

Company: ENCANA OIL & GAS (USA) INC

Well: HMU 6-13AA (J6SEB)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

TEMPERATURE LOG
CCL

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 1933 FSL & 1908 FEL

Well: HMU 6-13AA (J6SEB)

Company: ENCANA OIL & GAS (USA) INC

LOCATION

SHL: 1933 FSL & 1908 FEL
BHL: 814 FSL & 818 FWL

Elev.: K.B. 7165.00 ft
G.L. 7143.00 ft
D.F. 7164.00 ft

Permanent Datum: _____
Log Measured From: KELLY BUSHING
Drilling Measured From: KELLY BUSHING

GROUND LEVEL
Elev.: 7143.00 ft

22.00 ft above Perm. Datum

API Serial No.
05-045-21937-00

Section
6

Township
8S

Range
92W

PVT DATA				Run 1	Run 2	Run 3
Oil Density						
Water Salinity						
Gas Gravity						
Bo						
Bw						
1/Bg						
Bubble Point Pressure						
Bubble Point Temperature						
Solution GOR						
Maximum Deviation						
CEMENTING DATA						
Primary/Squeeze				Primary		
Casing String No						
Lead Cement Type						
Volume						
Density						
Water Loss						
Additives						
Tail Cement Type						
Volume						
Density						
Water Loss						
Additives						
Expected Cement Top						

Logging Date13-Oct-2013

Run Number1

Depth Driller9024 ft

Schlumberger Depth8956 ft

Bottom Log Interval8955 ft

Top Log Interval22 ft

Casing Fluid TypeFRESH WATER

Salinity

Density8.45 lbm/gal

Fluid Level22 ft

BIT/CASING/TUBING STRING

Bit Size8.750 in

From22 ft

To9024 ft

Casing/Tubing Size4.500 in

Weight11.6 lbm/ft

GradeS-80

From22 ft

To9003 ft

Maximum Recorded Temperatures226 degF

Logger On Bottom13-Oct-2013

Unit Number391

Recorded ByKIRSTIE BUNTING

Witnessed ByTONY

Time20:45

LocationGRAND JUNCTION

Logging Date						
Run Number						
Depth Driller						
Schlumberger Depth						
Bottom Log Interval						
Top Log Interval						
Casing Fluid Type						
Salinity						
Density						
Fluid Level						
BIT/CASING/TUBING STRING						
Bit Size						
From						
To						
Casing/Tubing Size						
Weight						
Grade						
From						
To						
Maximum Recorded Temperatures						
Logger On Bottom						
Unit Number						
Recorded By						
Witnessed By						

DEPTH SUMMARY LISTING

Date Created: 14-AUG-2013 11:54:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JB	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6349	Serial Number:	3421	Serial Number:	112136
Calibration Date:	7-31-2013	Calibration Date:	14-AUG-2013	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-5	Calibration RMS:	3		
Wheel Correction 2:	-4	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	

Depth Control Remarks

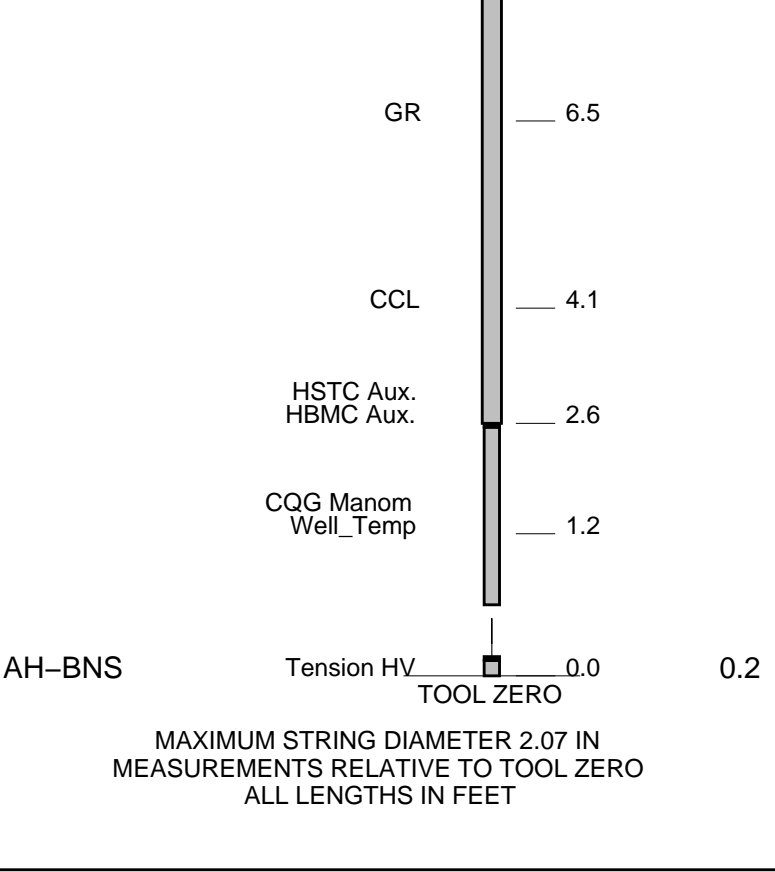
1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES USED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SPWT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1 OS1: NONE OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 20:00	
TIME ON BOTTOM: 20:45	
EXIT TIME: 21:30	

MAXIMUM RECORDED TEMPERATURE: 226 DEGF		
MAXIMUM RECORDED PRESSURE: 3730 PSIA		
SHORT JOINTS: 6847 FT & 7876FT		
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY		
CREW: KBUNTING, KIRWIN, WAZIZ, KJOHNS		
RUN 1		RUN 2
SERVICE ORDER #:	CGF9-00151	SERVICE ORDER #:
PROGRAM VERSION:	19C0-187	PROGRAM VERSION:
FLUID LEVEL:	22 ft	FLUID LEVEL:
LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION		
RUN 1		RUN 2
SURFACE EQUIPMENT		
WITM-A PSC_16MHZ		
DOWNHOLE EQUIPMENT		
MH-22 MH-22	<p>A vertical diagram representing wellbore equipment depths. At the top is a small upward-pointing arrow. Below it is a dashed line segment. Then a solid square symbol. Below that is another dashed line segment. Finally, a thick vertical bar representing a tool joint or similar component.</p>	13.2
AH-38	Detail MT TelStatus CTEM	11.7
HBMS-B PSC-A HUDH-A HSTC-A HBMC-A GR CCL HBMC HTPS-A 2884 HCQG_E_Mano RTD_Thermometer	— 11.4	11.4

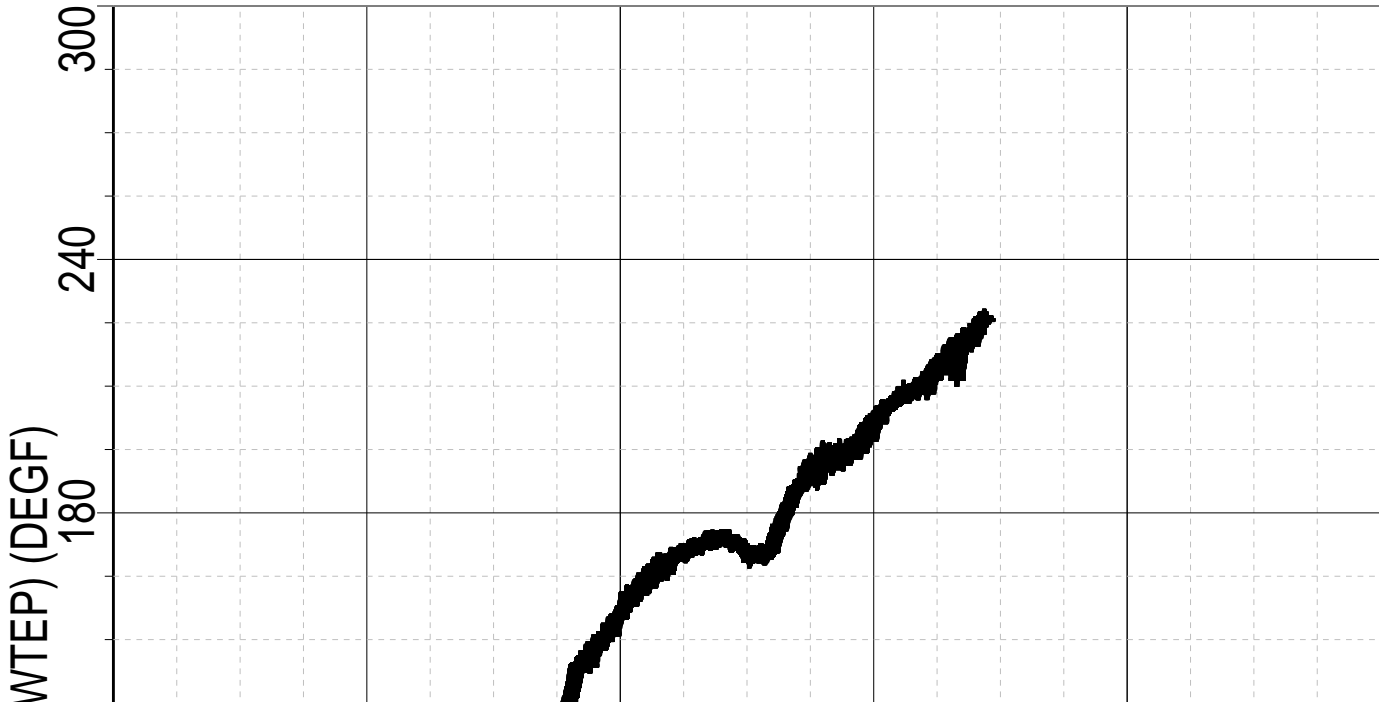


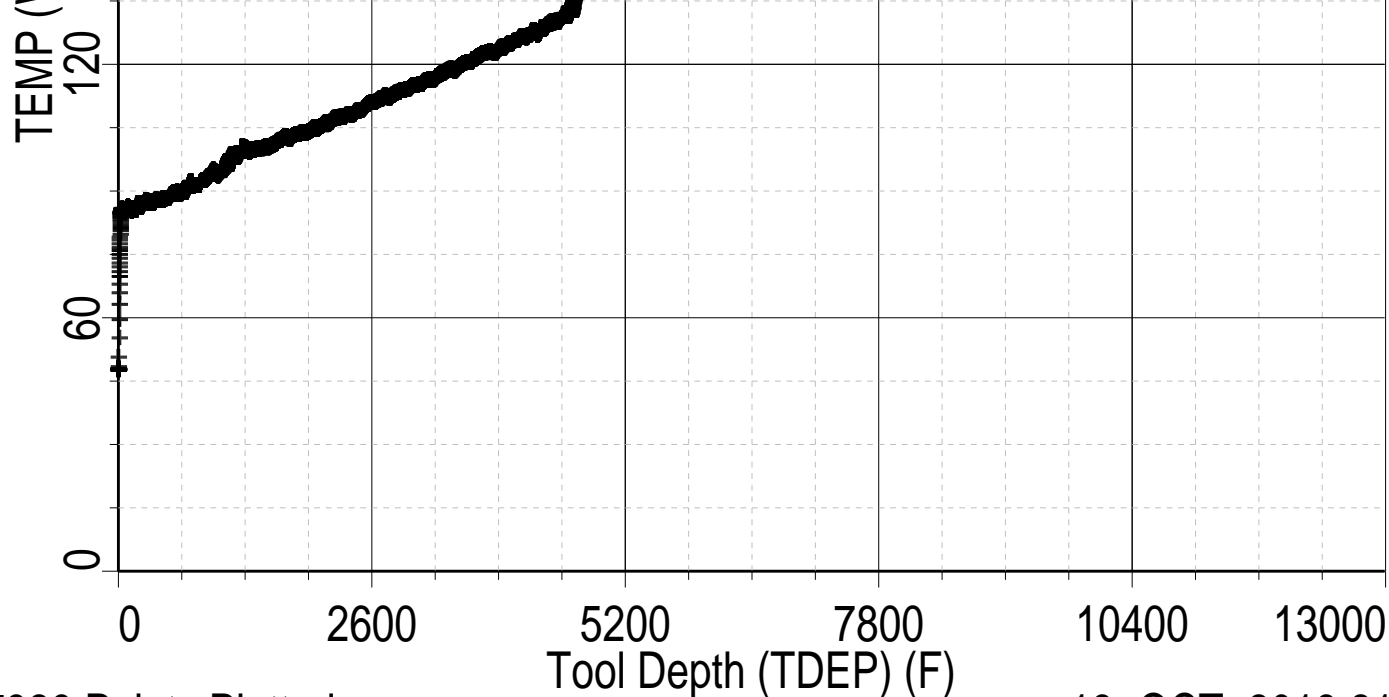
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

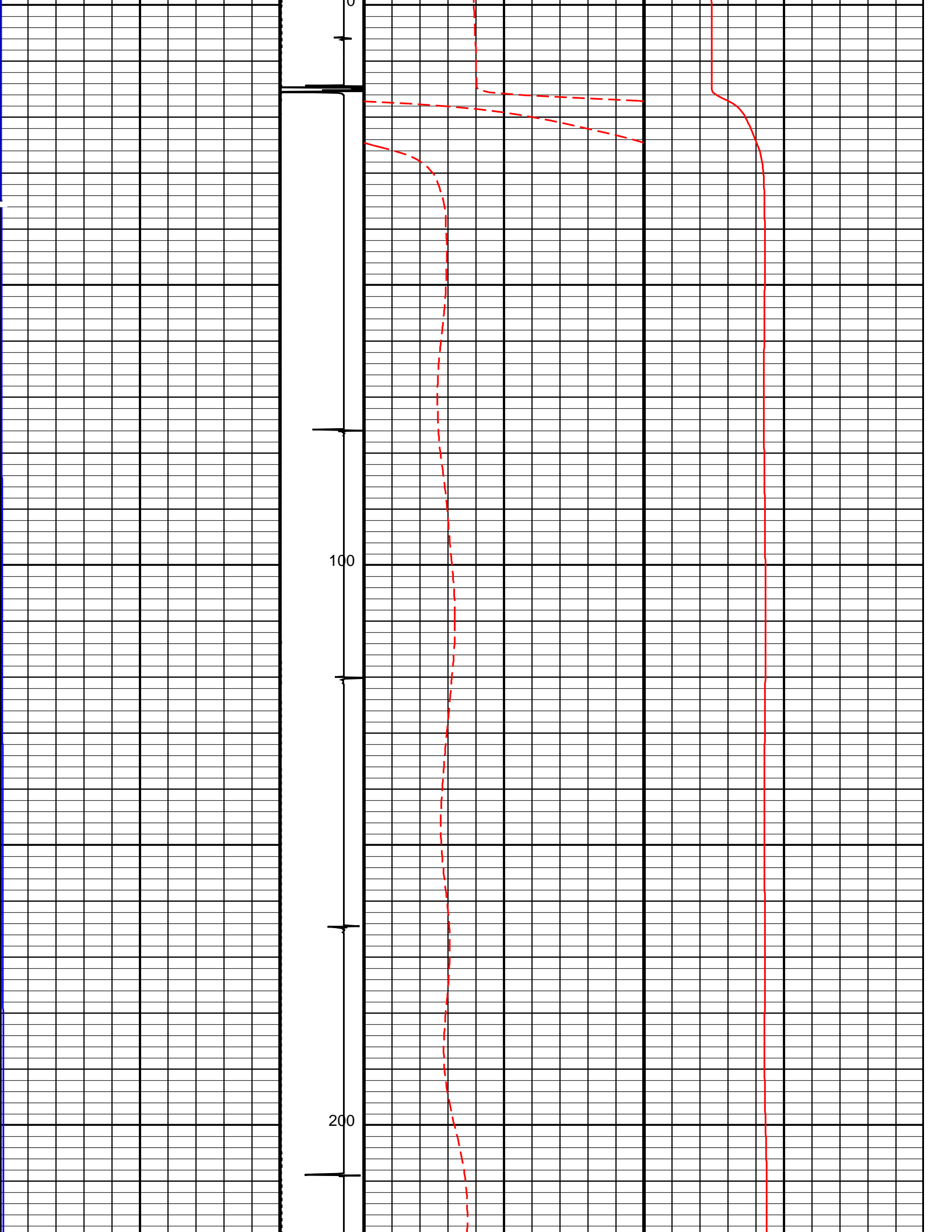
Index: 8964.0 – -19.5 FT

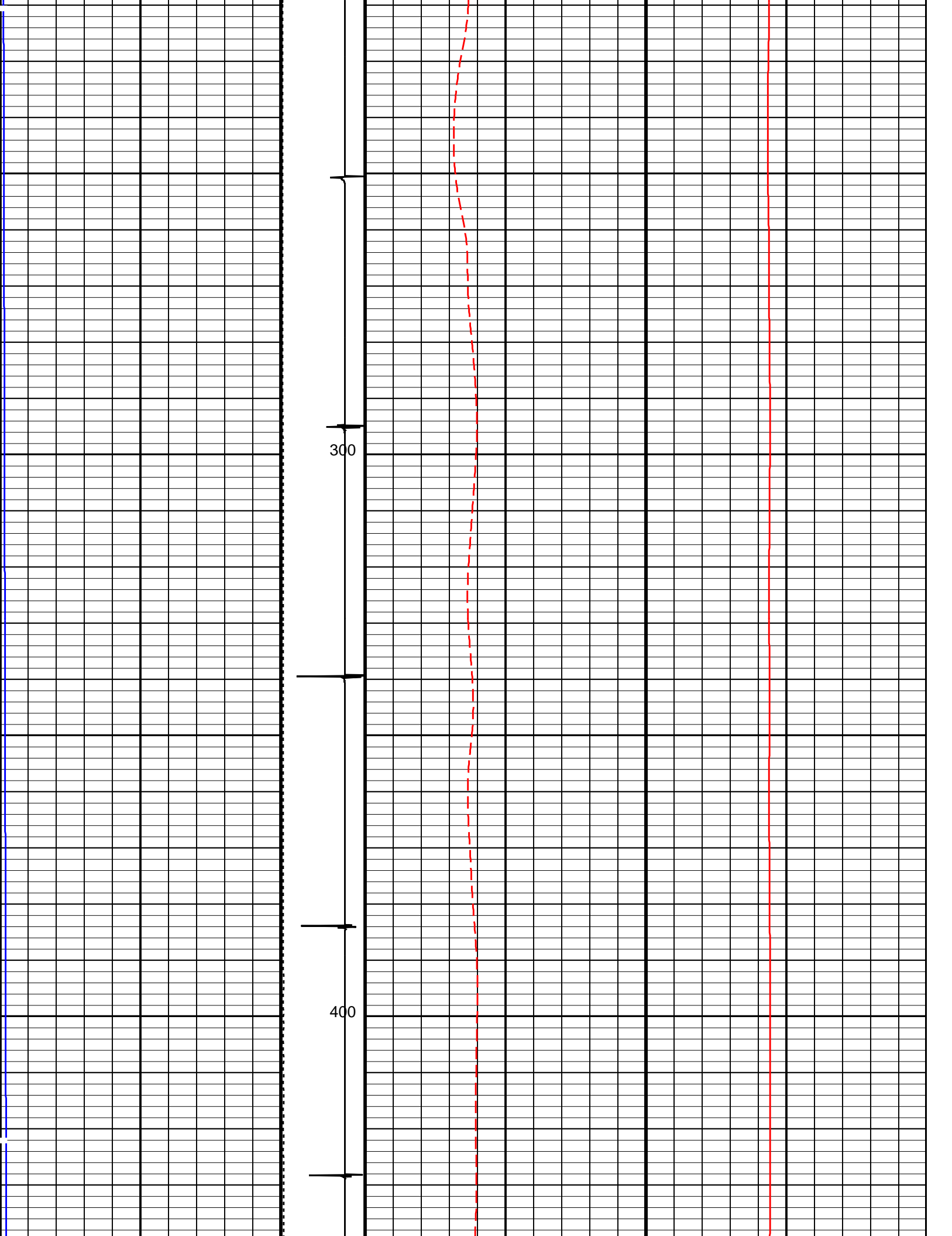


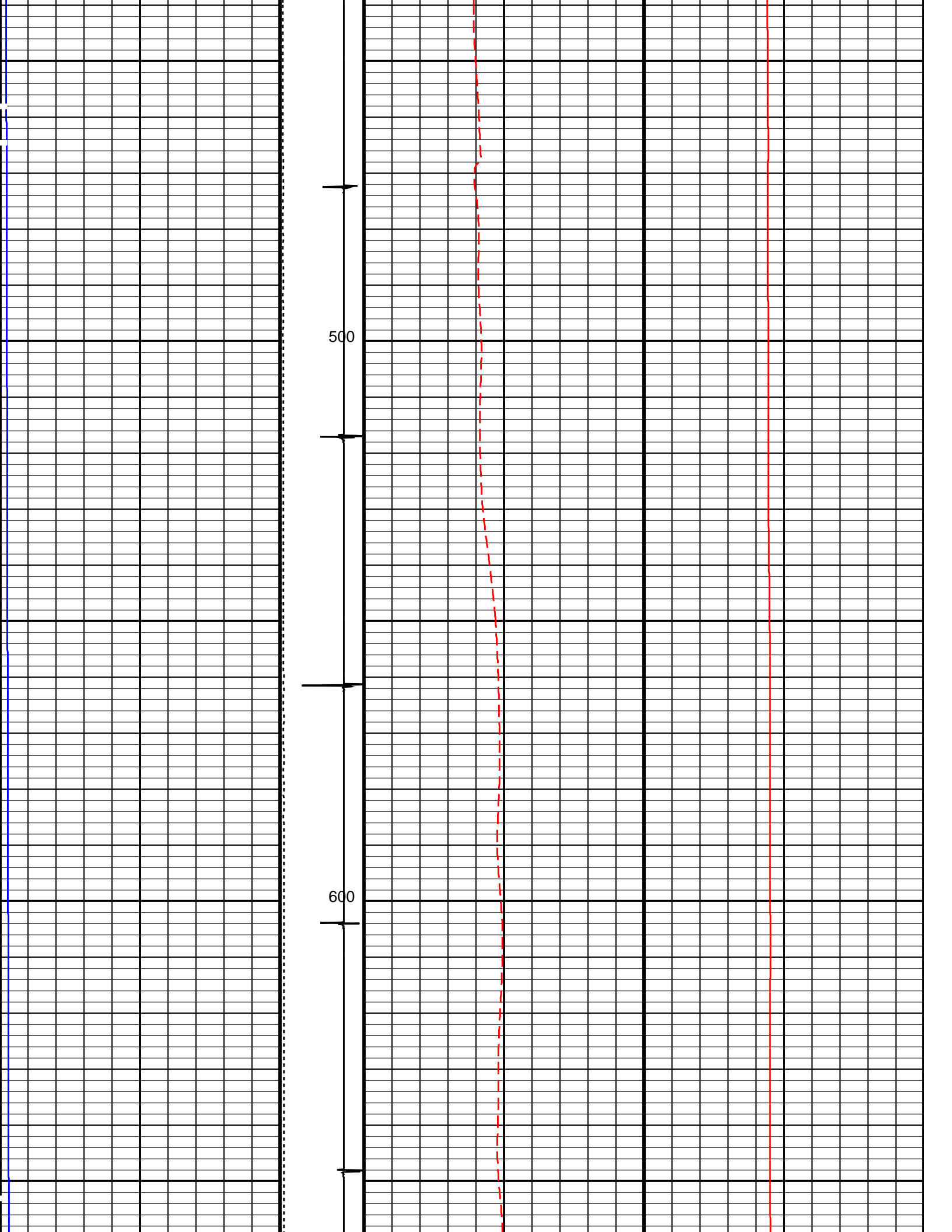


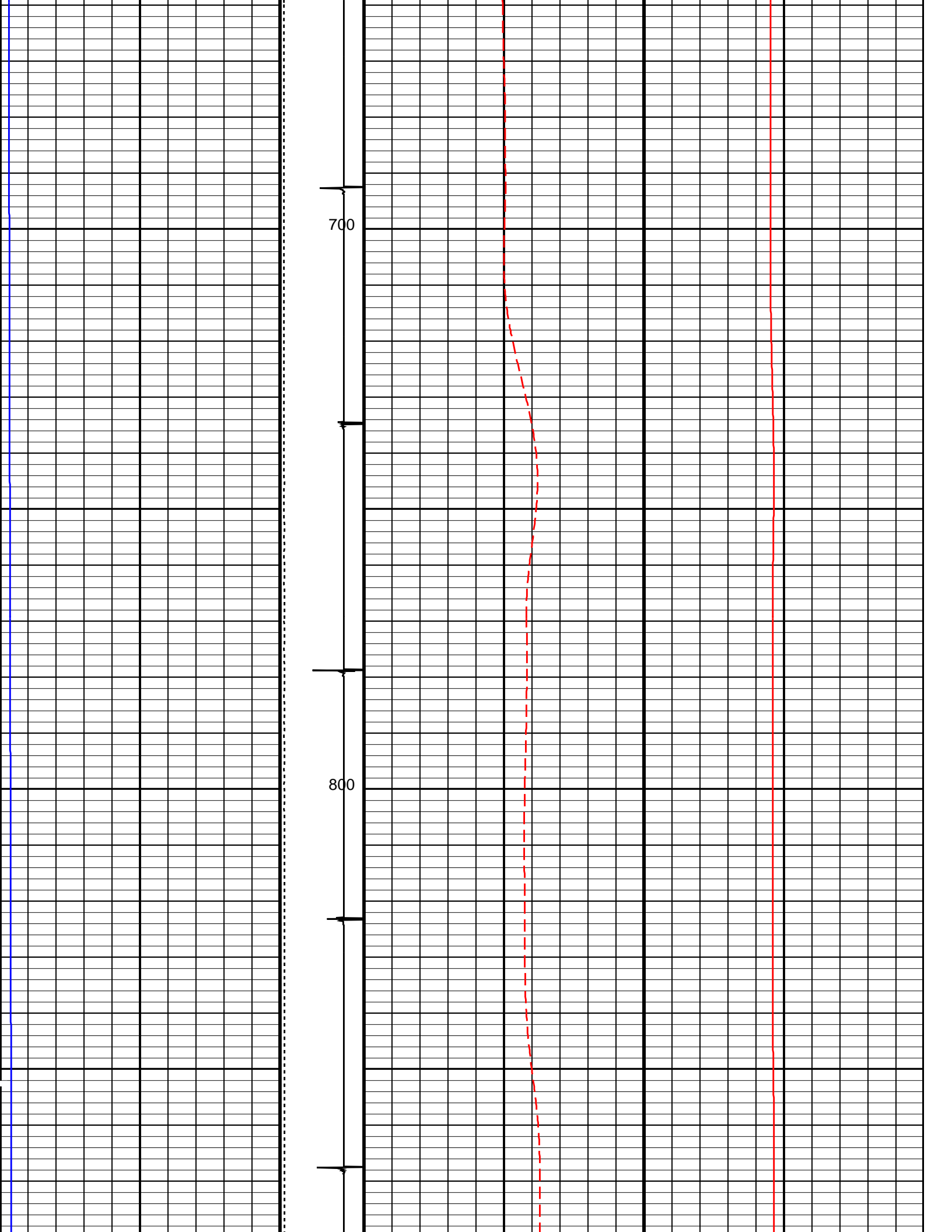
MAXIS Field Log

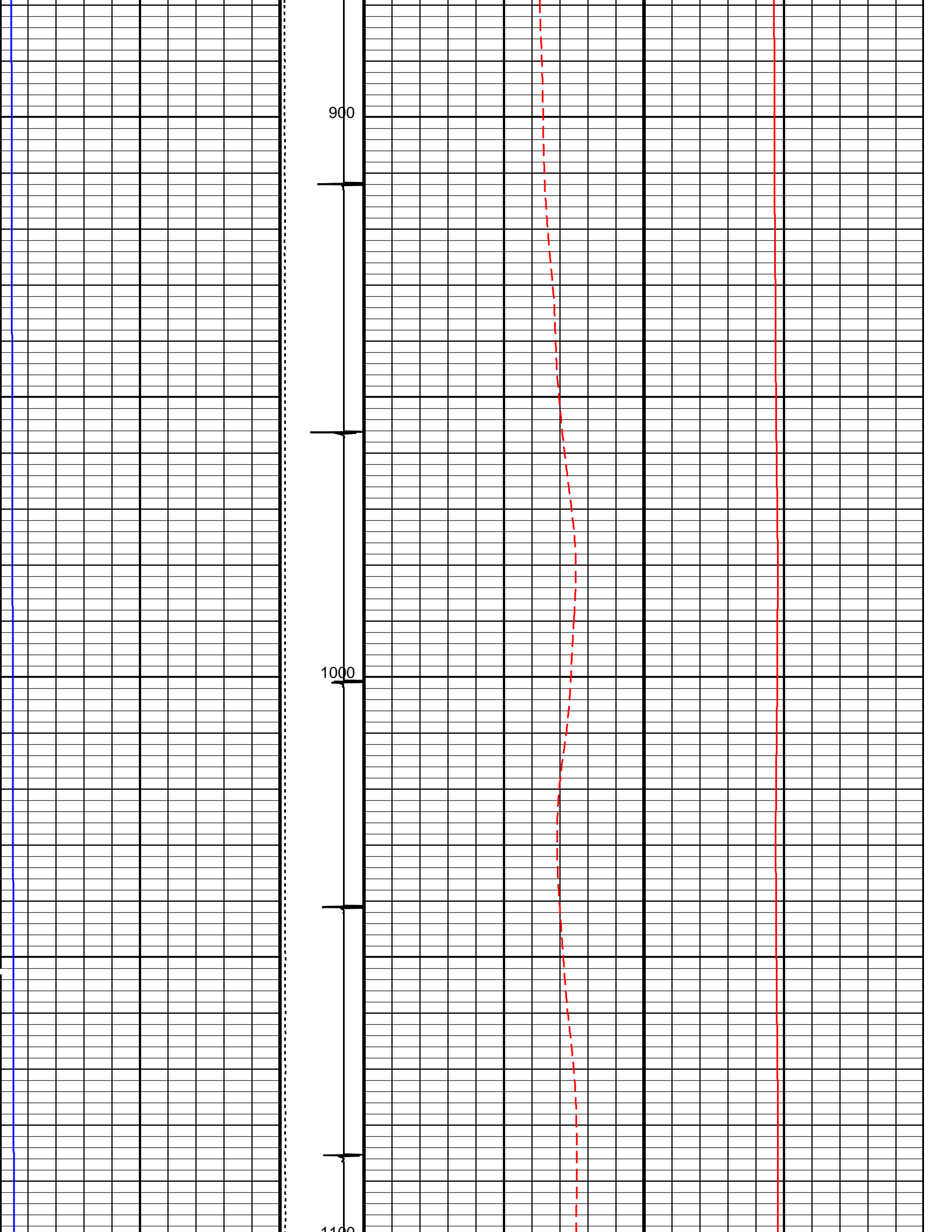
		Discriminat ed CCL (CCLD)		
		3 (V) -1		
Well Pressure (WPRE) (PSIA)		Tension (TENS) (LBF)	Well Temperature (WTEP) (DEGF)	Well Temperature (WTEP) (DEGF)
0	10000	0 2000	0 20	0 200

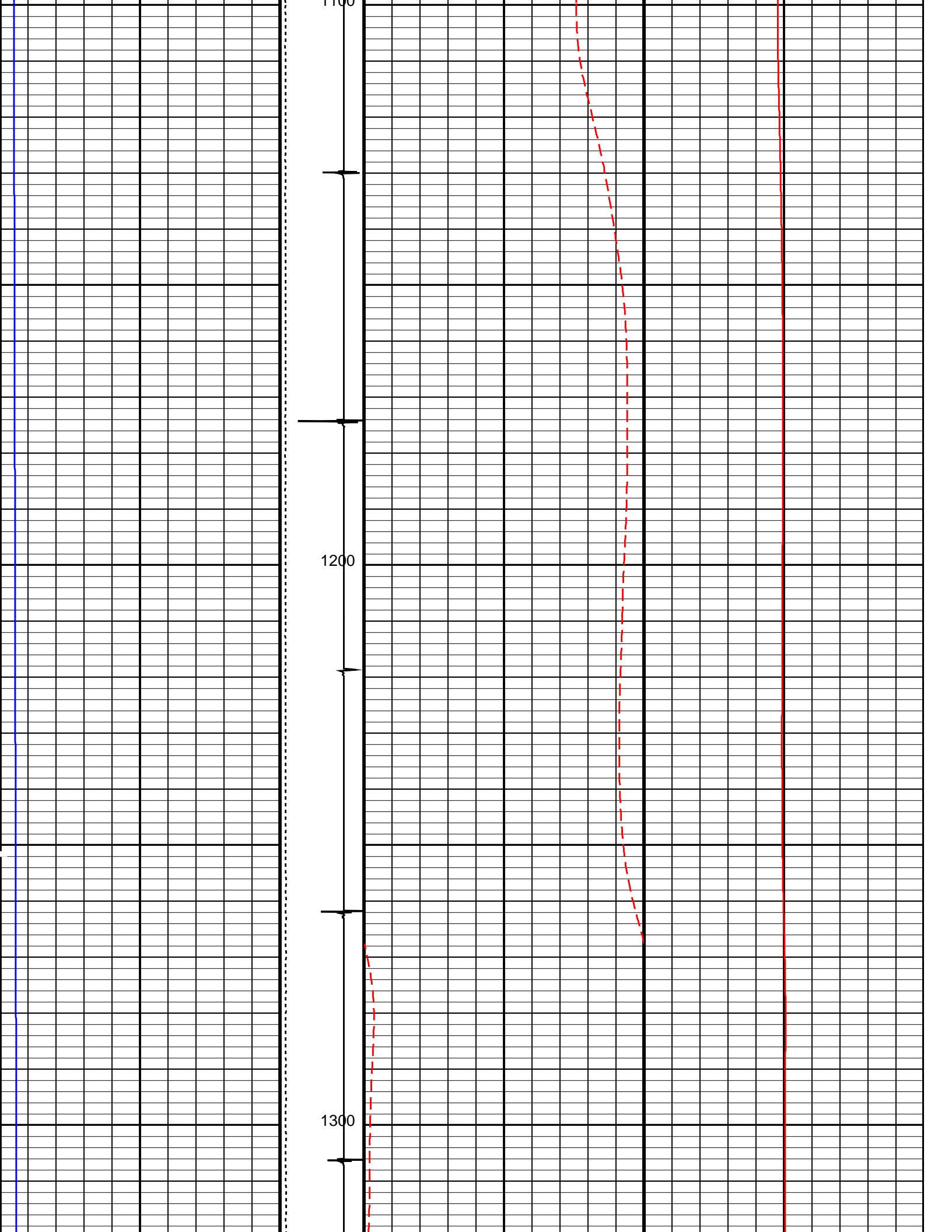


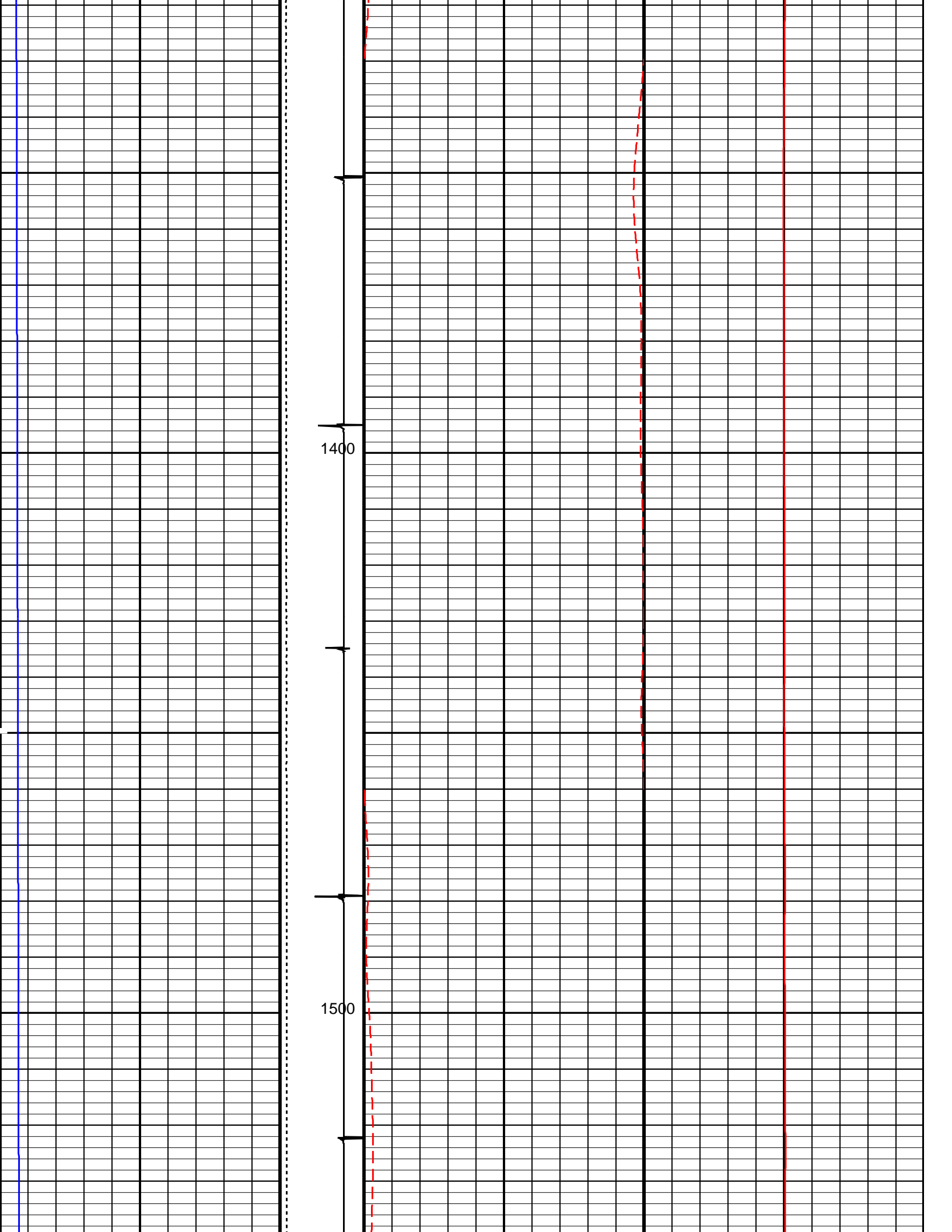


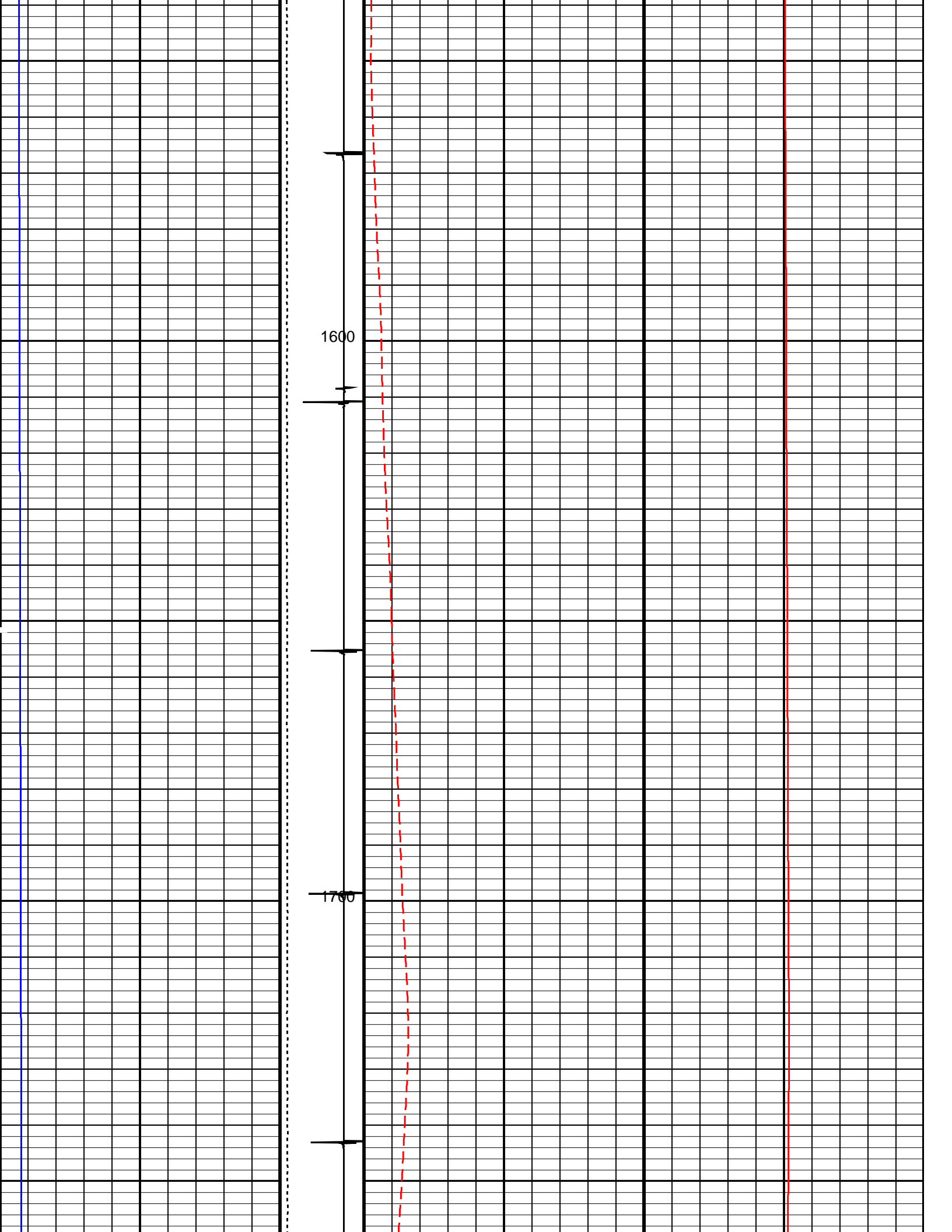


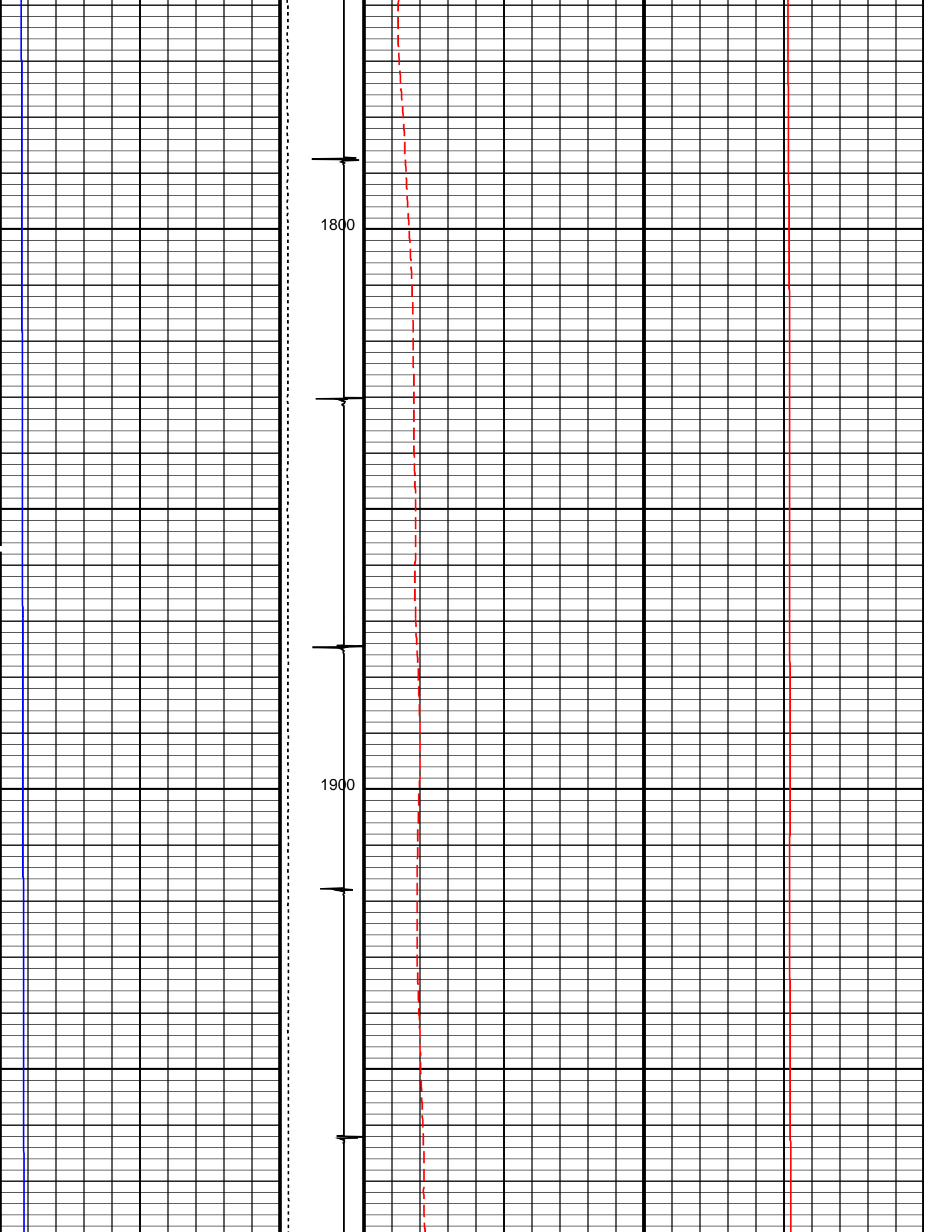


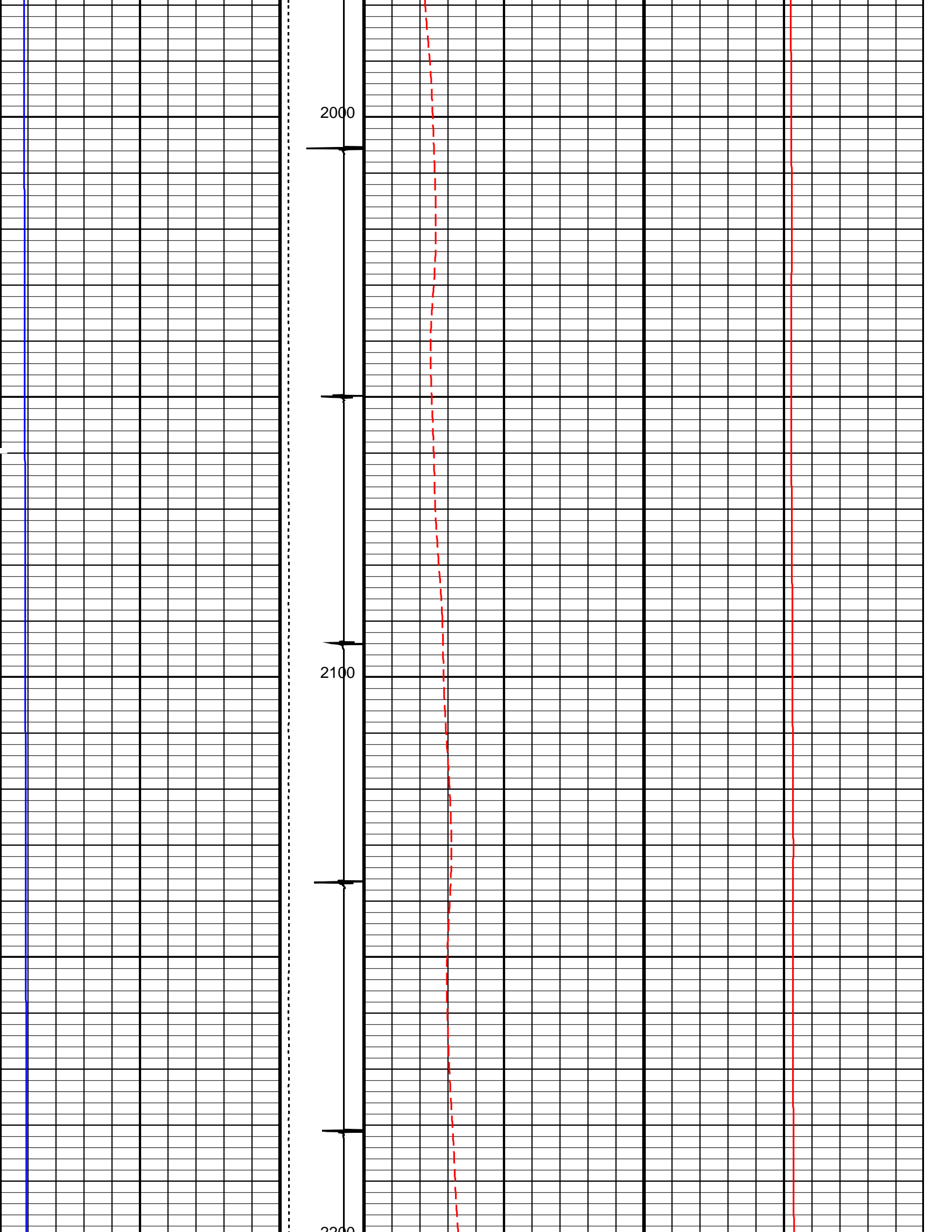


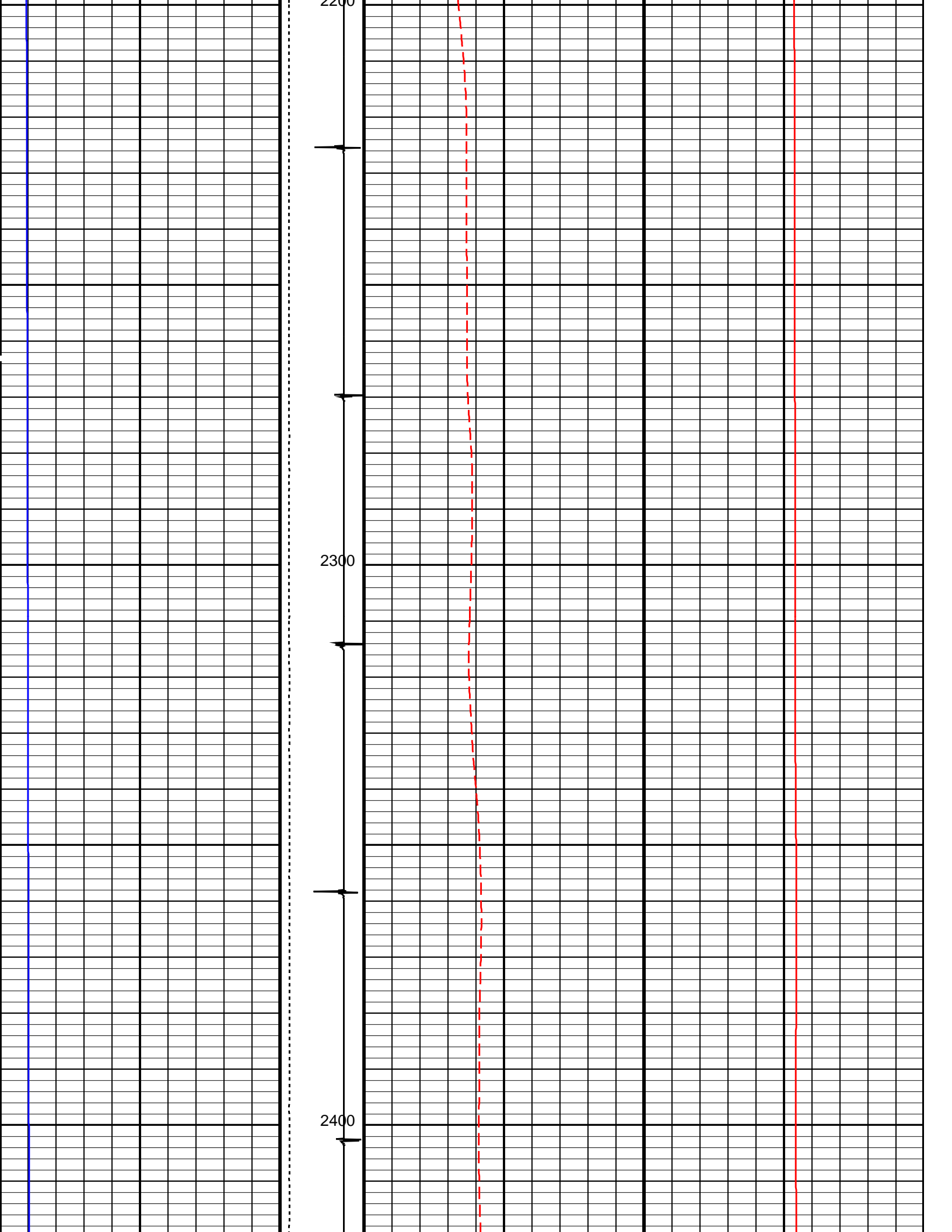


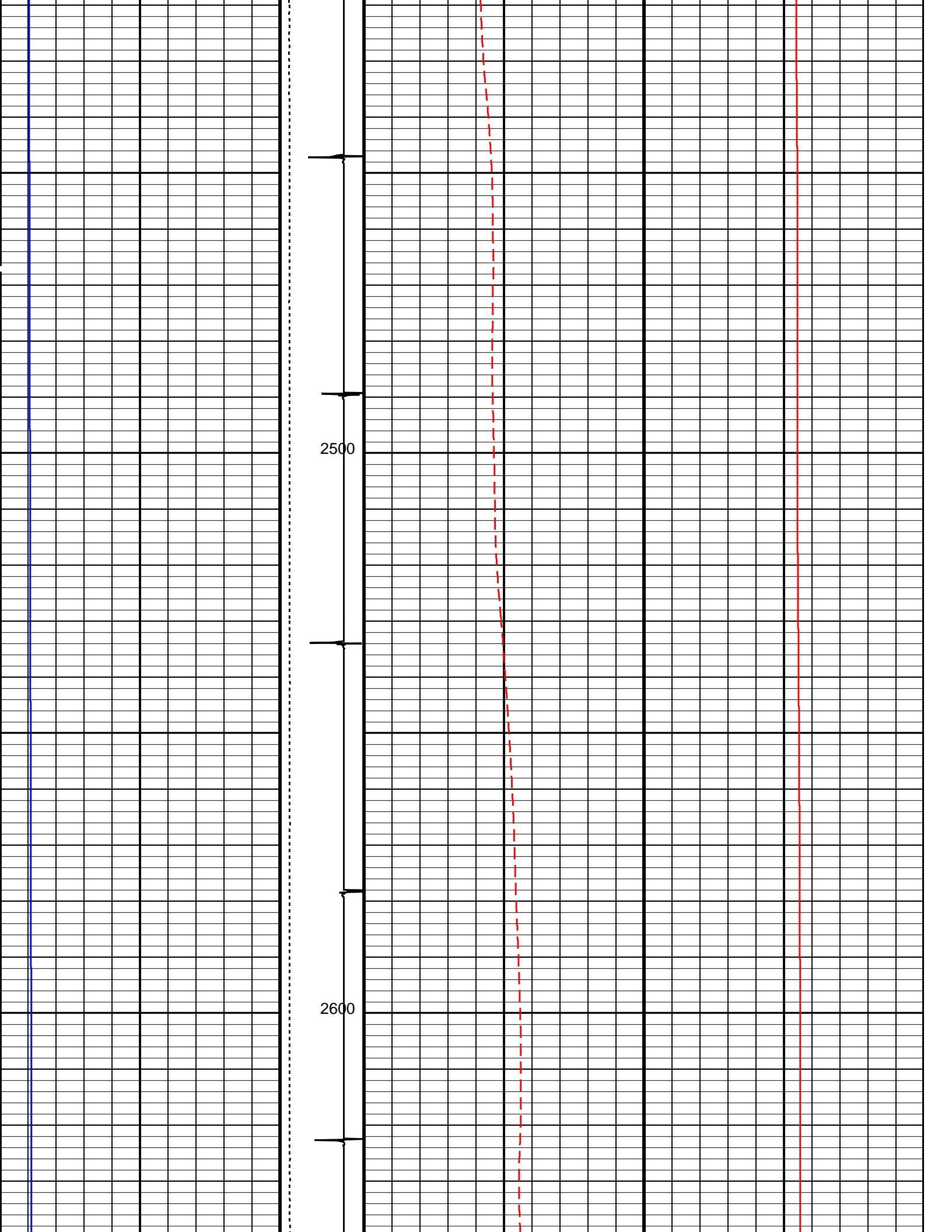


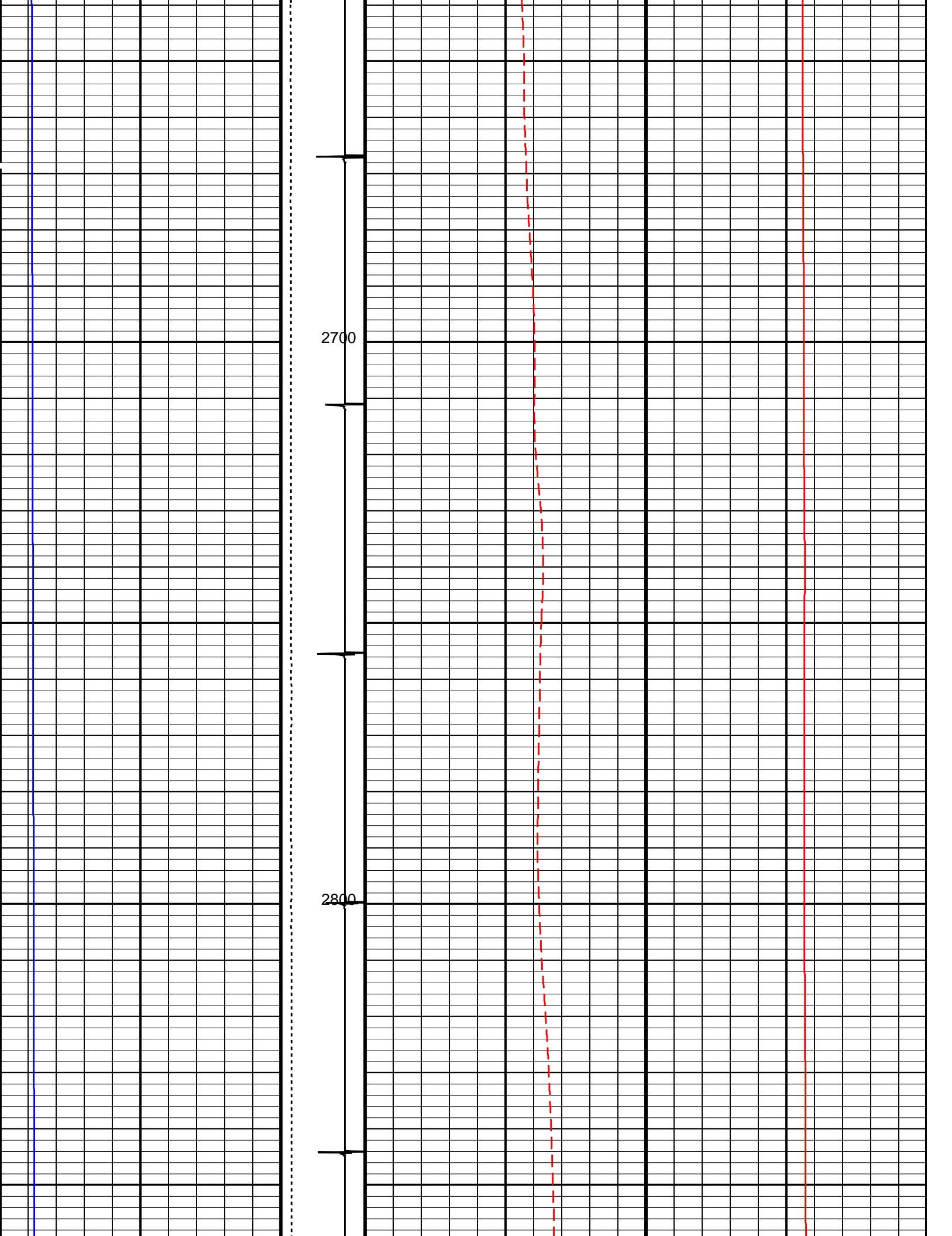


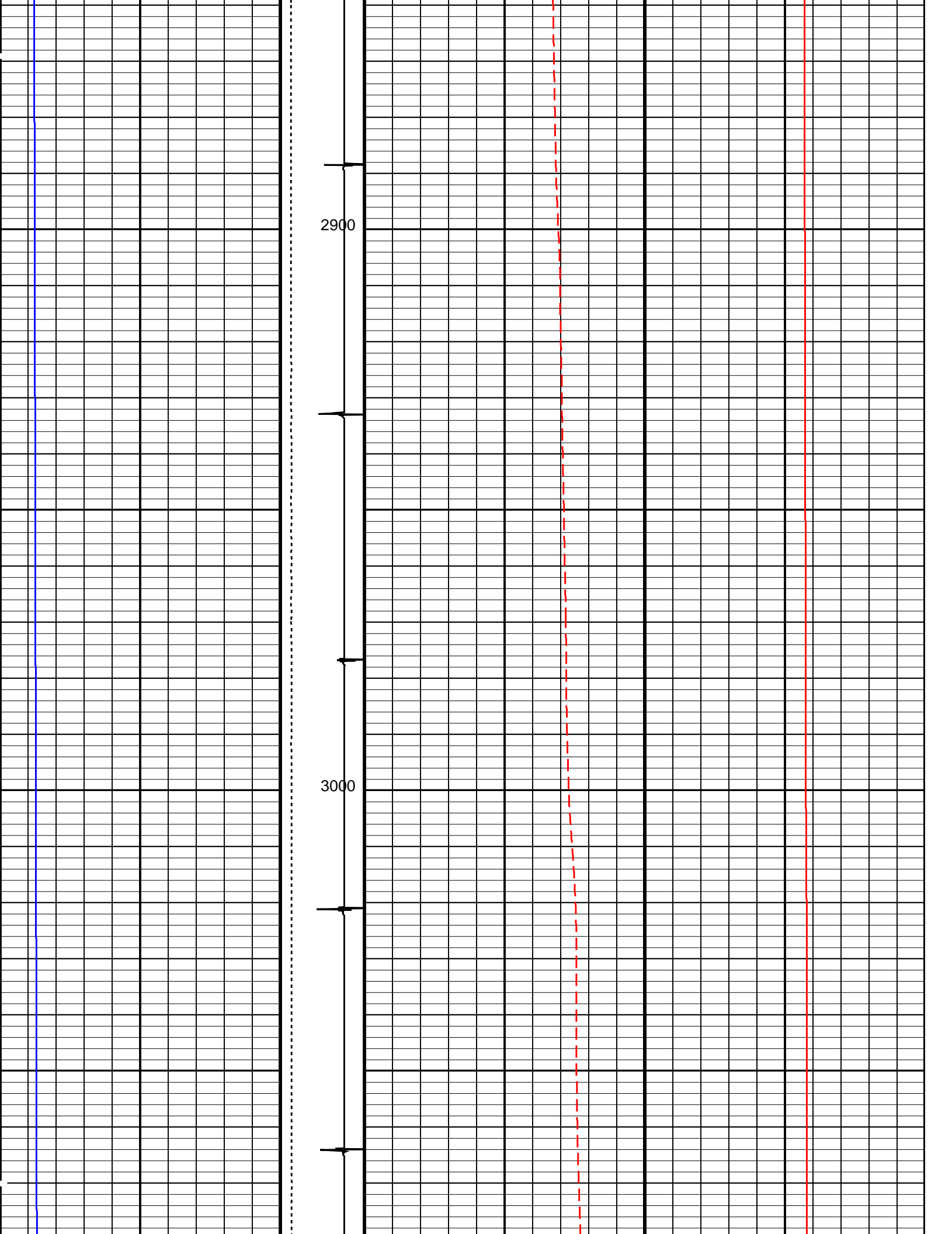


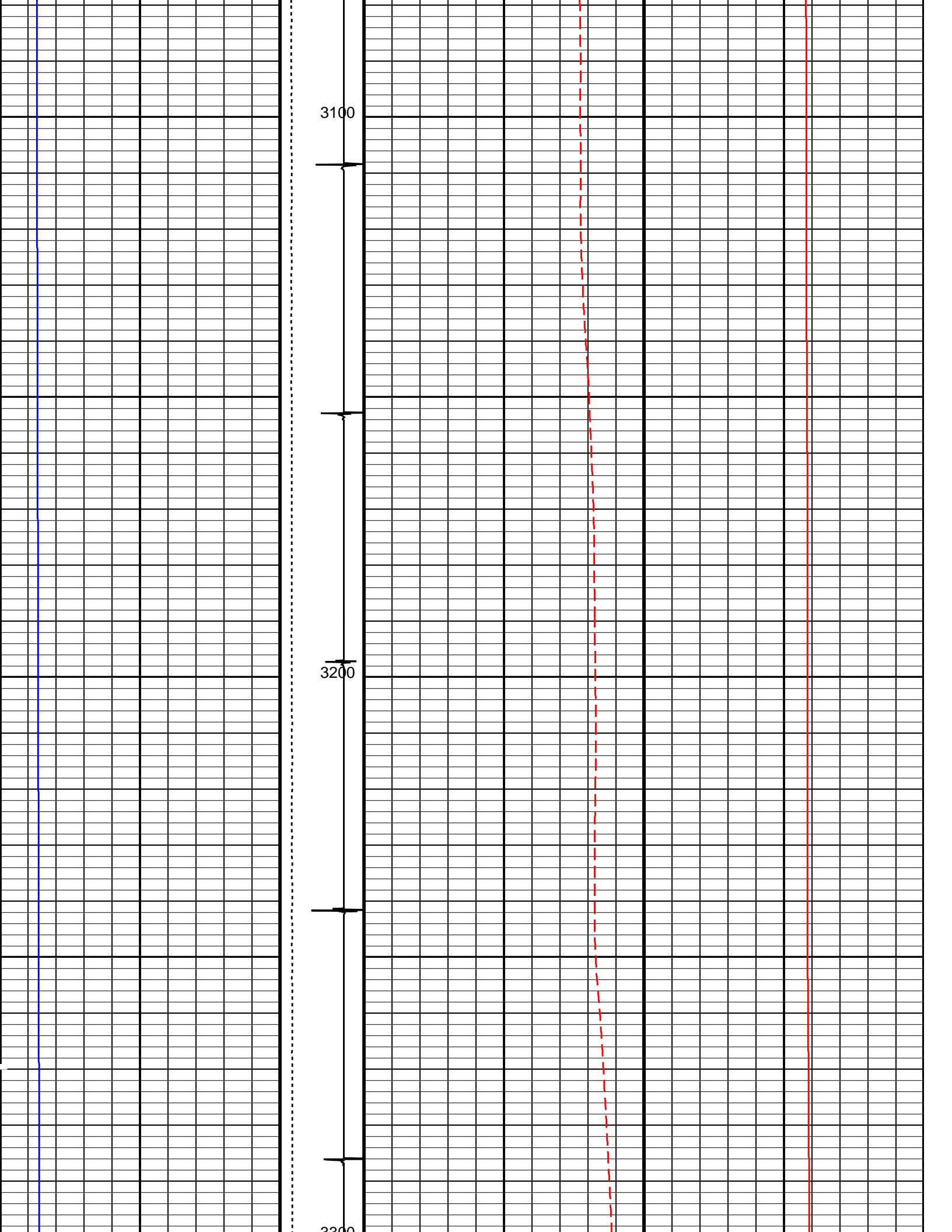


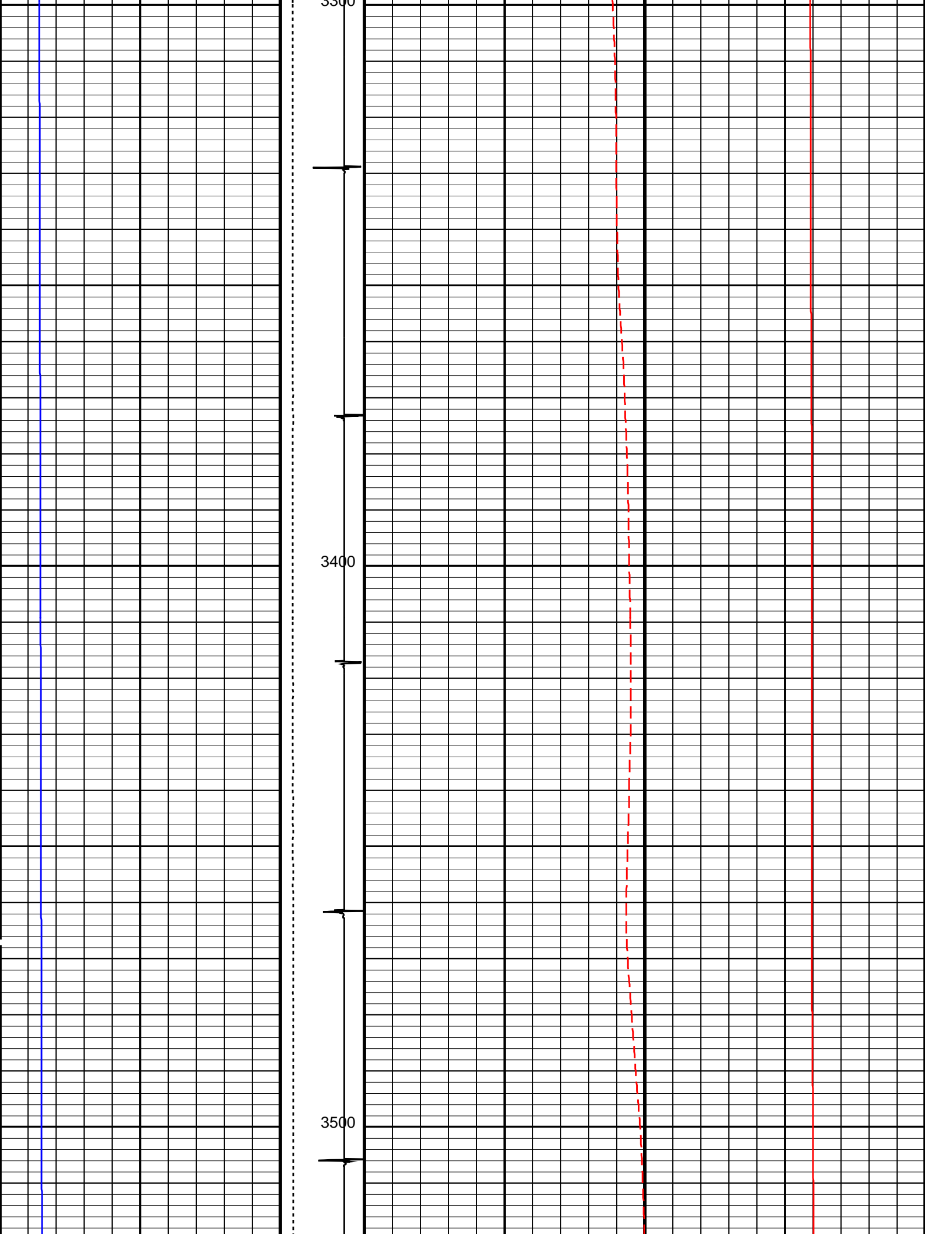


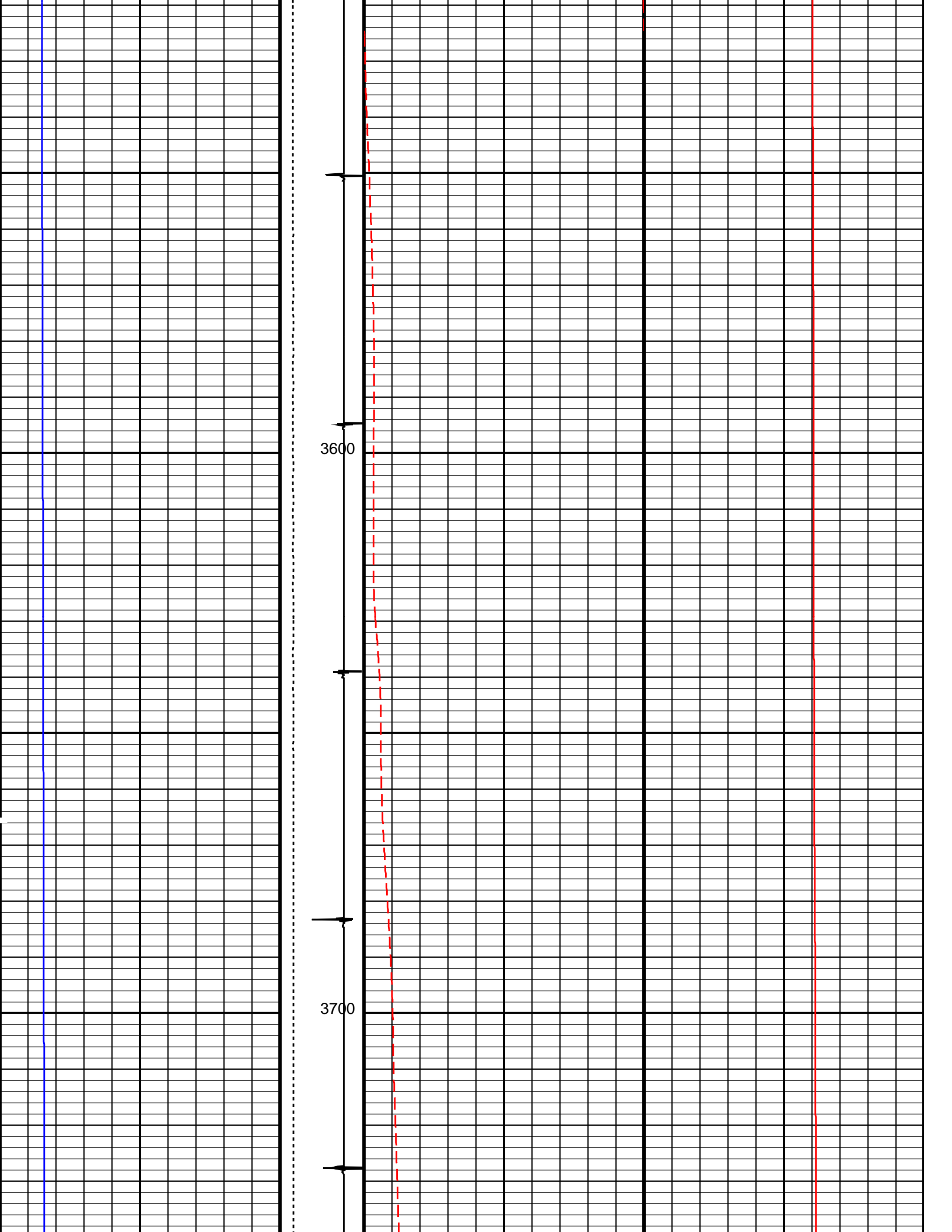


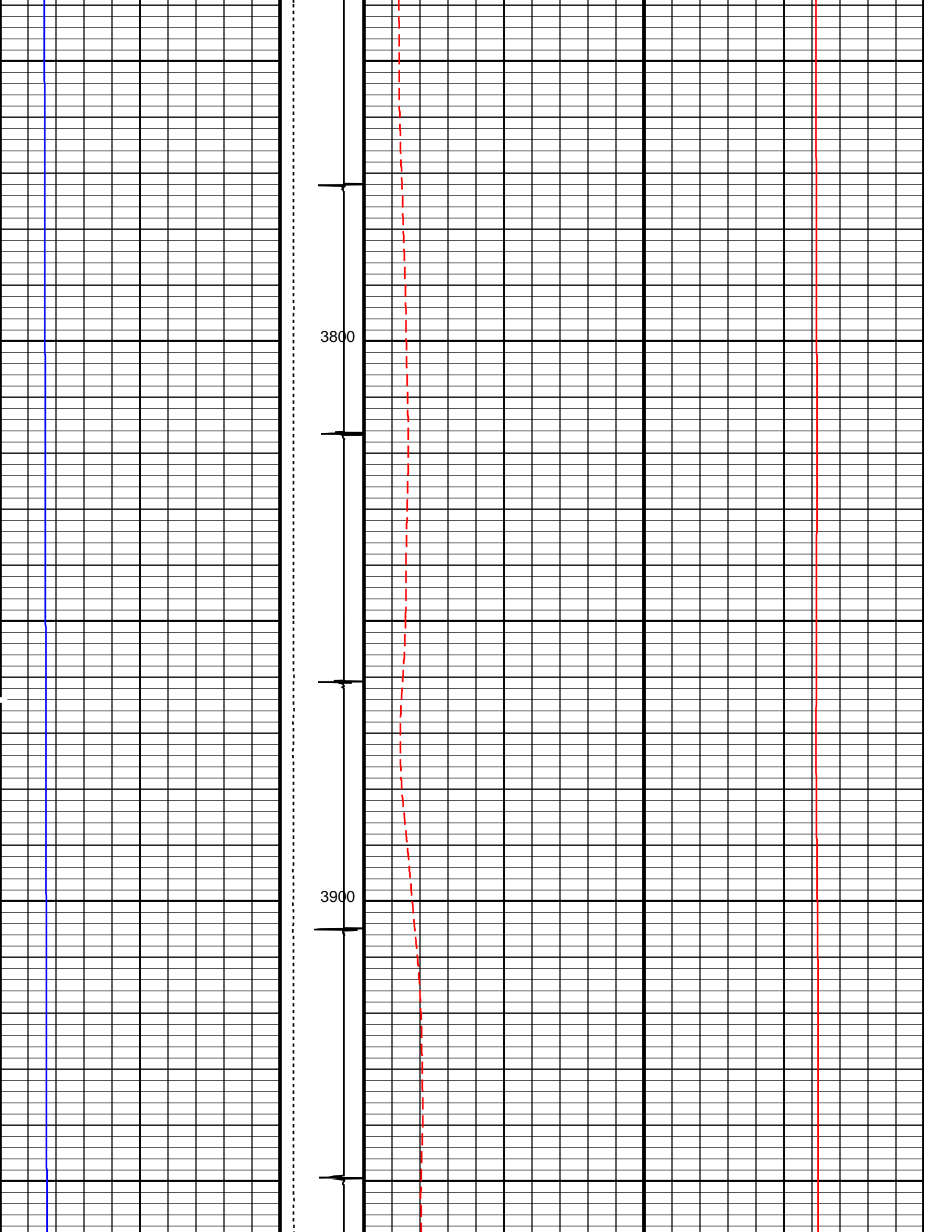


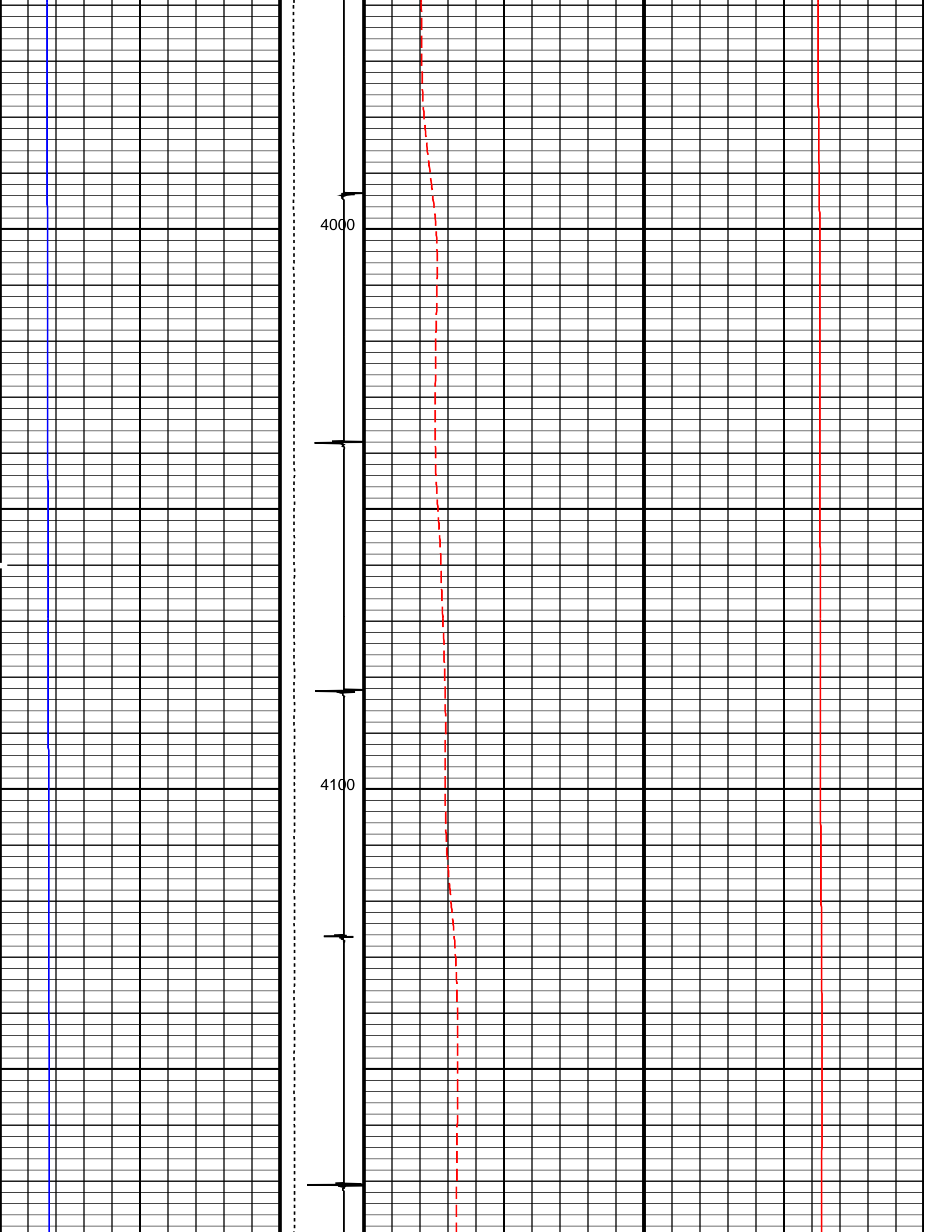


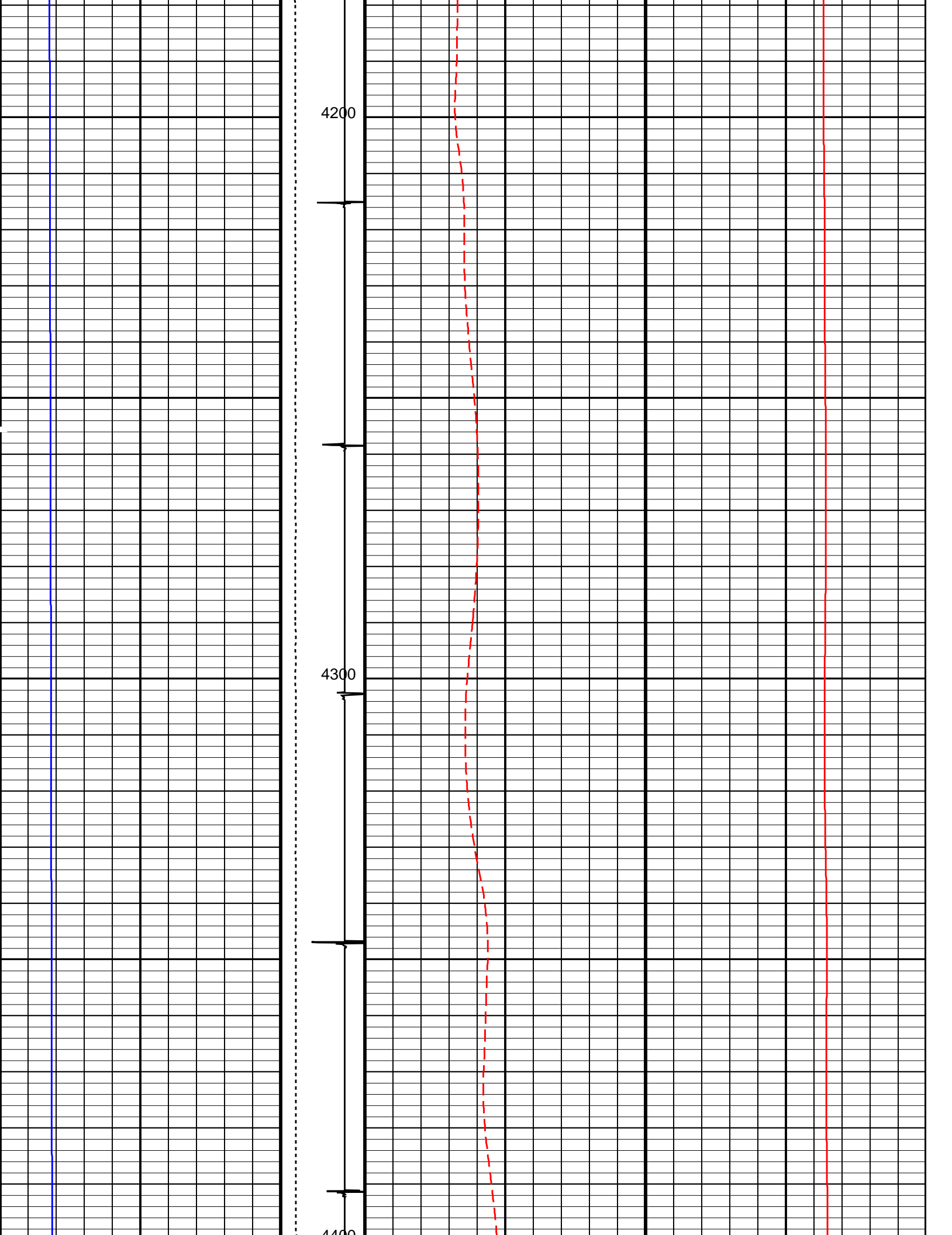


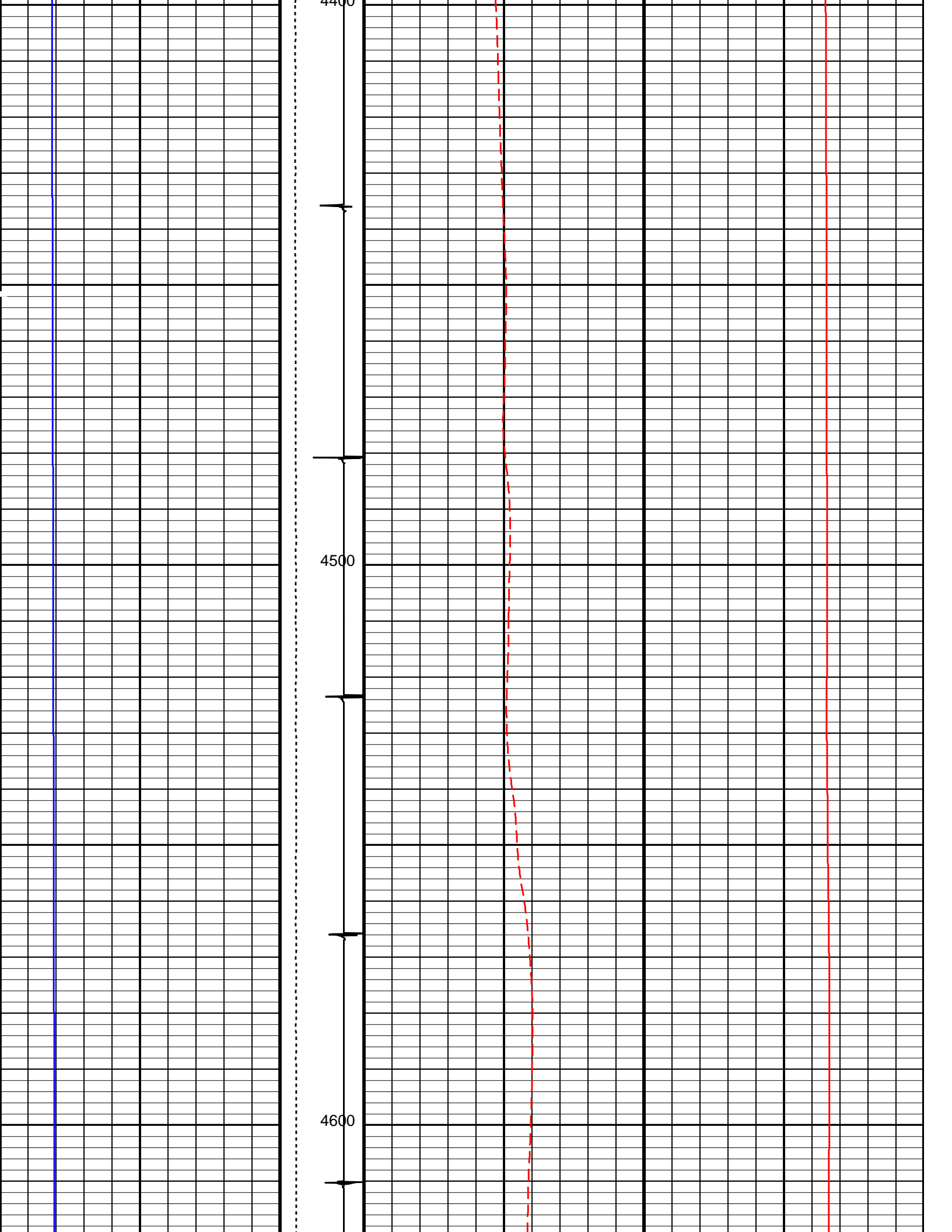


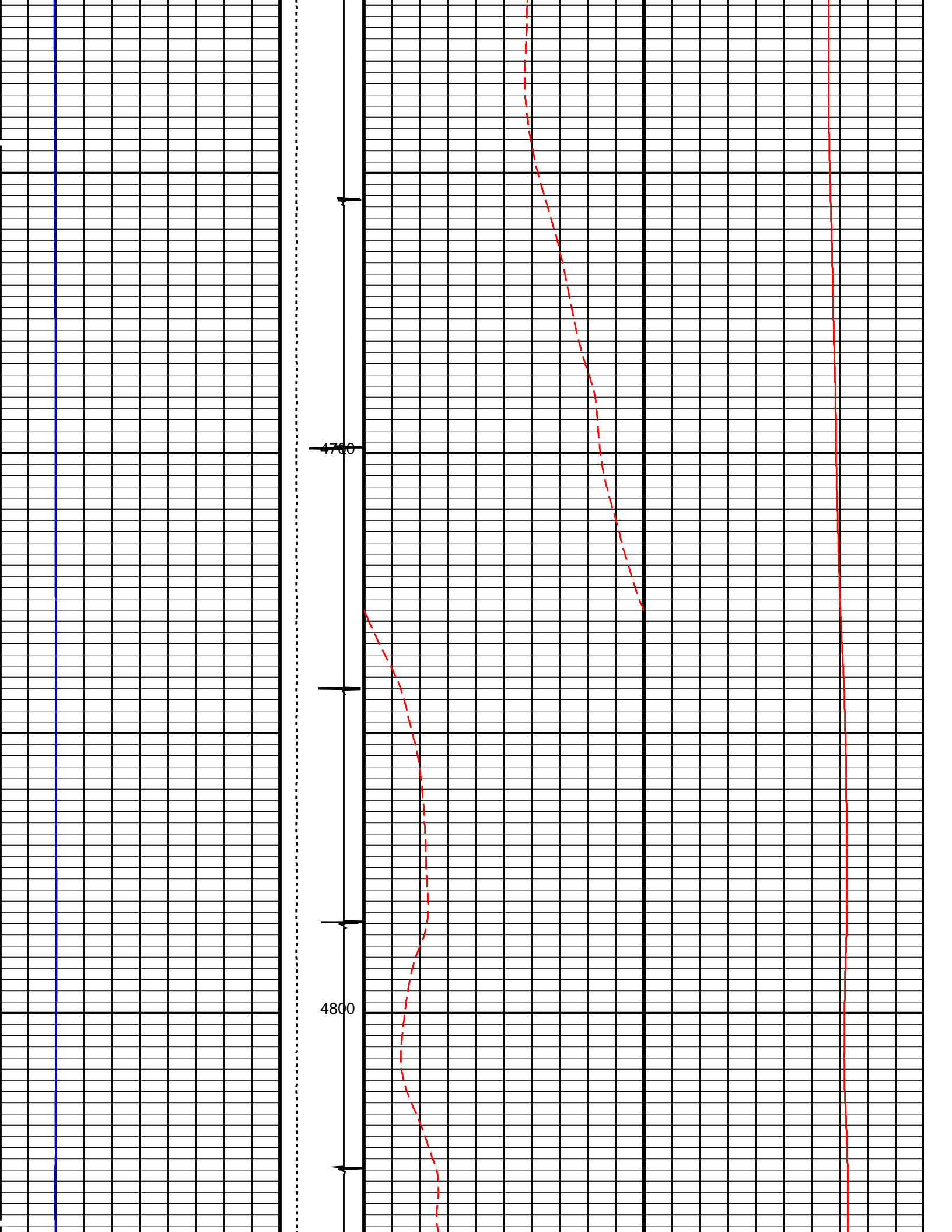


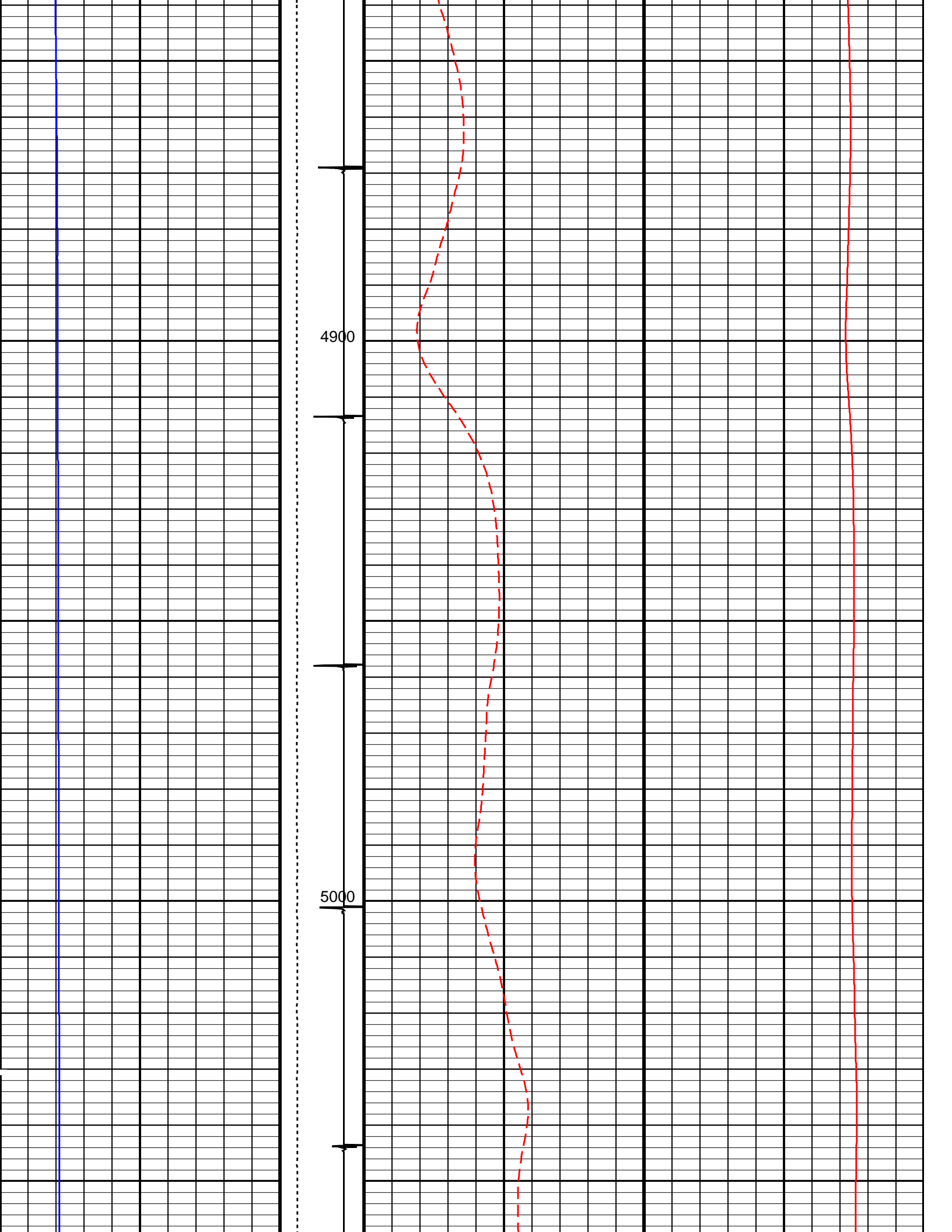


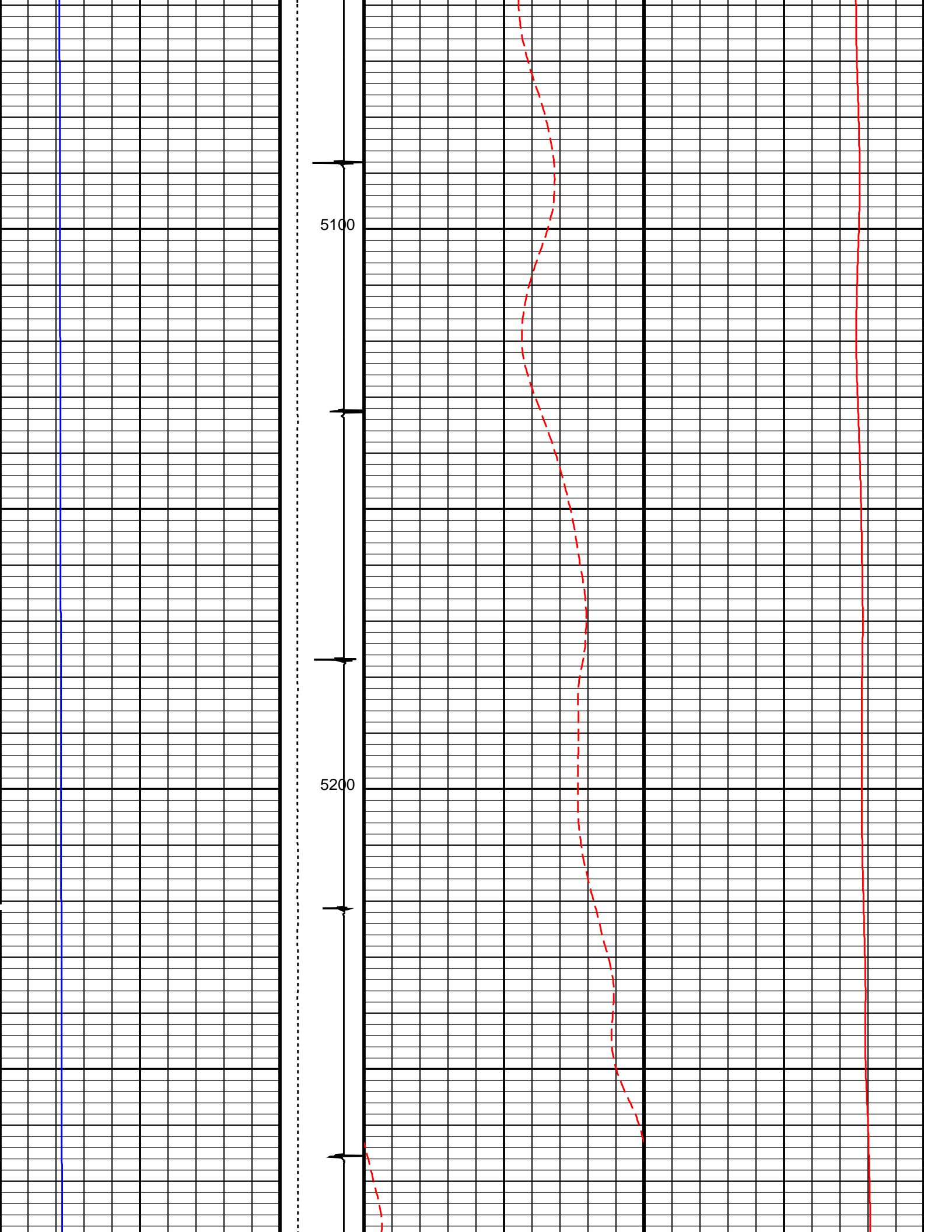


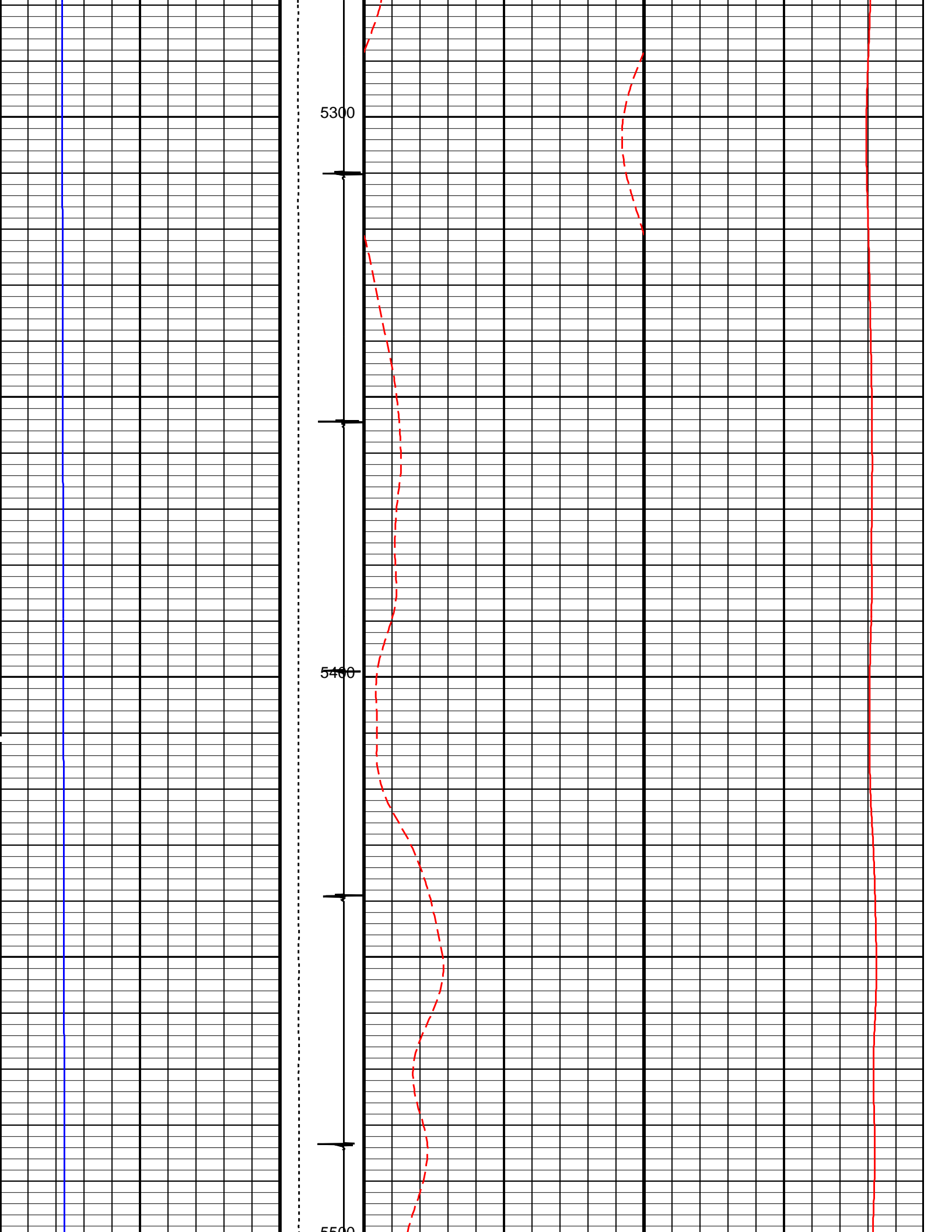


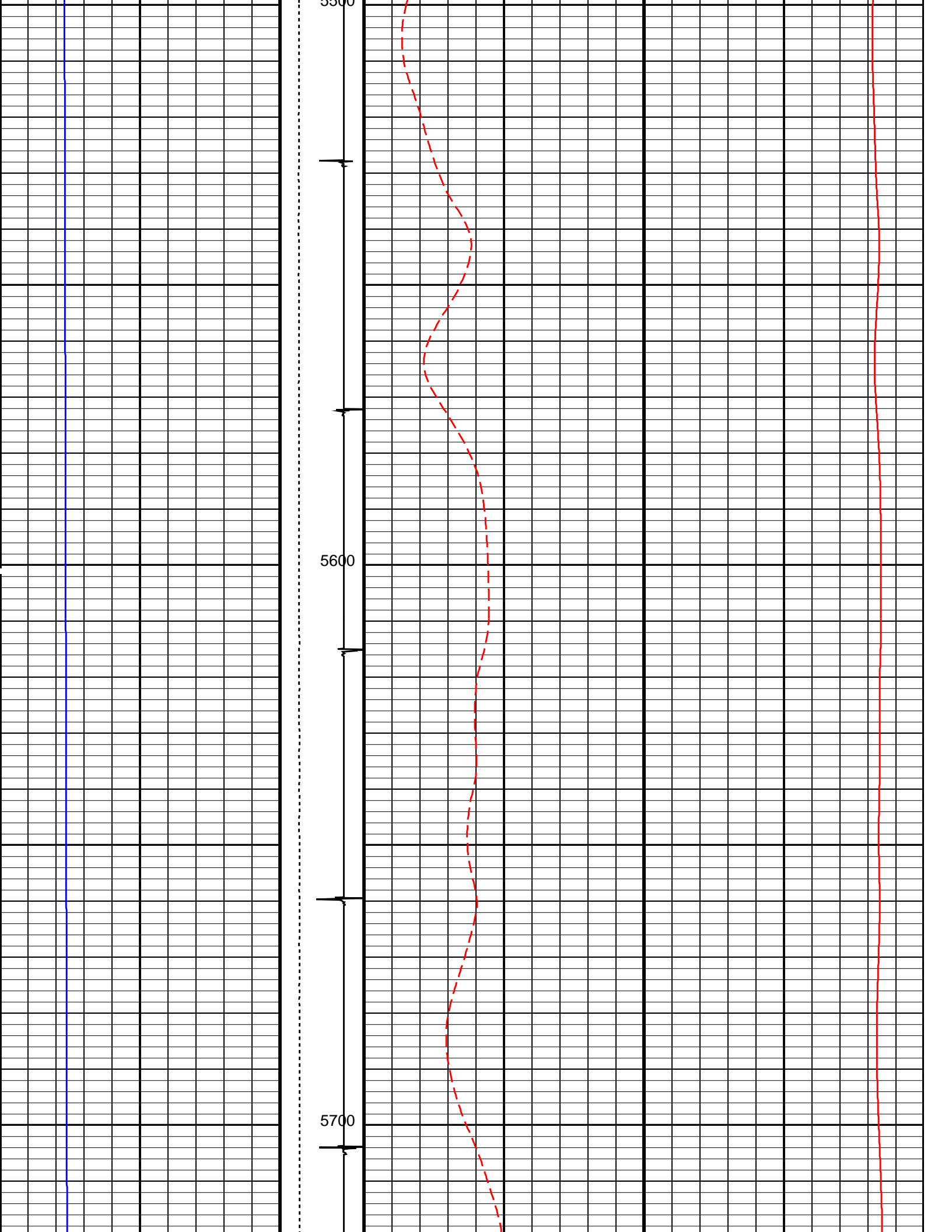


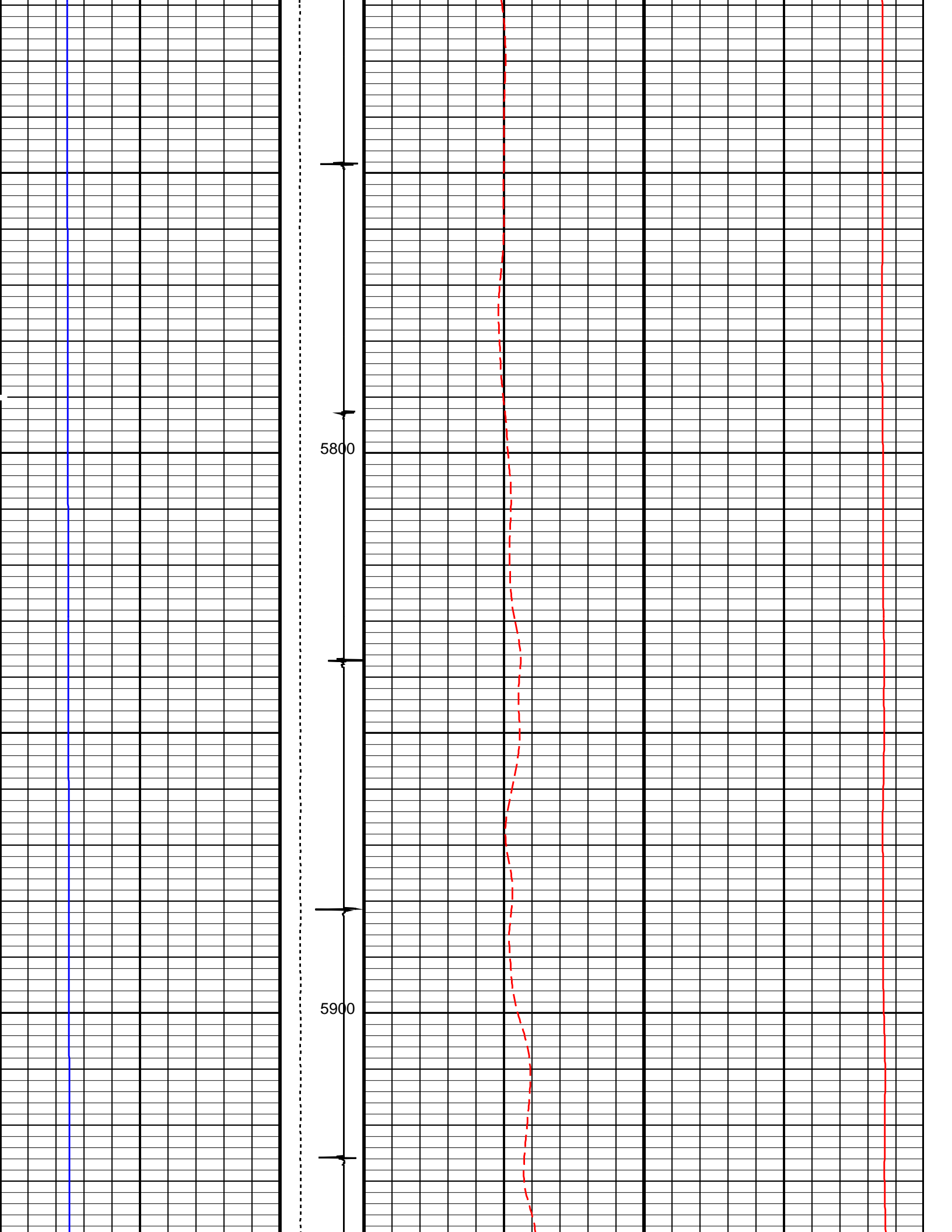


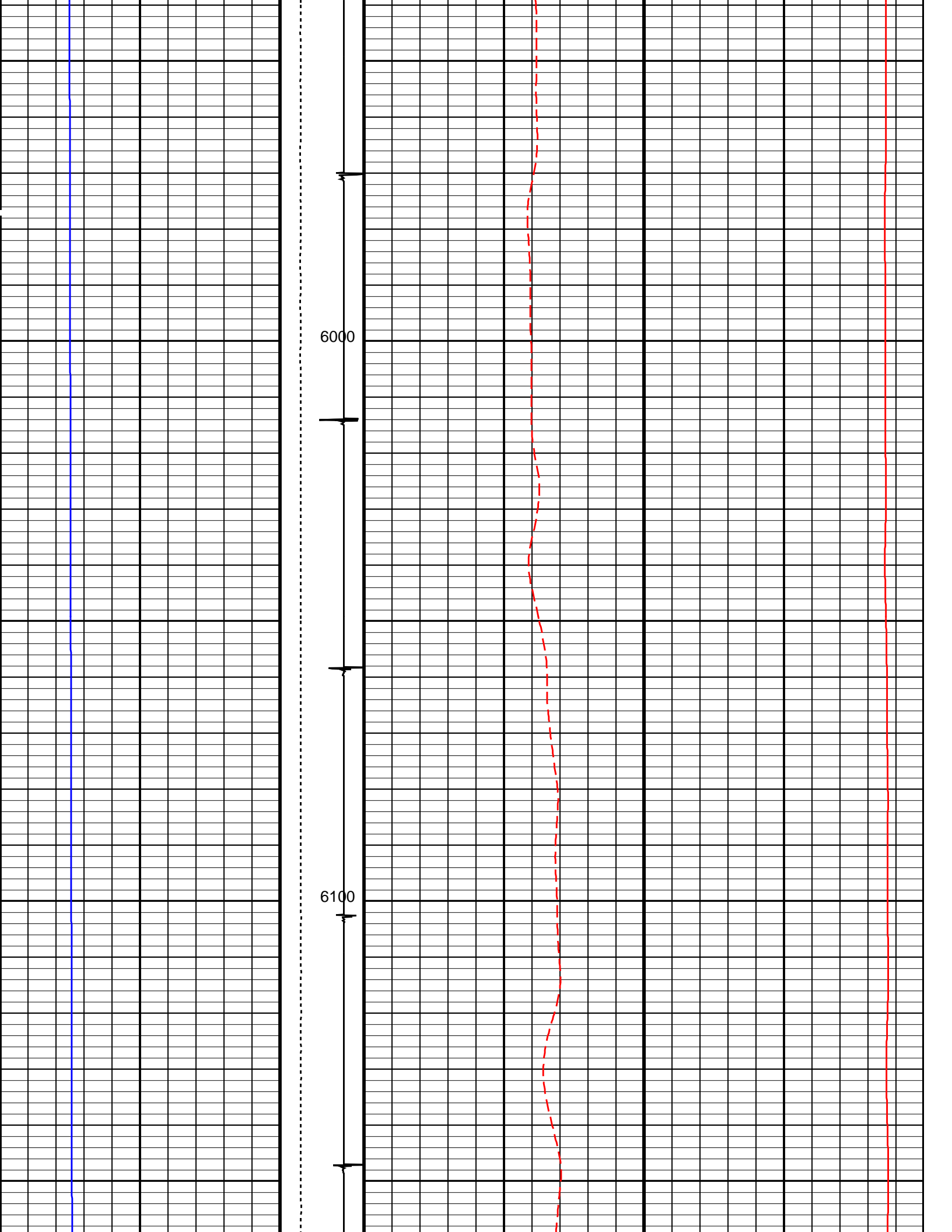


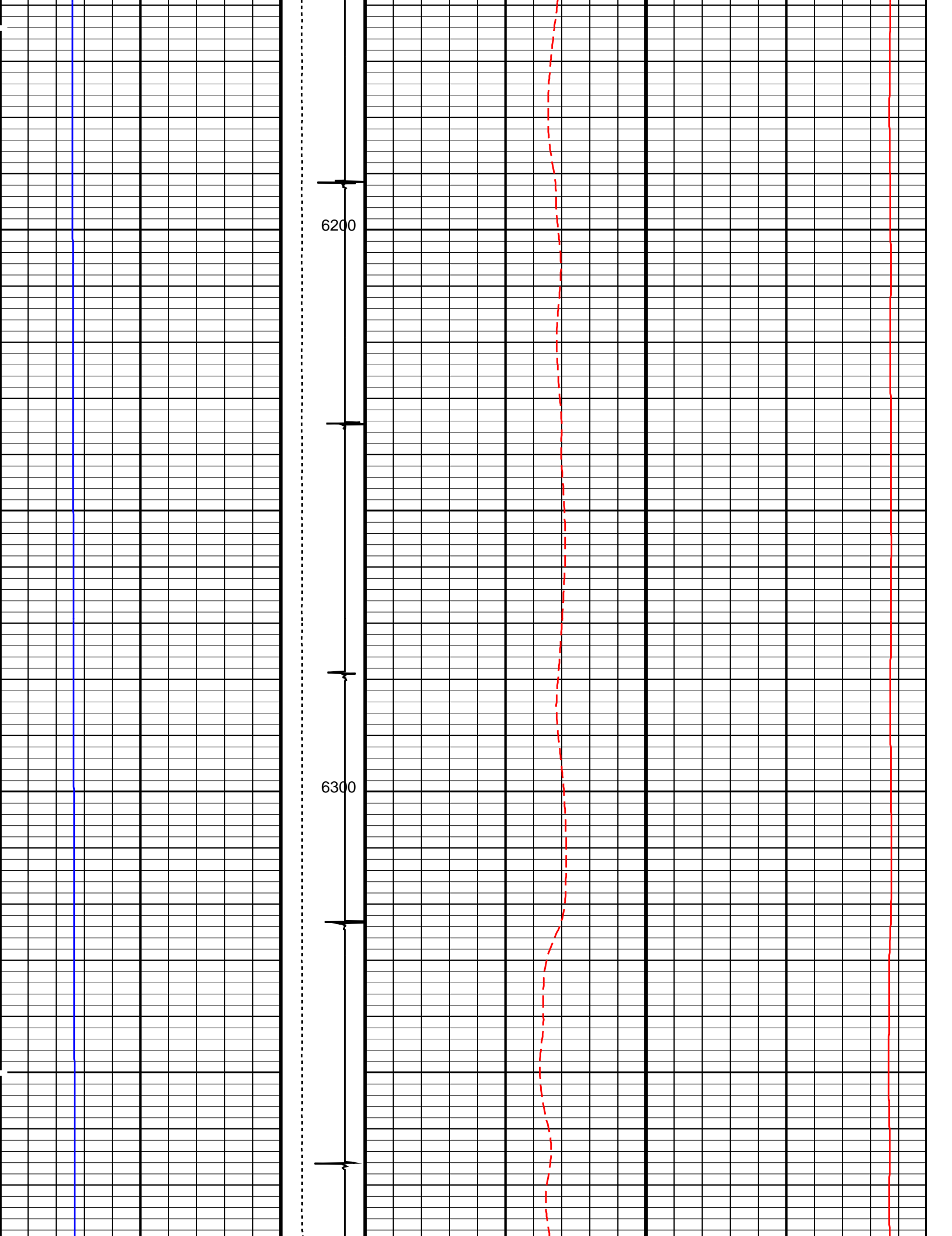


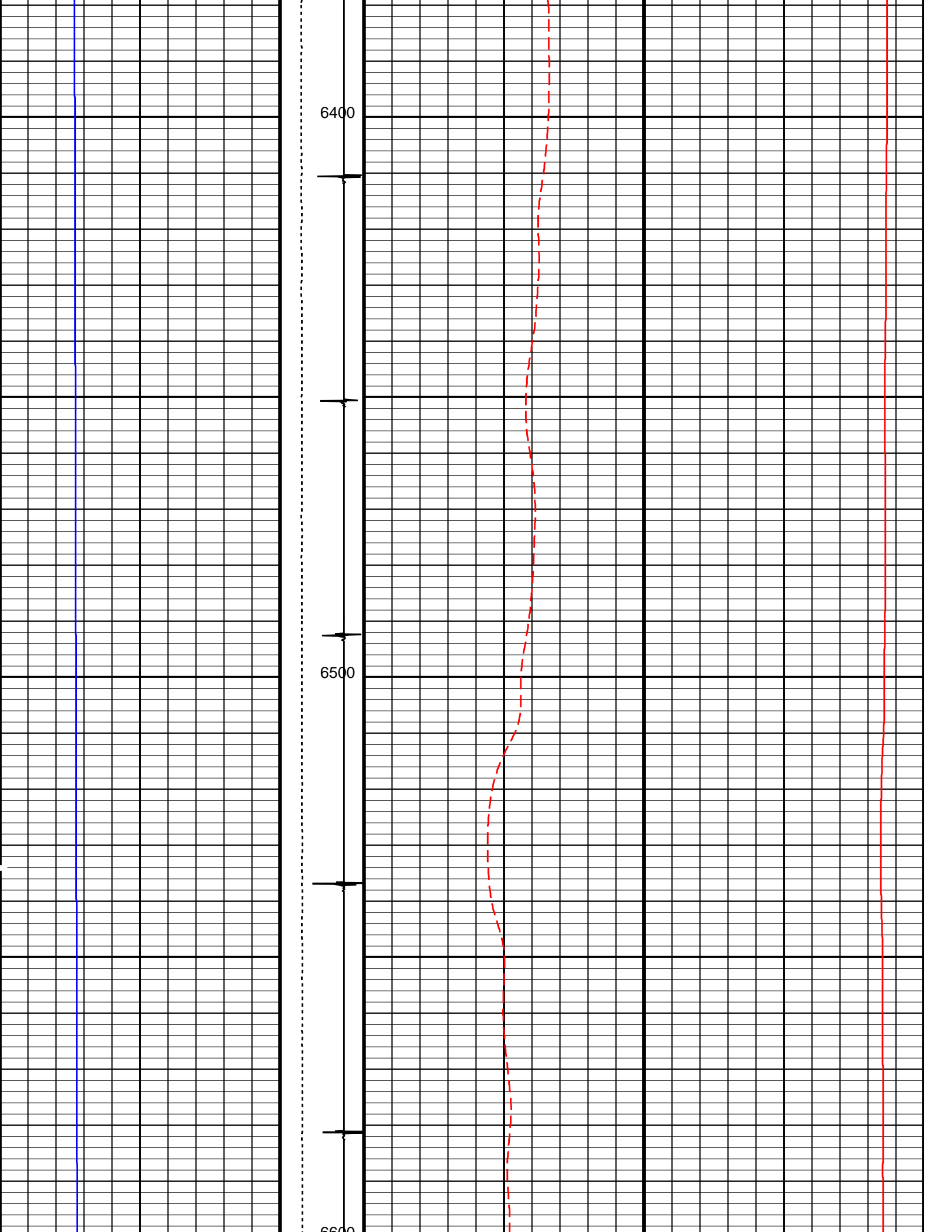


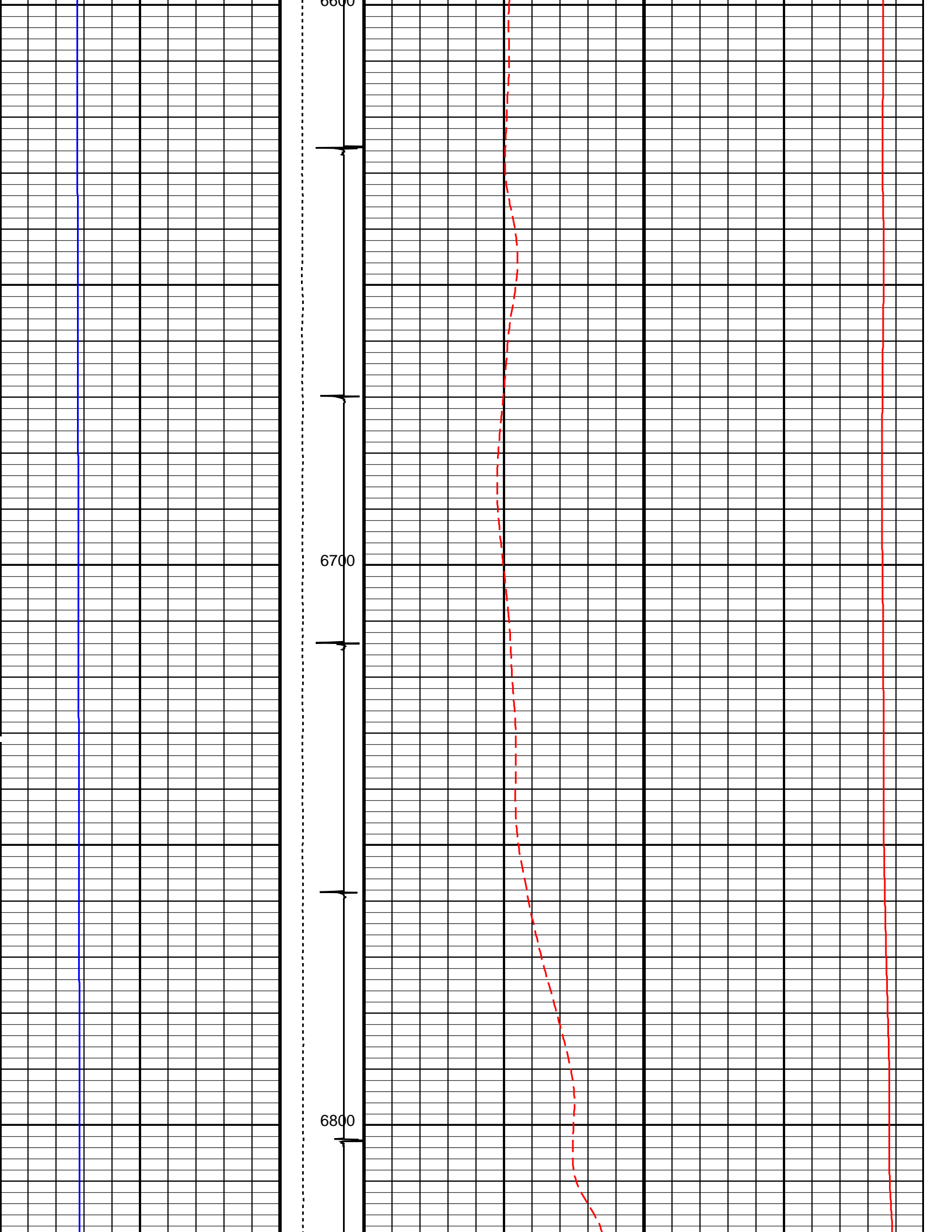


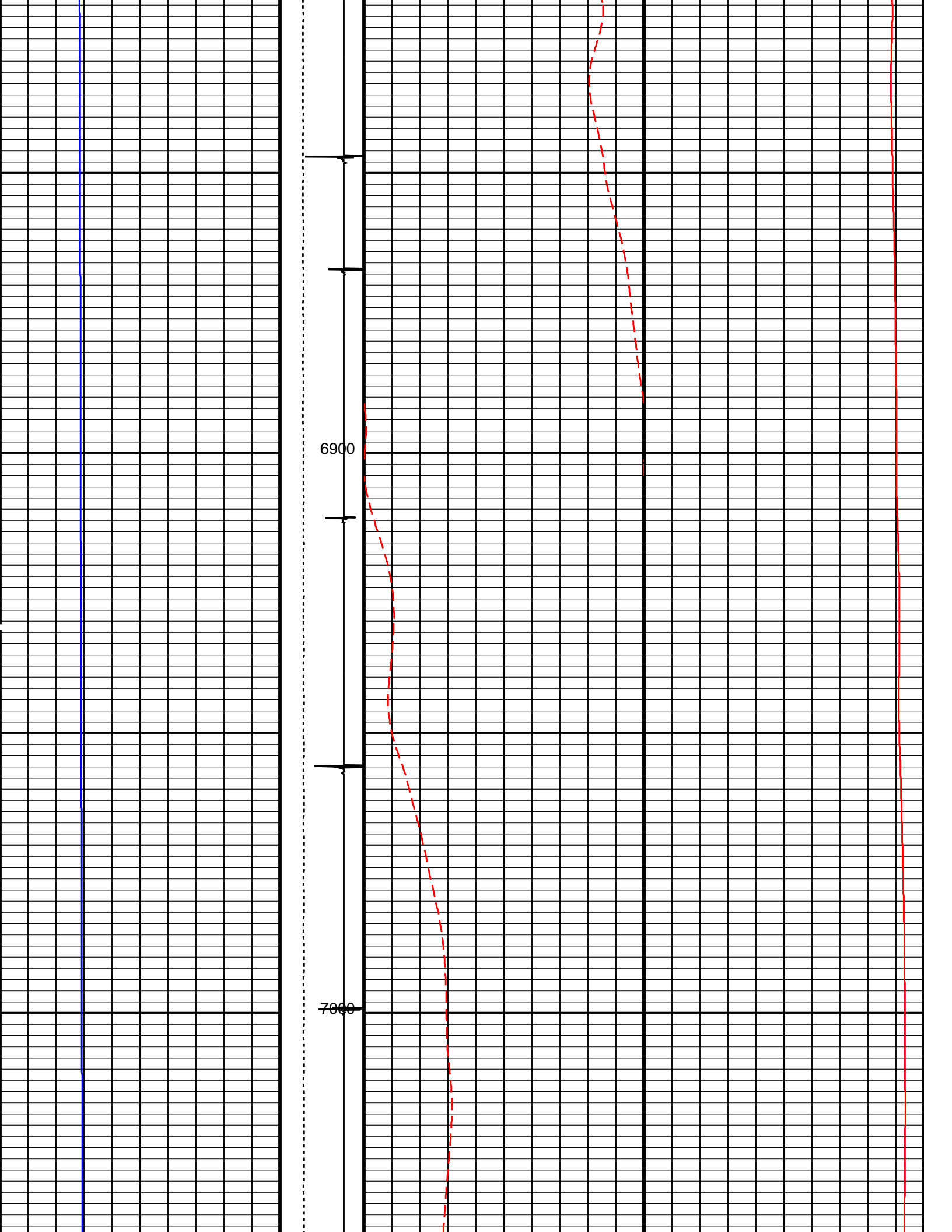


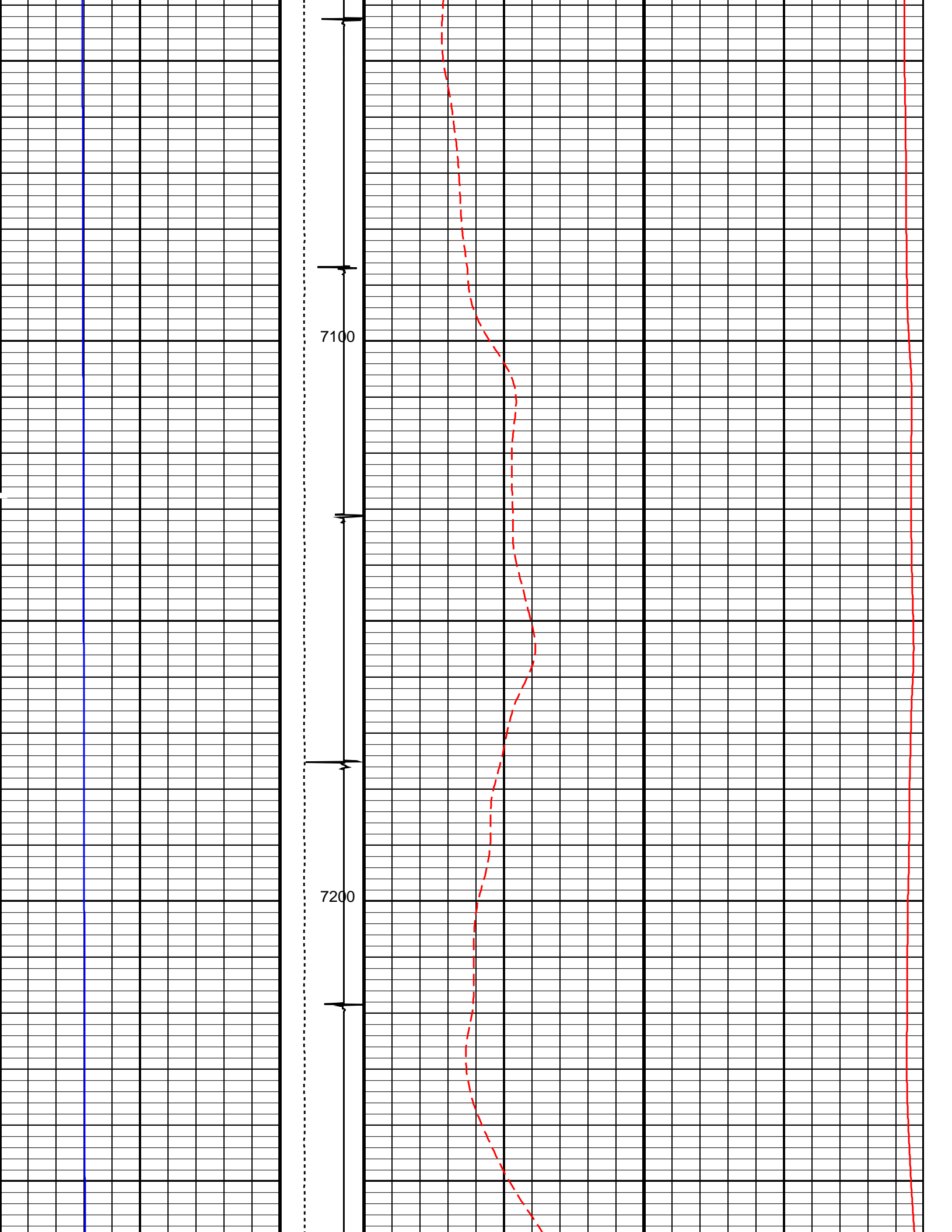


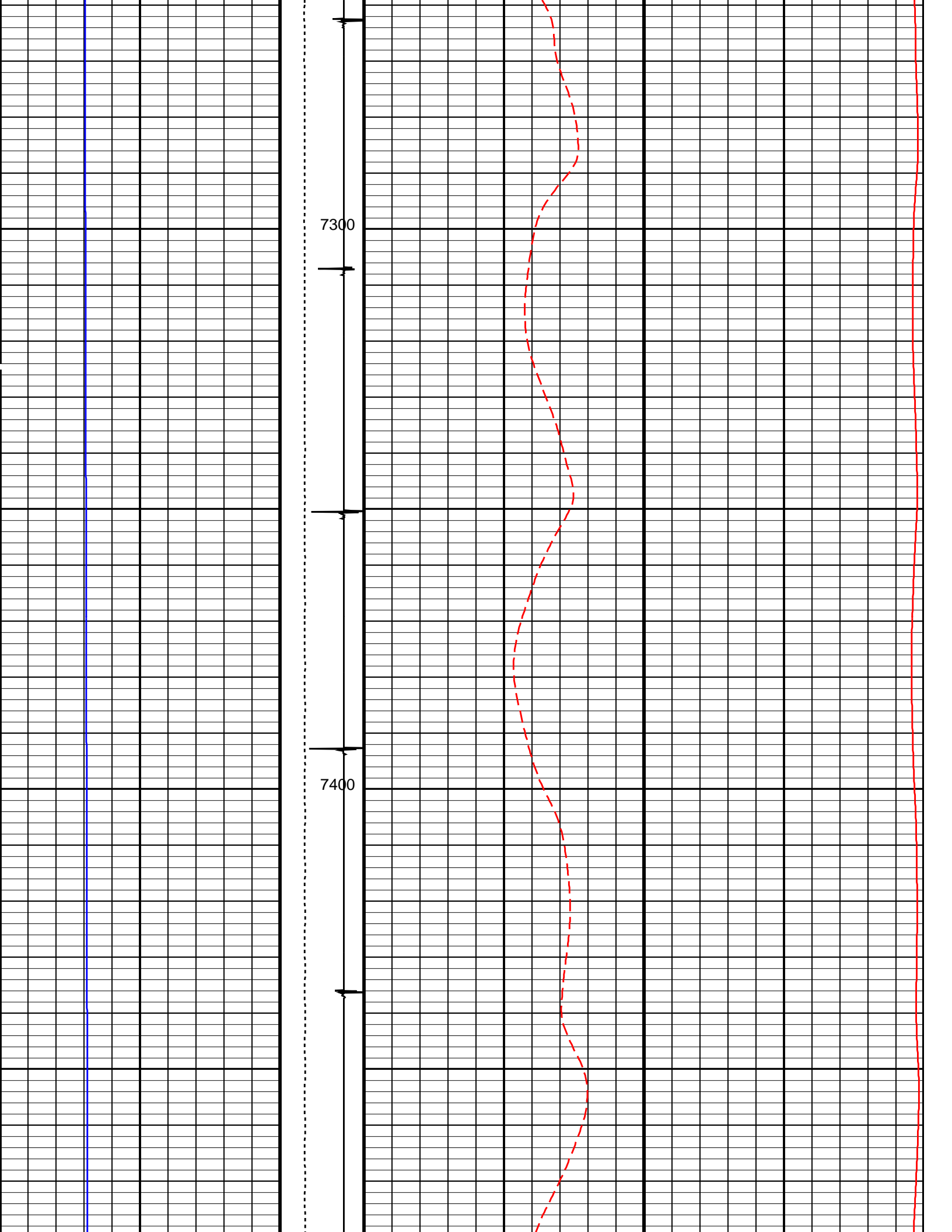


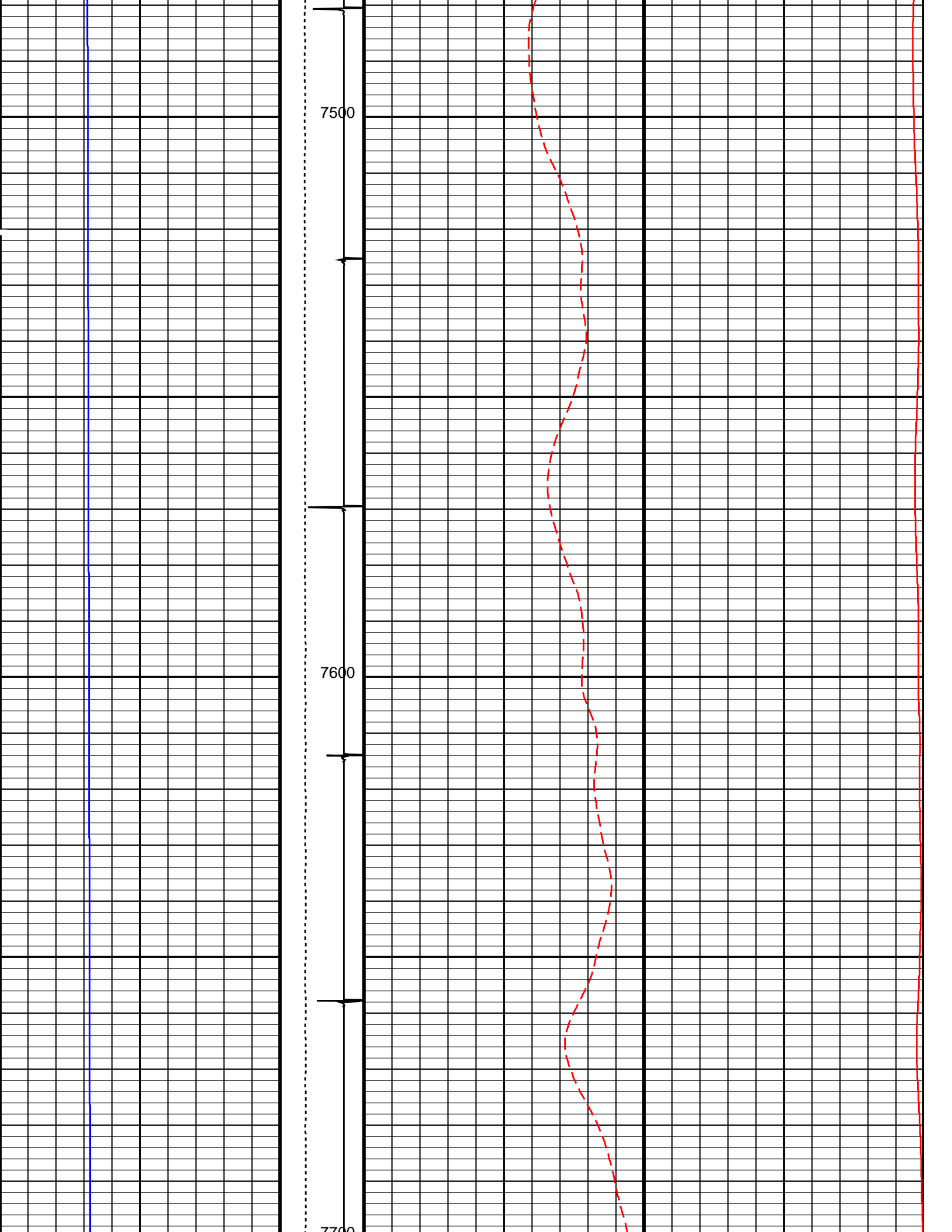


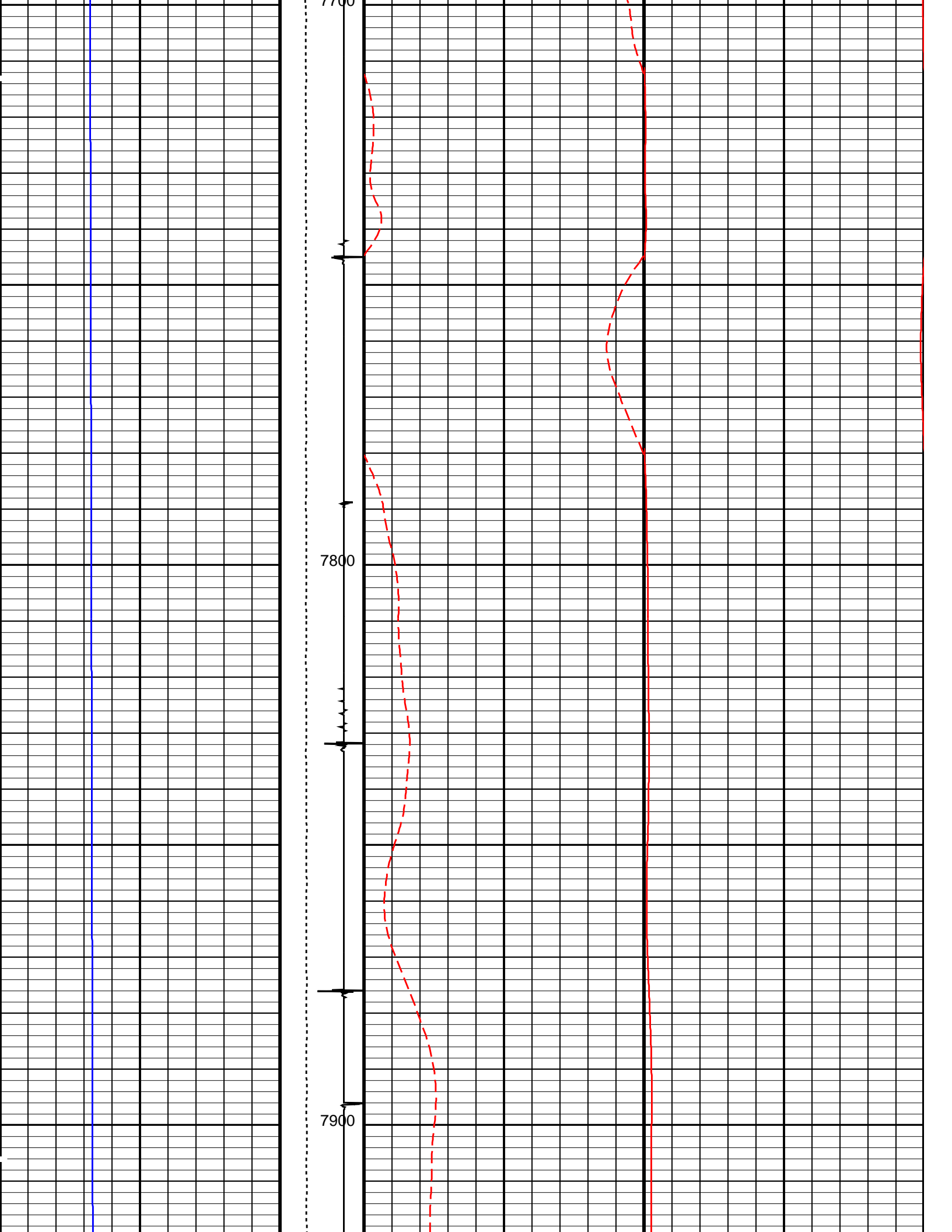


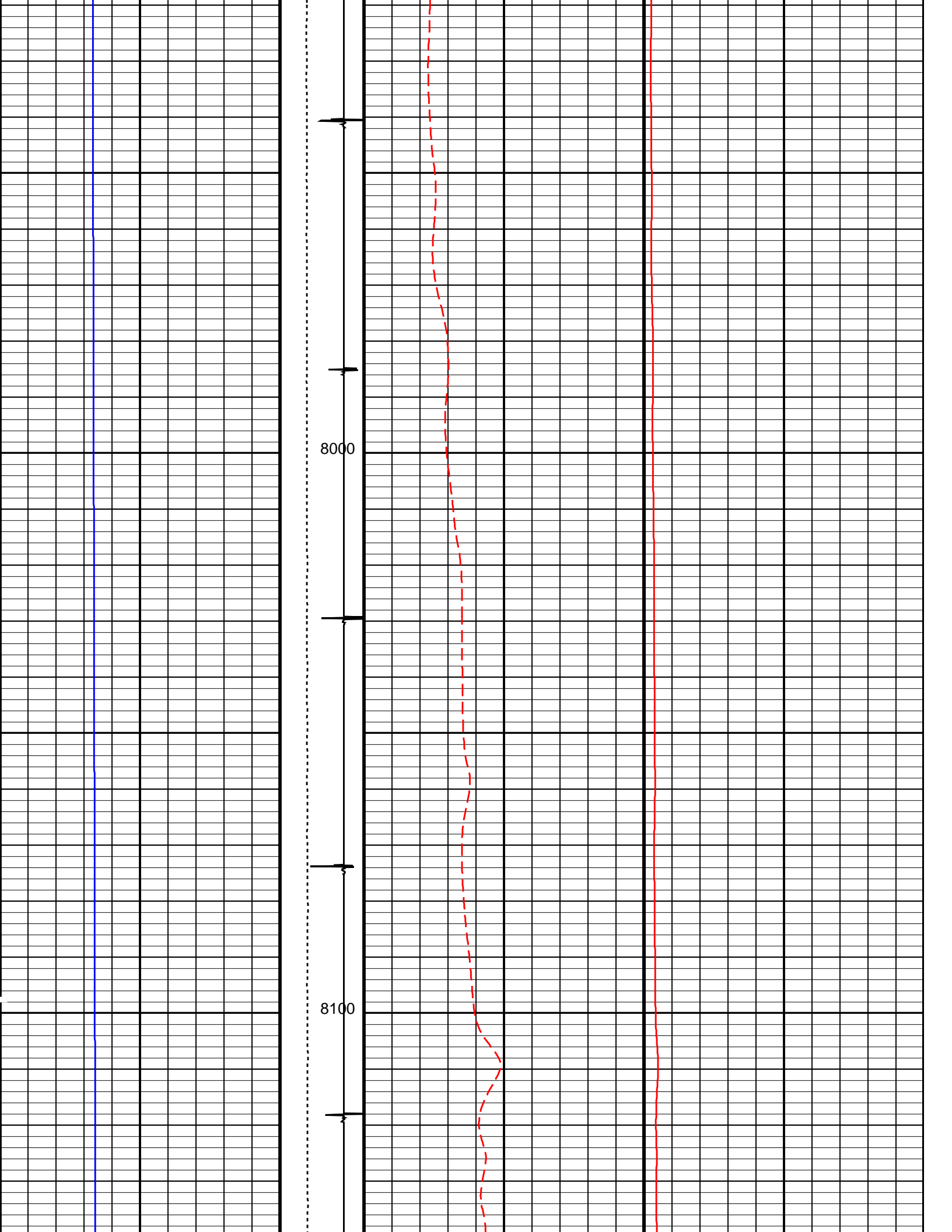


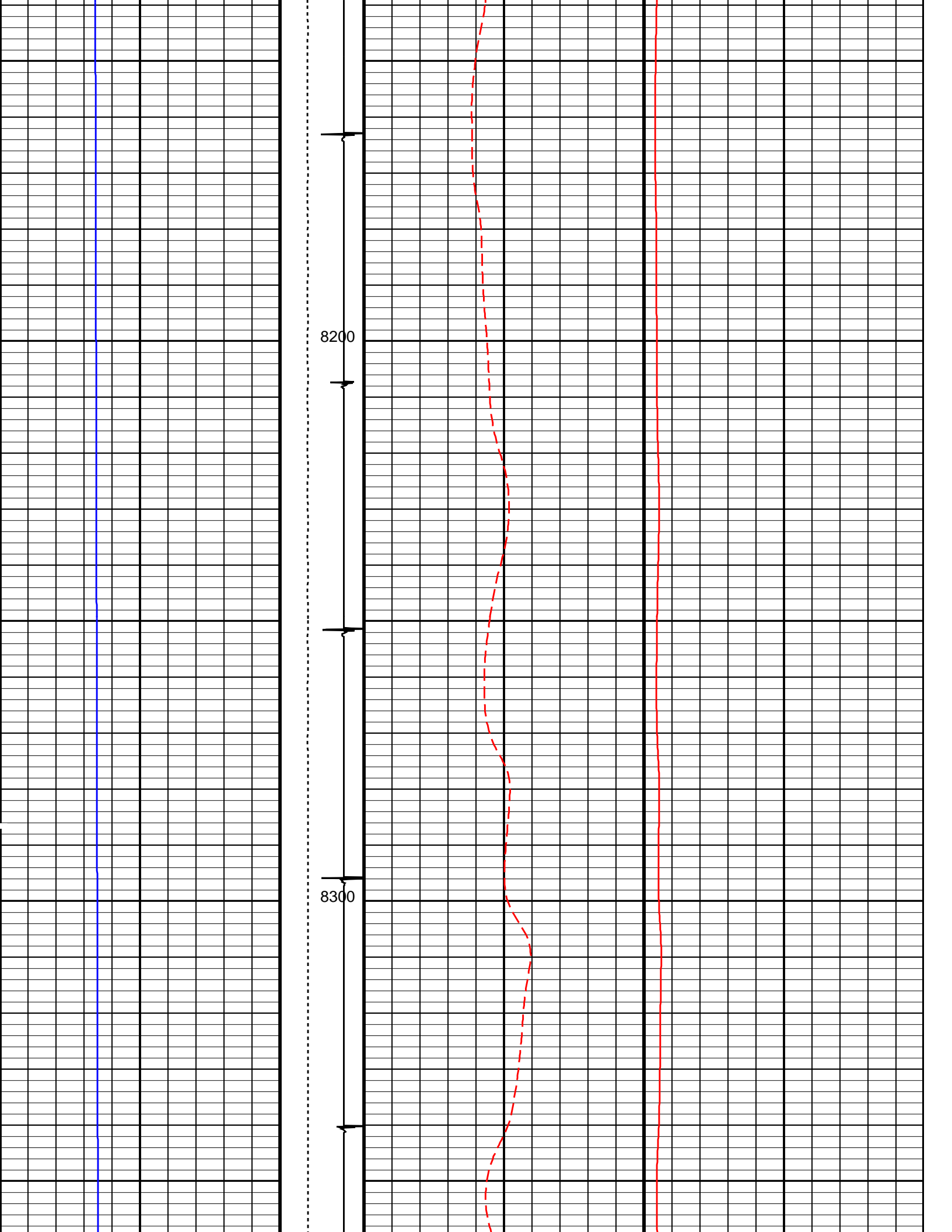


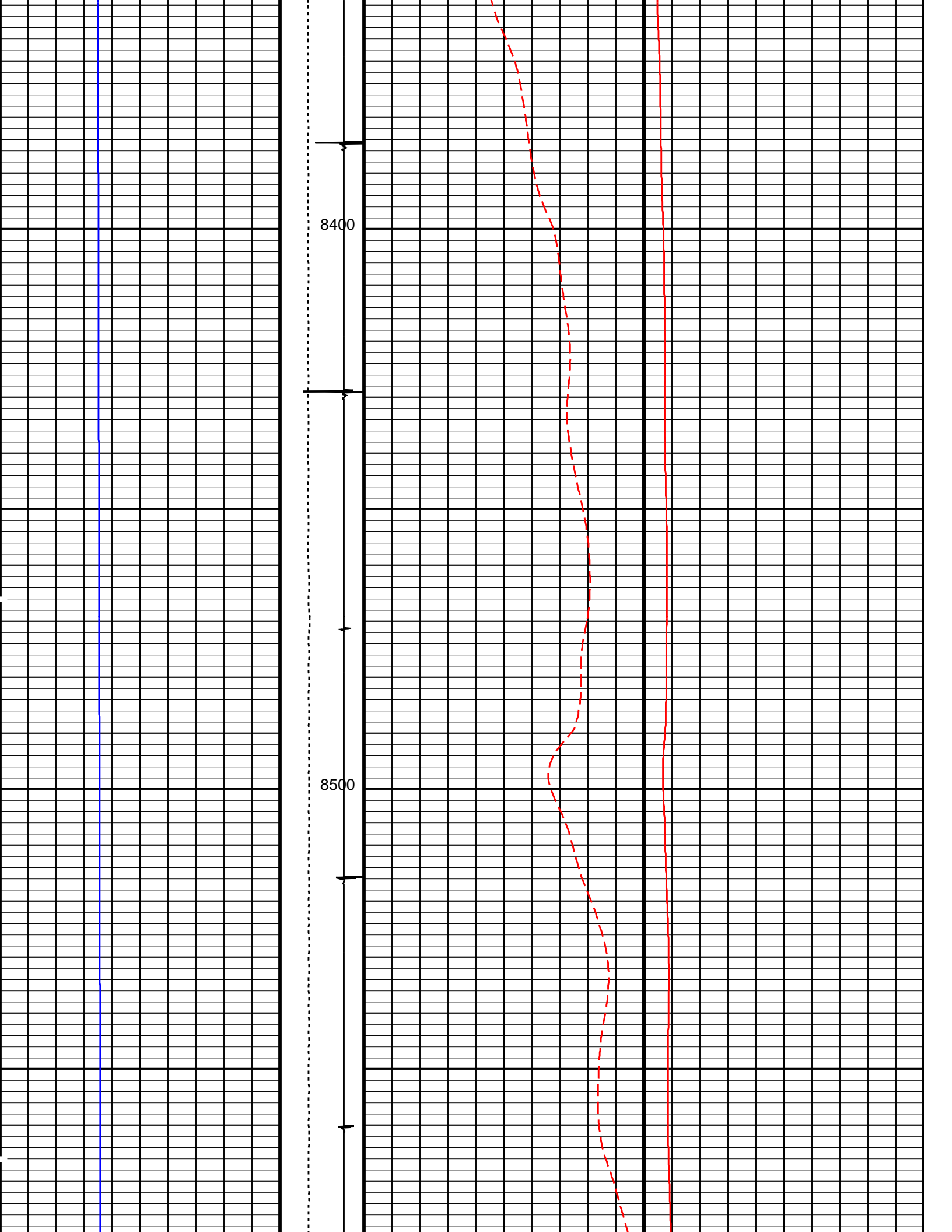


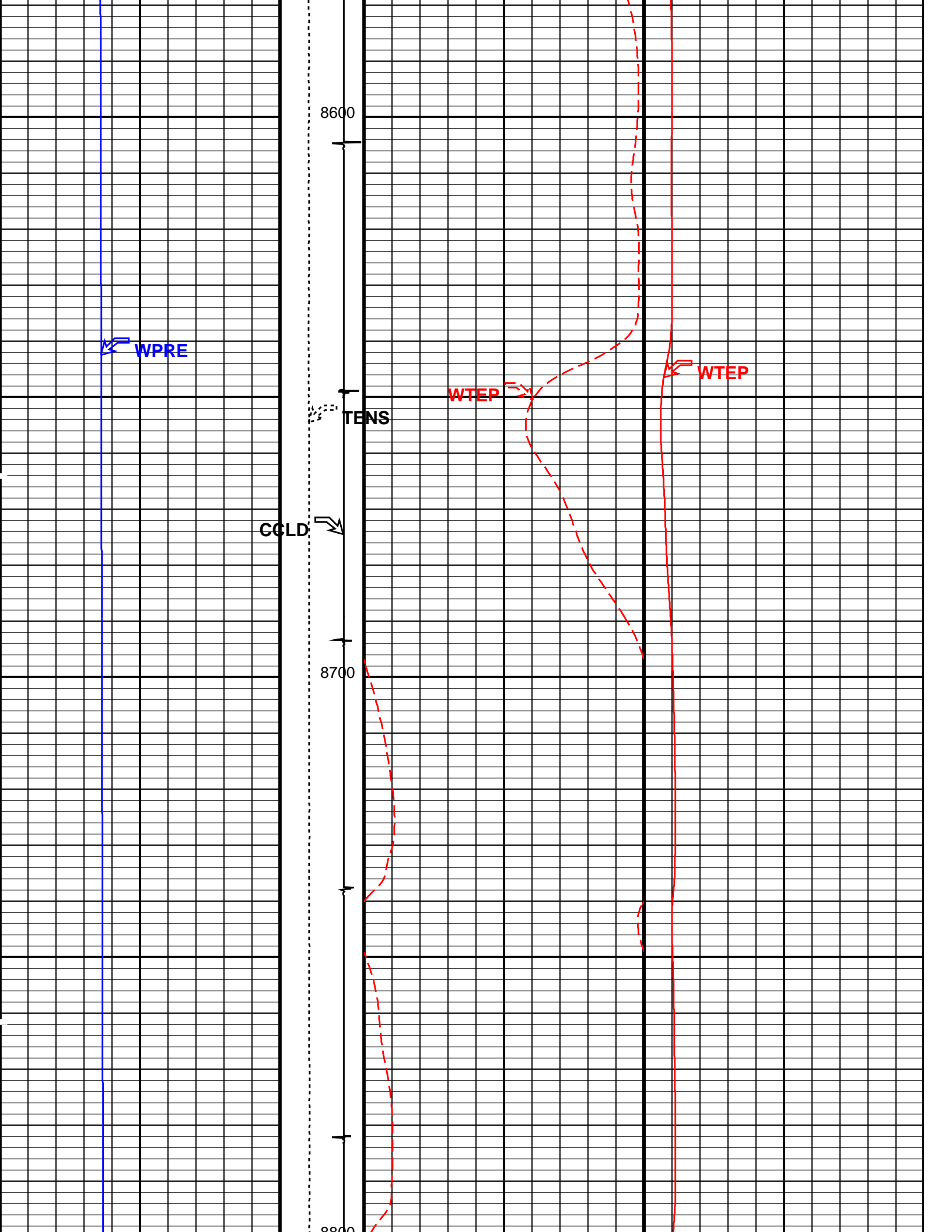


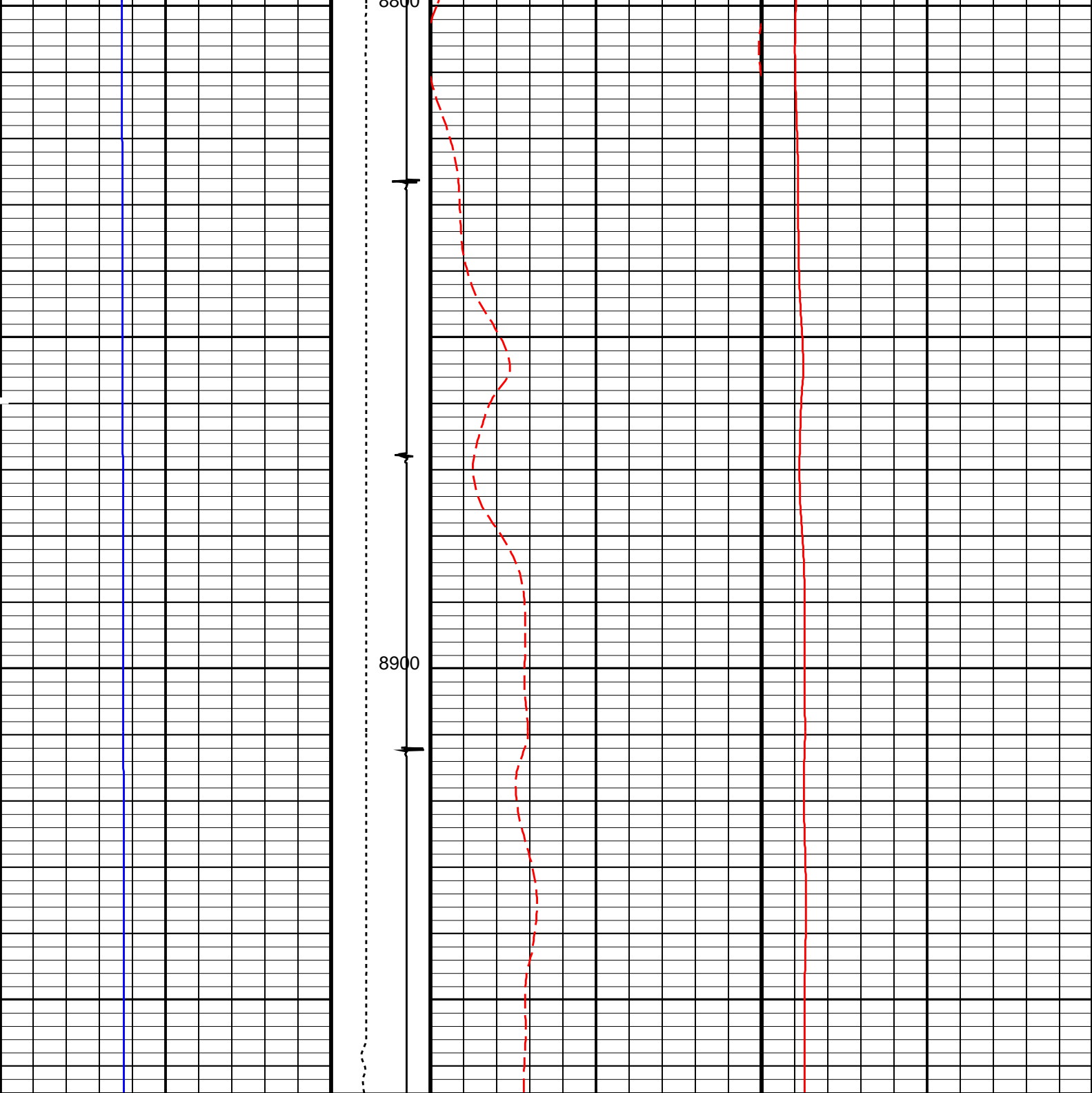












Well Pressure (WPRE) (PSIA)		0	10000
Tension (TENS) (LBF)		0	2000
Well Temperature (WTEP) (DEGF)		0	20
Well Temperature (WTEP) (DEGF)		0	200
Discriminat ed CCL (CCLD)			
3 (V) -1			

PIP SUMMARY

Time Mark Every 60 S

Parameters			
DLIS Name	Description		Value
System and Miscellaneous			

OP System Version: 19C0-187

HBMS-B

SRPC-5214-H2-2012-OP19

Input DLIS Files

DEFAULT

Flip_HBMS_004LUP

PRODUCER

13-Oct-2013 20:55

8973.0 FT

-10.5 FT

Output DLIS Files


DEFAULT

HBMS_007PUP

FN:4

PRODUCER

13-Oct-2013 21:03



REPEAT ANALYSIS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: HMU 6-13AA (J6SEB)

Input DLIS Files

DEFAULT

HBMS_007PUP

FN:4

PRODUCER

13-Oct-2013 21:03

8964.0 FT

-19.5 FT

Output DLIS Files

DEFAULT

HBMS_008PUP

FN:5

PRODUCER

13-Oct-2013 21:10

8960.5 FT

8456.5 FT

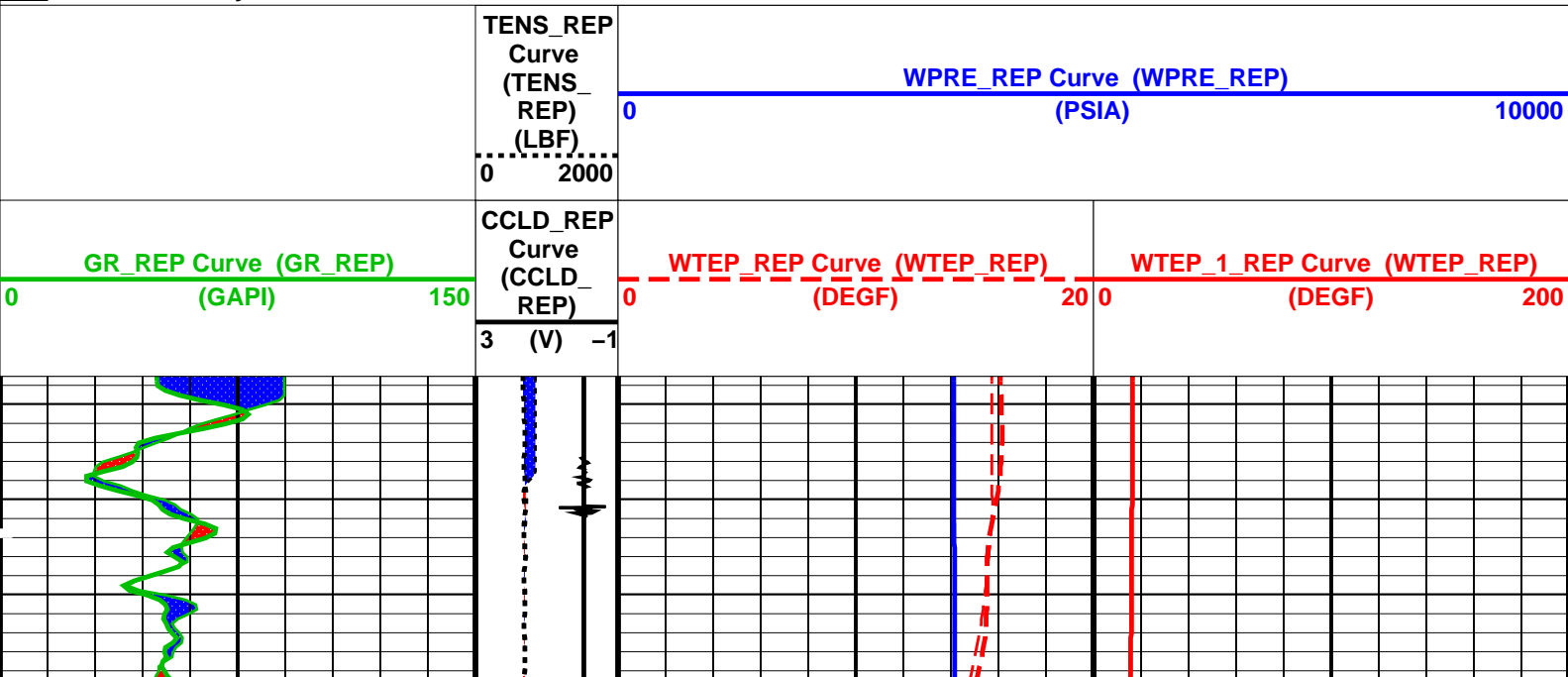
OP System Version: 19C0-187

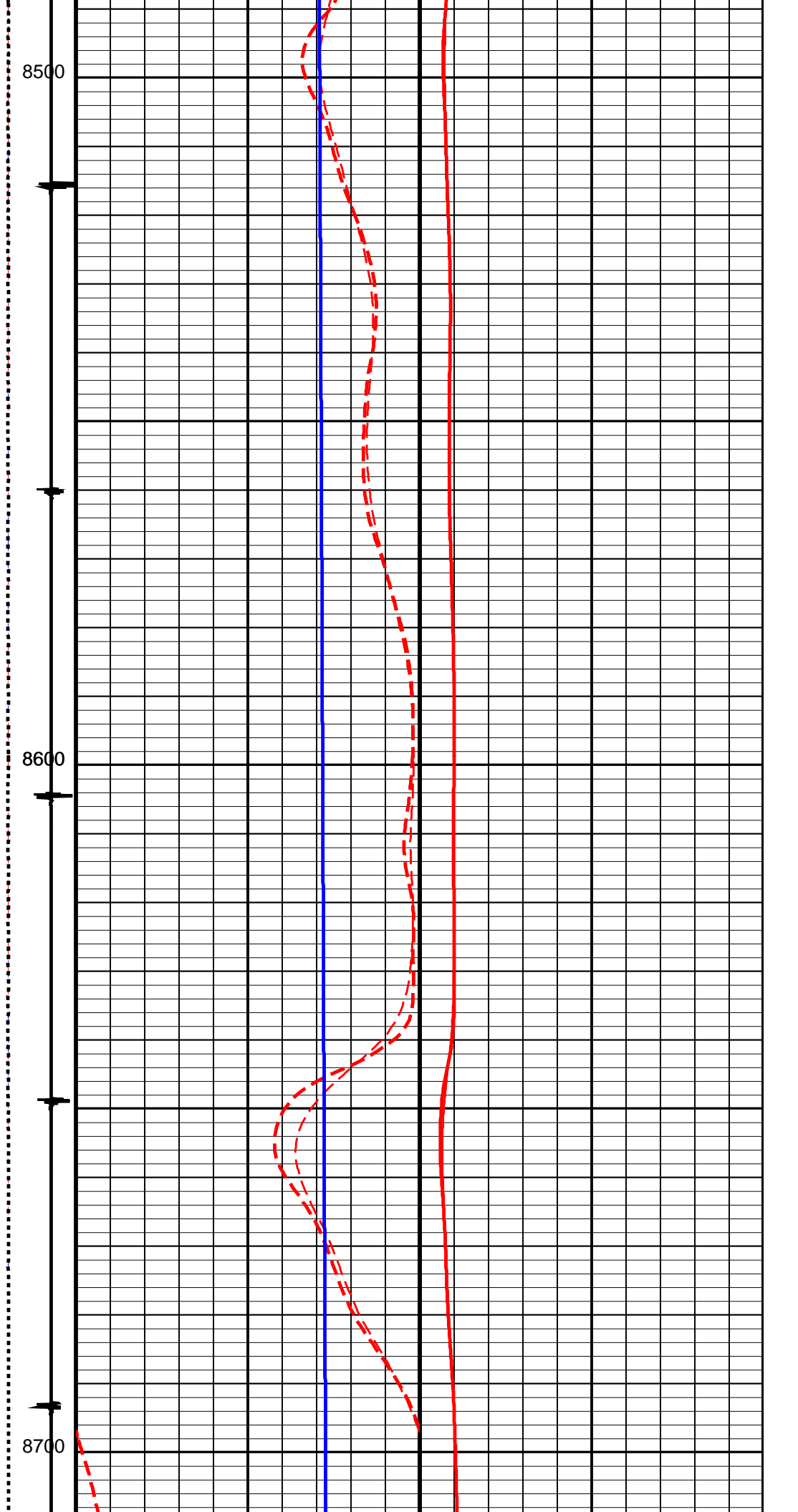
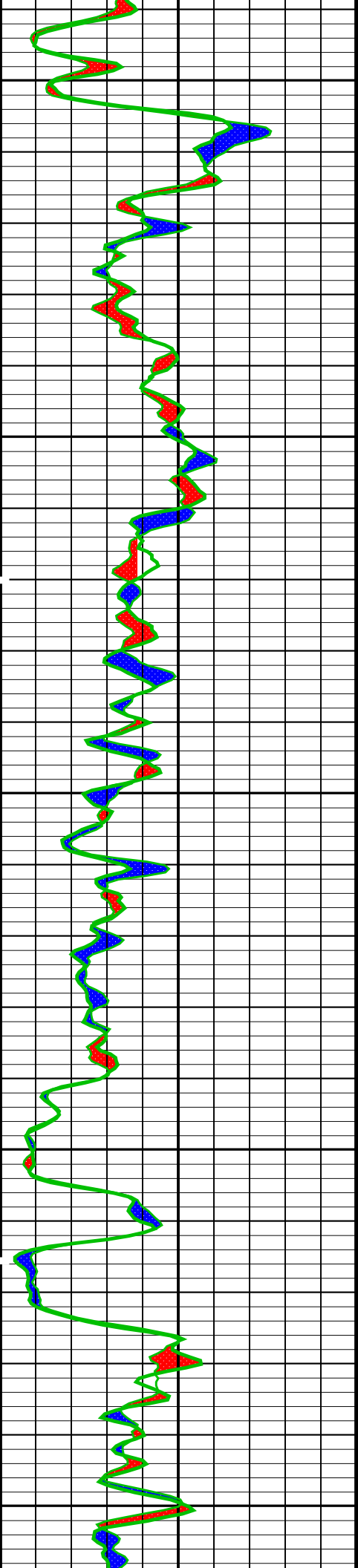
HBMS-B

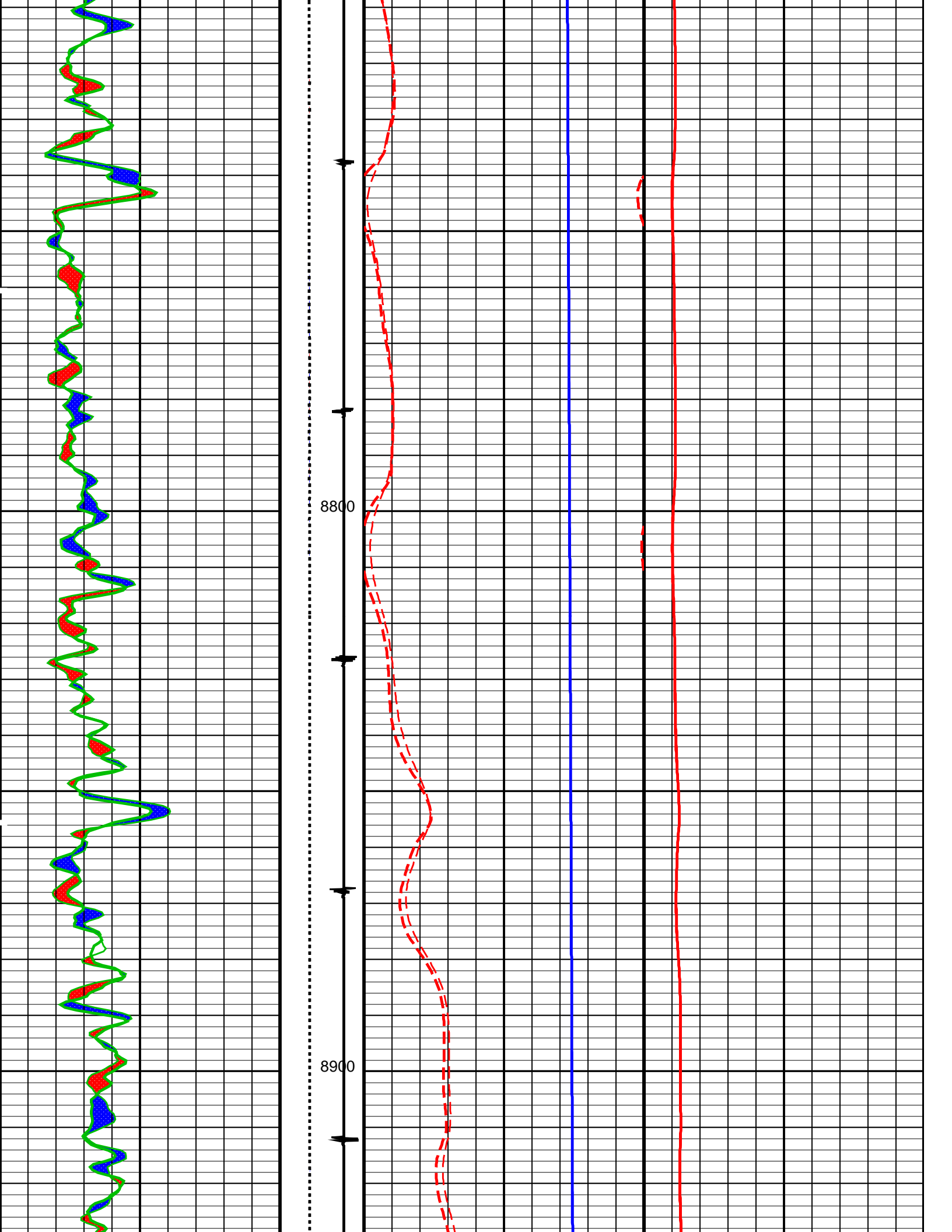
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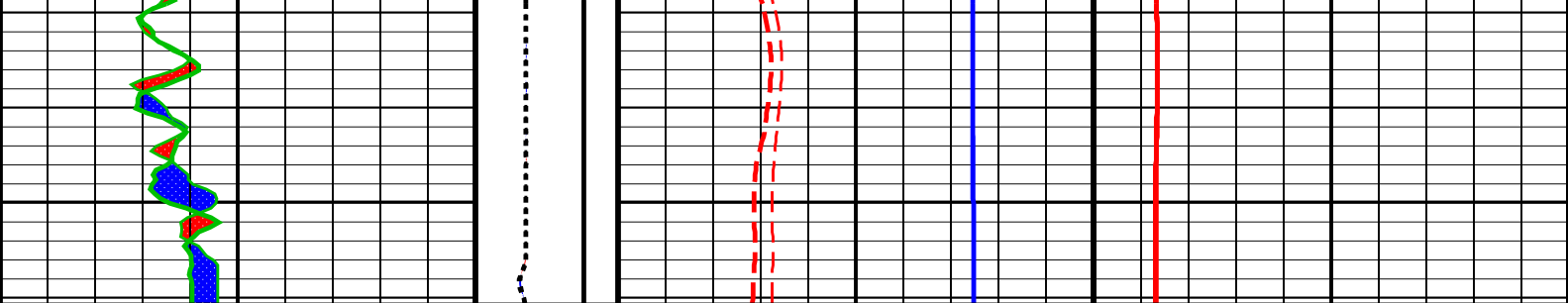
PIP SUMMARY

 Time Mark Every 60 S









GR_REP Curve (GR_REP) (GAPI)		CCLD_REP Curve (CCLD_REP) (V)	WTEP_REP Curve (WTEP_REP) (DEGF)	WTEP_1_REP Curve (WTEP_REP) (DEGF)
0	150	3 -1	0 20	0 200
		TENS_REP Curve (TENS_REP) (LBF)	WPRES_REP Curve (WPRES_REP) (PSIA)	
		0 2000	0 10000	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
System and Miscellaneous		
DO	Depth Offset for Playback	-9.0 FT
DORL	Depth Offset for Repeat Analysis	0.0 FT
PP	Playback Processing	RECOMPUTE

Format: TEMP LOG_REP Vertical Scale: 5" per 100' Graphics File Created: 13-Oct-2013 21:10

OP System Version: 19C0-187

HBMS-B SRPC-5214-H2-2012-OP19

Input DLIS Files

DEFAULT	HBMS_007PUP	FN:4	PRODUCER	13-Oct-2013 21:03	8964.0 FT	-19.5 FT
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Output DLIS Files

DEFAULT	HBMS_008PUP	FN:5	PRODUCER	13-Oct-2013 21:10
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Schlumberger

HBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC
Field: MAMM CREEK
Well: HMU 6-13AA (J6SEB)
Run date: 13-Oct-2013

Tool: PSP
Sub Type: PBMS
Sensor: GR

PBMS Gamma Ray
Sonde Serial NB RESISTORS FOR GR SENSOR N.34473,TOOL HBMS–BA2884. SENSOR S/N:
Sensor Serial NB 34473
Calib Date ddmmyy 090506
Matrix Size 12
Coeff CRC 0708

GR HV Rt

	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.190000000000e+04

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	MAMM CREEK	Sub Type:	PBMS
Well:	HMU 6–13AA (J6SEB)	Sensor:	WellTemp RTD
Run date:	13–Oct–2013		

PBMS RTD Well Thermometer
Sonde Serial NB COEFFICIENTS FOR RTD THERMOMETER PBMS–B.2884 S/N:
Sensor Serial NB 2884
Calib Date ddmmyy 290706
Matrix Size 16
Coeff CRC B134

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	–.111322977181E+04	+.870150832462E+03	–.279503665762E+03
	Tt**3	Tt**4	Tt**5
Tt**0	+.449965652060E+02	–.264920434334E+01	0.0

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: HMU 6–13AA (J6SEB)

Run date: 13–Oct–2013

Tool: PSP

Sub Type: PBMS

Sensor: CQG

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR CQG PBMS–B.2884 S/N:

2884

290706

66

CA7A

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc**0	+.746225778248E+04	+.221418944849E–01	–.210426289152E–06
Fc**1	–.104881478055E+01	–.124860716120E–04	–.949662972749E–10
Fc**2	+.872904863754E–06	+.426833452654E–10	+.759423319181E–15
Fc**3	+.239319347612E–11	+.290279345385E–15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

	Fb**3	Fb**4	Fb**5
Fc**0	–.812091932516E–10	–.147717591127E–14	–.150620854654E–19
Fc**1	+.145644303959E–15	+.160803895109E–19	0.0
Fc**2	0.0	0.0	0.0
Fc**3	0.0	0.0	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

2884

290706

66

F21E

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+ .113897507996E+03	– .324965333678E–03	+ .697134219555E–08

Fb**0	+.110001007000E-00	+.021000000070E-00	+.0007101210000E-00
Fb**1	-.601014483015E-02	+.175847256148E-07	+.180458009797E-12
Fb**2	-.317240807344E-07	+.374112953741E-12	+.133653042149E-17
Fb**3	-.236568542854E-12	+.787205826536E-17	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0
<div> <div>Fc**3</div> <div>Fc**4</div> <div>Fc**5</div> </div>			
Fb**0	+.881675188724E-13	-.146952444192E-16	-.415359060767E-21
Fb**1	-.553774805449E-18	-.739378844697E-21	0.0
Fb**2	0.0	0.0	0.0
Fb**3	0.0	0.0	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

2884

290706

16

72C9

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+.310161623072E+05	+.363878692519E-02	+.311171630292E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.277965051815E-10	-.181738305366E-14	-.633170122188E-20

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

2884

290706

16

3E80

Clock Temp Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+.111177101155E+03	-.545261137223E-02	-.112186276799E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	+.756690675632E-11	-.207457772298E-16	-.121623071907E-19

Company: ENCANA OIL & GAS (USA) INC



Well: HMU 6–13AA (J6SEB)
Field: MAMM CREEK
County: GARFIELD
State: COLORADO

TEMPERATURE LOG
CCL