

PEACH BOTTOM ATOMIC POWER STATION

MONTHLY REPORT NO. 73

for

JULY 1979

THERMAL AND BIOLOGICAL

MONITORING PROGRAMS

FOR

UNITS NO. 2 AND 3

PHILADELPHIA ELECTRIC COMPANY

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MONTHLY REPORT NO. 73 FOR JULY, 1979
THERMAL AND BIOLOGICAL MONITORING PROGRAMS
PEACH BOTTOM ATOMIC POWER STATION
UNITS NO. 2 & 3

The operation of PBAPS during the month of July, 1979 was well within all applicable thermal criteria. The monthly mean delta T temperature (727 hourly readings) for the state line minus S2 location was 2.5°F higher than the mean of the preoperational experience. The 5°F delta T above ambient criteria at the state line was not exceeded on an hourly basis due to plant operation.

The daily river flows as measured at Holtwood Hydro-electric Station and the daily generation at PBAPS in thermal megawatts for the reporting period are presented in Table 1. Table 2 summarizes the hourly Conowingo Pond temperatures and Table 3 shows the impact hours above July confidence limits. Figure 1 shows the instrument and survey locations.

Figures 2, 3, 4, and 5 are isotherm plots, which include three (3) horizontal sections of boat surveys made during the July recording period. Boat survey information is tabulated in Table 4. Surveys for this period were started at the north end of Conowingo Pond. The delta T at the state line indicated on the isotherms is calculated by subtracting the Holtwood Dam temperature and the hourly Confidence Limit (applicable to the mid-survey time) from the state line temperature. This delta T can be interpreted as being caused by PBAPS since ambient hourly variations at the state line have been considered.

Although the isotherm plots do not cover the entire reporting period on a daily, hour by hour basis and cannot be used as a continuous indication of temperature variation, they do represent a fair treatment of typical plume characteristics. In addition, they may also be used as an empirical tool in estimating probable plume patterns in advance of certain natural and plant operating conditions.

Table 5, lists the results of analysis of Susquehanna River water for heavy metals during the months of January through July, 1979. Acidified samples were collected by the PECO Chemical Laboratory at the station intake, upstream of the station intake, and at the circulation water system discharge to Conowingo Pond.

Chlorination data for the months when the units were chlorinated are shown in Table 6. Table 7 lists the results of the monthly survey of chlorine residual determinations made on samples taken at the discharge to the river during chlorination of the plant.

TABLE 1

HOLTWOOD DAILY FLOWS(CFS) AND DAILY THERMAL MEGAWATTS- JUL 1979

OBS	YEAR	MONTH	DAY	HW_FLOW	MW_THERM
1	79	7	1	15400	6334
2	79	7	2	16200	6458
3	79	7	3	15200	6538
4	79	7	4	15700	6544
5	79	7	5	14700	6534
6	79	7	6	14200	6462
7	79	7	7	13700	3344
8	79	7	8	12400	3274
9	79	7	9	11200	3764
10	79	7	10	10700	5559
11	79	7	11	9800	6104
12	79	7	12	9800	6530
13	79	7	13	9300	6423
14	79	7	14	9200	5728
15	79	7	15	10800	6358
16	79	7	16	10500	6403
17	79	7	17	10900	6430
18	79	7	18	10100	5039
19	79	7	19	10800	4917
20	79	7	20	11900	6069
21	79	7	21	17000	6418
22	79	7	22	14900	6401
23	79	7	23	11400	6474
24	79	7	24	11500	6464
25	79	7	25	11700	6456
26	79	7	26	12600	5455
27	79	7	27	12100	6441
28	79	7	28	12400	6435
29	79	7	29	14100	6425
30	79	7	30	15500	6398
31	79	7	31	17400	6417

TABLE 2

SUMMARY OF HOURLY CONOWINGO POND WATER TEMPERATURES JULY, 1979

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
HW_FLOW	744	12680.65	2353.72	9200.00	17400.00
MW_THERM	744	5954.71	922.04	3274.00	6544.00
S2	727	25.53	1.80	22.20	29.10
S2A	593	26.27	1.58	22.90	29.60
S2S	727	25.53	1.80	22.20	29.10
S13	134	24.91	1.10	22.70	27.40
S13A	727	27.41	1.78	22.90	30.10
S13S	727	27.40	1.80	22.70	30.10
S30	742	24.88	1.70	21.80	27.30
S31	740	34.95	2.26	29.00	39.80
S32	737	31.48	1.84	25.50	34.30
D13_2	727	1.86	0.75	-0.30	4.00
D2_2A	593	-0.22	0.31	-1.90	2.00
D13_13A	134	-0.06	0.34	-1.00	1.30
D31_30	740	10.07	1.23	4.70	13.40
D32_30	737	6.59	1.14	3.00	9.30
D31_32	737	3.47	0.88	-2.90	6.10
DS13SS2S	727	1.86	0.75	-0.30	4.00

Definitions are as follows:

- N - Number of observations during the month
 S - Thermograph Station (e.g., S2 is thermograph Station 2)

(TEMPERATURES ARE IN DEGREES CENTIGRADE)

- D - Difference in temperature of the two stations
 (e.g. D13-2 is the temperature at Station 13
 minus the temperature at Station 2, in degrees
 Centigrade)

- HW Flow - Holtwood Flow in CFS
 MW Therm- Total Thermal Output of PBAPS in Megawatts
 S13S - Thermograph S13A is substituted when S13 is
 missing or spurious readings are observed.
 S2S - Thermograph S2A is substituted when S2 is missing
 or spurious readings are observed.

TABLE 3

PBAPS IMPACT HOURS ABOVE JULY CONFIDENCE LIMIT

There were no pre-op hours above July Confidence Limits.

There were no hourly exceptions in July, 1979.

Definitions:

S = Thermograph
D = Delta T (C°)
Hw Flow = Holtwood Daily River Flow (cfs)
MW Therm = Daily Thermal Generation of PBAPS (megawatts)
CL = Confidence Limit (C°)
EX = Exceptions (C°)
IMP = Impact (F°)

TABLE 4

BOAT SURVEY INFORMATION

SURVEY DATE	7/2/79	7/12/79	7/18/79	7/26/79
TIME:				
Survey Start (EST)	0840	0800	0900	0800
State Line (EST)	0955	0905	1007	0900
Survey Finish (EST)	1245	1020	1320	1300
HYDRAULIC DATA:				
Pond Elevation Start (Ft.)	107.85	107.90	107.83	108.02
Pond Elevation Finish (Ft.)	107.73	108.35	108.00	108.26
Natural Flow (24 hour ave., CFS)	13,600	9,100	10,400	12,200
Conowingo Inflow (24 hrs. ave., CFS)	15,950	10,425	10,000	14,425
Conowingo Dam Draft (24 hr. ave., CFS)	21,925	12,825	11,550	16,300
PBAPS Power Output:				
Unit 2: Thermal (MW)	3280	3272	3290	3290
Electrical (MW)	1063	1054	1047	1042
Unit 3: Thermal (MW)	3178	3258	1749	2165
Electrical (MW)	1006	1035	522	990
METEOROLOGICAL DATA:				
Time (EST)	0820	0795	0845	745
Air Temperature (°F)	70	73	75	75
Relative Humidity (%)	80	95	96	95
Precipitation (24 hour total, in)	0	0	.13	0
Wind Speed (mph)	11	1	5	5
Cloud Over	Partly	Partly	Partly	Cloudy
Location:	7	7	7	7
Wind Direction	West	NE	SE	South
WATER TEMPERATURE (THERMOGRAPH)				
Daily Mean: Sta. #2, °C, (°F)	23.2(73.8)	23.7(74.7)	26.5(79.7)	26.7(80.1)
Mid Survey: Sta. #2, °C, (°F)	23.1(73.6)	23.9(74.1)	26.3(79.3)	26.6(79.9)
WATER TEMPERATURE (SURVEY)				
PBAPS Discharge °C, (F)	29.5(85.1)	28.6(83.5)	32.4(90.3)	31.7(89.1)
Intake °C, (F)	22.9(73.2)	23.5(74.3)	28.5(79.7)	26.4(79.5)
ΔT °C, (°F)	6.6(11.9)	5.1(9.2)	5.9(10.6)	5.3(9.6)
Pond Surface Max. °C, (°F)	30.0(86.0)	28.4(83.1)	32.0(89.6)	31.8(89.2)
Min. °C, (°F)	22.9(73.2)	23.4(74.1)	26.3(79.3)	26.3(79.3)
Pond Bottom Max. °C, (°F)	28.3(82.9)	28.8(83.7)	32.3(90.1)	31.5(88.7)
Min. °C, (°F)	22.7(72.9)	22.8(73.0)	24.1(75.4)	26.1(79.0)
No. of C.W. Pumps Operating	6	6	6	6
No. of Cooling Towers Operating	3	3	4	4

POOR ORIGINAL

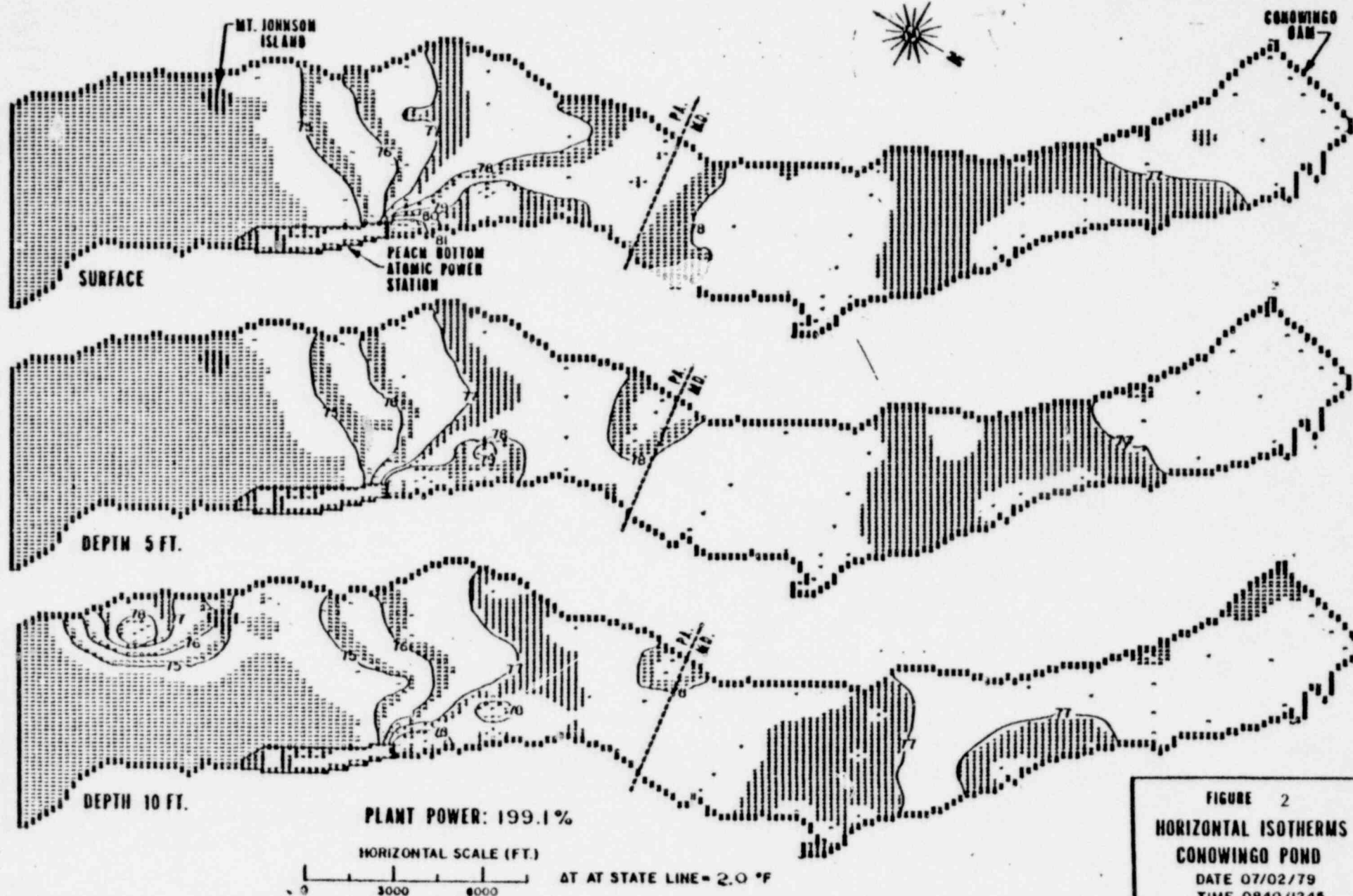


FIGURE 2
HORIZONTAL ISOTHERMS
CONOWINGO POND
DATE 07/02/79
TIME 0840/1245

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1126 235

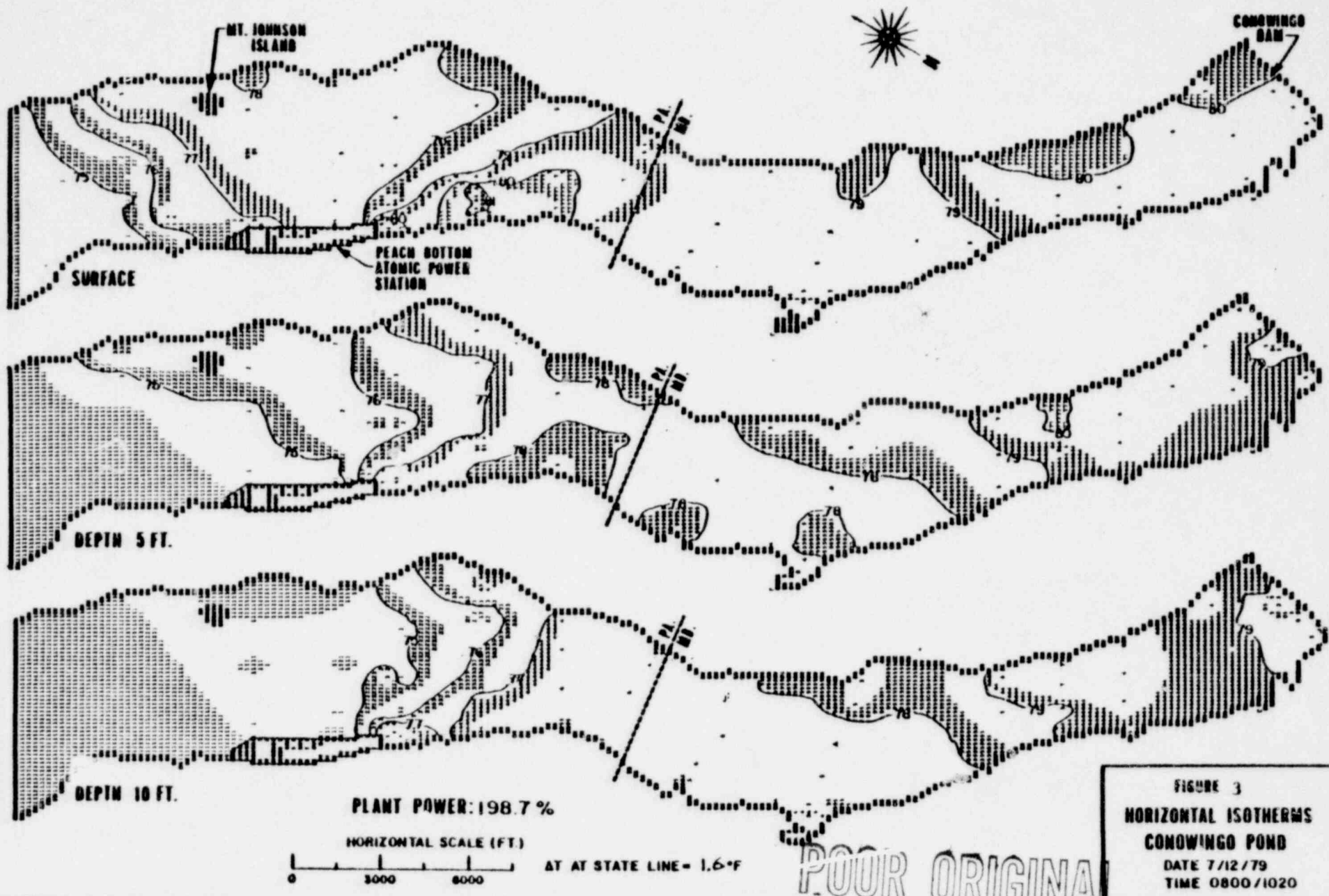


FIGURE 3
HORIZONTAL ISOTHERMS
CONOWINGO POND
DATE 7/12/79
TIME 0800/1020

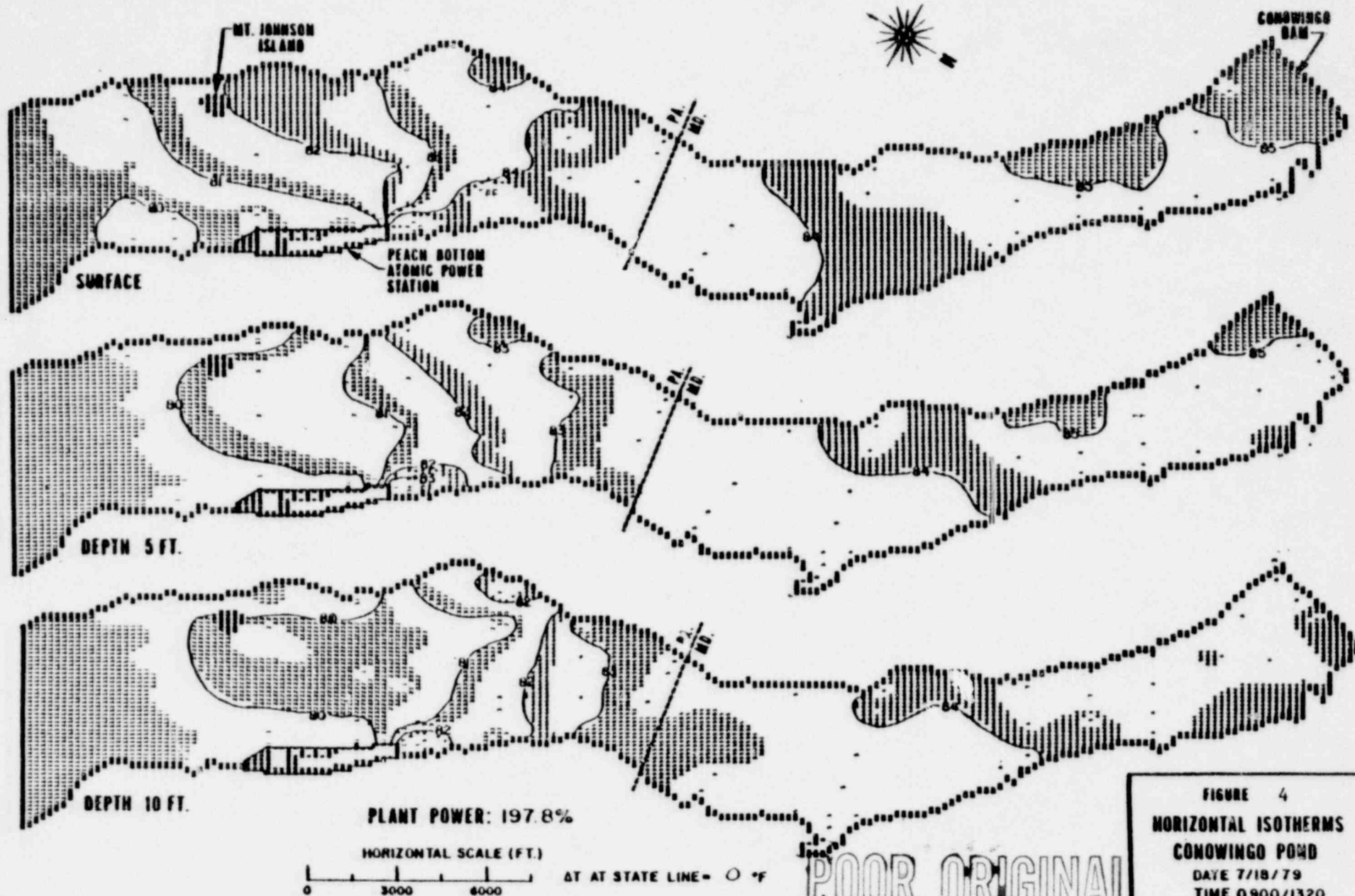


FIGURE 4
HORIZONTAL ISOOTHERMS
CONOWINGO POND
DATE 7/18/79
TIME 0900/1320

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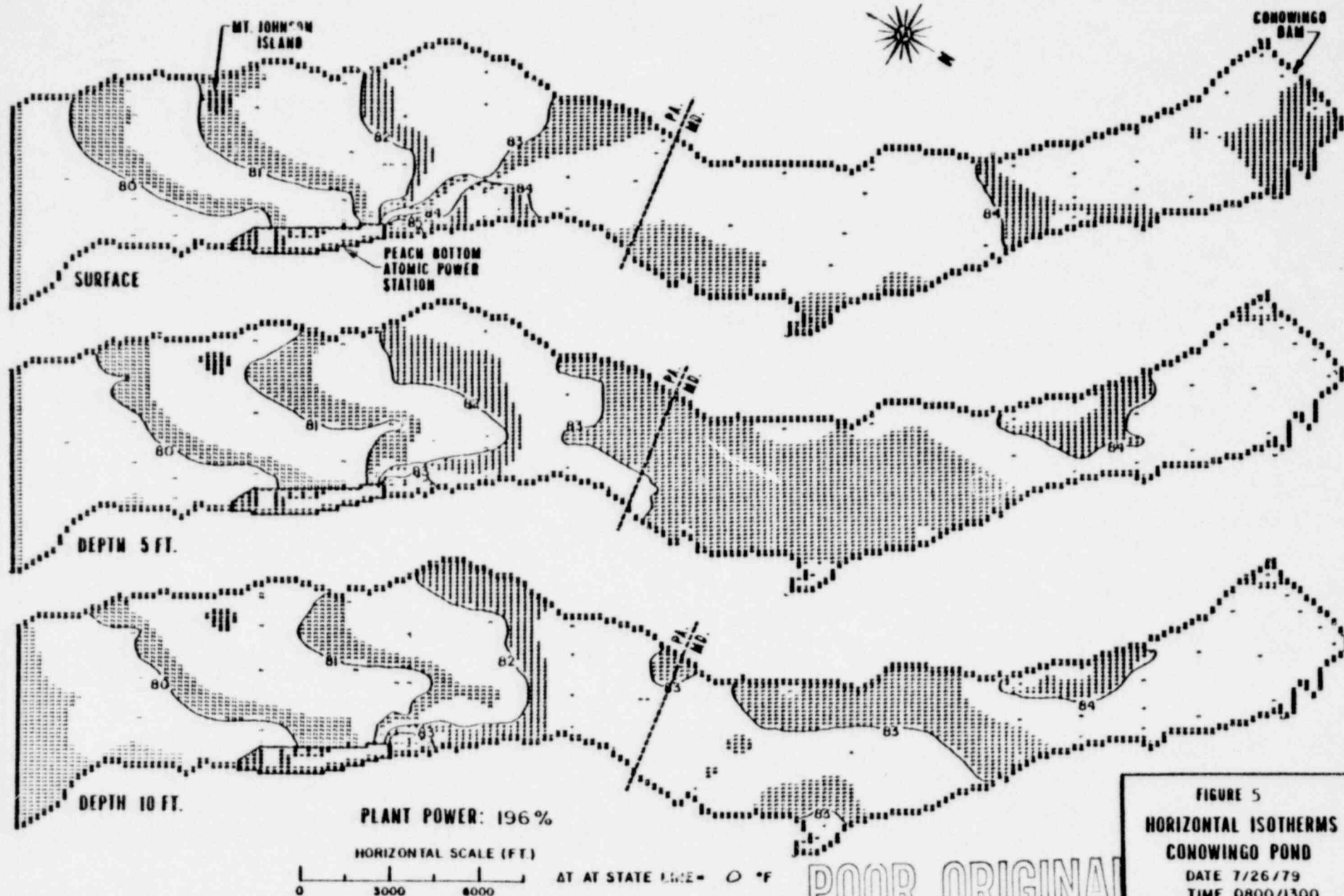


FIGURE 5
HORIZONTAL ISOTHERMS
CONOWINGO POND
DATE 7/26/79
TIME 0800/1300

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TABLE 5 (1 of 7)

SUSQUEHANNA RIVER WATER ANALYSIS

JANUARY, 1979

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

Date Sampled: 1/18/79

	<u>Upriver Sample (ppb)</u>	<u>Plant Intake (ppb)</u>	<u>Canal Discharge (ppb)</u>
Copper, Cu	2.7	4.0	9.2
Zinc, Zn	20	23	30
Iron, Fe	500	675	625
Cadmium, Cd	0.95	0.75	0.70
Cobalt, Co	5.0	5.0	4.4
Nickel, Ni	<100	<100	<100
Chromium, Cr	0.6	0.9	1.1
Manganese, Mn	265	245	220

Analyzed by: R. Loesch

Date Analyzed: 4/26/79

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POOR ORIGINAL

TABLE 5 (2 of 7)

SUSQUEHANNA RIVER WATER ANALYSIS

FEBRUARY, 1979

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

Date Sampled: 2/9/79

	<u>Upriver Sample (ppb)</u>	<u>Plant Intake (ppb)</u>	<u>Canal Discharge (ppb)</u>
Copper, Cu	<10	<10	<10
Zinc, Zn	38	50	38
Iron, Fe	550	550	675
Cadmium, Cd	<10	<10	<10
Cobalt, Co	<100	<100	<100
Nickel, Ni	<100	<100	<100
Chromium, Cr	<10	<10	<10
Manganese, Mn	238	220	243

Analyzed by: R. Loesch, T. King
Date Analyzed: 4/26/79

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POOR ORIGINAL

TABLE 5 (3 of 7)

SUSQUEHANNA RIVER WATER ANALYSIS

MARCH, 1979

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

Date Sampled: Unknown

	<u>Upriver Sample (ppb)</u>	<u>Plant Intake (ppb)</u>	<u>Canal Discharge (ppb)</u>
Copper, Cu	30	10	10
Zinc, Zn	118	90	63
Iron, Fe	5400	3475	2500
Cadmium, Cd	<10	<10	<10
Cobalt, Co	<100	<100	<100
Nickel, Ni	<100	<100	<100
Chromium, Cr	10	10	10
Manganese, Mn	1150	725	475

Analyzed by: R. Loesch, T. King
Date Analyzed: 4/26/79

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POOR ORIGINAL

TABLE 5 (4 of 7)

SUSQUEHANNA RIVER WATER ANALYSIS

APRIL, 1979

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

Date Sampled: 4/6/79

	<u>Upriver Sample (ppb)</u>	<u>Plant Intake (ppb)</u>	<u>Canal Discharge (ppb)</u>
Copper, Cu	<10	<10	<10
Zinc, Zn	20	38	40
Iron, Fe	1175	150	250
Cadmium, Cd	<10	<10	<10
Cobalt, Co	<100	<100	<100
Nickel, Ni	<100	<100	<100
Chromium, Cr	10	10	10
Manganese, Mn	190	43	193

Analyzed by: R. Loesch, T. King
Date Analyzed: 4/27/79

POOR ORIGINAL

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TABLE 5 (5 of 7)

SUSQUEHANNA RIVER WATER ANALYSIS

MAY 1979

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

Date sampled: 5/11/79

	<u>UPRIVER SAMPLE (ppb)</u>	<u>PLANT INTAKE (ppb)</u>	<u>CANAL DISCHARGE (ppb)</u>
Copper, Cu	8.3	7.9	13
Zinc, Zn	7.5	15	20
Iron, Fe	250	175	575
Cadmium, Cd	0.7	0.4	0.5
Cobalt, Co	3.5	2.5	3.0
Nickel, Ni	11.5	6.5	9.0
Chromium, Cr	1.1	1.1	1.2
Manganese, Mn	70	62.2	135

Analyzed by: T. King
Date Analyzed : 5/24/79

ktv

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TABLE 5 (6 of 7)
 SUSQUEHANNA RIVER WATER ANALYSIS
 JUNE, 1979
 PEACH BOTTOM ATOMIC POWER STATION
 PHILADELPHIA ELECTRIC COMPANY

Date Sampled: June 8, 1979

	<u>Upriver Sample (ppb)</u>	<u>Plant Intake (ppb)</u>	<u>Canal Discharge (ppb)</u>
Copper, Cu	2.3	7.2	10.2
Zinc, Zn	10.0	25.0	27.5
Iron, Fe	425.0	400.0	525.0
Cadmium, Cd	0.3	0.4	0.5
Cobalt, Cp	1.4	1.4	1.8
Nickel, Ni	4.5	8.5	6.2
Chromium, Cr	0.2	0.2	< 0.1
Manganese, Mn	200	175	200

Analyzed By: T. King
 Date Analyzed: June 14, 1979

DWM:tmg

7/24/79

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TABLE 5 (7 of 7)
 SUSQUEHANNA RIVER WATER ANALYSIS
 JULY, 1979
 PEACH BOTTOM ATOMIC POWER STATION
 PHILADELPHIA ELECTRIC COMPANY

Date Sampled: July 12, 1979

	<u>Upriver Sample (ppb)</u>	<u>Plant Intake (ppb)</u>	<u>Canal Discharge (ppb)</u>
Copper, Cu	5.0	7.0	15.0
Zinc, Zn	12.5	22.5	25.0
Iron, Fe	225	50	300
Cadmium, Cd	0.5	0.5	0.5
Cobalt, Co	4.5	3.0	1.5
Nickel, Ni	14.5	7.5	14.5
Chromium, Cr	1.0	0.5	0.5
Manganese, Mn	125	75	75

Analyzed By: T. King
 Date Analyzed: July 21, 1979

DWM/ktv

TABLE 6 (1 of 10)
MONTHLY CHLORINE DATA
PEACH BOTTOM ATOMIC POWER STATION
PHILADELPHIA ELECTRIC COMPANY
UNIT #2 CONDENSER
SECTIONS A, B, C

March, 1979

DATE	CHLORINATION RATE, #/day			TIME, MINUTES			FREE CL ₂ OUTLET, MG/1		
	A	B	C	A	B	C	A	B	C
1									
2									
3									
4									
5									
6									
7	3,500	3,500	-	15	25	-	* * *	* * *	-
8	3,500	3,500	-	15	15	-	* *	* *	-
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27	5,000	-	-	15	-	-	0	-	-
28	5,000	-	5,000	15	-	15	0.1	-	0.2
29	5,000	-	5,000	15	-	15	0.2	-	0
30									
31	5,000	-	5,000	15	-	15	0.4	-	0.3

* Sample pump malfunction

* * Invalid readings due to improperly cleaned chlorine test equipment after calibration

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TABLE 6 (2 of 10)
MONTHLY CHLORINE DATA

March, 1

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

UNIT #3 CONDENSER

SECTIONS A, B, C

March, 1979

DATE	CHLORINATION RATE, #/day			TIME, MINUTES			FREE Cl ₂ OUTLET, MG/l		
	A	B	C	A	B	C	A	B	C
1									
2									
3									
4									
5									
6									
7	3,500	-	3,500	15	-	15	<0.1	-	<0.1
8	4,500	-	4,500	15	-	15	<0.1	-	<0.1
9	7,500	-	7,500	15	-	15	0.1	-	0.5
10	7,500	-	7,500	15	-	15	0.2	-	0.5
11	7,500	-	7,500	15	-	15	0.2	-	0.4
12	7,500	-	7,500	15	-	15	0	-	0.6
13	7,500	-	7,500	15	-	15	0	-	0.3
14	7,500	-	7,500	15	-	15	0	-	0
15	7,500	-	7,500	15	-	15	0	-	0
16	7,500	-	7,500	20	-	20	<0.1	-	0.2
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27	5,000	5,000	5,000	15	15	15	0.3	0	0.1
28	5,000	5,000	5,000	15	15	15	0	0	0.2
29	5,000	5,000	5,000	15	15	15	0	0	0.4
30	5,000	5,000	5,000	15	15	15	<0.1	<0.1	0.5
31	5,000	5,000	5,000	15	15	15	0	0.1	0.5

TABLE 6 (3 of 10)

MONTHLY CHLORINE DATA
 PEACH BOTTOM ATOMIC POWER STATION
 PHILADELPHIA ELECTRIC COMPANY
 UNIT #2 CONDENSER
 SECTIONS A, B, C

April, 1979

<u>Date</u>	<u>Chlorination Rate, #/day</u>			<u>Time, minutes</u>			<u>Free Cl₂ outlet, mg/l</u>		
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>
1	5,000	—	5,000	15	—	15	0.3	—	0.3
2	5,000	—	5,000	15	—	15	0.1	—	0.3
3	5,000	—	5,000	15	—	15	0.2	—	0.5
4	5,000	—	5,000	15	—	15	0	—	0.4
5	6,500	—	8,000	15	—	15	0.1	—	0.6
6	8,000	—	8,000	15	—	15	0.2	—	0.6
7									
8	8,000	—	8,000	15	—	15	0.2	—	0
9	8,000	8,000	8,000	15	15	15	0.3	0.2	0.5
10	8,000	8,000	8,000	15	15	15	0.3	0.3	0.4
11	8,000	8,000	8,000	15	15	15	0.4	0.4	0.5
12	8,000	8,000	8,000	15	15	15	0.4	0	0.4
13	8,000	8,000	8,000	15	15	15	0.8	0	0.5
14									
15									
16	8,000	8,000	8,000	15	15	15	0.2	0.2	0.2
17	8,000	8,000	8,000	15	15	15	0.5	0.4	0.3
18	8,000	8,000	8,000	15	15	15	0.3	0.4	0.5
19	8,000	8,000	8,000	15	15	15	0.3	0.4	0.5
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

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TABLE 6 (4 of 10)

MONTHLY CHLORINE DATA
 PEACH BOTTOM ATOMIC POWER STATION
 PHILADELPHIA ELECTRIC COMPANY
 UNIT #3 CONDENSER
 SECTIONS A, B, C

April, 1979

<u>Date</u>	<u>Chlorination Rate. #/day</u>			<u>Time. minutes</u>			<u>Free Cl₂ outlet. mg/l</u>		
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>
1	5,000	5,000	5,000	15	15	15	0	0	0.3
2	5,000	5,000	5,000	15	15	15	0.1	0	0.3
3	5,000	5,000	5,000	15	15	15	0	0	0
4	5,000	5,000	5,000	15	15	15	0	0	0.2
5	8,000	7,000	7,000	15	15	15	0	0	0
6	8,000	8,000	8,000	15	15	15	0	0	0.5
7	8,000	8,000	8,000	15	15	15	0	0	0.7
8	8,000	8,000	8,000	15	15	15	0	0	0.8
9	8,000	8,000	8,000	15	15	15	0	0	0.6
10	8,000	8,000	8,000	15	15	15	0	0	0.6
11	8,000	8,000	8,000	15	15	15	0	0	0.5
12	8,000	8,000	8,000	15	15	15	0	0	0.4
13	8,000	8,000	8,000	15	15	15	0	0	0.5
14									
15									
16	8,000	8,000	8,000	15	15	15	0.1	0.3	0.4
17	8,000	8,000	8,000	15	15	15	0	0	0.2
18	8,000	8,000	8,000	15	15	15	0	0	0.4
19	5,000	5,000	7,500	15	15	15	0.2	0	0.4
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

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TABLE 6 (5 of 10)

MONTHLY CHLORINE DATA

PEACH BOTTOM ATOMIC STATION

PHILADELPHIA ELECTRIC COMPANY

UNIT #2 CONDENSER

SECTIONS A, B, C

MAY, 1979

Date	Chlorination Rate, #/day			Time, minutes			Free Cl ₂ outlet, mg/l		
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>
1.									
2.									
3.									
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22.									
23.									
24.									
25.									
26.									
27.									
28.									
29.									
30.	2500	2500	2500	15	15	15	0.05	0.05	0.05
31.	4000	4000	4000	15	15	15	0.05	0.05	0.05

TABLE 6 (6 of 10)

MONTHLY CHLORINE DATA
 PEACH BOTTOM ATOMIC POWER STATION
 PHILADELPHIA ELECTRIC COMPANY
 UNIT #3 CONDENSER
 SECTIONS A, B, C
 MAY, 1979

Date	Chlorination Rate, #/day			Time, minutes			Free Cl ₂ outlet, mg/l		
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>
1.									
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25.									
26.									
27.									
28.									
29.									
30.	2500	2500	2500	15	15	15	0.01	0.01	0.01
31.	4000	4000	4000	15	15	15	0	0	0.1

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TABLE 6 (7 of 10)

MONTHLY CHLORINE DATA

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

UNIT #2 CONDENSER

SECTIONS A, B, C

JUNE, 1979

DATE	<u>Chlorination Rate, #/day</u>			<u>Time, minutes</u>			<u>Free Cl₂ Outlet, mg/l</u>		
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>
1	4000	4000	4000	15	15	15	0.1	0.1	0.1
2	4000	4000	4000	15	15	15	0.1	0.1	0.1
3	4000	4000	4000	15	15	15	0.1	0.1	0.1
4	4000	4000	4000	15	15	15	0.1	0.1	0.1
5	3500	3500	8000	15	15	15	0.05	0.1	0.05
6	8000	8000	8000	15	15	15	0.02	0.08	0.15
7	8000	8000	8000	15	15	15	0.1	0.05	0.15
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	8000	7000	7000	15	15	15	0.1	0.05	0.1
24	8000	7500	7000	15	15	15	0.1	0.1	0.05
25	8000	7500	7500	15	15	15	0.1	0.1	0.1
26	8000	8000	8000	15	15	15	0.1	0.1	0.1
27	8000	7500	6500	15	15	15	0.1	0.1	0.1
28	6500	6500	6500	15	15	15	0.1	0.1	0.1
29	6500	6500	6500	15	15	15	0.6	0.8	0.8
30	7500	7500	7500	15	15	15	0.1	0.1	0.1
31									

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TABLE 6 (8 of 10)

MONTHLY CHLORINE DATA

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

UNIT #3 CONDENSER

SECTIONS A, B, C

June, 1979

DATE	Chlorination Rate, #/day			Time, minutes			Free Cl ₂ outlet, mg/l		
	A	B	C	A	B	C	A	B	C
1	4000	4000	4000	15	15	15	0.1	0.1	0.1
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	8000	8000	8000	15	15	15	0.1	0.1	0.05
24	7300	7000	7000	15	15	15	0.1	0.1	0.1
25	7500	7500	6500	15	15	15	0.1	1	0.1
26	7500	7500	7000	15	15	15	0.1	.1	0.1
27	8000	7500	7500	15	15	15	0.	.1	0.1
28	6500	6500	6500	15	15	15	0.	0.1	0.1
29	6500	6500	6500	15	15	15	0.9	0.2	0.5
30	7500	7500	7500	15	15	15	0.1	0.1	0.1
31									

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TABLE 6 (9 of 10)
MONTHLY CHLORINE DATA
PEACH BOTTOM ATOMIC POWER STATION
PHILADELPHIA ELECTRIC COMPANY
UNIT #2 CONDENSER
SECTIONS A, B, C
JULY 1979

DATE	Chlorination Rate, #/day			Time, minutes			Free Cl ₂ Outlet, mg/l		
	A	B	C	A	B	C	A	B	C
1	7000	7000	7000	15	15	15	0.1	0.1	0.1
2	6500	6500	6500	15	15	15	0.1	0.1	0.1
3	6500	6500	6500	15	15	15	0.1	0.1	0.1
4	7000	7000	7000	15	15	15	0.1	0.1	0.1
5	6000	45000	52000	15	15	15	0.1	0.1	0.1
6	7500	5500	5500	15	15	15	0.1	0.1	0.1
7	-	6000	-	-	15	-	-	0.1	-
8	-	-	-	-	-	-	-	-	-
9	7800	7800	7800	20	15	15	0.1	0.1	0.1
10	7500	-	6000	15	15	15	0.1	0.1	0.1
11	8000	8000	7000	15	15	15	0.1	0.1	0.1
12	8000	7000	6500	15	15	15	0.1	0.1	0.1
13	7000	7000	7000	15	15	15	0.1	0.1	0.1
14	8000	8000	7000	15	15	15	0.1	0.1	0.1
15	7500	7500	7500	15	15	15	1.0	1.0	0
16	6500	-	6500	15	-	15	0.3	-	0
17	7500	7500	7500	15	15	15	0.3	0	0.1
18	7500	7500	7500	15	15	15	0	0	0
19	8000	8000	8000	15	15	15	0	0.1	0
20	7300	7300	7300	20	20	20	0.01	0.1	0.02
21	8000	7500	7500	15	15	15	0	0.01	0.03
22	7400	7400	7400	15	15	15	0.01	0	0.02
23	7400	7400	7500	15	15	15	0	0	0
24	6500	7500	7400	15	15	15	0	0	0
25	7500	7500	7500	15	15	15	0.1	0.3	0.4
26	7500	7500	7500	15	15	15	0	0	0
27	7500	7400	7400	15	15	15	0	0	0
28	7500	7500	7000	15	15	15	0	0	0
29	7000	7000	7000	15	15	15	0	0	0
30	-	-	-	-	-	-	-	-	-
31	7500	7500	7500	15	15	15	0	0.1	0.1

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POOR ORIGINAL

TABLE 6 (10 of 10)

MONTHLY CHLORINE DATA

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

UNIT #3 CONDENSER

SECTIONS A, B, C

JULY 1979

DATE	Chlorination Rate, #/day			Time, minutes			Free Cl ₂ outlet, mg/l		
	A	B	C	A	B	C	A	B	C
1	7000	7000	7000	15	15	15	0.1	0.1	0.1
2	6500	6500	6500	15	15	15	0.1	0.1	0.1
3	6500	6500	6500	15	15	15	0.1	0.1	0.1
4	7000	7000	7000	15	15	15	0.1	0.1	0.1
5	5200	5500	5200	15	15	15	0.1	0.1	0.1
6	5500	5000	5500	15	15	15	0.1	0.1	0.1
7	6500	6500	5500	15	15	15	0.1	0.1	0.1
8	7500	7500	7500	15	15	15	0.1	0.1	0.1
9	7800	7800	7800	15	15	15	0.1	0.1	0.1
10	5000	8000	7000	15	15	15	0.1	0.1	0.1
11	6700	6500	6000	15	15	15	0.1	0.1	0.1
12	6000	6000	6000	15	15	15	0.1	0.1	0.1
13	7000	7000	7000	15	15	15	0.1	0.1	0.1
14	7500	7500	7500	15	15	15	0.1	0.1	0.1
15	7500	7500	7500	15	15	15	0.1	0.1	0.1
16	-	-	-	-	-	-	-	-	-
17	7500	7500	7500	15	15	15	0	0	0.5
18	-	7500	-	-	15	-	-	0	-
19	8000	8000	8000	15	15	15	0	0	0
20	7500	7400	7300	15	20	20	0.04	0.05	0.06
21	7500	7500	7500	15	15	15	0.01	0	0.04
22	6000	7200	7200	15	15	15	0	0.02	0.01
23	7500	7500	7500	15	15	15	0.05	0.01	0.02
24	7500	7500	7500	15	15	15	0	0	0
25	6800	6800	7500	15	15	15	0	0.01	0.01
26	5000	5000	5000	15	15	15	0	0	0
27	7400	7400	7400	15	15	15	0	0	0
28	7000	6500	6000	15	15	15	0	0	0
29	7000	7000	7000	15	15	15	0	0	0
30	-	-	-	-	-	-	-	-	-
31	7000	7000	7000	15	15	15	0	0.1	0.1

TABLE 7 (1 of 5)
MONTHLY CHLORINE SURVEY
PEACH BOTTOM ATOMIC POWER STATION
PHILADELPHIA ELECTRIC COMPANY

The following data lists results of the monthly survey of chlorine residual determinations made on samples taken at the canal discharge to the river during chlorination in the plant on March 13, 1979.

CHLORINATION DATA

TIME	CONDENSER SECTION	RATE #/DAY	FREE CHLORINE RESIDUAL, MG/l		
			START	MIDDLE	END
11:08 AM	3A	7,500	0.20	-	-
11:15 AM	3A	7,500	-	0.10	-
11:23 AM	3A	7,500	-	-	0.05

CANAL DISCHARGE DATA

TIME	TOTAL CHLORINE RESIDUAL, MG/l
11:08 AM	<0.1
11:23 AM	<0.1
11:38 AM	<0.1
11:53 AM	<0.1
12:08 PM	<0.1
12:23 PM	<0.1

TABLE 7 (2 of 5)

MONTHLY CHLORINE SURVEY

PEACH BOTTOM ATOMIC POWER STATION

PHILADELPHIA ELECTRIC COMPANY

The following data lists results of the monthly survey of chlorine residual determinations made on samples taken at the canal discharge to the river during chlorination in the plant on April 11, 1979.

Chlorination Data

<u>Time</u>	<u>Condenser Section</u>	<u>Rate #/Day</u>	<u>Free Chlorine Residual, mg/l</u>		
			<u>Start</u>	<u>Middle</u>	<u>End</u>
2:15 p.m.	38	8,000	0	—	—
2:22 p.m.	38	8,000	—	0	—
2:30 p.m.	38	8,000	—	—	0

Canal Discharge Data

<u>Time</u>	<u>Total Chlorine Residual, mg/l</u>
2:15 p.m.	<0.1
2:30 p.m.	<0.1
2:45 p.m.	<0.1
3:00 p.m.	<0.1
3:15 p.m.	<0.1
3:30 p.m.	<0.1

TABLE 7 (3 of 5)

MONTHLY CHLORINE SURVEY

PEACH BOTTOM ATOMIC POWER STATION
 PHILADELPHIA ELECTRIC COMPANY
 MAY, 1979

The following data lists results of the monthly survey of chlorine residual determinations made on samples taken at the canal discharge to the river during chlorination in the plant on May 31, 1979.

Chlorination Data

<u>Time</u>	<u>Condenser Section</u>	<u>rate #/Day</u>	<u>Free chlorine Residual, mg/l</u>		
			<u>Start</u>	<u>Middle</u>	<u>End</u>
10:30 am	2A	4000	0.05	---	---
10:37 am	2A	4000	---	0.05	---
10:45 am	2A	4000	---	---	0.05

Canal Discharge Data

<u>Time</u>	<u>Total Chlorine Residual, mg/l</u>
10:30 am	< 0.1
10:45 am	< 0.1
11:00 am	< 0.1
11:15 am	< 0.1
11:30 am	< 0.1
11:45 am	< 0.1

TABLE 7 (4 of 5)

MONTHLY CHLORINE SURVEY
PEACH BOTTOM ATOMIC POWER STATION
PHILADELPHIA ELECTRIC COMPANY

JUNE, 1979

The following data lists results of the monthly survey of chlorine residual determinations made on samples taken at the canal discharge to the river during chlorination in the plant on June 29, 1979.

Chlorination Data

<u>Time</u>	<u>Condenser Section</u>	<u>Rate #/Day</u>	<u>Free Chlorine Residual, mg/l</u>		
			<u>Start</u>	<u>Middle</u>	<u>End</u>
12:55 pm	2A	6500	0.4	-	-
1:03 pm	2A	6500	-	0.4	-
1:10 pm	2A	6500	-	-	0.6

Canal Discharge Data

<u>Time</u>	<u>Total Chlorine Residual, mg/l</u>
12:55 pm	<0.1
1:10 pm	<0.1
1:25 pm	<0.1
1:40 pm	<0.1
1:55 pm	<0.1
2:10 pm	<0.1

TABLE 7 (5 of 5)

MONTHLY CHLORINE SURVEY
PEACH BOTTOM ATOMIC POWER STATION
PHILADELPHIA ELECTRIC COMPANY
JULY 1979

The following data lists results of the monthly survey of chlorine residual determinations made on samples taken at the canal discharge to the river during chlorination in the plant on July 18, 1979.

Chlorination Data

<u>Time</u>	<u>Condenser Section</u>	<u>Rate #/Day</u>	<u>Free Chlorine Residual, mg/l</u>		
			<u>Start</u>	<u>Middle</u>	<u>End</u>
3:00 pm	2c	7500	0	-	-
3:08 pm	2c	7500	-	0	-
3:15 pm	2c	7500	-	-	0

Canal Discharge Data

<u>Time</u>	<u>Total Chlorine Residual, mg/l</u>
3:00 pm	<0.1
3:15 pm	<0.1
3:30 pm	<0.1
3:45 pm	<0.1
4:00 pm	<0.1
4:15 pm	<0.1