



Borehole Compensated Sonic Log

Pioneer Energy Services

API No.

15-153-20918-00-00

Company **Murfin Drilling Company, Inc.**

Well **Culwell "D" # 1-30**

Field **Brumm North**

County **Rawlins** State **Kansas**

Location **2000' FSL & 2020' FWL**

Other Services
CNL/CDL
MEL/DIL

Sec: 30 Twp: 1 S Rge: 36 W

Permanent Datum **Ground Level** Elevation **3275**
Log Measured From **Kelly Bushing** 10 Ft. Above Perm. Datum
Drilling Measured From **Kelly Bushing**

Elevation
K.B. 3285
D.F. 3275
G.L. 3275

Date **02/11/2013**

Run Number **Two**

Type Log **BHC Sonic**

Depth Driller **4770**

Depth Logger **4770**

Bottom Logged Interval **4759**

Top Logged Interval **200**

Type Fluid In Hole **Chemical**

Salinity, PPM CL **800**

Density **9.3**

Level **Full**

Max. Rec. Temp. F **126**

Operating Rig Time **5 Hours**

Equipment -- Location **91 Hays**

Recorded By **D.Schmidt**

Witnessed By **Jeff Christian**

Borehole Record

Casing Record

Run No.

Bit

From

To

Size

Wgt.
48 #

From

To

One 17.250

0

254

13.375

48 #

0

254

TD

254

254

254

254

254

254

254

254

254

254

254

254

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

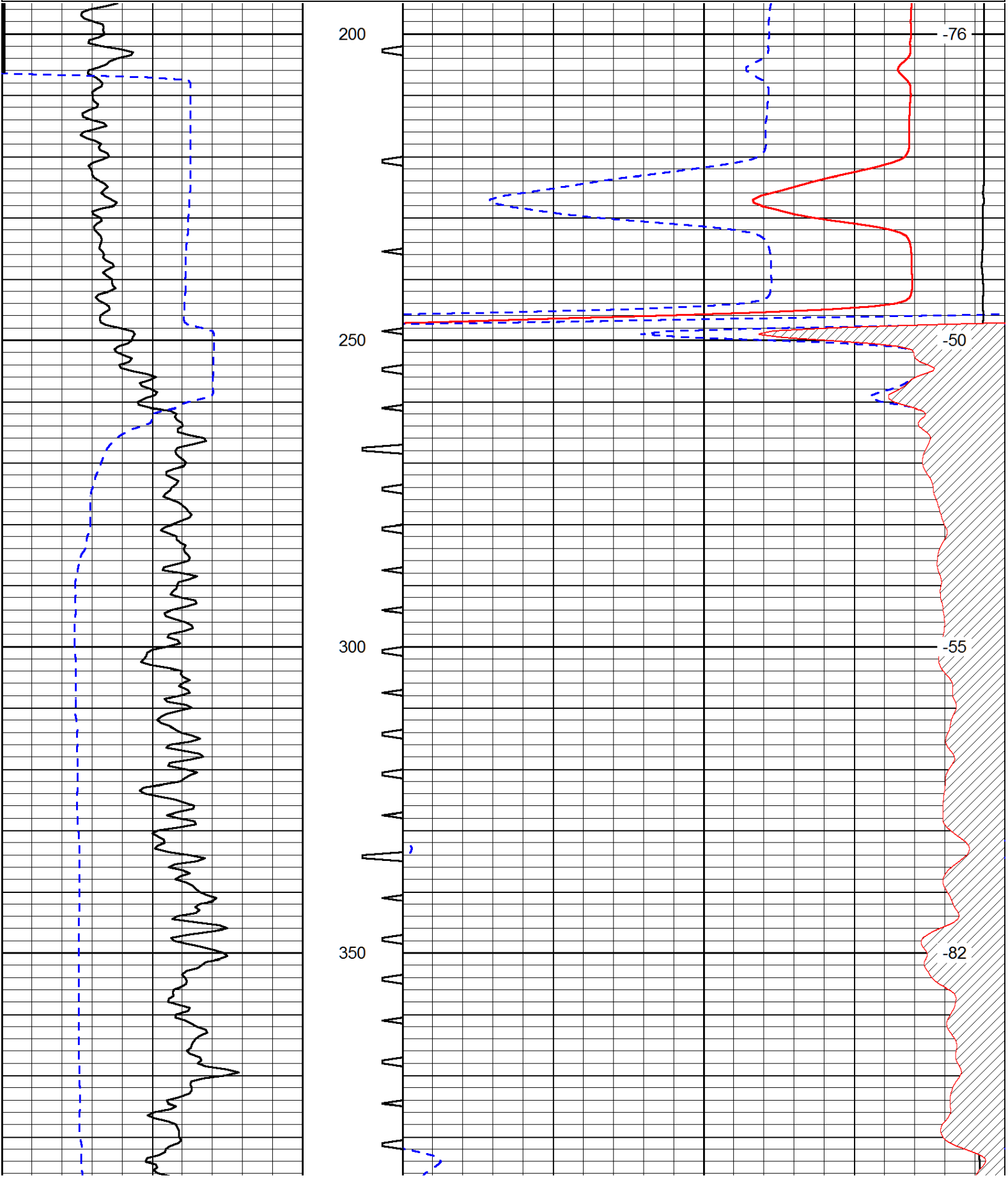
Comments

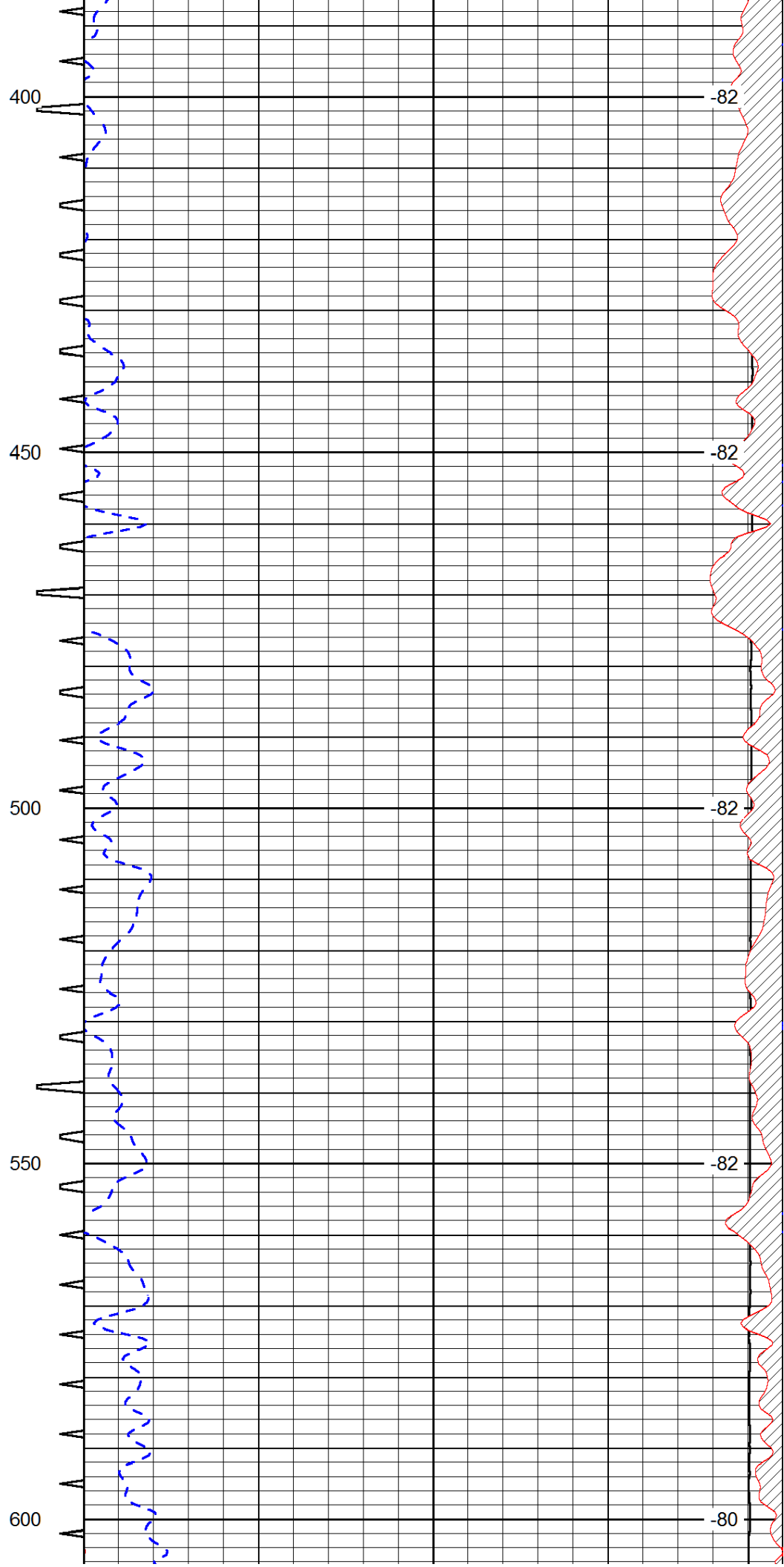
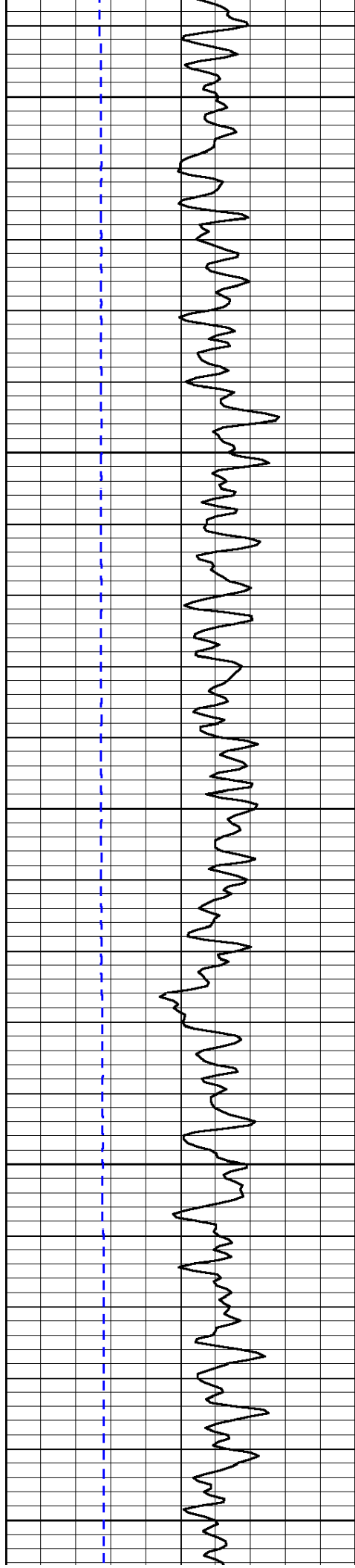
Thank you for using Log-Tech, Inc.
(785) 625-3858

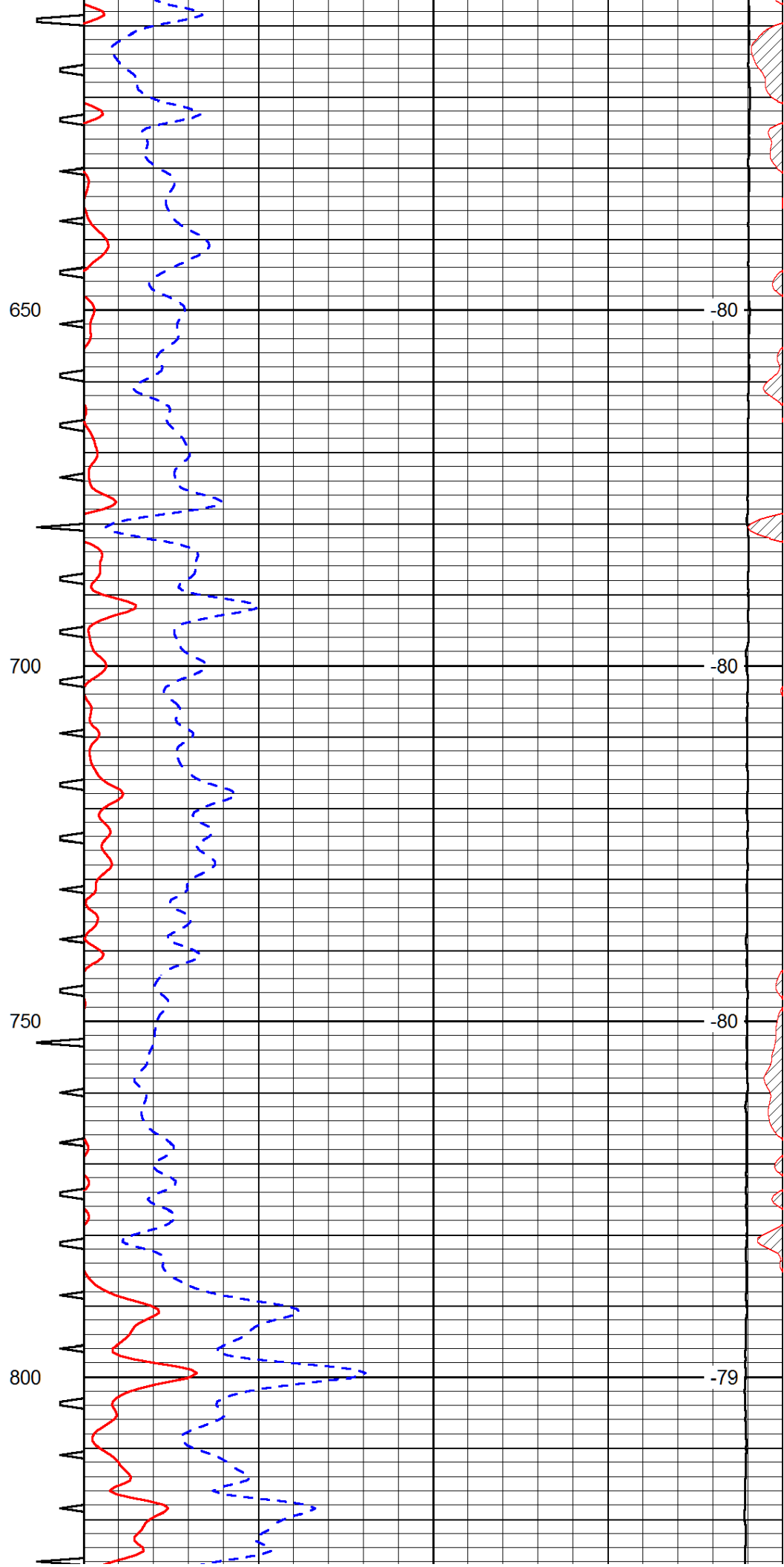
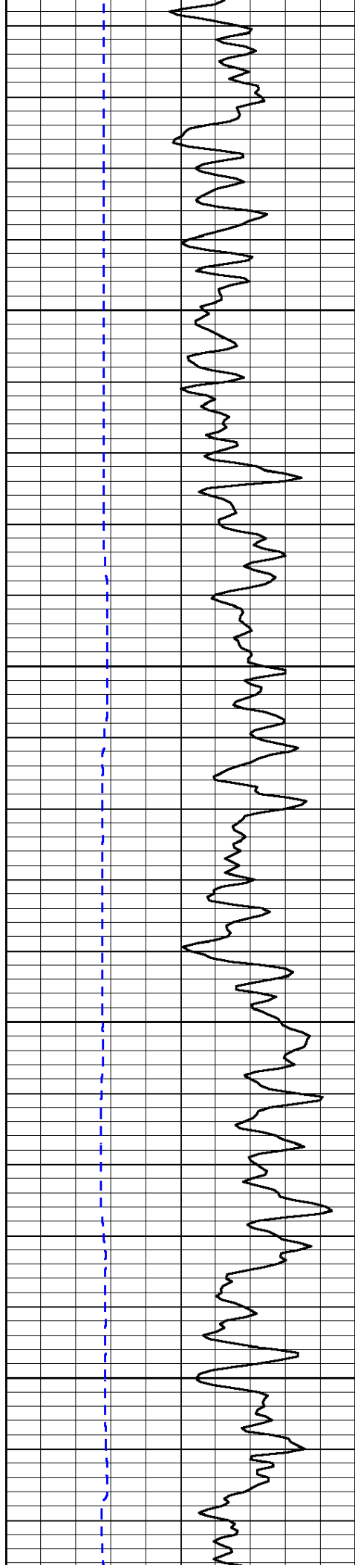
McDonald,
10 North to Z RD, 1 1/2 West,
North into

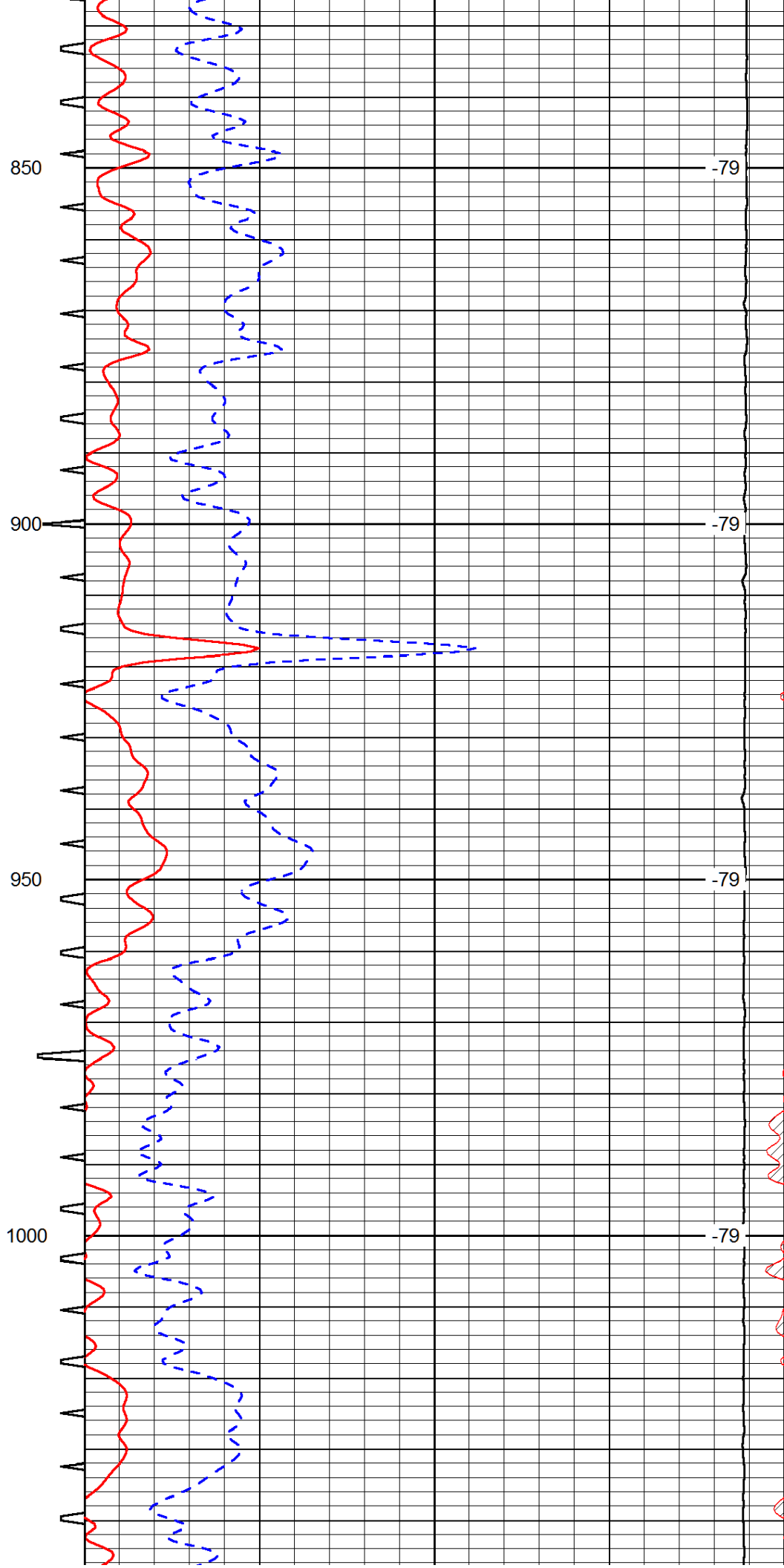
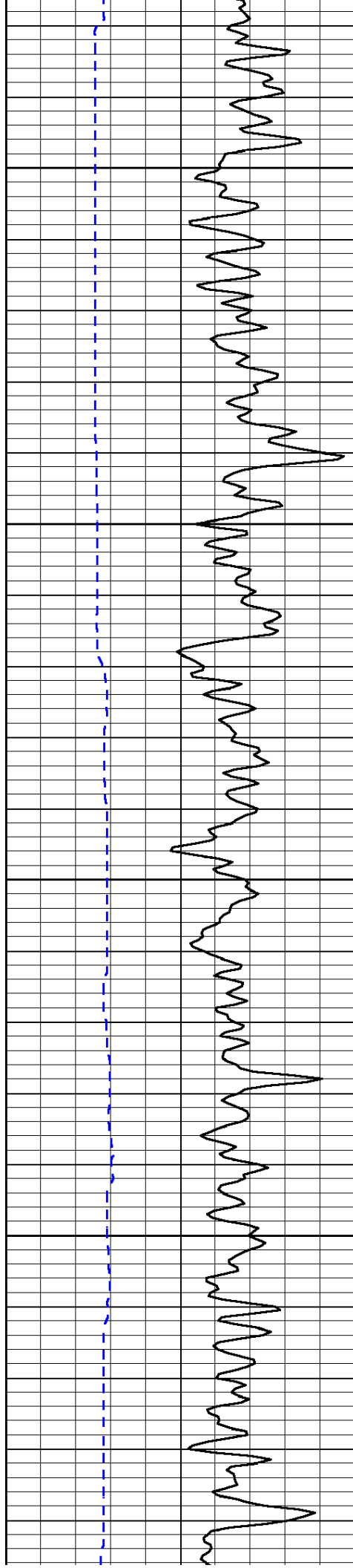
Database File: murfin_021113hd.db
Dataset Pathname: dil/mrfstack
Presentation Format: sonic
Dataset Creation: Mon Feb 11 16:27:40 2013
Charted by: Depth in Feet scaled 1:240

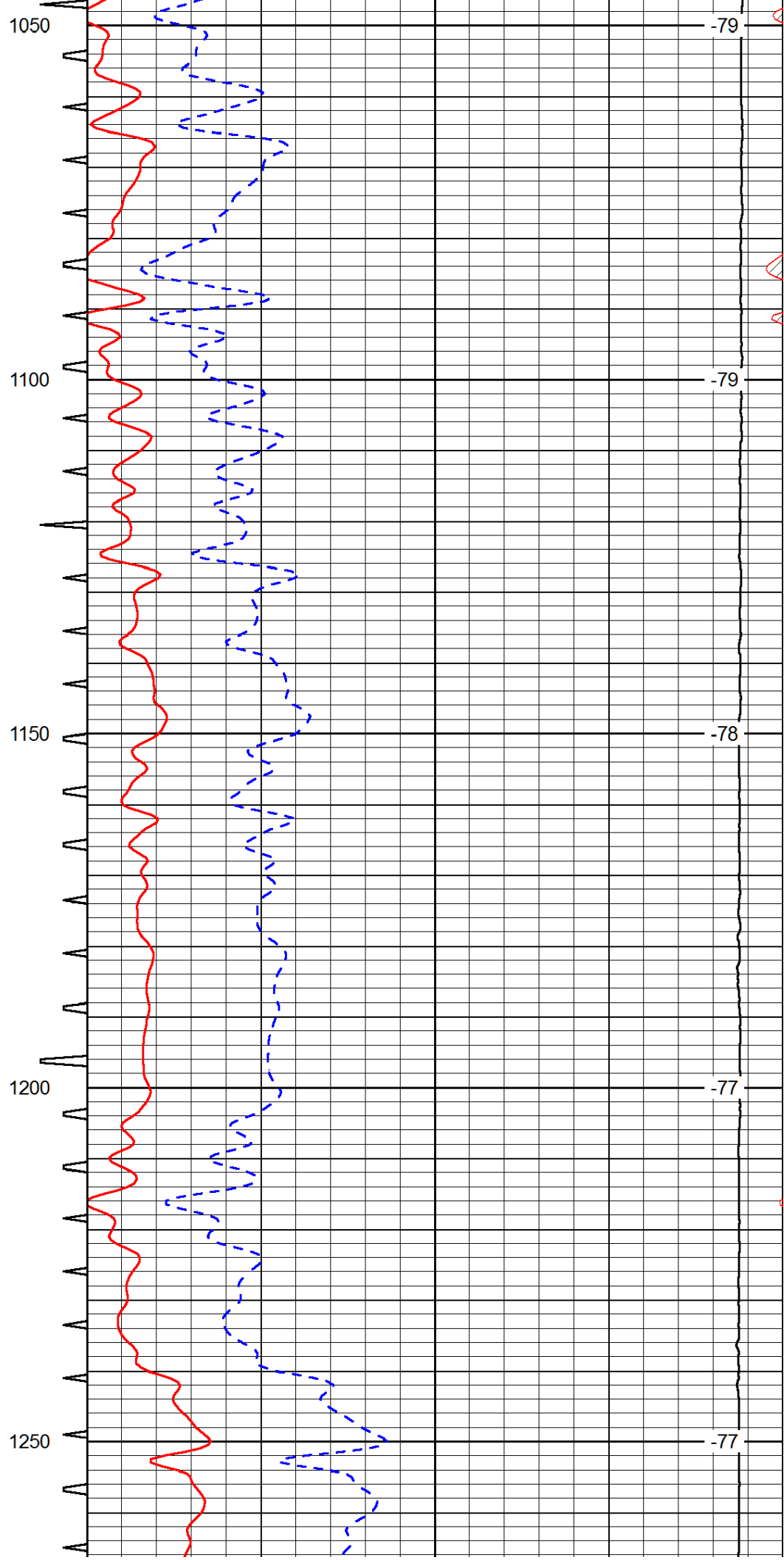
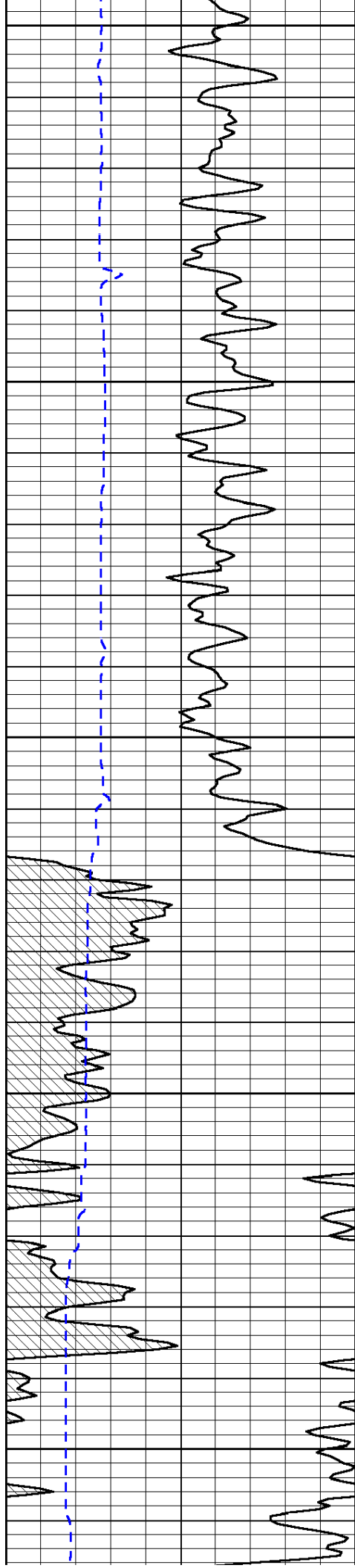
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	Gamma Ray (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	dCAL (in)	16		15000	LTEN (lb) (lb)	0
						LSPD (ft/min)

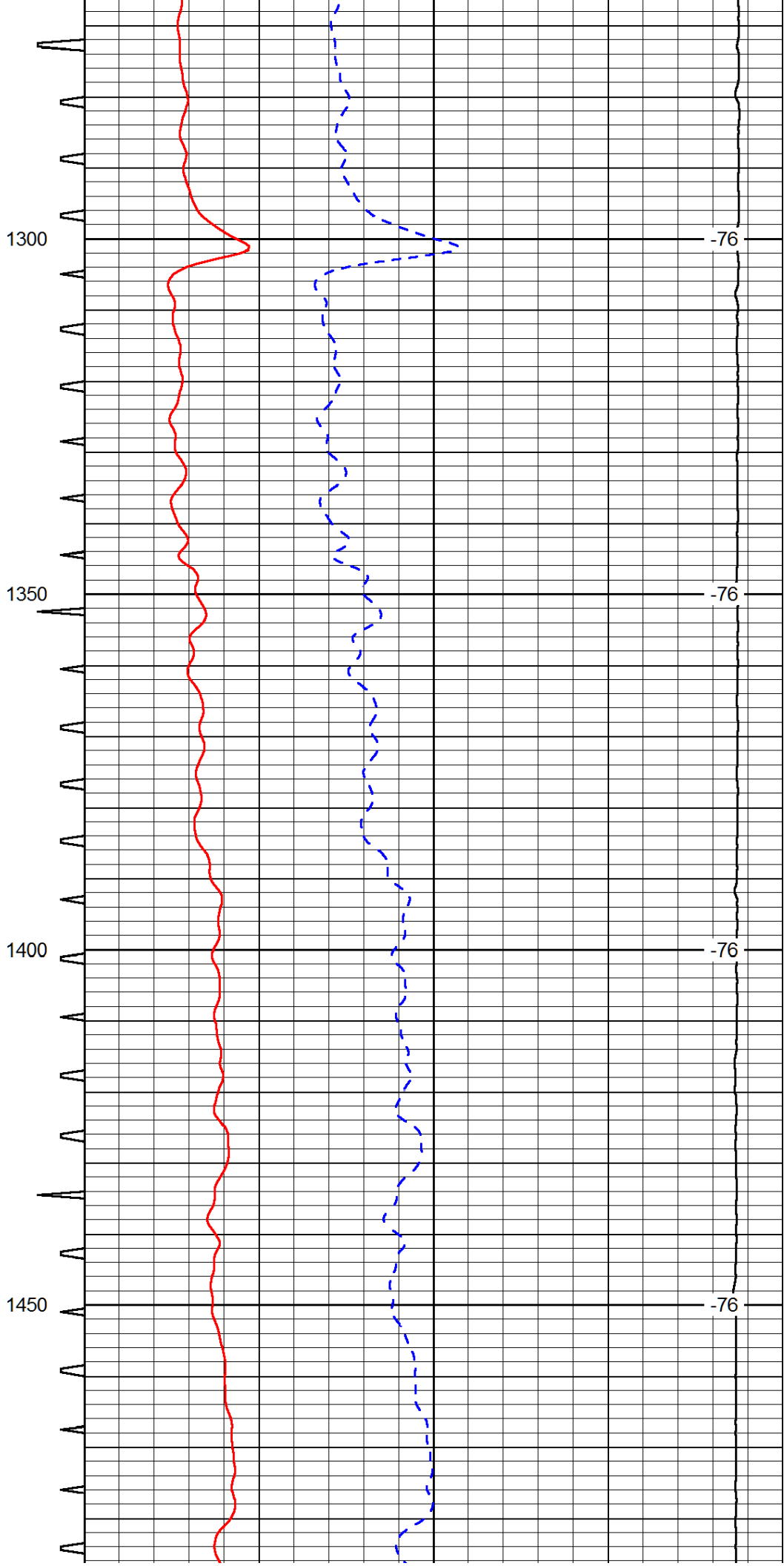
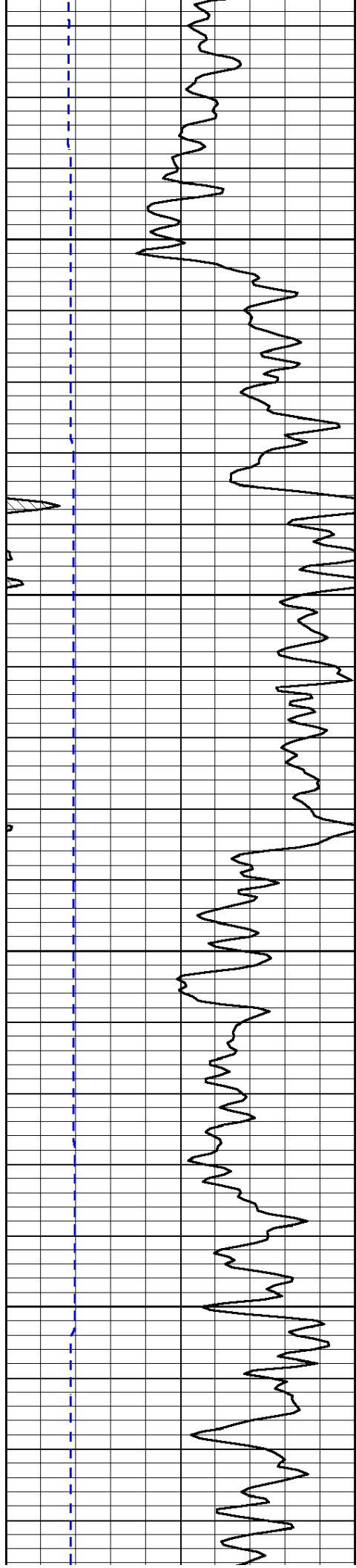


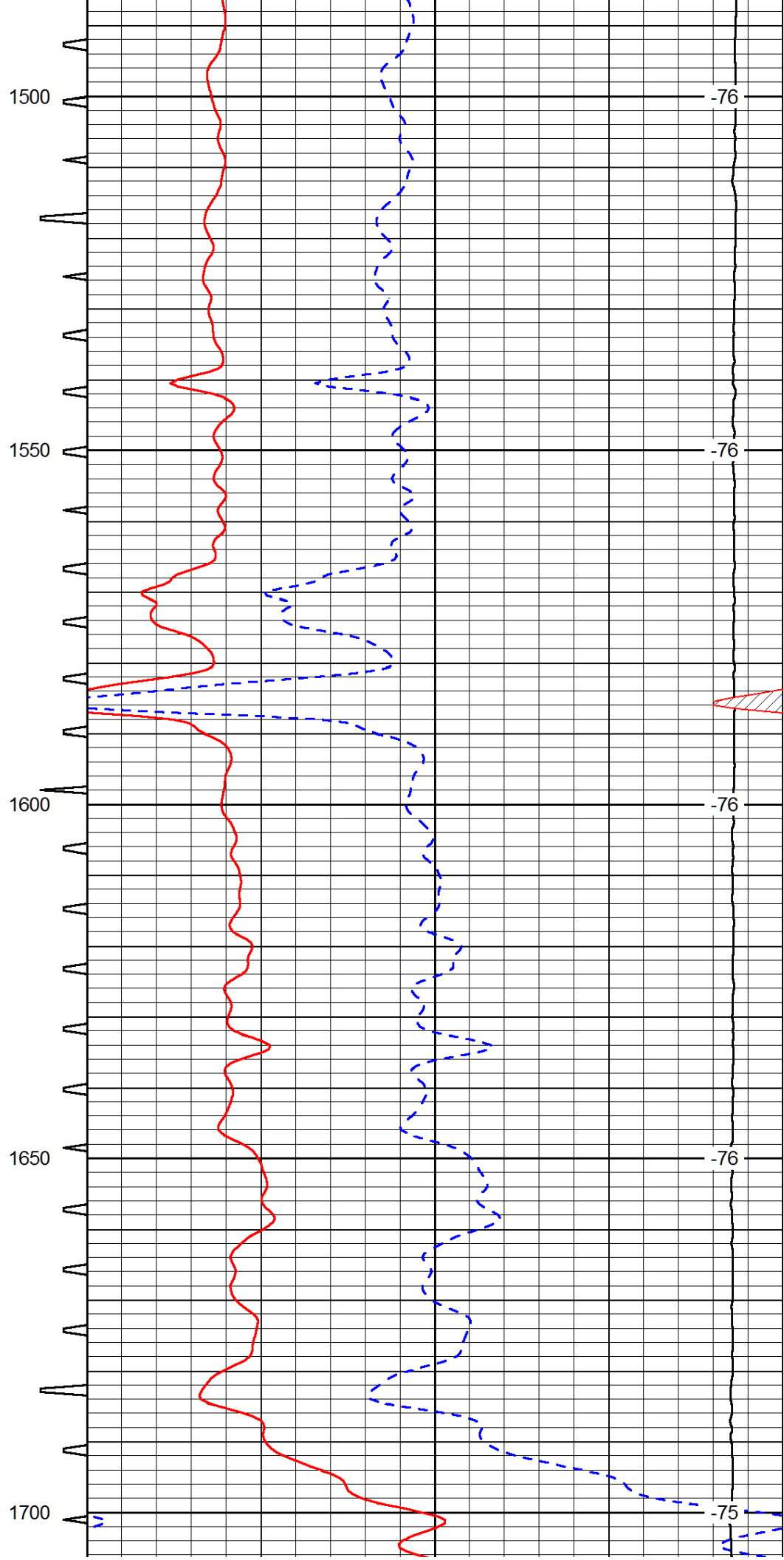
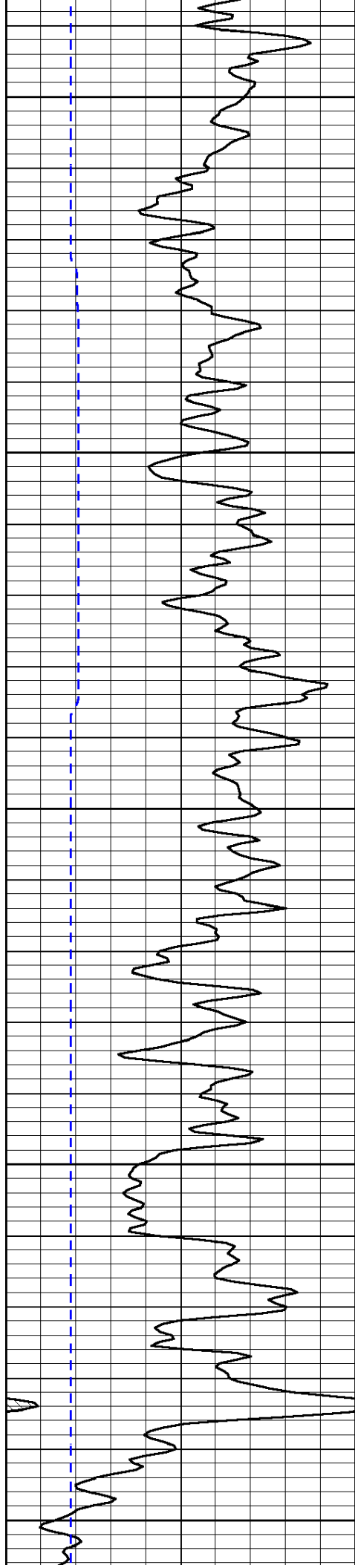


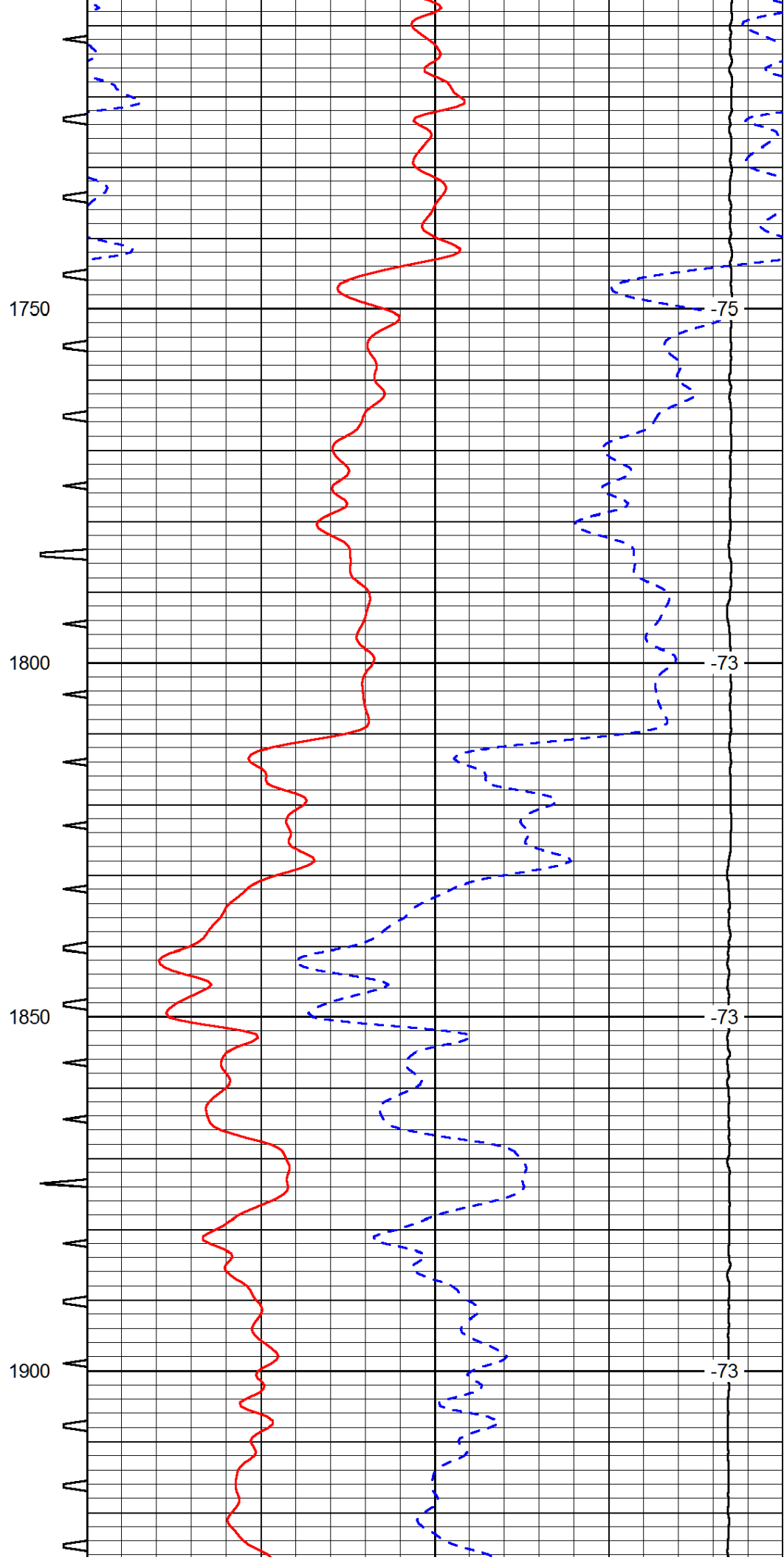
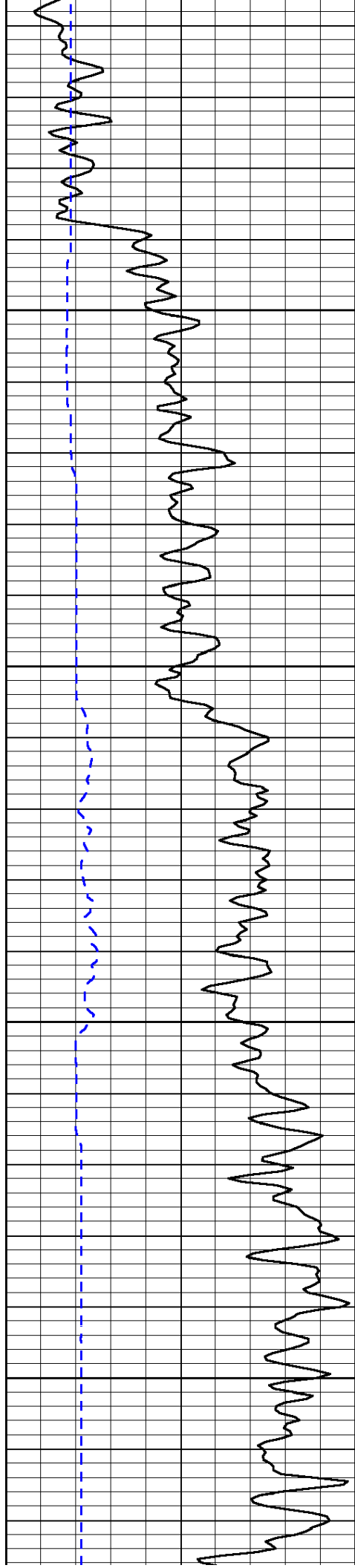


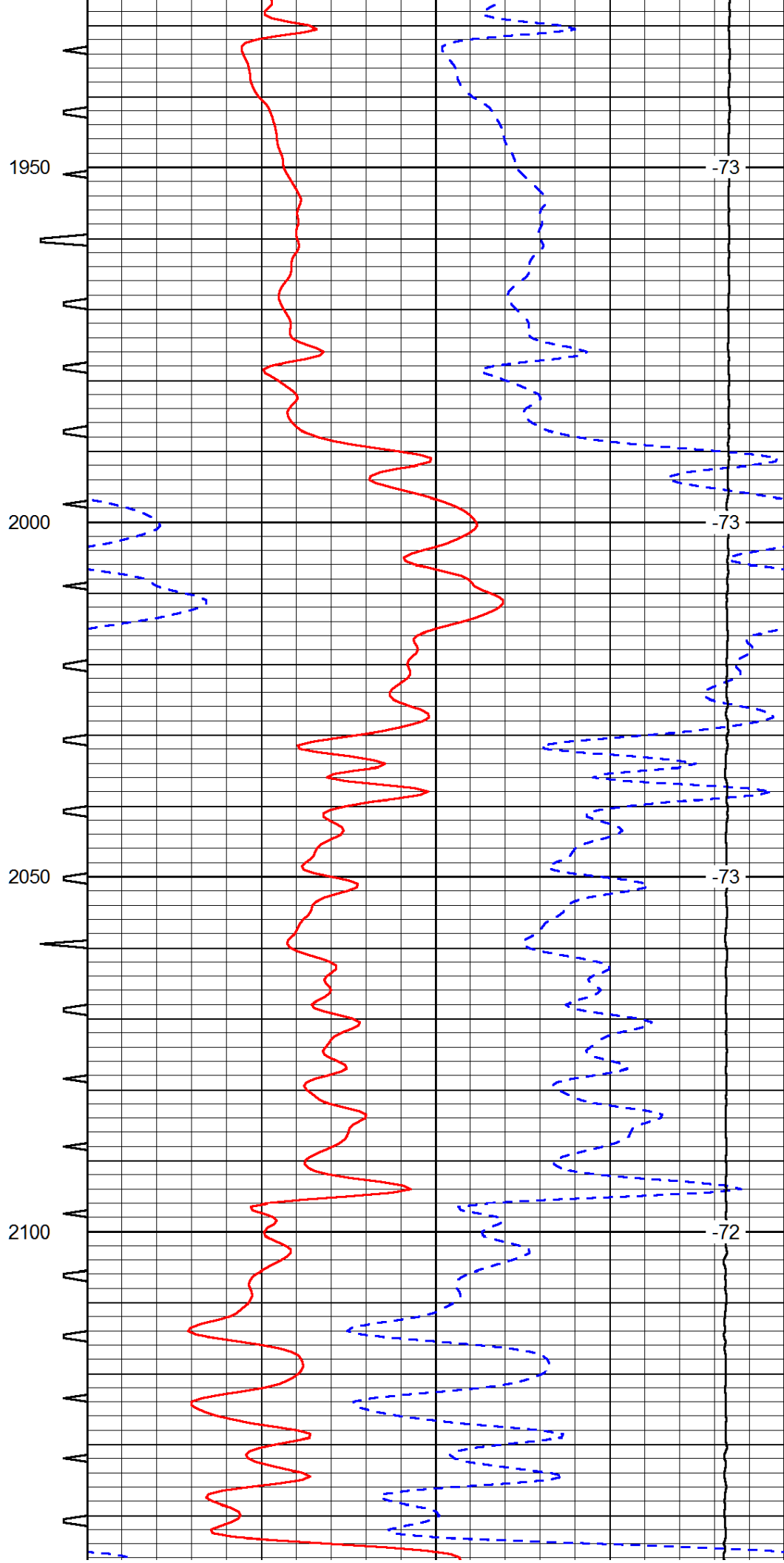
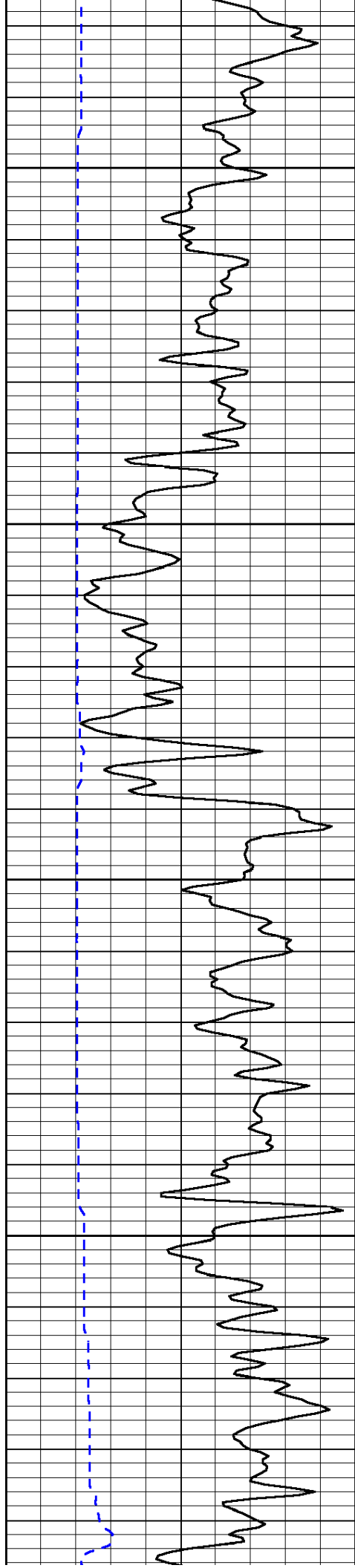


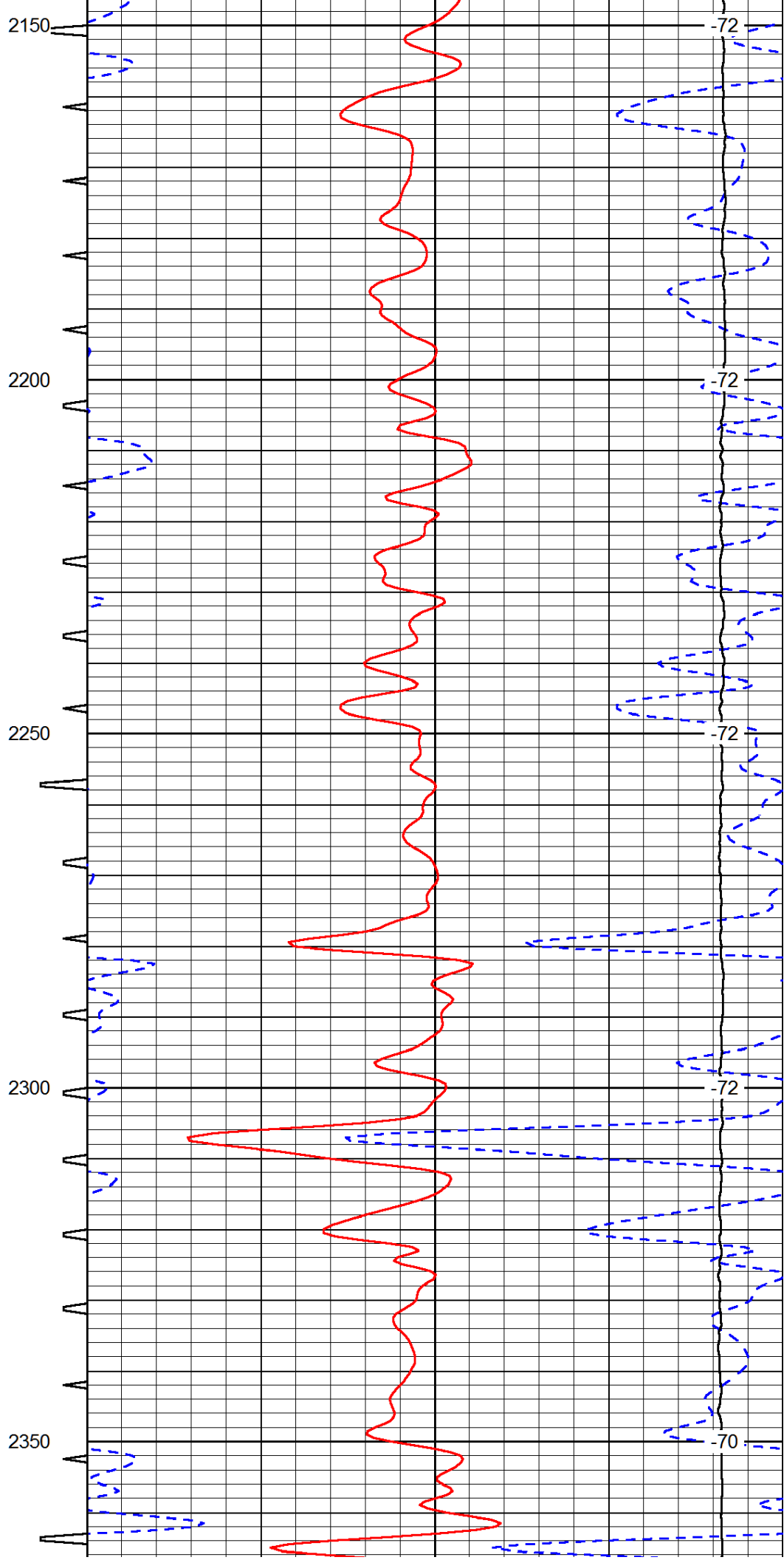
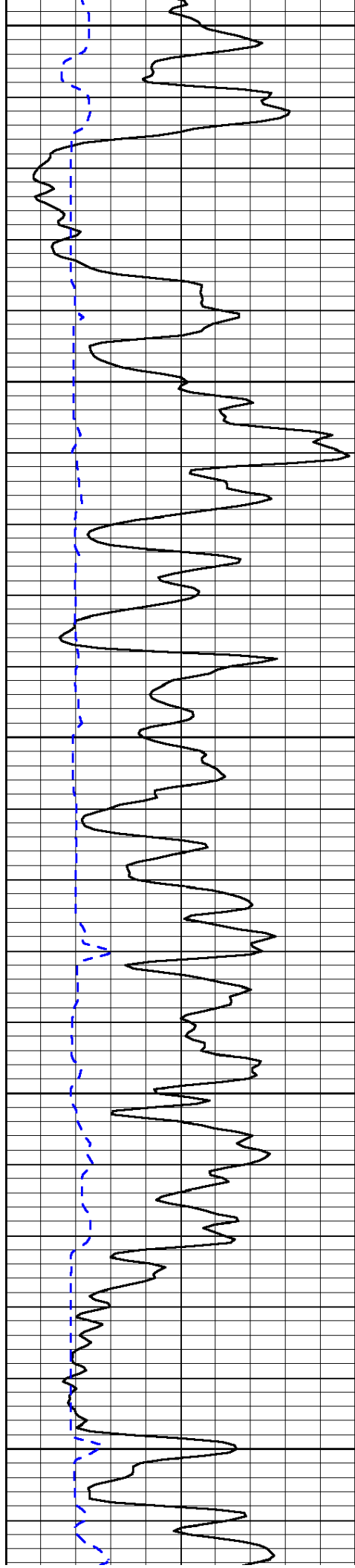


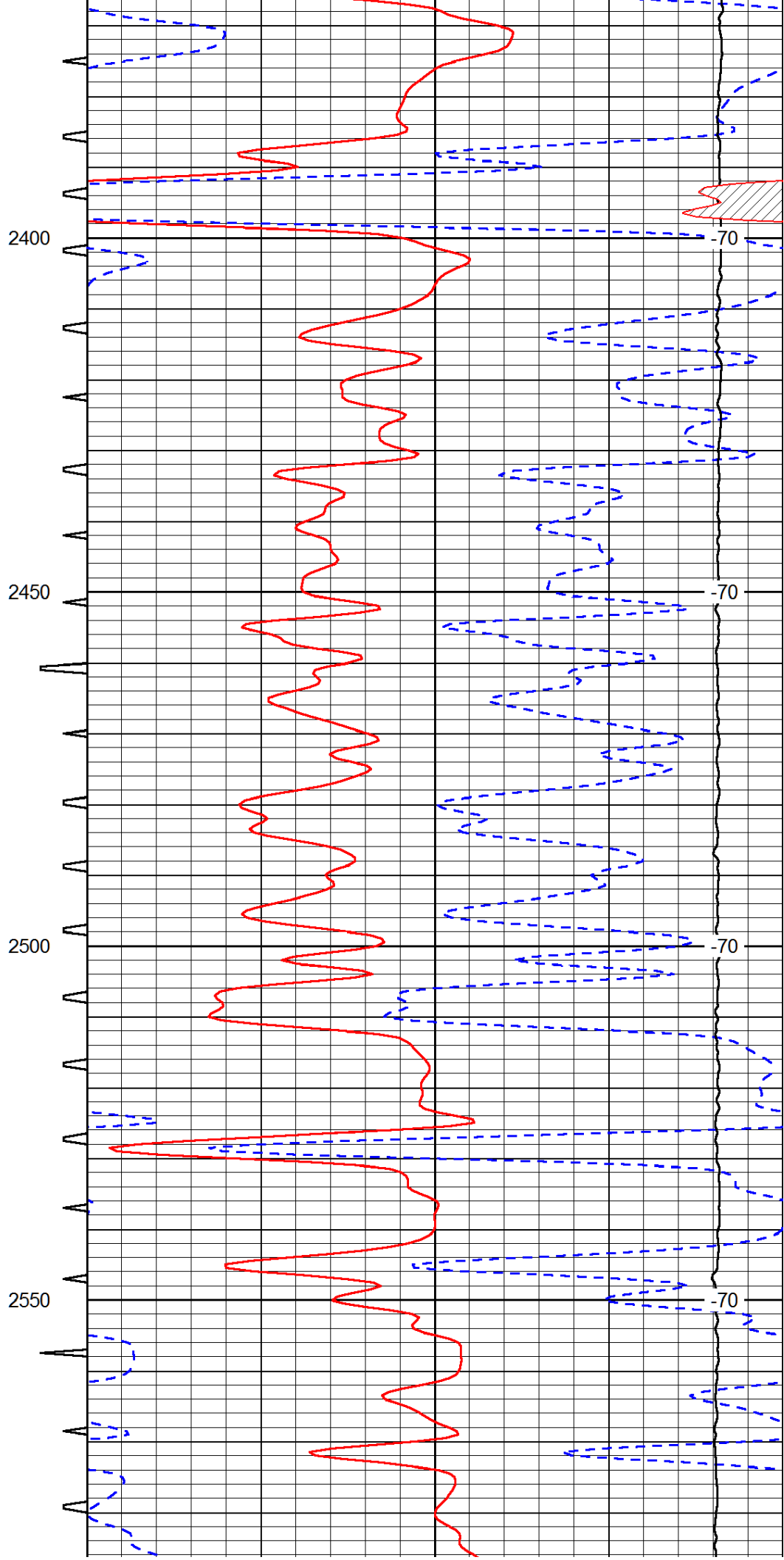
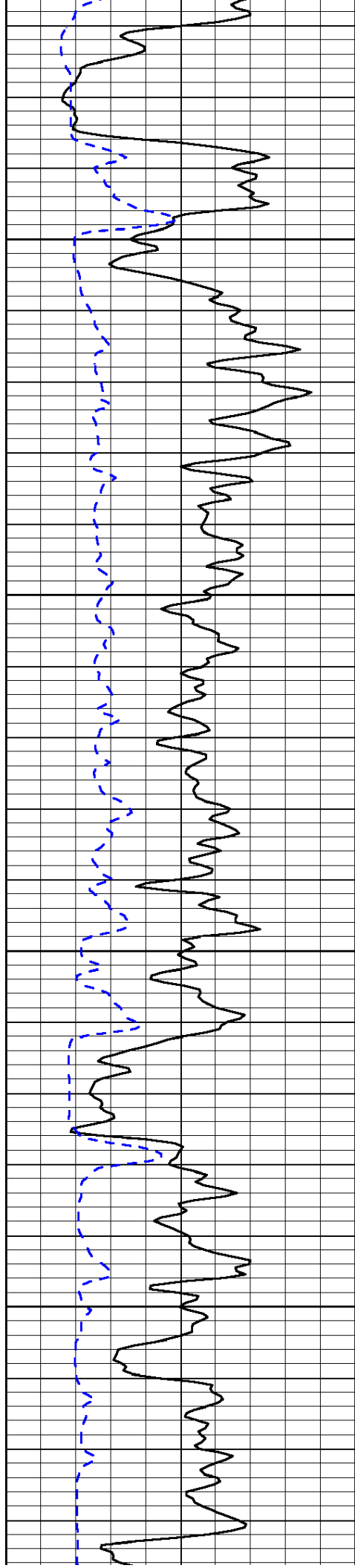


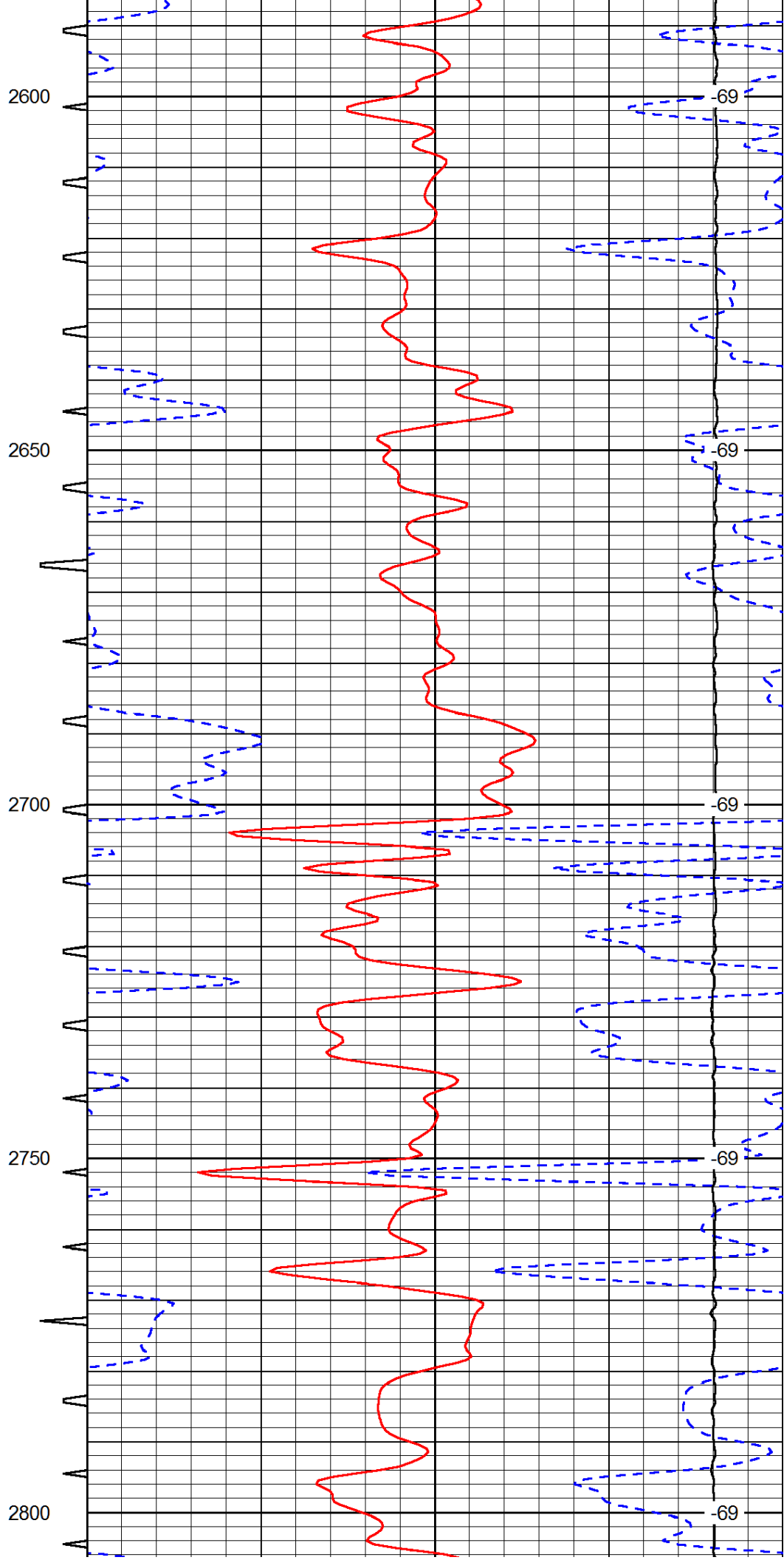
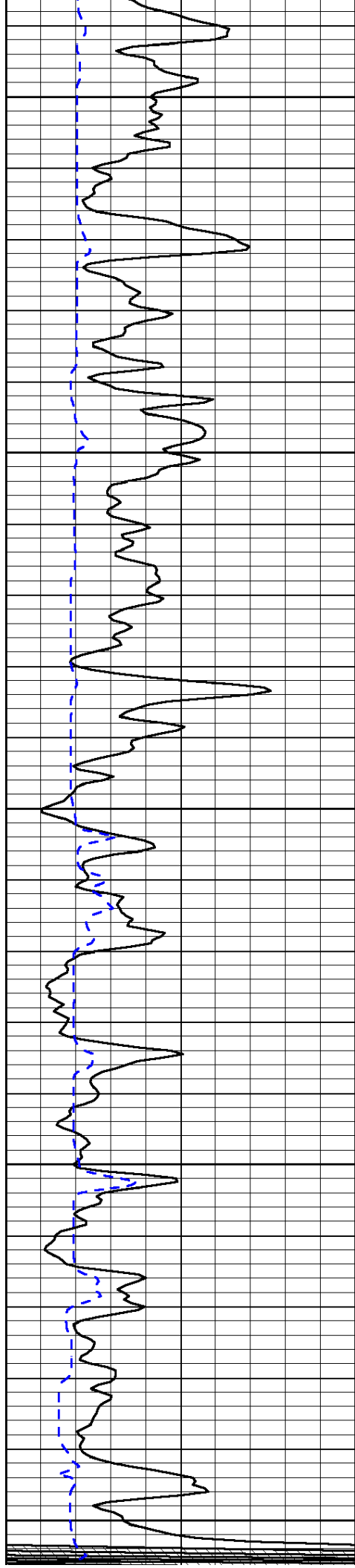


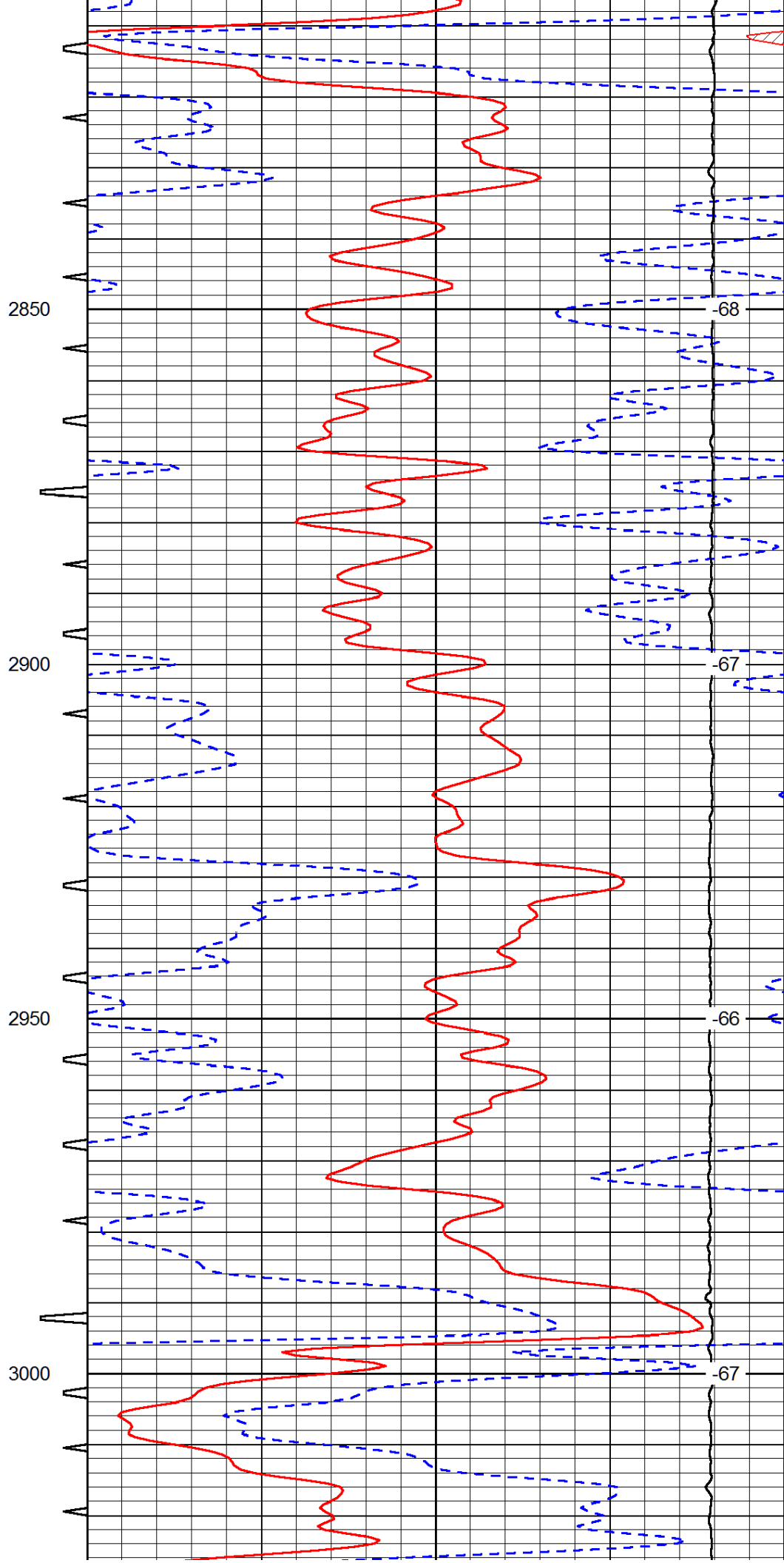
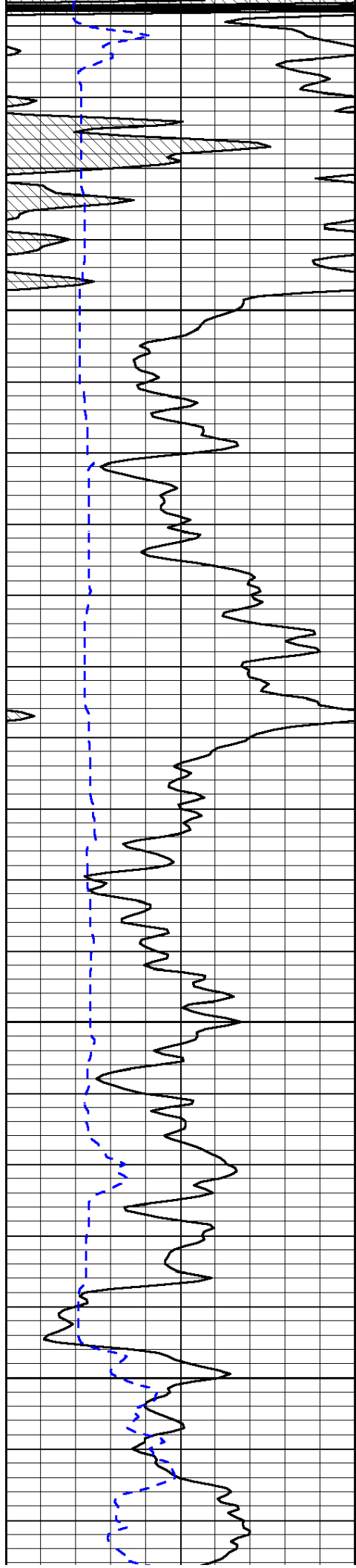


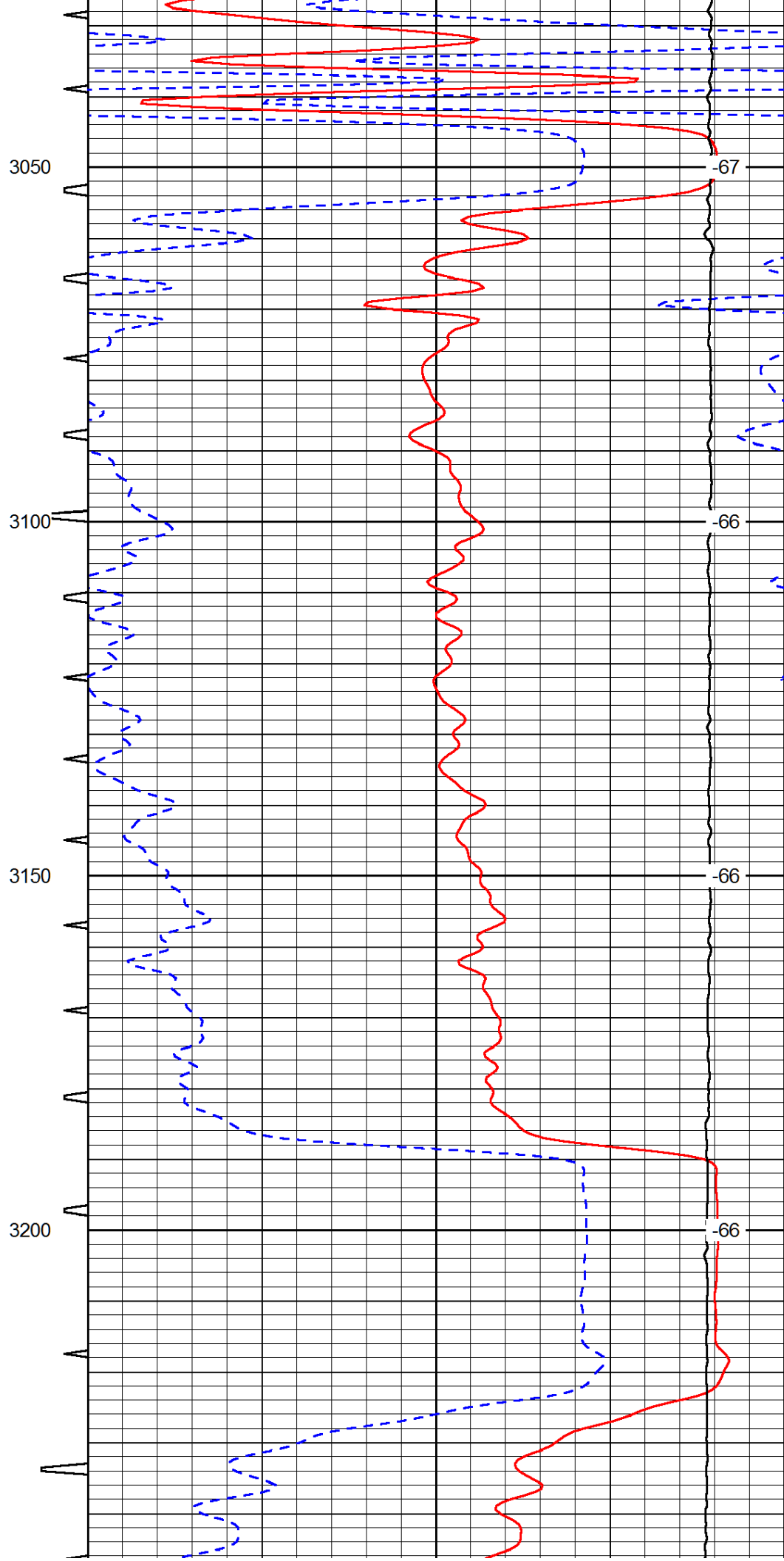
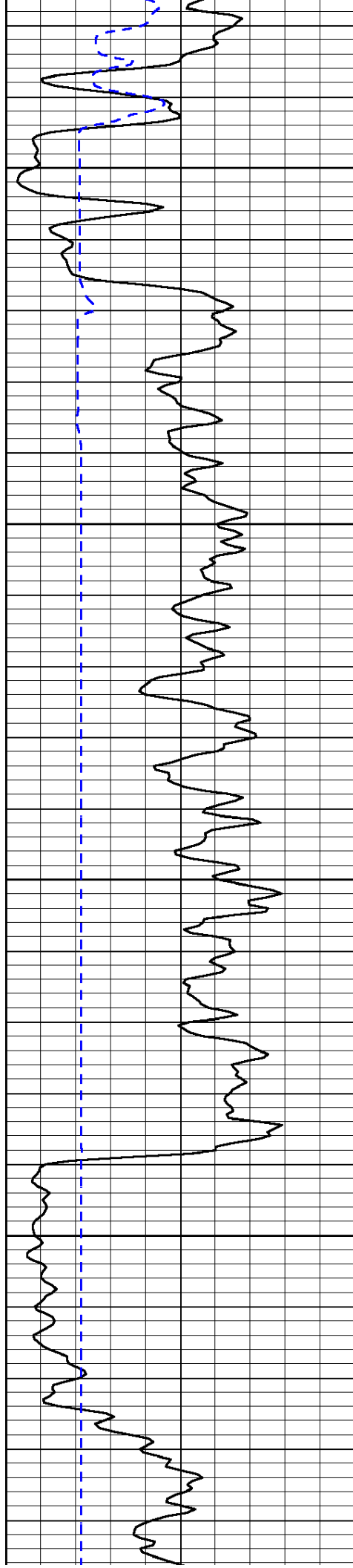


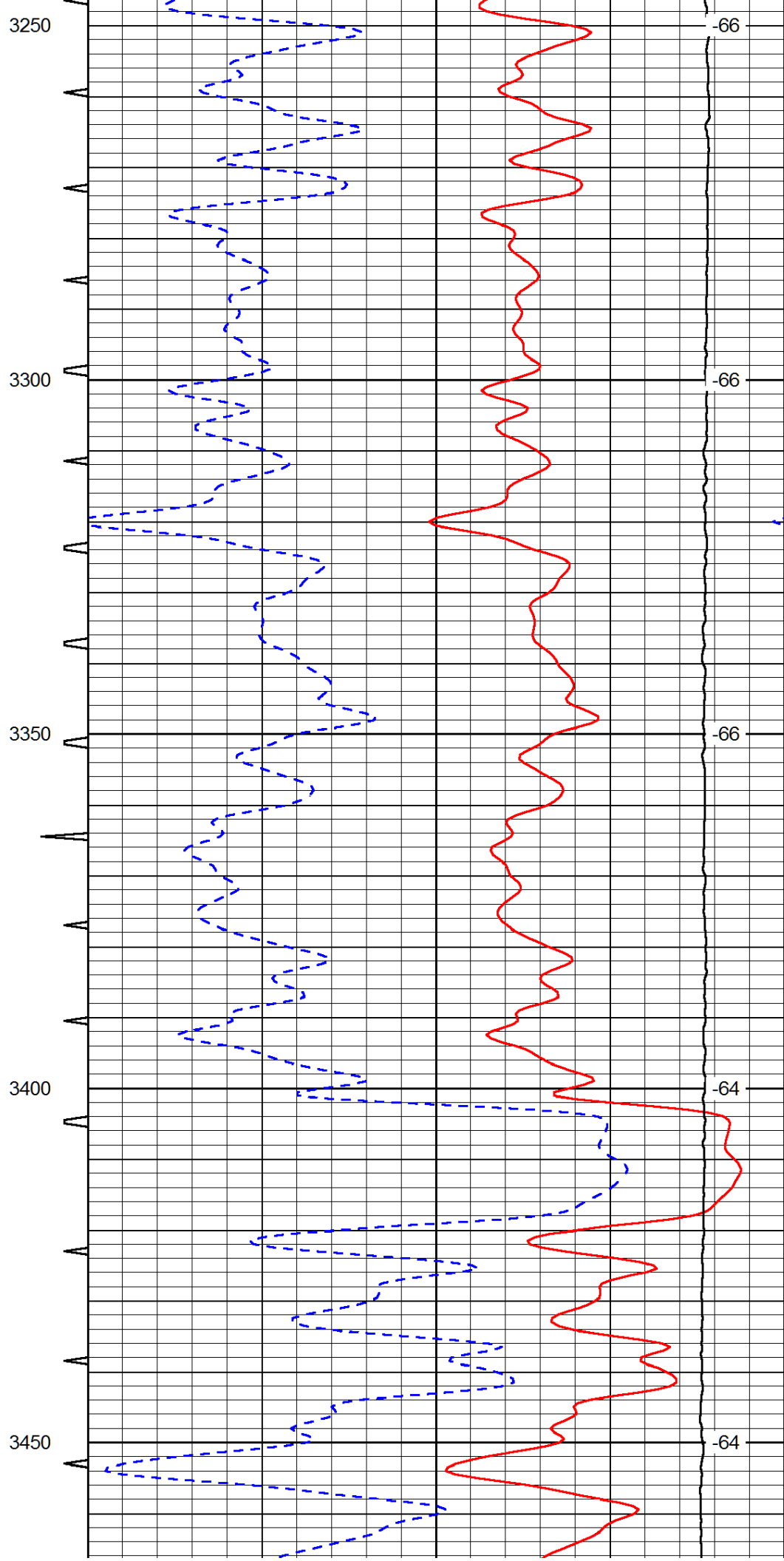
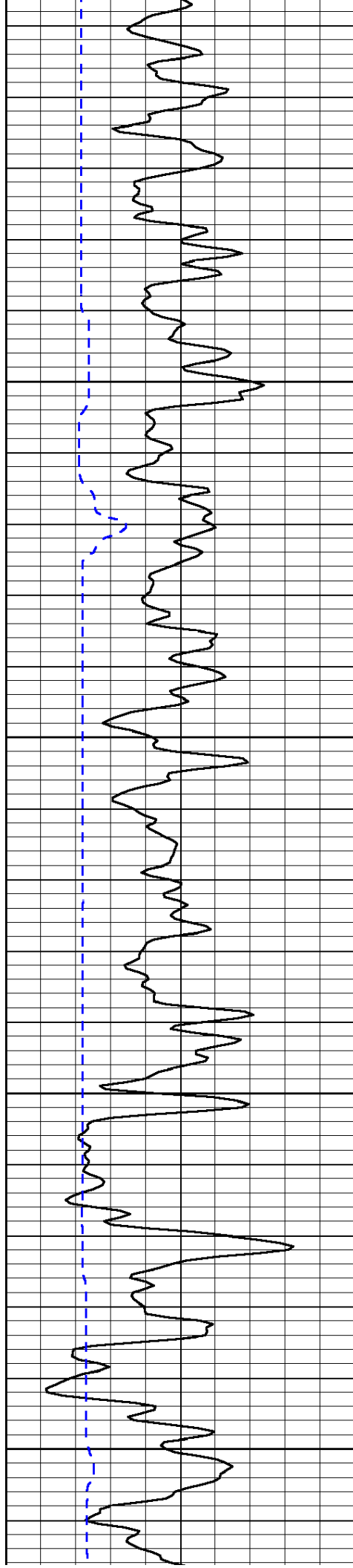


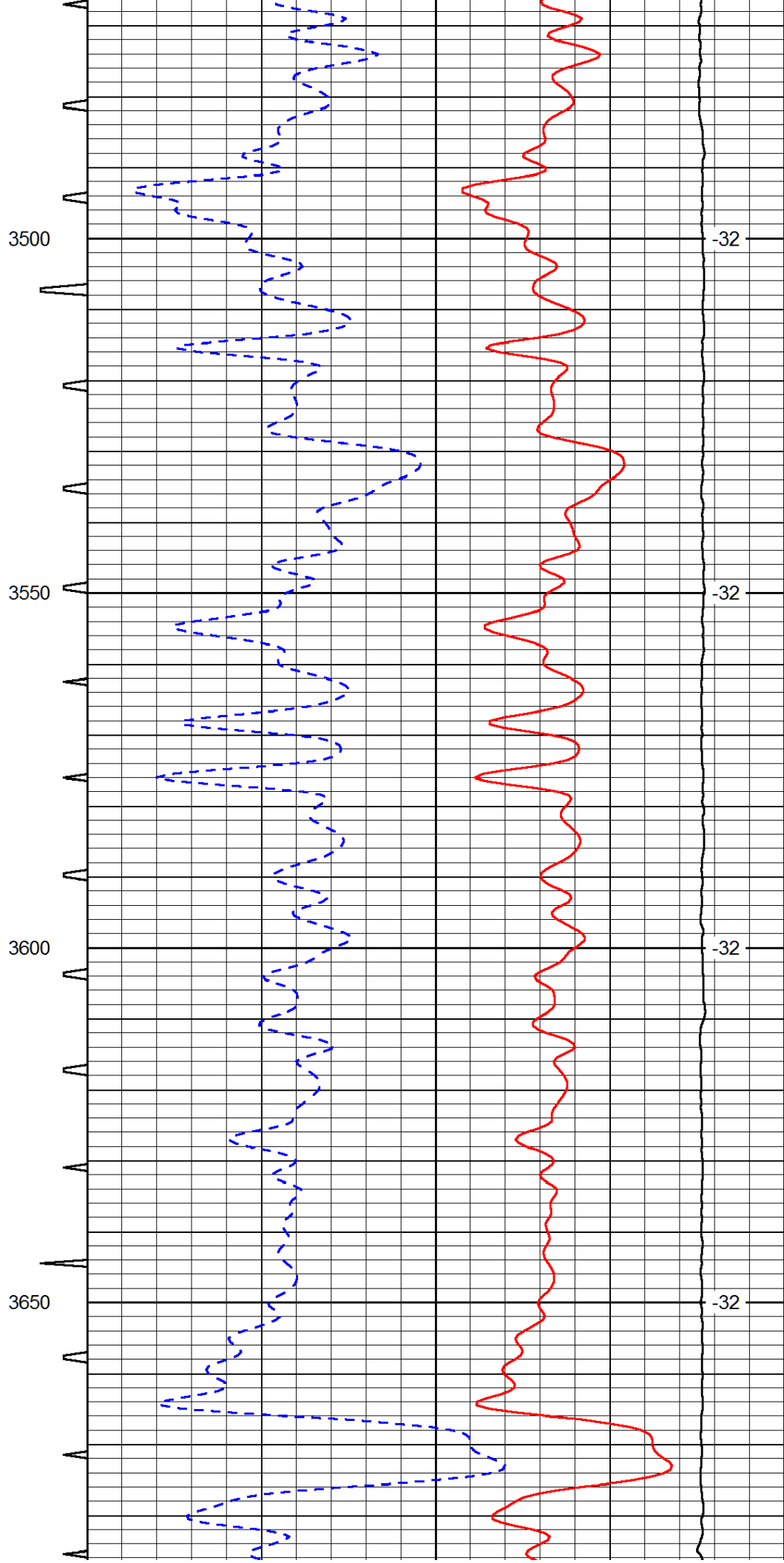
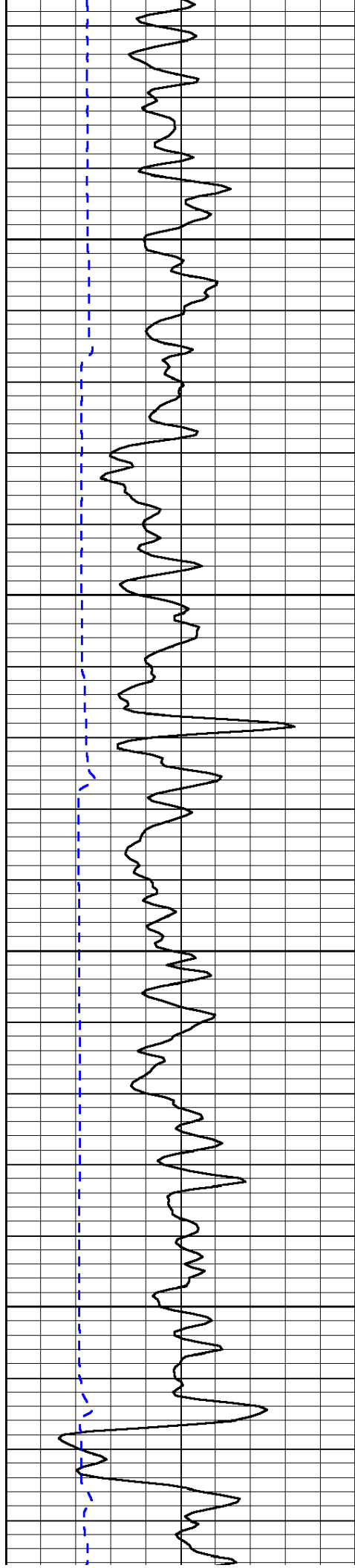


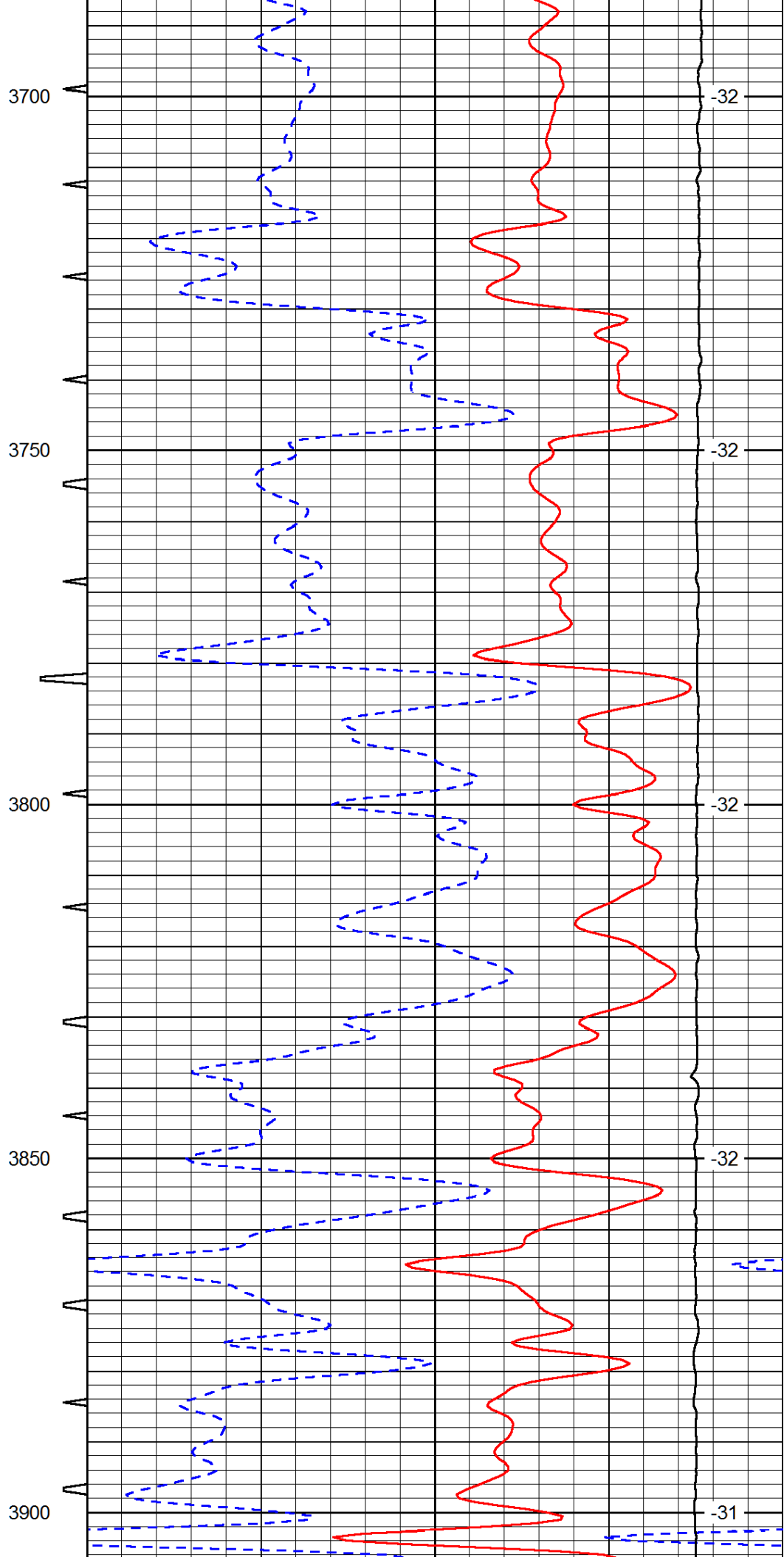
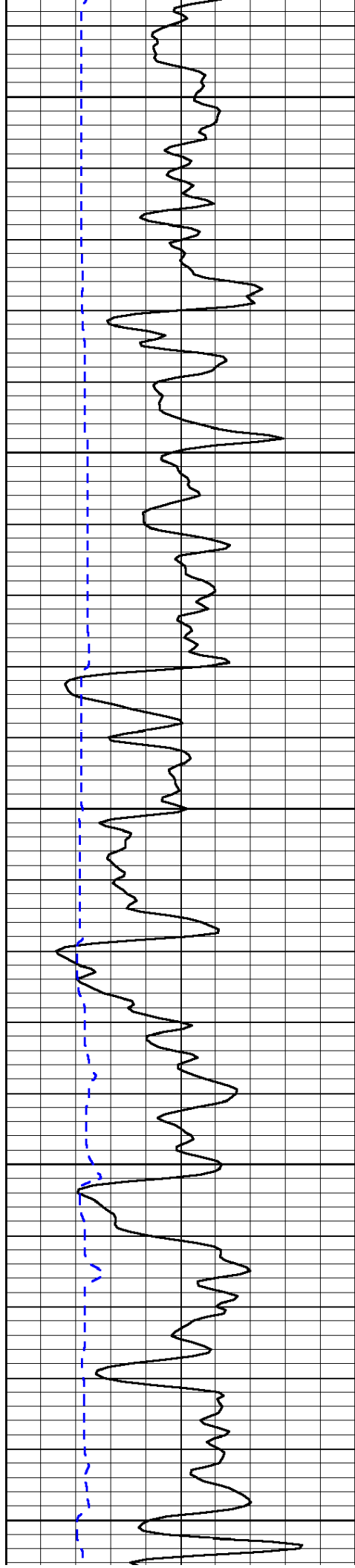


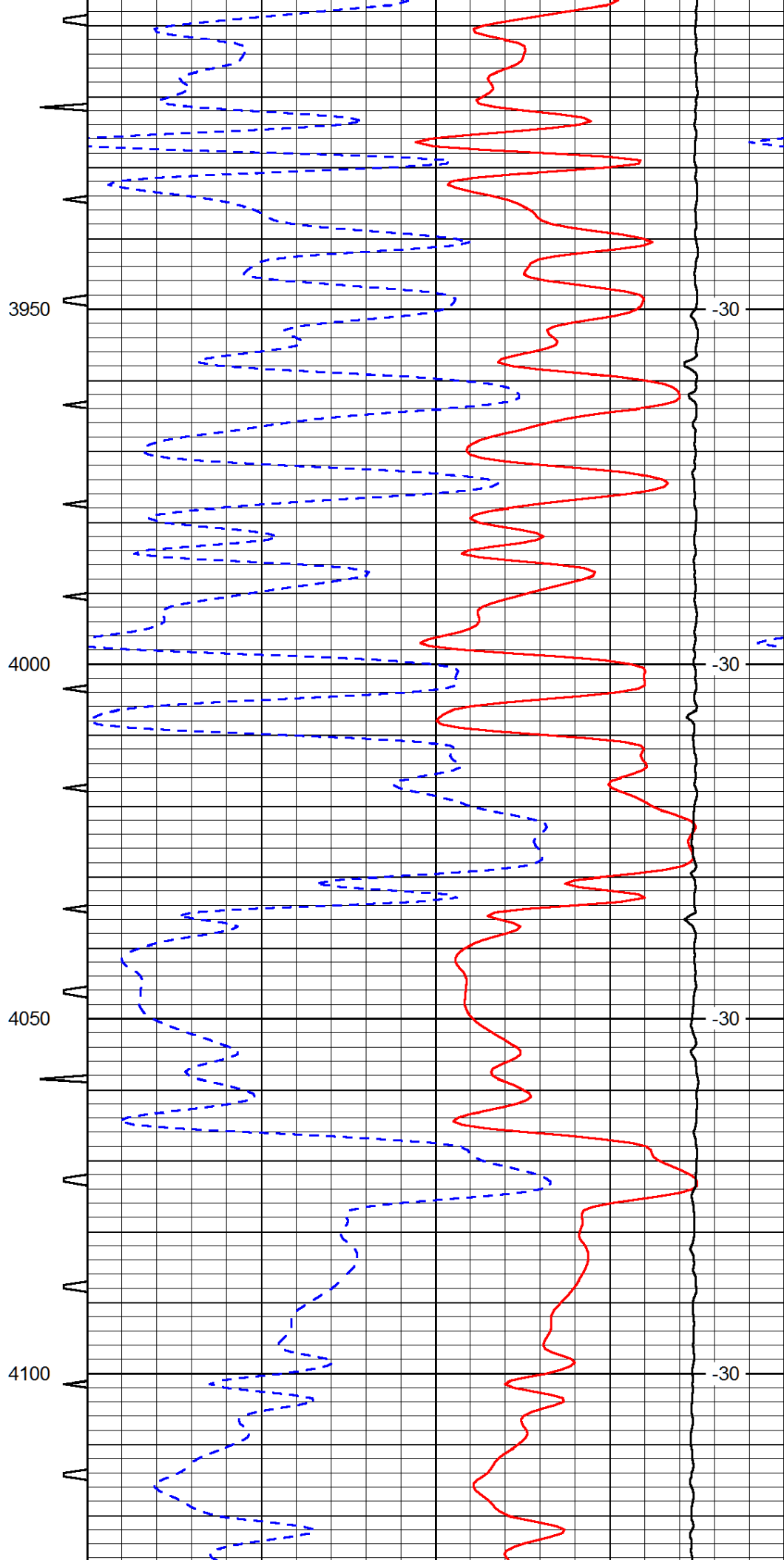
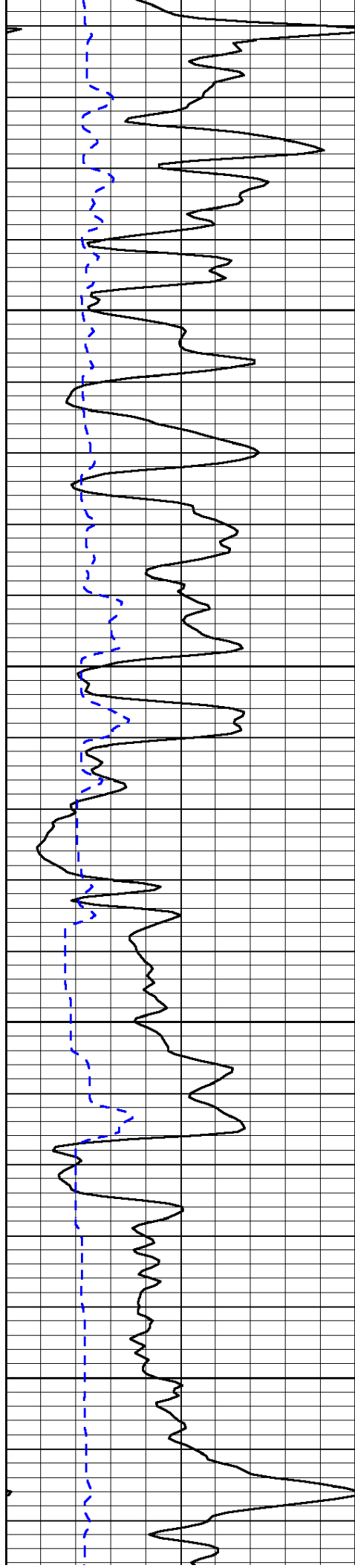


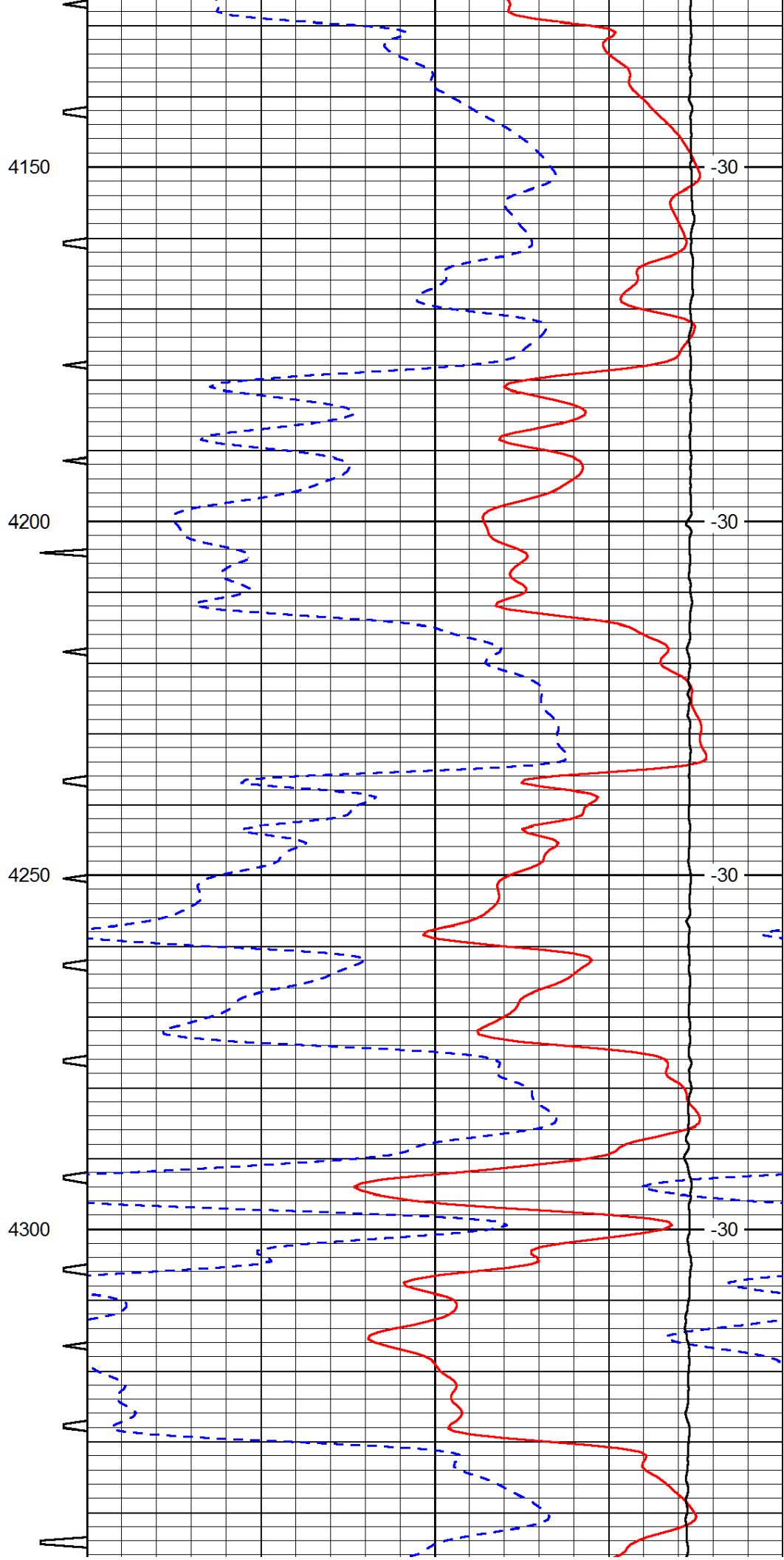
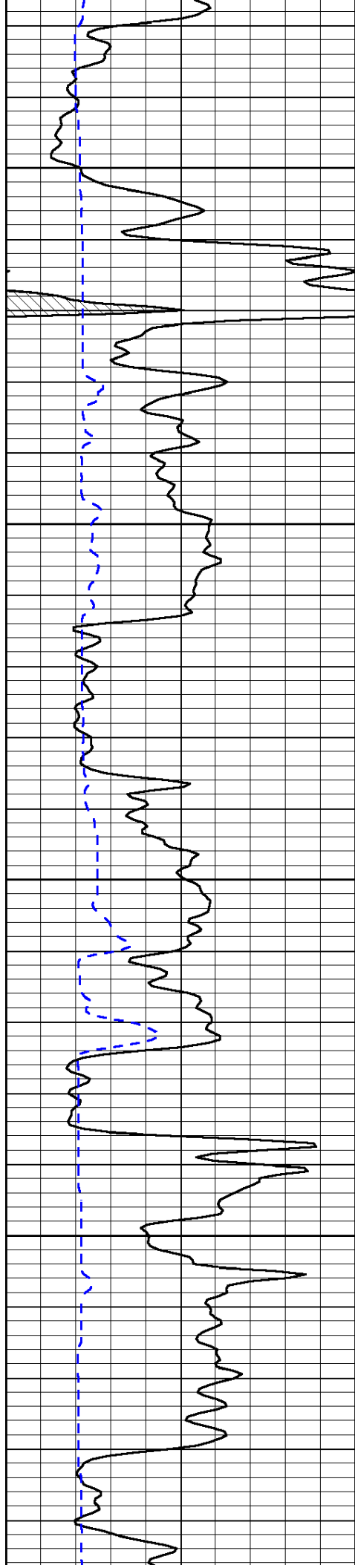


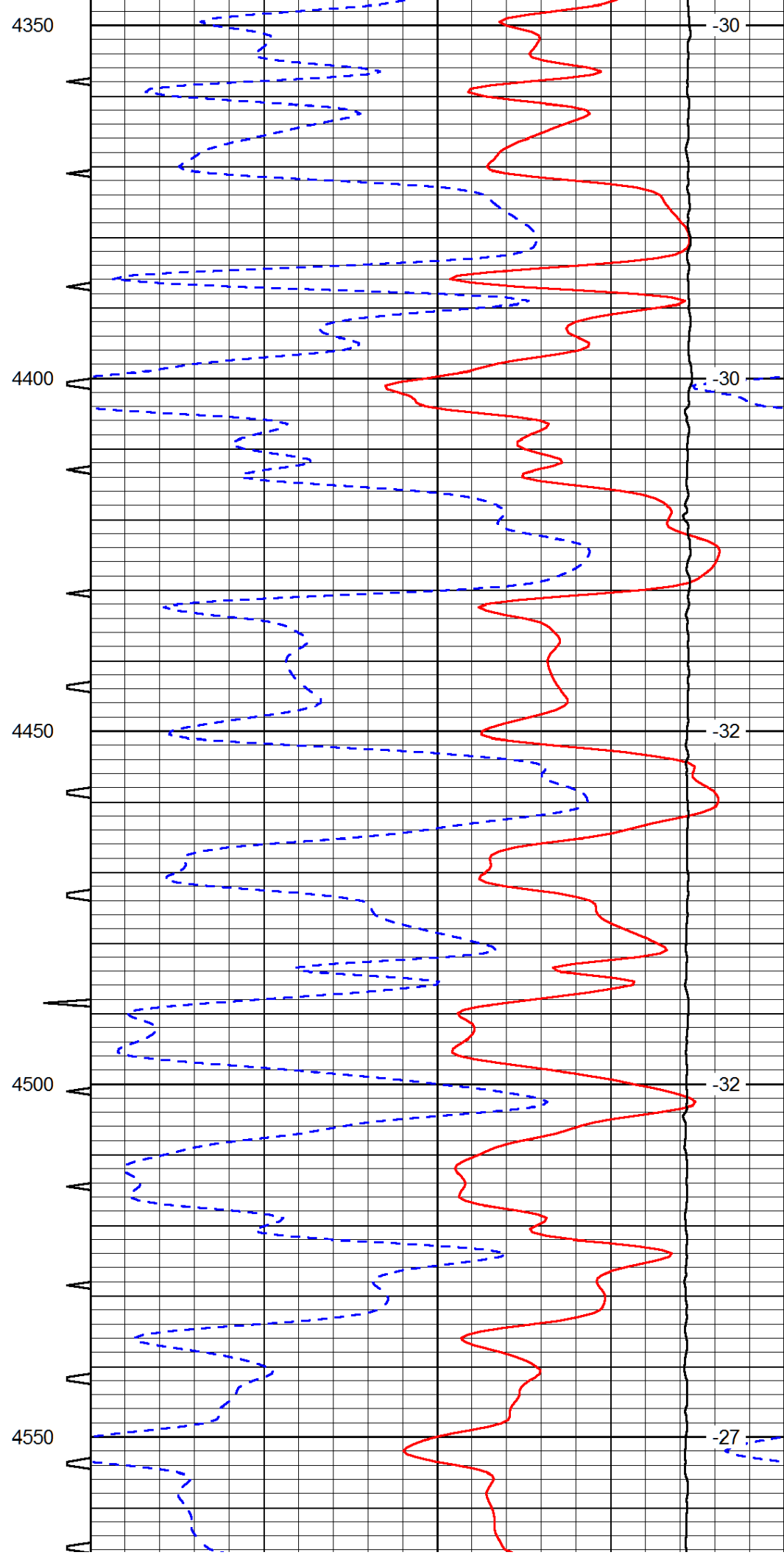
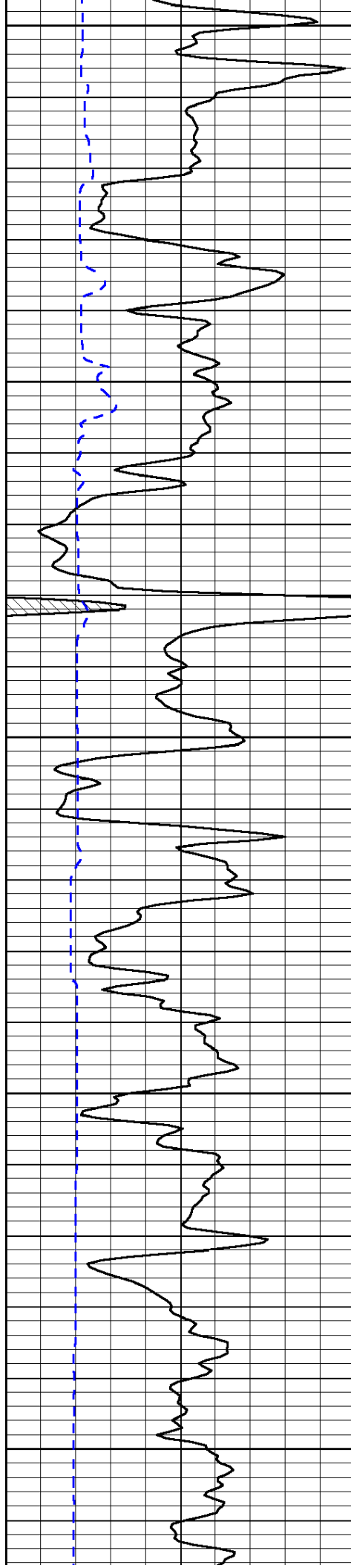


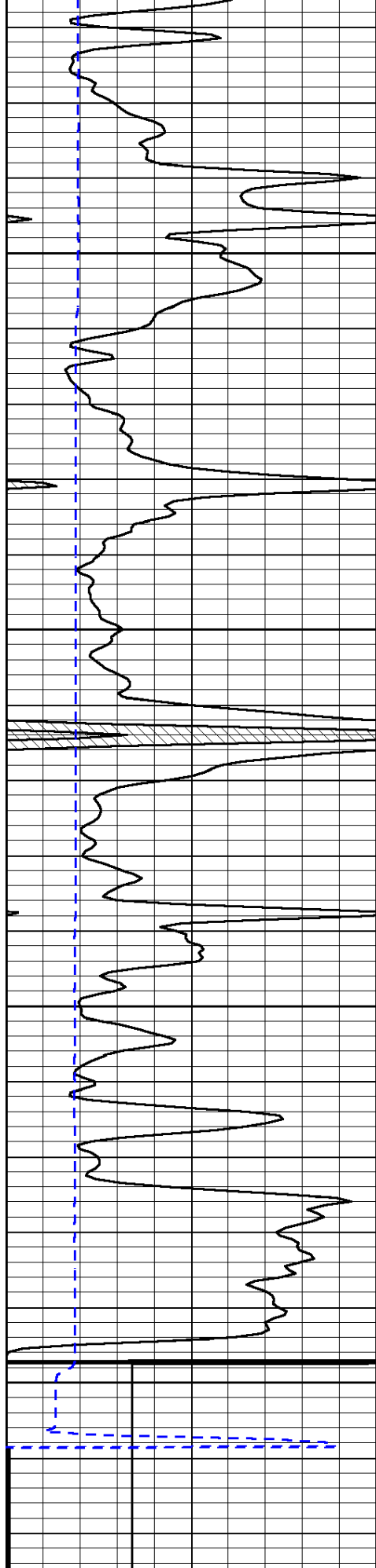




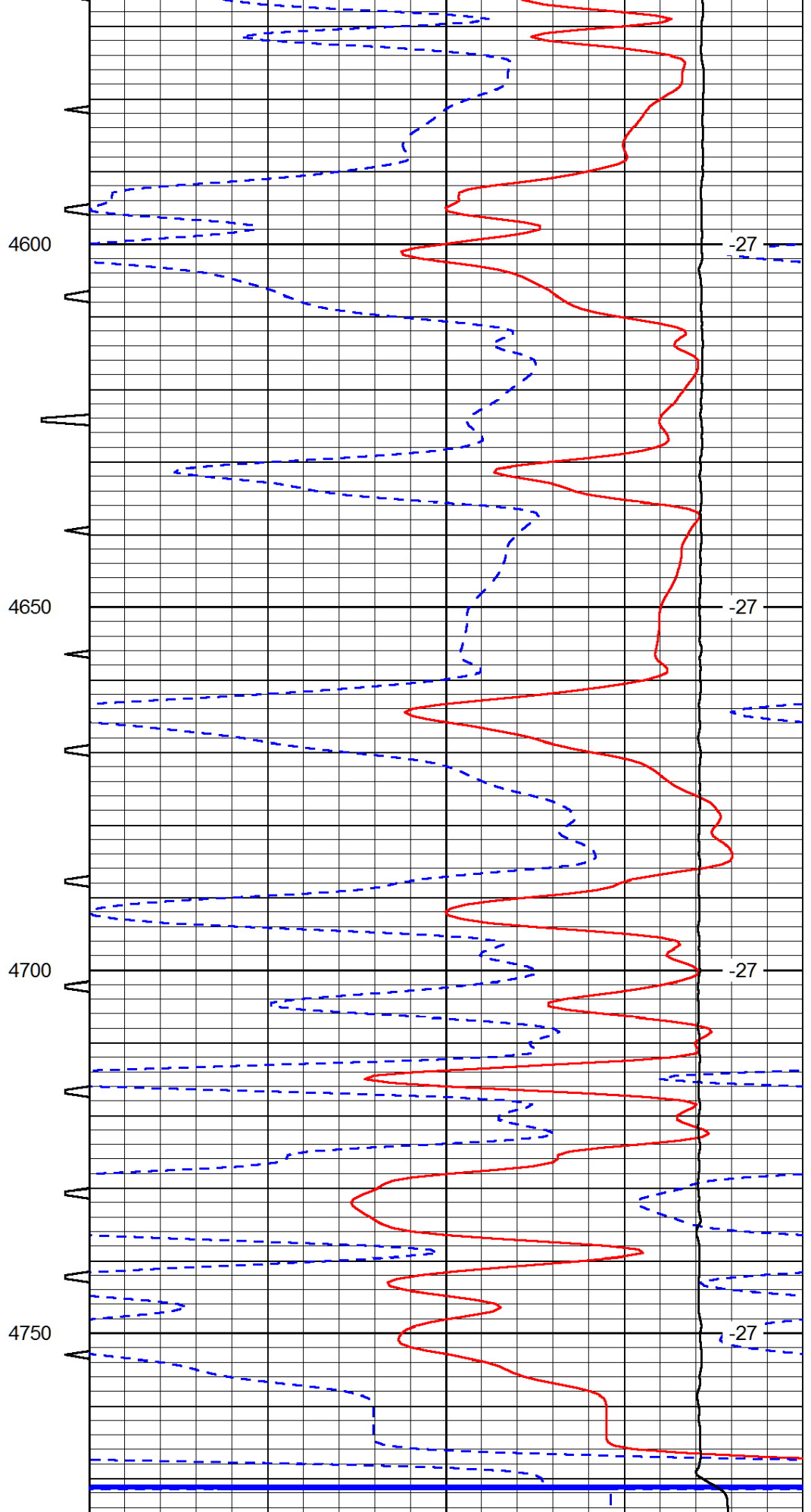








0	Gamma Ray (GAPI)	150
150	Gamma Ray (GAPI)	300



Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
5 (msec) 0	30	Sonic Porosity (pu)	-10

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