Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

PRIMARY COPPER
SMELTING
AP-42 Section ~~7~~ 12.3
Reference Number
~~5~~ 6

ASARCO

AP-42
5th ed.
Section 12.3
#6

[illegible] Plant
W. R. Kelly
[illegible]
[illegible] DeSantis
[illegible]
[illegible] Liebert
[illegible]
[illegible] Covington
[illegible]

August 31, 1977

Mr. Alfred E. Vervaert
U. S. Environmental Protection Agency
Industrial Studies Branch
Emission Standards & Engineering Div.
Research Triangle Park, N. C. 27711

Dear Mr. Vervaert:

In response to your request for information pertinent to the operations during the emission test program at Asarco's El Paso smelter between June 19-30, 1977, enclosed are copies of operating logs, charts and production data for the days in question. Some of the chart data may appear to be incomplete but this is due to the equipment or instrument not operating during the test.

Please let us know if you find any of the enclosed information requires further clarification.

Sincerely yours,

W. F. Cummins

W. F. CUMMINS
Assistant Manager

WFC:gp
Encls.
cc: W. R. Kelly

PRODUCTION DATA (1977)

	6/21	6/22	6/23	6/24	6/25	6/26	6/27	6/28	6/29	6/30
Tons of Acid Produced	333	378	170	531	---	---	---	---	---	---
Tons of Roaster Feed Charged	698	929	476	989	989	989	695	1024	870	476
Tons of Raw Concentrate Charged From Bins X-11, 13 & 15	476	631	323	692	692	692	461	678	584	309
Tons of Calcine Charged to Reverb	---	---	---	---	---	910	639	942	800	438
Tons of Converter Slag Returned	---	---	---	---	---	352	408	396	372	228
Tons of Matte Tapped	---	---	----	---	---	663	561	731	680	187
Tons of Reverb Slag Tapped	---	---	---	---	---	800	800	720	720	400
Tons of Blister Copper	---	---	---	---	---	263	142	332	226	79

FORE' AN'S DAILY REVERBERATORY ' 'PORT

6-26 197 7

LADLES OF MATTE		POTS OF SLAG DUMP	GY	FURNACE LIQUID OA	MATTE	LADLES OF CONVERTER SLAG	GAS FLOW C.F.H.	NO. CHARGES YESTERDAY		TODAY	FOREMAN
#4	12	7		52/50	27/28	10	153,000 155,000	40	22/22	44	C. [illegible]
#1	12	6		50/49	25/26	9	155,000	52	26/28	54	[illegible]
#4	12	7		50/49	27/28	9	155,000	50	28/26	54	F. MACIAS
	38	20		51	28	28		142		152	5¼ OUT X 11 8½ LEFT

MATTE—TONS | 7 AM 10,2 | 3 PM | 11 PM 8

ANALYSIS CO_2 O_2 CO | TEMPERATURES MATTE SLAG

REMARKS: 7 SHIFT	REMARKS: 3 SHIFT	REMARKS: 11 SHIFT
WR dirty at back 7:00 pm	#4 WR dirty at back 2:50 pm	#4 WR dirty at back 11
Acid sprays at 7:00 pm	2 Acid sprays At 3:10 pm	.4 Acid sprays @ 1 [illegible]
dded 1 Car A&B to BW	1 CAR fm A&B hopper to B/W	
dded 1 ladle sand		1 Car A+B hopper to B.W
ut gas at 7:45 pm to 100 [illegible]	Smoke	Cleaned Burners @ 11 [illegible]
ecause slag running	3 WR out At 7:45 pm	" " @ 5 [illegible]
ut walls. Waiting		
r Slurry. Passed		
as at 8:45 pm		
ROKE:	Burner cleaned at 4:00 pm	
	Burners Cleaned at 9:30 pm	
2 WR out at 9:00 AM		
2 WR in at 11:10 AM		
		1014/152 = 6.671
		723 TO[illegible]
Pot (¼ Matte) from AF.		
s 673794	INT. GAS 679682	INT. GAS 685597
	A.O.S.	A.O.S.

FORE AN'S DAILY REVERBERATORY PORT

6-26 197 I

LADLES OF MATTE		POTS OF SLAG DUMP	POTS OF SLAG GY	FURNACE LIQUID OA	FURNACE LIQUID MATTE	LADLES OF CONVERTER SLAG	GAS FLOW C.F.H.	NO. CHARGES YESTERDAY	NO. CHARGES TODAY	FOREMAN
#1	12	7	2 shells	52/55	28/28	8	155,000 140,000	44 22/18	44	C Fesker
#4	12	7		52/50	25/28	12	155,000	54 16/22	38	Rincon
#1	9	6		48/50	28/27	14	155 000 100 000	54 24/12	36	[illegible]
	33			52	28	34		152	118	4 3/4 out X 11 3 3/4 left

MATTE—TONS | 7 AM | 3 PM 4 | 11 PM

ANALYSIS CO_2 O_2 CO | TEMPERATURES MATTE SLAG

REMARKS: 7 SHIFT	REMARKS: 3 SHIFT	REMARKS: 11 SHIFT
4 WR dirty at back 7 [illegible]	#4 wr dirty at back 2 40/am	#1 + #4 WR dirty 1[illegible]
Acid spray at back 7 [illegible]	2 Acid Spray at 2 50/am	2 Acid Sprays at 1[illegible]
[illegible] to 125 000 at 8 [illegible]	Burners clean at 5 30/am	
draft & too much matte	Burners clean at 9 15/am	
skimbay		Burners cleaned 1 45
		Burners cleaned
moke	Furnace very heavy	5 30 AM
2 WR out at 9 00 AM	and piling all shift	
WR IN at 10 15 AM		#1 [illegible] motor
		[illegible] at 5 [illegible]
		[illegible] 6 30 AM
		Furnace heavy
		all shift
4 pot (1/4 Matte) from F		691/118 = 5.855
		461 Tons [illegible]
GAS 692360	INT. GAS 698291	INT. GAS 704883
S.	A.O.S.	A.O.S.

FORE AN'S DAILY REVERBERATORY 'PORT

6-28 197

LADLES OF MATTE		POTS OF SLAG DUMP	POTS OF SLAG GY	FURNACE LIQUID OA	FURNACE LIQUID MATTE	LADLES OF CONVERTER SLAG	GAS FLOW C.F.H.	NO. CHARGES YESTERDAY	NO. CHARGES TODAY	FOREMAN
#4	13	6		52/51	28/29	9	155,000	44 24/20	48	C. Rasker
#1	12	6		50/48	26/24	14	155,000	38 24/26	50	Rincon
#4	13	6		52/50	29/27	10	155,000	36 24/22	46	[illegible]
	43	18		49	25	33		118	144	6¼-OUT X15 7 sec Left

MATTE—TONS | 7 AM 7 | 3 PM 6 | 11 PM 8

ANALYSIS CO_2 O_2 CO | TEMPERATURES MATTE SLAG

REMARKS: 7 SHIFT	REMARKS: 3 SHIFT	REMARKS: 11 SHIFT
4 WR dirty at back	#4 WR dirty at back 2 45/AM	#4 W.R. dirty 10
2 Acid sprays 7 00/AM	2 Acid sprays at 3 00/AM	2 Acid sprays 10
	Burners cleaned 6 00/AM	Cleaned burners
	Burners cleaned 10 00/AM	at 1 30/AM
Burners cleaned at 7 30/AM		
	Cast iron added to H. Furn.	
make		Cleaned burners
WR out at 9 20/AM		5 30/AM
WR in at 1 30/AM		
		1019/144 = 7.076
Pot (1/5 matte) from H.F.		678 TONS OTS.
INT. GAS 711 390	INT. GAS 717480	INT. GAS 723592
A.O.S.	A.O.S.	A.O.S.

FORE AN'S DAILY REVERBERATORY PORT

6-29 197 7

LADLES OF MATTE		POTS OF SLAG DUMP	POTS OF SLAG GY	FURNACE LIQUID OA	FURNACE LIQUID MATTE	LADLES OF CONVERTER SLAG	GAS FLOW C.F.H.	NO. CHARGES YESTERDAY	NO. CHARGES TODAY	FOREMAN
#1	14	6		49/49	25/26	15	155,000	48 27/26	48	C. Rasken
#4	13	6		49/50	25/21	10	155000	50 28/20	48	R Carlson
#1	13	6		51/50	23/25	6	155,000	46 26/28	54	F. MACIAS
	40	18		52	25	31		144	150	5-OUT X15 2-LEFT

MATTE—TONS | 7 AM | 3 PM | 11 PM 10

ANALYSIS CO_2 O_2 CO | TEMPERATURES MATTE SLAG

REMARKS: 7 SHIFT	REMARKS: 3 SHIFT	REMARKS: 11 SHIFT
4 WR dirty at back 7 00 PM	#4 WR dirty 2 50 PM	#4 WR dirty @ 11
Acid sprays at 7 00 AM	2 acid spray 2 55 PM	2 acid sprays @ 11
	Burners Cleaned 5 30 PM	Burners cleaned at 12
		" " " 5
	Added Pig iron to H.F.	
2 pot (½ Matte) from H.F.		
	Burners Cleaned 10 00 PM	
Fce heavy with layer all shift	Fce very heavy all second half of shift	
	Calcine car derail 9 45 PM until 10 50 PM	
		96/150 = 5.773
		584 TONS ITS.
INT. GAS 730140	INT. GAS 736692	INT. GAS 743092
A.O.S.	A.O.S.	A.O.S.
H.F. GAS	H.F. GAS	H.F. GAS

FORT AN'S DAILY REVERBERATORY PORT

6-30 197

LADLES OF MATTE		POTS OF SLAG DUMP	POTS OF SLAG GY	FURNACE LIQUID OA	FURNACE LIQUID MATTE	LADLES OF CONVERTER SLAG	GAS FLOW C.F.H.	NO. CHARGES YESTERDAY		NO. CHARGES TODAY	FOREMAN
#1	8	6		52/51	23/21	12	[illegible]	48	22/18	38	C. [illegible]
#4	3			50/49	25/25	7	80,000 100,000	48	12/18	30	R Carlos
	0	4		49/47	27/27	0	100,000	54	10/2	12	F. MACIAS
	11			47	27	19				80	

MATTE—TONS | 7 AM 9 | 3 PM | 11 PM

ANALYSIS CO_2 O_2 CO | TEMPERATURES MATTE SLAG

REMARKS: 7 SHIFT	REMARKS: 3 SHIFT	REMARKS: 11 SHIFT
WR dirty at back 200 AM	#4 WR. dirty 2 30 PM	WR #4 Dirty @ 11 00
Acid spray at 200 AM	2 Acid sprays 3 00 PM	0 Acid Spray @ 12
	1 Acid spray at 3 30 PM	
	Burners Cleaned 6 00 PM	
Pot (1/3 Matte) from H.F.		1 Pot (1/4 Matte) From H.F.
		Holding Fire on
[illegible] gas at 945 AM for		Reverb @ 6 15 PM
[illegible] to clean damper	Burners Cleaned 10 00 PM	
slot.		
Smoke!		471 ÷ 80 = 58875
WR out 10 40 AM		309 TONS CONCTS.
Damper down at 11 5 PM		
T. GAS 749818	INT. GAS 755004	INT. GAS 758700
O.S.	A.O.S.	A.O.S.

EL PASO CONVERTER REPORT DATE: [illegible] CONVERTER NO. 1 CHARGE NO. [illegible] HALF ANODE CHG. NO. [illegible]

PREVIOUS CHARGE OUT AT 430 AM/PM
WAITING ON BATH FROM 630 AM/PM (waiting for mechanic to finish punches)
TURN AROUND TIME [illegible] MINUTES

COPPER FINISH: 94272
SLAG START: [illegible]
TOTAL TIME: _____ HRS.

	7-3	3-11	11-7	
AIR MOTOR TESTED	OK	OK	OK	AM/PM
DRUM LEVEL CHECKED	OK		OK	AM/PM

Bad [illegible]

MATTE 11 DR	REV	MINUTES FLUX	AIR ON		AIR OFF		AM/PM	MINS. BLOW	POTS SLAG		ADDITIONS	REMARKS & DELAY FROM	TO	REASON
11	3	3	7	25	8	35	PM	75	1			6:30 pm		Waiting for Crane Service
1	11	3	8	40	9	40	✓✓	60	1½	1	[illegible]			only one Crane in operation
	1	2-1	9	50	11	15	✓✓	85	1½	1	[illegible]			Middle Crane B.r. 4:50 pm Til 2:25
	1	2-2	11	20	12	05	A.M	45	1	1	Ladle hot cross walls			
	1	2-2	12	10	1	05	✓✓	55	1½					
	1	2-2	1	10	2	05	✓✓	55	1	1½	" Hi G. to #3 conv.			
	—	2-1	2	10	2	55	✓✓	45	1					
	1-1	2-1-2	3	05	4	10	✓✓	65	1	1	" slag shells			
	1	2-1	4	15	6	10	✓✓	55	1					
	1	2	6	15	7	40	✓✓		½	1	" " "			
		1	7	45	10	30	AM		½					
			10	35	11	50			½					
										¾	[illegible] 3-11			

AVERAGE AIR FLOW _____
AVERAGE TEMPERATURE _____

2¾ LADLES OF CU TO ANODE # 2
CONDITION OF CU high + little cold

(58)

	7-3	3-11	11-7
SKIMMERS:	Garcia	D.H.	Ochoa
FOREMAN:	A.W. Myers		JB

TUYERE MEASUREMENTS BEFORE LINING TUYERES OPEN 24

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

EL PASO CONVERTER REPORT DATE: 6-22-77 CONVERTER NO. 1 CHARGE NO. 474 HALF ANODE CHG. NO. 2.3

PREVIOUS CHARGE OUT AT 12 30 AM/PM
WAITING ON BATH FROM _____ AM/PM
TURN AROUND TIME _____ MINUTES

COPPER FINISH: 9440-1
SLAG START: _____
TOTAL TIME: _____ HRS.
4 ch 4

	7-3	3-11	11-7	
AIR MOTOR TESTED	ok	ok		AM/PM
DRUM LEVEL CHECKED	ok	ok		AM/PM

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG		ADDITIONS	REMARKS & DELAY FROM	TO	REASON
	2-1	2.1	2 45	3 45	P.M.	60	1	1	L ladle of cleanup			Tuyeres hard to open
	1	3	3 50	5 25	"		1					
2	11	3-	5 10	7 10	"	60	2	1	[illegible]	7 10 P.M.	[illegible]	N. Crane Bridge BO 7 00 P.M.
		2 1	7 [illegible]	11 20	"		—					til
		—	12 35	1 30	AM.		1					Waiting for Crane service
	—	2	7 30	8 25	AM					11 20 P.M.	12 35 AM	Blowing #2 & #3 conv.
	1	—	9 50	10 40	AM			1½	L. of W.M from #2 Conv.	1 30 AM		" " #2 & #3 "
	—	1	10 45	11 20	AM					8 25 AM		No Crane service waiting on Matte
	Cu	Blow	11 25	11 30	AM		—	1	L. of clean up (S)	11 30 AM	11 50 AM	Metal leaking on tuyeres [illegible]
			11 50	2 30	P.M.		1					
			3 35	3 50	"		1/4					
									N. Crane on the Way to transfer Cu to #2 avail			
									3 45 P.M. til			
								1	[illegible]			

AVERAGE AIR FLOW _____ 2½ LADLES OF CU TO ANODE # 2 (53)
AVERAGE TEMPERATURE _____ CONDITION OF CU _____

	7-3	3-11	11-7
SKIMMERS:	[illegible]	[illegible]	
FOREMAN:	A. Myers	[illegible]	

TUYERE MEASUREMENTS BEFORE LINING TUYERES OPEN 21

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

EL PASO CONVERTER REPORT DATE: 6-2-1 CONVERTER NO. 1 CHARGE NO. 1 HALF ANODE CHG. NO. V

PREVIOUS CHARGE OUT AT 1030 AM/PM

WAITING ON BATH FROM _____ AM/PM

TURN AROUND TIME _____ MINUTES

~~COPPER FINISH:~~ 94447 (wash out)

SLAG START: 9-11-0-1

TOTAL TIME: _____ HRS.

AIR MOTOR TESTED	7-3 OK	3-11	11-7 OK	AM/PM
DRUM LEVEL CHECKED	OK		OK	AM/PM

111

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG	ADDITIONS	REMARKS & DELAY FROM	TO	REASON
2	3	3	3:00	3:15				½ Ladle slag shells			
—	—	2	3:45	4:30					5:15	5:45	Changing Converter Lips
1	1	2	4:—	5:35	8AM	60	1				
	1	3	5:40	6:30	"	50	2				
	1	2	6:35	8:—	"	85	1½	1 Ladle of Cleanser			
	—	2	8:05	8:15	—	10	—	½ Liquid slag	8:15 AM		Smoke
	—	—	10:50	10:53	—	5	—	1½ L.W.M. to Converter #3	10:53 AM		Damper B.O.
									9:00 PM	9:15 PM	Washout to no Converter
								Washout			

AVERAGE AIR FLOW _____

AVERAGE TEMPERATURE _____

LADLES OF CU TO ANODE # _____

CONDITION OF CU _____

SKIMMERS:	7-3 Garcia	3-11	11-7 Miranda
FOREMAN:	A Myers		J Ortiz

3H

TUYERE MEASUREMENTS BEFORE LINING	TUYERES OPEN

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
																																X								

EL PASO CONVERTER REPORT DATE: 6-24-77 CONVERTER NO. 1 CHARGE NO. — HALF ANODE CHG. NO. — X

PREVIOUS CHARGE OUT AT 9 15/PM AM/PM

WAITING ON BATH FROM _____ AM/PM

TURN AROUND TIME _____ MINUTES

Washout ~~COPPER FINISH~~: 94491

~~SLAG~~ START: 9444-7

TOTAL TIME: _____ HRS.

6th Chge

	7-3	3-11	11-7	
AIR MOTOR TESTED	ok			AM/PM
DRUM LEVEL CHECKED	ok			AM/PM

11

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG		ADDITIONS	REMARKS & DELAY FROM	TO	REASON
3	3	3-3	2 —	2 50	A.M.		1					
	1	2	2 50	4 50	✓✓		1½	1	Ladle clean up			[illegible] #2 and #3 conv.
	1-1	3	7 35	9 35	✓✓	120	1	1	L. of clean up (S)	9 35 AM		Smoke 9 35 AM.
									3 L Washout to #2 conv			at 14 30/A.M.
										11 00 P.M.		N. crane 45 ton B.O.
										6 00 A.M.		S. crane 30 ton B.O.
								8	mins Silica 11-7			

AVERAGE AIR FLOW _____ LADLES OF CU TO ANODE # _____

AVERAGE TEMPERATURE _____ CONDITION OF CU _____

	7-3	3-11	11-7
SKIMMERS:			
FOREMAN:	[illegible]		[illegible]

TUYERE MEASUREMENTS BEFORE LINING TUYERES OPEN ~~[illegible]~~ 19.

EL PASO CONVERTER REPORT

DATE: 6-22-77 CONVERTER NO. 2 CHARGE NO. _____ HALF ANODE CHG. NO. _____

PREVIOUS CHARGE OUT AT _____ AM/PM

WAITING ON BATH FROM 945/ AM/PM

TURN AROUND TIME _____ MINUTES

Slag COPPER FINISH: 8704.8

SLAG START: 8898.5

TOTAL TIME: _____ HRS.

1st chg.

	7-3	3-11	11-7	
AIR MOTOR TESTED	OK	OK	OK	AM/PM
DRUM LEVEL CHECKED	OK	OK	OK	AM/PM

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG		ADDITIONS	REMARKS & DELAY FROM	TO	REASON
												First matte at 95°/P.M.
	3-1	3-3	11 35	12 35	A.M.	60	1½			12 35 Am		Blowing #1 & 3 conv
	1	3-3	1 30	2 35	✓✓	65	2			3 15	4 25 Am	Smoke
1	1	3-	2 40	3 15	✓✓	35	—	1	Ladle slag shells	5 25 Am		One crane service
	1	3-2	4 25	5 25	✓✓	60	1					
	—	2-2	5 30	6 25	✓✓	55	1½			7 30		High waiting for matte
	1	2-	6 30	7 30	✓✓	60		1	Ladle cleaning			" "
	1-1		8 25	9 -	✓✓	35	1					
	1-1	3	9 05	9 40	✓✓	35	1	1½	L. & W.M. to conv #1			
								3	L " " " " " #3			
												ONE CRANE ONLY
												All Night
									North CRANE B.O			
									middle CRANE B.O		430/Am	
									South CRAN. B.O	530/Am		

AVERAGE AIR FLOW _____

AVERAGE TEMPERATURE _____

LADLES OF CU TO ANODE # _____

CONDITION OF CU _____

	7-3	3-11	11-7
SKIMMERS:	Garcia		Ochoa
FOREMAN:	A. Myers	JH	J. Ortiz

TUYERE MEASUREMENTS BEFORE LINING — TUYERES OPEN

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

EL PASO CONVERTER REPORT DATE: 10-25-71 CONVERTER NO. 4 CHARGE NO. _____ HALF ANODE CHG. NO. _____

PREVIOUS CHARGE OUT AT 1005 AM/PM

WAITING ON BATH FROM _____ AM/PM

TURN AROUND TIME _____ MINUTES

COPPER FINISH: _____

SLAG START: 6:00 4.7

TOTAL TIME: _____ HRS.

2nd shift.

AIR MOTOR TESTED	7-3	3-11	11-7
	OK		OK AM/PM
DRUM LEVEL CHECKED	OK		OK AM/PM

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG	ADDITIONS
1-1	1-1-1	3	1 30	2 —	PM	30	—	1½ L Mn, Lt in corner from Converter Liaison
	1	3-2	3 30	4 20	"	50	—	
	1	1	5 15	5 25	"	10	2	
	—	3	5 30	6 10	"	40	—	
	1	2	7 25	7 45	"	20	—	
	1	2	10 10	11 55				
	1	2-2	11 40	12 10	AM	30	1½	
o	1	2-1	12 15	12 50	"	40	—	1 Ladle slag add.
.	1	—	1 —	1 50	"	50	2½	1 " anode slag
	—	2-2	1 55	2 55	"	60	2	
			3 40	6 25	AM	165	½	1 Ladle slag shells
			6 30	6 50	"			

REMARKS & DELAY FROM	TO	REASON
2 PM		Blowing #1 & #3 Conv
4:20 PM	5 PM	Waiting for crane service Elec using M. crane to pull and push N. Crane
7:45	10:10	M. crane shut B.O.
		M. crane shut B.O. no crane can not move
9:00 PM		N crane 60 B.O. 9:00 P.M. til Cranes are on S. end of ca. building
10:05		Waiting on Crane
2:55 PM		Blowing #1 + #3
7:00 AM		wait on crane to TRANS. CU.

AVERAGE AIR FLOW _____

AVERAGE TEMPERATURE _____

45 LADLES OF CU TO ANODE # 1 (105)

CONDITION OF CU _____

SKIMMERS:	7-3	3-11	11-7
FOREMAN:	Meyers		Coates

TUYERE MEASUREMENTS BEFORE LINING																					TUYERES OPEN																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

EL PASO CONVERTER REPORT DATE: 6-24-71 CONVERTER NO. _____ CHARGE NO. _____ HALF ANODE CHG. NO. 1

PREVIOUS CHARGE OUT AT 8 30 AM/PM

WAITING ON BATH FROM _____ AM/PM

TURN AROUND TIME _____ MINUTES

COPPER FINISH: 8925.3

SLAG START: 8913.7

TOTAL TIME: _____ HRS.

	7-3	3-11	11-7	
AIR MOTOR TESTED	OK	OK	OK	AM/PM
DRUM LEVEL CHECKED	OK		OK	AM/PM

11 Charge LINING

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG	ADDITIONS		REMARKS & DELAY FROM	TO	REASON
	3	—	11 56	12 —	AM.	10	—	1	cover of [illegible]	12:00 PM	12 PM	Dampen B.O.
	1	—	12 45	3 10	P.M.	1.5	—			3 1/4 PM	3	Drum Level Gmeter Shop
			3 30	11 35	"	1.5						working ON INSTRUMENT
	4		5 --	5 --	"	35	1 1/2					
	13		5 40	7 30	"	2	2	1	Ladle of [illegible]			
	3		7 50	8 50		60	2	1	" " " " "			
	2		8 55	9 55		1.0	1	2	Ladles of W.M from No1 Conv			
	2		11 --	12 20	AM.	140	1	1	[illegible]			
	2		12 25	1 25	"	60	1/4					
	—		1 30	1 55	"	95	1/4					
								1	[illegible]	4:00		

AVERAGE AIR FLOW _____

AVERAGE TEMPERATURE _____

43/4 LADLES OF CU TO ANODE # 2 (100)

CONDITION OF CU Hi + clean

SKIMMERS:	7-3	3-11	11-7
	Garcia	[illegible]	Eichen
FOREMAN:	A. Wagner		Jacobs

TUYERE MEASUREMENTS BEFORE LINING — TUYERES OPEN

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

PREVIOUS CHARGE OUT AT 12 15 AM/PM

WAITING ON BATH FROM 1245 AM/PM

TURN AROUND TIME 30 MINUTES

COPPER FINISH: 9988.3

SLAG START: 9972.1

TOTAL TIME: _____ HRS.

3rd Charge

	7-3	3-11	11-7
AIR MOTOR TESTED			O.K AM/PM
DRUM LEVEL CHECKED			O.K AM/PM

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG		ADDITIONS	REMARKS & DELAY FROM	TO	REASON
1	2-1	3	1 45	2 45	P.M.	60	—	1	Can of precipitate	2 45 P.M.	3 45 PM	Conv. hi, waiting for matte
	1	2	3 45	4 =	✓✓	15	1	1	L. anode slag and shells			
	1	3	4 05	4 40	✓✓	35	1					
	1-1	3-1	4 45	5 45	✓✓	60	2 1/2	1	Ladle of clean up (S)			
	1	3	5 50	6 45	✓✓	55	1 1/2					
	1	3	6 50	8 45	✓✓	115	2					
	1	3	8 50	9 25	✓✓	35	1 1/2					
(11)	1	3	9 30	11 10	✓✓	95	2			11 [illegible]	2 [illegible]	only one crane in service
	1	2-1	11 15	12 20	✓✓	55	1	1	slag shell			
	1	2-1	12 25	1 25	AM	60	1					
	1	2-1	1 30	2 35	✓✓	65	2					
								20	Anode bars & 2 molds			
Cu Blow		1	2 40	8 40	AM		1 1/2	1	Ladle of ~~[illegible]~~ Shells (2)			
								1 1/2	Ladles of W.M. from #1 conv.			
								2	Silica Hopper used 3-11 shift		6-21-77	
								1	" " " 11-7	"	6-21-77	

Small matte

AVERAGE AIR FLOW _____

AVERAGE TEMPERATURE _____

4 1/2 LADLES OF CU TO ANODE # _____

CONDITION OF CU Si

(95)

	7-3	3-11	11-7
SKIMMERS:		[illegible]	Zavala
FOREMAN:	A. Myrick		[illegible]

TUYERE MEASUREMENTS BEFORE LINING — TUYERES OPEN 36

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
																																				X	X	X	X	X

EL PASO CONVERTER REPORT DATE: 6-22-77 CONVERTER NO. _____ CHARGE NO. _____ 2nd HALF ANODE CHG. NO. 235

PREVIOUS CHARGE OUT AT 9:25 AM/~~PM~~

WAITING ON BATH FROM 10:10 AM/~~PM~~

TURN AROUND TIME _____ MINUTES

COPPER FINISH: 0003.9

SLAG START: 9988.3

TOTAL TIME: _____ HRS.

	7-3	3-11	11-7	
AIR MOTOR TESTED		ok	OK	AM/PM
DRUM LEVEL CHECKED		ok	OK	AM/PM

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG	IV change	ADDITIONS	REMARKS & DELAY FROM	TO	REASON
	3-1	3	11 35	1 30	AM	115	2	1	L. of clean up (2)			
(5)	1	2-1	1 35	2 30	PM	55	2	1	L. of Anode slag (5)			
	1-1	1-2	2 35	4 20	PM	1:45	1	1/2	L. of wide slag from #1 Conv. (1)	3 00 PM		Waiting for Matte Middle Crane B.O. North Crane Service
	1	2	4 25	5 20	PM	55	1 1/2	1	L. of Hot Dross Matte (5)			
(10)	1-1	2-1	5 25	7 10	P.M.	1:45	—	1	L. of clean up (2)	7 10 P.M.	9 20 PM	Waiting for Crane Service North Crane B.O. Conv. to Lt
	—	—	7 20 PM	9 35	P.M.	15	1	1	" " " " (2)	9 20 PM		South Crane Service only
	1	2	9 40	10 30	P.M.	50	1					
	1	2	10 35	11 50	"	75	—	1	L. of Clean up (5)	11 50 PM	12 10 AM	Waiting for Matte
	1	2	12 10	1 05	AM	55	2			10 5 AM	1 20 AM	cleaning conv. mouth
	—	1	1 20	2 10	"	50	1 1/2					
		1	2 15	6 25	AM	250	1/2	1	Ladle of clean up			
			6 30	7 —	"	30	1/4			7 A.M.		Waiting for crane service north & south Crane B.O.

AVERAGE AIR FLOW _____

AVERAGE TEMPERATURE _____

4 1/2 LADLES OF CU TO ANODE # 2 (95)

CONDITION OF CU _____

	7-3	3-11	11-7
SKIMMERS:		CAPPEON	[illegible]
FOREMAN:		[illegible]	[illegible]

TUYERE MEASUREMENTS BEFORE LINING TUYERES OPEN

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

EL PASO CONVERTER REPORT DATE: 6-25-11 CONVERTER NO. 5 CHARGE NO. _____ HALF ANODE CHG. NO. 12

PREVIOUS CHARGE OUT AT 830 AM/PM

WAITING ON BATH FROM _____ AM/PM

TURN AROUND TIME _____ MINUTES

COPPER FINISH: 0015.3

SLAG START: 0003.9

TOTAL TIME: _____ HRS.

AIR MOTOR TESTED	7-3	3-11	11-7	AM/PM
		OK		
DRUM LEVEL CHECKED		OK	OK	AM/PM

5th Charge

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG	ADDITIONS		REMARKS & DELAY FROM	TO	REASON
	1	2	10 05	10 40	A.M.	35	½	2½	L. of W.M. from #2 Conv.	10 40 AM	10 45 AM	Waiting on Crane operator-N+S. Cranes B.
	1-1	2-2	11 45	12 45	"	60	1	1	L of Clean up (5)			
	1	2	12 50	1 40	P.M.	50	1			1 40 PM		Blowing #1+2 Conv.
(5)	1	2	2 —	3 30	"	1½	—	1	L. of anode slag	3 PM	3 50 PM	N+S. Cranes - B.O. Blowing #2 Conv. Waiting for Crane operator
	—	1	3 50	4 00	"	10	1					
	1	2	4 05	5 30	"	85				5 30 PM	6 40 PM	M. Crane hot rail shut
(9)	1	—	6 40	6 50	"	10	2					B.O. 5 30 PM til
	—	2	6 55	7 51	"	55	—	1	Ladle of Anode Slag (5)	7 50 PM	8 PM	M.+N+S Cranes B.O. Waiting for Slag Tracycle going to Conv.
	1	—	8 30	8 50	"	20	1					
	—	2	8 55	9 20	"	25	—			9 30 PM		Waiting for Slag Ladle N. Crane B.O.
(9)	1	1	10 55	12 —	"	65	1½					
		1	12 05	3 05	AM	180	½	1	Ladle of slag			
			3 10	3 46	"	30	¼					

(95)

AVERAGE AIR FLOW _____

AVERAGE TEMPERATURE _____

4½ LADLES OF CU TO ANODE # 1

CONDITION OF CU hi hot and clean

SKIMMERS: 7-3 _____ 3-11 CARREON 11-7 Mendez

FOREMAN: _____ JFS JFS

TUYERE MEASUREMENTS BEFORE LINING														TUYERES OPEN																								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
																																				X	X	X	X	X

EL PASO CONVERTER REPORT DATE: 6-24-77 CONVERTER NO. 2 CHARGE NO. 480 481 HALF ANODE CHG. NO. 1st 2nd

PREVIOUS CHARGE OUT AT 6= AM (PM)
WAITING ON BATH FROM 645 AM (PM)
TURN AROUND TIME 45 MINUTES

COPPER FINISH: 0034.8
Lining ~~LEAD~~ START: 0024.0
TOTAL TIME: _____ HRS.

AIR MOTOR TESTED	7-3	3-11	11-7	AM/PM
	OK	O.K	OK	
DRUM LEVEL CHECKED	OK	O.K	OK	AM/PM

Lining

MATTE DR	MATTE REV	MINUTES FLUX	AIR ON	AIR OFF	AM/PM	MINS. BLOW	POTS SLAG	ADDITIONS		REMARKS & DELAY FROM	REMARKS & DELAY TO	REMARKS & DELAY REASON
	3-1	=	7 30	10=	PM	150	=	1	Can of precipitates			
	1-1	3-2	10 20	10 45	VV	25	2					
	1	3	10 50	11 50	VV	60	1	1	L. of clean up (2)			
	1	3	11 55	12 40	AM	45	1					
	1	2	12 45	1 40	"	55	1½	1	Ladle of clean up			
	1	3	1 45	2 40	"	55	1					
(11)	1	3	2 45	3 50	"	65	1			3 50 AM	4 05 AM	Cleaning around trunnions
		1	4 05	7 05	AM	180	1	25	Cu scrap Bars			
			7 10	7 35	"	25	½	1	Bot anode clean up			
								1	Hopper Silica 11-7			

AVERAGE AIR FLOW _____
AVERAGE TEMPERATURE _____

3 LADLES OF CU TO ANODE # 1 (63)
CONDITION OF CU Good

SKIMMERS: 7-3 Carolyn D. Jones | 3-11 [illegible] | 11-7 Wanda
FOREMAN: JCS T Smith | J Ortiz

TUYERE MEASUREMENTS BEFORE LINING — TUYERES OPEN

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

EL PASO PLANT

DAILY WEDGE ROASTER REPORT

S 42750

Date 6-26 19

IN NO.	MIX NO.	START	FINISH
~~A13~~	148		10:35 P.m
~~A11~~	151	11:30 P.m	

Charge in Roaster Hoppers 300 Tons X

CALCINE TEMPERATURES

	7 A.M. SHIFT				3 P.M. SHIFT				11 P.M. SHIFT			
	NO. ~~9~~	No. ~~12~~	No. ~~B~~	No. ~~14~~	NO. ~~9~~	No. ~~12~~	No. ~~B~~	NO. ~~14~~	No. ~~9~~	No. ~~12~~	No. ~~13~~	No.
1	—	1020	1060	1060	—	1040	1060	1070	—	1060	1040	
2	—	1020	1020	1040	—	1020	1050	1060	—	1040	1080	
3	—	1040	1040	1060	—	1040	1060	1070	—	1060	1040	
Avg.	—	1026	1040	1053	—	1033	1026	1066	—	1053	1053	

	ROASTERS IN OPERATION	CALCINE CHARGES	FLUE DUST CHARGES	TOTAL CHARGES	OPERATING HOURS No. ~~9~~	No. ~~12~~	No. ~~B~~	No. ~~14~~	No. OF MEN	TIME DOWN FOR REPAIRS
7:00	3	44		44	—	6¼	5¾	8	10	
3:00	3	54		54	—	7¼	8	7¼	8	
11:00	3	54		54	—	8	7½	8	8	
Total		152		152	—				26	

7:00 Shift 2 TRIPS X 11:00 AM 0 TRIPS X PLOW-DOWN # # X BAR-DOWN-HOPPER #

#3 roaster down at 9:10 to 11:15 a.m for smoke

3:00 Shift 2 TRIPS X 7:00 PM 2 TRIPS X PLOW-DOWN # # X BAR-DOWN-HOPPER

#2-4 roasters Shutdown at 7:45 to 8:P.m for smoke

11:00 Shift 2 TRIPS X 3:00 AM 2 TRIPS X PLOW-DOWN # # X BAR-DOWN-

EL PASO PLANT

DAILY WEDGE ROASTER REPORT

42750

Date 6-27- 19

N NO.	MIX NO.	START	FINISH	
X11	151			

Charge in Roaster Hoppers Tons X 400

CALCINE TEMPERATURES

	7 A.M. SHIFT				3 P.M. SHIFT				11 P.M. SHIFT			
	NO. 8	No. 10	No. 9	No. 12	NO. 8	No. 10	No. 9	NO. 12	No. 8	No. 10	No. 11	No. 12
1	—	1020	1010	1060	—	1035	1040	1070	—	1040	—	1020
2	—	990	1000	1060	—	1030	—	1060	—	1030	—	1070
3	—	1010	1020	1090	—	1040	1070	1080		1050	1040	1060
Avg.	—	1020	1010	1066	—	1035	1055	1070		1040	1045	1050

1014

	ROASTERS IN OPERATION	CALCINE CHARGES	FLUE DUST CHARGES	TOTAL CHARGES	OPERATING HOURS No. 8	No. 10	No. 9	No. 12	No. OF MEN	TIME DOWN FOR REPAIRS
7:00	3	46		46	—	8	6¾	8	10	
3:00	3	38		38	—	3	5¾	6	8	
1:00	3	36		36	—	6	2¾	6¾	7	
Total	9	120		120	—	17	16¼	20¾	25	

7:00 Shift 2 TRIPS X 11:00 AM 2 TRIPS X PLOW-DOWN # # X BAR-DOWN-HOPPER #
3-Roaster down at 9:6 10:15 PM

3:00 Shift 2 TRIPS X 7:00 PM 3 TRIPS X PLOW-DOWN # # X BAR-DOWN-HOPPER.

1:00 Shift 2 TRIPS X 3:00 AM 2 TRIPS X PLOW-DOWN # # X BAR-DOWN-
Roaster down at 6:30 for Repairs
to the Track Calciner Case

(2.3)

EL PASO PLANT

DAILY WEDGE ROASTER REPORT

42750

Date 6-28-77 19

N NO.	MIX NO.	START	FINISH
11	151		12:15 P.m
15	153	12:45 P.m	

Charge in Roaster Hoppers Tons X [illegible]

CALCINE TEMPERATURES

	7 A.M. SHIFT				3 P.M. SHIFT				11 P.M. SHIFT			
	NO. 9	No. 10	No. 13	No. 14	NO. 9	No. 10	No. 13	NO. 14	No. 9	No. 10	No. 11	No. 12
1	1000	—	1040	1050	—	1040	—	1050	—	1030	1040	1080
2	1120	—	1020	—	—	1030	1070	1080	1040	1010	1020	1050
3	[illegible]	1040	1040	1020	—	1010	1050	1030	—	1040	—	1030
Avg.	[illegible]	1040	1033	[illegible]	—	1026	1060	1053	1040	1026	1030	1053

1024

	ROASTERS IN OPERATION	CALCINE CHARGES	FLUE DUST CHARGES	TOTAL CHARGES	OPERATING HOURS No. 9	No. 10	No. 13	No. 14	No. OF MEN	TIME DOWN FOR REPAIRS
7:00	4	48		48	7½	3¼	7¼	4¾	12	
3:00	4	50		50	1¾	8	4¾	8	8	
11:00	4	46		46	4½	5	5½	6	8	
Total	12	144		144	13¾	16¼	17¼	18¾	28	

7:00 Shift 3 TRIPS)(11:00 AM 2 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER #

2-4- [illegible]

[illegible] for check [illegible] change [illegible]

3:00 Shift 3 TRIPS)(7:00 PM 3 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER

11:00 Shift 2 TRIPS)(3:00 AM 3 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER #

28

EL PASO PLANT

DAILY WEDGE ROASTER REPORT

42750

Date 6-29-77 19

IN NO.	MIX NO.	START	FINISH	
-15	153			

Charge in Roaster Hoppers Tons X 440

CALCINE TEMPERATURES

	7 A.M. SHIFT				3 P.M. SHIFT				11 P.M. SHIFT			
	NO. 9	No. 10	No. 11	No. 12	NO. 9	No 10	No. 11	NO. 12	No. 9	No. 10	No. 11	No. 12
1	1070	1020	1090	1080	—	1030	1020	1080	1040	1070	1030	1050
2	1080	1040	1060	1070	[illegible]	1050	1080	1070	1020	1060	1060	107
3	1060	1020	1070	1050	[illegible]	1040	1030	1060	1020	1090	1030	30
Avg.	1070	1026	1073	1076	[illegible]	[illegible]	1043	[illegible]	1026	1073 1050	1040	1050

	ROASTERS IN OPERATION	CALCINE CHARGES	FLUE DUST CHARGES	TOTAL CHARGES	OPERATING HOURS No. 9	No. 10	No. 11	No. 12	No. OF MEN	TIME DOWN FOR REPAIRS
7:00	4	48	—	48	5¼	5¼	4¾	5¼	12	
3:00	4	46	—	46	3	7¼	6¼	7¼	9	
1:00	4	54	—	54	5¼	5½	6	5½	7	
Total	12	148	—	148	13½	18¼	19¼	18	26	

7:00 Shift 2 TRIPS)(11 00 AM 3 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER #

3 ROASTER DOWN CHANGE PLOWS [illegible]

DECKS

3:00 Shift 2 TRIPS)(7 00 PM 3 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER

11:00 Shift 3 TRIPS)(3 00 AM 3 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER #

(2.8)

EL PASO PLANT

DAILY WEDGE ROASTER REPORT

42750

Date 6-30-77 19

N NO.	MIX NO.	START	FINISH	
15	153			

Charge in Roaster Hoppers Tons X

CALCINE TEMPERATURES

	7 A.M. SHIFT				3 P.M. SHIFT				11 P.M. SHIFT			
	NO. 9	No. 10	No. 11	No. 12	NO. 9	No. 10	No. 11	NO. 12	No. 9	No. 10	No. 11	No. 12
1	—	1020	—	1060	1060	1030	1040	1020	—	—	—	—
2	—	1040	—	108	1070	1040	1050	1060	—	—	—	—
3	—	1040	—	1070	1010	—	1060	—	—	—	—	—
Avg.	—	1033	—	1070	1053	1035	1050	1040	—	—	—	—

1047

	ROASTERS IN OPERATION	CALCINE CHARGES	FLUE DUST CHARGES	TOTAL CHARGES	OPERATING HOURS No. 9	No. 10	No. 11	No. 12	No. OF MEN	TIME DOWN FOR REPAIRS
	4	38	—	38	1/4	6½	1	6	12	
3:00	4	30	—	30	4½	3	4½	3	8	
1:00	2	12	—	12	2	—	2	—	7	
Total	10	80	—	80	6½	9½	7		27	

7:00 Shift 2 TRIPS)(11 00 AM 2 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER #
4 Roaster down to Check and Charge plows on feed A decks #1 Roaster
wn at 10 40 AM to 12 25 PM #3 Roaster down at 10 40 AM to 12 25 PM for [illegible]

3:00 Shift 3 TRIPS)(7 00 PM 3 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER

1:00 Shift 2 TRIPS)(3 00 AM 2 TRIPS)(PLOW-DOWN # #)(BAR-DOWN-HOPPER #

JUN 21 1977

Oil Supply T1-2	96	96	[illegible]	94	92	92		96	90	92	90	90
Oil Supply T1-2	18.00	18.2	[illegible]	[illegible]	18.2	18.2		18.0	[illegible]	[illegible]	17.4	17.4
401	140	142	130	[illegible]	132	132		120	[illegible]	[illegible]	125	125
402	140	142	130	[illegible]	134	132		135	135	135	135	135
403	136	136	120	125	125	125		125	125	[illegible]	126	125
404	140	142	130	[illegible]	132	132		125	120	125	128	125
405	142	142	135	[illegible]	140	138		145	[illegible]	[illegible]	145	145
406	142	142	140	140	140	140		135	130	[illegible]	135	135
407	148	150	140	144	140	140		130	[illegible]	[illegible]	142	142
408	190	200	180	183	182	182		215	210	210	210	210
409	140	150	—	[illegible]	152	148		135	135	130	132	130
410	240	220	162	[illegible]	198	205		150	148	210	205	210
Vibration Oil Pump												
401	0	0	[illegible]	0	0	0		40	40	40	40	40
402	70	70	70	70	70	70		40	38	38	40	40
403	5	5	5	5	5	5		50	50	50	48	48
404	48	50	50	50	50	48		80	80	[illegible]	80	80
405	70	70	72	70	70	72		110	110	110	110	110
406	50	50	50	50	50	48		60	60	[illegible]	60	60
407	42	42	42	42	40	40		60	58	58	55	58
408	50	52	50	45	40	45		44	44	44	42	45
409	2.0	1	0.8	0.5	0.5	0.5		110	1.5	1.5	1.5	1.5
Motor Ampl. in-	140	130	150	220	215	210		140	[illegible]	[illegible]	220	215
Vane Pos.) side	30	30	30	100	100	100		30	30	100	100	100
Comp. Inlet Pres	9	9	8.3	5.5	17.0	18.5		—	—	—	—	—
Comp. Disch. Pres	110	150	145	134	220	215		150	147	136	220	215
Comp. Disch. F°	118/108	122/110	112/100	112/102	114/102	112/102		106/112	100/98	104/100	102/98	100/96
Motor Brg. F°	120	114	[illegible]	116	116	116		110	106	110	110	110
Gear Oil) Comp. Oil) F°	118	112	112	114	114	114		112	110	114	112	112
	45	46	46	45	45	45		46	46	45	45	45

PLEASE USE ONLY ONE SHEET FOR BOTH BLOWERS

TIME	STACK TEMPERATURE
10:00 AM	1460
2:00 PM	1800
[illegible]	[illegible]
[illegible]	[illegible]
2:00 AM	1840
6:00 AM	1640

TIME	SP. GR.	TEMP.

El Paso, Texas
DATE: JUN 21 1977

ACID PLANT

DATE: JUN 2 1 1977

GAS CLEANING (COND.)

TIME	INTER FAN #1A TEMP. °F	FF88 #20 TEMP °F	PRECIPITATORS NUMBER 1 VOLTS	NUMBER 1 AMPS	NUMBER 1 CLARITY	NUMBER 2 VOLTS	NUMBER 2 AMPS	NUMBER 2 CLARITY	NUMBER 3 VOLTS	NUMBER 3 AMPS	NUMBER 3 CLARITY	NUMBER 4 VOLTS	NUMBER 4 AMPS	NUMBER 4 CLARITY	NEUTRALIZING SECTION FLOW TO STRIPPER G.P.M. FI 3028-1	PH NEUT. TANK AR 3011	PH SURGE TANK AR 3012	MAKE UP WATER G.P.M. PI 3025-9	PRESS NH3 STORAGE P.S.I.G.	SAFETY SHOWERS AND EYE WASH CHECK
INST. NO.	TI 3028-11	X			X			X			X			X						7-3 OK Carl
7 a.m.	74	3/4			Clear			Clear			Clear			Clear						3-11 OK L.T.
8 a.m.																				11-7 OK LH
9 a.m.	Reading used	Thick																		
10 a.m.																				SHIFT OPERATORS SIGNATURE
11 a.m.	95	3/4			Clear			Clear			Clear			Clear						A:
12 Noon																				B:
1 p.m.	99	3/4			Clear			Clear			Clear			Clear						C:
2 p.m.																				
3 p.m.	87	3/4			Clear			Clear			Clear			Clear						REMARKS:
4 p.m.																				
5 p.m.					Clear						Clear			Clear						
6 p.m.																				
7 p.m.					Clear			Clear			Clear			Clear						
8 p.m.																				
9 p.m.	78	3/4			Clear			Clear			Clear			Clear						
10 p.m.																				
11 p.m.	83	3/4			Clear			Clear			Clear			Clear						
12Midnight																				
1 a.m.	83	3/4			Clear			Clear			Clear			Clear						
2 a.m.																				
3 a.m.	84	3/4			Clear			Clear			Clear			Clear						
4 a.m.																				
5 a.m.	83	3/4			Clear			Clear			Clear			Clear						
6 a.m.																				

JUN 2 1 1977

DATE: JUN 2 1 1977

ACID PLANT

CONTACT SECTION

TIME	DRYING TOWER: DILUTION AIR CFM	DRYING TOWER: GAS TEMP. IN °F	DRYING TOWER: GAS TEMP. OUT °F	DRYING TOWER: GAS PRESS OUT H2O	DRYING TOWER: GAS FLOW CFM	STRIPPER TOWER PRESS OUT H2O	AIR BLOWERS: NO. AIR BLOWERS DAMPER OPENING IN %	AIR BLOWERS: NO. AIR BLOWERS DAMPER OPENING OUT %	AIR BLOWERS: NO. AIR BLOWERS AMPS	AIR BLOWERS: NO. 2 AIR BLOWER DAMPER OPENING IN %	AIR BLOWERS: NO. 2 AIR BLOWER DAMPER OPENING OUT %	AIR BLOWERS: NO. 2 AIR BLOWER AMPS	GAS TEMPERATURES - HEAT EXCHANGERS: NO. 5 TEMP. IN °F	NO. 5 TEMP. OUT °F	NO. 5 PRESS IN H2O	NO. 4 TEMP. IN °F	NO. 1 TEMP. IN °F	NO. 3 TEMP. IN °F	NO. 2 TEMP. IN °F	GAS OUT I.A.T. °F
INST. NO.		TE 1004-18	TW 1052-7	PI 1010	FE 1019	PI 1051-2	PV 1017	1016-1	FAST	PV 1016	1016-3	WEST	TE 1004-5	TE 1004-4	PI 1001	TE 1004-7	TN 1052-1	TE 1004-8	TE 1004-17	TI 1038
6 a.m.		C-2	113014	X	X	NIC 1013	X	TEMP	X	X	TEMP	X	A-2	A-3	X	A-5		A-8	C-1	X
8 a.m.		70	39	6.0	38000	0	—	—	—	55	94	250	277	260	130	177		636	212	180
10 a.m.		75	39	7.0	38000	0	—	—	—	55	94	250	341	317	115	193		628	253	220
12 Noon		66	39	8.5	42000	0	30	94	250	30	94	250	286	264	150	174		715	209	160
2 p.m.		69	39	20.0	42000	0	100	94	230	100	94	240	318	293	215	195		736	240	220
4 p.m.		69	39½	8.5	41000	0	30	95	230	30	95	150	326	306	170	197	—	706	243	220
6 p.m.		66	39½	7.	42000	0	30	95	230	30	95	150	317	295	160	178	—	708	236	210
8 p.m.		65	39½	23.	42000	0	100	95	230	100	98	240	325	303	230	180	—	702	248	220
10 p.m.		90	39½	23.	40000	0	100	98	230	100	98	240	353	331	220	193	—	686	248	220
12Midnight		67	38½	5.5	38000	OPEN	30	90	210	30	90	220	330	311	150	190		679	240	220
2 a.m.		67	38½	21.5	40000	OPEN	100	90	220	100	93	215	338	314	210	184		650	259	235
4 a.m.		67	38½	20.5	38500	OPEN	100	94	215	100	94	215	343	319	210	185		654	246	240
6 a.m.		66	38½	20.5	38500	OPEN	100	90	215	100	92	210	351	326	210	186		668	264	234
8 a.m.																				
10 a.m.																				
12 Noon																				
2 p.m.																				
4 p.m.																				
6 p.m.																				
8 p.m.																				
10 p.m.																				
12Midnight																				
2 a.m.																				
4 a.m.																				
6 a.m.																				
8 a.m.																				
10 a.m.																				
12 Noon																				

JUN 2 1 1977

DATE: JUN 21 1977

ACID PLANT

CONTACT SECTION

GAS STRENGTH	SO_2 PPM	TIME

CONVERTER TEMPERATURES

1ST MASS		2ND MASS		3RD MASS		4TH MASS		NO. 5 HT. EXCH. TUBE SIDE		PREHEATER		ACID TEMPERATURES						
												DRYING TOWER		INTER-TOWER			FINAL TOWER	
IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	TEMP. OUT °F TE	PRESS p H2O	IN °F TE	OUT °F TE	IN °F TI	OUT °F TE	OUT COOLER °F TE	IN °F TE	OUT °F TE
1004-10	1004-11	1004-11	1004-12	1004-13	1004-14	1004-15	1004-16	1004-2	1004-3	1004-1		1004-21	1004-20	1039	1004-22	1004-23	1004-25	1004-24
981	933	748	761	659	661	648	647	250	0.2	7.30								
974	892	762	754	696	694	646	652	300	5.8	8:00								
981	912	782	762	661	698	651	646	2000	6.0	8:30								
909	991	810	820	692	701	660	654	2000	7.0	9:00								
933	1057	808	902	733	702	673	664	2000	6.8	9:30								
943	1091	821	894	761	741	692	675	1000	6.2	10:00								
947	1094	831	894	765	749	703	682	400	6.6	10:30								
931	1076	812	886	774	762	732	716	80	3.0	11:00								
915	1025	804	829	745	762	734	723	80	0.2	11:30								
890	938	833	797	767	771	730	728	80	2.4	12:00								
898	903	801	842	775	776	739	741	100	4.8	12:30								
929	950	798	838	756	776	749	745	200	4.6	1:00								
944	970	845	852	766	771	746	747	400	6.0	1:30								
928	992	809	868	729	770	747	747	380	5.0	2:00								
929	1038	825	891	741	742	738	744	420	6.4	2:30								
939	1054	834	887	756	756	738	744	150	5.4	3:00								
785	919	822	832	720	743	723	726	0	2	3:30								
787	978	823	831	721	745	724	727	0	3.4	4:00								
796	952	821	819	725	720	725	732	100	4.4	4:30								
791	952	832	820	726	721	726	733	400	4.2	5:00								
800	962	832	826	729	744	726	726	200	3.6	5:30								
791	964	799	839	722	729	720	723	200	1.8	6:00								
801	954	817	816	737	735	709	719	300	3.2	6:30								
800	952	795	821	725	725	713	712	200	3.8	7:00								
805	954	810	829	723	727	716	713	160	5.8	7:30								
806	990	807	857	727	723	714	716	300	3.	8:00								
796	956	791	829	711	725	708	706	200	5.6	8:30								
799	961	788	810	709	729	709	711	600	5.2	9:00								
811	994	801	817	703	703	699	707	800	5.2	9:30								
813	1006	801	811	711	721	661	701	300		10:00								

DATE: JUN 21 1977

ACID PLANT

GAS STRENGTH | SO_2 PPM | TIME

CONTACT SECTION

CONVERTER TEMPERATURES								NO. 5 HT. EXCH. TUBE SIDE		PREHEATER		ACID TEMPERATURES						
1ST PASS		2ND PASS		3RD PASS		4TH PASS						DRYING TOWER		INTER-TOWER			FINAL TOWER	
IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	TEMP. OUT °F TE	PRESS p H2O	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	OUT COOLER °F TE	IN °F TE	OUT °F TE
1004-10	1004-11	1004-12	1004-13	1004-14	1004-15	1004-16		1004-2	1004-3	1004-1		1004-21	1004-20	1039	1004-22	1004-23	1004-25	1004-24
822	1026	816	843	727	733	699	697	6.	2000	10:30								
812	1008	805	826	720	728	703	699	3.0	160	11:00								
793	964	781	815	703	726	702	705	4.0	400	11:30PM								
787	943	774	787	690	692	692	698	3.0	160	12 MN								
793	914	763	783	673	685	678	686	4.2	720	12:30AM								
802	971	770	780	669	672	666	674	3-8	440	1:00 AM								
804	932	773	786	669	671	661	665	4.2	800	1:30								
800	961	776	791	684	687	662	664	4.0	520	2:00								
792	964	769	798	681	681	665	665	2.5	2000	2:30								
784	952	763	781	674	680	667	666	4.0	1000	3:00								
782	956	760	790	679	691	667	672	6.0	2000	3:30								
802	994	782	797	685	677	666	669	6.0	1400	4:00								
801	999	785	812	686	684	668	667	5.0	2000	4:30								
805	1001	790	810	694	696	677	674	5.6	2000	5:00								
805	1000	789	810	694	696	677	674	4.8	1400	5:30								
808	1000	789	814	699	697	681	680	4.0	480	6:00								
803	993	786	822	697	701	685	686	5-8	2000	6:30								

ACID PLANT

DATE: JUN 21 1977

CONTACT SECTION 2

TIME	ACID TEMP, Cont'd. OLEUM TWR. IN °F	OLEUM TWR. OUT °F	93% PRODUCT °F	98% PRODUCT °F	93% SP.GR.	OLEUM SP.GR.	LEVEL OLEUM TWR. INCHES	% SO2 OUT BLOWER	%SO2 OUT FINAL TWR.	% CONVERSION	STACK COND.	PUMP TANK LEVELS DRY	INTER.	FINAL	PUMP TANK - PUMP AMPS DRY	INTER.	FINAL
INST. NO.	TE 1004-28	TE 1004-29	TE 1004-26	TE 1004-27	DI 1032	DI 1043	LI 1041	AR 1014				LI 1023	LI 1025	LI 1031	B	A	A
								X		D-5	X	X	X	X	X	X	X
6 a.m.			D-1	D-2				5.6		94	Good	35	50	42	88	64	86
8 a.m.			67	72				6.6		96	Good	32	40	45	90	75	85
10 a.m.			73	94				6.4		89	Good	50	47	30	88	64	86
12 Noon			79	79				5.0		98	Good	55	42	35	88	65	86
2 p.m.			80	67				5.2		95	Good	40	45	45	85	60	80
4 p.m.			80	67				4.2		92	Good	50	40	55	85	60	85
6 p.m.			71	70				3.8		95	Good	52	40	55	85	60	80
8 p.m.			68	70				6		100	Good	45	45	40	80	75	80
10 p.m.			66	68				3.8		97	Good	44	40	45	86	65	86
12Midnight			63	67				3.6		96	Good	42	49	30	86	65	86
2 a.m.			63	65				4.0		98	Good	42	48	45	88	65	87
4 a.m.			60	63				4.4		97	Good	44	42	30	88	65	88
6 a.m.			58	67													
8 a.m.																	
10 a.m.																	
12 Noon																	
2 p.m.																	
4 p.m.																	
6 p.m.																	
8 p.m.																	
10 p.m.																	
12Midnight																	
2 a.m.																	
4 a.m.																	
6 a.m.																	
8 a.m.																	
10 a.m.																	
12 Noon																	

JUN 21 1977

JUN 2 2 1977

	P						A		S		T	
				1	2		10	2	6	10	2	6
Oil Supply Pr-2	96	96	98	94	90	90	198	96	96	94	90	90
Oil Supply Pr-2	18.2	18.2	18.0	18.0	18.2	18.2	18.00	17.6	17.2	17.2	17.2	17.2
401	140	145	135	132	130	131	130	132	132	126	125	125
402	140	142	140	132	134	135	136	136	140	135	132	135
403	135	140	130	125	132	125	126	130	135	128	125	127
404	140	140	138	132	131	133	126	128	135	128	126	129
405	140	140	140	138	138	138	145	146	148	145	138	138
406	143	150	142	140	139	140	135	135	138	135	132	134
407	148	150	145	142	141	141	140	142	145	145	142	139
408	150	150	185	182	182	182	215	220	215	210	208	208
409	150	152	158	152	150	152	135	140	136	135	130	130
410	170	180	210	195	199	215	155	160	215	200	200	224
Vibration Oil Pump												
401	0	0	0	0	0	0	40	40	40	40	.39	.39
402	70	70	70	70	.70	.70	36	52	40	40	.38	.38
403	5	5	5	5	.05	.05	50	52	48	45	.45	.45
404	50	50	50	50	.49	.45	76	80	76	75	.78	.78
405	70	72	72	70	.70	.70	110	110	110	110	1.08	1.08
406	42	50	50	50	.48	.48	60	60	60	60	.58	.58
407	40	42	42	40	.40	.40	55	58	58	55	.55	.55
408	52	52	50	40	.50	.40	45	44	45	45	.45	.45
409	1.0	1.0	-0-	0.5	1.0	-0-	2.0	1.0	1.0	1.5	2.0	2.0
Motor Amp.-in-	110	160	215	210	235	220	130	190	220	220	225	225
Conc. Pres.)side	30	30	100	100	100	100	30	30	100	100	100	100
Comp. Inlet Pres	10	0	19.0	18.0	7.2	20.6	—	—	—	—	—	—
Comp. Disch. Pres	106	140	210	215	124	210	115	140	210	215	125	212
Comp. Disch. Fo	116/108	122/110	118/108	110/100	110/102	110/100	106/103	108/110	114/102	100/96	96/94	100/94
Motor Brg. Fo	113	110	120	114	117	114	112	114	114	110	167	108
Gear Oil) Fo Comp. Oil)	116	116	118	114	114	113	116	116	116	114	111	111
	45	45	44	45	46	45	46	45	45	45	46	45

PLEASE USE ONLY ONE SHEET FOR BOTH BLOWERS

TIME	STACK TEMPERATURE
10⁰⁰ AM	1400
2⁰⁰ PM	1640
6⁰⁰ PM	1680
10⁰⁰ PM	1760
2⁰⁰ AM	1640
6⁰⁰ AM	1660

TIME	SP. GR.	TIME

El Paso, Texas
DATE: JUN 2 2 1977

ACID PLANT

DATE: JUN 22 1977

GAS CLEANING (COND.)

TIME	INTER FAN H2O TEMP. °F	PRESS H2O COMP OIL LEVEL	PRECIPITATORS NUMBER 1 VOLTS	AMPS	CLARITY	NUMBER 2 VOLTS	AMPS	CLARITY	NUMBER 3 VOLTS	AMPS	CLARITY	NUMBER 4 VOLTS	AMPS	CLARITY	NEUTRALIZING SECTION FLOW TO STRIPPER G.P.M. FI 3028-1	PH NEUT. TANK AR 3011	PH SURGE TANK AR 3012	MAKE UP WATER G.P.M. PI 3025-9	PRESS NH3 STORAGE P.S.I.G.
INST. NO.	TI 3026-11	X			X			X			X			X					
7 a.m.	82	3/4			clear			clear			clear			clear					
8 a.m.																			
9 a.m.	84	3/4			clear			clear			clear			clear					
10 a.m.																			
11 a.m.	85	3/4			clear			clear			clear			clear					
12 Noon																			
1 p.m.	87	3/4			clear			clear			clear			clear					
2 p.m.																			
3 p.m.	84	3/4			Clear			Clear			Clear			Clear					
4 p.m.																			
5 p.m.	82	3/4			Clear			Clear			Clear			Clear					
6 p.m.																			
7 p.m.	80	3/4			Clear			Clear			Clear			Clear					
8 p.m.																			
9 p.m.	80	3/4			Clear			Clear			Clear			Clear					
10 p.m.																			
11 p.m.	82	3/4			Clear			Clear			Clear			Clear					
12 Midnight																			
1 a.m.	82	3/4			Clear			Clear			Clear			Clear					
2 a.m.																			
3 a.m.	82	3/4			Clear			Clear			Clear			Clear					
4 a.m.																			
5 a.m.	82	3/4			Clear			Clear			Clear			Clear					
6 a.m.																			

SAFETY SHOWERS AND EYE WASH CHECK

7-3 OK [illegible]
3-11 OK [illegible]
11-7 OK [illegible]

SHIFT OPERATORS SIGNATURE
A:
B:
C:

REMARKS:

JUN 22 1977

DATE: JUN 22 1977

ACID PLANT

CONTACT SECTION	DRYING TOWER					STRIPPER TOWER	AIR BLOWERS						GAS TEMPERATURES - HEAT EXCHANGERS							
							NO. AIR BLOWERS			NO. 2 AIR BLOWER			NO. 5			NO. 4	NO. 1	NO. 3	NO. 2	GAS OUT
	DILUTION AIR CFM	GAS TEMP. IN °F	GAS OUT °F	GAS PRESS OUT H2O	GAS FLOW CFM	TOWER PRESS OUT H2O	DAMPER OPENING IN %	DAMPER OPENING OUT %	AMPS	DAMPER OPENING IN %	DAMPER OPENING OUT %	AMPS	TEMP. IN °F	TEMP. OUT °F	PRESS IN H2O	TEMP. IN °F	TEMP. IN °F	TEMP. IN °F	TEMP. IN °F	I.A.T. °F
		TE 1004-18	TW 1052-7	PI 1010	FE 1019	PI 1051-2	PV 1017	OIL 1016-1	EAST	PV 1018	OIL 1016-3	WEST	TE 1004-5	TE 1004-4	PI 1001	TE 1004-7	TN 1052-1	TE 1004-8	TE 1004-17	TI 1038
...ST.		C-2	213014	X	X	HIC1013	X	TEMP	X	X	TEMP	X	A-2	A-3	X	A-5		A-8	C-1	X
0.		69	38%	20.0	42000	0	100	96	230	100	96	250	355	332	220	197		694	252	240
6 a.m.		70	38%	10.0	28000	0	30	96	130	30	96	144	305	283	115	176		708	217	190
8 a.m.		71	38%	8.0	28000	0	30	96	130	30	95	140	250	234	150	181		701	191	170
0 a.m.		72	38%	8.0	28000	0	30	96	120	30	96	150	239	225	150	181		708	185	150
2 Noon		80	38%	18.0	38,500	OPEN	100	96	210	100	96	210	346	326	210	209		689	249	220
2 p.m.		75	38%	19.0	37,200	OPEN	100	96	220	100	98	215	344	324	215	202		683	253	235
4 p.m.		63	38%	8.0	26,600	OPEN	30	96	120	30	96	150	297	255	145	174		663	219	156
6 p.m.		67	38%	18.0	37,200	OPEN	100	94	220	100	94	210	297	279	220	184		665	219	200
8 p.m.		72	38%	21.0	42000	✓	100	94	220	100	96	225	290	277	215	193		622	205	194
10 p.m.		72	38%	21.0	42,000	✓	100	90	240	100	90	230	296	280	210	194		636	208	200
12 Midnight		68	38%	21.0	42,000	✓	100	90	230	100	90	230	300	282	210	196		690	210	200
2 a.m.		67	38%	20.0	43000	✓	100	90	230	100	90	230	308	296	210	202		695	216	206
4 a.m.																				
6 a.m.																				
8 a.m.																				
10 a.m.																				
12 Noon																				
2 p.m.																				
4 p.m.																				
6 p.m.																				
8 p.m.																				
10 p.m.																				
12 Midnight																				
2 a.m.																				
4 a.m.																				
6 a.m.																				
8 a.m.																				
10 a.m.																				
12 Noon																				

JUN 22 1977

ACID PLANT

DATE: JUN 2 2 1977

CONTACT SECTION 2

TIME	ACID TEMP, Cont'd. OLEUM TWR. IN °F	OLEUM TWR. OUT °F	93% PRODUCT °F	98% PRODUCT °F	93% SP.GR.	OLEUM SP.GR.	LEVEL OLEUM TWR. INCHES	% SO2 OUT BLOWER	%SO2 OUT FINAL TWR.	% CONVERSION	STACK COND.	PUMP TANK LEVELS DRY	INTER.	FINAL	PUMP TANK - PUMP AMPS DRY	INTER.	FINAL
INST. NO.	TE 1004-28	TE 1004-29	TE 1004-26	TE 1004-27	DI 1032	DI 1043	LI 1041	AR 1014				LI 1023	LI 1025	LI 1031	B	A	A
6 a.m.			D-1	D-2				X		D-5	X	X	X	X	X	X	X
8 a.m.			66	73				6.0		100	Good	55	50	55	88	75	85
10 a.m.			68	86				5.0		95	Good	42	35	40	88	75	85
12 Noon			79	88				4.4		96	Good	30	40	40	88	70	86
2 p.m.			81	78				4.0		88	Good	35	35	42	88	74	85
4 p.m.			78	76				4.2		98	Good	40	42	30	87	74	87
6 p.m.			72	78				3.8		101	Good	42	40	40	87	65	86
8 p.m.			60	70				3.2		71	Good	56	40	30	87	64	86
10 p.m.			69	71				3.6		94	Good	44	40	48	84	61	85
12Midnight			60	71				2.5		100	Good	50	40	50	90	75	86
2 a.m.			62	72				3.0		100	Good	40	40	40	90	75	86
4 a.m.			56	87				4.6		98	Good	40	40	45	88	75	86
6 a.m.			55	85				5.0		99	Good	40	40	45	90	76	86
8 a.m.																	
10 a.m.																	
12 Noon																	
2 p.m.																	
4 p.m.																	
6 p.m.																	
8 p.m.																	
10 p.m.																	
12Midnight																	
2 a.m.																	
4 a.m.																	
6 a.m.																	
8 a.m.																	
10 a.m.																	
12 Noon																	

JUN 2 2 1977

DATE: JUN 22 1977

ACID PLANT

Gas Strength

SO2 ppm

Time

CONTACT SECTION

CONVERTER TEMPERATURES								NO. 5 HT. EXCH. TUBE SIDE		PREHEATER		ACID TEMPERATURES						
1ST MASS		2ND MASS		3RD MASS		4TH MASS						DRYING TOWER		INTER-TOWER			FINAL TOWER	
IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	TEMP. OUT °F TE	PRESS p H2O	IN °F TE	OUT °F TE	IN °F TI	OUT °F TE	OUT COOLER °F TE	IN °F TE	OUT °F TE
[illegible]	[illegible]	1004-11	1004-12	1004-13	1004-14	1004-15	1004-16	1004-2	1004-3	1004-1		1004-21	1004-20	1039	1004-22	1004-23	1004-25	1004-24
727	1035	811	840	716	712	692	692	5.6	1600	730								
729	1047	821	857	724	722	698	695	6.0	2000	800								
734	1055	830	866	738	733	709	703	5.0	250	830								
722	1007	810	842	732	737	713	709	5.0	180	9:00								
722	1002	805	833	724	739	715	712	5.2	180	9:30								
715	990	802	817	739	746	725	721	1.2	100	10:00								
796	948	780	801	734	732	723	721	0.2	0	10:30								
788	851	782	772	732	737	710	715	0.1	0	11:00								
769	846	791	799	735	751	709	713	3.6	0	11:30								
807	893	807	802	741	752	716	717	3.6	200	12:00								
810	912	809	805	744	741	716	716	0.2	100	12:30								
818	889	834	791	742	739	711	710	4.2	180	1:00								
815	900	797	831	766	765	718	716	1.4	120	1:30								
816	909	815	794	755	772	722	717	4.0	200	2:00								
819	924	797	815	760	760	726	723	4.6	220	2:30								
822	944	805	832	705	746	728	725	5.2	320	3:00PM								
823	992	815	832	701	716	710	723	5.0	600	3:30PM								
825	1005	814	841	717	705	700	706	4.4	200	4:00PM								
816	992	802	827	710	712	696	694	4.0	80	4:30PM								
817	998	802	830	711	723	701	703	4.6	400	5:00PM								
809	986	794	823	706	712	698	698	4.0	CALIB.	5:30PM								
799	960	778	803	700	720	695	699	4.0	600	6:00PM								
795	954	778	788	691	706	687	691	4.0	400	6:30PM								
792	952	772	792	689	698	684	690	3.6	480	7:00PM								
787	893	768	755	728	905	673	681	0.2	40	7:30PM								
777	818	760	748	722	719	681	673	0.2	0	8:00PM								
770	779	735	743	716	714	684	680	0.2	0	8:30PM								
768	769	725	731	707	709	683	681	0.2	0	9:00PM								
745	789	743	744	705	708	680	679	4.4	600	9:30PM								
791	894	744	778	654	660	678	698	4.0	2000	10:00PM								

DATE: JUN 2 2 1977

ACID PLANT

GAS STRENGTH SO_2 PPM TIME

CONTACT SECTION

TEMPERATURES								NO. 5 HT. EXCH. TUBE SIDE		PREHEATER		ACID TEMPERATURES					
1ST PASS		2ND PASS		3RD PASS		4TH PASS						DRYING TOWER		INTER-TOWER			FINAL TOWER
IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	THER. OUT °F TE	PRESS p H2O	IN °F TE	OUT °F TE	IN °F TI	OUT °F TE	OUT COOLER °F TE	IN °F TE	OUT °F TE
												1004-21	1004-20	1039	1004-22	1004-23	1004-25	
789	929	758	759	646	648	657	668	3.0	1400	10:30PM								
777	925	746	753	646	649	644	650	2.8	2000	11:00PM								
770	909	738	750	643	659	638	648	2.0	1200	11:30								
766	904	735	748	641	642	633	644	3.0	2000	12:00								
787	920	760	761	645	650	630	633	1.2	2000	12:30								
765	941	742	764	662	651	634	631	0.8	800	1:00								
790	969	755	772	649	658	646	648	4.0	1050	1:30								
800	981	736	791	750	768	720	718	4.0	2000	2:00								
802	1004	800	798	748	766	759	760	5.0	2000	2:30								
805	1009	800	812	736	738	763	764	5.2	2010	3:00								
809	1020	802	818	709	709	766	770	5.0	2000	3:30								
815	1038	805	826	711	703	778	668	5.0	2000	4:00								
813	1039	806	826	712	705	779	669	5.0	2000	4:30								
812	1040	808	825	714	708	780	672	5.2	2000	5:00								
814	1039	804	825	711	705	778	674	4.8	2000	5:30								
813	1038	803	824	710	703	776	669	5.0	2000	6:00								
810	1033	809	559	736	742	703	674	5.0	2000	6:30								

JUN 2 2 1977

Oil Supply 21-2	96	96	92	90	90	90	96	96	90	90	90	90
Oil Supply 21-2	18.2	18.2	18.2	18.4	18.2	18.0	17.8	17.8	17.6	17.6	17.4	17.2
401	132	140	130	130	132	132	140	142	126	122	126	126
402	140	140	134	132	133	135	135	135	136	130	136	137
403	130	132	124	120	126	125	125	130	125	120	127	129
404	140	140	130	130	133	132	125	130	124	120	128	130
405	140	148	140	136	139	138	140	140	145	140	145	145
406	144	150	142	146	140	140	130	132	135	130	134	134
407	148	150	140	140	142	142	135	136	145	140	143	144
408	140	170	180	180	183	182	210	210	210	205	210	209
409	140	162	150	148	153	152	130	135	135	126	130	131
410	190	222	175	160	198	215	230	220	160	145	205	224
Vibration Oil Pump												
401	0	0	0	0	0	0	40	40	40	40	.40	.40
402	70	70	70	70	.70	.70	38	40	40	40	.38	.38
403	5	5	5	5	.05	.05	42	48	50	50	.48	.48
404	50	50	50	50	.49	.50	72	76	80	75	.78	.78
405	70	70	75	72	.70	.70	110	110	110	110	1.08	1.08
406	50	50	50	50	.48	.50	60	60	60	60	.60	.59
407	40	42	42	40	.40	.40	62	58	58	60	.55	.59
408	50	50	60	50	.43	.45	44	46	45	45	.45	.45
409	1.0	1.0	1.0	0.5	-0-	-0-	1.0	1.0	1.5	1.5	1.0	1.5
Motor Ampl. in-	220	220	150	150	130	230	220	220	120	110	125	240
Temp. Res. Inside	30	100	30	30	96	100	30	100	30	30	96	100
Comp. Inlet Pres	14	14	8.5	8.5	18.0	19.5	—	—	—	—	—	—
Comp. Disch. Pres	230	210	140	130	214	222	230	210	140	130	215	222
Comp. Disch. F°	112/104	122/112	118/104	113/100	116/104	114/104	104/102	110/106	104/104	98/96	102/100	102/98
Motor Brg. F°	118	120	114	112	116	116	110	114	110	106	110	110
Gear Oil) Comp. Oil) F°	112	116	114	110	114	114	114	116	112	110	113	112
	46	45	46	46	46	45	45	45	46	46	46	45

PLEASE USE ONLY ONE SHEET FOR BOTH ENGINES

TIME	STACK TEMPERATURE
10:00 AM	1800
2:00 PM	1780
6:00 PM	1640
10:00 PM	1860
2:00 A.M.	1640
6:00 A.M.	1560

TIME	SP. GR.	TEMP.

El Paso, Texas
DATE: JUN 23 1977

ACID PLANT

DATE: JUN 24 1977

CONTACT SECTION CONT'D.

COOLING TOWER					ACID PRODUCT TO STORAGE												ACID STORAGE TANKS				
							PB	101	PB	PB	Hac	Hac					No. 1	No. 2	No. 3		
																	93%		98%		
Water In	Temp. Out	Water G.P.M.	No. 1 Pump Amps.	No. 2 Pump Amps.	Temp.	Press	Conc'n	Amps.	Temp.	Press	Conc'n	Amps.	Temp.	Press	Conc'n	Amps.	Depth Feet	Depth Feet	Depth Feet	Depth Feet	Oleum
			D-6	D7			1111	810	1130	1113	1006	1008									
			60	58			C	C	0	0	3060	0									
			71	69			C	3060	0	0	C	0									
			73	71			C	0	C	0	C	0									
			80	78			C	0	0	0	C	0									
			73	71			C	0	C	0	C	C									
			70	67			C	C	C	C	C	C									
			70	68			C	0	0	C	C	0									
			69	67			C	C	C	C	C	0									
			74	72			C	0	0	0	C	0									
			75	72			C	0	0	0	C	0									
			74	72			C	0	0	0	C	0									
			73	70			C	0	0	0	C	0									

PRODUCTION PREVIOUS DAY

SHIFT OPERATORS SIGNATURE

A:

B:

C:

REMARKS:

DATE: JUN 24 1977

ACID PLANT

CONTACT SECTION

TIME	DRYING TOWER: DILUTION AIR CFM	DRYING TOWER: GAS TEMP. IN °F TE 1004-18	DRYING TOWER: GAS TEMP. OUT °F TE	DRYING TOWER: GAS PRESS OUT H2O PI 1010	DRYING TOWER: GAS FLOW CFM TE 1019	STRIPPER TOWER PRESS OUT H2O PI 1051-2	AIR BLOWERS: NO. AIR BLOWERS DAMPER OPENING IN % PV 1017	AIR BLOWERS: NO. AIR BLOWERS DAMPER OPENING OUT %	AIR BLOWERS: NO. AIR BLOWERS AMPS	AIR BLOWERS: NO. 2 AIR BLOWER DAMPER OPENING IN % PV 1018	AIR BLOWERS: NO. 2 AIR BLOWER DAMPER OPENING OUT %	AIR BLOWERS: NO. 2 AIR BLOWER AMPS	GAS TEMPERATURES - HEAT EXCHANGERS: NO. 5 TEMP. IN °F TE 1004-5	NO. 5 TEMP. OUT °F TE 1004-4	NO. 5 PRESS IN H2O PI 1001	NO. 4 TEMP. IN °F TE 1004-7	NO. 1 TEMP. IN °F TN 1052-1	NO. 3 TEMP. IN °F TE 1004-8	NO. 2 TEMP. IN °F TE 1004-17	GAS OUT I.A.T. °F TI 1033
INST. NO.																					
6 a.m.		C-2																			
8 a.m.		60	38	7.0			30		135	30	95	150	305	277	180	169		720	236	190
10 a.m.		70	38	11.0			40	95	145	70	95	170	320	300	175	186		705	235	174
12 Noon		75	38	11.5			30	95	140	30	96	150	302	282	145	180		707	222	215
2 p.m.		82	38	19.5			100	95	230	100	96	250	348	325	215	206		693	265	250
4 p.m.		74	55	19.			100	98	230	100	98	240	354	333	220	202		715	245	230
6 p.m.		73	56	4			30	95	120	30	95	160	324	307	130	181		726	212	160
8 p.m.		70	56	21.5			100	98	220	100	98	230	344	319	215	192		713	257	230
10 p.m.		69	56	10.			30	95	120	30	98	140	306	293	170	171		694	202	160
12 Midnight		73	56	17.5			100	94	230	100	94	240	370	345	220	204		724	267	250
2 a.m.		74	56	15.0			100	94	220	100	94	230	350	331	210	195		714	230	212
4 a.m.		70	56	9.0			30	94	150	30	94	150	340	320	150	190		710	220	200
6 a.m.		71	56	21.0			100	94	230	100	94	250	359	335	220	200		724	254	226
8 a.m.																				
10 a.m.																				
12 Noon																				
2 p.m.																				
4 p.m.																				
6 p.m.																				
8 p.m.																				
10 p.m.																				
12 Midnight																				
2 a.m.																				
4 a.m.																				
6 a.m.																				
8 a.m.																				
10 a.m.																				
12 Noon																				

DATE: JUN 24 1977

ACID PLANT

GAS CLEANING

G. FANS		OUTLET GAS						NO. 1 SCRUBBER LIQUOR					NO. 1 SCRUBBER LIQUOR					VENTURI				
TEMP °F	PRESS H20	Gas Temp VENTURI °F	Cooling Tower PRESS H20	Packed SCRUBBERS AMPS NO. 1	NO. 2	PRESS H20 SCRUBB NO. 1	PRESS H20 SCRUBB NO. 2	TEMP. IN °F	TEMP. OUT °F	Vent Gas Press PH	PRESS TO COOLER P.S.I.G.	PRESS OUT COOLER P.S.I.G.	TEMP. IN °F	TEMP. OUT °F	Vent Pump Amps PH	PRESS TO COOLER P.S.I.G.	PRESS OUT COOLER P.S.I.G.	LEVEL VENT IN	TEMP. VENT °F	PH	NO. 1 LIQ. LEVEL INCH	NO. 2 LIQ. LEVEL INCH
TE-5	PI-5	TE	TI	TE - 1004		PI	PI	TI	TI	PI	PI	PI	TI	TI		PI	PI	LIC	TI		LIC	LIC
3026	3025	3026-13	1052	32 A	32 B	3006	3007	3026-3	3026-4	3025-1	3025-3	3025-2	3026-7	3026-8	A / B	3025-7	3025-6	3002	3026-1		3002	3005
72	15	225	60	63	66	20	50	80	68	5	34	28	78	70	53-55	32	19	52	—	—	53	50
80	15	225	66	60	64	20	50	84	72	5	36	28	82	74	52-54	34	20	50	—	—	[illegible]	[illegible]
84	15	250	72	60	64	20	50	86	78	6	35	28	84	80	52-53	34	22	50	—	—	[illegible]	[illegible]
86	15	250	74	60	64	20	50	92	82	6	35	28	90	84	52-53	34	22	50	—	—	55	50
[illegible]	[illegible]	[illegible]	70	[illegible]	66	[illegible]	50	[illegible]	[illegible]	[illegible]	35	28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	50	—	—	[illegible]	[illegible]
[illegible]	[illegible]	250	[illegible]	[illegible]	66	[illegible]	[illegible]	94	76	6	35	28	96	80	[illegible]	32	[illegible]	50	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20	50	[illegible]	76	7	[illegible]	[illegible]	94	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]
85	15	265	75	62	68	20	50	94	78	7	34	28	96	80	[illegible]	[illegible]	[illegible]	48	—	—	53	52
81	15	240	77	63	68	20	50	96	80	6	34	28	98	84	53-54	30	22	50	—	—	54	52
85	15	265	74	63	68	20	50	94	78	9	34	28	96	82	52-54	30	20	50	—	—	53	50
84	15	250	76	63	68	20	50	96	76	6	34	28	98	80	52-54	30	20	50	—	—	54	52

ACID PLANT

DATE: JUN 23 1977

CONTACT SECTION 2

TIME	ACID TEMP, Cont'd. OLEUM TWR. IN °F	OLEUM TWR. OUT °F	93% PRODUCT °F	98% PRODUCT °F	93% SP.GR.	OLEUM SP.GR.	LEVEL OLEUM TWR. INCHES	% SO2 OUT BLOWER	%SO2 OUT FINAL TWR.	% CONVERSION	STACK COND.	PUMP TANK LEVELS DRY	TANK INTER.	FINAL	PUMP TANK - PUMP AMPS DRY	INTER.	FINAL
INST. NO.	TE 1004-28	TE 1004-29	TE 1004-26	TE 1004-27	DI 1032	DI 1043	LI 1041	AR 1014				LI 1023	LI 1025	LI 1031			
6 a.m.			[illegible]	[illegible]				[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8 a.m.			57	81				3.2		96	GOOD	30	40	44	90	68	87
10 a.m.			65	76				1.0		85	GOOD	40	30	42	90	65	88
12 Noon			78	76				2.0		96	GOOD	40	40	30	90	65	88
2 p.m.			78	85				4.0		97	GOOD	45	45	40	88	75	86
4 p.m.			80	83				3.8		99	GOOD	45	40	30	88	65	87
6 p.m.			78	79				3.8		91	GOOD	40	40	40	87	65	87
8 p.m.			73	73				2.6		73	GOOD	48	40	47	87	62	86
10 p.m.			69	73				2.0		66	GOOD	40	40	50	89	65	88
12Midnight			67	72				2.2		71	GOOD	50	40	50	87	62	86
2 a.m.			66	81				4.8		92	GOOD	50	45	60	90	75	87
4 a.m.			60	84				5.0		90	GOOD	50	40	40	90	75	86
6 a.m.			59	84				5.0		93	GOOD	50	40	46	90	75	86
8 a.m.																	
10 a.m.																	
12 Noon																	
2 p.m.																	
4 p.m.																	
6 p.m.																	
8 p.m.																	
10 p.m.																	
12Midnight																	
2 a.m.																	
4 a.m.																	
6 a.m.																	
8 a.m.																	
10 a.m.																	
12 Noon																	

DATE: JUN 23 1977

ACID PLANT

[illegible] TOWER				STRIPPER	AIR BLOWERS						GAS TEMPERATURES - HEAT EXCHANGERS							
					NO. AIR BLOWERS			NO. 2 AIR BLOWER			NO. 5			NO. 4	NO. 1	NO. 3	NO. 2	
[illegible] TEMP. IN	GAS TEMP. OUT °F	GAS PRESS OUT H2O	GAS FLOW CFM	TOWER PRESS OUT H2O	DAMPER OPENING IN %	DAMPER OPENING OUT %	AMPS	DAMPER OPENING IN %	DAMPER OPENING OUT %	AMPS	TEMP. IN °F	TEMP. OUT °F	PRESS IN H2O	TEMP. IN °F	TEMP. IN °F	TEMP. IN °F	TEMP. IN °F	GAS OUT I.A.T. °F
[illegible]	[illegible]	PI 1010	FE 1019	PI 1051-2	PV 1017	PV 1014	East	PV 1016	PV 1016-3	West	TE 1004-5	TE 1004-4	PI 1001	TE 1004-7	TN 1052-1	TE 1004-8	TE 1004-17	TI 1038
C-3	D 30%	D	D	HC/N3	D	Temp	D	D	Temp	D	A-2	A-3	D	A-5		P-8	C-1	D
61	38%	9.0	28000	0	30	94	130	30	94	150	295	270	150	172		707	220	180
65	38%	8.5	28000	0	30	94	130	30	94	150	250	232	150	173		714	187	140
71	38%	21.5	42000	0	100	94	230	100	94	250	273	256	215	201		707	196	205
72	38%	19.5	42000	0	100	94	230	100	94	250	353	332	215	200		706	246	230
76	38%	18.0	37200	0	100	94	220	100	94	215	328	307	220	198		695	244	232
68	38%	9.5	28000	0	30	90	120	30	92	150	320	277	135	175		669	240	215
65	38%	9.0	28000	0	30	90	120	30	90	150	300	285	130	187		675	210	180
69	38%	9.0	28000	0	30	90	110	30	90	150	239	215	140	170		681	168	120
[illegible]	38%	20.0	42000	✓	100	90	230	100	90	250	290	276	210	211		666	218	204
[illegible]	38%	20.0	42000	✓	100	90	230	100	90	240	332	314	210	201		665	233	218
[illegible]	38%	20.0	42000	✓	100	90	230	100	90	240	370	318	215	200		702	236	238
[illegible]	38%	18.5	42000	✓	100	90	230	100	90	240	364	346	225	196		721	258	240

DATE: JUN 23 1977

ACID PLANT

GAS CLEANING

G. FANS		OUTLET GAS						NO. 1 SCRUBBER LIQUOR					NO. 1 SCRUBBER LIQUOR					VENTURI				
TEMP °F	PRESS H20	Gas Temp VENTURI °F	Cooling Tower PRESS H20	Packed SCRUBBERS AMPS NO. 1	NO. 2	PRESS H20 SCRUBB NO. 1	PRESS H20 SCRUBB NO. 2	TEMP. IN °F	TEMP. OUT °F	Vent Gas Press PH	PRESS TO COOLER P.S.I.G.	PRESS OUT COOLER P.S.I.G.	TEMP. IN °F	TEMP. OUT °F	Vent Pump Amps PH	PRESS TO COOLER P.S.I.G.	PRESS OUT COOLER P.S.I.G.	LEVEL VENT IN	TEMP. VENT °F	PH	NO. 1 LIQ. LEVEL INCH	NO. 2 LIQ. LEVEL INCH
TE-5	PI-5	TE	Temp	TE - 1004		PI	PI	TI	TI	PI	PI	PI	TI	TI		PI	PI	LIC	TI		LIC	LIC
3026	3025	3026-10	10526	31	32	3006	3007	3026-3	3026-4	3025-1	3025-3	3025-2	3026-7	3026-8		3025-7	3025-6	3002	3026-2		3007	3008
74	15	240	62	62	68	20	50	80	70	6	34	28	72	72	53 54	31	20	50	—		53	51
74	15	235	68	62	68	20	50	82	70	5	34	28	80	72	53 54	31	20	50	—		53	51
80	15	220	78	62	68	20	50	80	74	4	34	28	72	68	53 54	31	20	50	—		53	51
76	15	230	76	62	62	20	50	92	74	4	34	28	90	80	53 54	31	20	50	—		53	51
82	15	245	66	62	66	20	50	80	74	6	34	27	96	78	53 56	31	21	50	—		53	51
76	15	225	64	62	66	20	50	76	70	4	34	27	78	72	53 56	31	21	50	—		53	51
74	15	200	64	62	66	20	50	78	68	3	34	27	76	70	53 56	31	21	50	—		53	51
70	15	200	62	62	66	20	50	76	66	4	34	27	76	66	53 56	31	21	50	—		53	51
76	15	200	80	62	66	20	50	80	74	5	34	28	80	84	52 54	31	21	50	—	—	53	52
76	15	220	68	63	68	20	50	84	72	6	34	28	86	74	52 54	31	20	48	—	—	53	52
78	15	210	70	63	68	20	50	84	72	8	34	28	84	74	52 54	30	20	51	—	—	53	51
80	15	240	70	63	68	20	50	90	74	7	34	28	90	86	[illegible]	30	20	50	—	—	53	52

DATE: JUN 2 0 1977

ACID PLANT

TIME	317 / 274 / H2S ppm. / °F	PRESS H2O TO DRY T'R, Jay Excel	GAS CLEANING (COND.) PRECIPITATORS NUMBER 1 VOLTS	NUMBER 1 AMPS	NUMBER 1 CLARITY	NUMBER 2 VOLTS	NUMBER 2 AMPS	NUMBER 2 CLARITY	NUMBER 3 VOLTS	NUMBER 3 AMPS	NUMBER 3 CLARITY	NUMBER 4 VOLTS	NUMBER 4 AMPS	NUMBER 4 CLARITY	NEUTRALIZING SECTION FLOW TO STRIPPER G.P.M. FI 3028-1	PH NEUT. TANK AR 3011	PH SURGE TANK AR 3012	MAKE UP WATER G.P.M. PI 3025-9	PRESS NH3 STORAGE P.S.I.G.	Safety Showers & Eye Wash
Noon	71 / 3026 #				X			X			X			X						7-3 BK [illegible]
1 a.m.	2?	3/4			ditto			ditto			ditto			ditto						3-11 ak [illegible]
2 a.m.	22	3/4			ditto			ditto			ditto			ditto						11-7 ak [illegible]
3 a.m.																				SHIFT OPERATORS SIGNATURE
4 a.m.	25	3/4			ditto			ditto			ditto			ditto						A:
5 a.m.																				B:
6 a.m.	15	3/4			ditto			ditto			ditto			ditto						C:
7 a.m.																				
8 a.m.	85	3/4			Clear			Clear			Clear			Clear						REMARKS:
9 a.m.																				
10 a.m.	80	3/4			Clear			Clear			Clear			Clear						
11 a.m.																				
Noon	83	3/4			Clear			Clear			Clear			Clear						
1 p.m.																				
2 p.m.	83	3/4			Clear			Clear			Clear			Clear						
3 p.m.																				
4 p.m.	83	3/4			Clear			Clear			Clear			Clear						
5 p.m.																				
6 p.m.	82	3/4			Clear			Clear			Clear			Clear						
7 p.m.																				
8 p.m.	82	3/4			Clear			Clear			Clear			Clear						
9 p.m.																				
10 p.m.	82	3/4			Clear			Clear			Clear			Clear						
11 p.m.																				
Midnight	82	3/4			Clear			Clear			Clear			Clear						
1 a.m.																				
2 a.m.	82	3/4			Clear			Clear			Clear			Clear						
3 a.m.																				
4 a.m.	82	3/4			Clear			Clear			Clear			Clear						
5 a.m.																				
6 a.m.																				

JUN 23 1977

DATE:

ACID PLANT

CONTACT SECTION

CONVERTER TEMPERATURES								NO. 5 HT. EXCH. TUBE SIDE		PREHEATER		ACID TEMPERATURES						
1ST MASS		2ND MASS		3RD MASS		4TH MASS						DRYING TOWER		INTER-TOWER			FINAL TOWER	
IN OF TE	OUT OF TE	IN OF TE	OUT OF TE	IN OF TE	OUT OF TE	IN OF TE	OUT OF TE	IN OF TE	OUT OF TE	TEMP. OUT OF TE	PRESS p H2O	IN OF TE	OUT OF TE	IN OF TI	OUT OF TE	OUT COOLER OF TE	IN OF TE	OUT OF TE
[illegible]	[illegible]	[illegible]	1004-12	[illegible]	[illegible]	[illegible]	[illegible]	1004-2	1004-3	1004-1	STACK TEMP	1004-21	1004-20	1039	[illegible]	[illegible]	[illegible]	[illegible]
B1	B-2	B-3	B4	B-5	B-6	B-7	B-8	A-2	A-4	A-1	Ø	C-5	C-4	Ø	C-7	C-8	C-1	C-3
732	981	809	834	766	770	721	712	294	206	833	1750	70	91	130	80	123	218	153
819	895	796	809	761	752	731	729	250	192	821	1780	73	92	110	74	122	187	143
778	899	809	839	733	761	722	723	269	214	789	1650	84	107	150	87	146	195	193
813	1024	820	849	735	738	719	717	355	248	791	1780	83	115	150	119	133	249	162
773	937	773	814	694	719	707	717	325	234	792	1400	79	110	172	102	128	243	158
774	930	754	788	682	689	682	691	319	234	807	1640	72	93	164	92	114	236	135
798	957	770	791	688	684	692	700	302	229	818	1460	91	107	150	88	117	212	139
789	824	772	754	731	734	700	696	241	189	800	1860	78	90	100	63	108	168	139
[illegible]	934	764	795	671	693	678	679	294	233	855	1780	106	122	162	99	135	219	167
822	1039	808	836	704	700	676	671	332	243	855	1640	79	118	146	116	128	232	157
830	1070	888	880	769	780	738	728	268	250	858	1600	80	116	150	120	138	260	178
852	1074	892	893	768	790	740	731	372	253	867	1560	81	118	156	128	141	264	180

ACID PLANT

DATE: JUN 23 1977

CONTACT SECTION CONT'D.

COOLING TOWER					ACID PRODUCT TO STORAGE											ACID STORAGE TANKS				
																No. 1	No. 2	No. 3		
																93%		98%		
Water In	Temp. Out	Water G.P.M.	No. 1 Pump Amps.	No. 2 Pump Amps.	Temp.	PB Press	HC Conc'n	PB Amps.	PB Temp.	HC Press	HC Conc'n	Amps.	Temp.	Press	Conc'n	Amps.	Depth Feet	Depth Feet	Depth Feet	Depth Feet	Oleum
			66	67		1111	1108	1130	1117	1006	1108										
			63	61		C	1060	0	0	0%	0										
			65	64		C	C	0	0	45% C	0										
			72	70		C	0	0	0	C	0										
			72	70		C	0	0	0	C	0										
			70	68		C	0	0	0	C	0										
			64	63		C	0	0	0	C	0										
			61	60		C	0	0	0	C	0										
			56	55		C	C	0	0	0	0										
			71	69		C	0	0	0	0	0										
			67	65		C	0	0	0	0	0										
			68	65		C	0	0	0	0	0										
			68	65		C	0	0	0	0	0										

PRODUCTION PREVIOUS DAY

SHIFT OPERATORS SIGNATURE

A:

B: Eugene Lee Newberry Jr

C:

REMARKS:

	96	100	96	94	95	94	96	100	94	94	94	94	
	18	17.8	18.2	[illegible]	18.0	18.0	17.2	17.0	17.6	[illegible]	17.4	17.6	
	135	140	[illegible]	[illegible]	134	135	125	126	[illegible]	[illegible]	130	130	
	140	140	[illegible]	[illegible]	138	139	135	135	[illegible]	[illegible]	139	138	
	126	128	[illegible]	[illegible]	128	128	125	130	[illegible]	[illegible]	130	131	
	138	140	135	[illegible]	135	136	125	130	[illegible]	[illegible]	130	130	
	140	140	[illegible]	[illegible]	129	140	145	145	[illegible]	[illegible]	147	142	
	146	150	[illegible]	[illegible]	142	146	135	132	[illegible]	[illegible]	136	135	
	146	150	[illegible]	[illegible]	144	143	145	150	[illegible]	[illegible]	145	145	
	184	180	185	[illegible]	185	184	213	220	[illegible]	210	210	210	
	150	160	[illegible]	[illegible]	151	156	135	140	[illegible]	[illegible]	135	135	
	180	184	[illegible]	[illegible]	201	215	161	164	[illegible]	[illegible]	209	223	
Vibration Oil Pump													
	0	0	0	0	0	0	40	42	[illegible]	[illegible]	40	41	
	70	70	[illegible]	[illegible]	69	69	40	40	[illegible]	[illegible]	38	39	
	5	5	5	5	05	05	50	44	[illegible]	[illegible]	45	45	
	50	50	50	50	50	49	78	76	[illegible]	[illegible]	75	78	
	70	72	75	[illegible]	71	70	110	110	[illegible]	[illegible]	109	109	
	50	47	50	50	50	48	60	60	[illegible]	[illegible]	60	60	
	45	42	[illegible]	[illegible]	40	40	60	60	[illegible]	[illegible]	58	58	
	60	50	[illegible]	[illegible]	51	50	45	42	[illegible]	[illegible]	46	45	
	0	0	[illegible]	[illegible]	-0-	-0-	2.0	1.0	[illegible]	[illegible]	1.0	1.5	
[illegible]	170	210			215	220	130	220			220	225	
[illegible]	30	100	30	50	100	150	30	100	30	30	100	100	
Comp. Inlet Pres.	10.9	17	9.2	9.5	18.0	19.0	—	~~21~~	—	—	—	—	
Comp. [illegible] Pres.	80.4	210	126	127	190	215	160.5	210	126	[illegible]	174	216	
Comp. Discl. Pr	120/109	120/114	[illegible]	[illegible]	116/106	116/106	104/104	112/114	[illegible]	[illegible]	104/100	104/100	
Motor Brg. Pr	119	124	116	114	118		118	120	112	[illegible]	113	113	
Gear Oil) po Comp. Oil)	118	127	114	114	116	116	118	120	116	[illegible]	116	115	
		43	45	45	45	45		43	45	42	45	45	
	45						45						

PLEASE USE ONLY ONE SHEET FOR BOTH PUMPS

TIME	SUCTION PR.
10:00 AM	1560
2:00 PM	1432
[illegible]	[illegible]
[illegible]	[illegible]
2:00 AM	1340
6:00 AM	1320

El Paso, Texas

JUN 24 1977

LATD: _____

JUN 24 1977

DATE: JUN 24 1977

ACID PLANT

GAS CLEANING (COND.)

TIME	MT FAN H2O TEMP. °F	PRESS H2O TO DRY TWR.	PRECIPITATORS NUMBER 1 VOLTS	AMPS	CLARITY	NUMBER 2 VOLTS	AMPS	CLARITY	NUMBER 3 VOLTS	AMPS	CLARITY	NUMBER 4 VOLTS	AMPS	CLARITY	NEUTRALIZING SECTION FLOW TO STRIPPER G.P.M. FI 3028-1	PH NEUT. TANK AR 3011	PH SURGE TANK AR 3012	MAKE UP WATER G.P.M. PI 3025-9	PRESS NH3 STORAGE P.S.I.G.
INST. NO.	TI 3026-11	99% Oil Level			x			x			x			x					
7 a.m.	82	3/4			clear			clear			clear			clear					
8 a.m.																			
9 a.m.	84	3/4			clear			clear			clear			clear					
10 a.m.																			
11 a.m.	84	3/4			clear			clear			clear			clear					
12 Noon																			
1 p.m.	85	3/4			clear			clear			clear			clear					
2 p.m.																			
3 p.m.	89	3/4			clear			clear			clear			clear					
4 p.m.																			
5 p.m.	[illegible]	[illegible]																	
6 p.m.																			
7 p.m.		[illegible]																	
8 p.m.																			
9 p.m.																			
10 p.m.																			
11 p.m.	85	3/4			clear			clear			clear			clear					
12 Midnight																			
1 a.m.	85	3/4			clear			clear			clear			clear					
2 a.m.																			
3 a.m.	84	3/4			clear			clear			clear			clear					
4 a.m.																			
5 a.m.	84	3/4			clear			clear											
6 a.m.																			

Safety Shower & Eye Wash

7-3 OK [illegible]
3-11 [illegible]
11-7 OK [illegible]

SHIFT OPERATORS SIGNA[illegible]
A:
B:
C:

REMARKS:

DATE: JUN 24 1977

ACID PLANT

CONVERTER SECTION

	CONVERTER TEMPERATURES								NO. 5 HT. EXCH.		PREHEATER		ACID TEMPERATURES						
	1ST PASS		2ND PASS		3RD PASS		4TH PASS		TUBE SIDE				DRYING TOWER		INTER-TOWER			FINAL TOWER	
	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	IN °F TE	OUT °F TE	TEMP. OUT °F TE	PRESS p H20 STACK	IN °F TE	OUT °F TE	IN °F TI	OUT °F TE	OUT COOLER °F TE	IN °F TE	OUT °F TE
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	A-2	A-4	A-1	0	C-5	C-4	0	C-7	C-8	C-1	C-5	
14	943	798	803	755	750	739	741	307	282	821	1640	66	84	140	80	114	236	186	
26	987	822	837	724	728	721	729	321	233	821	1580	80	102	160	94	126	236	150	
6	946	815	835	736	743	721	721	302	223	789	1640	87	112	170	94	132	221	159	
14	970	830	840	719	730	705	709	349	251	809	1540	93	131	165	114	133	260	159	
E3	1042	E15	E26	743	745	739	730	254	257	791	1600	E5	119	145	124	136	248	169	
E2	1019	E22	E42	758	759	741	740	323	236	E10	1440	E0	107	140	96	124	213	147	
E1	998	E09	E52	721	730	725	737	345	238	E07	1540	79	106	165	121	130	250	159	
E07	987	E03	E23	710	713	707	710	305	228	E24	1320	76	104	130	104	122	207	144	
12	1002	844	858	754	773	756	729	367	285	825	1440	86	130	162	129	142	263	177	
25	1052	871	870	770	775	759	756	379	260	838	1460	87	129	142	115	145	229	177	
20	1040	870	900	770	772	740	740	345	248	850	1680	85	115	140	110	140	230	170	
23	1074	878	917	774	777	741	742	361	252	849	1372	80	120	150	125	147	245	181	

ACID PLANT

DATE: JUN 24 1977

SECTION 2

	OLEUM TEMP, Cont'd.												PUMP TANK - PUMP AMPS		
	OLEUM TWR. IN °F	OLEUM TWR. OUT °F	93% PRODUCT °F	98% PRODUCT °F	93% SP.GR.	OLEUM SP.GR.	LEVEL OLEUM TWR. INCHES	% SO2 OUT BLOWER	%SO2 OUT FINAL TWR.	% CONVERSION	STACK COND.	PUMP TANK LEVELS DRY	INTER.	FINAL	DRY	INTER.	FINAL
	TE 1004-28	TE 1004-29	TE 1004-26	TE 1004-27	DI 1032	DI 1043	LI 1041	AR 1014				LI 1023	LI 1025	LI 1031			
			121	103				0		25	0	0	0	0	0	0	0
			60	77				2.0		89	GOOD	35	40	30	88	67	88
			74	90				3.6		92	GOOD	30	40	55	88	65	87
			81	79				3.6		88	GOOD	50	46	30	88	67	88
			83	85				4.6		96	GOOD	35	45	42	88	65	87
			82	91				4.8		97	GOOD	50	35	55	90	70	90
			83	85				4.4		95	GOOD	45	45	55	90	65	90
			79	76				4.4		103	GOOD	55	35	45	85	70	85
			75	84				4.4		97	GOOD	50	45	45	85	75	86
			71	91				5.0		100	GOOD	35	40	55	75	75	86
			70	80				4.0		96	GOOD	35	40	50	87	75	86
			76	81				3.5		99	GOOD	40	40	40	87	75	86
			69	83				3.5		98	GOOD	40	40	50	85	75	86

Acid to Conv. Tank
#1 Pump
#2 Pump

Acid at 7 A.M.
Conv. T 29"
#1 45"
#2 13"
#3 10"

#1 Pump
#2 Pump
16" Acid to ~~Conv.~~ Tank

Acid at 3 P.M.
Conv. T 29"
#1 45
#2 50"
#3 44"

#1 Pump
#2 Pump
Acid to Conv. Tank

Acid at 11 P.M.
Conv. T 29"
#1 43
#2 50
#3 44

TYRELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-21-77

7-3 Shift 22" of Acid in RR

3-11 Shift

11-7 Shift 18" Acid in RR

ME	A. IBARRA 19" of Acid in RR						
ME	C1	C2	C3	Ma	Ma	A	W
AM	5	—	—	190	190	—	2
PM	—	—	F	190	190	—	2
M	5	—	F	190	200	—	2
AM	5	—	F	190	200	—	2
AM	5	—	—	190	230	—	2
M	F	—	—	190	260	—	2
M	F	—	—	190	260	—	2
PM	F	—	5	190	270	—	2
	F	—	5	190	270	—	2

	E. LEVERO 14" of Acid in RR						
TIME	C1	C2	C4	Ma	Ma	A	W
3PM	F	—	5	190	270	—	2
30							
4 PM	F	—	5	190	240	—	2
30							
5 PM	F	—	5	190	240	—	2
30							
6 PM	—	—	5	190	240	—	2
30							
7 PM	—		5	190	230	—	2
30							
8 PM	—		5	190	230	—	2
30							
9 PM	5		5	190	190	—	2
30							
10 PM	5		5	190	150	—	2
30							

	R. HERRERA						
TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	5	—	5	190	170	—	2
30							
12 PM	5	—	5	190	180	—	2
30							
1 AM	5	—	5	190	190	—	2
30							
2 AM	5	—	F	190	250	—	2
30	5	—	F	190	250	—	2
3 AM							
30	5	—	F	190	260	—	2
4 AM	5	—	F	190	260	—	2
30							
5 AM							
30	5	—	F	190	190	—	2
6 AM	5	—	F	190	240	—	2
30	5	—	F	190	230	—	2

REMARKS Checked Conv. water Pump & oil level and Hot Valve. Checked Conv. Acid Sprays. Checked Conv. water sprays at 7:15 A.M. Cleaned Conv. Thermocouple & Cleaned RR Acid Spray on Sd. disc. Cleaned Acid & Hot Filter Working upstairs. Cleaned RR water sprays on Values #3 5-8 Checked water sprays on Conv. Side at 12:10 P.M. Cleaned water sprays on Conv. Side Value #3. Working upstairs

REMARKS Checked water pump & oil level Drained Filter, Checked All water & Acid Sprayers Pump, Clean water pump Filter Worth Saw Shop, Clean water sprays Valves #1-4 on RR Clean water sprays Valve #4 on Conv.

REMARKS Checked pump & oil level Drained filter & checked conv water sprays Checked acid sprays on RR Flue. Working upstairs Cleaned water on RR Valves 5-8 Checked water on conv. & cleaned valve #1

29" Conv. T 7 AM Acid #1 40"
Acid #2 46"
Acid #3 44"

Transferred 16" of Acid to RR

30" to RR

Acid to Conv. Tank	Acid at 7 A.M.	#1 Pump	Acid at 3 P.M.	#1 Pump	Acid at 11 P.M.
#1 Pump	Conv. T 29"	✓ #2 Pump	Conv. T 28"	#2 Pump	Conv. T -8"
#2 Pump	#1 40"	Acid to Conv.Tank	#1 40"	Acid to Conv.Tank	#1 40"
	#2 50"		#2 50"		#2 50"
	#3 44"		#3 44"		#3 44"

RELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-22-77

7-3 Shift 11" of Acid in R&R

3-11 Shift 19" of Acid in R&R

11-7 Shift 16" Acid in R&R

A. Ibarra 23" of Acid in R&R

C1	C2	C3	Ma	Ma	A	W
S	–	F	190	240	–	2
S	–	–	190	240	–	2
S	–	–	190	240	–	2
F	–	–	190	240	–	2
F	–	–	190	240	–	2
F	–	–	190	240	–	2
–	–	S	190	230	2	2
–	–	S	190	230	3	2
–	–	S	190	230	–	2
–	–	S	190	230	–	2

A. Ibarra

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	–	–	S	190	160	–	2
30							
4 PM	S	–	S	190	160	–	2
30							
5 PM	S	–	–	190	160	–	2
30							
6 PM	S	–	S	190	170	–	2
30	S	–	S	190	170	–	2
7 PM	Down for Repairs						
30							
8 PM							
30							
9 PM							
30	S	–	S	190	170	–	2
10 PM							
30	S	–	S	190	170	–	2

R. Melano

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	S	–	S	190	200	–	2
30							
12 PM	–	–	S	190	200	–	2
30							
1 AM	S	–	S	190	230	–	2
30	S	–	S	190	230	–	2
2 AM							
30	S	–	F	190	230	–	2
3 AM	–	S	F	190	230	–	2
30	–	S	F	190	230	–	2
4 AM	–	–	F	190	250	–	2
30	–	–	F	190	240	–	2
5 AM							
30	–	S	F	190	240	–	2
6 AM	–	S	F	190	250	–	2
30	–	S	F	190	250	–	2

ARKS Checked Conv. water pump & oil level and bleed valve. Checked Conv. Acid sprays. Checked Conv. water sprays at 2:10 A.M. Cleaned Conv. thermocouples. Cleaned R&R Acid sprays on (South) side. Also cleaned Acid & Air filters. Working upstairs. Cleaned R&R water sprays on valves #s 1-4. Checked Conv. water sprays at 11:45 A.M. Cleaned Conv. water sprays on valve #2. Working upstairs. Cleaned 3 Acid sprays on Conv. side.

REMARKS Checked Conv. water pump & oil level and bleed valve. Checked Conv. Acid sprays. Checked Conv. water sprays at 8:20 P.M. Working upstairs. Checked R&R Acid sprays. Cleaned R&R water sprays on valves #5-8. Checked Conv. water sprays at. Cleaned Conv. water sprays on valve #3. Working upstairs.

REMARKS Checked pump & oil level. Drained filter & checked conv. water sprays. Working upstairs. Cleaned water on R&R on valves 1-4. Checked conv. water & cleaned water valve #4

28" Conv. T 7 AM Acid #1 40"

Acid #2 50"

Acid #3 44"

Replaced water hose & pipe on valve #1

	Acid to Conv. Tank	Acid at 7 A.M.		#1 Pump	Acid at 3 P.M.	#1 Pump	Acid at 11 P.M.
✓	#1 Pump	Conv. T 28"	✓	#2 Pump	Conv. T 28"	#2 Pump	Conv. T 28"
	#2 Pump	#1 40"		Acid to Conv.Tank	#1 37"	Acid to Conv.Tank	#1 37"
30" To R&R		#2 50"			#2 50"		#2 50"
		#3 44"			#3 44"		#3 44"

EL PASO SMELTING WORKS

DATE 6-23-77

TRELL DEPARTMENT

7-3 Shift 12" of Acid in R&R

3-11 Shift 27" ACID IN R&R

11-7 Shift 22" Acid in R&R

A. Ibarra 10" of Acid in R&R

TIME	C1	C2	C3	Ma	Ma	A	W
AM	—	S	—	190	240	—	2
PM	—	S	—	190	240	—	2
AM	—	S	—	190	240	—	2
AM	—	S	S	190	240	—	2
AM	F	—	S	190	230	—	2
M	F	—	S	190	170	—	2
M	F	—	S	190	170	—	2
PM	F	—	S	190	170	—	2

Don F Parker

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	F	—	S	190	250	—	2
30	F	—	S	190	240	—	2
4 PM	—	—	S	190	200	—	2
30	—						
5 PM	—	—	S	200	210	—	2
30	—	—	S	210	2[illegible]	—	2
6 PM	DOWN		CONV				
30	—	—	S	200	240	—	2
7 PM	—	—	S	190	250	—	2
30							
8 PM	—	—	S	190	240	—	2
30	DOWN		CONV				
9 PM	—	—	S	190	250	—	2
30	DOWN		CONV				
10 PM							
30	—	S	—	190	260	—	2

R. Melano

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	—	S	—	190	250	—	2
30							
12 PM	—	S	F	190	250	—	2
30	—	S	F	190	250	—	2
1 AM							
30	—	S	F	190	250	—	2
2 AM	—	S	F	190	240	—	2
30							
3 AM	—	S	F	190	240	—	2
30							
4 AM	S	F	—	190	230	—	2
30							
5 AM	S	F	—	190	230	—	2
30	S	F	—	190	230	—	2
6 AM	S	F	—	190	220	—	2
30							

REMARKS Cleaned on top of conv. spray chamber, Checked conv. water pump & oil level and bleed valve. Checked conv. acid sprays. Checked conv. water sprays at 7:10 A.M. Cleaned conv. thermocouples. Cleaned R&R acid sprays on (north) side, also cleaned acid & air filters. Working upstairs. Cleaned R&R water sprays on valves #3 1-4. Checked conv. water sprays at 12:05 P.M. Cleaned conv. water sprays on valve #1. Cleaned 2 acid sprays on conv. side, and replaced 1 air leaking acid spray. [illegible]

REMARKS Checked conv water pump & drained filter & checked oil level. Checked all acid & water sprays on conv at 3:15. Checked R&R acid sprays and tank. Cleaned water sprays on valves 5-8 on R&R. Rechecked all water sprays on conv and cleaned sprays on valve #2 at 7 PM. Working up stairs.

REMARKS Checked pump & oil level, drained filter, checked conv. water sprays working upstairs. Cleaned water on R&R valves 1-4 checked conv water sprays & cleaned valve #3

Conv. T 25 7 AM

Acid #1 37"
Acid #2 50"
Acid #3 44"

Acid to Conv. Tank
#1 Pump
✓ #2 Pump

Acid at 7 A.M.
Conv. T 28
#1 37"
#2 50"
#3 42"

#1 Pump
✓ #2 Pump
Acid to Conv. Tank
26" Acid to R+R

Acid at 3 P.M.
Conv. T 28"
#1 37"
#2 50"
#3 44"

#1 Pump
#2 Pump
Acid to Conv. Tank

Acid at 11 P.M.
Conv. T 27
#1 35"
#2 50"
#3 44"

COTTRELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-24-17

7-3 Shift 18" of Acid in R+R

3-11 Shift 14" Acid in R+R

11-7 Shift 26" Acid in R+R

NAME F. Lucero 16" of Acid in R+R at 8:00 A.M.

TIME	C1	C2	C3	Ma	Ma	A	W
7 AM	S	—	S	190	230	—	2
30							
8 PM	S	—	—	190	240	—	2
30							
9 AM	S	—	S	190	240	—	2
30							
10 AM	—	—	S	200	220	—	2
30							
11 AM	—	—	S	200	220	—	2
30							
12 M	—	—	S	200	220	—	2
30							
1 PM	S	L	F	200	150	—	2
30							
2 PM	—	L	F	200	150	—	2
30	—	L	F	200	150	—	2

REMARKS Checked water pump & oil level & drained filter checked all water sprays & nozzles clean with steam & nozzles cleaned. Clean R&R Acid sprays (south) side. Clean Acid & Lift Fan cover R. Clean water pump Filter cover (south) Clean water sprays valves #5-8. Clean water sprays valve #4 on Board

NAME Dan T Parker

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	—	L	F	200	200	—	2
30	—	L	F	190	230	—	2
4 PM							
30	—	L	F	190	210	—	2
5 PM	—	L	F	200	300	—	2
30							
6 PM	—	S	F	190	220	—	2
30							
7 PM	—	S	F	190	210	—	2
30							
8 PM	—	S	E	210	220	—	2
30	—	S	L	190	220	—	2
9 PM	—	S	L	200	210	3	2
30							
10 PM	—	S	L	190	200	3	2
30	—	S	L	190	200	3	2

REMARKS Checked water pump & OIL LEVEL + drained F. Filter & Checked ALL Acid & WATER SPRAYS ON CONV AT 3:30. Checked R&R ACID SPRAYS and TANK & CLEANED WATER SPRAYS ON VALVES 1-4 ON R&R. Rechecked ALL WATER SPRAYS AND CLEANED SPRAYS ON VALVE #4 ON CONV AT 8 PM.

NAME R. Macano

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	—	S	L	190	200	3	2
30							
12 PM	—	F	L	190	180	3	2
30	—	F	L	190	180	3	2
1 AM	—	F	L	190	180	3	2
30	—	F	S	190	180	3	2
2 AM	S	—	S	190	160	3	2
30							
3 AM	S	—	S	190	150	3	2
30	S	—	S	190	160	3	2
4 AM							
30	—	S	E	190	200	3	2
5 AM							
30	—	S	F	190	210	—	2
6 AM	—	S	F	190	220	—	2
30	—	S	F	190	230	—	2

REMARKS checked pump & oil level drained filter & water sprays on conv working upstairs checked acid sprays on R&R cleaned water on valves 5-8 checked conv. water & cleaned valve #2 working upstairs

25" Conv. T 7 AM Acid #1 35
Acid #2 50"
Acid #3 44"

Transferred 16" Acid to R&R.

___ Acid to Conv. Tank	Acid at 7 A.M.	___ #1 Pump	Acid at 3 P.M.
___ #1 Pump	Conv. T 25"	✓ #2 Pump	Conv. T 25"
✓ #2 Pump	#1 35"	___ Acid to Conv.Tank	#1 35"
	#2 50"		#2 50"
	#3 44"		#3 44"

___ #1 Pump	Acid at 11 P.M.
✓ #2 Pump	Conv. T 23"
15" Acid to Conv.Tank	#1 35"
25" Acid to R&R Tank.	#2 50"
	#3 44"

COTTRELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-25-77

7-3 Shift 23" of Acid in R&R

3-11 Shift 18" Acid in R&R.

11-7 Shift 14" Acid in R&R

NAME F. Luevano 21" of Acid in R&R at 8:00 A.M.

TIME	C1	C2	C3	Ma	Ma	A	W
7 AM	—	S	F	190	230	—	2
8 PM	—	S	F	190	230	—	2
30							
9 AM	S	S	—	190	220	—	2
30							
10 AM	S	S	—	190	230	—	2
30							
11 AM	S	S	—	190	230	—	2
30							
12 M	S	S	—	190	240	—	2
30							
1 PM	S	F	—	190	240	—	2
30							
2 PM	S	F	—	190	220	—	2
30	S	F	—	190	220	—	2

Don F. Parker

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	S	F	—	190	240	—	2
30							
4 PM	S	F	—	180	230	—	2
30							
5 PM	S	F	—	190	250	—	2
30							
6 PM	S	—	S	200	210	—	2
30	—	—	S	210	200	—	2
7 PM	S	—	S	190	140	3	2
30	S	—	S	190	150	3	2
8 PM	S	—	S	190	170	3	2
30	S	—	S	180	170	3	2
9 PM	F	—	S	200	210	—	2
30							
10 PM	—	S	S	200	210	—	2
30	—	S	S	180	170	3	2

R. Melano

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	—	S	S	190	200	3	2
30	—	S	F	190	200	—	2
12 PM	—	S	F	190	200	—	2
30							
1 AM	—	S	F	190	200	—	2
30	—	S	F	190	220	—	2
2 AM	—	S	F	190	220	—	2
30							
3 AM							
30	S	—	F	190	230	—	2
4 AM	S	—	F	190	250	—	2
30							
5 AM	S	F	—	190	200	—	2
30							
6 AM	S	F	—	190	220	—	2
30	S	F	—	190	250	—	2

REMARKS Checked water pump & oil level & drained filter. Checked all water & acid sprays on conv. Cleaned both thermocouples on conv. Cleaned R&R acid sprays (north) Cleaned air & acid filters on R&R. Cleaned water sprays valves #1-4 on R&R. Cleaned water on F. Luevano R&R (south) Cleaned water sprays valve #3 on conv.

REMARKS Checked water pump & oil level & drained filter. Checked all acid & water sprays on conv at 3:15. Checked R&R acid sprays and tank. Cleaned water sprays on valves 5-8 on R&R. Rechecked all water sprays and cleaned sprays on valve #4 on conv at 7 PM. Working up stairs.

REMARKS Checked pump & oil levels drained filter. Checked water sprays on conv. Checked acid sprays on R&R. Cleaned water on R&R valves 1-4 Checked conv. water & cleaned valve #1

28" Conv. T ___ 7 AM

Acid #1 31"

Acid #2 50"

Acid #3 44"

Cleaned acid lines

25" to R&R Tank

15" to [illegible]

Acid to Conv. Tank
#1 Pump
✓ #2 Pump

Acid at 7 A.M.
Conv. T 28"
#1 31"
#2 50"
#3 44"

✓ #1 Pump
#2 Pump
Acid to Conv.Tank

Acid at 3 P.M.
Conv. T 28"
#1 31"
#2 50"
#3 44"

✓ #1 Pump
#2 Pump
Acid to Conv.Tank

Acid at 11 P.M.
Conv. T 25"
#1 31"
#2 50"
#3 44"

EL PASO SMELTING WORKS

COTTRELL DEPARTMENT

DATE 6-26-77

7-3 Shift 27" of Acid in R&R

3-11 Shift 22" of Acid in R&R

11-7 Shift 19" of Acid in R&R

NAME F. LUEVANO 25" of Acid in R&R at 8:00 A.M.

TIME	C1	C2	C3	Ma	Ma	A	W
7 AM	S	F	—	190	250	--	2
30							
8 PM	S	F	—	170	250	—	2
30							
9 AM	—	F	S	190	250	—	2
30							
10 AM	—	F	S	190	240	—	2
30							
11 AM	—	F	S	160	240	—	2
30							
12 M	S	—	S	170	170		2
30							
1 PM	S	—	S	190	130	—	2
30							
2 PM	—	S	S	190	120	—	2
30	—	S	S	190	120	—	2

REMARKS Checked water pump, cell level, cleaned filter, checked all water & acid sprays on Cone. Cleaned 3-4 [illegible] sprays on Cone. Cleaned R&R acid sprays (south) cleaned acid filters on R&R. Cleaned water sprays valves #5-8 on R&R. Cleaned water filter (north) on R&R. Cleaned water sprays valves 2 on [illegible]

Cleaned Top of Cone. spray chamber.

NAME M. MARQUEZ

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	—	S	S	190	150	6	2
30							
4 PM	—	S	S	190	160	4	2
30							
5 PM	—	S	S	190	160	4	2
30							
6 PM	—	S	S	190	160	4	2
30		S	F	190	220	—	2
7 PM	—	S	F				
30							
8 PM	—	S	F	190	110	—	2
30							
9 PM	—	S	F	190	220	—	0
30							
10 PM	—	S	F	190	220	—	2
30	—	F	F	190	220	—	2

REMARKS CHECKED WATER PUMP & DRAINED FILL. CHECKED WATER SPRAYS 3:15 P.M. CHECKED ACID SPRAYS CHECKED R&R ACID SPRAYS CHECKED WATER SPRAYS AT 8:15 P.M. CLEANED VALVE #3 (CONE)

NAME A. IBARRA

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	—	F	F	190	250	-	2
30							
12 PM	—	F	—	170	220	-	2
30							
1 AM	1—	F	S	170	230	-	2
30							
2 AM	—	F	S	170	230	—	2
30							
3 AM	—	—	S	170	250	-	2
30	—	—	S	170	230	-	2
4 AM	—	—	S	170	230	—	2
30		—	S	170	230	—	2
5 AM							
30	—	—	F	170	230		2
6 AM	—	S	F	190	250		2
30	—	S	F	170	230		2

REMARKS Checked Cone water pump & filled and bled lines. Checked Cone acid sprays. Checked Cone water sprays all working. Checked R&R acid sprays. Cleaned R&R water sprays on valves #3-5-5. Checked Cone water sprays at 2:50 A.M. Cleaned Cone water sprays on valve #4. Working upstairs.

Conv. T 25" 7 AM
Acid #1 31"
Acid #2 50"
Acid #3 44"

Acid to Conv. Tank
✓ #1 Pump
✓ #2 Pump

Acid at 7 A.M.
Conv. T 25
#1 31"
#2 50"
#3 44"

✓ #1 Pump
✓ #2 Pump
Acid to Conv.Tank
25" Acid to R-R tank

Acid at 3 P.M. 11
Conv. T 42
#1 31"
#2 50"
#3 44"

#1 Pump
✓ #2 Pump
Acid to Conv.Tank

Acid at 11 P.M.
Conv. T 24 11
#1 24"
#2 50"
#3 44"

COTTRELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-27-77

7-3 Shift 17" of Acid in R+R

3-11 Shift 10" of Acid in R+R

11-7 Shift 17" of Acid in R+R

NAME M Martinez = 16" Acid at 7:30 AM

TIME	C1	C2	C3	Ma	Ma	A	W
7 AM	–	S	F	190	170	–	2
30							
8							
1 PM	–	S	F	190	210	–	2
30							
2 AM	–	S	–	190	210	–	2
30							
10 AM	–	S	–	190	230	–	2
30							
11 AM	–	S	–	180	180	–	2
30							
12 M	–	S	–	180	180	–	2
30							
1 PM	–	S	–	180	180	–	2
30							
2 PM	–	F	–	180	190	–	2
30							

REMARKS CHECKED CONV. WATER SPRAYS W/ WATER PUMP #1 SPRAYS/ CHECKED CONV. THERMOCOUPLES/ CHECKED R+R CONV. WATER SPRAYS/ CLEANED + BLEW OUT SPRAYS 1-4/ RECHECKED CONV. WATER SPRAYS AT 2 AM/ CLEANED COOLING TOWER #4 BY PASS WATER SPRAYS. DRAINED 1 ACID SPRAY & CHECKED COOLING TOWER ACID TANK

M. MARQUEZ

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	—	F	—	180	140	—	2
30							
4 PM	—	F	—	180	140	—	2
30							
5 PM	—	F	—	180	140	—	2
30							
6 PM	—	—	L	200	140	—	2
30							
7 PM	S	—	L	200	140	—	2
30							
8 PM	S	—	L	200	140	—	2
30							
9 PM	—	S	S	200	190	4	2
30							
10 PM	S	S	S	190	150	4	2
30	—	S	S	190	150	4	2

REMARKS CHECKED WATER PUMP & DRAINED STRAINER. CHECKED CONV. WATER SPRAYS. CHECKED R+R WATER SPRAYS. 3:20 P.M. CHECKED R+R SURGE. CHECKED WATER SPRAYS AT 5:30 P.M. CHECKED VALVES #2 7:00 P.M. CLEANED VALVES #2

A. Ibarra

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	–	S	S	190	160	4	2
30							
12 PM	S	S	–	190	160	–	2
30							
1 AM	S	S	S	190	150	–	2
30							
2 AM	–	S	S	190	220	–	2
30							
3 AM	–	S	F	190	220	–	2
30							
4 AM	–	S	F	190	220	–	2
30	–	–	F	190	220	–	2
5 AM							
30	–	S	F	190	220	–	2
6 AM	–	S	F	190	220	–	2
30	–	S	F	190	190	–	2

REMARKS Checked Conv. water pump & found strainer and head badly. Checked Conv. acid sprays. Checked Conv. water sprays at 11:16 P.M. Working 4 hours. Checked R+R acid sprays. Cleaned R+R water sprays & valves #'s 1-4. Checked Conv. water sprays at 3:30 A.M. Cleaned Conv. water sprays on valve #3. Working with R+R.

24 Conv. T 7 AM
Acid #1 27"
Acid #2 50"
Acid #3 44"

Acid to Conv. Tank
#1 Pump
✓ #2 Pump
51" ACID To Cooling Tower
53" ACID TO R+R

Acid at 7 A.M.
Conv. T 24"
#1 29"
#2 50"
#3 44"

#1 Pump
✓ #2 Pump
Acid to Conv. Tank

Acid at 3 P.M.
Conv. T 22"
#1 23"
#2 50"
#3 44"

✓ #1 Pump
#2 Pump
Acid to Conv. Tank

Acid at 11 P.M.
Conv. T 18"
#1 23"
#2 50"
#3 44"

COTTRELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-25-77

7-3 Shift 12" of Acid in R+R

3-11 Shift

11-7 Shift 20" of Acid in R+R

NAME M. Montana 10" ACID AT 8AM

TIME	C1	C2	C3	Ma	Ma	A	W
7 AM	-	S	F	190	230	-	2
30							
8 PM	-	S	-	190	230	-	2
30							
9 AM	-	S	-	190	180	-	2
30							
10 AM	-	S	-	190	180	-	2
30							
11 AM	-	-	S	190	180	4	2
30							
12 M	-	-	S	190	130	4	2
30							
1 PM	-	-	S	190	150	4	2
30							
2 PM	-	L	S	190	100	7	2
30							

REMARKS CHECKED CONV. ACID TANK + SPRAYS, WATER PUMP #2 + SPRAYS / CLEANED CONV. THERMOCOUPLES CHECKED B+R ACID TANK + SPRAYS / CLEANED B+R SCRUBBER ACID SPRAYS, AIR + ACID FILTER WATER FILTERS SPRAYS 5-8 / CHECKED CONV. WATER SPRAYS, BATTERY CLEANED / CONV. WATER SPRAYS, VALVE #4 + 2 ACID SPRAYS

F. Luevano 25" Acid to R+R at 4 p.m.

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	—	L	S	190	100	7	2
30							
4 PM	—	1	S	190	100	7	2
30							
5 PM	—	S	S	190	170	7	2
30							
6 PM	—	S	F	190	240	—	2
30							
7 PM	—	S	F	190	240	—	2
30							
8 PM	—	S	F	190	240	—	2
30							
9 PM	—	S	F	190	190	—	2
30							
10 PM	—	S	F	190	190	—	2
30	—	S	F	190	190	—	2

REMARKS Checked Conv. water sprays & oil level + Heated F. Ctck, Checked ACI water & Acid sprays and cooler. Cleaned Conv. Thermocouples & Checked Conv. water sprays #1-4 Checked Acid water sprays on Cowles. Checked & Cleaned valve #1 on Conv.

A. Tarra

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	—	S	F	190	240	—	2
30							
12 PM	—	F	—	170	240	—	2
30							
1 AM	—	F	—	170	240	—	2
30							
2 AM	—	F	—	190	240	—	2
30							
3 AM	S	F	—	190	240	—	2
30							
4 AM	S	—	—	170	170	—	2
30	S	—	S	190	120	—	2
5 AM							
30	S	—	S	170	100	—	2
6 AM	S	—	S	160	190	4	2
30	S	—	S	160	230	4	2

REMARKS Checked Conv. water pump oil level, and bleed valve. Checked Conv. thermocouples. Checked Conv. water sprays AT 11:15 P.M. WORKING 4 HOURS. Checked & Cleaned Acid sprays. Cleaned B+R water sprays. Cowles #3 & #4 Checked Conv. water sprays AT 5:50 A.M. Cleaned Conv. water sprays on Conv. #1. Cleaned and checked Acid sprays on Conv. Side.

Conv. T 18" 7 AM
Acid #1 23"
Acid #2 50"
Acid #3 44"

Acid to Conv. Tank
#1 Pump
✓ #2 Pump

Acid at 7 A.M.
Conv. T 18"
#1 23"
#2 50"
#3 44"

✓ #1 Pump
#2 Pump
Acid to Conv.Tank
33" of Acid to R&R Tank

Acid at 3 P.M.
Conv. T 18
#1 54"
#2 50"
#3 44"

✓ #1 Pump
#2 Pump
Acid to Conv.Tank

Acid at 11 P.M.
Conv. T 17"
#1 55"
#2 50"
#3 45"

COTTRELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-29-77

7-3 Shift 16" of Acid in R&R

NAME Juan J. Carbajal

TIME	C1	C2	C3	Ma	Ma	A	W
7 AM	S	–	S	160	240	–	2
30							
8 AM							
30	–	F	S	170	200	–	2
9 AM							
30							
10 AM	–	F	S	160	210	–	2
30	–	F	S	170	230	–	3
11 AM							
30	–	F	S	160	230	–	2
12 M							
30	–	F	S	160	230	–	2
1 PM							
30	–	F	S	160	230	–	2
2 PM							
30	S	–	S	160	220	–	2

3-11 Shift

F. Luevano 8" of Acid in R&R at 4:00 p.m.

TIME	C1	C2	C4	Ma	Ma	A	W
3PM	S	–	F	160	220	–	2
30							
4 PM	S	S	F	160	230	–	2
30							
5 PM	–	S	F	160	230	–	2
30							
6 PM	S	S	–	160	190	–	2
30							
7 PM	F	S	–	160	220	–	2
30							
8 PM	F	S	–	160	230	–	2
30							
9 PM	F	S	–	160	230	–	2
30							
10 PM	–	F	–	160	220	–	2
30	–	F	–	160	220	–	2

11-7 Shift 23" of Acid in R&R

A. Ibarra

TIME	C1	C2	C4	Ma	Ma	A	W
11 PM	–	F	–	160	220	–	2
30							
12 PM	–	F	–	160	220	–	2
30							
1 AM	–	F	–	160	220	–	2
30							
2 AM	–	S	–	160	230	–	2
30							
3 AM	–	S	–	160	230	–	2
30	–	S	S	160	230	–	2
4 AM							
30	–	S	S	160	230	–	2
5 AM	–	S	S	160	230	–	2
30							
6 AM	–	S	S	160	230	3	2
30	–	S	S	160	230	3	2

REMARKS Checked water pump & oil level drained filter. Checked all acid & water sprays on conv. at 7:15. Cleaned north acid sprays and #19 acid filter on R&R. Cleaned out Green Tank. Cleaned water sprays on valves 1-4 on R&R. Cleaned thermocouples. Cleaned water sprays on valve #30 on conv. Checked all water sprays on conv at 1:30. Cleaned water pump filter ... #9 on conv.

REMARKS Checked water pump & oil level & drained filter. Checked all water & acid sprays. ... Cleaned water pump filter ... Cleaned water sprays valves #5-8 ... Cleaned water sprays valve #4 ...

REMARKS Checked conv. water pump & oil level. Acid bleed valve. Checked conv. acid sprays. Checked conv. water sprays at 11:05 p.m. Working upstairs. Checked R&R acid sprays. Cleaned R&R water sprays on valves 1-4. Checked conv. water sprays at 3:15 a.m. Cleaned conv. water sprays ...

Conv. T 17" 7 AM
Acid #1 50"
Acid #2 50"
Acid #3 44"

Working upstairs.

___ Acid to Conv. Tank	Acid at 7 A.M.	___ #1 Pump	Acid at 3 P.M.	___ #1 Pump	Acid at 11 P.M.
___ #1 Pump	Conv. T 17"	✓ #2 Pump	Conv. T 16"	✓ #2 Pump	Conv. T 16"
✓ #2 Pump	#1 50"	___ Acid to Conv.Tank	#1 50"	___ Acid to Conv.Tank	#1 ~~[illegible]~~ 47"
	#2 50"	23" of Acid to R&R Tank	#2 50"		#2 50"
	#3 44"		#3 ~~[illegible]~~ 51"		#3 52"

COTTRELL DEPARTMENT

EL PASO SMELTING WORKS

DATE 6-30-77

7-3 Shift 18" of Acid in R&R

3-11 Shift

11-7 Shift 50" of Acid in R&R

NAME	Dan F Parker 14" of Acid in R&R							F. Lucano 9" of Acid in R&R at 4:00 P.M.								A. Thayer							
TIME	C1	C2	C3	Ma	Ma	A	W	TIME	C1	C2	C4	Ma	Ma	A	W	TIME	C1	C2	C4	Ma	Ma	A	W
7 AM	—	S	S	160	200	3	2	3PM	—	S	—	160	210	—	2	11 PM	Down			Down		Down	
30								30								30							
8 PM	—	S	S	160	210	—	2	4 PM	—	S	—	160	220	—	2	12 PM							
30								30								30							
9 AM	—	S	S	160	210	—	2	5 PM	—	S	—	160	220	—	2	1 AM							
30	—	S	S	150	220	—	2	30								30							
10 AM	—	—	S	160	220	—	2	6 PM	—	S	—	160	220	—	2	2 AM							
30								30								30							
11 AM	—	S	F	170	200	—	2	7 PM	—	F	—	160	250	—	2	3 AM							
30	—	S	F	160	250	—	2	30								30							
12 M	—	S	—	160	240	—	2	8 PM	—	F	—	160	240	—	2	4 AM							
30	—	S	—	170	250	—	2	30								30							
1 PM	—	S	—	160	180	—	2	9 PM	—	F	—	160	240	—	2	5 AM							
30	—	S	—	160	190	—	2	30								30							
2 PM	—	S	—	160	210	—	2	10 PM	Down				Down			6 AM							
30	—	S	—	170	200	—	2	30								30							

REMARKS Checked conv water pump & oil level drained filter. Checked all acid & water sprays on conv at 7:15. Checked R&R acid sprays and cleaned north acid sprays and air & acid filter. Cleaned water sprays on valves 5-8 on R&R. Cleaned thermocouples. Checked all water sprays and cleaned sprays on valve #2 on conv at 12:30. Cleaned water pump filter in [illegible]

REMARKS Checked conv water pump & oil level drained filter & checked all water [illegible] sprays on conv. Cleaned water pump filter on R&R. Cleaned water sprays valve #1-4 on R&R. Cleaned water sprays valve #3 on conv.

REMARKS Checked conv acid tank [illegible] upstairs.

16" Conv. T ___ 7 AM

Acid #1 47"
Acid #2 50"
Acid #3 50"

EL PASO PLANT

COTTRELL PLANT

DATE 6-21-77

CONVERTER TREATER

UNIT	SECTION 1								SECTION 2								SECTION 3								SECTION 4								SECTION 5								SECTION 6								SECTION 7							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																																								
3																																																								
11																																																								
AVERAGE																																																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

UNIT	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	17	65	16	80	28	70	25	70	17	65	18	80	16	70	25	70	17	65	28	70	16	70	25	70	18	80	28	70	16	70	25	70
3	19	70	20	75	30	65	24	70	19	70	20	75	18	80	24	70	19	70	30	65	18	80	24	70	20	75	30	65	18	80	24	70
11	19	70	20	75	30	65	24	70	19	70	20	75	20	80	24	70	19	70	30	65	20	80	24	70	20	75	30	65	20	80	24	70
AVERAGE	18	68	19	77	29	67	24	70					18	77																		

24 HR. AVG.: KV 21.6, MA 71.8

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
J Fernandez	A Ibarra	R. Chavez F. Luevano	J. Arguinieta R. Melano
7-3		3-11	11-7
Cleaned & lime Ins. Boxes on Sect #10 Unit #4.		CLEANED AND LIMED INSULATOR BOXES ON SEC# 8-UNIT #1	CLEANED & LIMED INSULATOR BOXES SEC #11 UNITS #2
DOWN TIME HRS.____ MIN.____		DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	7985	7
START	7977	3
KWH	800	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

COTTRELL PLANT

EL PASO PLANT

DATE 6-22-77

CONVERTER TREATER

	SECTION 1								SECTION 2								SECTION 3								SECTION 4							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER																																
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																
3																																
11																																
AVERAGE																																

24 HR. AVG.: KV_____, MA_____

	SECTION 5								SECTION 6								SECTION 7							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER																								
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																								
3																								
11																								
AVERAGE																								

REVERBERATORY AND WEDGE ROASTER TREATER

	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	19	65	20	70	25	70	24	65	19	65	20	70	19	80	24	65	19	65	24	70	19	80	24	65	20	70	26	70	19	80	24	65
3	18	70	18	80	30	65	24	70	18	70	18	80	20	85	24	70	18	70	30	65	20	85	24	70	18	80	30	65	20	85	24	70
11	18	70	19	80	30	65	26	70	18	70	19	80	20	80	26	70	18	70	30	65	20	80	26	70	19	80	30	65	20	80	26	70
AVERAGE	18	68	19	77	29	67	25	68					20	82																		

24 HR. AVG.: KV 23.2, MA 72.3

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
J Fernandez A IBARRA		R. CHAVEZ A. IBARRA	J. ALCANTAR K. ARELLANO
7-3		3-11	11-7
Cleaned insulator boxes on Sec 10 Unit 1.		CLEANED AND LIMED INSULATOR BOXES ON SEC #8 UNIT #2 CLEANED HOT FRAME. CONV. down AT 7:30 P.M. BACK ON AT 9:30 P.M. MAIN DAMPER ON AUTO.	CLEANED & LIMED INSULATOR BOXES SEC. #11 UNIT #3
DOWN TIME HRS.____ MIN.____		DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	7993	7
START	7985	3
KWH	800	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

COTTRELL PLANT

EL PASO PLANT

DATE 6-23-77

CONVERTER TREATER

UNIT	SECTION 1								SECTION 2								SECTION 3								SECTION 4								SECTION 5								SECTION 6								SECTION 7							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																																								
3																																																								
11																																																								
AVERAGE																																																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

UNIT	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	20	70	22	66	26	71	22	70	20	70	22	66	19	80	22	70	20	70	26	75	15	80	22	70	27	66	26	75	15	80	22	70
3	19	65	20	70	28	65	22	70	19	65	20	70	18	85	22	70	19	65	28	65	18	85	22	70	20	70	28	65	18	85	22	70
11	20	70	20	70	26	65	24	70	20	70	20	70	19	80	24	70	20	70	26	65	19	80	24	70	20	70	26	65	19	80	24	70
AVERAGE	20	68	21	69	27	67	23	70					19	82																		

24 HR. AVG.: KV 22.0, MA 71.3

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
J. Ramirez	A. YBARRA	R. CHAVEZ D. PARKER	J. ARONIEGA R. MELANO

7-3	3-11	11-7
	CLEANED AND - LIMED INSULATOR BOXES ON SECTION #8 - UNIT #3 CLEANED HOT FRAME CONVERTERS DOWN AT 9:15 P.M. MAIN DAMPER ON AUTO ACID PLANT CONTROL IT. CONVERTERS BACK ON AT 10:20 P.M.	CLEANED & LIMED INSULATOR BOXES SEE #11 UNITS #4
DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	7002	7
START	7993	3
KWH	900	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

Oiled - oilers - TERRELL CONV. 6-23-77

COTTRELL PLANT

DATE 6-24-77

EL PASO PLANT

CONVERTER TREATER

UNIT	SECTION 1								SECTION 2								SECTION 3								SECTION 4							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																
3																																
11																																
AVERAGE																																

UNIT	SECTION 5								SECTION 6								SECTION 7							
	1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																								
3																								
11																								
AVERAGE																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

UNIT	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	18	70	22	72	28	75	20	70	18	70	22	72	24	80	20	70	18	70	24	75	24	80	20	70	22	72	28	75	24	80	20	70
3	20	73	20	75	30	65	22	70	20	73	20	75	19	80	22	70	20	73	30	65	19	80	22	70	20	75	30	65	19	80	22	70
11	20	70	19	75	30	65	24	70	20	70	19	75	20	80	24	70	20	70	30	65	20	80	24	70	19	75	30	65	20	80	24	70
AVERAGE	19	71	20	74	29	68	22	70					21	80																		

24 HR. AVG.: KV 22.2, MA 73.2

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
J. Ramirez	F. Luevano	R. Chavez D. Parker	C. Arcinieri R. Melano
7-3		3-11	11-7
Cleaned & Limed ins. Boxes on sec 5 unit 2		CLEANED AND LIMED INSULATOR BOXES ON SEC # 8 - UNIT # 4 CLEANED HOT FRAME.	Removed 1 wire sec # 9 unit # 4 Removed 1 wire sec # 11 unit # 1
DOWN TIME HRS.____ MIN.____		DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	8010	7
START	8002	3
KWH	800	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

COTTRELL PLANT

EL PASO PLANT

DATE 6-26-77

CONVERTER TREATER

	SECTION 1								SECTION 2								SECTION 3								SECTION 4							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER																																
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																
3																																
11																																
AVERAGE																																

	SECTION 5								SECTION 6								SECTION 7							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER																								
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																								
3																								
11																								
AVERAGE																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		13		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	22	68	23	70	24	75	24	70	22	67	23	70	21	80	24	70	22	67	22	75	21	70	24	70	23	70	26	70	21	90	24	70
3	20	70	24	70	34	80	24	70	20	70	24	70	20	80	24	70	20	70	34	80	20	80	24	70	24	70	34	80	20	80	24	70
11	19	70	20	80	36	65	23	70	17	70	20	80	20	80	22	70	19	70	36	65	20	80	22	70	20	80	26	65	20	80	22	70
AVERAGE	20	69	22	73	29	73	23	70					20	80																		

24 HR. AVG.: KV 22.8, MA 73.0

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
A Ramirez	F Lucero	D. Parker	J Fernandez
		M. Marquez	R Ibarra

7-3	3-11	11-7
Cleaned & Limed inc. Roaster ov Sec 9 Unit 4.		Cleaned & limed insulator box on Sec 10 Unit 2.

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	8026	7
START	8018	3
KWH	800	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

DOWN TIME	DOWN TIME	DOWN TIME
HRS.____ MIN.____	HRS.____ MIN.____	HRS.____ MIN.____

COTTRELL PLANT

EL PASO PLANT

DATE 6-27-77

CONVERTER TREATER

UNIT	SECTION 1								SECTION 2								SECTION 3								SECTION 4								SECTION 5								SECTION 6								SECTION 7							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																																								
3																																																								
11																																																								
AVERAGE																																																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

UNIT	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	22	70	21	72	28	72	20	70	22	70	21	72	18	80	20	70	22	70	28	72	18	80	20	70	21	72	28	75	18	80	20	70
3	30	70	19	70	30	65	24	70	20	70	19	70	30	80	24	70	20	70	36	65	20	80	24	70	19	70	30	65	20	80	24	70
11	20	70	21	80	28	65	24	70	20	70	21	80	20	80	24	70	20	70	28	65	20	80	24	70	21	80	28	65	20	80	24	70
AVERAGE	21	70	20	74	29	68	23	70					19	80																		

24 HR. AVG.: KV 22.4, MA 72.4

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
J Ramirez	M. Montoya	C. Arquinea M. Marquez	J Fernandez A Ibarra
7-3		3-11	11-7
		Cleaned & Limed insulator boxes sec# 11 unit #1	Cleaned & limed insulator boxes on Sec 10 Unit 3
DOWN TIME HRS.____ MIN.____		DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	8034	7
START	8026	3
KWH	800	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

COTTRELL PLANT

EL PASO PLANT

DATE 6-28-77

CONVERTER TREATER

	SECTION 1								SECTION 2								SECTION 3								SECTION 4							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER																																
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																
3																																
11																																
AVERAGE																																

	SECTION 5								SECTION 6								SECTION 7							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER																								
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																								
3																								
11																								
AVERAGE																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
UNIT	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	19	70	18	60	26	65	26	65	19	70	18	60	19	85	26	65	19	70	26	65	19	85	26	65	18	60	X	65	19	85	26	65
3	19	70	18	70	28	65	26	70	19	70	18	70	30	60	26	70	19	70	28	65	30	80	26	70	18	70	28	65	30	80	26	70
11	2050	19	70	26	65	24	70	20	80	19	70	20	80	24	70	20	80	26	65	20	80	24	70	19	70	26	65	20	80	24	70	
AVERAGE	19	73	18	67	27	65	25	68					20	82																		

24 HR. AVG.: KV 21.8, MA 71.0

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
K. MELAND	M. MONTOYA	G. ARCHULETA F. LUEVANO	J. FERNANDEZ A. ESPERZA

7-3	3-11	11-7
REMOVED 1 WIRE FROM SEC #10 UNIT #4, CLEANED & LINED 1 N.S. BOXES ON SEC. #8 UNIT #2	CLEANED & LINED INSULATOR BOXES IN SEC. #11 UNIT #3 ON SCALO UNIT	

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	8042	7
START	8034	3
KWH	800	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

DOWN TIME	DOWN TIME	DOWN TIME
HRS._____ MIN._____	HRS._____ MIN._____	HRS._____ MIN._____

MEL PRINTING CO.—EL PASO

COTTRELL PLANT

EL PASO PLANT

DATE 6-29-77

CONVERTER TREATER

UNIT	SECTION 1								SECTION 2								SECTION 3								SECTION 4							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																
3																																
11																																
AVERAGE																																

UNIT	SECTION 5								SECTION 6								SECTION 7							
	1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																								
3																								
11																								
AVERAGE																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

UNIT	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	19	50	18	75	30	65	22	65	19	50	18	75	19	70	22	65	19	50	30	65	19	70	22	65	18	75	30	65	19	70	22	65
3	19	70	19	80	28	65	24	70	19	70	19	80	20	70	24	70	19	70	28	65	20	70	24	70	19	80	28	65	20	70	24	70
11	20	70	20	80	30	65	26	70	20	70	20	80	19	70	26	70	20	70	30	65	19	70	26	70	20	80	30	65	19	70	26	70
AVERAGE	19	63	19	78	29	65	24	68					19	70																		

24 HR. AVG.: KV 22.0, MA 68.8

OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
R. Melano	D.F. Parker	U. Preiniega F. Luevano	J Fernandez H Ibarra
7-3		3-11	11-7
Cleaned & Limed ins. Boxes on Sec. #8 Unit #3		Cleaned & Limed Insulator Boxes Sec #11 Unit #3	Replaced Burned ~~[illegible]~~ over-load switch on Sec 10 Unit 2
DOWN TIME HRS.____ MIN.____		DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	8049	7
START	8042	3
KWH	700	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

COTTRELL PLANT

EL PASO PLANT

DATE 6-30-77

CONVERTER TREATER

UNIT	SECTION 1								SECTION 2								SECTION 3								SECTION 4							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																																
3																																
11																																
AVERAGE																																

UNIT	SECTION 5								SECTION 6								SECTION 7							
	1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7																								
3																								
11																								
AVERAGE																								

24 HR. AVG.: KV_____, MA_____

REVERBERATORY AND WEDGE ROASTER TREATER

UNIT	SECTION 8								SECTION 9								SECTION 10								SECTION 11							
	1		2		3		4		1		2		3		4		1		2		3		4		1		2		3		4	
RECTIFIER	12		13		14		15		12		13		11		15		12		14		11		15		13		14		11		15	
	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA	KV	MA
7	19	70	17	50	22	60	24	65	19	70	17	50	18	80	24	65	19	70	22	60	18	80	24	65	17	50	22	60	18	80	24	65
3	18	70	17	70	24	65	24	70	18	70	17	70	19	80	24	70	18	70	24	65	19	80	24	70	17	70	24	65	19	80	24	70
11																																
AVERAGE	19	70	17	60	23	63	24	68					19	80																		

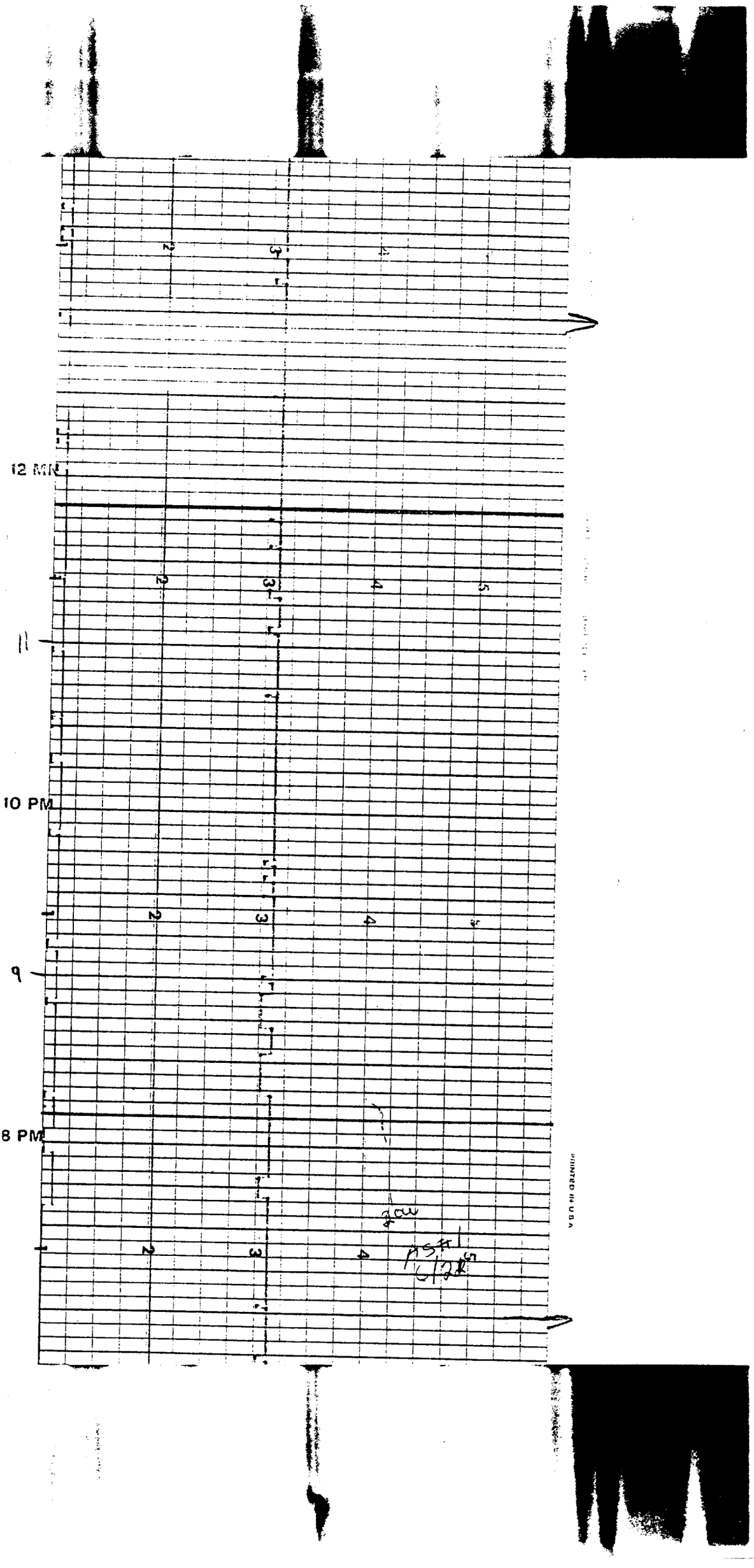
24 HR. AVG.: KV 20.2, MA 68.2

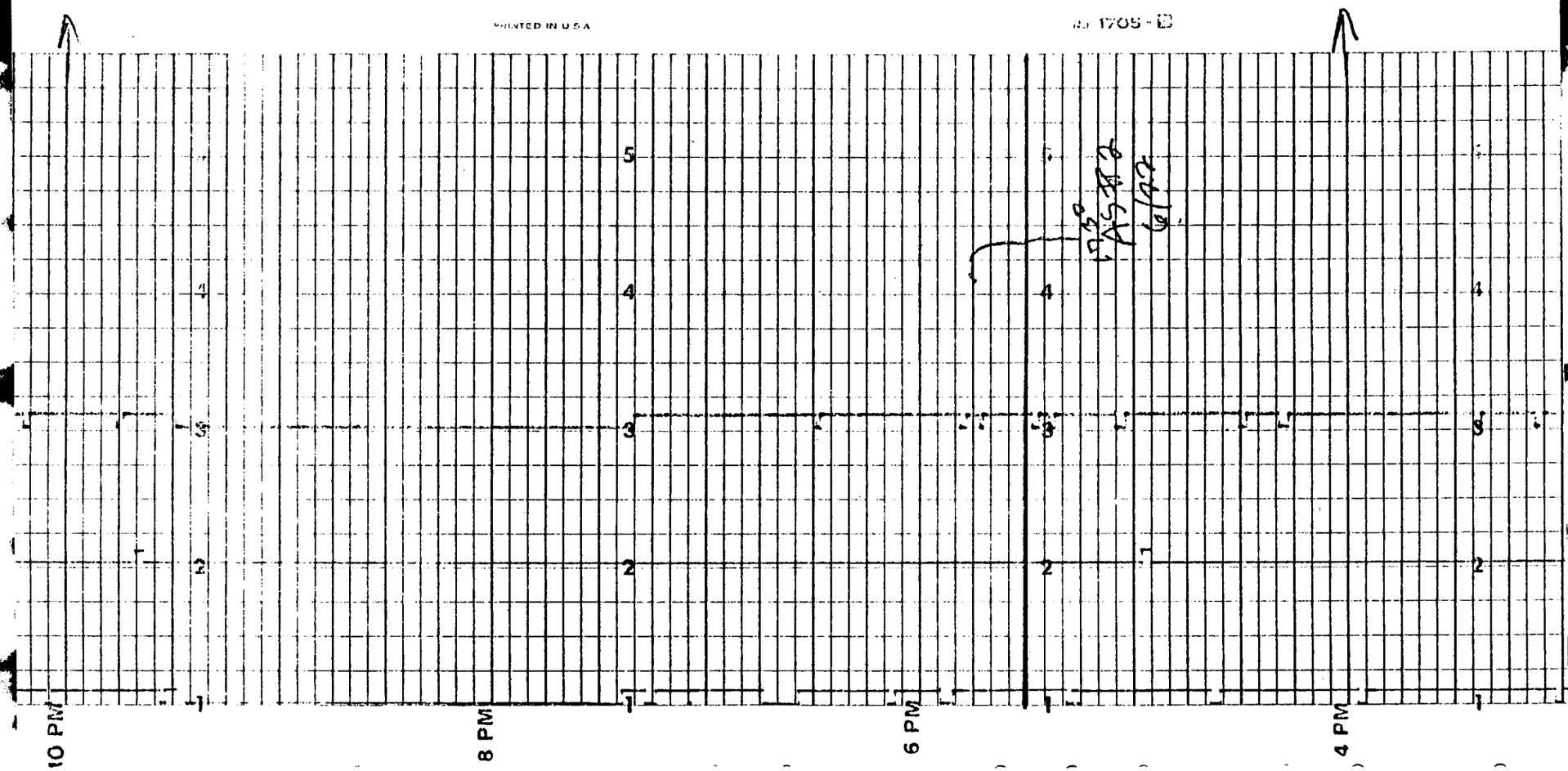
OPERATOR	CONDITIONER	CONDITIONER	CONDITIONER
R. MELANO	D.F. PARKER	[illegible]	[illegible] YBARRA
7-3		FLUEGANO	11-7
CLEANED & LIMED INS. BOXES ON SEC. #8 UNIT #4		CLEANED & LIMED INSULATOR BOXES SEC. #11 UNIT #4	CLEANED RECTIFIER MACHINES #12 13 14 & 15, SWEPT THE FLOOR.
DOWN TIME HRS.____ MIN.____		DOWN TIME HRS.____ MIN.____	DOWN TIME HRS.____ MIN.____

METER READING		VOLTAGE REGULATOR CHECKED TIME
FINISH	8055	7
START	8049	3
KWH	600	11

	TIME
THERMOCOUPLES CLEANED	
CONVERTER FLUE DRAFT PIPE CLEANED	
MAIN FLUE DRAFT PIPE CLEANED	

8.10 – 11.48





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2 PM
4 PM
6 PM

5
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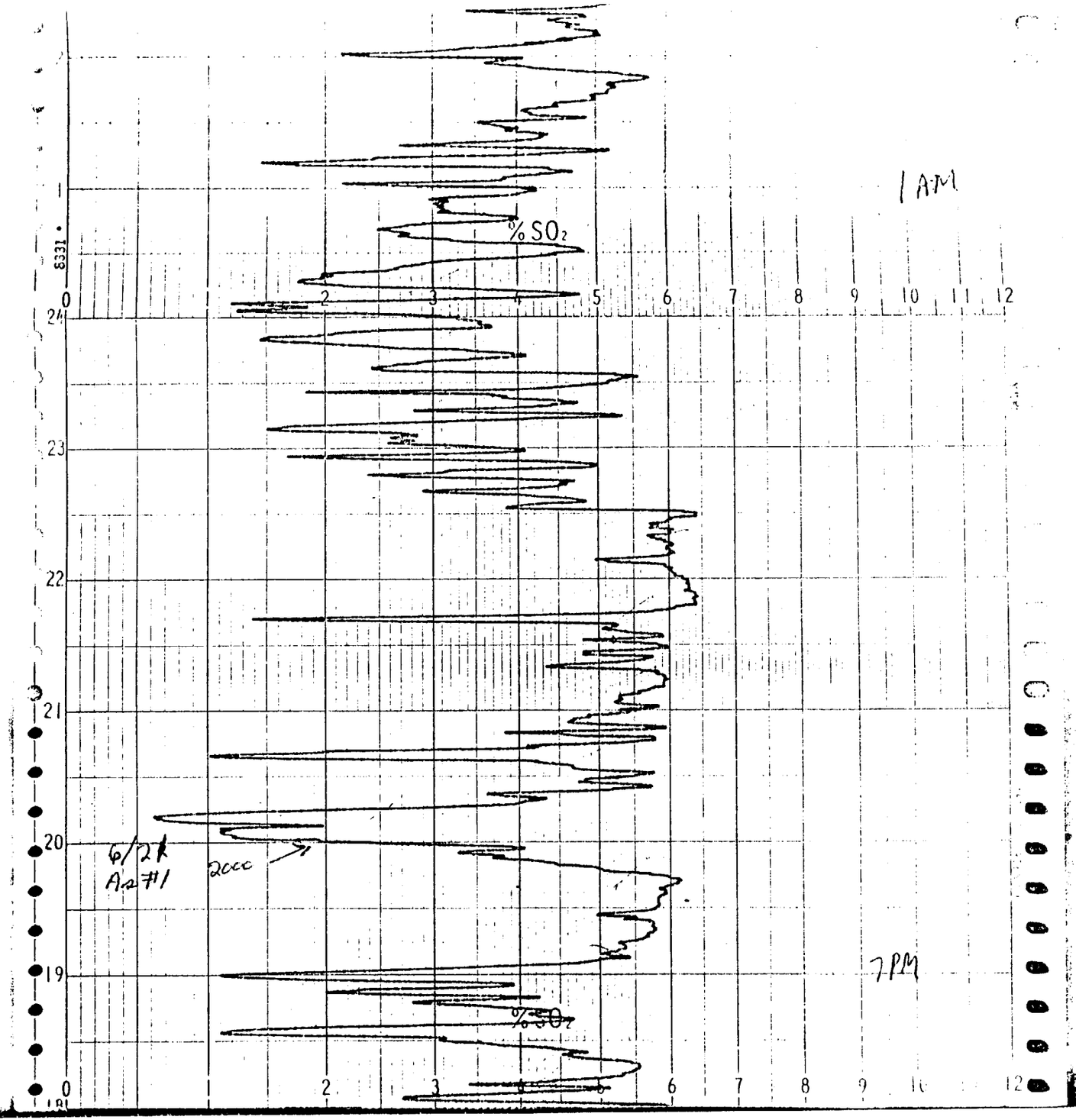
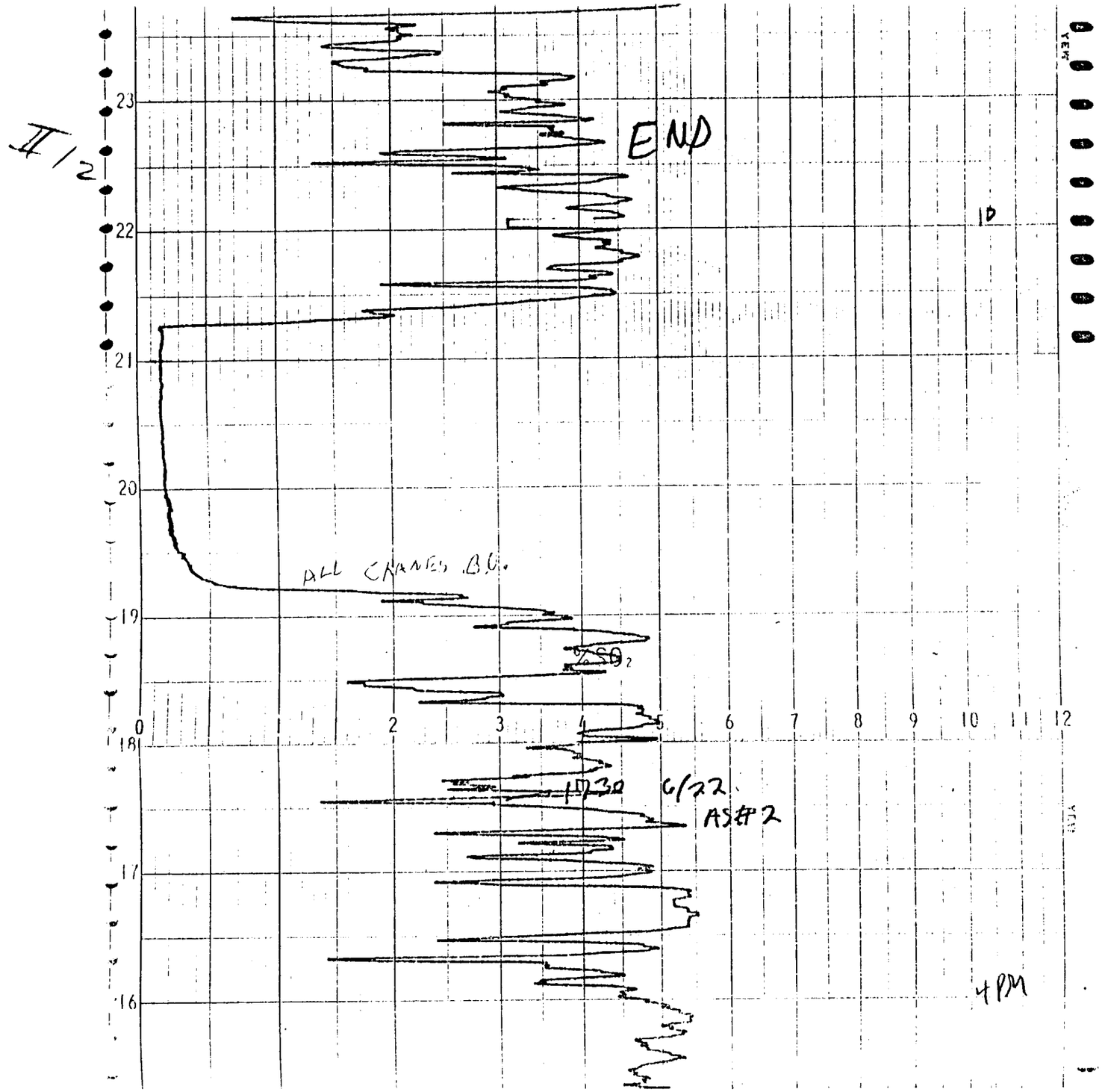
II/1




II/2
END
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ALL CRANES B.U.
%SO2
1730 6/22
AS#2
4PM
23
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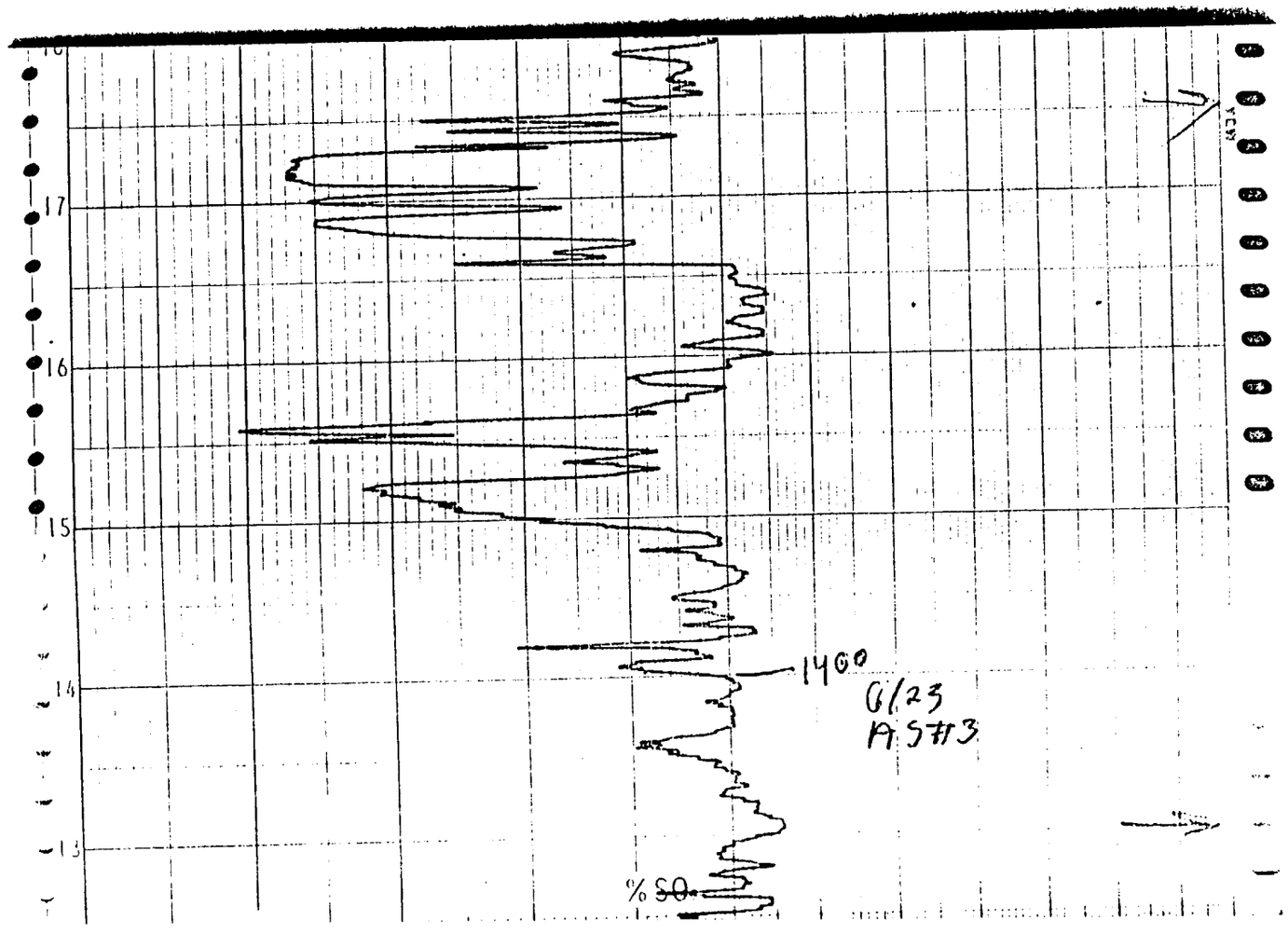
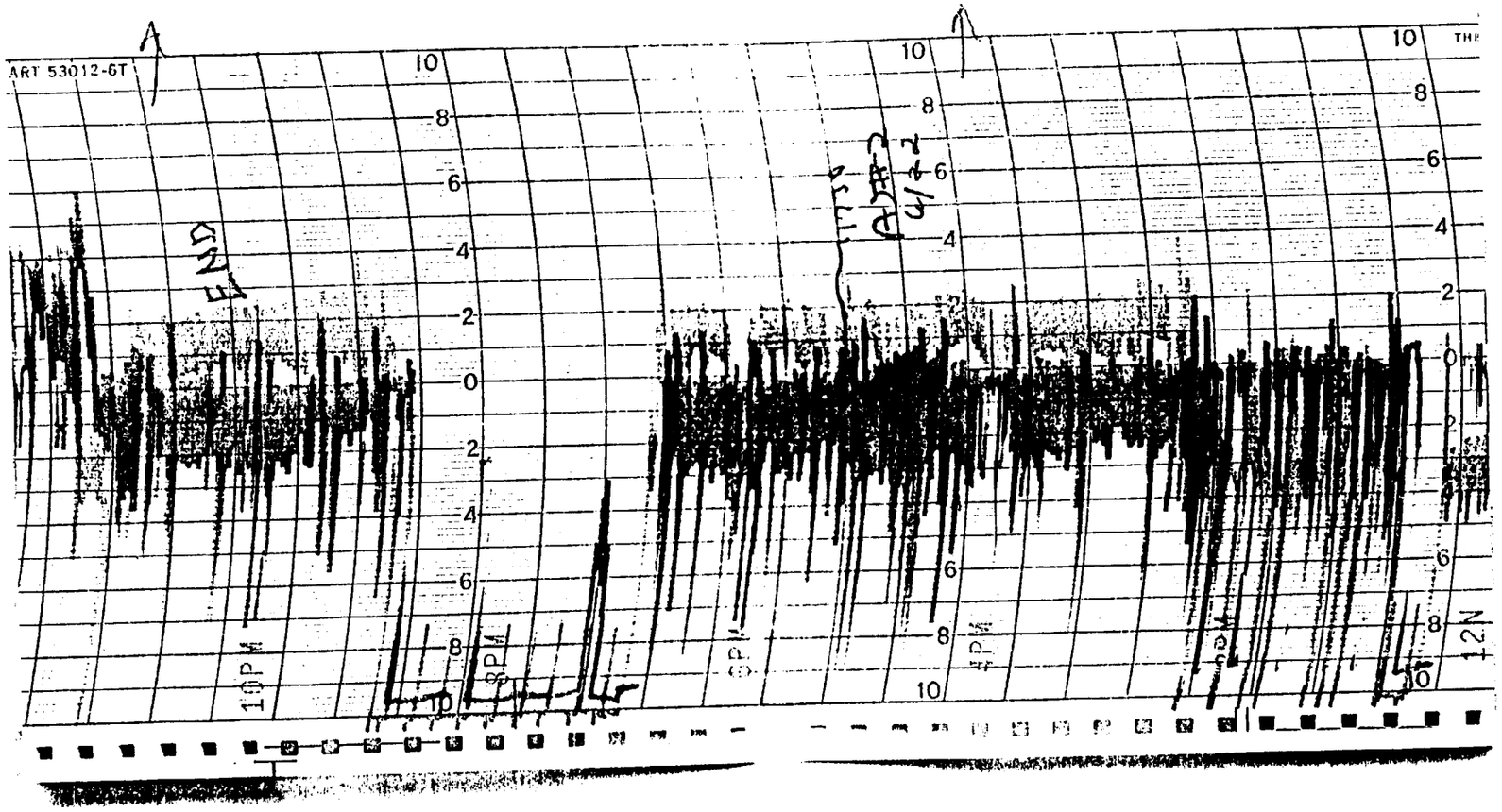
12

II/13

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8PM
6PM
4PM
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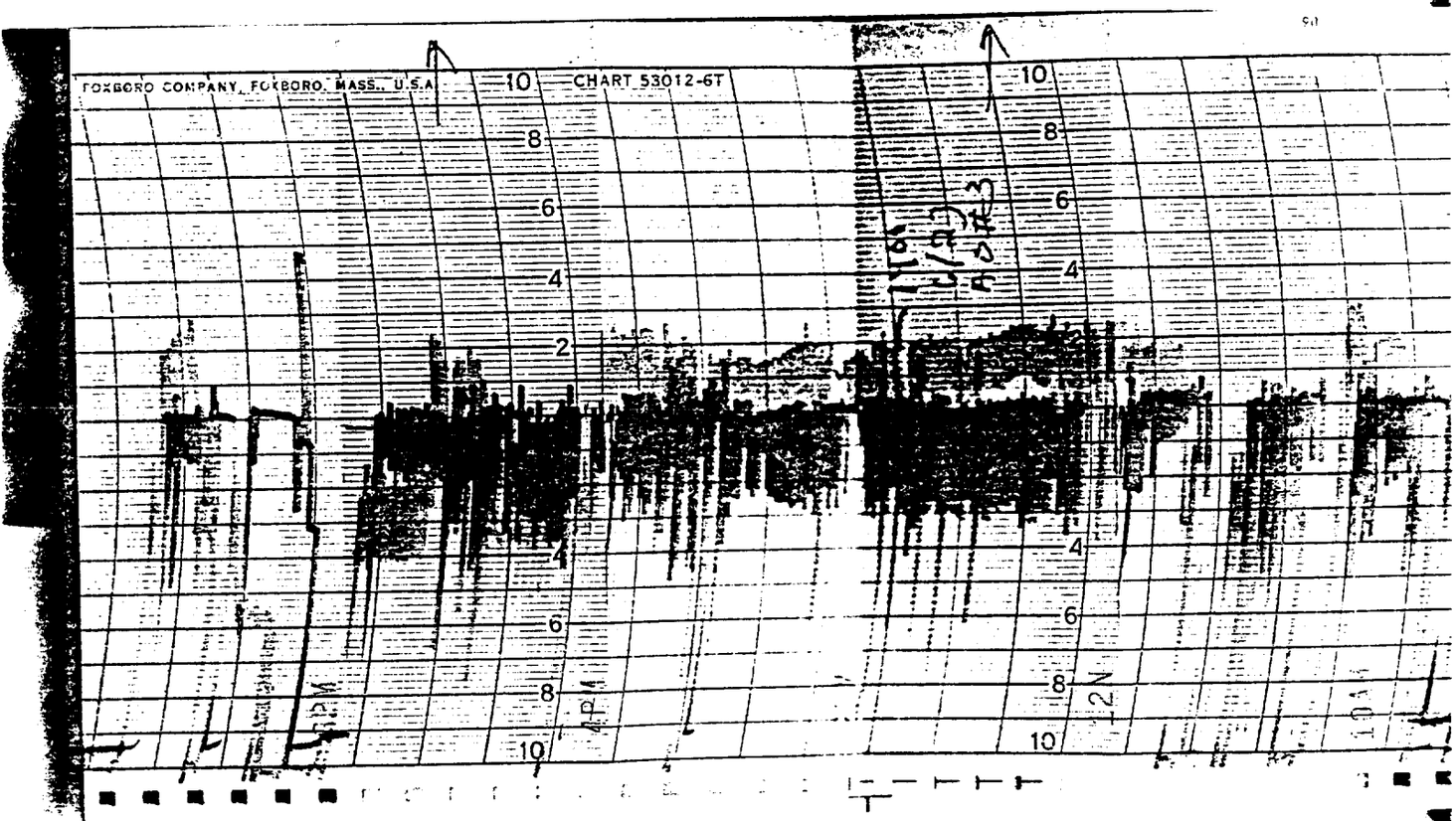
FOXBORO COMPANY, FOXBORO, MASS., U.S.A.
CHART 53012-6T
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8
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4
2
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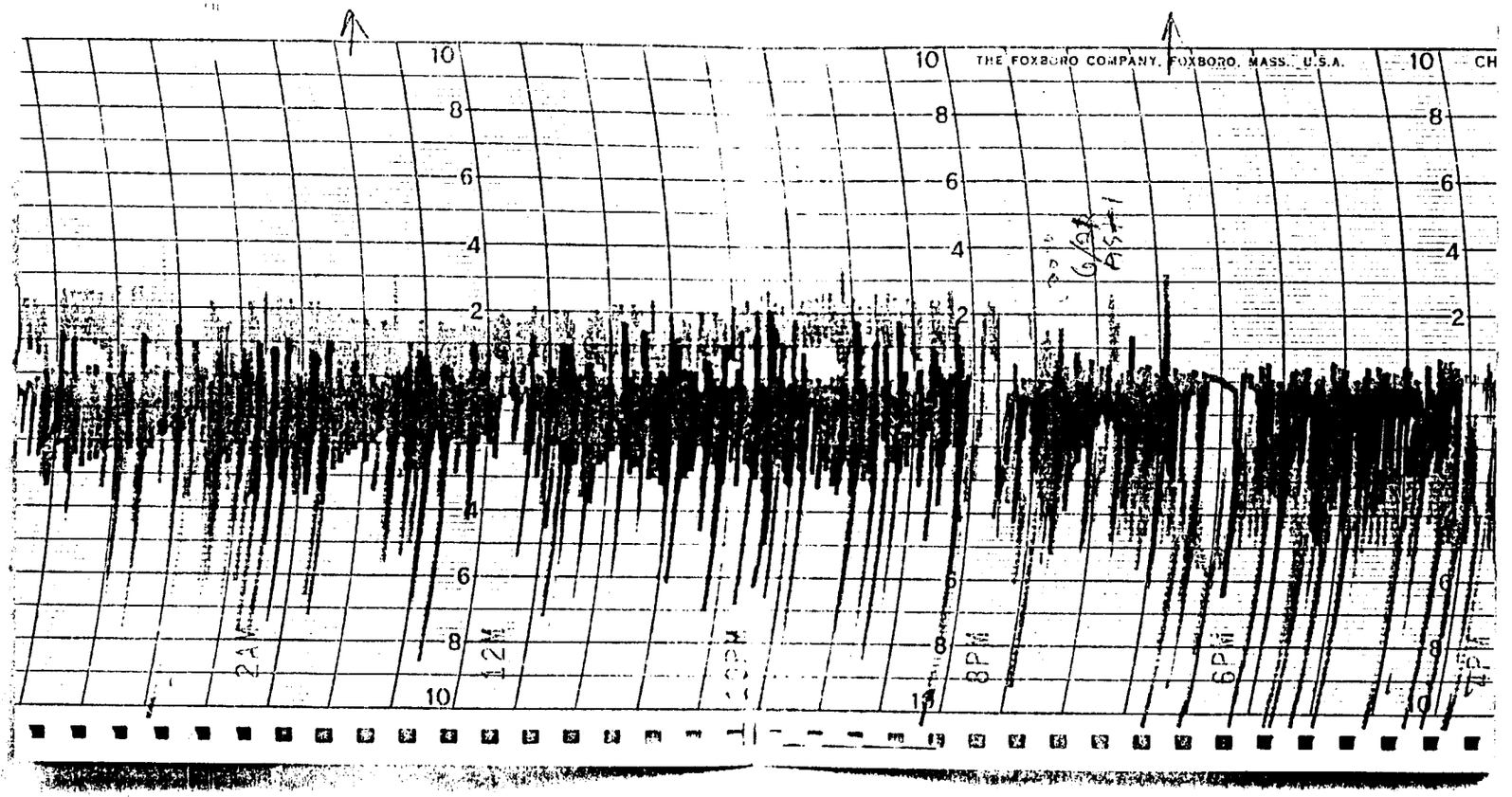
8
10


THE FOXBORO COMPANY, FOXBORO, MASS., U.S.A.
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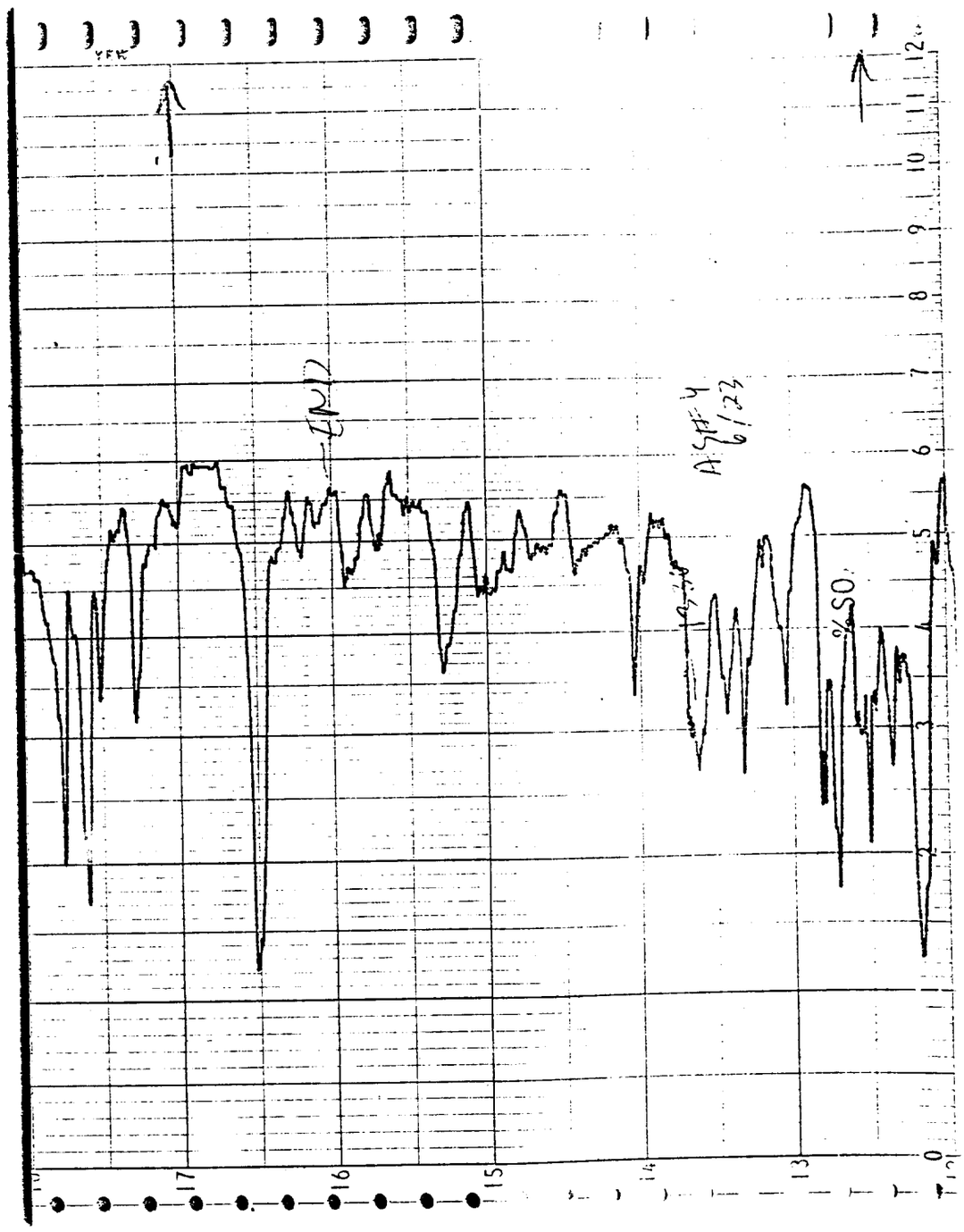
6
4
2
12M
8PM
6PM
4PM



IN 2
AS#4
6/23
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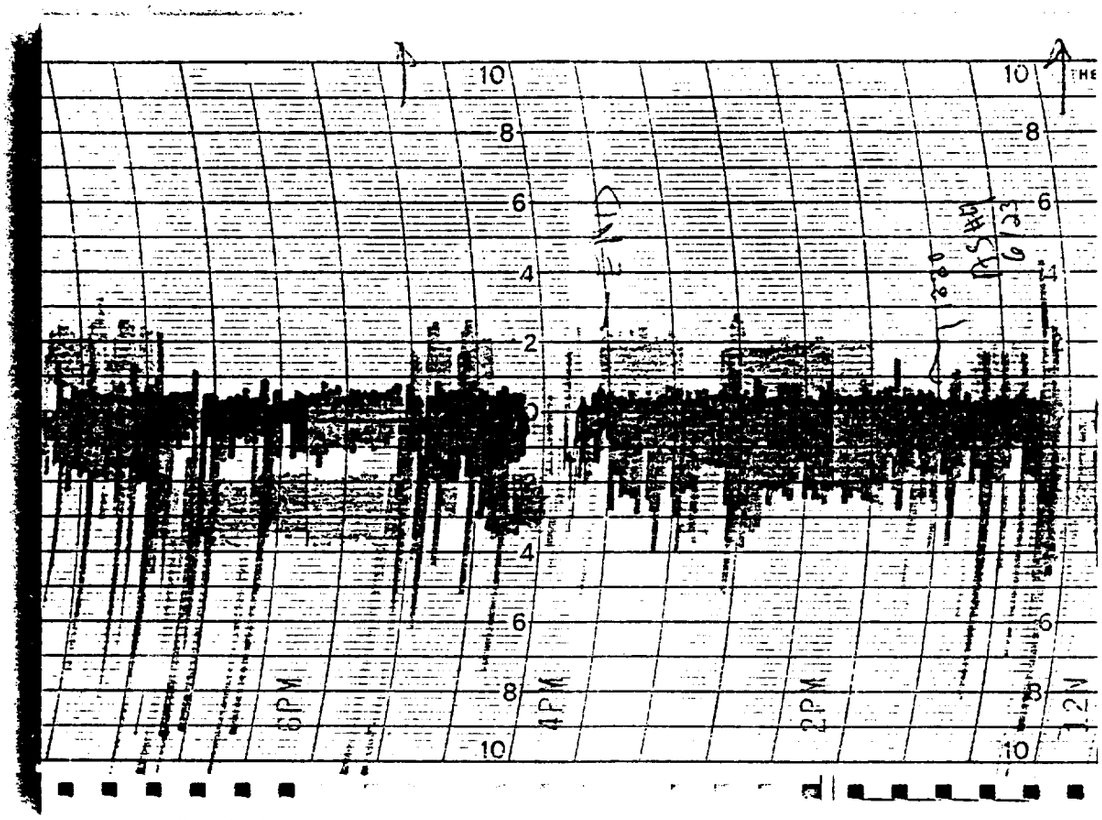
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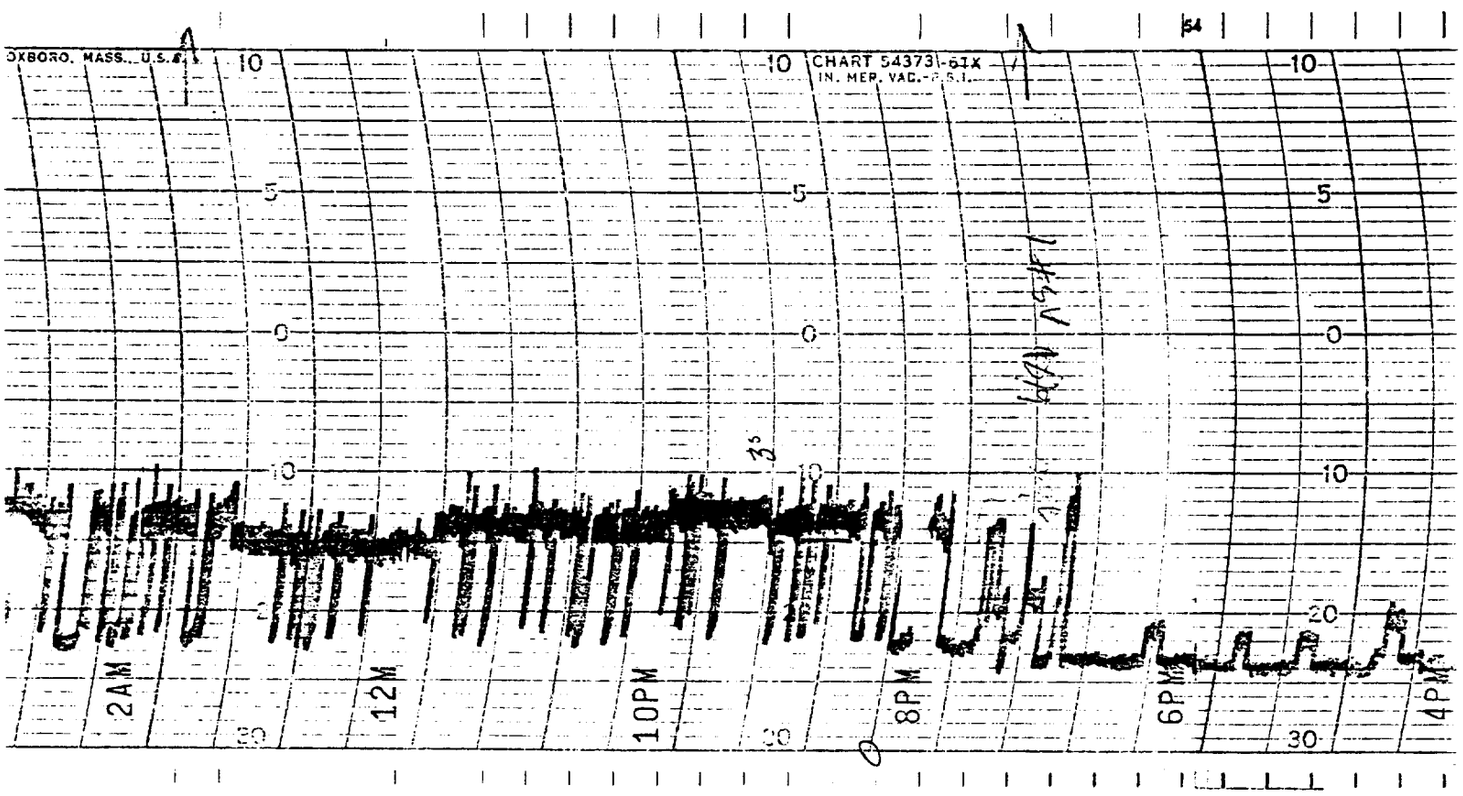
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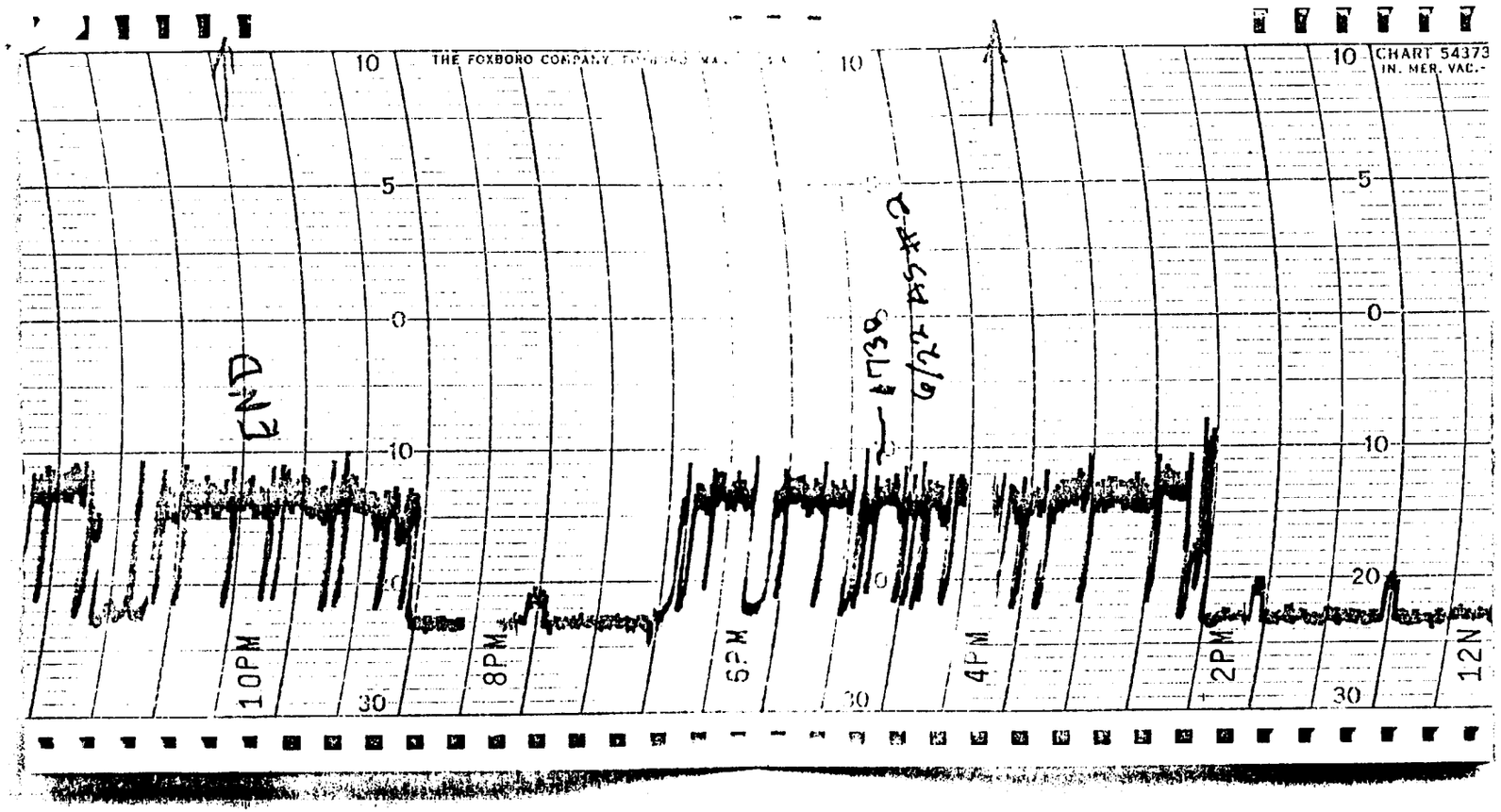
6PM
4PM


THE FOXBORO COMPANY
CHART 54373
IN. MER. VAC.
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10
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30
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8PM
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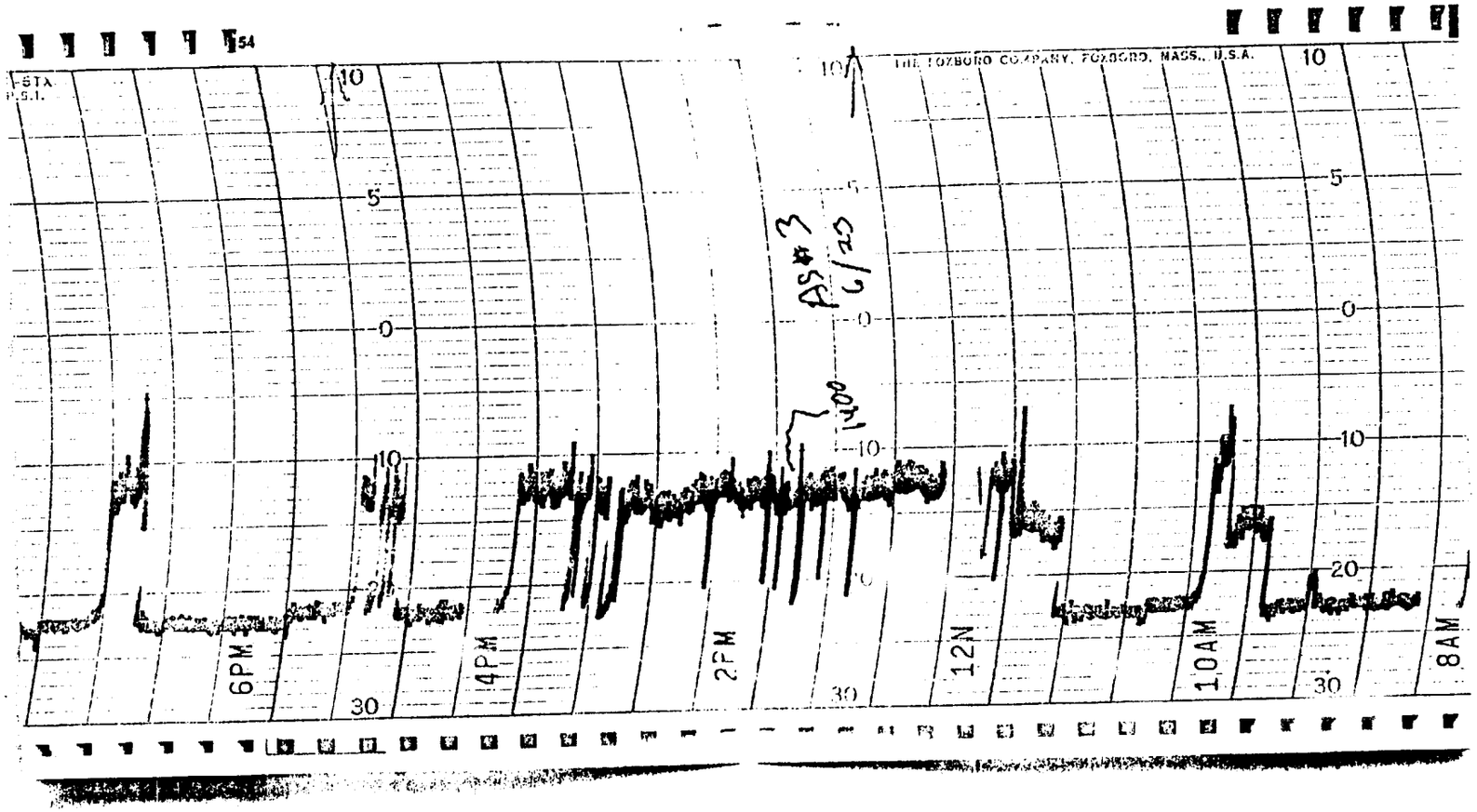
2PM
12N


THE FOXBORO COMPANY, FOXBORO, MASS., U.S.A.
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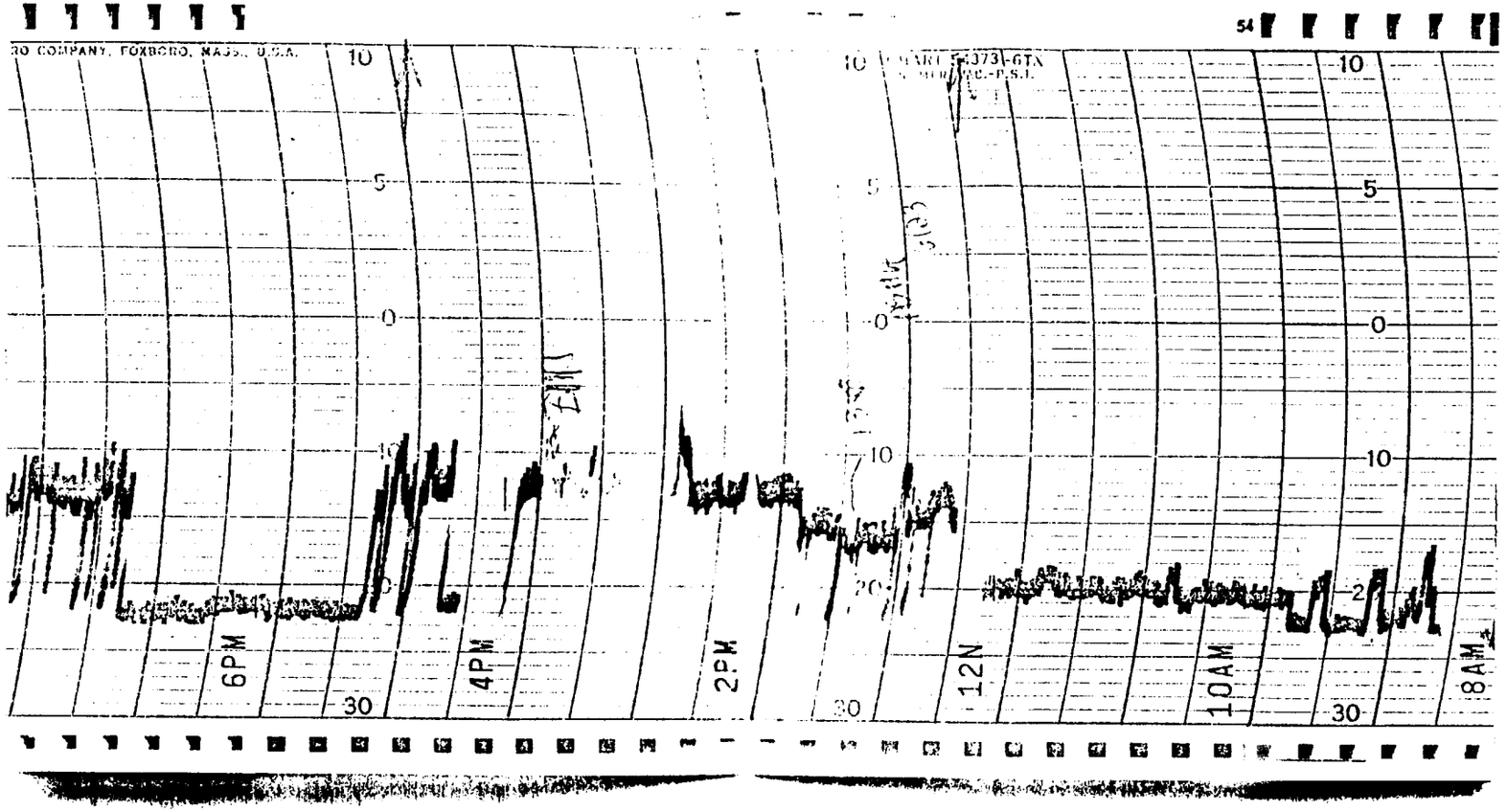
AS#3
6/20
1400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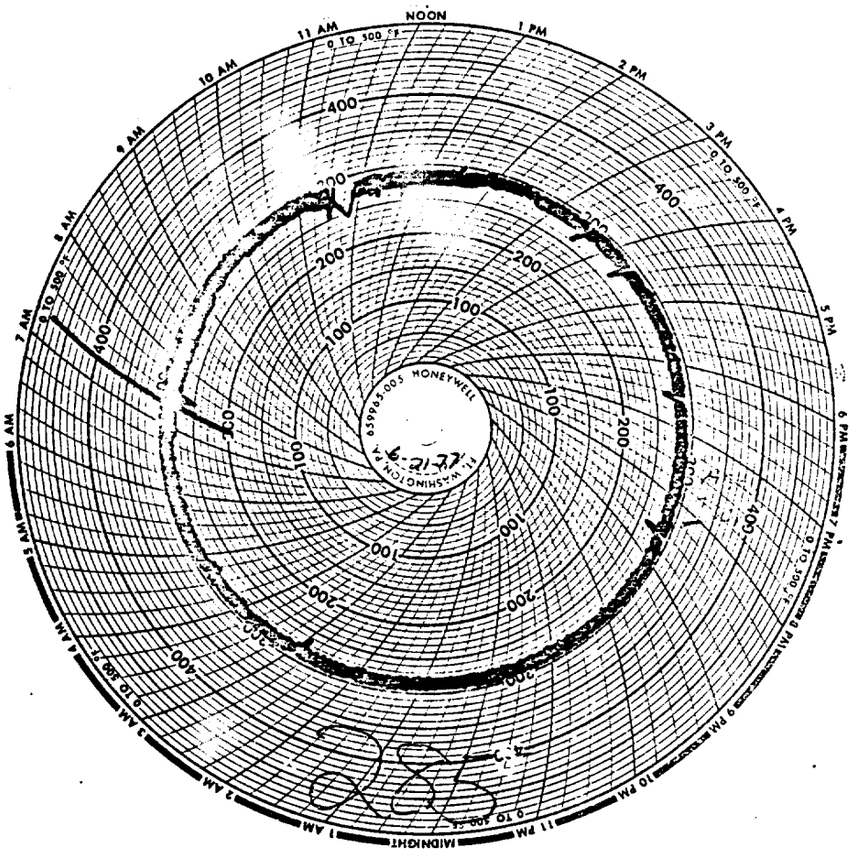
8AM


NOON
1 PM
2 PM
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8 PM
9 PM
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11 PM
MIDNIGHT
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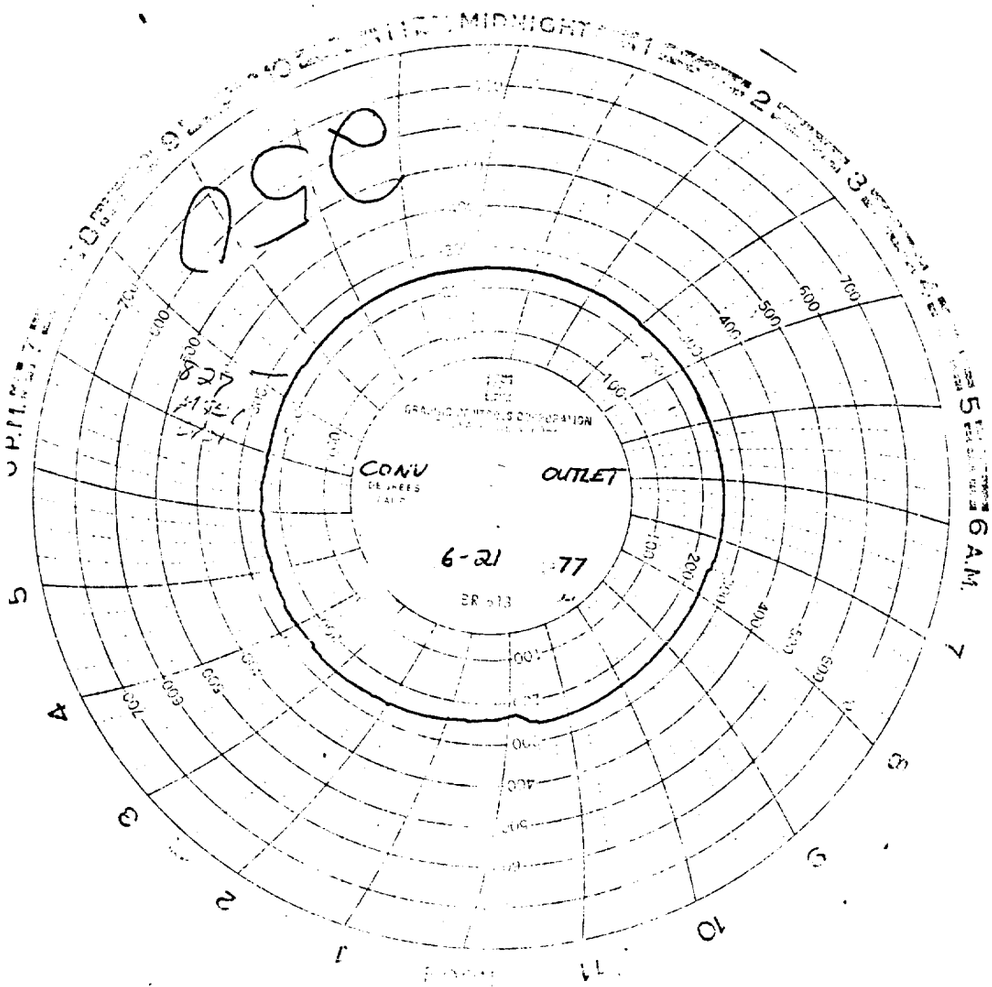
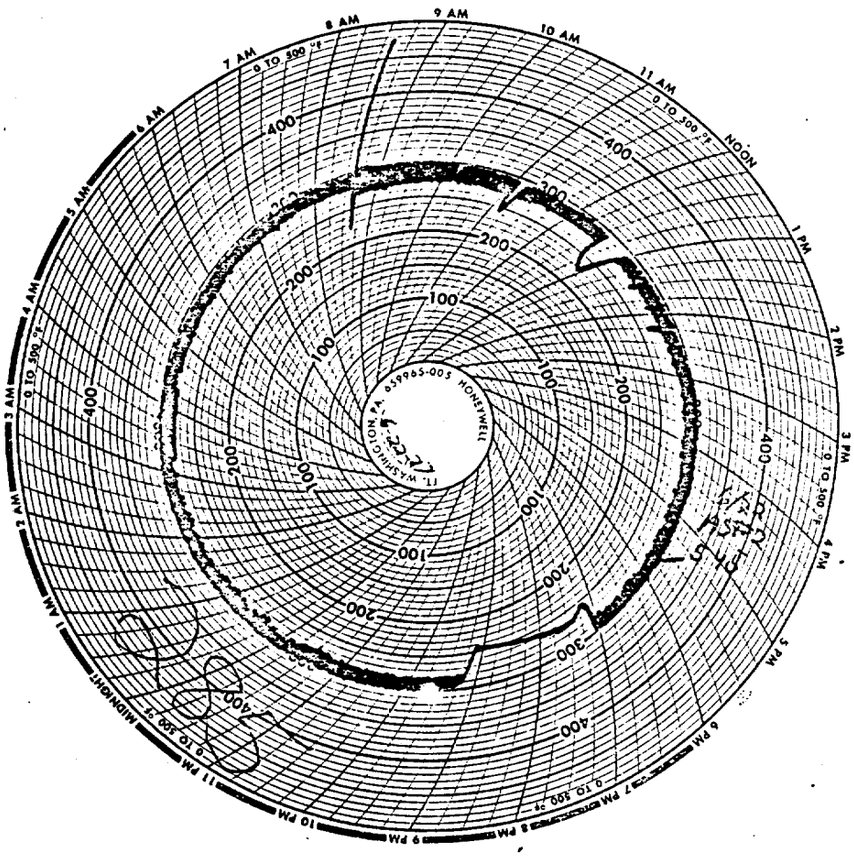
MINNEAPOLIS-HONEYWELL
6-21-77

II 6


MIDNIGHT
CONV
OUTLET
6-21
77

II 7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11 PM
MIDNIGHT
1 AM
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3 AM
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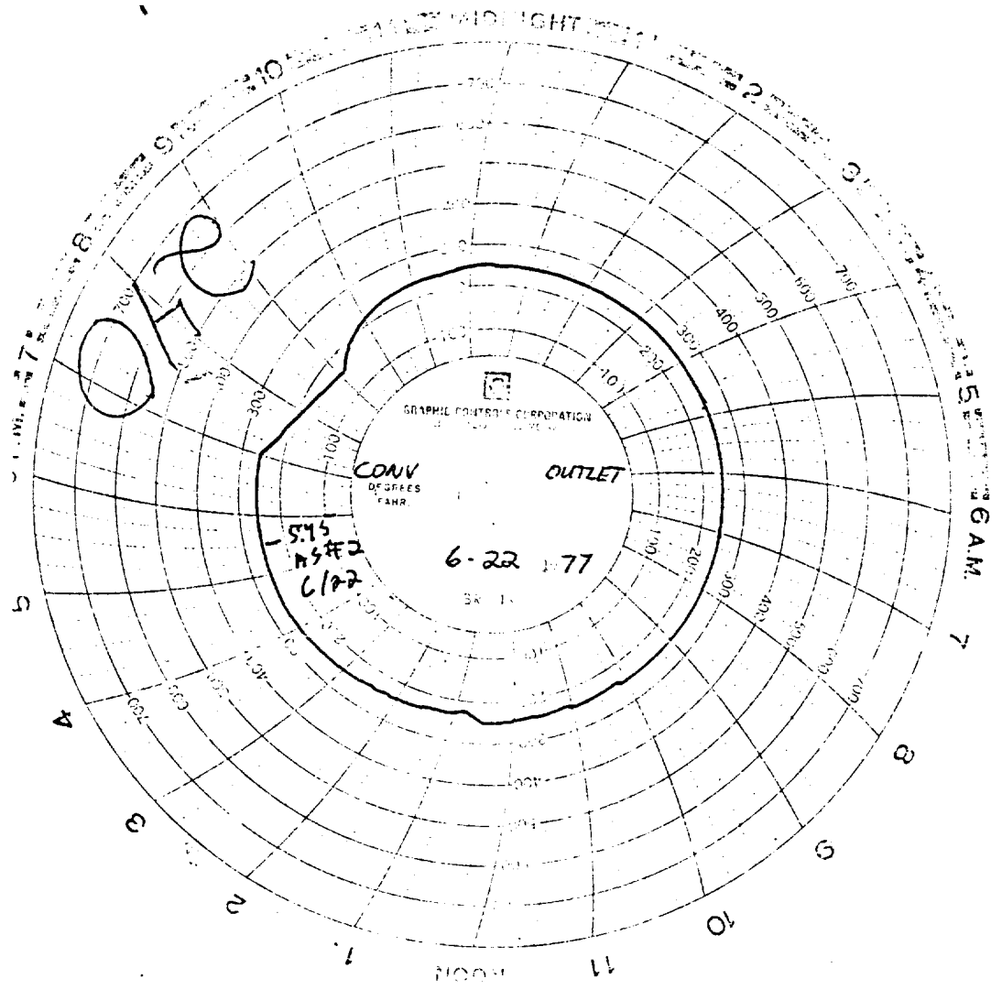
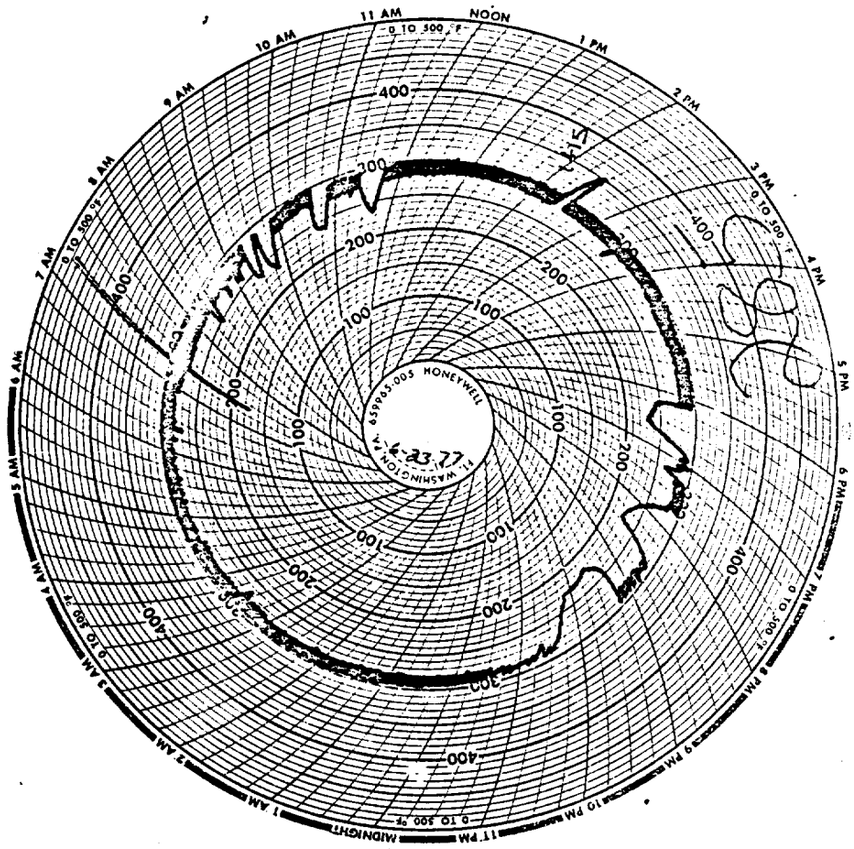
7 AM
8 AM
0 TO 500 FT
100
200
300
400
HONEYWELL
6-22-77

II 6


GRAPHIC CONTROLS CORPORATION
CONV
DEGREES FAHR
OUTLET
6-22 77
6 A.M.

II 7


11 AM
NOON
1 PM
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10 PM
11 PM
MIDNIGHT
1 AM
2 AM
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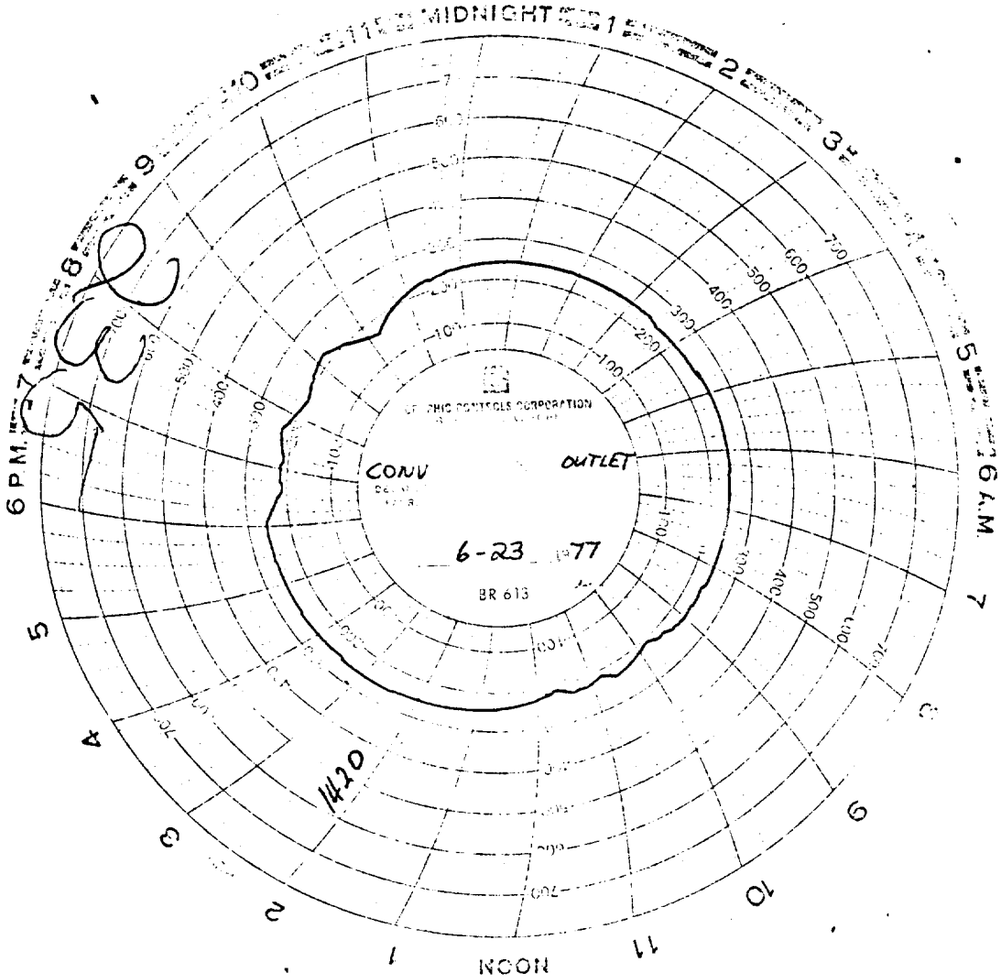
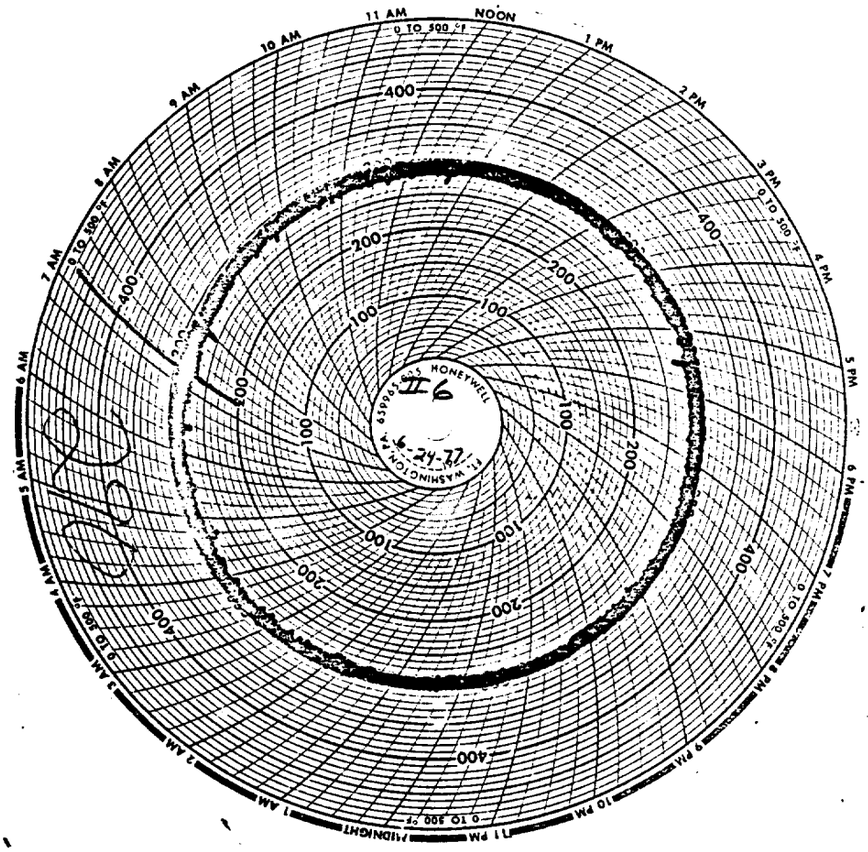
6 AM
7 AM
8 AM
9 AM
10 AM
0 TO 500 °F
HONEYWELL
WASHINGTON
6-23-77

II 6


MIDNIGHT
6 P.M.
6 A.M.
NOON
CONV
OUTLET
6-23 77
BR 613
1420

II 7


11 AM
NOON
1 PM
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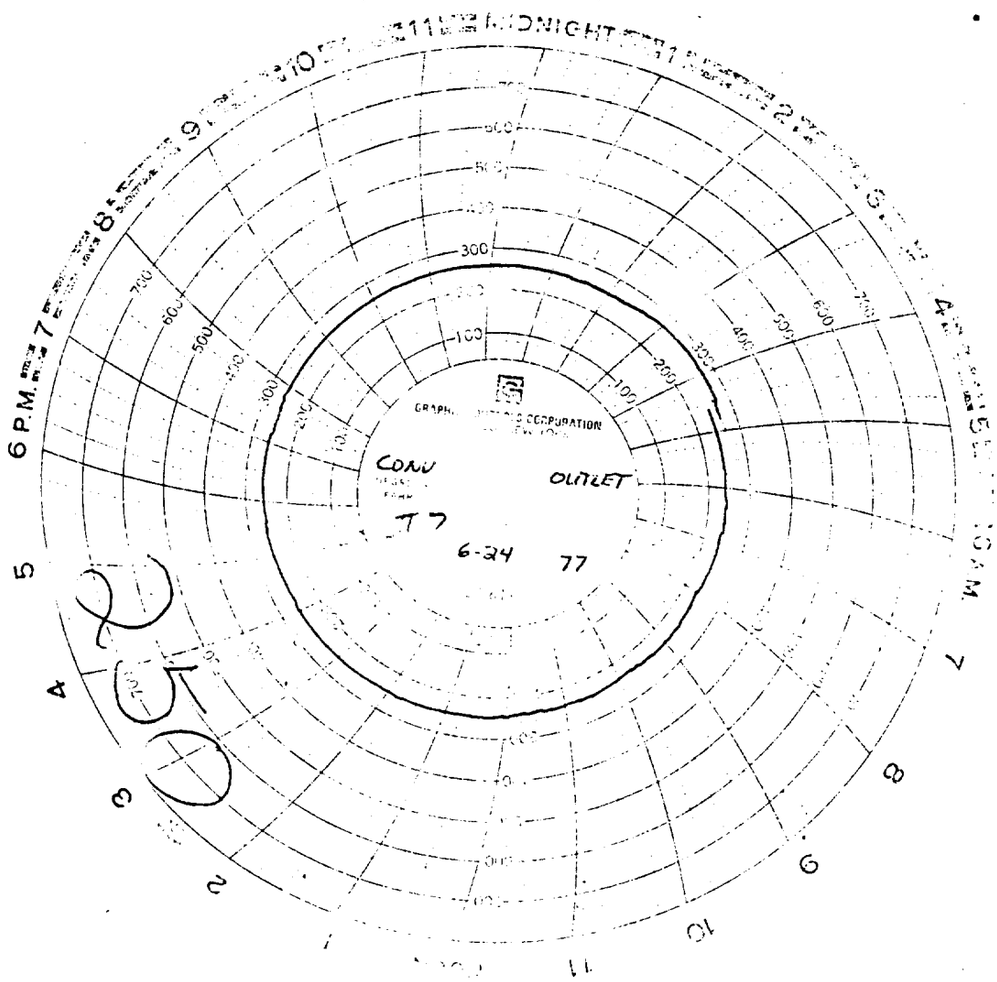
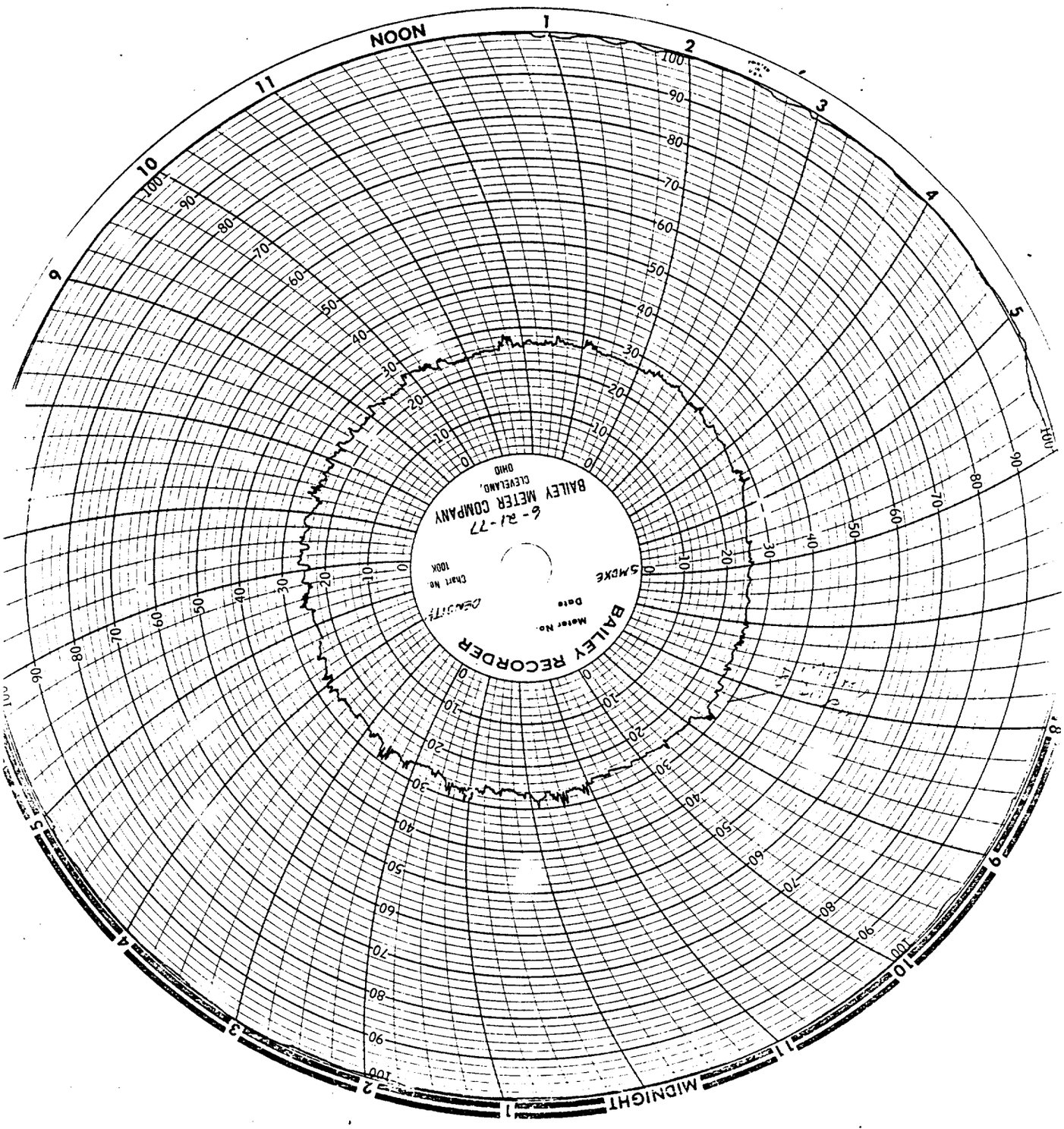
8 AM
9 AM
10 AM
0 TO 500 °F
100
200
300
400
HONEYWELL
#6
6-24-77

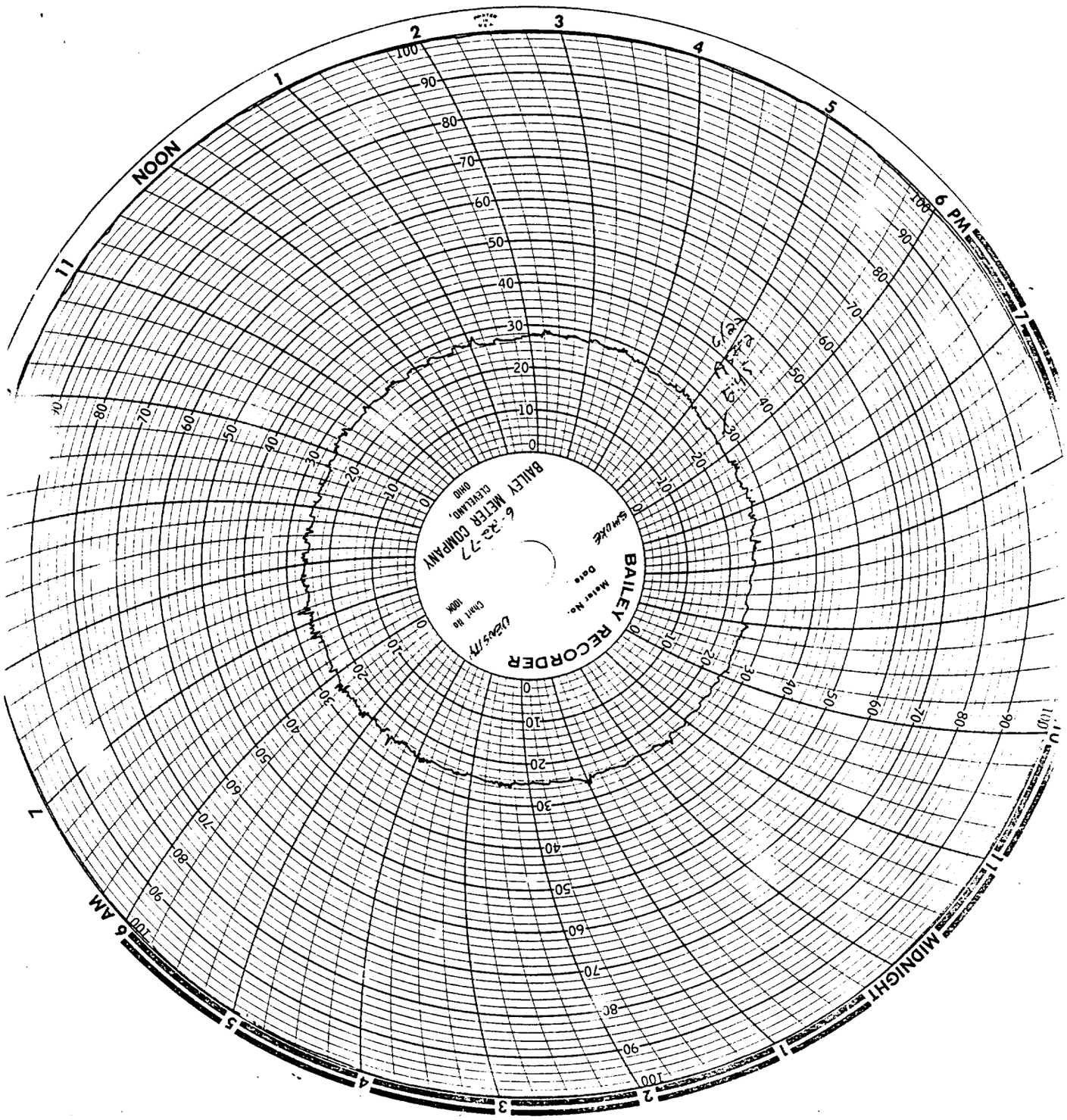
#6


MIDNIGHT
6 P.M.
5
4
3
2
1
7
8
9
10
11
100
200
300
400
500
600
700
800
CONV
OUTLET
#7
6-24
77

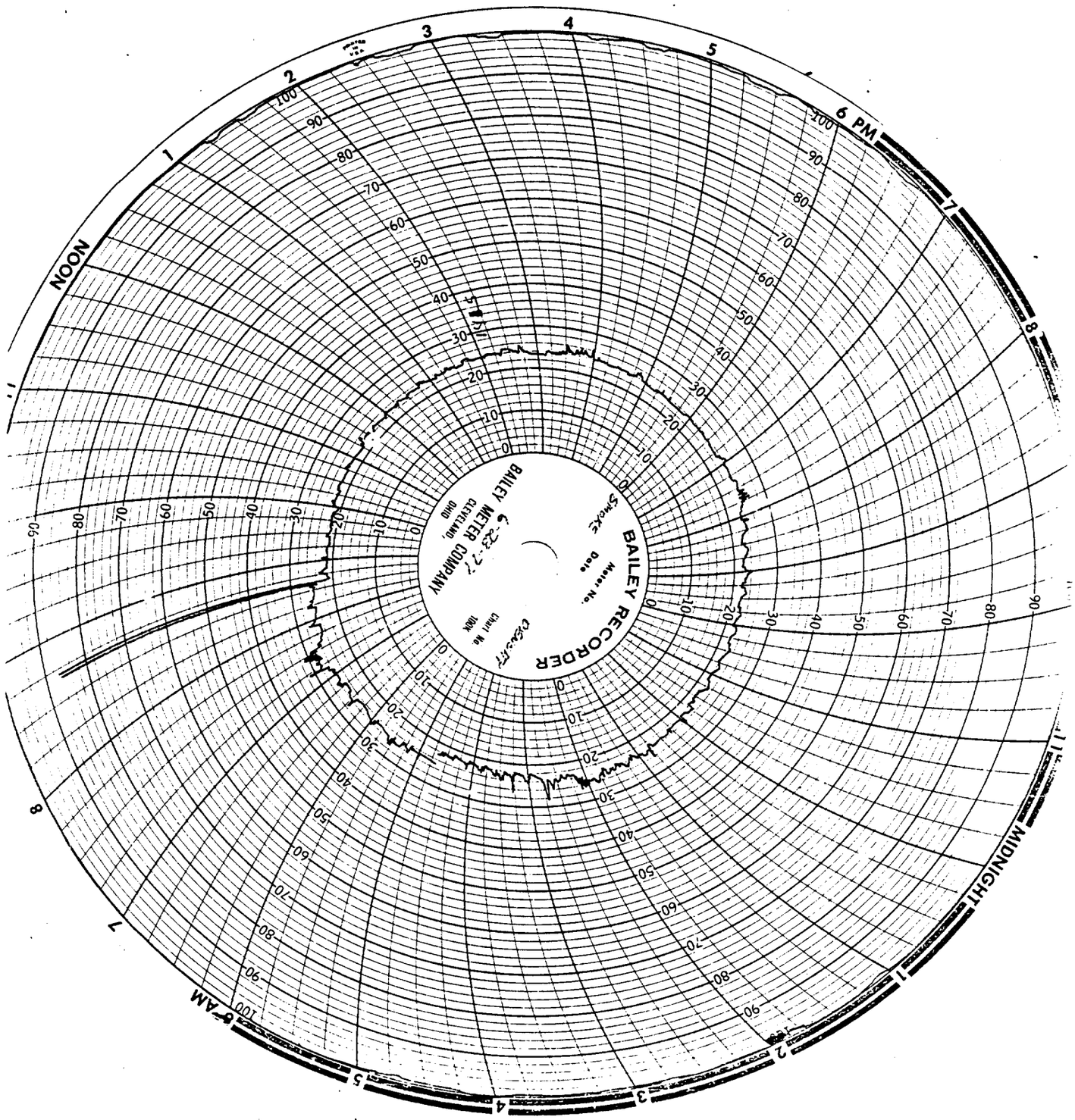
#7


NOON
MIDNIGHT
BAILEY RECORDER
BAILEY METER COMPANY
CLEVELAND, OHIO
6-21-77
Chart No.
100K
Date
Meter No.
DENSITY
5 MCKE

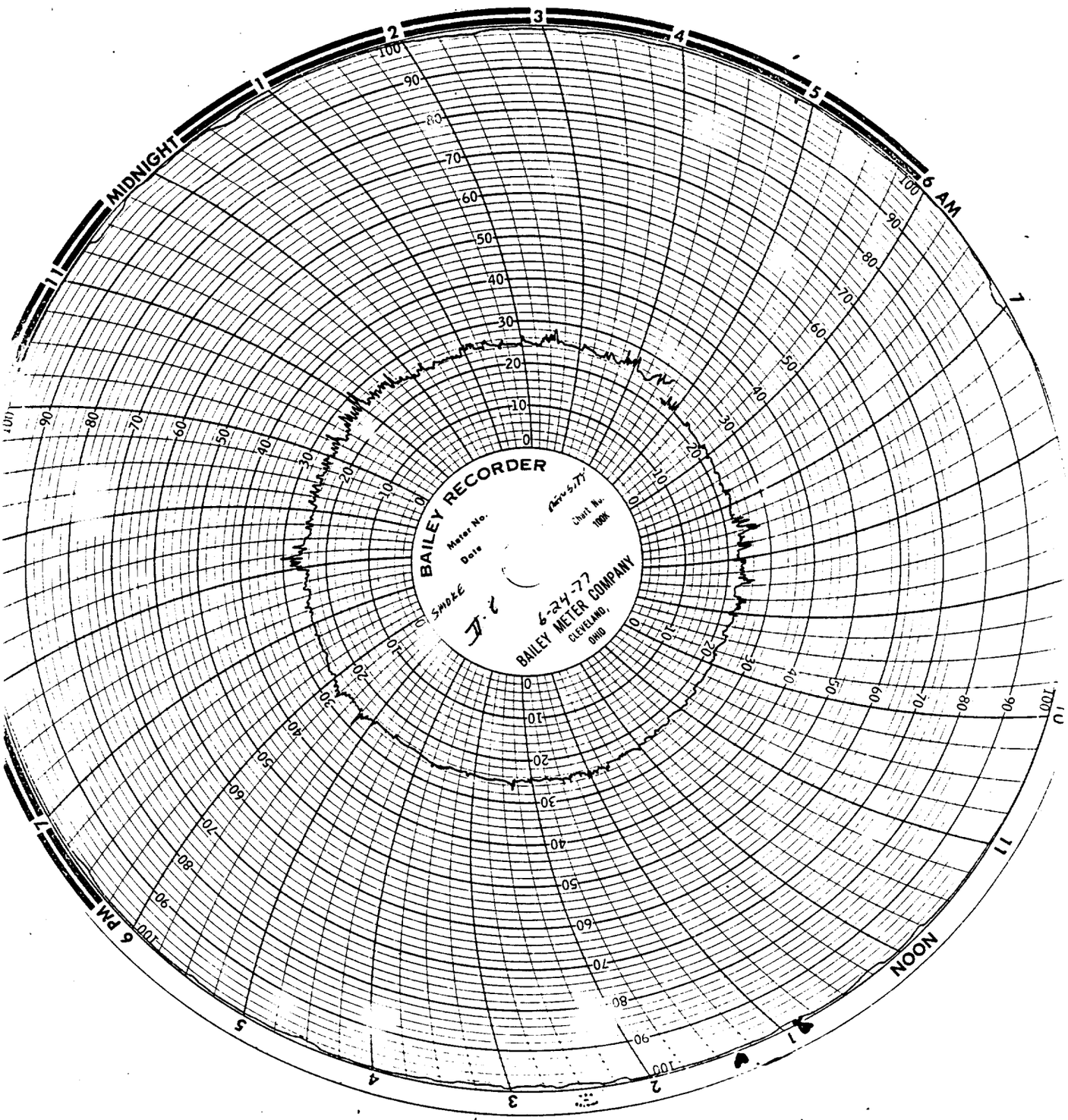
II 4


BAILEY RECORDER
BAILEY METER COMPANY
CLEVELAND, OHIO
Meter No.
Date
Chart No.
100K
Density
Smoke
NOON
6 PM
MIDNIGHT
6 AM

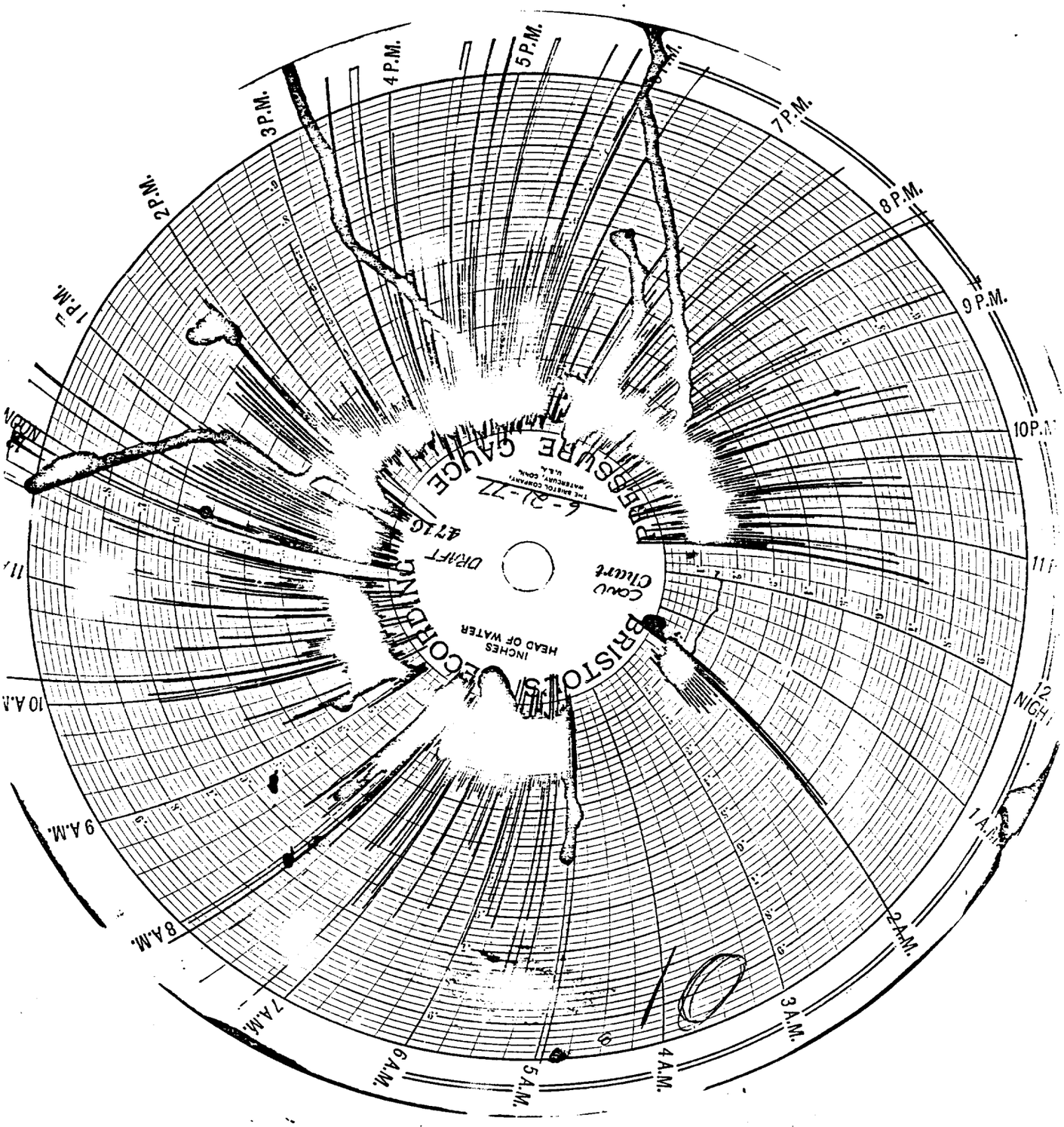
II 8


BAILEY RECORDER
BAILEY METER COMPANY
CLEVELAND, OHIO
Smoke
Meter No.
Date
Chart No.
100K
Density
NOON
6 PM
MIDNIGHT
6 AM

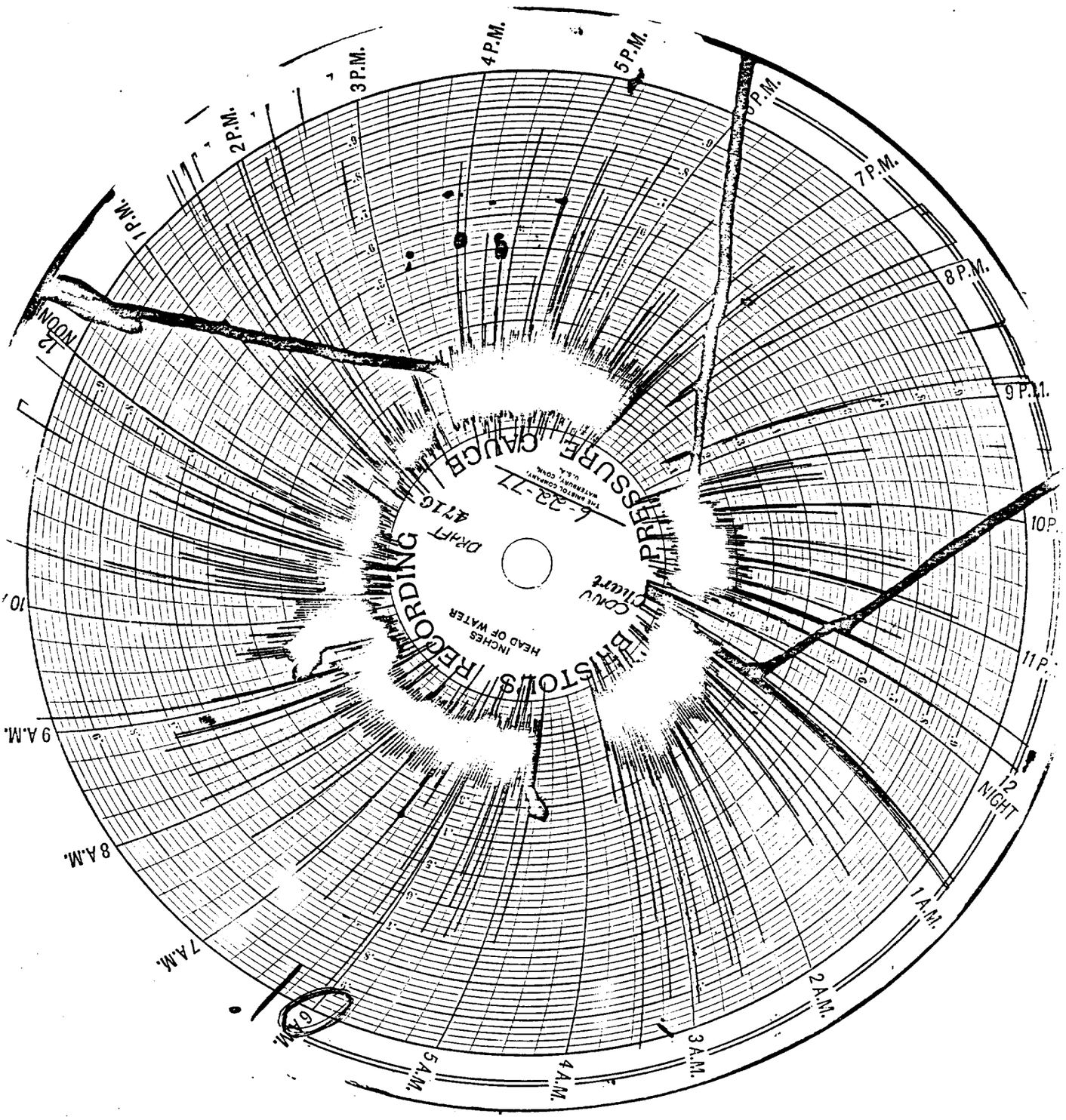
II-1


BAILEY RECORDER
Meter No.
Date
Chart No.
100K
SMOKE
6-24-77
BAILEY METER COMPANY
CLEVELAND, OHIO
MIDNIGHT
6 AM
NOON
6 PM

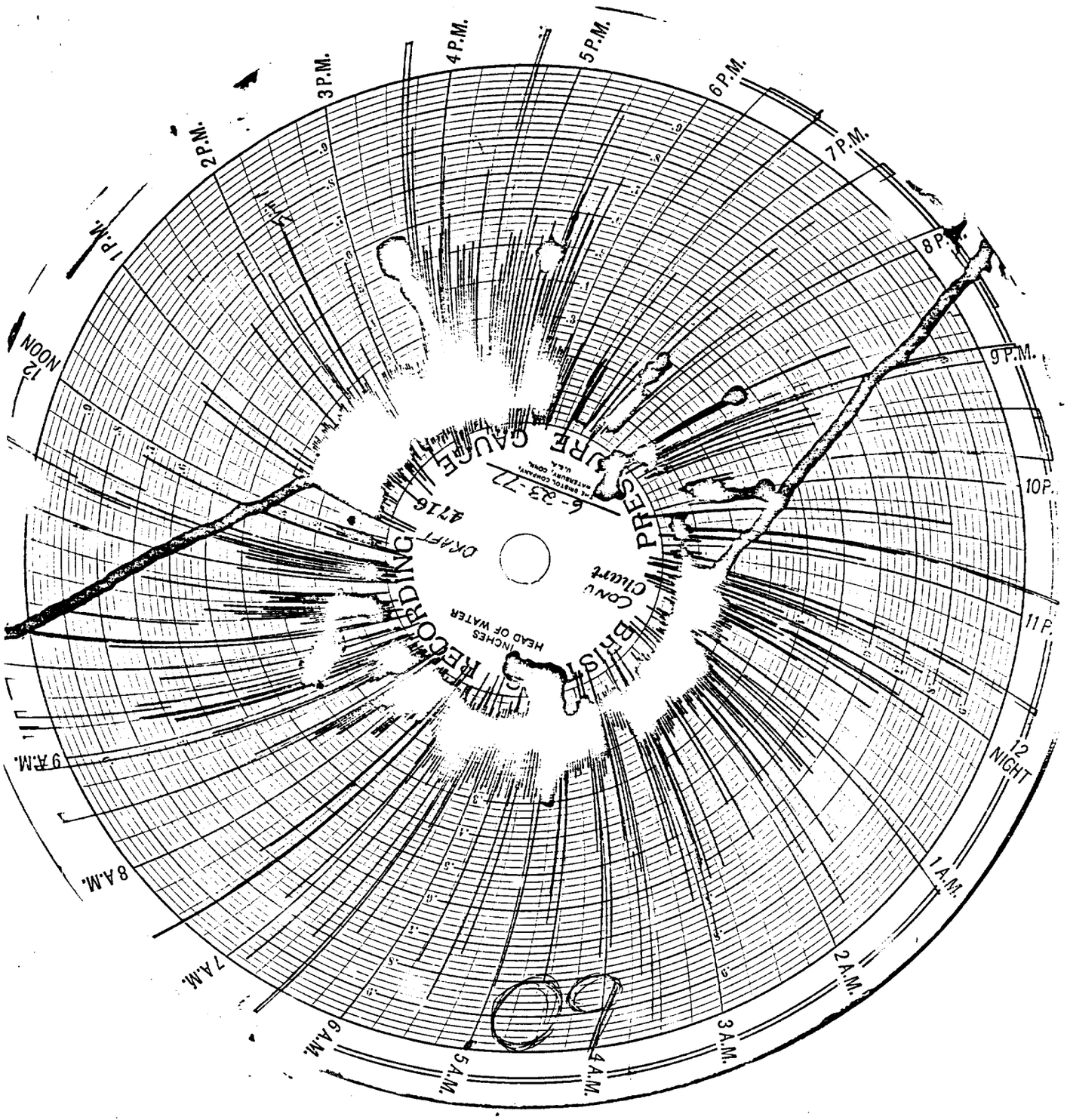
II 8


PRESSURE GAUGE
BRISTOL'S RECORDING
INCHES
HEAD OF WATER
DRAFT
4716
Conv Chart
6-21-77
THE BRISTOL COMPANY, WATERBURY, CONN. U.S.A.
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
NOON

II 9

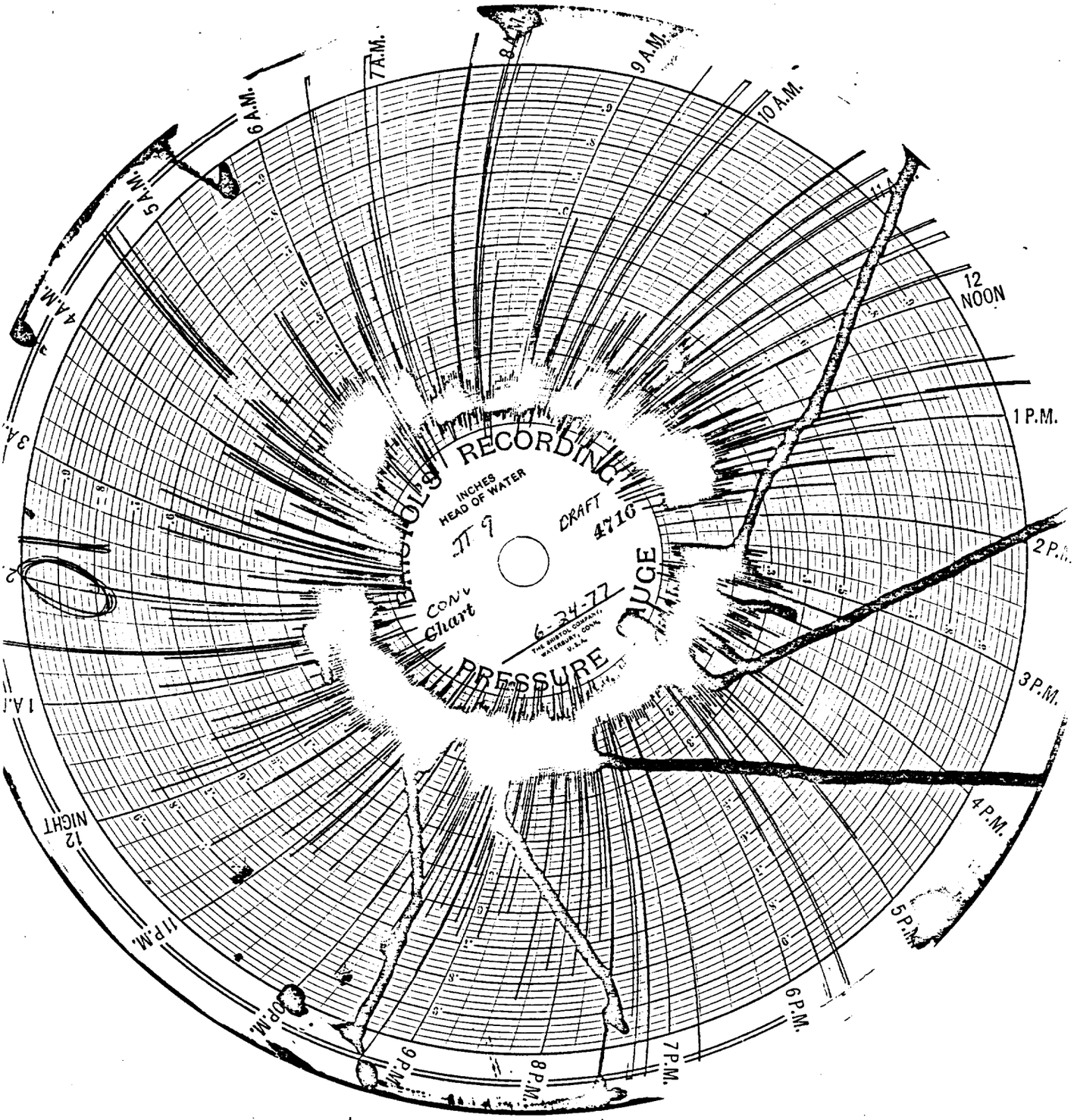

BRISTOL'S RECORDING PRESSURE GAUGE
INCHES
HEAD OF WATER
DRAFT
4716
6-22-77
THE BRISTOL COMPANY, WATERBURY, CONN. U.S.A.
CONV
Chart
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.
11 P.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10
12 NOON

II 9

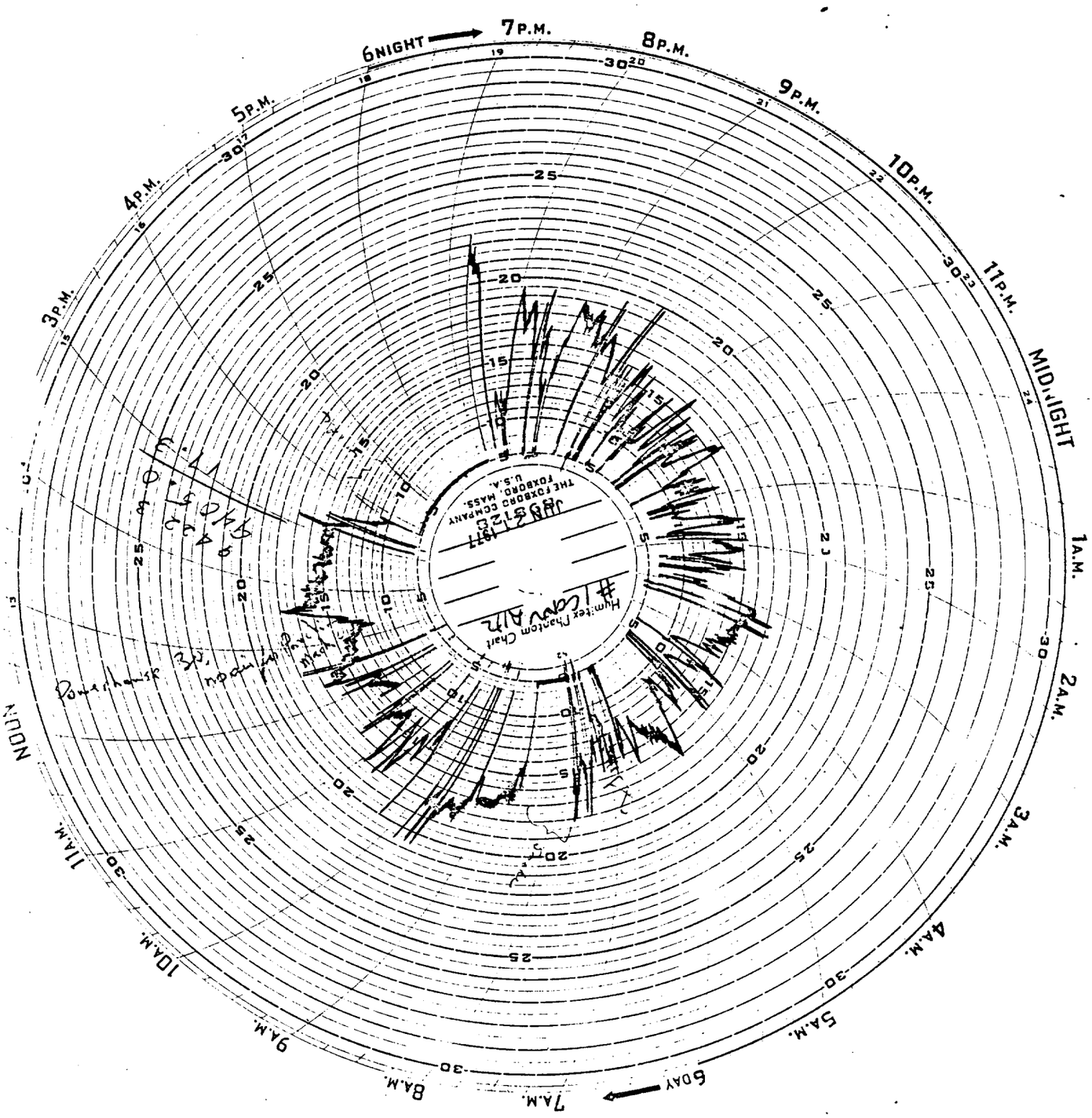


1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.
11 P.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
12 NOON
BRISTOL RECORDING PRESSURE GAUGE
INCHES
HEAD OF WATER
CONV
Chart
DRAFT
4716
6-23-77

II 9

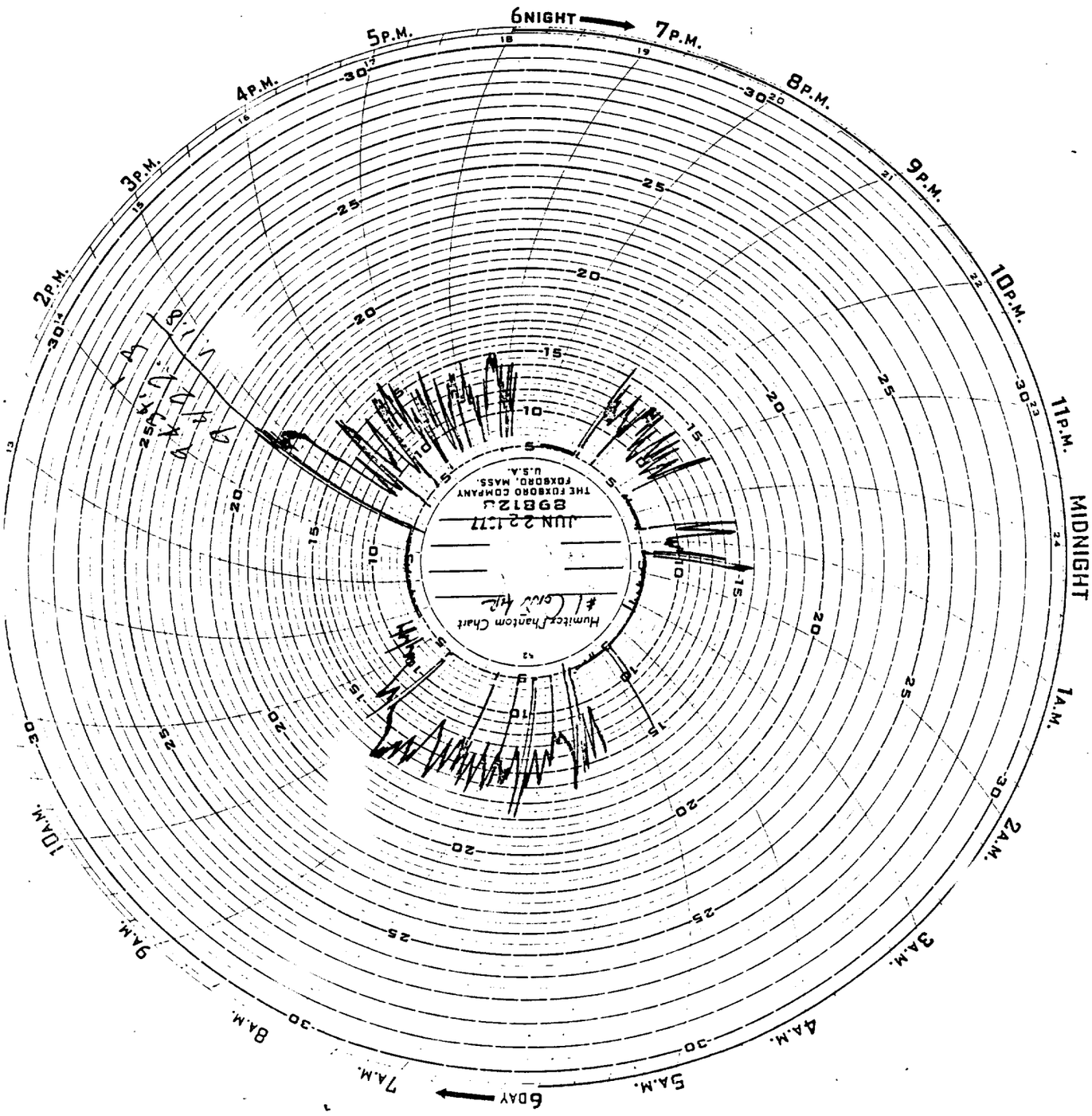

RECORDING
INCHES
HEAD OF WATER
DRAFT
4710
CONV
Chart
6-24-77
THE BRISTOL COMPANY
WATERBURY, CONN.
U.S.A.
PRESSURE GAUGE
12
NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12
NIGHT
1 A.M.
2
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.

II-7

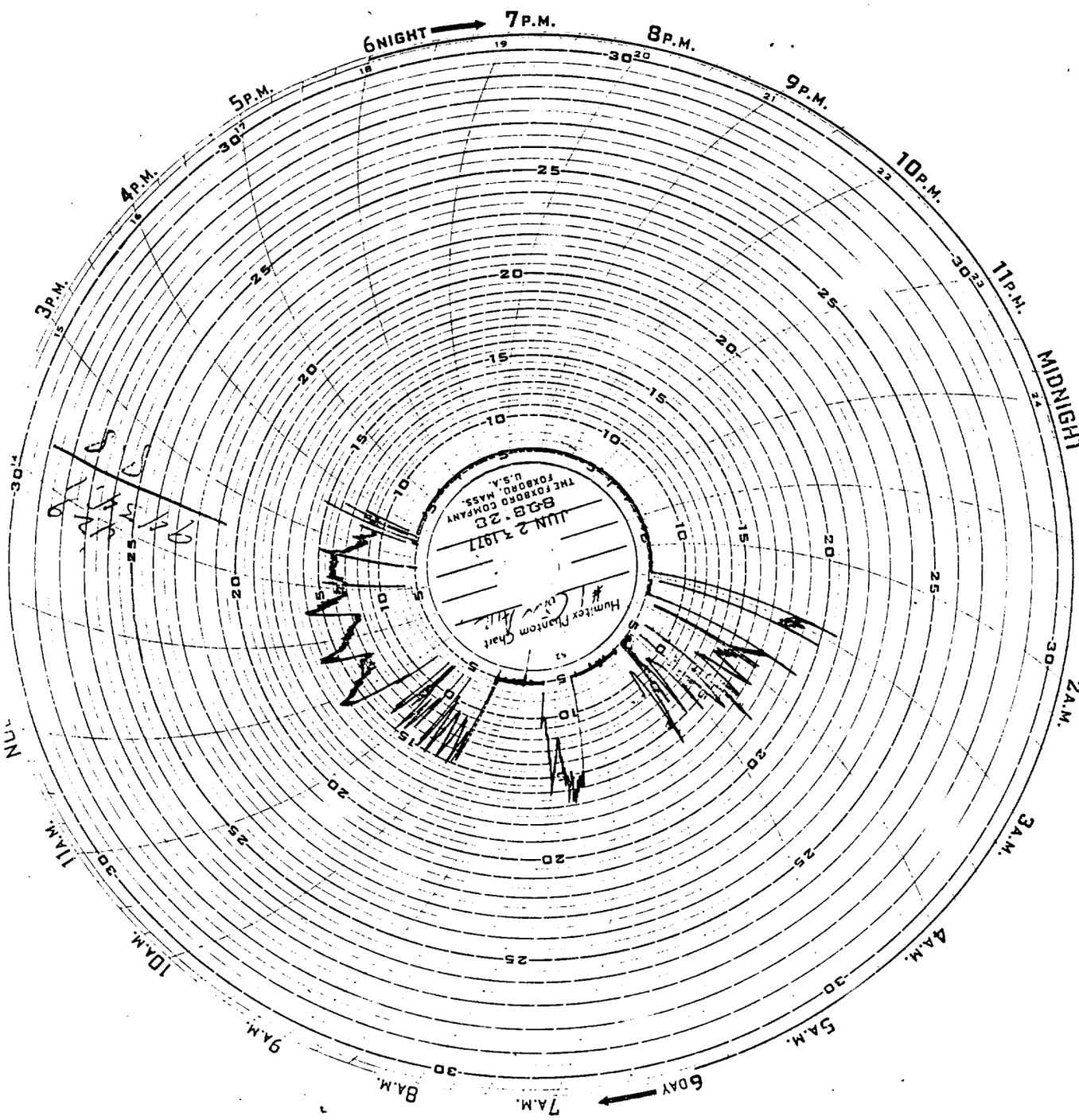


6 NIGHT
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 DAY
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
NOON
3 P.M.
4 P.M.
5 P.M.
JUN 21 1977
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Hum-tex Phantom Chart
#1 Conv A1/2

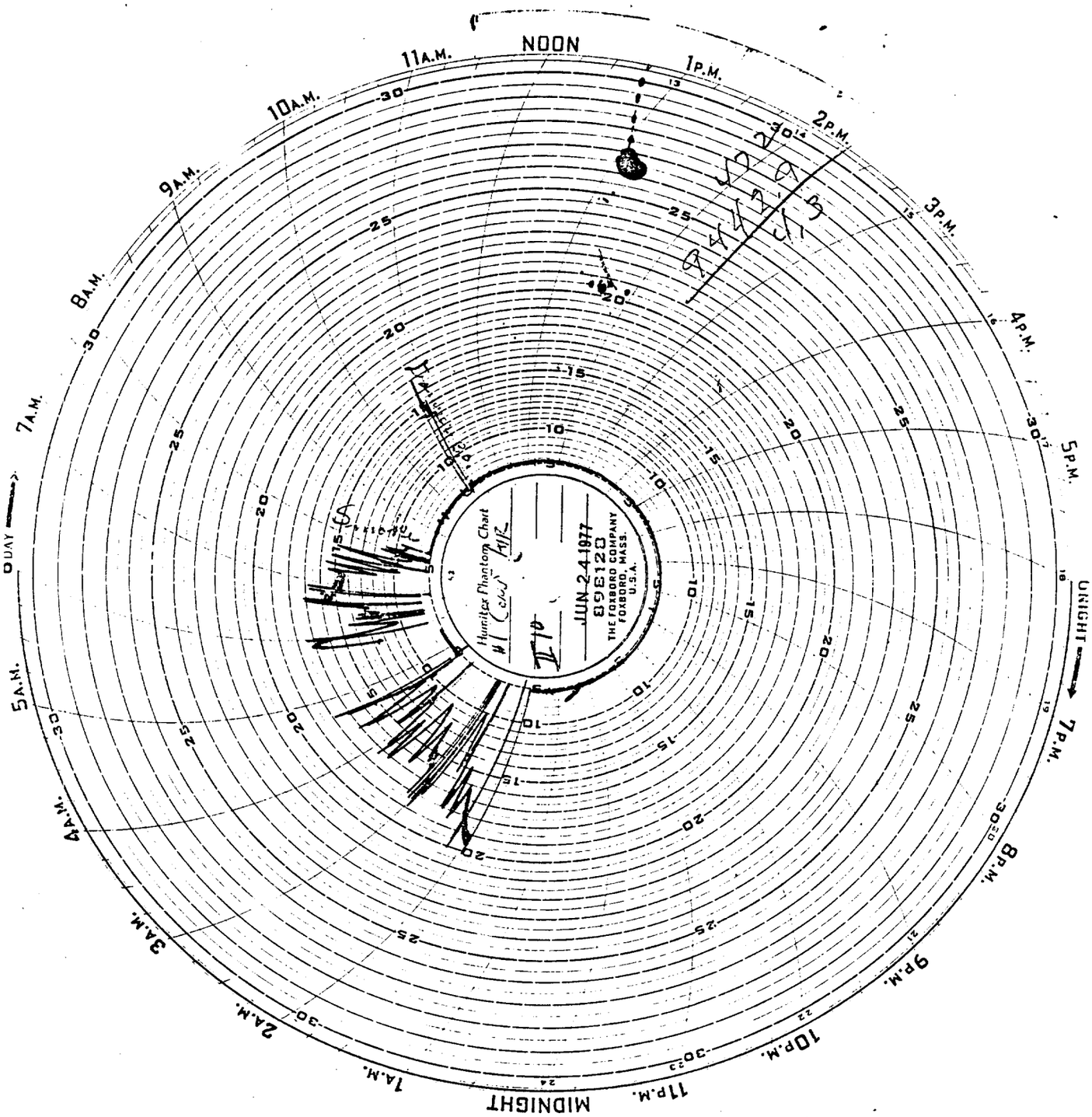
II.10


6NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
2P.M.
3P.M.
4P.M.
5P.M.
JUN 22 1977
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Humitex Phantom Chart

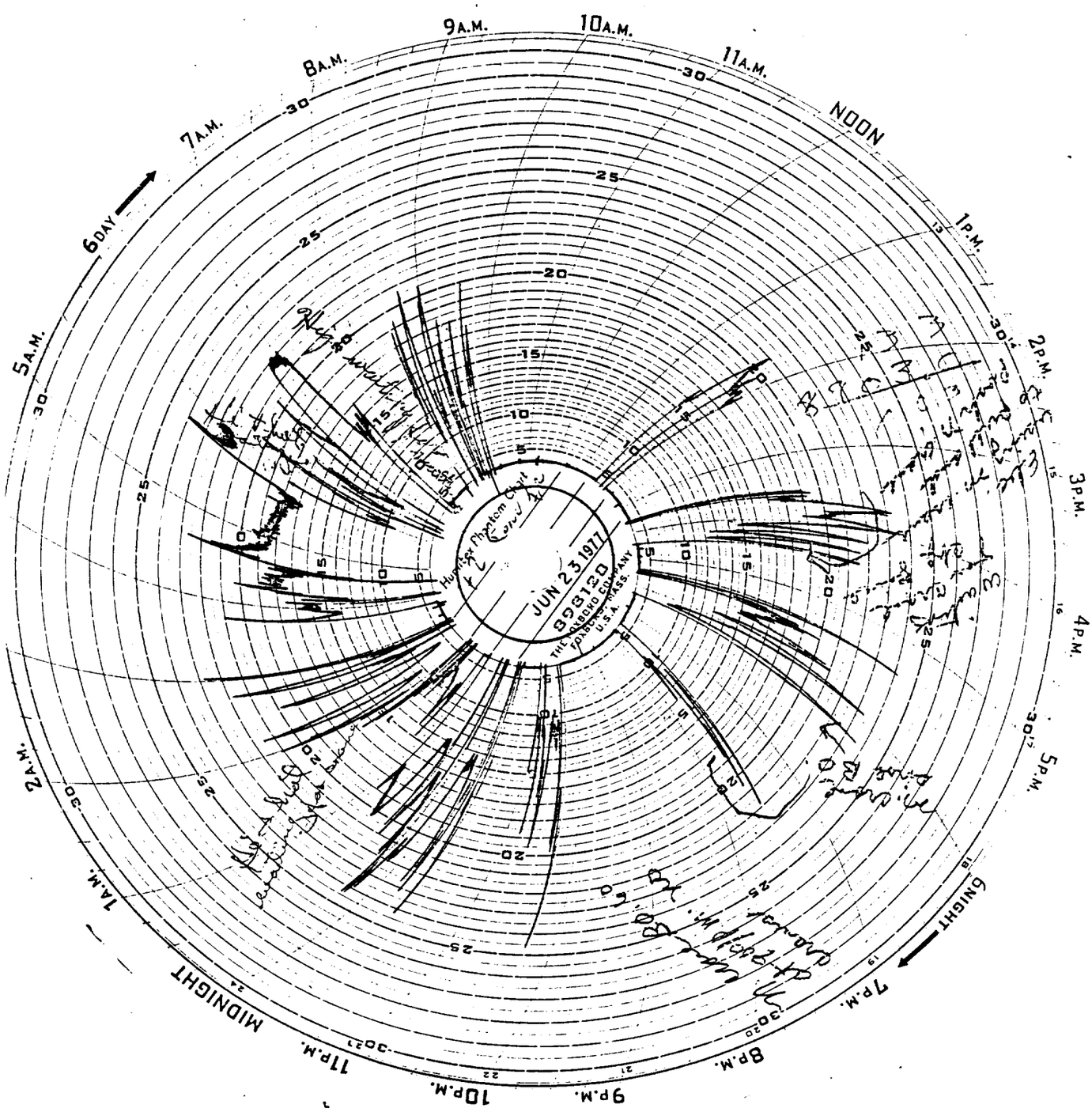
II 10


6 NIGHT
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 DAY
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
NOON
3 P.M.
4 P.M.
5 P.M.
Humitex Phantom Chart
JUN 2 1917
808-2C
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

I-10

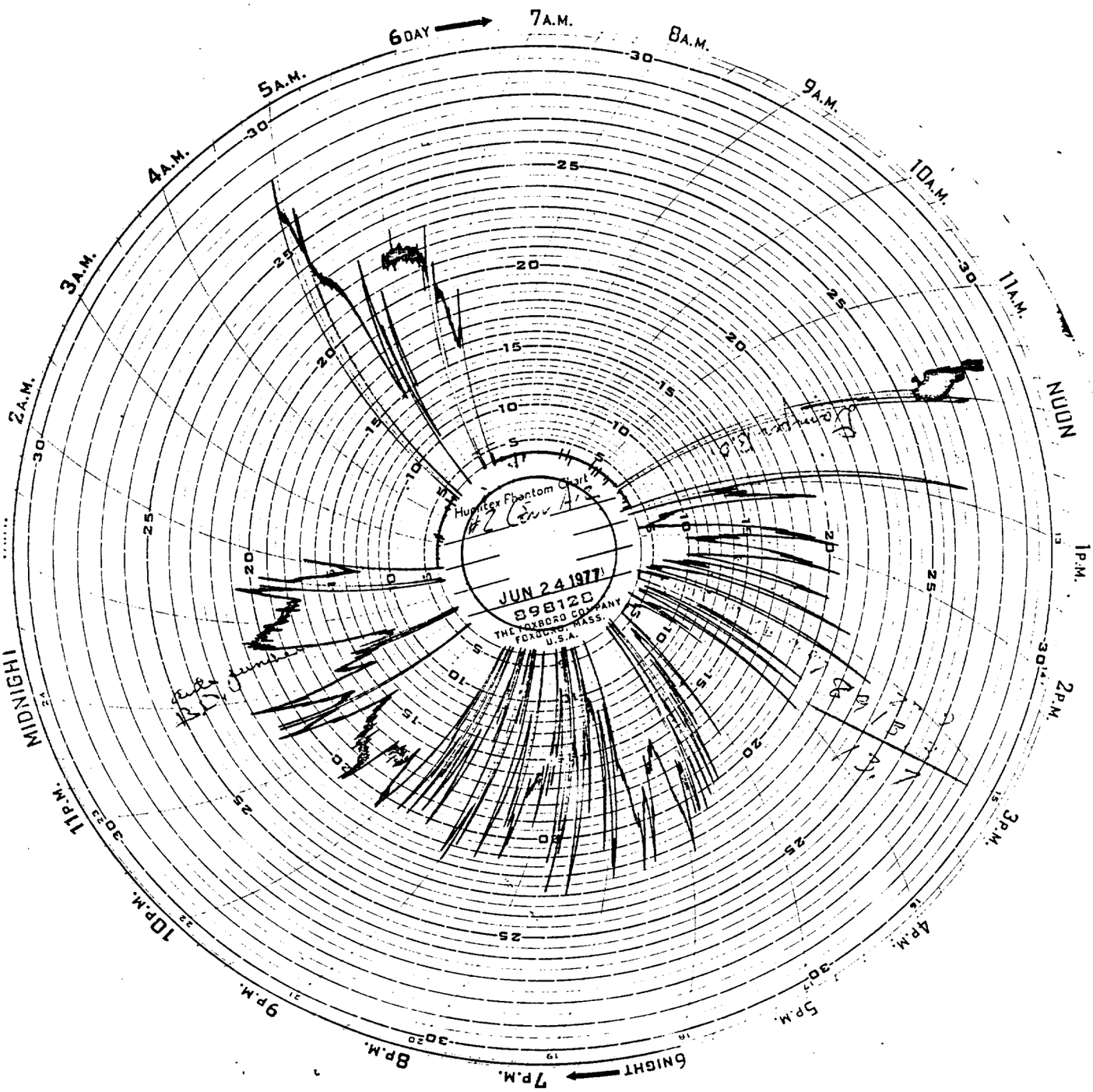

NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
DAY
NIGHT
Hunttex Phantom Chart
JUN 24 1977
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

II-10

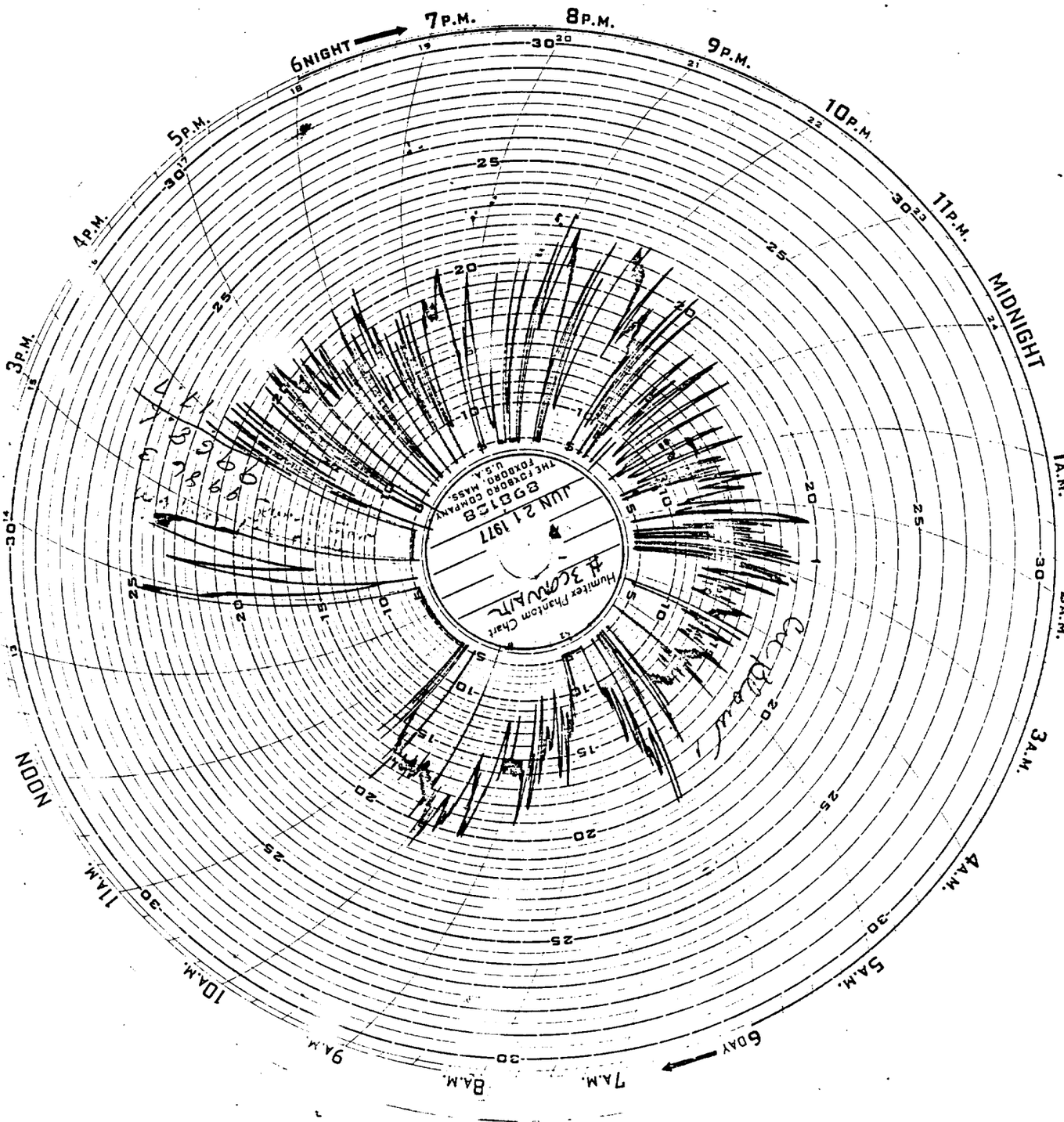


9A.M.
10A.M.
11A.M.
NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
5A.M.
6DAY
7A.M.
8A.M.
JUN 23 1977
898120
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

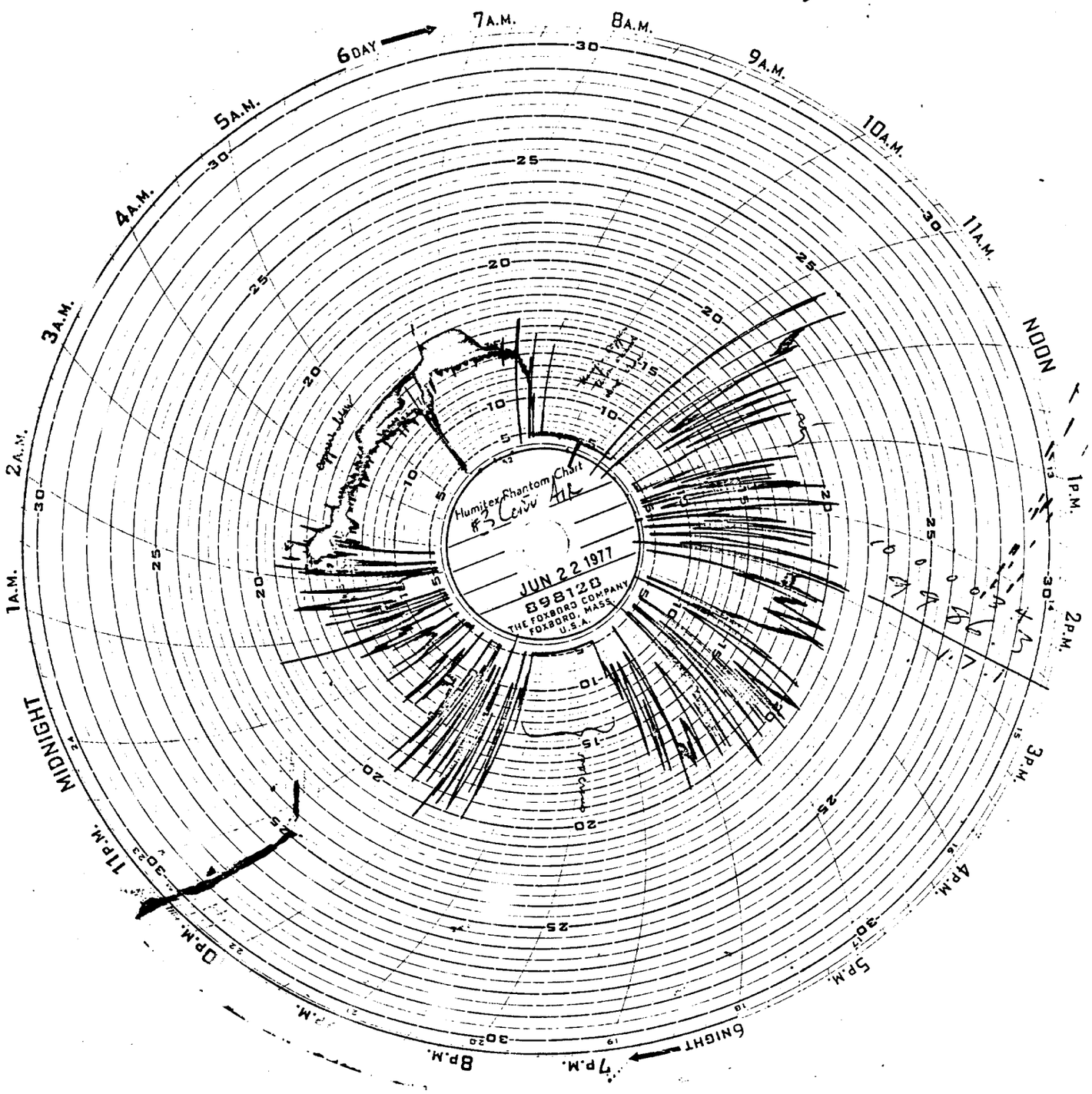
II10


6 DAY
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 NIGHT
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
2 A.M.
3 A.M.
4 A.M.
5 A.M.
Hunter Phantom Chart
JUN 24 1977
99120
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

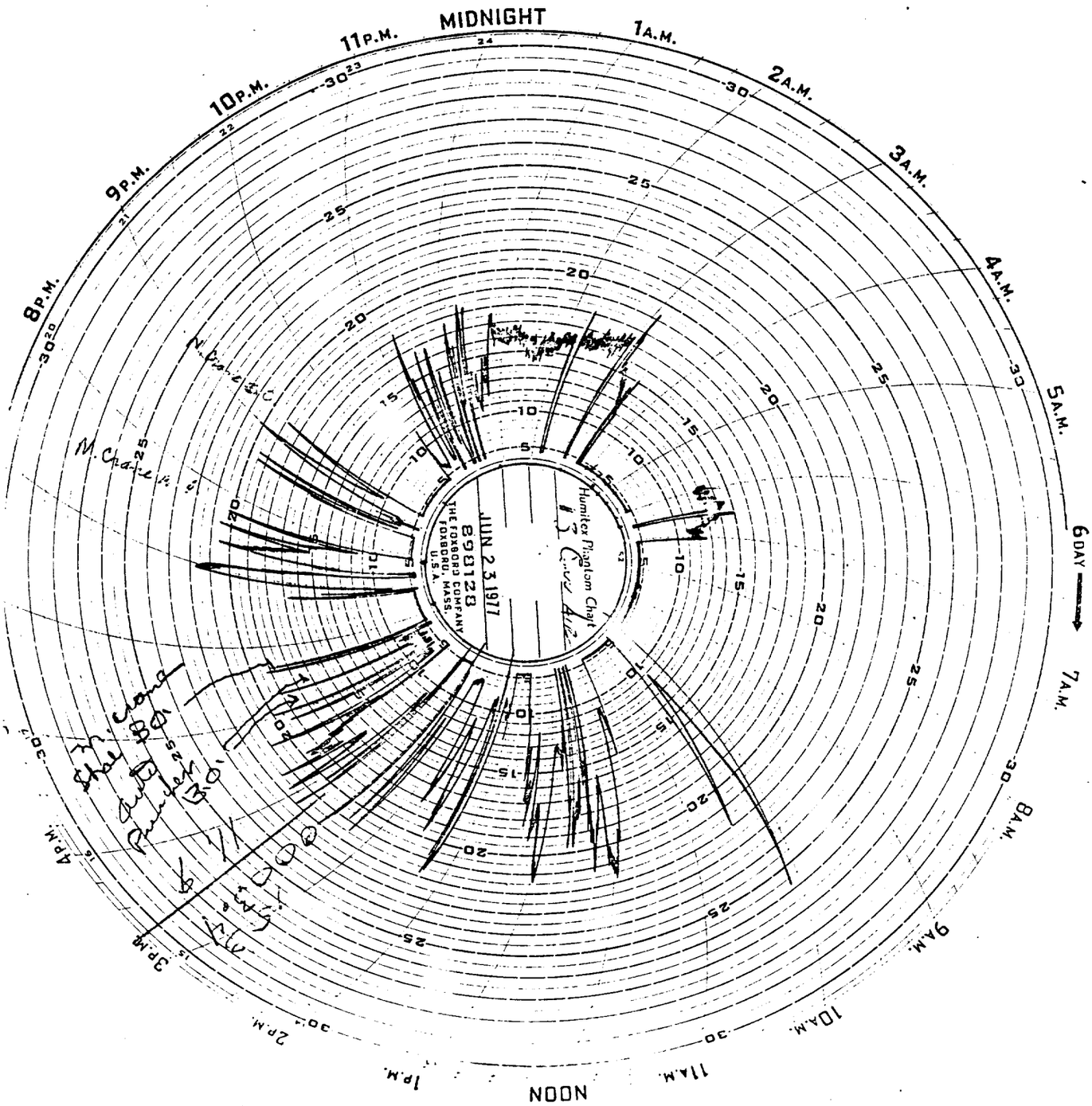
JJ10


7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6NIGHT
Humitemp Phantom Chart
JUN 21 1977
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

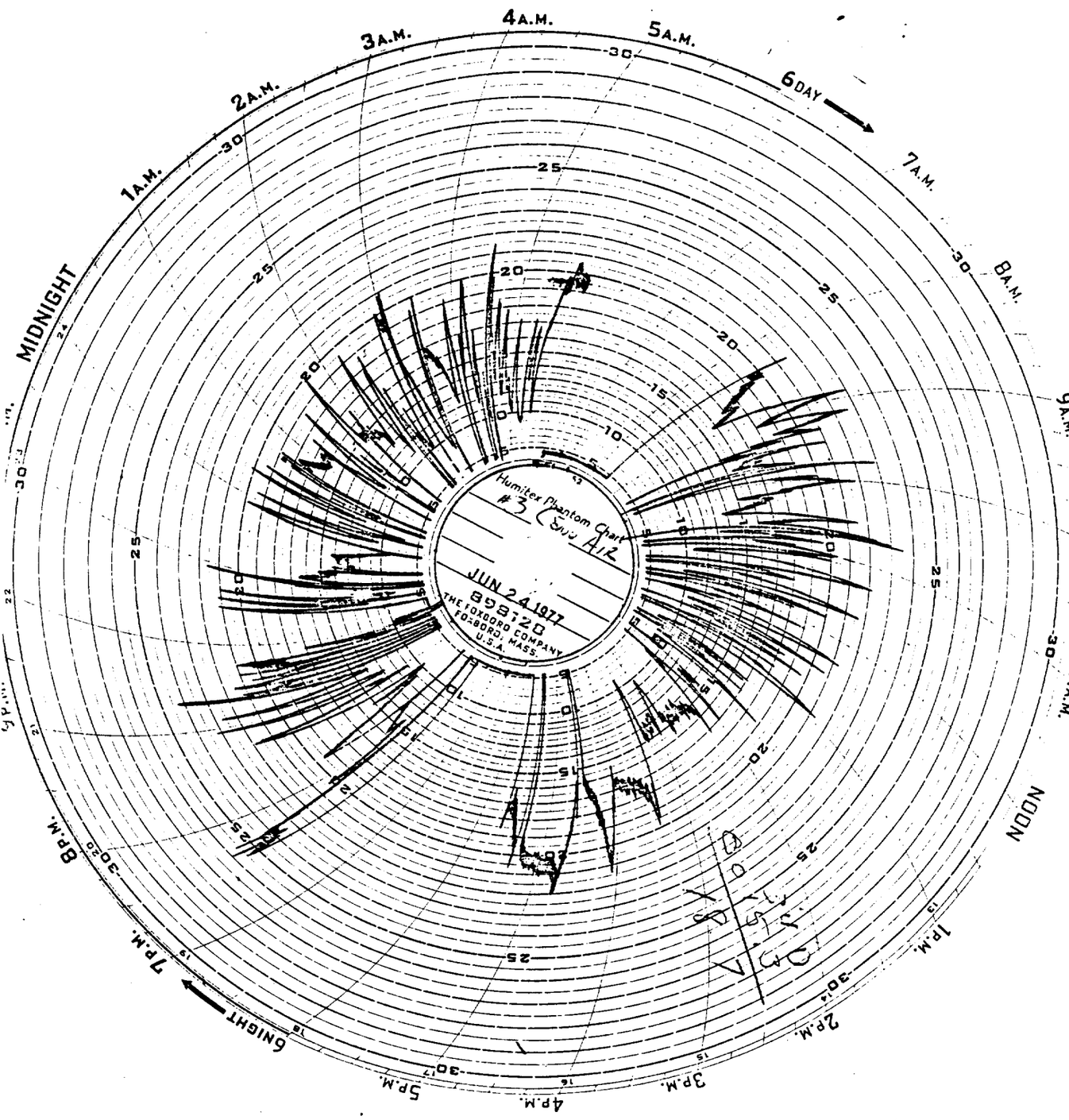
II.10


7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6DAY
Humitex Phantom Chart
JUN 22 1977
898120
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

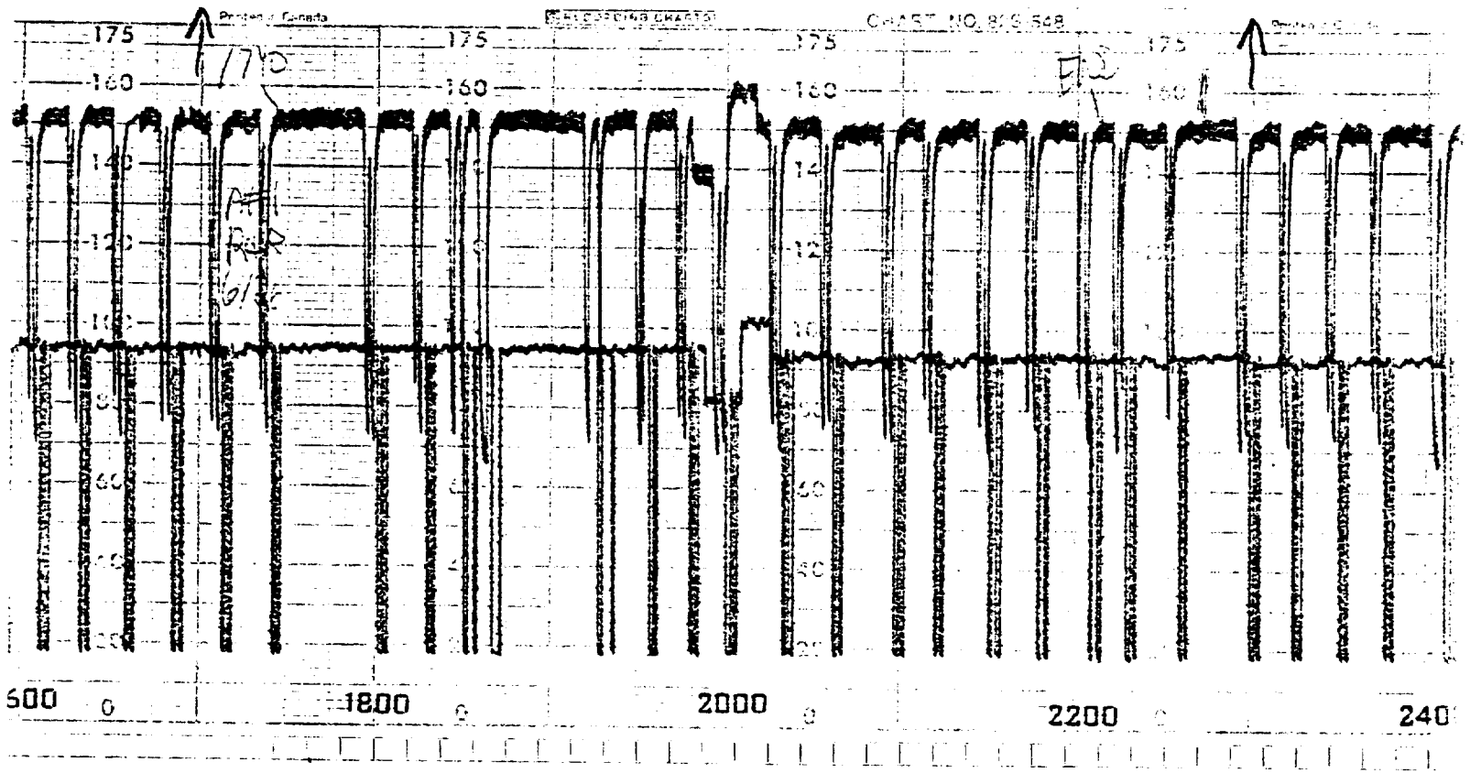
II 10


MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6 DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
NOON
1P.M.
2P.M.
3P.M.
4P.M.
8P.M.
9P.M.
10P.M.
11P.M.
Humitex Plugtom Chart
JUN 23 1977
898128
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

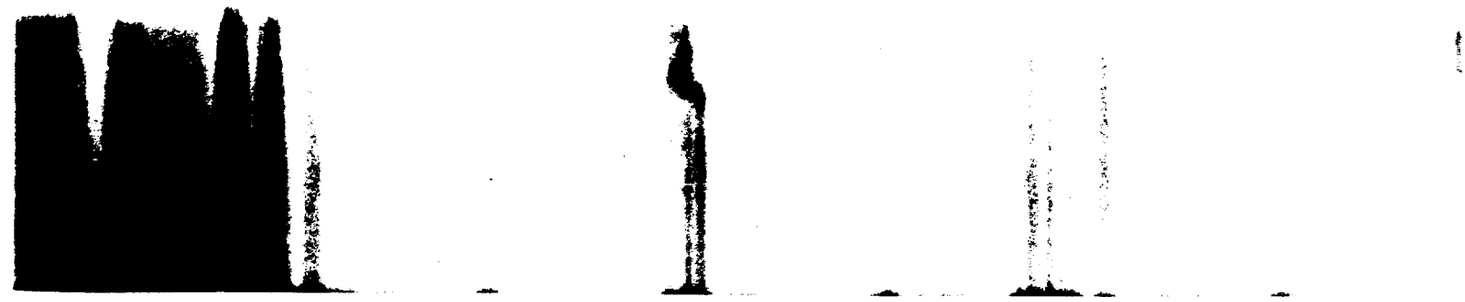
II 10

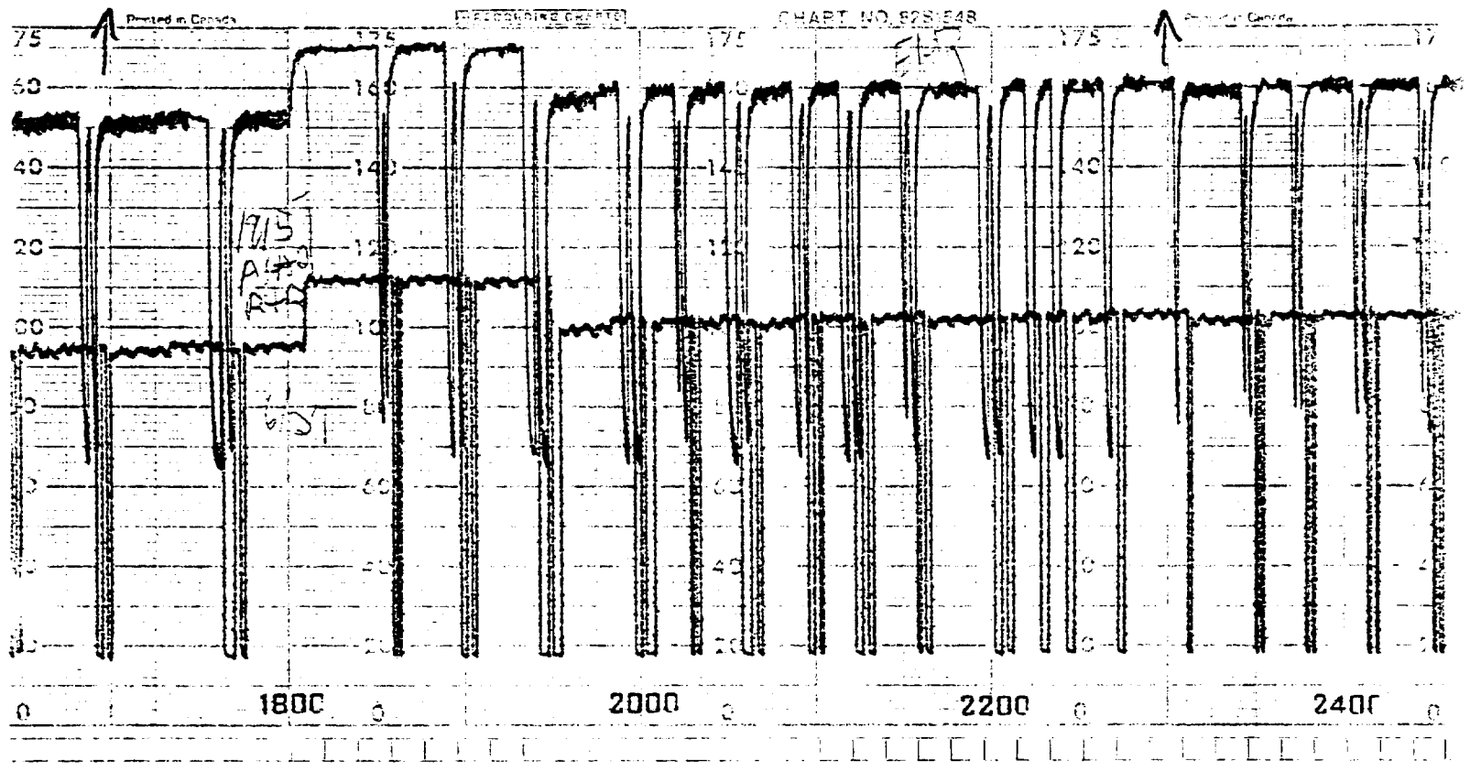

4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6NIGHT
7P.M.
8P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
Humiter Phantom Chart
#3 Supp Air
JUN 24 1977
88720
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

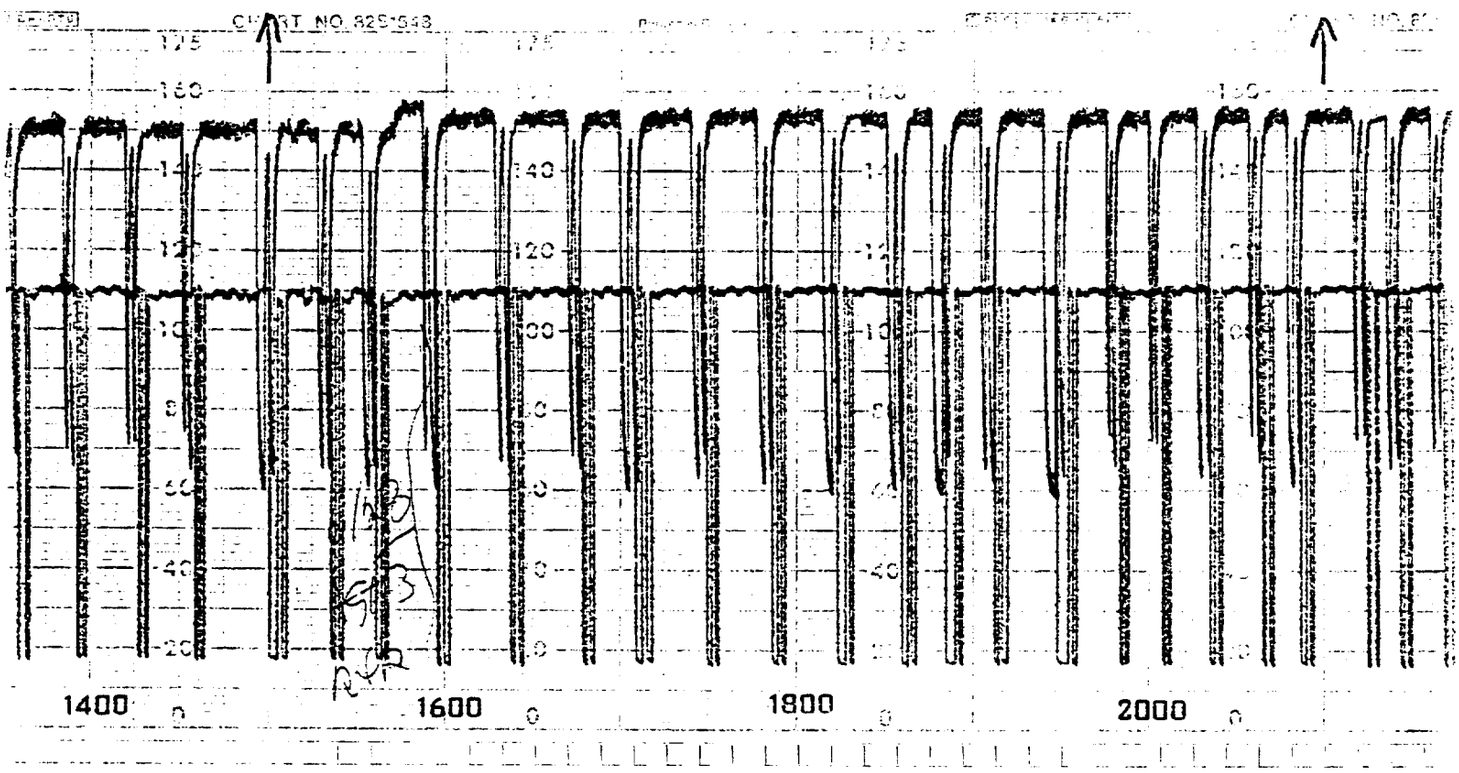
III10



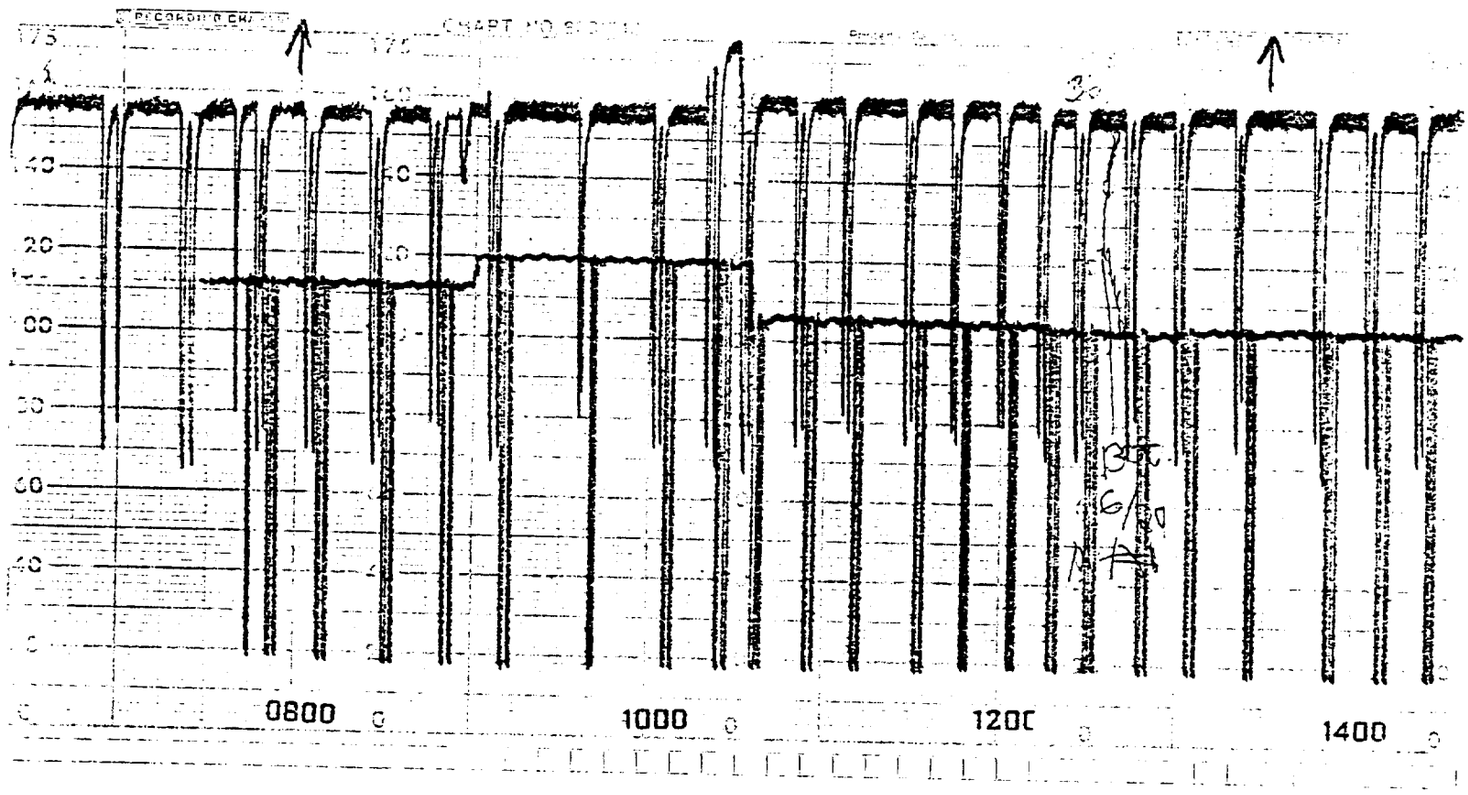
II 11



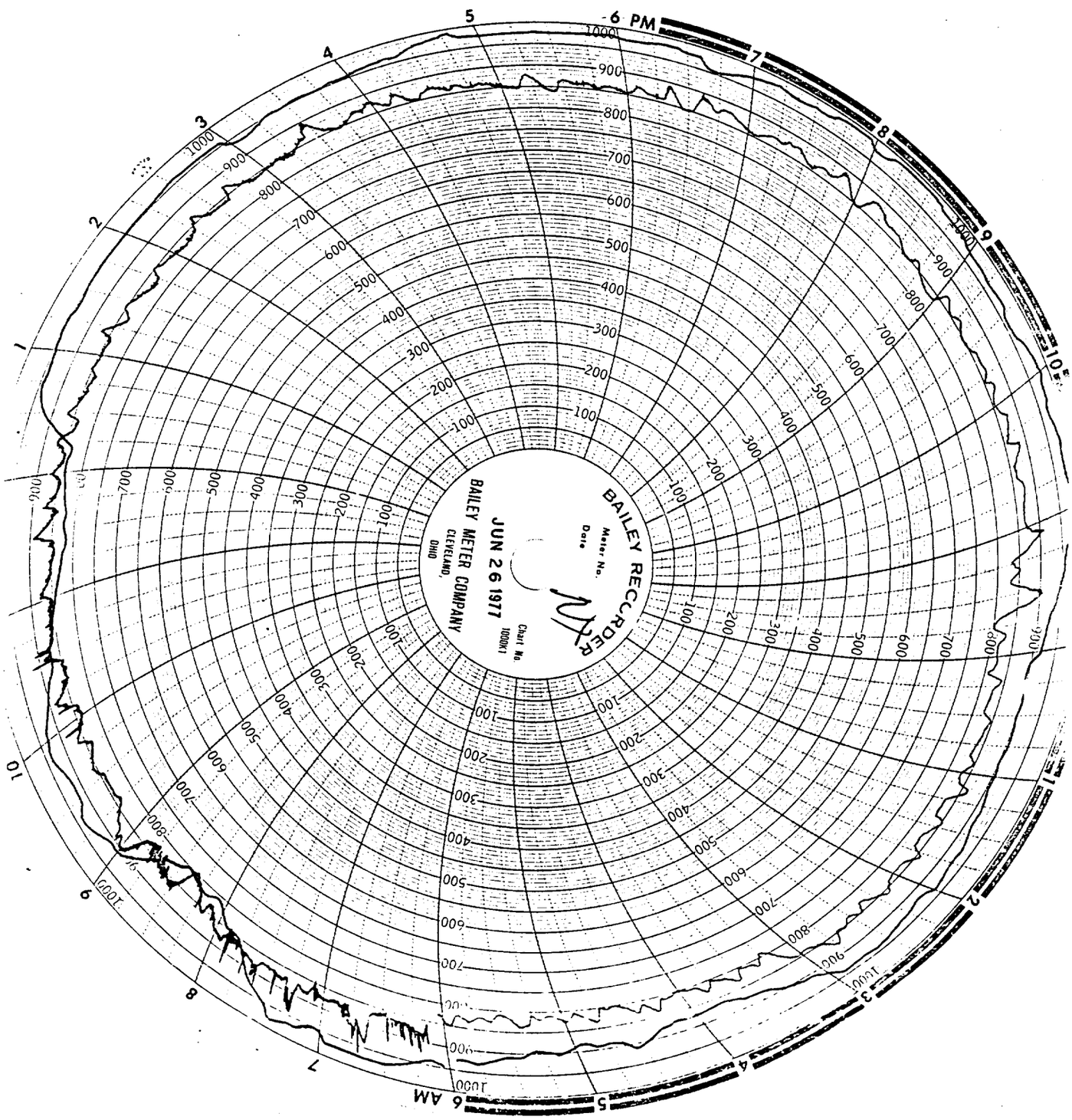

1800
2000
2200
2400



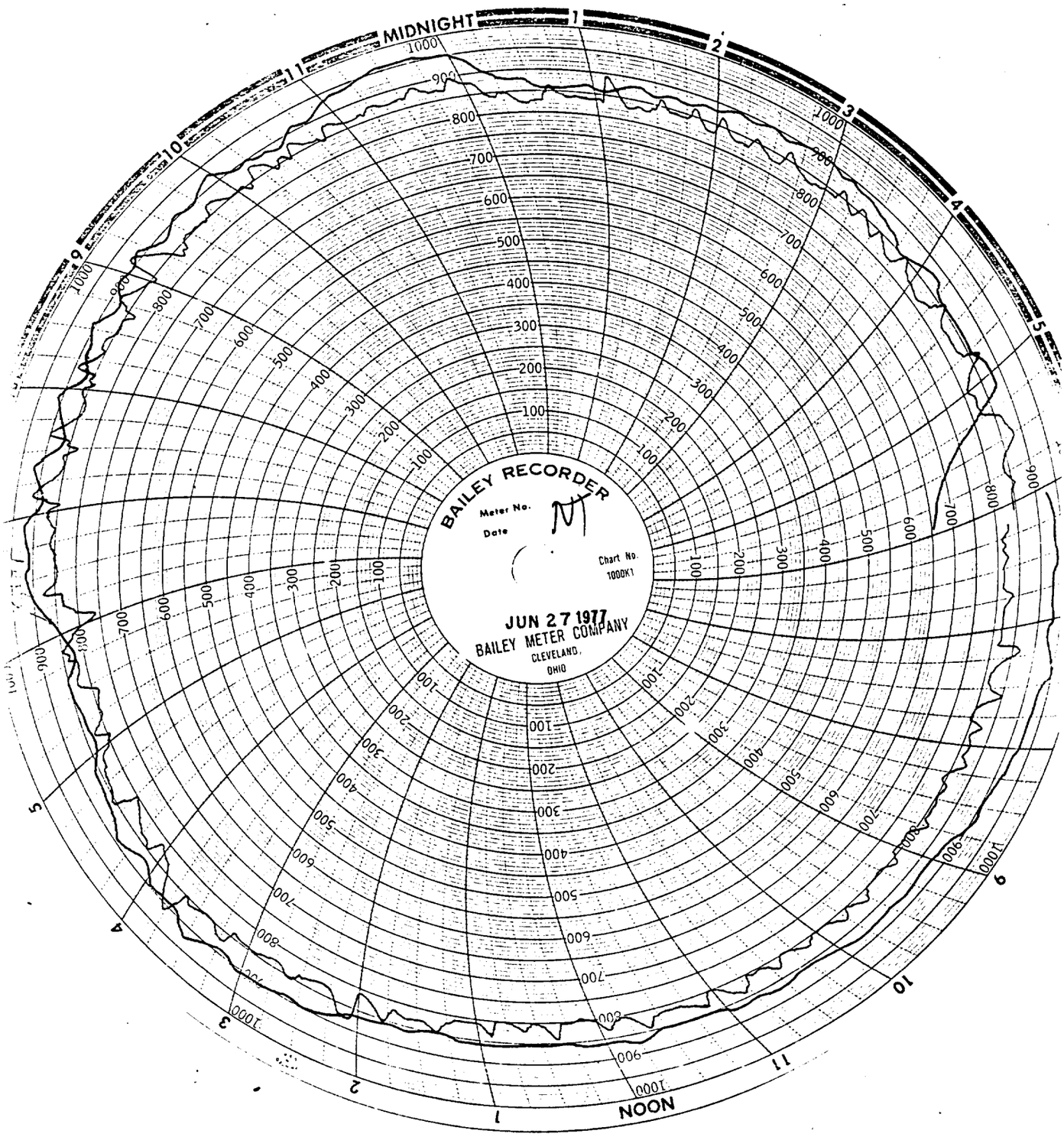
II 113

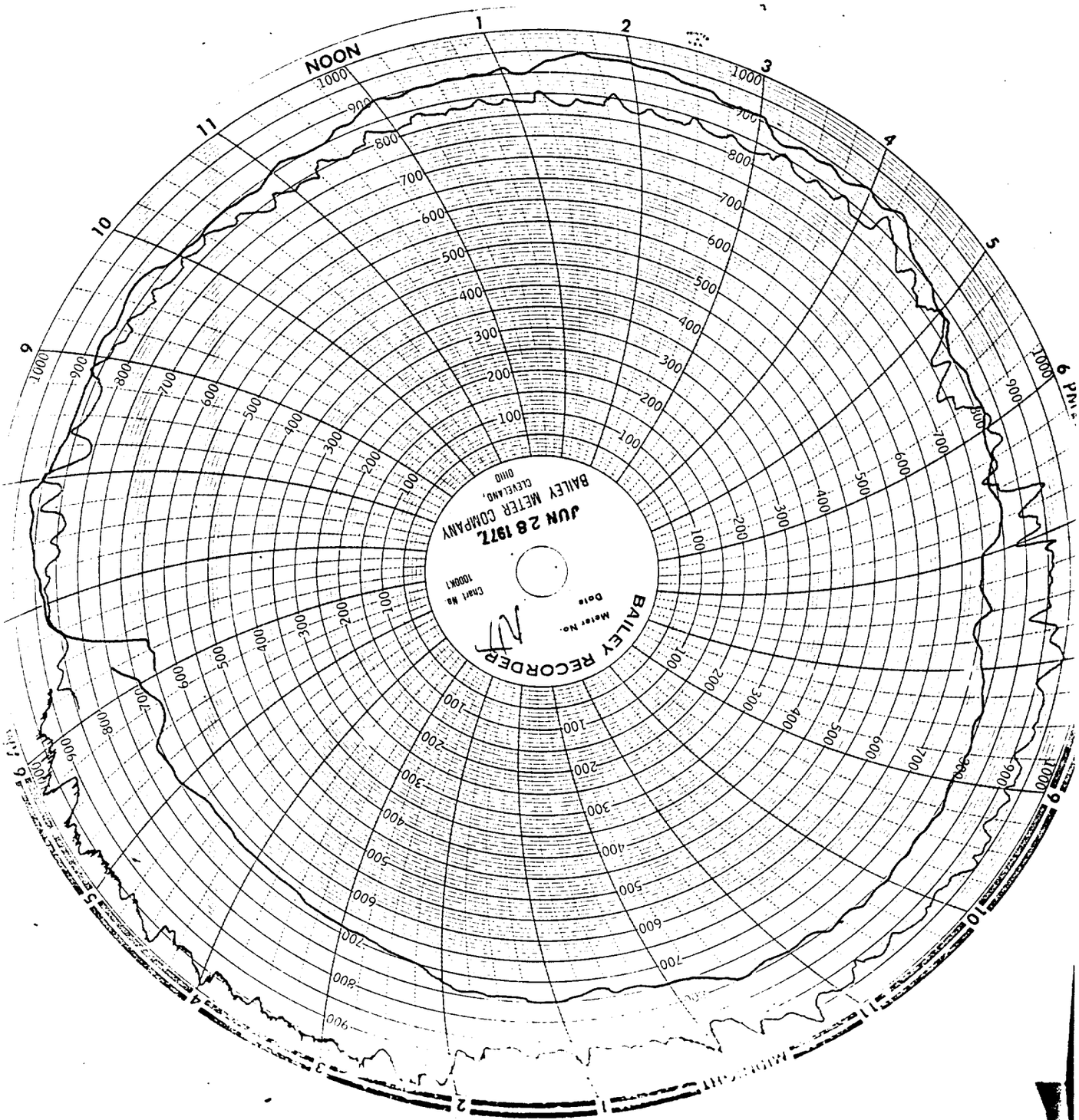


II 114

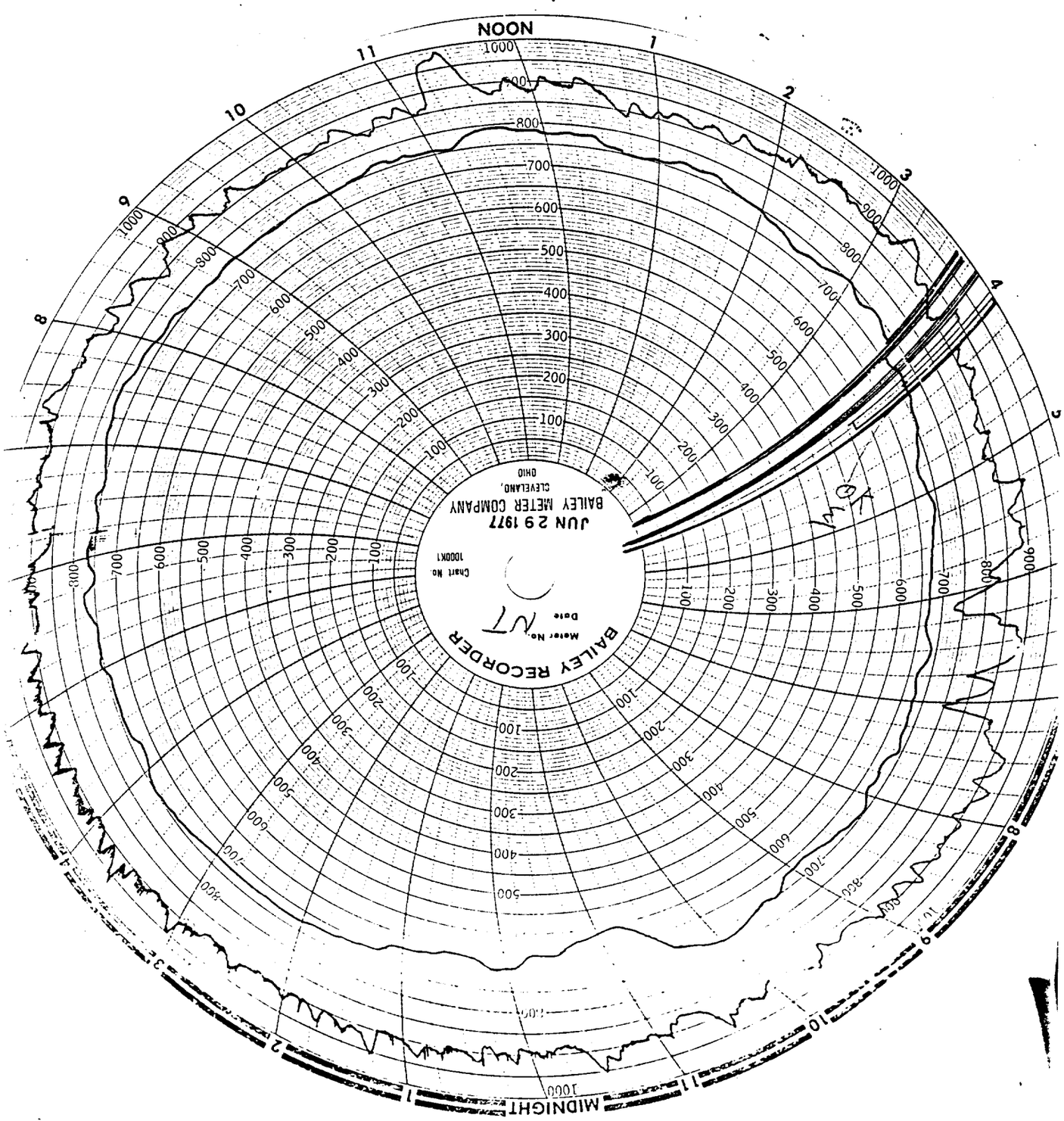

BAILEY RECORDER
Meter No.
Date
JUN 26 1977
Chart No. 1000K1
BAILEY METER COMPANY
CLEVELAND, OHIO
6 PM
6 AM

II 12

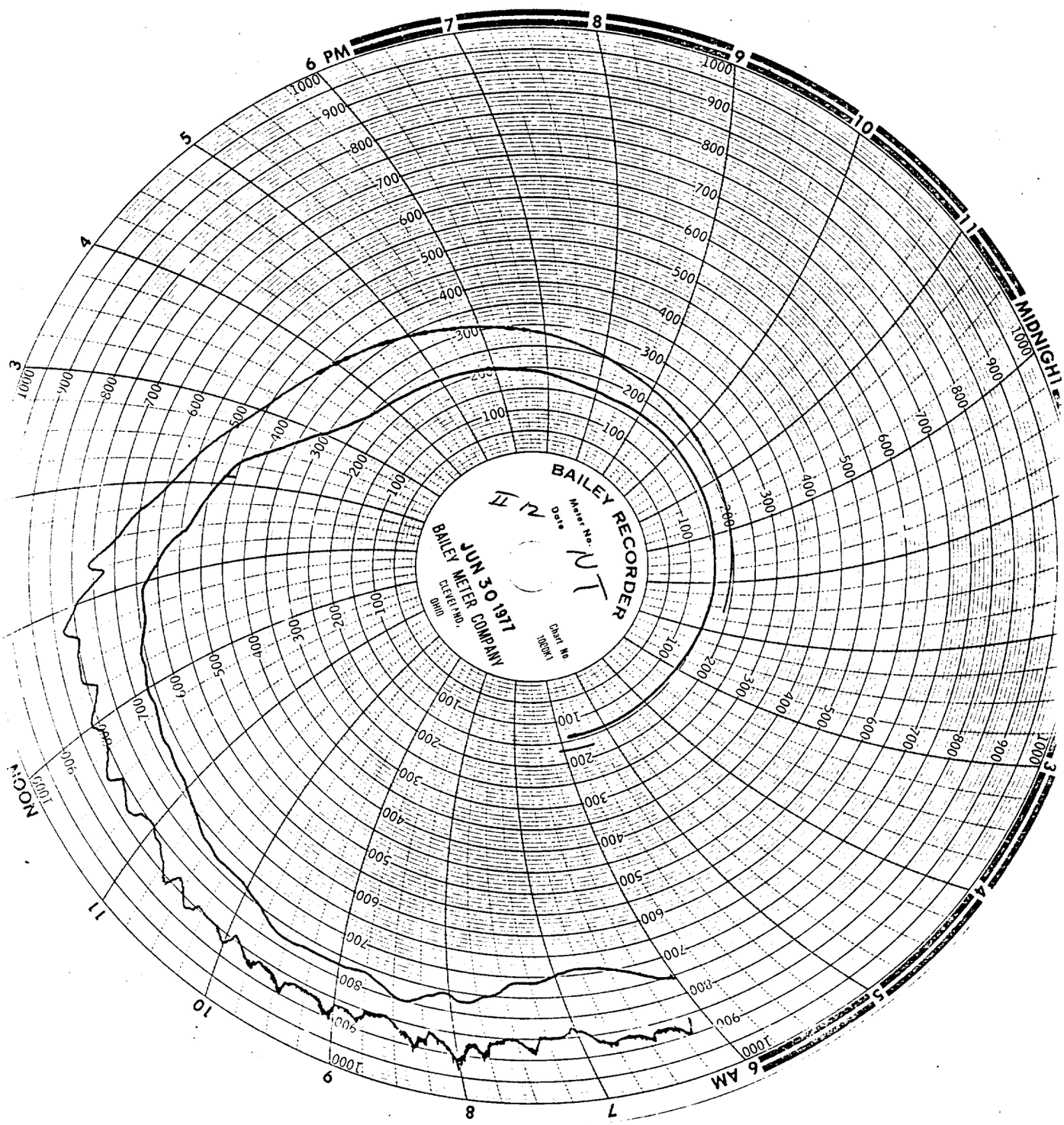

MIDNIGHT
NOON
BAILEY RECORDER
Meter No.
Date
Chart No.
100DK1
JUN 27 1977
BAILEY METER COMPANY
CLEVELAND,
OHIO


NOON
1
2
3
4
5
6 PM
9
10
11
BAILEY RECORDER
Meter No.
Date
Chart No.
100041
JUN 28 1977
BAILEY METER COMPANY
CLEVELAND, OHIO

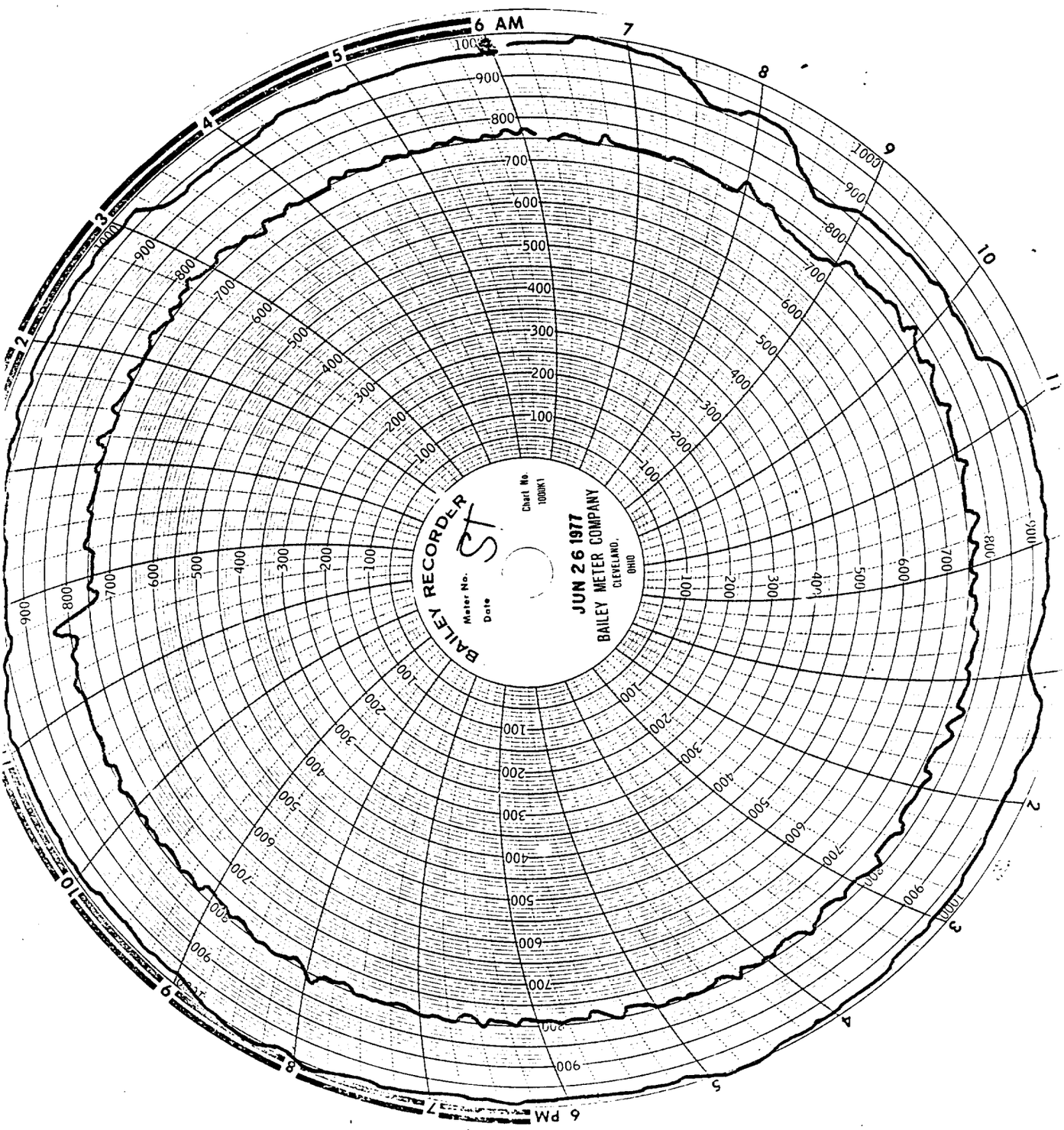
II 12

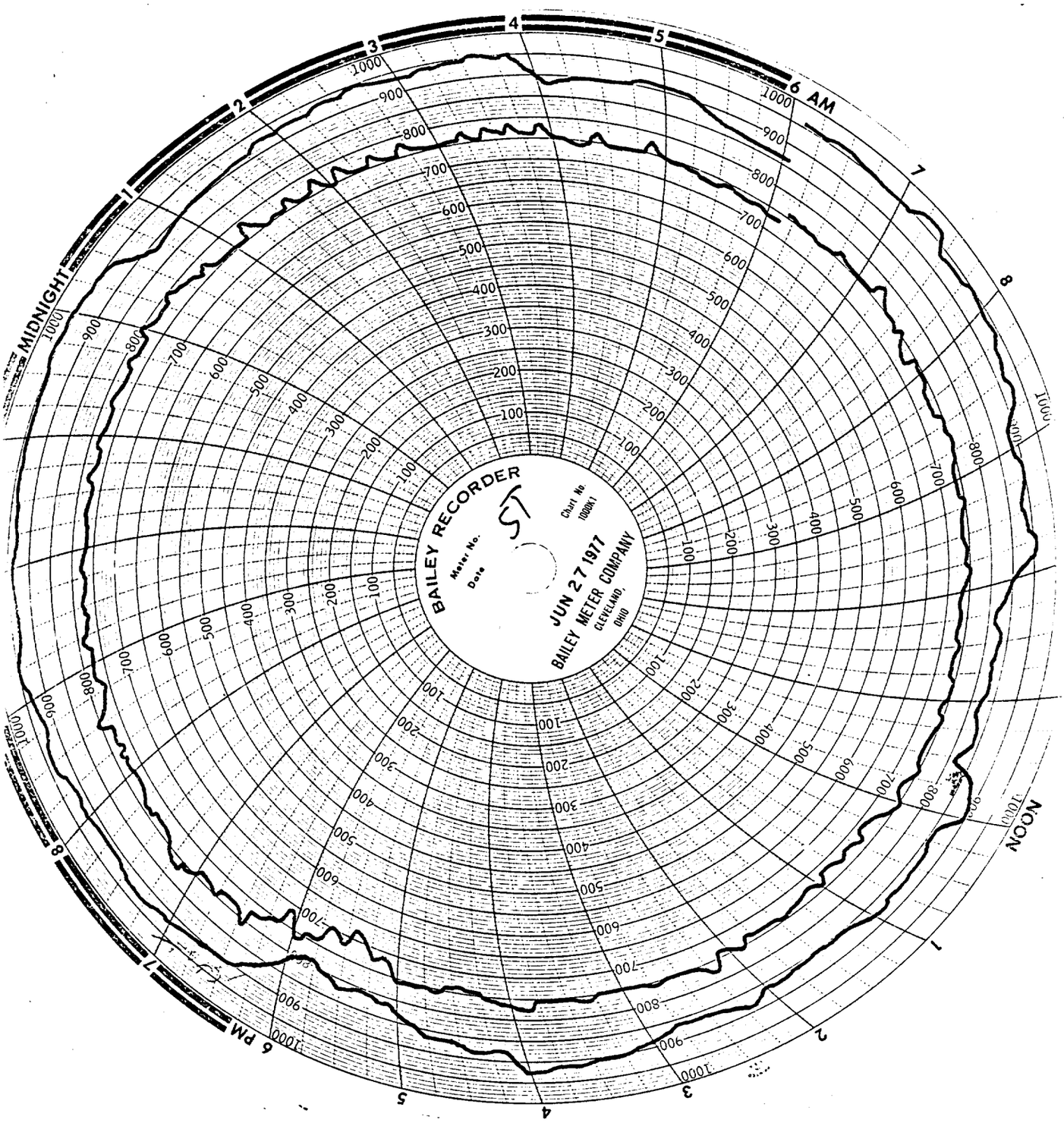

NOON
MIDNIGHT
BAILEY RECORDER
Meter No. N1
Date
Chart No. 100KN1
JUN 29 1977
BAILEY METER COMPANY
CLEVELAND, OHIO
OK

II 12

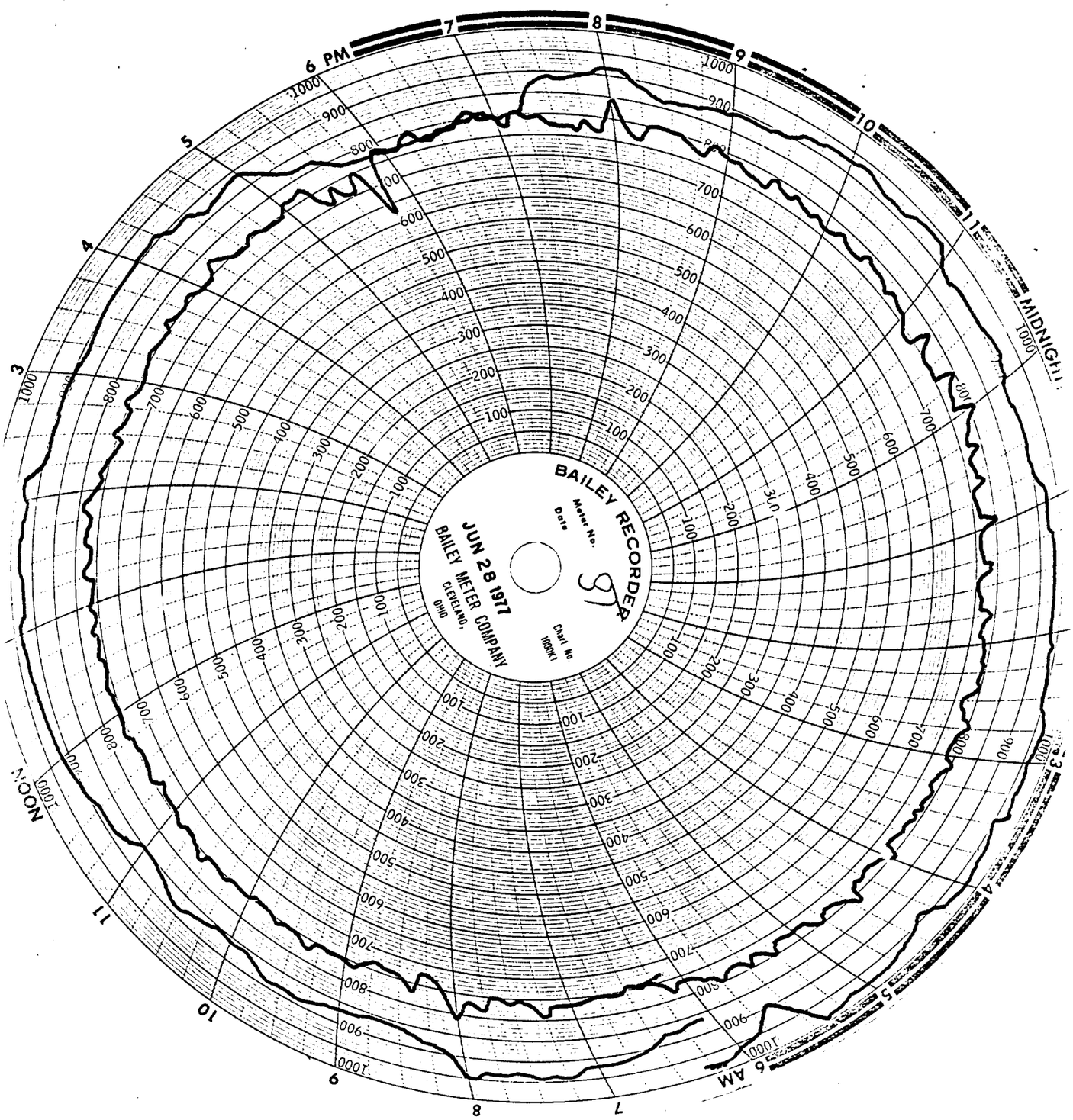

BAILEY RECORDER
Meter No.
Date
JUN 30 1977
BAILEY METER COMPANY
CLEVELAND, OHIO
Chart No
6 PM
7
8
9
10
11
MIDNIGHT
5
4
3
NOON
11
10
9
8
7
6 AM
5
4
3

II 12

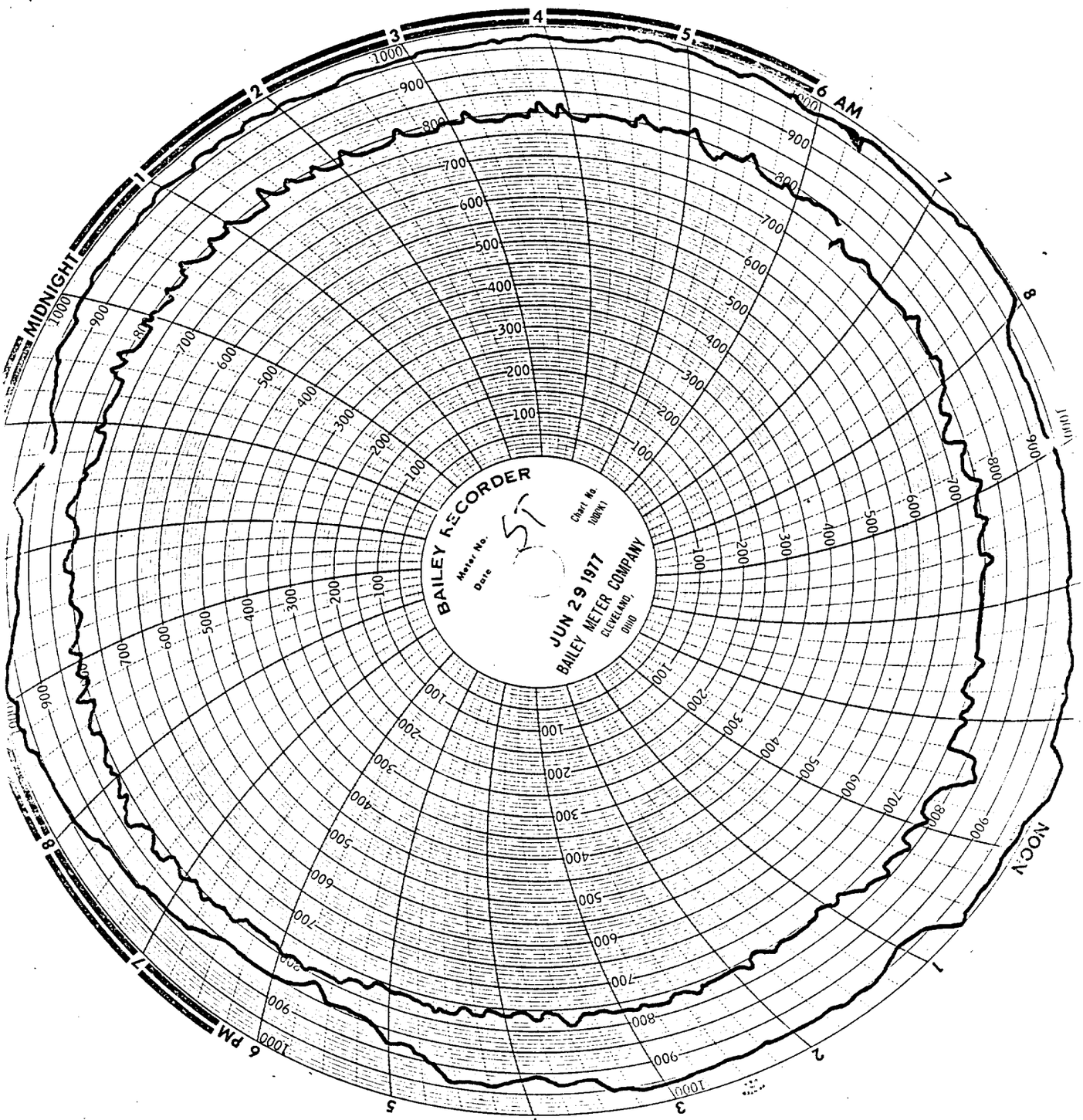

6 AM
6 PM
BAILEY RECORDER
Meter No. ST
Date
Chart No. 1000K1
JUN 26 1977
BAILEY METER COMPANY
CLEVELAND, OHIO


MIDNIGHT
6 AM
NOON
6 PM
BAILEY RECORDER
Meter No.
Date
ST
Chart No.
1000X1
JUN 27 1977
BAILEY METER COMPANY
CLEVELAND, OHIO

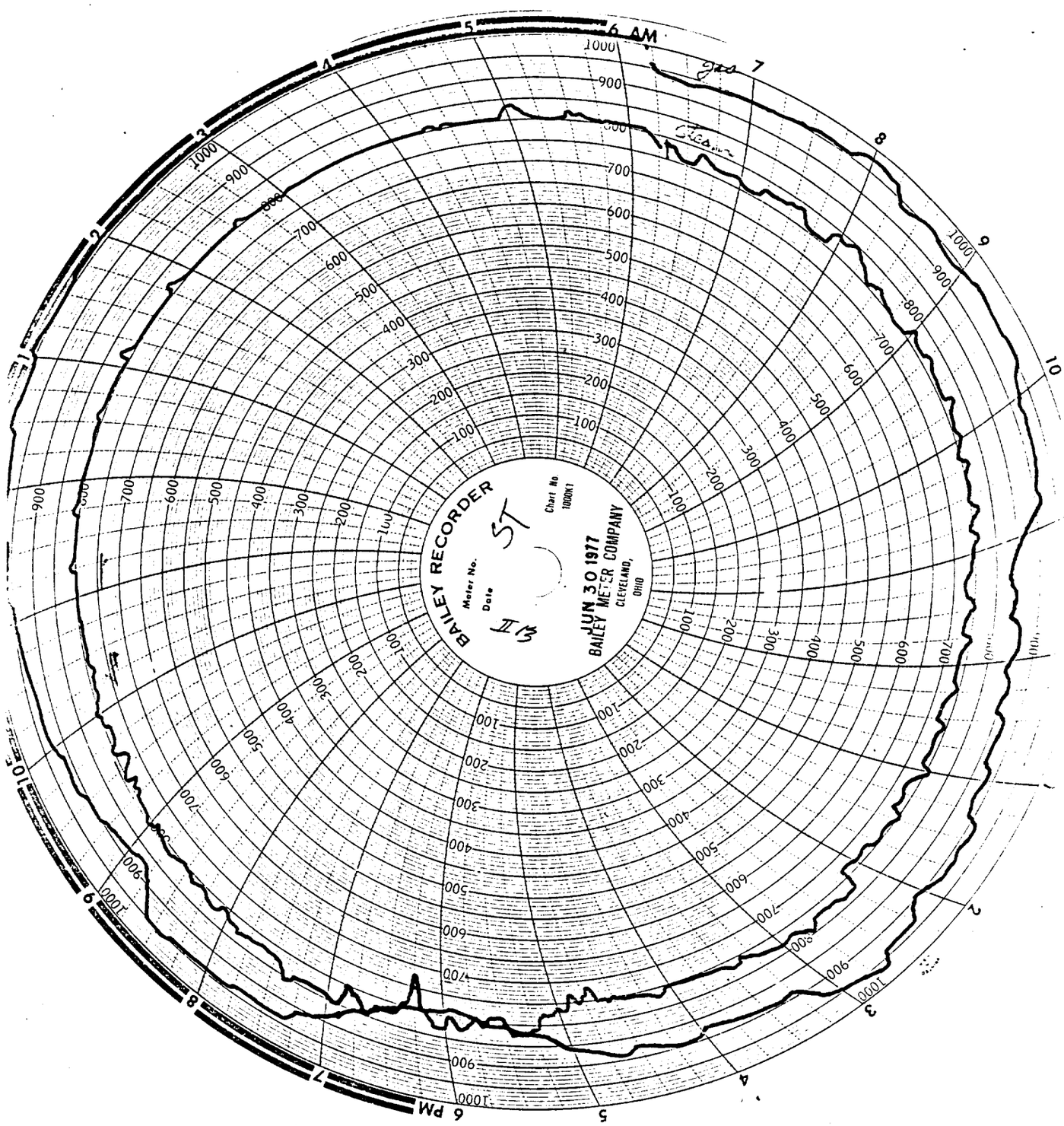
II 13


6 PM
7
8
9
10
11
MIDNIGHT
5
4
3
NOON
11
10
9
8
7
6 AM
5
4
3
BAILEY RECORDER
Meter No.
Date
JUN 28 1977
BAILEY METER COMPANY
CLEVELAND, OHIO
Chart No.
1000X1

II 13


MIDNIGHT
6 AM
NOON
6 PM
BAILEY RECORDER
Meter No.
Date
Chart No.
100PN1
JUN 29 1977
BAILEY METER COMPANY
CLEVELAND, OHIO

II 13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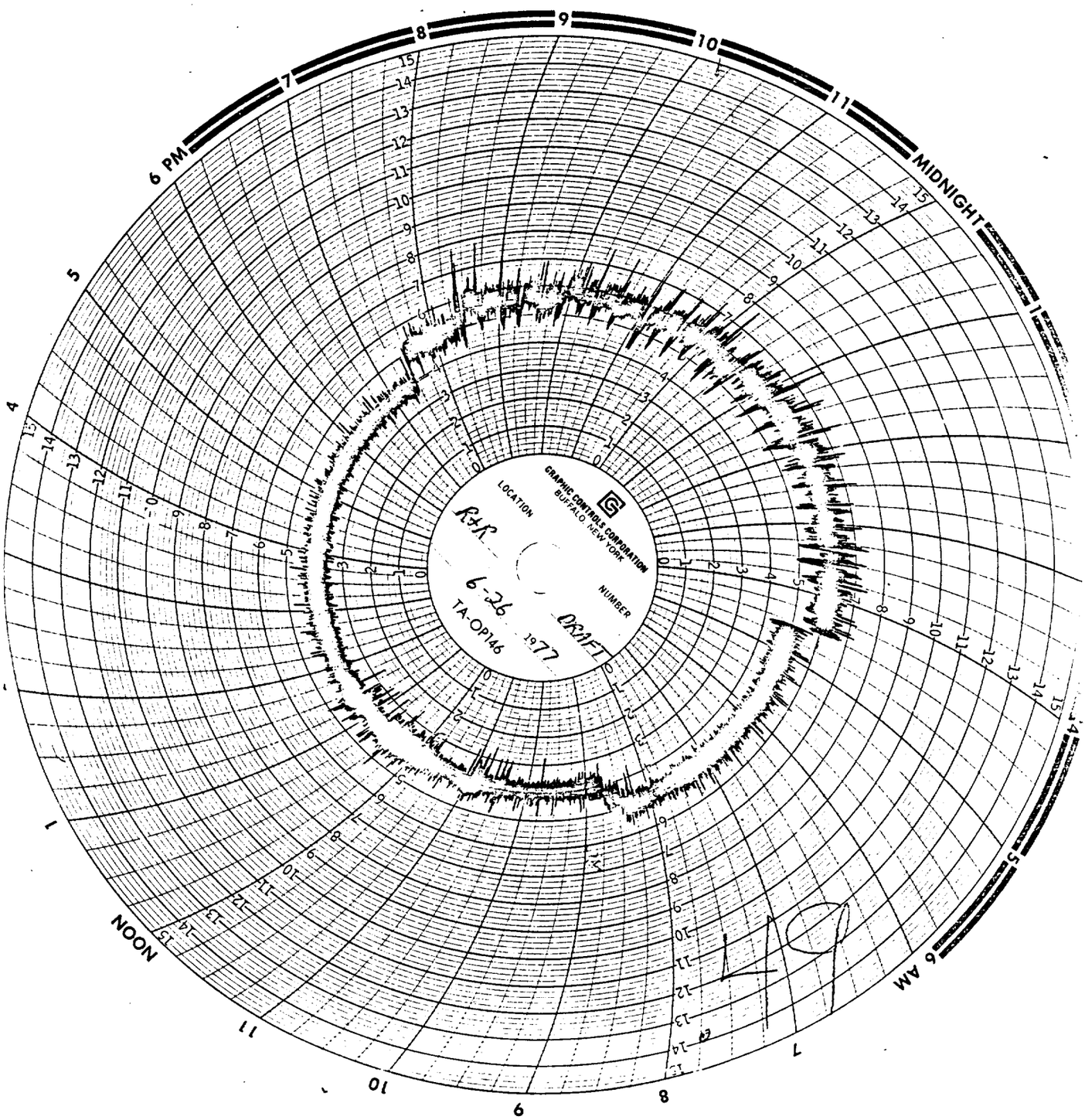
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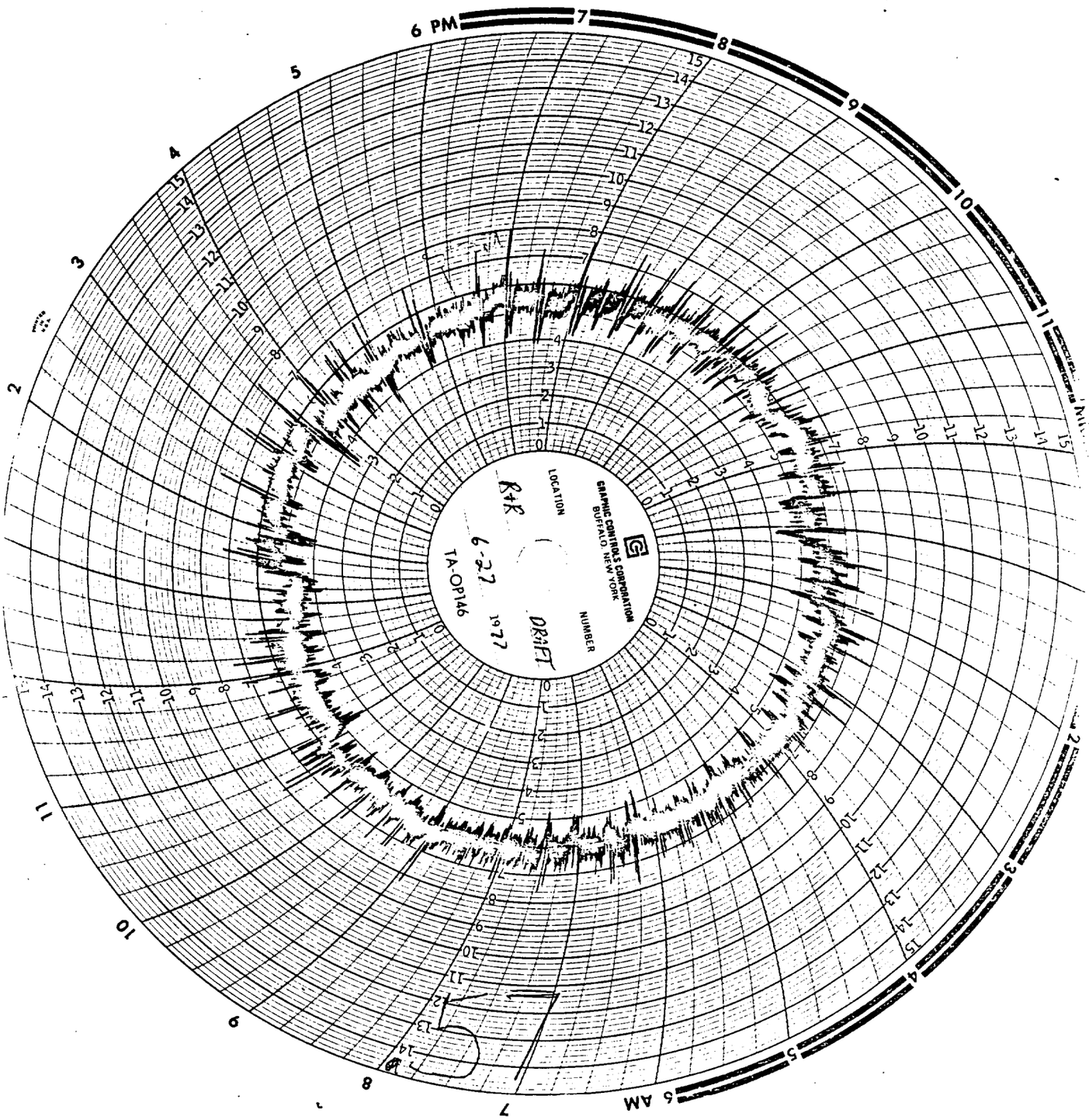
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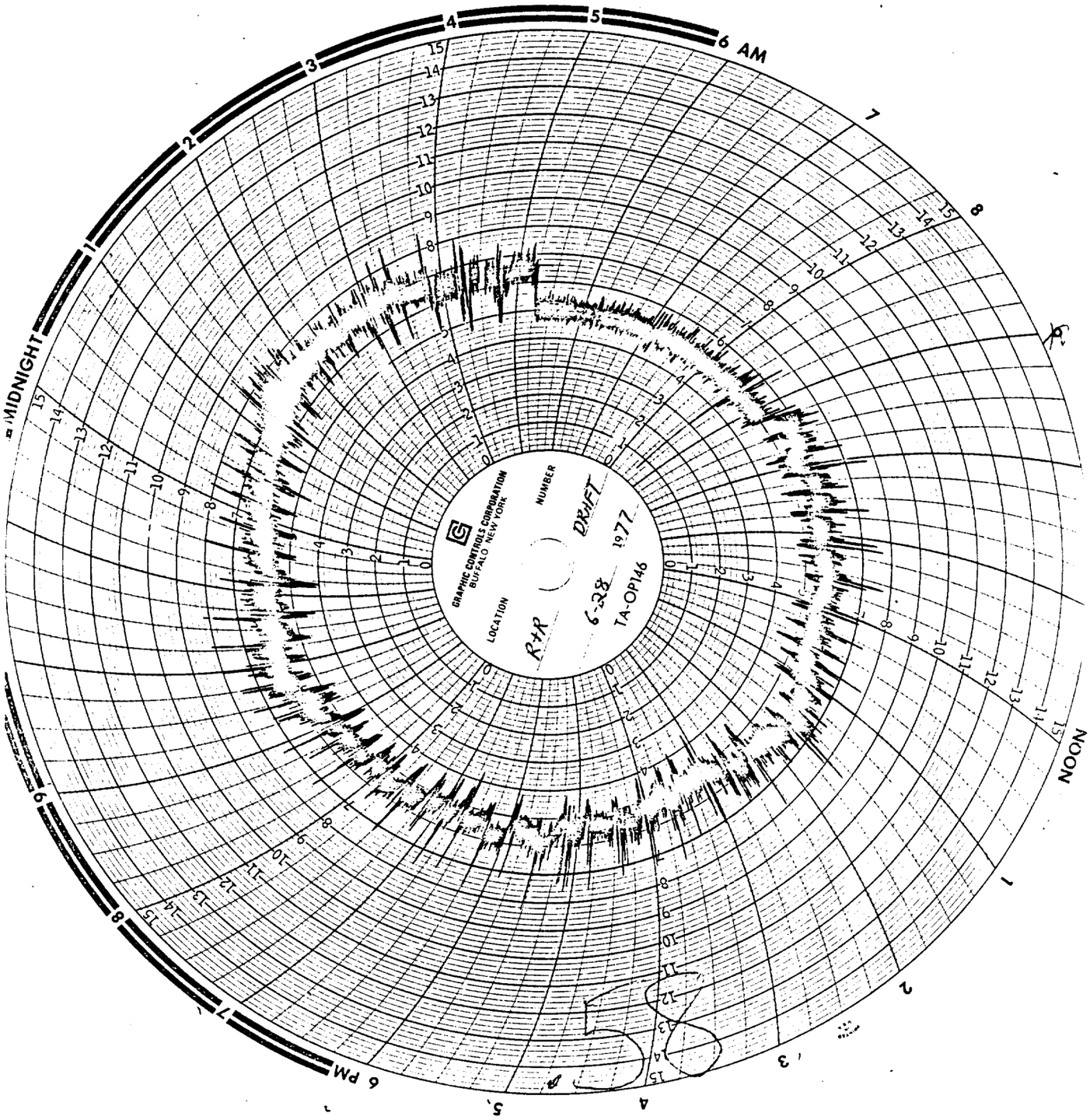
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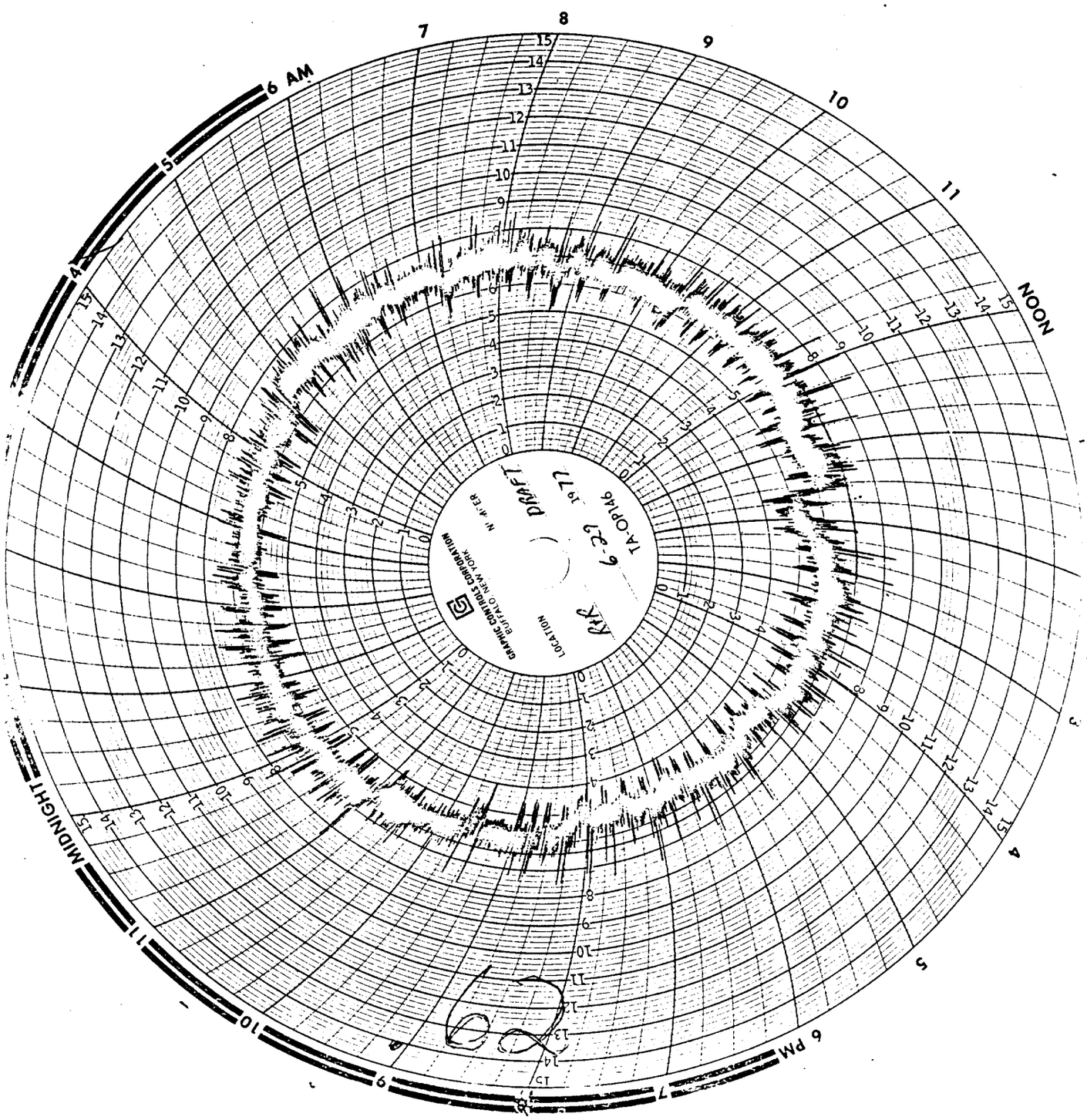
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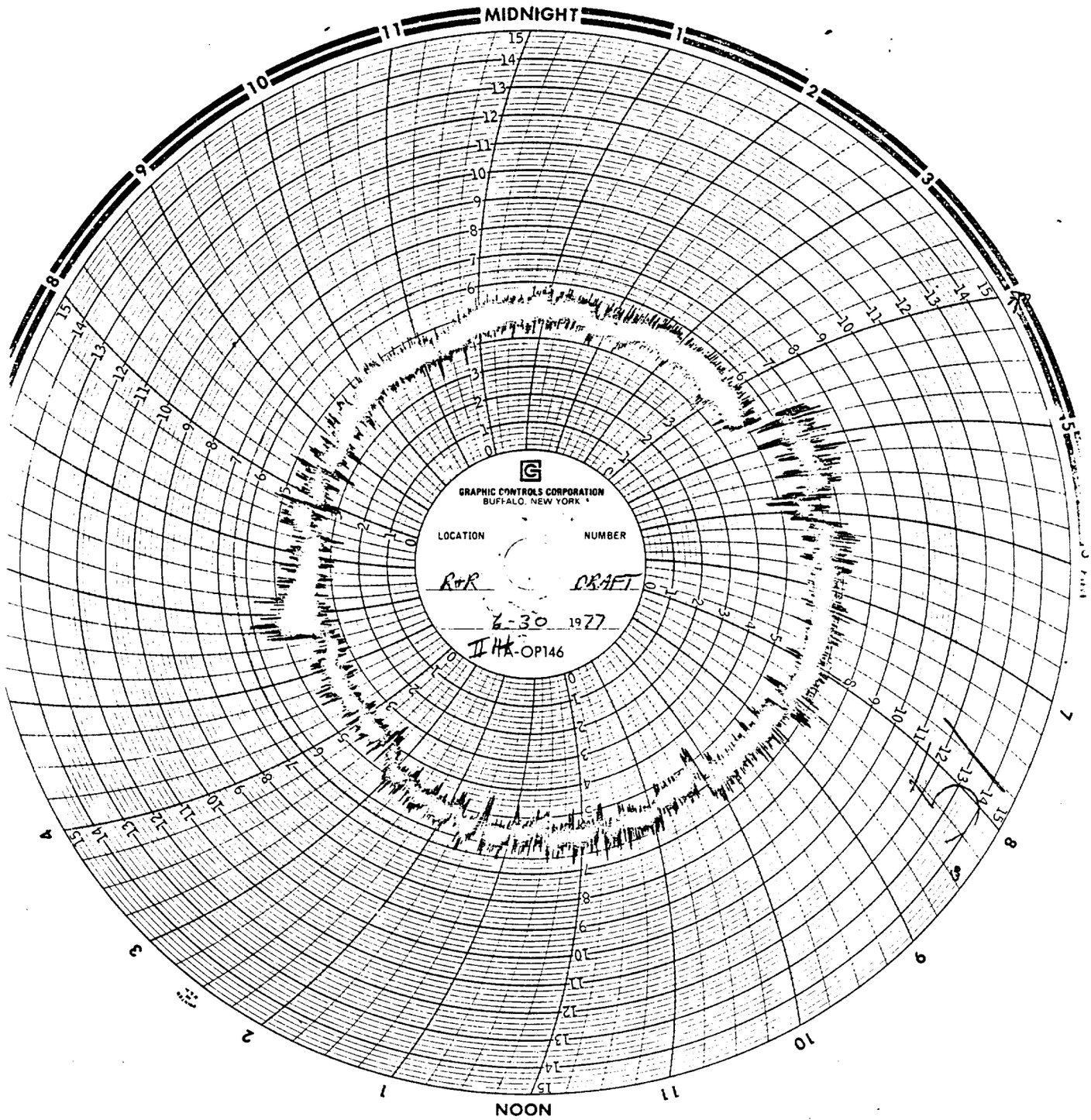
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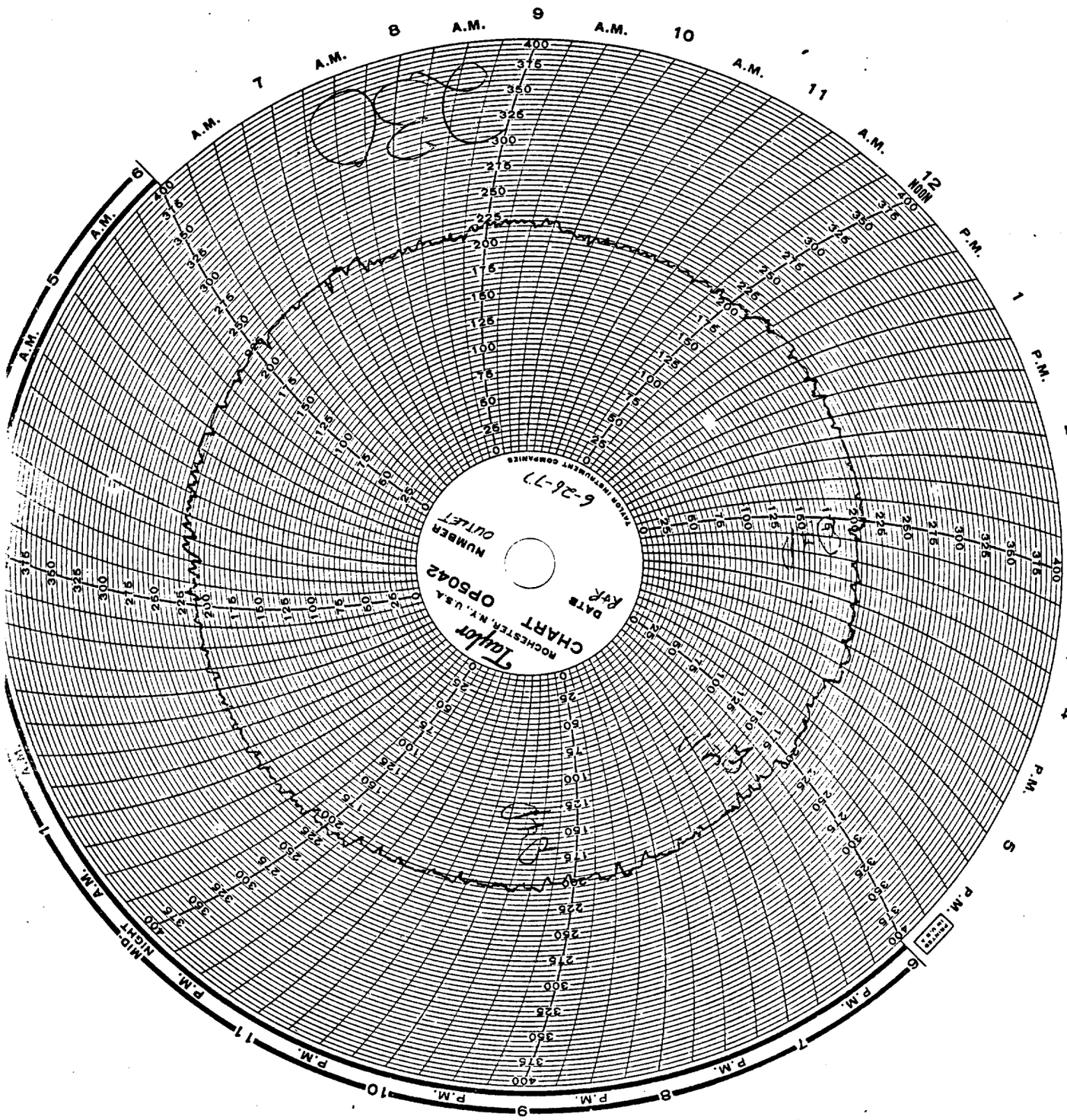
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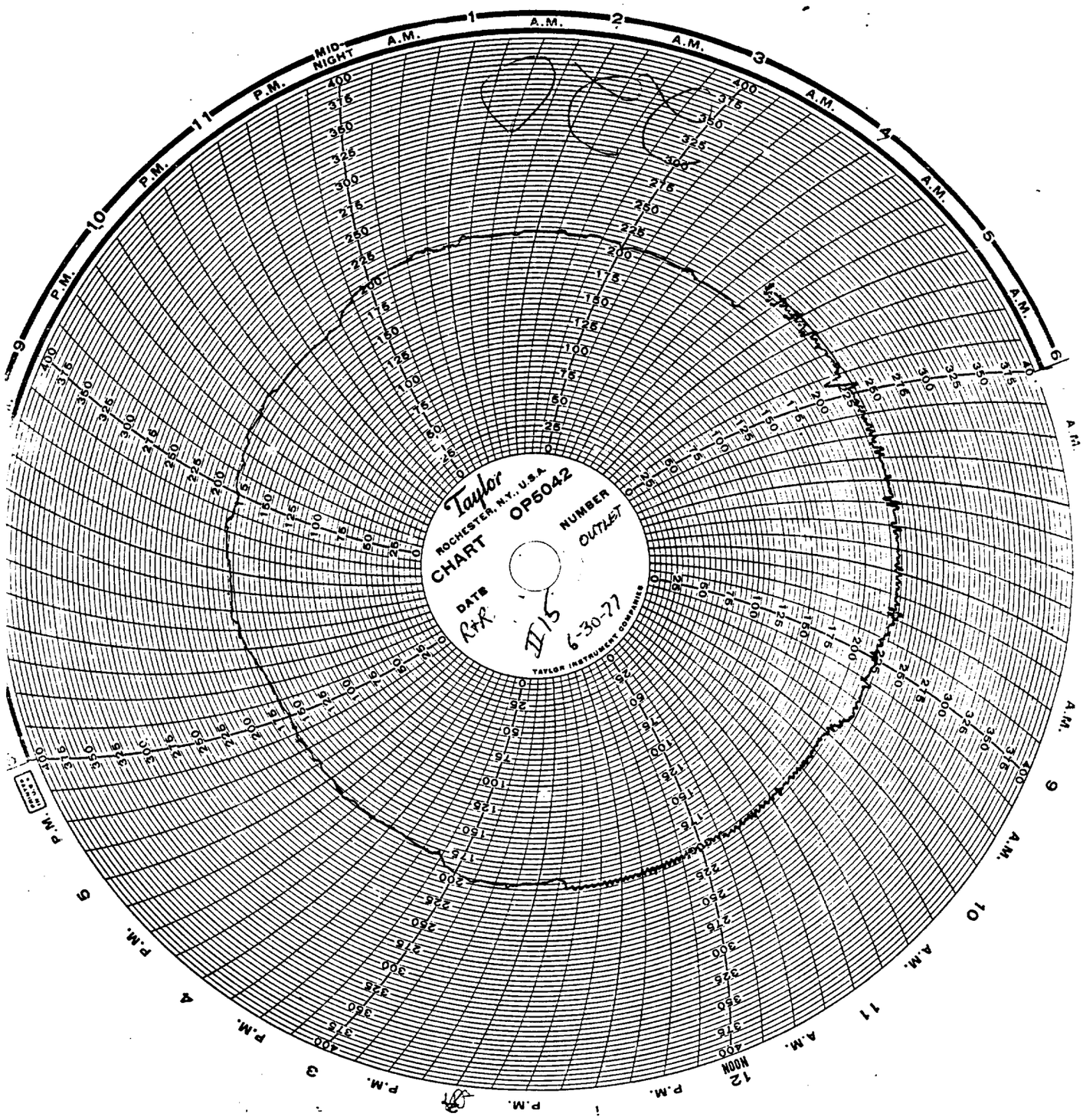
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