

energy services

Permanent Datum:	GL	Elevations:		Services:
Drilling Measured From:	KB	KB 2858.00	Ft	CNT CST
Log Measured From:	KB	DF 2857.00	Ft	LDT PIT
Above Permanent Datum:	0.00 Ft	GL 2846.00	Ft	MLT

The customer is hereby warned that by providing the log data herein, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by STEP Energy Services personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by STEP Energy Services for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Run Number	1		
Date	12-07-2019		
Date/Time On Bottom	12-07-2019 09:45		
Depth to Fluid	0.0 Ft		
Salinity	0.000		
RMF@BHT	0.850 @ 125 F		
RMC@BHT	1.150 @ 125 F		

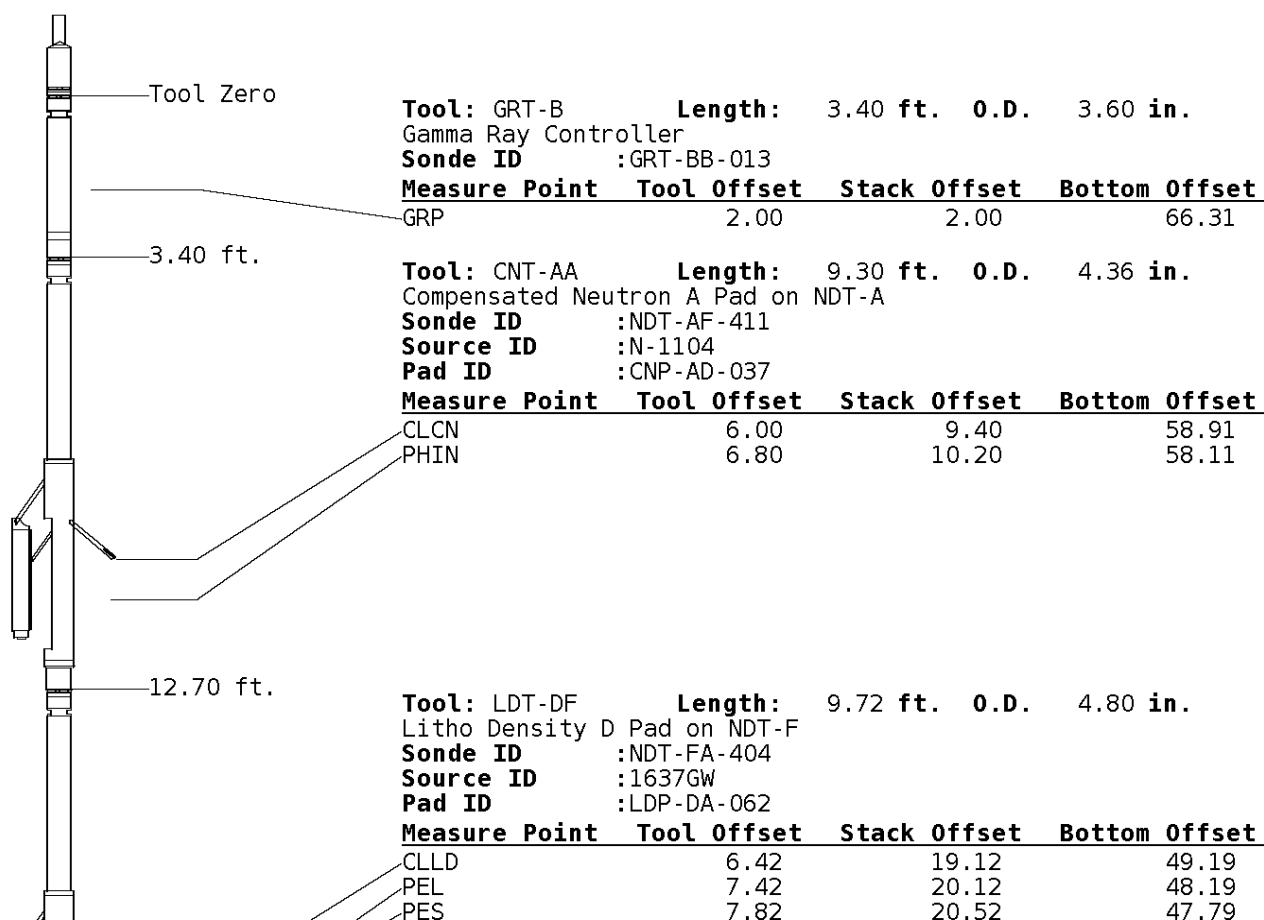
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, MLT, CST, AND PIT RUN IN COMBINATION
CALIPERS ORIENTED ON X-Y AXIS
2.71 G/CC USED TO CALCULATE POROSITY
ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING
PHIN IS CALIPER CORRECTED

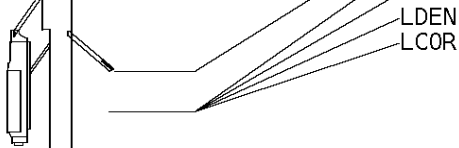
GRT: GRP.
CNT: PHIN, CLCNIN.
LDT: PORL, LCORN, PECLN, LDENN, CLLDIN.
MLT: NOR_RF, INV_RF, MSCLPIN.
CST: PORS, ITT, CDTF, TT1, TT2, TT3, TT4.
PIT: ILD, ILM, SFLAEC, CIRD, SPU

OPERATORS:

Tool String Schematic

Total Tool Length - 68.31 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1171.00 lbs.



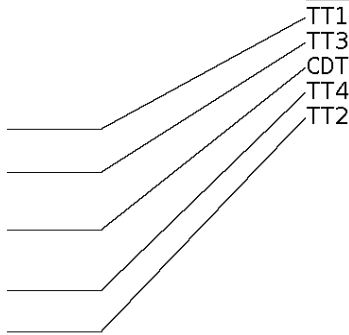


LDEN	7.62	20.32	47.99
LCOR	7.62	20.32	47.99

22.42 ft.

Tool: CST-AD **Length:** 13.80 ft. **O.D.** 3.60 in.
Open Hole Sonic
Sonde ID : CST-AB-24

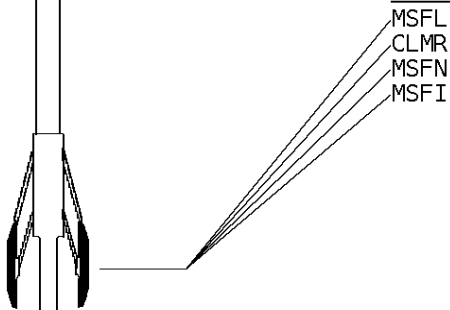
Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	27.22	41.09
TT3	5.80	28.22	40.09
CDT	7.30	29.72	38.59
TT4	8.80	31.22	37.09
TT2	9.80	32.22	36.09



36.22 ft.

Tool: MLT-AB **Length:** 10.60 ft. **O.D.** 6.00 in.
Micro Log Tool
Sonde ID : MLT-012

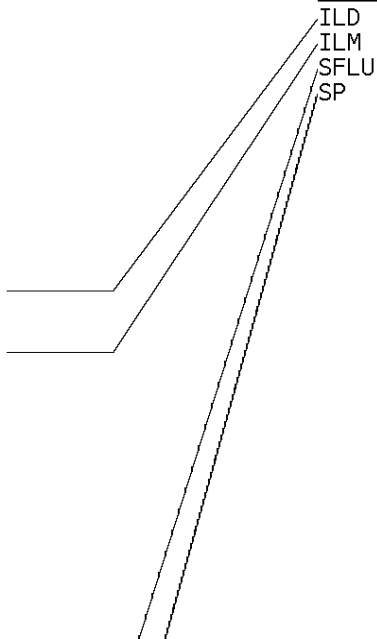
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	8.90	45.12	23.19
CLMR	7.60	43.82	24.49
MSFN	8.90	45.12	23.19
MSFI	8.90	45.12	23.19



46.82 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
Phased Dual Induction w/ RM & D
Sonde ID : PIT-AC-043

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	55.74	12.56
ILM	10.10	56.92	11.39
SFLU	17.49	64.31	4.00
SP	20.60	67.42	0.88



LWT 68.31 ft.

Well File: casillas hamker 20-3 dec-7-2019_qst

Scale: 1:240 Format: CST-240

Segment: V1.D1.S7 Reprocess MAIN

Acquired: 2019-12/07 11:10 3.4.1-13972

Reference: 0

Processed: 2019-12/07 13:13 3.4.1-13972

NEUTRON (Y) CALIPER
INCHES (IN)

16 26
6 16

DENSITY (X) CALIPER
INCHES (IN)

16 26
6 16

BIT SIZE
INCHES (IN)

6 16

TENSION
LBS

10000 0

GAMMA RAY
API UNITS

150 300
0 150

COMPENSATED SONIC TRAVEL TIME
uSEC/FT

240 140 140 40

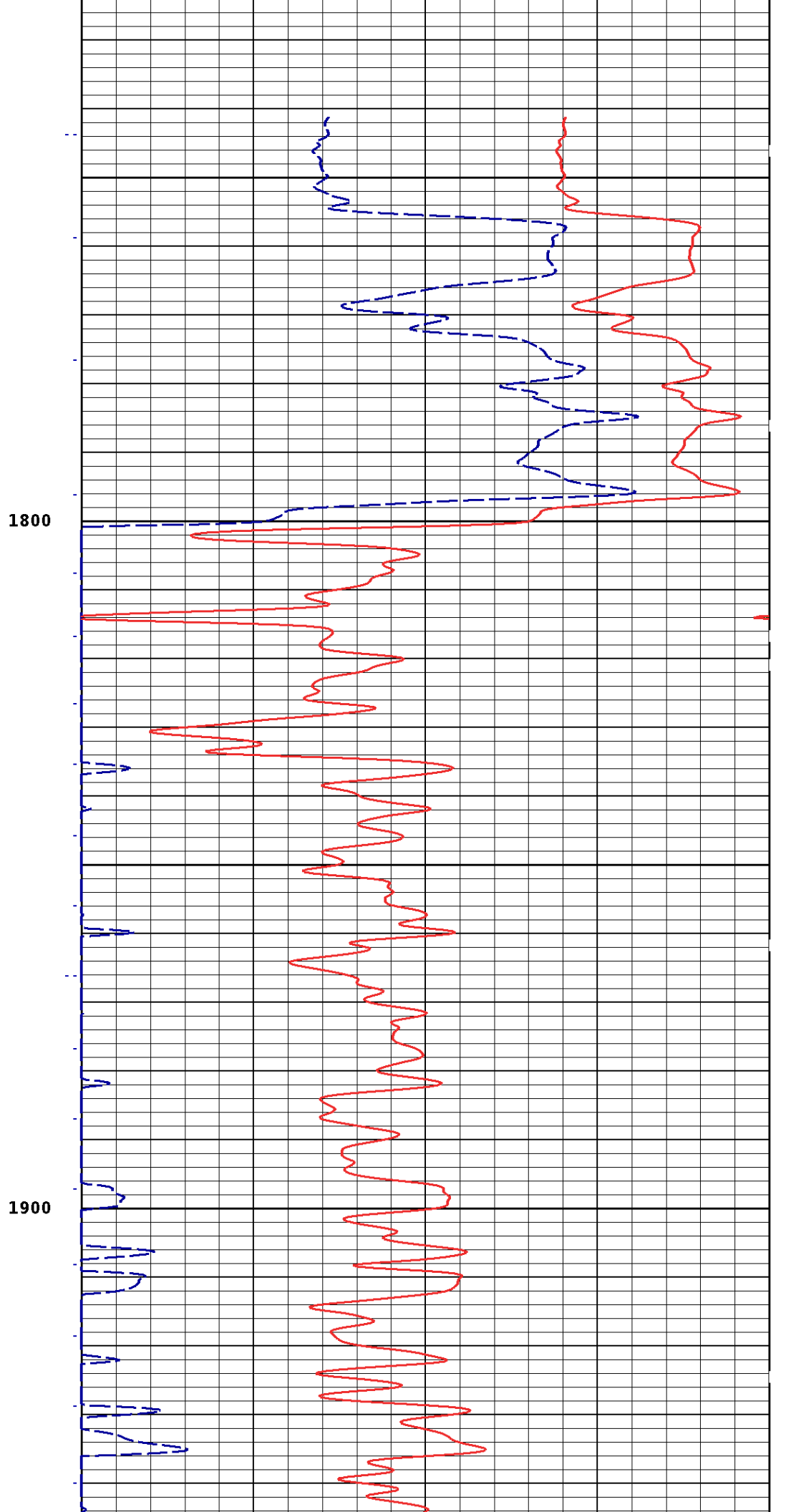
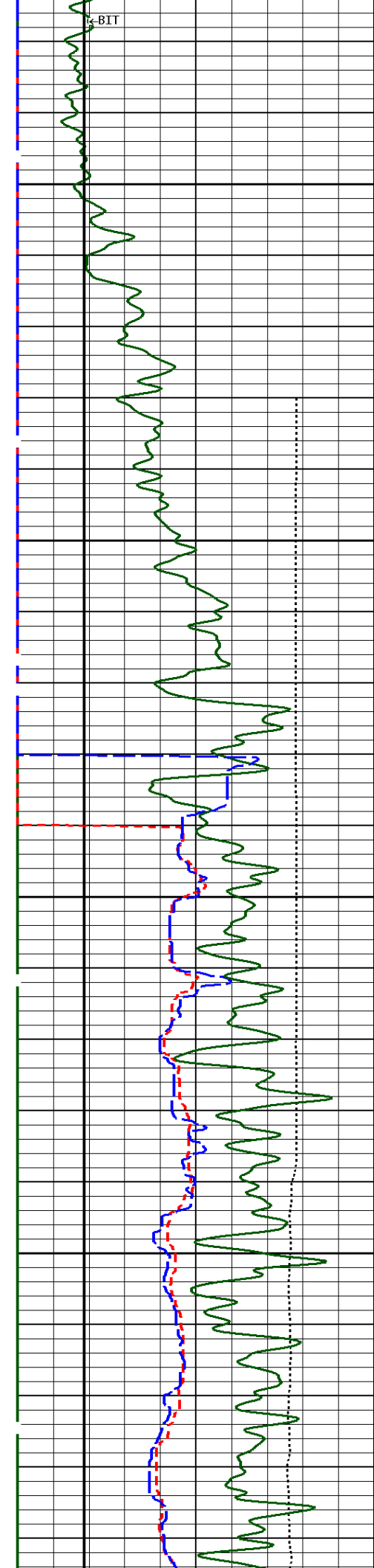
SONIC POROSITY
PERCENT

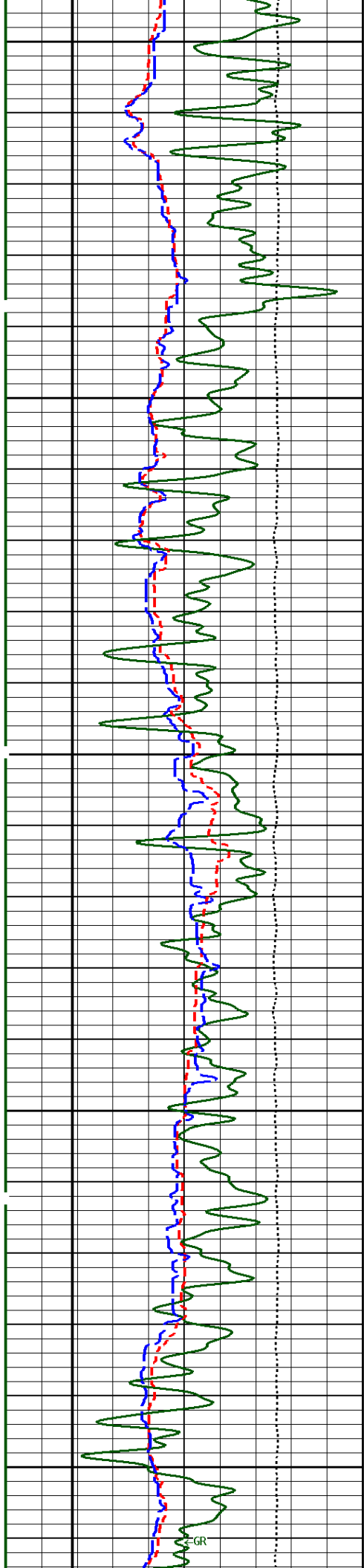
30 -10

1:240 MAIN SECTION

File #1.1.7

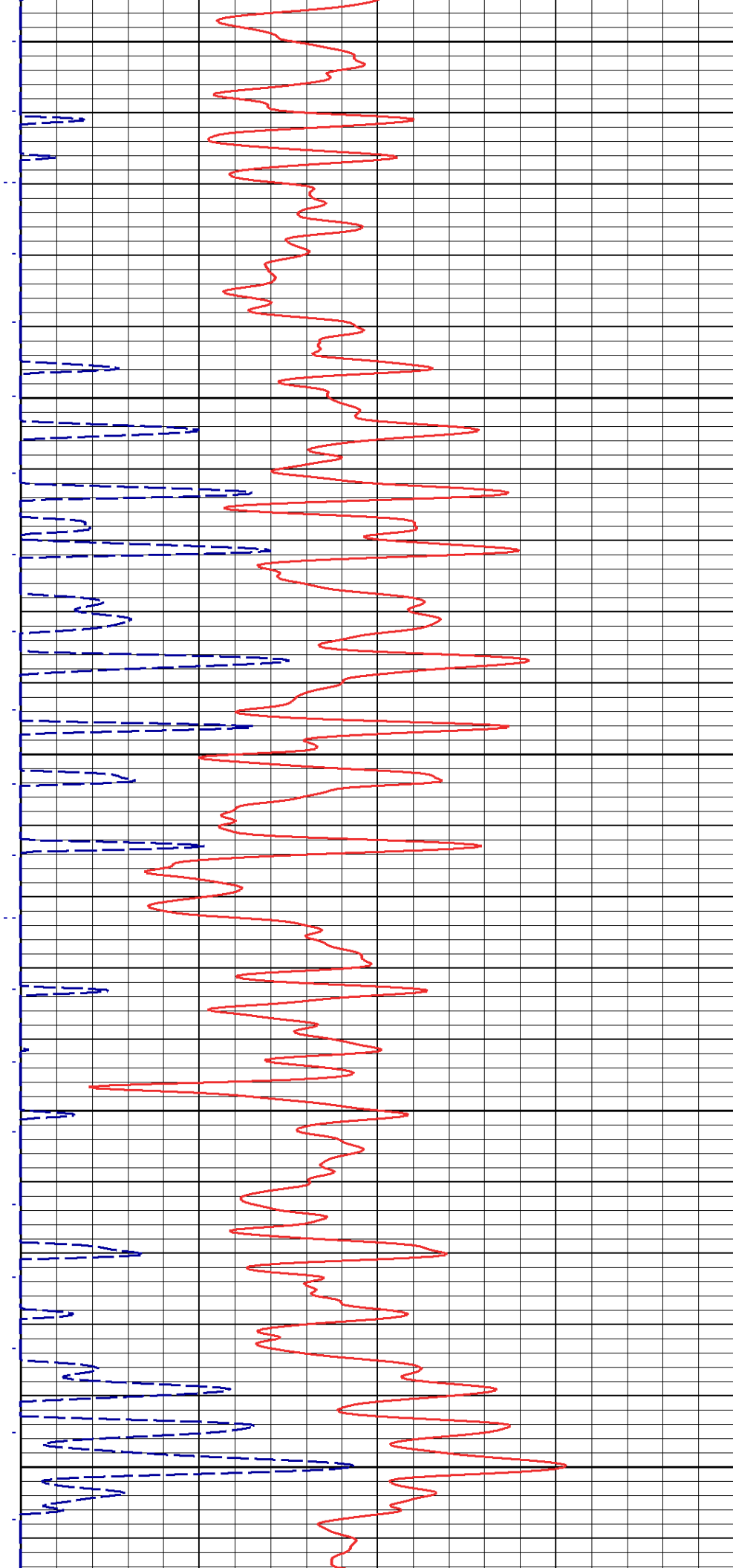
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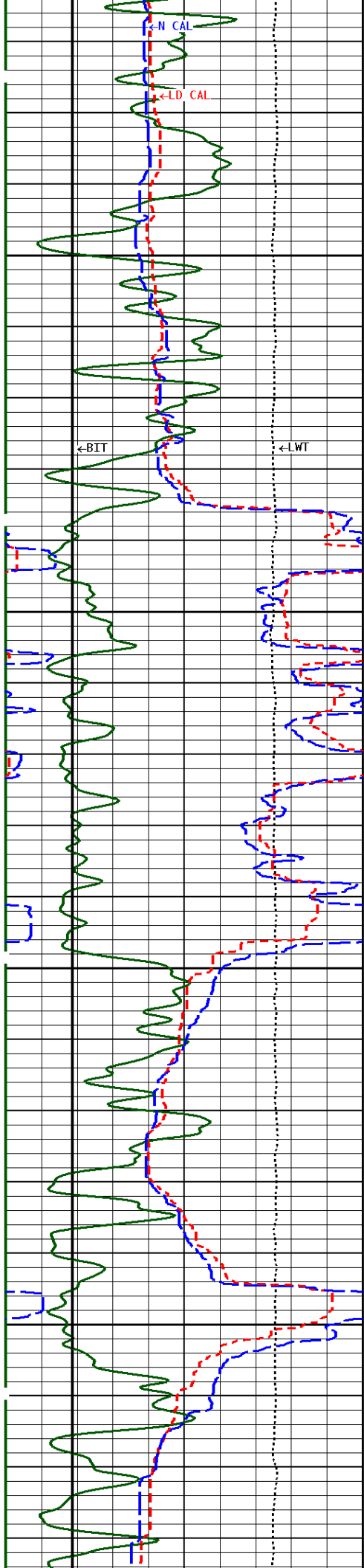




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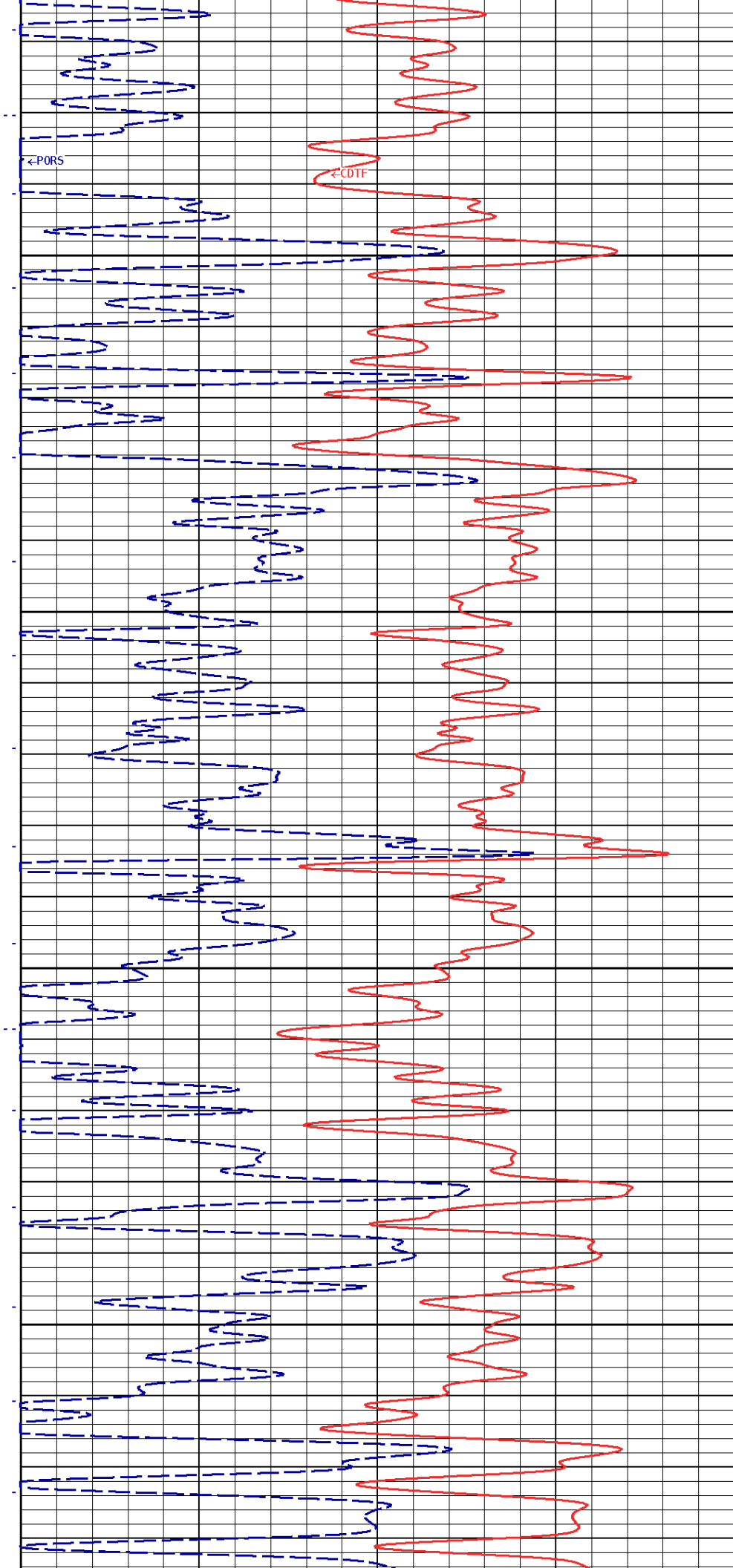
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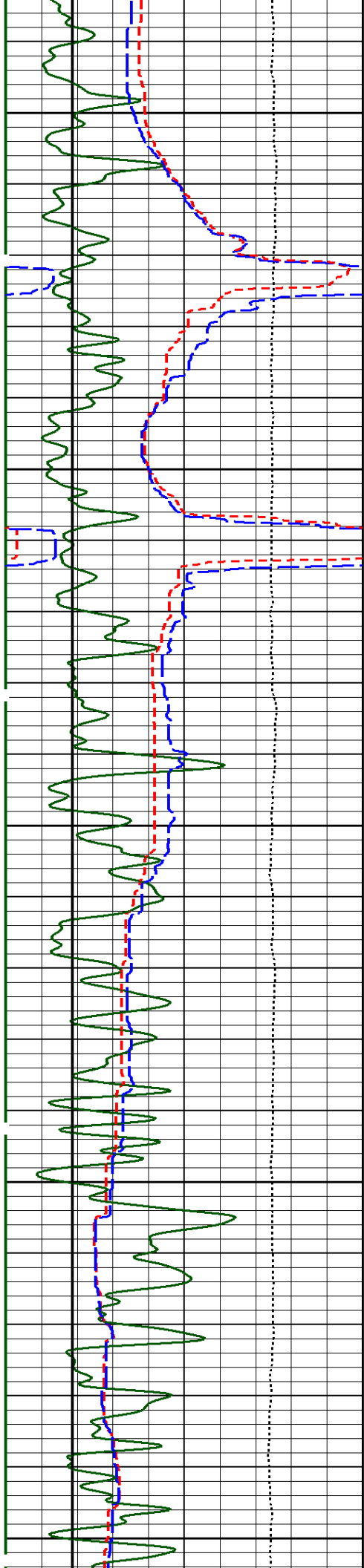




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2300

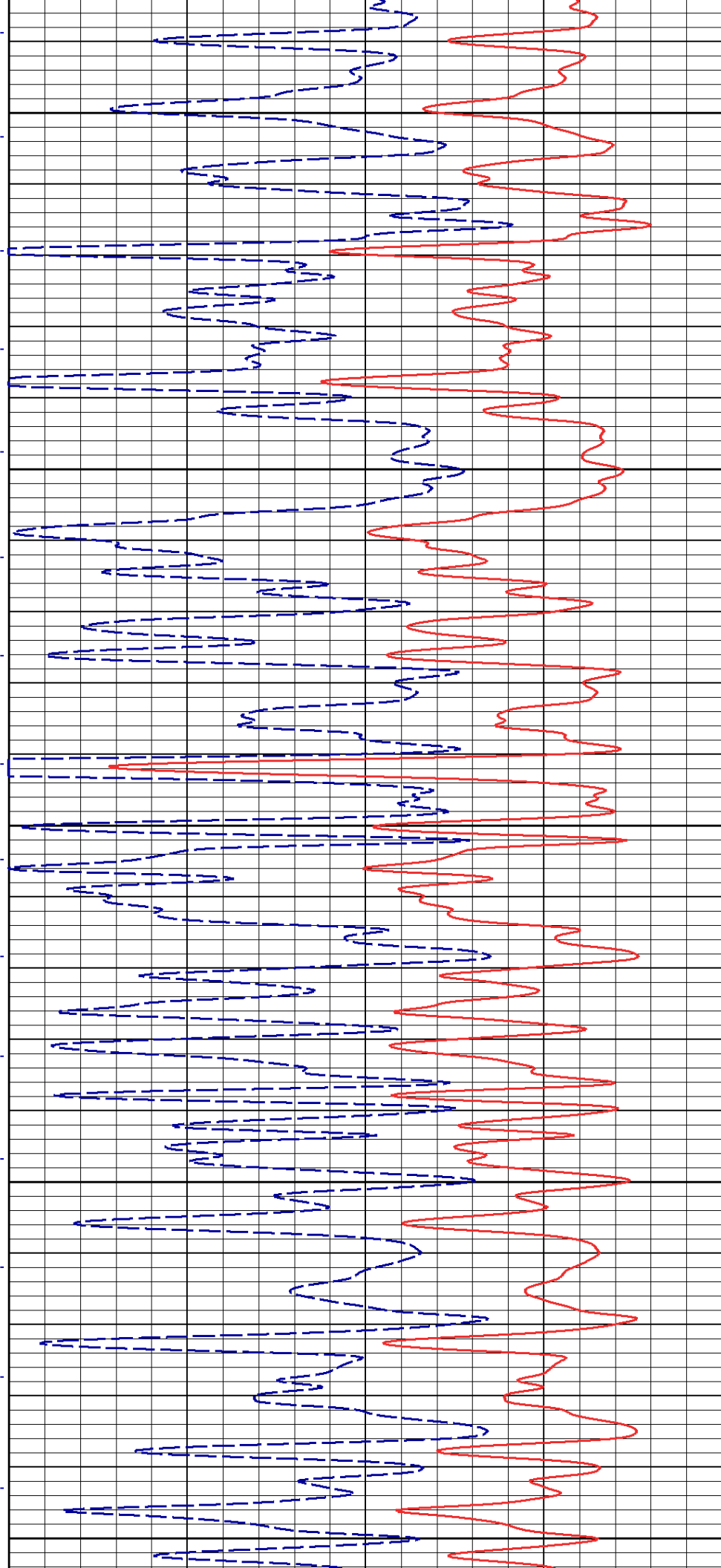


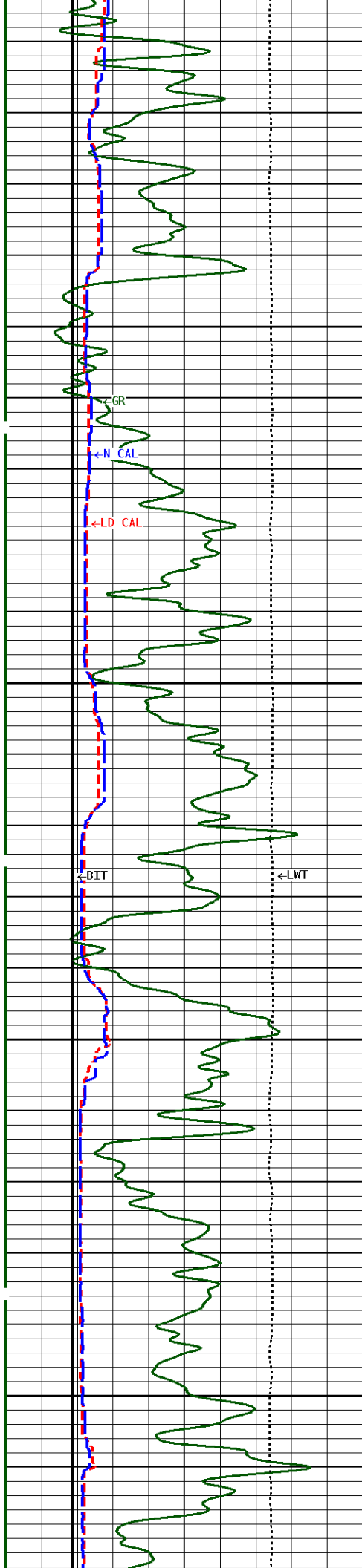


2400

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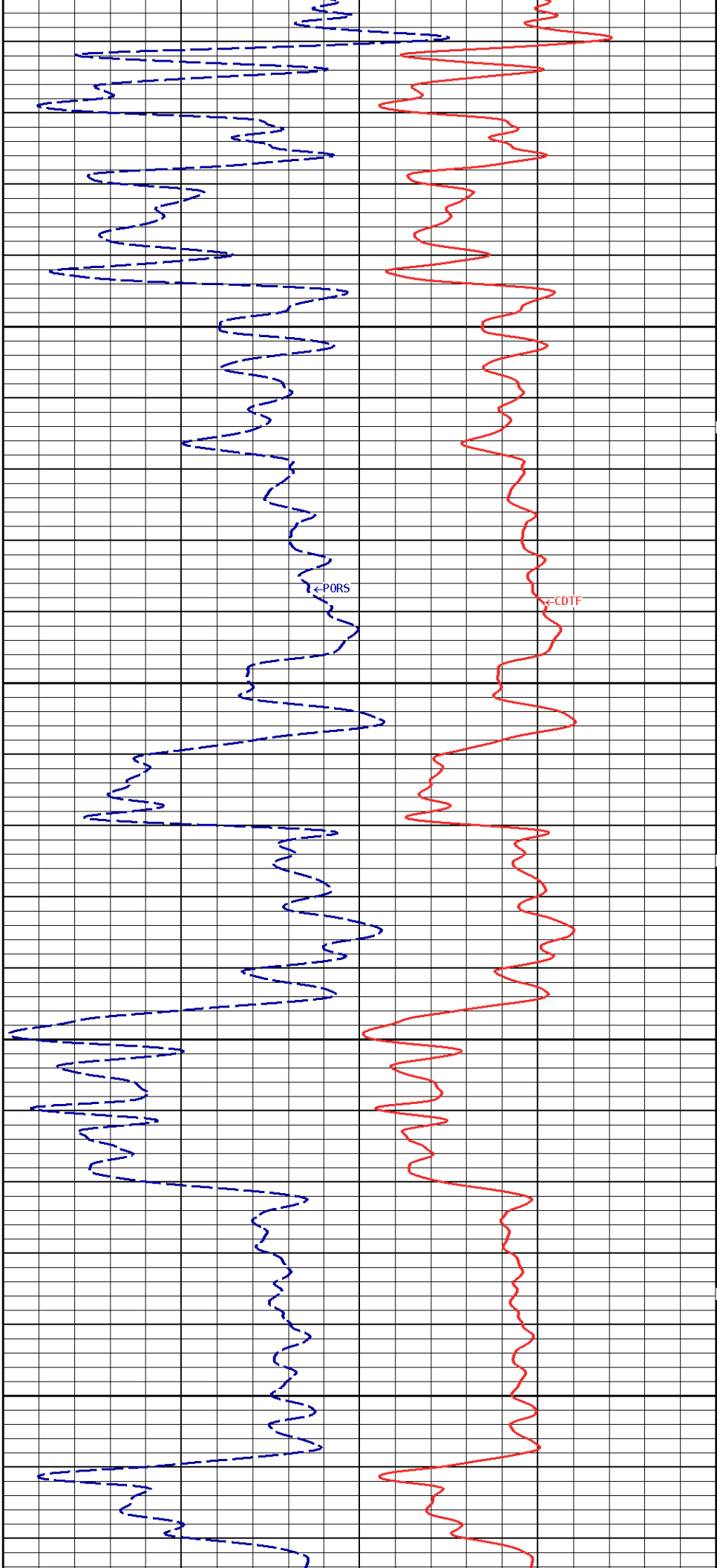
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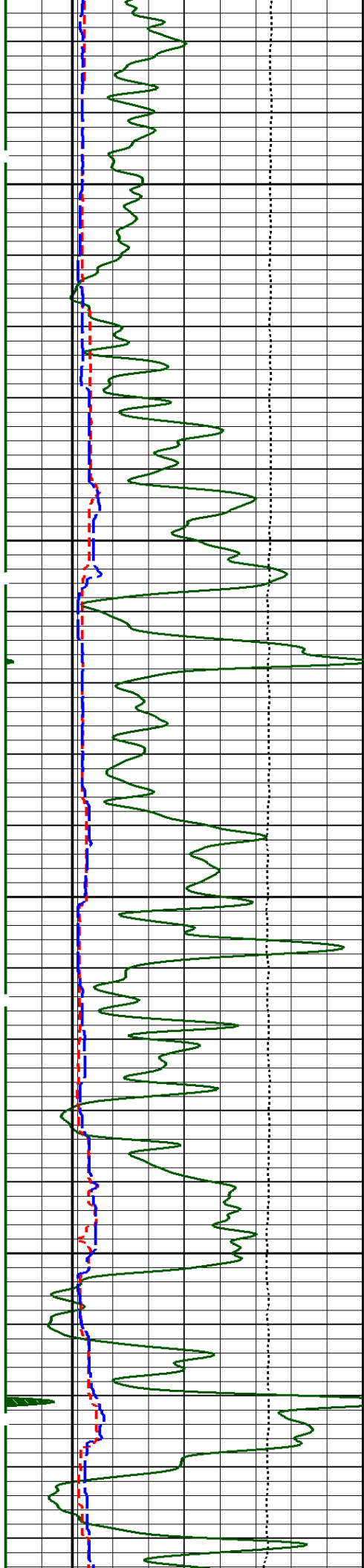




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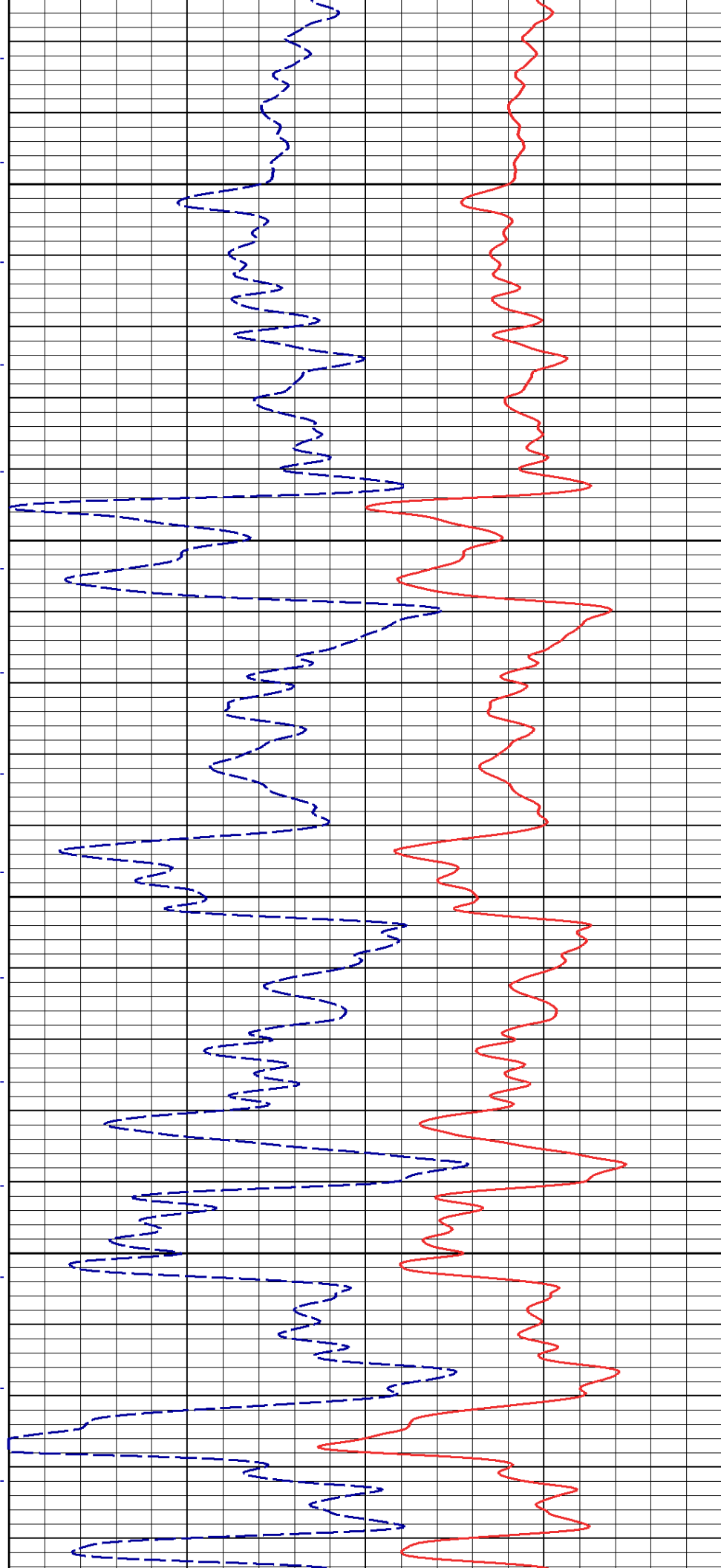
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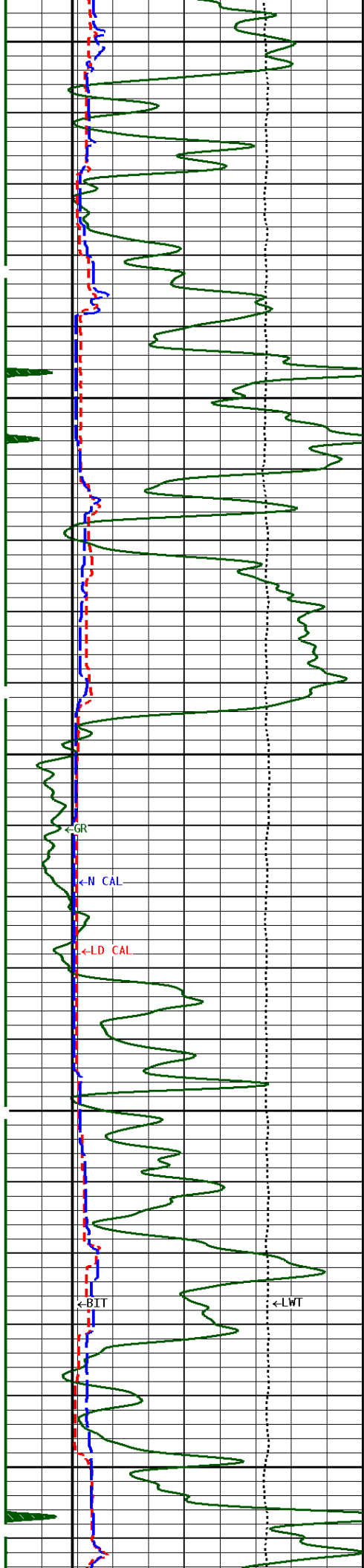




2900

3000





3100

3200

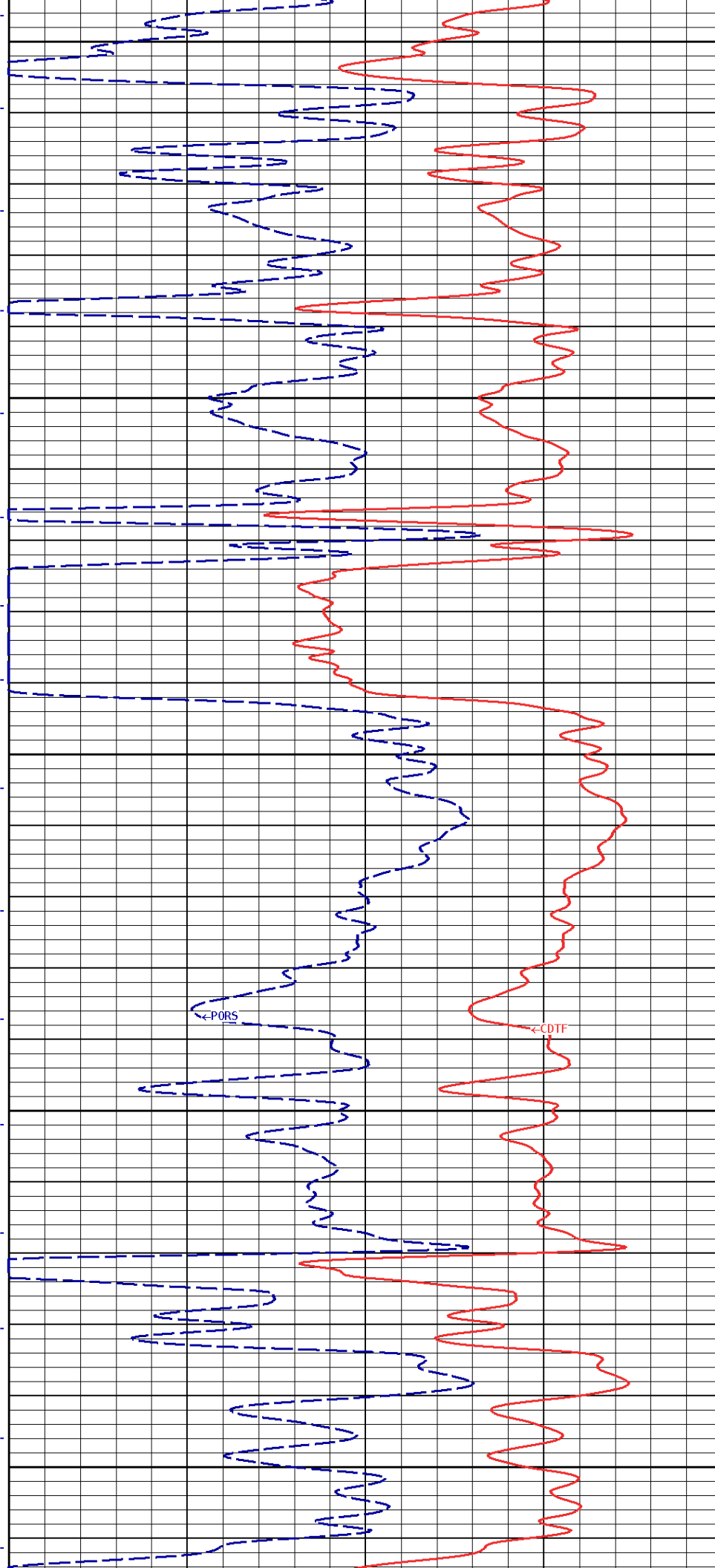
←GR

←N CAL

←LD CAL

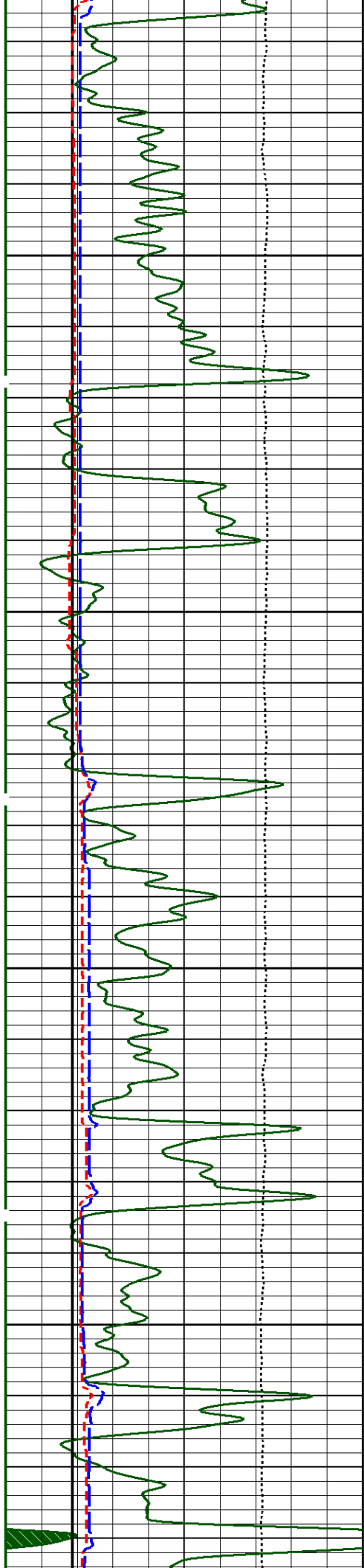
←BIT

←LWT



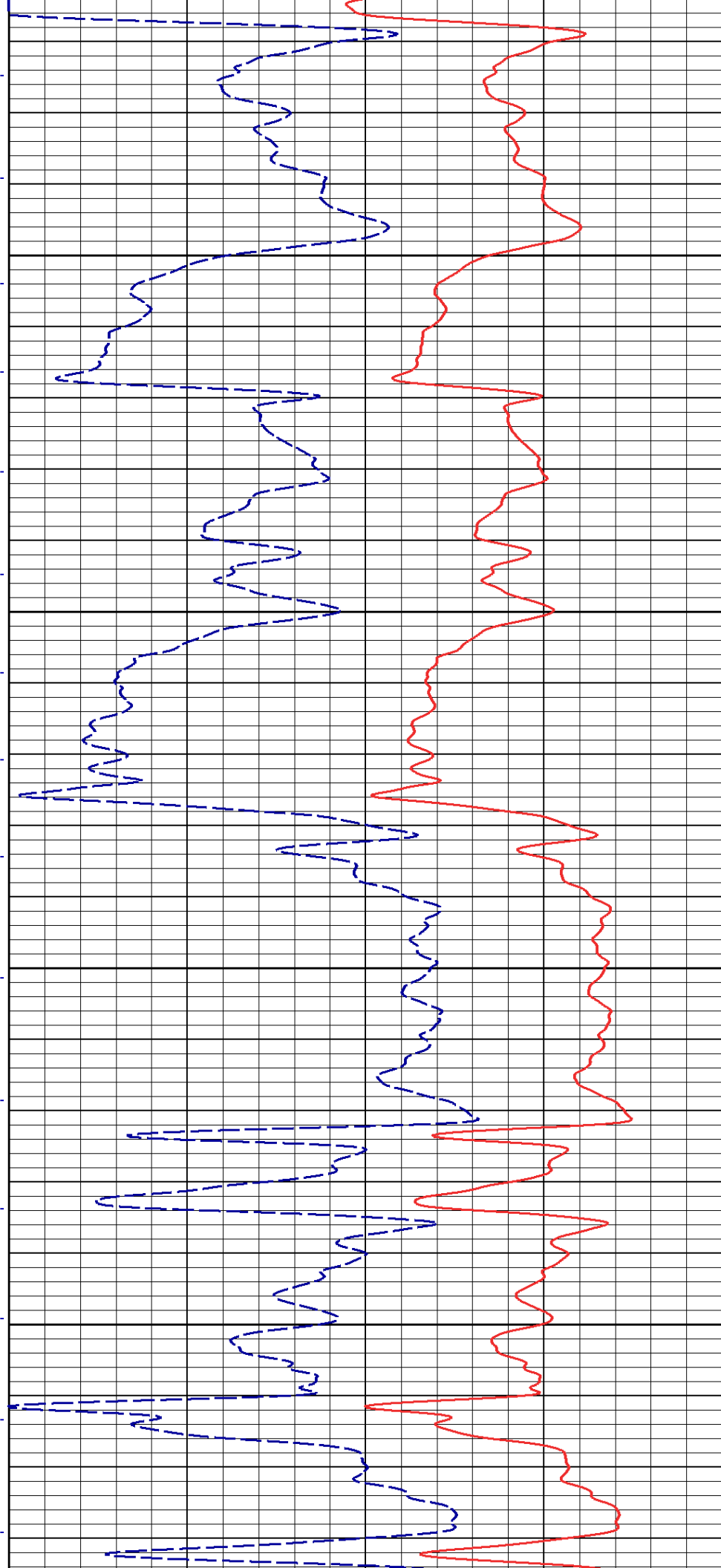
←PORS

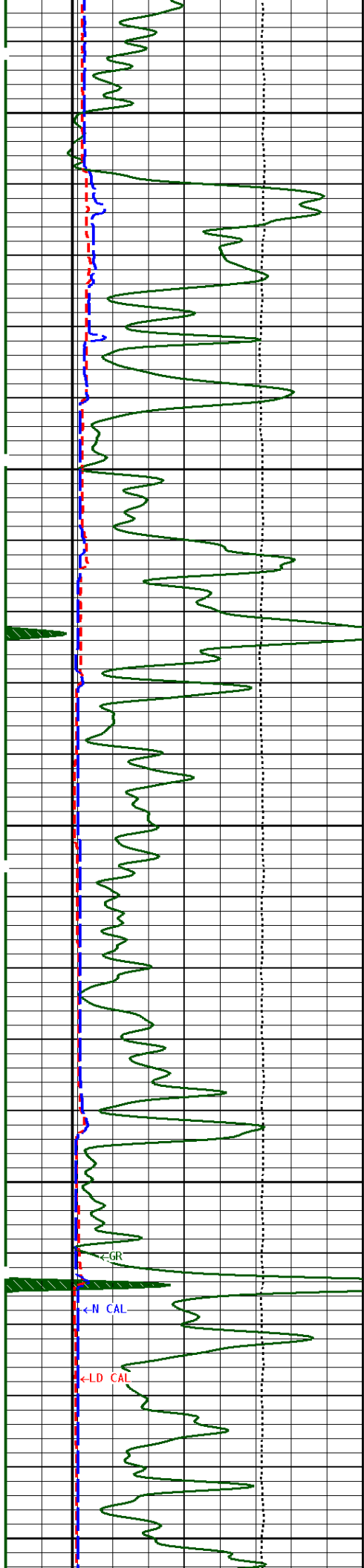
←CDTF



3300

3400

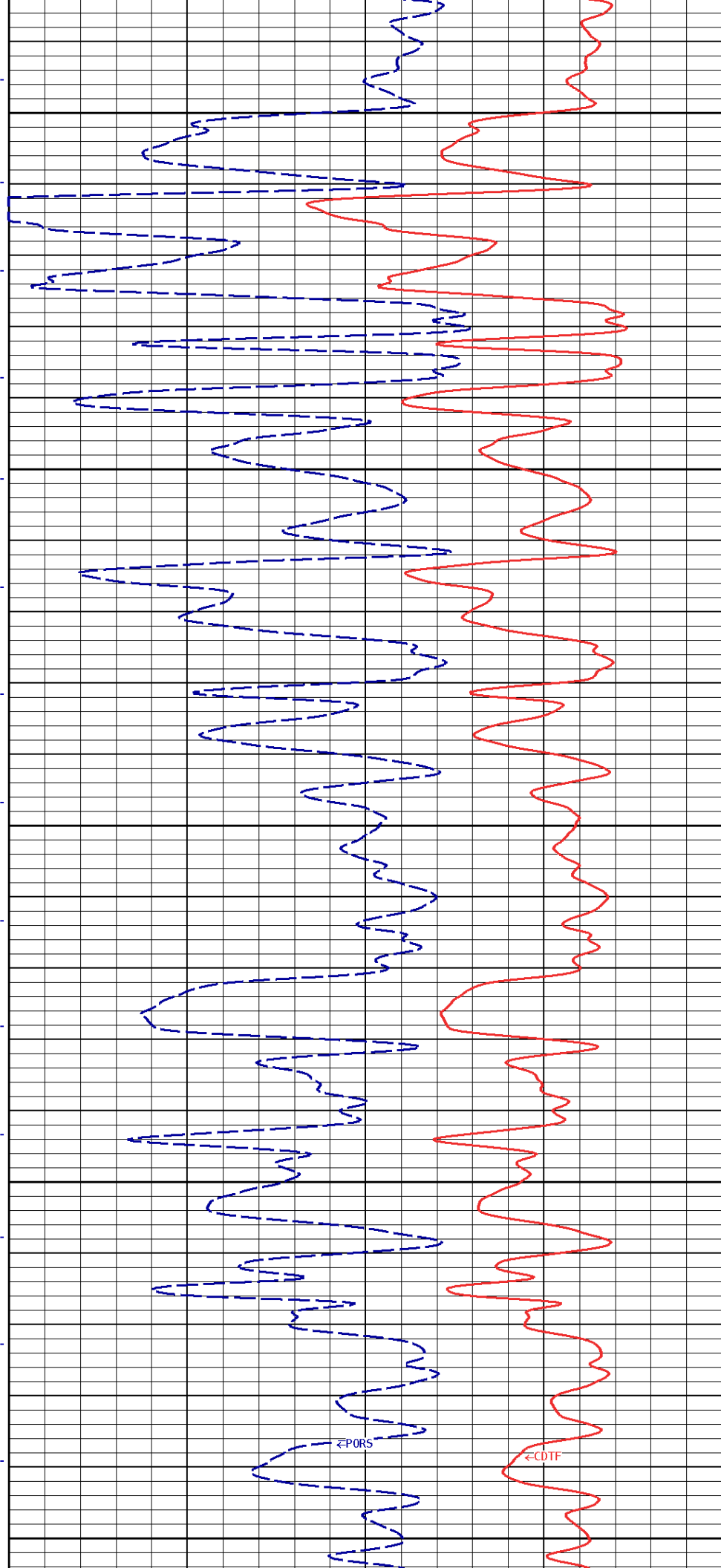




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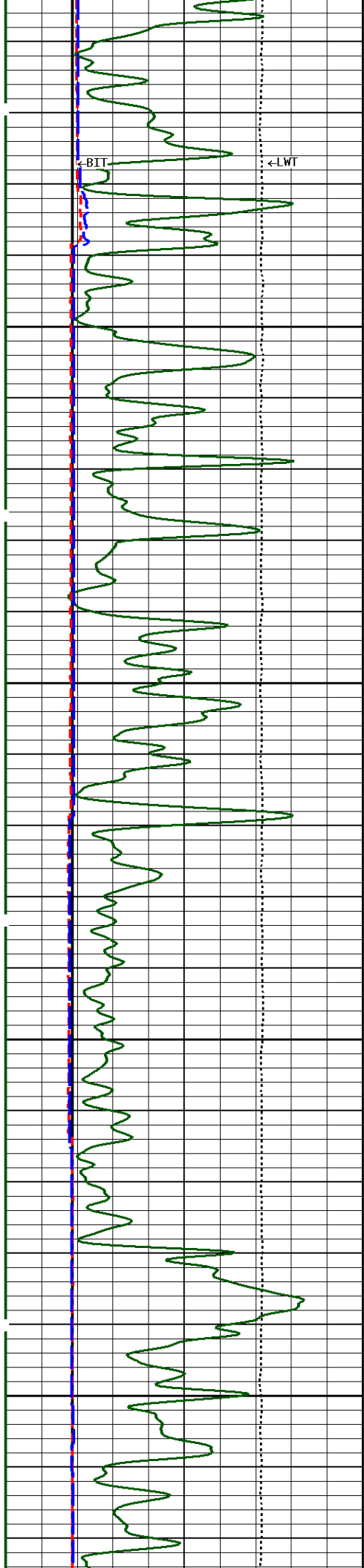
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3700



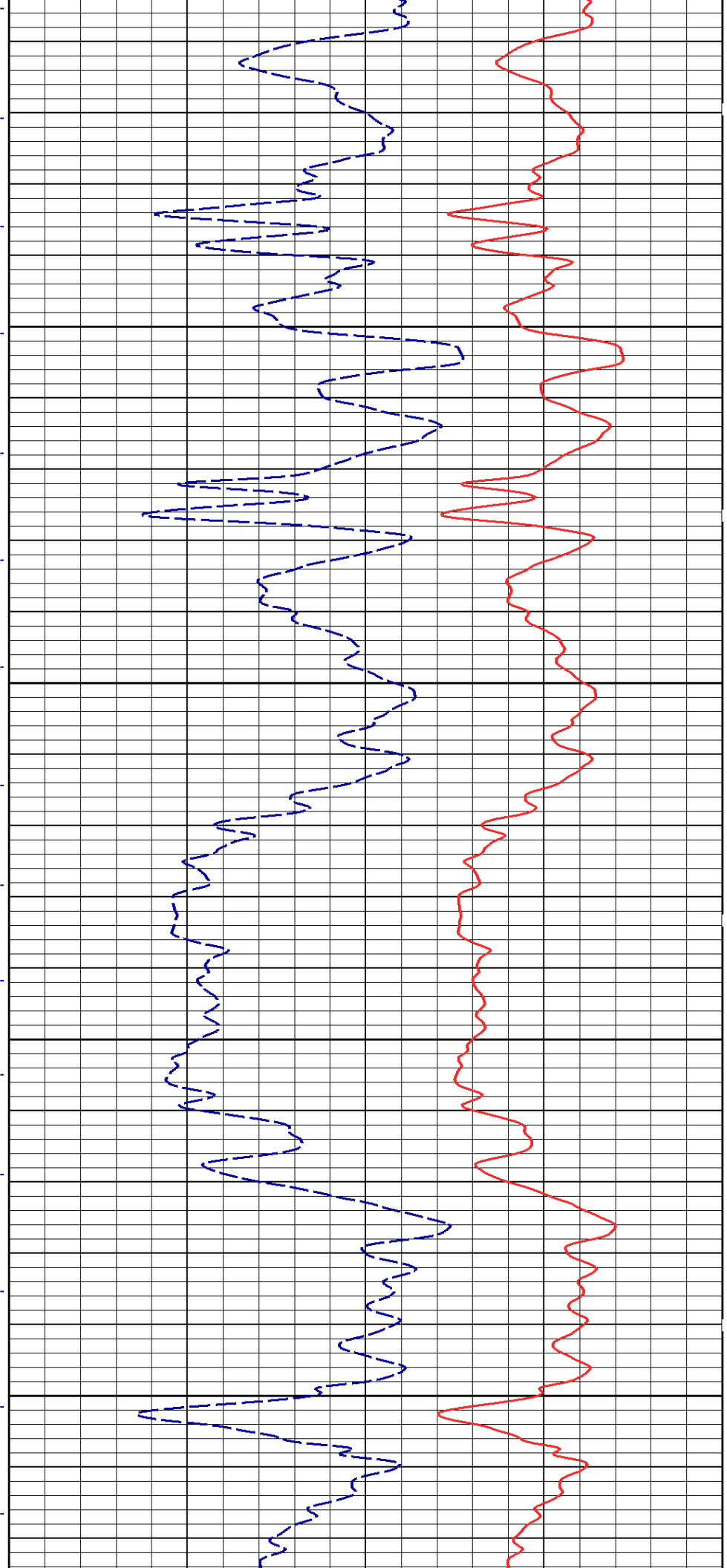
←PORS

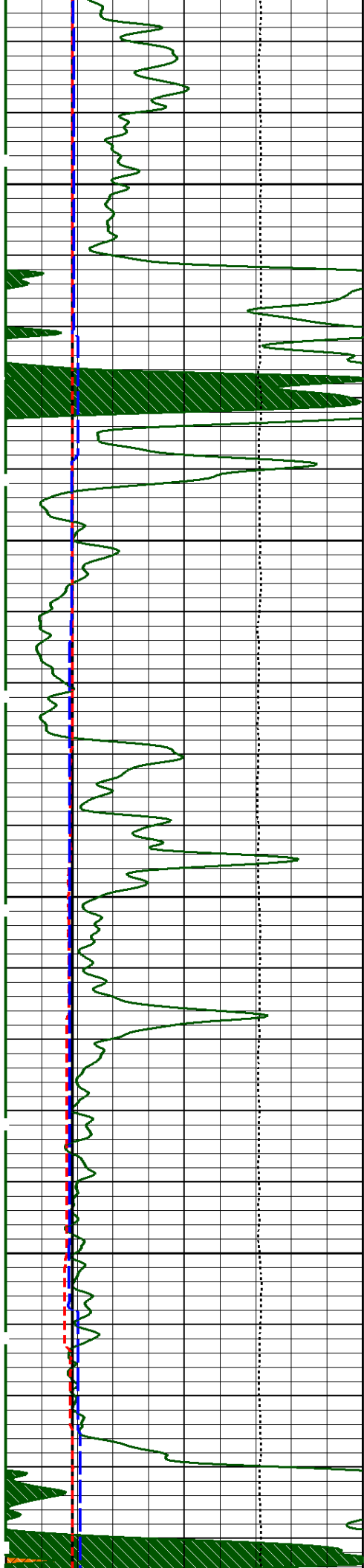
←CDTF



3800

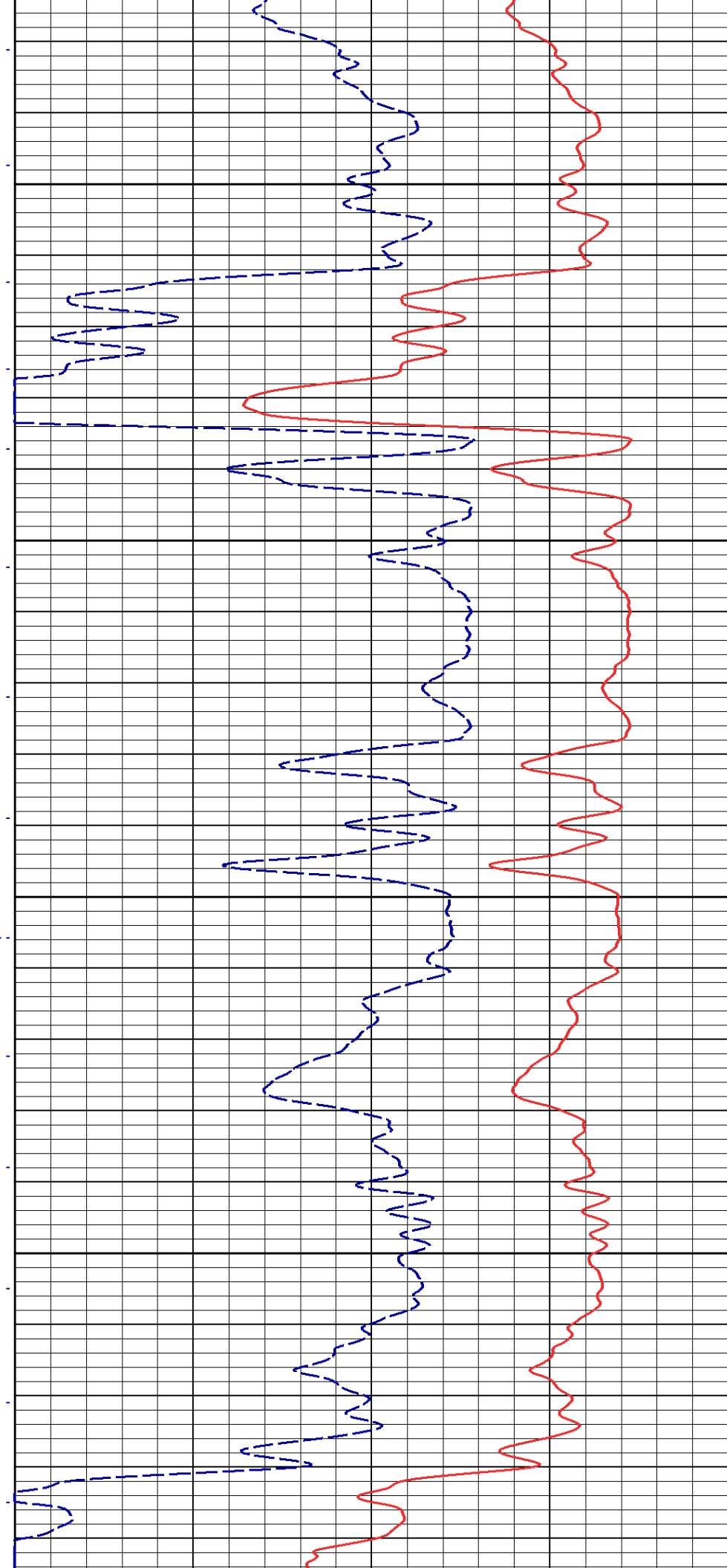
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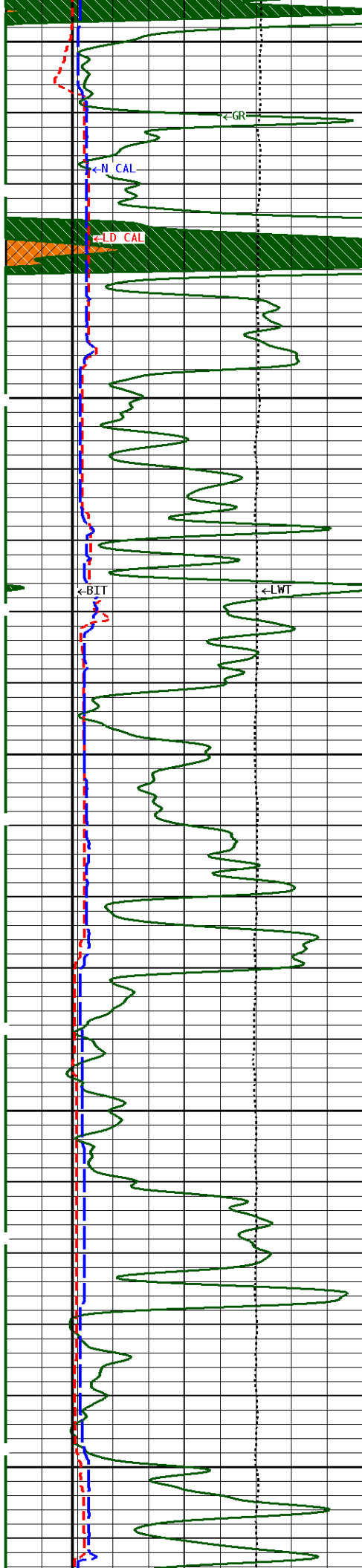




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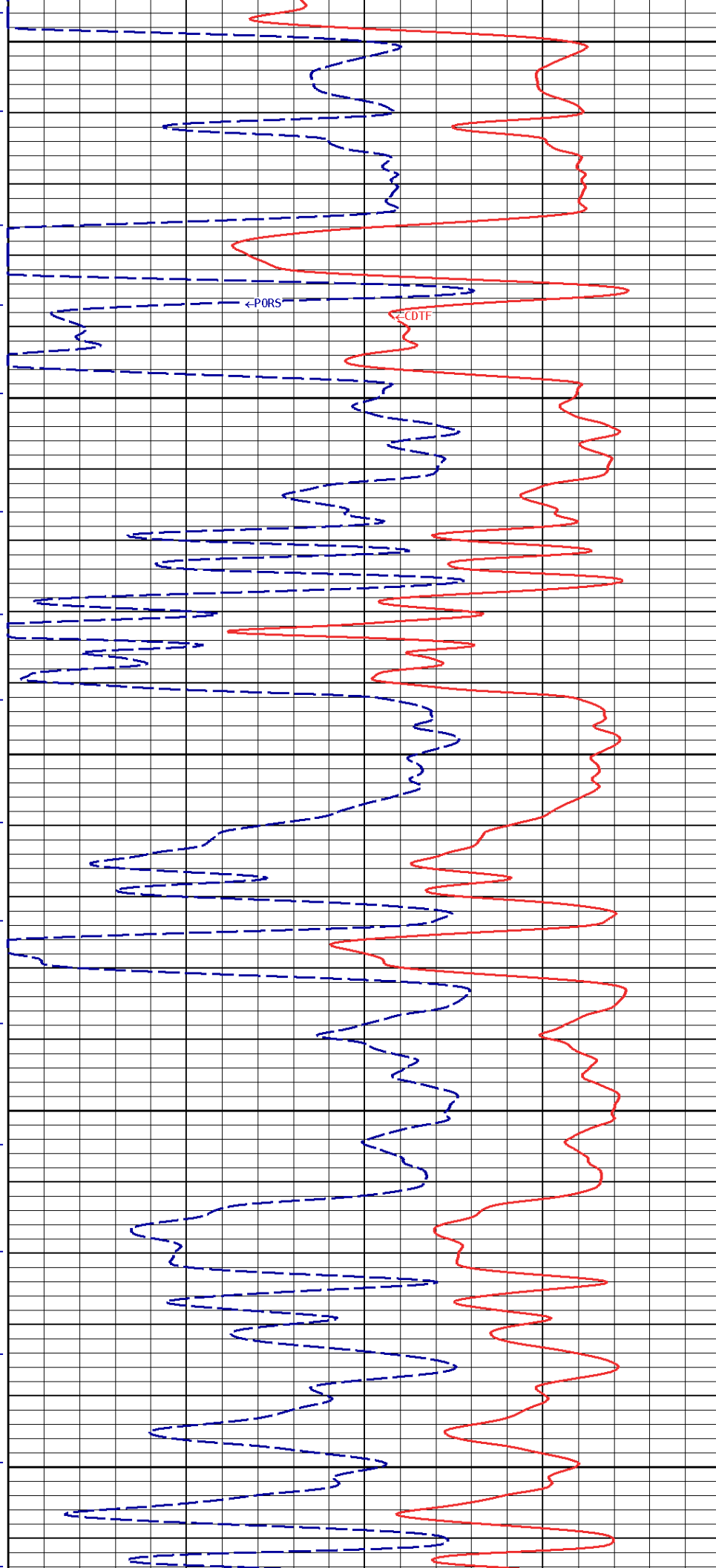
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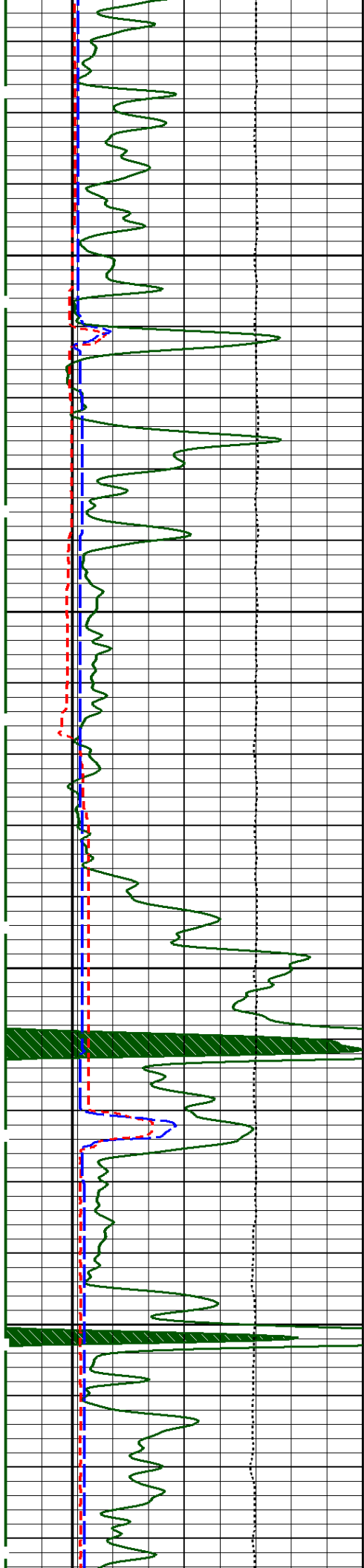




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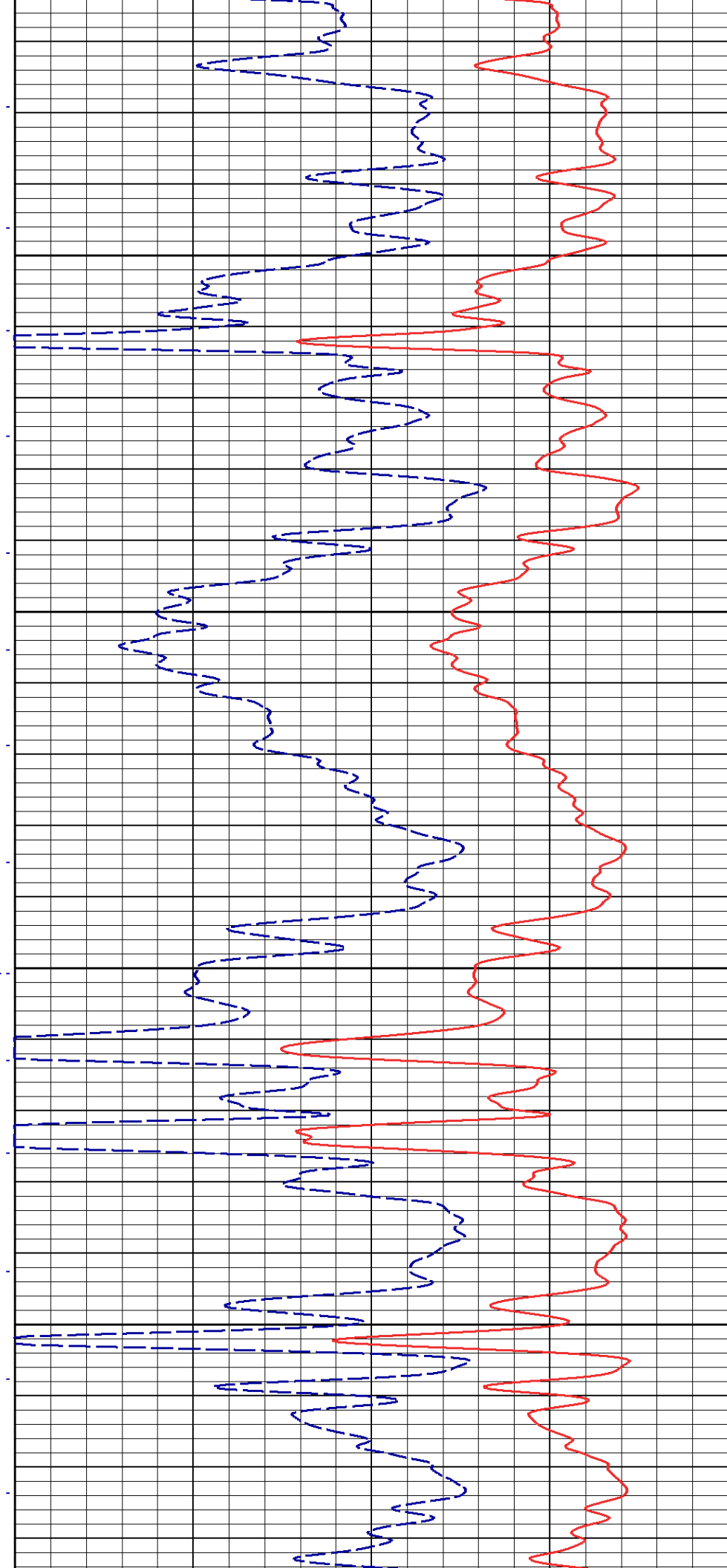
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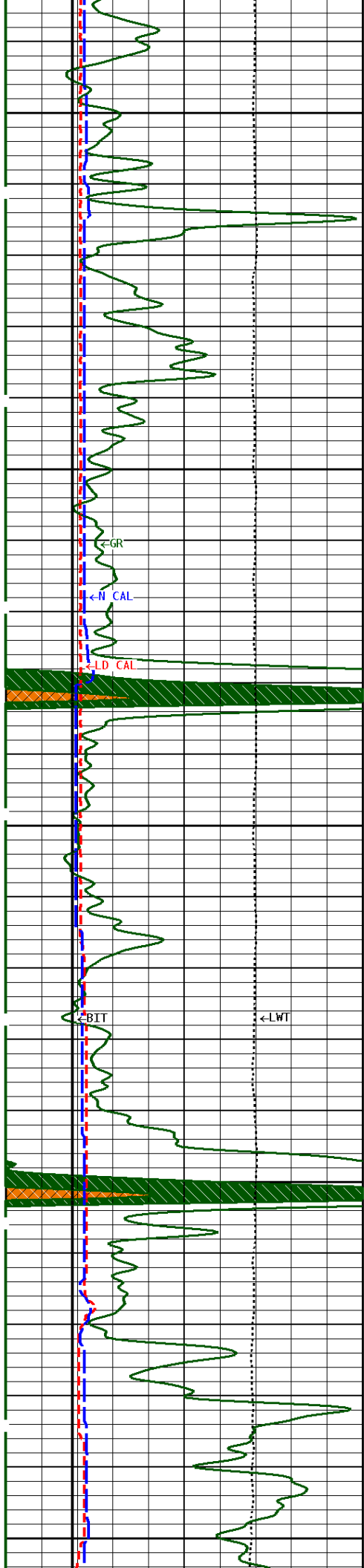




4400

4500

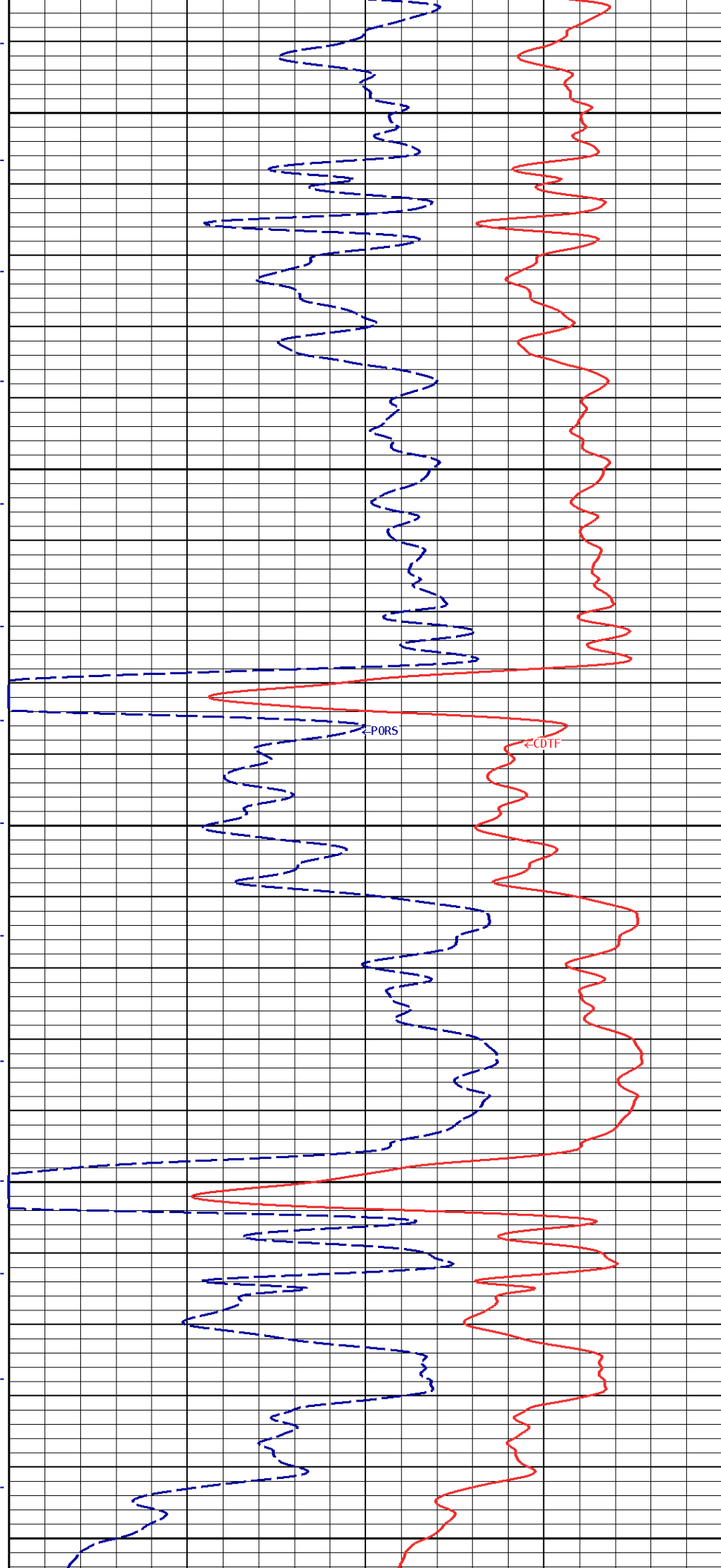


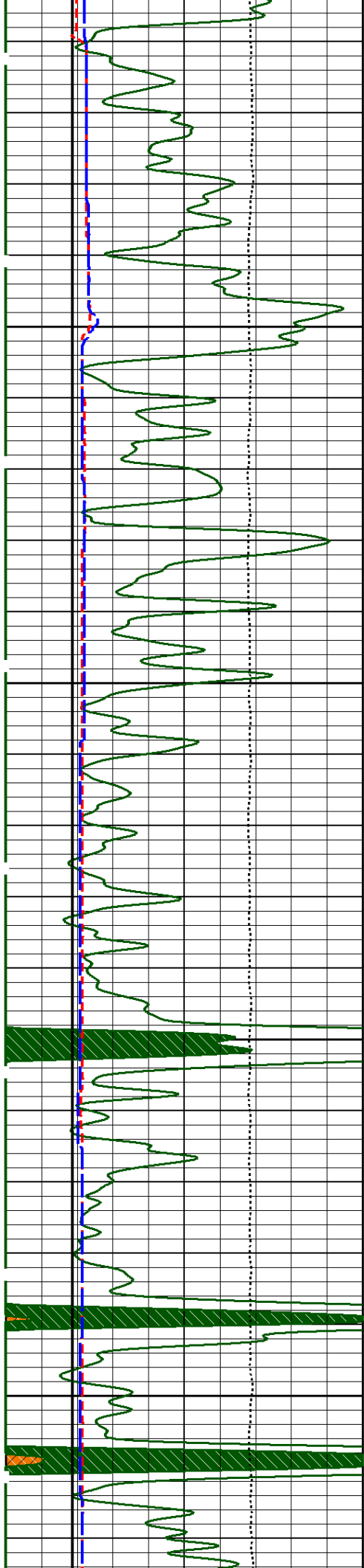


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4700

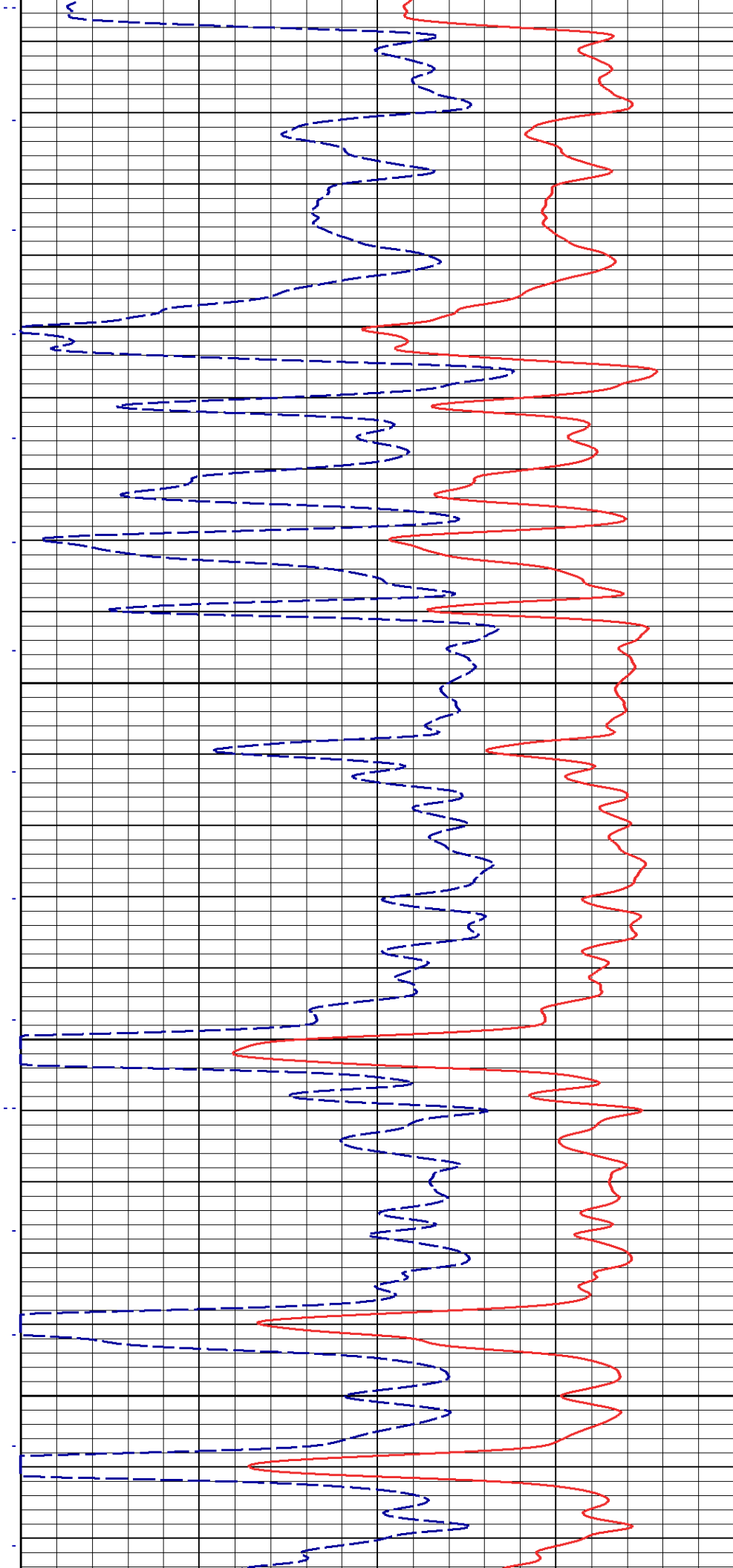
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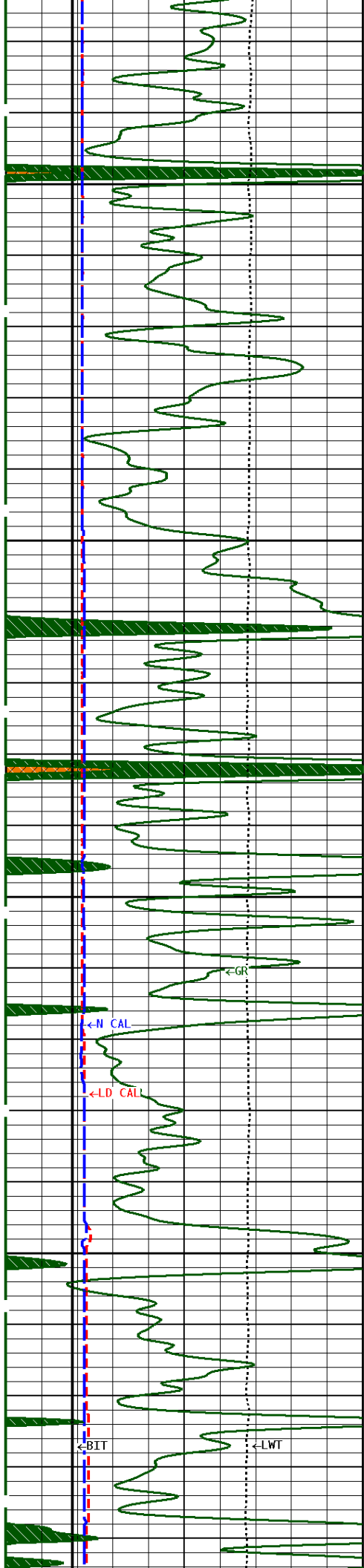




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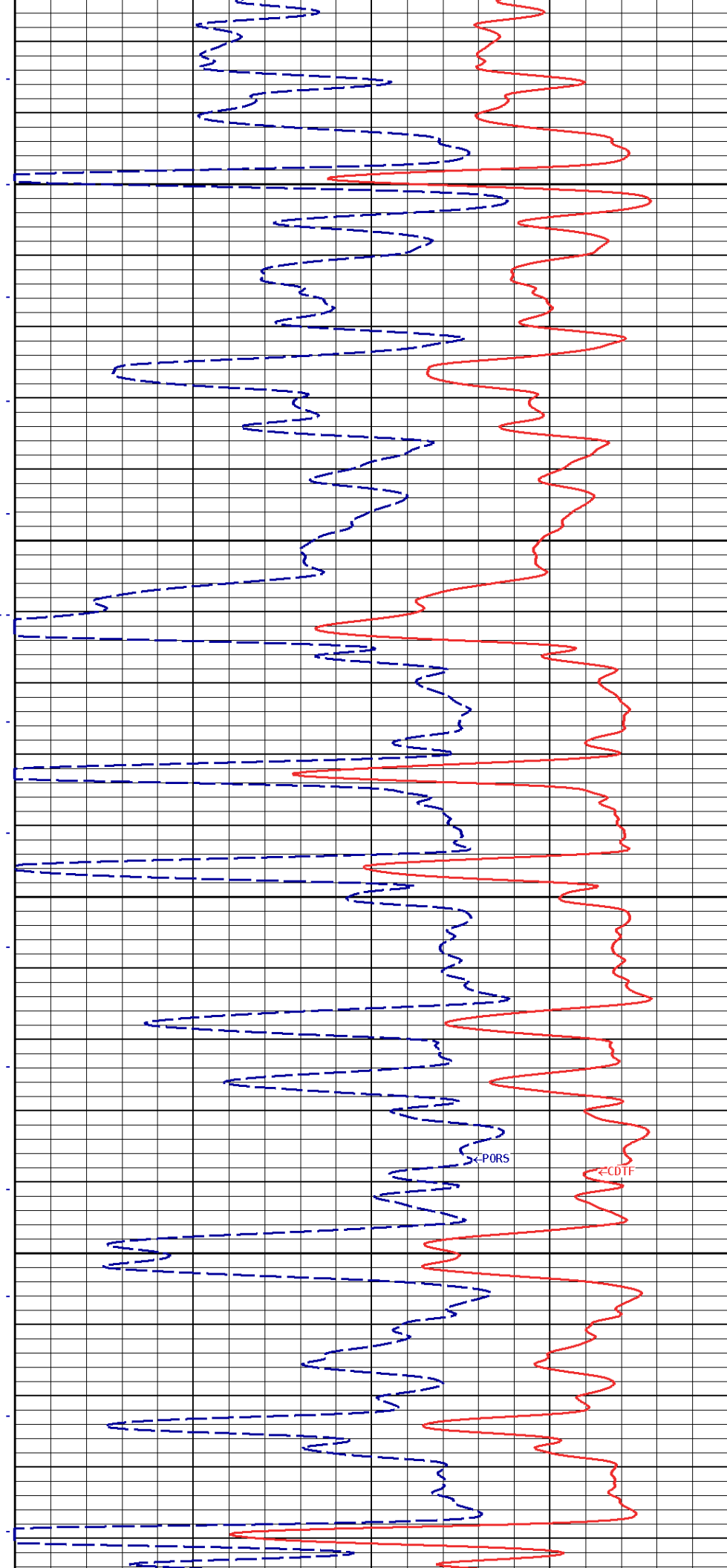
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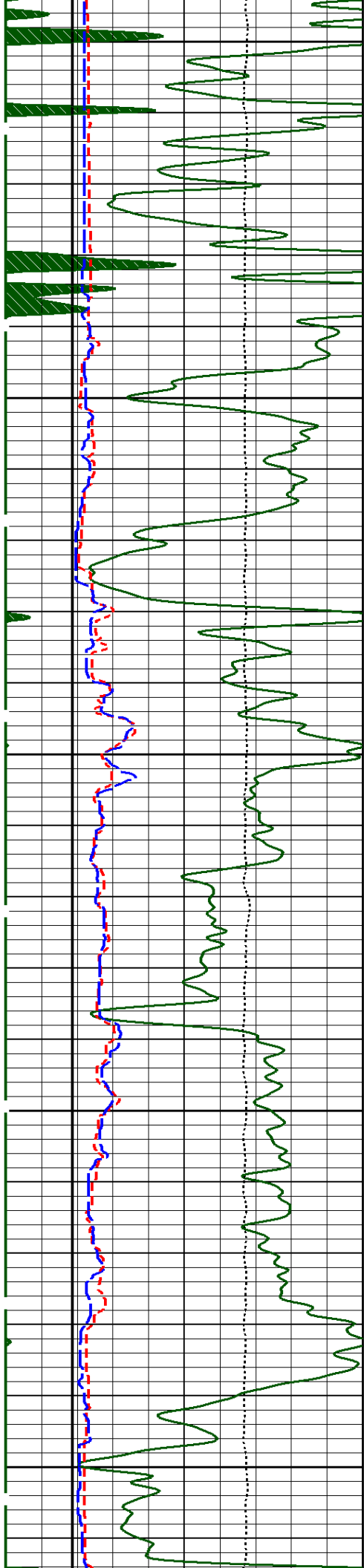




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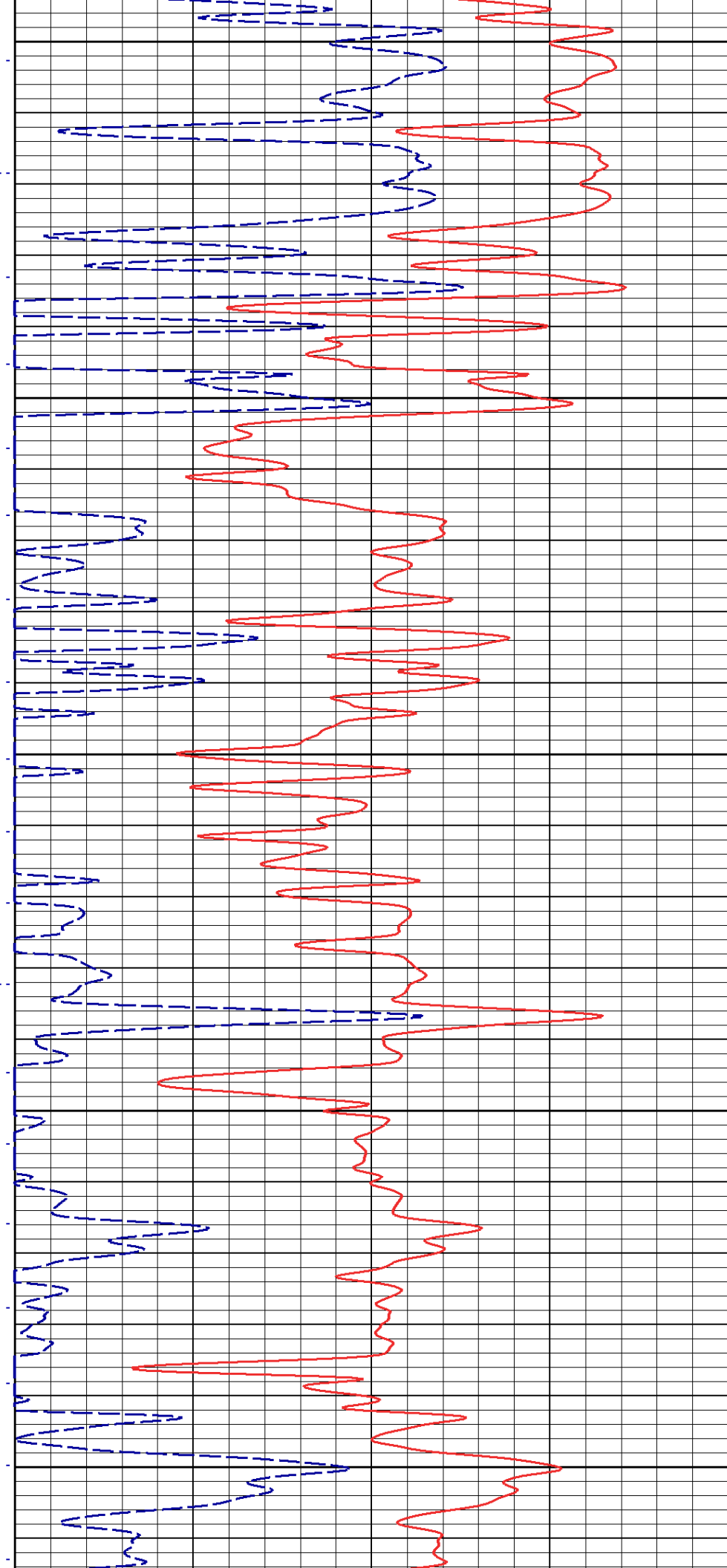
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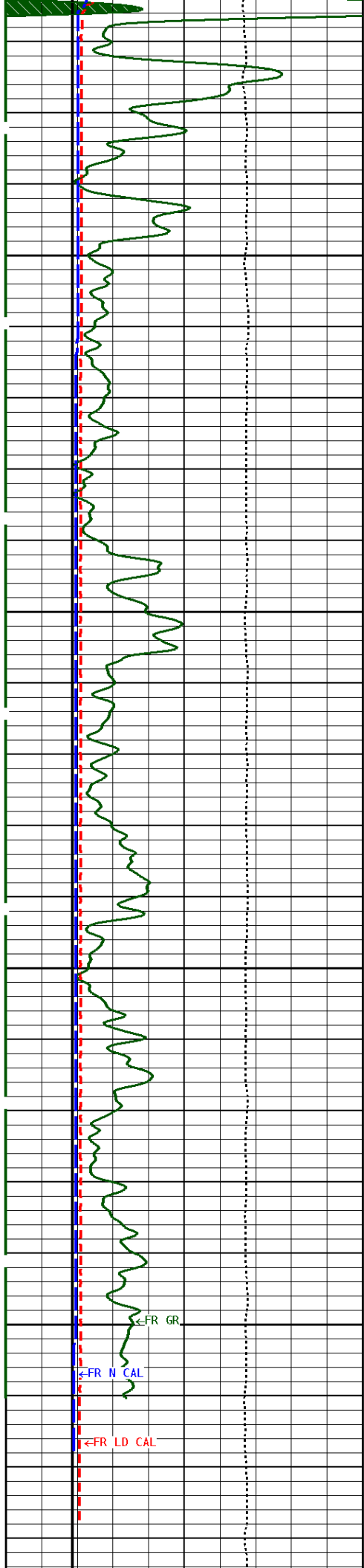




5300

5400





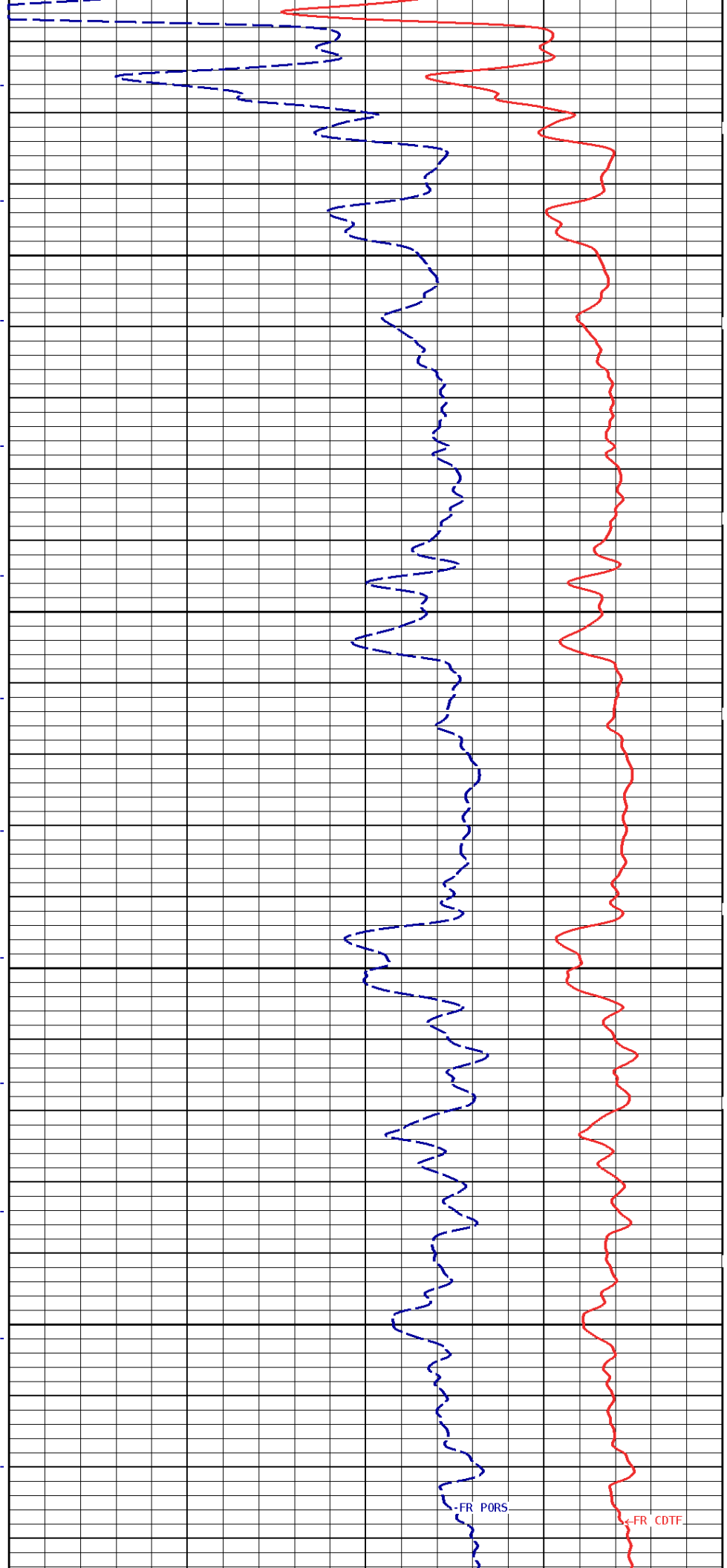
5500

5600

GR

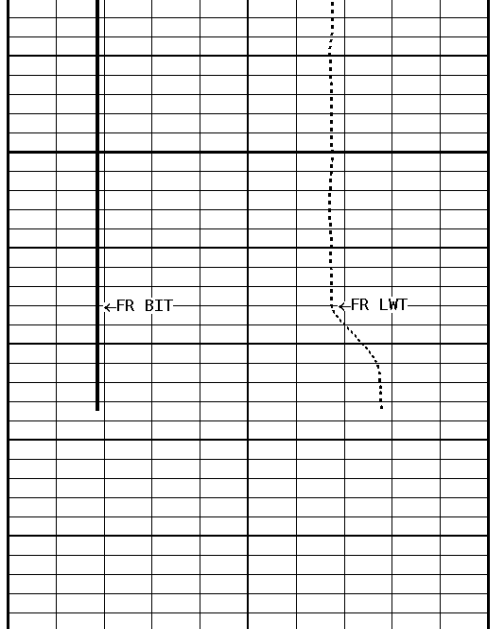
N CAL

LD CAL



PORS

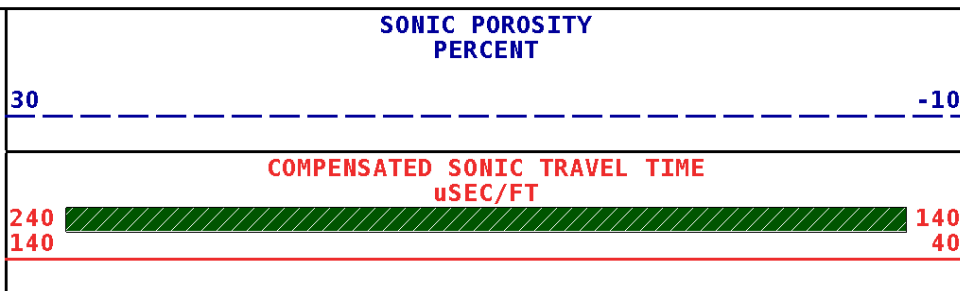
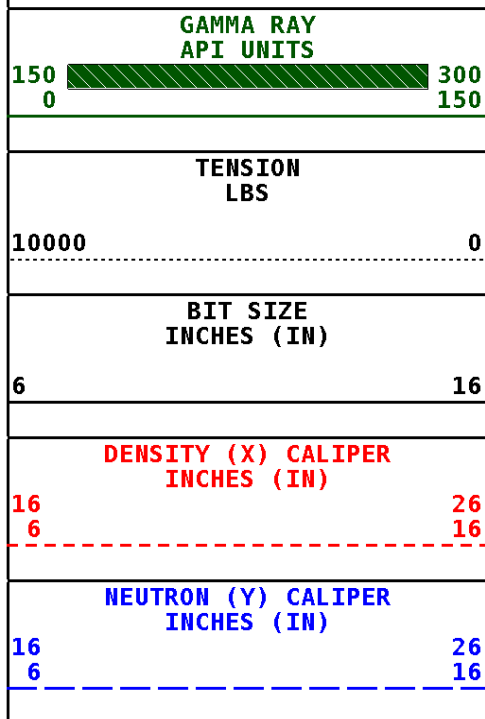
CDTF



5700

5716

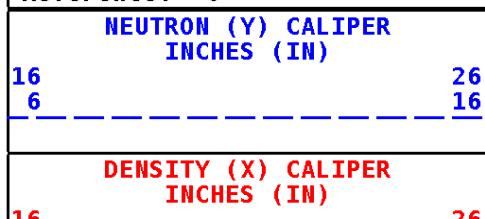
1:240 MAIN SECTION

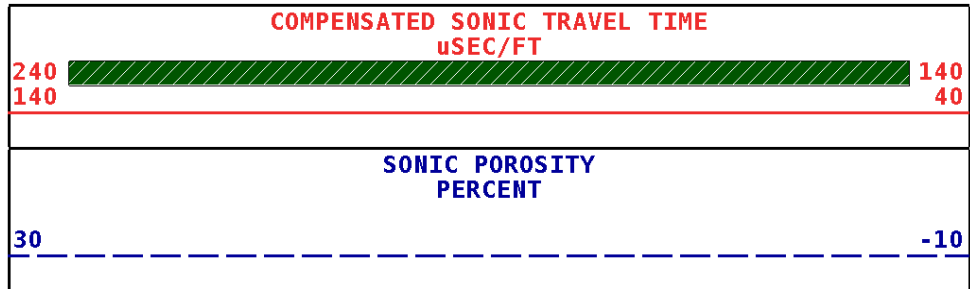
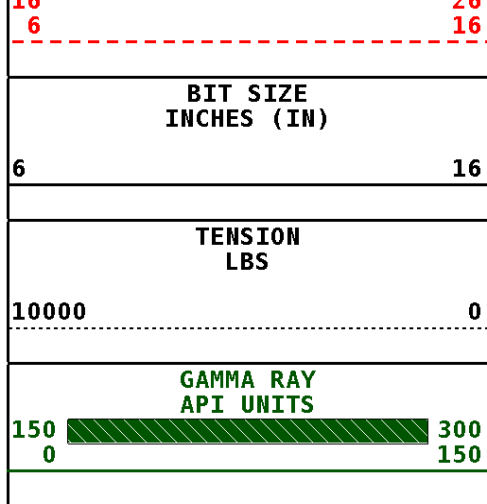


* Borehole Zone Factors *

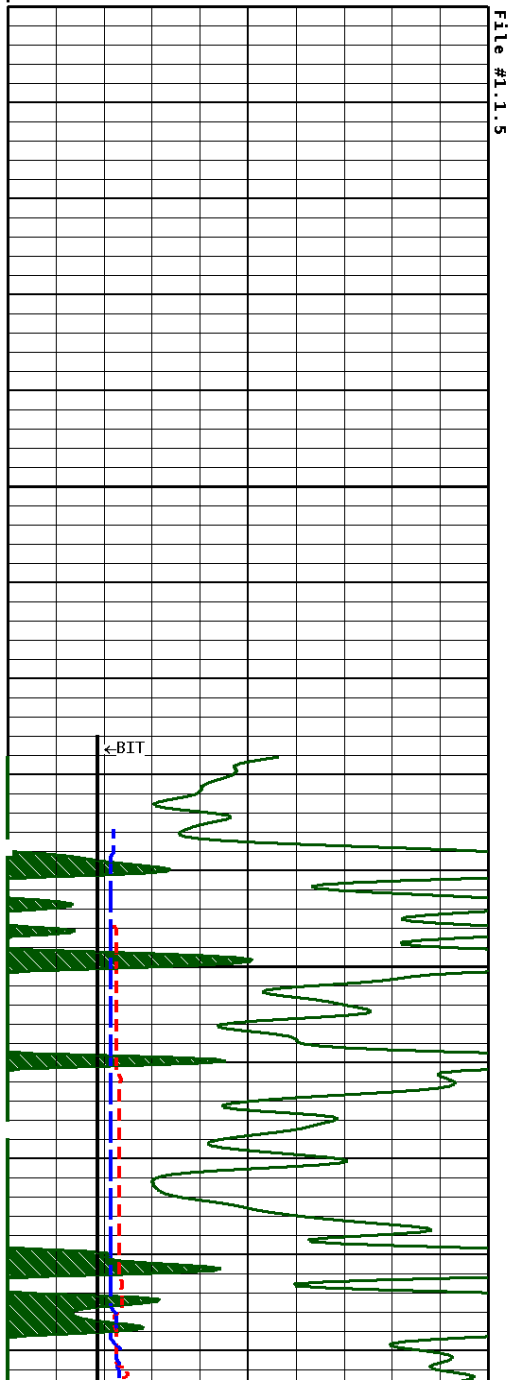
Zone 1	99999.0	to	0.0	Feet
Matrix Transit Time			47.5	us/ft
Fluid Transit Time			189.0	us/ft

Well File: casillas_hamker_20-3 dec-7-2019_qst Scale: 1:240 Format: CST-240
 Segment: V1.D1.S5 Reprocess REPEAT Acquired: 2019-12/07 10:48 3.4.1-13972
 Reference: 0 Processed: 2019-12/07 13:08 3.4.1-13972

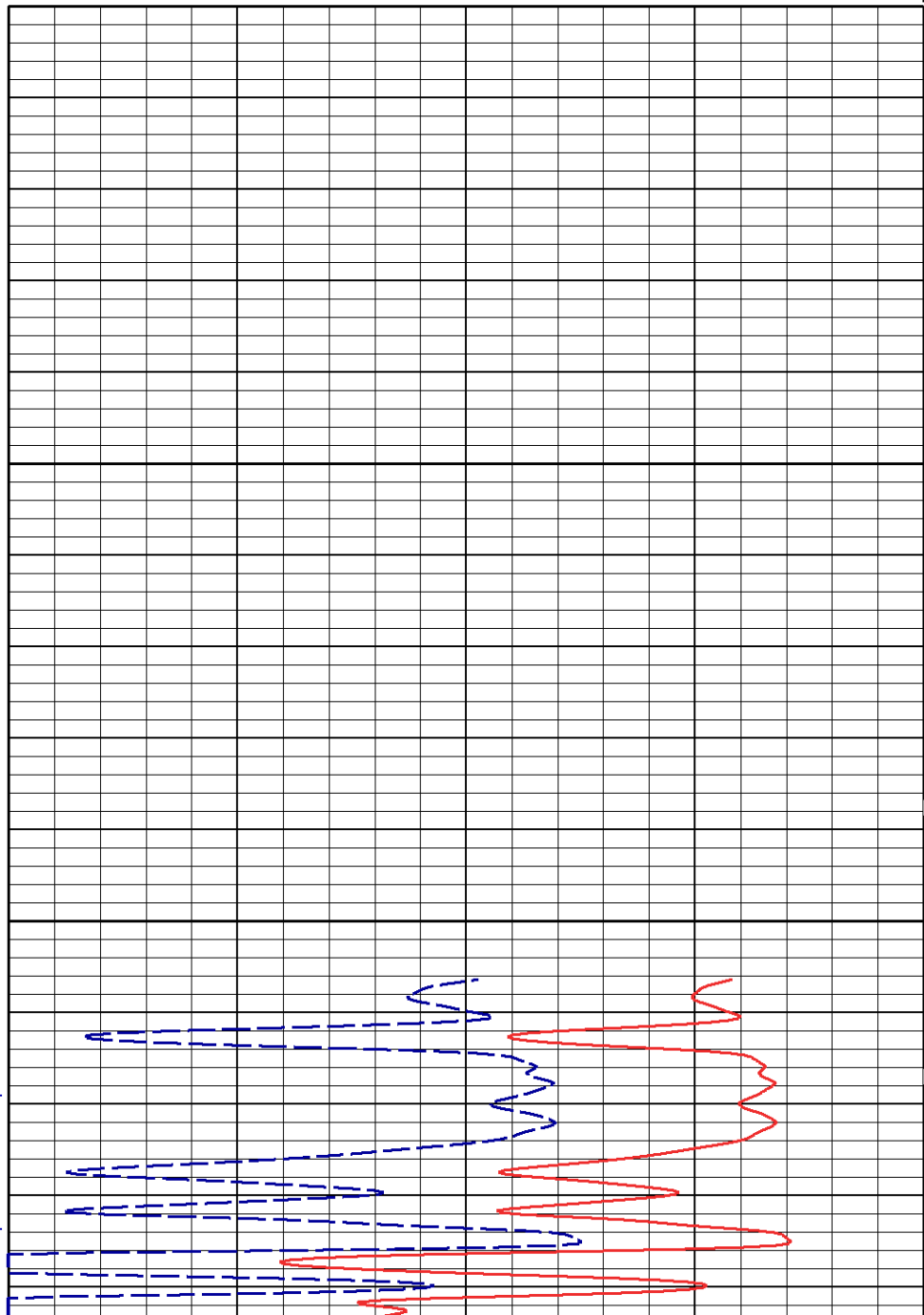


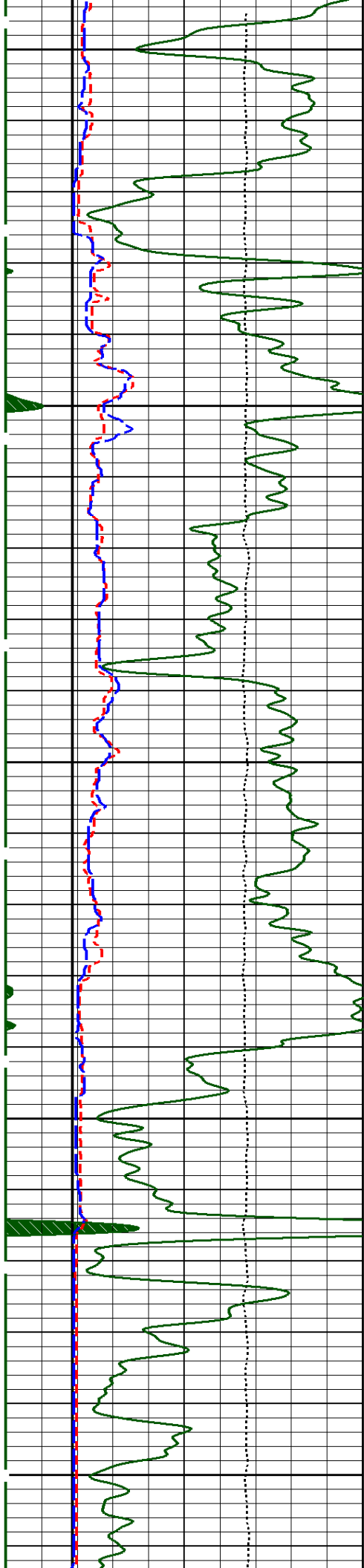


1:240 REPEAT SECTION



5200

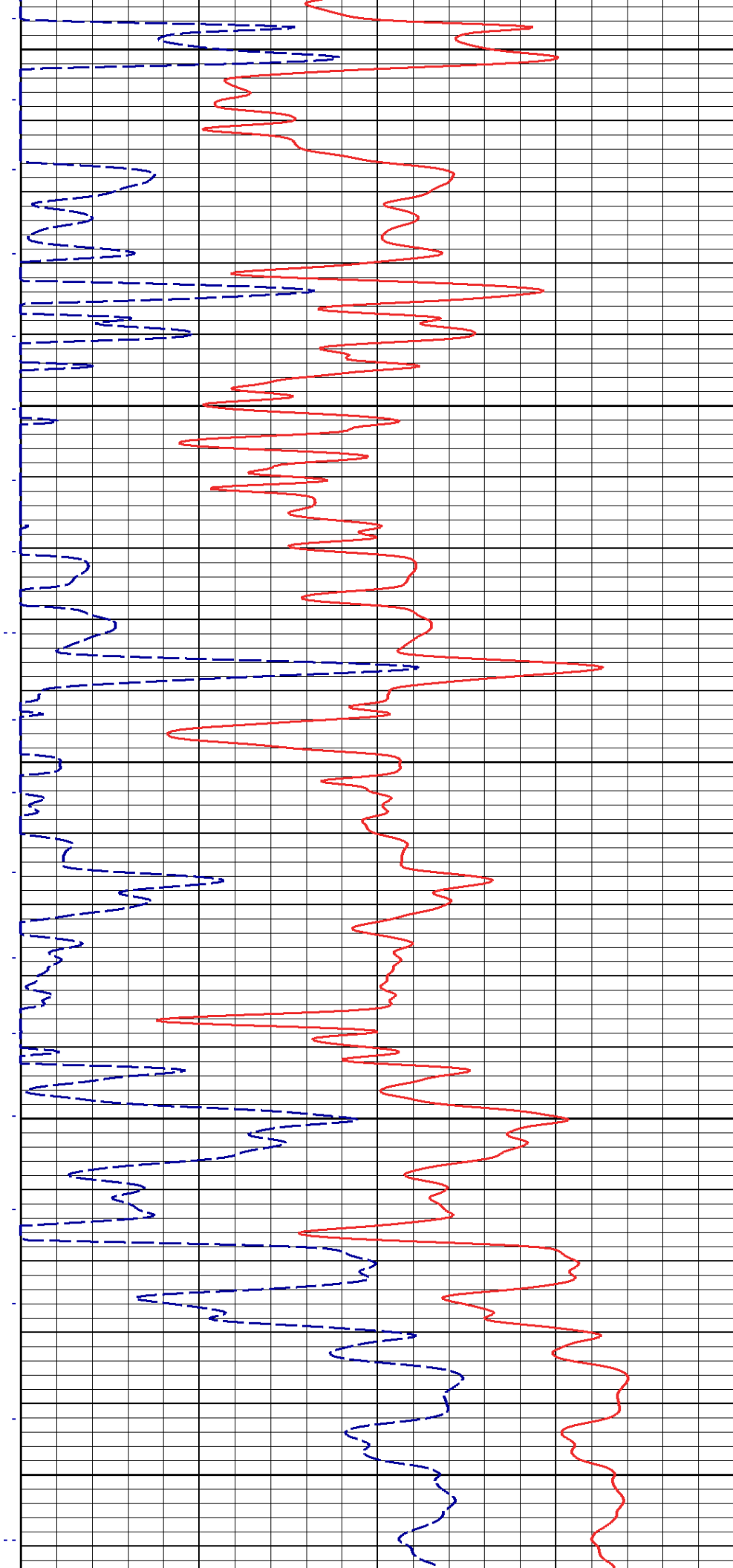


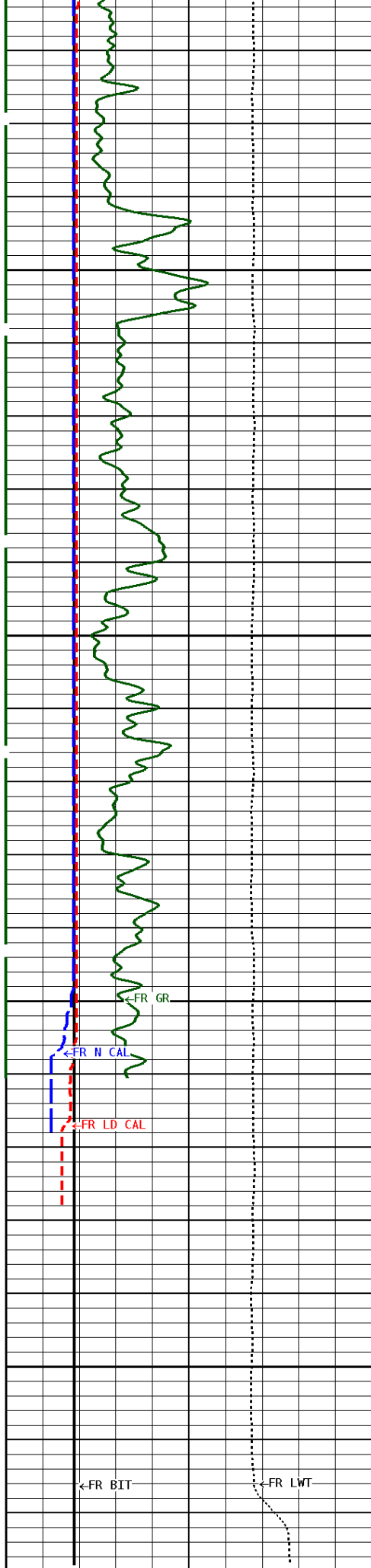


5300

5400

5500

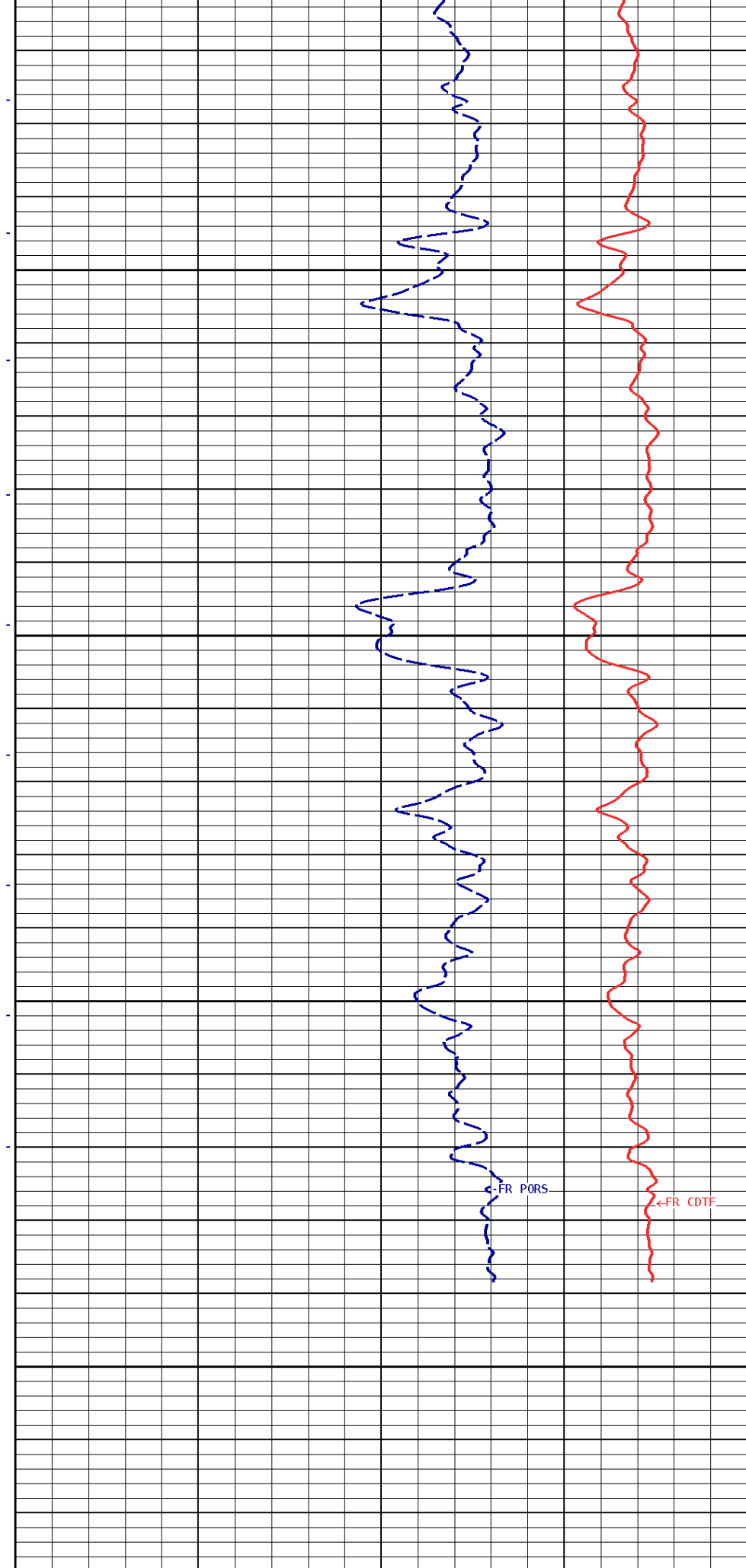




5600

5700

5716



←FR PORS

←FR CDTF

1:240 REPEAT SECTION

GAMMA RAY
API UNITS

150 0 300 150

TENSION
LBS

10000 0

BIT SIZE
INCHES (IN)

6 16

DENSITY (X) CALIPER
INCHES (IN)16 26
6 16NEUTRON (Y) CALIPER
INCHES (IN)16 26
6 16SONIC POROSITY
PERCENT

30 -10

COMPENSATED SONIC TRAVEL TIME
uSEC/FT

240 140 140 40

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet

Matrix Transit Time 47.5 us/ft
Fluid Transit Time 189.0 us/ft

* Calibration Summary *

Shop Calibration
GRT-BPerformed : 04-Jun-2019 Time : 09:53
Sensor Suite : GR-GR5 ID : GRT-BB-013

	Measured	Units	Calibrated	Units
GR Background	Jig 44	CPS	Jig 160	GRAPI

Shop Calibration
CST-ADPerformed : 26-MAY-2003 Time : 16:03
Sensor Suite : SON-ANA ID : CST-AB-24

		Transit Time		
T/R Pair	Measured	Calibrated	Units	
T1R1	208.5	208.5	uS	
T2R2	208.5	208.5	uS	
T1R2	322.5	322.5	uS	
T2R1	322.5	322.5	uS	
		Amplitude		
T/R Pair	Measured	Calibrated	Units	
T1R1	90.00	90.00	mV	
T2R2	90.00	90.00	mV	
T1R2	78.00	78.00	mV	
T2R1	78.00	78.00	mV	