



MIDWEST WIRELINE

# DUAL INDUCTION LOG

Company **Griffin Management LLC**  
 Well **Harper #2**  
 Field **Wildcat**  
 County **Barber** State **Kansas**

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 Well **Harper #2**  
 Field **Wildcat**  
 County **Barber**  
 State **Kansas**

Location: **1320 FNL & 2589 FEL**  
**SEC 4 TWP 30S RGE 15W**  
 API #: **15-007-24385-00-00**  
 Permanent Datum **Ground Level** Elevation **1991**  
 Log Measured From **Kelly Bushing**  
 Drilling Measured From **Kelly Bushing**  
 Other Services **CNL/CDL MEL**  
 Elevation **1996**  
 K.B. **1996**  
 D.F. **1991**  
 G.L. **1991**

Date	12/12/2021
Run Number	One
Depth Driller	4798
Depth Logger	4794
Bottom Logged Interval	4793
Top Log Interval	250
Casing Driller	8.625 @ 263
Casing Logger	259
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	7000
Density / Viscosity	9.4 64
pH / Fluid Loss	10.5 8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.55 @ 65
Rmt @ Meas. Temp	.41 @ 65
Rmc @ Meas. Temp	.74 @ 65
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.29 @ 124
Operating Rig Time	2 Hours
Max Rec. Temp. F	124
Equipment Number	P-108
Location	HAYS
Recorded By	J. Henrickson
Witnessed By	Eli Felts

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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.

Haviland Kansas  
 East to 140th, 10 South to 110th, 1 East,  
 North Into

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

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

<b>Your Midwest Wireline Crew</b>	<b>This Log Record Was Witnessed By</b>
Engineer: <b>J. Henrickson</b>	Primary Witness: <b>Eli Felts</b>
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\griffin\_harper\_2.db  
 Dataset field/well/stackml/pass4.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	124	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	575	50	Off	4794

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (tk10-MW)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (915-956)	8.50	4.00	250.00
MCAL MI MN	19.58 19.58 19.58		ML-PSI STKBL ML (PSI-02)	7.58	4.00	65.00
RLL3F RLL3	15.50 15.50					
CILD	8.33		DIL-PSI HIGH TEMP (959-1032)	18.25	3.50	220.00

CILM 4.50

SP 0.20

Dataset: griffin\_harper\_2.db: field/well/stackml/pass4.1  
 Total length: 42.33 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in



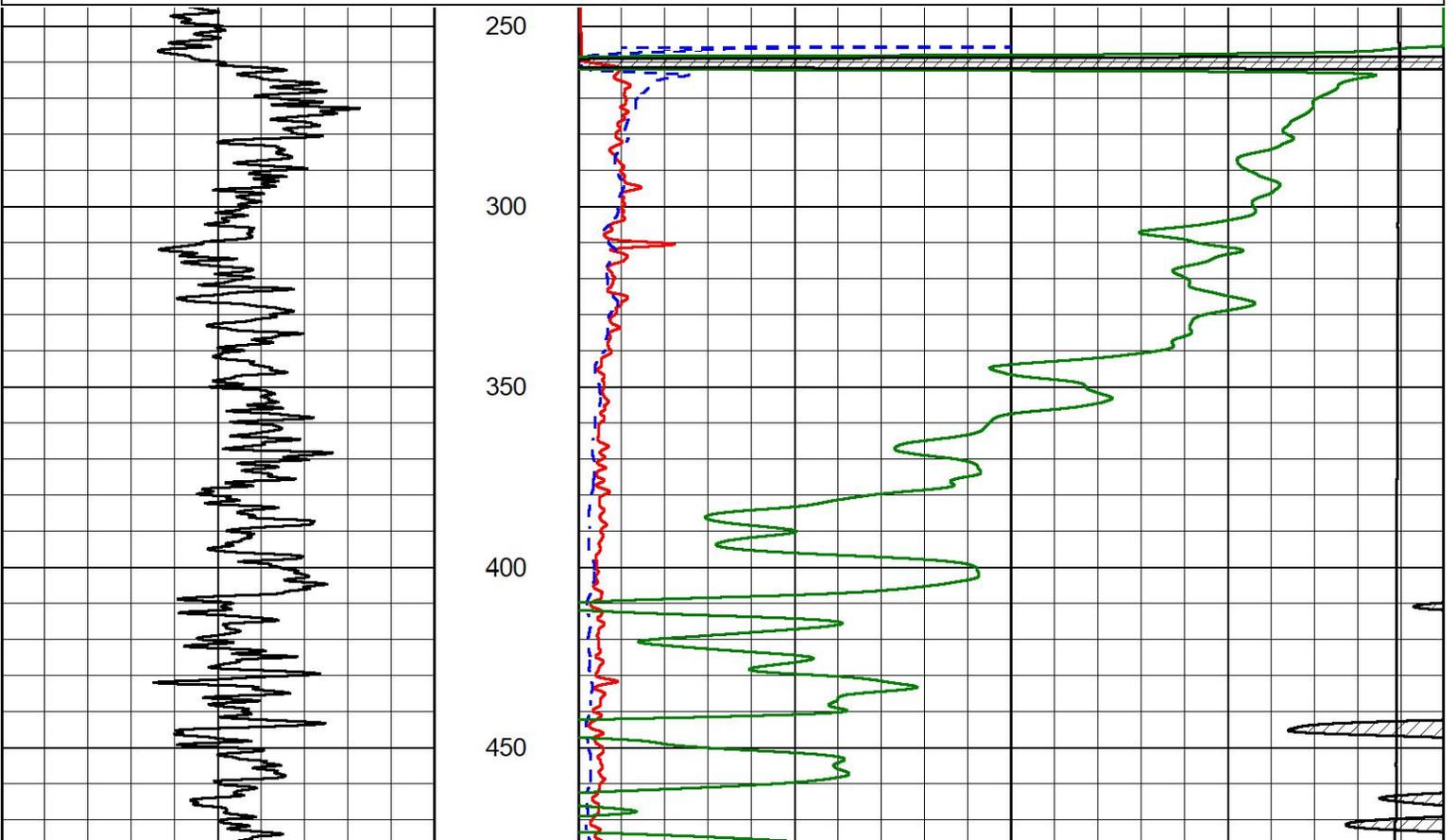
MIDWEST WIRELINE

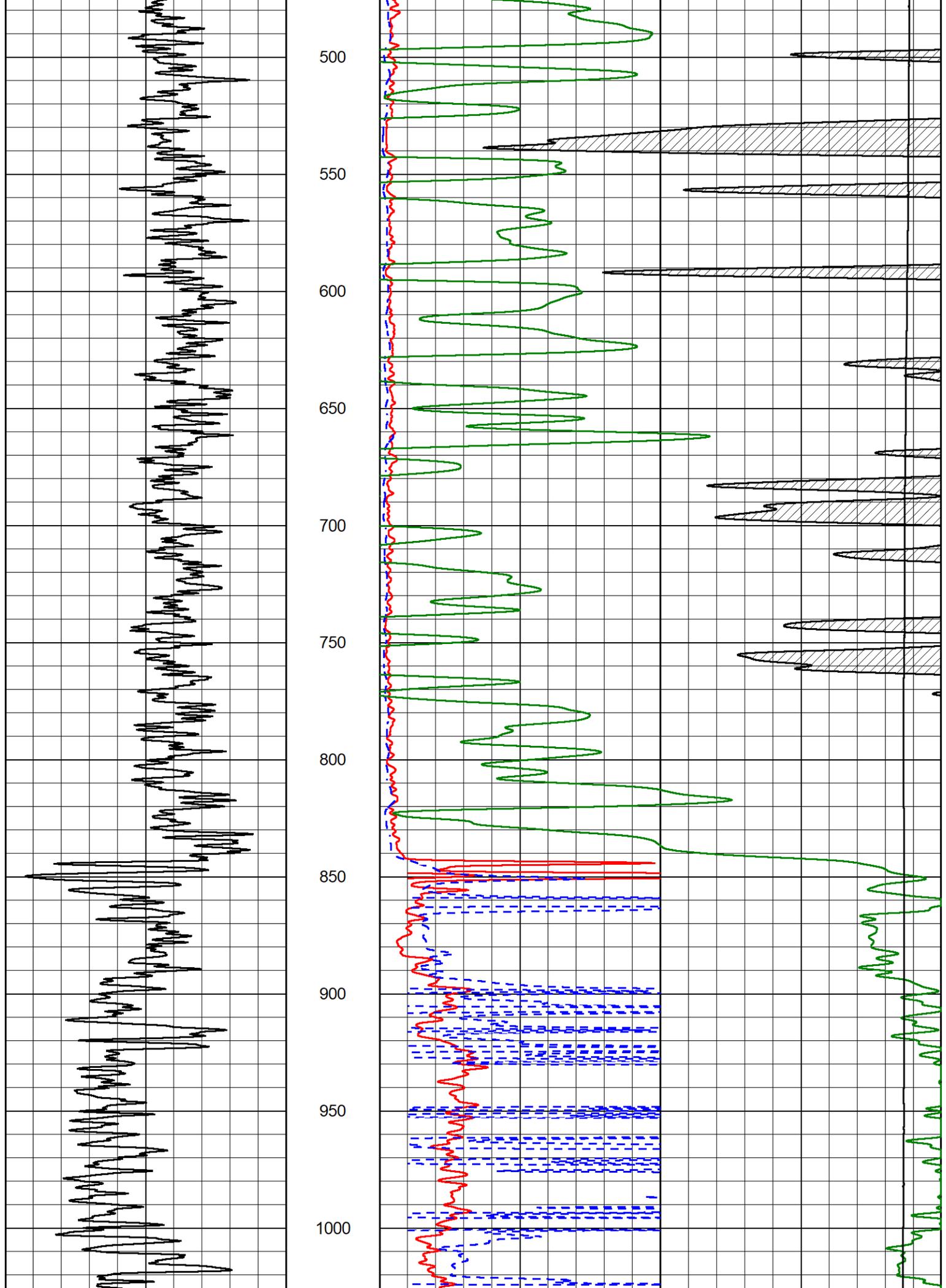
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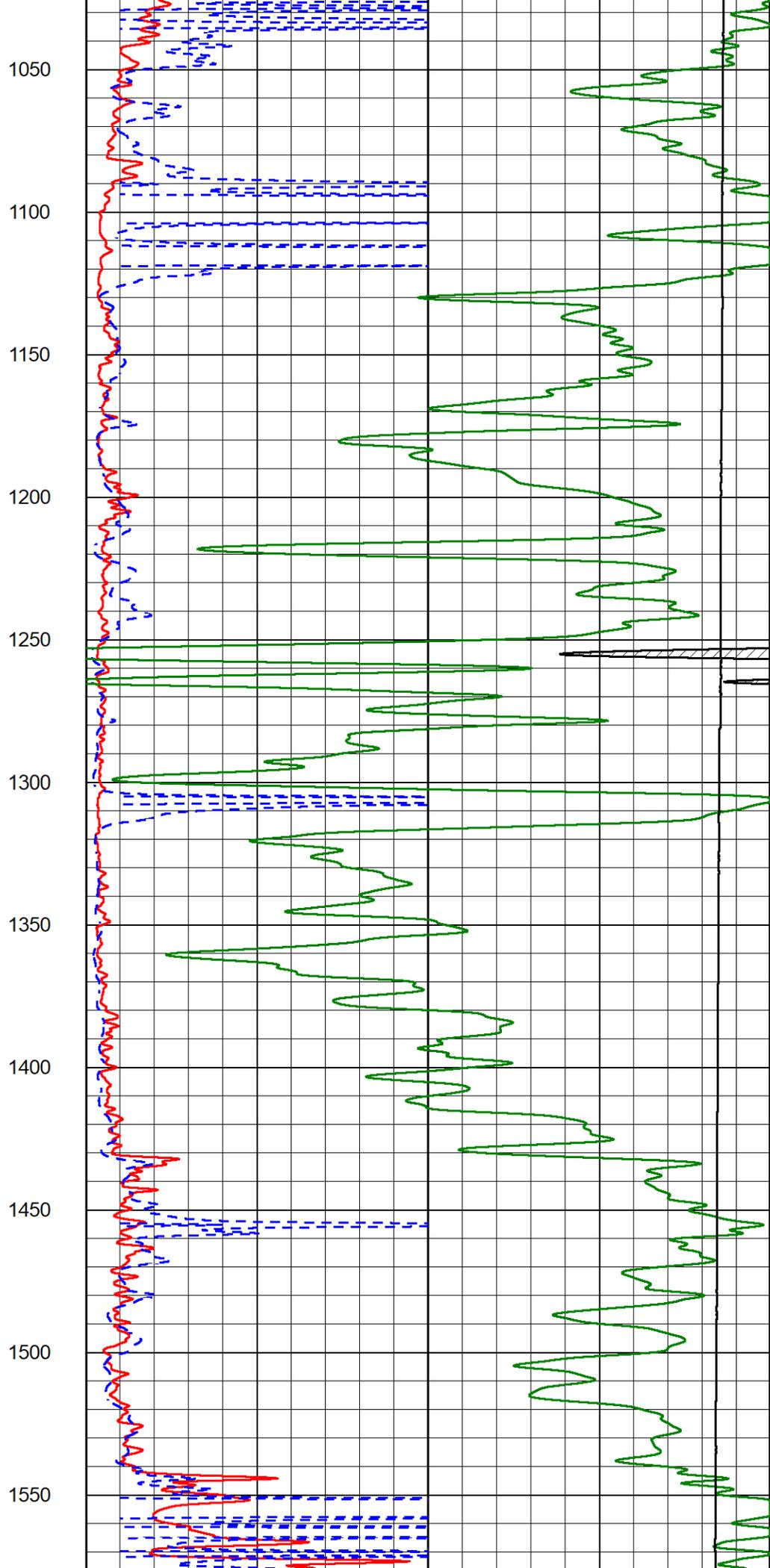
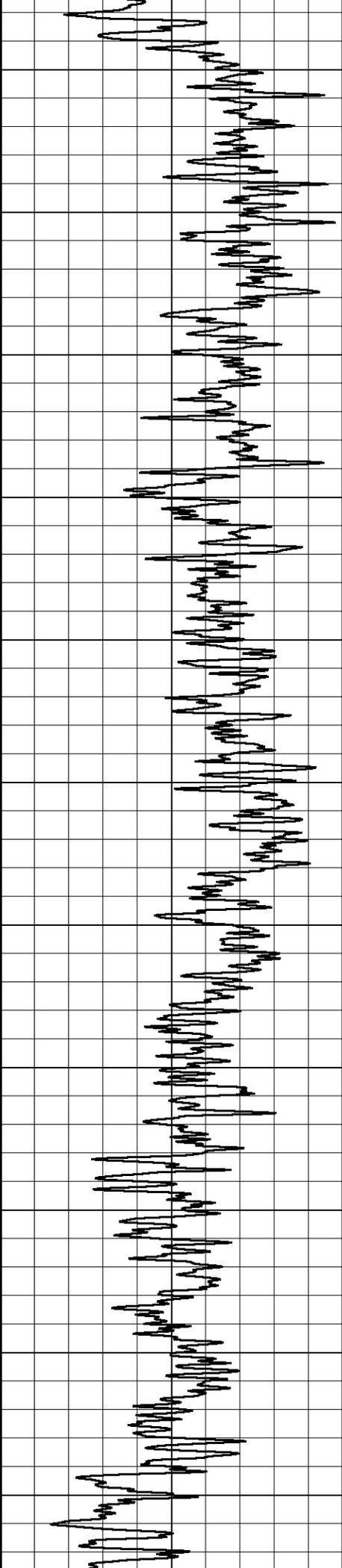
## MAIN PASS

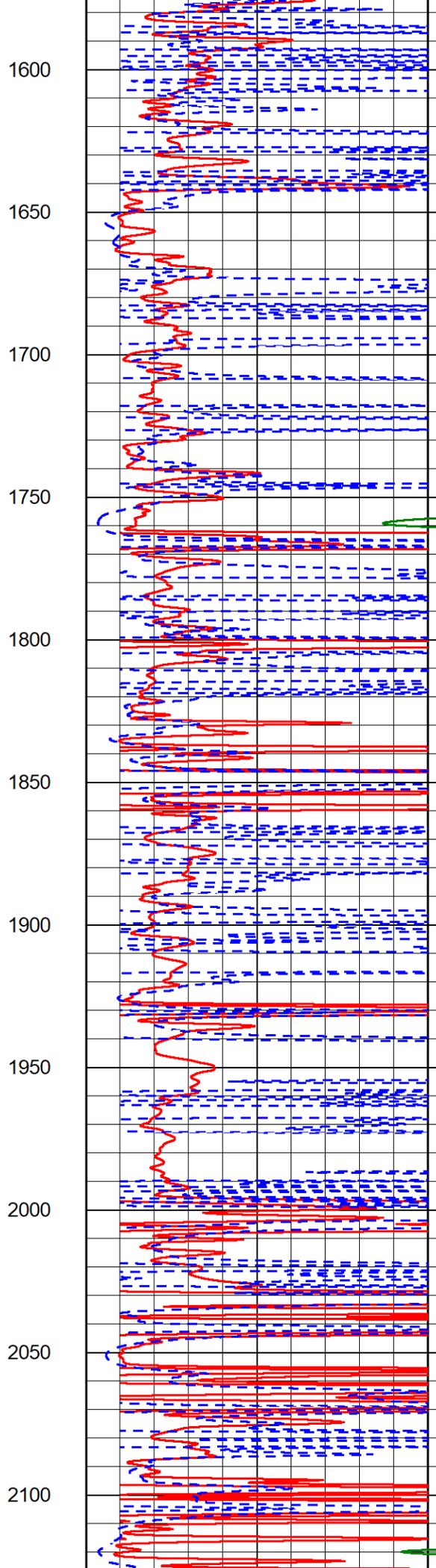
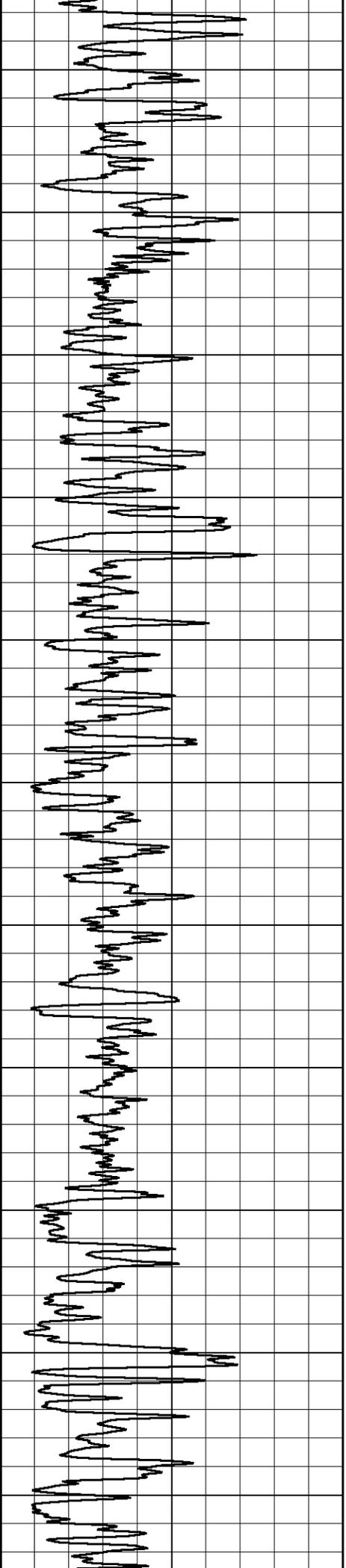
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 Dataset Pathname stackml/pass5.1  
 Presentation Format \_dil2in  
 Dataset Creation Mon Dec 13 00:02:27 2021  
 Charted by Depth in Feet scaled 1:600

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

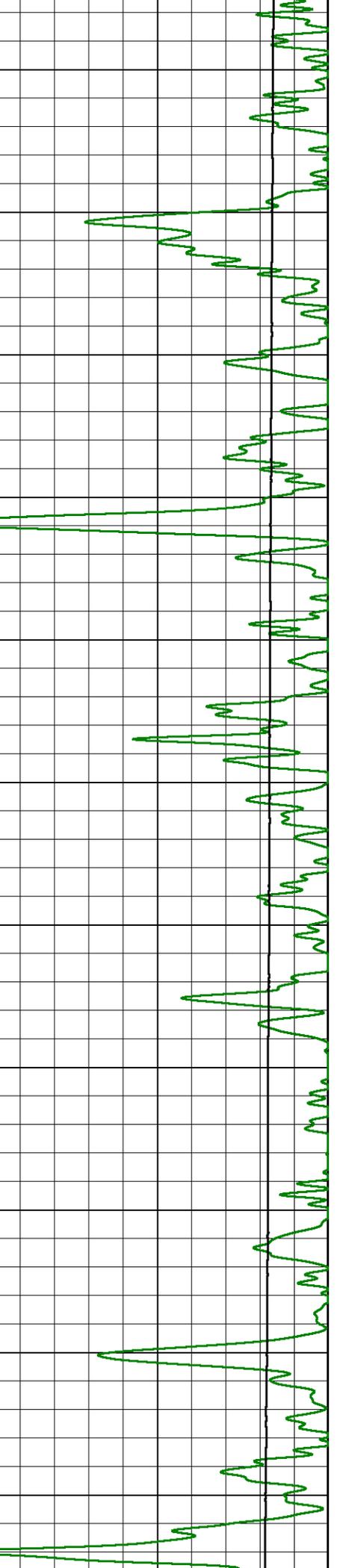


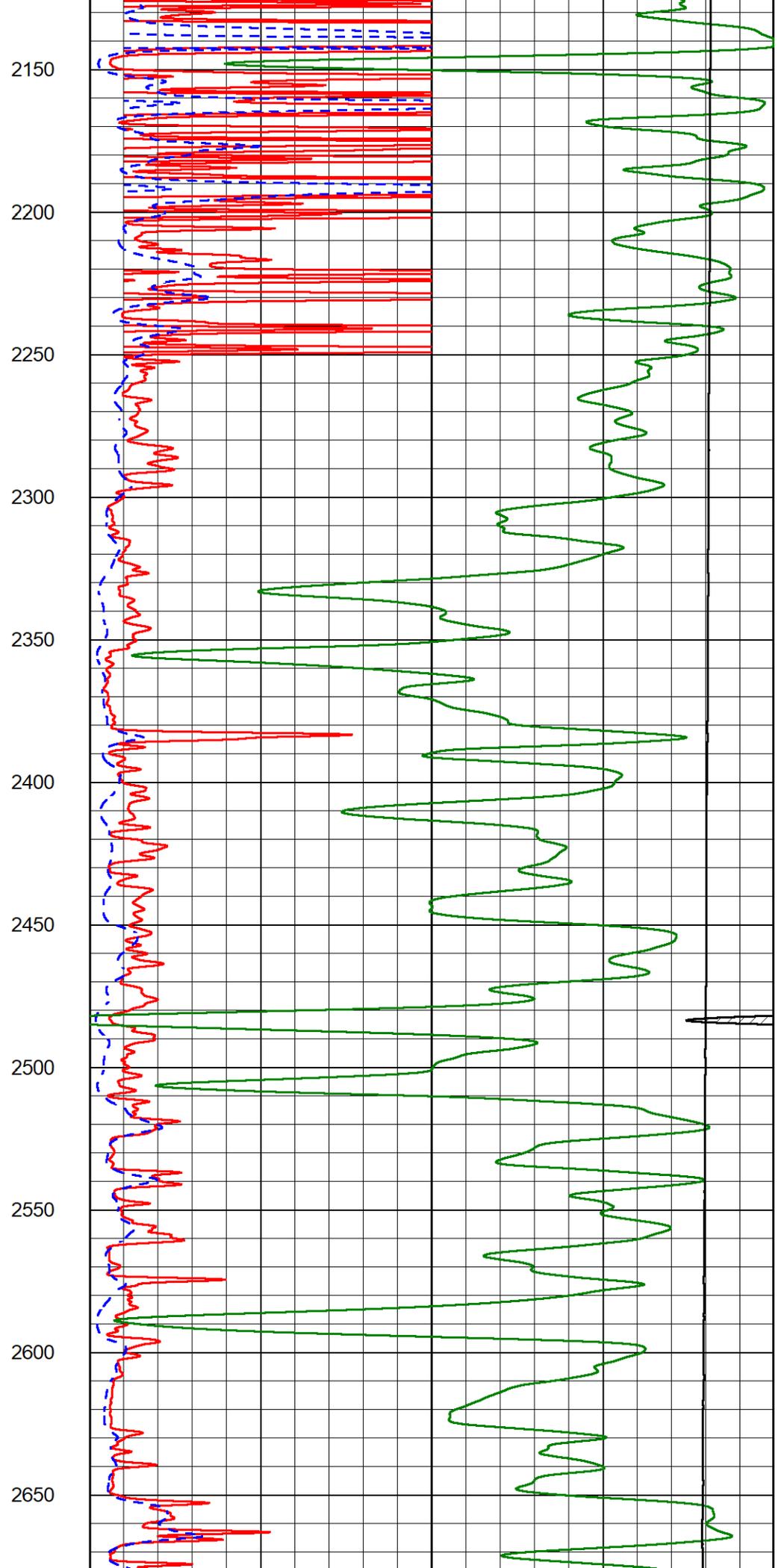
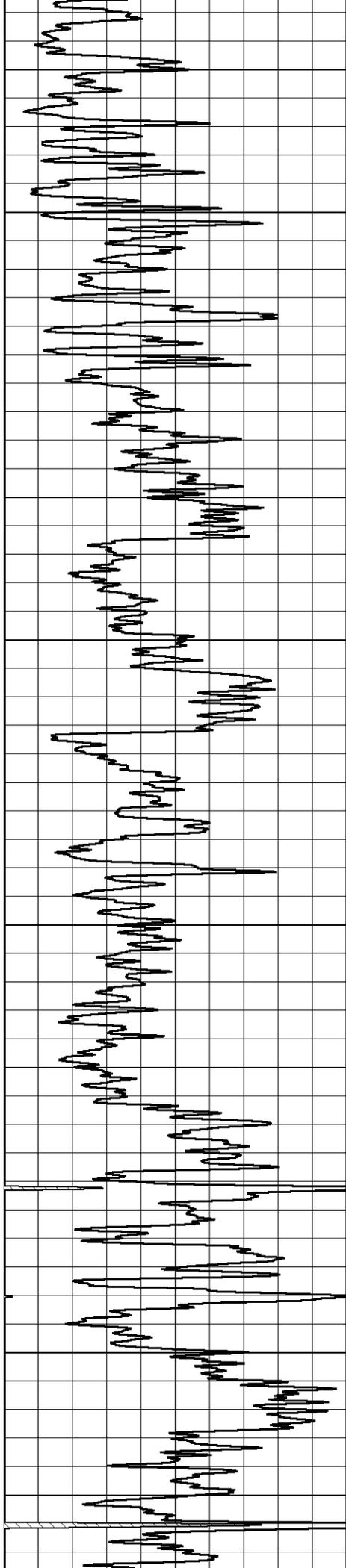


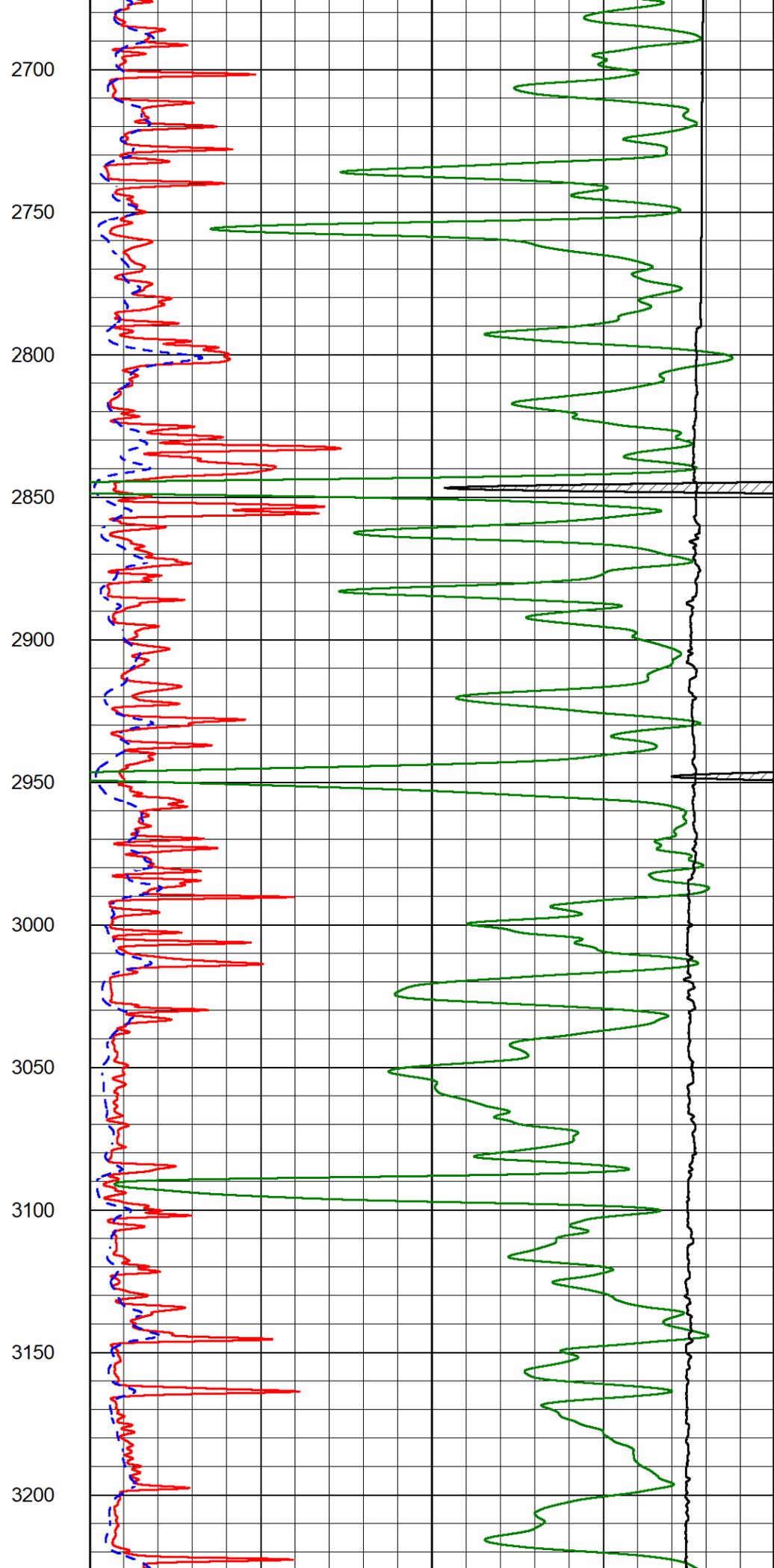
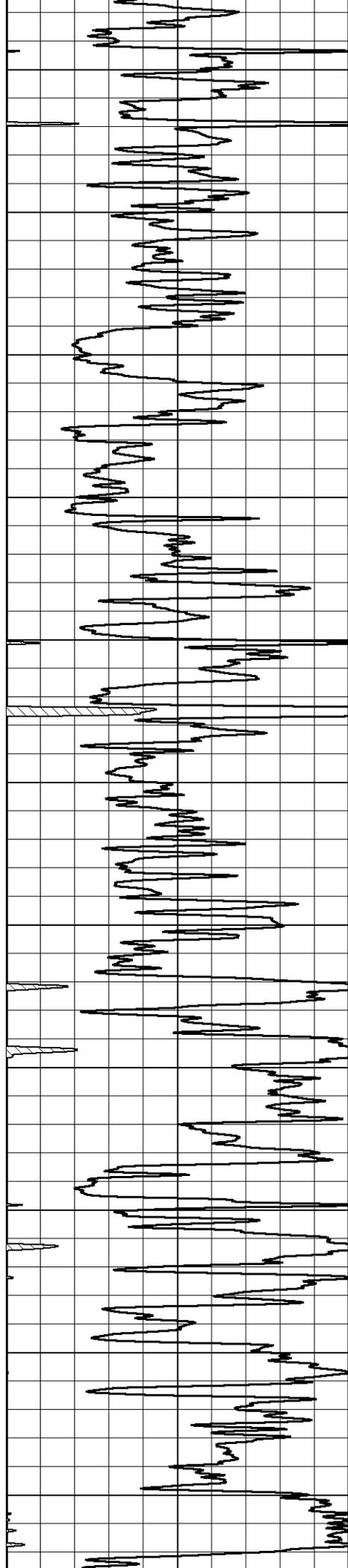


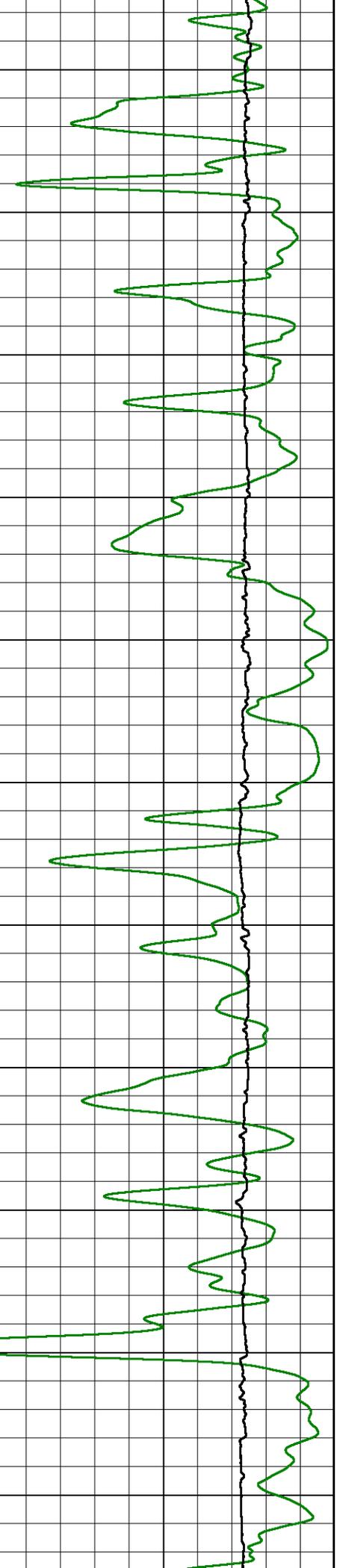
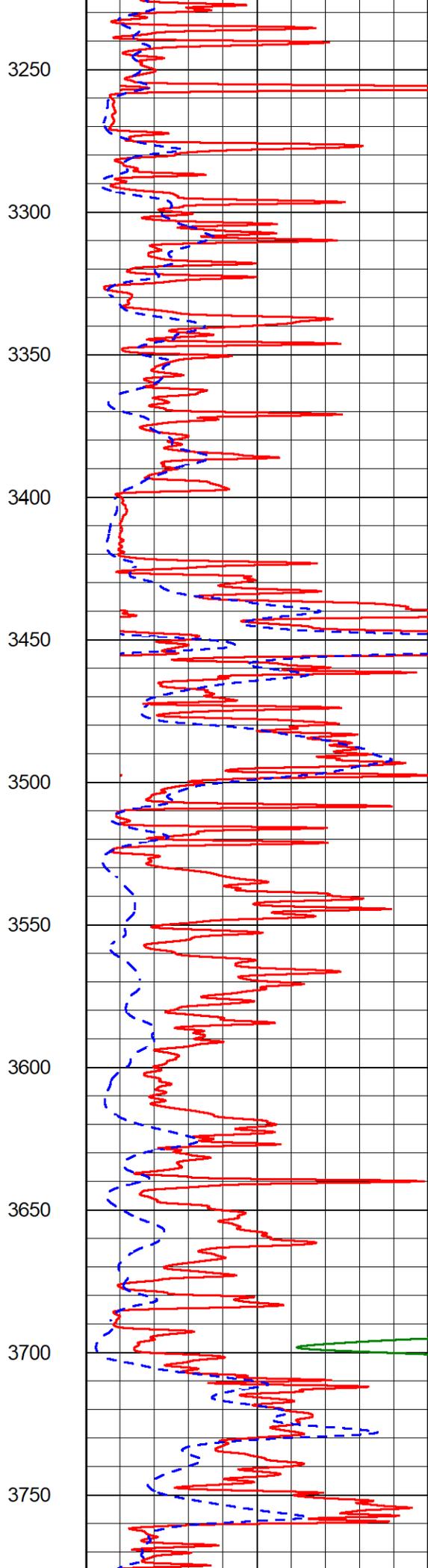
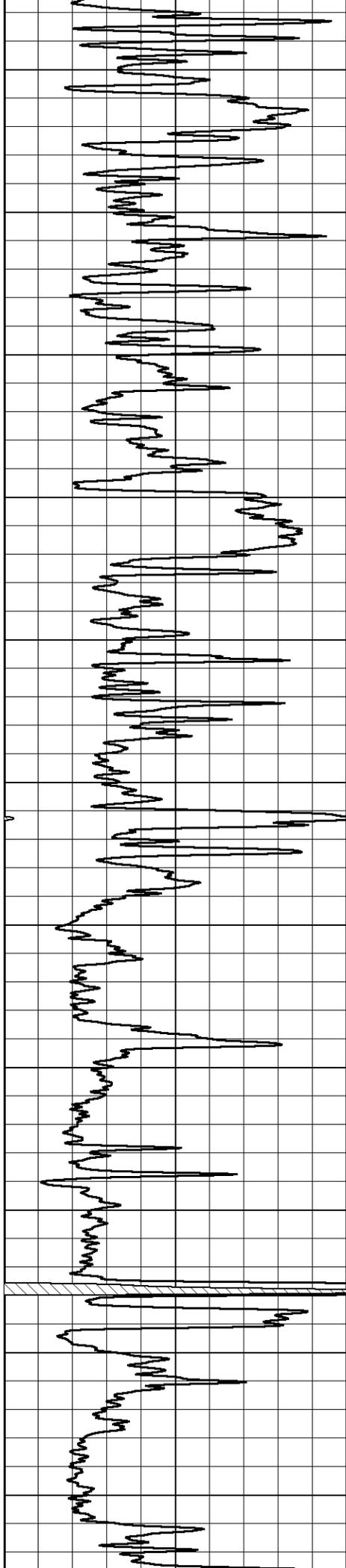


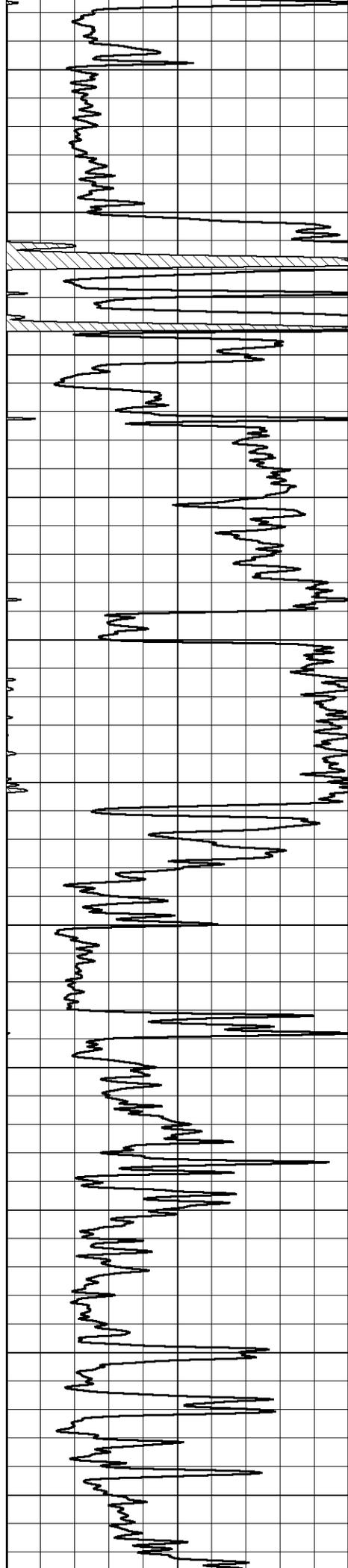
1600  
1650  
1700  
1750  
1800  
1850  
1900  
1950  
2000  
2050  
2100



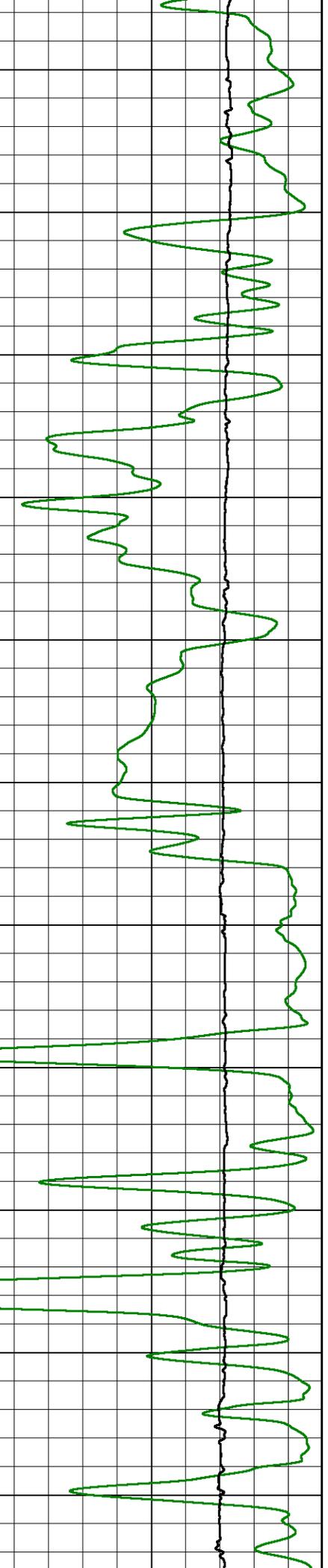
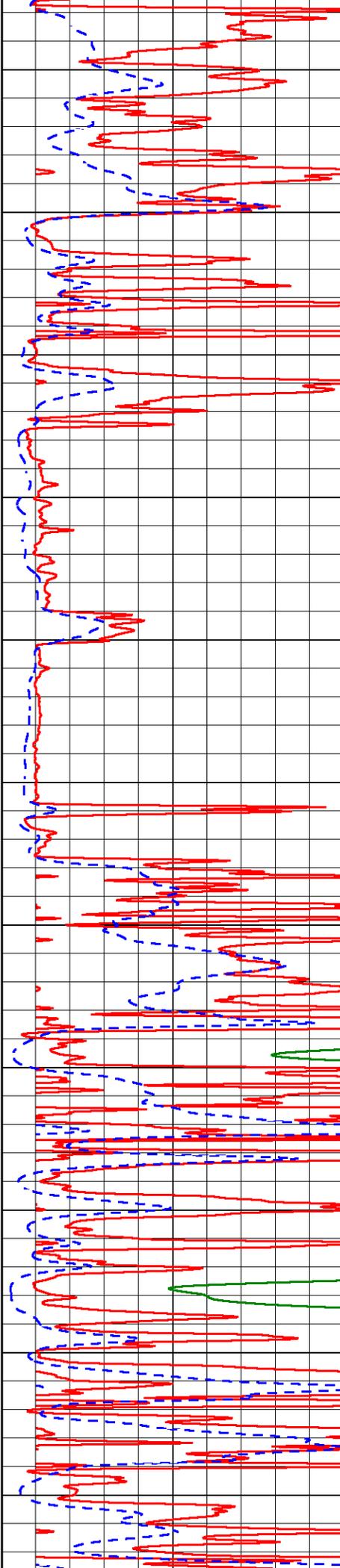


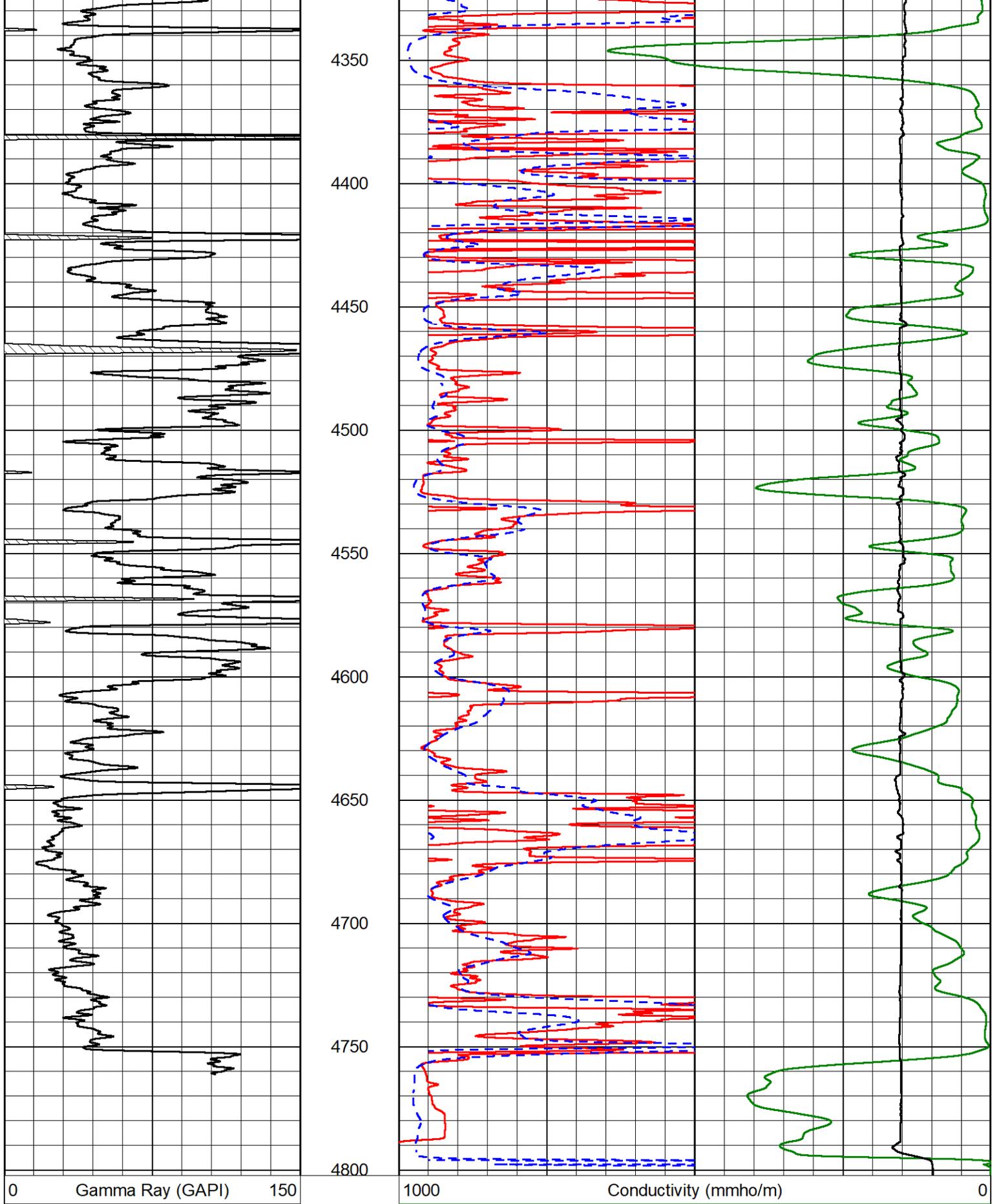






3800  
3850  
3900  
3950  
4000  
4050  
4100  
4150  
4200  
4250  
4300





0 Gamma Ray (GAPI) 150

4350  
4400  
4450  
4500  
4550  
4600  
4650  
4700  
4750  
4800

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



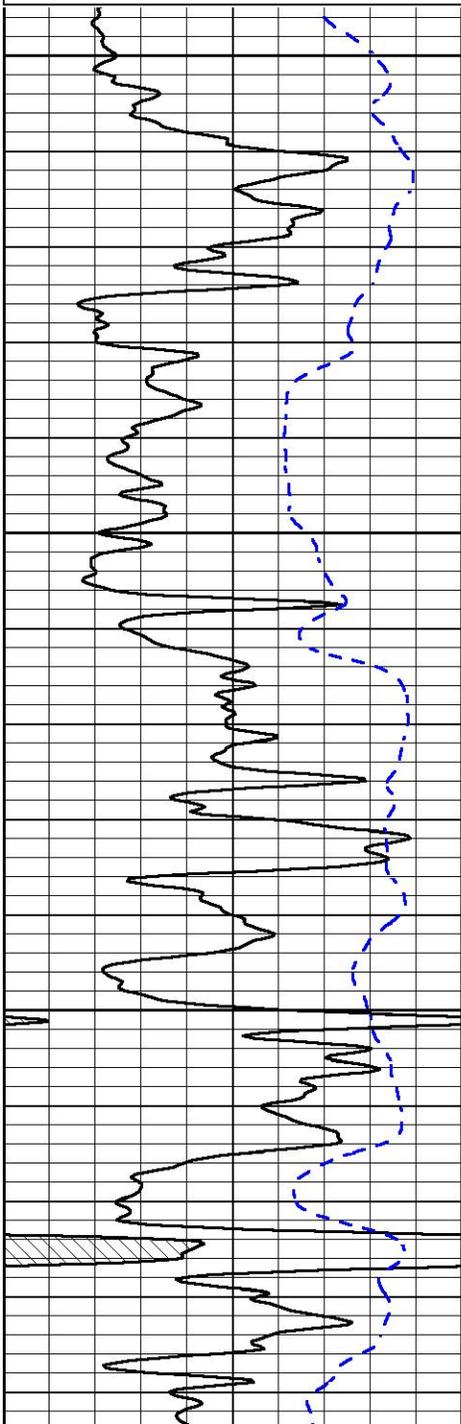
# DETAIL SECTION

## MAIN PASS

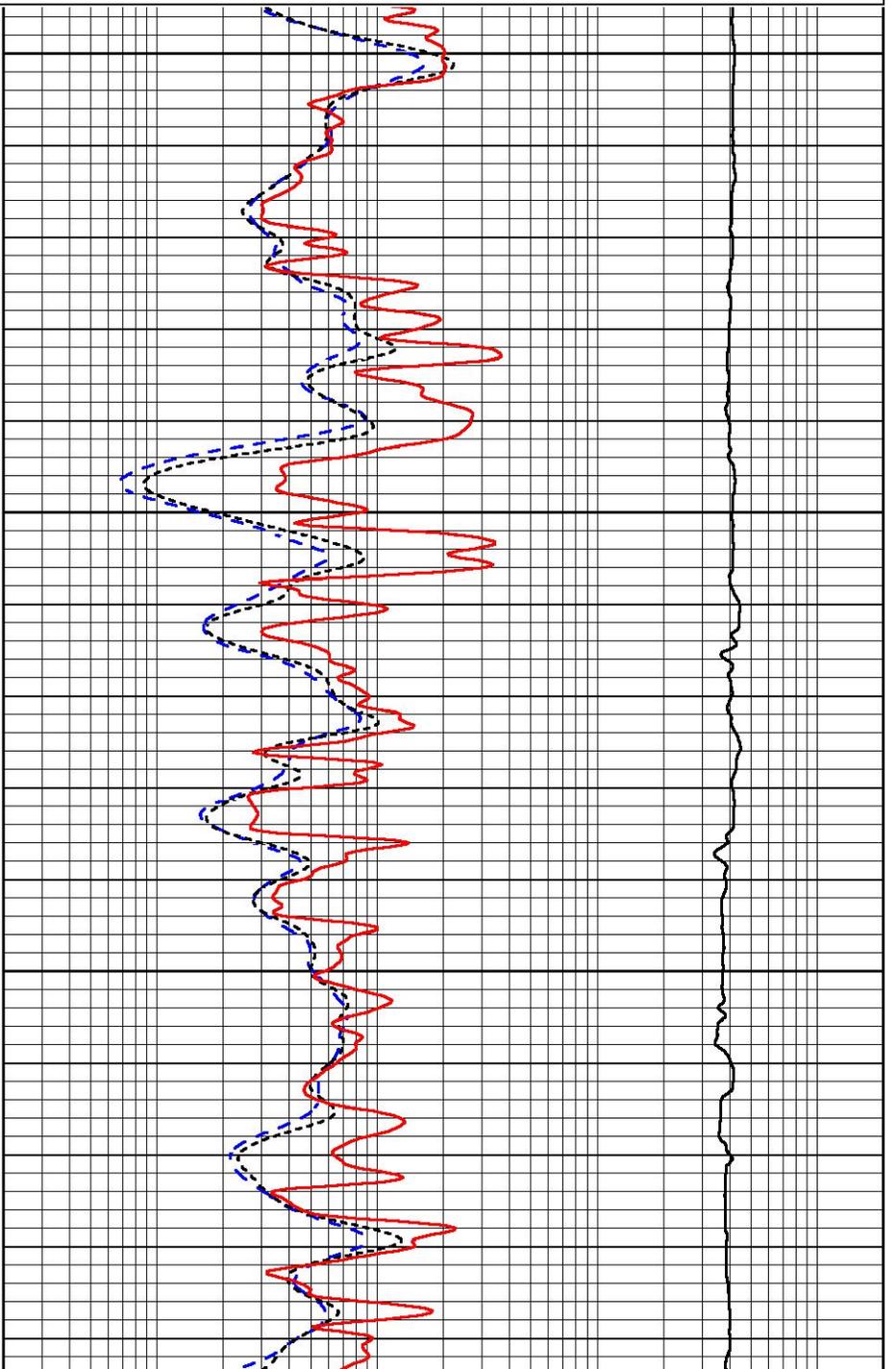
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 Presentation Format \_dil  
 Dataset Creation Sun Dec 12 23:32:46 2021  
 Charted by Depth in Feet scaled 1:240

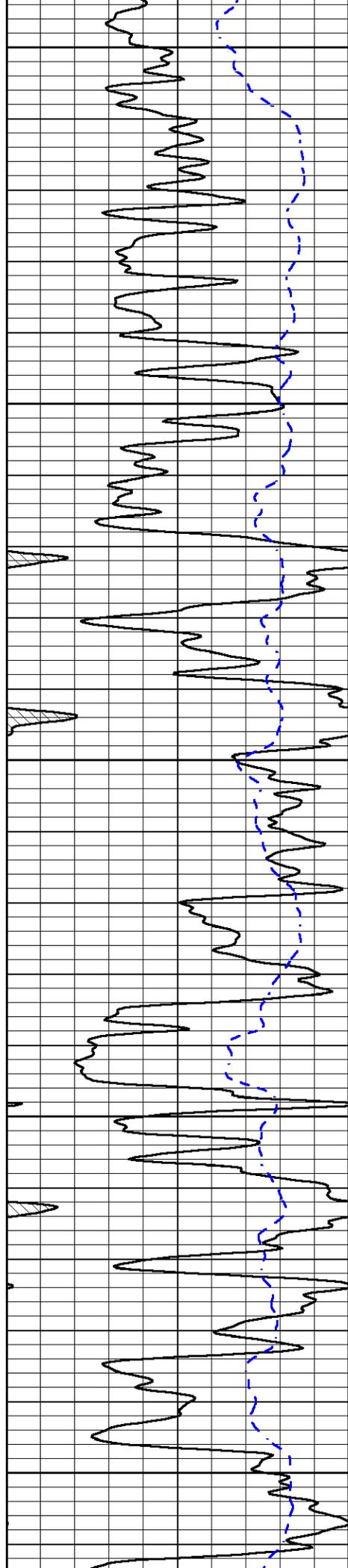
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

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



2800  
2850  
2900





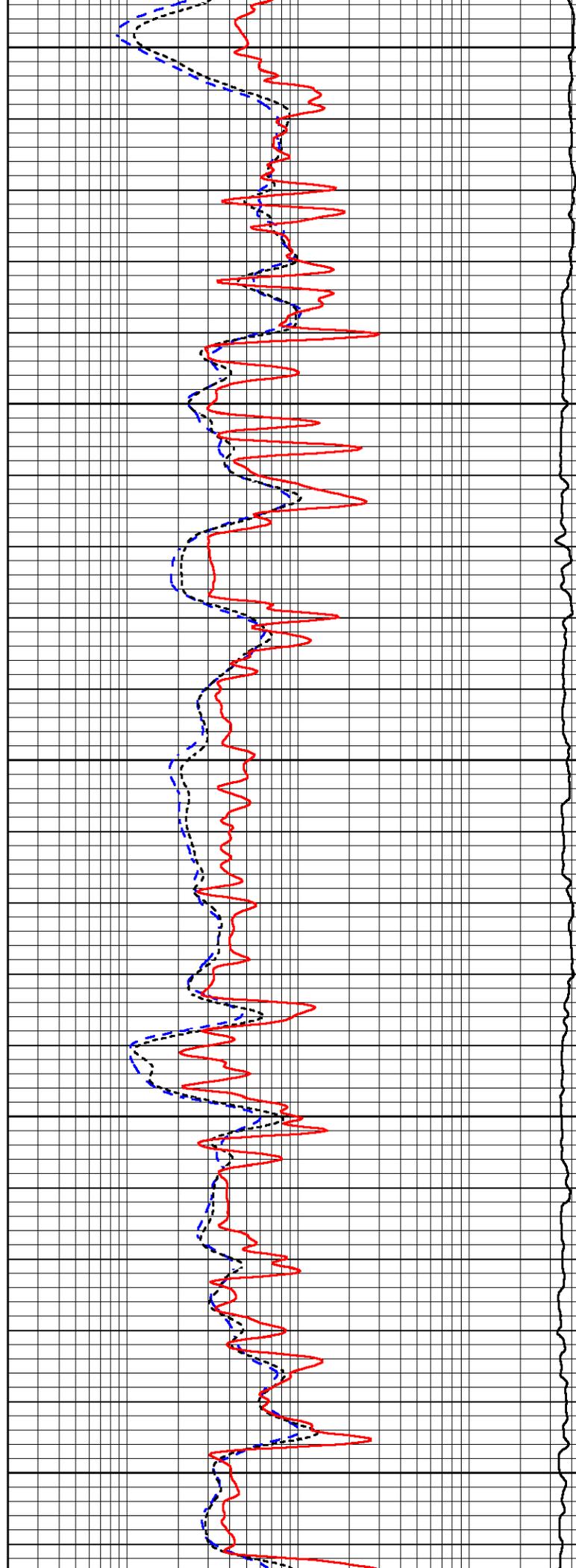
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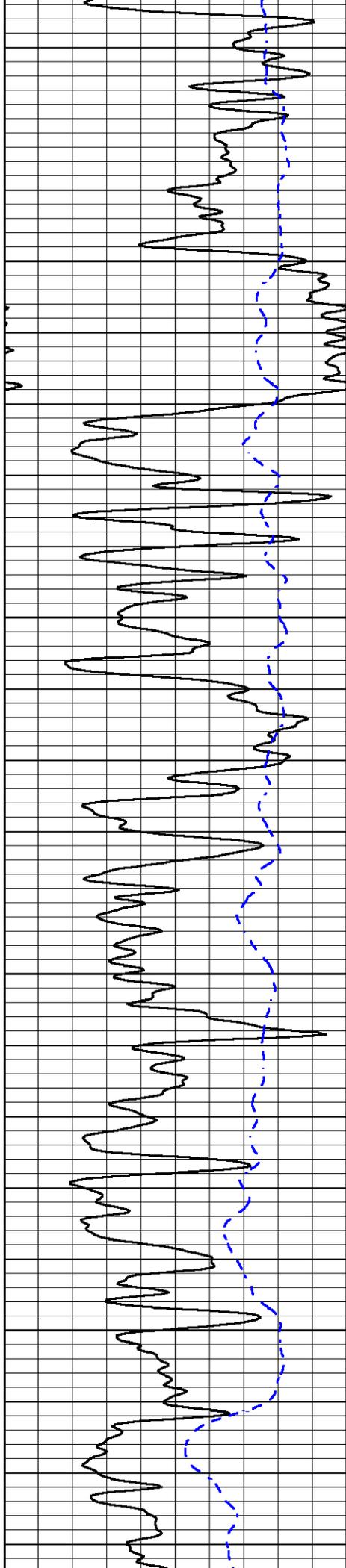
3000

3050

3100

3150



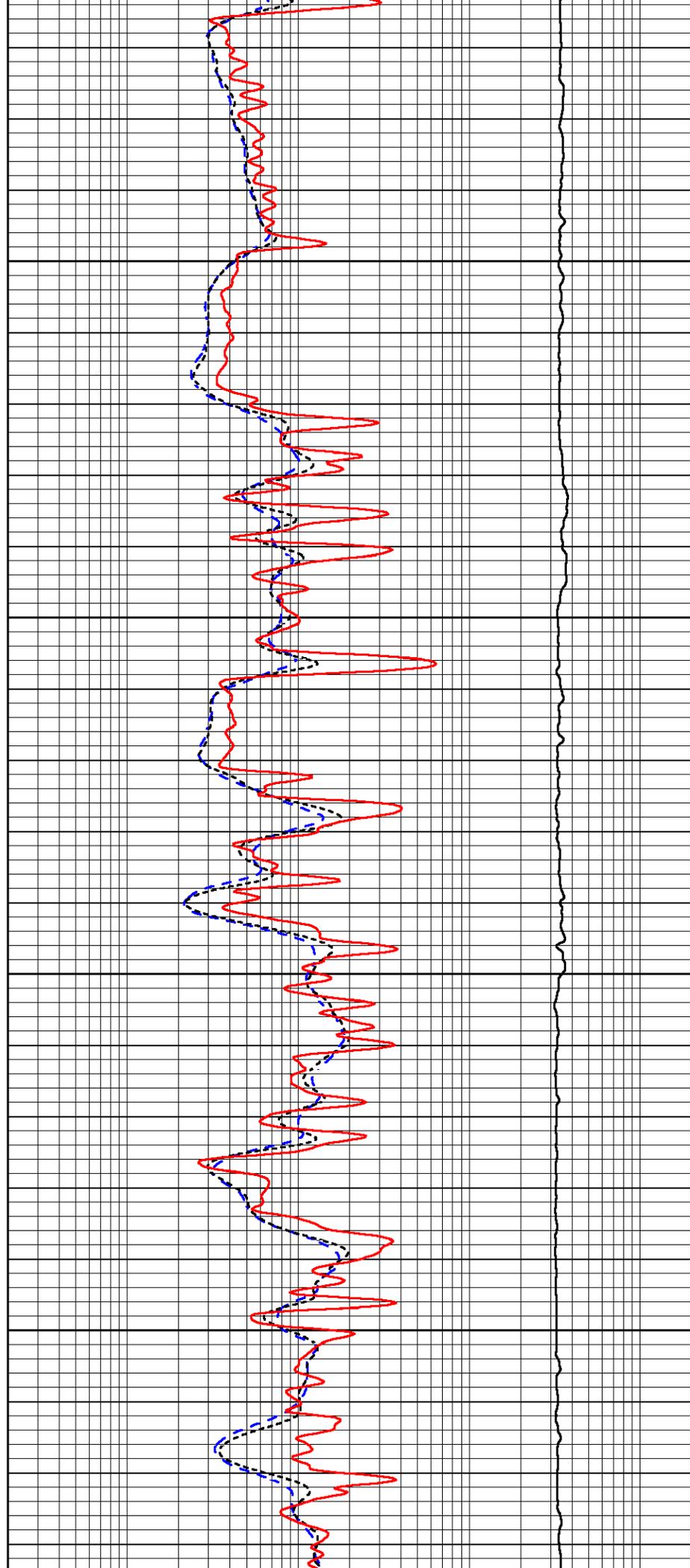


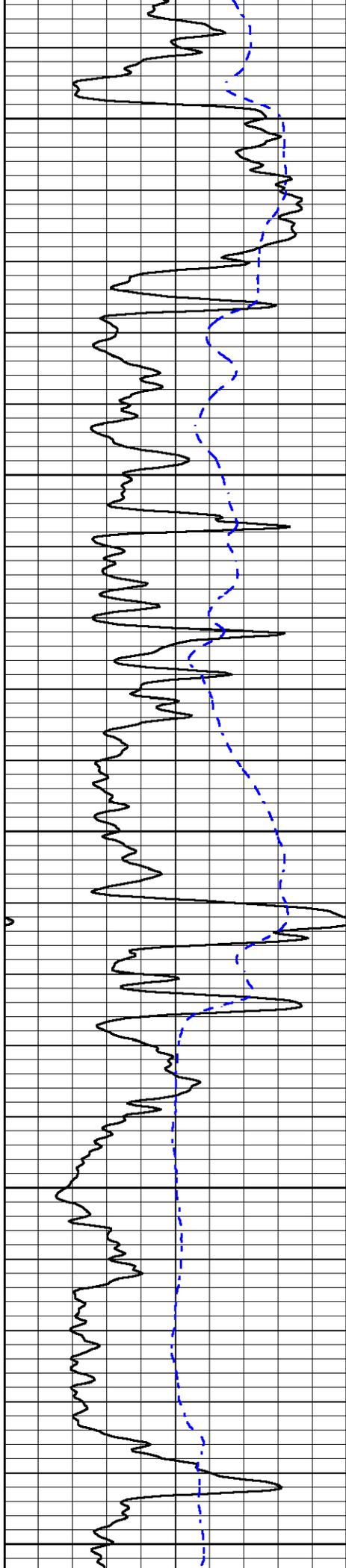
3200

3250

3300

3350





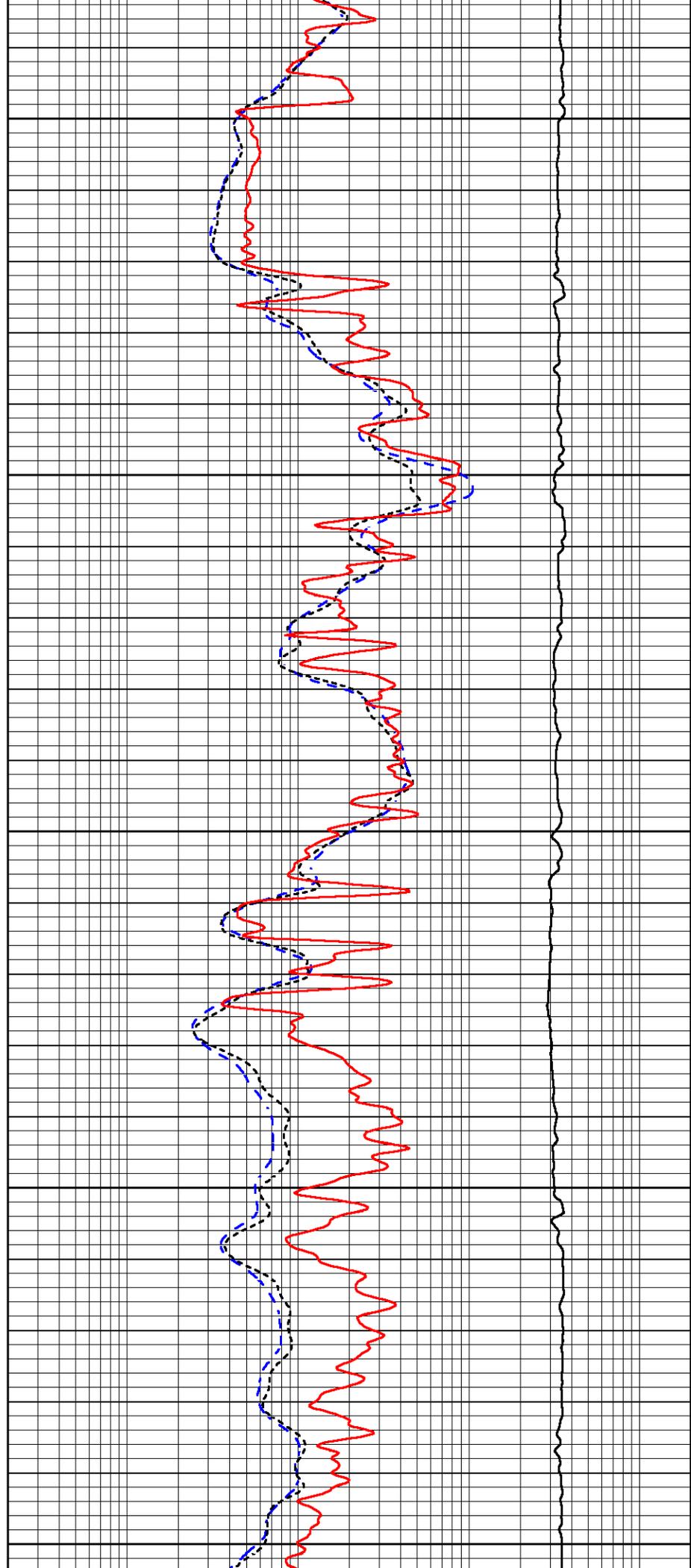
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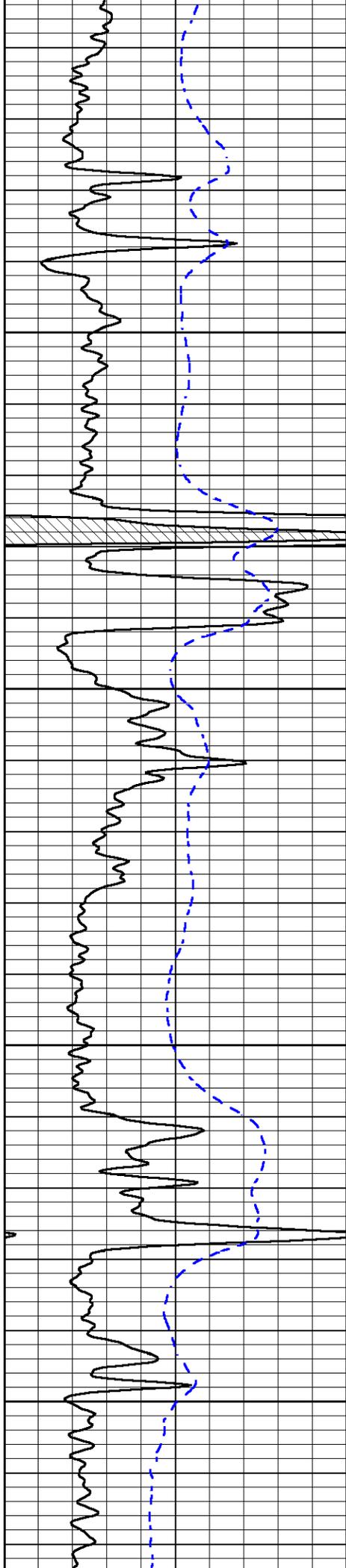
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3500

3550

3600



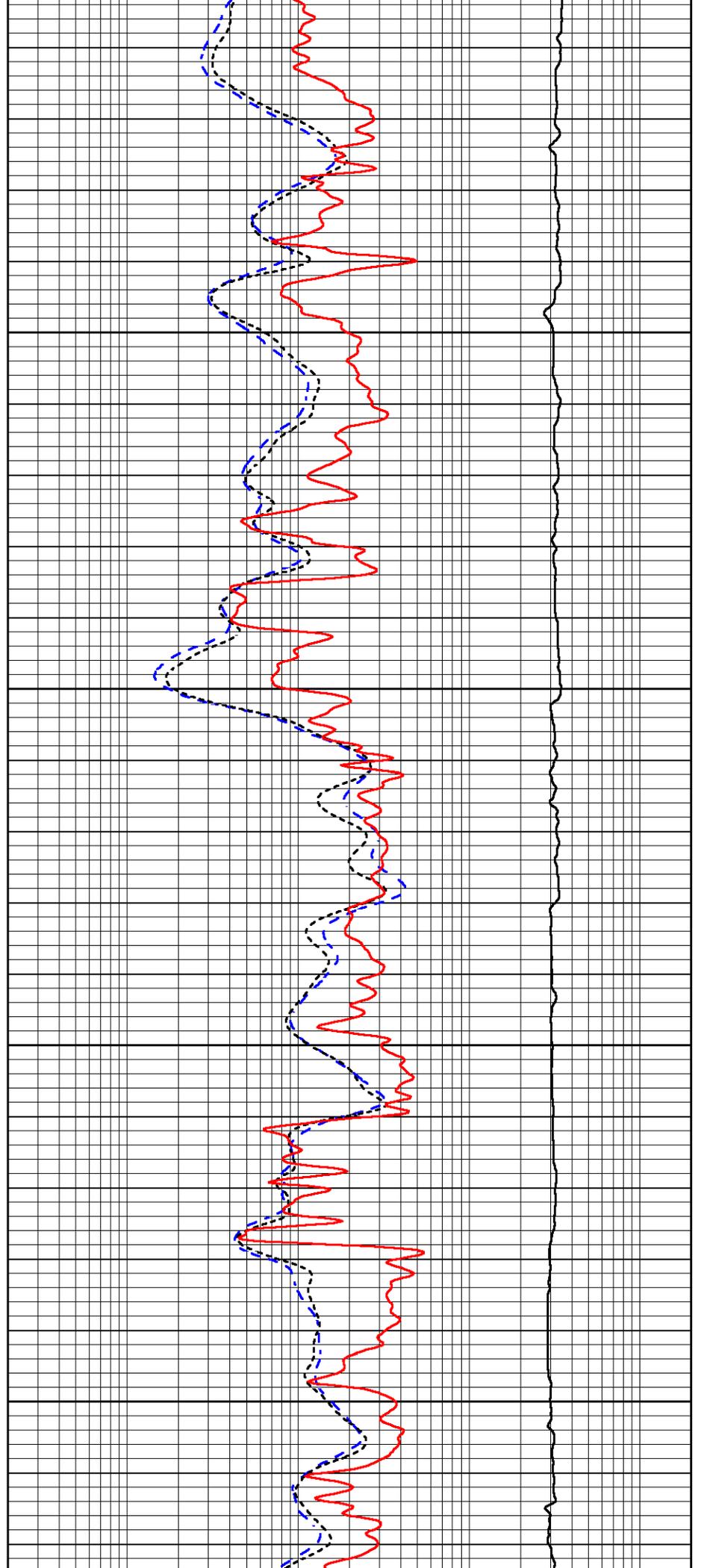


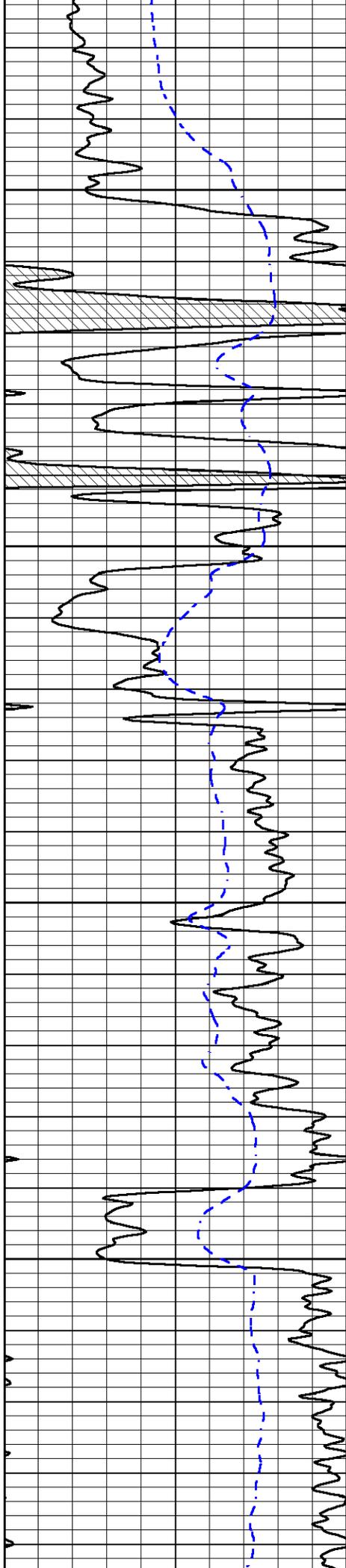
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3700

3750

3800



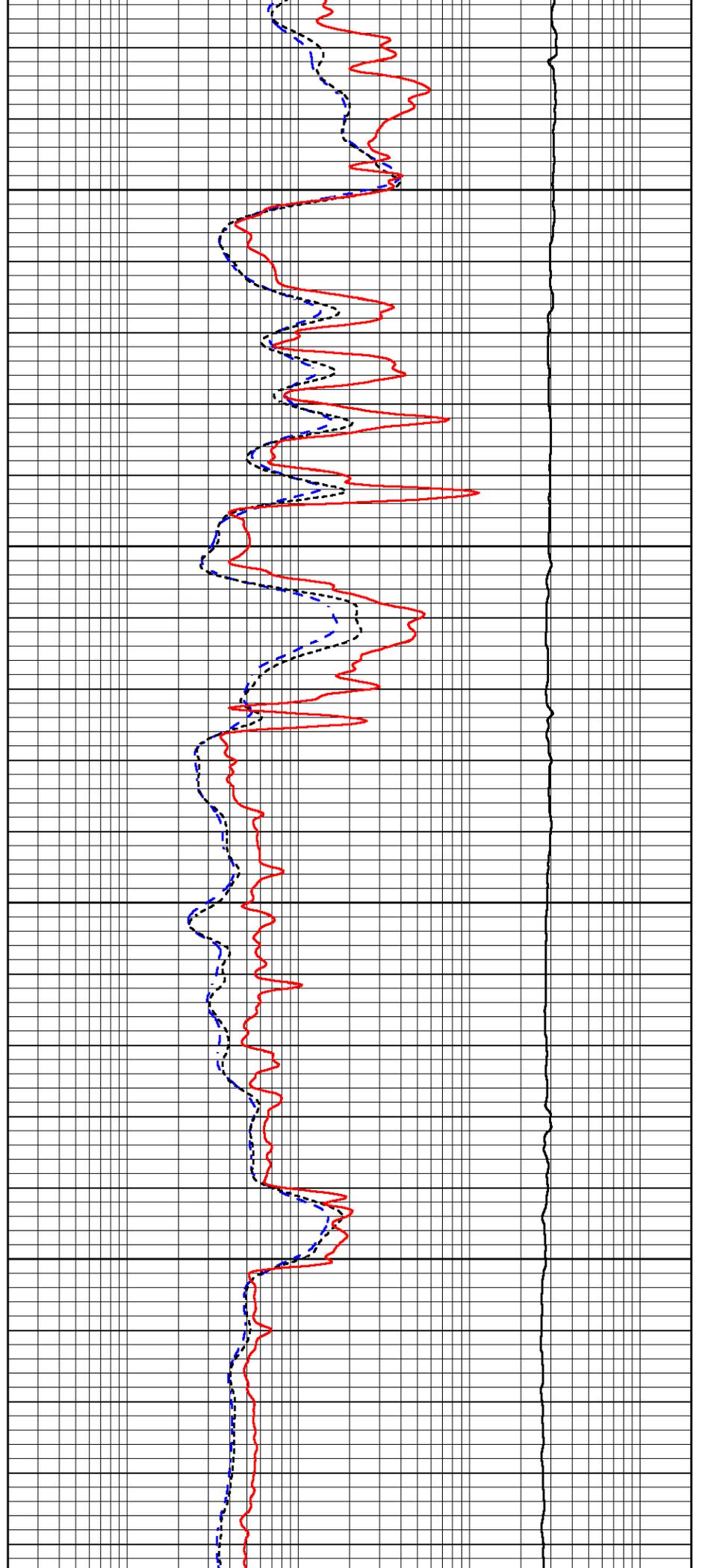


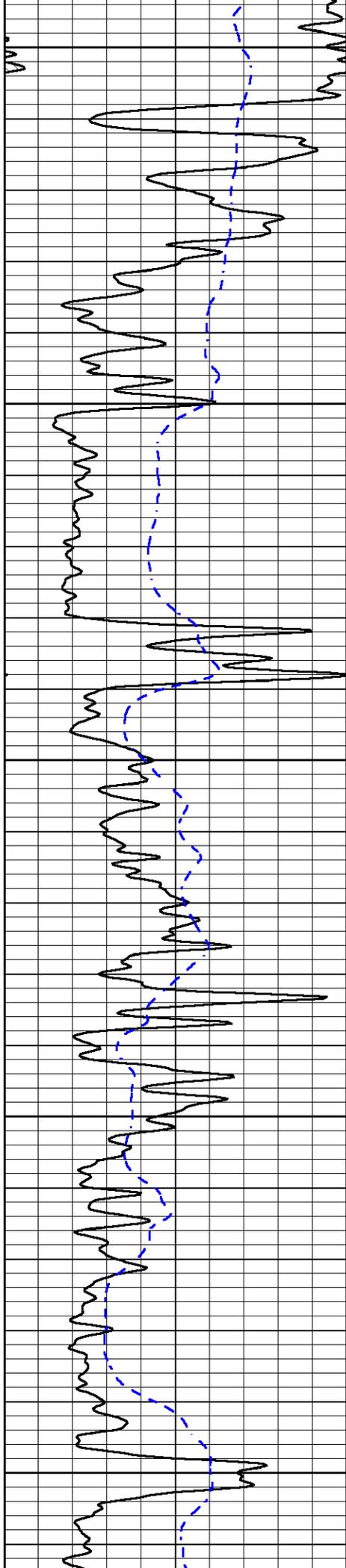
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3900

3950

4000





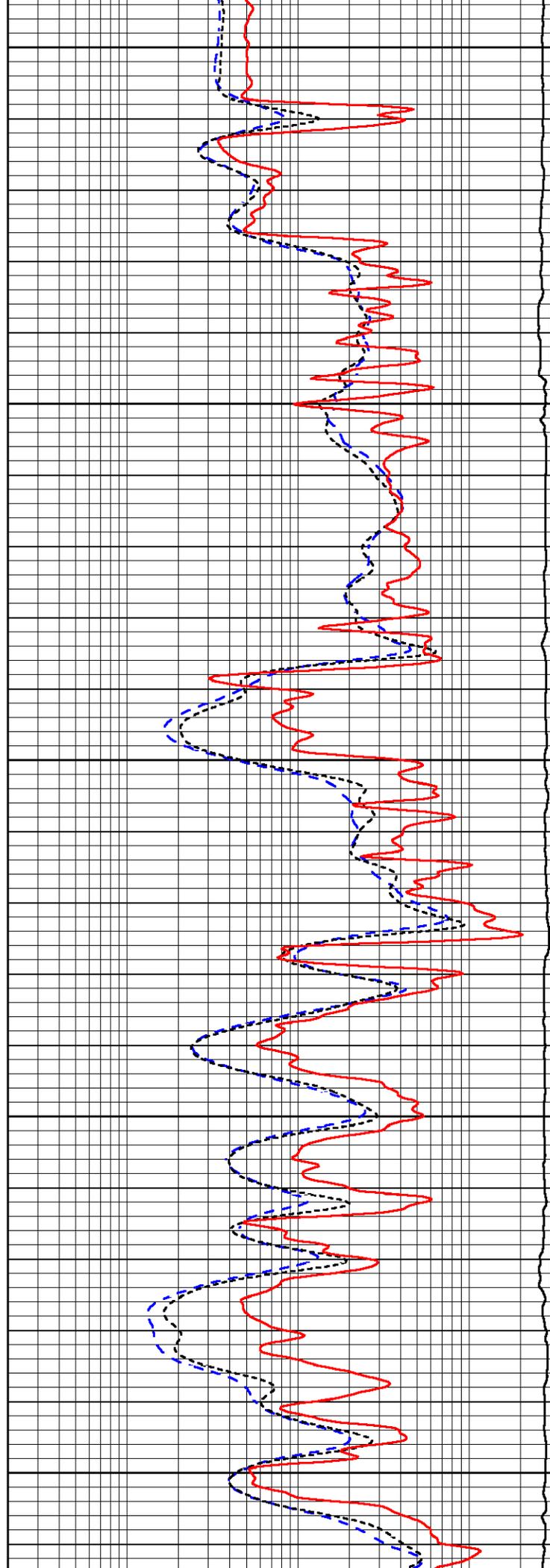
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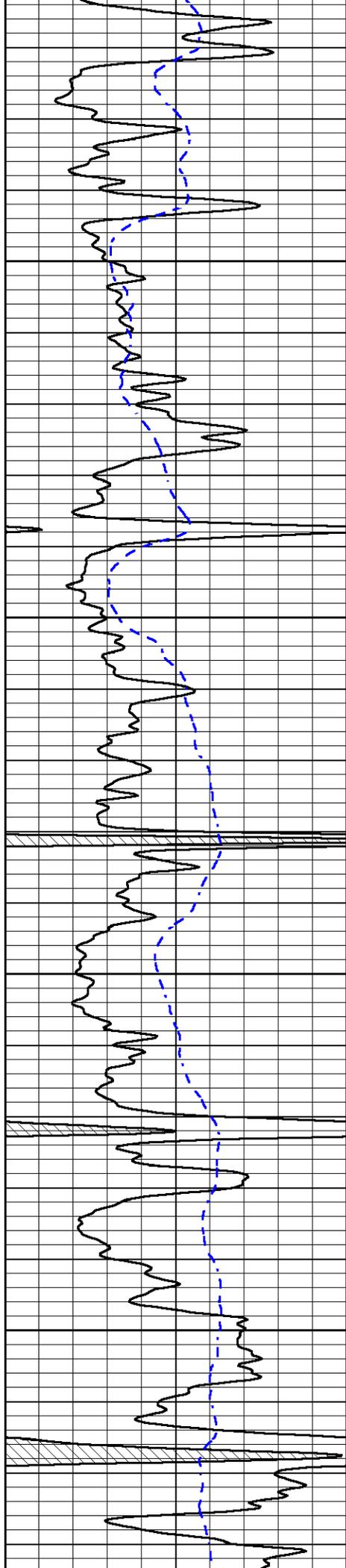
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4150

4200

4250



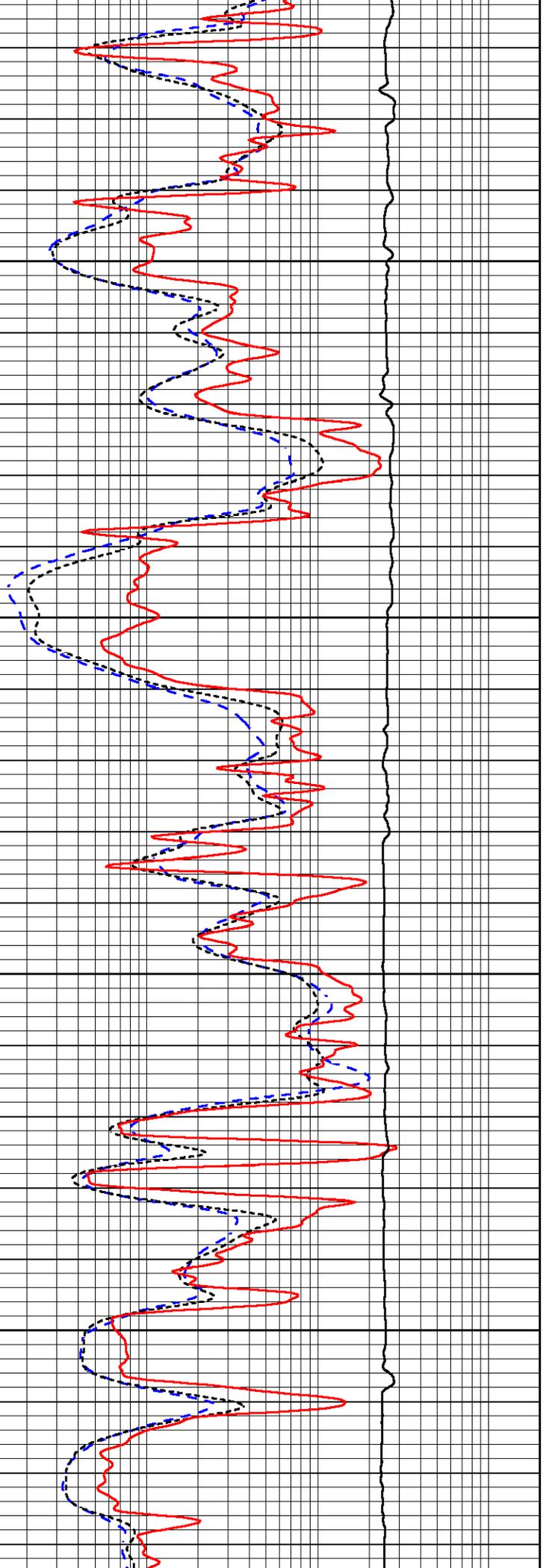


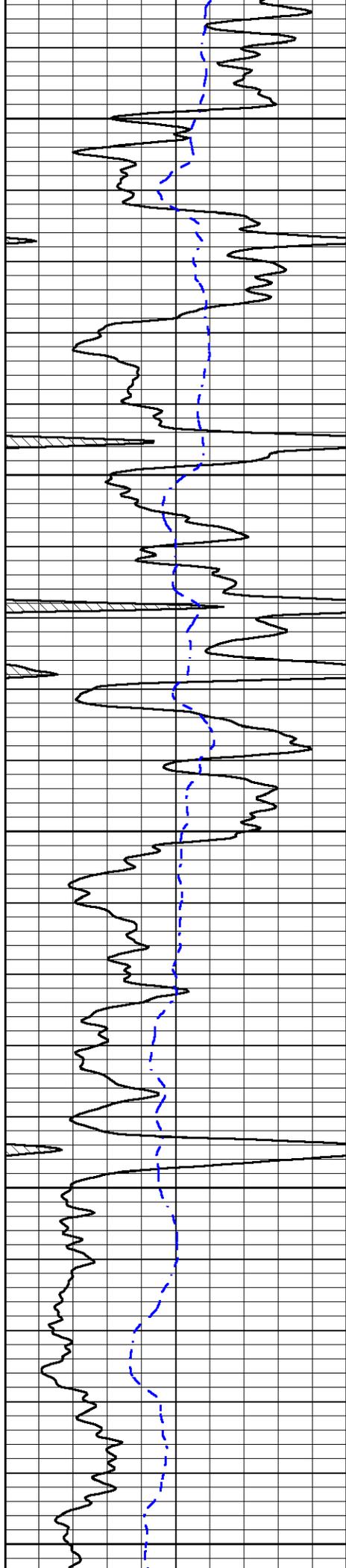
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4350

4400

4450





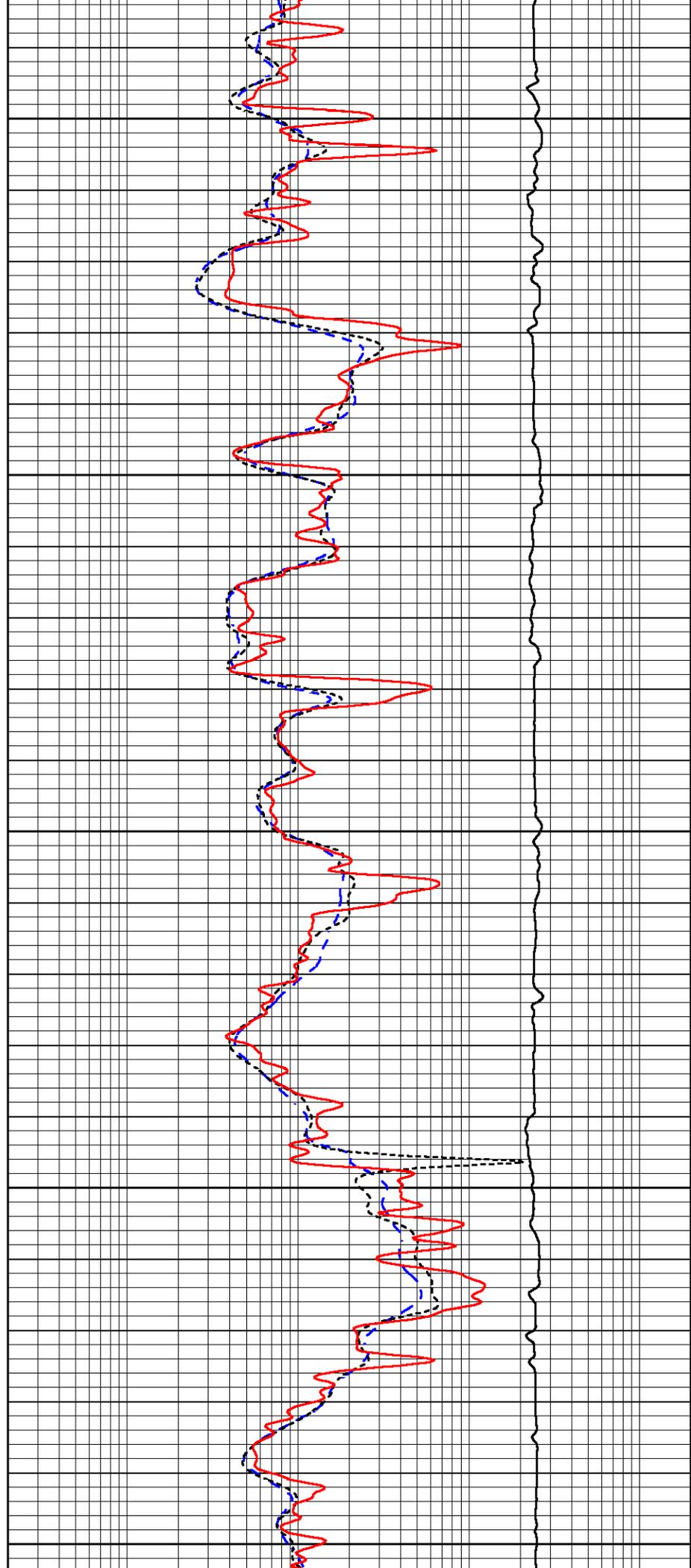
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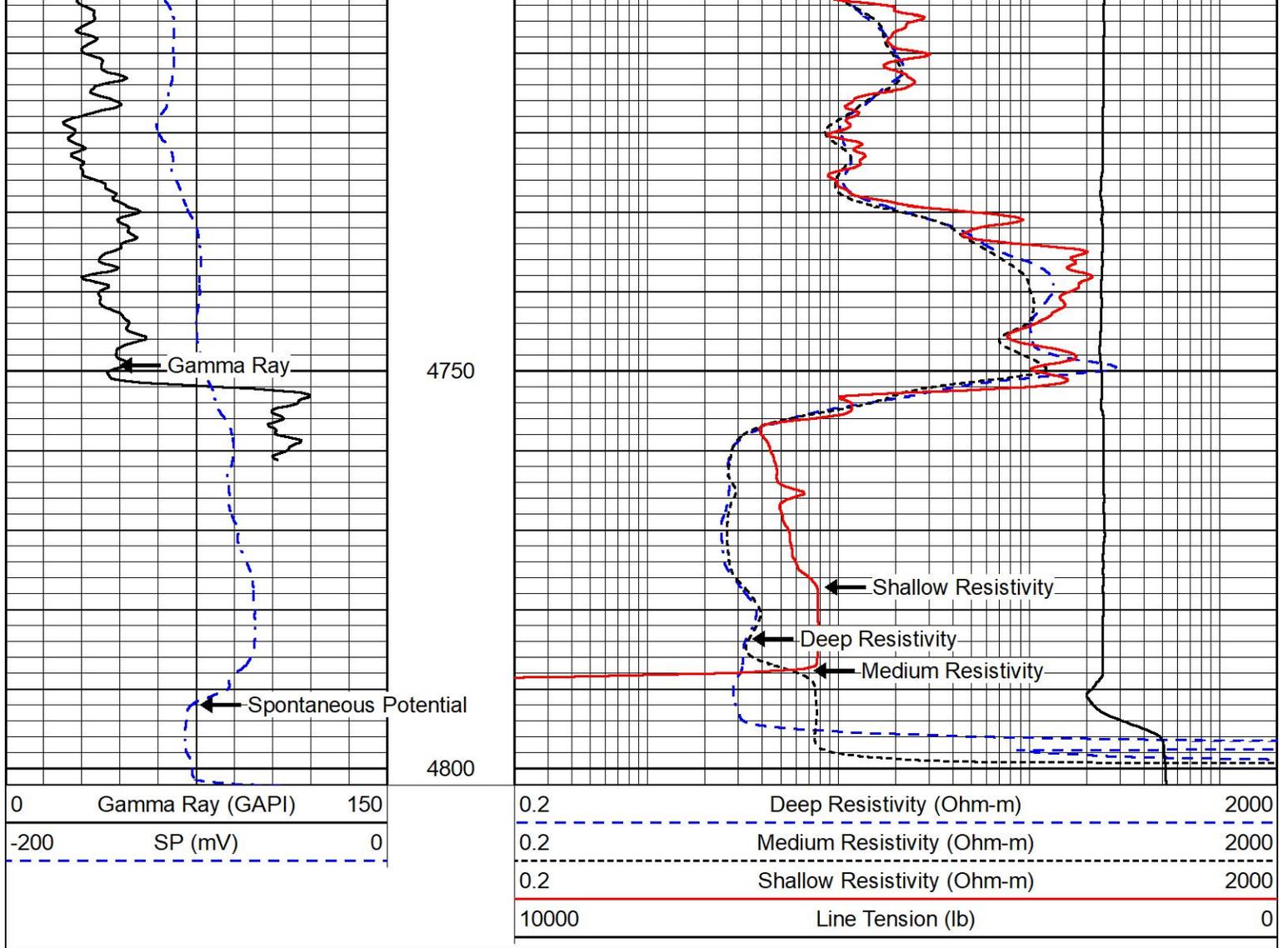
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4600

4650

4700



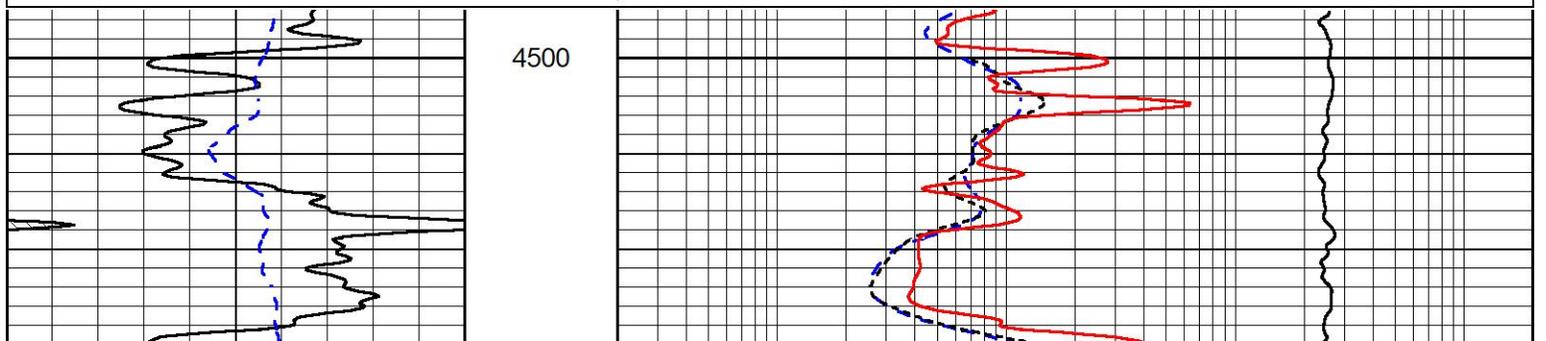
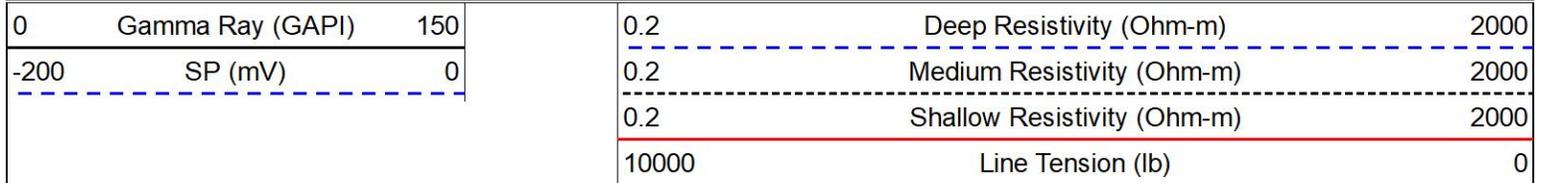


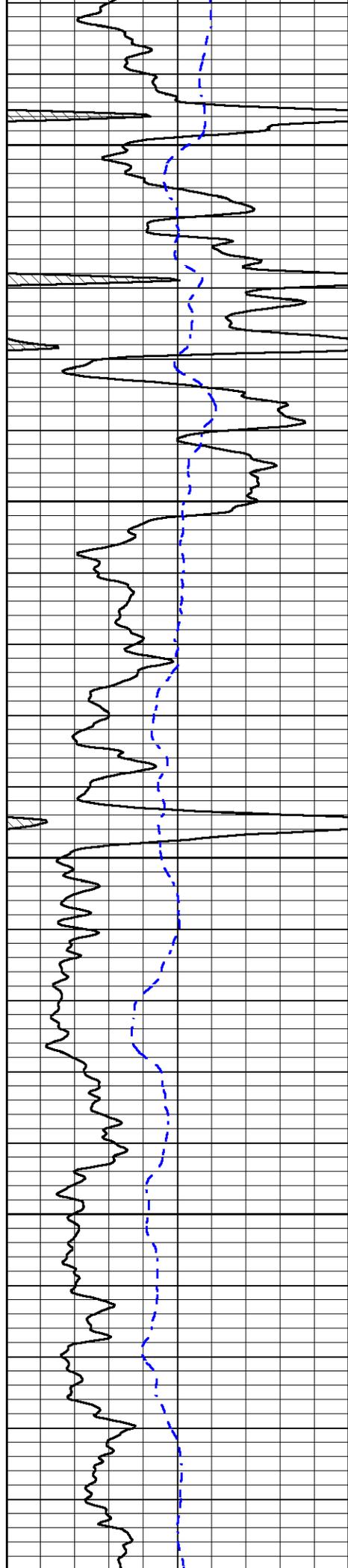
MIDWEST WIRELINE

## REPEAT SECTION

### REPEAT PASS

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 Dataset Pathname stackml/pass2.1  
 Presentation Format \_dil  
 Dataset Creation Sun Dec 12 23:31:29 2021  
 Charted by Depth in Feet scaled 1:240





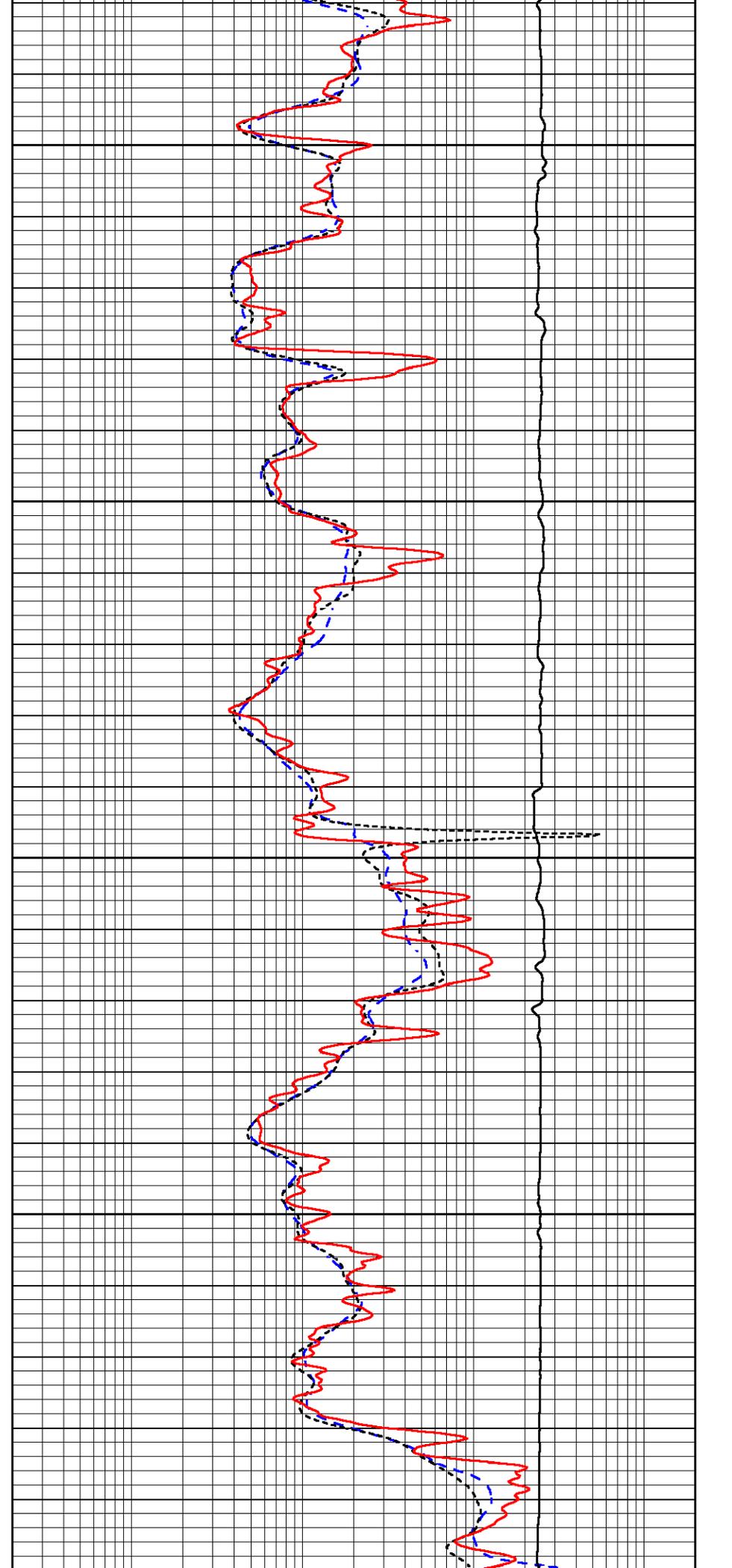
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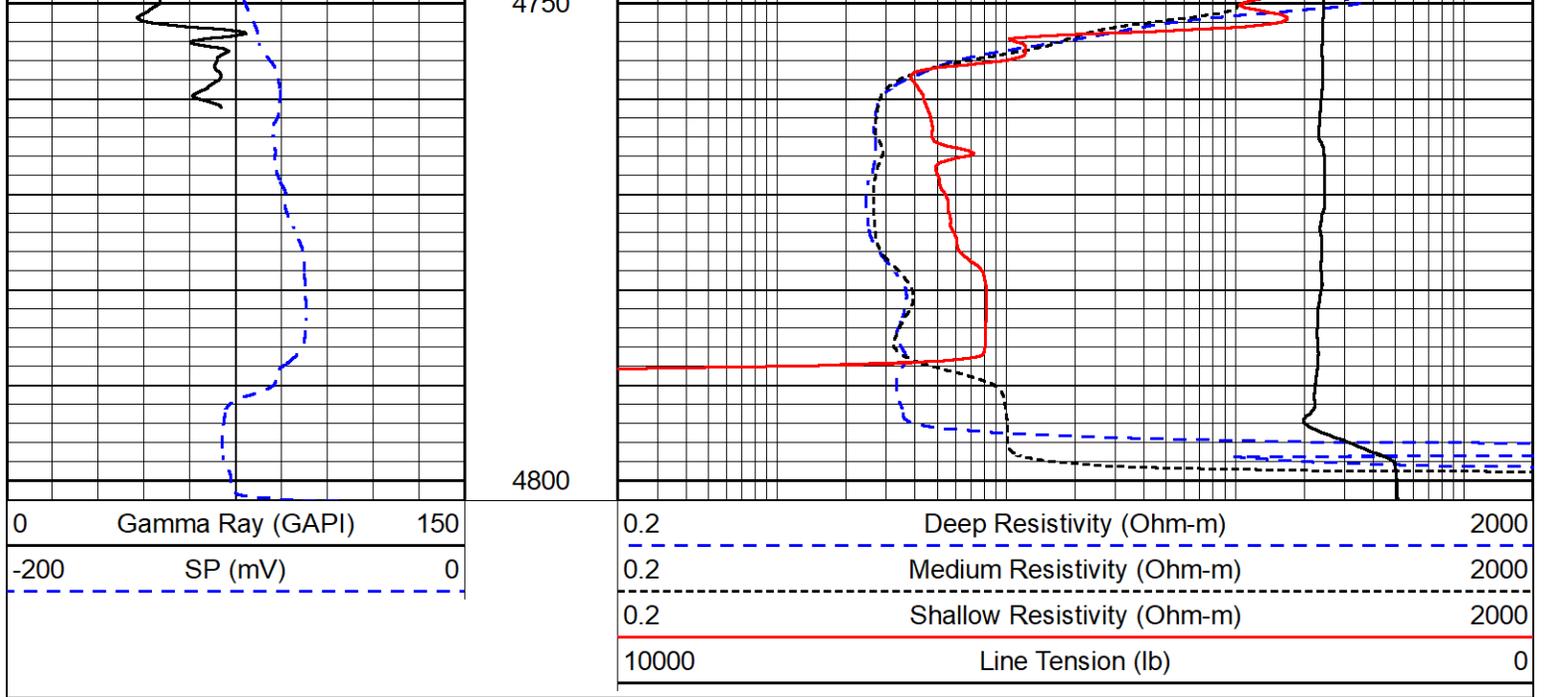
4600

4650

4700

4750





### Calibration Report

Database File griffin\_harper\_2.db  
 Dataset Pathname stackml/pass4.1  
 Dataset Creation Sun Dec 12 23:32:46 2021

### Dual Induction Calibration Report

Serial-Model: 959-1032-PSI HIGH TEMP  
 Surface Cal Performed: Mon Oct 25 13:13:32 2021

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	178.615	710.235	0.000	255.800	mmho/m	0.650	-19.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.450	-45.500

### Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML  
 Performed: Sat Apr 7 11:01:20 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	23000.0000	-1.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	20000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-134.8000

### Compensated Density Calibration Report

Serial-Model: 915-956-M&W  
 Source #: 21170B  
 Master Calibration Performed: Fri Dec 3 11:22:35 2021

### Master Calibration

Density Far Detector Near Detector

Magnesium	1.755	g/cc	3668.53	4669.61	cps
Aluminum	2.670	g/cc	710.88	3056.05	cps

Spine Angle = 75.51

Density/Spine Ratio = 0.540

	Size		Reading
Small Ring	4.00	in	1.17
Large Ring	14.00	in	1.05

Compensated Neutron Calibration Report

Serial-Model:	tk10-MW-M&W
Source #:	N-1238
Master Calibration Performed:	Fri Dec 3 09:16:24 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:	89-M&W	
Tool Model:	M&W	
Performed:	Fri Dec 3 12:13:24 2021	
Calibrator Value:	500.0	GAPI
Background Reading:	28.0	cps
Calibrator Reading:	986.0	cps
Sensitivity:	0.5700	GAPI/cps



Company	Griffin Management LLC
Well	Harper #2
Field	Wildcat
County	Barber
State	Kansas