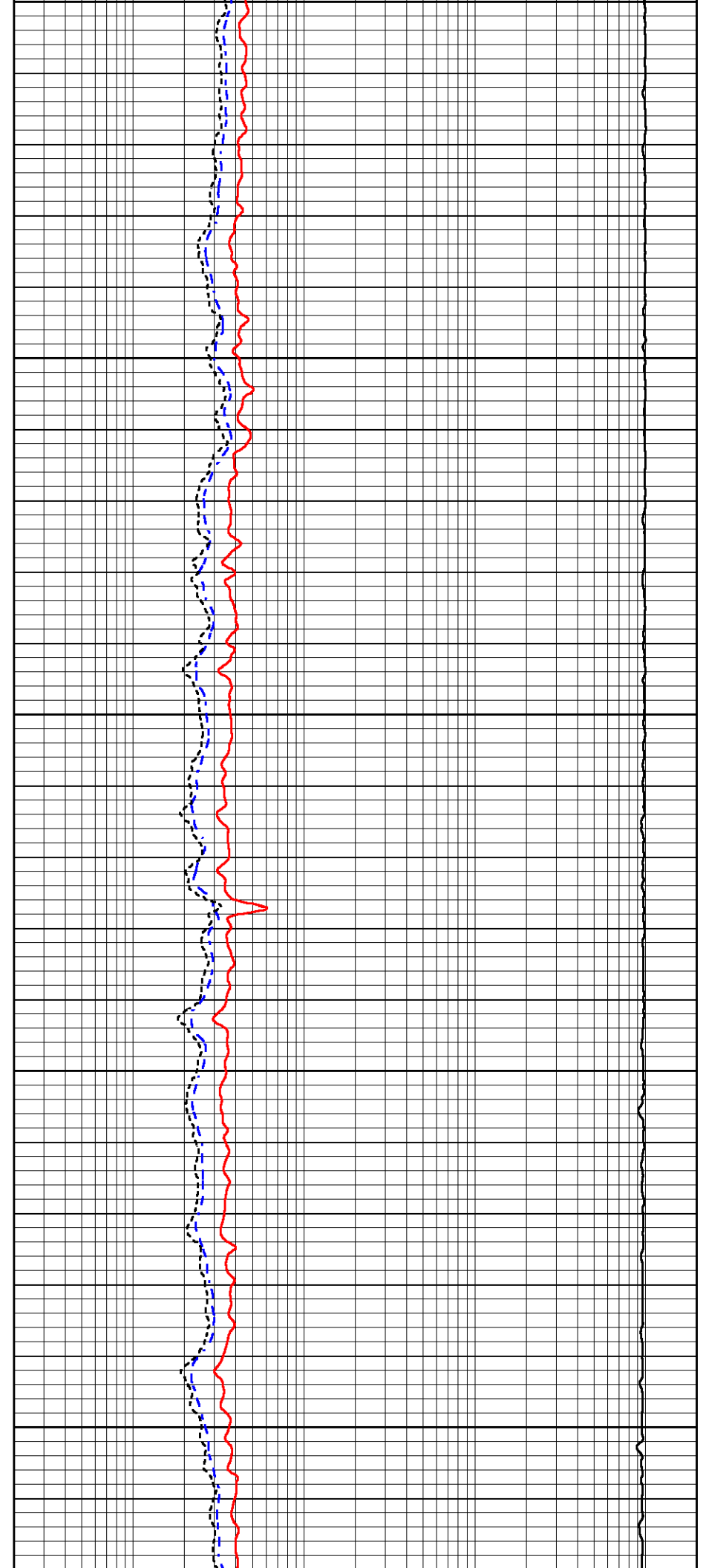
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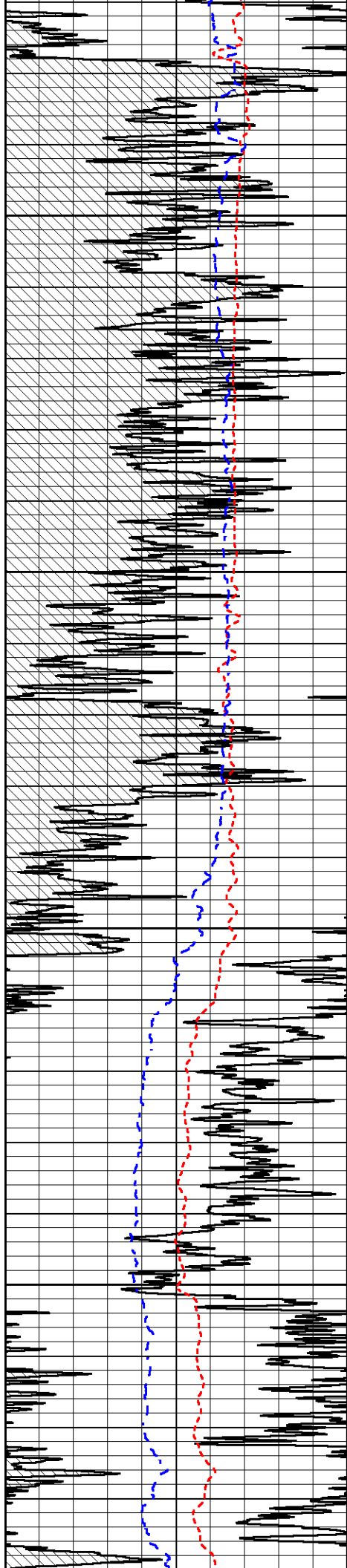
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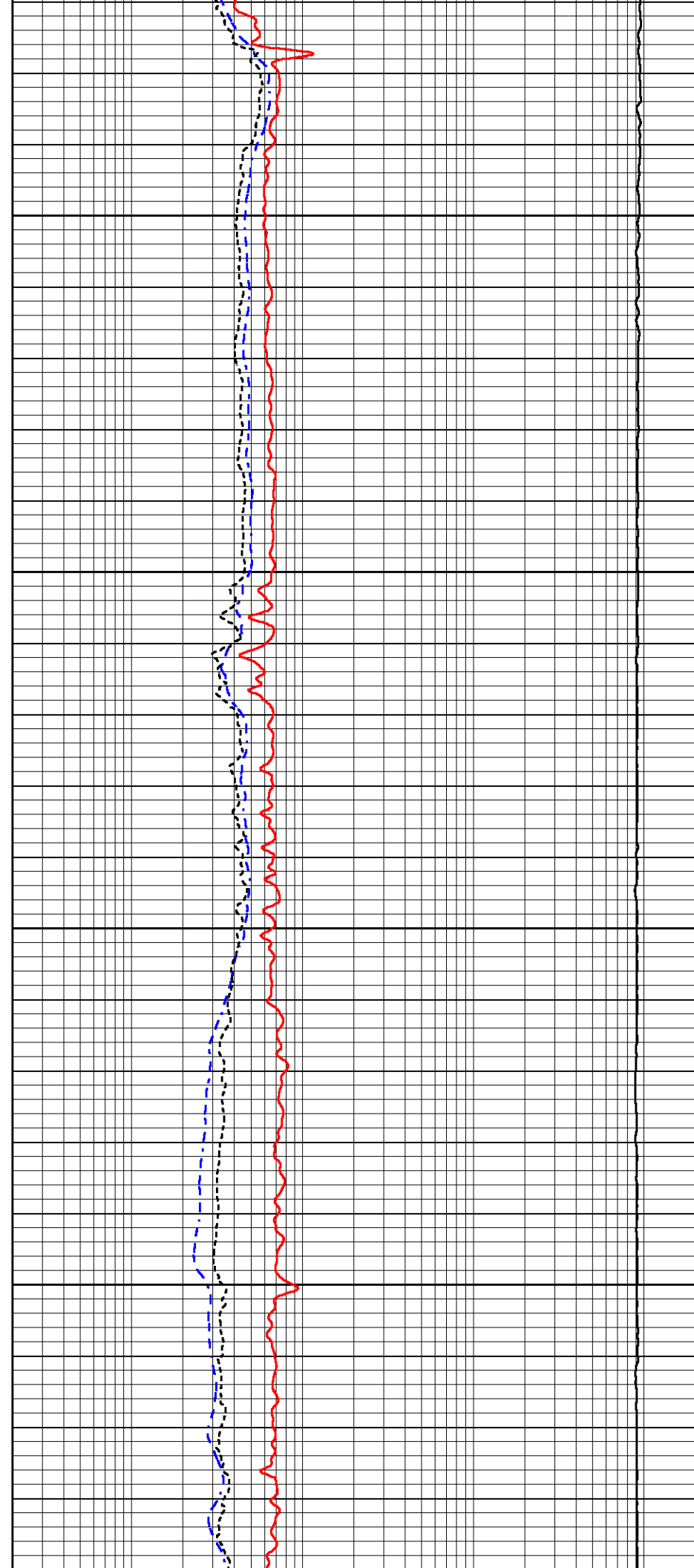


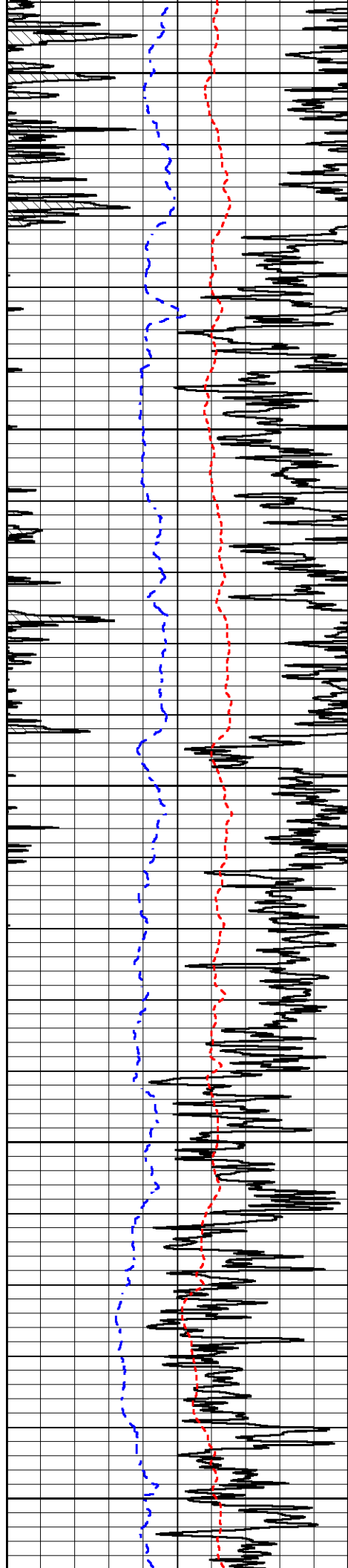
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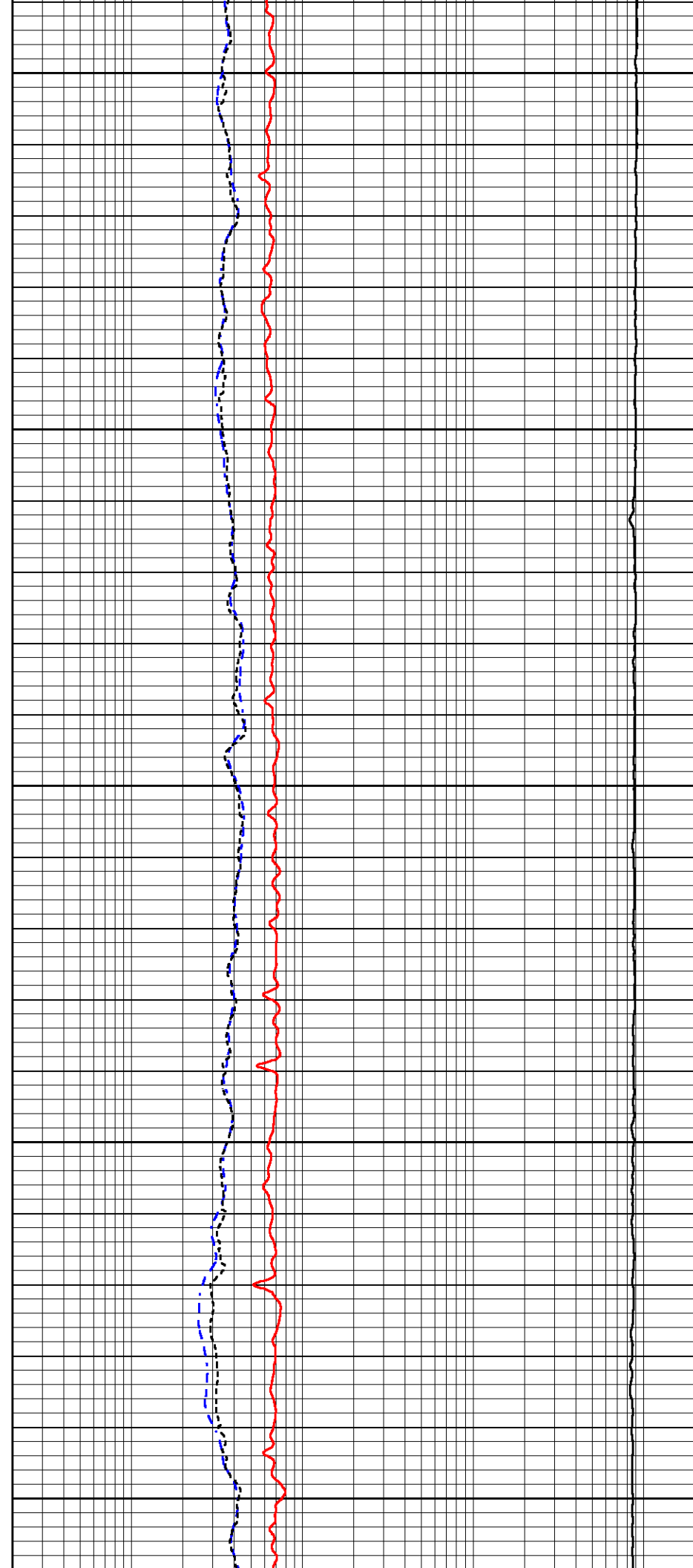
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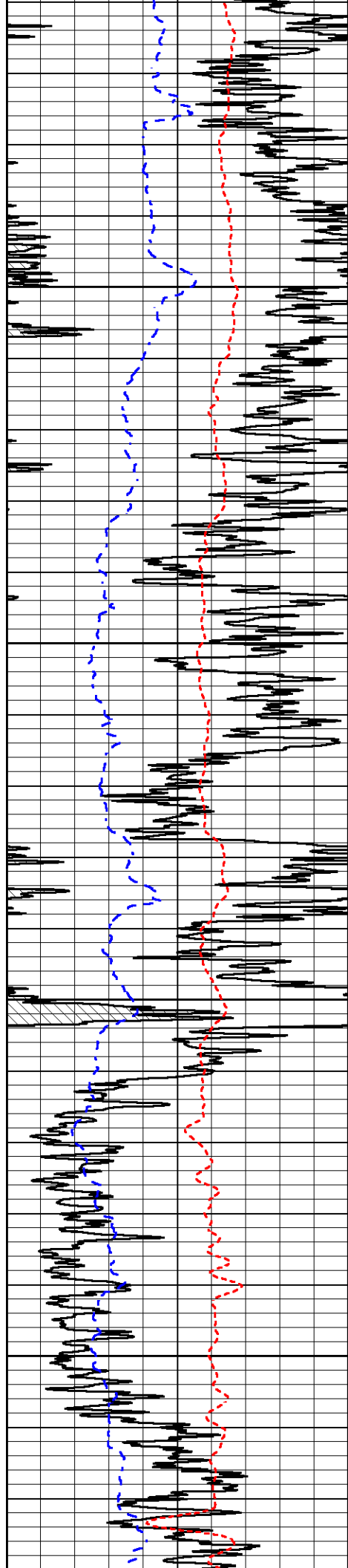
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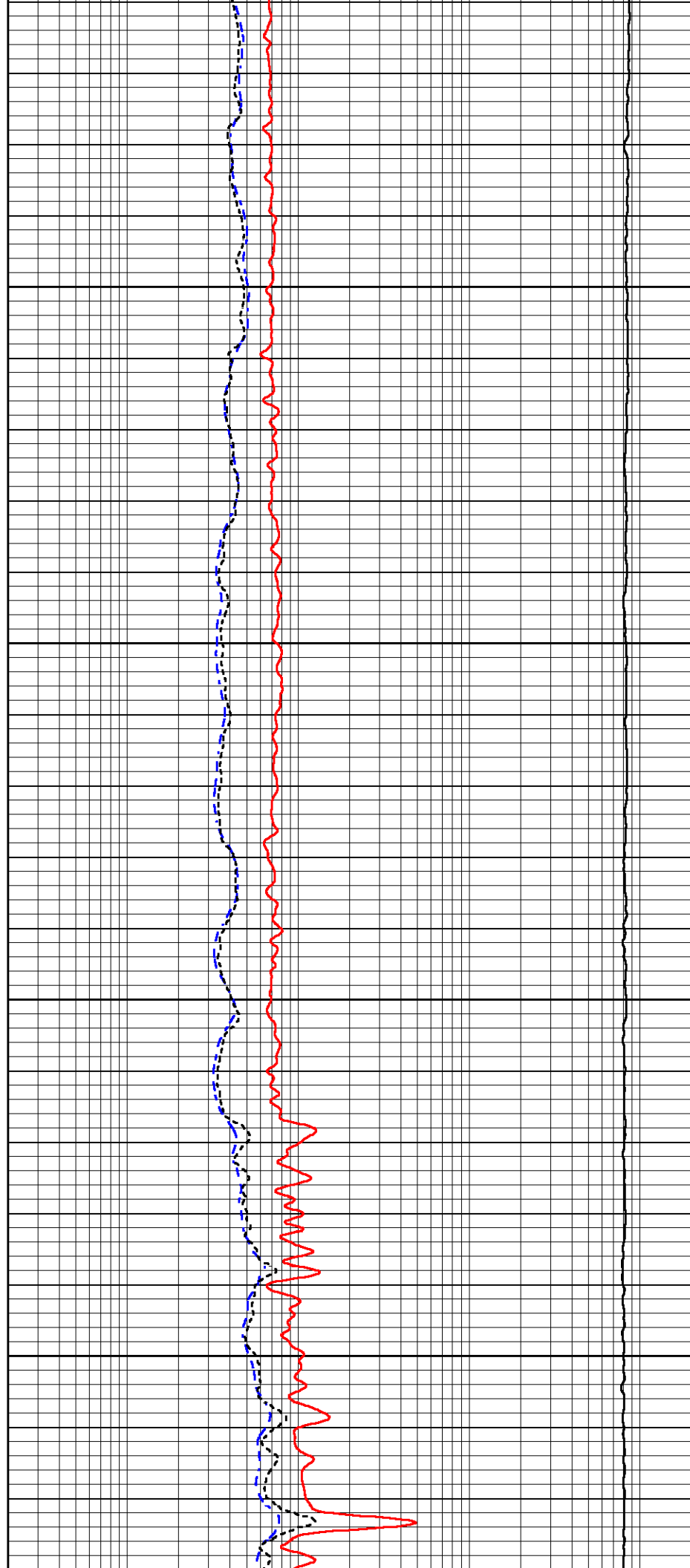


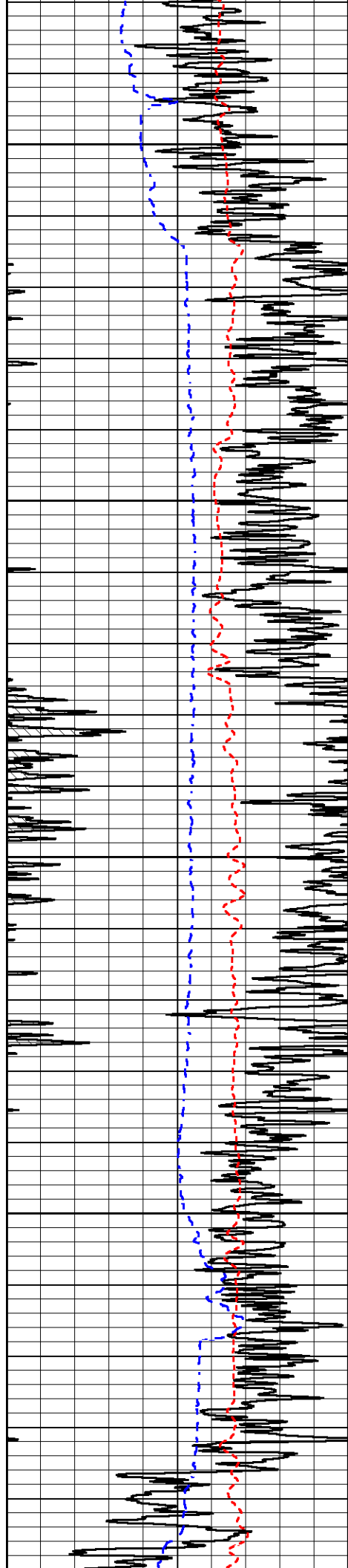
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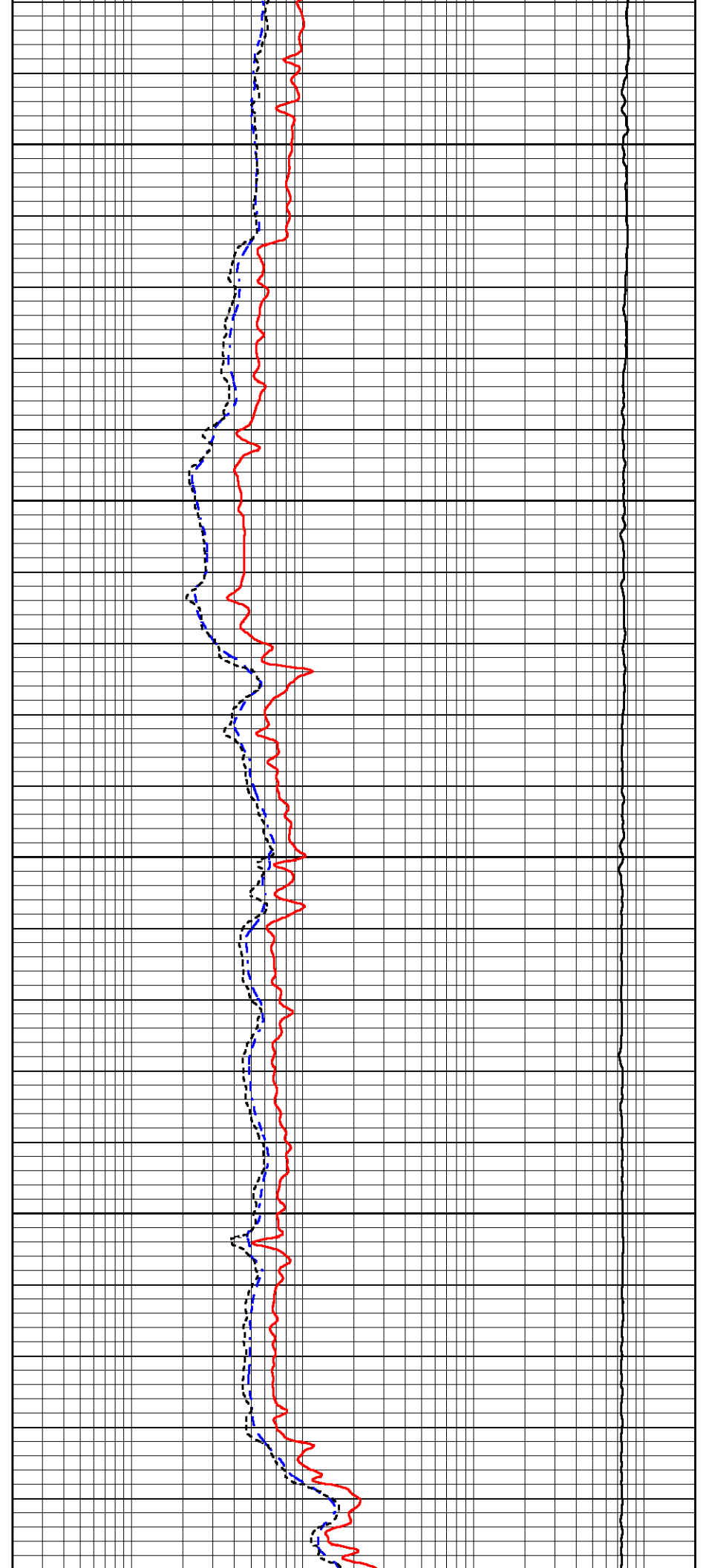
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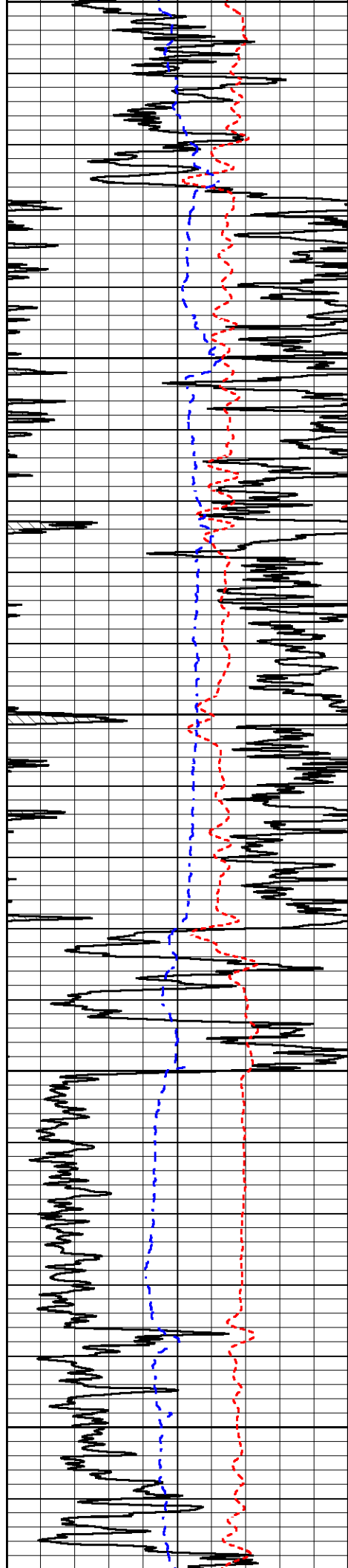
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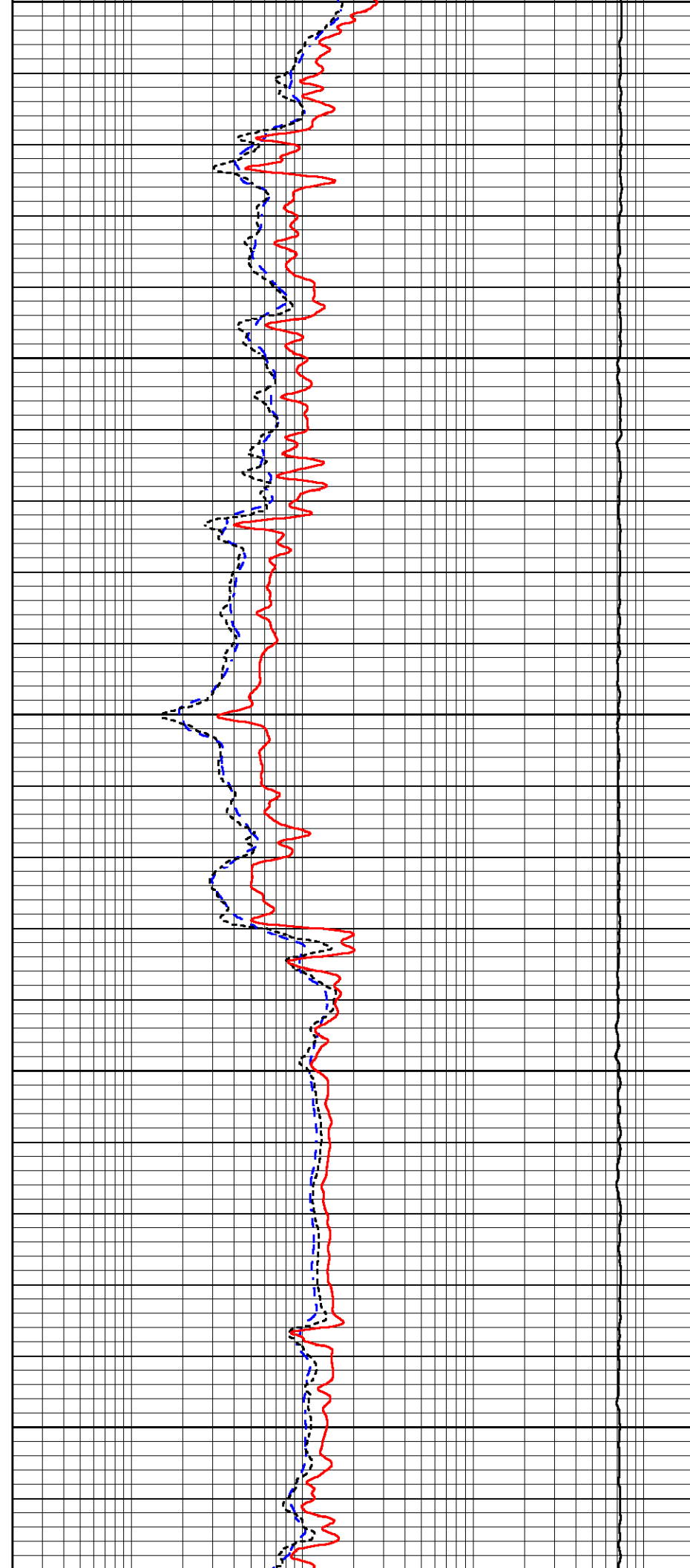
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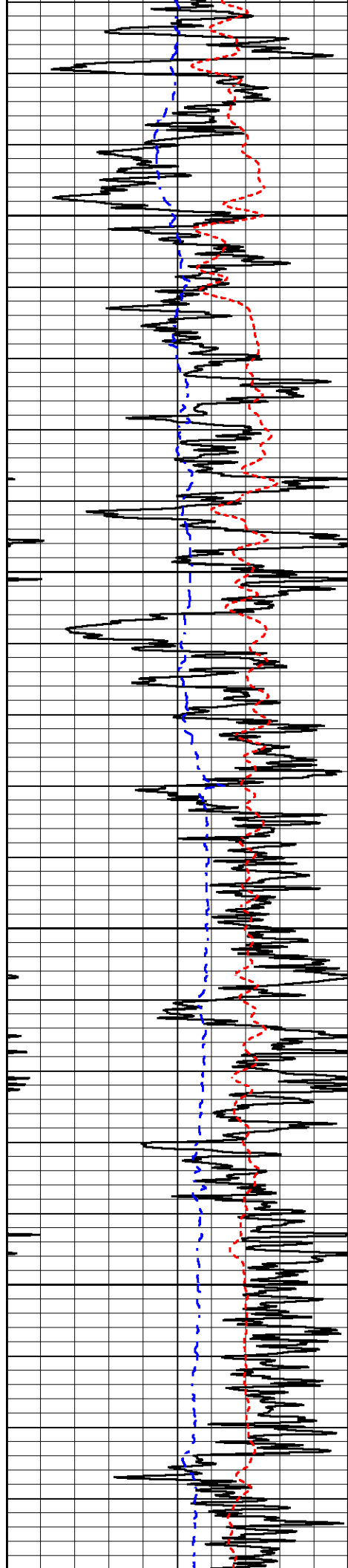
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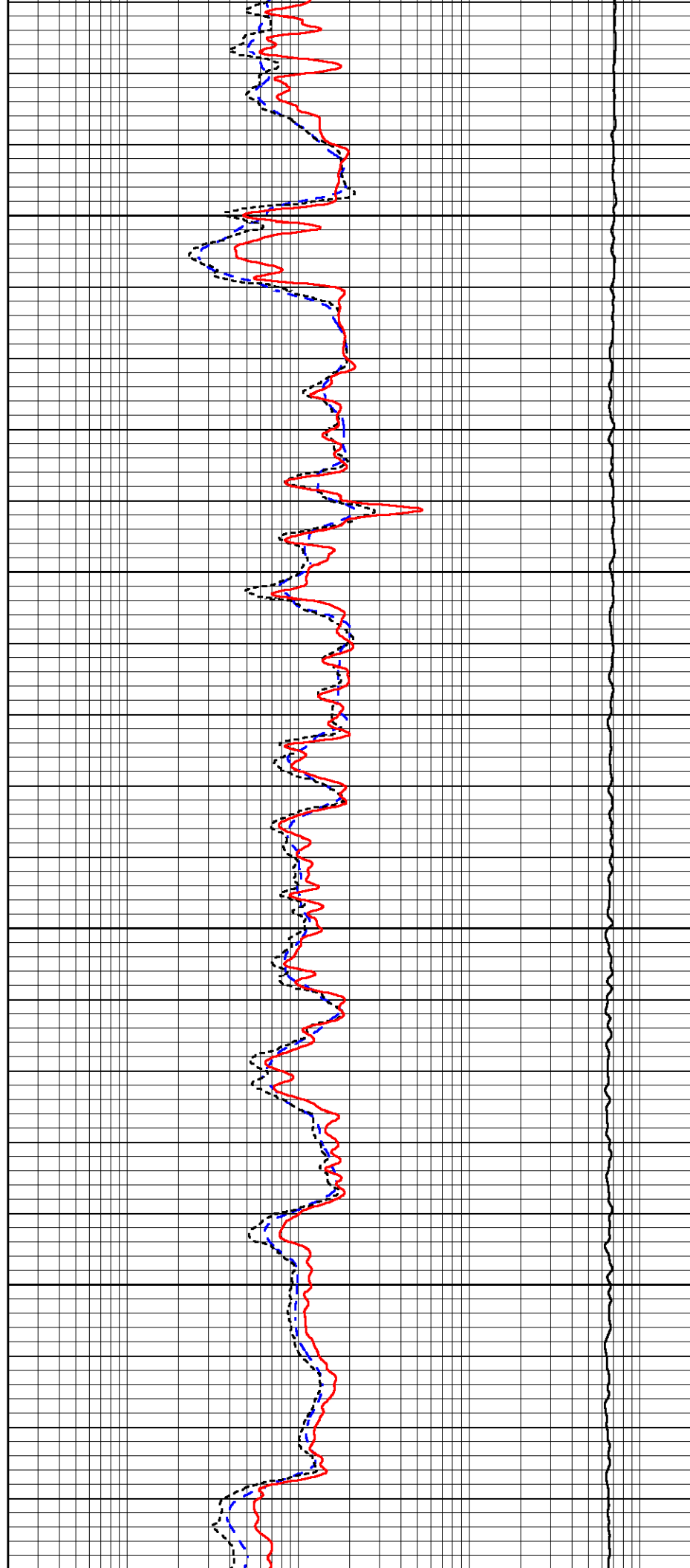


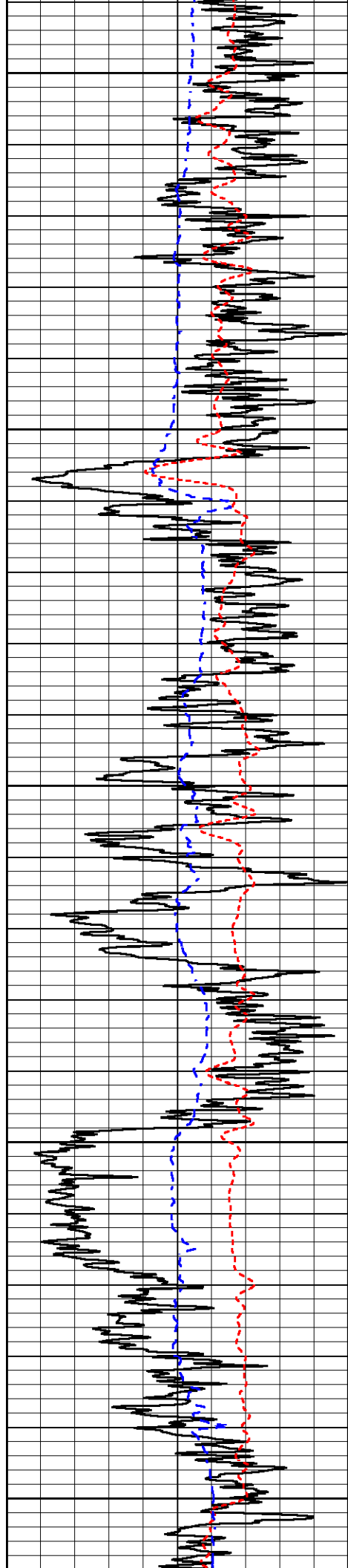
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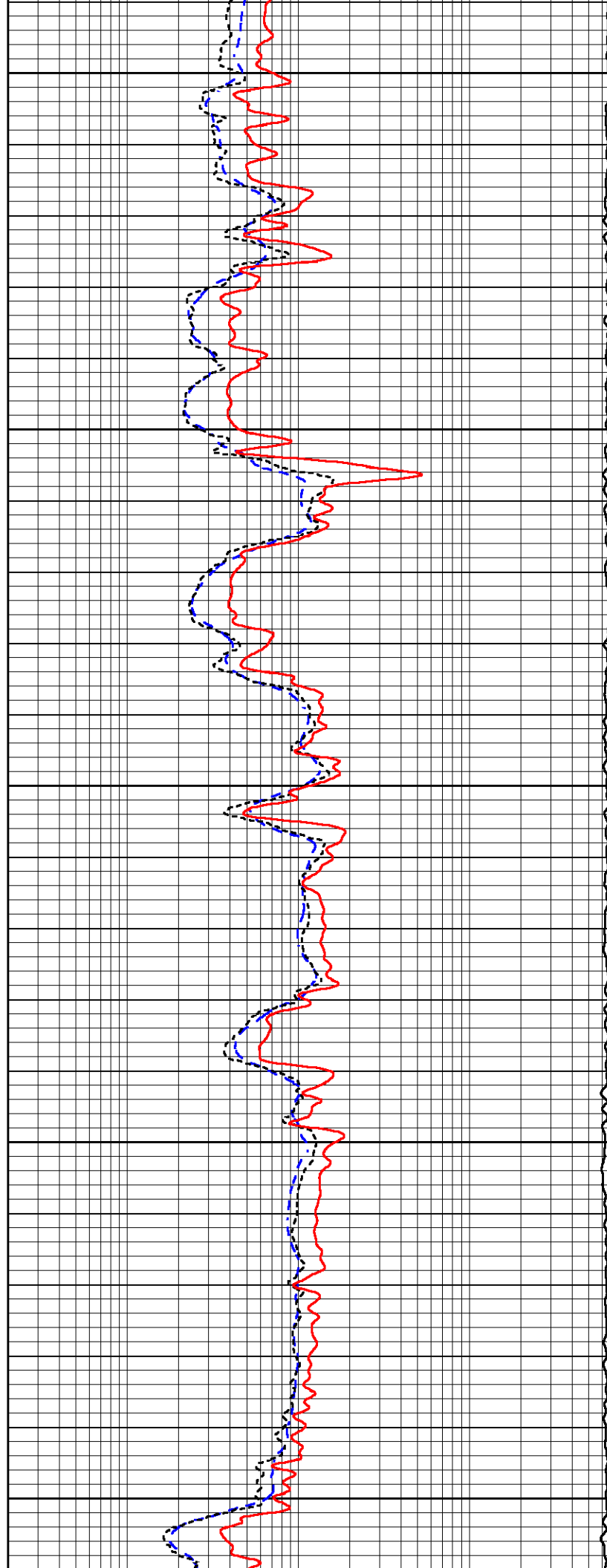
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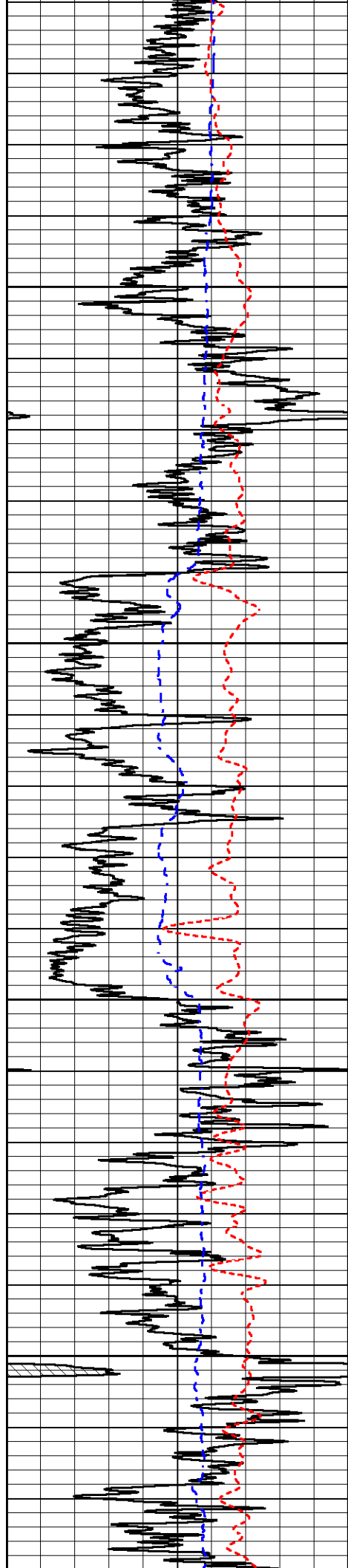
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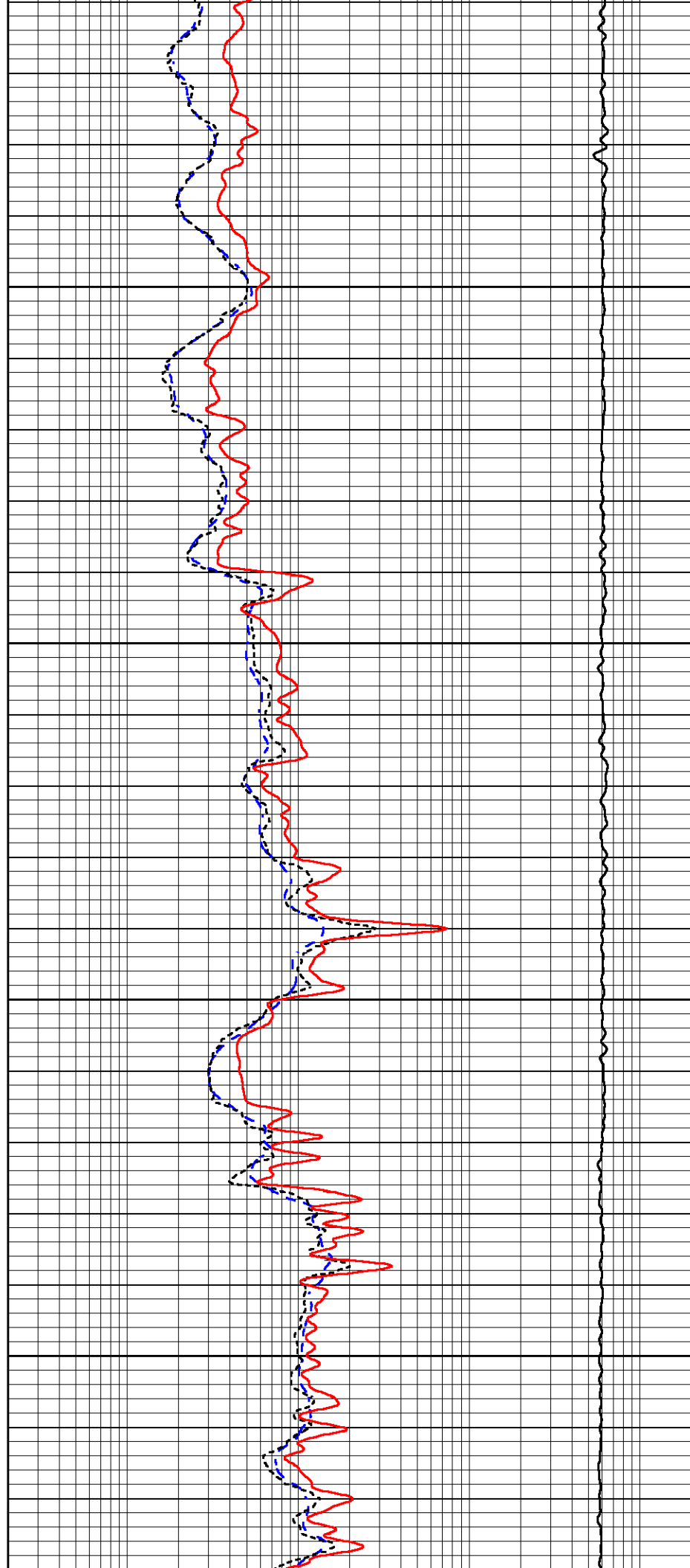


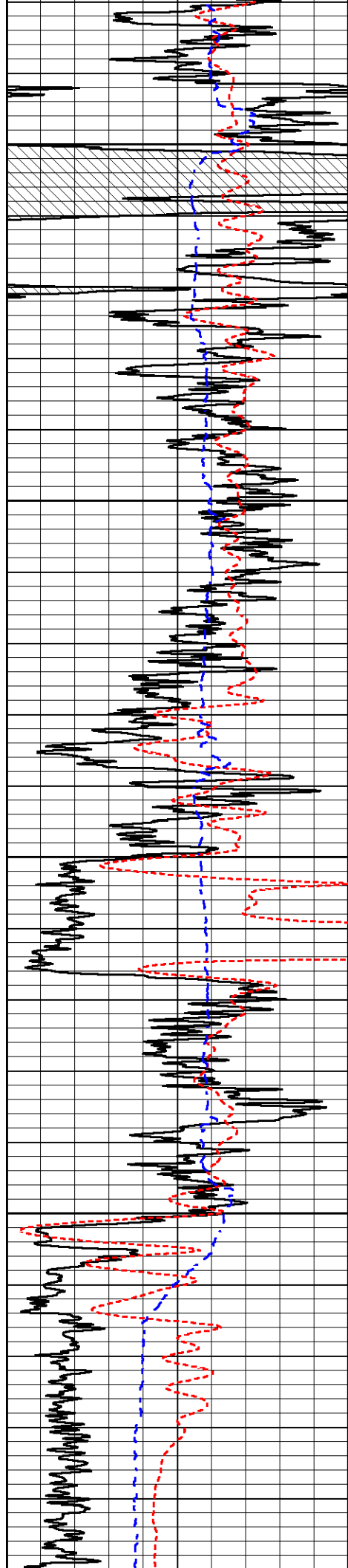
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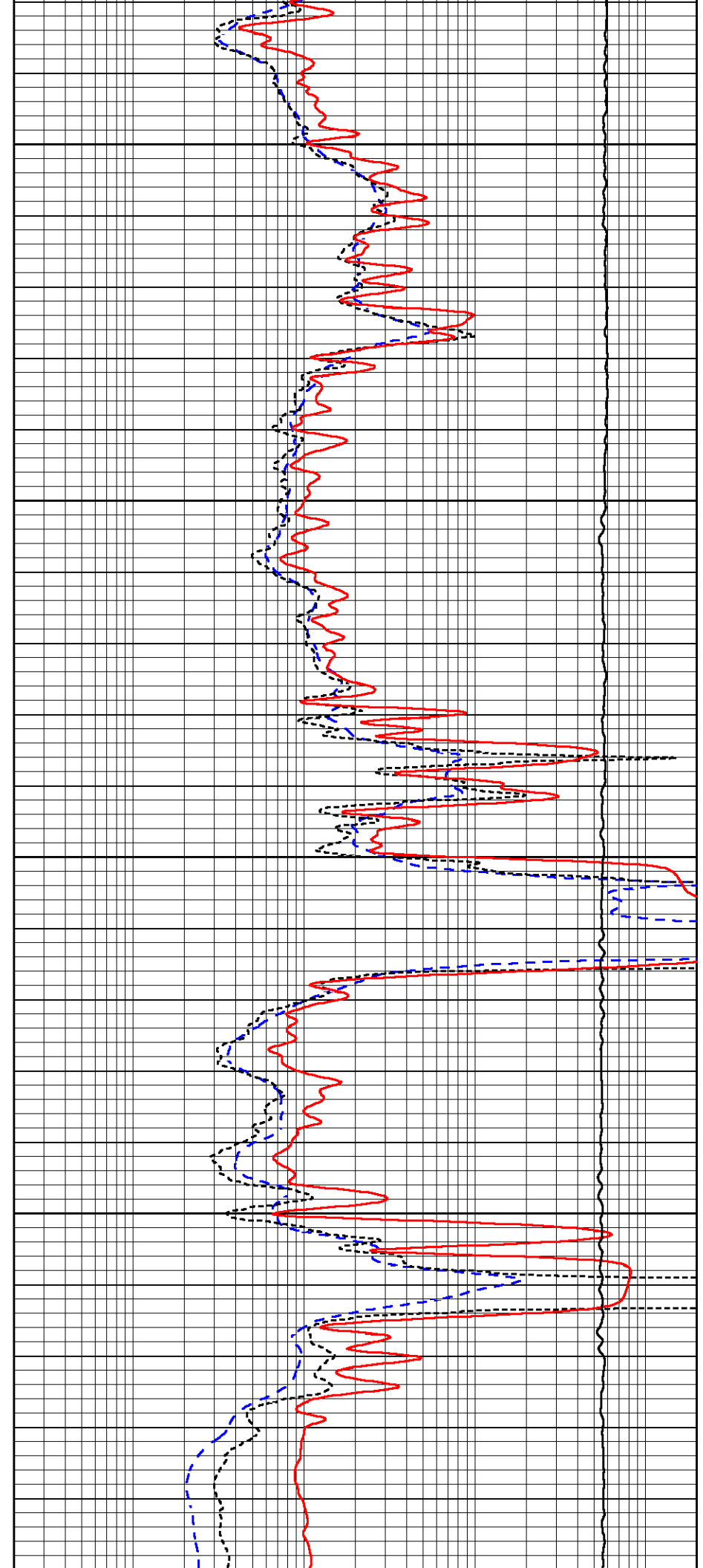
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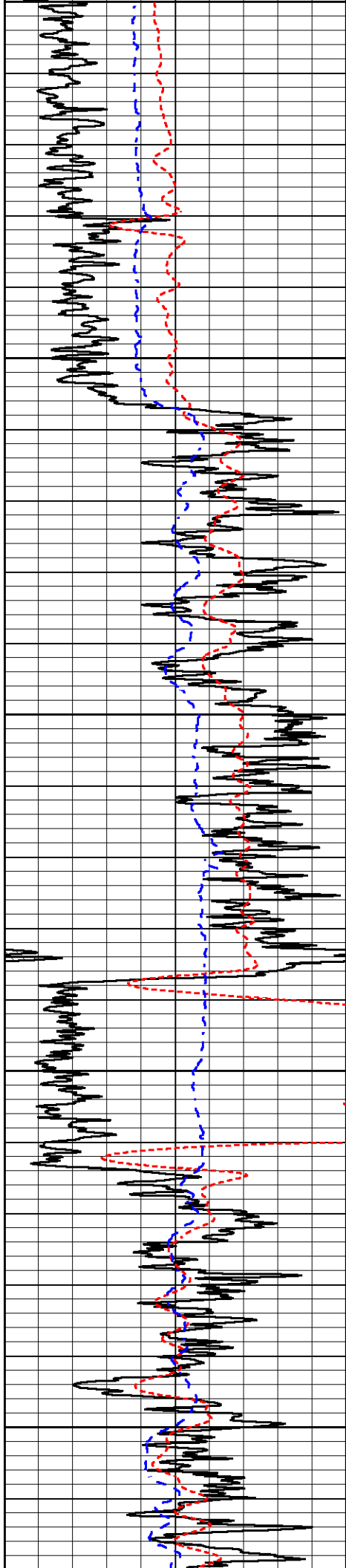
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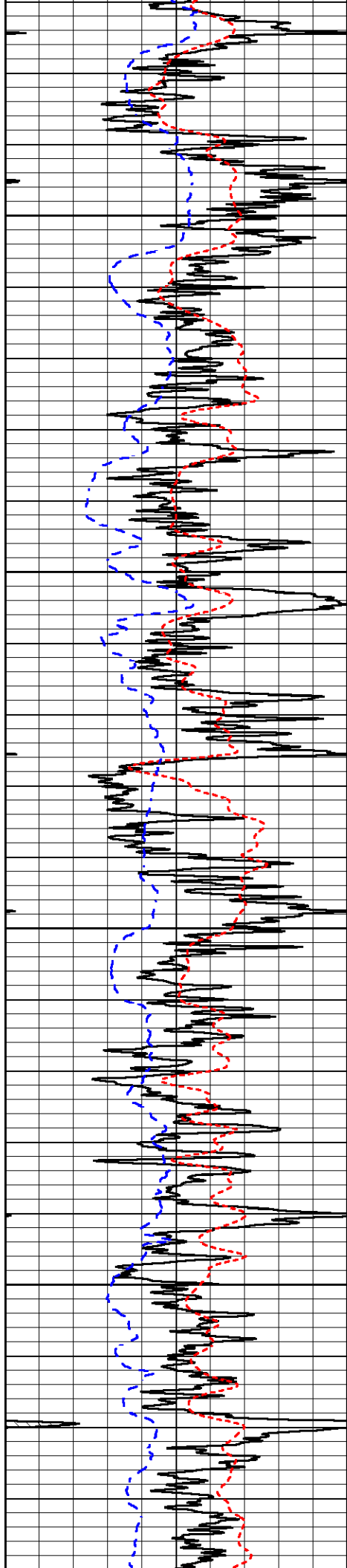
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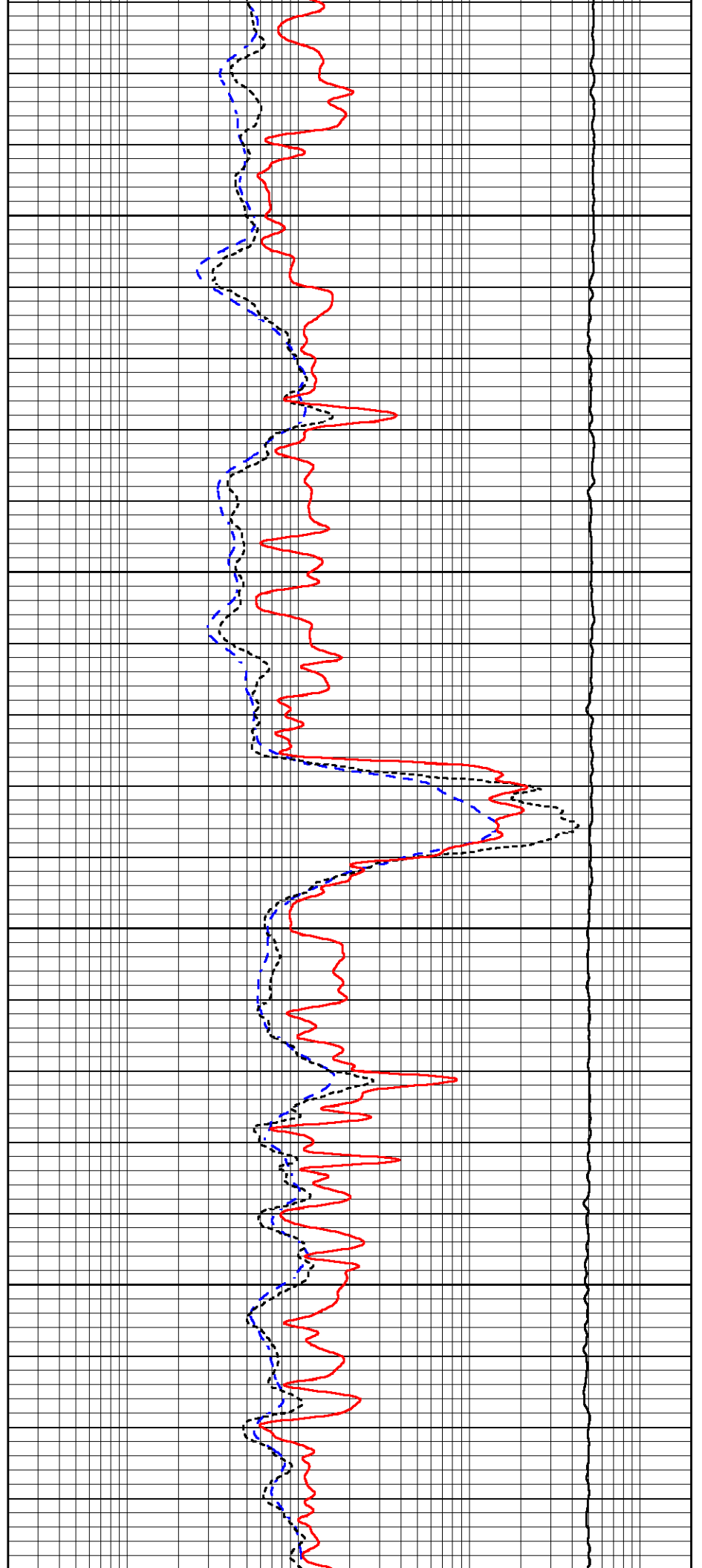


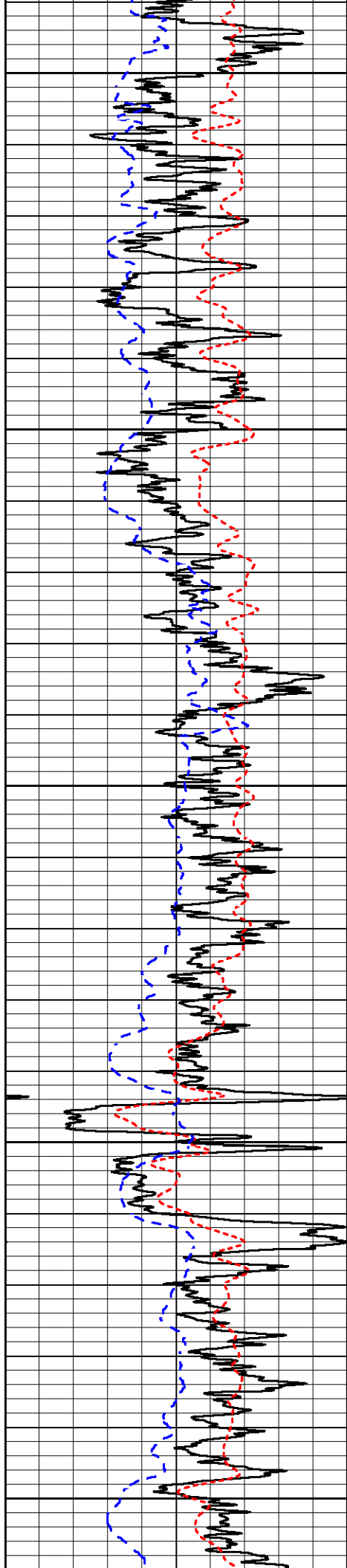
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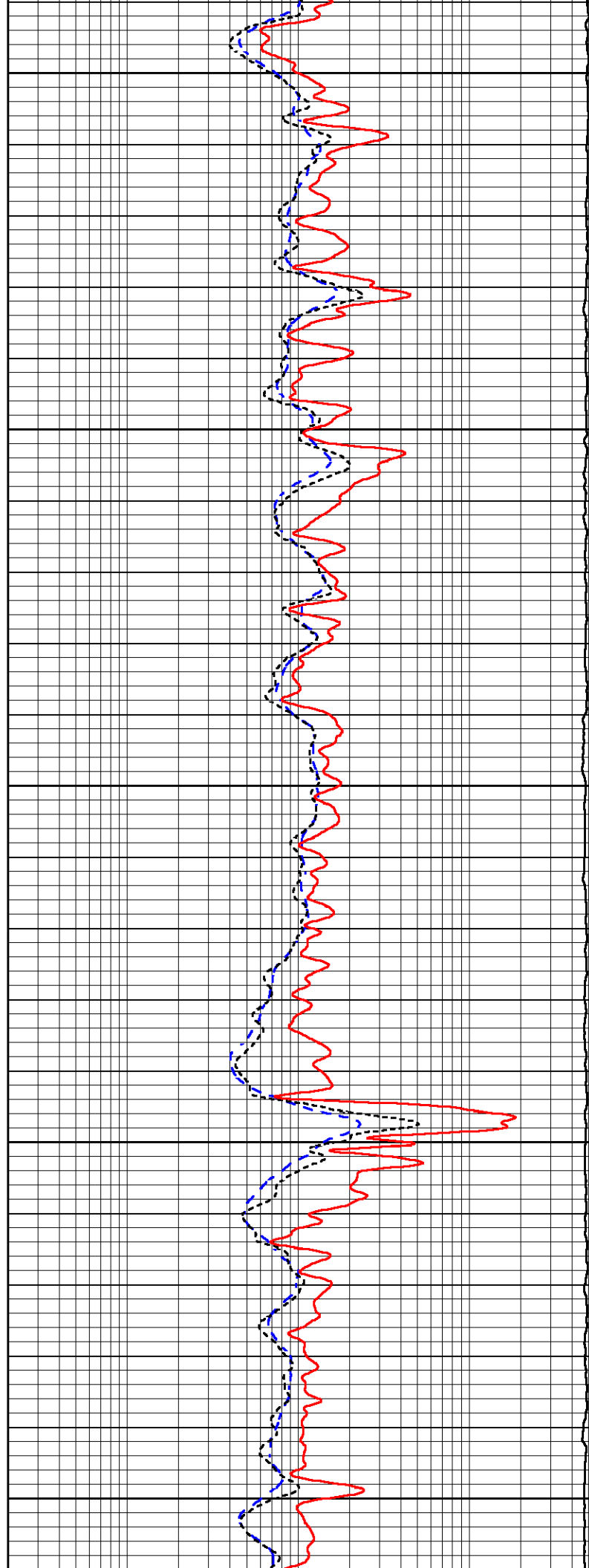
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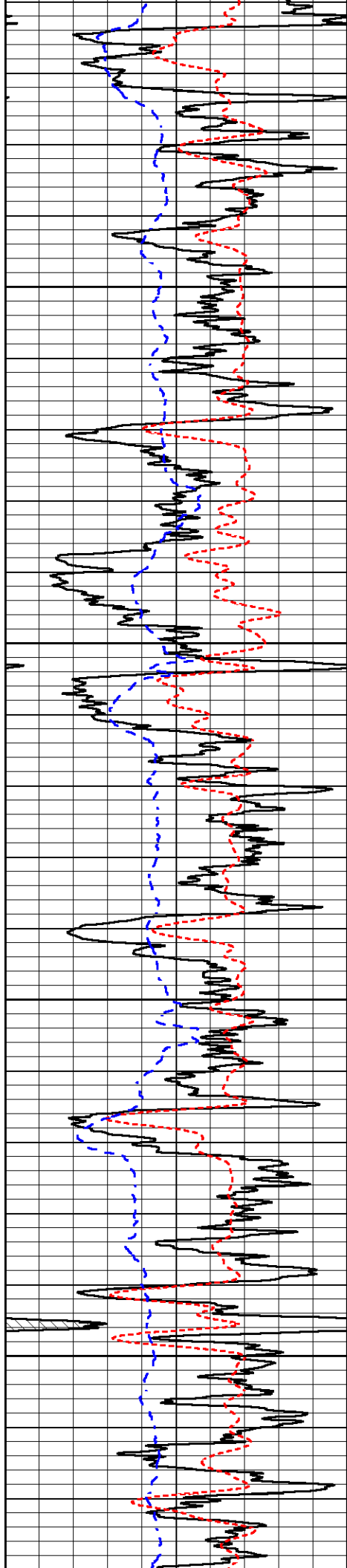
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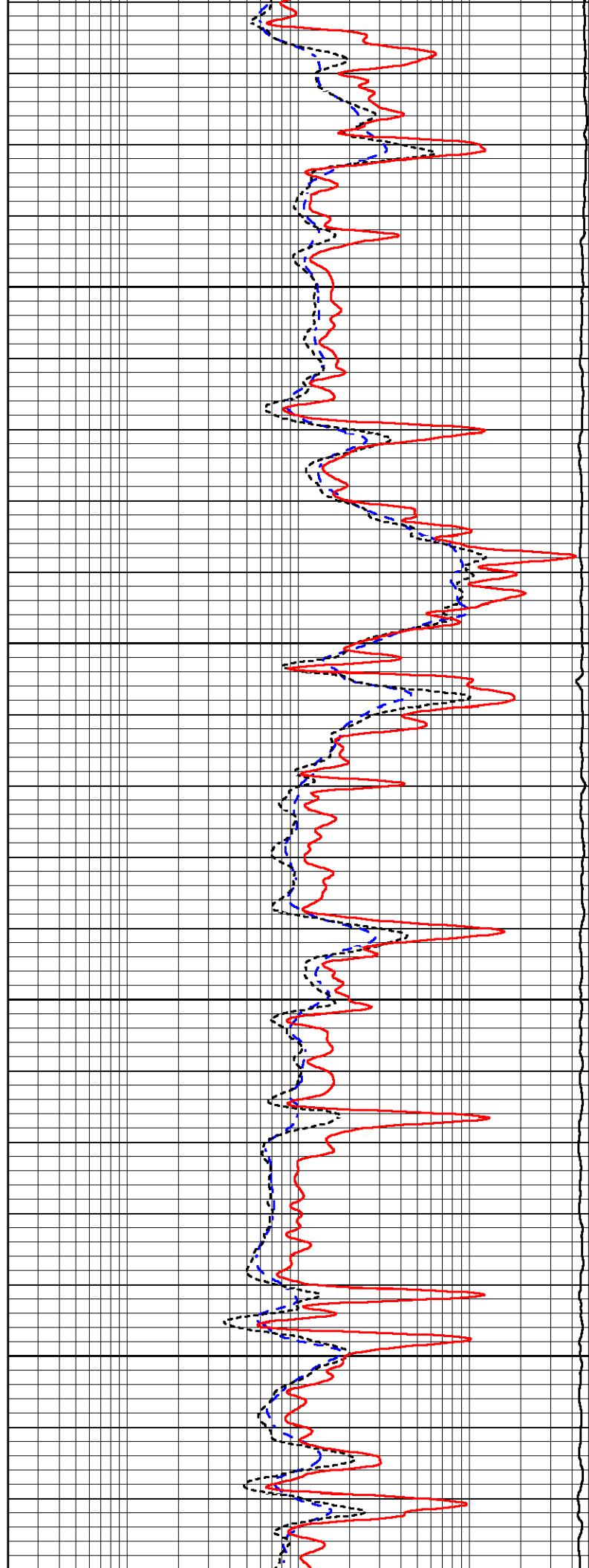


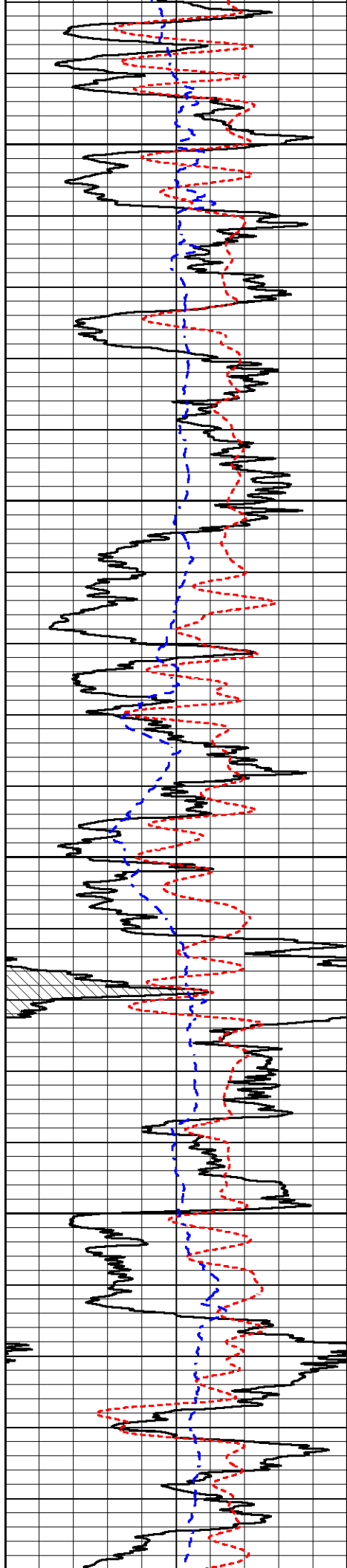
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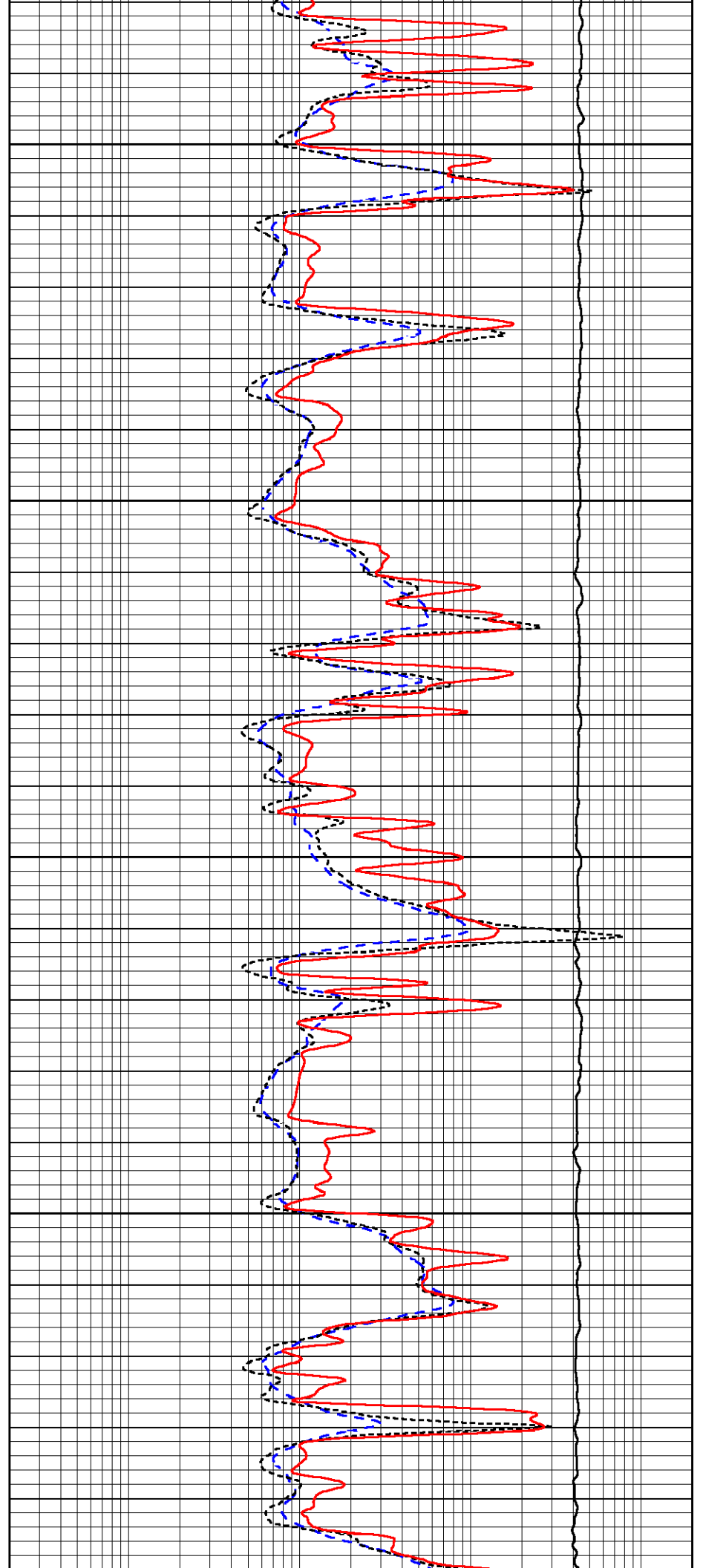
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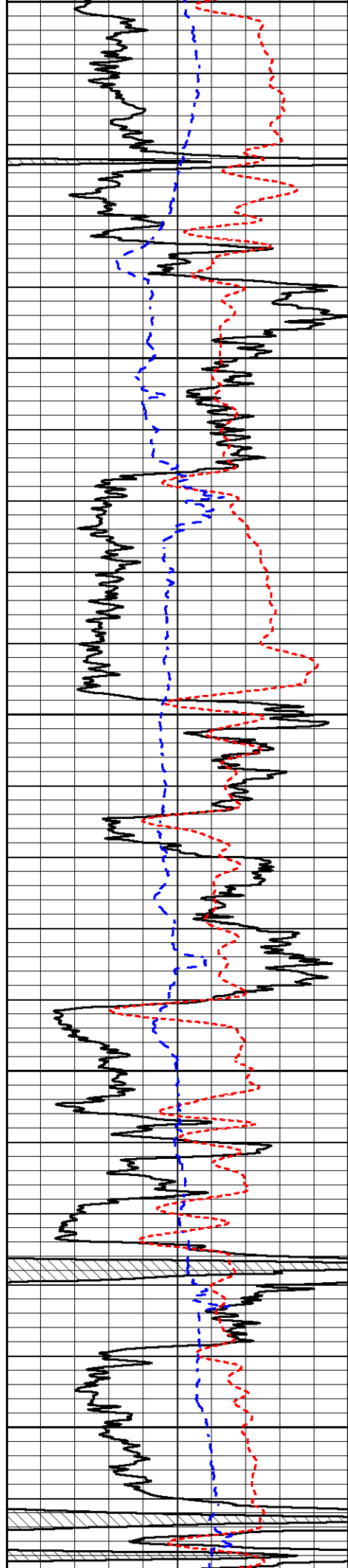
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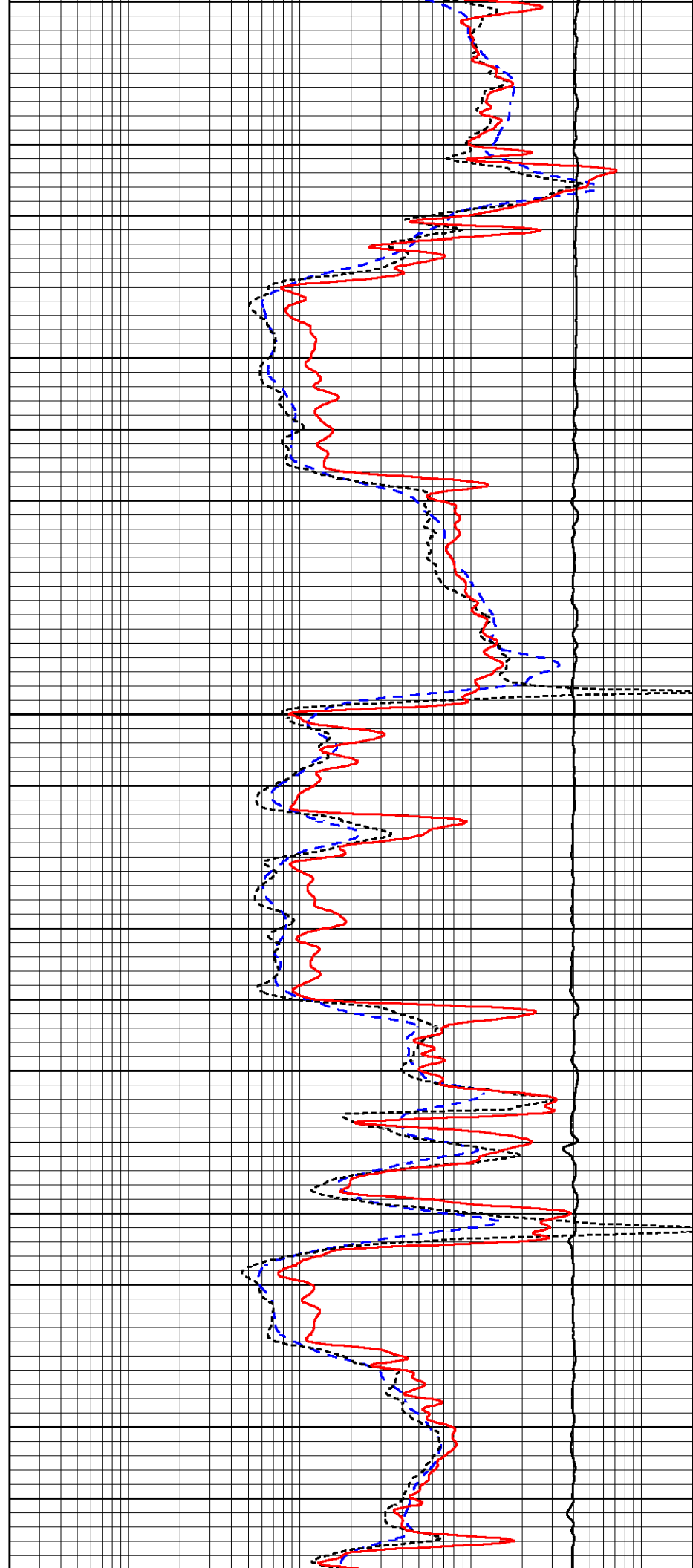
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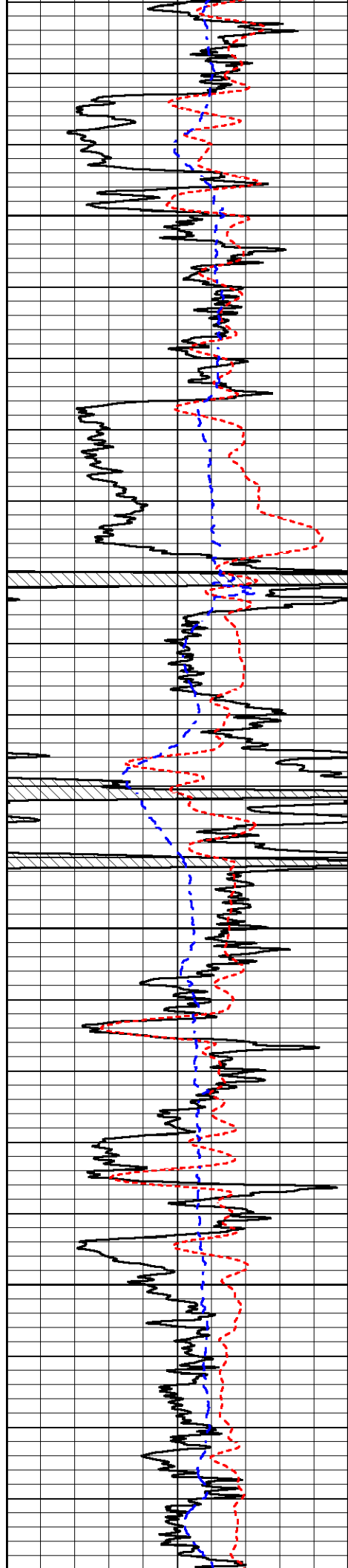
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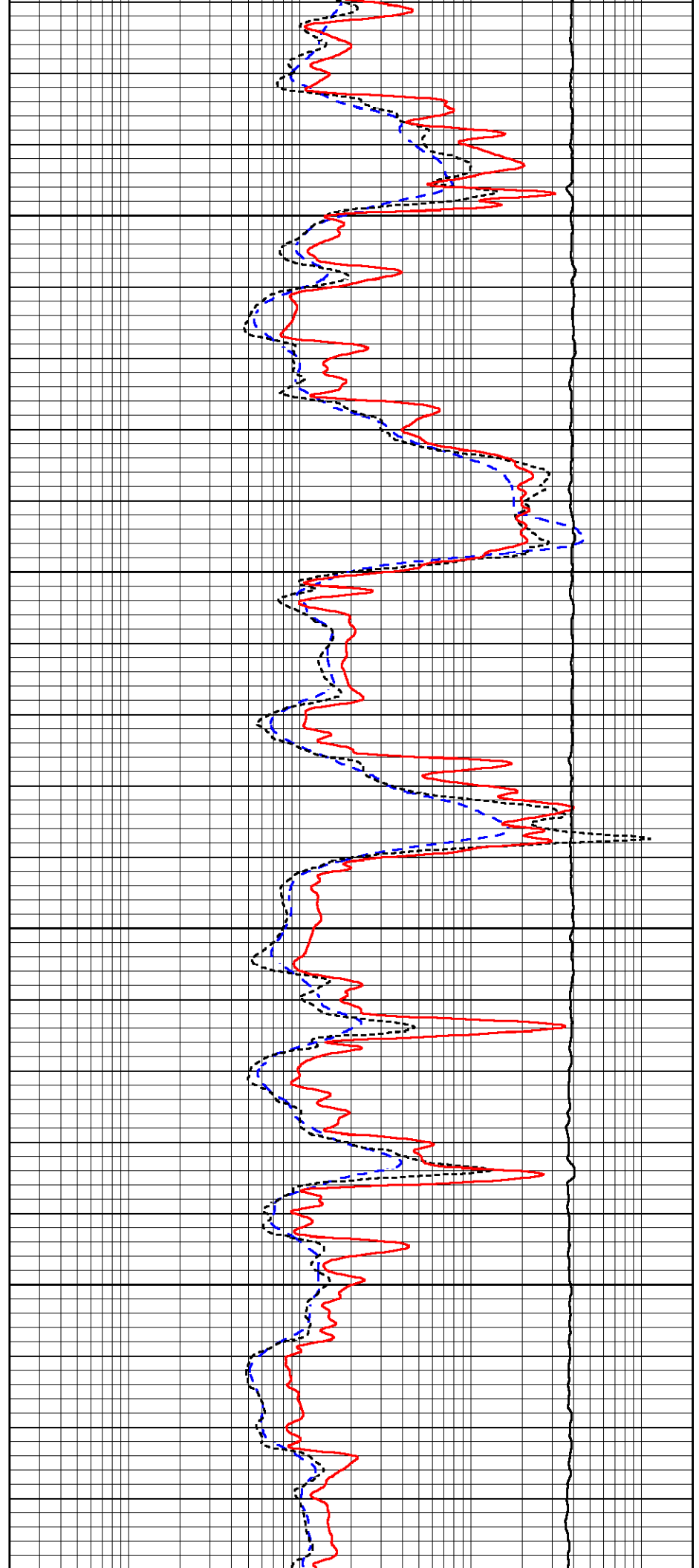


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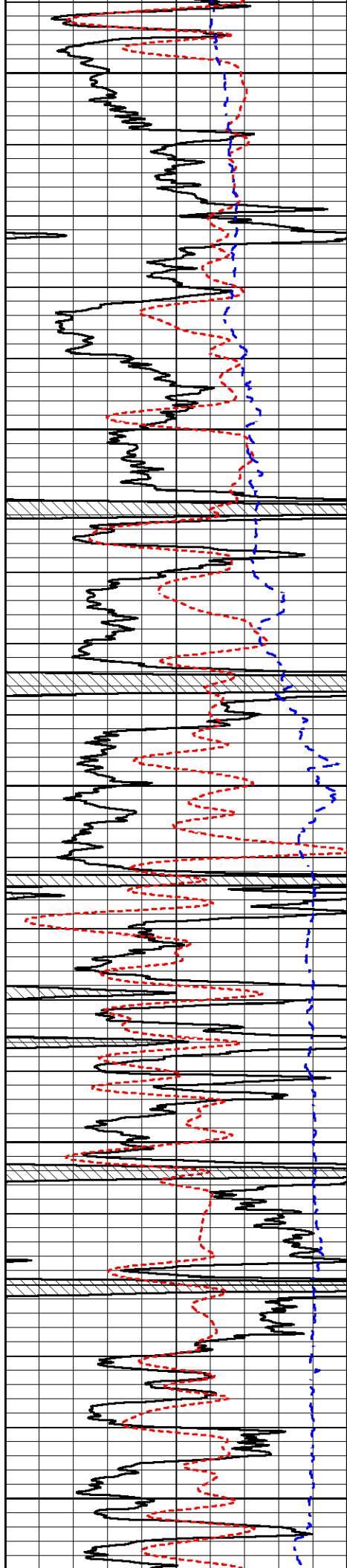


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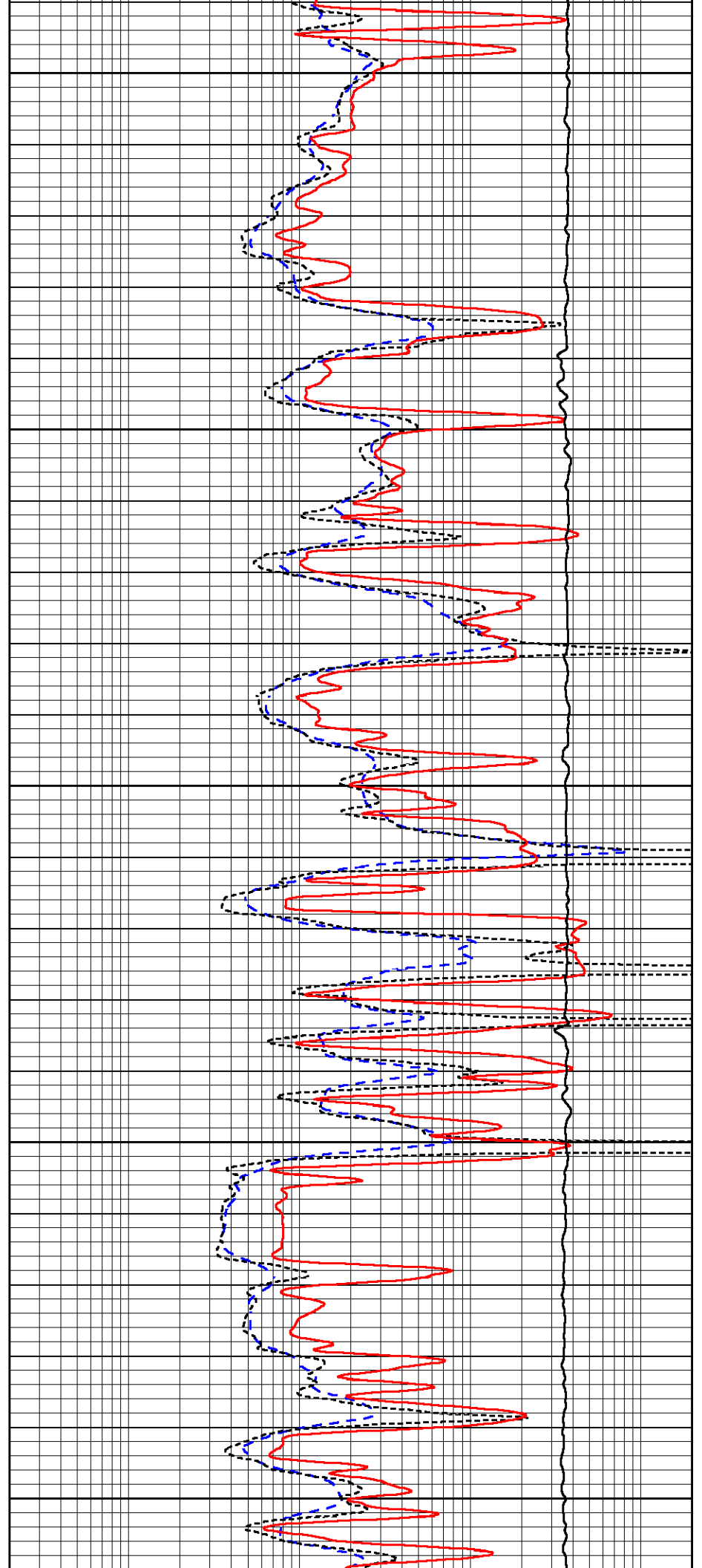
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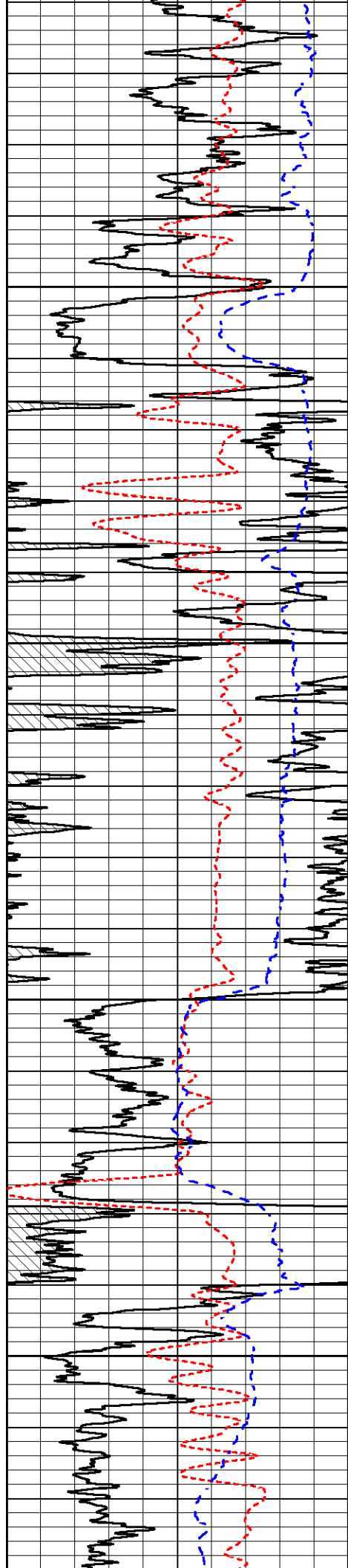
4750

4800

4850

4900



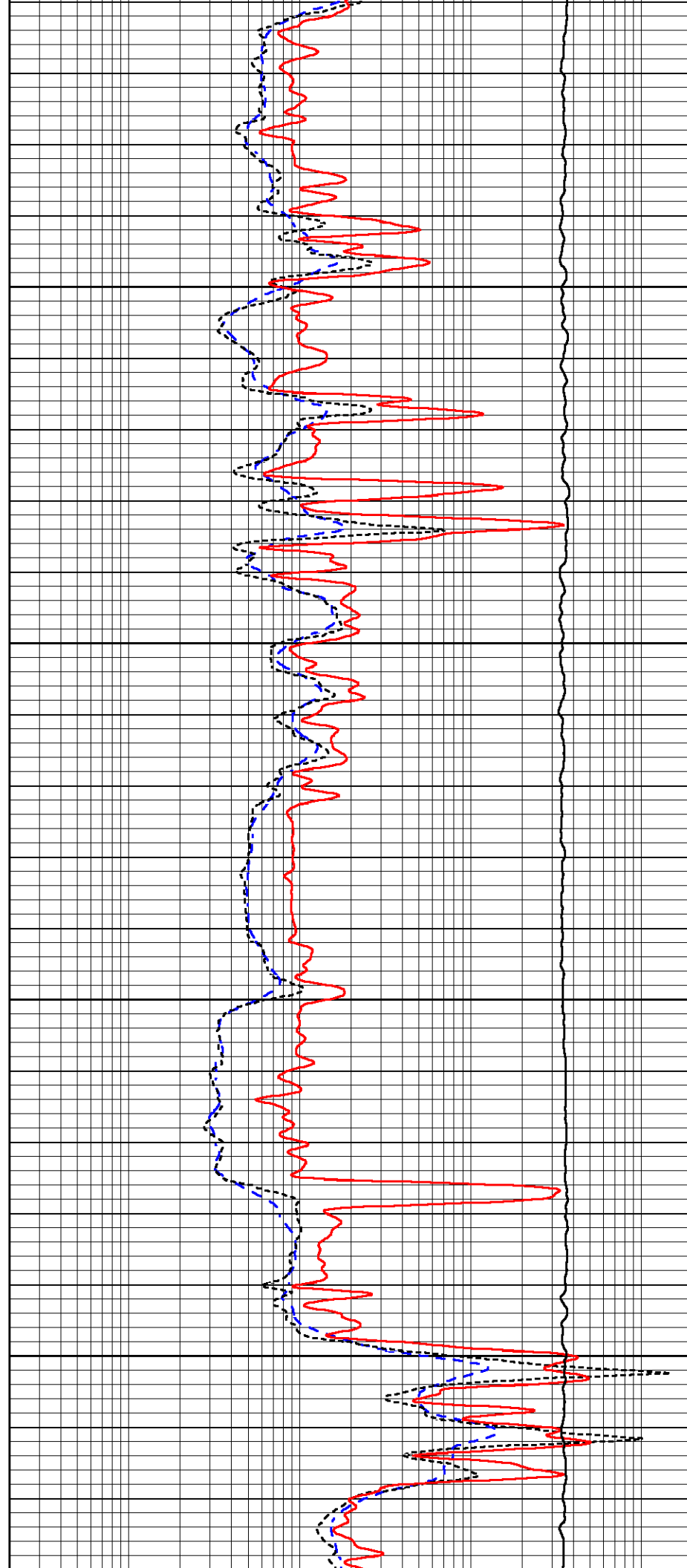


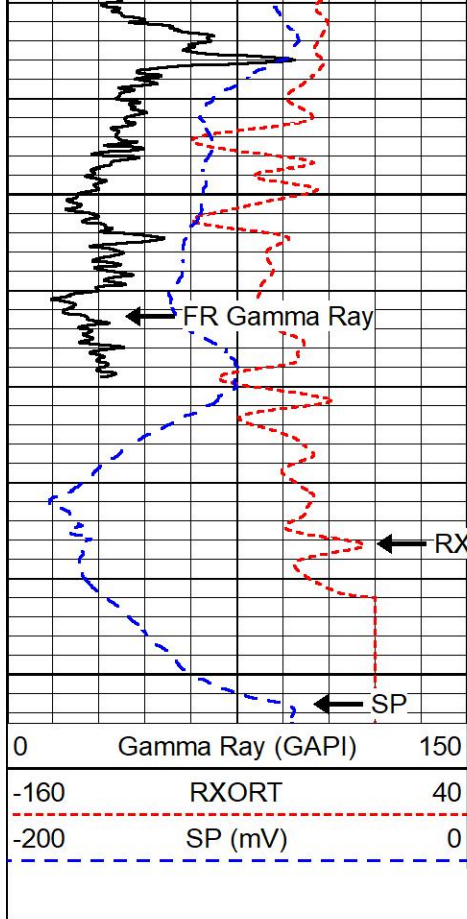
4950

5000

5050

5100



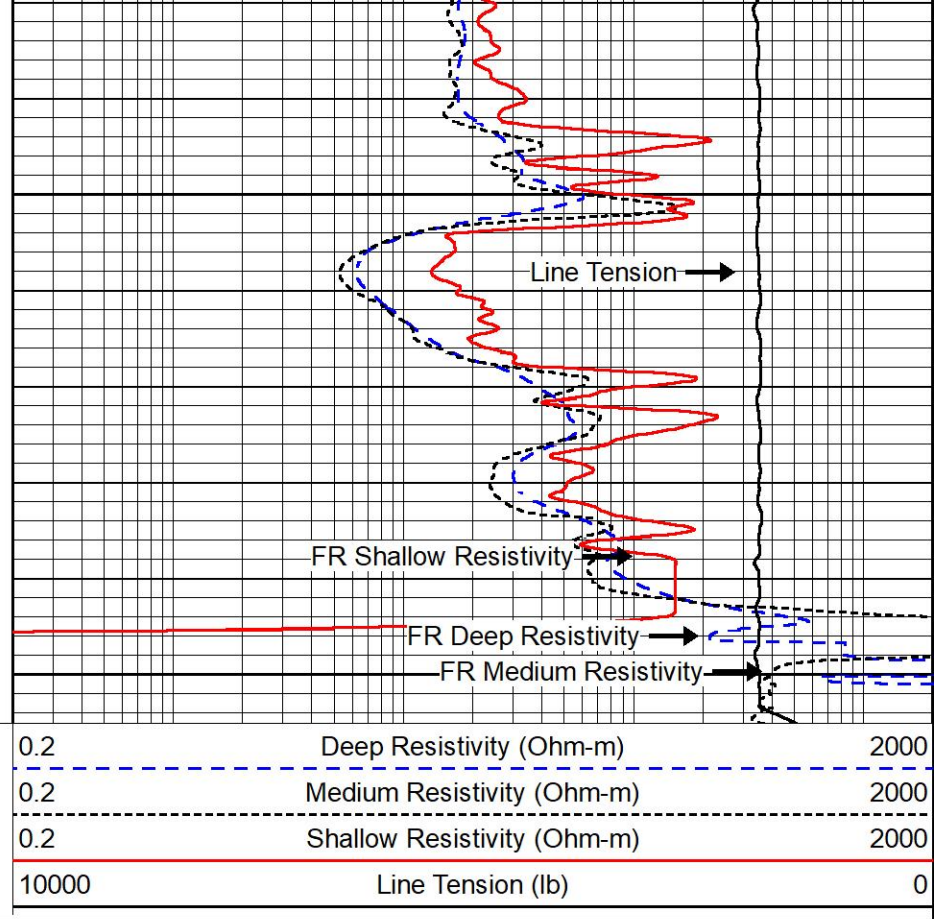


5150

RXORT

5200

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0



Line Tension

FR Shallow Resistivity

FR Deep Resistivity

FR Medium Resistivity

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0



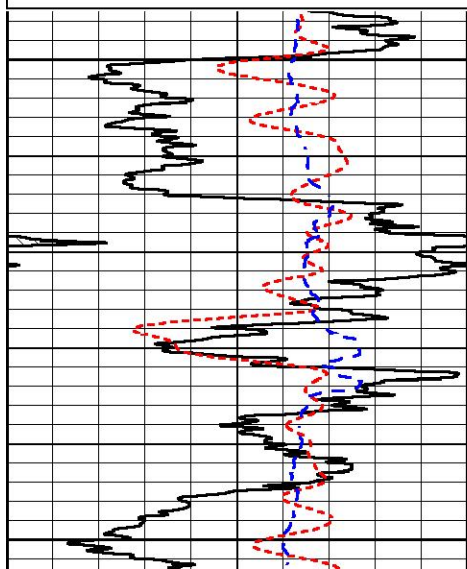
REPEAT SECTION

REPEAT PASS

Database File murfin_keller b 1-36.db
 Dataset Pathname stkml/pass2.1
 Presentation Format _dil
 Dataset Creation Mon Jan 24 22:14:24 2022
 Charted by Depth in Feet scaled 1:240

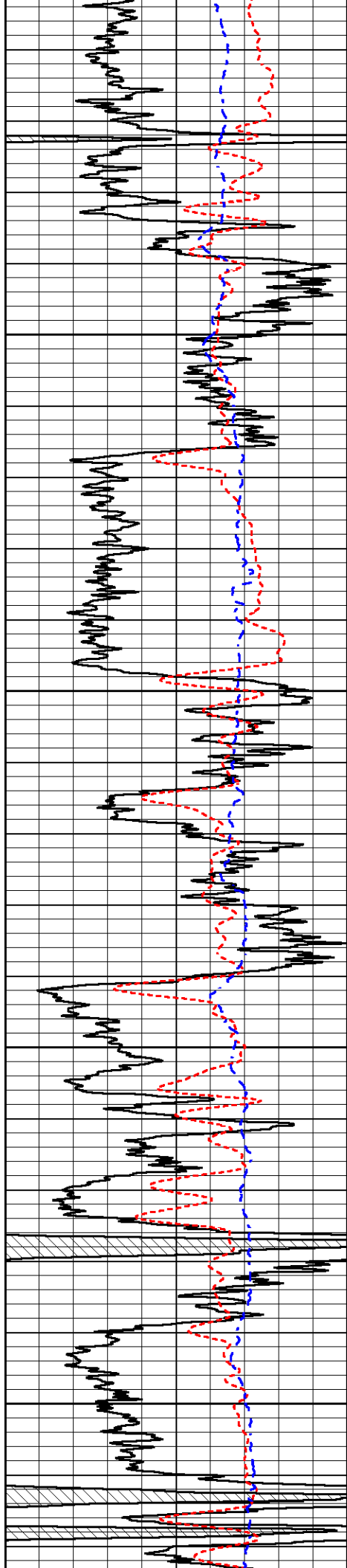
0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0



4200

4250

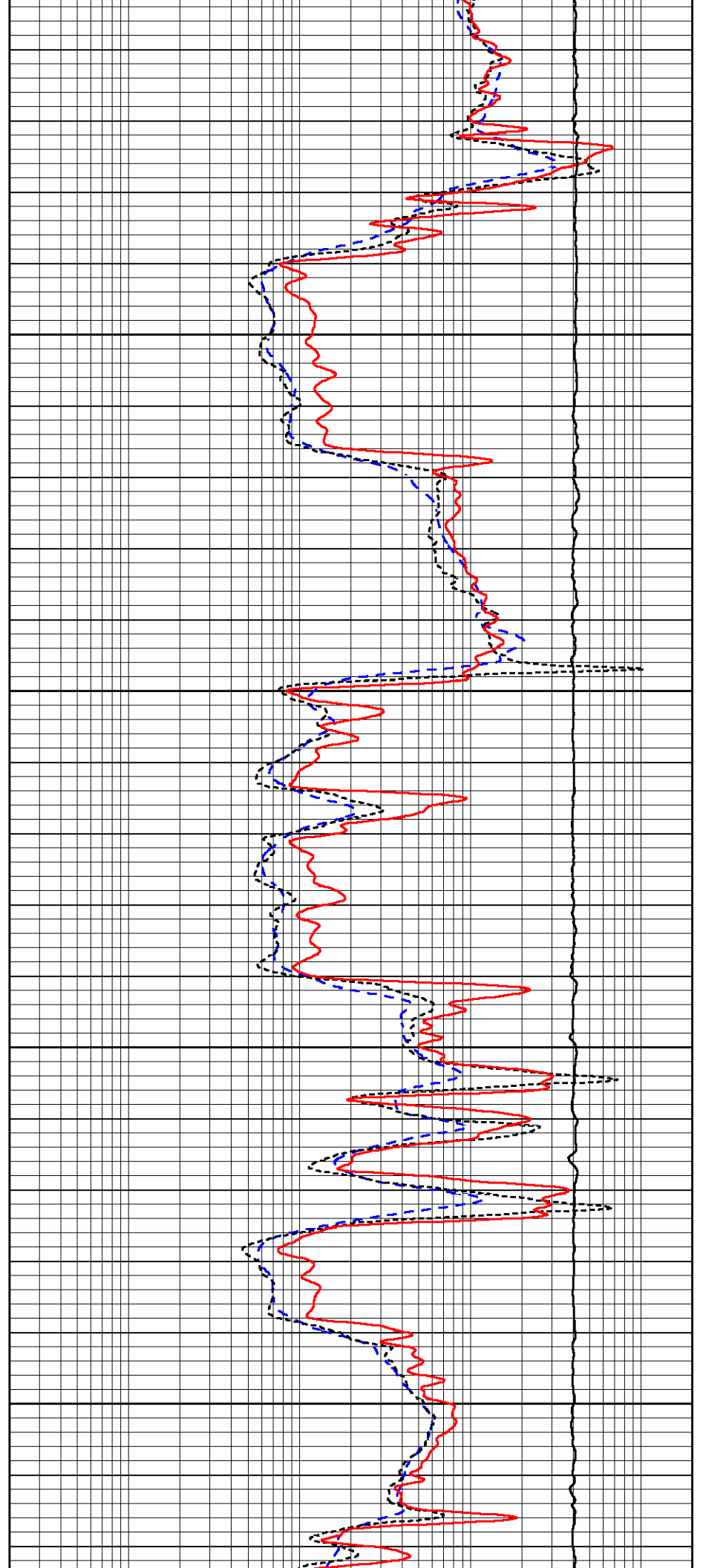


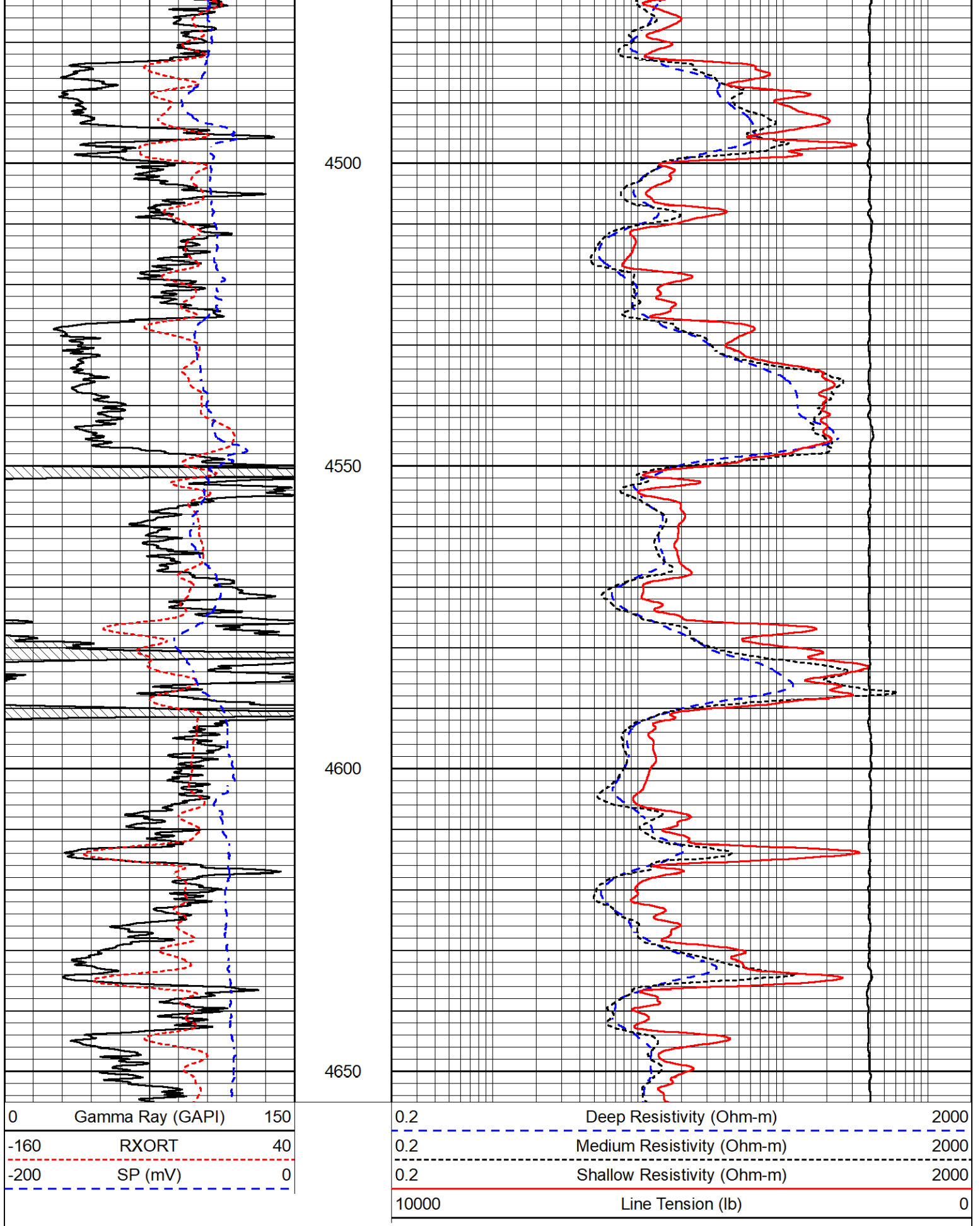
4300

4350

4400

4450





Calibration Report

Database File murfin_keller b 1-36.db
 Dataset Pathname stkml/pass3.1

Dual Induction Calibration Report

Serial-Model: 501 HT-M&W
 Surface Cal Performed: Mon Jan 24 19:13:55 2022

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.420	-33.500
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.300	-32.000

Microlog Calibration Report

Serial-Model: 402-PSIML
 Performed: Mon Jan 24 20:31:16 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	34000.0000	-2.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	0.0000
Caliper	1.0052	1.0858	5.0000	16.5000	in	125.0000	-124.0000

Compensated Density Calibration Report

Serial-Model: 305-05-M&W
 Source #: 20762B
 Master Calibration Performed: Mon Jan 24 19:14:33 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	8758.11	9709.36	cps
Aluminum	2.630	g/cc	1513.14	5652.54	cps
Spine Angle = 72.88			Density/Spine Ratio = 0.476		
	Size		Reading		
Small Ring	4.00	in	1.75		
Large Ring	14.00	in	1.38		

Compensated Neutron Calibration Report

Serial-Model: 207-MW-M&W
 Source #: 100046B
 Master Calibration Performed: Mon Nov 29 15:06:24 2021

Master Calibration

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number: 101
Tool Model: M&W
Performed: Mon Jan 24 19:14:46 2022

Calibrator Value: 500.0 GAPI
Background Reading: 24.0 cps
Calibrator Reading: 637.0 cps
Sensitivity: 0.5500 GAPI/cps



MIDWEST WIRELINE

Company Murfin Drilling Company, Inc.
Well Keller B #1-36
Field
County Cheyenne
State Kansas