



MIDWEST WIRELINE

DUAL INDUCTION LOG

Company: Murfin Drilling Company, Inc.
 Well: Rusco-Davis #4-1
 Field: Star Southwest
 County: Ellis
 State: Kansas

Company: Murfin Drilling Company, Inc.
 Well: Rusco-Davis #4-1
 Field: Star Southwest
 County: Ellis
 State: Kansas

Location: API #: 15-051-27025-00-00
 1000 FNL & 2250 FWL
 SEC 1 TWP 12S RGE 20W
 Permanent Datum: Ground Level Elevation 2045
 Log Measured From: Kelly Bushing
 Drilling Measured From: Kelly Bushing
 Other Services: CNL/CDL MEL/BHCS
 Elevation: K.B. 2050 D.F. G.L. 2045

Date	2/13/2022
Run Number	One
Depth Driller	3700
Depth Logger	3700
Bottom Logged Interval	3699
Top Log Interval	00
Casing Driller	8.625 @ 262
Casing Logger	260
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	4500
Density / Viscosity	9.3 54
pH / Fluid Loss	10.0 6.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.65 @ 76
Rmt @ Meas. Temp	.49 @ 76
Rmc @ Meas. Temp	.88 @ 76
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.44 @ 113
Operating Rig Time	5 Hours
Max Rec. Temp. F	113
Equipment Number	P-108
Location	HAYS
Recorded By	J. Henrickson
Witnessed By	Jeff Lawler

<<< 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.

Ellis Kansas
 North to Homestead, 2 1/2 East,
 South 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: J. Henrickson
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

Primary Witness: Jeff Lawler
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfir_rusco_davis_4_1.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	113	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	380	50	Off	3700

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 (210)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (303-03)	8.50	4.00	250.00
MCAL MI MN	19.58 19.58 19.58		ML-PSI STKBL ML (402)	7.58	4.00	65.00
RLL3F RLL3	15.50 15.50		DIL-M&W (504 HT)	18.25	3.50	220.00
CILD	8.33					

CILM 4.50

SP 0.20

Dataset: murfin_rusco_davis_4_1.db: field/well/stackml/pass4.1
 Total length: 42.33 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in



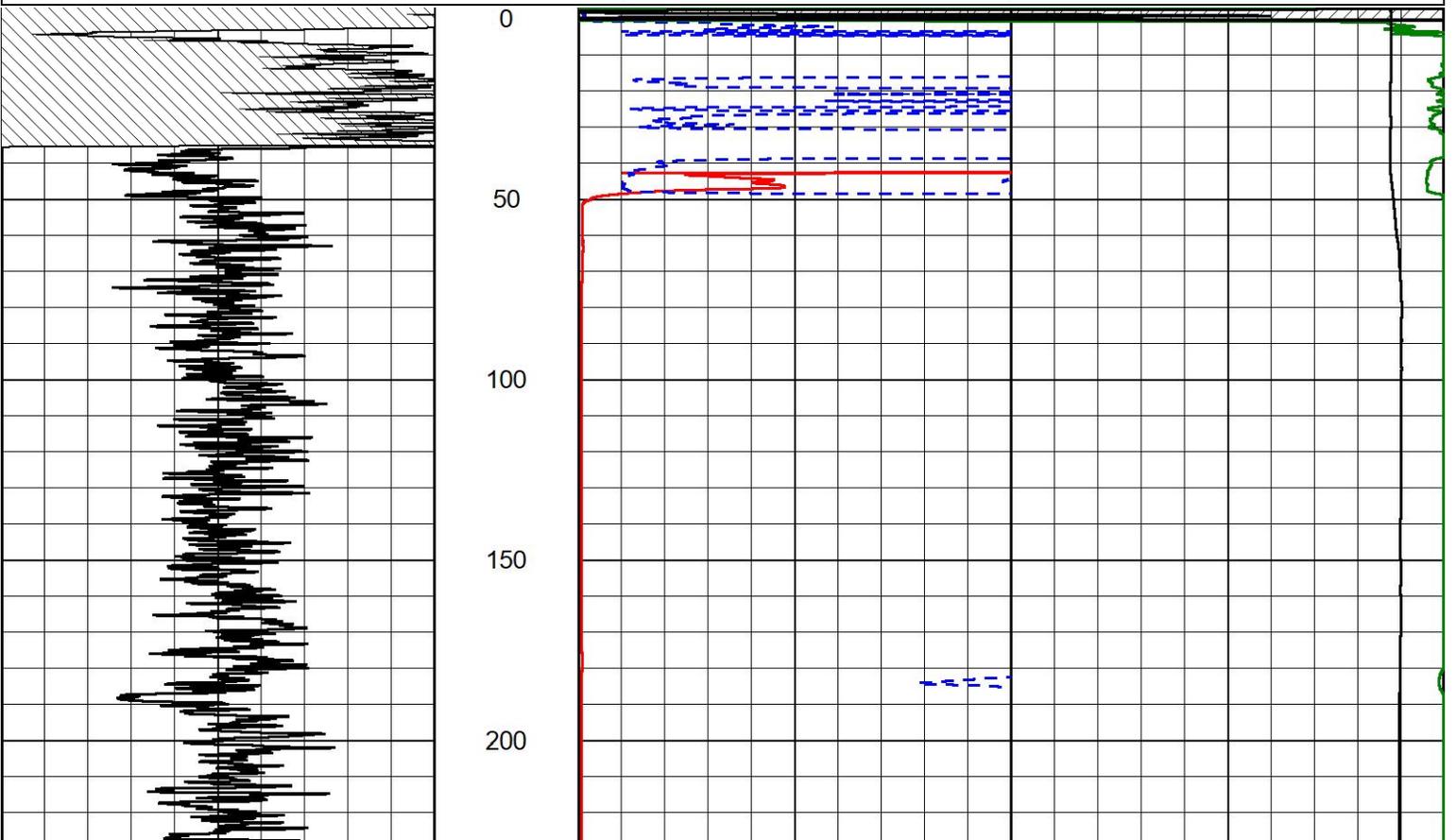
MIDWEST WIRELINE

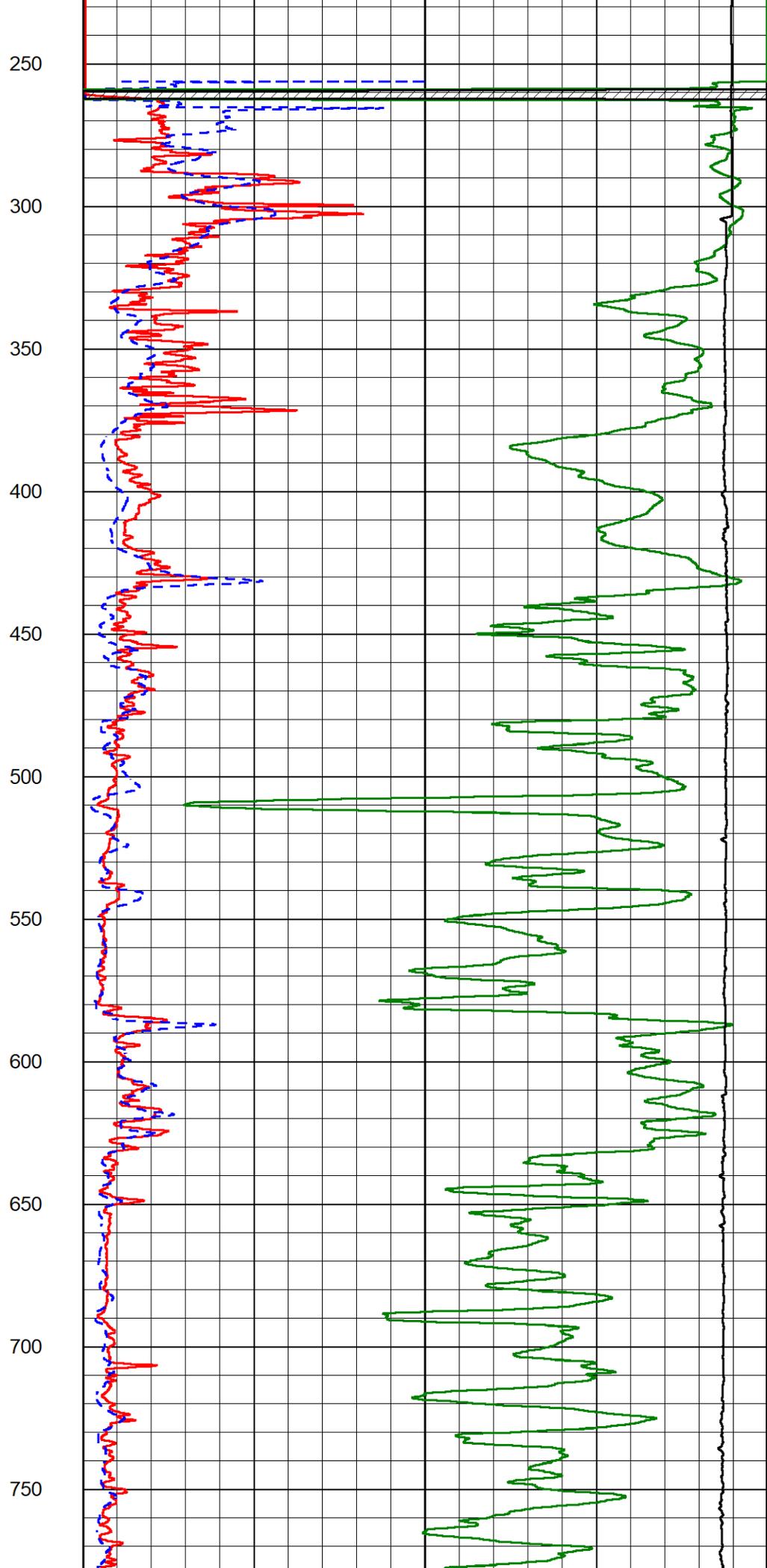
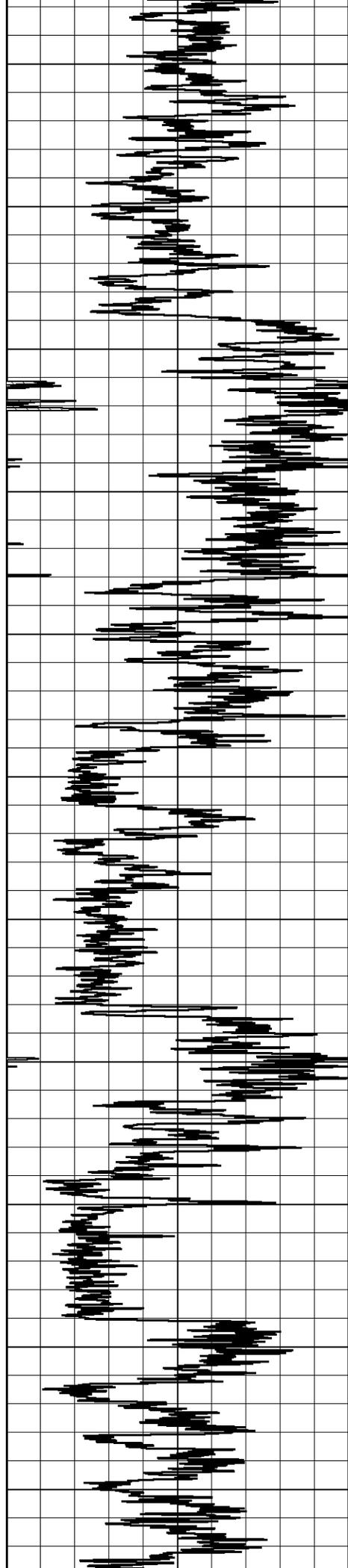
2" SCALE RESISTIVITY

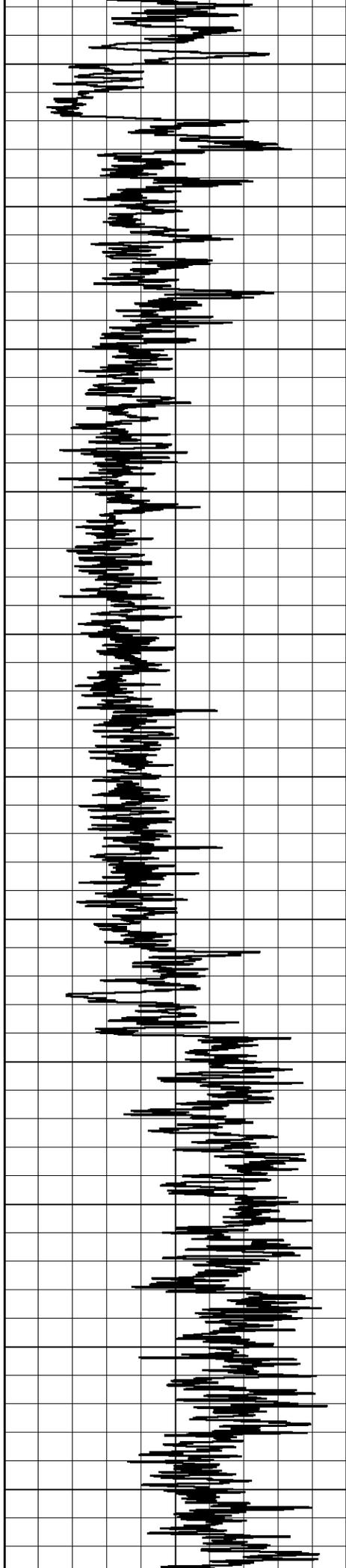
MAIN PASS

Database File murfin_rusco_davis_4_1.db
 Dataset Pathname stackml/pass5.1
 Presentation Format _dil2in
 Dataset Creation Sun Feb 13 11:44:43 2022
 Charted by Depth in Feet scaled 1:600

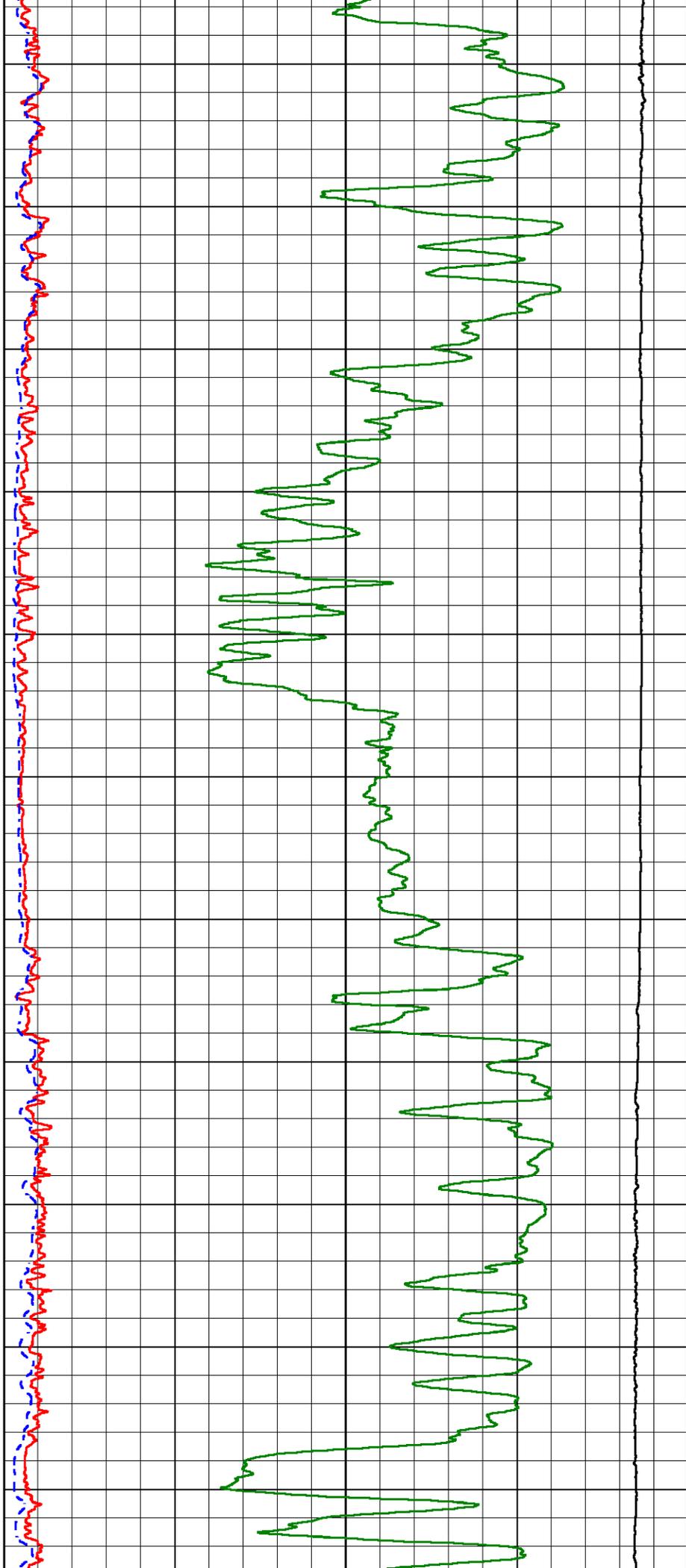
0	Gamma Ray (GAPI)	150	1000	Conductivity (mmho/m)	0
			15000	Line Tension (lb)	0
0	Shallow Resistivity (Ohm-m)	50			
0	Deep Resistivity (Ohm-m)	50			
	Shallow Resistivity				
50	(Ohm-m)	200			
50	Deep Resistivity (Ohm-m)	200			

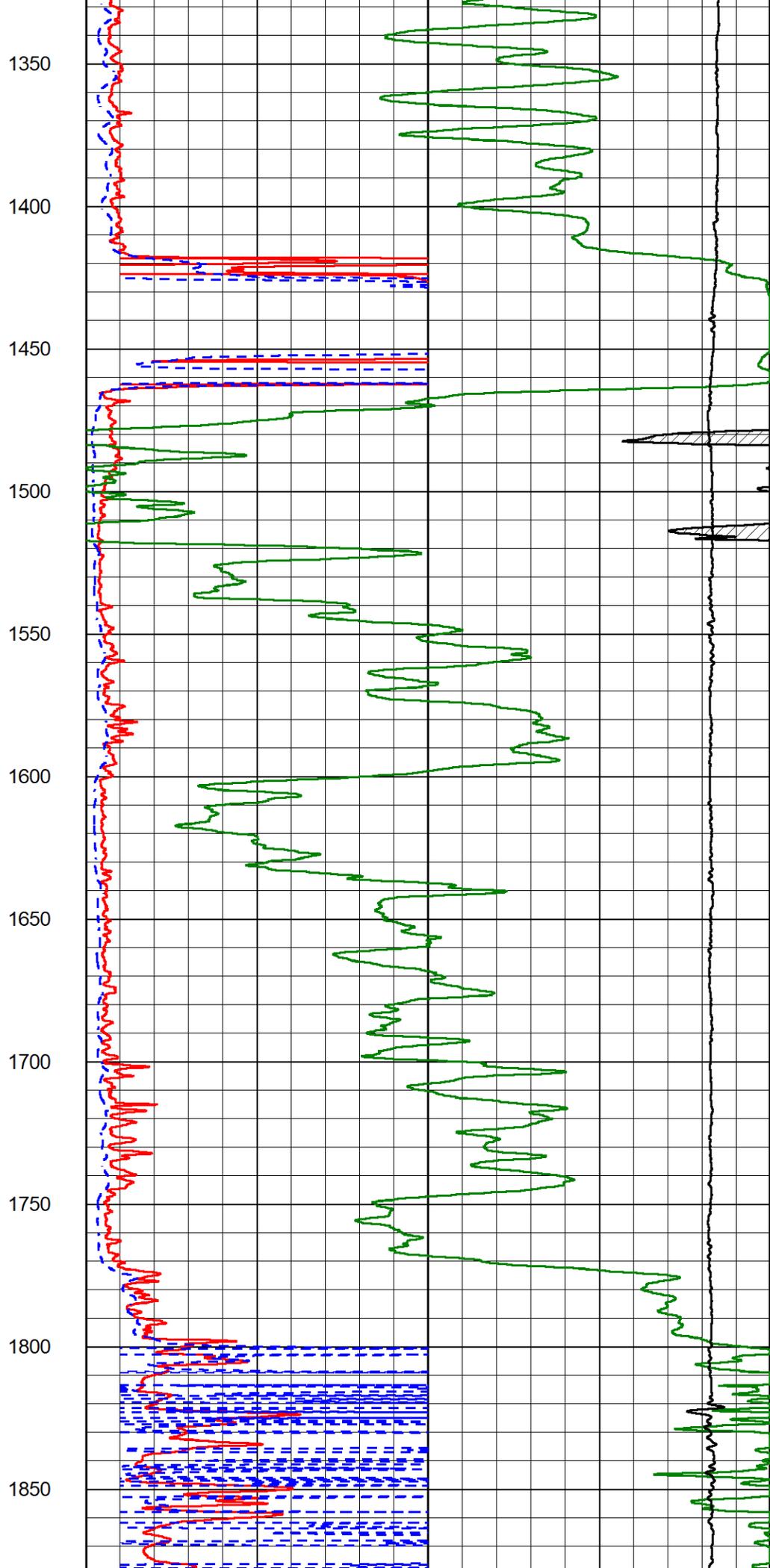
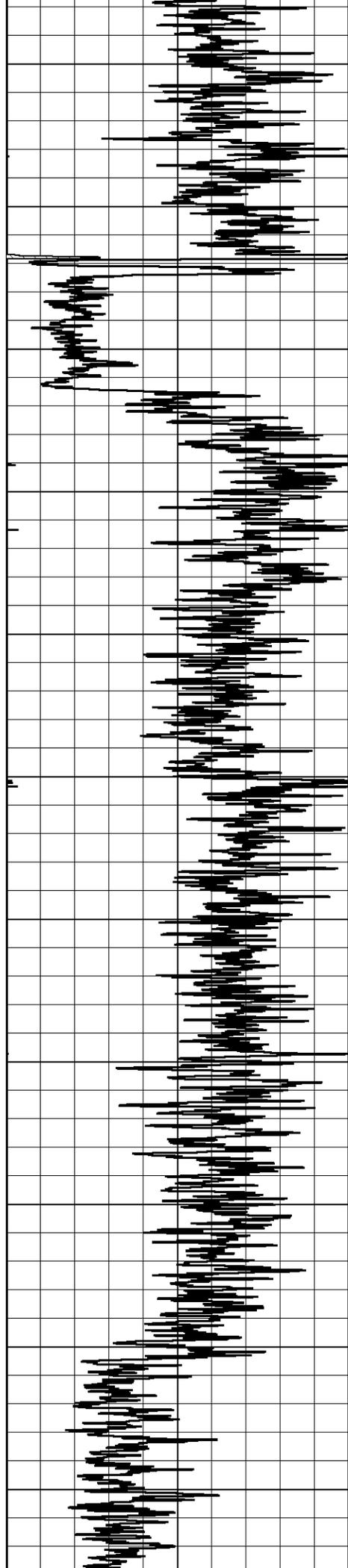


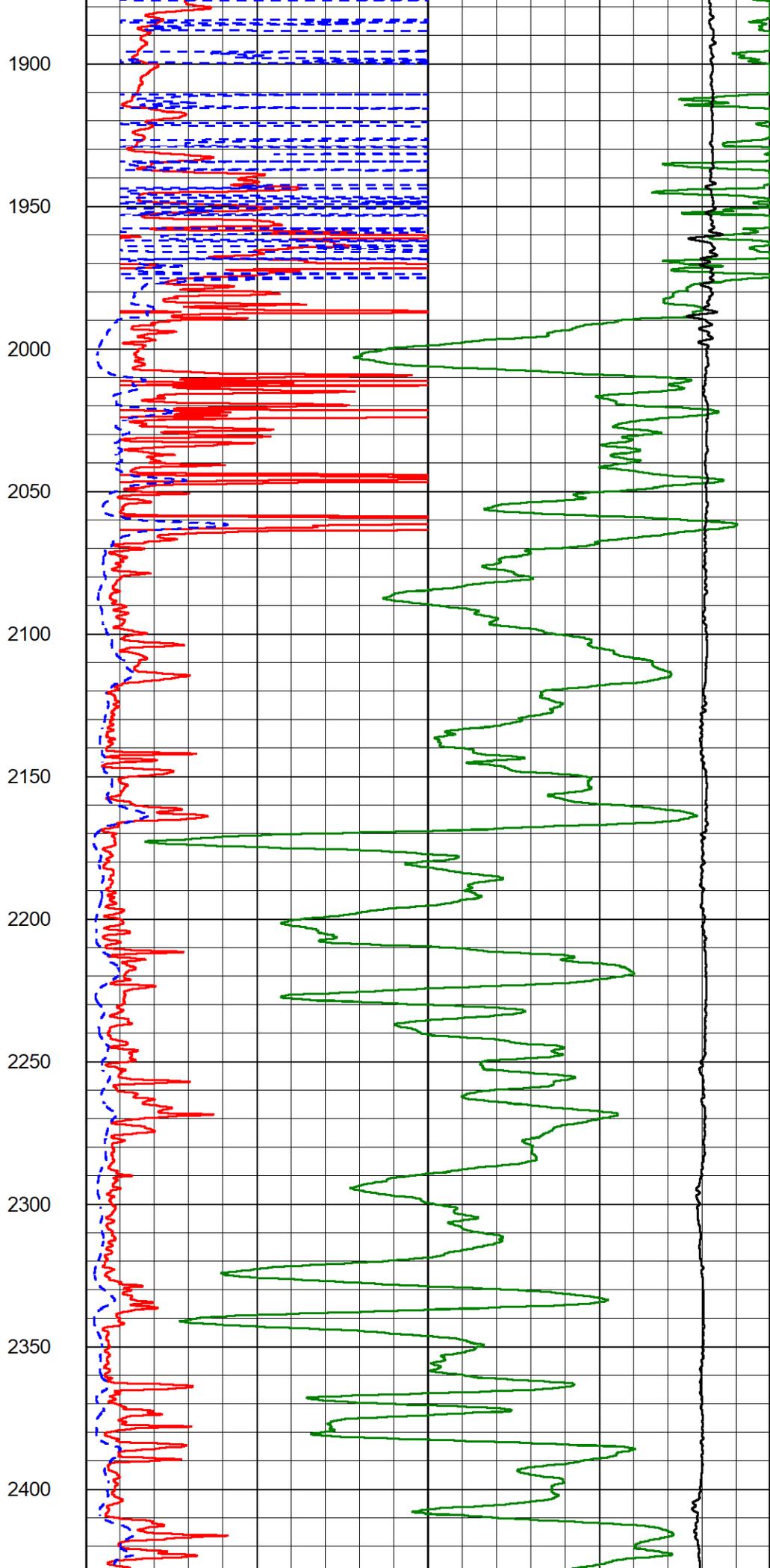
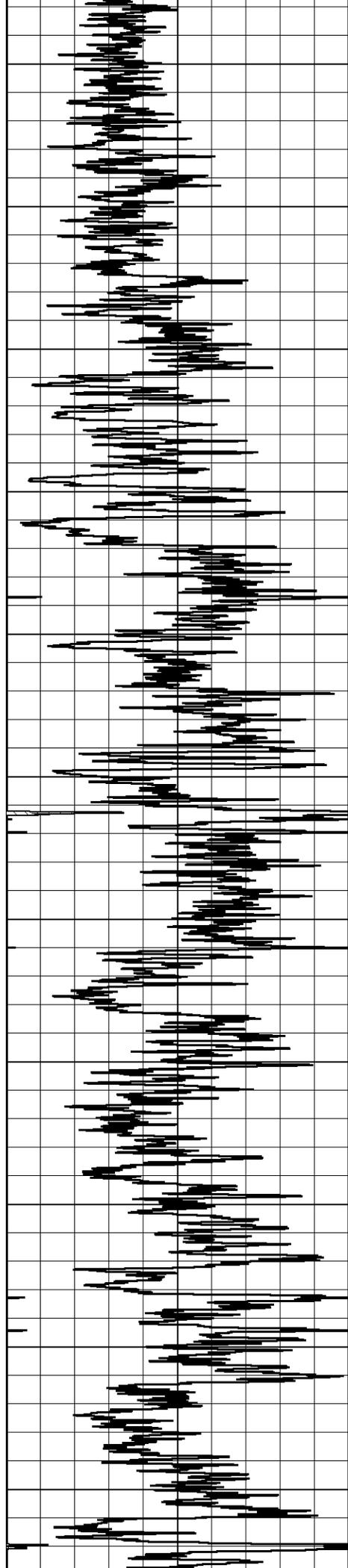


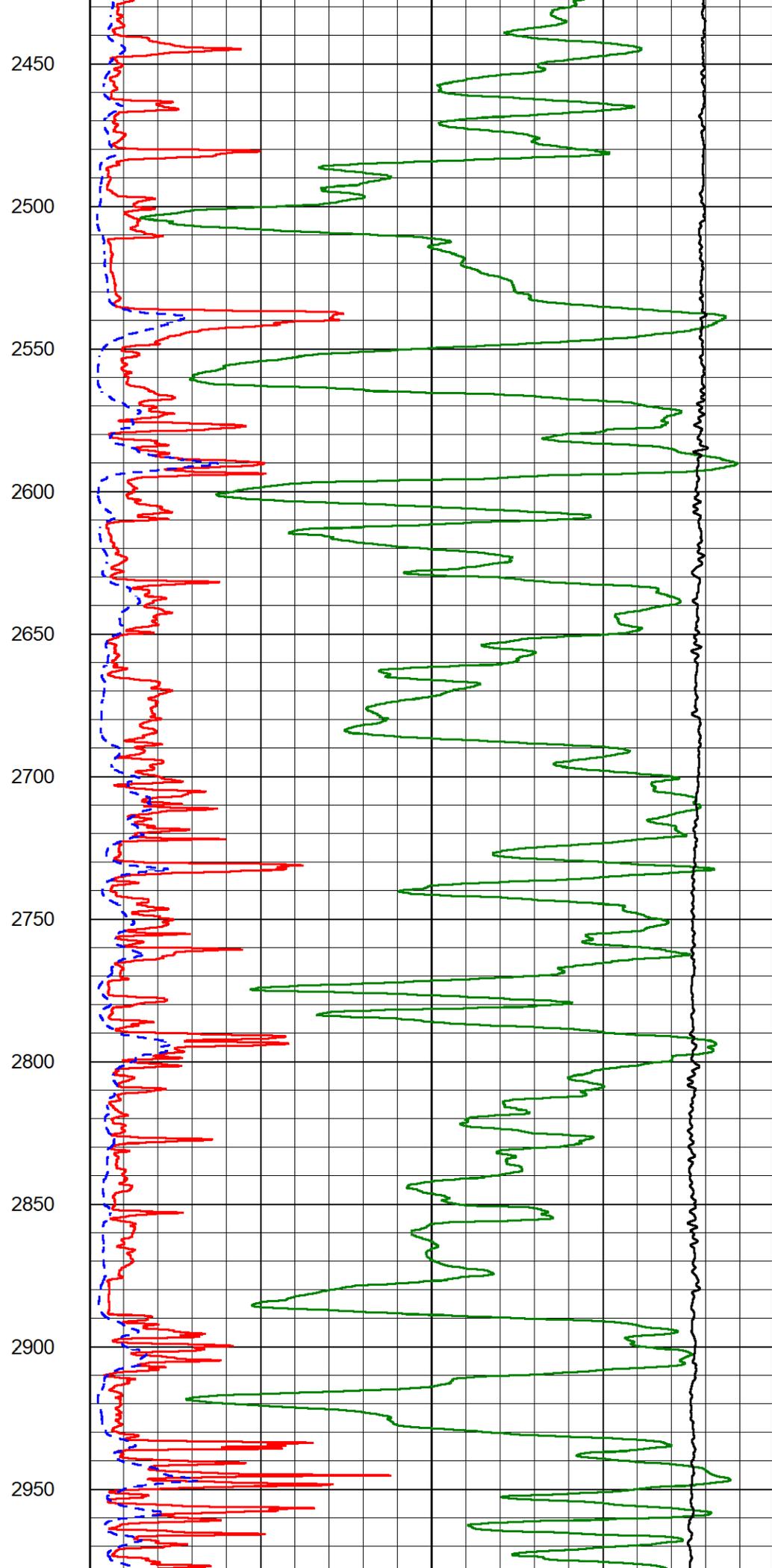
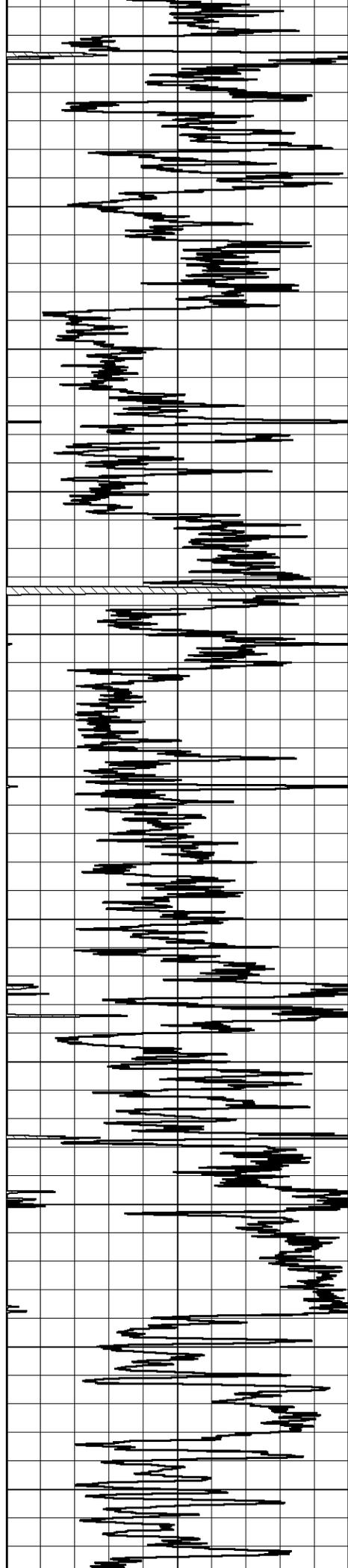


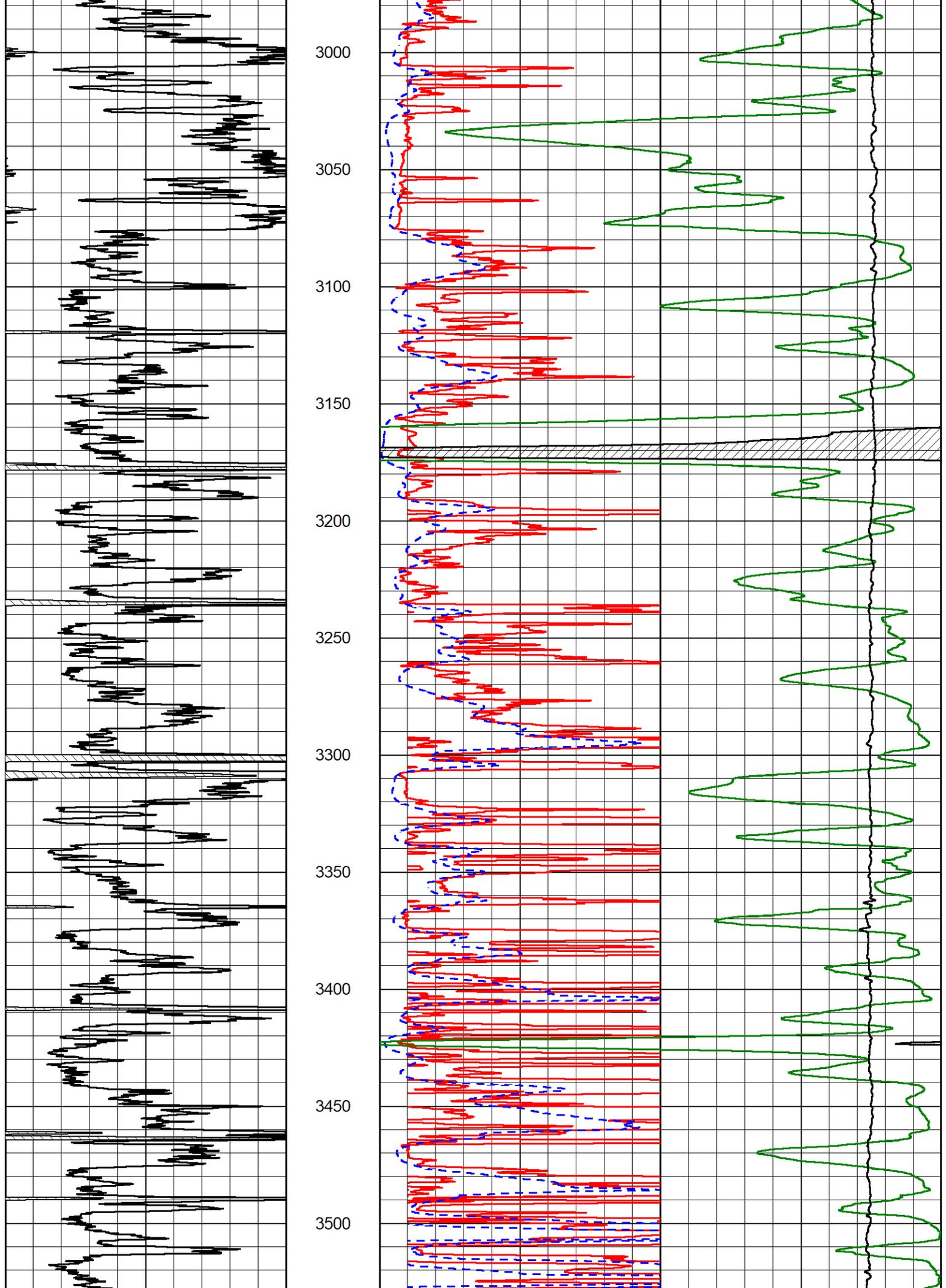
800
850
900
950
1000
1050
1100
1150
1200
1250
1300

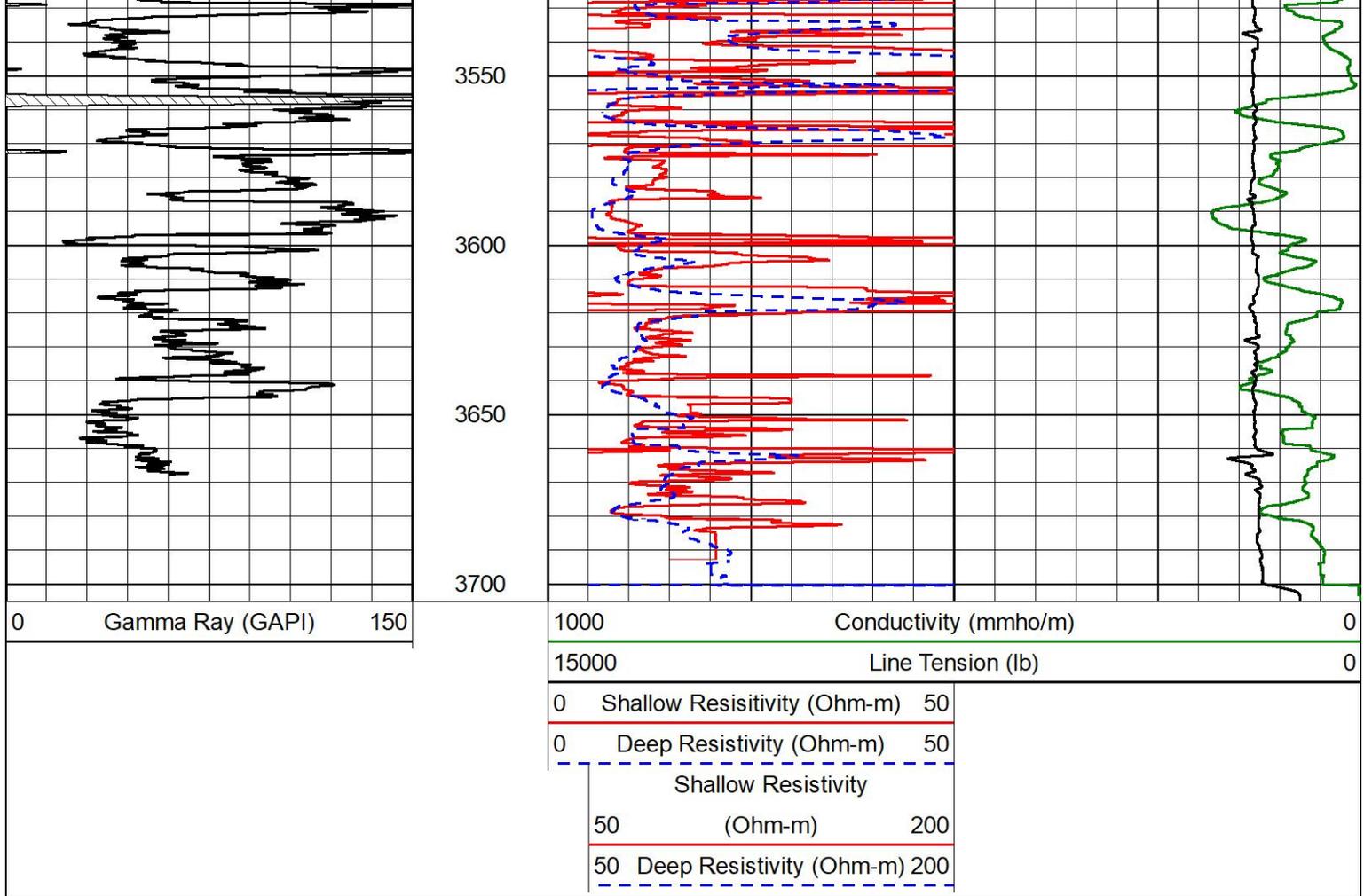








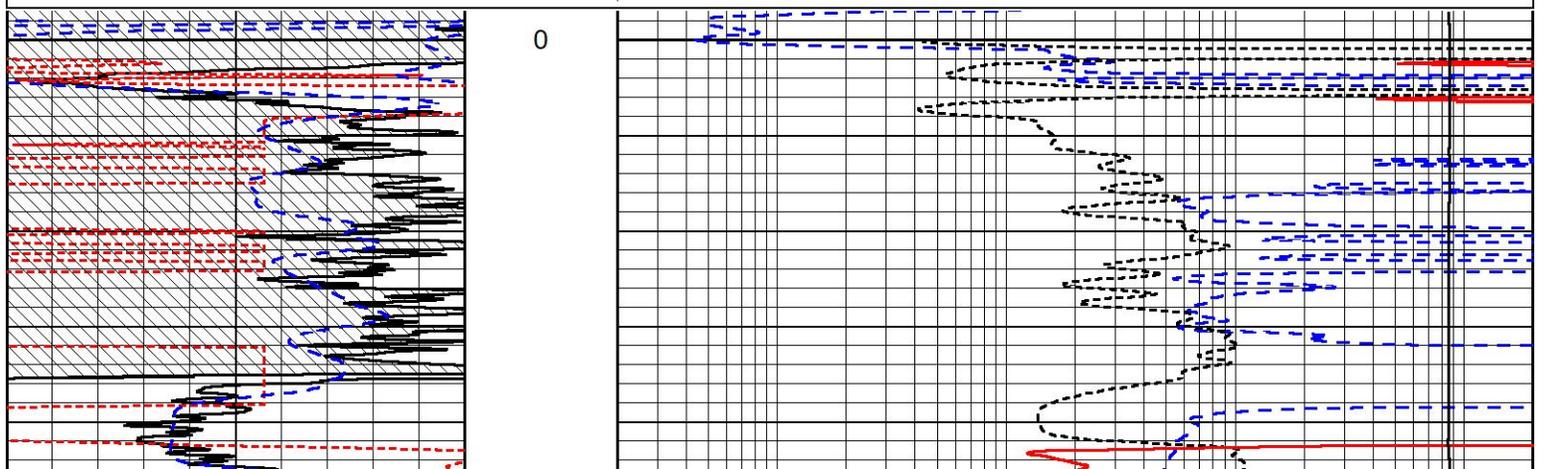
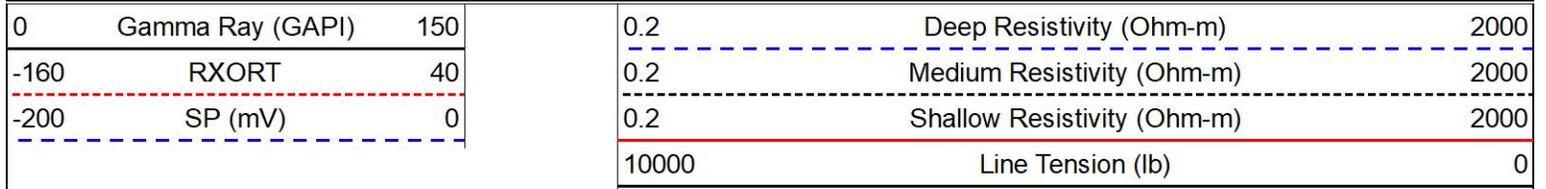


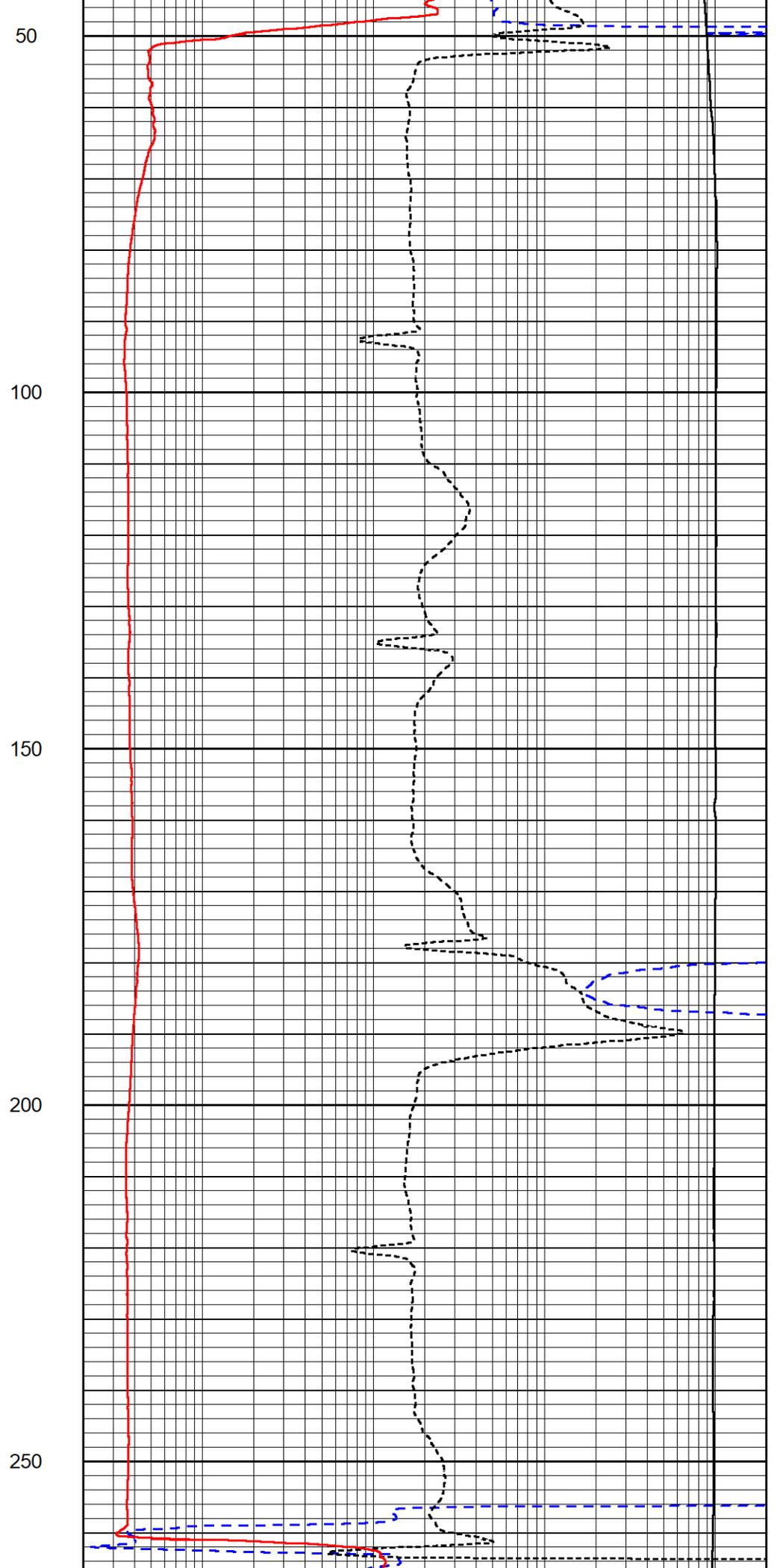
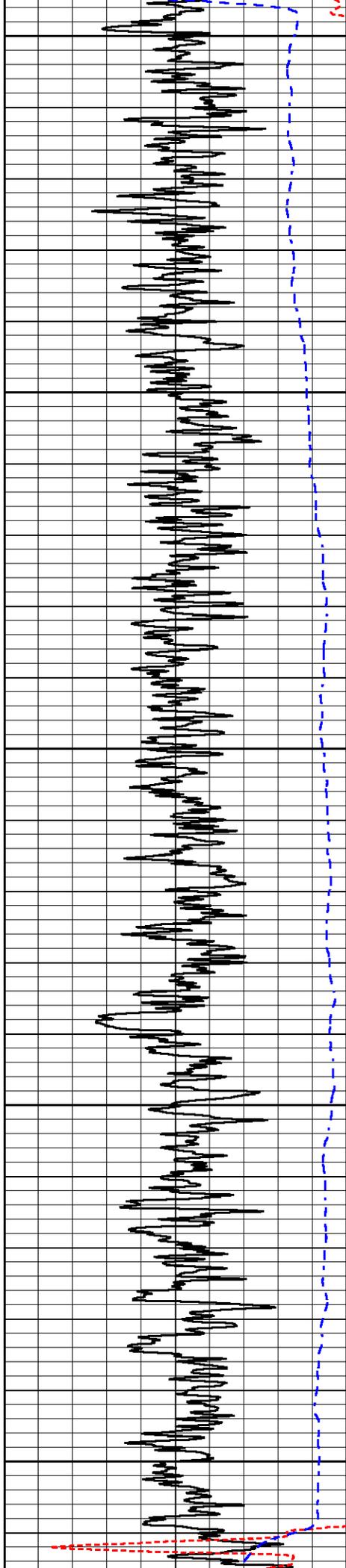


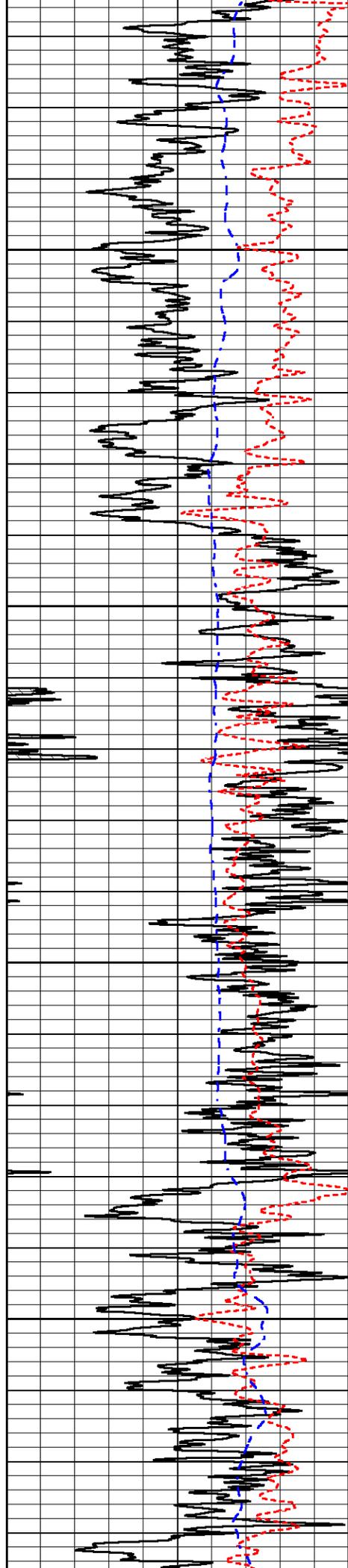
DETAIL SECTION

MAIN PASS

Database File murfin_rusco_davis_4_1.db
 Dataset Pathname stackml/pass6.1
 Presentation Format _dil
 Dataset Creation Sun Feb 13 11:45:17 2022
 Charted by Depth in Feet scaled 1:240





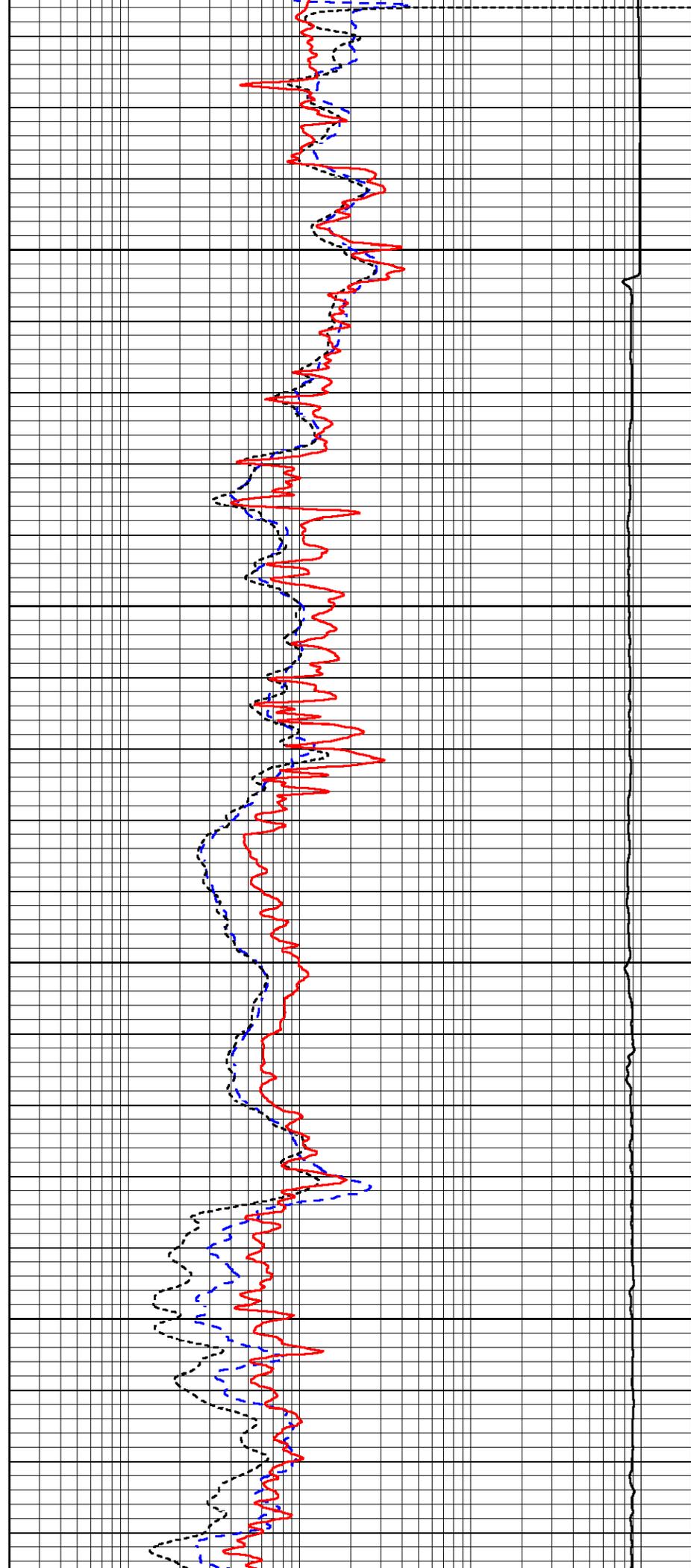


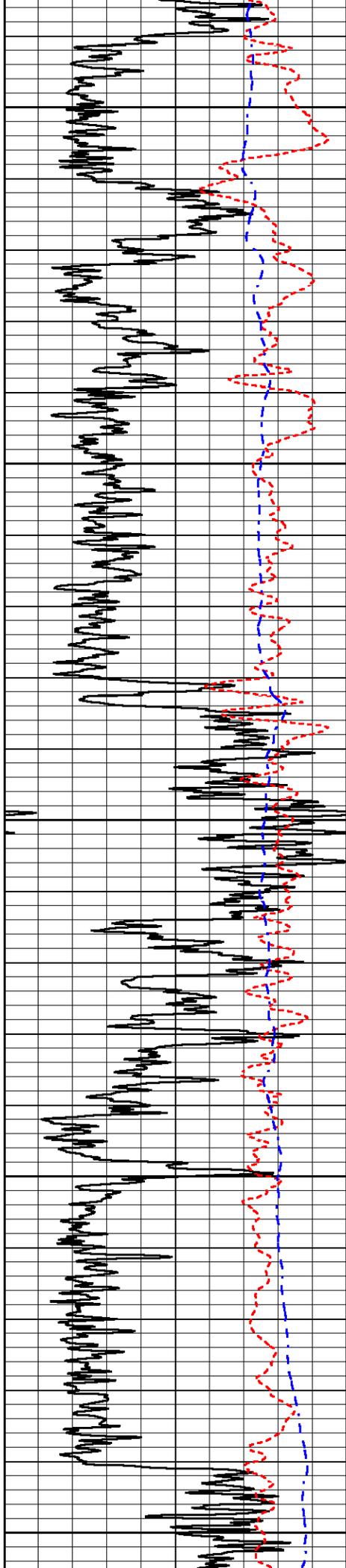
300

350

400

450





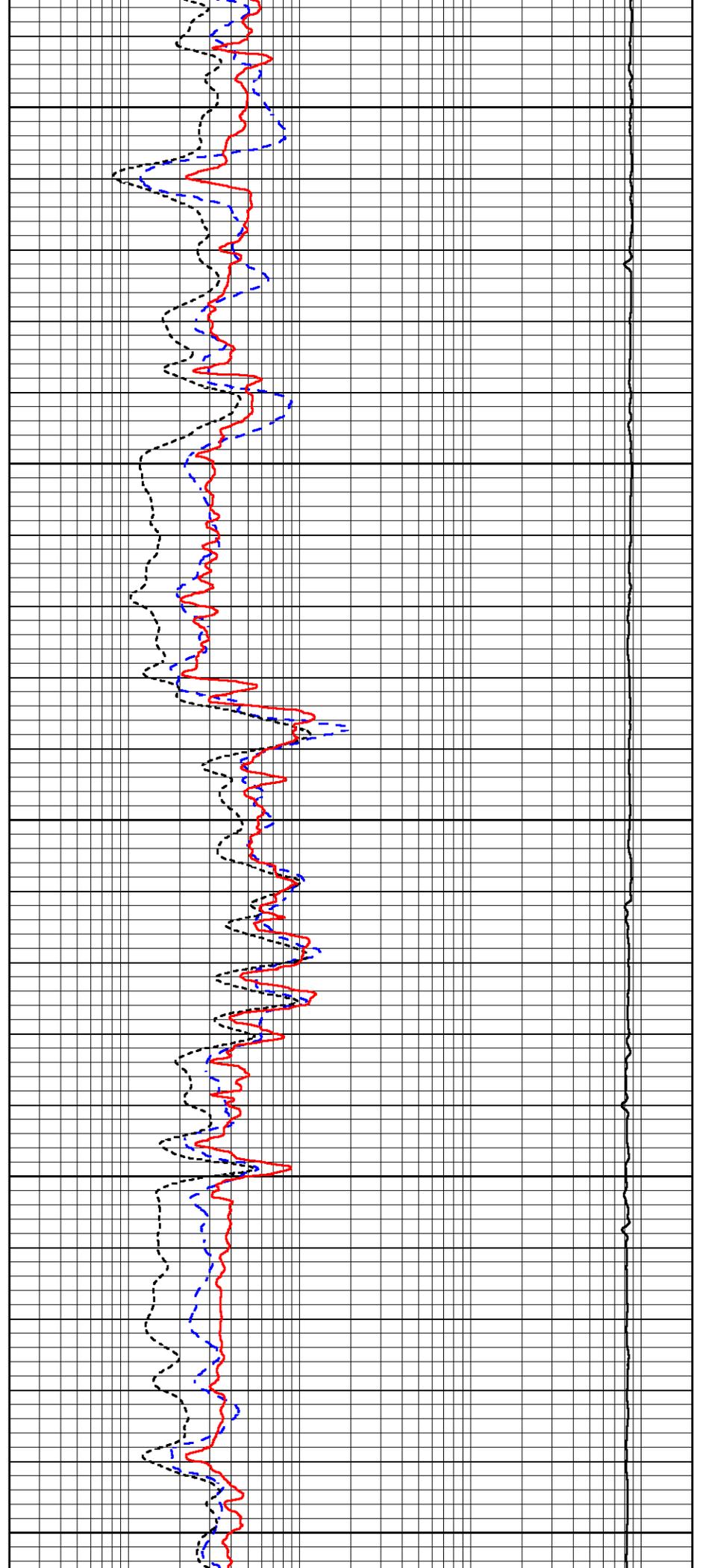
500

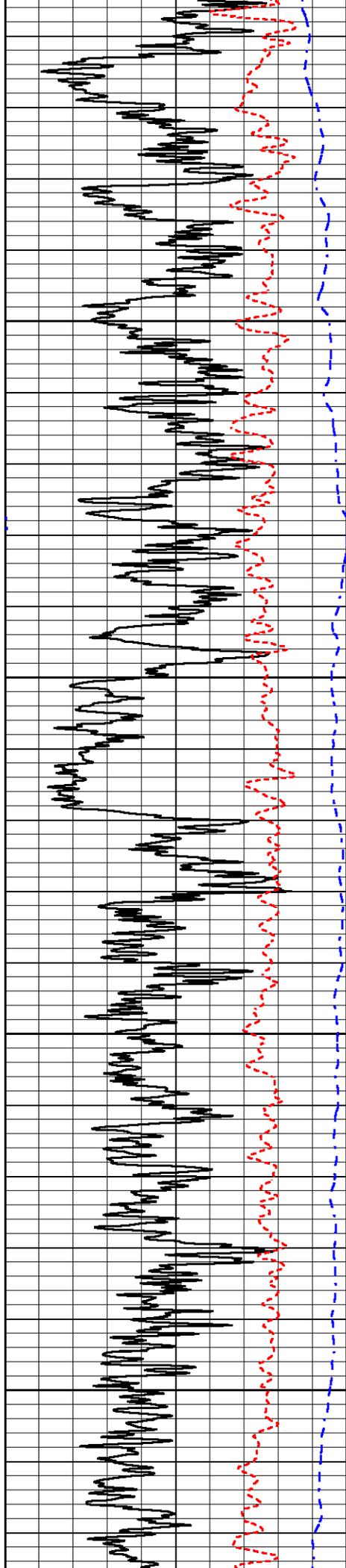
550

600

650

700



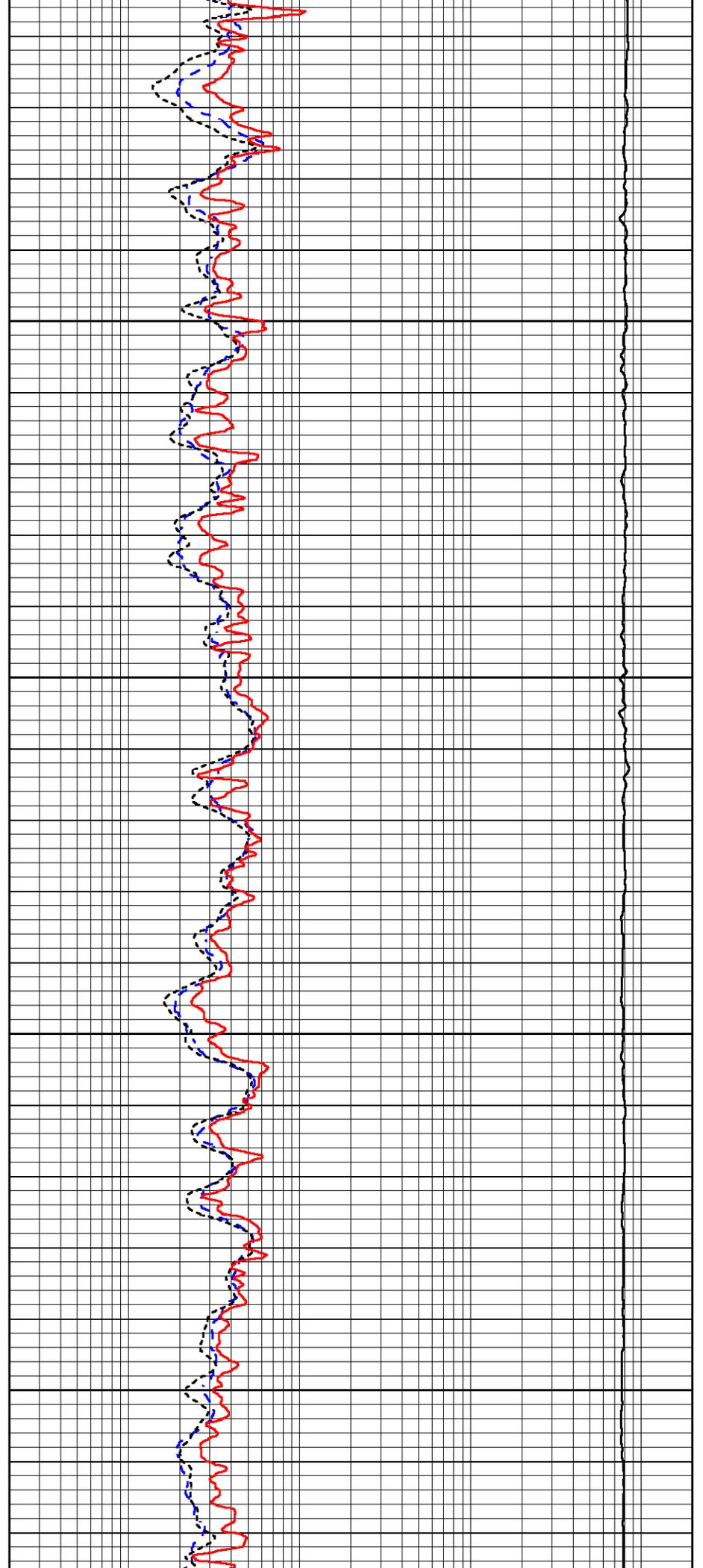


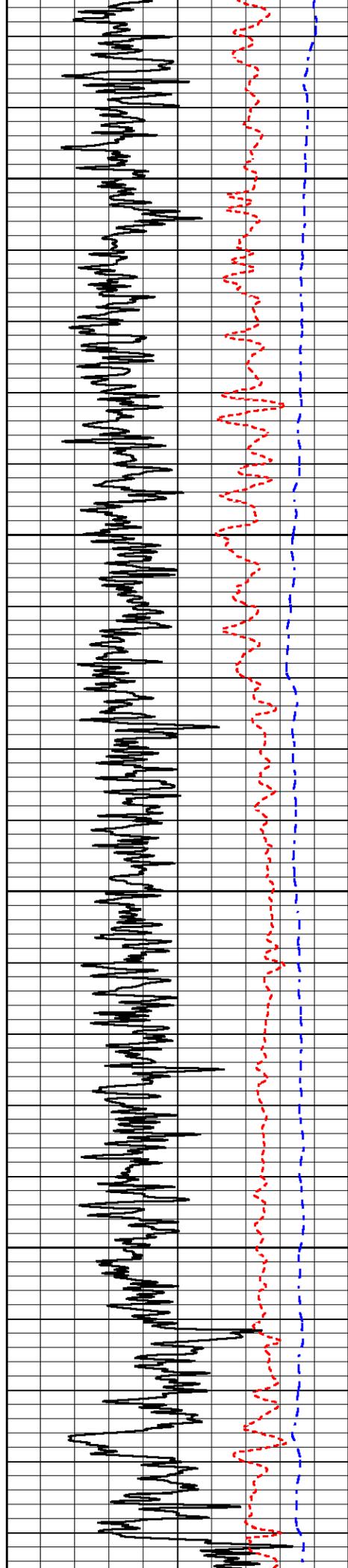
750

800

850

900



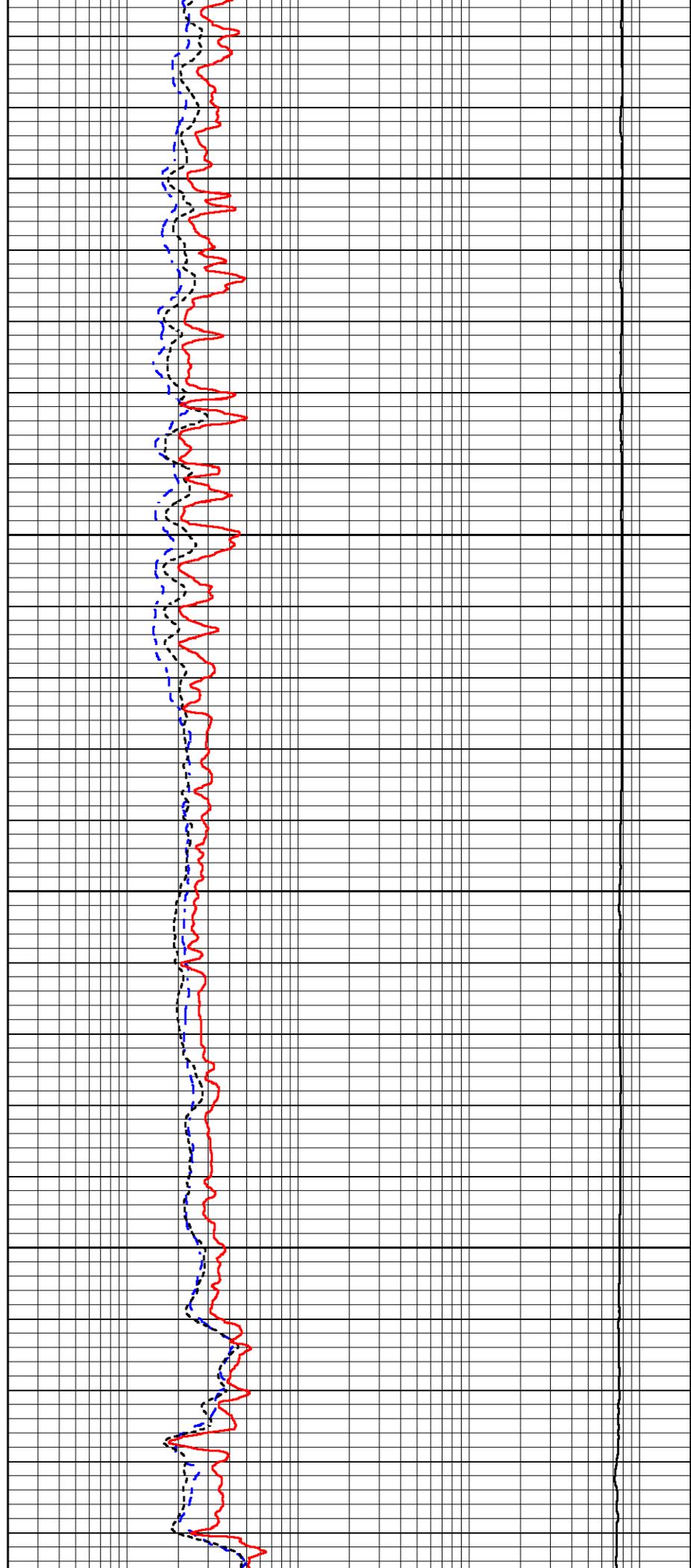


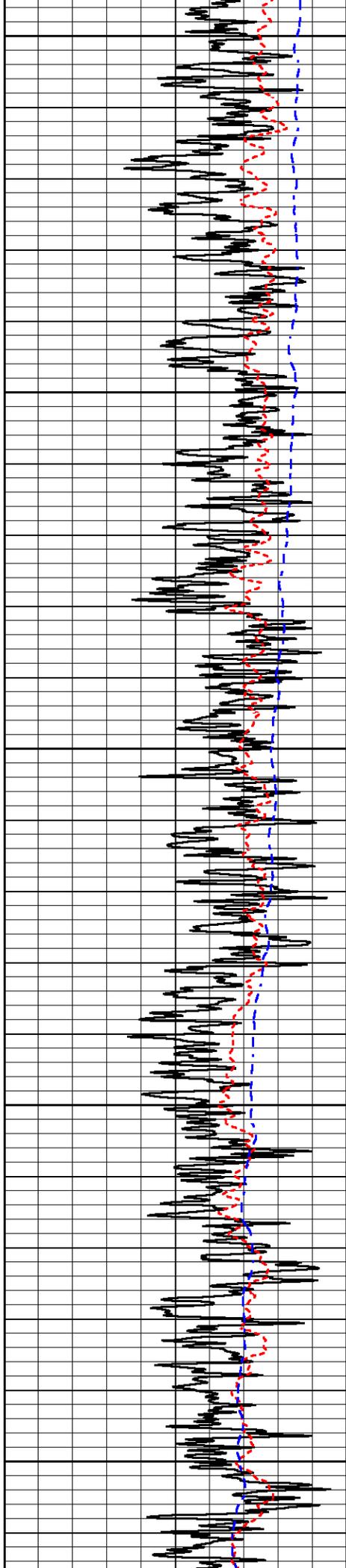
950

1000

1050

1100





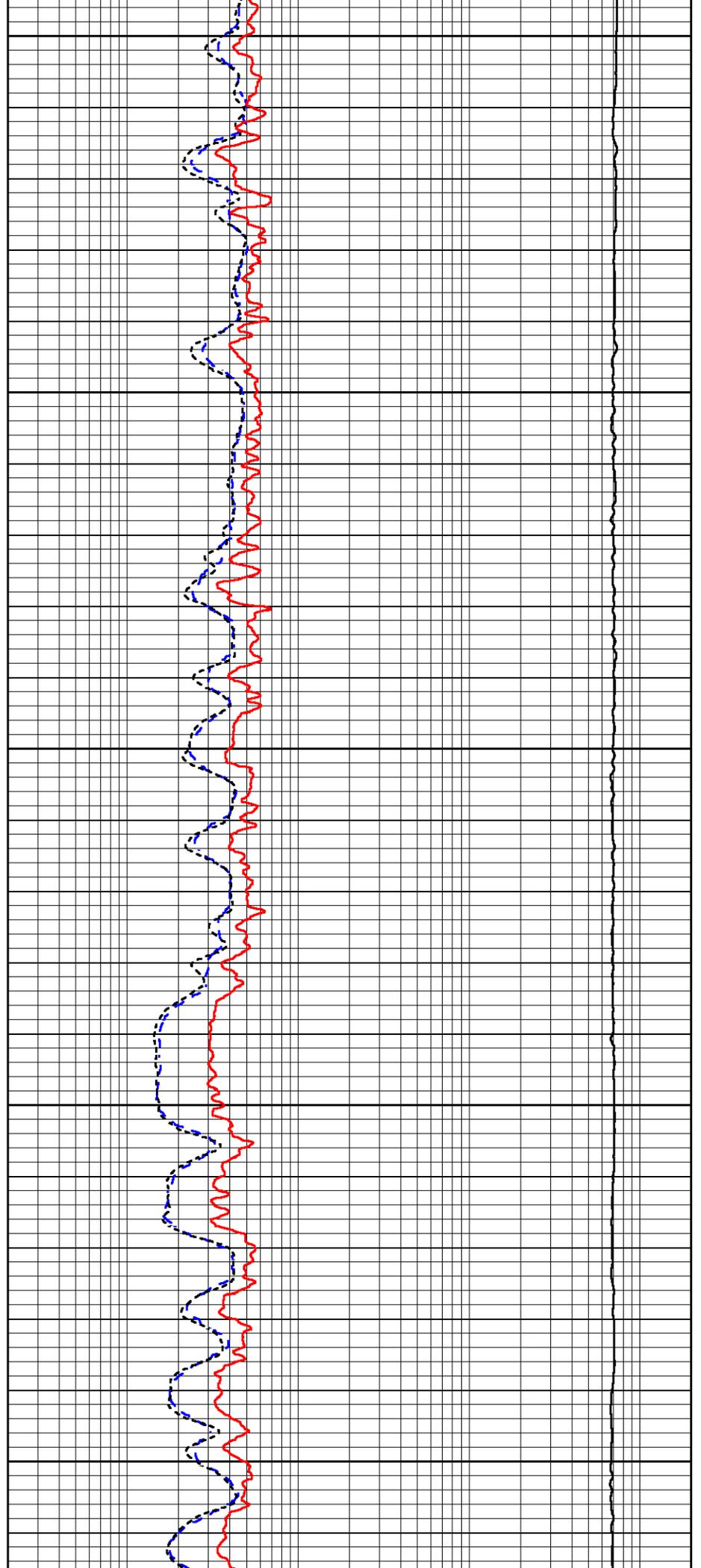
1150

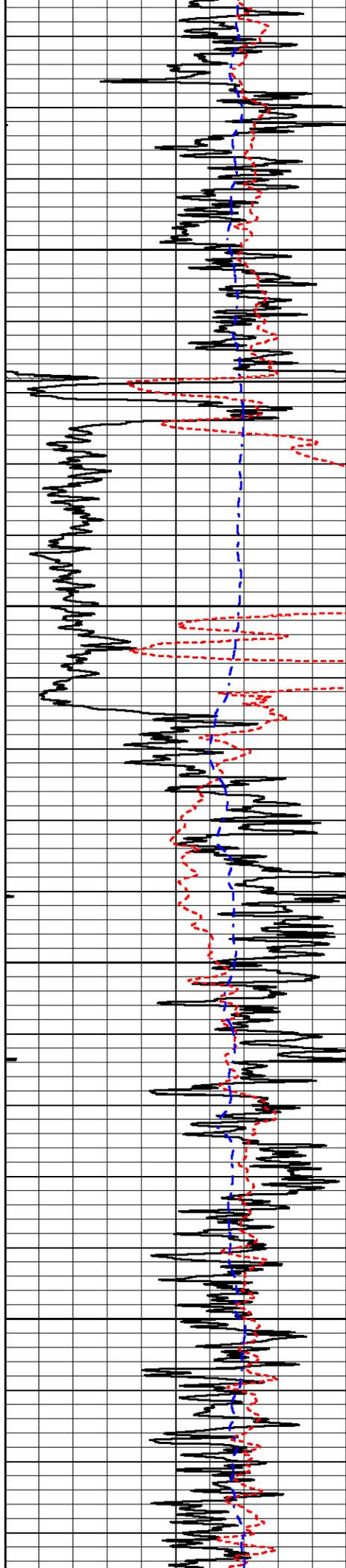
1200

1250

1300

1350



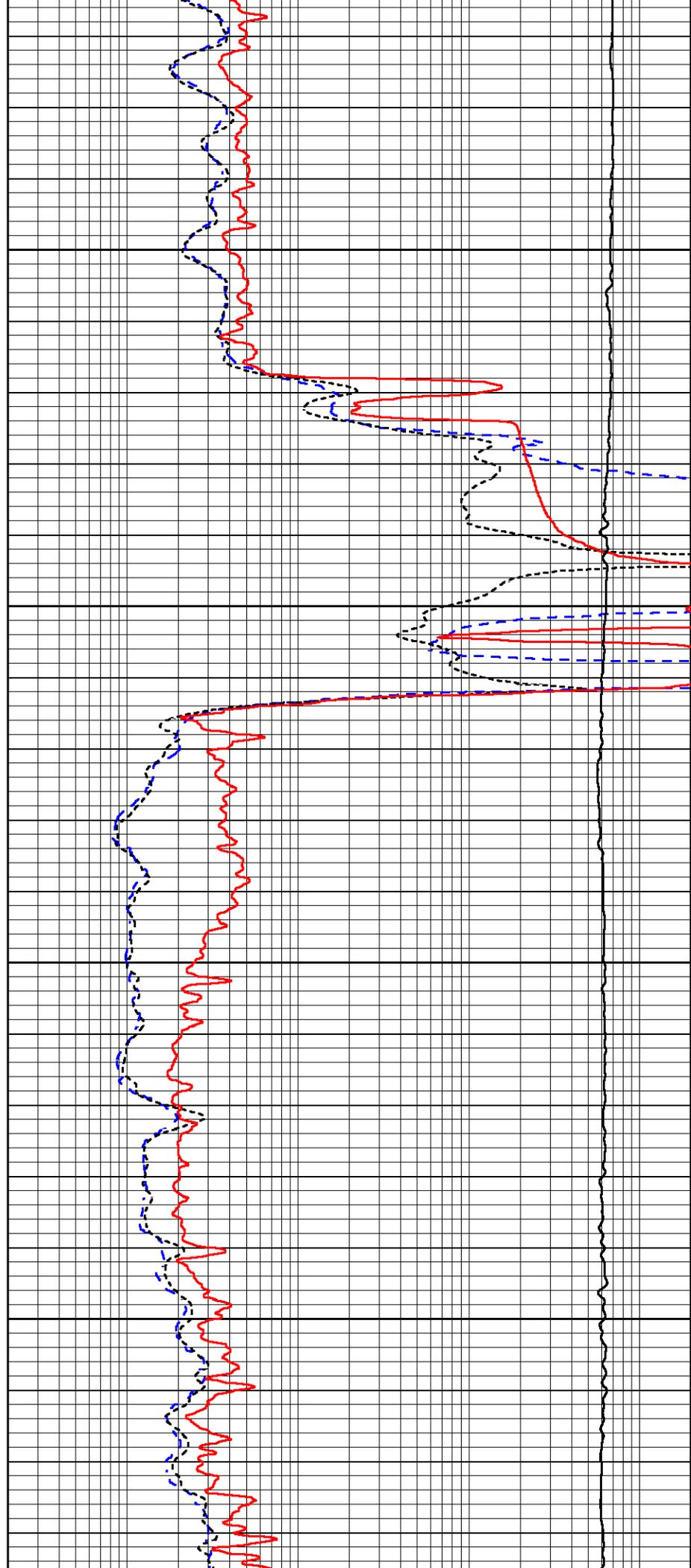


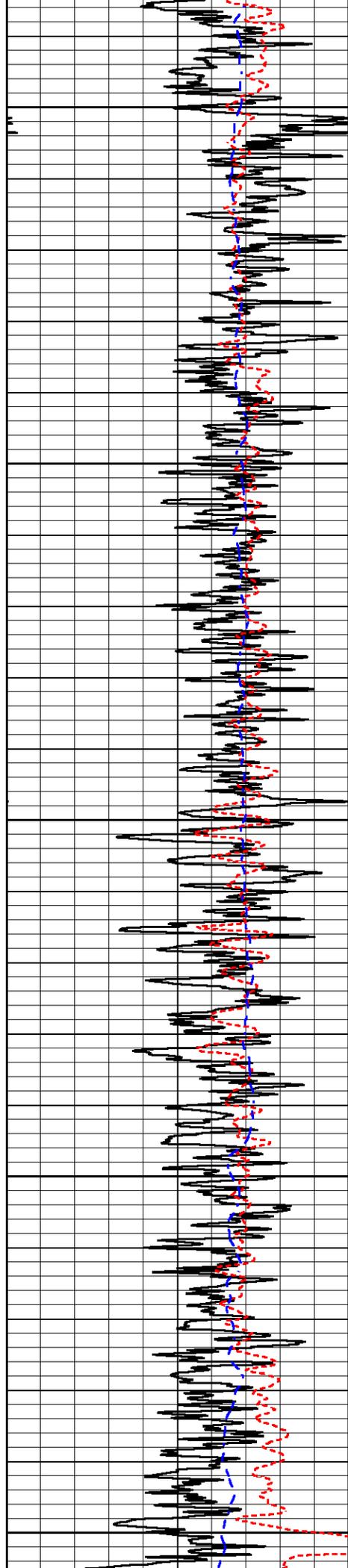
1400

1450

1500

1550





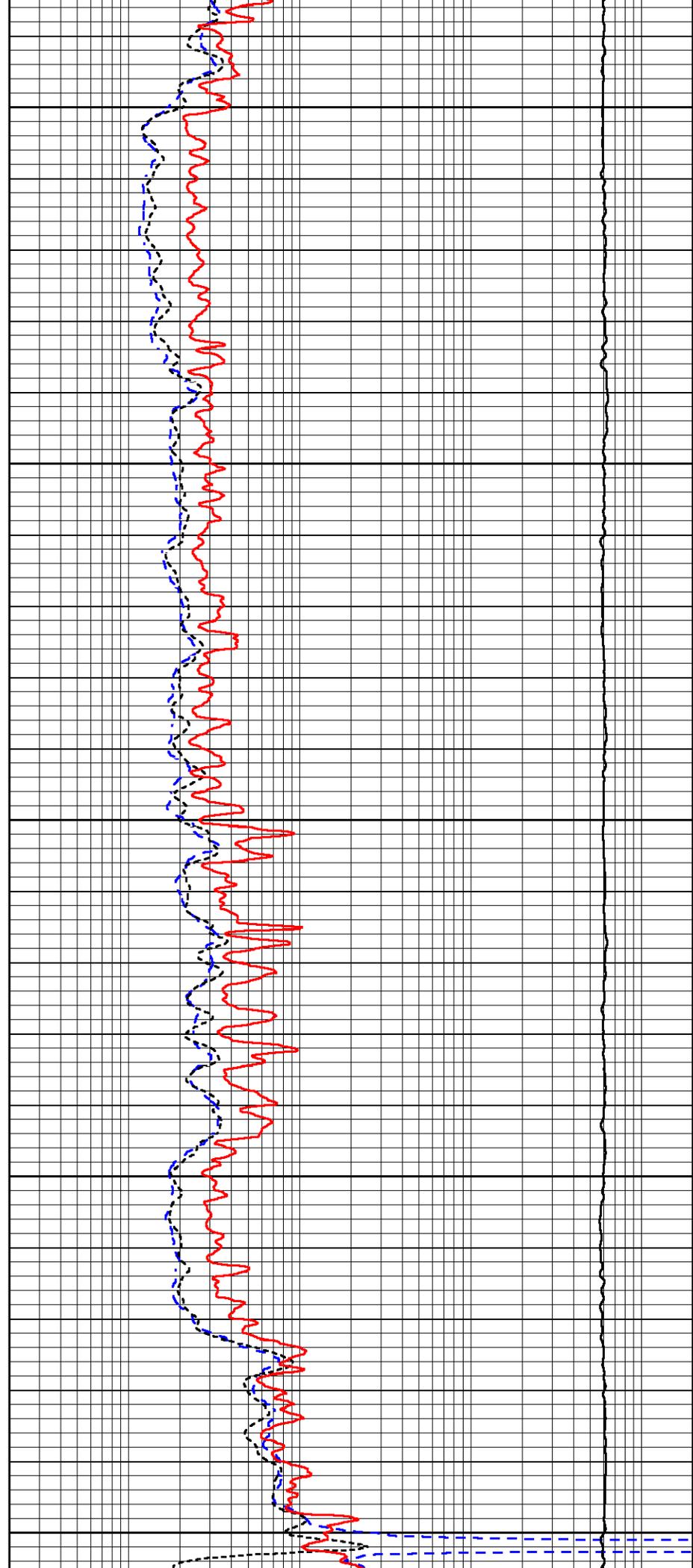
1600

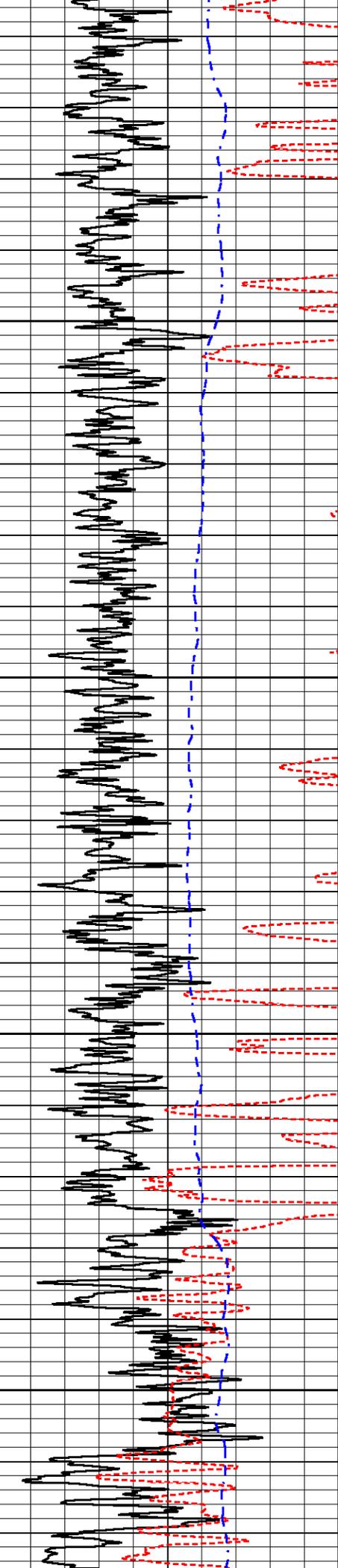
1650

1700

1750

1800



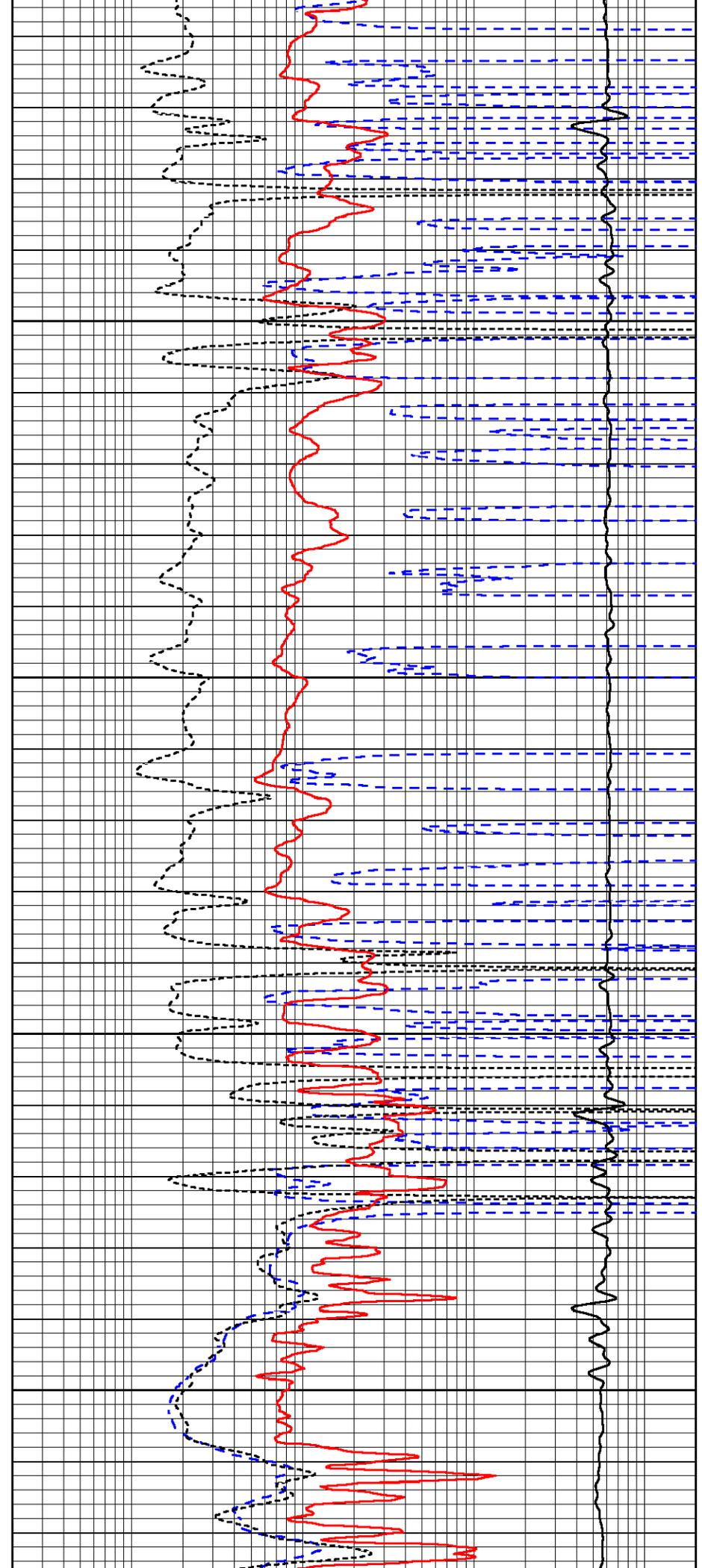


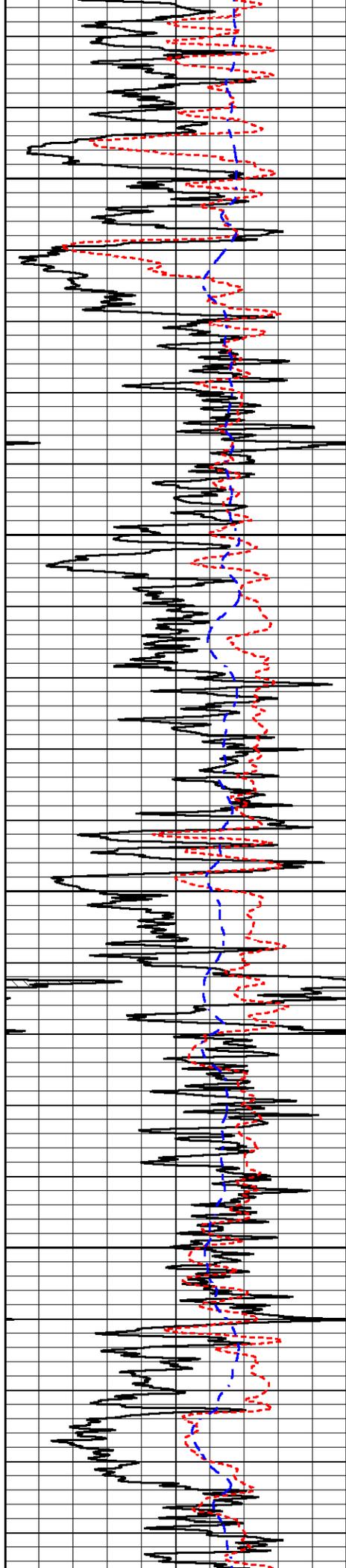
1850

1900

1950

2000



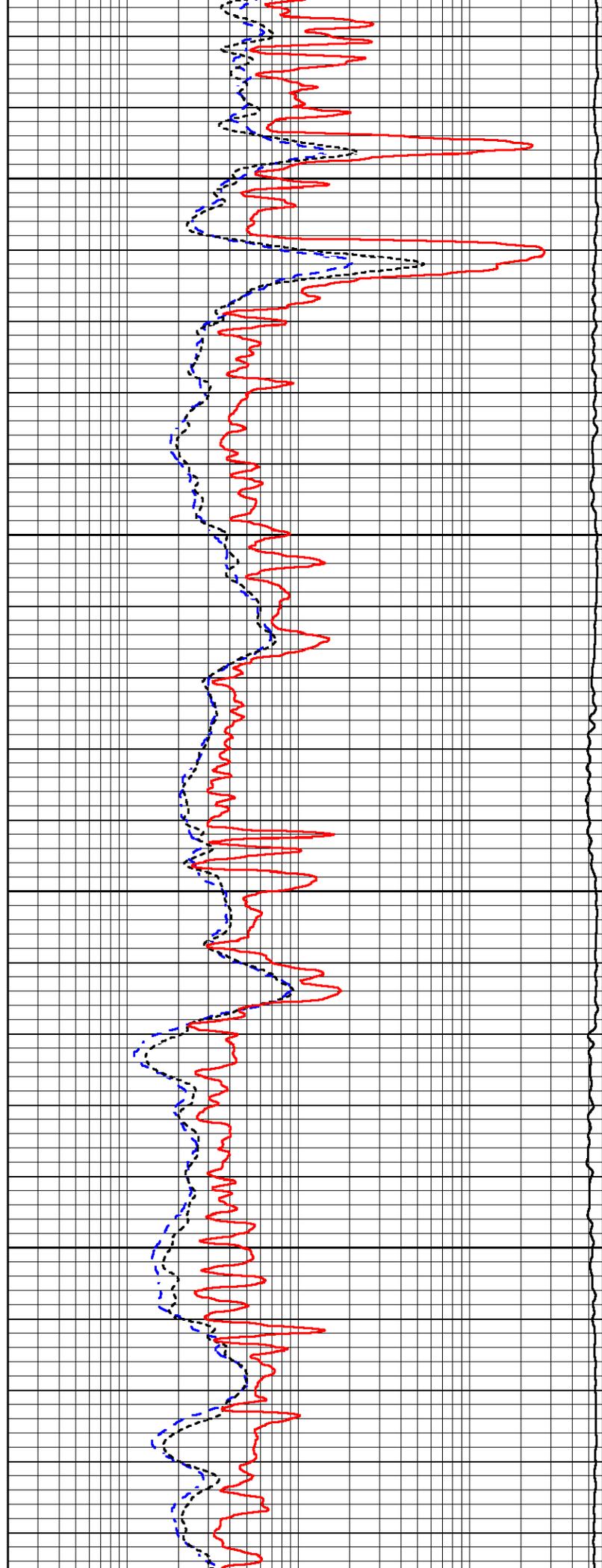


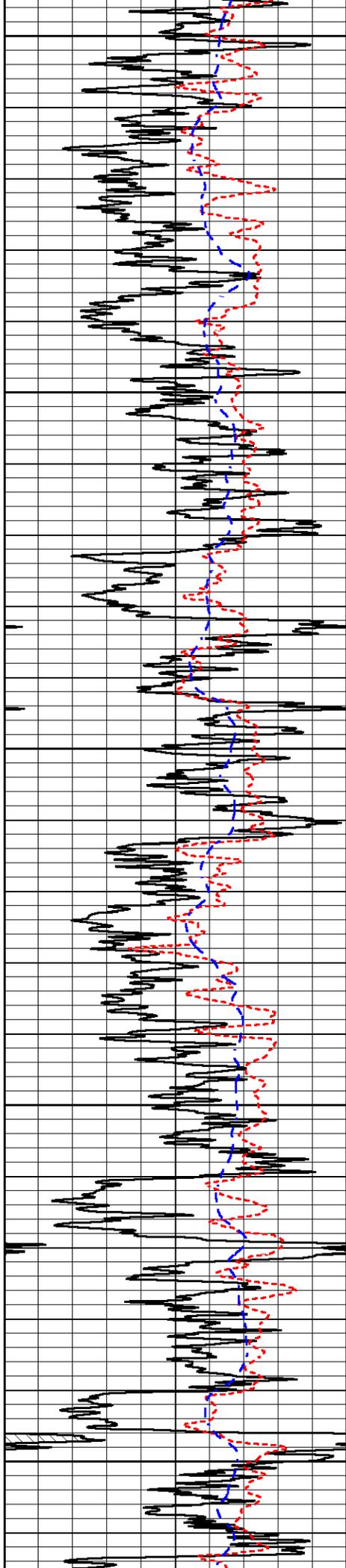
2050

2100

2150

2200





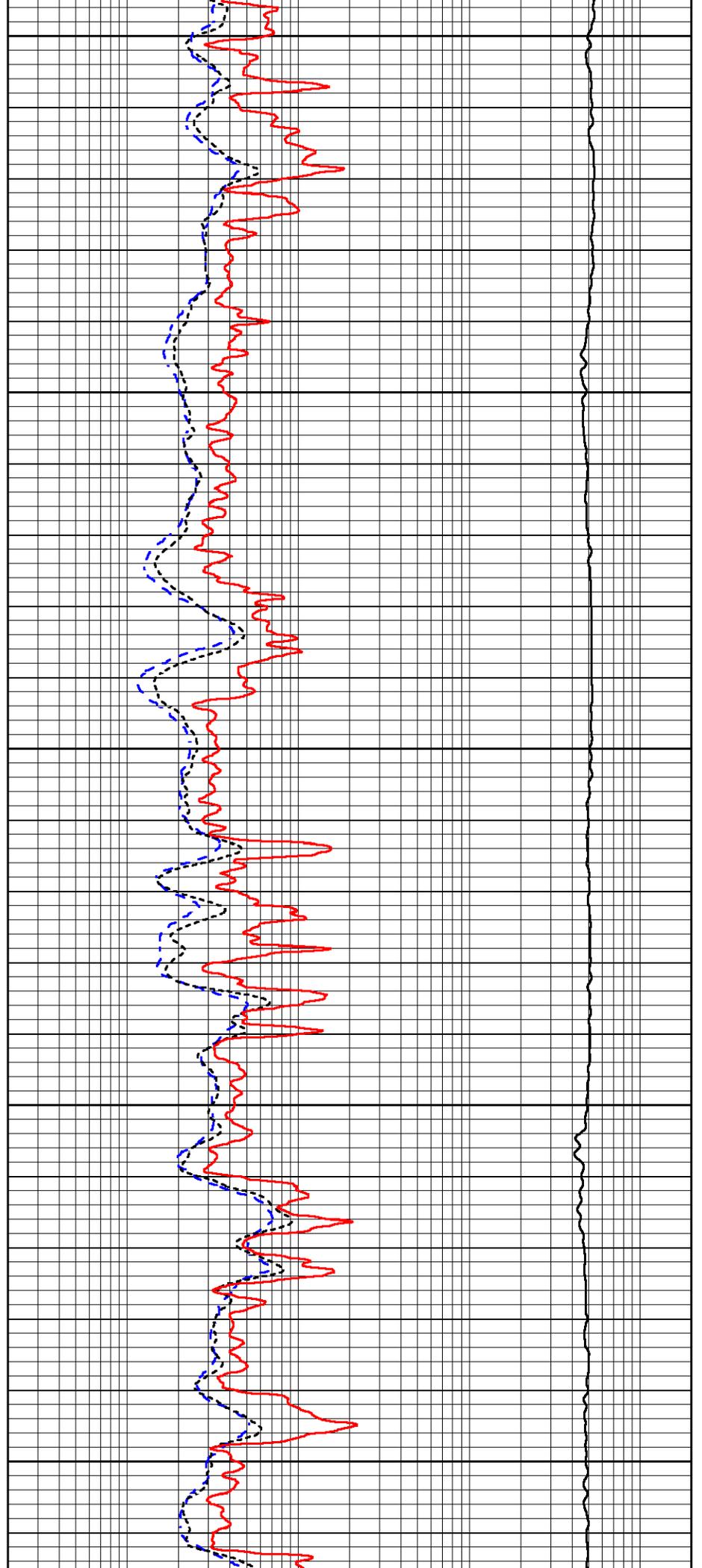
2250

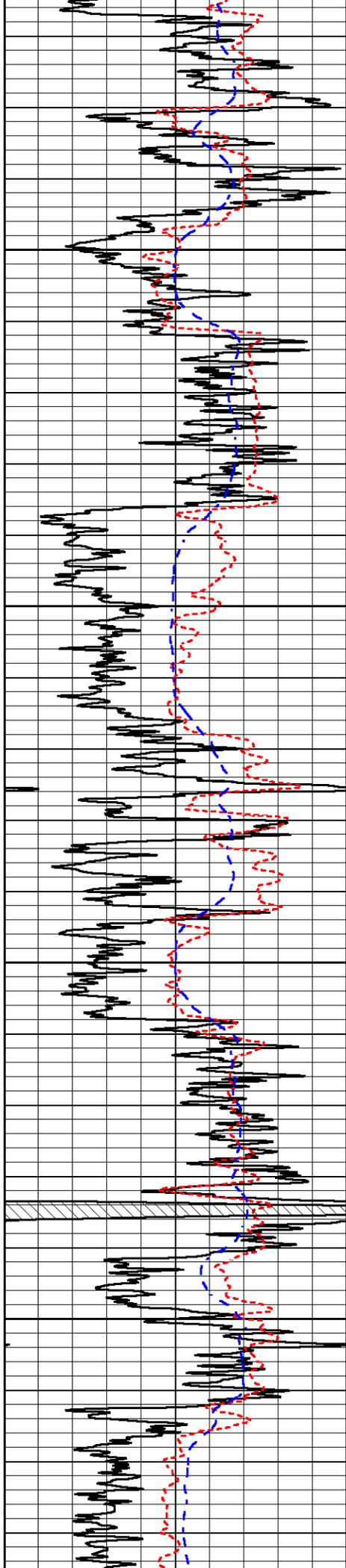
2300

2350

2400

2450



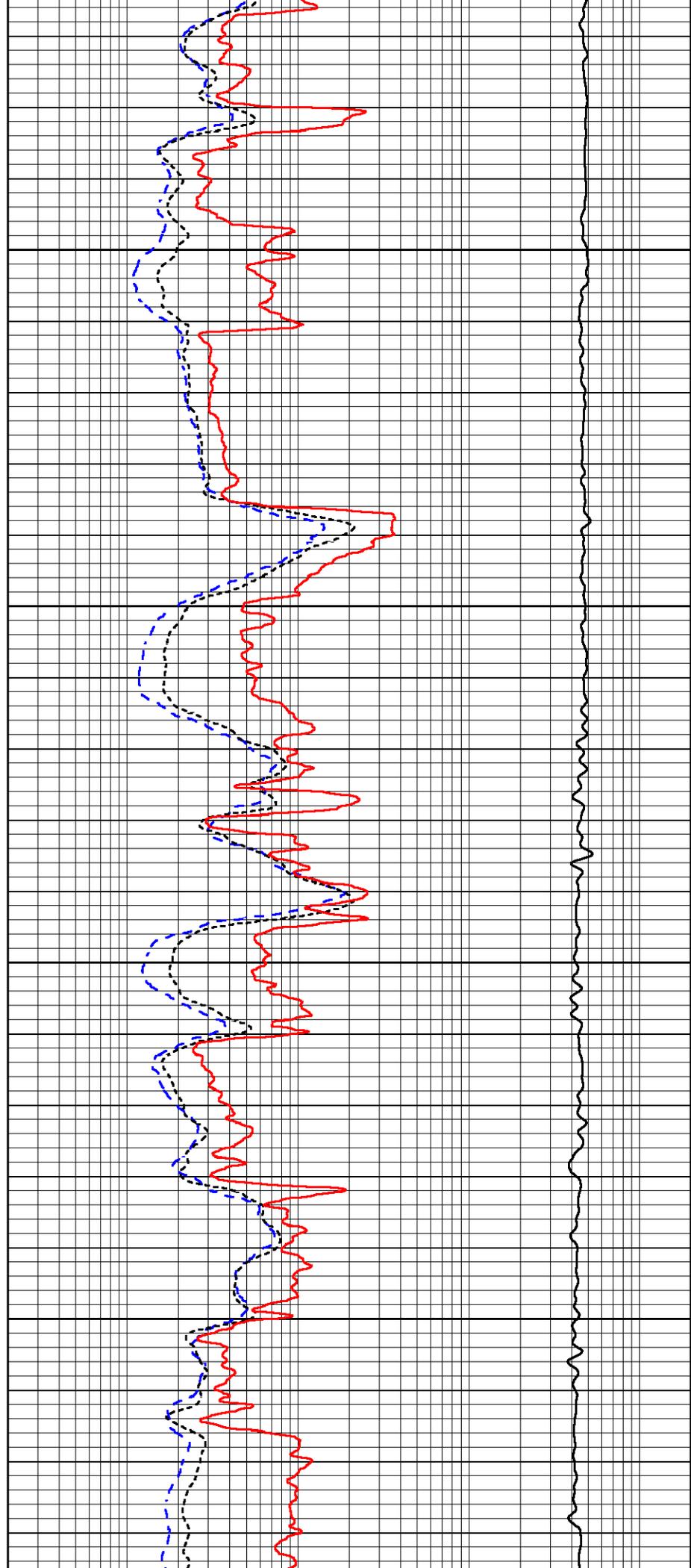


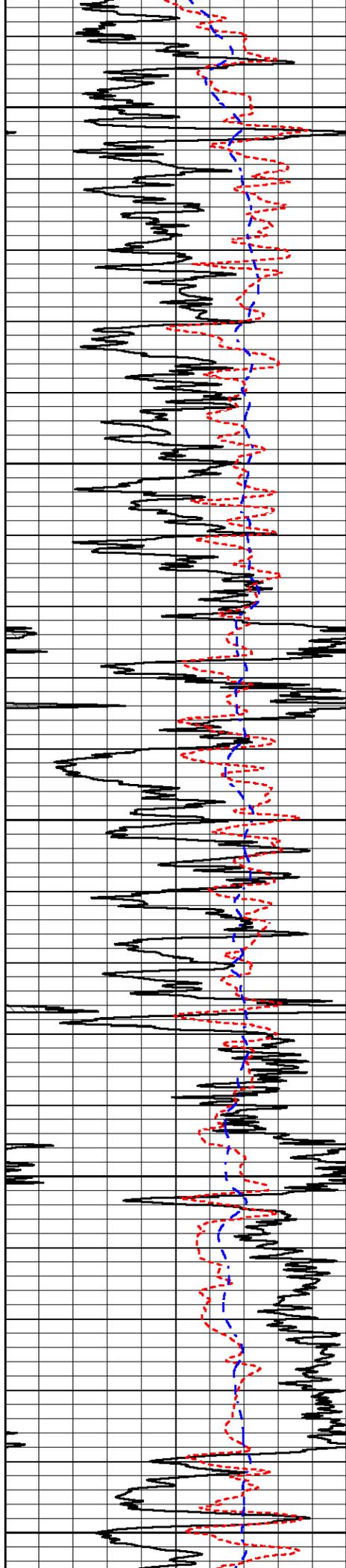
2500

2550

2600

2650





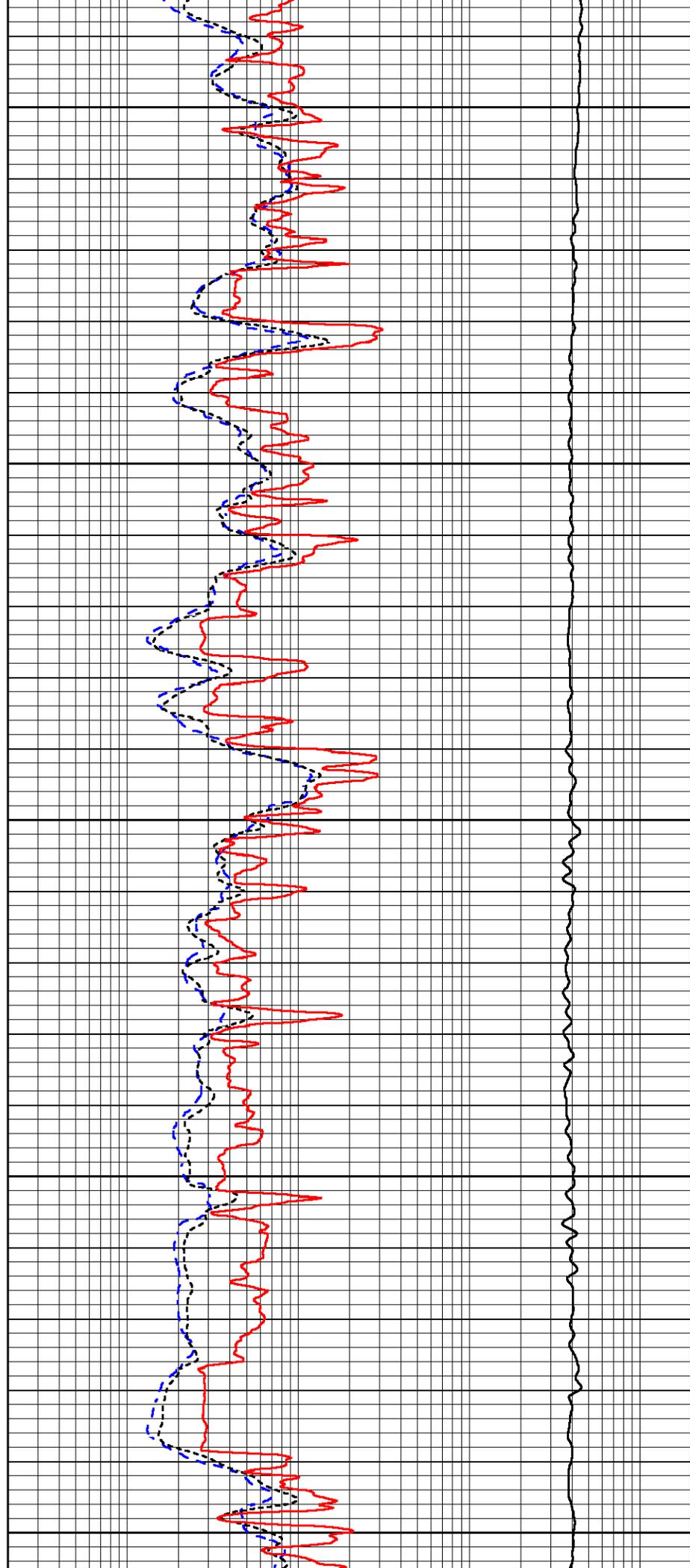
2700

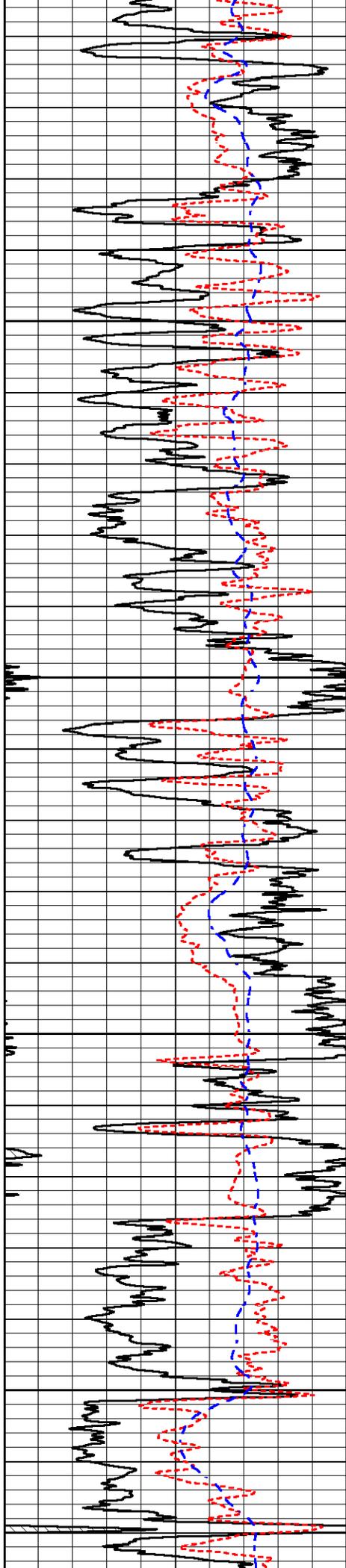
2750

2800

2850

2900



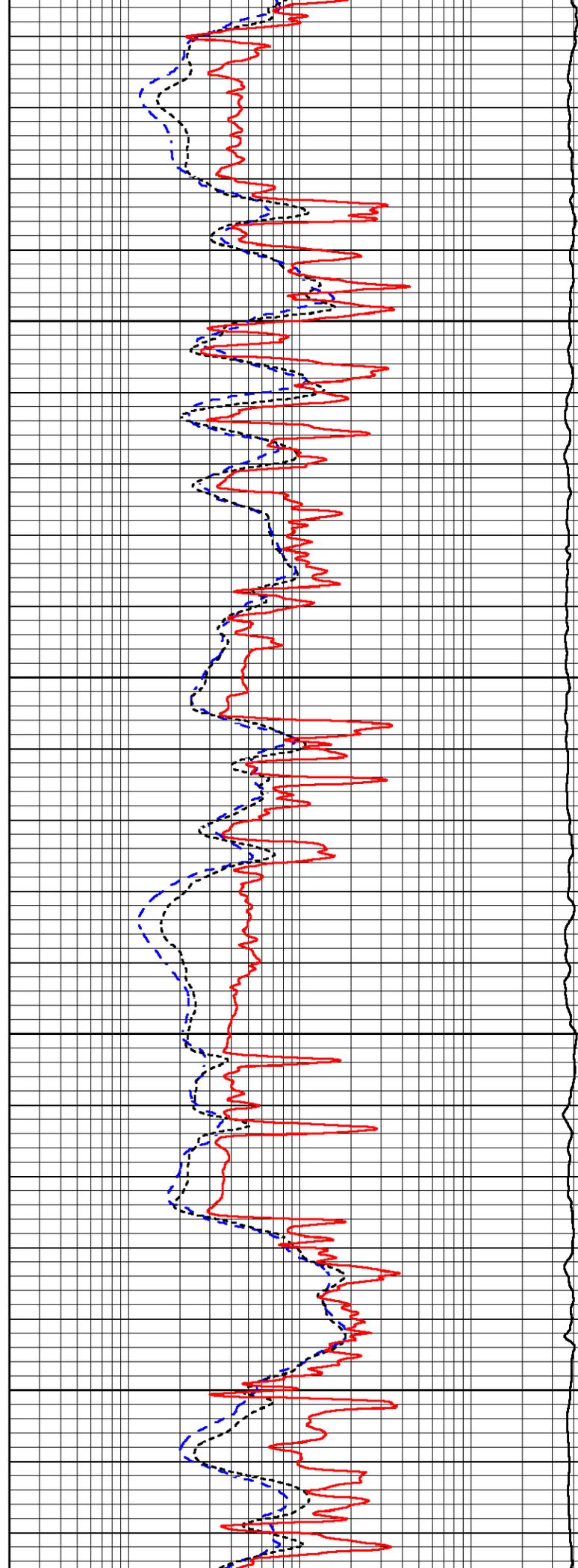


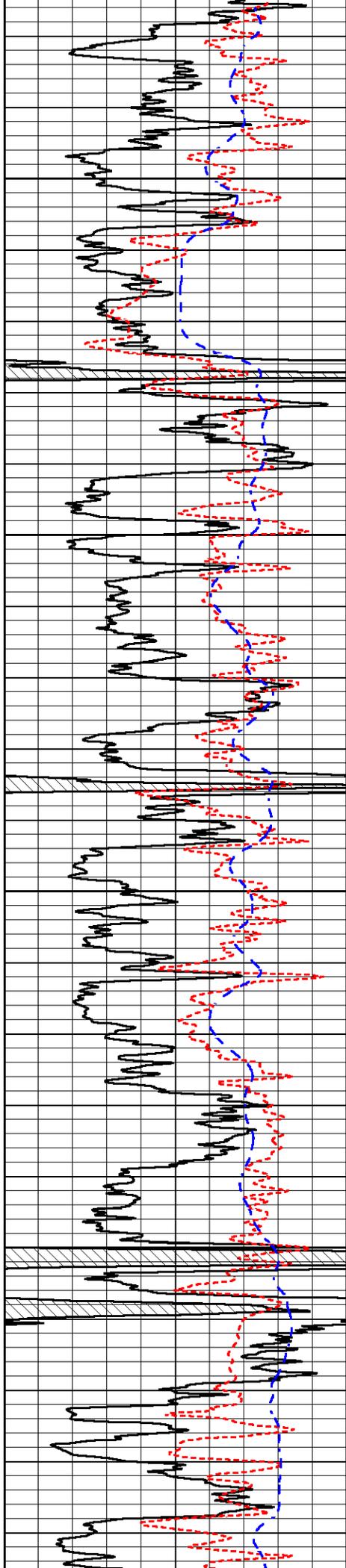
2950

3000

3050

3100



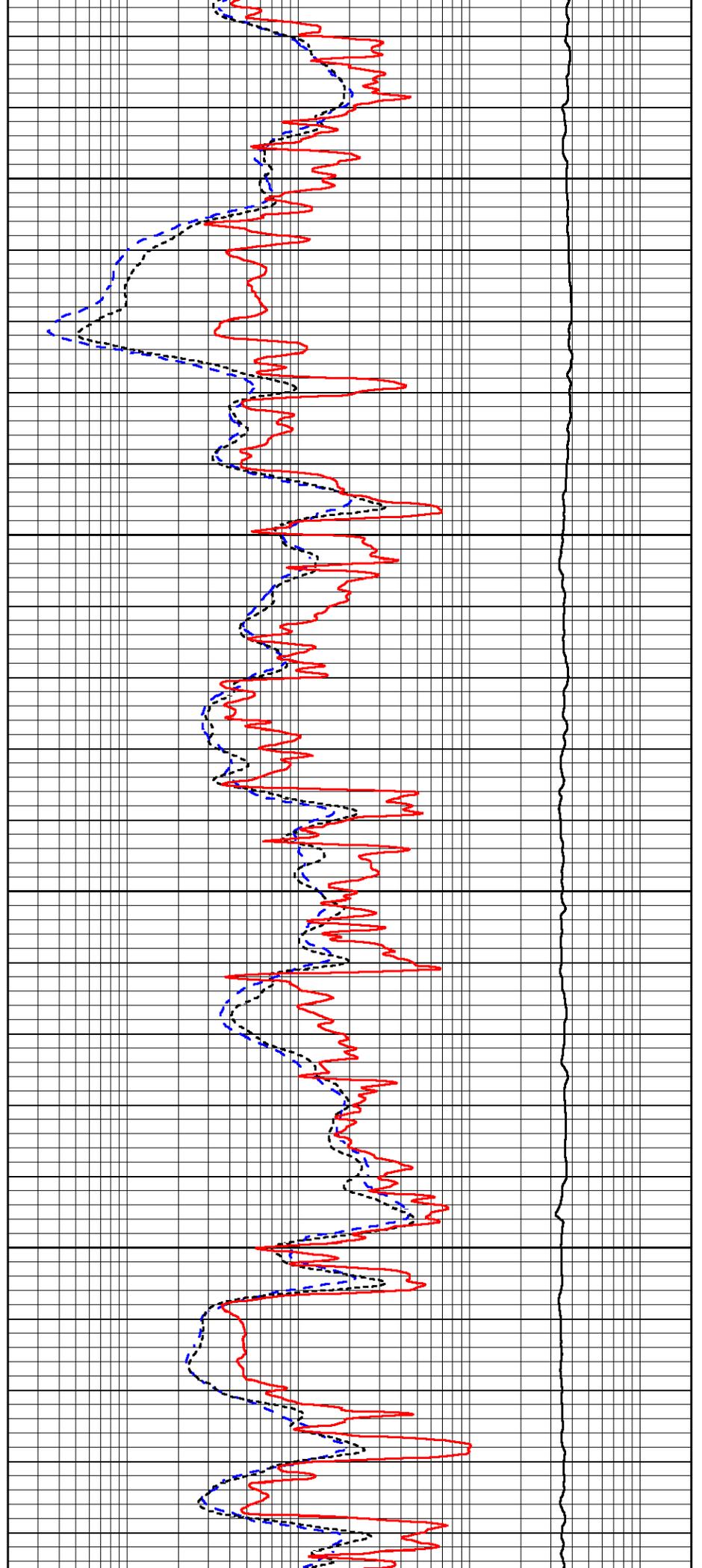


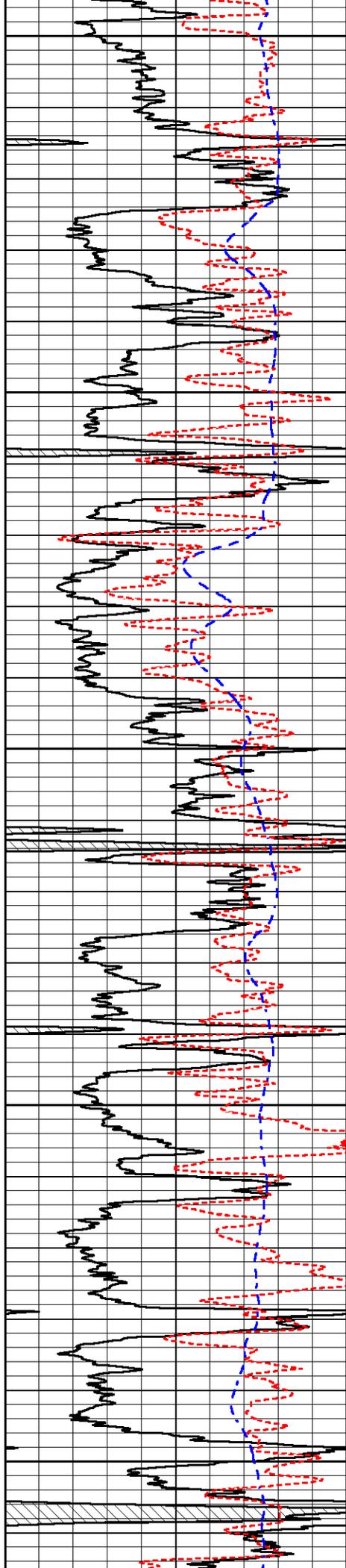
3150

3200

3250

3300





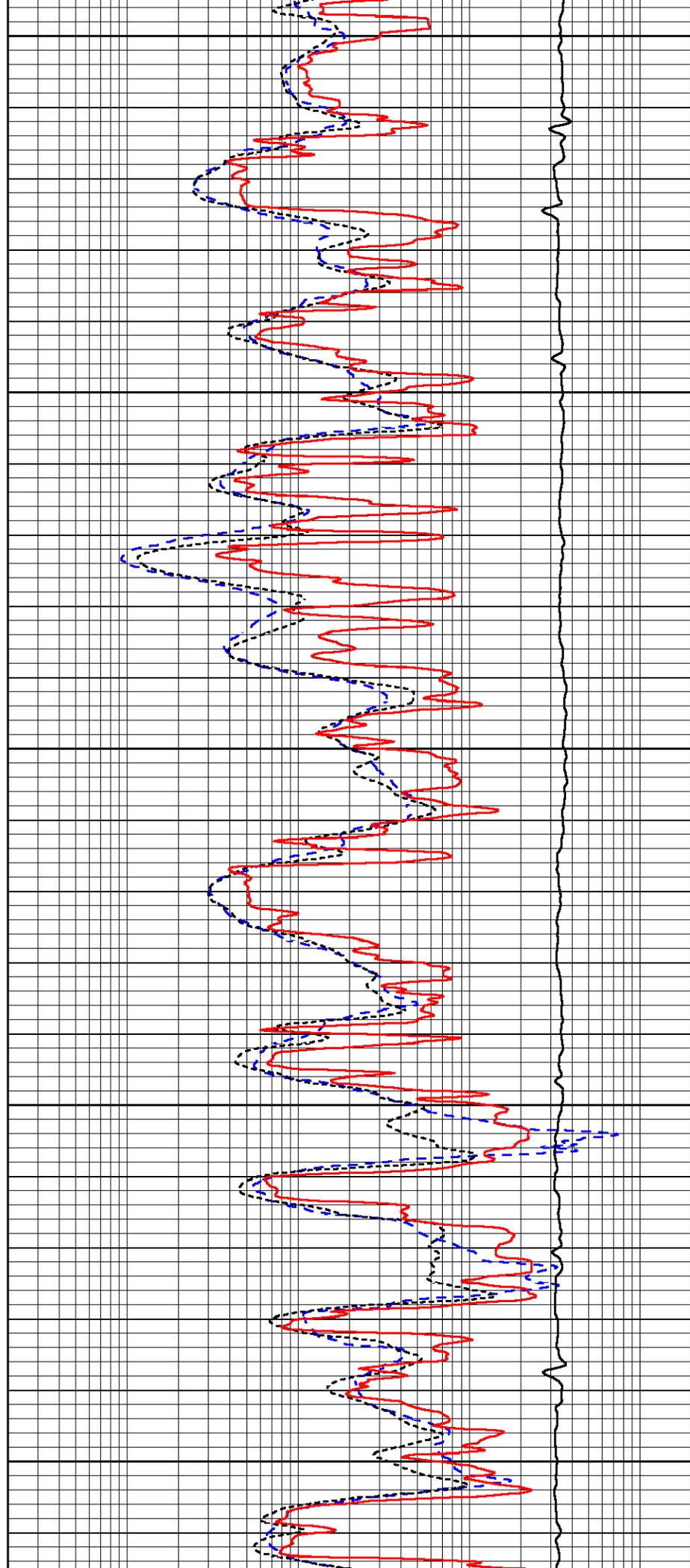
3350

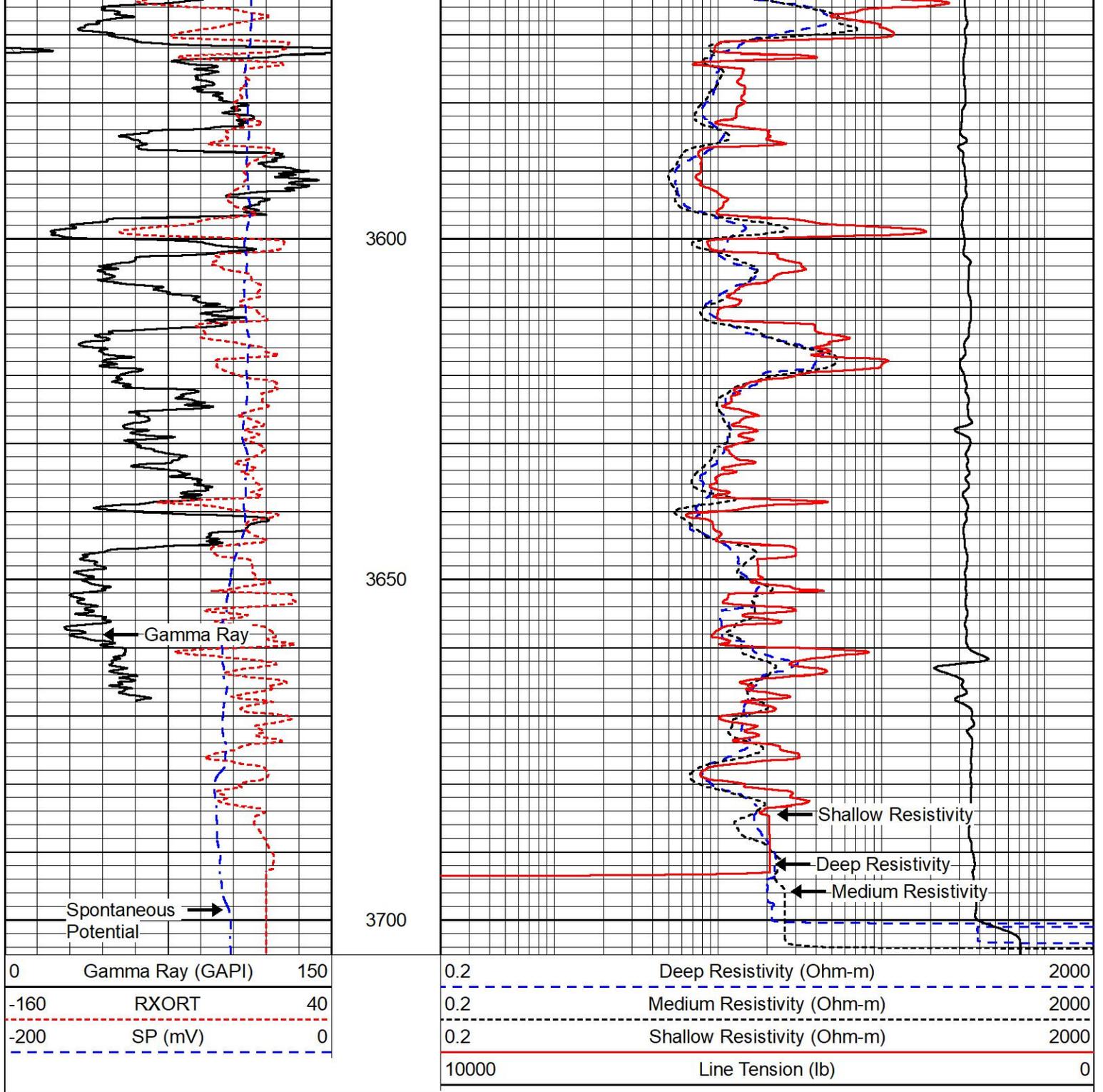
3400

3450

3500

3550



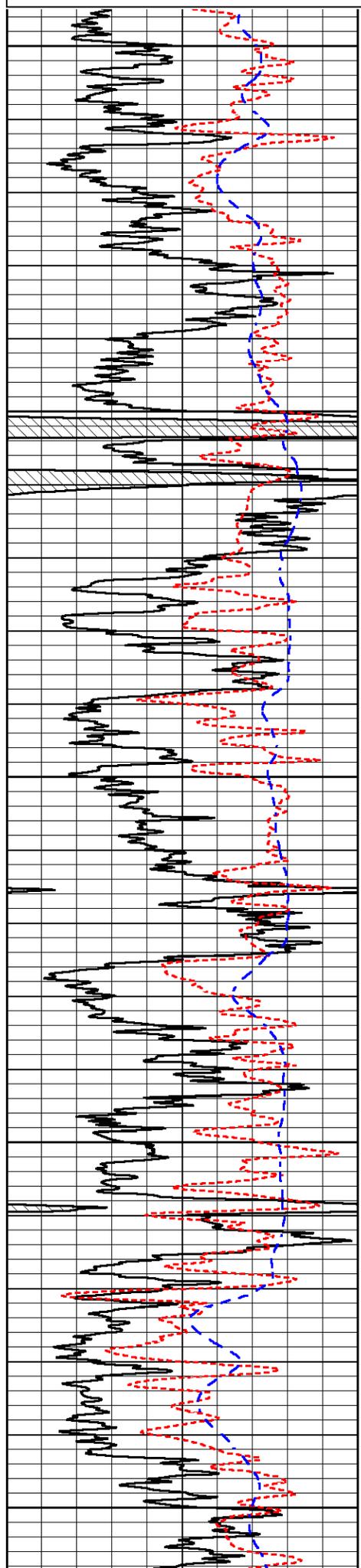


REPEAT SECTION

REPEAT PASS

Database File murfin_rusco_davis_4_1.db
 Dataset Pathname stackml/pass2.1
 Presentation Format _dil
 Dataset Creation Sun Feb 13 10:34:34 2022
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	0.2	Deep Resistivity (Ohm-m)	2000
-160	RXORT	40	0.2	Medium Resistivity (Ohm-m)	2000
-200	SP (mV)	0	0.2	Shallow Resistivity (Ohm-m)	2000



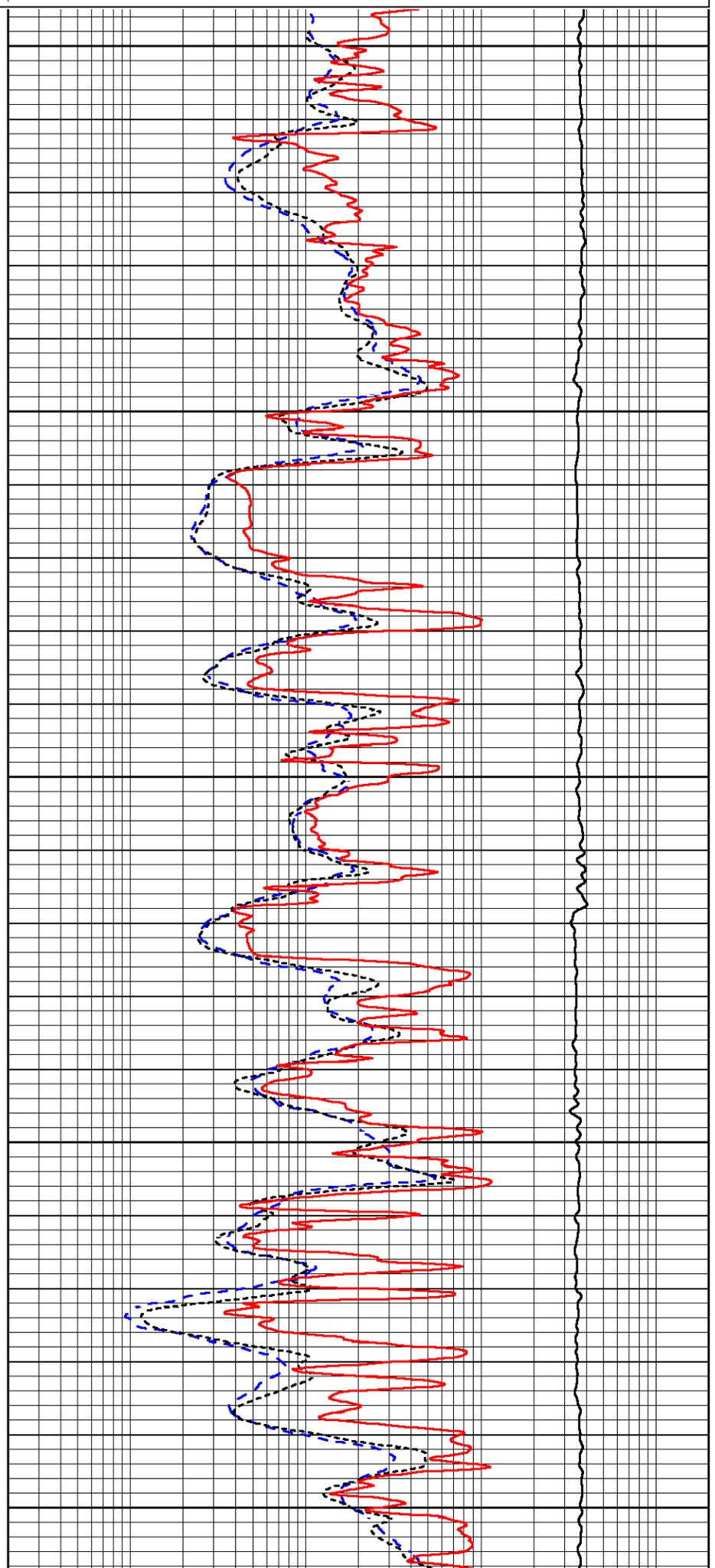
3250

3300

3350

3400

3450



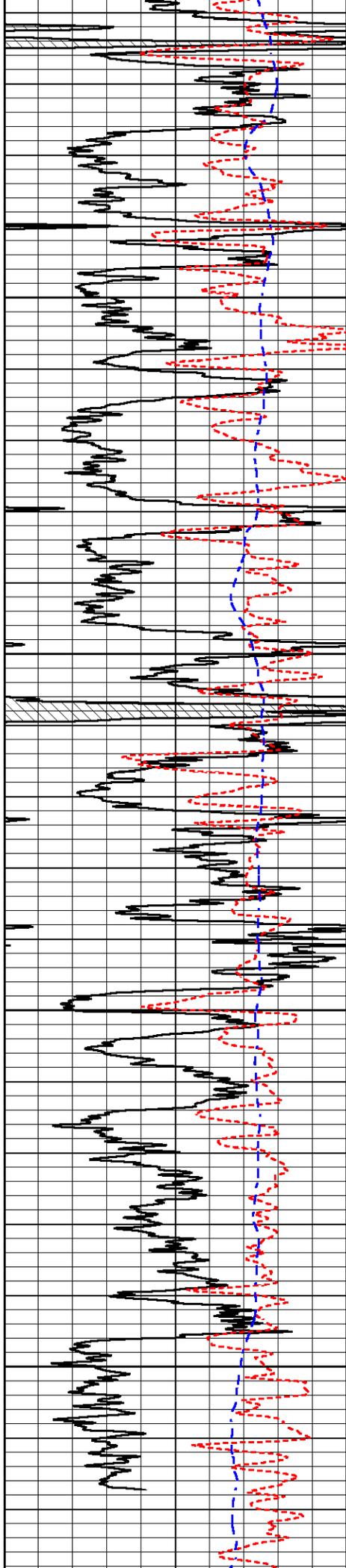
3250

3300

3350

3400

3450

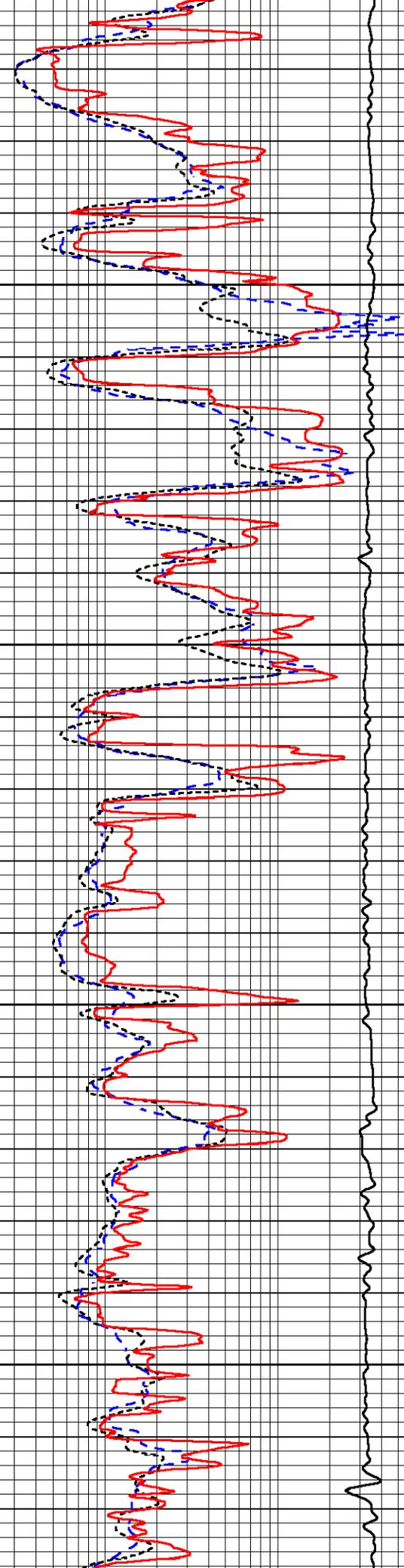
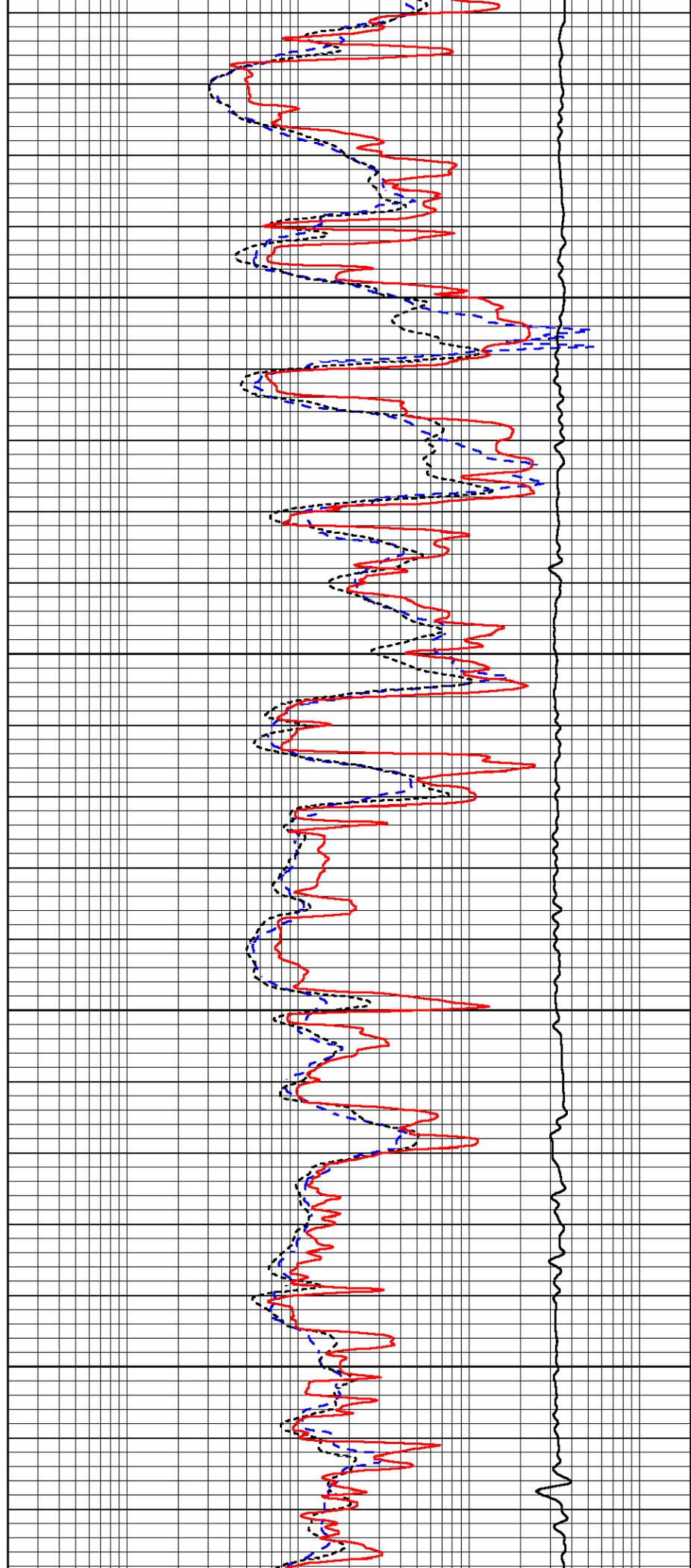


3500

3550

3600

3650

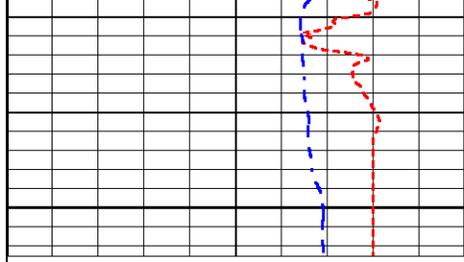


3500

3550

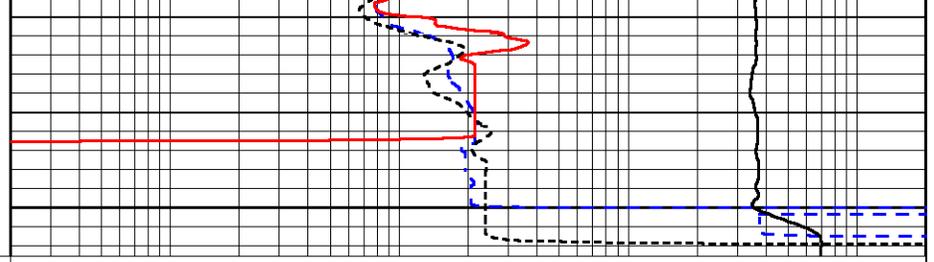
3600

3650



3700

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

Calibration Report

Database File murfin_rusco_davis_4_1.db
 Dataset Pathname stackml/pass6.1
 Dataset Creation Sun Feb 13 11:45:17 2022

Dual Induction Calibration Report

Serial-Model: 504 HT-M&W
 Surface Cal Performed: Thu Dec 16 22:32:49 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: 402-PSI STKBL ML
 Performed: Thu Dec 16 22:29:48 2021

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	27000.0000	-1.0000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	20000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1520	-131.2000

Compensated Density Calibration Report

Serial-Model: 303-03-M&W
 Source #: 21170B
 Master Calibration Performed: Thu Dec 16 23:28:34 2021

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3841.78	5151.73	cps
Aluminum	2.670	g/cc	700.98	3068.49	cps

Spine Angle = 73.06

Density/Spine Ratio = 0.515

	Size	Reading
Small Ring	4.00 in	1.17

Small Ring
Large Ring

4.00 in
14.00 in

1.17
1.05

Compensated Neutron Calibration Report

Serial-Model: 210-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: 103
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 Murfin Drilling Company, Inc.
Well Rusco-Davis #4-1
Field Star Southwest
County Ellis
State Kansas