

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEE 19-13D (K19CNE)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 2320 FSL & 312 FWL

Well: ENCANA FEE 19-13D (K19CNE)

Company: ENCANA OIL & GAS (USA) INC

TEMPERATURE LOG

CCL – TEMPERATURE

LOCATION

SHL: 2320 FSL & 312 FWL

BHL: 140 FSL & 660 FWL

Elev.: K.B. 5687.00 ft

G.L. 5665.00 ft

D.F. 5686.00 ft

Permanent Datum: \_\_\_\_\_

GROUND LEVEL \_\_\_\_\_

Elev.: 5665.00 ft \_\_\_\_\_

Log Measured From: KELLY BUSHING

22.00 ft above Perm. Datum

Drilling Measured From: KELLY BUSHING

API Serial No. 05-045-20757-00

Section 19

Township 6S

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 Date 20-Feb-2013

Run Number 1

Depth Driller 9115 ft

Schlumberger Depth 7000 ft

Bottom Log Interval 7000 ft

Top Log Interval 0 ft

Casing Fluid Type FRESH WATER

Salinity

Density 8.4 lbm/gal

Fluid Level

BIT/CASING/TUBING STRING

Bit Size 8.750 in

From 0 ft

To 9115 ft

Casing/Tubing Size 4.500 in

Weight 11.6 lbm/ft

Grade

From 22 ft

To 9055 ft

Maximum Recorded Temperatures 171 degF

Logger On Bottom 21-Feb-2013

Unit Number 391

Location GRAND JUNCTION

Recorded By JASON BARRY

Witnessed By TERRY DUNN

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				
Location				
Recorded By				
Witnessed By				

## DEPTH SUMMARY LISTING

Date Created: 29-JAN-2013 10:07:01

## Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6214	Serial Number:	3421	Serial Number:	112136
Calibration Date:	24-APR-2012	Calibration Date:	29-JAN-2013	Length:	19500 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:	-3	Calibration RMS:	13		
Wheel Correction 2:	-4	Calibration Peak Error:	23		

## Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	
Rig Up Length At Bottom:	
Rig Up Length Correction:	
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 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: 23:45	
TIME ON BOTTOM: 00:30	
EXIT TIME: 1:15	

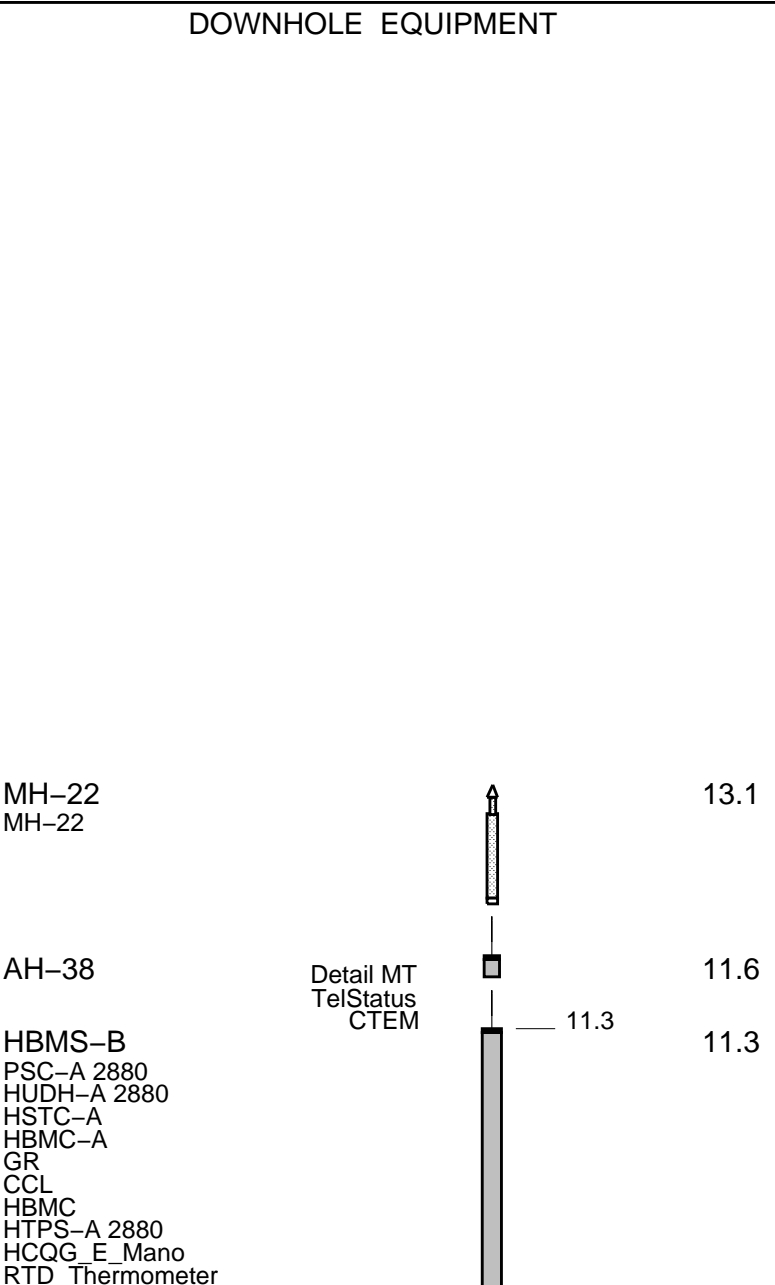
MAX RECORDED TEMPERATURE: 171 DEGF	
MAX RECORDED PRESSURE: 2848 PSI	
SHORT JOINTS: 5601 FT & 6679 FT	
CREW: J BARRY, B CUPP, K JOHNS, B RANSBOTTOM	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

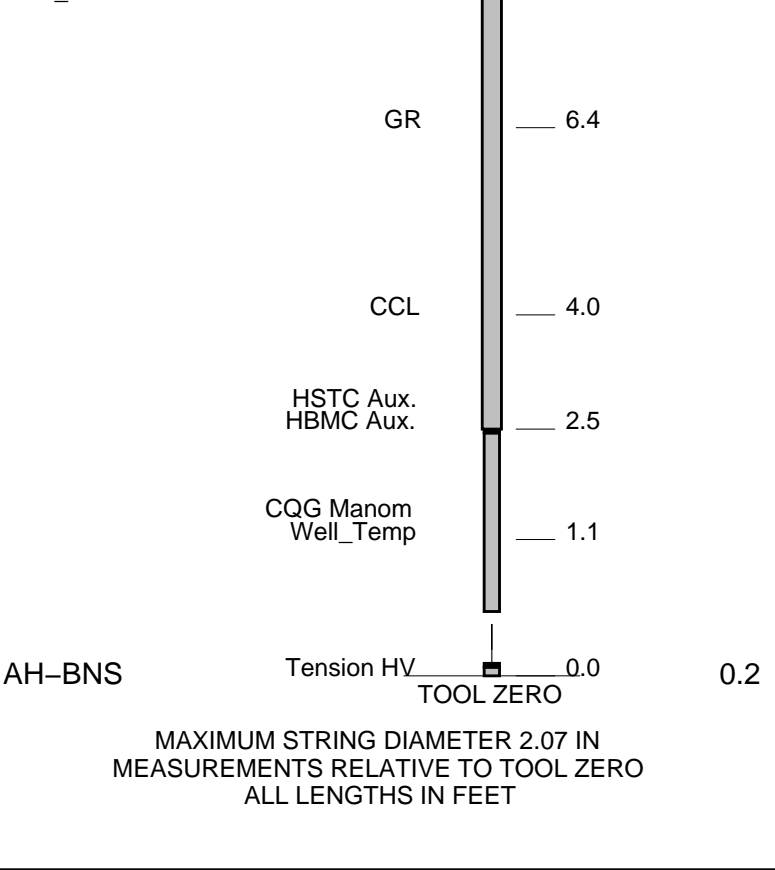
RUN 1			RUN 2		
SERVICE ORDER #:	C920-00045		SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187		PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT

WITM-A  
PSC\_16MHZ



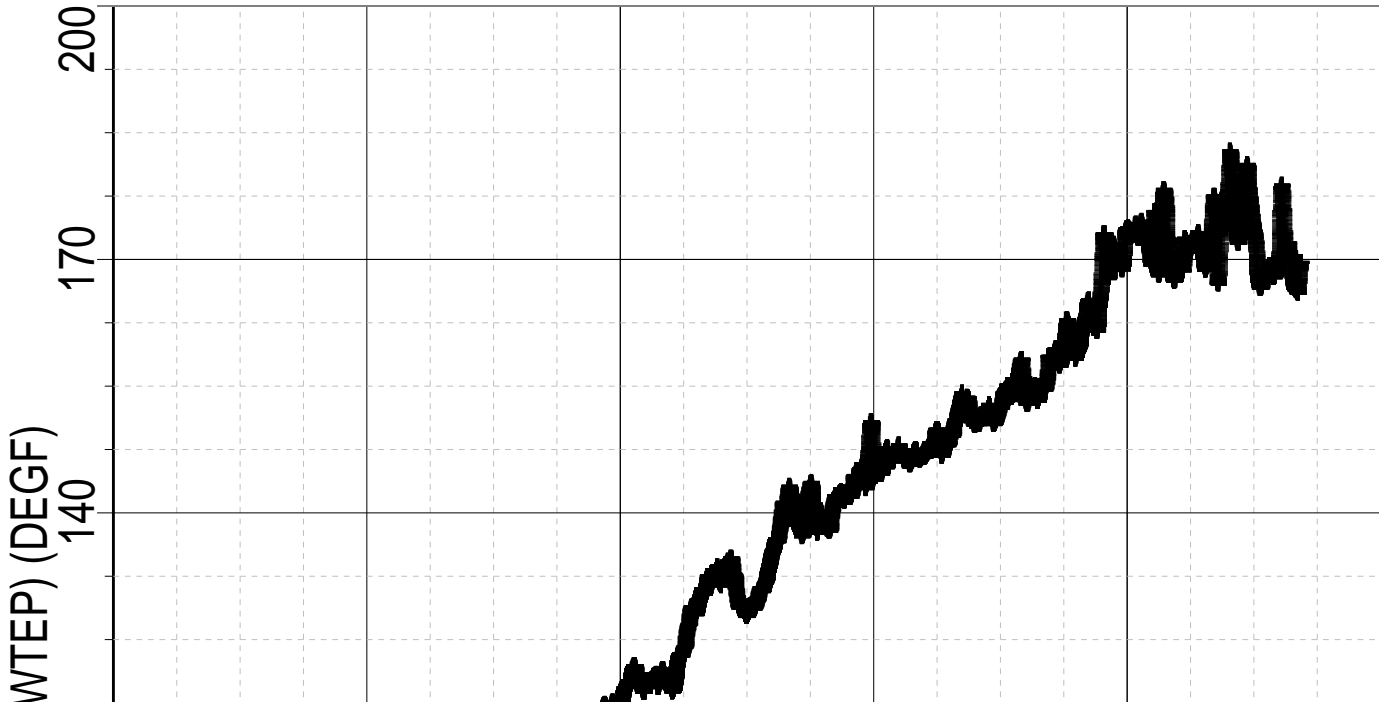


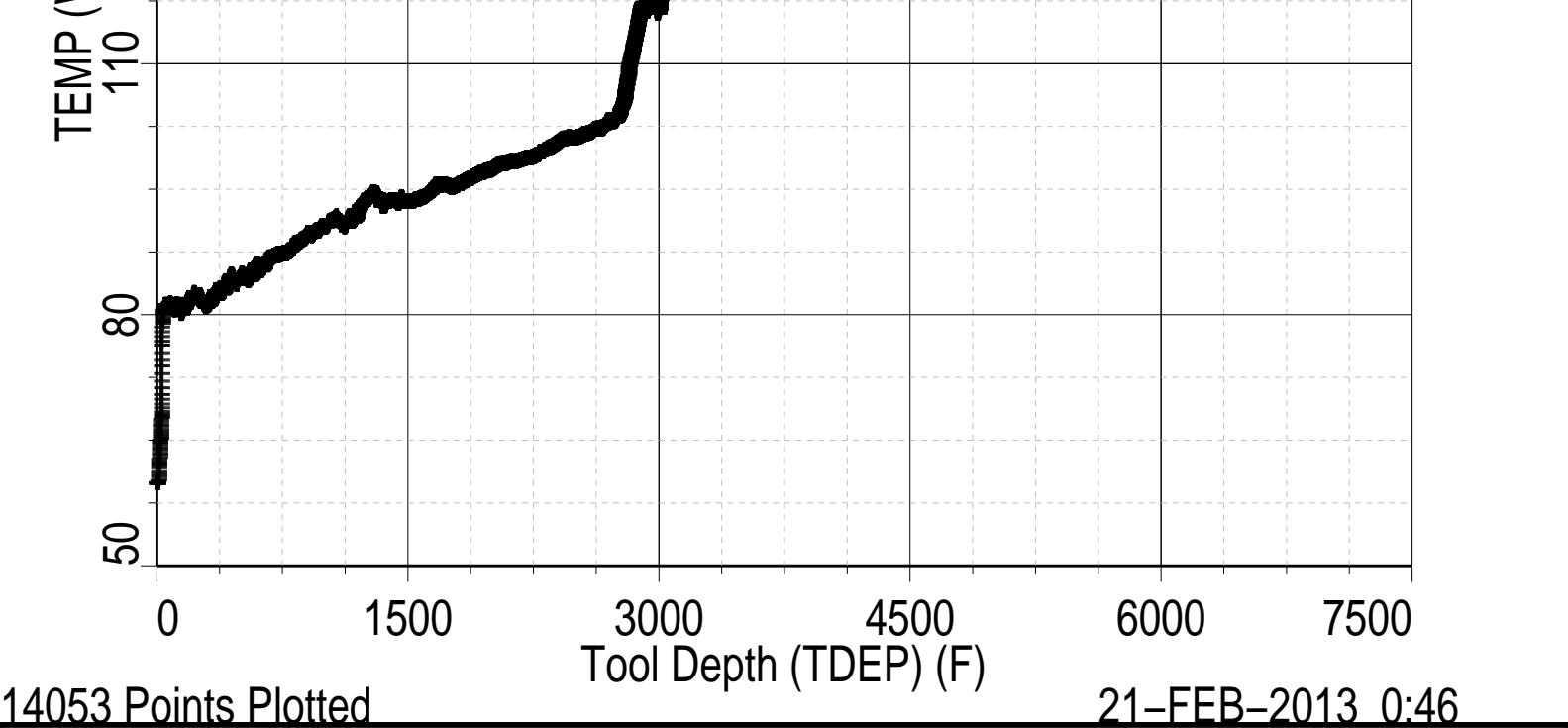
Schlumberger

# TEMPERATURE PLOT

MAXIS Field Log

Index: 7028.0 – 2.0 FT





Schlumberger

## TEMPERATURE LOG

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEE 19-13D (K19CNE)

### Input DLIS Files

DEFAULT Flip\_HBMS\_005LUP PRODUCER 21-Feb-2013 00:36 7024.0 FT -2.0 FT

### Output DLIS Files

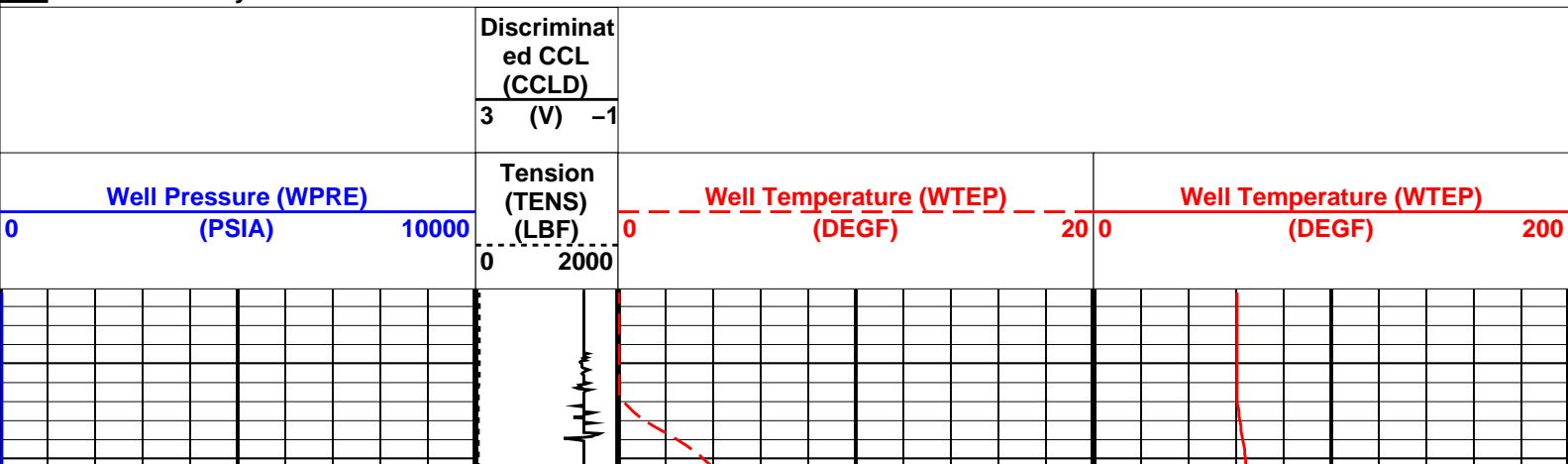
DEFAULT HBMS\_008PUP FN:4 PRODUCER 21-Feb-2013 00:42 7028.0 FT 2.0 FT

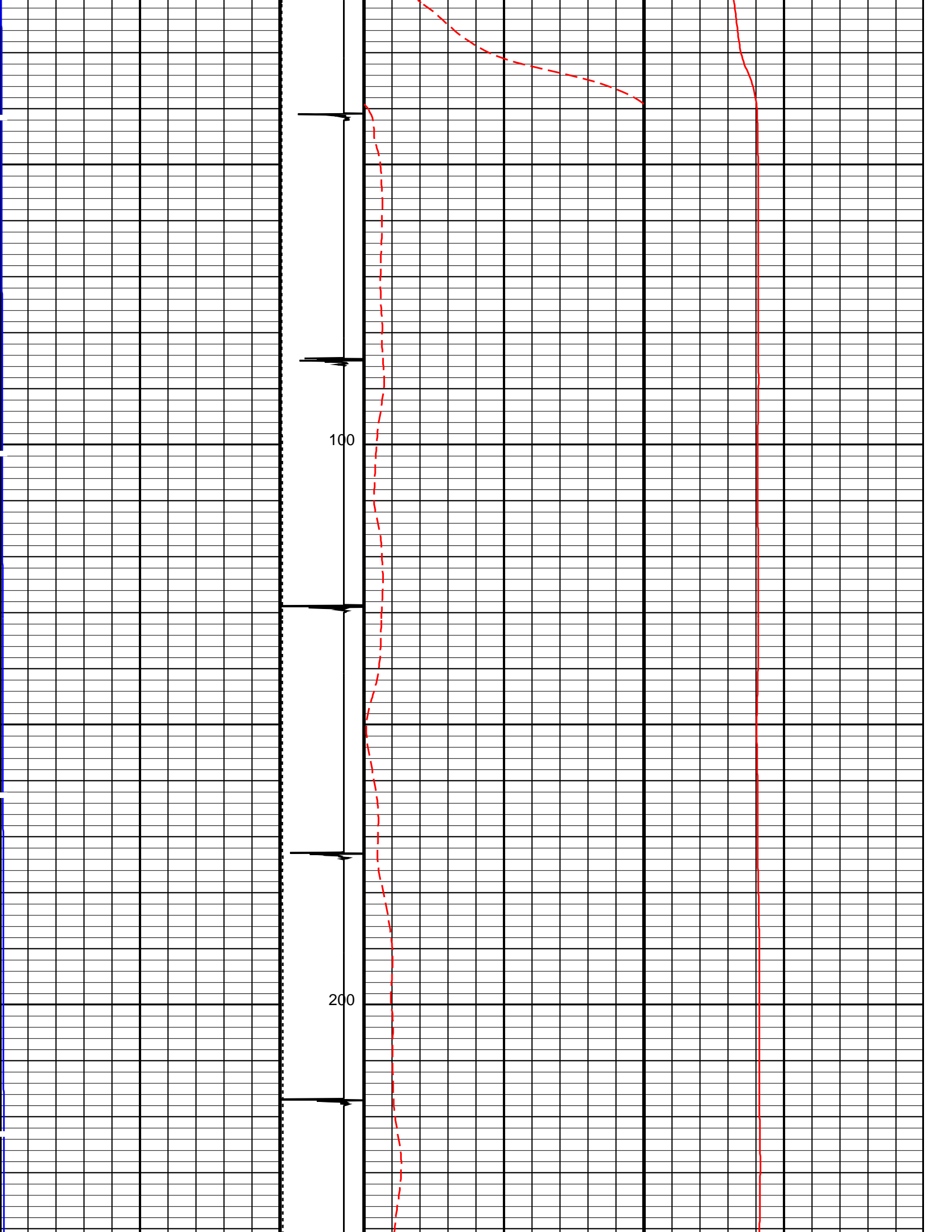
OP System Version: 19C0-187

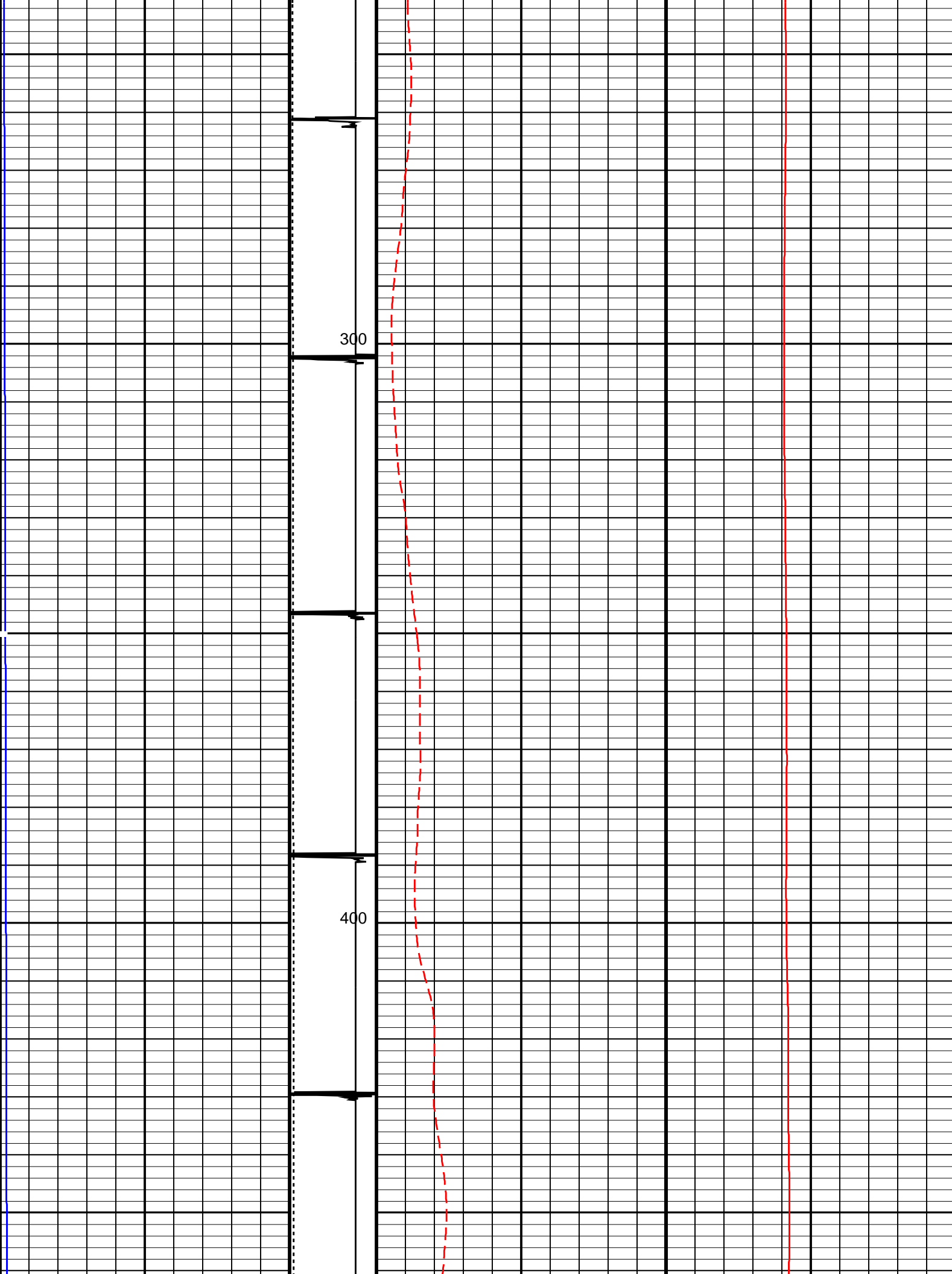
HBMS-B SRPC-5214-H2-2012-OP19

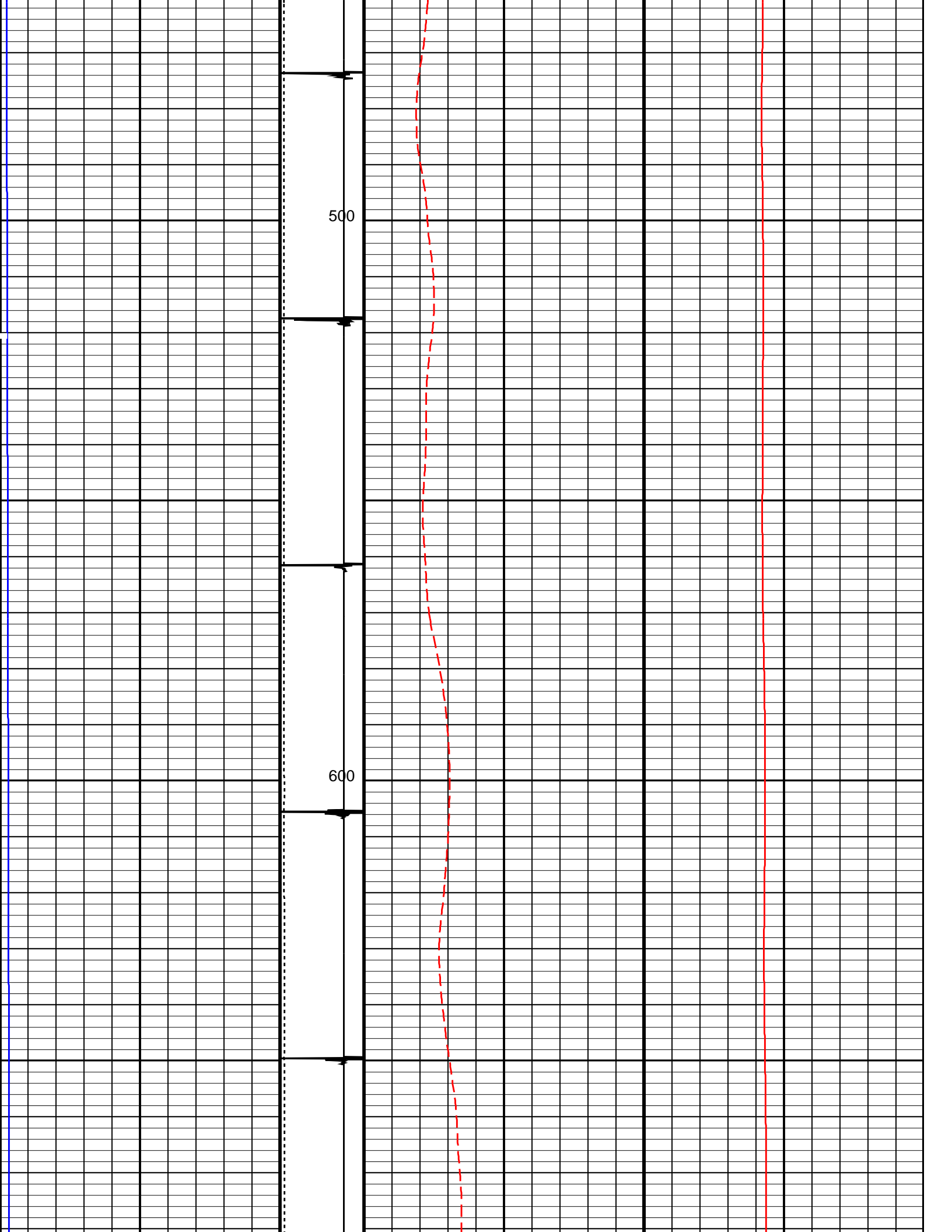
### PIP SUMMARY

Time Mark Every 60 S

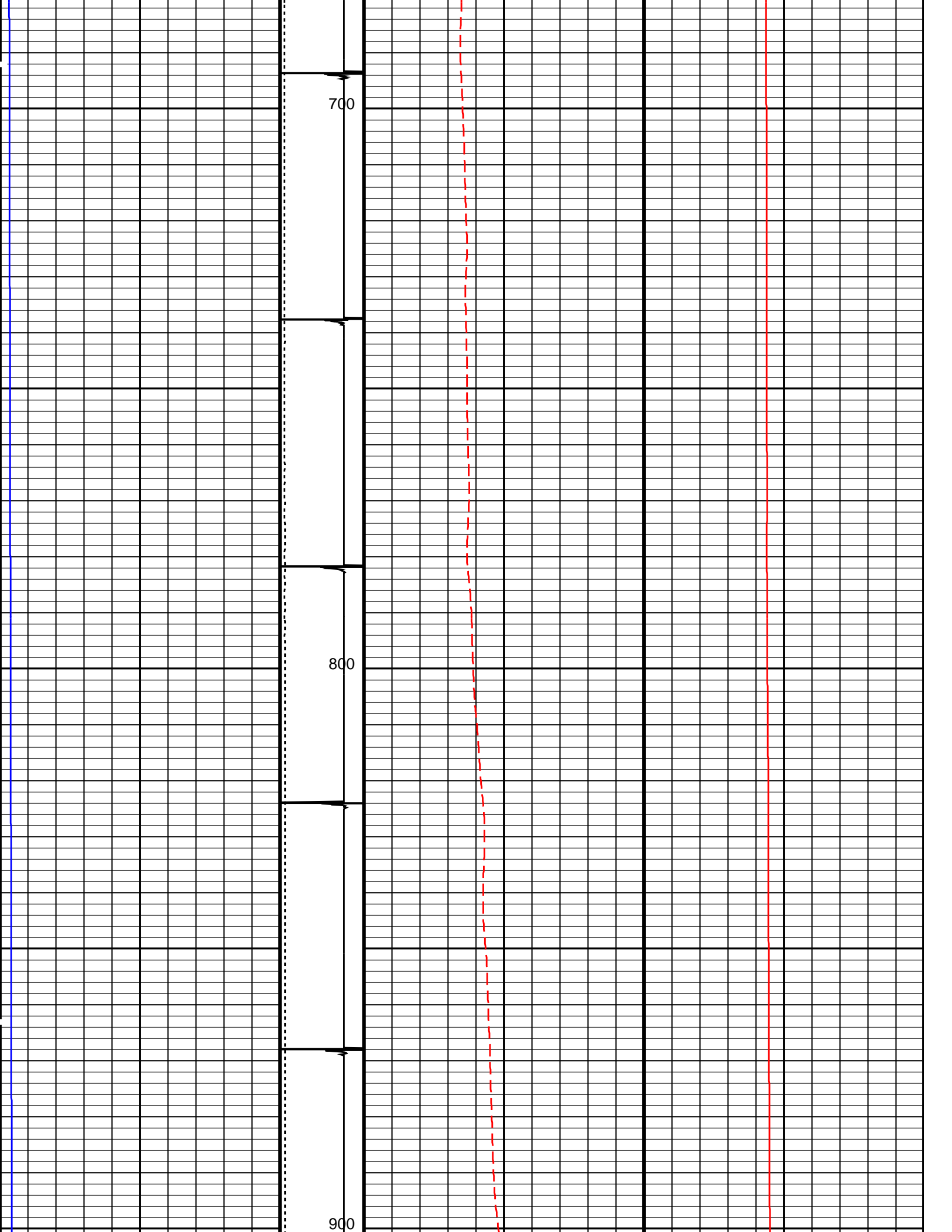


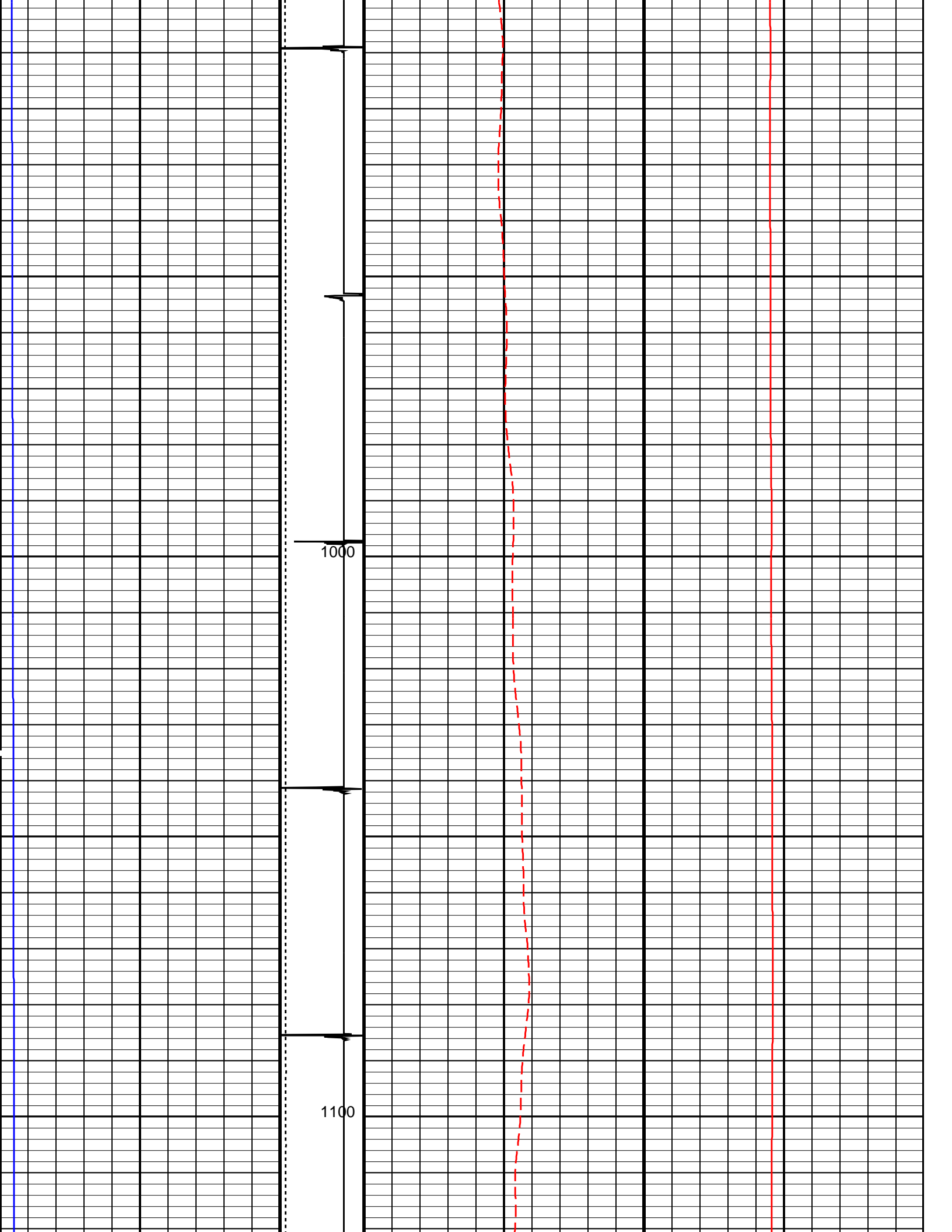


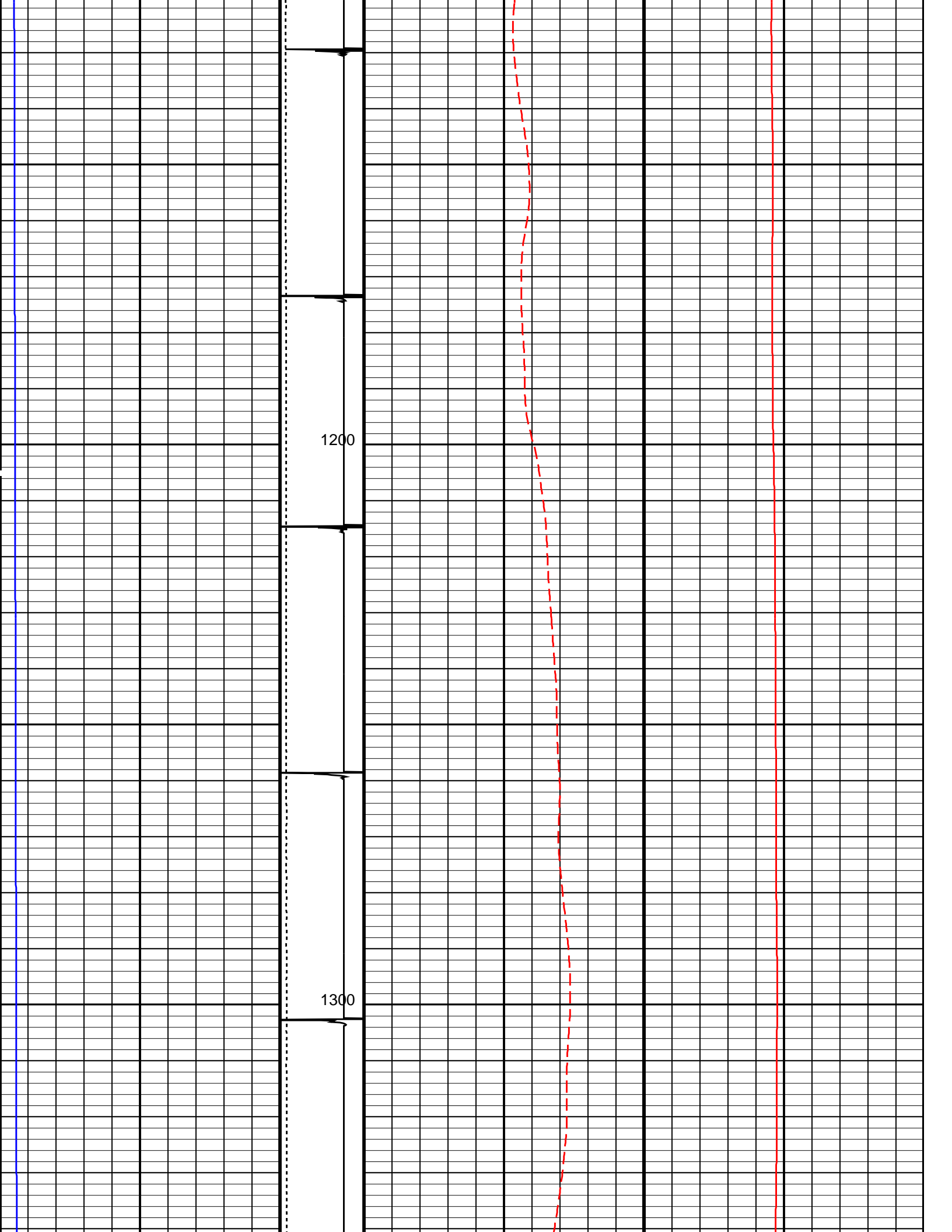


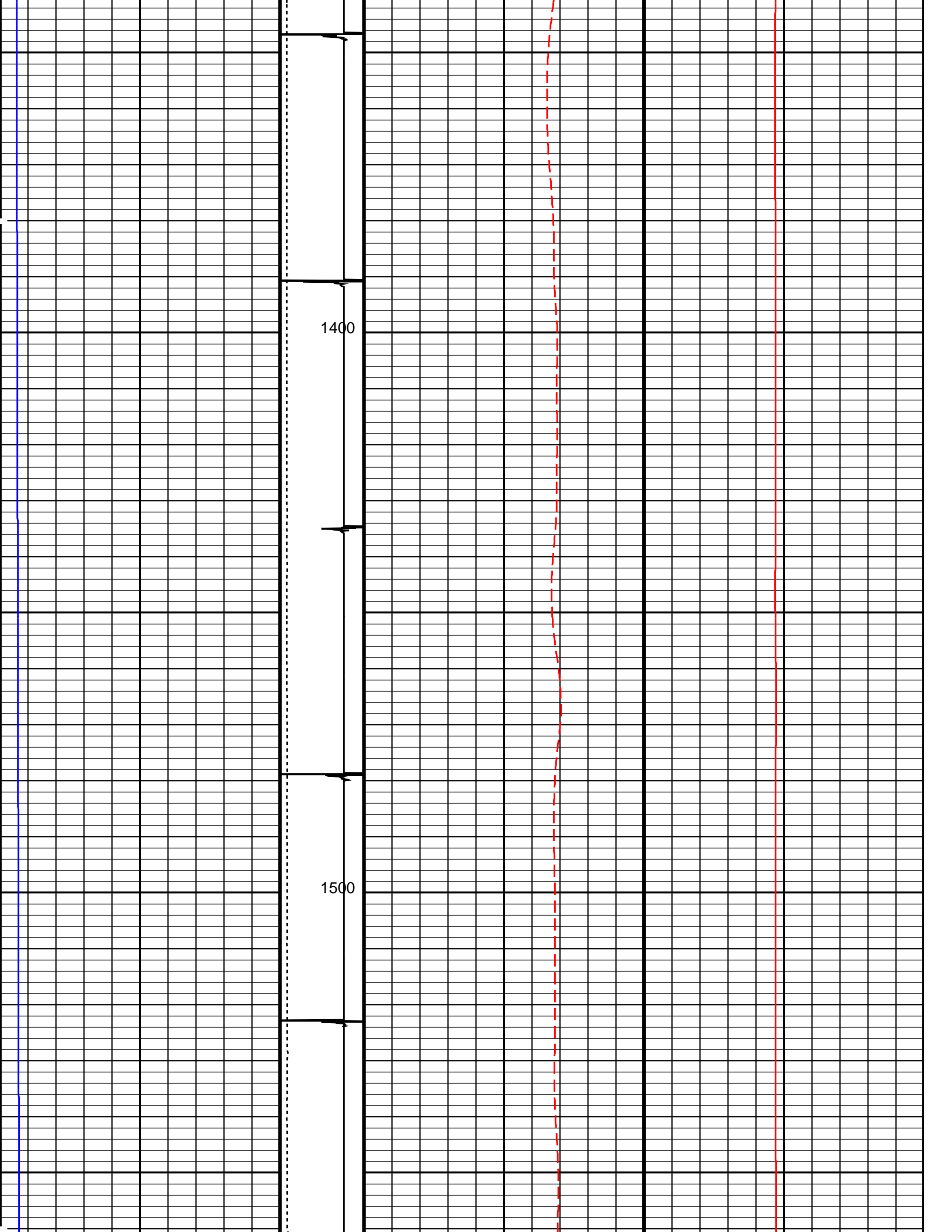


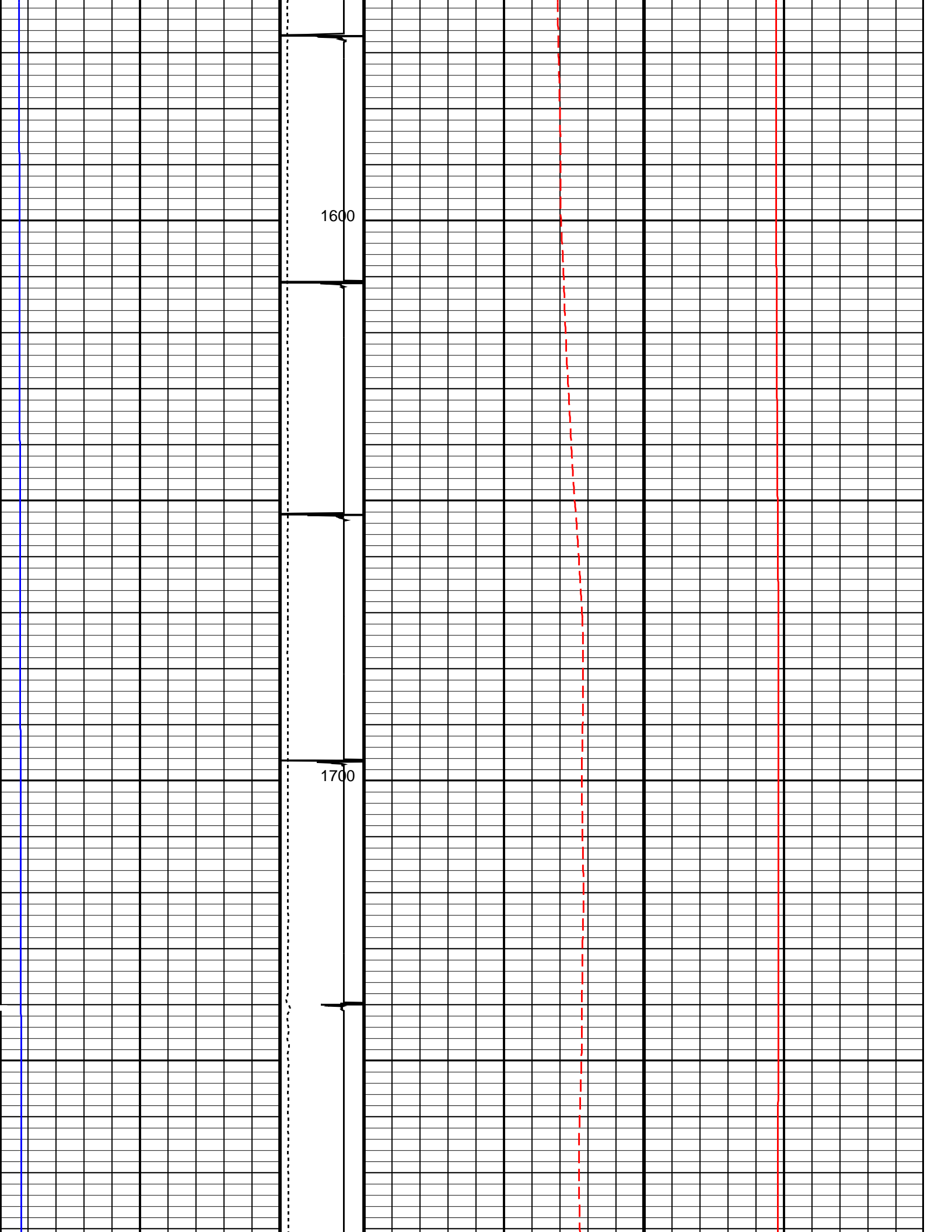


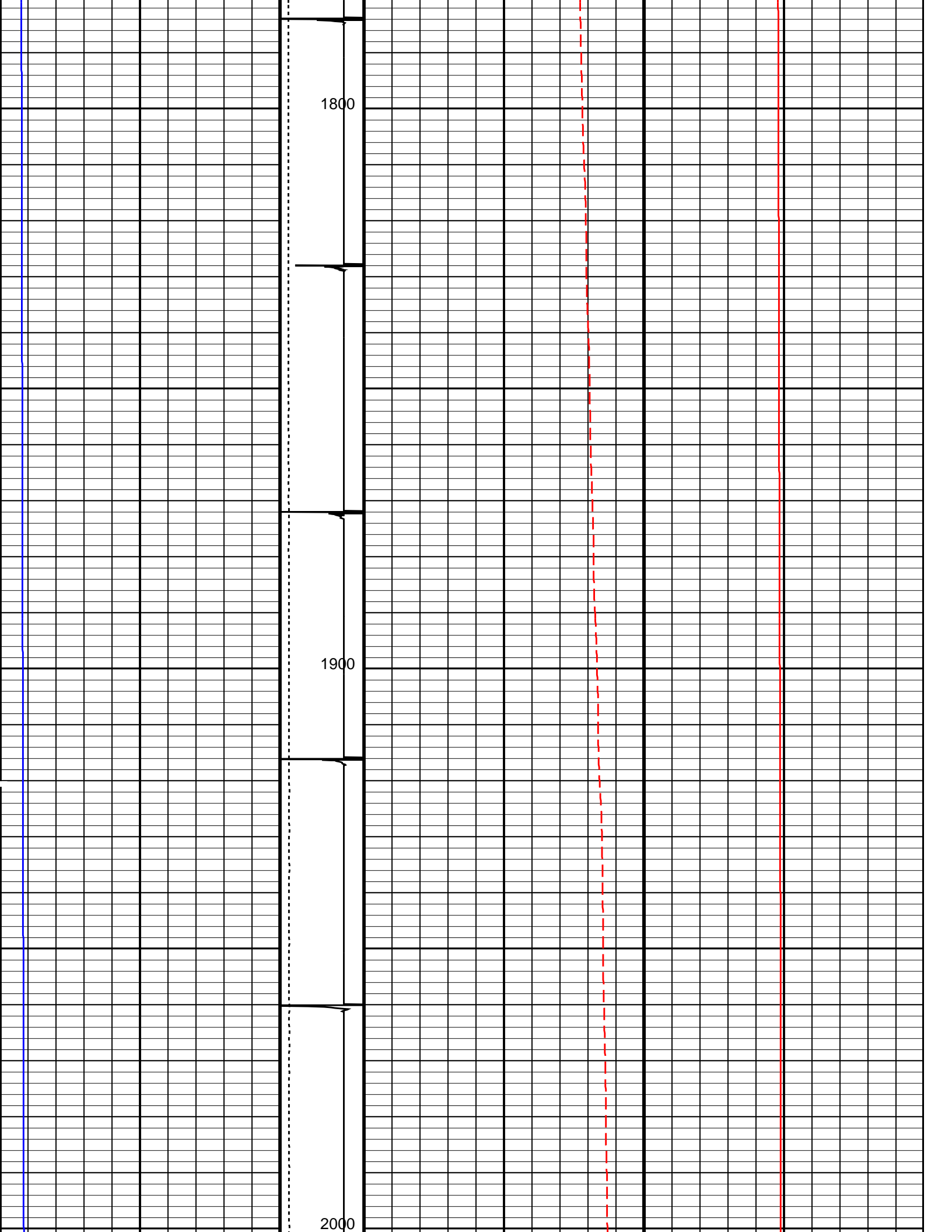








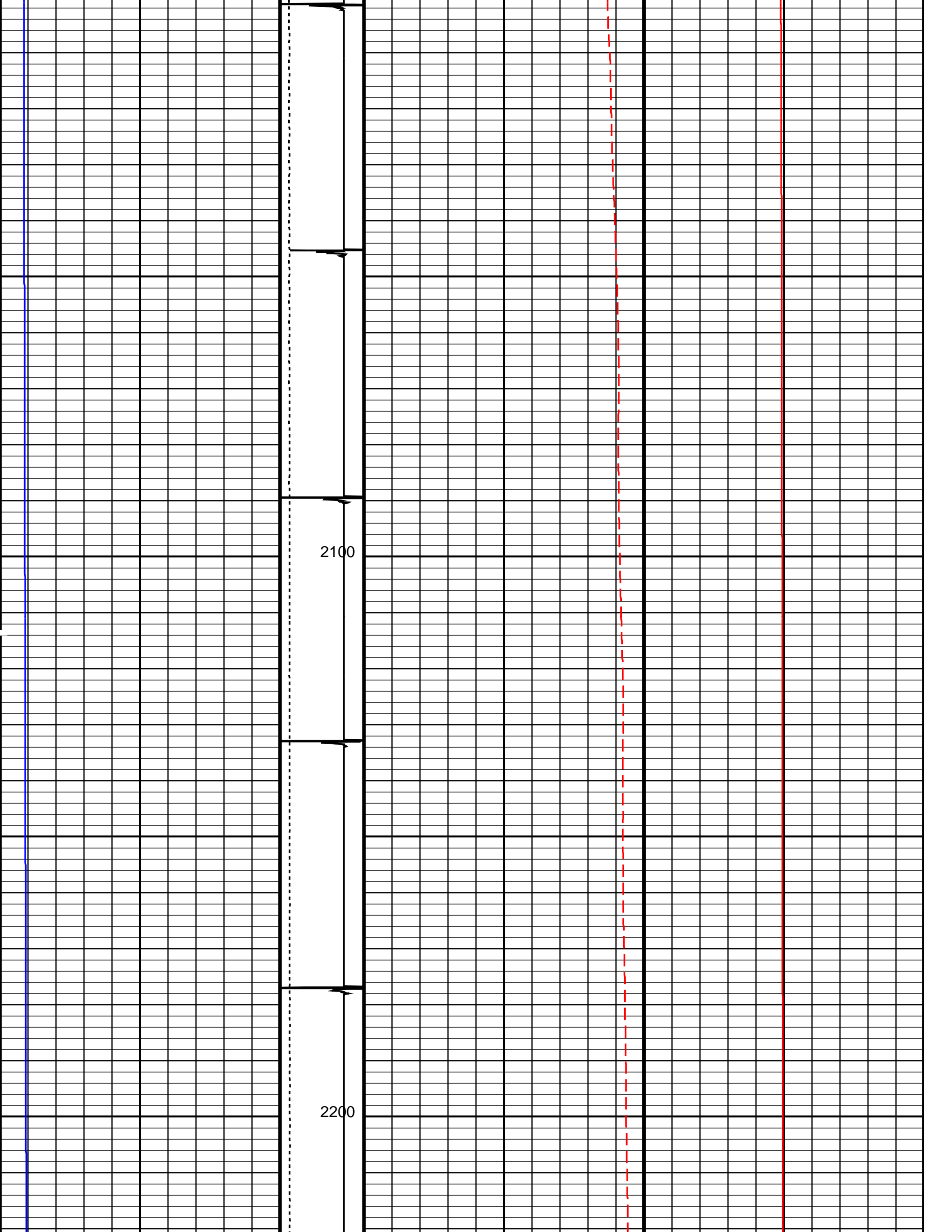


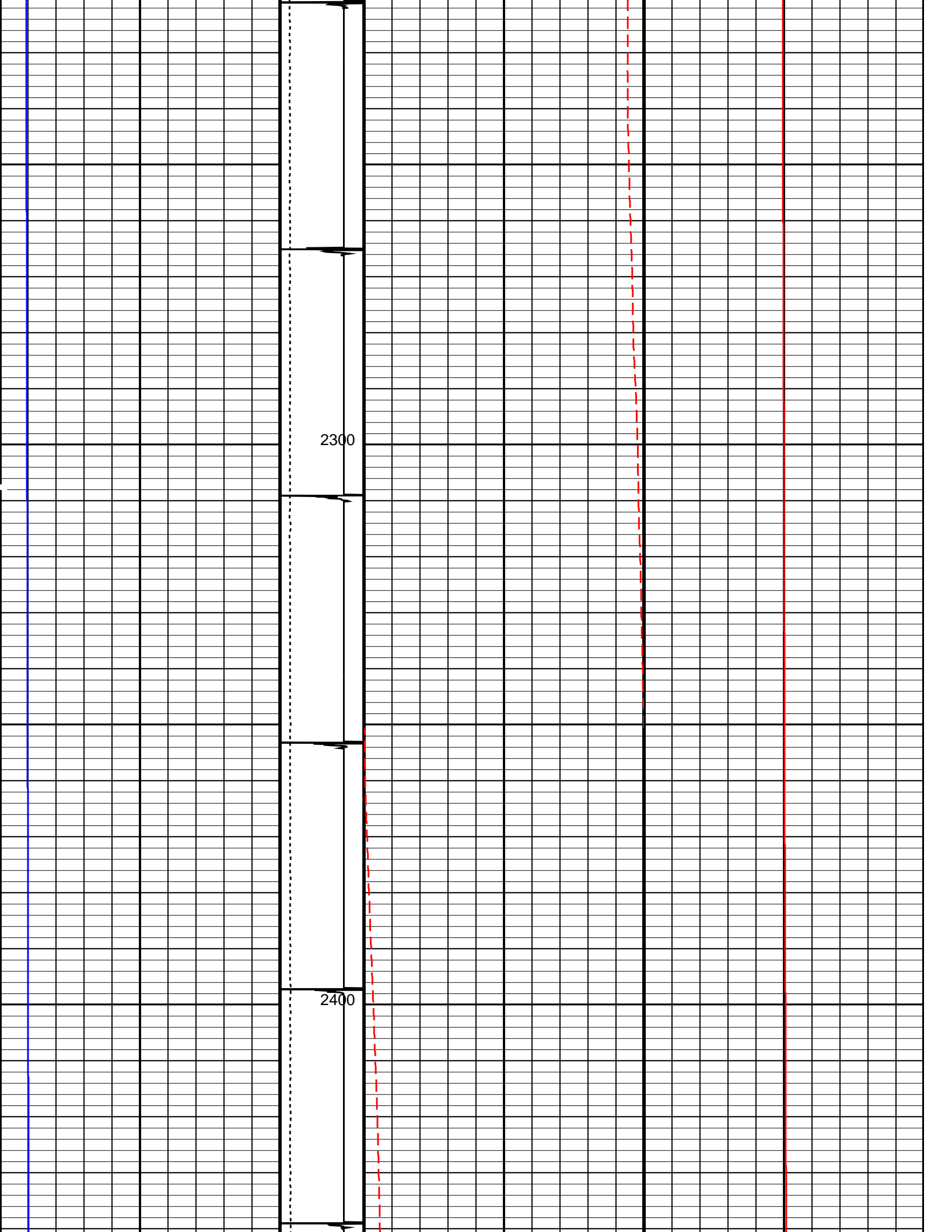


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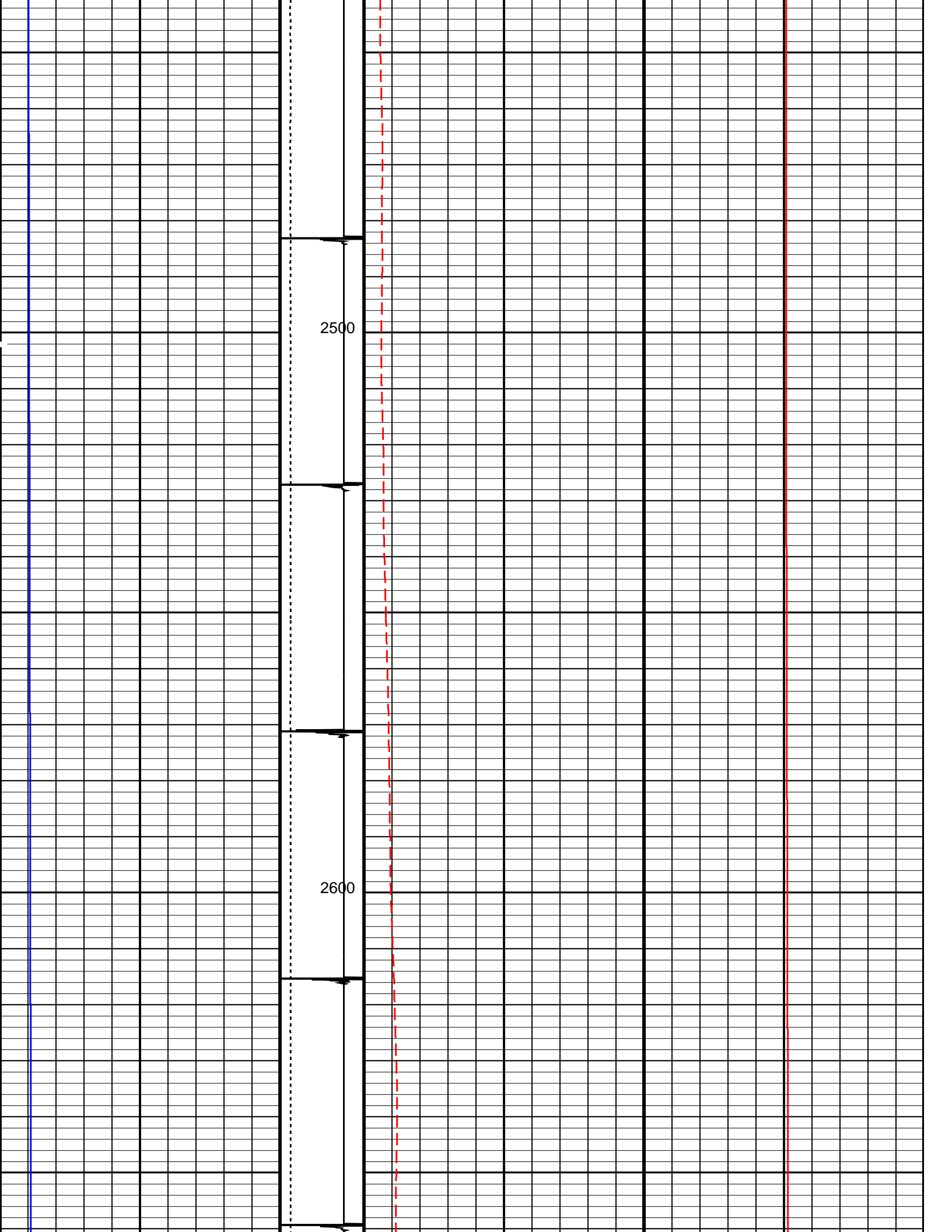
1900

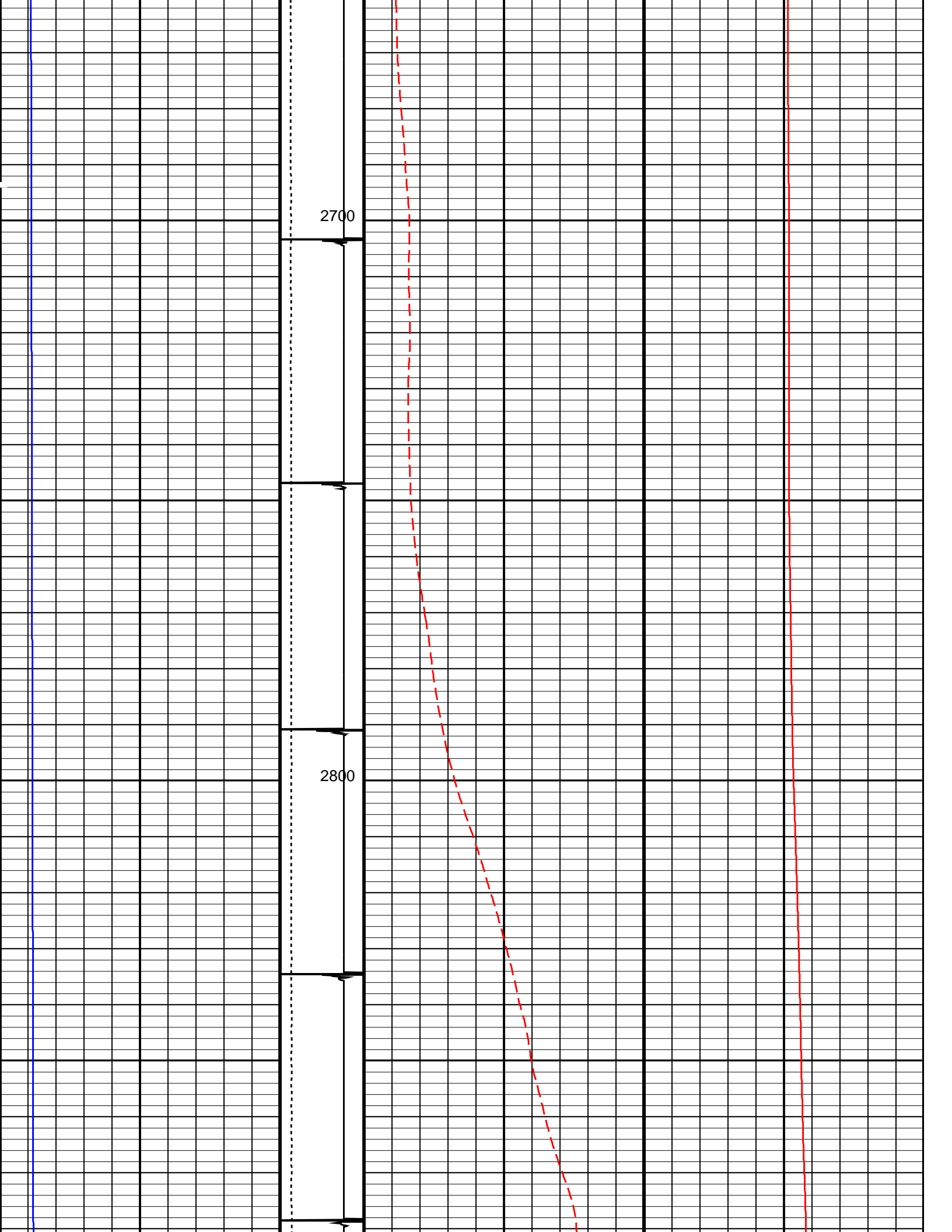
2000

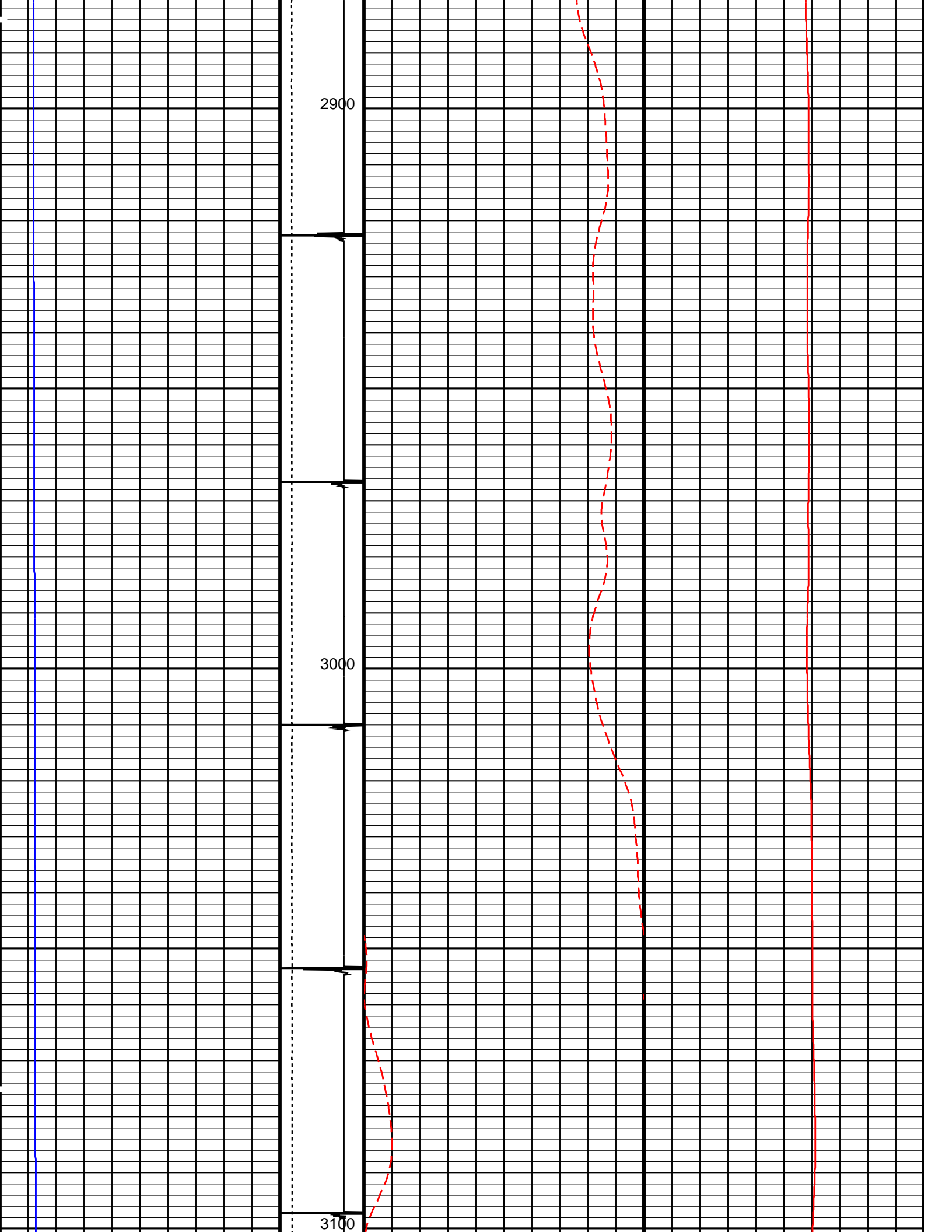


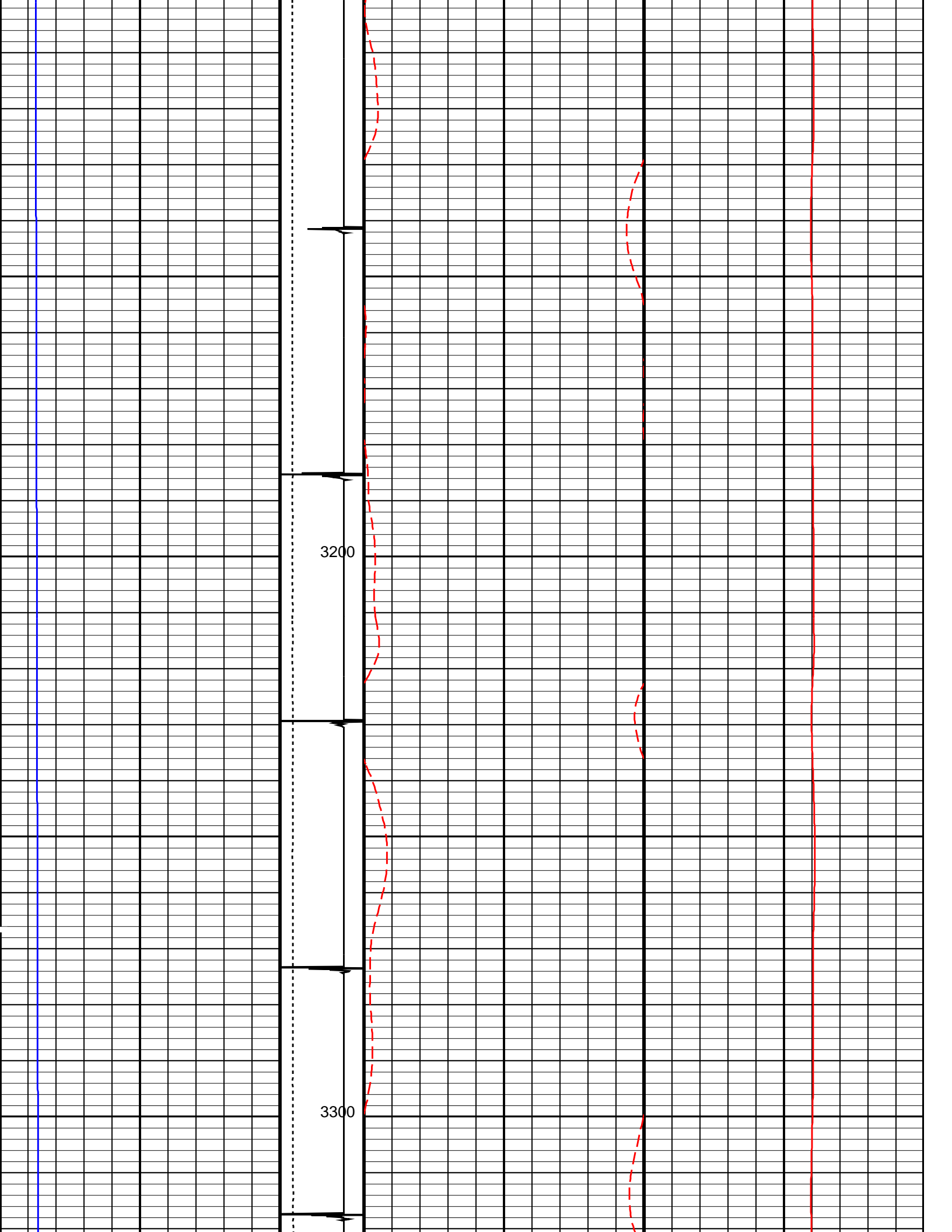


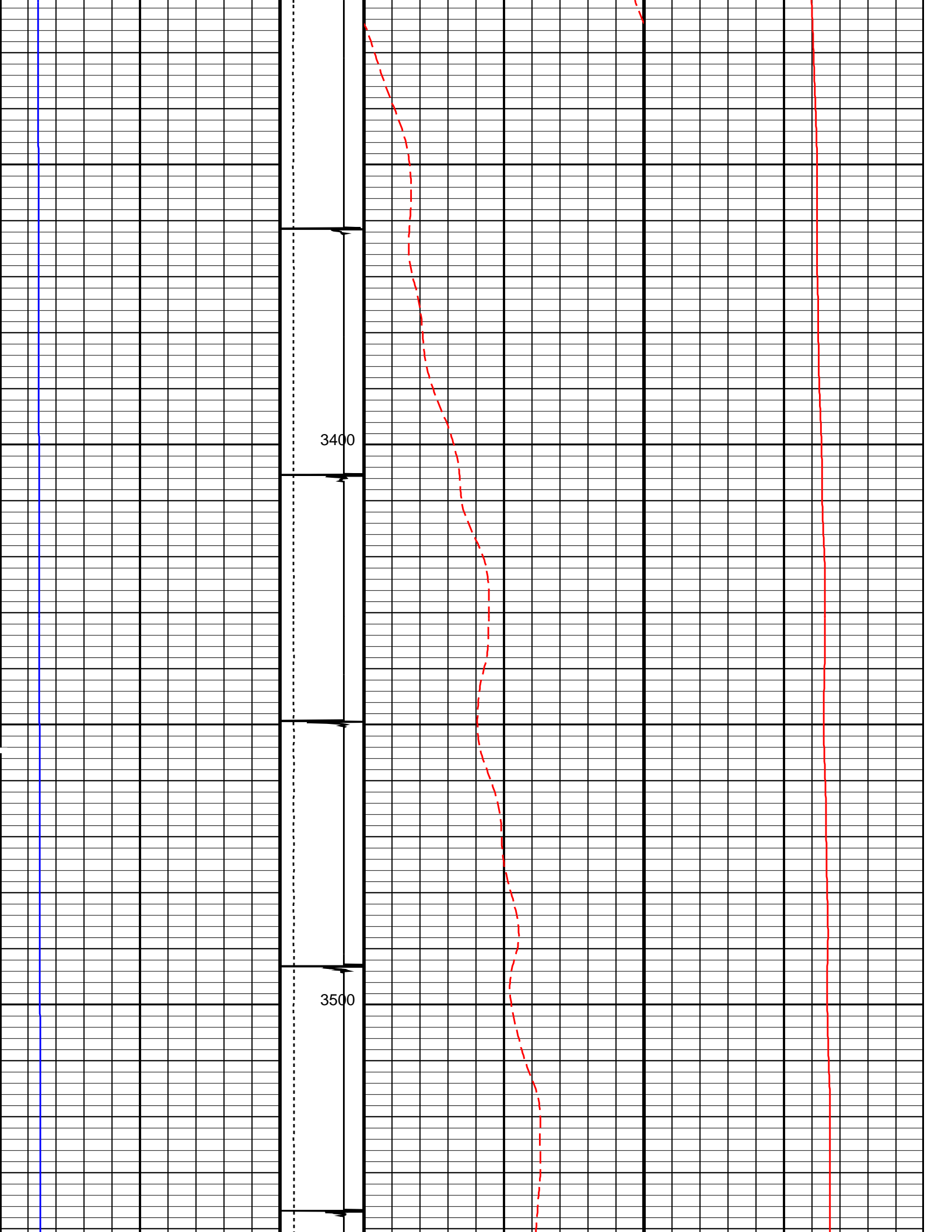


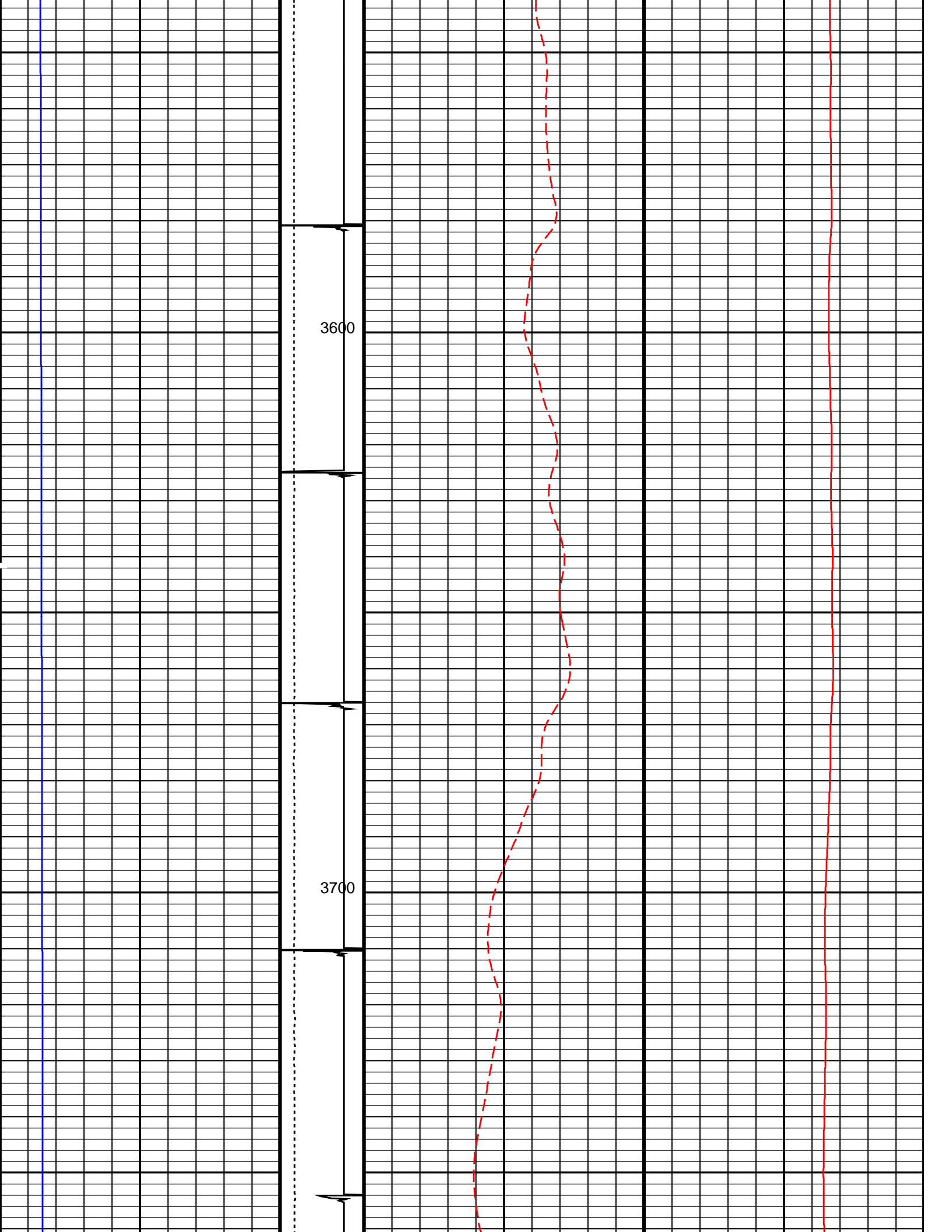


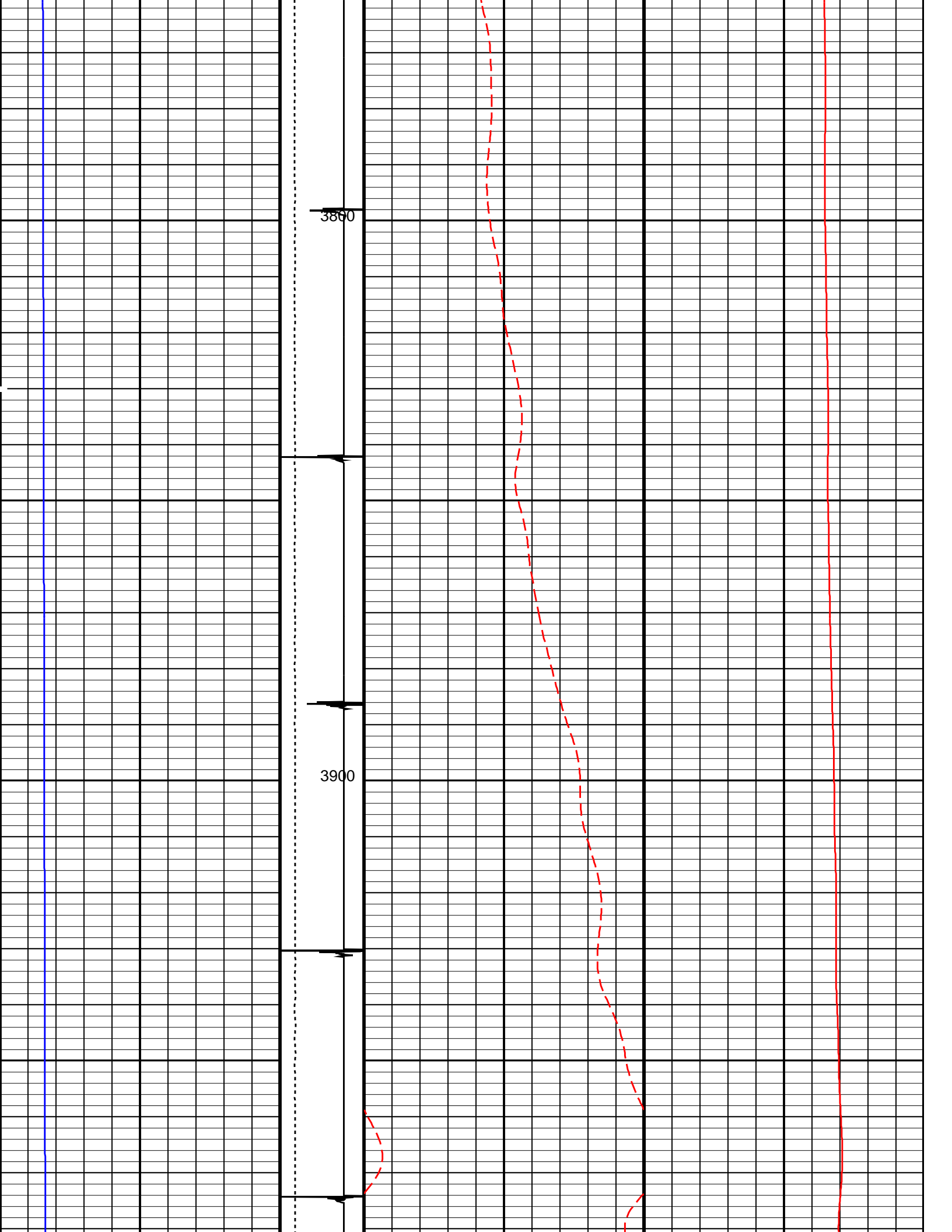


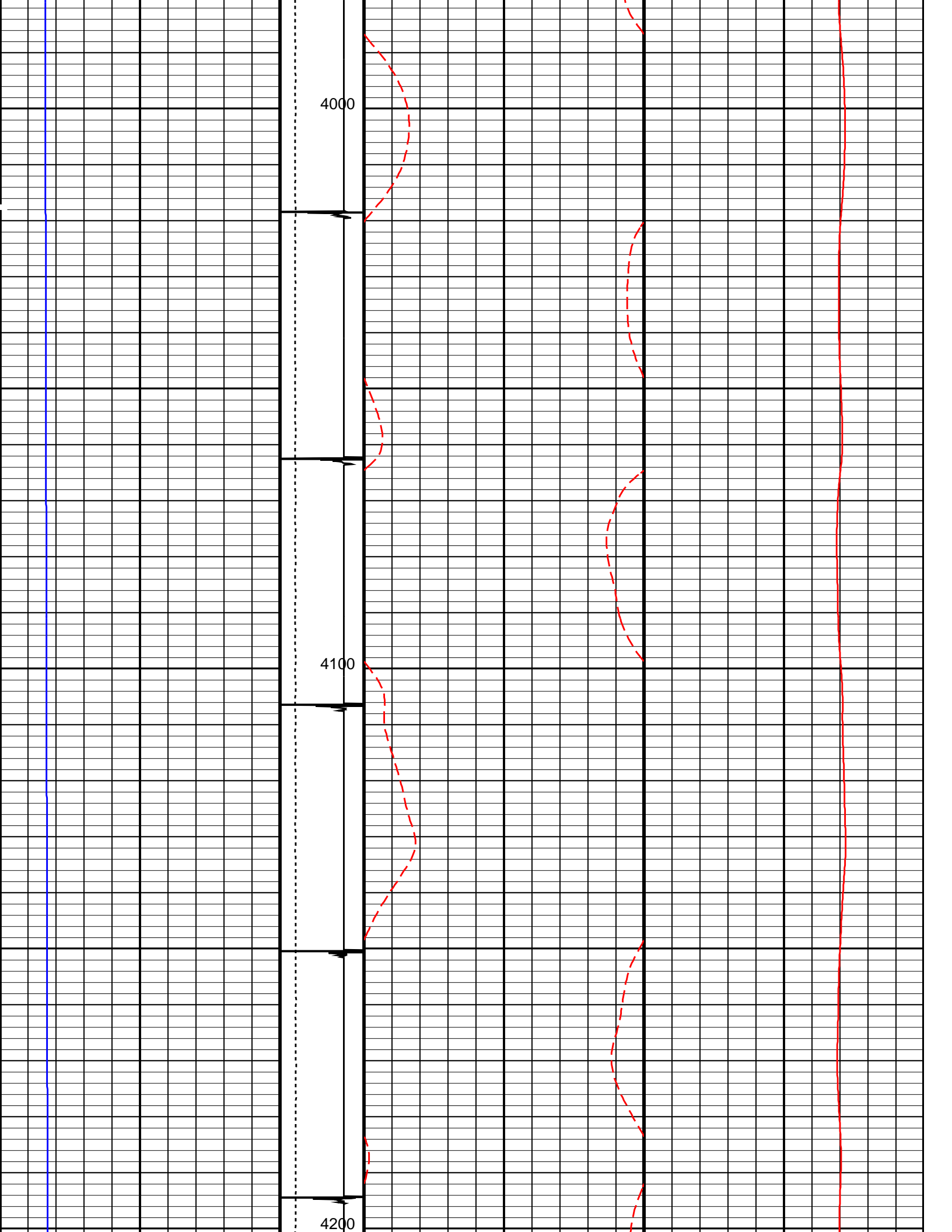




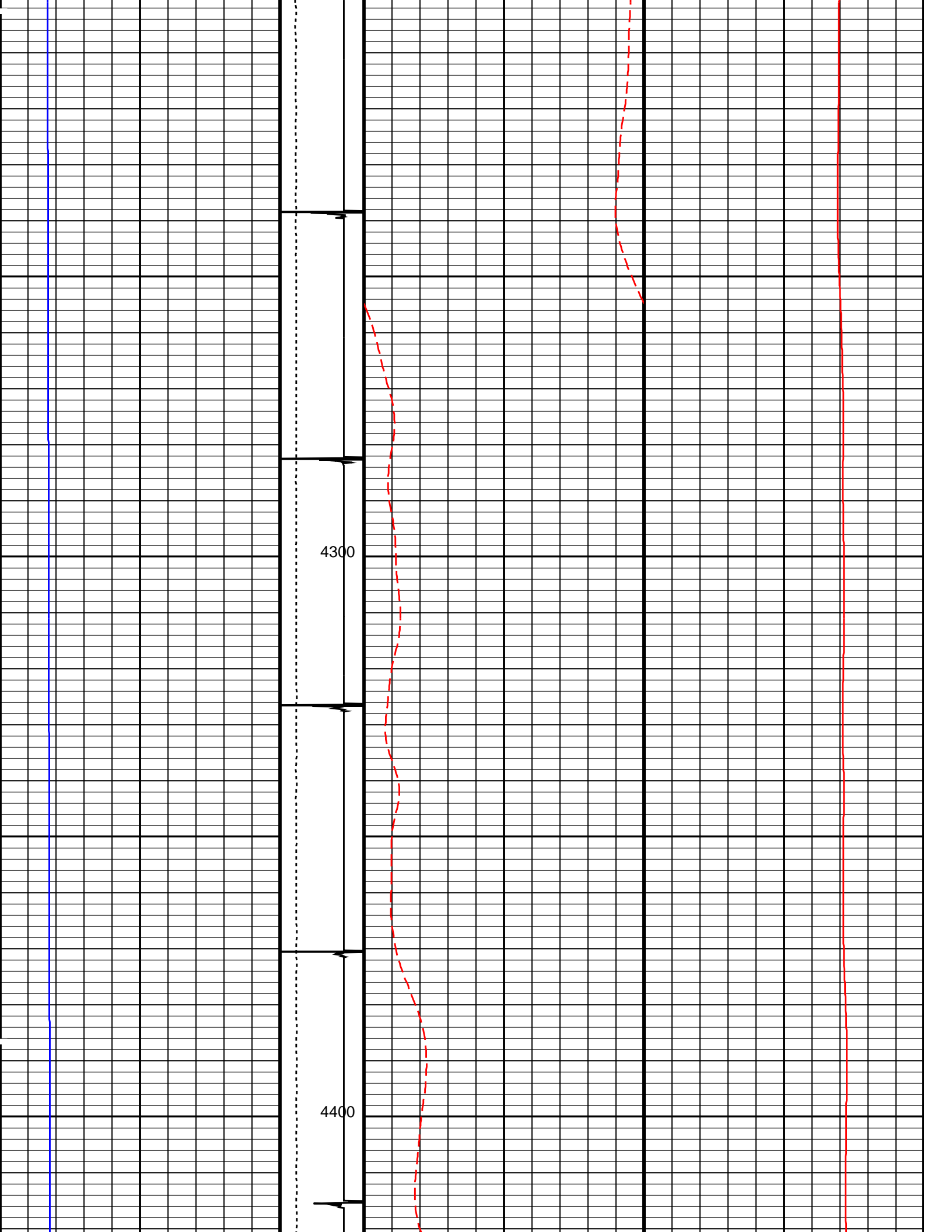


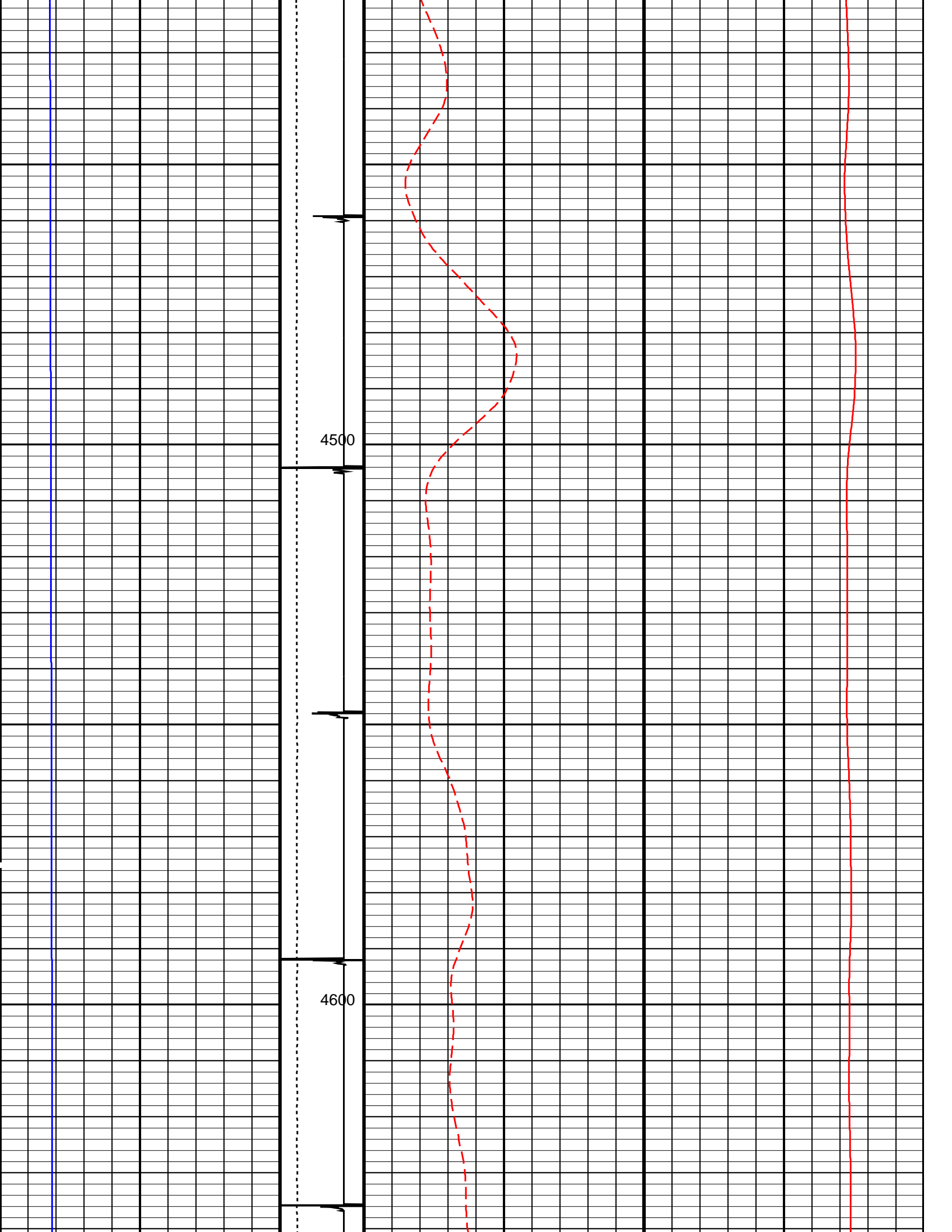


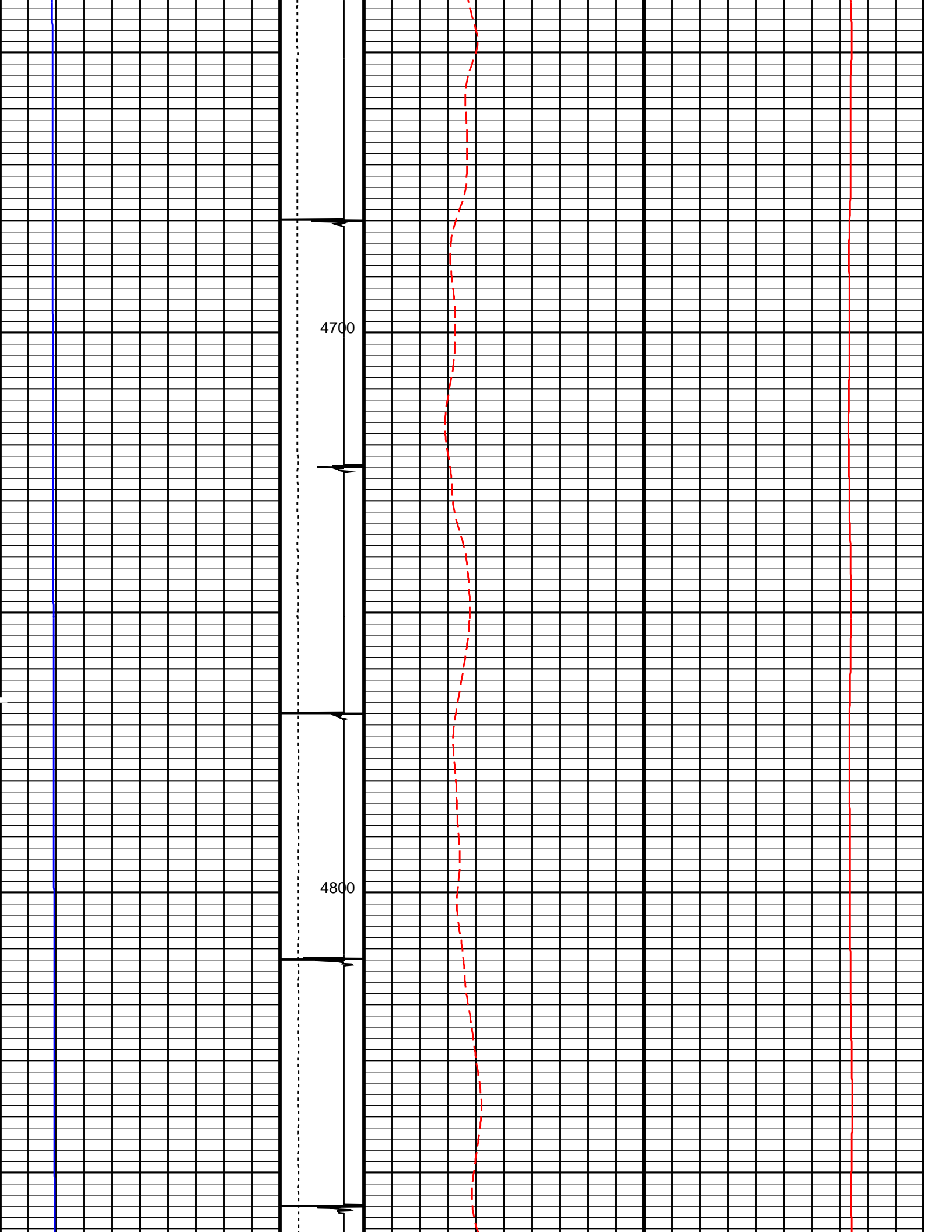


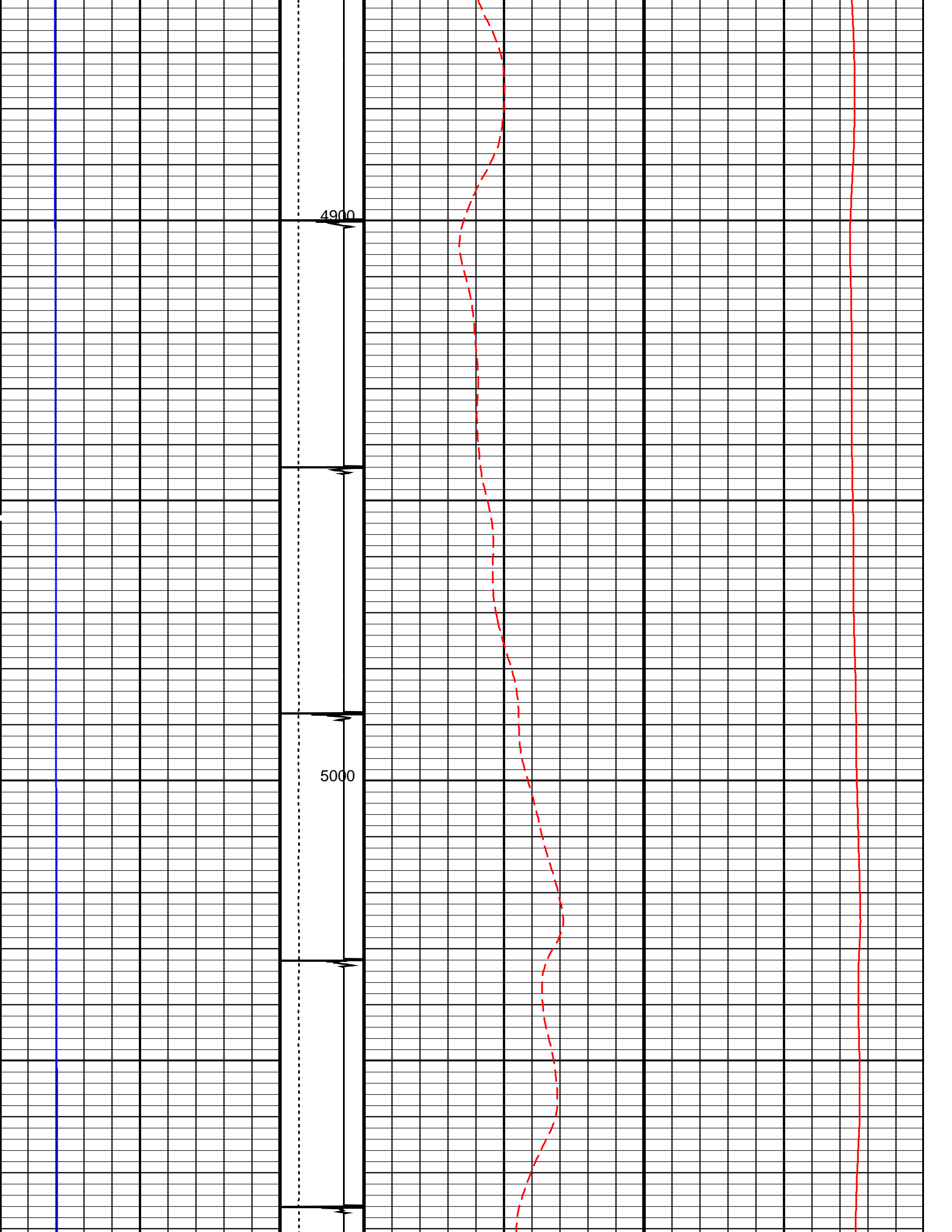


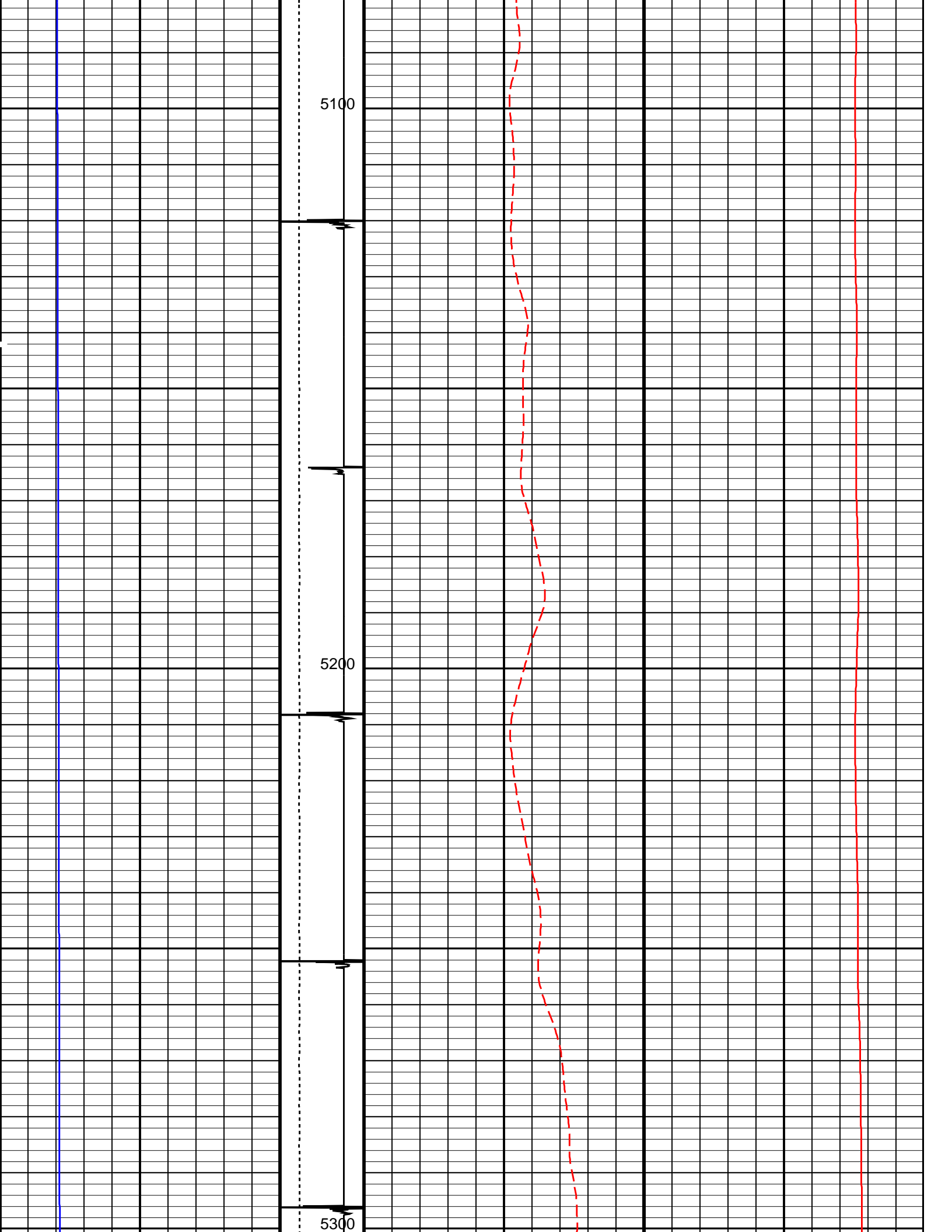


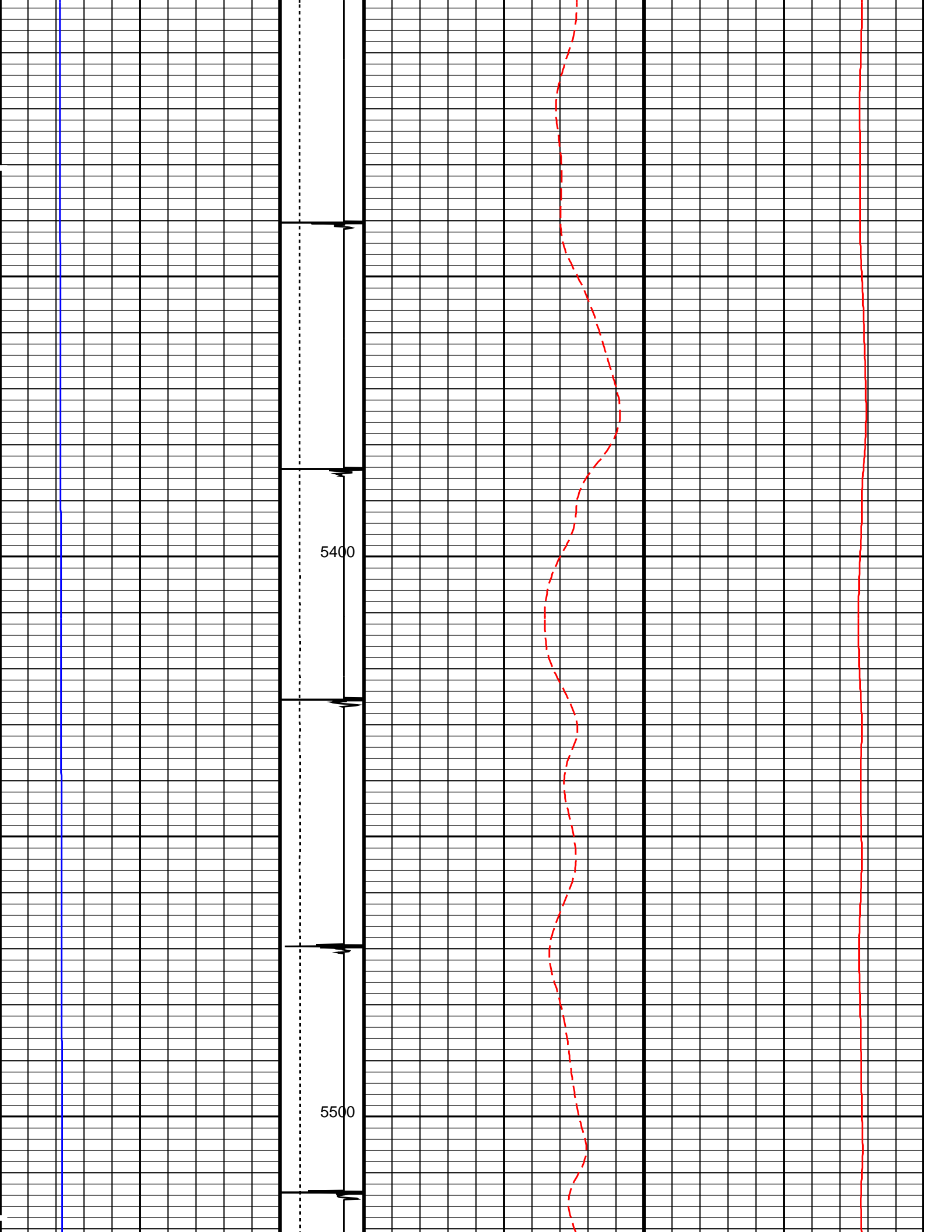


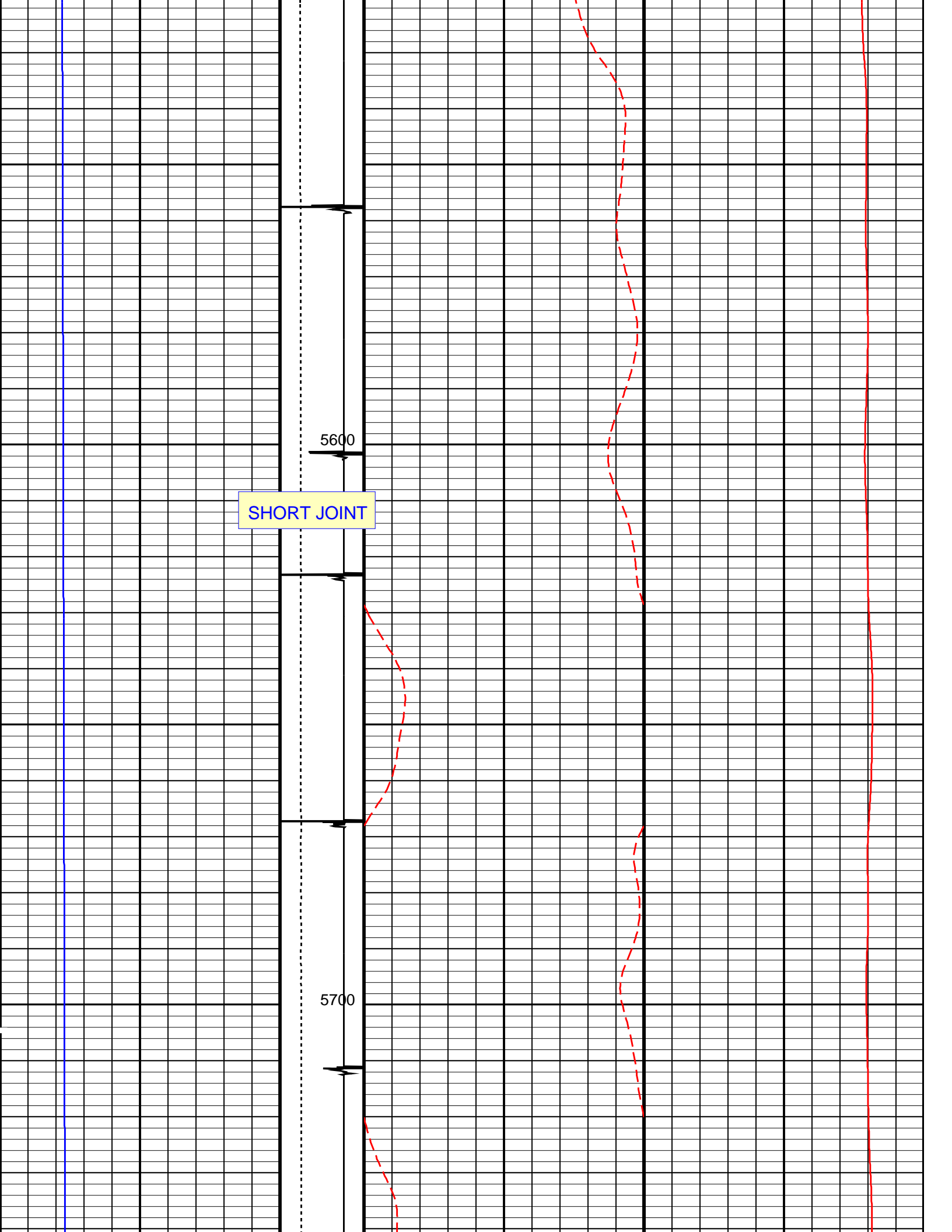


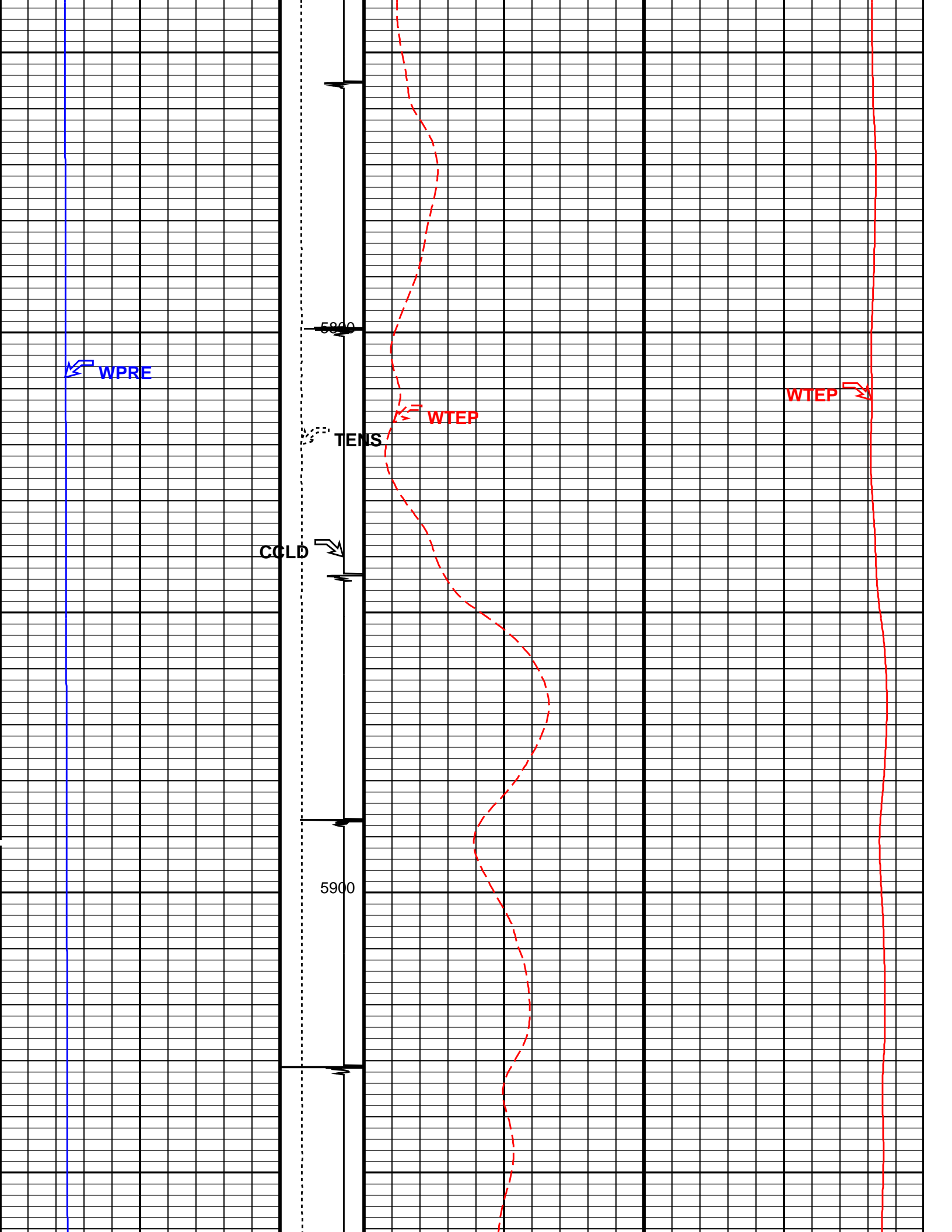




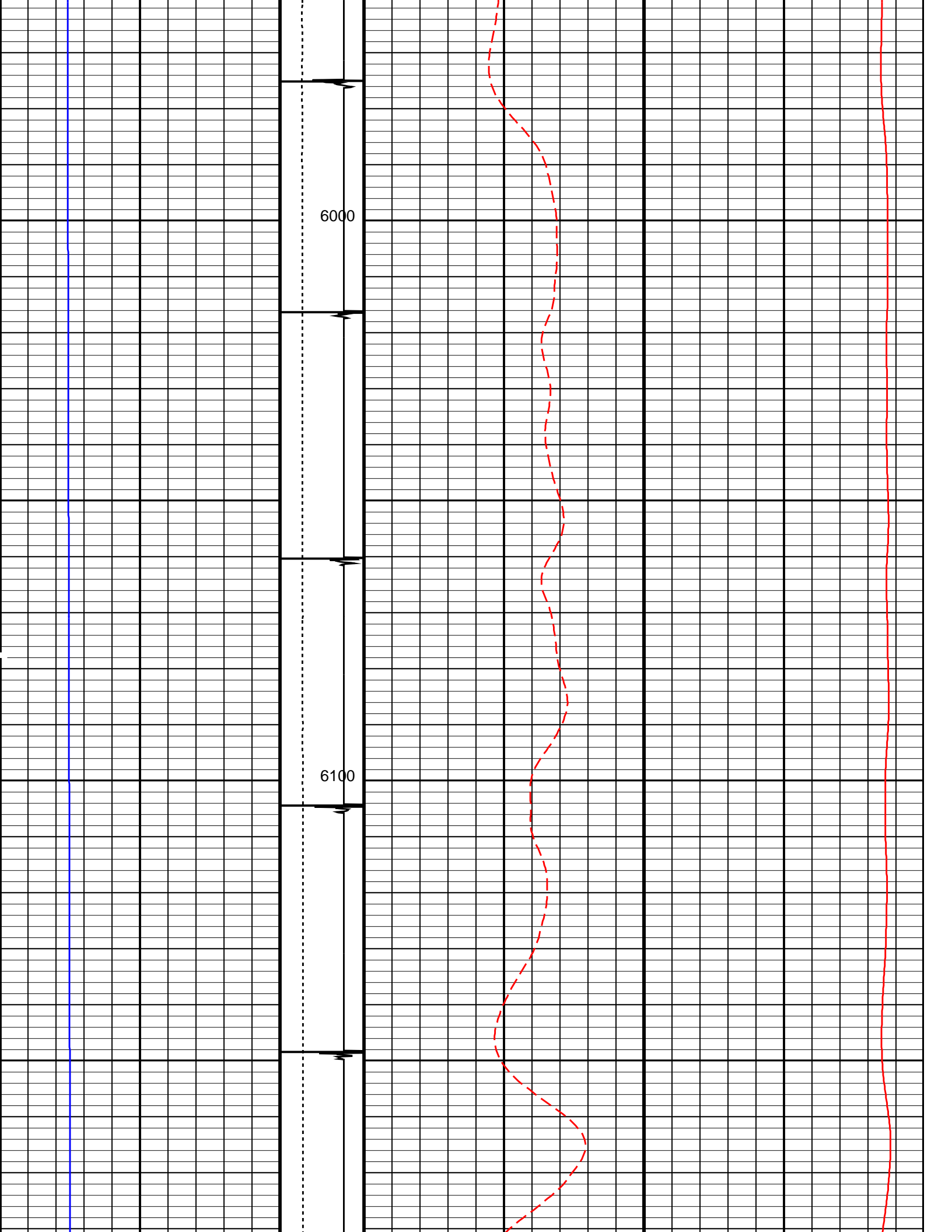


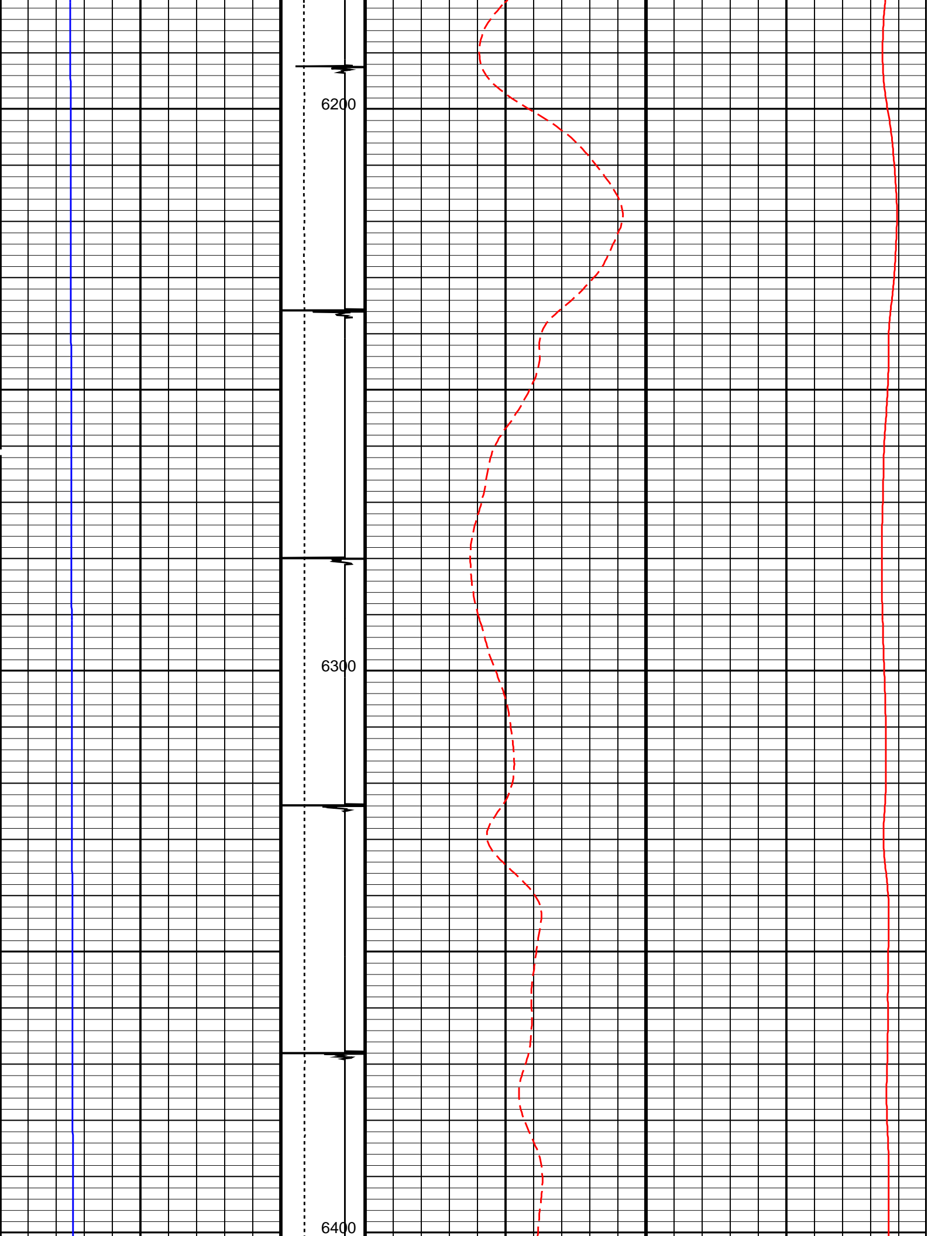


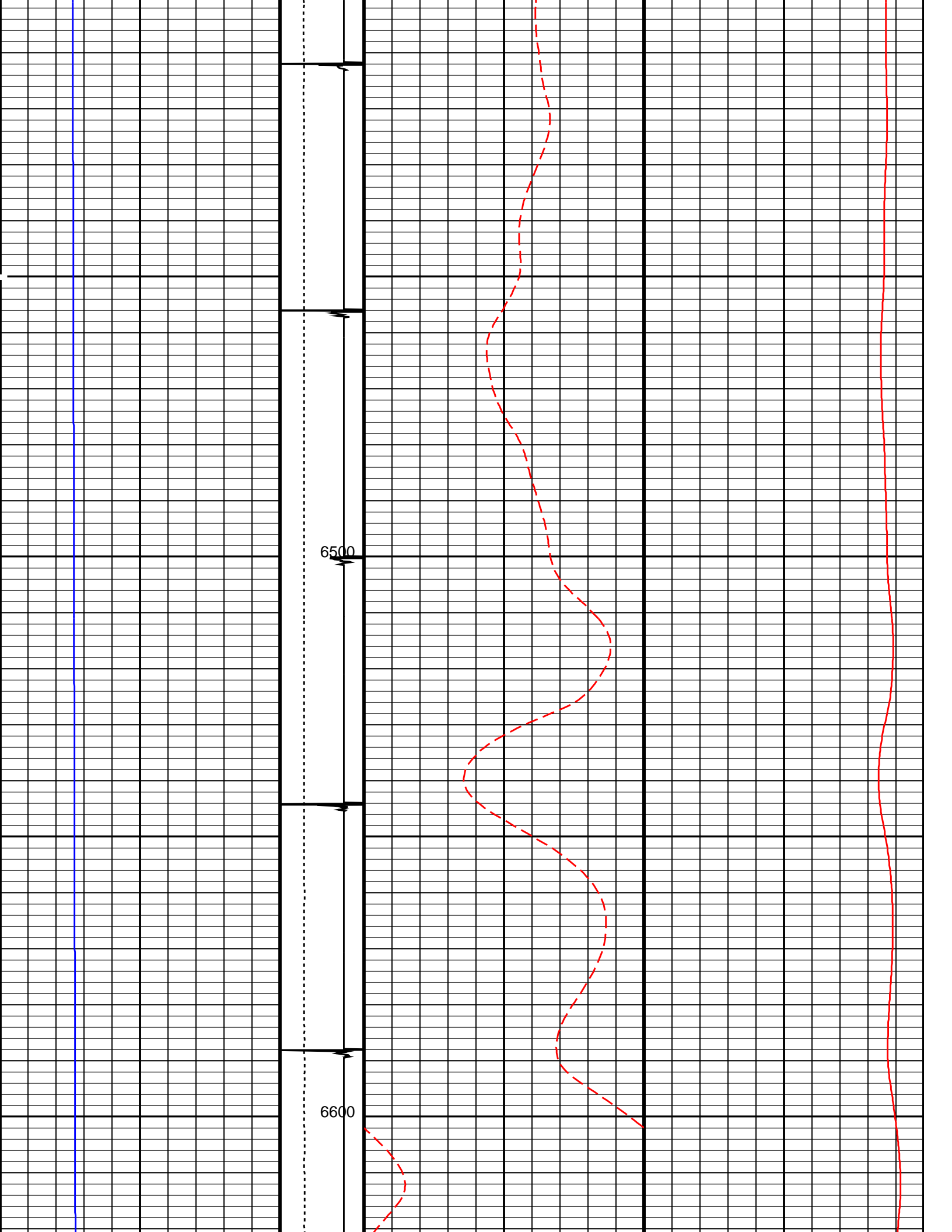


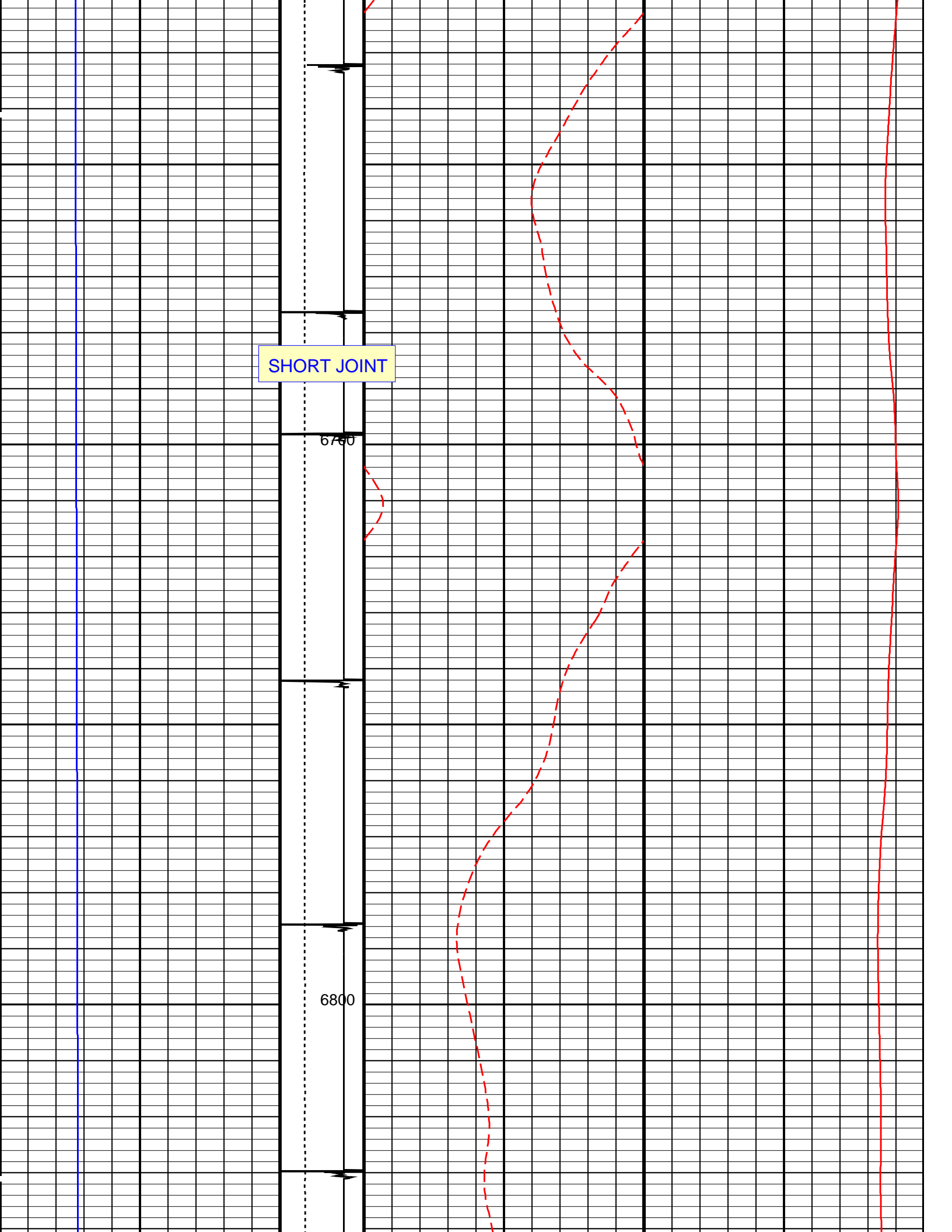


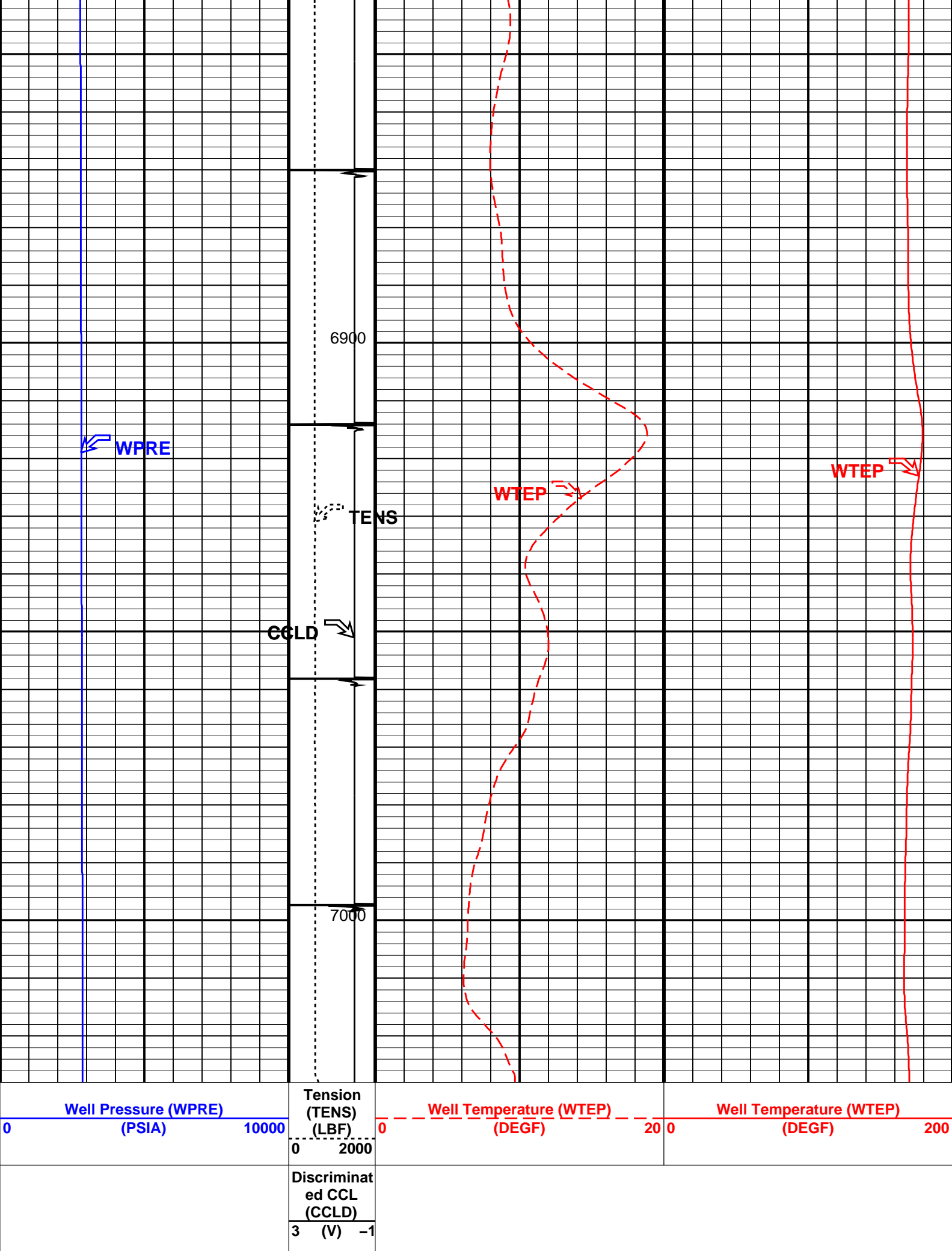












Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DO	System and Miscellaneous	4.0 FT
PP	Depth Offset for Playback	RECOMPUTE
	Playback Processing	

Format: TEMP LOG    Vertical Scale: 5" per 100'    Graphics File Created: 21-Feb-2013 00:42

OP System Version: 19C0-187


HBMS-B	SRPC-5214-H2-2012-OP19
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Input DLIS Files

DEFAULT	Flip_HBMS_005LUP	PRODUCER	21-Feb-2013 00:36	7024.0 FT	-2.0 FT
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Output DLIS Files

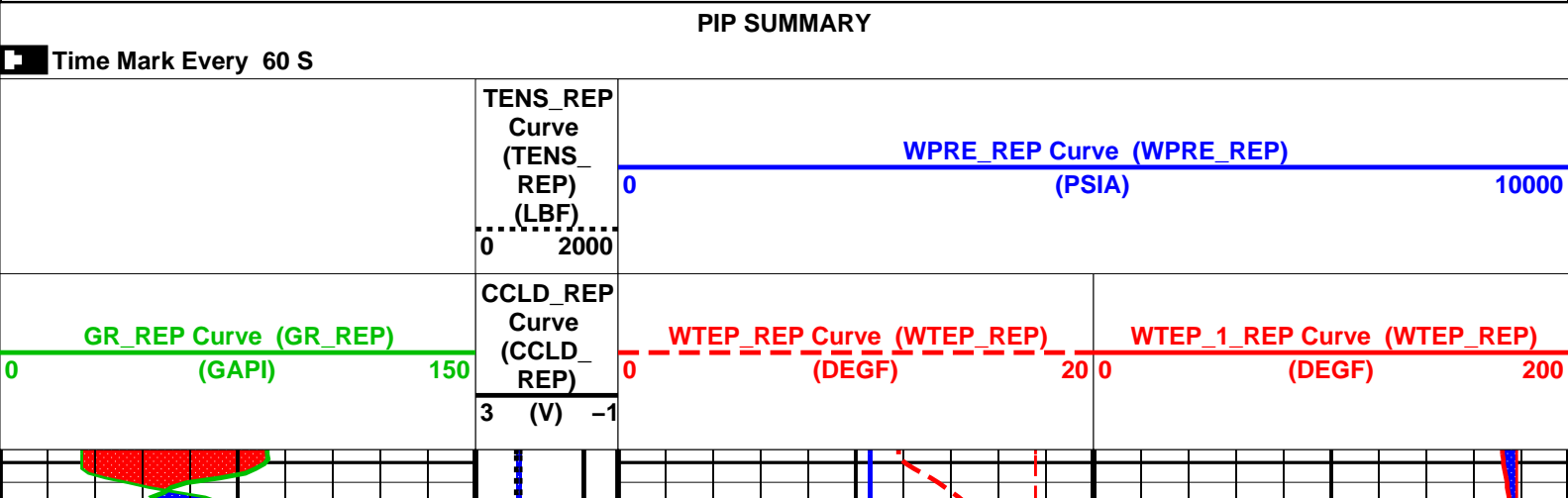
DEFAULT	HBMS_008PUP	FN:4	PRODUCER	21-Feb-2013 00:42
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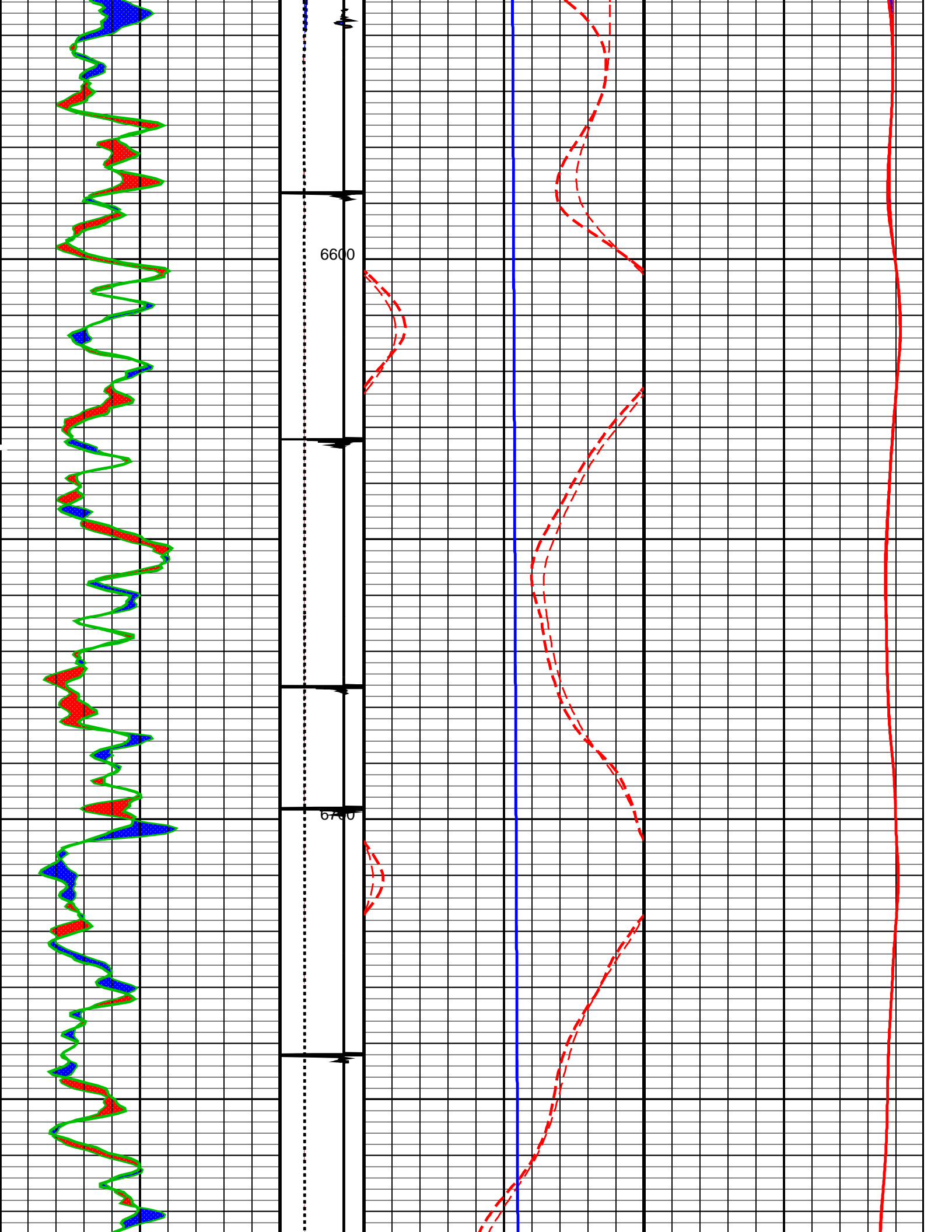


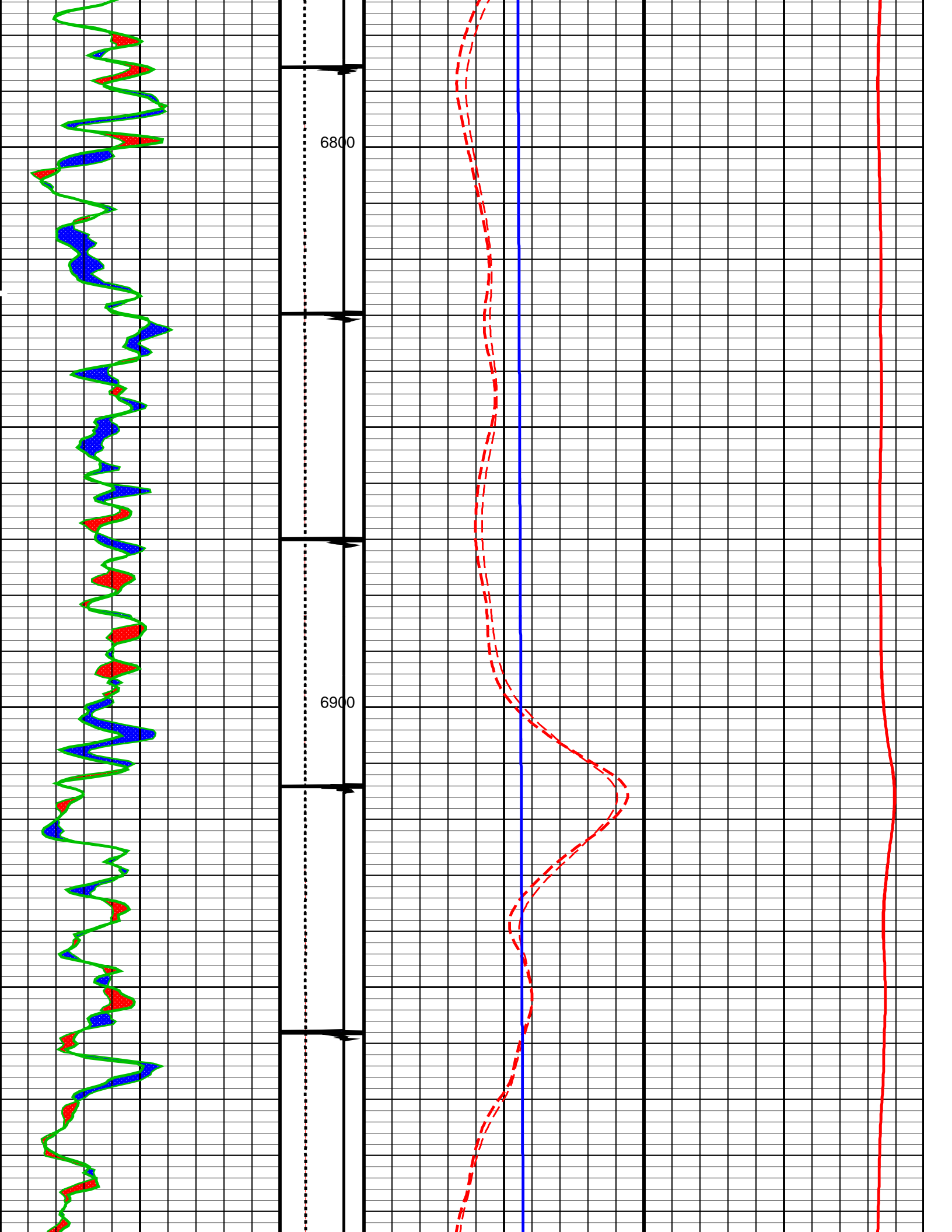
REPEAT ANALYSIS

MAXIS Field Log

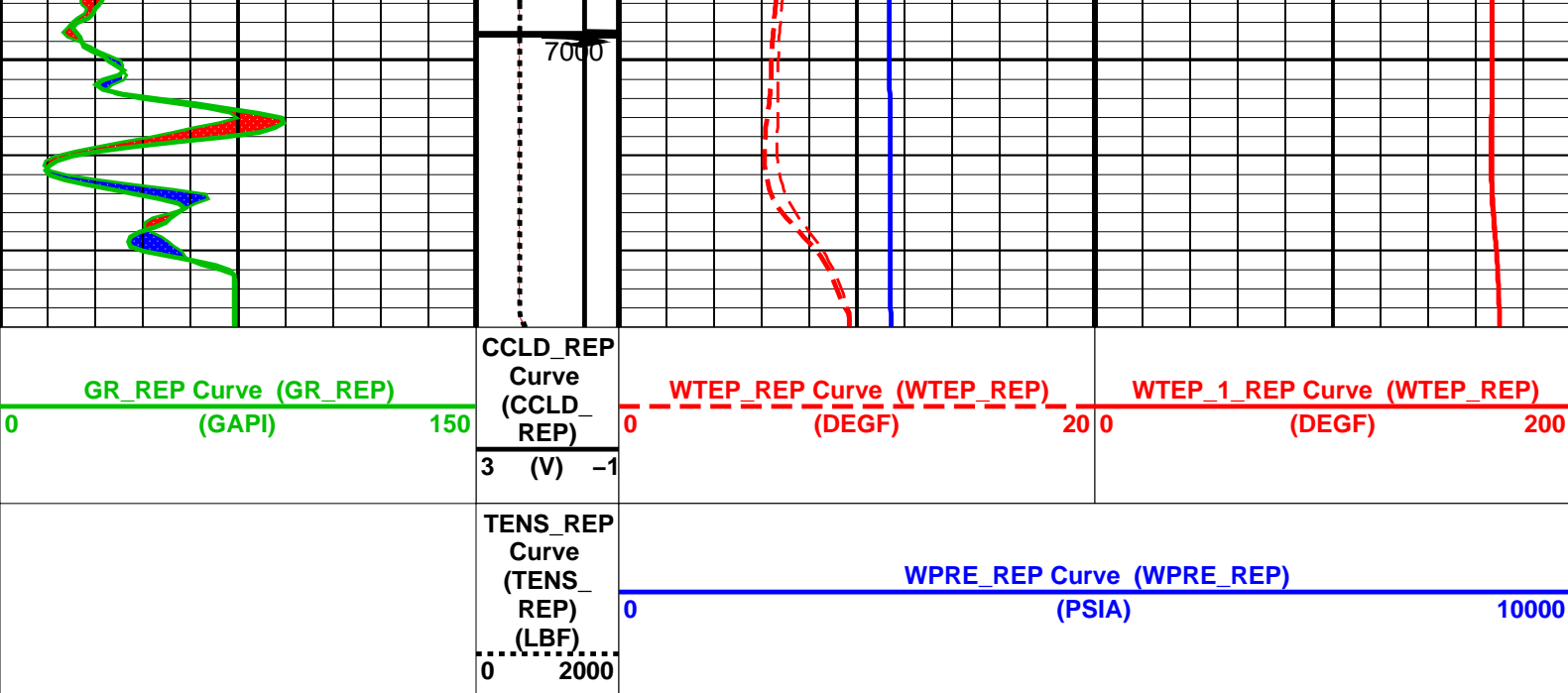
Company: ENCANA OIL & GAS (USA) INC				Well: ENCANA FEE 19-13D (K19CNE)		
Input DLIS Files						
DEFAULT	Flip_HBMS_006LUP		PRODUCER	21-Feb-2013 00:36	7024.0 FT	6544.0 FT
DEFAULT	HBMS_008PUP	FN:4	PRODUCER	21-Feb-2013 00:42	7028.0 FT	2.0 FT
Output DLIS Files						
DEFAULT	HBMS_009PUP	FN:5	PRODUCER	21-Feb-2013 00:47	7028.0 FT	6548.0 FT
OP System Version: 19C0-187						
HBMS-B	SRPC-5214-H2-2012-OP19					











#### PIP SUMMARY

Time Mark Every 60 S

#### Parameters

DLIS Name	Description	Value
DO	System and Miscellaneous	
DORL	Depth Offset for Playback	4.0 FT
PP	Depth Offset for Repeat Analysis	0.0 FT
	Playback Processing	RECOMPUTE

Format: TEMP LOG\_REP Vertical Scale: 5" per 100'

Graphics File Created: 21-Feb-2013 00:47

#### OP System Version: 19C0-187

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

#### Input DLIS Files

DEFAULT	Flip_HBMS_006LUP	PRODUCER	21-Feb-2013 00:36	7024.0 FT	6544.0 FT
DEFAULT	HBMS_008PUP	FN:4	PRODUCER	21-Feb-2013 00:42	7028.0 FT
				2.0 FT	

#### Output DLIS Files

DEFAULT	HBMS_009PUP	FN:5	PRODUCER	21-Feb-2013 00:47
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**Schlumberger**

#### HBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC  
Field: MAMM CREEK  
Well: ENCANA FEE 19-13D (K19CNE)  
Run date: 20-Feb-2013

Tool: PSP  
Sub Type: PBMS  
Sensor: GR

PBMS Gamma Ray

Sonde Serial NB RESISTORS FOR GR SENSOR N.34384,TOOL HBMS-BA2880. SENSOR S/N:  
Sensor Serial NB 34384  
Calib Date ddmmyy 160206  
Matrix Size 12  
Coeff CRC D8B5

GR HV Rt

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

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	MAMM CREEK	Sub Type:	PBMS
Well:	ENCANA FEE 19-13D (K19CNE)	Sensor:	WellTemp RTD
Run date:	20-Feb-2013		

PBMS RTD Well Thermometer

Sonde Serial NB COEFFICIENTS FOR RTD THERMOMETER PBMS-B.2880 S/N:  
Sensor Serial NB 2880  
Calib Date ddmmyy 260408  
Matrix Size 16  
Coeff CRC 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: ENCANA FEE 19-13D (K19CNE)

Run date: 20-Feb-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.2880 S/N:

2880

260408

66

66B8

Pres Coeff

	Fb**0	Fb**1	Fb**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**3	Fb**4	Fb**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

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

2880

260408

66

3690

Temp Coeff

Fc\*\*0

Fc\*\*1

Fc\*\*2

Fc 0

Fc 1

Fc 2

Fb**0	+1.114978632240E+03	−.318843725686E−03	+651766172344E−08
Fb**1	−.590205352250E−02	+1.168686572404E−07	+1.162345150354E−12
Fb**2	−.362996279263E−07	+4.07654559315E−12	+4.52411391342E−17
Fb**3	−.276281361281E−12	+8.71817059405E−17	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

Fc\*\*3

Fc\*\*4

Fc\*\*5

Fb**0	+1.199118144093E−13	−.260997933236E−18	+6.18908211390E−21
Fb**1	+2.50084591851E−17	+4.55070709200E−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	+3.10736316923E+05	+2.73670214709E−02	+7.31815197856E−06
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(Fb'−Fc')\*\*3

(Fb'−Fc')\*\*4

(Fb'−Fc')\*\*5

(Fb'−Fc')**0	−.654219198492E−10	−.150585137208E−15	−.117697151708E−19
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## 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	+1.16053417872E+03	−.554118045908E−02	−.348241454518E−07
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(Fb'−Fc')\*\*3

(Fb'−Fc')\*\*4

(Fb'−Fc')\*\*5

(Fb'−Fc')**0	+2.07992675474E−12	−.353168788938E−17	−.345142848607E−21
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Company: ENCANA OIL & GAS (USA) INC



Well: ENCANA FEE 19–13D (K19CNE)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

TEMPERATURE LOG  
CCL – TEMPERATURE