

Company: ENCANA OIL & GAS (USA) INC

Well: SHIDELER FEDERAL 19-13D (O19EB)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 635 FSL & 1608 FEL

Well: SHIDELER FEDERAL 19-13D (O19EB)

Company: ENCANA OIL & GAS (USA) INC

TEMPERATURE LOG

CCL – TEMPERATURE

SHL: 635 FSL & 1608 FEL  
BHL: 372 FSL & 534 FWL

Elev.: K.B. 6631.00 ft  
G.L. 6509.00 ft  
D.F. 6530.00 ft

Permanent Datum: \_\_\_\_\_  
Log Measured From: KELLY BUSHING  
Drilling Measured From: KELLY BUSHING

GROUND LEVEL  
Elev.: 6509.00 ft

22.00 ft above Perm. Datum

API Serial No. 05-045-21836-00

Section 19

Township 7S

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	10-Apr-2013		
Run Number	1		
Depth Driller	8408 ft		
Schlumberger Depth	8325 ft		
Bottom Log Interval	8324 ft		
Top Log Interval	22 ft		
Casing Fluid Type	FRESH WATER		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	22 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.750 in		
From	22 ft		
To	8408 ft		
Casing/Tubing Size	4.500 in		
Weight	11.6 lbm/ft		
Grade			
From	22 ft		
To	8393 ft		
Maximum Recorded Temperatures	192 degF		
Logger On Bottom	10-Apr-2013	15:30	
Unit Number	391	GRAND JUNCTION	
Recorded By	KIRSTIE BUNTING		
Witnessed By	ERASMO		

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-MAR-2013 10:41:08

## 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:	20-FEB-2012	Length:	19500 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	<div>Conveyance Method: Wireline</div> <div>Rig Type: LAND</div>	
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-3	Calibration RMS:	4		
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 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: 15:00	
TIME ON BOTTOM: 16:00	
EXIT TIME: 16:30	

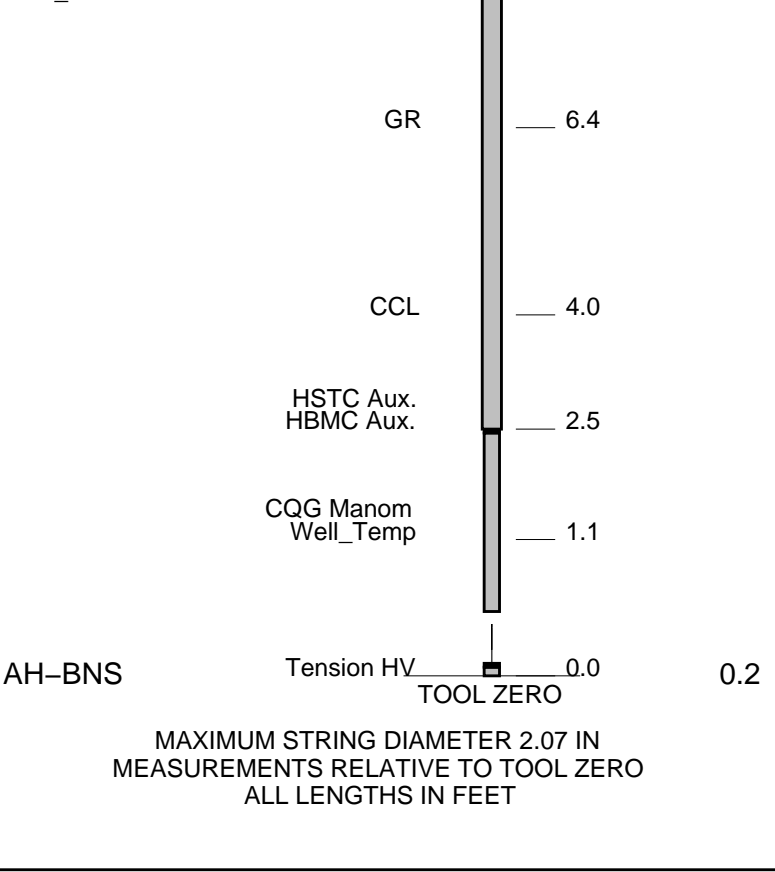
MAX RECORDED TEMPERATURE: 192 DEGE

SERVICE ORDER #: CGF9-00037  
PROGRAM VERSION: 19C0-187  
FLUID LEVEL: 22 ft

EQUIPMENT DESCRIPTION	
RUN 1	RUN 2
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
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80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

WITM-A  
PSC 16MHZ

Instrument	Height (m)
MH-22	13.1
MH-22	
Detail MT	
TelStatus	11.6
CTEM	
HBMS-B	11.3
PSC-A 2884	
HUDH-A 2884	
HSTC-A	
HBMC-A	
GR	
CCL	
HBMC	
HTPS-A 2884	
HCQG_E_Mano	
RTD Thermometer	

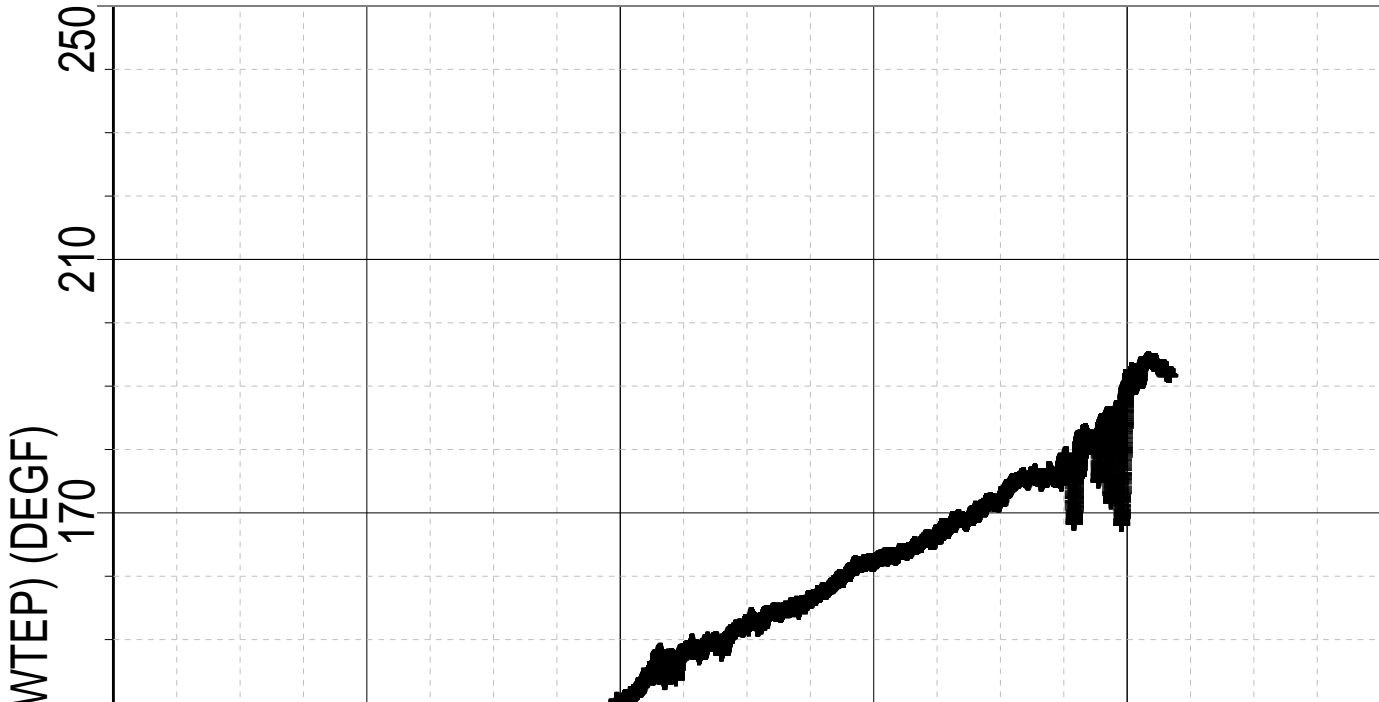


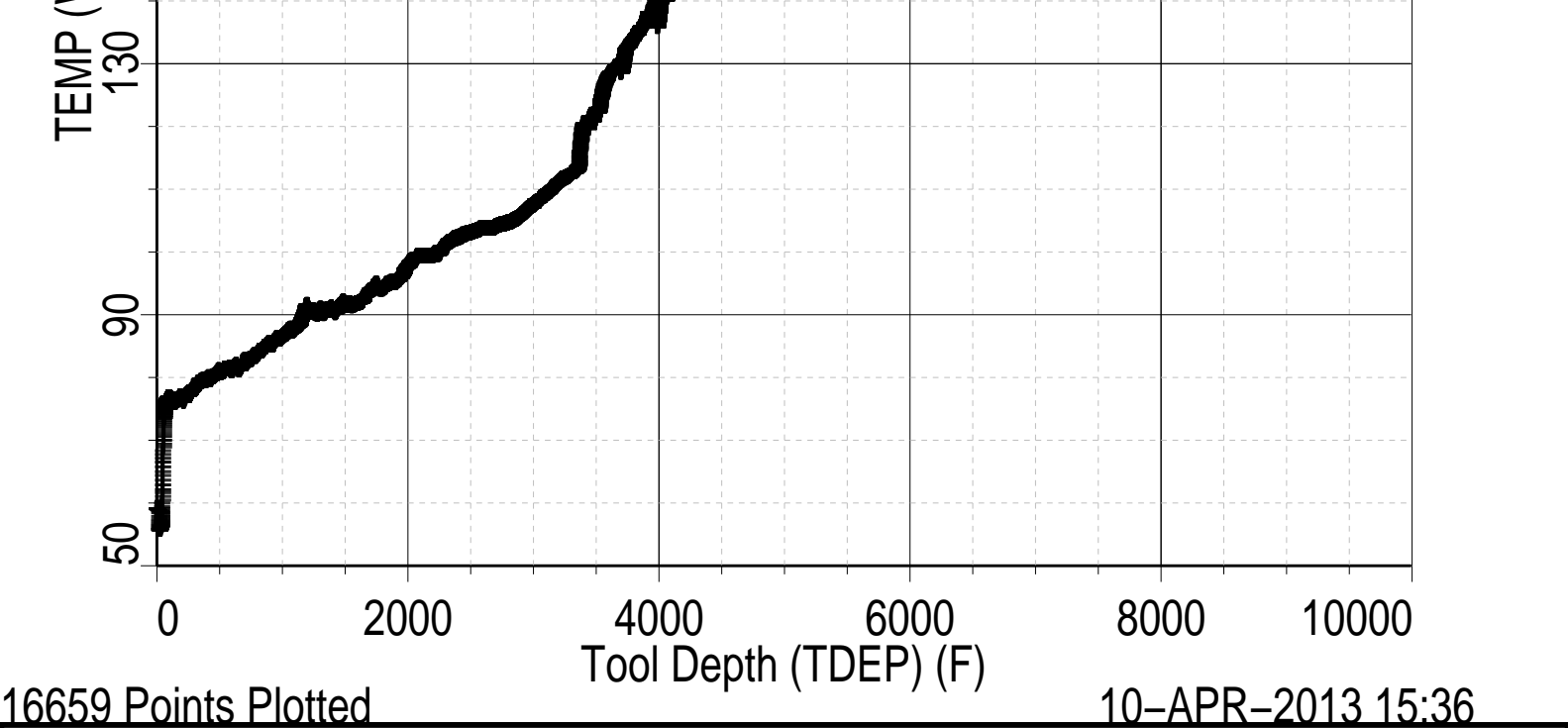
**Schlumberger**

## TEMPERATURE PLOT

MAXIS Field Log

Index: 8337.0 – 8.0 FT





Schlumberger

## TEMPERATURE LOG

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: SHIDELER FEDERAL 19-13D (O19EB)

### Input DLIS Files

DEFAULT	Flip_HBMS_005LUP	PRODUCER	10-Apr-2013 15:31	8337.0 FT	8.0 FT
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### Output DLIS Files

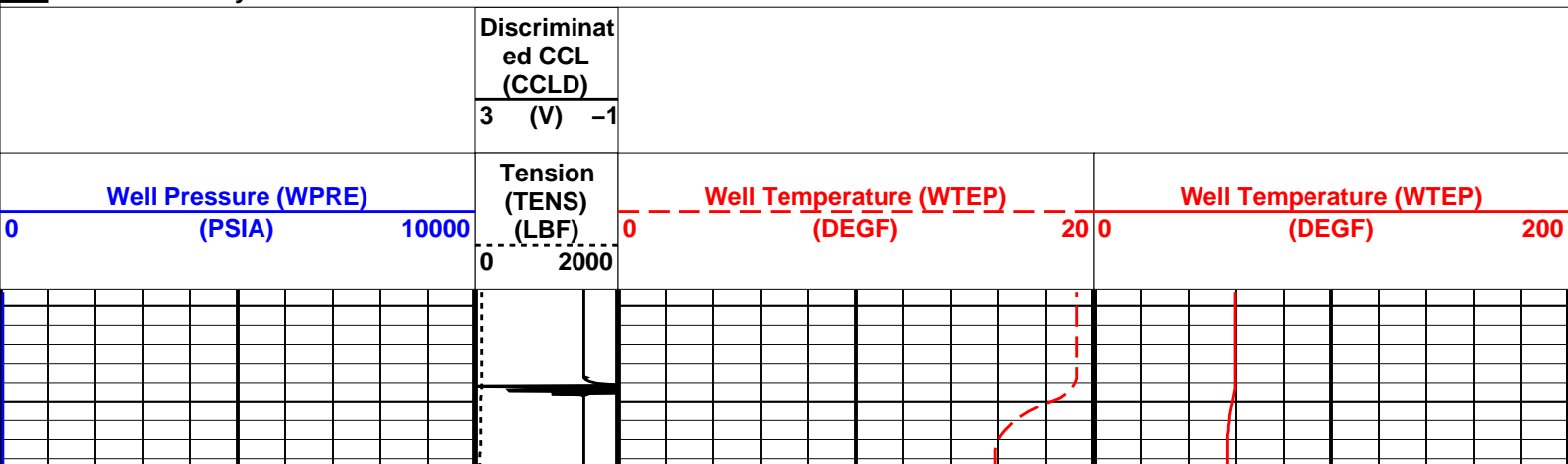
DEFAULT	HBMS_007PUP	FN:4	PRODUCER	10-Apr-2013 15:32	8337.0 FT	8.0 FT
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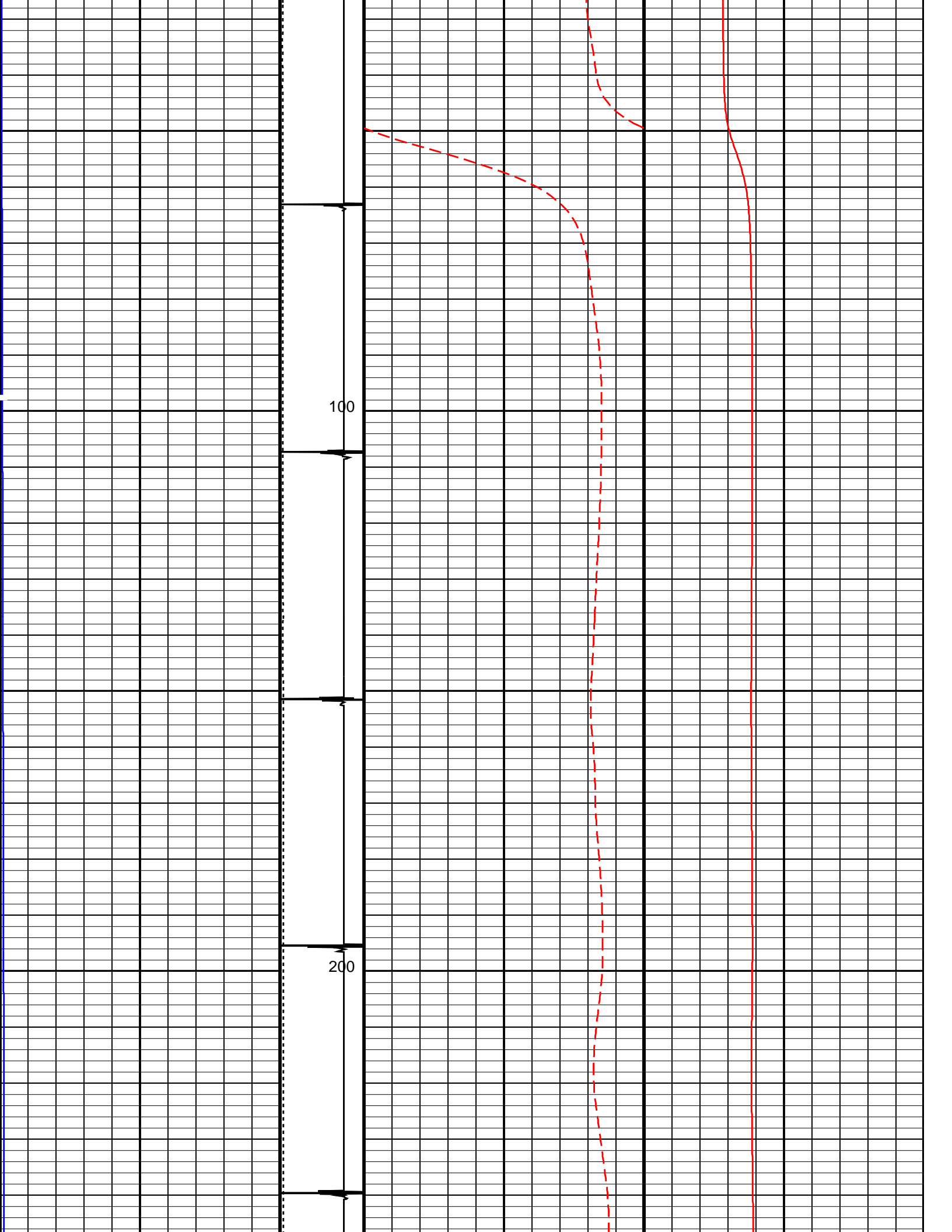
OP System Version: 19C0-187

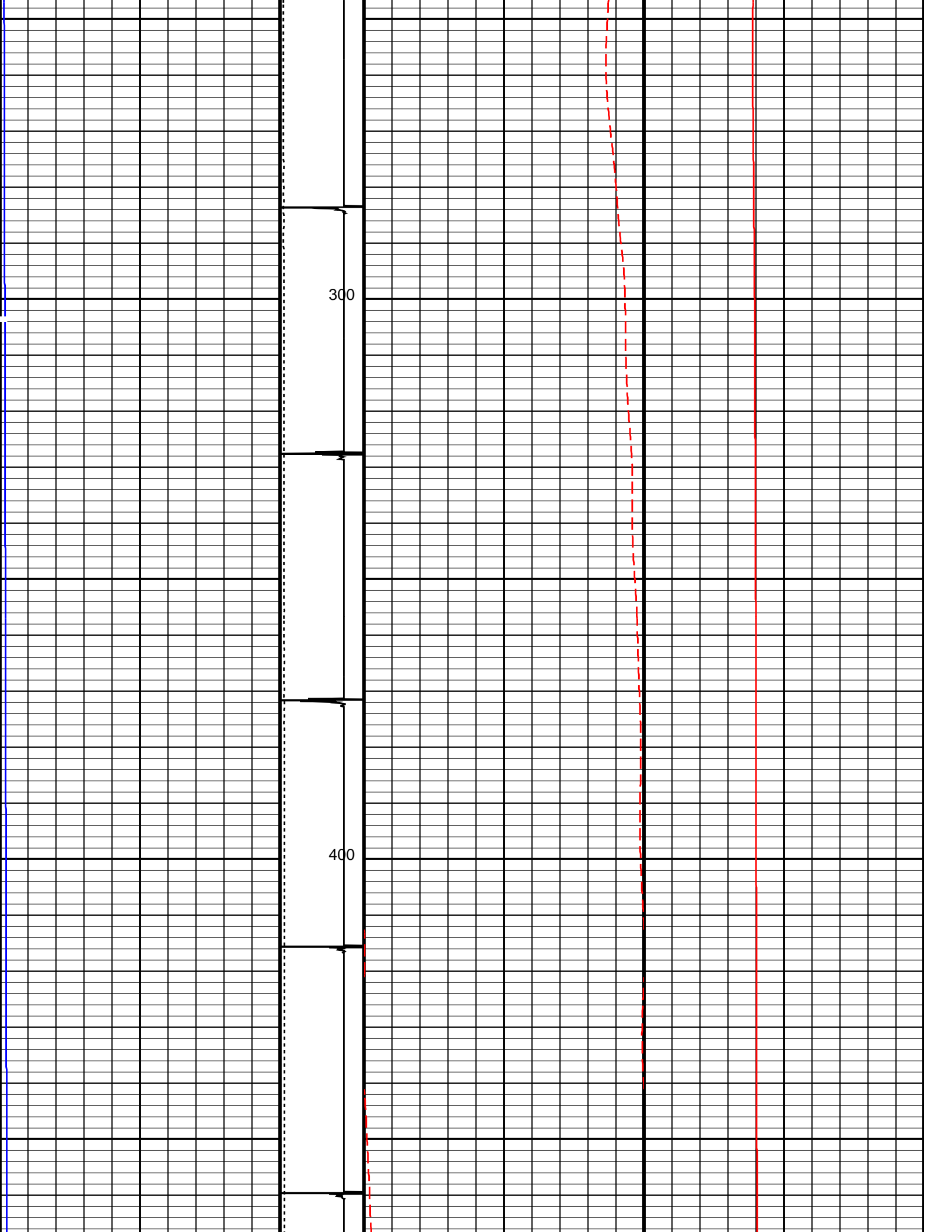
HBMS-B SRPC-5214-H2-2012-OP19

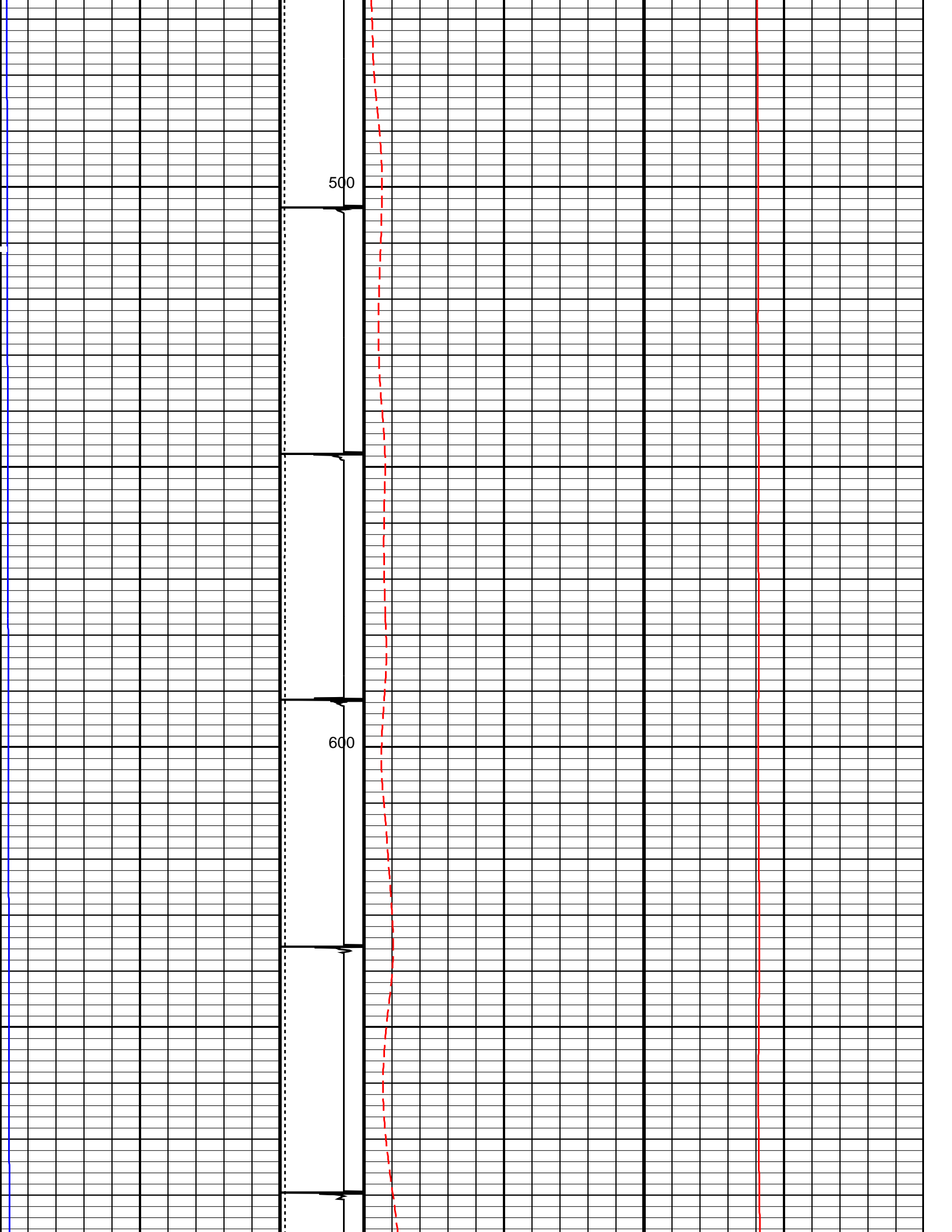
### PIP SUMMARY

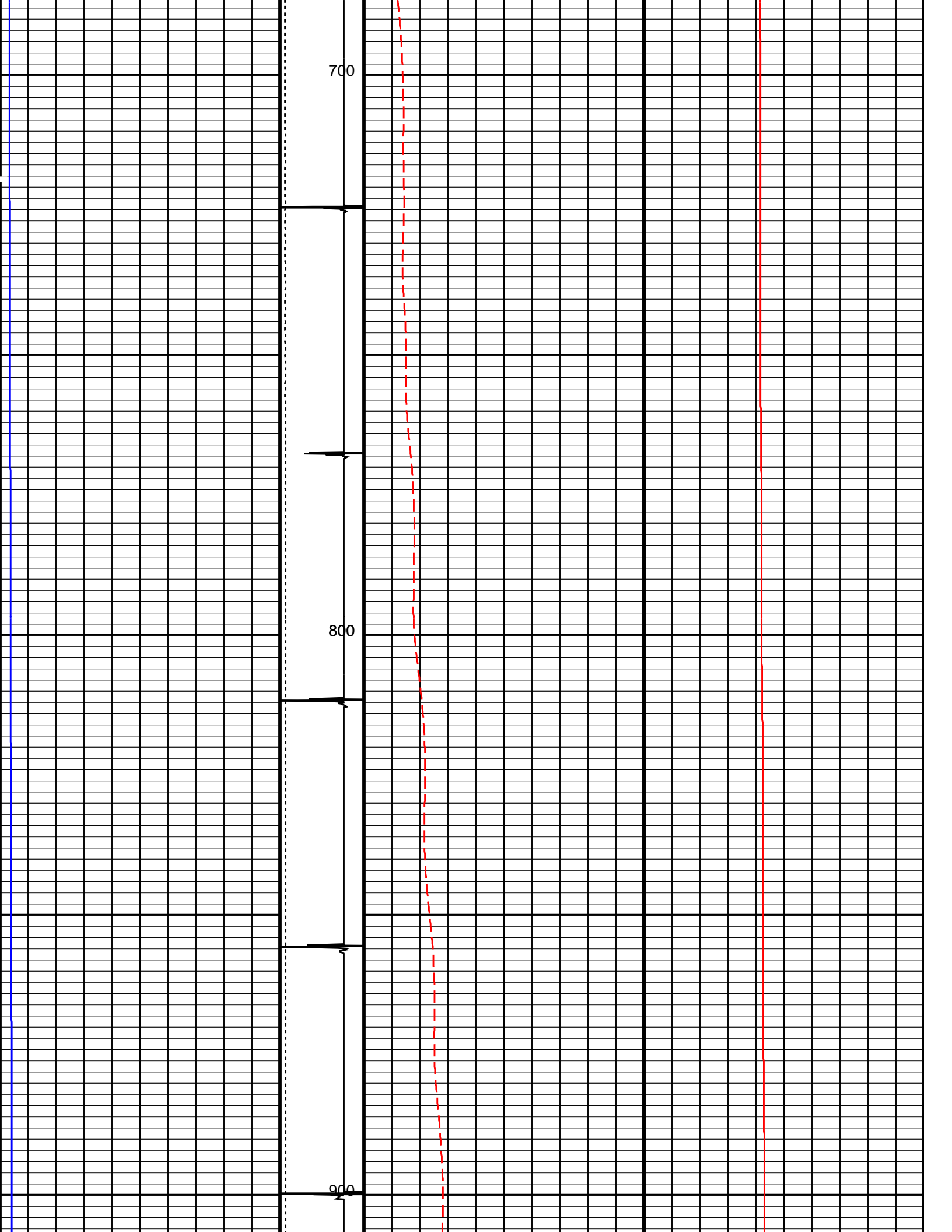
Time Mark Every 60 S

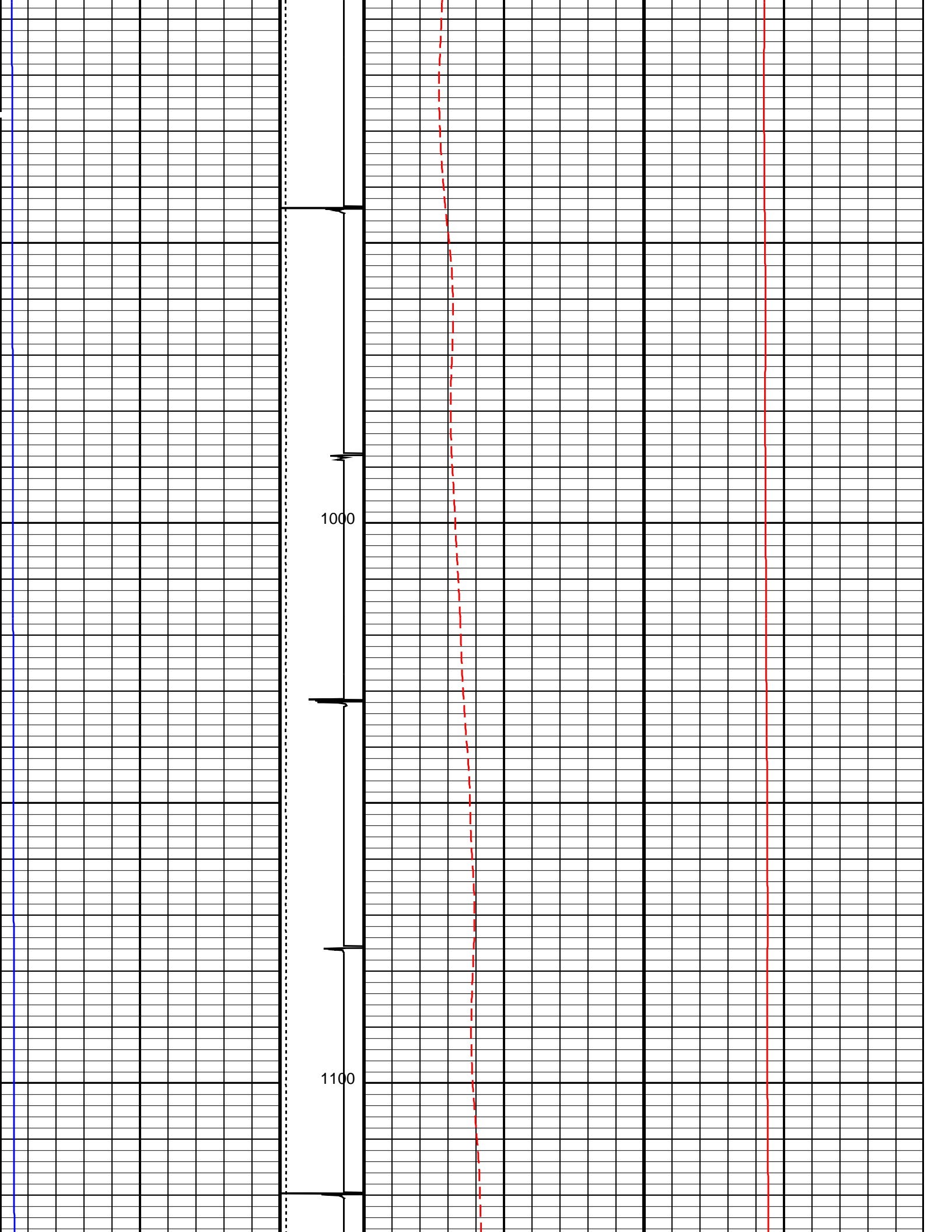


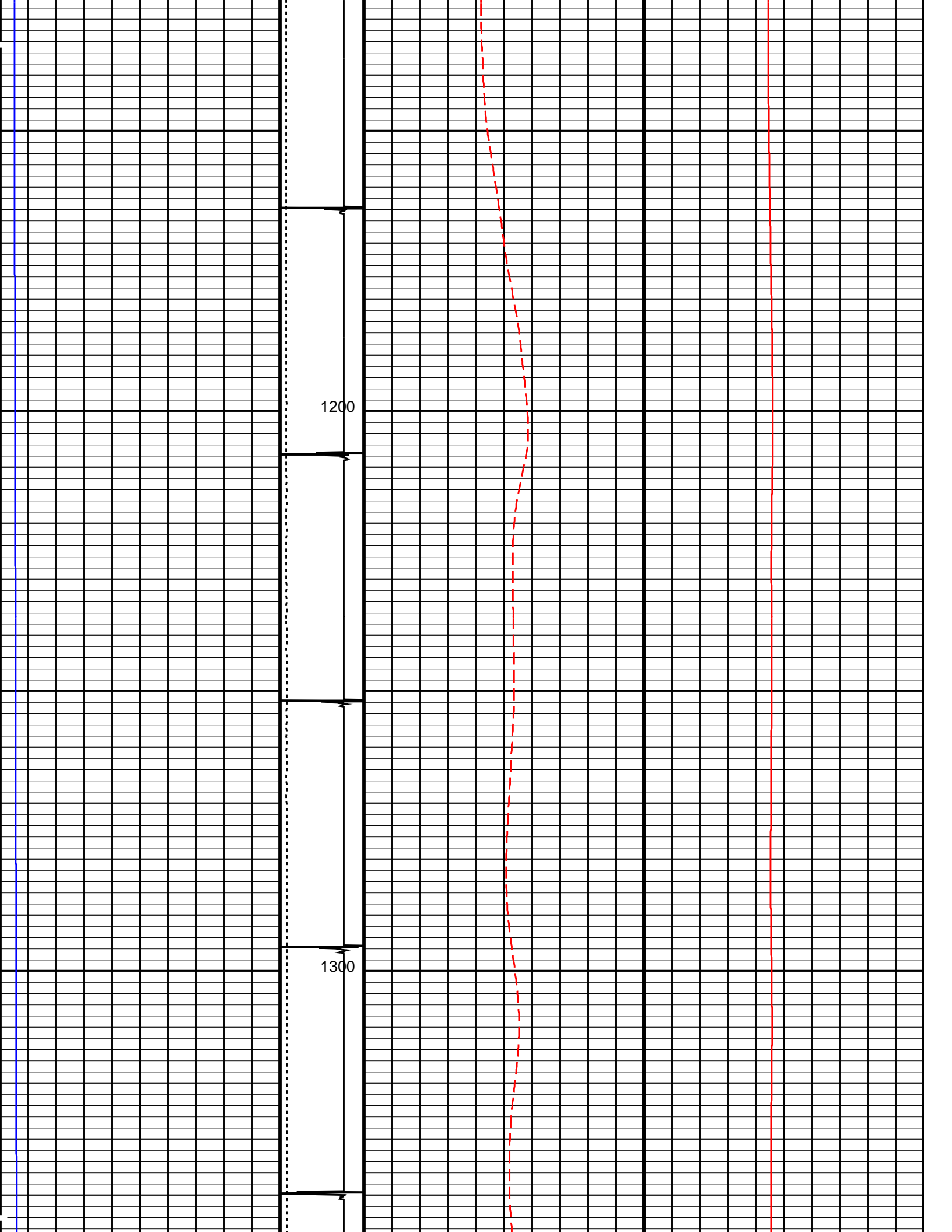


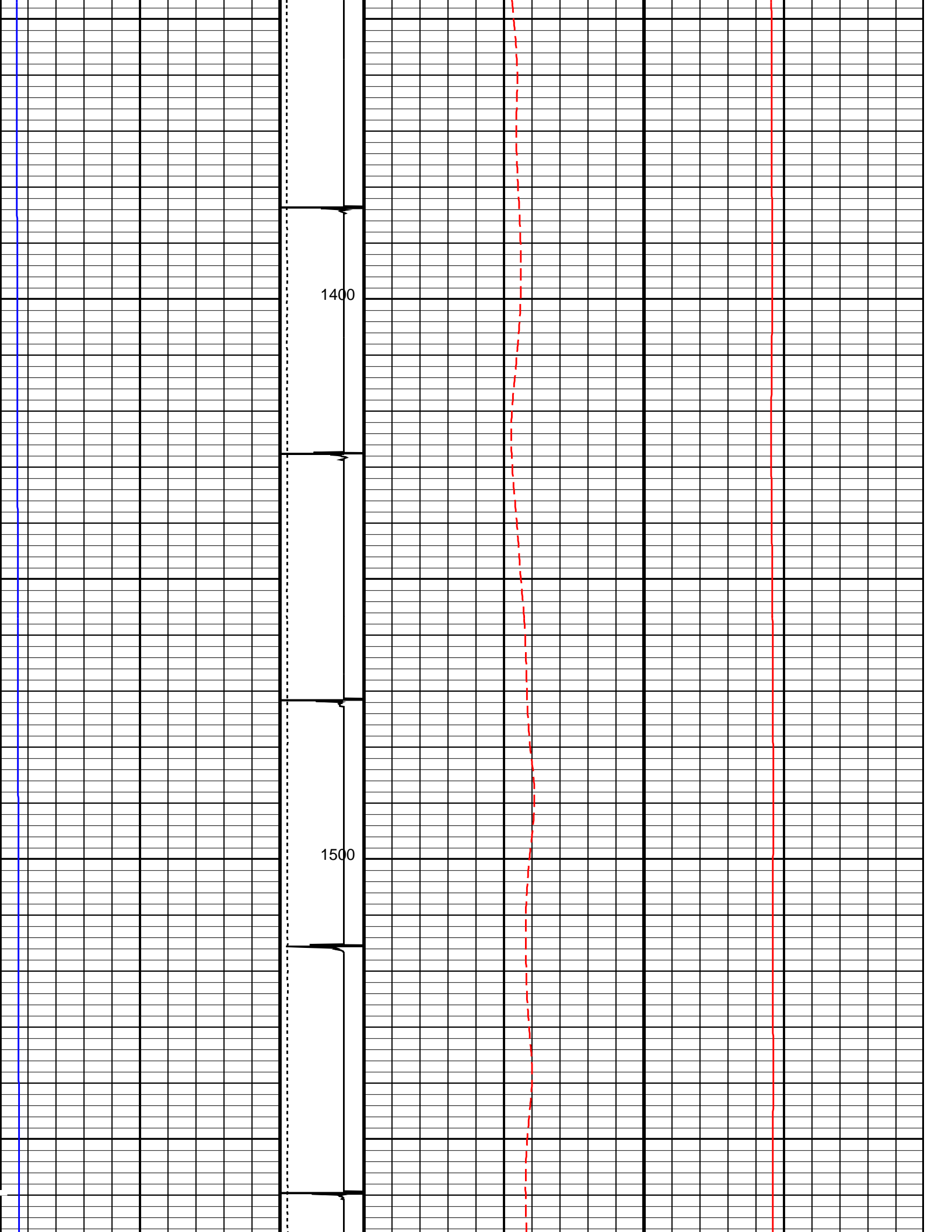


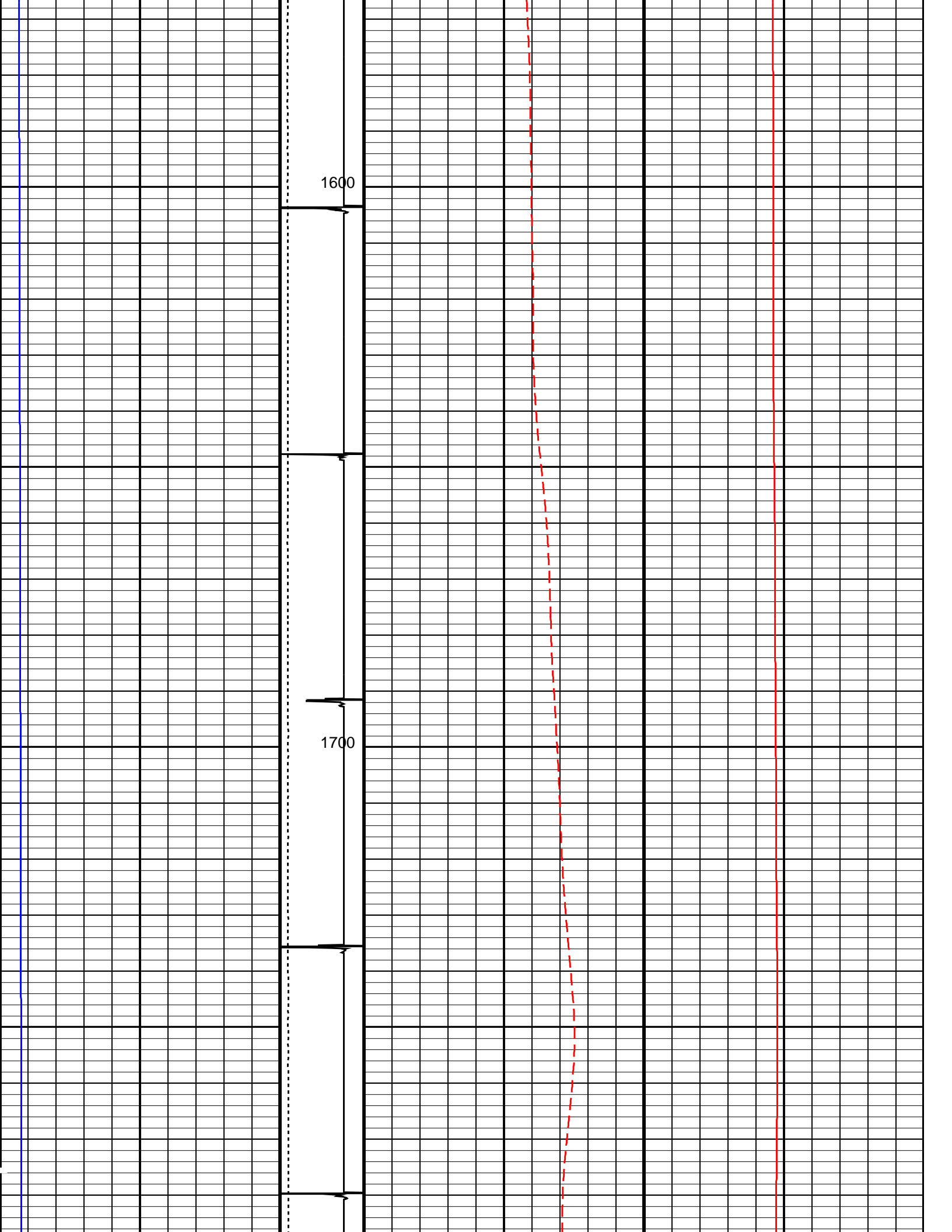


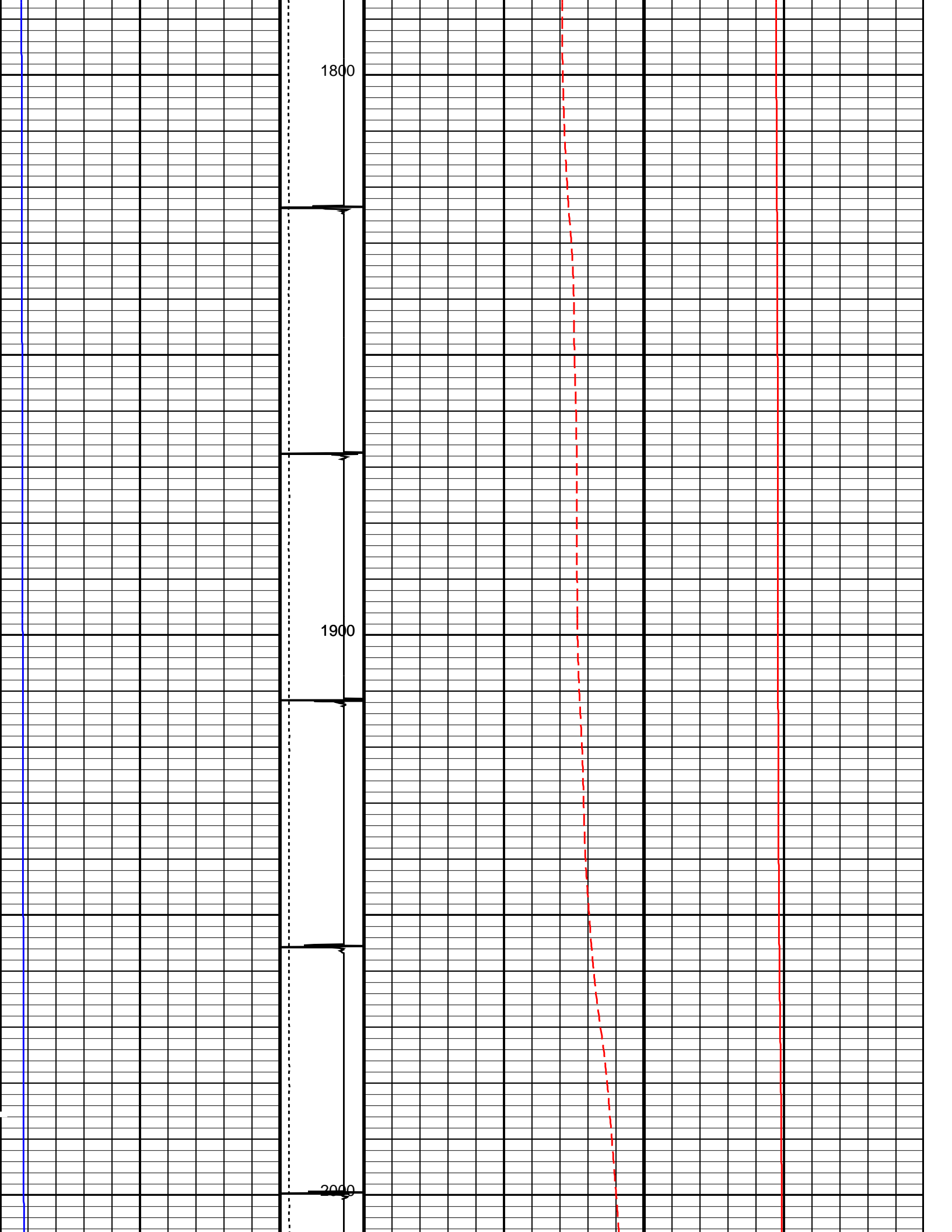


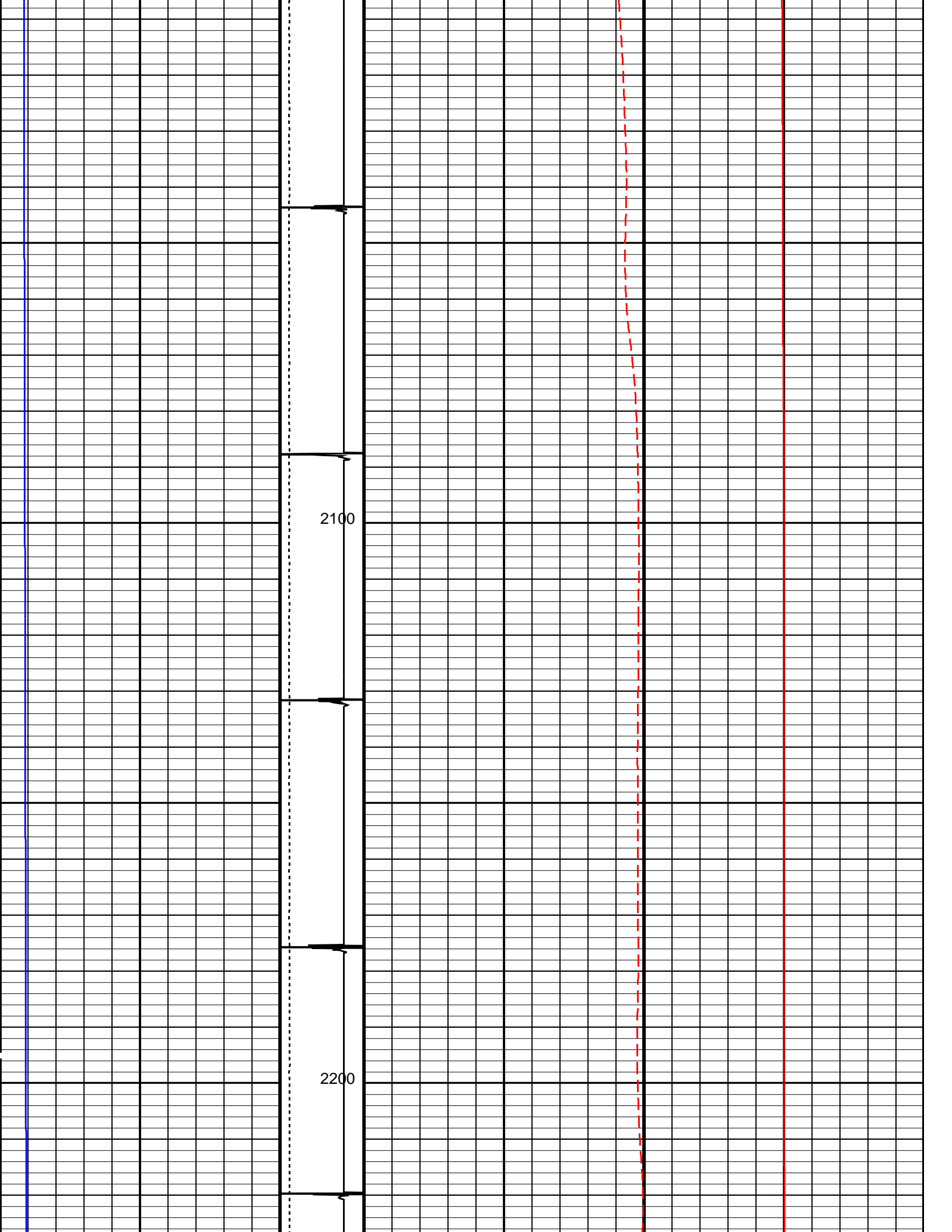


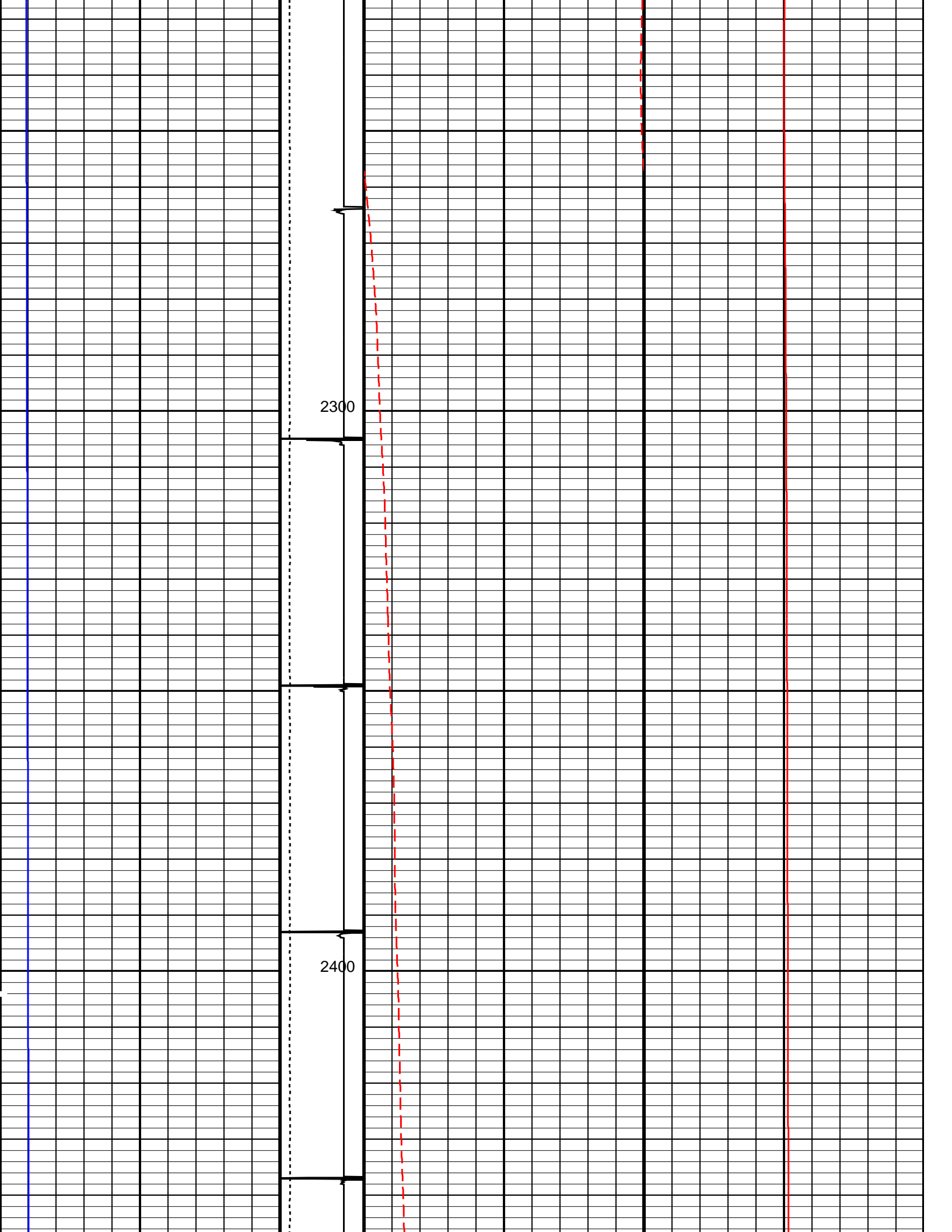


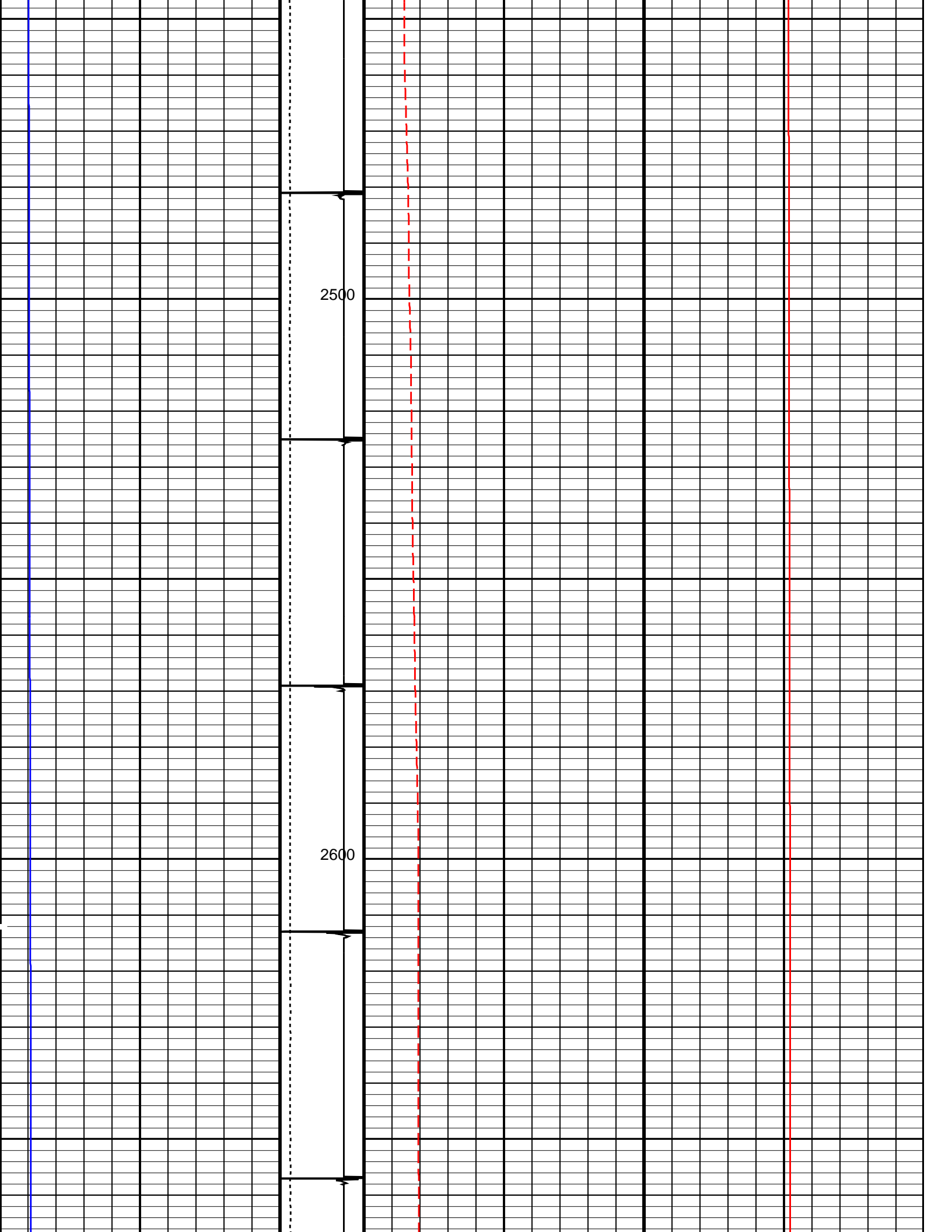


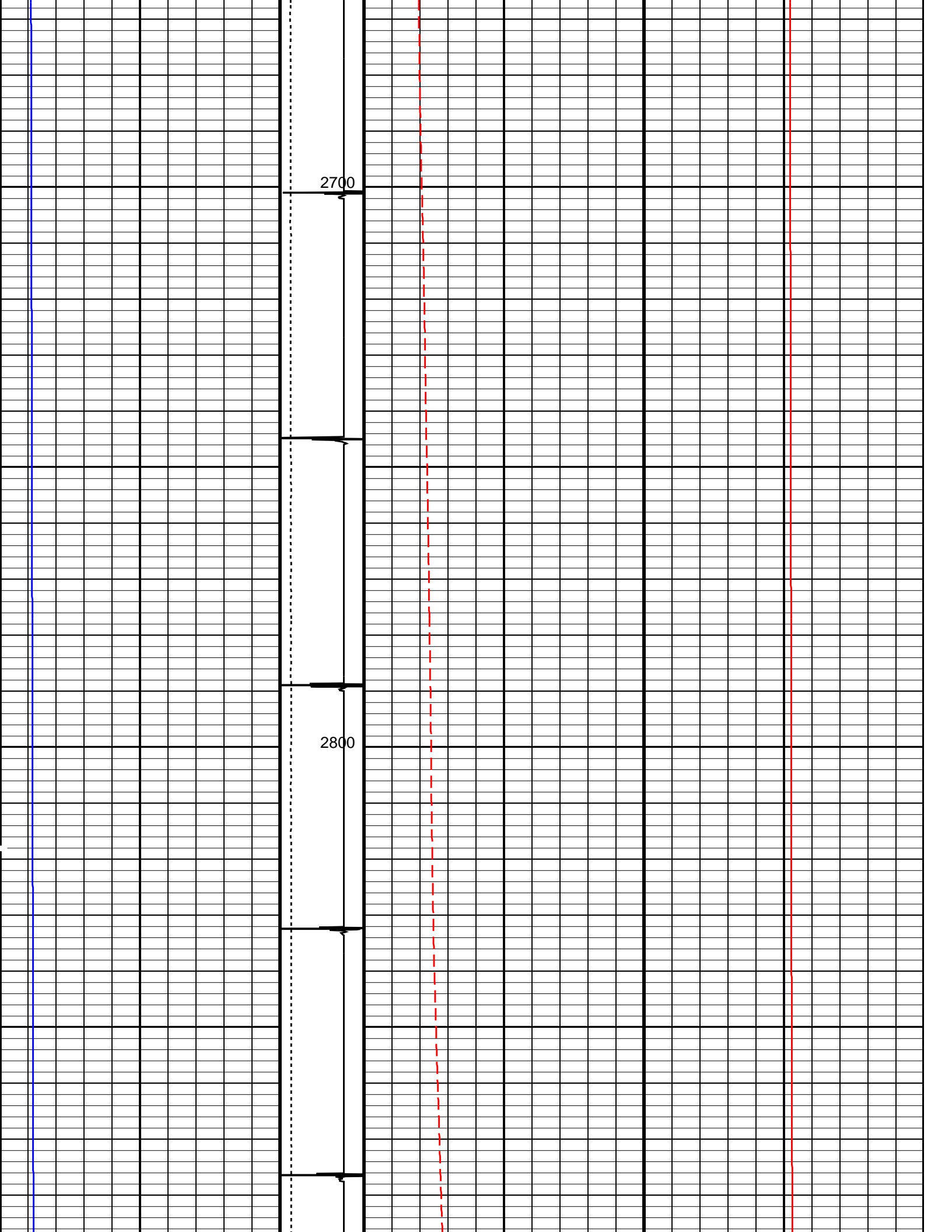


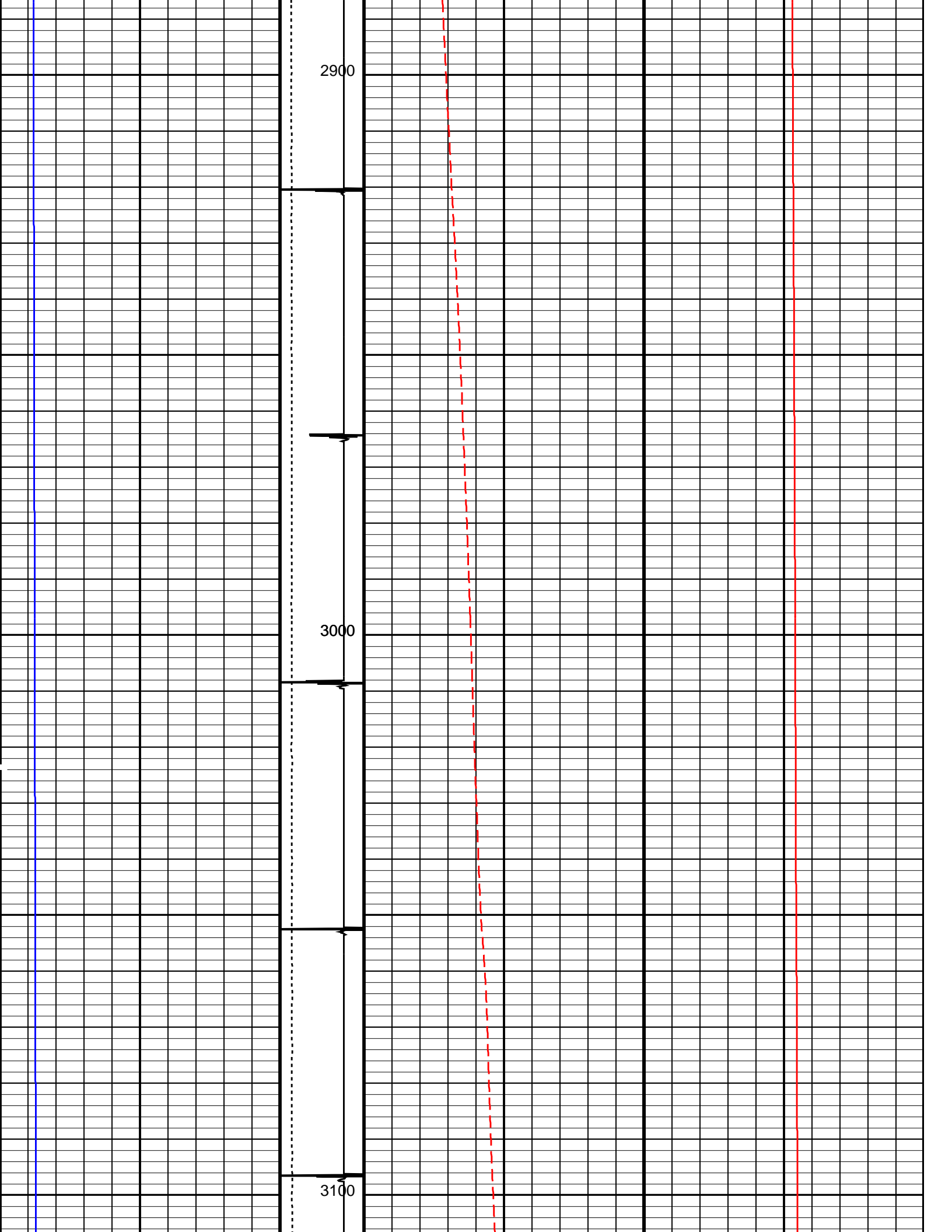


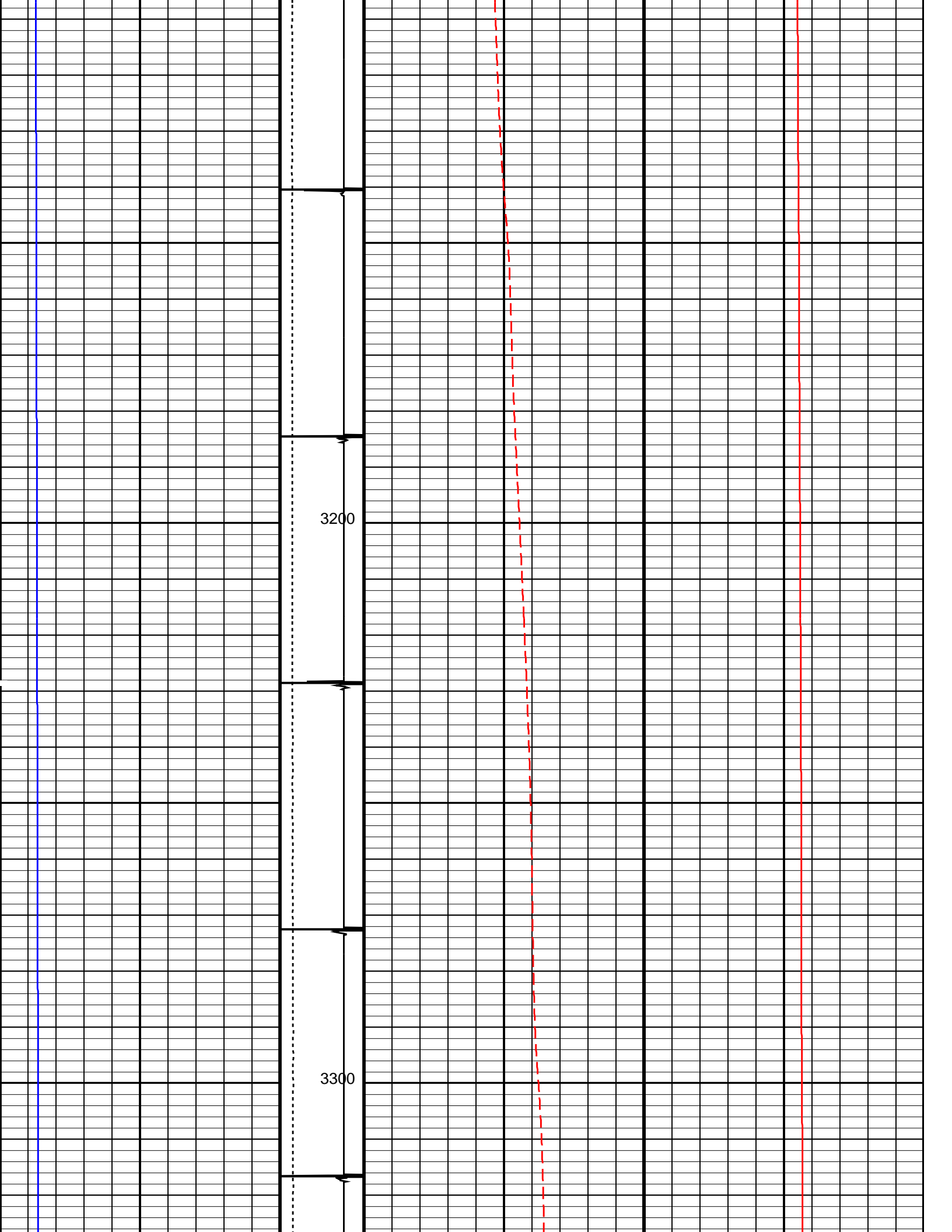


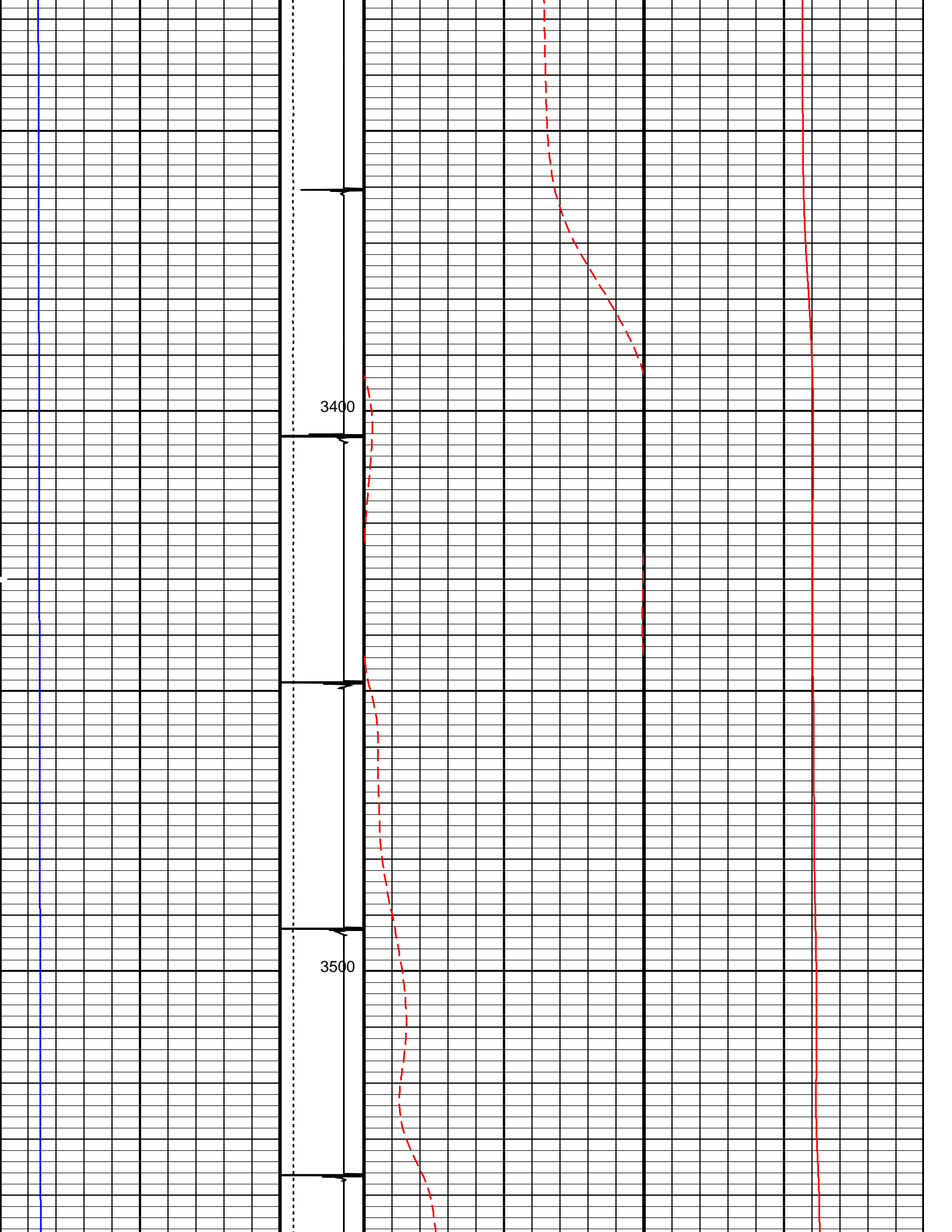


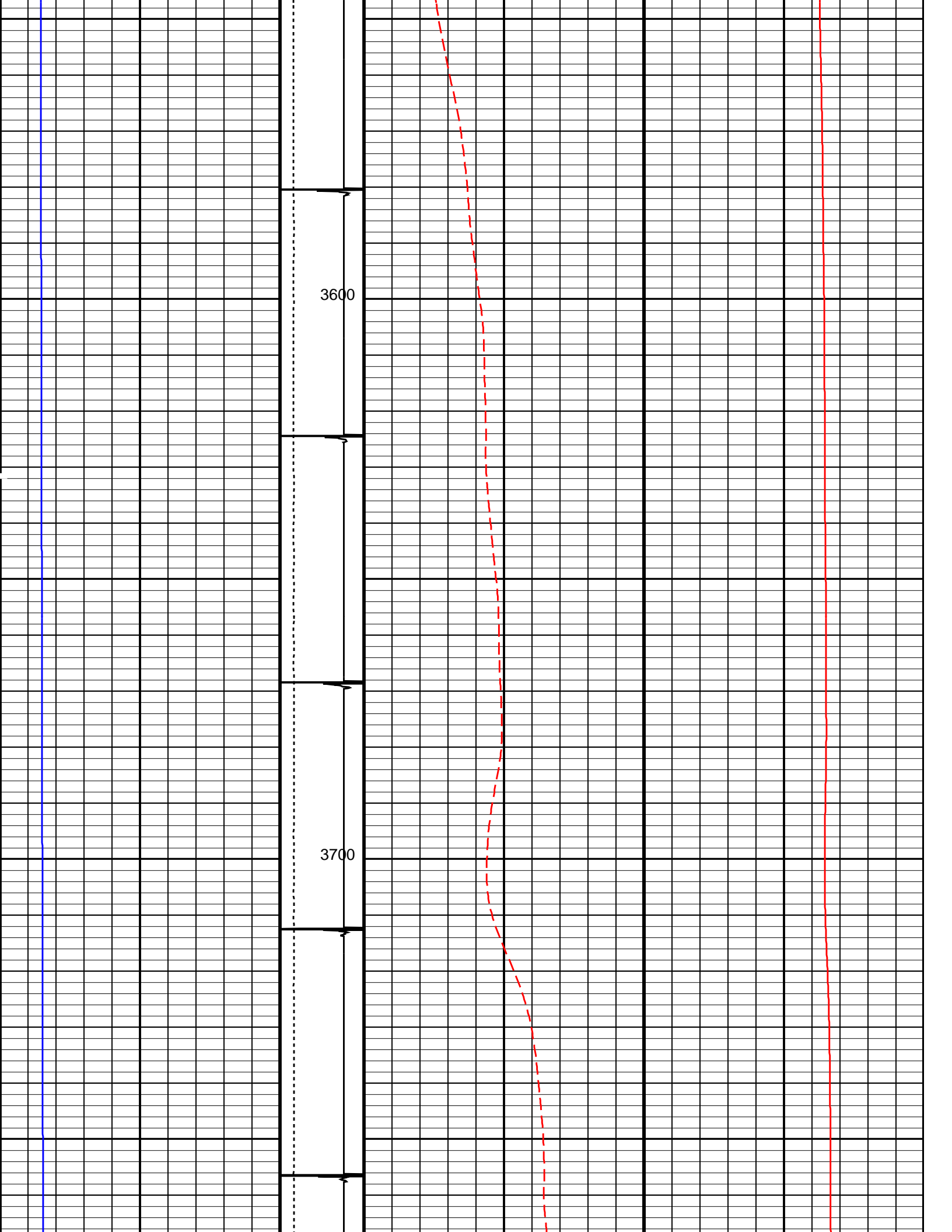


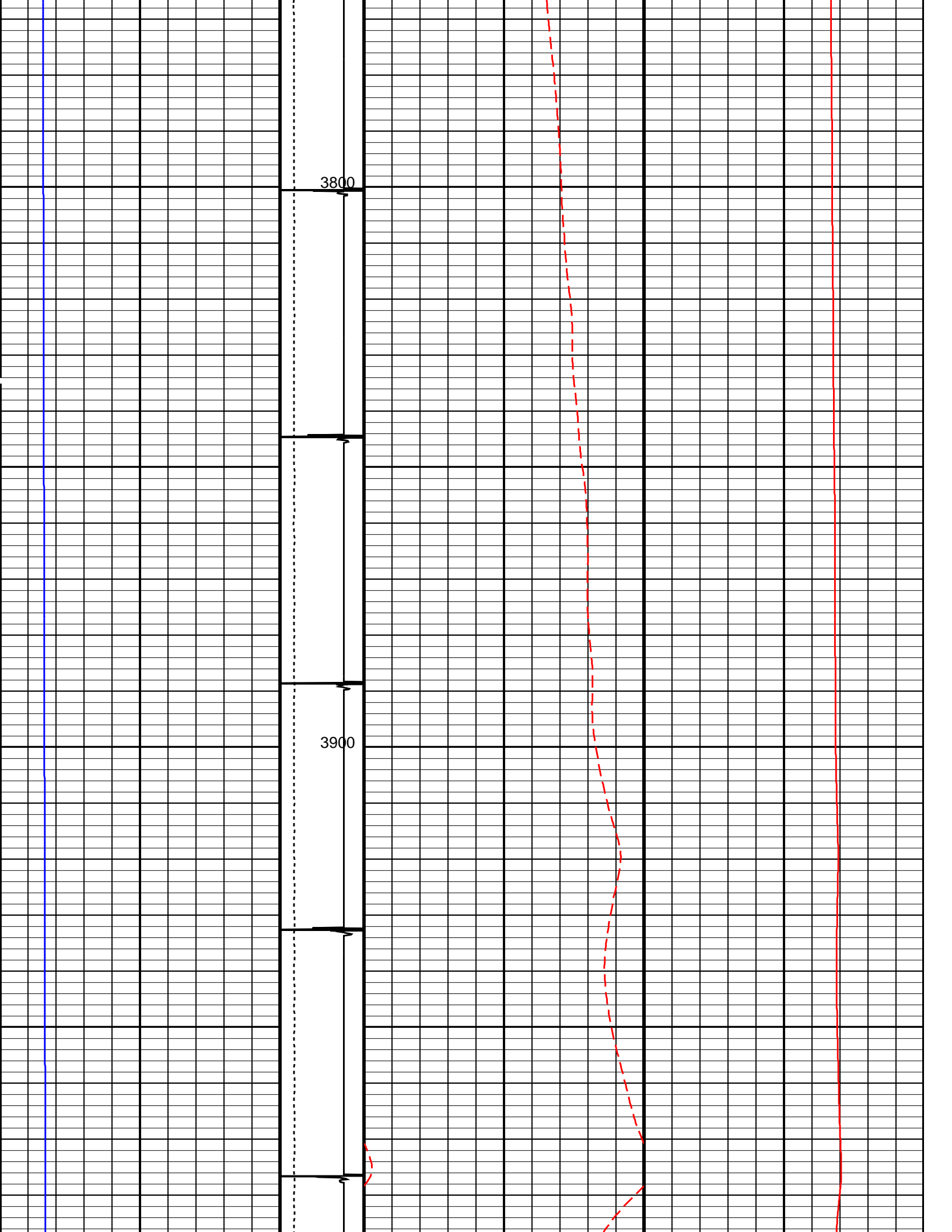


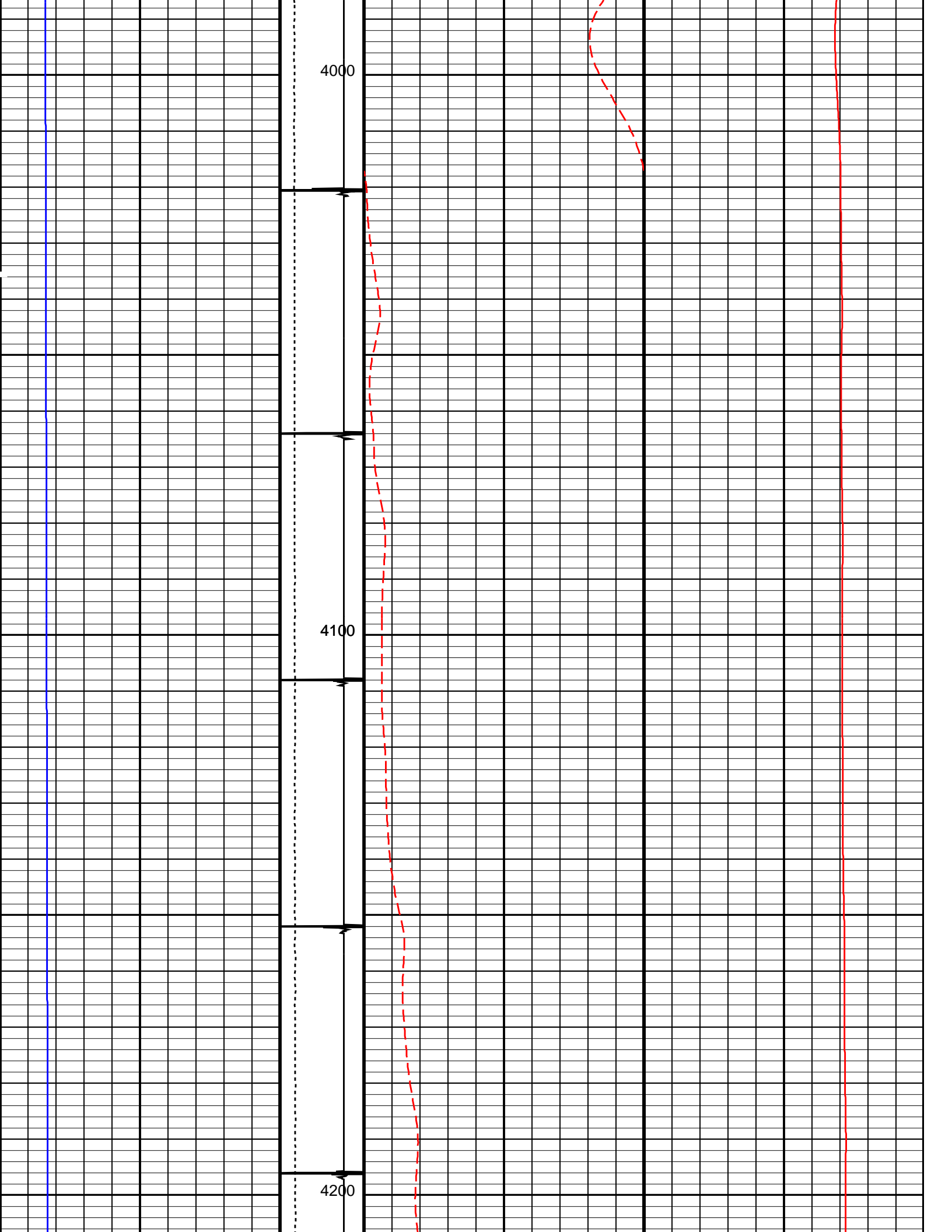


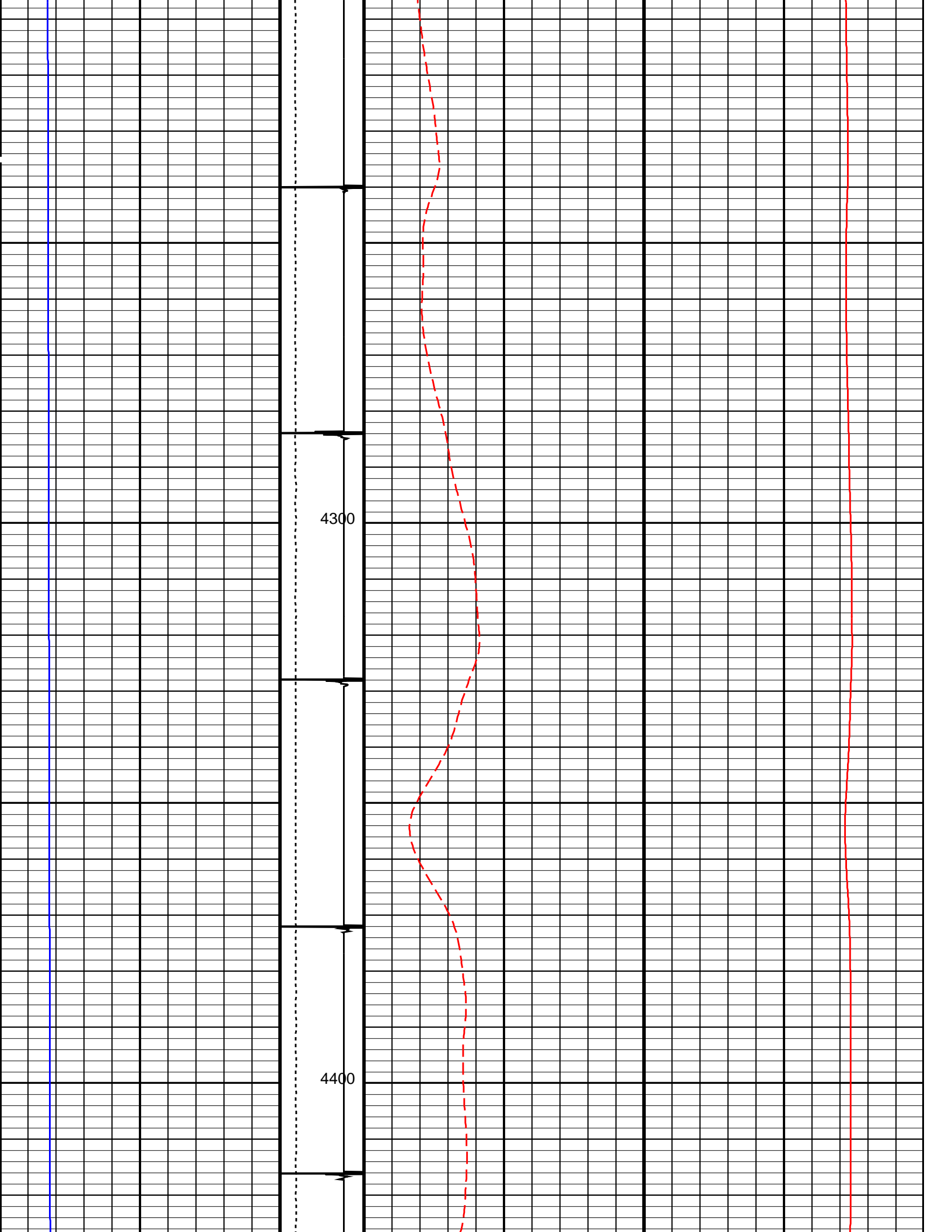


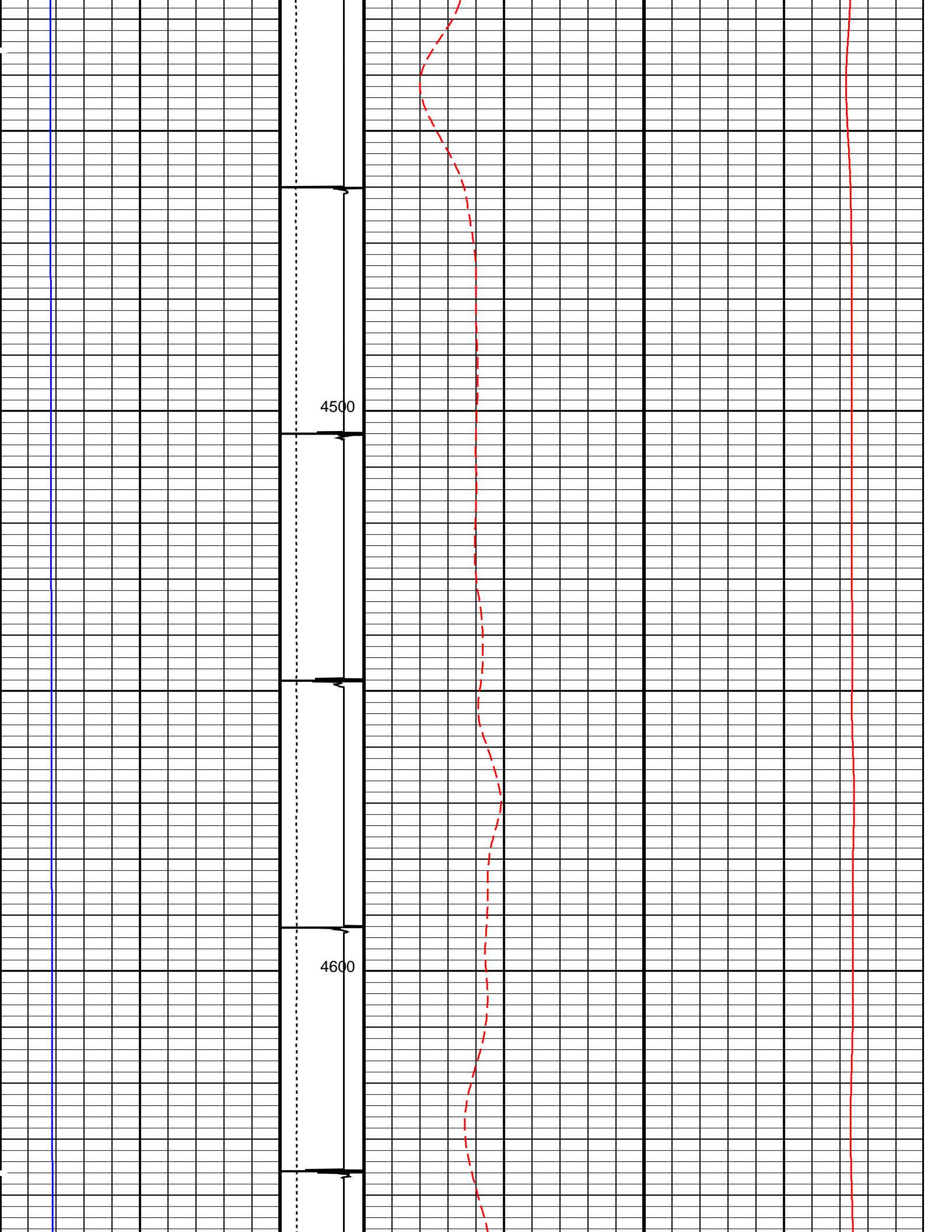


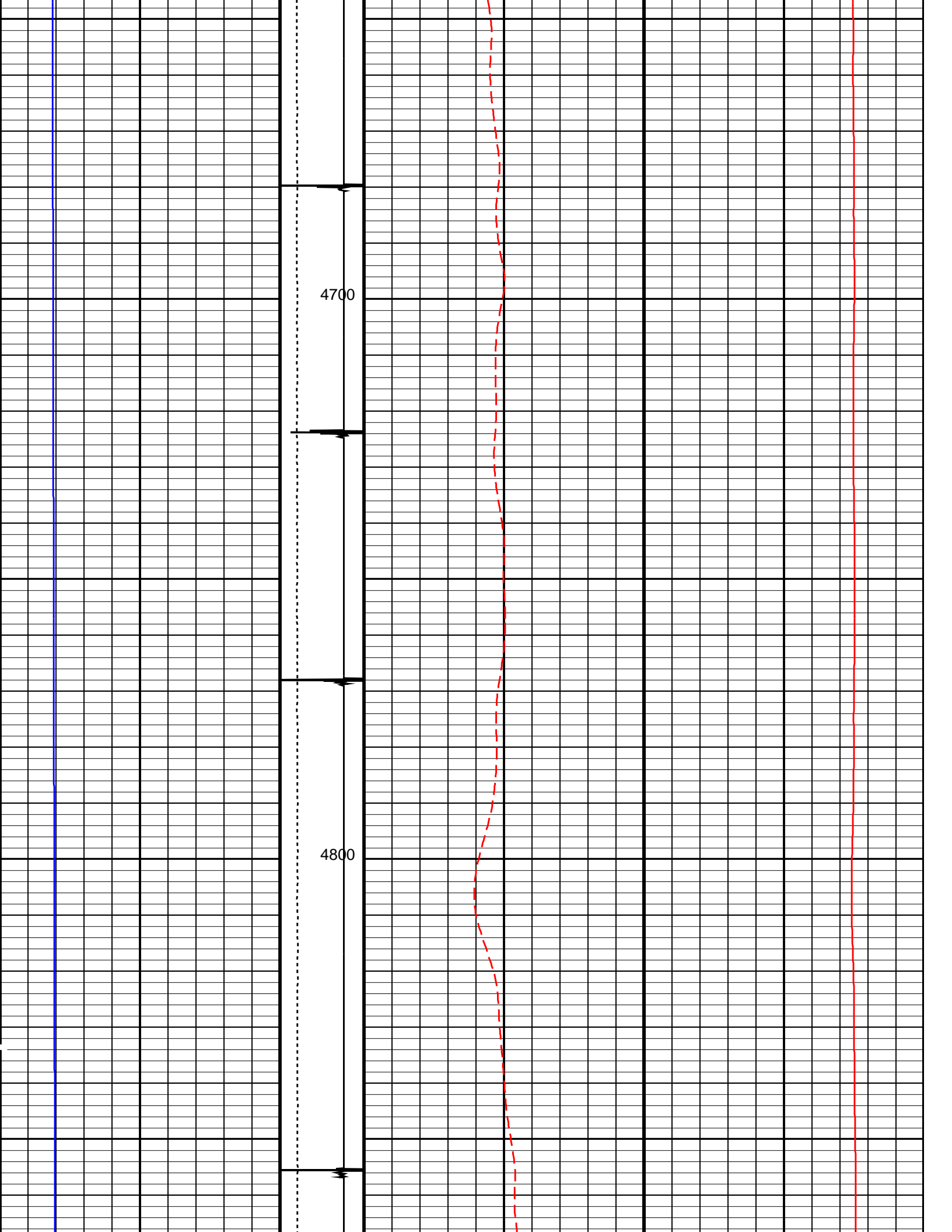


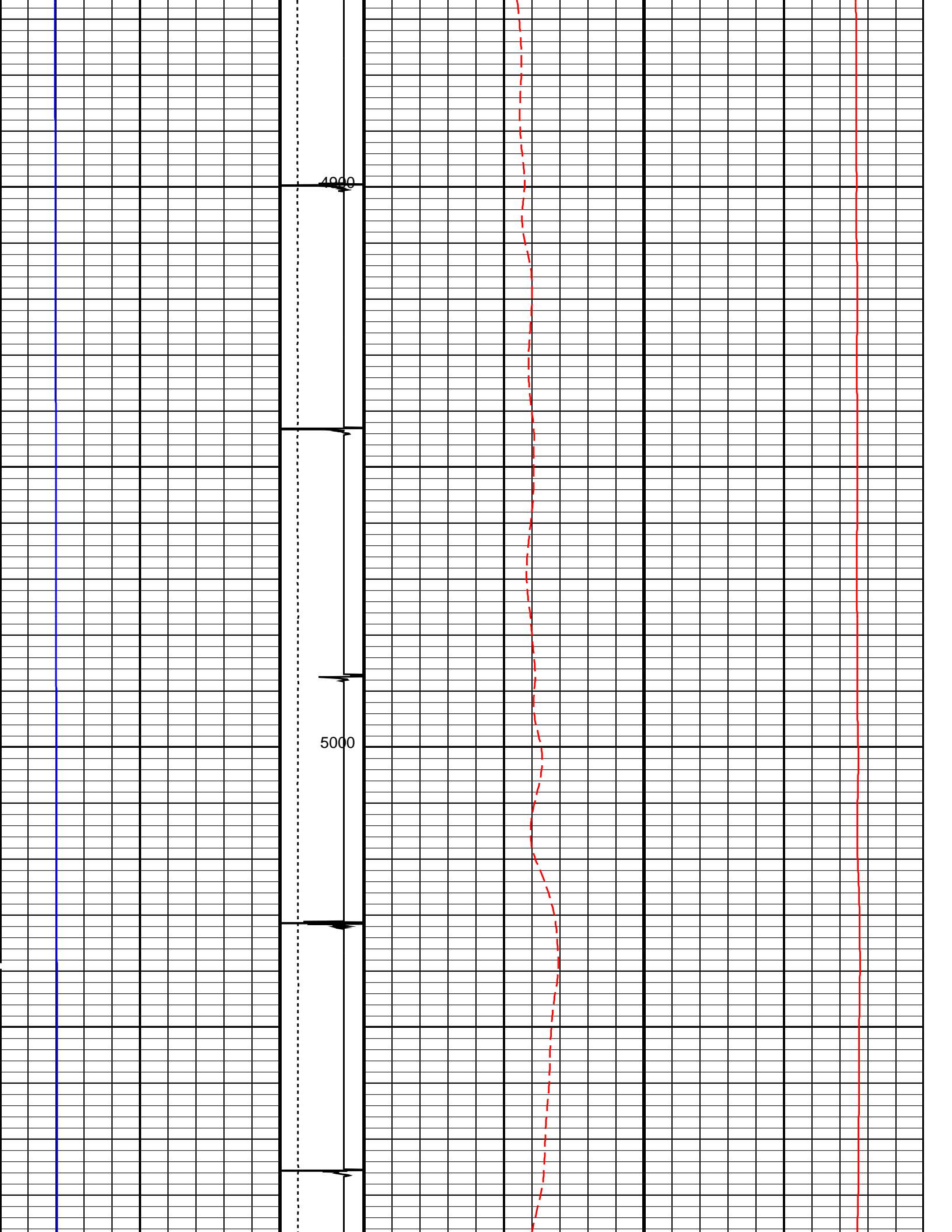


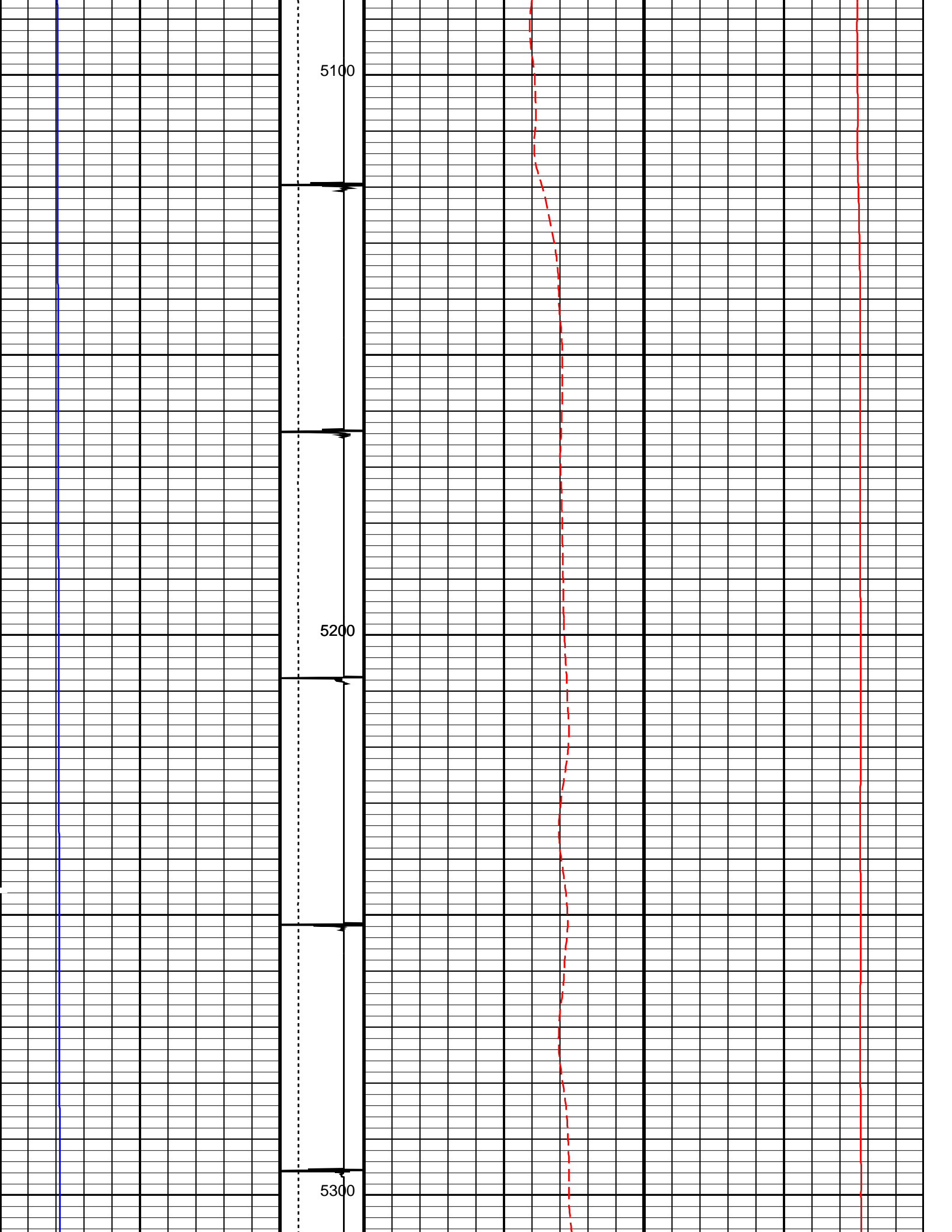


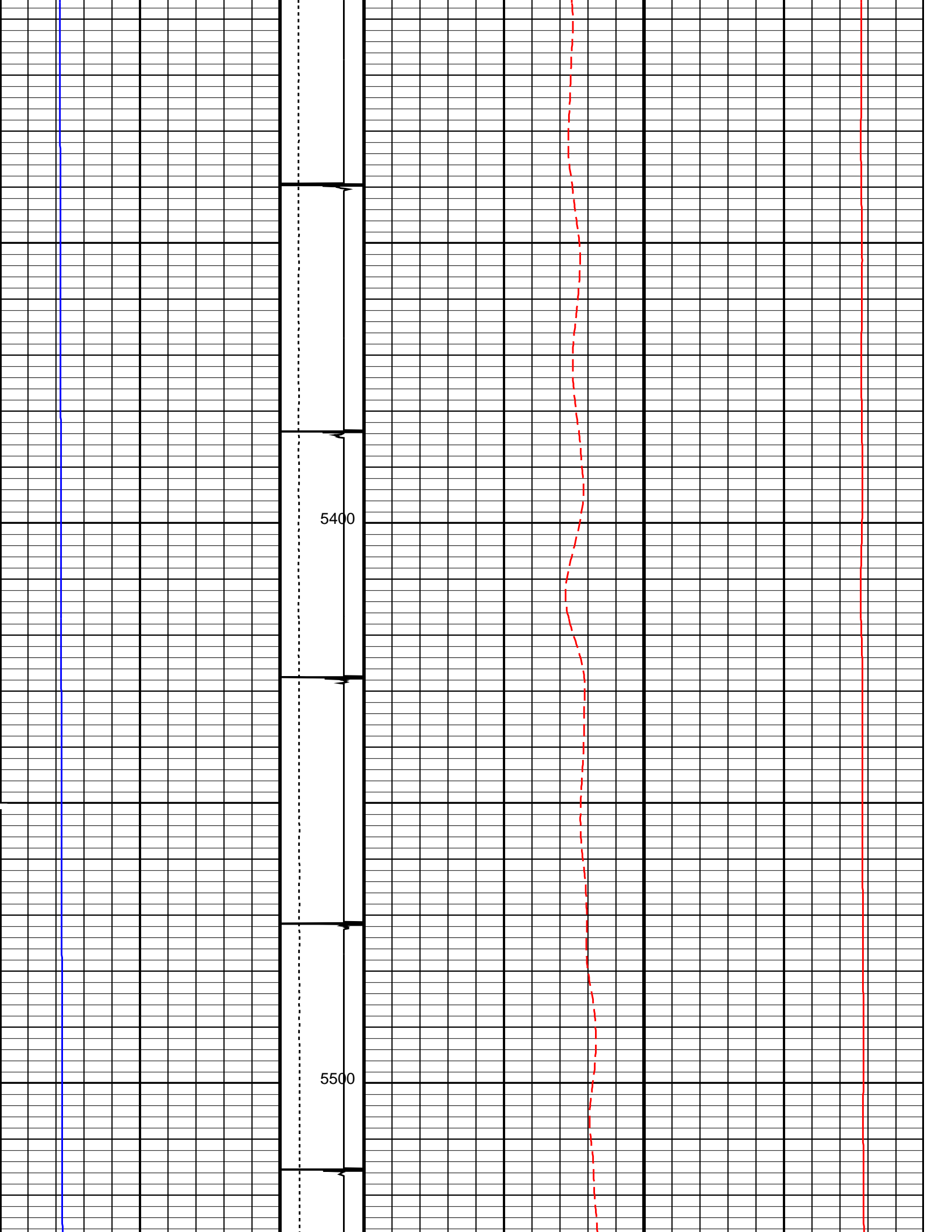


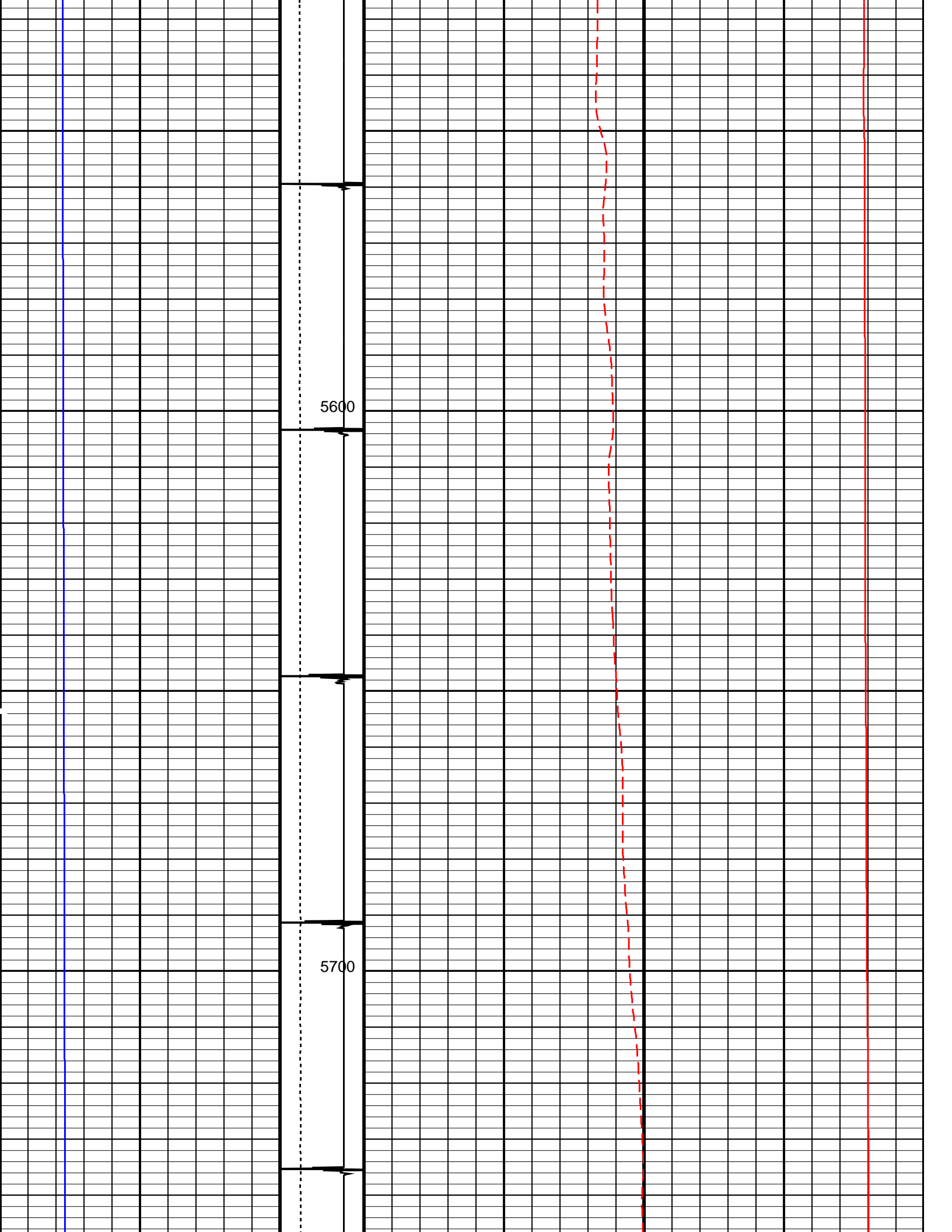


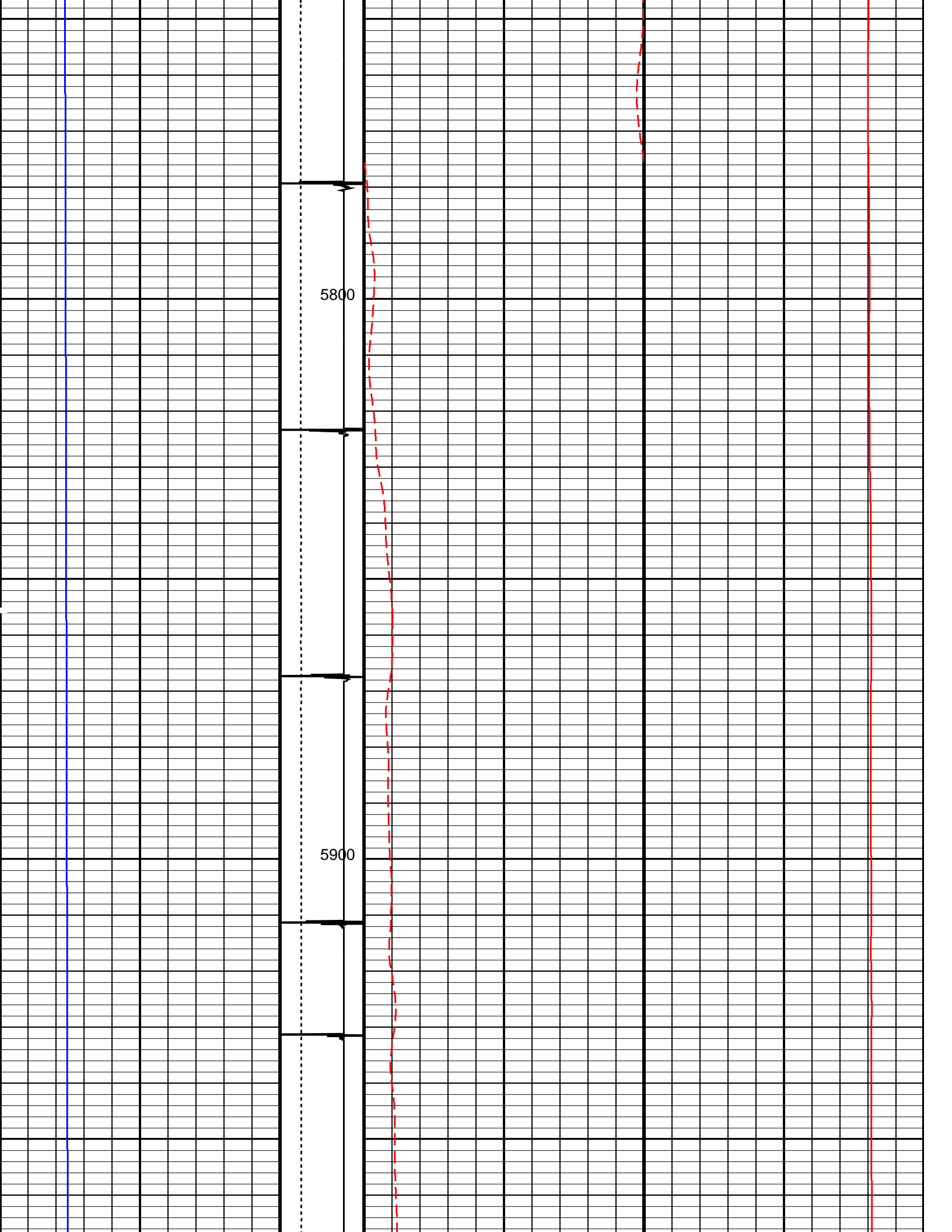


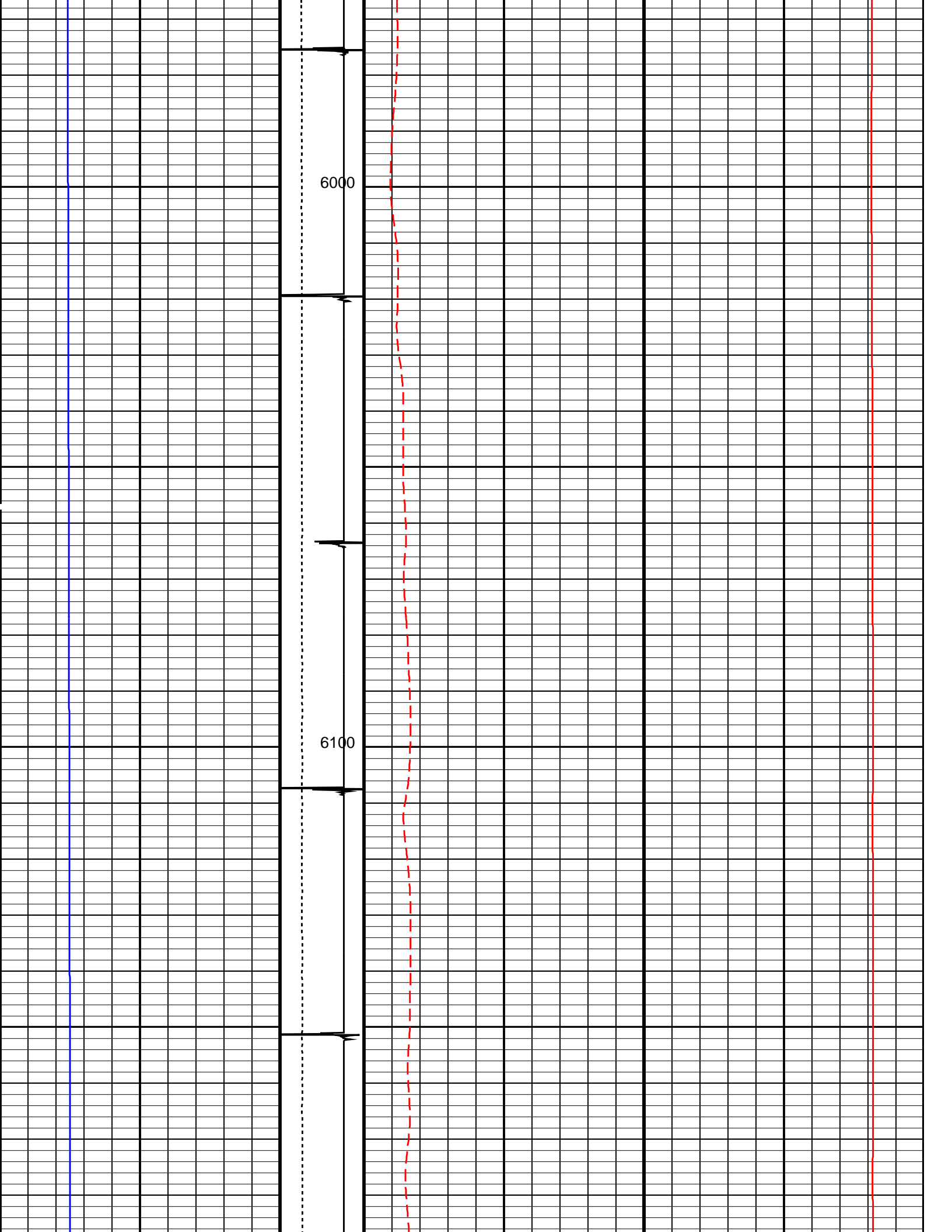


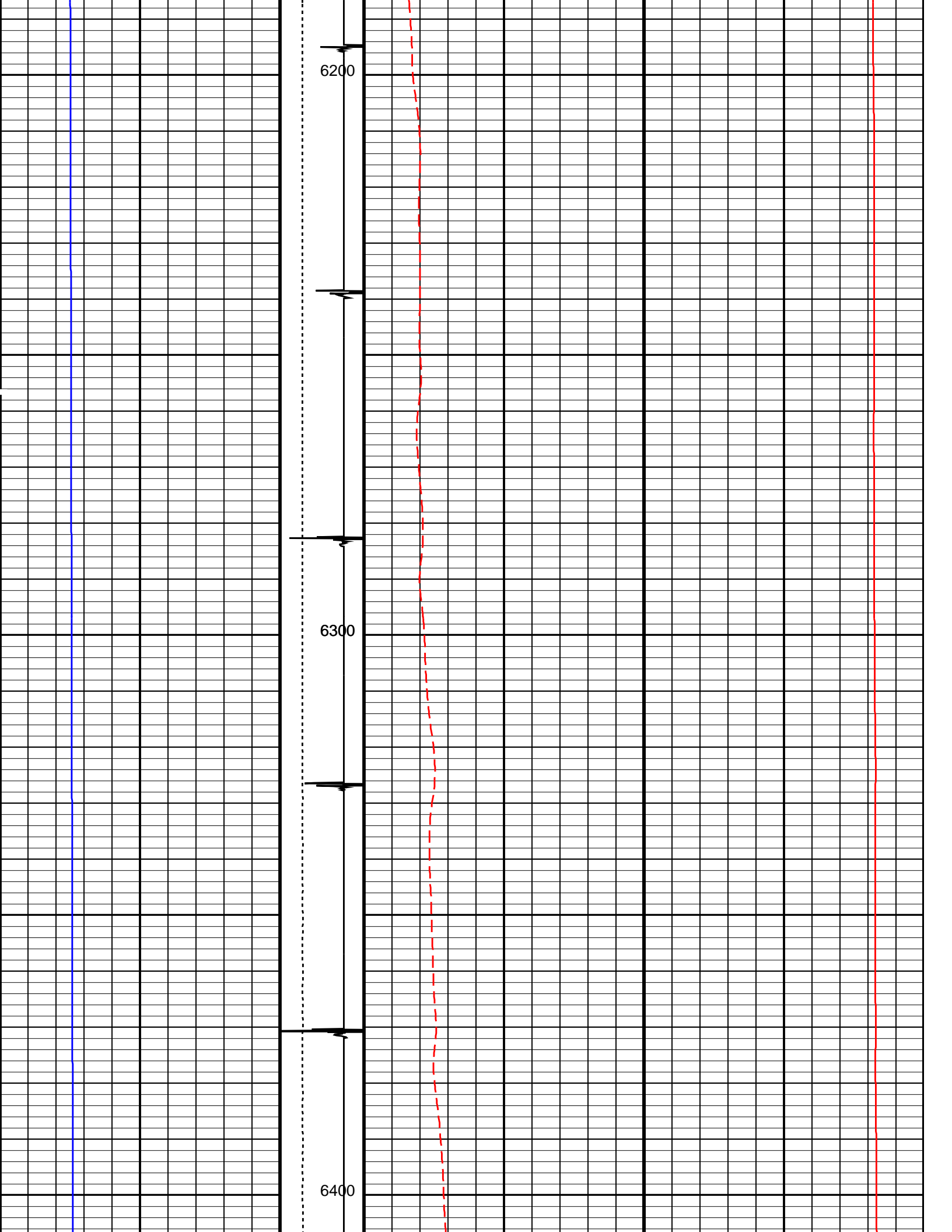


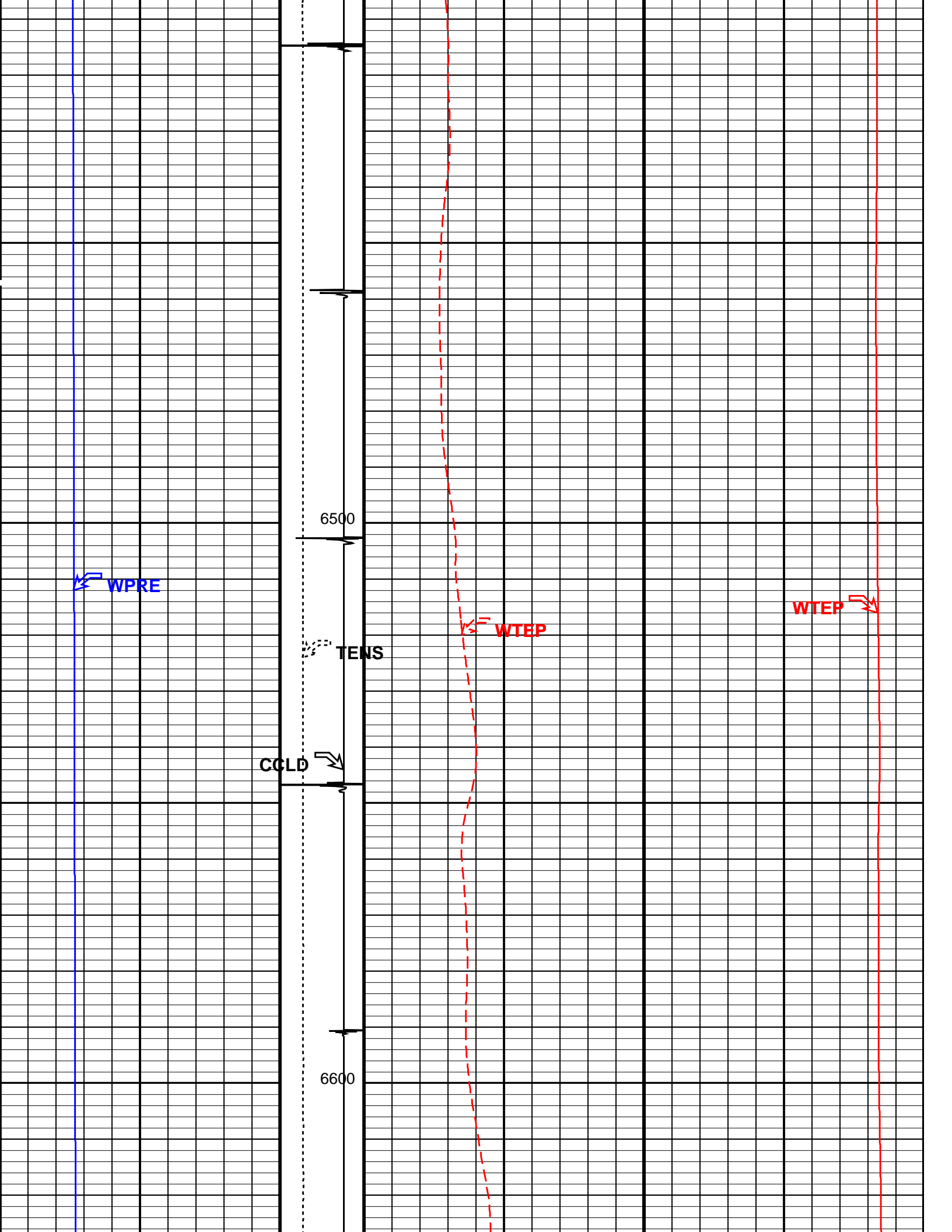


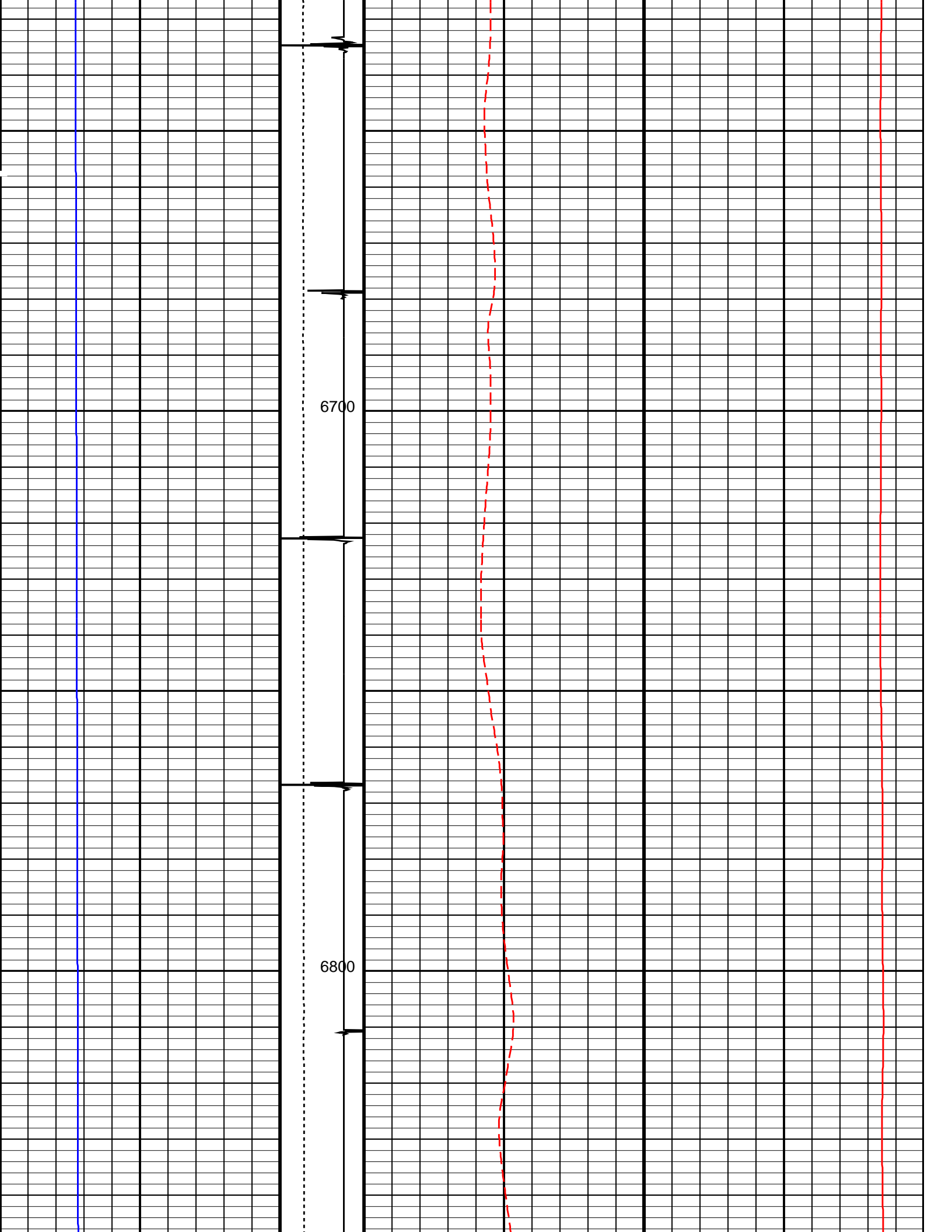


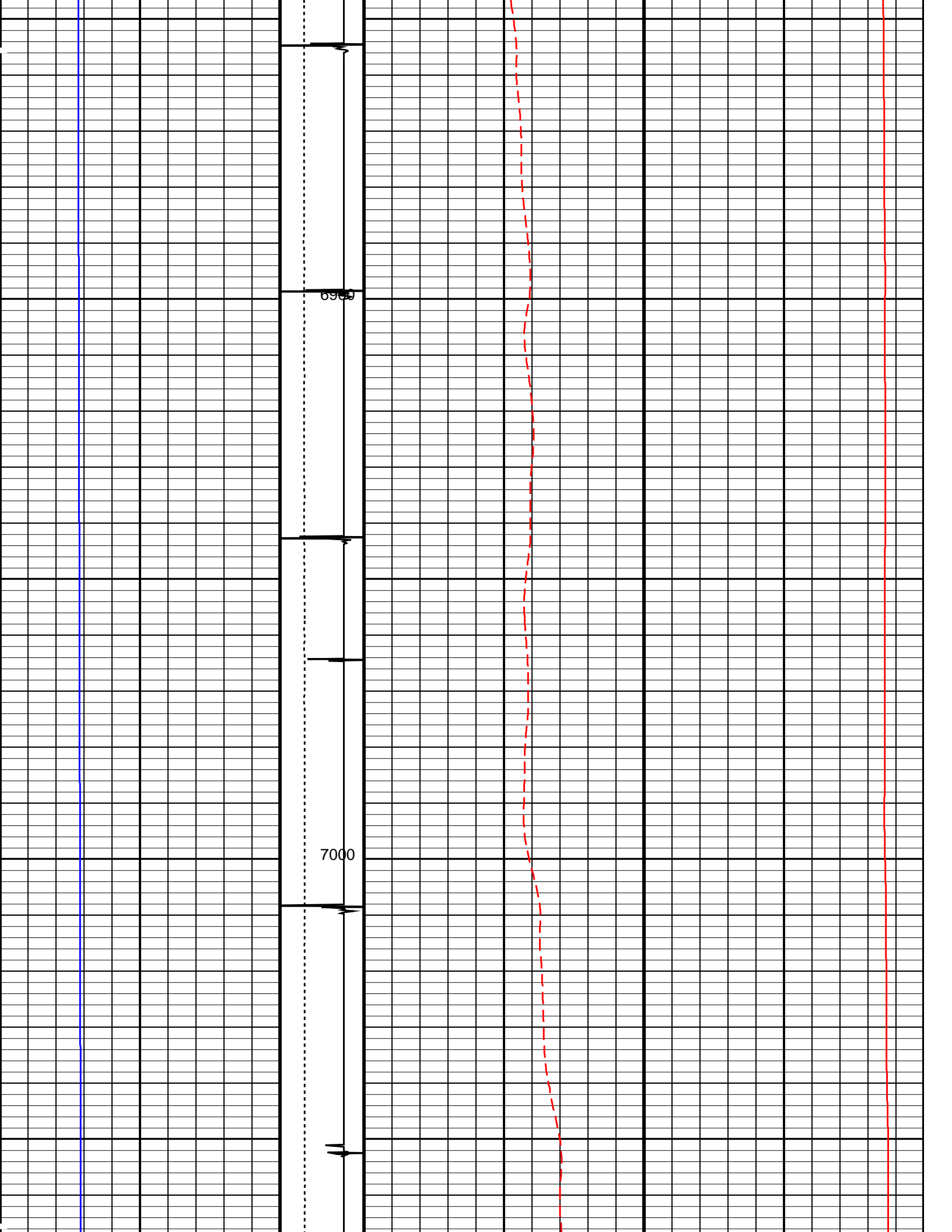


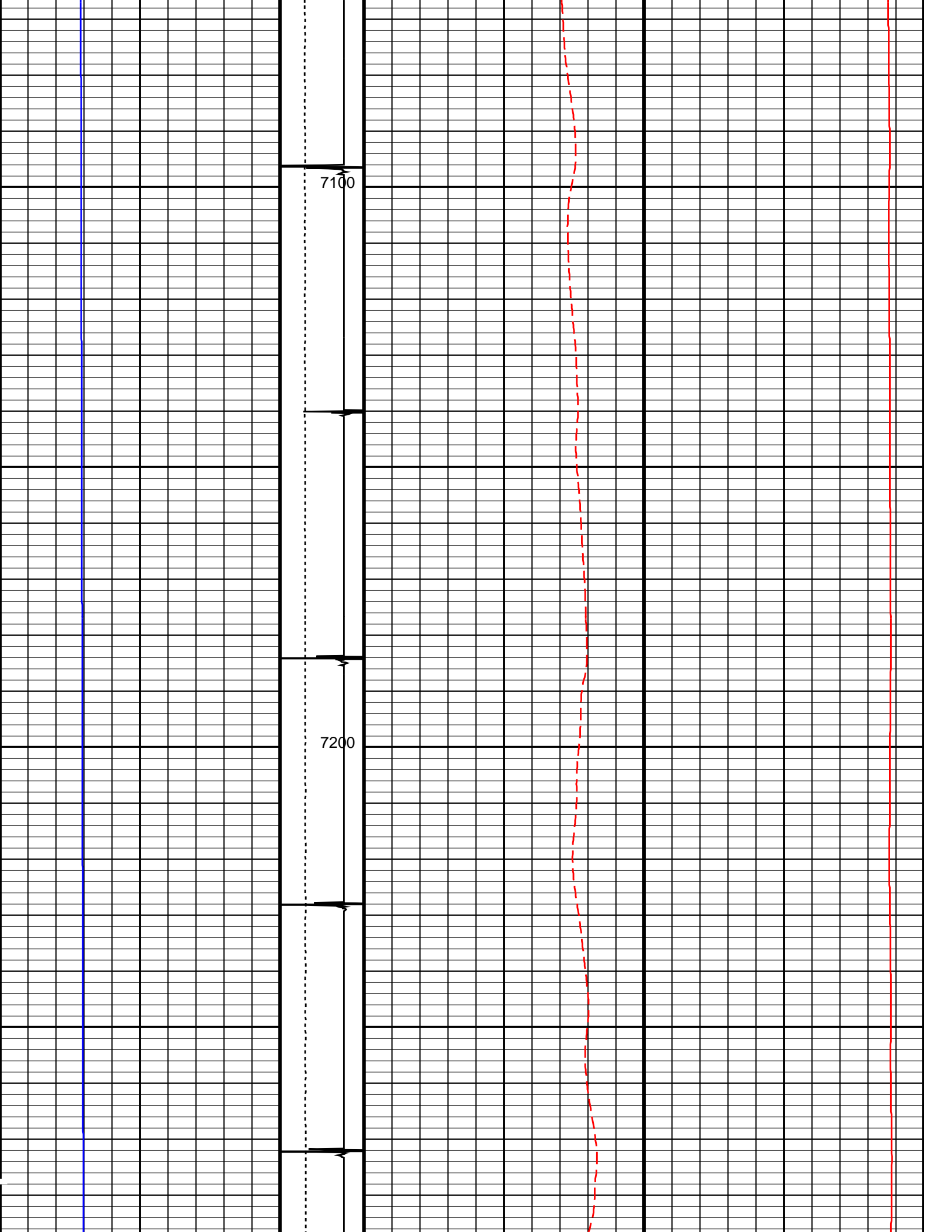


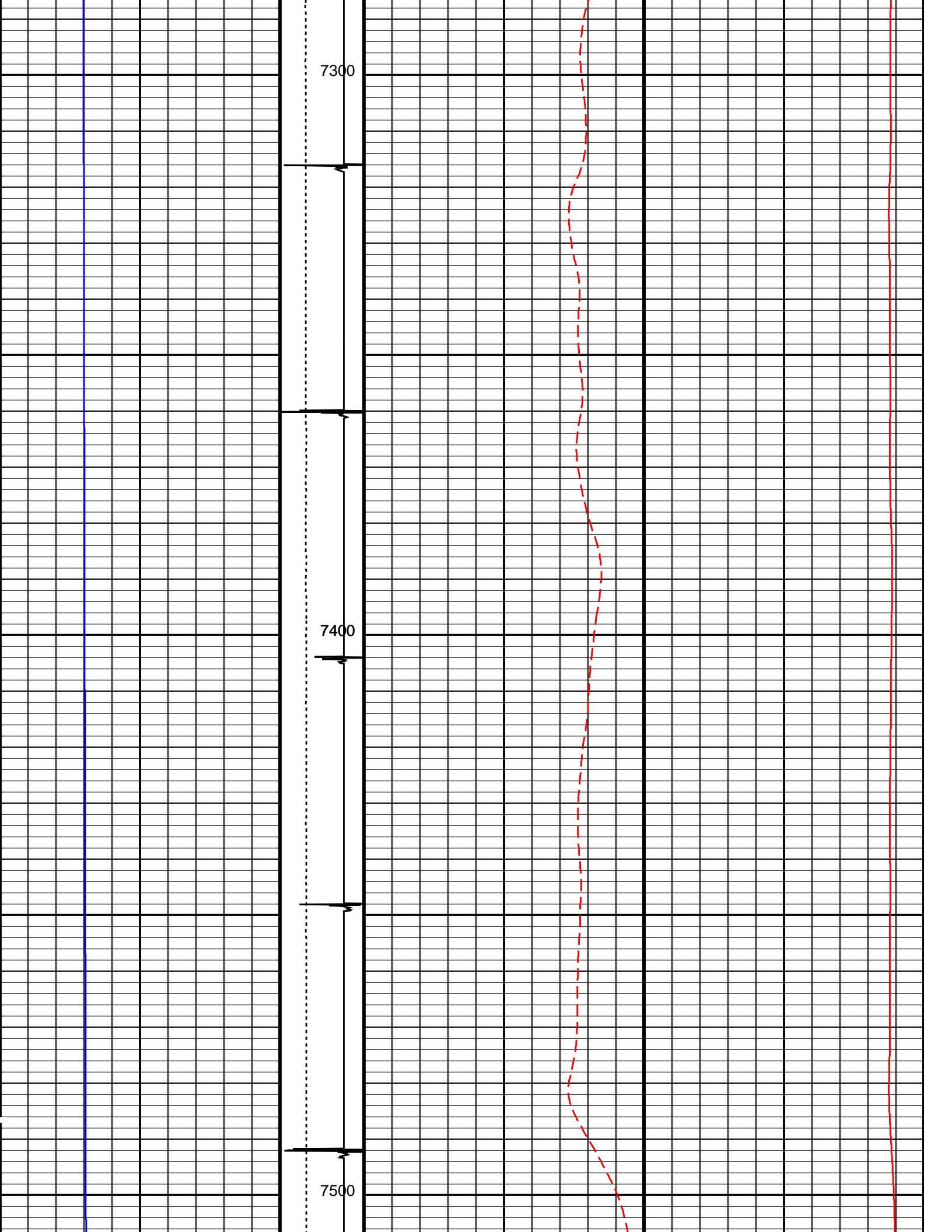


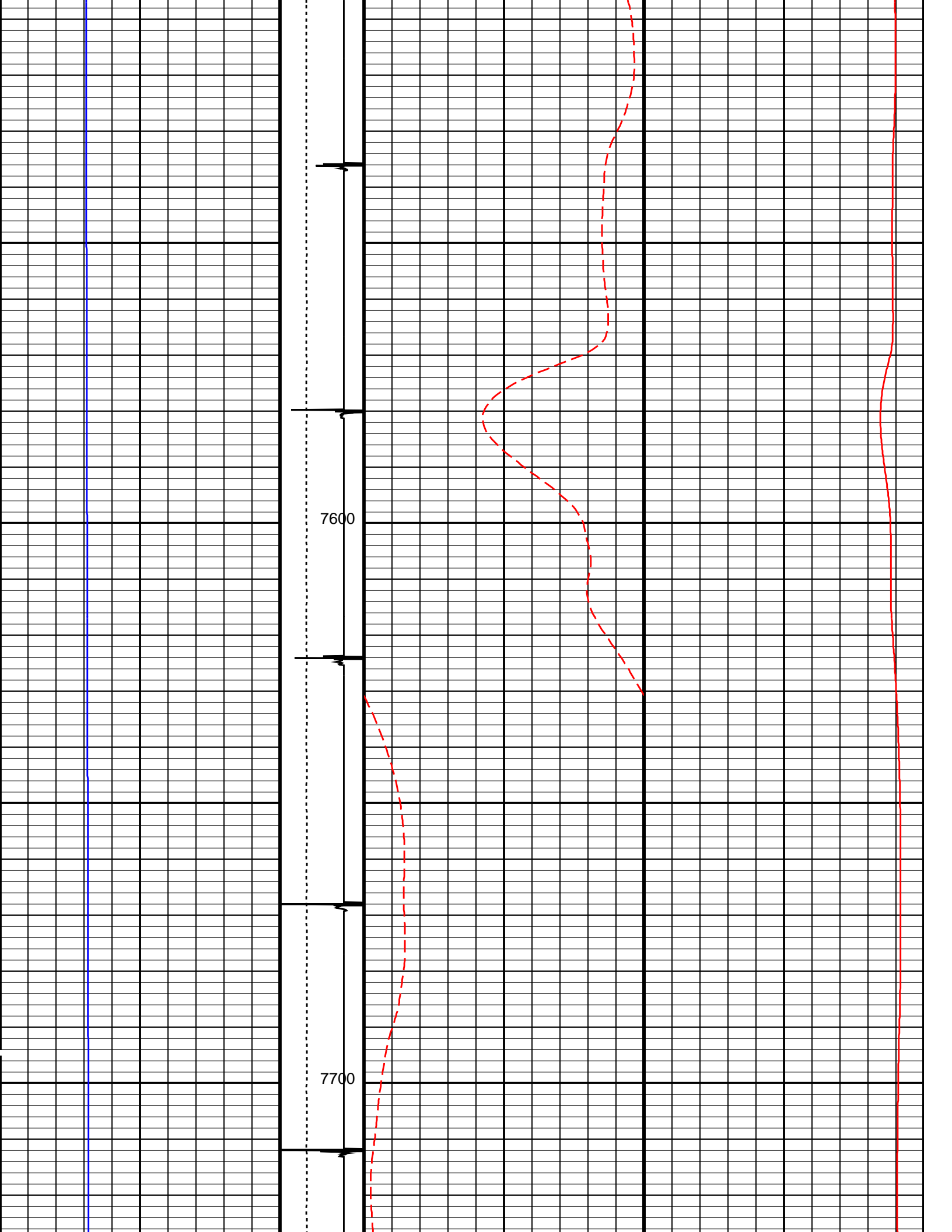


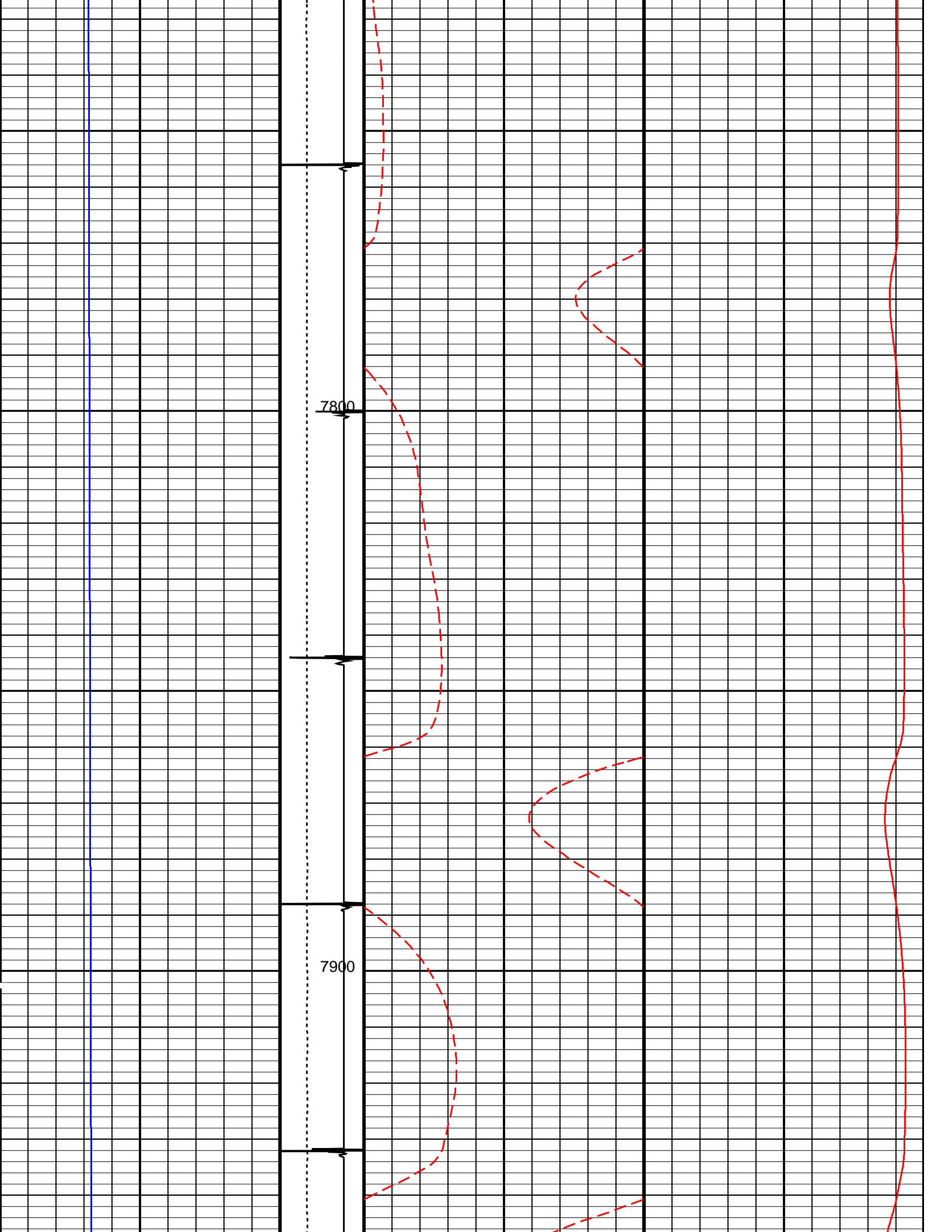


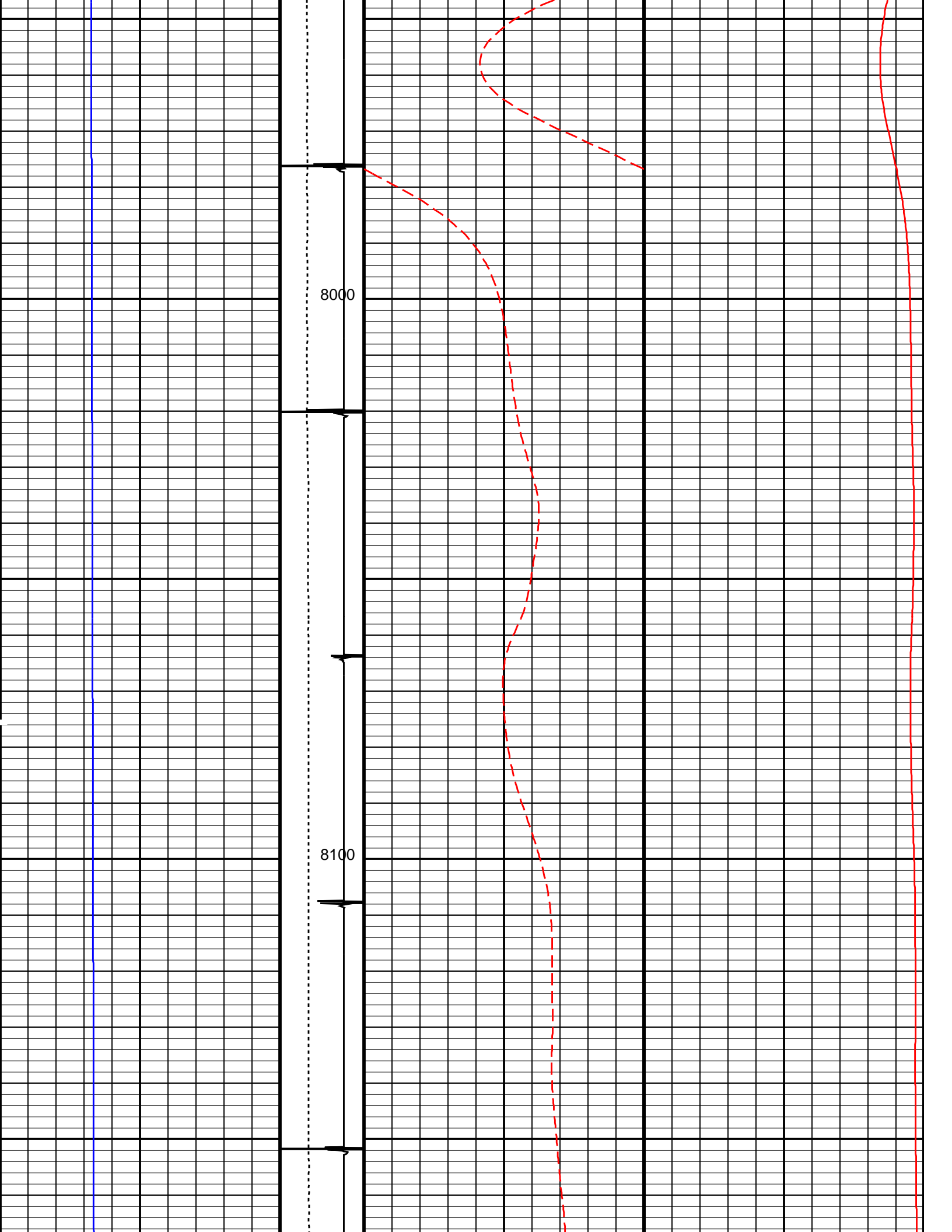


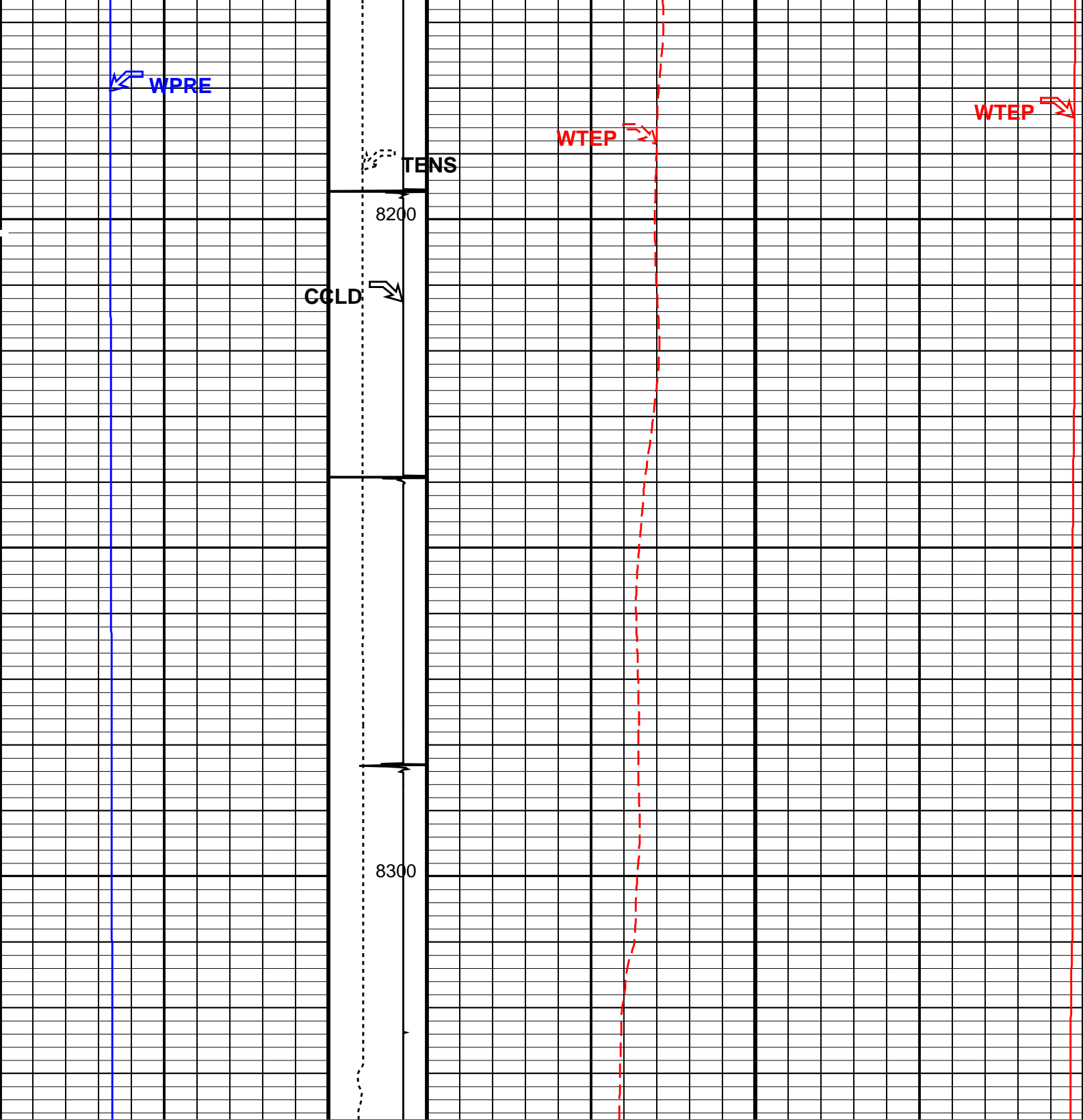












Well Pressure (WP) (PSIA)		Tension (TENS) (LBF)		Well Temperature (WTEP) (DEGF)		Well Temperature (WTEP) (DEGF)	
0	10000	0	2000	0	20	0	200
		Discriminat ed CCL (CCLD)					
		3 (V) -1					

PIP SUMMARY

Time Mark Every 60 S

Parameters		
DLIS Name	Description	Value

DO  
PP

System and Miscellaneous  
Depth Offset for Playback  
Playback Processing

0.0  
FT  
RECOMPUTE

Format: TEMP LOG    Vertical Scale: 5" per 100'    Graphics File Created: 10-Apr-2013 15:32

OP System Version: 19C0-187

HBMS-B    SRPC-5214-H2-2012-OP19

Input DLIS Files

DEFAULT    Flip\_HBMS\_005LUP    PRODUCER    10-Apr-2013 15:31    8337.0 FT    8.0 FT

Output DLIS Files

DEFAULT    HBMS\_007PUP    FN:4    PRODUCER    10-Apr-2013 15:32

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC    Well: SHIDELER FEDERAL 19-13D (O19EB)

Input DLIS Files

DEFAULT    Flip\_HBMS\_006LUP    PRODUCER    10-Apr-2013 15:31    8329.5 FT    8087.5 FT

DEFAULT    HBMS\_007PUP    FN:4    PRODUCER    10-Apr-2013 15:32    8337.0 FT    8.0 FT

Output DLIS Files

DEFAULT    HBMS\_009PUP    FN:6    PRODUCER    10-Apr-2013 15:37    8329.5 FT    8087.5 FT

OP System Version: 19C0-187

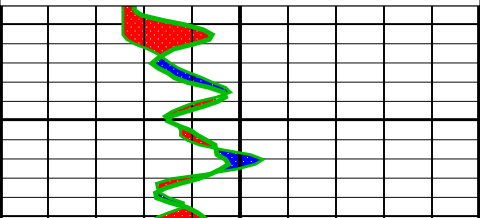
HBMS-B    SRPC-5214-H2-2012-OP19

PIP SUMMARY

Time Mark Every 60 S

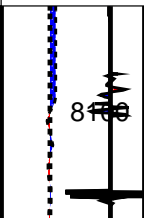
GR\_REP Curve (GR\_REP)  
(GAPI)

0150



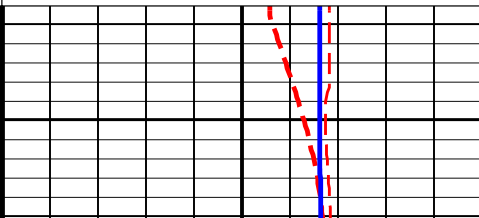
TENS\_REP Curve (TENS\_REP)  
(LBF)

02000



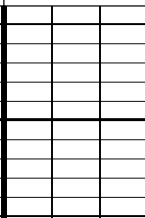
WPRE\_REP Curve (WPRE\_REP)  
(PSIA)

010000



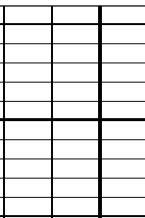
CCLD\_REP Curve (CCLD\_REP)  
(V)

3-1



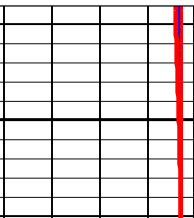
WTEP\_REP Curve (WTEP\_REP)  
(DEGF)

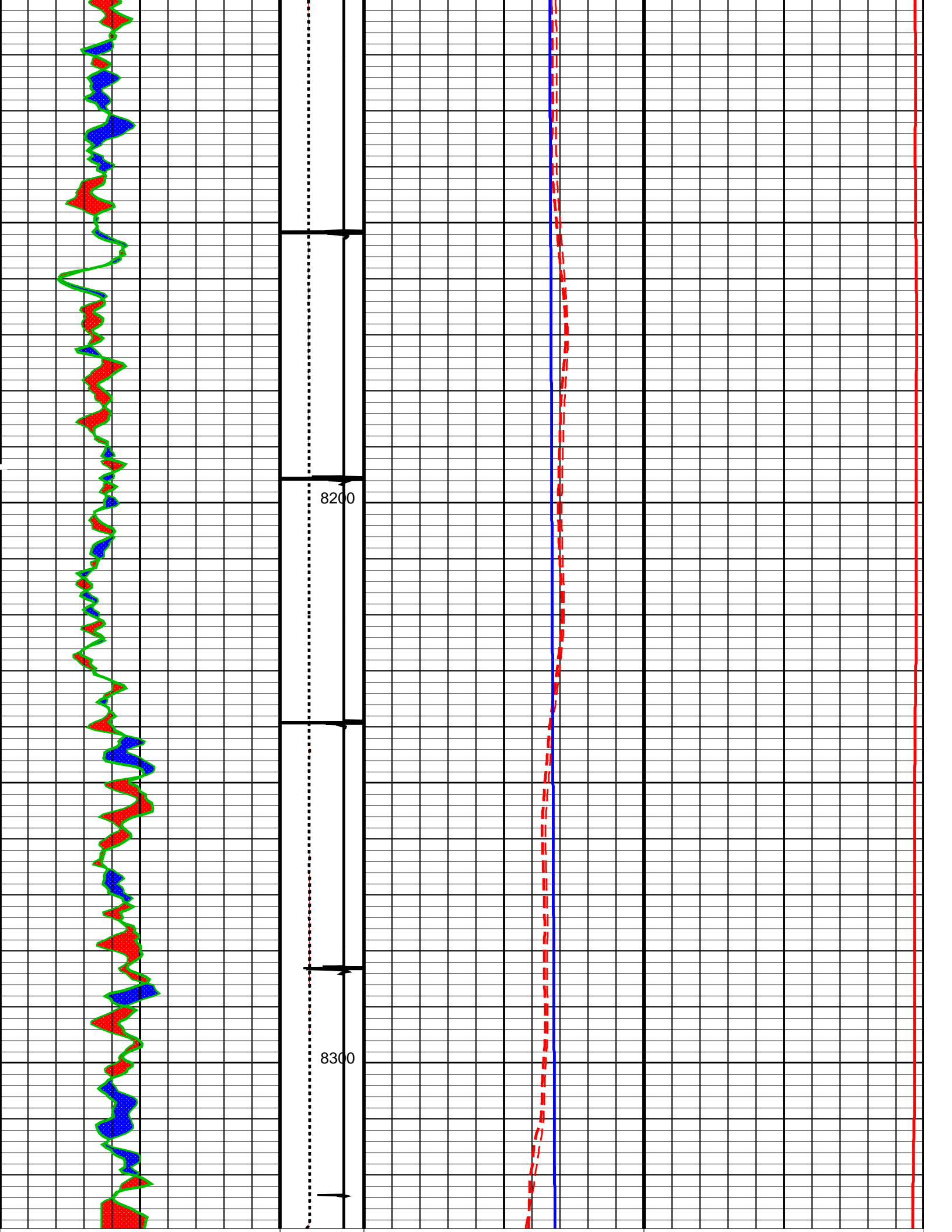
0200

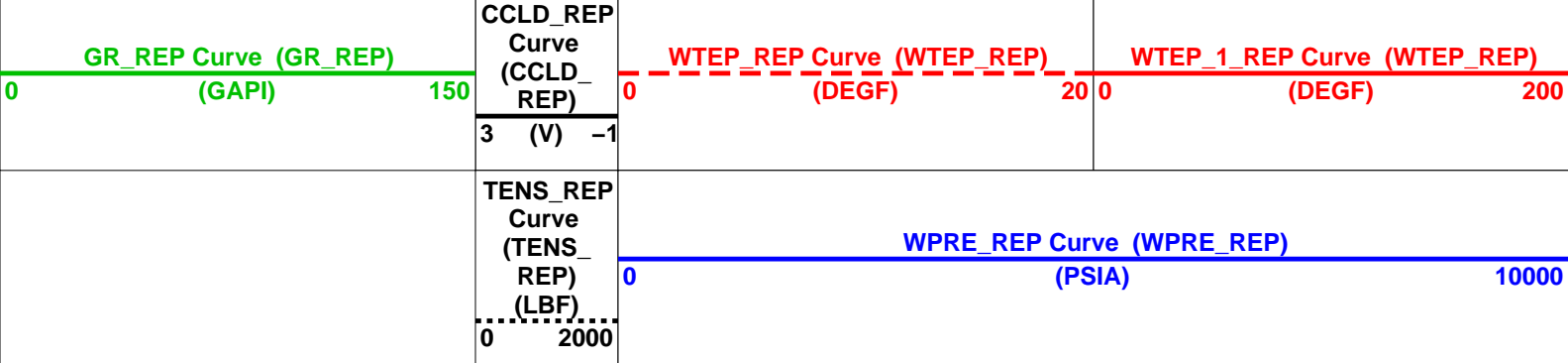


WTEP\_1\_REP Curve (WTEP\_REP)  
(DEGF)

0200







PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
System and Miscellaneous		
DO	Depth Offset for Playback	0.0 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: 10-Apr-2013 15:37		

OP System Version: 19C0-187

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

Input DLIS Files

DEFAULT	Flip_HBMS_006LUP	PRODUCER	10-Apr-2013 15:31	8329.5 FT	8087.5 FT
DEFAULT	HBMS_007PUP	FN:4 PRODUCER	10-Apr-2013 15:32	8337.0 FT	8.0 FT

Output DLIS Files

DEFAULT	HBMS_009PUP	FN:6 PRODUCER	10-Apr-2013 15:37
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HBMS COEFFICIENTS

MAXIS Field Log

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	MAMM CREEK	Sub Type:	PBMS
Well:	SHIDELER FEDERAL 19-13D (O19EB)	Sensor:	GR
Run date:	10-Apr-2013		

PBMS Gamma Ray

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

RESISTORS FOR GR SENSOR N.34473,TOOL HBMS-BA2884. SENSOR S/N:

34473

090506

12

Coeff CRC 0708

GR HV Rt

Rt\*\*0

Rt\*\*1

Rt\*\*0

+.200000000000e+04

+.190000000000e+04

Client: ENCANA OIL & GAS (USA) INC  
Field: MAMM CREEK  
Well: SHIDELER FEDERAL 19-13D (O19EB)  
Run date: 10-Apr-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.2884 S/N:  
2884  
290706  
16  
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

Tool: PSP  
Sub Type: PBMS

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**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

Fb**5	0.0	0.0	0.0
	Fc**3	Fc**4	Fc**5
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 2884  
 Calib Date ddmmyy 290706  
 Matrix Size 16  
 Coeff CRC 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 2884  
 Calib Date ddmmyy 290706  
 Matrix Size 16  
 Coeff CRC 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

**Schlumberger**

Well: SHIDELER FEDERAL 19-13D (O19EB)

Field: MAMM CREEK

Field: MAMM CREEK  
County: GARFIELD  
State: COLORADO

TEMPERATURE LOG  
CCL – TEMPERATURE