MIDWEST WIRELINE

DUAL INDUCTION LOG

Company Murfin Drilling Company, Inc.
Well MJ Unit #1-10
Field
County Cheyenne State Kansas
Location: API # : 15-023-21582-00-00
830 FSL & 200 FWL
SEC 10 TWP 3S RGE 39W

Other Services: CNL/CDL, MEL/BHCS

Permanent Datum: Ground Level — Elevation: 3419
Log Measured From: Kelly Bushing
Drilling Measured From: Kelly Bushing

Elevation: K.B. 3424, D.F., G.L. 3419

Company Murfin Drilling Company, Inc.
Well MJ Unit #1-10
Field
County Cheyenne
State Kansas

Date	9/29/2022			
Run Number	One			
Depth Driller	5189			
Depth Logger	5187			
Bottom Logged Interval	5186			
Top Log Interval	0			
Casing Driller	8.625 @ 301			
Casing Logger	301			
Bit Size	7.875			
Type Fluid in Hole	Chemical			
Salinity,ppm CL	600			
Density / Viscosity	9.3 / 75			
pH / Fluid Loss	10.5 / 6.8			
Source of Sample	Flowline			
Rm @ Meas. Temp	0.90 @ 88			
Rmf @ Meas. Temp	0.68 @ 88			
Rmc @ Meas. Temp	1.22 @ 88			
Source of Rmf / Rmc	Charts			
Rm @ BHT	0.62 @ 128			
Operating Rig Time	6 Hours			
Max Rec. Temp. F	128			
Equipment Number	P-24			
Location	Hays			
Recorded By	D. Schmidt			
Witnessed By	Marc Summervill			

<<< Fold Here >>>

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Wheeler,
2 East, 5 North

Log Measured From: Kelly Bushing 5 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: D. Schmidt	Primary Witness: Marc Summervill
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
GR	40.33		GR-M&W (106)	3.00	3.50	50.00
CNLSC	37.23		CNT-M&W (207-MW)	5.00	3.50	100.00
CNSSC	36.48					
			CDL-M&W (307-11)	8.50	4.00	250.00
LSD	28.18					
DCAL	28.17					
SSD	27.68					
			ML-PSIML (402)	7.58	4.00	65.00
MCAL	19.58					
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
			DIL-M&W (501 HT)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset:	murfin_mj unit 1-10.db: field/well/stkml/pass4.1
Total length:	42.33 ft
Total weight:	685.00 lb
O.D.:	4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_mj unit 1-10.db
Dataset field/well/stkml/pass4.1/_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	0	0	0	350	90	Off	5187

Variable Description

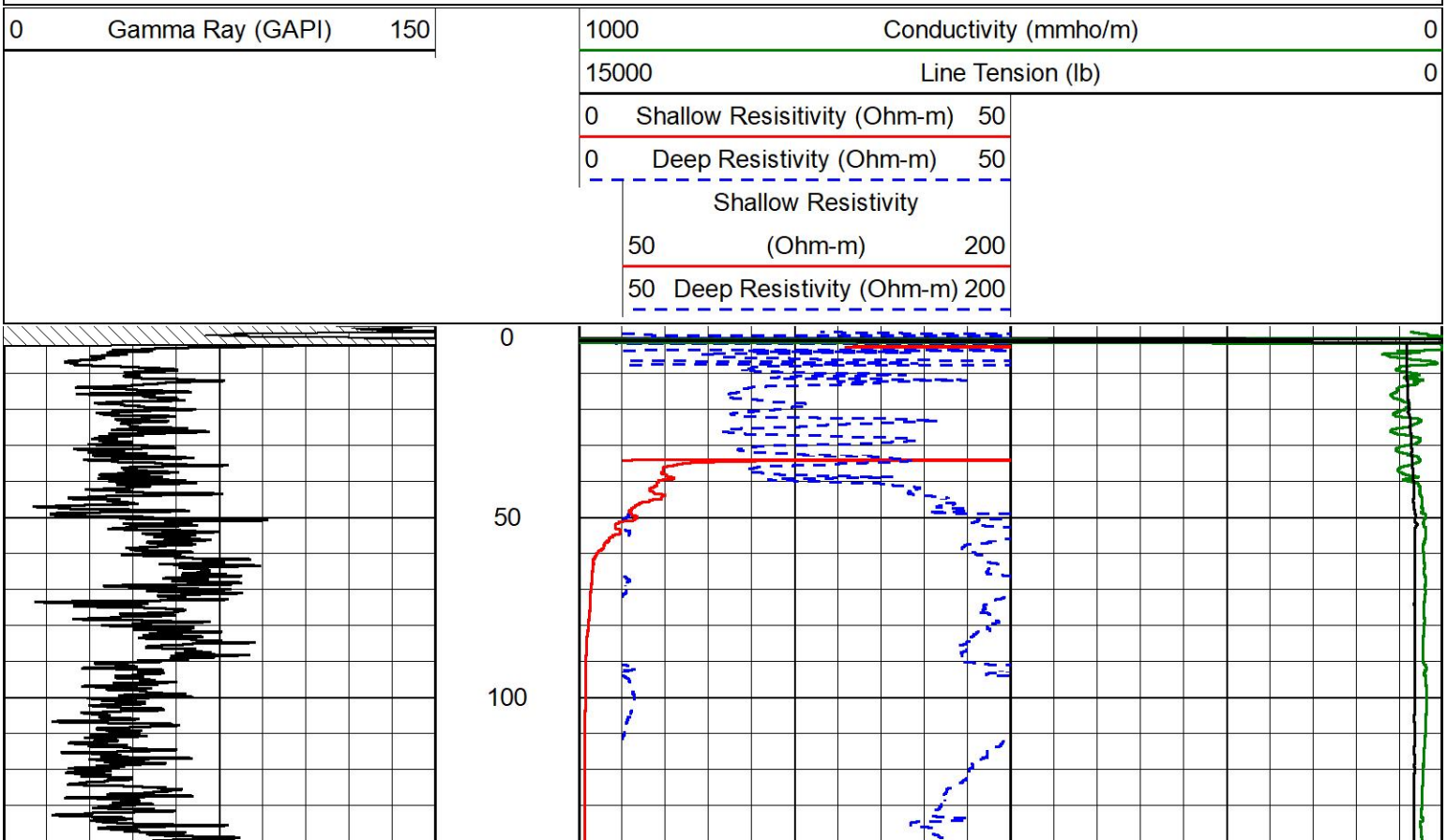
A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density
NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth

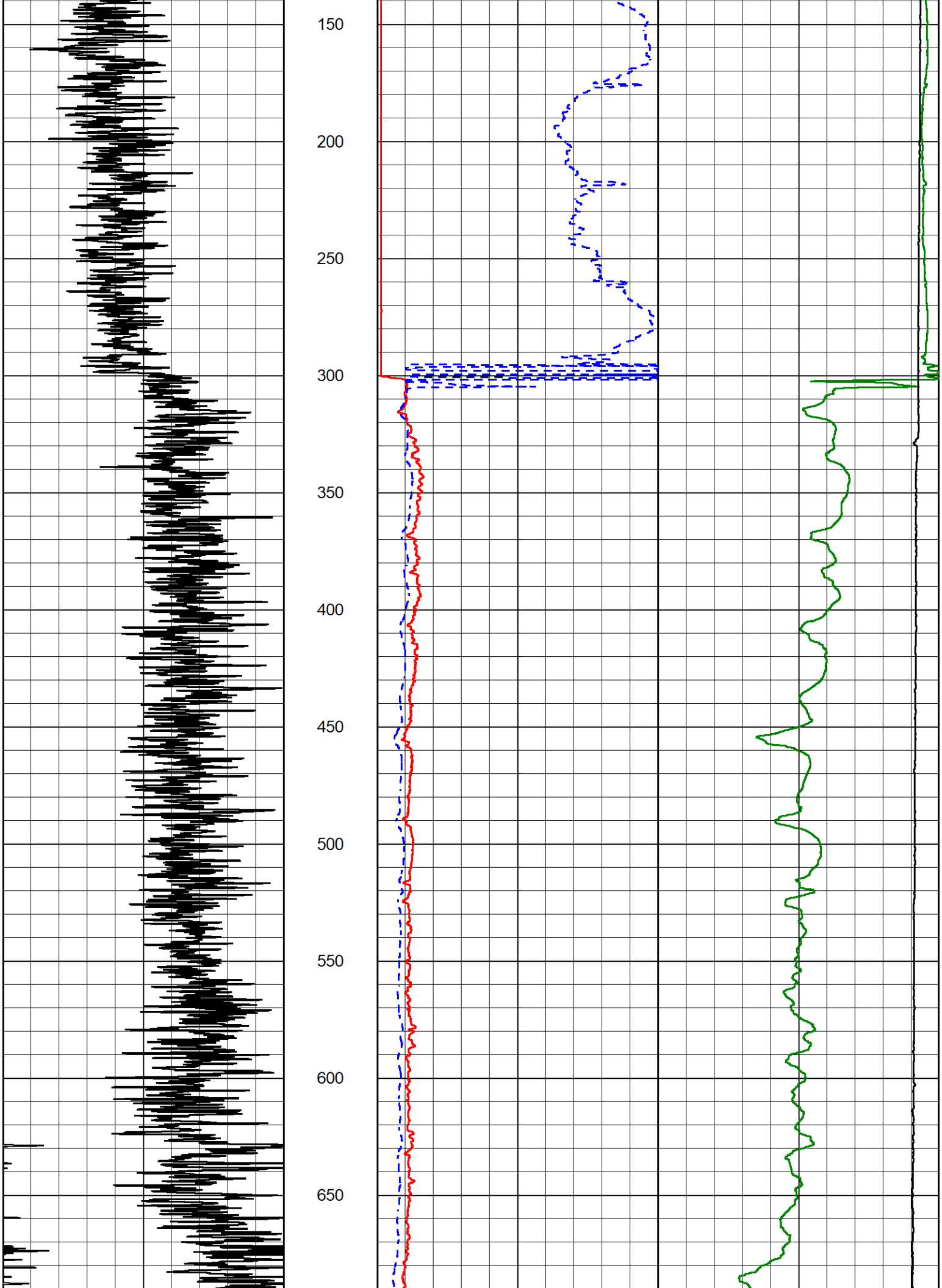
MIDWEST WIRELINE

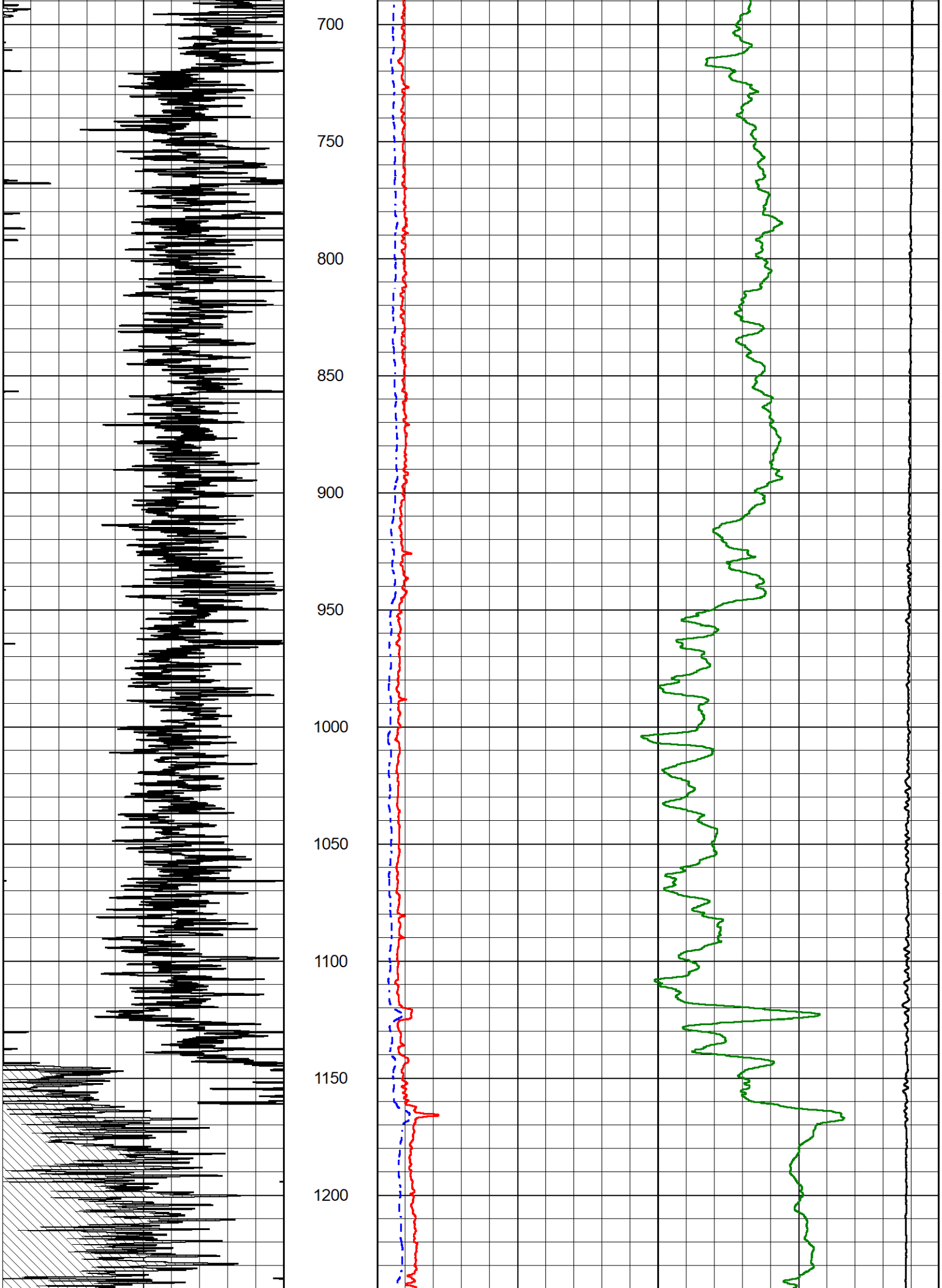
2" SCALE RESISTIVITY

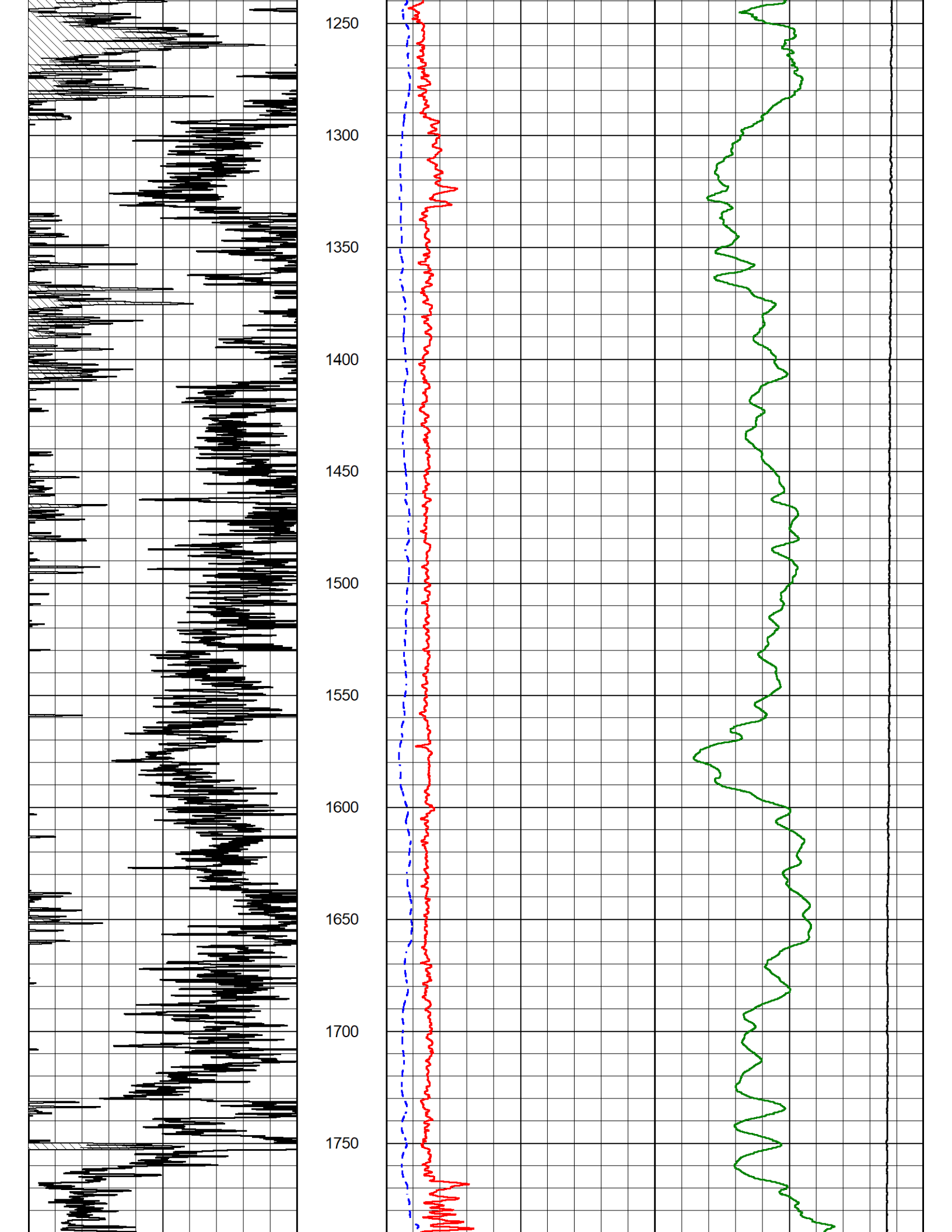
MAIN PASS

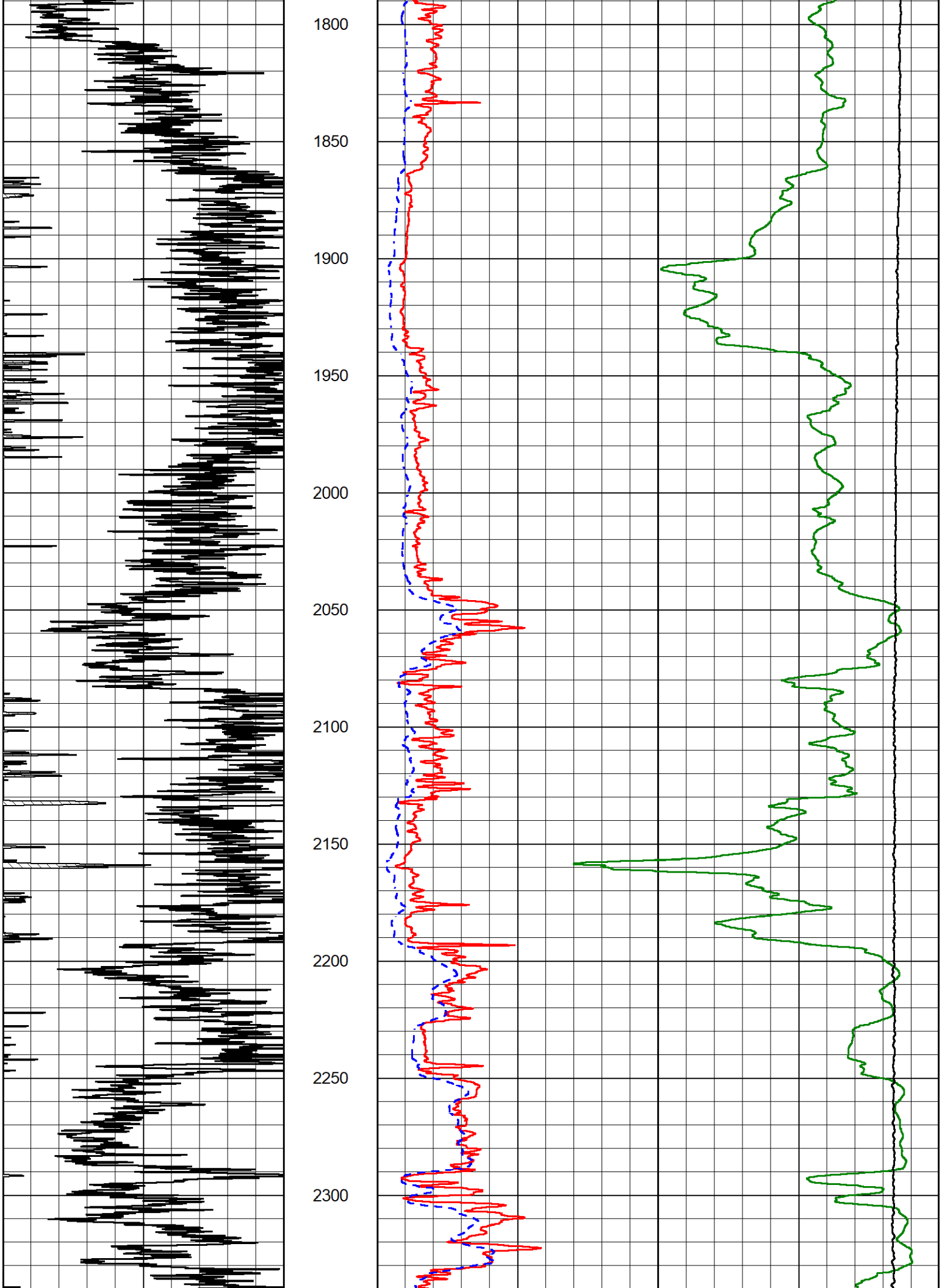
Database File	murfin_mj unit 1-10.db
Dataset Pathname	stkml/pass4.3
Presentation Format	_dil2in
Dataset Creation	Thu Sep 29 19:53:26 2022
Charted by	Depth in Feet scaled 1:600

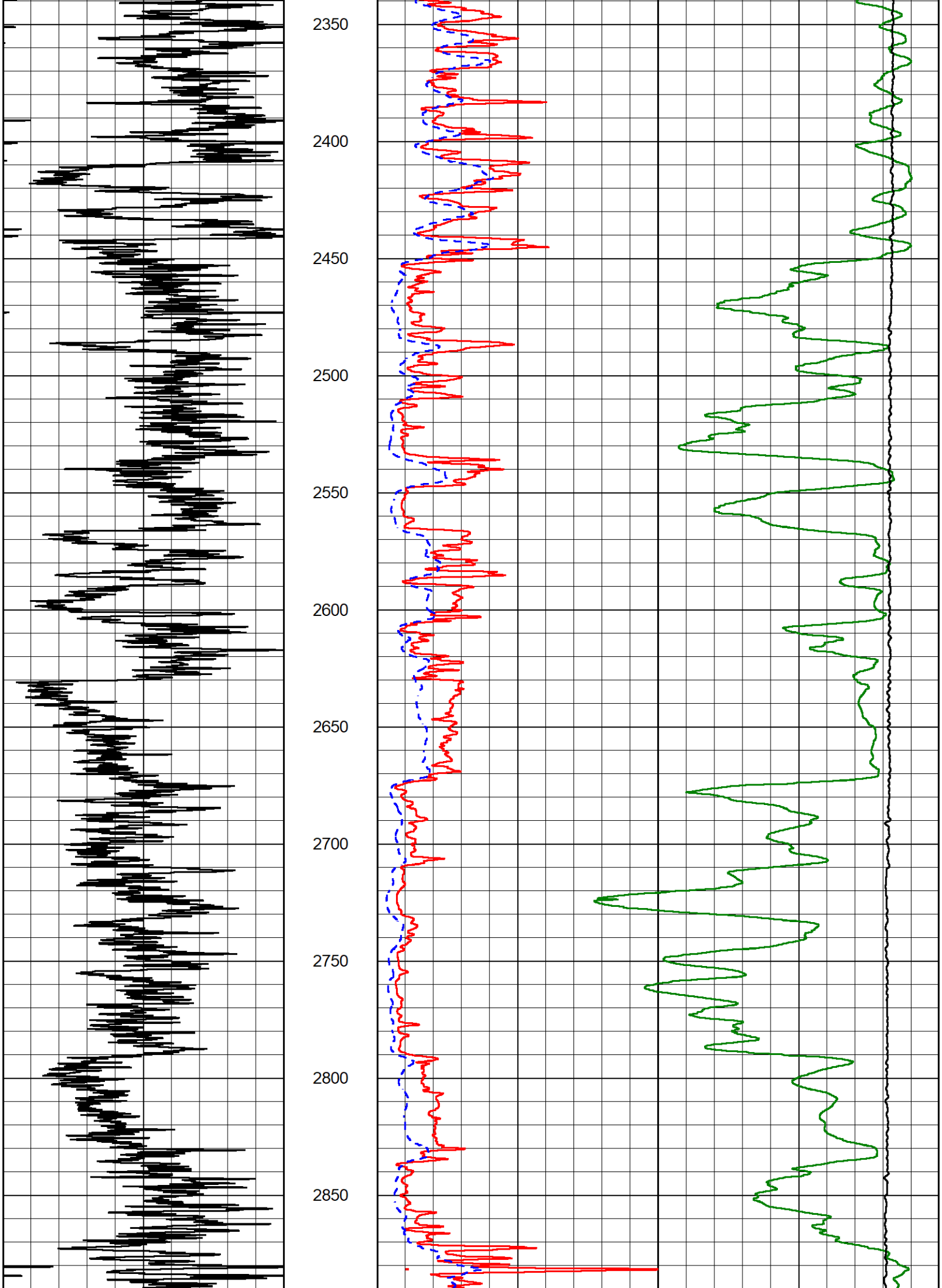


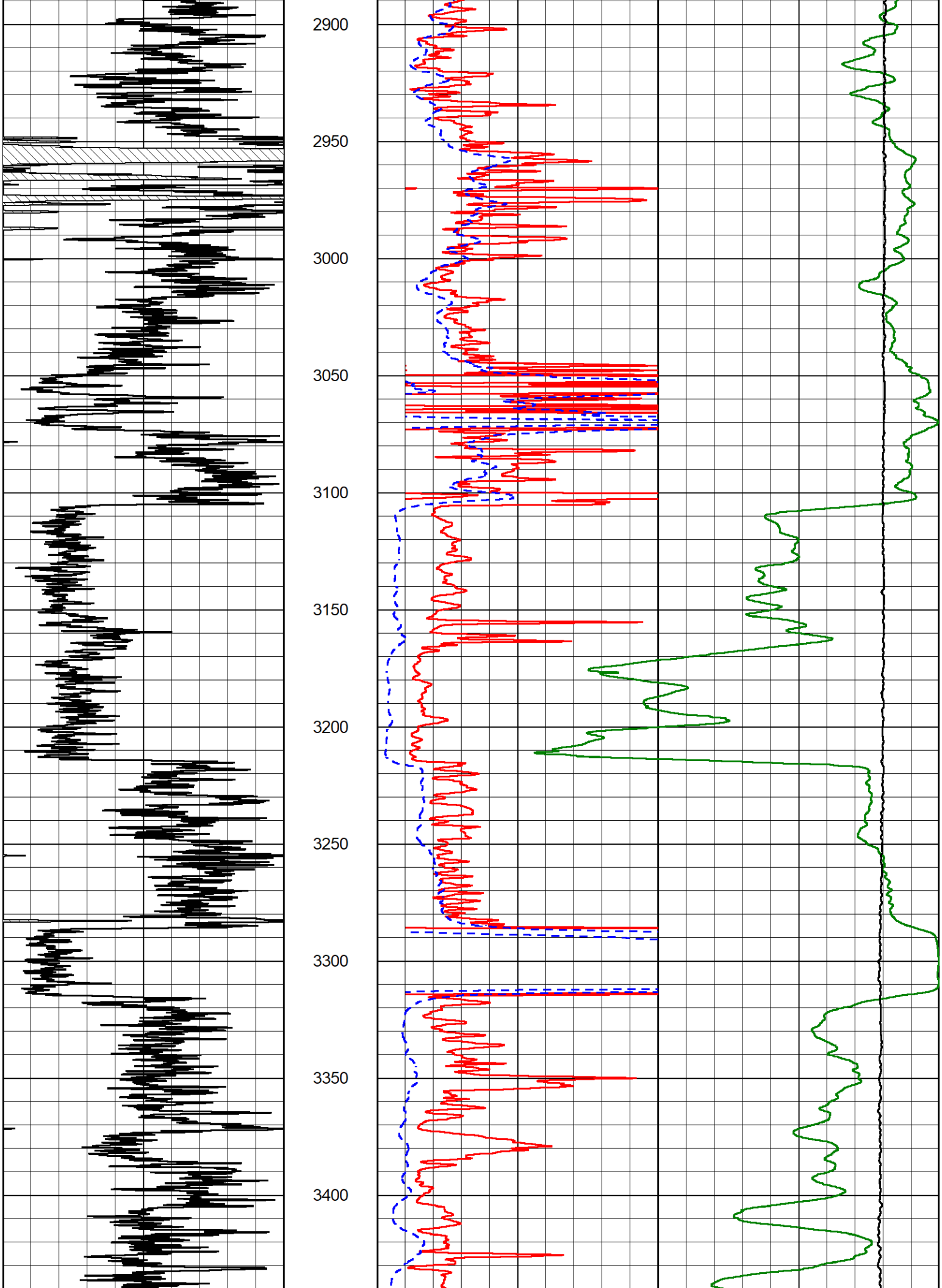

150
200
250
300
350
400
450
500
550
600
650

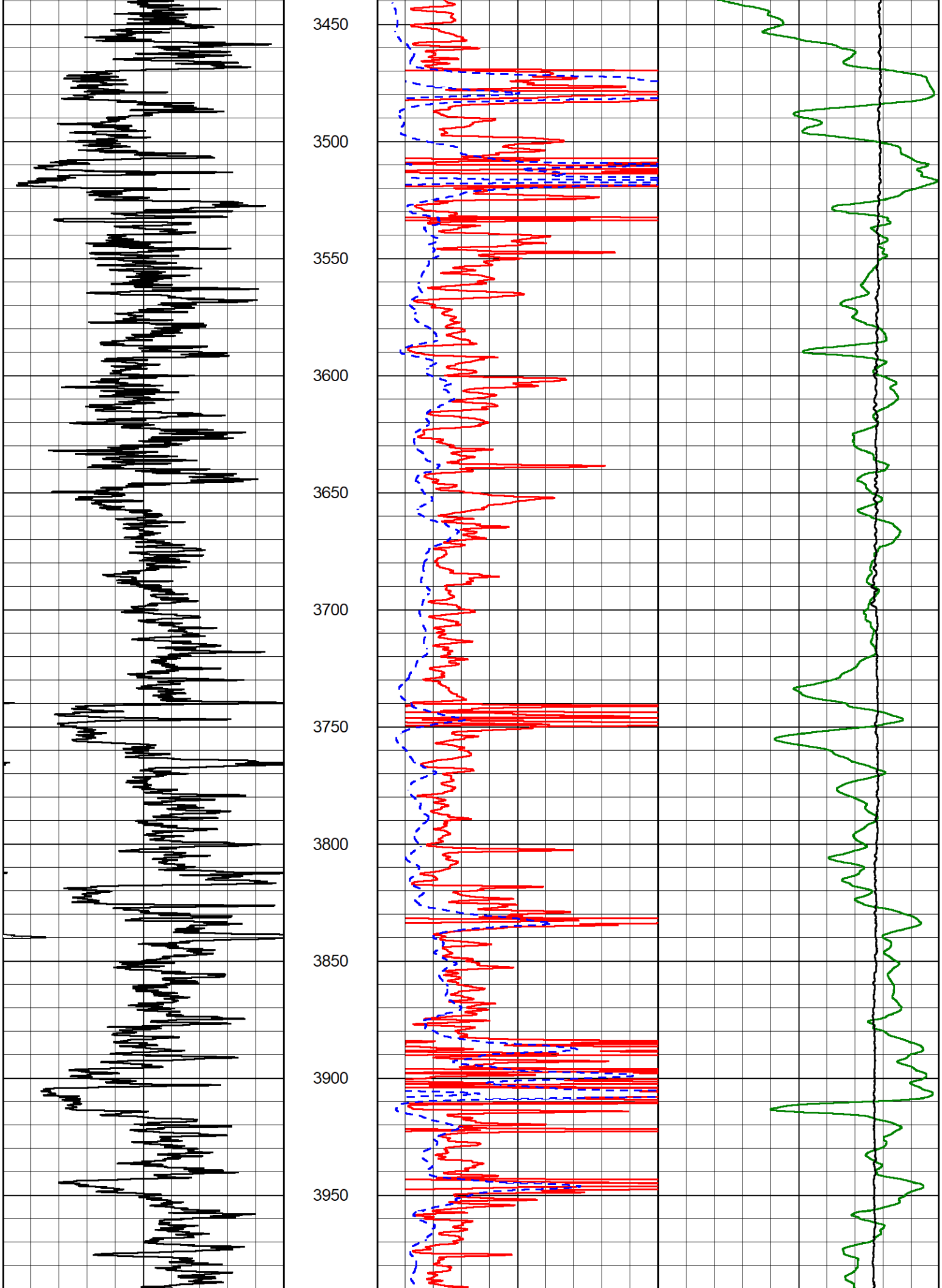

700
750
800
850
900
950
1000
1050
1100
1150
1200

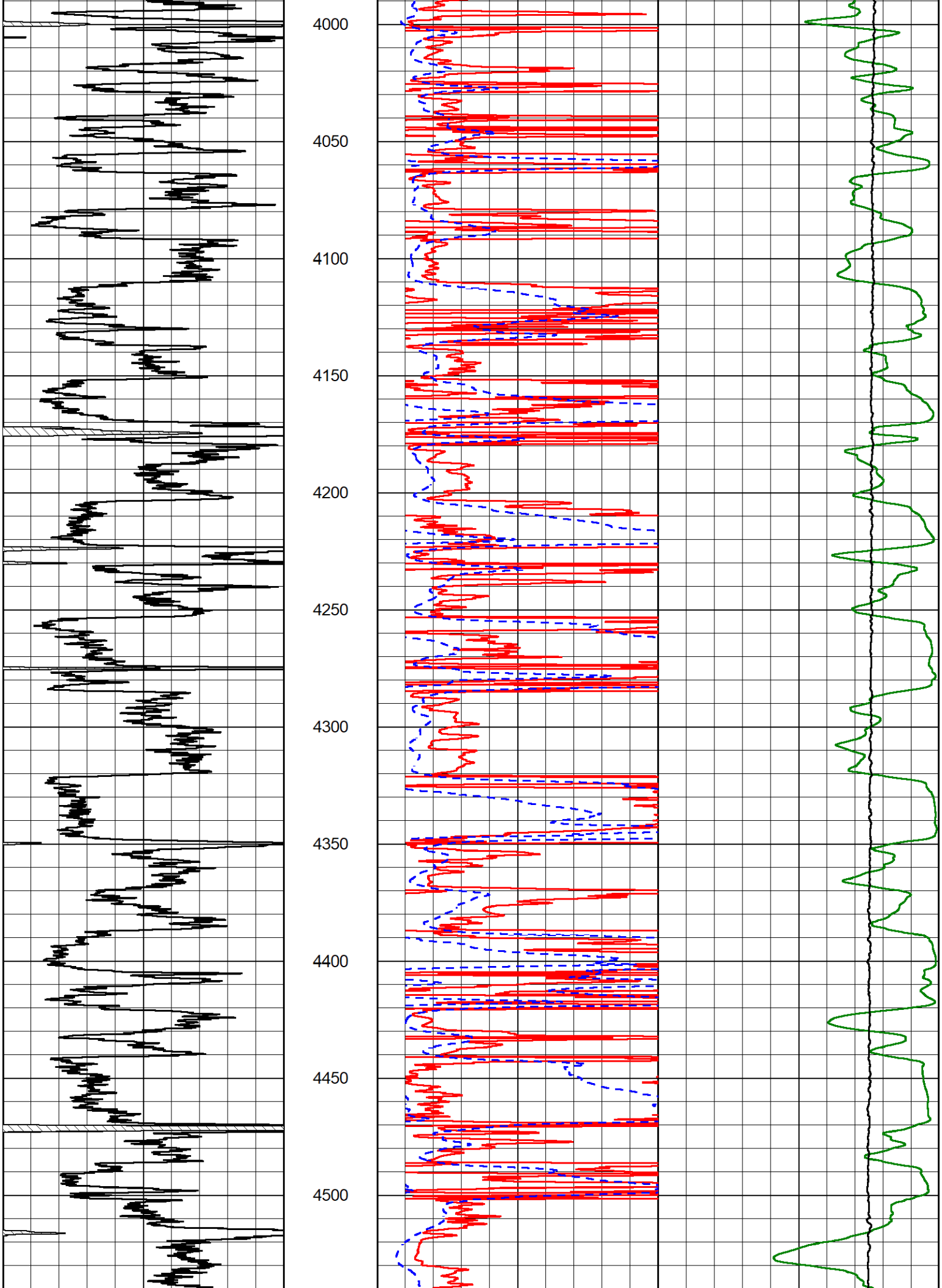

1250
1300
1350
1400
1450
1500
1550
1600
1650
1700
1750

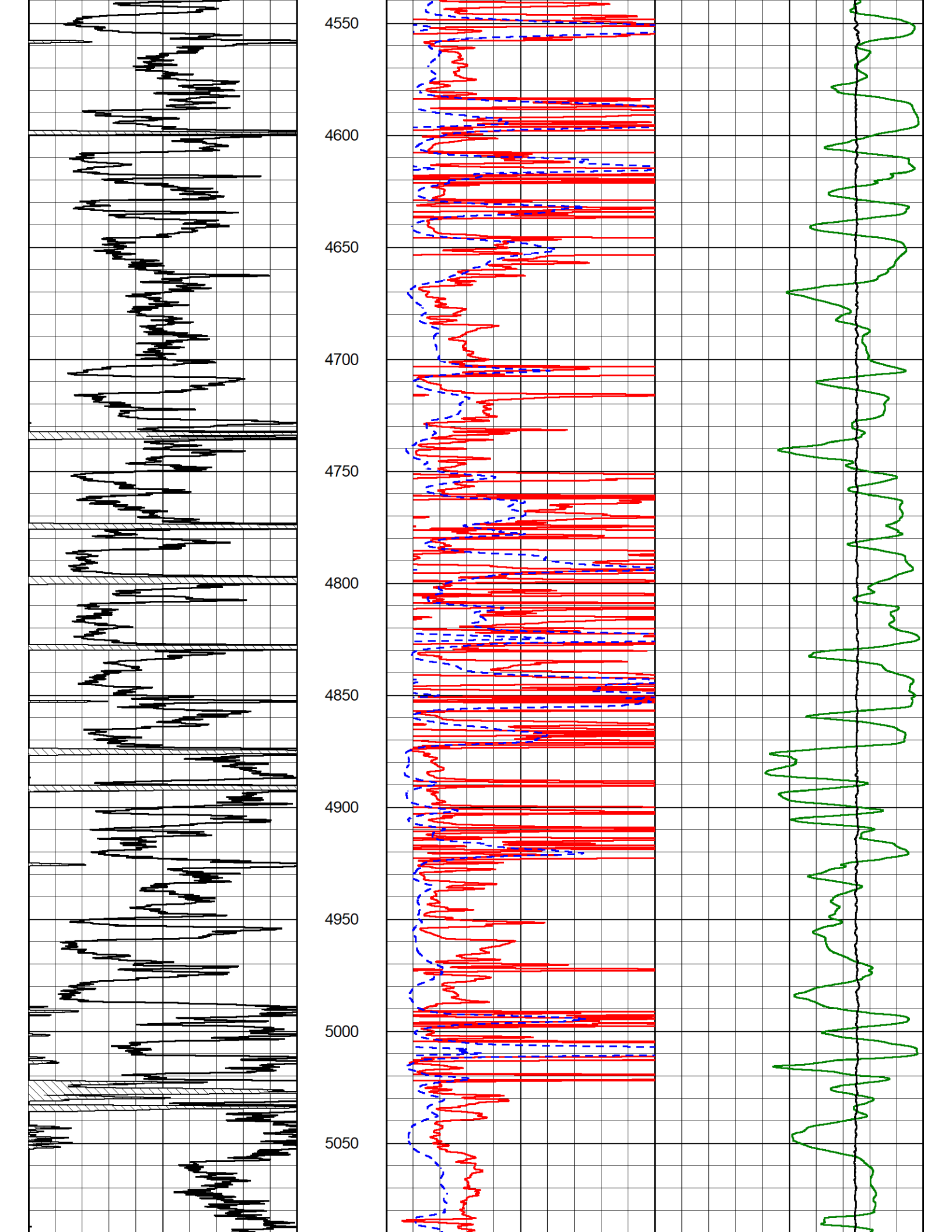

1800
1850
1900
1950
2000
2050
2100
2150
2200
2250
2300

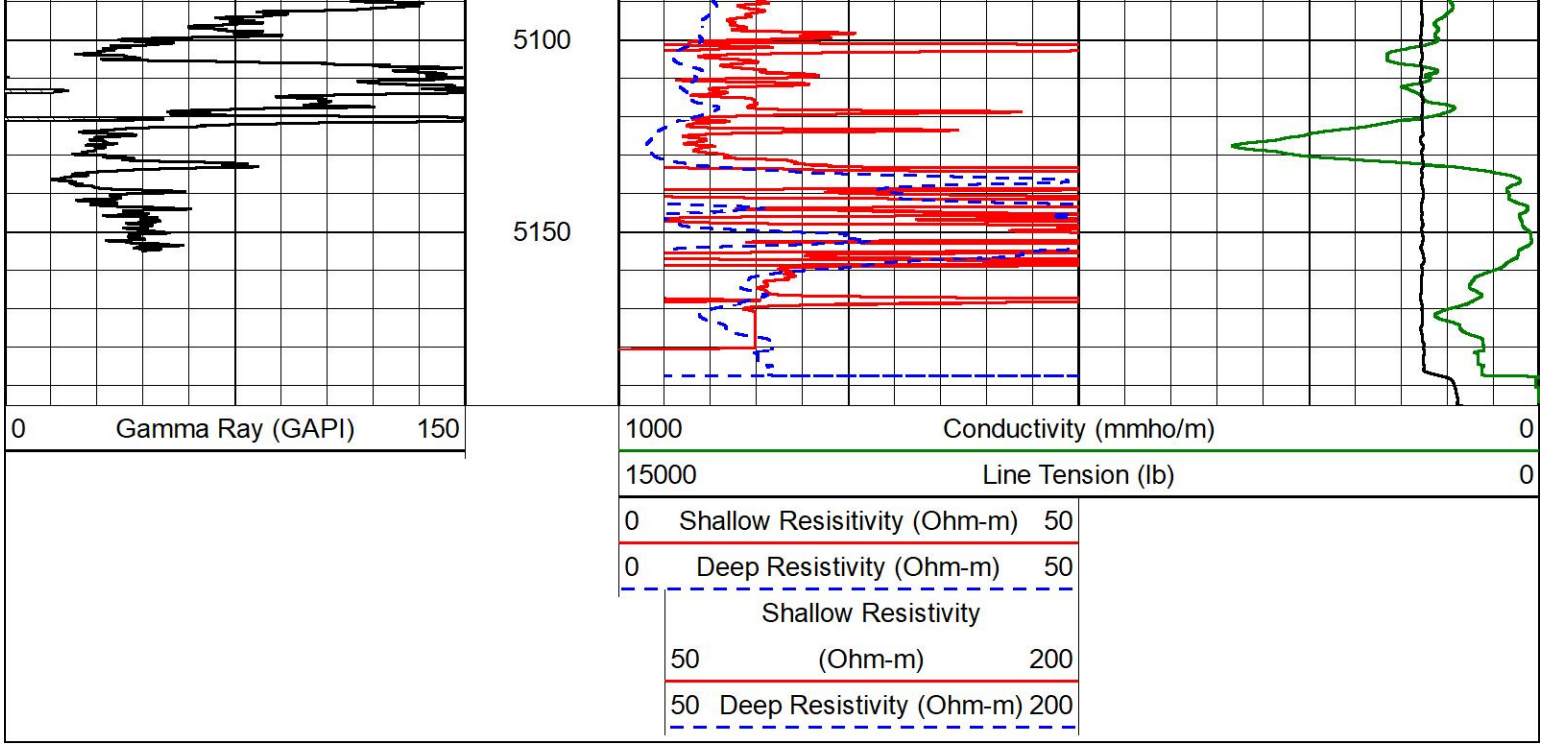

2350
2400
2450
2500
2550
2600
2650
2700
2750
2800
2850


2900
2950
3000
3050
3100
3150
3200
3250
3300
3350
3400


3450
3500
3550
3600
3650
3700
3750
3800
3850
3900
3950


4000
4050
4100
4150
4200
4250
4300
4350
4400
4450
4500


4550
4600
4650
4700
4750
4800
4850
4900
4950
5000
5050

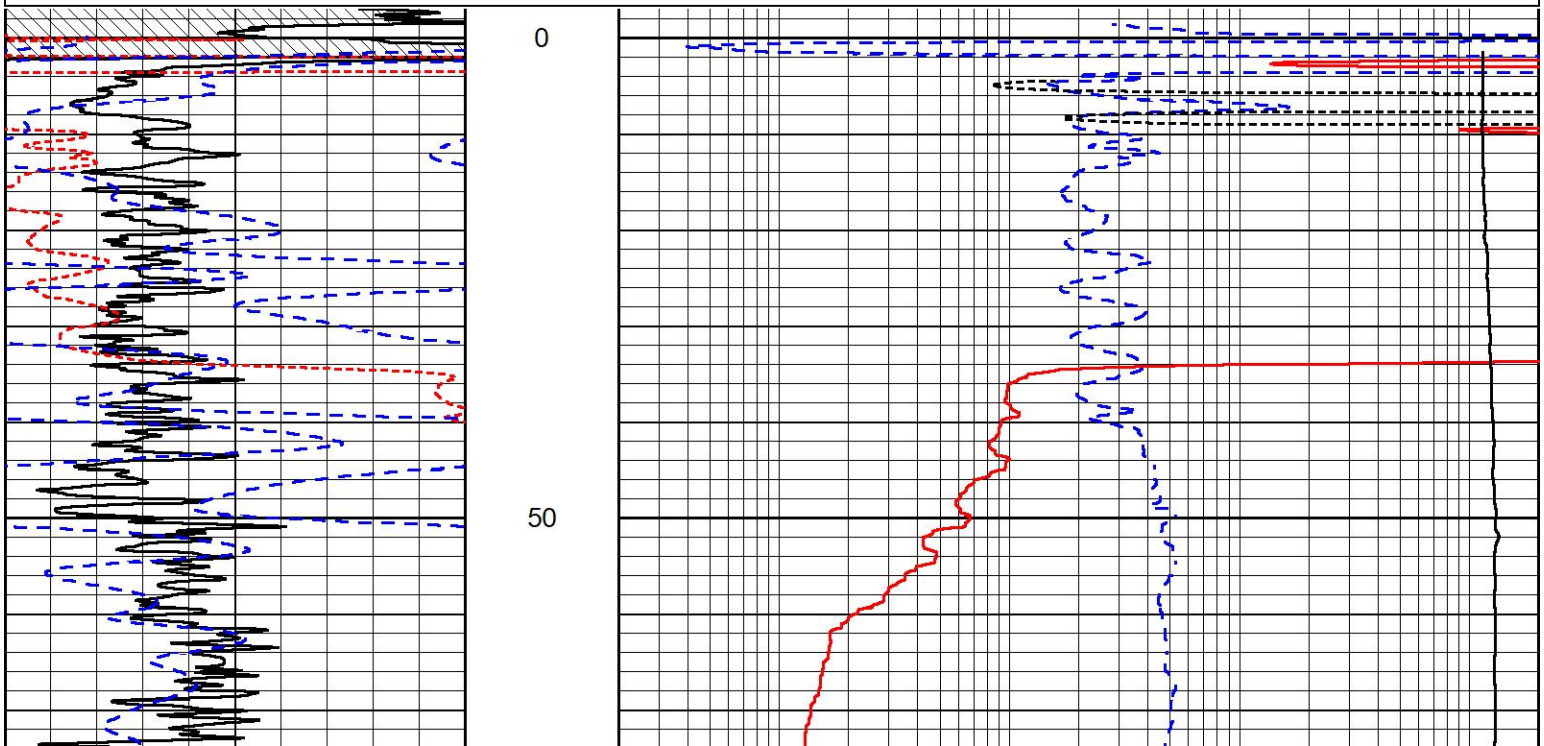


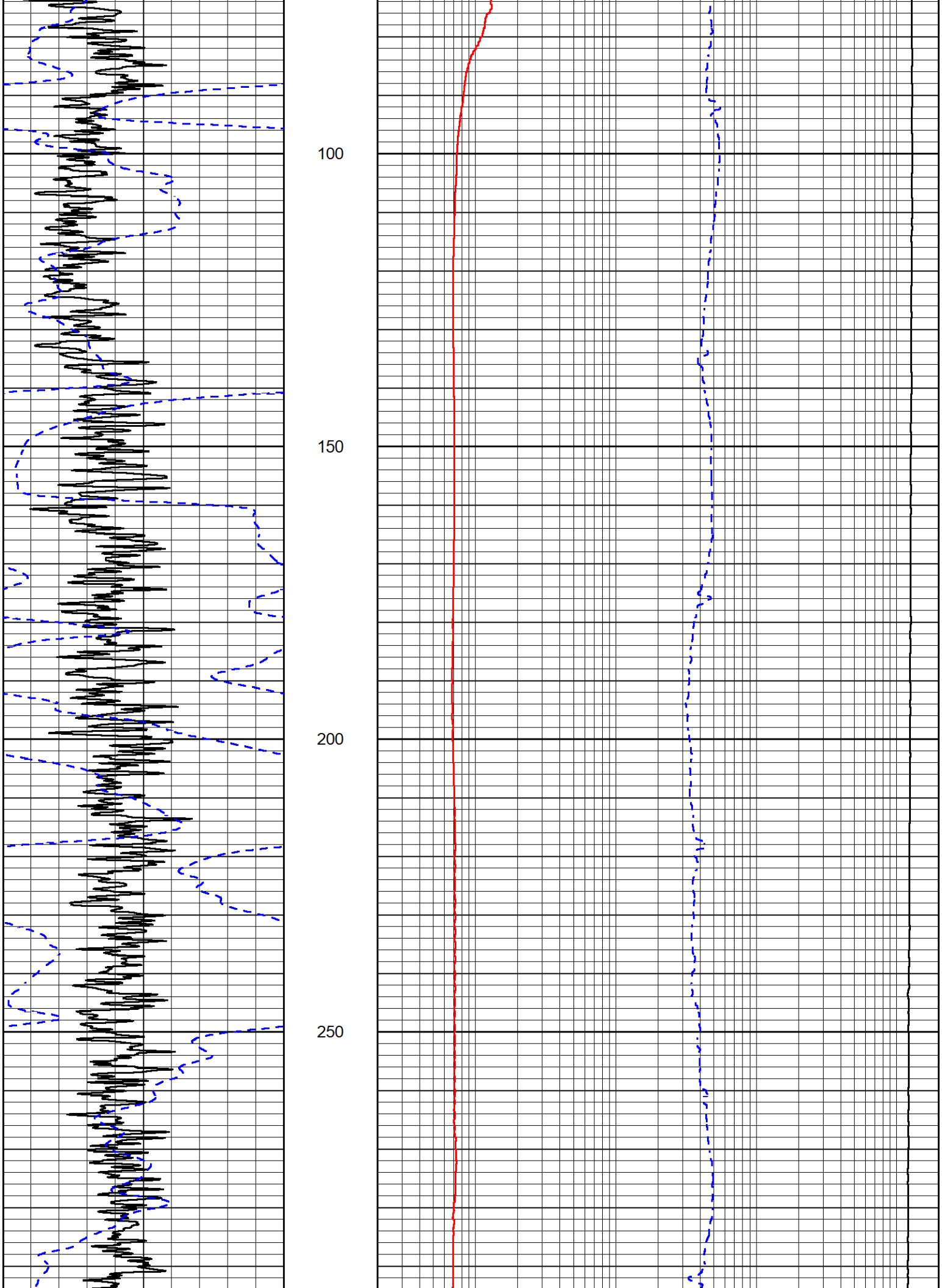
MIDWEST WIRELINE

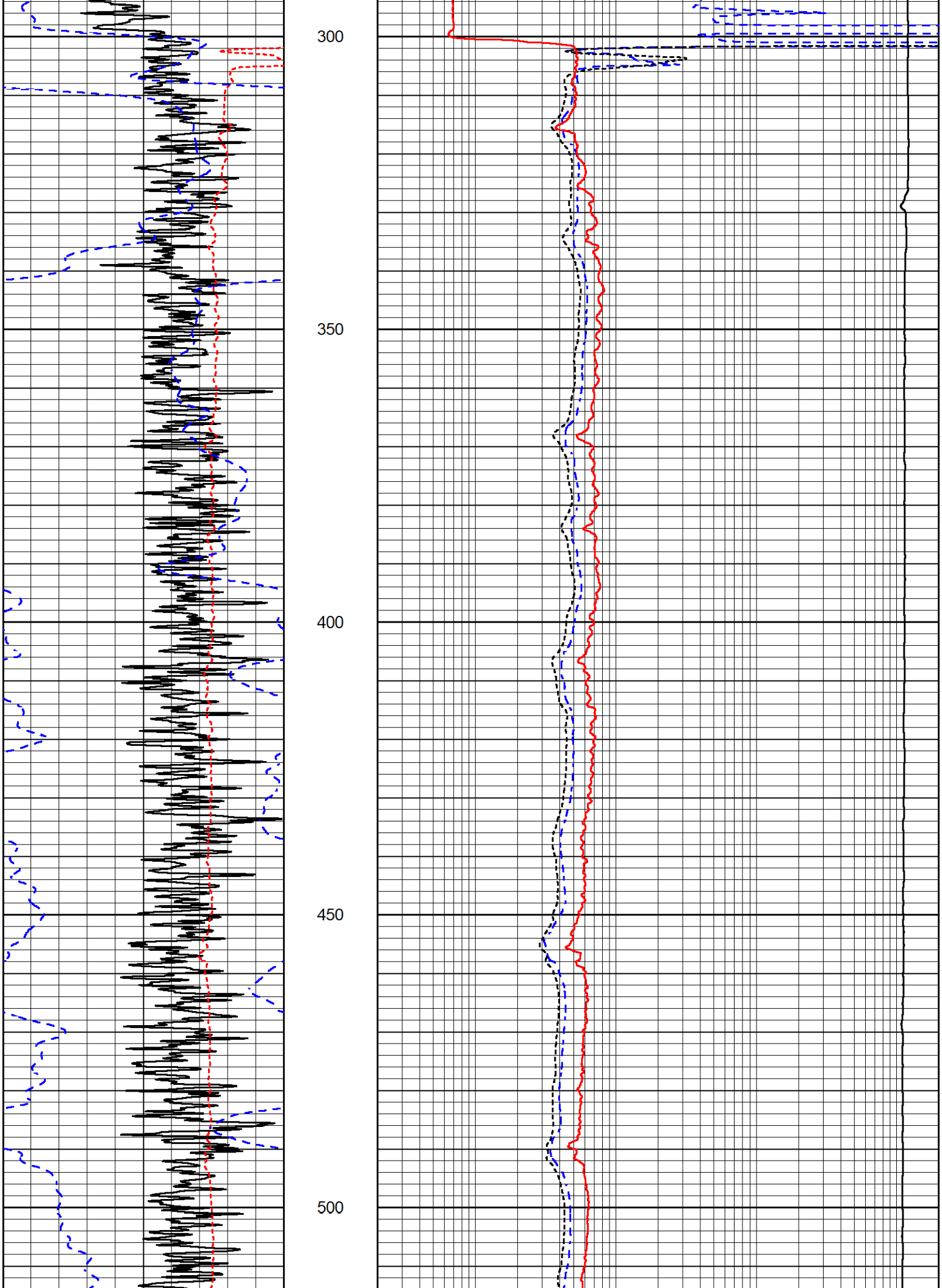
DETAIL SECTION

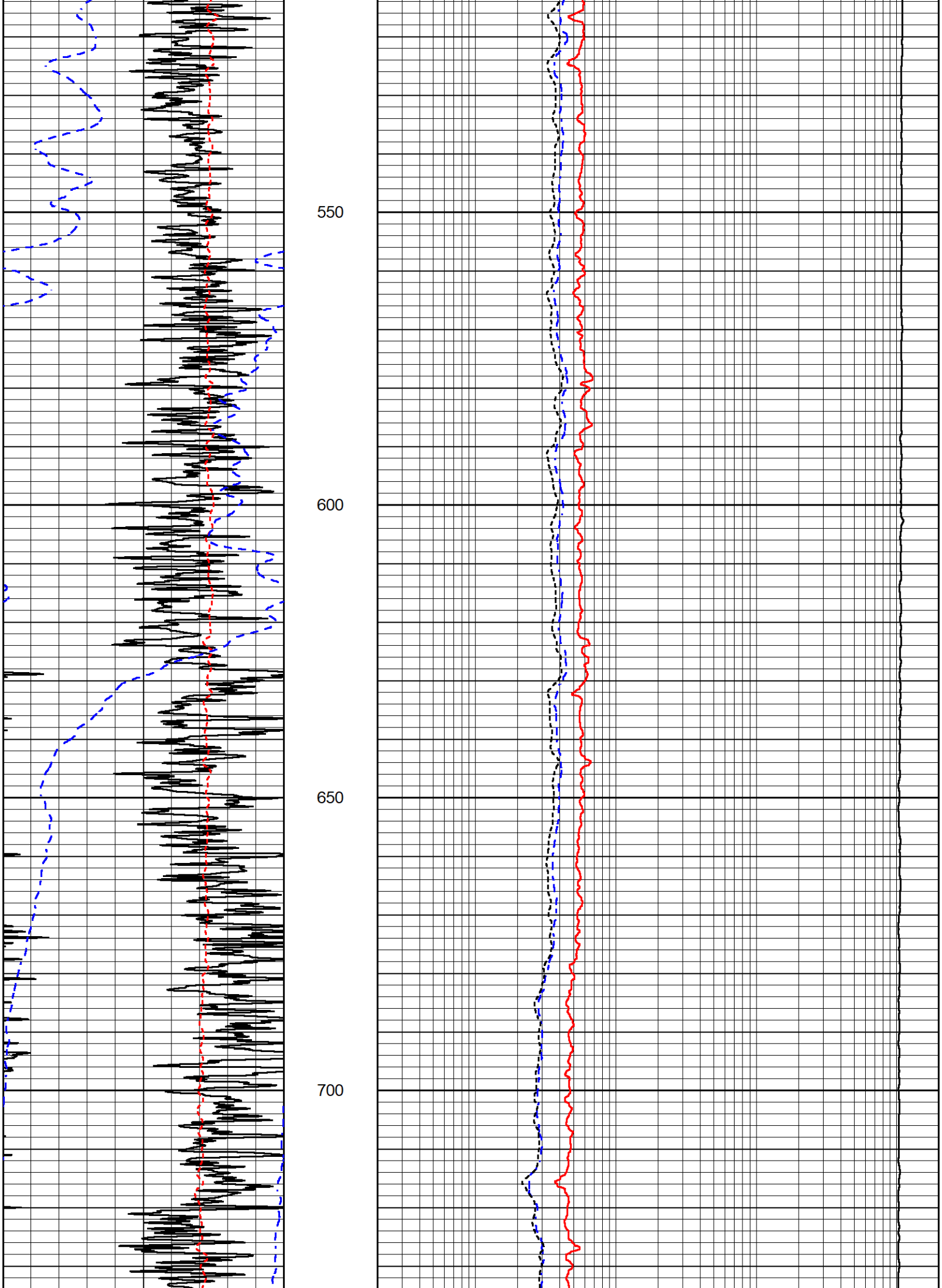
MAIN PASS

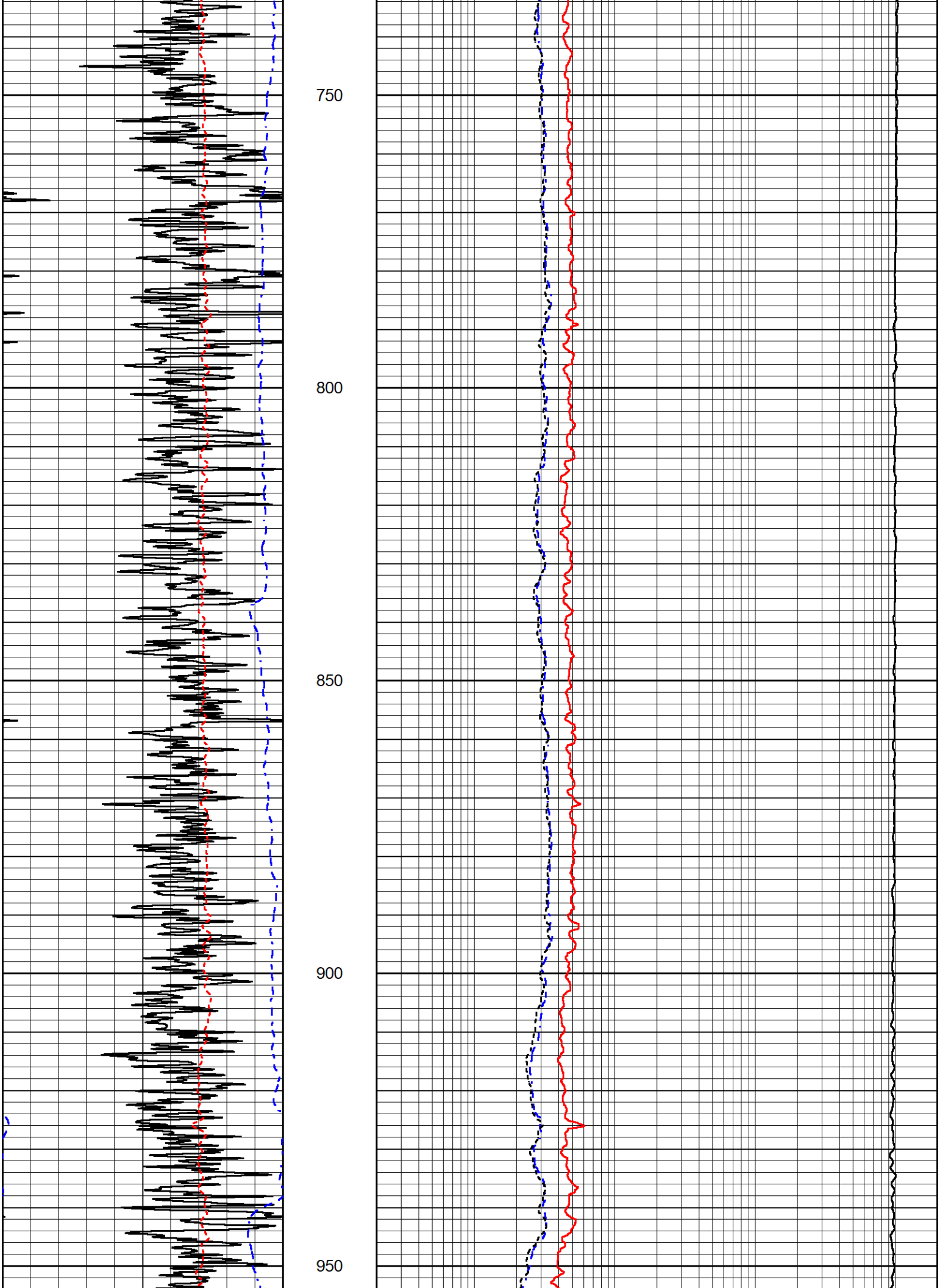
Database File	murfin_mj unit 1-10.db
Dataset Pathname	stkml/pass4.1
Presentation Format	_dil
Dataset Creation	Thu Sep 29 19:53:04 2022
Charted by	Depth in Feet scaled 1:240

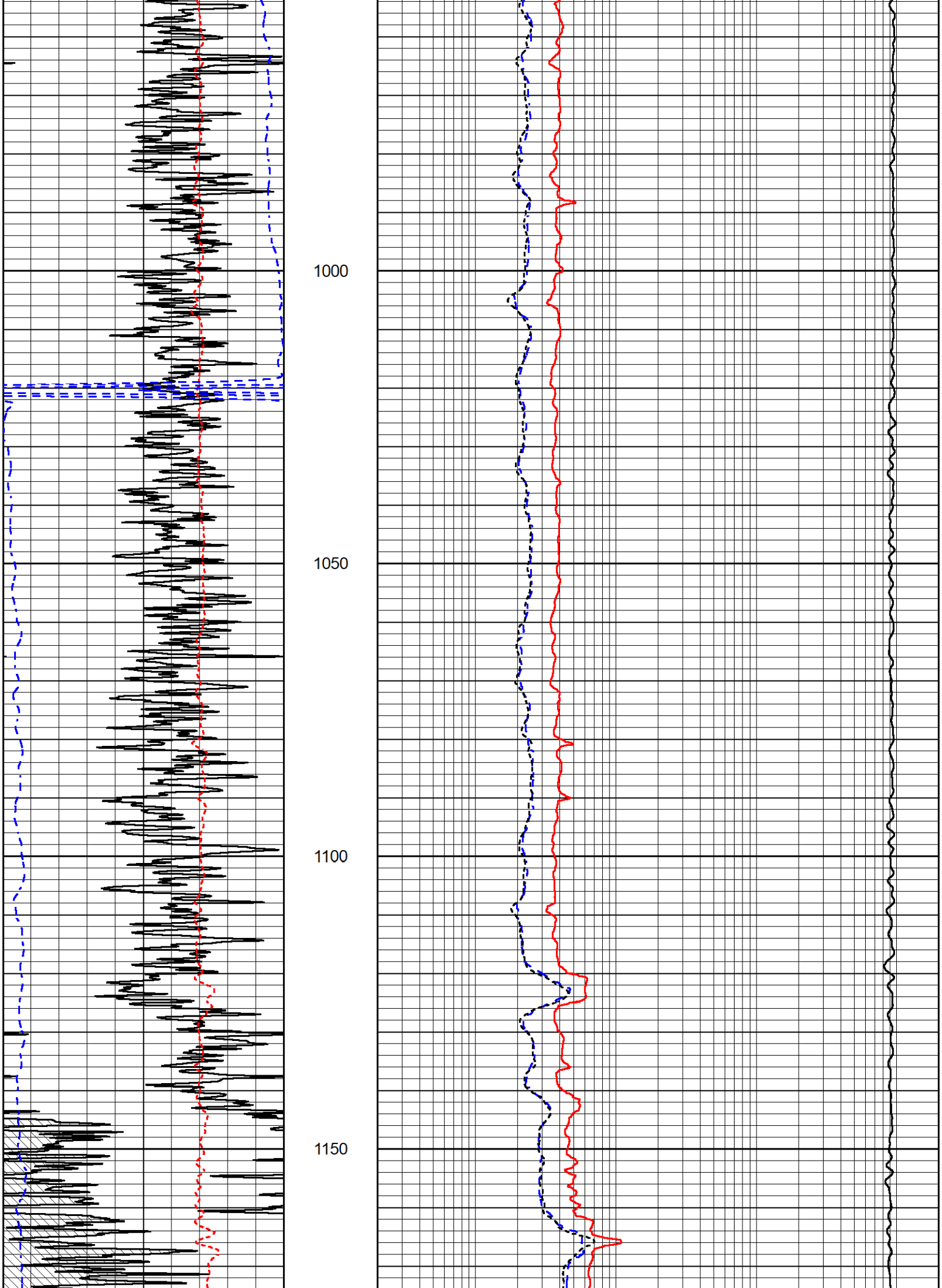


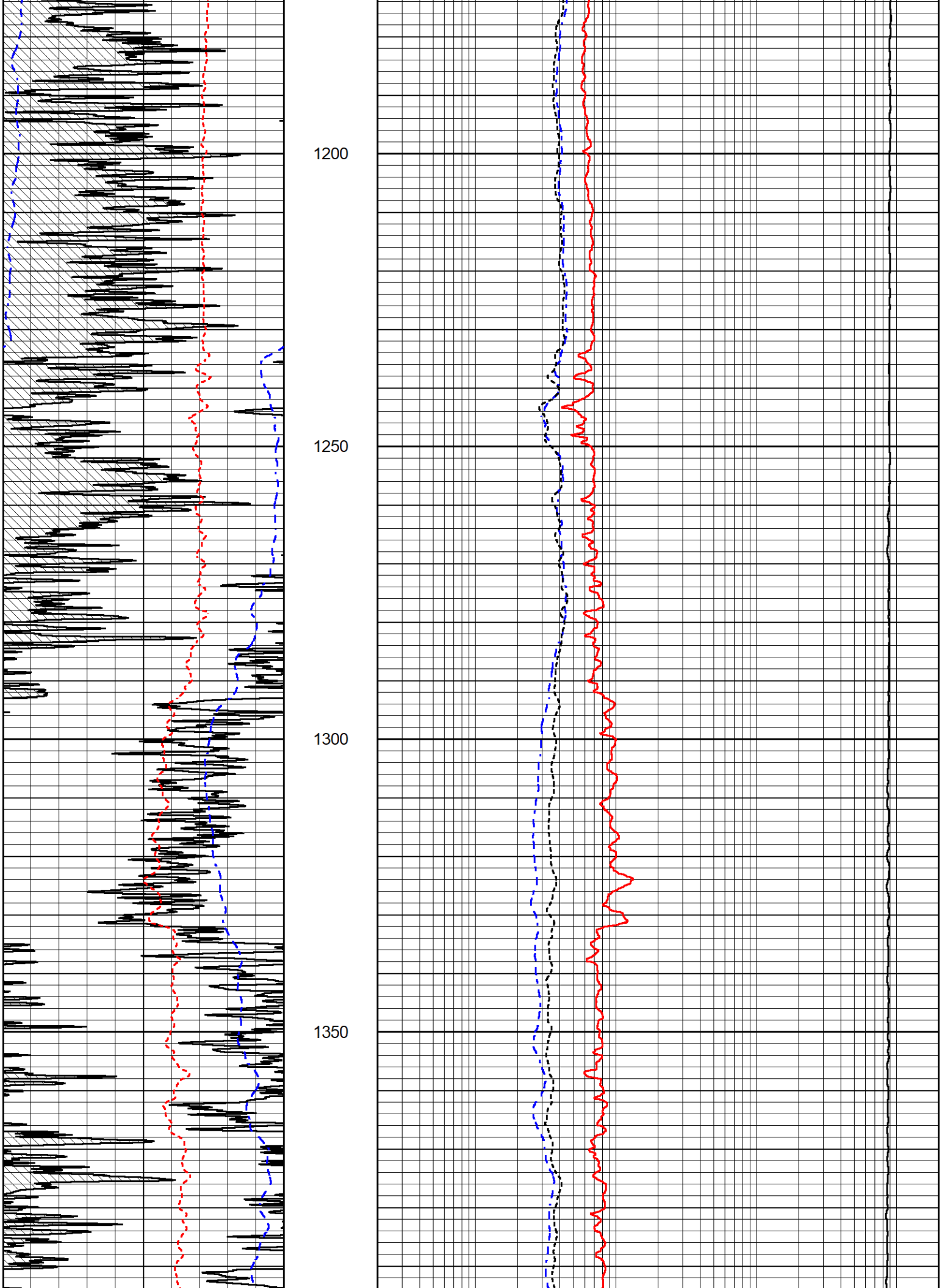

100
150
200
250

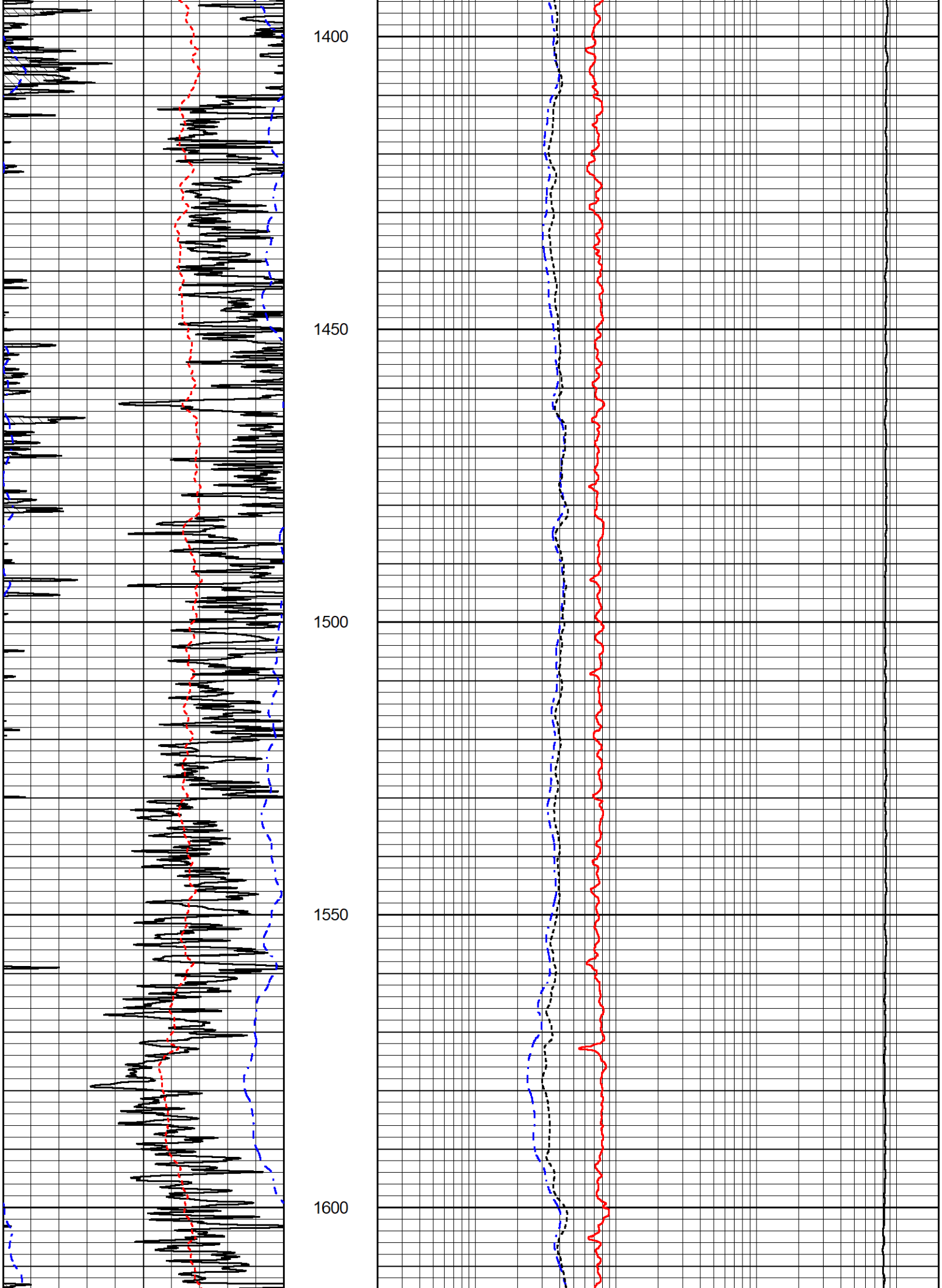

300
350
400
450
500

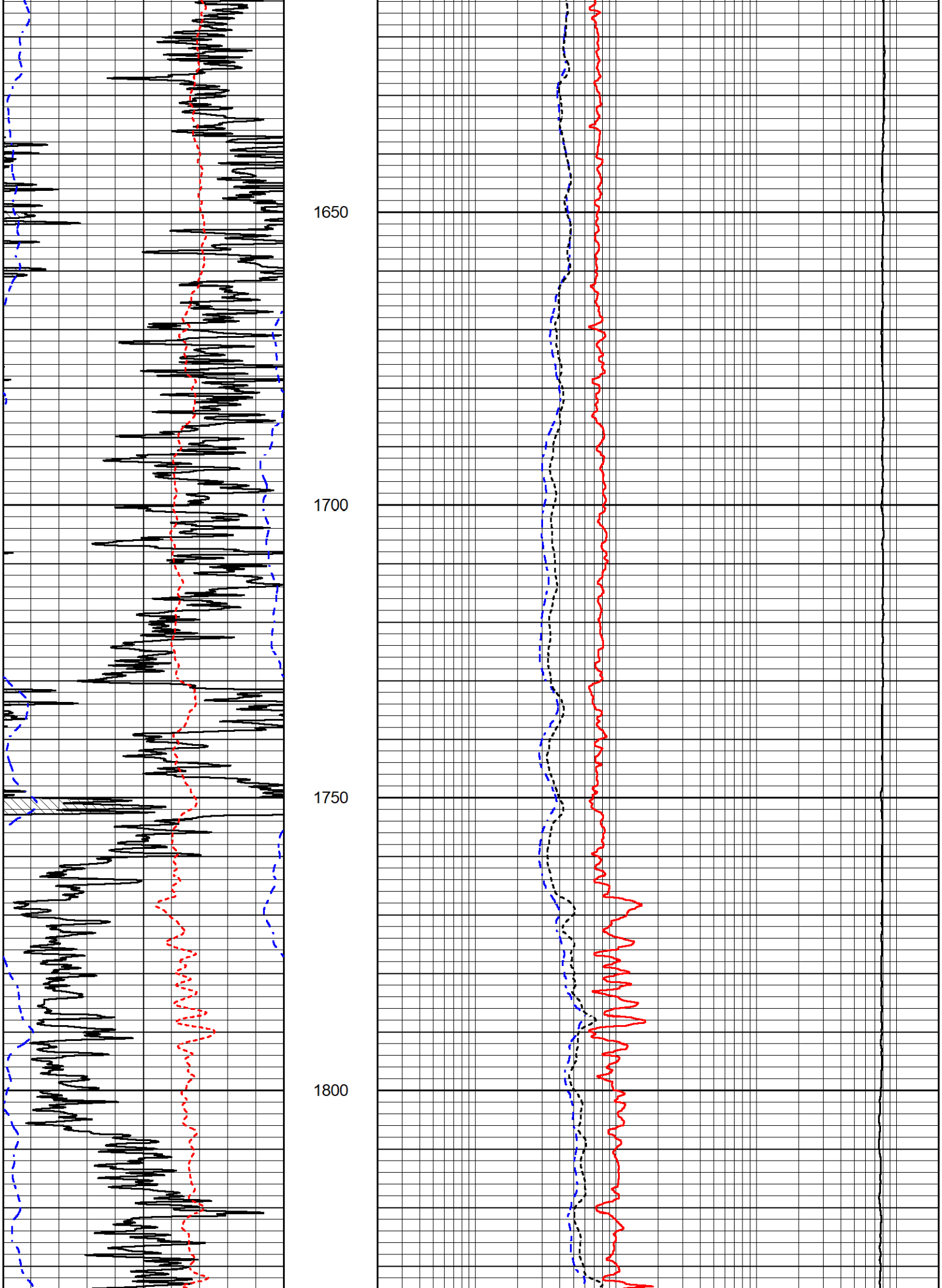

550
600
650
700

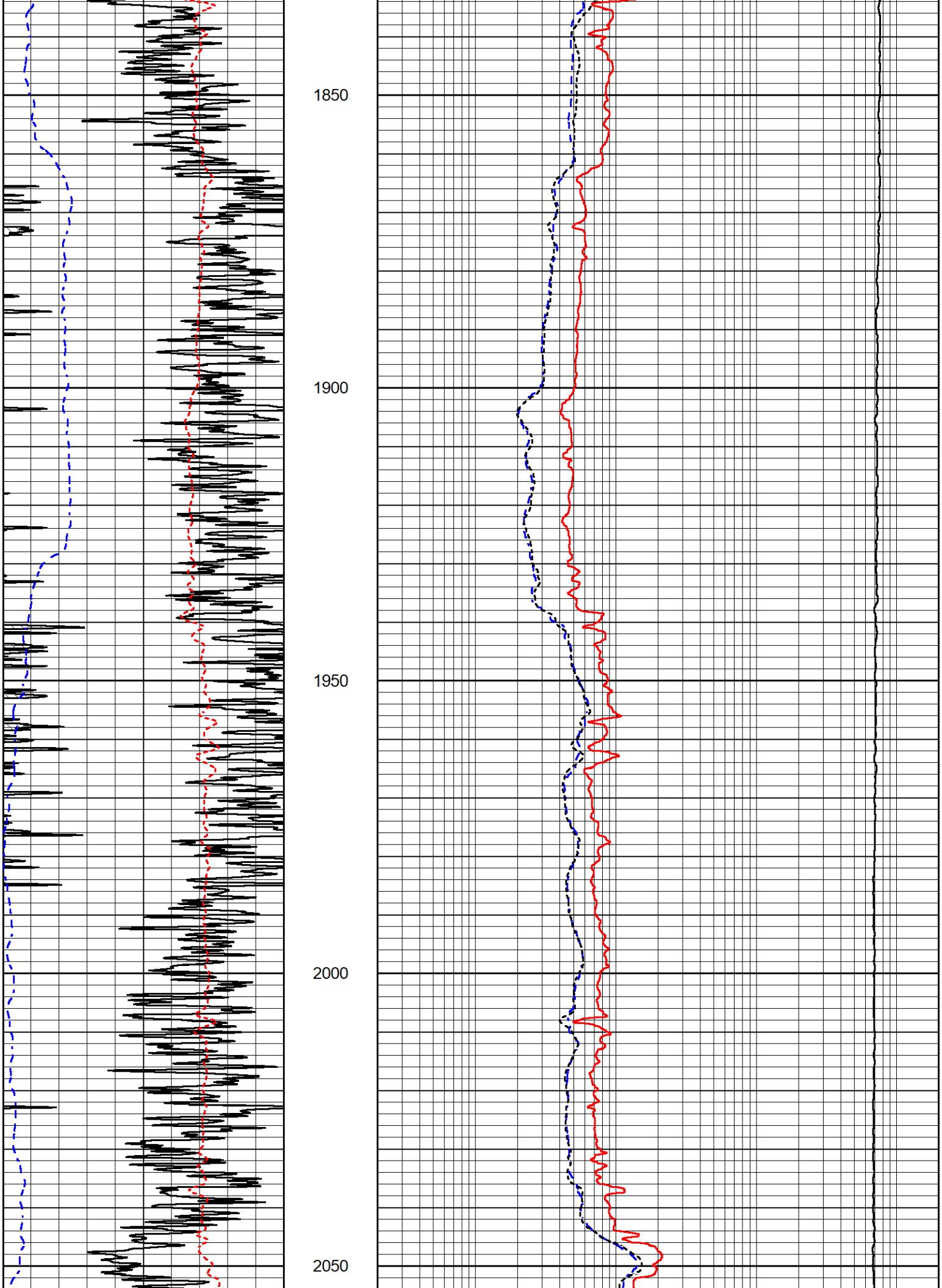

750
800
850
900
950

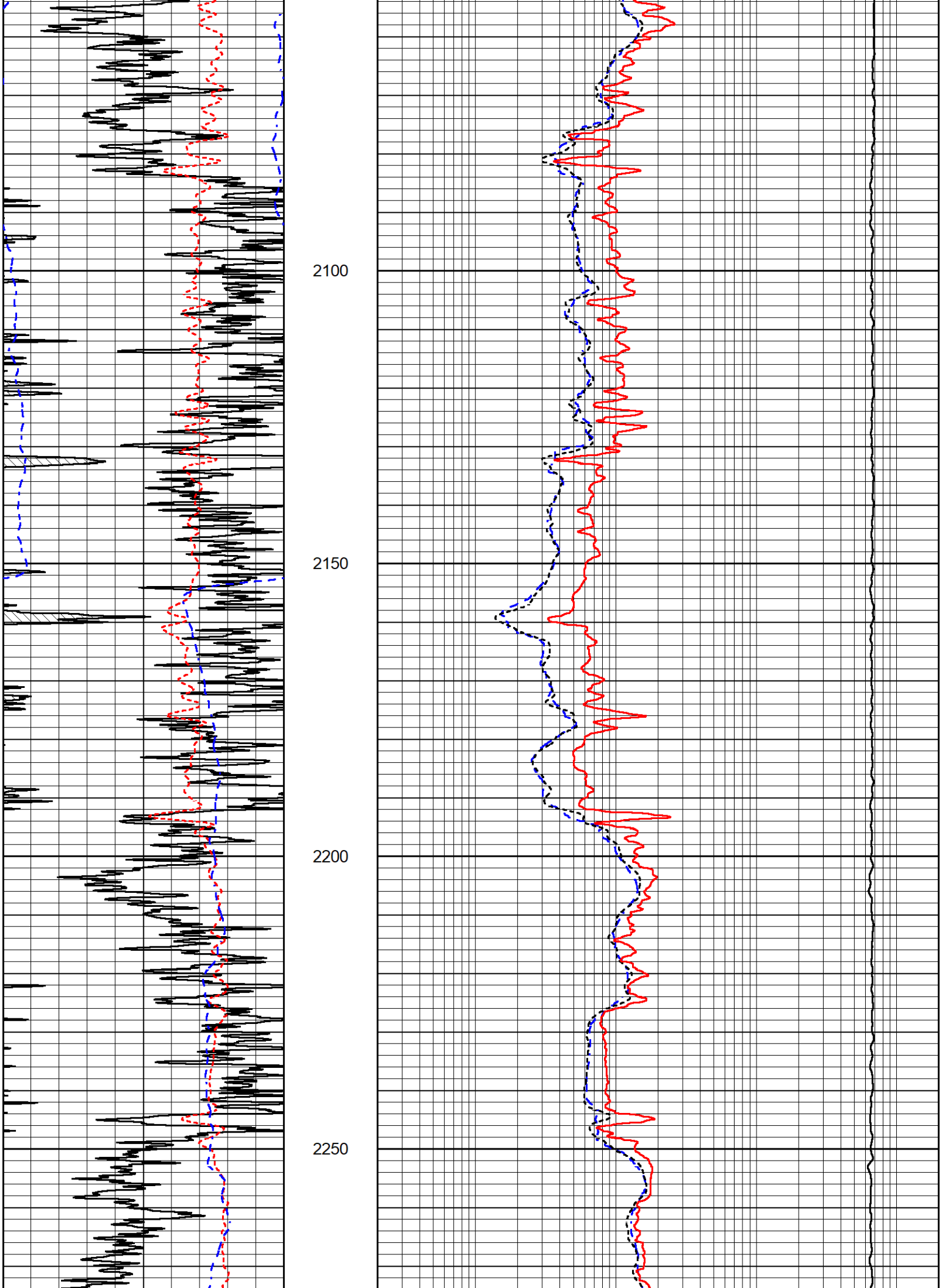

1000
1050
1100
1150

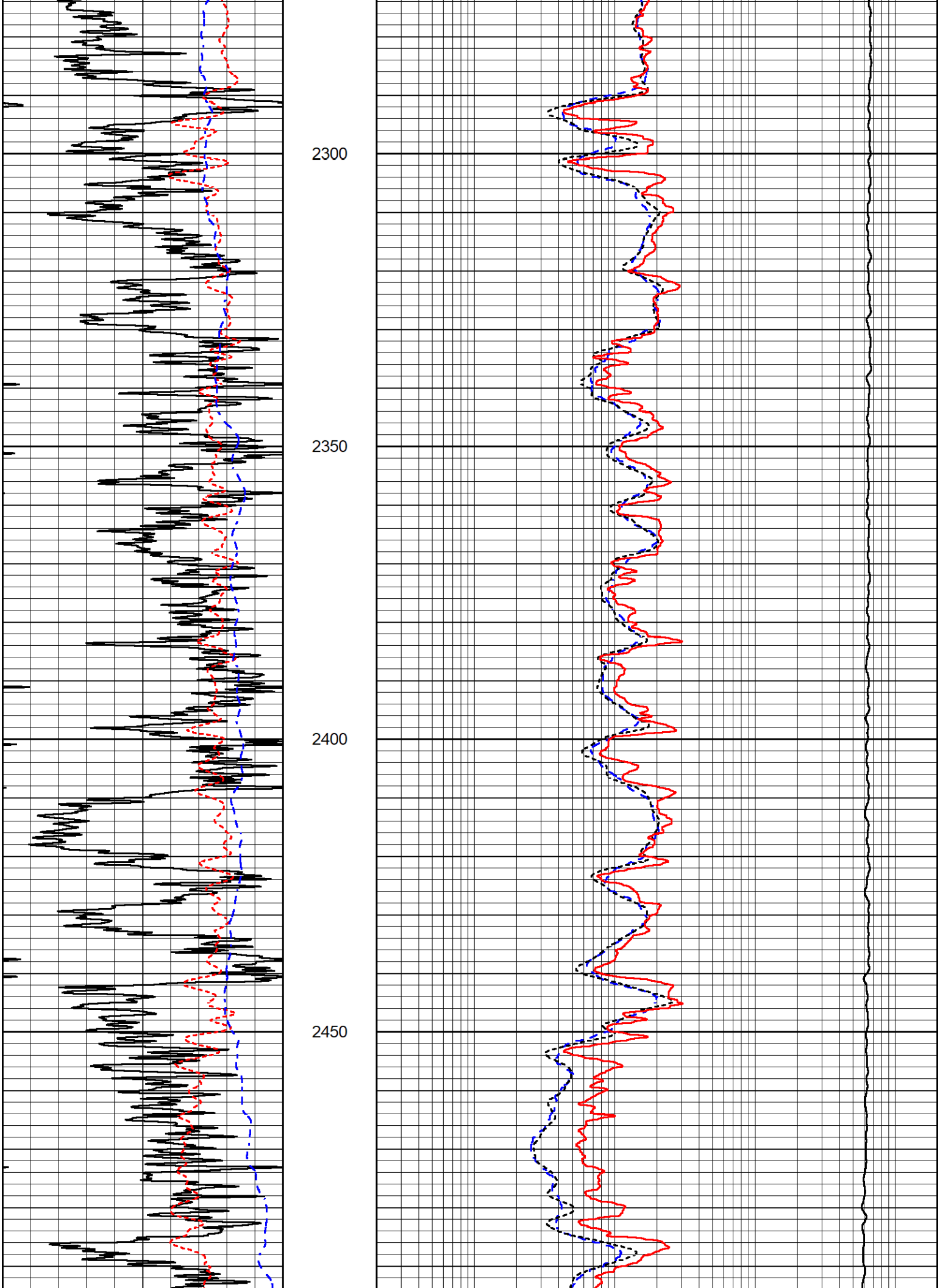

1200
1250
1300
1350

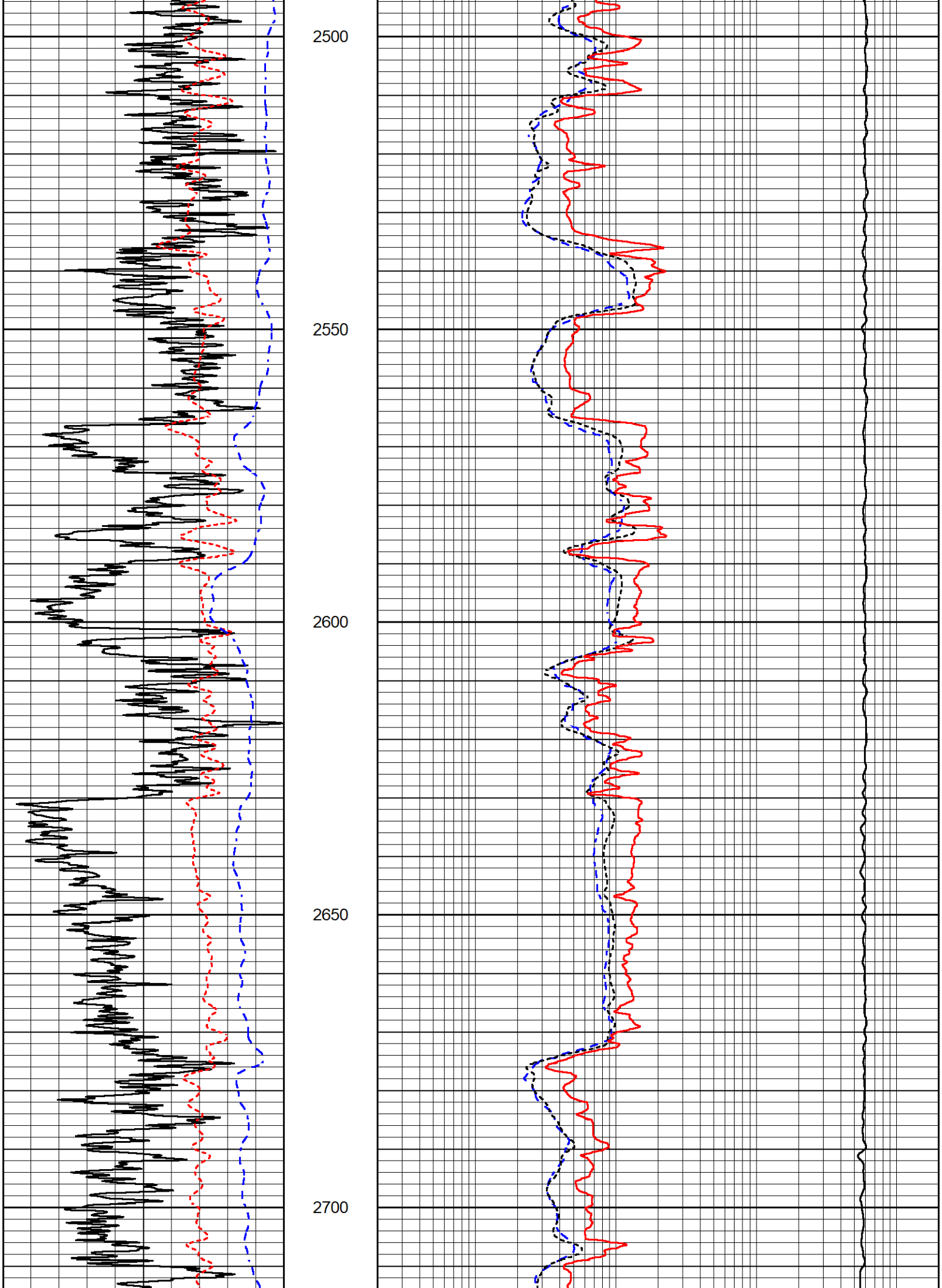

1400
1450
1500
1550
1600

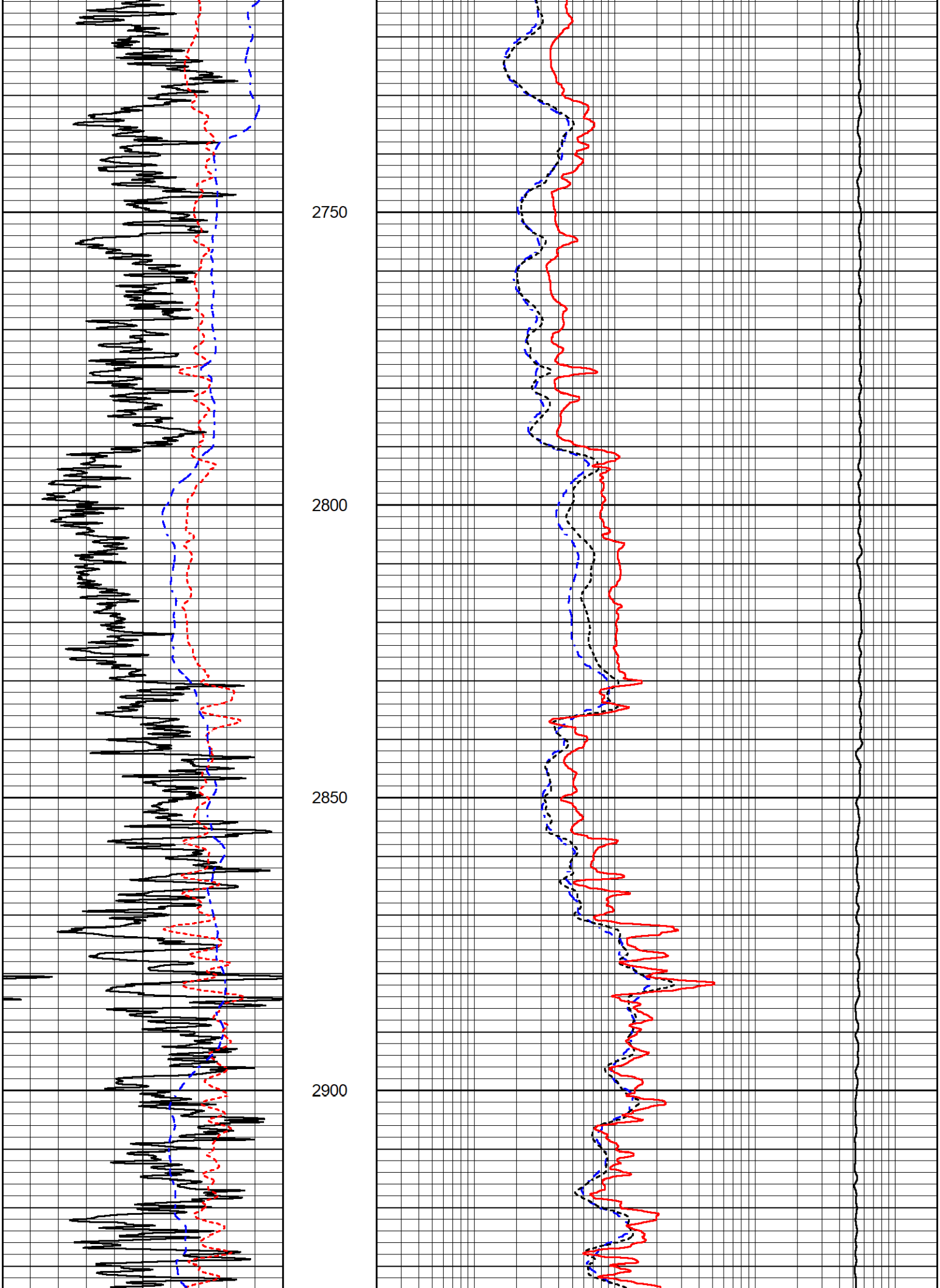

1650
1700
1750
1800

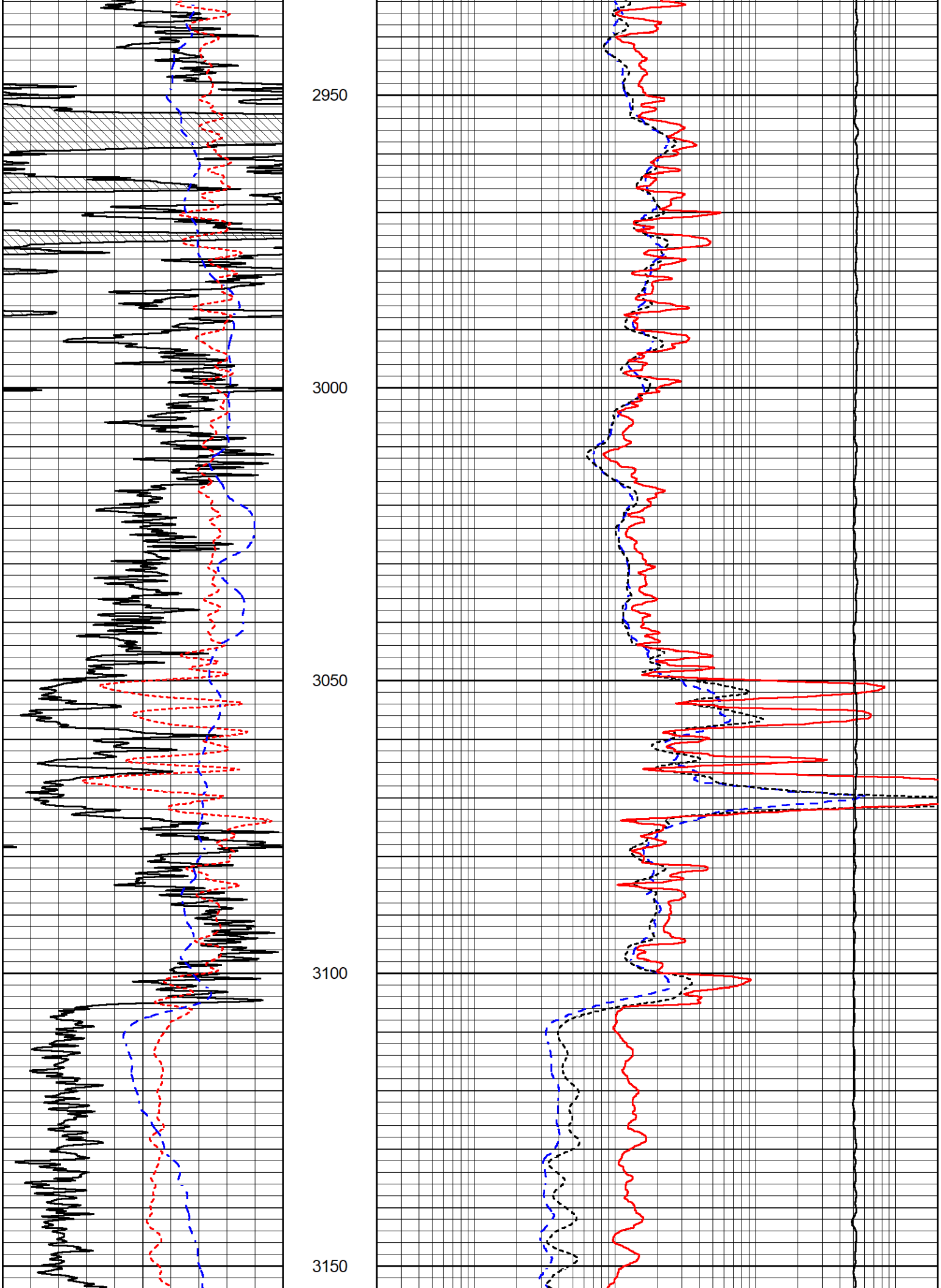

1850
1900
1950
2000
2050

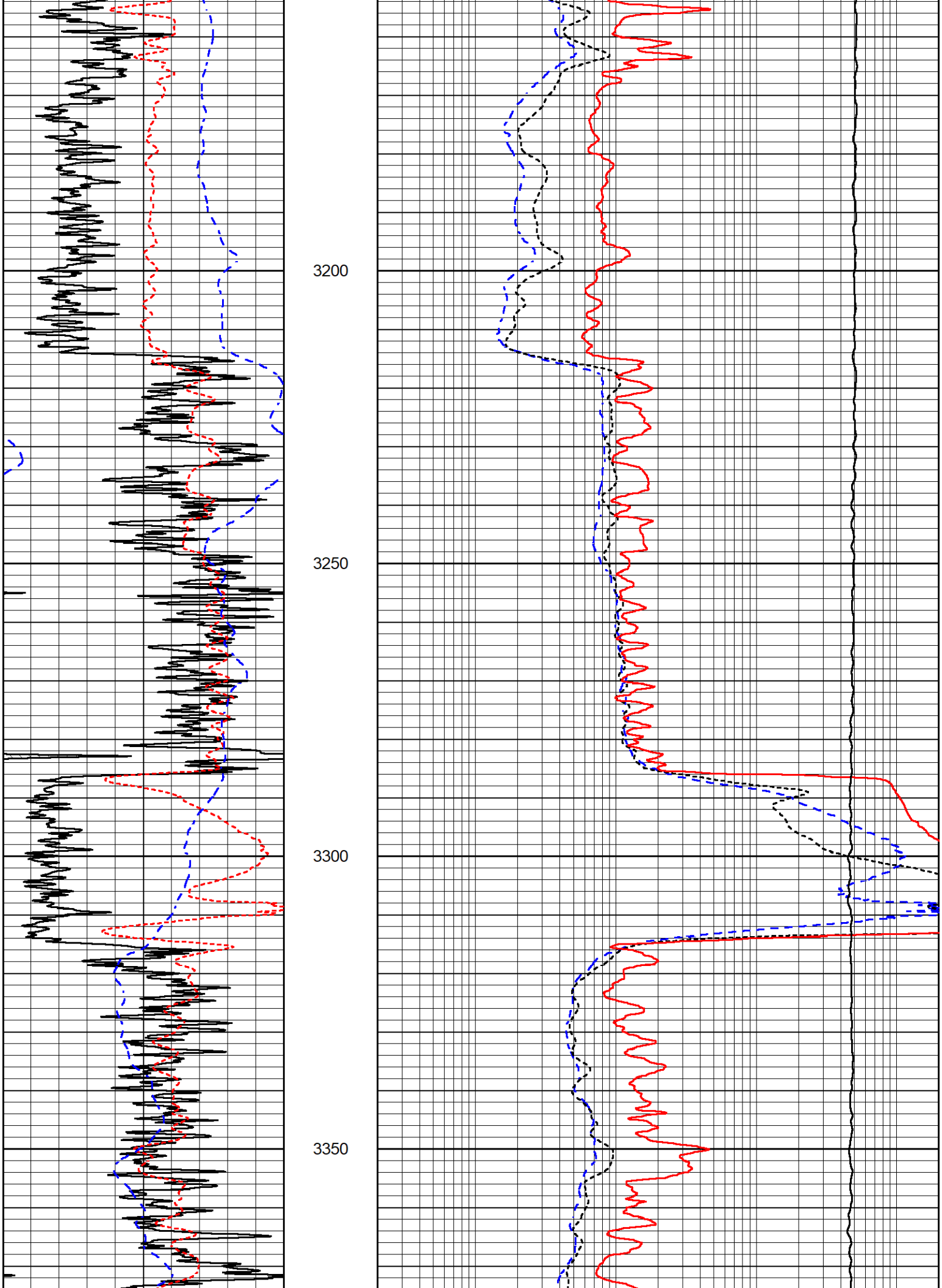

2100
2150
2200
2250

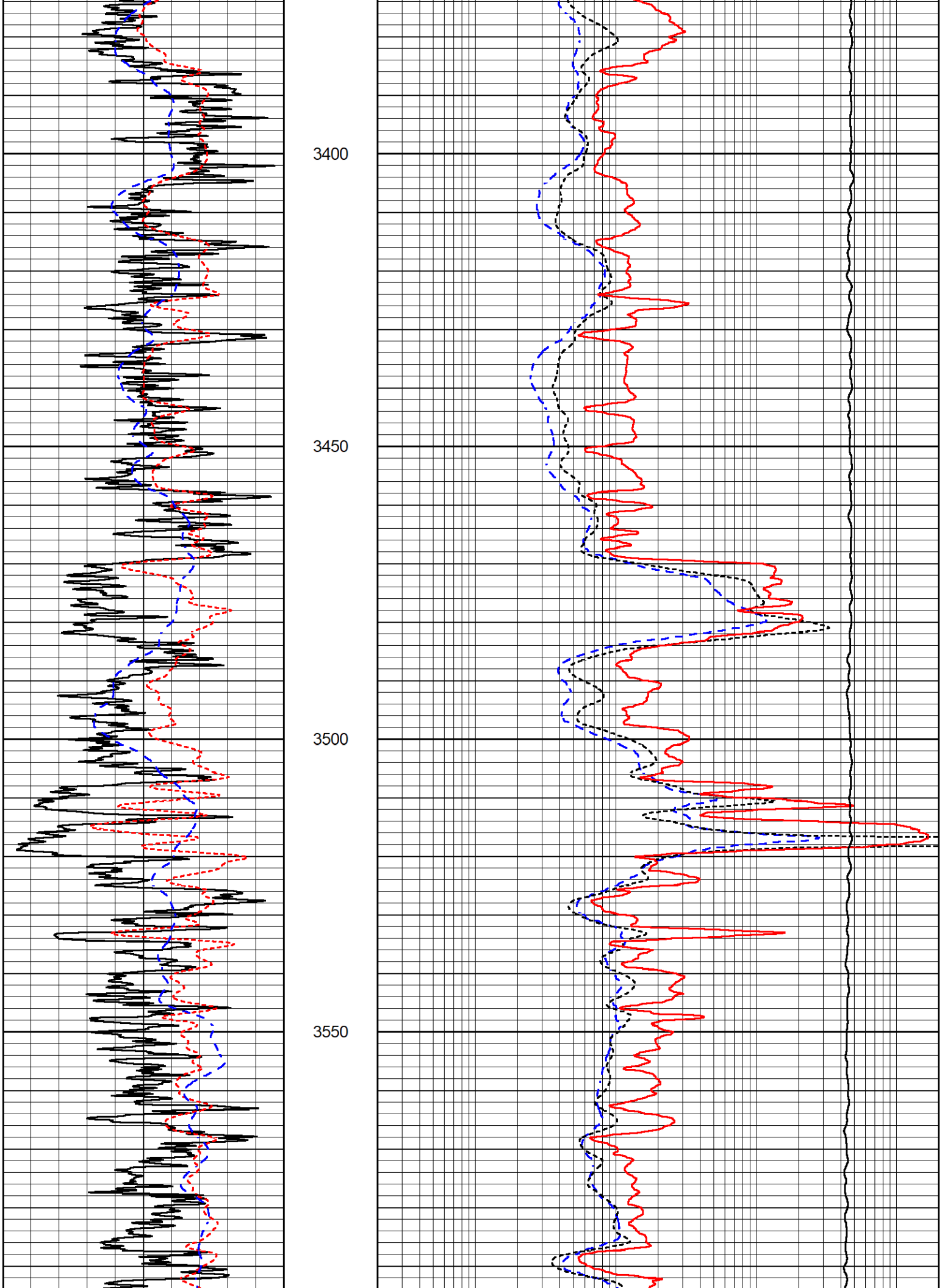

2300
2350
2400
2450

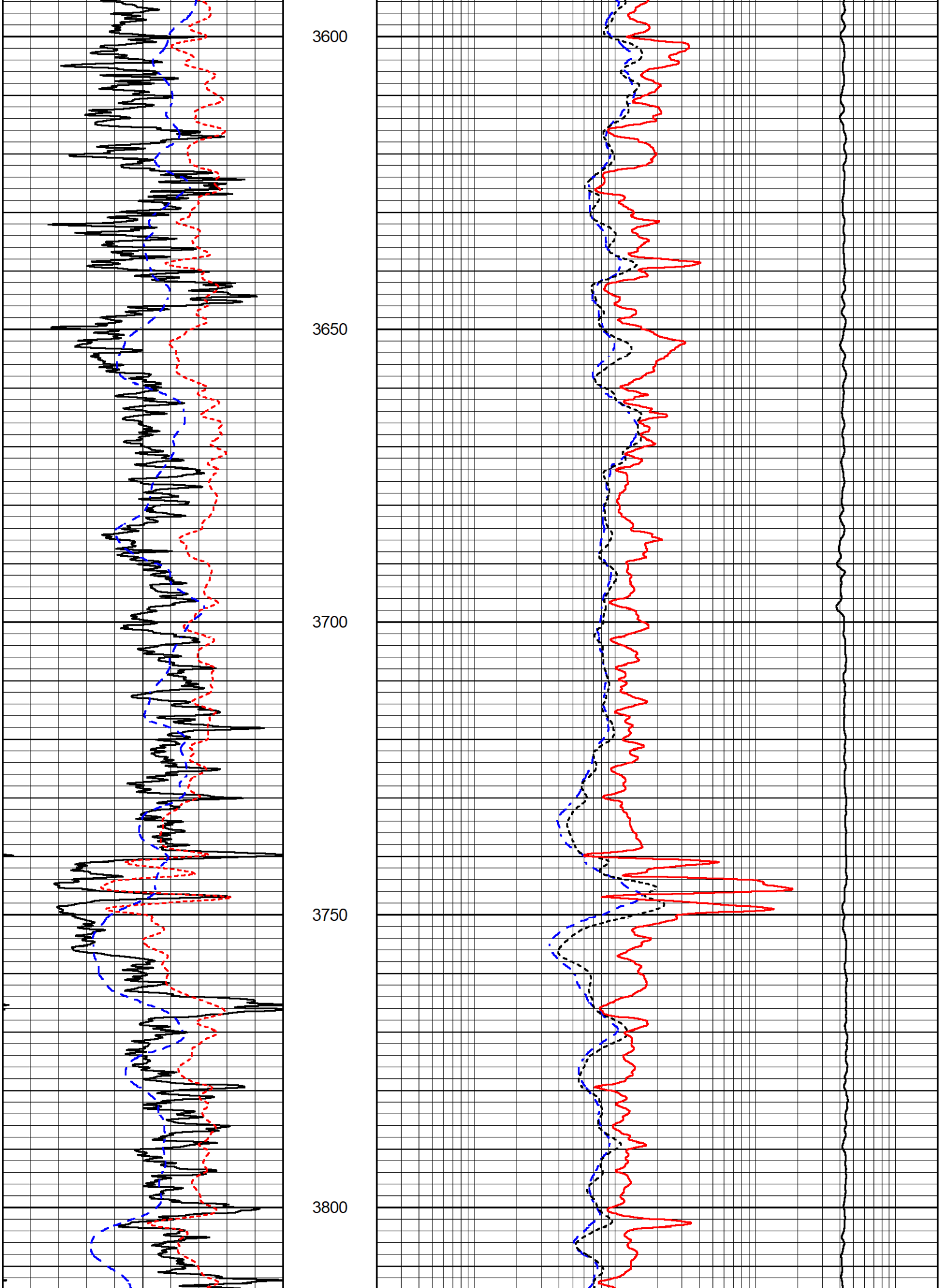

2500
2550
2600
2650
2700

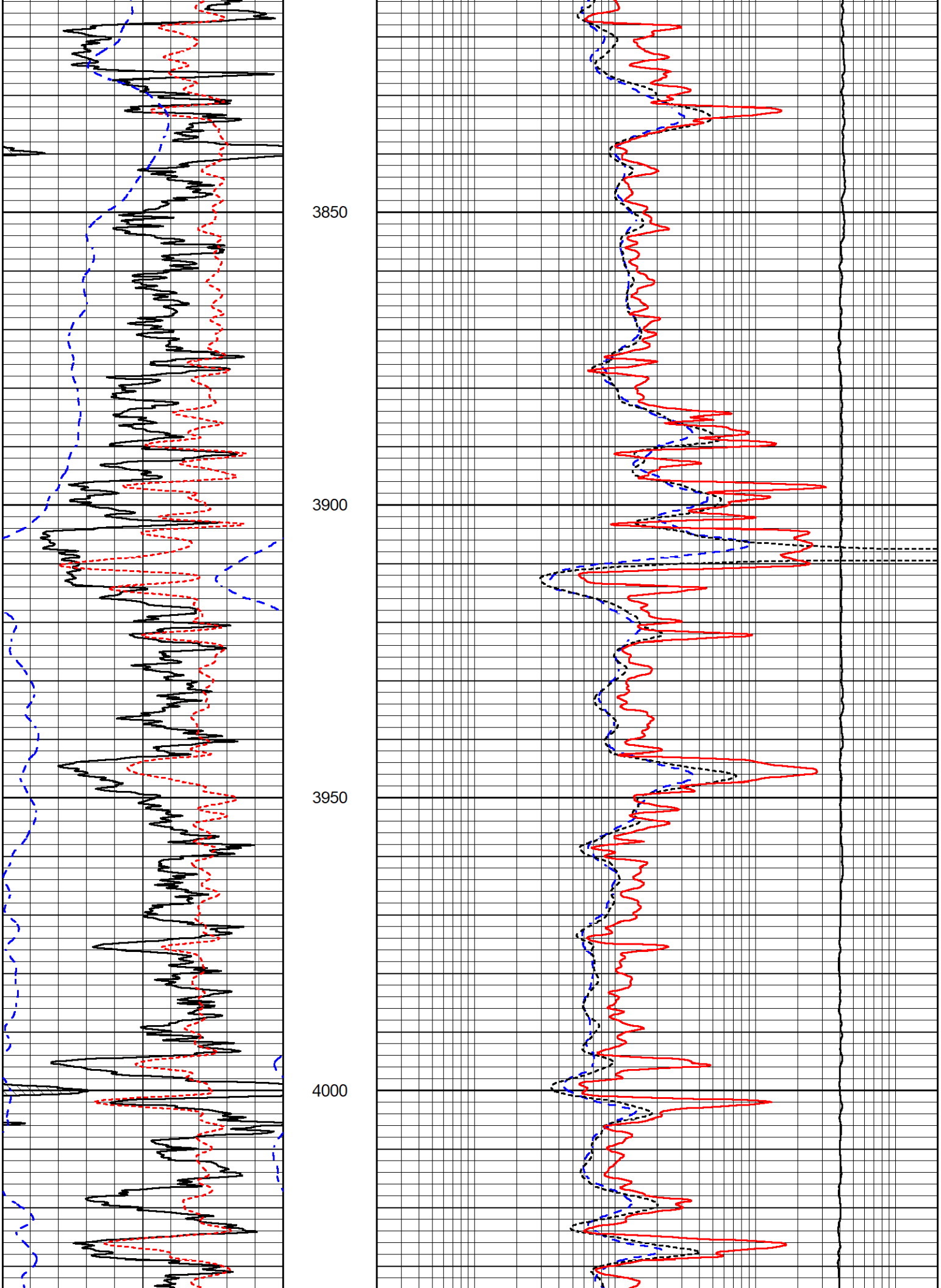

2750
2800
2850
2900

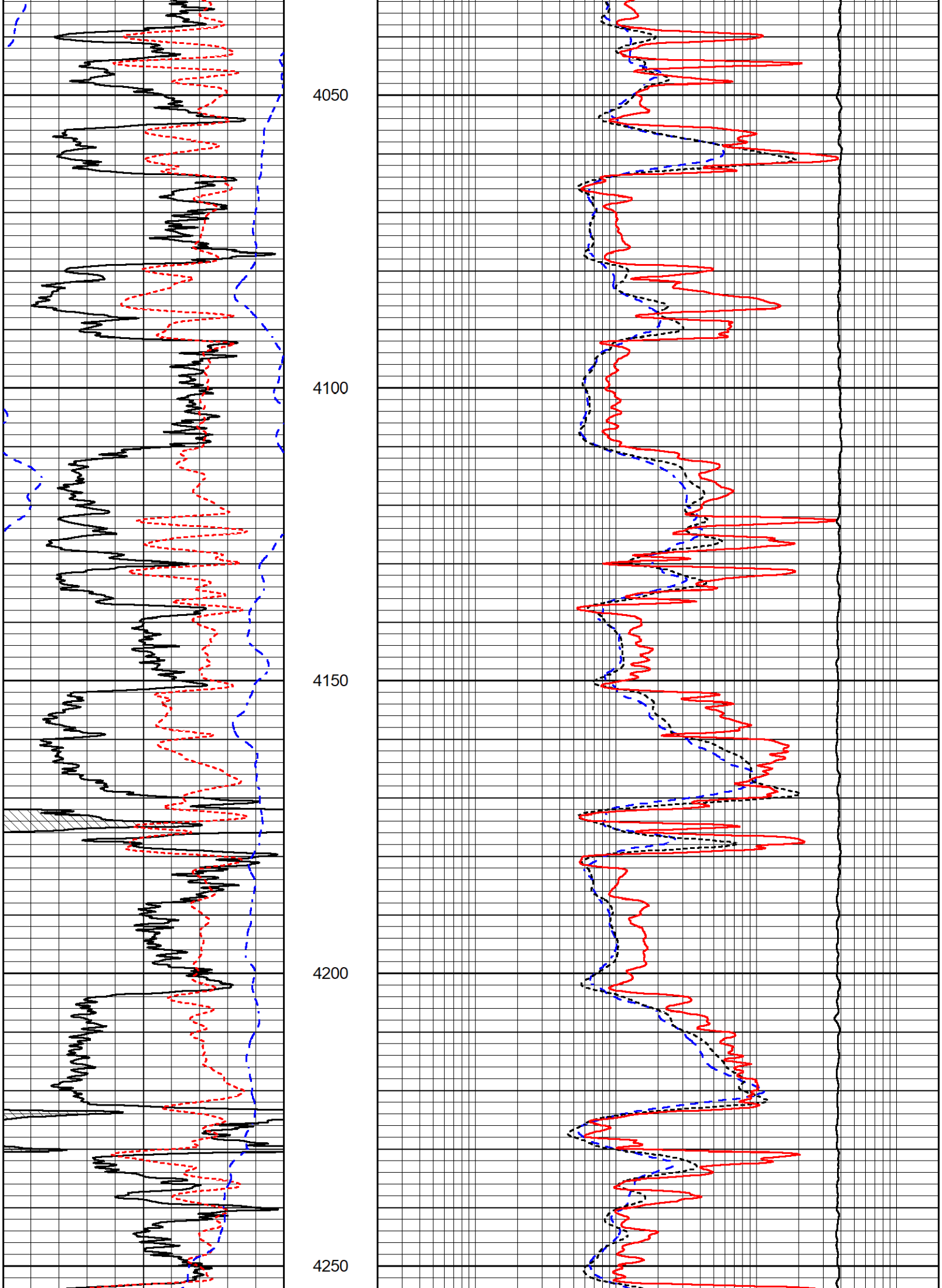

2950
3000
3050
3100
3150

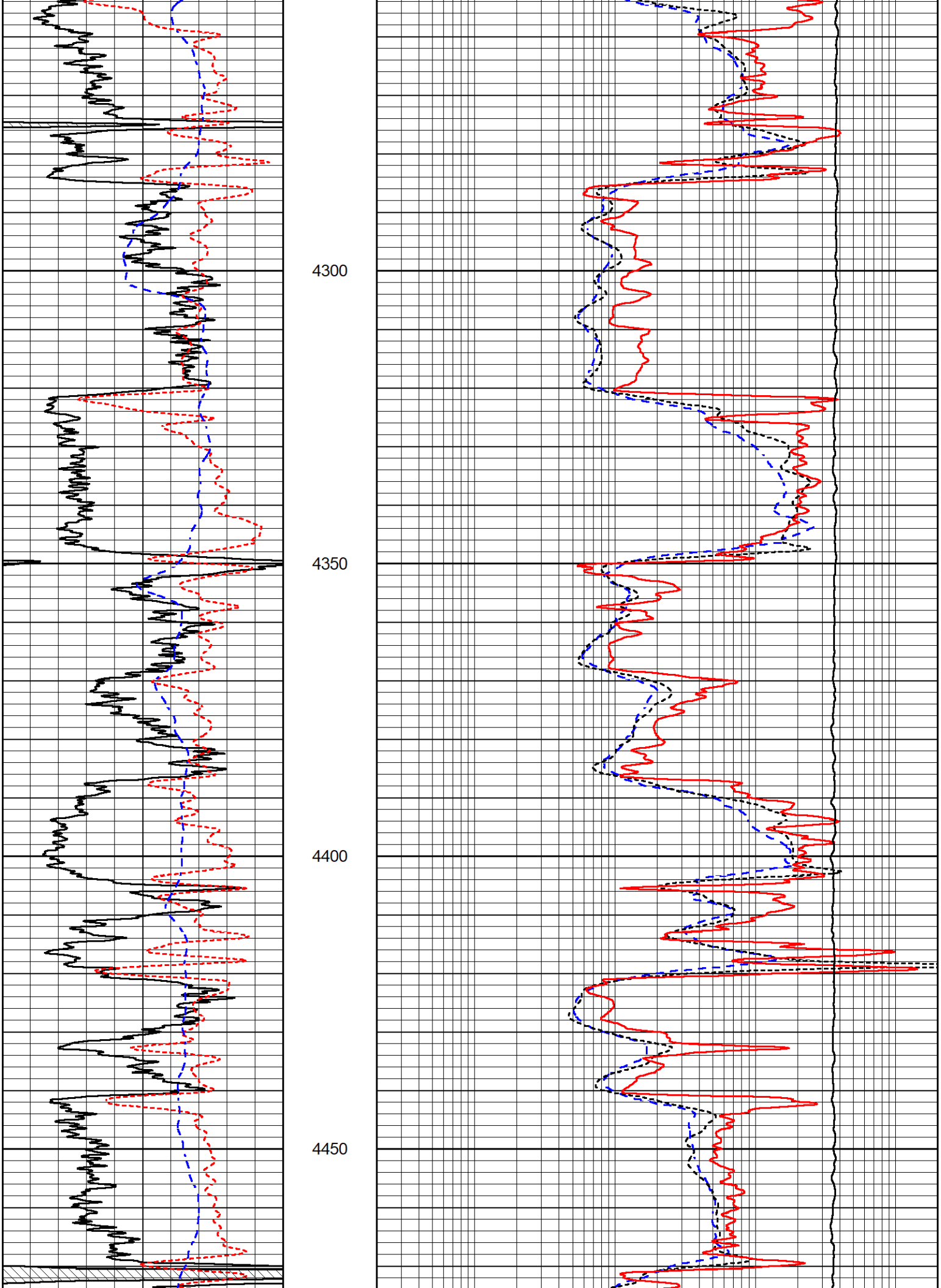

3200
3250
3300
3350

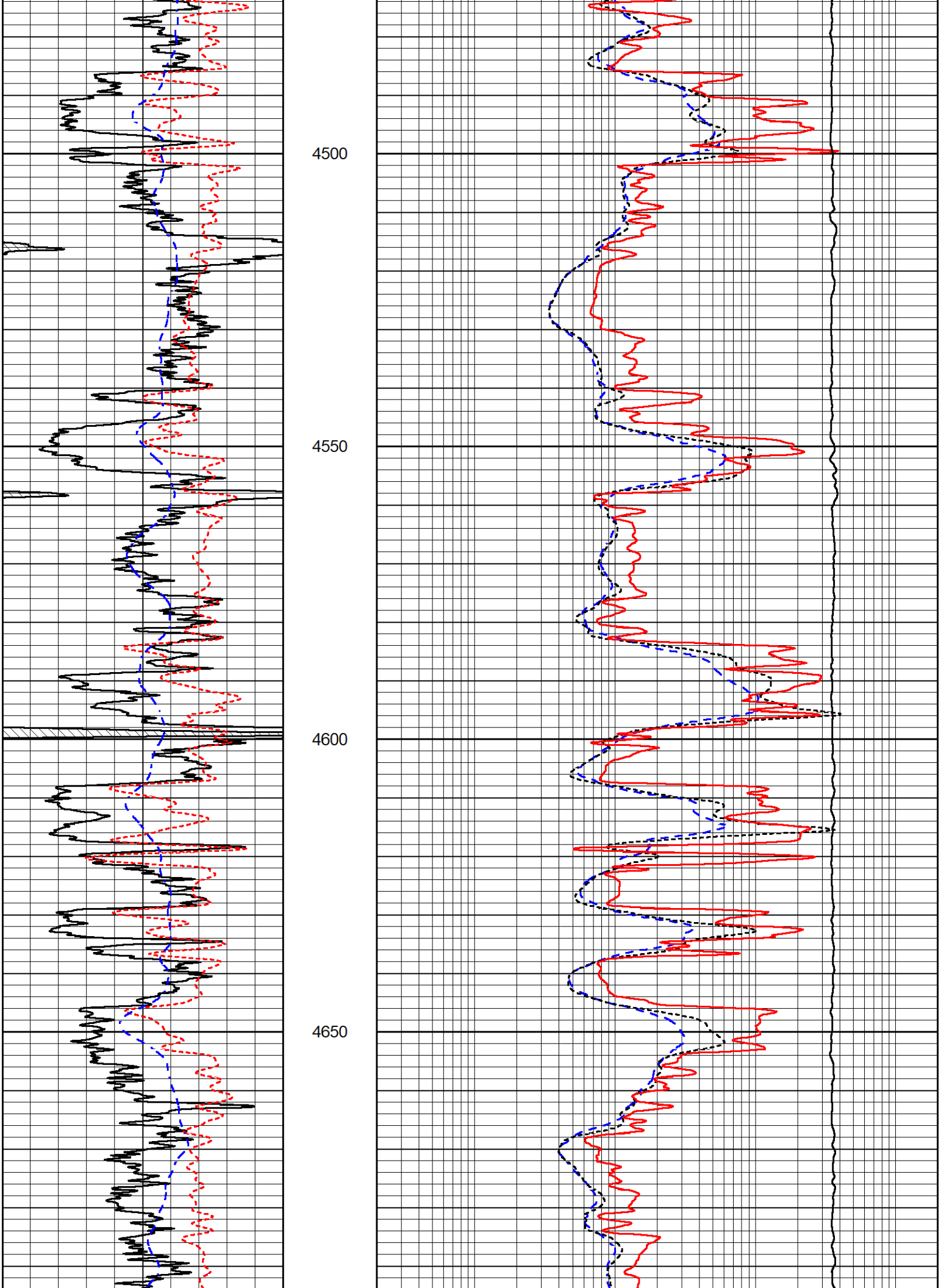

3400
3450
3500
3550

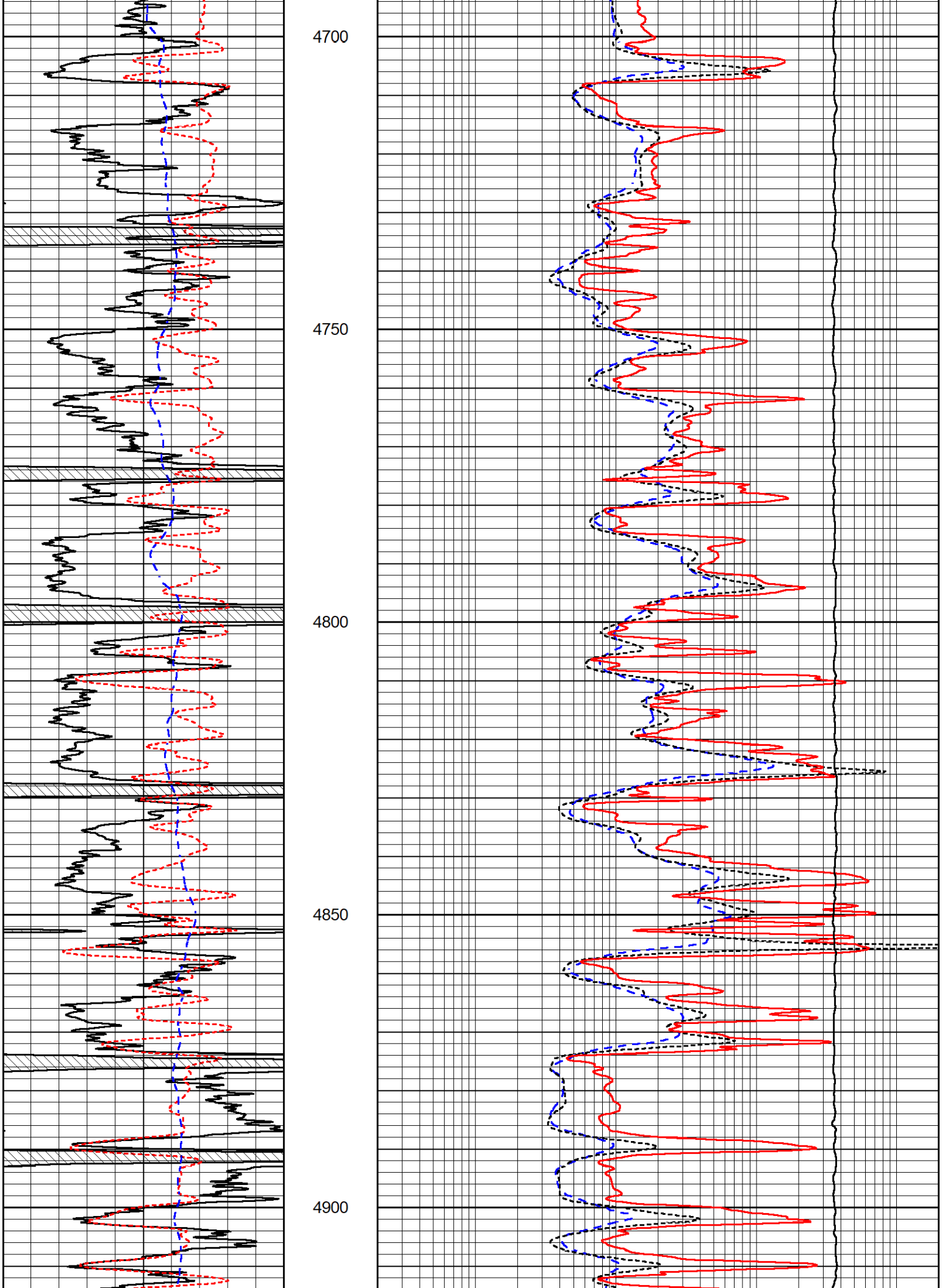

3600
3650
3700
3750
3800

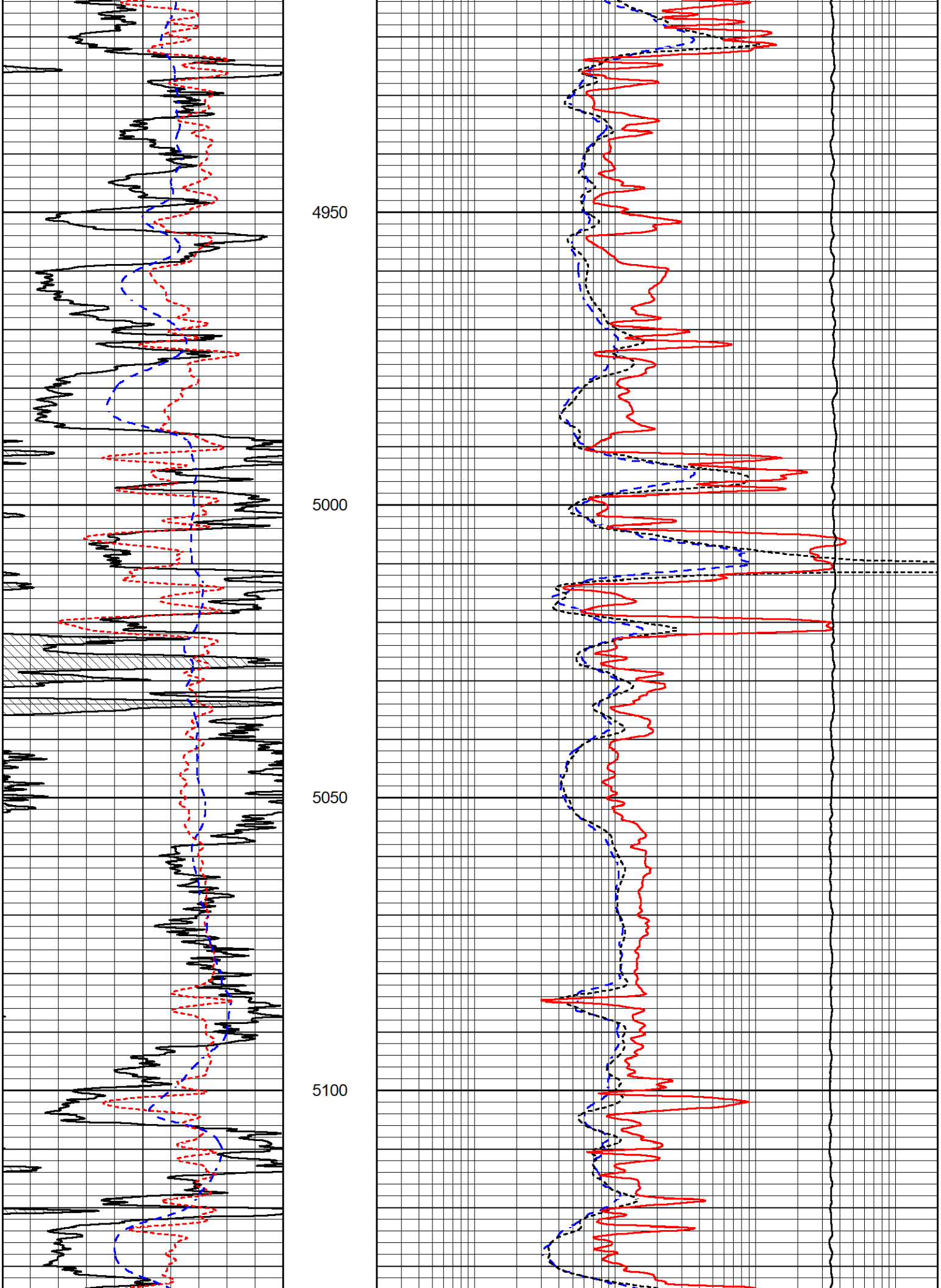

3850
3900
3950
4000

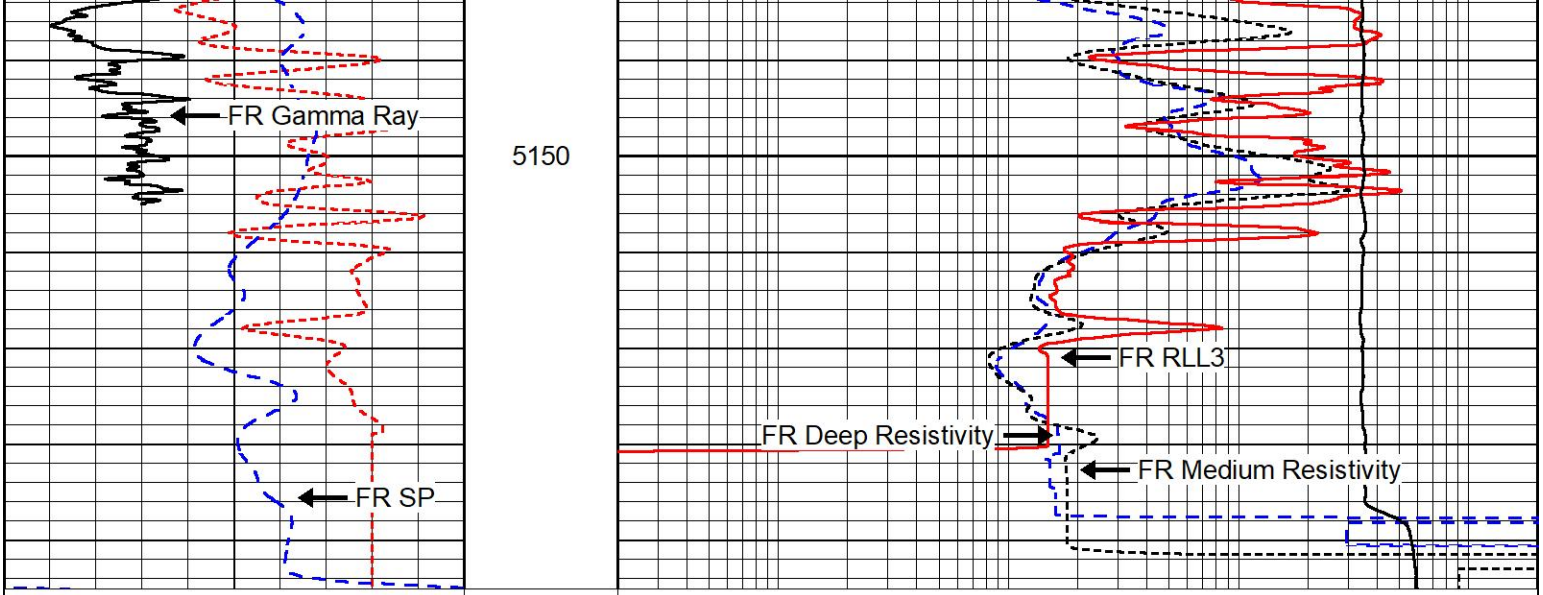

4050
4100
4150
4200
4250


4300
4350
4400
4450


4500
4550
4600
4650


4700
4750
4800
4850
4900


4950
5000
5050
5100



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

MIDWEST WIRELINE

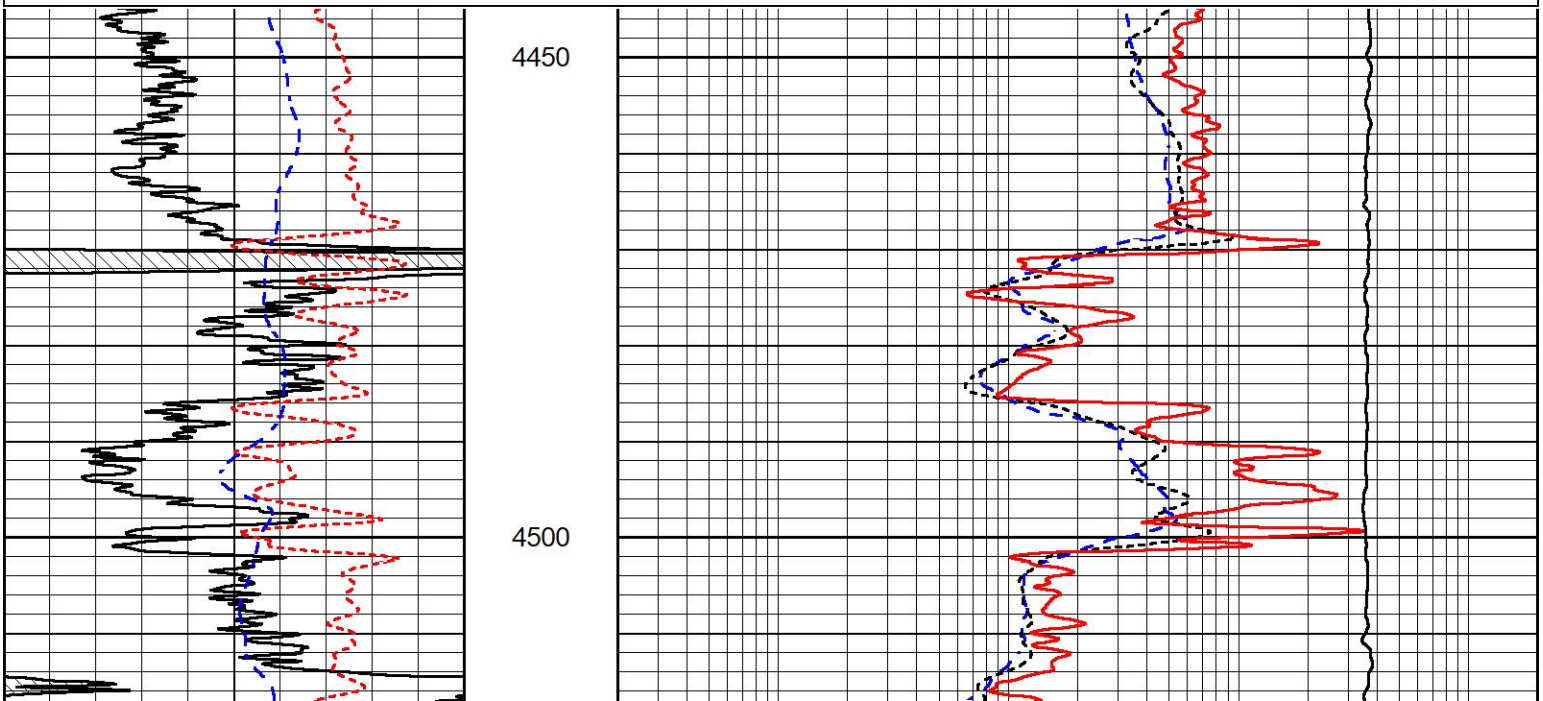
REPEAT SECTION

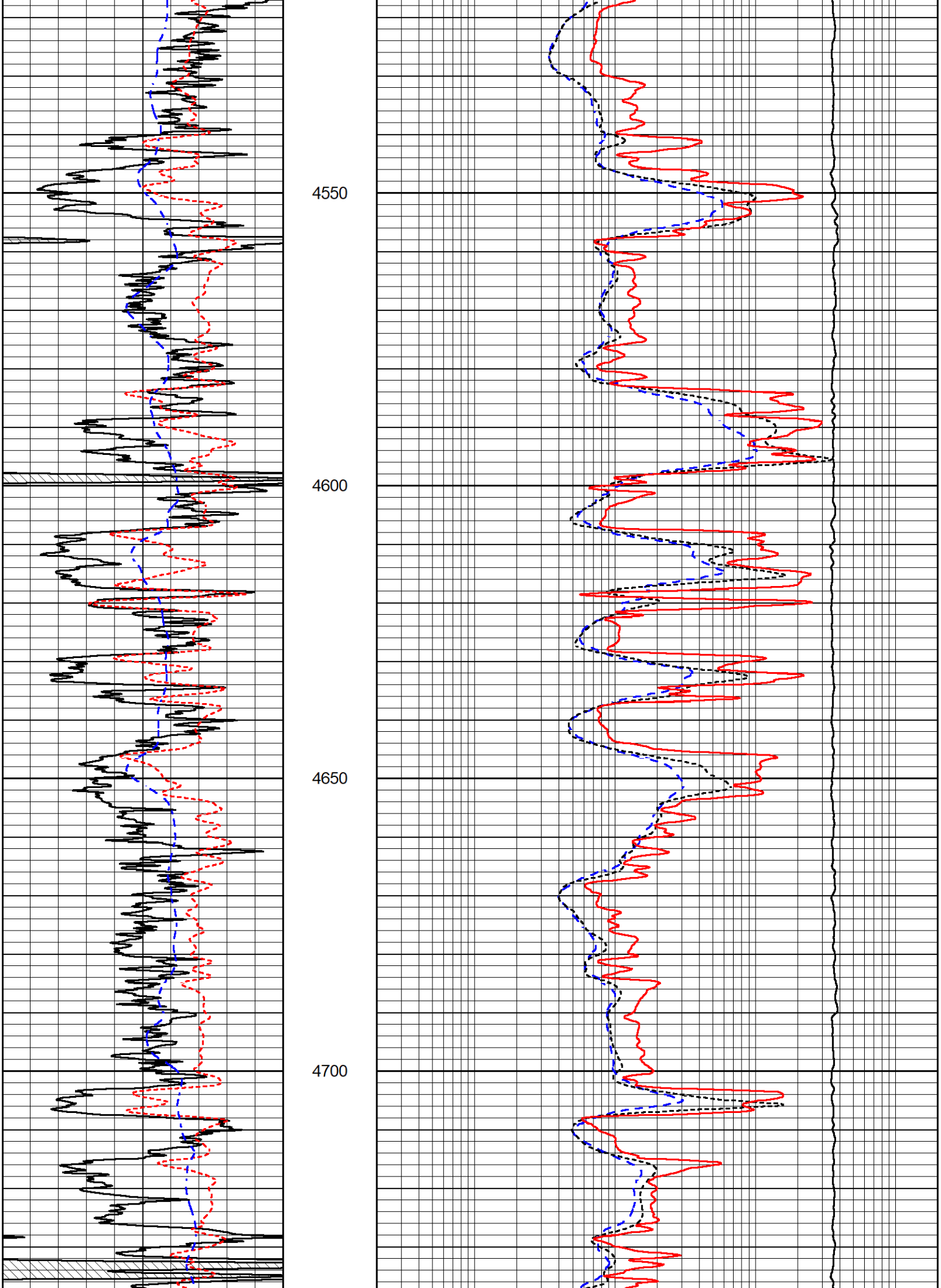
REPEAT PASS

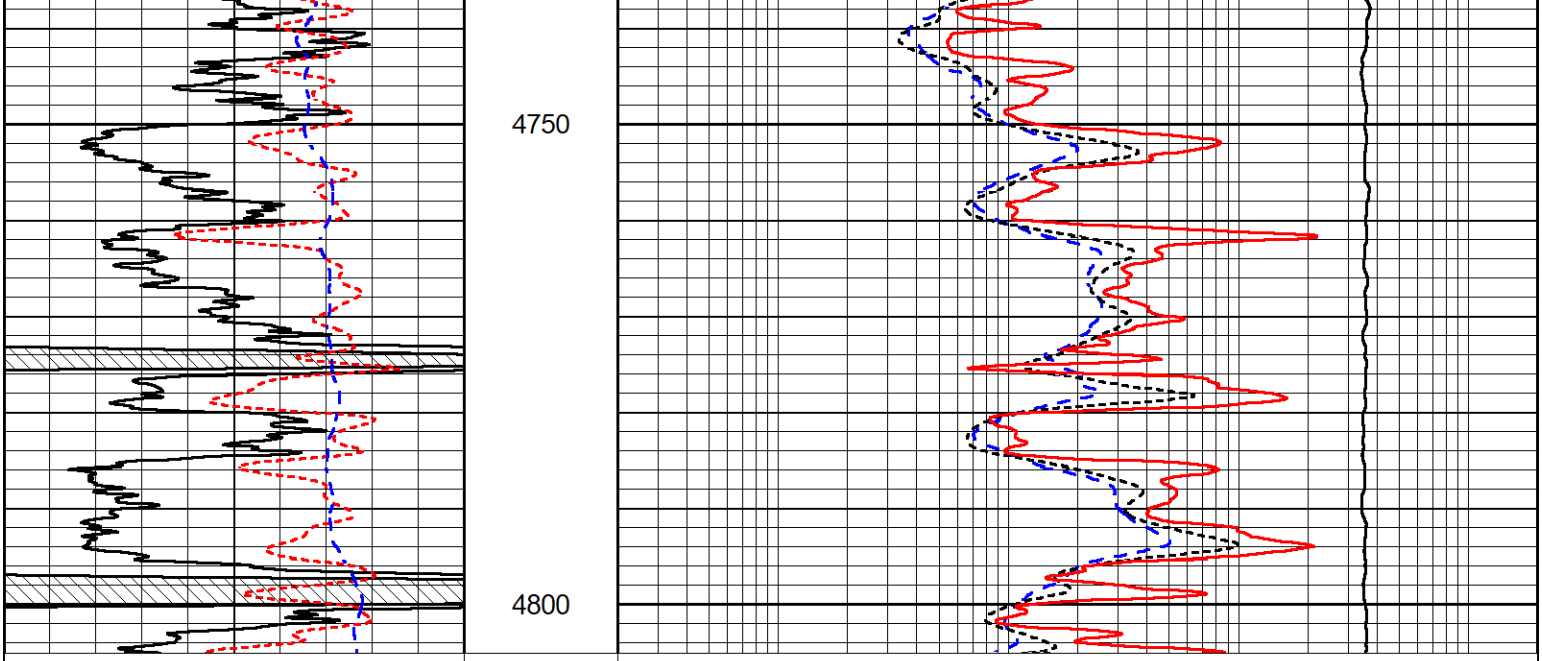
Database File	murfin_mj unit 1-10.db
Dataset Pathname	stkml/pass2.1
Presentation Format	_dil
Dataset Creation	Thu Sep 29 19:22:20 2022
Charted by	Depth in Feet scaled 1:240

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




4550
4600
4650
4700



Calibration Report

Database File	murfin_mj unit 1-10.db
Dataset Pathname	stkml/pass4.1
Dataset Creation	Thu Sep 29 19:53:04 2022

Dual Induction Calibration Report

Serial-Model:	501 HT-M&W
Surface Cal Performed:	Thu Sep 22 17:20:27 2022

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.455	-37.000
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.305	-35.000

Microlog Calibration Report

Serial-Model:	402-PSIML
Performed:	Thu Sep 22 17:20:33 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	24500.0000	-1.2500
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	28000.0000	-1.0000
Caliper	1.0052	1.0858	5.0000	16.5000	in	120.0000	-117.2750

Compensated Density Calibration Report

Serial-Model:	307-11-M&W
Source #:	20762B
Master Calibration Performed:	Sat Aug 27 10:20:16 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3600.52	4768.22	cps
Aluminum	2.670	g/cc	693.98	3106.20	cps

Spine Angle = 75.41 Density/Spine Ratio = 0.538

	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		
	Long Space		cps	pu	pu
2)	Short Space		cps		
	Long Space		cps	pu	
3)	Short Space		cps		
	Long Space		cps	pu	

POST-SURVEY VERIFICATION

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

Gamma Ray Calibration Report

Serial Number: 106
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	Murfin Drilling Company, Inc.
Well	MJ Unit #1-10
Field	
County	Cheyenne
State	Kansas