



MIDWEST WIRELINE

BOREHOLE COMPENSATED SONIC LOG

Company: Murfin Drilling Company, Inc.
 Well: Hester #4-7
 Field: Sarah Ann
 County: Cheyenne
 State: Kansas

Company: Murfin Drilling Company, Inc.
 Well: Hester #4-7
 Field: Sarah Ann
 County: Cheyenne
 State: Kansas

Location: API #: 15-023-21629-00-00
 900 FNL & 450 FWL
 SEC 7 TWP 1S RGE 39W
 Permanent Datum: Ground Level Elevation 3407
 Log Measured From: Kelly Bushing
 Drilling Measured From: Kelly Bushing
 Other Services: CNL/CDL DIL/MEL
 K.B. 3412
 D.F. G.L. 3407

Date	8/26/2023						
Run Number	Two						
Type Log	BHCS						
Depth Driller	5175						
Depth Logger	5175						
Bottom Logged Interval	5163						
Top Logged Interval	300						
Type Fluid In Hole	Chemical						
Salinity, PPM CL	1200						
Density	9.3						
Level	Full						
Max. Rec. Temp. F	128						
Operating Rig Time	5 Hours						
Equipment -- Location	P-108 HAYS						
Recorded By	D. Schmidt						
Witnessed By	Robert Hendrix						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	0	302	8.625	23	0	302
Two	7.875	302	TD				
Casing Record							

<<< 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.

Benkelman,
 West on Hwy 34 to Rd 326A,
 about 2 1/2 South to location

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: Robert Hendrix
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CENT-PENGO	4.25	3.00	70.00
WVF4 WVF1	12.50 12.50		SLT-PENGO Short (607)	16.00	3.50	300.00
WVF3 WVF2	10.50 10.50					
			CENT-PENGO	4.25	3.00	70.00

Dataset: murfin_hester 4-7.db: field/well/son/pass2
 Total length: 24.50 ft
 Total weight: 440.00 lb
 O.D.: 3.50 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_hester 4-7.db
 Dataset field/well/stkml/pass3.5/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	128	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	-11	1.35	640	70	Off	5176

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

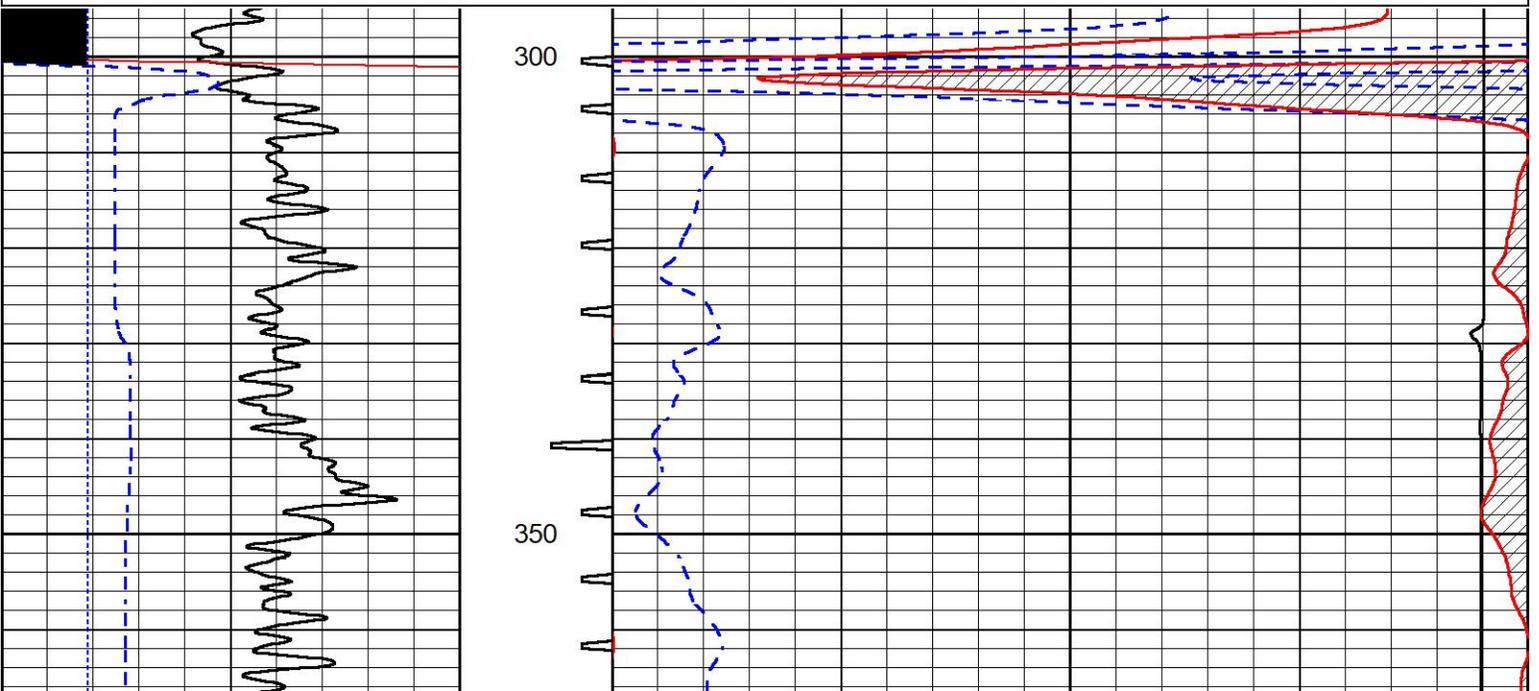


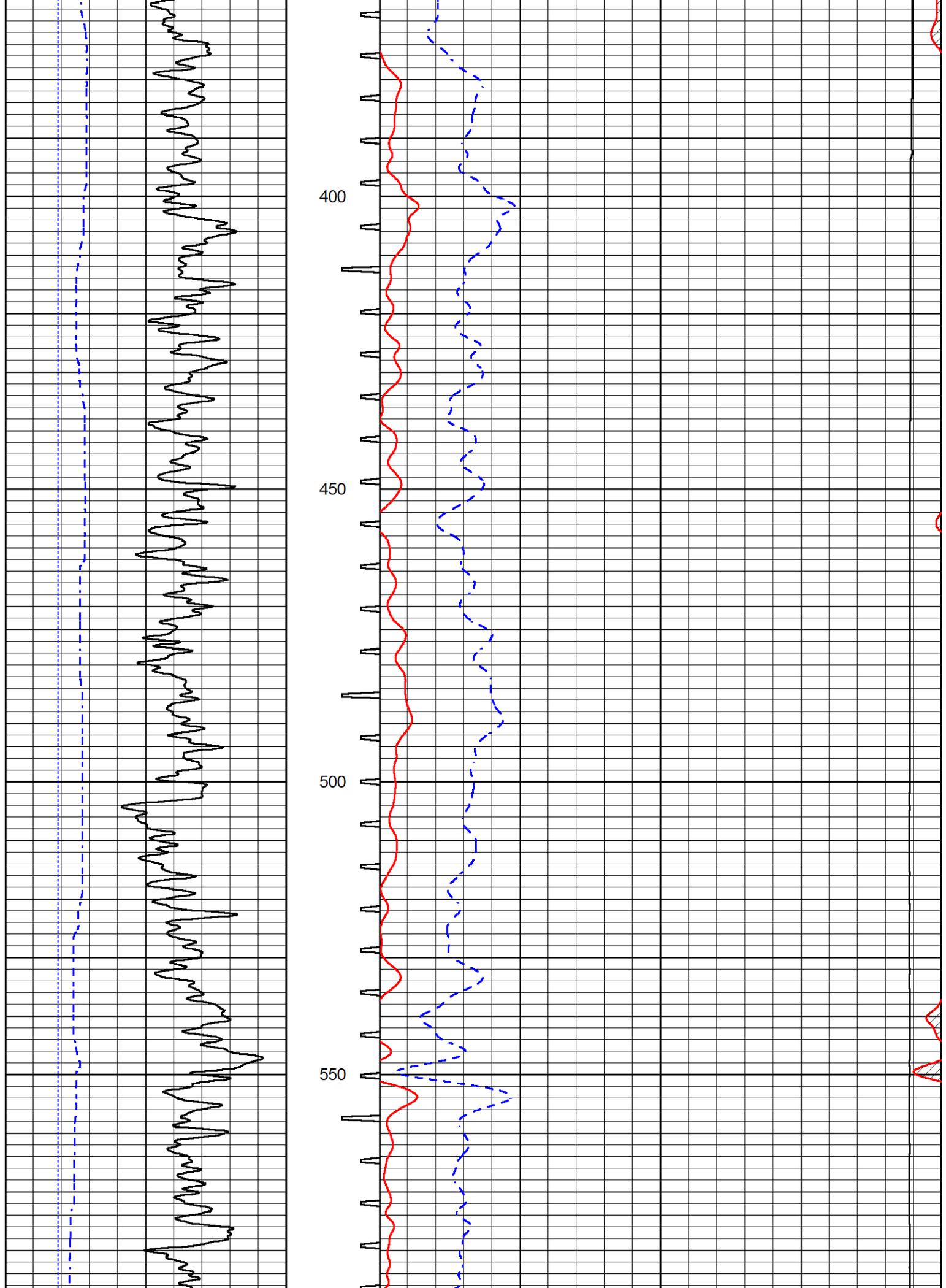
DETAIL SECTION

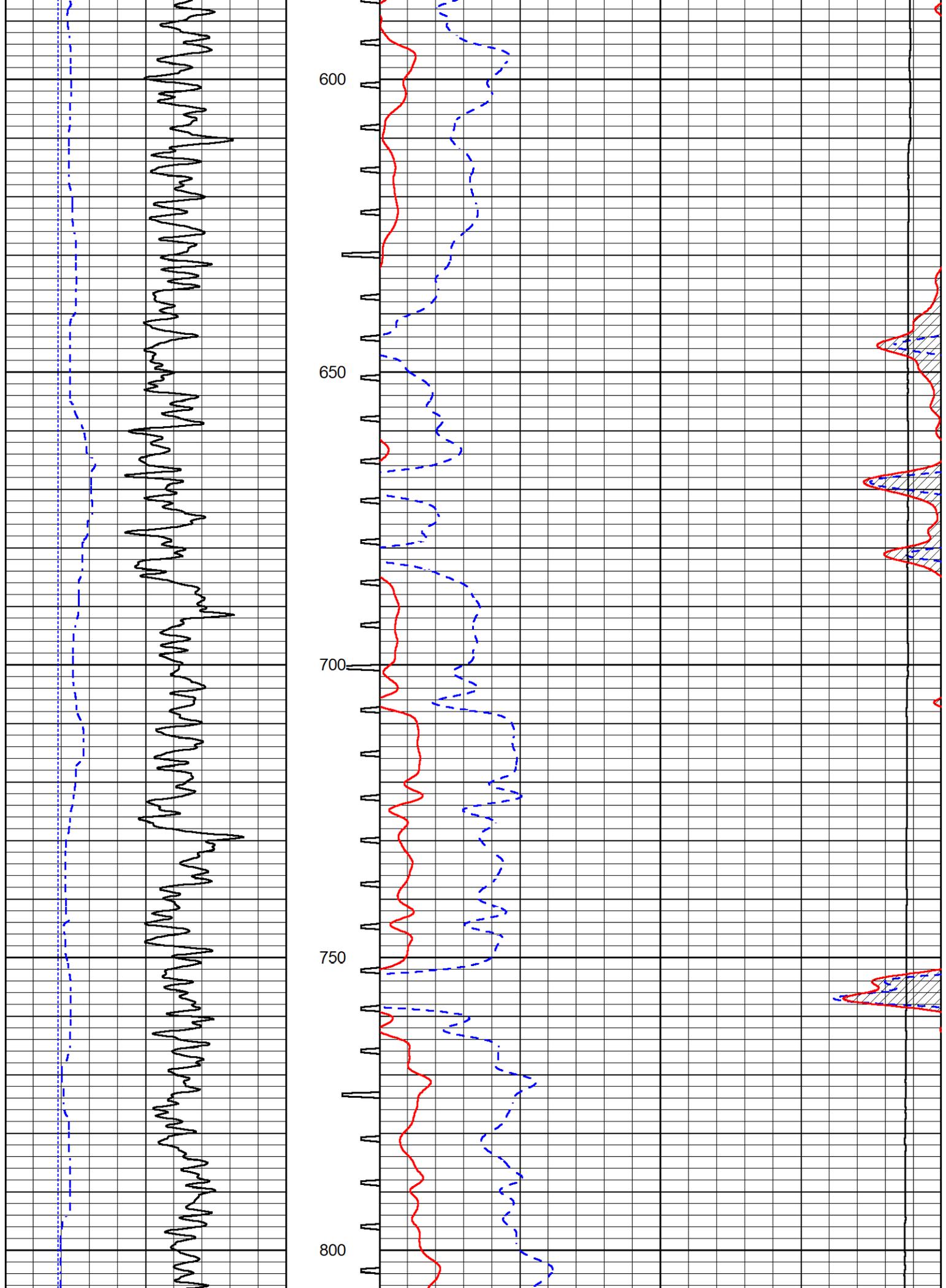
MAIN PASS

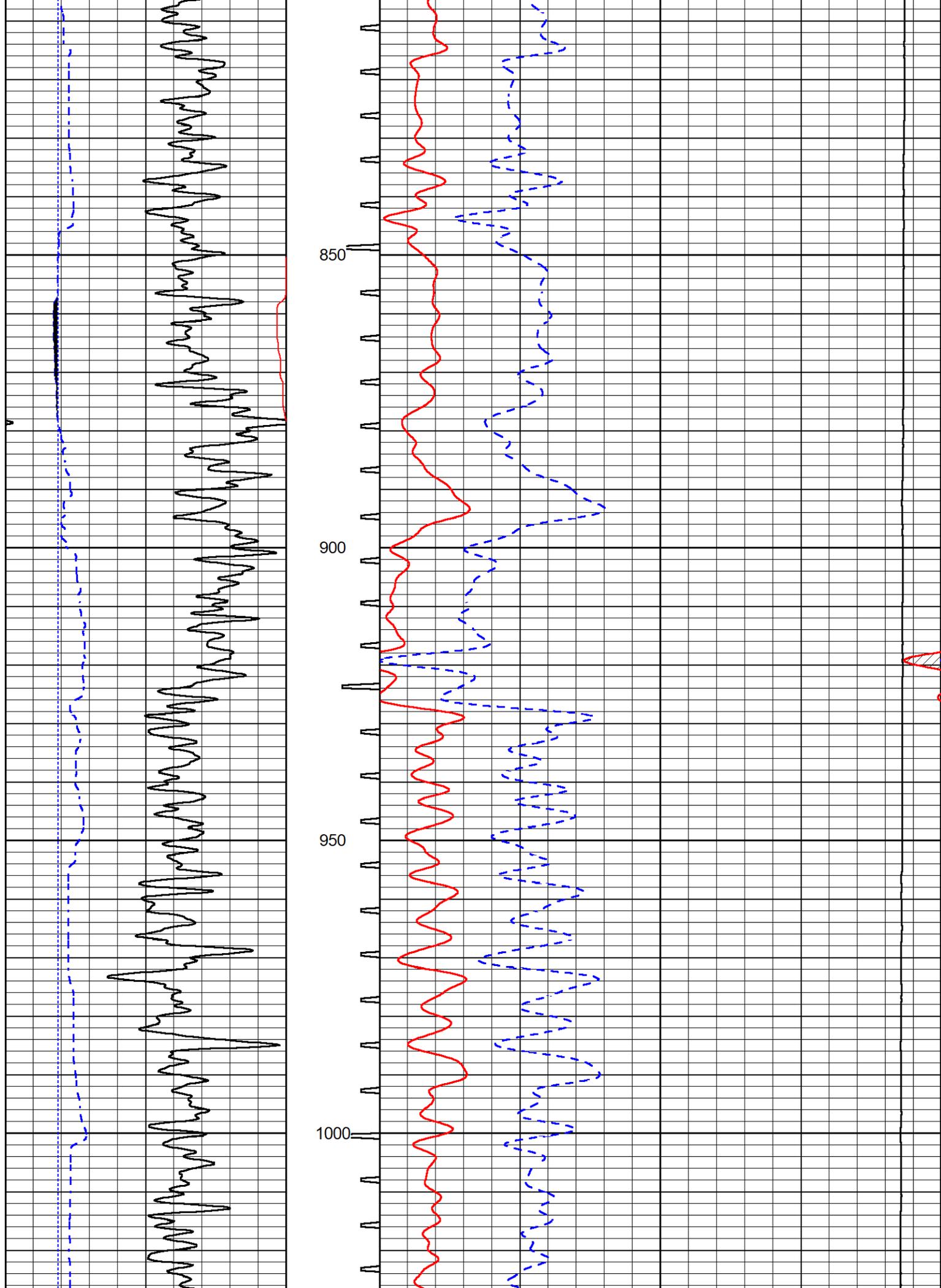
Database File murfin_hester 4-7.db
 Dataset Pathname stkml/pass3.4
 Presentation Format _sonic
 Dataset Creation Sat Aug 26 04:49:10 2023
 Charted by Depth in Feet scaled 1:240

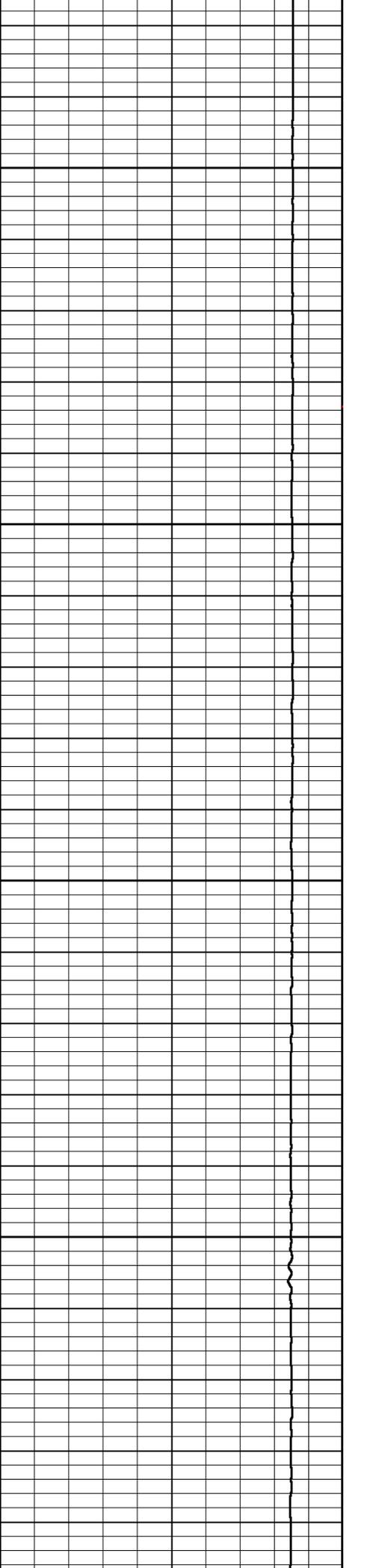
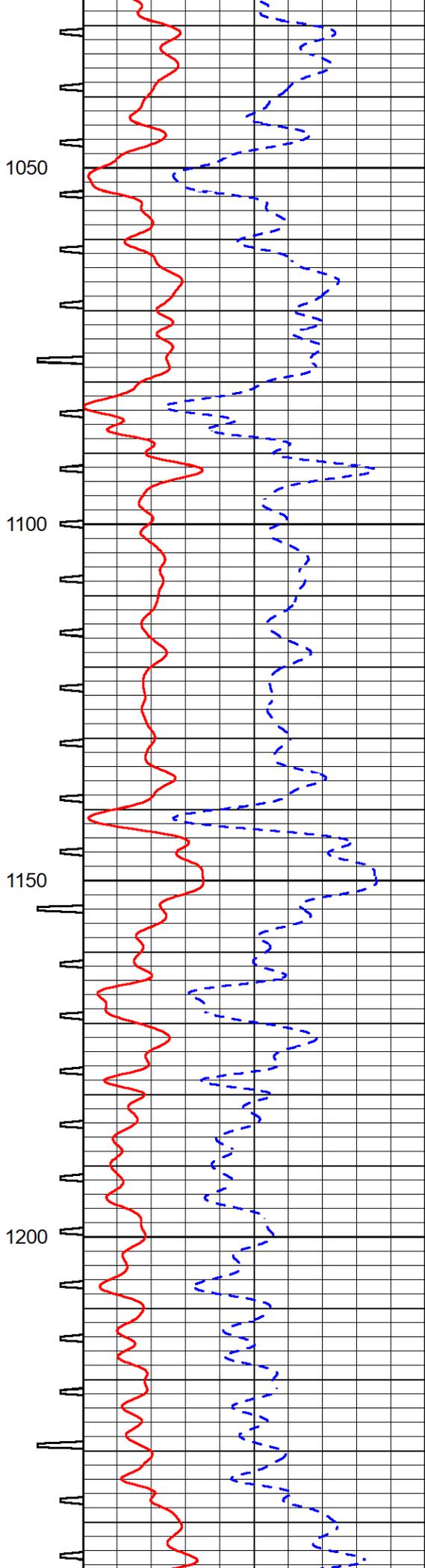
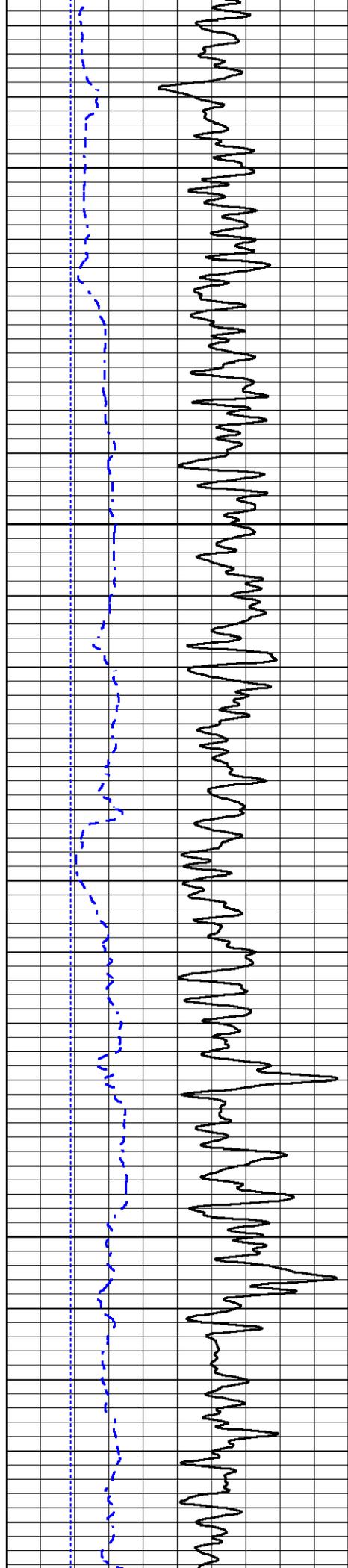
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	LCAL (in)	16		15000	Line Tension (lb)	0
2.875	lcal (in)	7.875				

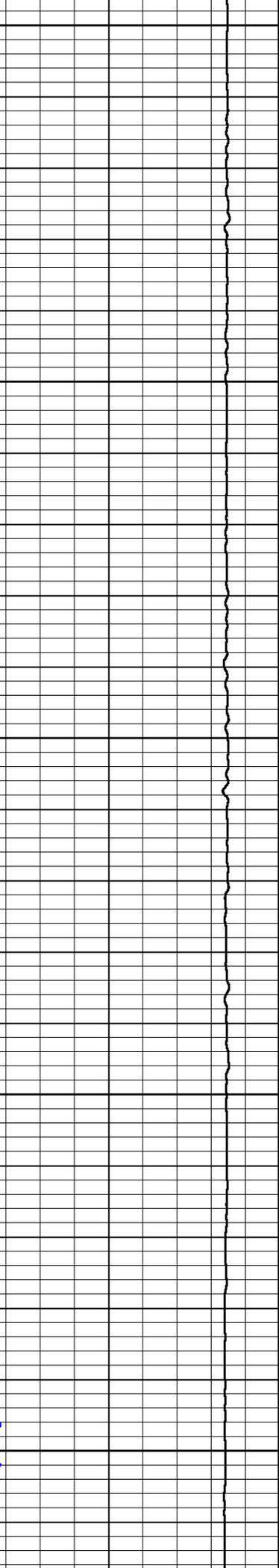
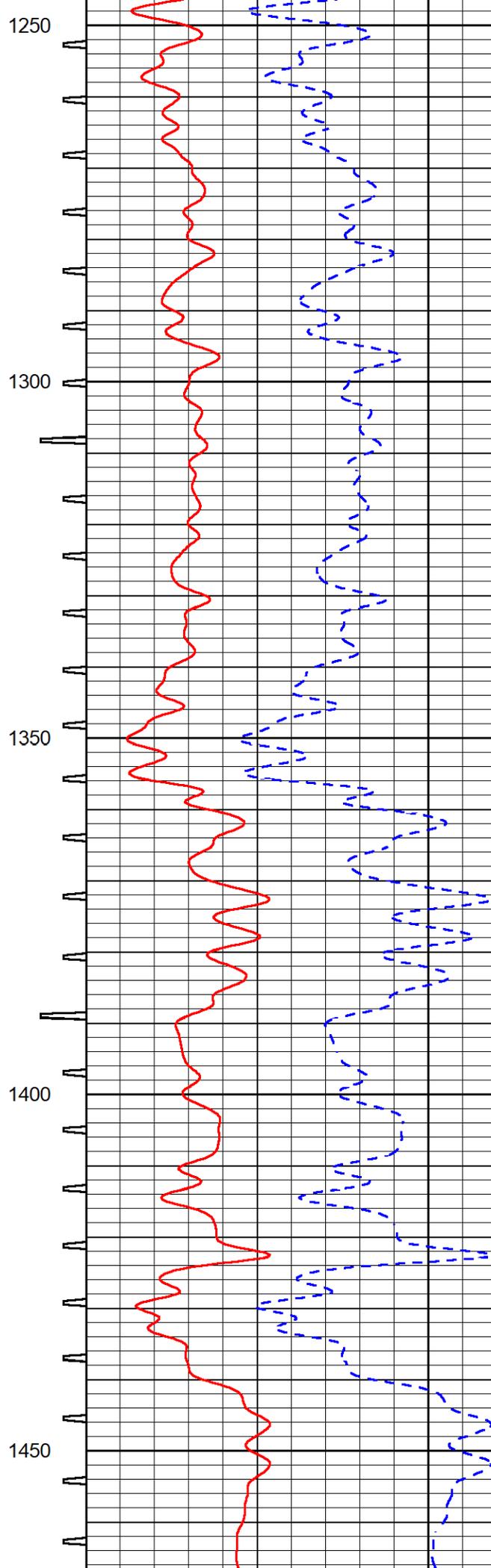
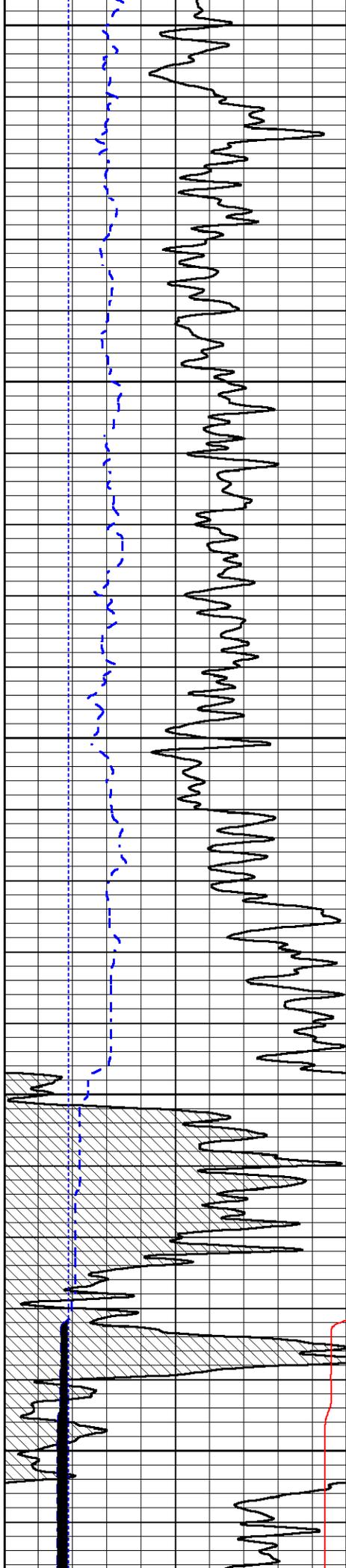


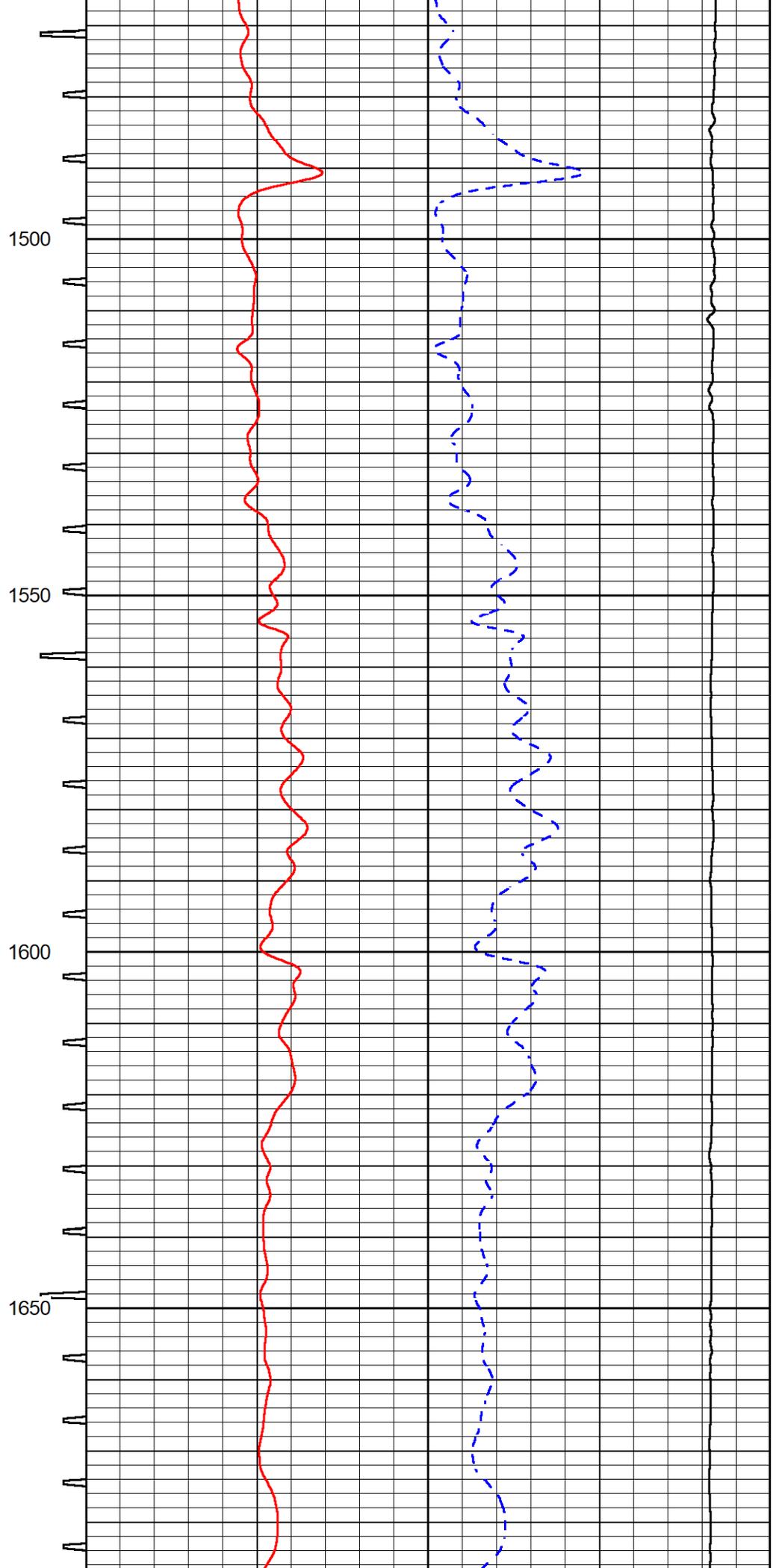
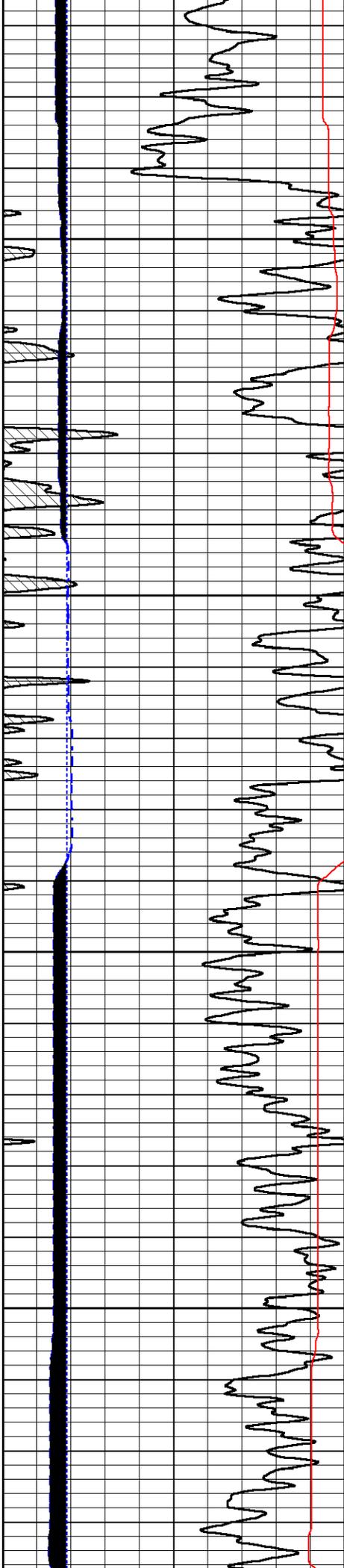


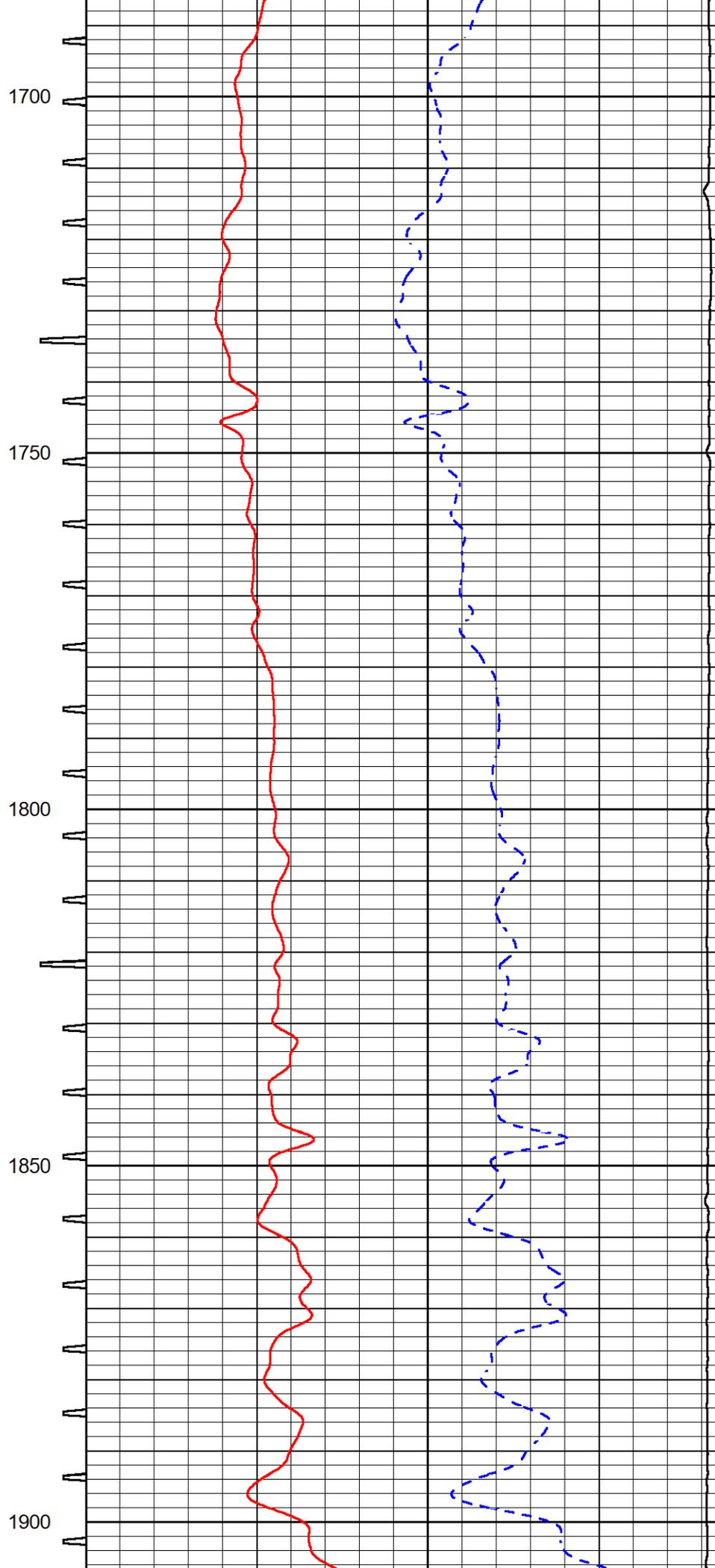
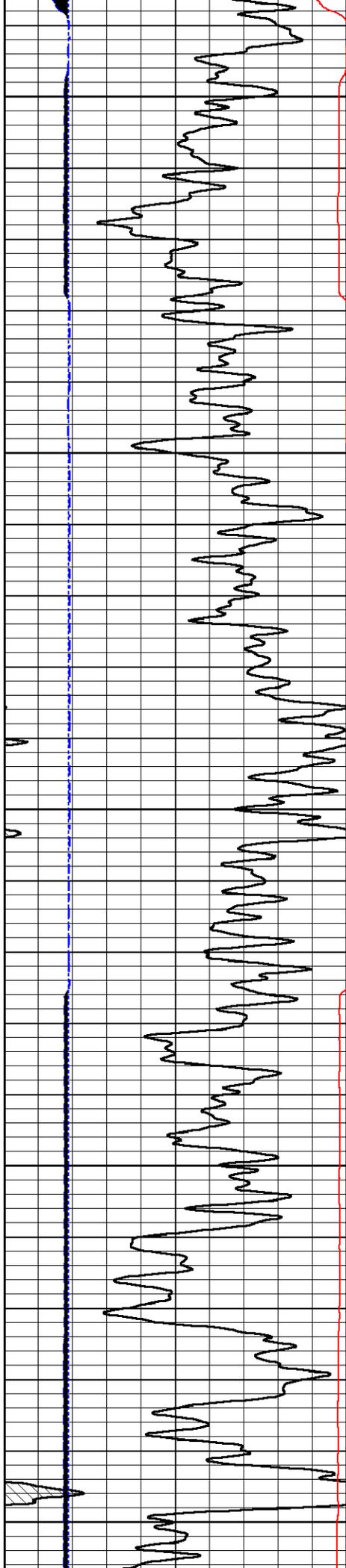


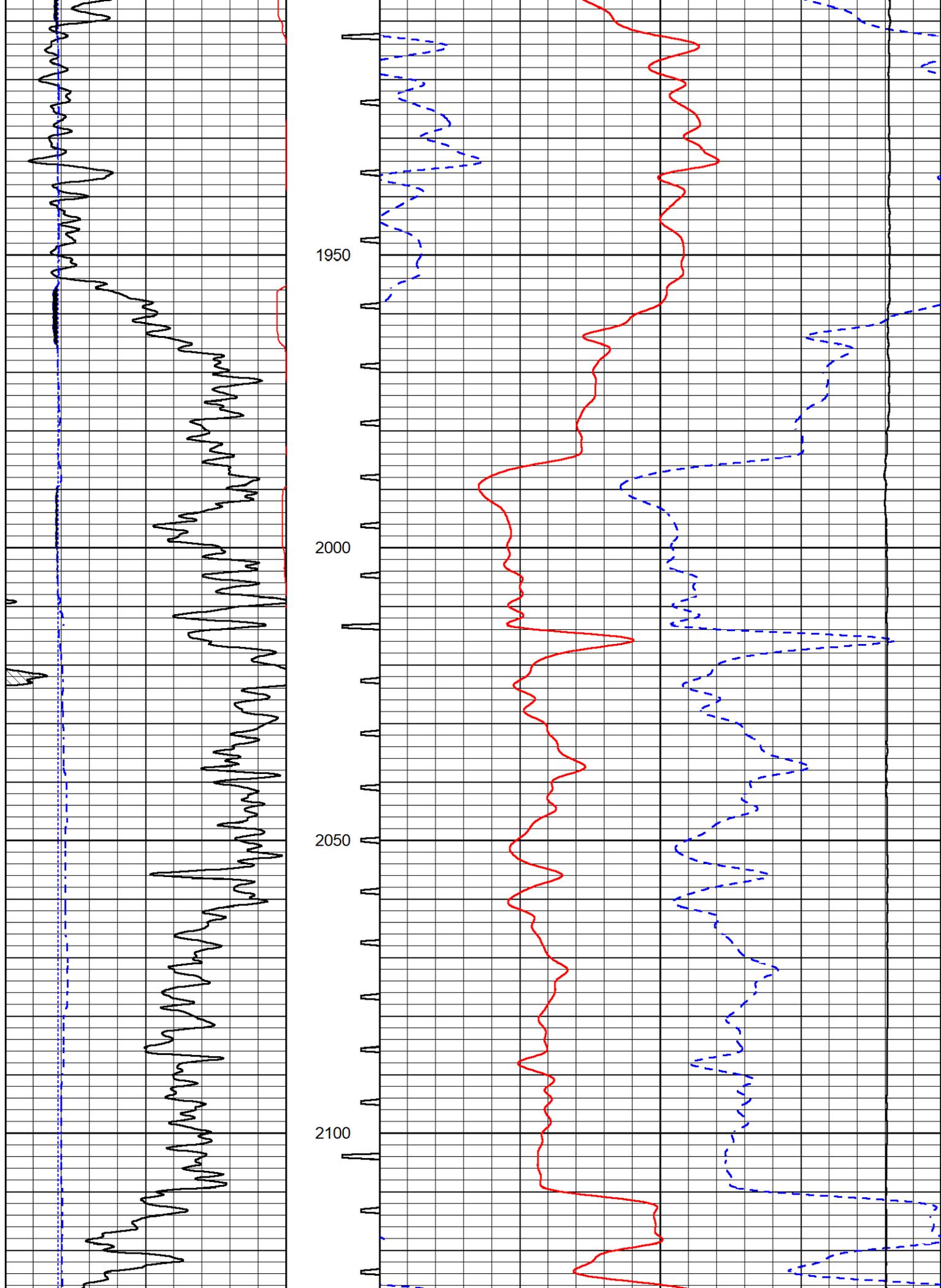


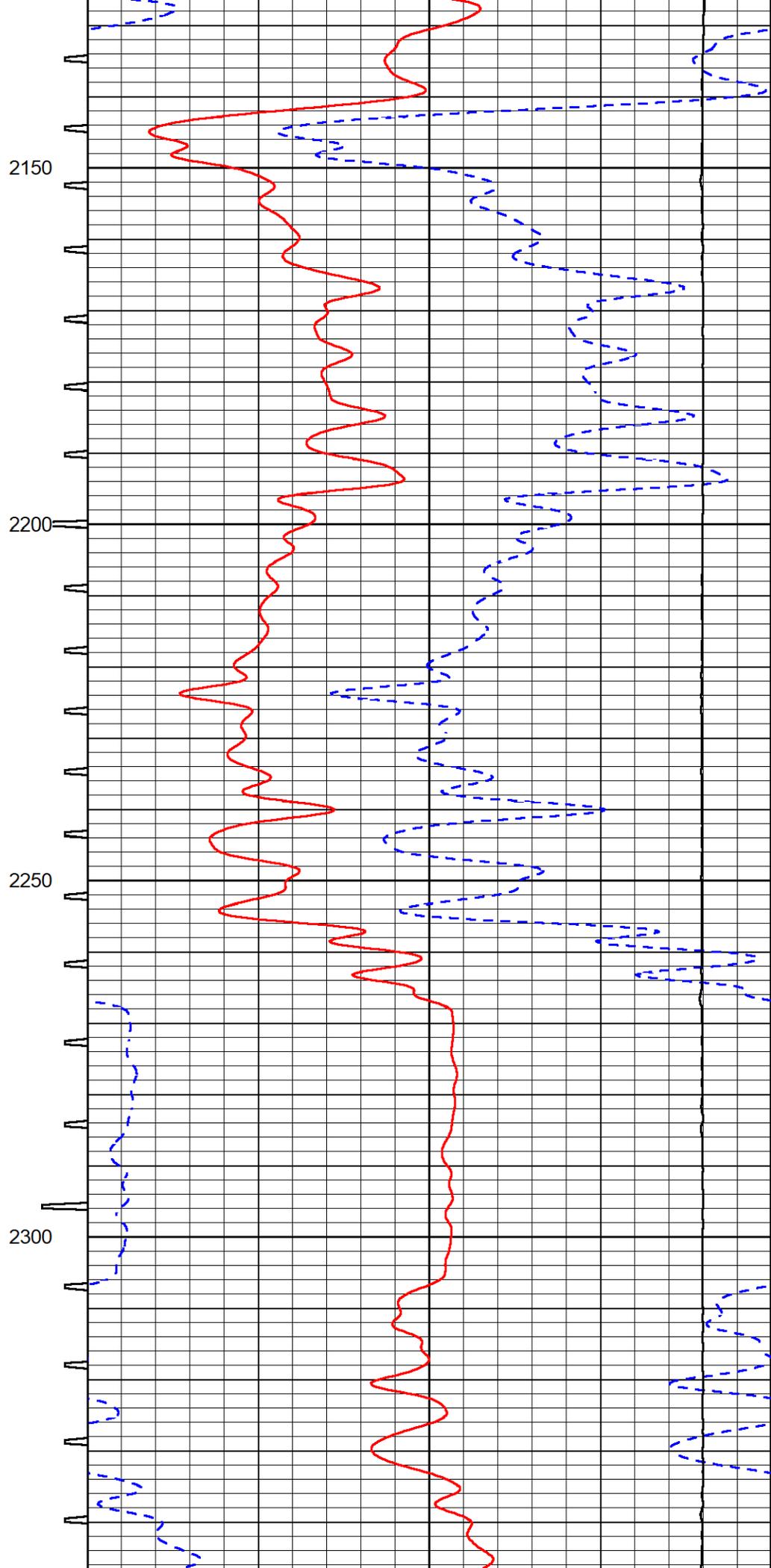
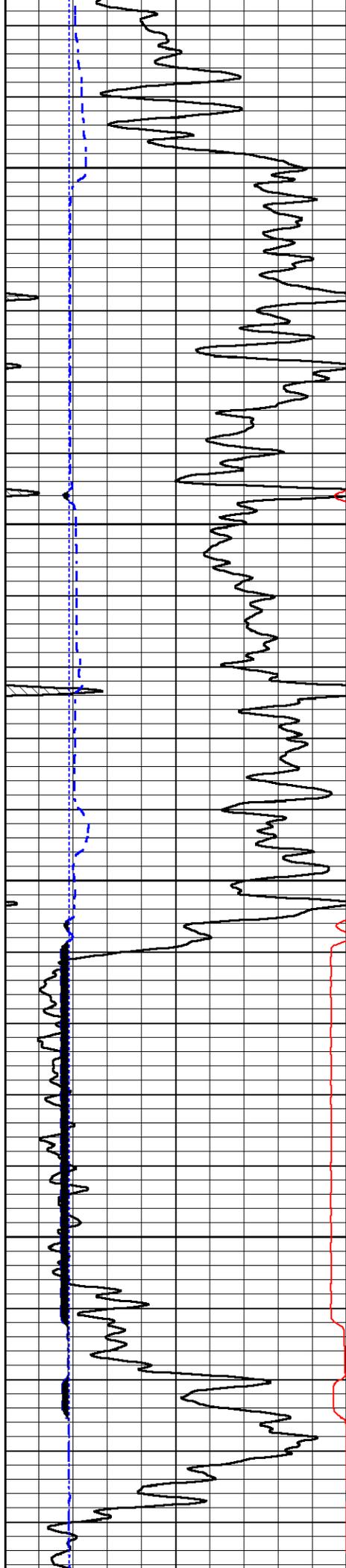


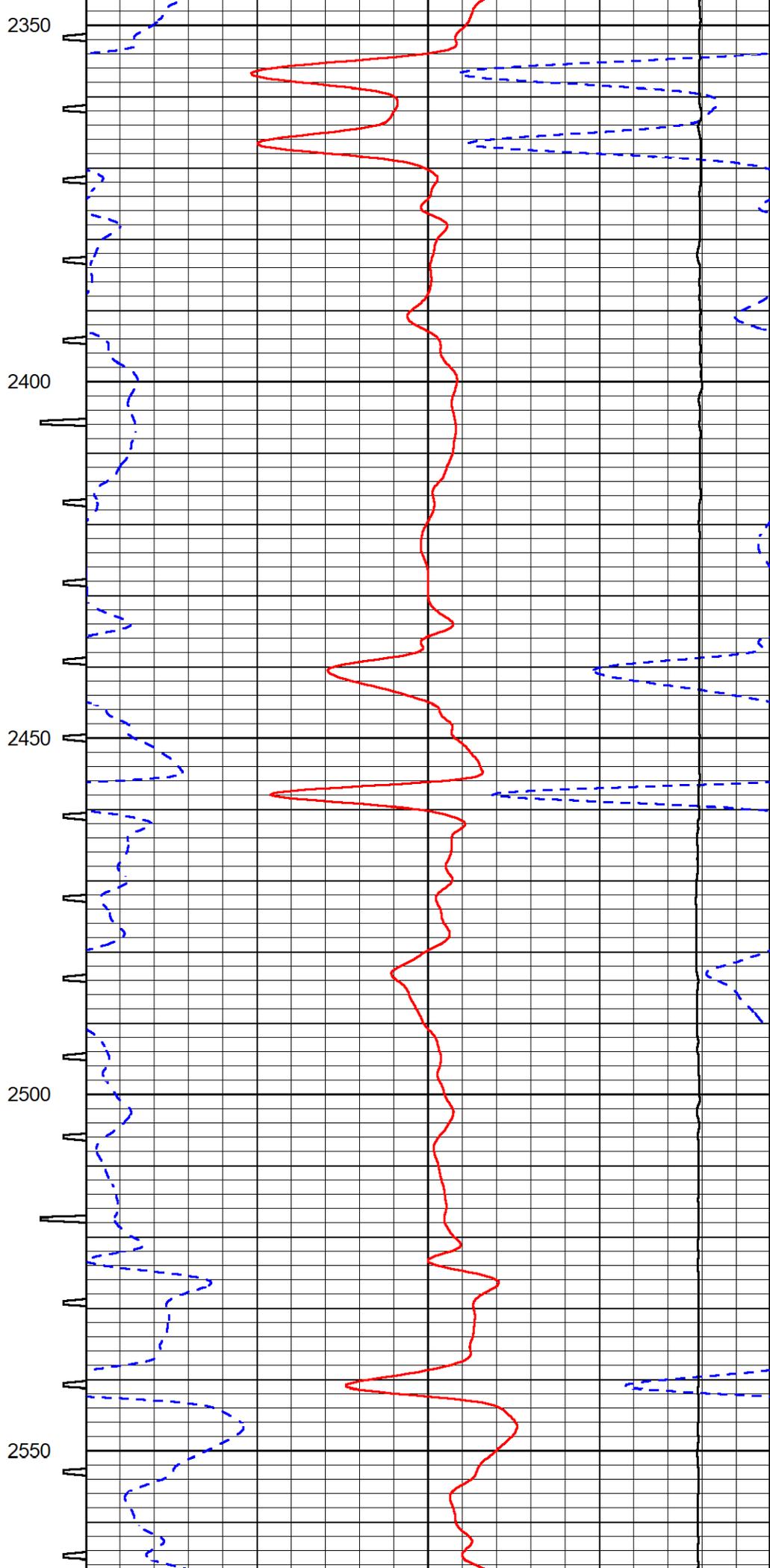
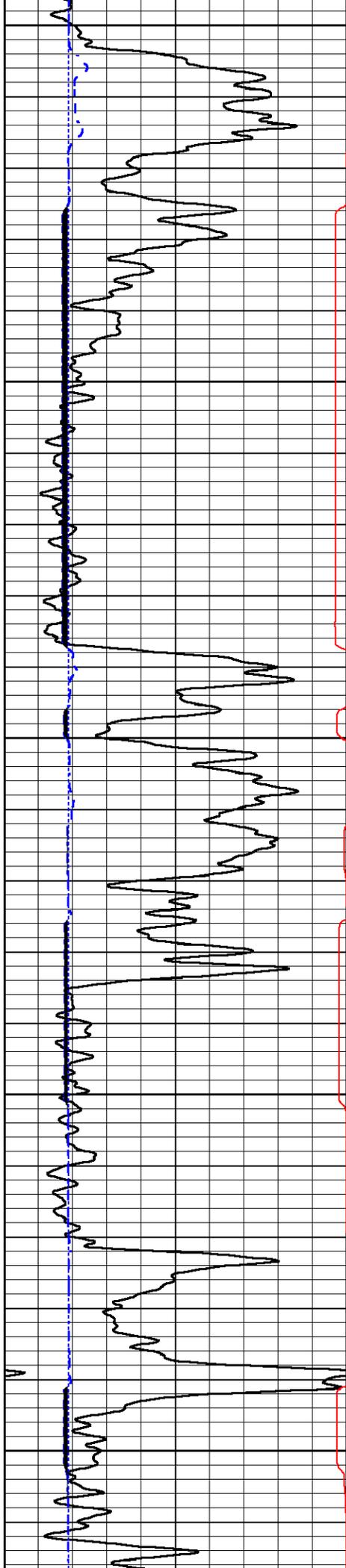


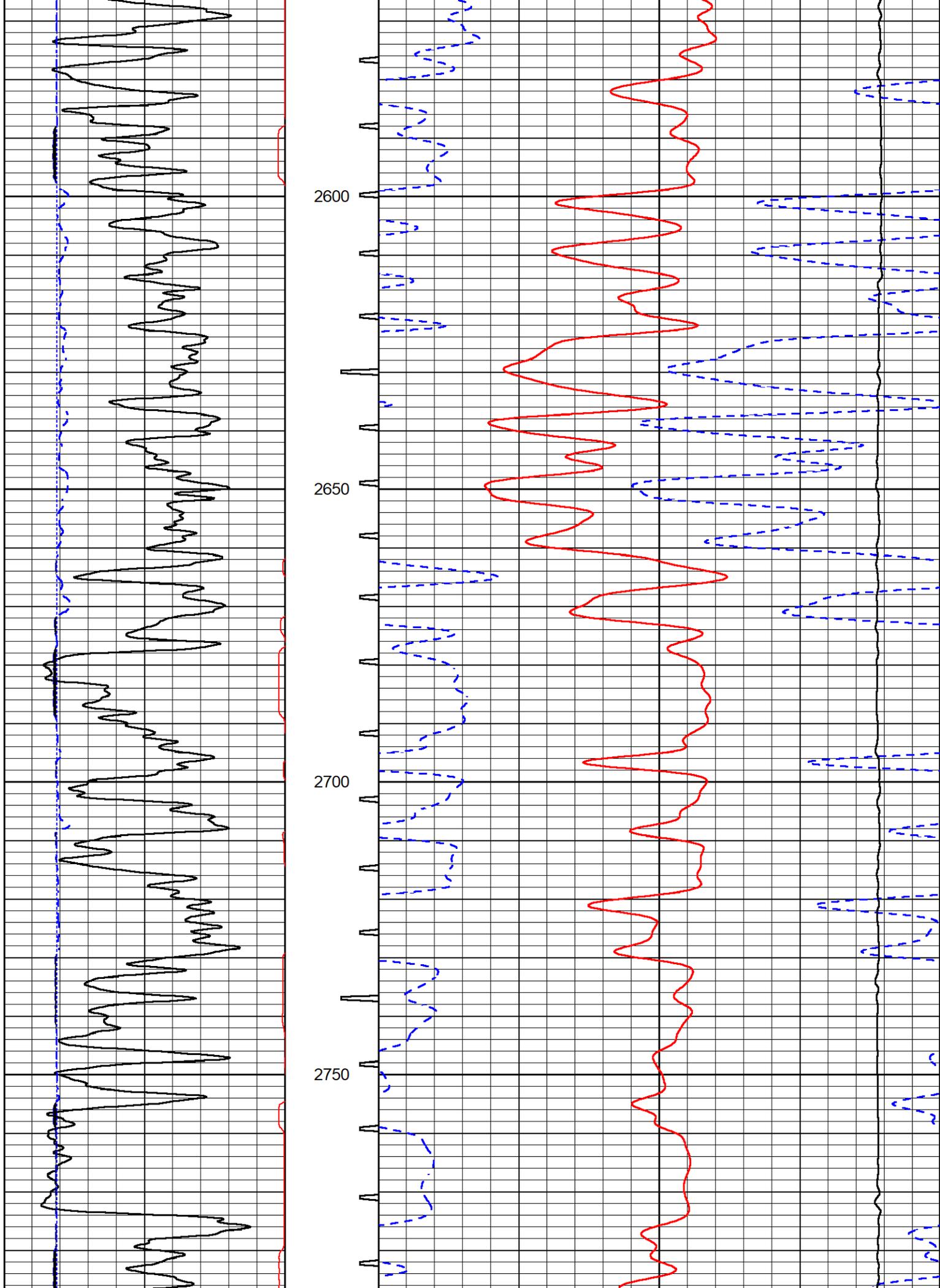


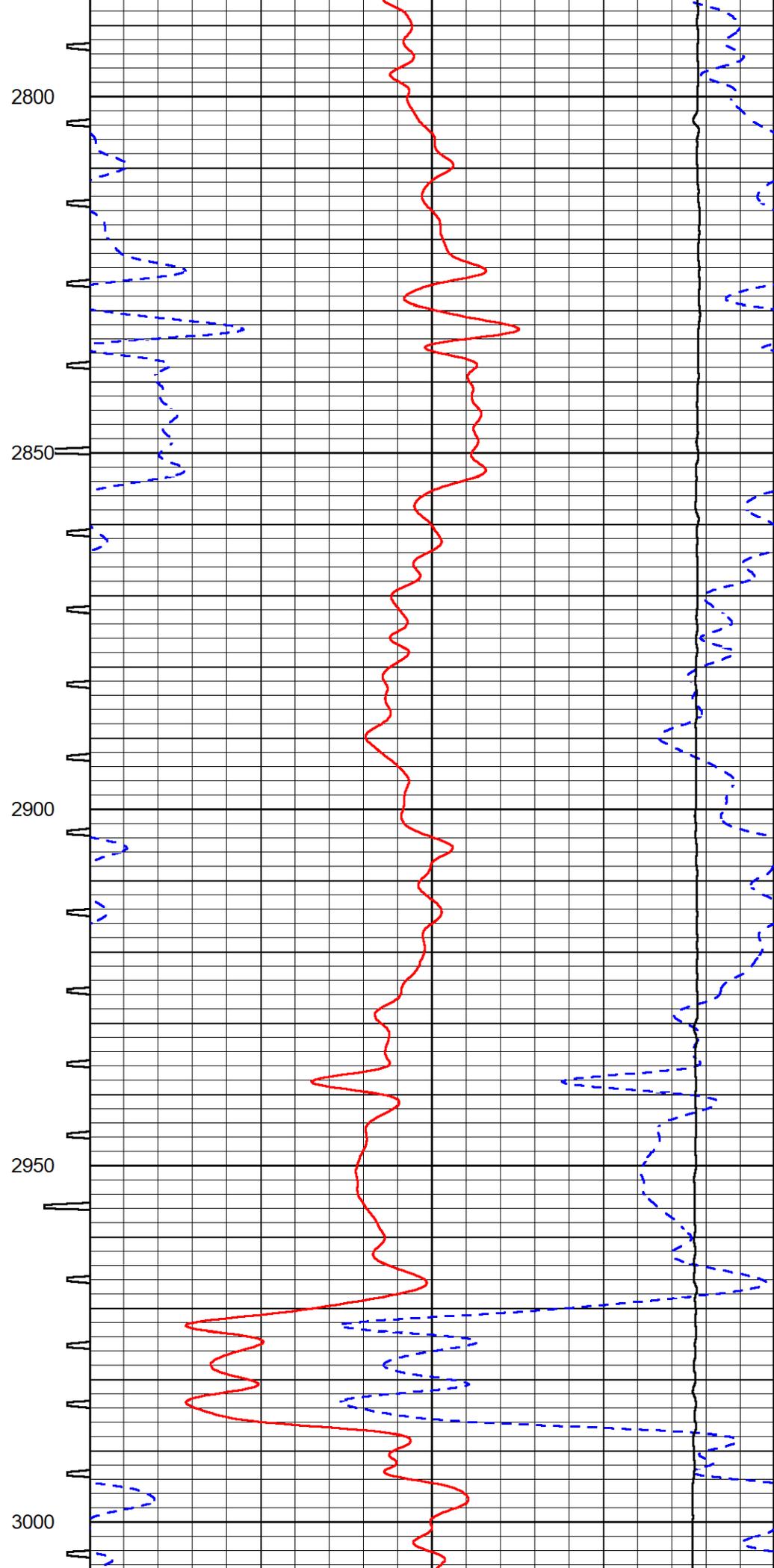
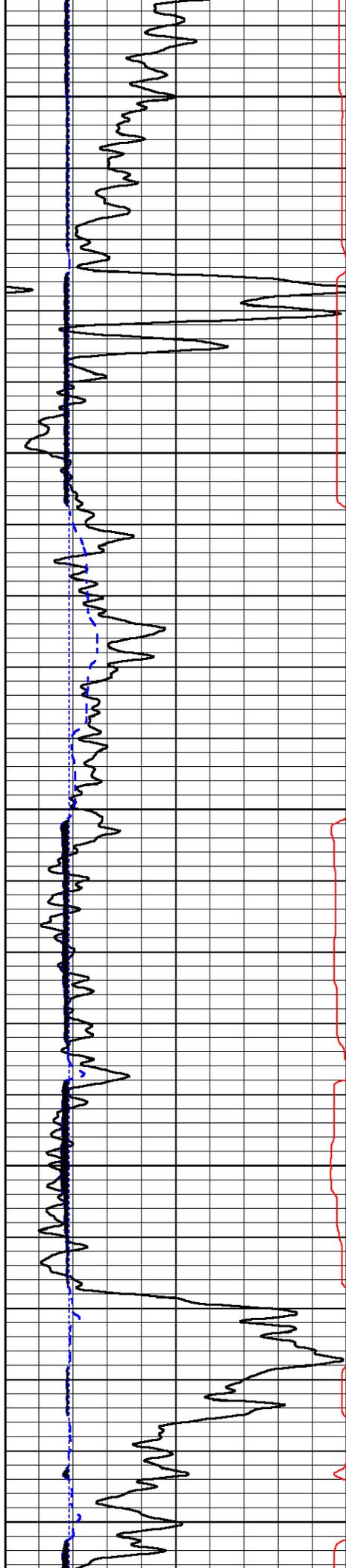


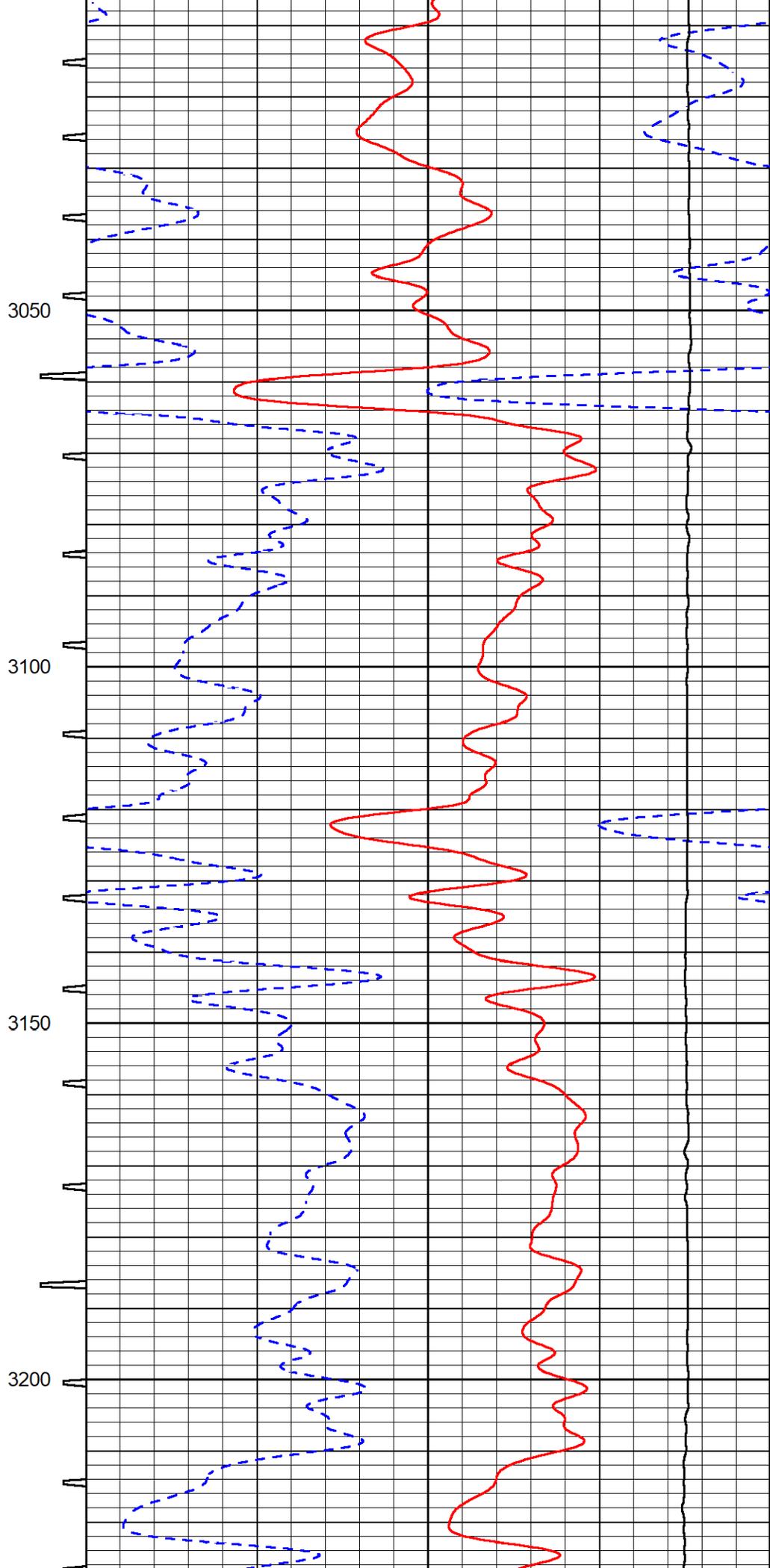
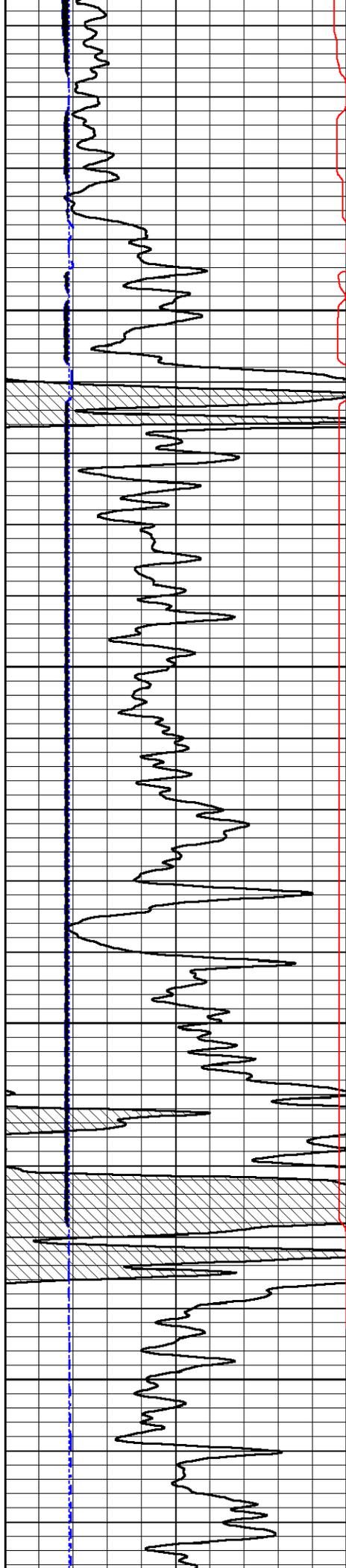


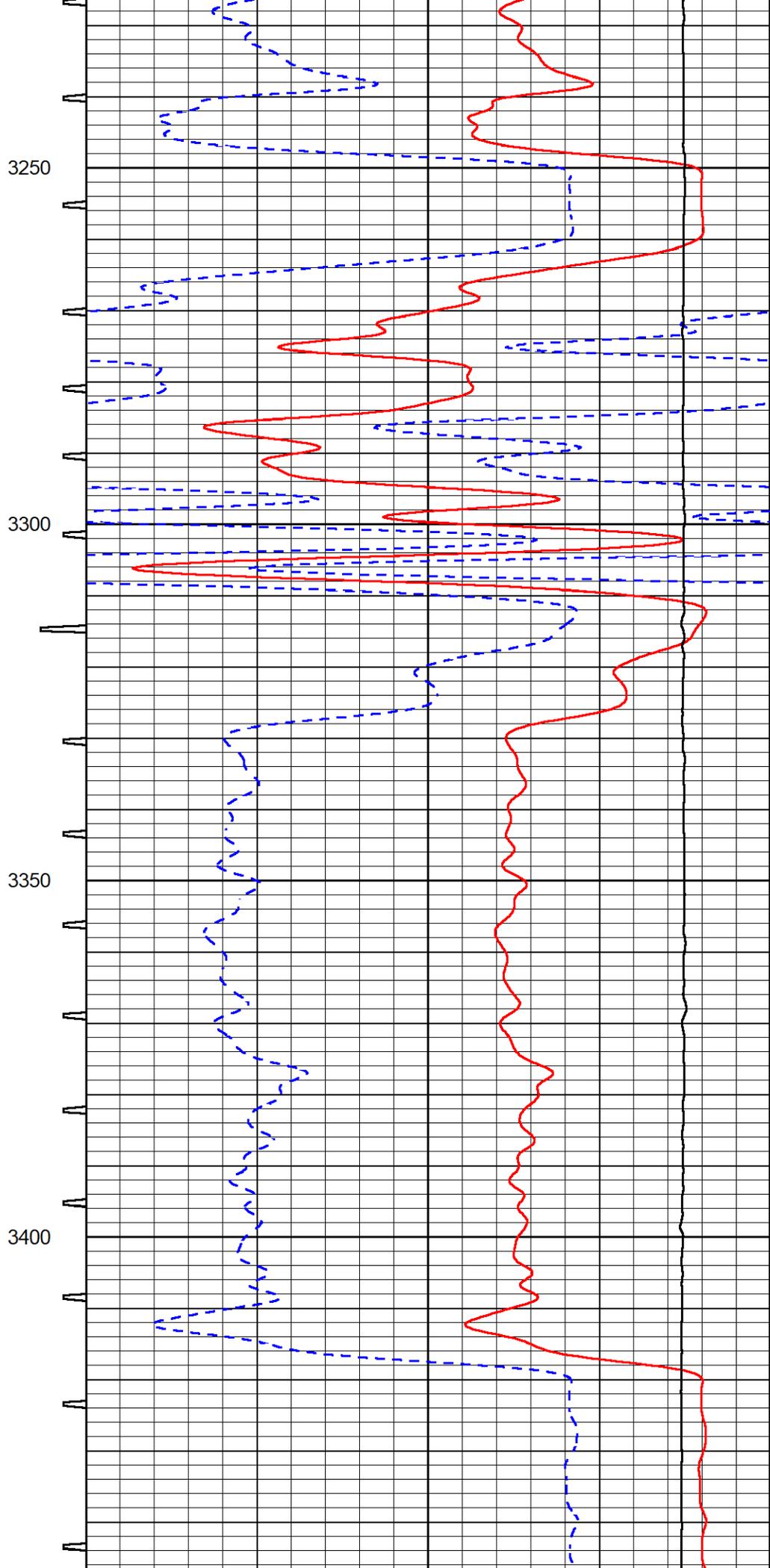
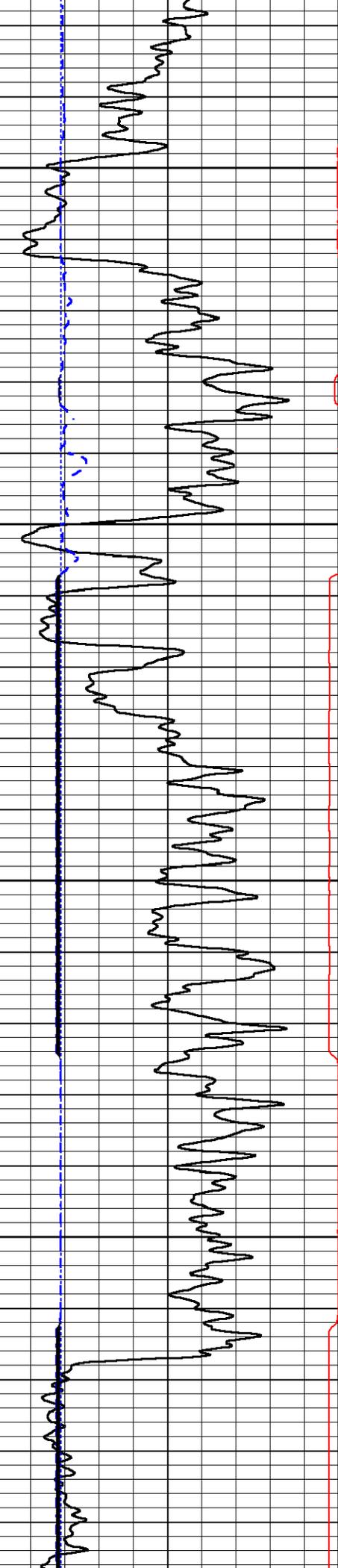


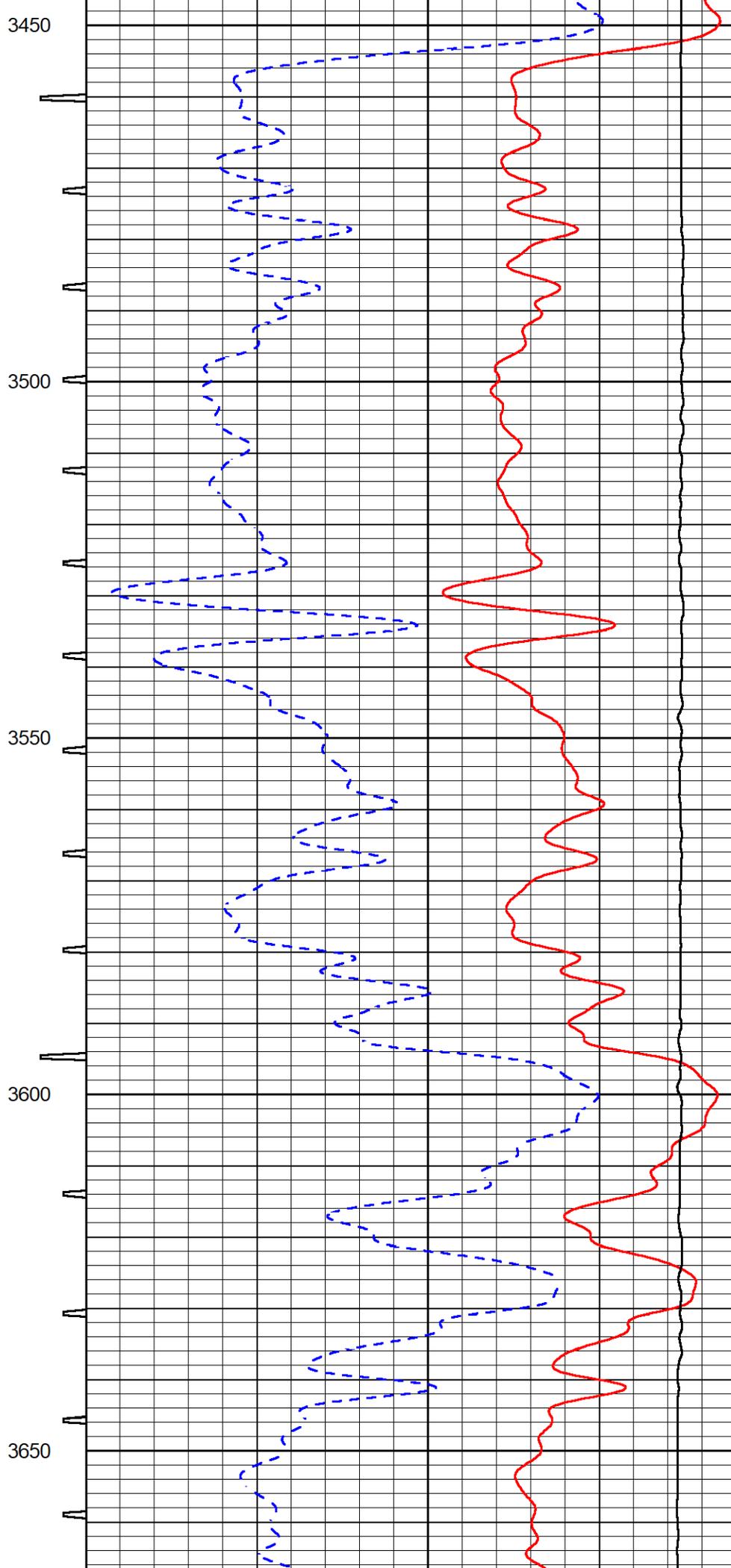
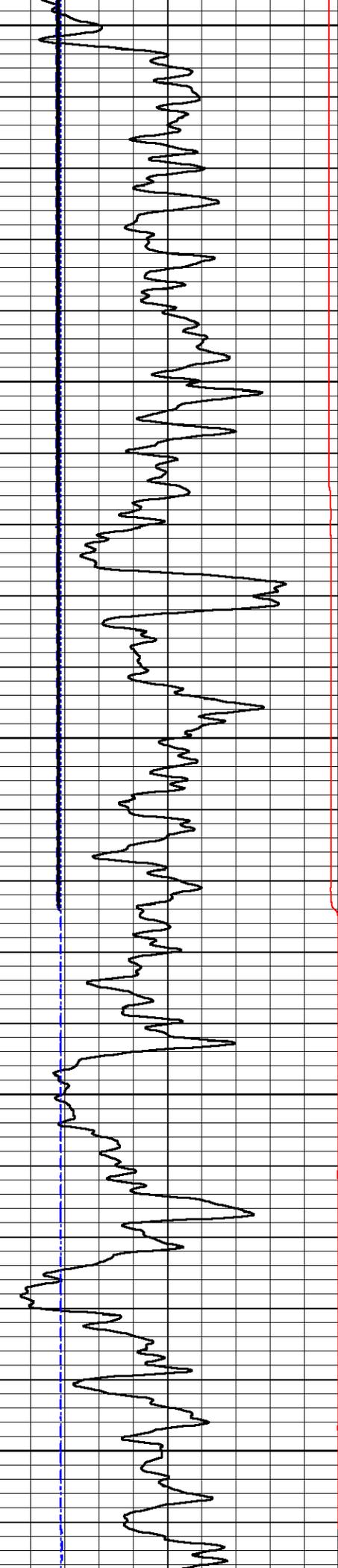


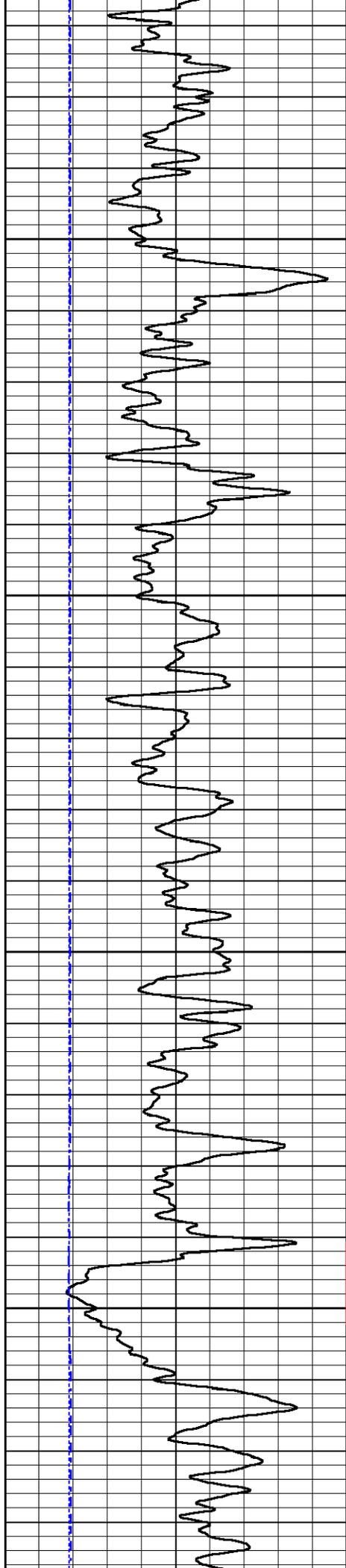










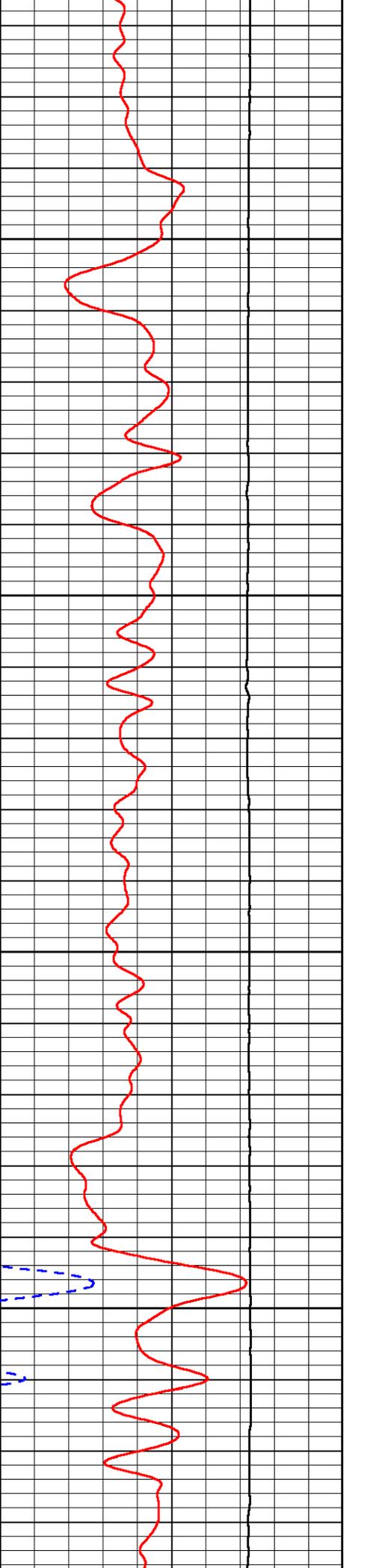
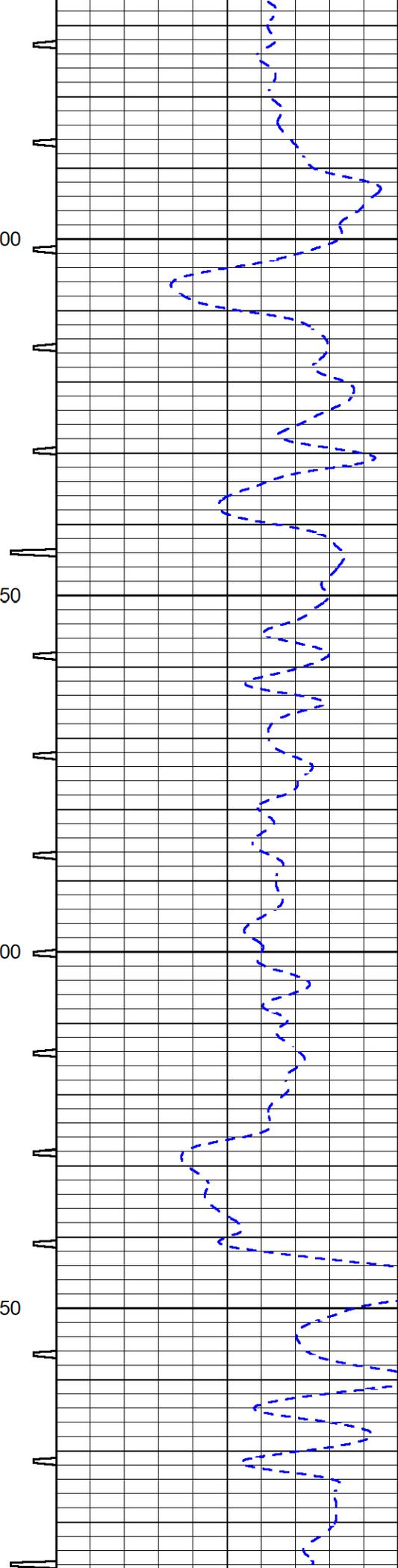


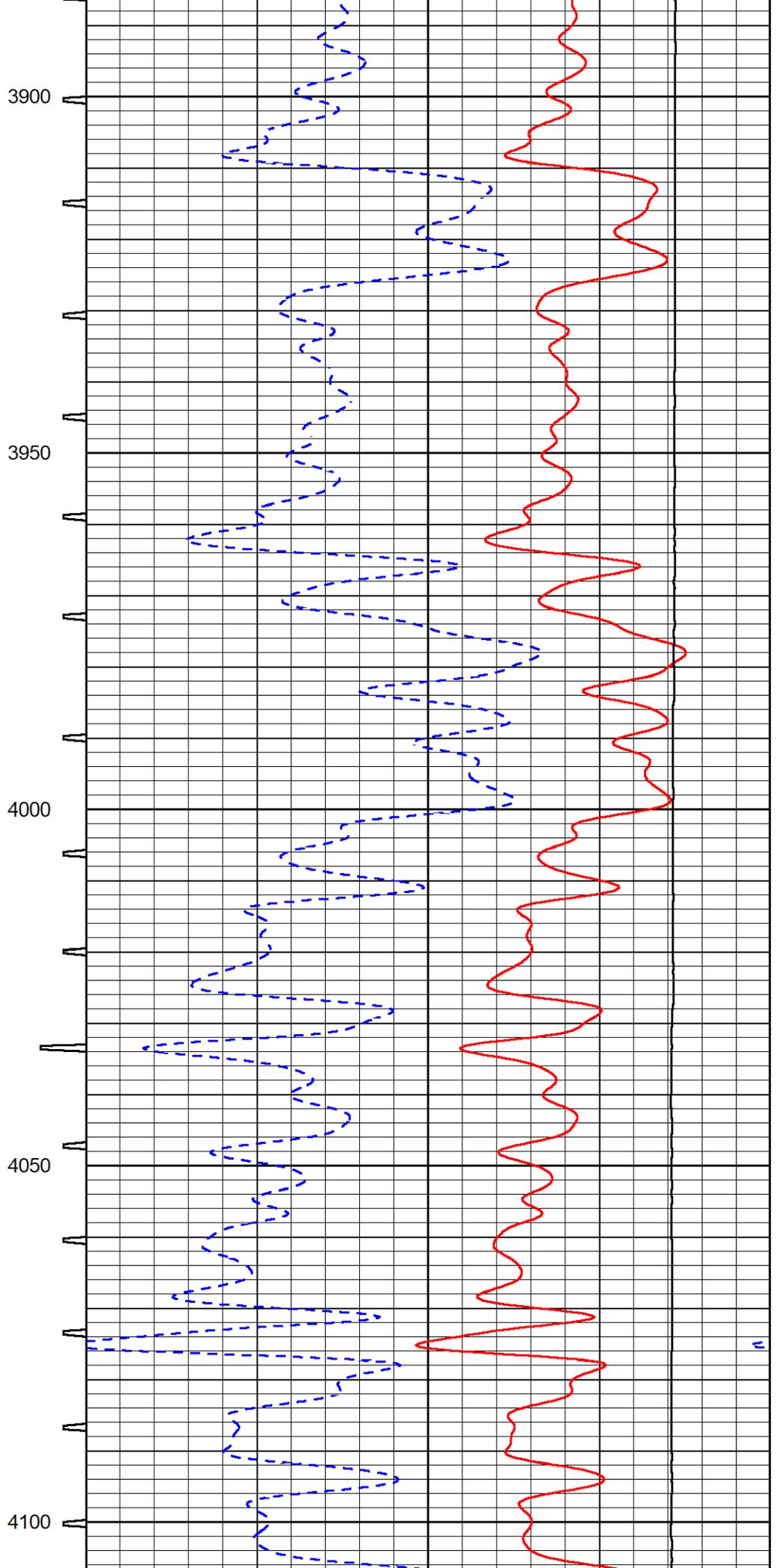
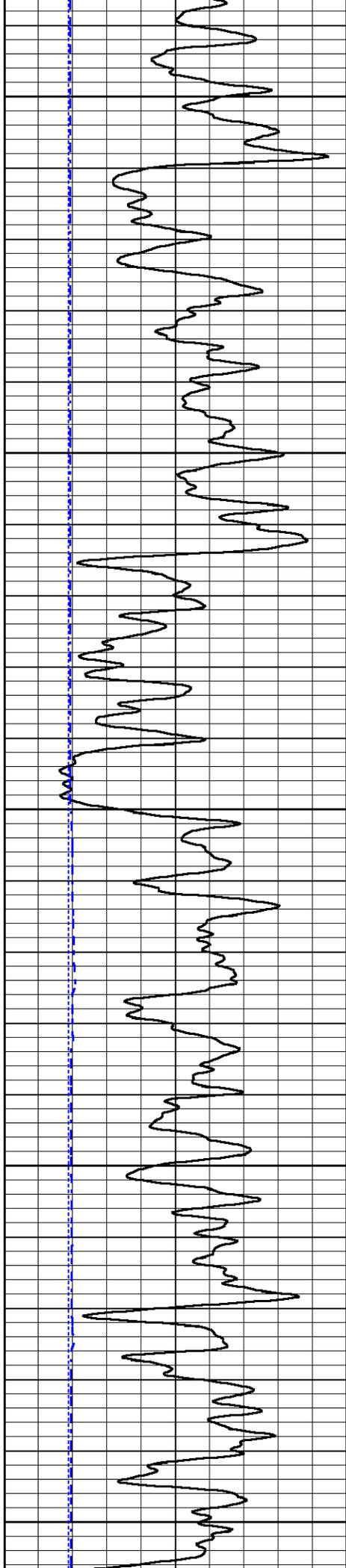
3700

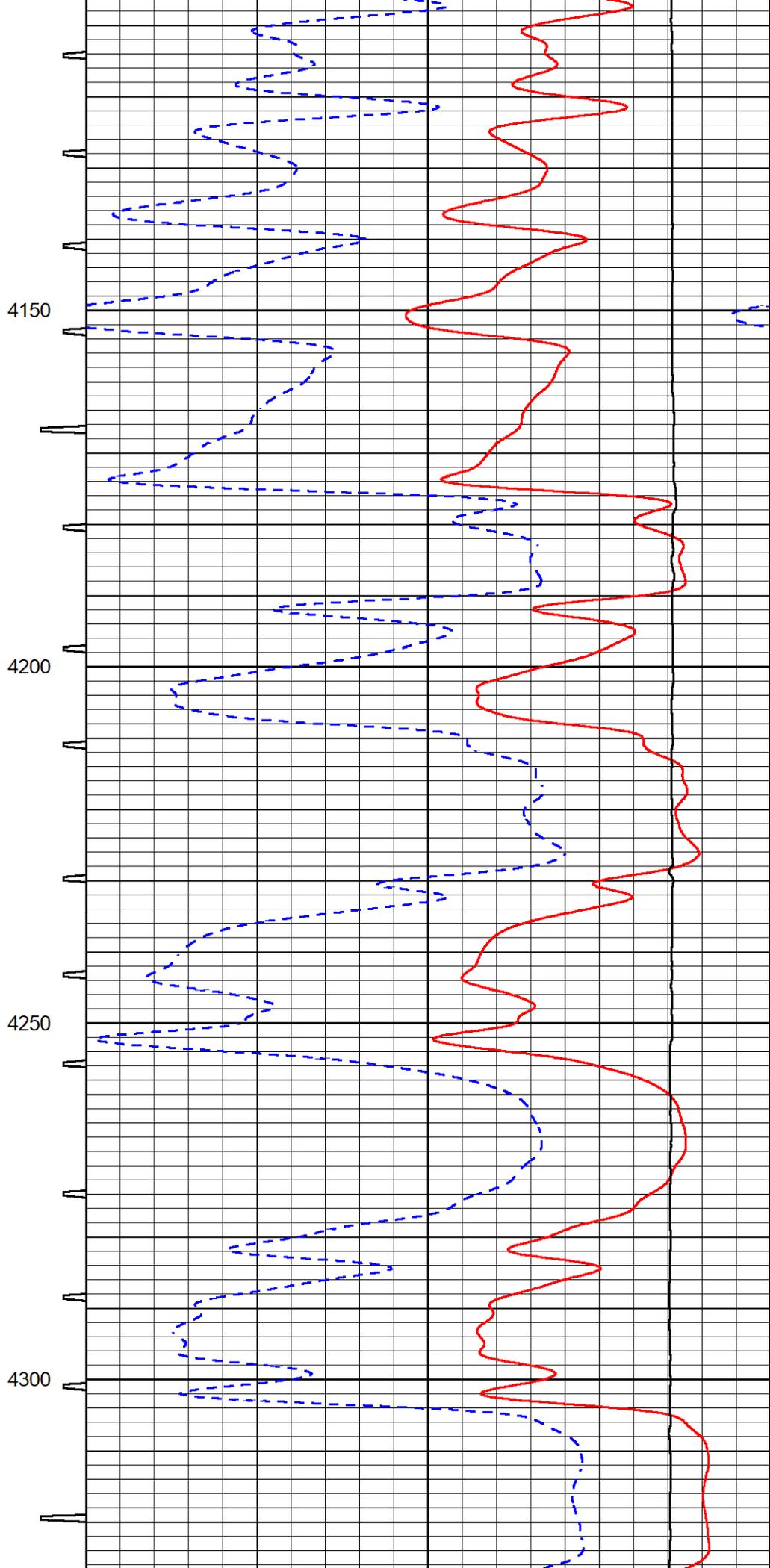
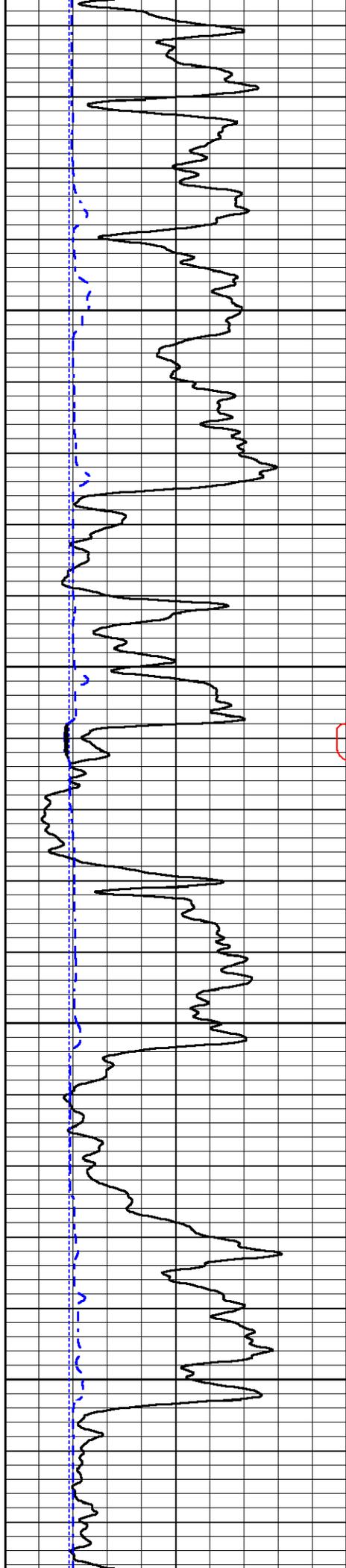
3750

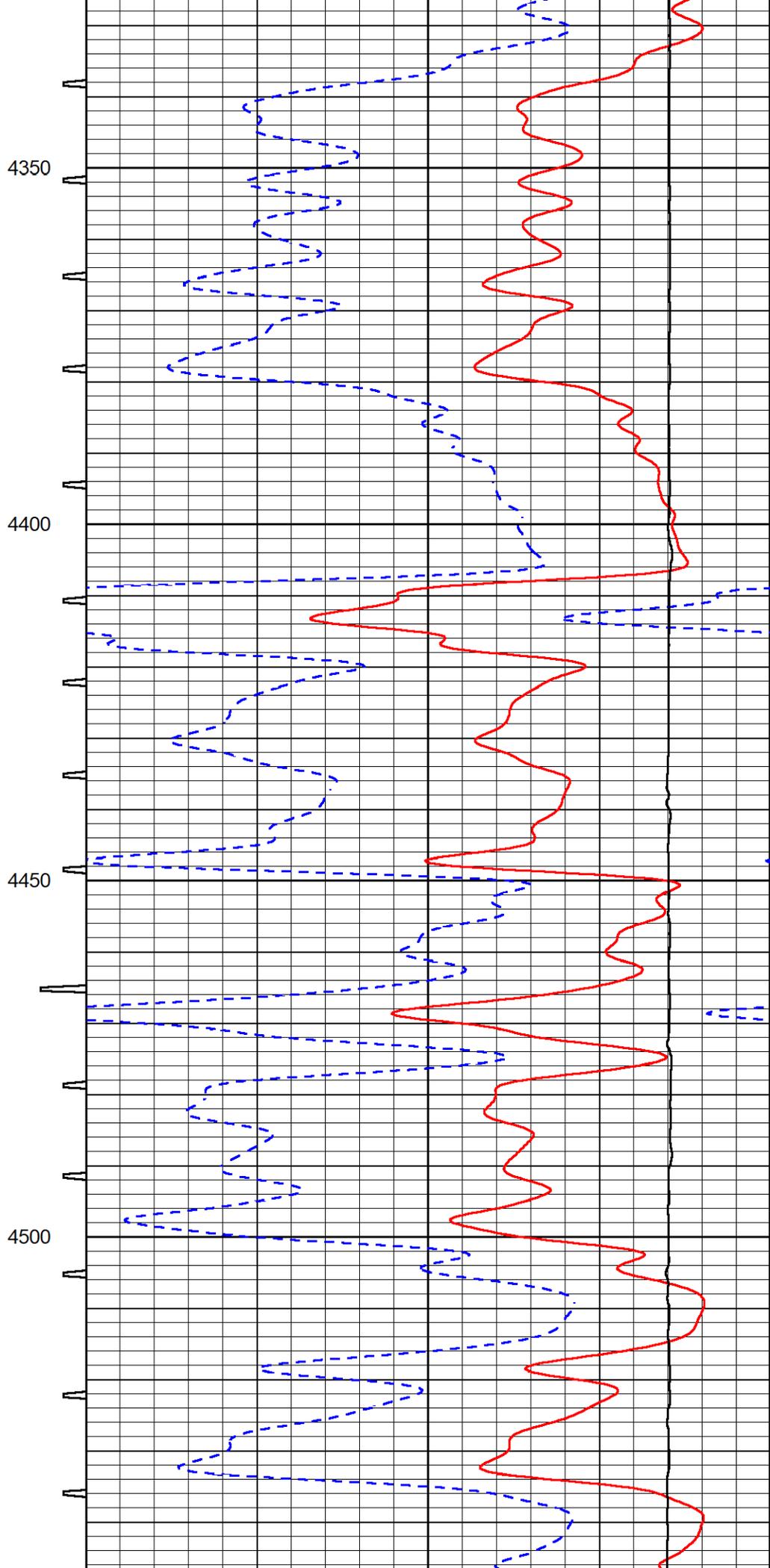
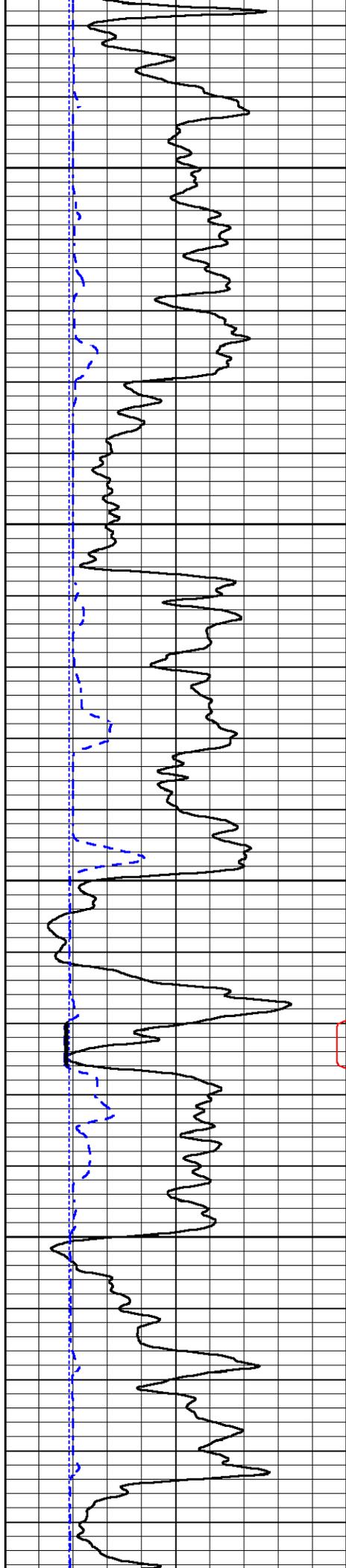
3800

3850







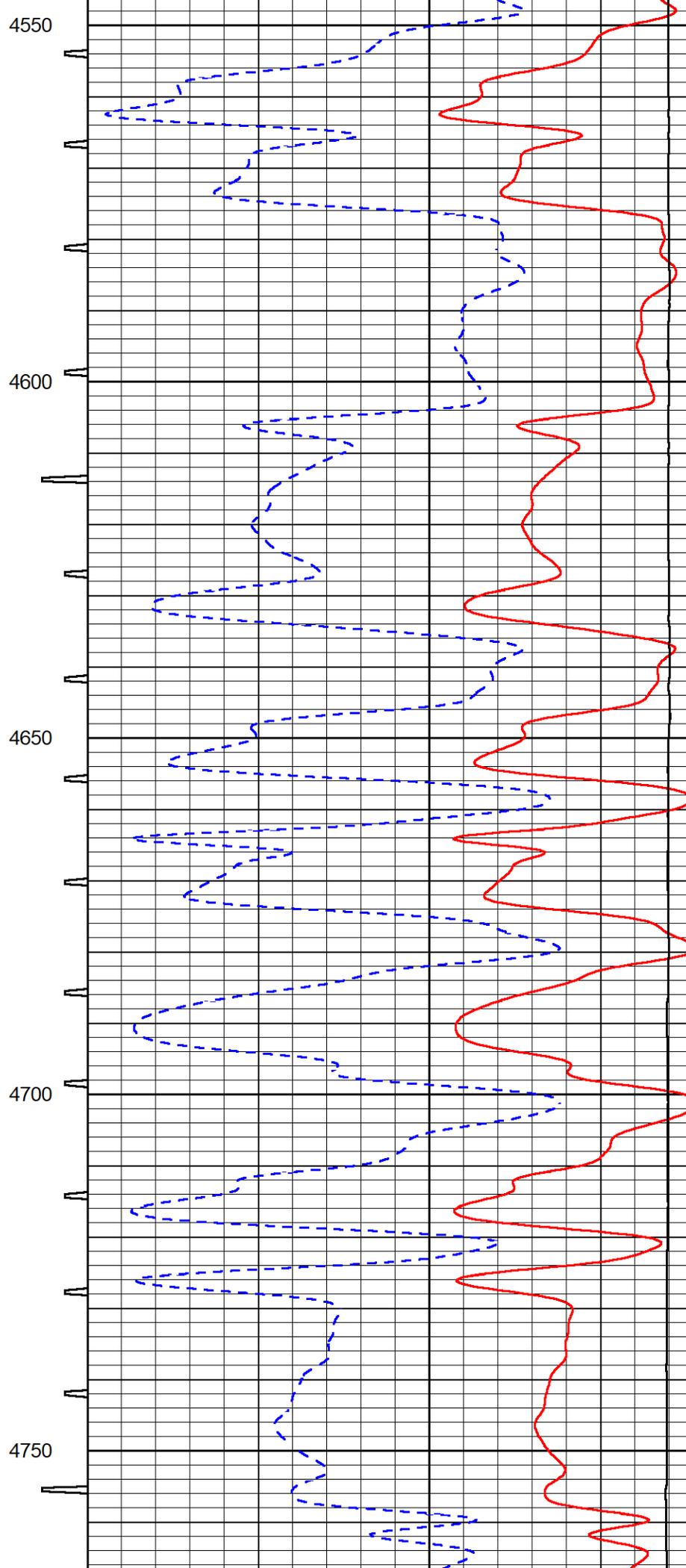
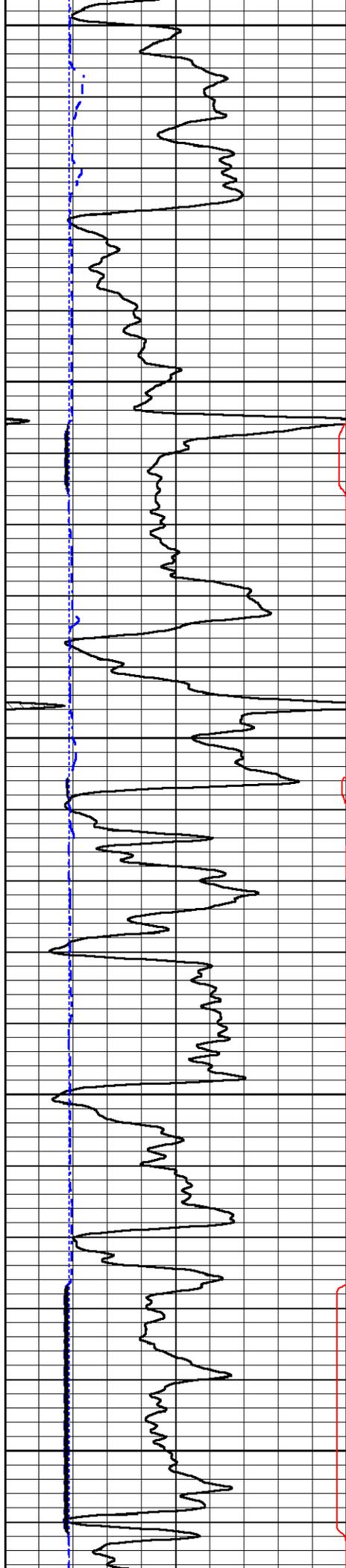


4350

4400

4450

4500



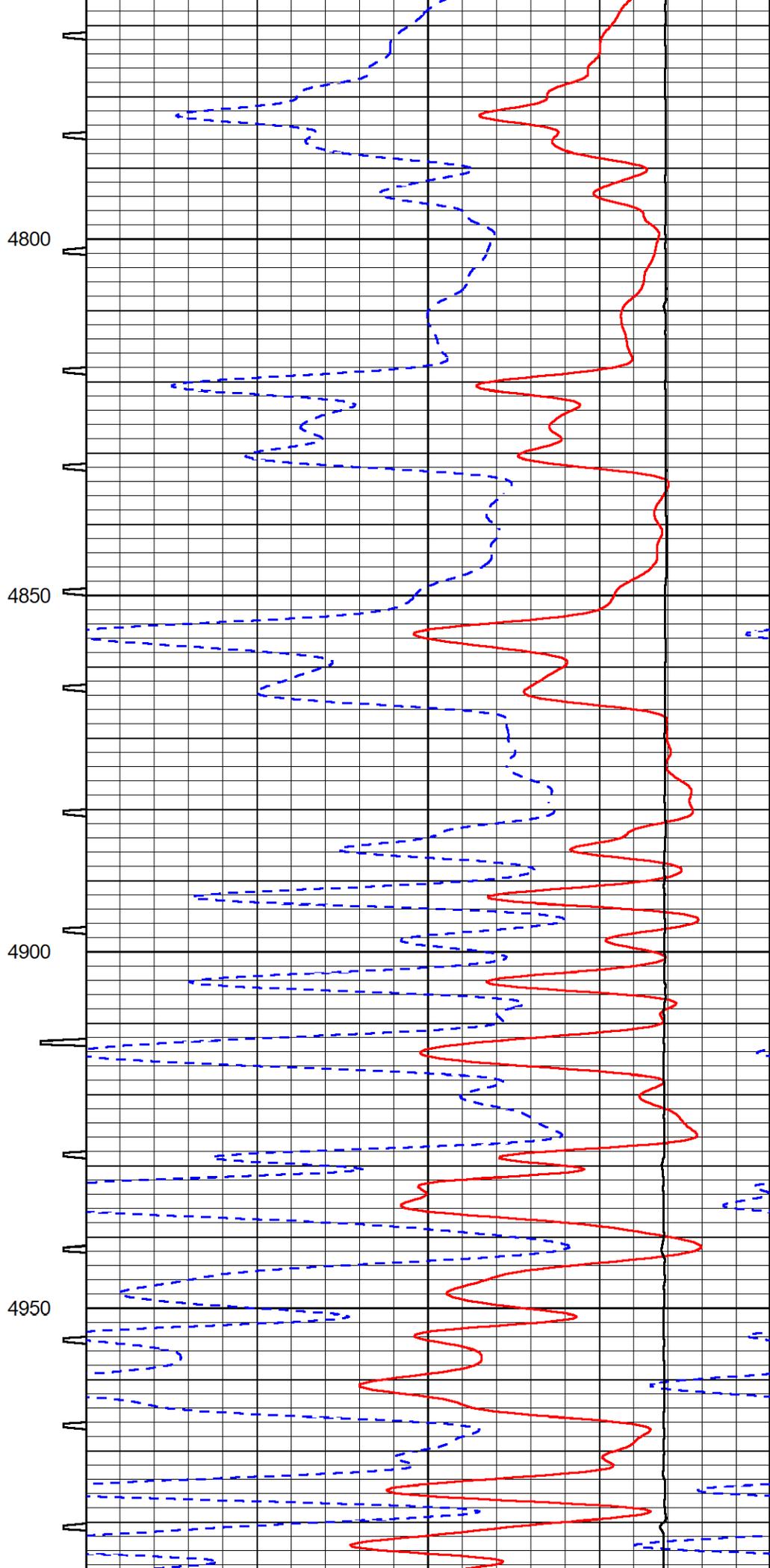
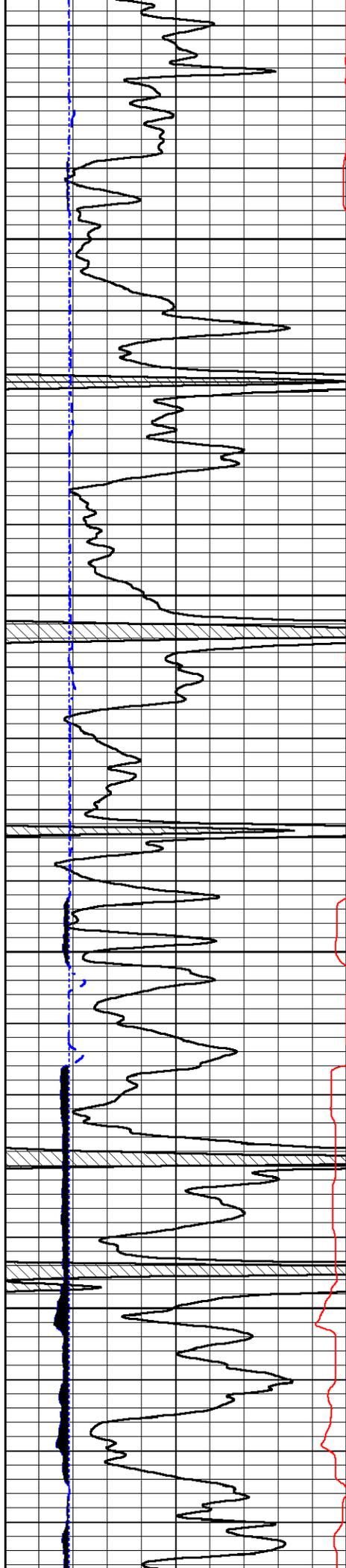
4550

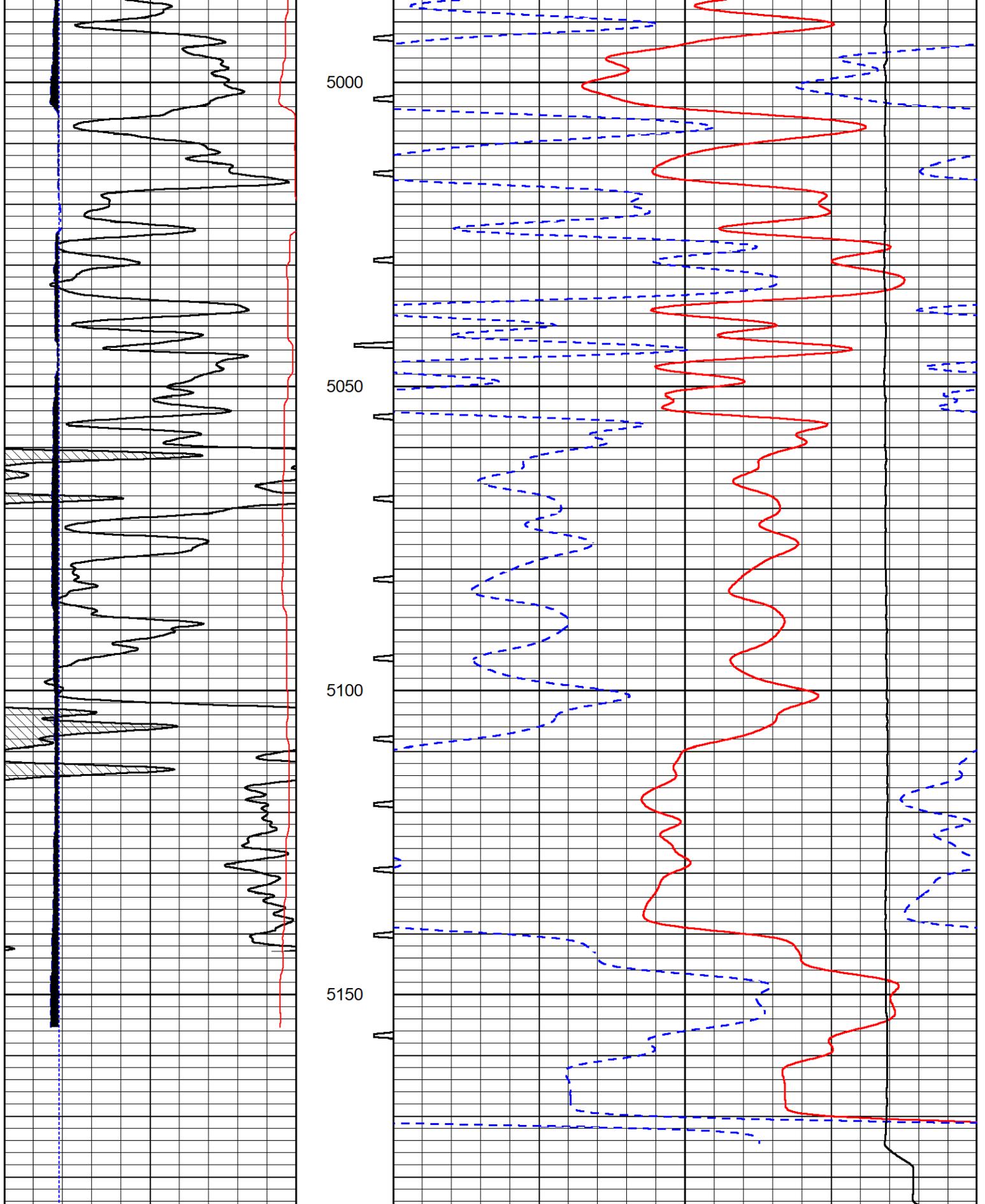
4600

4650

4700

4750





0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	LCAL (in)	16		15000	Line Tension (lb)	0
2.875	lcal (in)	7.875				

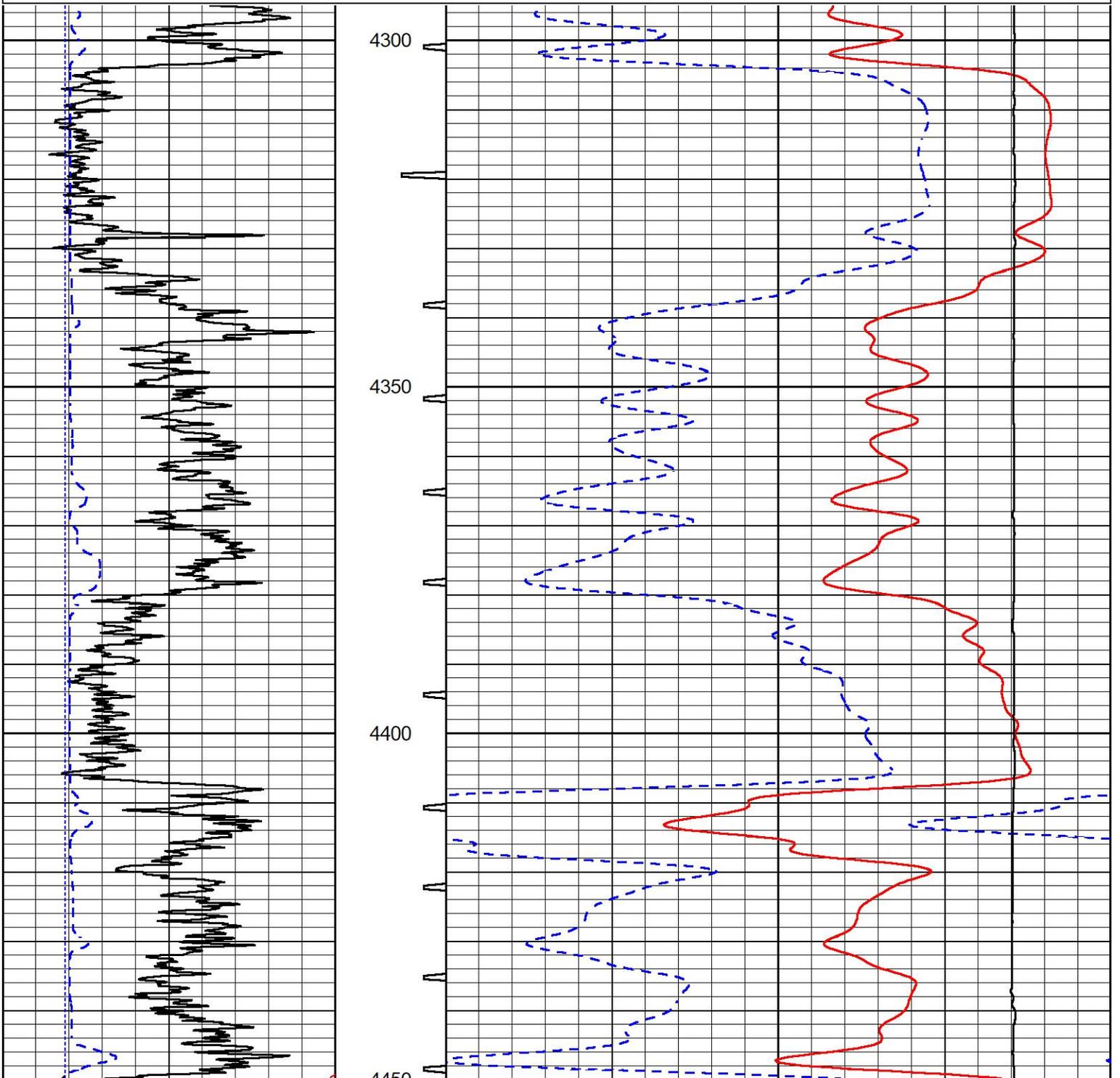


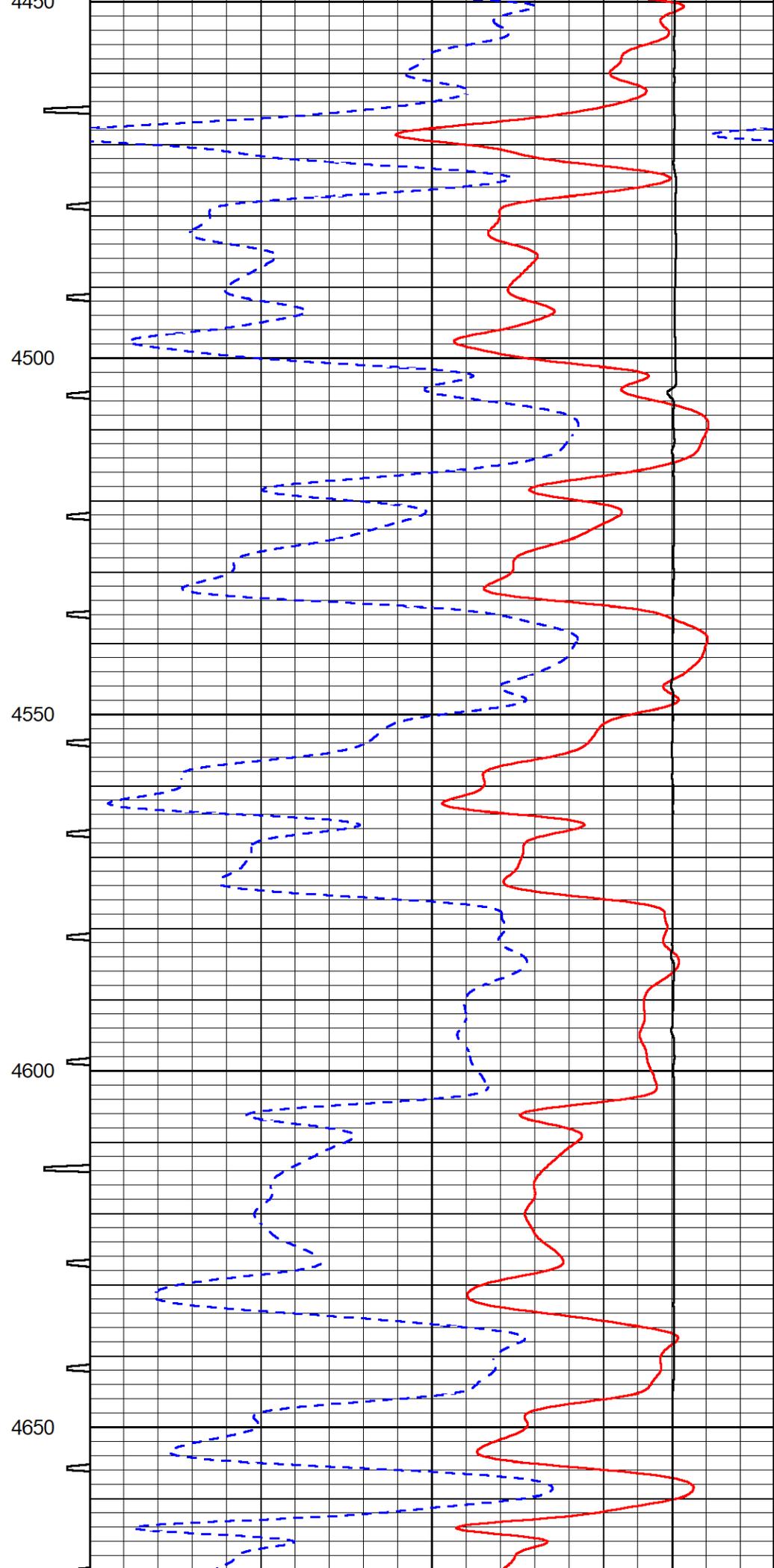
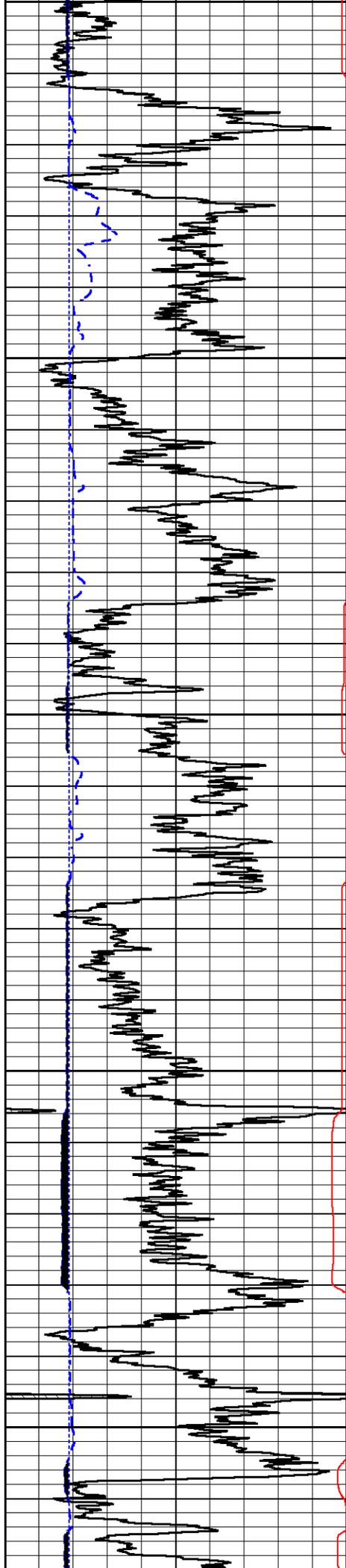
REPEAT SECTION

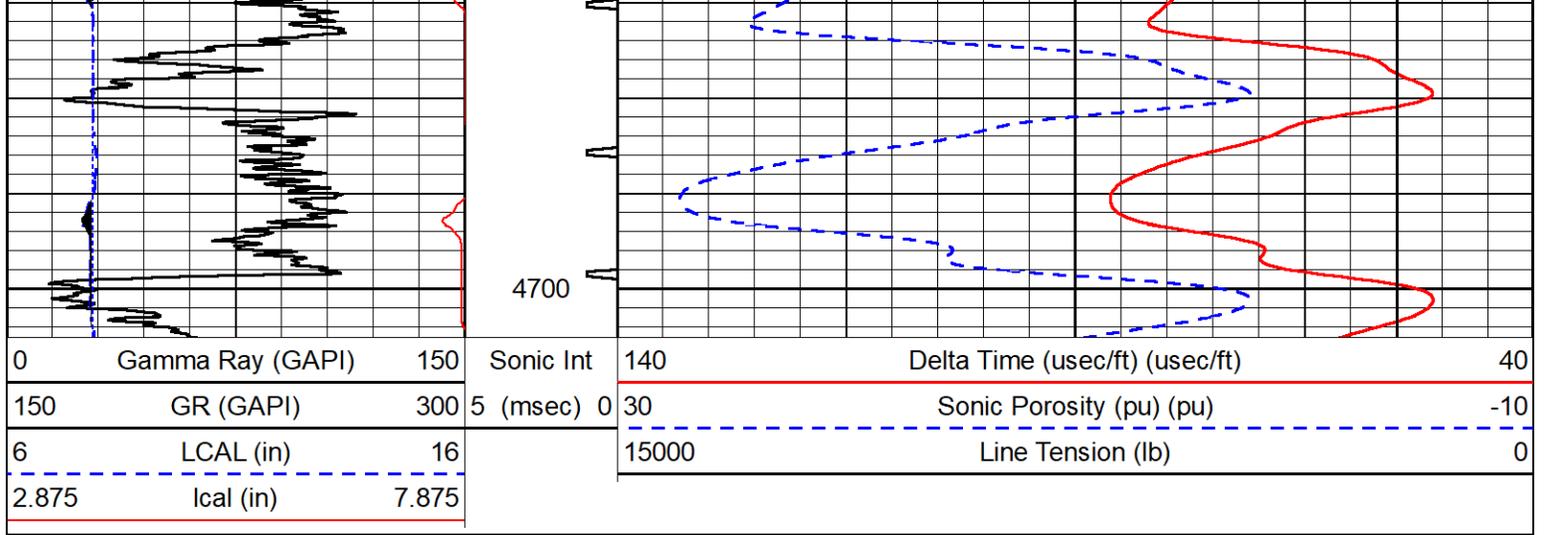
REPEAT PASS

Database File murfin_hester 4-7.db
 Dataset Pathname stkml/pass2.1
 Presentation Format _sonic
 Dataset Creation Sat Aug 26 02:55:29 2023
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	LCAL (in)	16		15000	Line Tension (lb)	0
2.875	lcal (in)	7.875				







Calibration Report

Database File murfin_hester 4-7.db
 Dataset Pathname stkml/pass3.5
 Dataset Creation Sat Aug 26 03:05:15 2023

Dual Induction Calibration Report

Serial-Model: 505 HT-M&W
 Surface Cal Performed: Fri Aug 11 21:22:17 2023

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.480	-42.000
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.410	-40.000

Microlog Calibration Report

Serial-Model: 402-PSI STKBL ML
 Performed: Thu Aug 24 12:21:45 2023

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	30500.0000	-0.7000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	27000.0000	-0.1000
Caliper	1.0046	1.1419	5.5000	20.0000	in	50.0000	-44.4000

LITHODENSITY Calibration Report

Serial Number: 701-01
 Tool Model: STEP LITHO Short
 Performed: Wed Aug 16 15:02:56 2023

Source:

	Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:									
SS:	52	53	205	255	24	69	44	1	cps
LS:	81	85	334	425	46	135	88	2	cps
Aluminum:									
SS:	774	936	2171	1967	43	73	44	2	cps
LS:	847	1595	3011	1457	56	137	87	5	cps

Magnesium:
 SS: 1271 1508 3520 2831 46 71 45 3 cps
 LS: 3600 6590 11760 4608 88 128 83 13 cps

Aluminum+Iron:
 SS: 492 651 1805 1706 40 72 44 2 cps
 LS: 499 1107 2530 1299 53 134 86 4 cps

	Density			PE				
	Actual	Calibrated		Actual	Calibrated	Quality		
Background:								
SS:						0.222		
LS:						0.212		
Aluminum:								
SS:	2.6000	2.6000	g/cc			0.248		
LS:	2.6000	2.6000	g/cc			0.220		
Magnesium:								
SS:	1.6800	1.6800	g/cc	2.5700	2.5700	0.222		
LS:	1.6800	1.6800	g/cc	2.5700	2.5700	0.213		
Aluminum+Iron:								
SS:					6.1800	0.239		
LS:					6.1800	0.214		

Caliper:	Reference:	Reading:
Small Ring:	6.0 in	100.0
Large Ring:	16.0 in	400.0
Gain:	18.000	
Offset:	0.185	

Compensated Neutron Calibration Report

Serial Number: 210
 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

Gamma Ray Calibration Report

Serial Number: 105
 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



Company Murfin Drilling Company, Inc.
 Well Hester #4-7
 Field Sarah Ann
 County Cheyenne
 State Kansas