



**BOREHOLE COMPENSATED  
SONIC LOG**

Company BEREXCO, LLC  
Well STURGEON A #1-25  
Field UNNAMED  
County CHEYENNE  
State KANSAS

Company **BEREXCO, LLC**  
Well **STURGEON A #1-25**  
Field **UNNAMED**  
County **CHEYENNE** State **KANSAS**

Location: API #: 15-023-21536-00-00  
830' FNL & 2180' FWL  
SEC 25 TWP 2S RGE 38W  
Permanent Datum GROUND LEVEL Elevation 3372'  
Log Measured From KELLY BUSHING  
Drilling Measured From KELLY BUSHING  
Other Services  
CNL/CDL  
DIL/MEL  
BHCS  
Elevation  
K.B. 3380'  
D.F. N/A  
G.L. 3372'

Date	5/21/2020						
Run Number	TWO						
Type Log	BHCS						
Depth Driller	4980'						
Depth Logger	4980'						
Bottom Logged Interval	4968'						
Top Logged Interval	300'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	600						
Density	9.5						
Level	FULL						
Max. Rec. Temp. F	126						
Operating Rig Time	5 HOURS						
Equipment -- Location	P-24 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	BRYAN BYNOG						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	327'	8.625"	23#	0'	327'
TWO	7.875"	327'					
Casing Record							

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, 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

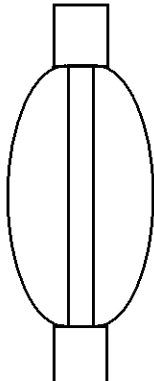
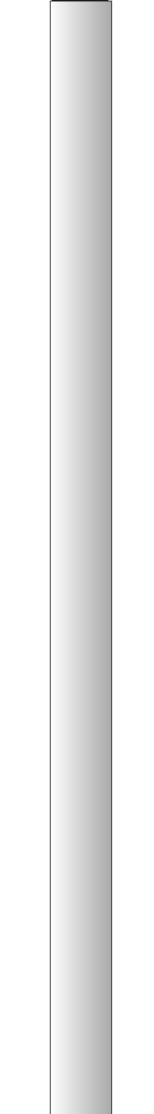
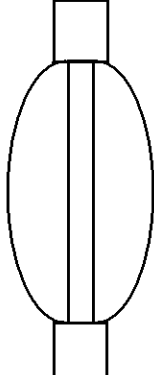
N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

BIRD CITY,  
7 NORTH TO U RD, 1/2 EAST,  
SOUTH INTO

Log Measured From: KELLY BUSHING      8 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES  
www.pioneerenergy.com      785-625-3858

Your Pioneer Energy Services Crew		This Log Record Was Witnessed By	
Engineer: D. SCHMIDT	Operator:	Primary Witness: BRYAN BYNOG	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CENT-PENGO (3-PENGO)	5.50	3.00	70.00
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50		CENT-PENGO (4-PENGO)	5.50	3.00	70.00

Dataset: berexco\_sturgeon a 1-25.db: field/well/SON/pass2  
 Total length: 27.00 ft  
 Total weight: 440.00 lb  
 O.D.: 3.50 in

# Log Variables

Database C:\ProgramData\Warrior\Data\berexco\_sturgeon a 1-25.db  
 Dataset field/well/STKML/pass3.1/\_vars\_

## Top - Bottom

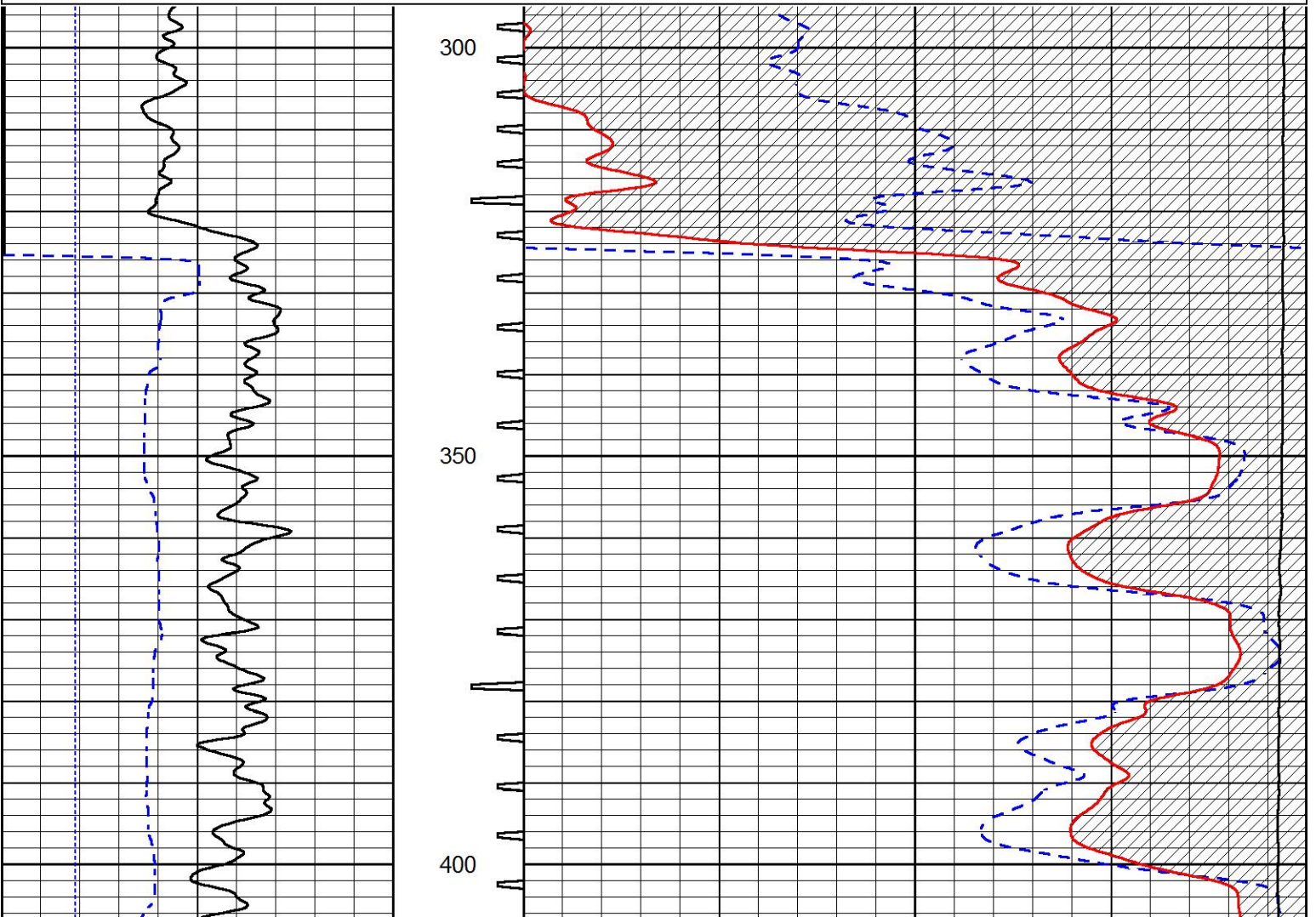
A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	1050	0	Off	0

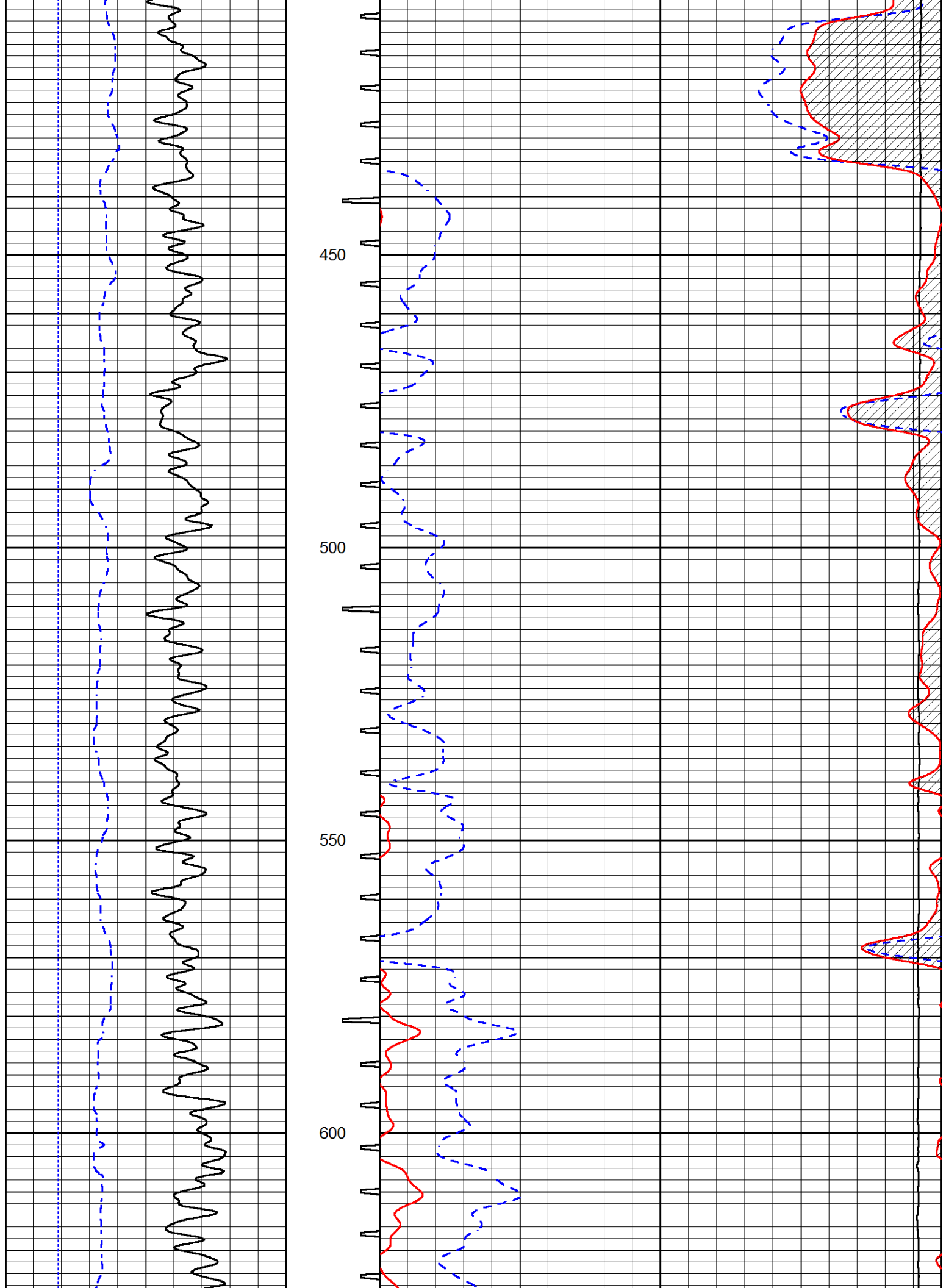


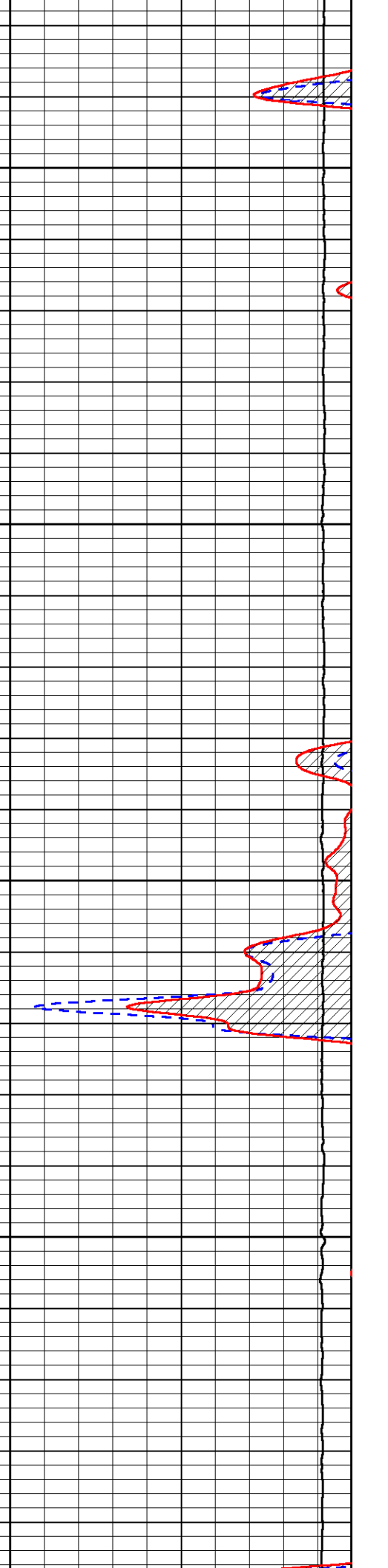
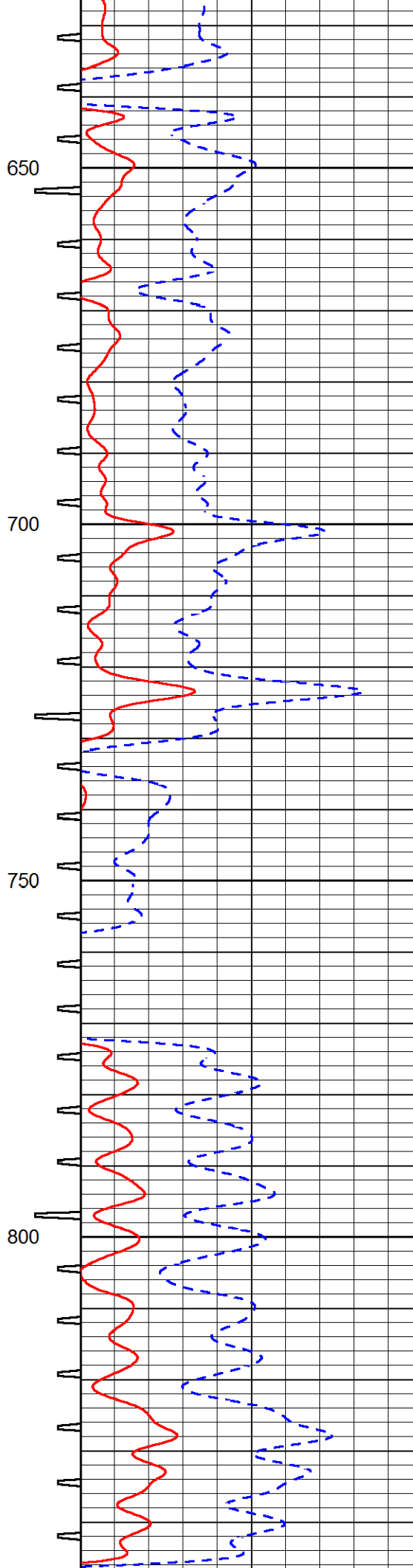
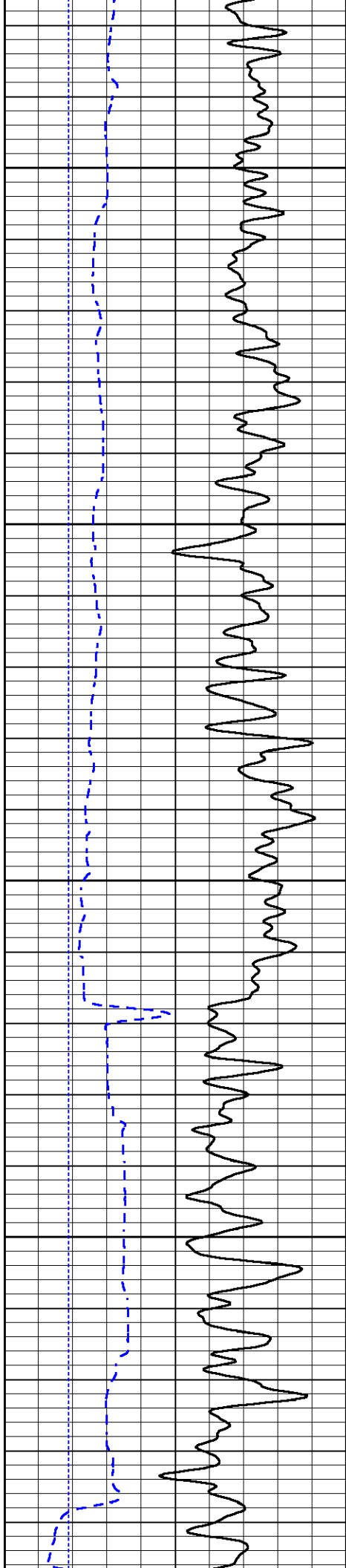
# MAIN PASS

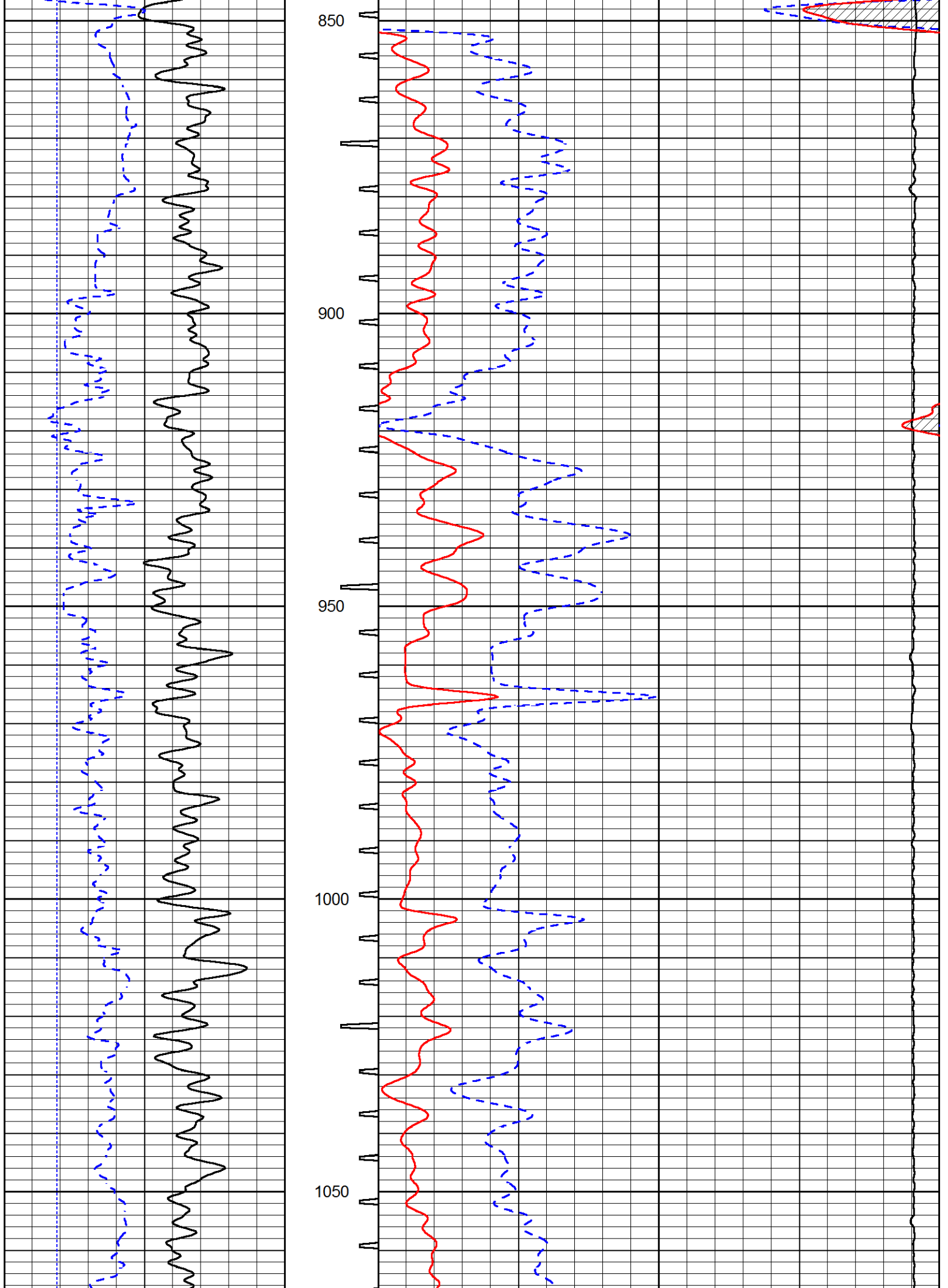
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 Dataset Pathname STKML/pass6.1  
 Presentation Format \_sonic  
 Dataset Creation Thu May 21 04:16:50 2020  
 Charted by Depth in Feet scaled 1:240

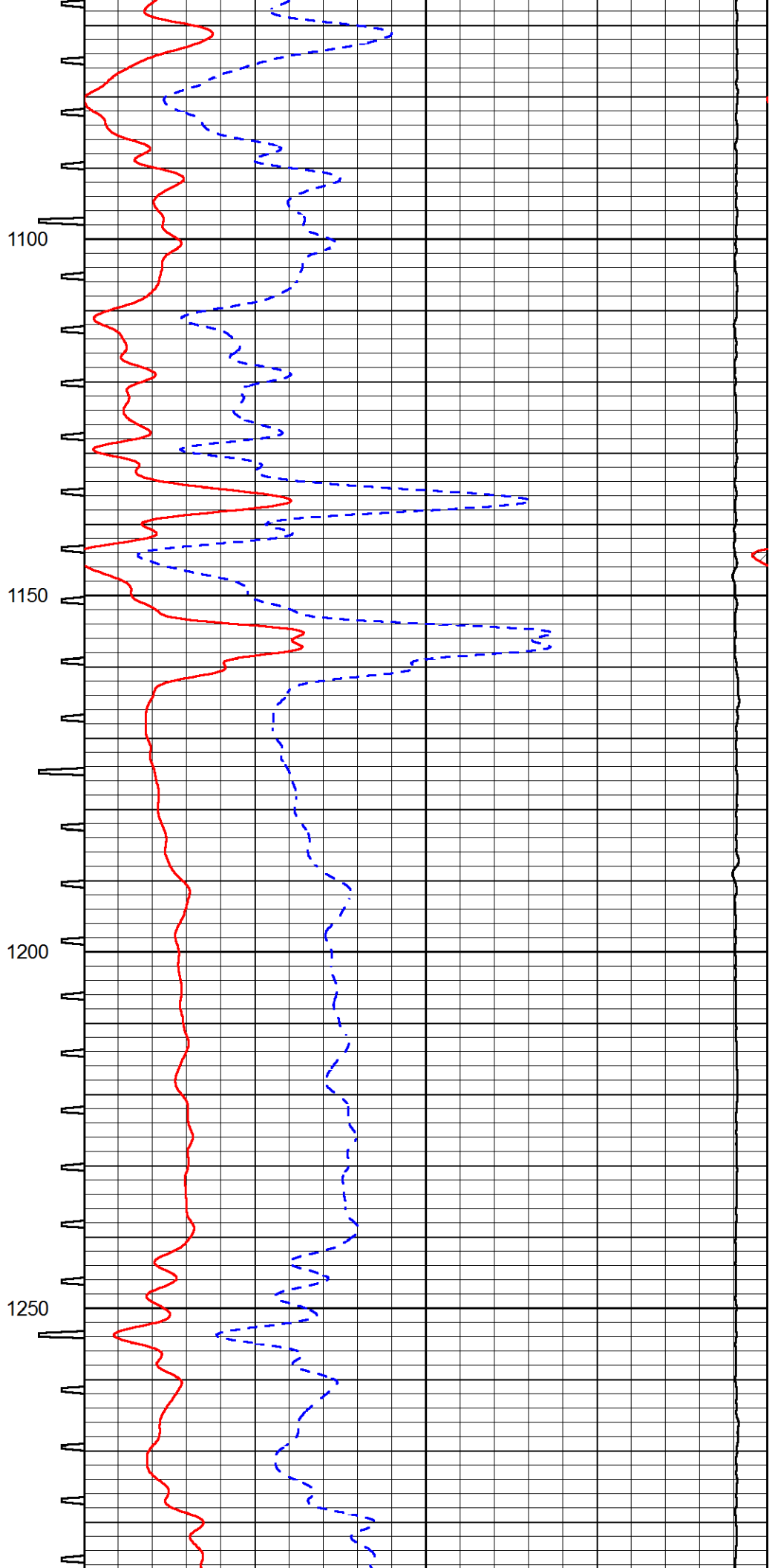
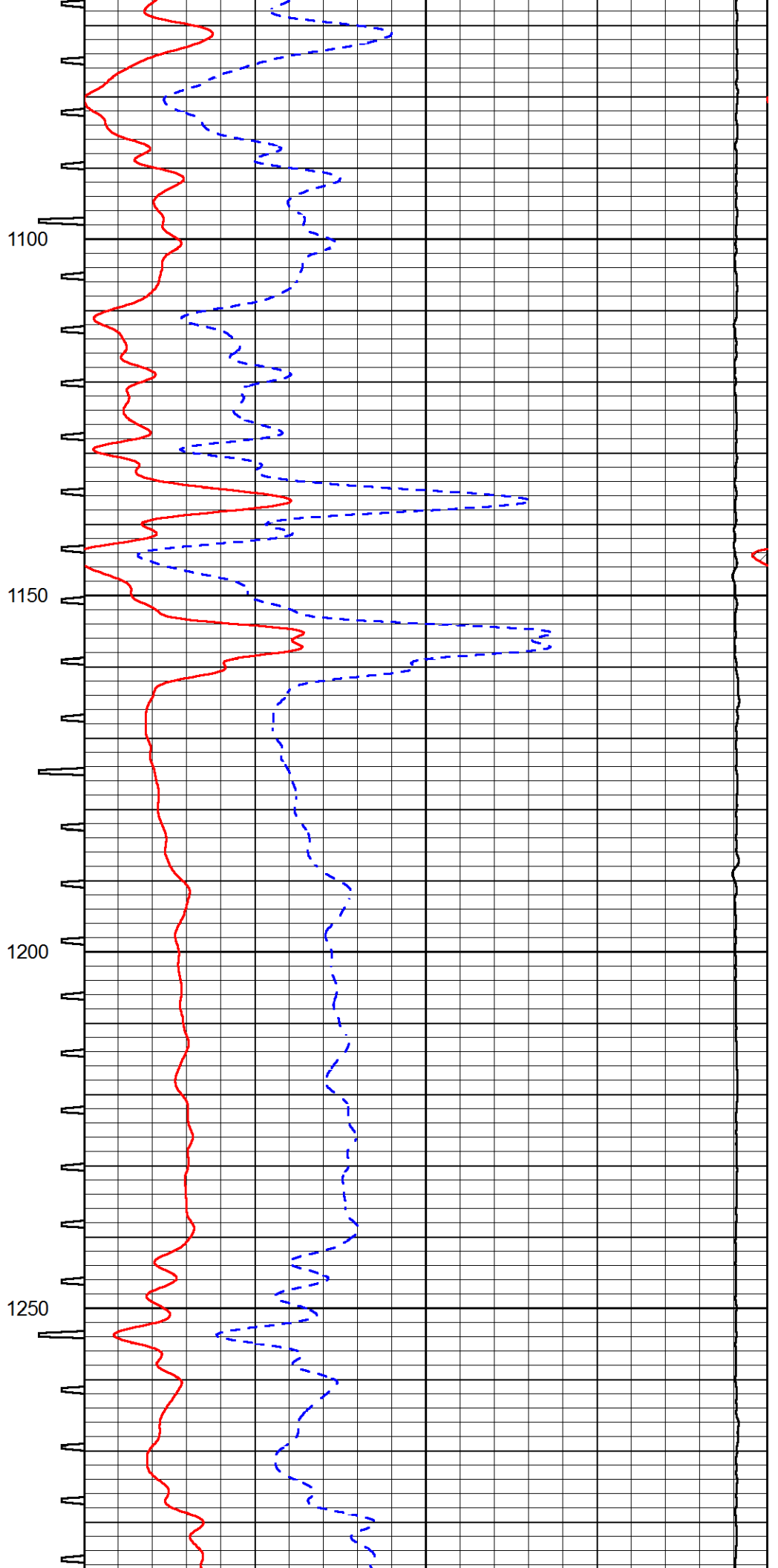
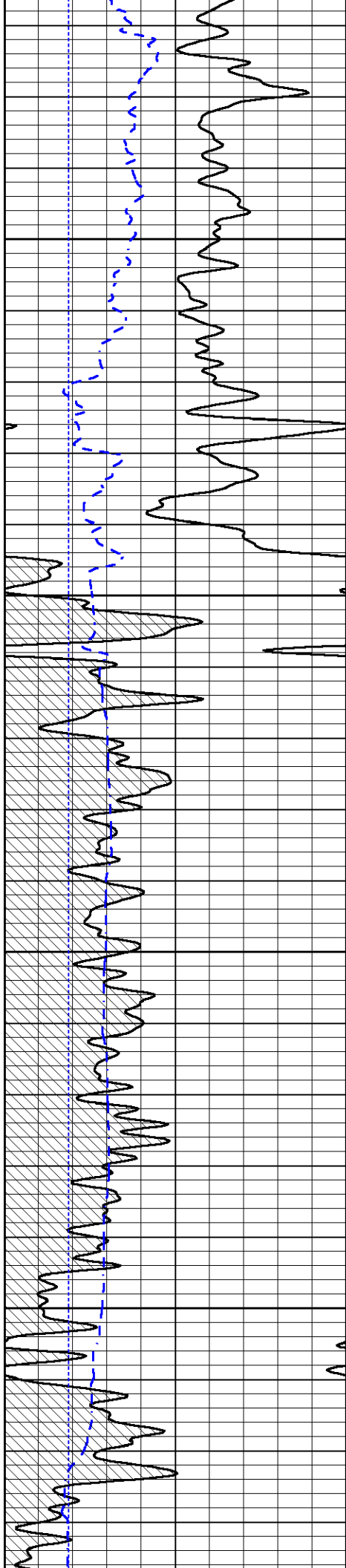
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0

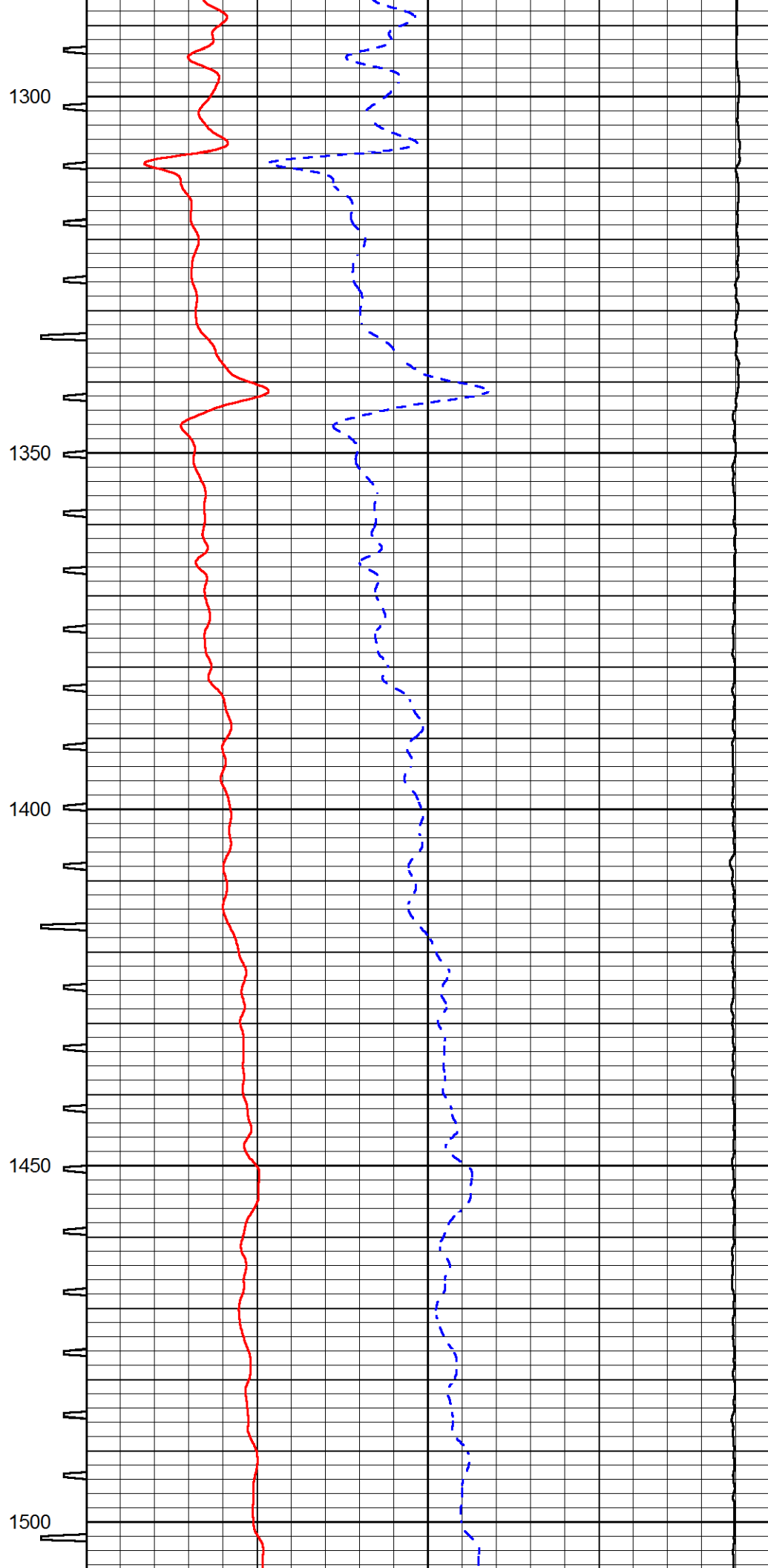
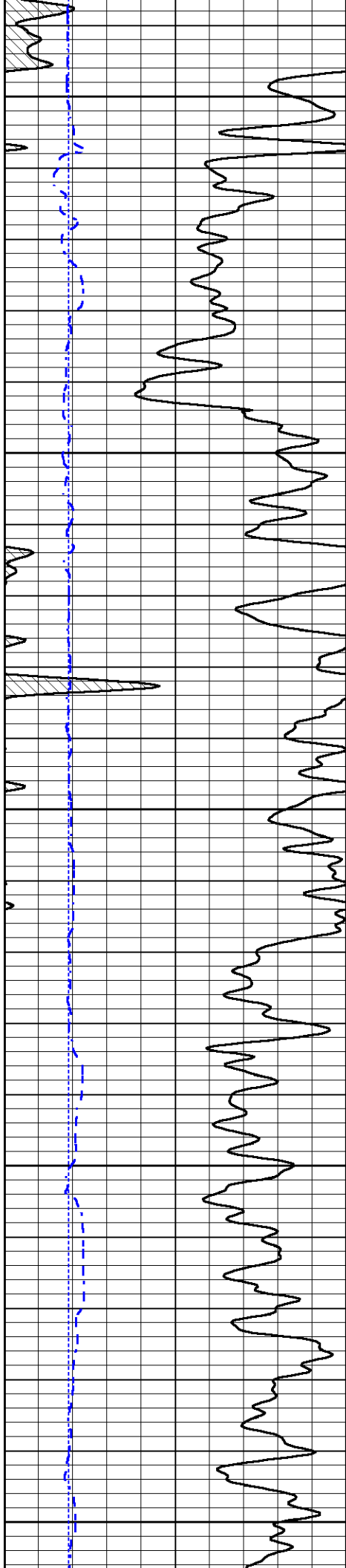


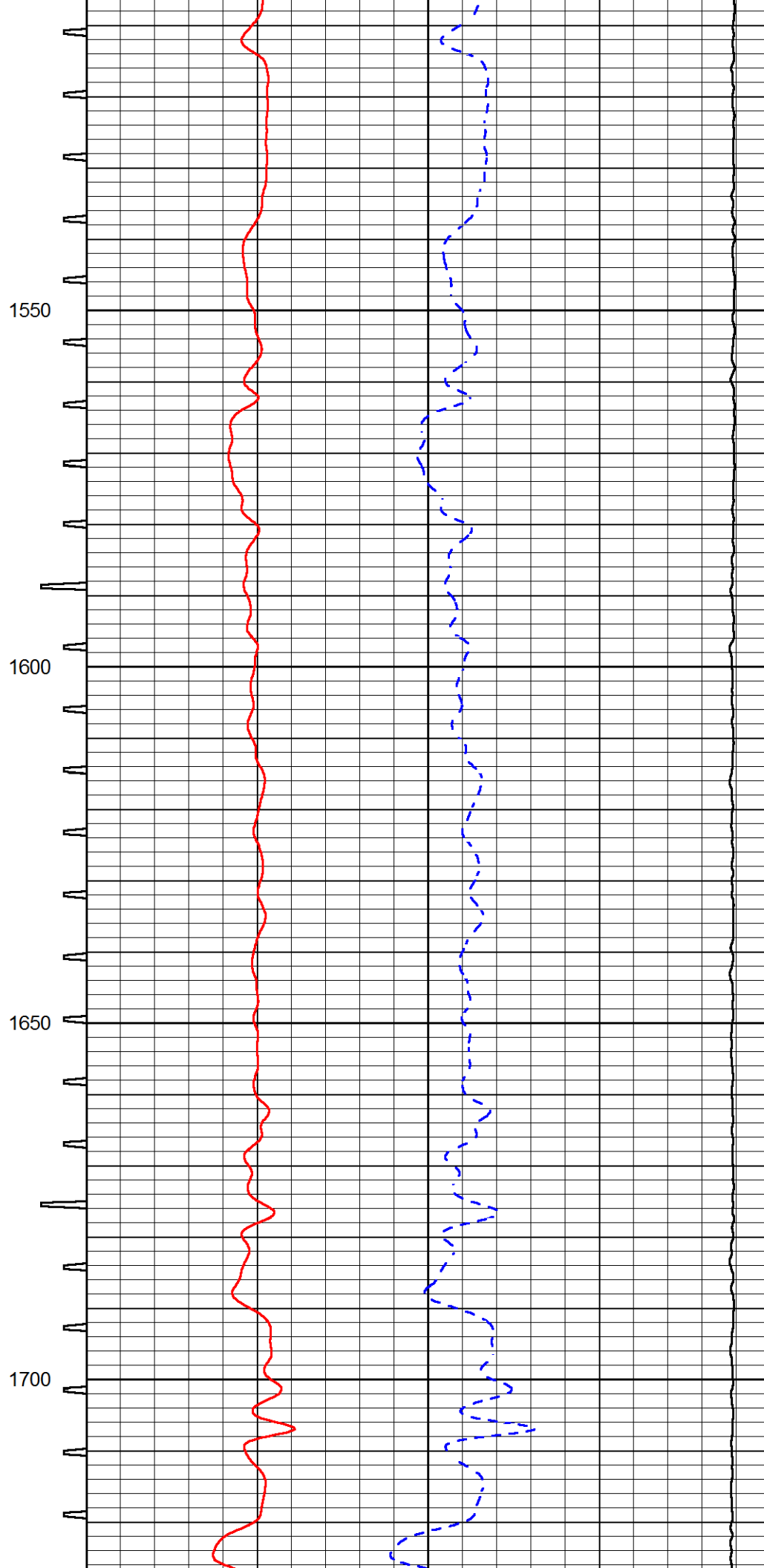
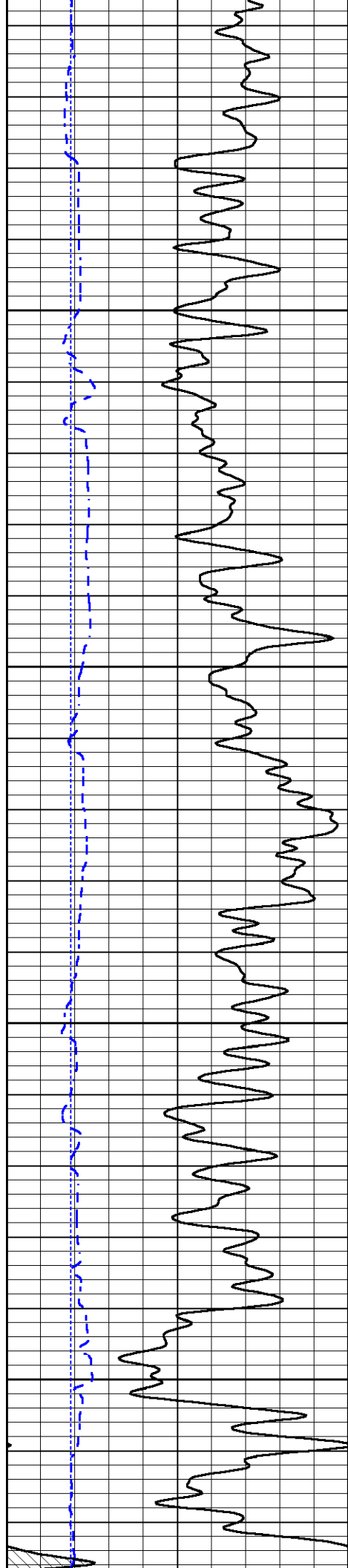


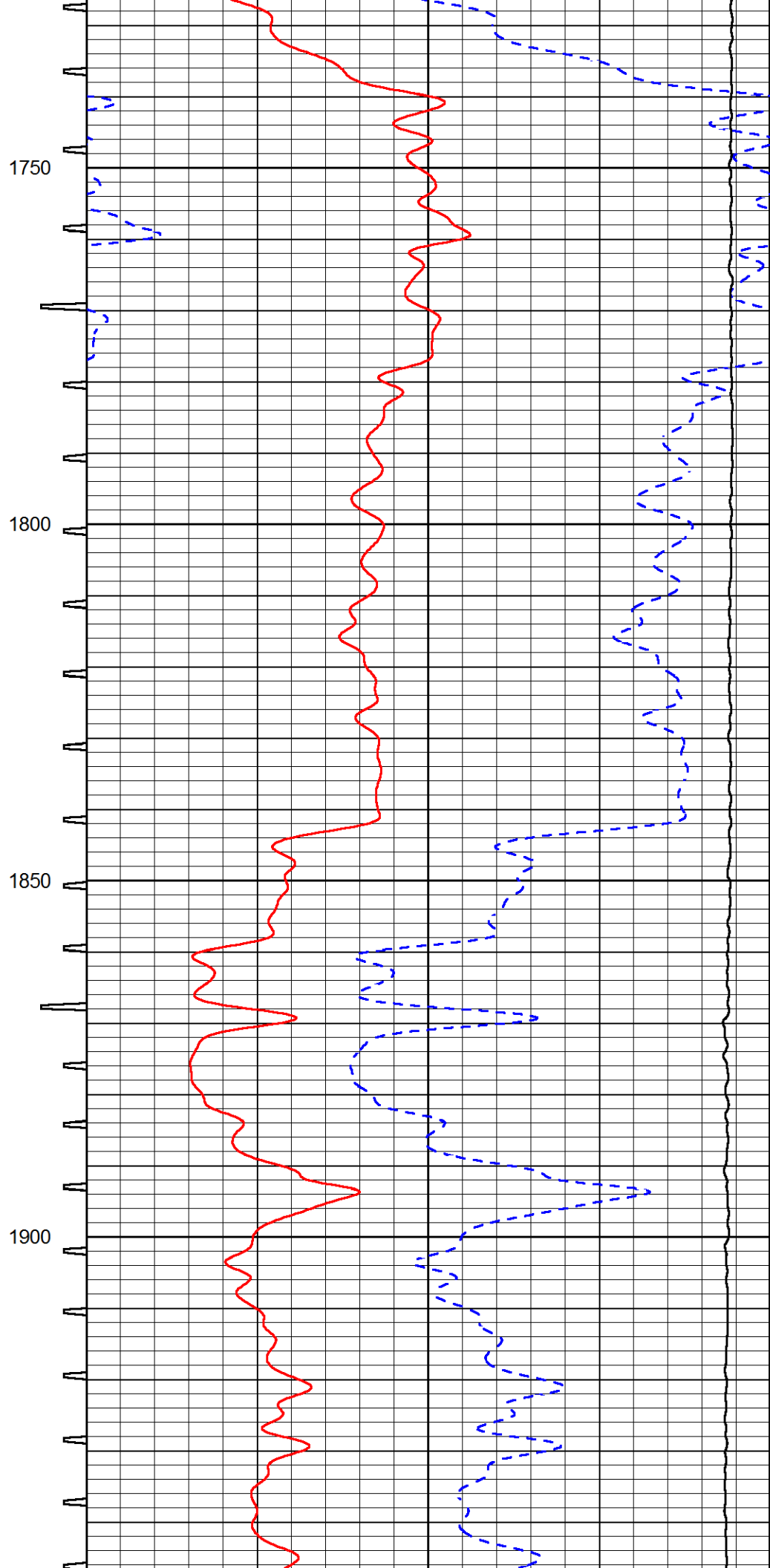
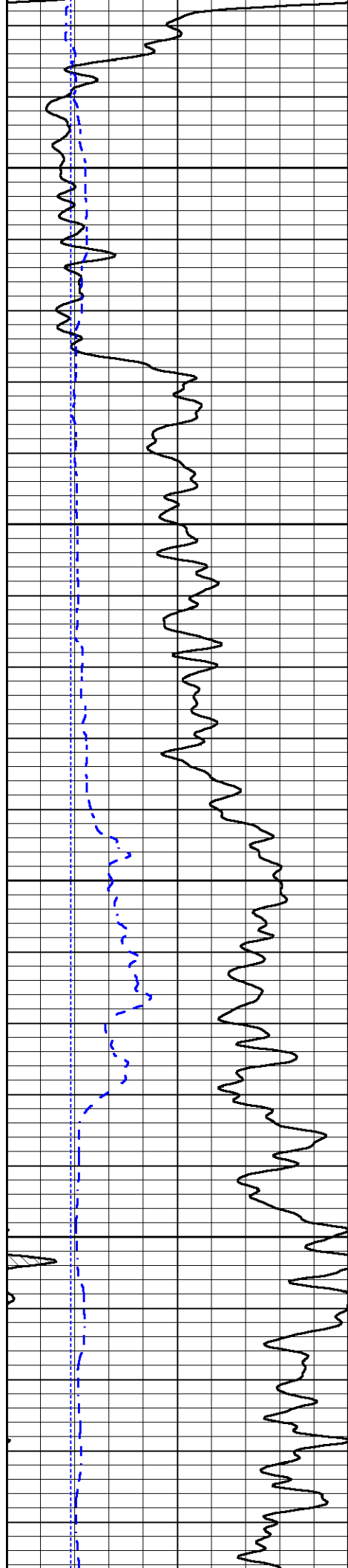


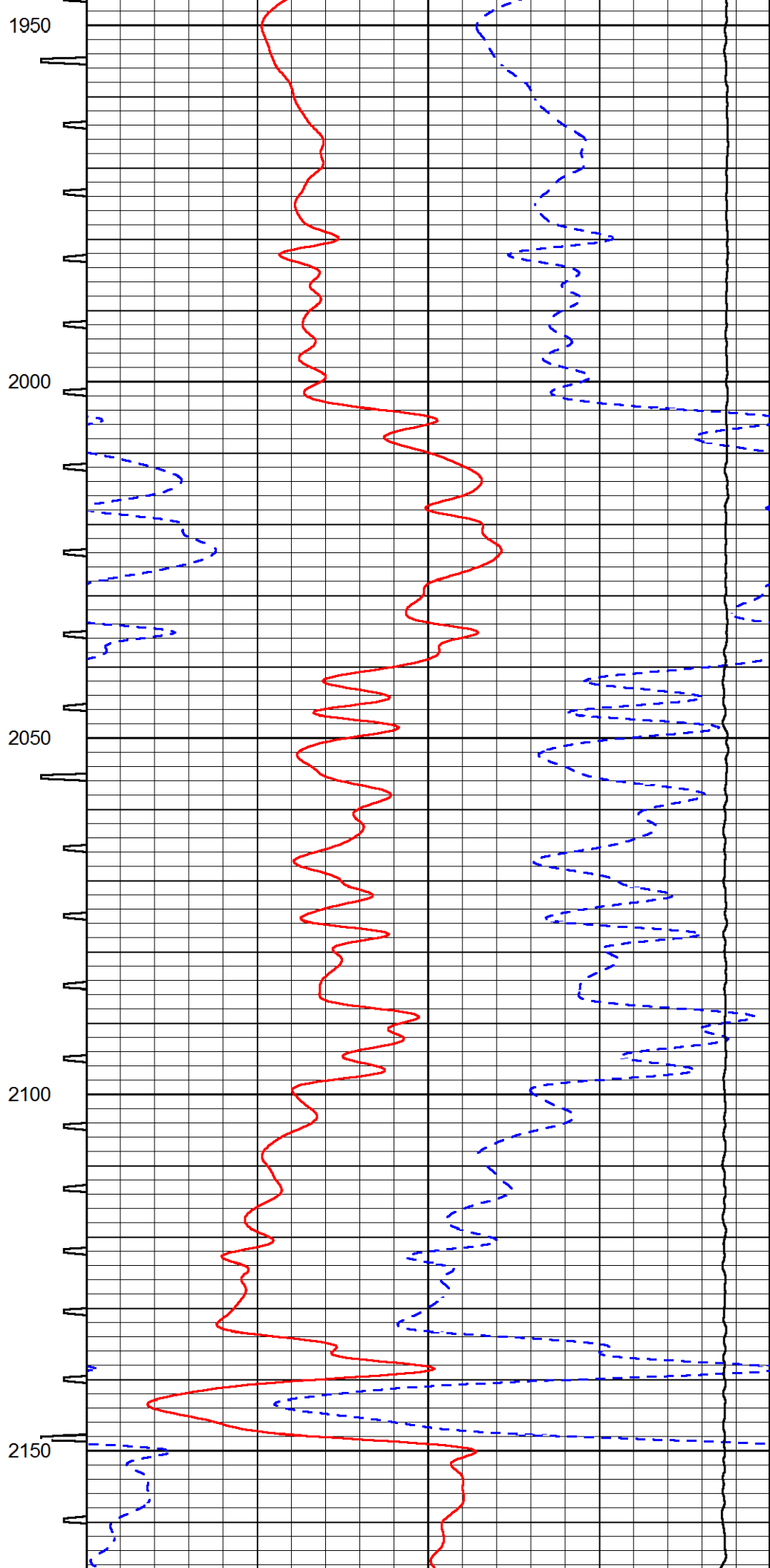
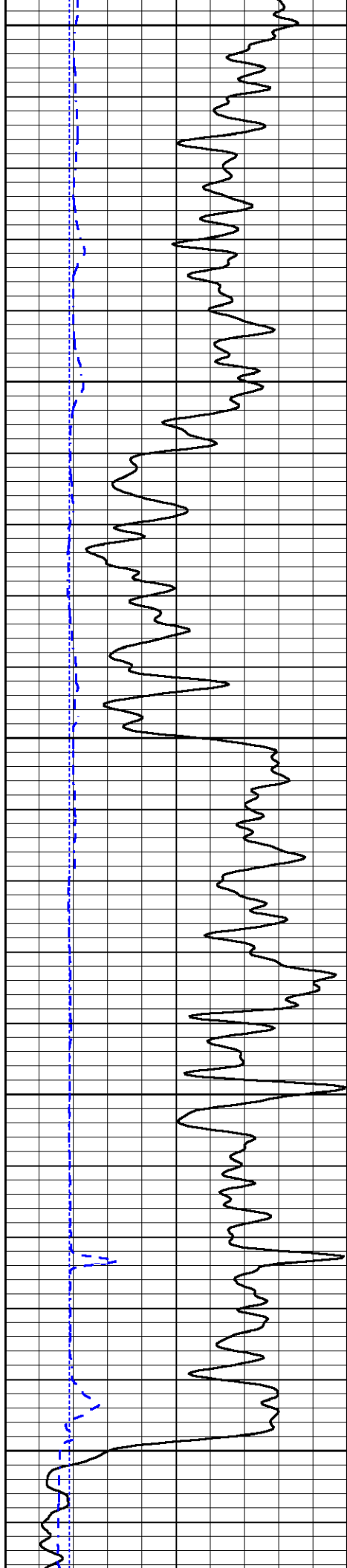


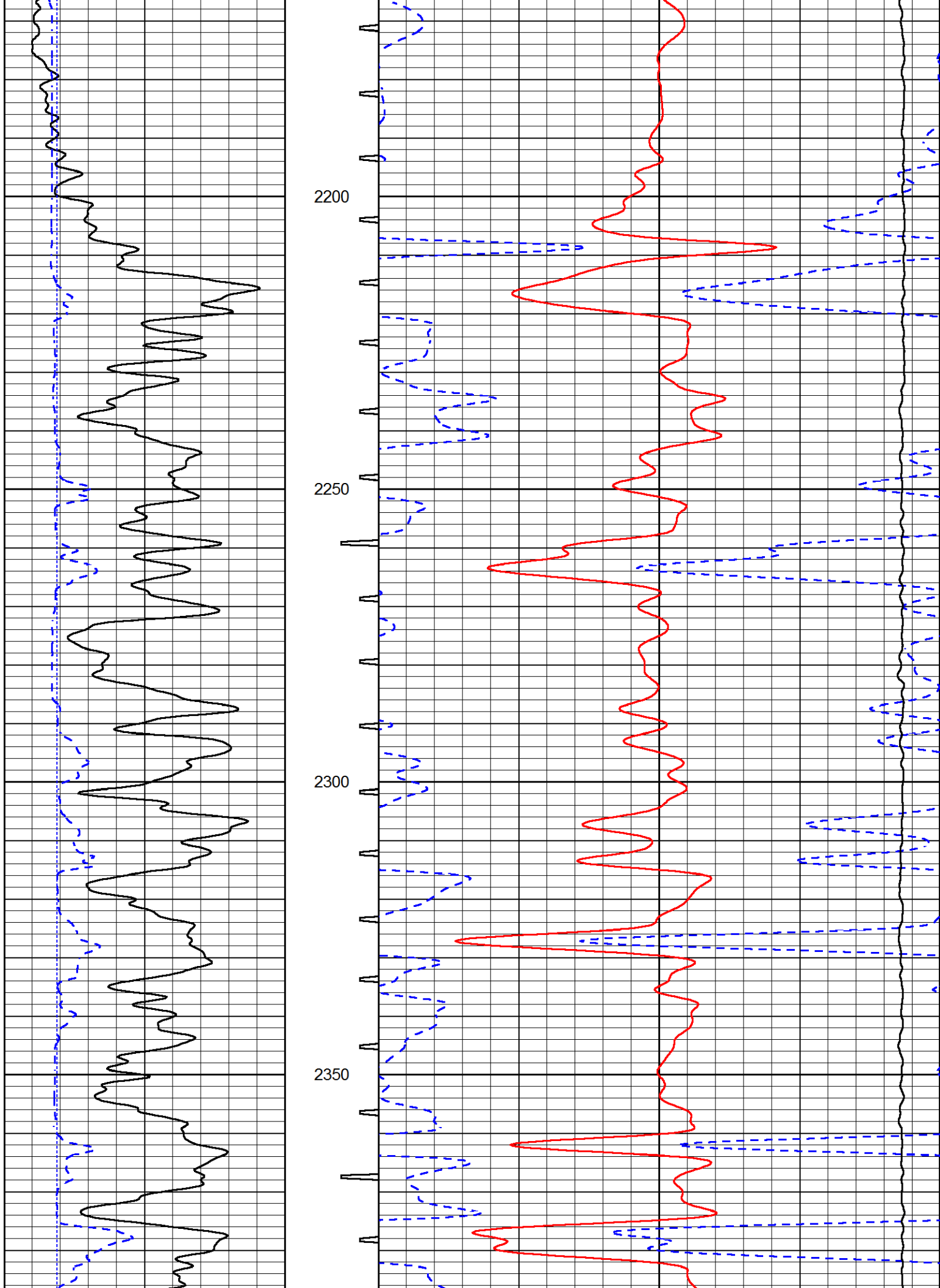


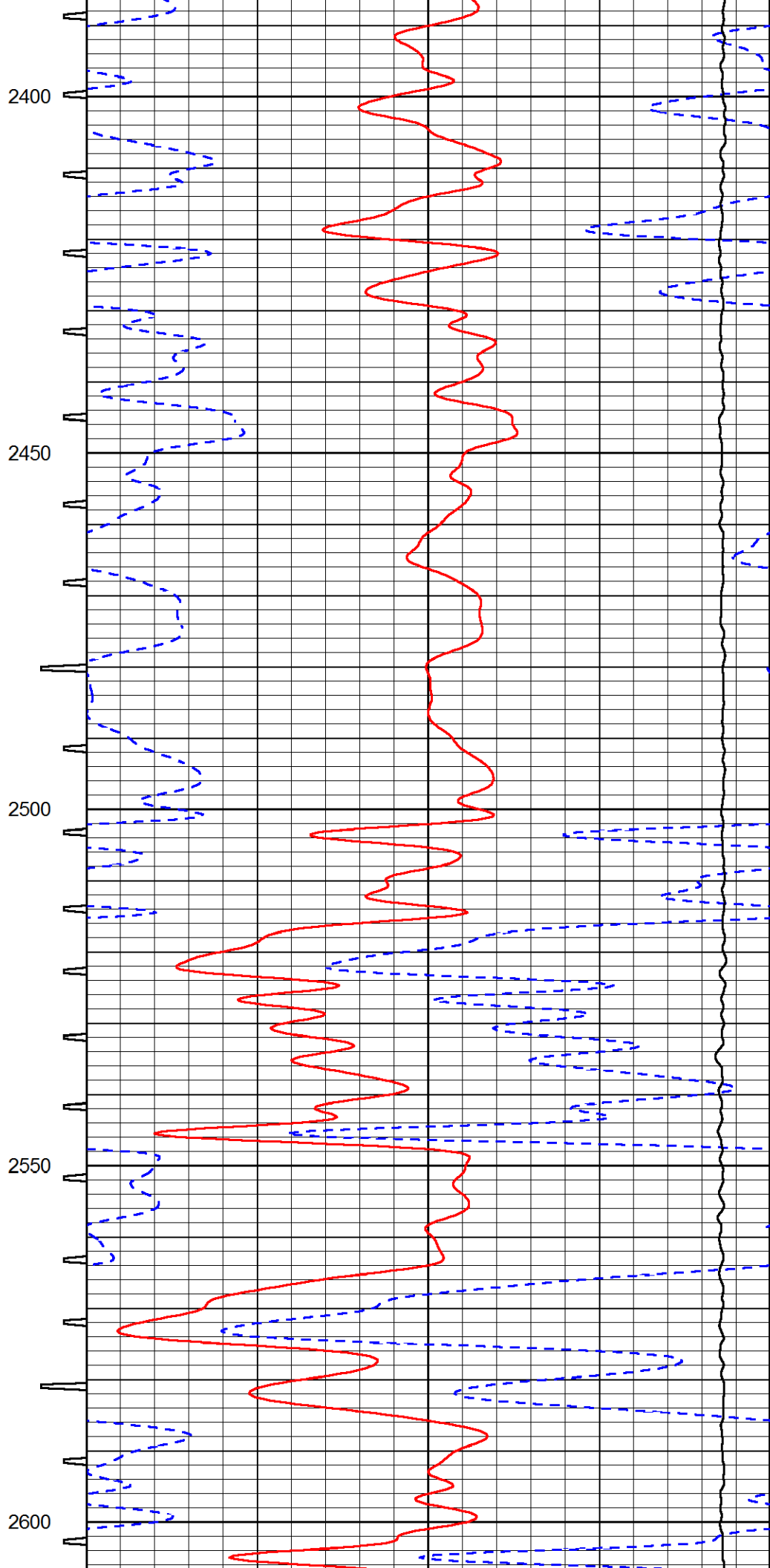
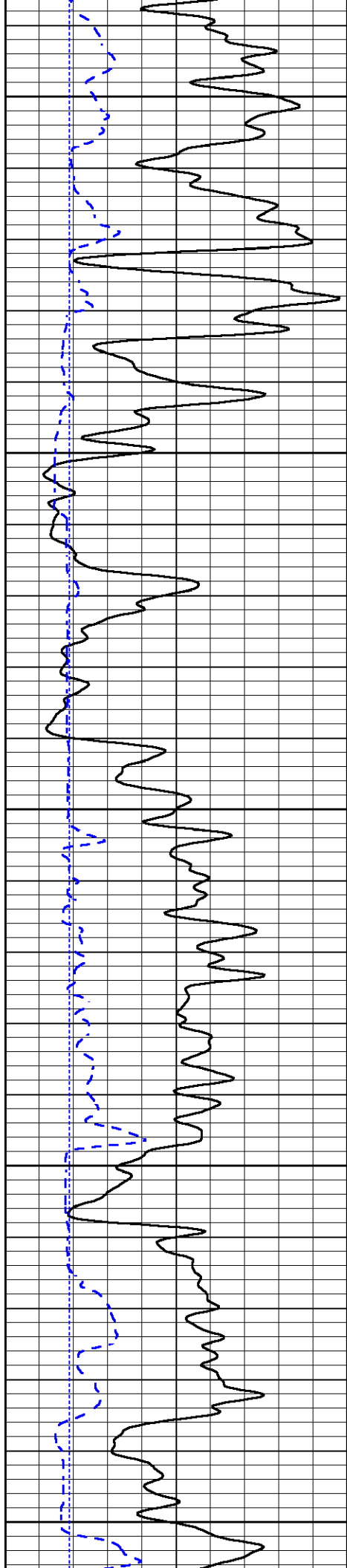


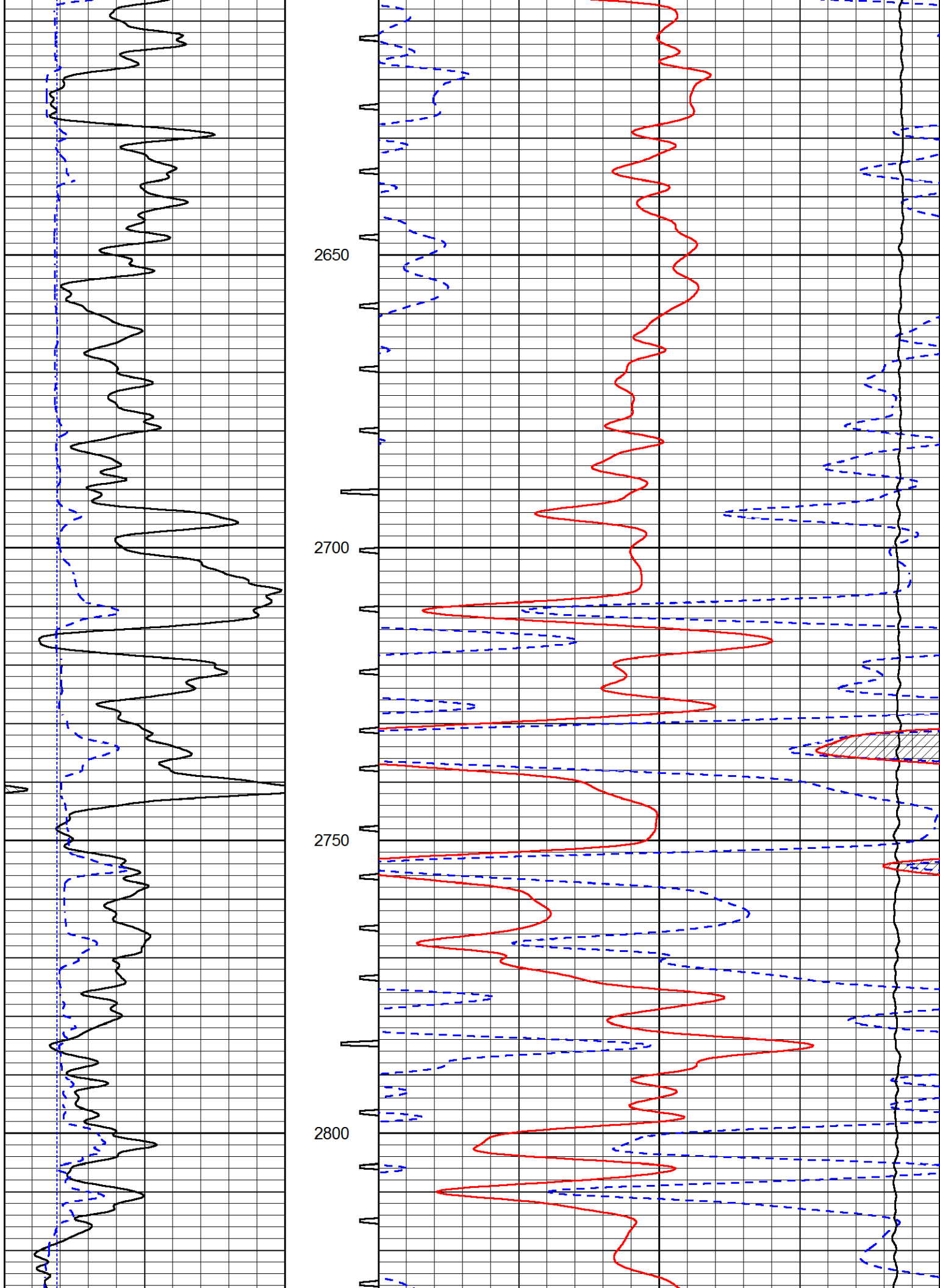


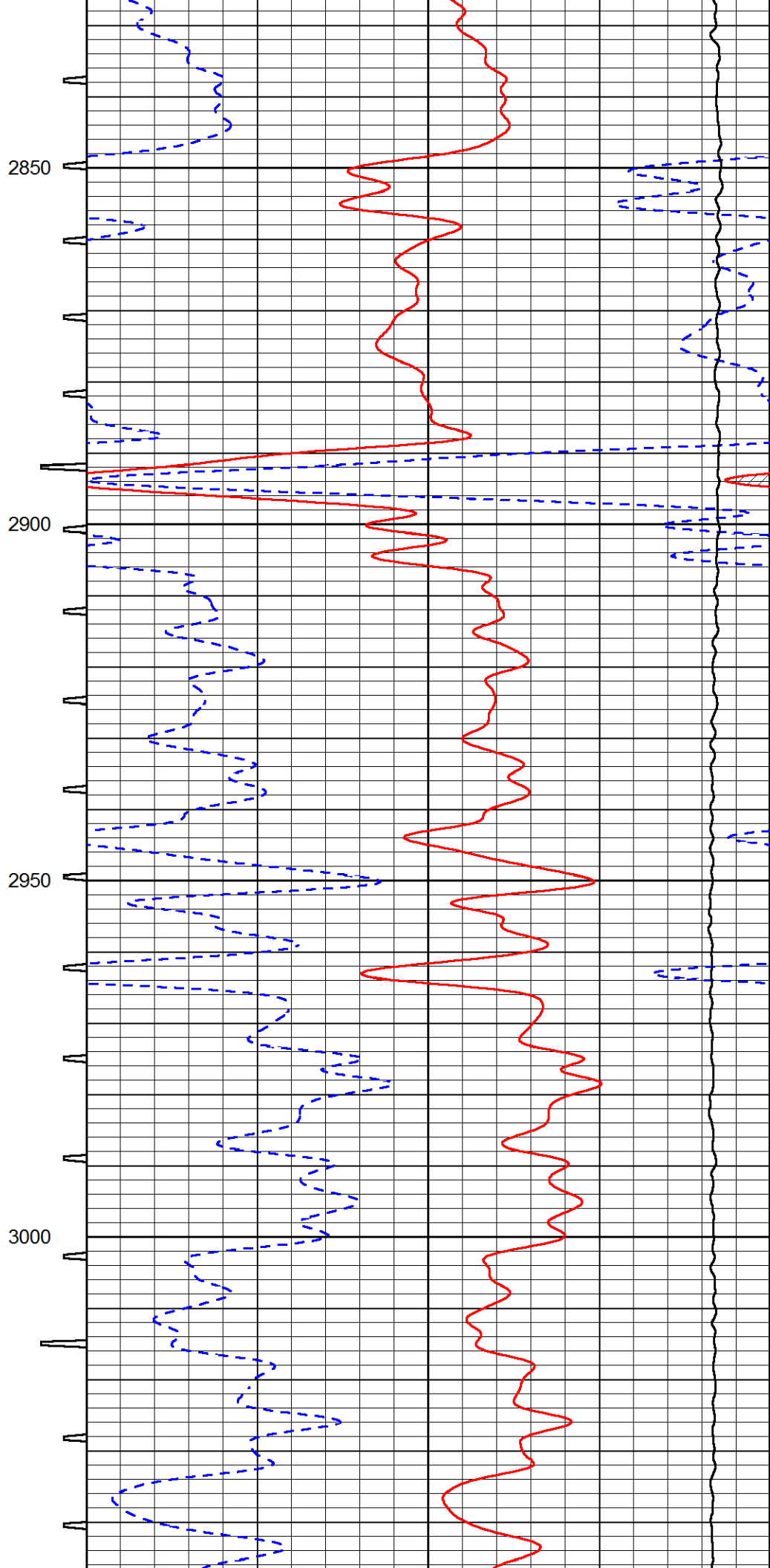
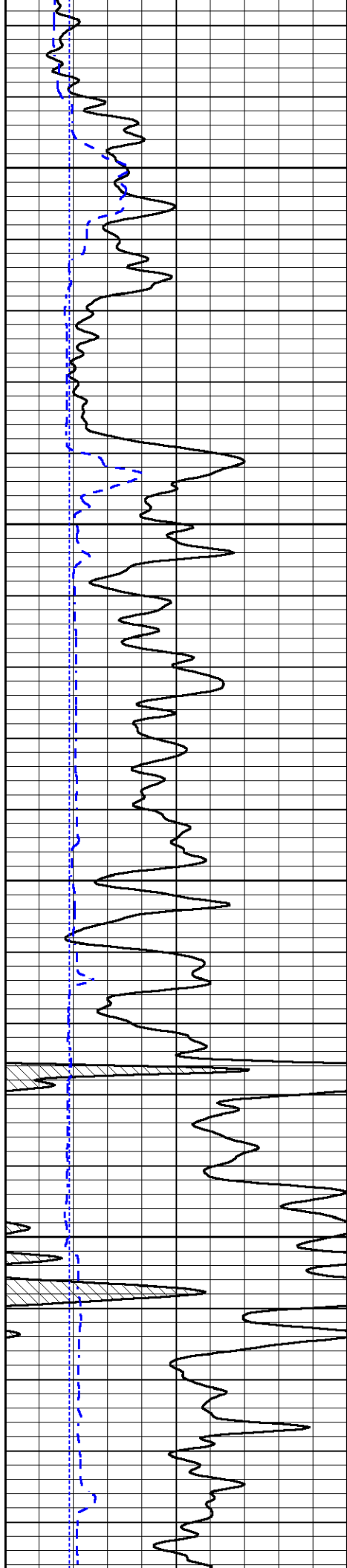


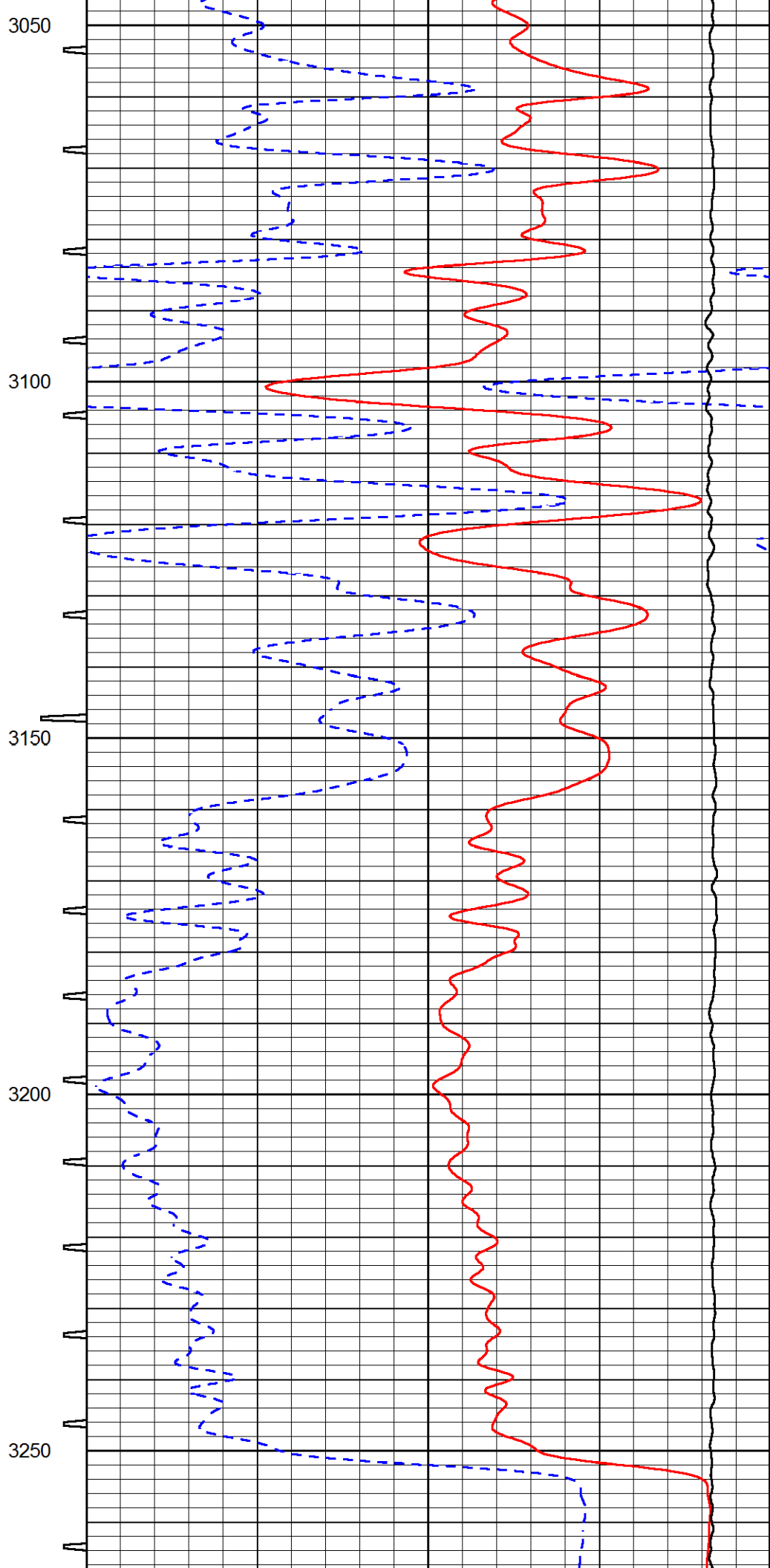
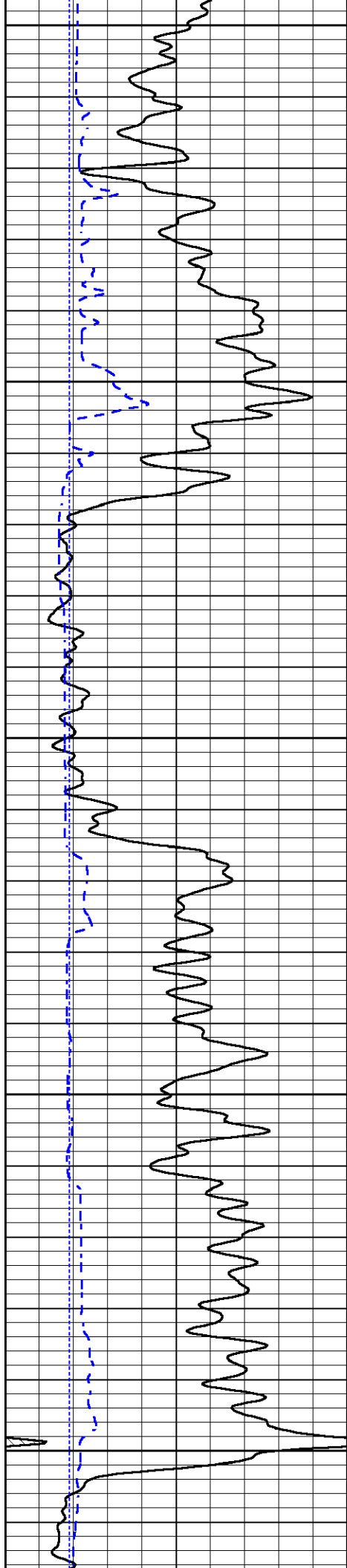


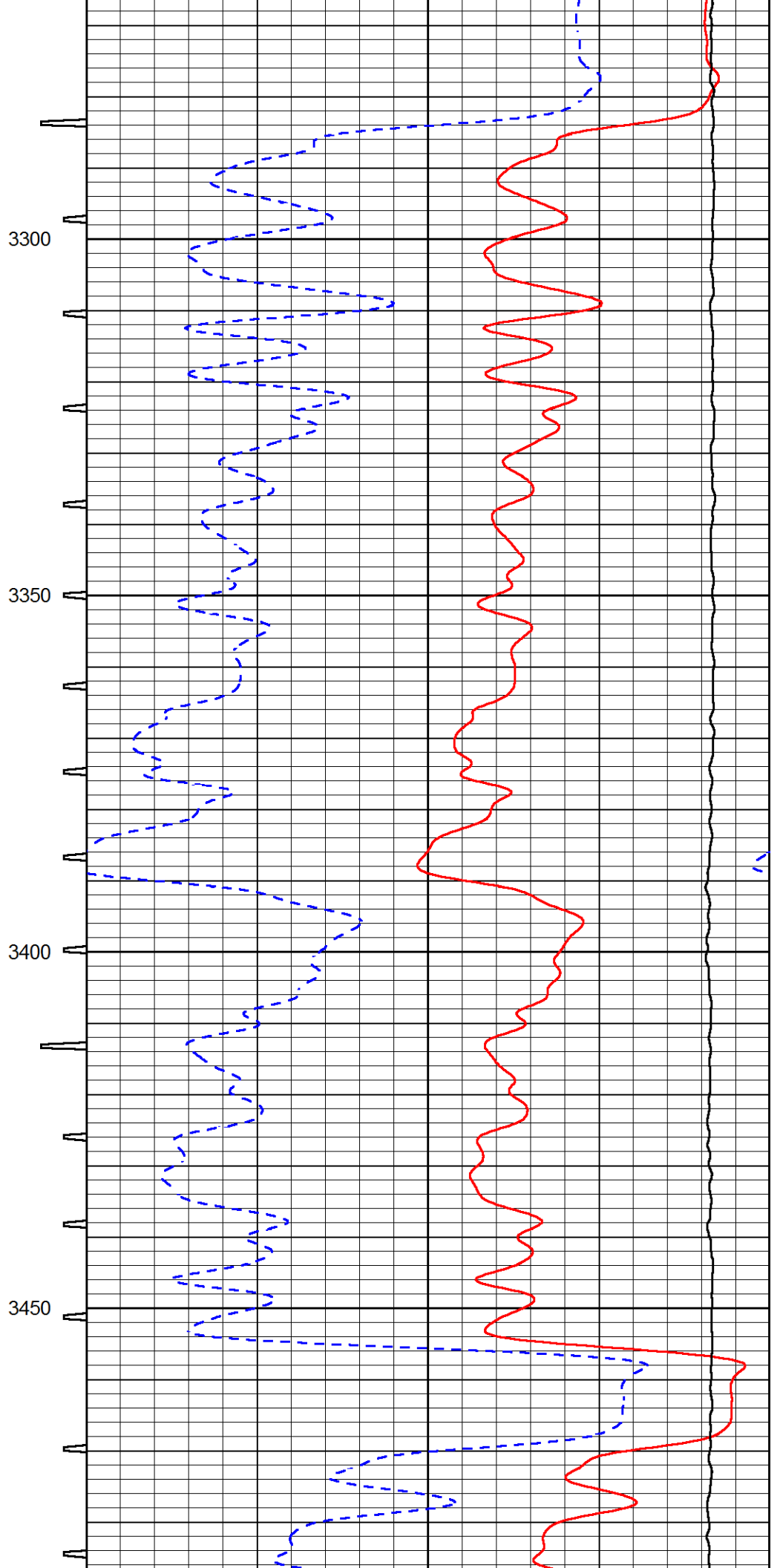
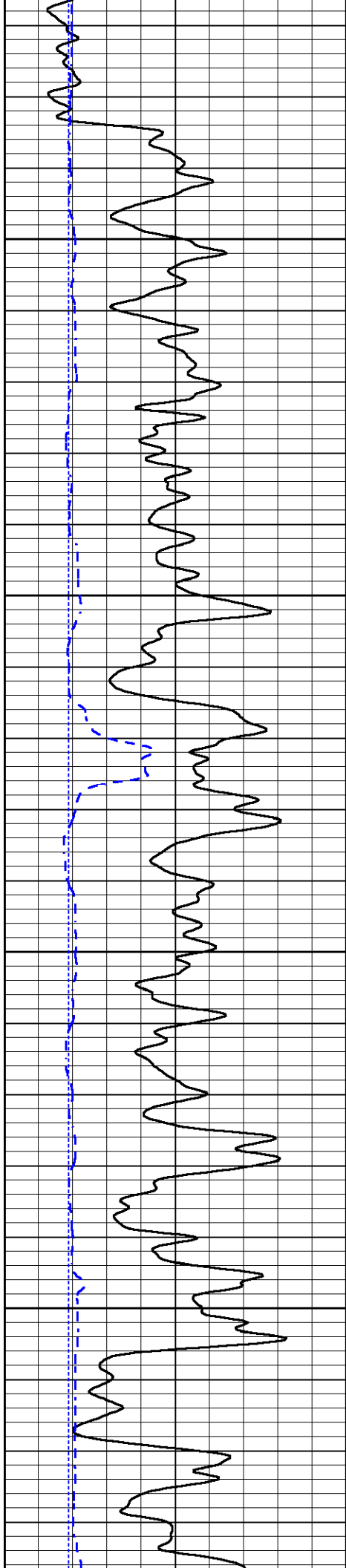


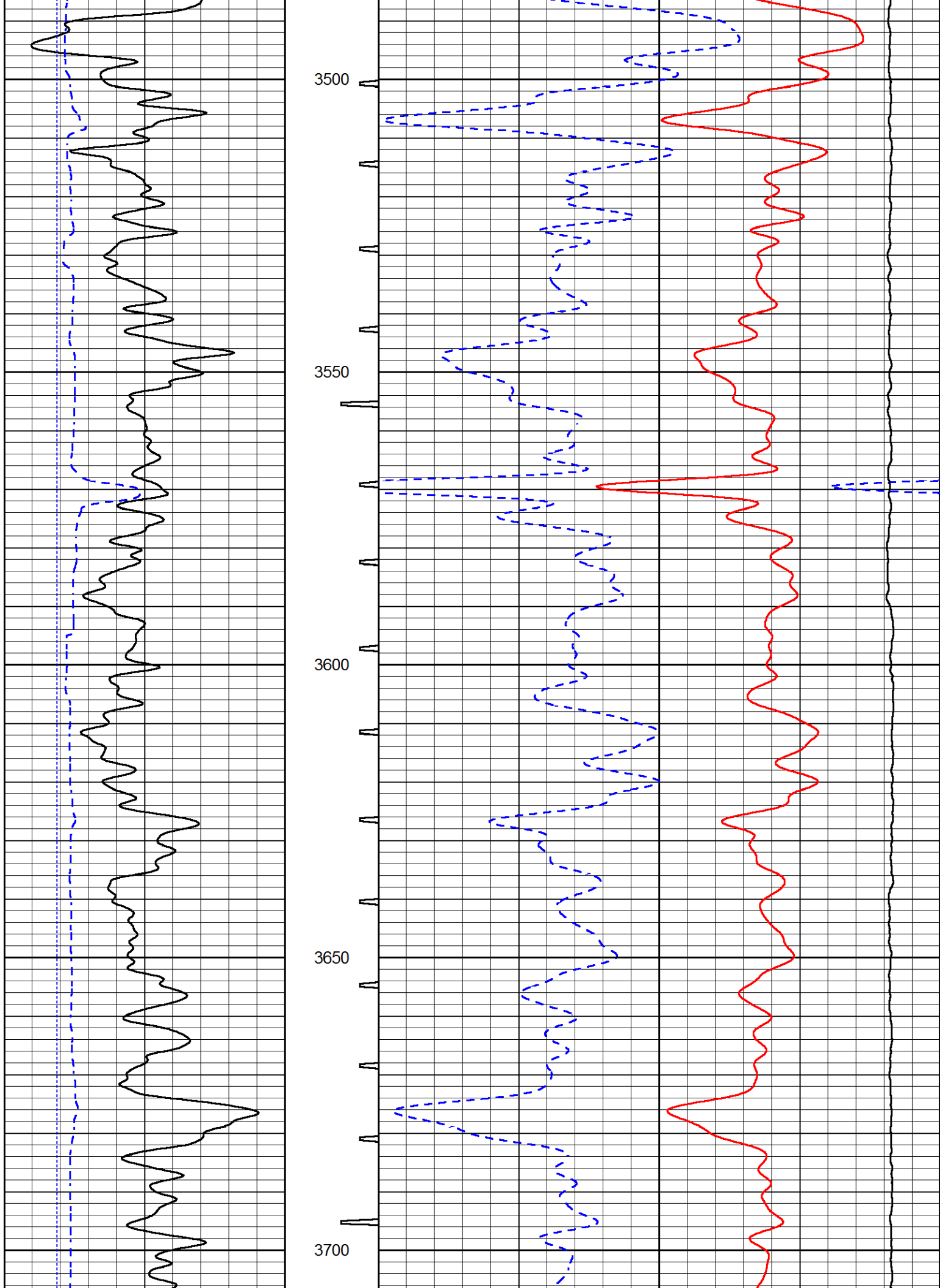


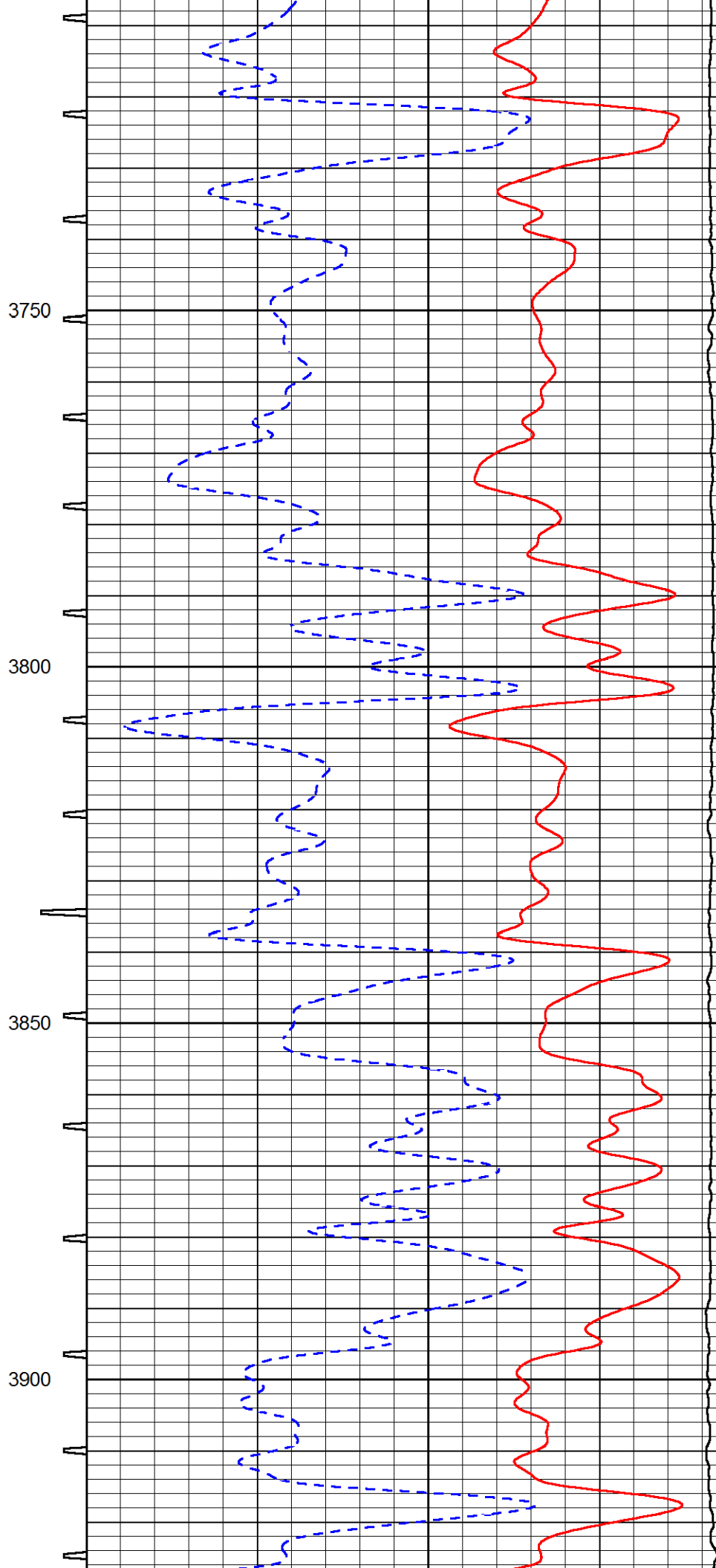
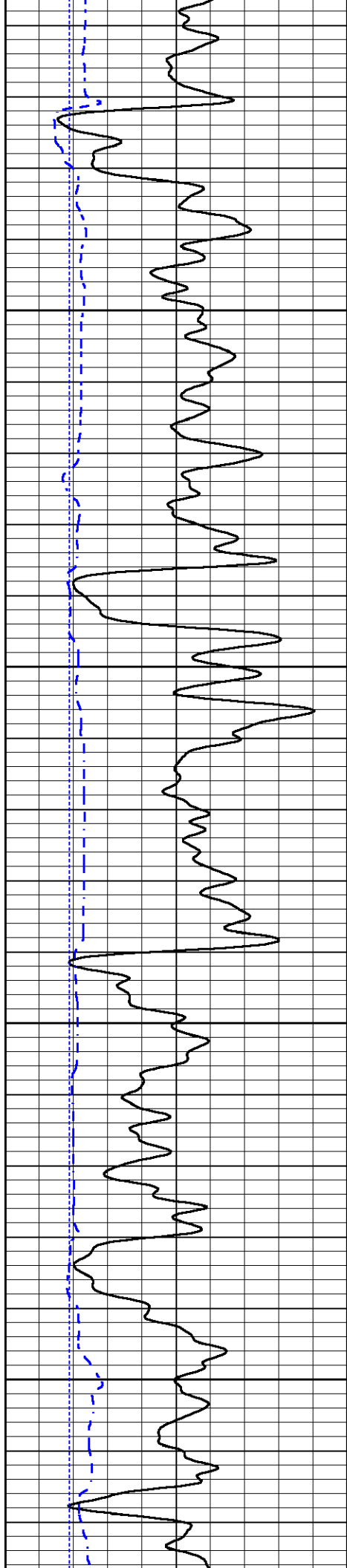


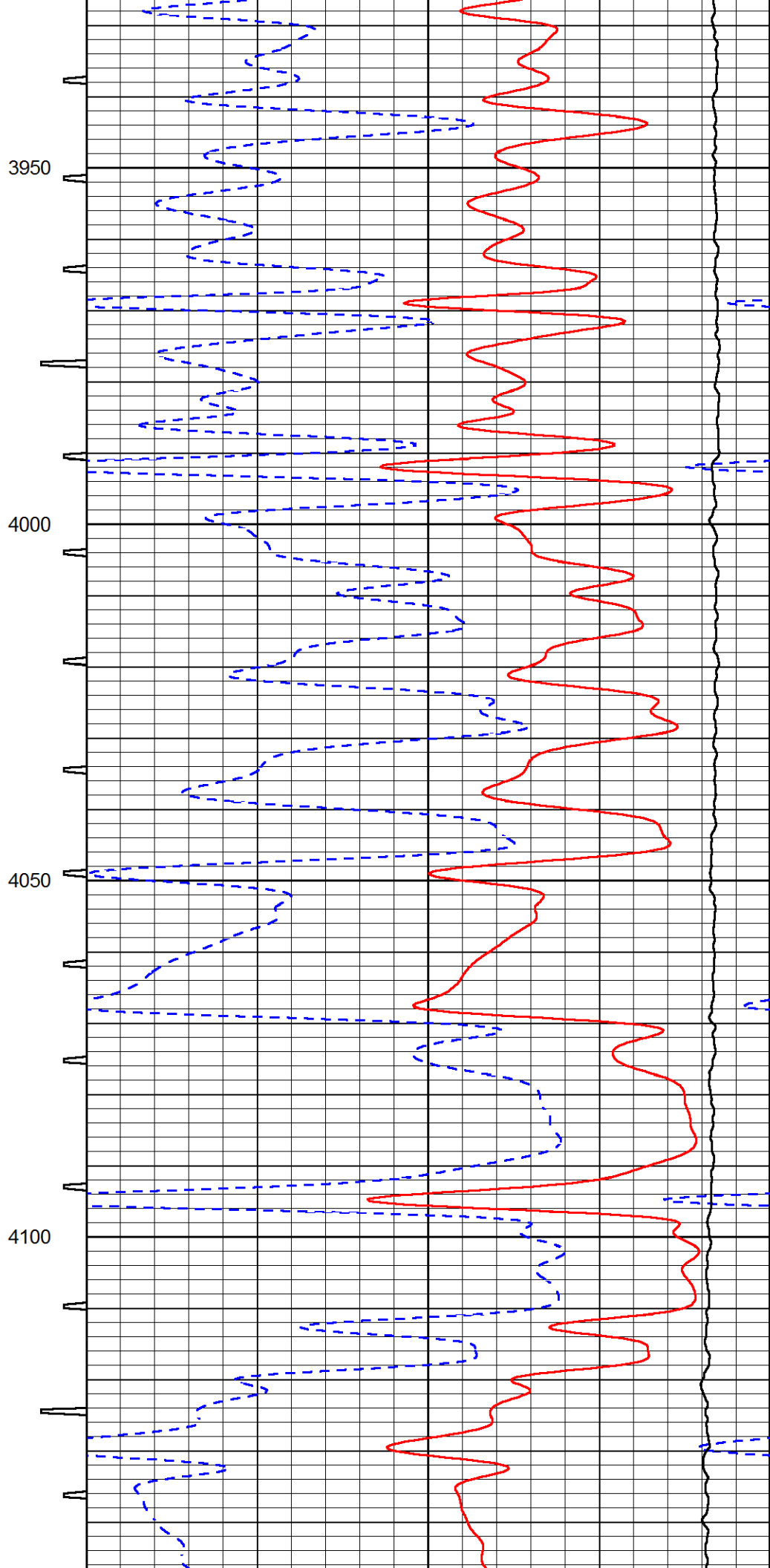
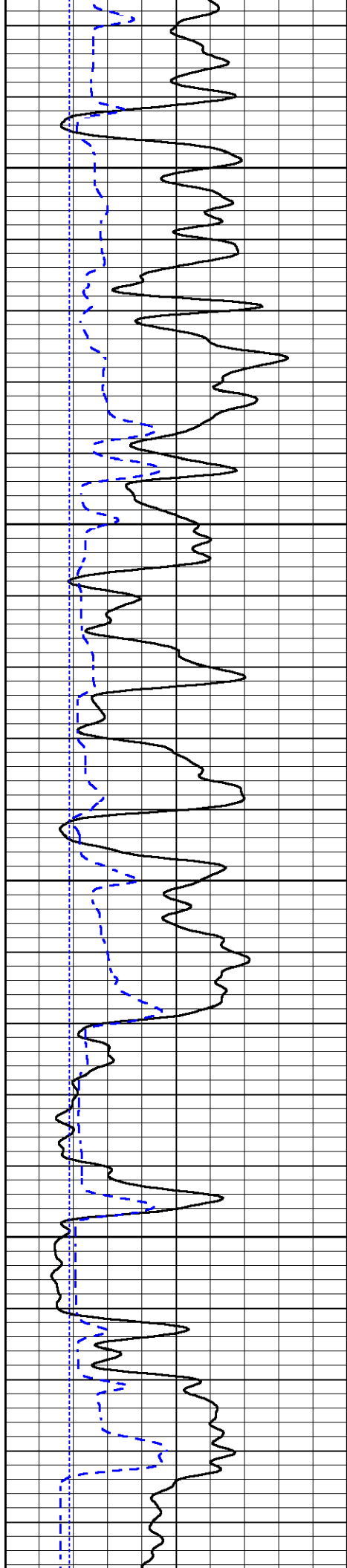


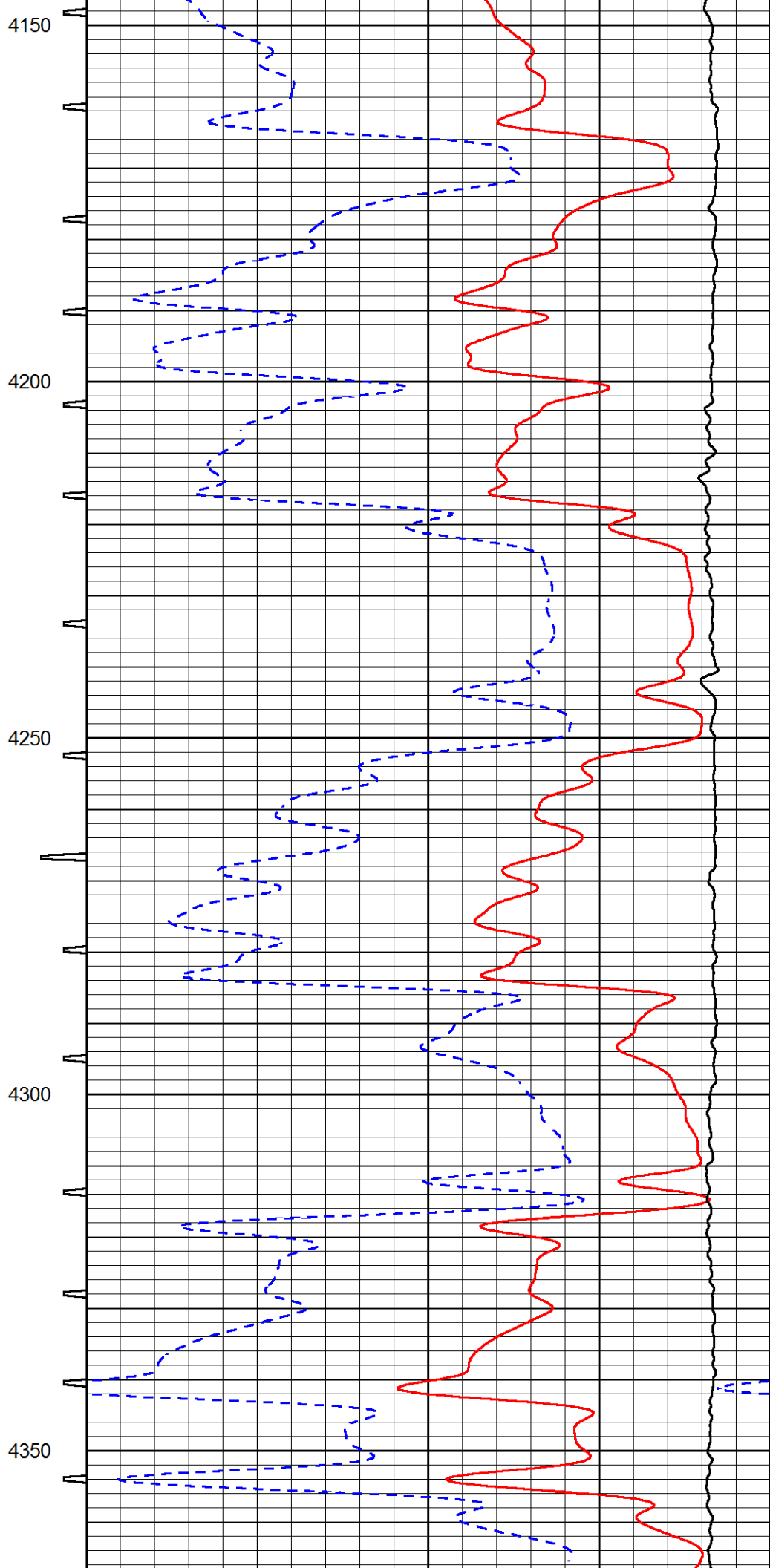
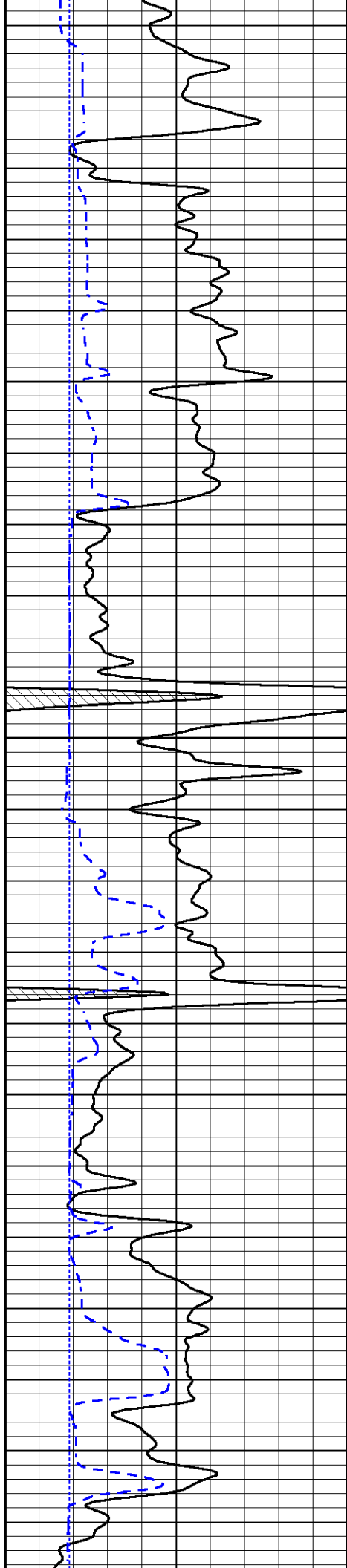


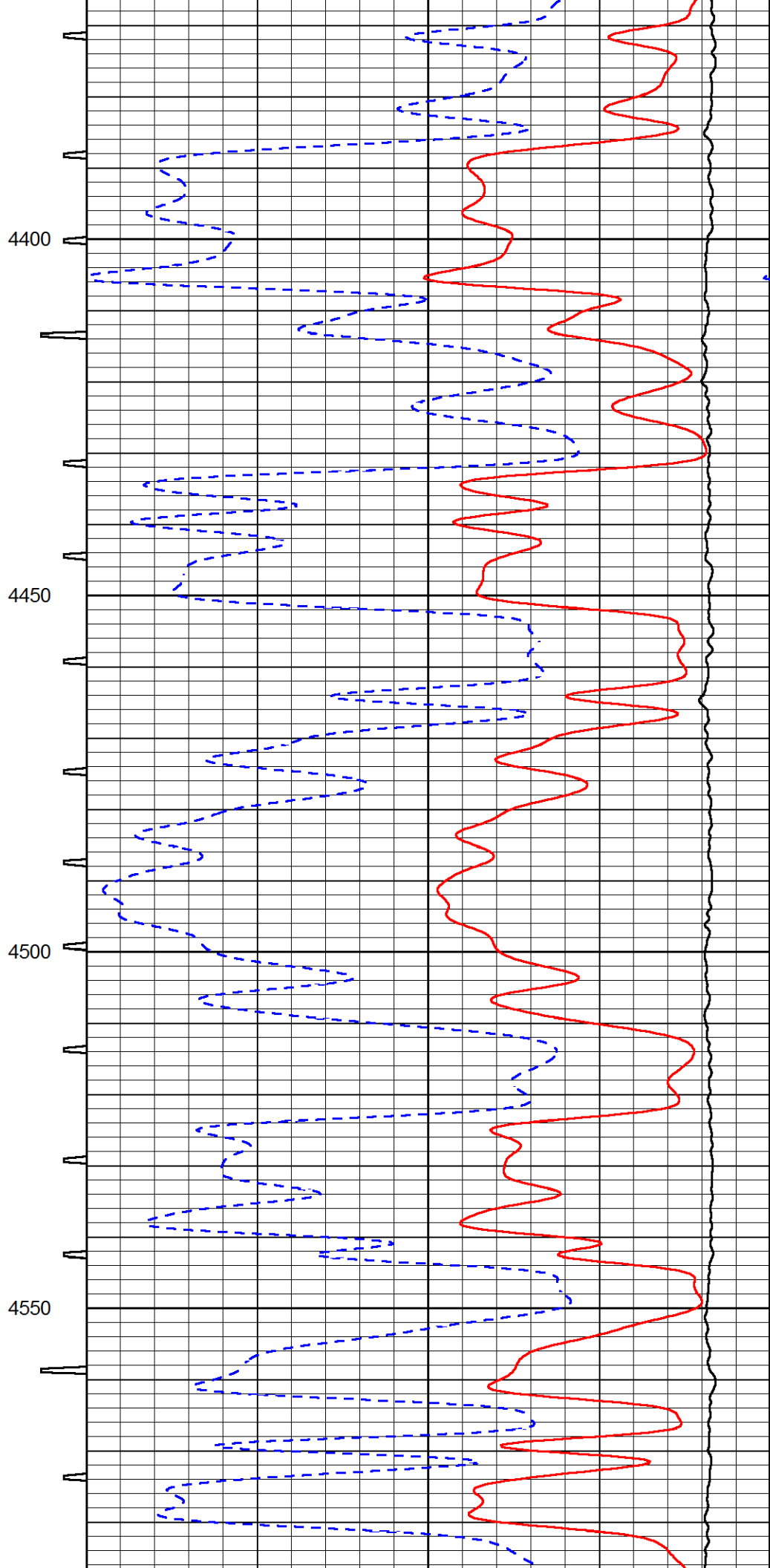
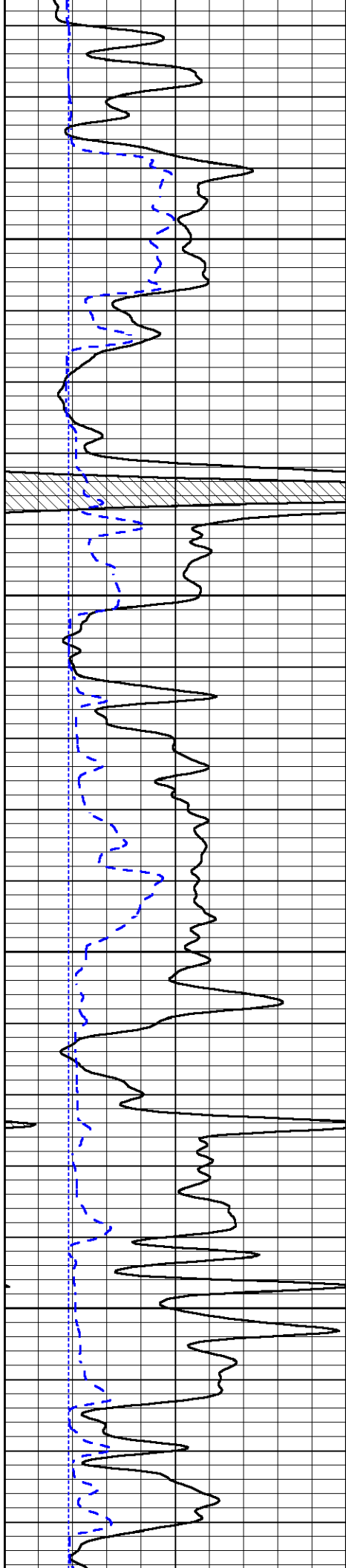


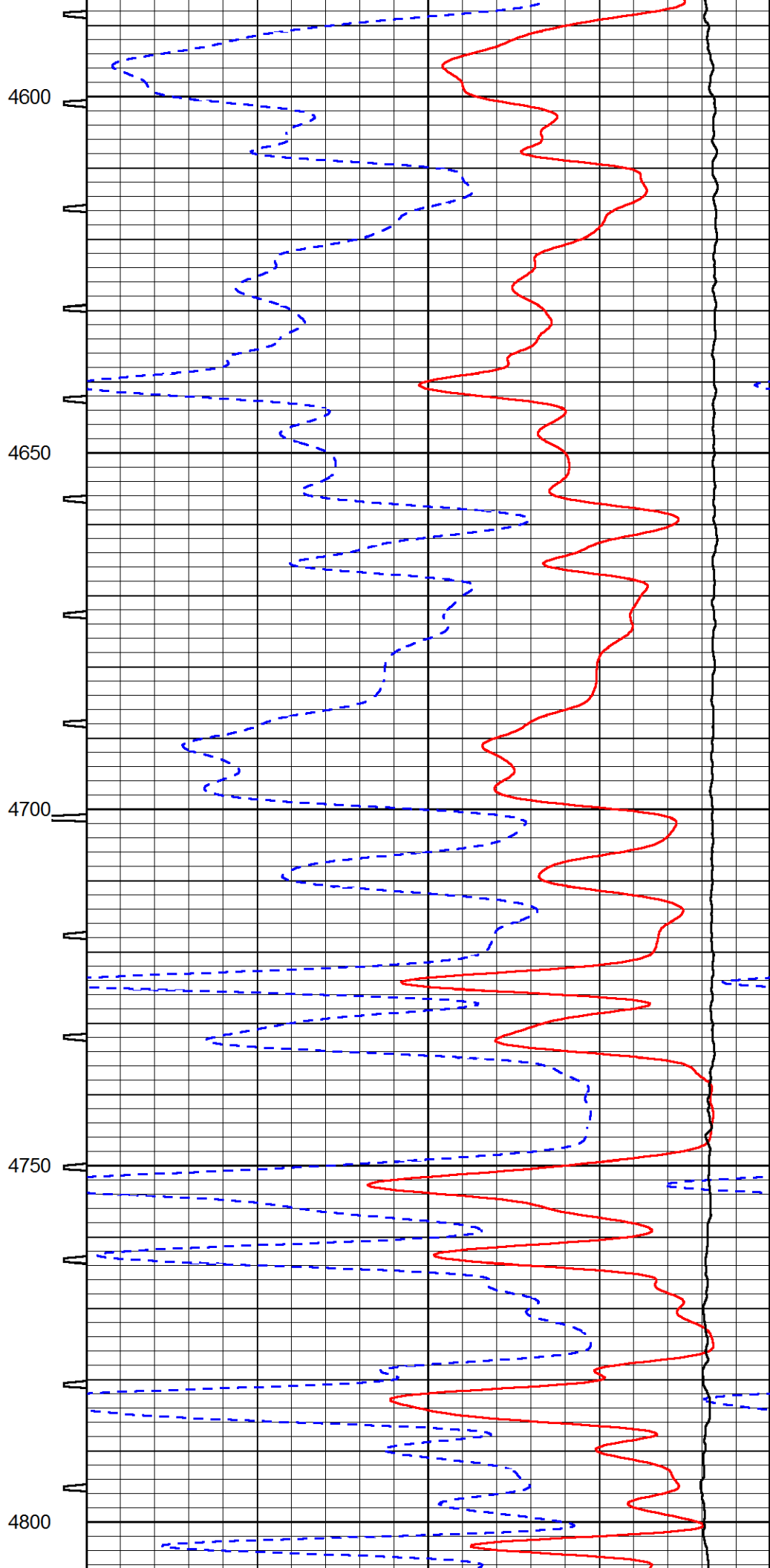
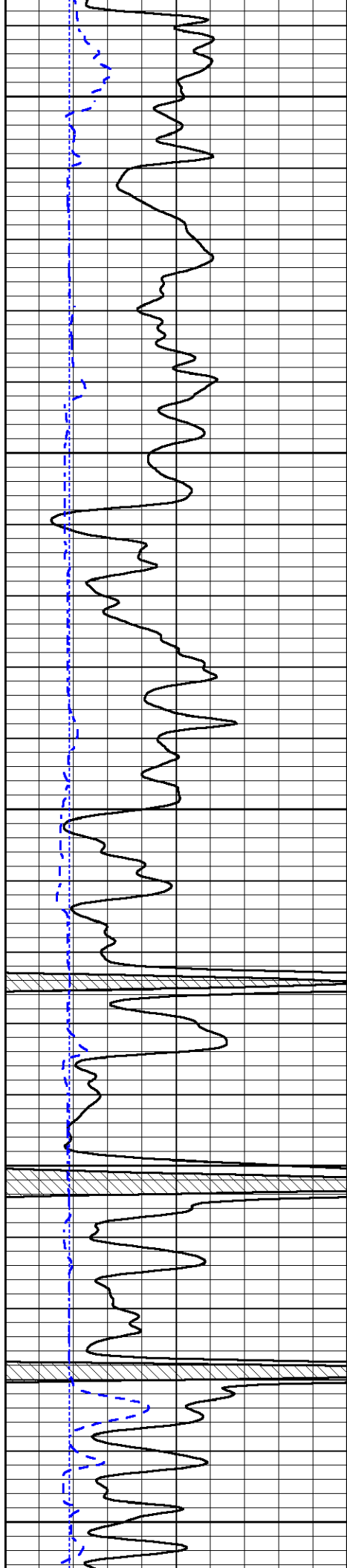


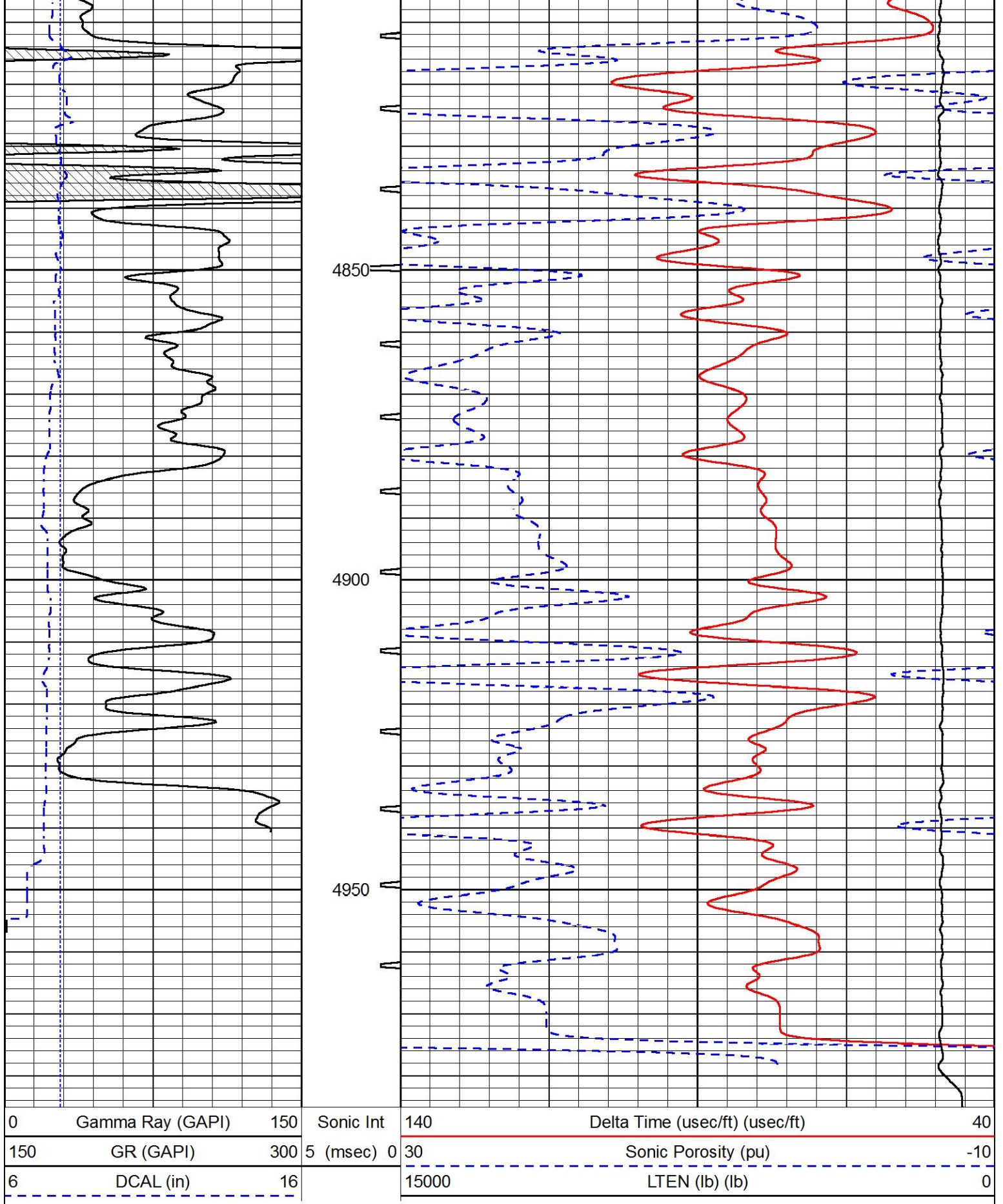








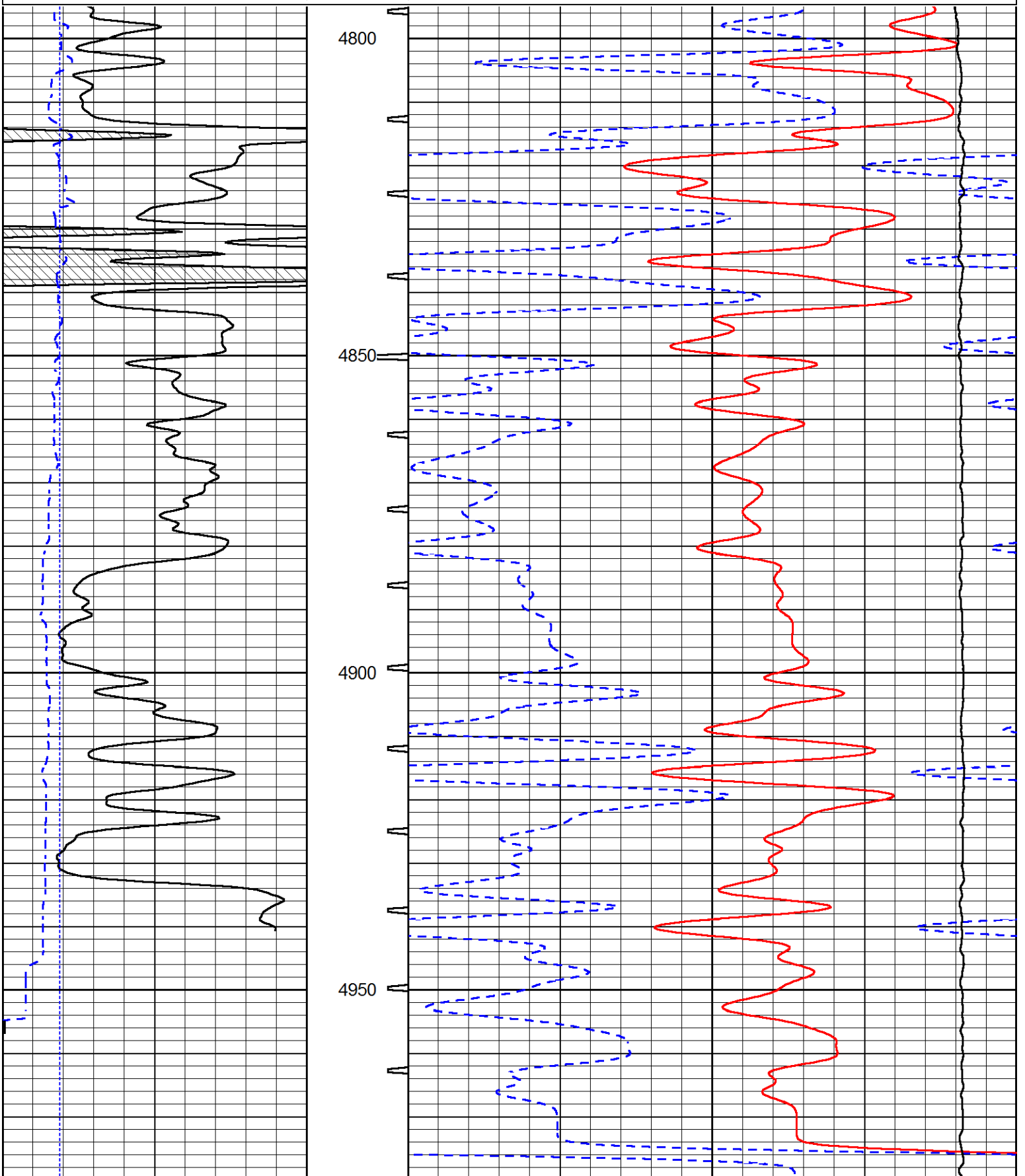




# REPEAT SECTION

Database File berexco\_sturgeon a 1-25.db  
 Dataset Pathname STKML/pass2.1  
 Presentation Format \_sonic  
 Dataset Creation Thu May 21 02:49:38 2020  
 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)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0



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

**Calibration Report**

Database File     berexco\_sturgeon a 1-25.db  
Dataset Pathname     STKML/pass3.1  
Dataset Creation     Thu May 21 02:58:35 2020

**Dual Induction Calibration Report**

Serial-Model:                     952-828-PSI HIGH TEMP  
Calibration Performed:             Sun Mar 01 09:43:59 2020

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.470	-33.000
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.320	-31.000

**Microlog Calibration Report**

Serial-Model:                     UDM-01-PSI UDM ML  
Performed:                             Sun Jan 05 15:35:23 2020

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	29000.0000	-0.1000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	25000.0000	0.0000
Caliper	1.0020	1.2631	6.5000	21.0000	in	55.5374	-70.0000

**Compensated Density Calibration Report**

Serial-Model:                     817-947-M&W  
Source / Verifier:                     16955B / 2ci  
Master Calibration Performed:         Tue Sep 24 21:18:50 2019

**Master Calibration**

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.670	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.526		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	14.50	in	1.23		

**Compensated Neutron Calibration Report**

Serial Number:                     207-MW  
Tool Model:                             M&W

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: 233-M&W  
 Tool Model: M&W  
 Calibration Performed: Fri Feb 07 01:42:40 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.5500 GAPI/cps



**PIONEER**  
 Pioneer Energy Services

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 Field UNNAMED  
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