



MIDWEST WIRELINE

BOREHOLE COMPENSATED SONIC LOG

Company Murfin Drilling Company, Inc.

Well C-W Unit #1-14

Field
County Cheyenne State Kansas

Location: API #: 15-023-21601-00-00

1200 FSL & 1320 FEL
SEC 14 TWP 1S RGE 40W
Other Services
CNL/CDL
DIL/MEL

Company Murfin Drilling Company, Inc.
Well C-W Unit #1-14
Field
County Cheyenne
State Kansas

Permanent Datum	Ground Level	Elevation	3367
Log Measured From	Kelly Bushing	K.B.	3372
Drilling Measured From	Kelly Bushing	D.F.	
		G.L.	3367

Date	2/21/2023	
Run Number	Two	
Type Log	BHCS	
Depth Driller	5160	
Depth Logger	5162	
Bottom Logged Interval	5150	
Top Logged Interval	200	
Type Fluid In Hole	Chemical	
Salinity, PPM CL	1500	
Density	9.3	
Level	Full	
Max. Rec. Temp. F	128	
Operating Rig Time	6 Hours	
Equipment -- Location	P-108 HAYS	
Recorded By	D. Schmidt	
Witnessed By	Saman Sharifaie	

Borehole Record				Casing Record			
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	0	217	8.625	23	0	217
Two	7.875	217	TD				

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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.

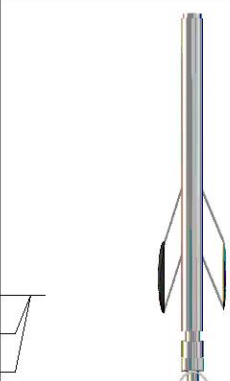
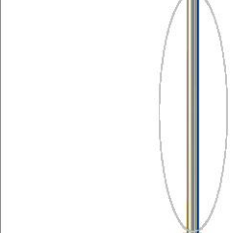
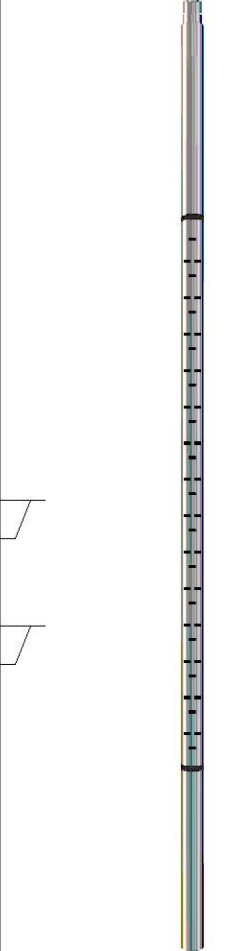
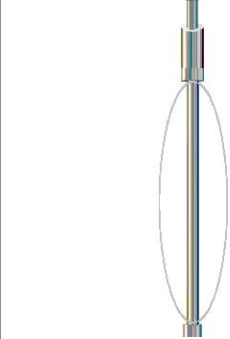
St Francis,
North on Rd 14, turns into Rd 15,
North to BB Rd, 3/4 East,
North and West into

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

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

Your Midwest Wireline Crew	This Log Record Was Witnessed By
Engineer: D. Schmidt	Primary Witness: Saman Sharifaie
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Case No.	Offset (ft)	Schematic	Description	Length (ft)	C.D. (in)	Weight (lb)
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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
MCAL MI MN	25.50 25.50 25.50		ML-PENGO (P003)	5.50	3.50	100.00
			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_cw unit 1-14.db: field/well/sonmel/pass2
 Total length: 30.00 ft
 Total weight: 540.00 lb
 O.D.: 3.50 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_cw unit 1-14.db
 Dataset field/well/stkml/pass3.15/_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	0	0	600	50	Off	5162

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

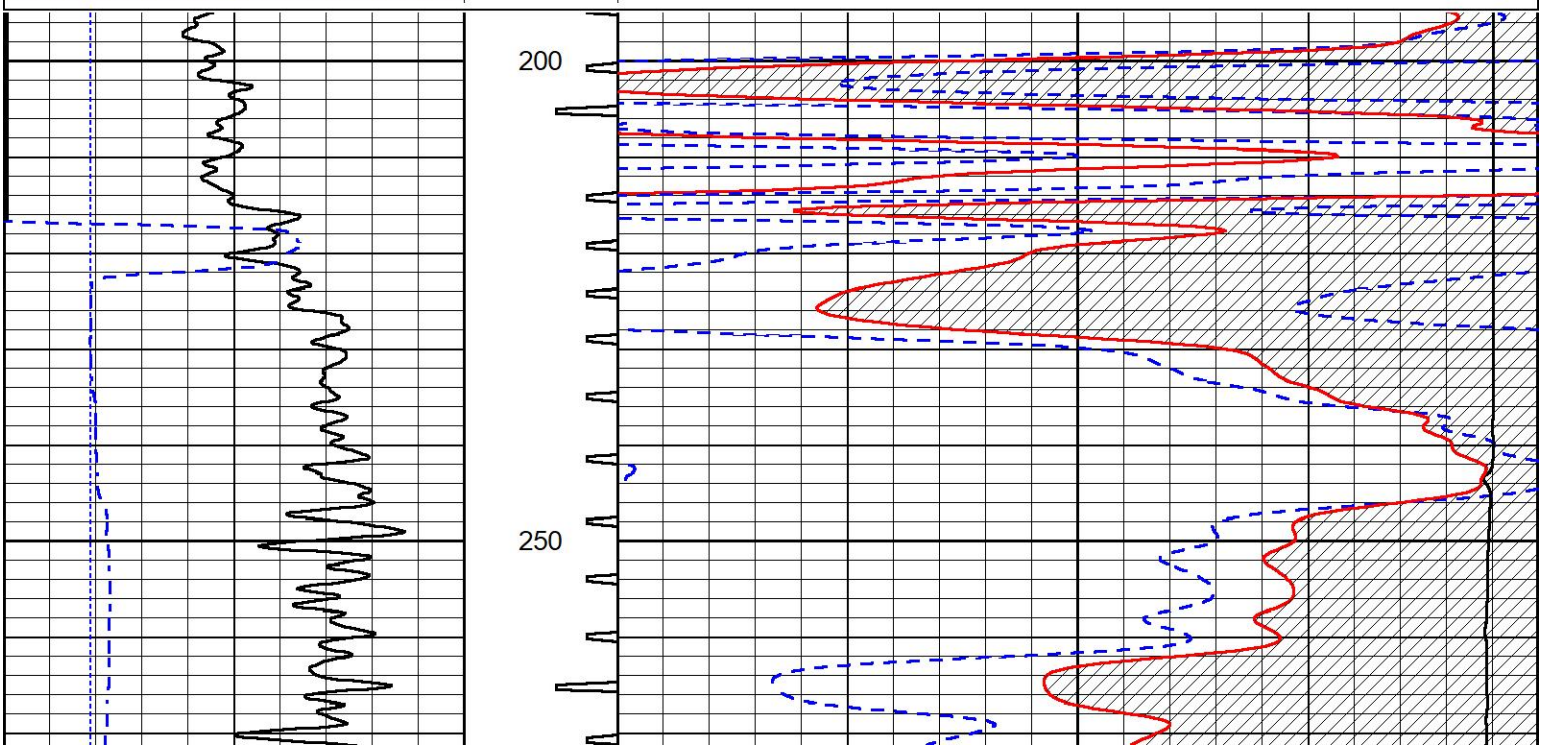


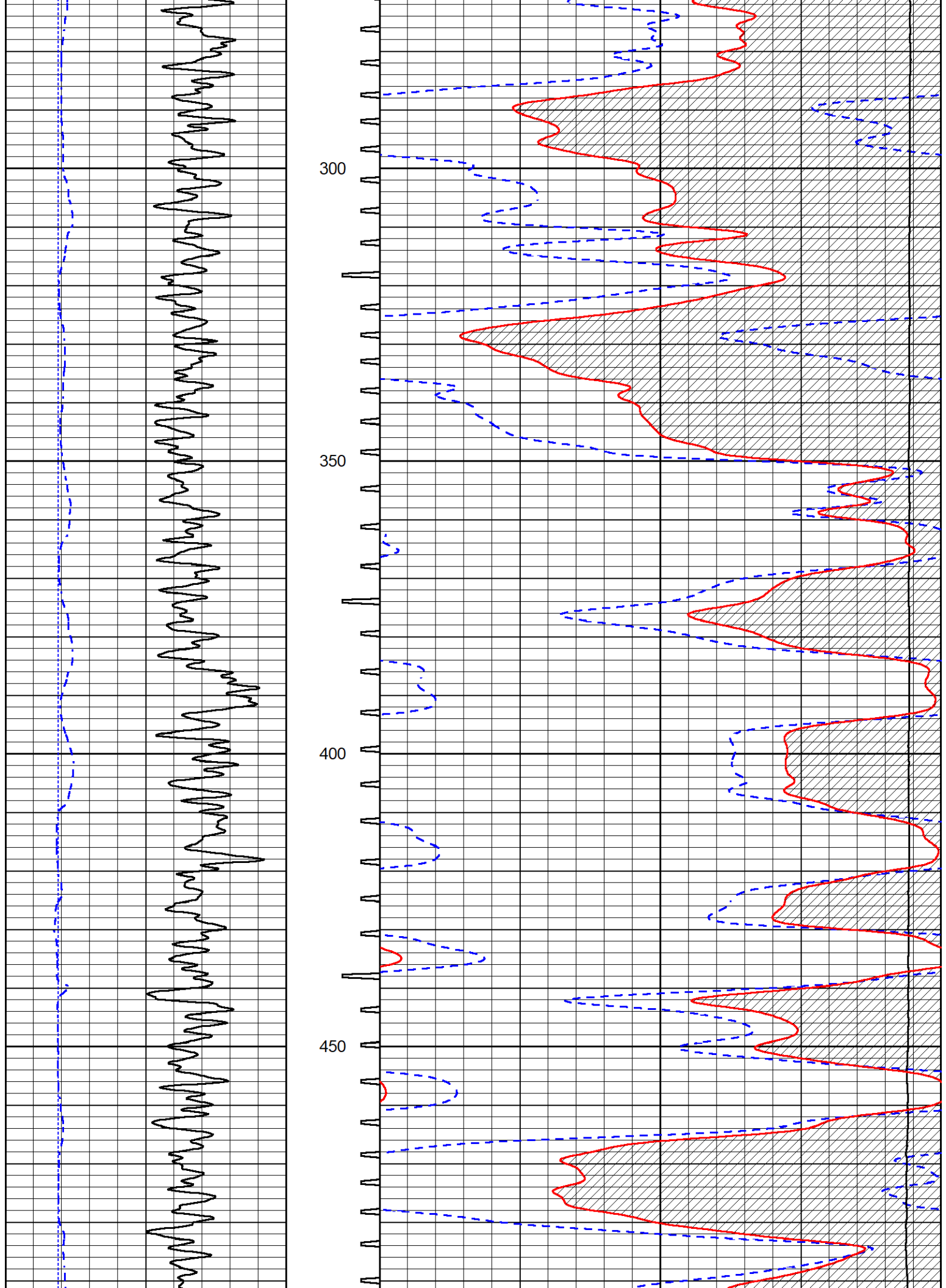
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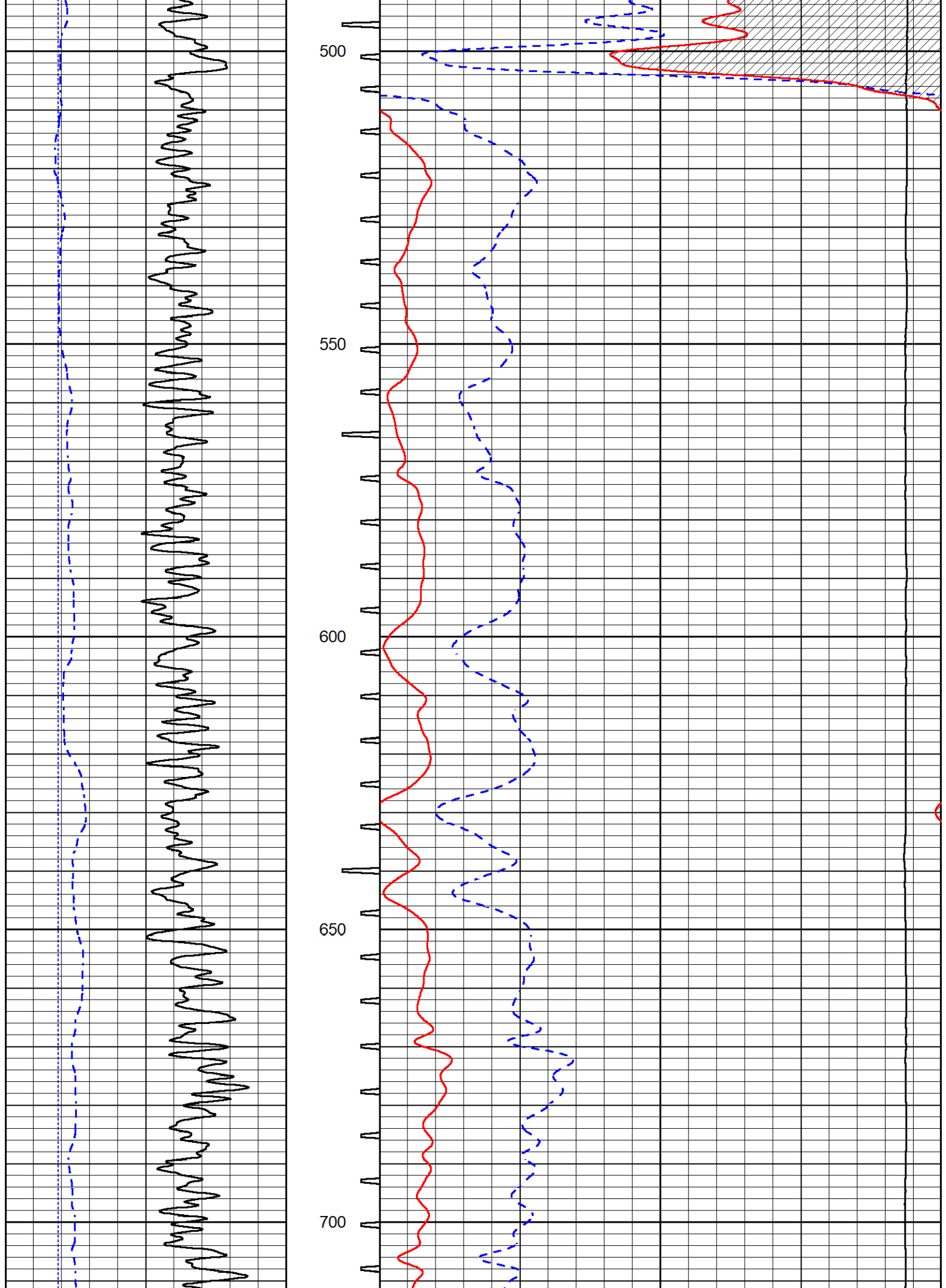
MAIN PASS

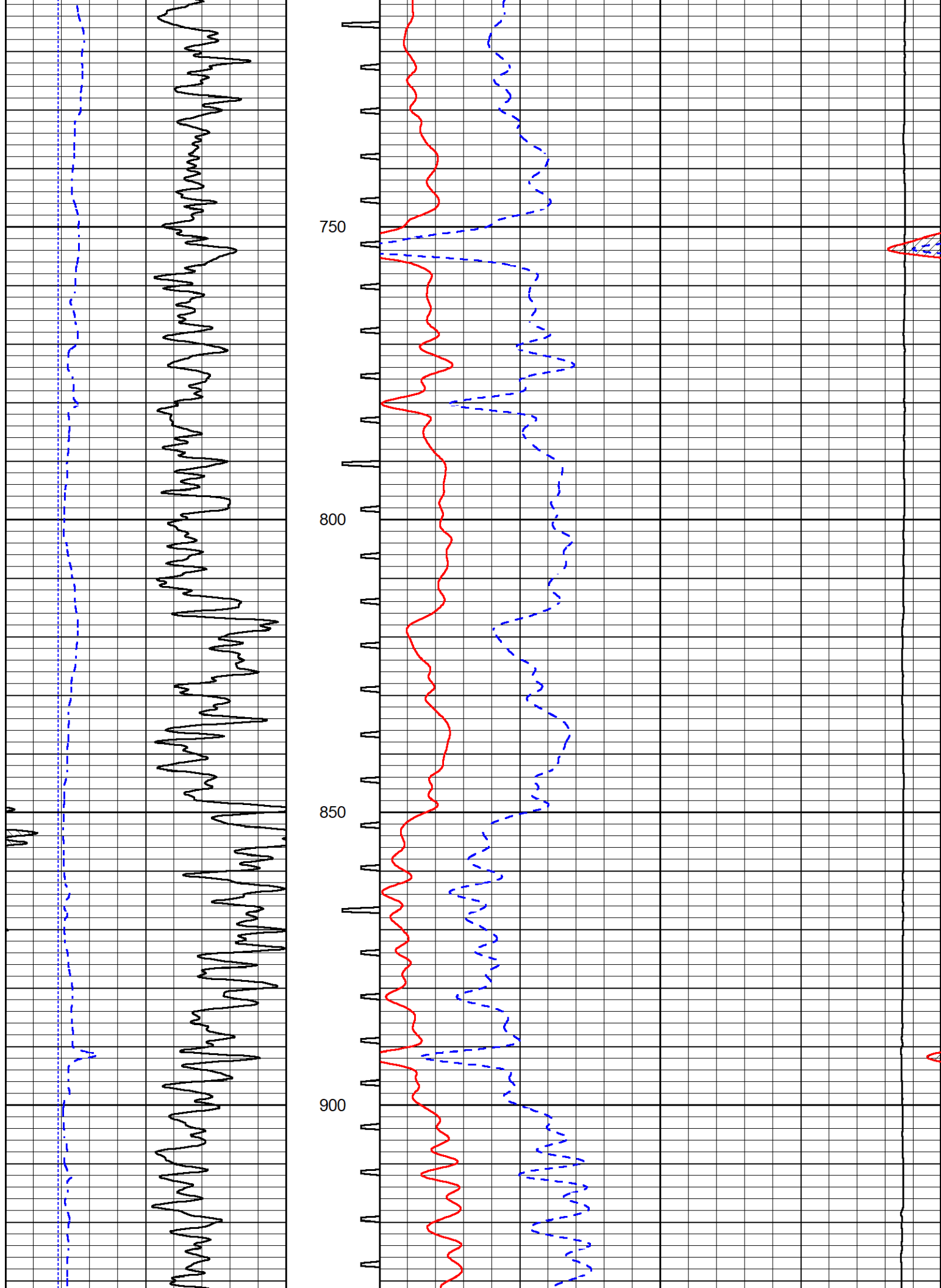
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 Charted by Depth in Feet scaled 1:240

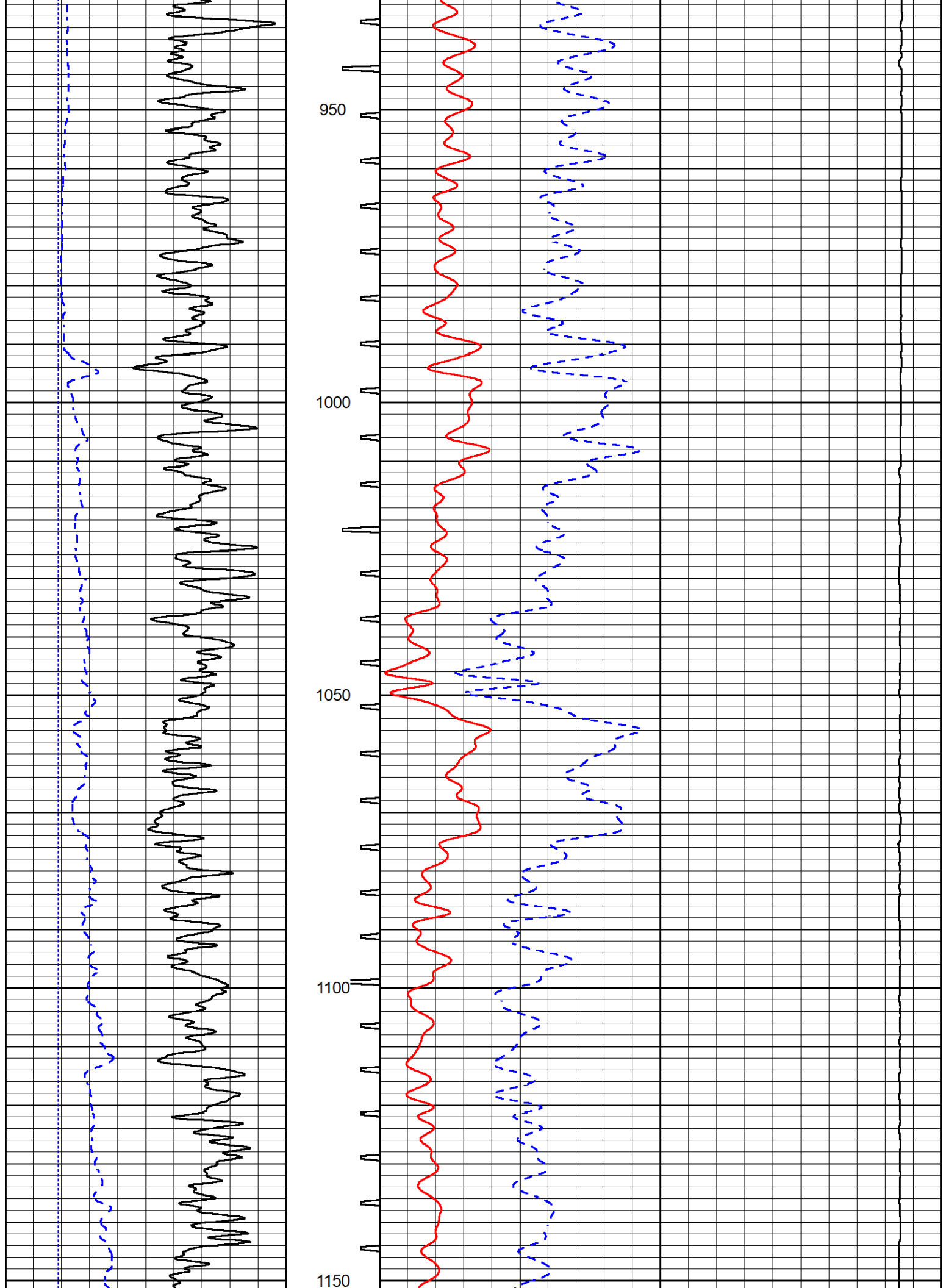
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150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	Caliper (in)	16		15000	Line Tension (lb)	0

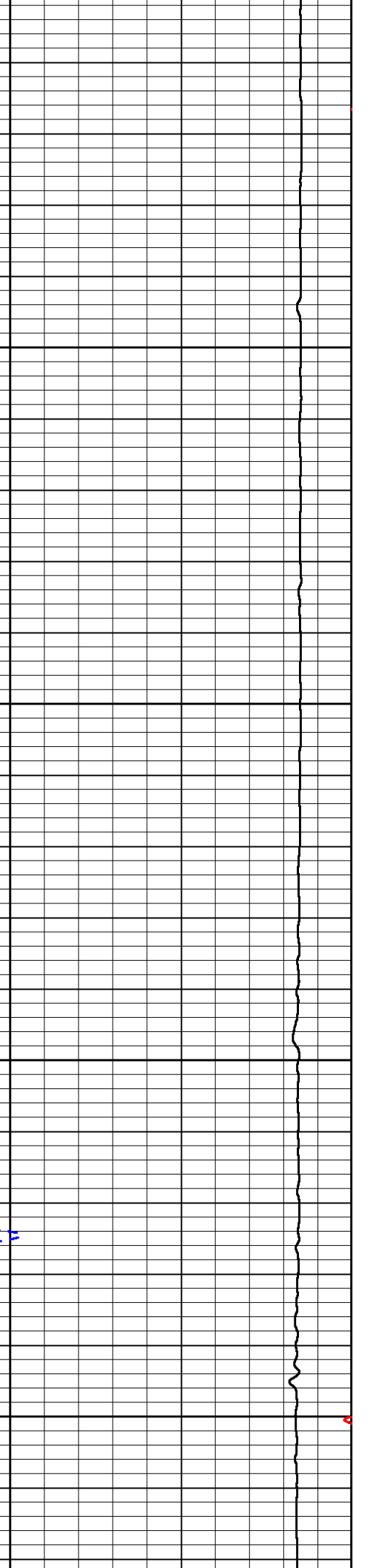
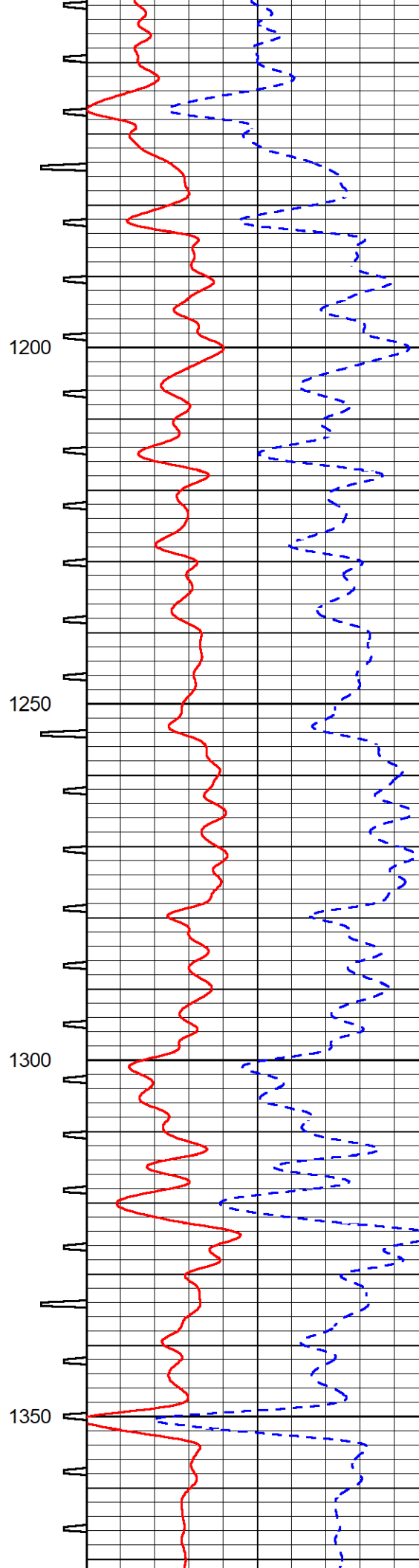
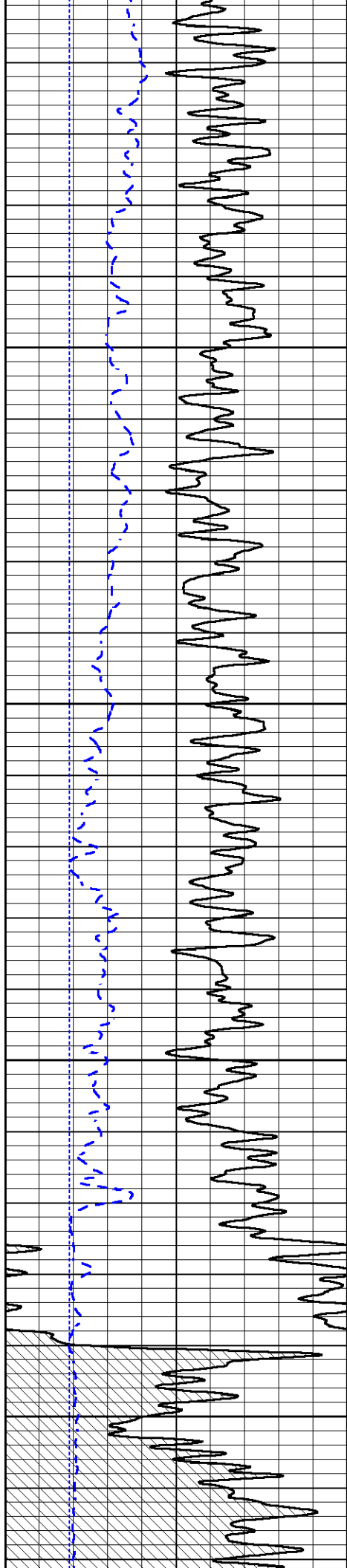


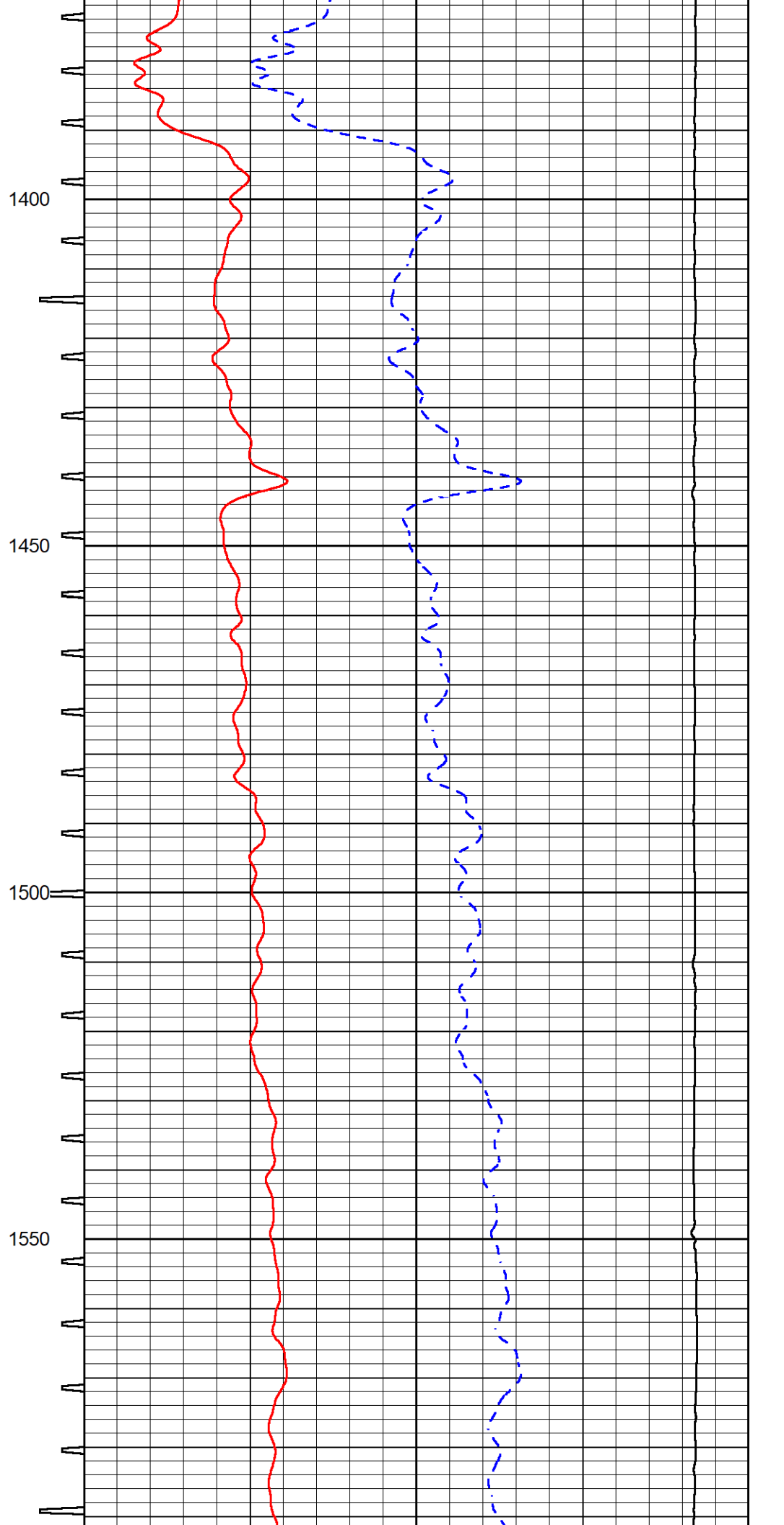
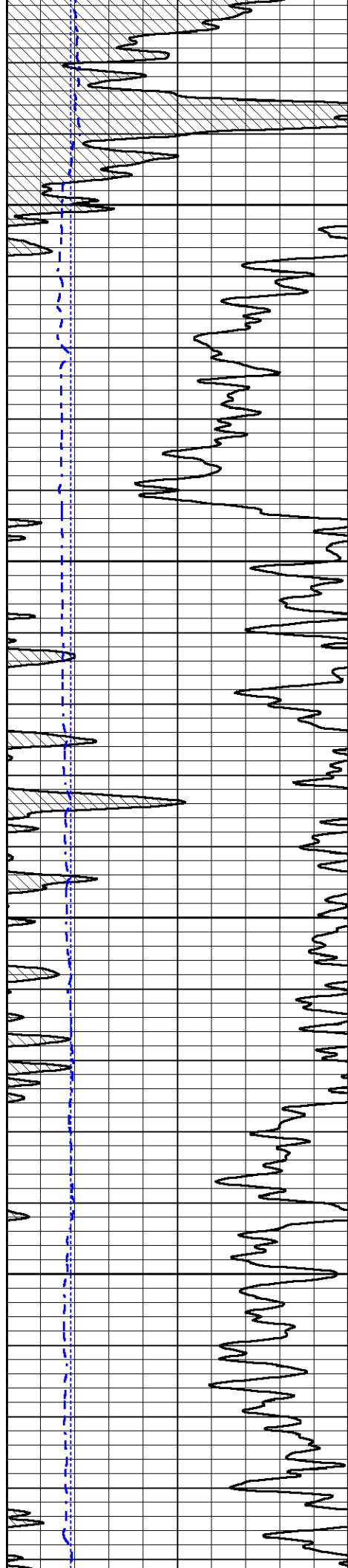


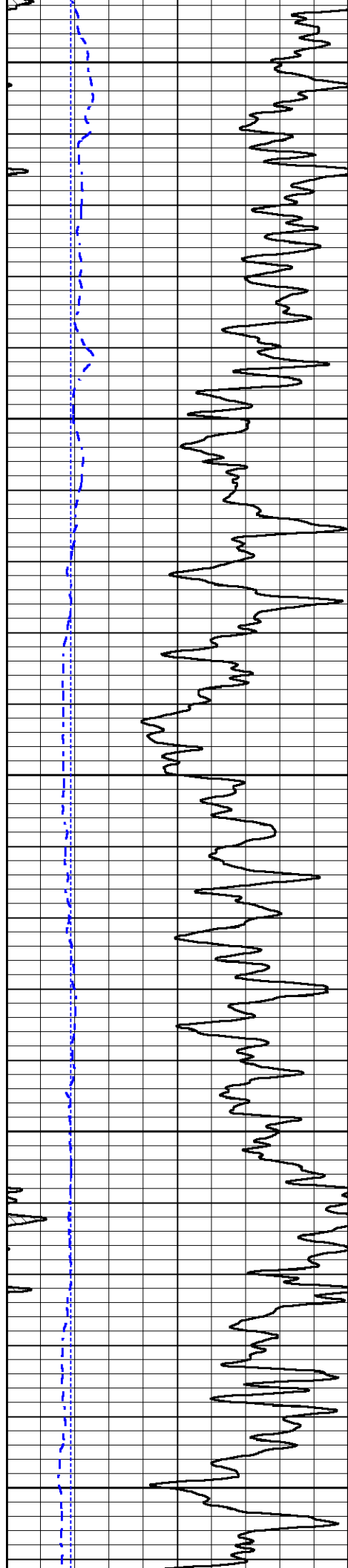




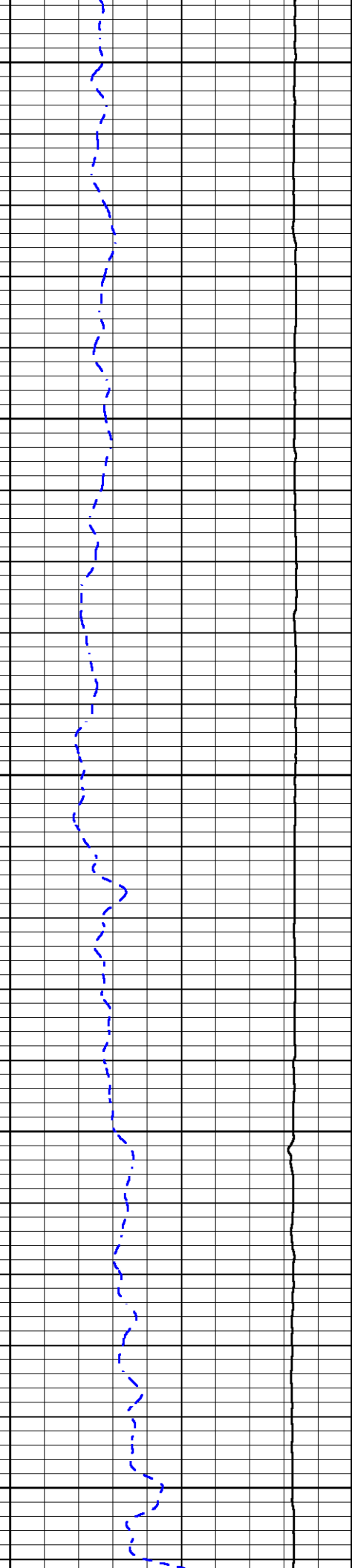
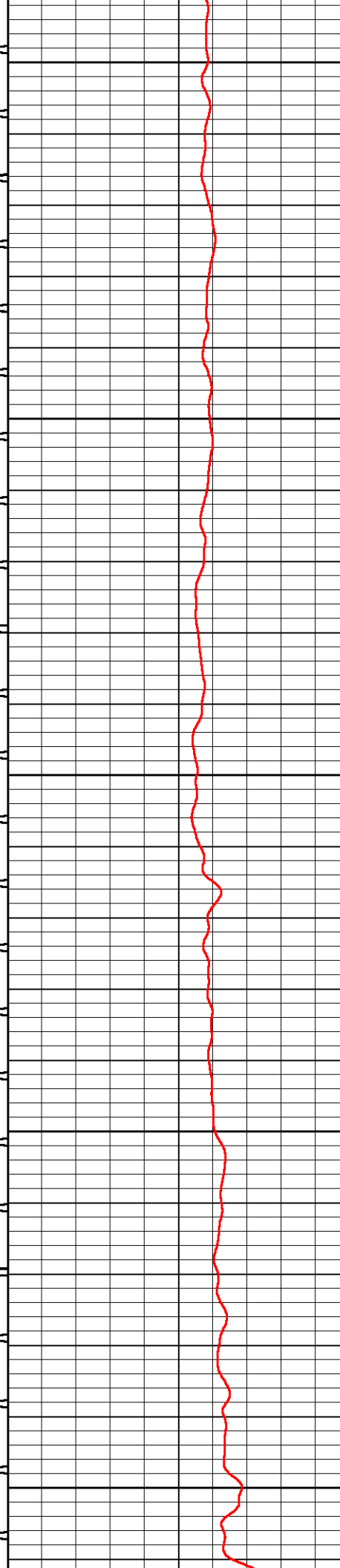


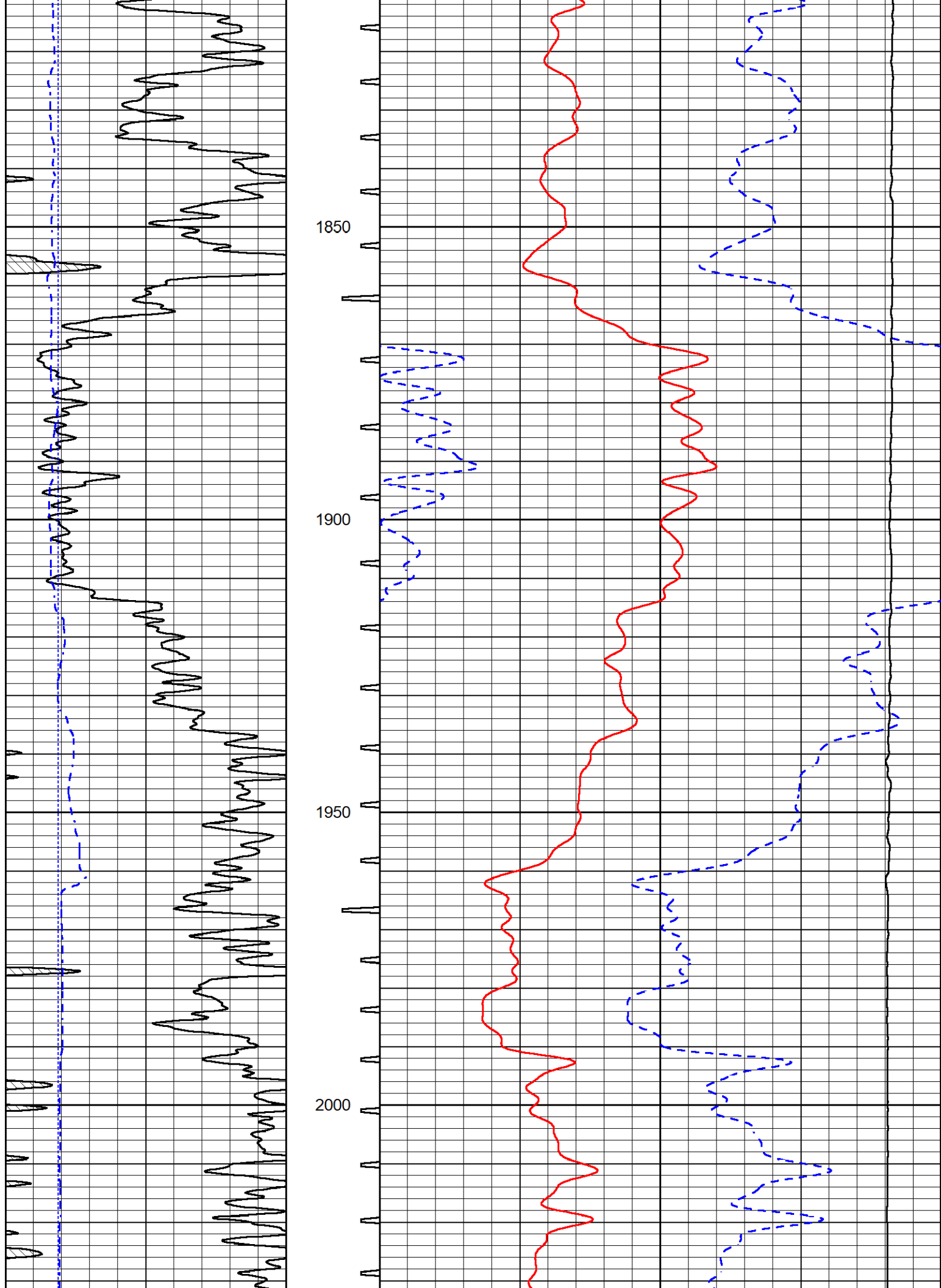


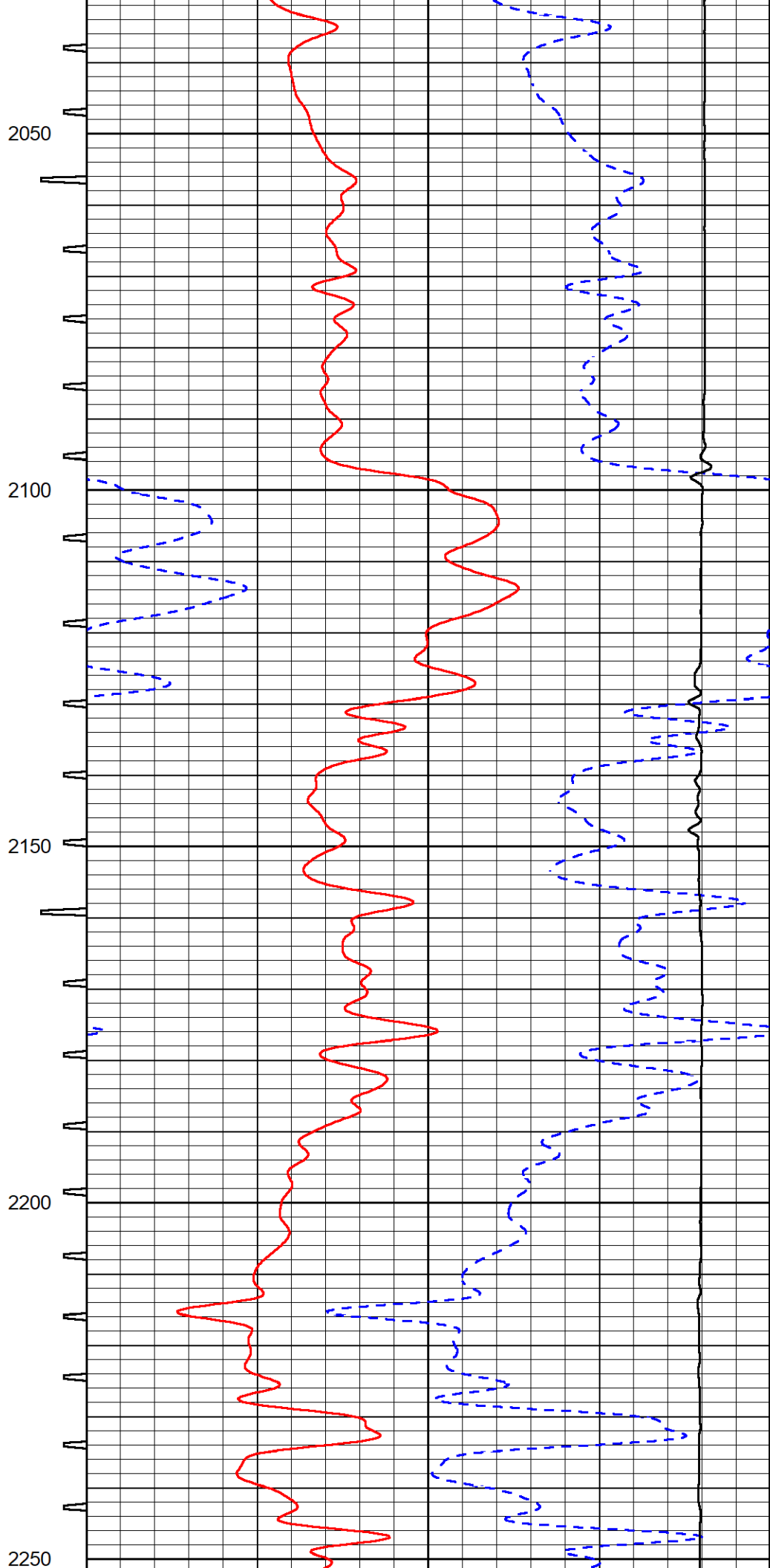
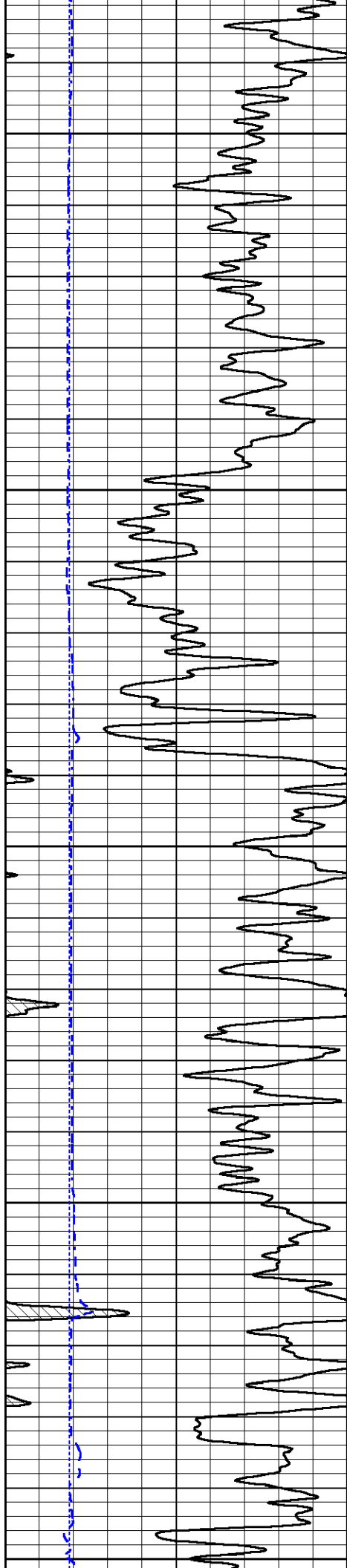


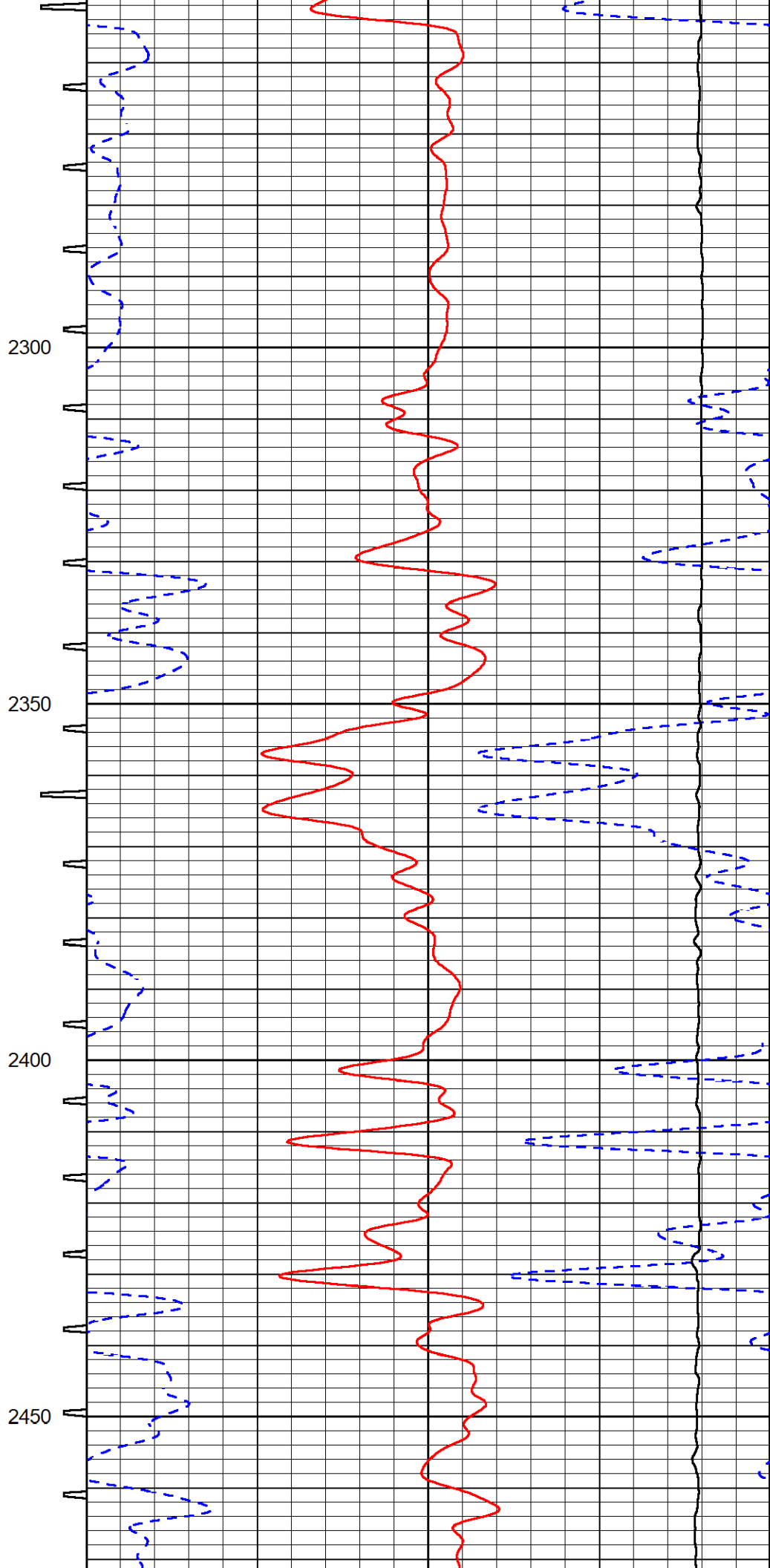
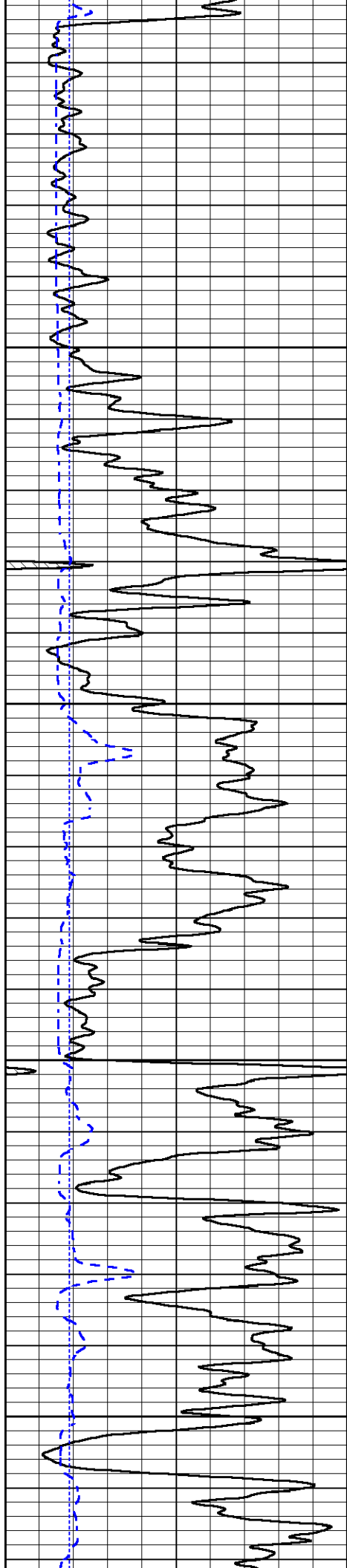


1600
1650
1700
1750
1800







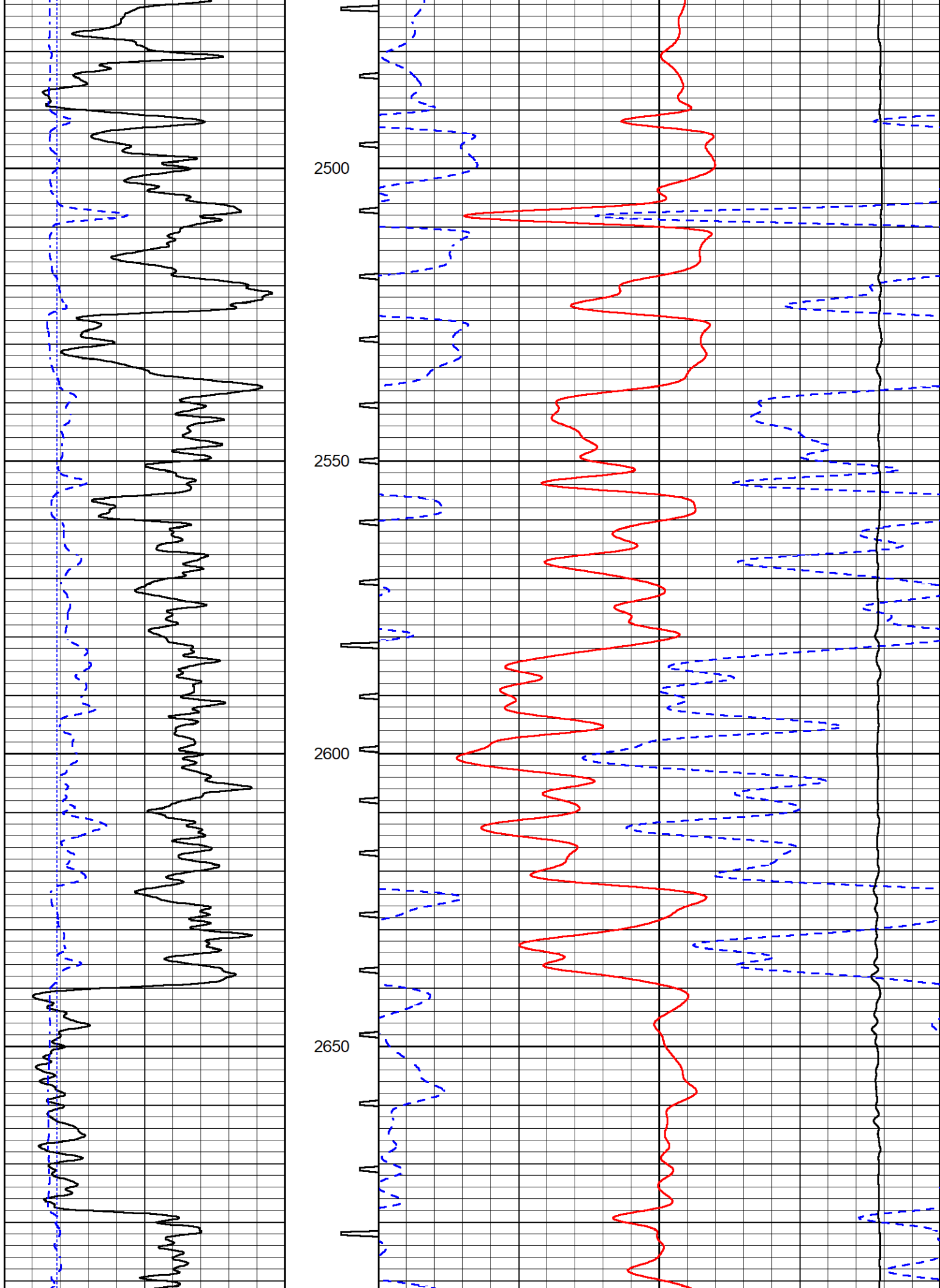


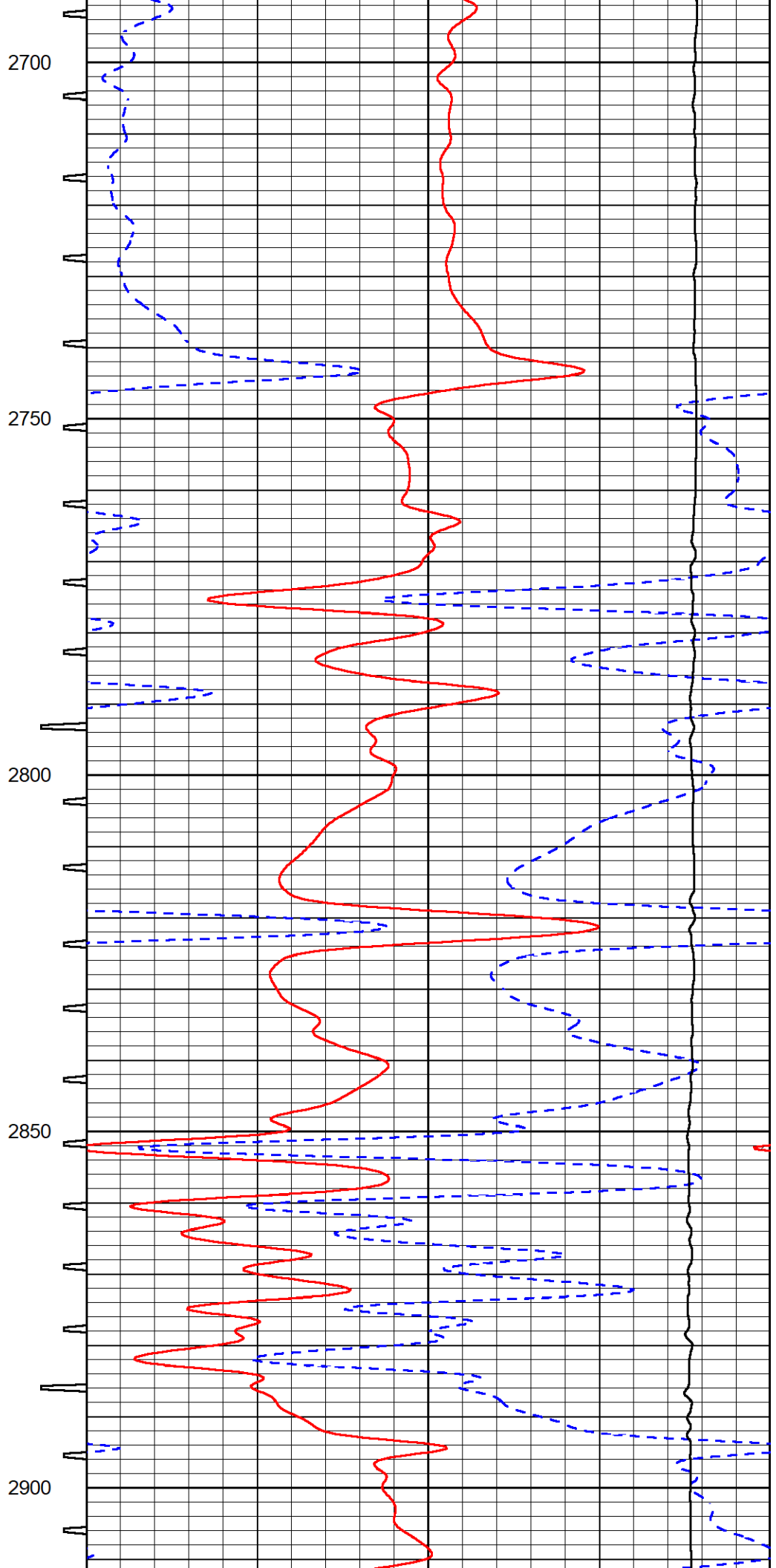
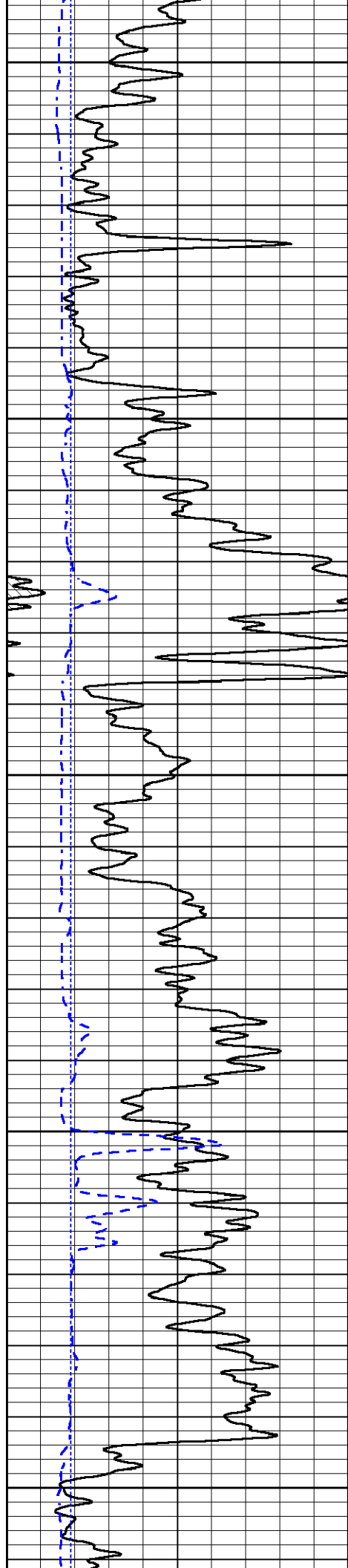
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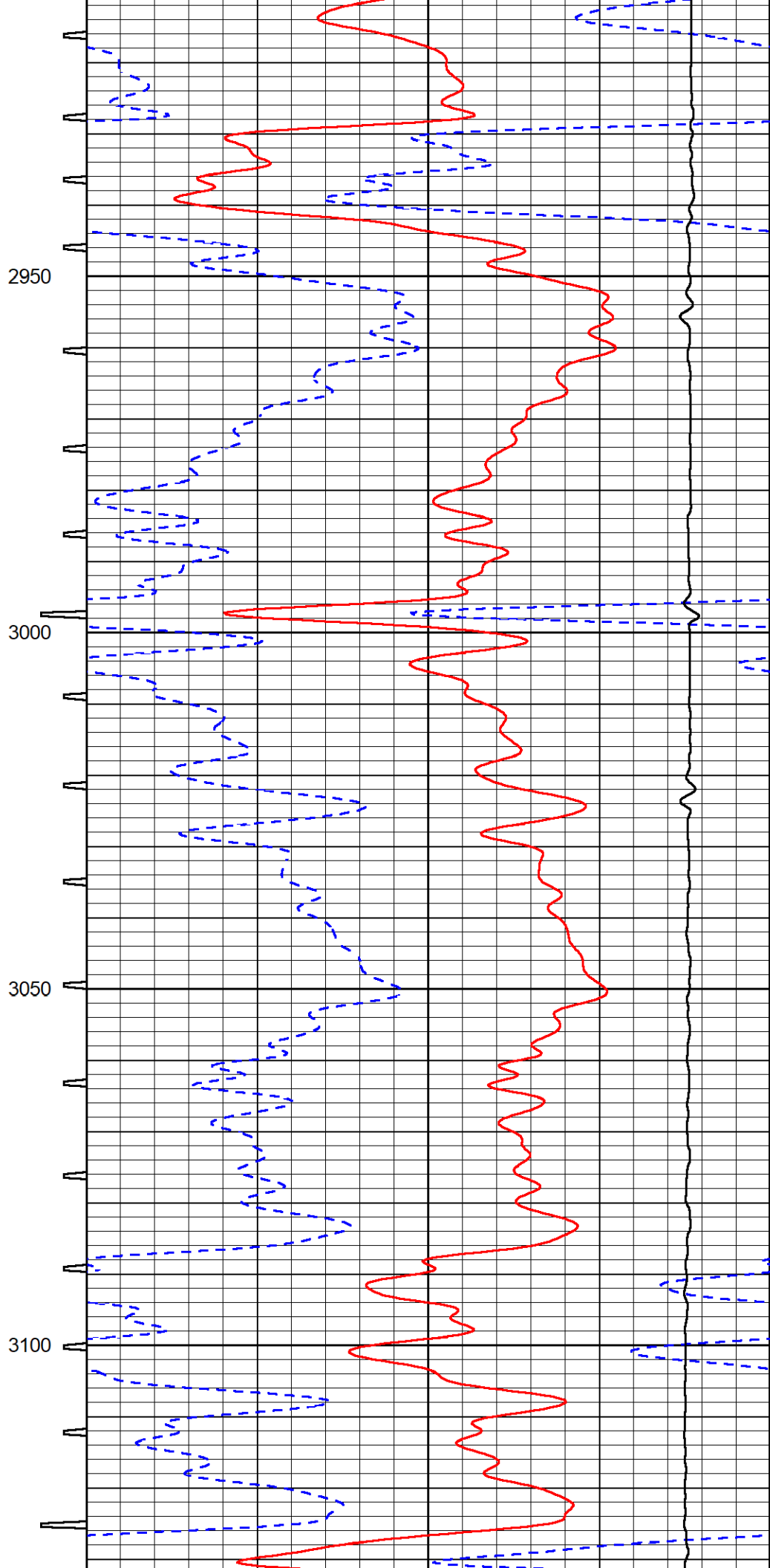
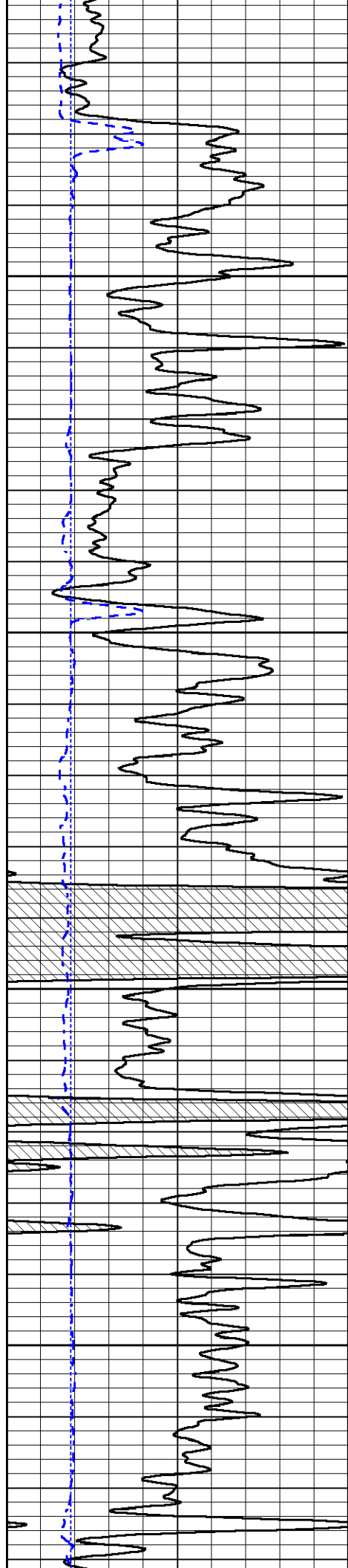
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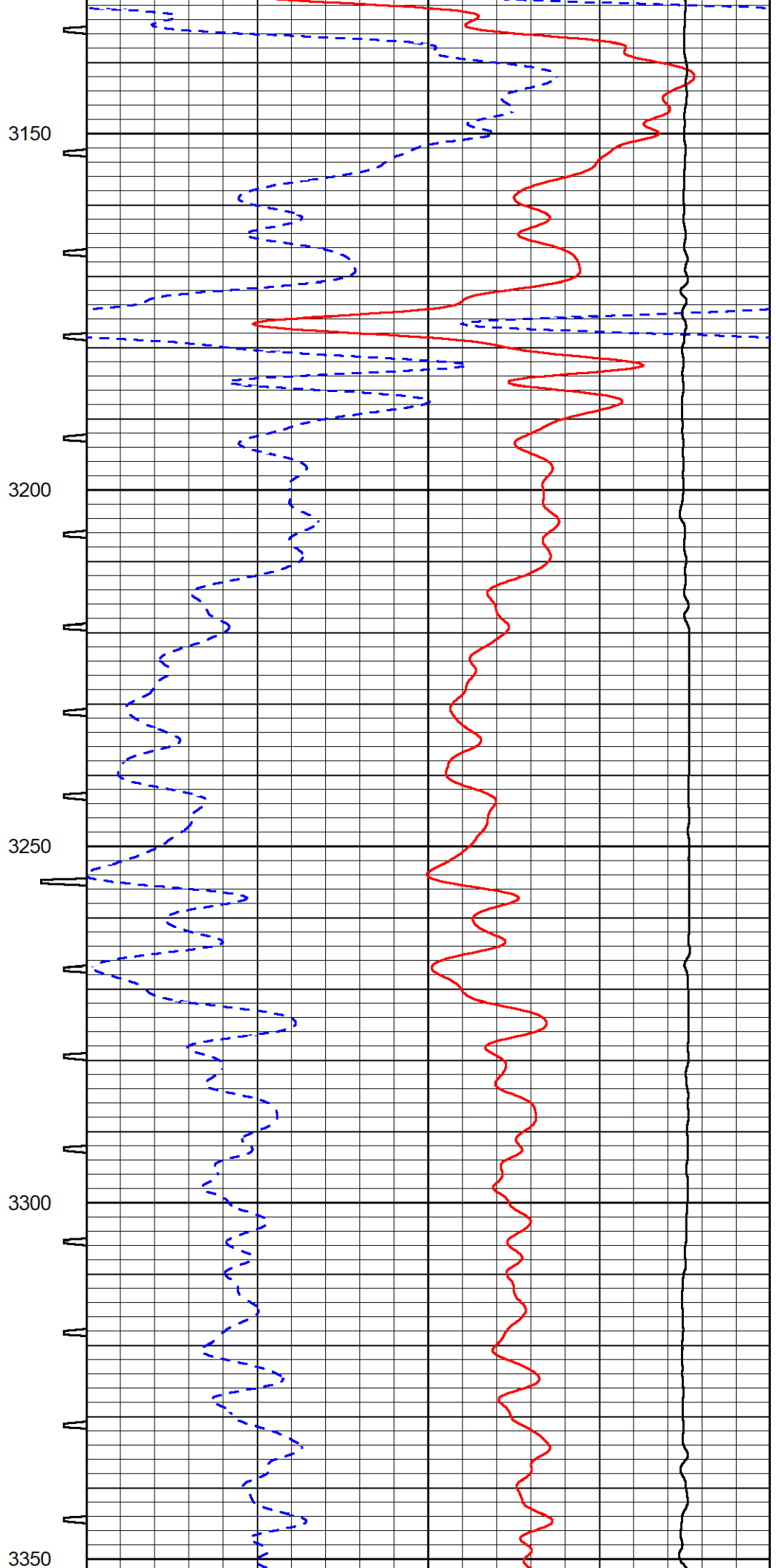
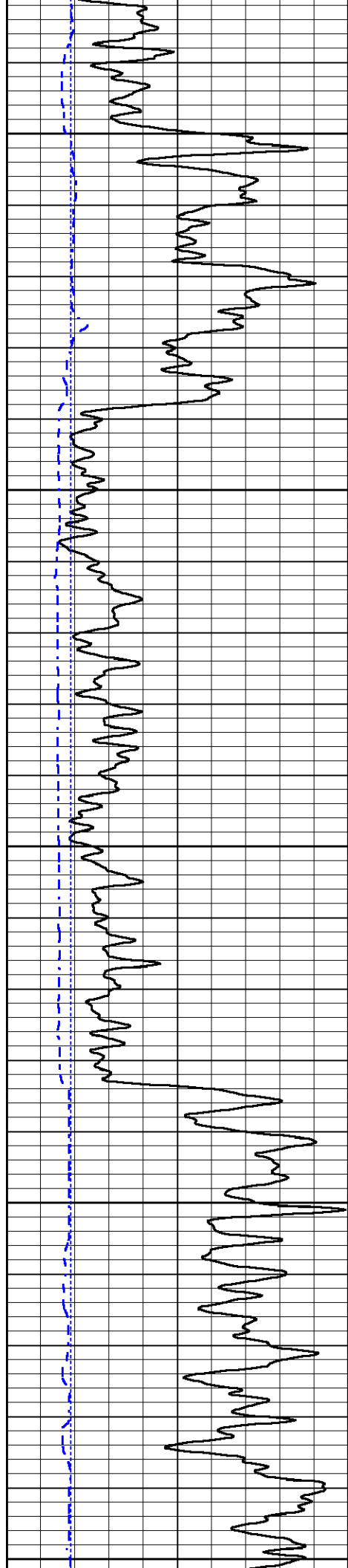
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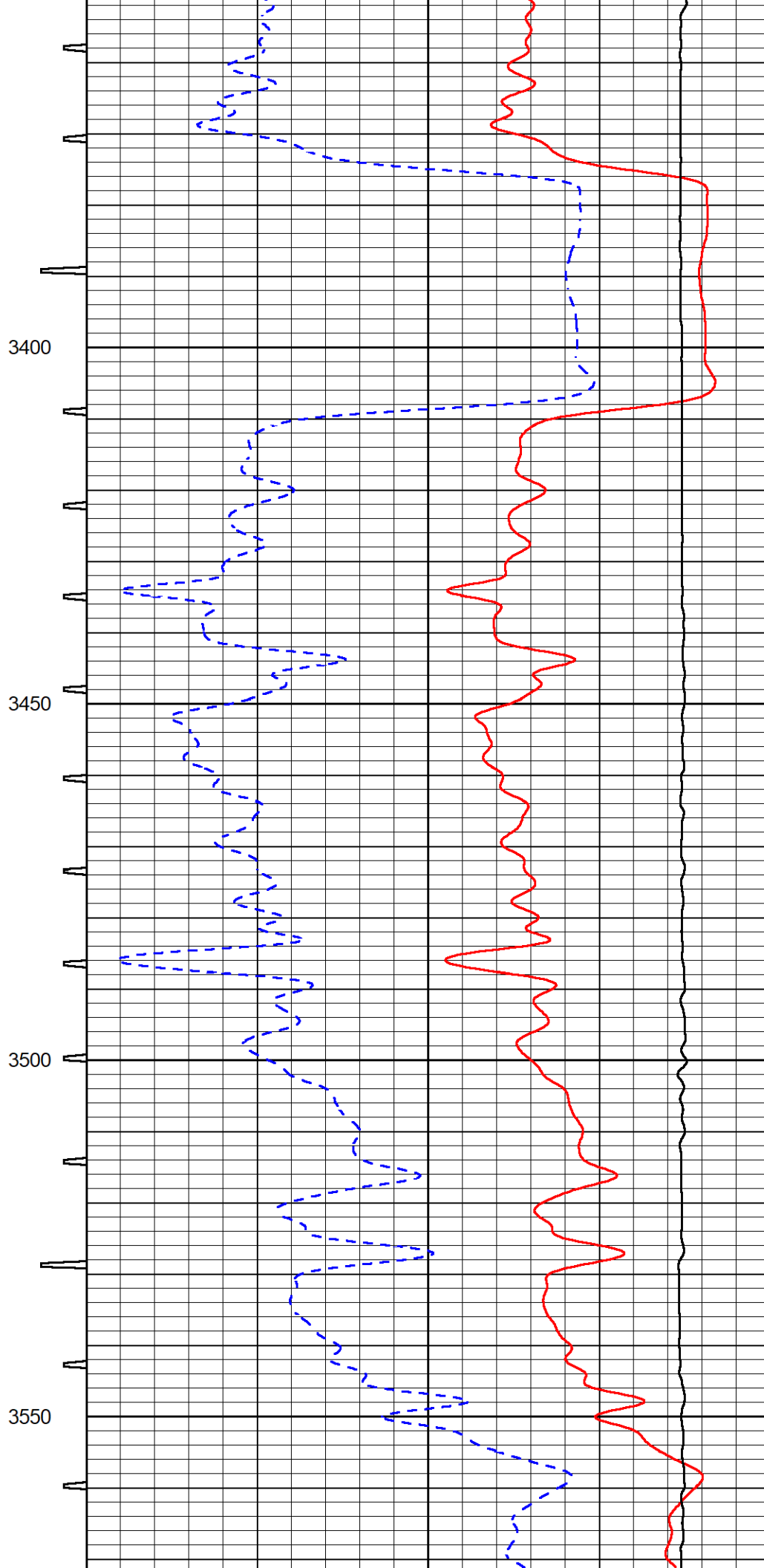
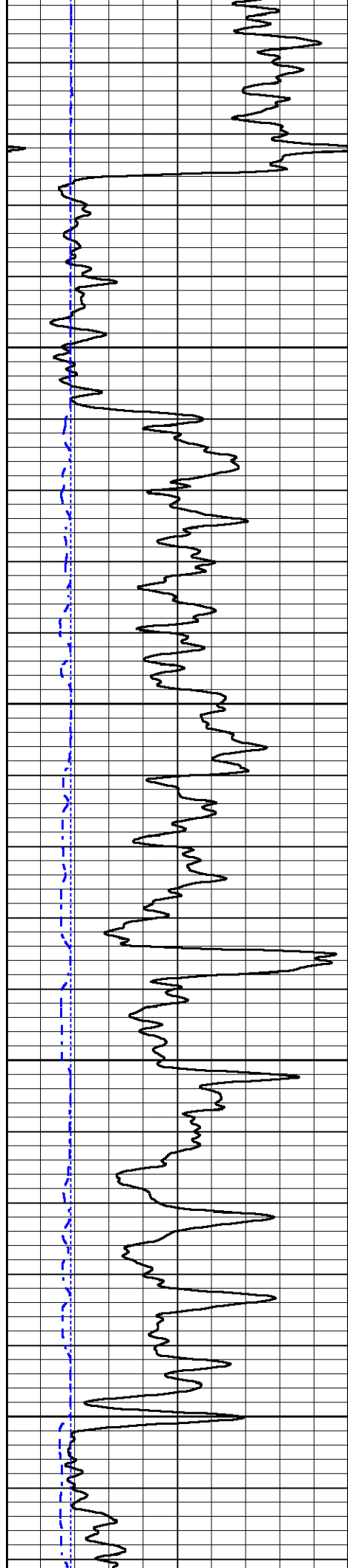
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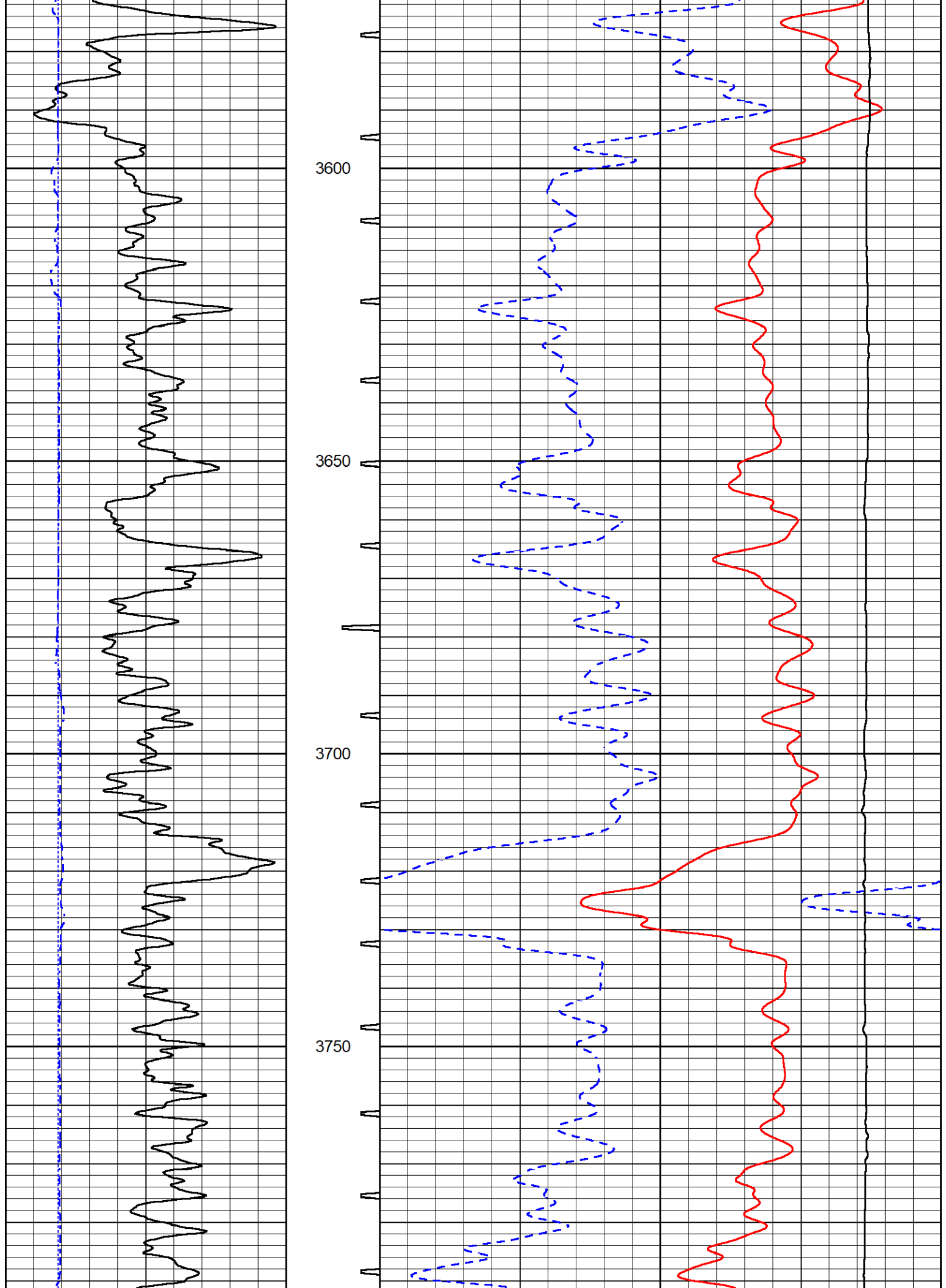


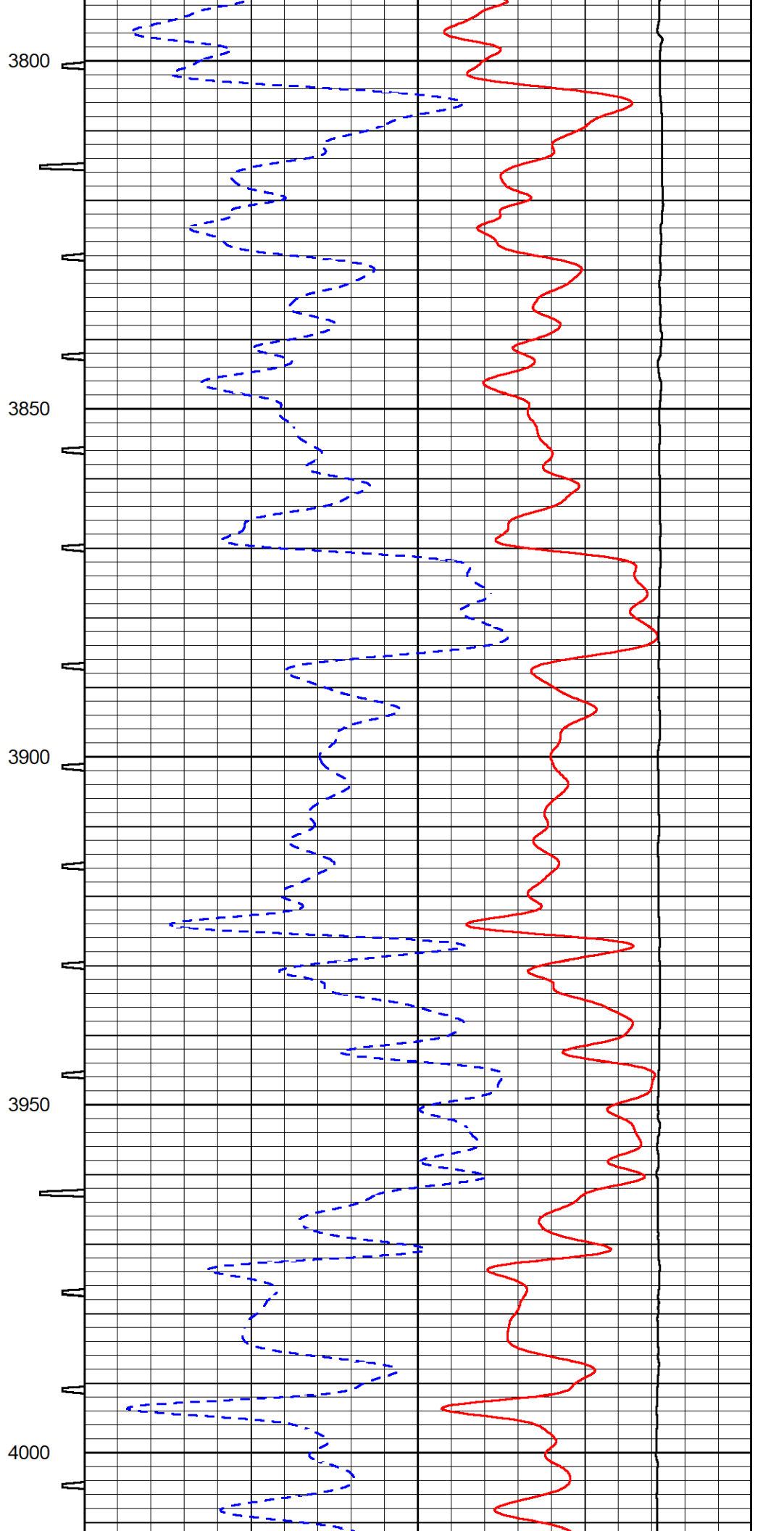
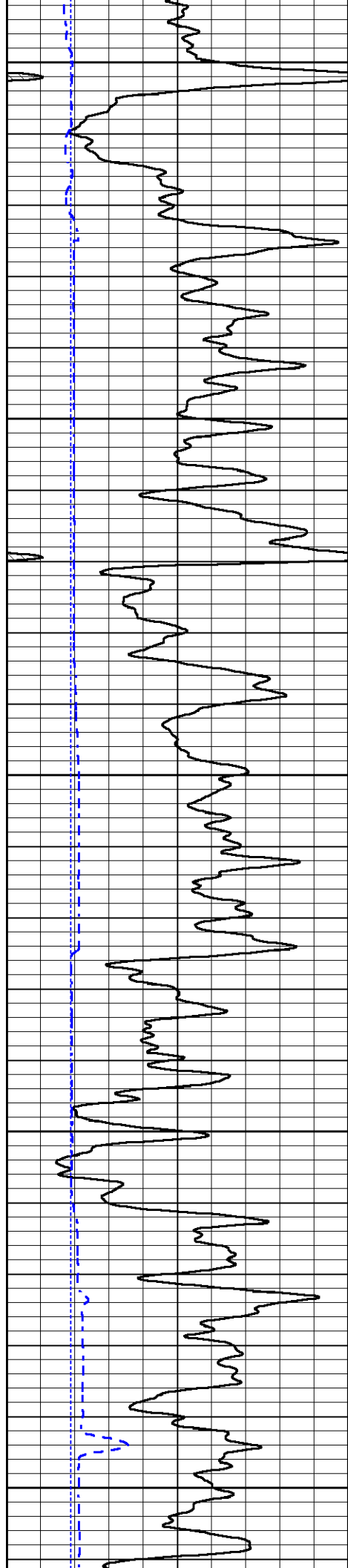
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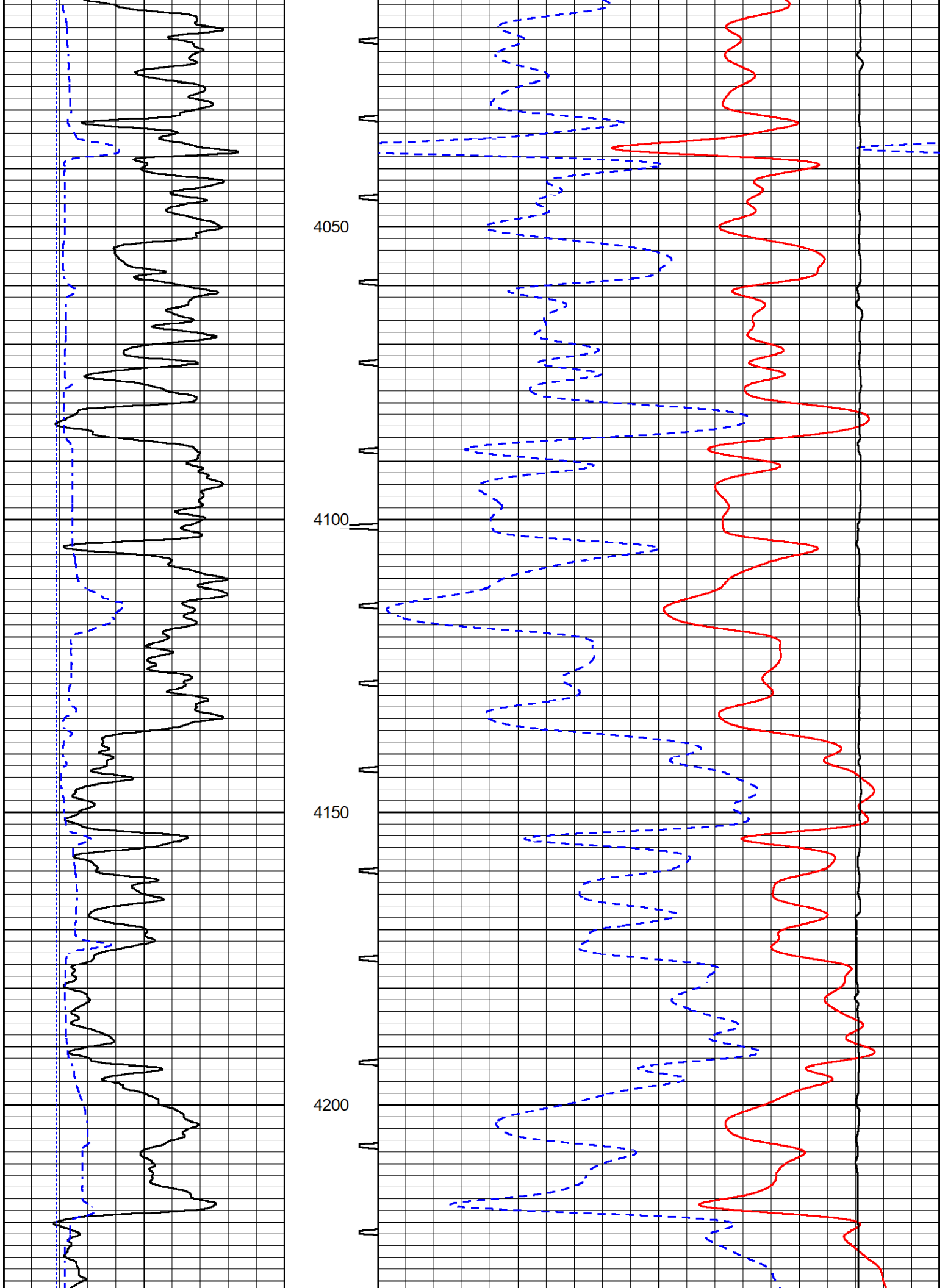
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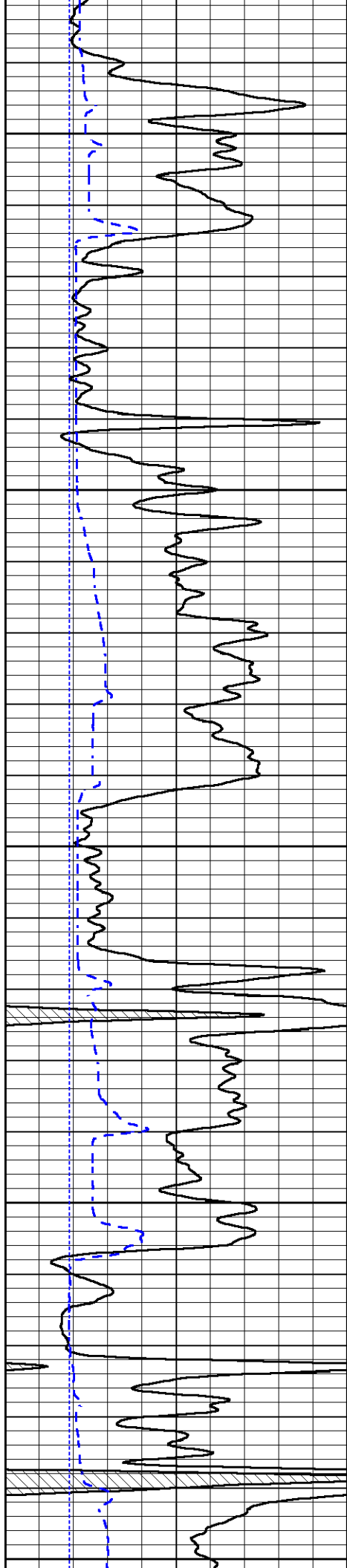
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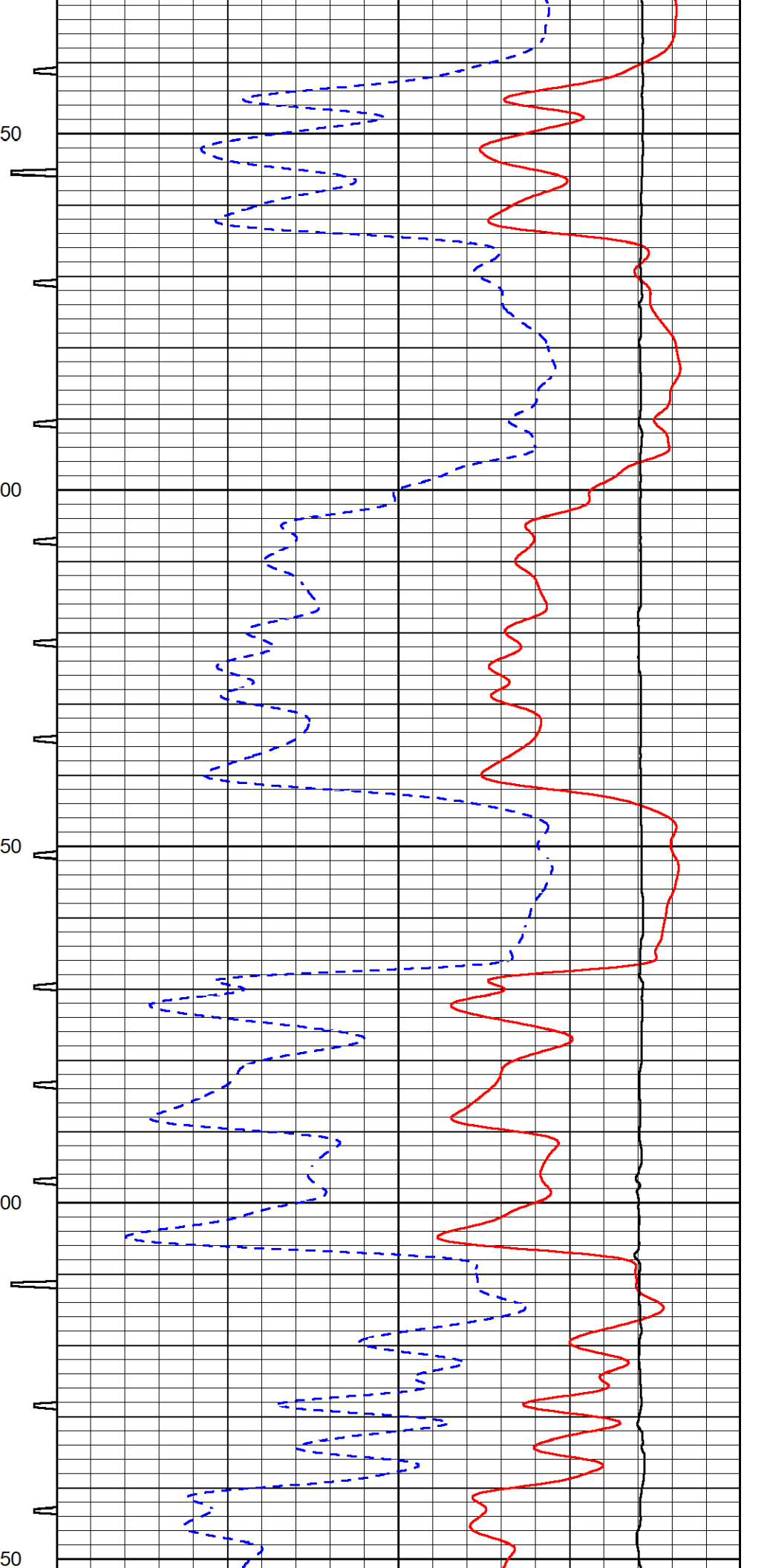
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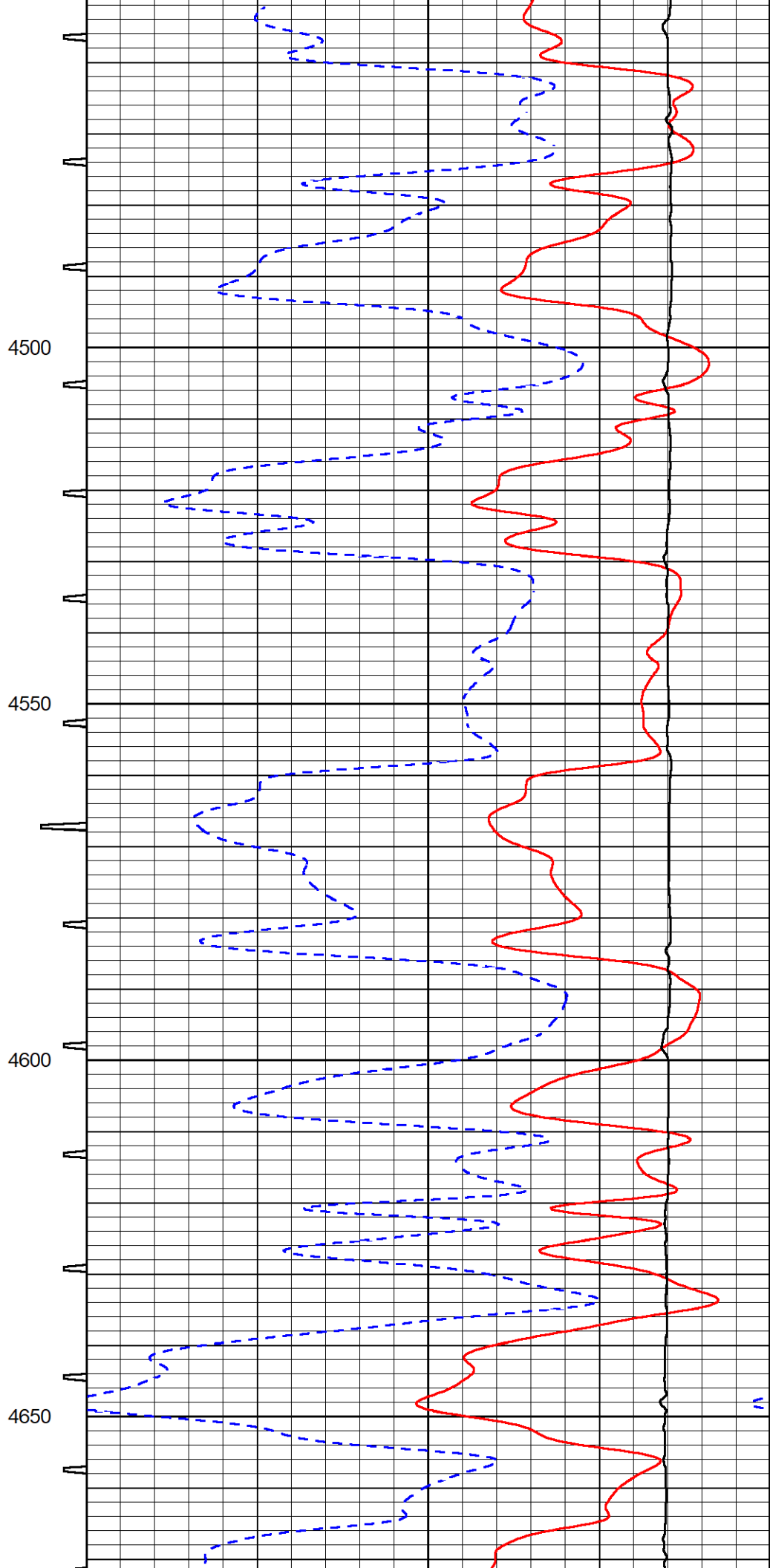
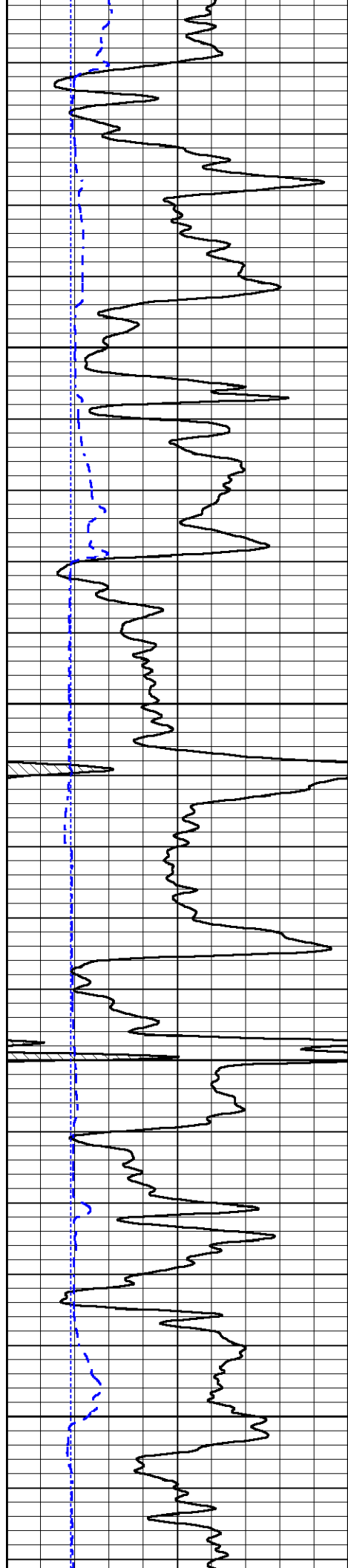
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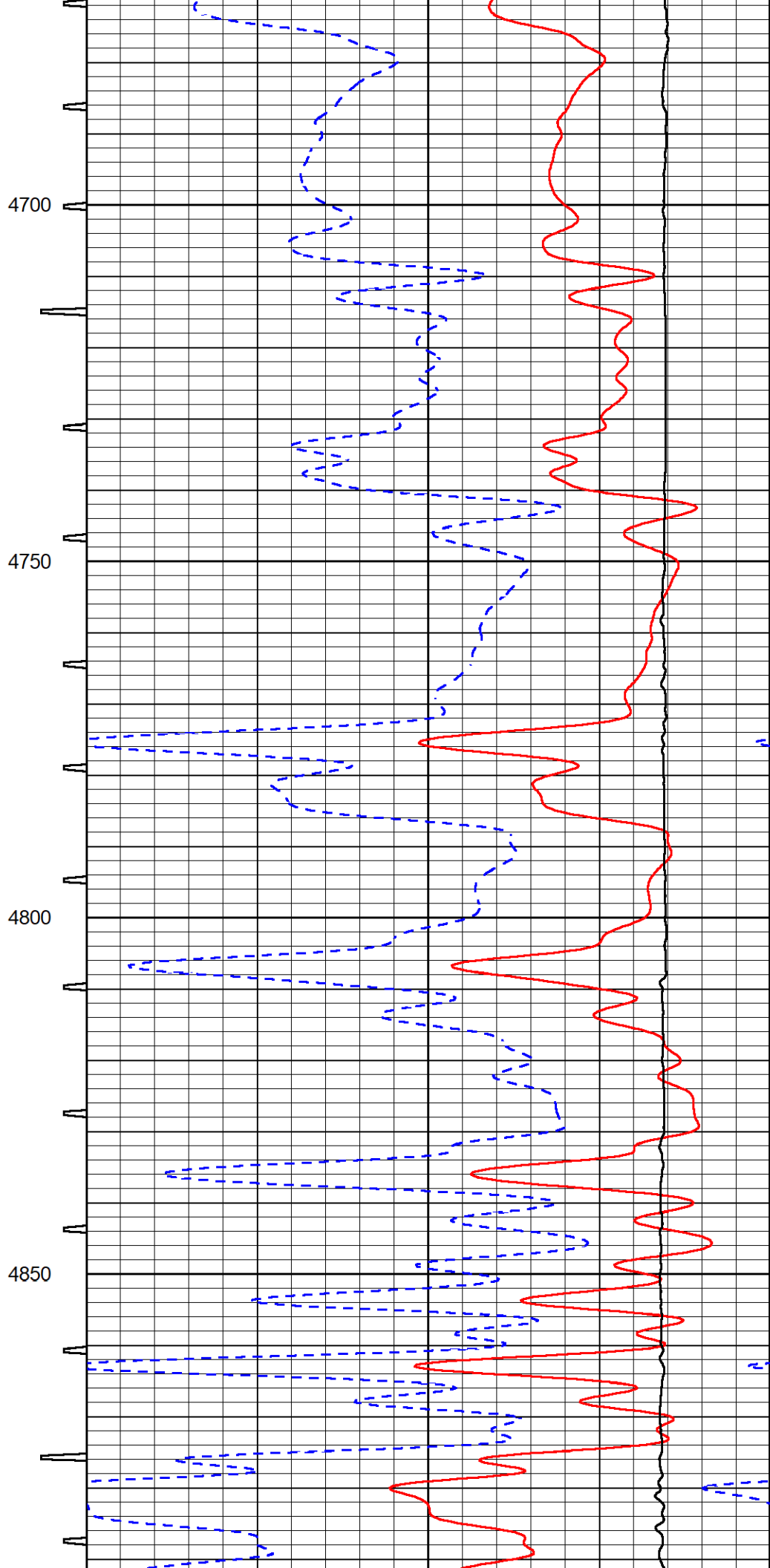
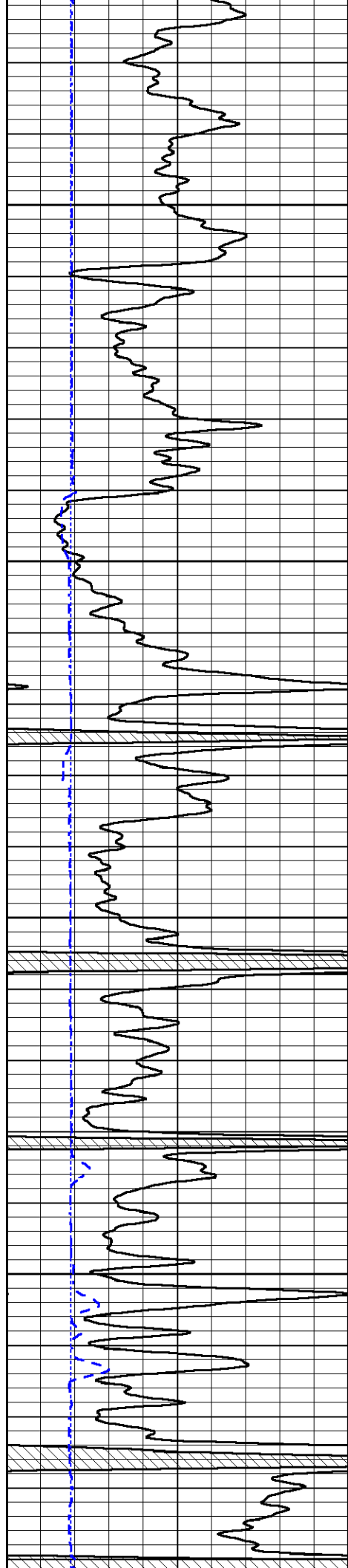
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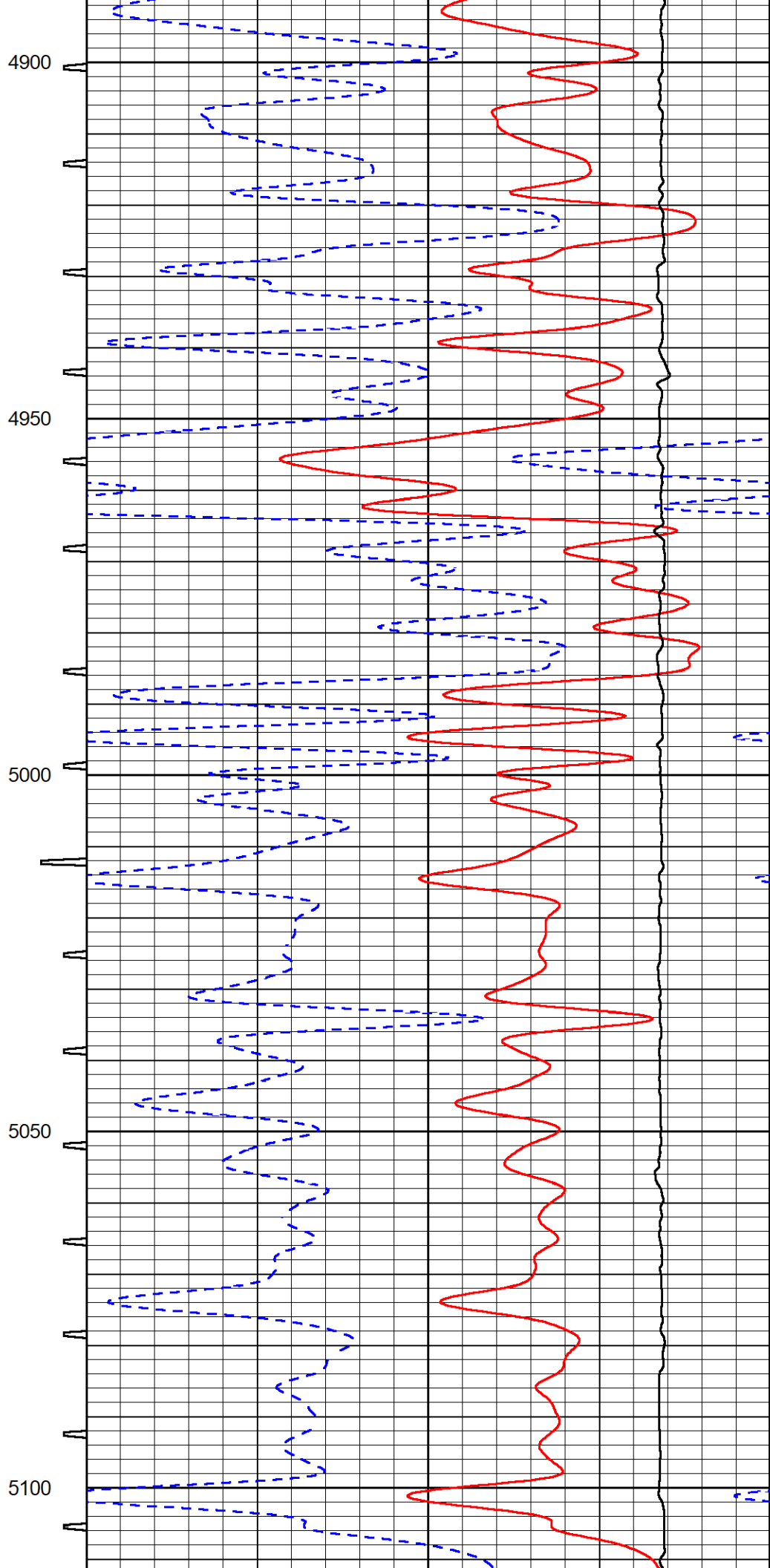
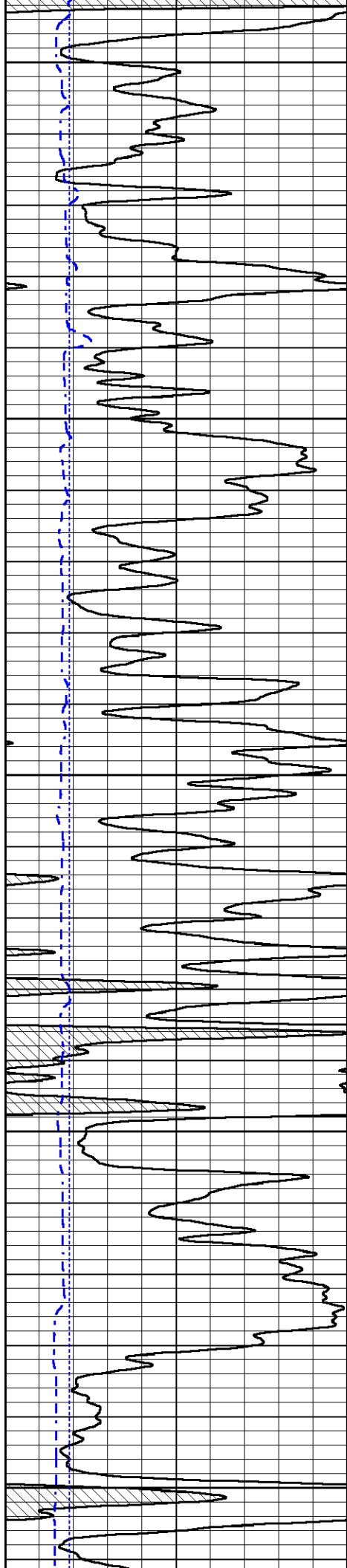
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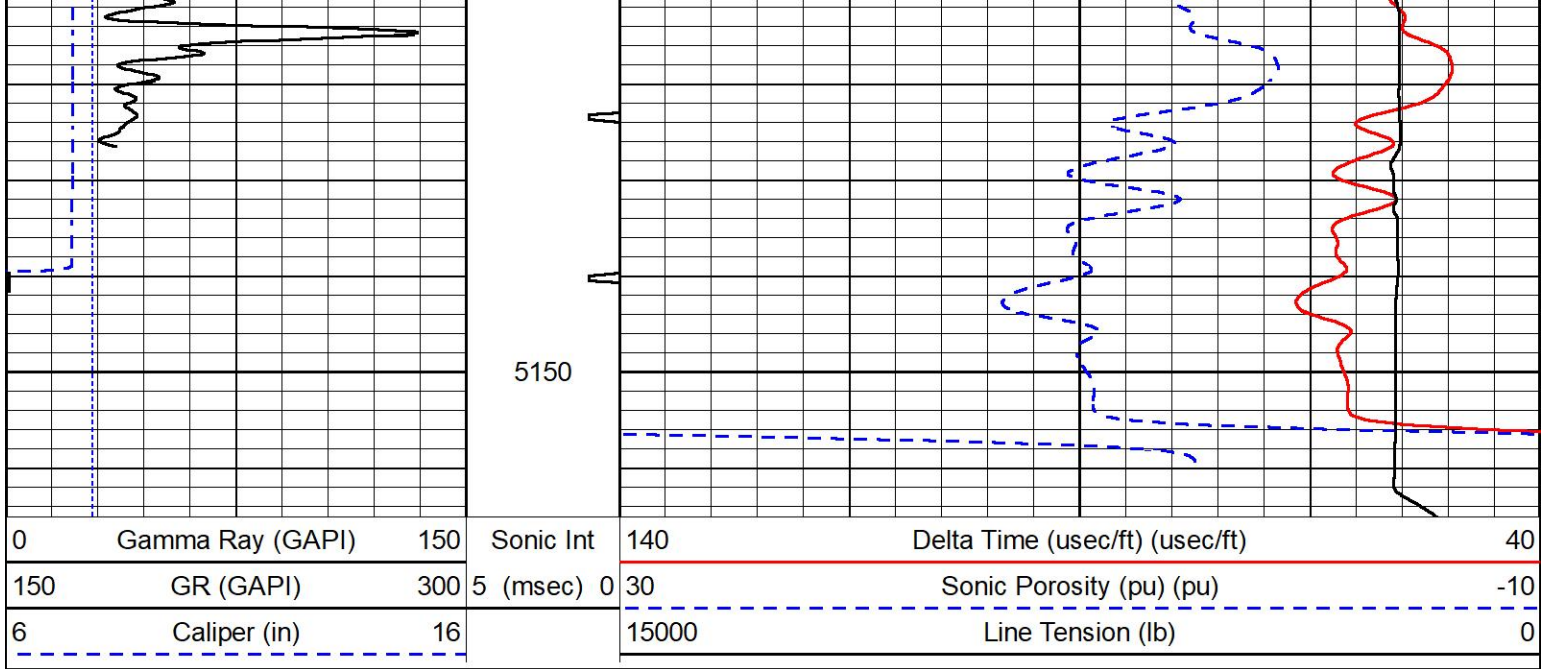
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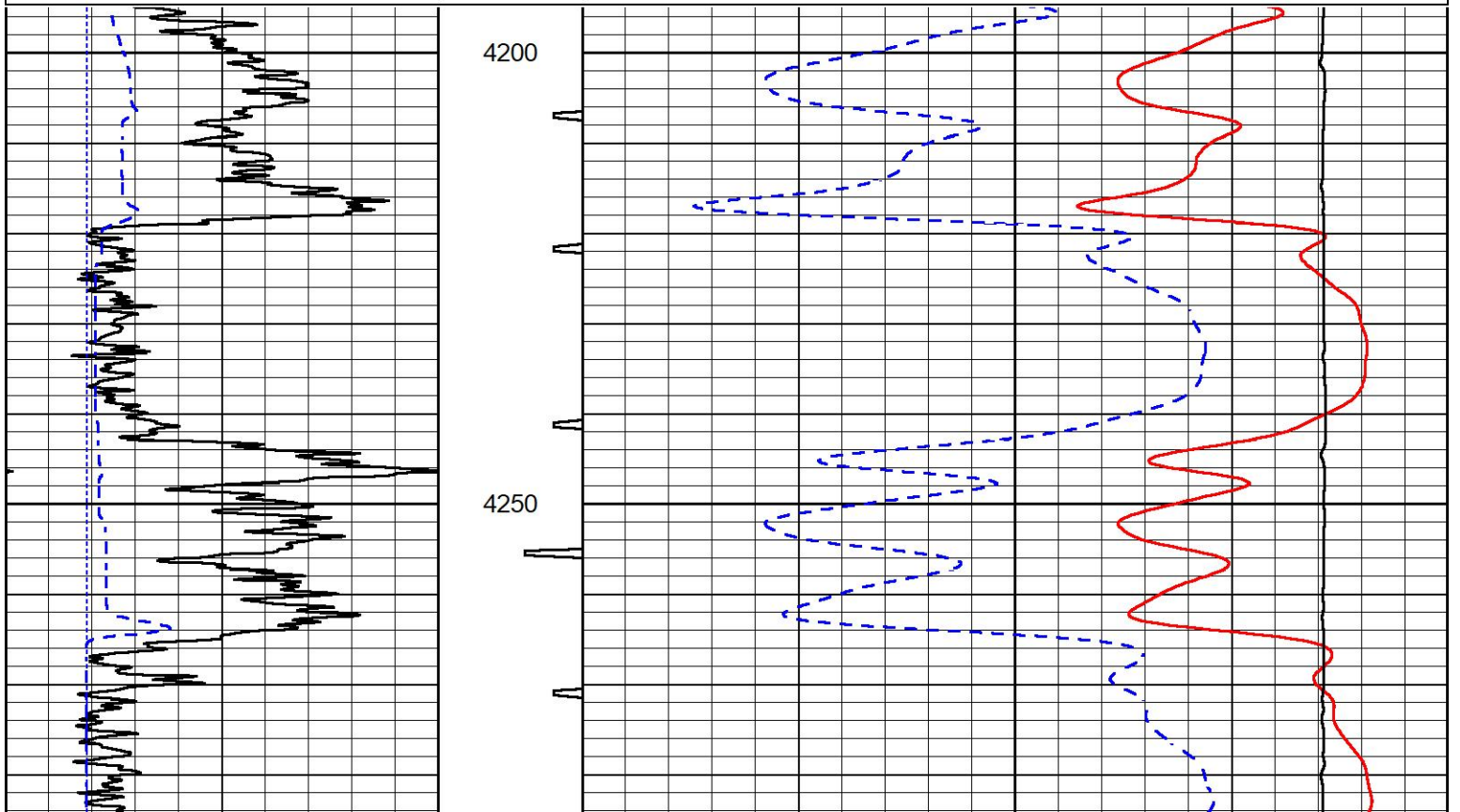
MIDWEST WIRELINE

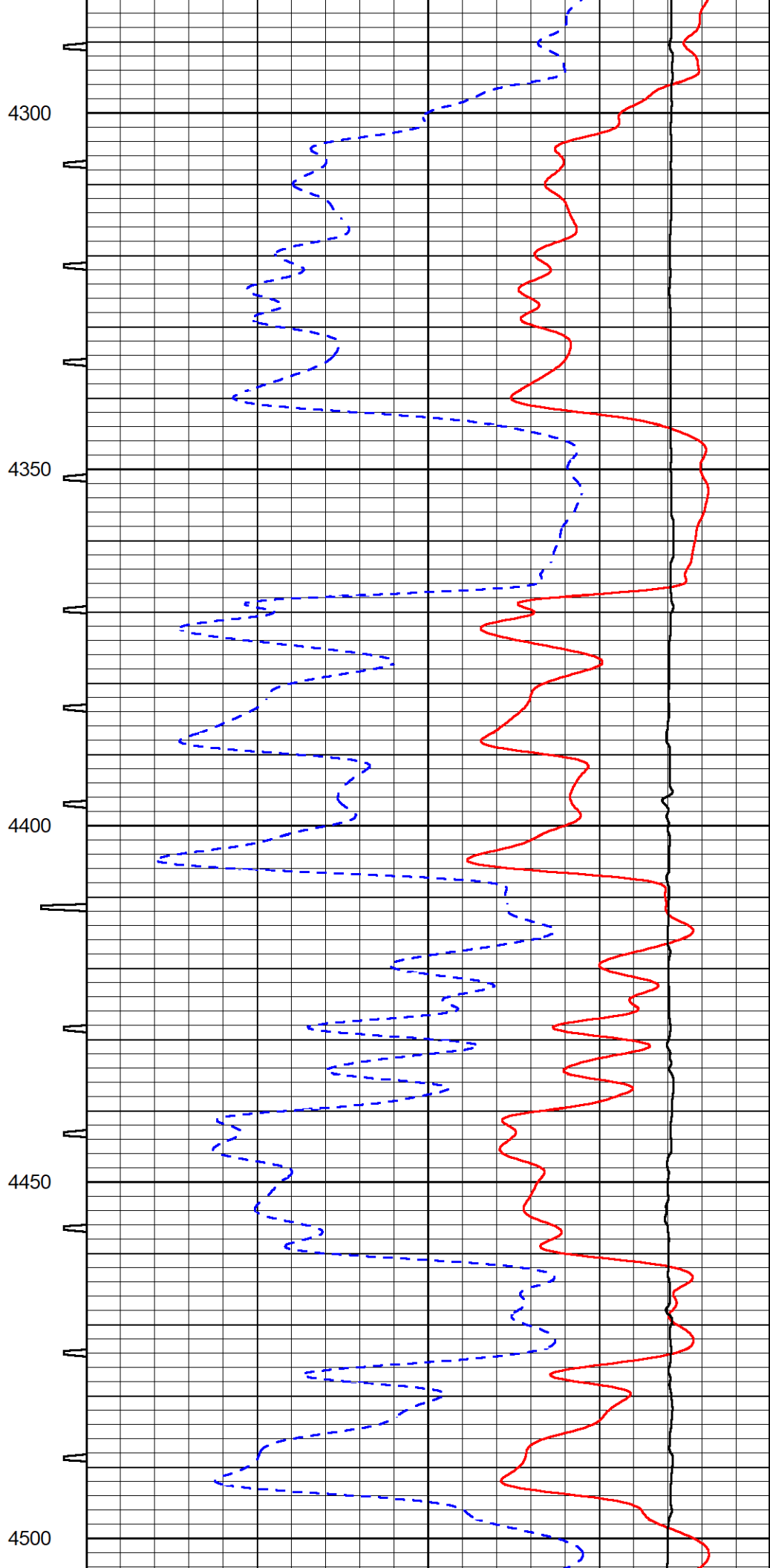
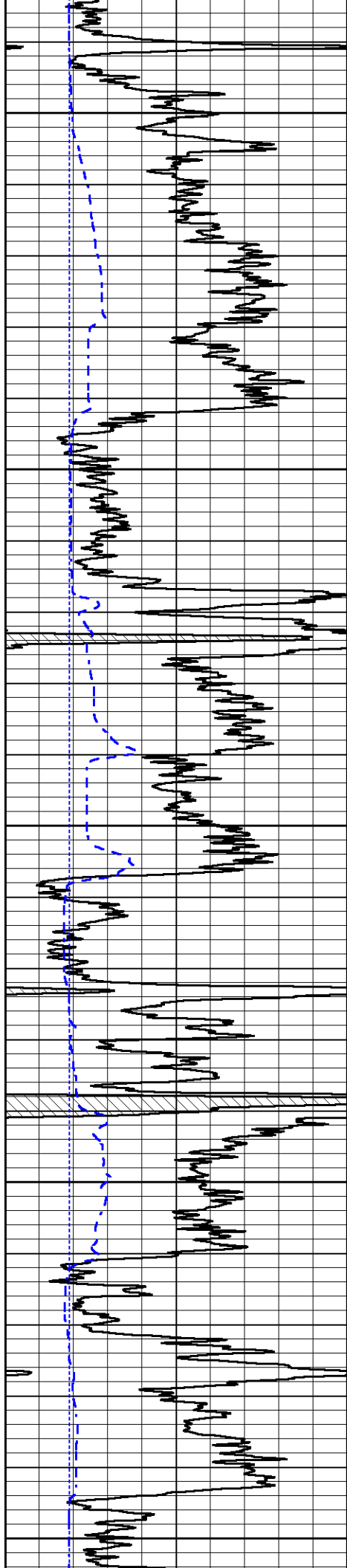
REPEAT SECTION

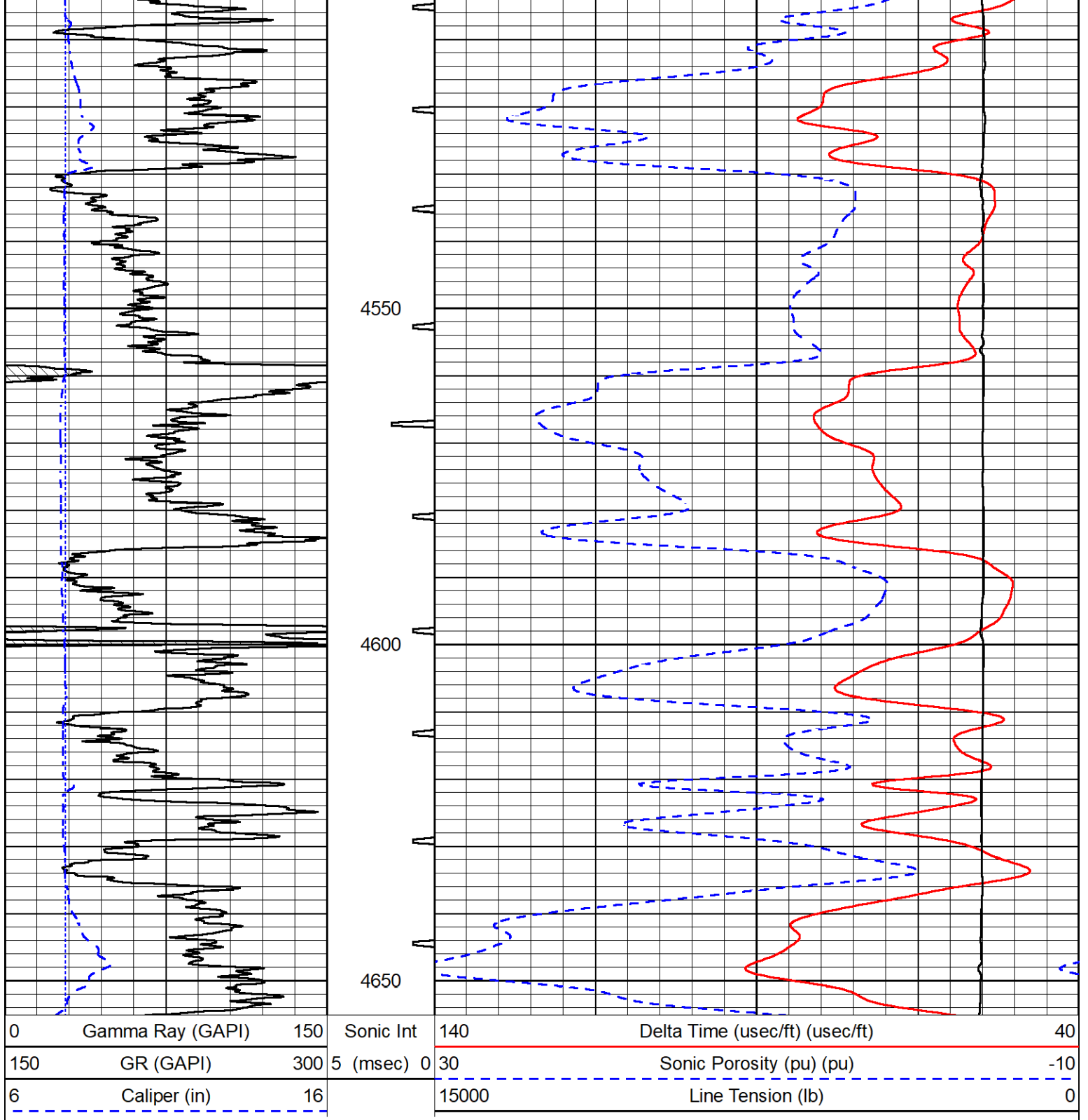
REPEAT PASS

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 Dataset Pathname stkml/pass2.1
 Presentation Format _sonic
 Dataset Creation Tue Feb 21 15:33:35 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	Caliper (in)	16		15000	Line Tension (lb)	0







Calibration Report

Database File murfin_cw unit 1-14.db
 Dataset Pathname stkml/pass3.15
 Dataset Creation Tue Feb 21 15:28:59 2023

Dual Induction Calibration Report

Serial-Model: 504 HT-M&W
 Surface Cal Performed: Wed Jan 25 21:25:46 2023

Readings

References

Results

Loop: Air Loop Air Loop m b

Deep	178.615	710.235	0.000	255.800	mmho/m	0.580	-21.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.400	-42.000

Microlog Calibration Report

Serial-Model: 402-PSI STKBL ML
 Performed: Wed Jan 25 21:26:04 2023

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	24000.0000	-0.9000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	21000.0000	0.0000
Caliper	1.0046	1.1419	5.5000	20.0000	in	50.0000	-44.4250

Compensated Density Calibration Report

Serial-Model: 306-06-M&W
 Source #: 21170B
 Master Calibration Performed: Tue Dec 14 14:05:52 2021

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	5193.26	4968.12	cps
Aluminum	2.650	g/cc	962.25	3144.87	cps
Spine Angle = 74.82			Density/Spine Ratio = 0.512		
	Size		Reading		
Small Ring	4.00	in	1.01		
Large Ring	14.00	in	1.15		

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: Wed Jan 25 21:25:33 2023

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	C-W Unit #1-14
Field	
County	Cheyenne
State	Kansas