

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEE 24-8C2

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

TEMPERATURE LOG
CCL - TEMPERATURE

County:	GARFIELD			
Field:	MAMM CREEK			
Location:	SHL: 2347 FSL & 308 FWL			
Well:	ENCANA FEE 24-8C2			
Company:	ENCANA OIL & GAS (USA) INC			
	LOCATION			
	SHL: 2347 FSL & 308 FWL		Elev.: K.B. 5687.00 ft	
	BHL: 2430 FNL & 855 FEL		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.	Section 19	Township 6S	Range 92W
	05-045-20756-00			

	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	16-Mar-2013			
Run Number	1			
Depth Driller	9008 ft			
Schlumberger Depth	3585 ft			
Bottom Log Interval	3585 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	9008 ft			
Casing/Tubing Size	4.500 in			
Weight	11.6 lbm/ft			
Grade				
From	22 ft			
To	8991 ft			
Maximum Recorded Temperatures	120 degF			
Logger On Bottom	16-Mar-2013		15:00	
Unit Number	Location			
Recorded By	JASON BARRY			
Witnessed By	TERRY DUINN			

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: 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	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
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: 14:30	
TIME ON BOTTOM: 15:00	
EXIT TIME: 15:15	

MAX RECORDED TEMPERATURE: 120 DEGF	
MAX RECORDED PRESSURE: 1525 PSI	
CREW: J BARRY, B CUPP, W AZIZ	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

RUN 1			RUN 2		
SERVICE ORDER #:	C920-00050		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

DOWNHOLE EQUIPMENT

MH-22

MH-22

AH-38

Detail MT
TelStatus
CTEM

HBMS-B

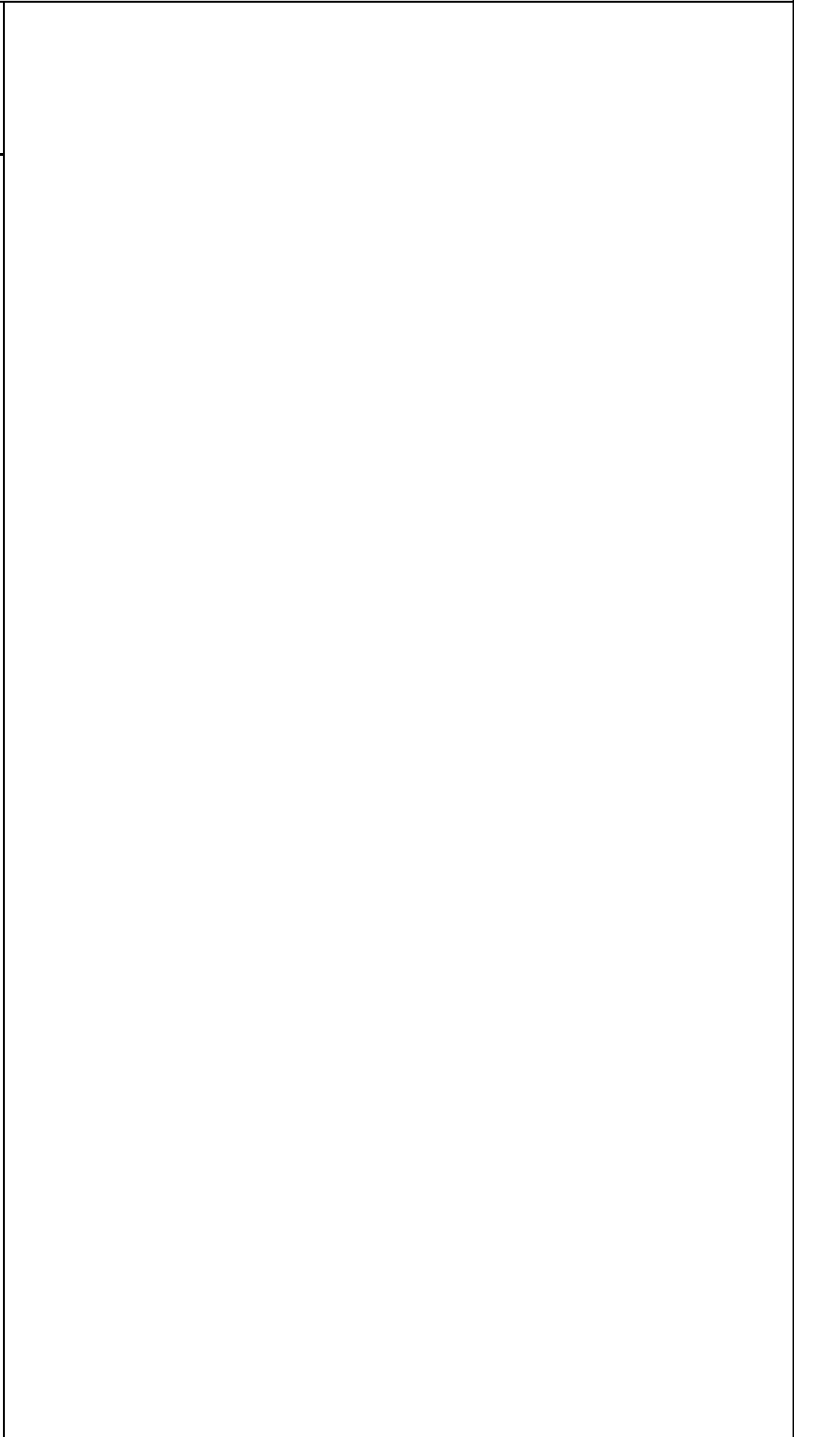
PSC-A 2880
HUDH-A 2880
HSTC-A
HBMC-A
GR
CCL
HBMC
HTPS-A 2880
HCQG_E_Mano
RTD Thermometer

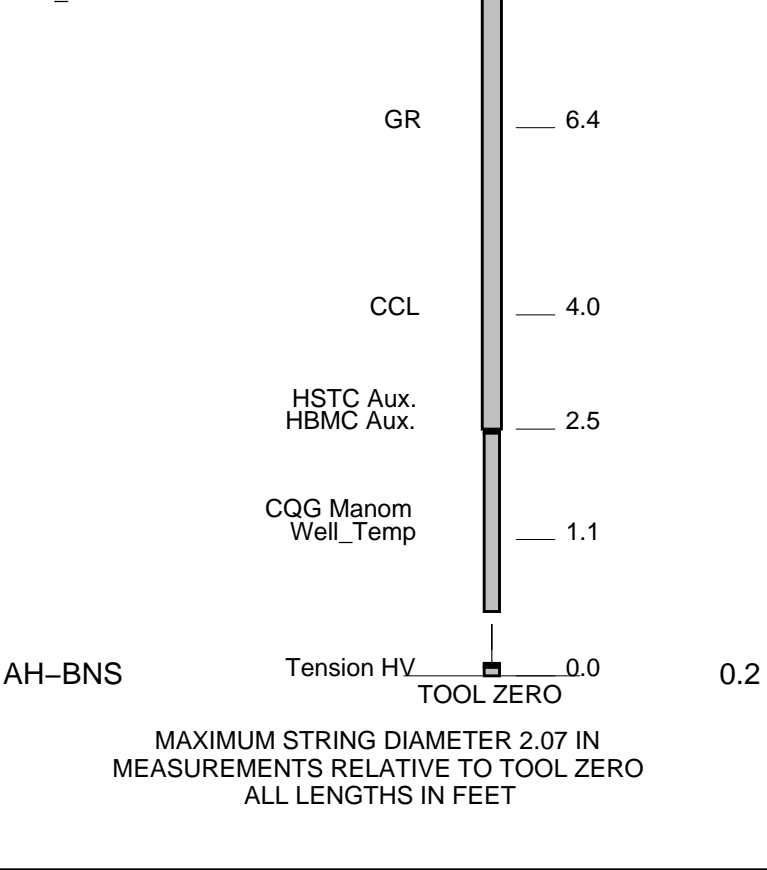
11.3

13.1

11.6

11.3

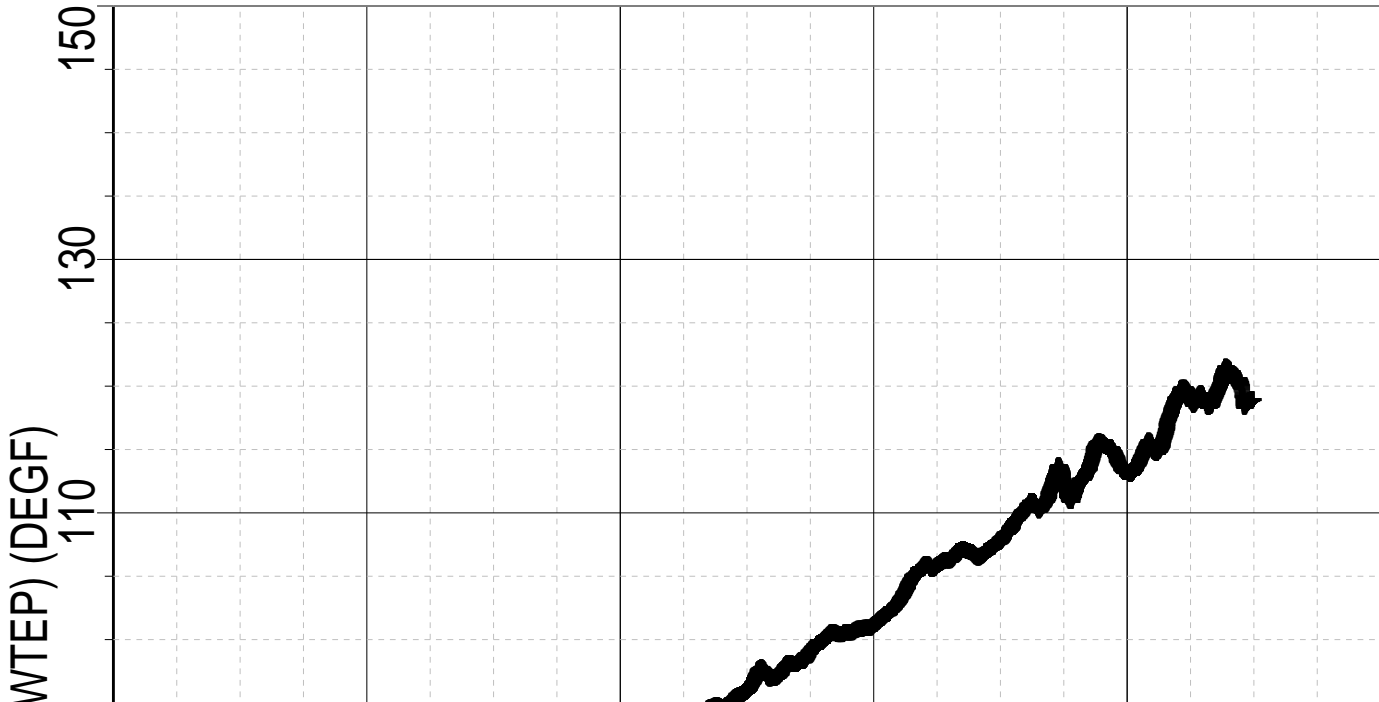


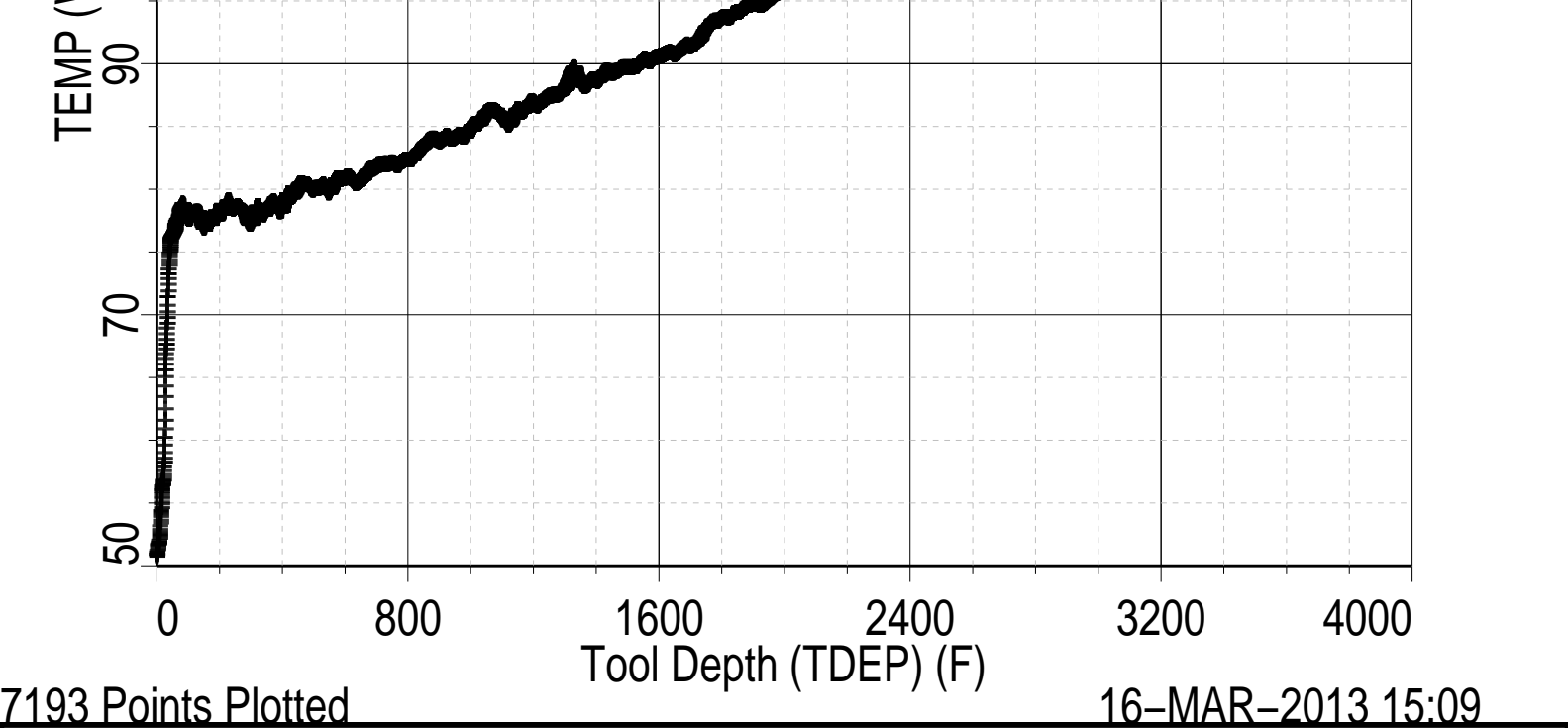


TEMPERATURE PLOT

MAXIS Field Log

Index: 3596.0 – -17.5 FT





Schlumberger

TEMPERATURE LOG

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEE 24-8C2

Input DLIS Files

DEFAULT Flip_HBMS_007LUP PRODUCER 16-Mar-2013 15:05 3596.0 FT -17.5 FT

Output DLIS Files

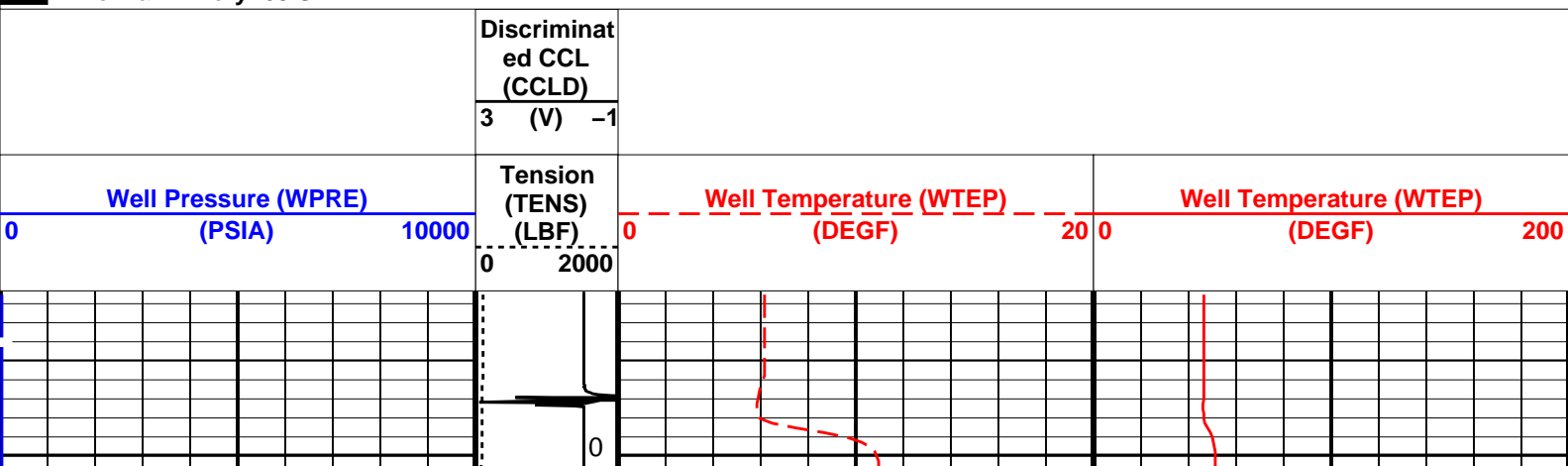
DEFAULT HBMS_010PUP FN:6 PRODUCER 16-Mar-2013 15:07 3596.0 FT -17.5 FT

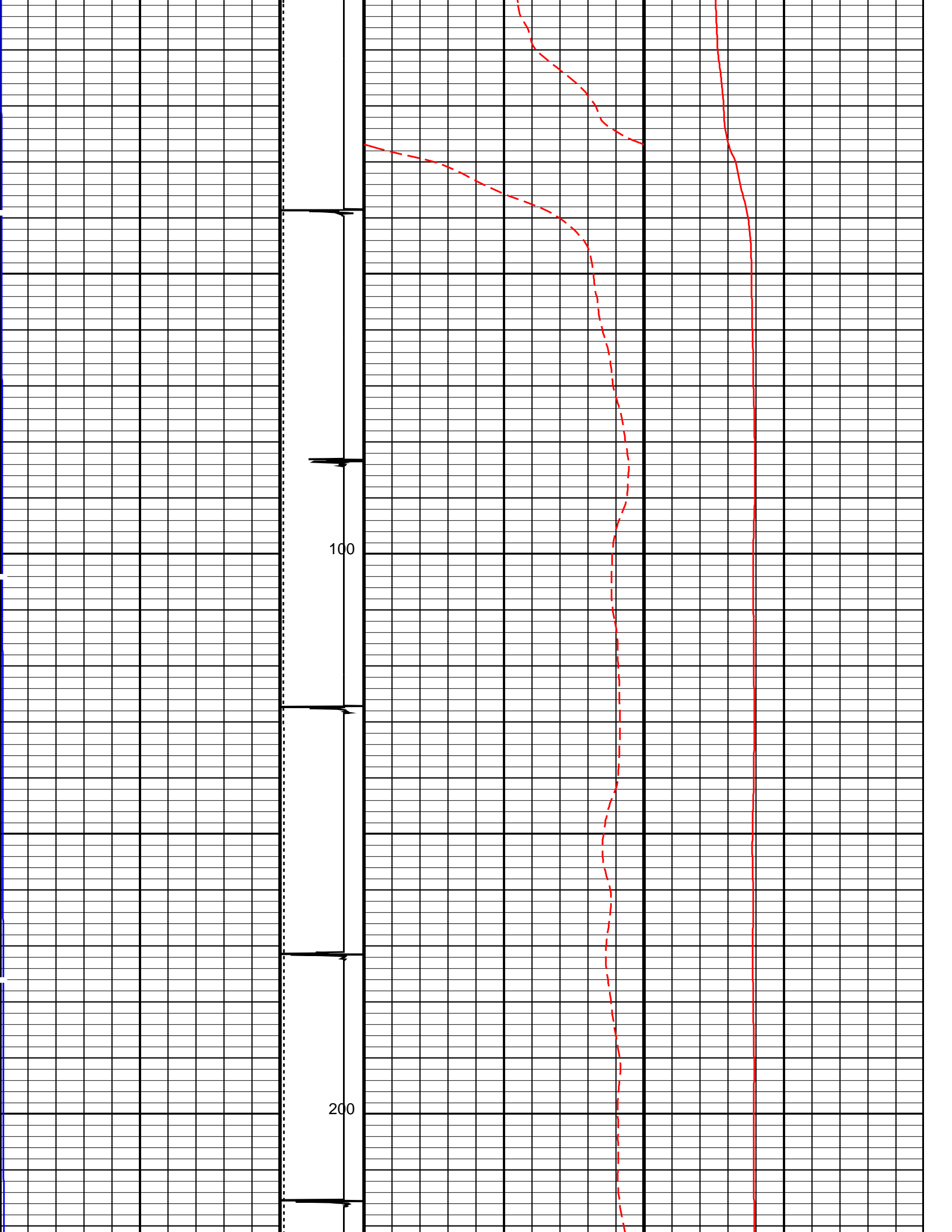
OP System Version: 19C0-187

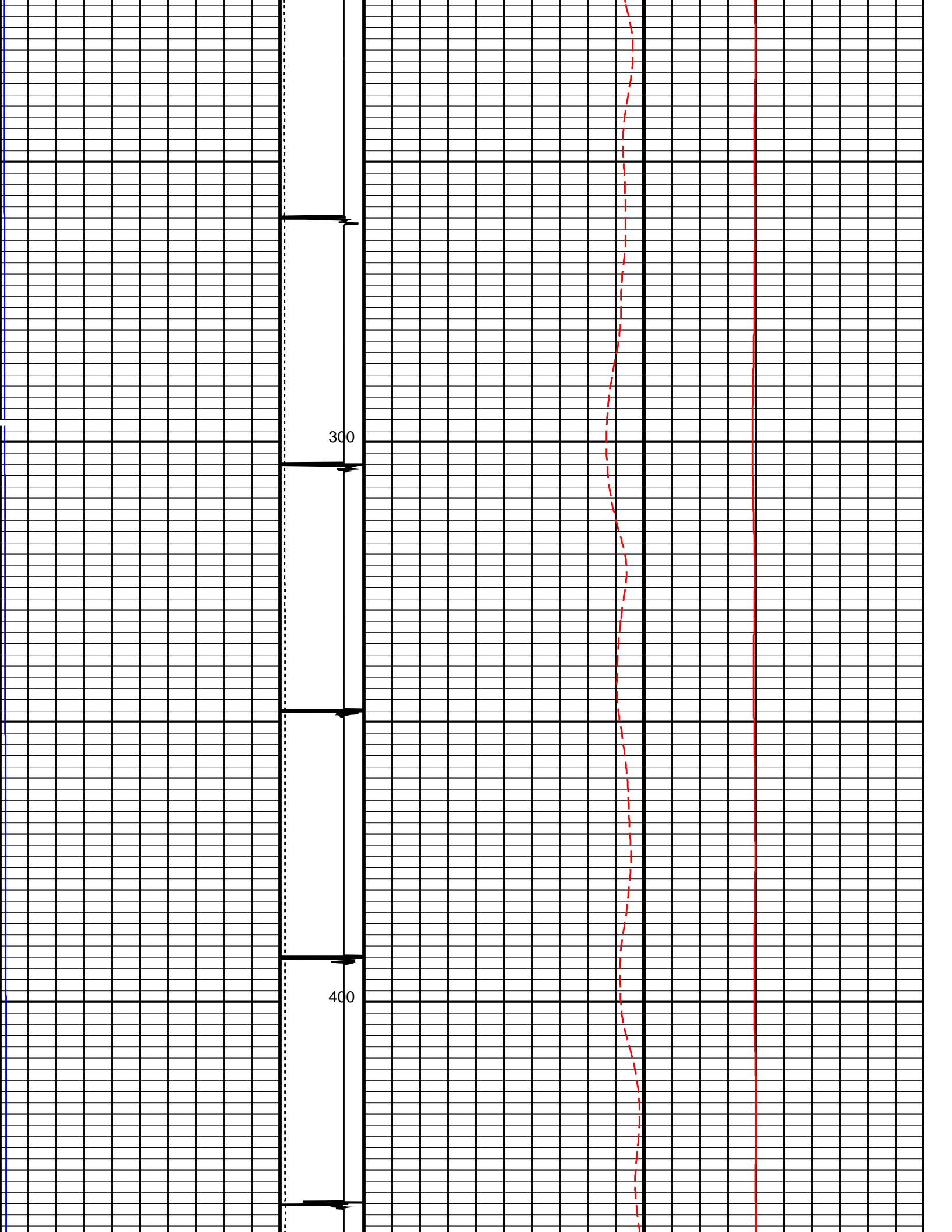
HBMS-B SRPC-5214-H2-2012-OP19

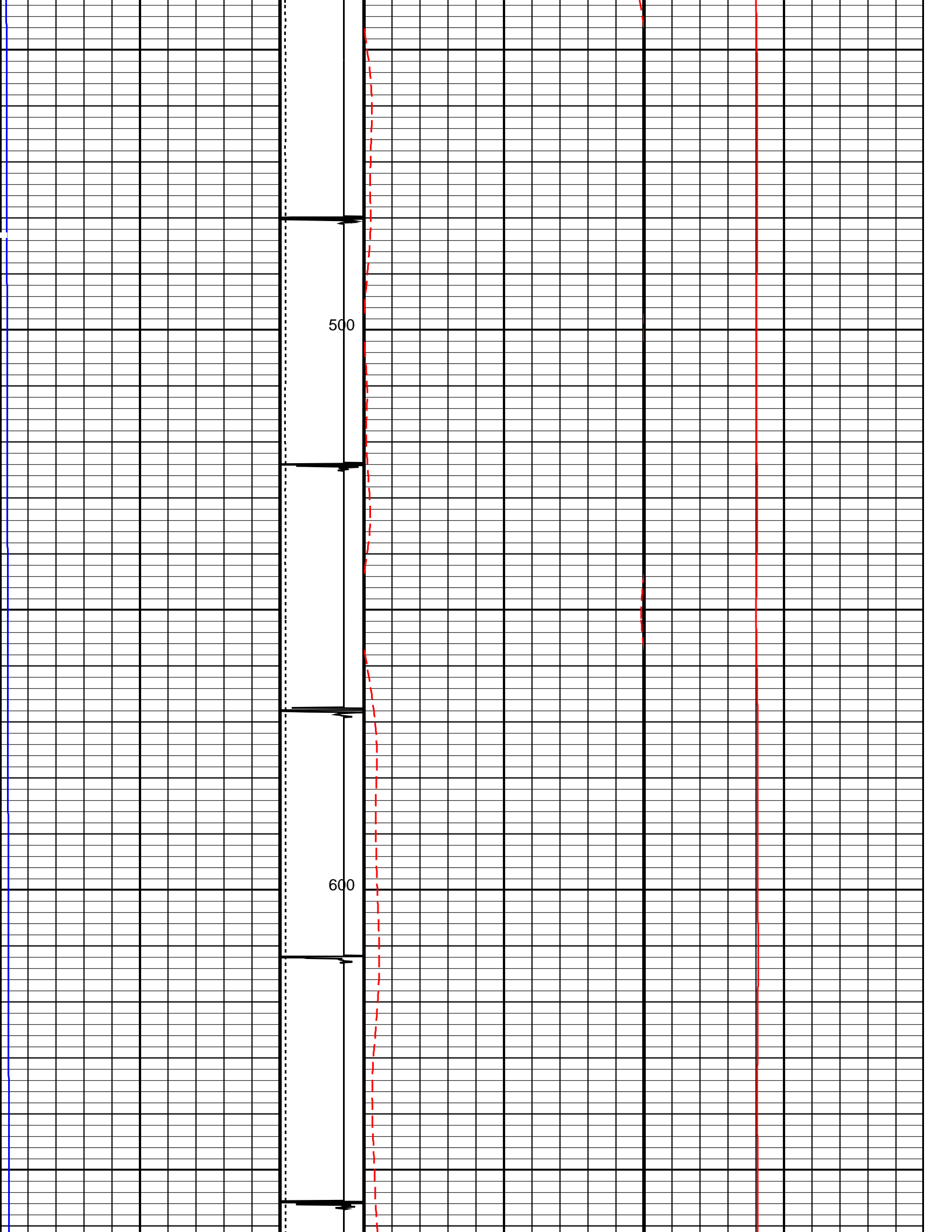
PIP SUMMARY

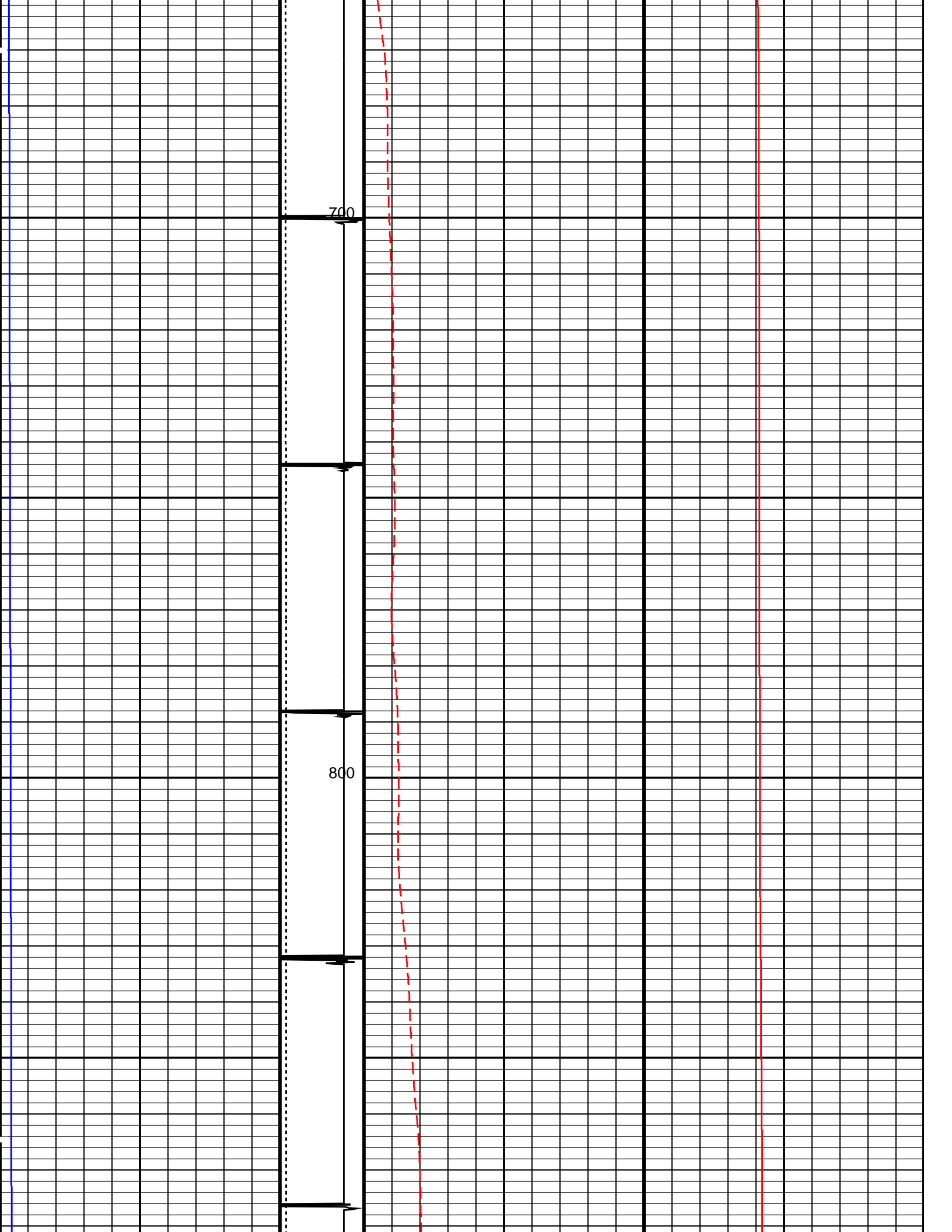
Time Mark Every 60 S

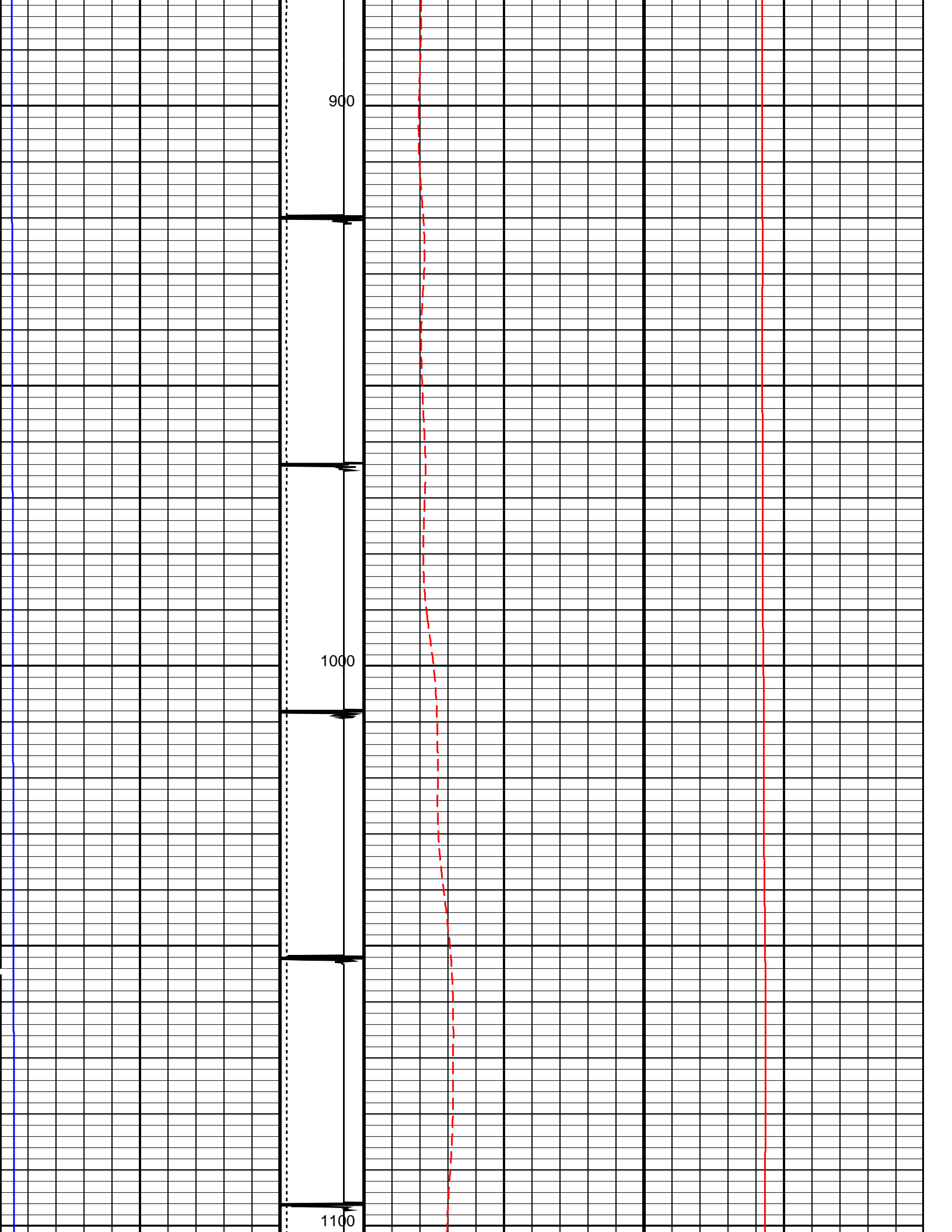


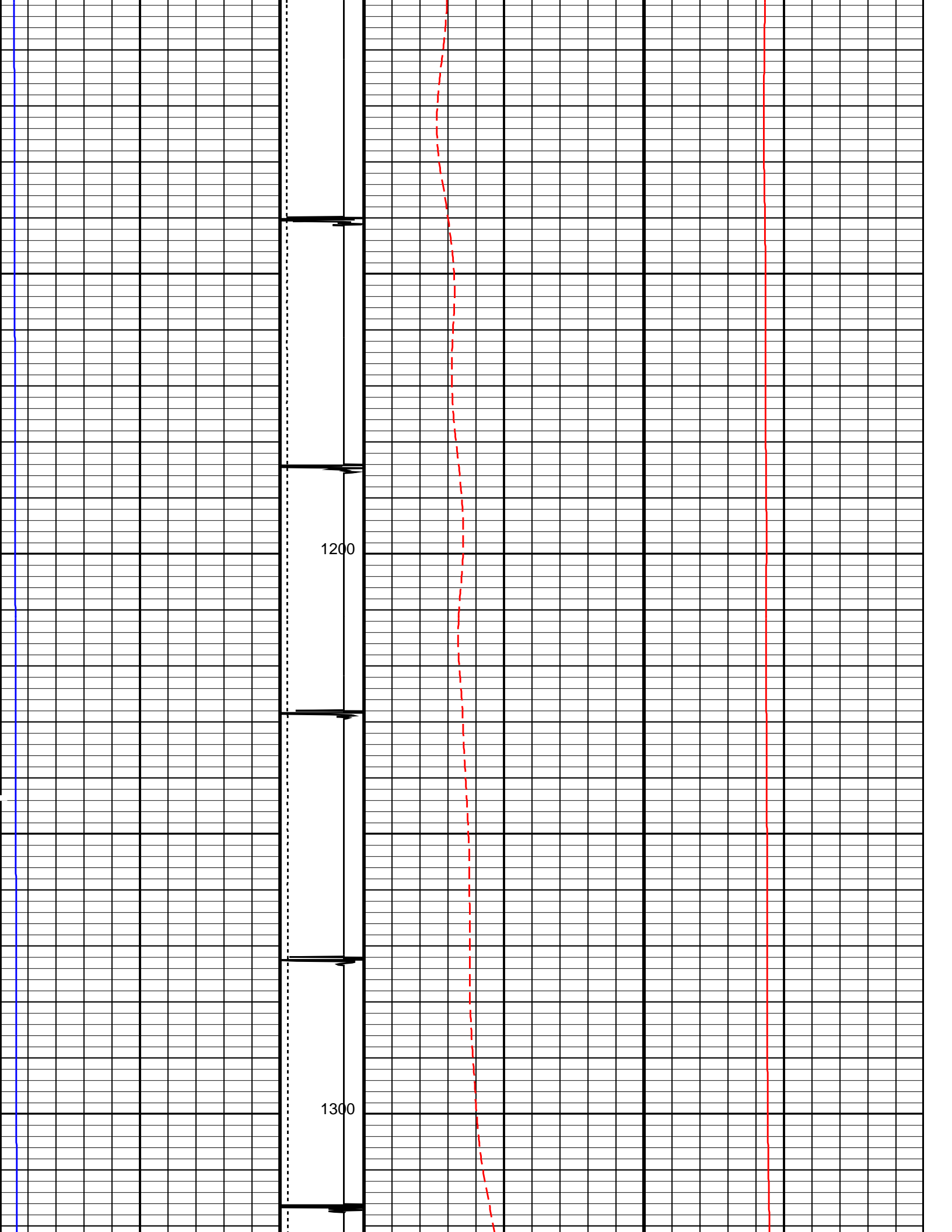


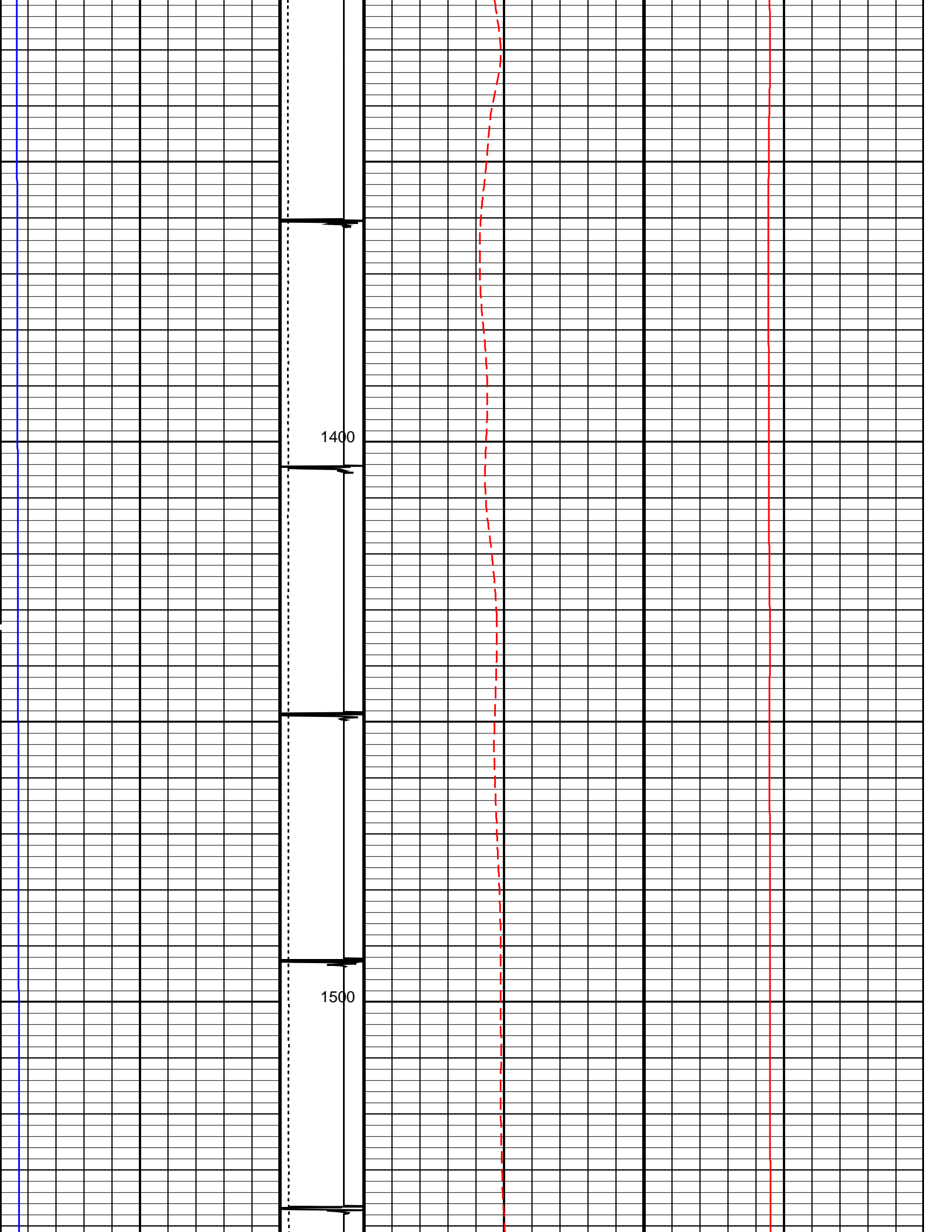


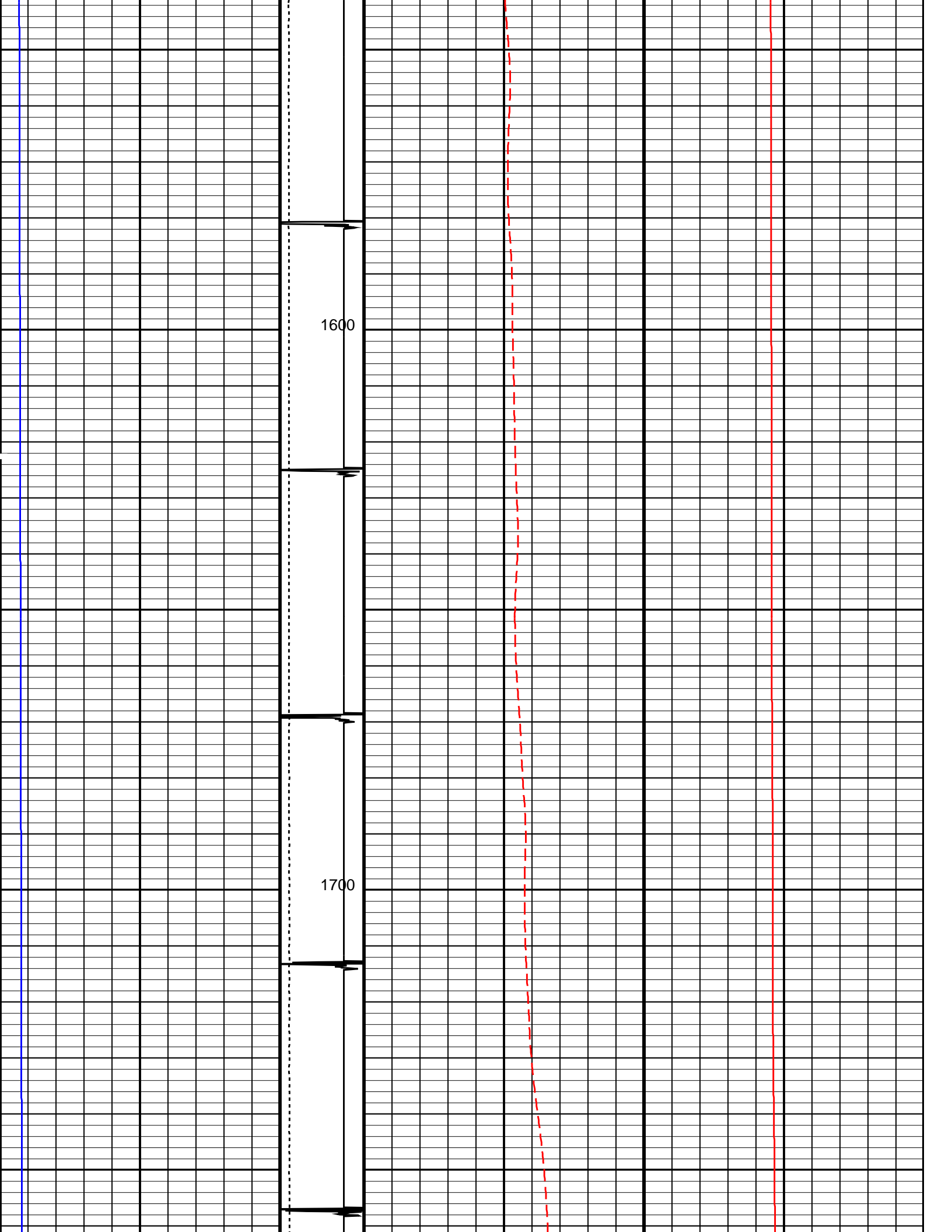


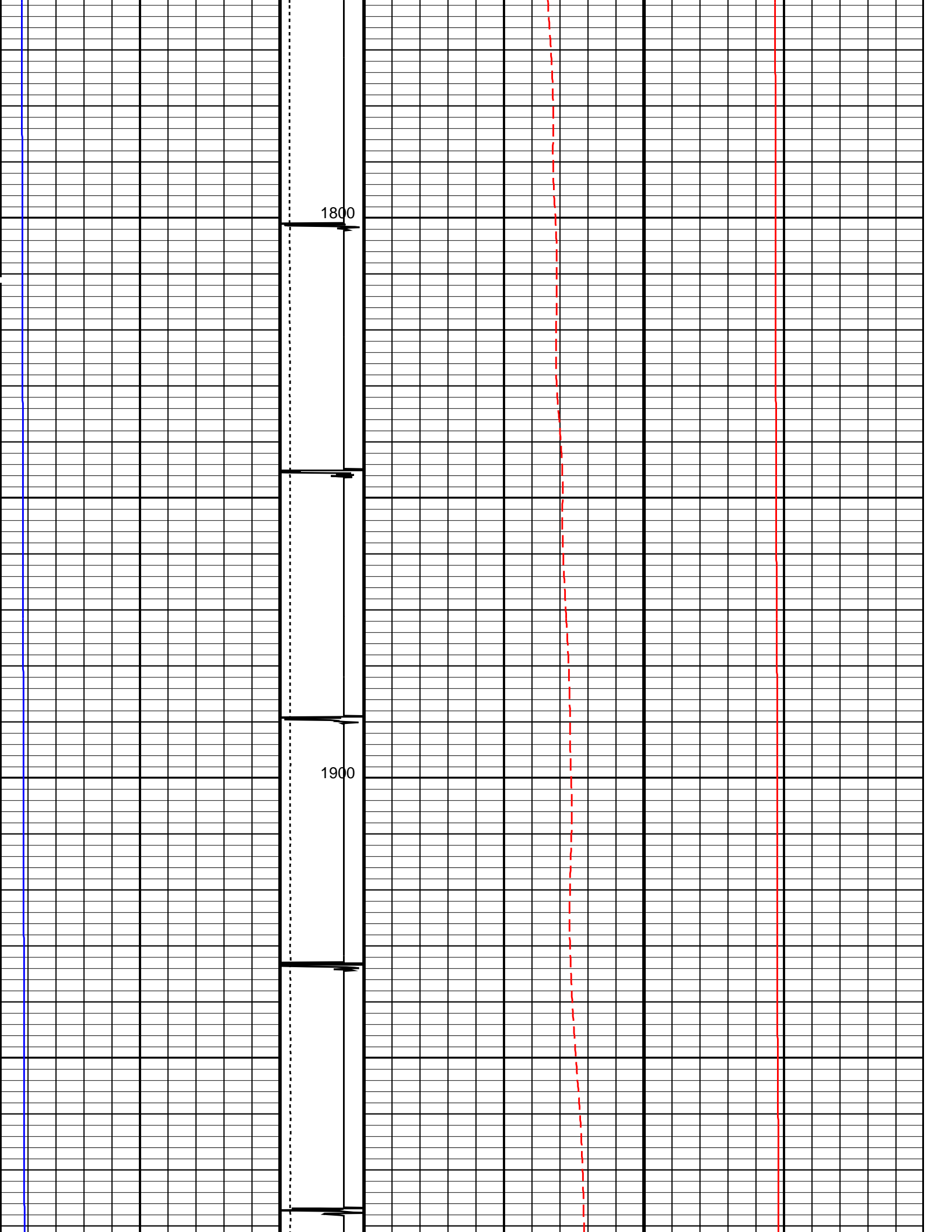


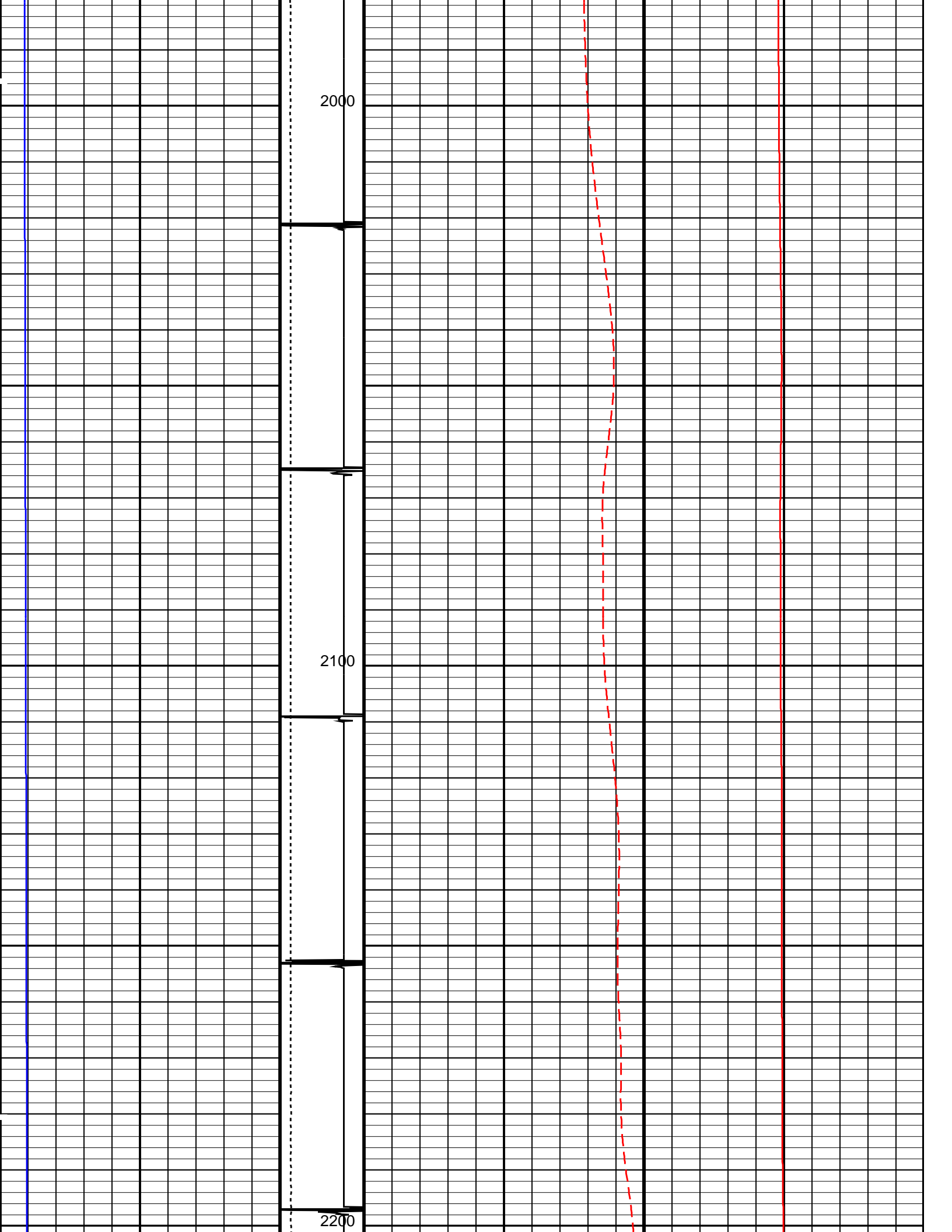


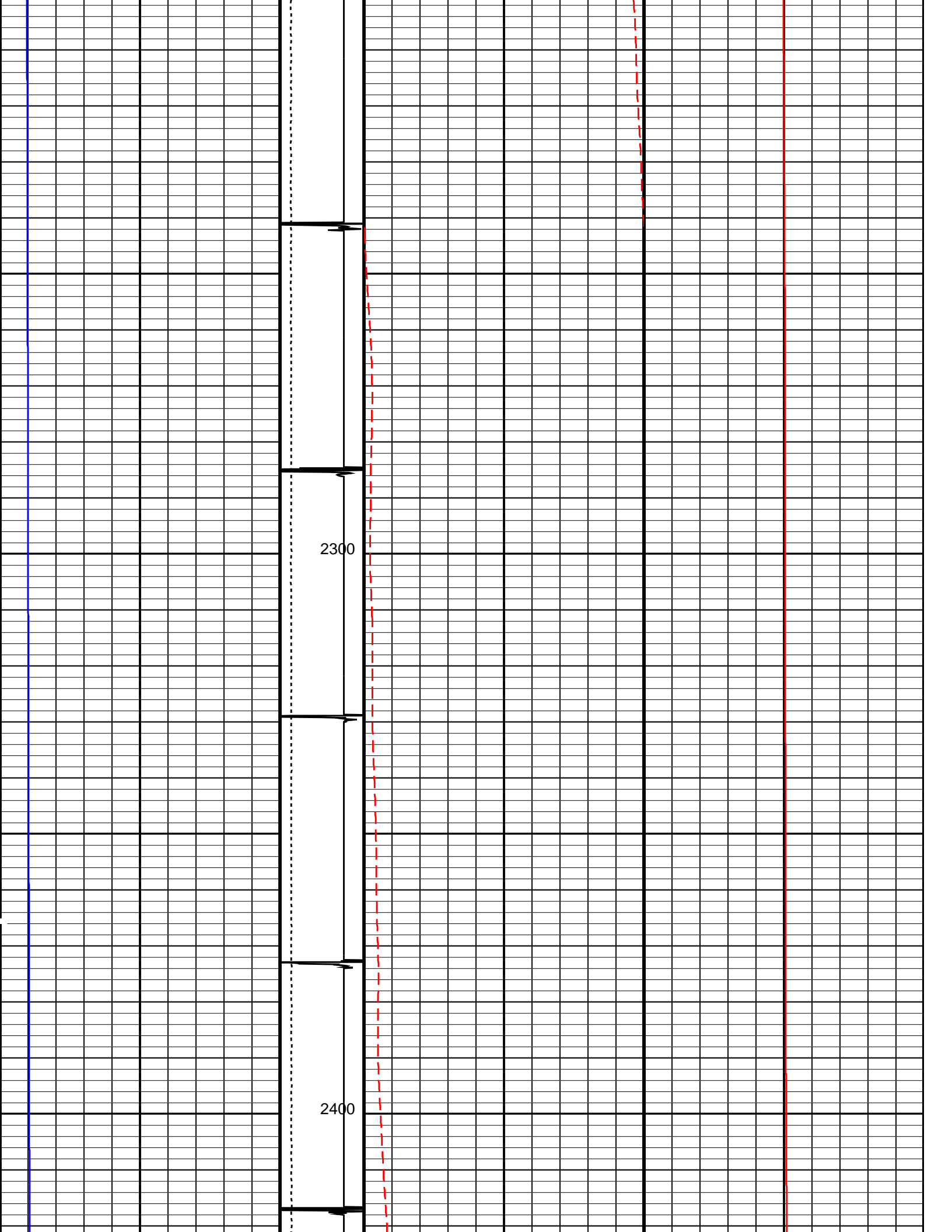


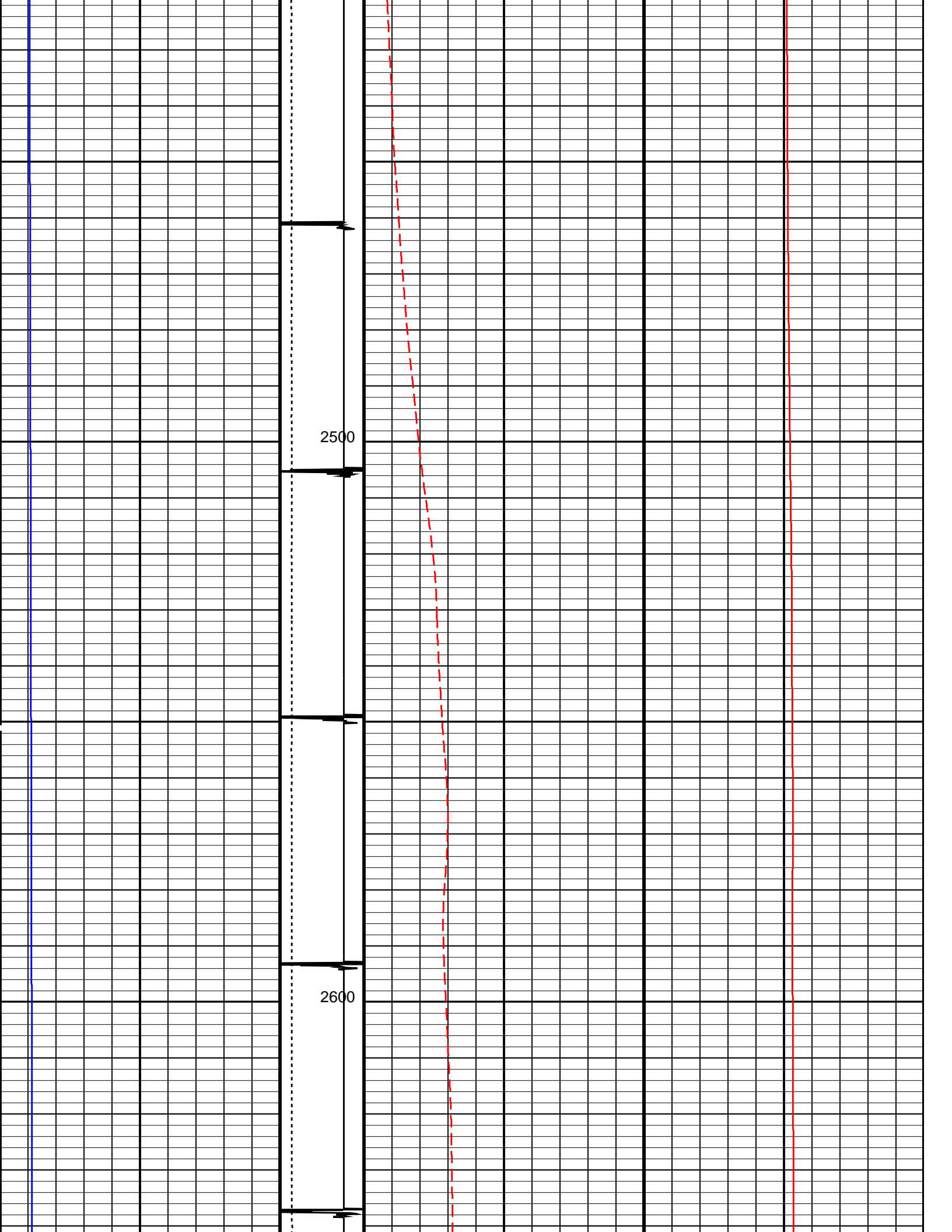


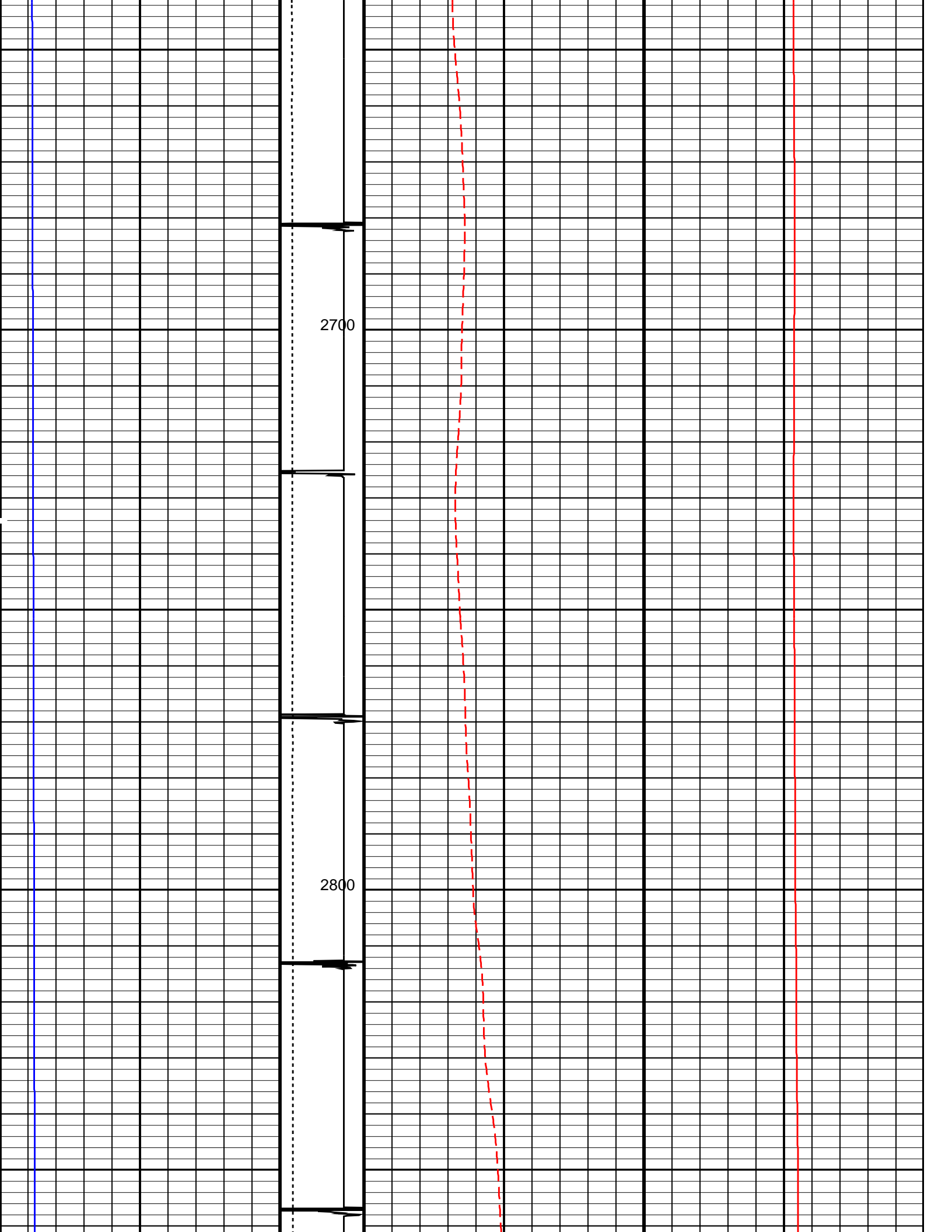


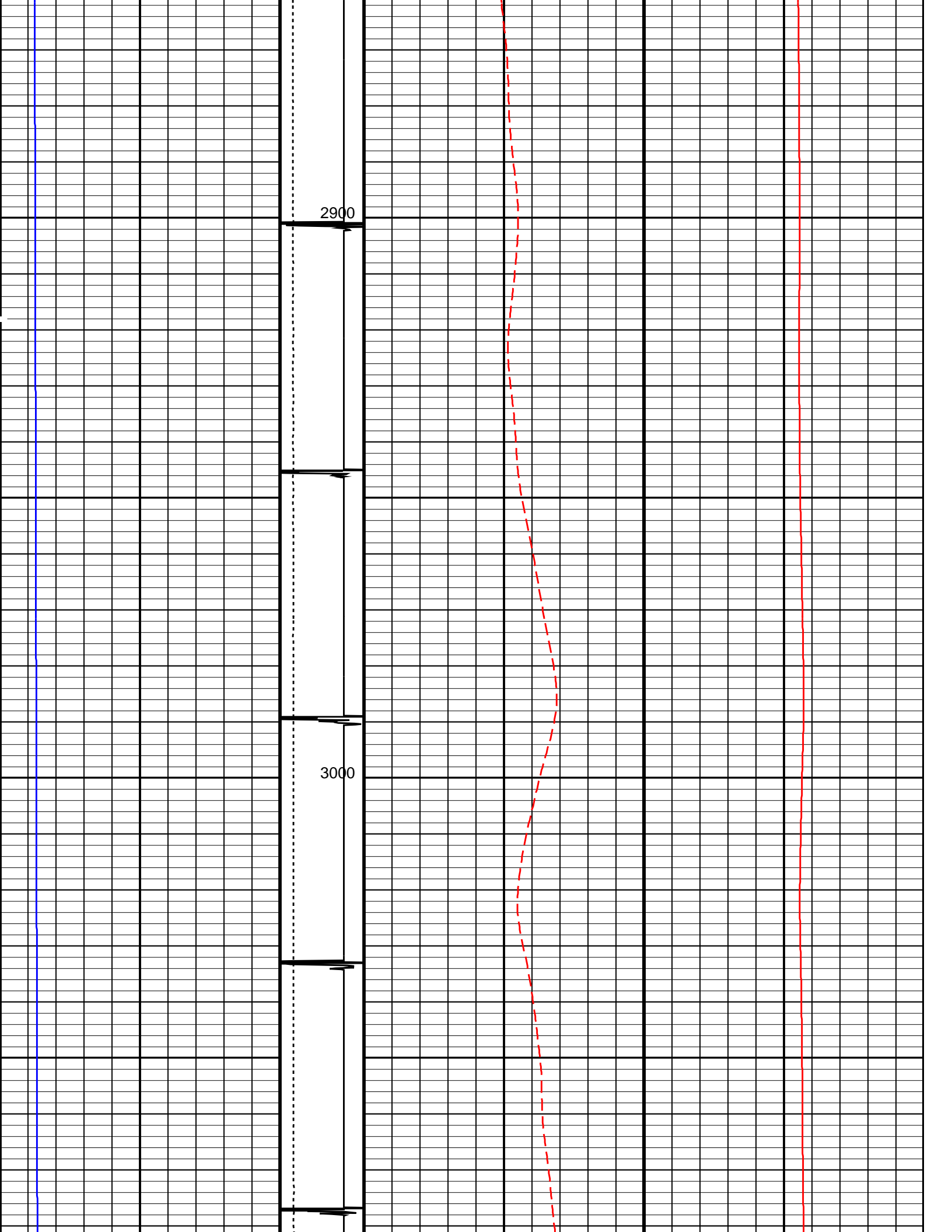


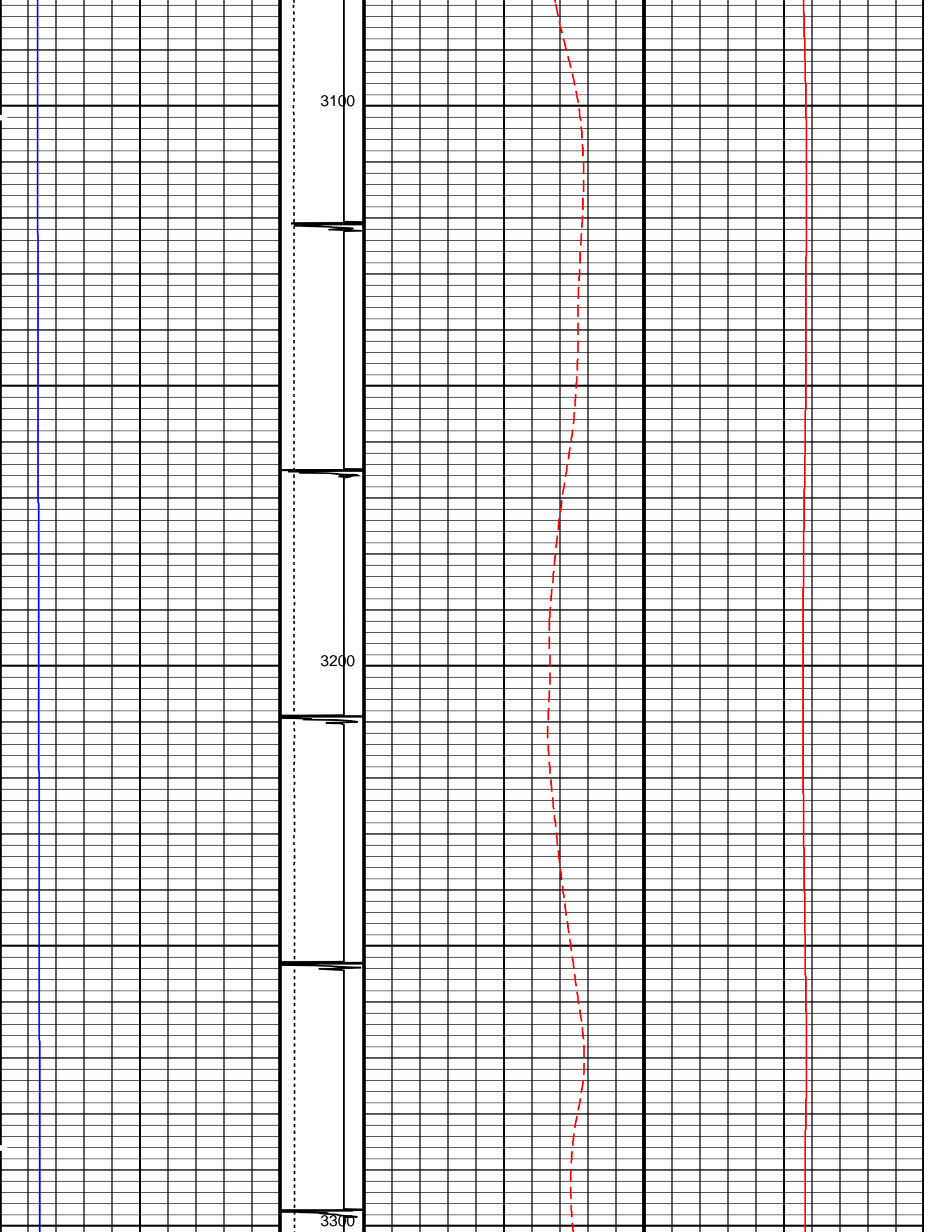


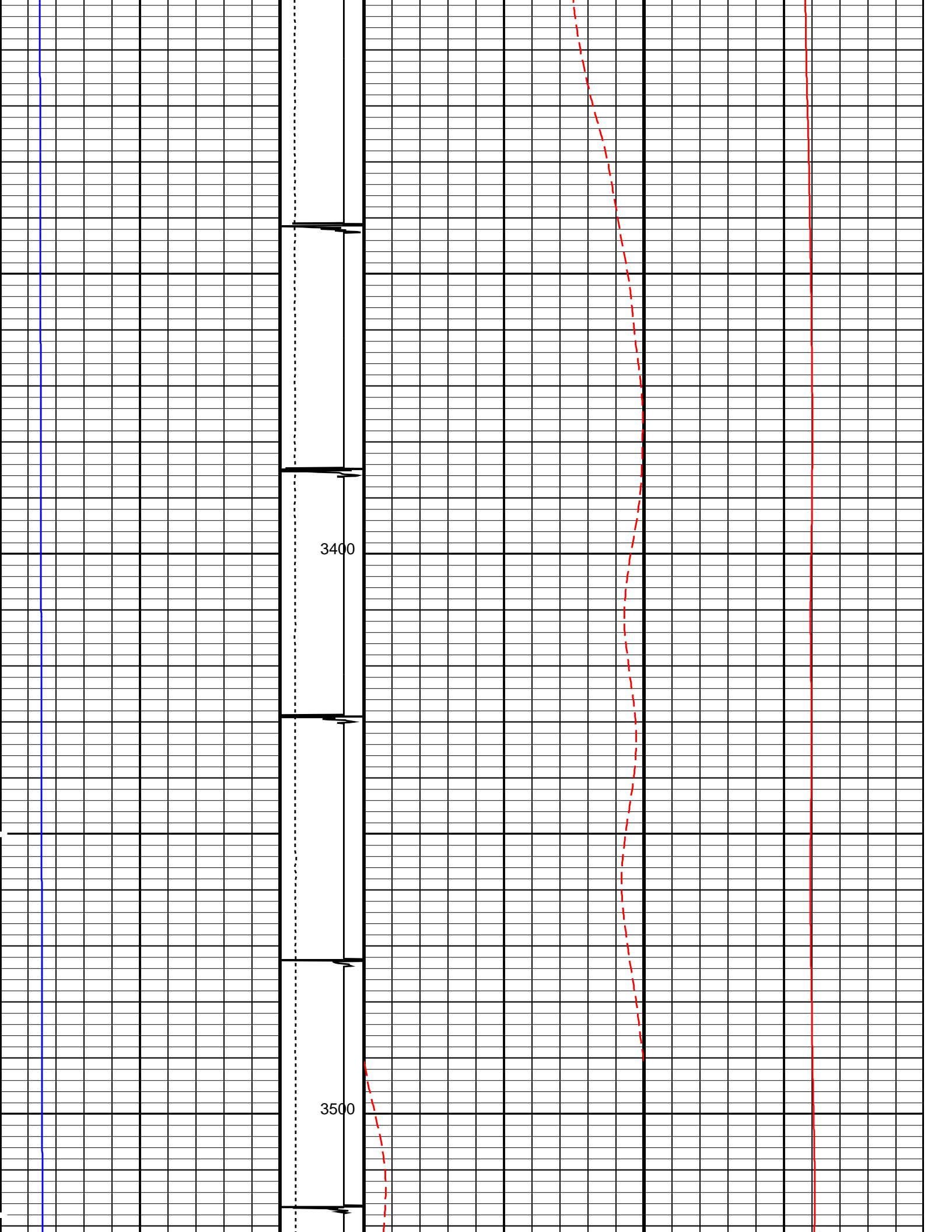


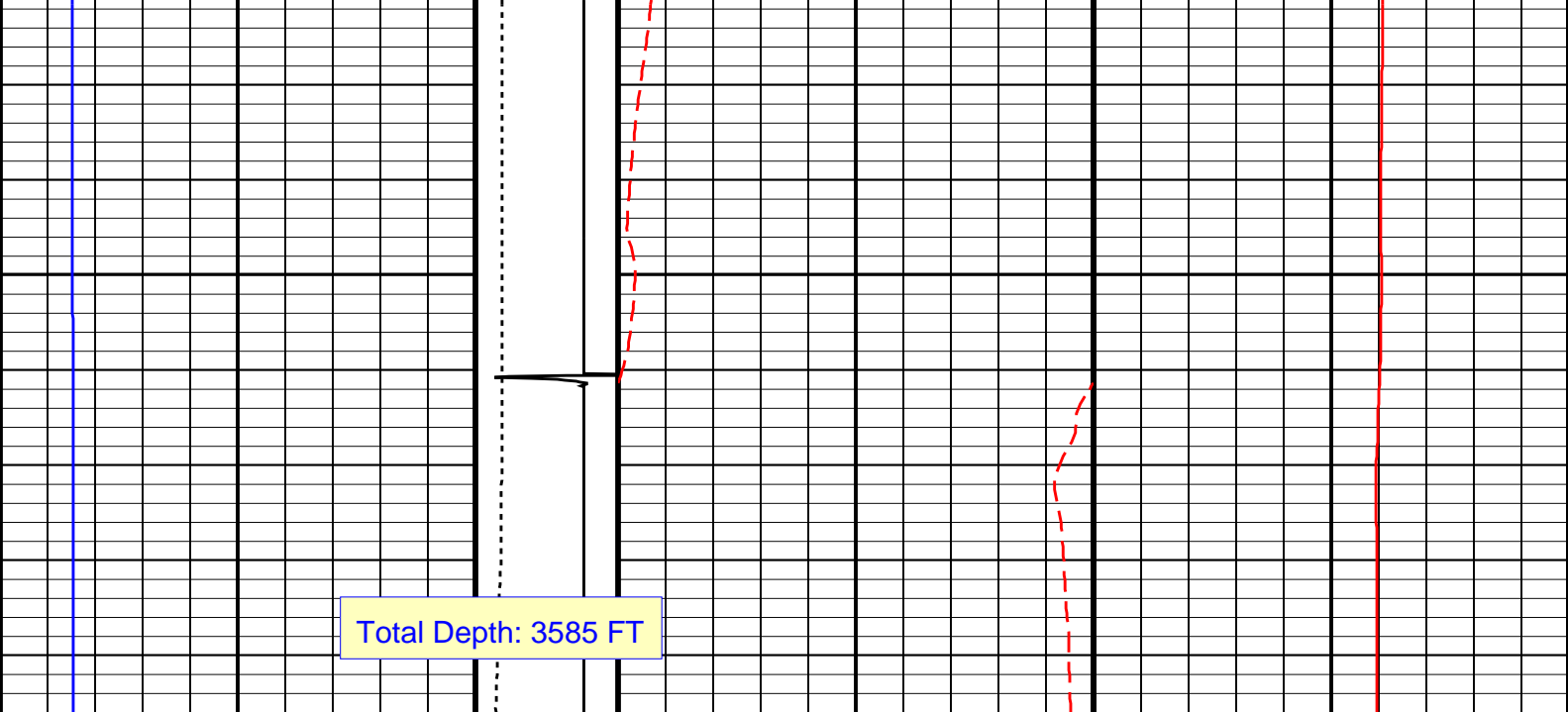












Well Pressure (WPRE) (PSIA)		Tension (TENS) (LBF)		Well Temperature (WTEP) (DEGF)		Well Temperature (WTEP) (DEGF)	
0	10000	0	2000	0	20	0	200
		Discriminat ed CCL (CCLD)					
		3 (V) -1					

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: 16-Mar-2013 15:07

OP System Version: 19C0-187

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

Input DLIS Files

DEFAULT	Flip_HBMS_007LUP	PRODUCER	16-Mar-2013 15:05	3596.0 FT	-17.5 FT
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Output DLIS Files

DEFAULT	HBMS_010PUP	FN:6	PRODUCER	16-Mar-2013 15:07
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REPEAT ANALYSIS

Input DLIS Files

DEFAULT	Flip_HBMS_008LUP	PRODUCER	16-Mar-2013 15:05	3459.0 FT	3181.5 FT
DEFAULT	HBMS_010PUP	FN:6 PRODUCER	16-Mar-2013 15:07	3596.0 FT	-17.5 FT

Output DLIS Files

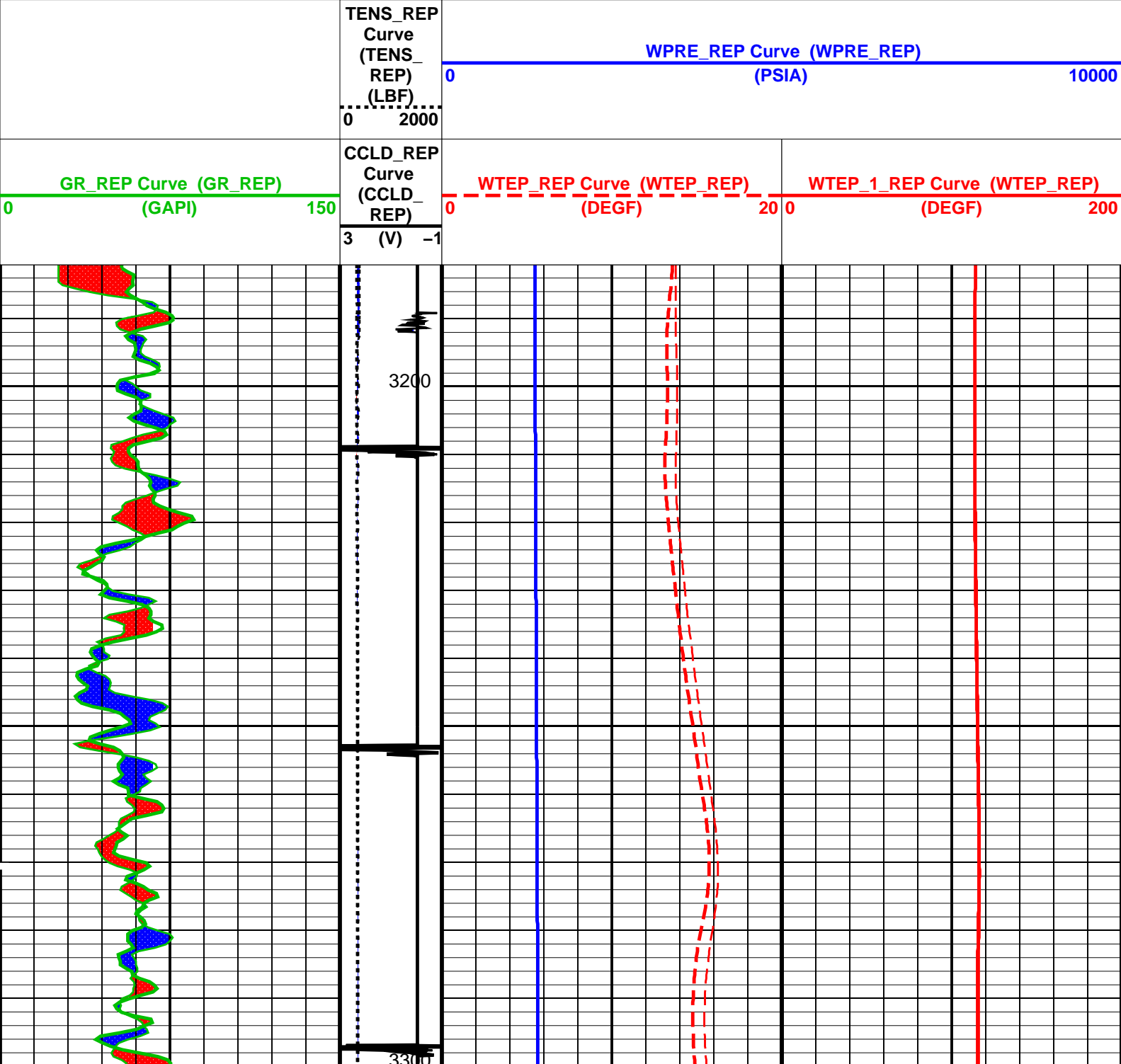
DEFAULT	HBMS_011PUP	FN:7 PRODUCER	16-Mar-2013 15:13	3459.0 FT	3181.5 FT
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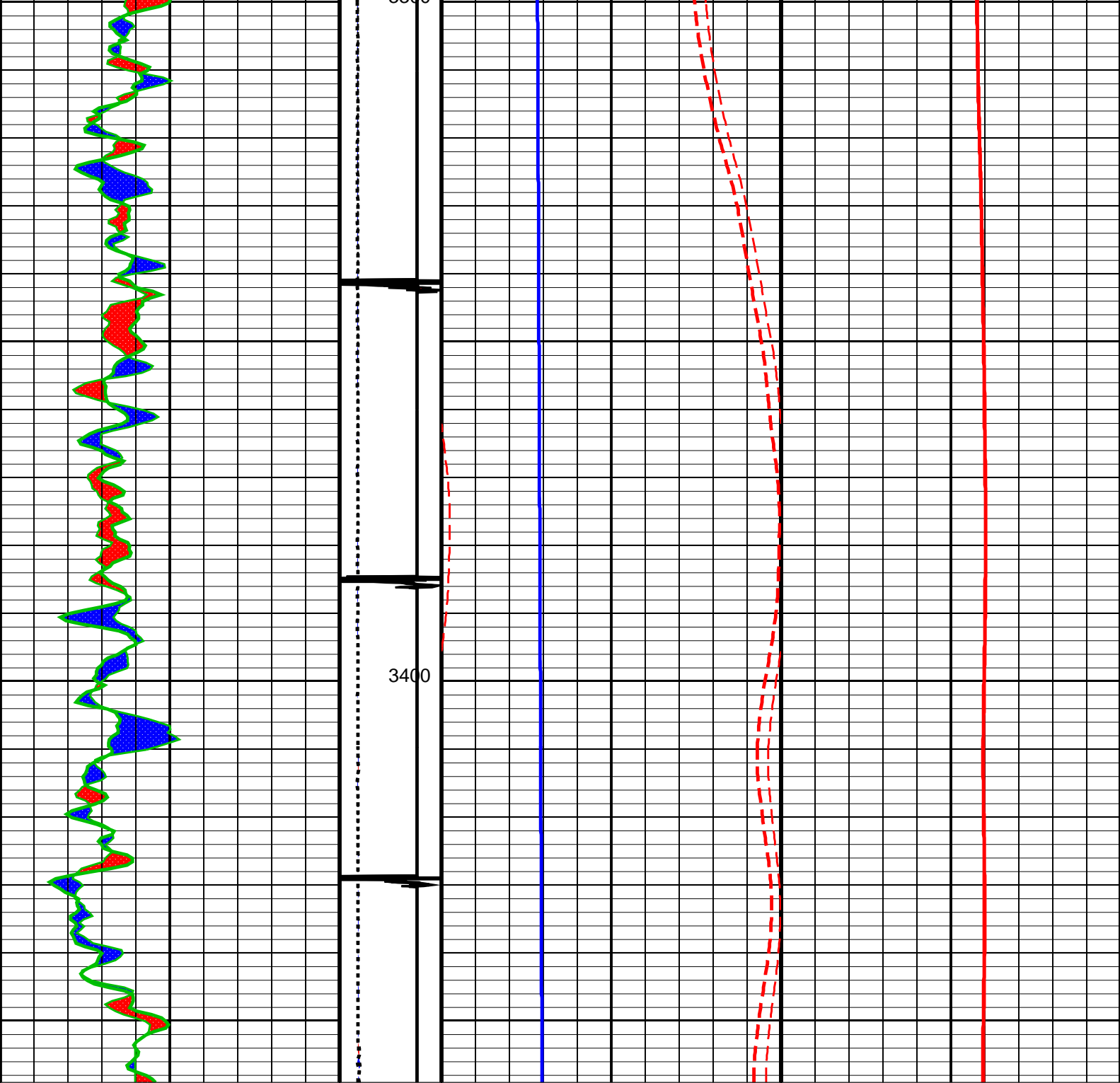
OP System Version: 19C0-187

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

PIP SUMMARY

☒ Time Mark Every 60 S





<div>GR_REP Curve (GR_REP) (GAPI)</div> <div>0150</div>	<div>CCLD_REP Curve (CCLD_REP)</div> <div>3 (V) -1</div>	<div>WTEP_REP Curve (WTEP_REP) (DEGF)</div> <div>020</div>	<div>WTEP_1_REP Curve (WTEP_REP) (DEGF)</div> <div>0200</div>
	<div>TENS_REP Curve (TENS_REP) (LBF)</div> <div>02000</div>	<div>WPRE_REP Curve (WPRE_REP) (PSIA)</div> <div>010000</div>	

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: 16-Mar-2013 15:13

OP System Version: 19C0-187						
HBMS-B		SRPC-5214-H2-2012-OP19				
Input DLIS Files						
DEFAULT	Flip_HBMS_008LUP		PRODUCER	16-Mar-2013 15:05	3459.0 FT	3181.5 FT
DEFAULT	HBMS_010PUP	FN:6	PRODUCER	16-Mar-2013 15:07	3596.0 FT	-17.5 FT
Output DLIS Files						
DEFAULT	HBMS_011PUP	FN:7	PRODUCER	16-Mar-2013 15:13		

Schlumberger

HBMS COEFFICIENTS

MAXIS Field Log

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	MAMM CREEK	Sub Type:	PBMS
Well:	ENCANA FEE 24-8C2	Sensor:	GR
Run date:	16-Mar-2013		

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: ENCANA FEE 24-8C2

Run date: 16-Mar-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: ENCANA FEE 24-8C2

Run date: 16-Mar-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
Fb**0	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00

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

Fb3**

Fb4**

Fb5**

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

Fc0**

Fc1**

Fc2**

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

Fc3**

Fc4**

Fc5**

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:

Well:

Field:

County:

State:

ENCANA OIL & GAS (USA) INC

ENCANA FEE 24-8C2

MAMM CREEK

GARFIELD

COLORADO

Schlumberger

TEMPERATURE LOG

CCL - TEMPERATURE