

STEP

energy services

BOREHOLE COMPENSATED SONIC LOG

Company GRAND MESA OPERATING COMPANY Well PREISSER #1-34 Field WILDCAT County RENO State KANSAS Country USA API No. 15-155-21771-00-00		File No : HAYS-70428 Company : GRAND MESA OPERATING COMPANY Well : PREISSER #1-34 Field : WILDCAT County : RENO State : KANSAS Country : USA API No : 15-155-21771-00-00	
Location : 330' ENL & 1620' FEL E2 NE NW NE		LSD : Sect : 34 Twp : 24S Rge : 09W	
Permanent Datum: Drilling Measured From: Log Measured From: Above Permanent Datum:	GL KB KB 11.00 Ft	Elevations: KB 1687.00 DF 1688.00 GL 1677.00	Services: GRT CNP MLT PIT LD
Date	12-14-2019		
Run Number	1		
Depth--Driller	4140.0 Ft		
Depth--Logger	4140.0 Ft		
First Reading	4108.0 Ft		
Last Reading	266.0 Ft		
Casing--Driller	266.0 Ft		
Casing--Logger	266.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	WBM		
Density	9.4		
Fluid Loss	11.6		
PH/Viscosity	9.0	53.0	
Sample Source	MEASURED		
RM@Measured Temp.	1.400 @ 58 F		
RMF@Measured Temp	1.190 @ 58 F		
RMC@Measured Temp.	1.610 @ 58 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.720 @ 119 F		
Time Circulation Stopped	12-14-2019 05:57		
Max Recorded Temp.	119	F	
Equipment/Base	TRK-137	HAYS	
Recorded By	B.BAILEY		
Witnessed By	KENT MATSON		

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.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	4140.00	8.625	17.00	266.00	0.00

Run Number	1	
Date	12-14-2019	
Date/Time On Bottom	12-14-2019 11:57	
Depth to Fluid	0.0 Ft	
Salinity	10400.000	
RMF@BHT	0.610 @ 119 F	
RMC@BHT	0.830 @ 119 F	

ALL PRESENTATIONS AS PER CUSTOMER REQUEST.

GRT, CNT, LDT, CST, MLT, AND PIT RUN IN COMBINATION.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

5.5" PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUME.

CALIPERS ORIENTED ON X-Y AXIS.

PHIN IS CALIPER CORRECTED

GRT: GRP

CNT: PHIN, PHINDOL, CLCNIN

LDT: PORL, PORLDOL, LCORN, LDENN, PECLN, CLLDIN

MLT: MSFI, MSFN, CLMRIN.

PIT: ILD, ILM, SFLAEC, SPU, CIRD

OPERATORS:

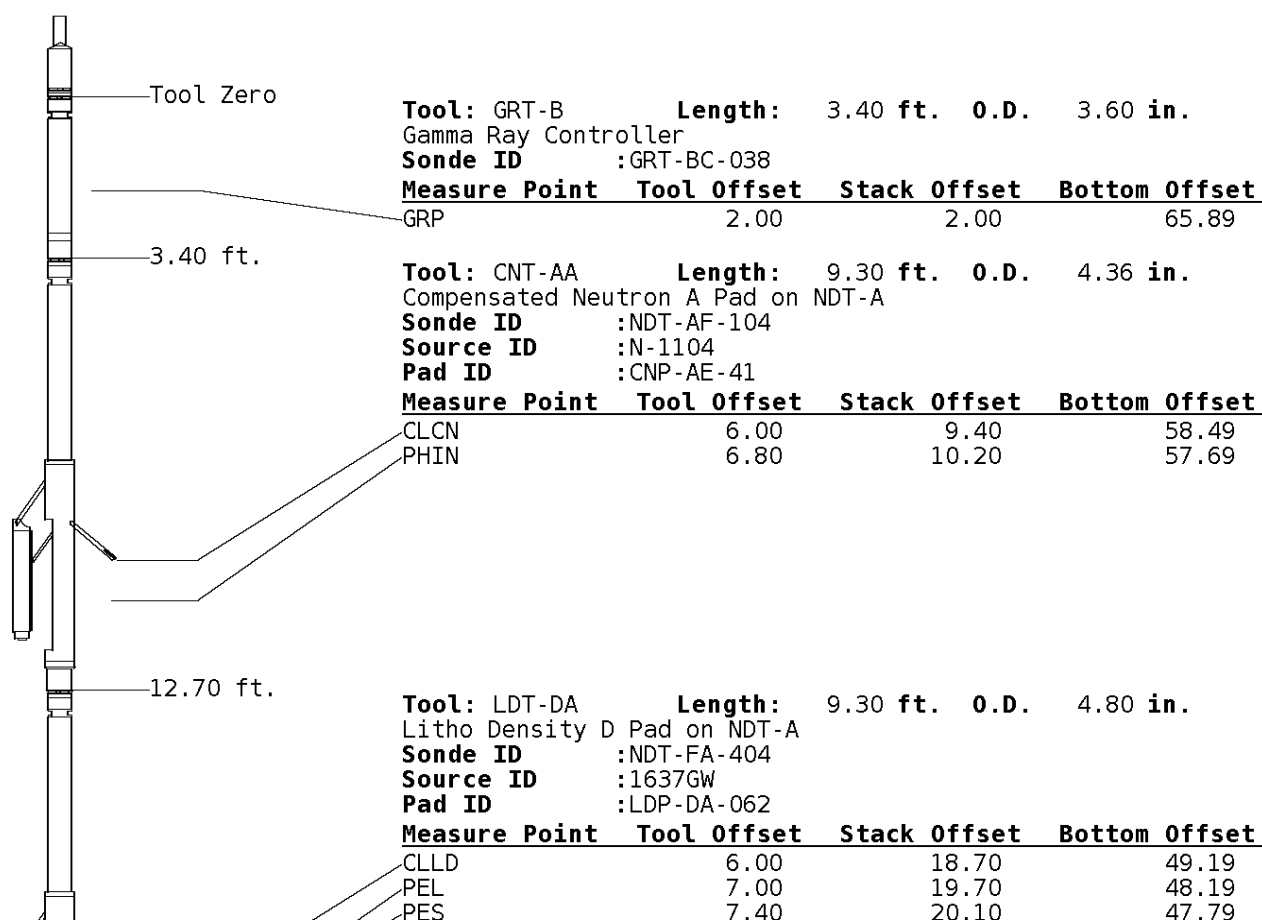
D.LEGLEGITER

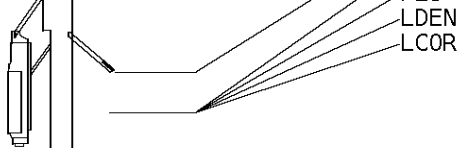
D.RAGSDALE

J.VAUGHN

Tool String Schematic

Total Tool Length - 67.89 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1171.00 lbs.



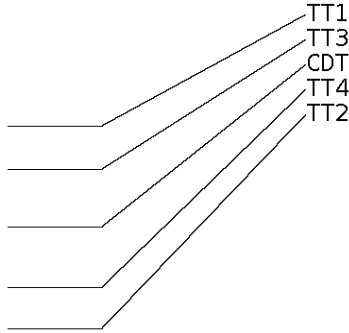


7.20	19.90	47.99
7.20	19.90	47.99

22.00 ft.

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

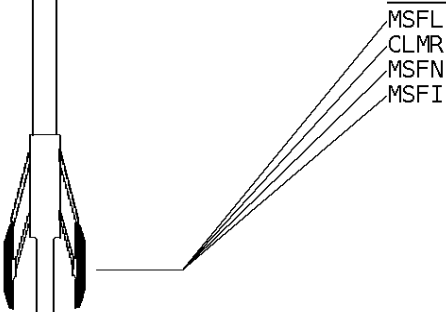
Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	26.80	41.09
TT3	5.80	27.80	40.09
CDT	7.30	29.30	38.59
TT4	8.80	30.80	37.09
TT2	9.80	31.80	36.09



35.80 ft.

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

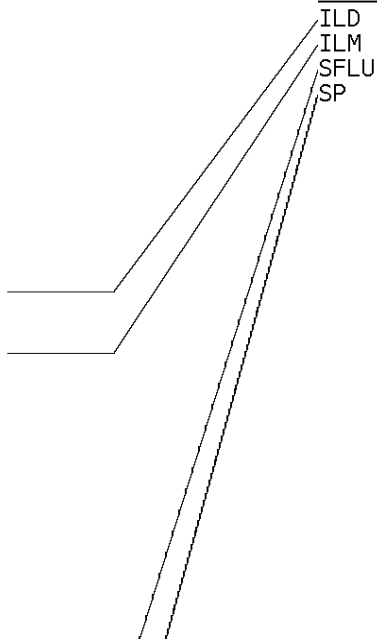
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	8.90	44.70	23.19
CLMR	7.60	43.40	24.49
MSFN	8.90	44.70	23.19
MSFI	8.90	44.70	23.19

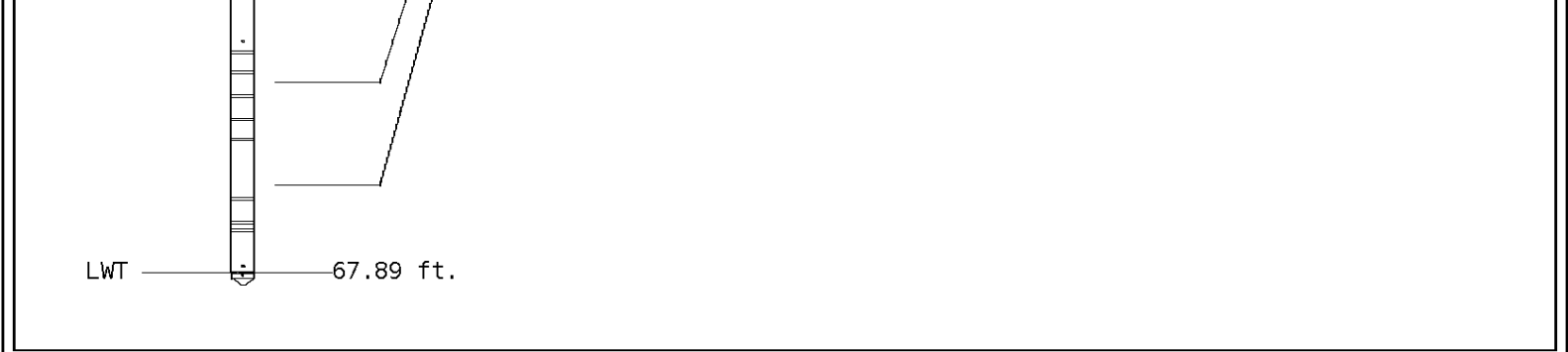


46.40 ft.

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	55.32	12.56
ILM	10.10	56.50	11.39
SFLU	17.49	63.89	4.00
SP	20.60	67.00	0.88





Well File: GRAND MESA PREISSER 1-34 DEC-14 QUINT **Scale:** 1:240 **Format:** CST-240
Segment: V1.D1.S3 mn **Acquired:** 2019-12/14 12:23 3.4.1-13972
Reference: 0 **Processed:** 2019-12/14 12:23 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

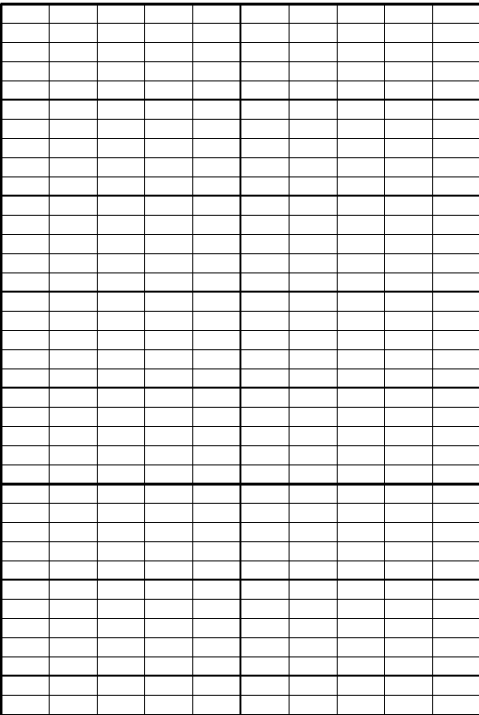
TENSION LBS	
10000	0

GAMMA RAY API UNITS	
150	300
0	150

COMPENSATED SONIC TRAVEL TIME uSEC/FT	
240	140
140	40

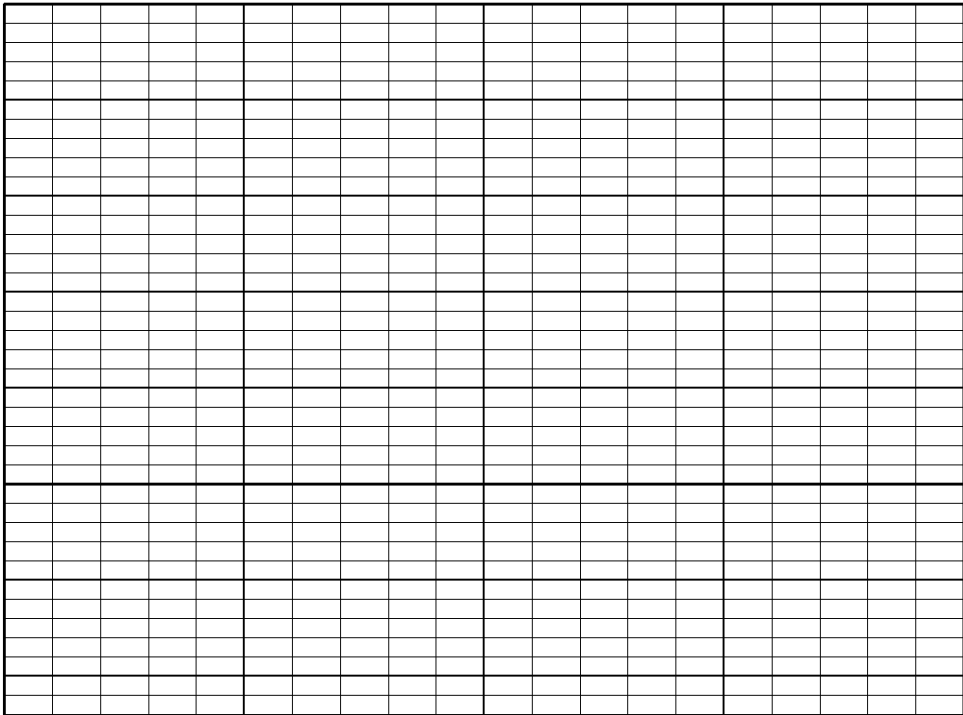
SONIC POROSITY PERCENT	
30	-10

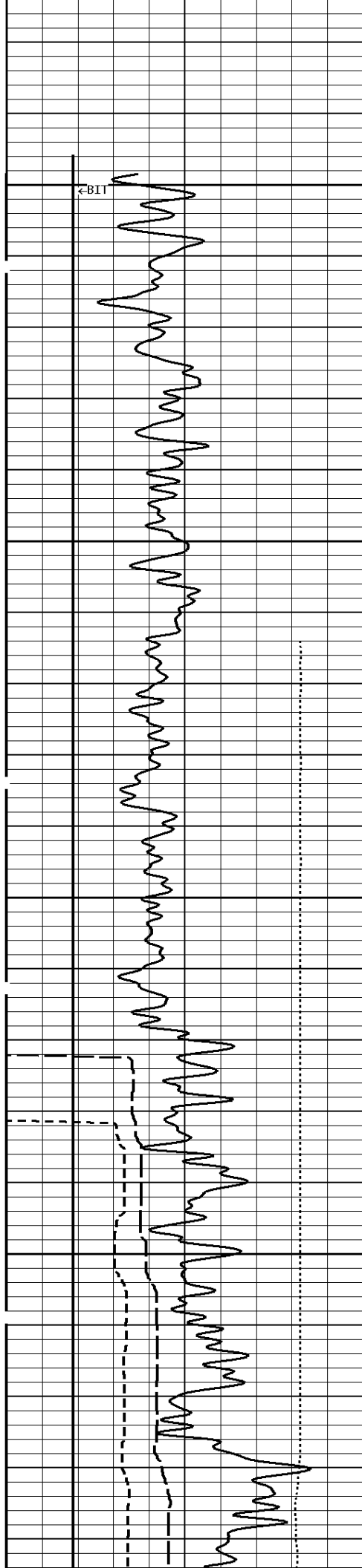
1:240 MAIN SECTION



File #1.1.3

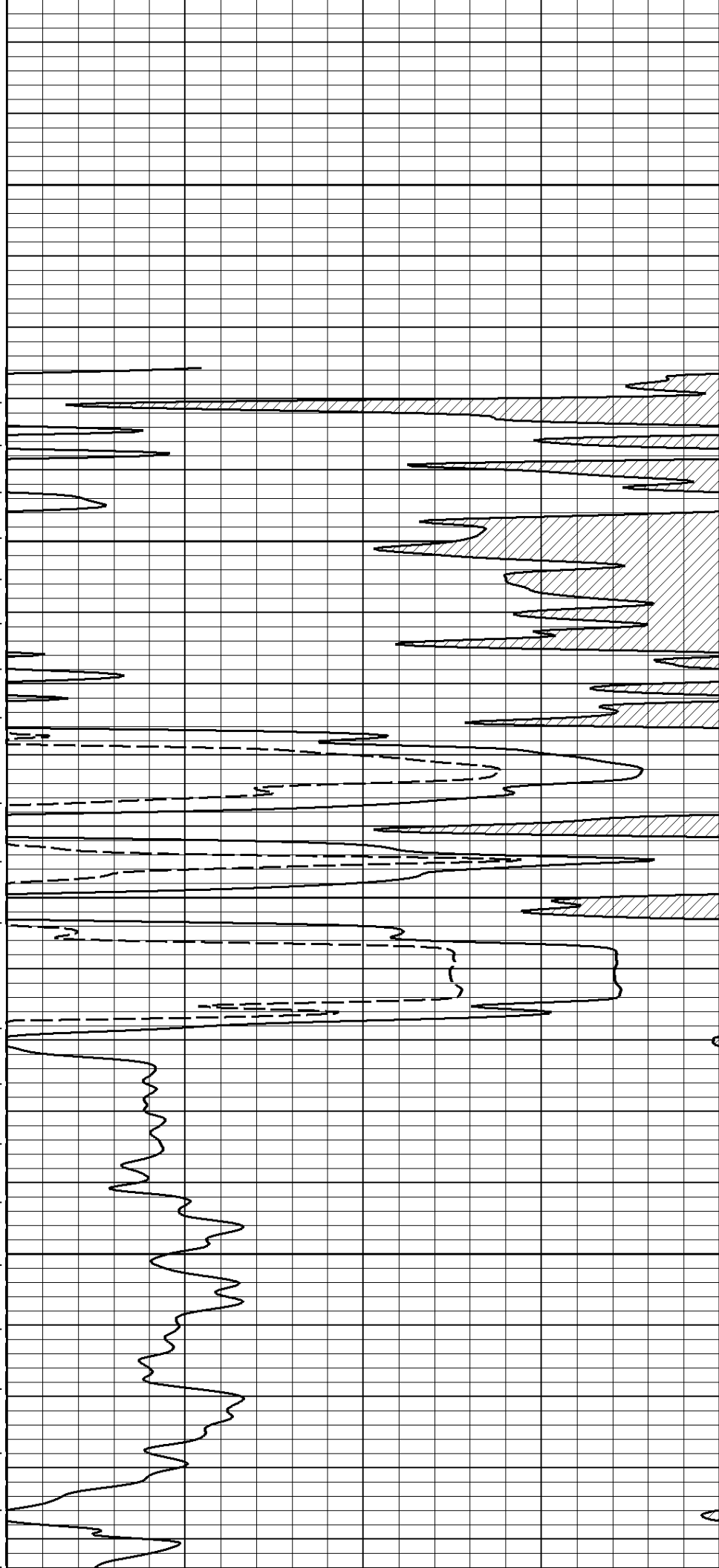
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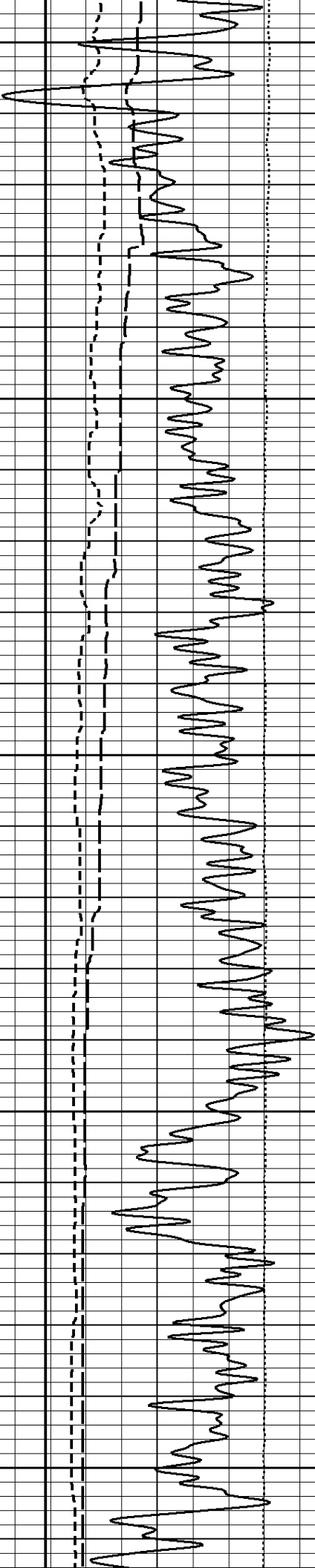




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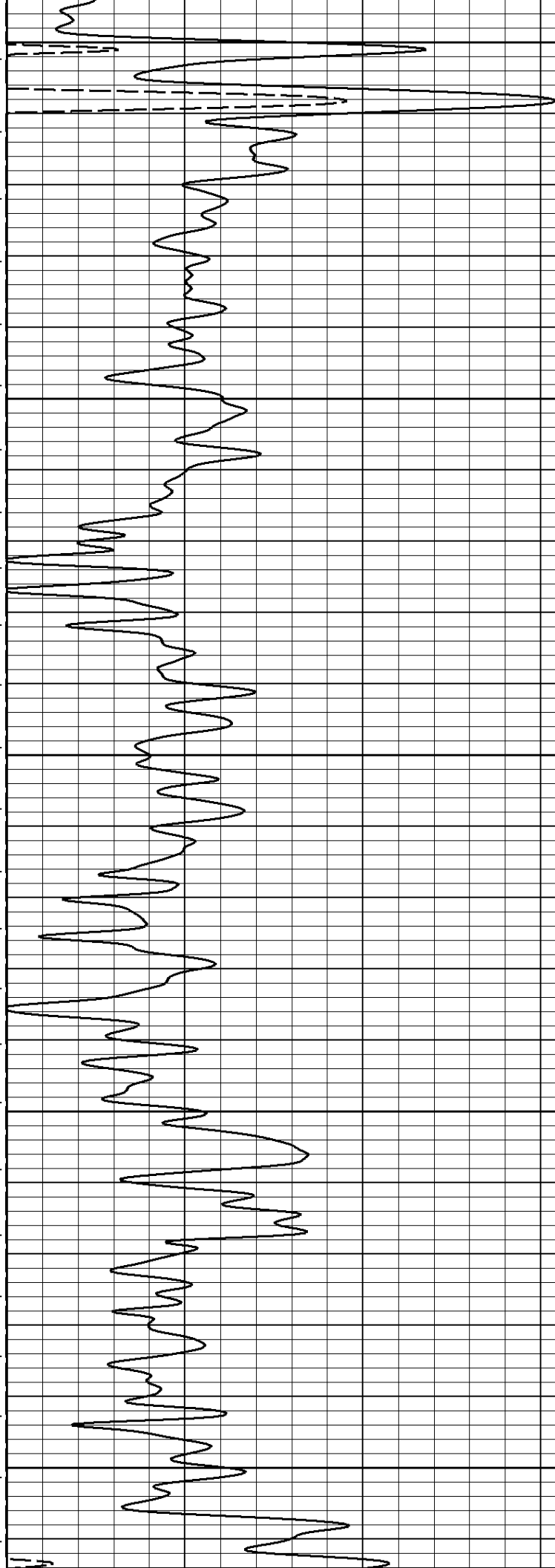
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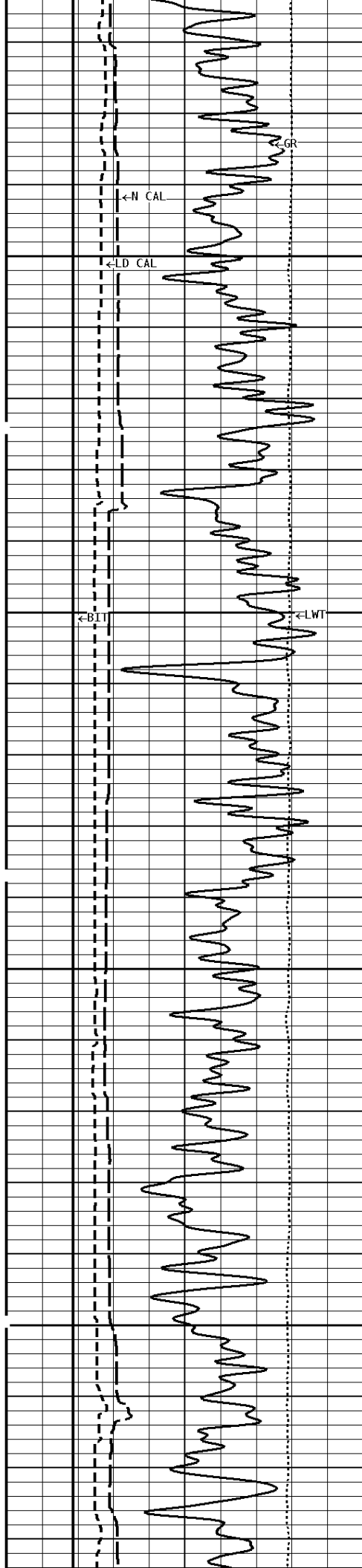




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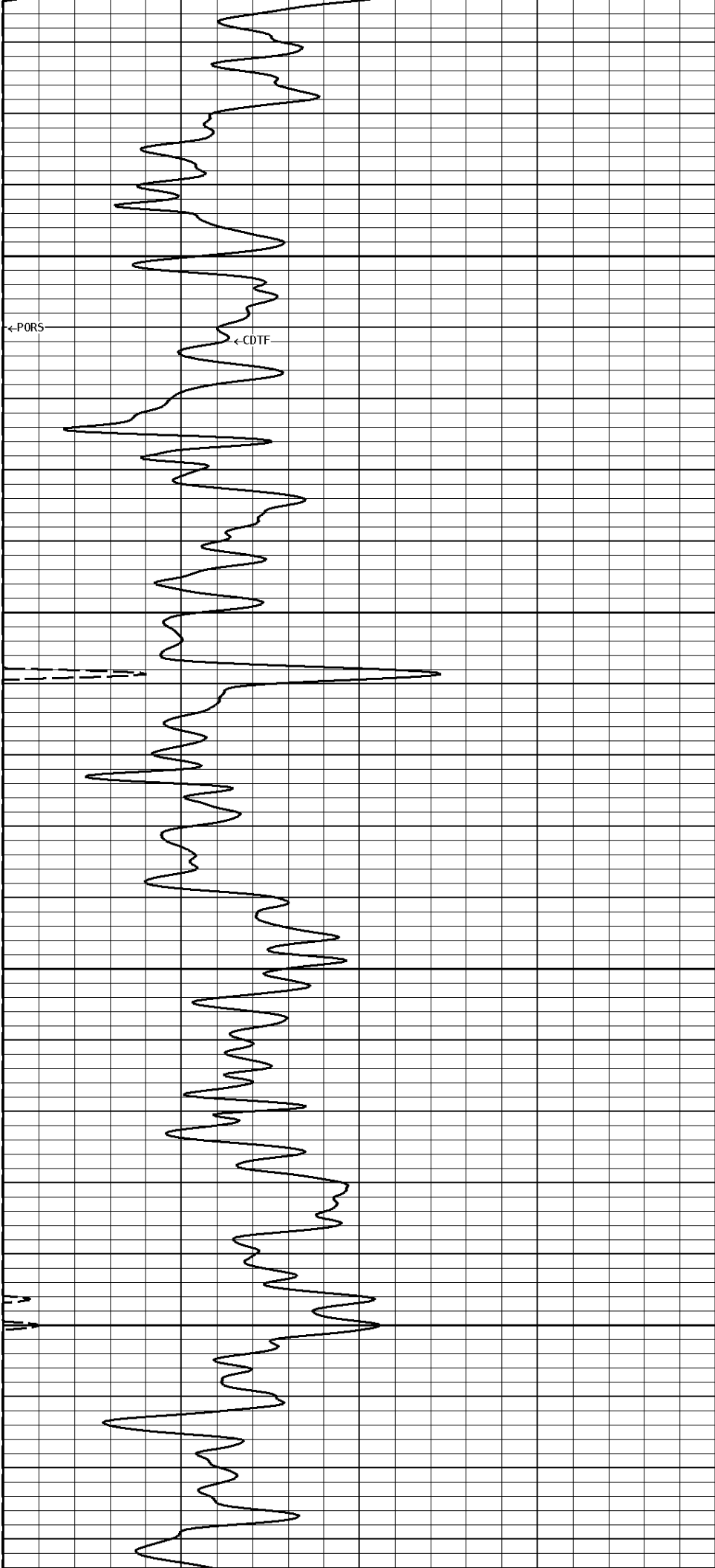
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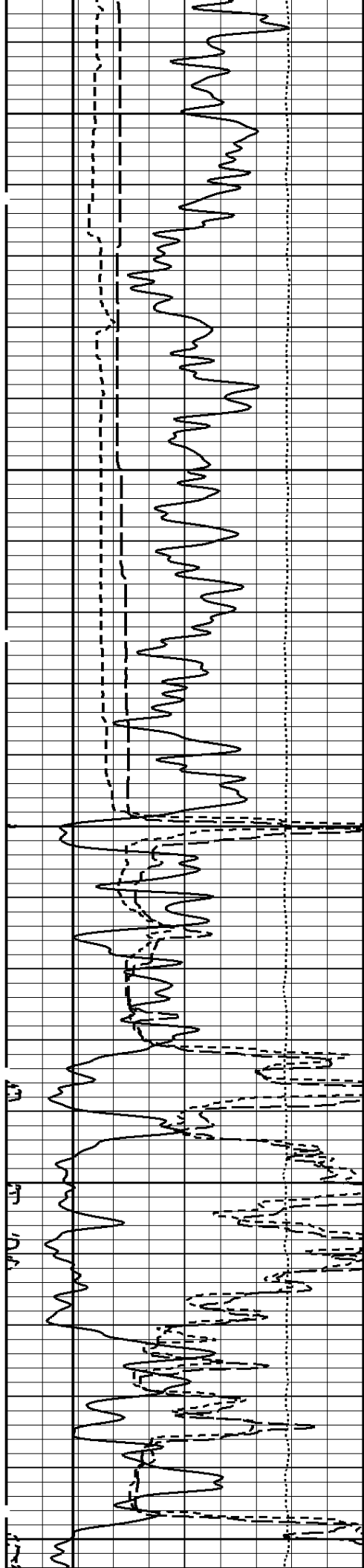




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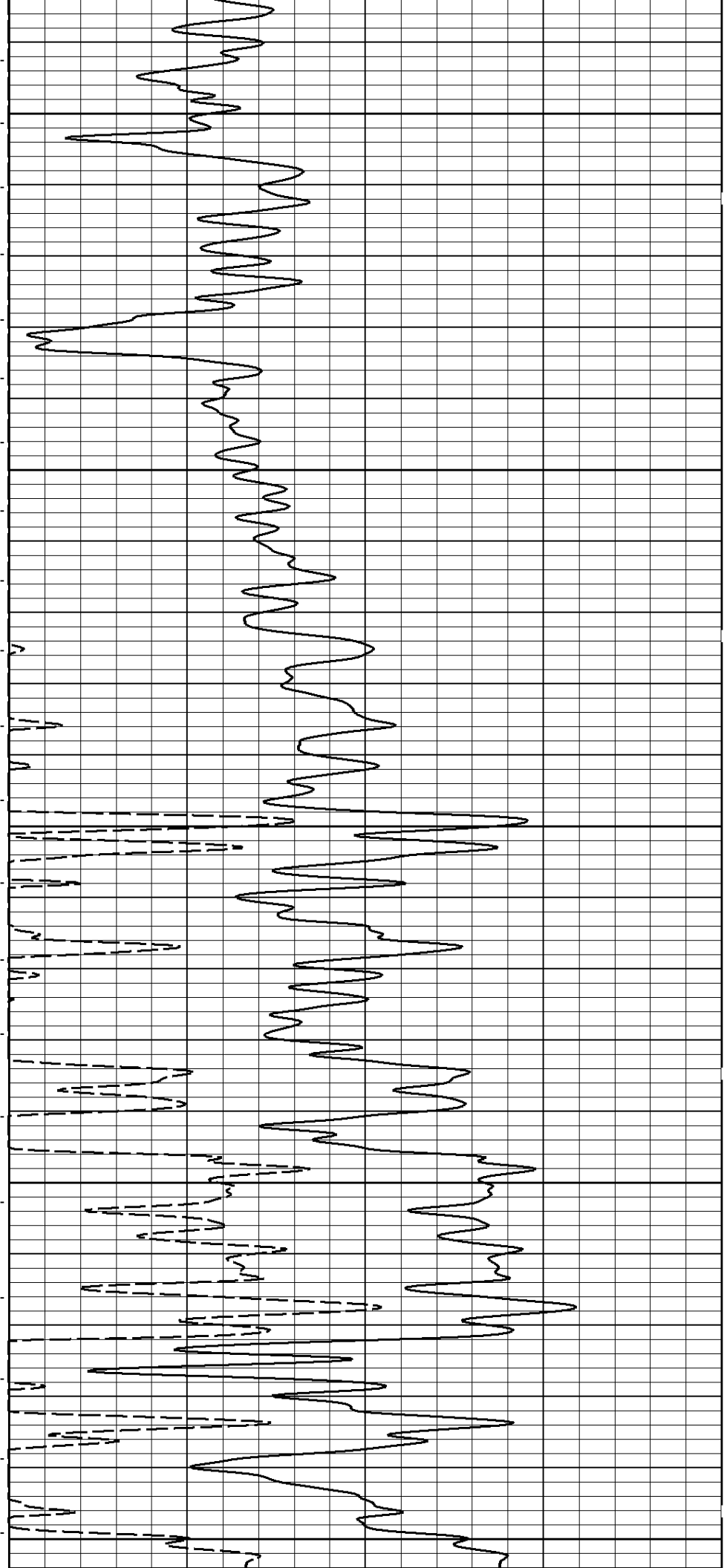


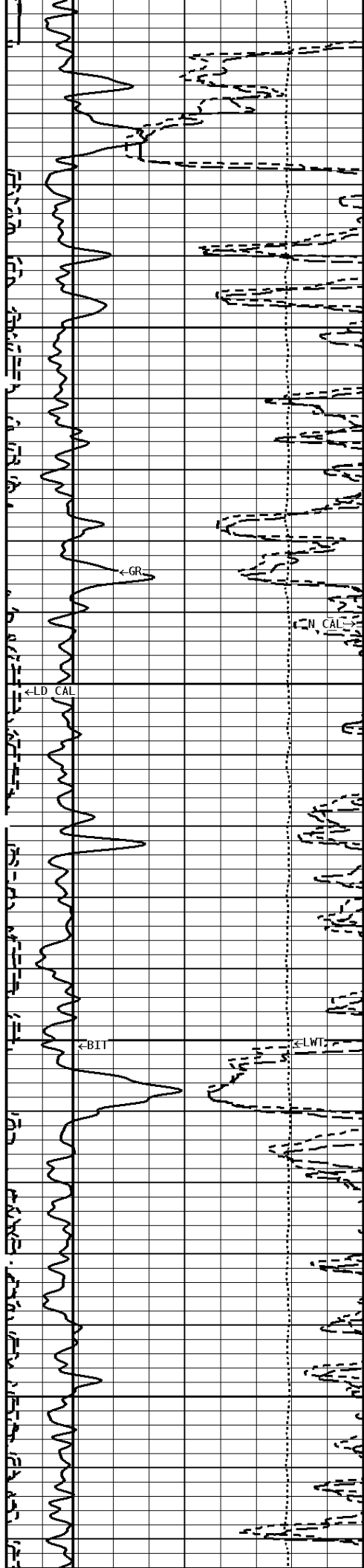


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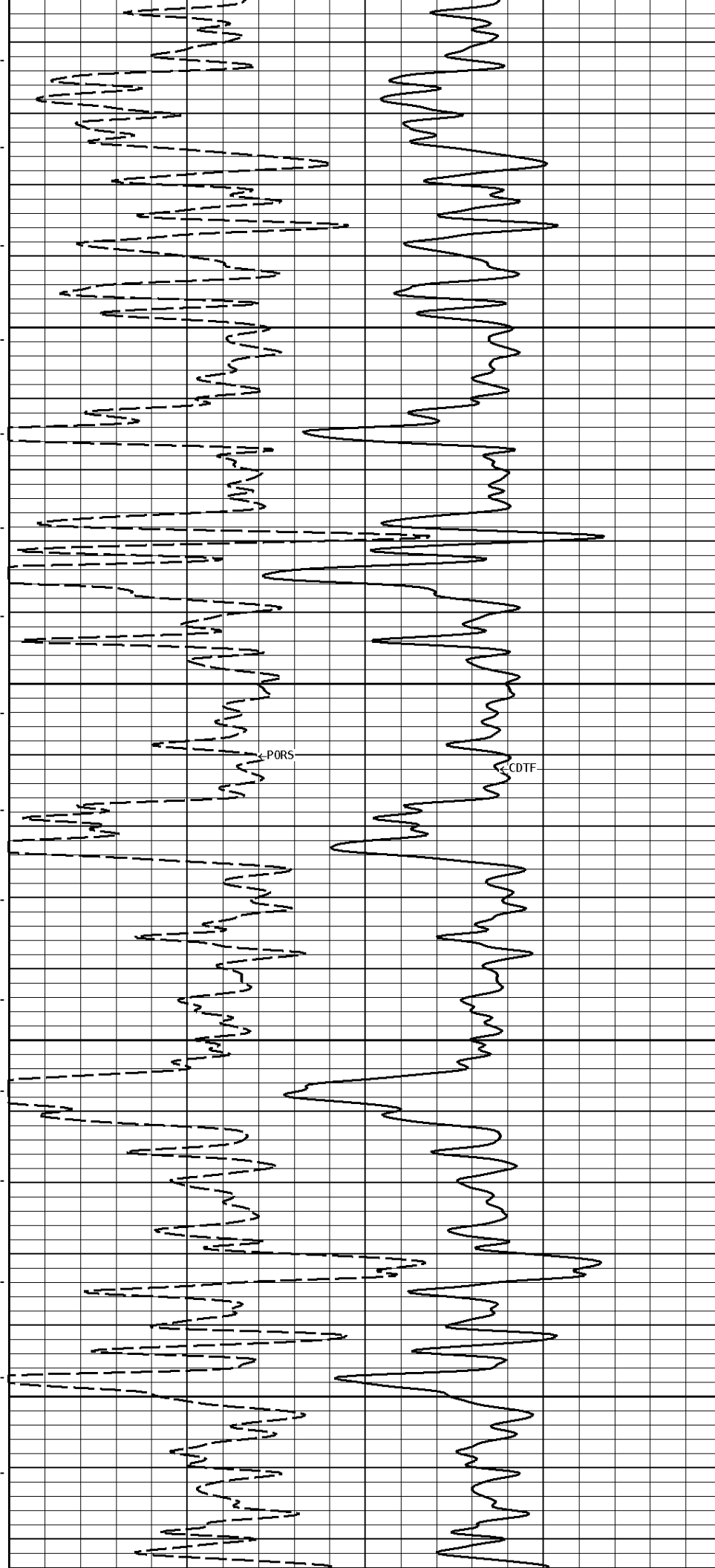
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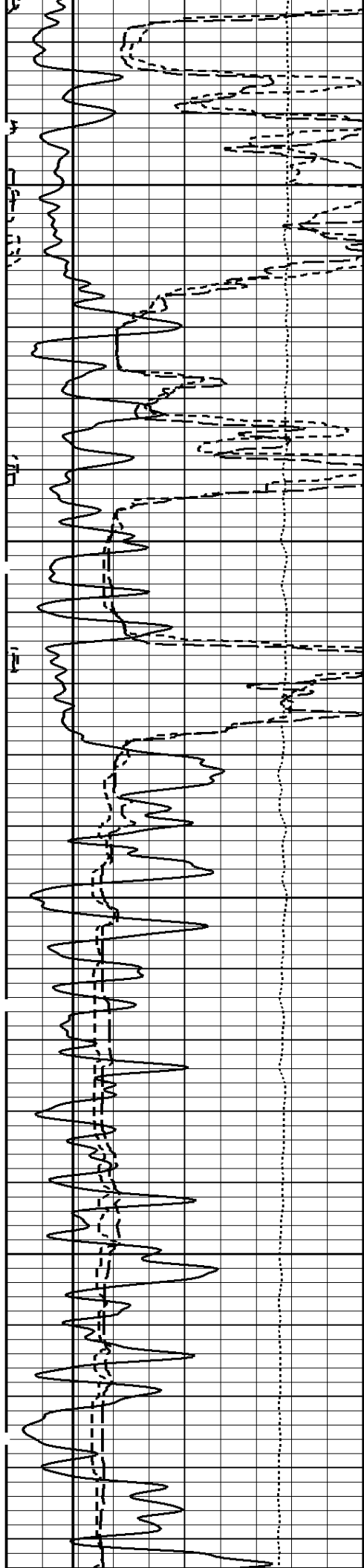




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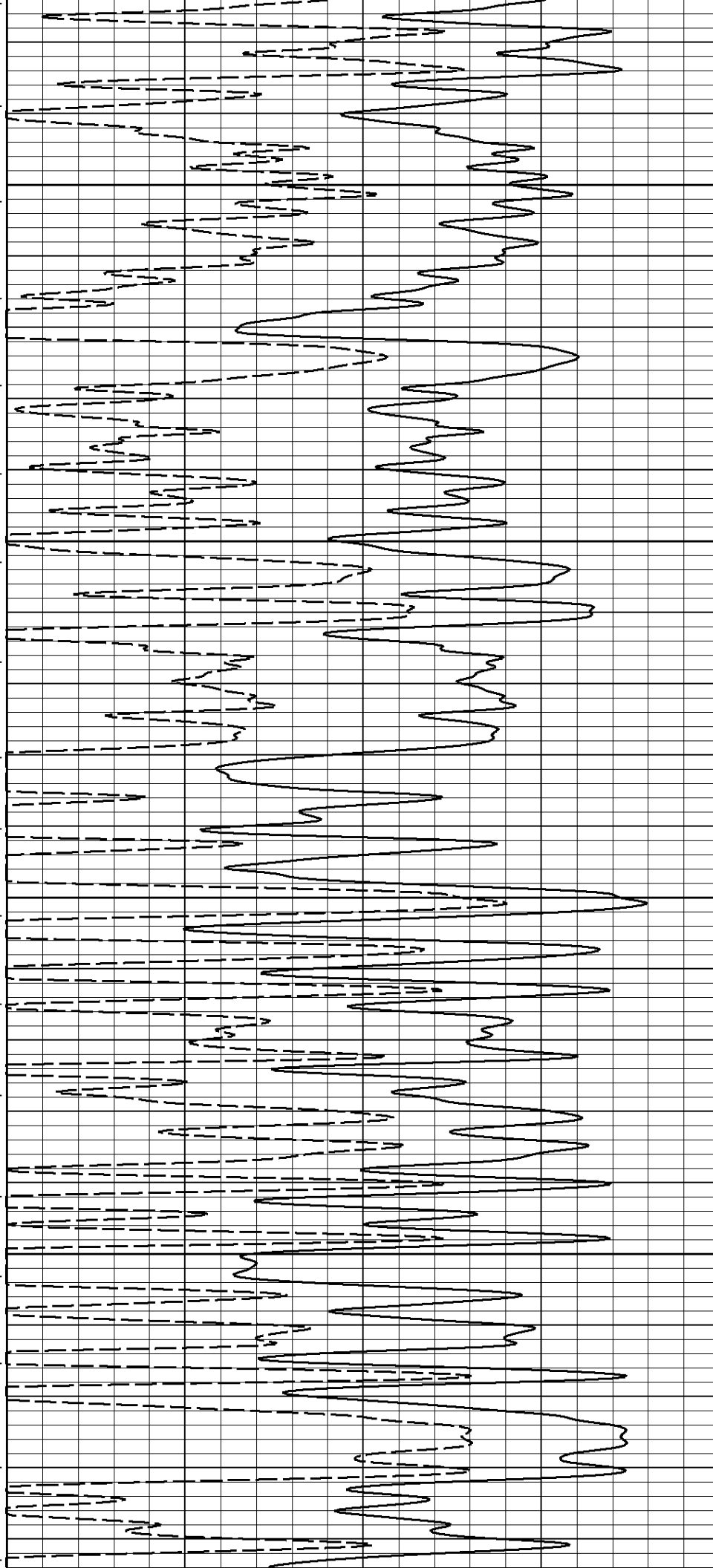
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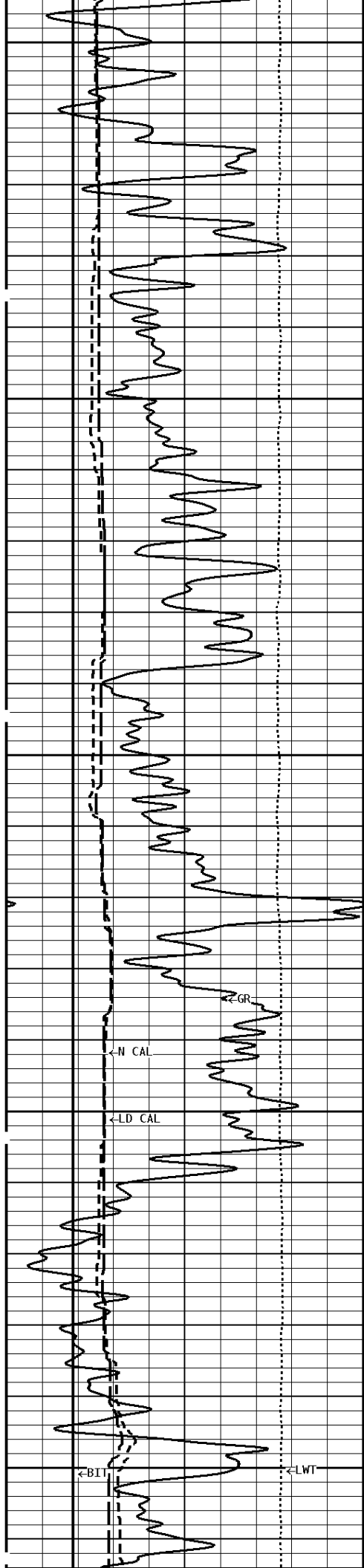




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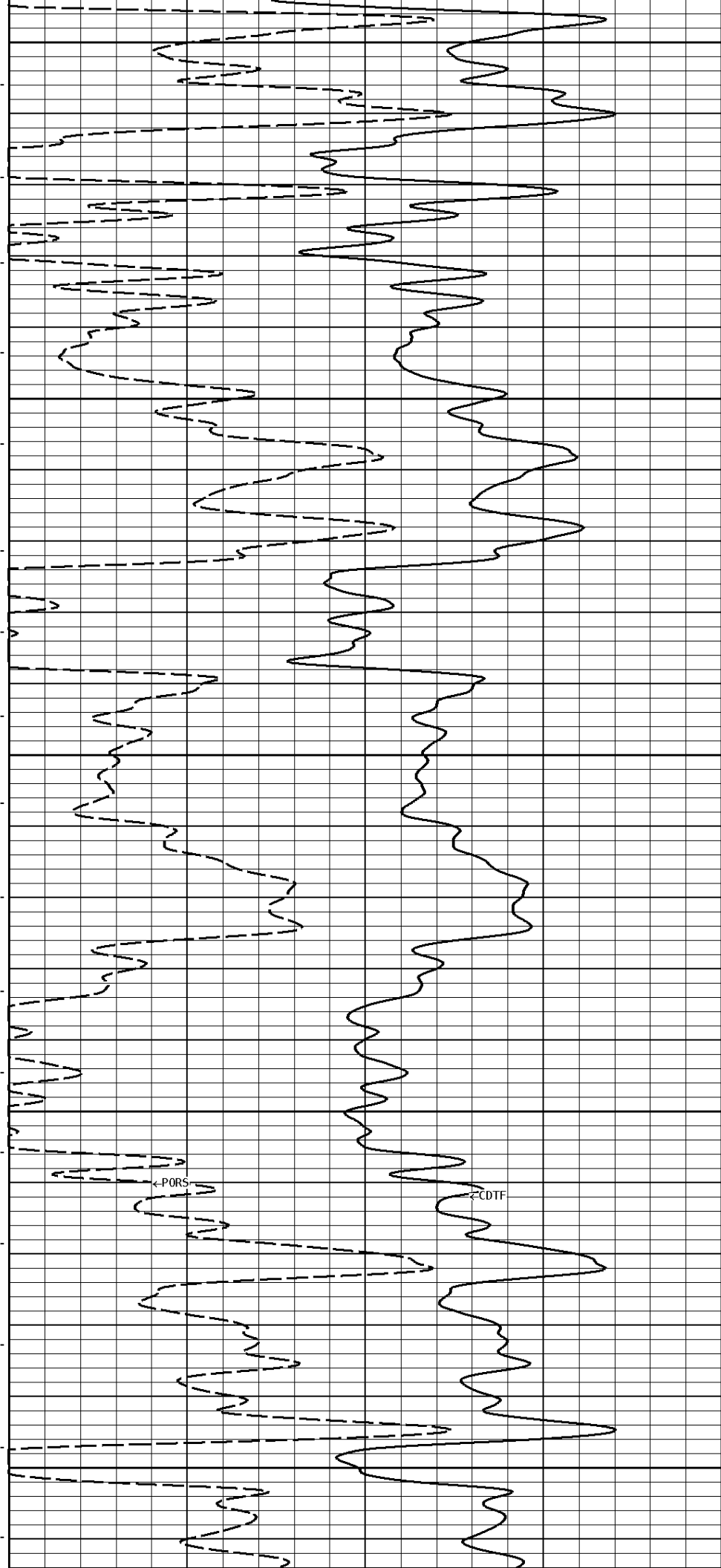
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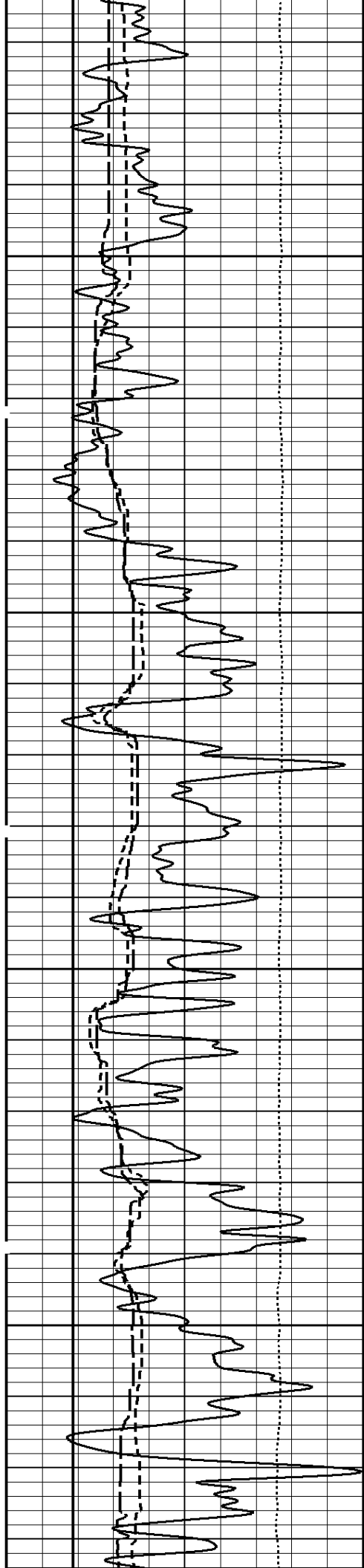




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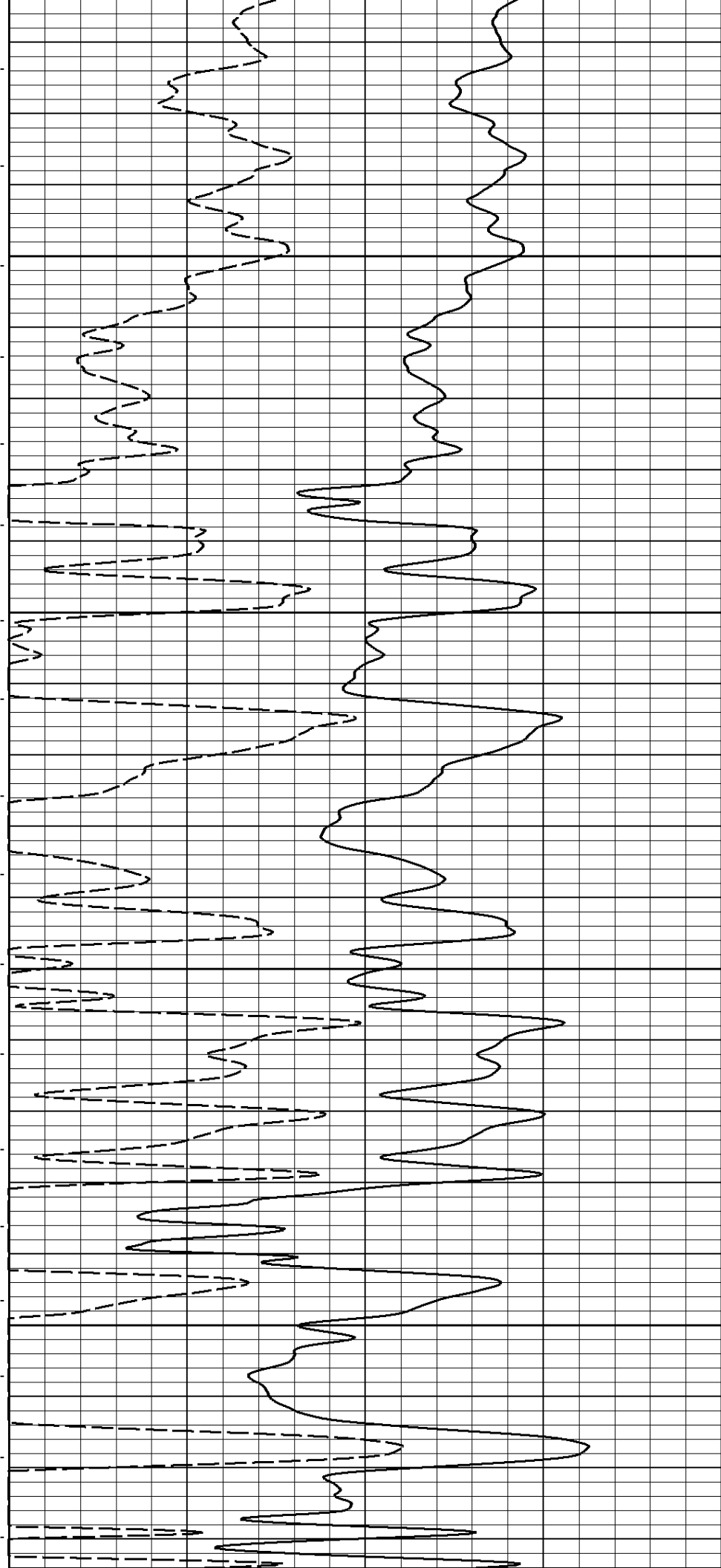
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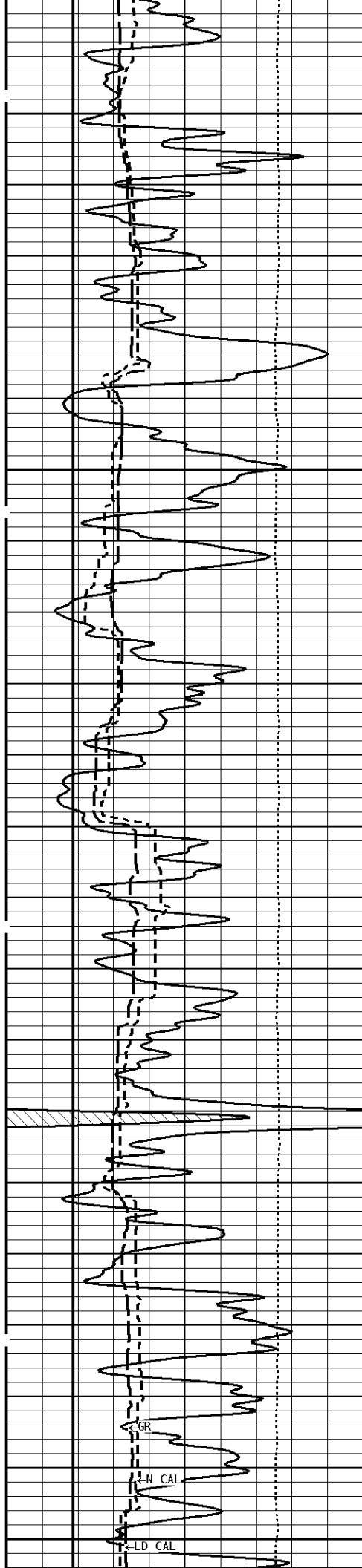




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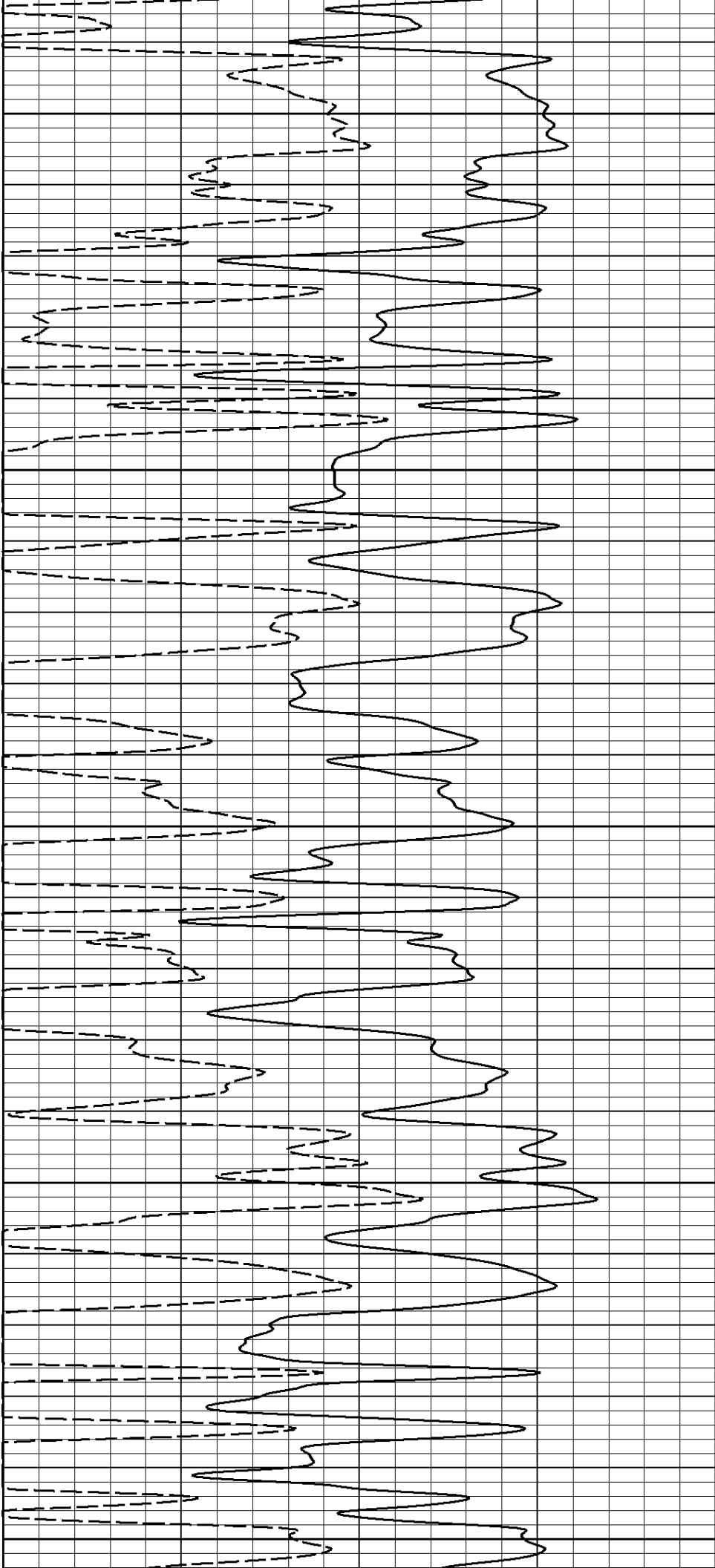


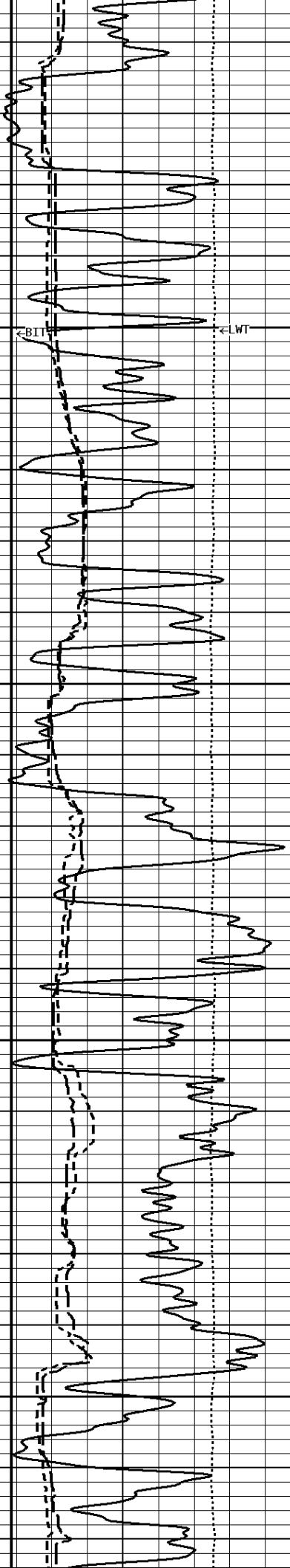


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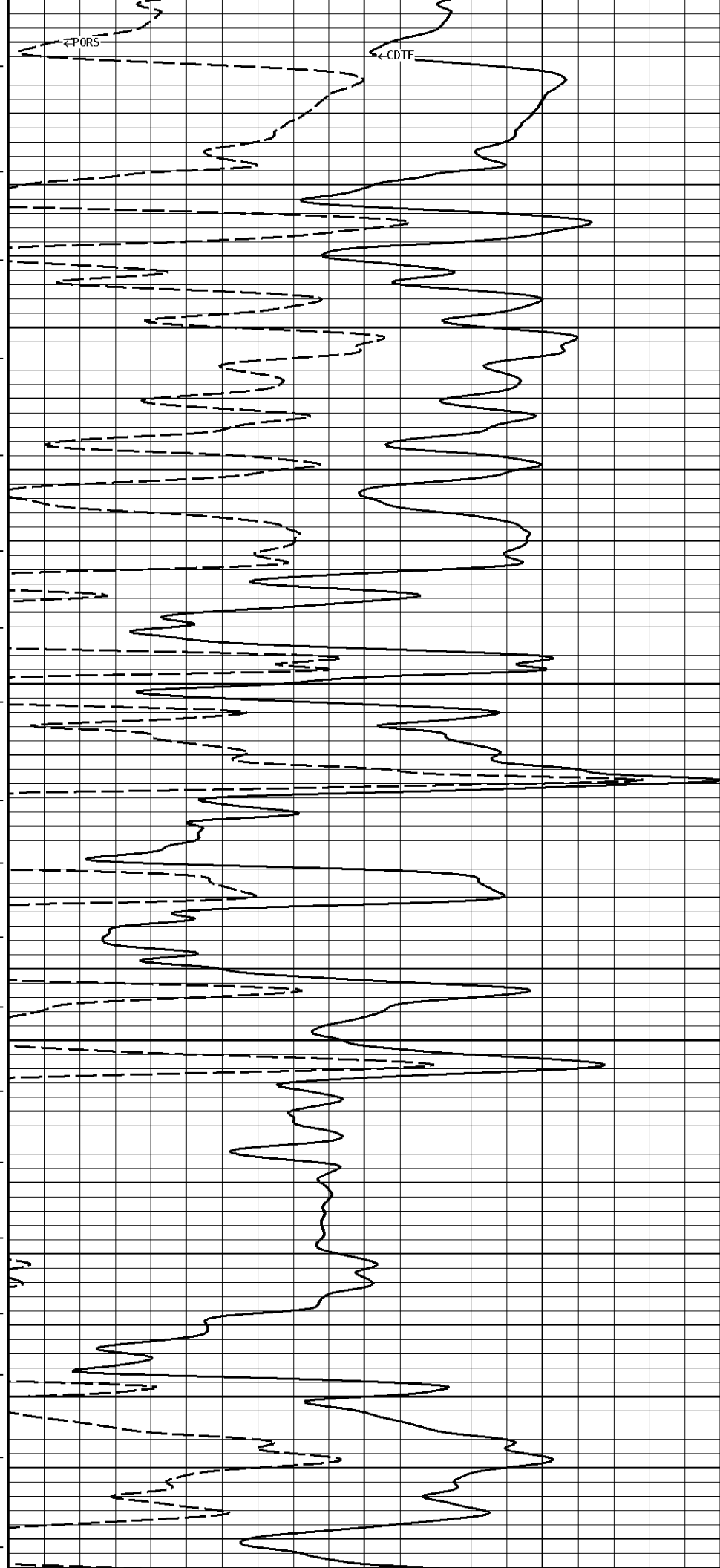
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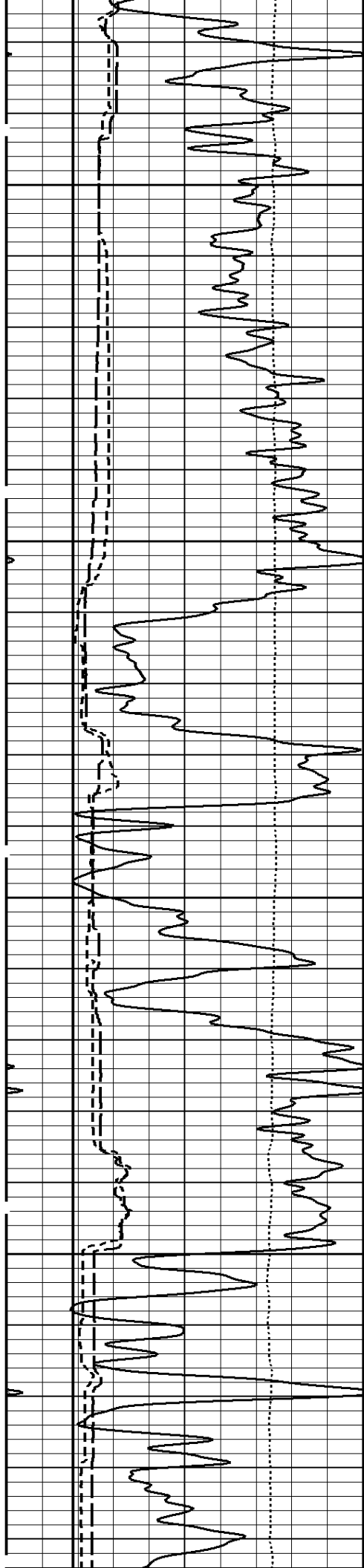




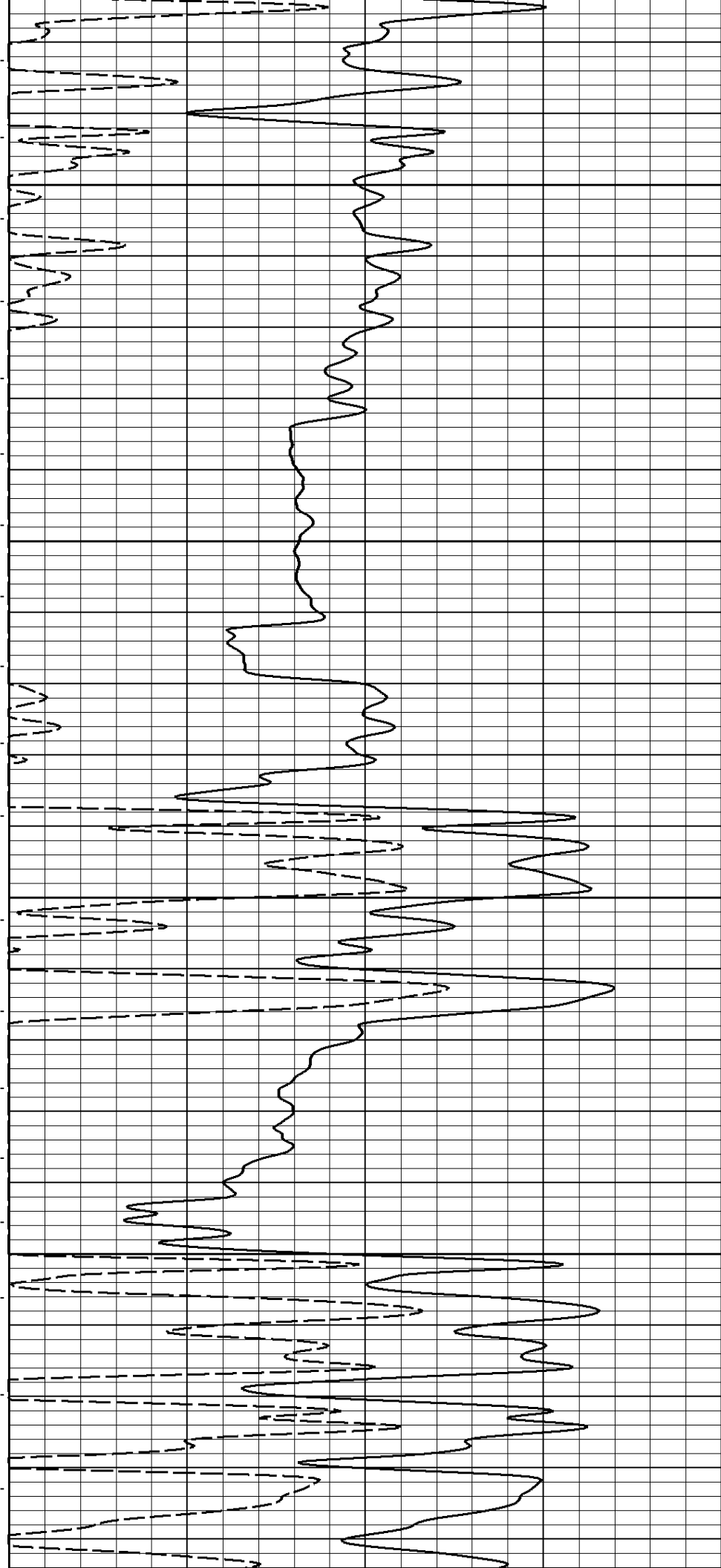
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2300

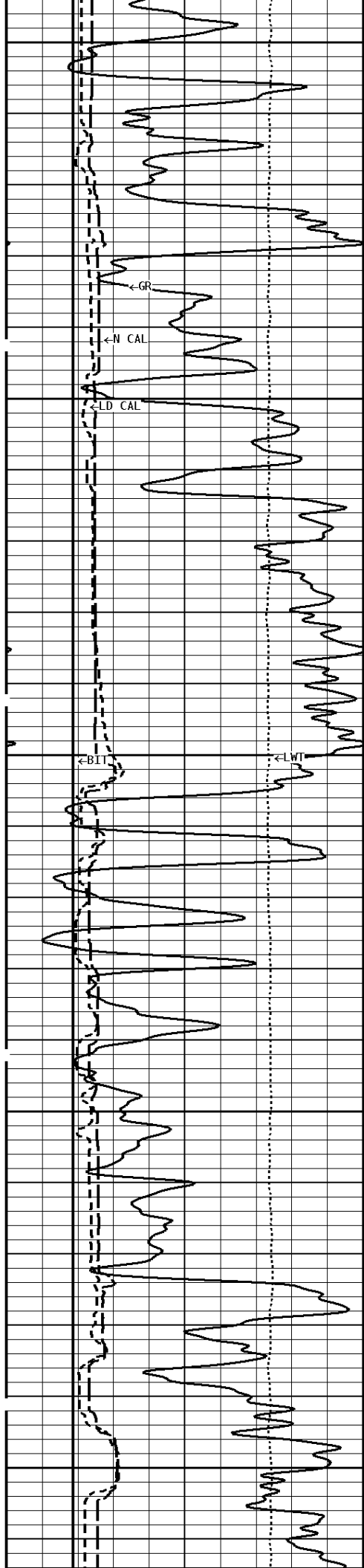




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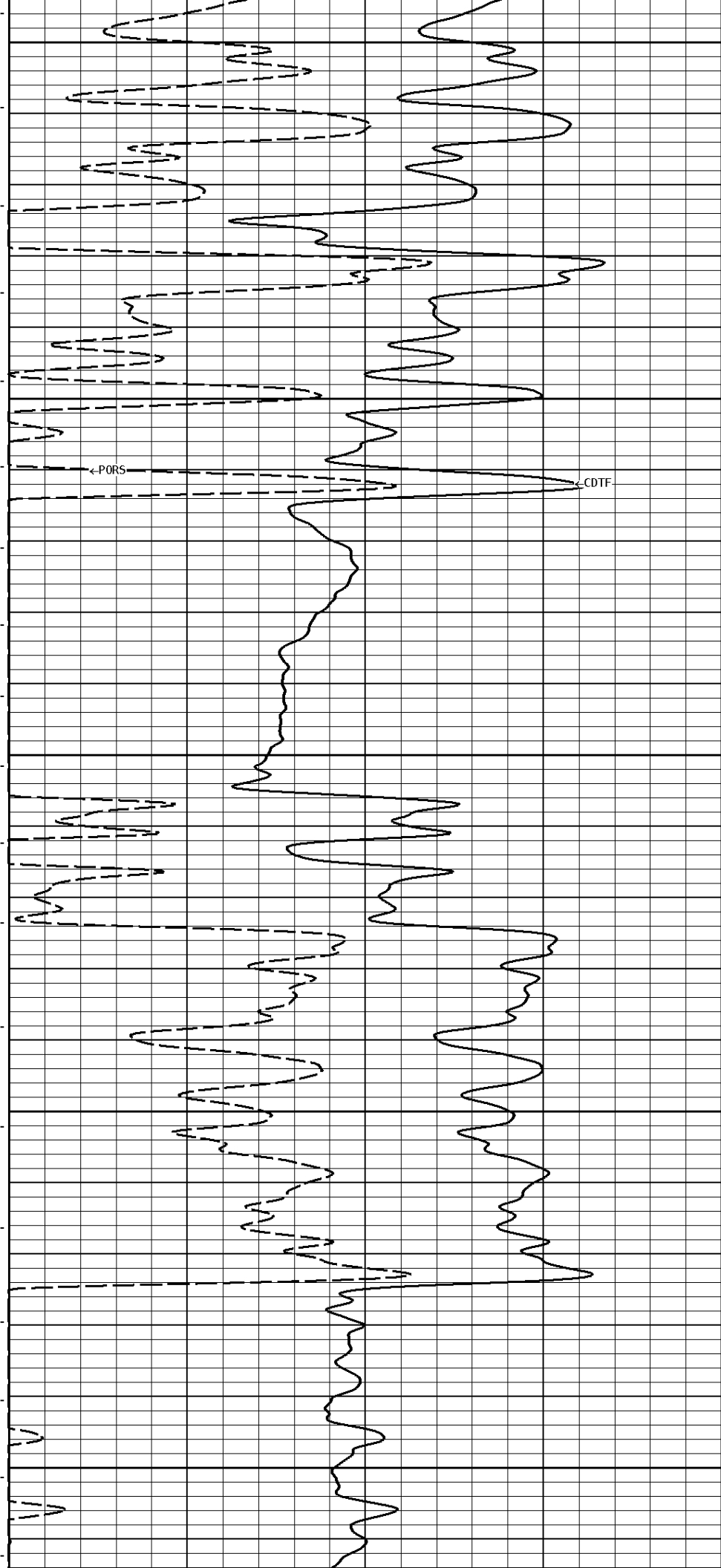


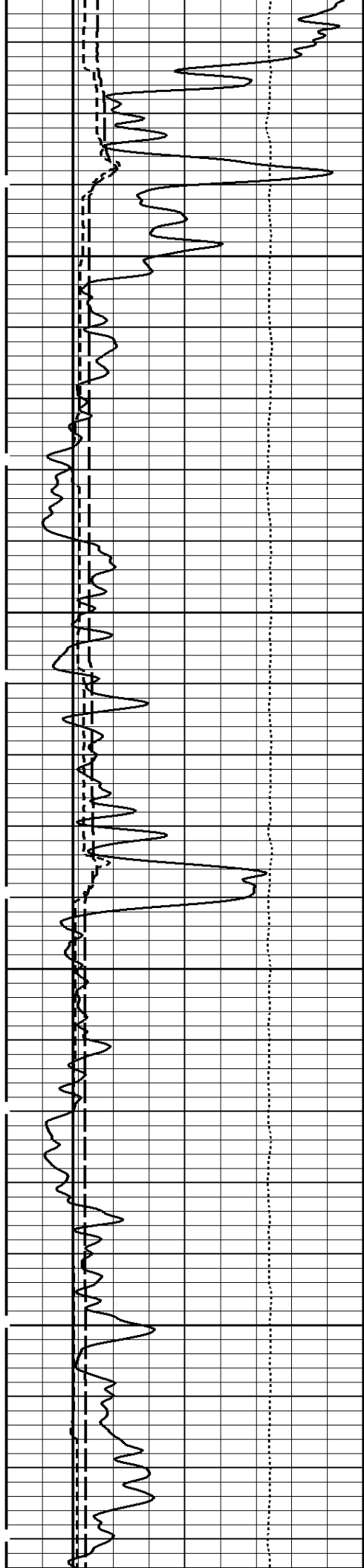
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2600

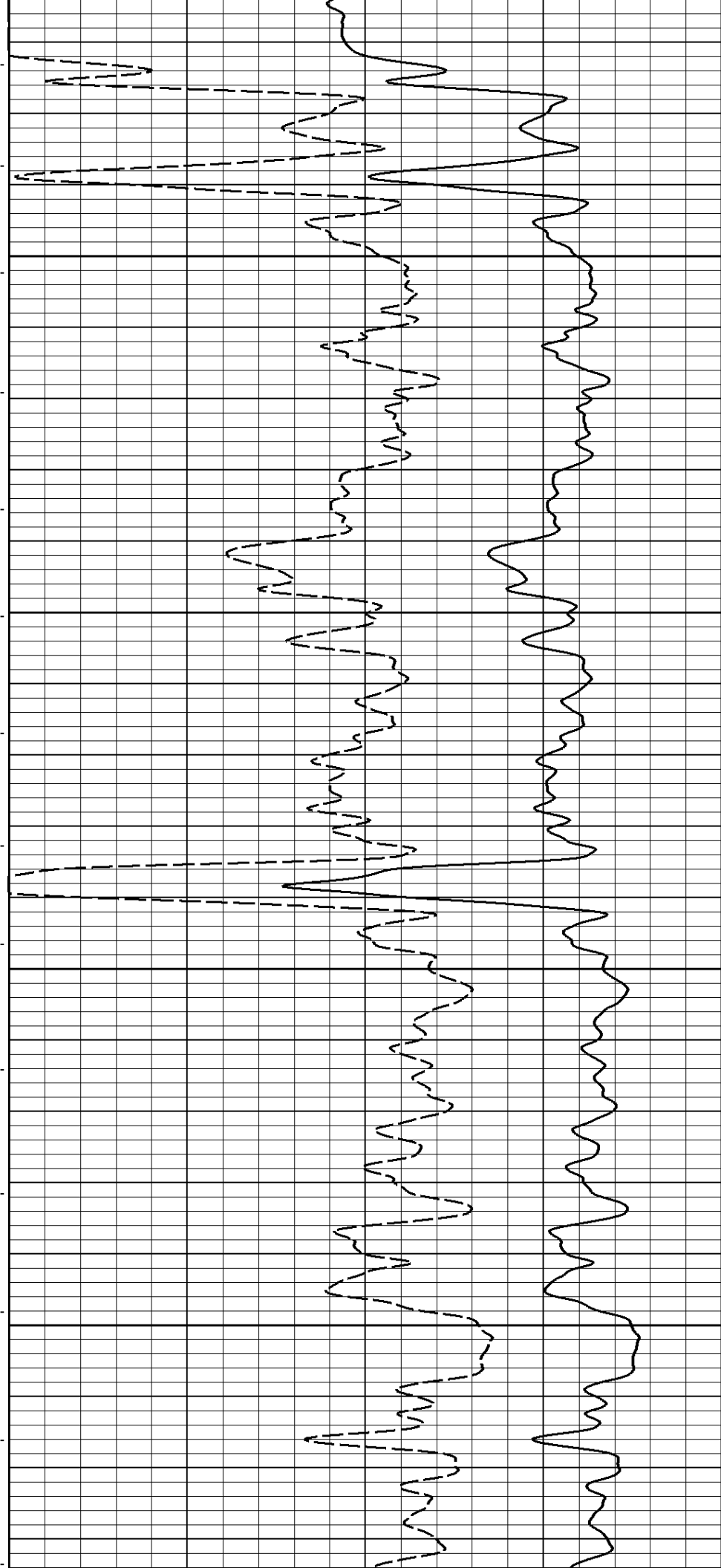
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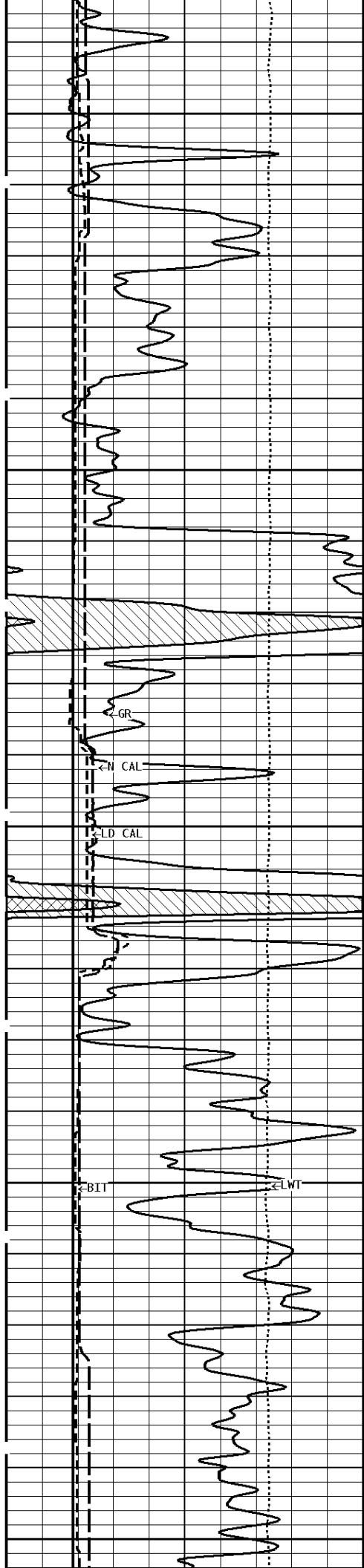




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2900

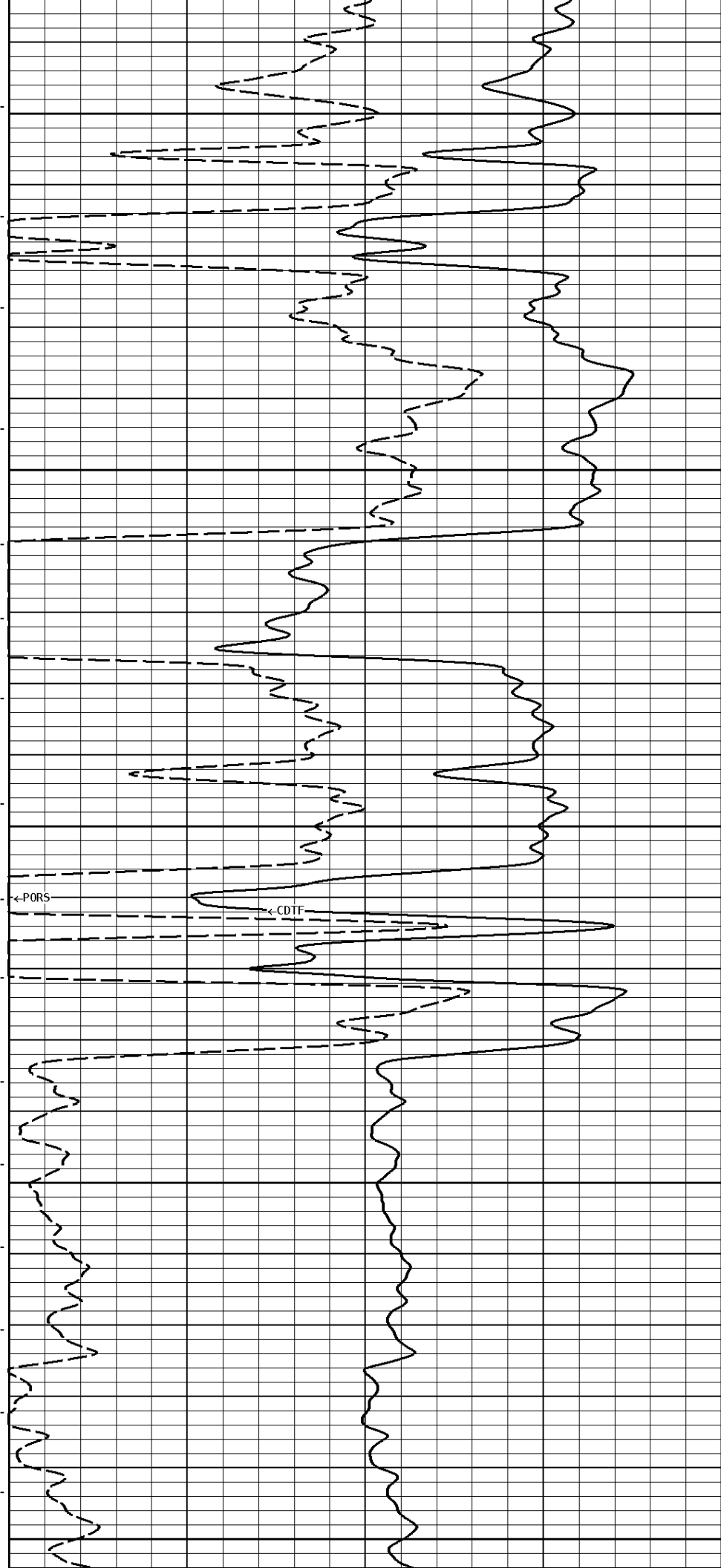


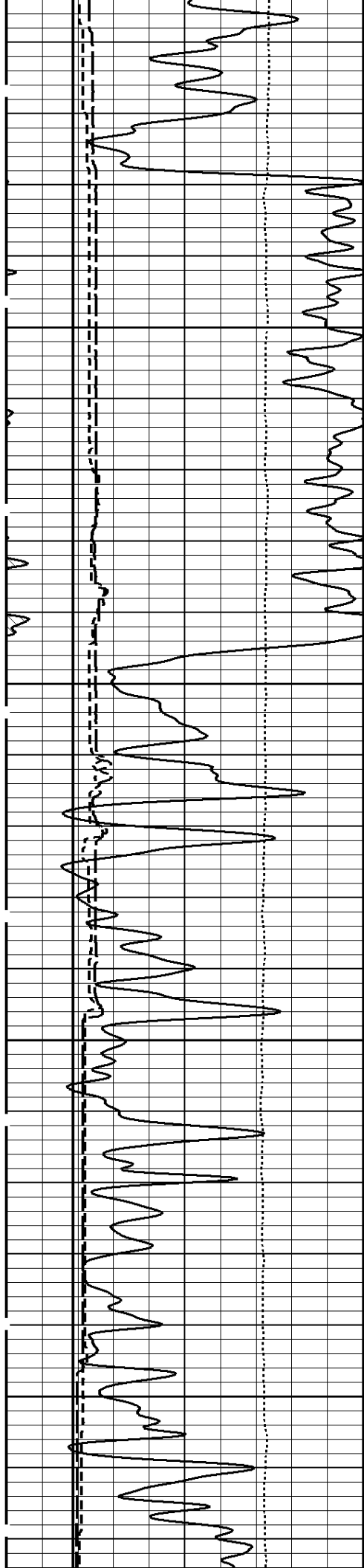


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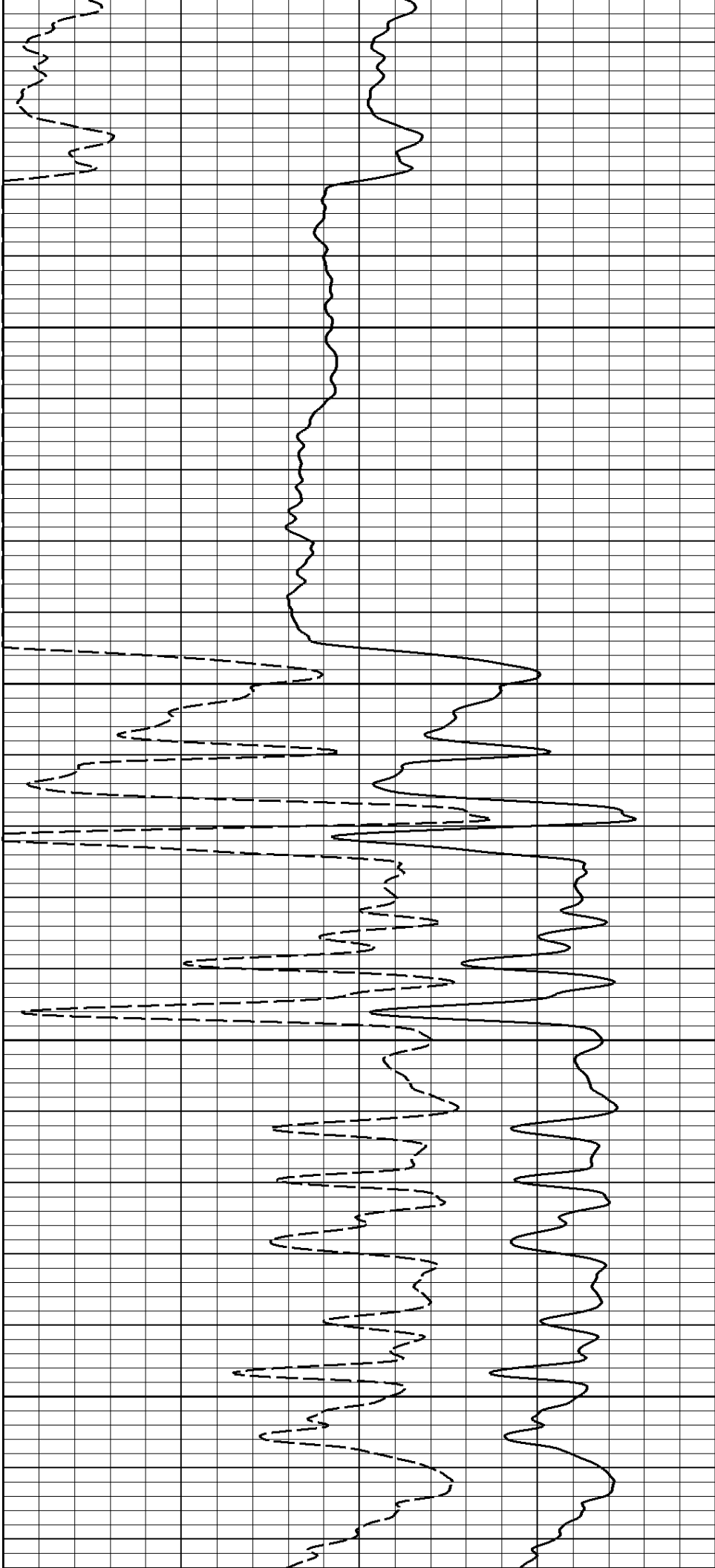
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3200

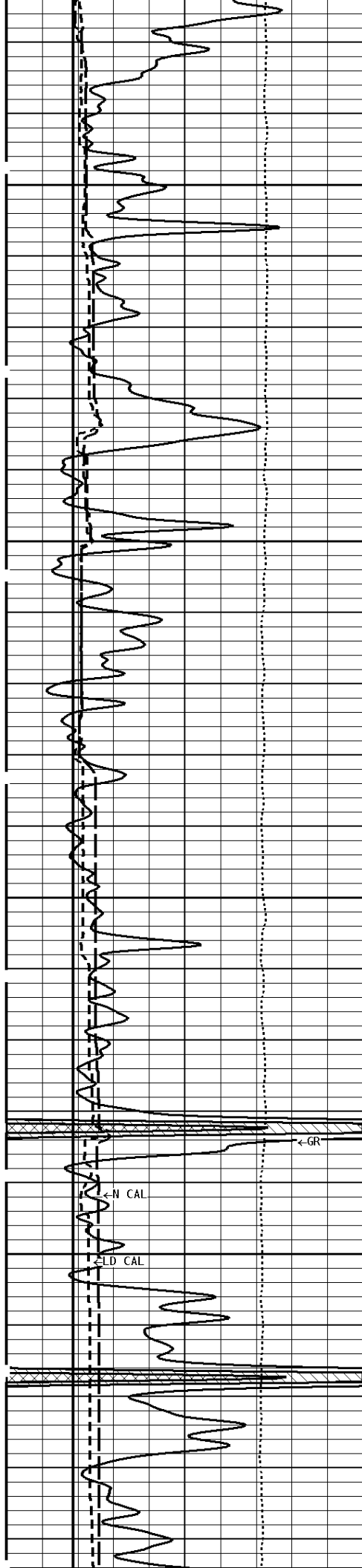




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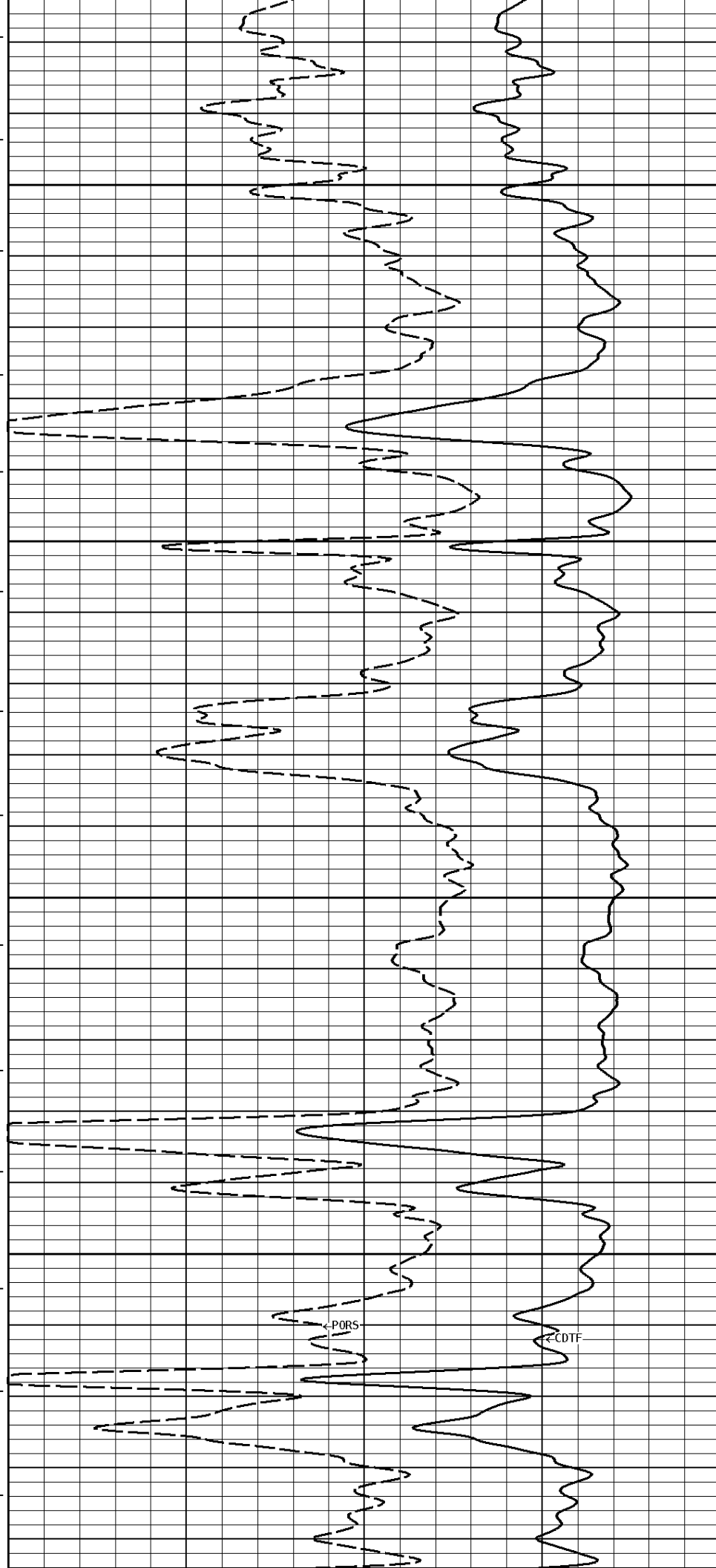


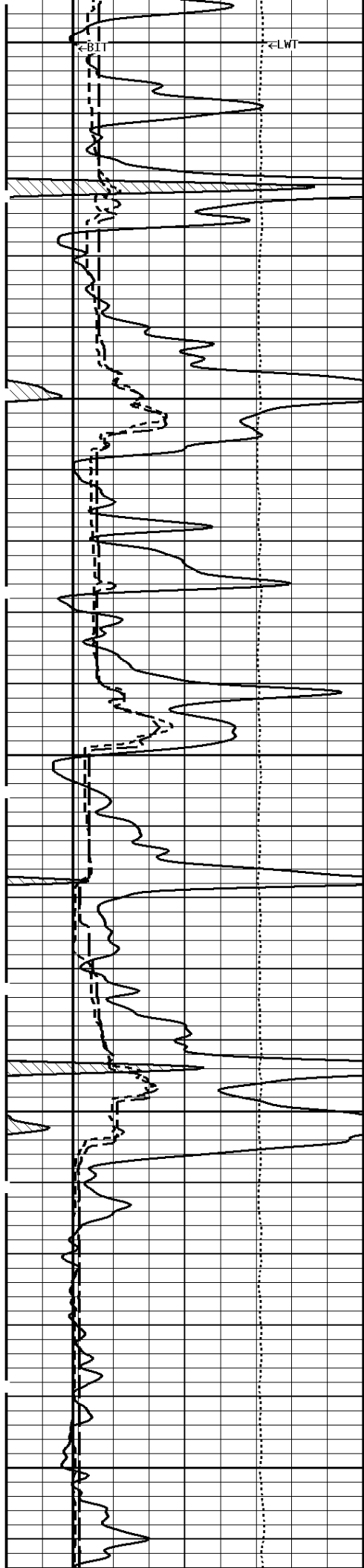
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3500

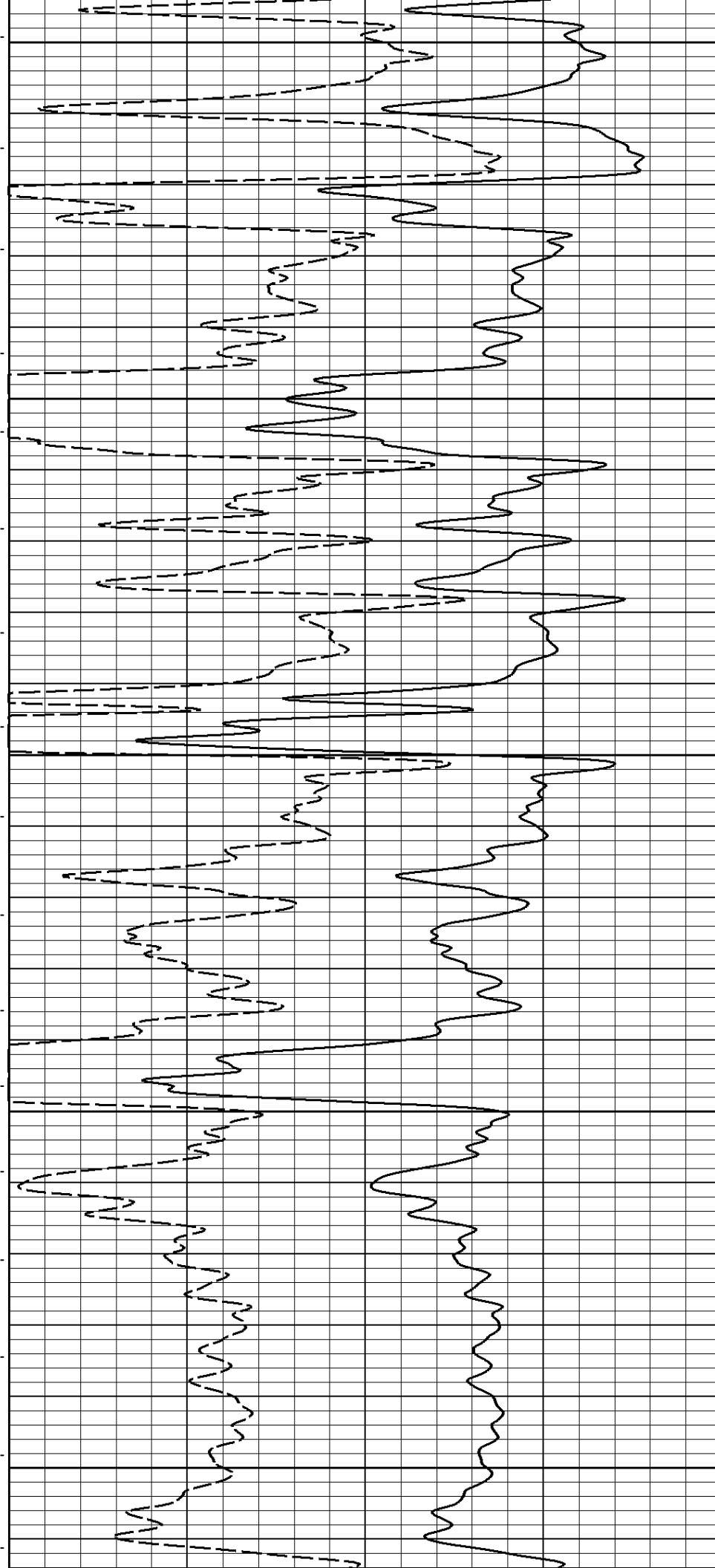
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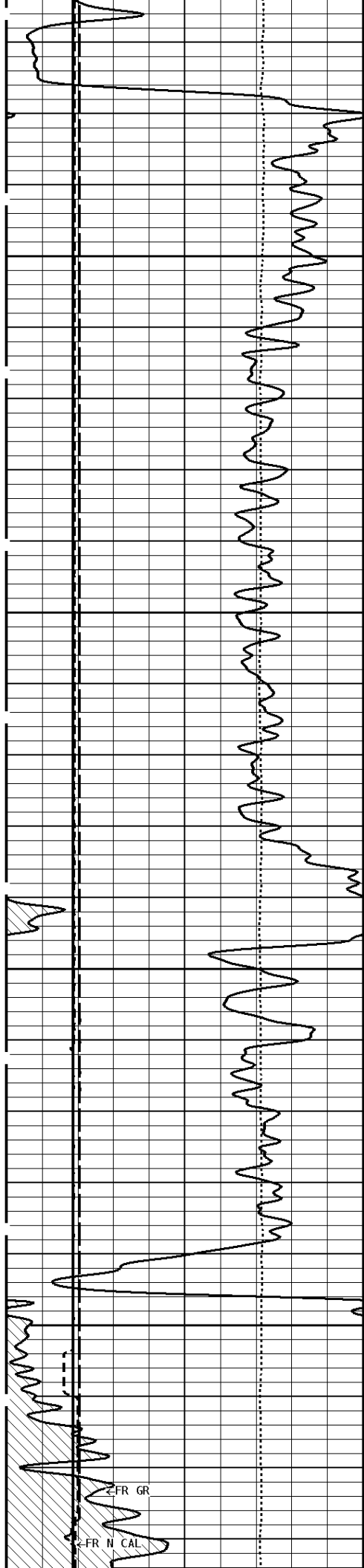




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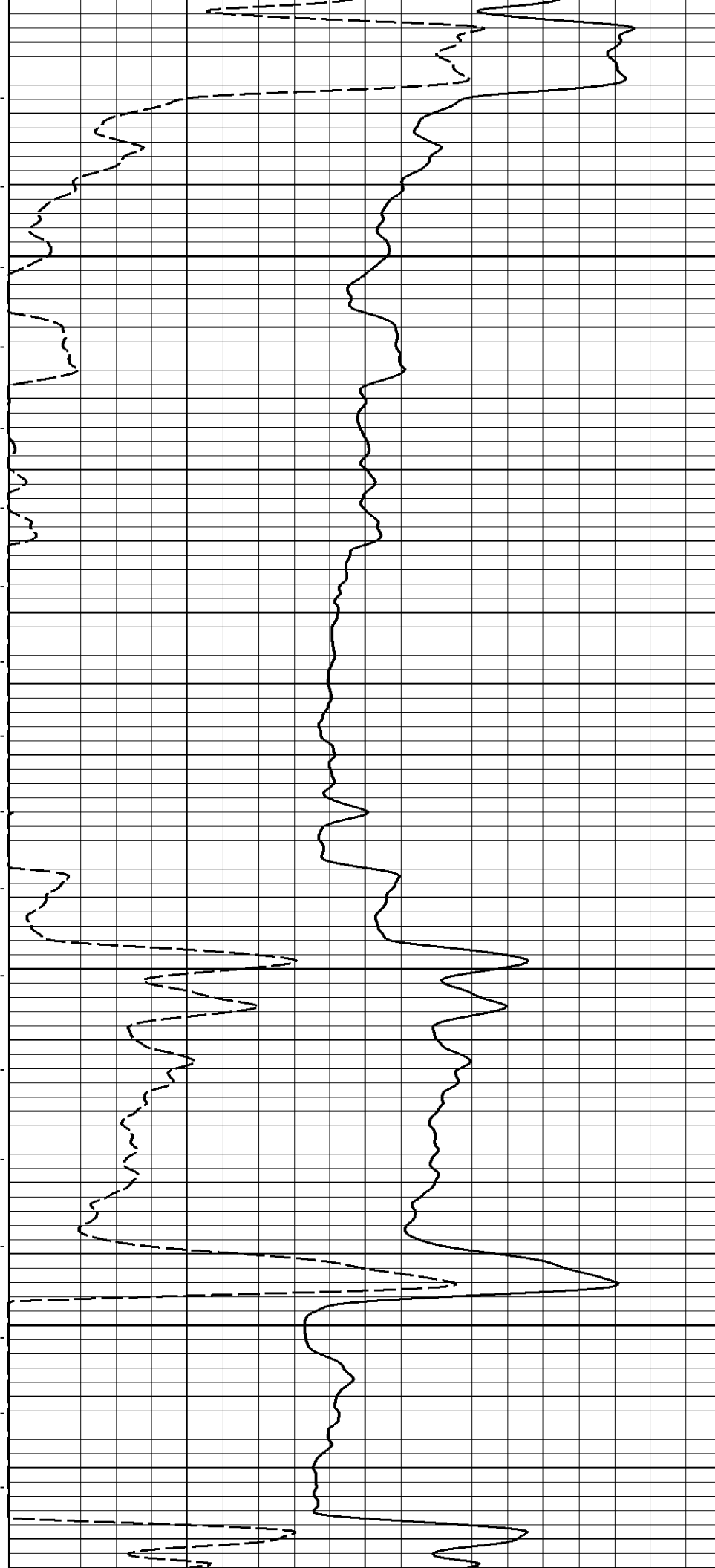
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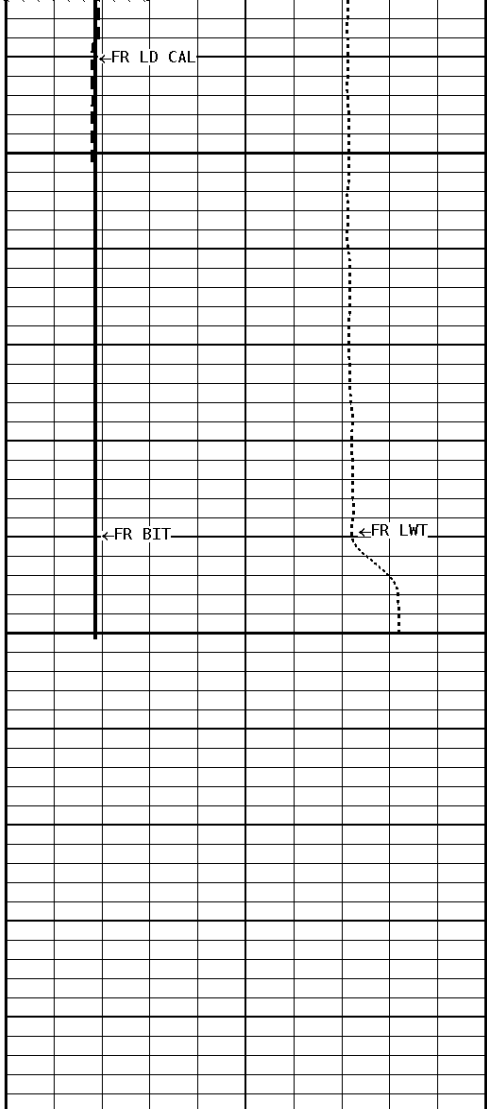
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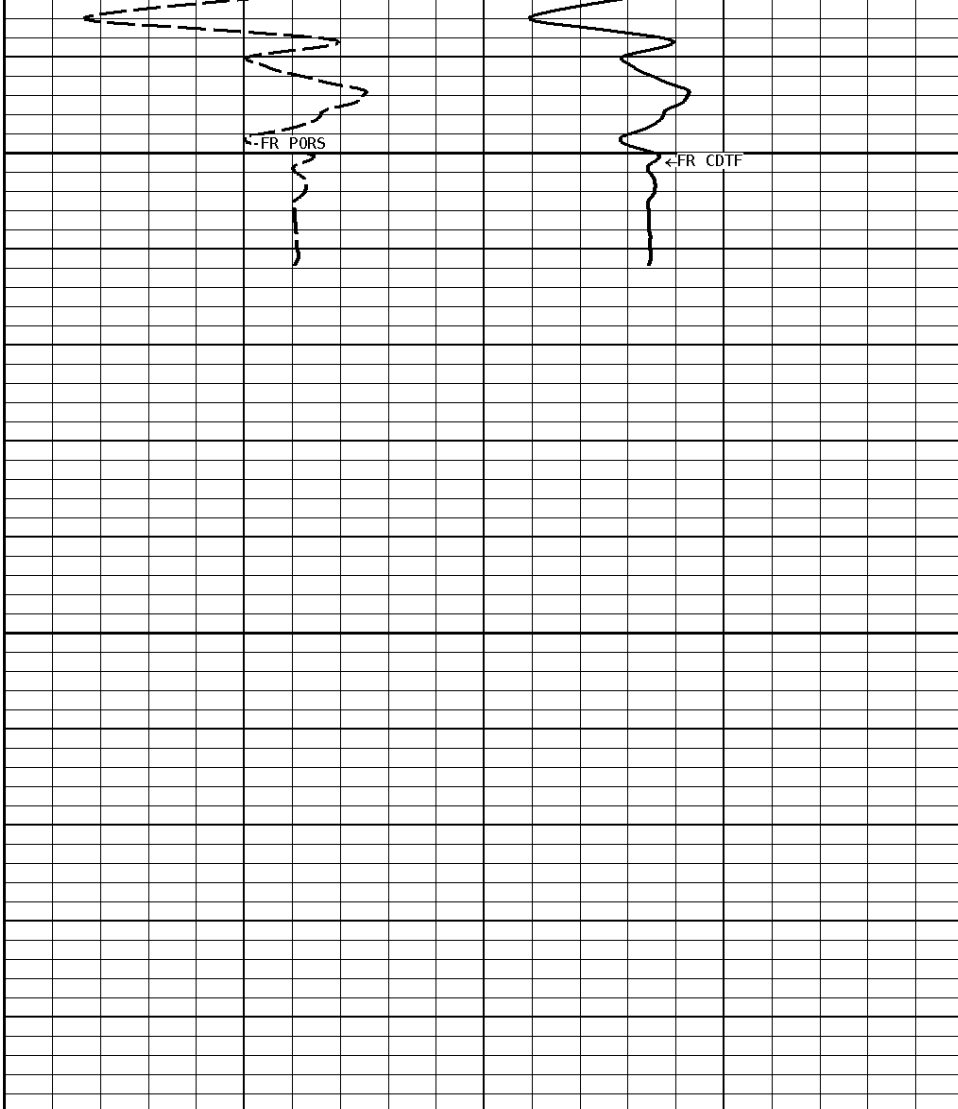


2-FR GR

2-FR N CAL



File #1.1.3



1:240 MAIN 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 6	26 16
NEUTRON (Y) CALIPER INCHES (IN)	
16 6	26 16

SONIC POROSITY PERCENT	
30	-10
COMPENSATED SONIC TRAVEL TIME uSEC/FT	
240 140	140 40

Zone 1 99999.0 to 0.0 Feet

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

Well File: GRAND MESA PREISSER_1-34_DEC-14_QUINT

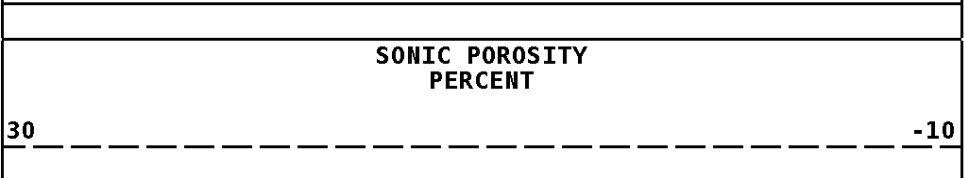
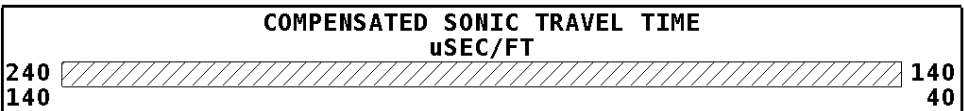
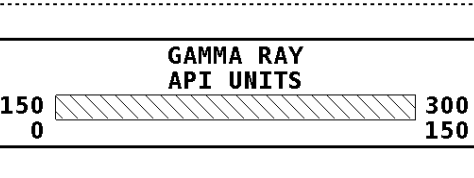
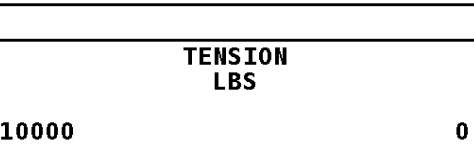
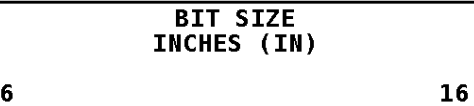
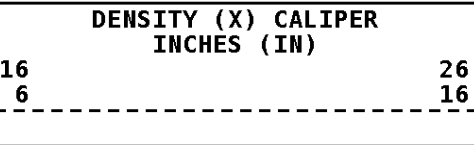
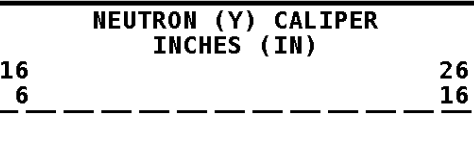
Scale: 1:240 Format: CST-240

Segment: V1.D1.S2 re

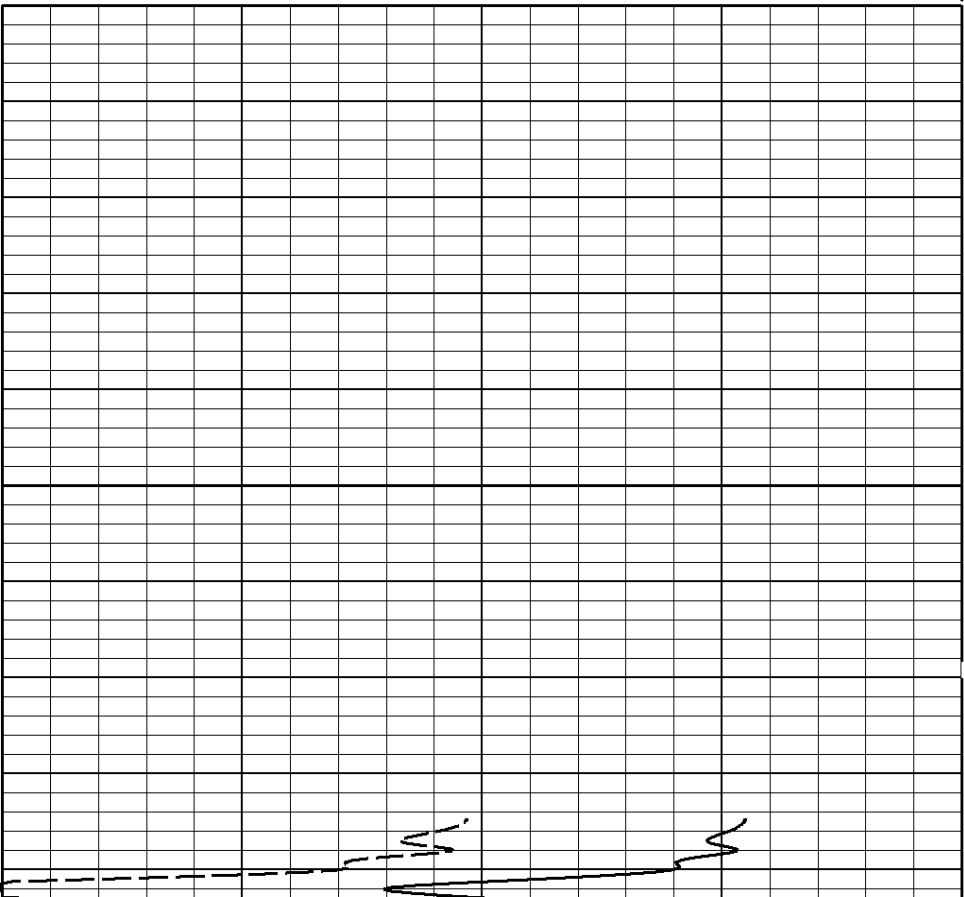
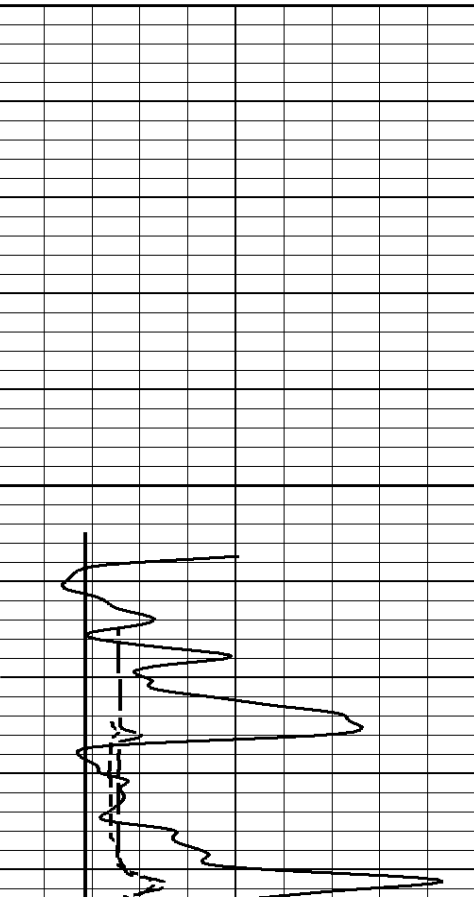
Acquired: 2019-12/14 12:05 3.4.1-13972

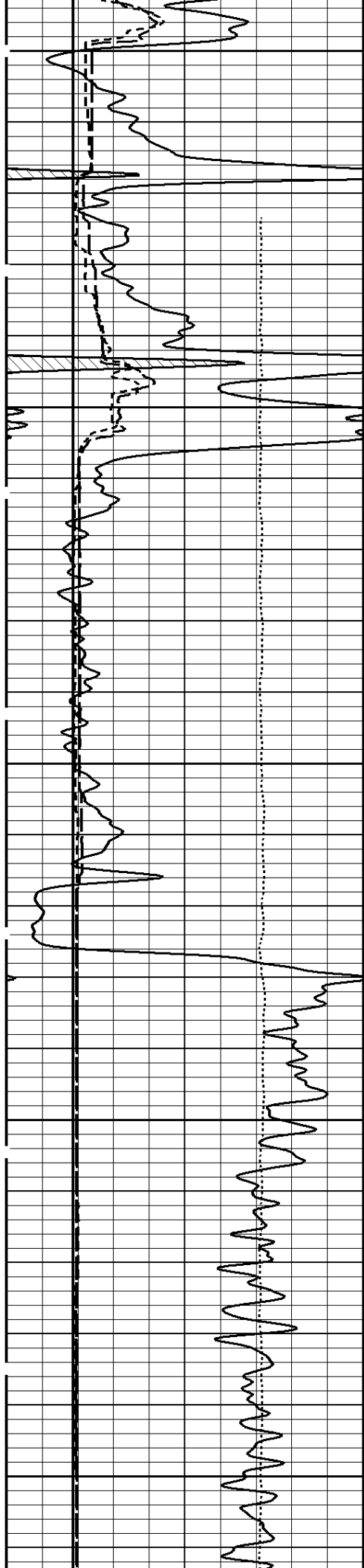
Reference: 0

Processed: 2019-12/14 12:05 3.4.1-13972



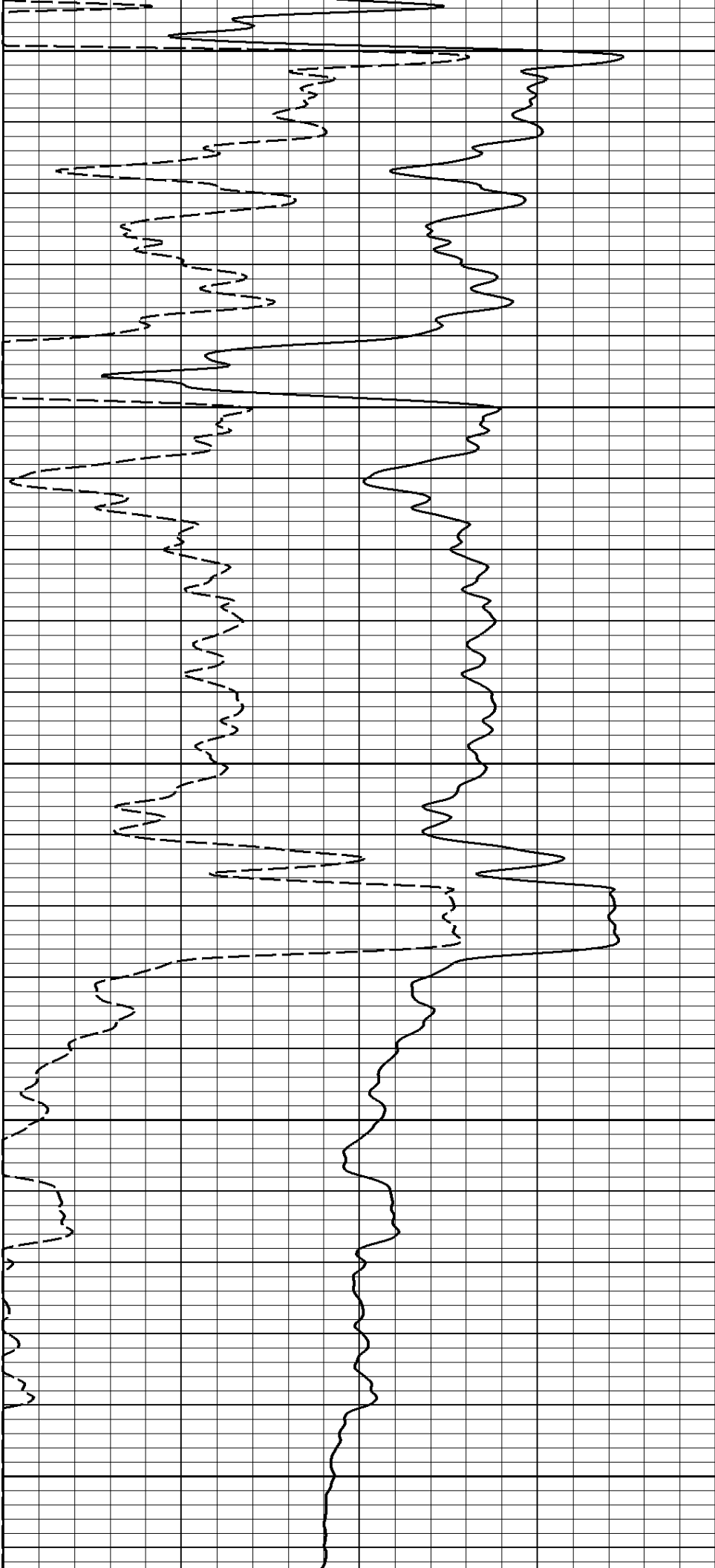
1:240 REPEAT SECTION

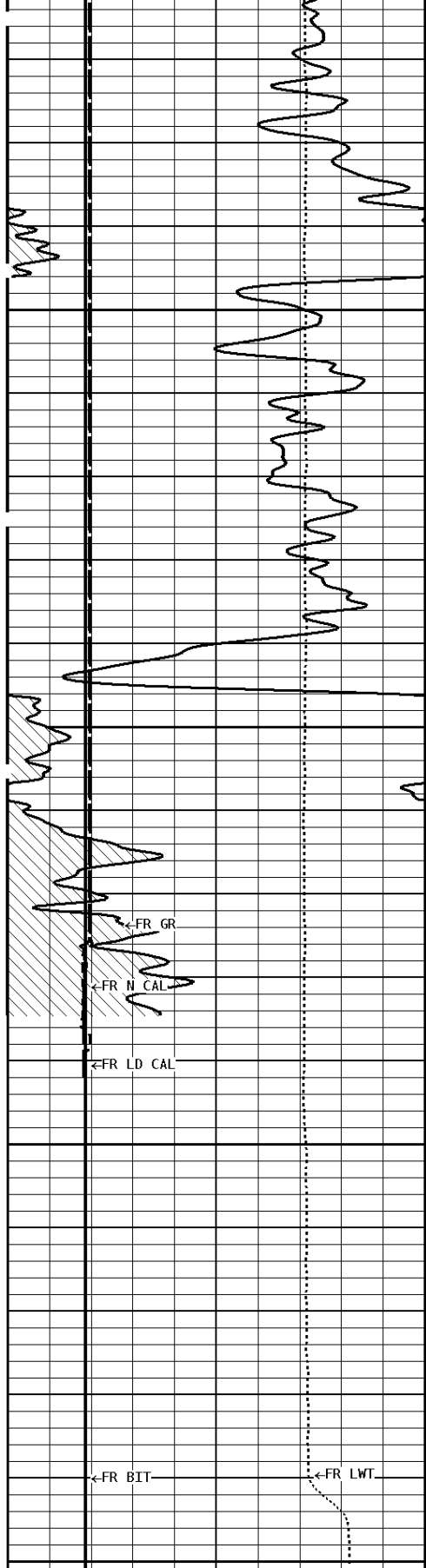




3800

3900

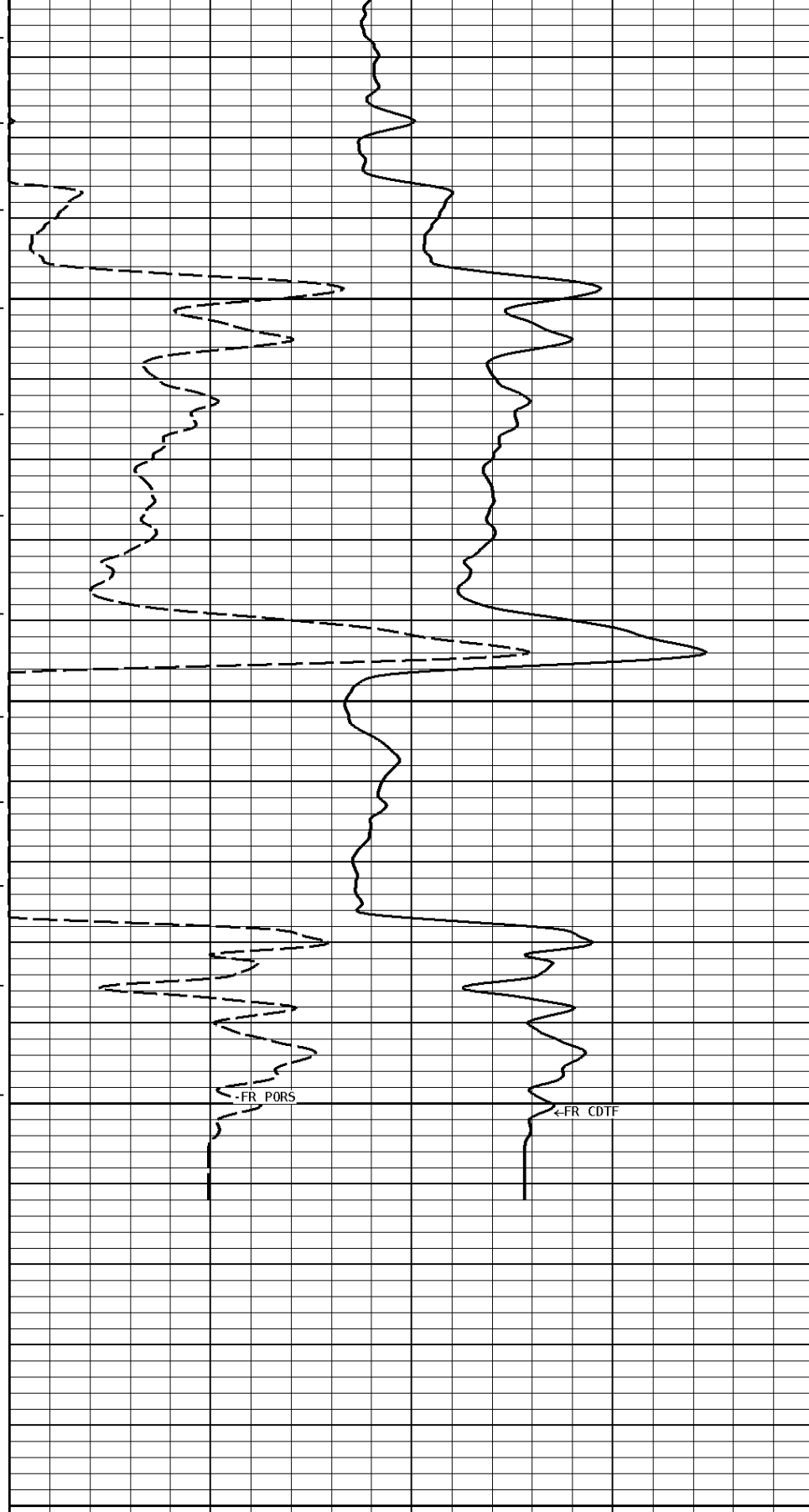




4000

4100

4140



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 6	26 16
NEUTRON (Y) CALIPER INCHES (IN)	
16 6	26 16

SONIC 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-B					
Performed : 24-JUN-2019			Time : 12:20		
Sensor Suite : GR-GR5			ID : GRT-BC-038		
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig		
	36	266	160	GRAPI	
Shop Calibration CST-AD					
Performed : 26-MAY-2003			Time : 16:03		
Sensor Suite : SON-ANA			ID : CST-AB-24		
	Measured	Transit Time	Calibrated	Units	
T/R Pair					
T1R1	208.5		208.5	uS	
T2R2	208.5		208.5	uS	
T1R2	322.5		322.5	uS	
T2R1	322.5		322.5	uS	
	Measured	Amplitude	Calibrated	Units	
T/R Pair					
T1R1	90.00		90.00	mV	
T2R2	90.00		90.00	mV	
T1R2	78.00		78.00	mV	
T2R1	78.00		78.00	mV	