

6102376

Schlumberger

SIMULTANEOUS
COMPENSATED NEUTRON-
FORMATION DENSITY

COUNTY CHURCHILL
FIELD DIXIE VALLEY
LOCATION 14-23N-35E
WELL DIXIE FEDERAL 45-14
COMPANY THERMAL POWER CO.

COMPANY THERMAL POWER COMPANY
WELL DIXIE FEDERAL 45-14
FIELD DIXIE VALLEY
COUNTY CHURCHILL STATE NEVADA
LOCATION NORTHWEST 1/4 OF NORTHWEST 1/4 OF SOUTHWEST 1/4 OF
API SERIAL NO. SEC. 14 TWP. 23N RANGE 35E
Other Services:

Permanent Datum: GL, Elev.: 3410
Log Measured From KB, 22 Ft. Above Perm. Datum
Drilling Measured From KB

Date	6-9-79	6-28-79
Run No.	ONE	TWO
Depth-Driller	5405	8534
Depth-Logger	5414	8535
Btm. Log Interval	5413	8535
Top Log Interval	1337	5396
Casing-Driller	1337 @ 1330	928 @ 5398
Casing-Logger	1337	5396
Bit Size	12 1/2"	8 1/2"
Type Fluid in Hole	MAGCOBAR	WATER
Dens. Visc.	69	62.4
pH	10.2	N/A
Fluid Loss	ml	ml
Source of Sample	FLOWLINE	FLOWLINE
Rm @ Meas. Temp.	@ 0.75 @ 125°F	1.95 @ 82°F
Rmf @ Meas. Temp.	@ 1.62 @ 64°F	@ -- @ --°F
Rmc @ Meas. Temp.	@ 1.01 @ 78°F	@ -- @ --°F
Source: Rmf Rmc	M M	M M
Rm @ BHT	@ 0.39 @ 242°F	0.46 @ 372°F
Circulation Stopped	2200	2000
Logger on Bottom	530	745
Max. Rec. Temp.	242°F	372°F
Equip. Location	7763 SAC	8128 SAC
Recorded By	BRASFIELD/HUEFMAN	LINDGREEN (RUN TWO)
Witnessed By	RUDISILL	DEL FEN

FOLD HERE The well name, location and borehole reference data were furnished by the customer.

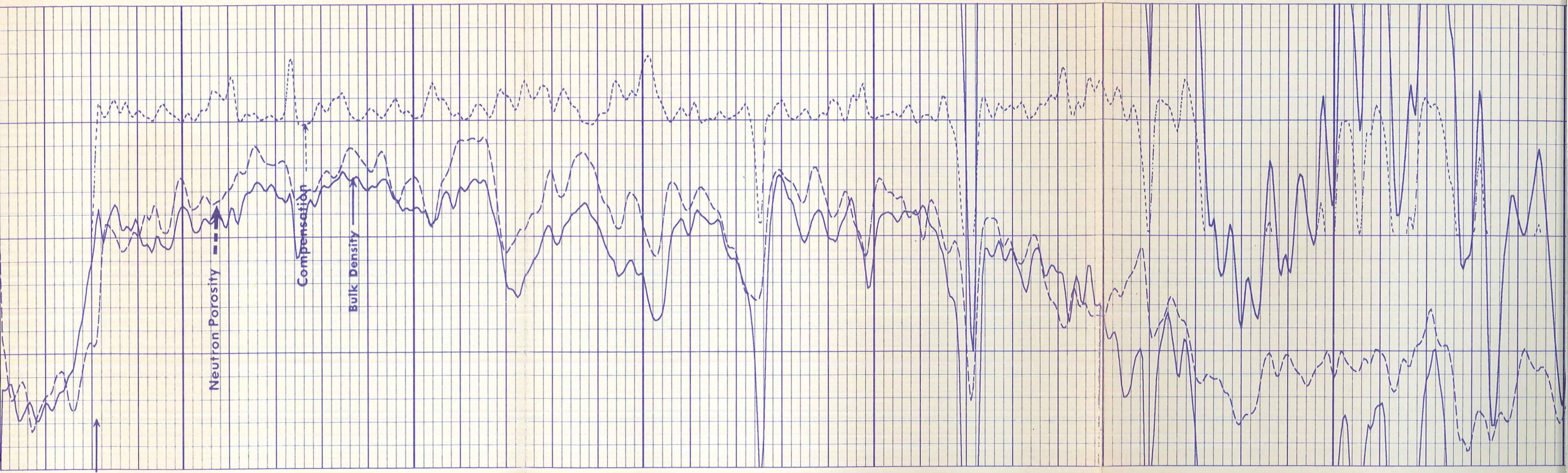
RUN NO.	ONE	TWO	Type Log	Depth
Service Order No.	24849	83008		
Fluid Level	FULL	FULL		
Salinity, PPM CL.	---	---		
Speed - F.P.M.	30	30		
EQUIPMENT DATA				
Dens. Panel	EJ-1352	BB-443		
Dens. Cart.	G - 213	G-189		
Dens. Skid.	E - 231	E-206		
Dens. Sonde	ED- 472	EC-392		
Dens. Source	5146	5199		
Dens. Calibrator	530	SFT-106		
Neut. Panel	BA- 39	---		
Neut. Cart.	A - 409	---		
Neut. Source	495	---		
Neut. Calibrator	AB- 594	---		
GR Cart.	1410	JC-2087		
Memorizer Panel	CA- 209	---		
Tape Recorder (TTR)	2927	---		
Depth Encoder (DRE)	2733	---		
Pressure Wheel (CPW)	H - 998	---		
Centralizers:	Type	B-SPRING		
Enter Spring,	No.	1		
Standoffs,	S. O. - Inches	---		
In-line, or None		---		
CALIBRATION DATA				
GR	BKG. CPS	48	31	
	Source CPS	282	198	
	Sens. - Cal	0-200	165	
	T. C. - Cal	2	2	
IND	Short Spacing - Before Log	354	-	
	Long Spacing - Before Log	156	-	
	Short Spacing - After Log	353	-	
	Long Spacing - After Log	156	-	
CDF	P1 - Before Log	94.3	741	
	P2 - Before Log	158.0	744	
	P1 - After Log	94.6	410	
	P2 - After Log	158.7	408	

REMARKS:

LOGGING DATA												
DEPTH		CNP			FDC				GR			
Top	Bottom	Porosity Scale	Matrix	Auto Corr. or Hole Size Setting	Porosity Scale	Grain Density	Liquid Density	Hole Fluid	Sens. Logged	T. C.	Zero. Div. Left	Scale Per 100 Div.
1337	5413	60-0	OH-SS	AUTO	---	2.68	1	LIQ.	0-200	2	0	200
5396	8535	--	--	--	---	2.68	1	LIQ.	165	2	0	0-200

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.

CALIPER	DIAM. IN INCHES	DEPTH	CORRECTION	GRAMS CC
8"	18"			
GAMMA RAY	API UNITS			
0	200			

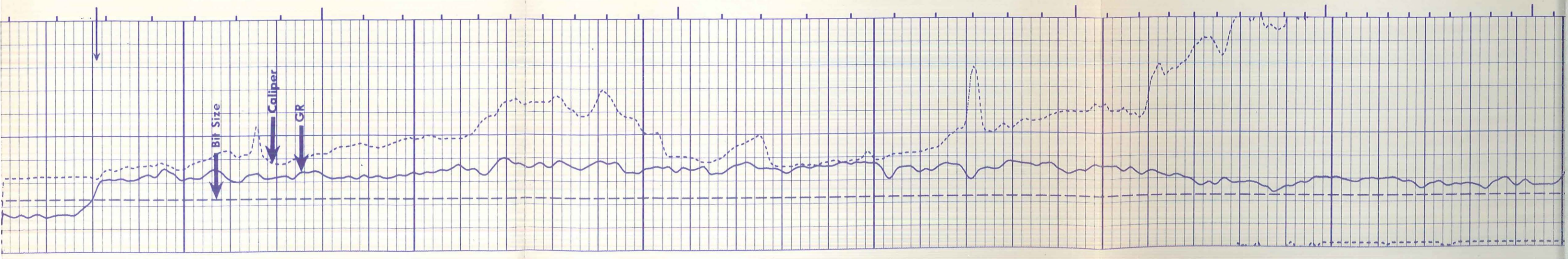


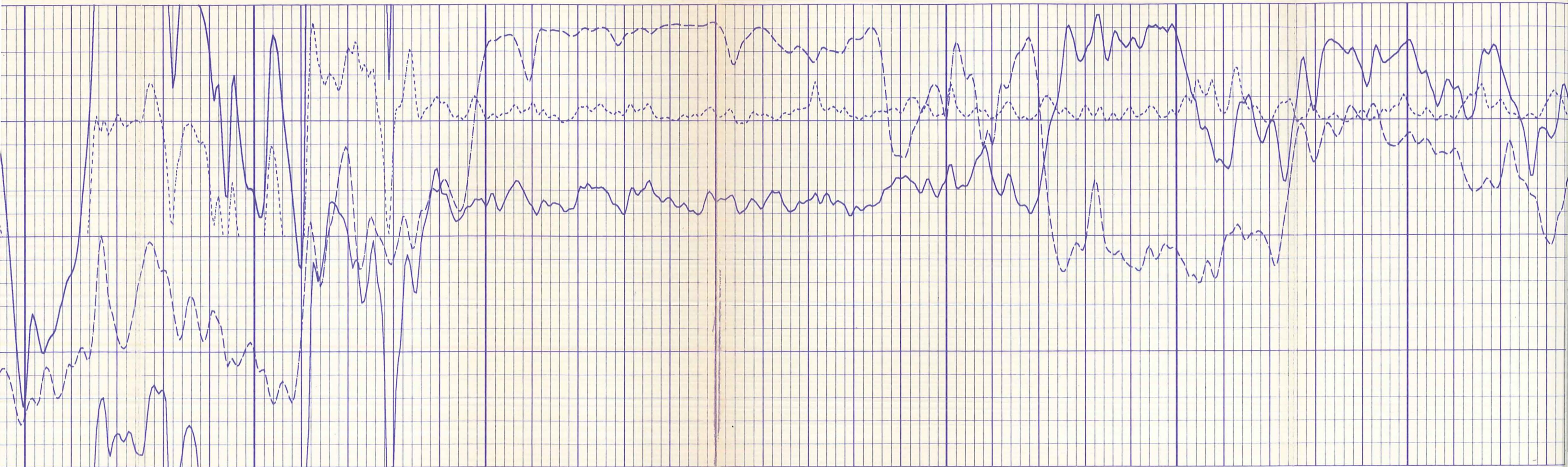
CSG.

1400

1500

1600

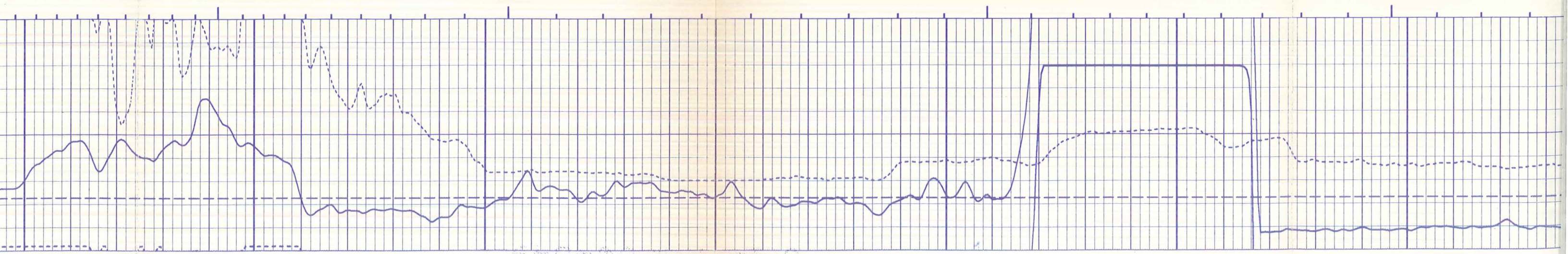




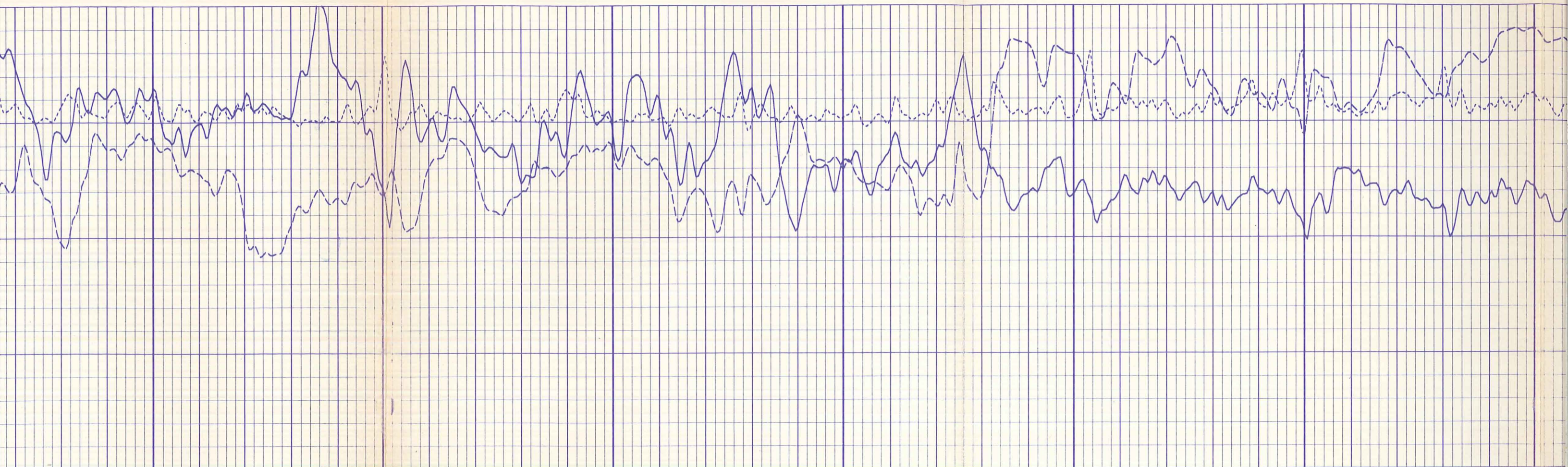
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1800

1900



8-11-2019 12:11-8

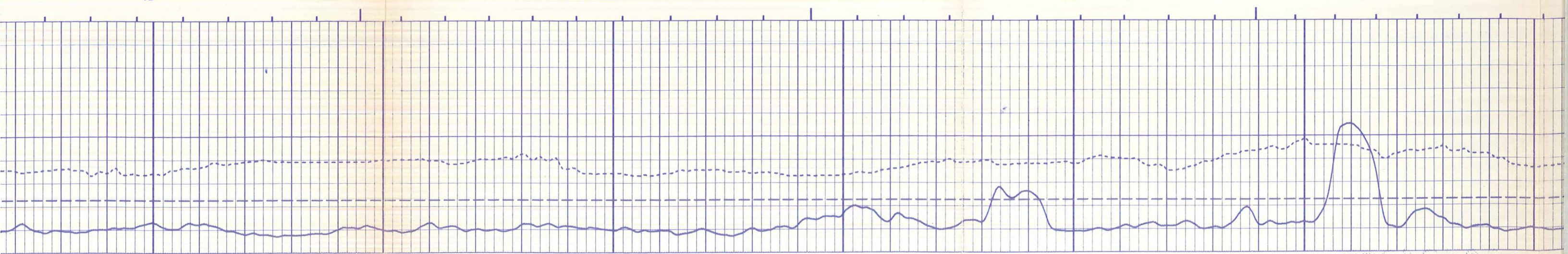


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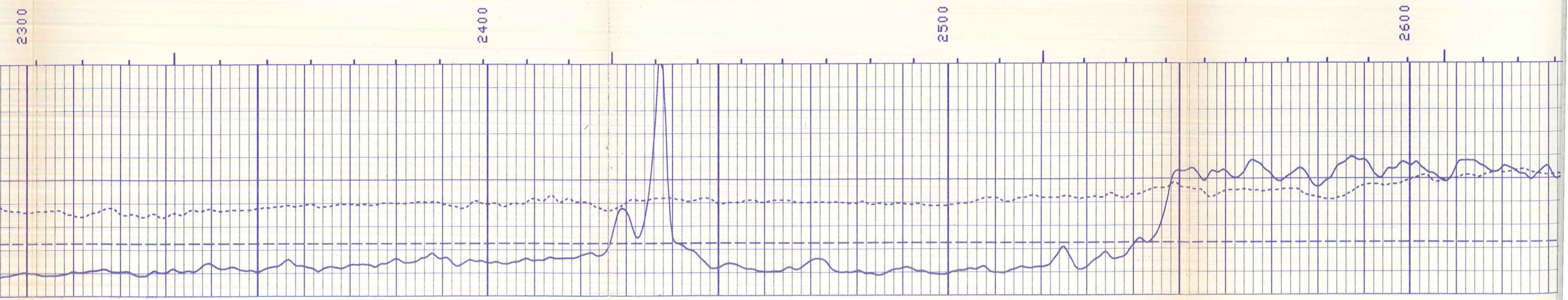
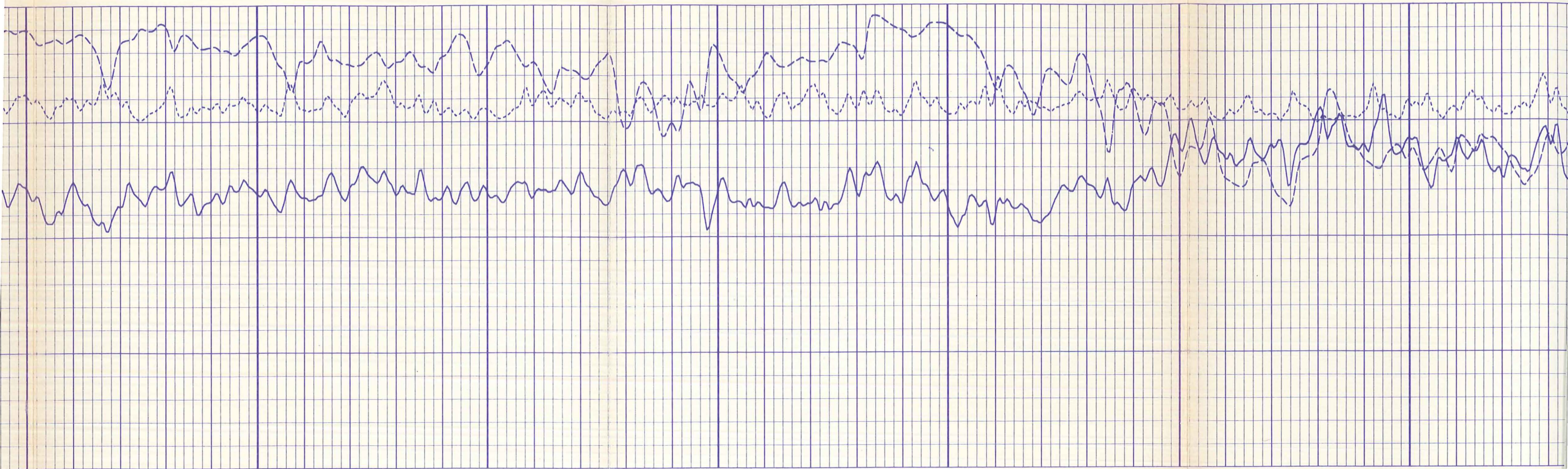
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2200

2300



2020

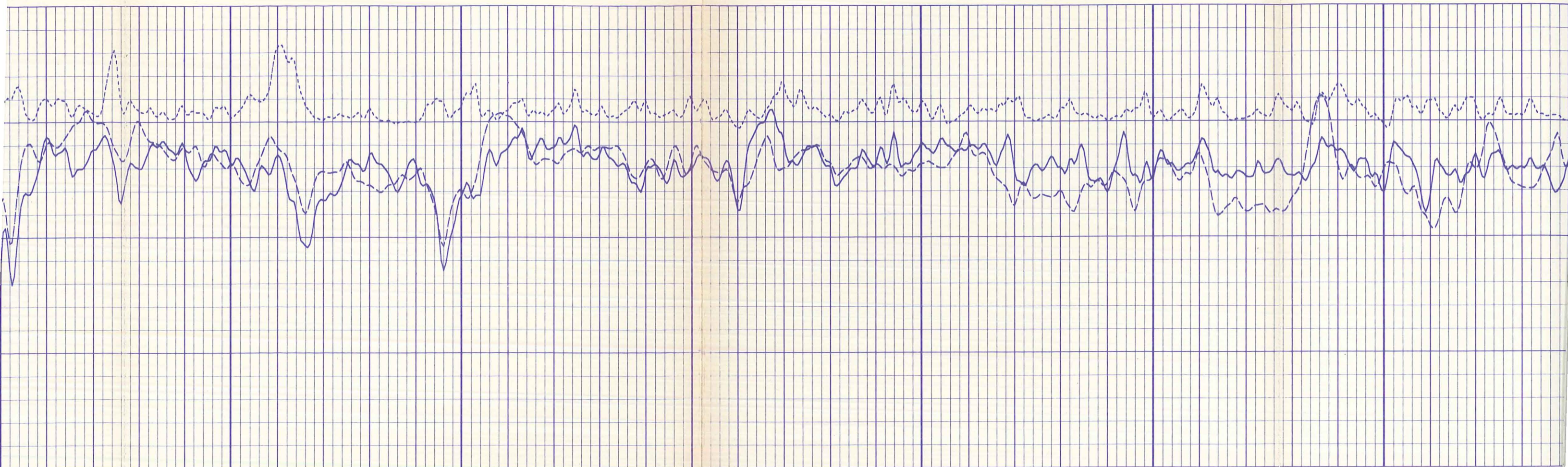


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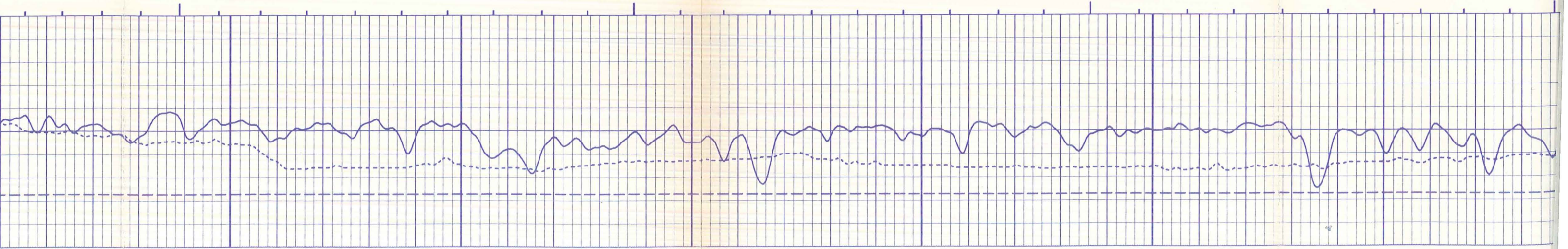
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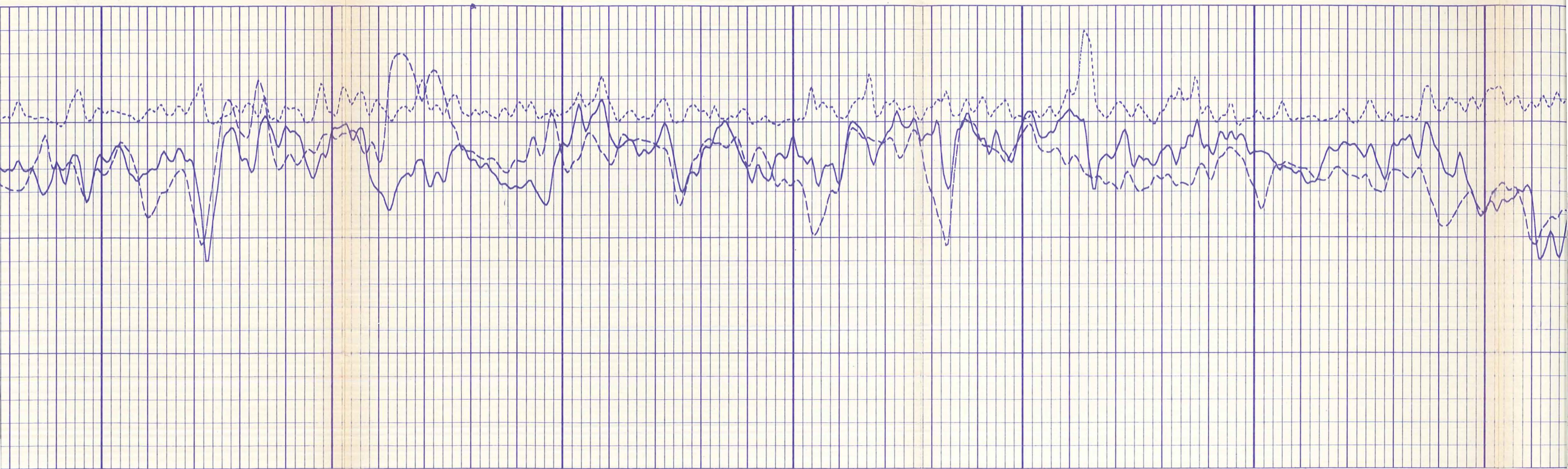
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2-6hPn9n, 10/1-21-8

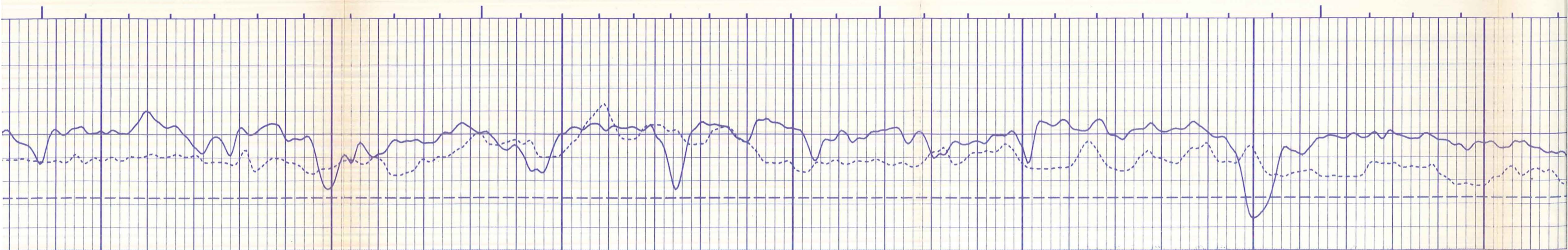


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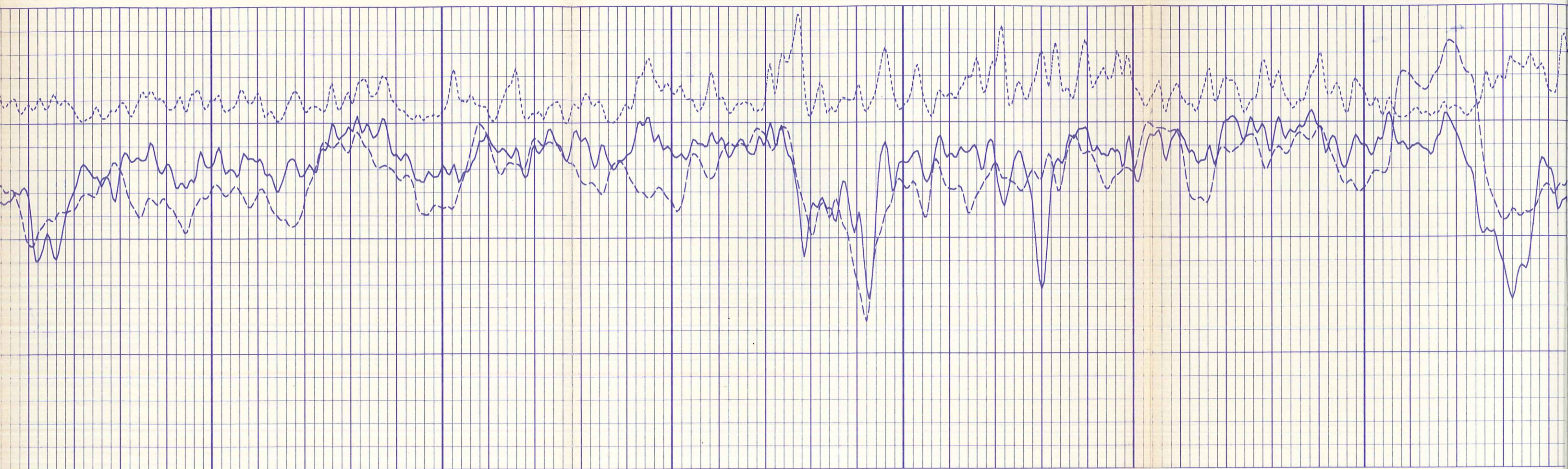
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3300



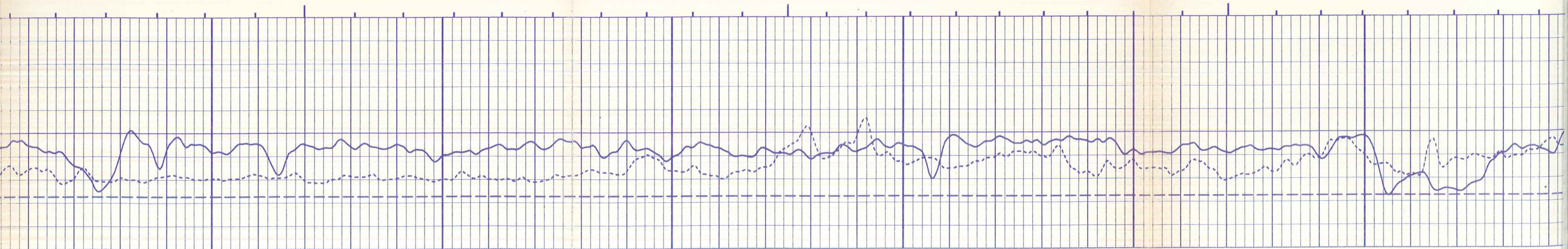
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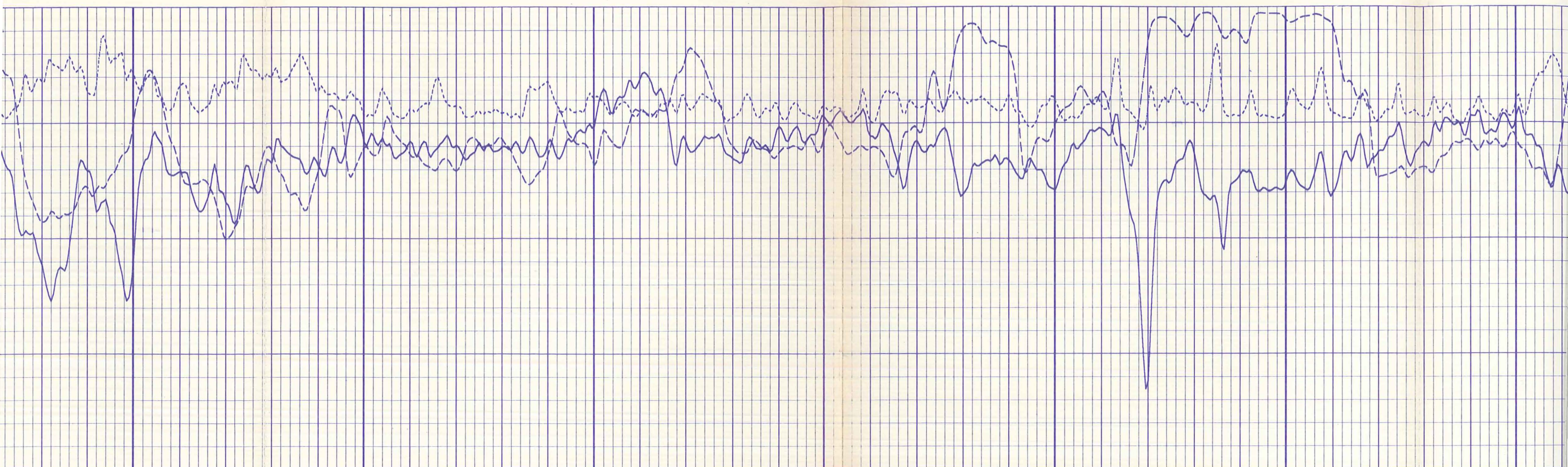


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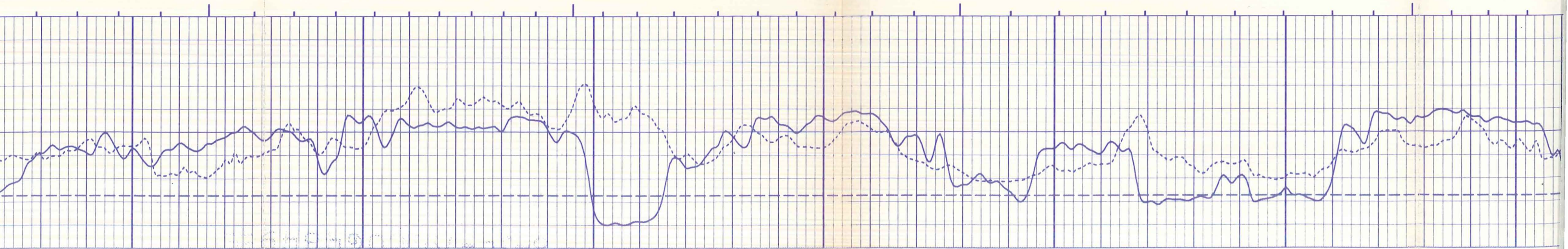




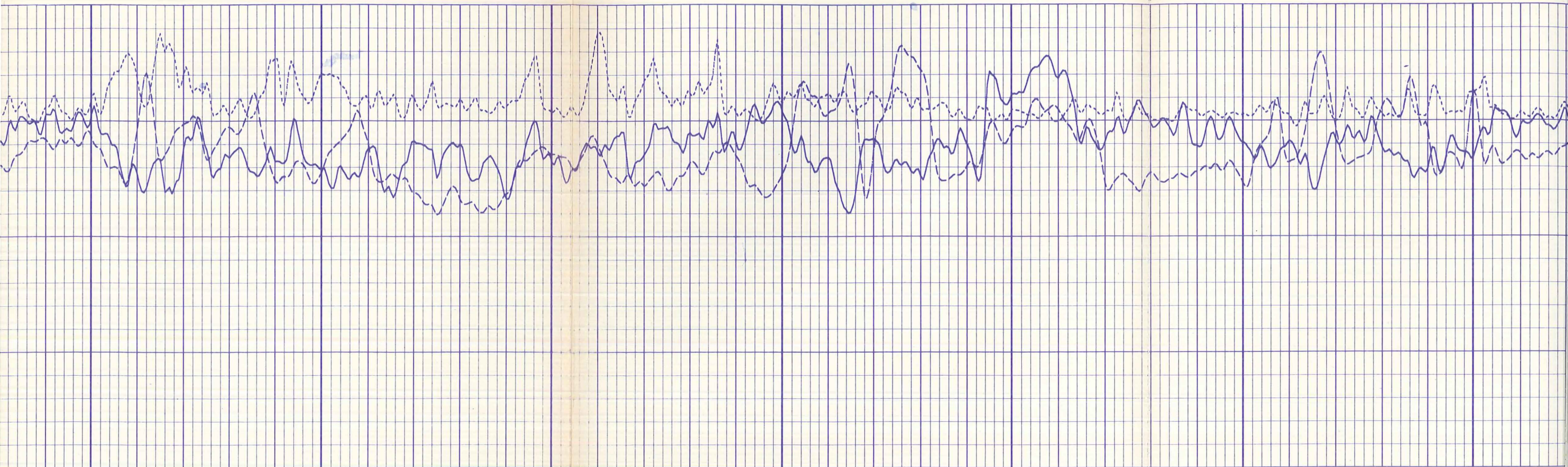
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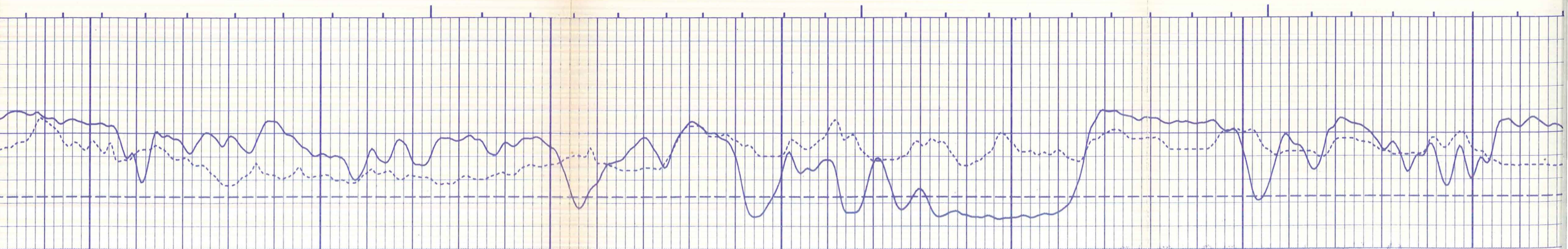
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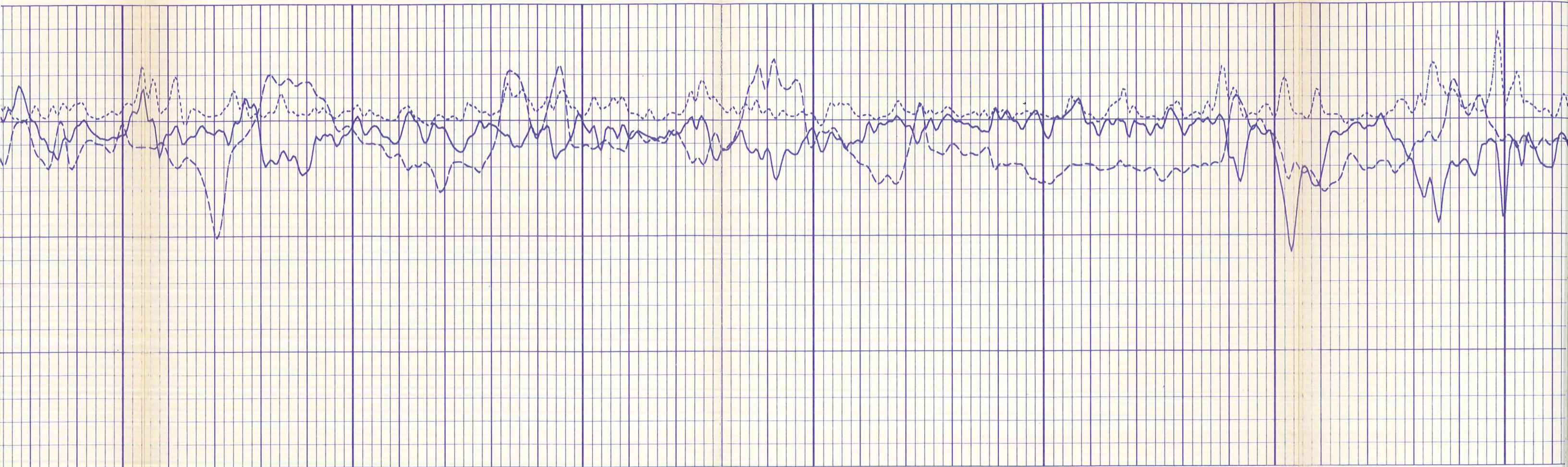
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4100

4200



— 1000 1000 1000 1000 —

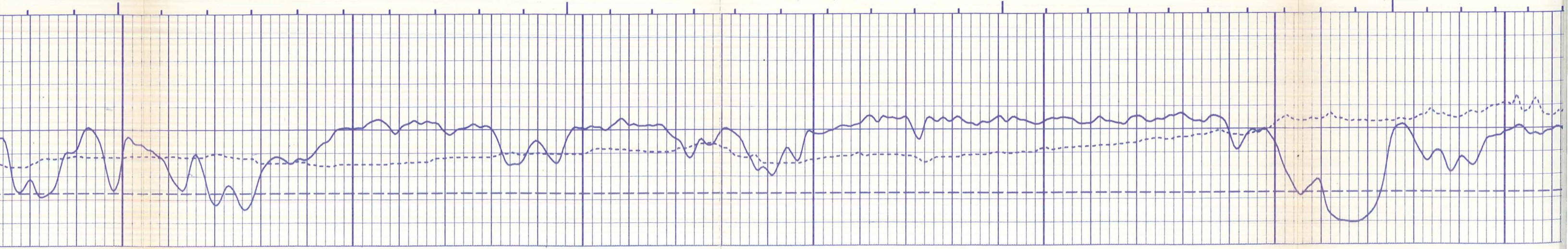


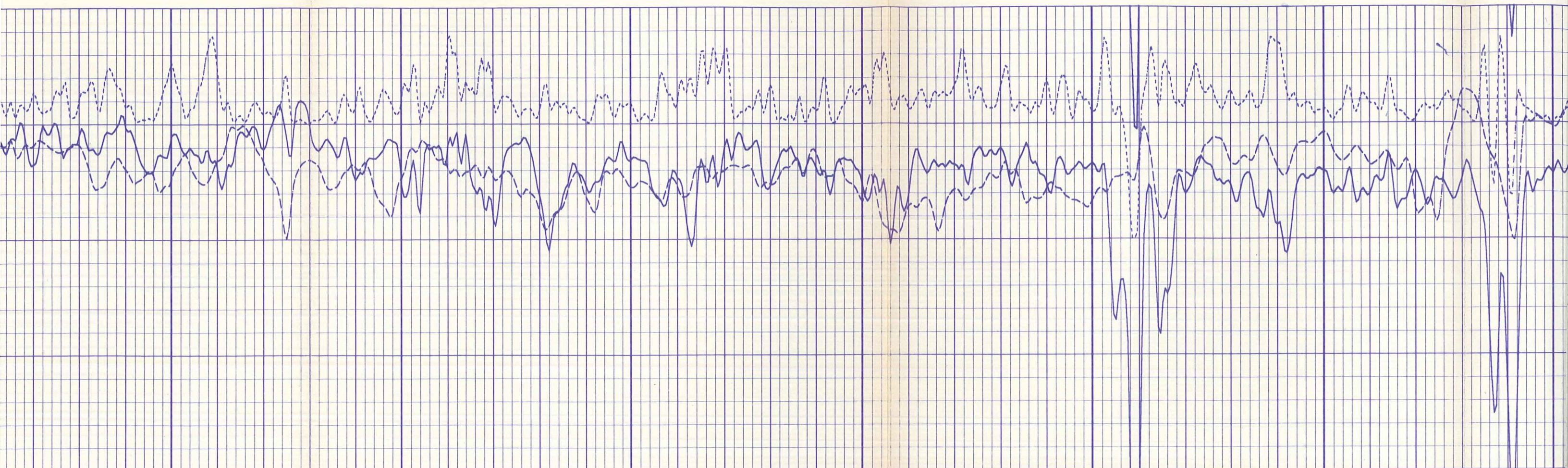
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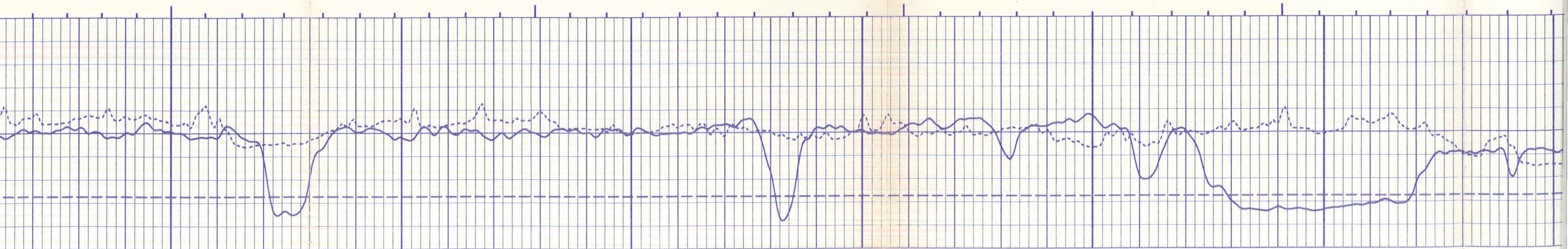




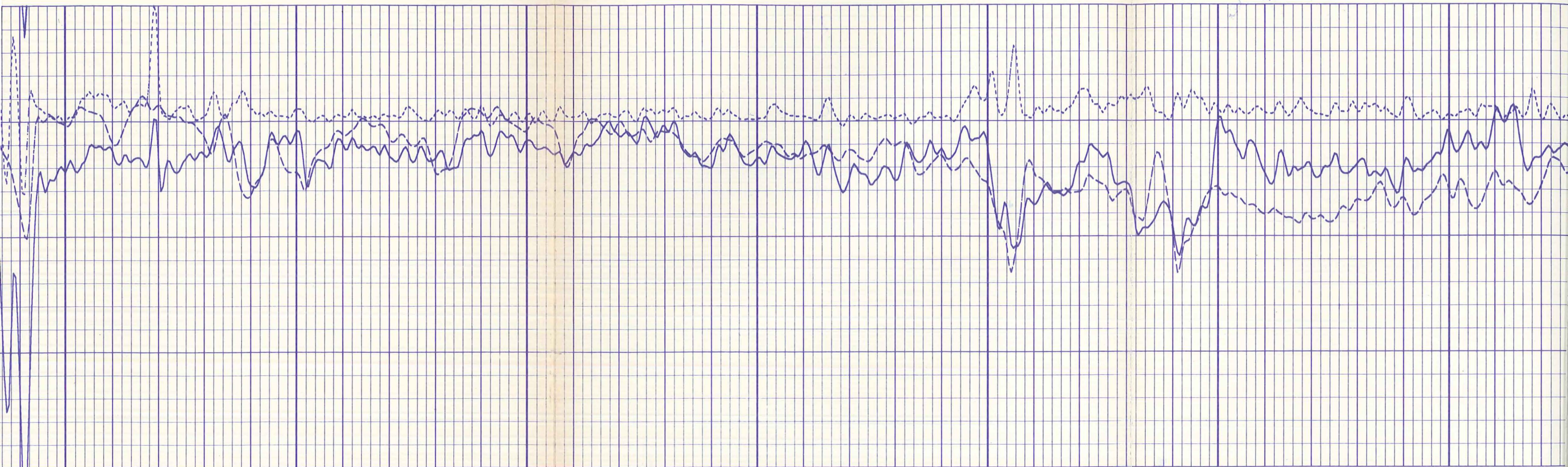
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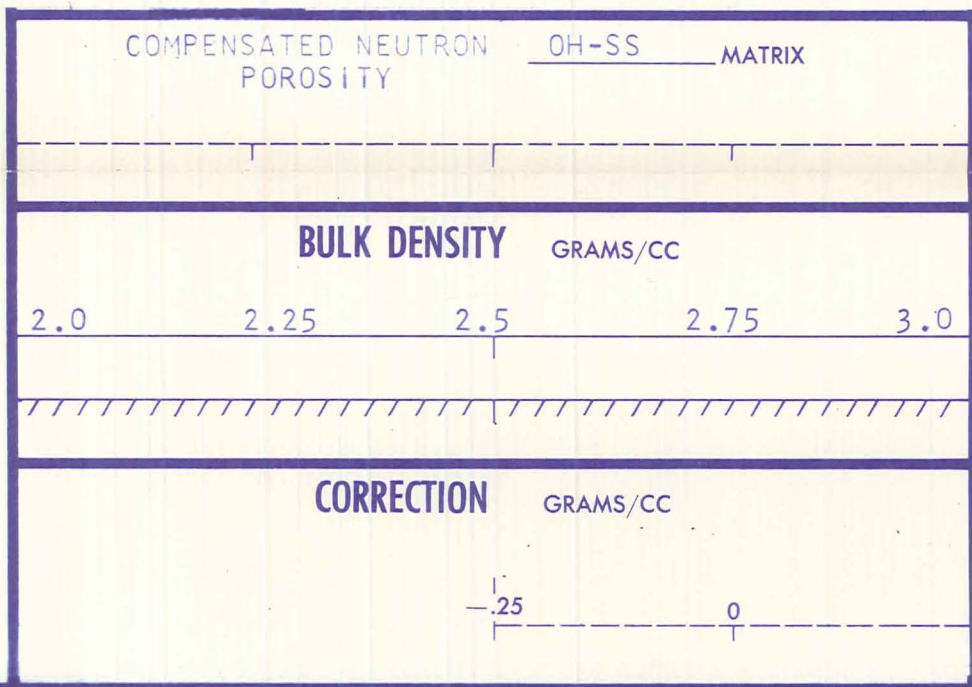
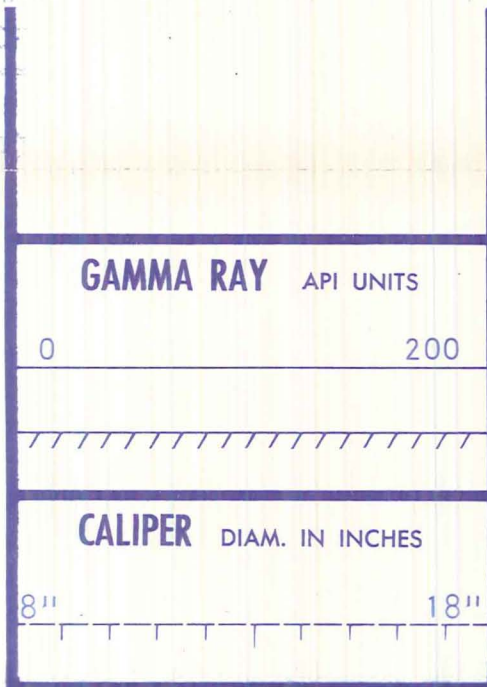
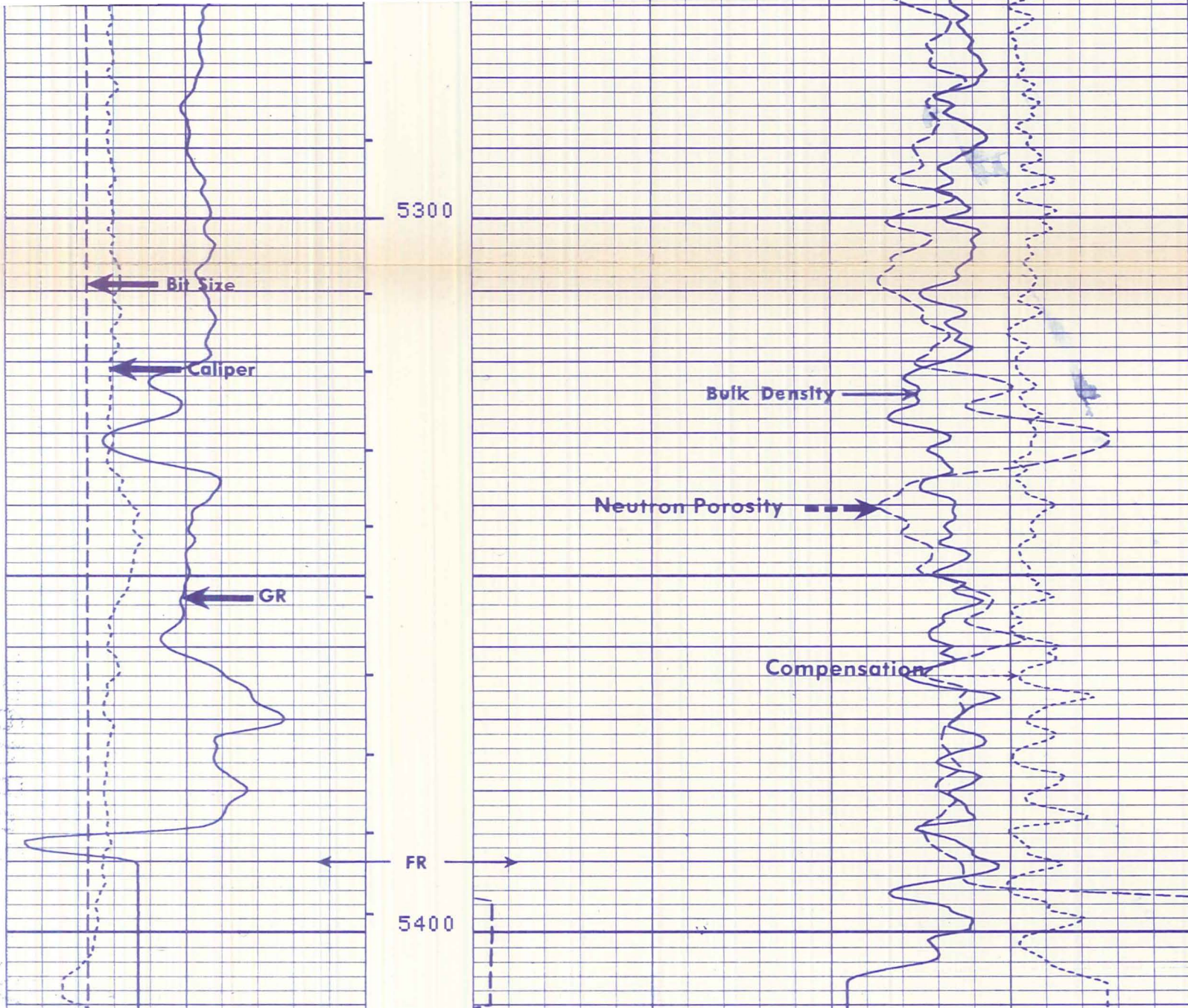


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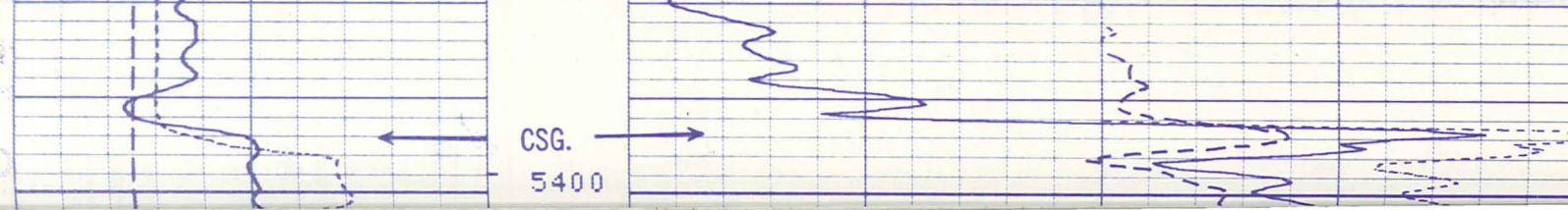
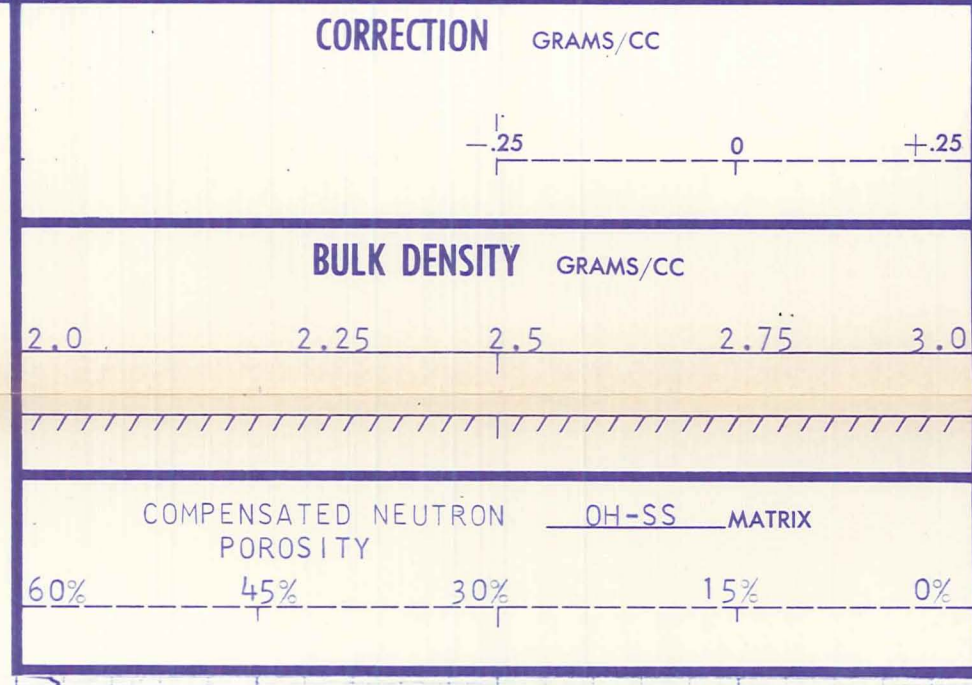
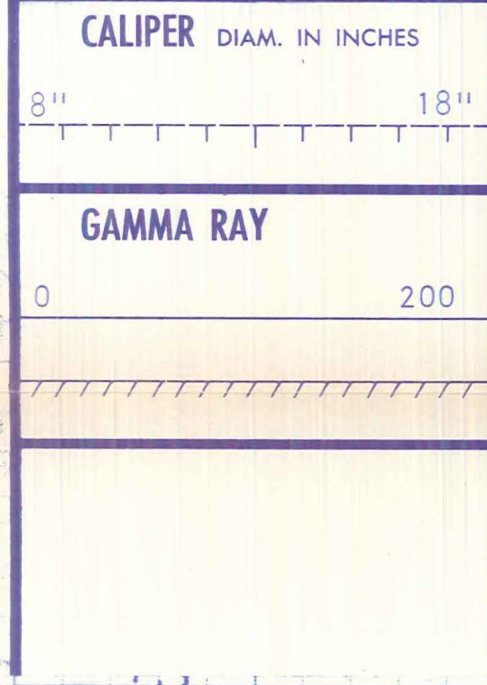
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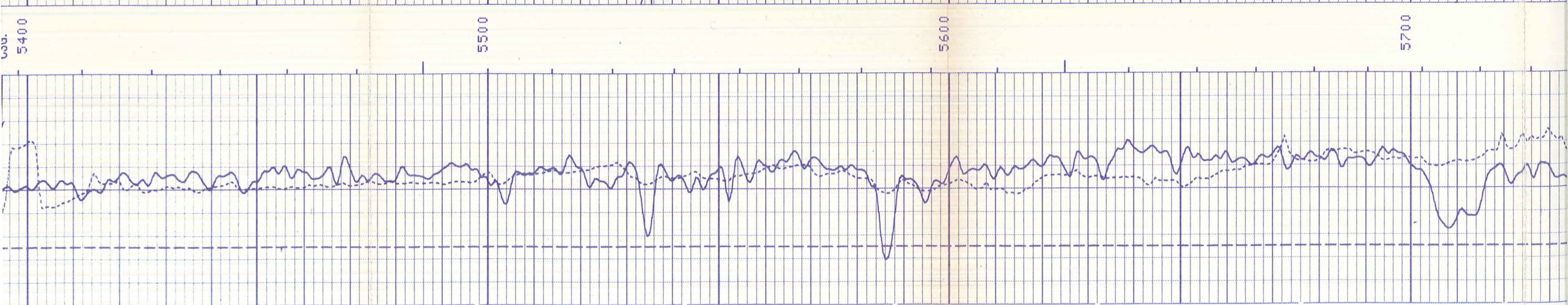
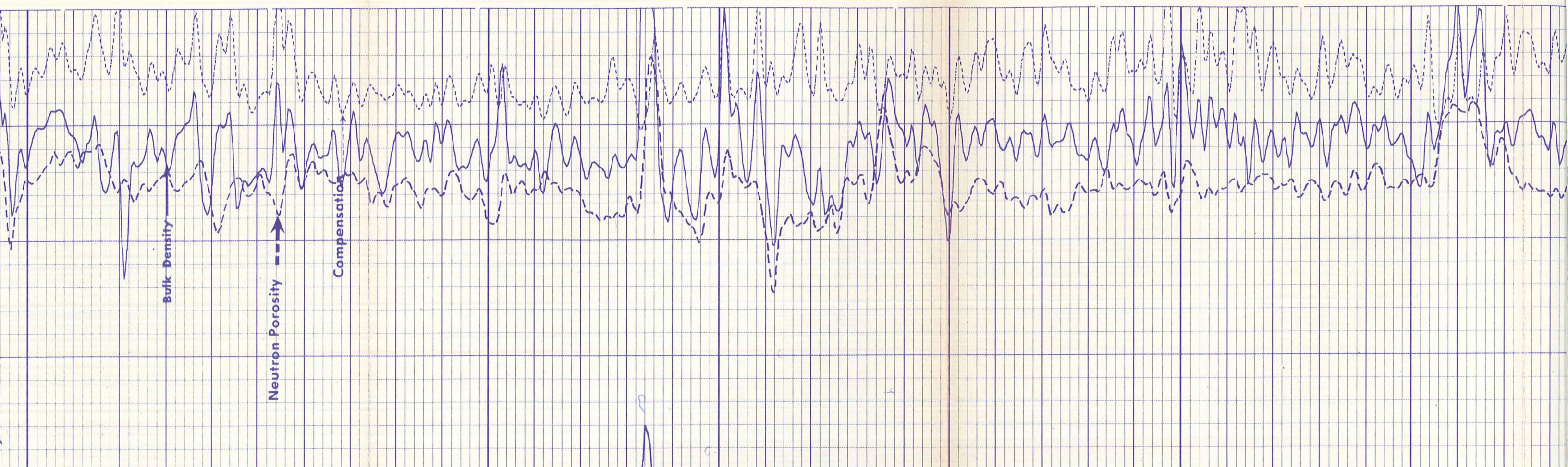




COMPANY THERMAL POWER COMPANY SCHL. FR 5413
 WELL DIXIE FEDERAL 45-14 SCHL. TD 5414
 FIELD DIXIE VALLEY DRLR. TD 5405
 COUNTY CHURCHILL STATE NEVADA Elev: KB 3432
DF --
GL 3410



8 in 16 in 24 in 32 in 40 in 48 in 56 in 64 in 72 in 80 in 88 in 96 in 104 in 112 in 120 in 128 in 136 in 144 in 152 in 160 in 168 in 176 in 184 in 192 in 200 in



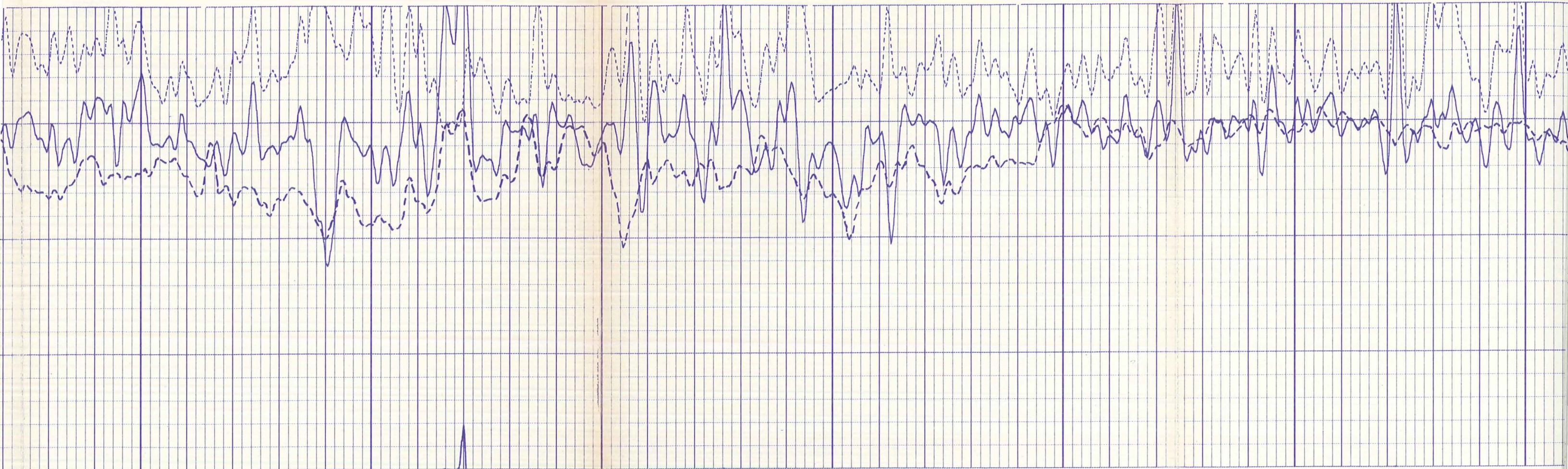
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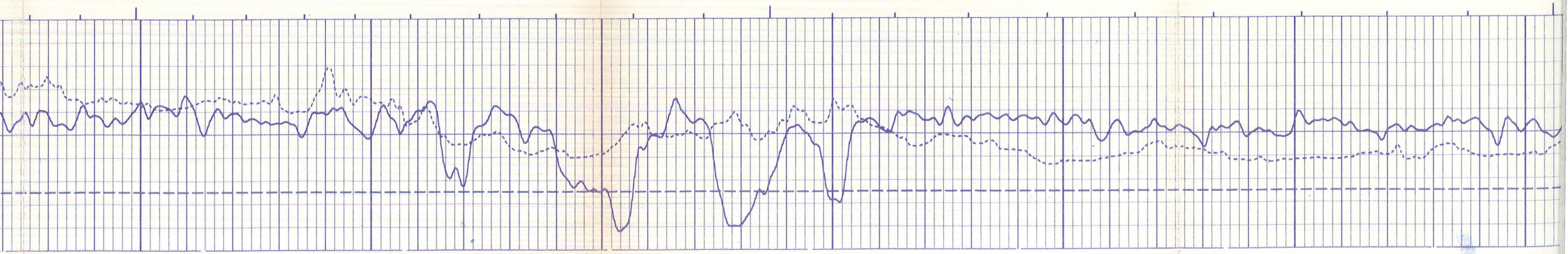
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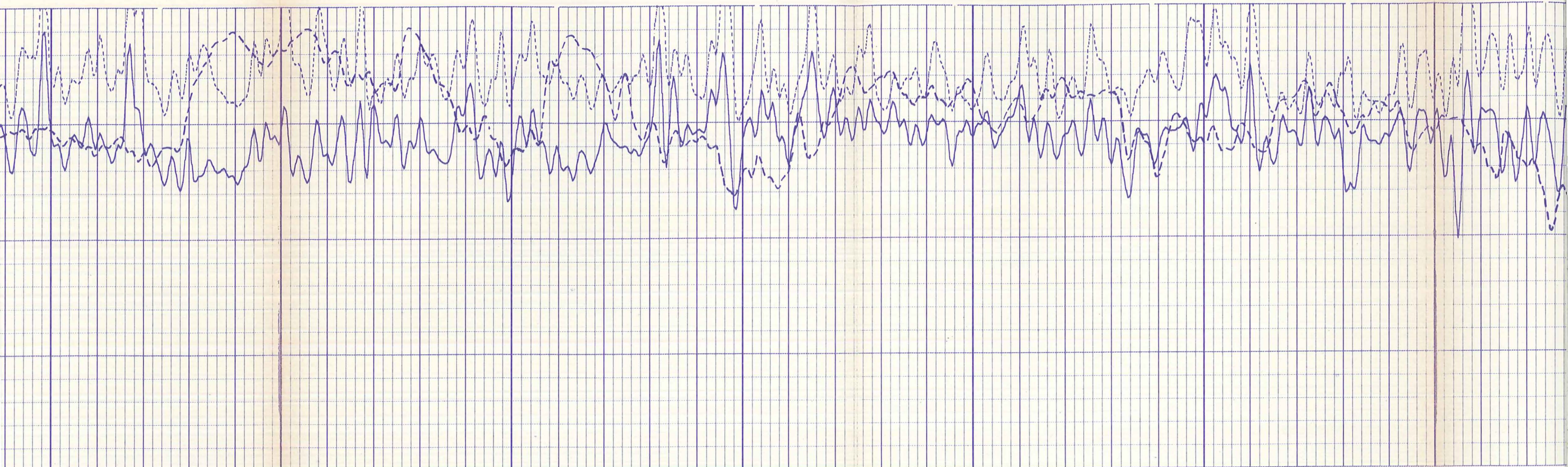


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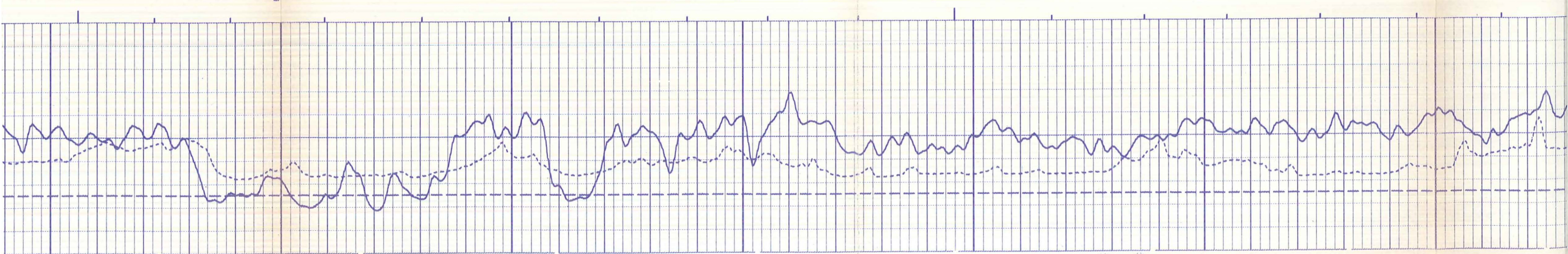




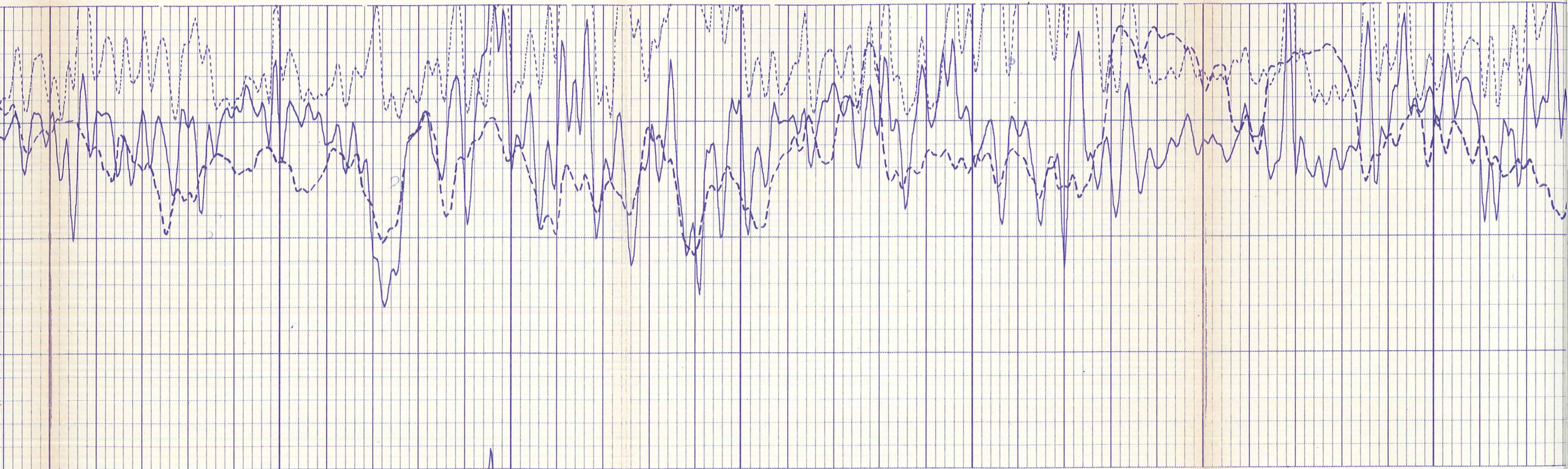
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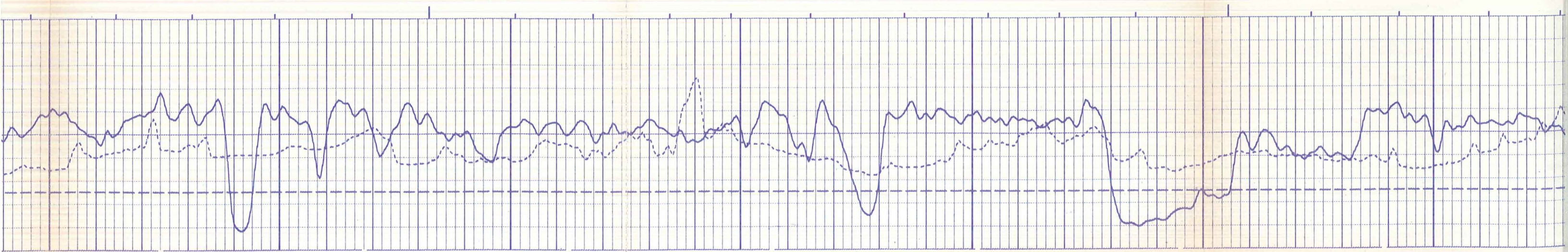
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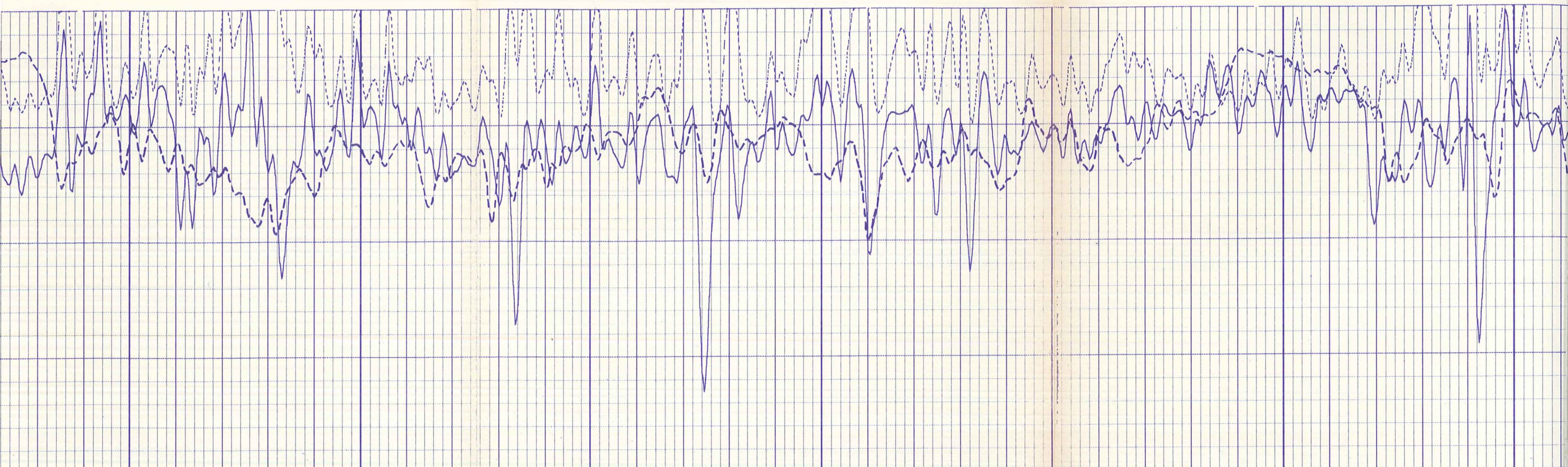


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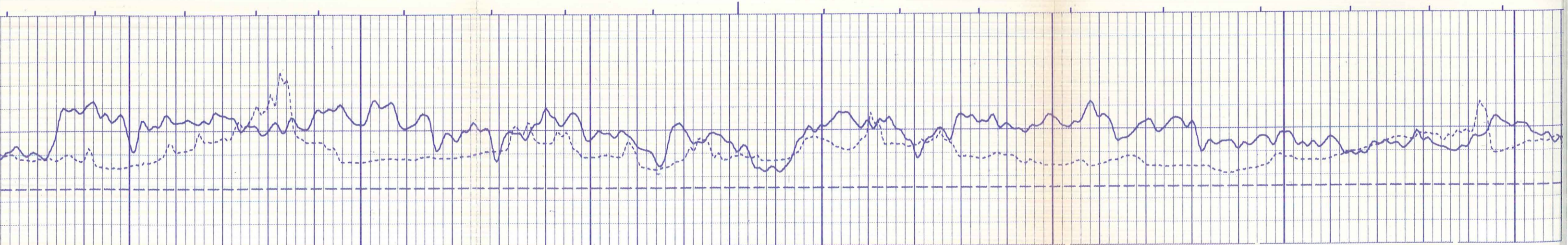




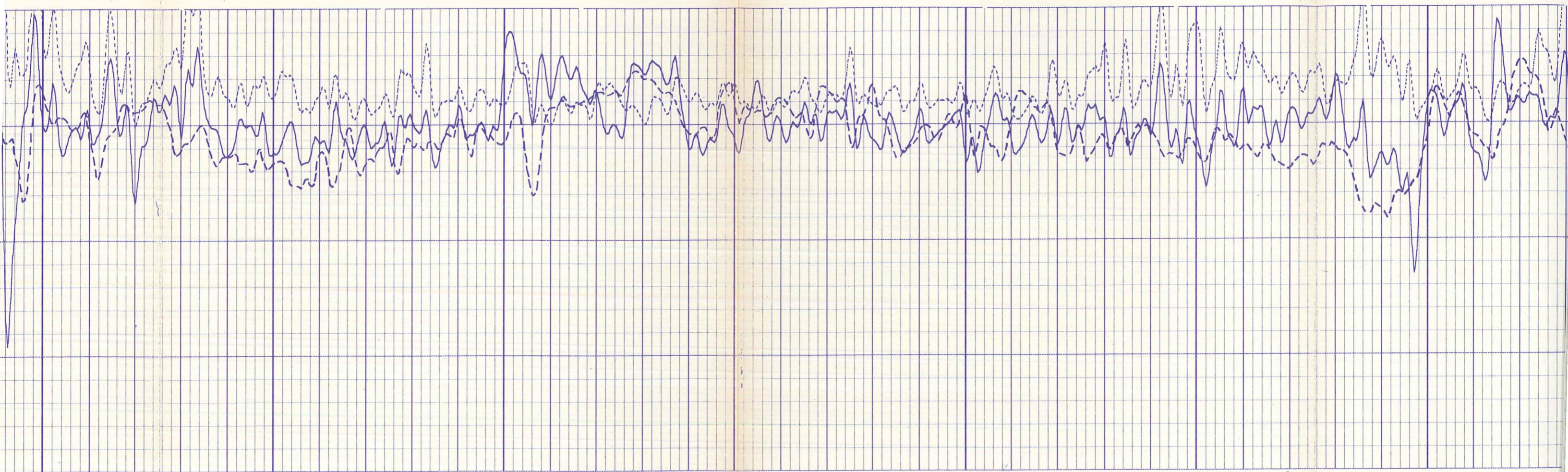
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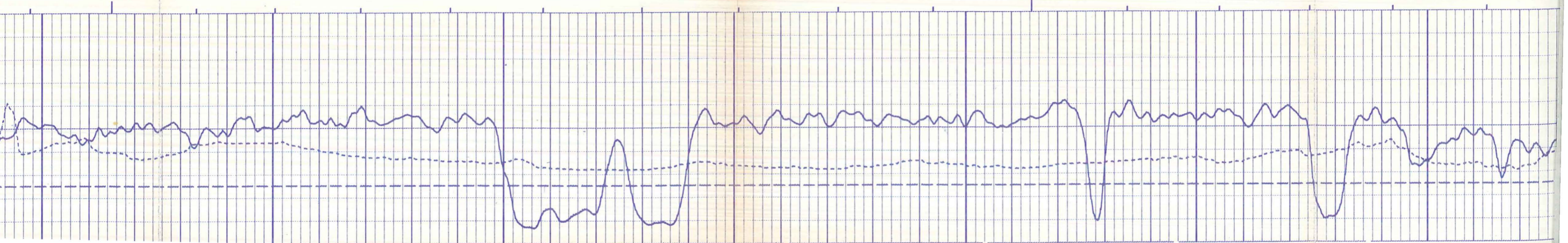
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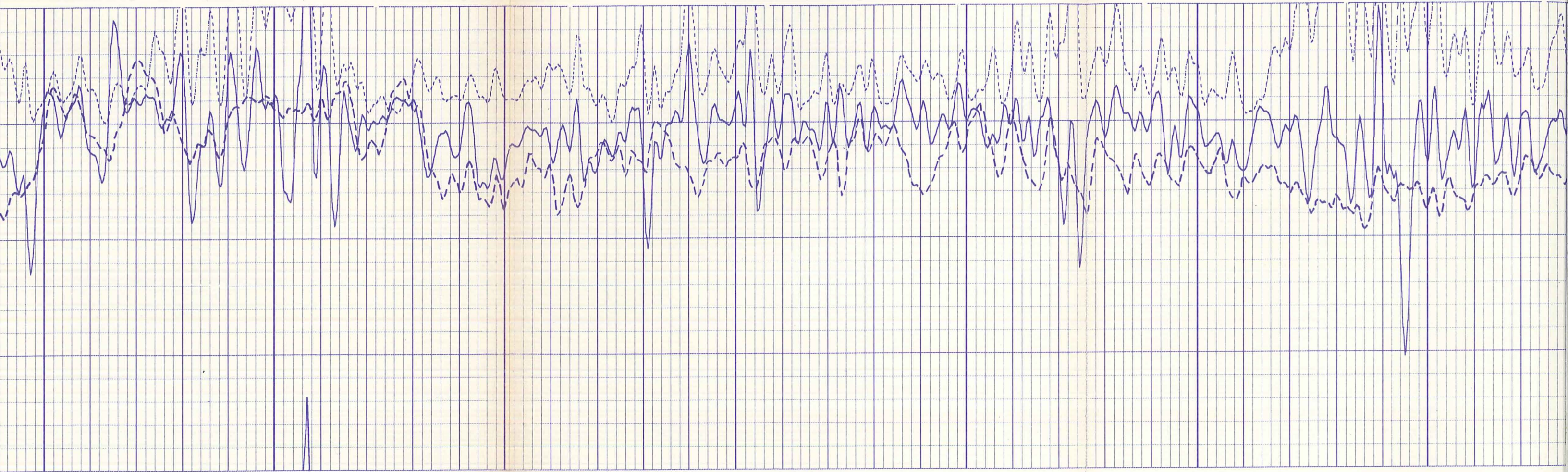


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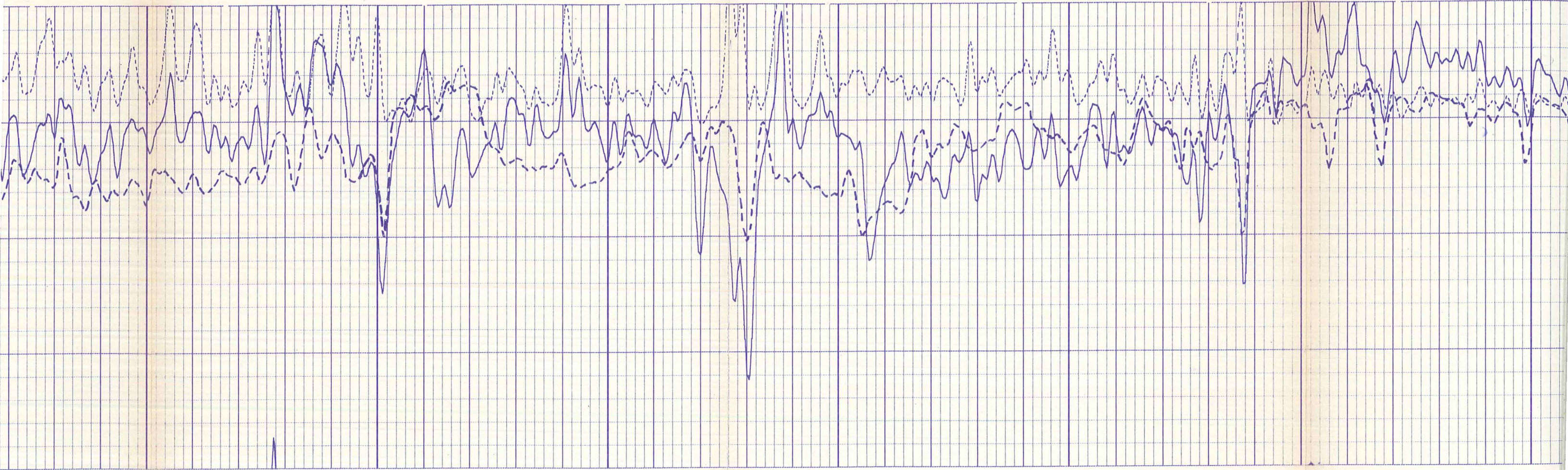
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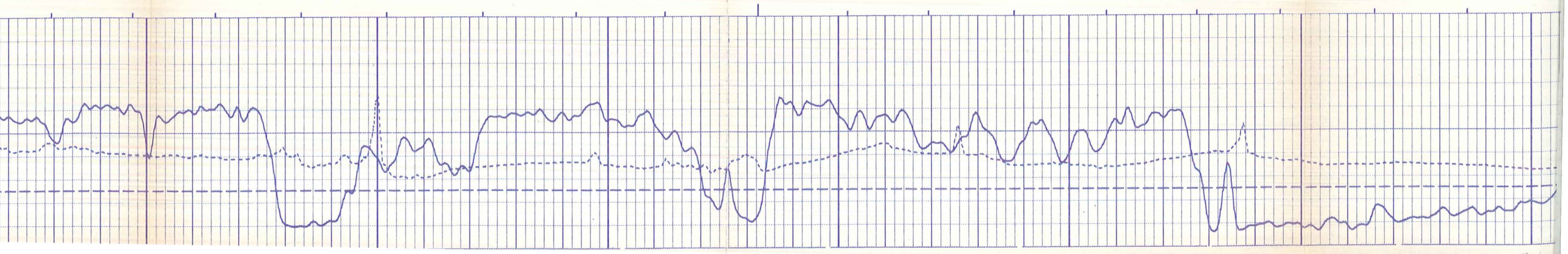


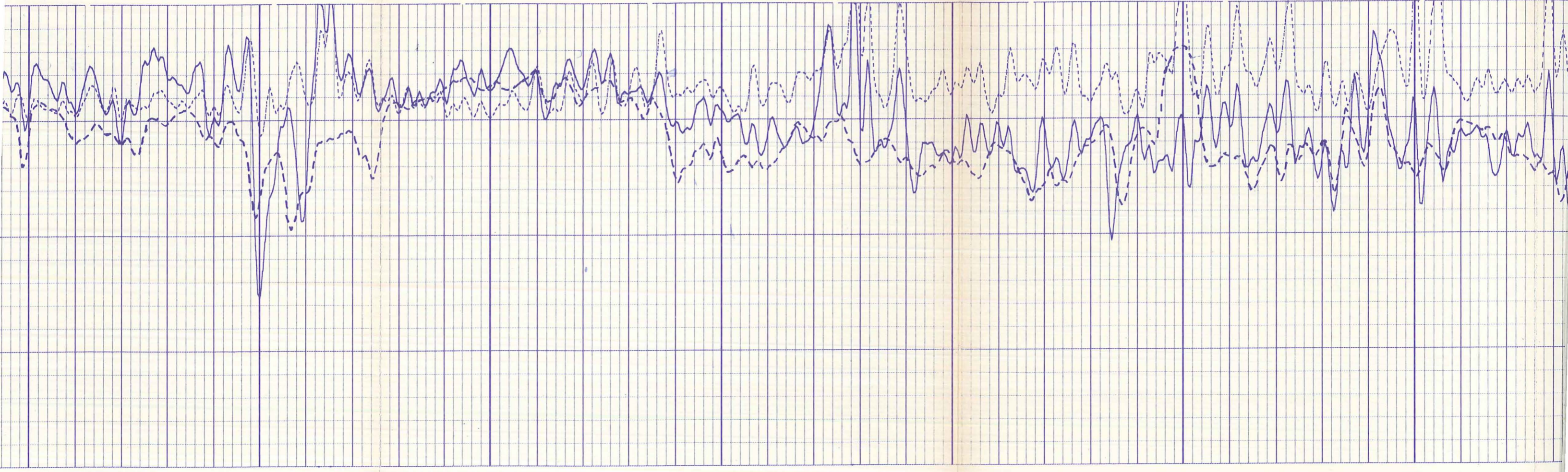
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7800

7900



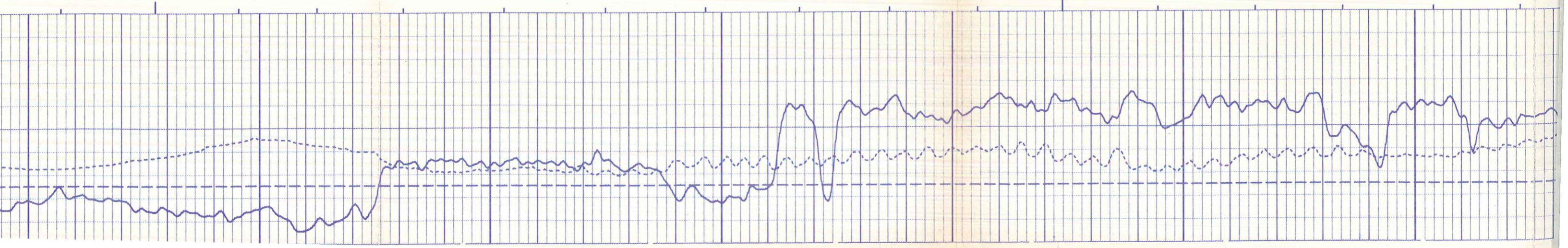


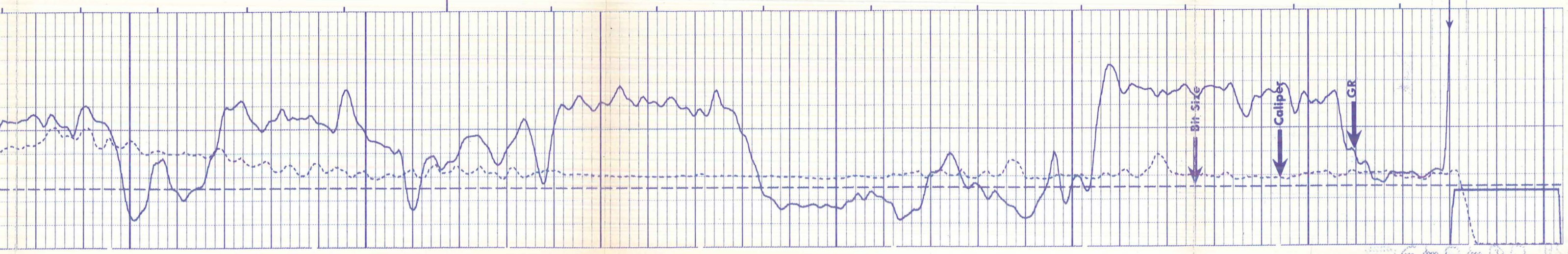
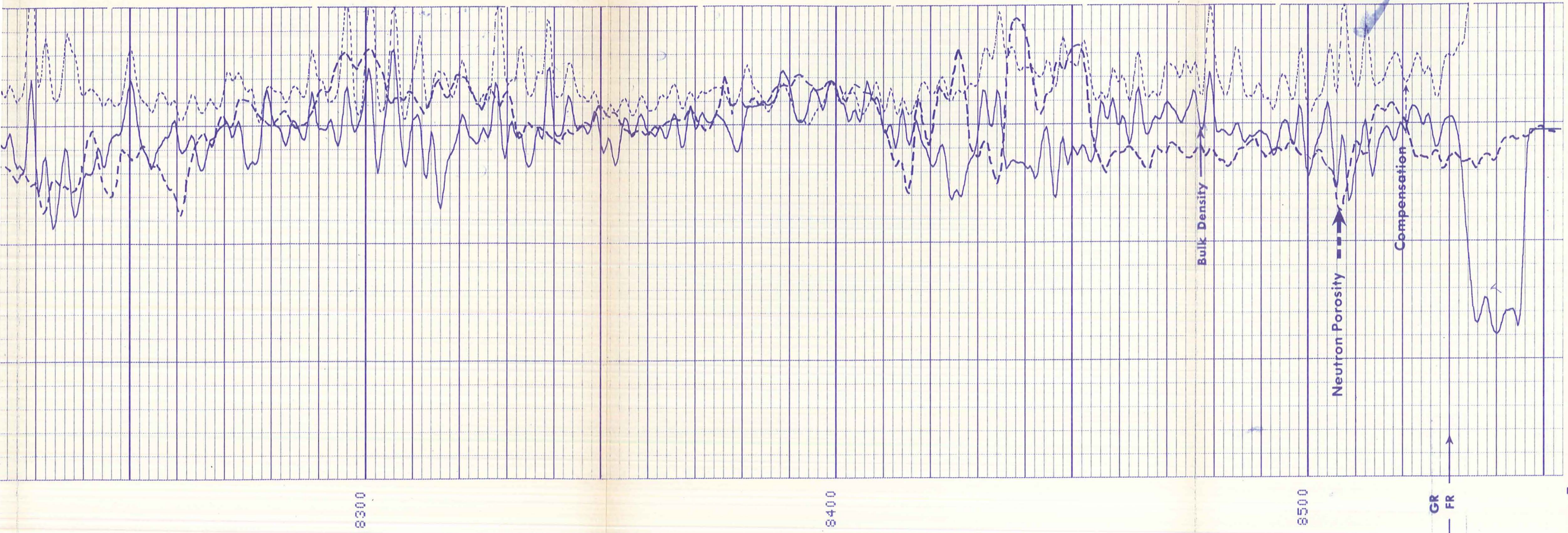
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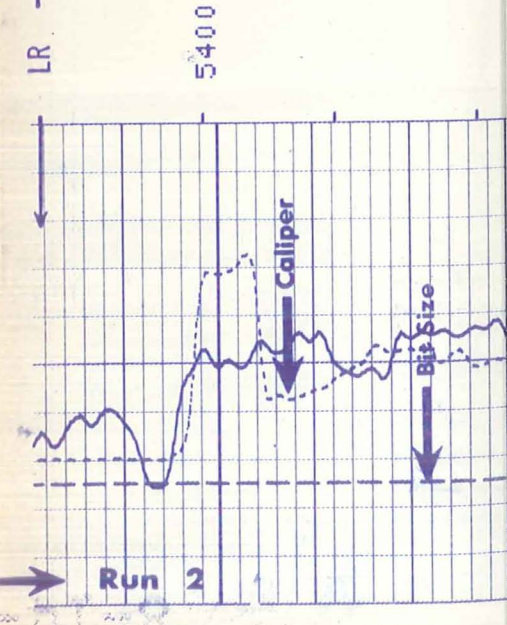
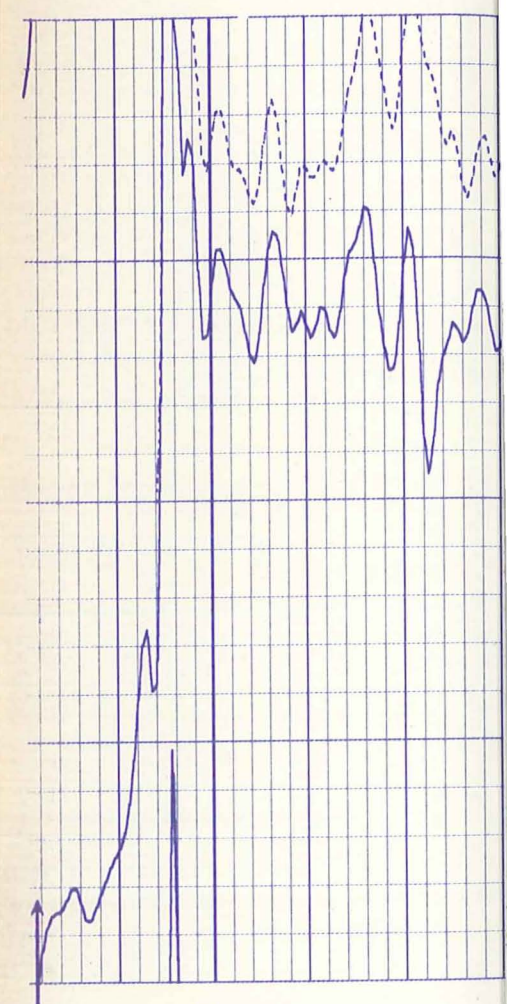
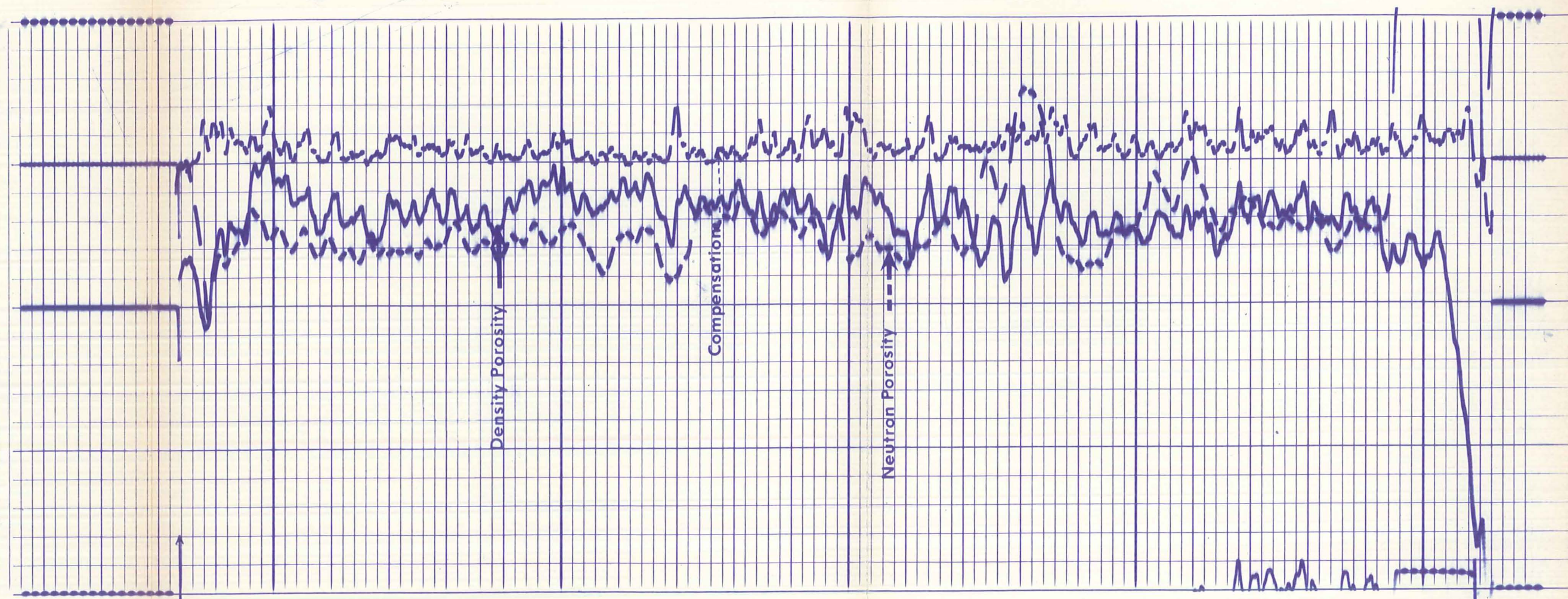
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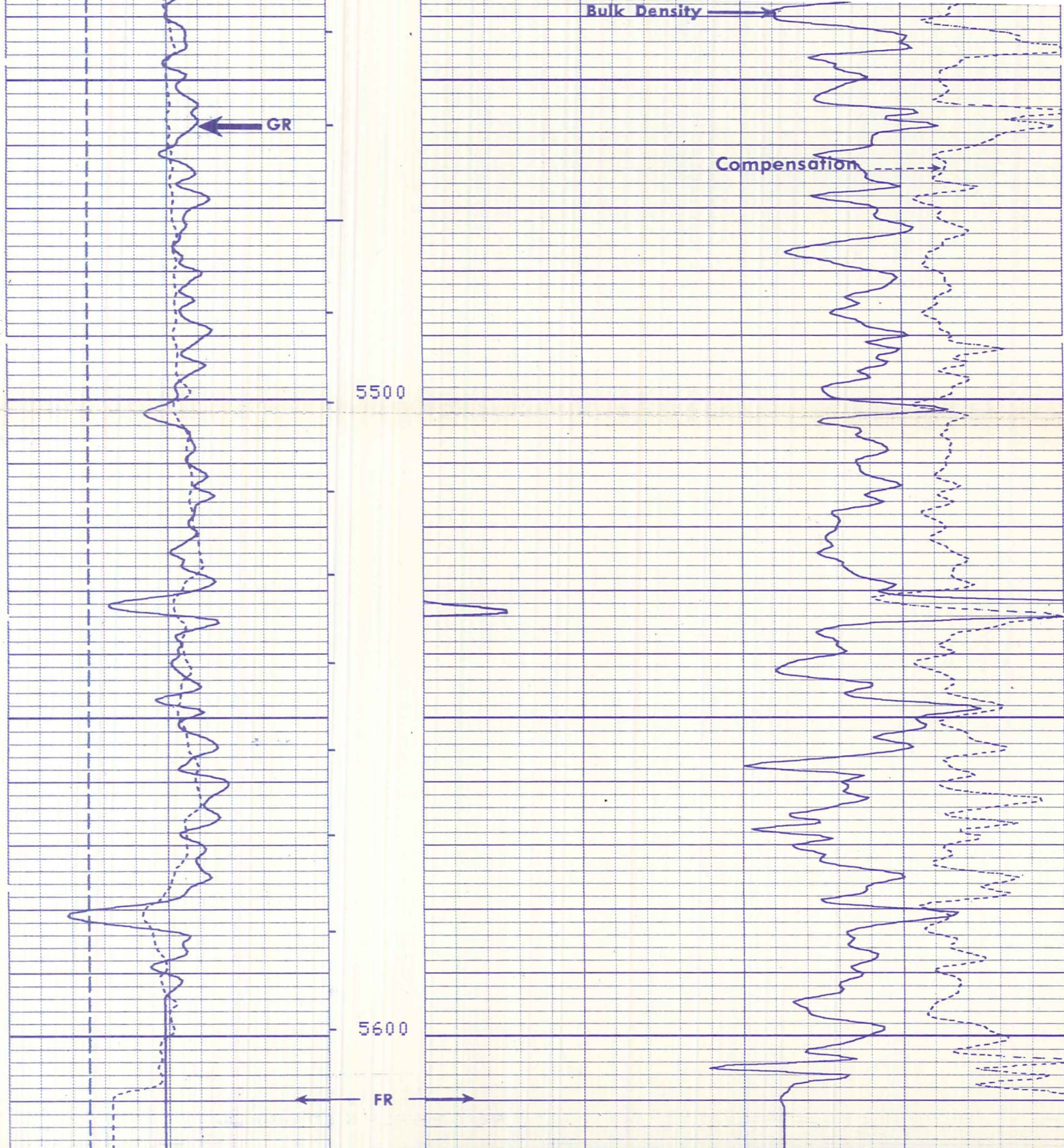
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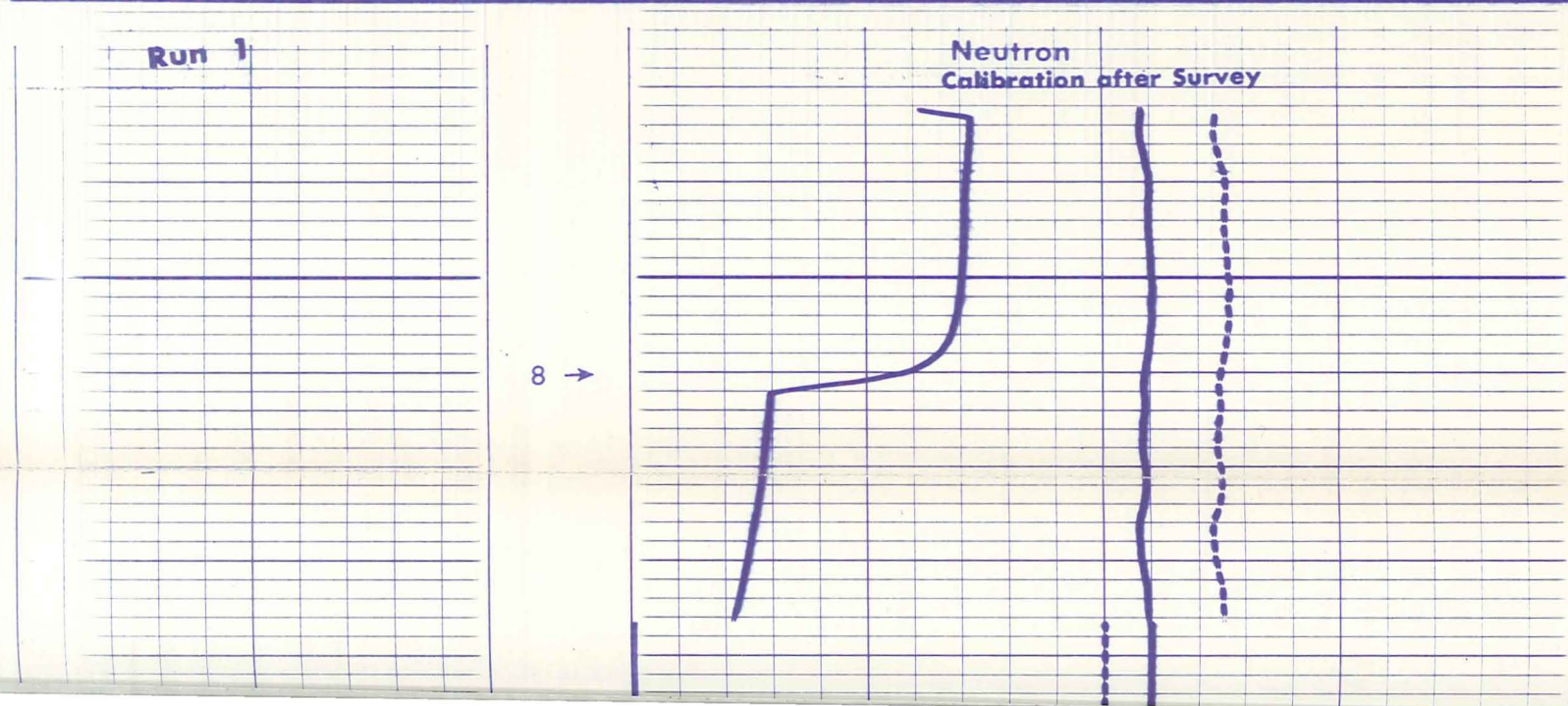


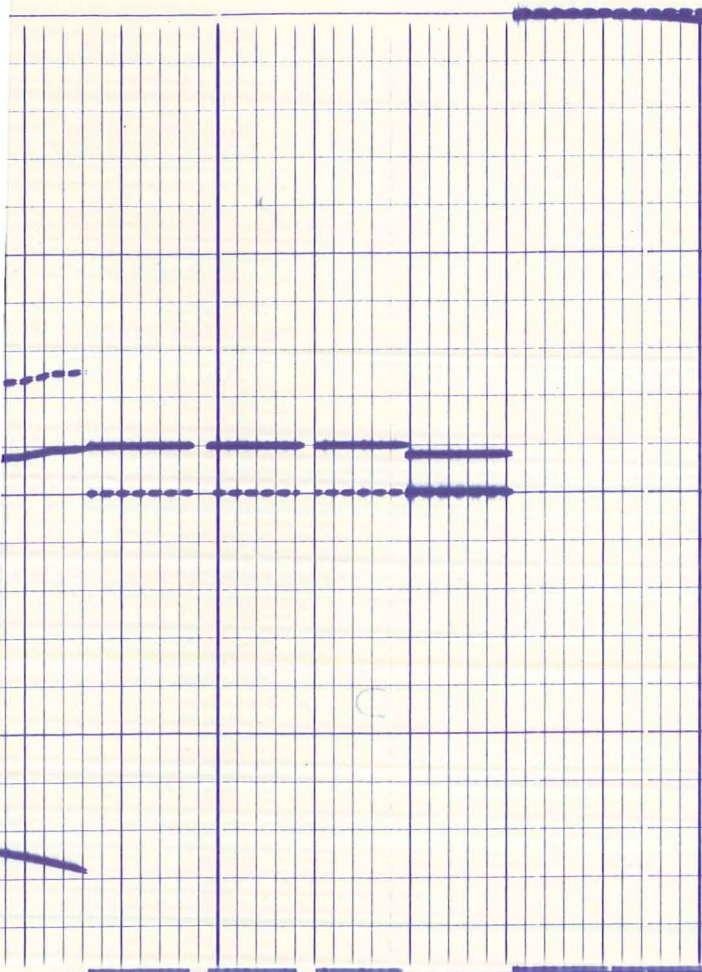
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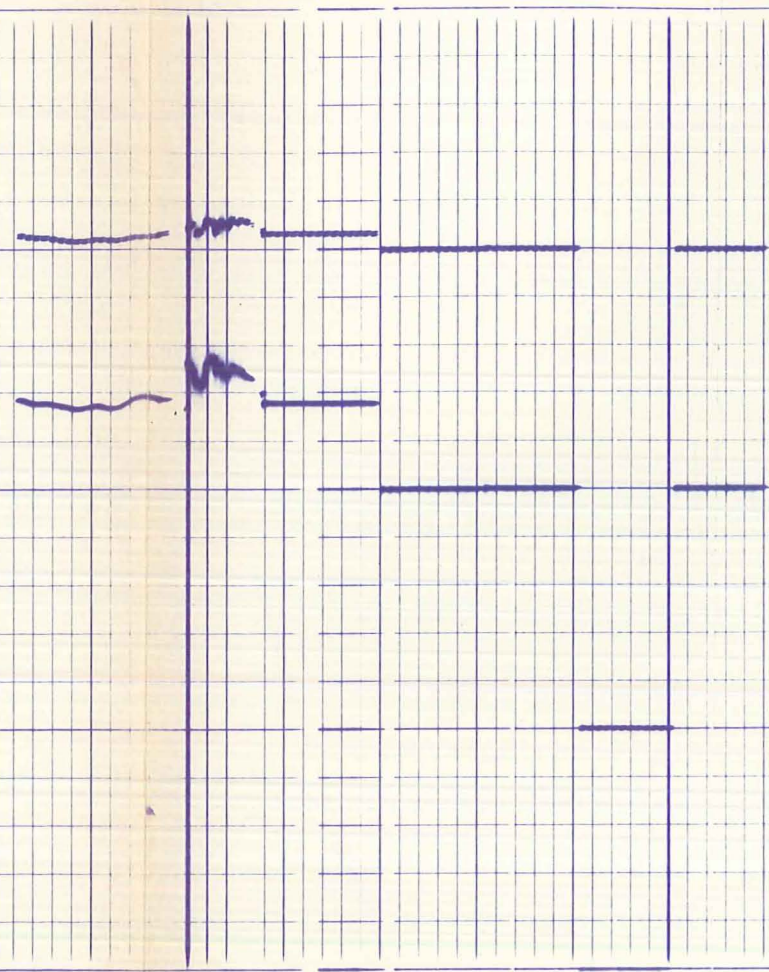


	COMPENSATED NEUTRON POROSITY 04-SS MATRIX
	60% 45% 30% 15% 0%
GAMMA RAY API UNITS 0 200	BULK DENSITY GRAMS/CC 2.0 2.25 2.5 2.75 3.0
CALIPER DIAM. IN INCHES 8" 18"	CORRECTION -0.25 0
CALIBRATION RECORD	

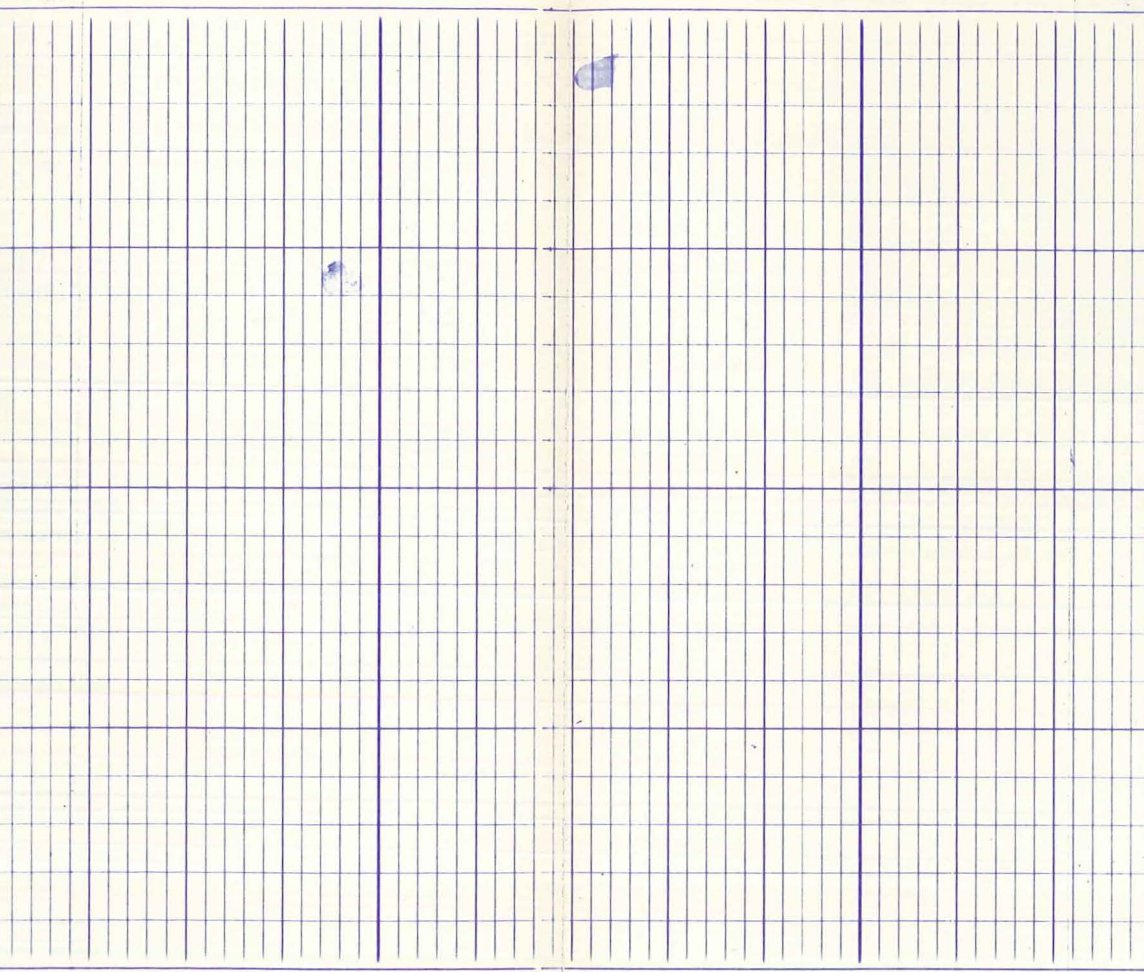




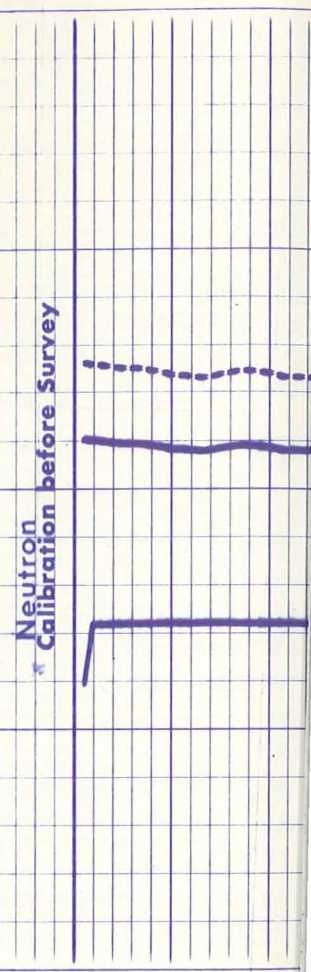
7 →
2 →
1 →



13 →
12 →
11 →
2 →
1 →

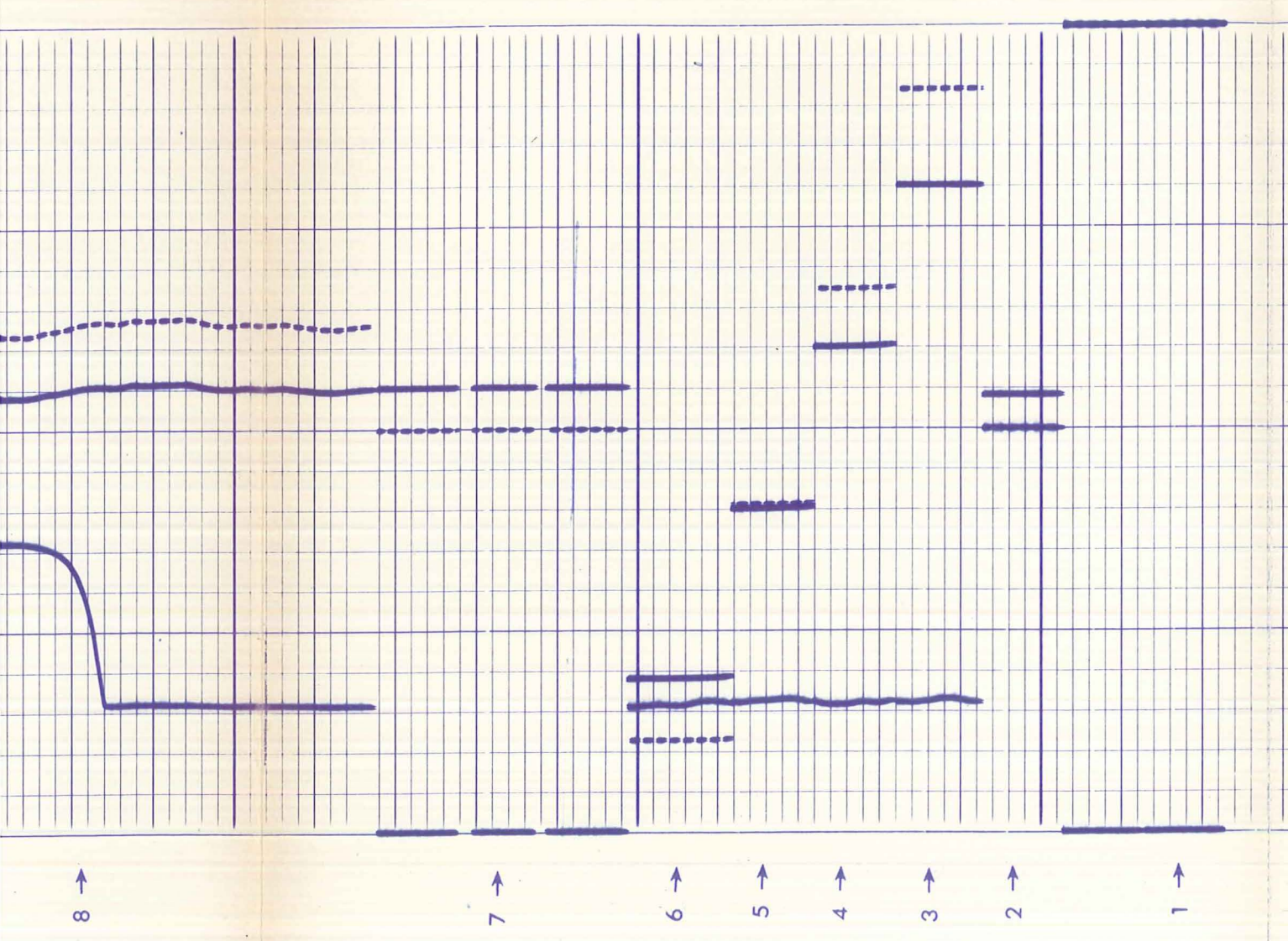


6
5
4
3
1



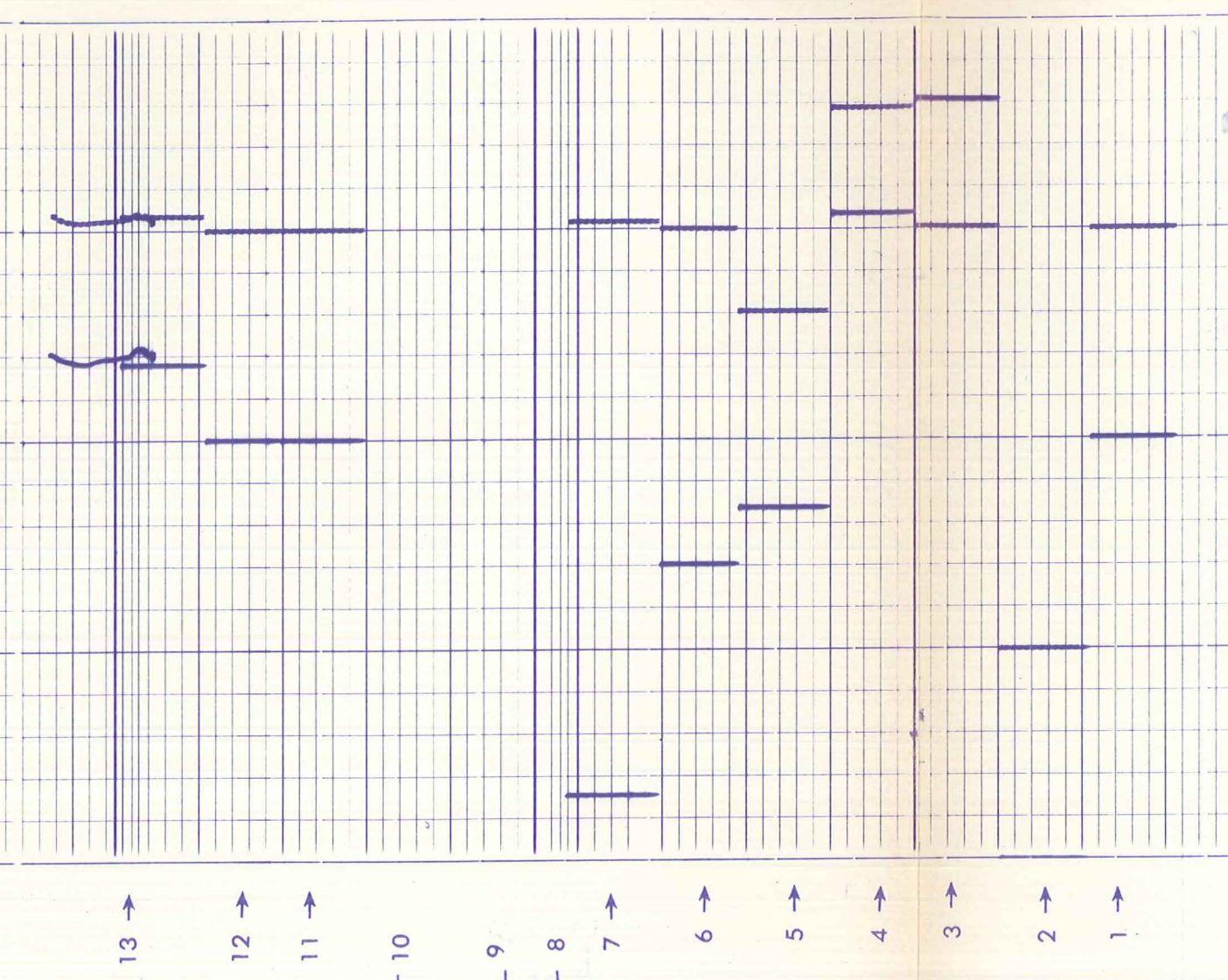
Run 1

6-10-70 064545



Run 1

Density Calibration before Survey



Run 1

8-14-70 10:64 495

8

7

2

1

8A

7A

6

5

4

3

2

1

COMPENSATED NEUTRON CALIBRATION CODING

1. MECHANICAL ZERO

2. RECORDED SENSITIVITY (THRU MEMORIZER IF USED)

RATIO

OH POROSITY

CH POROSITY

P A N E L		RATIO	OH POROSITY			CH POROSITY	
			LS <input type="checkbox"/>	SS <input type="checkbox"/>	DOL <input type="checkbox"/>	SS <input type="checkbox"/>	LS <input type="checkbox"/>
3.	1		1.6	4.9	-0.2	2.4	0.1
4.	2		15.6	19.7	8.1	13.0	9.0
5.	3		30.5	36.0	25.2	29.1	24.1
6.	4		45.4	53.1	47.5	47.5	43.2

47 MAY 18 1970

T E S T	7.	POROSITY NORMALIZED WITH CNB-A IN PLACE				CNC-A 409
	7A.	TOOL IN NCT-B				CNB-AB 594
	8.	LOG POSITION WITH CNB-A IN PLACE				SOURCE 495
	8A.	LOG POSITION WITH TOOL IN NCT-B				FAR 154
		OH		CH	NEAR 348	
	LS	SS	DOL	SS	LS	
	18	22.2	10.4	15.3	11.2	
		2.17				
	RATIO (NORMALIZED) = RATIO (NCT-B)				RATIO LOG	
					BLUE SET	

FORMATION DENSITY COMPENSATED CALIBRATION CODING

1.	MECHANICAL ZERO	MIXED SET	8.	MECHANICAL ZERO CALIPER
2.	RECORDER SENSITIVITY	PGS-ED 472	9.	8" RING
	<u>PANEL TEST</u>	PGC-G 213	10.	12" RING
		PDH-E 231	11.	TOOL CALIBRATE #1 SET $\rho = 2.50$
	<u>FDC LIQUID</u>	SFT-106 530	12.	TOOL CALIBRATE #2 SET $\Delta\rho = .00$
	<u>POS</u>	SOURCE 5146	13.	LOG POSITION $\rho = 2.59, \Delta\rho = .015$
3.	# 1	ρ 2.92		
4.	# 2	$\Delta\rho$ +.14		
6.	# 3	$\Delta\rho$ -.10		
6.	# 4	ρ 2.35		
7.	# 5	ρ 2.08		

2

Run 2

BEFORE SURVEY CALIBRATION SUMMARY

PERFORMED: 04/02/00
 PROGRAM FILE: NUC (VERSION 12.4 78/12/ 8)

SGTE DETECTOR CALIBRATION SUMMARY

	MEASURED			
GR	BKGD	JIG	CALIBRATED	UNITS
	30	198	164	GAPI

PGTE DETECTOR CALIBRATION SUMMARY

	BLOCK		JIG		
	CALIBRATED	MEASURED	CALIBRATED	UNITS	
FFDC	0	410	336	CPS	
NFDC	0	741	527	CPS	

PGTE CALIPER CALIBRATION SUMMARY

	MEASURED		CALIBRATED		
CALI	SMALL	LARGE	SMALL	LARGE	UNITS
	6.8	12.8	6.0	11.9	IN

2

AFTER SURVEY TOOL CHECK SUMMARY

PERFORMED: 04/02/00
 PROGRAM FILE: NUC (VERSION 12.4 78/12/ 8)

PGTE TOOL CHECK

		JIG		
	BEFORE	AFTER	UNITS	
FFDC	336	334	CPS	
NFDC	527	530	CPS	

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CALIBRATION RECORD

COMPANY	THERMAL POWER COMPANY	SCHL. FR	8535
WELL	DIXIE FEDERAL 45-14	SCHL. TD	8535
FIELD	DIXIE VALLEY	DRLR. TD	8534
COUNTY	CHURCHILL	STATE	NEVADA
		Elev: KB	3432
		DF	--
		GL	3410