

Company: ENCANA OIL & GAS (USA) INC

Well: HMU 6-15AA (J6SEB)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

TEMPERATURE LOG
CCL – TEMPERATURE

County:	GARFIELD		
Field:	MAMM CREEK		
Location:	SHL:1910' FSL & 1885' FEL		
Well:	HMU 6-15AA (J6SEB)		
Company:	ENCANA OIL & GAS (USA) INC		
	LOCATION		
	SHL:1910' FSL & 1885' FEL BHL: 655' FSL & 1410' FEL	Elev.: K.B. 7165.00 ft G.L. 7143.00 ft D.F. 7164.00 ft	
	Permanent Datum: _____ Log Measured From: KELLY BUSHING	GROUND LEVEL _____ Elev.: 7143.00 ft	
	Drilling Measured From: KELLY BUSHING	22.00 ft above Perm. Datum	
Logging Date	31-Aug-2013		
Run Number	1		
Depth Driller	8846 ft		
Schlumberger Depth	8689 ft		
Bottom Log Interval	8689 ft		
Top Log Interval	0 ft		
Casing Fluid Type	FRESH WATER		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	0 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.750 in		
From	22 ft		
To	8846 ft		
Casing/Tubing Size	4.500 in		
Weight	11.6 lbm/ft		
Grade			
From	22 ft		
To	8740 ft		
Maximum Recorded Temperatures	225 degF		
Logger On Bottom	31-Aug-2013	15:45	
Unit Number	338	GRAND JUNCTION	
Recorded By	JASON BARRY		
Witnessed By	KIRBY BURCHETT		

	Run 1	Run 2	Run 3
PVT DATA			
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 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: 16-JUL-2013 14:30:54

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6217	Serial Number:	5006	Serial Number:	112135
Calibration Date:	6-26-2012	Calibration Date:	07-16-2013	Length:	20000 FT
Calibrator Serial Number:		Calibrator Serial Number:		Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	1	Calibration RMS:	6		
Wheel Correction 2:	-3	Calibration Peak Error:	15		

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 POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SWPT 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	OTHER SERVICES2
OS1: NONE	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 15:00	
TIME ON BOTTOM: 15:45	
EXIT TIME: 16:15	

MAX RECORDED TEMPERATURE: 225 DEGF	
MAX RECORDED PRESSURE: 3666 PSIA	
SHORT JOINTS: 6577 FT – 6597 FT & 7569 FT – 7589 FT	
CREW: J BARRY, K BOZARTH	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

RUN 1			RUN 2		
SERVICE ORDER #:		C920–00120	SERVICE ORDER #:		
PROGRAM VERSION:		19C0–187	PROGRAM VERSION:		
FLUID LEVEL:		0 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT

WITM–A
PSC_16MHZ

DOWNHOLE EQUIPMENT

MH–22

MH–22

AH–38

Detail MT
TelStatus
CTEM

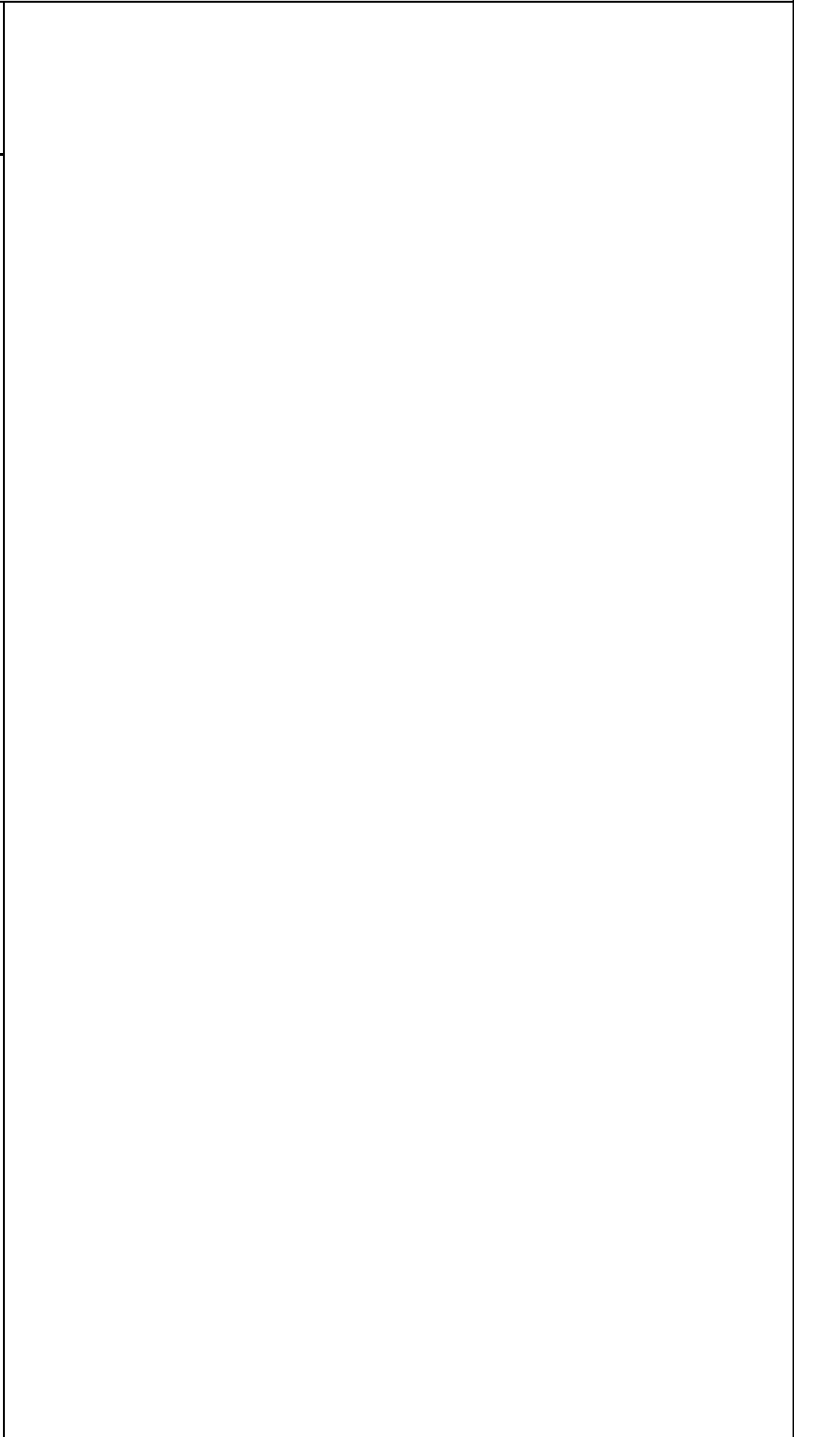
HBMS–B
PSC–A 2880
HUDH–A 2880
HSTC–A
HBMC–A
GR
CCL
HBMC
HTPS–A 2880
HCQG_E_Mano
RTD Thermometer

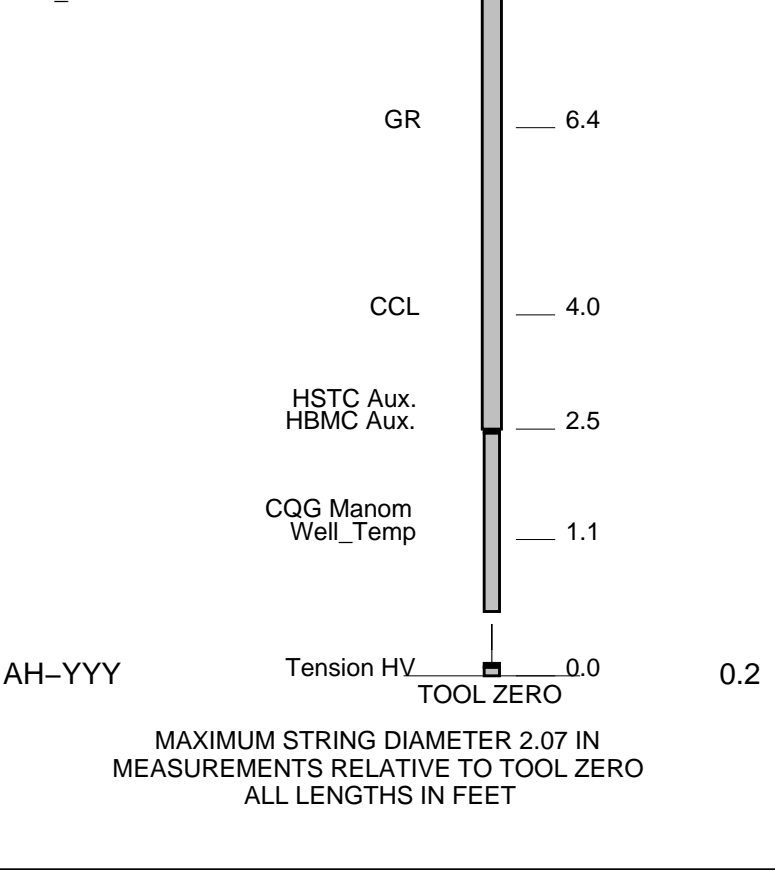
11.3

13.1

11.6

11.3



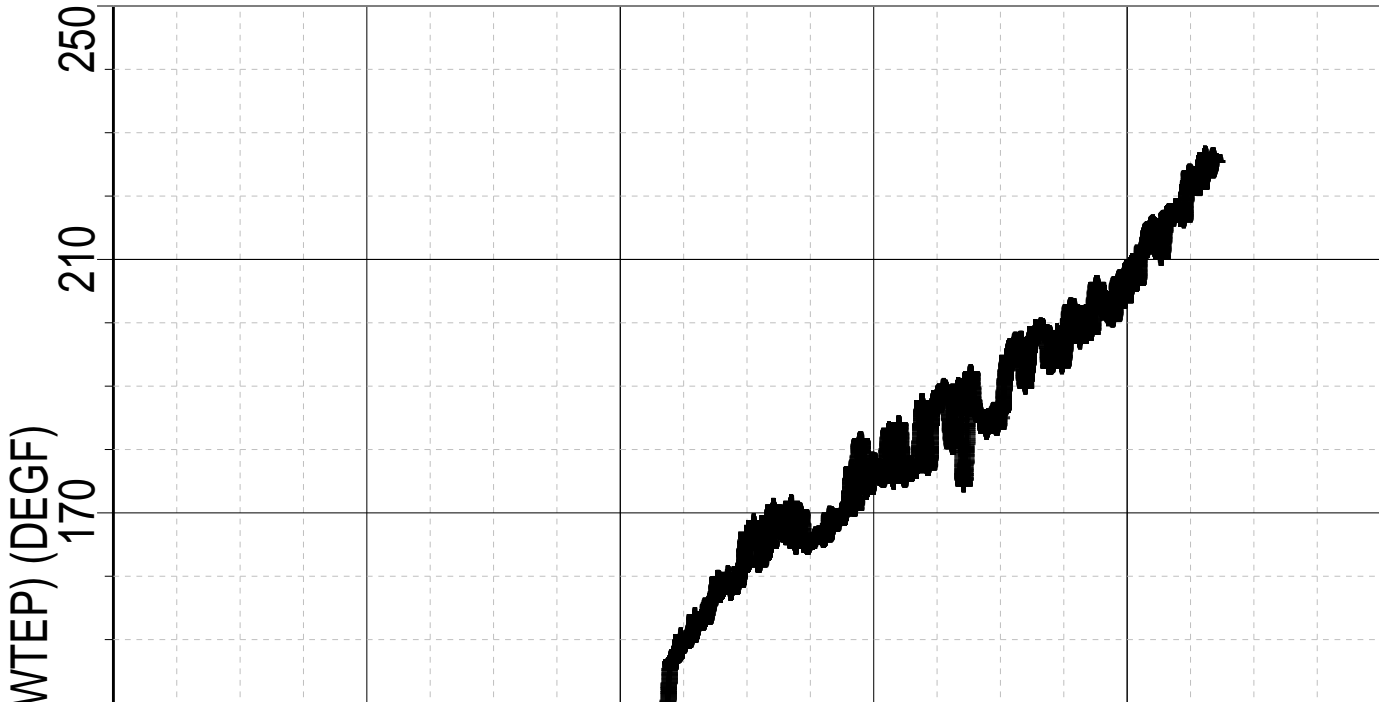


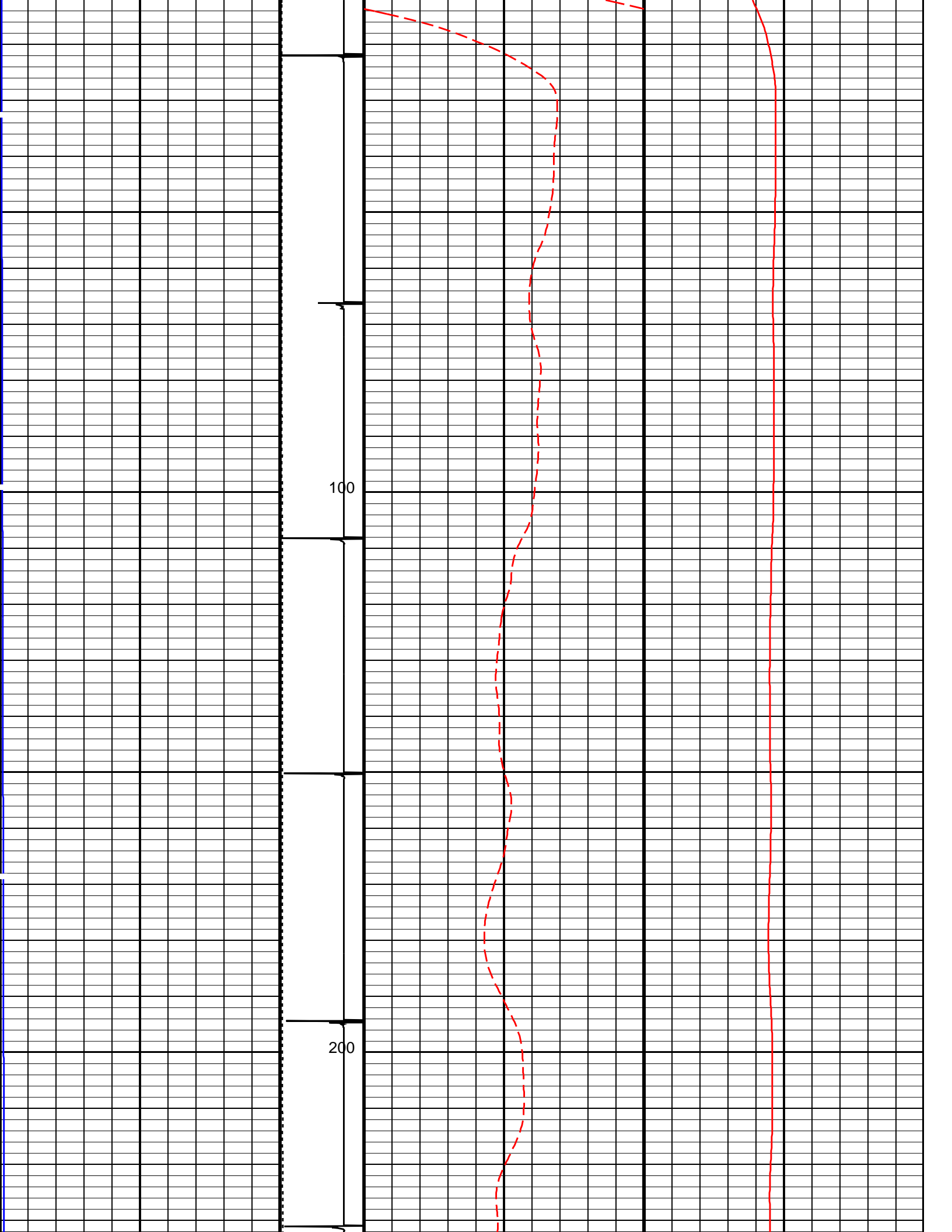
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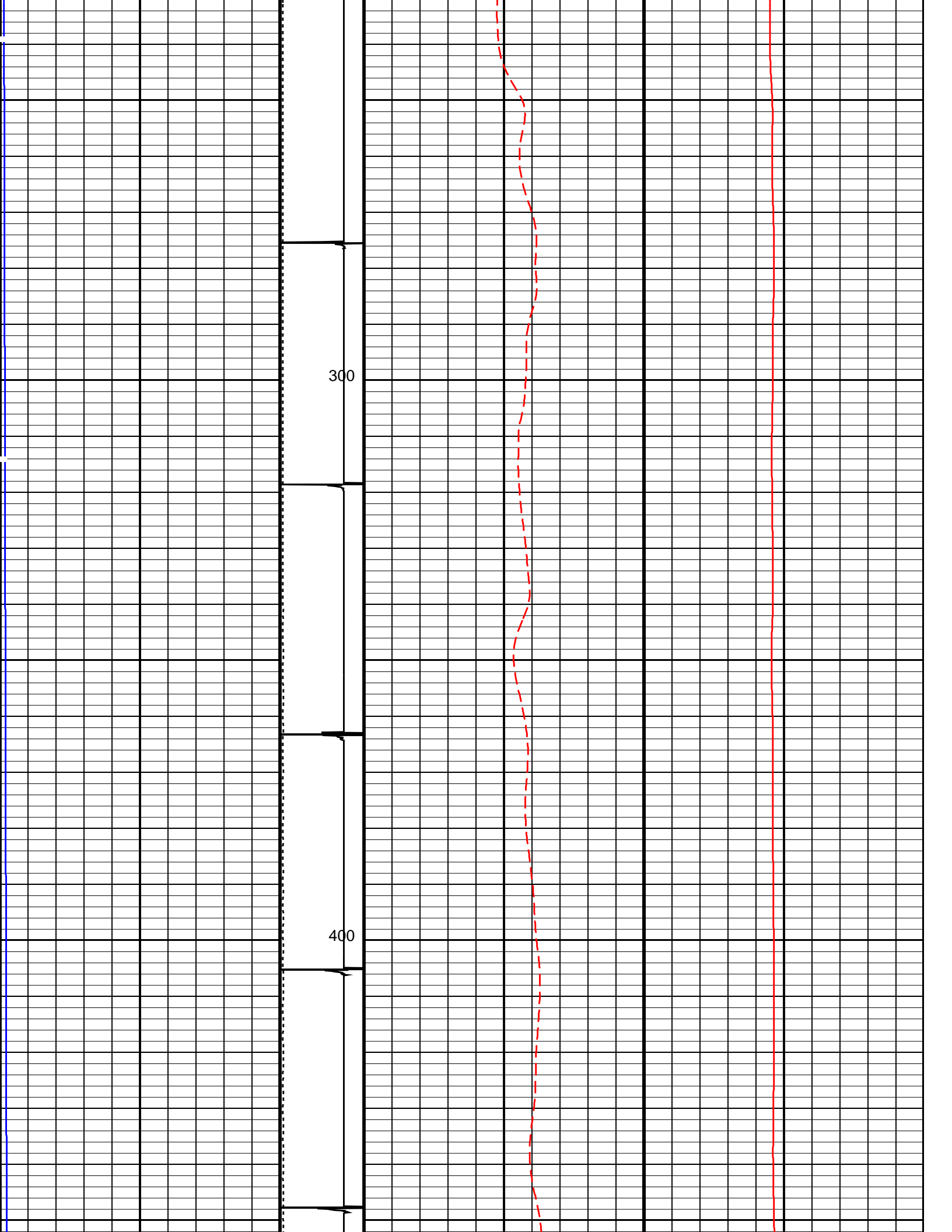
TEMPERATURE PLOT

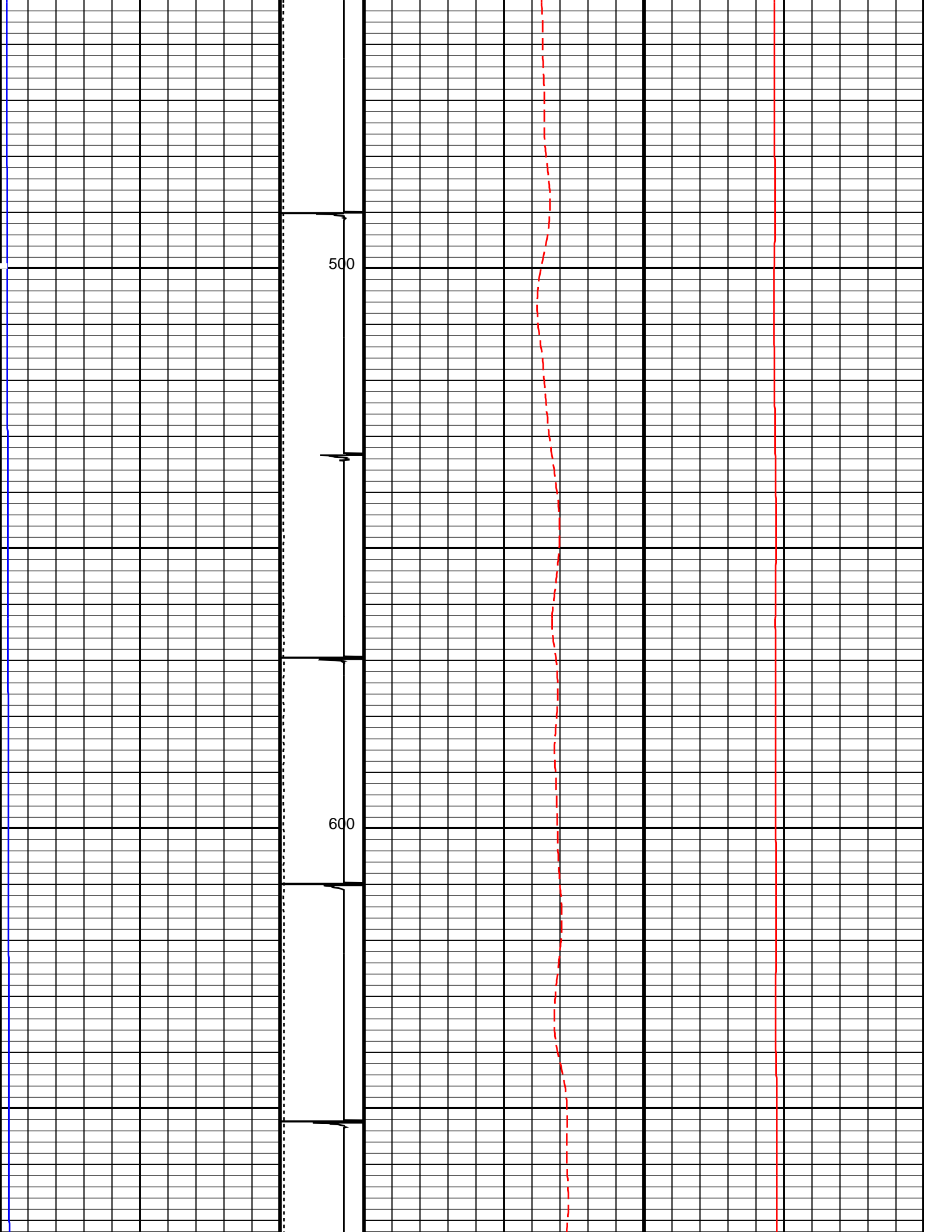
MAXIS Field Log

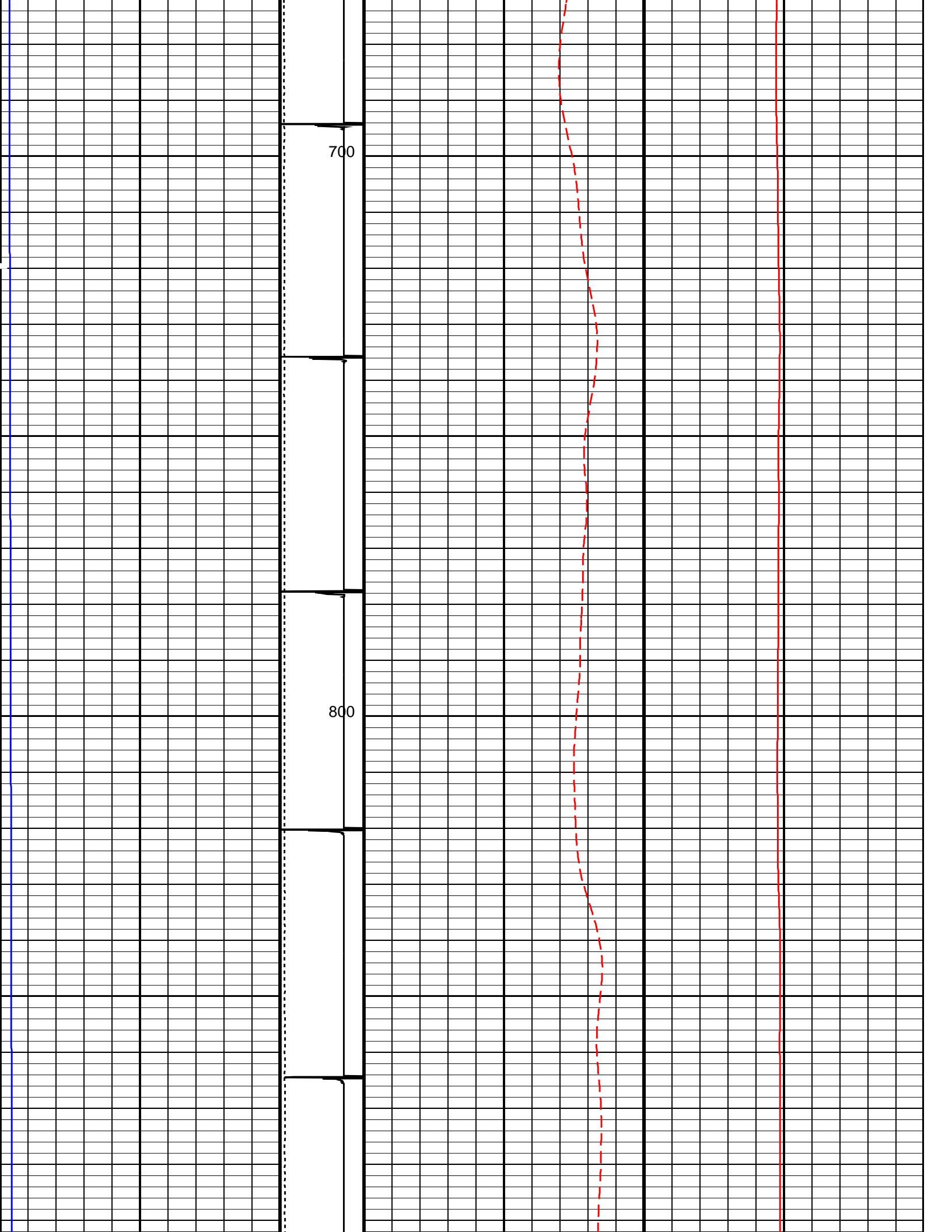
Index: 8704.5 – -6.5 FT

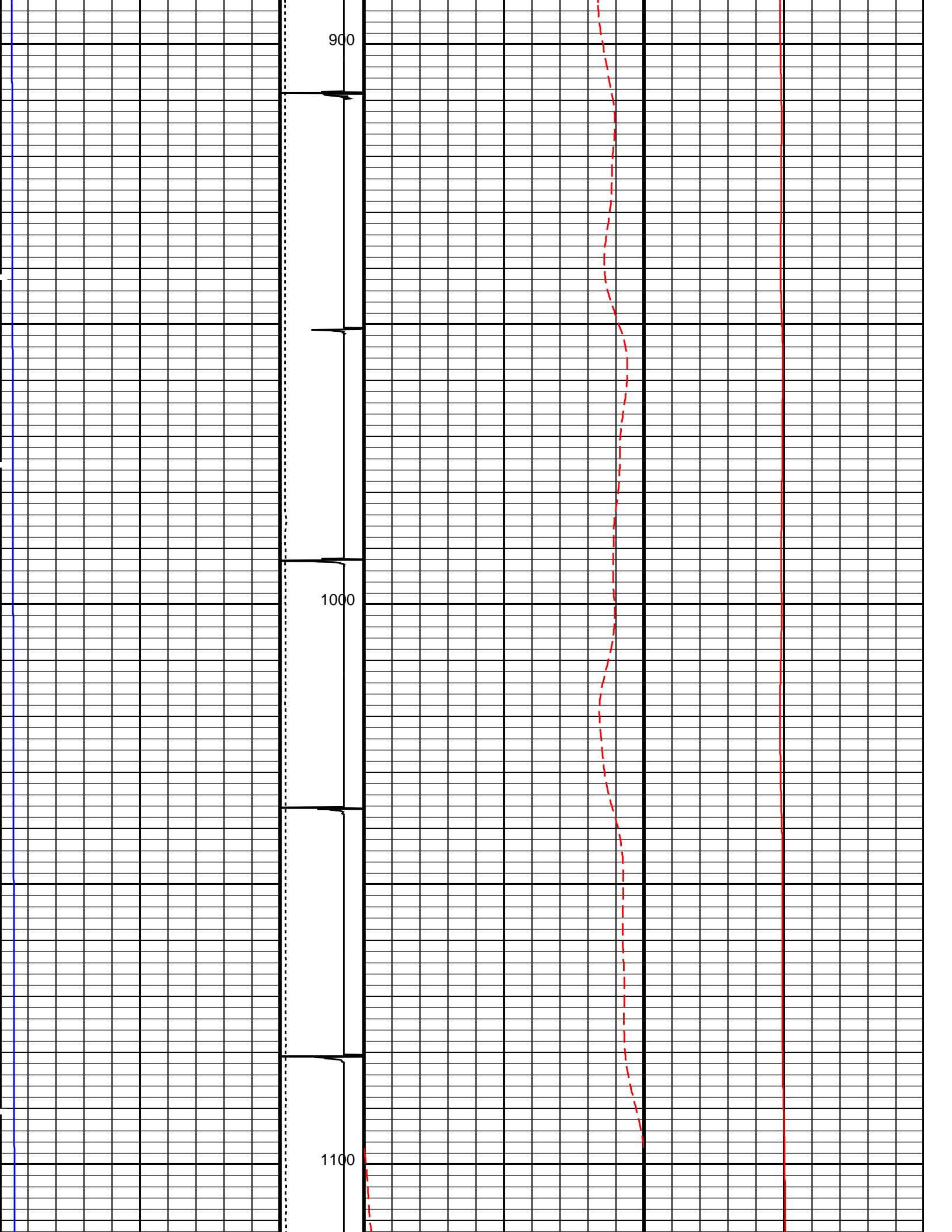


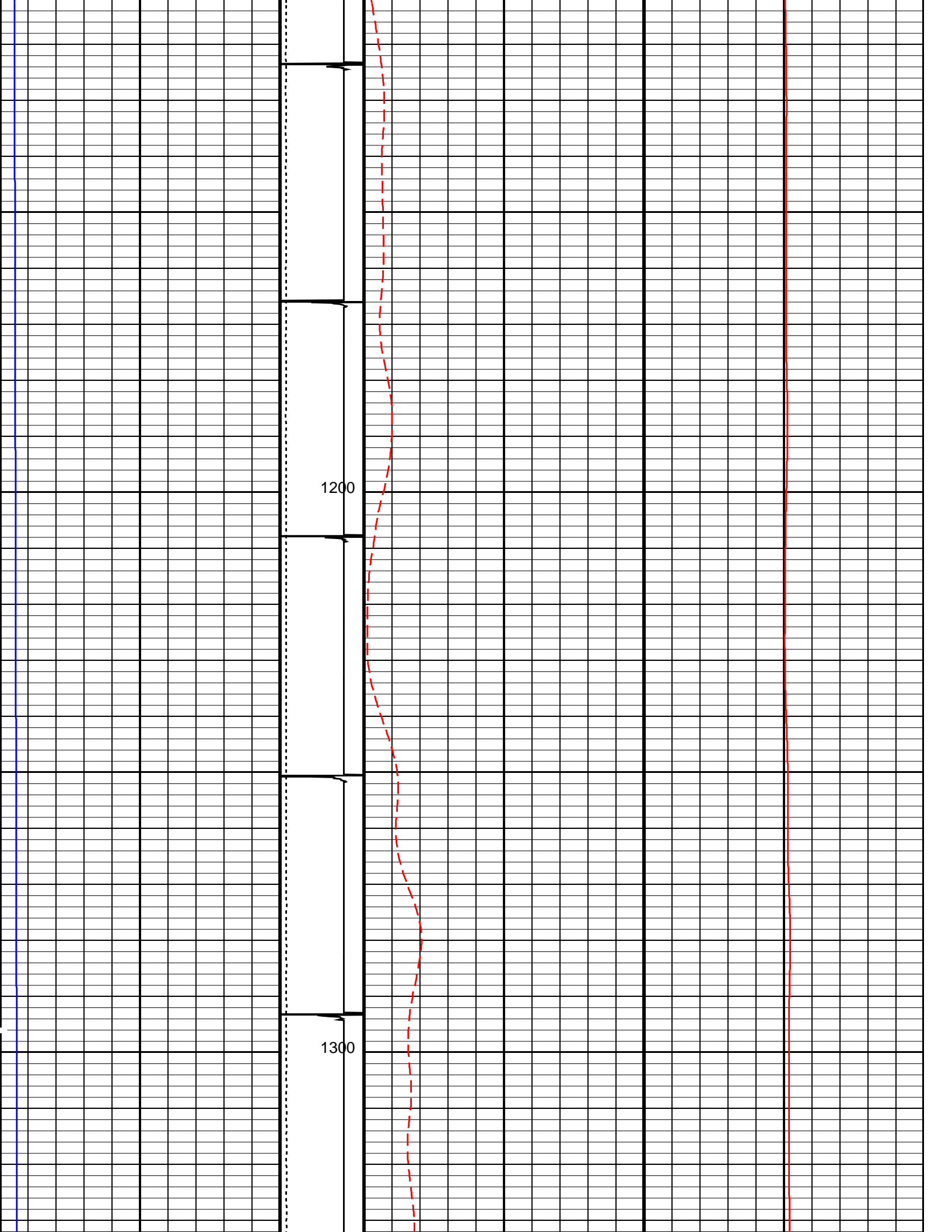


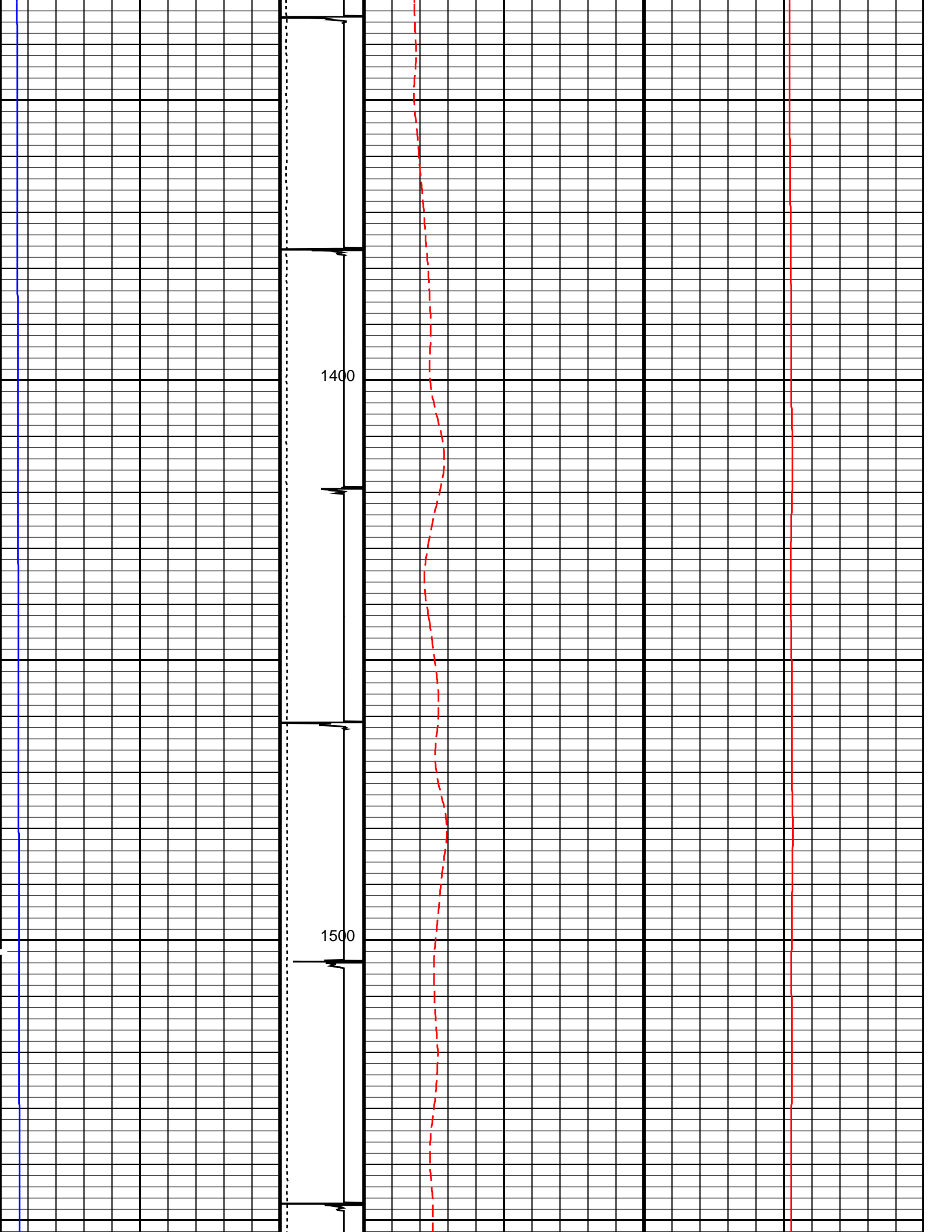


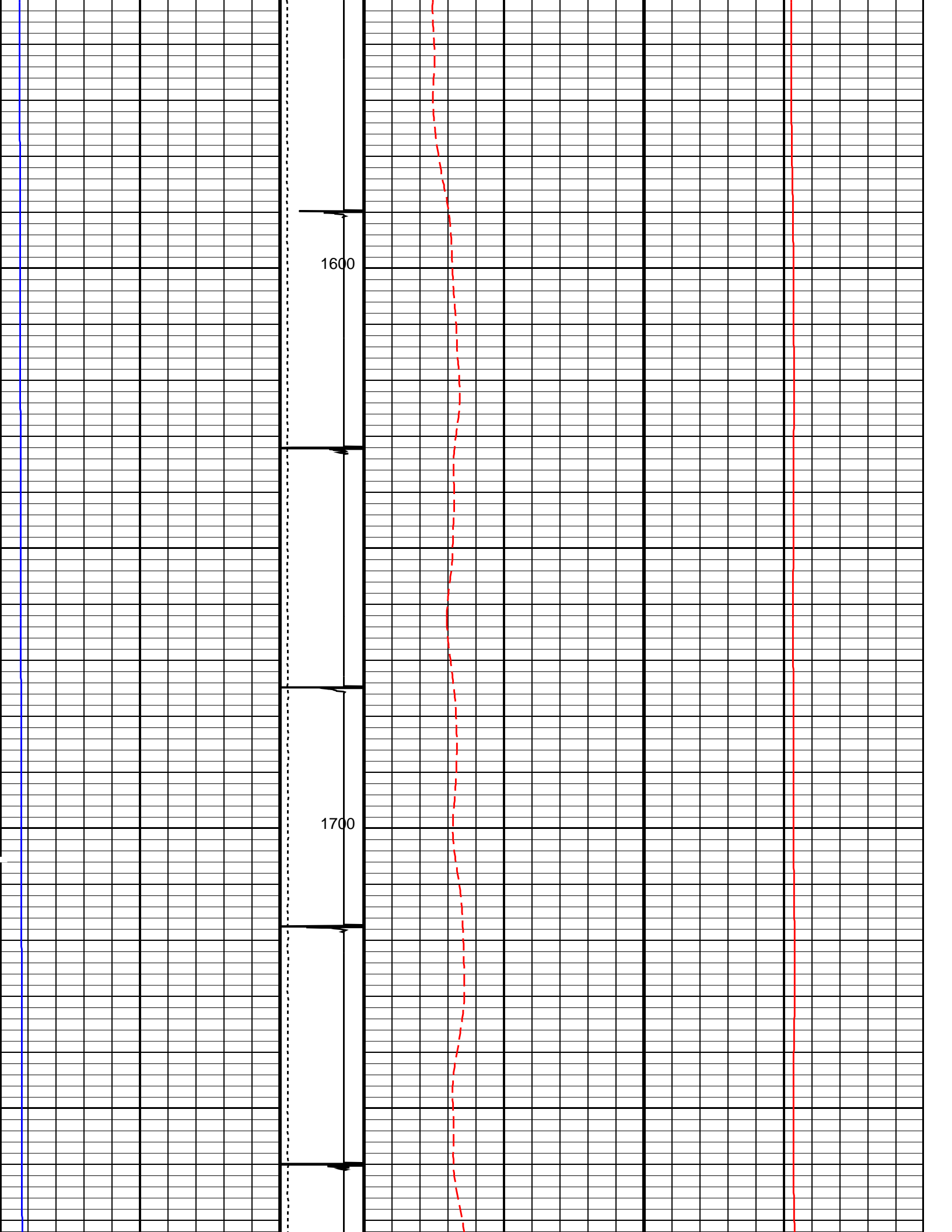


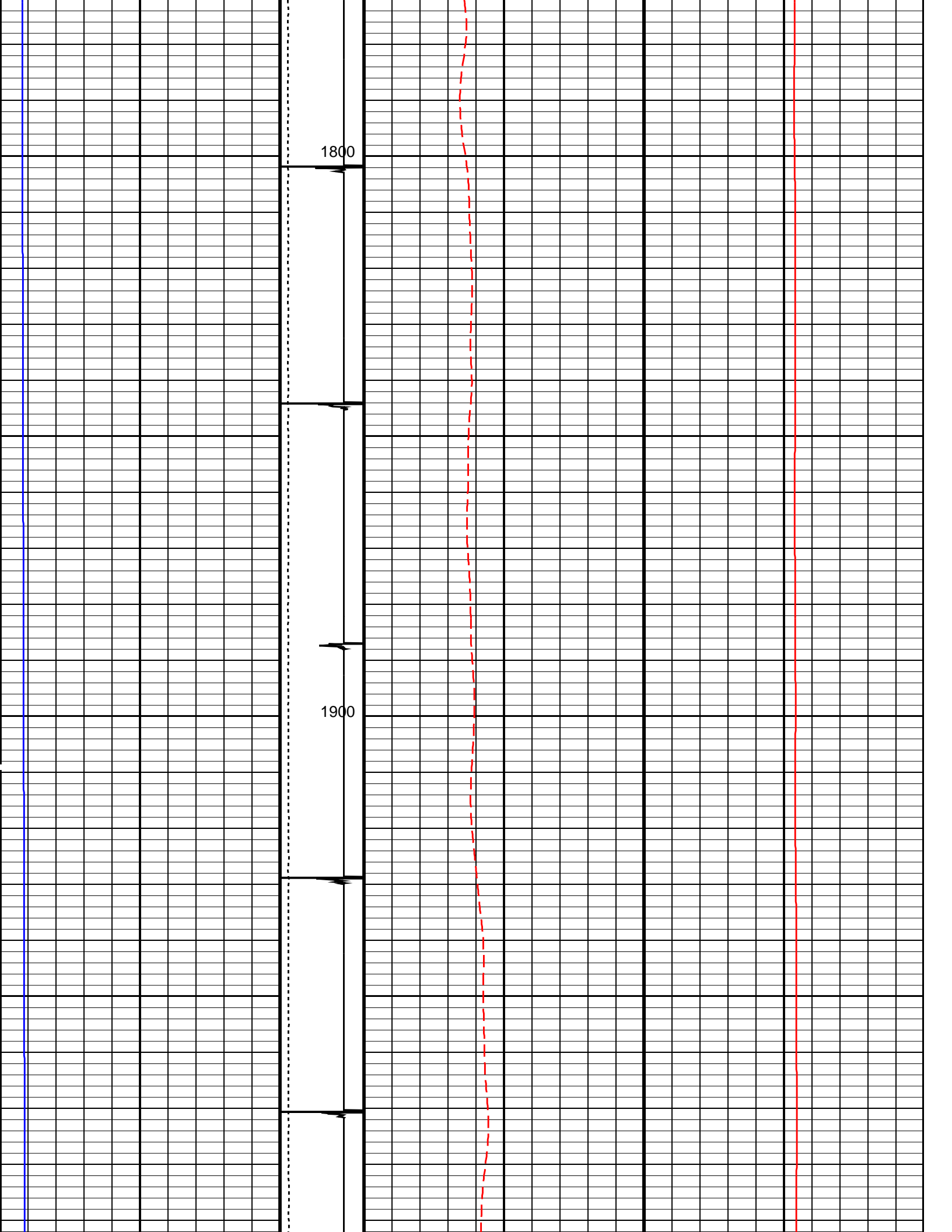


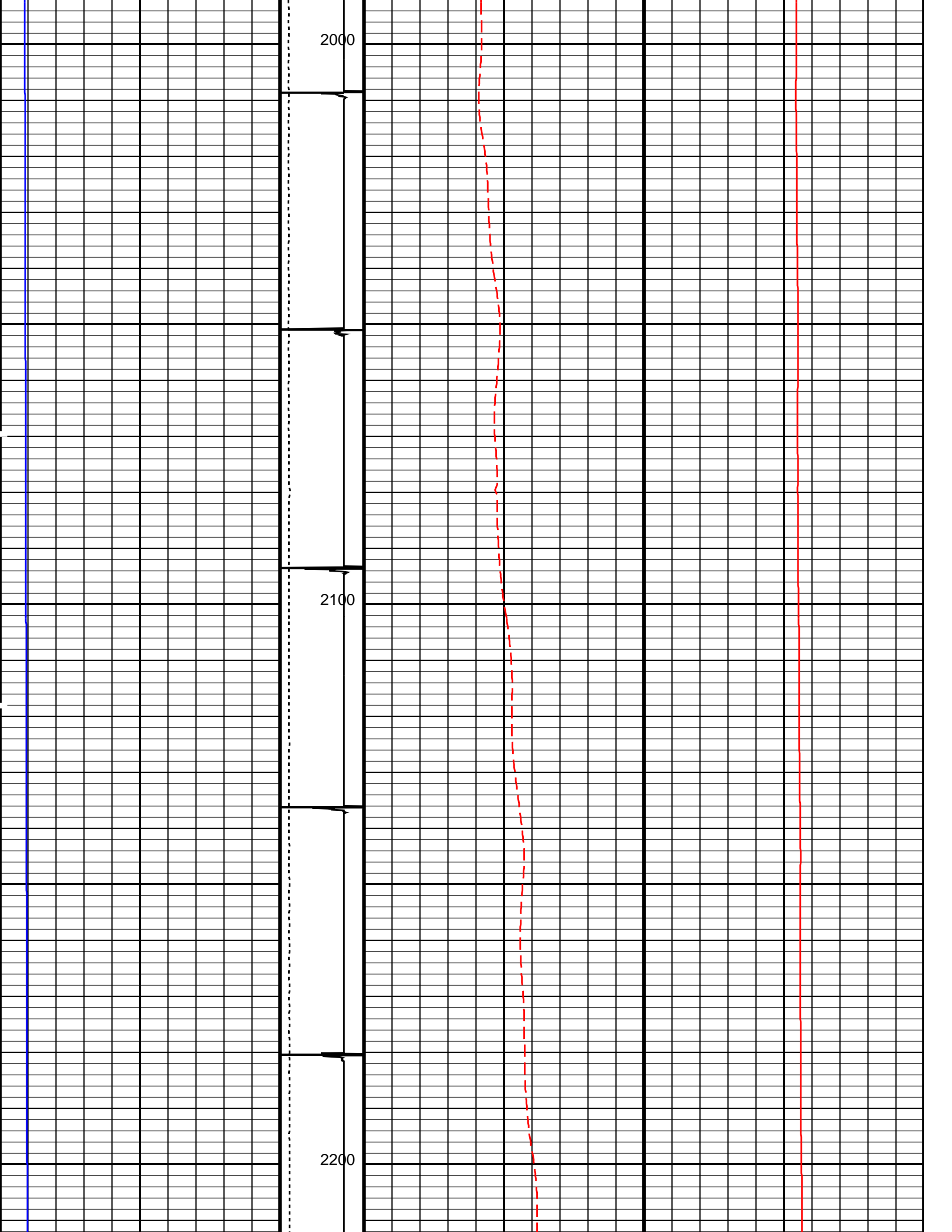


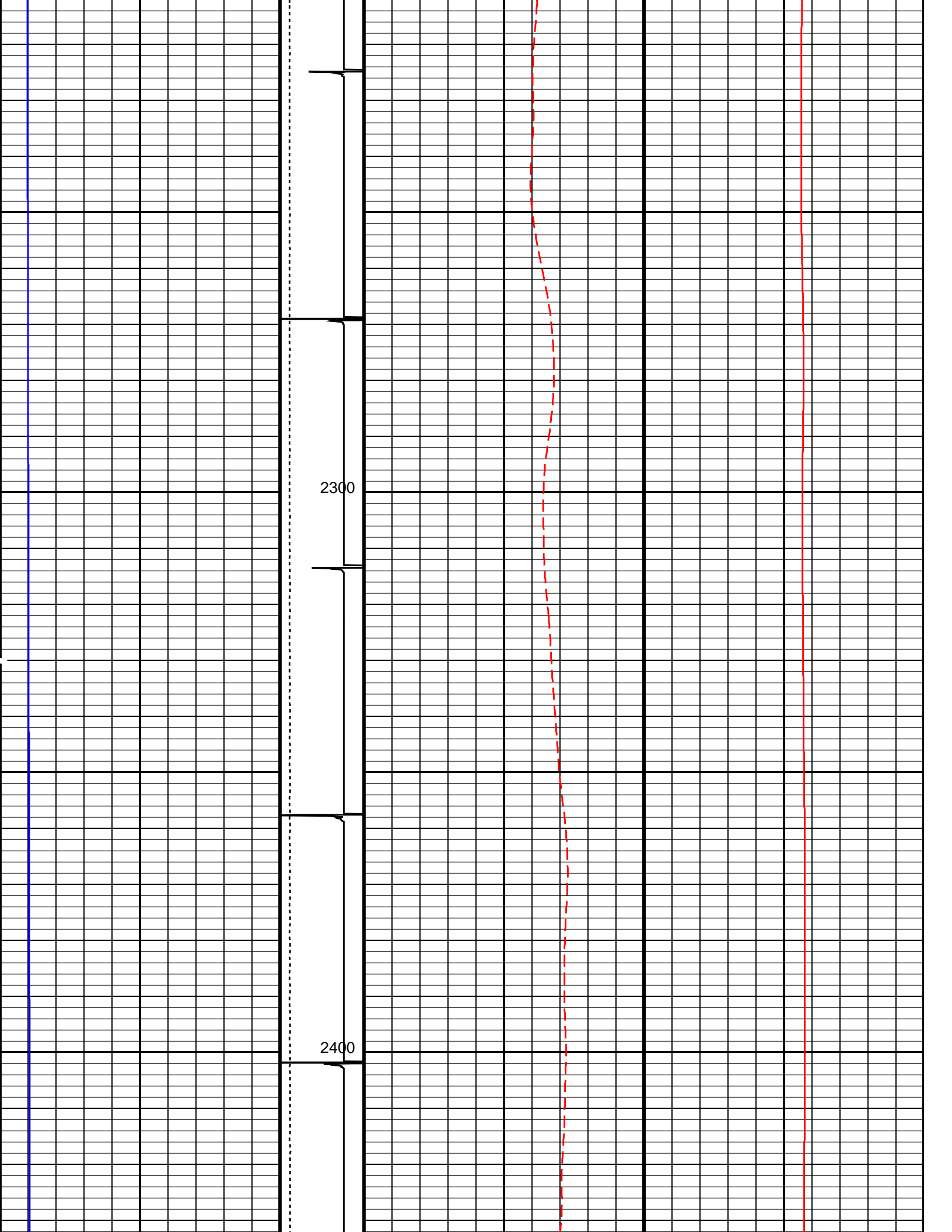


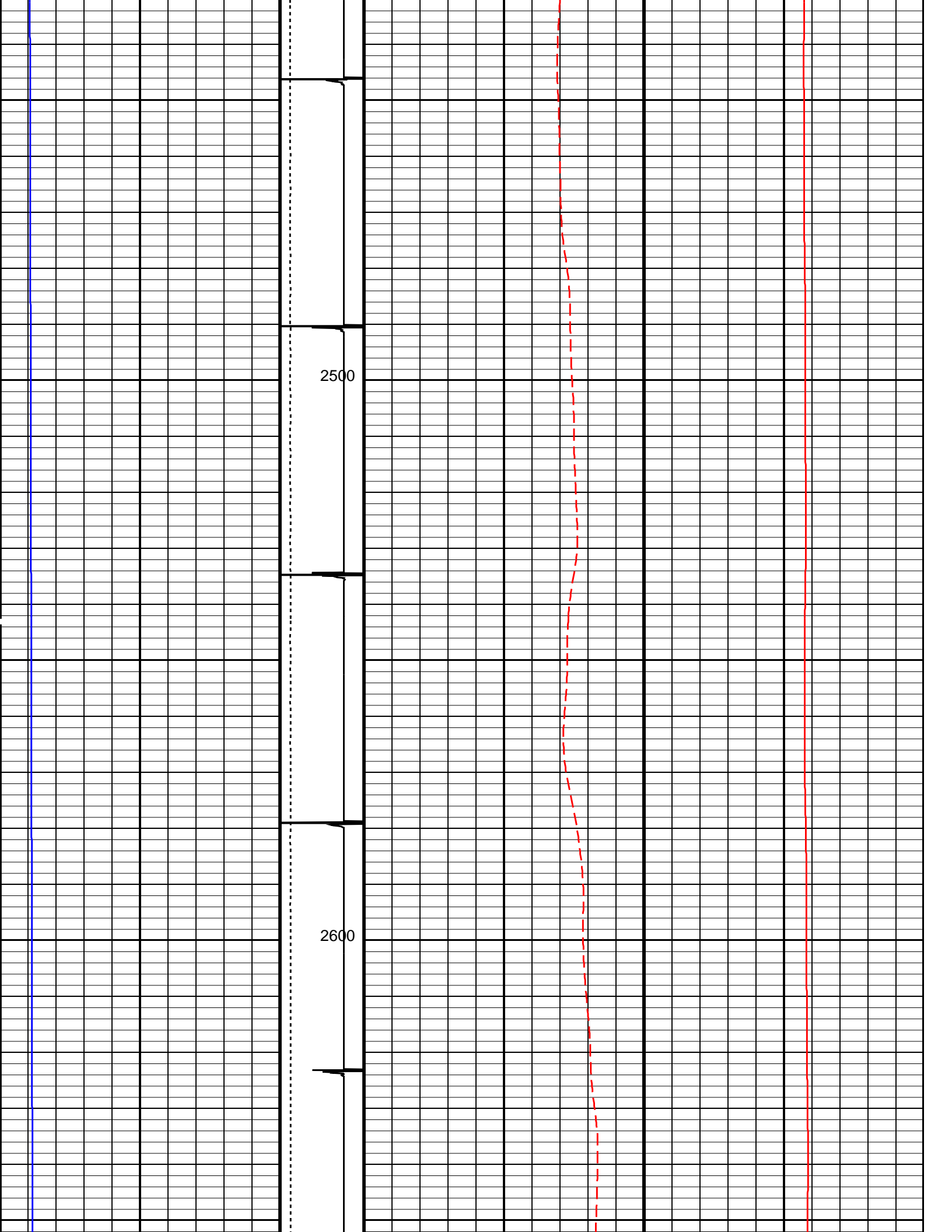


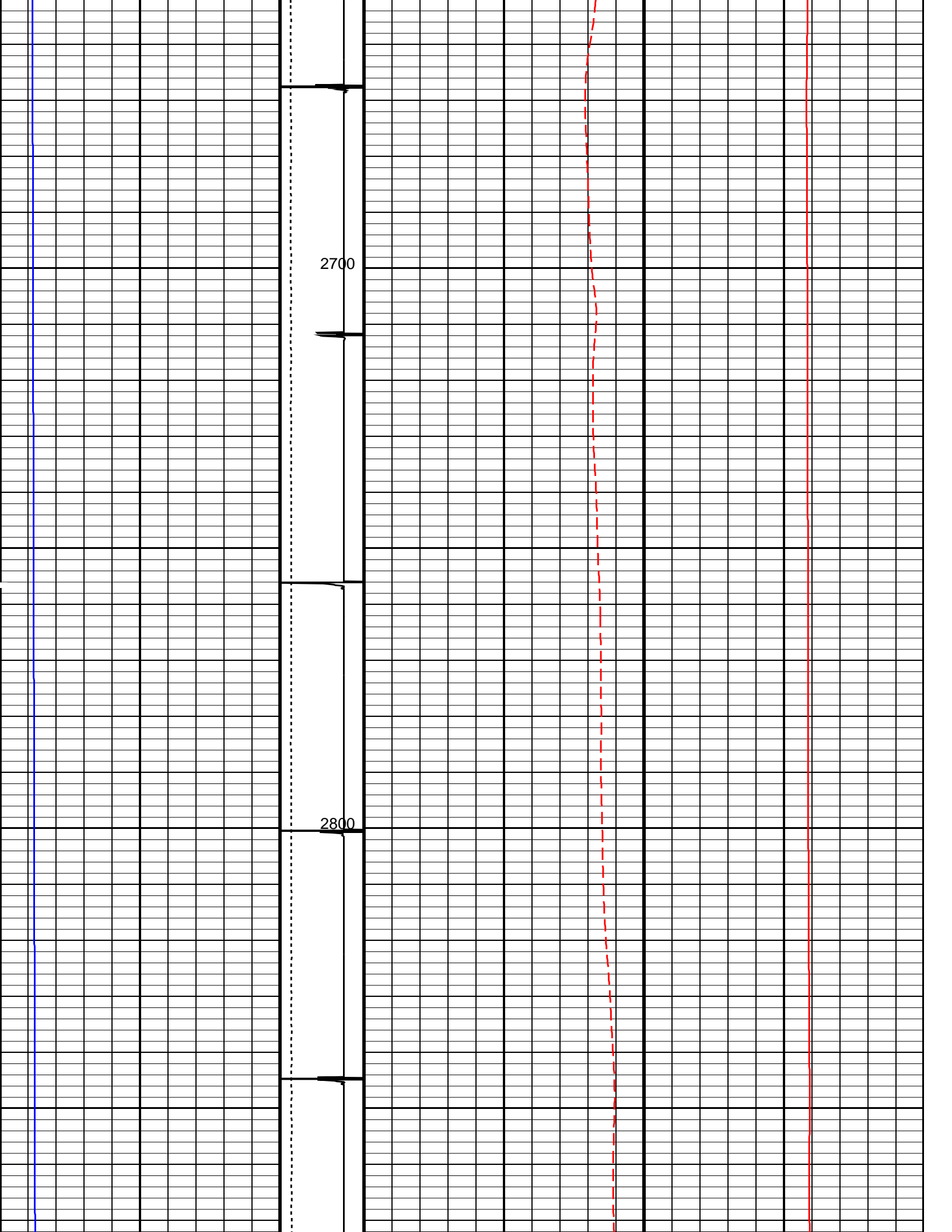


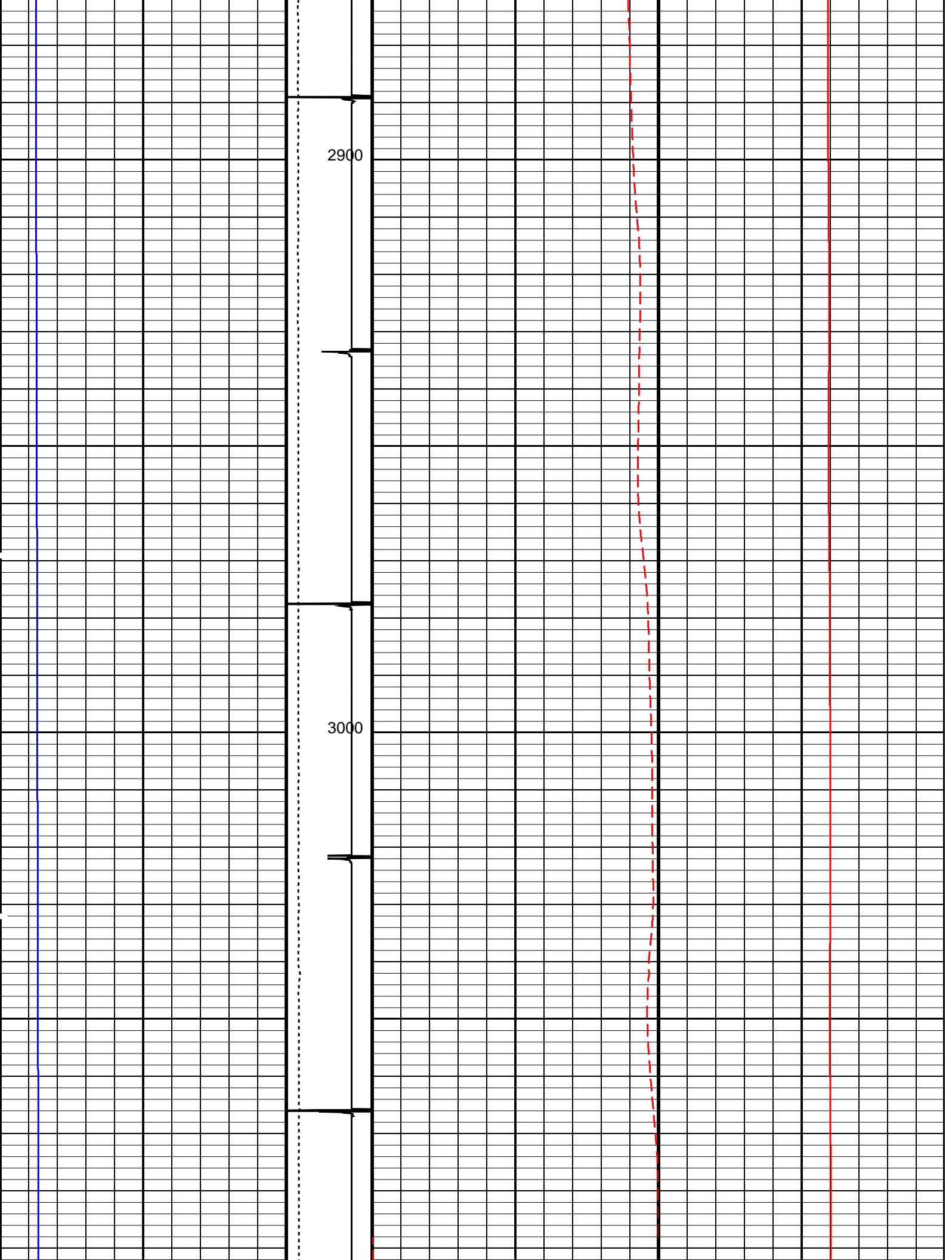


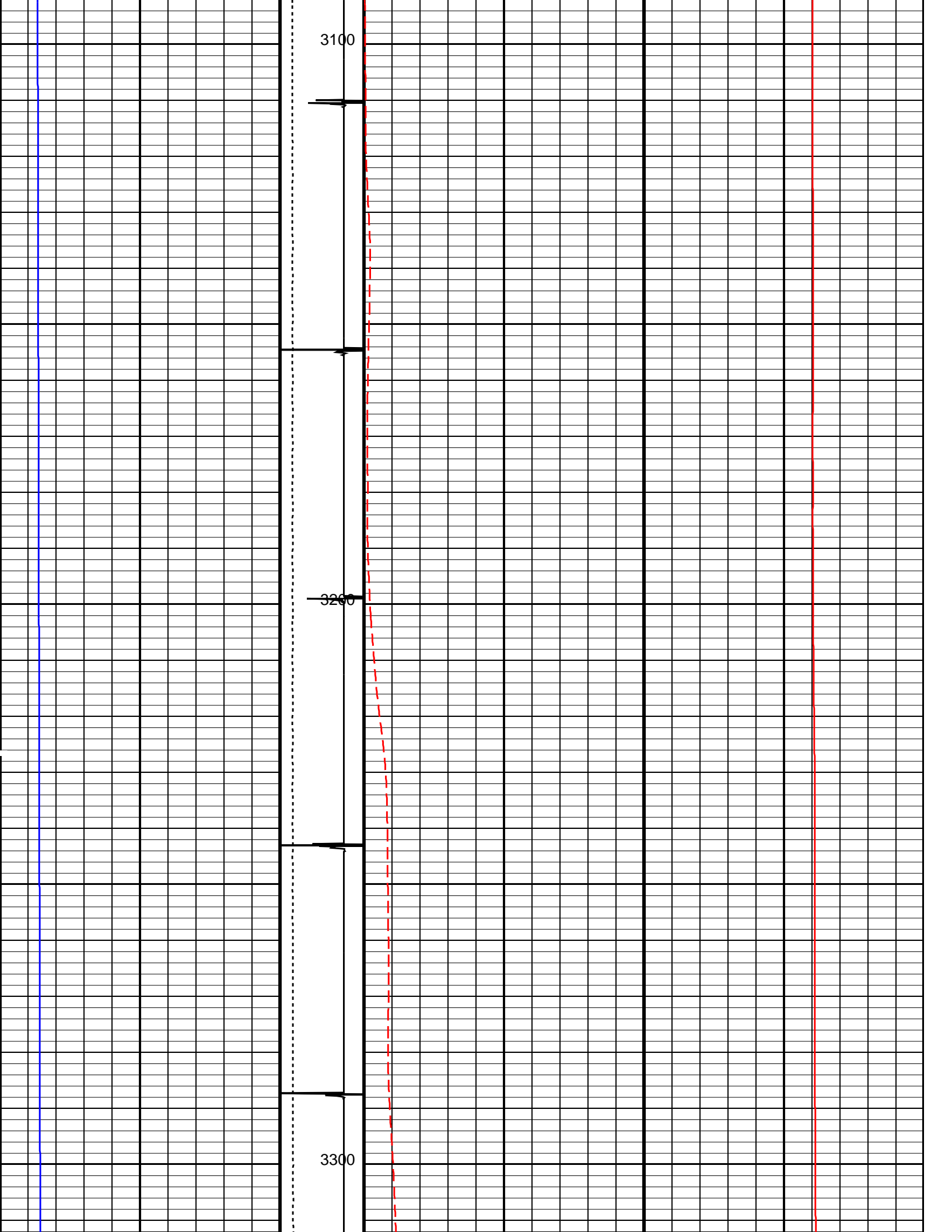


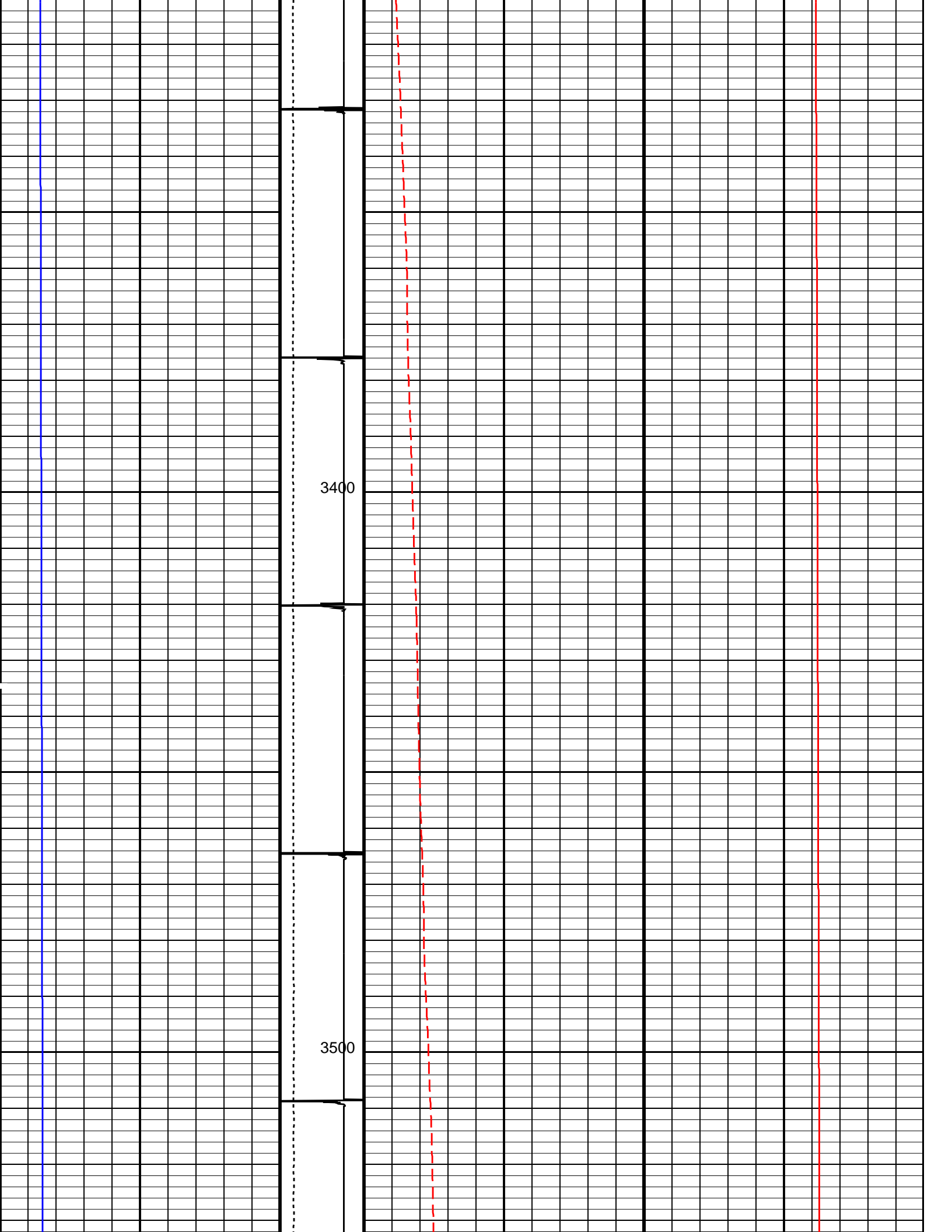


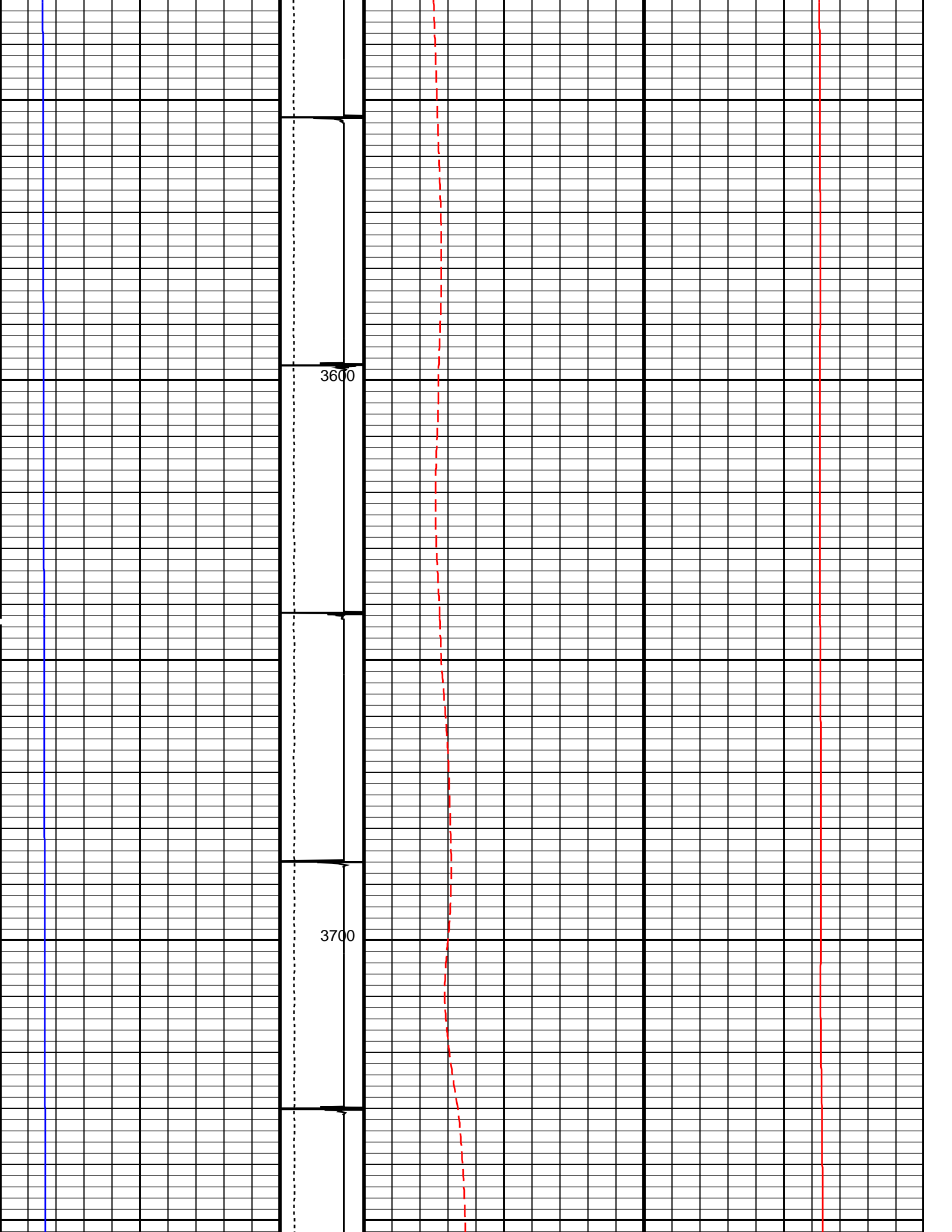


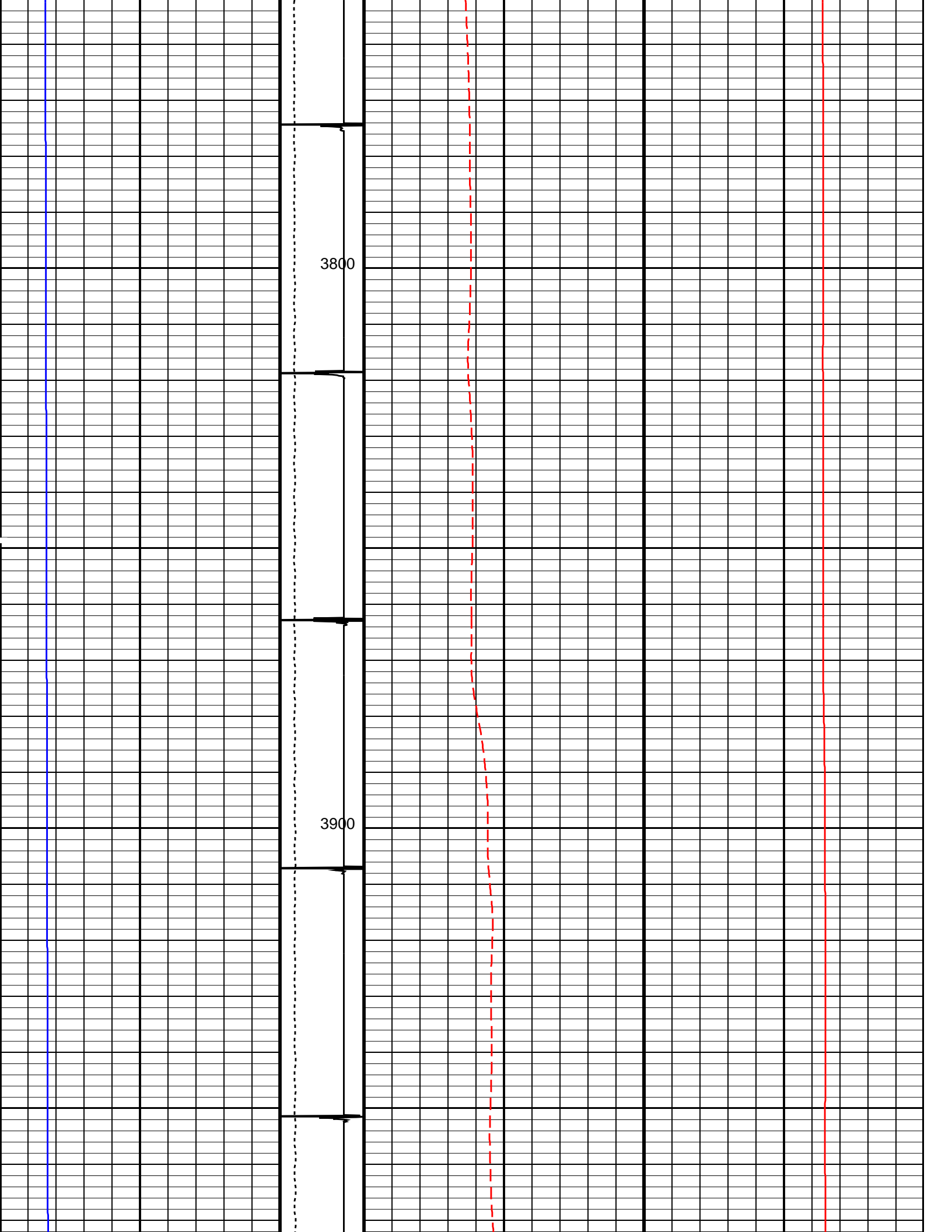


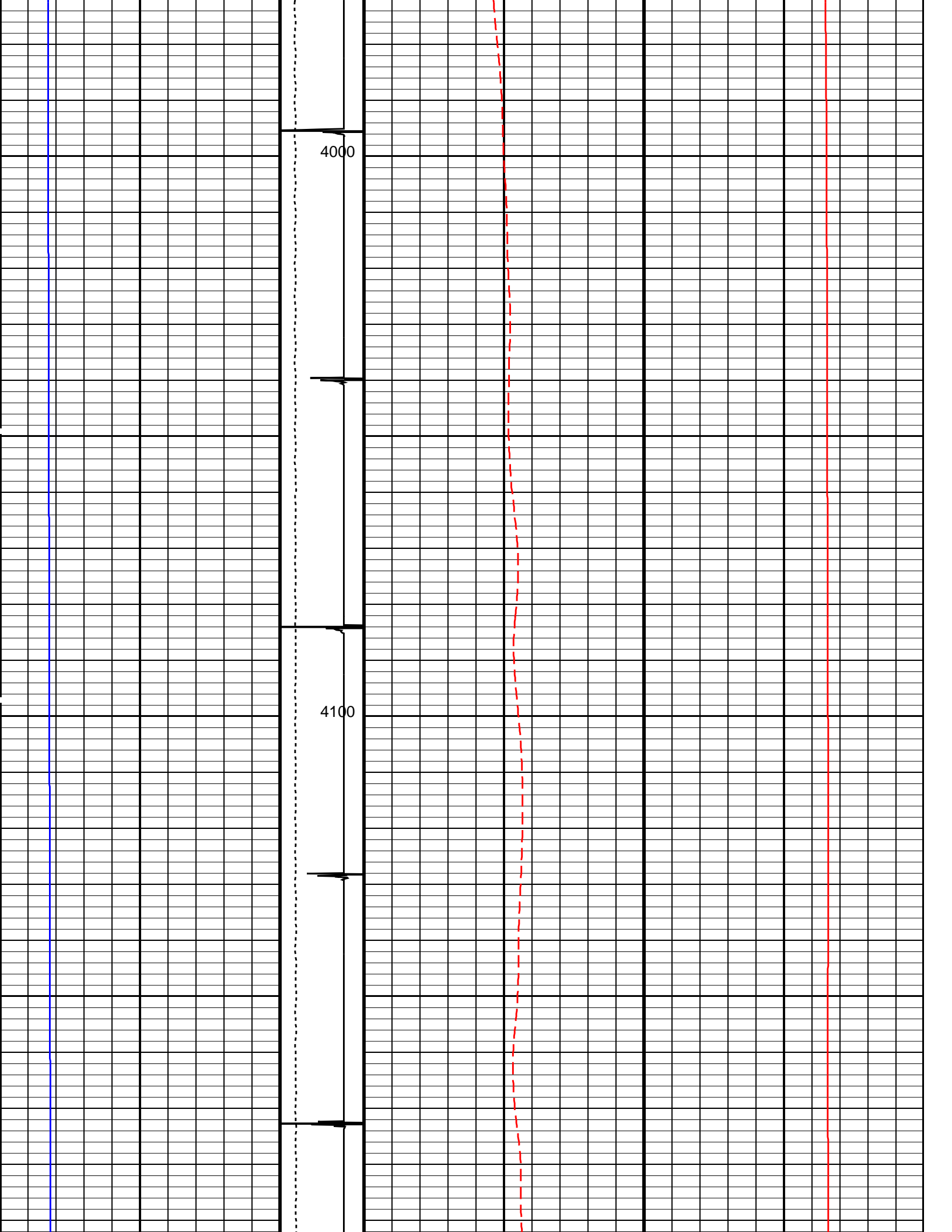


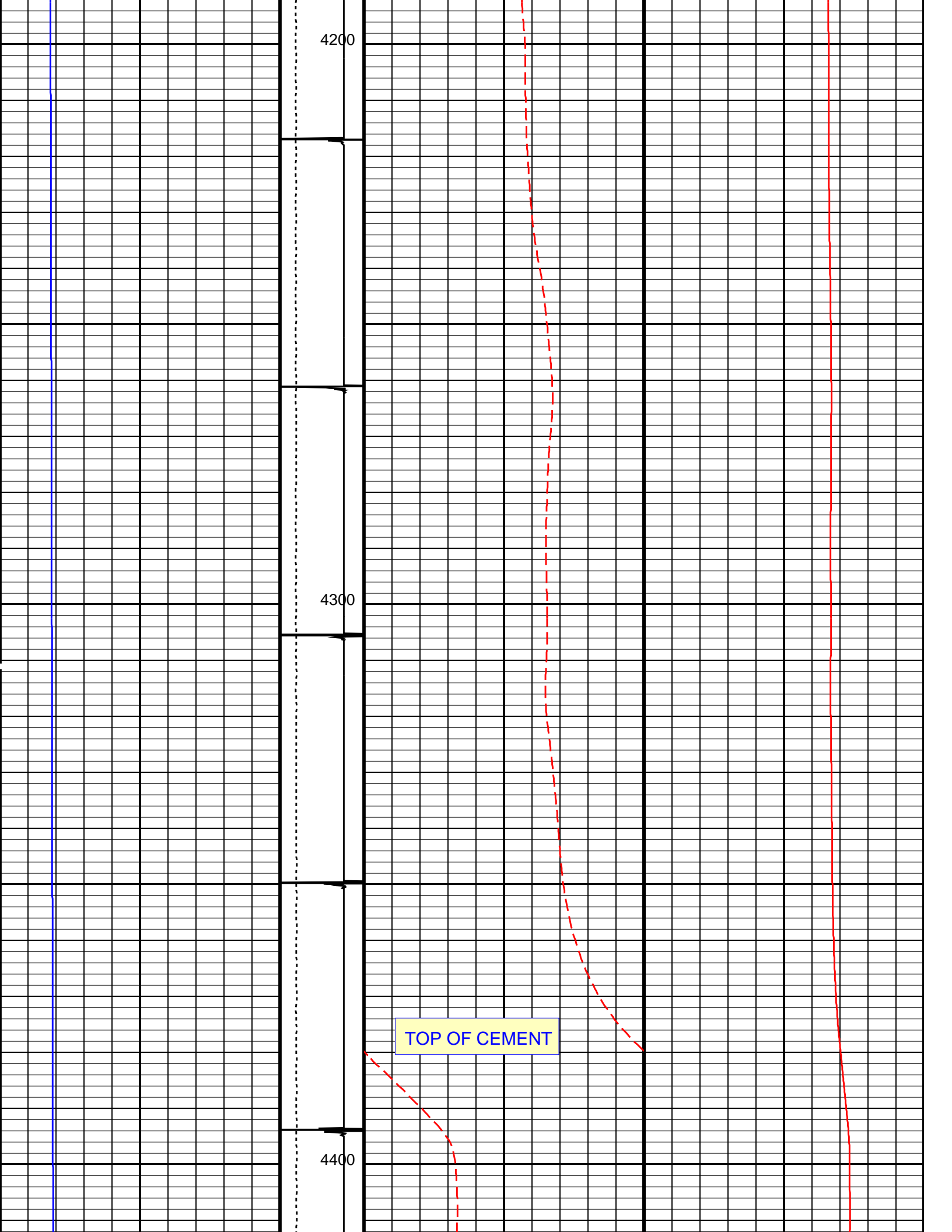


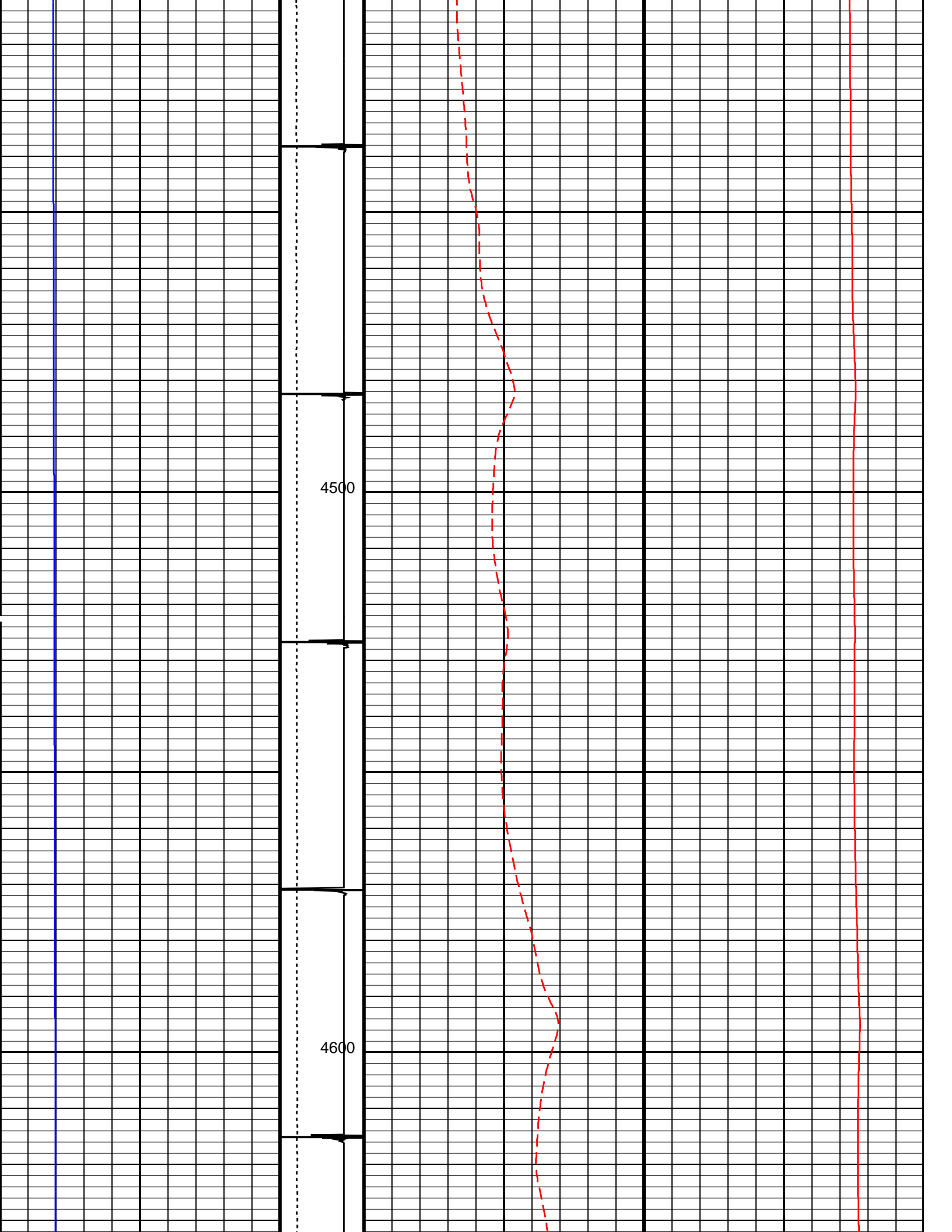


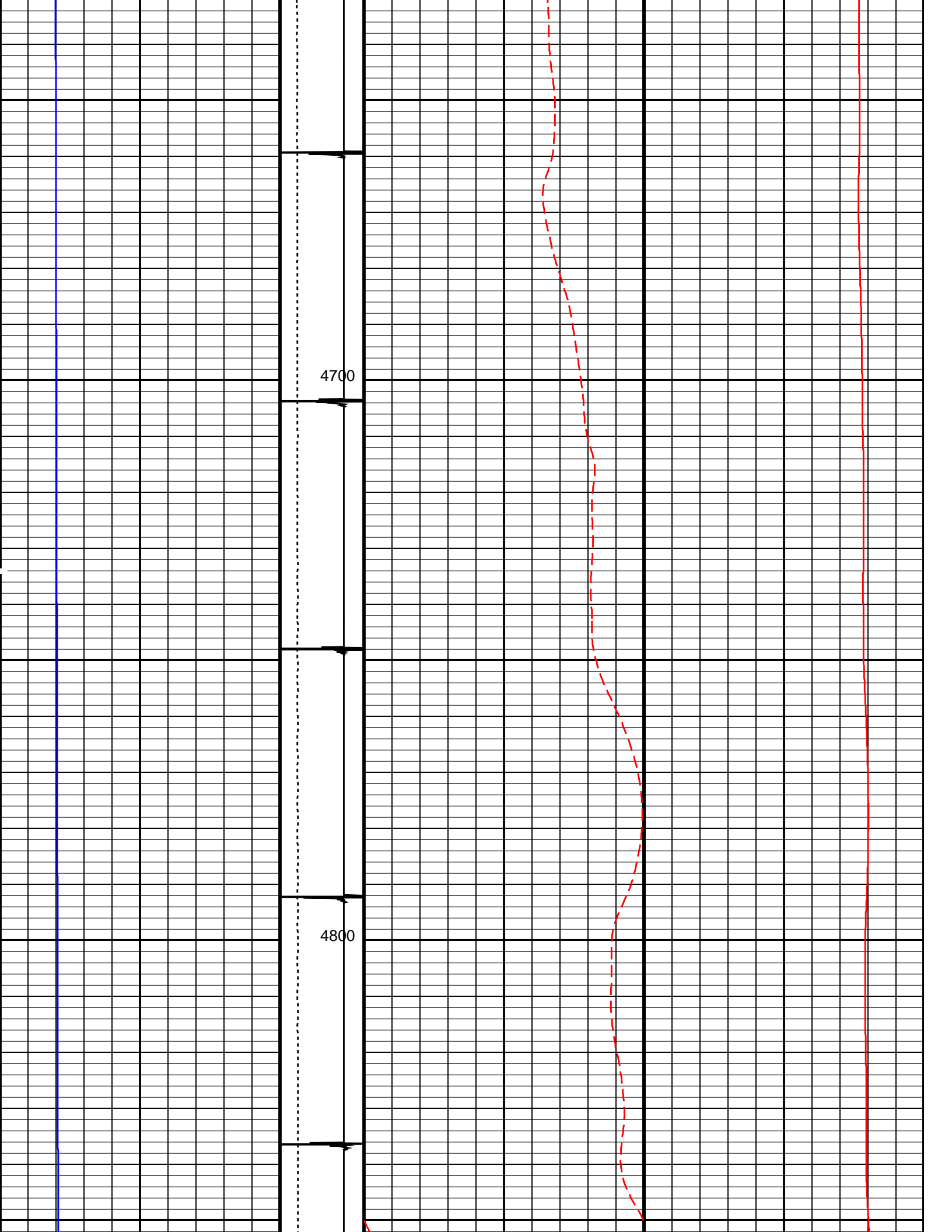


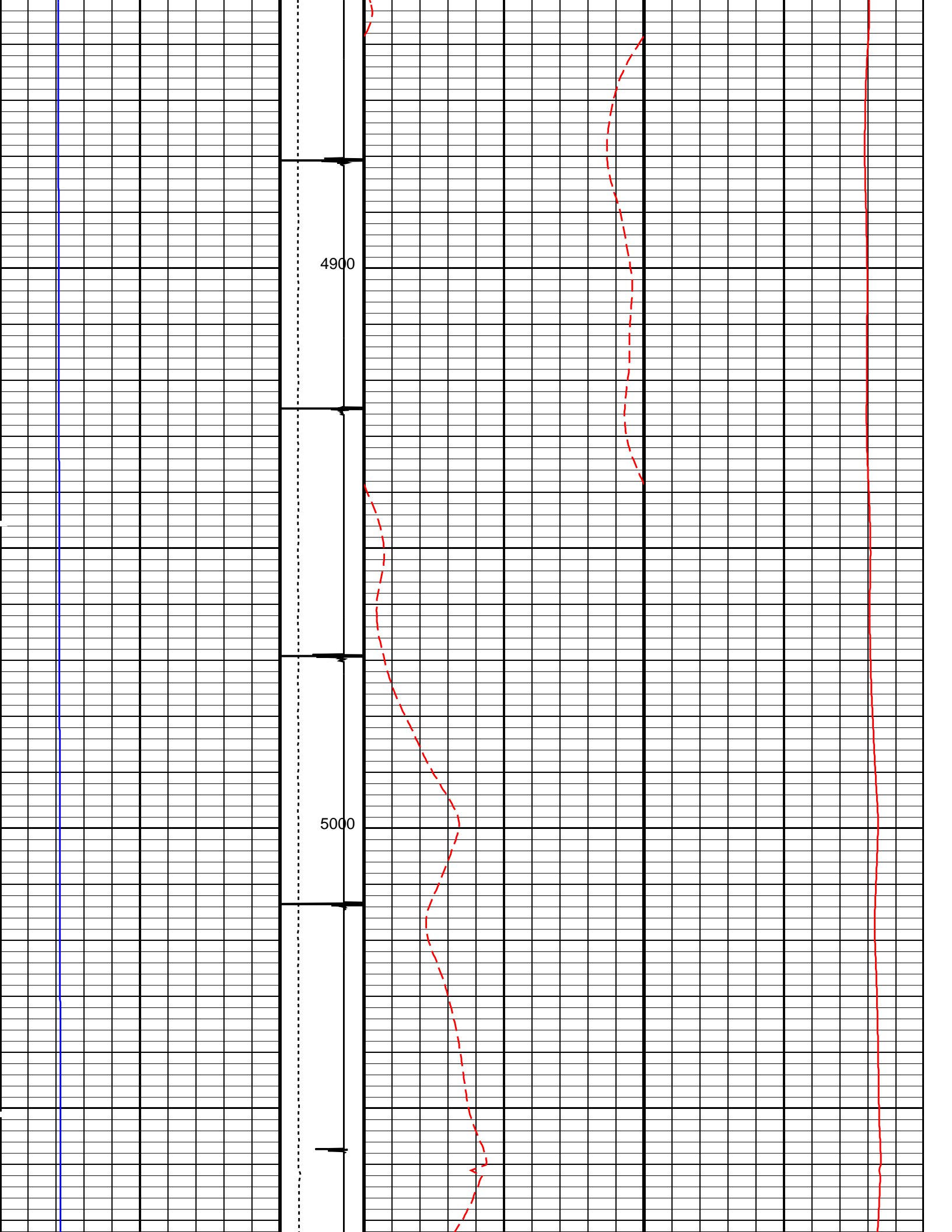


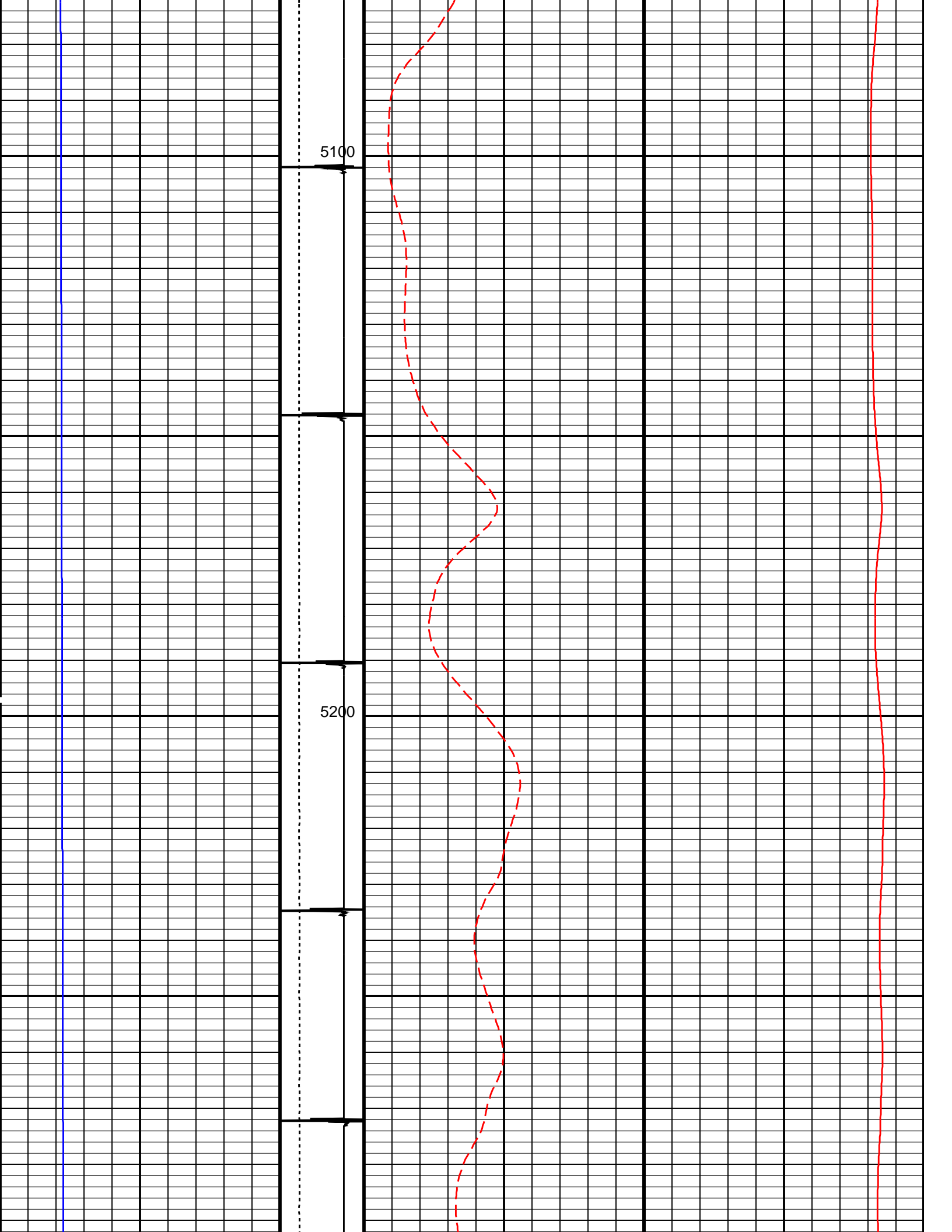


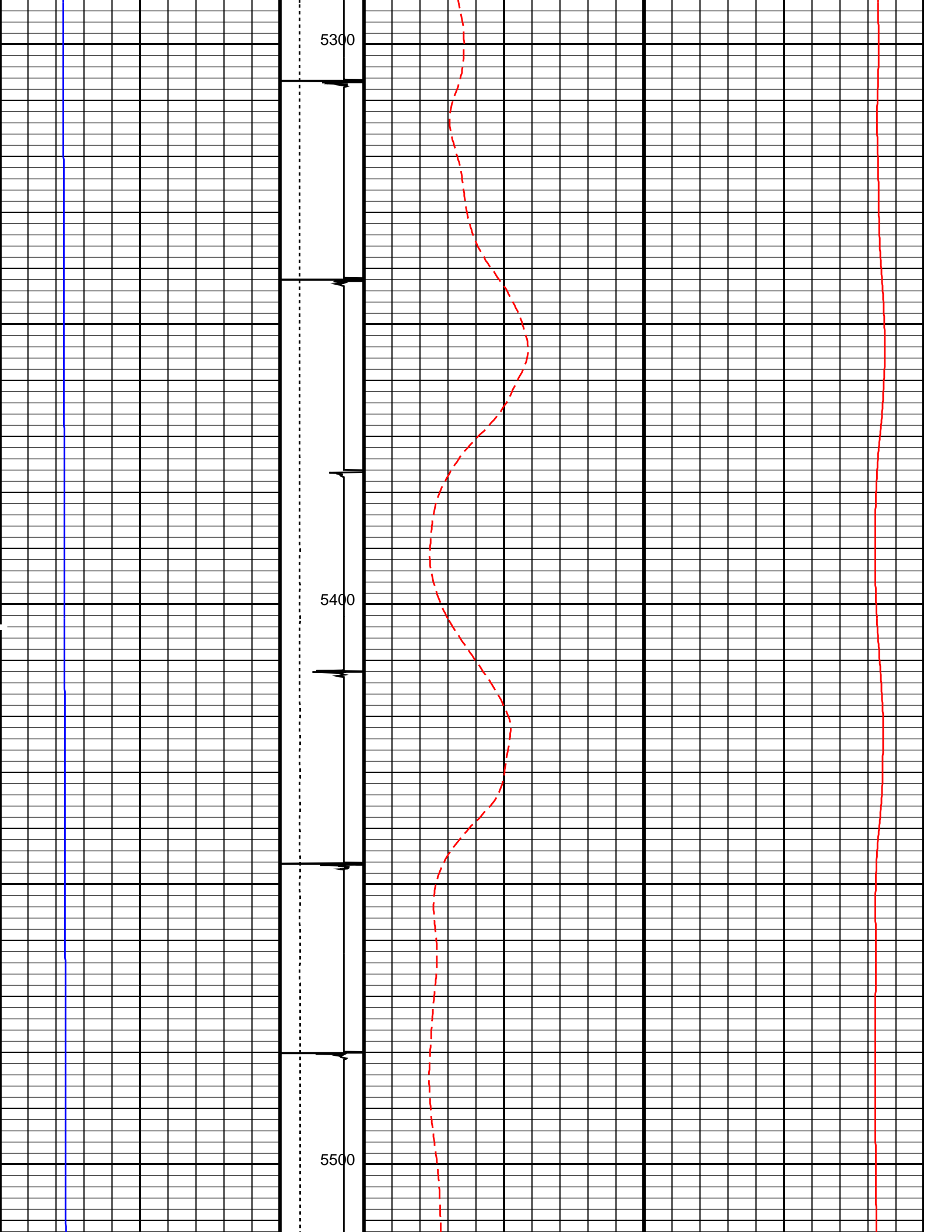


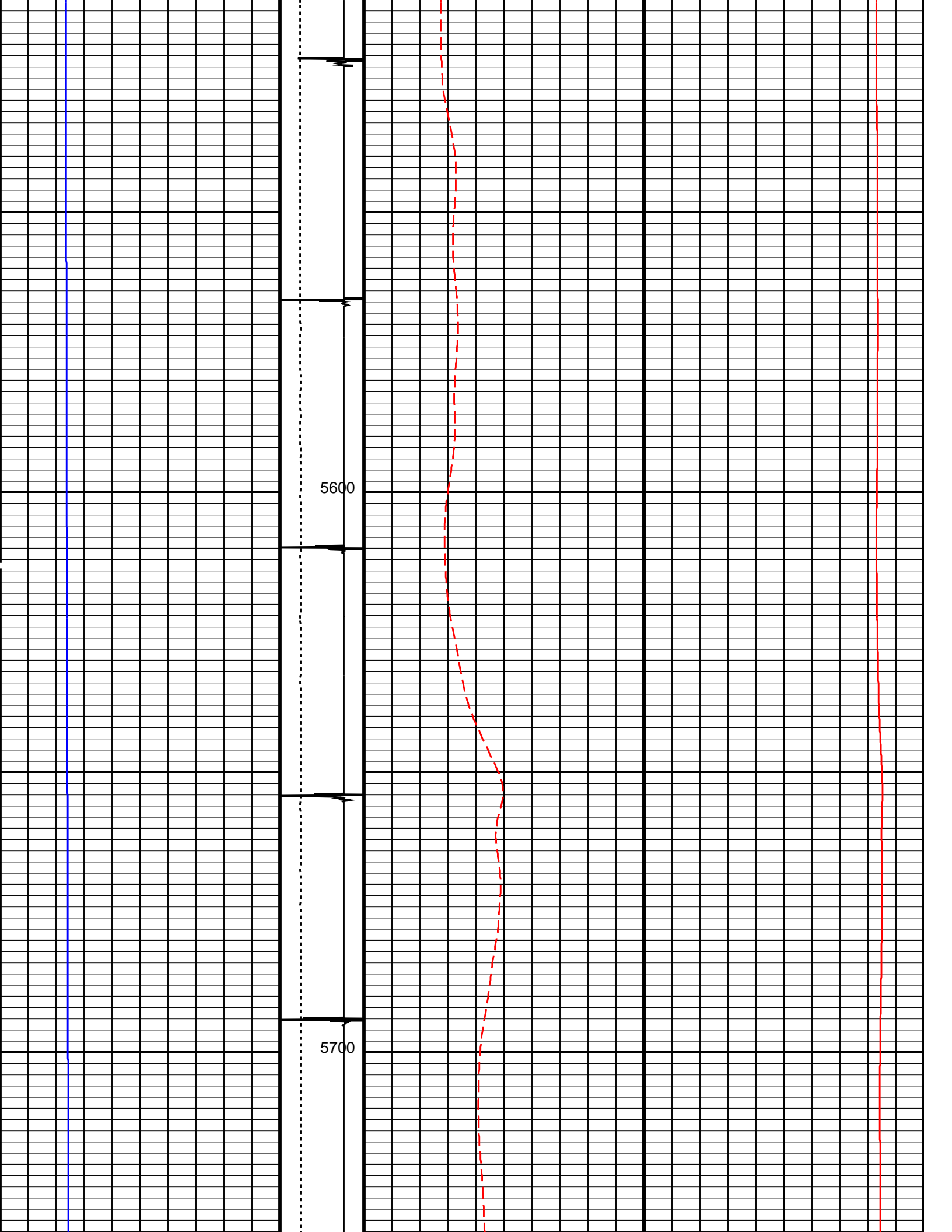


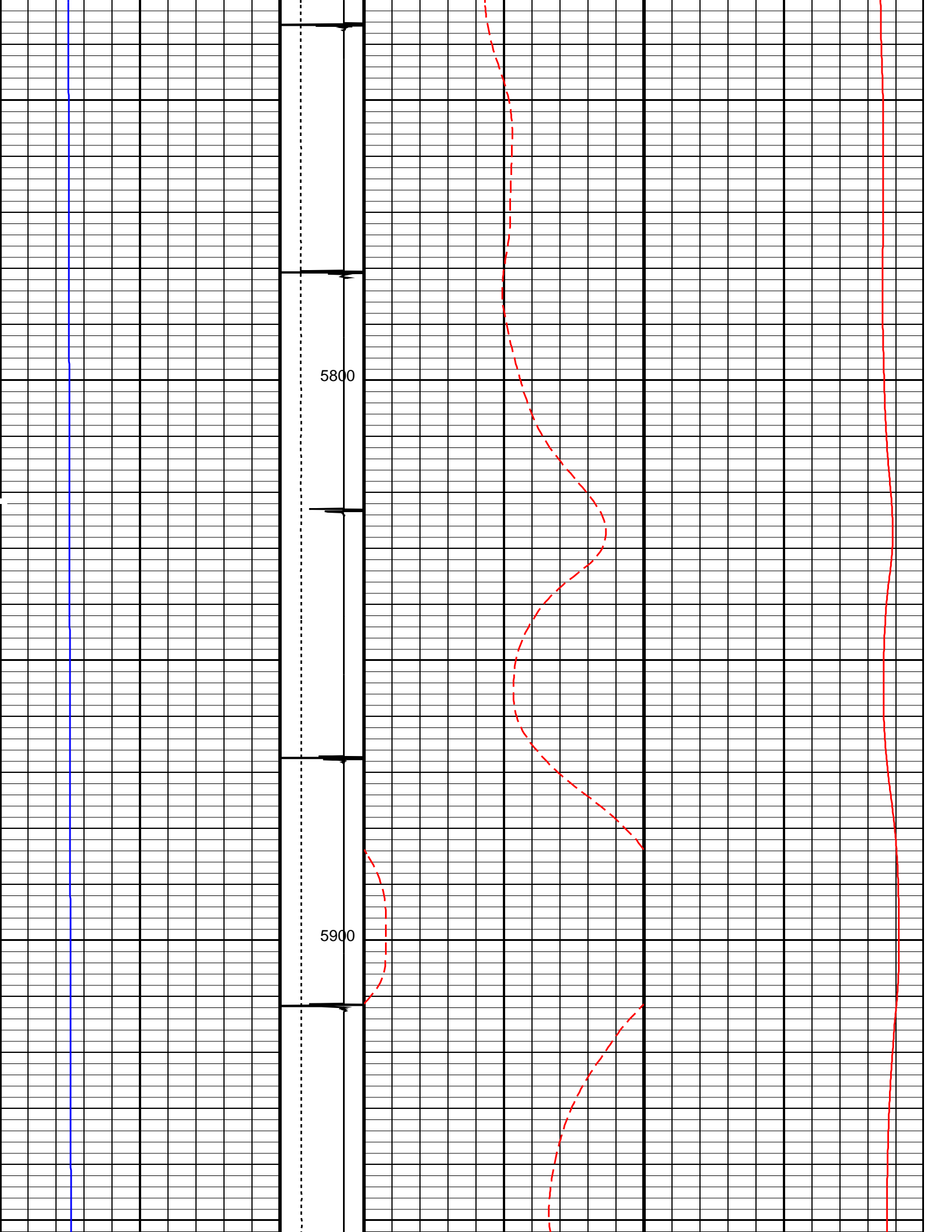


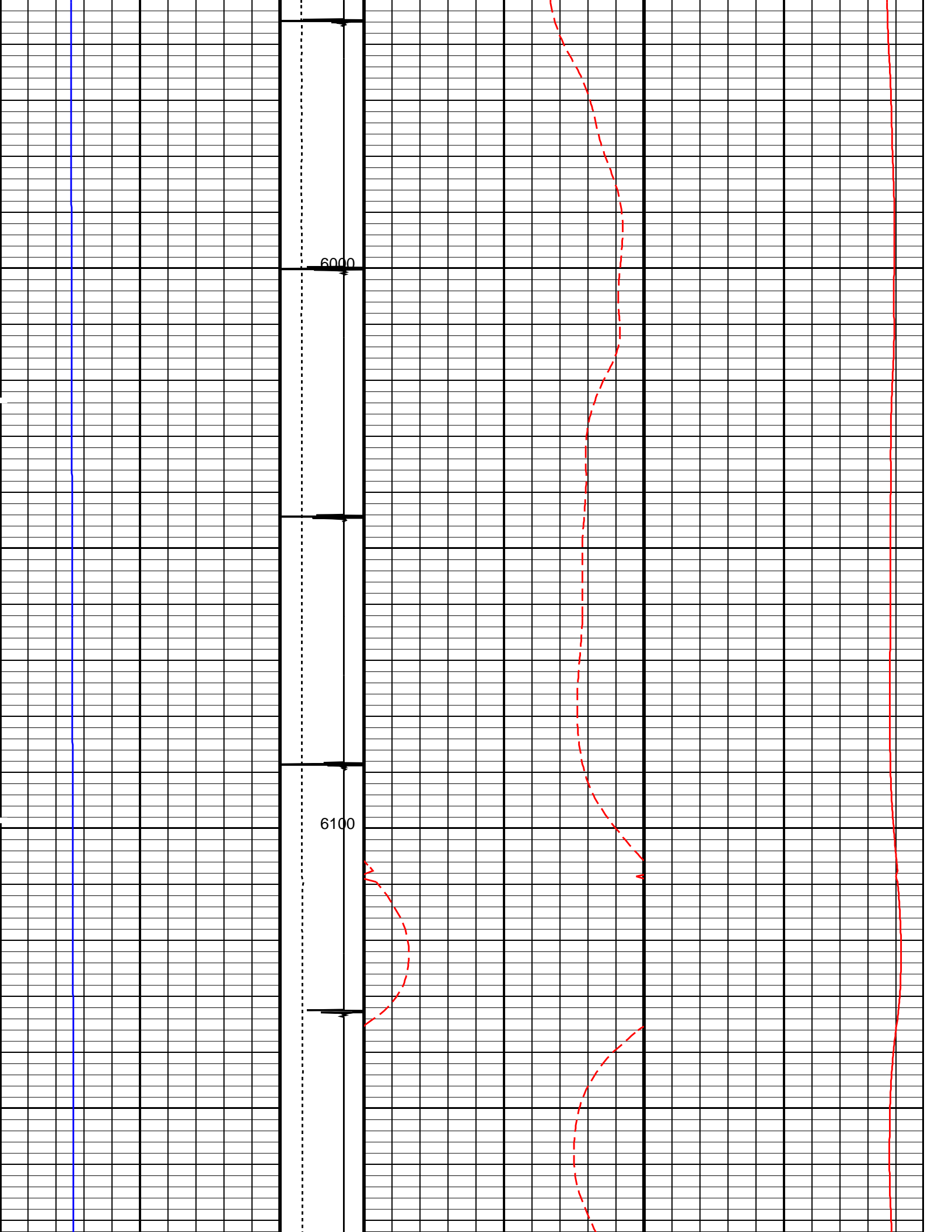


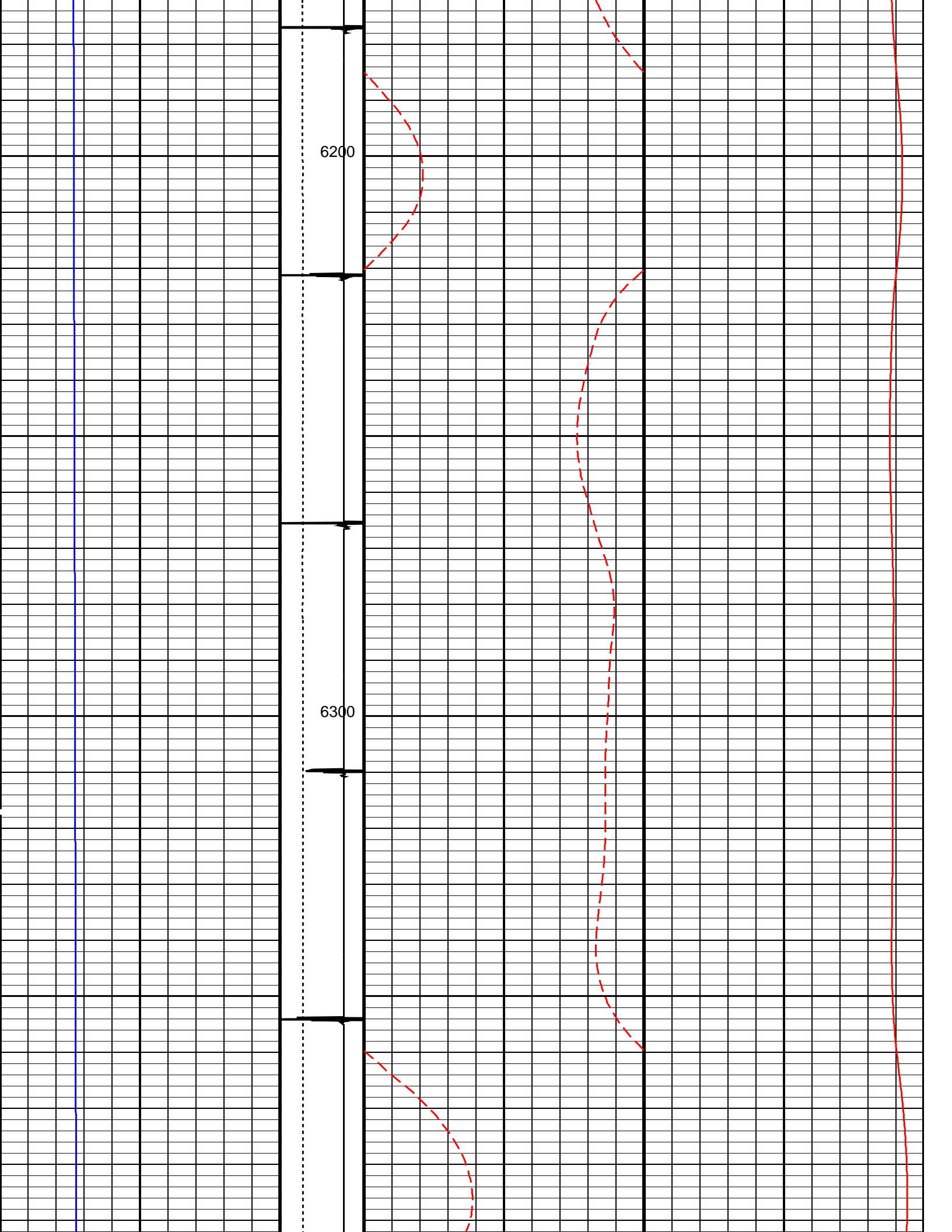


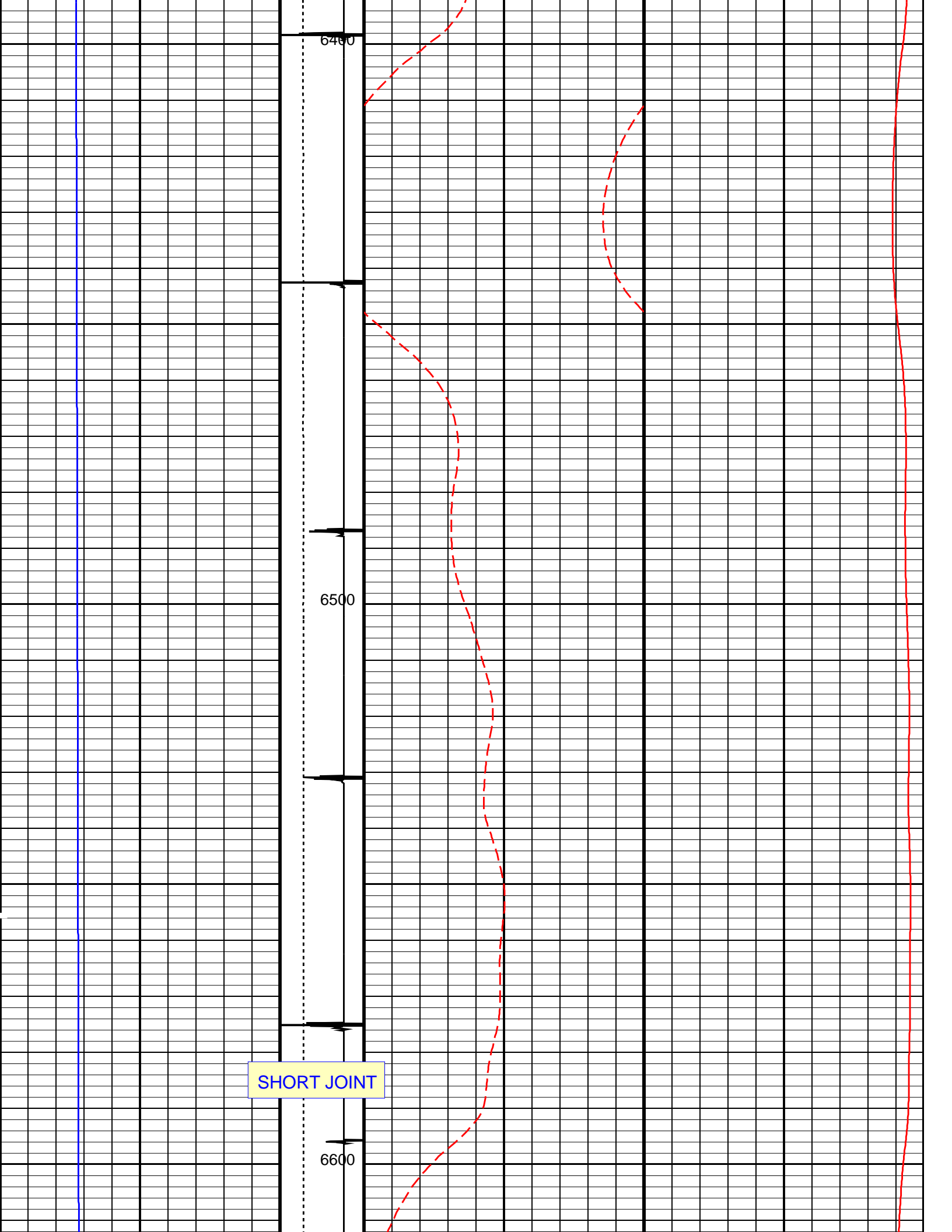


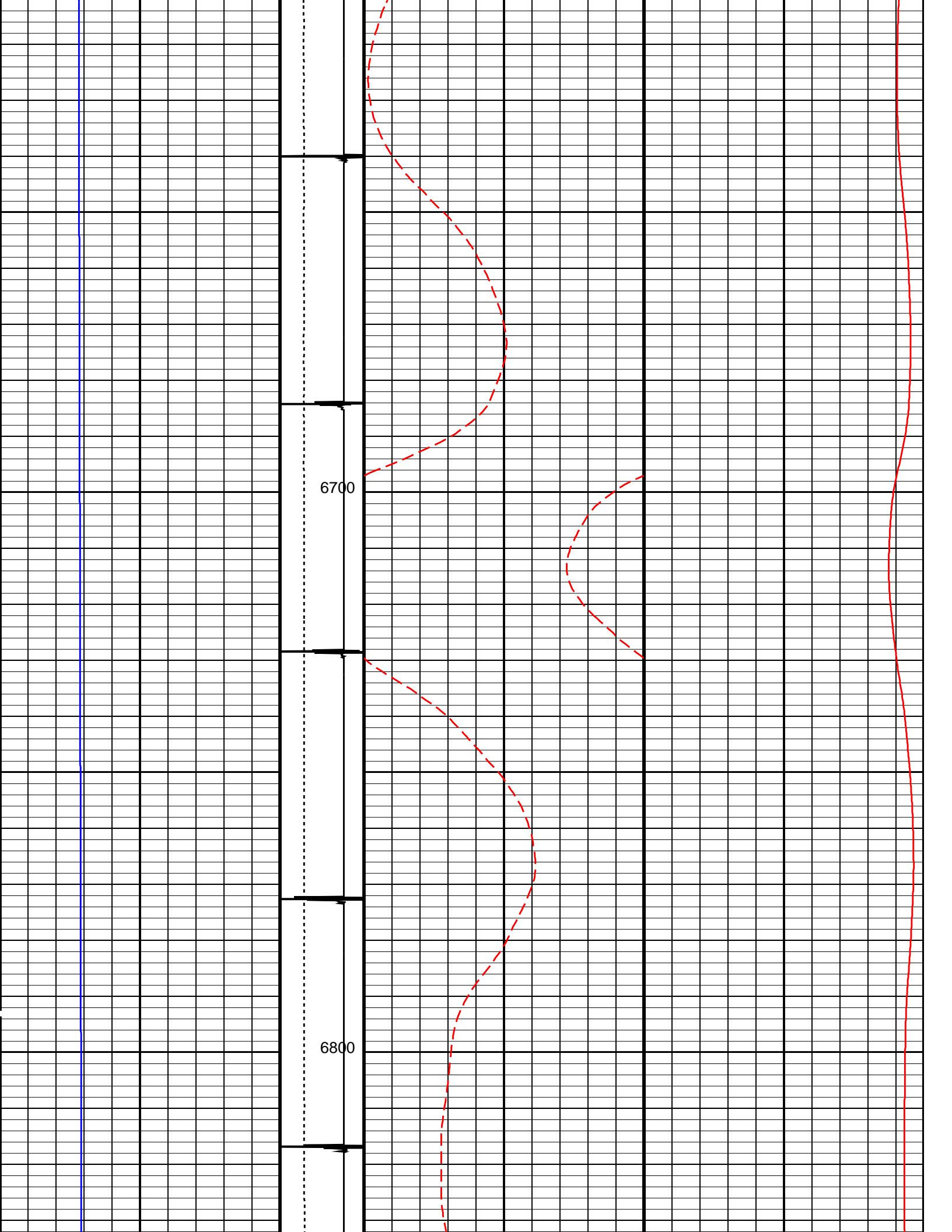


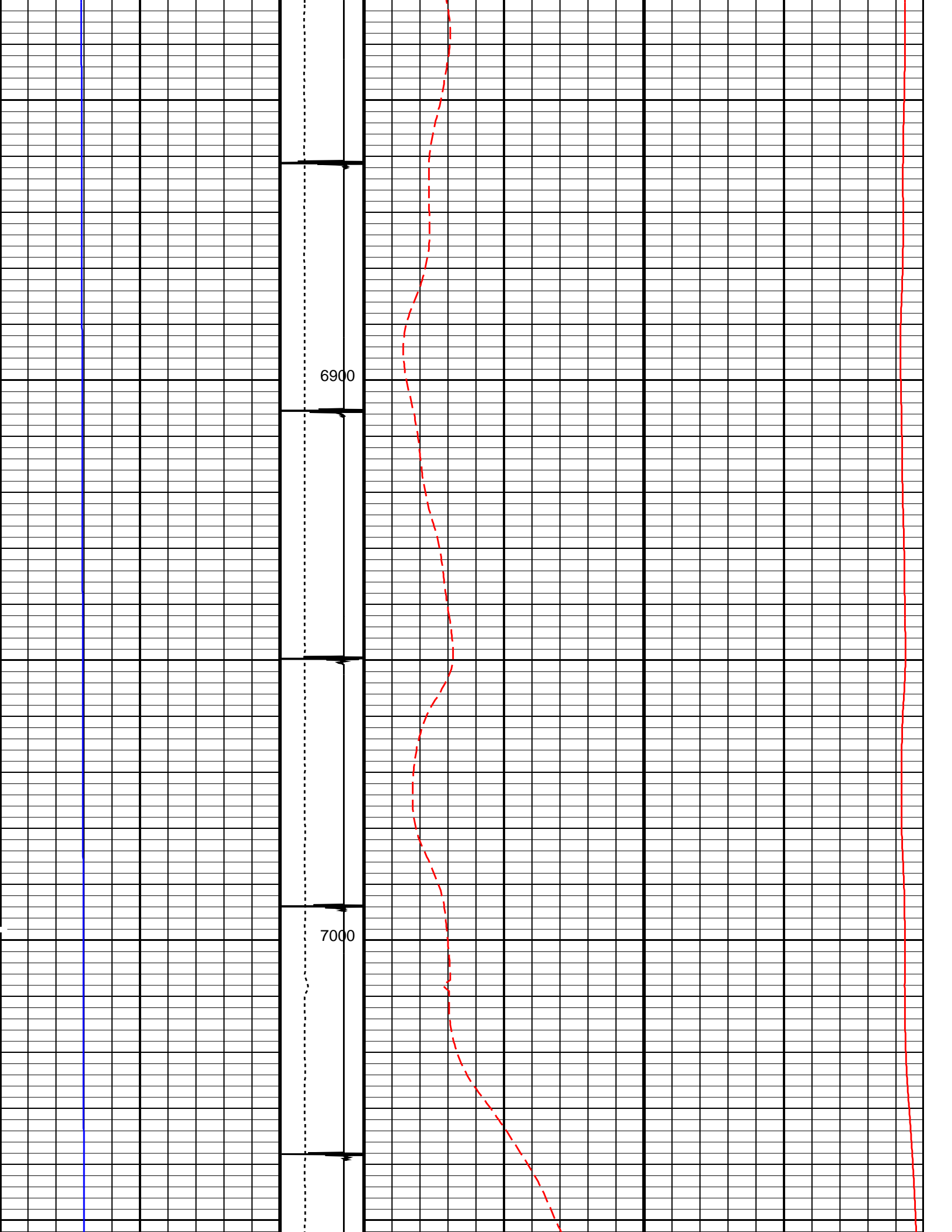


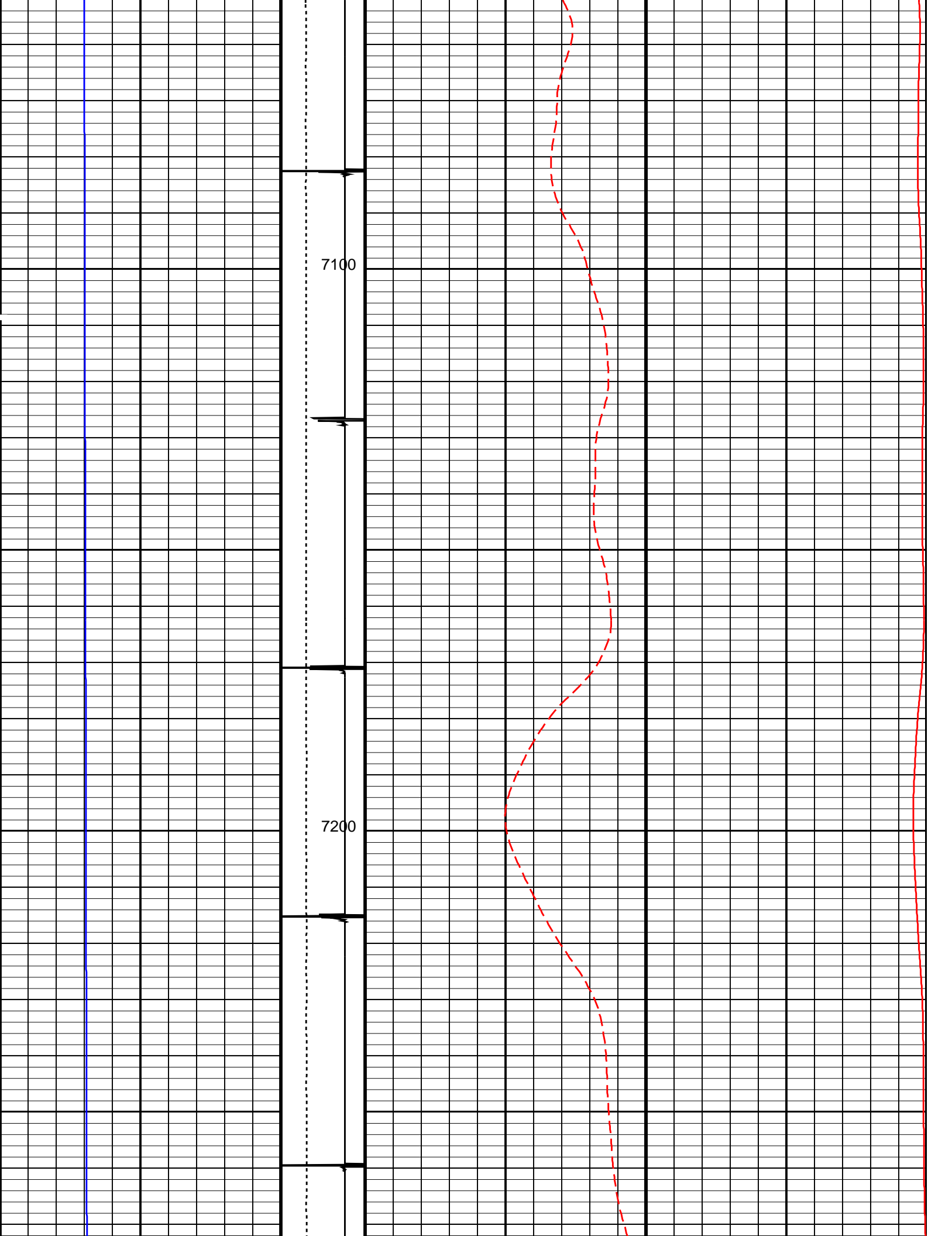


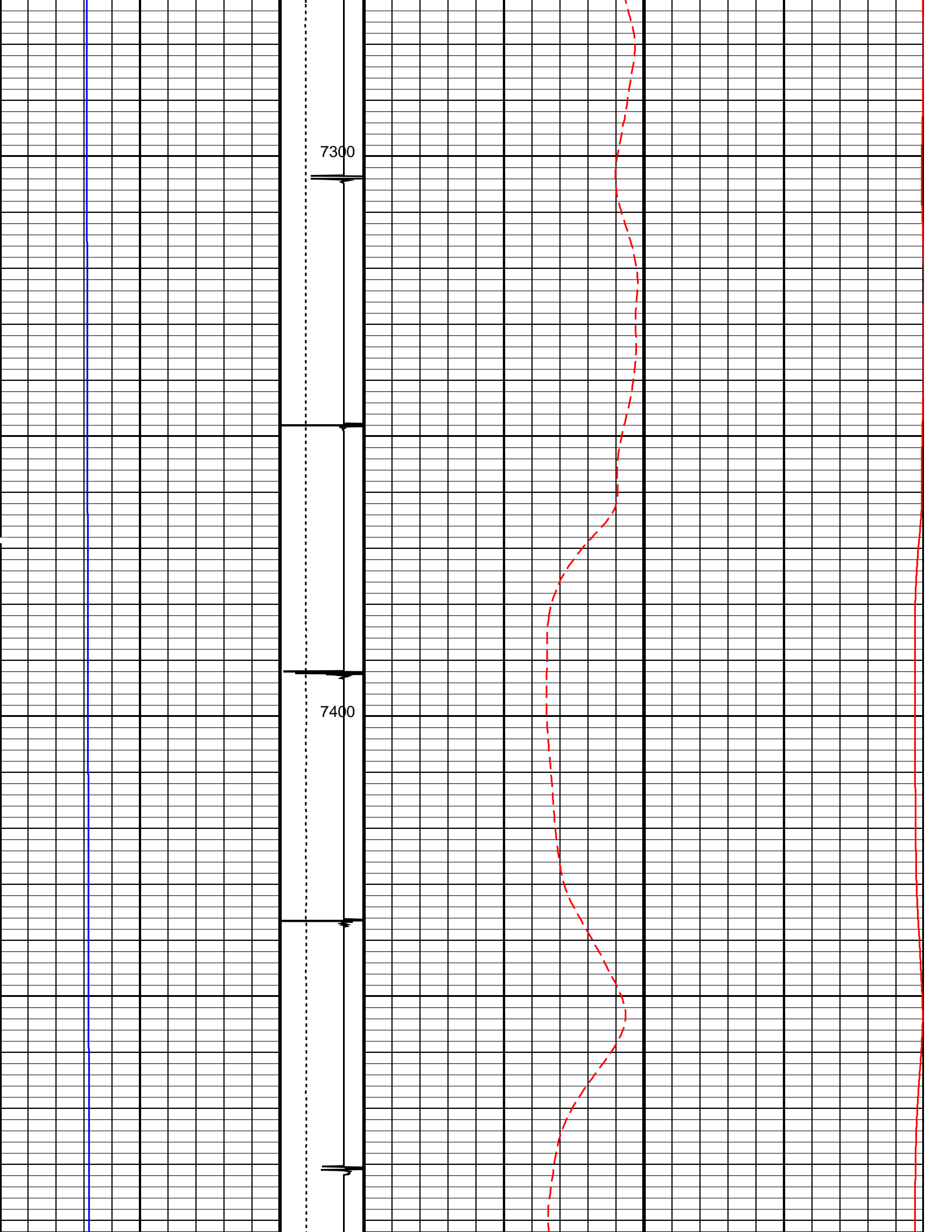


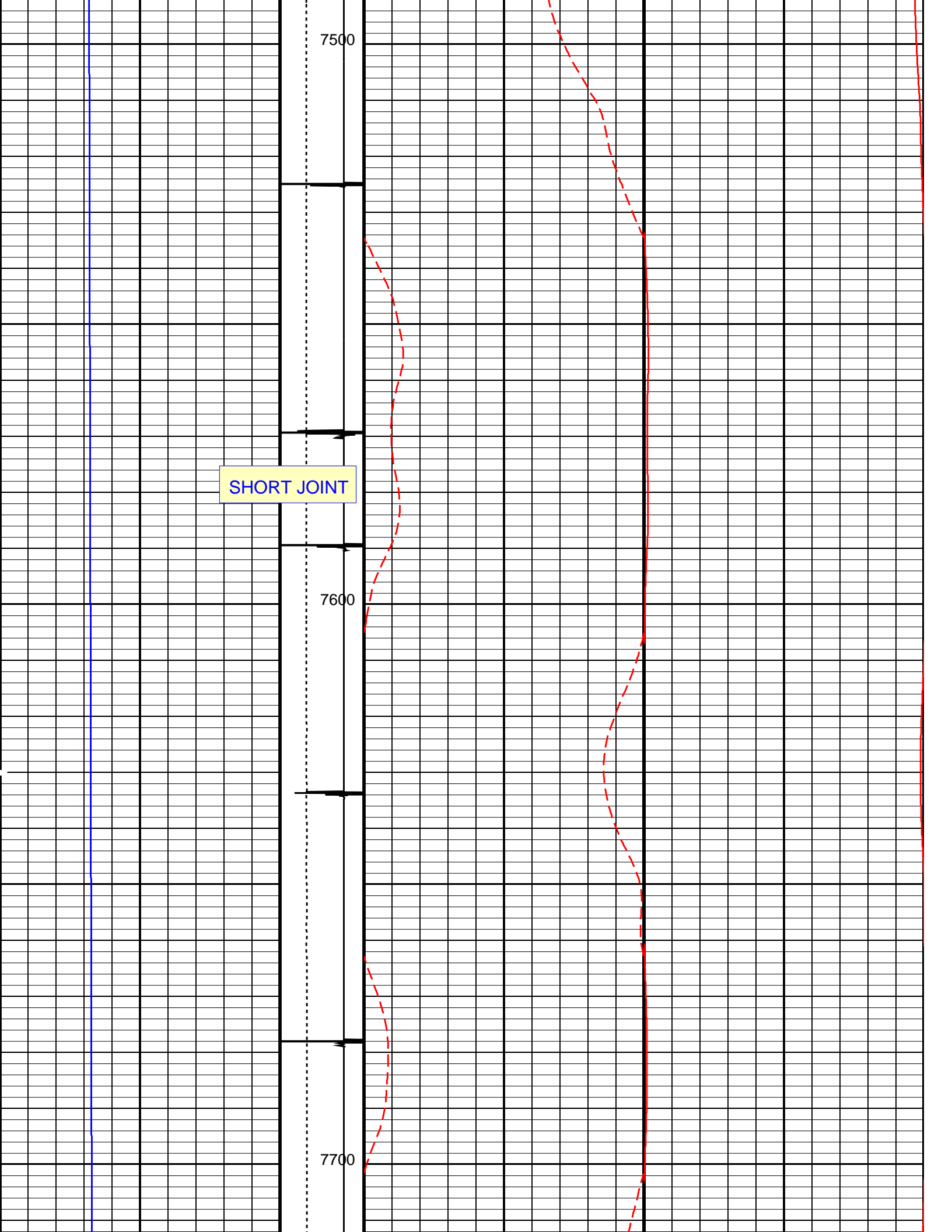


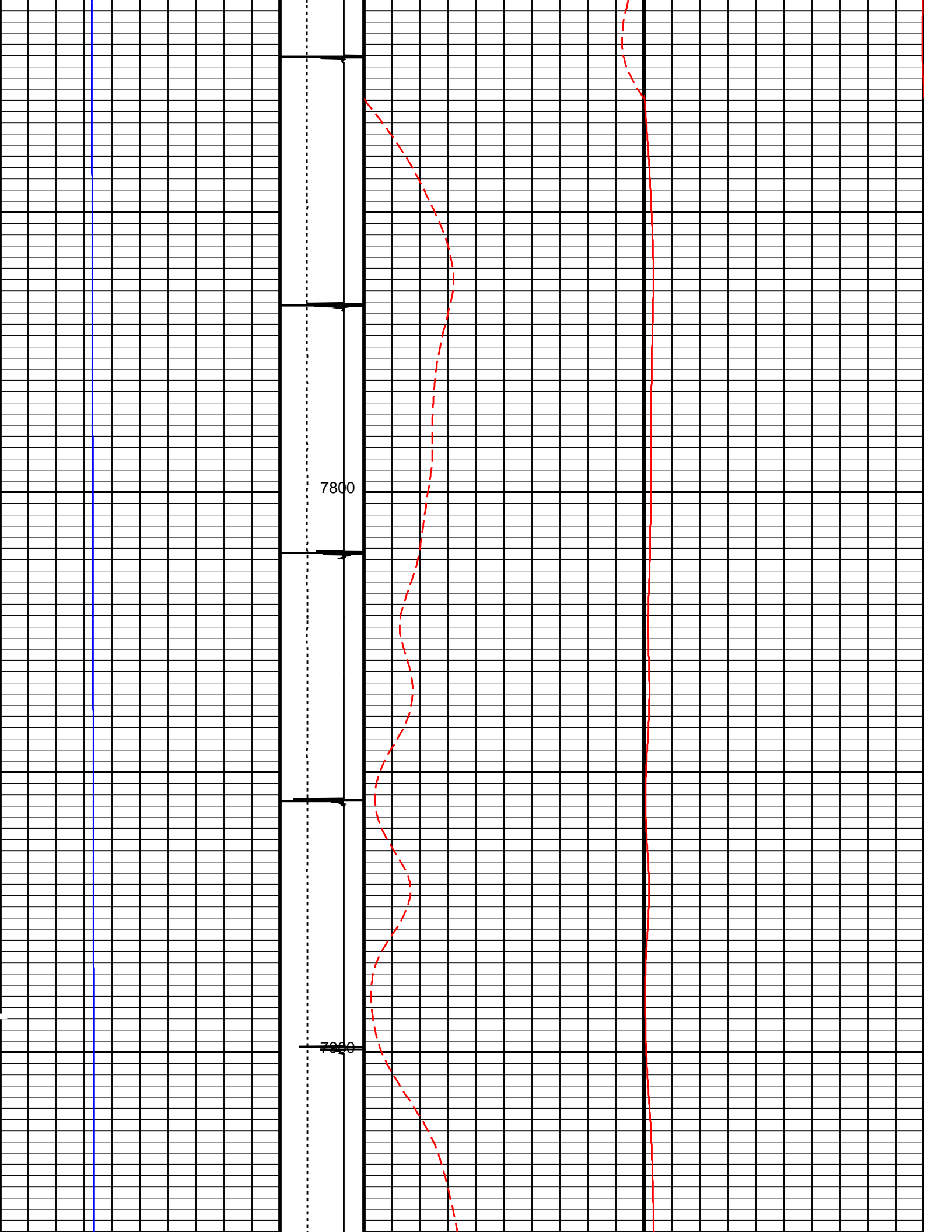


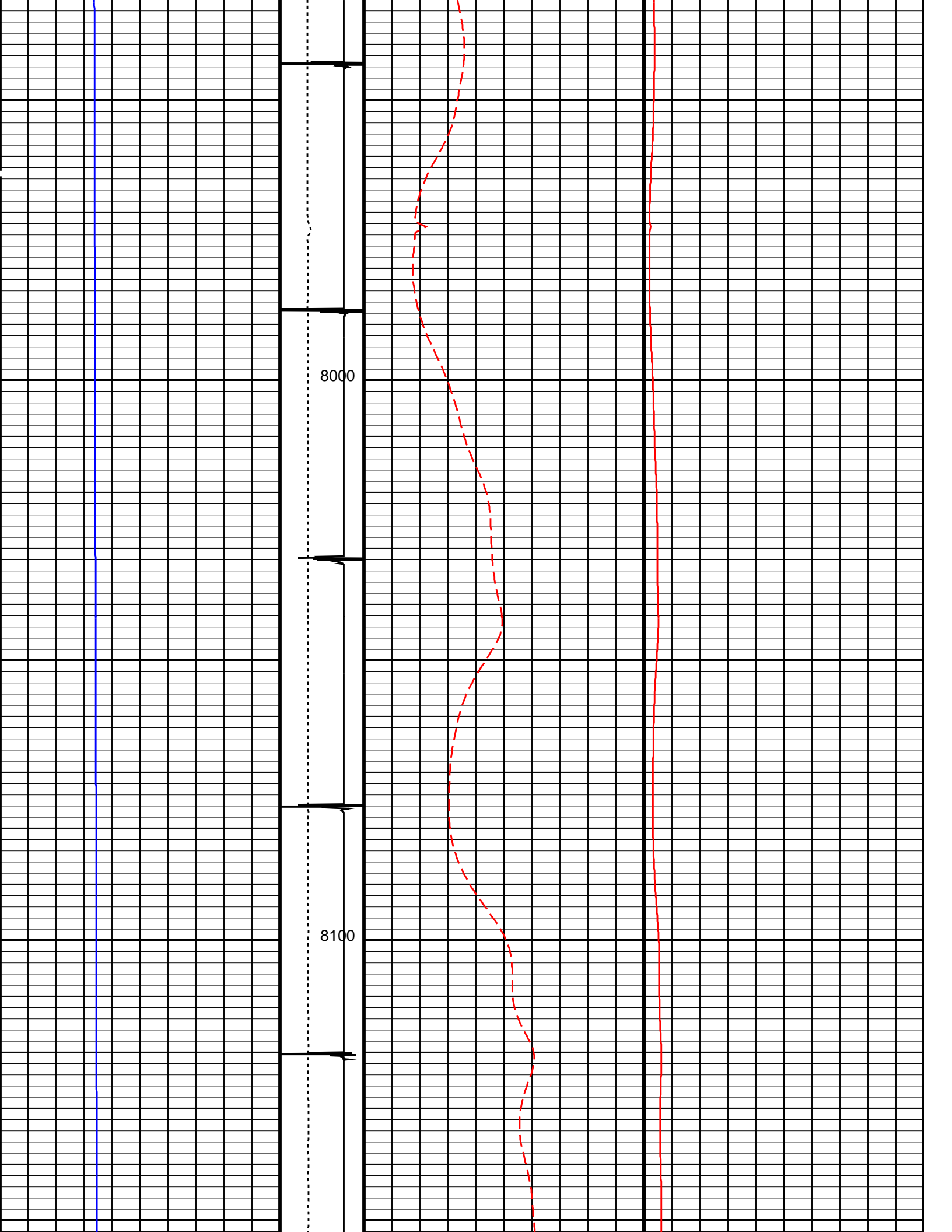


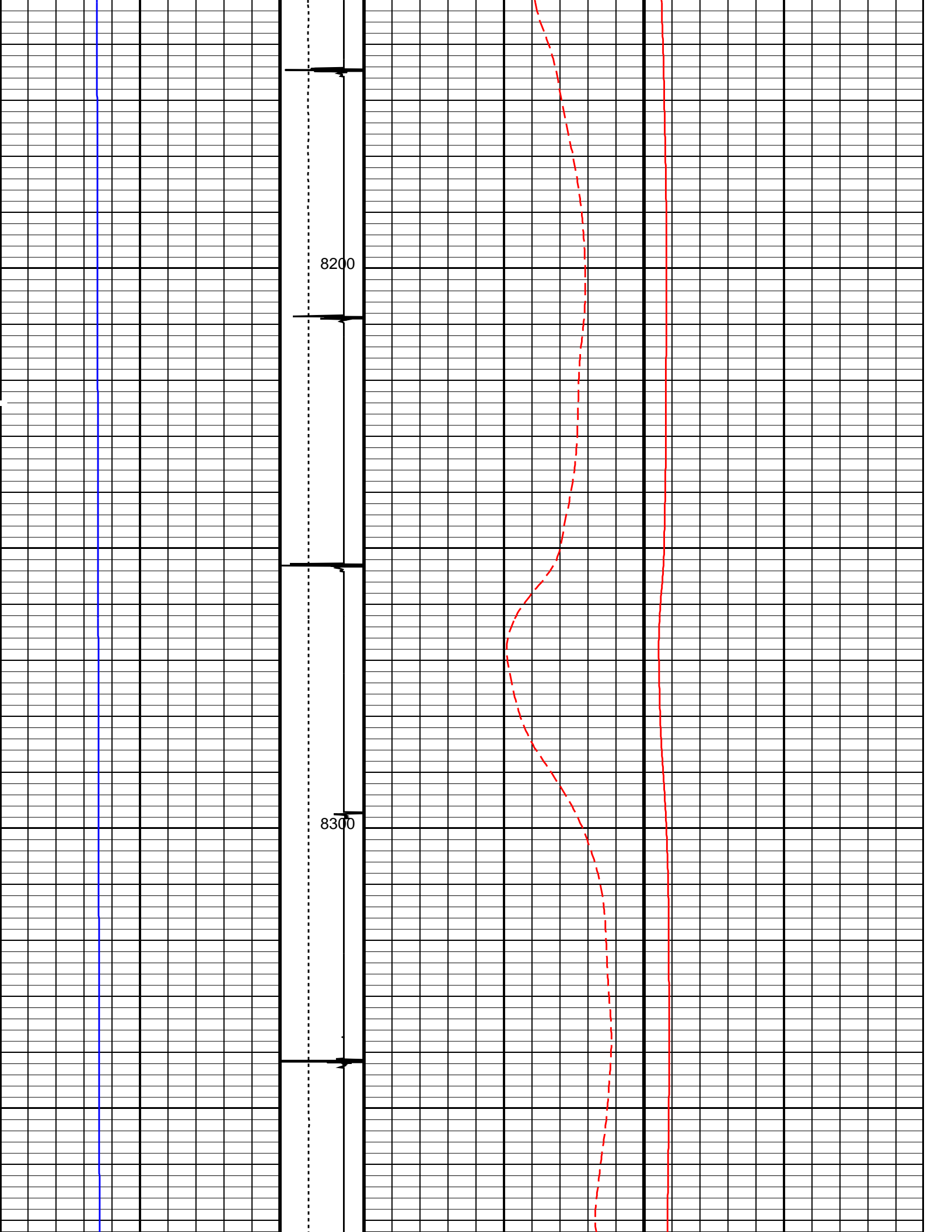


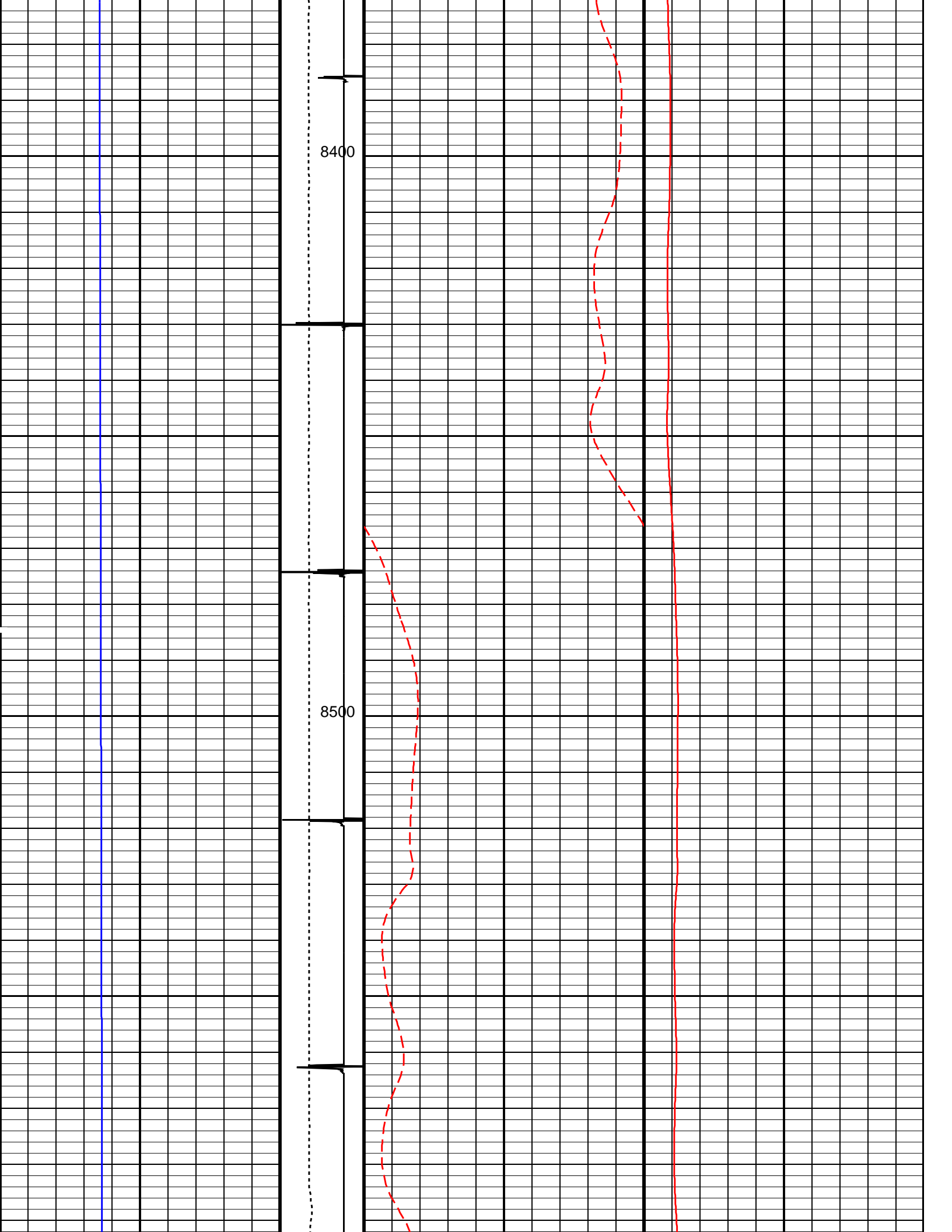


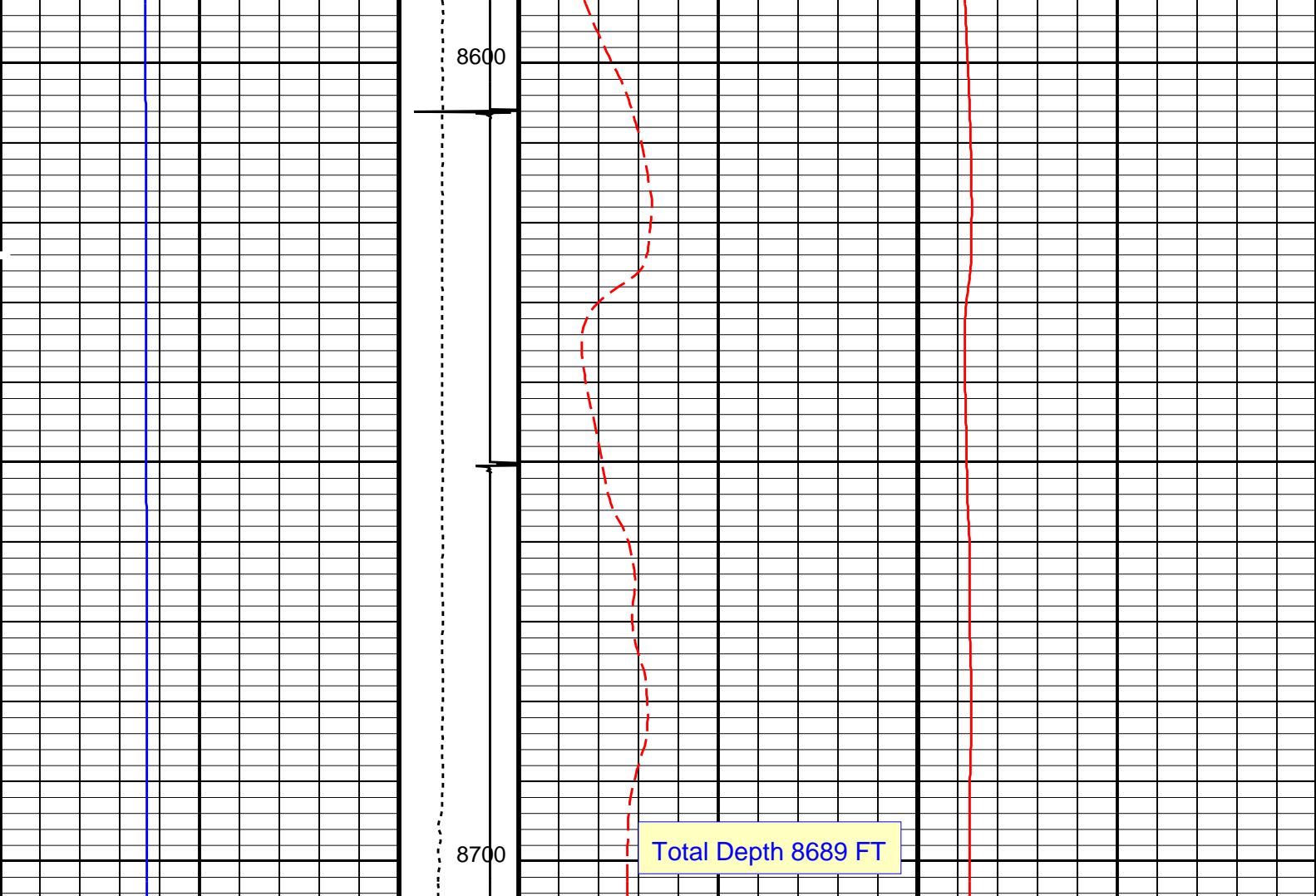












Well Pressure (WPRES) (PSIA)		0	10000
Tension (TENS) (LBF)		0	2000
Well Temperature (WTEP) (DEGF)		0	200
Well Temperature (WTEP) (DEGF)		0	200
Discriminat ed CCL (CCLD)			
3 (V) -1			

PIP SUMMARY

Time Mark Every 60 S

Parameters		
DLIS Name	Description	Value
DO	System and Miscellaneous	
PP	Depth Offset for Playback	-15.0 FT
	Playback Processing	RECOMPUTE

Format: TEMP LOG Vertical Scale: 5" per 100' Graphics File Created: 31-Aug-2013 15:53

OP System Version: 19C0-187	
HBMS-B	19C0-187

Input DLIS Files					
DEFAULT	Flip_HBMS_006LUP	PRODUCER	31-Aug-2013 15:51	8719.5 FT	8.5 FT
Output DLIS Files					
DEFAULT	HBMS_008PUP	FN:5	PRODUCER	31-Aug-2013 15:53	

Company: ENCANA OIL & GAS (USA) INC

Well: HMU 6-15AA (J6SEB)

Input DLIS Files

DEFAULT	Flip_HBMS_007LUP	PRODUCER	31-Aug-2013 15:52	8611.0 FT	8365.0 FT
DEFAULT	HBMS_008PUP	FN:5 PRODUCER	31-Aug-2013 15:53	8704.5 FT	-6.5 FT

Output DLIS Files

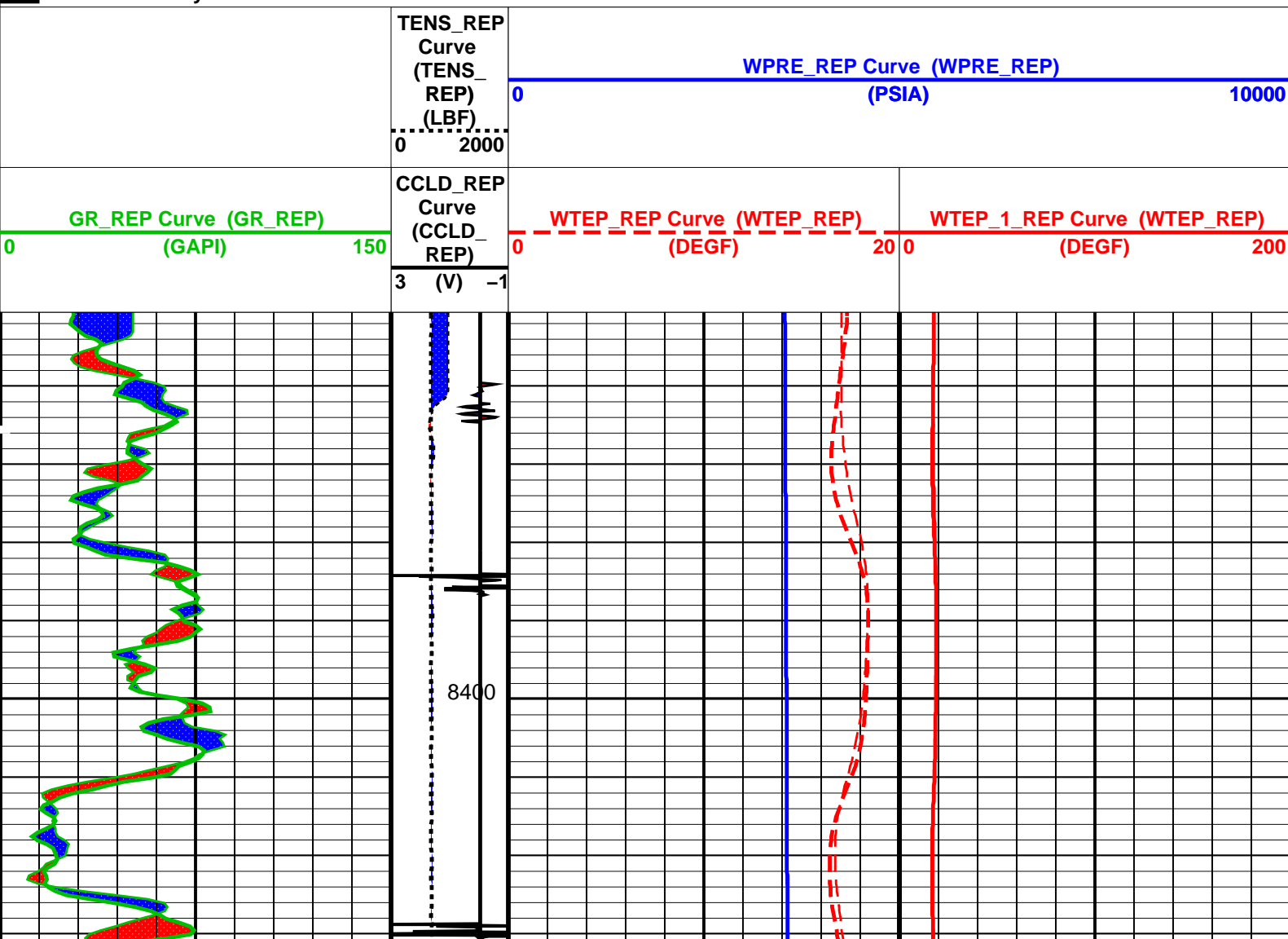
DEFAULT	HBMS_009PUP	FN:6 PRODUCER	31-Aug-2013 15:59	8596.0 FT	8350.0 FT
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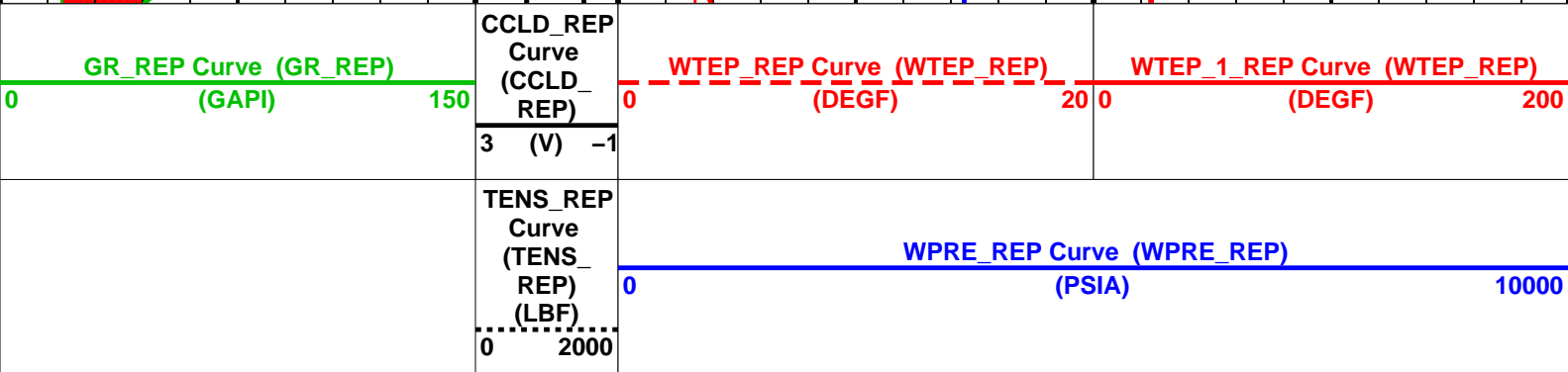
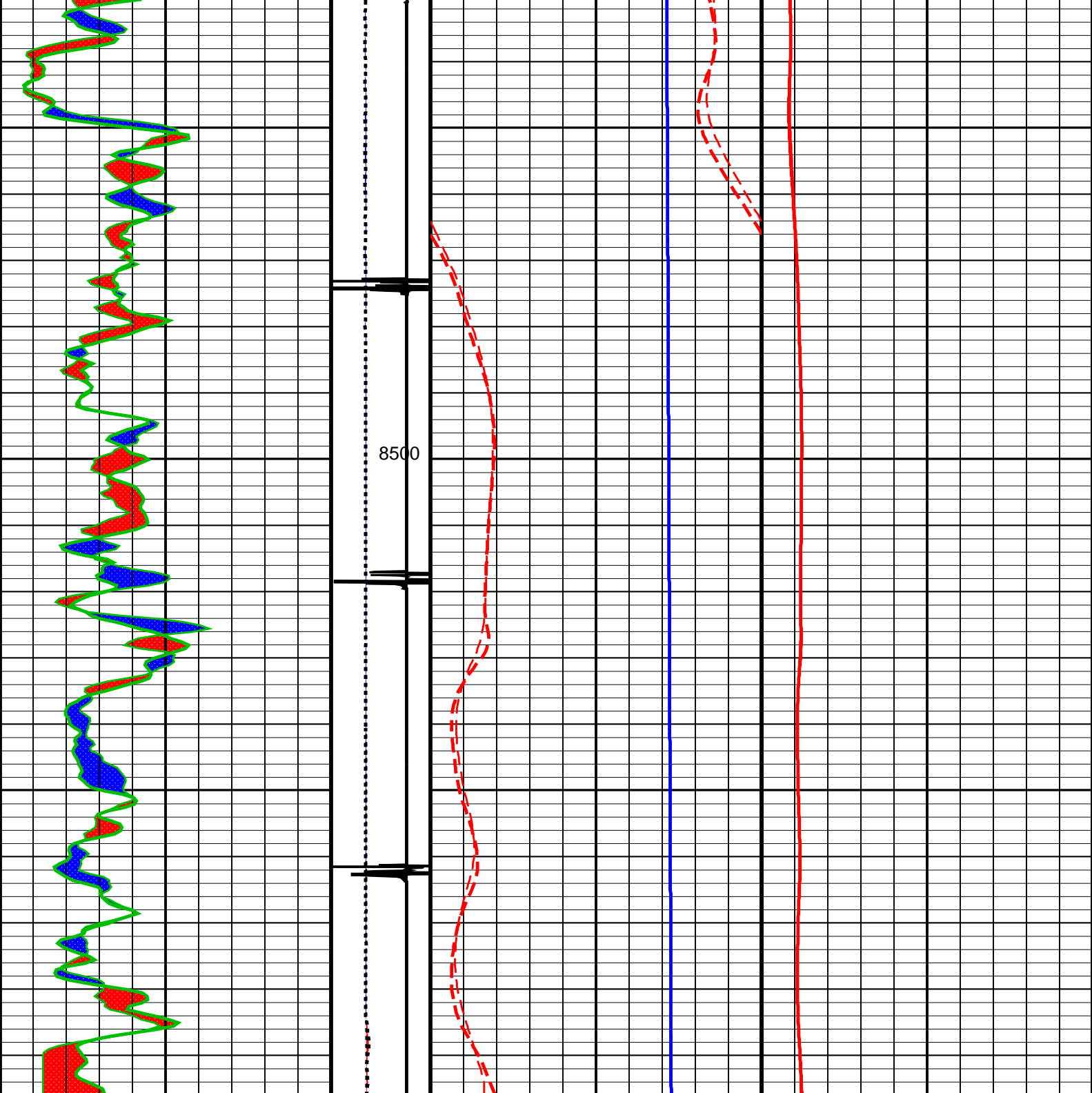
OP System Version: 19C0-187

HBMS-B 19C0-187

PIP SUMMARY

Time Mark Every 60 S





PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
System and Miscellaneous		
DO	Depth Offset for Playback	-15.0 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: 31-Aug-2013 15:59		
OP System Version: 19C0-187		
HBMS-B	19C0-187	
Input DLIS Files		
DEFAULT	Flip_HBMS_007LUP	PRODUCER 31-Aug-2013 15:52 8611.0 FT 8365.0 FT
DEFAULT	HBMS_008PUP	FN:5 PRODUCER 31-Aug-2013 15:53 8704.5 FT -6.5 FT
Output DLIS Files		
DEFAULT	HBMS_009PUP	FN:6 PRODUCER 31-Aug-2013 15:59



HBMS COEFFICIENTS

MAXIS Field Log

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	MAMM CREEK	Sub Type:	PBMS
Well:	HMU 6-15AA (J6SEB)	Sensor:	GR
Run date:	31-Aug-2013		

PBMS Gamma Ray

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

RESISTORS FOR GR SENSOR N.34384,TOOL HBMS-BA2880. SENSOR S/N:

34384

160206

12

D8B5

GR HV Rt

	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.173000000000e+04

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: HMU 6–15AA (J6SEB)

Run date: 31–Aug–2013

Tool: PSP

Sub Type: PBMS

Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR RTD THERMOMETER PBMS–B.2880 S/N:

2880

260408

16

A3AF

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	–.104337336008E+04	+.798824971753E+03	–.251944021281E+03
	Tt**3	Tt**4	Tt**5
Tt**0	+.406192777109E+02	–.240958437264E+01	0.0

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: HMU 6–15AA (J6SEB)

Run date: 31–Aug–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

Pres Coeff

COEFFICIENTS FOR CQG PBMS–B.2880 S/N:

2880

260408

66

66B8

Fb**0Fb**1Fb**2

Fc**0	+.694668499013E+04	+.138137467574E-01	-.206148488488E-06
Fc**1	-.104285125976E+01	-.125721589078E-04	-.971577899959E-10
Fc**2	+.101045175546E-05	+.480801816357E-10	+.889110474366E-15
Fc**3	+.127326781620E-11	+.130693902354E-15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

Fb**3Fb**4Fb**5

Fc**0	-.802395356069E-10	-.148392899370E-14	-.162952476494E-19
Fc**1	+.114970383999E-15	+.186330526680E-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 2880
Calib Date ddmmyy 260408
Matrix Size 66
Coeff CRC 3690

Temp Coeff

Fc**0Fc**1Fc**2

Fb**0	+.114978632240E+03	-.318843725686E-03	+.651766172344E-08
Fb**1	-.590205352250E-02	+.168686572404E-07	+.162345150354E-12
Fb**2	-.362996279263E-07	+.407654559315E-12	+.452411391342E-17
Fb**3	-.276281361281E-12	+.871817059405E-17	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

Fc**3Fc**4Fc**5

Fb**0	+.199118144093E-13	-.260997933236E-18	+.618908211390E-21
Fb**1	+.250084591851E-17	+.455070709200E-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	2880
Calib Date ddmmyy	260408
Matrix Size	16
Coeff CRC	71B5

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+310736316923E+05	+273670214709E-02	+731815197856E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.654219198492E-10	-.150585137208E-15	-.117697151708E-19

PBMS Quartz Gauge type F

Sonde Serial NB	:
Sensor Serial NB	2880
Calib Date ddmmyy	260408
Matrix Size	16
Coeff CRC	ECB5

Clock Temp Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+116053417872E+03	-.554118045908E-02	-.348241454518E-07
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	+207992675474E-12	-.353168788938E-17	-.345142848607E-21

Company: ENCANA OIL & GAS (USA) INC



Well: HMU 6-15AA (J6SEB)
Field: MAMM CREEK
County: GARFIELD
State: COLORADO

TEMPERATURE LOG
CCL - TEMPERATURE