



MIDWEST WIRELINE

DUAL INDUCTION LOG

Company IGWT, Inc.
 Well S&W #1
 Field
 County Butler State Kansas

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 Well S&W #1
 Field
 County Butler
 State Kansas

Location: API #: 15-015-24201-00-00
 NW NW
 660 FNL & 660 FWL
 SEC 31 TWP 23S RGE 4E
 Permanent Datum Ground Level Elevation 1367
 Log Measured From Kelly Bushing
 Drilling Measured From Kelly Bushing
 Other Services
 CNL/CDL
 MEL
 Elevation
 K.B. 1376
 D.F.
 G.L. 1367

Date	4/7/2023
Run Number	One
Depth Driller	2520
Depth Logger	2522
Bottom Logged Interval	2521
Top Log Interval	200
Casing Driller	8.625 @ 224
Casing Logger	2.19
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	1100
Density / Viscosity	9.4 47
pH / Fluid Loss	10.0 10.2
Source of Sample	Flowline
Rm @ Meas. Temp	0.8 @ 72
Rmt @ Meas. Temp	0.6 @ 72
Rmc @ Meas. Temp	1.08 @ 72
Source of Rmf / Rmc	Charts
Rm @ BHT	0.57 @ 101
Operating Rig Time	2 Hours
Max Rec. Temp. F	101
Equipment Number	P-24
Location	Hays
Recorded By	T. Martin
Witnessed By	Bill Stout

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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.

Newton, KS, E on 1st St ~12 mi to Meadowlark Rd,
 2 S, 2 E, 1/2 S, E into

Log Measured From: Kelly Bushing 9 Ft. Above Permanent Datum

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

Your Midwest Wireline Crew		This Log Record Was Witnessed By	
Engineer: T. Martin	Operator:	Primary Witness: Bill Stout	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Core	Offset (ft)	Depth	Description	Length (ft)	O.D. (in)	Weight (lb)
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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (103)	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 (307-08)	8.50	4.00	250.00
MCAL MI MN	19.58 19.58 19.58		ML-PSIML (401)	7.58	4.00	65.00
RLL3F RLL3	15.50 15.50					
CILD	8.33		DIL-M&W (507)	18.25	3.50	220.00
CILM	4.50					
SP	0.20					

Dataset: igwt_s&w #1.db: field/well/StkMI/pass3.1
 Total length: 42.33 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\igwt_s&w #1.db
 Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	101	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	0	0	460	30	Off	2522

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

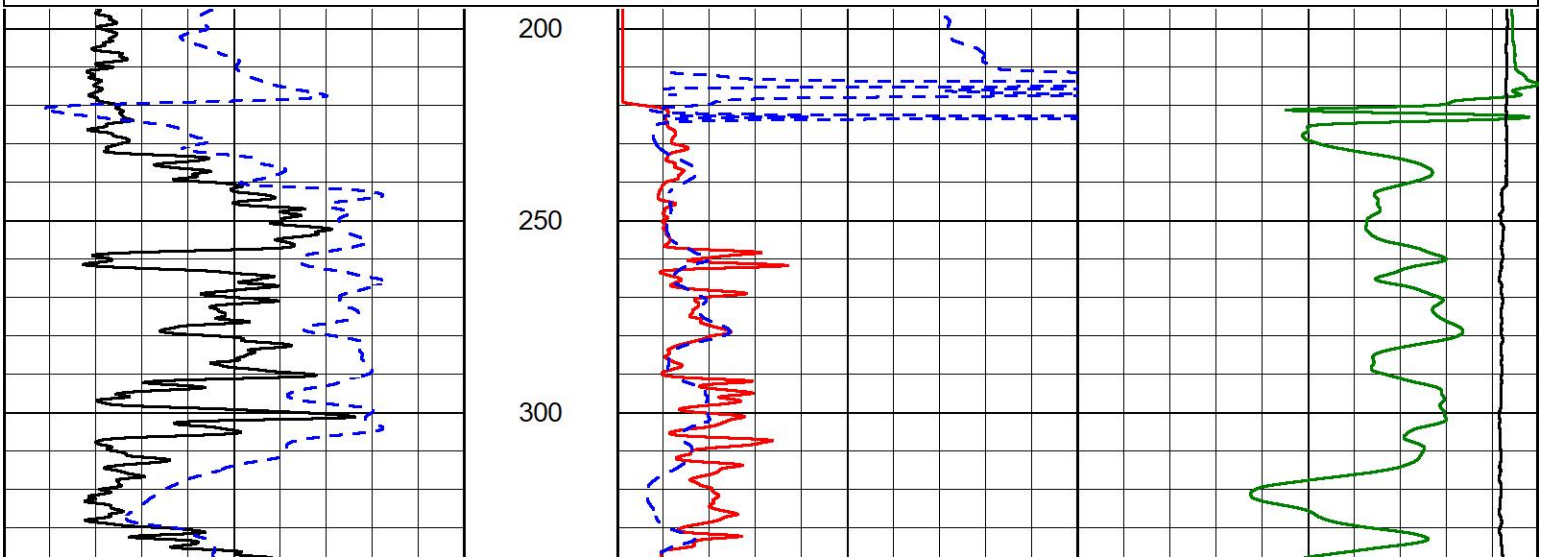


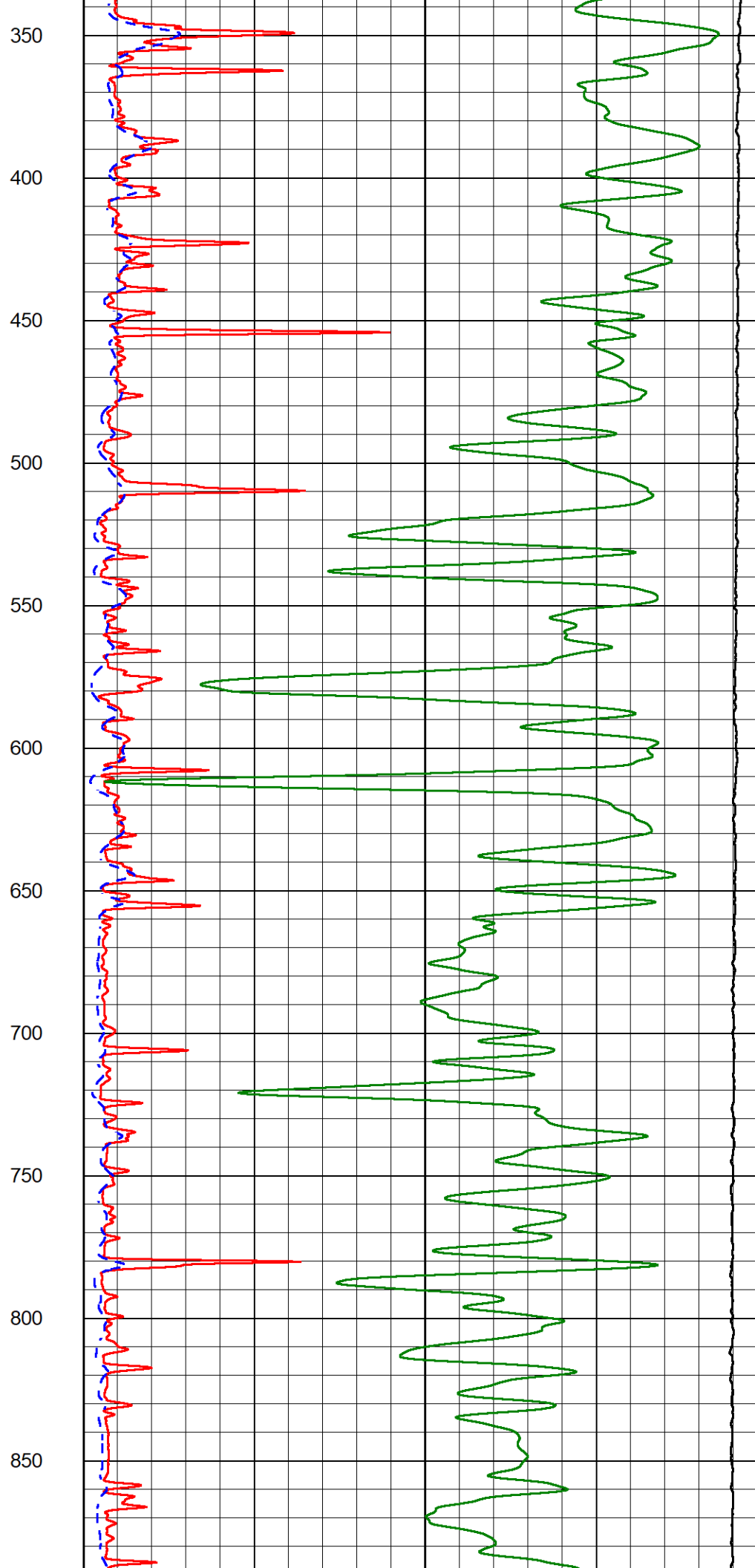
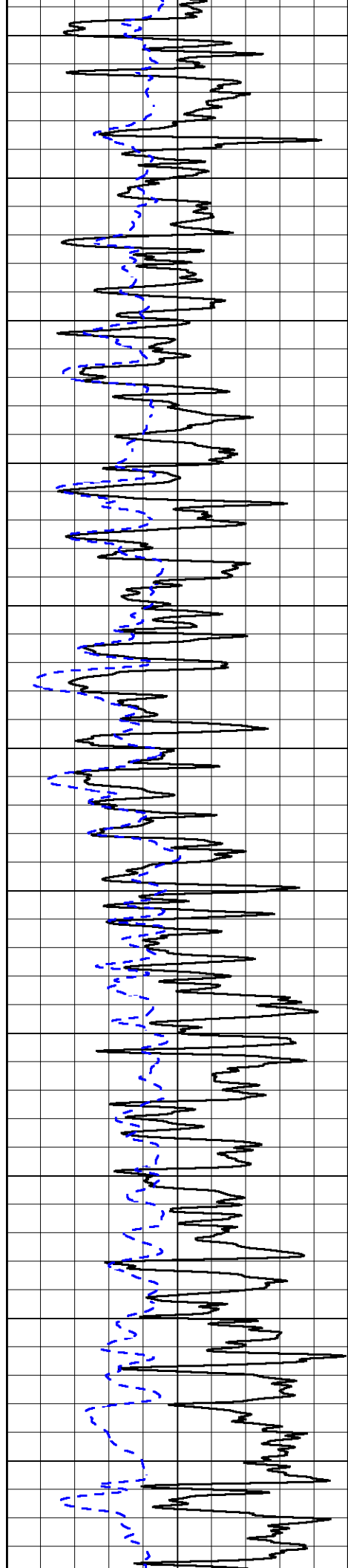
2" SCALE RESISTIVITY

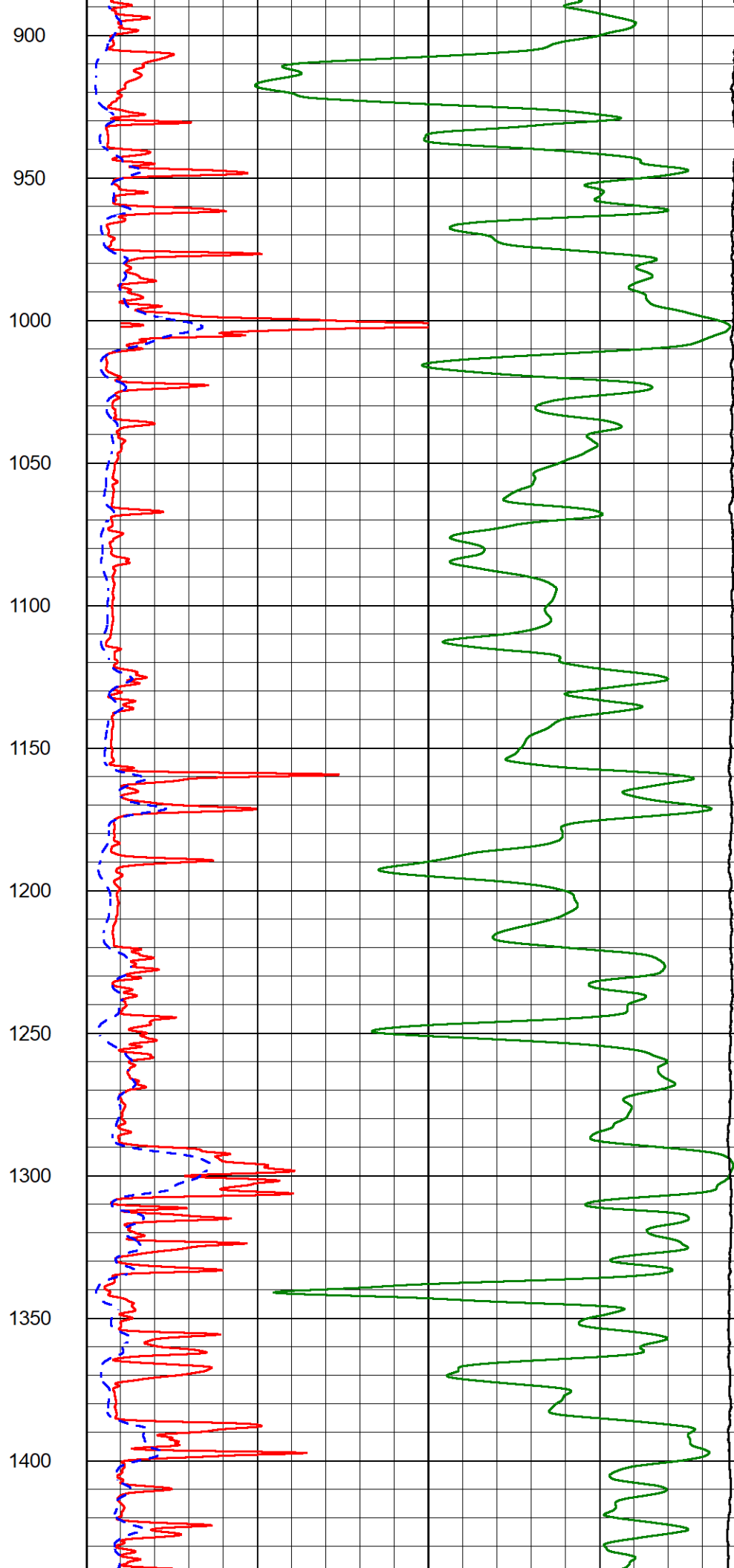
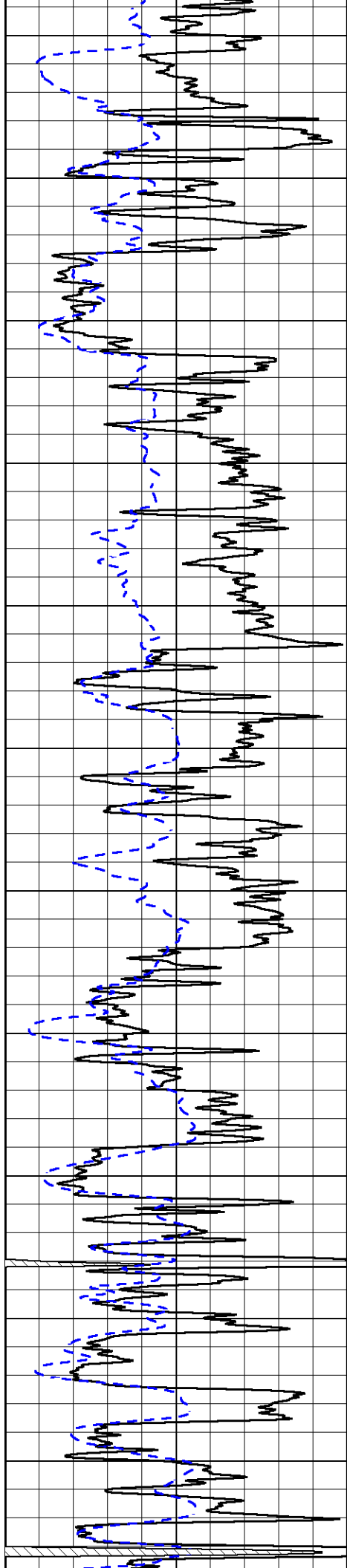
MAIN PASS

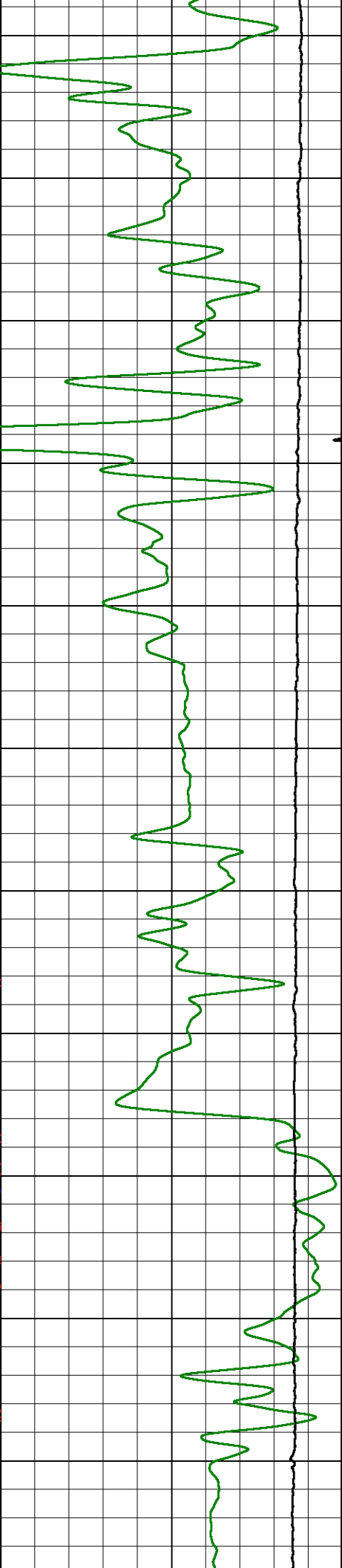
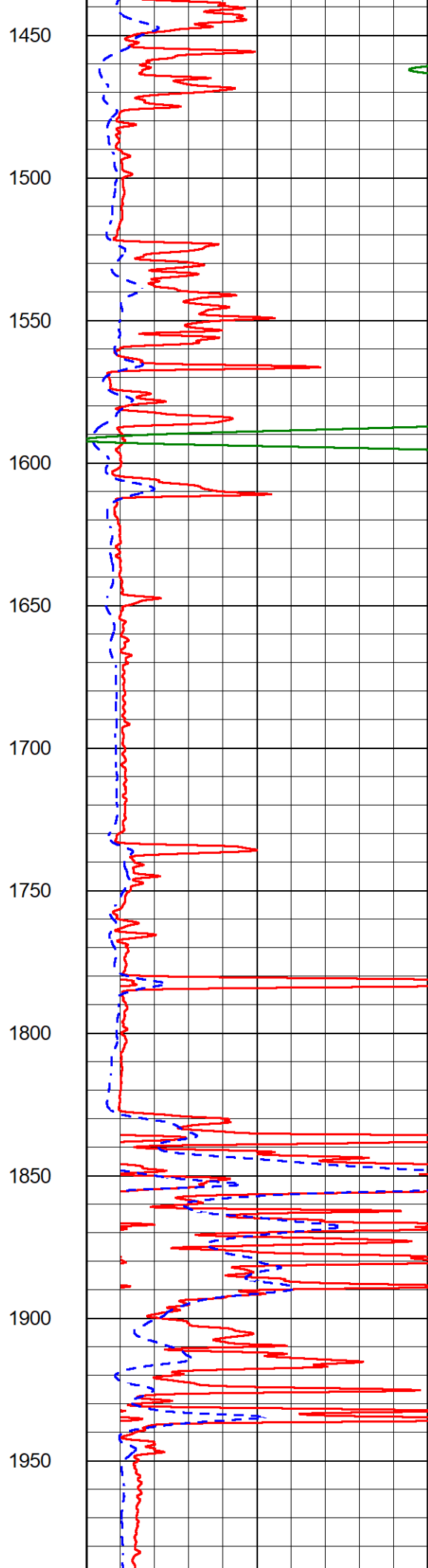
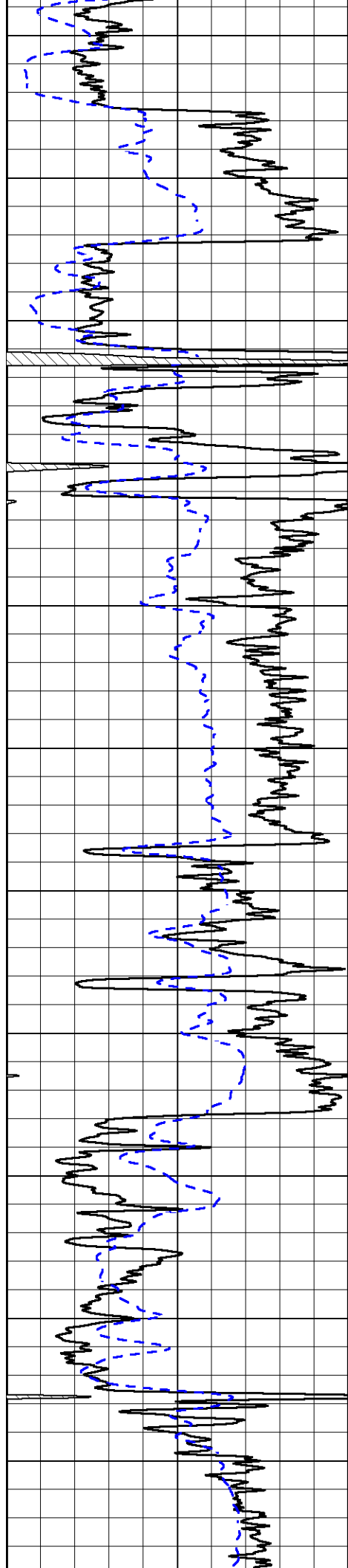
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 Presentation Format _dil2in
 Dataset Creation Fri Apr 07 05:26:40 2023
 Charted by Depth in Feet scaled 1:600

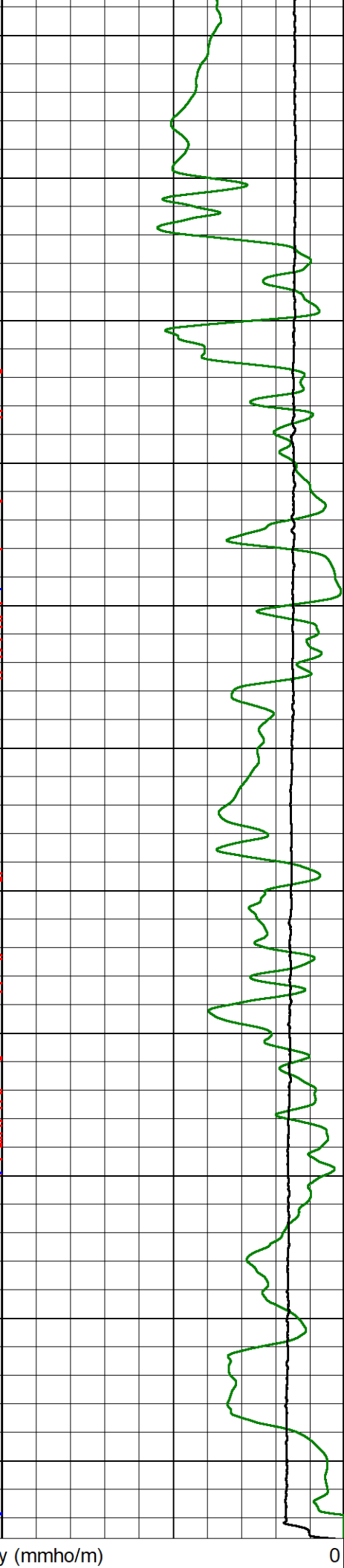
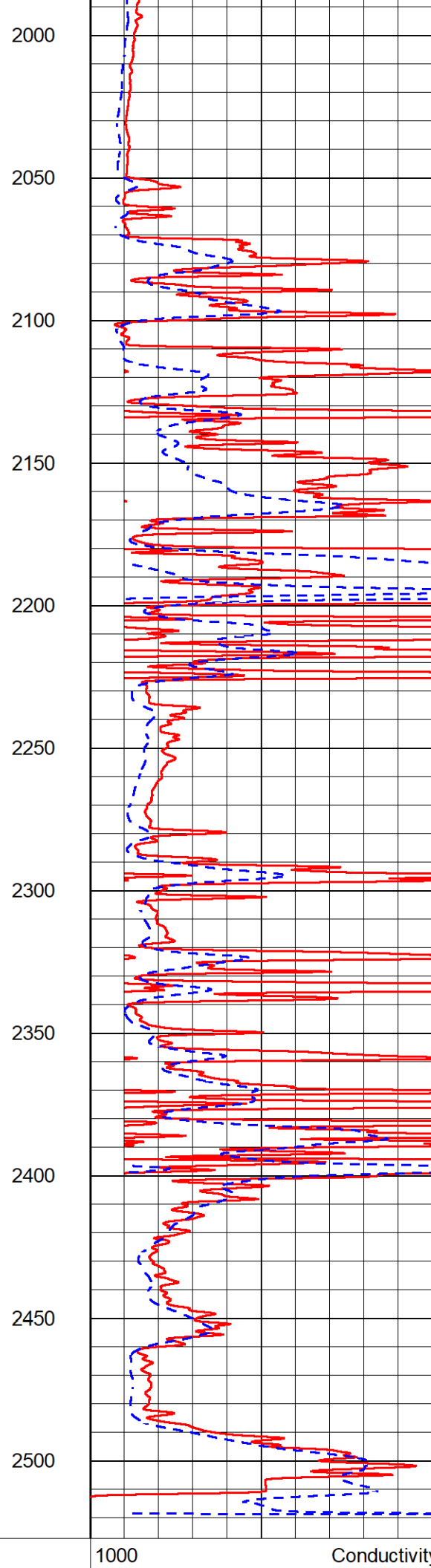
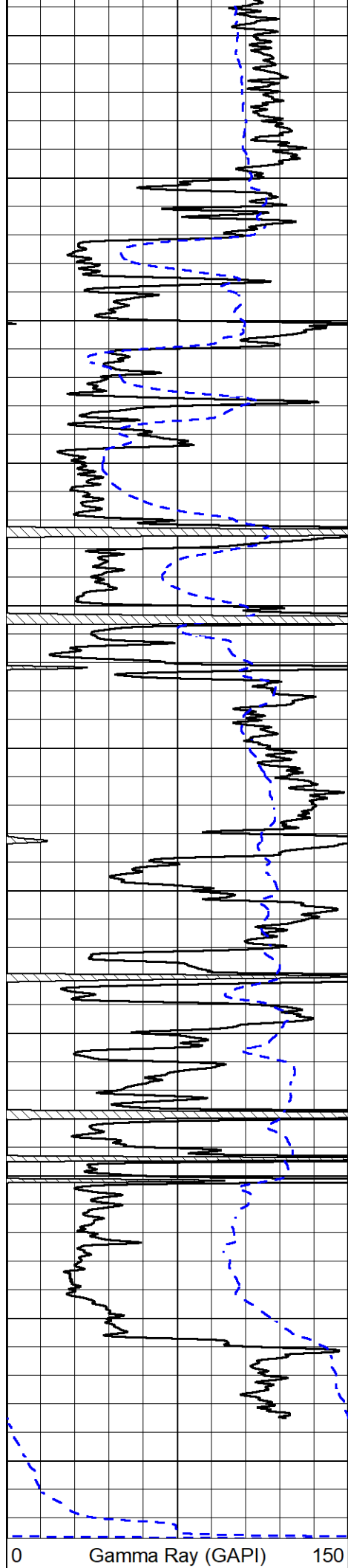
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-200	SP (mV)	0	15000	Line Tension (lb)	0
		0		Shallow Resistivity (Ohm-m)	50
		0		Deep Resistivity (Ohm-m)	50
		Shallow Resistivity			
		50	(Ohm-m)	200	
		50		Deep Resistivity (Ohm-m)	200











-200	SP (mV)	0
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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



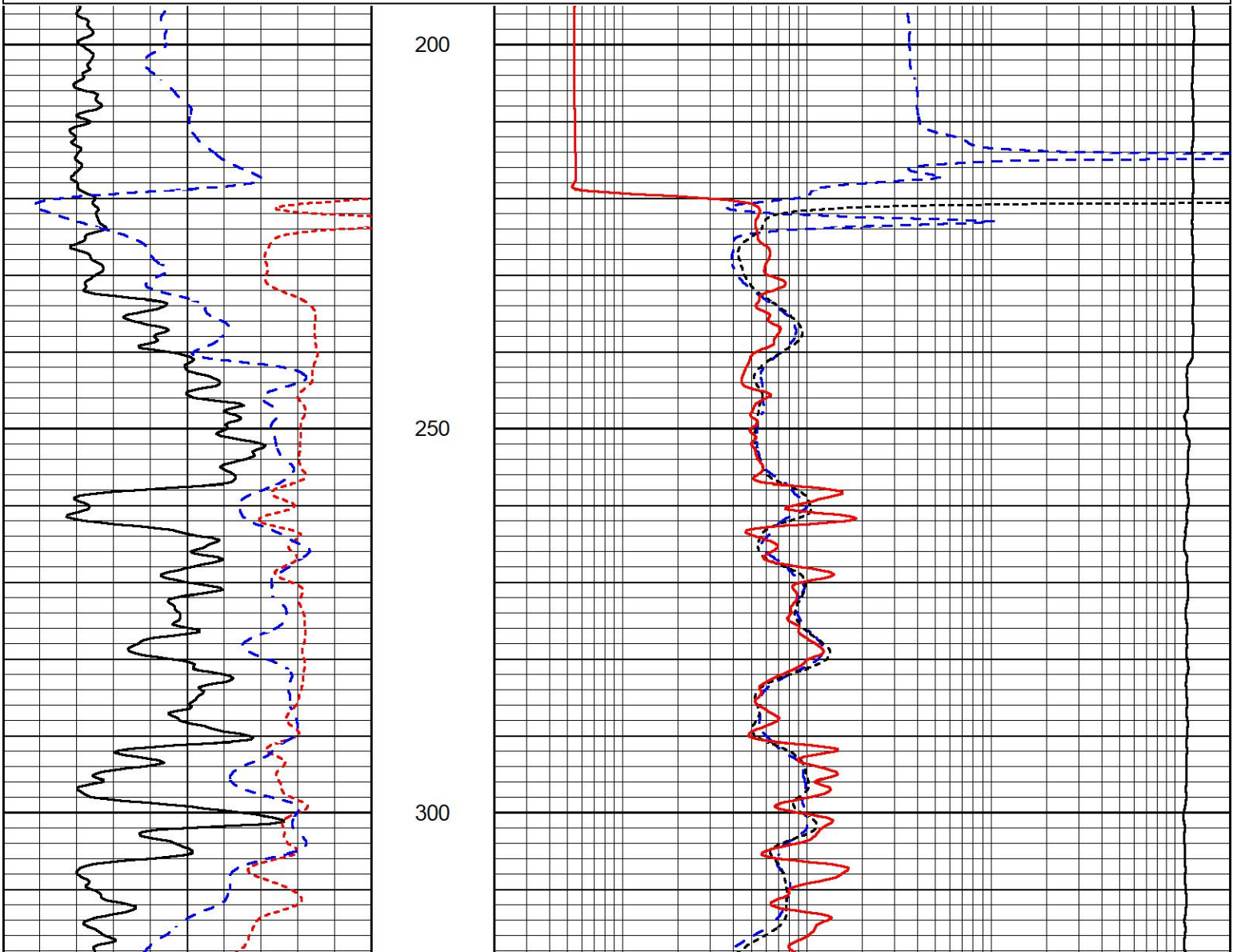
DETAIL SECTION

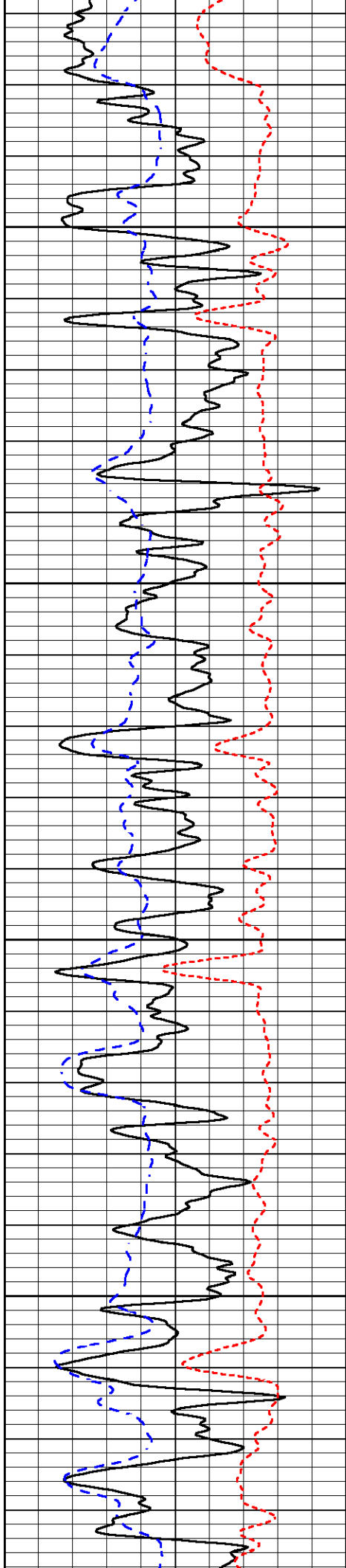
MAIN PASS

Database File igwt_s&w #1.db
 Dataset Pathname StkMI/pass3.1
 Presentation Format _dil
 Dataset Creation Fri Apr 07 05:26:55 2023
 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	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



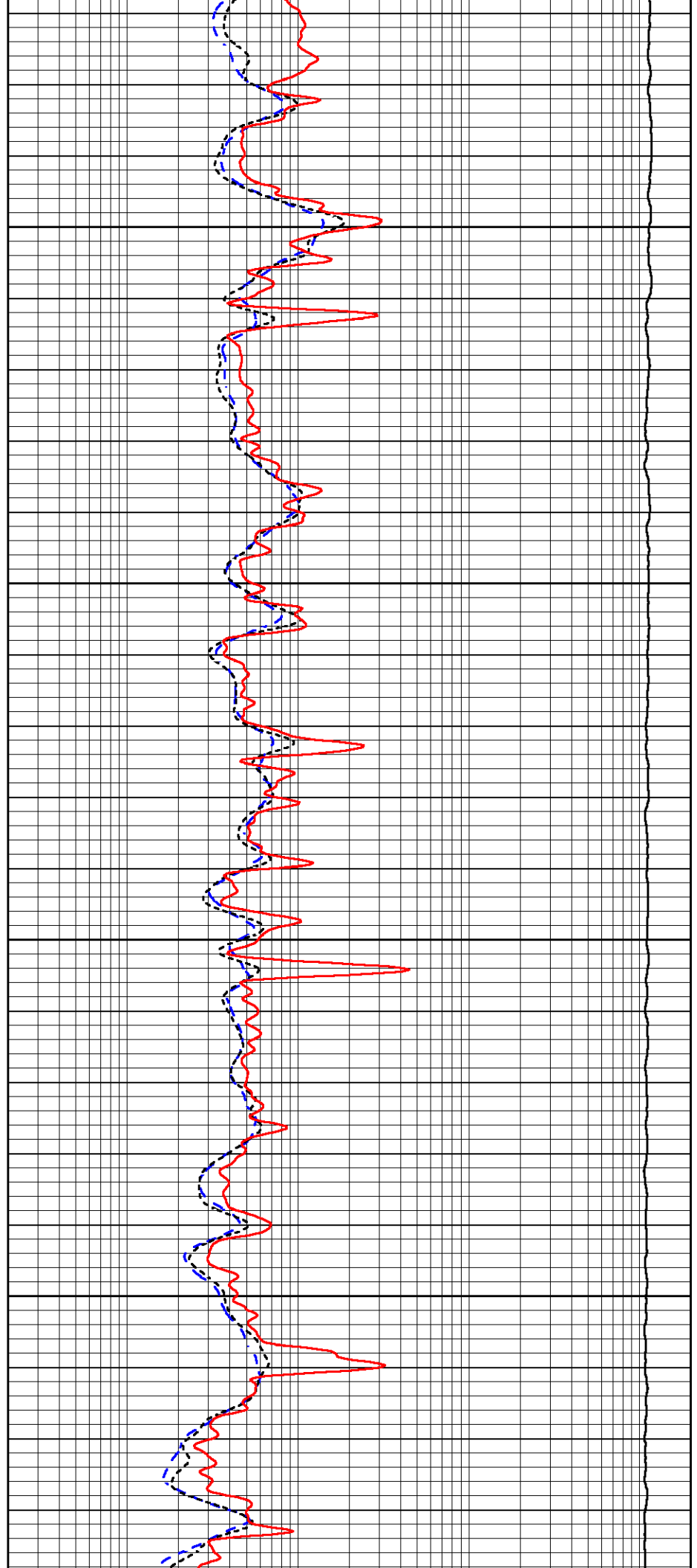


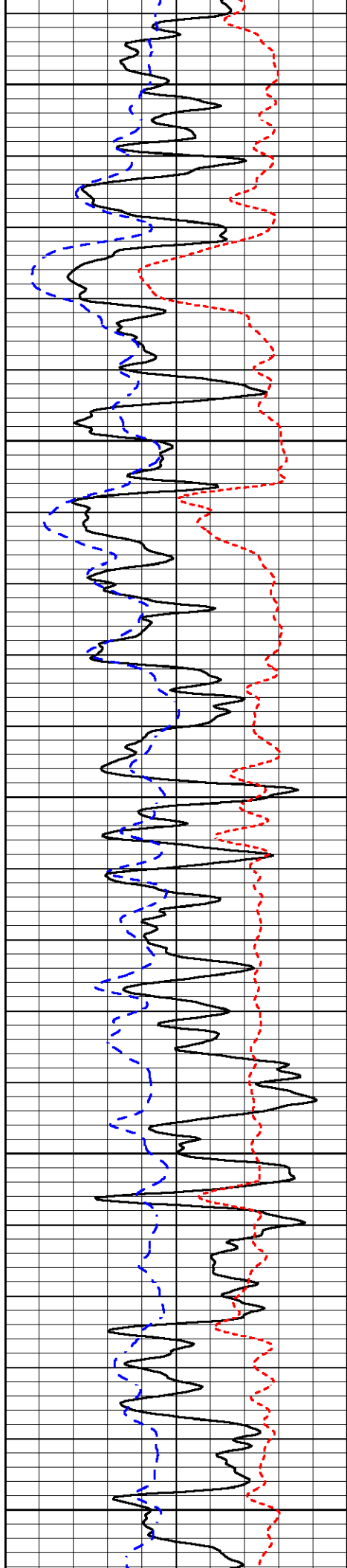
350

400

450

500





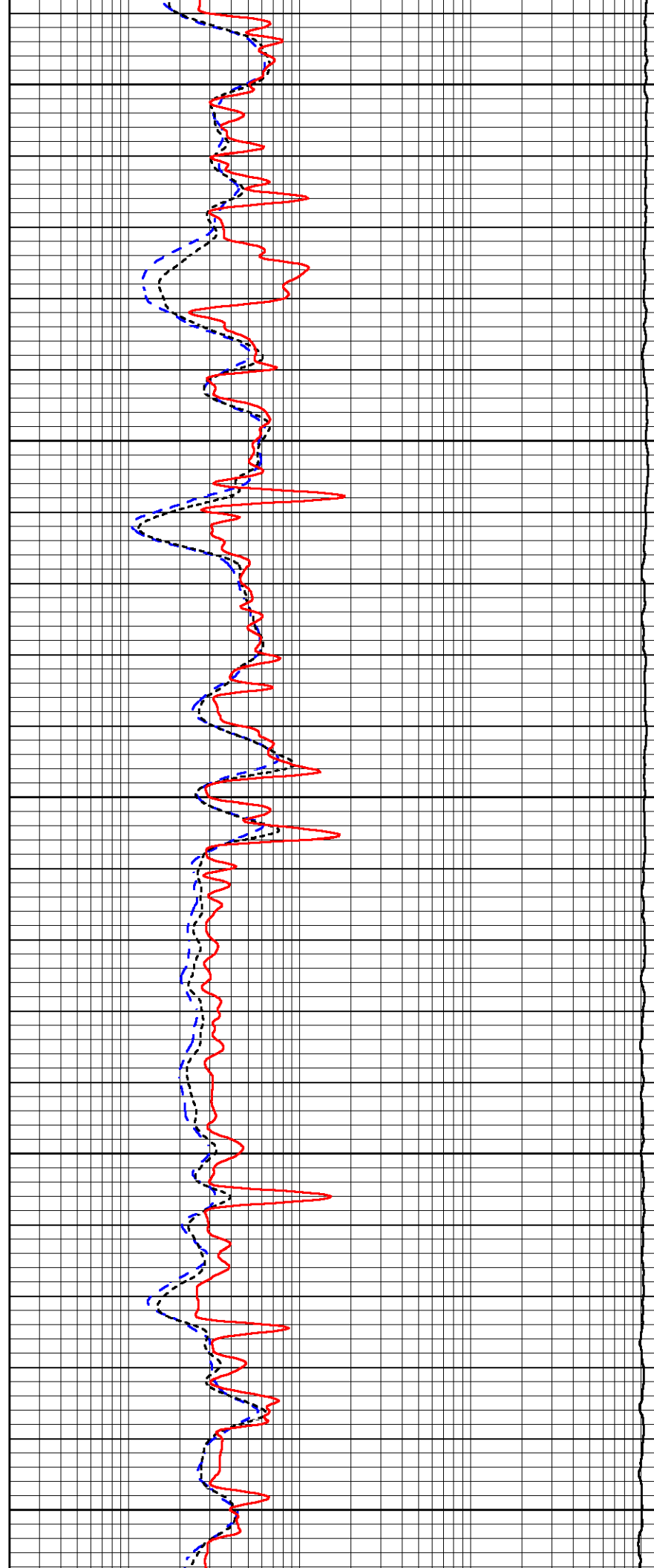
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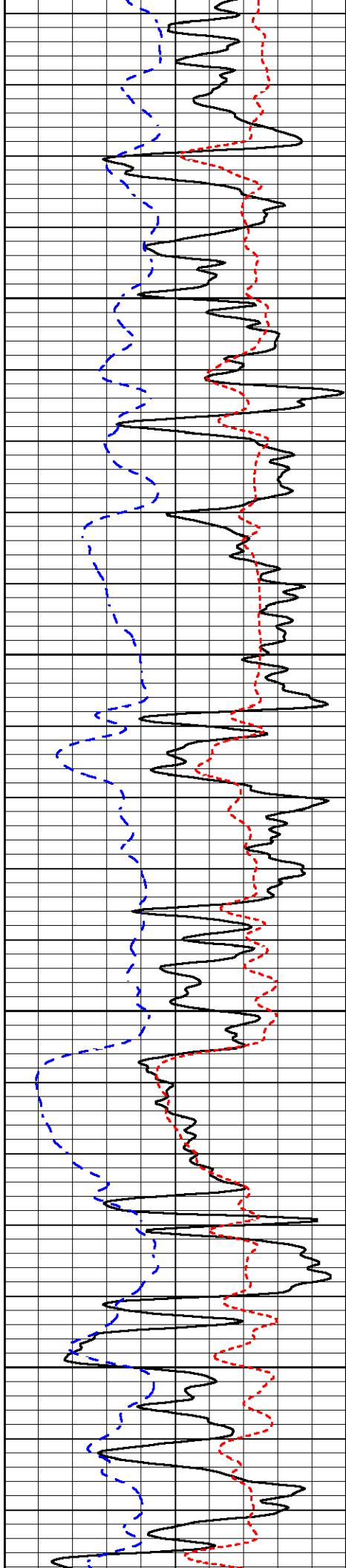
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650

700

750



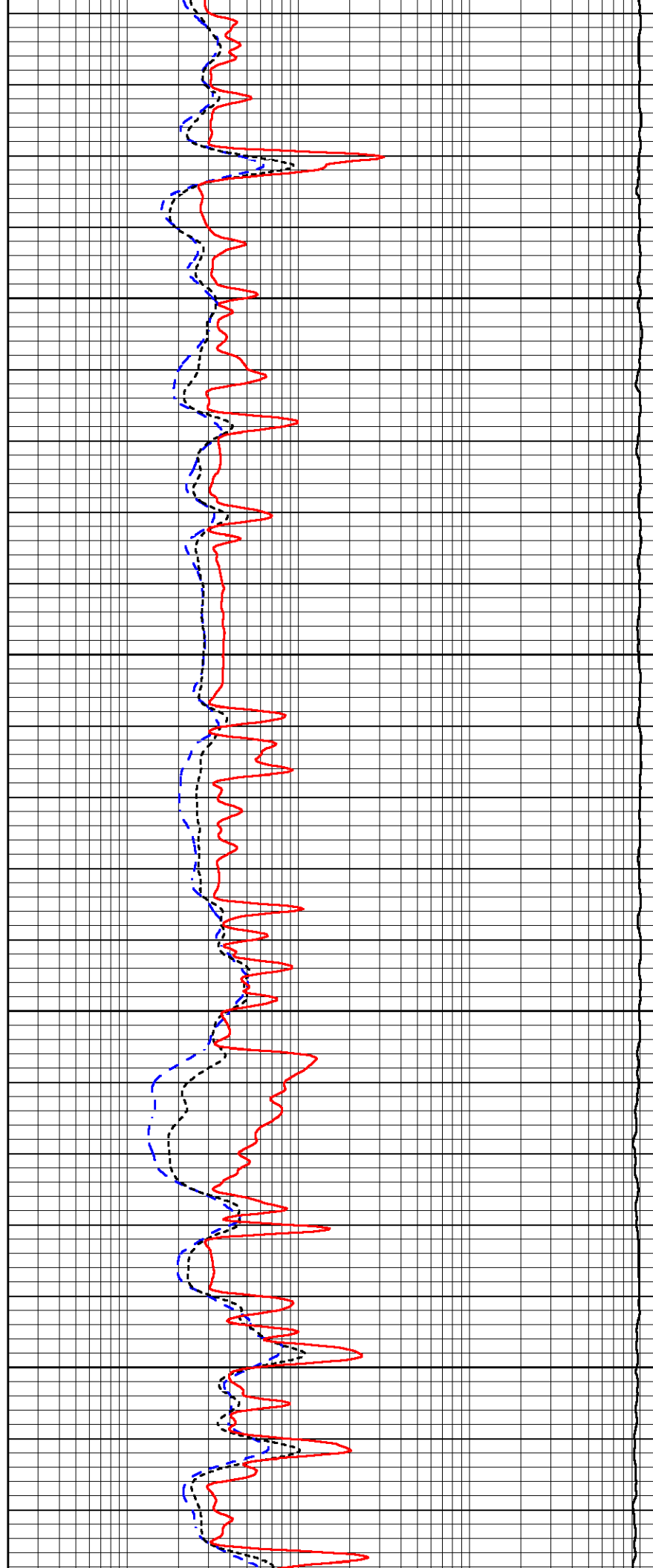


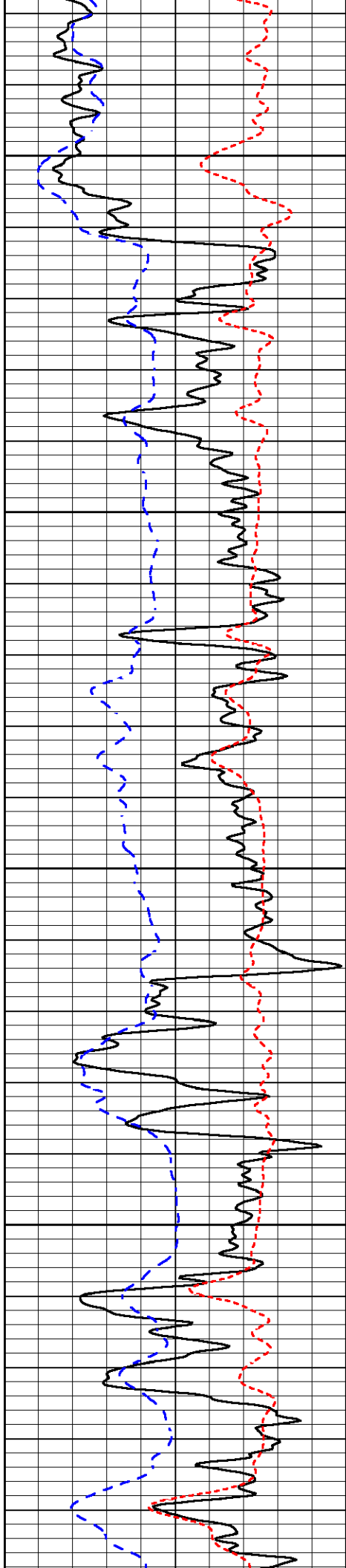
800

850

900

950



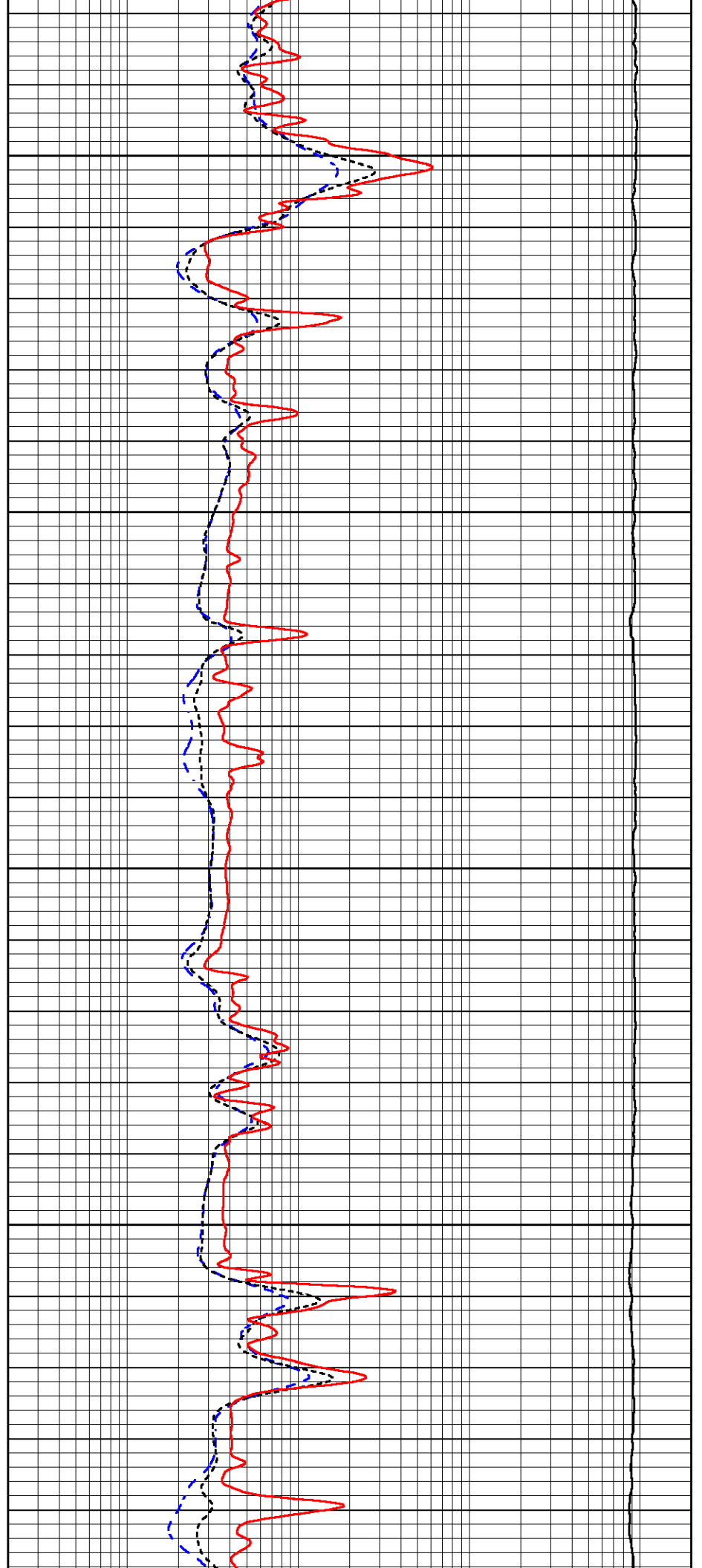


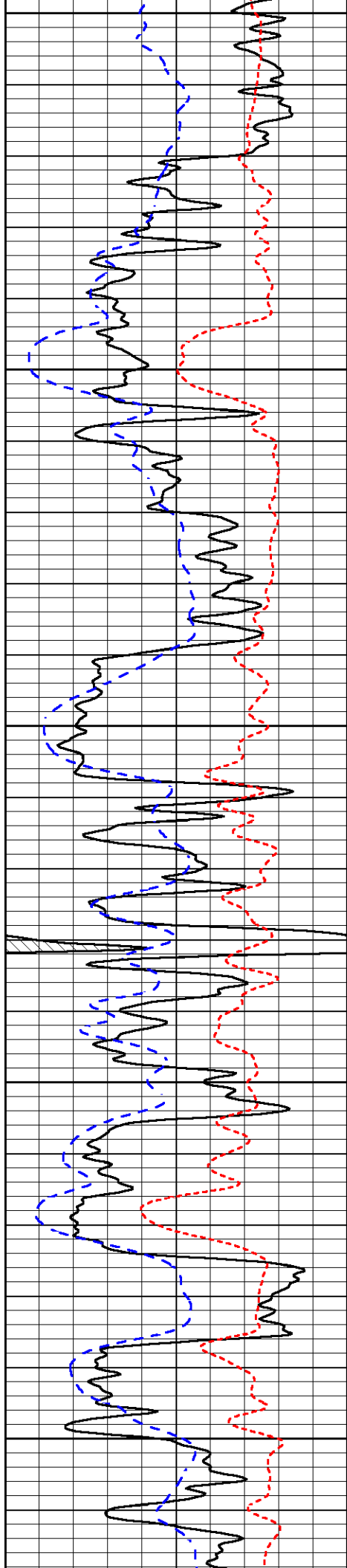
1000

1050

1100

1150





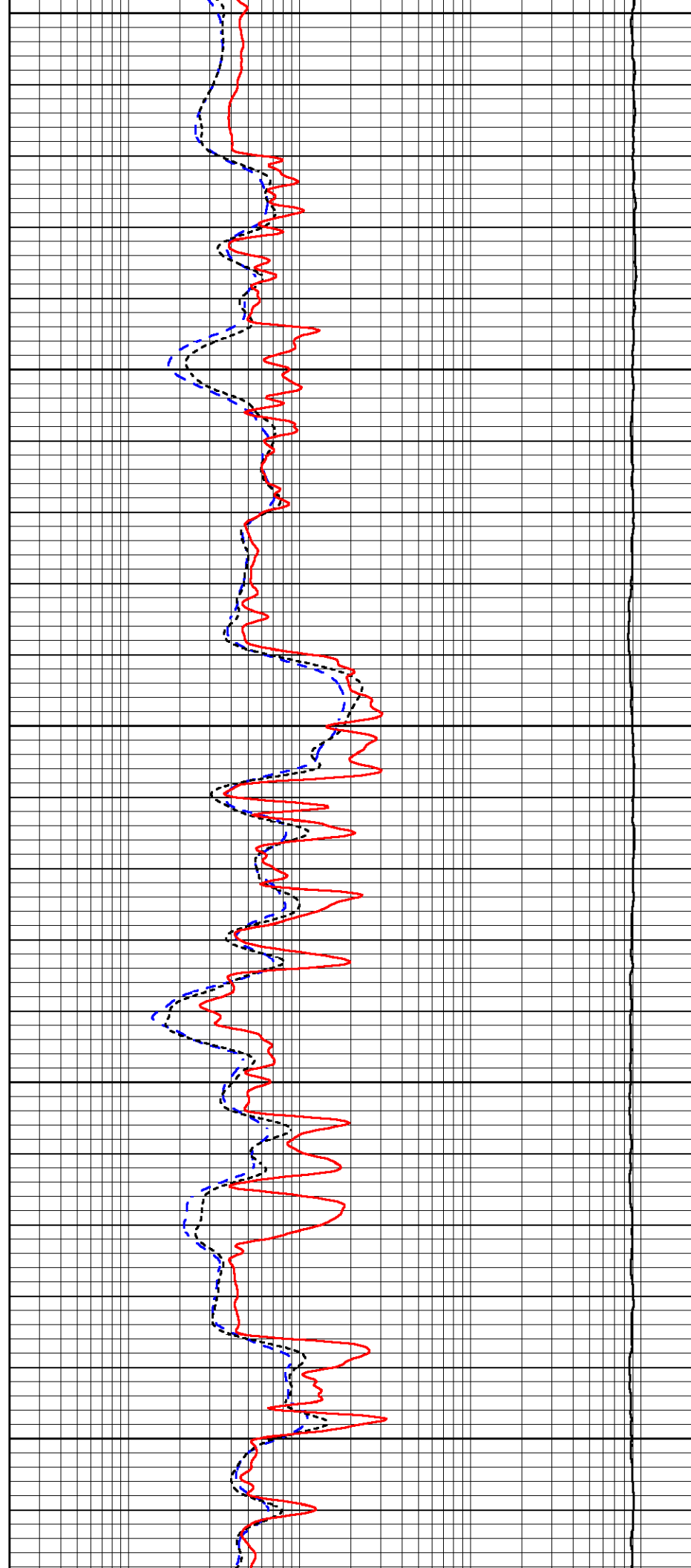
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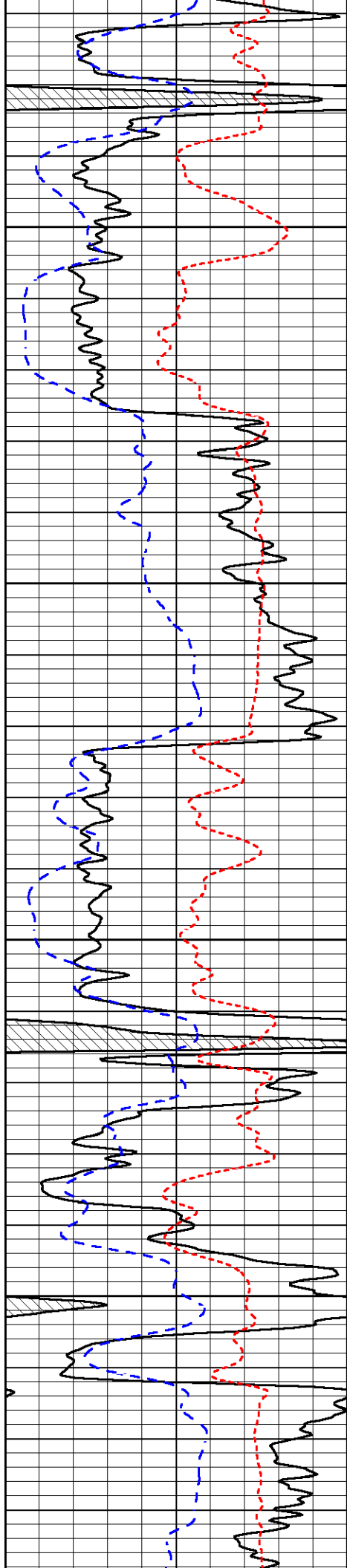
1250

1300

1350

1400



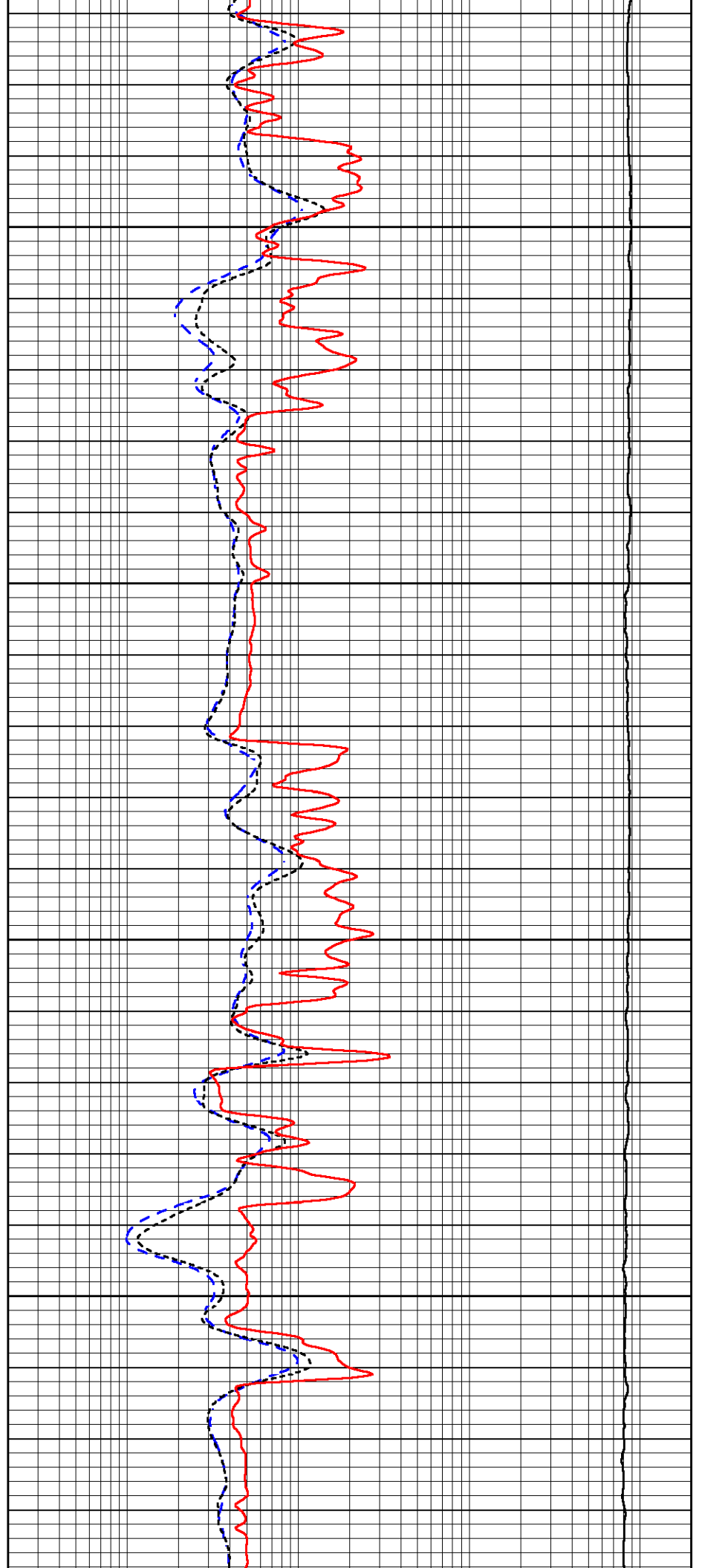


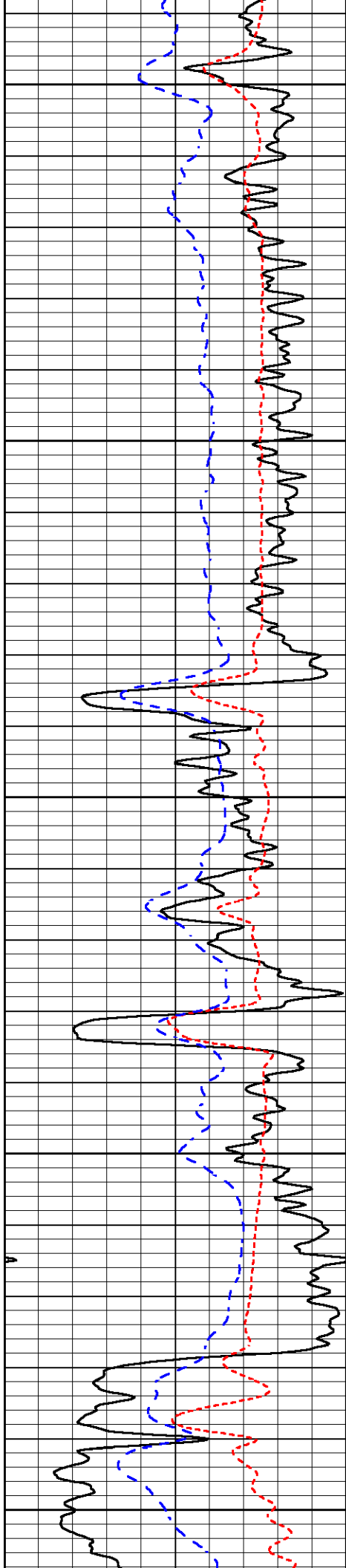
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1500

1550

1600





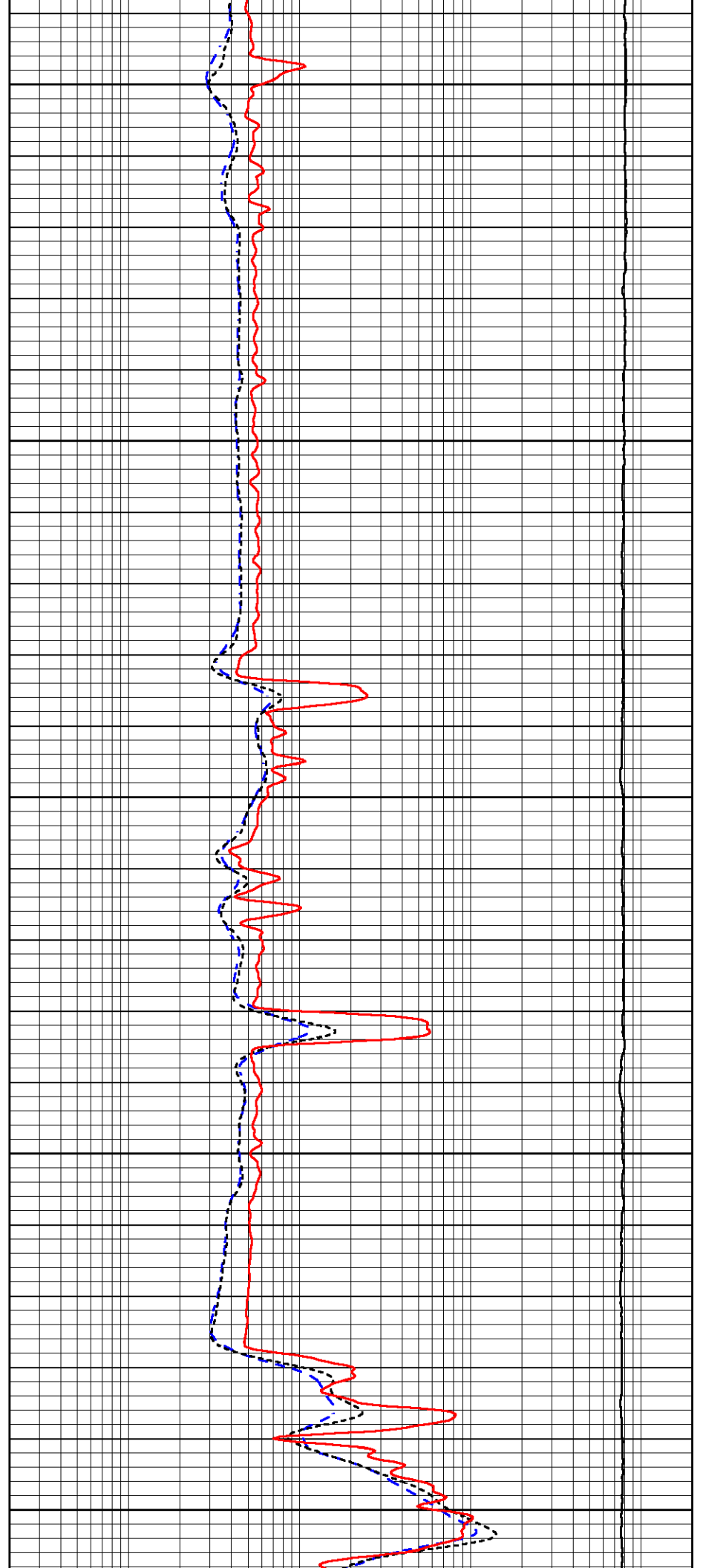
1650

1700

1750

1800

1850



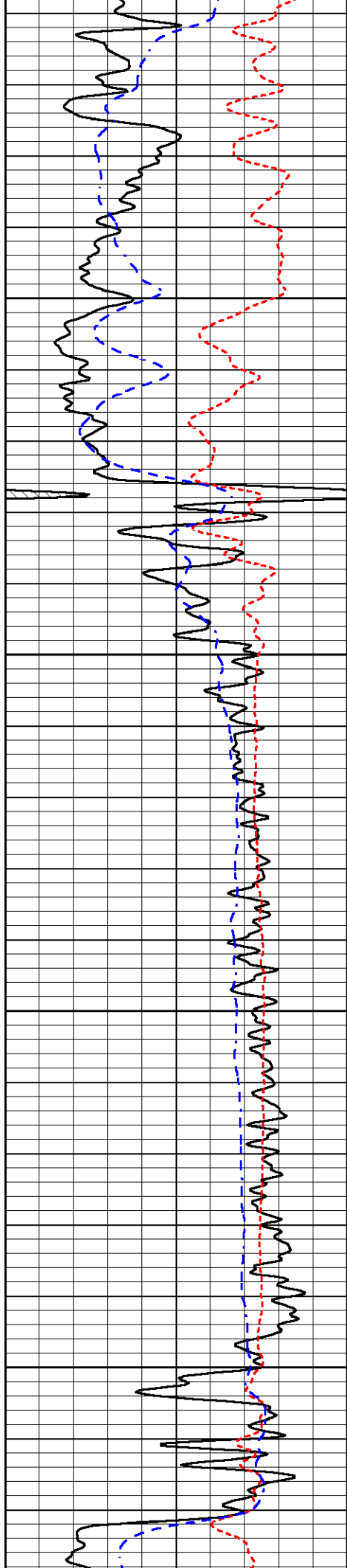
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1700

1750

1800

1850

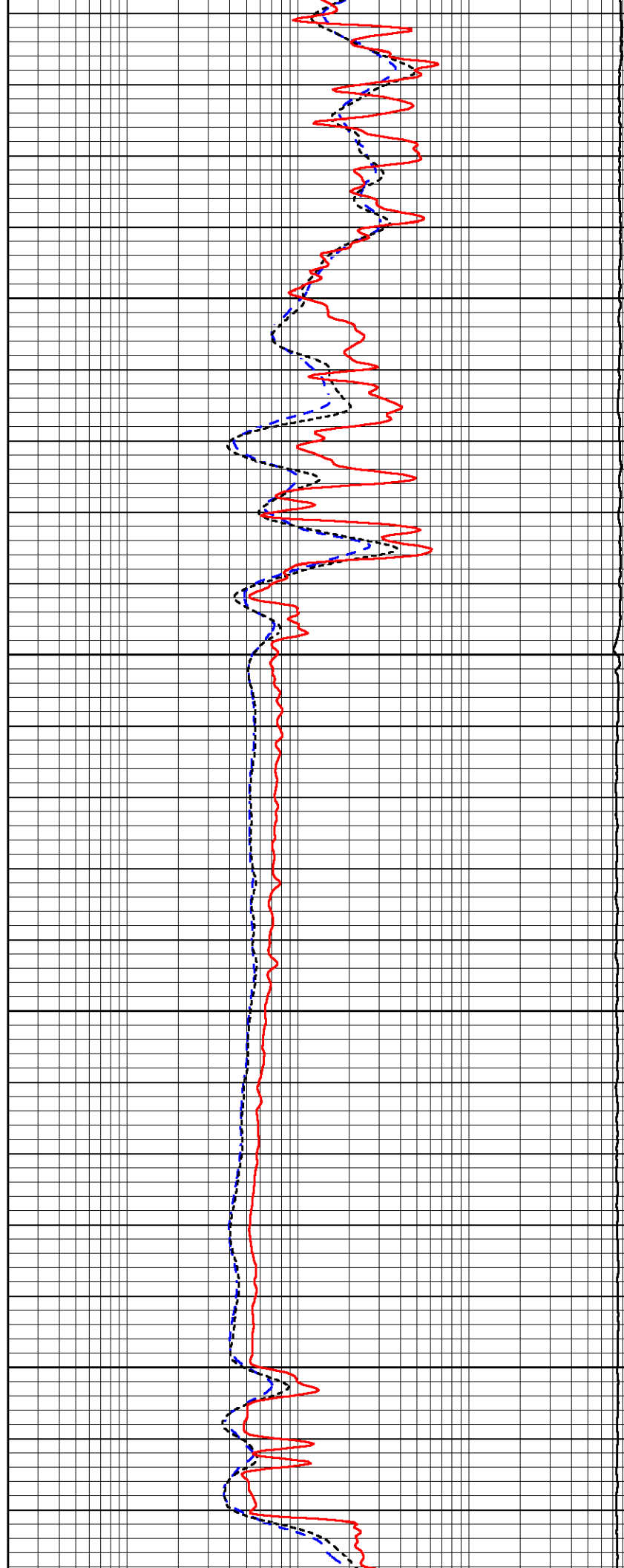


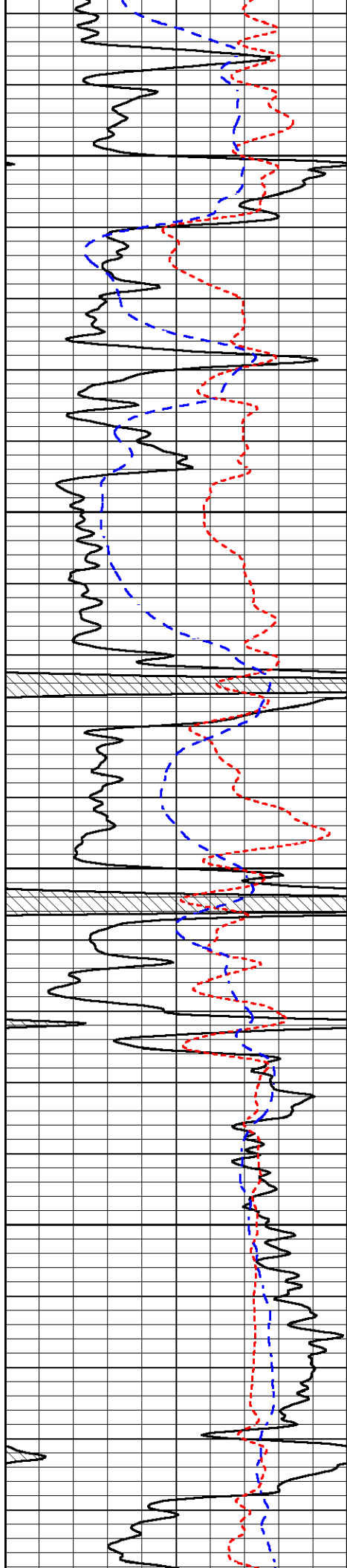
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1950

2000

2050



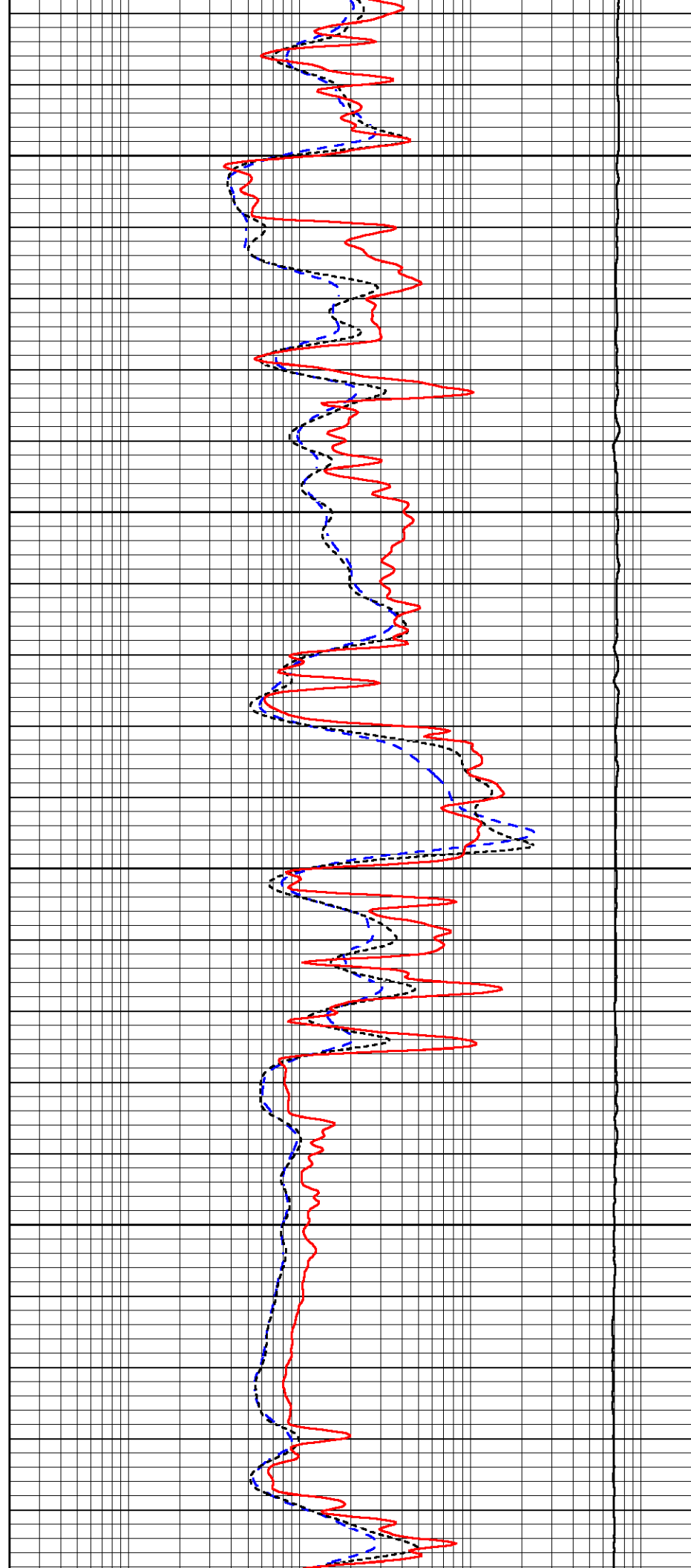


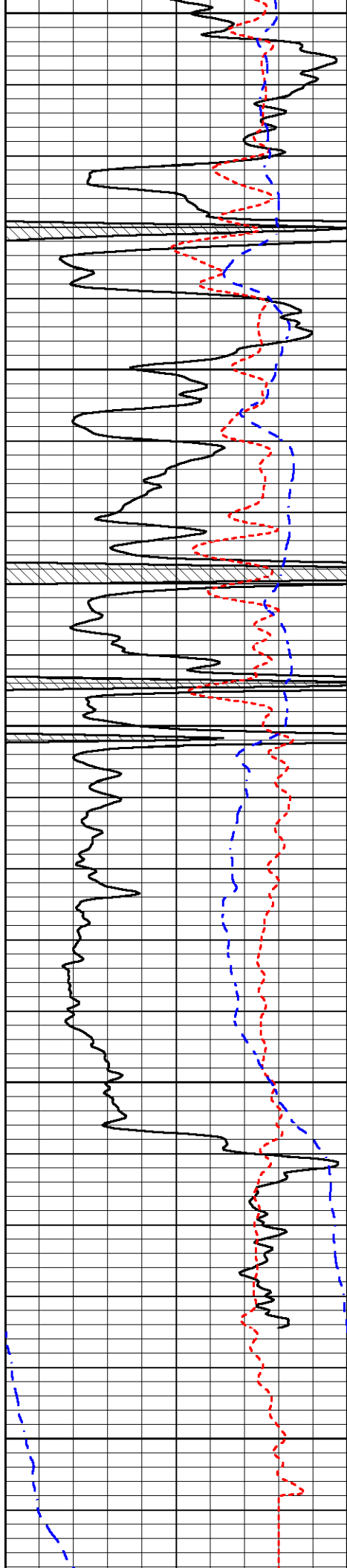
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2150

200

2250





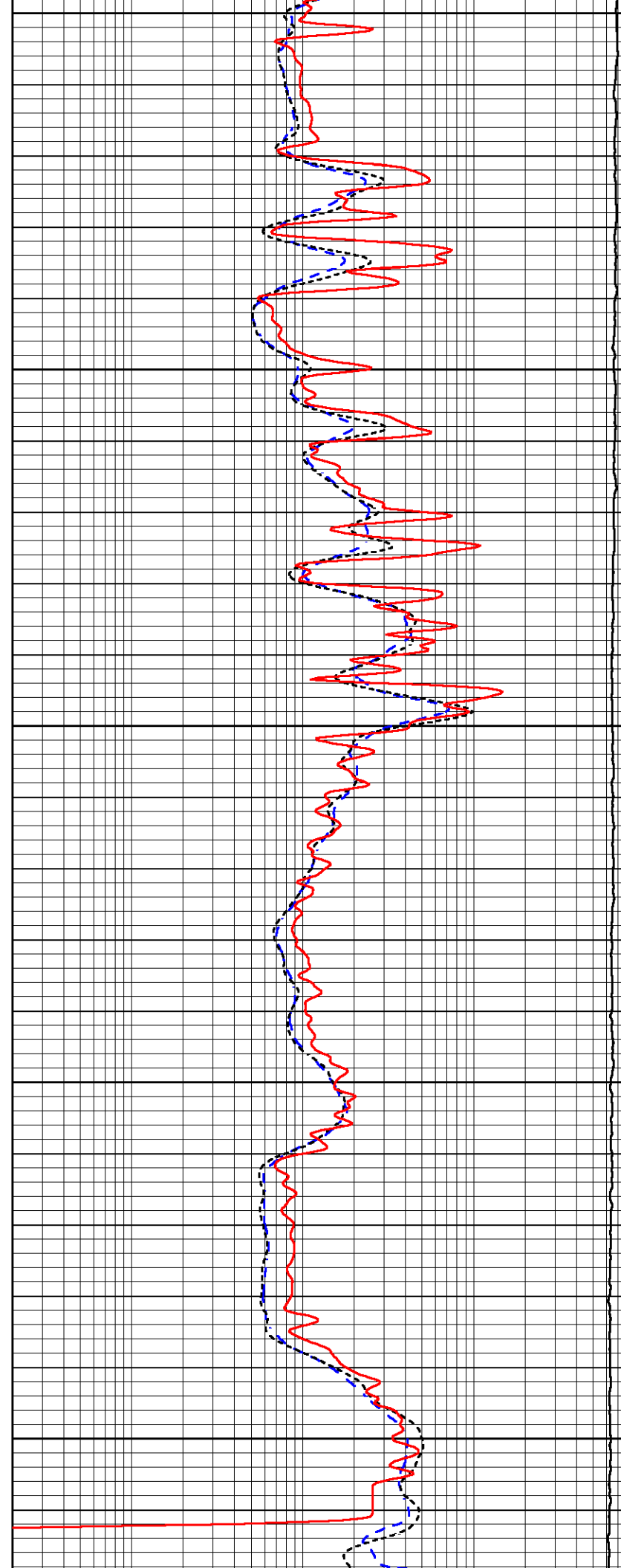
2300

2350

2400

2450

2500



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	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



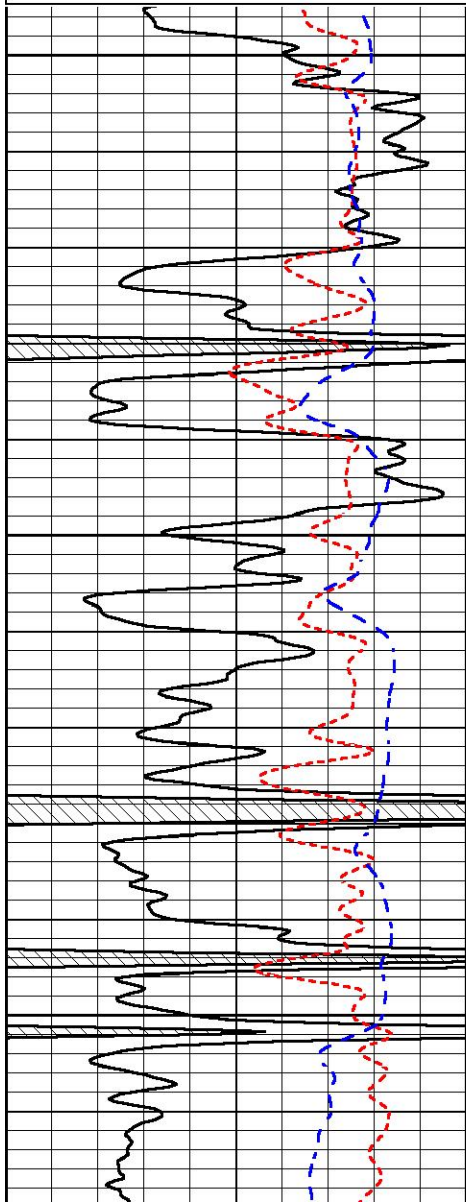
REPEAT SECTION

REPEAT PASS

Database File igwt_s&w #1.db
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 Presentation Format _dil
 Dataset Creation Fri Apr 07 04:37:41 2023
 Charted by Depth in Feet scaled 1:240

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

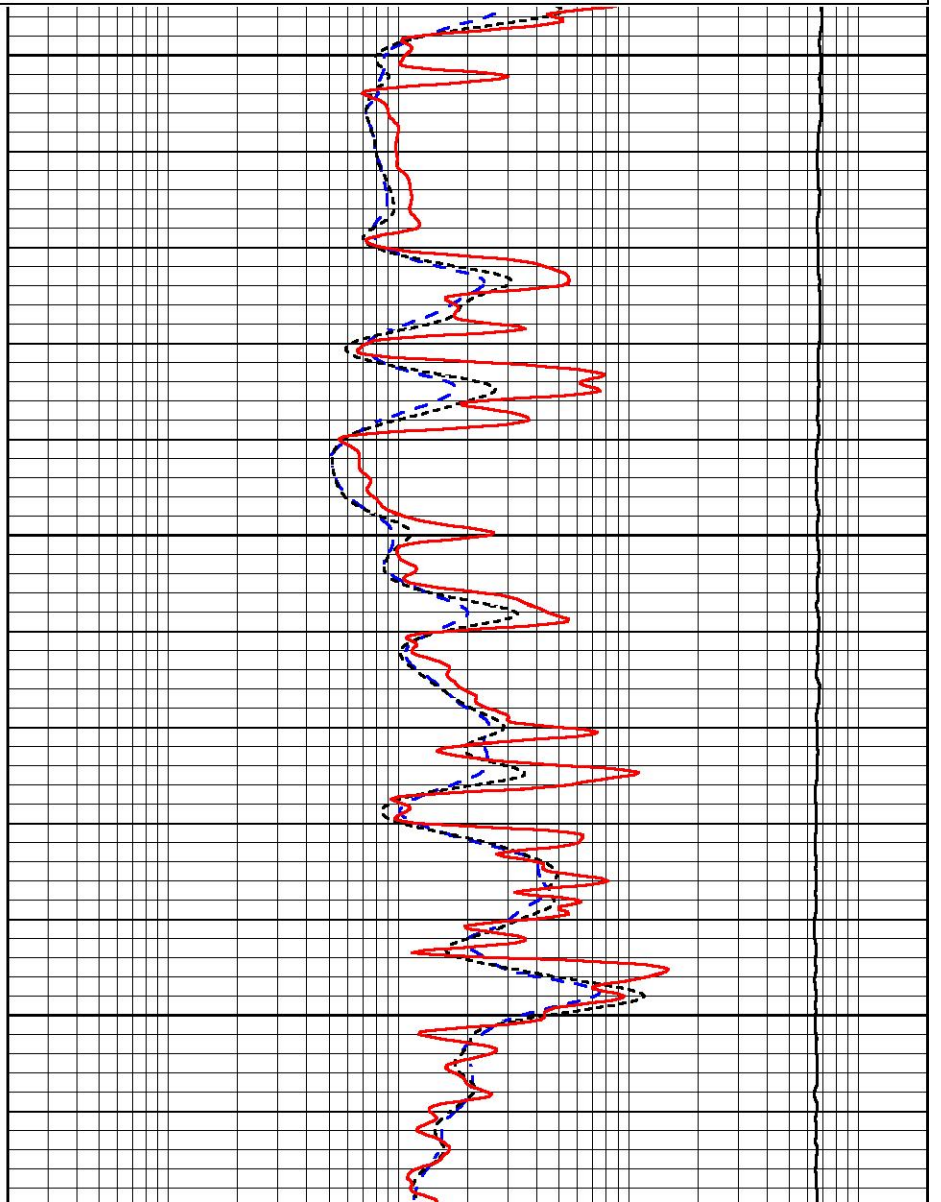
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

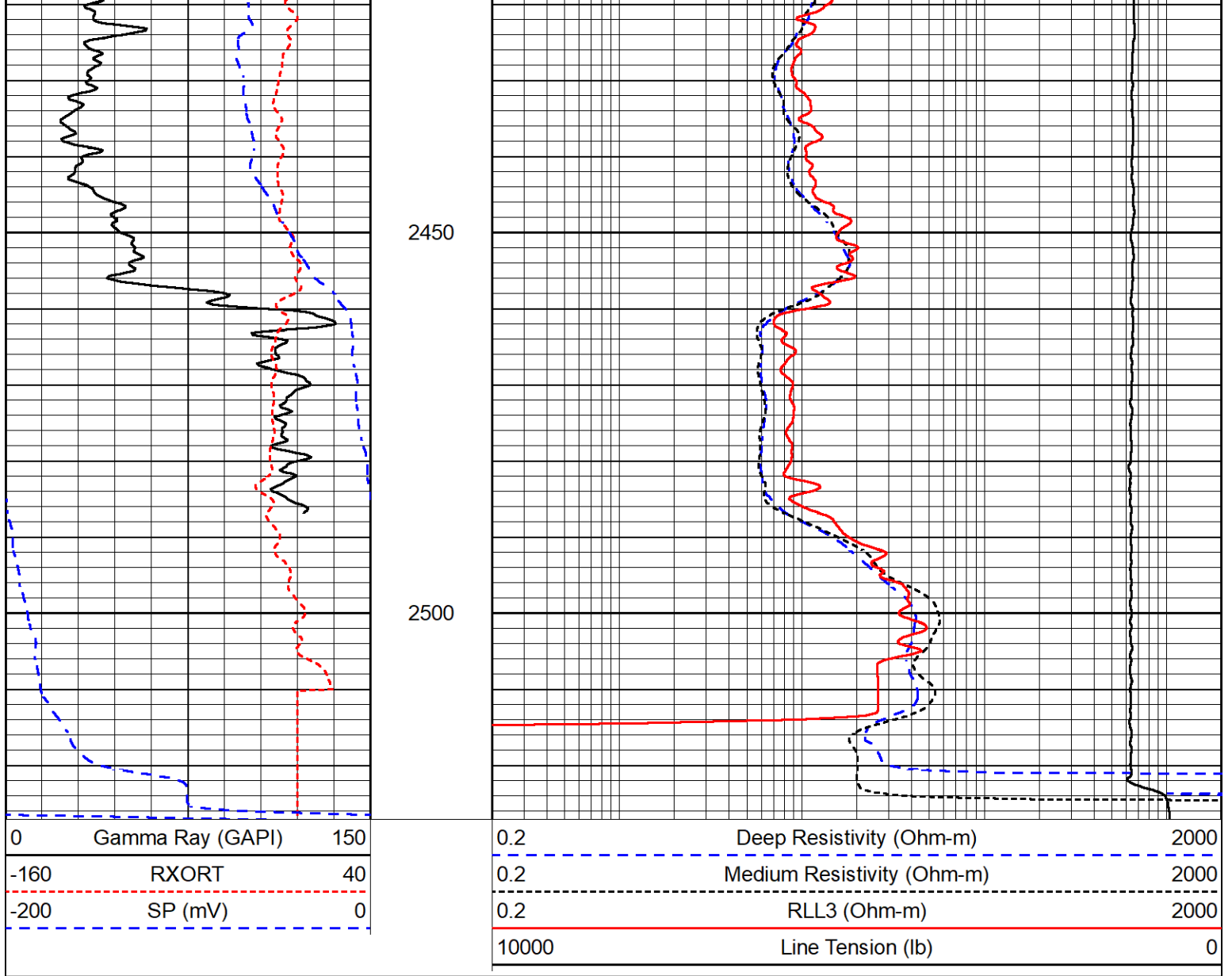


2300

2350

2400





Calibration Report

Database File igwt_s&w #1.db
 Dataset Pathname StkMI/pass3.1
 Dataset Creation Fri Apr 07 05:26:55 2023

Dual Induction Calibration Report

Serial-Model: 507-M&W
 Surface Cal Performed: Sun Mar 19 18:02:16 2023

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	m	b
Deep	67.445	566.296	0.000	255.800	mmho/m	0.450	-35.000
Medium	192.026	839.715	0.000	255.800	mmho/m	0.420	-85.000

Microlog Calibration Report

Serial-Model: 401-PSIML
 Performed: Mon Mar 20 04:31:34 2023

Readings	References	Results
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	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	9000.0000	-0.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	9000.0000	-0.5000
Caliper	1.0052	1.0858	5.0000	16.5000	in	142.7190	-138.9000

Compensated Density Calibration Report

Serial-Model: 307-08-M&W
Source #: 20762B
Master Calibration Performed: Sat Feb 25 11:00:49 2023

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4131.04	5675.82	cps
Aluminum	2.635	g/cc	781.38	3576.78	cps
Spine Angle = 74.50			Density/Spine Ratio = 0.509		
	Size		Reading		
Small Ring	6.00	in	1.16		
Large Ring	18.00	in	1.01		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W

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

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps	pu	pu
	Long Space	cps		
2)	Short Space	cps	pu	
	Long Space	cps		
3)	Short Space	cps	pu	
	Long Space	cps		

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps	pu	pu
	Long Space	cps		
2)	Short Space	cps	pu	pu
	Long Space	cps		
3)	Short Space	cps	pu	pu
	Long Space	cps		

Gamma Ray Calibration Report

Serial Number: 103
Tool Model: M&W
Performed: Fri Dec 3 15:10:46 2021

Calibrator Value: 500.0 GAPI

Background Reading: 24.0 cps
Calibrator Reading: 637.0 cps

Sensitivity: 0.5500 GAPI/cps



MIDWEST WIRELINE

Company IGWT, Inc.
Well S&W #1
Field
County Butler
State Kansas