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RE: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Mr. O'Reilly:

Please find enclosed forty (40) copies of the Oconee Nuclear Station Annual Report for the period ending December 31, 1977. This report is submitted pursuant to the Oconee Nuclear Station Technical Specification 6.6.1.2, Annual Operating Report, and the Non-Radiological Environmental Specifications, Appendix B to Operating Licenses DPR-38, DPR-47, and DPR-55.

Very truly yours,

William O. Parker, Jr.

William O. Parker, Jr. By HBO

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OCONEE NUCLEAR STATION
ANNUAL OPERATING REPORT
1977

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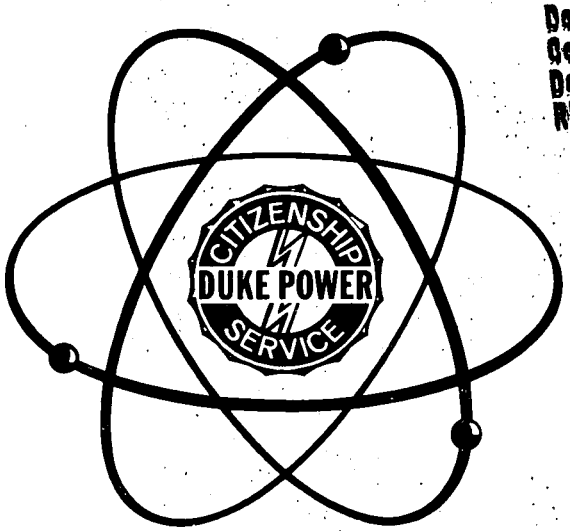

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ANNUAL OPERATING REPORT
1977

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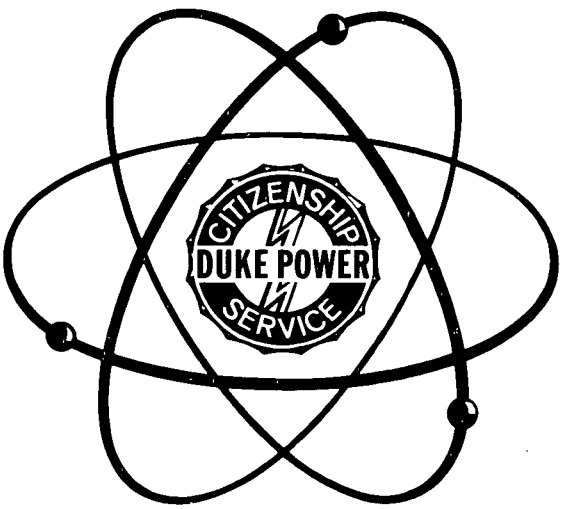

D U K E P O W E R C O M P A N Y

OCONEE NUCLEAR STATION

ANNUAL REPORT

PERIOD ENDING DECEMBER 31, 1977

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SECTION I

NON-RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT

1. INTRODUCTION

This section of the Annual Report is submitted pursuant to the Non-Radiological Environmental Technical Specifications, Appendix B, to Operating Licenses DPR-38, DPR-47, and DPR-55. This section summarizes the Non-Radiological Environmental Surveillance Program for Oconee Nuclear Station from January 1 through December 31, 1977.

1.1 STATION COOLING WATER SYSTEMS THERMAL LIMITS

Specification: A. The cooling water effluent temperature at the discharge shall not exceed 100 F for a time period in excess of two hours. In the event of the once-in-20 years combination of extreme natural conditions the station's generating capacity shall be limited as necessary to keep the discharge temperature from exceeding 100 F unless there is a serious need for the lost power. A serious need for lost power is defined here as a condition which would result in voltage reductions or load shedding (except contracted interruptable loads). Under these circumstances, the licensee shall notify AEC/DOL immediately by telephone and the discharge temperature shall not be allowed to exceed 103 F.

B. Temperature rises from the condenser intake to the discharge shall not exceed 28 F. Further, the temperature rise should not exceed 22 F when the inlet temperature is greater than 68 F.

C. Normal station operations shall be programmed so that effluent temperatures shall not decrease more than 6 F per hour during the winter and 10 F per hour during the spring, summer, and fall (Duke Power Company 1973a).

I. INTRODUCTION

The noted specifications were established to minimize the effects of thermal discharges on aquatic life in the vicinity of Oconee Nuclear Station. The limits on station discharge temperature, temperature rise across the condensers, and the rate of decrease of the discharge temperature permit sufficient operational flexibility to allow for the starting or shutdown of a circulation water pump during unit load changes. Under normal operation, station procedures incorporate the programming of load changes to minimize the resulting transient thermal change.

II. METHODS AND MATERIALS

The ONS daily average Condenser Cooling Water (CCW) intake and discharge temperatures and flow rates for the period January 1 through December 31, 1977 are presented in Table 1.1-1 and Figure 1.1-1. These data represent a summary of the Environmental Monitoring Report (EMR) computer program. The EMR computes the station flow rate, inlet temperature and outlet temperature continuously (intervals less than one minute) and prints hourly maximum, minimum, and average values. During periods of equipment failure, representative data readings are recorded manually.

III. RESULTS AND DISCUSSION

With respect to Specification A, Table 1.1-1 and Figure 1.1-1 show that the maximum allowable discharge temperature of 100.0 F (37.8 C) was not exceeded at any time during the year 1977. The maximum daily average discharge temperature of 87.3 F (30.7 C) and the maximum hourly average discharge temperature of 88.1 F (31.2 C) both occurred on September 26. The daily average inlet temperature ranged from a low of 42.8 F (6.0 C) on February 12 to a high of 75.7 F (24.3 C) on October 2.

With respect to Specification B, the temperature rise (ΔT) within the CCW system did not exceed 28.0 F^{o} (15.6 C^{o}) nor did it exceed 22.0 F^{o} (12.2 C^{o}) when the inlet temperature was greater than 68.0 F (20.0 C). The maximum hourly average ΔT when the inlet temperature was greater than 68.0 F (20.0 C) was 16.2 F^{o} (9.0 C^{o}) which occurred on August 3. When the inlet temperature was less than 68.0 (20.0 C) the maximum hourly average ΔT was 25.1 F^{o} (13.9 C^{o}) which occurred on January 3.

With respect to Specification C, the maximum allowable temperature decrease at the discharge was not exceeded during normal station operations or any other time. The maximum hourly temperature decrease at the CCW outlet for the winter period was 4.5 F^{o} (2.5 C^{o}) which occurred on February 16. The maximum hourly decrease in outlet temperature for the remainder of the year was 5.8 F^{o} (3.2 C^{o}) which occurred on September 21.

A comparison of inlet and outlet temperatures in 1977 with previous years show temperatures to be cooler than both 1975 and 1976 (Figures 1.1-2 and 1.1-3). Inlet temperatures in February were 3-4 C^{o} colder than in any of the previous years (1973-1976) due to the extremely cold winter. The mean monthly discharge temperature during the summer months was also 3-4 C^{o} cooler than the two previous summers primarily because of the reduced thermal capacity of ONS due to refueling outages.

IV. SUMMARY AND CONCLUSIONS

The operation of ONS in 1977 was well within the thermal limits for maximum discharge temperature, maximum ΔT, and the maximum hourly decrease in ΔT. Temperature regimes both at the inlet and outlet were considerably cooler than in the past two years due to meteorology and ONS operations.

REFERENCES CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2 and 3, Duke Power Company, U.S. Atomic Energy Commission, Docket Nos. 50-259, 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC) Washington D.C.

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
January, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$\times 10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1514.7	(5733.1)	49.3	(9.6)	71.9	(22.2)	22.6	(12.6)
2	1433.7	(5426.6)	49.1	(9.5)	72.8	(22.6)	23.7	(13.1)
3	1392.6	(5271.0)	49.0	(9.4)	73.0	(22.8)	24.0	(13.4)
4	1392.3	(5269.9)	49.0	(9.4)	73.0	(22.8)	24.0	(13.4)
5	1391.9	(5268.3)	49.1	(9.5)	73.1	(22.8)	24.0	(13.3)
6	1394.8	(5279.3)	49.0	(9.4)	73.0	(22.8)	24.0	(13.4)
7	1392.2	(5269.5)	49.0	(9.4)	73.0	(22.8)	24.0	(13.4)
8	1392.1	(5269.1)	48.8	(9.4)	72.7	(22.6)	23.9	(13.2)
9	1392.6	(5271.0)	48.4	(9.1)	72.3	(22.4)	23.9	(13.3)
10	1396.9	(5287.3)	48.5	(9.2)	72.4	(22.4)	23.9	(13.2)
11	1393.5	(5274.4)	48.2	(9.0)	72.0	(22.2)	23.8	(13.2)
12	1392.2	(5269.5)	47.9	(8.8)	71.7	(22.0)	23.8	(13.2)
13	1392.0	(5268.7)	47.7	(8.7)	71.7	(22.0)	24.0	(13.3)
14	1392.4	(5270.2)	47.4	(8.6)	71.3	(21.8)	23.9	(13.2)
15	1392.0	(5268.7)	47.3	(8.5)	70.1	(21.2)	22.8	(12.7)
16	1384.9	(5241.8)	47.4	(8.6)	63.3	(17.4)	15.9	(8.8)
17	1173.2	(4440.6)	47.5	(8.6)	66.6	(19.2)	19.1	(10.6)
18	1174.0	(4443.6)	47.1	(8.4)	66.2	(19.0)	19.1	(10.6)
19	1173.4	(4441.3)	46.7	(8.2)	66.0	(18.9)	19.3	(10.7)
20	1179.6	(4464.8)	46.5	(8.0)	65.6	(18.6)	19.1	(10.6)
21	1172.2	(4436.8)	46.5	(8.0)	65.6	(18.6)	19.1	(10.6)
22	1172.9	(4439.4)	46.0	(7.8)	65.2	(18.4)	19.2	(10.6)
23	1172.8	(4439.0)	45.3	(7.4)	64.6	(18.1)	19.3	(10.7)
24	1172.7	(4438.7)	44.8	(7.1)	64.7	(18.2)	19.9	(11.1)
25	1172.2	(4436.8)	44.9	(7.2)	64.9	(18.3)	20.0	(11.1)
26	1336.9	(5060.2)	45.2	(7.4)	67.4	(19.6)	22.2	(12.2)
27	1392.2	(5269.5)	45.3	(7.4)	69.2	(20.6)	23.9	(13.2)
28	1391.4	(5266.4)	44.9	(7.2)	69.6	(20.9)	24.7	(13.7)
29	1390.3	(5262.3)	45.3	(7.4)	69.9	(21.0)	24.6	(13.6)
30	1390.2	(5261.9)	45.2	(7.4)	69.6	(20.9)	24.4	(13.5)
31	1421.4	(5380.0)	44.1	(6.7)	68.1	(20.0)	24.0	(13.3)
	Avg.		Avg.		Avg.		Avg.	
	1333.1	(5045.8)	47.2	(8.4)	69.6	(20.9)	22.4	(12.5)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
February, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$x10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1275.9	(4829.3)	43.8	(6.6)	62.6	(17.0)	18.8	(10.4)
2	1340.8	(5074.9)	43.3	(6.3)	60.4	(15.8)	17.1	(9.5)
3	1390.3	(5262.3)	43.2	(6.2)	59.6	(15.4)	16.4	(9.2)
4	1177.8	(4458.0)	43.5	(6.4)	63.4	(17.4)	19.9	(11.0)
5	1195.3	(4524.2)	44.4	(6.9)	64.1	(17.8)	19.7	(10.9)
6	1390.7	(5263.8)	43.9	(6.6)	60.5	(15.8)	16.6	(9.2)
7	1390.6	(5263.4)	43.6	(6.4)	60.3	(15.7)	16.7	(9.3)
8	1516.4	(5739.6)	43.3	(6.3)	64.1	(17.8)	20.8	(11.5)
9	1604.0	(6071.1)	43.5	(6.4)	64.7	(18.2)	21.2	(11.8)
10	1506.3	(5701.3)	43.3	(6.3)	66.2	(19.0)	22.9	(12.7)
11	1391.7	(5267.6)	43.1	(6.2)	67.6	(19.8)	24.5	(13.6)
12	1389.6	(5259.6)	42.8	(6.0)	67.2	(19.6)	24.4	(13.6)
13	1389.0	(5257.4)	42.9	(6.0)	67.0	(19.4)	24.1	(13.4)
14	1262.1	(4777.0)	42.9	(6.0)	64.2	(17.9)	21.3	(11.9)
15	1165.9	(4412.9)	43.1	(6.2)	62.6	(17.0)	19.5	(10.8)
16	1165.1	(4409.9)	43.3	(6.3)	62.8	(17.1)	19.5	(10.8)
17	1164.6	(4408.0)	43.3	(6.3)	62.7	(17.0)	19.4	(10.7)
18	1165.9	(4412.9)	43.4	(6.4)	62.9	(17.2)	19.5	(10.8)
19	1166.4	(4414.8)	43.8	(6.6)	63.3	(17.4)	19.5	(10.8)
20	1166.1	(4413.7)	45.4	(7.4)	64.9	(18.3)	19.5	(10.9)
21	1166.4	(4414.8)	44.5	(7.0)	64.1	(17.8)	19.6	(10.8)
22	1166.2	(4414.1)	44.6	(7.0)	64.2	(17.9)	19.6	(10.9)
23	1229.4	(4653.3)	44.9	(7.2)	65.3	(18.5)	20.4	(11.3)
24	1390.0	(5261.2)	45.7	(7.6)	66.8	(19.4)	21.1	(11.8)
25	1390.9	(5264.6)	46.5	(8.0)	64.1	(17.8)	17.6	(9.8)
26	1390.6	(5263.4)	45.8	(7.6)	64.9	(18.3)	19.1	(10.7)
27	1389.7	(5260.0)	45.6	(7.6)	69.8	(21.0)	24.2	(13.4)
28	1540.7	(5831.5)	45.6	(7.6)	67.3	(19.6)	21.7	(12.0)
	Avg.		Avg.		Avg.		Avg.	
	1317.1	(4985.2)	44.0	(6.6)	64.3	(18.0)	20.3	(11.4)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
March, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$x10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1576.2	(5965.9)	45.5	(7.5)	61.3	(16.3)	15.8	(8.8)
2	1406.6	(5324.0)	45.5	(7.5)	63.4	(17.4)	17.9	(9.9)
3	1362.9	(5158.6)	45.5	(7.5)	63.9	(17.7)	18.4	(10.2)
4	1362.2	(5155.9)	45.6	(7.6)	63.9	(17.7)	18.3	(10.1)
5	1361.1	(5151.8)	45.6	(7.6)	64.0	(17.8)	18.4	(10.2)
6	1361.3	(5152.5)	45.6	(7.6)	64.1	(17.8)	18.5	(10.2)
7	1361.2	(5152.1)	45.5	(7.5)	63.5	(17.5)	18.0	(10.0)
8	1362.2	(5155.9)	45.5	(7.5)	62.7	(17.0)	17.2	(9.5)
9	1362.6	(5157.4)	45.5	(7.5)	62.7	(17.0)	17.2	(9.5)
10	1227.1	(4644.6)	45.5	(7.5)	64.1	(17.8)	18.6	(10.3)
11	1170.0	(4428.5)	45.4	(7.4)	64.6	(18.1)	19.2	(10.7)
12	1169.6	(4426.9)	45.4	(7.4)	64.8	(18.2)	19.4	(10.8)
13	1219.1	(4614.3)	46.1	(7.8)	66.3	(19.0)	20.2	(11.2)
14	1553.8	(5881.1)	47.0	(8.4)	67.0	(19.4)	20.0	(11.0)
15	1572.0	(5950.0)	47.2	(8.4)	66.9	(19.4)	19.7	(11.0)
16	1387.9	(5253.2)	47.0	(8.4)	67.8	(19.9)	20.8	(11.5)
17	1388.1	(5254.0)	46.8	(8.2)	69.6	(20.9)	22.8	(12.7)
18	1388.5	(5255.5)	47.0	(8.4)	70.2	(21.2)	23.2	(12.8)
19	1388.3	(5254.7)	47.3	(8.5)	70.5	(21.4)	23.2	(12.9)
20	1387.9	(5253.2)	47.4	(8.6)	70.5	(21.4)	23.1	(12.8)
21	1387.7	(5252.4)	47.0	(8.4)	70.9	(21.6)	23.9	(13.2)
22	1387.6	(5252.1)	47.1	(8.4)	70.9	(21.6)	23.8	(13.2)
23	1385.5	(5244.1)	47.1	(8.4)	60.6	(15.9)	13.5	(7.5)
24	1295.2	(4902.3)	47.5	(8.6)	62.8	(17.1)	15.3	(8.5)
25	1366.6	(5172.6)	47.8	(8.8)	64.4	(18.0)	16.6	(9.2)
26	1365.8	(5169.6)	48.0	(8.9)	64.7	(18.2)	16.7	(9.3)
27	1365.8	(5169.6)	48.1	(9.0)	65.0	(18.4)	16.9	(9.4)
28	1312.8	(4968.9)	48.1	(9.0)	64.6	(18.1)	16.5	(9.1)
29	1269.7	(4805.8)	48.4	(9.1)	64.6	(18.1)	16.2	(9.0)
30	1247.0	(4719.9)	48.4	(9.1)	65.1	(18.4)	16.7	(9.3)
31	1127.3	(4266.8)	48.8	(9.4)	66.8	(19.4)	18.0	(10.0)
	Avg.		Avg.		Avg.		Avg.	
	1351.0	(5113.5)	46.7	(8.2)	65.6	(18.6)	18.9	(10.4)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
April, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$x10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1157.7	(4382.0)	49.4	(9.6)	68.8	(20.4)	19.4	(10.8)
2	1159.9	(4390.2)	49.1	(9.5)	68.5	(20.3)	19.4	(10.8)
3	1274.5	(4824.0)	48.9	(9.4)	67.4	(19.6)	18.5	(10.2)
4	1546.1	(5852.0)	50.0	(10.0)	70.5	(21.4)	20.5	(11.4)
5	1547.1	(5855.8)	51.1	(10.6)	72.7	(22.6)	21.6	(12.0)
6	1549.5	(5864.9)	51.0	(10.6)	71.9	(22.2)	20.9	(11.6)
7	1554.7	(5884.5)	51.5	(10.8)	71.7	(22.0)	20.2	(11.2)
8	1563.8	(5919.0)	51.4	(10.8)	73.4	(23.0)	22.0	(12.2)
9	1567.2	(5931.9)	50.5	(10.3)	72.6	(22.6)	22.1	(12.3)
10	1567.7	(5933.7)	50.5	(10.3)	72.5	(22.5)	22.0	(12.2)
11	1683.1	(6370.5)	50.9	(10.5)	71.6	(22.0)	20.7	(11.5)
12	1737.0	(6574.5)	51.2	(10.6)	71.5	(22.0)	20.3	(11.4)
13	1611.5	(6099.5)	51.4	(10.8)	69.9	(21.0)	18.5	(10.2)
14	1564.0	(5919.7)	51.4	(10.8)	73.0	(22.8)	21.6	(12.0)
15	1614.2	(6109.7)	51.6	(10.9)	73.4	(23.0)	21.8	(12.1)
16	1754.4	(6640.4)	52.2	(11.2)	72.5	(22.5)	20.3	(11.3)
17	1754.0	(6638.9)	52.3	(11.3)	72.8	(22.6)	20.5	(11.3)
18	1686.8	(6384.5)	52.3	(11.3)	73.3	(23.0)	21.0	(11.7)
19	1611.9	(6101.0)	52.6	(11.4)	74.0	(23.4)	21.4	(12.0)
20	1540.7	(5831.5)	52.8	(11.6)	74.8	(23.8)	22.0	(12.2)
21	1562.5	(5914.1)	52.5	(11.4)	74.6	(23.6)	22.1	(12.2)
22	1564.3	(5920.9)	52.7	(11.5)	74.3	(23.5)	21.6	(12.0)
23	1563.5	(5917.8)	52.9	(11.6)	72.5	(22.5)	19.6	(10.9)
24	1472.5	(5573.4)	53.2	(11.8)	70.2	(21.2)	17.0	(9.4)
25	1479.4	(5599.5)	52.9	(11.6)	72.3	(22.4)	19.4	(10.8)
26	1703.8	(6448.9)	53.2	(11.8)	72.5	(22.5)	19.3	(10.7)
27	1759.3	(6659.0)	53.5	(12.0)	72.2	(22.4)	18.7	(10.4)
28	1784.1	(6752.8)	54.1	(12.3)	73.8	(23.2)	19.7	(10.9)
29	1803.9	(6827.8)	54.3	(12.4)	74.6	(23.6)	20.3	(11.2)
30	1926.5	(7291.8)	53.7	(12.0)	72.8	(22.6)	19.1	(10.6)
	Avg.		Avg.		Avg.		Avg.	
	1588.8	(6013.6)	51.9	(11.0)	72.3	(22.4)	20.4	(11.4)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
May, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$x10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1924.6	(7284.6)	53.9	(12.2)	73.0	(22.8)	19.1	(10.6)
2	1922.1	(7275.1)	54.4	(12.4)	73.6	(23.1)	19.2	(10.7)
3	1909.8	(7228.6)	54.7	(12.6)	74.4	(23.6)	19.7	(11.0)
4	1907.6	(7220.3)	54.9	(12.7)	75.0	(23.9)	20.1	(11.2)
5	1916.6	(7254.3)	54.8	(12.6)	74.3	(23.5)	19.5	(10.9)
6	1916.3	(7253.2)	55.1	(12.8)	74.2	(23.4)	19.1	(10.6)
7	1819.4	(6886.4)	54.8	(12.6)	71.4	(21.9)	16.6	(9.3)
8	1752.0	(6631.3)	55.0	(12.8)	69.1	(20.6)	14.1	(7.8)
9	1663.0	(6294.5)	54.9	(12.7)	69.9	(21.0)	15.0	(8.3)
10	1548.7	(5861.8)	54.8	(12.6)	70.7	(21.5)	15.9	(8.9)
11	1551.2	(5871.3)	55.2	(12.9)	71.0	(21.6)	15.8	(8.7)
12	1552.5	(5876.2)	55.3	(13.0)	71.3	(21.8)	16.0	(8.8)
13	1552.6	(5876.6)	55.3	(13.0)	71.3	(21.8)	16.0	(8.8)
14	1552.3	(5875.5)	55.2	(12.9)	71.1	(21.7)	15.9	(8.8)
15	1552.1	(5874.7)	55.4	(13.0)	71.4	(21.9)	16.0	(8.9)
16	1569.0	(5938.7)	55.6	(13.1)	71.4	(21.9)	15.8	(8.8)
17	1553.6	(5880.4)	55.9	(13.3)	71.9	(22.2)	16.0	(8.9)
18	1552.8	(5877.3)	56.1	(13.4)	72.0	(22.2)	15.9	(8.8)
19	1546.0	(5851.6)	55.9	(13.3)	71.8	(22.1)	15.9	(8.8)
20	1542.3	(5837.6)	56.2	(13.4)	72.1	(22.3)	15.9	(8.9)
21	1540.6	(5831.2)	56.3	(13.5)	72.2	(22.4)	15.9	(8.9)
22	1540.2	(5829.7)	56.5	(13.6)	72.6	(22.6)	16.1	(9.0)
23	1579.6	(5978.8)	56.5	(13.6)	74.0	(23.4)	17.5	(9.8)
24	1761.4	(6666.9)	56.9	(13.8)	74.0	(23.4)	17.1	(9.6)
25	1754.5	(6640.8)	57.3	(14.0)	75.3	(24.0)	18.0	(10.0)
26	1794.3	(6791.4)	57.7	(14.3)	75.4	(24.1)	17.7	(9.8)
27	1759.5	(6659.7)	57.5	(14.2)	76.0	(24.4)	18.5	(10.2)
28	1712.1	(6480.3)	57.8	(14.4)	75.5	(24.2)	17.7	(9.8)
29	1418.4	(5368.4)	57.5	(14.2)	72.7	(22.6)	15.2	(8.4)
30	1400.0	(5299.0)	57.4	(14.1)	73.1	(22.8)	15.7	(8.7)
31	1551.8	(5873.6)	57.8	(14.4)	73.6	(23.1)	15.8	(8.7)
	Avg.		Avg.		Avg.		Avg.	
	1665.1	(6302.4)	55.9	(13.3)	72.8	(22.6)	16.9	(9.3)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
June, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$\times 10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1551.8	(5873.6)	58.1	(14.5)	73.9	(23.3)	15.8	(8.8)
2	1570.8	(5945.5)	58.2	(14.6)	73.6	(23.1)	15.4	(8.5)
3	1560.8	(5907.6)	58.3	(14.6)	74.0	(23.4)	15.7	(8.8)
4	1558.1	(5897.4)	58.6	(14.8)	74.6	(23.6)	16.0	(8.8)
5	1559.5	(5902.7)	59.0	(15.0)	75.2	(24.0)	16.2	(9.0)
6	1425.4	(5395.1)	59.3	(15.2)	72.3	(22.4)	13.0	(7.2)
7	1119.9	(4238.8)	59.5	(15.3)	76.3	(24.6)	16.8	(9.3)
8	1283.0	(4856.2)	59.4	(15.2)	77.9	(25.5)	18.5	(10.3)
9	1319.4	(4993.9)	60.0	(15.6)	79.0	(26.1)	19.0	(10.5)
10	1318.8	(4991.7)	59.6	(15.4)	77.6	(25.4)	18.0	(10.0)
11	1020.8	(3863.7)	59.5	(15.3)	73.1	(22.8)	13.6	(7.5)
12	905.7	(3428.1)	60.0	(15.6)	75.0	(23.9)	15.0	(8.3)
13	900.7	(3409.1)	59.7	(15.4)	74.5	(23.6)	14.8	(8.2)
14	896.0	(3391.4)	59.9	(15.5)	74.3	(23.5)	14.4	(8.0)
15	894.5	(3385.7)	60.0	(15.6)	74.5	(23.6)	14.5	(8.0)
16	893.5	(3381.9)	59.9	(15.5)	74.4	(23.6)	14.5	(8.1)
17	893.0	(3380.0)	60.2	(15.6)	74.6	(23.6)	14.4	(8.0)
18	892.4	(3377.7)	60.3	(15.7)	74.8	(23.8)	14.5	(8.1)
19	891.1	(3372.8)	60.6	(15.9)	75.1	(24.0)	14.5	(8.1)
20	891.3	(3373.6)	60.6	(15.9)	75.0	(23.9)	14.4	(8.0)
21	894.1	(3384.2)	61.0	(16.1)	75.3	(24.0)	14.3	(7.9)
22	1078.2	(4081.0)	60.5	(15.8)	72.4	(22.4)	11.9	(6.6)
23	1117.7	(4230.5)	61.1	(16.2)	72.8	(22.6)	11.7	(6.4)
24	1113.1	(4213.1)	61.2	(16.2)	72.8	(22.6)	11.6	(6.4)
25	1112.6	(4211.2)	61.5	(16.4)	73.1	(22.8)	11.6	(6.4)
26	1113.3	(4213.8)	61.4	(16.4)	73.1	(22.8)	11.7	(6.4)
27	1111.8	(4208.2)	61.6	(16.4)	77.8	(25.4)	16.2	(9.0)
28	1282.7	(4855.0)	61.6	(16.4)	78.9	(26.0)	17.3	(9.6)
29	1293.0	(4894.0)	62.1	(16.7)	80.3	(26.8)	18.2	(10.1)
30	1294.6	(4900.1)	62.0	(16.6)	80.4	(26.9)	18.4	(10.3)
	Avg.		Avg.		Avg.		Avg.	
	1158.6	(4385.3)	60.1	(15.6)	75.3	(24.0)	15.2	(8.4)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
July, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$x10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1296.6	(4907.6)	62.3	(16.8)	81.5	(27.5)	19.2	(10.7)
2	1300.9	(4923.9)	62.3	(16.8)	81.7	(27.6)	19.4	(10.8)
3	1305.1	(4939.8)	62.1	(16.7)	81.4	(27.4)	19.3	(10.7)
4	1306.0	(4943.2)	63.0	(17.2)	82.4	(28.0)	19.4	(10.8)
5	1303.6	(4934.1)	63.1	(17.3)	76.5	(24.7)	13.4	(7.4)
6	1302.4	(4929.6)	63.3	(17.4)	78.4	(25.8)	15.1	(8.4)
7	1424.4	(5391.4)	63.5	(17.5)	76.6	(24.8)	13.1	(7.3)
8	1658.5	(6277.4)	63.8	(17.6)	75.4	(24.1)	11.6	(6.5)
9	1742.7	(6596.1)	64.2	(17.9)	75.5	(24.2)	11.3	(6.3)
10	1406.2	(5322.5)	64.1	(17.8)	77.8	(25.4)	13.7	(7.6)
11	1549.1	(5863.3)	64.4	(18.0)	77.3	(25.2)	12.9	(7.2)
12	1542.4	(5838.0)	64.6	(18.1)	79.1	(26.2)	14.5	(8.1)
13	1547.6	(5857.7)	64.6	(18.1)	79.8	(26.6)	15.2	(8.5)
14	1547.5	(5857.3)	64.9	(18.2)	79.4	(26.4)	14.5	(8.2)
15	1389.4	(5258.9)	65.1	(18.4)	73.8	(23.2)	8.7	(4.8)
16	1139.1	(4311.5)	65.5	(18.6)	76.0	(24.4)	10.5	(5.8)
17	1139.6	(4313.4)	65.6	(18.6)	76.1	(24.5)	10.5	(5.9)
18	1167.0	(4417.1)	65.8	(18.8)	76.0	(24.4)	10.2	(5.6)
19	1139.2	(4311.9)	66.0	(18.9)	76.6	(24.8)	10.6	(5.9)
20	1138.7	(4310.0)	66.1	(19.0)	76.7	(24.8)	10.6	(5.8)
21	1138.5	(4309.2)	66.3	(19.0)	77.1	(25.0)	10.8	(6.0)
22	1218.9	(4613.5)	66.3	(19.0)	76.7	(24.8)	10.4	(5.8)
23	1274.3	(4823.2)	66.3	(19.0)	76.0	(24.4)	9.7	(5.4)
24	1155.5	(4373.6)	66.8	(19.4)	77.8	(25.4)	11.0	(6.0)
25	1143.1	(4326.6)	66.9	(19.4)	78.1	(25.6)	11.2	(6.2)
26	1142.3	(4323.6)	67.1	(19.5)	78.3	(25.7)	11.2	(6.2)
27	1333.0	(5045.4)	66.7	(19.3)	80.8	(27.1)	14.1	(7.8)
28	1363.9	(5162.4)	67.2	(19.6)	81.6	(27.6)	14.4	(8.0)
29	1364.2	(5163.5)	67.1	(19.5)	81.6	(27.6)	14.5	(8.1)
30	1361.8	(5154.4)	67.6	(19.8)	81.9	(27.7)	14.3	(7.9)
31	1426.8	(5400.4)	67.7	(19.8)	82.2	(27.9)	14.5	(8.1)
	Avg.		Avg.		Avg.		Avg.	
	1331.2	(5038.6)	65.1	(18.4)	78.4	(25.8)	13.3	(7.4)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
August, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$\times 10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1742.2	(6594.2)	68.0	(20.0)	80.8	(27.1)	12.8	(7.1)
2	1747.8	(6615.4)	68.2	(20.1)	81.6	(27.6)	13.4	(7.5)
3	1747.7	(6615.0)	68.3	(20.2)	81.8	(27.6)	13.5	(7.4)
4	1747.8	(6615.4)	68.5	(20.3)	82.0	(27.8)	13.5	(7.5)
5	1707.9	(6464.4)	68.9	(20.5)	79.5	(26.4)	10.6	(5.9)
6	1661.3	(6288.0)	69.0	(20.6)	76.5	(24.7)	7.5	(4.1)
7	1662.8	(6293.7)	69.6	(20.9)	77.0	(25.0)	7.4	(4.1)
8	1662.0	(6290.7)	69.5	(20.8)	76.8	(24.9)	7.3	(4.1)
9	1605.8	(6078.0)	69.8	(21.0)	77.2	(25.1)	7.4	(4.1)
10	1663.3	(6295.6)	70.0	(21.1)	77.2	(25.1)	7.2	(4.0)
11	1665.5	(6303.9)	70.4	(21.4)	77.7	(25.4)	7.3	(4.0)
12	1666.7	(6308.5)	70.4	(21.4)	77.6	(25.4)	7.2	(4.0)
13	1300.2	(4921.3)	70.6	(21.4)	79.8	(26.6)	9.2	(5.2)
14	1209.3	(4577.2)	70.7	(21.5)	80.7	(27.0)	10.0	(5.5)
15	1204.1	(4557.5)	70.6	(21.4)	80.7	(27.0)	10.1	(5.6)
16	1202.3	(4550.7)	70.9	(21.6)	81.0	(27.2)	10.1	(5.6)
17	1200.4	(4543.5)	71.1	(21.7)	81.1	(27.3)	10.0	(5.6)
18	1198.4	(4535.9)	71.1	(21.7)	81.1	(27.3)	10.0	(5.6)
19	1265.3	(4789.2)	71.0	(21.6)	80.4	(26.9)	9.4	(5.3)
20	1398.1	(5291.8)	71.3	(21.8)	76.6	(24.8)	5.3	(3.0)
21	938.9	(3553.7)	71.6	(22.0)	72.1	(22.3)	0.5	(0.3)
22	1173.3	(4440.9)	71.5	(22.0)	76.1	(24.5)	4.6	(2.5)
23	1284.7	(4862.6)	71.6	(22.0)	77.2	(25.1)	5.6	(3.1)
24	1514.2	(5731.2)	71.6	(22.0)	78.0	(25.6)	6.4	(3.6)
25	1598.3	(6049.6)	71.8	(22.1)	78.2	(25.6)	6.4	(3.5)
26	1567.3	(5932.2)	71.8	(22.1)	79.0	(26.1)	7.2	(4.0)
27	1653.2	(6257.4)	72.2	(22.4)	79.7	(26.5)	7.5	(4.1)
28	1661.9	(6290.3)	72.6	(22.6)	80.9	(27.2)	8.3	(4.6)
29	1663.9	(6297.9)	72.7	(22.6)	82.9	(28.3)	10.2	(5.7)
30	1665.8	(6305.1)	72.8	(22.6)	82.9	(28.3)	10.1	(5.7)
31	1778.3	(6730.9)	72.8	(22.6)	83.3	(28.5)	10.5	(5.9)
	Avg.		Avg.		Avg.		Avg.	
	1508.3		70.6		79.4		8.8	
	(5708.9)		(21.4)		(26.4)		(5.0)	

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
September, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$\times 10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1826.9	(6914.8)	73.1	(22.8)	84.4	(29.1)	11.3	(6.3)
2	1795.7	(6796.7)	73.2	(22.9)	82.5	(28.0)	9.3	(5.1)
3	1710.7	(6475.0)	73.3	(23.0)	83.2	(28.4)	9.9	(5.4)
4	1731.1	(6552.2)	73.4	(23.0)	83.2	(28.4)	9.8	(5.4)
5	1800.7	(6815.6)	73.5	(23.0)	84.8	(29.4)	11.3	(6.4)
6	1857.0	(7028.7)	73.8	(23.2)	85.3	(29.6)	11.5	(6.4)
7	1899.9	(7191.1)	73.9	(23.3)	85.5	(29.7)	11.6	(6.4)
8	1895.3	(7173.7)	74.0	(23.4)	84.8	(29.4)	10.8	(6.0)
9	1844.2	(6980.3)	73.8	(23.2)	84.0	(28.9)	10.2	(5.7)
10	1896.0	(7176.4)	74.6	(23.6)	85.9	(30.0)	11.3	(6.4)
11	1864.0	(7055.2)	74.6	(23.6)	84.8	(29.4)	10.2	(5.8)
12	1671.0	(6324.7)	74.2	(23.4)	81.7	(27.6)	7.5	(4.2)
13	1672.8	(6331.5)	74.2	(23.4)	81.6	(27.6)	7.4	(4.2)
14	1659.0	(6279.3)	74.5	(23.6)	81.8	(27.6)	7.3	(4.0)
15	1671.1	(6325.1)	74.5	(23.6)	81.7	(27.6)	7.2	(4.0)
16	1667.0	(6309.6)	74.5	(23.6)	81.6	(27.6)	7.1	(4.0)
17	1667.5	(6311.5)	74.8	(23.8)	82.0	(27.8)	7.2	(4.0)
18	1749.3	(6621.1)	74.8	(23.8)	81.6	(27.6)	6.8	(3.8)
19	1855.3	(7022.3)	74.9	(23.8)	81.4	(27.4)	6.5	(3.6)
20	1854.6	(7019.7)	74.7	(23.7)	81.3	(27.4)	6.6	(3.7)
21	1951.3	(7385.7)	74.6	(23.6)	80.9	(27.2)	6.3	(3.6)
22	1949.9	(7380.4)	74.6	(23.6)	80.8	(27.1)	6.2	(3.5)
23	1961.1	(7422.8)	74.6	(23.6)	81.0	(27.2)	6.4	(3.6)
24	1910.8	(7232.4)	74.7	(23.7)	81.1	(27.3)	6.4	(3.6)
25	1881.0	(7119.6)	74.9	(23.8)	84.9	(29.4)	10.0	(5.6)
26	1827.5	(6917.1)	75.0	(23.9)	87.3	(30.7)	12.3	(6.8)
27	1871.1	(7082.1)	75.1	(24.0)	87.1	(30.6)	12.0	(6.6)
28	2053.7	(7773.3)	75.3	(24.0)	84.6	(29.2)	9.3	(5.2)
29	2097.6	(7939.4)	75.3	(24.0)	84.6	(29.2)	9.3	(5.2)
30	2102.4	(7957.6)	75.4	(24.1)	84.7	(29.3)	9.3	(5.2)
	Avg.		Avg.		Avg.		Avg.	
	1839.9	(6964.0)	74.4	(23.6)	83.4	(28.6)	9.0	(5.0)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
October, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$x10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	2101.8	(7955.3)	75.4	(24.1)	84.6	(29.2)	9.2	(5.1)
2	2098.0	(7940.9)	75.7	(24.3)	84.7	(29.3)	9.0	(5.0)
3	2104.9	(7967.0)	75.5	(24.2)	84.4	(29.1)	8.9	(4.9)
4	2110.5	(7988.2)	75.4	(24.1)	84.1	(29.0)	8.7	(4.9)
5	2115.1	(8005.7)	75.3	(24.0)	83.8	(28.8)	8.5	(4.8)
6	2116.6	(8011.3)	75.2	(24.0)	83.9	(28.8)	8.7	(4.8)
7	2061.0	(7800.9)	74.9	(23.8)	83.2	(28.4)	8.3	(4.6)
8	1884.7	(7133.6)	74.6	(23.6)	80.3	(26.8)	5.7	(3.2)
9	1860.8	(7043.1)	74.5	(23.6)	80.3	(26.8)	5.8	(3.2)
10	1883.4	(7128.7)	74.0	(23.4)	79.7	(26.5)	5.7	(3.1)
11	1884.6	(7133.2)	73.7	(23.2)	79.3	(26.3)	5.6	(3.1)
12	1884.4	(7132.5)	73.4	(23.0)	79.1	(26.2)	5.7	(3.2)
13	1754.3	(6640.0)	72.7	(22.6)	76.1	(24.5)	3.4	(1.9)
14	1885.9	(7138.1)	72.4	(22.4)	76.5	(24.7)	4.1	(2.3)
15	1887.7	(7144.9)	71.9	(22.2)	77.3	(25.2)	5.4	(3.0)
16	1888.6	(7146.4)	71.3	(21.8)	76.8	(24.9)	5.5	(3.1)
17	1886.9	(7141.9)	70.5	(21.4)	77.3	(25.2)	6.8	(3.8)
18	1890.6	(7155.9)	70.1	(21.2)	76.9	(25.0)	6.8	(3.8)
19	1890.1	(7154.0)	69.7	(21.0)	77.9	(25.5)	8.2	(4.5)
20	1874.7	(7095.7)	69.3	(20.7)	77.1	(25.0)	7.8	(4.3)
21	1679.0	(6355.0)	69.0	(20.6)	76.8	(24.9)	7.8	(4.3)
22	1450.1	(5488.6)	68.6	(20.4)	72.0	(22.2)	3.4	(1.8)
23	1372.9	(5196.4)	68.3	(20.2)	71.6	(22.0)	3.3	(1.8)
24	1373.6	(5199.1)	68.0	(20.0)	71.2	(21.8)	3.2	(1.8)
25	1427.4	(5402.7)	67.7	(19.8)	71.5	(22.0)	3.8	(2.2)
26	1492.1	(5647.6)	67.6	(19.8)	71.7	(22.1)	4.1	(2.3)
27	1489.2	(5636.6)	67.4	(19.6)	71.0	(21.6)	3.6	(2.0)
28	1491.3	(5644.6)	67.2	(19.6)	73.0	(22.8)	5.8	(3.2)
29	1493.5	(5652.9)	67.0	(19.4)	77.7	(25.4)	10.7	(6.0)
30	1493.9	(5654.4)	66.9	(19.4)	78.1	(25.6)	11.2	(6.2)
31	1494.0	(5654.8)	66.7	(19.3)	77.9	(25.5)	11.2	(6.2)
	Avg.		Avg.		Avg.		Avg.	
	1784.6	(6754.7)	71.7	(22.0)	78.5	(25.8)	6.8	(3.8)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
November, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$\times 10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1412.7	(5347.1)	66.7	(19.3)	78.3	(25.7)	11.6	(6.4)
2	1298.8	(4916.0)	66.6	(19.2)	79.5	(26.4)	12.9	(7.2)
3	1298.9	(4916.3)	66.6	(19.2)	78.7	(26.0)	12.1	(6.8)
4	1298.5	(4914.8)	66.5	(19.2)	70.6	(21.4)	4.1	(2.2)
5	1002.1	(3792.9)	66.4	(19.1)	70.6	(21.4)	4.2	(2.3)
6	947.6	(3586.7)	65.9	(18.8)	72.6	(22.6)	6.7	(3.8)
7	917.3	(3472.0)	65.8	(18.8)	74.9	(23.8)	9.1	(5.0)
8	917.2	(3471.6)	65.7	(18.7)	75.3	(24.0)	9.6	(5.3)
9	917.3	(3472.0)	65.7	(18.7)	75.4	(24.1)	9.7	(5.4)
10	917.2	(3471.6)	65.7	(18.7)	75.2	(24.0)	9.5	(5.3)
11	919.3	(3479.6)	65.2	(18.4)	75.2	(24.0)	10.0	(5.6)
12	947.8	(3587.4)	64.5	(18.0)	77.0	(25.0)	12.5	(7.0)
13	918.3	(3475.8)	63.9	(17.7)	76.1	(24.5)	12.2	(6.8)
14	918.5	(3476.5)	63.3	(17.4)	78.4	(25.8)	15.1	(8.4)
15	918.8	(3477.7)	63.0	(17.2)	79.1	(26.2)	16.1	(9.0)
16	919.0	(3478.4)	62.7	(17.0)	78.4	(25.8)	15.7	(8.8)
17	1155.6	(4373.9)	62.6	(17.0)	75.5	(24.2)	12.9	(7.2)
18	1582.9	(5991.3)	62.6	(17.0)	72.3	(22.4)	9.7	(5.4)
19	1582.7	(5990.5)	62.3	(16.8)	72.1	(22.3)	9.8	(5.5)
20	1583.3	(5992.8)	62.0	(16.6)	71.8	(22.1)	9.8	(5.5)
21	1584.3	(5996.6)	61.9	(16.6)	71.6	(22.0)	9.7	(5.4)
22	1582.6	(5990.1)	61.8	(16.6)	71.5	(22.0)	9.7	(5.4)
23	1582.7	(5990.5)	61.7	(16.5)	71.7	(22.0)	10.0	(5.5)
24	1581.9	(5987.5)	61.6	(16.4)	73.0	(22.8)	11.4	(6.4)
25	1581.0	(5984.1)	61.5	(16.4)	73.4	(23.0)	11.9	(6.6)
26	1505.8	(5699.5)	61.1	(16.2)	74.0	(23.4)	12.9	(7.2)
27	1357.3	(5137.4)	60.5	(15.8)	75.1	(24.0)	14.6	(8.2)
28	1358.6	(5142.3)	60.0	(15.6)	74.9	(23.8)	14.9	(8.2)
29	1368.0	(5177.9)	59.8	(15.4)	74.4	(23.6)	14.6	(8.2)
30	1358.4	(5141.5)	59.6	(15.3)	73.4	(23.0)	13.8	(7.7)
	Avg.		Avg.		Avg.		Avg.	
	1241.1	(4697.6)	63.2	(17.4)	74.4	(23.6)	11.2	(6.2)

Table 1.1-1
CCW TEMPERATURE MONITORING
OCONEE NUCLEAR STATION
December, 1977

DAY	FLOW		INLET TEMP.		OUTLET TEMP.		ΔT	
	$\times 10^3$ GPM	M^3/min	°F	°C	°F	°C	F°	C°
1	1359.2	(5144.6)	59.6	(15.4)	73.8	(23.2)	14.2	(7.8)
2	1352.3	(5118.5)	59.6	(15.4)	69.0	(20.6)	9.4	(5.2)
3	1358.4	(5141.5)	59.3	(15.2)	68.6	(20.4)	9.3	(5.2)
4	1570.0	(5942.5)	59.5	(15.3)	69.4	(20.8)	9.9	(5.5)
5	1580.2	(5981.1)	59.3	(15.2)	69.3	(20.7)	10.0	(5.5)
6	1484.1	(5617.3)	59.1	(15.0)	67.7	(19.8)	8.6	(4.8)
7	1456.0	(5511.0)	58.4	(14.6)	66.9	(19.4)	8.5	(4.8)
8	1579.7	(5979.2)	57.7	(14.3)	68.4	(20.2)	10.7	(5.9)
9	1379.4	(5221.0)	57.6	(14.2)	69.3	(20.7)	11.7	(6.5)
10	1165.3	(4410.7)	57.4	(14.1)	66.6	(19.2)	9.2	(5.1)
11	1224.2	(4633.6)	56.2	(13.4)	69.4	(20.8)	13.2	(7.4)
12	1480.0	(5601.8)	55.8	(13.2)	70.2	(21.2)	14.4	(8.0)
13	1581.2	(5984.8)	55.7	(13.2)	71.3	(21.8)	15.6	(8.6)
14	1581.1	(5984.5)	55.4	(13.0)	71.3	(21.8)	15.9	(8.8)
15	1579.0	(5976.5)	55.3	(13.0)	72.8	(22.6)	17.5	(9.6)
16	1701.3	(6439.4)	55.2	(12.9)	72.3	(22.4)	17.1	(9.5)
17	1719.5	(6508.3)	55.1	(12.8)	72.2	(22.4)	17.1	(9.6)
18	1729.0	(6544.3)	54.9	(12.7)	72.4	(22.4)	17.5	(9.7)
19	1735.2	(6567.7)	54.8	(12.6)	72.5	(22.5)	17.7	(9.9)
20	1760.1	(6662.0)	54.6	(12.6)	71.6	(22.0)	17.0	(9.4)
21	1571.1	(5946.6)	54.7	(12.6)	67.6	(19.8)	12.9	(7.2)
22	1452.6	(5498.1)	54.8	(12.6)	68.4	(20.2)	13.6	(7.6)
23	1569.8	(5941.7)	54.5	(12.5)	67.2	(19.6)	12.7	(7.1)
24	1570.5	(5944.3)	54.3	(12.4)	68.0	(20.0)	13.7	(7.6)
25	1569.6	(5940.9)	54.2	(12.4)	71.7	(22.0)	17.5	(9.6)
26	1570.4	(5944.0)	53.8	(12.1)	72.0	(22.2)	18.2	(10.1)
27	1760.3	(6662.7)	53.2	(11.8)	70.8	(21.6)	17.6	(9.8)
28	1767.8	(6691.1)	52.8	(11.6)	68.7	(20.4)	15.9	(8.8)
29	1762.2	(6670.0)	52.3	(11.3)	69.0	(20.6)	16.7	(9.3)
30	1456.7	(5513.6)	51.9	(11.0)	66.3	(19.0)	14.4	(8.0)
31	1525.3	(5773.3)	51.7	(11.0)	66.9	(19.4)	15.2	(8.4)
	Avg.		Avg.		Avg.		Avg.	
	1546.8	(5854.6)	55.6	(13.1)	69.8	(21.0)	14.2	(7.9)

DAILY AVERAGE TEMPERATURE (°F)
30
40
50
60
70
80
90
100
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
DISCHARGE
INTAKE
INTAKE AND DISCHARGE TEMPERATURE VS TIME
-1.1
4.4
10.0
15.6
21.1
26.7
32.2
37.8
DAILY AVERAGE TEMPERATURE (°C)
FLOW RATE (X 10^5 GPM)
0
2
4
6
8
10
12
14
16
18
20
22
CONDENSER COOLING WATER FLOW RATE VS TIME
0
757
1514
2271
3028
3785
4542
5299
6056
6813
7570
8327
FLOW RATE (M^3/MIN)

1977

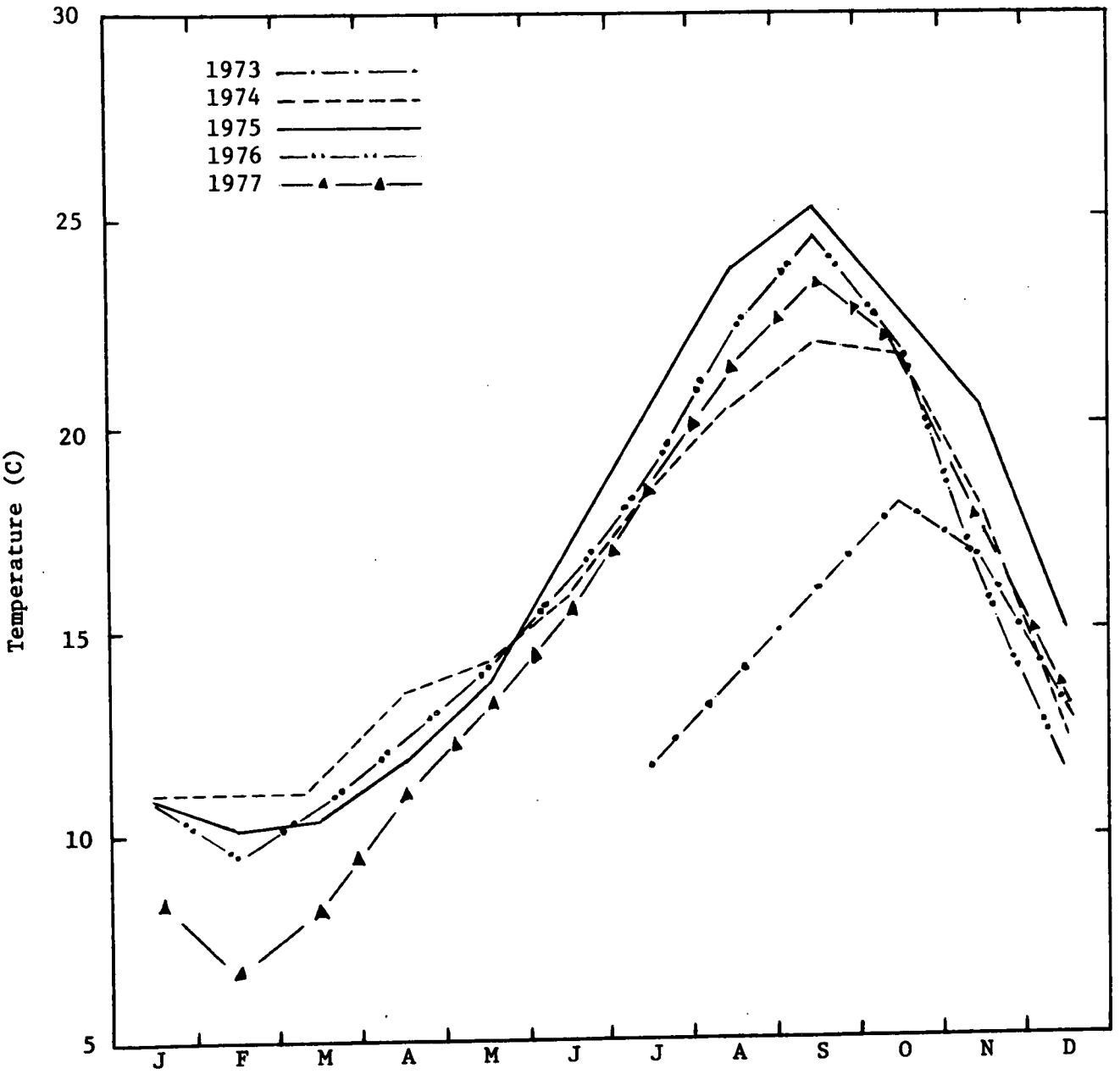


Figure 1.1-2 Monthly mean of the daily average inlet temperatures.

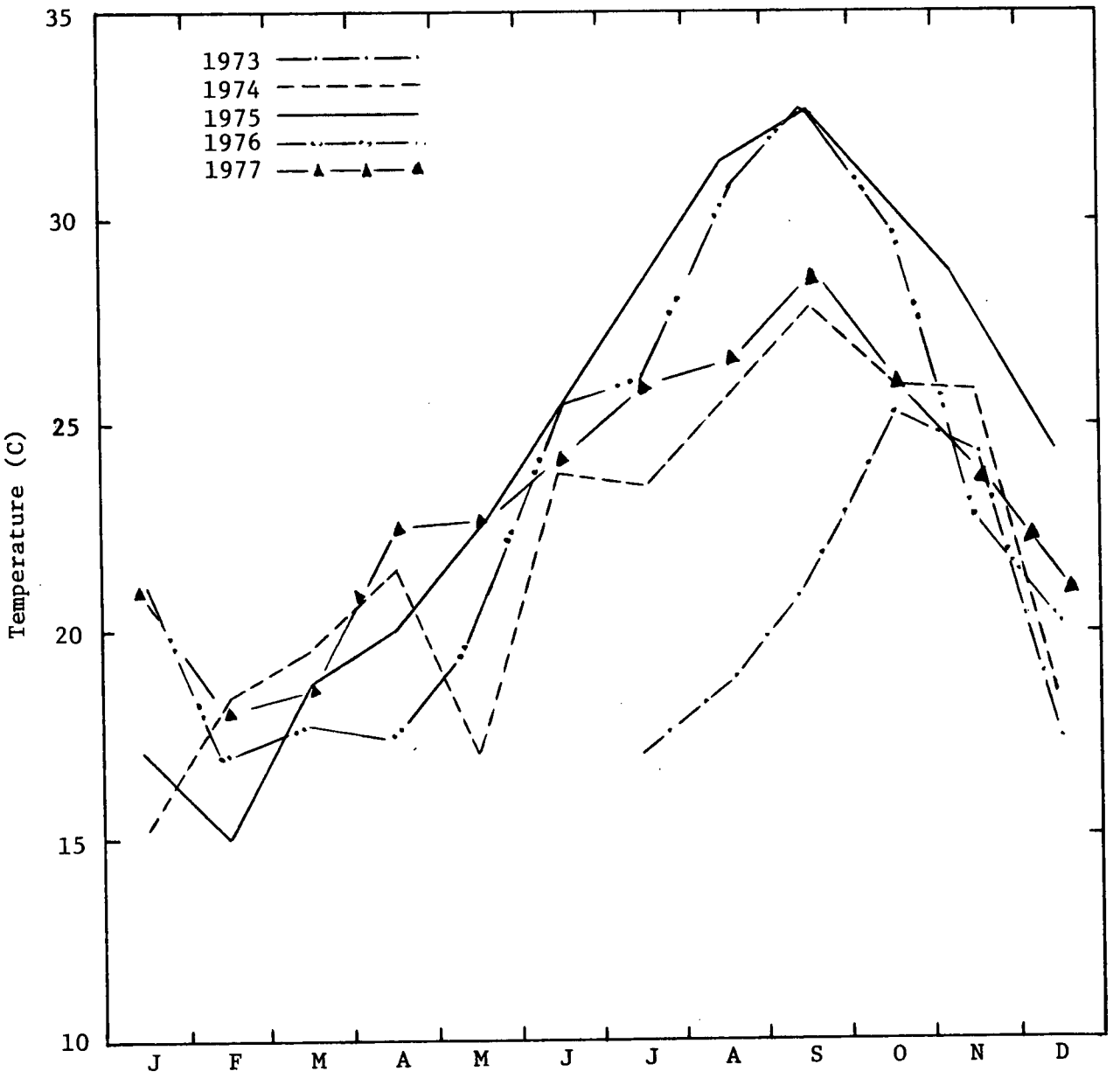


Figure 1.1-3 Montly mean of the daily average outlet temperature.

1.2 CHEMICAL DISCHARGE LIMITS

Specification:

A. Limits for certain chemical wastes and pH of water released from the Waste Water Treatment System and the Low Level Radwaste System shall not exceed the concentrations indicated in Table 1.2-1, "Limits and Monitoring Requirements on Certain Chemicals and pH of Water Released from Oconee Nuclear Station."

B. Chlorine or other chemical biocides will not be used for condenser cleaning.

I. INTRODUCTION

The noted specifications were established to insure that chemical concentrations in the river resulting from station discharges are not toxic to aquatic organisms. A chemical inventory is maintained to determine what quantities of environmentally significant chemicals are used and thus to estimate the quantities which are discharged over the period of interest. In addition, the pH of the waste water collection basin and effluent from the plant site is determined and recorded daily, and corrective measures are initiated as necessary.

II. RESULTS AND CONCLUSIONS

Table 1.2-2 lists the dates on which discharges from the yard drains were outside the specified chemical or pH limits.

Table 1.2-1

Limits and Monitoring Requirements on Certain Chemicals and pH of Water Released from Oconee Nuclear Station

Type Monitoring	Waste Water Treatment System[a] Frequency	Limit	Low Level Rad Waste System[b] Frequency	Limit
pH	Daily	6.0 - 9.0		
Hydrazine	Daily	0.7 ppm	Prior to Release	0.1 ppm
Boron			Prior to Release	1.0 ppm

[a]Monitored at point of release to Hartwell Reservoir.

[b]Concentrations are measured prior to point of discharge. Limits apply on downstream incremental increases in concentration in the Hartwell Reservoir following dilution in the Keowee tailrace.

TABLE 1.2-2

January - December, 1977

	Time	pH	
3/15/77	1715	8.5	(Note 1)
	2000	8.4	
	2200	8.5	
	2240	8.4	
3/16/77	0010	8.5	
	0120	9.2	
	0400	8.4	
	0530	8.5	
	0600	8.3	
4/18/77	1500	9.3	(Note 2 & 3)
	1625	9.7	
	1730	8.8	
5/1/77	1740	9.1	(Note 4)
	1920	9.1	
	2015	7.2	

Notes:

(1) Incident Report B-595

(2) Effective March 17, 1977, yard drain pH limits 6.0 - 9.0.

(3) Incident Report B-615

(4) Incident Reprot B-620

1.3 GENERAL AQUATIC SURVEILLANCE

Specification: Surveillance programs shall be conducted to detect and quantify Oconee's effects on water quality, fish, periphyton, plankton, and benthos (Duke Power Company, 1973a).

I. INTRODUCTION

The objective of the aquatic surveillance program is to determine the effects of Oconee Nuclear Station's (ONS) operation on the aquatic ecosystem of Lake Keowee and the area of Lake Hartwell influenced by ONS thermal and chemical discharges. The current environmental monitoring programs on Lakes Keowee and Hartwell are summarized in Table 1.3-1. Sampling locations are shown in Figures 1.3-1 and 1.3-2.

This annual report covers the third full year in which all three Oconee Nuclear Station (ONS) units were commercially operational and the fifth year of the non-radiological aquatic surveillance program (Section 1.3) and related studies (Sections 1.4 through 1.7).

The ONS "Environmental Summary Report 1971 - 1976" (Duke Power Company 1977) described the effects of ONS operation on the aquatic environment and concluded that no major adverse environmental impacts had occurred. The information gathered in 1977 supports this conclusion. For the year, ONS average condenser cooling water flows and ΔT's (Section 1.1) were similar to 1976 and somewhat lower than in 1975. Intake temperatures in January through March, 1977, were three to four degrees (C) colder than in previous years (1973 - 1976) due to the unusually cold winter. During the summer months, the monthly mean ONS discharge temperatures were 3 to 4 C^{o} colder than in 1975 or 1976, primarily because of the reduced operation of ONS due to refueling outages. At the same time, however, exceptionally warm weather in July caused surface temperatures in areas of Lake Keowee not influenced by ONS to be slightly higher this summer than in previous summers.

II. GENERAL CONCLUSIONS

Detailed descriptions and results of the General Aquatic Surveillance studies and other related studies are presented in Subsections 1.3.1 through 1.3.5 and Sections 1.4 through 1.7, respectively. Some general conclusions based on the data presented in Sections 1.3 through 1.7 of this report are as follows:

1. As concluded in the ONS Environmental Summary Report 1971 - 1976 (Duke Power Company 1977), Lake Keowee is inhabited by an aquatic community whose species composition is typical of a piedmont reservoir. The overall abundance of aquatic organisms is relatively low, as would be expected because of the reservoir's low nutrient concentrations.

2. Water quality characteristics of Lakes Keowee and Hartwell (Subsection 1.3.1) were very similar this year compared to previous reporting periods. Both lakes exhibited thermal stratification in Spring, Summer and early Fall. As a result of this, the bottom waters exhibited lower dissolved oxygen and pH and higher ammonia, iron and manganese concentrations during stratification.

3. The effects of ONS operation on temperature and dissolved oxygen concentrations in the lake were documented during the twelve monthly synoptic water quality surveys (Subsection 1.3.1) and six plume mapping surveys (Section 1.6). ONS discharge temperatures were higher than "ambient" surface temperatures for the periods January through March, and October through December. A "thermal plume" was not evident from April through September, however, due to the use of cool bottom layers of the lake for condenser cooling water.

   Weekly monitoring of dissolved oxygen (Subsection 1.3.1) near ONS and Keowee Hydro showed spatial and temporal patterns similar to those reported previously. The minimum ONS intake and discharge concentrations were 4.4 and 4.6 mg/1, respectively, which occurred on September 8. Values at the Keowee Hydro intake and tailrace and at Location 605.0 never dropped below 5 mg/1.

4. Periphyton (Subsection 1.3.3) community composition was similar to previous years except that chrysophytes were more abundant at all locations in 1977. Organic accumulation rates and densities were somewhat lower during the mid-summer of 1977 than in previous years. This was a lake-wide phenomenon, and may have been related to the surface water temperatures, which were higher than those in previous years. Blue-greens continued to comprise only a small percentage of the periphyton community.

5. Phytoplankton (Subsection 1.3.4) taxonomic composition and standing crops showed patterns similar to those reported previously. Green algae (especially desmids) were more abundant in the Little River arm of the lake this summer than in previous years. During thermal stratification, Phytoplankton were much less abundant in the bottom waters of Lake Keowee than in surface waters. As a result, ONS intake and discharge waters had lower standing crops than sampling stations in the plume, which were, in turn, lower than at areas not directly influenced by the ONS discharge plume.

6. Zooplankton (Subsection 1.3.4) abundance showed trends which directly parallel the temporal and spatial distribution described for phytoplankton. Zooplankton densities in 1977 were, however, generally lower than in previous years.

7. The benthic community (Subsection 1.3.5), as in previous reports, was dominated by chironomid larvae, ceratopogonid larvae, Chaoborus larvae, and oligochaetes. Benthic sampling revealed a pattern of increasing diversity from deep waters to shallow waters, with chironomids being the most diverse group. Dredge sampling showed benthic populations at 508 (Discharge station) to have reduced density, biomass, and diversity, when compared to other stations; however, littoral samples in the discharge showed no such pattern. Unsuitable substrate and scouring, rather than temperature appear to be the limiting factors. A specimen of the Asiatic clam, Corbicula, was collected from Lake Keowee this year. Corbicula will probably become an important component of the benthos in future years.

8. Fish impingement (Section 1.4) in 1977 was similar to that observed in previous years. Rates of impingement were highest in Winter and early Spring, and were dominated by threadfin shad. Bluegill and yellow perch dominated the much lower impingement observed during the remainder of the year.

   Almost 2000 m^3 of ONS condenser cooling water was filtered in 1977 to detect entrainment of fish eggs and larvae. No eggs or larvae were collected. Supplemental sampling in the intake canal confirmed that few, if any, fish eggs or larvae are drawn into the intake canal from the lake, and that there is no appreciable fish reproduction in the canal itself. These results are similar to those reported previously.

9. Studies of Phytoplankton and Zooplankton Entrainment (Section 1.5) confirmed previous conclusions that passage through ONS has an effect on these communities which is of little ecological significance. As a result Oconee's use of bottom waters for CCW, relatively few organisms are entrained, and the ΔT's and discharge temperatures to which the organisms are exposed, are moderate.

10. Monitoring by SERI fisheries biologists detected no gas-bubble disease in any Lake Keowee fishes (Section 1.7). No symptoms of this disease have yet been detected since ONS began operating. Nitrogen supersaturation ($\sim$105%) has been observed quite often.

11. Fish population dynamics and reproduction studies are continuing to be carried out by the Southeast Reservoirs Investigations group, Fish and Wildlife Service, U. S. Department of the Interior. See Subsection 1.3.2 and Appendices C and D for information on these studies.

REFERENCES CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company. U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC), Washington, D. C.

_____. 1977. Oconee Nuclear Station. Environmental Summary Report 1971 - 1976.

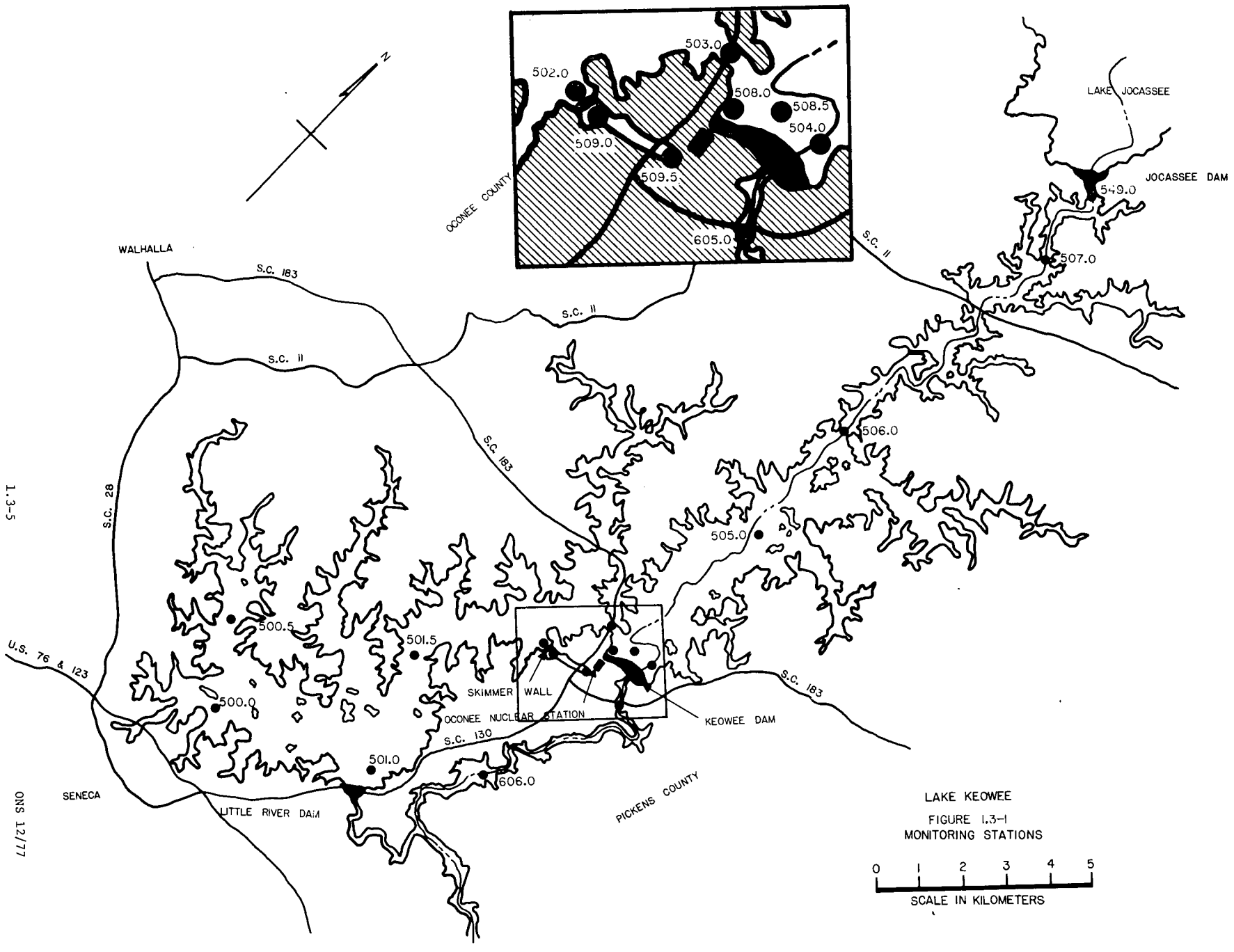
TABLE 1.3-1

SUMMARY OF CURRENT ENVIRONMENTAL MONTIORING PROGRAMS ON LAKE KEOWEE AND LAKE HARTWELL, DECEMBER, 1977

SAMPLING PROGRAM	SAMPLING LOCATIONS																							
	LAKE KEOWEE																		LAKE HARTWELL					
	500	501	501.5	502	503	504	505	506	507	508	508.5	509	509.5	549	Pre-Cond.	Post-Cond.	Intake Structure	Discharge Structure	601	602	603	604	605	606
WATER QUALITY																								
Temperature (1)	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Dissolved Oxygen (1)	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Conductivity	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
ORP	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
pH	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Surface Light	M	M	M	M	M	M	M	M	M	M									M	M	M	M		
Euphotic Depth	M	M	M	M	M	M	M	M	M	M									M	M	M	M		
Alkalinity	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Turbidity	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Chloride	M	M	M	M	M	M	M	M	M	M		M		M					Q	Q	Q	Q	Q	
BOD	M		M			M			M	M		M							M	M	M	M	M	
NO_2-NO_3 Nitrogen	M	M	M	M	M	M	M	M	M	M		M		M					Q	Q	Q	Q	Q	
NH_3 Nitrogen	M	M	M	M	M	M	M	M	M	M		M		M					Q	Q	Q	Q	Q	
Ortho P	M	M	M	M	M	M	M	M	M	M		M		M					Q	Q	Q	Q	Q	
Total P	M	M	M	M	M	M	M	M	M	M		M		M					Q	Q	Q	Q	Q	
Silicon	M	M	M	M	M	M	M	M	M	M		M		M					Q	Q	Q	Q	Q	
Iron	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Manganese	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Calcium	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Magnesium	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M	M	M	
Aluminum		Q				Q		Q		Q				Q					Q	Q	Q		Q	
Cadmium		Q				Q		Q		Q				Q					Q	Q	Q		Q	
Chromium		Q				Q		Q		Q				Q					Q	Q	Q		Q	
Copper		Q				Q		Q		Q				Q					Q	Q	Q		Q	
Lead		Q				Q		Q		Q				Q					Q	Q	Q		Q	
Potassium	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M		M	
Sodium	M	M	M	M	M	M	M	M	M	M		M		M					M	M	M		M	
Zinc		Q				Q		Q		Q				Q					Q	Q	Q		Q	
Mercury		Q				Q		Q		Q				Q					Q	Q	Q		Q	
PLUME STUDIES																								
Continuous Temp.				C	C	C																		
Mapping (2)				Q	Q	Q				Q	Q							Q						
PLANKTON																								
Entrainment																								
Zooplankton															BM	BM	BM	BM						
Phytoplankton																BM	BM							
Surveillance																								
Zooplankton	BM	BM		BM	BM	BM	BM	BM		BM	BM		BM											
Phytoplankton	BM	BM		BM	BM		BM	BM		BM	BM		BM											
PERIPHYTON	M	M		M		M		M		M														
BENTHOS		Q		Q		Q	Q	Q		Q												Q		Q
DISSOLVED GASES		W		W	W	W	W				W						W	W						
FISHES (3)																								

(1) See Section 1.3.1
(2) Approximately 25 additional stations will be sampled.
(3) See Southeast Reservoir Investigations Reports (Appendices C & D)

KEY: M-Monthly (Minimum of 10 times per year with a period not to exceed 45 days between samples); C-Continuously; Q-Quarterly; BM-Bi-Monthly (6 times per year); W-Winter period monthly (Nov.-April).

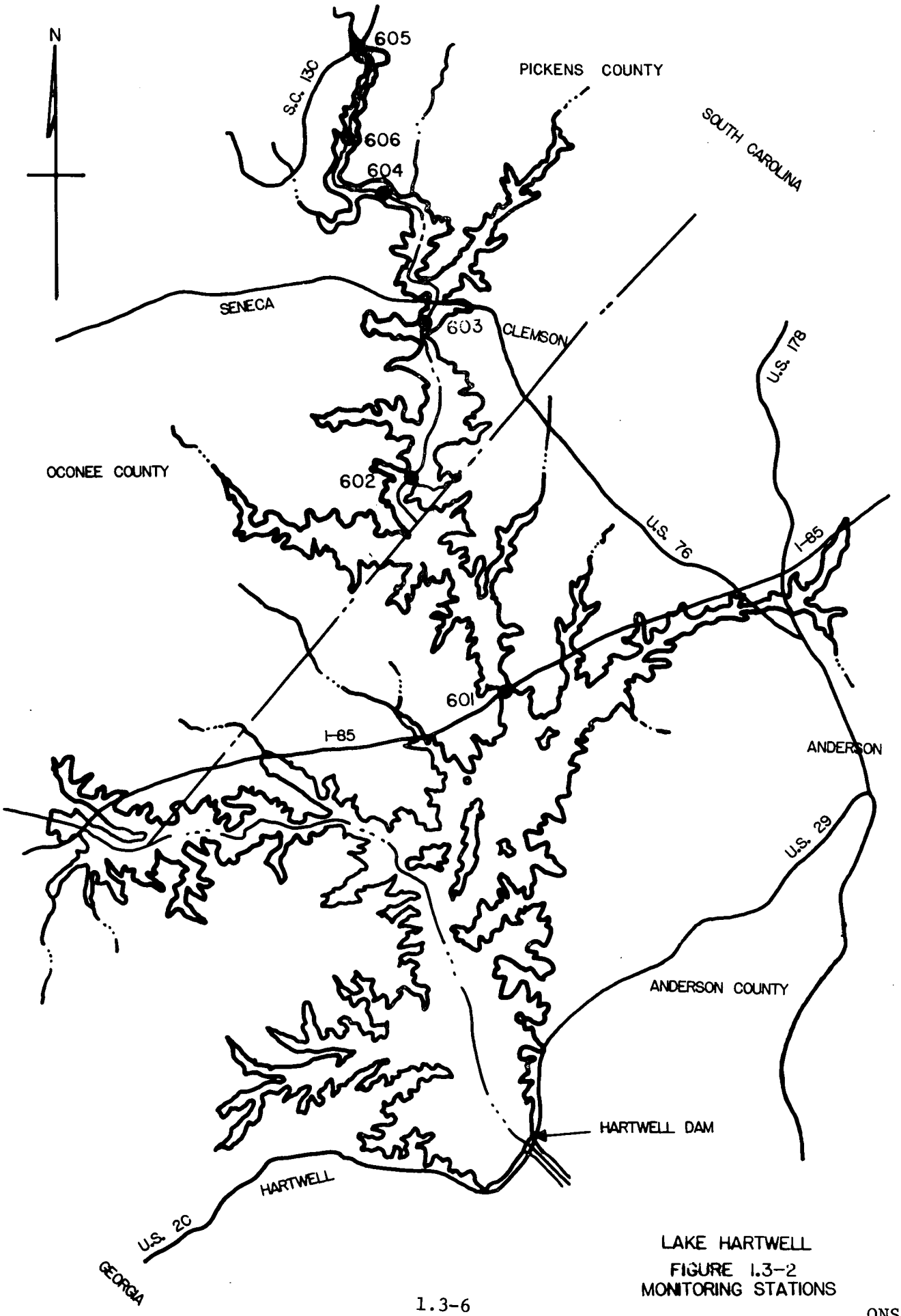


LAKE KEOWEE

FIGURE 1.3-1
MONITORING STATIONS

1.3-5

ONS 12/77



LAKE HARTWELL

FIGURE 1.3-2
MONITORING STATIONS

ONS 12/77

1.3.1 Water Quality

Specification: A. Synoptic water quality surveys at nine (9) sampling stations on Lake Keowee, four (4) stations on Lake Hartwell and a station on the Keowee River between the lakes shall be conducted. Sampling locations are shown on Figure 1.3-1 and Figure 1.3-2, and required sampling parameters are listed in Table 1.0-1.

Temperature and dissolved oxygen measurements shall be made at 0.3, 1.5, 5.0, 6.5, 8.0, 10.0 meters and thereafter every 2.5 meters to one meter off the bottom for lake samples. BOD measurements on Lake Keowee shall be taken at 0.3 meters, 3.0 meters, and bottom depths. BOD measurements on Lake Hartwell shall be made on samples which are a composite of water from 0.3 meters, mid depth and bottom depths. All other specified parameters shall be measured at a minimum of three depths for each lake sampling station. At sampling station 605 (Figure 1.3-2), the Keowee River shall be sampled from 0.3 meters. (Duke Power Company 1973a)

I. INTRODUCTION

A discussion of the importance of a synoptic water quality program has been presented previously by Duke Power Company (1973b). A summary of preoperational and operational monitoring and the impact from ONS has been presented by Duke Power Company (1977).

II. METHODS AND MATERIALS

Frequency and Locations for Sampling

Profile measurements of temperature, dissolved oxygen, pH, oxidation-reduction potential, and specific conductance were conducted at monthly intervals at twelve (12) sampling locations on Lake Keowee and five (5) locations on Lake Hartwell from January 1977 through December 1977. These in situ measurements were made at depths of 0.3 m, 1.5 m, 3.0 m, 5.0 m, 6.5 m, 8.0 m, 10.0 m, and at 2.5 m intervals to 1 m above the bottom.

Samples to be analyzed in the laboratory were collected at 5 m intervals from 0.3 m to 1 m from bottom. Examination of past data indicated that more samples than necessary were being withdrawn in order to characterize the water column. On June 1, 1977, the depth interval was increased from five (5) to ten (10) meters. However, duplicates of all samples were withdrawn. This change increased the data-handling capability for the water chemistry program. Due to the shallow depth (≤10 m) at Locations 508.0, 603.0, and 604.0, samples were taken from only two depths for each location.

On March 1, 1977, sampling was discontinued at Locations 500.5 and 508.5. Past data indicated these locations were adequately characterized by the remaining locations. Light meter readings were not obtained during

August and December at Location 505.0 nor during August, November, and December at Locations 506.0 and 507.0 due to late evening sampling.

Sampling locations, frequency, and chemical constituents monitored are presented in Table 1.3-1. Data for Lakes Keowee and Hartwell appear in Appendix A, Sections I-IV.

Laboratory Procedures

Analytical methods, preservation techniques, references, detection limits and reporting units for each chemical constituent measured on Lakes Keowee and Hartwell are presented in Table 1.3.1-1. All analytical methods either conform to 40 CFR 136 (USEPA 1976a) and/or are considered best available technique by the scientific community. The detection limits employed were at the "state-of-art" level for the type of analyses being performed.

In May 1977, the method used to measure ammonia nitrogen was changed from the Salicylate/nitroprusside method to the Berthelot method. The technical problem that occurred in March 1976 while using the Berthelot reaction method was corrected (Duke Power Company 1976). The Berthelot method provided improved sensitivity and detection limits. Based on variability observed in past studies, all minerals and heavy metals, except iron and manganese, were analyzed as location composites. The frequency of sampling for major mineral elements (sodium and potassium) previously classed as heavy metals was increased to monthly. Beginning in June 1977, the locations for quarterly heavy metals sampling were reduced to the following: 501.0, 504.0, 506.0, 508.0, 549.0, 601.0, 602.0, 603.0, and 605.0. Evaluation of past data indicated that the heavy metals composition of the areas studied on Lakes Keowee and Hartwell are adequately characterized by these locations. Manganese concentrations were not determined during June 1977.

The precision and accuracy of the data were affirmed in accordance with the procedures recommended by the USEPA (1972).

Data Analysis

Sampling locations were grouped into three areas; Little River arm (500.0, 501.0, 502.0), near field (508.0, 504.0, 505.0) and far field (506.0, 507.0, 549.0). Means were calculated for the area subgroups and used to graphically illustrate temporal and spatial variation between areas during this study period.

The monthly data were used to calculate volume-weighted averages and total lake content (metric tons) for Lake Keowee for selected constituents. All sampling depths at Locations 500.0, 501.0, 502.0, 503.0, 504.0, 505.0, 506.0, and 507.0 were used to calculate a mean lake concentration for each depth sampled. The mean concentration for each

constituent at each depth was multiplied by the lake volume for that stratum. The constituent contents for the various strata were summed to obtain total content for Lake Keowee during each month. This was then divided by total lake volume to yield a volume-weighted average of each constituent in Lake Keowee for each sampling date. A summary of the volume-weighted averages are presented in Table 1.3.1-2.

Data were subjected to selected statistical procedures as outlined in Barr et al. (1976). Water chemistry data were subjected to Pearson's correlation analysis with the hydrological data.

III. RESULTS AND DISCUSSION

Lake Keowee

Temperature

Isotherms for Lake Keowee during 1977 are presented in Figures 1.3.1-1 through 1.3.1-4. The coldest temperatures existed during February with a volume-weighted average of 7.9 C (Table 1.3.1-2). The lowest surface temperature (5.4 C) was observed at Location 500.0. As surface water temperatures increased during the spring months, the lake gradually stratified. By July, Location 501.0 exhibited a vertical thermal gradient of 21.2 C°. During July, temperatures ranged from 9.9 C to 31.7 C (year maximum) with a monthly mean of 21.8 C (Table 1.3.1-3). The highest volume-weighted average lake temperature (25.0 C) existed during September (Table 1.3.1-2). As air temperatures decreased in the fall, the lake cooled rapidly and was nearly isothermal by December (Figures 1.3.1-1, 1.3.1-2, and 1.3.1-4).

Surface temperatures at Locations 501.0, 506.0 and 508.0 are compared in Figure 1.3.1-5. Location 501.0 typifies the Little River arm and Location 506.0 typifies the Keowee River arm. Location 508.0 is in the discharge cove. Location 501.0 generally was cooler than Locations 506.0 and 508.0, except during the summer. The annual maximum temperatures observed at Locations 501.0 (31.0 C), 506.0 (30.2 C), and 508.0 (30.7 C) occurred at the surface during July. Location 508.0 had the highest surface temperatures during the winter (Figure 1.3.1-5). The greatest difference in surface temperatures between the two arms (Locations 501.0 and 506.0) was 4.5 C°, measured during February.

As documented in the ONS Summary Report (Duke Power Company 1977), mixing by ONS operations resulted in bottom water temperatures exhibiting greater yearly increases than during preoperational years. The effects observed during 1977 were of approximately the same magnitude as observed during other operational years.

Dissolved Oxygen

The highest volume-weighted average DO concentration (11.1 mg/ℓ) in Lake Keowee occurred during February, and decreased to a minimum

value of 5.8 mg/ℓ in September (Table 1.3.1-2). The temporal pattern for DO for 1977 was consistent to that previously reported (Duke Power Company 1977). Maximum DO concentrations occurred from January through April. As stratification commenced, DO concentrations decreased in the lower strata until minimum values were observed during August, September, and October (Figures 1.3.1-6 through 1.3.1-9).

The minimum DO content in each year from 1973 through 1977 was progressively higher than the preceeding year (Figure 1.3.1-10). The occurrence of the minimum DO content changed from September, 1971-1975 to August, 1976 and 1977. Figure 1.3.1-10 indicates that the DO content curve was flatter during August through October 1977 than during previous years. The flatter curve and higher DO content for 1977 was attributed to the unusually cold weather that occurred during the winter of 1976-1977.

pH

Lake Keowee remained mildly acidic with a volume-weighted lake average pH ranging from 6.0 to 6.5 for 1977 (Table 1.3.1-2). During August, pH values ranged from 6.1 to 8.3 with a mean of 6.5 (Table 1.3.1-3). The higher values (≥8.0) were observed in the Little River arm (Locations 500.0, 501.0 and 501.5) in the upper strata (0.3 through 3.0 m). Values above 7.0 were attributed primarily to phytoplankton productivity (Section 1.3.4).

Specific Conductance

Very little spatial or temporal change occurred in specific conductance values in Lake Keowee. The annual mean specific conductance was 18.6 μmhos/cm with a minimum value of 12 μmhos/cm observed during April and December. The highest single value (92 μmhos/cm) and highest monthly lake mean (22 μmhos/cm) were observed during October (Table 1.3.1-3). The higher specific conductance values during October coincided with increased ionic constituent concentrations (e.g. iron and manganese) in the lake (Table 1.3.1-3). The mean specific conductance of the lake returned to 18 μmhos/cm in November.

Turbidity

Turbidity values throughout the lake were generally below 10 JTU and were similar to previous observations (Duke Power Company 1977). Turbidity values ranged from 2 to 100 JTU with an annual mean of 6.2 JTU. The highest monthly mean (10 JTU) occurred during April and July (Table 1.3.1-3). The higher turbidity values during April and July were attributed primarily to a period of increased rainfall preceding sampling. Abnormally high turbidities (100 JTU at Location 500.0 during April) were attributed to sample contamination by bottom sediment disturbed during the sampling process.

Oxidation-Reduction Potential

Oxidation-reduction potential (ORP) varied with respect to the equilibrium between the ionic constituents in the lake. In natural waters the state of equilibrium is constantly shifting and the ORP may be controlled by the most rapid of the several possible reactions (Hem 1971). Consequently, a steady state is assumed for the given instant during which measurement is made.

The maximum ORP (450 mv at Location 504.0) and the minimum ORP (-190 mv at Location 506.0) occurred during October (Appendix A, Section I). The negative ORP indicated the shift of equilibrium toward reduced conditions due to anoxia. This anoxic condition was a result of the inability of the bottom strata to mix with the upper strata due to thermal gradients which naturally occur as the lake warms during spring and summer. These reduced conditions also enhance formation of ammonia nitrogen, release of sediment phosphorus, and solubilization of iron and manganese. In lower strata, the toxic form of sulfide (H_2S) may also be formed under these reducing conditions.

Biochemical Oxygen Demand

Biochemical oxygen demand (BOD_{14}) measurements ranged from 0.1 to 4.2 mg/ℓ with an annual mean of 1.5 mg/ℓ. Monthly means indicated that maximum biochemical oxygen demand occurred during April (2.9 mg/ℓ). The maximum value (4.2 mg/ℓ) occurred at the bottom depth of Location 507.0 during April. The lowest monthly mean (0.8 mg/ℓ) occurred during February and November. Based on frequency distribution, 33% of the BOD_{14} values were less than 1.2 mg/ℓ and 47% fell below 1.8 mg/ℓ. Even though Lake Keowee BOD_{14} values were slightly higher than previously, the 1977 study period ($\bar{X}$ = 1.5 mg/ℓ) compared favorably with the January 1971 through December 1976 period ($\bar{X}$ = 1.1 mg/ℓ). Data from the 1977 study period reaffirmed the conclusion of the Summary Report (Duke Power Company 1977) that BOD_{14} values were low enough to be of little value in characterizing Lakes Keowee and Hartwell water chemistry.

Minerals

The annual mean hardness (6 mg/ℓ-$CaCO_3$) and the molar percentages of the major mineral constituents were equal to or nearly the same as the 1976 observations (Duke Power Company 1976). Molar percentages indicated bicarbonate (32%) was the major constituent followed by silica (24%), sodium (13%), chloride (9%), calcium (8%), magnesium (5%), potassium (4%), aluminum (3%), iron (1%) and manganese (1%). Furthermore, these mineral data were similar to that observed during the 1973 through 1976 operational period (Figure 1.3.1-11).

The average annual silica concentration (3.1 mg/ℓ-Si) indicated that silica, a major component of Lake Keowee minerals, continued to decrease

slightly (Duke Power Company 1977). Except during August, silica showed very little spatial change during the study period. During August, silica ranged from 0.64 mg/ℓ-Si (yearly minimum) to 7.3 mg/ℓ-Si (yearly maximum) with a monthly mean of 1.8 mg/ℓ-Si (Table 1.3.1-3). The maximum concentrations occurred at Locations 500.0 and 505.0 (Appendix A-Section III). The wide variation was attributed to heavy rainfall (7.8 inches) and runoff prior to the sample date.

Iron ($\bar{X}$ = 0.37 mg/ℓ) and manganese ($\bar{X}$ = 0.16 mg/ℓ) exhibited similar seasonal trends both spatially and temporally (Figures 1.3.1-12 and 1.3.1-13). The monthly variation in iron and manganese concentrations during the 1977 study period and the operational period 1973 through 1976 were similar (Figures 1.3.1-14 and 1.3.1-15). Maximum concentrations continued to be observed during late summer and fall with the Little River locations exhibiting the maximum concentrations at this time. The near-field and far-field locations continued to show a decline in iron concentrations during the fall. This concentration decrease was attributed to increased mixing and higher DO concentrations caused by ONS and Jocassee Pumped Storage operations (Duke Power Company 1977).

Aquatic Nutrients

Minimal temporal and spatial variations in orthophosphate concentrations were observed due to extremely low concentration levels. Soluble orthophosphate ranged from 0.005 to 0.026 mg/ℓ-P with an annual mean of 0.006 mg/ℓ-P. The monthly means of the different lake areas revealed that from July through November the Little River area exhibited slightly lower orthophosphate concentrations than the near-field and far-field areas (Figure 1.3.1-16). This was attributed to higher biological productivity in the Little River area during this period (Section 1.3.4).

Total phosphorus concentrations on Lake Keowee continued to decrease during 1977 (Figure 1.3.1-17). This steady decrease has also been observed in other newly impounded reservoirs (Weiss 1975). The highest total phosphorus concentrations occurred in August. No explanation is offered for this maximum as it did not follow the trend of anoxic conditions in the bottom waters and it did not seem to be associated with a number of other possible causative factors. Total phosphorus ranged from 0.005 to 0.58 mg/1-P with an annual mean of 0.010 mg/1-P (Table 1.3.1-3). Temporal and spatial variations in total phosphorus concentrations are shown in Figures 1.3.1-18 and 1.3.1-19.

Temporal variation of nitrate-nitrite concentrations was directly associated with seasonal DO concentrations (Figure 1.3.1-20). The Little River area generally exhibited slightly higher nitrate-nitrite concentrations than the near-field and far-field areas (Figure 1.3.1-21). This was attributed to nutrient enrichment as noted in previous reports (Duke Power Company 1976, 1977). The far-field area continued to exhibit the lowest nitrate-nitrite concentrations due to dilution with water from

Lake Jocassee containing lower nutrient concentrations. Nitrate-nitrite concentrations ranged from 0.010 to 0.46 mg/ℓ-N with an annual mean of 0.11 mg/ℓ-N. The maximum mean monthly nitrate-nitrite concentration (0.17 mg/ℓ-N) occurred during the period of highest DO (February). The minimum mean monthly concentration (0.062 mg/ℓ-N) occurred during September and was associated with the period of lowest DO concentration ($\bar{X}$ = 5.1 mg/ℓ) and increased reducing conditions that naturally occur at this time.

During March and April 1977, an increase in ammonia concentrations was recorded (Figure 1.3.1-22). An increase during these months had not been recorded in previous years. The 1977 increase in ammonia concentrations corresponded to increased rainfall that began two weeks prior to the March sampling date (3.0 in) and continued until one week preceding the April sampling date (an additional 11.0 in). Further, the highest monthly mean turbidity occurred during April. Both of these conditions were indicative of runoff inputs. Ammonia concentrations diminished in May and June as the excess ammonia was removed by hydrological and biological actions. The November peak followed the period of maximum anoxia and the December values indicated that the fall overturn was completed. Ammonia concentrations ranged from 0.013 to 1.2 mg/ℓ-N with an annual mean of 0.16 mg/ℓ-N.

As noted in the ONS Summary Report (Duke Power Company 1977), operation of ONS continued to stabilize the spatial variations of ammonia (Figure 1.3.1-19). As a result of nutrient enrichment (Duke Power Company 1977), the Little River area exhibited slightly higher ammonia concentrations than the near-field and far-field areas (Figure 1.3.1-23). Ammonia concentrations were directly correlated with chloride ($r=0.51$, $p<0.05$) indicating a relationship to wastewater inputs.

In order to evaluate nutrient loading and to more clearly define the temporal and spatial variations in selected nutrient concentrations, volume-weighted averages for nitrate-nitrite, ammonia, orthophosphate and total phosphorus were determined and are presented in Table 1.3.1-2.

Orthophosphate comprised from 12% of the total phosphorus concentration during August to 100% during March and December with a monthly average of 68%. Percentages below 20% were due to an increase in particulate phosphorus as a result of increased rainfall. This was substantiated by a significant correlation between percent orthophosphate and total rainfall for the two week period preceding the sampling ($r=0.56$, $p<.001$). Nitrate to ammonia ratios (0.36 to 1.18) indicated that ammonia was the dominant form of inorganic nitrogen during the study period (Figure 1.3.1-22). Inorganic N/P ratios calculated from the monitoring data were in agreement with previous findings that Lake Keowee was a phosphorus-limited system (USEPA 1975 and Duke Power Company 1977).

Inorganic nitrogen content for Lake Keowee ranged from 196 to 461 metric tons with a monthly mean of 330 metric tons (Table 1.3.1-2). Orthophosphate ranged from 4.7 to 9.1 metric tons with a mean of 6.3 metric tons.

Total phosphorus content ranged from 5.6 to 70 metric tons and averaged 14 metric tons. Total inorganic nitrogen to orthophosphate ratios (N/P) were calculated using these contents and ranged from 36 to 76 with a mean of 51. Values above the mean were recorded in the spring and fall which have previously been noted as seasons when nitrogen inputs typically occur.

The absence of temporal uniformity in the N/P values indicated that factors other than biological activity were responsible for nutrient fluctuations. Correlation analyses of the content data indicated these factors were rainfall and dissolved oxygen. A correlation coefficient of 0.83 ($p<0.001$) was obtained between rainfall and total phosphorus content indicating runoff to be the major controlling factor of total phosphorus. Additional total phosphorus was input by sediment release during anoxia as evidenced by a correlation of -0.51 ($p<0.1$) with DO. A correlation of 0.50 ($p<0.1$) was obtained between total inorganic nitrogen and rainfall, however, the correlation between inorganic nitrogen and DO was only -0.16 ($p>0.1$).

These results indicated that nitrogen and phosphorus fluctuations in Lake Keowee can be explained from meteorological and hydrological data. The operation of Oconee Nuclear Station affected these nutrient concentrations by altering the hydrological processes (mixing) which controlled their fluctuations.

Heavy Metals

Although no requirements exist for analysis of heavy metals, copper, cadmium, lead, mercury and zinc were monitored during this study period. The objective was to determine if concentrations of these metals were detrimental to aquatic life or to consumers of Lake Keowee water. This was ascertained by comparing the measured concentrations to criteria developed by the USEPA (1976b).

Copper concentrations continued to be well below the recommended USEPA limit for domestic water supply (1 mg/ℓ). The highest copper concentrations occurred during the winter with a minimum value of 0.003 mg/ℓ occurring in the far-field area and a maximum of 0.014 mg/ℓ in the near-field area (Appendix A, Section IV). These values were well below the values reported as harmful to bluegill (USEPA 1976b).

Cadmium concentrations were generally below the 0.4 µg/ℓ limit set by the USEPA (1976b) for a soft water system. During the winter and spring of 1977, the near-field and the far-field areas exhibited concentrations higher than 0.4 µg/ℓ with area means ranging from 0.5 to 4.3 µg/ℓ (Appendix A, Section IV). The higher values were observed in the near-field area during the winter.

Lead concentrations ranged from 0.8 to 5.7 µg/ℓ with a mean of 2.1 µg/ℓ (Appendix A, Section III). Concentrations below 6.0 to 11.9 µg/ℓ have not shown any adverse effects on salmonids, the most sensitive soft water species (USEPA 1976b).

Mercury concentrations in Lake Keowee during 1977 were consistent with findings from 1974 through 1976 and were below the detection limit of 0.1 µg/ℓ (Appendix A, Section III).

Recorded zinc values never exceeded 0.18 mg/ℓ (Appendix A, Section IV). A mean of 0.031 mg/ℓ indicated that zinc concentrations were sufficiently below a 96 hour TL_{50} for bluegill (2.58 mg/ℓ) for waters with similar pH, hardness and alkalinity as Lake Keowee (USEPA 1976b). Zinc values were observed to be highest during the winter and lowest during fall seasons. Little spatial variation in zinc concentrations was observed during this study period.

During the 1977 study period, only cadmium displayed occasional concentrations that exceeded the limit set by the USEPA (1976b). Further, the operation of ONS did not appear to have any effect on heavy metal concentrations in Lake Keowee.

Lake Hartwell

Temperature

The operation of ONS had minimal thermal impact on Lake Hartwell waters. Temperature and dissolved oxygen isopleths are presented in Figures 1.3.1-24 through 1.3.1-26. The coldest temperature (4.4 C) recorded on Lake Hartwell occurred during February at Location 601.0 and the highest surface temperature (31.0 C) occurred at Location 602.0 during July (Appendix A, Section I). From May through September, surface temperatures at Location 605.0 were lower than at Locations 603.0 and 601.0 (Figure 1.3.1-27).

Dissolved Oxygen

The operation of ONS had minimal effect on Lake Hartwell dissolved oxygen concentrations. Monthly variations in surface (0.3 m) DO concentrations on Lake Hartwell are presented in Figure 1.3.1-28. The lowest and highest monthly mean DO concentrations occurred during September and February, respectively (Table 1.3.1-4). Location 605.0 (Keowee tailrace) exhibited maximum and minimum DO concentrations in March and August, respectively.

Biochemical Oxygen Demand

Lake Hartwell BOD_{14} values were slightly higher than those observed on Lake Keowee ranging from 0.3 to 4.3 mg/ℓ with an annual mean of 1.9 mg/ℓ. The temporal trend closely resembled that observed on Lake Keowee with the highest monthly mean (2.6 mg/ℓ) occurring during April and the lowest (0.9 mg/ℓ) during December. Based on frequency distribution, 63% of the BOD values were less than 2.0 mg/ℓ and 82% fell below 2.5 mg/ℓ. The higher values were attributed to higher nutrient loading, a result of more point sources on Lake Hartwell than on Lake Keowee.

Minerals

The annual mean hardness (8 mg/ℓ-$CaCO_3$) and the molar percentages of the major mineral constituents were the same as or closely resembled the 1976

observations (Duke Power Company 1976). The annual molar percentages indicated bicarbonate (32%) was the major component followed by silica (21%), sodium (15%), chloride (11%), calcium (8%), magnesium (4%), potassium (4%), aluminum (2%), iron (2%) and manganese (1%).

The annual mean silica concentration was 3.4 mg/ℓ-Si. Except during August, monthly means showed very little deviation from the mean during the study period. The low monthly mean of 2.7 mg/ℓ-Si during August was attributed to heavy rainfall prior to the sampling date.

Aquatic Nutrients

Phosphorus concentrations during 1977 were similar to concentrations reported during 1976 (Duke Power Company 1976). Soluble orthophosphate ranged from 0.005 to 0.048 mg/ℓ-P with an annual mean of 0.008 mg/ℓ-P (Table 1.3.1-4). Total phosphorus ranged from 0.005 to 0.078 mg/ℓ-P with an annual mean of 0.017 mg/ℓ-P. The highest phosphorus concentrations were observed during August when monthly means for soluble orthophosphate and total phosphorus were 0.022 and 0.044 mg/ℓ-P, respectively. The elevated phosphorus concentrations during August were attributed to increased rainfall prior to sampling.

Temporal variation of nitrate-nitrite was directly associated with seasonal DO content. Nitrate-nitrite concentrations ranged from 0.021 to 0.44 mg/ℓ-N with an annual mean of 0.15 mg/ℓ-N. Ammonia concentrations ranged from 0.027 to 7.1 mg/ℓ-N with an annual mean of 0.37 mg/ℓ-N. Increased ammonia concentrations in the hypolimnion at Locations 601.0 and 602.0 were observed during periods of anoxia. Nitrate-nitrite to ammonia ratios indicated that ammonia was the dominant form of inorganic nitrogen from July through November (0.02 to 0.47) and that nitrate-nitrite was the dominant form of inorganic nitrogen from January through May and during December (2.5 to 2.7). Total inorganic nitrogen to phosphorus ratios ranged from 18 during August to 236 during September.

Comparison of Lake Keowee and Hartwell

Stratification and turnover occurred at approximately the same time on Lakes Keowee and Hartwell. The water chemistry of both lakes was similar with temporal and spatial distribution of both nutrients and minerals following classical patterns (Hutchinson 1957). As a result of more point sources on Lake Hartwell than on Lake Keowee, Lake Hartwell had slightly higher concentrations of nutrients. The effects of ONS operation on Lake Keowee were due to transport of hypolimnetic water from the Little River arm to the epilimnion of the Keowee River arm, and included effects on the thermal regime, dilution and mixing due to station operation as previously discussed (Duke Power Company 1976, 1977). The effect of ONS on the water chemistry of Lake Hartwell was minimal and was restricted to Location 605.0.

IV. SUMMARY AND CONCLUSIONS

Water chemistry of Lake Keowee and Lake Hartwell was monitored at monthly intervals from January through December 1977. The highest DO content

occurred during February and the lowest during September. Anoxic conditions existed in the hypolimnion during late summer and fall. Meteorology and hydrology were primary factors influencing the water chemistry of Lake Keowee during 1977. After periods of high rainfall, chemical variation due to runoff was evident. The biochemical oxygen demand (BOD_{14}) values obtained from Lake Keowee and Lake Hartwell were low and showed no significant change. The mineral composition of Lakes Keowee and Hartwell was similar to the composition previously reported. A continued decrease in lake-wide total phosphorus concentration was observed. Spatial and temporal variation of all nutrients were similar to that previously reported. An exception was the effect of high rainfall and the resulting runoff on ammonia, silica, and turbidity. In March an unusual increase in ammonia concentrations was noted. Consequently, ammonia was the dominant form of inorganic nitrogen during the study period. Inorganic N/P ratios indicated Lake Keowee to be a phosphorus-limited system. Of the heavy metals measured, only cadmium showed occasional concentrations above the recommended USEPA limit.

The effects of ONS operations on the water chemistry of Lake Keowee was similar to that previously reported and included a shift in the date of the chemical overturn, stabilization of nutrient variations and increased mixing of the lake. These impacts are primarily the result of the pumping component of ONS operation. The effect of ONS on the water chemistry of Lake Hartwell was minimal and was restricted to Location 605.0. Although the water chemistry of Lakes Keowee and Hartwell was influenced by ONS operation, no major impact was noted.

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Specification: A. (Continued)

Dissolved oxygen will also be measured weekly from May through November at three locations: (1) the Oconee discharge, (2) the lake surface (0.3 meter depth) at the Keowee intake structure, and (3) the Keowee tailrace during hydroelectric plant operation (Duke Power Company, 1973a).

I. INTRODUCTION

The utilization of hypolimnetic withdrawal of water from Lake Keowee for the ONS condenser cooling water has been discussed previously (Duke Power Company 1974a, 1977). During lake stratification (May through November) the withdrawal of cool bottom water low in dissolved oxygen (DO) and its subsequent discharge to the surface of Lake Keowee is the basis for the above specification.

II. METHODS AND MATERIALS

Dissolved oxygen concentrations and water temperatures were measured weekly (duplicate samples) in Lake Keowee and the Keowee Hydro tailrace from the following structures: ONS intake and discharge, Keowee Hydro Station intake and discharge, and S.C. Highway 183 bridge (Location 605).

The modified "Winkler" method described previously (Duke Power Company, 1973b) was employed for DO analysis.

III. RESULTS AND DISCUSSION

The results of the weekly DO monitoring program are presented in Table 1.3.1 - 5. Figure 1.3.1 -29 illustrates the DO concentrations for the five monitoring stations for the 1977 reporting period. Dissolved oxygen concentrations for the ONS intake ranged from a low of 4.4 mg/1 on September 2 and 8 to a high of 9.1 mg/1 on May 5 (Table 1.3.1-5). Dissolved oxygen values for the ONS discharge ranged from a low of 4.6 mg/1 on September 8 to a high of 8.7 mg/1 on May 5 (Table 1.3.1-5). The lowest value recorded at the Keowee Hydro Station intake was 5.3 mg/1, recorded on September 8 (Table 1.3.1-5). Lows of 6.7 mg/1 and 6.8 mg/1 were recorded at the Keowee Hydro Station discharge and Location 605 respectively, on September 2.

Continuous DO concentrations less than 5.0 mg/1 for the ONS intake extended from August 24 through September 8. From September 2 through September 8, DO concentrations less than 5.0 mg/1 were recorded at the ONS discharge. Dissolved oxygen values for the Keowee Hydro Station intake were never lower than 5.3 mg/1.

The gradual improvement in DO concentrations continued in the intake canal in 1977 as in past years with respect to both minimal DO concentrations (4.4 mg/1 in 1977, 4.2 mg/1 in 1976, 3.6 mg/1 in 1975, and 3.4 mg/1 in 1974, Figure 1.3.1-30) and the period in which DO concentrations were less than 5.0 mg/1 (3 weeks in 1977, 5 weeks in 1976, 5 weeks in 1975, and 9 weeks in 1974) (Duke Power Company 1974b, 1975, and 1976).

The gradual improvement in DO concentrations also continued in the ONS discharge in 1977 as in past years with respect to both minimal DO conditions (4.6 mg/l in 1977, 4.3 mg/l in 1976, 3.8 mg/l in 1975, and 3.4 mg/l in 1974, Figure 1.3.1 -31) and in the period in which DO concentrations were less than 5.0 mg/l (1 week in 1977, 3 weeks in 1976, 5 weeks in 1975, and 6 weeks in 1974) (Duke Power Company 1974b, 1975, and 1976).

IV. SUMMARY AND CONCLUSIONS

An improvement in DO concentrations of ONS condenser cooling water discharged to the surface of Lake Keowee and subsequently to Lake Hartwell can be attributed to the following: 1) ONS discharge water mixing with lake water in the discharge cove; 2) aeration in the discharge cove; 3) mixing and aeration in the Keowee Hydro tailrace during the operation of the Keowee Hydro Station; and 4) the increased DO concentrations of water entering the intake canal.

A gradual increase in DO concentrations in the ONS intake and discharge for the summer months has been documented annually since 1974. The hypolimnetic withdrawal of water from Lake Keowee and the subsequent discharge to the lake surface has allowed surface waters to mix to lower depths, thus allowing water higher in DO concentrations to be drawn into the ONS intake by the operation of the Condenser Cooling Water (CCW) pumps.

The discharge of water relatively low in dissolved oxygen is limited to the immediate vicinity of the ONS discharge. The short duration of DO concentrations less than 5.0 mg/l and the small area of Lake Keowee affected should not adversely affect the aquatic biota of the lake.

REFERENCES

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company. U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC), Washington, D.C.

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1.3.1 WATER QUALITY

Specification: B. Water temperature recording stations shall be established at Stations 502, 503, and 504. Temperature shall be monitored in a multi-point vertical profile, accurate to 0.5°C. Sensors shall be placed at a depth of 0.3 meters below the surface, on the bottom, and at a minimum of six (6) intervals to describe the temperature profile.

A fourth temperature recording station shall be established to monitor the waters discharged from Lake Keowee through the Keowee Hydro Plant (Duke Power Company, 1973a).

I. INTRODUCTION

Discussion of the significance of continuous temperature monitoring has been presented (Duke Power Company 1973b).

II. METHODS AND MATERIALS

Locations 502.0, 503.0, 504.0, Keowee Tailrace

The methods and materials used in monitoring the water temperature profile at these locations have been described (Duke Power Company 1973c).

Data Reduction

The method of data reduction used for Locations 502.0, 503.0, 504.0, and Keowee Tailrace have been described (Duke Power Company 1973c).

III. RESULTS AND DISCUSSION

A comparison of the water temperature data from 1972 through 1977 (Duke Power Company, 1973b, 1973c, 1974a, 1974b, 1975a, 1975b, 1976) reveals that both the maximum and minimum surface temperatures occurred during 1977. The minimum surface temperature (6.9 C) occurred at Location 502.0 on February 14, 1977, and the maximum temperature (33.0 C) occurred at Location 503.0 on July 20, 1977. The previous maximum surface temperature (32.8 C) was recorded at Location 502.0 during July 1972 and the previous minimum surface temperature (7.2 C) was recorded at Location 503.0 during January 1972.

Using the data in Appendix A, Section V, the following temperature trends were observed for Locations 502.0 and 504.0. From April through September 1977, the mean monthly temperature for Location 502.0 (at the skimmer wall) was warmer for each corresponding depth than Location 504.0 (in the ONS discharge plume). This was due to the CCW discharge temperature of ONS being colder than the surface receiving waters. There was a colder than usual supply of hypolimnetic water that was pulled under the skimmer wall and utilized for the entire summer by the CCW system. This resulted from a very cold winter combined with lower than usual CCW

flow rates and ΔT's during the summer. CCW flow rates and ΔT's are presented in Table 1.1-1. In previous years of ONS operation, the hypolimnetic temperatures were increased enough by early August that passage through the CCW system raised the discharge water to a temperature higher than the surface receiving water.

From January through March 1977, and October through December 1977, Location 504.0 was warmer than 502.0 for each corresponding depth. The ONS thermal plume was very evident in the top 3 meters at Location 504.0 during January. This column of surface water was 5.0 C° warmer than at Location 502.0 as shown in Figure 1.3.1-32.

The Keowee Tailrace temperature data are presented in Appendix A, Section V and summarized as shown in Table 1.3.1-6. The monthly means of the changes in temperature between periods of hydro generation and "no-generation" revealed that operation of the Keowee Hydro consistently resulted in raising the tailrace temperature. These changes ranged between 0.1 C° and 2.4 C° and the maximum daily change observed was 5.0 C° for this reporting period.

Comparison of the Keowee Hydro tailrace temperatures with those of Location 504.0 during periods of power generation indicates that the hydro draws a layer of water from Lake Keowee at a depth of 5 to 8 m.

IV. SUMMARY AND CONCLUSIONS

The maximum (33.0 C) and the minimum (6.9 C) surface temperatures recorded for the past six years occurred during this reporting period. The maximum (33.0 C) was recorded during July and is a result of climatic conditions rather than ONS operation as can be seen from the fact that the ONS Condenser Cooling Water discharge temperatures were cooler than the surface receiving water for the summer months. The maximum discharge temperature for the month of July was 28.0 C and averaged 25.8 C for that month.

The Keowee Hydro generation resulted in a 1.1 C° increase in mean tailrace temperature compared to tailrace temperatures when Keowee was not generating.

REFERENCES CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company, U. S. Atomic Energy Commission, Docket nos. 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC), Washington, D. C.

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Table 1.3.1-1

Analytical Methods for Chemical and Physical Constituents Measured on Lake Keowee and Lake Hartwell

Parameter	Method	Reference	Preservative	Detection Limit
Alkalinity, total	Method 403	A.P.H.A. et al., 1975	4 C	1 mg/l-$CaCO_3$
Aluminum	Atomic Absorption	Perkin-Elmer Corp., 1976	0.5% HNO_3	0.1 mg/l
	Atomic Absorption/HGA	Perkin-Elmer Corp., 1977	0.5% HNO_3	0.03 µg/l
Ammonia	Method 329-74 W/A	Technicon Ind. Systems, 1972	4 C, filtration	0.008 mg/l-N
	Method 98-70 W	Technicon Ind. Systems, 1973	4 C, filtration	0.005 mg/l-N
Biochemical Oxygen Demand $(BOD)_{14}$	Method 507	A.P.H.A. et al., 1975	4 C	0.5 mg/l
Cadmium	Atomic Absorption/HGA	Perkin-Elmer Corp., 1977	0.5% HNO_3	0.1 µg/l
Calcium	Atomic Absorption/DA	Perkin-Elmer Corp., 1976	0.5% HNO_3	0.01 mg/l
Chloride	Method 99-70 W	Technicon Ind. Systems, 1974	4 C, filtration	0.3 mg/l
Conductance, specific	Method 205	A.P.H.A. et al., 1975	4 C	1 µmhos/cm
	temperature compensated nickel electrode	Hydrolab Corp., 1973	In Situ	1 µmhos/cm
Copper	Atomic Absorption	Perkin-Elmer Corp., 1976	0.5% HNO_3	0.1 mg/l
	Atomic Absorption/HGA	Perkin-Elmer Corp., 1977	0.5% HNO_3	1.0 µg/l
Hardness, total	Method 309 A	A.P.H.A. et al., 1975	none	1 mg/l-$CaCO_3$
1% Incident Light	Photometer	Montedoro-Whitney Corp., 1974	In Situ	0.5 m
Iron, total	Atomic Absorption/DA	Perkin-Elmer Corp., 1976	4 C	0.01 mg/l
	Method 01045	U.S.E.P.A., 1974	4 C	
Lead	Atomic Absorption/HGA	Perkin-Elmer Corp., 1977	0.5% HNO_3	1 µg/l
Magnesium	Atomic Absorption/DA	Perkin-Elmer Corp., 1976	0.5% HNO_3	0.01 mg/l
Manganese	Atomic Absorption/DA	Perkin-Elmer Corp., 1976	0.5% HNO_3	0.01 mg/l
Mercury, total	Flameless Atomic Absorption/Method 71900	U.S.E.P.A., 1974	1.0% HNO_3	0.1 µg/l
Nitrate-Nitrite	Method 158-71 W	Technicon Ind. Systems, 1972	4 C, filtration	0.02 mg/l-N
Orthophosphate, soluble	Method 155-71 W	Technicon Ind. Systems, 1973	4 C, filtration	0.005 mg/l-P
Oxidation-Reduction Potential (ORP)	Silver-Silver chloride electrode	Hydrolab Corp., 1973	In Situ	-1000 mv
Oxygen, dissolved	Method 422 B	A.P.H.A. et al., 1975	In Situ (pumped sample)	0.0 mg/l
	temperature compensated polarographic cell	Hydrolab Corp., 1973	In Situ	0.0 mg/l
pH	Method 424	A.P.H.A. et al., 1975	4 C	0.1 pH unit
	temperature compensated glass electrode	Hydrolab Corp., 1973	In Situ	0.1 pH unit
Phosphorus, total	Method 00665	U.S.E.P.A., 1974	4 C	0.005 mg/l-P
Potassium	Atomic Absorption/DA	Perkin-Elmer Corp., 1976	0.5% HNO_3	0.1 mg/l
Silica, soluble	Method 105-71 W	Technicon Ind. Systems, 1973	4 C	0.02 mg/l-Si
Sodium	Atomic Absorption/DA	Perkin-Elmer Corp., 1976	0.5% HNO_3	0.1 mg/l
Surface Illumination	Photometer	Montedoro-Whitney Corp., 1974	In Situ	0.01 ly/min
Temperature	Method 212	A.P.H.A. et al., 1975	In Situ	-1.0 C
	thermistor thermometer	Hydrolab Corp., 1973	In Situ	-5.0 C
Turbidity	Monitek Turbidimeter	Monitor Tech. Inc., 1973	4 C	1 JTU
Zinc	Atomic Absorption/DA	Perkin-Elmer Corp., 1976	0.5% HNO_3	10 µg/l
	Atomic Absorption/HGA	Perkin-Elmer Corp., 1977	0.5% HNO_3	1 µg/l

Table 1.3.1-2

Summary of volume-weighted averages and content of selected aquatic chemistry constituents for Lake Keowee 1977.

	January	February	March	April	May	June	July	August	September	October	November	December
Temperature												
Average (C)	10.4	7.9	10.4	13.0	16.6	19.9	22.0	23.4	25.0	22.8	17.6	13.8
Content (10^{13} k cal)	1.12	.80	1.15	1.49	1.88	2.23	2.39	2.60	3.18	2.82	2.23	1.77
Dissolved Oxygen												
Average (mg/l)	10.4	11.1	10.9	10.1	9.4	8.6	7.4	6.4	5.8	6.0	7.4	8.9
Content (metric tons)	1100	1100	1200	1200	1100	960	800	710	740	740	930	1100
Nitrate-nitrite												
Average (mg/l-N)	.097	.17	.11	.13	.12	.11	.10	.10	.062	.11	.13	.13
Content (metric tons)	103	159	119	154	152	129	107	149	76	139	153	163
Ammonia												
Average (mg/l-N)	.087	.10	.19	.26	.18	.093	.14	.19	.16	.24	.26	.083
Content (metric tons)	93	94	196	307	237	109	149	276	203	292	307	101
Ortho-phosphate												
Average (mg/l-P)	.005	.005	.005	.005	.005	.005	.005	.006	.005	.006	.007	.005
Content (metric tons)	5.4	4.7	5.0	6.0	6.5	6.0	5.5	9.1	6.2	7.3	8.2	6.1
Total phosphorus												
Average (mg/l-P)	.006	.006	.005	.008	.007	.006	.009	.048	.009	.008	.014	.005
Content (metric tons)	6.9	5.6	5.6	9.5	8.9	7.0	9.3	70	11	10	16	6.1
$\frac{\text{Orthophosphate}}{\text{Total Phosphorus}}$ %	83	83	100	63	71	83	56	12	56	63	50	100
$\frac{\text{nitrate-nitrite + ammonia}}{\text{Orthophosphate}}$	37	54	61	77	60	41	49	32	45	58	56	43
pH												
Average	6.3	6.1	6.5	6.5	6.4	6.4	6.5	6.5	6.2	6.0	6.1	6.2
Conductivity												
Average (μmho/cm)	17.7	17.5	16.8	15.1	17.5	20.0	20.7	17.6	18.6	20.3	17.5	15.4

Table 1.3.1-3

Descriptive Statistics for Lake Keowee, 1977

	January			February			March			April		
	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum
Temperature (C)	10.4	15.7	8.0	7.8	13.4	4.4	10.4	17.3	6.8	13.1	20.2	7.3
Dissolved Oxygen (mg/l)	10.4	11.4	8.9	11.0	12.3	9.7	10.9	12.2	9.1	10.1	11.4	7.8
pH	6.3	6.9	5.5	6.2	6.8	5.4	6.5	7.0	6.3	6.7	7.4	6.3
Specific Conductance (μmhos/cm)	17.7	42	14	17.8	23	15	16.9	23	13	15.2	18	12
Alkalinity (mg/l-$CaCO_3$)	7.4	8	7	7.8	9	7	8.1	13	4	7.7	12	5
Turbidity (JTU)	5.1	7	3	5.0	35	3	5.2	14	3	10.2	100	4
Nitrate-nitrite (mg/l-N)	.104	.16	.071	.168	.46	.068	.126	.21	.066	.137	.34	.092
Ammonia (mg/l-N)	.125	.44	.023	.109	.26	.041	.182	.50	.042	.245	1.2	.084
Ortho-phosphate (mg/l-P)	.005	.007	.005	.005	.009	.005	.005	.007	.005	.005	.007	.005
Total Phosphorus (mg/l)	.008	.025	.005	.007	.027	.005	.006	.016	.005	.009	.062	.006
Iron (mg/l)	.154	.23	.08	.267	.98	.15	.231	.80	.10	.494	3.3	.22
Manganese (mg/l)	.051	.07	.05	.055	.42	.05	.050	.07	.05	.075	1.0	.05
Calcium (mg/l)	1.31	1.6	.79	1.18	1.8	.91	1.54	2.0	1.0	1.48	2.3	1.2
Magnesium (mg/l)	.549	.62	.43	.551	.72	.45	.562	.68	.46	.525	1.1	.40
Silica (mg/l-Si)	4.11	4.6	3.4	3.39	3.9	3.0	3.12	3.4	2.8	3.12	3.4	2.8
Oxidation Reduction Potential (mv)	335	350	300	303	370	100	375	420	280	363	410	260
Chloride (mg/l)	1.51	3.6	1.0	1.56	7.8	1.2	1.51	2.7	1.0	1.68	5.7	1.1

Table 1.3.1-3 (Cont.)

	May			June			July			August		
	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum
Temperature (C)	16.7	23.2	8.7	19.0	26.2	9.4	21.8	31.7	9.9	22.6	29.7	10.8
Dissolved Oxygen (mg/l)	9.3	11.2	5.8	8.2	10.8	1.4	7.1	10.2	.9	6.1	9.1	.0
pH	6.4	7.3	5.9	6.4	7.4	5.9	6.5	7.9	6.1	6.5	8.3	6.1
Specific Conductance (μmhos/cm)	17.7	21	15	20.3	28	16	20.7	46	17	17.8	31	14
Alkalinity (mg/l-$CaCO_3$)	6.9	8	6	5.6	24	3	6.1	8	3	7.7	21	6
Turbidity (JTU)	3.4	12	2	6.1	14	3	10.2	66	2	5.8	37	2
Nitrate-nitrite (mg/l-N)	.123	.26	.072	.115	.26	.033	.106	.27	.024	.103	.27	.037
Ammonia (mg/l-N)	.116	1.1	.028	.086	.23	.013	.149	.36	.065	.177	.73	.064
Ortho-phosphate (mg/l-P)	.005	.005	.005	.005	.009	.005	.006	.016	.005	.006	.023	.005
Total Phosphorus (mg/l)	.008	.039	.005	.006	.017	.005	.010	.026	.005	.026	.58	.005
Iron (mg/l)	.274	2.0	.06	.159	.86	.03	.413	6.0	.04	.479	5.1	.10
Manganese (mg/l)	.021	.15	.01				.080	.70	.01	.203	2.4	.03
Calcium (mg/l)	1.64	2.2	1.4	1.65	1.9	1.5				1.65	2.0	1.4
Magnesium (mg/l)	.524	.81	.42	.520	.62	.45				.593	.71	.47
Silica (mg/l-Si)	3.19	3.5	2.8	3.27	3.8	2.9	3.10	3.7	2.9	1.74	7.3	.64
Oxidation Reduction Potential (mv)	359	400	270	386	420	270	290	380	130	353	400	20
Chloride (mg/l)	1.16	2.6	.9	1.25	3.1	.9	1.20	2.7	.8	1.75	3.8	1.3

Table 1.3.1-3 (Cont.)

	September			October			November			December		
	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum
Temperature (C)	23.9	28.6	11.2	22.1	27.5	12.6	17.9	21.4	11.1	13.8	17.9	12.3
Dissolved Oxygen (mg/l)	5.1	8.2	.0	5.7	7.8	.0	7.4	8.6	.1	8.9	9.4	8.0
pH	6.2	7.0	5.7	6.1	7.1	5.6	6.4	6.6	5.8	6.2	6.4	6.1
Specific Conductance (μmhos/cm)	18.8	62	15	21.5	92	15	17.7	46	14	17.4	35	12
Alkalinity (mg/l-$CaCO_3$)	8.4	33	6	9.9	22	6	7.7	22	6	5.8	8	3
Turbidity (JTU)	6.7	40	2	6.1	35	2	4.5	23	2	4.9	10	3
Nitrate-nitrite (mg/l-N)	.062	.24	.010	.089	.29	.037	.107	.24	.051	.124	.21	.078
Ammonia (mg/l-N)	.170	.44	.075	.211	.86	.058	.276	.94	.091	.078	.17	.030
Ortho-phosphate (mg/l-P)	.005	.010	.005	.006	.012	.005	.007	.026	.005	.005	.005	.005
Total Phosphorus (mg/l)	.009	.034	.005	.008	.019	.005	.015	.031	.008	.005	.005	.005
Iron (mg/l)	.482	9.4	.05	.709	13	.07	.400	4.3	.10	.208	.34	.11
Manganese (mg/l)	.352	3.1	.01	.550	4.2	.02	.184	4.0	.01	.056	.14	.01
Calcium (mg/l)	1.93	2.5	1.6	1.92	2.9	1.5	1.35	1.5	1.1	1.34	1.5	.93
Magnesium (mg/l)	.648	.78	.54	.603	.78	.49	.498	.58	.40	.481	.56	.35
Silica (mg/l-Si)	3.07	3.8	2.8	3.25	4.0	3.0	3.35	3.5	3.0	3.15	3.4	2.8
Oxidation Reduction Potential (mv)	377	430	-70	363	450	-190	393	440	100	387	430	280
Chloride (mg/l)	1.47	2.50	1.2	1.68	2.4	1.2	2.18	4.5	1.6	1.58	3.6	1.3

Table 1.3.1-4

Descriptive Statistics for Lake Hartwell, 1977.

	January			February			March			April		
	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum
Temperature (C)	6.8	7.0	6.5	6.8	9.3	4.4	10.2	13.8	6.7	13.8	19.5	8.2
Dissolved Oxygen (mg/l)	10.8	11.4	10.2	11.6	12.6	10.7	11.0	12.1	9.8	8.9	11.1	6.7
pH	6.9	7.2	6.6	6.2	6.7	5.8	6.7	7.0	6.4	6.9	7.6	6.2
Specific Conductance (μmhos/cm)	19.5	22	17	25.0	31	19	24.0	27	21	20.0	24	16
Alkalinity (mg/l-$CaCO_3$)	8.4	7	9	8.0	8	8	10.4	5	15	9.4	12	7
Turbidity (JTU)	7.3	15	4	6.6	9	6	5.4	11	3	19.5	60	5
Nitrate-nitrite (mg/l-N)				.28	.44	.15						
Ammonia (mg/l-N)				.11	.20	.067						
Ortho-phosphate (mg/l-P)				.005	.007	.005						
Total Phosphorus (mg/l)				.015	.021	.009						
Iron (mg/l)	.30	.46	.16	.29	.42	.19	.32	1.0	.14	.83	1.9	.37
Manganese (mg/l)	.05	.05	.05	.05	.05	.05	.05	.09	.05	.05	.12	.05
Calcium (mg/l)	1.4	1.7	1.1	1.6	1.9	1.3	1.9	2.5	1.6	1.7	1.9	1.5
Magnesium (mg/l)	.64	.70	.56	.63	.68	.59	.70	.94	.57	.62	.73	.53
Silica (mg/l-Si)				3.7	4.1	3.4						
Oxidation Reduction Potential (mv)	265	280	250	285	330	240	325	390	260	390	430	350
Chloride (mg/l)				2.1	3.4	1.4						

Table 1.3.1-4 (Cont.)

	May			June			July			August		
	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum
Temperature (C)	17.2	23.2	11.2	19.6	26.5	12.7	22.3	31.0	13.6	22.5	30.4	14.6
Dissolved Oxygen (mg/l)	6.4	10.4	2.4	5.3	10.5	0.3	4.6	9.1	0.1	4.4	8.8	0.0
pH	7.2	8.0	6.3	7.2	8.5	5.9	7.0	8.0	6.0	7.1	8.1	6.1
Specific Conductance (μmhos/cm)	23.0	27	19	29.0	38	20	37.0	52	22	46.0	71	21
Alkalinity (mg/l-$CaCO_3$)	8.1	10	7	7.8	10	7	10.9	18	7	14.2	34	6
Turbidity (JTU)	9.0	280	3	9.5	24	3	14.9	30	4	12.5	38	3
Nitrate-nitrite (mg/l-N)	.24	.4	.095	.20	.37	.027	.14	.35	.035	.065	1.5	.028
Ammonia (mg/l-N)	.09	.20	.035	.08	.19	.027	.28	.53	.074	.33	.90	.058
Ortho-phosphate (mg/l-P)	.005	.005	.005	.007	.010	.005	.006	.018	.005	.022	.052	.006
Total Phosphorus (mg/l)	.017	.078	.009	.012	.024	.005	.015	.025	.009	.044	.19	.013
Iron (mg/l)	.64	1.9	.26	.36	1.1	.10	.83	4.9	.10	1.5	6.3	.16
Manganese (mg/l)	.07	.34	.01				.35	1.3	.01	.51	1.7	.06
Calcium (mg/l)	2.0	2.5	1.8	1.9	2.2	1.6	1.9	2.2	1.7	2.3	2.7	1.8
Magnesium (mg/l)	.66	.94	.54	.63	.74	.52	.69	.79	.57	.80	.87	.63
Silica (mg/l-Si)	3.3	3.7	2.5	3.5	3.8	3.2	3.4	4.3	2.7	2.7	3.3	2.3
Oxidation Reduction Potential (mv)	290	360	220	330	380	280	170	300	40	90	340	-160
Chloride (mg/l)	1.7	2.1	1.1	2.0	2.8	1.2	2.3	3.7	1.4	2.5	4.1	1.6

Table 1.3.1-4 (Cont.)

	September			October			November			December		
	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum
Temperature (C)	22.0	27.3	16.6	21.8	23.7	19.8	17.4	18.8	16.0	12.8	14.9	10.8
Dissolved Oxygen (mg/l)	3.5	7.0	0.0	3.9	7.8	0.0	7.8	8.8	6.7	9.2	9.8	8.6
pH	6.2	6.5	5.8	6.4	6.8	6.1	6.7	7.0	6.4	6.4	6.9	6.0
Specific Conductance (μmhos/cm)	48	77	18	45	74	16	24	30	18	26	32	19
Alkalinity (mg/l-$CaCO_3$)	15.4	40	4	10.9	18	8	9.0	11	6	6.0	7	6
Turbidity (JTU)	10.5	135	4	11.0	31	4	9.7	25	4	8.9	27	5
Nitrate-nitrite (mg/l-N)	.04	.28	.021	.10	.13	.072	.16	.24	.091	.16	.24	.097
Ammonia (mg/l-N)	1.6	7.1	.11	.24	.068	.60	.38	.89	.10	.058	.11	.030
Ortho-phosphate (mg/l-P)	.007	.025	.005	.006	.009	.005	.006	.012	.005	.006	.007	.005
Total Phosphorus (mg/l)	.021	.054	.009	.006	.013	.005	.015	.042	.005	.006	.010	.005
Iron (mg/l)	2.2	8.3	.16	.36	.95	.15	.74	2.2	.30	.35	.65	.18
Manganese (mg/l)	.65	2.6	.06	.16	.84	.05	.06	.45	.03	.05	.11	.02
Calcium (mg/l)	2.7	3.3	2.2	1.9	2.3	1.6	1.6	1.8	1.4	1.6	1.7	1.4
Magnesium (mg/l)	.90	1.1	.77	.67	.84	.57	.58	.65	.50	.59	.66	.49
Silica (mg/l-Si)	3.7	4.6	3.1	3.5	4.4	3.1	3.5	4.0	3.2	3.3	3.6	3.1
Oxidation Reduction Potential (mv)	130	380	-120	200	410	-10	415	430	-400	375	410	340
Chloride (mg/l)	2.4	4.1	1.3	2.3	3.0	1.2	2.8	5.0	1.6	1.9	2.3	1.3

Table 1.3.1-5. Summary of weekly dissolved oxygen monitoring for May through November, 1977

Date	Station*	Temp. °C	DO mg/1
5/05/77	Oconee Intake	13.3	9.2-9.0
	Oconee Discharge	21.3	8.7-8.7
	Keowee Hydro Intake	21.7	9.0-9.0
	Keowee Hydro Discharge	19.1	9.4-9.5
	Station 605	19.8	9.8-9.8
5/12/77	Oconee Intake	14.9	8.5-8.5
	Oconee Discharge	21.6	8.5-8.7
	Keowee Hydro Intake	21.8	8.7-8.8
	Keowee Hydro Discharge	20.4	9.4-9.4
	Station 605	20.7	9.5-9.6
5/19/77	Oconee Intake	14.0	8.8-8.5
	Oconee Discharge	22.8	8.5-8.6
	Keowee Hydro Intake	24.6	8.6-8.7
	Keowee Hydro Discharge	21.7	9.2-9.3
	Station 605	22.1	9.5-9.6
5/26/77	Oconee Intake	15.0	7.9-8.0
	Oconee Discharge	22.6	7.9-8.0
	Keowee Hydro Intake	22.6	8.2-8.2
	Keowee Hydro Discharge	22.0	9.2-9.1
	Station 605	22.1	9.1-9.3
6/02/77	Oconee Intake	15.8	7.6-7.6
	Oconee Discharge	23.4	7.7-7.8
	Keowee Hydro Intake	25.2	8.2-8.3
	Keowee Hydro Discharge	21.7	9.0-9.0
	Station 605	22.3	9.1-8.9
6/09/77	Oconee Intake	17.3	7.5-7.6
	Oconee Discharge	25.4	8.0-8.1
	Keowee Hydro Intake	25.1	8.3-8.0
	Keowee Hydro Discharge	23.1	8.5-8.4
	Station 605	24.2	9.2-9.2
6/16/77	Oconee Intake	17.2	7.3-7.1
	Oconee Discharge	25.0	8.2-7.7
	Keowee Hydro Intake	26.5	9.4-9.0
	Keowee Hydro Discharge	25.0	9.0-9.5
	Station 605	24.8	7.8-8.3

*Measurements were taken at the facility structures.

Table 1.3.1-5 (Cont.). Summary of weekly dissolved oxygen monitoring for May through November, 1977

Date	Station	Temp. °C	DO mg/1
6/23/77	Oconee Intake	17.7	7.2-7.3
	Oconee Discharge	24.5	7.4-7.5
	Keowee Hydro Intake	26.9	8.1-8.2
	Keowee Hydro Discharge	24.8	8.4-8.5
	Station 605	25.0	8.6-8.6
6/30/77	Oconee Intake	18.0	6.6-6.5
	Oconee Discharge	26.1	6.6-6.8
	Keowee Hydro Intake	28.5	7.9-7.9
	Keowee Hydro Discharge	25.5	8.1-8.3
	Station 605	25.5	8.1-8.1
7/07/77	Oconee Intake	19.1	6.1-6.2
	Oconee Discharge	27.9	6.9-7.1
	Keowee Hydro Intake	30.9	7.8-7.8
	Keowee Hydro Discharge	23.4	7.8-7.6
	Station 605	25.1	7.8-7.9
7/12/77	Oconee Intake	20.3	6.1-6.4
	Oconee Discharge	26.6	6.8-6.7
	Keowee Hydro Intake	30.0	7.9-7.7
	Keowee Hydro Discharge	25.2	7.8-8.1
	Station 605	25.7	7.8-7.8
7/21/77	Oconee Intake	20.8	6.5-6.6
	Oconee Discharge	28.1	7.1-7.0
	Keowee Hydro Intake	30.5	7.7-7.8
	Keowee Hydro Discharge	26.3	7.8-7.7
	Station 605	26.0	7.3-7.2
7/28/77	Oconee Intake	20.0	5.4-5.3
	Oconee Discharge	26.1	5.6-5.5
	Keowee Hydro Intake	26.6	7.3-7.4
	Keowee Hydro Discharge	24.3	7.0-7.1
	Station 605	25.7	7.6-7.4
8/04/77	Oconee Intake	20.6	4.8-4.9
	Oconee Discharge	27.8	4.8-5.0
	Keowee Hydro Intake	27.2	6.1-6.2
	Keowee Hydro Discharge	25.2	7.2-7.2
	Station 605	25.2	7.5-7.5

Table 1.3.1-5 (Cont.). Summary of weekly dissolved oxygen monitoring for May through November, 1977

Date	Station	Temp. °C	DO mg/1
8/11/77	Oconee Intake	22.3	5.4-5.4
	Oconee Discharge	28.0	7.1-7.2
	Keowee Hydro Intake	29.3	7.7-7.9
	Keowee Hydro Discharge	25.3	7.0-7.4
	Station 605	26.1	7.5-7.4
8/18/77	Oconee Intake	21.6	5.0-4.9
	Oconee Discharge	27.2	5.5-5.8
	Keowee Hydro Intake	26.8	6.6-6.6
	Keowee Hydro Discharge	25.7	7.2-7.5
	Station 605	25.9	7.2-7.3
8/24/77	Oconee Intake	22.5	4.9-4.9
	Oconee Discharge	27.2	5.7-5.8
	Keowee Hydro Intake	27.0	7.5-7.6
	Keowee Hydro Discharge	25.5	7.4-7.5
	Station 605	26.0	7.6-7.6
9/02/77	Oconee Intake	23.2	4.3-4.4
	Oconee Discharge	28.2	4.7-4.9
	Keowee Hydro Intake	27.8	5.7-5.6
	Keowee Hydro Discharge	26.8	6.7-6.7
	Station 605	27.1	6.8-6.7
9/08/77	Oconee Intake	23.6	4.6-4.3
	Oconee Discharge	28.8	4.5-4.6
	Keowee Hydro Intake	27.9	5.3-5.3
	Keowee Hydro Discharge	27.2	6.7-6.8
	Station 605	27.5	6.8-7.0
9/15/77	Oconee Intake	23.6	5.0-4.9
	Oconee Discharge	27.4	5.5-5.4
	Keowee Hydro Intake	27.0	5.6-5.7
	Keowee Hydro Discharge	26.0	6.9-6.9
	Station 605	26.6	7.0-7.0
9/22/77	Oconee Intake	24.7	5.4-5.2
	Oconee Discharge	27.5	5.2-5.2
	Keowee Hydro Intake	27.0	6.1-6.2
	Keowee Hydro Discharge	26.3	7.6-7.8
	Station 605	26.6	7.7-7.7

Table 1.3.1-5 (Cont.). Summary of weekly dissolved oxygen monitoring for May through November, 1977

Date	Station	Temp. °C	DO mg/1
9/28/77	Oconee Intake	24.8	5.5-5.4
	Oconee Discharge	28.6	5.4-5.5
	Keowee Hydro Intake	28.9	6.1-6.1
	Keowee Hydro Discharge	27.3	7.0-7.0
	Station 605	27.2	7.2-7.2
10/06/77	Oconee Intake	24.6	6.4-6.2
	Oconee Discharge	28.2	6.4-6.3
	Keowee Hydro Intake	26.7	6.5-6.4
	Keowee Hydro Discharge	26.0	7.5-7.5
	Station 605	26.1	7.2-7.2
10/13/77	Oconee Intake	22.9	7.2-7.2
	Oconee Discharge	24.3	7.1-7.1
	Keowee Hydro Intake	23.8	7.0-6.9
	Keowee Hydro Discharge	23.5	8.3-8.3
	Station 605	23.3	8.4-8.5
10/21/77	Oconee Intake	21.1	7.6-7.5
	Oconee Discharge	25.7	7.7-7.8
	Keowee Hydro Intake	23.3	7.9-7.8
	Keowee Hydro Discharge	21.9	7.6-8.0
	Station 605	22.2	8.9-8.7
10/27/77	Oconee Intake	19.8	8.4-8.2
	Oconee Discharge	21.0	8.0-8.6
	Keowee Hydro Intake	21.7	7.8-8.4
	Keowee Hydro Discharge	21.7	7.9-7.6
	Station 605	20.9	7.5-8.0
11/03/77	Oconee Intake	19.7	8.7-8.5
	Oconee Discharge	23.6	7.9-7.7
	Keowee Hydro Intake	22.6	8.1-8.0
	Keowee Hydro Discharge	21.6	8.0-8.1
	Station 605	21.5	7.9-8.3
11/10/77	Oconee Intake	18.9	7.8-7.7
	Oconee Discharge	24.7	7.6-7.7
	Keowee Hydro Intake	20.9	7.9-8.2
	Keowee Hydro Discharge	19.8	10.2-9.6
	Station 605	19.2	8.9-8.9

Table 1.3.1-5 (Cont.). Summary of weekly dissolved oxygen monitoring for May through November, 1977

Date	Station	Temp. °C	DO mg/1
11/17/77	Oconee Intake	17.9	8.6-8.8
	Oconee Discharge	21.4	8.1-8.0
	Keowee Hydro Intake	20.3	8.3-8.6
	Keowee Hydro Discharge	18.8	9.3-9.3
	Station 605	19.0	8.7-8.8
11/22/77	Oconee Intake	17.4	8.5-8.6
	Oconee Discharge	21.6	8.2-8.7
	Keowee Hydro Intake	19.3	8.8-8.6
	Keowee Hydro Discharge	18.4	9.2-9.6
	Station 605	18.2	7.9-10.0

Table 1.3.1-6. SUMMARY OF KEOWEE TAILRACE TEMPERATURE

Data: Amounts (average for month and maximum within month) by which temperatures recorded during generating mode exceeded those during non-generating mode of Keowee Hydro. (See text for further explanation).

MONTH	MEAN (C°)	MAXIMUM (C°)
January	+0.8	+2.7
February	+0.1	+2.1
March	+1.5	+3.0
April	+2.4	+5.0
May	+1.8	+1.7
June	+1.3	+3.1
July	+1.7	+3.2
August	+1.1	+1.7
September	+0.7	+1.8
October	+0.4	+1.4
November	+0.5	+1.2
December	+0.6	+1.6

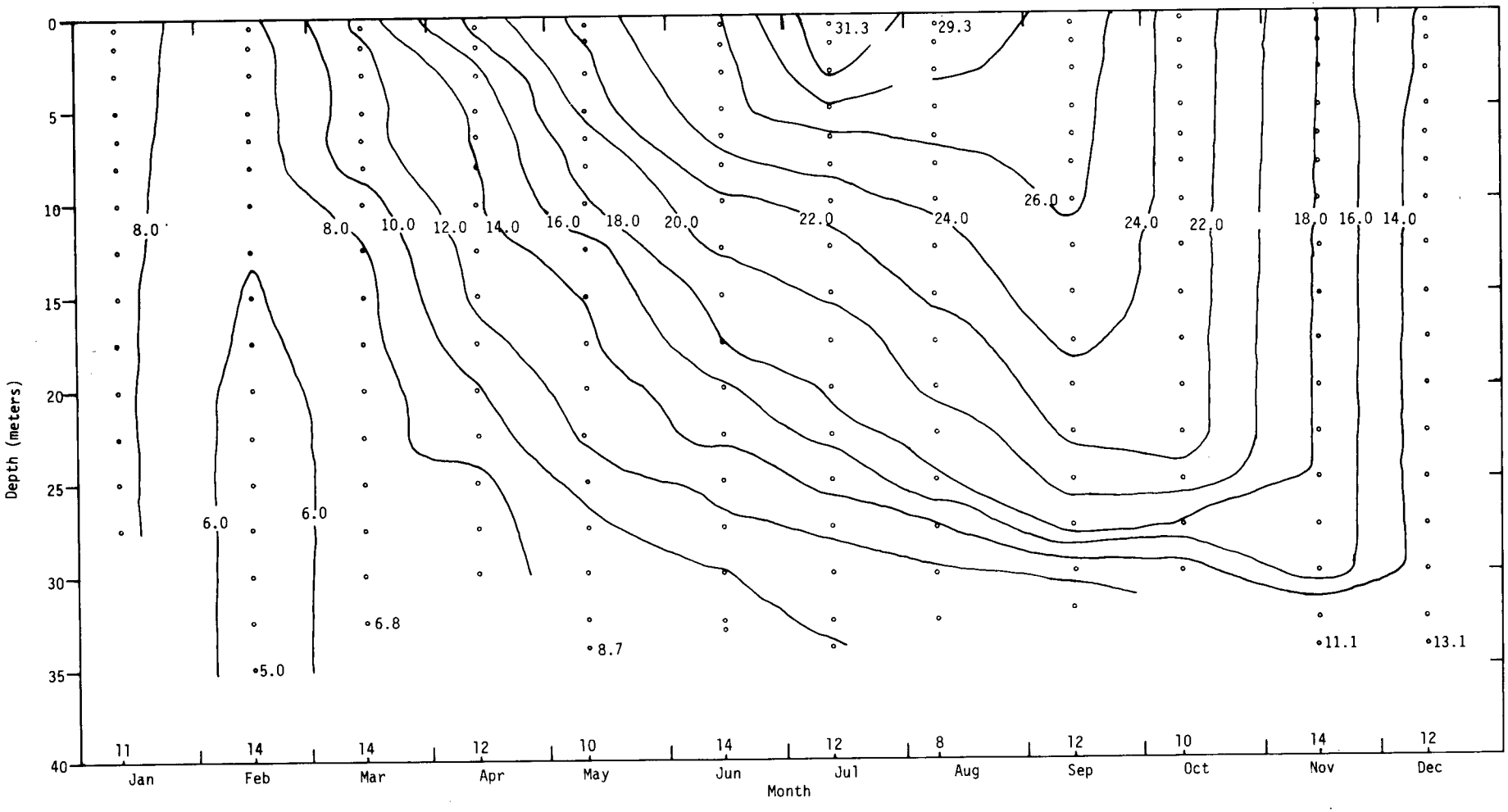


Figure 1.3.1-1. Temperature isopleths (C) for Location 501.0 on Lake Keowee for 1977.

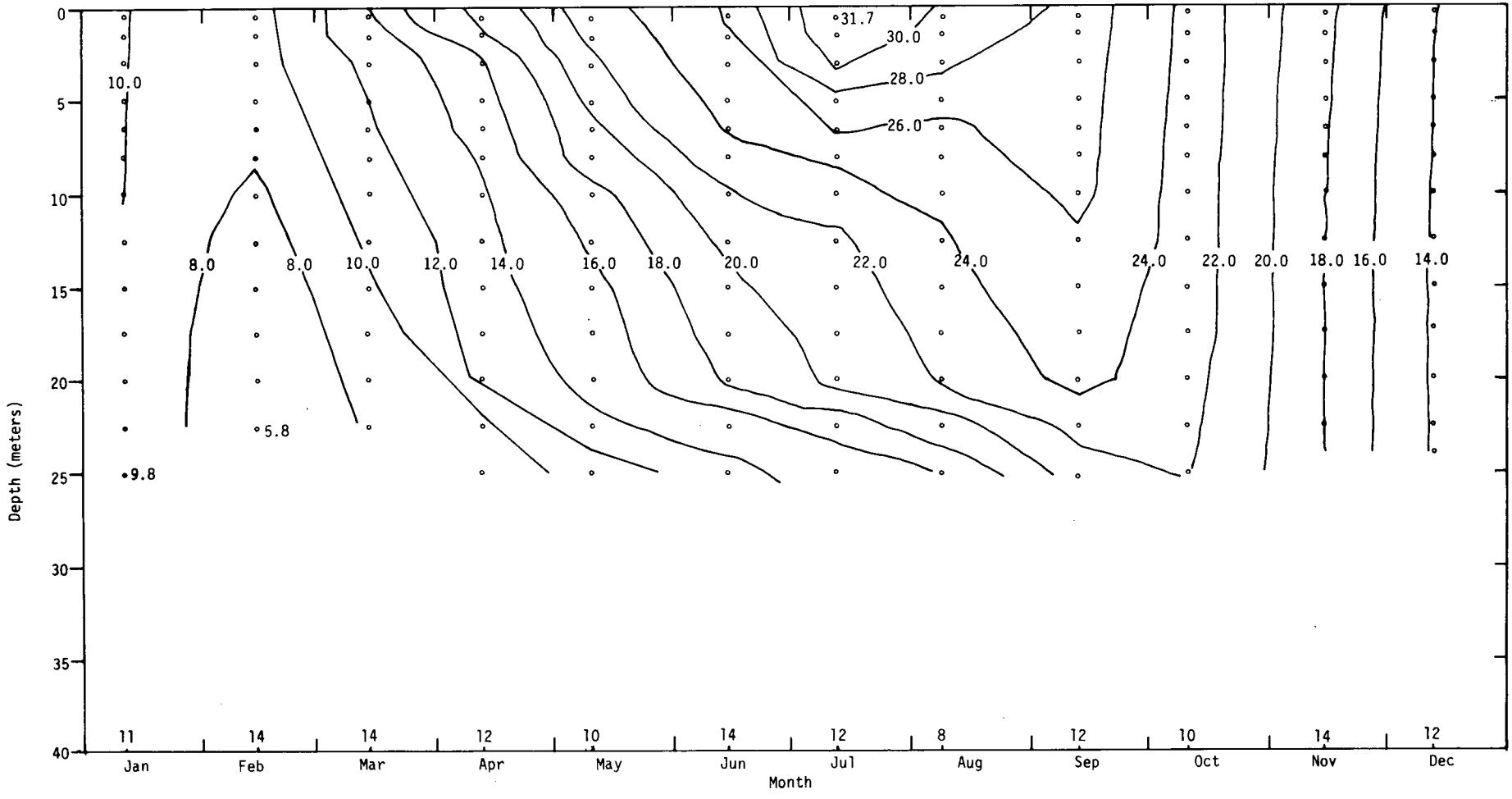


Figure 1.3.1-2. Temperature isopleths (C) for Location 502.0 on Lake Keowee for 1977.

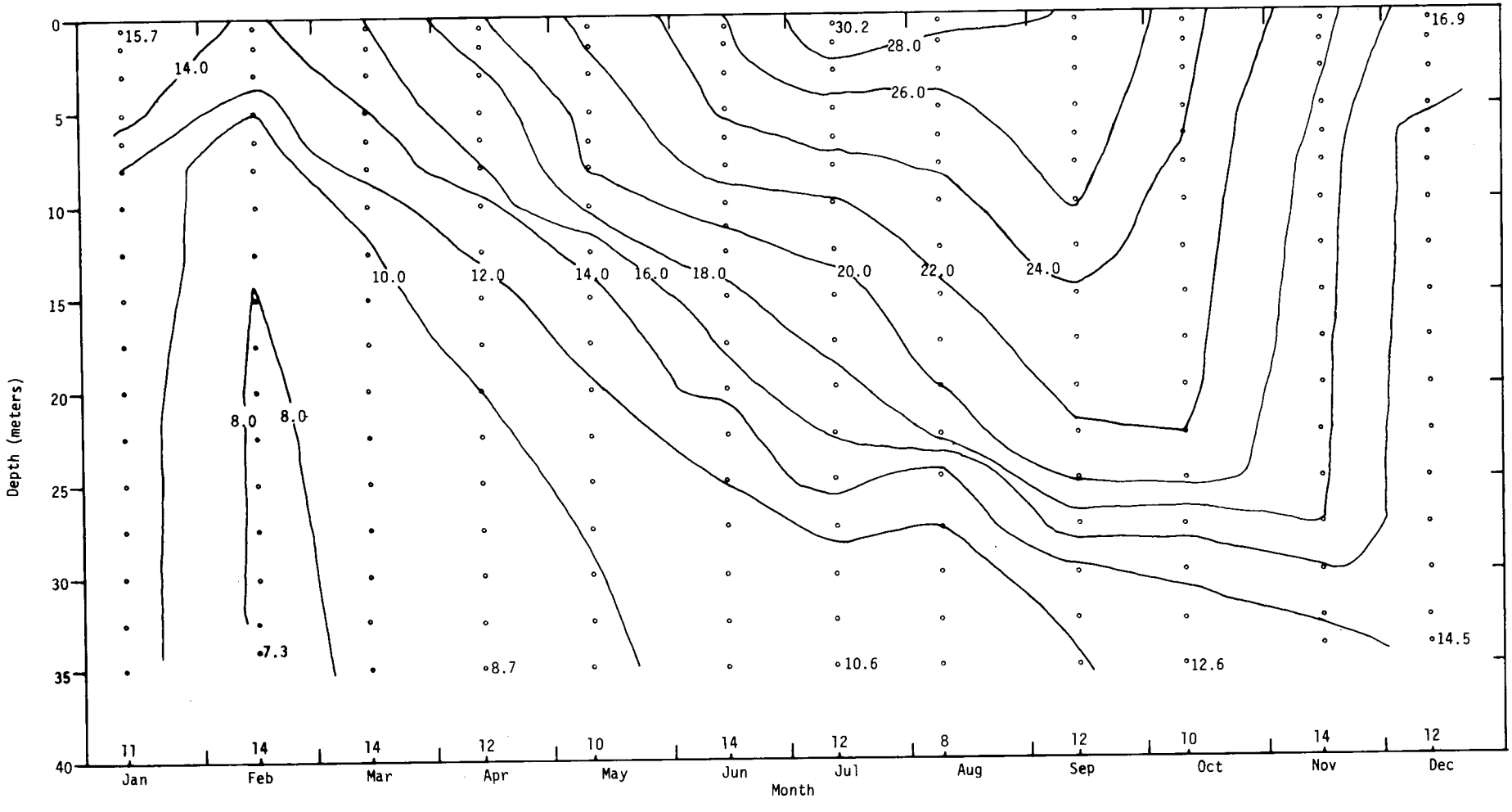


Figure 1.3.1-3. Temperature isopleths (C) for Location 504.0 on Lake Keowee for 1977.

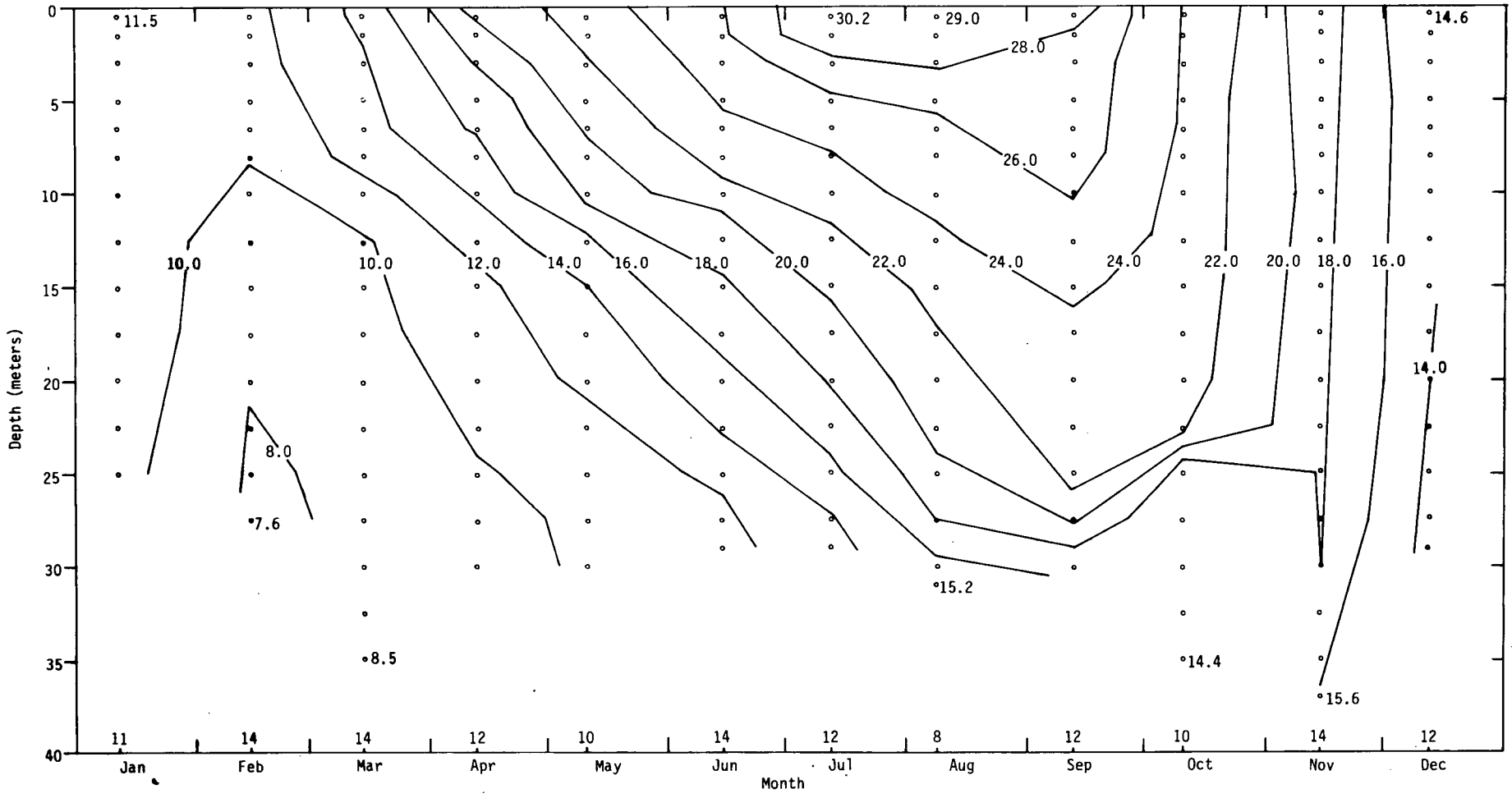


Figure 1.3.1-4. Temperature isopleths (C) for Location 506.0 on Lake Keowee for 1977.

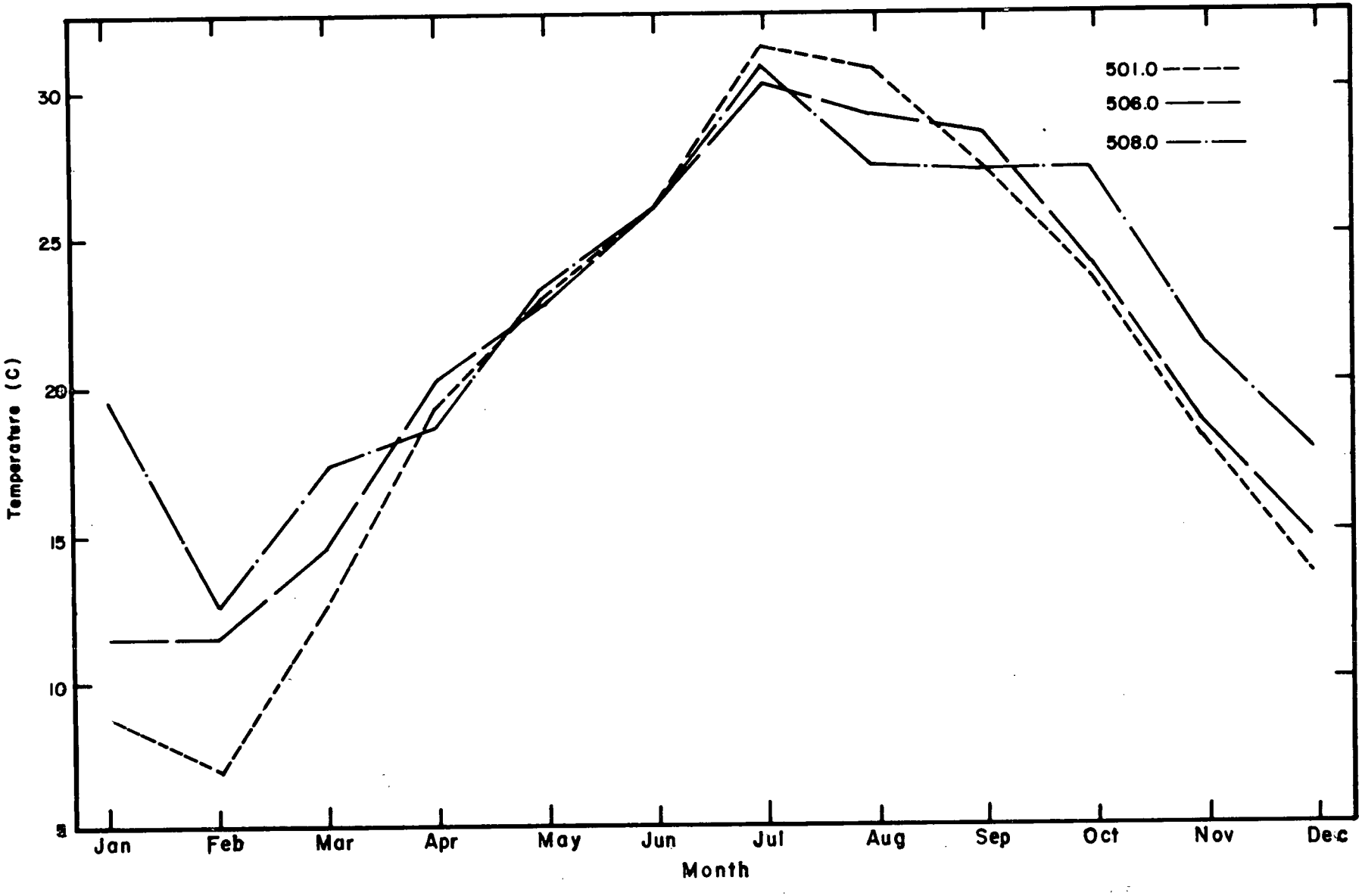


Figure: 1.3.1

Surface Temperatures at Locations 501.0, 506.0, and 508.0 on Lake Keowee for 1977

Figure 1.3.1-5. Surface temperatures at Locations 501.0, 506.0 and 508.0 on Lake Keowee for 1977.

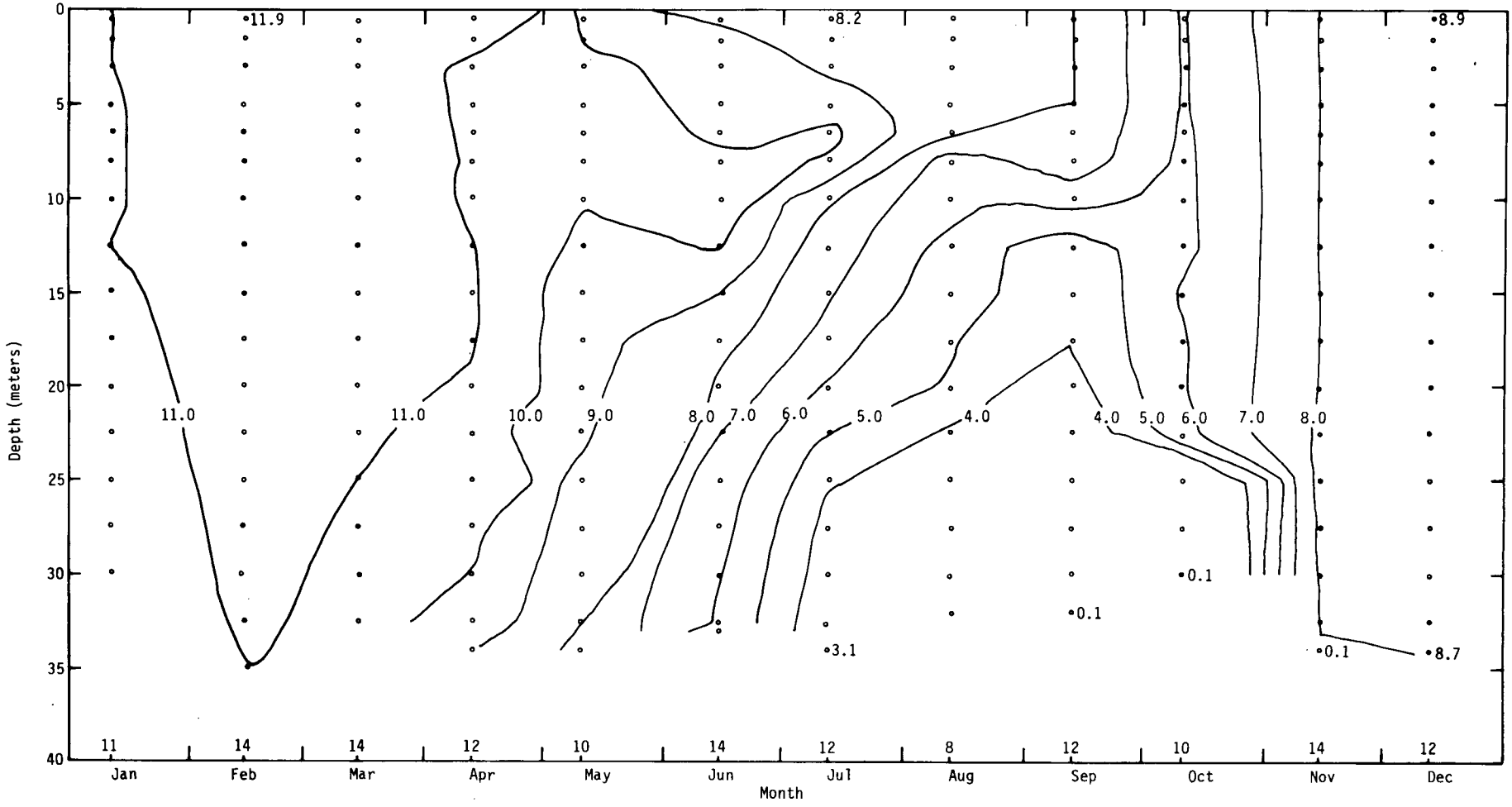


Figure 1.3.1-6. Dissolved oxygen isopleths (mg/ℓ) for Location 501.0 on Lake Keowee for 1977.

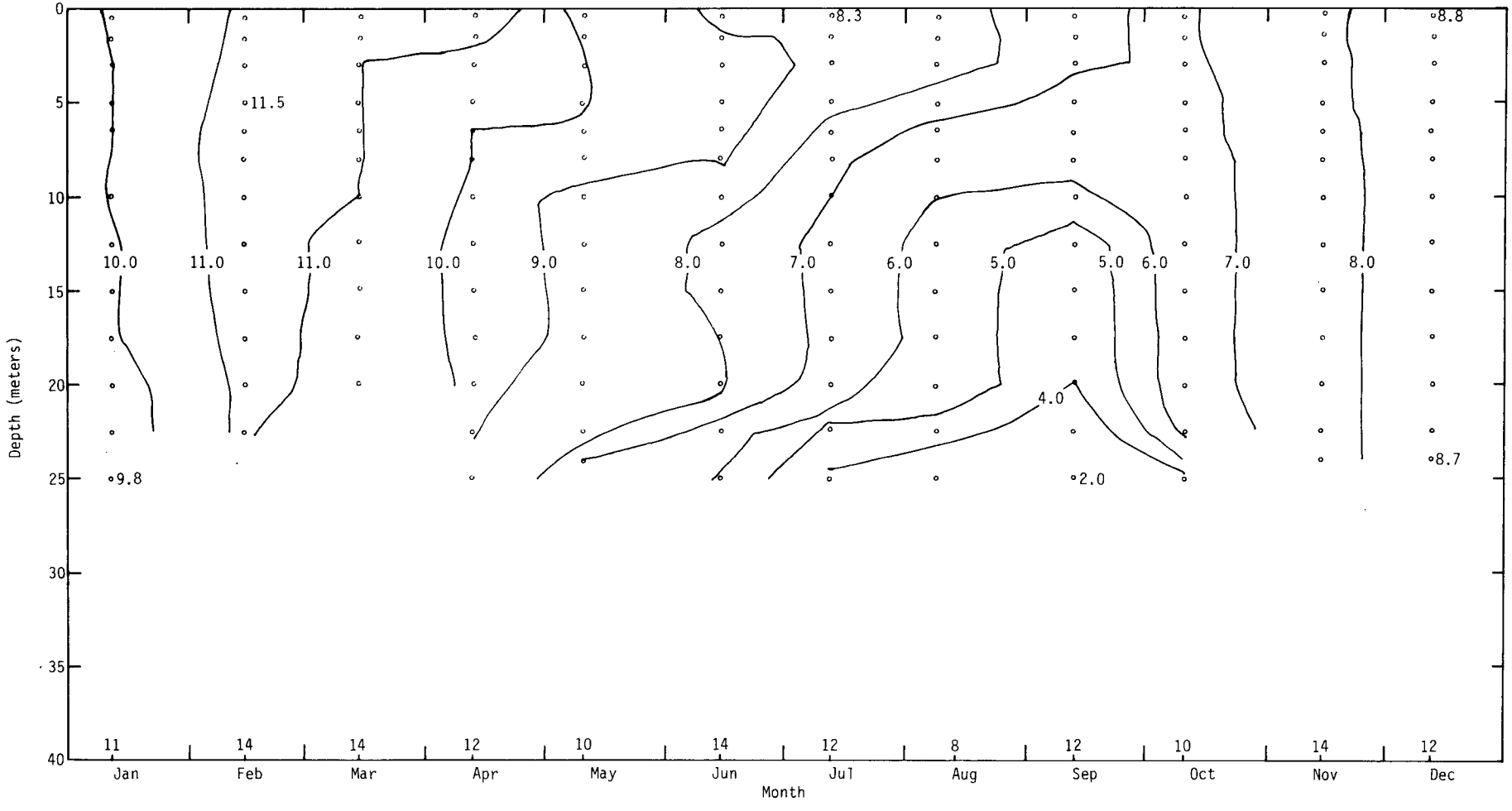


Figure 1.3.1-7. Dissolved oxygen isopleths (mg/ℓ) for Location 502.0 on Lake Keowee for 1977.

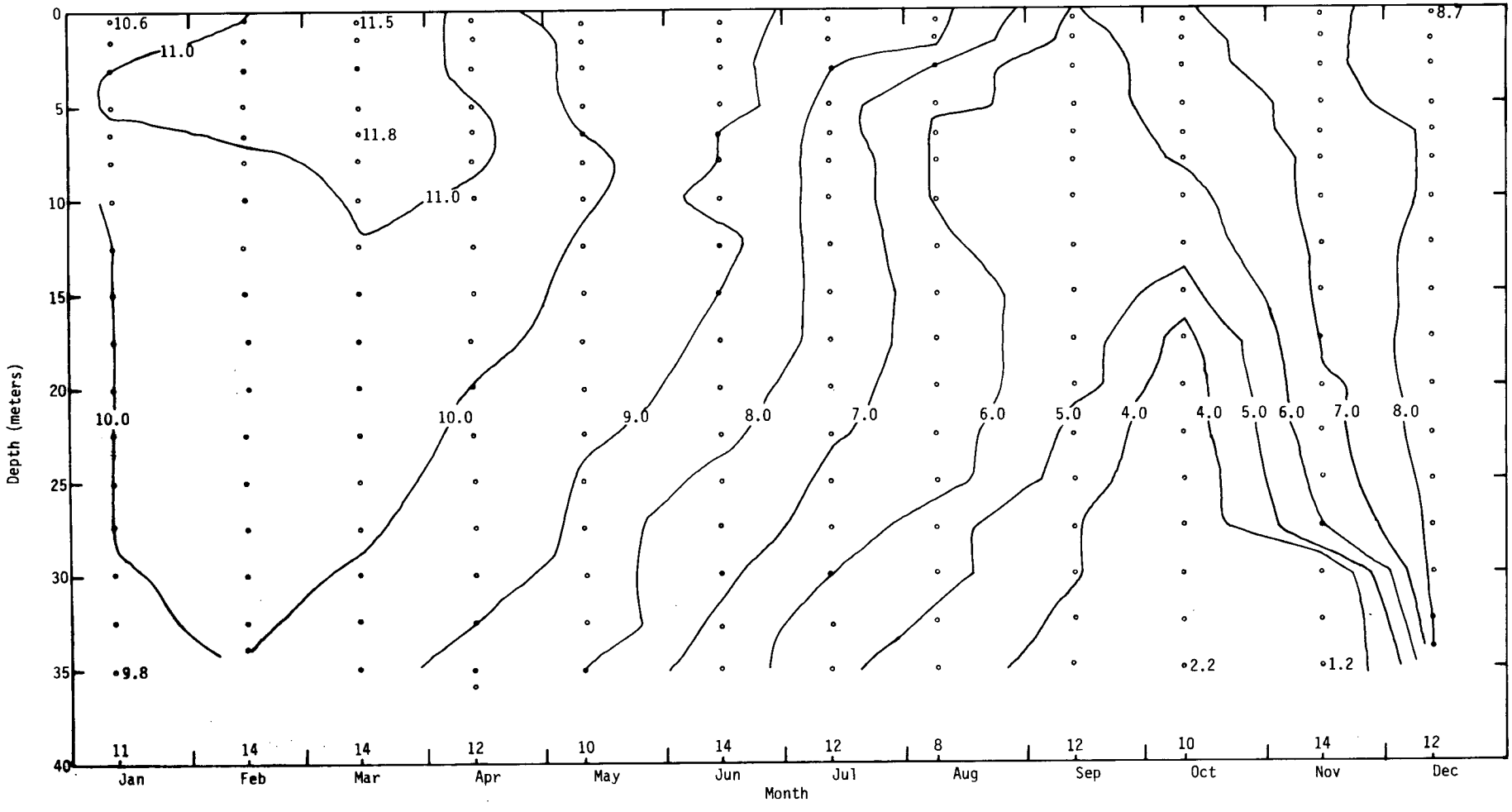


Figure 1.3.1-8. Dissolved oxygen isopleths (mg/ℓ) for Location 504.0 on Lake Keowee for 1977.

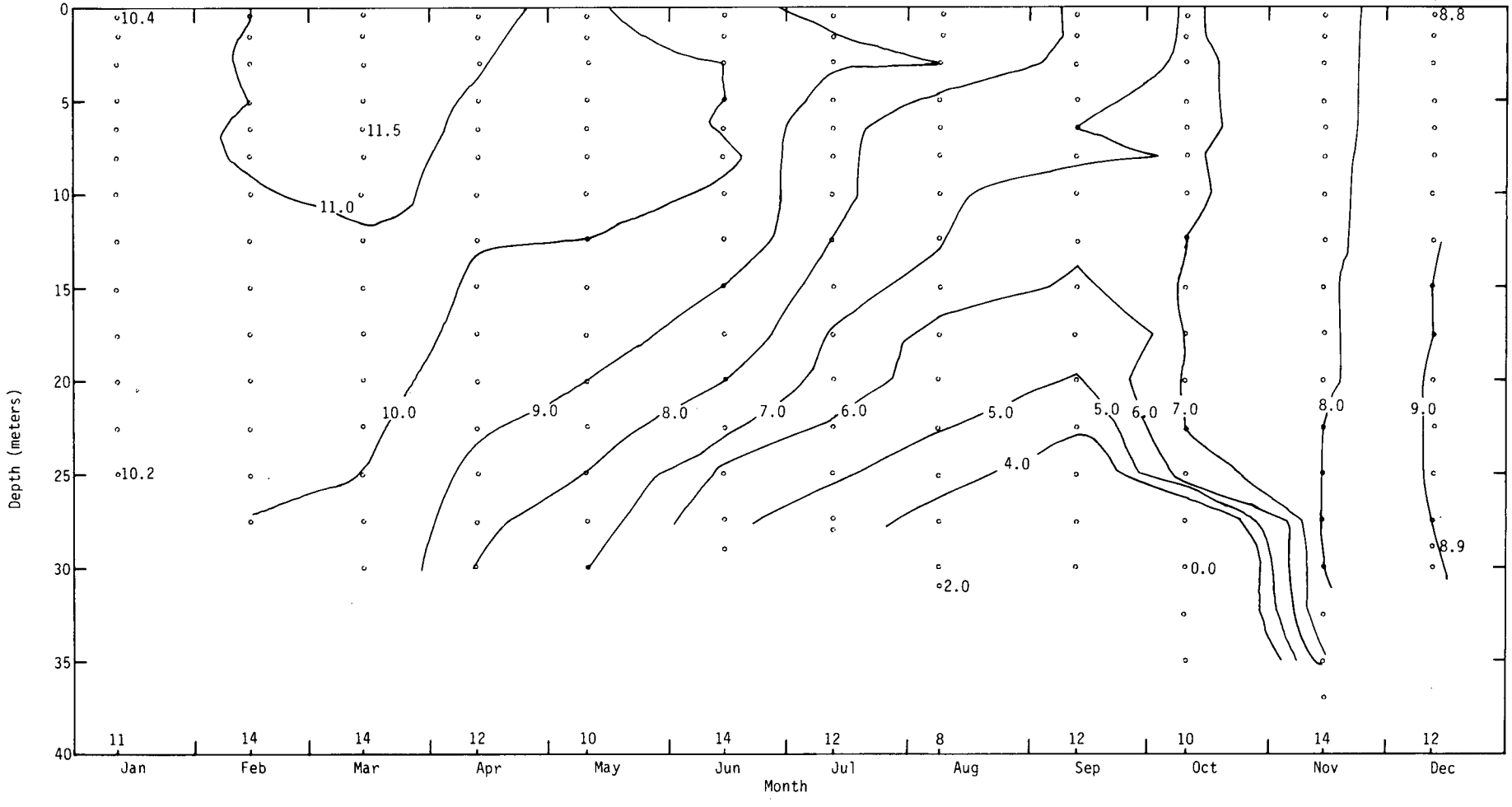


Figure 1.3.1-9. Dissolved oxygen isopleths (mg/ℓ) for Location 506.0 on Lake Keowee for 1977.

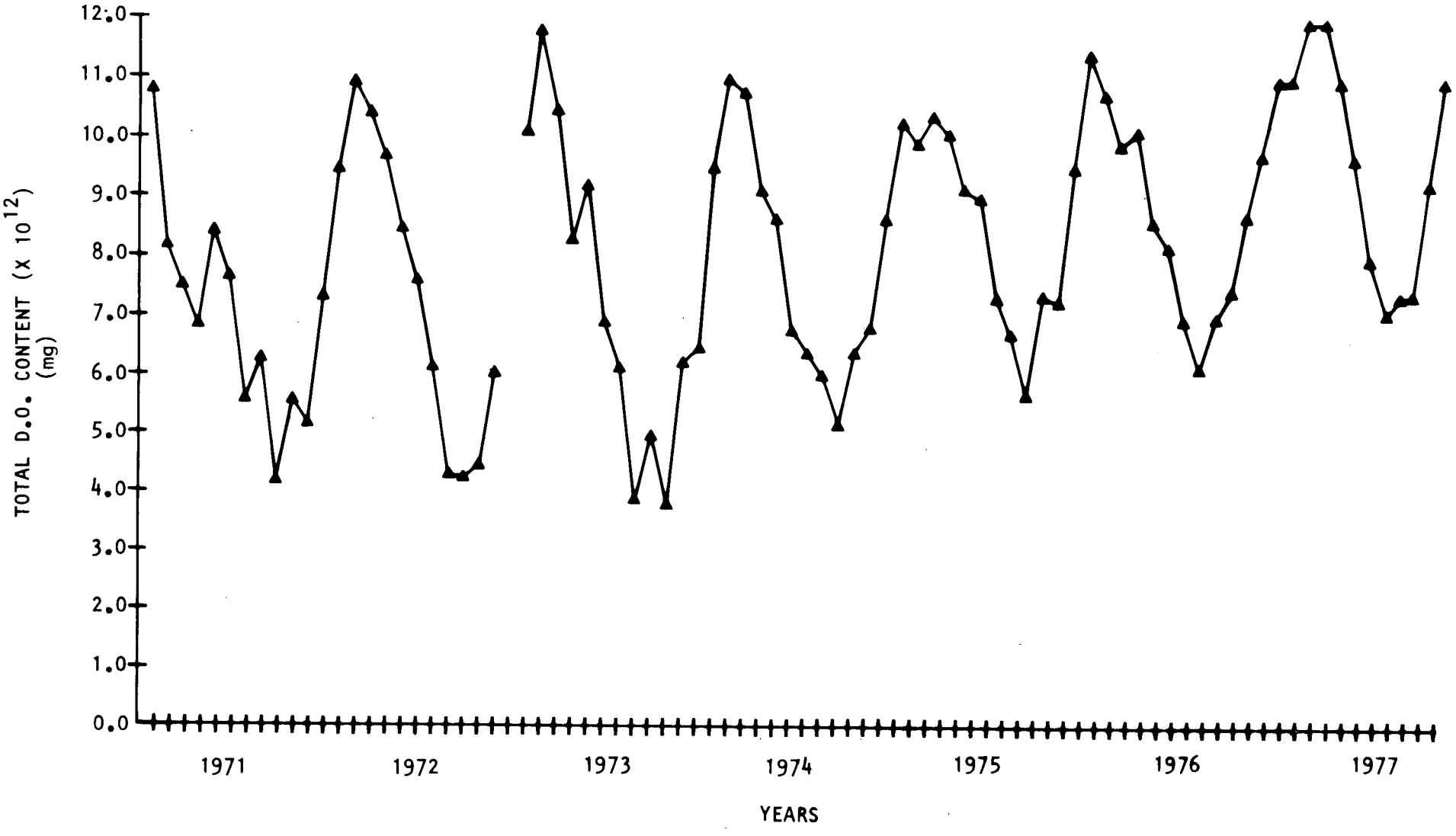
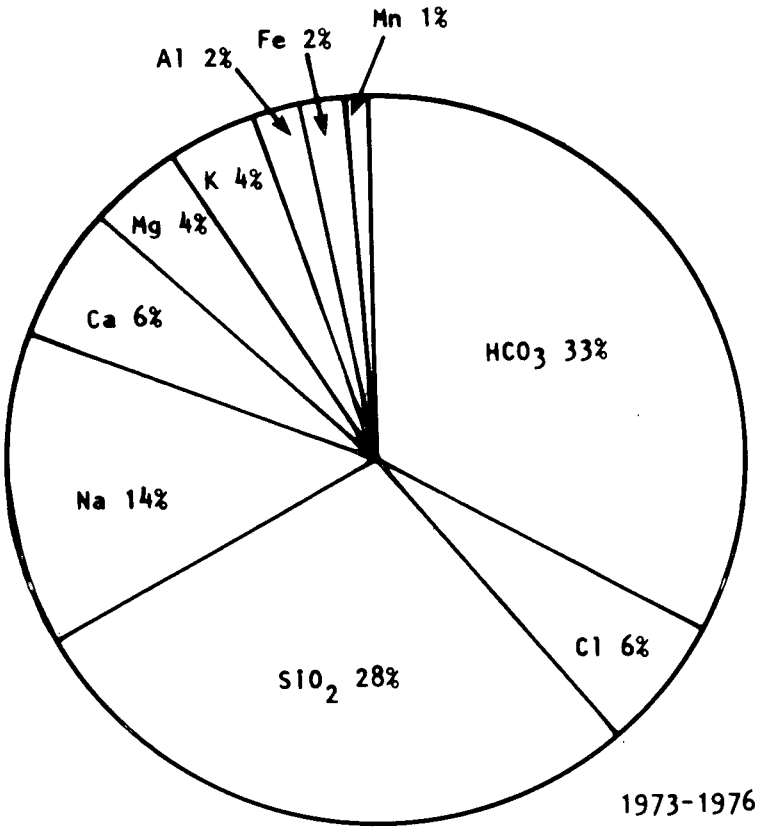


Figure 1.3.1-10. Total dissolved oxygen content for Lake Keowee from January 1971 through December 1977.



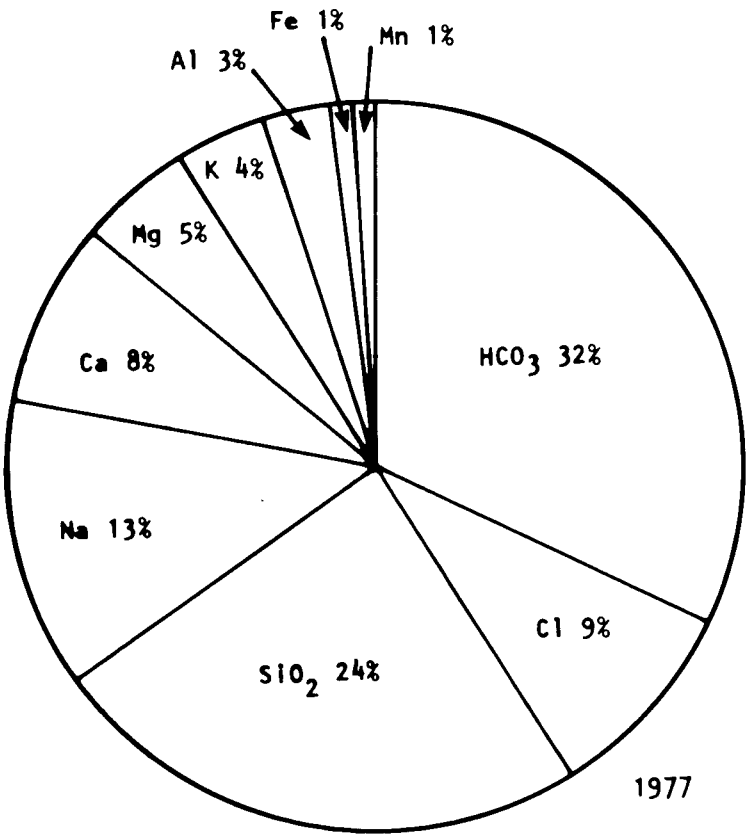


Figure 1.3.1-11. Molar percentages of mineral constituents found in Lake Keowee during operational periods 1973 through 1976 and during 1977.

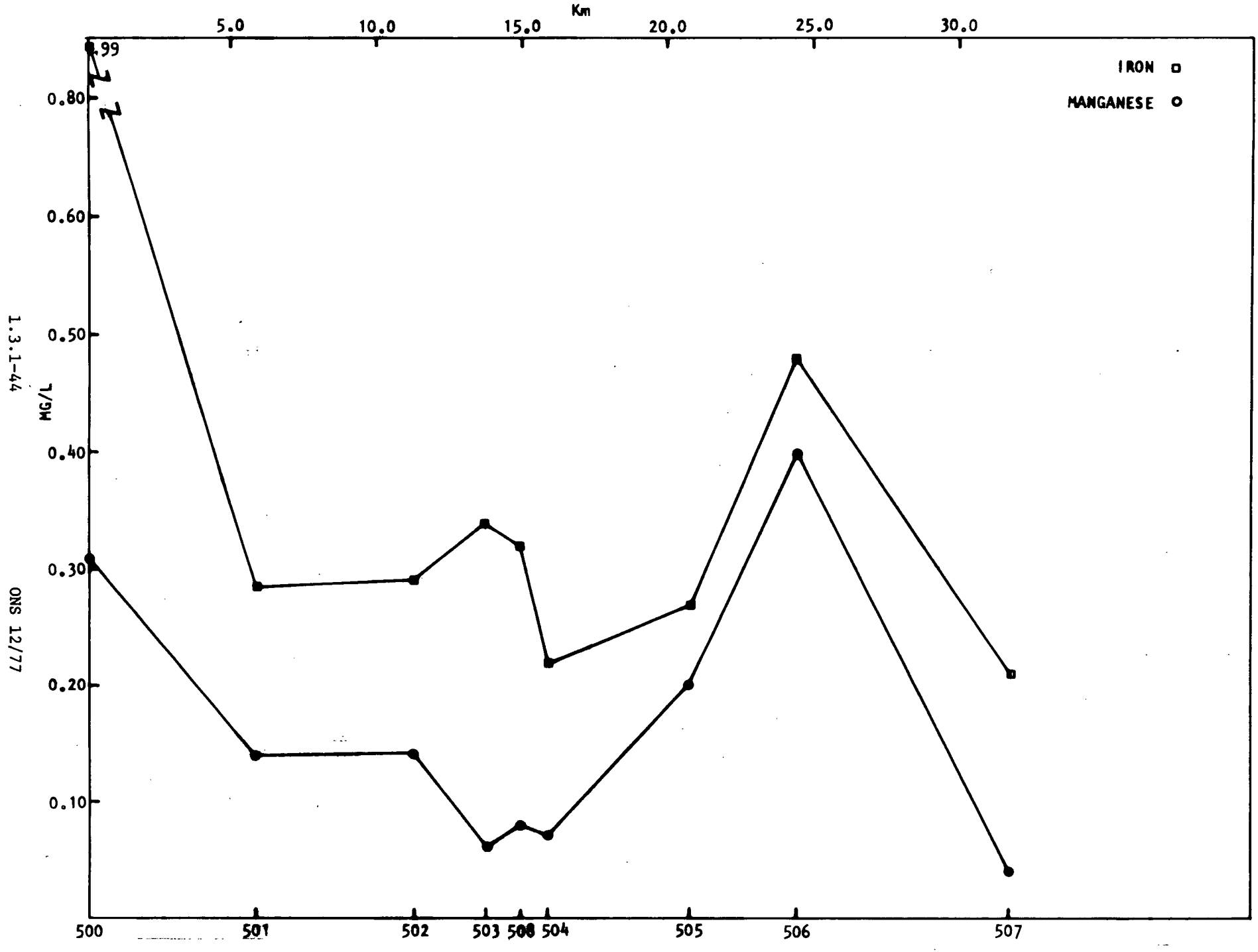


Figure 1.3.1-12. Spatial variations in iron and manganese concentrations on Lake Keowee for 1977.

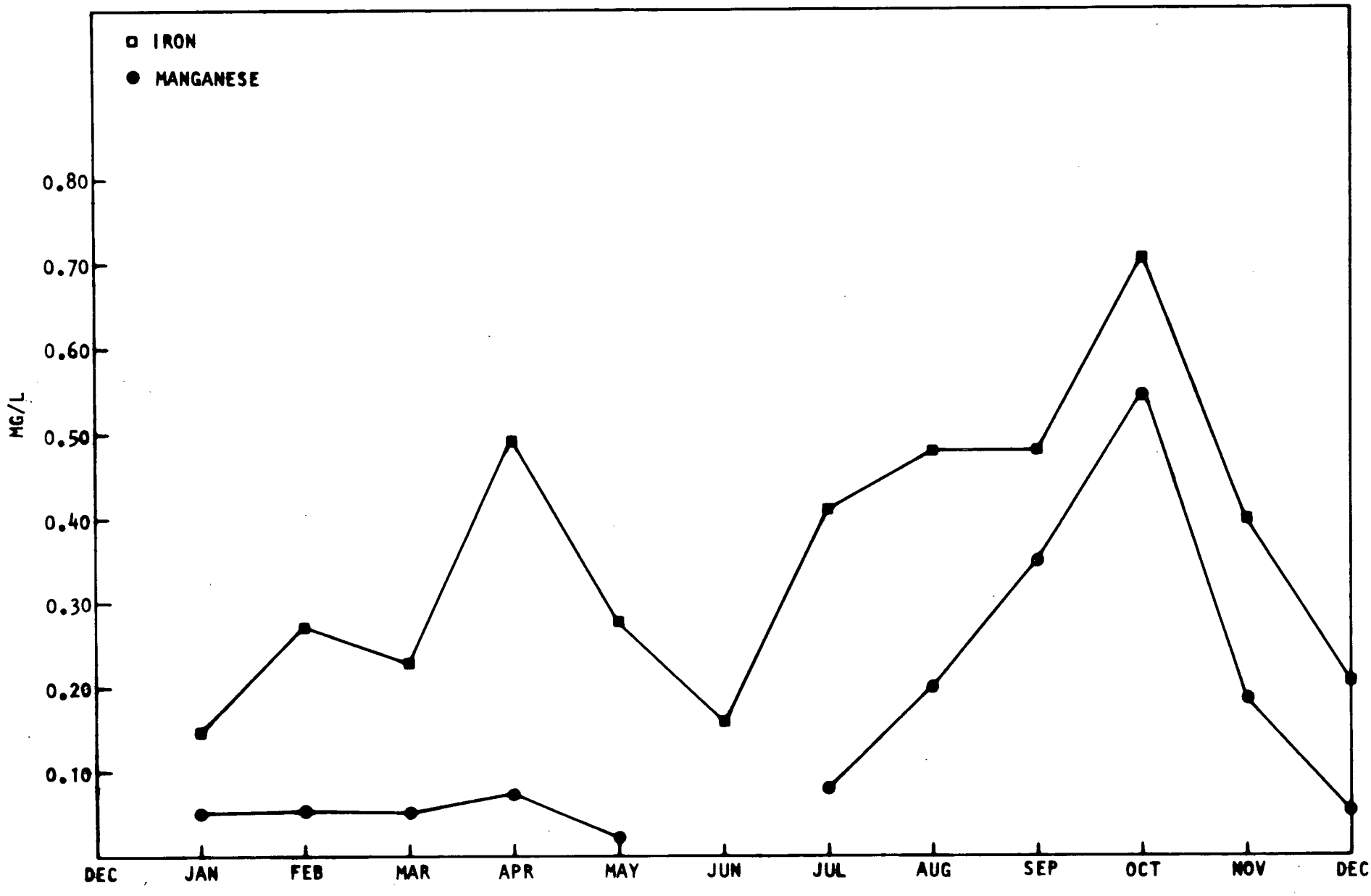
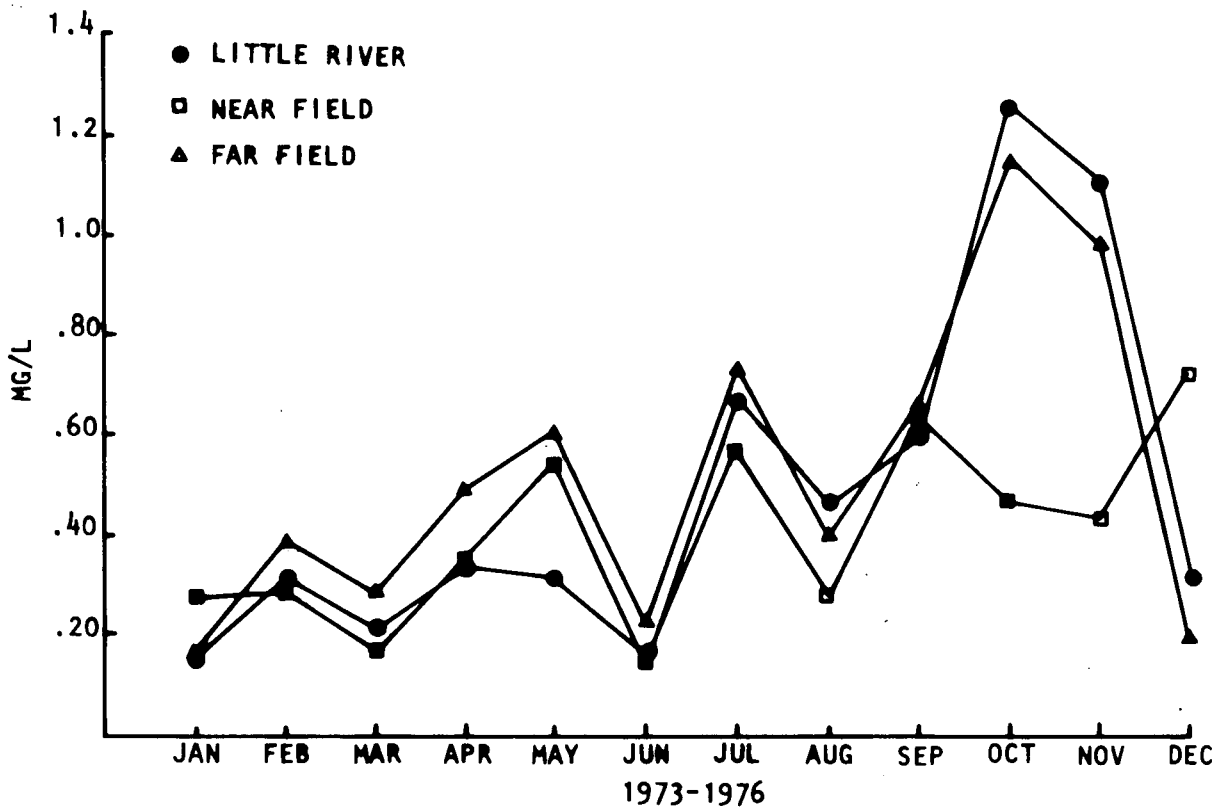


Figure 1.3.1-13. Temporal variations in iron and manganese concentrations on Lake Keowee for 1977.



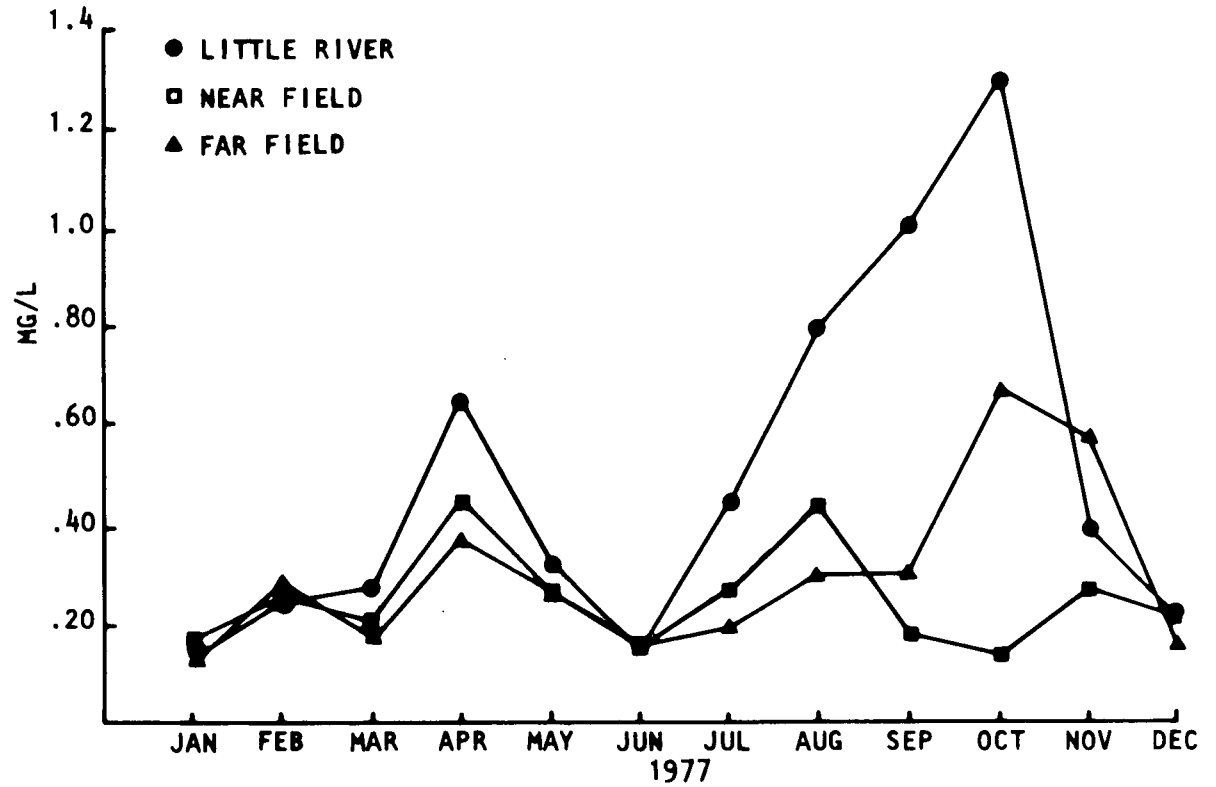


Figure 1.3.1-14. Monthly variations in iron concentrations during operational periods 1973 through 1976 and during 1977 on Lake Keowee.

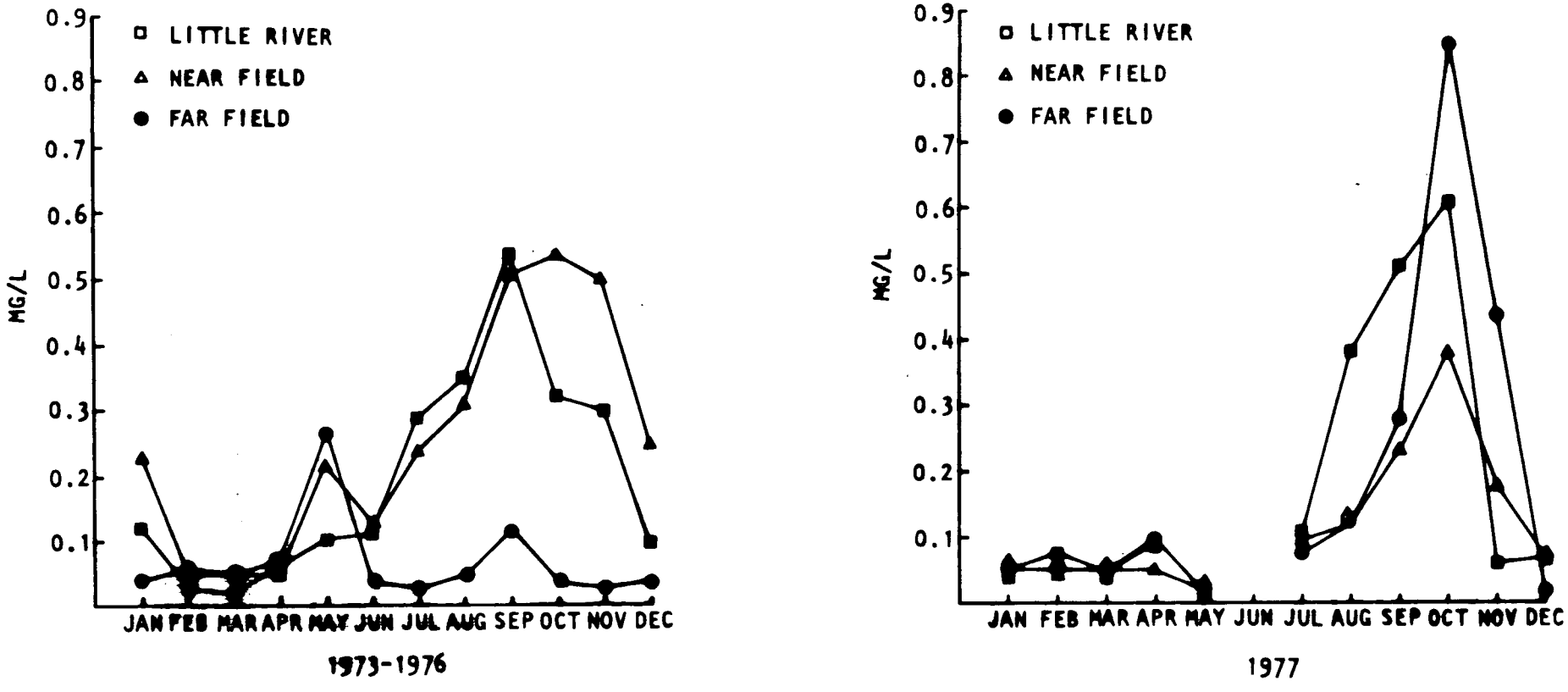


Figure 1.3.1-15. Monthly variations in manganese concentrations during operational periods 1973 through 1976 and during 1977 on Lake Keowee.

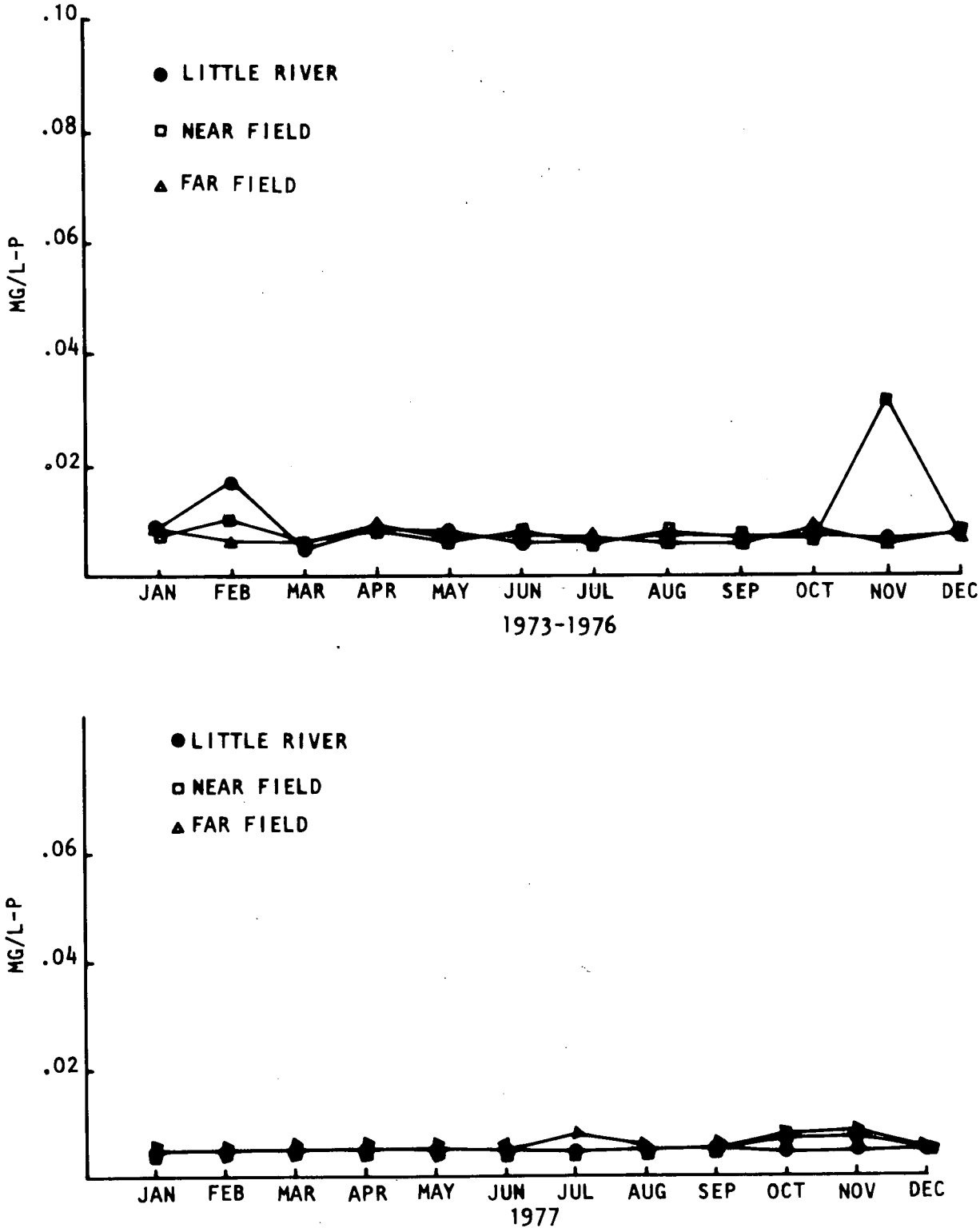


Figure 1.3.1-16. Monthly variations in orthophosphate concentrations during operational periods 1973 through 1976 and during 1977 on Lake Keowee.

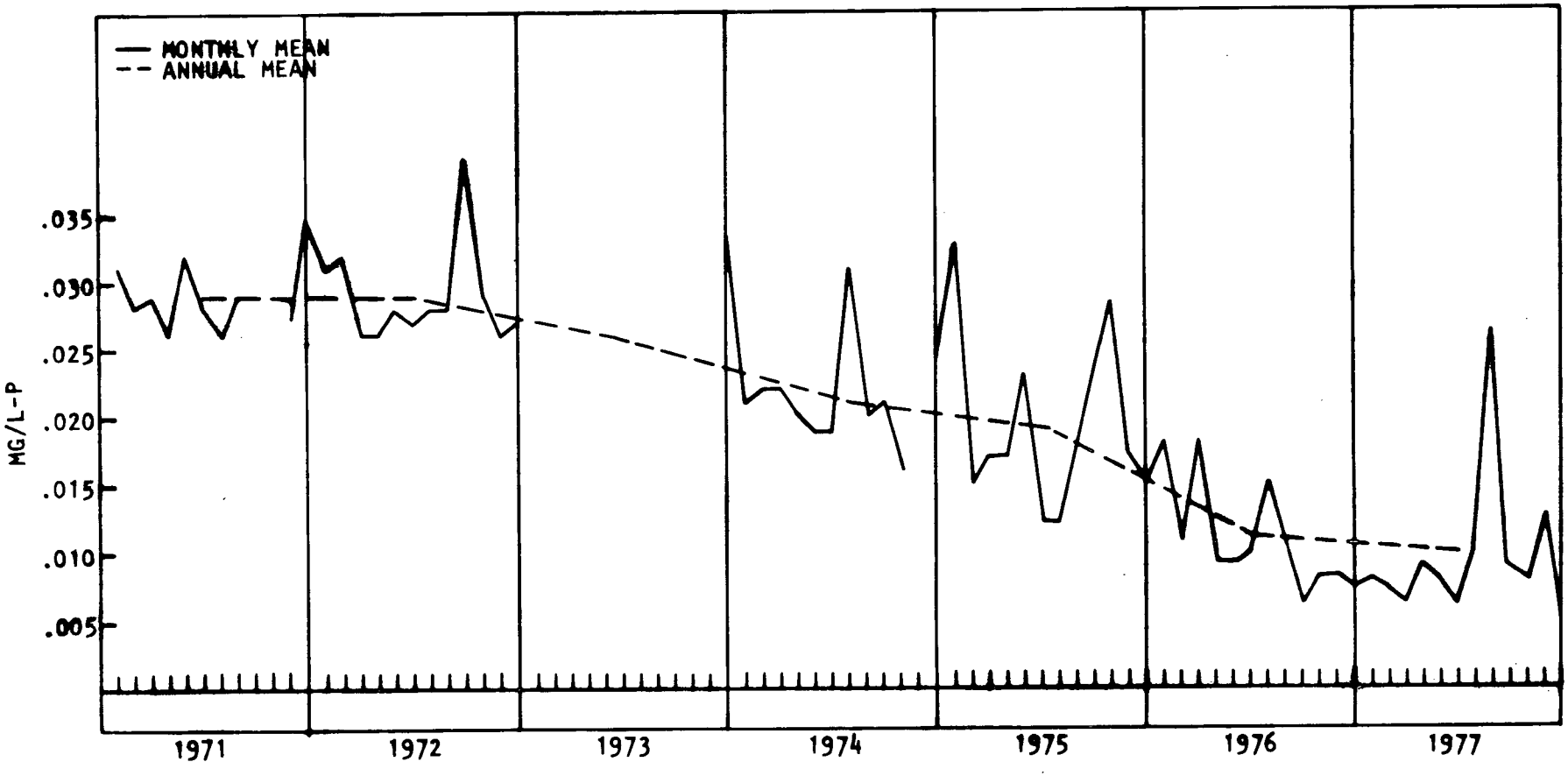


Figure 1.3.1-17. Monthly and annual variations in total phosphorus concentrations on Lake Keowee from 1971 through 1977.

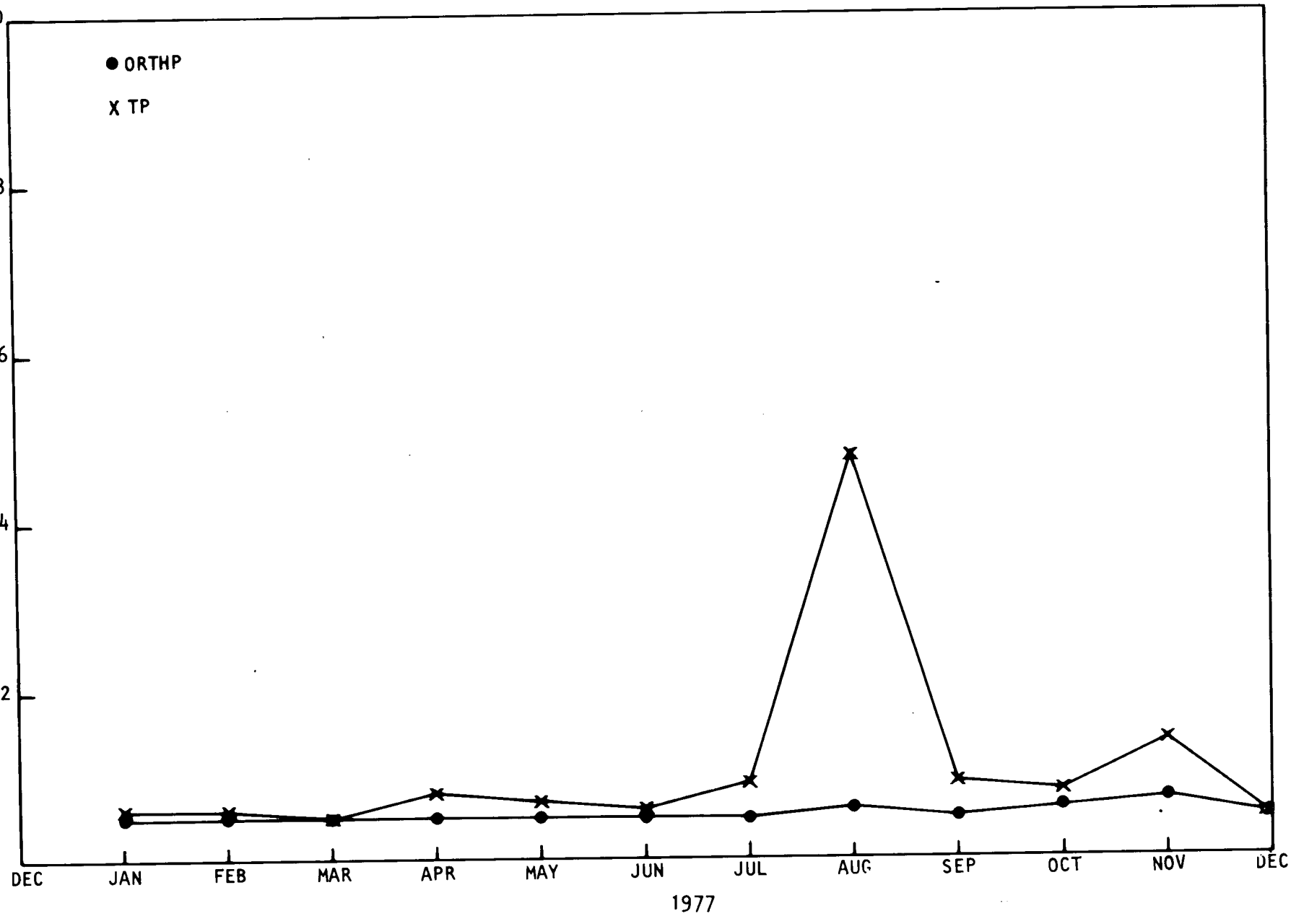


Figure 1.3.1-18. Temporal variations in orthophosphate and total phosphorus concentrations on Lake Keowee for 1977 (volume-weighted average).

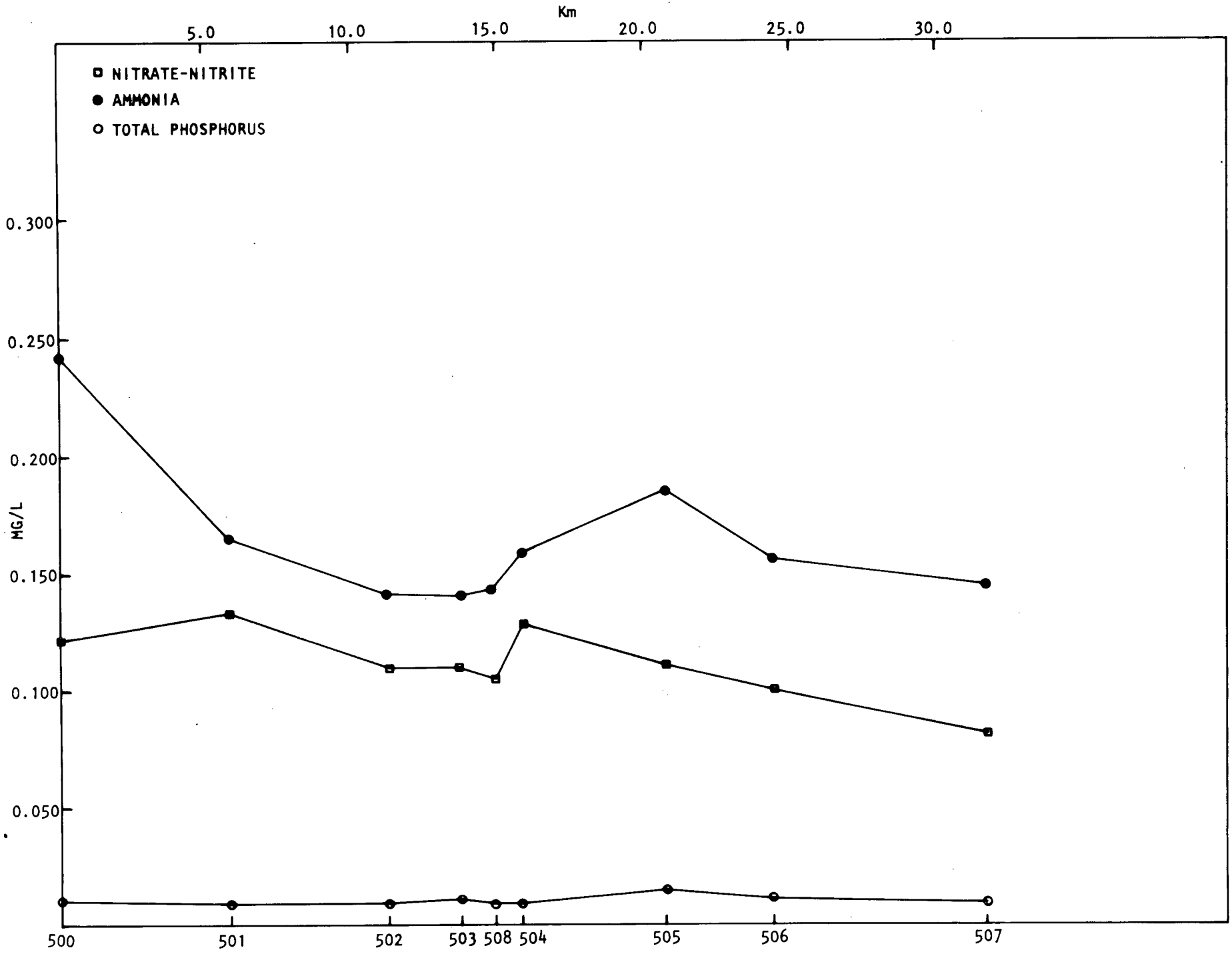


Figure 1.3.1-19. Spatial variations in nitrate-nitrite, ammonia, and total phosphorus concentrations on Lake Keowee for 1977.

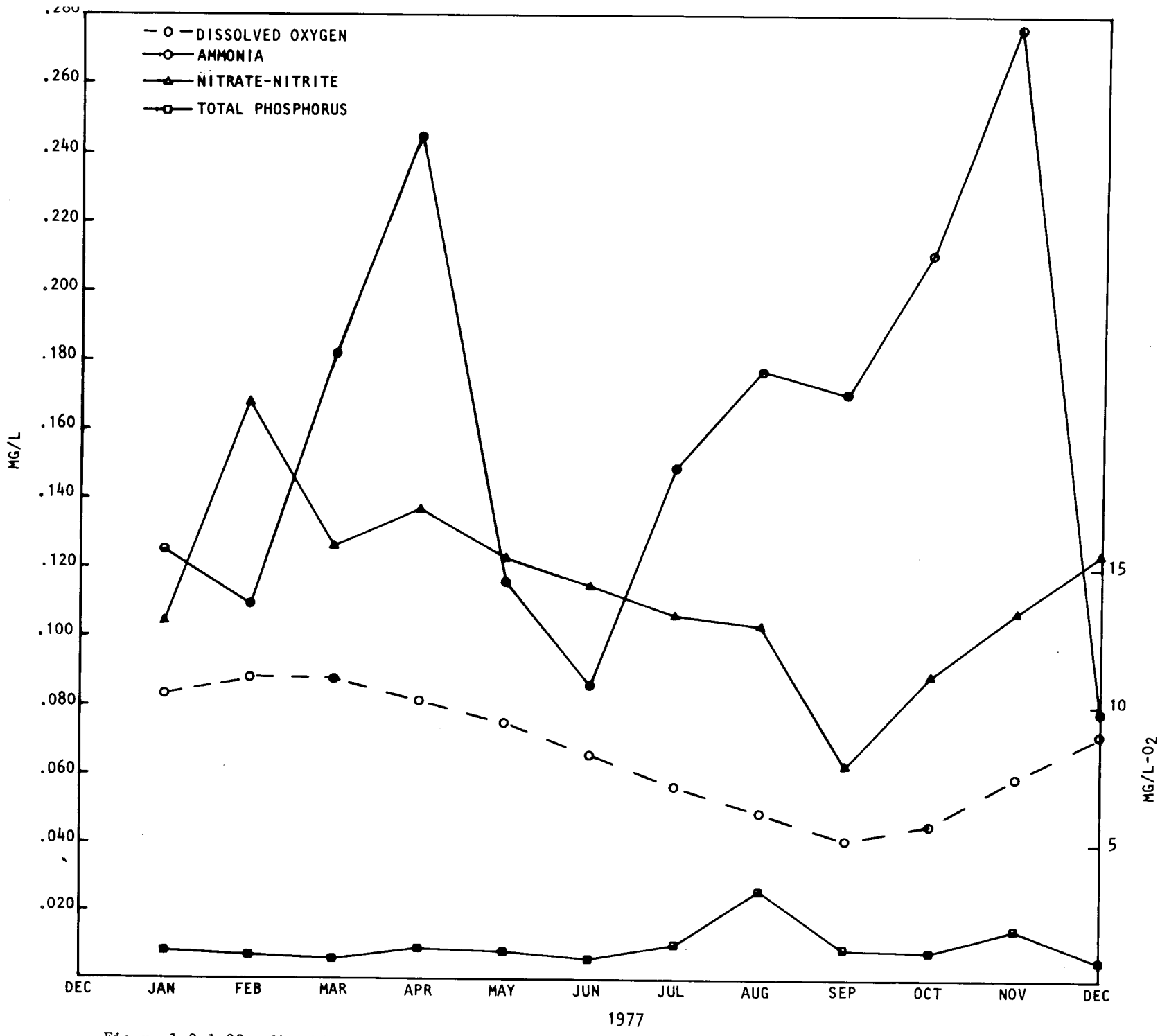
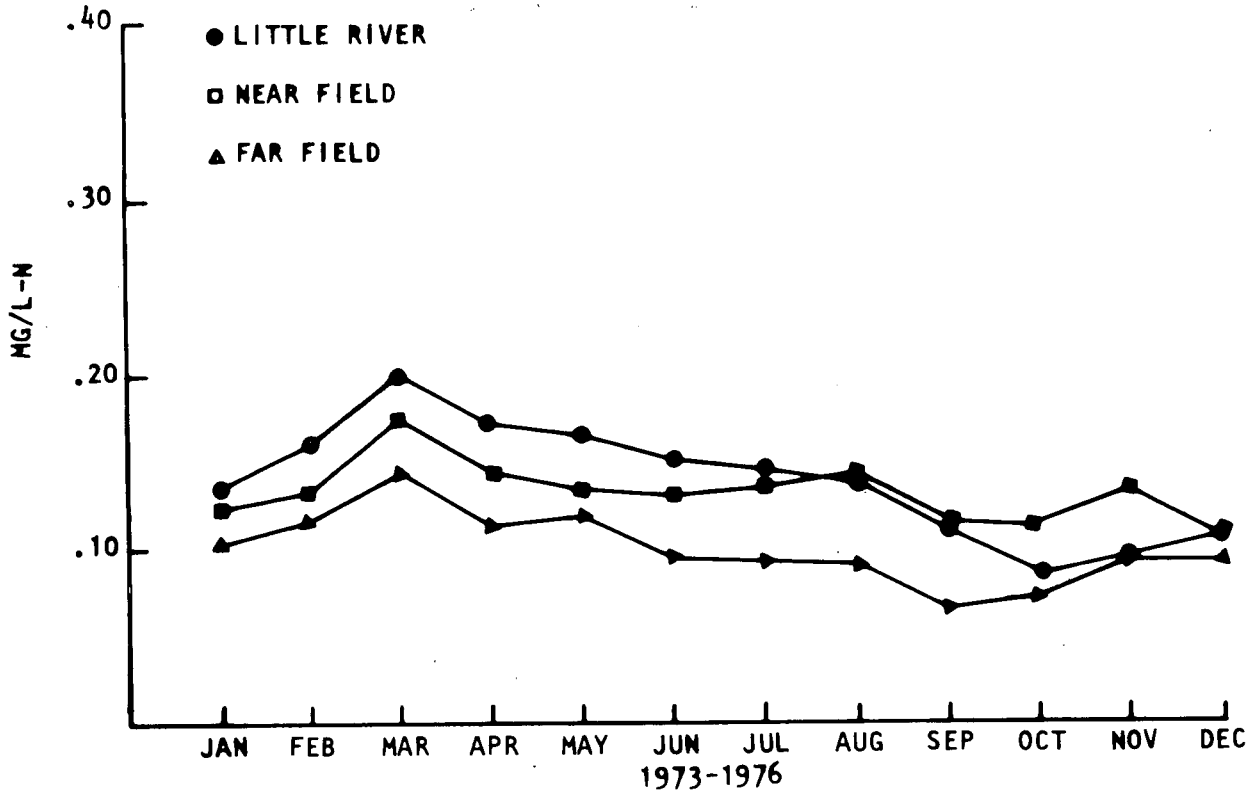


Figure 1.3.1-20. Monthly variations in dissolved oxygen, ammonia, nitrate-nitrite and total phosphorus concentrations on Lake Keowee for 1977.



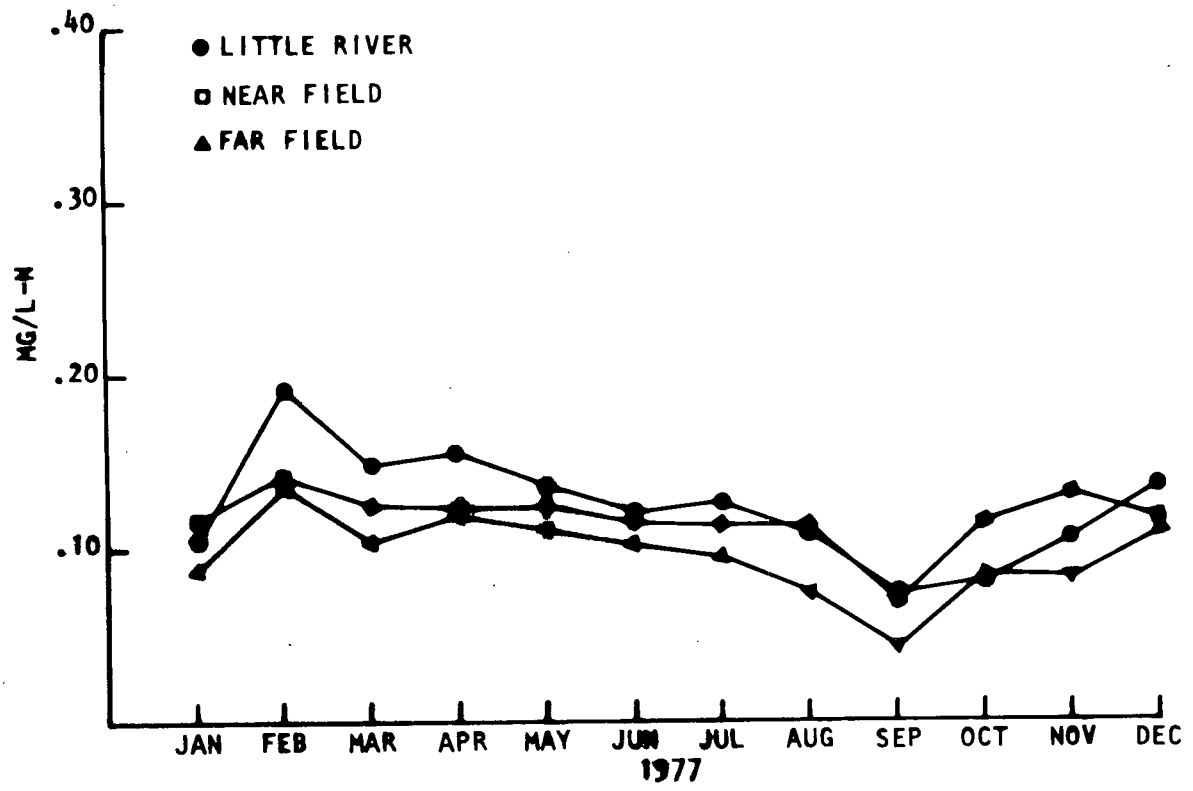


Figure 1.3.1-21. Monthly variations in nitrate-nitrite concentrations during operational periods 1973 through 1976 and during 1977 on Lake Keowee.

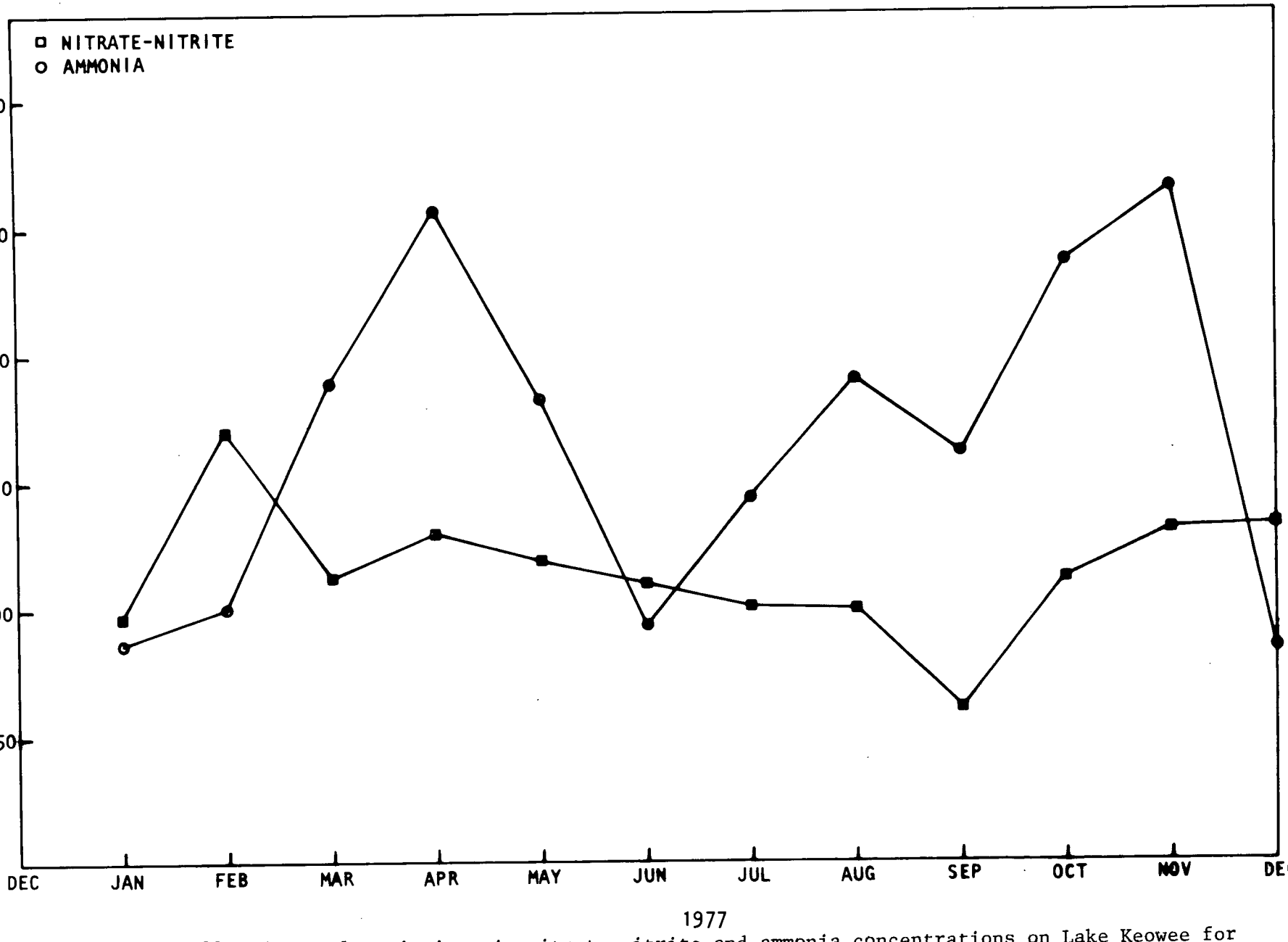
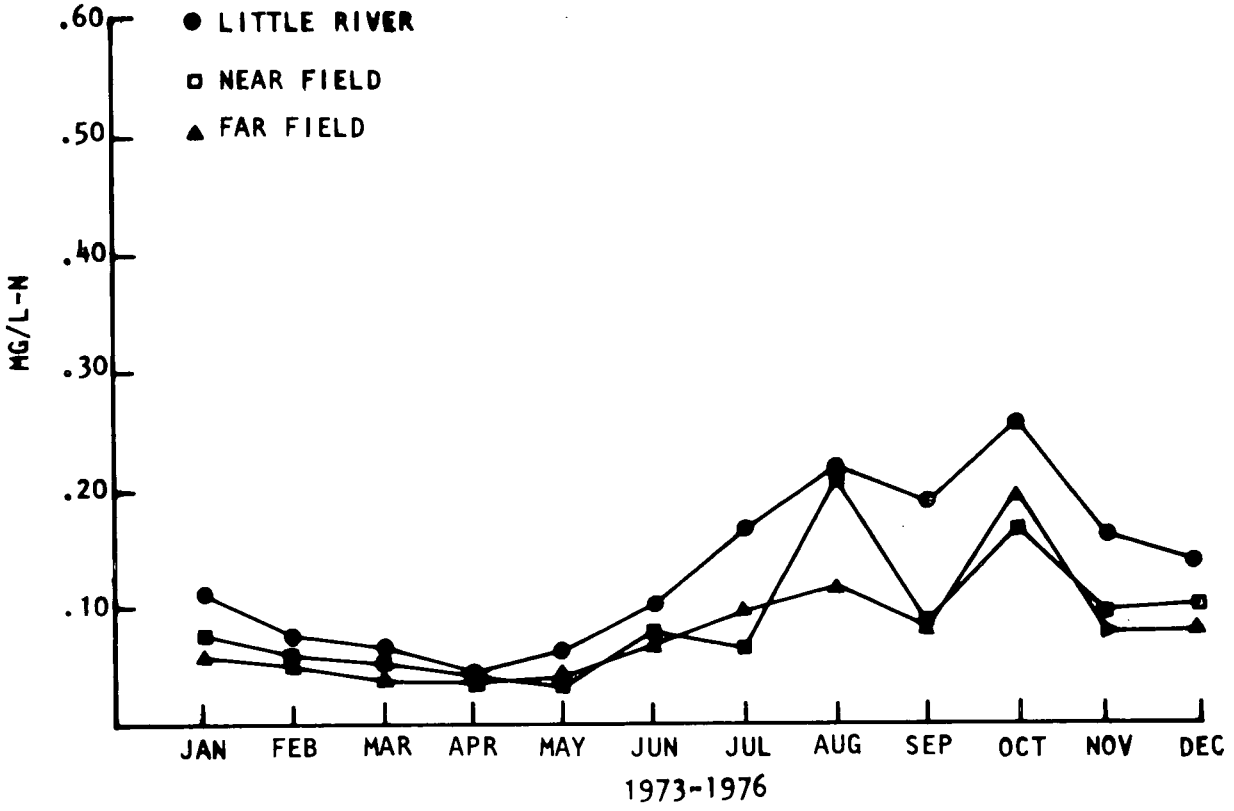


Figure 1.3.1-22. Temporal variations in nitrate-nitrite and ammonia concentrations on Lake Keowee for 1977 (volume-weighted average).



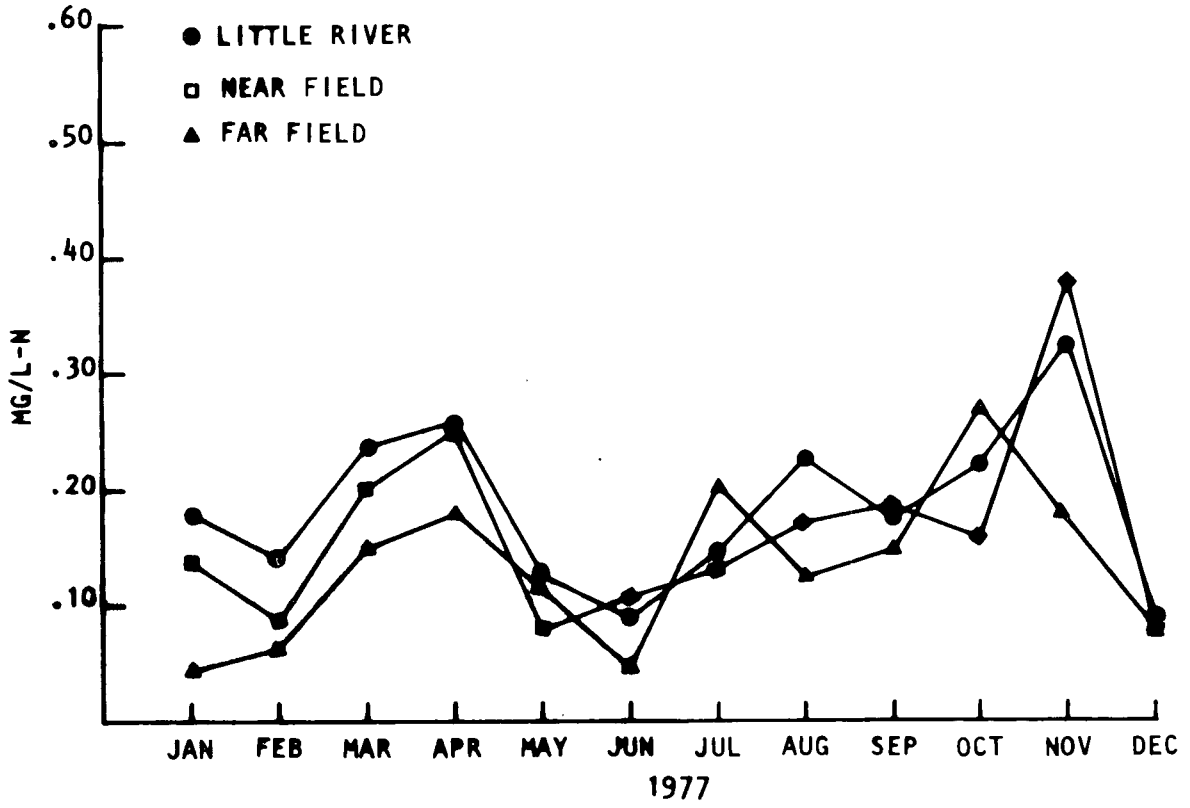
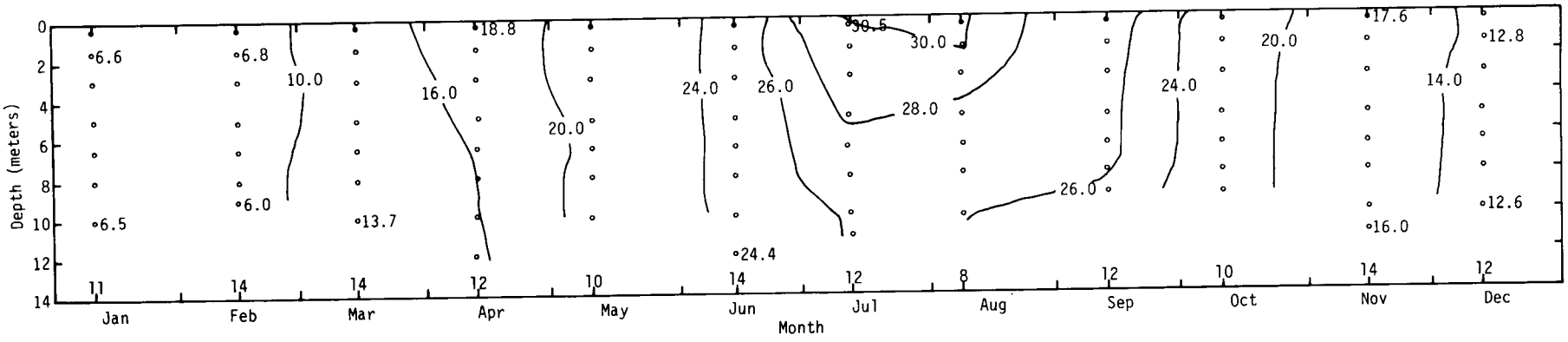


Figure 1.3.1-23. Monthly variations in ammonia concentrations during operational periods 1973 through 1976 and during 1977 on Lake Keowee.



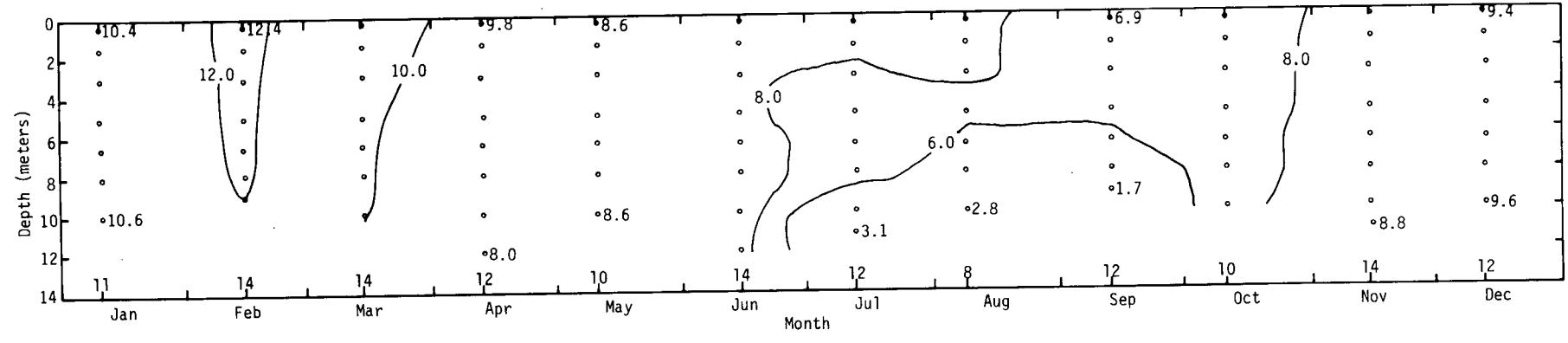


Figure 1.3.1-24. Temperature and dissolved oxygen isopleths for Location 604.0 on Lake Hartwell for 1977.

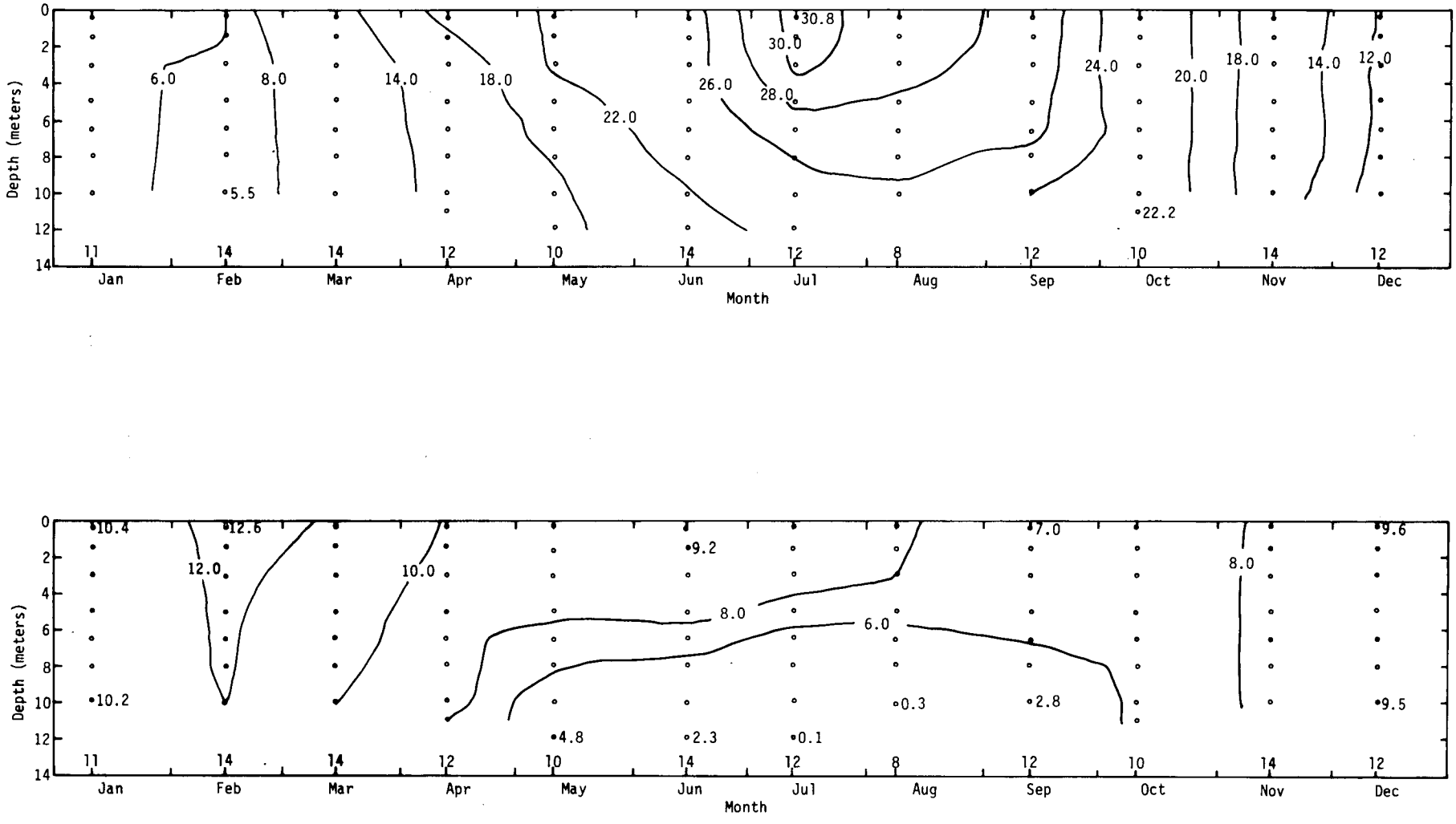
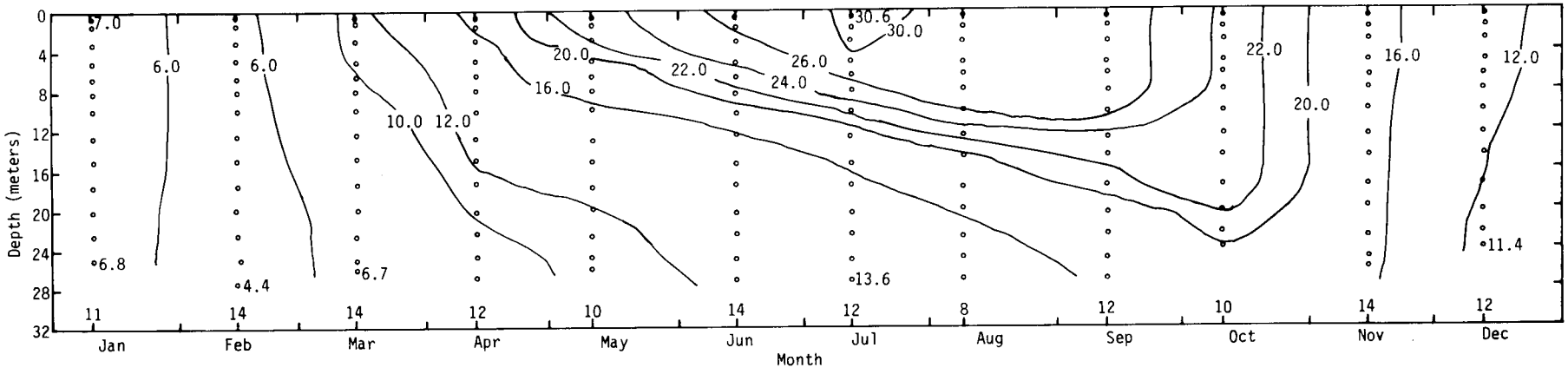


Figure 1.3.1-25. Temperature and dissolved oxygen isopleths for Location 603.0 on Lake Hartwell for 1977.



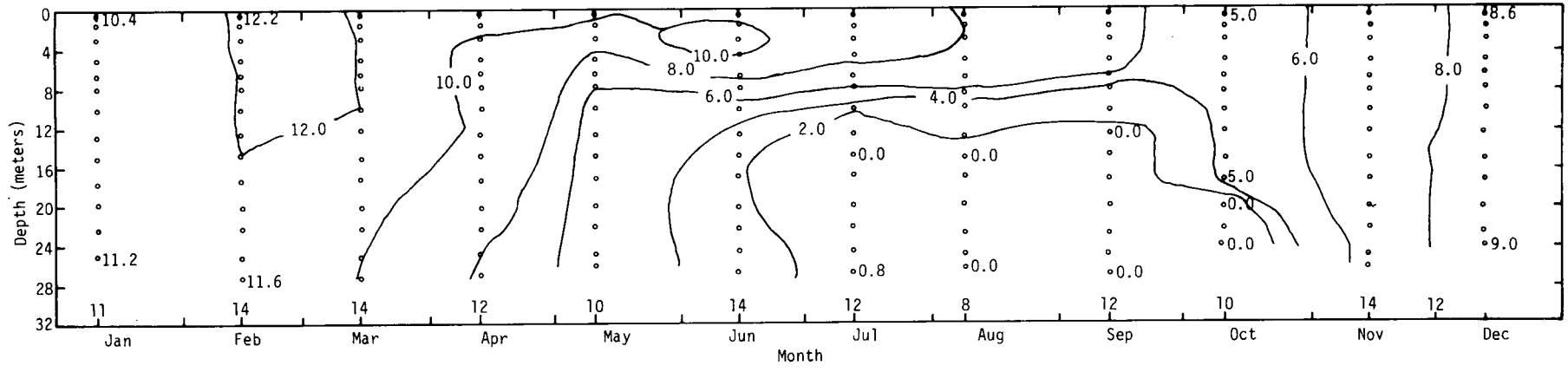


Figure 1.3.1-26. Temperature and dissolved oxygen isopleths for Location 601.0 on Lake Hartwell for 1977.

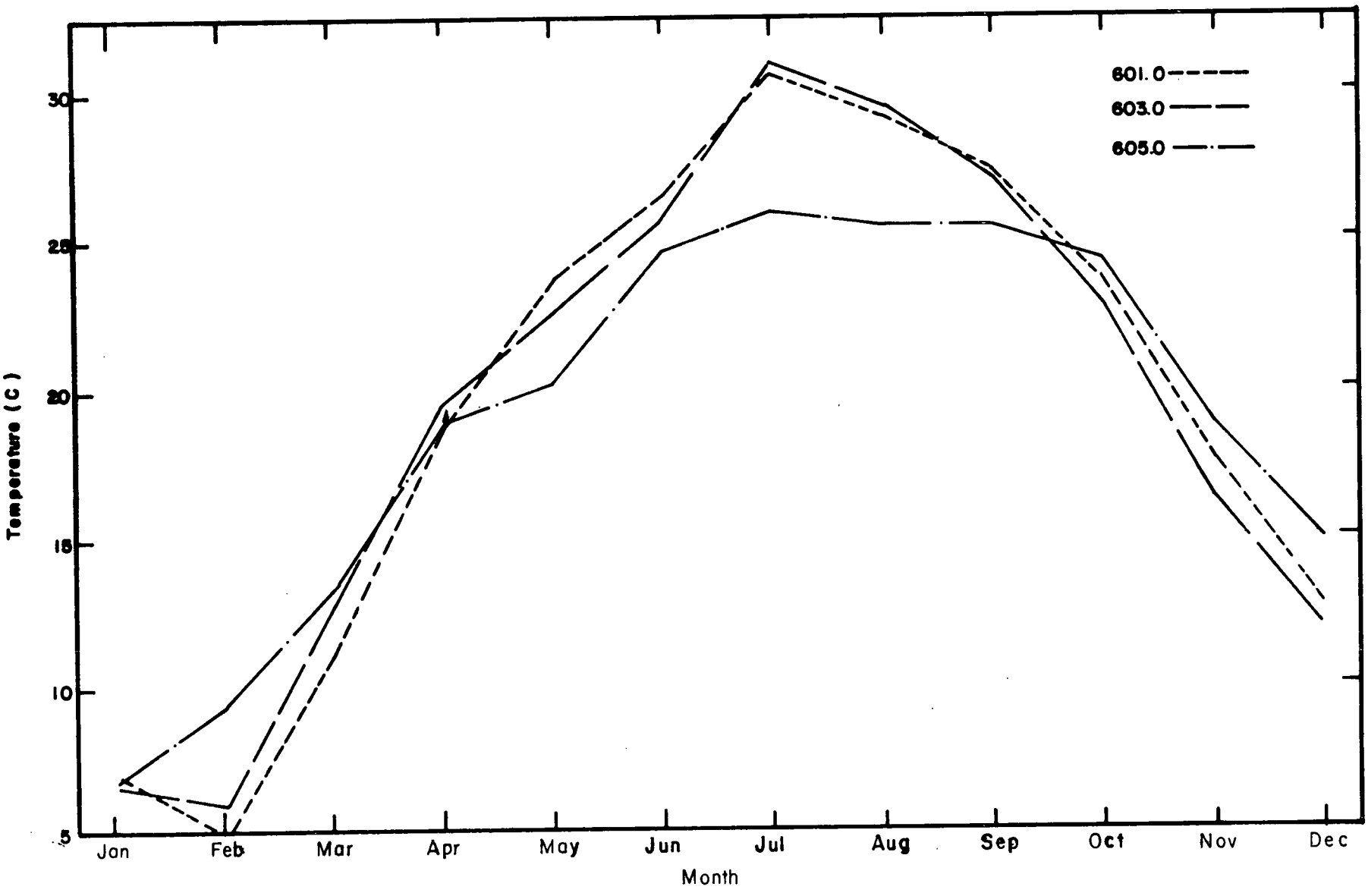


Figure 13.1

Surface Temperatures at Locations 601.0, 603.0, and 605.0 on Lake Hartwell for 1977

Figure 1.3.1-27. Surface temperatures at Locations 601.0, 603.0 and 605.0 on Lake Hartwell for 1977.

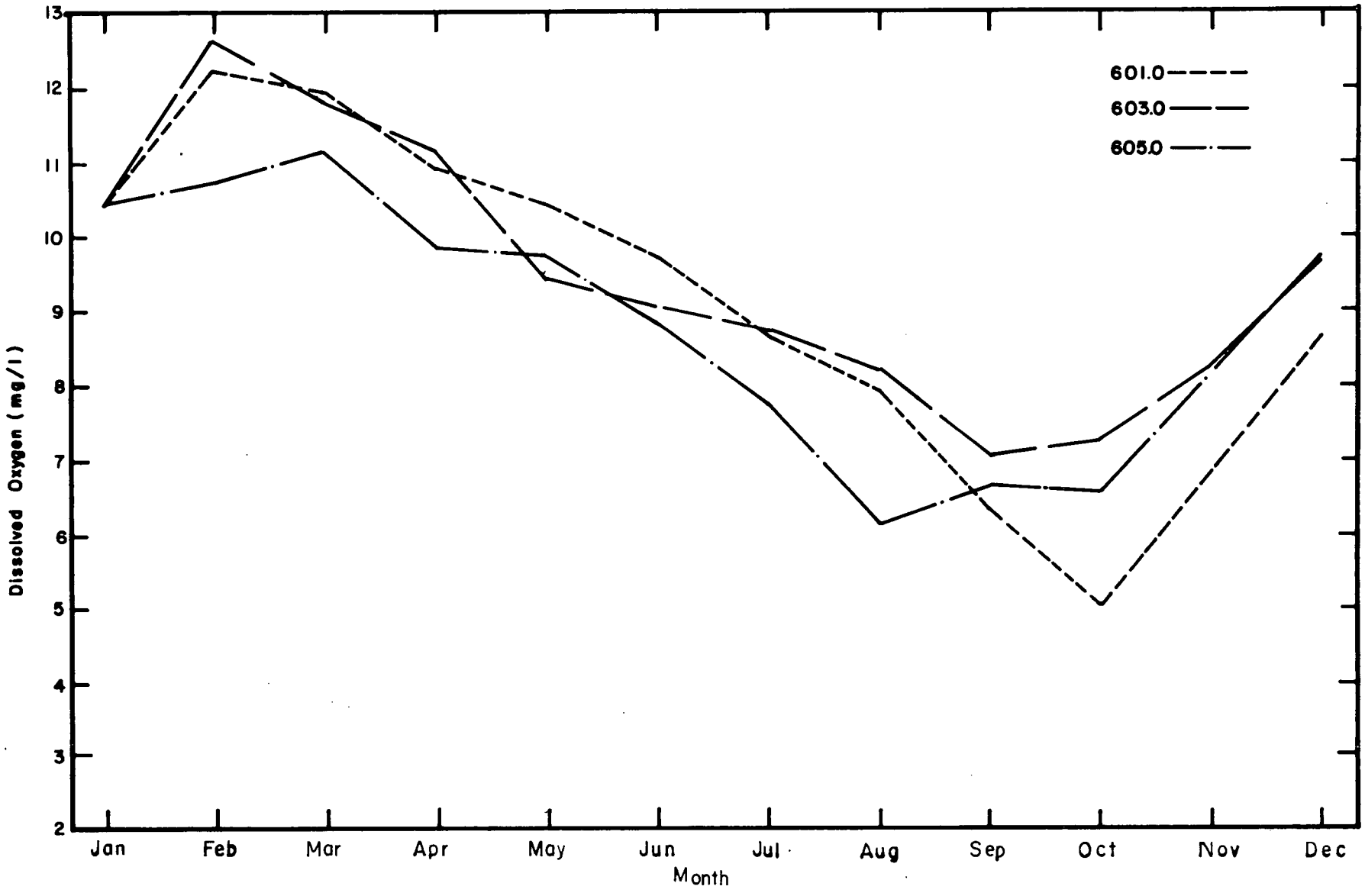


Figure: 13.1

Surface Dissolved Oxygen Concentrations at Locations 601.0, 603.0, and 605.0 on Lake Hartwell for 1977

Figure 1.3.1-28. Surface dissolved oxygen concentrations at Locations 601.0, 603.0 and 605.0 on Lake Hartwell for 1977.

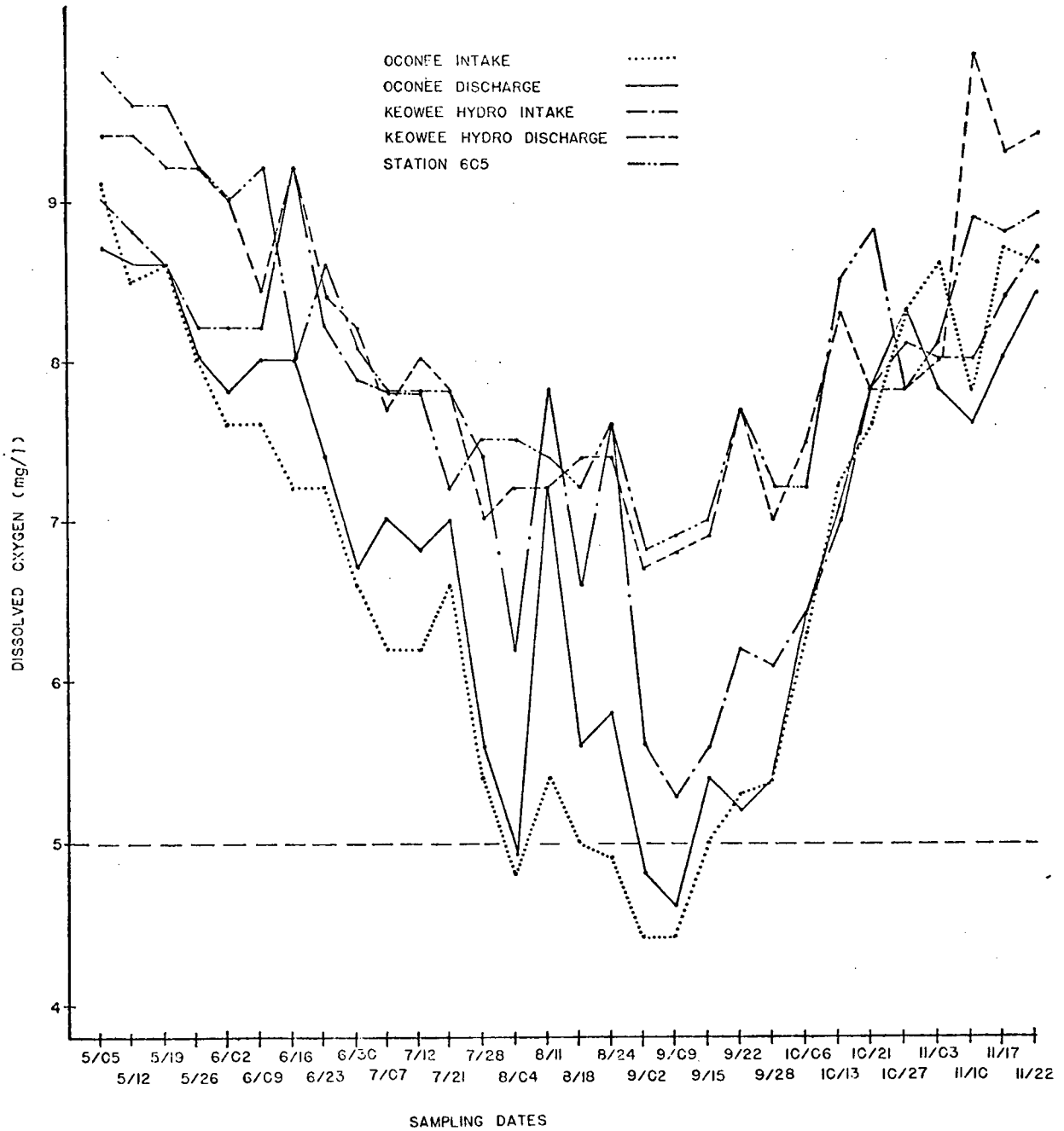


Figure 1.3.1 - . Weekly dissolved oxygen concentrations in mg/l for May-November, 1977.

Figure 1.3.1-29. Weekly dissolved oxygen concentrations in mg/l for May-November 1977.

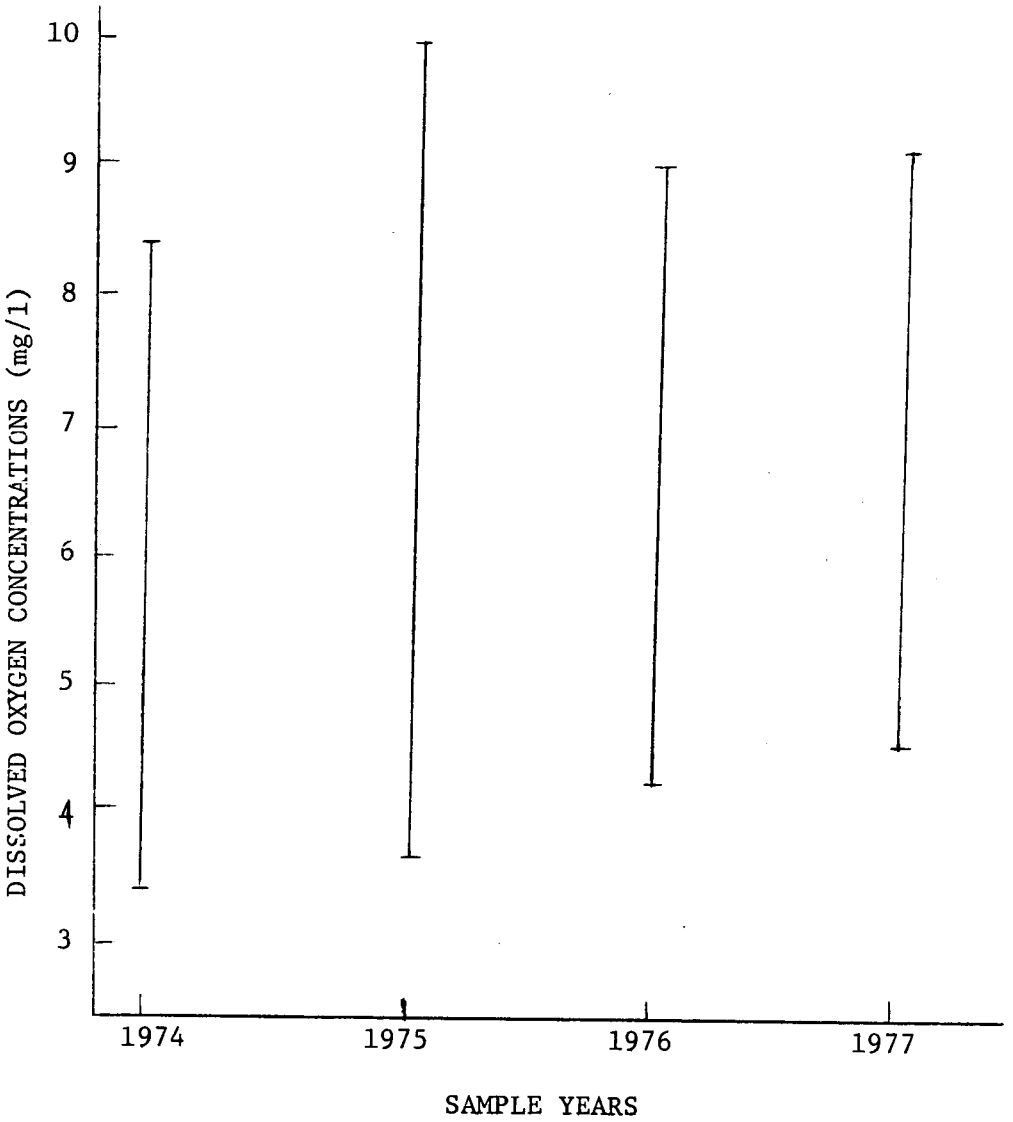


Figure 1.3.1 - 30 . The annual range of dissolved oxygen concentrations measured in the Intake canal during the period of May through November, 1974-1977.

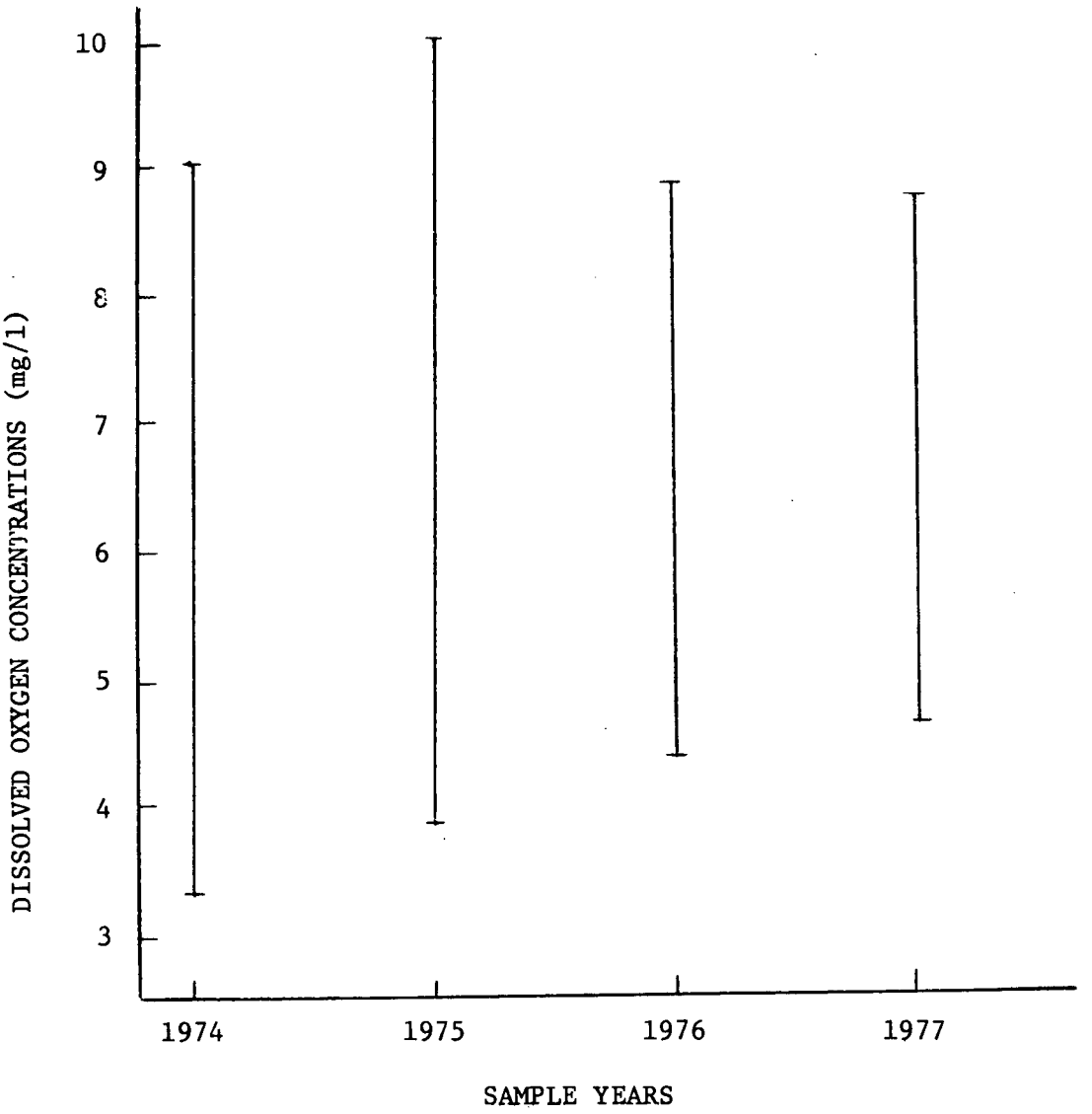


Figure 1.3-31 . The annual range of dissolved oxygen concentrations measured in the Oconee discharge during the period of May through November, 1974-1977.

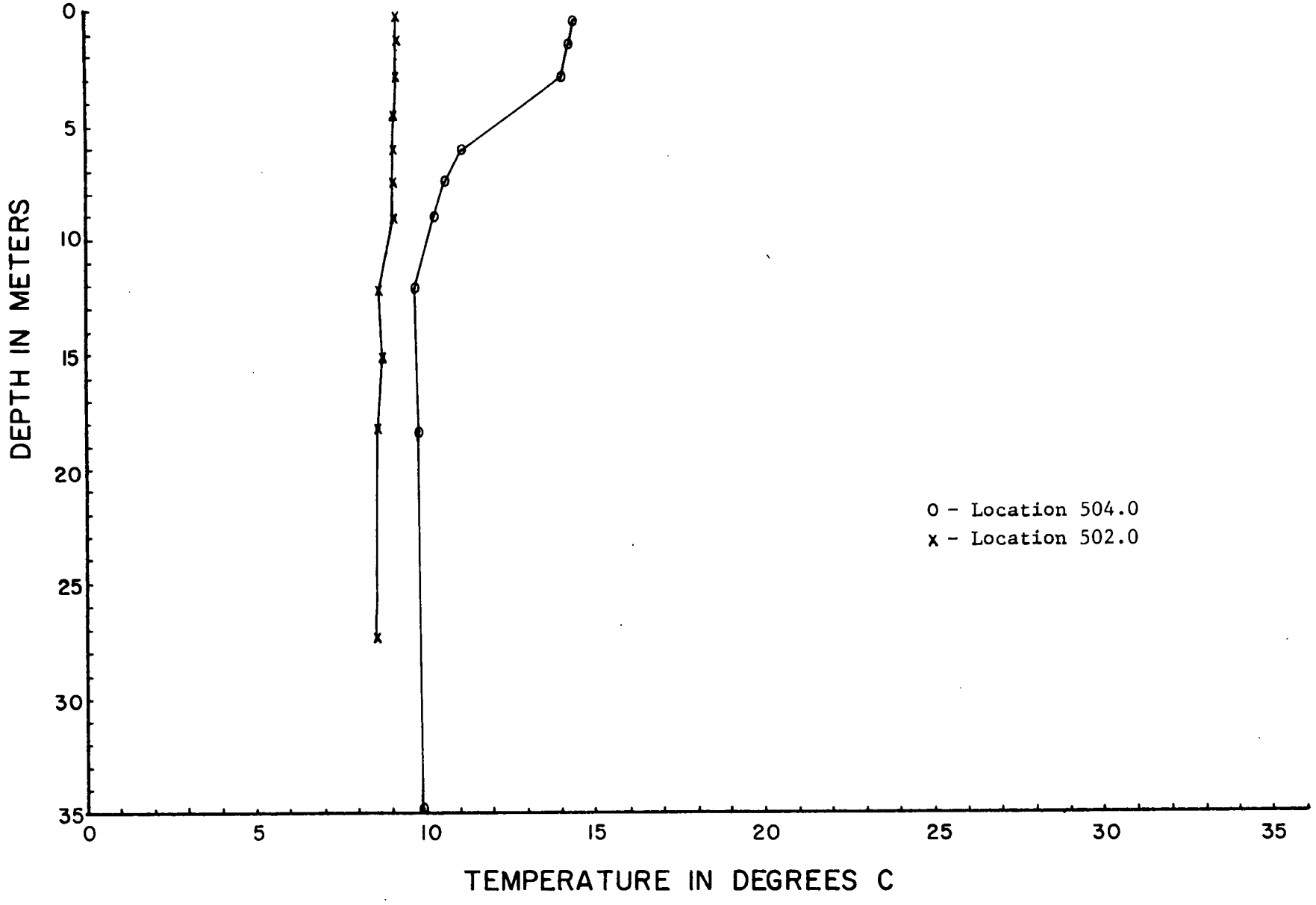


Figure 1.3.1-32. ONS average monthly water temperature profiles at Locations 502.0 and 504.0 for January 1977.

1.3.2 FISH - POPULATION DYNAMICS AND REPRODUCTION

Specification: A. Comparisons shall be made of the data obtained by systematic sampling of fishes using nets, electrofishing and rotenone at suitable locations both within and essentially out of the influence of the effluent.

Significant changes in the composition, abundance, and growth of the major fishes in various areas of Lake Keowee shall be identified and the factors which cause change defined especially those relating to the effluent from Oconee Nuclear Station (Duke Power Company 1973a).

I. INTRODUCTION

A discussion of the effects of power plant operation on the population dynamics of fishes was presented in the Oconee Nuclear Station Semi-Annual Report for the period ending June 30, 1973 (Duke Power Company 1973b). Those studies are being performed by the Southeast Reservoir Investigations (SERI), Fish and Wildlife Service, located in Clemson, South Carolina.

II. METHODS AND MATERIALS

Methods and materials used for fisheries research in connection with the operation of ONS have been summarized in the ONS Semi-Annual Report for the period ending June 30, 1974 (Duke Power Company 1974). This program has continued through December 31, 1977, except for the discontinuation of electrofishing after October 1975. This decision was made because of low numbers of fish collected with this technique.

III. RESULTS AND DISCUSSION

Data necessary to characterize the dynamics of fish populations of Lake Keowee have been collected using seines, gill nets, and rotenone. A discussion of these data is provided by SERI in the following two reports: (1) "Highlights of Activities" which covers the period October 1976 - September 1977 (Appendix C) and (2) an excerpt from the proposed annual work plan for 1977-78 (Appendix D).

Seining

Preliminary analysis of data from 1977 indicates a continuous decline in shoreline species except for spotail shiners.

Gill Netting

The relative abundance of most species of fish have declined since 1973. Flat bullhead and black crappie appear to be the only major species increasing in relative abundance.

Except for an apparent winter concentration of fish in the area of the heated effluent, no obvious changes in the adult fish population within the discharge cove were noted.

Rotenoning

The standing crops of three species (flat bullhead, redbreast sunfish and green sunfish) increased during the period 19731977. Standing crops of other species have been variable and long term trends have not been established.

IV. SUMMARY AND CONCLUSIONS

The studies conducted by SERI have provided valuable data concerning species composition, abundance and growth of Lake Keowee fishes. These data show: 1) a decline in the shoreline fish population; 2) a decline in the relative abundance of most species except for flat bullhead and black crappie; and 3) an increase in the standing crops of flat bullhead, redbreast sunfish and green sunfish, while other species are too variable to predict at this time.

It is not known if the changes in the fish populations in Lake Keowee are the results of a change in habitat (riverine to reservoir) or alterations in the lake caused by the operation of Oconee Nuclear Station. However, with the exception of a winter concentration of fish in the heated discharge of ONS, no obvious changes in the adult fish population within the discharge cove were noted.

REFERENCES CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company. U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC), Washington, D. C.

_____. 1973b. Oconee Nuclear Station. Semi-Annual Report, Period Ending June 30, 1973.

_____. 1974. Oconee Nuclear Station. Semi-Annual Report, Period Ending June 30, 1974.

1.3.2 FISH - POPULATION DYNAMICS AND REPRODUCTION

Specification: B. The reproduction of four (4) indicator species (largemouth bass, black crappie, yellow perch, and bluegill) representative of the fish species in Lake Keowee shall be characterized by determining the environmental requirements for reproduction. Pertinent data collected from other studies shall be utilized and results and observations obtained for Lake Keowee shall be compared to those previously published.

Spawning data for Lake Keowee shall be collected by direct observation and the use of ichthyoplankton trawls.

The sampling procedures, periods, and intensity related to Specifications A and B above will be based on those established by the Southeast Reservoir Investigations team of the Fish and Wildlife Service, Department of the Interior (Duke Power Company 1973a).

I. INTRODUCTION

A discussion of the effects of power plant operations on the population dynamics of fishes was presented in the Oconee Nuclear Station Semi-Annual Report for the period ending June 30, 1973 (Duke Power Company 1973b).

II. METHODS AND MATERIALS

The methods and materials used in studying the reproduction of Lake Keowee fishes have been previously described (Duke Power Company 1974). This program has continued without change through December 31, 1977.

III. RESULTS AND DISCUSSION

Life history studies have continued on four indicator species representative of the species in Lake Keowee (Appendices C and D). These are: largemouth bass, black crappie, bluegill, and yellow perch. Life history studies have been divided into three distinct parameters for each species. These are: 1) age and growth, 2) reproduction and fecundity, and 3) food habits. Four study areas on Lake Keowee have been selected as sampling locations for life history data. These areas are: 1) pumpback (between Lake Jocassee and Hwy. 11), 2) north (mouths of Crow

Creek and Mile Creek arms), 3) middle (from the skimmer wall to 2 km north of Keowee Dam), and 4) south (from Little River Dam to Hwy. 188). During 1977 3 major tributaries were also sampled (Appendicies C and D).

Trawl sampling, conducted March - September 1973 thru 1977, has resulted in a steadily declining catch in three of four species of fish captured consistently each year. These three species were yellow perch, black crappie and sunfish. Threadfin shad having been stocked in the reservoir during January 1974 remained about the same during sampling 1974-1976 (Duke Power Company, 1977). If these data represent an actual drop in abundance of these three species, competition from the recently introduced species, threadfin shad, may be an influencing factor. It is possible, however, that these data may indicate a less efficient sampling as a result of changes in larval fish distribution after the operation of ONS.

Gonads have been collected and preserved from specimens since the 1973 field season began. Fecundity data are still being analyzed. Comparisons will be made between pre-operational and operational periods.

IV. SUMMARY AND CONCLUSIONS

Data on the reproduction of largemouth bass, black crappies, yellow perch, and bluegill have been collected using trawls, seines and by direct observation. These data indicate a decrease in mean number of larval fish per standard frame trawl haul at all stations from 1973 through 1977. Adequate data are not yet available for an assessment of the effects of ONS on the reproduction of Lake Keowee fishes.

REFERENCES

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company. U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC), Washington, D. C.

_____. 1973b. Oconee Nuclear Station. Semi-Annual Report, Period Ending June 30, 1973.

_____. 1974. Oconee Nuclear Station. Semi-Annual Report, Period Ending June 30, 1974.

_____. 1977. Oconee Nuclear Station. Environmental Summary Report, 1971-1976.

1.3.3 PERIPHYTON

Specification: Duplicate artificial substrates (plexiglass slides) shall be held in racks and submerged at a depth of five feet at three general locations in the lake (Stations 502, 504, and a station in the discharge area) that may be influenced by the plant discharge, and at two control locations in the lake (Stations 501 and 506) that shall be essentially out of the influence of the plant discharge. Dry and ash-free weights of each sample shall be determined so that comparisons can be made of the relative productivity values between the different stations (Duke Power Company 1973a).

I. INTRODUCTION

A general discussion of the concepts involved in this study has been presented (Duke Power Company 1973b).

II. METHODS AND MATERIALS

Previously described methods and materials (Duke Power Company 1973a, 1973b, 1975a, 1975b, 1976) were followed during this report period except for the following changes:

Duplicate diatom proportional counts were discontinued since diatom community composition has already been established.

III. RESULTS AND DISCUSSION

Organic Accumulation

Organic accumulation rates are presented in Table 1.3.3-1 and seasonal and spatial trends are diagrammed in Figures 1.3.3-1 and 1.3.3-2. Seasonal trends of organic accumulation rates generally followed patterns of temperature and solar radiation; however, peaks of organic accumulation rates during periods of warm temperatures were lower than in previous years (Duke Power Company 1977), indicating a bimodal seasonal pattern (Figure 1.3.3-1).

Spatially, organic accumulation rates tended to follow patterns of nutrient concentrations (Chapter 1.3.1, Figure 1.3.3-2), as they had in previous years (Duke Power Company 1977).

Location 506.0 usually had the highest organic accumulation rates, followed by Locations 500.0 and 504.0. Lowest rates of accumulation were usually observed at Location 502.0 (Table 1.3.3-1, Figures 1.3.3-1 and 1.3.3-2). Organic accumulation rates in the Little River arm were progressively lower from Locations 500.0 to 502.0, while those in the Keowee River arm were higher with increased distance from the plant. Although nutrient concentrations were low at Location 508.0, consistent

current increased nutrient availability and brought about higher rates of accumulation at this location than would be expected. Ruttner (1953) found that current provides for constant renewal of materials in solution at the surfaces of organisms.

Community Composition

A total of 296 periphyton taxa were identified from Lake Keowee locations in 1977, including 62 genera, 175 species, and 59 varieties (Tables 1.3.3-2 and 1.3.3-3). Community composition in 1977 was similar to previous years, except that the Chrysophyceae contributed more to the mean total density (Duke Power Company 1977).

Total Periphyton

Total periphyton densities are presented in Table 1.3.3-4 and seasonal trends are diagrammed in Figure 1.3.3-3. Seasonal trends of periphyton densities were similar to those of organic accumulation rates, and were primarily a function of solar radiation and temperature. Temperatures at periphyton sampling locations during July of 1977 ranged from 29.3 C (Location 508.0) to 31.6 C (Location 502.0) and were 2.4 to 5.5 C higher than those in 1976 (Chapter 1.3.1; Duke Power Company 1976). Whitford and Schumacher (1963) found that optimum temperatures for diatom development range from 14 to 22 C. Since diatoms constituted over 75% of the mean total density (Table 1.3.3-2), periphyton densities were comparatively lower during mid-summer.

Spatial trends of total periphyton densities were similar to those of previous years (Duke Power Company 1977), and to those of organic accumulation rates. Nutrient concentrations generally followed this same spatial pettern (Chapter 1.3.1, Figure 1.3.3-2). Highest densities were usually observed at Location 504.0, and lowest densities generally occurred at Location 502.0. Low densities in the vicinity of ONS, especially in the Little River arm, were a function of lower nutrient concentrations brought about by induced mixing from ONS operation. Densities at Location 508.0 were also influenced by warmer winter temperatures and increased nutrient availability brought about consistent current.

Class Variations

Since diatoms constituted over 75% of the mean total density (Table 1.3.3-2), seasonal and spatial trends of diatom densities were similar to total densities. Trends were also similar to those of previous years, except for lower densities during mid-summer (Duke Power Company 1977). Diatom densities ranged from 1.3 X 10^3 units$\cdot$cm^{-2} at Location 500.0 on March 1 to 343.8 X 10^3 units$\cdot$cm^{-2} at Location 504.0 on October 21 (Appendix B, Section 1, pages 26 and 34).

Major diatom taxa observed at Lake Keowee locations in 1977 were similar to those observed in 1975 and 1976 (Duke Power Company 1977). Those which were common at all locations (Achnanthes microcephala, Anomoeoneis vitrea, Melosira distans and Synedra spp.) are all described as ubiquitous

and cosmopolitan (Lowe 1974; Patrick and Reimer 1966). Acidophilous forms such as Eunotia spp. and Tabellaria spp. (Lowe 1974; Patrick and Reimer 1966), and rheophilous forms such as Gomphonema parvulum (Patrick and Reimer 1975; Wallace and Patrick 1950) were more abundant at Location 508.0 as a result of more acidic conditions during stratified periods and consistent current. The types and proportions of diatom species observed at Lake Keowee locations are those generally associated with circumneutral, oligotrophic lakes (Hutchinson 1967).

Green algae were generally most abundant from July through October, especially at Locations 504.0 and 508.0, where this class, composed primarily of Mougeotia spp., constituted over 40% of the total densities on July 28 (Appendix B, Section 1, page 31).

Densities of green algae ranged from 34.0 X 10^3 units·cm^{-2} at Location 501.0 on March 1 to 111.1 X 10^3 units·cm^{-2} at Location 504.0 on July 28 (Appendix B, Section 1, pages 2 and 31). Seasonal and spatial distributions of Chlorophyceae were similar to previous years, except that densities in 1977 were consistently lower. Since lower densities were observed at far field locations, as well as those in the vicinity of ONS, this could not be related to the operation of ONS.

Densities of chrysophytes were higher in 1977 than in previous years at all locations in Lake Keowee (Duke Power Company 1977). No chrysophytes were observed at Lake Keowee locations in January and February. Chrysophyte densities peaked at Location 504.0 on May 31 (106.8 X 10^3 units·cm^{-2}) when they contributed nearly 40% to the total density. Epipyris ramosa, an epiphytic, colonial chrysophyte, was the dominant species of this class (Appendix B, Section 1, pages 25, 26 and 29).

The Myxophyceae were most abundant in May, July, and October. Very low densities occurred from December through March. The dominant blue-green alga was Oscillatoria geminata, a filamentous form which accounted for 8.7% of the total density at Location 508.0 on May 31 (Appendix B, Section 1, page 29).

Patrick et al. (1969) found that blue-greens become dominant at temperatures over 35 C. Temperatures at Lake Keowee locations were never high enough to cause a shift from diatoms and green algae to blue-green algae. Low pH conditions in the discharge tended to favor green algae and acidophilous diatoms which are considered more desirable than blue-greens as they are within the food chain and do not form floating scums (Shapiro 1973).

IV. SUMMARY AND CONCLUSIONS

Seasonal trends of organic accumulation rates and densities generally followed patterns of solar radiation and temperature, as they have in previous years, except that a bimodal pattern was observed in 1977. Lower

organic accumulation rates and densities during the mid-summer of 1977 may have been due to naturally-occurring, lake-wide temperatures that were higher than those of previous years.

Spatial trends of organic accumulation rates were similar to those of nutrient concentrations and total periphyton densities. Therefore, as in previous years, lower organic accumulation rates and densities in the vicinity of ONS, especially in the Little River arm, were a function of reduced nutrient concentrations brought about by induced mixing from ONS operation, and not a result of thermal discharge.

Although nutrient concentrations were low at Location 508.0, nutrient availability to attached algae was increased by current, especially during warm stratified periods. Increased nutrient availability and warm winter temperatures influenced densities and organic accumulation rates at this location, as was noted in previous years. Increased nutrient availability and more acidic conditions brought about by the operation of ONS during stratified periods also caused a shift in diatom species toward more acidophilous forms such as Eunotia spp. and Tabellaria spp., and rheophilous forms such as Gomphonema parvulum.

Community composition was similar to previous years except that chrysophytes were more abundant at all locations in 1977. Major taxa within classes were also the same as those found previously. Blue-green algae were not enhanced by the operation of ONS.

Based on periphyton species composition, densities and organic accumulation rates observed on artificial substrates, Lake Keowee can be classified as a circumneutral, oligotrophic lake. Lower organic accumulation rates and densities during mid-summer of 1977 were probably a function of higher naturally-occurring temperatures throughout the lake, and not the operation of ONS.

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Table 1.3.3-1

Periphyton organic accumulation rates in $mg \cdot m^{-2} \cdot day^{-1}$ from December 30, 1976 through December 29, 1977, for locations in Lake Keowee, SC. Values are averages of duplicate samples.

Date	Exposure Period (days)	Locations 500.0	501.0	502.0	508.0	504.0	506.0	Mean
Feb 1 1977	33	1.8	0.4	0.6	0.2	(1)	1.0	0.8
Mar 1 1977	29	1.8	3.1	2.7	2.9	3.2	2.9	2.8
Mar 29 1977	28	5.8	4.7	5.0	8.2	8.1	8.0	6.6
Apr 29 1977	31	14.6	5.8	3.8	58.6	17.6	130.4	38.5
May 31 1977	32	28.6	7.6	6.2	14.2	52.8	47.8	26.2
Jun 30 1977	30	36.1	20.0	19.9	27.6	34.9	46.6	30.8
Jul 28 1977	28	(1)	45.0	14.2	50.0	36.2	67.1	42.5
Aug 31 1977	34	45.6	47.2	21.1	55.0	(1)	(1)	42.2
Sep 29 1977	29	95.6	32.6	23.2	(1)	(1)	103.7	63.8
Oct 31 1977	32(2)	50.6	9.2	19.1	9.1	39.1	62.2	31.6
Nov 29 1977	29	11.2	4.0	4.0	8.0	8.0	45.0	13.5
Dec 29 1977	30	3.8	2.0	3.7	3.1	3.3	8.1	4.0
Mean		26.9	15.1	10.5	19.8	22.6	43.6	

[1]Sampler missing

[2]Location 508.0 this period = 31 days

Table 1.3.3-2

Distribution of periphyton taxa and percent composition of algal classes in Lake Keowee, S. C., from December 30, 1976 through December 29, 1977.

Taxon	Genera	Species	Varieties	Percent Composition
Bacillariophyceae	26	112	50	75.6
Chlorophyceae	21	39	8	17.8
Chrysophyceae	4	6	0	4.5
Myxophyceae	4	7	0	1.3
Cryptophyceae	2	3	0	0.4
Dinophyceae	2	5	0	0.3
Euglenophyceae	2	2	1	0.1
Haptophyceae	1	1	0	<0.1
	62	175	59	

Table 1.3.3-3

Periphyton species list for Lake Keowee through December, 1977

Division: Chrysophyta
Class: Bacillariophyceae

*Achnanthes deflexa Reim.
*A. exigua Grun.
*A. cf. hauckiana Grun.
*A. lanceolata (Breb.) Grun.
*A. lanceolata var. dubia Grun.
**A. levanderi Hust.
*A. lewisiana Patr.
*A. linearis (W. Sm.) Grun.
*A. linearis f. curta H. L. Smith
*A. marginulata Grun.
*A. microcephala (Kutz.) Grun.
*A. minutissima Kutz.
*A. saxonica Krasske
**A. sp.
*Amphora ovalis Kutz.
**A. ovalis var. pediculus (Kutz.) V. H.
Anomoeneis exilis (Kutz.) Cl.
A. serians (Breb. ex Kutz.) Cl.
*A. serians var. brachysira (Breb. ex Kutz.) Hust.
*A. vitrea (Grun.) Ross
*Asterionella formosa Hass.
Caloneis bacillum (Grun.) Meres.
*C. sp.
Cocconeis placentula Ehr.
*C. placentula var. lineata (Ehr.) V. H.
*Cyclotella meneghiniana Kutz.
*C. pseudostelligera Hust.
*C. stelligera Cl. and Grun.
Cymbella cf. cesatii (Rabh.) Grun. ex A. S.
*C. gracilis (Rabh.) Cleve
*C. hybrida Grun.
*C. microcephala Grun.
*C. minuta Hilse ex Rabh.
*C. naviculiformis Auerswald
*C. tumida (Breb.) Van Heurck
C. turgida (Greg.) Cleve
*Denticula elegans Kutz.
D. sp.
Diatoma vulgare Bory
*Diploneis ellipica (Kutz.) Cl.
D. sp.

* Observed during the sampling period of December 30, 1976 through December 29, 1977.
** Observed for the first time during the above sampling period.

*Epithemia zebra (Ehr.) Kutz.
Eunotia arcus var. bidens Grun.
*E. curvata (Kutz.) Lagerst
*E. curvata var. capitata (Grun.) Patr. comb. nov.
*E. exigua (Breb. ex Kutz.) Rabh.
E. fallax A. Cl.
*E. flexuosa Breb. ex Kutz.
*E. flexuosa var. eurycephala Grun.
E. incisa W. Sm. ex Greg.
E. cf. incisa W. Sm. ex Greg.
*E. naegelii Migula
*E. pectinalis (O. F. Mull.?) Rabh.
E. pectinalis var. minor (Kutz.) Rabh.
E. pectinalis var. ventricosa Grun.
*E. perpusilla Grun.
*E. zasuminensis (Cabejszekowna) Korner
*E. sp.
**Fragilaria capucina Desm.
**F. construens (Ehr.) Grun.
F. construens var. venter (Ehr.) Grun.
F. crotonensis Kitton
F. pinnata Ehr.
*F. vaucheriae (Kutz.) Peters
*F. sp.
*Frustulia rhomboides (Ehr.) DeT.
*F. rhomboides var. amphipleuroides (Ehr.) DeT.
*F. rhomboides var. capitata (A. Meyer) Patr.
F. rhomboides var. crassinervia (Breb. ex W. Sm.) Ross
*F. rhomboides var. saxonica (Rabh.) DeT.
**F. rhomboides var. virida (breb.) Cl.
Gomphonema cf. abbreviatum (Ag) Kutz.
*G. acuminatum Ehr.
*G. acuminatum var. coronata W. Smith
G. acuminatum var. turris Cleve
G. angustatum (Kutz.) Rabh.
*G. angustatum var. producta Grun.
G. cf. apuncto J. Wallace
**G. clevii Fricke
G. constrictum Ehr.
G. constrictum var. capitata (Ehr.) Cleve
**G. dichotomum Kutz.
*G. gracile Ehr.
G. intricatum Kutz.
G. lanceolatum Ehr.
*G. parvulum (Kutz.) Grun.
*G. puiggarianum Grun.
*G. sp.
Gyrosigma spencerii (W. Smith) Grif. and Henf.
*Hantzschia amphioxys (Ehr.) Grun.

**Melosira ambigua (Grun.) O. Mull.
*M. distans (Ehr.) Kutz.
*M. distans var. alpigena Grun.
*M. granulata (Ehr.) Ralfs
*M. granulata var. angustissima (Ehr.) Mull.
M. italica (Ehr.) Kutz.
*M. italica var. tenuissima (Grun.) O. Mull.
*M. varians Ag.
*M. sp.
*Meridion circulare (Grev.) Ag.
*Navicula accomoda Hust.
N. cf. accomoda Hust.
**N. aikenensis Patr.
N. cf. anglica Ralfs
**N. anglica var. subsala (Gurn.) Cl.
**N. arvensis Hust.
N. capitata var. hungarica (Grun.) Ross
N. cocconeiformis Greg. ex Grev.
*N. cryptocephala Kutz.
N. contenta Grun.
*N. decussis Østr.
**N. elginensis (Greg.) Ralfs
**N. elginensis var. neglecta (Kras.) Patr.
N. exigua var. capitata Patr.
N. gregaria Donk.
N. halophila (Grun.) Cl.
*N. hambergii Hust.
*N. hustedtii Krasske
N. lanceolata (Ag.) Kutz.
N. lateropunctata Wallace
N. lapidosa Krasske
*N. minima Grun.
*N. mutica Kutz.
N. mutica var. tropica Hust.
**N. mutica var. undulata (Hilse) Grun.
*N. notha Wallace
*N. paucivisitata Patr.
*N. pupula Kutz.
*N. pupula var. capitata Skv. and Meyer
N. pupula var. elliptica Hust.
*N. pupula var. mutata (Krasske) Hust.
N. radiosa var. parva Wallace
*N. rhynchocephala Kutz.
N. rhynchocephala var. germainii (Wallace) Patr.
**N. salinarum Grun.
**N. salinarum var. intermedia (Grun.) Cl.
N. schroeteri var. escambia Patr.
N. cf. secura Patr.
**N. seminulum var. hustedtii Patr.
*N. subtillissima Cleve

N. viridula (Kutz.) Kutz.
*N. viridula var. linearis Hust.
*N. viridula var. rostellata (Kutz.) Cl.
*N. sp.
**Neidium affine (Ehr.) Cl.
cf. N. affine var. humerus Reim.
*N. affine var. longiceps (Greg.) Cl.
N. iridis var. amphigomphus (Ehr.) A. Mayer
N. sp.
Nitzschia acicularis W. Smith
**N. acuta Hant.
**N. agnita Hust.
N. amphioxoides Hust.
N. denticula Grun.
*N. dissipata (Kutz.) Grun.
N. filiformis (W. Smith) Schutt
*N. frustulum (Kutz.) Grun.
*N. lorenziana var. subtilis Grun.
N. obtusa W. Smith
*N. palea (Kutz.) W. Smith
*N. paleacea Grun.
**N. cf. romana Grun.
N. sigmoidea (Nitzsch) W. Smith
**N. sublinearis Hust.
*N. sp.
*Pinnularia biceps Greg.
P. biceps f. petersenii Ross
P. cf. borealis Ehr.
P. braunii (Grun.) Cl.
P. braunii var. amphicephala (A. Mayer) Hust.
**P. caudata (Boyer) Patr.
P. cf. divergens W. Smith
*P. mesolepta (Ehr.) W. Smith
P. microstauron (Ehr.) Cl.
P. subcapitata Greg.
P. subcapitata var. paucistriata (Grun.) Cl.
*P. sp.
Stauroneis amphioxys Greg.
*S. anceps Ehr.
S. anceps f. gracilis Rabh.
S. livingstonii Reim.
*S. phoenicenteron (Nitz.) Ehr.
S. phoenicenteron f. gracilis (Ehr.) Hust.
**S. smithii Grun.
S. sp.
Stephanodiscus sp.
*Surirella angustata Kutz.
S. delicatissima Lewis
S. linearis W. Smith

S. linearis var. helvetica (Brun.) Meister
S. ovata Kutz.
*S. sp.
Synedra acus Kutz.
S. amphicephala Kutz.
**S. delicatissima W. Sm.
*S. famelica Kutz.
S. cf. miniscula Grun.
*S. parasitica (W. Sm.) Hust.
S. cf. parasitica (W. Sm.) Hust.
*S. radians Kutz.
*S. rumpens Kutz.
*S. rumpens var. familiaris (Kutz.) Hust.
*S. rumpens var. fragilariodies Grun.
*S. rumpens var. meneghiniana Grun.
*S. rumpens var. scotica Grun.
*S. socia Wallace
*S. ulna (Nitz.) Ehr.
**S. ulna var. ramesii (Herib.) Hust.
*S. sp.
*Tabellaria fenestrata (Lyngb.) Kutz.
*T. flocculosa (Roth) Kutz.

Class: Chrysophyceae

*Dinobryon bavaricum Imhof
**D. sp.
*Epipyxis ramosa (Lauterb.) Hilliard and Asmund
**Kephyrion sp.
**Mallomonas tonsurata Teiling
**M. sp.

Class: Haptophyceae

**cf. Chrysochromulina parva Lackey
Unidentified chrysophyte cyst

Division: Chlorophyta

Class: Chlorophyceae

*Ankistrodesmus falcatus (Corda) Ralfs
**A. falcatus var. mirabilis (West and West) G. S. West
**A. fusiformis Corda sensu Korsch
A. sp.
**Arthrodesmus sp.
*Characium ambiguum Hermann
C. sp.
*Chlamydomonas sp.
**Closteriopsis longissima var. tropica West and West
*Cosmarium angulosum var. concinnum (Rab.) W. and G. S. West
*C. asphaerosporum var. strigosum Norst.
C. cosmetum Norst.
**C. ornatum var. perornatum G. S. West
**C. parvulum Breb.
**C. phaseolus var. minor Boldt.
**C. raciborskii Lag.

C. trilobatum var. depressum Printz
*C. sp.
**Crucigenia tetrapedia (Kirch) West
*C. sp.
*Diogenes gsp.
**Docidium baculum Breb.
**Gonatozygon monotaenium DeB.
**Kirchneriella subsolitaria G. S. West
*Monoraphidium contortum Thur.
*M. setiforme (Nygaard) Komarkov-Legnerova
M. sp.
*Mougeotia sp. A
*M. sp. B
Oedogonium sp.
Pediastrum duplex var. gracilimum West and West
**Planktosphaeria gelatinosa G. M. Smith
*Pseudenoclonium basiliensis Vischer
Scenedesmus abundans (Kirch.) Chod.
*S. acuminatus (Lag.) Chod.
S. armatus (Chod.) G. M. Smith
*S. cf. bijuga (Turp.) Lag.
*S. dimorphus (Turp.) Kutz.
**S. opoliensis var. contracta Pres.
*S. quadricauda (Turp.) Breb.
*S. sp.
*Selenastrum minutum (Naeg.) Collins
Spyrogyra sp.
**Staurastrum clevii Wittr.
S. curvatum var. elongatum G. M. Smith
S. dejectum Breb.
*S. pentacerum (Wolle) G. M. Smith
*S. tetracercum Ralfs
S. sp.
**Stigeoclonium subsecundum Kutz.
**S. sp.
*Tetraedron caudatum (Lorda) Hansgirg
T. enorme (Ralfs) Hansgirg
T. cf. limneticum Borge
*T. minimum Braun
T. muticum (A. Braun) Hansgirg
**Ulothrix cf. zonata (Weber and Mohr) Kutz.
*Coccoid greens
Unidentified green flagellates

Division: Cryptophyta
Class: Cryptophyceae

Cryptomonas ovata Ehr.
*C. phaseolus Skuja
*C. sp.
*Rhodomonas minuta Skuja

*cf. Rhodomonas minuta Skuja
Unidentified flagellate
Division: Cyanophyta
Class: Myxophyceae
Agmenellum quadriduplicatum (Menegh.) Breb.
**Anabaena sheremetevii Elen.
*A. sp.
cf. A. sp.
*Anacystis cyanea Drouet and Daily
A. incerta Drouet and Daily
A. thermale Drouet and Daily
A. sp.
*Oscillatoria geminata Menegh.
**O. cf. tenuis Agardh
*O. sp.
Phormidium angustissima West and West
**P. cf. valderianum (Dep.) Gom.
*P. sp.
*Unidentified blue green filament
Division: Euglenophyta
Class: Euglenophyceae
*Euglena sp.
**Trachelomonas volvocina var. punctata Playfair
Division: Pyrrhophyta
Class: Dinophyceae
*Glenodinium sp.
**Peridinium aciculiferum (Lemm.) Stein
*P. inconspicuum Lemm.
*P. pusillum (Pen.) Lemm.
P. wisconsinense Eddy
*P. sp.
*Unidentified Dinoflagellate

Table 1.3.3-4

Total periphyton densities in units·cm^{-2} x 10^3 from December 30, 1976 through December 29, 1977. Values are averages of duplicate samples[1].

Date	Exposure Period (days)	Locations 500.0	501.0	502.0	508.0	504.0	506.0	Mean
Feb 1 1977	33	3.5	6.9	5.4	17.7	(2)	25.4	11.8
Mar 1 1977	29	1.4	1.4	1.6	1.6	4.8	4.2	2.5
Mar 29 1977	28	26.3	3.7	2.6	3.1	12.7	9.4	9.6
Apr 29 1977	31	72.9	29.7	15.1	119.8	124.2	123.9	80.9
May 31 1977	32	292.4	35.1	50.8	125.0	269.6	396.2	194.8
Jun 30 1977	30	(3)	35.1	13.1	95.4	33.8	46.6	44.8
Jul 28 1977	28	(2)	13.2	12.8	232.1	276.5	72.8	121.5
Aug 31 1977	34	131.9	77.6	31.7	228.1	(2)	(2)	117.3
Sep 29 1977	29	95.7	11.1	23.0	(2)	(2)	137.4	66.8
Oct 31 1977	32[4]	(3)	19.7	59.3	29.8	405.3	254.5	153.7
Nov 29 1977	29	54.0	12.8	12.2	(3)	47.6	78.1	40.9
Dec 29 1977	30	15.3	6.1	13.5	20.6	19.0	35.4	18.3
Mean		77.0	21.0	20.1	87.3	132.6	107.6	

[1]Bottom slides missing at Location 500.0 for Aug 31 and Location 502.0 for Sep 29.

[2]Sampler missing

[3]Top and bottom slides for densities missing

[4]Location 508.0 this date = 31 days

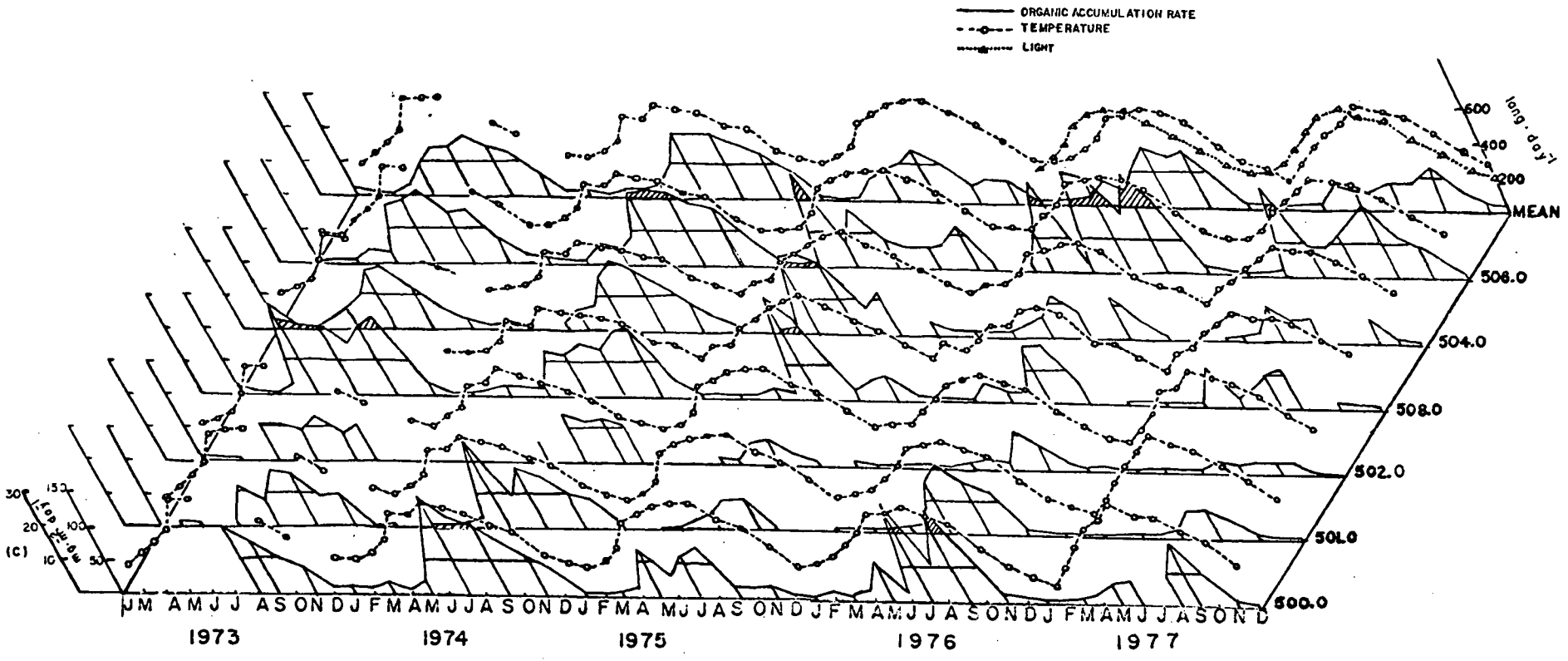

Figure 1.3.3-1 Periphyton organic accumulation rates ($mg \cdot m^{-2} \cdot day^{-1}$) and temperatures (C) from January, 1973 through December, 1977, and solar radiation ($lang \cdot day^{-1}$) from January, 1976 through December, 1977 for locations in Lake Keowee, SC.

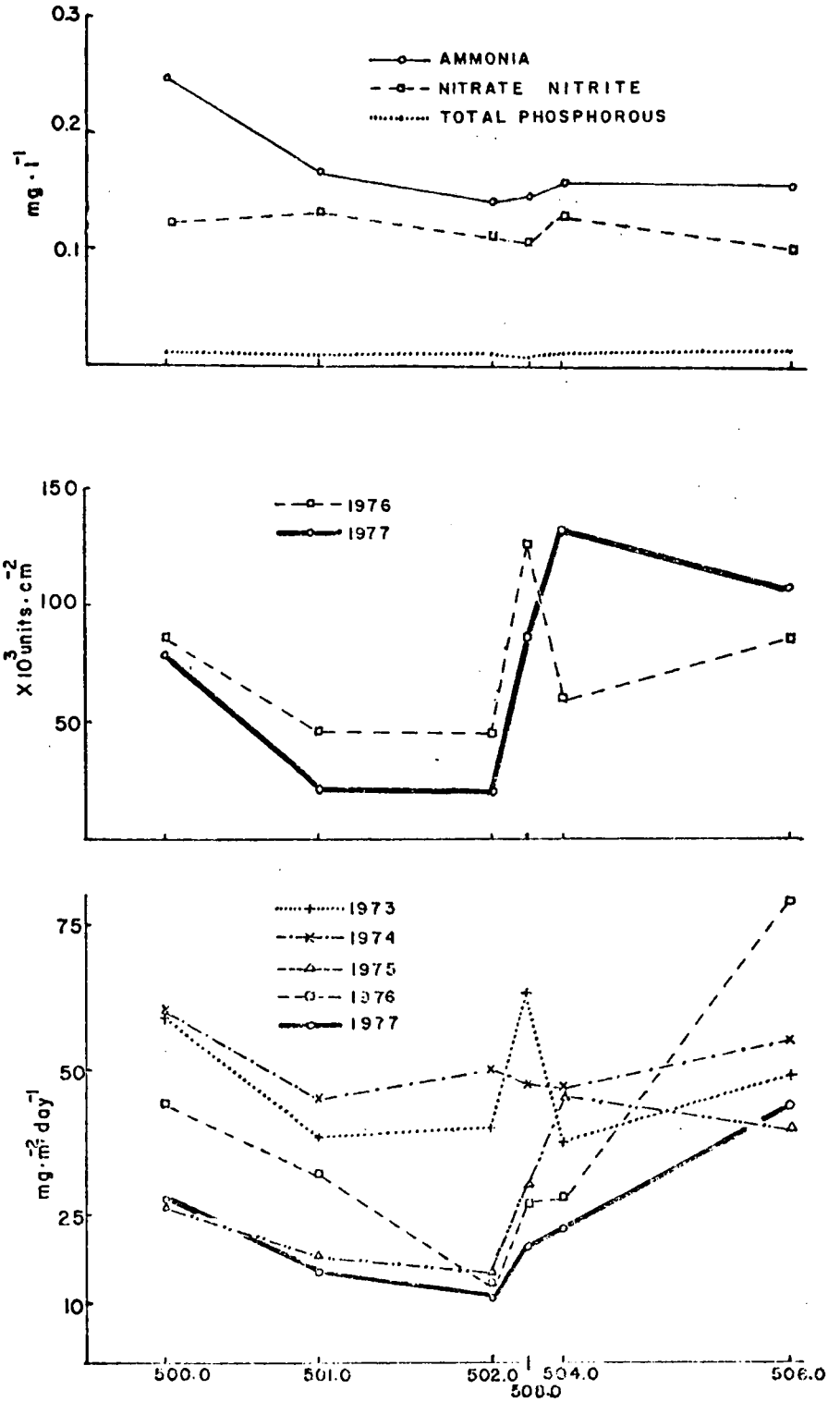

Figure 1.3.3-2 Spatial trends of nutrients ($mg \cdot l^{-1}$) during 1977, of densities ($X10^3$ units$\cdot cm^{-2}$) from January, 1976 through December, 1977, and of organic accumulation rates ($mg \cdot m^{-2} \cdot day^{-1}$) from January, 1973 through December, 1977 in Lake Keowee, SC.

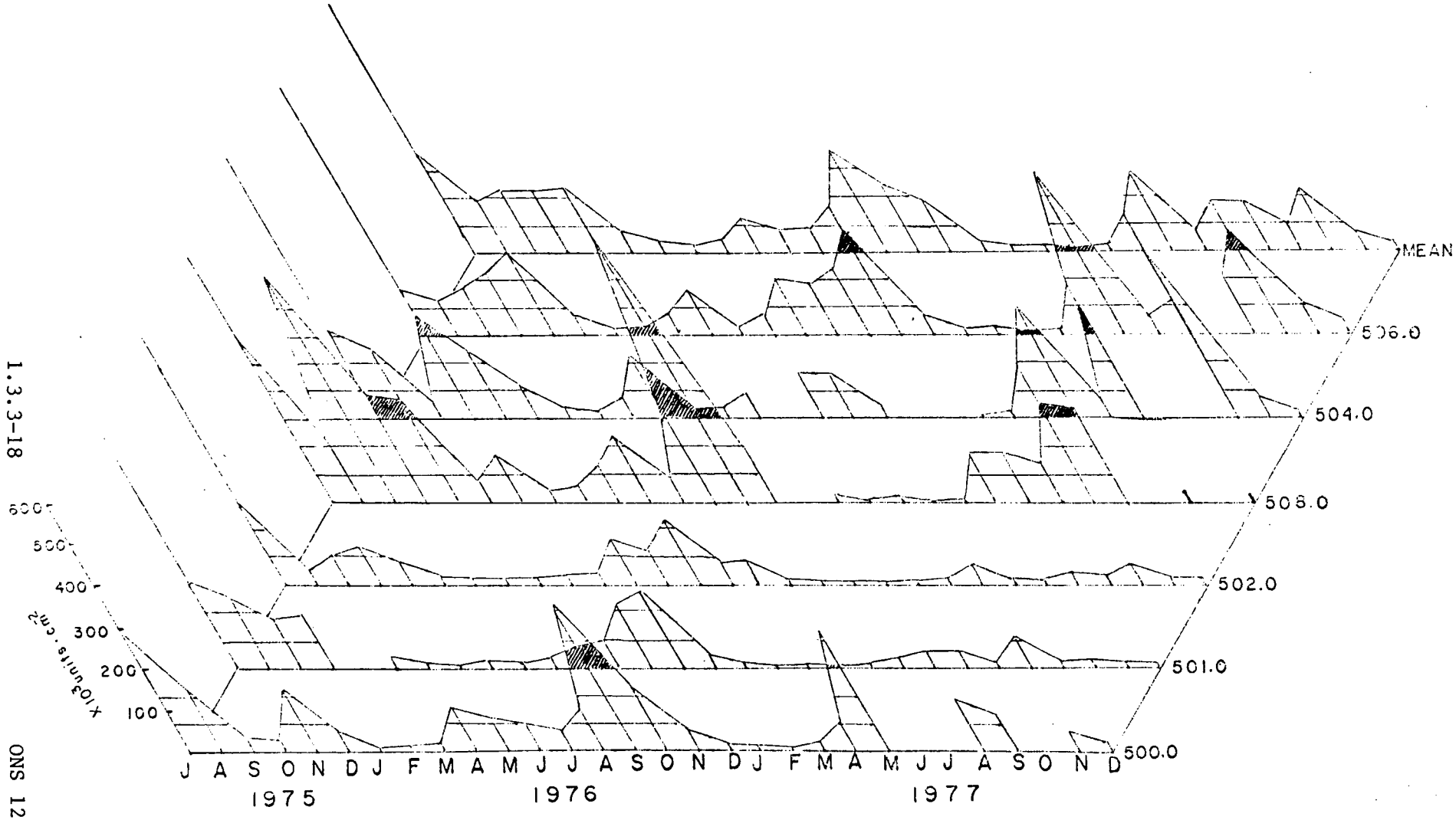

Figure 1.3.3-3 Periphyton densities ($X10^3$ units.cm^{-2}) for locations in Lake Keowee, SC, from July , 1975 through December, 1977.

1.3.4 PHYTOPLANKTON-ZOOPLANKTON RECEIVING WATER STUDY

Specification: Bimonthly sampling (6 times/yr.) shall be done at Stations 500, 503, 505, 506, 509.5 (intake structure), 508 (discharge cove), and 508.5 (approximately midway between 508 and 504). The latter two stations shall be geographically fixed points used to examine for cooling water effects.

Both whole water samples and samples concentrated using a plankton net will be collected. The sampling at stations affected by the discharge shall consist of samples taken at water depths, both affected and not affected by the plume. At the control stations, samples will also be taken at these corresponding depths (Duke Power Company 1973a).

I. INTRODUCTION

A discussion of the importance of temperature regimes to phytoplankton and zooplankton has been presented (Duke Power Company 1973b).

II. METHODS AND MATERIALS

The methods and materials used in 1977 were previously described (Duke Power Company 1973b, 1973c, 1974a, 1974b, 1975a, 1975b, 1976) except for the following changes:

Phytoplankton Sampling and Data Analyses

Phytoplankton were collected monthly at nine reservoir locations in Lake Keowee during 1977. Samples were analyzed for species composition, abundance and pigment concentrations. Non-replicated data for three standing crop indices (density, biovolume and chlorophyll) were tested for location differences using a Friedman's analysis of variance by rank (Conover 1971).

Zooplankton Data Analyses

Sampling locations were grouped into reference, intermediate and discharge areas according to relative distance from the Oconee Nuclear Station (ONS) discharge structure (Table 1.3.4-5). Reference (Locations 500.0, 501.0, 506.0), intermediate (Locations 502.0, 503.0, 505.0) and discharge (Locations 508.0, 508.5, 504.0) areas constituted 60, 33, and 7% of the lake surface area, respectively. Estimated percentages of lake surface area for each lake area were determined by tracing the mapped shoreline with a planimeter and defining area boundaries to be the midpoint between locations. Previous plume studies (Duke Power Company 1975, 1976) indicate that the majority of the ONS thermal plume was confined to the Keowee River arm of the lake and was only slightly detected past the Keowee River-Little River connecting canal (Location 503.0). For that reason, Location 503.0 was included in the intermediate area group, although it is about 1 km from the discharge structure (Table 1.3.4-5).

Data were arranged into three data sets on the basis of sampling dates. The first data set consisted of all sampling dates (January through December, 1977).

The second and third data sets were the "stratified" (March through September) and "destratified" (January, February and October through December) periods. Division of months was based on the stratification of zooplankton as indicated by comparing bottom-to-surface and 10 m-to-surface densities lakeside of the skimmer wall at Location 502.0 (Figure 1.3.4-12). Temperature isopleths at Location 502.0 (Figure 1.3.1-2) indicate a vertical thermal gradient greater than 2.5 C° existed from near surface to 20 m (approximate depth of skimmer wall opening at full pond) for the months categorized as stratified on the basis of zooplankton vertical distribution. For most months categorized as destratified, the vertical temperature gradient was less than 2 C°. One exception was February, when a 3.5 C° gradient existed from near surface to 20 m and the zooplankton were not stratified (Figure 1.3.4-12).

Densities of major taxonomic groups (total zooplankton, Copepoda, Cladocera, and Rotifera) estimated from 10-m-to-surface tows were analyzed statistically as follows: 1) Data for all months, stratified months, and destratified months failed Bartlett's Test, thereby failing to meet the assumption of homogeniety which is required for an analysis of variance procedure; 2) Data were analyzed for location and month effects using Friedman's Test, a non-parametric analysis of variance procedure (Conover 1971); 3) Data groups that yielded significant results ($P \leq 0.05$) were analyzed graphically since a non-parametric multiple comparison procedure similar to the Student-Newman-Keul's Test was not sensitive enough to detect differences among ranked locations or months; 4) Statistical tests were performed on SAS 1976 (Barr et al. 1976). Zooplankton density estimates derived from bottom depth-to-surface tows were not analyzed statistically since the bottom depth differed appreciably (18 to 34 m) among locations.

III. RESULTS AND DISCUSSION

Light penetration was measured in conjunction with phytoplankton sampling. Both euphotic depths (depth to 1% of surface light penetration) and Secchi disc readings were taken in 1977. The maximum mean euphotic depth (10.2 m) occurred in May, and the shallowest mean depth of 4.9 m was observed in September and October (Table 1.3.4-1). Secchi readings were greatest from May through July (range of 2.1 to 5.0 m), whereas readings were shallowest during April and September (range of 1.0 to 2.3 m).

Phytoplankton

During 1977, 212 algal taxa were observed in Lake Keowee, including 16 new taxa (Table 1.3.4-2). Since 1973, a total of 432 taxa have been recorded. The phytoplankton community was composed primarily of diatoms (Bacillariophyceae), green algae (Chlorophyceae) and dinoflagellates (Dinophyceae). Euphotic-zone composite (EZC) densities were dominated by green algae (Arthrodesmus sp., and Cosmarium asphaerosporum var. strigosum) and diatoms (Cyclotella stelligera, Melosira distans var. A, Synedra sp. A, and Rhizosolenia eriensis) (Figure 1.3.4-1). Total biovolume for EZC samples was comprised mostly of diatoms (Cyclotella stelligera and Rhizosolenia eriensis) and dinoflagellates (Peridinium spp.), except in August and September when green algae (Arthrodesmus sp. and C. asphaerosporum var. strigosum) exhibited greater biovolumes than diatoms (Figure 1.3.4-2).

Generally, density, biovolume and chlorophyll concentrations were similar in EZC and lower-depth samples (LDS) during late fall and winter months (Appendix B, Section 2). As the reservoir stratified, EZC samples had higher standing crops than LDS standing crops. Standing crops of the LDS remained relatively constant through the year. Winter EZC samples showed minor spatial differences in phytoplankton standing crops (Figures 1.3.4-3) and 1.3.4-4). During spring and summer, the discharge area (503.0, 508.0, 508.5) had lower EZC standing crops than did other locations (Figures 1.3.4-5 through 1.3.4-7). Intake (509.5) and discharge (508.0) standing crops were similar to LDS crops at Location 502.0. In fall, EZC standing crops again exhibited minor spatial variation (Figures 1.3.4-7 and 1.3.4-8). As was previously discussed (Duke Power Company 1977), the EZC phytoplankton concentrations in the discharge area during spring and summer seasons were lower than at other reservoir areas. This was directly related to the deep-water source of ONS Condenser Cooling Water which contained low phytoplankton standing crops compared to surface waters at reference areas.

The two arms of the reservoir exhibited slightly different standing crops and species composition during 1977 (Figure 1.3.4-9). In August, the Little River Arm had greater green algal densities and biovolumes than the Keowee River arm; dinoflagellates contributed more to the percent composition of densities in the Keowee River arm than in the Little River arm. In September dinoflagellates showed reduced biovolumes and greens dominated densities and biovolumes for both reservoir arms (Appendix B, Section 2). Friedman's analysis of variance (Table 1.3.4-3) detected significant ($P \leq 0.05$) location differences for EZC biovolume as well as for EZC and LDS chlorophyll data. Location means indicated lowest phytoplankton concentrations occurring in the ONS discharge area but concentrations gradually elevated with distance from the discharge structure. This is attributed to ONS pumping bottom water to the surface (Figure 1.3.4-10). This observation was discussed in the ONS Environmental Summary Report (Duke Power Company 1977). The significantly higher chlorophyll concentrations in the Location 508.0 LDS (Figure 1.3.4-10) were due to the rapid mixing of discharge and lake surface water in the discharge cove.

Greater EZC standing crops existed during the summer of 1977 than during previous summers (Duke Power Company 1977). Two small desmids (green algae), Arthrodesmus sp. and Cosmarium asphaerosporum var. strigosum, dominated total densities for August and September 1977 in the Little River arm (Figure 1.3.4-11). These taxa were observed during September 1976, but were considered rare before 1976. The greater abundance of these taxa could not be attributed to changes in nutrient concentrations or temperature changes (Appendix B, Section 2, p. 377). ONS operational changes also could not account for increased desmid standing crops, especially since the Little River arm is least affected by the ONS plume (Plume Mapping, Section 1.6). Lake Keowee water chemistry (Water Quality, Section 1.3.1) favors desmid algae because of the slight acidity, low nitrogen and phosphorus concentrations, and relatively low divalent to monovalent cation ratios (Kim 1967).

For comparative purposes, EZC phytoplankton data for 1977 were grouped according to lake area as previously described (Duke Power Company 1977): (1) reference area group included Locations 500.0, 502.0, 505.0, and 506.0; and (2) discharge area group consisted of Locations 503.0, 508.0, 508.5 and 509.5. The above reservoir groupings exhibited markedly higher yearly mean

standing crops in 1977 than during previous years (Table 1.3.4-4). The 1977 summer pulse of desmid algae contributed greatly to this yearly increase. However, if the September 1977 data had been excluded from the 1977 means, then 1977 densities and biovolumes would have been approximately 50% lower. These new means would have been similar in magnitude to previous year means for the two areas.

The previously described empirical equations (Duke Power Company 1977) which predicted standing crop reductions from Location 500.0 were used for 1977 phytoplankton data. The predicted reductions for 1977 were typically greater than observed reductions for 1977 as was presented previously (Duke Power Company 1977). Simple linear regression detected similar spatial trends between observed and predicted percent reductions for only three months in 1977, i.e. August ($r^2 = 0.55$, $n = 7$), September ($r^2 = 0.97$, $n = 7$) and October ($r^2 = 0.74$, $n = 7$). These trends probably were due to the increased desmid biomass observed in the Little River arm.

Zooplankton

Forty-seven genera of zooplankton which included sixty-six identified species (10 copepods, 19 cladocerans, 37 rotifers), were collected from Lake Keowee in 1977 (Table 1.3.4-6). The copepod Cyclops vernalis, the cladocerans Alona circumfimbriata and Kurzia latissima, and the rotifer Philodina spp., were identified from zooplankton samples for the first time. As in previous years, littoral organisms were occasionally found in the samples but the more common organisms collected were characteristically limnetic. Densities of major taxonomic groups and individual taxa are listed for each month and location sampled in Appendix B Section 3.

Numerically Dominant Organisms

Although the structure of the zooplankton community varied seasonally there were a few taxa from each major taxonomic group that numerically dominated the group. The numerically dominant zooplankton organisms in 1977 were the same as those reported in previous years (Duke Power Company 1977).

The major contributors to copepod densities were the immature naupliar and copepodid forms which averaged approximately 90% of the copepod population during 1977. The remaining 10% of the copepod population were adults. Tropocyclops prasinus and Diaptomus mississippiensis constituted approximately 99% of the adult copepods in 1977.

Cladocerans were numerically dominated by Bosmina coregoni and Diaphanosoma leuchtenbergianum. These two plankters constituted approximately 90% of the cladoceran community during 1977. Holopedium gibberum and Daphnia ambigua were occasionally abundant.

Rotifer species exhibited marked differences in temporal and spatial distribution which made it difficult to select only a few numerically dominant taxa. Various combinations (usually 2 or 3) of the following taxa represented major portions of the rotifer community during 1977: Keratella spp. (including K. americana, K. cochlearis, K. crassa, and K. earlinae); Polyarthra spp. (including P. dolichoptera and P. vulgaris); Collotheca spp. (including C. balatonica, C. discophora, C. libera, and C. mutabilis); Conochilus unicornis;

and Ptygura spp. (including P. libera and an unidentified species). Other rotifers that were occasionally prevalent included Ploesoma truncatum and Synchaeta pectinata.

Seasonal Analysis

The seasonal abundance of zooplankton in Lake Keowee was estimated by computing a grand mean of reference, intermediate and discharge area densities. These estimates are biased towards discharge and intermediate areas since they comprised smaller surface areas of the lake (7 and 33%, respectively) than the reference area (60%).

The abundance of zooplankton during 1977 was generally higher during the spring and summer (15 to 39/ℓ) than during the fall and winter (6 to 23/ℓ) as indicated in Figure 1.3.4-13. Friedman's Test results indicate there were significant differences in the density of zooplankton among months during 1977 (Table 1.3.4-7). Densities were similar among spring and summer (stratified) months. Likewise, densities were similar among fall and winter months (de-stratified). Total zooplankton densities for 1977 pulsed in May (33/ℓ) and September (39/ℓ). Copepods were the major contributors to zooplankton density in May (48%) while rotifers were dominant in September (50%). In general, copepods and cladocerans were co-dominant in the lake during the first half of 1977 (56 to 80%) while rotifers were dominant the latter half of the year (50 to 60%).

The lake abundance of zooplankton in 1977 was lower than in previous years, particularly during the spring and summer (stratified) seasons (Figure 1.3.4-13). Zooplankton density during the stratified seasons of 1974 through 1977 averaged 60, 54, 49, and 27/ℓ, respectively. Densities for the destratified seasons of 1974 through 1977 were 18, 12, 18, and 12/ℓ, respectively. Averaged annual densities of zooplankton in the lake were 36, 30, 30, and 21/ℓ, respectively, for 1974 through 1977. A gradual decrease in copepod, cladocerans, and rotifer abundance was noted during stratified seasons over the years. A number of factors which include lake aging, predation pressure by the introduction of threadfin shad, meteorological variations, and the operation of ONS could have accounted for the trend of gradual decreasing abundance of zooplankton in the lake from 1974 to 1977.

Spatial Analysis

The seasonal distribution patterns of zooplankton for locations in the Little River arm of the lake differed from those in the Keowee River arm (Figure 1.3.4-12). A bimodal distribution curve with density pulses occurring in the spring (May) and fall (September) was noted at Locations 500.0 and 502.0 which are in the Little River arm. Copepods and cladocerans were the major contributors to the density pulse in May while rotifers were the major contributors to the September density pulse. Densities of zooplankton ranged from 10 to 59/ℓ and 6 to 38/ℓ at Locations 500.0 and 502.0, respectively.

A general trend of increased density from winter to fall was noted at Locations 506.0 and 505.0 which are in the Keowee River arm of the lake. Rotifer densities peaked in September at Location 506.0 whereas copepod and cladoceran densities peaked in September at Location 505.0. Densities of zooplankton ranged from 9 to 89/ℓ and 5 to 47/ℓ, respectively, at Locations 506.0 and 505.0.

Zooplankton densities were generally higher in the Keowee River arm of the lake than in the Little River arm. A noticeable spring pulse in zooplankton density did not occur in the Keowee River arm as it did in the Little River arm. Rotifers constituted a greater portion of the zooplankton population in the Keowee River arm than in the Little River arm during the winter and early spring months of 1977.

The seasonal abundance of zooplankton at Location 508.5, which is in the Keowee River arm of the lake, was low (<23/ℓ) throughout 1977 compared to other locations in the Keowee River arm as well as locations in the Little River arm (Figure 1.3.4-12). Cladocerans constituted a greater percentage of the zooplankton population at Location 508.5 during the winter and early spring months compared to locations previously discussed.

Spatial trends in zooplankton data observed for stratified and destratified periods of 1977 were similar to those previously reported for stratified and destratified periods of 1974 to 1976 (Figure 1.3.4-14). Densities of zooplankton in the discharge area of the lake have remained about the same over the years while densities in the intermediate and reference areas have steadily decreased.

Densities of zooplankton (particularly copepods and rotifers) were lower in the discharge and intermediate areas of the lake than densities in the reference area during the stratified period of 1977 (Figure 1.3.4-15). The density of rotifers was higher at Location 506.0 (Keowee River arm reference) than at Locations 500.0 and 501.0 (Little River arm reference). The density of copepods was higher at Location 500.0 and 501.0 than at Location 506.0. Densities of cladocerans were lower in the discharge area than in the intermediate and reference areas. Intermediate and reference area densities of cladocerans were similar. Statistical analyses revealed significant differences in density among locations for each major taxonomic group of zooplankton (Total zooplankton, Copepoda, Cladocera, and Rotifera) for the stratified period of 1977 (Table 1.3.4-7).

During the destratified period of 1977 densities of zooplankton (copepods and rotifers) were lower in the discharge and intermediate areas of the lake than in the reference area (Figure 1.3.4-15). Densities of copepods and rotifers in discharge and intermediate areas were similar during the destratified period. Statistical analyses revealed significant differences in density among locations for total zooplankton, copepods and rotifers, but not cladocerans, for the destratified period of 1977 (Table 1.3.4-7).

The density of zooplankton in the intake canal was 28% of the density lakeside of the skimmer wall during the stratified period of 1977 (Figure 1.3.4-16). During the destratified period densities in the intake canal were about 80% of those lakeside of the skimmer wall. Densities of zooplankton in the intake canal and in the discharge cove in 1977 were similar which indicate densities in the discharge cove were governed by densities in the intake canal. Similar trends have been reported for previous years (Duke Power Company 1977).

Effects of ONS Operation

As in previous years, the major detectable effect of ONS operation on

zooplankton in the receiving water in 1977 was lower total densities of zooplankton in the discharge (7% of lake surface area) and intermediate (33% of lake surface area) areas of the lake. Zooplankton densities were 59 and 38% lower in the discharge and intermediate areas, respectively, than densities in the reference area during the stratified period (Figure 1.3.4-14). During the destratified period, densities were 52 and 48% lower in the discharge and intermediate areas, respectively, than densities in the reference area. Discharge area densities remained similar from year to year but reference and intermediate densities have gradually decreased from 1975 through 1977.

As reported previously (Duke Power Company 1977), differences in the densities of zooplankton among reference, intermediate, and discharge areas was the result of a combination of intake skimmer wall effects and condenser cooling water (CCW) flow, particularly during the stratified period. During the stratified period, substantial numbers of zooplankton were prevented from entering the intake canal due to bottom water withdrawal for cooling by ONS. Intake water with a low density of zooplankton was passed through the CCW System and discharged into the receiving water. Oconee Nuclear Station CCW flow during the stratified period of 1977 (monthly averages of 4,385 to 6.964 m^3/min) were sufficient to substantially dilute zooplankton populations in the discharge and intermediate areas. The CCW flow for the stratified 1977 period was comparable to CCW flow for 1975 and 1976 stratified periods. The dilution effect diminished with distance from the discharge structure (Figure 1.3.4-14).

During the destratified period of 1977 CCW flow (monthly averages of 4,698 to 6,755 m^3/min) was sufficiently high to dilute populations in the discharge area had there been appreciable intake skimmer wall exclusion of zooplankton. However, little skimmer wall exclusion was indicated during the destratified period (Figure 1.3.4-16). Densities of zooplankton in the reference area were higher than densities in the rest of the lake. Densities were similar for discharge and intermediate areas. Nutrient concentrations (nitrate-nitrite, ammonia) were higher at reference Locations 500.0 and 501.0 than at other locations (Water Quality 1.3.1), which could have created a greater availability of food (phytoplankton blooms) for zooplankton, and thus could have resulted in higher densities of zooplankton in the Keowee River arm reference area during the destratified period. However, phytoplankton data indicate similar densities throughout the lake during the destratified period of 1977. Zooplankton densities at reference Location 506.0 could have been high because of influence from the operation of the Jocassee Pumped Storage facility. Zooplankton densities in Lake Jocassee have been reported to be appreciably higher than those in Lake Keowee (Duke Power Company 1977, SERI Addendum A-6). Also, Location 506.0 is more protected from weather disturbances. Another explanation of higher densities of zooplankton in the reference areas than in the remainder of the lake could be that of predation pressure by fish (particularly threadfin shad) since they tend to overwinter in heated waters (U.S. Atomic Energy Commission 1972, Industrial Bio-test 1974).

Due to rapid mixing of the heated effluent in the discharge cove, the water temperature (mean from bottom depth to surface) measured in the discharge cove (Location 508.0) did not exceed the thermal tolerance level of 30 C described in the literature for a viable zooplankton population (Bunting 1974, Goss and Bunting 1976). The maximum discharge cove temperature occurred in

in July at 27.9 C (Water Quality 1.3.1). Surface water temperatures recorded in the reference area were similar or slightly higher (0.5 to 1.5 C°) than discharge cove temperatures during the summer and early fall months when discharge cove temperatures were highest. The minimum dissolved oxygen concentration (mean of bottom depth to surface recorded at Location 508.0) occurred in September at 4.3 mg/ℓ. This concentration was not sufficiently low to be lethal to the zooplankton (Bogatova 1973, Kring et al. 1976, Mangum et al. 1973, Sprague 1963).

IV SUMMARY AND CONCLUSIONS

Phytoplankton

(1) The phytoplankton of Lake Keowee were sampled monthly during 1977 to assess the impact of cooling water use by ONS on their distribution and abundance. Phytoplankton communities were dominated by diatoms, green algae and dinoflagellates, as in previous years. Green algae were more abundant in the Little River arm during summer 1977 than 1976. This was reflected in the overall higher standing crops during summer 1977 than previous years.

(2) Euphotic-zone phytoplankton were more abundant during months of thermal stratification than under isothermal conditions, with greatest concentrations occurring in August and September. The greater the vertical differences in phytoplankton concentrations lakeside of the skimmer wall, the greater the differences between standing crops in the euphotic-zone of discharge and reference areas. The lower standing crops in the discharge area occurred primarily in spring and summer months. Thus, the exclusion of upper strata phytoplankton from the ONS intake via a skimmer wall affected the phytoplankton abundance and distribution more than did ONS heat inputs to the reservoir.

Zooplankton

Data collected in 1977 revealed the same general trends in the zooplankton as those reported previously (Duke Power Company 1977).

(1) The zooplankton community was numerically dominated by immature copepods and rotifers. Cladocerans and adult copepods were relatively scarce. The same taxa as previously reported were numerically dominant in 1977. Copepods were generally more abundant in the Little River arm of the lake while rotifers were more abundant in the Keowee River arm.

(2) The density of zooplankton in the lake in 1977 was lower than densities reported in previous years. Lake aging, predation pressure by the introduction of threadfin shad, meteorological variations, and/or the operation of ONS could have contributed to this trend.

(3) The density of zooplankton was lower in the discharge and intermediate areas (40% of lake surface area) than in the reference area during 1977. Densities in the intake and discharge area were similar to those reported in previous years while densities in the intermediate and reference area were lower than those previously reported.

(4) The low densities of zooplankton in the discharge and intermediate areas during the stratified period of 1977 was the result of dilution due to ONS's intake of bottom water for cooling. Oconee CCW flow and skimmer wall exclusion of zooplankton contributed to the diluting effect. Similar spatial trends were noted for stratified periods of 1975 and 1976 under similar plant operating conditions.

(5) Densities of zooplankton were lower in discharge and intermediate areas than in the reference area during the destratified period of 1977. Densities in the discharge and intermediate areas were similar. This trend could not be completely explained by dilution or predation by fish in the discharge and intermediate areas nor by greater availability of food in the reference areas.

(6) Discharge cove temperatures and dissolved oxygen concentrations in the discharge cove were not responsible for the low densities of zooplankton in the discharge and intermediate areas during 1977.

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Summary of euphotic (EZ), lower sample (LS) and Secchi disc (SD) depths (m) for Lake Keowee phytoplankton collections, 1977.

Location	Jan 11			Feb 15			Mar 15			Apr 13			May 10			[2]Jun 15		
	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD
500.0	7.0	20	2.3	6.0	23	1.9	8.0	20	2.0	5.0	25	1.6	10	25	3.1	6.5	25	2.9
501.0	6.5	30	2.2	7.0	30	2.0	7.5	30	2.2	6.0	30	2.3	12	30	3.8	9.5	30	5.0
502.0	7.5	25	2.4	7.0	25	2.2	7.0	25	1.9	4.0	25	1.3	9.0	25	3.1	8.0	25	3.7
503.0	6.5	20	2.1	7.0	25	2.2	8.0	25	2.0	4.5	25	1.5	9.5	25	2.8	7.0	25	3.0
505.0	6.0	30	2.0	7.0	30	2.2	7.5	30	2.0	6.0	30	1.5	10.5	30	2.9	8.0	30	4.0
506.0	6.5	30	2.2	7.0	30	2.2	7.0	30	1.6	6.0	30	1.6	12	30	3.2	9.0	30	3.7
508.0	6.0	10	2.0	7.0	9	2.1	7.5	8	2.0	5.0	10	1.3	9.0	11	2.4	6.0	11	3.0
508.5	6.0	20	2.0	7.0	22	2.2	7.5	25	2.1	5.5	20	1.5	10	25	2.8	7.0	25	3.4
[1]509.5	1.0	10	2.3	1.0	10	2.2	1.0	10	2.4	1.0	10	1.4	1.0	10	2.9	1.0	10	2.5
Month Mean	6.5		2.2	6.9		2.1	7.5		2.0	5.2		1.6	10.2		3.0	7.6		3.5

[1] A 1-m sample was collected instead of measuring the euphotic zone and creating a composite.

[2] A Montedoro-Whitney Solar Illuminance Meter Model LMD-8A was used to measure the euphotic zone; a Kahlsico Model 268WA310 Submarine Photometer was used on all other dates.

[3] The Submarine Photometer developed a malfunction on this date; thus, an average euphotic zone was used based on Section 1.3.1 data.

Table 1.3.4-1 (Cont)

Location	[2]Jul 12			Aug 9			Sep 12			Oct 13			[3]Nov 17			[3]Dec 14			Year Mean	
	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD	EZ	LS	SD	EZ	SD
500.0	6.0	22	2.1	6.5	22	1.5	5.5	25	1.4	5.0	25	2.4	5.0	25	2.1	5.0	25	2.0		
501.0	7.5	30	3.2	8.5	30	1.4	8.0	30	2.0	5.0	30	2.5	5.0	30	2.3	5.0	30	2.1		
502.0	6.0	25	2.7	7.0	25	2.1	7.0	25	2.2	5.0	25	2.3	5.0	25	2.1	5.0	25	1.8		
503.0	6.0	25	2.7	7.0	25	1.2	3.0	25	1.1	4.5	25	1.9	5.0	25	1.8	5.0	25	1.8		
505.0	7.0	30	2.3	7.0	30	2.3	4.0	30	2.2	5.0	30	2.1	5.0	30	1.8	5.0	30	1.7		
506.0	6.0	30	2.4	8.0	30	2.5	6.0	30	2.3	5.0	30	2.6	5.0	30	2.3	5.0	30	1.9		
508.0	8.0	10	2.7	7.5	10	2.6	3.0	10	1.2	4.5	10	2.0	5.0	10	1.9	5.0	9.0	2.2		
508.5	6.5	20	2.3	7.5	20	1.8	2.5	25	1.0	5.0	25	2.1	5.0	25	1.9	5.0	23	1.8		
[1]509.5	1.0	10	3.4	1.0	10	3.1	1.0	10	1.0	1.0	10	2.2	1.0	10	2.1	1.0	10	2.4		
Month Mean	6.6		2.6	7.4		2.1	4.9		1.6	4.9		2.2	5.0		2.0	5.0		2.0	6.5	2.2

Phytoplankton Species Checklist for Lake Keowee
through December, 1977

Division: Chlorophyta
Class: Chlorophyceae
*Ankistrodesmus falcatus (Corda) Ralfs
*A. falcatus var. acicularis (Braun) G. W. West
*A. falcatus var. mirabilis (West & West) G. W. West
*A. fusiformis Corda sensu Korsch
A. spp.
*Arthrodesmus incus (Breb.) Hass.
*A. incus var. extensus Anderson
*A. subulatus Kutz.
*A. spp.
*Asterococcus limneticus G. M. Smith
A. spp.
Bambusina brebissonii var. gracilescens Wolle.
Binuclearia eriensis Wittrock
**Botryococcus braunii Kutz.
*B. sudeticus Lemm.
Carteria klebsii (Dang.) Dill
C. spp.
Cerasterias staurastroides West & West
Chlamydomonas mucicola Schmidle
*C. spp.
Chlorella ellipsoidea Gerneck.
C. homosphaera Skuja
C. vulgaris Beyer.
*C. spp.
Closteriopsis longissima Lemm.
C. longissima var. tropica West & West
*Closterium ceratium Perty
C. gracile Breb.
*C. incurvum Breb.
C. pusillum Hantz.
C. venus var. incurvum (Breb.) Krieg.
*C. spp.
*Coccomonas spp.
*Coelastrum cambricum Archer
*C. microporum Naeg.
C. reticulatum (Dang.) Senn.
C. sphaericum Naeg.
C. spp.
Cosmarium abbreviatum Raciborski
C. abbreviatum var. minor West & West
C. asphaerosporum Nordst.
*C. asphaerosporum var. strigosum Nordst.
C. botrytis Meneg.
C. cosmetum West & West

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* Observed during 1977

** Observed for the first time during 1977

Table 1.3.4-2 (Cont)

**C. ornatum var. perornatum Croasdale
*C. phaseolus var. minor Boldt.
C. portianum Archer
C. subcrenatum Hantz.
*C. tenue Archer
*C. tinctum Ralfs
*C. spp.
Cosmocladium saxonicum DeBary
C. spp.
*Crucigenia apiculata (Lemm.) Schmidle
*C. fenestrata Schmidle
C. irregularis Wille
*C. quadrata Morren
*C. tetrapedia (Kirch.) West & West
C. spp.
**Dactylococcus infusionum Naeg.
Desmatractum indutum (Geitler) Pascher
*Dictyosphaerium ehrenbergianum Naeg.
*D. pulchellum Wood
D. spp.
Dysmorphococcus variabilis Takeda
D. spp.
*Elakatothrix gelatinosa Wille
E. spp.
Euastrum spp.
Eudorina spp.
*Franceia droescheri (Lemm.) G. M. Smith
*Gloeocystis gigas (Kutz.) Lag.
*G. planctonica (West & West) Lemm.
*G. vesiculosa Naeg.
G. spp.
Golenkinia paucispina West & West
*G. radiata Chod.
Gonatozygon aculeatum Hast.
G. monotaenium DeBary
*Gyromitus cordiformis Skuja
Haematococcus lacustris (Girod.) Rostaf.
Kirchneriella contorta (Schmidle) Bohlin
K. elongata G. M. Smith
*K. lunaris (Kirch.) Moebius
K. lunaris var. dianae Bohlin
**K. obesa (W. West) Schmidle
*K. spp.
*Lagerheimia spp.
Micractinium pusillum Fres.
M. spp.
*Monoraphidium braunii Naeg.
*M. contortum Thur.
M. irregulare G. M. Smith
*M. pusillum Printz
*M. saxatile Kom.-Legn.
*M. setiforme (Nyg.) Kom-Legn.
M. spp.

Mougeotia elegantula Wittrock
*M. spp.
Nannochloris spp.
*Nephrocytium agardhianum Naeg.
N. limneticum (G. M. Smith) G. M. Smith
*Oocystis borgei Snow
O. elliptica W. West
*O. lacustris Chod.
*O. parva West & West
*O. pusilla Hansgirg
*O. submarina Lag.
*O. spp.
*Pediastrum duplex Meyen
P. duplex var. gracilimum West & West
*P. tetras (Ehr.) Ralfs
**P. tetras var. tetraodon (Corda) Rabenhorst
Penium spp.
Planktonema lauterbornii Schmidle
*Planktosphaeria gelatinosa G. M. Smith
*Quadrigula closterioides (Bohlin) Printz
*Q. lacustris (Chod.) G. M. Smith
Q. spp.
Rhizoclonium spp.
*Scenedesmus abundans (Kirch.) Chod.
S. abundans var. brevicauda G. M. Smith
S. abundans var. longicauda G. M. Smith
*S. acuminatus (Lag.) Chod.
S. armatus (Chod.) G. M. Smith
S. armatus var. bicaudatus (Gug.-Printz) Chod.
S. bernardii G. M. Smith
*S. bijuga (Turp.) Lag.
*S. brasiliensis Bohlin
**S. carinatus (Lemm.) Chod.
*S. denticulatus Lag.
S. denticulatus var. linearis Hansgirg
*S. dimorphus (Turp.) Kutz.
S. ecornis (Ralfs.) Chod.
S. granulatus West & West
S. opoliensis var. contracta Prescott
*S. quadricauda (Turp.) Breb.
**S. quadricauda var. alternans G. M. Smith
*S. quadricauda var. longispina (Chod.) G. M. Smith
*S. spp.
Schizochlamys spp.
*Schroederia setigera (Schroeder) Lemm.
*Selenastrum gracile Reinsch
*S. minutum (Naeg.) Collins
*S. westii G. M. Smith
*Sphaerocystis schroeteri Chod.
*Sphaerozosma granulatum Roy & Biss.
Staurastrum arctiscon (Ehr.) Lundell
*S. curvatum W. West
*S. curvatum var. elongatum G. M. Smith

Table 1.3.4-2 (Cont)

*S. cuspidatum Breb.
S. cuspidatum var. divergens Nordst.
S. dejectum Breb.
S. limneticum var. cornutum G. M. Smith
S. megacanthum Lundell
S. ophiura var. cambricum (Lund.) West & West
*S. paradoxum var. parvum W. West
**S. paradoxum var. A
*S. pentacerum (Wolle) G. M. Smith
S. quadricuspidatum Turner
**S. subcruciatum Cooke & Wille
*S. tetracerum Ralfs.
S. spp.
**Stigeoclonium spp.
*Tetraedron caudatum (Corda) Hansgirg.
*T. minimum Braun
*T. muticum (Braun) Hansgirg
*T. regulare var. incus Teiling
*T. spp.
Tetraspora lamellosa Prescott
Tetrastrum glabrum (Roll) Ahlstrom & Tiffany
*T. heteracanthum (Nordst.) Chod.
Treubaria setigerum (Archer) G. M. Smith
Xanthidium cristatum var. uncinatum f. mucronata W. West

Division: Chrysophyta
Class: Bacillariophyceae
Achnanthes inflata (Kutz.) Grun.
*A. microcephala (Kutz.) Cleve
*A. minutissima Kutz.
*A. spp.
*Asterionella formosa Hass.
*Attheya zachariasi Brun.
Cocconeis spp.
Cyclotella kutzingiana Thwaites
C. meneghiniana Kutz.
C. michiganiana Skvortzow
*C. stelligera (Cleve) Van Heurck
*C. spp.
*Cymbella affinis Kutz.
C. naviculiformis Auerswald
C. turgida Greg.
*C. spp.
Denticula thermalis Kutz.
Diploneis spp.
*Eunotia flexuosa (Breb.) Kutz.
E. naegelii Migula
*E. zasuminensis (Cab.) Koerner
*E. sp. A.
*E. spp.
Fragilaria crotonensis Kitt.
*F. spp.
Frustulia spp.
Gomphonema constrictum Ehr.

Table 1.3.4-2 (Cont)

G. parvulum (Kutz.) Kutz.
G. spp.
Gyrosigma spp.
Hannaea arcus (Ehr.) Patr.
*Melosira distans var. alpigena Grun.
*M. distans var. A.
M. granulata (Ehr.) Ralfs
*M. italica (Ehr.) Kutz.
*M. italica var. tenuissima (Grun.) Mull.
*Navicula cryptocephala Kutz.
*N. exigua Greg. Ex Grun.
N. gysingensis Foged.
*N. notha Wallace
*N. pupula Kutz
N. pupula var. elliptica Hust.
N. pupula var. mutata (Krasske) Hust.
*N. subtilissima Cleve
N. viridula var. linearis Hust.
*N. spp.
Neidium spp.
*Nitzschia acicularis (Kutz.) W. Smith
*N. angustata (W. Smith) Grun.
N. dissipata (Kutz.) Grun.
N. filiformis (W. Smith) Schutt
*N. gracilis Hantzsch
N. kutzingiana Hilse
N. linearis (Agardh) W. Smith
*N. lorenziana var. subtilis Grun.
*N. palea (Kutz.) W. Smith
*N. sublinearis Hust.
*N. spp.
Pinnularia braunii var. amphicephala (A. Mayer) Hust.
P. biceps Greg.
P. crucifera Cleve-Euler
P. gibba Ehr.
P. mesolepta (Ehr.) W. Smith
P. mesolepta var. angusta Cleve
*P. spp.
*Rhizosolenia eriensis H. L. Smith
R. longiseta Zach.
Rhoicosphenia curvata (Kutz.) Grun.
Stauroneis phoenicenteron (Nitz.) Ehr.
S. spp.
Stenopterobia intermedia (Lewis) Breb.
Surirella linearis W. Smith
S. spp.
Synedra acus Kutz.
*S. nana Meister.
*S. radians Kutz.
*S. rumpens Kutz.

Table 1.3.4-2 (Cont)

S. rumpens var. scotica Grun.
**S. tenera W. Smith
*S. ulna (Nitz.) Ehr.
*S. sp. A.
*S. spp.
*Tabellaria fenestrata (Lyngb.) Kutz.
*T. flocculosa (Roth) Kutz.
T. spp.
Terpsinoe americana (Bail.) Ralfs
Class: Chrysophyceae
Chromulina stellata Pascher
*C. spp.
*Chrysococcus spp.
*Chrysosphaerella longispina Laut.
*Dinobryon bavaricum Imhof
D. campanulostipitatum Ahlstrom
*D. cylindricum Imhof
*D. divergens Imhof
D. pediforme (Lemm.) Stein.
*D. sertularia Ehr.
*D. spp.
Epipyxis spp.
Erkenia subaequiciliata Skuja
*Kephyrion spp.
Lagynion spp.
*Mallomonas acaroides Perty
*M. allantoides Harris
M. alpina Pascher and Ruttner
*M. caudata Conrad
*M. elongata var. americana Bourrelly
**M. globosa Schill.
*M. majorensis Skuja
M. producta Iwanoff
*M. pseudocoronata Prescott
*M. tonsurata Teiling
*M. spp.
Ochromonas chromata H. Meyer
O. variabilis H. Meyer
*O. spp.
Pheaster spp.
Pseudokephyrion latum (Schill.) Schmidle
P. schilleri Conrad
*P. spp.
Pteridomonas pulex Penard
Synura adamsii G. M. Smith
*S. spinosa Korsch.
S. uvella Ehr.
*S. spp.
Class: Haptophyceae
*Chrysochromulina parva Lackey
Class: Xanthophyceae
Ophiocytium capitatum var. longispinum (Moebius) Lemm.

Table 1.3.4-2 (Cont)

Division: Cryptophyta
Class: Cryptophyceae
*Chroomonas acuta Utermohl
C. caudata Geit.
*C. coerula (Geit.) Skuja
*C. norstedtii Hansgirg
*C. reflexa Kiss.
C. spp.
*Cryptomonas erosa Ehr.
**C. erosa var. reflexa Marsson
C. marsonii Skuja
*C. obovata Skuja
*C. ovata Ehr.
*C. phaseolus Skuja
*C. reflexa Skuja
C. spp.
*Cyanomonas spp.
Division: Cyanophyta
Class: Myxophyceae
*Agmenellum quadriduplicatum (Menegh.) Breb.
A. thermale (Kutz.) Drouet and Daily
Anabaena catenula (Kutz.) Bornet and Flahault
A. cylindrica Lemm.
A. levanderi Lemm.
*A. scheremetievi Elenkin
*A. spp.
*Anacystis cyanea Drouet and Daily
A. firma (Kutz.) Drouet and Daily
*A. incerta Drouet & Daily
*A. montana Drouet & Daily
*A. spp.
Coccochloris stagnina (Sprengel)
C. spp.
Coelosphaerium kutzingianum Naeg.
C. naegelianum Unger
Cylindrospermum spp.
Dactylococcopsis acicularis Lemm.
D. rhaphidioides Hansgirg
D. smithii Chod. & Chod.
D. spp.
Gomphosphaeria lacustris Chod.
G. spp.
Lyngbya contorta Lemm.
O. acuminata Gomont
Oscillatoria acutissima Kuff
O. agardhii Gomont
O. amphibia Agardh
O. angusta Koppe
O. angustissima West & West
*O. geminata Menegh.
O. limnetica Lemm.
O. tenuis Agardh
O. spp.

Table 1.3.4-2 (Cont)

*Phormidium angustissimum West & West
P. spp.
Radiocystis geminata Skuja
Division: Euglenophyta
Class: Euglenophyceae
Euglena gracilis Klebs
E. proxima Dang.
*E. spp.
Lepocinclis spp.
Trachelomonas abrupta (Swir.) Defl.
T. acanthostoma (Stokes) Defl.
T. dubia (Swir.) Defl.
T. intermedia Dang.
T. mammillosa Prescott
T. pulchella Drez.
T. pulcherrima Playfair
T. superba (Swir.) Defl.
T. volvocina Ehr.
T. volvocina var. punctata Playfair
*T. spp.
Division: Pyrrhophyta
Class: Dinophyceae
Ceratium hirundinella (Mull.) Duj.
*Glenodinium armatum Levander
G. gymnodinium Penard
G. palustre (Lemm.) Schiller
G. pulvisculus (Ehr.) Stein
G. quadridens (Stein) Schiller
*G. spp.
Gymnodinium spp.
Hemidinium nasutum Stein
H. spp.
*Peridinium aciculiferum (Lemm.) Stein
P. africanum Lemm.
*P. cinctum Ehr.
*P. deflandrei Lefevre
P. gatunense Nygaard
*P. inconspicuum Lemm.
**P. keyense Nygaard
*P. pusillum (Pen.) Lemm.
*P. wisconsinense Eddy
*P. spp.
Division: Chloromonadophyta
Class: Chloromonadophyceae
Gonyostomum depressum (Laut.) Lemm.
*G. latum Iwanoff
Unknown Species
*0374-2-03
*0574-2-02
*0574-2-03
*0574-2-04
0774-2-07

Table 1.3.4-2 (Cont)

*0774-2-15
0774-2-16
0774-2-17
*0774-2-22
*0774-2-24
*0774-2-28
*0774-2-32
*0774-2-34
*0974-2-07
*0974-2-24
*1074-2-02
*1074-2-04
1174-2-01
0175-2-01
0275-2-03
0675-2-01
0675-2-02
0675-2-05
0775-2-02
0775-2-03
0875-2-03
0975-2-01
*1175-2-04
0176-2-01
0176-2-02
0776-2-02
0776-2-03
0776-2-04
*0976-2-01
*0976-2-02
*0976-2-03
0976-2-04
**0477-2-01
**1277-2-01

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* Observed during 1977

** Observed for the first time during 1977

Table 1.3.4-3

Results of Friedman's analysis of variance for phytoplankton indices, Lake Keowee, 1977.

Data Type	Treatment Source	Friedman's Statistic[1] by Index		
		Density	Biovolume	Chlorophyll
Euphotic Zone Composite	Location	13.7 (df = 8)	18.9* (df = 8)	35.3* (df = 8)
Euphotic Zone Composite	Time (Months)	75.8* (df = 11)	60.9* (df = 11)	42.1* (df = 11)
Lower Depth Sample	Location	13.4 (df = 7)	12.8 (df = 7)	32.0* (df = 7)
Lower Depth Sample	Time (Months)	67.6* (df = 11)	70.3* (df = 11)	48.0* (df = 11)

[1]Compare with Chi-square distribution table using designated degrees of freedom.

* significant at the $p \leq 0.05$ level.

Table 1.3.4-4

Summary of phytoplankton standing crop indices for Lake Keowee, SC, 1974-1977.

Sampling Year	Lake Area	N	Mean[1] ± 95% Confidence Interval by Index: Density, x 10^6 units/m^3	Biovolume, mm^3/m^3	Chlorophyll, mg/m^3
1974	reference(2)	23	537 ± 156	242 ± 116	2.42 ± 0.51
	discharge(3)	23	315 ± 82	119 ± 29	1.07 ± 0.35
1975	reference	24	597 ± 144	546 ± 152	2.37 ± 0.54
	discharge	24	290 ± 65	190 ± 49	0.96 ± 0.14
1976	reference	24	708 ± 322	420 ± 154	2.07 ± 0.50
	discharge	24	361 ± 66	212 ± 72	1.08 ± 0.15
1977	reference	24	1125 ± 641	887 ± 566	2.55 ± 0.66
	discharge	24	464 ± 120	308 ± 119	1.22 ± 0.19

1 The months January, March, May, July, September, and November were used to analyze data for each year because of the availability of data in each study year.

2 Data averaged for Locations 500.0, 502.0, 505.0, and 506.0.

3 Data averaged for Locations 503.0, 508.0, 508.5, and 509.5.

Table 1.3.4-5. Description of sampling locations and lake areas of Lake Keowee used in data analyses. 1977.

SAMPLING LOCATION	DESCRIPTION	CLASSIFICATION
500.0	approximately 14 km up Little River arm from discharge structure	Reference area 60%
501.0	approximately 10 km up Little River arm from discharge structure	
506.0	approximately 9 km up Keowee River arm from discharge structure	
505.0	approximately 5 km up Keowee River arm from discharge structure	Intermediate area 33%*
503.0	Keowee River - Little River connecting canal, 1 km from discharge structure	
502.0	Lake-side of the skimmer wall, approximately 3 km up Little River arm from discharge structure	
504.0	<1 km up Keowee River arm from discharge structure	Discharge area 7%
508.5	<1 km up Keowee River arm from discharge structure	
508.0	discharge cove	
509.5	intake canal	

*estimated percent of total lake surface area

Table 1.3.4-6

Zooplankton Taxa of Lake Keowee
Collected through December 1977

Arthropoda
  Crustacea
    Copepoda
      Calanoida
       *Diaptomus mississippiensis Marsh
      Cyclopoida
       *Cyclops thomasi (Forbes)
      **Cyclops vernalis Fischer
       *Eucyclops agilis (Koch)
        Eucyclops prionophorus (Kiefer)
       *Mesocyclops edax Forbes
       *Orthocyclops modestus (Herrick)
       *Paracyclops fimbriatus (Fischer)
       *Tropocyclops prasinus Fischer
      Harpacticoida
       *Canthocamptus cf. assimilis Kiefer
       *Canthocamptus cf. sinuus Coker
       *Harpacticoid spp.
    Cladocera
        Alona affinis (Leydig)
      **Alona circumfimbriata (Megard)
       *Alona gutatta Sars
       *Alona quadrangularis (Müller)
        Alona setulosa (Megard)
       *Alona spp.
       *Bosmina coregoni Baird
        Camptocercus spp.
       *Ceriodaphnia lacustris (Birge)
       *Ceriodaphnia reticulata (Jurine)
        Chydorus piger Sars
       *Chydorus sphaericus (Müller)
       *Chydorus spp.
       *Daphnia ambigua Scourfield
       *Daphnia laevis Birge
       *Daphnia parvula Fordyce
        Diaphanosoma brachyurum (Liéven)
       *Diaphanosoma leuchtenbergianum Fischer
       *Disparalona acutirostris (Frey)
       *Disparalona spp.
       *Holopedium gibberum Zaddach
       *Ilyocryptus spinifer Herrick
      **Kurzia latissima Kurz
       *Leptodora kindtii (Focke)
       *Leydigia leydigi (Leydig)
       *Sida crystallina Müller
       *Simocephalus expinosus Birge

 * Observed during this reporting period
** Observed for the first time during this reporting period

Table 1.3.4-6 (cont.)

Zooplankton Taxa of Lake Keowee
Collected through December 1977

Rotifera

Asplanchna amphora Western
*Asplanchna priodonta Ehrenberg
Brachionus angularis Gosse
*Brachionus patulus (Müller)
*Brachionus spp.
*Chromogaster ovalis (Bergendel)
*Collotheca balatonica Varga
*Collotheca discophora (Skorikov)
*Collotheca libera (Zachairas)
*Collotheca mutabilis Hudson
*Conochiloides coenobasis (Skorikov)
*Conochiloides natans (Seligo)
*Conochilus unicornis Rousselet
*Dipleuchlanis spp.
*Euchlanis spp.
*Filinia spp.
*Gastropus stylifer Imhof
*Hexarthra mira (Hudson)
*Kellicottia bostoniensis (Rousselet)
*Keratella americana Carlin
*Keratella cochlearis (Gosse)
*Keratella crassa Ahlstrom
*Keratella earlinae Ahlstrom
Lecane acronycha Harring and Myers
Lecane crepida Harring and Myers
Lecane depressa Harring
Lecane flexilis (Gosse)
Lecane haliclysta Harring and Myers
*Lecane hornemani (Ehrenberg)
Lecane leontina (Turner)
Lecane luna (Muller)
Lecane mira (Murray)
*Lecane ploenensis (Harring)
*Lecane spp.
*Lepadella spp.
*Macrochaetus subquadratus Perty
*Macrochaetus spp.
*Monostyla crenata Harring and Myers
*Monostyla lunaris (Ehrenberg)
Monostyla quadridentata Ehrenberg
Monostyla stenroosi Meissener
*Monostyla spp.
Noltholca spp.
**Philodina spp.
*Platyias quadricornis (Ehrenberg)
*Ploesoma hudsoni (Imhof)
*Ploesoma truncatum (Levander)
*Polyarthra euryptera Wierzejski

* Observed during this reporting period
** Observed for the first time during this reporting period

Zooplankton Taxa of Lake Keowee
Collected through December 1977

*Polyarthra dolichoptera (Idelson)
*Polyarthra major Burckhardt
*Polyarthra vulgaris Carlin
*Ptygura libera Myers
*Ptygura spp.
*Synchaeta pectinata (Ehrenberg)
*Trichocerca capucina Wierz
Trichocerca chattoni (de Beauchamp)
*Trichocerca cylindrica (Imhof)
Trichocerca longiseta (Schrank)
Trichocerca multicrinis (Kellicott)
*Trichocerca platessa (Meyers)
*Trichocerca porcellus (Gosse)
Trichocerca pusilla (Jennings)
*Trichocerca similis (Wierzejski)
*Trichocerca stylata Gosse
*Trichocerca spp.
*Trichotria spp.
Unidentified Bdelloidea
Unidentified Rotifer

* Observed during this reporting period
** Observed for the first time during this reporting period

Table 1.3.4-7. Summary of Friedman Two-way Analysis of Variance by Ranks for major taxonomic categories of zooplankton. Lake Keowee, 1977.

DATA GROUPS	TREATMENT/BLOCK	COPEPODA	CLADOCERA	ROTIFERA	TOTAL ZOOPLANKTON
Jan-Dec 1977	1	57.23*	11.91	52.78*	59.59*
	2	75.35*	33.34*	79.08*	73.49*
Stratified 1977	1	44.14*	26.97*	30.05*	45.79*
(Mar-Sep)	2	1.71	0.69	0.18	0.58
Destratified 1977	1	21.00*	12.32	33.87*	23.80*
(Jan, Feb, Oct-Dec)	2	1.30	0.56	0.22	1.10

1 location/month
2 month/location
* $p \leq 0.05$

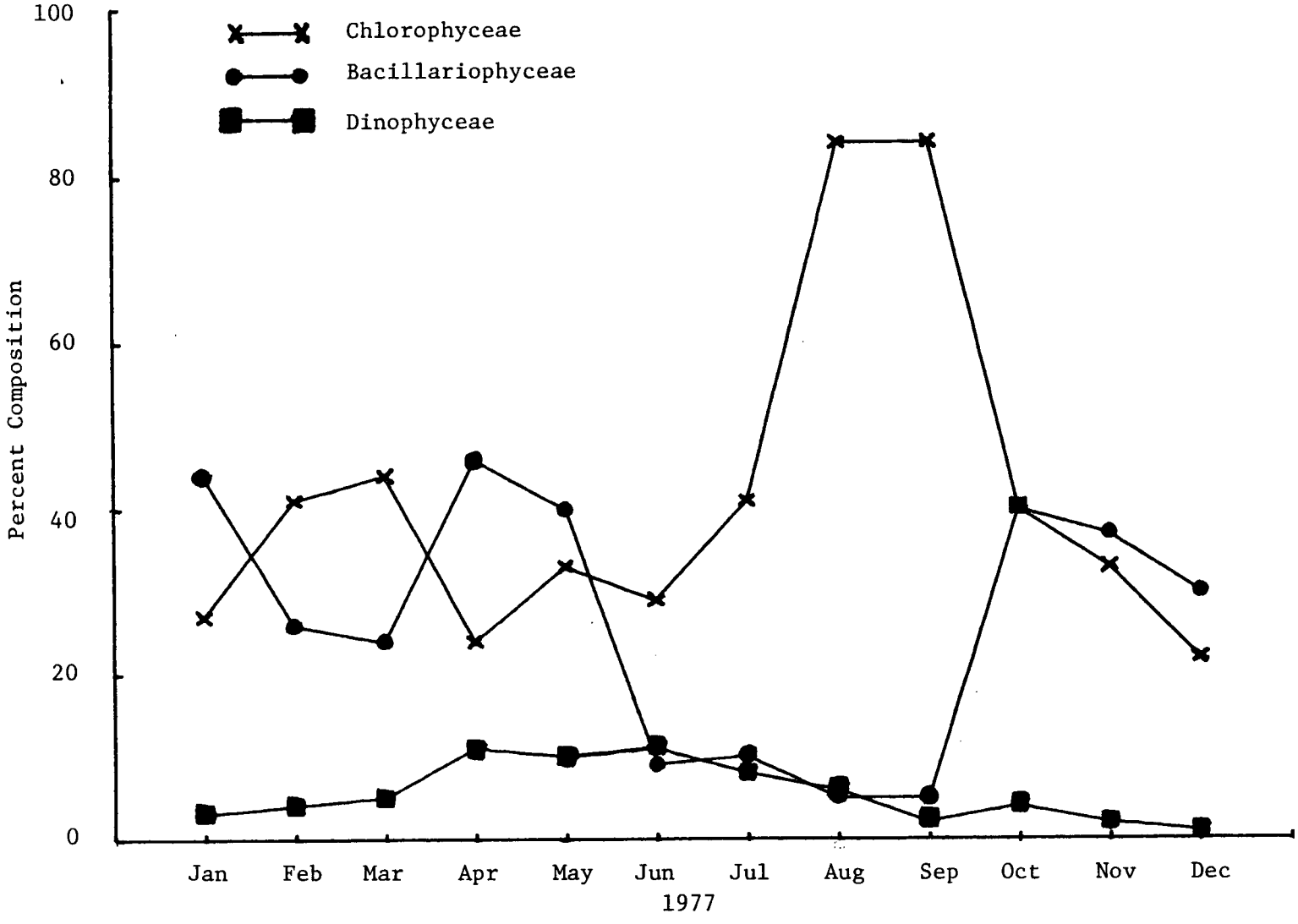


Figure 1.3.4-1. Mean percent composition of total density for major algal classes occurring at nine locations in Lake Keowee, SC.

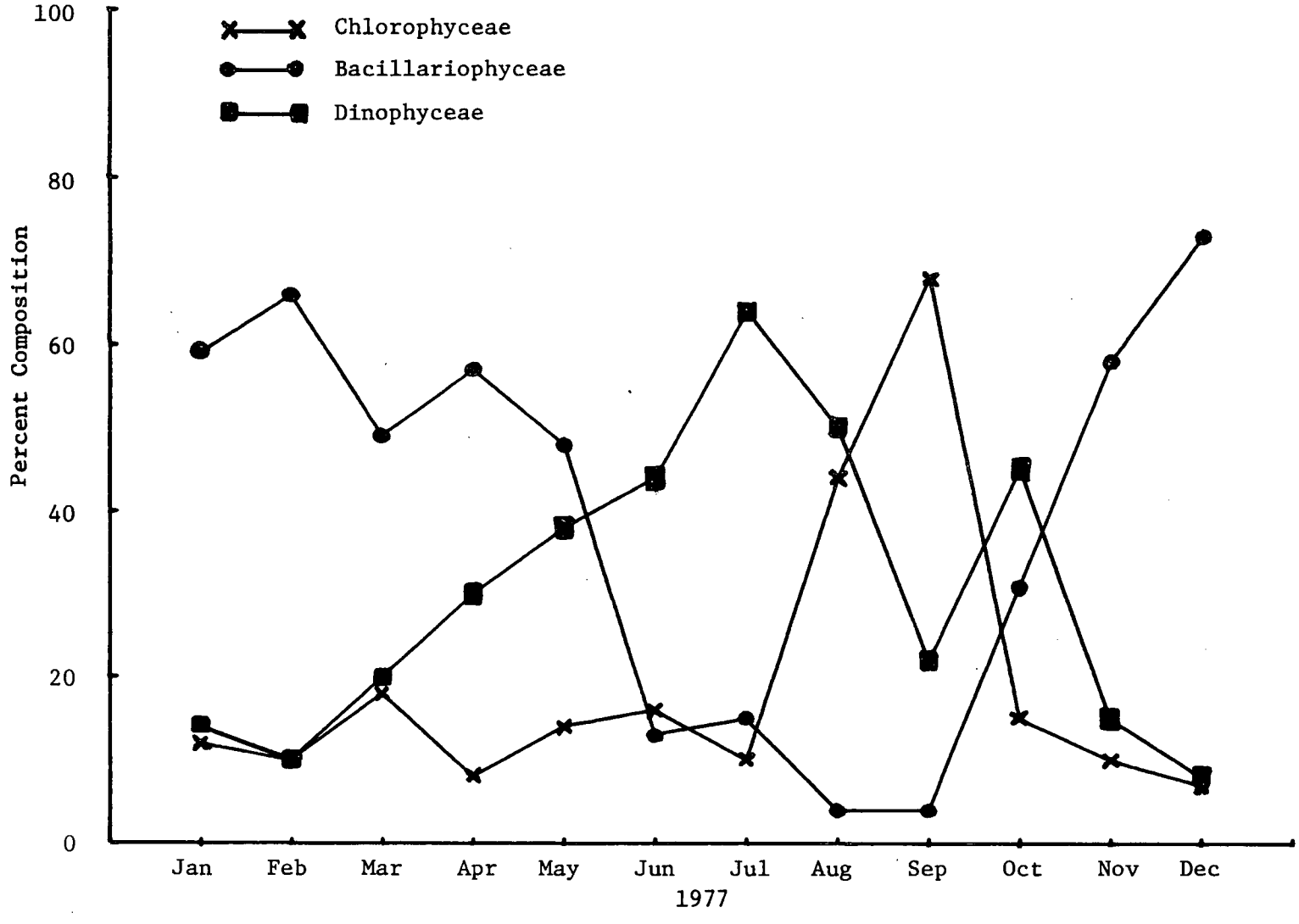


Figure 1.3.4-2. Mean percent composition of total biovolume for major algal classes at nine locations in Lake Keowee, SC.

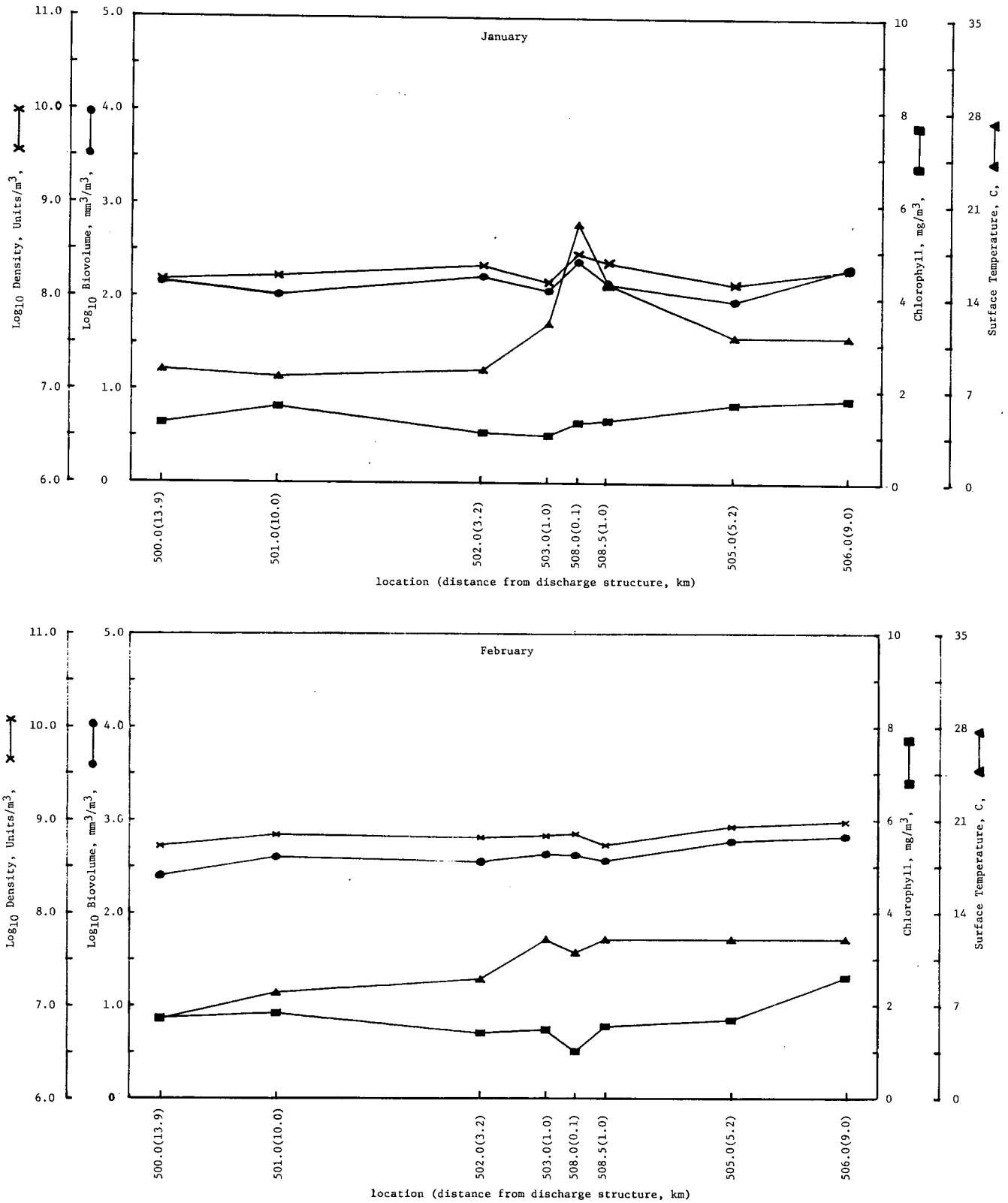
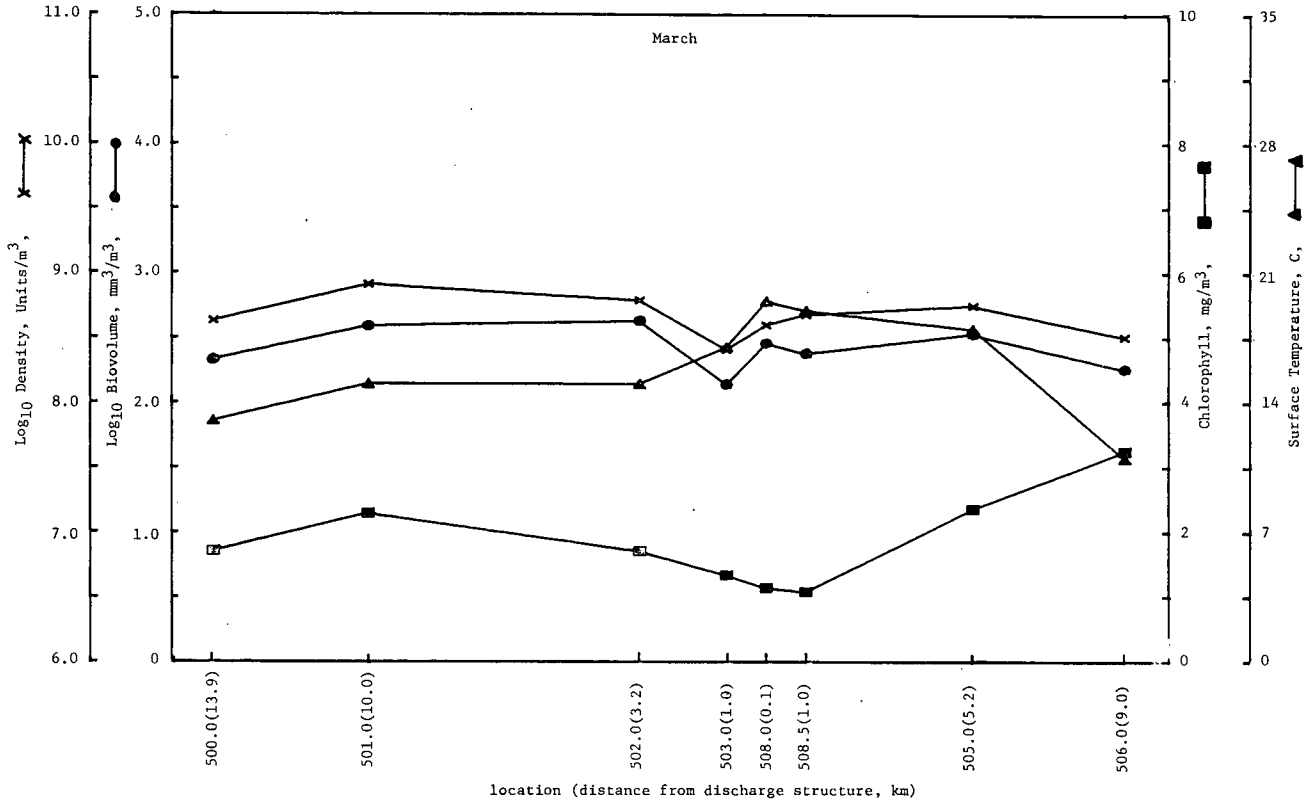


Figure 1.3.4-3. Euphotic zone phytoplankton standing crops and surface temperatures measured at selected locations, Lake Keowee, SC, in January and February, 1977.



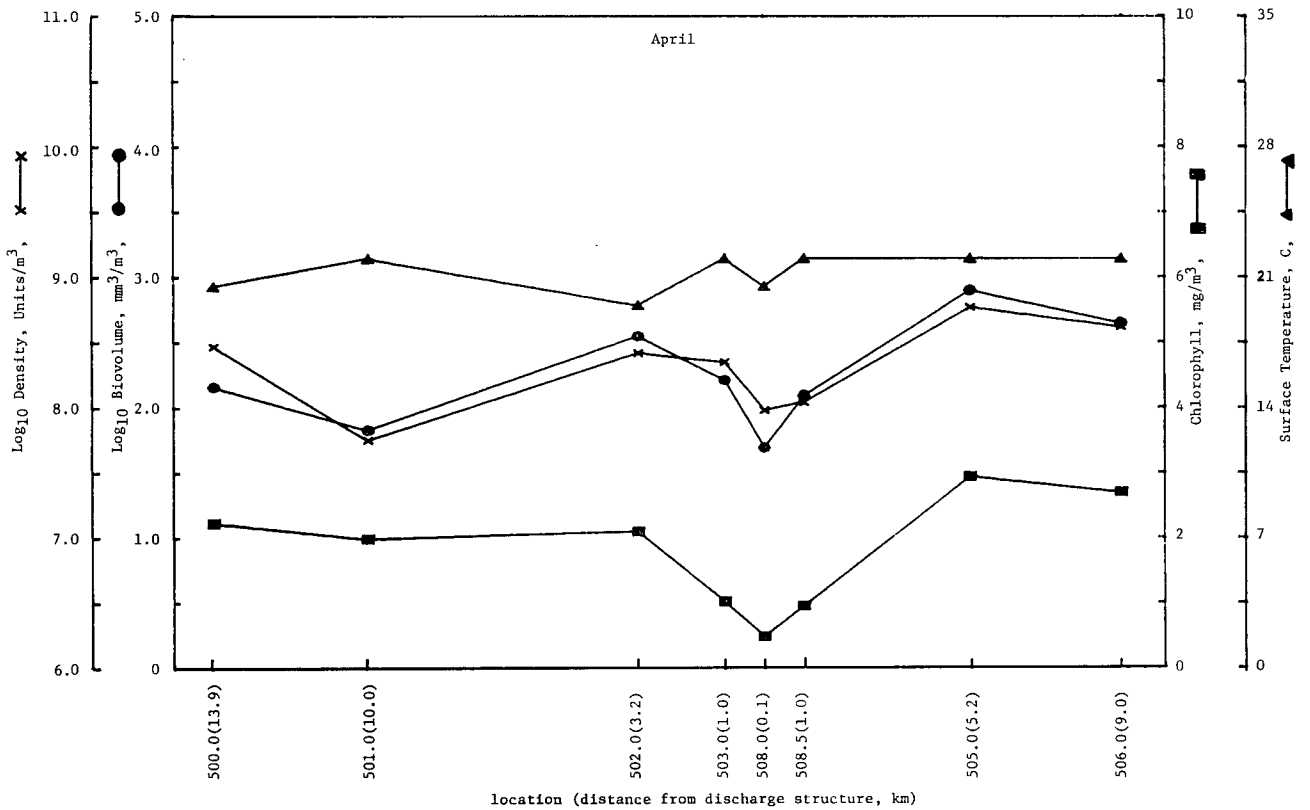
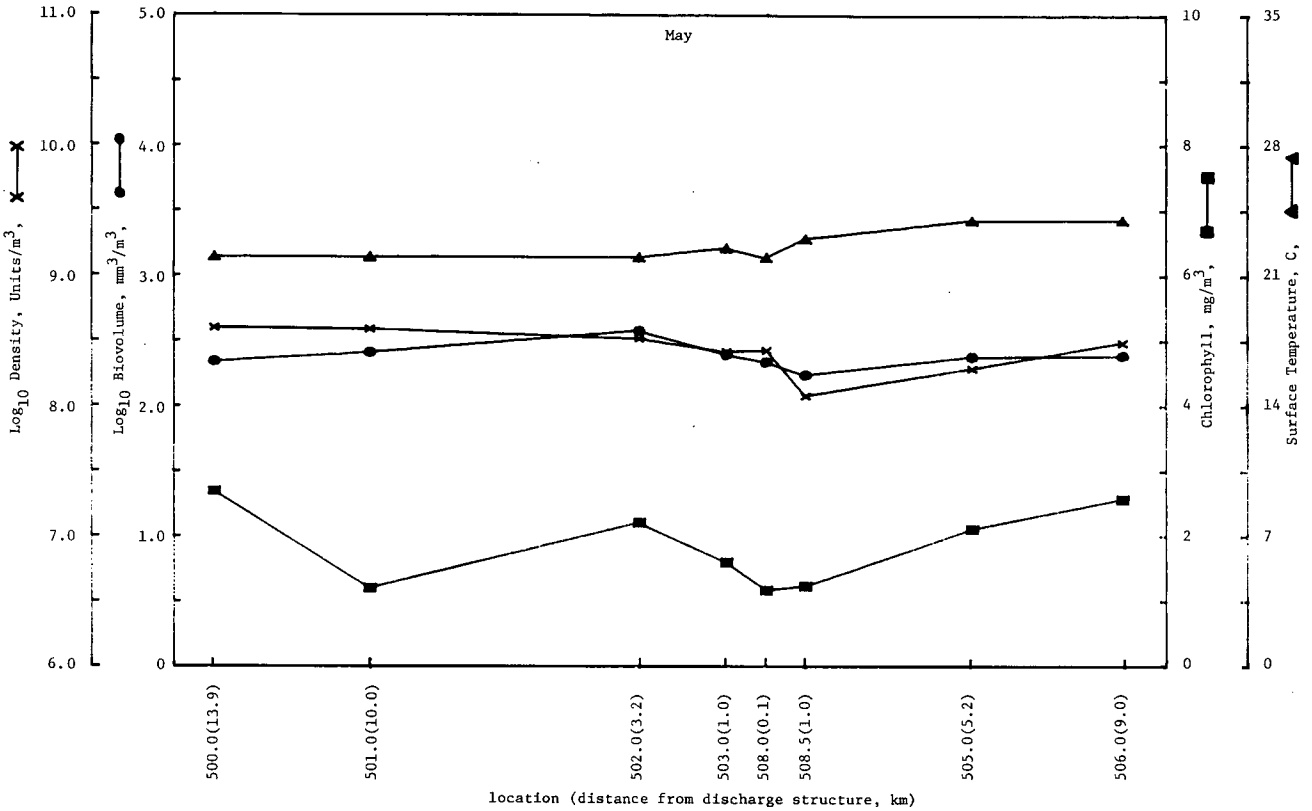


Figure 1.3.4-4. Euphotic zone phytoplankton standing crops and surface temperatures measured at selected locations, Lake Keowee, SC, in March and April, 1977.



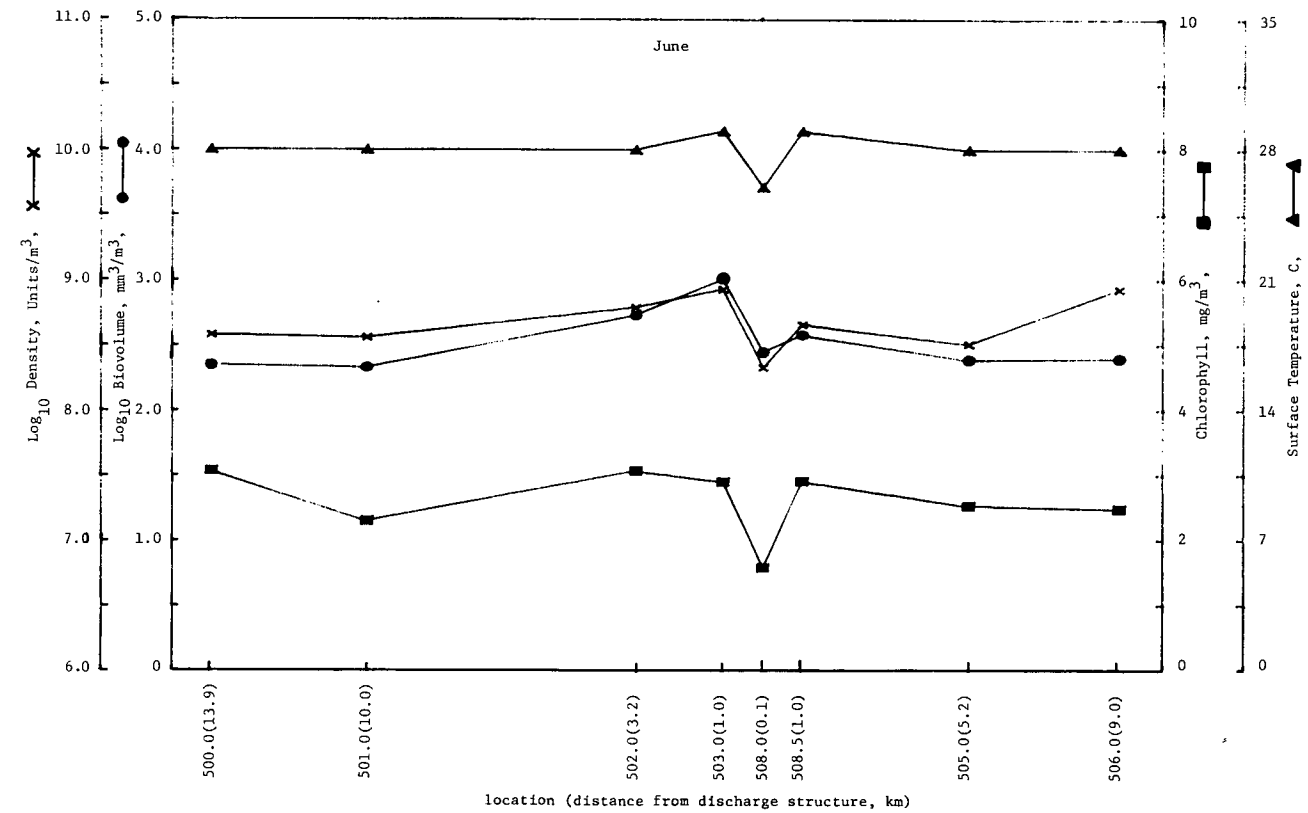


Figure 1.3.4-5. Euphotic zone phytoplankton standing crops and surface temperatures measured at selected locations, Lake Keowee, SC, in May and June, 1977.

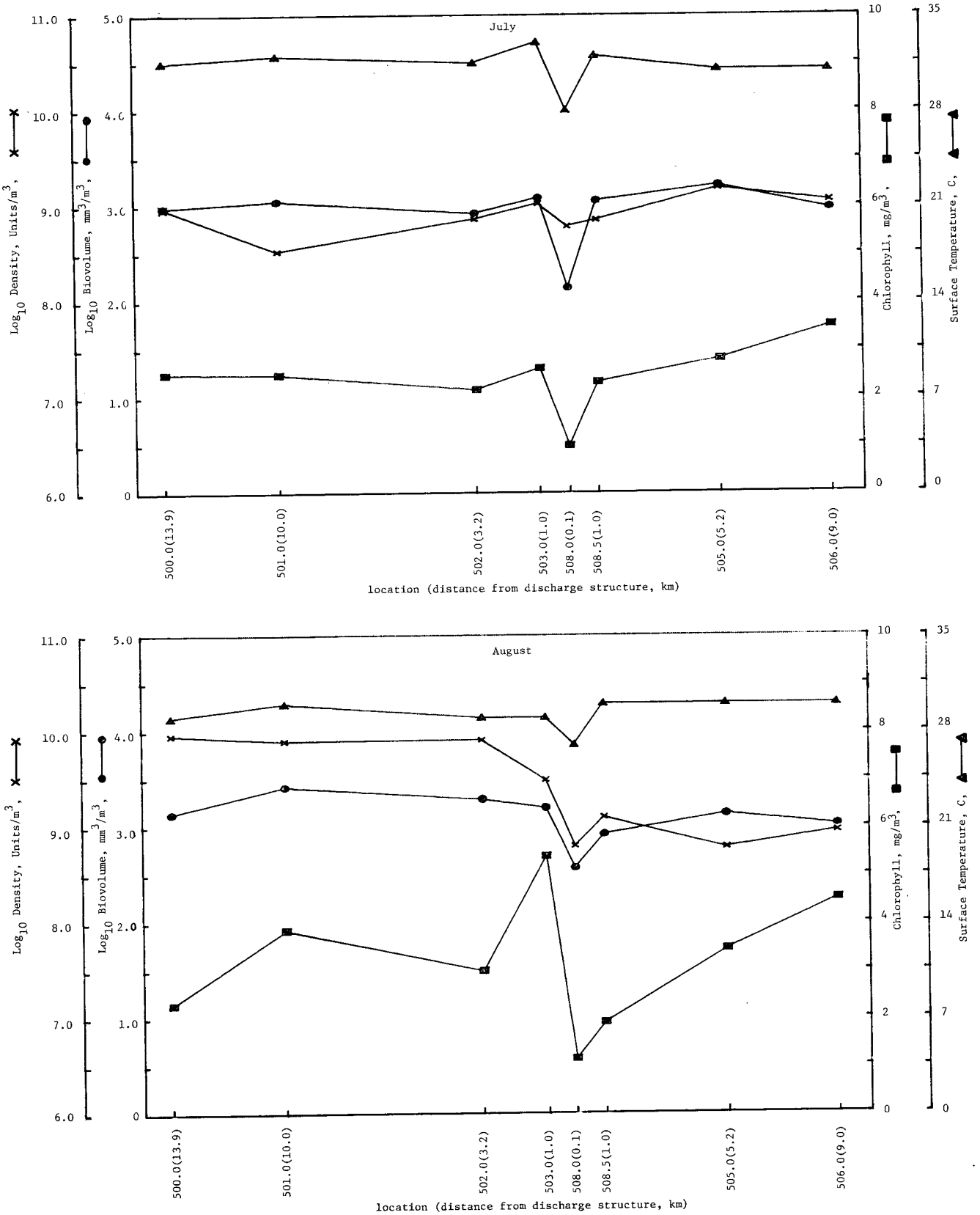


Figure 1.3.4-6. Euphotic zone phytoplankton standing crops and surface temperatures measured at selected locations, Lake Keowee, SC, in July and August, 1977.

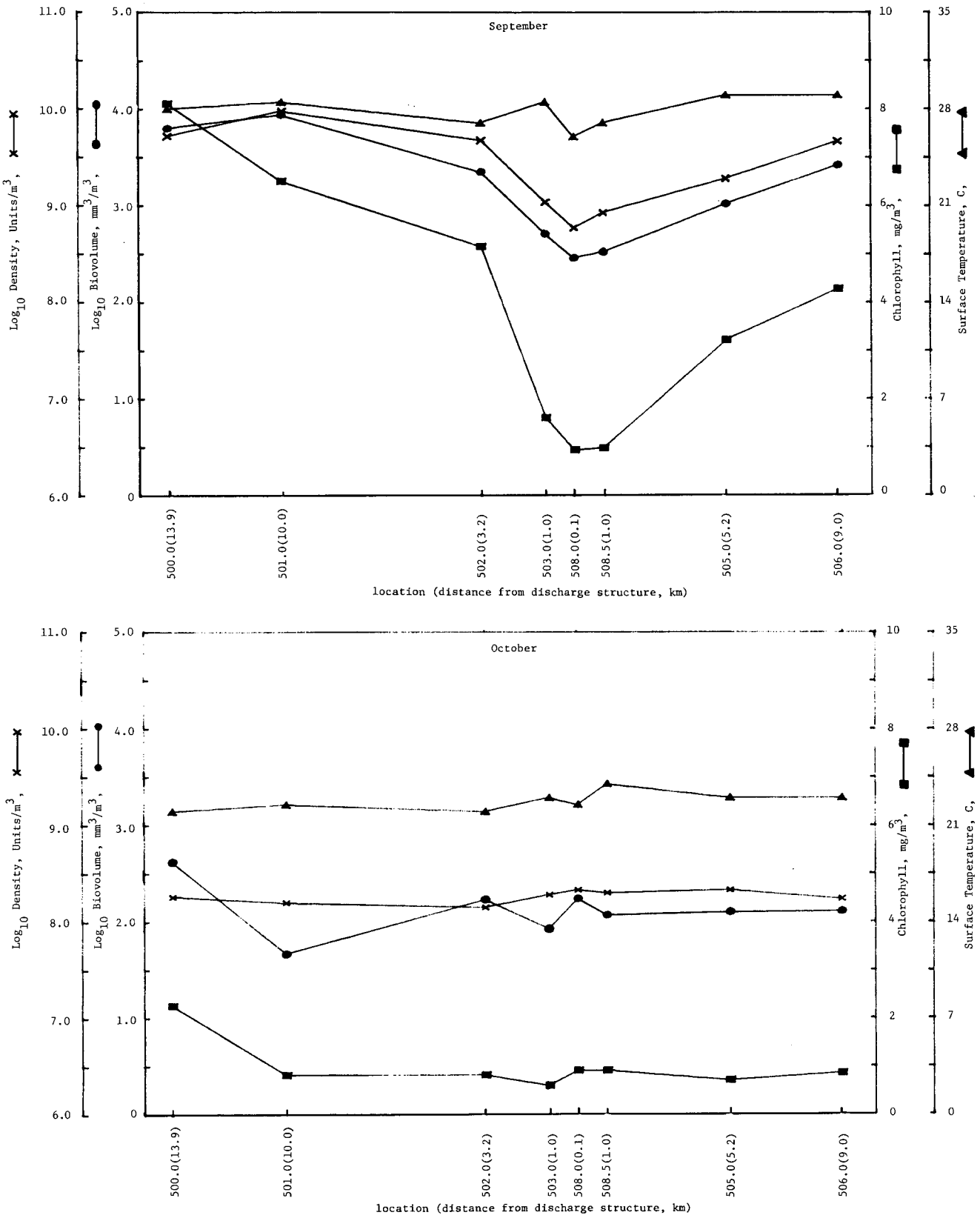


Figure 1.3.4-7. Euphotic zone phytoplankton standing crops and surface temperatures measured at selected locations, Lake Keowee, SC, in September and October, 1977.

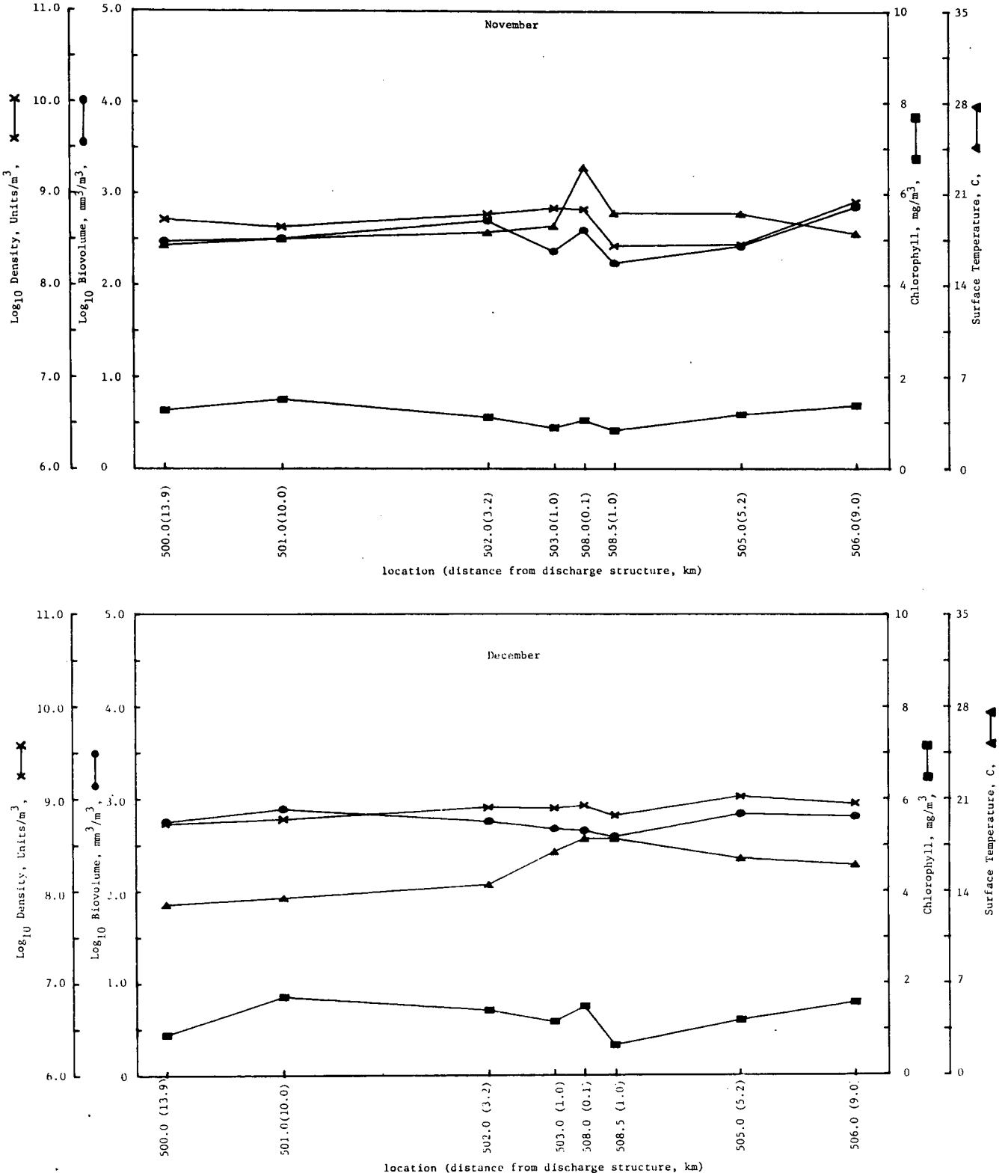


Figure 1.3.4-8. Euphotic zone phytoplankton standing crops and surface temperatures measured at selected locations, Lake Keowee, SC, in November and December, 1977.

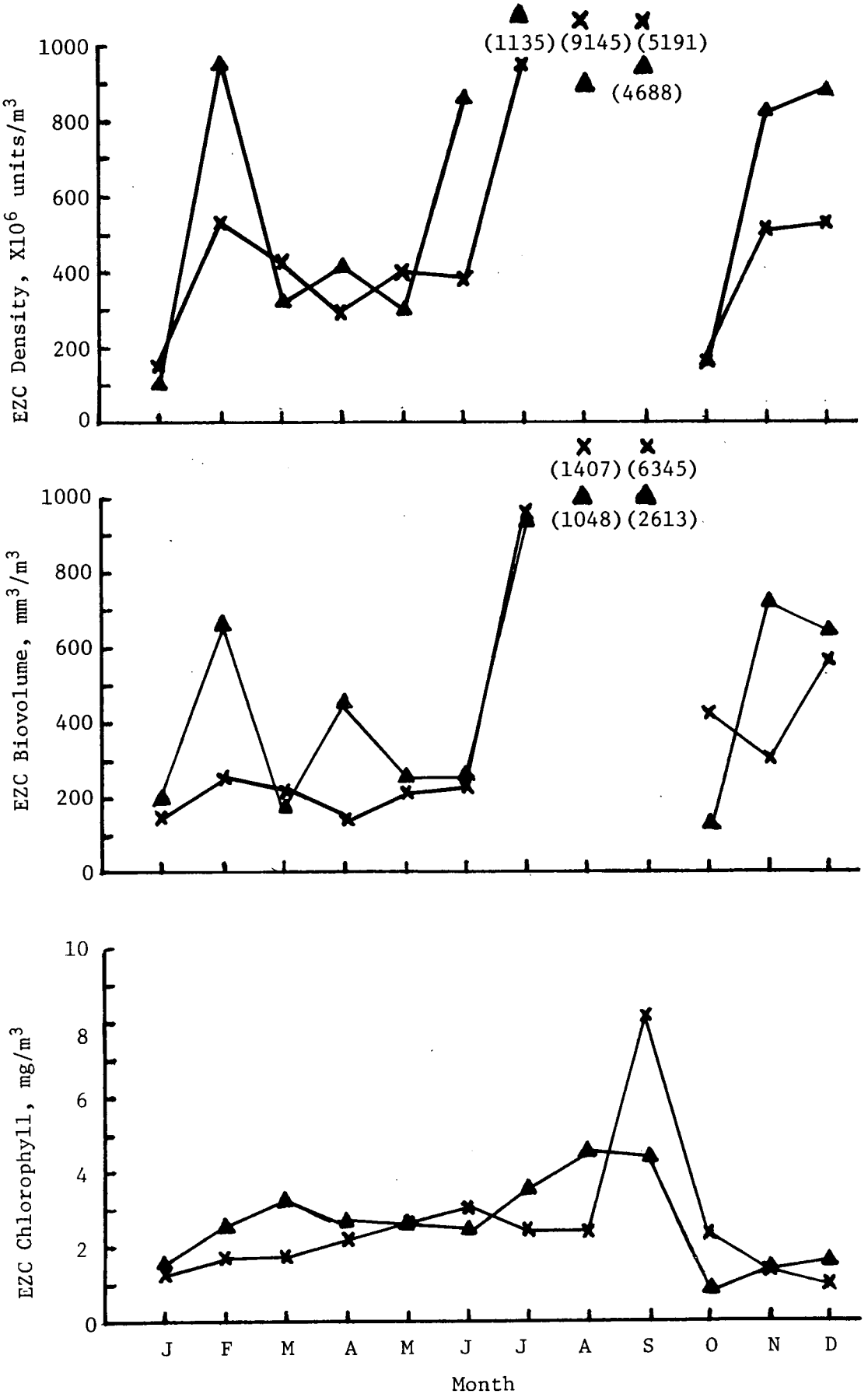


Figure 1.3.4-9. Phytoplankton standing crops for the two arms of Lake Keowee, 1977. Location 500.0 (✕—✕) represents the Little River arm and Location 506.0 (▲—▲) represents the Keowee River arm.

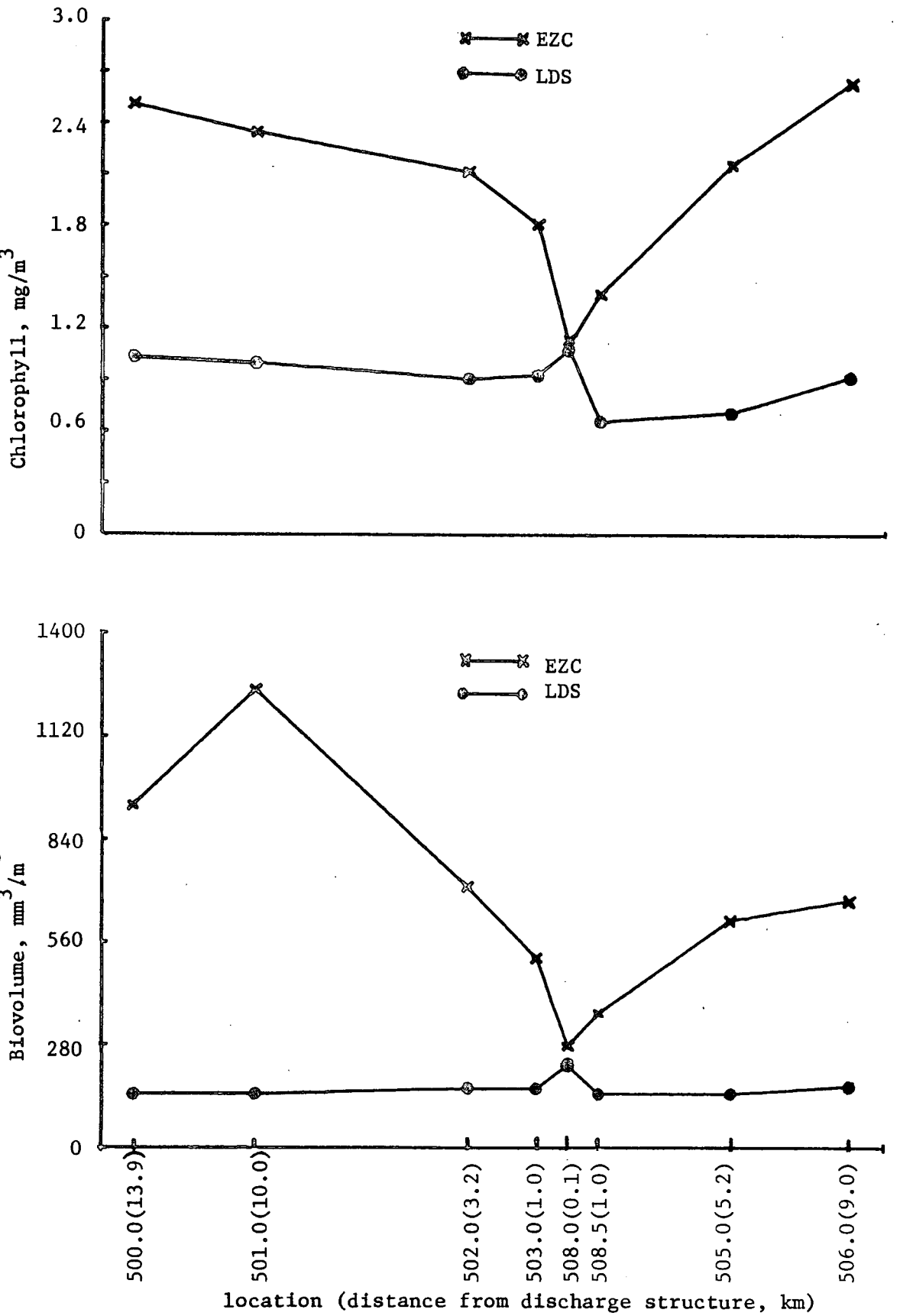


Figure 1.3.4-10. Mean biovolume and chlorophyll at various sampling locations in Lake Keowee, SC, for 1977.

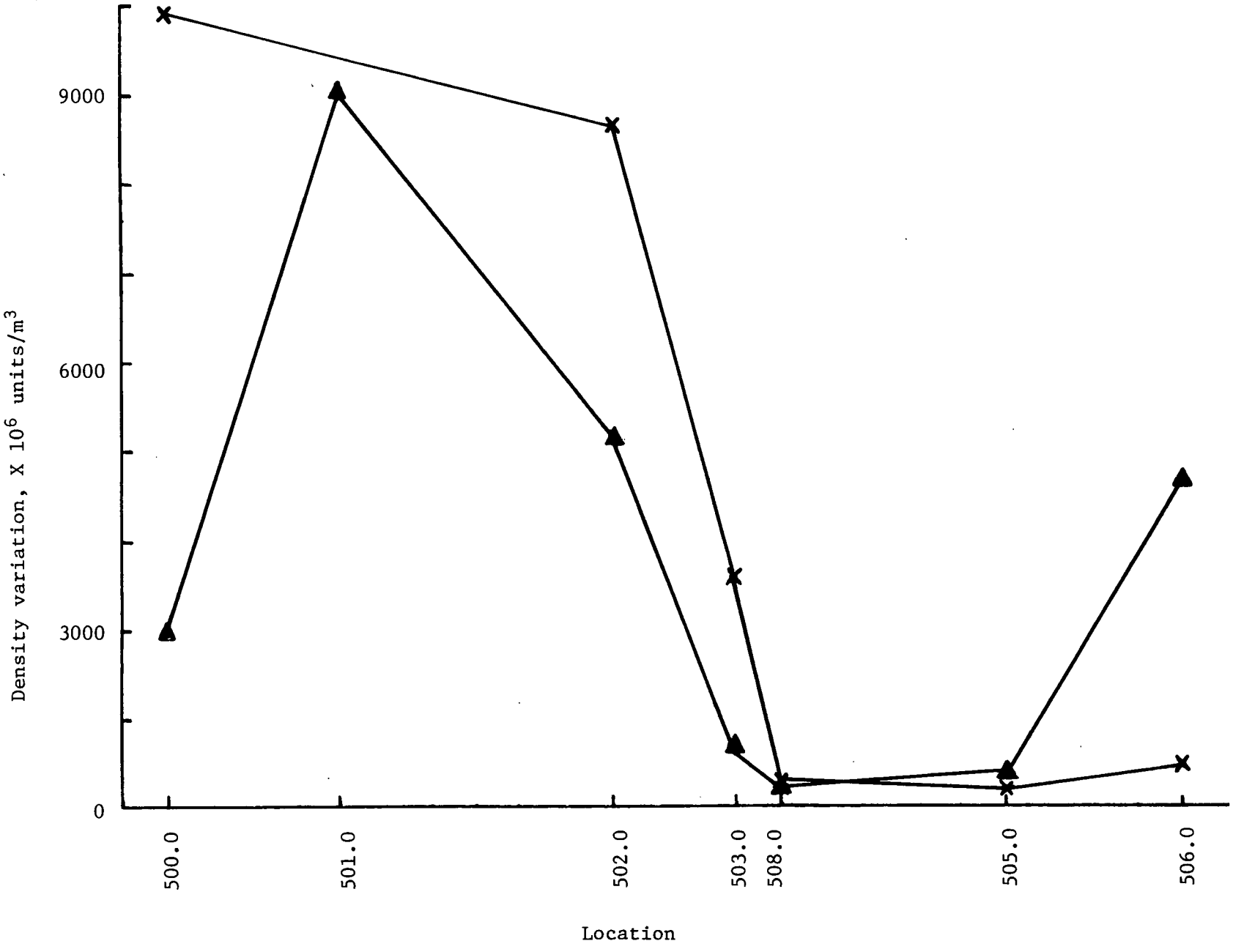


Figure 1.3.4-11. The amount which two desmid taxa densities (Arthrodesmus sp. and Cosmarium asphaerosporum var. strigosum) observed in 1977 exceeded densities of previous years in Lake Keowee, SC. Densities for August 1977 minus August 1974 (✕—✕) and September 1977 minus September 1976 (▲—▲) are presented.

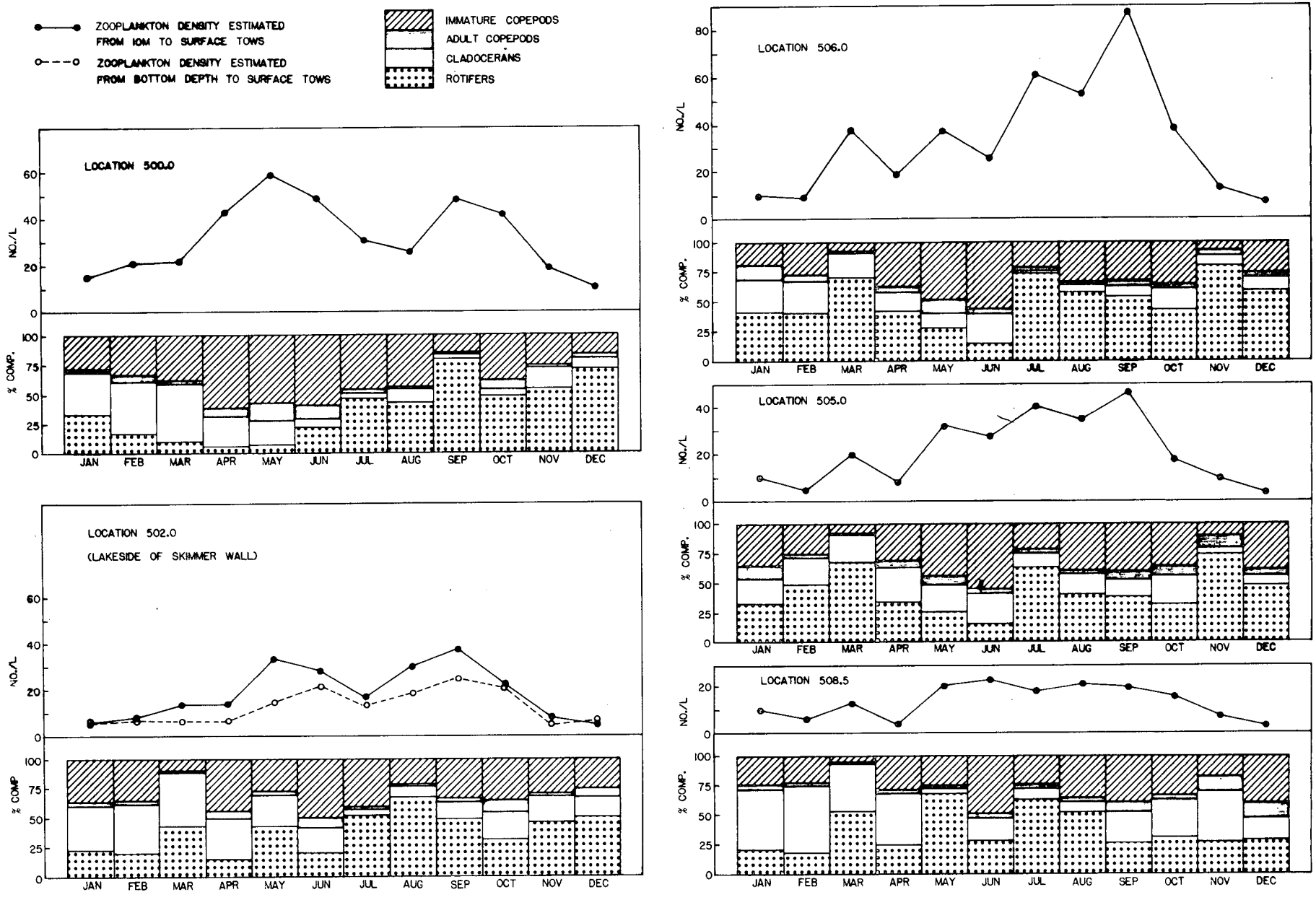


Figure 1.3.4-12. Seasonal distribution (10 m-to-surface) and taxonomic composition of zooplankton at locations in the Little River (500.0, 502.0) and Keowee River arm (506.0, 505.0, 508.5) of Lake Keowee in 1977.

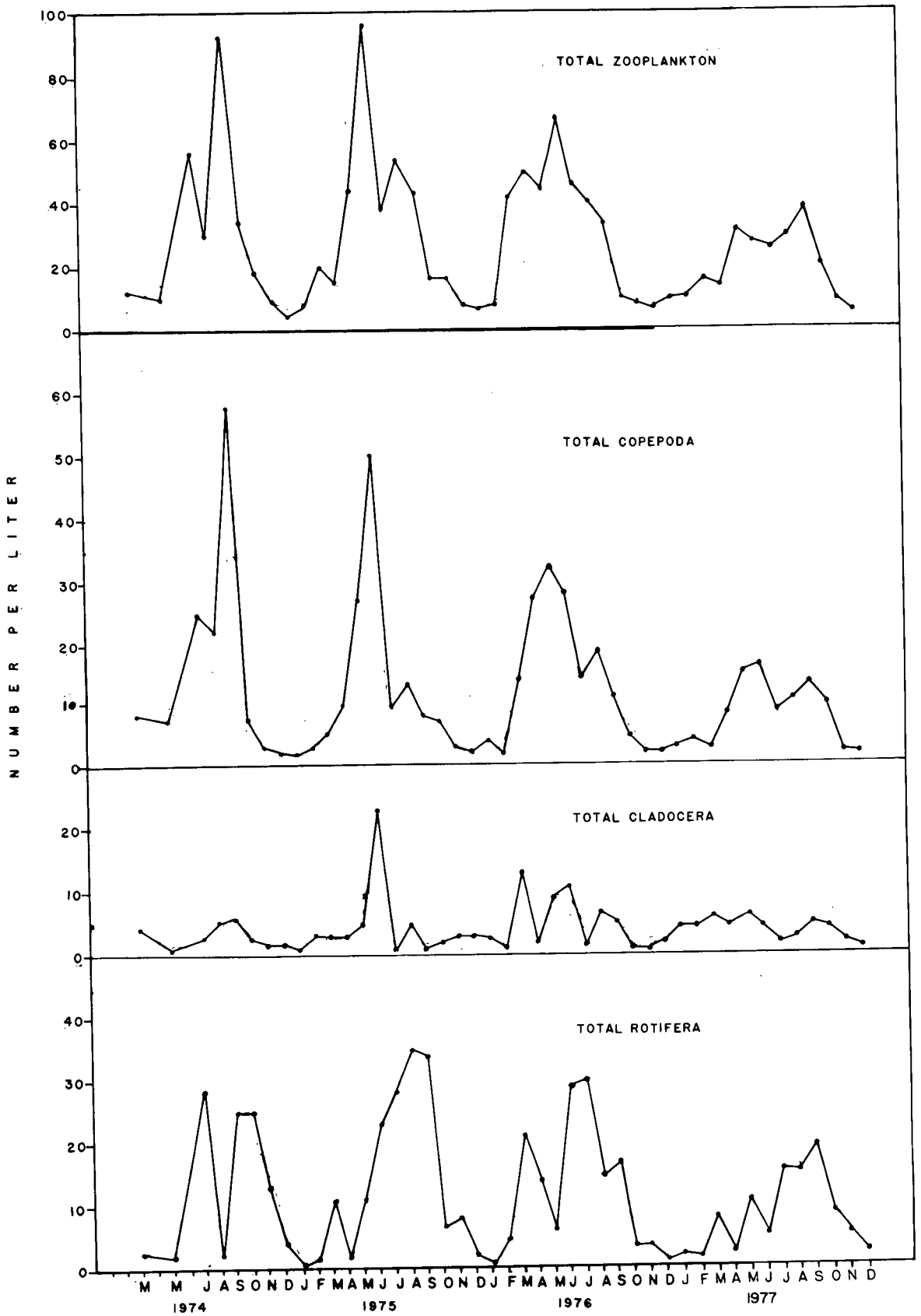


Figure 1.3.4-13. Seasonal distribution (10 m-to-surface) of major taxonomic groups of zooplankton in Lake Keowee for 1974 through 1977. Abundance of zooplankton in the lake was estimated by computing a grand mean of reference (500.0, 501.0, 506.0), intermediate (502.0, 503.0, 505.0), and discharge (508.0, 508.5, 504.0) area densities.

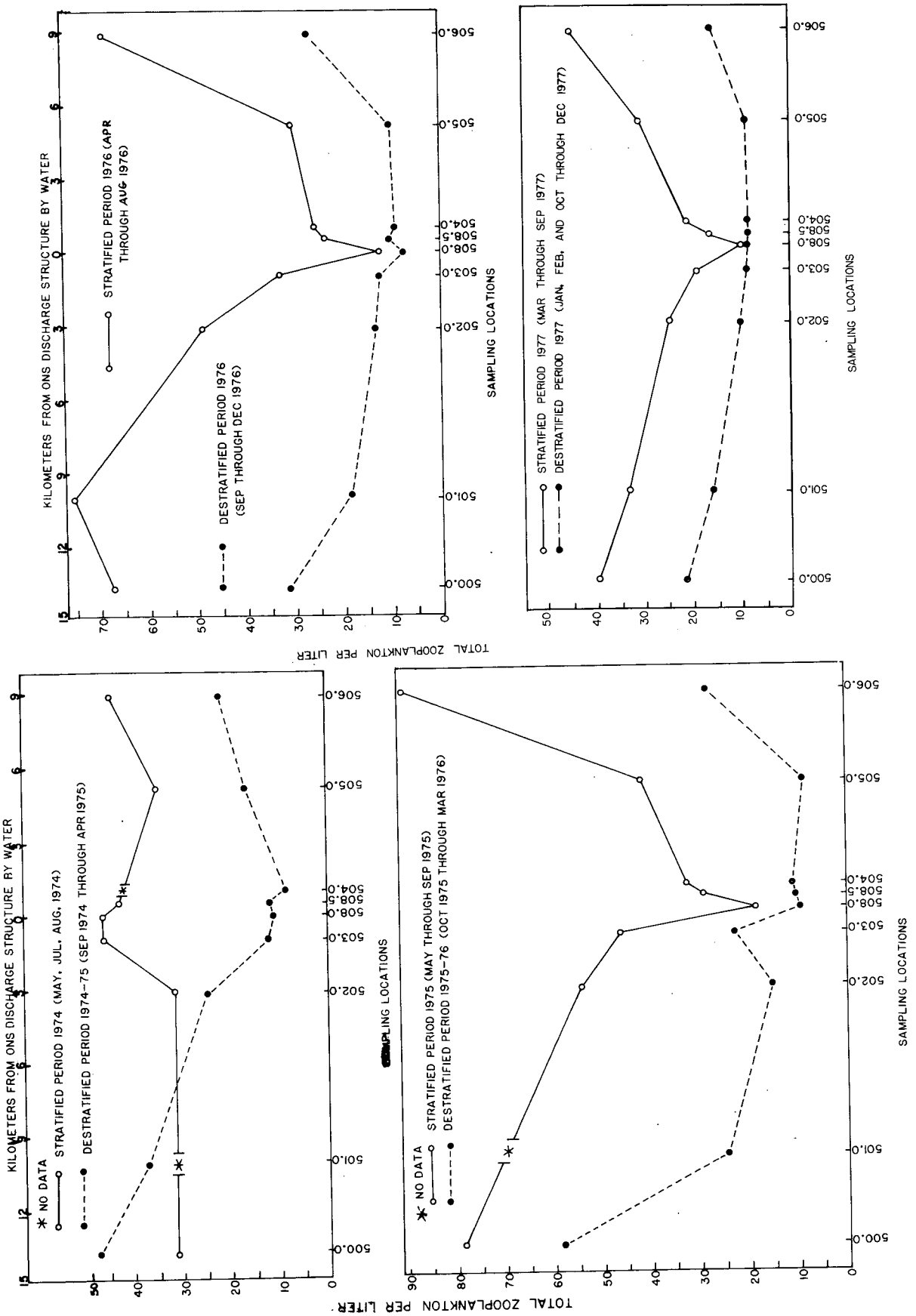


Figure 1.3.4-14. Spatial distribution (10 m-to surface) of zooplankton in Lake Keowee for stratified and destratified periods of 1974 through 1977. Densities were calculated as a mean of monthly densities categorized as stratified and as a mean of monthly densities categorized as destratified.

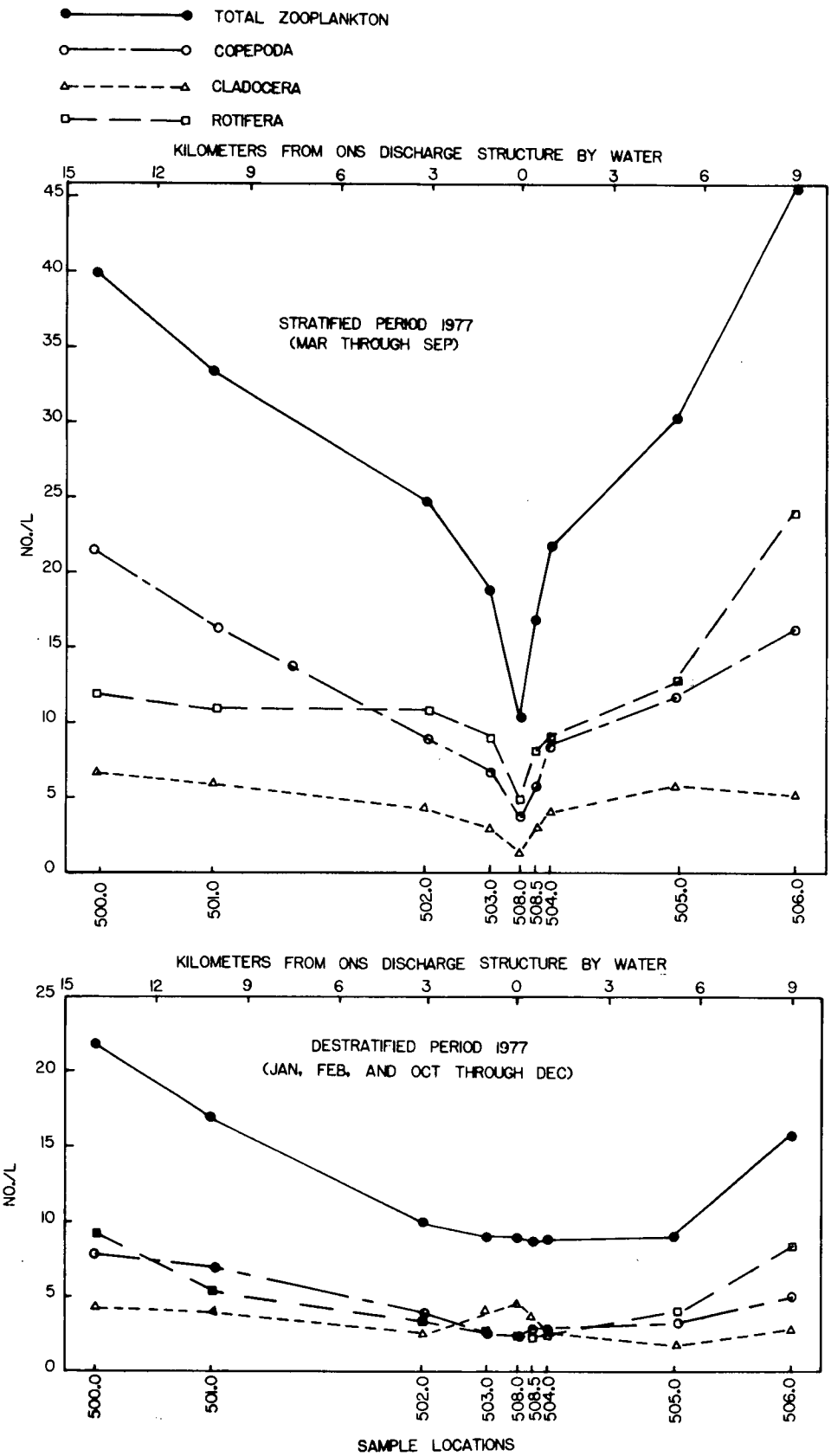


Figure 1.3.4-15. Spatial distribution (10 m-to-surface) of major taxonomic groups of zooplankton in Lake Keowee for stratified and destratified periods of 1977. Densities were calculated as a mean of monthly densities categorized as stratified and as a mean of monthly densities categorized as destratified.

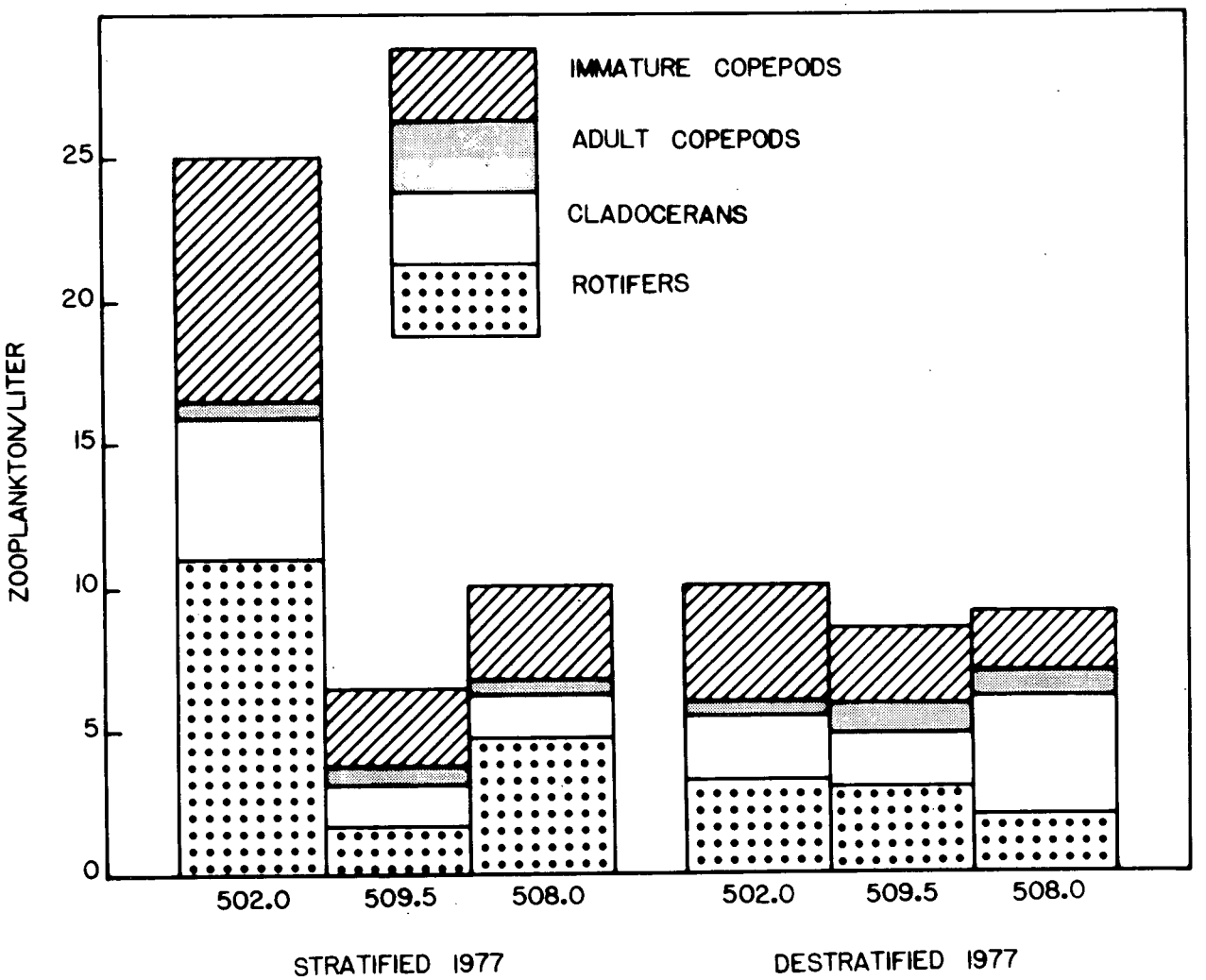


Figure 1.3.4-16. Densities of zooplankton (10 m-to-surface) lakeside of the skimmer wall (Location 502.0), in the intake canal (Location 509.5) and in the discharge cove (Location 508.0) of Lake Keowee for stratified and destratified periods of 1977. Densities were calculated as a mean of the monthly densities categorized as stratified and as a mean of the monthly densities categorized as destratified.

1.3.5 BENTHOS

Specification: The benthic macroinvertebrate populations of Lakes Keowee and Hartwell shall be sampled four (4) times per year. Sampling stations shall be located on the lake side of the skimmer wall (502), in the vicinity of the discharge, (Discharge canal and 504), at control stations on Lake Keowee (501 and 506), and in Lake Hartwell below Keowee Dam (604 and 606). Quantitative samples shall be taken with a modified Petersen grab. Qualitative samples (e.g., sweep-netting shall be taken along the shore nearest each of the stations listed above.

Benthic organisms collected shall be identified to the genus level where practicable. Diversity indices shall be calculated, as well as data on standing crop of benthic organisms, such as number per square meter and/or grams per square meter (Duke Power Company 1973a).

I. INTRODUCTION

A discussion of the value of benthic macroinvertebrates as environmental monitors has been presented previously (Duke Power Company 1973b).

II. METHODS AND MATERIALS

The methods and materials were the same as described in the ONS Environmental Summary Report (Duke Power Company 1977), except as indicated herein. Quantitative estimates of Oligochaeta were presented at the Class level; in addition, a qualitative checklist was compiled to record taxonomic composition.

III. RESULTS AND DISCUSSION

Lake Keowee: Littoral Zone

A total of 60 taxa was collected in Lake Keowee core and sweep net samples, of which chironomids (31 taxa) and oligochaetes (8 taxa) were the most diverse groups. The greatest number of chrionomid taxa (20) occurred in the subfamily Chironominae (Table 1.3.5-1). Six genera of Orthocladiinae and five genera of Tanypodinae were also collected. Dominant chironomids in core samples were Cryptochironomus sp., Pseudochironomus sp., and Stictochironomus sp. The Naididae (3 taxa) and Tubificidae (4 taxa) were the most diverse Oligochaeta families (Table 1.3.5-1). Other frequently occurring organisms included chironomid pupae and ceratopogonid larvae.

Chironomids and oligochaetes, as in previous years (Duke Power Company 1977), continued to be the dominant benthic organisms in the littoral zone of Lake Keowee in both density and standing crop. Chironomids represented 85% of the total density and 77% of the total standing crop in 1977, while Oligochaeta comprised 6 and 16% of the density and standing crop, respectively.

The highest mean annual density (2,505/m^2) and standing crop (1,573 mg/m^2) of macroinvertebrates occurred at Location 505.0 (Fig. 1.3.5-1). High densities of macroinvertebrates at Location 505.0 have been previously reported (Duke Power Company 1977), and were attributed to the excellent habitat provided

by the aquatic vegetation. The lowest mean annual density (551/m^2) and the lowest mean annual standing crop (225 mg/m^2) were recorded at Location 508.0 (Fig. 1.3.5-1) and were attributed to unsuitable substrate and wave action in the discharge area. Low densities and standing crops of macroinvertebrates have commonly occurred at Location 508.0 (Duke Power Company 1977). The highest monthly mean density and standing crop of macroinvertebrates in the littoral zone occurred in August. The lowest mean monthly density occurred in February while the lowest standing crop occurred in May (Fig. 1.3.5-1).

The highest number of taxa (34) was identified from Location 504.0, and the lowest (21) was identified from Location 502.0. Similar findings were noted in the Oconee Summary Report. The low numbers of taxa at 502.0 were attributed to the poor substrate of hard packed clay.

Lake Keowee: Sublittoral and Profundal Zone

It appears that only slight changes in taxonomic composition have occurred since sampling commenced in 1973 (Duke Power Company 1977). With the exception of Corbicula, which was collected for the first time in August, no new taxa were found in 1977. Taxonomically, the groups that were the most diverse in the littoral zone of Lake Keowee were also the most diverse in the sublittoral and profundal zones, and have remained so throughout the study. Chironomids and oligochaetes were the most diverse groups, with 29 and 6 taxa, respectively. Chironominae was the dominant subfamily with 17 taxa, while Tanypodinae and Orthocladiinae were represented by 10 and 2 taxa, respectively.

Chironomids, oligochaetes, and chaoborids were the dominant macroinvertebrates in density (95%) and standing crop (70%). Chironomidae was the dominant benthic group by density (52%), while Oligochaeta was the dominant group by standing crop (46%).

Macroinvertebrates were most abundant at Locations 501.0 and 506.0 (Fig. 1.3.5-2). In previous years, there were high densities at these locations (Fig. 1.3.5-3); the high densities were attributed to organically enriched substrates. The discharge (Location 508.0) had a characteristically low density (221/m^2) in 1977 (Fig. 1.3.5-2). Low densities have repeatedly occurred at the discharge (Fig. 1.3.5-3), due to the unsuitable substrate and low organic carbon (Duke Power Company 1977). The maximum mean monthly density (1,348/m^2) of macroinvertebrates at all locations occurred in winter and the minimum (399/m^2) occurred in summer (Fig. 1.3.5-2).

Fluctuations in total density were related to changes in the density of chironomid populations. Densities of Chaoborus punctipennis, which had previously been low (Duke Power Company 1977), remained low throughout 1977, with seasonal peaks occurring in February and November (Table 1.3.5-2). Although densities of C. punctipennis have not been extremely high in Lake Keowee, (Duke Power Company 1973b), the decrease since 1973 cannot be fully explained. Some possible causes for the decrease were mentioned in the Oconee Summary Report (Duke Power Company 1977).

The annual mean standing crop was high at Locations 506.0 and 508.0 (Fig. 1.3.5-2) in 1977. Location 506.0 has consistently had a high standing crop (Fig. 1.3.5-4), which has been associated with the high organic carbon content of the sediments, and also with the larger size of profundal macroinvertebrates.

In past years, however, the standing crop at Location 508.0 has been lower than at other locations (Fig. 1.3.5-4); it was higher in 1977 due to the collection of the single large Corbicula in August, which accounted for 90% of the annual standing crop. Seasonally, the maximum mean standing crop (1,434 mg/m^2) occurred in August, coincident with the time of minimum density (Fig. 1.3.5-2). However, the high standing crop in August was due to the collection of the single large Corbicula at Location 508.0. Excluding this specimen, August mean standing crop would have been reduced to 578 mg/m^2.

In the last three decades, Corbicula has become widely dispersed in freshwater habitats in North America. Once Corbicula enters a river basin, it rapidly exploits the new habitat with an explosive population build-up (Sinclair 1971). It is believed that Corbicula will proliferate in Lake Keowee in the future and will contribute significantly to the standing crop.

Although diversity generally decreased as depth increased, the differences between the number of taxa in the littoral zone (60) and in the sublittoral and profundal zones (51) were slight. The highest number of taxa was identified from Locations 501.0 and 505.0 with 34 and 27 taxa, respectively. The lowest number of taxa (14) occurred at Locations 506.0 and 508.0. In past years, similar trends in the number of taxa have been noted (Fig. 1.3.5-5). Diversity indices ($\bar{H}$) are listed in Table 1.3.5-2 and revealed highs and lows at the same locations as mentioned above.

Lake Hartwell: Littoral Zone

The taxonomic composition of Lake Hartwell has remained similar to that of previous years (Duke Power Company 1977). A total of 68 taxa was collected in core and sweep net samples from Lake Hartwell, with Chironomidae (29 taxa) being the dominant group. The subfamily Chironominae was represented by 15 taxa, with Tanypodinae and Orthocladiinae represented by 8 and 6 taxa, respectively. Oligochaetes were represented with 4 taxa in Tubificidae and 4 taxa in Naididae (Table 1.3.5-3). The littoral zone in Lake Hartwell was more diverse than the littoral zone in Lake Keowee. The Tanypodinae and Orthocladiinae were also more abundant and diverse in Lake Hartwell than in Lake Keowee.

Oligochaetes and chironomids remained the dominant macroinvertebrates and accounted for 70% of the total number of organisms collected. Oligochaetes represented a much higher percentage of the total density in Lake Hartwell (56%) than in Lake Keowee (6%). Location 604.0 had a higher mean annual density (3,893/m^2) than did Location 606.0 (2,910/m^2) (Fig. 1.3.5-6). However, Location 606.0 had a slightly higher standing crop (1,113 mg/m^2) than did Location 604.0 (1,085 mg/m^2) (Fig. 1.3.5-6). The maximum mean monthly density and standing crop occurred in February, while the minimum mean monthly density and standing crop occurred in November (Fig. 1.3.5-6). Diversity was higher at Location 606.0 (57 taxa), than at Location 604.0 (47 taxa), and was attributed mainly to a more diverse oligochaete population.

Lake Hartwell: Sublittoral Zone

The sublittoral zone of Lake Hartwell had a less diverse benthic community (48 taxa) than the littoral zone. Chironomids (22 taxa) and oligochaetes (11 taxa) were the most diverse groups (Table 1.3.5-4). The subfamilies

Chironominae and Tanypodinae were represented by 10 and 9 taxa, respectively. Tubificidae was the most diverse oligochaete family, with 7 taxa.

Chironomids and oligochaetes represented 61% of the total density, with the respective groups accounting for 25 and 36%. Chaoborus punctipennis larvae comprised only a small percentage (6%) of the total density. Location 606.0 had a higher mean annual density (1,491/m^2) than did Location 604.0. Also, Location 606.0 had a much higher mean annual standing crop (27,081 mg/m^2) than did Location 604.0 (1,372 mg/m^2). The high standing crop at 606.0 was due to the presence of large Corbicula in February samples (Fig. 1.3.5-7). The highest monthly mean density (3,270/m^2) and standing crop (44,756 mg/m^2) occurred in February (Fig. 1.3.5-4).

Location 606.0 had a more diverse benthic fauna (33 taxa) than did Location 604.0 (27 taxa). Diversity indices ($\bar{H}$) for Lake Hartwell grab samples are listed in Table 1.3.5-4.

IV. SUMMARY AND CONCLUSIONS

The benthic communities of Lakes Keowee and Hartwell were sampled quarterly in 1977, in accordance with the Technical Specifications for ONS. No major changes in taxonomic composition, density, standing crop, or diversity were noted from past years, with the exception of the first collection of Corbicula. The density of Chaoborus punctipennis in Lake Keowee, which had dropped between 1973 and 1976, remained low in 1977. The discharge, Location 508.0, had the lowest density in 1977, but did not have the lowest standing crop or diversity. Low densities have consistently been reported at the discharge and are suspected to result from unsuitable substrate rather than temperature and/or water quality, which were within acceptable limits for most aquatic insects. Also, the Asiatic clam, Corbicula, was collected at the discharge in August for the first time, and was largely responsible for the high standing crop at the discharge. Corbicula are expected to increase in Lake Keowee.

No detrimental effects from ONS were observed on Lakes Keowee or Hartwell during the 1977 sampling period.

REFERENCES CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Stations Units 1, 2, and 3, Duke Power Company, U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised April 9, 1976, NRC), Washington, D. C.

_____. 1973b. Oconee Nuclear Station. Semi-Annual Report. Period Ending June 30, 1973. Charlotte, N. C.

_____. 1977. Oconee Nuclear Station. Environmental Summary Report. 1971-1976. Charlotte, N. C.

Sinclair, Ralph M. 1971. Corbicula Variation and Dreissena Parallels. The Biologists. 53(3) 153-159.

Table 1.3.5-1

Density (mean no./m^2) of benthic macroinvertebrates collected in a core sampler and presence (S) of macroinvertebrates collected by sweep net in the littoral zone of Lake Keowee, 1977.

Locations / Taxa	501.0 F	501.0 M	501.0 A	501.0 N	502.0 F	502.0 M	502.0 A	502.0 N	504.0 F	504.0 M	504.0 A	504.0 N
Chironomidae (p)		S	S,26	53						S,131	S,289	
Chironomidae						26		26				
Ablabesmyia aspera		S	S								S,105	
Ablabesmyia mallochi						S						
Coelotanypus scapularis												
Procladius spp.			S,210				S				S,184	
Procladius bellus	26		S,552	53			210				316	
Orthocladiinae U.I.			S									
Cricotopus sp.			S									
Microcricotopus sp.												
Parakiefferiella sp.		26	158	S,421						S,316	S,920	
Psectrocladius sp.		S	S			S				S,158		
Smittia spp.												S
Chironomiini U.I.												
Cryptochironomus sp.	26	26	53			53		S	S	S,158	S,526	S,79
Cladopelma sp.										105		S
Cryptotendipes sp.							S				S,552	
Dicrotendipes sp.												S
Chironomus sp.										S,158		
Nilothauma sp.												
Pagastiella sp.			S	158					53			
Polypedilum spp.												
Polypedilum (Tripodura) grp.		S,26	79	S,158		S,26		S	S	S		S
Polypedilum (Nubeculosum) grp.						S						
Polypedilum (fallax) grp.									S	S	S,105	26
Pseudochironomus sp.					S							
Stenochironomus sp.												
Stictochironomus sp.		53	S,421	S,6154			S,1499	S	S		S,920	S,1183
Tanytarsini U.I.										158	105	
Cladotanytarsus sp.										1026		
Micropsectra sp.		S	S		S	S,26				S,53	S,79	
Stempellina sp.			237							368	S,447	
Tanytarsus sp.	26	S	S,26			S,710				S,316	S	
Ceratopogonidae (p)		26										
Palpomyia complex (Palpomyia sp., Bezzia sp., Probezzia sp., Johannsenomyia sp.) (larvae)		S,26	S,131	S,421		S	S,53	S,53	S		S,552	S,53
Alluaudomyia spp.				26								
Dasyhelea spp.	S		S	S,79				26				
Chaoborus punctipennis					S			26				
Oecetis spp.			26									
Polycentropus spp.			S	S			S				S,26	
Centroptilum spp.												
Heptageniidae											S	
Hexagenia spp.												
Gomphus spp.												
Coenagrionidae			S									
Hydrachnellae			26			53	26					
Oligochaeta				S,79	79		S		S,26	158	26	
Naididae											+	
Amphichaeta americana										+		
Nais variabilis										†		
Lumbriculus variegatus												

Table 1.3.5-1 (Cont)

Taxa \ Locations	501.0 F	501.0 M	501.0 A	501.0 N	502.0 F	502.0 M	502.0 A	502.0 N	504.0 F	504.0 M	504.0 A	504.0 N
Tubificidae U.I.		S										
Aulodrilus limnobius									+			
Limnodrilus spp.									S			
Limnodrilus hoffmeisteri									S			
Nematoda		S	S	S,26		79	53	26		53	131	
Nemertinea			S				S				26	
Prostoma spp.		S	S	S							S	
Corbicula spp.												
Pectinatella magnifica			+									
Total Littoral Taxa	4	15	25	13	4	11	10	7	10	17	21	8
Mean Number of Organisms/m^2	78	183	1945	7628	79	973	1841	157	79	3158	5309	1341
Wet Weight (mg/m^2)	21	92	665	1076	26	113	1107	45	34	318	423	131

(p) = pupae
\+ = organisms present in core samples

Table 1.3.5-1 (Cont)

Taxa \ Locations	505.0 F	505.0 M	505.0 A	505.0 N	506.0 F	506.0 M	506.0 A	506.0 N	508.0 F	508.0 M	508.0 A	508.0 N
Chironomidae (p)		S,26	S,79			S,131	S,26			S	S,53	S 131
Chironomidae	S					S						
Ablabesmyia aspera										26		
Ablabesmyia mallochi	S											
Coelotanypus scapularis							S					
Procladius spp.						26	S			26	S	
Procladius bellus												
Orthocladiinae U.I.										S		
Cricotopus sp.											S	
Microcricotopus sp.		S,105	158							S,105	S	
Parakiefferiella sp.		53								S,158	S	
Psectrocladius sp.										26		
Smittia spp.												
Chironomiini U.I.	S,237	S,53	S,789	S,289	S,53	S	S,79	26	S,79	S,26	S,26	
Cryptochironomus sp.			S,237								S,26	
Cladopelma sp.		S	S,79				S				S	
Cryptotendipes sp.					S	S,79						
Dicrotendipes sp.		S			S	S,79						
Chironomus sp.			S									
Nilothauma sp.		53					S			26		
Pagastiella sp.				26		79			26			
Polypedilum spp.	S,158	S,26	79	S,131		S,158			S,26	S	S,53	79
Polypedilum (Tripodura) grp.						79						
Polypedilum (Nubeculosum) grp.						S						
Polypedilum (fallax) grp.	S,131	368	S,605	S,1473	S	S						
Pseudochironomus sp.												
Stenochironomus sp.	S,1420		158	S,368	S,2525		S,736	S,158	S,184	S	S,158	S,526
Stictochironomus sp.												
Tanytarsini U.I.		53	79									
Cladotanytarsus sp.	26	S,79				S,421	S,79			S,53	S	
Micropsectra sp.		368	S,316			237				S,26	131	
Stempellina sp.	53	53			53	S,53	S			S	S	
Tanytarsus sp.						26						
Ceratopogonidae (p)			S	S	S	26	S,53	S,158	26	S	S,26	S,53
Palpomyia complex (Palpomyia sp., Bezzia sp., Probezzia sp., Johannsenomyia sp.) (larvae)												
Alluaudomyia spp.						S	26			26		
Dasyhelea spp.					S			53				
Chaoborus punctipennis					S							
Oecetis spp.												
Polycentropus spp.	S				S		S,26					
Centroptilum spp.			S									
Heptageniidae			26									
Hexagenia spp.					S							
Gomphus spp.				S								
Coenagrionidae												
Hydrachnellae	S,1131	53	S,131	S,421	S,263		S,26	S,26	S		S,53	26
Oligochaeta						S						
Naididae												
Amphichaeta americana												
Nais variabilis												
Lumbriculus variegatus												

Table 1.3.5-1 (Cont)

Taxa \ Locations	505.0 F	505.0 M	505.0 A	505.0 N	506.0 F	506.0 M	506.0 A	506.0 N	508.0 F	508.0 M	508.0 A	508.0 N
Tubificidae U.I.	+				S							
Aulodrilus limnobius									+			
Limnodrilus spp.	S		S,+		S		+					
Limnodrilus hoffmeisteri	S,+				S							
Nematoda			S,79	26	S,26	S,26		26				
Nemertinea			26								S	
Prostoma spp.				S	S							S,26
Corbicula spp.												
Pectinatella magnifica												
Total Littoral Taxa	13	14	18	10	17	19	14	6	8	16	16	6
Mean Number of Organisms/m^2	3156	1290	2841	2734	2920	1420	1051	447	341	498	526	841
Wet Weight (mg/m^2)	2808	171	2183	1131	781	363	781	221	347	179	313	181

(p) = pupae
\+ = Organisms present in core samples.

Table 1.3.5.2

Density (mean no./m^2) of benthic macroinvertebrates collected with a modified Petersen grab in the sublittoral and profundal zones of Lake Keowee, 1977.

Taxa \ Locations	501.0 F	501.0 M	501.0 A	501.0 N	502.0 F	502.0 M	502.0 A	502.0 N	504.0 F	504.0 M	504.0 A	504.0 N	505.0 F	505.0 M	505.0 A	505.0 N	506.0 F	506.0 M	506.0 A	506.0 N	508.0 F	508.0 M	508.0 A	508.0 N
Chironomidae				29																	13			
Chironomidae (pupae)	13	26	13	13						26				26	13									
Ablabesmyia aspera														26										
Ablabesmyia janta			26						26															
Ablabesmyia mallochi		39												39										
Coelotanypus spp.							13						26											
Coelotanypus scapularis			52																					
Procladius spp.																								
Procladius (Psilotanypus) bellus	65	65			13					26		13	39	26		65	65	26	13	13	26			
Procladius (Procladius) spp.			65												91									
Psectrotanypus dyari															13									
Clinotanypus spp.			26																					
Parakiefferiella sp.				13				13	26	78				13							13			
Psectrocladius sp.										117														
Chironomus sp.		39						26											26	13	13			
Cryptochironomus sp.				13					26	39	13		39		13	52								13
Cryptotendipes sp.			39																					
Dicrotendipes sp.			39																					
Endochironomus sp.									26															
Harnishcia sp.		26					13			26														
Nilothauma sp.															13									
Pagastiella sp.		91	13				13			156	13		130	403	52		13	26			26	143	39	
Cladopelma sp.		78	39											13										
Pseudochironomus sp.															13									
Stictochironomus	1300	299	286				13		962	286	39	39	299	78	65		52		13		26		13	13
Polypedilum (Tripodura) grp.	65	143	39				52		78	91	13	26	286	260		39						13	13	
Tanytarsini U.I.			13																					
Cladotanytarsus sp.		39								26		13				78								13
Micropsectra sp.	78																							
Stempellina sp.		78	39							65				104	13									26
Tanytarsus sp.	546	39	117			195		13	52				65			26								
Palpomyia complex (Palpomyia sp., Bezzia sp., Probezzia sp., Johannsenomyia sp.)	65	39	26	65					52	39	13	78	13	39	13	26		13						
Chaoborus punctipennis	52			52	39			104	78		13	104	26	26	13	52	182			117	182		26	234
Chaoborus punctipennis (pupae)			13											13				13						
Oecetis spp.				26					13		13			26										
Polycentropus sp.		52										13	26											
Gomphus sp.													39											
Sialis sp.			13																					
Hydrachnellae												13	13											
Oligochaeta	39				351	39				26			13			104	2418	1235	845	1404	26			
Nais pardalis	+																	+						
Nais variabilis	+																+	+	+		+			
Tubificidae					+					+														
Aulodrilus limnobius					+												+	+	+					
Limnodrilus spp.					+												+	+						
Limnodrilus hoffmeisteri																	+							
Tubifex tubifex																	+							
Nematoda																	13							
Prostoma spp.	13	13											26											
Corbicula sp.																							13	
Pectinatella magnifica	+				+																			
Mean number organisms/m^2	2236	1066	858	221	403	234	104	156	1339	1001	117	299	1040	1092	312	442	2743	1313	897	1547	325	156	104	299
Wet weight (mg)/m^2	368	795	456	98	256	119	45	165	332	439	13	191	235	320	256	244	2364	2136	2687	1893	273	46	5149	217
Total number of taxa	13	15	17	7	7	2	5	4	10	14	7	8	14	14	9	8	10	9	6	4	9	2	5	5
Bottom temperature (°C)	7.0	12.0	30.0	20.0	7.0	17.0	15.0	18.5	10.0	--	27.0	--	10.0	—	25.0	20.0	6.0	--	13.0	19.0	9.0	18.5	22.0	22.0
H = (Diversity)	0.58	1.03	1.02	0.76	0.25	0.23	0.50	0.43	0.51	0.96	0.80	0.76	0.89	0.85	0.89	0.86	0.22	0.13	0.12	0.16	0.66	0.12	0.65	0.35
R = (Redundancy)	0.52	0.18	0.31	0.28	0.83	0.97	1.00	0.73	0.62	0.20	1.00	0.39	0.33	0.37	0.47	0.09	0.78	0.94	0.95	0.82	0.59	1.00	0.52	0.88

Table 1.3.5-3

Density (mean no./m^2) of benthic macroinvertebrates collected in a core sampler and presence (S) of macroinvertebrates collected by sweep net in the littoral zone of Lake Hartwell, 1977.

Taxa	Locations	604.0				606.0			
		F	M	A	N	F	M	A	N
Chironomidae				S,		(26)		26	26
Chironomidae (p)			S,(105)	(53)			S		S,
Ablabesmyia aspera			(105)	S,			S,(26)	S	
Coelotanypus scapularis		(26)		S,	(26)	(26)		S,	
Coelotanypus concinnus				S,					
Coelotanypus tricolor		(26)			(26)			26	
Coelotanypus spp.						(26)	26		
Procladius spp.				S,(131)				S,(26)	
Procladius (Psilotanypus) bellus		(26)		S,(184)			(26)	S,(158)	
Procladius (Procladius) spp.				S,	S,			S,	
Cricotopus spp.					S,		S,(184)	(53)	(53)
Parakiefferiella spp.			(158)		S,	S,	(26)	S,(105)	
Psectrocladius spp.			S,(131)		S,	S,(26)	S,(105)	S,	
Microcricotopus spp.				S,				26	
Nanocladius incomptus			(79)						
Smittia spp.									26
Chironomus spp.			S,(263)		S,		S,		
Cryptochironomus spp.		(79)		(79)	(26)	S,(26)		S,(26)	
Dicrotendipes spp.			S,(26)		S,	S,(53)			
Pagastiella sp.				S,(316)				S,	
Cladopelma sp.			(26)	S,(316)				S,(26)	
Pseudochironomus sp.					S,				
Stictochironomus sp.				S,(79)	(26)				
Polypedilum (Tripodura) grp.		(26)			S,	S,(53)			
Polypedilum (Polypedilum) grp.							S,		
Cryptotendipes sp.			(26)	S,(210)					
Nilothauma sp.							S,		
Cladotanytarsus sp.					S,				
Tanytarsus sp.			S,(131)		S,		S,	S,26	
Micropsectra sp.			S,(53)	(158)			S,(26)	S,(131)	
Stempellina sp.								(26)	
Ceratopogonidae (p)			S,						
Palpomyia complex (Palpomyia sp., Bezzia sp., Probezzia sp., Johannsenomyia sp.)		S,(131)	S,	S,(815)	S,	S,(447)	S	S,(1262)	S,(53)
Dasyhelea spp.		(210)	S,(53)	S,		(237)	(26)	S,(26)	S,(26)
Alluaudemyia spp.				(79)					
Chaoborus punctipennis									S,
Oecetis spp.						S,			
Polycentropus spp.		S,(26)		S,(26)				S,	
Oxyethira spp.								S,	
Baetidae									S,
Caenis spp.						S,			
Hexagenia spp.				S,(158)				S,	
Gomphus spp.						S,			
Argia spp.			S,						
Sialis spp.				S,				S,(26)	
Hydrophorus spp.						S,			

Table 1.3.5-3 (Cont)

Taxa	Locations	604.0				606.0			
		F	M	A	N	F	M	A	N
Tipulidae									53
Muscidae (l)									26
Coleoptera (p)									26
Hydrachnellae		(26)							
Oligochaeta		S,(4865)	S,	S,(4050)	S,(105)	S,(5102)	S,(473)	S,(2209)	S,(105)
Naididae			S,					+	
Nais spp.						+		+	
Nais variabilis							S,		
Arcteonais lomondi								+	
Lumbriculus variegatus							S,	S,+	
Tubificidae		+		S,+		S,+	S,+		
Limnodrilus spp.		+							
Limnodrilus hoffmeisteri		+				S,+			
Bothrioneurum vejdovskyanum		+		S,		+	S,+	+	
Aulodrilus limnobius						+		+	
Nematoda			S,	(79)	(26)	S,(26)		(26)	(26)
Nemertina		+	S,		S,		S,		
Prostoma spp.		S,(79)		S,(53)		S,	S,		
Pelecypoda		(1742)	S,(79)			S,		(26)	
Corbicula spp.		S,		(53)				S,	S,
Gastropoda								26	
Pectinatella magnifica		+		+		+			
Mean number organisms/m^2		7262	1235	6839	235	6048	918	4256	420
Wet weight (mg/m^2)		2538	584	1133	84	2264	216	1670	302
Total Number of Taxa		19	22	28	18	24	20	34	14

(l) = larvae
(p) = pupae
\+ = Indicates presence in grab samples.

Table 1.3.5-4

Density (mean no./m^2) of benthic macroinvertebrates collected with a modified Petersen grab in the sublittoral zone of Lake Hartwell, 1977.

Taxa	Locations	604.0				606.0			
		F	M	A	N	F	M	A	N
Chironomidae			13						39
Chironomidae (p)									39
Ablabesmyia aspera						13	39	13	
Ablabesmyia mallochi							26		
Ablabesmyia annulata									13
Coelotanypus concinnus							13		
Coelotanypus tricolor		65	52		13				
Coelotanypus scapularis		65	169	52	65	130	65	26	
Procladius spp.				13				13	
Procladius (Psilotanypus) bellus		78			13	52	13	13	
Procladius (Procladius) spp.								26	13
Cricotopus sp.									26
Parakiefferiella spp.						52			
Psectrocladius sp.			13			273	156	13	
Chironomus sp.							13		13
Cryptochironomus sp.		39							
Dicrotendipes sp.						26			
Pagastiella sp.		143	39			39			
Cladopelma sp.							65	13	
Pseudochironomus sp.							13		
Stictochironomus sp.					13				
Polypedilum (Tripodura) grp.		26	13						
Tanytarsus sp.						13			
Micropsectra sp.		26							
Palpomyia complex (Palpomyia sp., Bezzia sp., Probezzia sp., Johannsenomyia sp.)		52	13		26	390	364	13	169
Chaoborus punctipennis		26		416	91	13		26	
Oecetis spp.						26	26		
Hexagenia spp.						39	26		39
Gomphus sp.					13				
Hydrachnellae				13					
Oligochaeta		91	208	13	13	858	949	845	117
Naididae			+						
Nais pseudobtusa		+							
Nais communis									
Stylaria lacustris		+	+			+		+	
Tubificidae		+				+	+	+	
Aulodrilus piqueti						+			
Aulodrilus limnobius								+	
Limnodrilus spp.						+			
Limnodrilus hoffmeisteri		+							
Limnodrilus udekemianus						+	+		
Bothrioneurum vejdovskyanus									
Nematoda			26	39	13		13		
Nemertina		+							
Prostoma spp.		39	13	13		39	91		
Pelecypoda		169	403			325			13
Corbicula spp.				39		65	221	39	13

Table 1.3.5-4 (Cont)

Taxa / Locations	604.0 F	604.0 M	604.0 A	604.0 N	606.0 F	606.0 M	606.0 A	606.0 N
Pectinatella magnifica	+		+	+				
Mean number organisms/m^2	819	962	598	260	2353	2093	1040	494
Wet weight (mg/m^2)	815	1953	349	2373	88,697	15,858	674	3096
Total Number of Taxa	18	13	9	10	21	18	13	11
Bottom Temperature (°C)	7	-	29	20	8	19.5	28.5	21
$\bar{H}$ = (Diversity)	1.04	0.73	0.54	0.85	0.87	0.80	0.39	0.84
R = (Redundancy)	0.11	0.43	0.70	0.52	0.34	0.42	0.87	0.37

(p) = pupae
\+ = Indicates presence in grab samples.

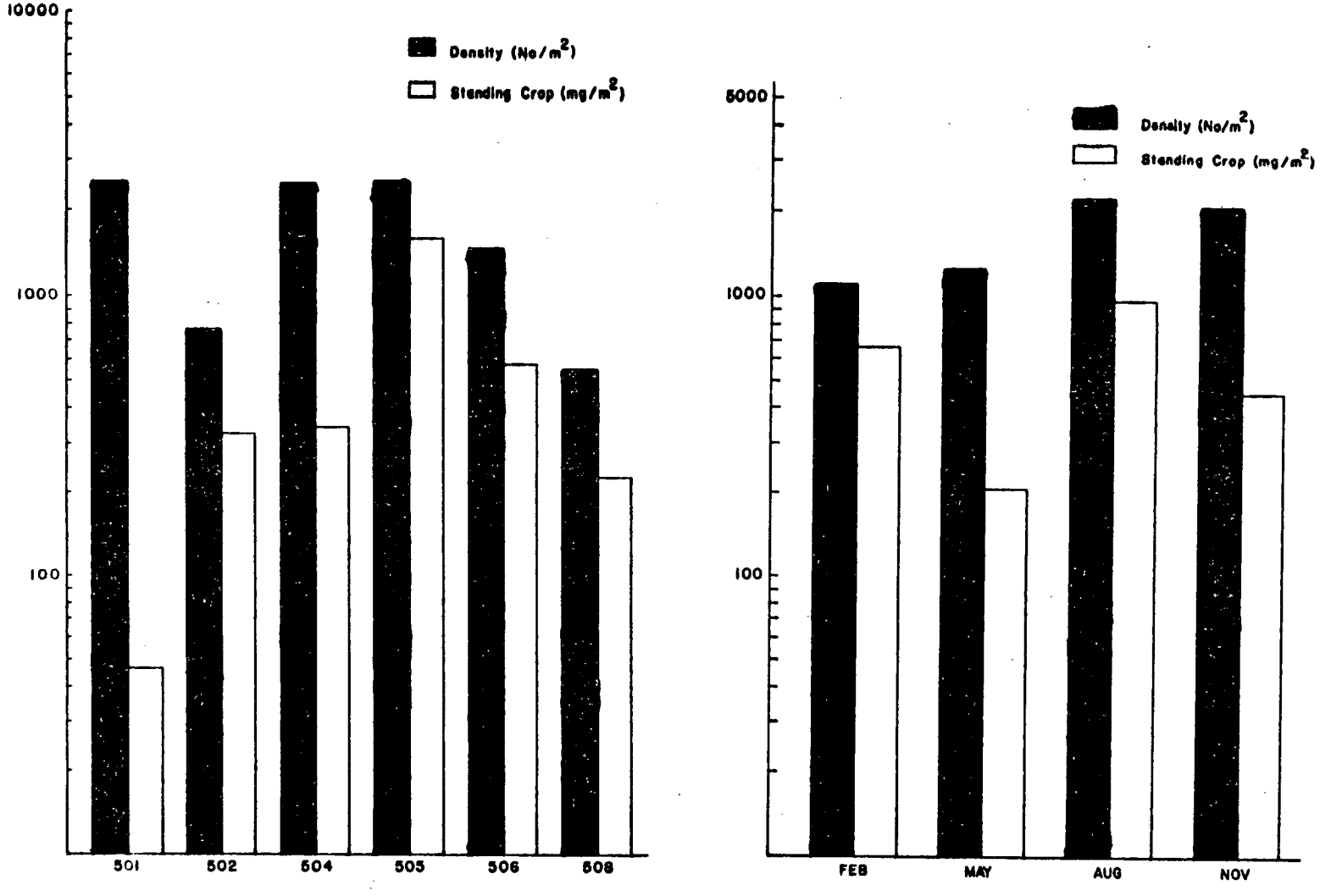


Figure 1.3.5-1. Mean density (no./m^2) and standing crop (mg/m^2) of benthic macroinvertebrates in Lake Keowee littoral zones in 1977, by location and sampling period.

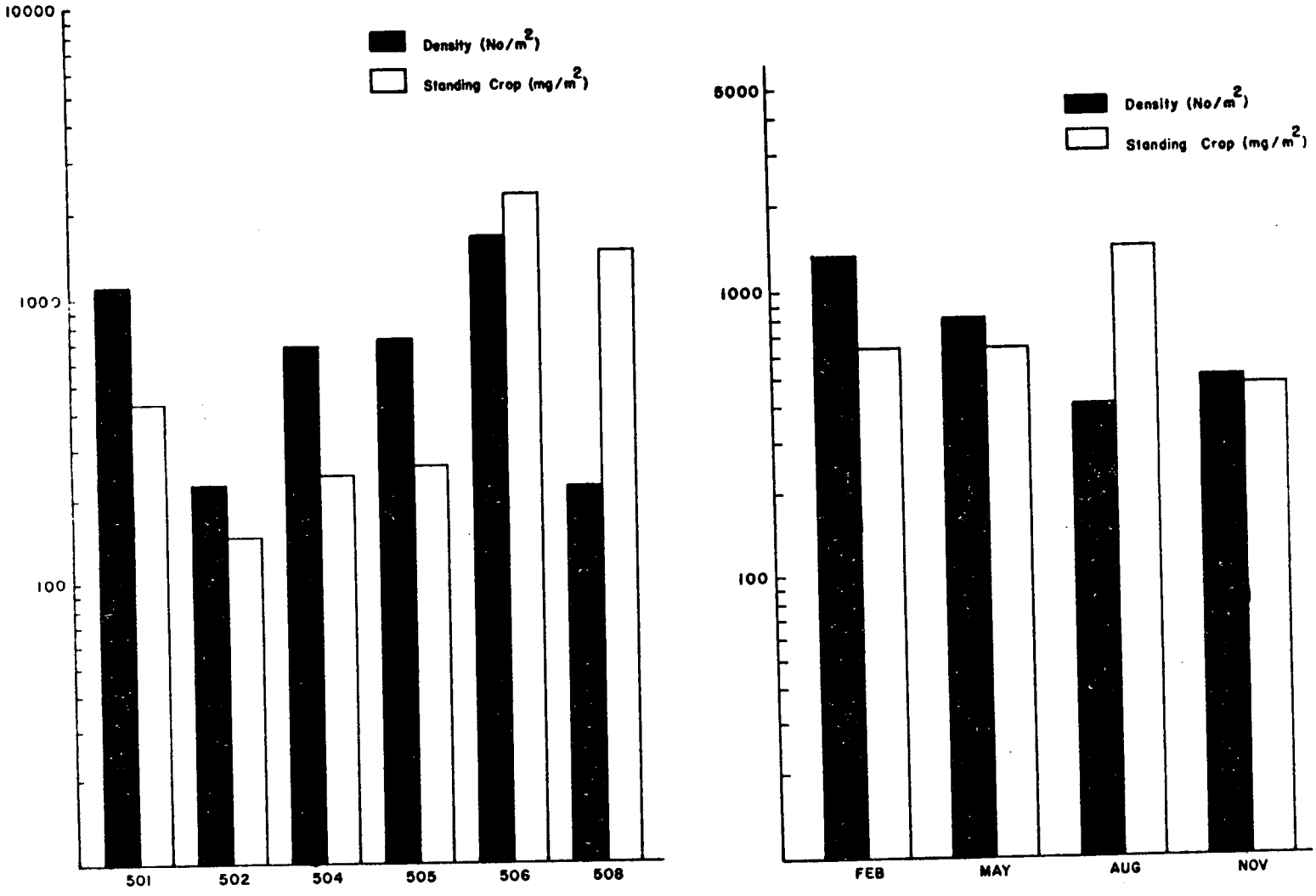


Figure 1.3.5-2. Mean density (no./m^2) and standing crop (mg/m^2) of benthic macroinvertebrates in Lake Keowee sublittoral and profundal zones in 1977, by location and sampling period.

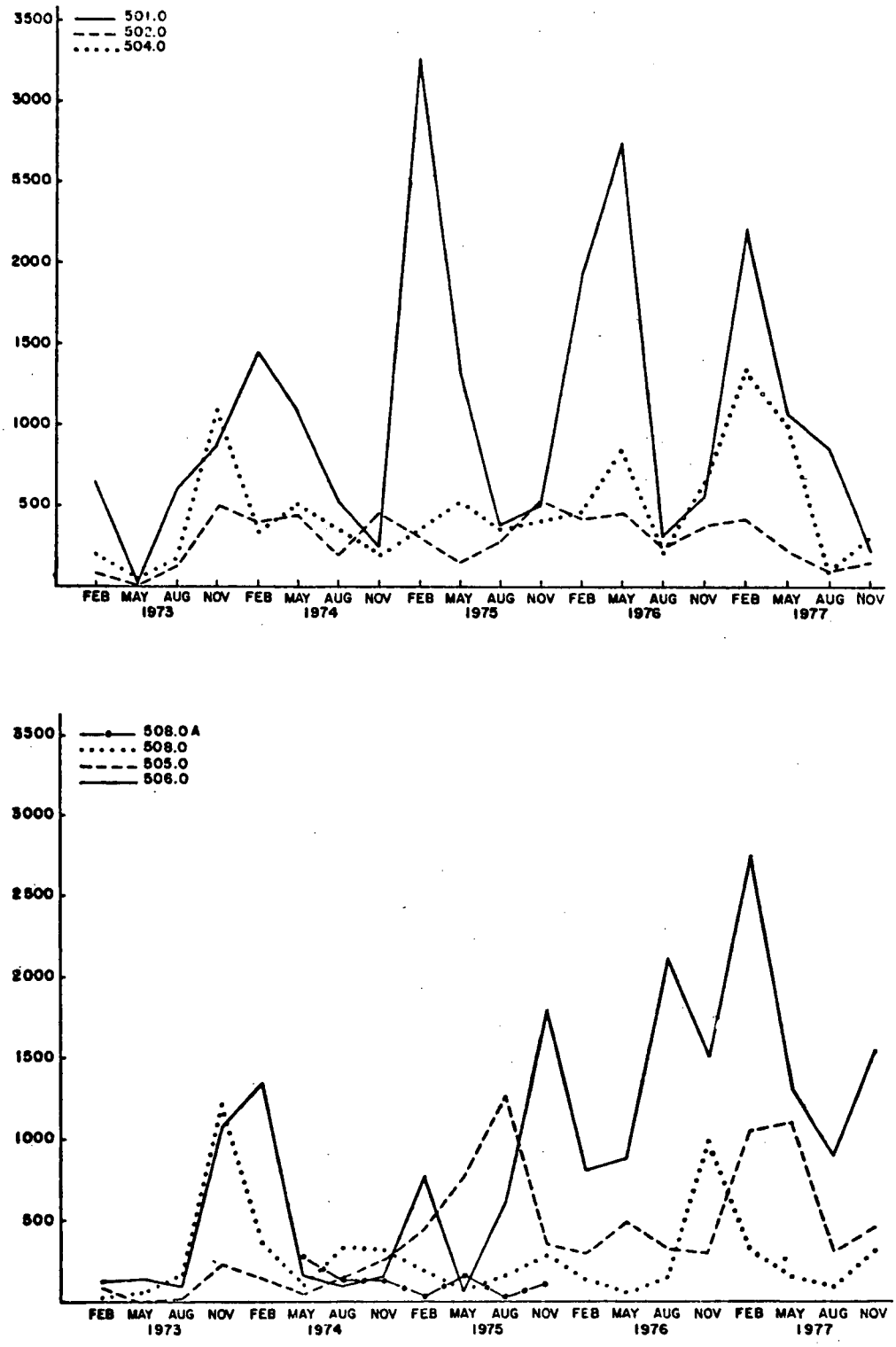


Figure 1.3.5-3. Density (mean no./m^2) of benthic macroinvertebrates collected in grab samples from Lake Keowee from February, 1973, to November, 1977.

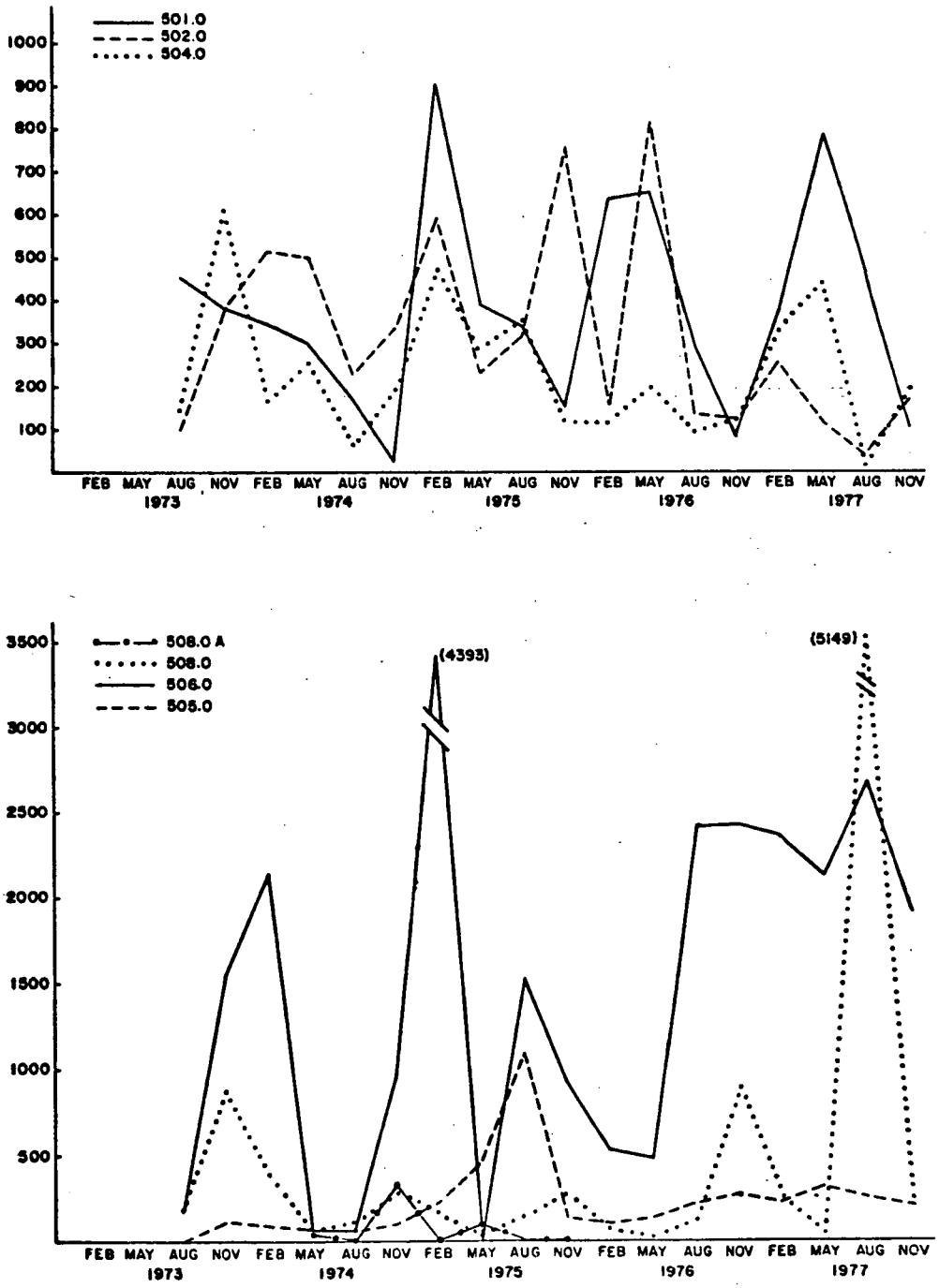


Figure 1.3.5-4. Standing crop density (mean mg./m^2) of benthic macroinvertebrates collected in grab samples from Lake Keowee from August, 1973, to November 1977.

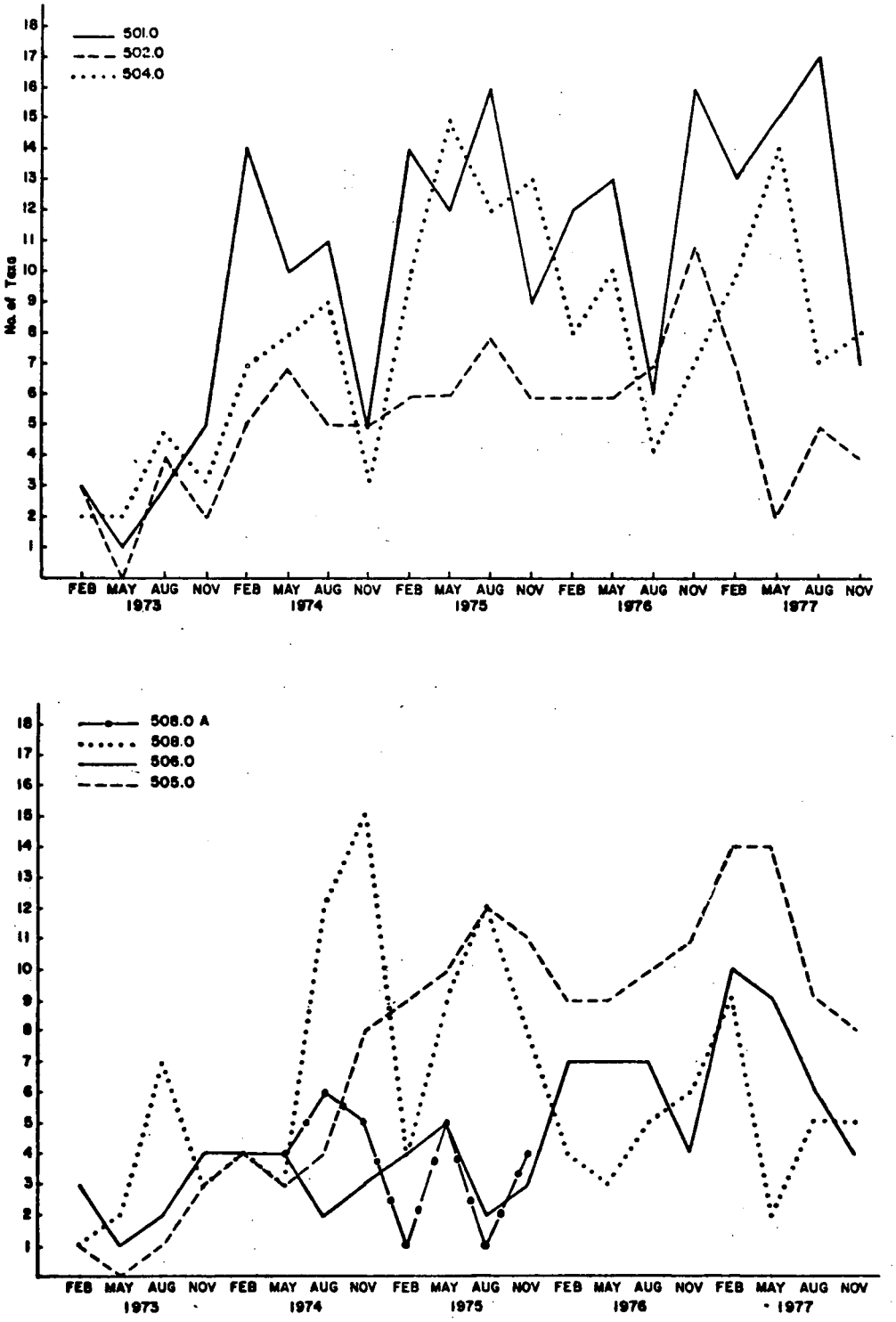


Figure 1.3.5-5. Relative diversity (number of taxa) of benthic macroinvertebrates collected in grab samples from Lake Keowee from February, 1973, to November, 1977.

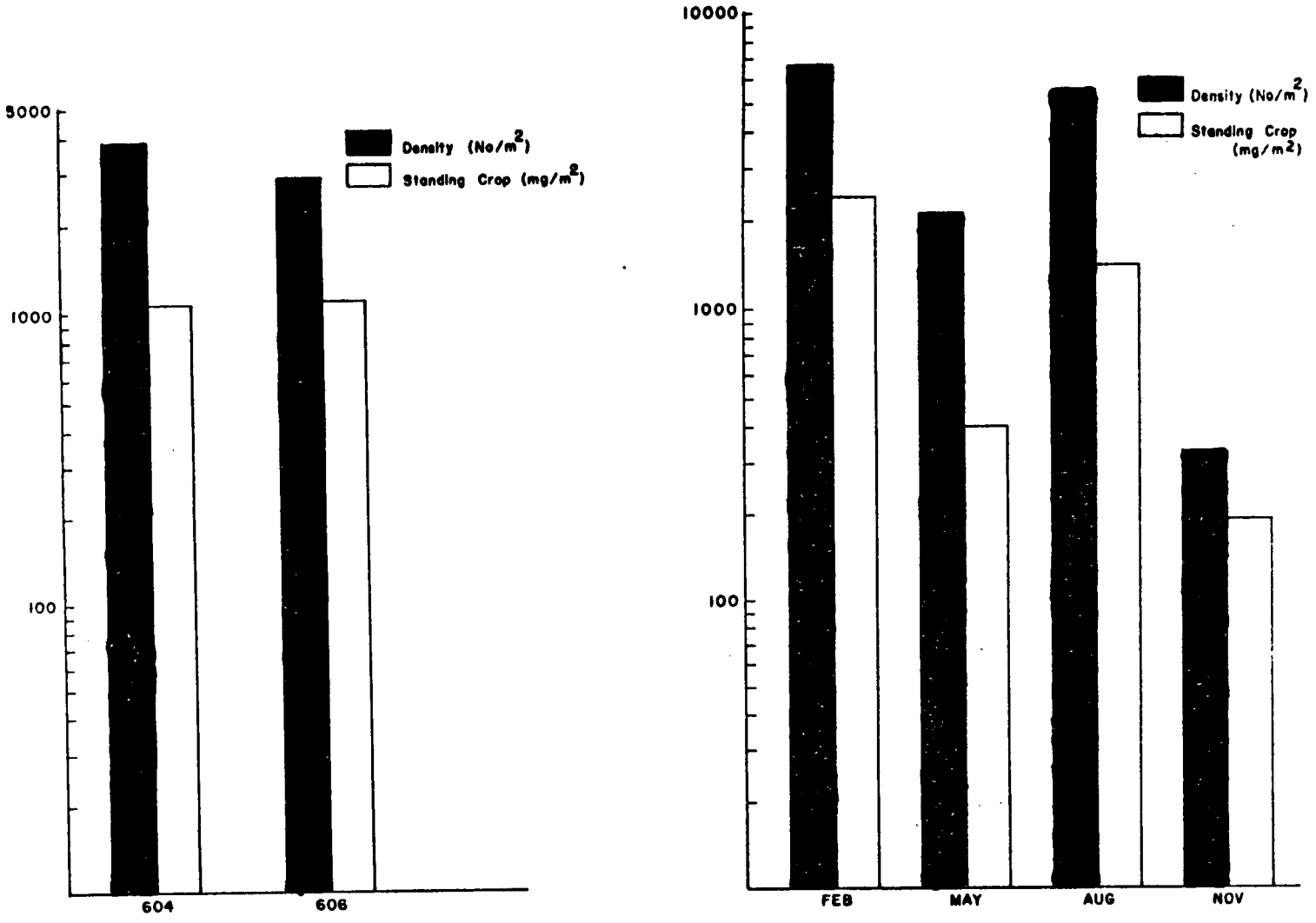


Figure 1.3.5-6. Mean density (no./m^2) and standing crop (mg/m^2) of benthic macroinvertebrates in Lake Hartwell littoral zones in 1977, by location and sampling period.

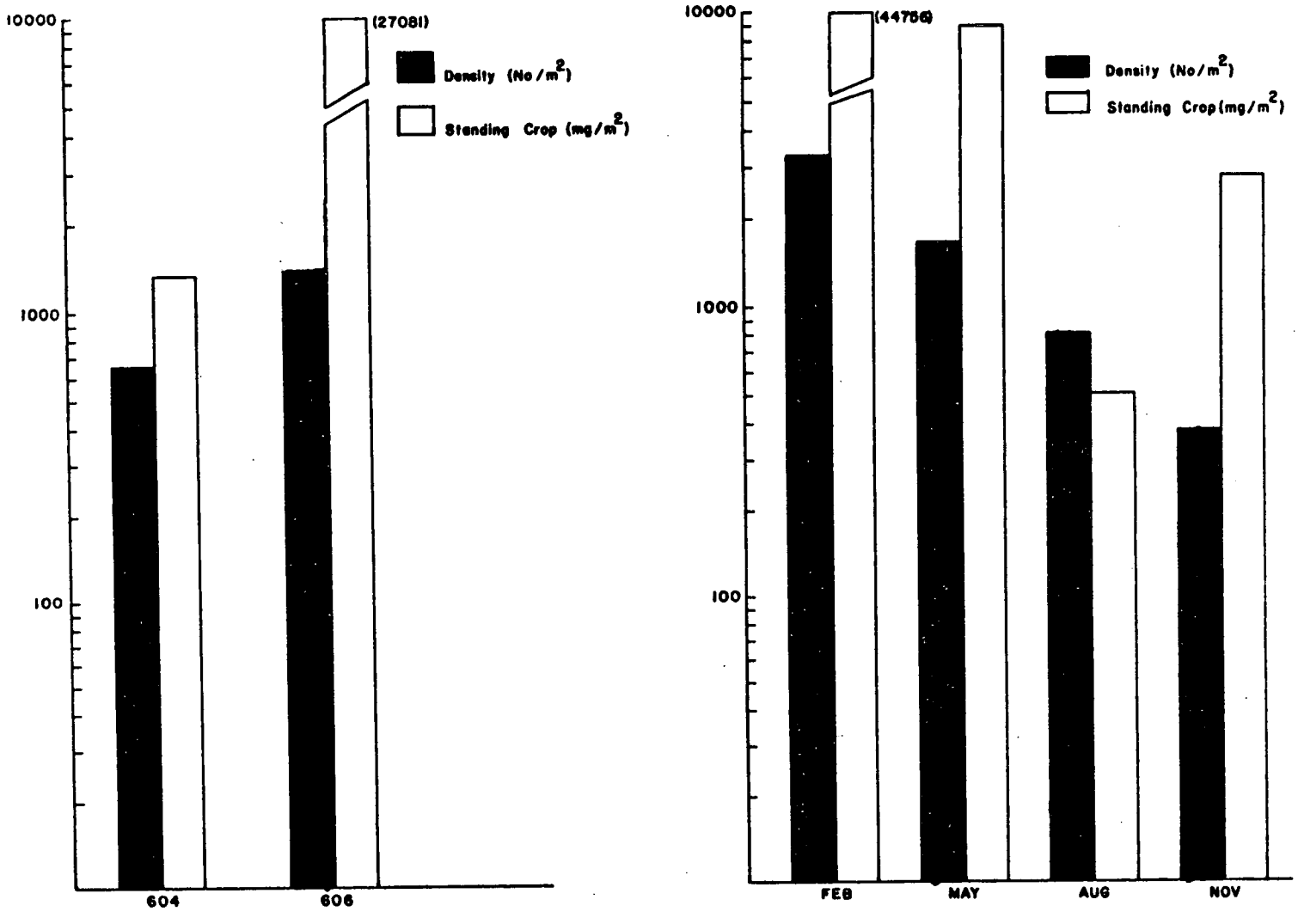


Figure 1.3.5-7. Mean density (no./m^2) and standing crop (mg/m^2) of benthic macroinvertebrates in Lake Hartwell sublittoral zones in 1977, by location and sampling period.

1.4 FISH IMPINGEMENT ON INTAKE SCREENS AND ENTRAINMENT OF FISH EGGS AND LARVAE

Specification: A. A detailed analysis of fish impinged upon the intake screens of the Oconee Nuclear Station shall be conducted by species, size and number and weight each time one or more intake screens are pulled due to reduced pumping efficiency of the associated condenser cooling water pumps. Quarterly, an inspection of six intake screens (two from each unit) will be performed. The screens to be inspected will be cleaned one week prior to inspection so that the rate of fish impingement during the week can be determined. A detailed analysis of the fish impinged shall be conducted by species, size and number and weight. The data collected from these inspections will be recorded in tabular form (Duke Power Company, 1973a).

I. INTRODUCTION

Fish impingement at Oconee Nuclear Station has been discussed previously in the Oconee Nuclear Station Reports (Duke Power Company, 1973b, 1977).

II. METHODS AND MATERIALS

Unscheduled Screen Inspections

Methods and materials for inspection of screens pulled because of reduced pumping efficiency due to build up of trash have been discussed previously (Duke Power Company, 1973b, 1974). Data collected included: species, numbers, estimated lengths, and weights.

Quarterly Screen Inspections

Methods and materials for quarterly screen inspections have been discussed previously (Duke Power Company, 1975a, 1976). Data collected included: species, numbers, estimated lengths, weights, water temperatures (surface and bottom), and dissolved oxygen concentrations at the intake structure.

III. RESULTS AND DISCUSSION

Unscheduled Screen Inspections

A total of fifty-three screens were pulled in 1977 due to a build up of trash on the screen surface. A total of 10,106 fish were impinged on these screens. Species, numbers and percent abundance of identifiable fish were: threadfin shad (Dorosoma petenense), 4920 (97.3%); yellow perch (Perca flavescens), 131 (2.6%); and bluegill (Lepomis macrochirus), 3 (0.1%), respectively. A total of 5052 fish were unidentifiable due to extreme decomposition. A summary of data for the above screen inspections is presented in Table 1.4-1.

Quarterly Screen Inspections

During the first quarterly screen inspection of 1977, conducted on February

18, a total of 7081 fish were impinged on the six screens inspected (Table 1.4-1). All but one, a black crappie (Pomoxis nigromaculatus), were threadfin shad. The impinged fish weighed 28.07 kg for an average of 4.0 g per fish. Size distribution of impinged fish were: 2-4 cm (57.2%); 4-6 cm (38.1%); 6-8 cm (4.7%); and $\geq$ 10 cm (< 0.1%).

On May 24, the second inspection, a total of 136 fish were impinged (Table 1.4-1). Species, numbers and percent abundance of identifiable impinged fish were: yellow perch, 68 (58.1%); bluegill, 48 (41.0%); and threadfin shad, 1 (0.9%), respectively. A total of 19 fish (14% of total fish impinged) were unidentifiable due to extreme decomposition. The impinged fish weighed 1.16 kg for an average of 8.5 g per fish. Size distribution of impinged fish were: 4-6 cm (30.9%); 6-8 cm (58.8%); 8-10 cm (8.8%); and $\geq$ 10 cm (1.5%).

On September 16, the third inspection, a total of 72 fish were impinged (Table 1.4-1). All fish observed impinged were unidentifiable due to extreme decomposition. The impinged fish weighed 0.29 kg for an average of 4.1 g per fish. The two size groups of impinged fish were 6-8 cm (98.6%) and $\geq$ 10 cm (1.4%).

On December 19, the fourth inspection, a total of 2549 fish were impinged (Table 1.4-1). Species, numbers, and percent abundance were: threadfin shad, 2537 (99.6%); and miscellaneous identifiable fish, 12 (0.4%), respectively. The impinged fish weighed 7.07 kg for an average of 2.8 g per fish. Size distribution of impinged fish were: 2-4 cm (21.2%); 4-6 cm (68.9%); 6-8 cm (8.0%); 8-10 cm (1.8%); and $\geq$ 10 cm (0.1%).

Figure 1.4-1 illustrates the average numbers of fish impinged per day projected for the station and the associated water temperatures in the intake canal. The numbers of fish impinged per day were determined by multiplying the totals for the six screens inspected by four to represent a station total and then dividing by seven, the number of days in the inspection period. The numbers of threadfin shad impinged were highest in February (4045 fish per day) when water temperatures were lowest while the numbers of threadfin shad impinged were lowest in September (0 fish per day) when water temperatures were highest. The susceptibility of threadfin shad to low water temperatures has been well documented (Parsons and Kimsey, 1954; Strawn, 1965). Other identifiable fish, primarily small numbers of yellow perch and bluegill, were most commonly impinged in the spring.

IV. SUMMARY AND CONCLUSIONS

The number of fish impinged in 1977 follow the seasonal trends exhibited in 1975 and 1976 (Duke Power Company, 1975a, 1975b, 1976). During the winter months, as intake water temperature decreases, the numbers of threadfin shad (2-6 cm in length) impinged on the intake screens increase. During the remainder of the year, when intake temperatures were warmer few threadfin shad were impinged, however, small numbers of yellow perch and bluegill (4-8 cm in length) were impinged.

The numbers, kinds, and sizes of fish impinged on the intake screens at Oconee Nuclear Station should not be detrimental to the fishery resource

of Lake Keowee.

REFERENCES

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company, U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised April 9, 1976, NRC), Washington, D. C.

Duke Power Company. 1973b. Oconee Nuclear Station. Semi-Annual Report. Period Ending June 30, 1973.

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Parsons, J. W. and J. B. Kimsey. 1954. A report on the Mississippi threadfin shad. Prog. Fish Culturist. 14 (4): 179-181.

Strawn, K. R. 1965. Resistance of threadfin shad to low temperatures. Proc. 19th Ann. Conf. S. E. Assoc. Game and Fish Comm. pp. 290-293.

1.4 FISH IMPINGEMENT ON INTAKE SCREENS AND ENTRAINMENT OF FISH EGGS AND LARVAE

Specification: B. The entrainment of fish eggs and larvae in the cooling water system shall be monitored biweekly (every other week) during the major spawning period of April through July and an estimate made of the total number of fish eggs and larvae entrained and their survival.

C. If the quantity or type of fish, or their eggs or larvae, is determined to be of significance or to have a significant detrimental impact on the propagation of fish of recreational importance, then plans for corrective action will be developed (Duke Power Company, 1973a).

I. INTRODUCTION

The effects of entrainment of fish eggs and larvae have been discussed previously (Duke Power Company, 1973b and 1977).

II. METHODS AND MATERIALS

The Condenser Cooling Water (CCW) system at ONS was sampled at least biweekly (once every two weeks) for entrainment of fish eggs and larvae during the months of April through July. The sample procedure remained the same as discussed previously (Duke Power Company, 1973b, 1975a, and 1977). Supplemental sampling was carried out in the ONS intake canal weekly during the same period. This sampling consisted of two samples, one collected from the surface and one collected at a depth of five (5) meters. A 500 micron nylon mesh net was towed behind the boat for two 15 minute periods at each depth. Simultaneously, a second net was suspended in the opening of the skimmer wall at a depth of 23 meters for a period of approximately one hour. A flow meter, attached to each net, was used to calculate volumes of water sampled. In addition, temperature and dissolved oxygen profiles were determined weekly at the skimmer wall.

III. RESULTS AND DISCUSSION

The results of the fish eggs and larvae entrainment sampling in the CCW system are summarized in Table 1.4-2. Samples ranging in volume from 6.82 m^3 to 216.58 m^3 were collected from the Unit 1 pre-condenser outlet. No fish eggs or larvae were collected during any of the thirteen sample periods.

Table 1.4-3 summarizes the supplemental sampling conducted in the ONS intake canal. A total of 50 larval tows were conducted with sample volumes ranging from 273.84 m^3 to 659.76 m^3. Sixteen (16) samples were collected from the opening in the skimmer wall with volumes of water sampled ranging from 79.84 m^3 to 219.10 m^3. No fish eggs or larvae were collected from the sampling in the intake canal.

IV. SUMMARY AND CONCLUSIONS

The collection of one fish larvae and no fish eggs in the CCW system from

1973 through 1976 and the absence of any fish eggs and larvae collected in 1977 clearly shows entrainment at ONS to be minimal. Based upon the supplemental sampling of water flowing into the intake canal, it is apparent that the skimmer wall acts as a barrier to entrainment of fish eggs and larvae and limits passage to those fish eggs and larvae found at the depth of the skimmer wall opening. It is also apparent that based on the low numbers of fish eggs and larvae collected, (two fish larvae in the past five years), in the intake canal that reproduction of fish inhabiting the intake canal is minimal. Therefore, the entrainment of fish eggs and larvae caused by the operation of ONS has not had a measurable impact upon the fishery resource of Lake Keowee.

REFERENCES

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company. U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised April 9, 1976, NRC), Washington, D. C.

Duke Power Company. 1973b. Oconee Nuclear Station. Semi-Annual Report, Period Ending June 30, 1973.

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Table 1.4-1. Summary of fish impingement data by screen inspection date, 1977.

DATE	SCREEN	WFI	NFI	SPECIES COMPOSITION					SIZE GROUPS (cm)					DO	TEMP
	#	(kg)	#	BG	YP	TS	U	M	2-4	4-6	6-8	8-10	10+	mg/l	(°C)
01/31/77	2A1	6.40	1610	0	0	1610	0	0	0	910	700	0	0		
	2A2	3.90	950	0	0	950	0	0	0	375	500	75	0		
	TOTAL	10.30	2560	0	0	2560	0	0	0	1285	1200	75	0		
02/11/77	1A1	16.00	4100	0	0	1000	3100	0	1000	3100	0	0	0		s-6.5
	1A2	16.50	4225	0	5	1420	2800	0	1300	2800	5	120	0	11.2	b-6.4
	2A1	4.25	1080	0	0	1080	0	0	525	360	195	0	0		
	2A2	5.15	1262	0	2	1260	0	0	625	550	87	0	0		
	3A1	0.51	102	0	3	99	0	0	0	99	3	0	0		
	3A2	0.50	104	0	0	101	3	0	20	84	0	0	0		
	TOTAL	42.91	10873	0	10	4960	5903	0	3470	6993	290	120	0		
* 02/18/77	1A1	3.90	980	0	0	980	0	0	425	400	155	0	0		
	1A2	5.50	1375	0	0	1375	0	0	900	475	0	0	0	11.5	s-6.8 b-6.6
	2A1	5.75	1475	0	0	1475	0	0	875	550	50	0	0		
	2A2	4.00	1000	0	0	1000	0	0	450	450	100	0	0		
	3A1	4.72	1151	0	0	1150	0	1	825	325	0	1	0		
	3A2	4.20	1100	0	0	1100	0	0	575	500	25	0	0		
	TOTAL	28.07	7081	0	0	7080	0	1	4050	2700	330	1	0		

* Quarterly Inspection - Screens pulled 7 days prior, cleaned, returned and fish and debris allowed to accumulate for a seven-day period.

Screen # - Represents Condenser Cooling Water (CCW) intake screen; two sets of screens for each CCW pump.

WFI - Represents the weight of fish impinged (kgs).

NFI - Represents the number of fish impinged.

Species Composition - BG = Bluegill; YP = Yellow perch; TS = Threadfin shad; U = Unidentifiable; M = Miscellaneous.

Temp. - Represents the lake temperature in the intake canal: s = surface, b = bottom.

Table 1.4-1 (Cont.). Summary of fish impingement data by screen inspection date, 1977.

DATE	SCREEN	WFI	NFI	SPECIES COMPOSITION					SIZE GROUPS (cm)					DO	TEMP
	#	(kgs)	#	BG	YP	TS	U	M	2-4	4-6	6-8	8-10	10+	(mg/1)	(°C)
03/03/77	2C1	1.12	490	0	10	5	475	0	0	455	35	0	0		
	2C2	4.80	850	0	0	0	850	0	0	275	375	200	0		
	TOTAL	5.92	1340	0	10	5	1325	0	0	730	410	200	0		
03/16/77	3B1	3.80	1075	0	25	0	1050	0	0	1050	25	0	0		
	3B2	4.70	1133	0	0	0	1133	0	0	1125	0	0	8		
	TOTAL	8.50	2208	0	25	0	2183	0	0	2175	25	0	8		
04/04/77	3B1	0.02	6	0	0	0	6	0	0	6	0	0	0		
05/03/77	1D1	1.50	375	0	0	0	375	0	0	375	0	0	0		
	1D2	0.41	100	0	0	0	100	0	0	100	0	0	0		
	TOTAL	1.91	475	0	0	0	475	0	0	475	0	0	0		
05/06/77	1A1	2.20	205	0	75	0	130	0	0	125	75	0	5		
	1A2	4.20	781	0	0	0	781	0	0	550	225	0	6		
	TOTAL	6.40	986	0	75	0	911	0	0	675	300	0	11		
05/17/77	1A1	0.20	21	0	0	0	21	0	0	5	15	0	1		
	1A2	0.29	45	45	0	0	0	0	0	8	33	4	0	8.6	s-14.0
	2A1	2.50	490	0	0	0	490	0	0	50	400	0	40		b-13.6
	2A2	2.80	420	0	0	0	420	0	0	75	325	0	20		
	3A1	2.10	465	0	0	0	465	0	0	380	85	0	0		
	3A2	0.63	210	0	0	0	210	0	0	210	0	0	0		
	TOTAL	8.52	1651	45	0	0	1606	0	0	728	858	4	61		

Table 1.4-1 (Cont.). Summary of fish impingement data by screen inspection date, 1977.

DATE	SCREEN	WFI	NFI	SPECIES COMPOSITION					SIZE GROUPS (cm)					DO	TEMP
	#	(kgs)	#	EG	YP	TS	U	M	2-4	4-6	6-8	8-10	10+	(mg/1)	(°C)
*05/24/77	1A1	0.19	33	5	27	1	0	0	0	5	16	12	0		
	1A2	0.52	44	2	41	0	1	0	0	2	41	0	1	8.0	s-15.0
	2A1	0.30	27	27	0	0	0	0	0	11	15	0	1		b-14.0
	2A2	0.08	14	14	0	0	0	0	0	6	8	0	0		
	3A1	0.07	18	0	0	0	18	0	0	18	0	0	0		
	3A2	0	0	0	0	0	0	0	0	0	0	0	0		
	TOTAL	1.16	136	48	68	1	19	0	0	42	80	12	2		
06/06/77	2B1	0.22	45	0	0	0	45	0	0	0	40	0	5		
07/06/77	2A2	0.10	1	0	0	0	1	0	0	0	0	0	1		
07/13/77	3A1	0	0	0	0	0	0	0	0	0	0	0	0		
	3A2	0	0	0	0	0	0	0	0	0	0	0	0		
	3C1	0.02	1	0	0	0	1	0	0	0	0	1	0		
	3C2	0	0	0	0	0	0	0	0	0	0	0	0		
	3D1	0.06	25	0	7	13	5	0	25	0	0	0	0		
	3D2	0.10	33	1	0	18	14	0	32	1	0	0	0		
	TOTAL	0.18	59	1	7	31	20	0	57	1	0	1	0		
07/29/77	3A1	0.14	11	0	0	0	11	0	0	10	0	0	1		
	3A2	0.06	12	0	0	0	12	0	0	12	0	0	0		
	TOTAL	0.20	23	0	0	0	23	0	0	22	0	0	1		
08/15/77	2A1	0.05	19	0	0	0	19	0	0	19	0	0	0		
08/30/77	2B2	0.09	27	0	0	26	1	0	26	0	0	0	1		

Table 1.4-1 (Cont.). Summary of fish impingement data by screen inspection date, 1977.

DATE	SCREEN	WFI	NFI	SPECIES COMPOSITION					SIZE GROUPS (cm)					DO	TEMP
	#	(kgs)	#	BG	YP	TS	U	M	2-4	4-6	6-8	8-10	10+	(mg/1)	(°C)
09/09/77	1C1	0	0	0	0	0	0	0	0	0	0	0	0	4.4	s-23.2 b-23.1
	1C2	0	0	0	0	0	0	0	0	0	0	0	0		
	2A1	0	0	0	0	0	0	0	0	0	0	0	0		
	2A2	0.01	1	0	0	0	1	0	0	0	1	0	0		
	3A1	0.05	17	0	0	0	17	0	0	12	5	0	0		
	3A2	0.02	7	0	0	0	7	0	0	6	1	0	0		
	TOTAL	0.08	25	0	0	0	25	0	0	18	7	0	0		
* 09/16/77	1C1	0.02	2	0	0	0	2	0	0	0	2	0	0	4.9	s-23.6 b-23.3
	1C2	0.03	4	0	0	0	4	0	0	0	4	0	0		
	2A1	0.08	26	0	0	0	26	0	0	0	26	0	0		
	2A2	0.06	10	0	0	0	10	0	0	0	9	0	1		
	3A1	0	0	0	0	0	0	0	0	0	0	0	0		
	3A2	0.10	30	0	0	0	30	0	0	0	30	0	0		
	TOTAL	0.29	72	0	0	0	72	0	0	0	71	0	1		
09/26/77	3A1	0.11	33	0	0	0	33	0	0	0	33	0	0		
	3A2	0	0	0	0	0	0	0	0	0	0	0	0		
	3C1	0.02	5	0	0	0	5	0	0	5	0	0	0		
	3C2	0.02	5	0	0	0	5	0	0	5	0	0	0		
	3D1	0	0	0	0	0	0	0	0	0	0	0	0		
	3D2	0	0	0	0	0	0	0	0	0	0	0	0		
	TOTAL	0.15	43	0	0	0	43	0	0	10	33	0	0		
10/11/77	1D1	0	0	0	0	0	0	0	0	0	0	0	0		
	1D2	0	0	0	0	0	0	0	0	0	0	0	0		

Table 1.4-1 (Cont.). Summary of fish impingement data by screen inspection date, 1977.

DATE	SCREEN	WFI	NFI	SPECIES COMPOSITION					SIZE GROUPS (cm)					DO	TEMP
	#	(kgs)	#	BG	YP	TS	U	M	2-4	4-6	6-8	8-10	10+	(mg/1)	(°C)
10/28/77	1A1	0.10	20	0	5	15	0	0	15	0	2	3	0		
	1A2	0.28	67	0	5	62	0	0	62	0	5	0	0		
	1D1	0	0	0	0	0	0	0	0	0	0	0	0		
	1D2	0	0	0	0	0	0	0	0	0	0	0	0		
	TOTAL	0.38	87	0	10	77	0	0	77	0	7	3	0		
11/01/77	1A1	0	0	0	0	0	0	0	0	0	0	0	0		
	1A2	0	0	0	0	0	0	0	0	0	0	0	0		
	1B1	0	0	0	0	0	0	0	0	0	0	0	0		
	1B2	0	0	0	0	0	0	0	0	0	0	0	0		
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0		
11/11/77	2C1	0	0	0	0	0	0	0	0	0	0	0	0		
	2C2	0	0	0	0	0	0	0	0	0	0	0	0		
	2D1	0	0	0	0	0	0	0	0	0	0	0	0		
	2D2	0	0	0	0	0	0	0	0	0	0	0	0		
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0		
11/14/77	2C1	0	0	0	0	0	0	0	0	0	0	0	0		
12/02/77	1A1	0.28	81	0	0	81	0	0	0	81	0	0	0		
	1A2	0.98	246	1	0	245	0	0	0	245	1	0	0		
	1B1	0.28	65	0	0	65	0	0	0	65	0	0	0		
	1B2	0.04	14	1	0	13	0	0	0	14	0	0	0		
	1C1	0	0	0	0	0	0	0	0	0	0	0	0		
	1C2	0	0	0	0	0	0	0	0	0	0	0	0		
	1D1	2.14	611	0	4	607	0	0	0	607	4	0	0		
	1D2	3.87	1210	0	0	1210	0	0	0	1210	0	0	0		
	TOTAL	7.59	2227	2	4	2221	0	0	0	2222	5	0	0		

Table 1.4-1 (Cont.). Summary of fish impingement data by screen inspection date, 1977.

DATE	SCREEN	WFI	NFI	SPECIES COMPOSITION					SIZE GROUPS (cm)					DO	TEMP
	#	(kgs)	#	BG	YP	TS	U	M	2-4	4-6	6-8	8-10	10+	(mg/1)	(°C)
12/06/77	2C2	0	0	0	0	0	0	0	0	0	0	0	0		
12/12/77	1A1	0	0	0	0	0	0	0	0	0	0	0	0		
	1A2	0	0	0	0	0	0	0	0	0	0	0	0	9.4	s - 13.5
	2A1	2.60	1051	0	0	0	1051	0	800	200	50	0	1		b - 13.5
	2A2	1.50	760	0	0	0	760	0	600	150	10	0	0		
	3A1	1.50	770	0	0	70	700	0	420	350	0	0	0		
	3A2	1.10	551	1	0	0	550	0	350	200	1	0	0		
	TOTAL	6.70	3132	1	0	70	3061	0	2170	900	61	0	1		
* 12/19/77	1A1	0.15	108	1	0	105	0	2	12	86	10	0	0		
	1A2	0.07	47	0	1	45	0	1	10	36	1	0	0	9.4	s - 12.7
	2A1	3.30	815	0	0	815	0	0	200	500	100	15	0		b - 12.8
	2A2	1.14	517	0	0	517	0	0	50	430	27	10	0		
	3A1	1.20	531	0	1	530	0	0	120	350	50	10	1		
	3A2	1.21	531	0	6	525	0	0	150	355	16	10	0		
	TOTAL	7.07	2549	1	8	2537	0	3	542	1757	204	45	1		

Table 1.4-2. Summary of entrainment of fish eggs and larvae within the ONS Condenser Cooling Water System for April through July, 1977.

DATE	TIME	DURATION	INTAKE	DISCHARGE	CCW PUMPS	SAMPLE	SAMPLE	# FISH ENTRAINED	
		HOURS	TEMP (°C)	TEMP (°C)	OPERATING (#)	VOLUME (m^3)	FLOW (m^3/min)	EGGS	LARVAE
4/06/77	0905	24.0	10.5	21.4	2	190.05	0.08	0	0
4/13/77	0900	24.0	10.6	21.8	3	179.93	0.12	0	0
4/20/77	0900	24.5	11.4	22.4	3	194.81	0.13	0	0
4/27/77	0845	24.5	11.8	21.4	3	194.80	0.13	0	0
5/04/77	0845	24.5	12.5	24.1	3	183.68	0.12	0	0
5/11/77	0830	24.0	12.6	12.8	1	174.50	0.12	0	0
5/17/77	0930	1.0	13.0	13.0	1	6.82	0.11	0	0
6/01/77	0920	1.0	14.4	24.4	3	8.50	0.14	0	0
6/15/77	0945	1.0	15.3	26.3	3	9.09	0.15	0	0
6/29/77	0830	22.5	16.6	27.5	3	168.68	0.13	0	0
7/07/77	0845	24.5	17.4	24.0	3	185.35	0.13	0	0
7/20/77	0845	23.8	18.9	28.8	3	216.58	0.15	0	0
7/28/77	0840	24.0	19.2	29.6	3	204.46	0.14	0	0

Table 1.4-3. Summary of sampling for fish eggs and larvae in the ONS intake canal from April through July, 1977.

DATE	SURFACE TOWS			5 METER TOWS			SKIMMER WALL		
	AVG. VOL.	# FISH		AVG. VOL.	# FISH		* VOL.	# FISH	
	(m^3)	EGGS	LARVAE	(m^3)	EGGS	LARVAE	(m^3)	EGGS	LARVAE
4/06/77	546.24	0	0	563.93	0	0	192.63	0	0
4/12/77	531.77	0	0	545.49	0	0	140.37	0	0
4/19/77	567.07	0	0	502.78	0	0	139.62	0	0
4/26/77	567.64	0	0	395.23	0	0	138.81	0	0
5/05/77	519.74	0	0	588.54	0	0	219.10	0	0
5/12/77	529.56	0	0	502.02	0	0	131.41	0	0
5/18/77	480.11	0	0	487.02	0	0	132.47	0	0
5/24/77	545.89	0	0	534.06	0	0	203.54	0	0
6/01/77	563.66	0	0	423.68	0	0	145.85	0	0
6/07/77	536.07	0	0	* -	-	-	94.25	0	0
6/16/77	611.10	0	0	-	-	-	86.09	0	0
6/21/77	563.76	0	0	-	-	-	85.02	0	0
6/28/77	538.82	0	0	-	-	-	83.07	0	0
7/05/77	567.04	0	0	-	-	-	84.17	0	0
7/19/77	562.32	0	0	-	-	-	84.25	0	0
7/26/77	557.90	0	0	-	-	-	79.94	0	0

* Volumes measured for the skimmer wall are approximations--flow meter inaccurate at low velocities.

* Sampling deleted.

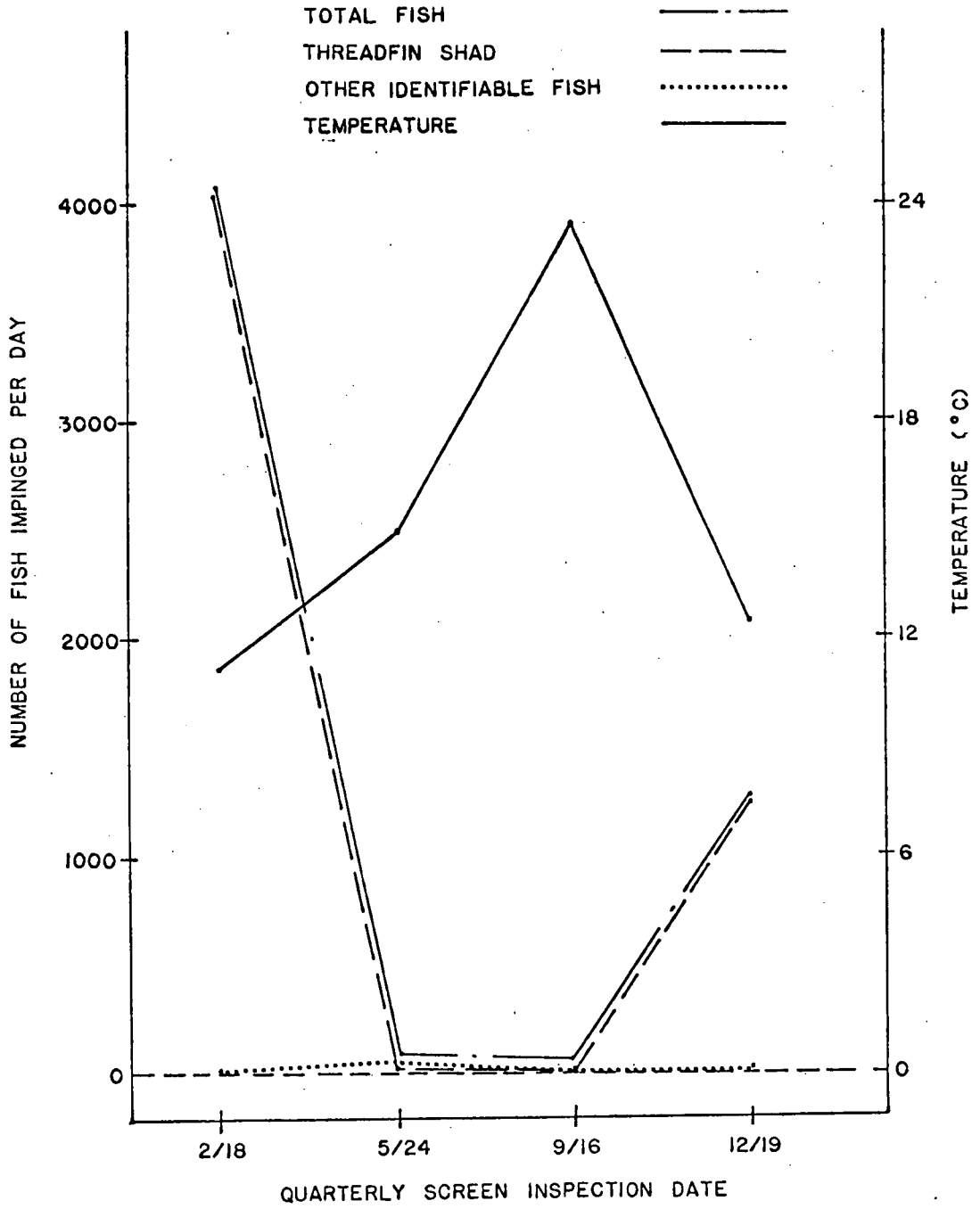

Figure 1.4-1. Seasonal fish impingement rates as determined by the quarterly screen inspections. Values were computed by multiplying the totals of the screen inspections by four for a station total and then dividing by seven, the number of days in the inspection period of 1977.

1.5 PHYTOPLANKTON-ZOOPLANKTON ENTRAINMENT MORTALITY STUDY

Specification: At least 6 times per year water samples will be collected by either plankton nets or pumps at the condenser cooling water systems intake and at the heated water discharge before it enters the receiving water. Samples will be analyzed for types, quantities and survival of the various planktonic groups. Sampling will be such to encompass the range of temperature rises across the condenser (e.g., 16°-28°F) (Duke Power Company 1973a).

I. INTRODUCTION

The effects of entrainment in condenser cooling water on planktonic organisms have been discussed previously (Duke Power Company 1973b, 1977).

II. METHODS AND MATERIALS

Previously described methods and materials were used in 1977 (Duke Power Company 1977) except for the following amendments:

Phytoplankton Entrainment

Phytoplankton samples were collected on six occasions during 1977 from two locations at ONS, the intake (530.0) and the postcondenser (530.6). In this report, as in the ONS Environmental Summary Report (Duke Power Company 1977), assimilation ratios (the rate of production per unit of chlorophyll) were used to estimate algal metabolism. Thermal effects were tested by comparing the heated intake ratios to the ambient intake ratios. Mechanical effects were tested by comparing the heated post-condenser ratios to the heated intake ratios. Total plant effects were analyzed by a comparison of the heated postcondenser metabolism to the ambient intake ratios.

Phytoplankton density, biovolume, chlorophyll concentrations, and assimilation ratios were all analyzed by a two-factor analysis of variance (ANOVA) to determine significant differences ($p \leq 0.05$) between locations and dates (Keppel 1973). When interactions occurred in an ANOVA, a simple main effects test was applied to separate differences between samples (Keppel 1973). All statistical testing was performed by means of the Statistical Analysis System computer programs of Barr et al. (1976).

Zooplankton Entrainment

Regular entrainment studies were conducted in January, March, May, July, October, and November of 1977. In conjunction with the March 16, 1977 regular entrainment study, zooplankton immotility and damage were assessed at an open lake location (502.0). Duplicate samples were collected with a 0.5 m net towed from ten meters to surface (10-s) and bottom to surface (b-s). Immotility and damage analyses were performed

utilizing the same methods as for the intake (509.5) collections. The purpose of this study was to compare immotility and damage in the lake with those values found in the intake canal.

Data Analyses

Spearman's rank correlation coefficient, a non-parametric measure of association, was calculated to determine which variables could be possible effectors of zooplankton immotility and damage. Friedman's test, a non-parametric analysis of variance, was used to test percent immotility and damage data for differences among sample periods and between locations ($p \leq 0.05$). Friedman's test and Spearman's coefficient were calculated using procedures in SAS 76 (Barr et al. 1976).

III. RESULTS AND DISCUSSION

Phytoplankton Standing Crops

Mean density estimates were the highest in July (438 X 10^6 units/m^3) with similar values during March and November (Table 1.5-1). The lowest mean density occurred in May (141 X 10^6 units/m^3). Bacillariophyceae was the dominant class in 67% of the samples, Chlorophyceae in 17%, and an unidentified taxon in 17% (Figures 1.5-1 and 1.5-2). Typical dominant green algae were Monoraphidium setiforme and coccoid greens. Dominant diatoms were Melosira distans var. A, Synedra sp. A, and Melosira italica var. tenuissima (Appendix B, Section 4).

The highest mean biovolumes were found in November (430 mm^3/m^3), although, like the densities, relatively high biovolumes were also observed during March and July (Table 1.5-1). The lowest mean biovolume was in January (110 mm^3/m^3). Algal biovolumes were dominated by Bacillariophyceae (primarily Rhizosolenia eriensis, Synedra sp. A, Melosira italica var. tenuissima, and Tabellaria fenestrata) in 58% of the samples and by Dinophyceae (primarily Peridinium deflandrei, P. wisconsinense, and P. inconspicuum) in the remaining 42% (Figures 1.5-1 and 1.5-2; Appendix B, Section 4).

The dominant classes were the same as was reported in the ONS Environmental Summary Report (Duke Power Company 1977). The presence of Myxophyceae continued to be of minor importance since blue-greens were never observed to comprise over 4% of the density or 1% of the biovolume.

The results of the two-factor ANOVA's on density and biovolume (Table 1.5-2) showed no significant differences between the intake and the postcondenser locations. This indicated that ONS operation had no effect on phytoplankton densities and biovolumes as was previously reported in the ONS Environmental Summary Report (Duke Power Company 1977). There were significant differences between sampling dates due to seasonal periodicity of the phytoplankton. This was also consistent with the trend observed in the ONS Environmental Summary Report (Duke Power Company 1977).

The mean chlorophyll concentrations ranged from a high of 1.36 mg/m^3 in January to a low of 0.7 mg/m^3 in July (Table 1.5-1). Trends in chlorophyll concentrations appeared to differ from those of biovolume and density; however, the magnitude of the differences in chlorophyll concentration was so small that it was difficult to recognize a definite seasonal trend in the data.

An ANOVA of the chlorophyll data showed significant differences between the intake and the postcondenser on all of the dates sampled (Table 1.5-2). The postcondenser had higher chlorophyll concentrations on five of the dates and lower concentrations in January (Table 1.5-1). Chlorophyll data showed no consistent pattern with respect to temperature increases in the Condenser Cooling Water (CCW) System, nor with the ambient intake temperature. Since biovolume and density did not show similar trends, the chlorophyll concentration differences were probably due to natural variation (patchiness) in the intake water. Also, the low chlorophyll concentrations were subject to higher analytical error.

Phytoplankton Metabolism

Mean assimilation ratios of the two locations were highest in November (0.65 mgC/mg chlorophyll/hr) and lowest in July (0.17 mgC/mg chlorophyll/hr) (Table 1.5-3). The variability was due to seasonal periodicity of the phytoplankton. The same seasonal pattern occurred in 1976 (Duke Power Company 1976).

Thermal, mechanical and total plant effects were analyzed by a two-factor ANOVA (Table 1.5-4). Results indicated there were no significant mechanical effects evident in 1977. Location-date interactions occurred in the thermal and total effect analyses. A simple main effects test isolated the dates on which there were significant thermal and total effects. In January, the thermal elevation caused a 470% stimulatory effect and a total stimulatory effect of 760%. These effects appeared to be large because the control intake assimilation ratio was relatively low (0.10 mgC/mg chlorophyll/hr) as compared to previous years (Figure 1.5-3), and even a small metabolic increase in the heated intake or heated postcondenser sample would result in a large percentage increase. The intake temperatures, ΔT's, and flow rates at ONS were very similar during January and March 1977 (Figure 1.5-4); however, phytoplankton metabolism was significantly stimulated during January but not during March. The phytoplankton entering the CCW System in January might have been in better physiological condition than in March, which would result in a greater response to thermal elevations. In November, although there were no significant thermal or mechanical effects, the total passage effect caused a 45% inhibition of phytoplankton metabolism. Again, due to lake mixing, the physiological state of the algae drawn into the intake from bottom waters was probably better than during months of stratification, so the phytoplankton responded to CCW System passage. During thermally stratified periods of the year, the phytoplankton were in the aphotic zone of Lake Keowee for a longer period of time and were probably in very poor condition, as indicated by lower photosynthetic efficiencies.

The previous three years showed no significant thermal, mechanical, or total station effects on entrained phytoplankton when all the data were analyzed together (Duke Power Company 1977). In 1977, total station effects caused an increase in assimilation ratios (from 0.10 mgC/mg chlorophyll/hr to 0.86 mgC/mg chlorophyll/hr) and a decrease in November (from 0.87 mgC/mg chlorophyll/hr to 0.48 mgC/mg chlorophyll/hr) (Table 1.5-3).

Zooplankton Entrainment: Assessment of Immotility

Data for each study date including taxa observed, time of sampling, number of organisms observed, volume filtered, percent immotile, and corrected percent immotile (CPI) are presented in Appendix B, Section 5, pp. 173-201. Negative CPI values resulted when the percent of immotile organisms at the postcondenser or discharge was lower than the percent of immotile organisms at the precondenser or intake, respectively. Immotility should not decrease as a result of passage of organisms through the condenser system. Negative CPI's were, therefore, probably a result of sampling error and/or variations in subsampling and were assumed to be zero.

Eight major taxa or life stages comprised 95% to 99% of the total Crustacea entrained on all sample dates (based on standing crop values at Location 509.5 taken one day prior to or one day after entrainment sampling, Appendix B, Section 3, pp. 37-61). Three of the taxa were Cladocera and five were Copepoda.

The three major Cladocera taxa (Bosmina coregoni, Diaphanosoma leuchtenbergianum, and Daphnia ambigua) comprised the majority of total Crustacea entrained during January, March, and May sample dates, representing 63.7%, 52.5%, and 62.4%, respectively, of the total Crustacea. Bosmina coregoni was the dominant cladoceran on all sample dates with Diaphanosoma leuchtenbergianum and Daphnia ambigua being second and third in abundance.

The five major Copepoda taxa or life stages (nauplii, cyclopoid copepodid, calanoid copepodid, Diaptomus mississippiensis, and Tropocyclops prasinus) comprised the majority of total Crustacea entrained on July, October, and November sample dates, representing 73.7%, 77.9%, and 52.4%, respectively, of the total Crustacea. Nauplii were the most abundant with cyclopoid copepodid, calanoid copepodid, Diaptomus mississippiensis, and Tropocyclops prasinus following from high to low in order of numerical abundance (Appendix B, Section 3, pp. 37-61).

The condenser CPI values (Figure 1.5-5) were greatest for Cladocera in March ($\bar{X}$CPI = 27.2) and for Copepoda and total Crustacea in May ($\bar{X}$CPI's = 4.6 and 6.5, respectively). Intake-discharge CPI values were greatest for Cladocera in October ($\bar{X}$CPI = 7.9) and for Copepoda and total Crustacea in November ($\bar{X}$CPI's = 7.9 and 6.5, respectively). The data appeared to exhibit a seasonal trend, i.e., greater CPI values occurring primarily during the stratified months of the year.

Major percent immotility peaks (Figures 1.5-6 and 1.5-7) occurred during stratified months (March, May, and July). The results of Friedman's test revealed no significant differences ($p \leq 0.05$) in percent immotility among sample dates or between sample locations for Cladocera, Copepoda, and total Crustacea.

Data indicating percent immotility of total number of organisms observed in 1977 are presented in Table 1.5-6. These data were variable between locations, but indicated that passage through the ONS Condenser Cooling System had a minimal effect on the crustacean zooplankton

Spearman's rank correlation coefficients were significant ($p \leq 0.05$) between precondenser total Crustacea immotility and both intake and precondenser temperatures. Cladocera immotility was not significantly correlated with any of the physical-chemical variables (Table 1.5-7). Discharge Copepoda and total Crustacea immotility correlated ($p \leq 0.05$) with intake and discharge temperatures. These data suggest that at higher acclimation temperatures the Crustacea were more susceptible to the stresses which render them immotile. This supports conclusions stated previously (Duke Power Company 1977). Intake percent immotility for Cladocera, Copepoda, and total Crustacea did not correlate with factors tested that might affect it (Table 1.5-7).

The final temperatures to which the zooplankton were exposed during this study (Figure 1.5-8) are not lethal to most microcrustaceans (Goss and Bunting 1976, Bunting 1974, and Brown 1929). These results were the same as those reported previously (Duke Power Company 1977).

The open lake (Location 502.0) study of March 1977 was conducted to further investigate the hypothesis that organisms in the deeper strata of the lake may exist there as a result of their inability to maintain vertical position due to injury, age, and/or other stresses. Those animals in the deeper water (>20 m) at Location 502.0 were more likely to be entrained through ONS cooling system. Data from the open lake analyses (Figure 1.5-9) indicated that total Crustacea immotility at Location 502.0 was greater in the bottom-to-surface samples than in the ten-meter-to-surface samples ($\bar{X}$ % immotile = 2.8 and 1.8, respectively). Immotility in the lower depths was probably greater than 2.8% but was biased by the inclusion of organisms in the upper 10 m of the water column. This hypothesis was supported by the comparatively high immotility for total Crustacea in the intake canal (11.6% immotile) on the same date. The data indicated that a greater percentage of the organisms are immotile in the lower depths of the lake than in the upper strata. Results of this study were basically the same as those reported previously (Duke Power Company 1977).

Zooplankton Entrainment: Damage Analyses

Percent damage at precondenser and postcondenser was low (<5% in most cases) and quite variable (Figure 1.5-10). Percent damage for the

major taxa was generally higher at the discharge than the intake (Figure 1.5-11). Highest percent damage was found during stratified months. Friedman's ANOVA results indicated no significant differences ($p \leq 0.05$) for percent damage (Cladocera, Copepoda, and total Crustacea) between intake and discharge, precondenser and postcondenser, or among collection dates. Spearman's correlation results for the major taxonomic categories indicated no significant correlations between percent damage and the physical-chemical variables.

Table 1.5-8 presents the percent damage values for total organisms studied over the reporting period. These data indicate that damage encountered between locations was low, with the net damage for total Crustacea between intake and discharge being 1.4 percent. The net effect for this study period was neither statistically nor ecologically significant.

SUMMARY AND CONCLUSIONS

Phytoplankton Entrainment

1. Phytoplankton entrainment studies were conducted on six dates in 1977. The studies involved measurements of density, biovolume, chlorophyll and assimilation ratios.

2. Algal densities were dominated by Bacillariophyceae, Chlorophyceae, and an unidentified taxon. Bacillariophyceae and Dinophyceae dominated the algal biovolumes. Both observations were consistent with previous years.

3. Statistical analyses of biovolume and density data revealed the same results as reported previously. Neither biovolume nor density showed significant differences between the intake and the postcondenser locations. Chlorophyll concentrations showed significant differences between the two locations, differing from prior data; however, since density and biovolume data were not consistent with chlorophyll, these differences were attributed to sampling and/or natural variability.

4. Assimilation ratios of entrained phytoplankton were not significantly inhibited or stimulated by mechanical factors in 1977. In January, there were stimulatory thermal and total effects on phytoplankton metabolism. In November, CCW passage had a total effect of inhibiting metabolism. On the other four sampling dates, ONS did not have any significant effects on the metabolism of entrained phytoplankton.

Zooplankton Entrainment

1. Copepoda and total Crustacea percent immotile at the discharge correlated with discharge as well as intake temperatures. The results indicated that immotility was associated with ambient temperature and the final temperature to which the organisms were exposed.

2. The ΔT's had little or no apparent relationship to immotility. The maximum temperatures to which the zooplankton were exposed during passage through ONS Condenser Cooling Water System were generally below thermal tolerance levels found in other studies.

3. Friedman's test results indicated that there was no significant difference between precondenser and postcondenser or intake and discharge locations for percent immotility and percent damage.

4. Although seasonal trends appeared to be present for percent immotility and percent damage, Friedman's test indicated no statistically significant differences among the collection dates.

5. A study of open lake (502.0) immotility and damage showed that immotility and damage was greater in the intake canal than at either 502.0 (b-s) or 502.0 (10-s), indicating that zooplankton in the lower portion of the water column are immotile prior to induction into ONS.

6. Net immotility and damage percentages indicate that the entrainment effects on the zooplankton were small if not negligible.

7. Analysis of data collected during this reporting period yielded the same basic conclusions as those reported in previous years.

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Table 1.5-1

Phytoplankton density (X 10^6 units/m^3), biovolume (mm^3/m^3), and total chlorophyll (mg/m^3) for ONS entrainment studies, 1977.

Location	Replicate	Jan 12	Mar 16	May 11	Jul 13	Oct 12	Nov 16	Mean
				DENSITY				
530.0	A	161	468	122	539	217	339	
	B	177	577	164	493	178	773	
	Mean*	168	520	142	514	195	556	349
530.6	A	168	493	157	477	179	368	
	B	125	380	126	433	174	291	
	Mean*	145	434	140	452	173	330	279
	Date Mean	156	477	141	483	184	443	
				BIOVOLUME				
530.0	A	115	265	136	145	220	362	
	B	112	425	157	143	137	637	
	Mean*	114	345	146	144	179	500	238
530.6	A	117	257	183	260	93	332	
	B	94	232	131	148	108	388	
	Mean*	105	245	157	204	100	360	195
	Date Mean	110	295	151	174	140	430	
				CHLOROPHYLL				
530.0	A	1.32	0.75	1.04	0.49	1.07	1.15	
	B	1.61	0.91	1.03	0.74	0.68	1.03	
	Mean*	1.46	0.83	1.04	0.60	0.88	1.09	0.98
530.6	A	1.38	1.08	1.48	0.81	1.30	1.00	
	B	1.15	0.80	1.26	0.80	1.44	1.20	
	Mean*	1.26	0.94	1.37	0.80	1.37	1.10	1.14
	Date Mean	1.36	0.88	1.20	0.70	1.12	1.10	

530.0 - intake location
530.6 - postcondenser location
* Replicate means may appear to be a few digits off the last significant digit. This is due to truncation of numbers by the computer in calculating summary table totals (Appendix B, Section 4).

Table 1.5-2

Analysis of variance (ANOVA) of phytoplankton density, biovolume, and chlorophyll measurements of ONS entrainment locations, 1977.

Source	df	SS	MS	F
Density between locations	1	29190.4	29190.4	3.05
Density among dates	5	573603.7	114720.7	12.00*
Location X date	5	34178.4	6835.7	0.72
Error	12	114681.5	9556.8	
Biovolume between locations	1	10880.0	10880.0	2.03
Biovolume among dates	5	299901.7	59980.3	11.22*
Location X date	5	28538.7	5707.7	1.07
Error	12	64165.5	5347.1	
Chlorophyll between locations	1	0.1473	0.1473	6.11*
Chlorophyll among dates	5	1.0861	0.2172	9.02*
Location X date	5	0.2983	0.0597	2.48
Error	12	0.2891	0.0241	

* Significant at the $\alpha \leq 0.05$ level.

Table 1.5-3

Carbon assimilation ratios (mg carbon/mg chlorophyll/hr) and mean incubation temperatures (MIT) for assessment of phytoplankton entrainment effects at ONS, 1977.

	Entrainment Location					
	530.0		530.0		530.6	
Sampling Date	Assimilation Ratio	MIT, C	Assimilation Ratio	MIT, C	Assimilation Ratio	MIT, C
01/12/77	0.06	10.2	0.60	19.8	0.55	19.8
	0.15		0.54		1.18	
Mean	0.10		0.57		0.86	
03/16/77	0.58	10.7	0.52	20.9	0.43	20.9
	0.47		0.54		0.18	
Mean	0.52		0.53		0.30	
05/11/77	0.36	14.4	0.35	22.3	0.25	22.3
	0.31		0.28		0.38	
Mean	0.34		0.32		0.32	
07/13/77	0.18	21.1	0.18	28.9	0.26	28.9
	0.11		0.07		0.23	
Mean	0.14		0.12		0.24	
10/12/77	0.39	20.2	0.44	26.0	0.39	26.0
	0.86		0.80		0.29	
Mean	0.62		0.62		0.34	
11/16/77	0.90	17.8	0.61	25.1	0.37	25.1
	0.84		0.60		0.58	
Mean	0.87		0.60		0.48	
1977 Mean	0.43	15.7	0.46	23.8	0.42	23.8

530.0 - intake location
530.6 - postcondenser location

Table 1.5-4

Analysis of variance (ANOVA) of assimilation ratios for thermal, mechanical, and total ONS effects, 1977.

Source	df	SS	MS	F
Thermal Effect				
Between locations	1	0.0043	0.0043	0.25
Among dates	5	0.9836	0.1967	11.72*
Date X location	5	0.2830	0.0566	3.37*
Error	12	0.2014	0.0168	
Mechanical Effect				
Between locations	1	0.0081	0.0081	0.28
Among dates	5	0.6789	0.1358	4.78*
Date X location	5	0.2393	0.0479	1.68
Error	12	0.3410	0.0284	
Total Effect				
Between locations	1	0.0006	0.0006	0.02
Among dates	5	0.5242	0.1048	3.21*
Date X location	5	0.8730	0.1746	5.35*
Error	12	0.3917	0.0326	

* Significant at the $\alpha \leq 0.05$ level.

Table 1.5-5

Analysis of simple main effects of thermal and total ONS effects, 1977.

Source	MS*	F
Thermal Effect		
January	0.21622	12.886**
March	0.00002	0.001
May	0.00040	0.024
July	0.00040	0.024
October	0.00002	0.001
November	0.07022	4.185
Error	0.01678	
Total Effect		
January	0.57760	17.696**
March	0.04840	1.483
May	0.00040	0.012
July	0.01000	0.306
October	0.08122	2.488
November	0.15602	4.780**
Error	0.03264	

$F_{.05(1,12)} = 4.75$

* Each month MS=SS/1 df.
**Significant at the $\alpha \leq 0.05$ level.

Table 1.5-6

Percent immotile at the locations sampled based on total number of organisms observed in 1977.

Site	Precondenser		Postcondenser		Intake		Discharge	
	Number Observed	Percent Immotile	Number Observed	Percent Immotile	Number Observed	Percent Immotile	Number Observed	Percent Immotile
Taxa								
Cladocera	1365	12.7	818	17.5	1094	8.1	825	11.4
Copepoda	1812	14.3	1791	11.3	2159	18.0	2910	12.3
Total Crustacea	3177	13.6	2609	13.2	3253	14.7	3735	12.1

Table 1.5-7

Spearman rank order correlation for percent immotile versus selected physical-chemical variables.

Location	Unit I Precondenser			Unit I Postcondenser			Intake			Discharge		
Taxa	Cladocera	Copepoda	Total Crustacea	Cladocera	Copepoda	Total Crustacea	Cladocera	Copepoda	Total Crustacea	Cladocera	Copepoda	Total Crustacea
Physical-Chemical Parameters												
Intake Temperature	0.44* 0.15** 12	0.55 0.07 12	0.61 0.04 12	-0.25 0.43 12	0.43 0.16 12	0.06 0.86 12	0.38 0.91 12	0.40 0.20 12	0.26 0.41 12	0.35 0.27 12	0.59 0.04 12	0.66 0.02 12
Discharge Temperature										0.39 0.21 12	0.90 <0.01 12	0.85 <0.01 12
Precondenser Temperature	0.45 0.14 12	0.62 0.03 12	0.62 0.03 12	-0.14 0.67 12	0.41 0.19 12	0.09 0.78 12						
Postcondenser Temperature				-0.12 0.70 12	0.41 0.19 12	0.01 0.98 12						
Unit I Condenser ΔT				0.09 0.77 12	-0.44 0.15 12	-0.35 0.27 12				-0.46 0.13 12	-0.04 0.91 12	-0.27 0.40 12
Intake-Discharge ΔT										-0.35 0.27 12	-0.29 0.36 12	-0.43 0.16 12
Unit I CCW Flow (m^3/sec)	0.25 0.44 12	0.10 0.76 12	0.13 0.69 12	0.25 0.43 12	0.34 0.28 12	0.27 0.40 12						
ONS CCW Flow (m^3/sec)				-0.38 0.22 12	0.18 0.57 12	0.03 0.94 12				0.1 0.76 12	-0.18 0.57 12	0.00 1.00 12
Intake Dissolved Oxygen	-0.56 0.55 12	-0.59 0.04 12	-0.79 <0.01 12	0.21 0.51 12	-0.68 0.02 12	-0.33 0.30 12	0.02 0.95 12	-0.17 0.60 12	0.00 1.00 12	-0.40 0.20 12	-0.49 0.10 12	-0.59 0.04 12

* Spearman correlation coefficient
** Probability of greater /R/ by chance under H_0:p=0
*** Number of observations

Table 1.5-8

Percent damage at the locations sampled based on total number of organisms observed in 1977.

Site	Precondenser		Postcondenser		Intake		Discharge	
	Number Observed	Percent Damage	Number Observed	Percent Damage	Number Observed	Percent Damage	Number Observed	Percent Damage
Taxa								
Cladocera	1401	3.0	1292	2.3	1612	0.9	1527	2.2
Copepoda	1622	2.3	2124	2.4	2071	4.6	2389	5.7
Crustacea	3023	2.6	3416	2.4	3683	3.0	3916	4.4

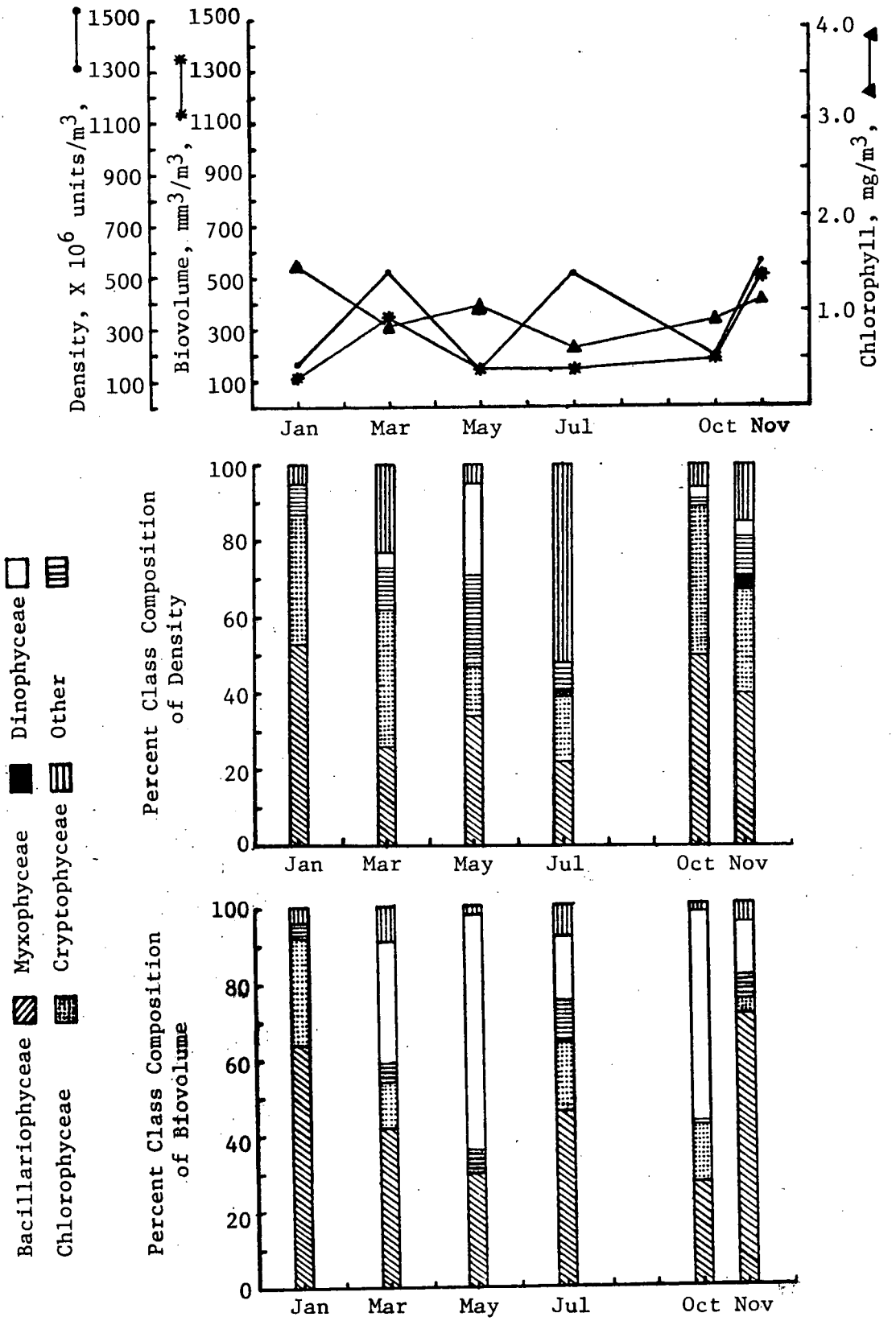

Figure 1.5-1. Intake location (530.0) phytoplankton standing crop indices, density percent class composition and biovolume percent class composition for ONS, 1977.

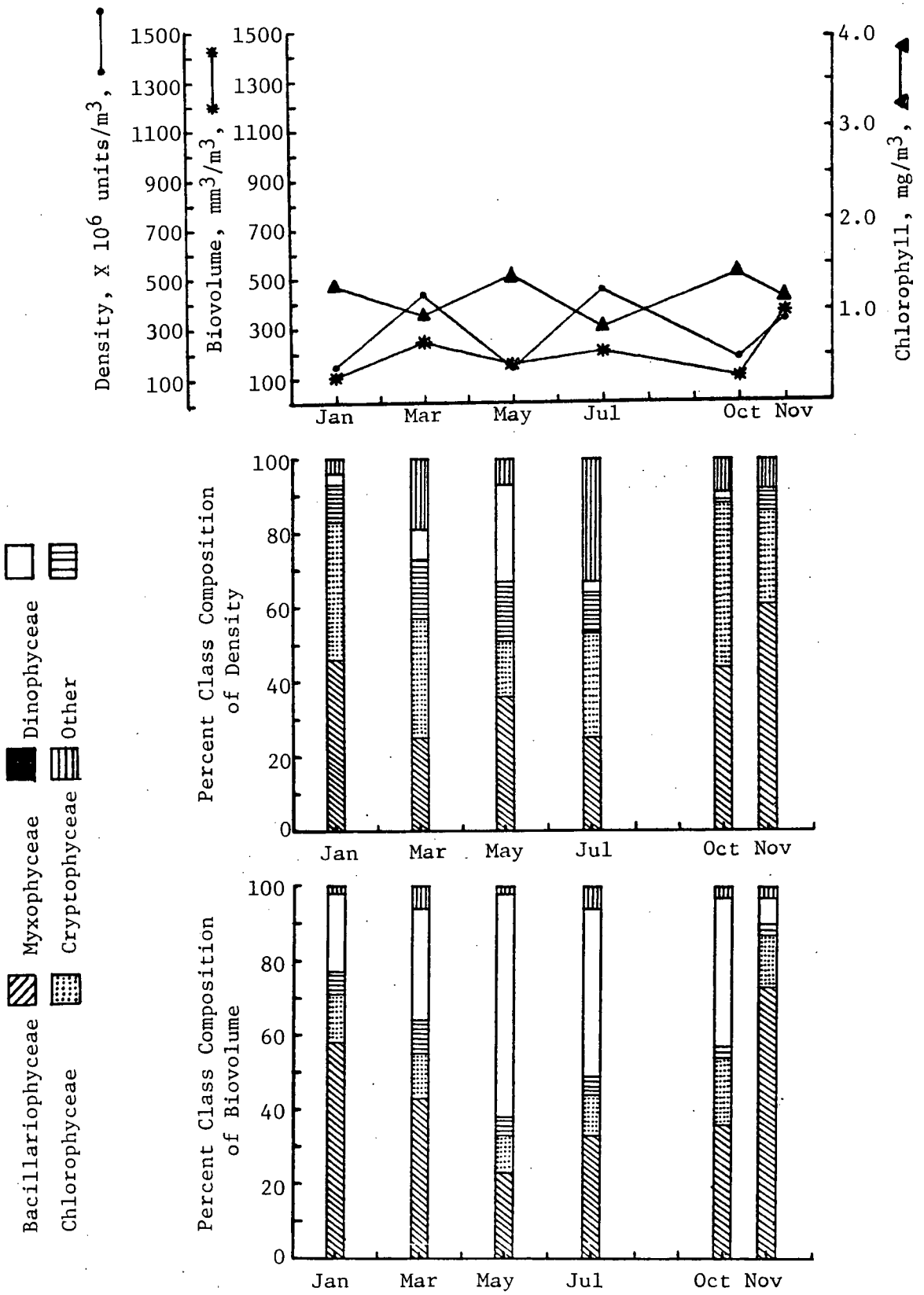

Figure 1.5-2. Postcondenser location (530.6) phytoplankton standing crop indices, density percent class composition and biovolume percent class composition for ONS, 1977.

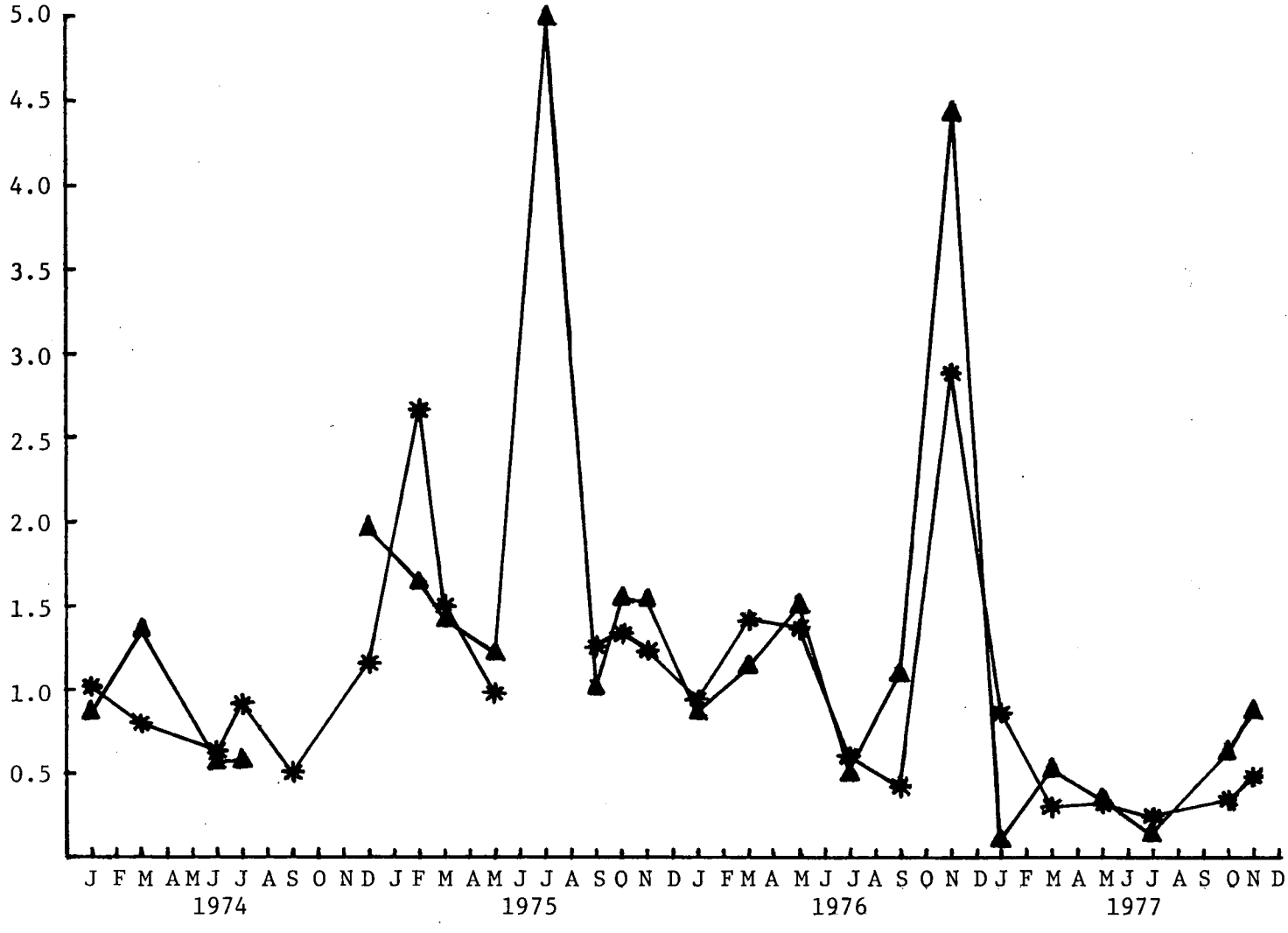

Figure 1.5-3. Mean carbon assimilation ratios (mgC/mg chlorophyll/hr) for the control intake (▲—▲) and for the heated postcondenser (✱—✱) for 1974-1977 at ONS.

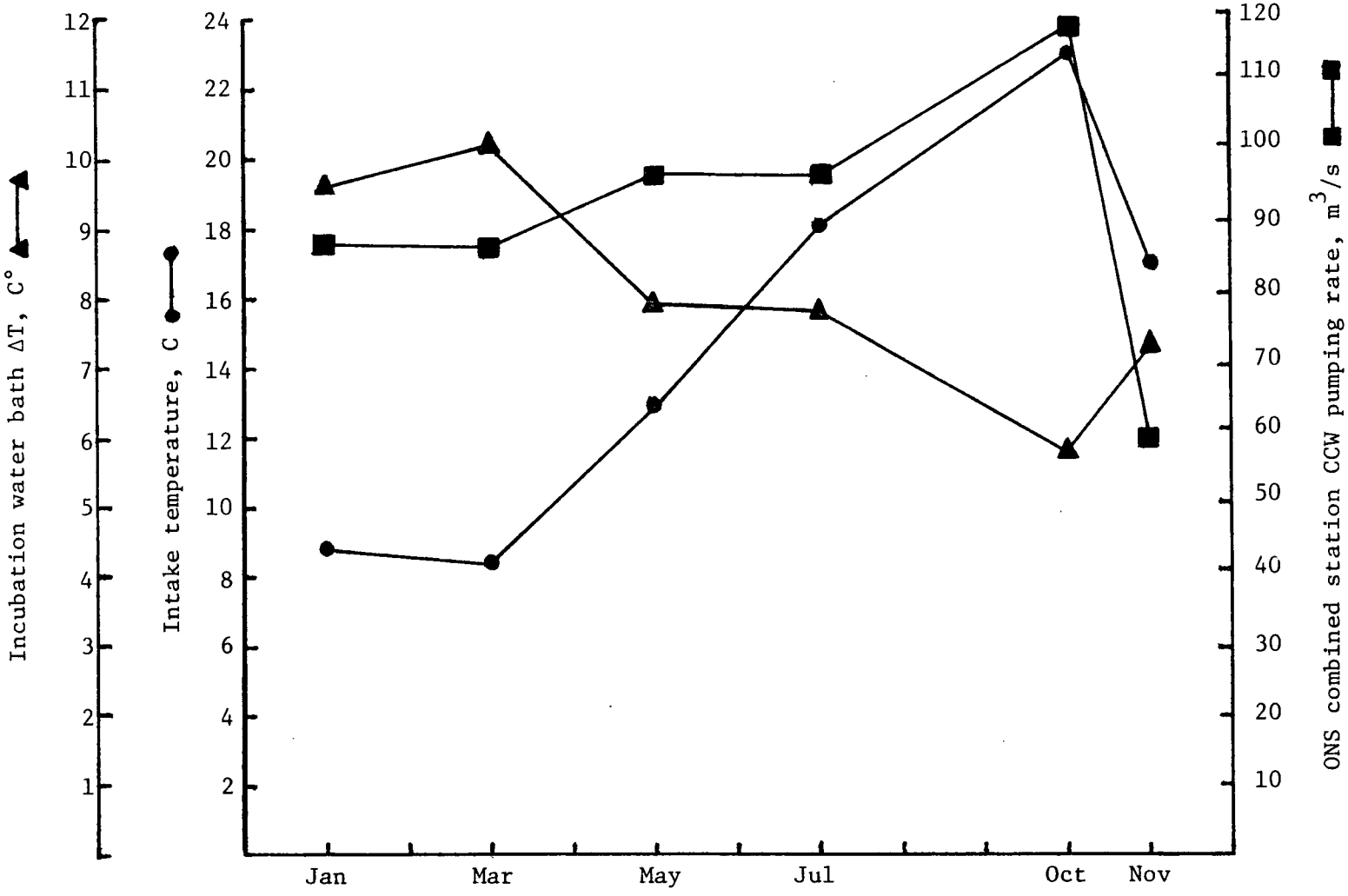

Figure 1.5-4. Physical factors related to light-dark bottle incubations of intake and postcondenser water at ONS, 1977.

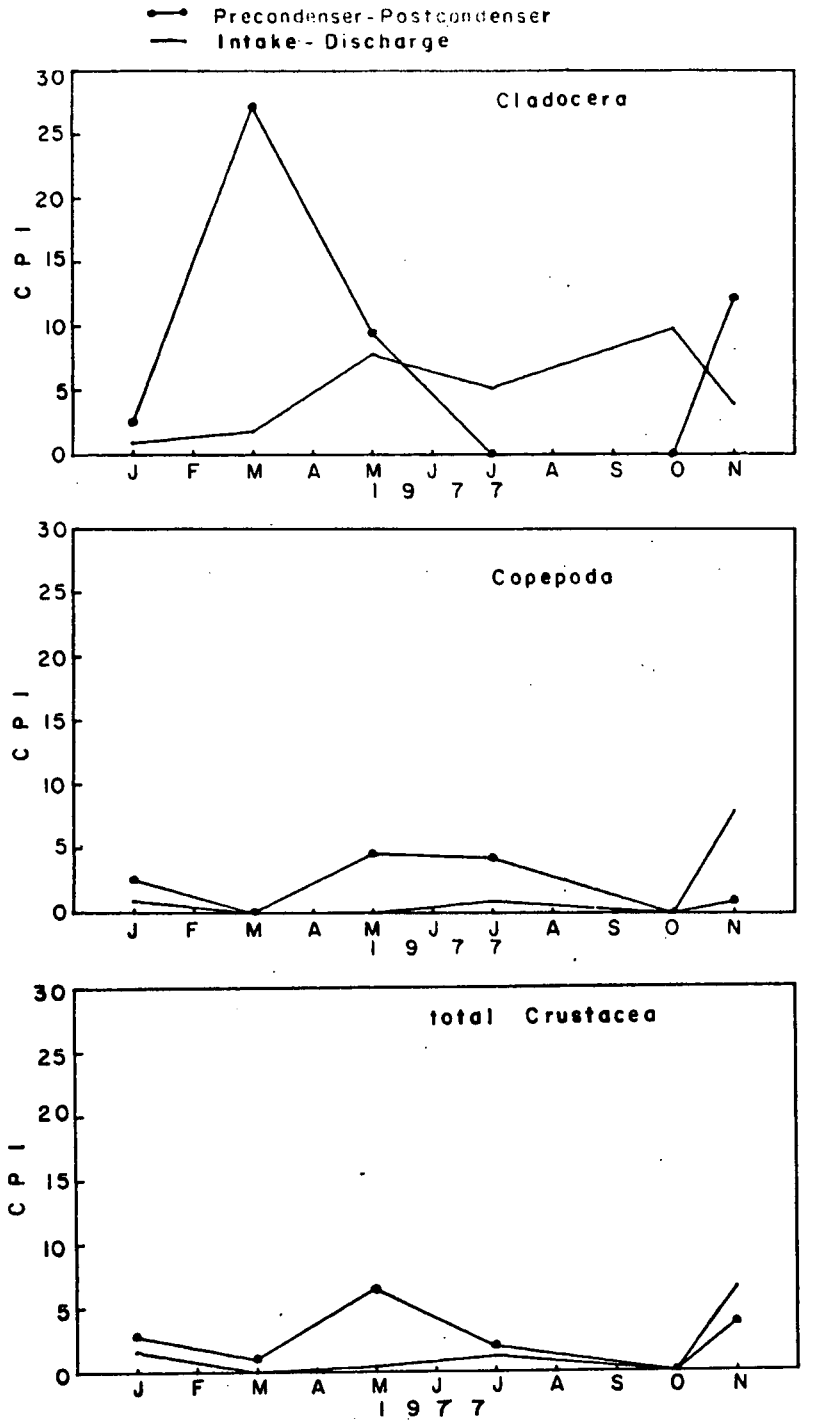

Figure 1.5-5. Corrected percent immotile (CPI) data for Cladocera, Copepoda, and total Crustacea at precondenser-postcondenser and intake-discharge. Values are means of duplicate samples.

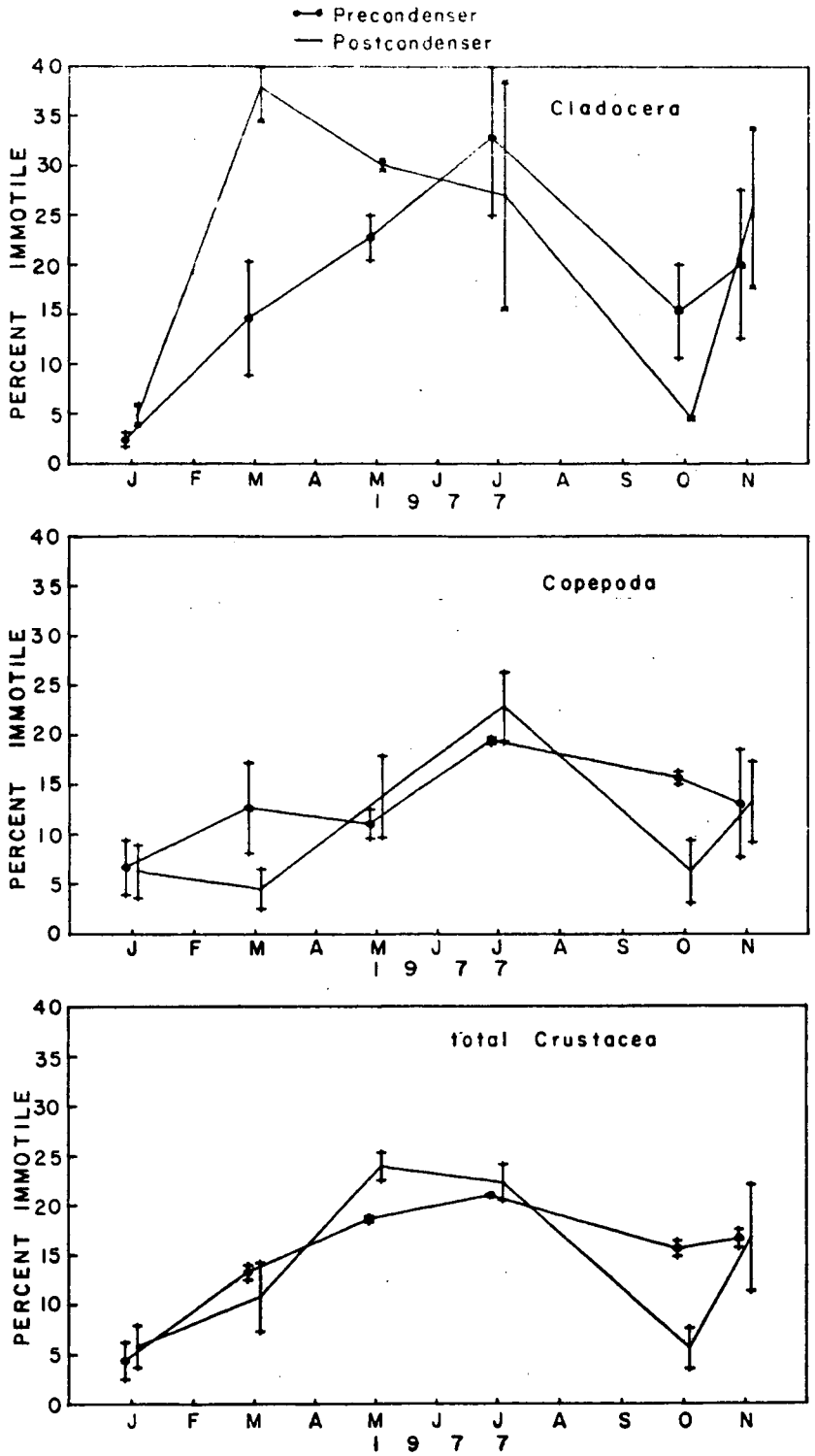

Figure 1.5-6. Percent immotile Cladocera, Copepoda, and total Crustacea at precondenser and postcondenser. Values are means of duplicate samples with ranges indicated.

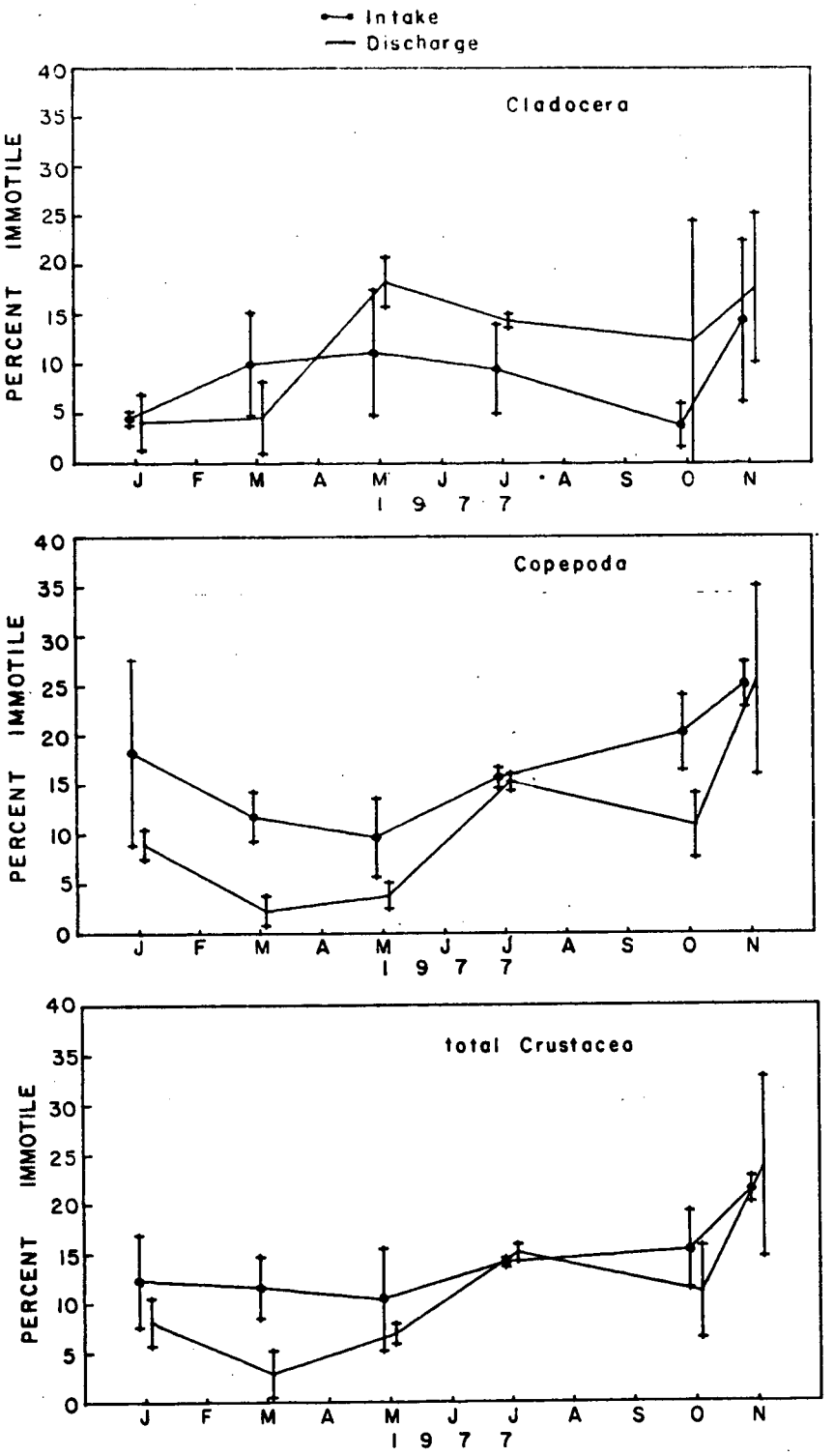

Figure 1.5-7. Percent immotile Cladocera, Copepoda, and total Crustacea at intake and discharge. Values are means of duplicate samples with ranges indicated.

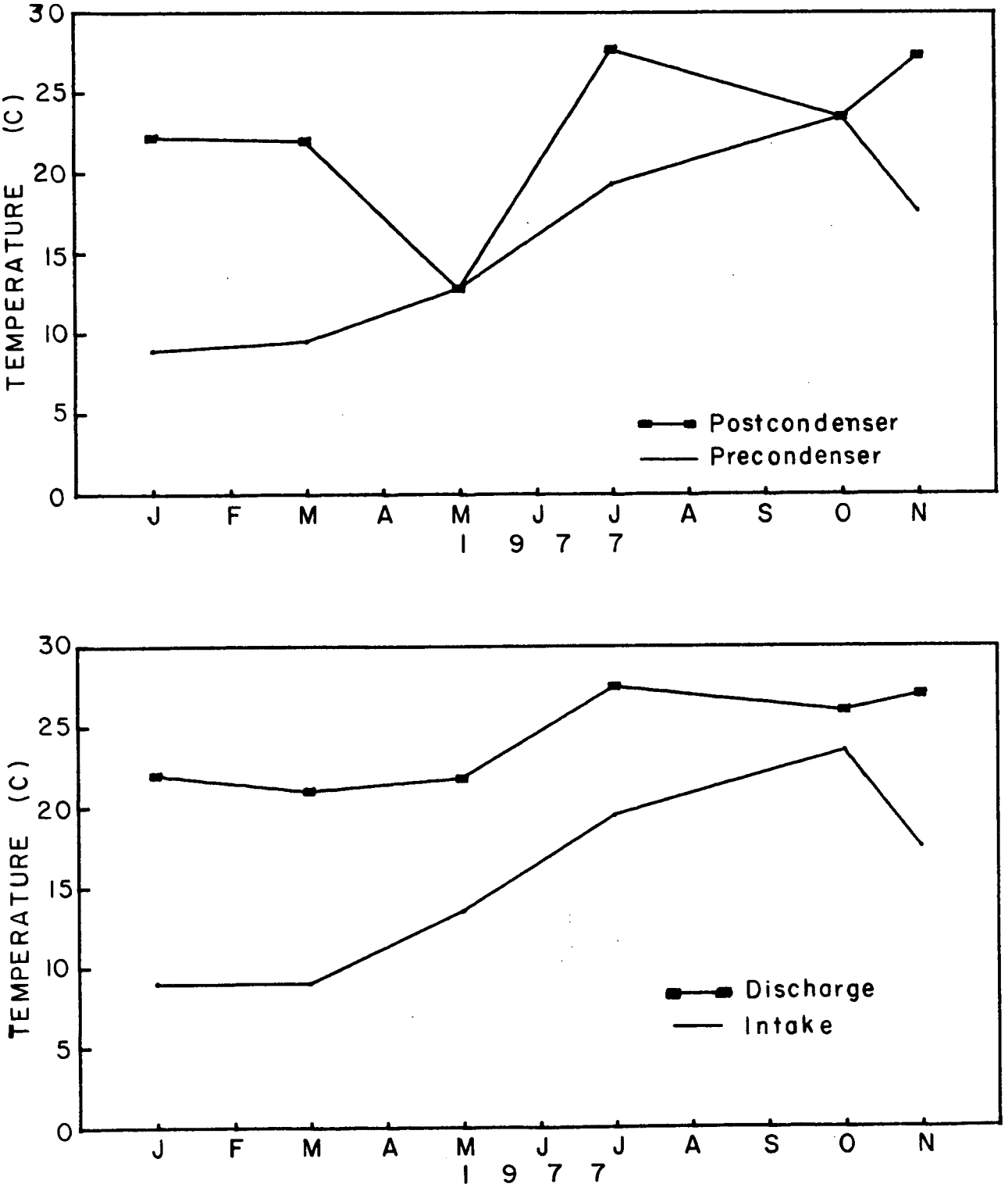

Figure 1.5-8. Temperatures recorded at the entrainment sample locations on the date of sampling.

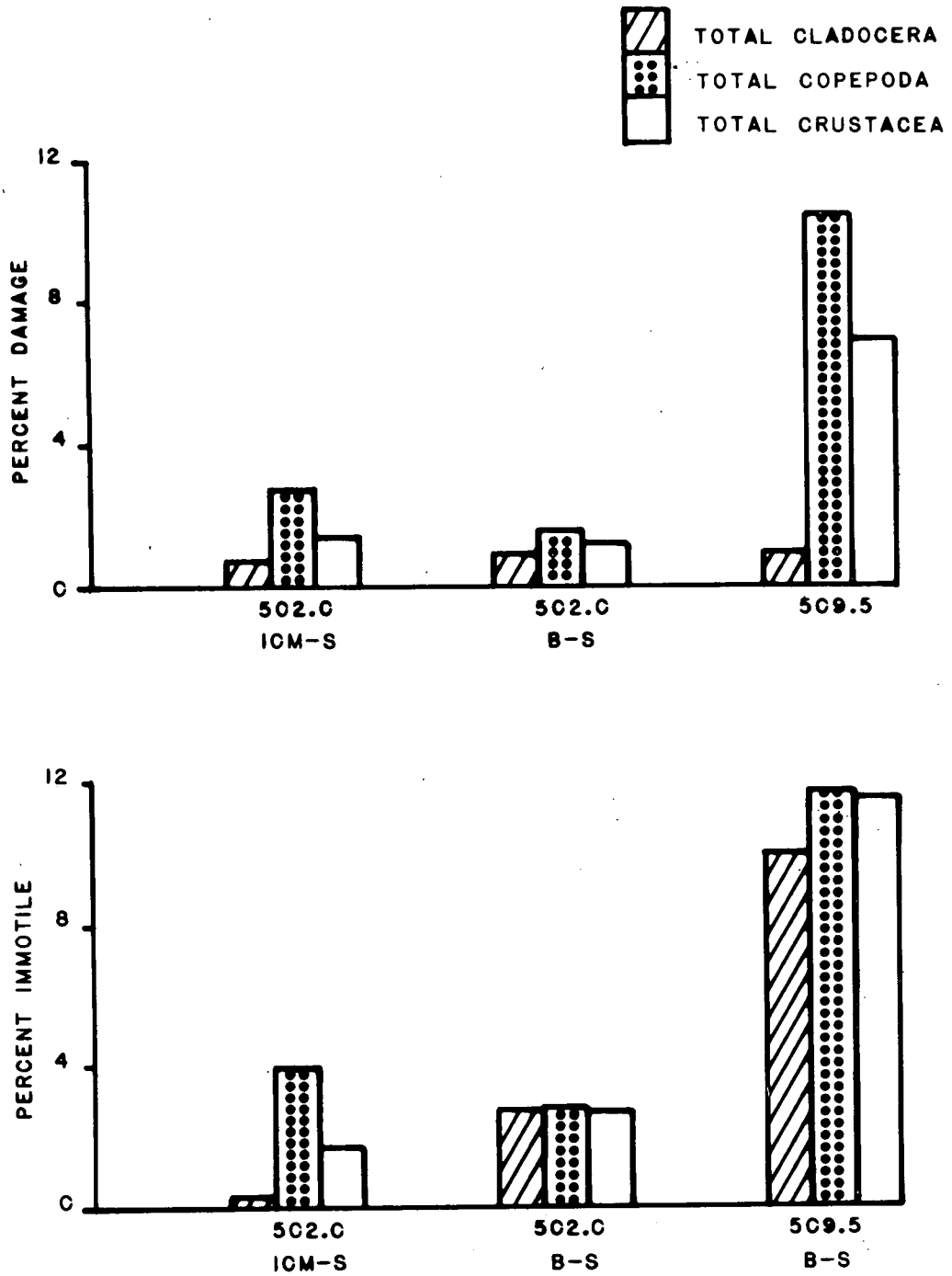

Figure 1.5-9. Percent immotile and percent damage for open lake (502.0) and intake (509.5) locations. Values are means of duplicate samples.

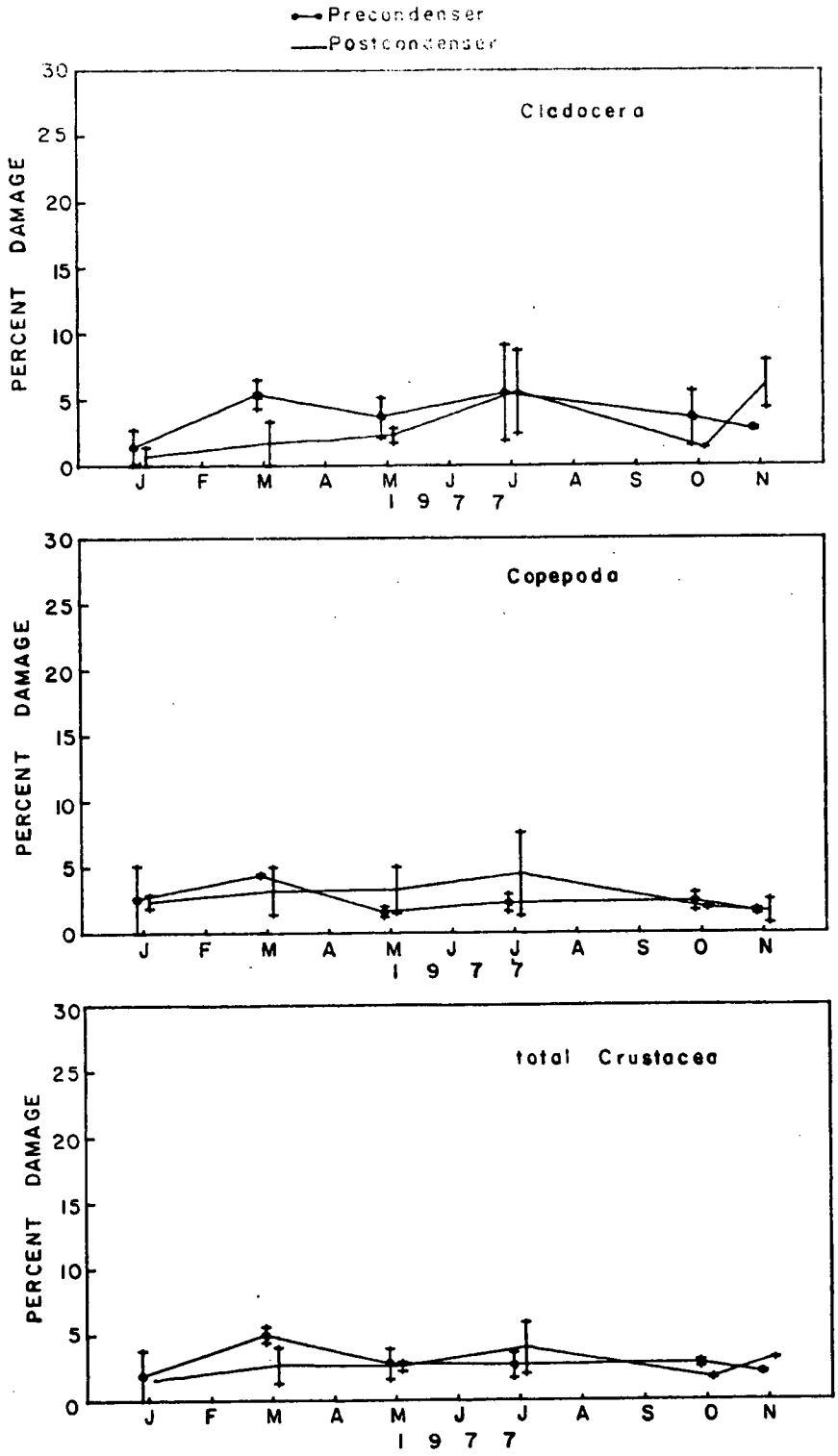

Figure 1.5-10. Percent damage for Cladocera, Copepoda, and total Crustacea at precondenser and postcondenser locations. Values are means of duplicate samples with ranges indicated.

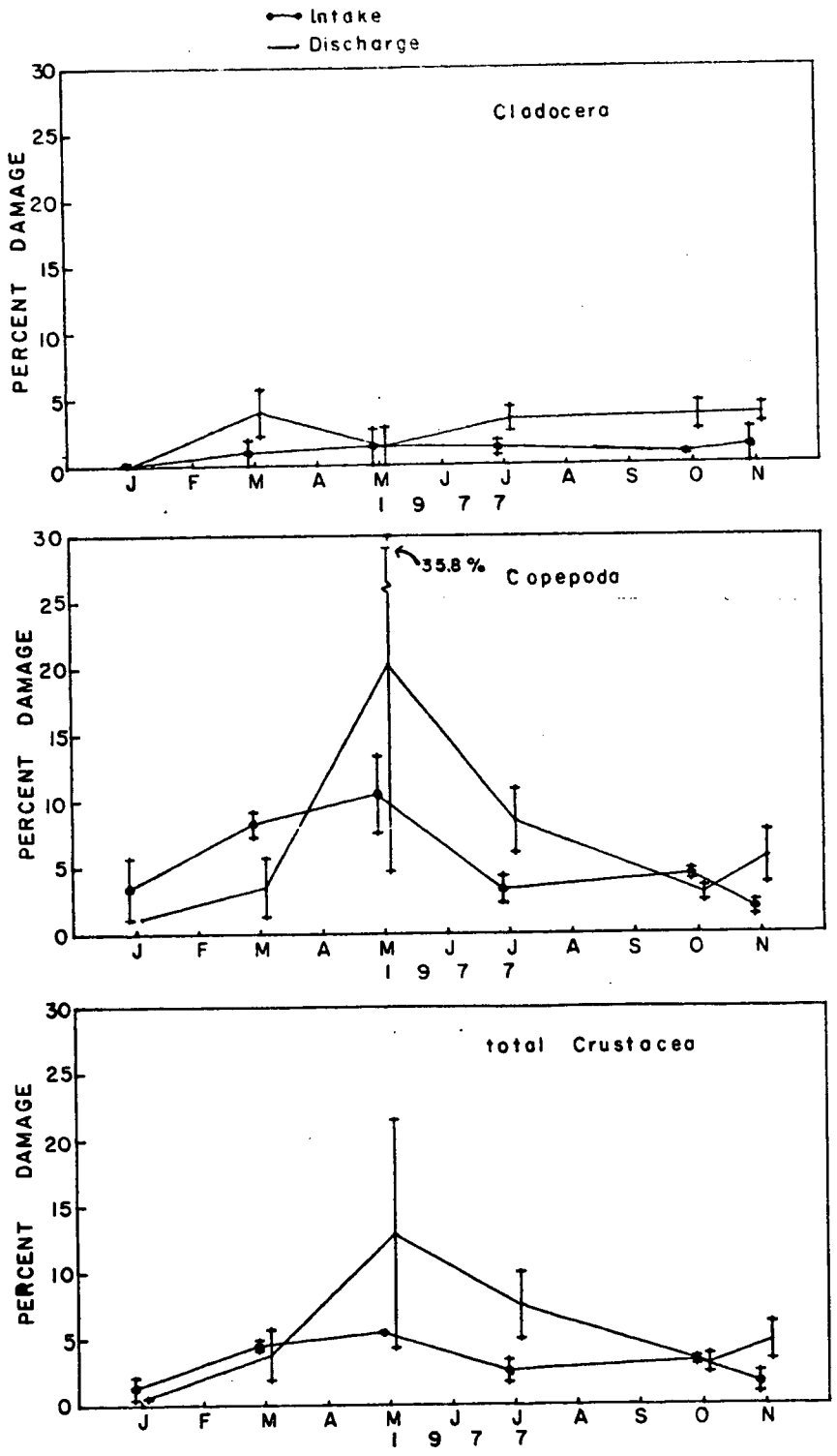

Figure 1.5-11. Percent damage for Cladocera, Copepoda, and total Crustacea at intake and discharge locations. Values are means of duplicate samples with ranges indicated.

1.6 PLUME MAPPING FOR TEMPERATURE AND DISSOLVED OXYGEN

Specification: At least four times per year, special sampling studies shall be made to identify and characterize the cooling water discharge plume with respect to dissolved oxygen and temperature. Data shall be collected from a minimum of 30 sampling points, following a sampling pattern designed to achieve coverage of the plume.

Three of the surveys shall be conducted during periods when the following conditions are expected:

1) Maximum condenser cooling water discharge temperature
2) Maximum acreage of discharge plume
3) Minimum condenser cooling water dissolved oxygen concentration

(Duke Power Company 1973a).

I. INTRODUCTION

During 1977 six plume surveys were conducted to characterize the thermal discharge from Oconee Nuclear Station (ONS). These plume surveys were conducted on February 24, August 30, September 21, October 12, November 22, and December 14, 1977. The surveys in August, September, and October were conducted to satisfy conditions 1 and 3 of the specification. Condition 2 of the specification was satisfied by surveys in February, November, and December.

II. METHODS AND MATERIALS

Temperature and dissolved oxygen (DO) measurements were obtained by an in-situ sonde; a description of this method was contained in the Water Quality Section of a previous ONS Semi-Annual Report (Duke Power Company 1973b). Temperatures and DO concentrations were recorded to the nearest ± 0.1 C and ± 0.1 mg/l, respectively.

Sample locations for the plume surveys conducted on February 24, August 30, and September 21 are indicated in Figure 1.6-1. Each location was sampled in a vertical profile which began one meter above the bottom and continued to the surface (0.3 m), at intervals designed to characterize the plume. Vertical profiles for the plume surveys of October 12, November 22, and December 14 consisted of mid-channel profiles as in previous surveys. Other locations within a transect (Fig. 1.6-2) were sampled from a depth of 16 m to 0.3 m, where possible. During the December 14 plume survey, a malfunction of the DO subsystem on one of the instruments resulted in DO concentrations being recorded only in the discharge area (App. E, Table E-6).

Sample locations (Fig. 1.6-1 and 1.6-2) for all surveys were located by visual alignment between established reference points. The majority of the reference points were located by survey crews by triangulation for placement on a map (Duke Power Company 1973b). Other locations were visually placed on a map.

Interpretation of Data

Data for each transect in the Keowee River arm were averaged for each depth.

The data were then plotted with respect to depth and distance from the discharge and isolines were drawn (Fig. 1.6-3 through 1.6-13). Since the effects of the thermal plume were minimal in the Little River arm, data for that area were not plotted.

Figures 1.6-14 through 1.6-19 were drawn by placing surface temperatures on a map. The average surface temperature for transect 30, 31, 32 (Location 506.0) served as a reference temperature; so that comparisons could be made with surveys previously reported. Using the surface temperatures for each location and the reference temperature, isopleths depicting surface areas affected by the thermal plume were drawn for each survey. The resulting areas were measured with a planimeter and tabulated in Figures 1.6-14 through 1.6-19. Daily heat rejection rates by ONS are plotted in Figure 1.6-20.

III. RESULTS AND DISCUSSION

During the surveys conducted in August and September 1977 the thermal plume was almost non-existent. This situation was attributed to the hypolimnetic withdrawal of the intake, low operating capacity, and high CCW flow. During February, November, and December larger plumes were recorded.

Discharge temperatures recorded by the CCW temperature monitoring program (Table 1.1-1) ranged from 15.4 C in February to 30.7 C in September. The highest discharge temperature recorded during a plume survey (29.9 C) occurred on August 30. Dissolved oxygen concentrations at the discharge as recorded by the weekly DO monitoring program ranged from a low of 4.6 mg/1 in September to a high of 8.7 mg/1 in May (Table 1.3.1-3). During the August 30 plume survey the lowest discharge DO concentration (4.4 mg/1) was recorded.

February 24

On this date the average rate of heat rejection for ONS was 6.2×10^7 kcal/min (Fig. 1.6-20). This was the highest heat rejection rate that occurred during the plume surveys of 1977. Condenser cooling water flow was 68% of the maximum. The highest discharge temperature recorded during this survey was 20.0 C (9 C° above reference) and the lowest discharge dissolved oxygen concentration was 10.8 mg/1. Approximately 16.2 km^2 (21.8%) of the lake surface was heated more than 0.5 C° above the reference temperature (Fig. 1.6-14). These temperatures were noted as far as 7 km from the discharge. Data for depths below 10 m were not obtained due to high winds and rough surface conditions.

August 30

The rate of heat rejected by ONS averaged 3.6×10^7 kcal/min with a CCW flow of 82% of the maximum on August 30. The highest discharge temperature recorded (29.9 C) was 2.3 C° higher than the reference temperature. The 0.5 C° isotherm bounded an area of 0.1 km^2 (Fig. 1.6-15). Surface isotherms in the Little River arm depict an inverted thermal plume which was the result of cooler water from the Keowee River arm being drawn through the connecting canal (Fig. 1.6-15). Low operating capacity, high CCW flow, and utilization of a hypolimnetic intake resulted in the discharge of waters approximately the same temperature as the receiving waters.

During the plume survey on August 30, the intake surface DO concentration was 4.3 mg/l, while the lowest discharge DO concentration was 4.4 mg/l (App. E, Table E-2). Surface DO concentrations of 6.0 mg/l were recorded within 0.8 km of the discharge (Fig. 1.6-10). Surface DO concentrations in the inverted thermal plume of the Little River arm were in excess of 7.0 mg/l (App. E, Table E-2).

September 21

Heat was rejected by ONS at an average rate of 2.6 X 10^7 kcal/min on September 21 (Fig. 1.6-20). The CCW flow averaged 96% of the maximum. The highest discharge temperature recorded during the plume survey was 27.5 C. The temperature difference between the discharge and the reference was 0.5 C°. Again, as in August, the thermal plume was discernible only in the discharge cove of ONS. Surface isotherms (Fig. 1.6-16) depict an inverted thermal plume in the Little River arm, which was the result of the same factors affecting the August plume.

The minimum discharge DO concentration recorded for the survey was 5.0 mg/l. The CCW mixed rapidly with the receiving waters and a surface DO concentration of 6.0 mg/l was recorded at the discharge. DO concentrations in the Little River arm inverted thermal plume averaged 7.0 mg/l (App. E, Table E-3).

October 12

On October 12, the heat rejection rate was 2.3 X 10^7 kcal/min (Fig. 1.6-20). The CCW flow averaged 93% of the maximum. The maximum discharge temperature recorded was 29.0 C and the minimum discharge DO concentration was 6.3 mg/l (App. E, Table E-4).

The temperature difference between the maximum discharge temperature and the reference temperature was 5.2 C°. Characterized by the 0.5 C° isotherm, the CCW plume was detected 4.5 km from the discharge and covered 10.0 km^2 (13.4%) of the total lake surface area (Fig. 1.6-17). The plume affected lake waters to a depth of 6 m (Fig. 1.6-6). The intrusion of the thermal plume into the Little River arm was small.

In the discharge area (i.e. within about 5 km) the plume seems to have inhibited DO replenishment to waters below 12 m (Fig. 1.6-12). In the Little River arm areas not affected by the plume had nearly the same DO concentration top to bottom. This condition has been observed in previous years (Duke Power Company 1977).

November 22

The heat rejection rate for ONS on November 22 was 3.2 X 10^7 kcal/min (Fig. 1.6-20). The CCW flow averaged 78% of the maximum. The highest recorded discharge temperature was 23.8 C which was 6.1 C° higher than the reference temperature (Fig. 1.6-18).

The plume was detected at 6.5 km from the discharge (Fig. 1.6-18) and to a maximum depth of 11 m (Fig. 1.6-7). The 0.5 C° isotherm bounded an area

of 17.6 km^2 (23.7%) of the total lake surface and was observed in the Little River arm (Fig. 1.6-18). This plume was the largest observed during 1977.

Predictions of monthly average plumes were made by Duke Power Company prior to the operation of ONS (United States Atomic Energy Commission 1972). The plumes with the largest area coverage were predicted to occur from November to March. The area affected by temperatures 1.7 C° above the reference was to be 22.4 km^2 (30.3%) of the total lake surface. The 1.5 C° isotherm of the plume on November 22 encompassed an area of 8.2 km^2 (11.1%) of the lake surface area (Fig. 1.6-18) and was considerably smaller than predicted. This plume affected less area than the largest plume recorded (November 19, 1975) during ONS operations (Duke Power Company 1977).

The lowest DO concentration recorded at the discharge was 7.8 mg/1. The DO concentration of the discharged CCW had little effect on the receiving waters since DO concentrations of both were nearly the same (Fig. 1.6-13).

December 14

The heat rejection rate for ONS averaged 5.3 X 10^7 kcal/min on this date (Fig. 1.6-20) and the CCW flow was 78% of the maximum. The highest discharge temperature was 22.9 C (App. E, Table E-6). A difference of 8.2 C° was observed between the discharge and reference temperatures. The area bounded by isotherms 0.5 C° and greater was 16.4 km^2 (22%) of the total surface area of Lake Keowee (Fig. 1.6-18). The plume extended 7 km up the Keowee River arm and affected waters to 7 m deep (Fig. 1.6-8).

The lowest DO concentration recorded at the discharge was 8.7 mg/1. Dissolved oxygen concentrations recorded in the Keowee River arm exceeded 8.0 mg/1 (App. E, Table E-6).

IV. SUMMARY AND CONCLUSIONS

Discharge temperatures recorded during plume surveys ranged from 20.0 C in February to 29.9 C in August. DO concentrations at the discharge measured during plume surveys varied from 4.4 mg/1 in August to 10.8 mg/1 in February.

Small thermal plumes were recorded during August and September. Low operating capacities, high CCW flow, and hypolimnetic withdrawal of the intake contributed to discharging cool water into the Keowee River arm of Lake Keowee. An inverted thermal plume in the Little River arm also resulted from these operating conditions.

Larger thermal plumes recorded in February, November, and December were smaller than those predicted in the 1972 Final Environmental Statement for similar situations. Plume data recorded during 1977 substantiate recommendations made in the Oconee Nuclear Station Environmental Summary Report to modify Technical Specification 1.6.

Low DO concentrations were observed during August and September. Rapid mixing of the CCW with the receiving waters resulted in surface DO concentrations at the discharge of no less than 6.0 mg/1. During October, the plume inhibited the replenishment of DO to depths below 12 m. DO concentrations of the CCW were nearly the same as the receiving waters during

November. Operation of ONS during 1977 resulted in no dramatic change to the DO concentrations in Lake Keowee.

LITERATURE CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company. U. S. Atomic Energy Commission Docket Nos. 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC), Washington, D. C.

_____. 1973b. Oconee Nuclear Station. Semi-Annual Report, Period Ending December 31, 1973.

_____. 1976. Oconee Nuclear Station. Annual Report. Period Ending December 31, 1976.

_____. 1977. Oconee Nuclear Station. Summary Report.

United States Atomic Energy Commission. 1972. Final Environmental Statement relate to operation of Oconee Nuclear Stations Units 1, 2, and 3. Duke Power Company Docket Nos. 50-269, 502-70, 50-287, Washington, D. C.

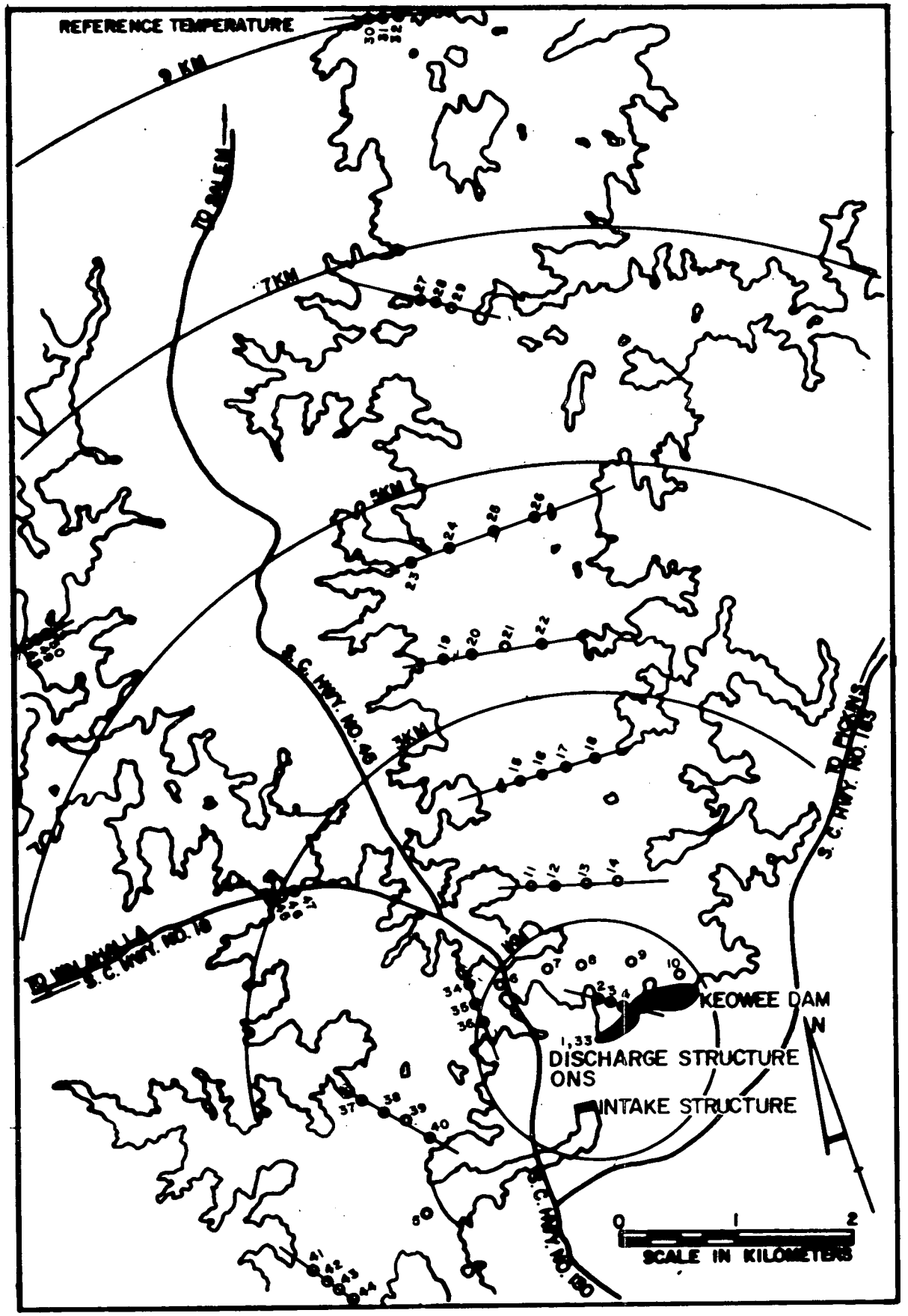

Figure: 1.6-1

Oconee Nuclear Station
Plume Mapping Study
Station Locations

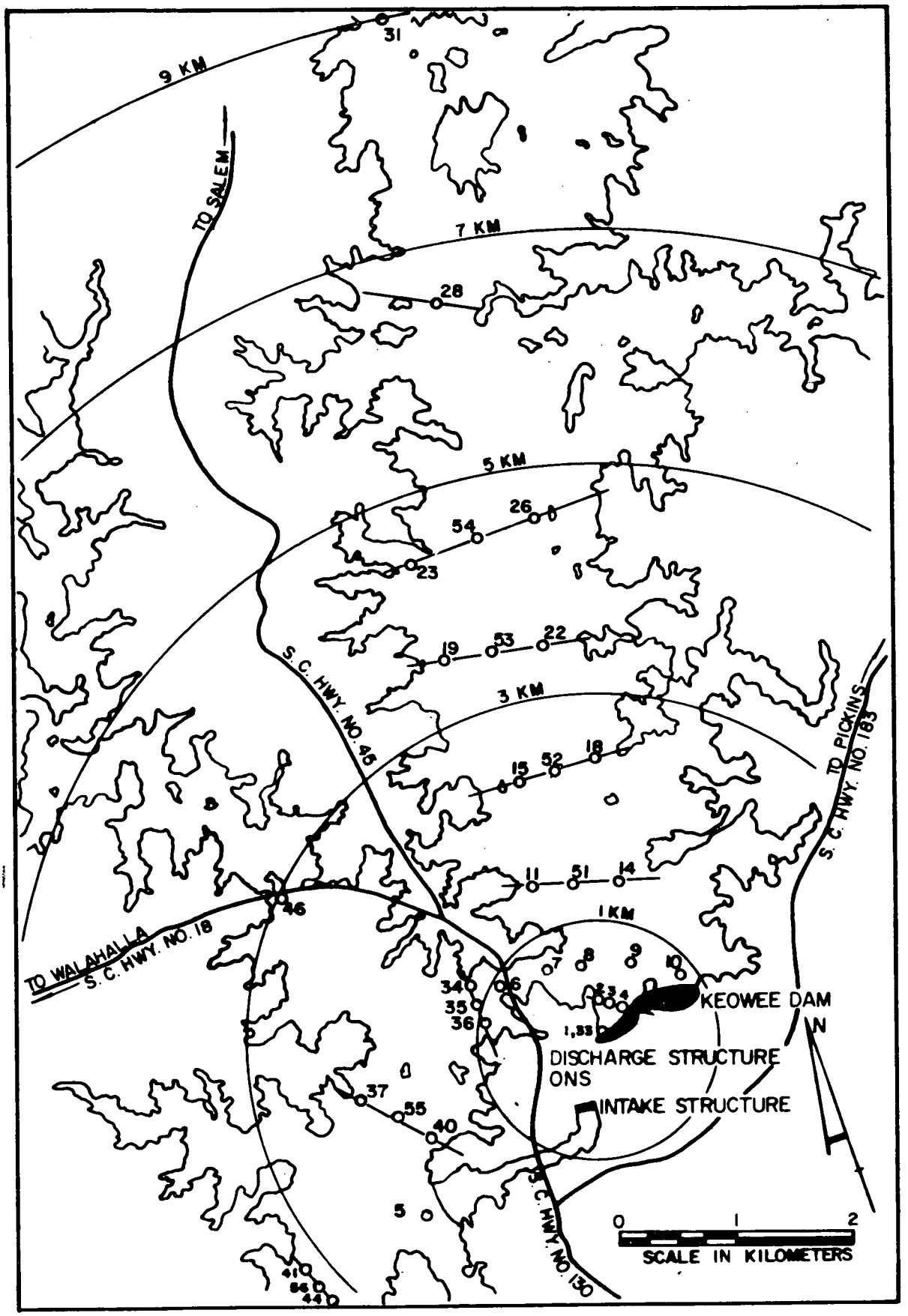

Figure: I.6-2

Oconee Nuclear Station
Plume Mapping Study
Station Locations

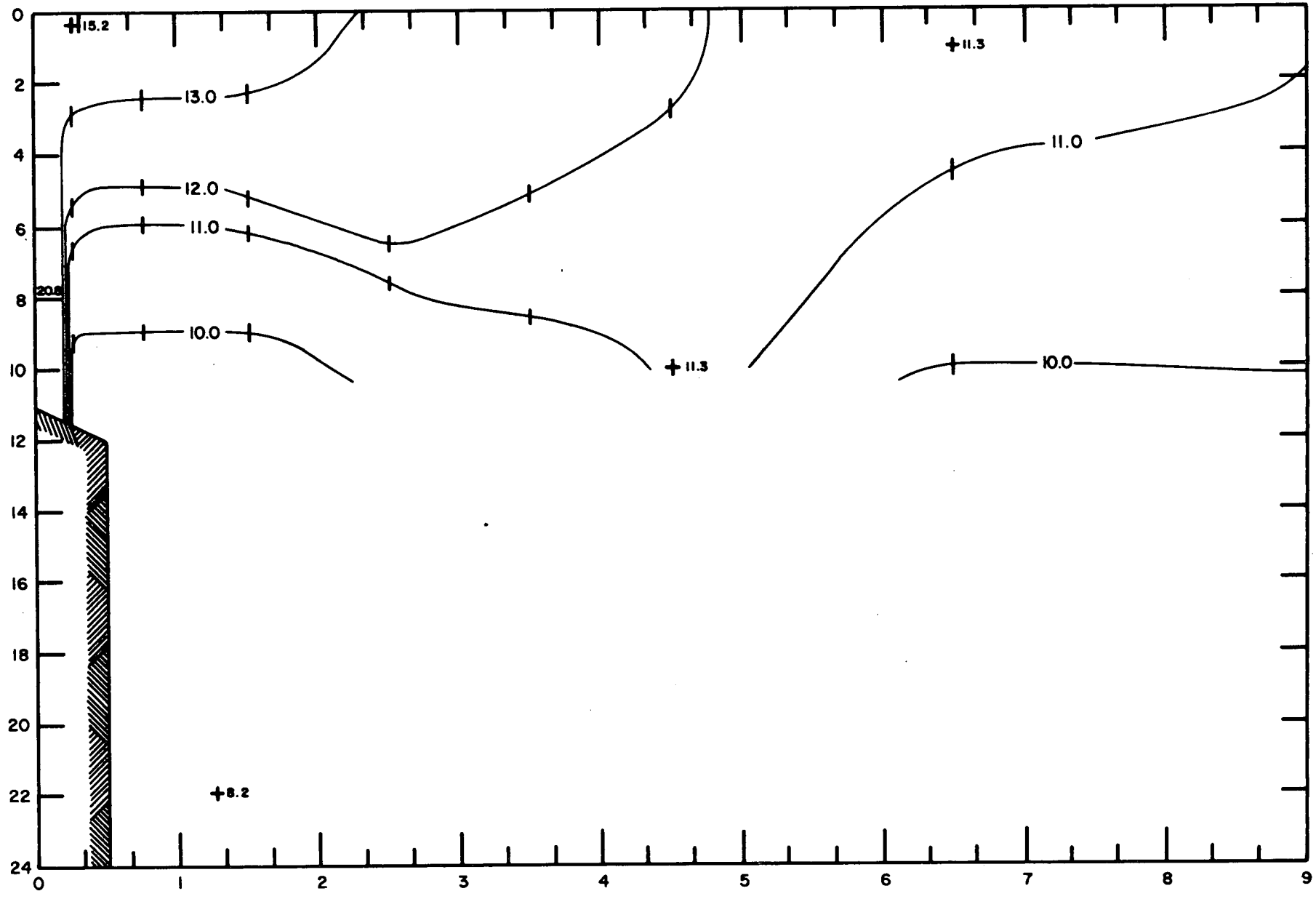

FIGURE : 1.6-3

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 2-24-77

PARAMETER : TEMPERATURE (C)

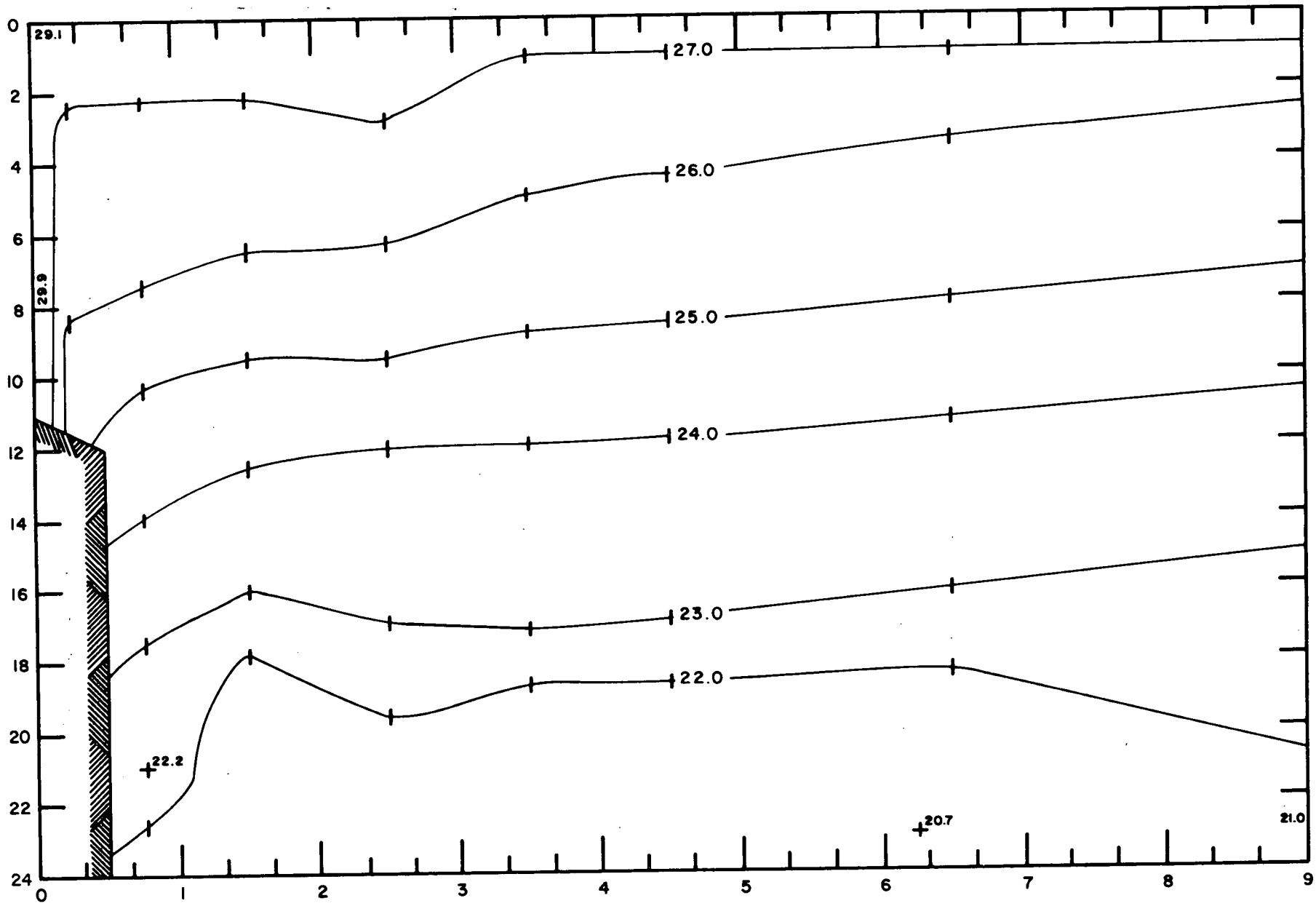

FIGURE : 1.6-4

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 8-30-77

PARAMETER : TEMPERATURE (C)

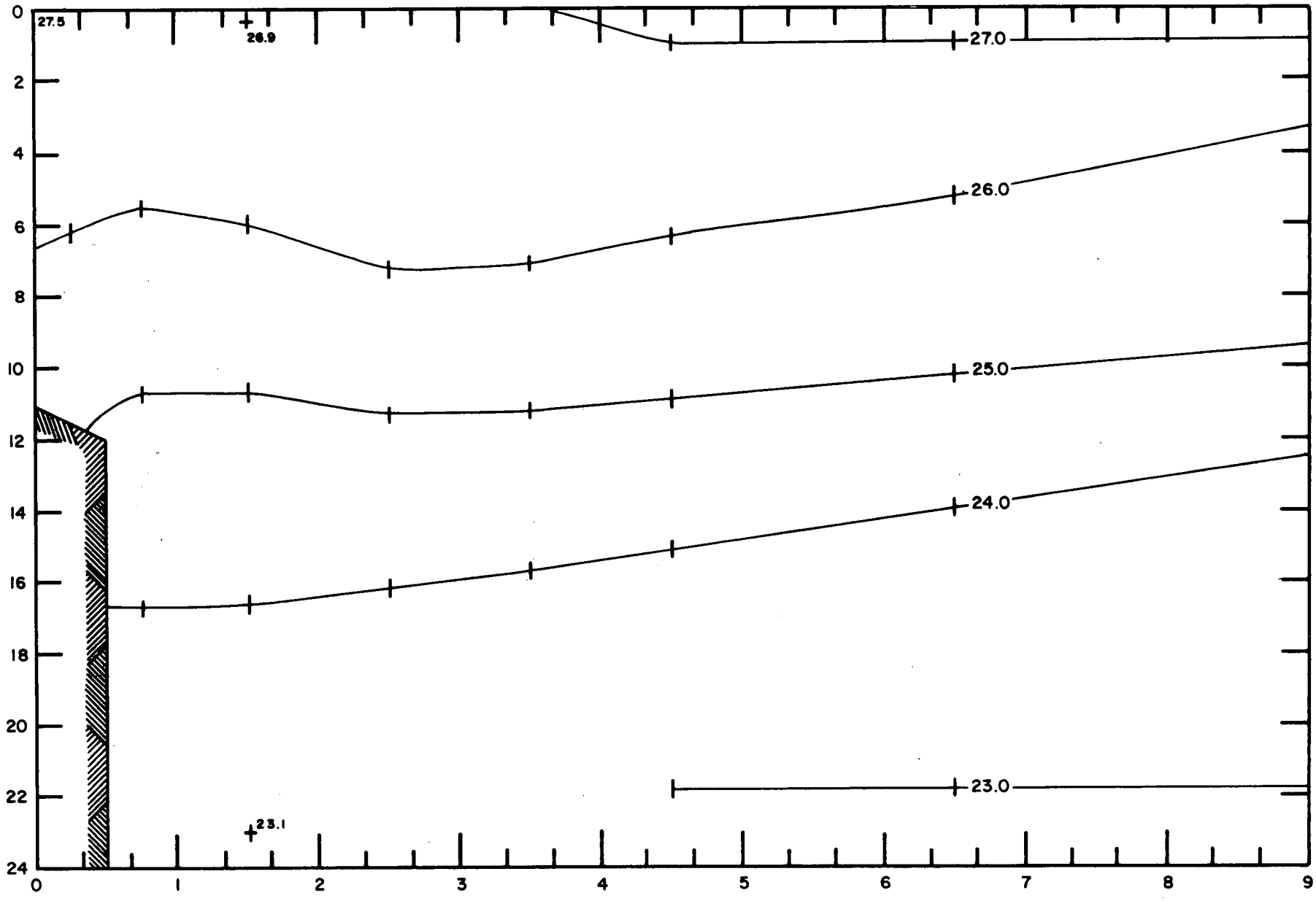

FIGURE : 1.6-5

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 9-21-77

PARAMETER : TEMPERATURE (C)

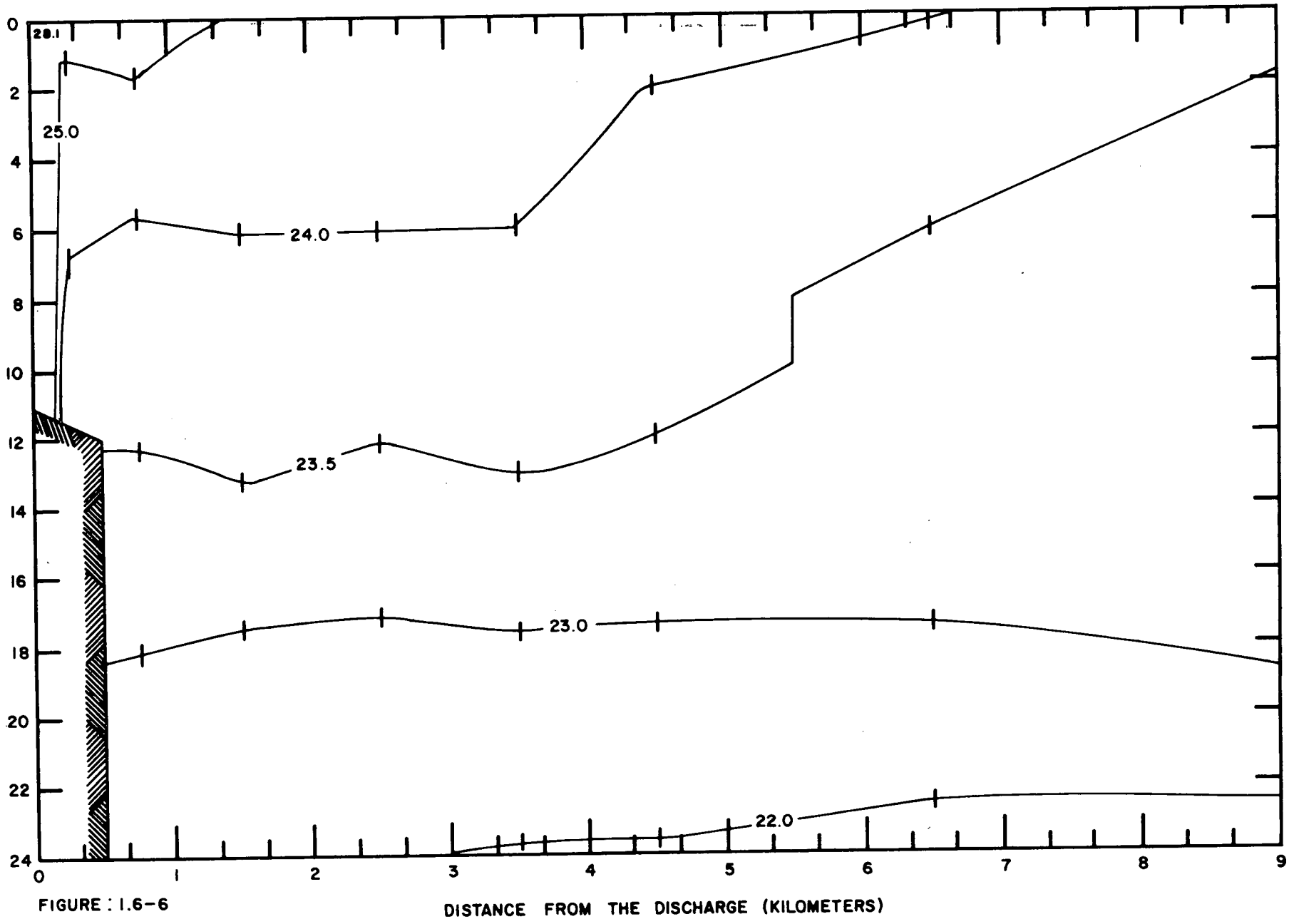

FIGURE : 1.6-6

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 10-12-77

PARAMETER : TEMPERATURE (C)

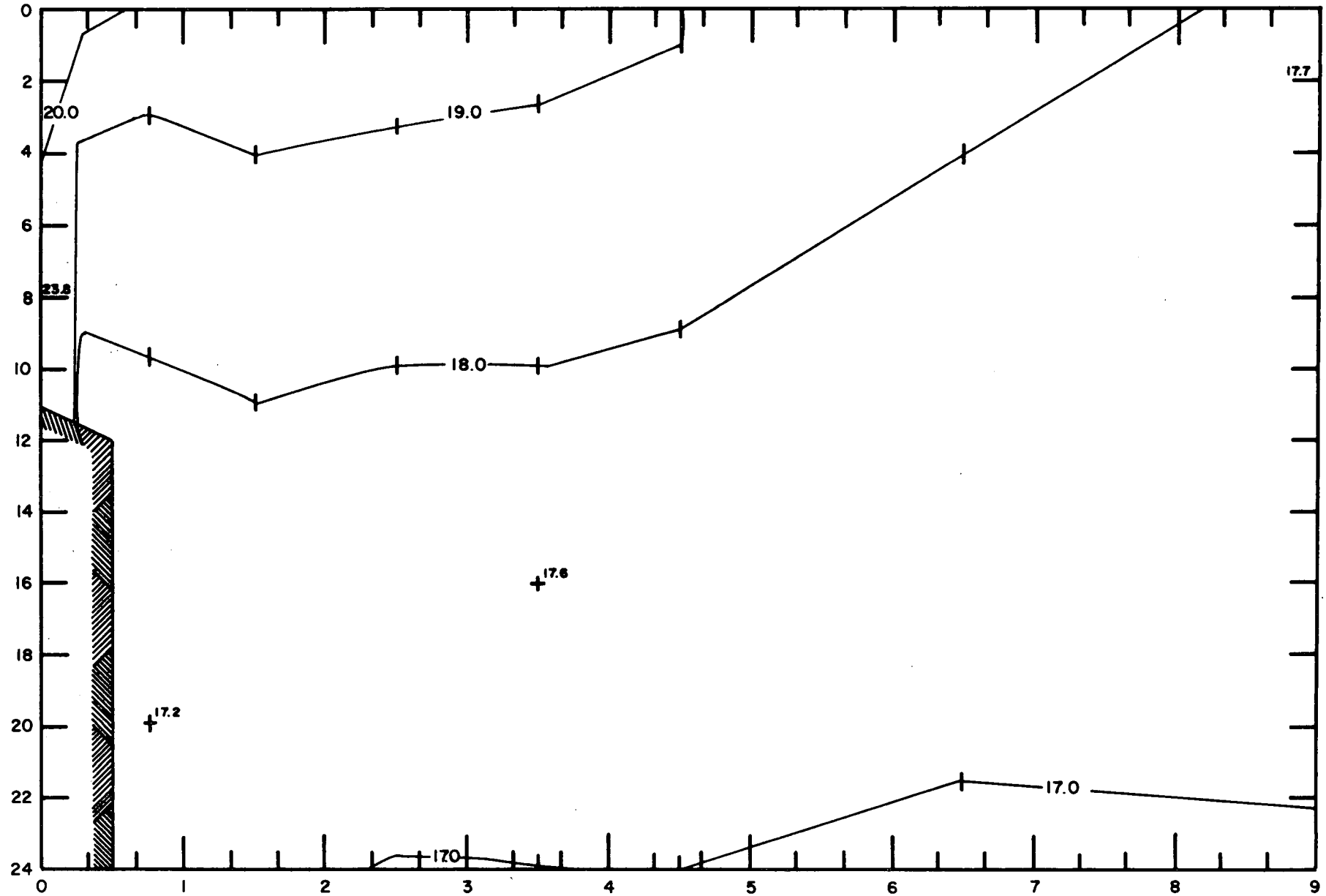

FIGURE : 1.6-7

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 11-22-77

PARAMETER : TEMPERATURE (C)

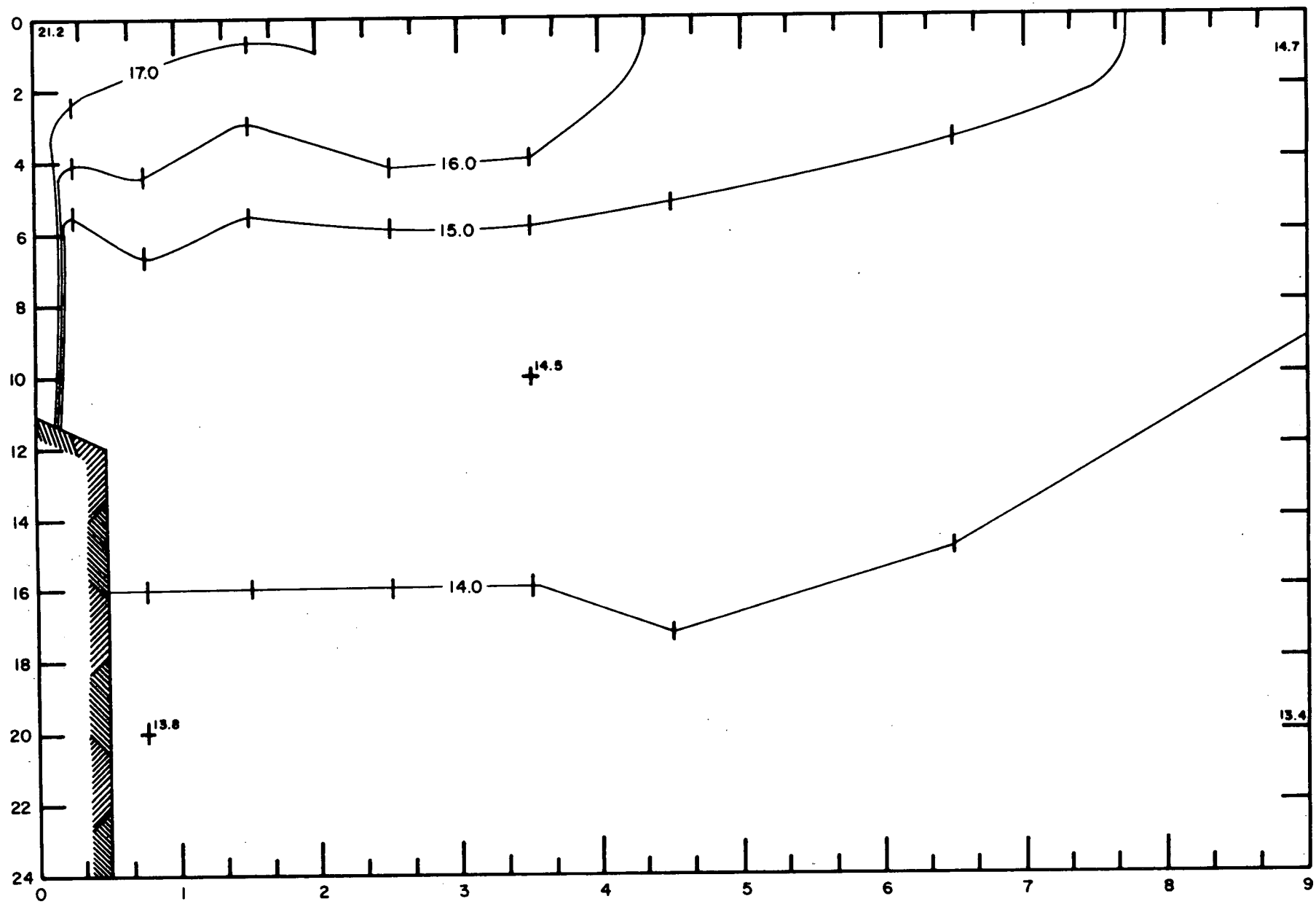

FIGURE : 1.6-8

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 12-14-77

PARAMETER : TEMPERATURE (C)

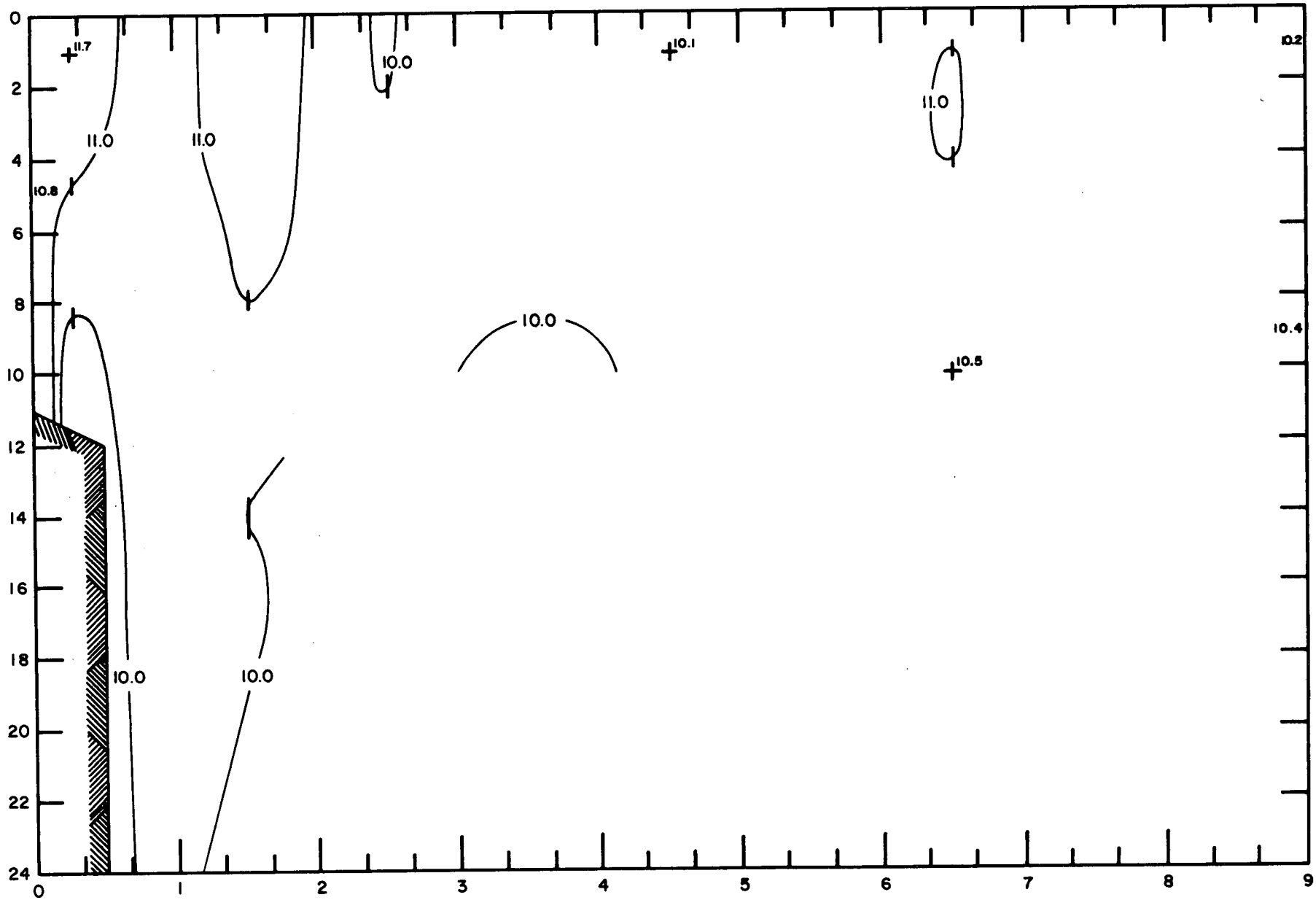

FIGURE : 1.6-9

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 2-24-77

PARAMETER : DISSOLVED OXYGEN (mg/l)

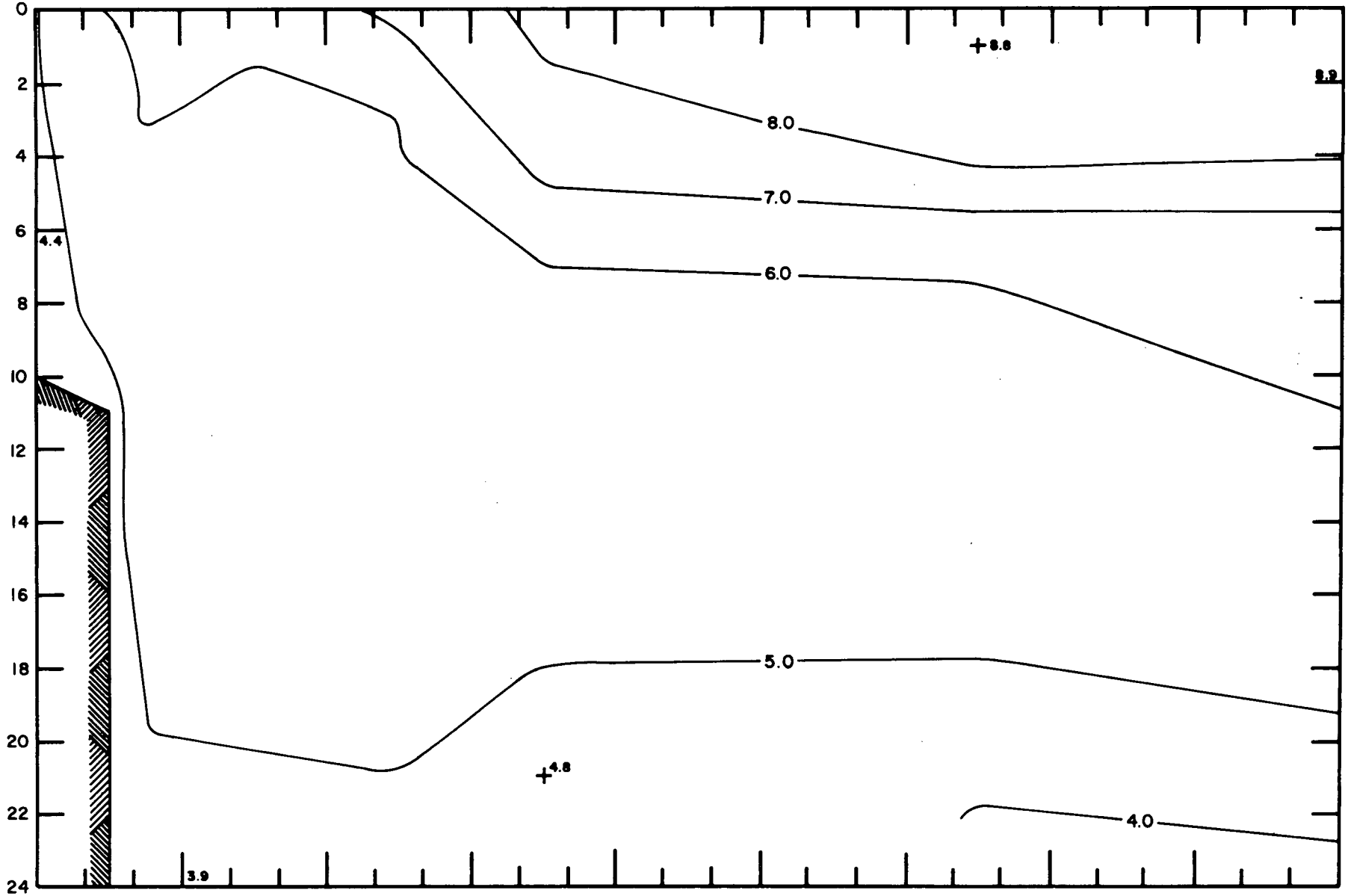

FIGURE : 1.6-10

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 8-30-77

PARAMETER : DISSOLVED OXYGEN (mg/l)

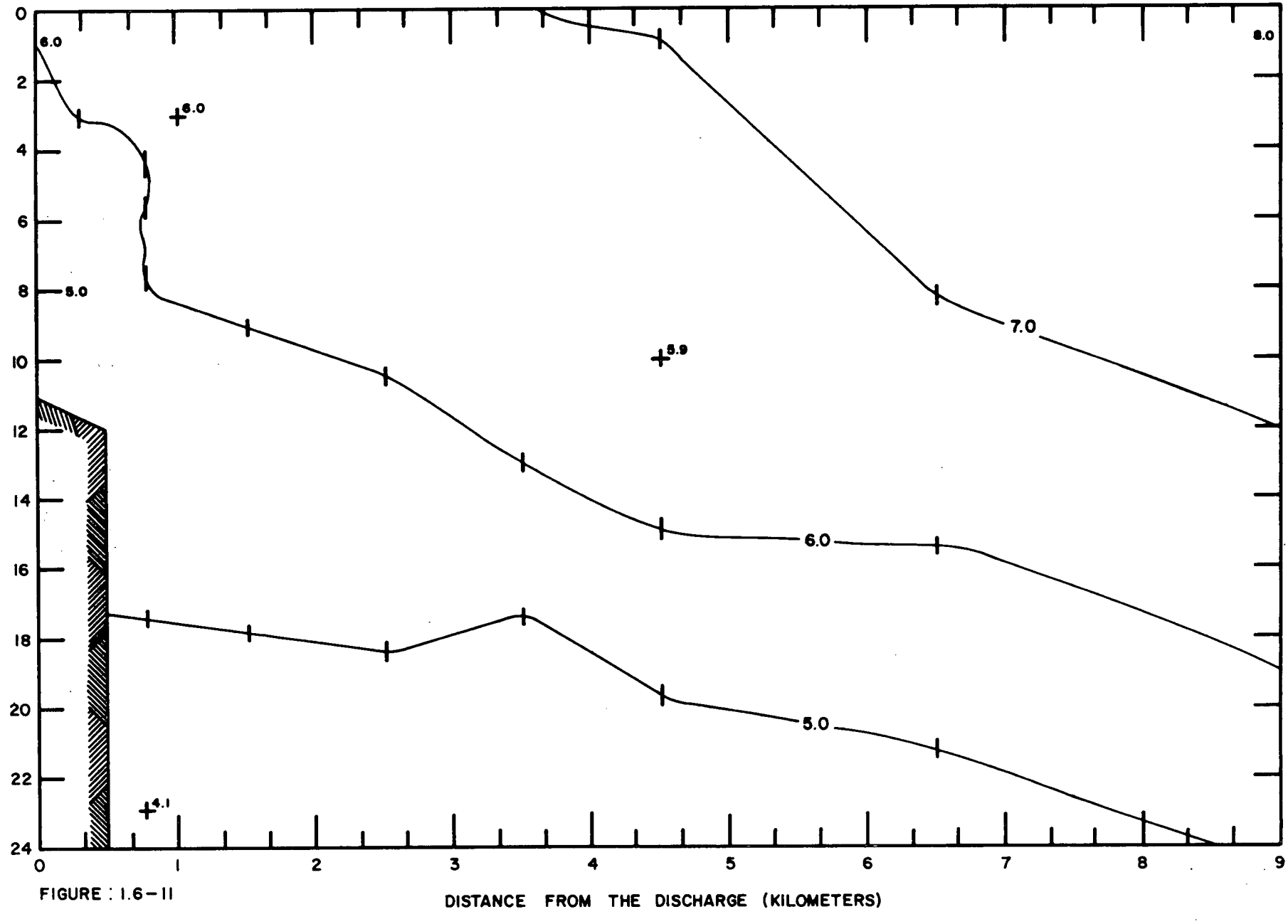

FIGURE : 1.6-11

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 9-21-77

PARAMETER : DISSOLVED OXYGEN (mg/l)

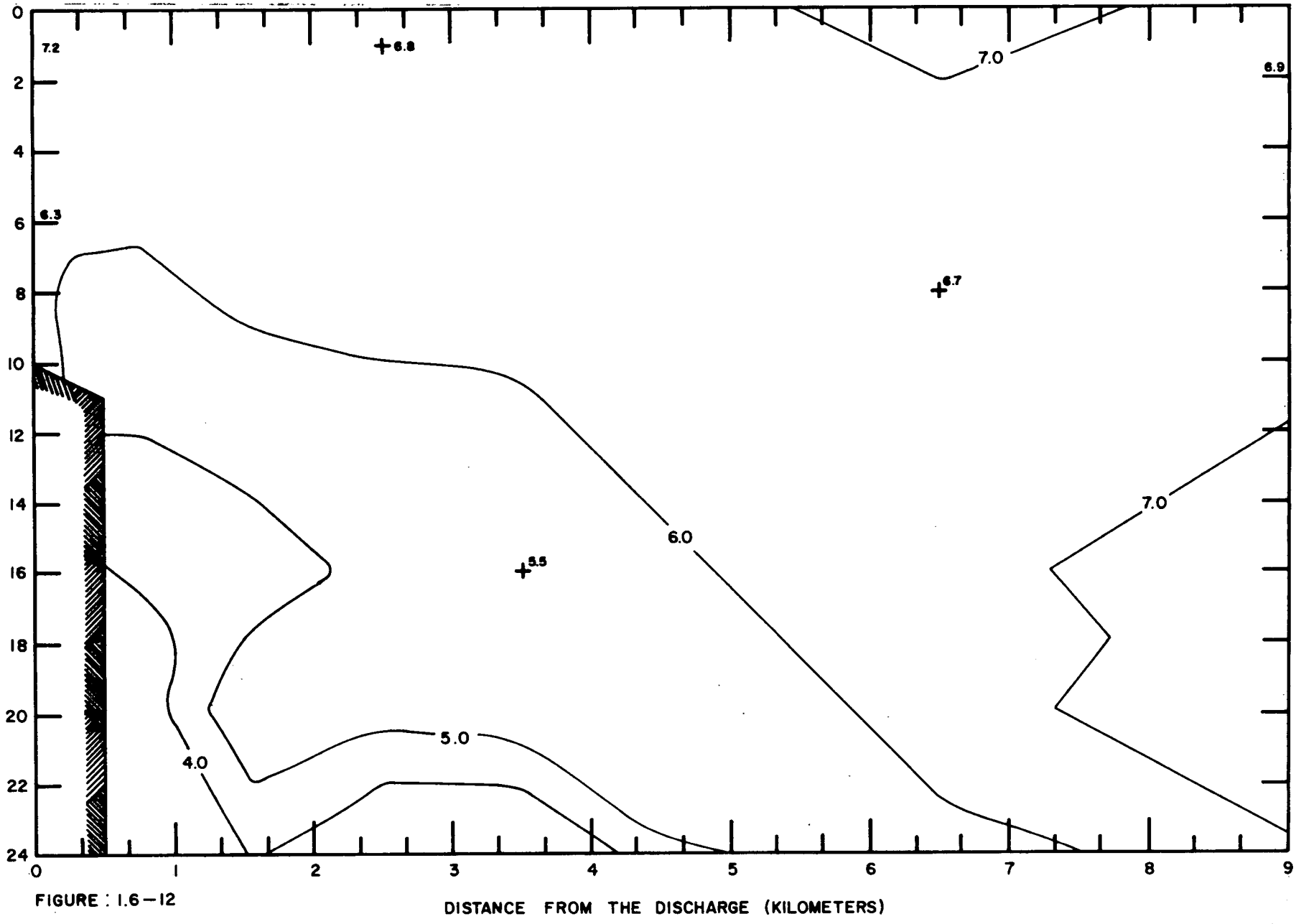

FIGURE : 1.6-12

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 10-12-77

PARAMETER : DISSOLVED OXYGEN (mg/l)

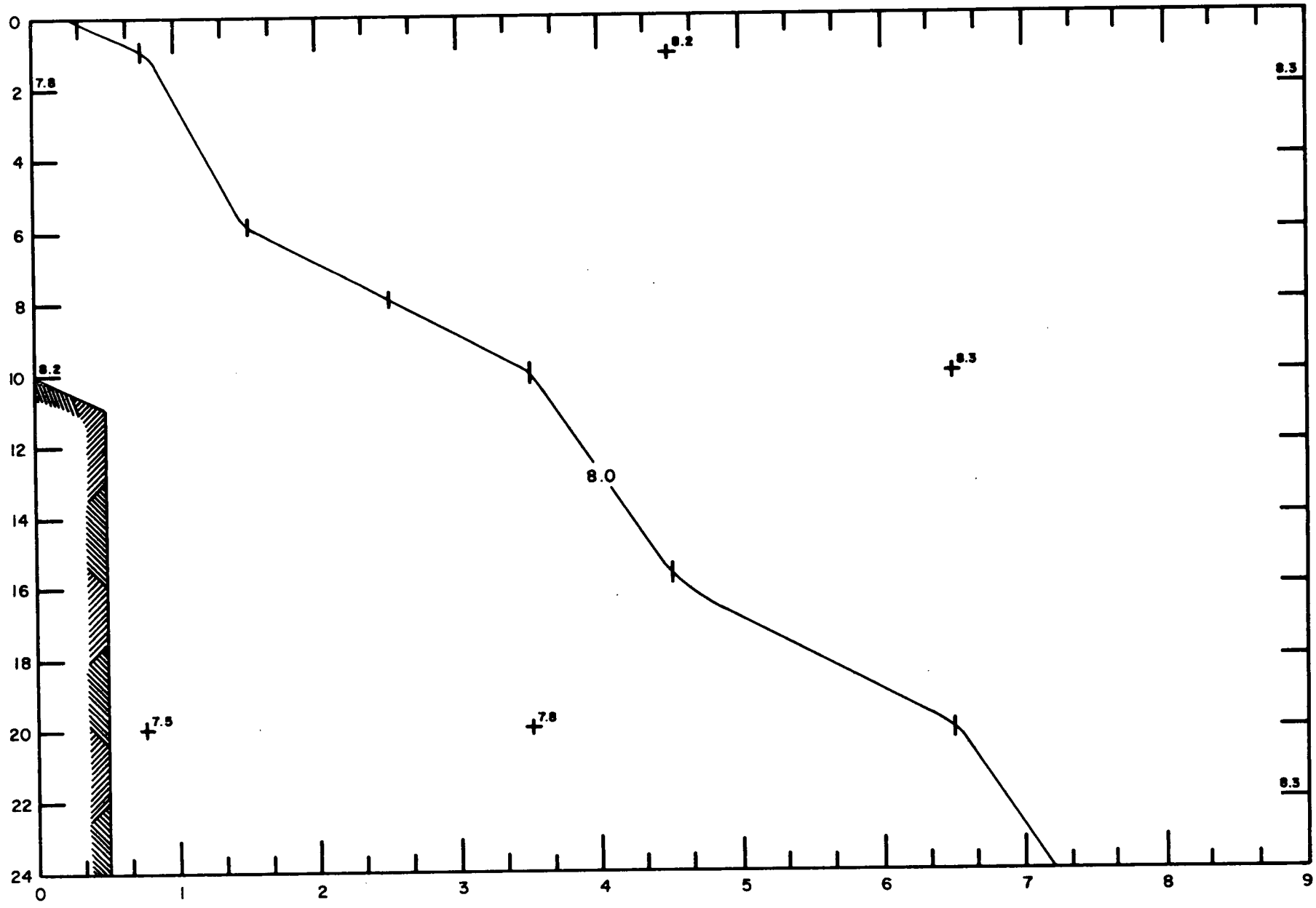

FIGURE : 1.6-13

OCONEE NUCLEAR STATION
PLUME MAPPING STUDY

DATE : 11-22-77

PARAMETER : DISSOLVED OXYGEN (mg/l)

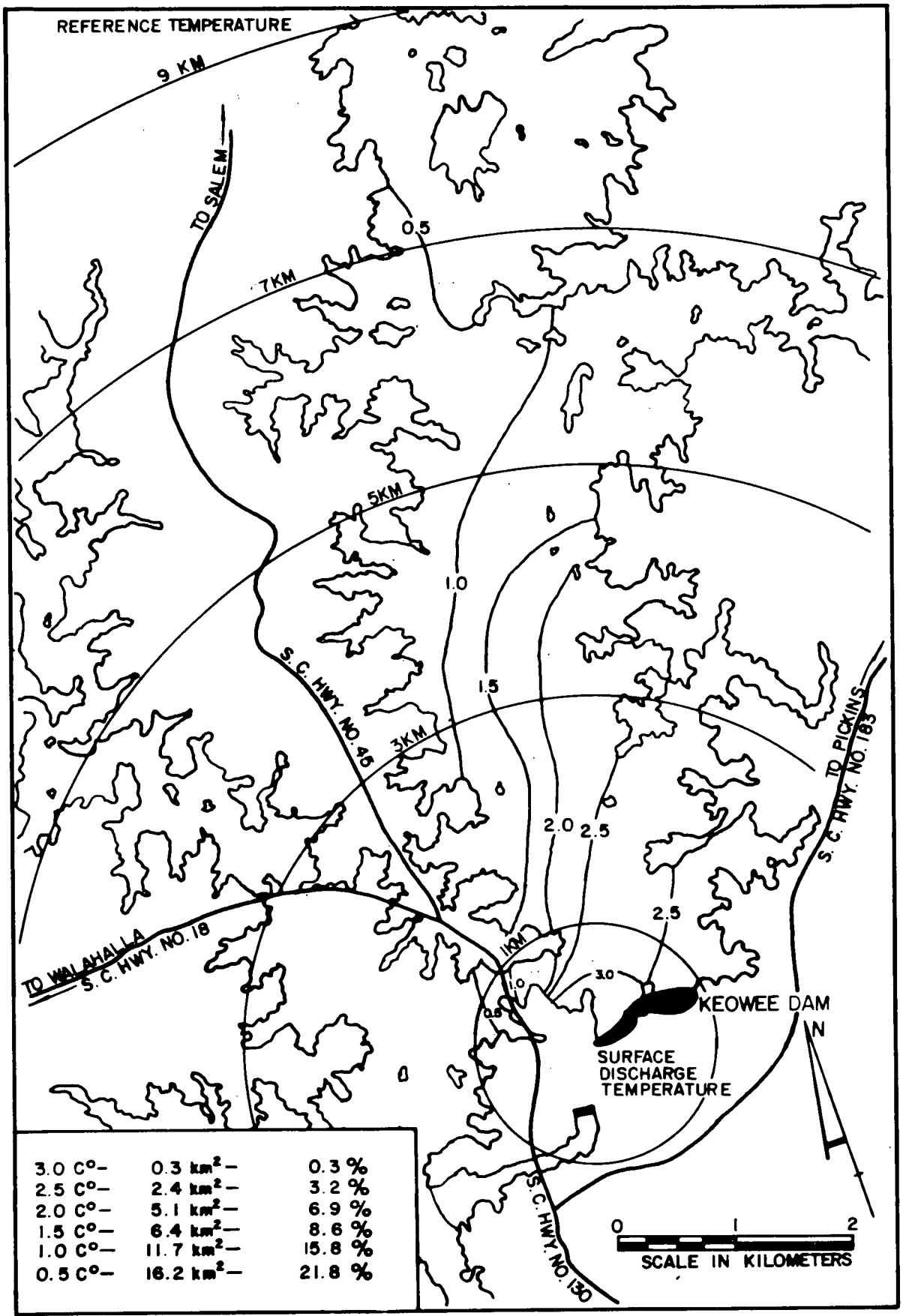

Figure: 1.6-14

Oconee Nuclear Station
Plume Mapping Study
C° Above Reference

Date: 2-24-77

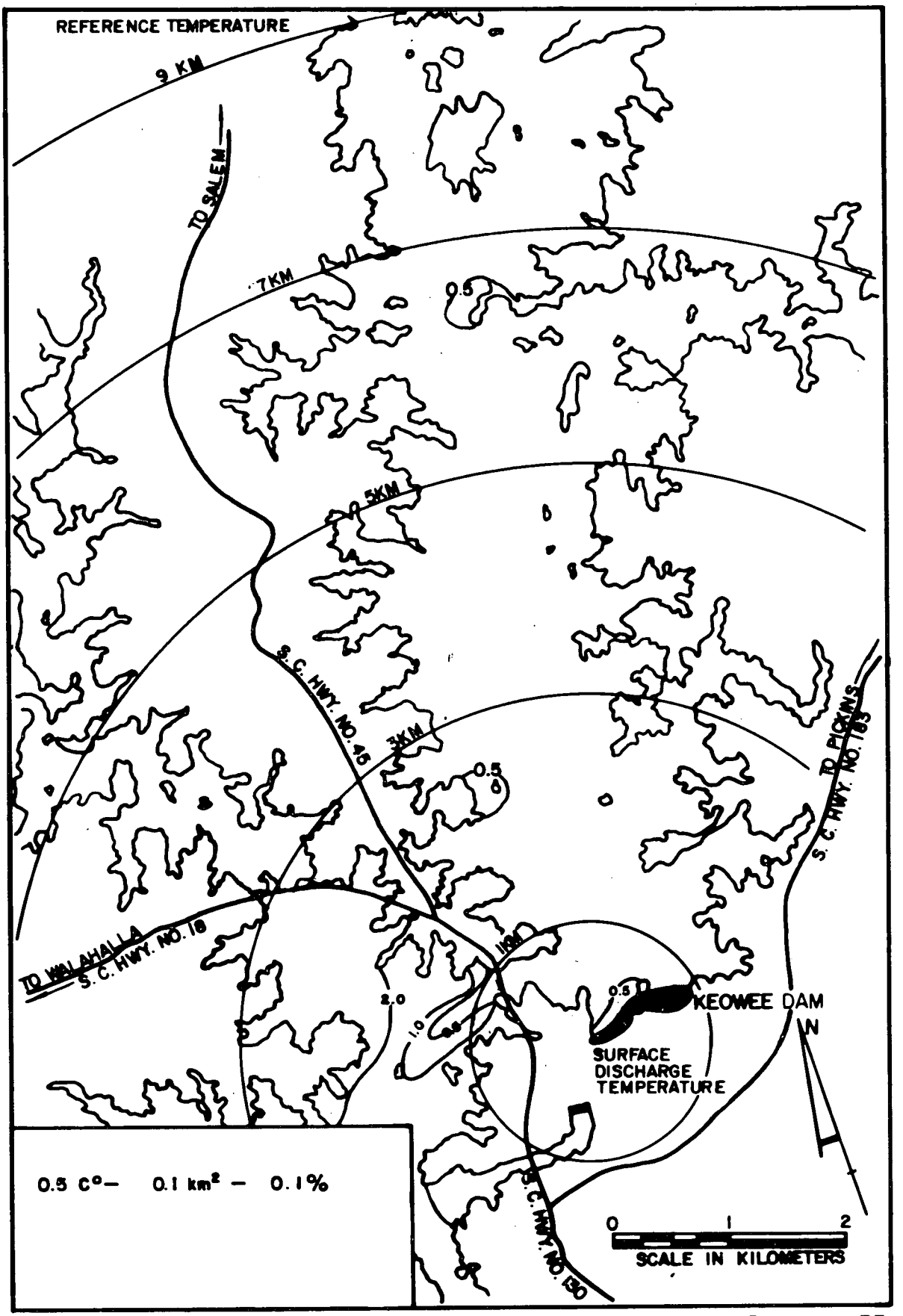

Figure: 1.6-15

Oconee Nuclear Station
Plume Mapping Study
C° Above Reference

Date: 8-30-77

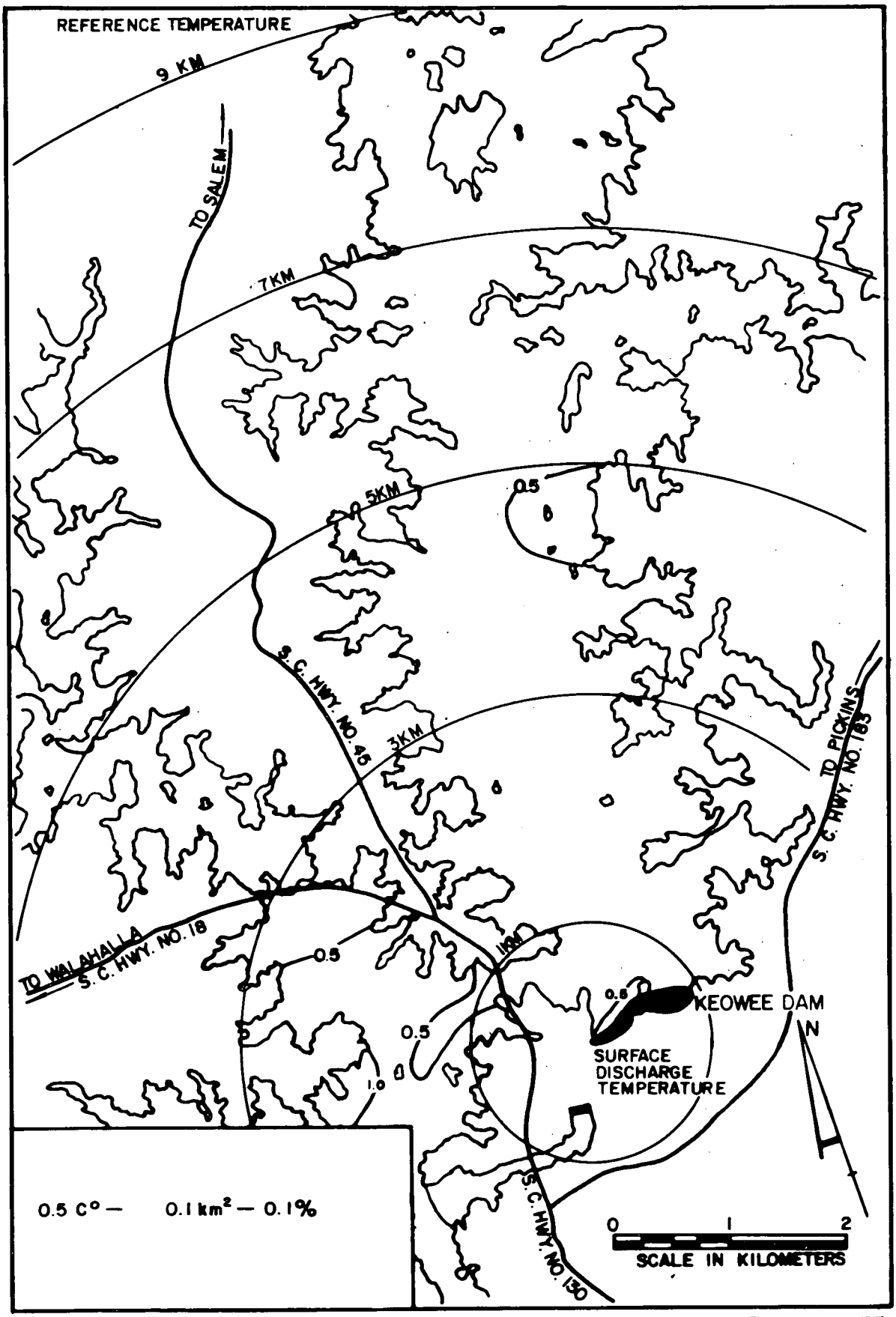

Figure: 1.6-16

Oconee Nuclear Station
Plume Mapping Study
C° Above Reference

Date: 9-21-77

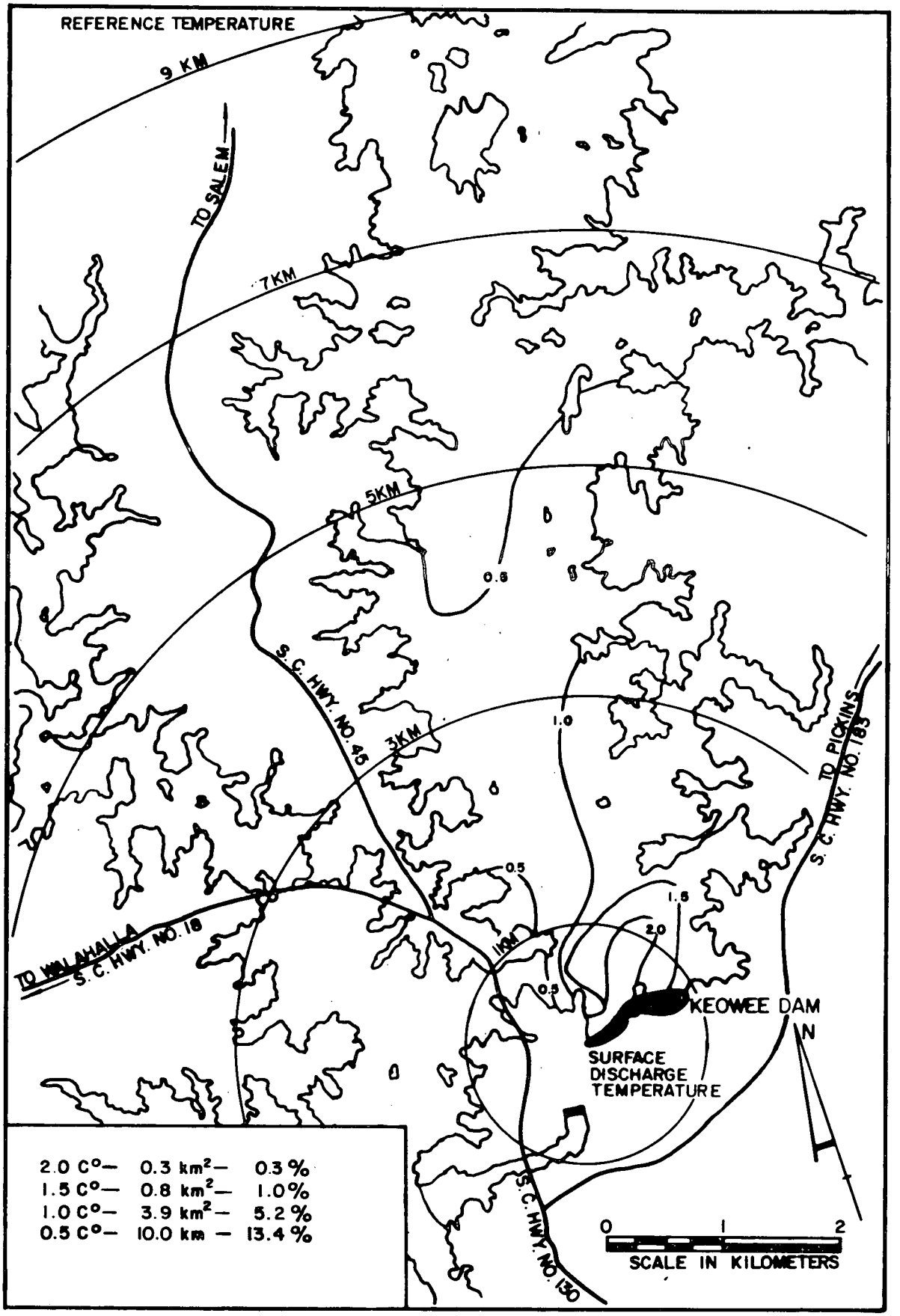

Figure: 1.6-17

Oconee Nuclear Station
Plume Mapping Study
C° Above Reference

Date: 10-12-77

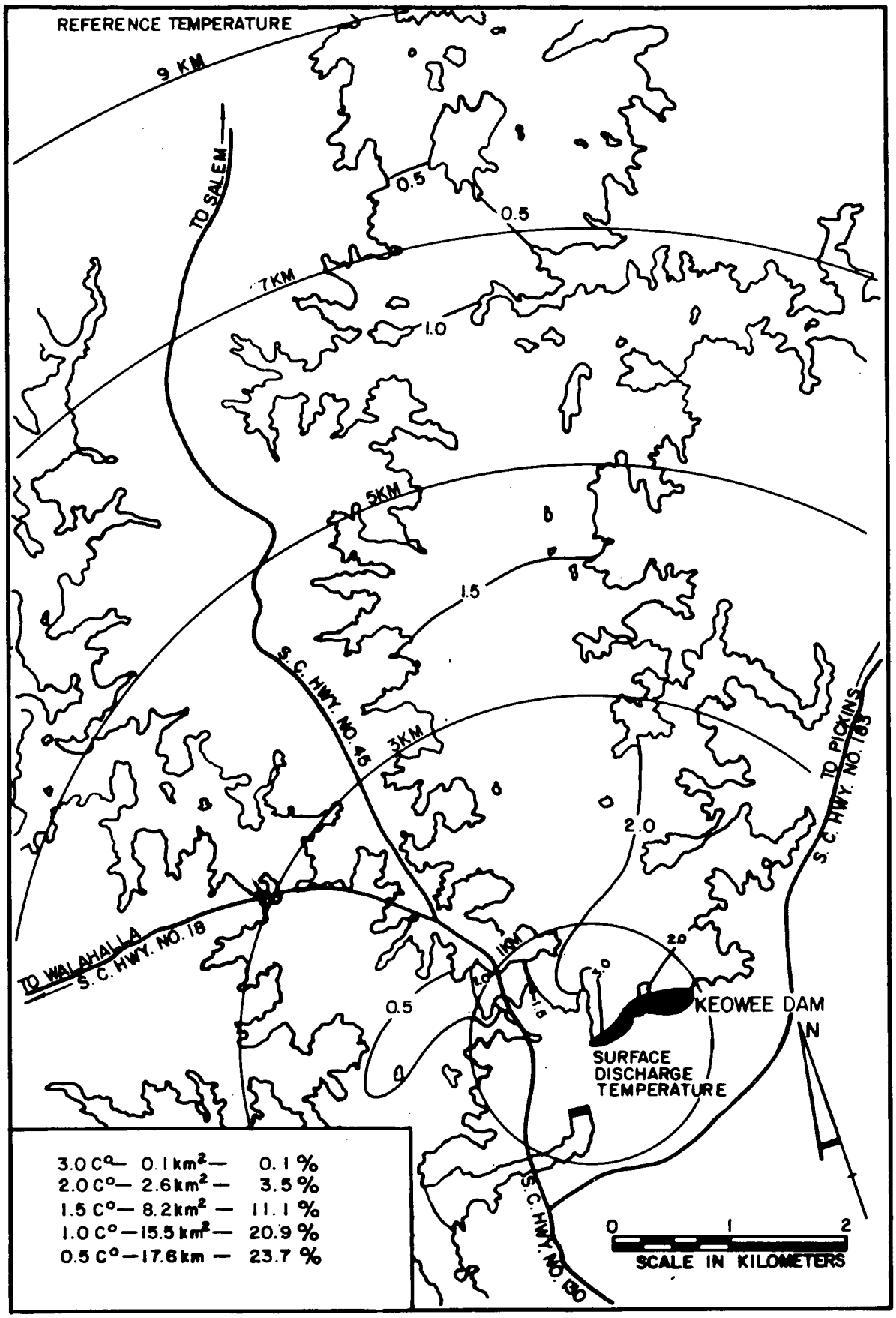

Figure: 1.6-18

Oconee Nuclear Station
Plume Mapping Study
C° Above Reference

Date: 11-22-77

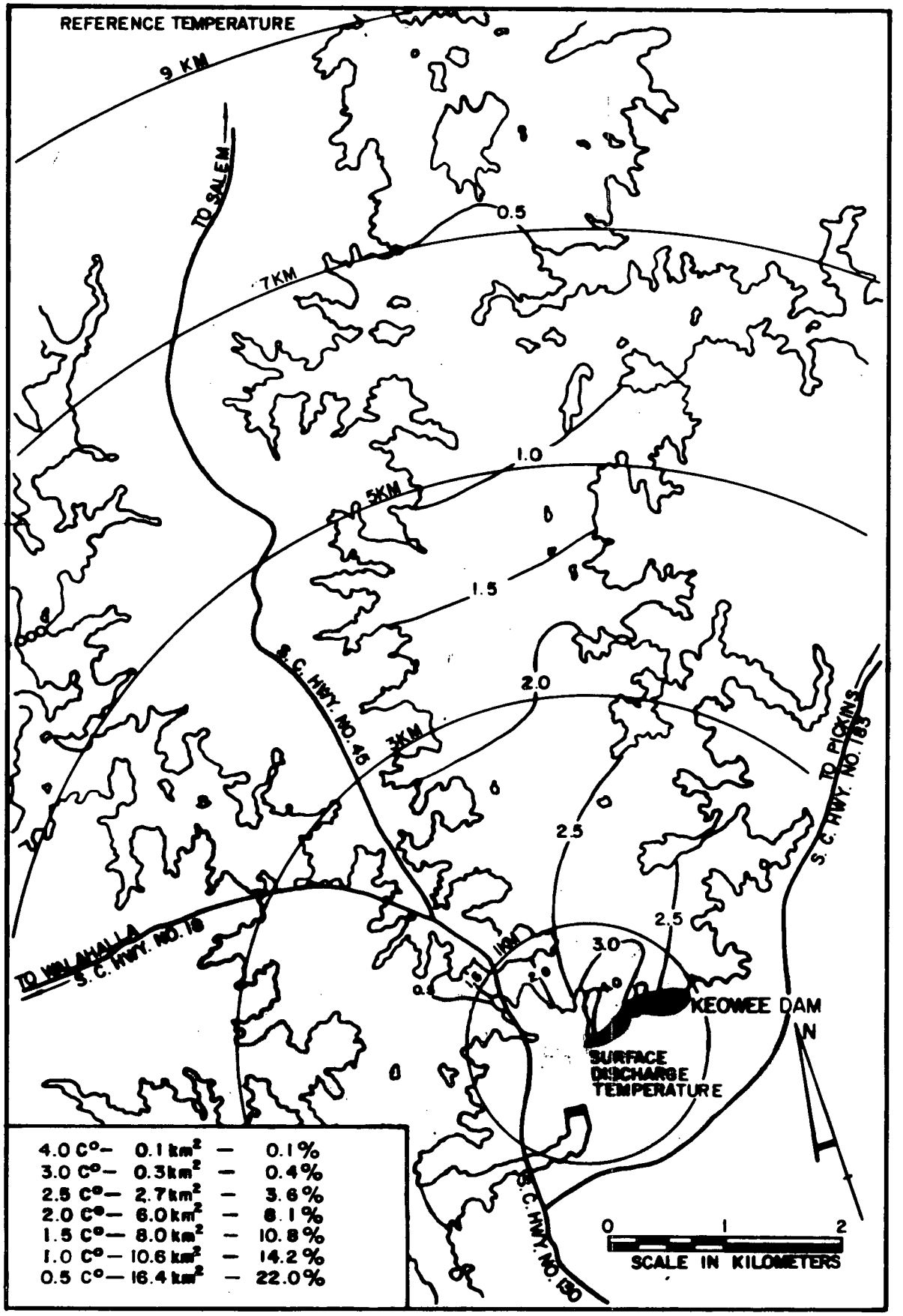

Figure: 1.6-19

Oconee Nuclear Station
Plume Mapping Study
C° Above Reference

Date: 12-14-77

1.7 GAS BUBBLE DISEASE STUDY

Specification: A. The fish collected as a part of the population dynamics study (1.3.2) shall be examined for symptoms of gas-bubble disease. Those fish which exhibit symptoms of gas-bubble disease shall be identified, weighed, and measured; this data plus the date and location of capture will be tabulated (Duke Power Company 1973a).

I. INTRODUCTION

The relationship between gas-bubble disease and the operation of steam electric stations has been discussed previously (Duke Power Company 1973b).

II. METHODS AND MATERIALS

The methods and materials used in monitoring gas-bubble disease in Lake Keowee fishes were presented in the Oconee Nuclear Station, Semi-Annual Report for the period ending June 30, 1973 (Duke Power Company 1973b).

III. RESULTS AND DISCUSSION

Southeast Reservoir Investigations has not observed gas-bubble disease in Lake Keowee fishes during this reporting period.

IV. SUMMARY AND CONCLUSIONS

The lack of observed gas-bubble disease symptoms in Lake Keowee fishes to date indicates that the problem does not exist in the lake.

LITERATURE CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company, U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised August 1, 1975, NRC), Washington, D. C.

Duke Power Company. 1973b. Oconee Nuclear Station. Semi-Annual Report, Period ending June 30, 1973.

1.7 GAS BUBBLE DISEASE

Specification: B. Determination of the percent saturation values of the gases oxygen and nitrogen dissolved in Lake Keowee waters shall be made at Stations 502, 504, 505, intake structure, discharge structure, and discharge cove at depths of 1, 5, 10 and 20 feet. The study shall be performed monthly during the winter period, November to April, starting in November, 1973 (Duke Power Company 1973a).

I. INTRODUCTION

Supersaturation of dissolved gases has previously been found in the discharge of steam plants. A discussion of this phenomenon may be found in the ONS Semi-Annual Report for the period ending June 30, 1973 (Duke Power Company 1973b) and the Environmental Summary Report, 1971-1976 (Duke Power Company 1977).

II. METHODS AND MATERIALS

A discussion of the methods and materials used in this study for January through December, 1977, may be found in the Oconee Nuclear Station Semi-Annual Report for the period ending June 30, 1974 (Duke Power Company 1974).

III. RESULTS AND DISCUSSION

The results of sampling during 1977 are summarized in Table 1.7-1 as percent saturation of oxygen and nitrogen. Figures 1.7-1 through 1.7-6 depict the mean percent saturation and standard deviations of dissolved gases for each location for each month of sampling.

Generally the highest average saturation values were recorded for the ONS discharge (Location 508.0). The following is a summary of the sampling location minimum and maximum values for each of the six sampling periods (these values were obtained by averaging the four sampling depths):

% Nitrogen Saturation

Date	Minimum	Maximum
January 7	92.9% - Location 501.0	105.8% - Location 508.0
February 4	89.4% - Location 501.0	101.8% - Location 502.0
March 4	93.9% - Location 502.0	103.8% - Location 504.0
April 1	90.0% - Location 502.0	110.3% - Location 508.0
November 18	79.4% - Location 509.5	99.0% - Location 501.0
December 9	91.7% - Location 504.0	101.4% - Location 508.0

	% Oxygen Saturation	
Date	Minimum	Maximum
January 7	88.7% - Location 505.0	106.7% - Location 508.0
February 4	85.9% - Location 501.0	99.8% - Location 508.0
March 4	91.0% - Location 502.0	99.8% - Location 504.0
April 1	87.4% - Location 502.0	106.4% - Location 508.0
November 18	75.6% - Location 509.5	89.8% - Location 501.0
December 9	82.4% - Location 503.0	93.8% - Location 508.0

Even though supersaturation of nitrogen was most common in the ONS discharge the condition existed at each of the remaining sampling locations at least once during the six sampling periods. Supersaturation of dissolved oxygen was less evident than nitrogen. Supersaturation of oxygen was primarily associated with the ONS discharge (Location 508.0). Supersaturation of both gases in the ONS discharge seemed to have dissipated by the time the thermal discharge plume reached Location 508.5 approximately 200 m out in front of the discharge structure.

IV. SUMMARY AND CONCLUSIONS

Slight supersaturation of both, nitrogen and oxygen, has been documented both near and distant to the discharge area of ONS during each of the past four years of sampling. Supersaturation of these two gases in the discharge was attributed to the increase in temperature and pressure as the lake water passed through the Condenser Cooling Water system during ONS operations. However, supersaturated conditions at distant locations from the ONS discharge show that even under natural conditions slight supersaturation of nitrogen and oxygen can and has occurred in the lake.

The absence of symptoms of gas-bubble disease (GBD) in Lake Keowee fishes in the area of the ONS discharge may indicate that fish do not remain in the warm water discharge long enough to develop symptoms of GBD and/or that the concentrations of these two gases are not high enough to result in the symptmns of GBD. The presence of supersaturated conditions in waters distant to the discharge suggests the latter.

LITERATURE CITED

Duke Power Company. 1973a. Appendix B to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55, Technical Specifications for the Oconee Nuclear Station Units 1, 2, and 3, Duke Power Company. U. S. Atomic Energy Commission, Docket Nos. 50-269, 50-270, and 50-287 (revised August 19, 1974, NRC), Washington, D. C.

_____. 1973b. Oconee Nuclear Station. Semi-Annual Report, Period Ending June 30, 1973.

_____. 1974. Oconee Nuclear Station. Semi-Annual Report, Period Ending June 30, 1974.

_____. 1977. Oconee Nuclear Station. Environmental Summary Report, 1971-1976.

Table 1.7-1 Dissolved gas saturation values for Lake Keowee, January through April, November and December 1977.

SAMPLING LOCATIONS

Date	Depth (m)	501.0 Temp (°C)	501.0 % Sat. O_2	501.0 % Sat. N_2	502.0 Temp (°C)	502.0 % Sat. O_2	502.0 % Sat. N_2	509.0 Temp (°C)	509.0 % Sat. O_2	509.0 % Sat. N_2	508.0 Temp (°C)	508.0 % Sat. O_2	508.0 % Sat. N_2	508.5 Temp (°C)	508.5 % Sat. O_2	508.5 % Sat. N_2	503.0 Temp (°C)	503.0 % Sat. O_2	503.0 % Sat. N_2	504.0 (°C)	504.0 % Sat. O_2	504.0 % Sat. N_2	505.0 Temp (°C)	505.0 % Sat. O_2	505.0 % Sat. N_2
01/07	0.3	8.6	92.6	91.9	10.6	92.1	92.4	9.7	84.4	91.9	19.4	102.2	103.0	16.7	97.5	102.8	12.6	91.7	96.0	14.9	100.9	102.9	12.7	84.8	91.0
	1.5	8.6	90.2	91.9	10.5	86.4	92.6	9.4	92.4	99.0	19.4	106.5	106.7	16.7	96.4	100.4	12.2	95.4	99.4	14.9	95.0	99.3	12.8	92.8	99.8
	3.0	8.6	93.9	94.9	10.5	93.2	96.1	9.4	87.6	95.9	19.5	108.1	106.3	13.4	89.6	96.7	11.0	94.0	94.1	14.9	82.7	90.8	12.8	85.7	97.8
	6.1	8.6	93.8	92.8	10.4	94.3	95.1	9.4	95.2	95.4	19.5	110.0	107.4	12.5	92.1	97.4	11.0	90.5	92.1	14.8	94.4	98.0	12.7	91.4	96.2
02/04	0.3	5.4	84.2	85.9	8.0	98.9	113.2	6.2	81.1	88.7	16.7	104.8	101.3	12.0	93.6	96.3	8.3	86.0	95.7	12.2	93.1	97.0	11.6	88.2	93.1
	1.5	5.4	86.2	90.0	8.0	92.4	100.6	6.2	89.9	96.0	14.2	89.4	92.4	11.8	92.7	95.4	8.3	84.0	95.0	12.2	94.0	95.6	11.6	91.8	96.3
	3.0	5.3	87.1	90.0	7.9	87.2	96.8	6.2	88.1	96.3	16.2	109.6	109.1	10.1	83.7	93.5	8.3	93.1	106.4	12.2	96.0	100.3	10.5	88.0	91.3
	6.1	5.3	86.3	91.8	7.9	83.3	96.4	6.2	85.0	91.0	10.0	95.5	100.1	9.6	89.3	92.0	8.2	89.2	97.2	11.1	86.7	92.4	10.3	92.4	95.4
03/04	0.3	8.9	92.3	95.7	11.3	93.9	94.9	7.8	82.0	96.7	11.6	101.4	102.5	13.3	96.4	99.2	13.3	102.8	108.1	14.4	102.8	105.0	13.5	99.3	105.1
	1.5	8.8	93.0	99.7	11.1	95.1	95.8	7.8	92.1	99.3	13.5	98.9	102.9	13.3	100.3	105.4	12.8	88.6	103.2	14.4	100.9	106.2	13.6	96.1	100.1
	3.0	8.5	93.1	95.2	10.3	84.7	89.1	7.8	99.5	102.9	13.6	99.4	104.7	12.8	94.7	103.3	10.3	87.2	99.3	14.4	100.2	103.9	13.3	96.7	101.0
	6.1	8.3	99.6	104.8	10.0	90.5	95.8	8.1	95.6	101.6	13.5	94.9	98.4	12.5	94.1	97.2	10.0	94.2	98.5	13.6	95.5	100.3	12.9	104.4	107.2
04/01	0.3	15.4	108.9	109.5	15.7	88.7	91.0	10.1	90.1	102.2	19.5	106.1	108.8	17.6	92.2	101.0	15.6	88.2	90.4	16.5	92.4	99.6	15.7	97.8	98.4
	1.5	15.4	91.0	91.9	15.6	88.8	91.0	9.8	95.9	107.8	19.4	104.9	111.6	16.5	95.6	103.2	15.2	88.6	94.8	16.5	89.1	99.0	15.7	93.8	96.1
	3.0	15.1	88.8	93.6	15.3	84.2	89.2	9.8	92.5	101.7	19.9	105.3	107.8	15.8	95.2	99.8	14.8	89.4	93.6	16.4	107.2	114.2	15.6	91.4	94.2
	6.1	13.8	88.6	89.0	14.3	87.9	89.0	9.8	87.0	97.6	17.8	109.3	112.9	15.3	86.8	95.1	14.1	84.3	93.8	15.4	94.4	100.4	15.5	94.8	96.3

Table 1.7-1 Dissolved gas saturation values for Lake Keowee, January through April, November and December 1977 (Cont.).

SAMPLING LOCATIONS

Date	Depth (m)	501.0 Temp (°C)	501.0 % Sat. O_2	501.0 % Sat. N_2	502.0 Temp (°C)	502.0 % Sat. O_2	502.0 % Sat. N_2	509.0 Temp (°C)	509.0 % Sat. O_2	509.0 % Sat. N_2	508.0 Temp (°C)	508.0 % Sat. O_2	508.0 % Sat. N_2	508.5 Temp (°C)	508.5 % Sat. O_2	508.5 % Sat. N_2	503.0 Temp (°C)	503.0 % Sat. O_2	503.0 % Sat. N_2	504.0 (°C)	504.0 % Sat. O_2	504.0 % Sat. N_2	505.0 Temp (°C)	505.0 % Sat. O_2	505.0 % Sat. N_2
11/18	0.3	17.1	85.7	90.2	17.5	84.0	92.7	16.9	79.4	79.8	22.1	89.6	93.6	19.2	80.0	91.9	18.7	86.1	94.5	19.4	82.7	93.0	18.6	82.3	90.9
	1.5	17.1	92.3	110.4	17.4	61.5	74.5	17.1	72.4	77.3	20.5	80.3	87.1	19.4	94.4	99.0	18.0	87.3	101.5	19.3	84.4	95.5	18.8	80.8	88.2
	3.0	17.0	79.6	82.8	17.3	90.0	98.0	17.2	77.4	82.2	20.6	78.7	87.8	19.5	95.2	100.1	17.9	84.8	91.2	19.3	85.3	102.0	18.8	83.7	91.8
	6.1	17.0	101.6	112.8	17.3	86.2	92.1	17.1	73.2	78.4	20.5	82.6	88.7	19.4	84.6	96.1	17.7	82.8	98.8	19.3	83.4	82.7	18.6	76.9	81.4
12/09	0.3	13.9	95.8	100.1	14.5	84.2	93.6	14.9	97.8	104.8	21.3	110.5	112.2	17.5	91.3	95.8	15.5	71.1	84.1	16.8	88.3	94.5	15.9	85.1	95.9
	1.5	13.8	97.3	105.3	14.6	90.9	101.2	14.6	92.6	100.2	21.0	82.6	92.8	17.2	83.1	89.9	15.3	91.2	100.5	16.8	80.9	88.7	15.6	91.3	95.1
	3.0	13.8	92.4	98.0	14.5	88.0	97.5	14.6	89.2	96.6	21.0	90.5	101.4	17.0	85.9	94.9	15.3	88.4	100.0	16.7	78.2	93.5	15.6	74.4	85.1
	6.1	13.8	89.6	99.8	14.5	87.8	98.7	14.6	89.7	99.5	19.9	91.8	99.1	16.7	87.5	96.6	14.8	79.1	89.2	16.7	84.2	90.3	15.7	84.6	93.7

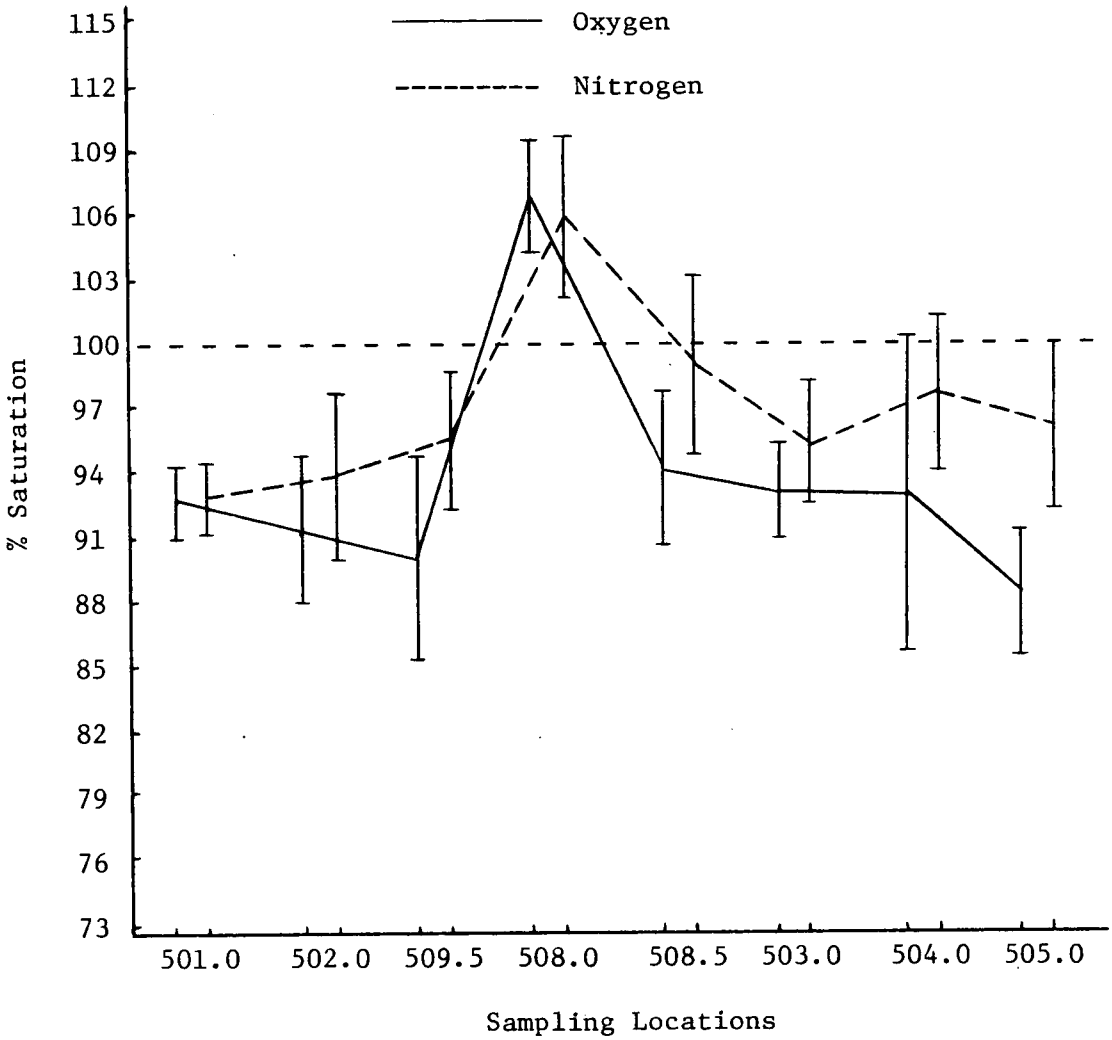

Figure 1.7-1 Mean dissolved gas saturation values for the various sampling locations on Lake Keowee and the associated standard deviations for January 7, 1977.

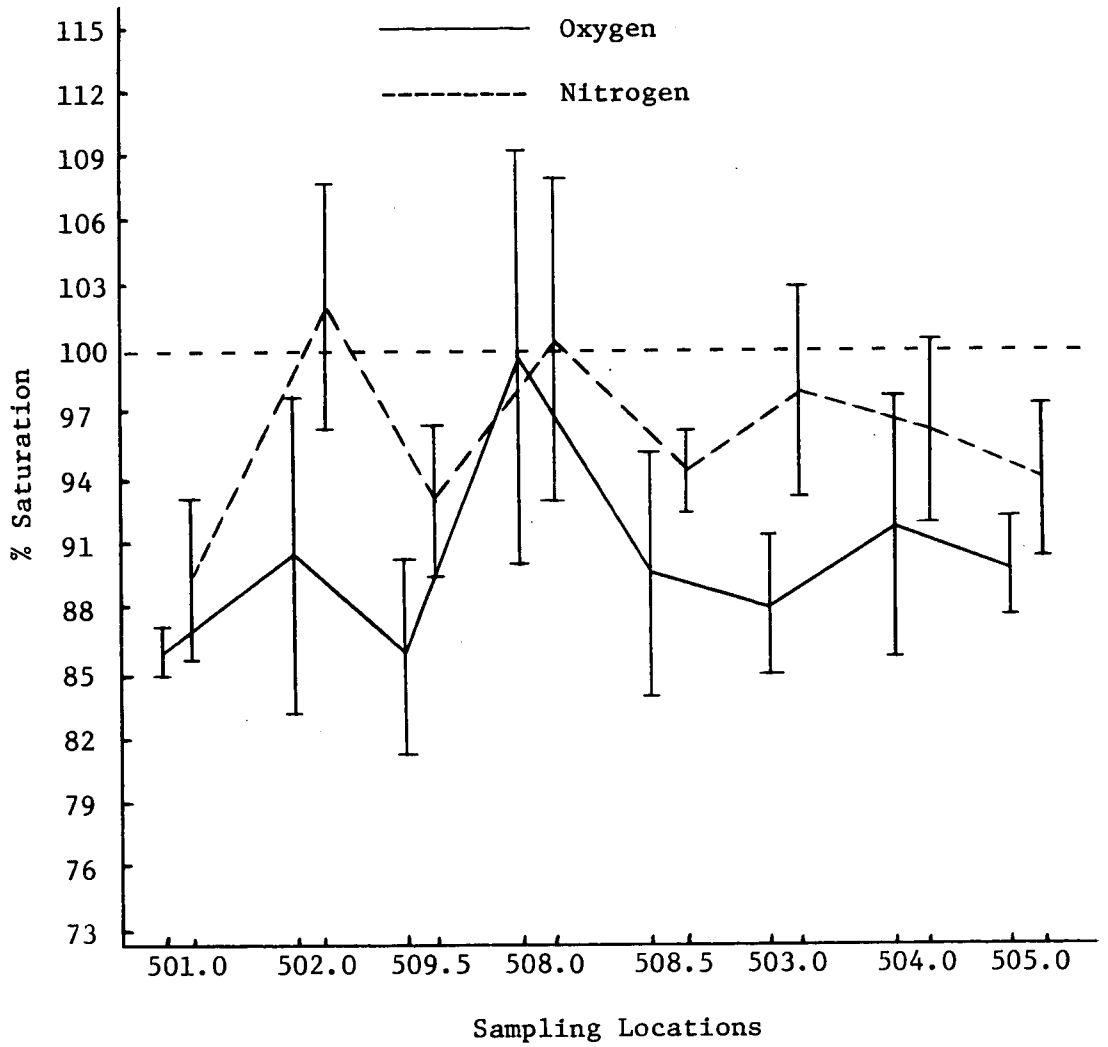

Figure 1.7-2 Mean dissolved gas saturation values for the various sampling locations on Lake Keowee and the associated standard deviations for February 4, 1977.

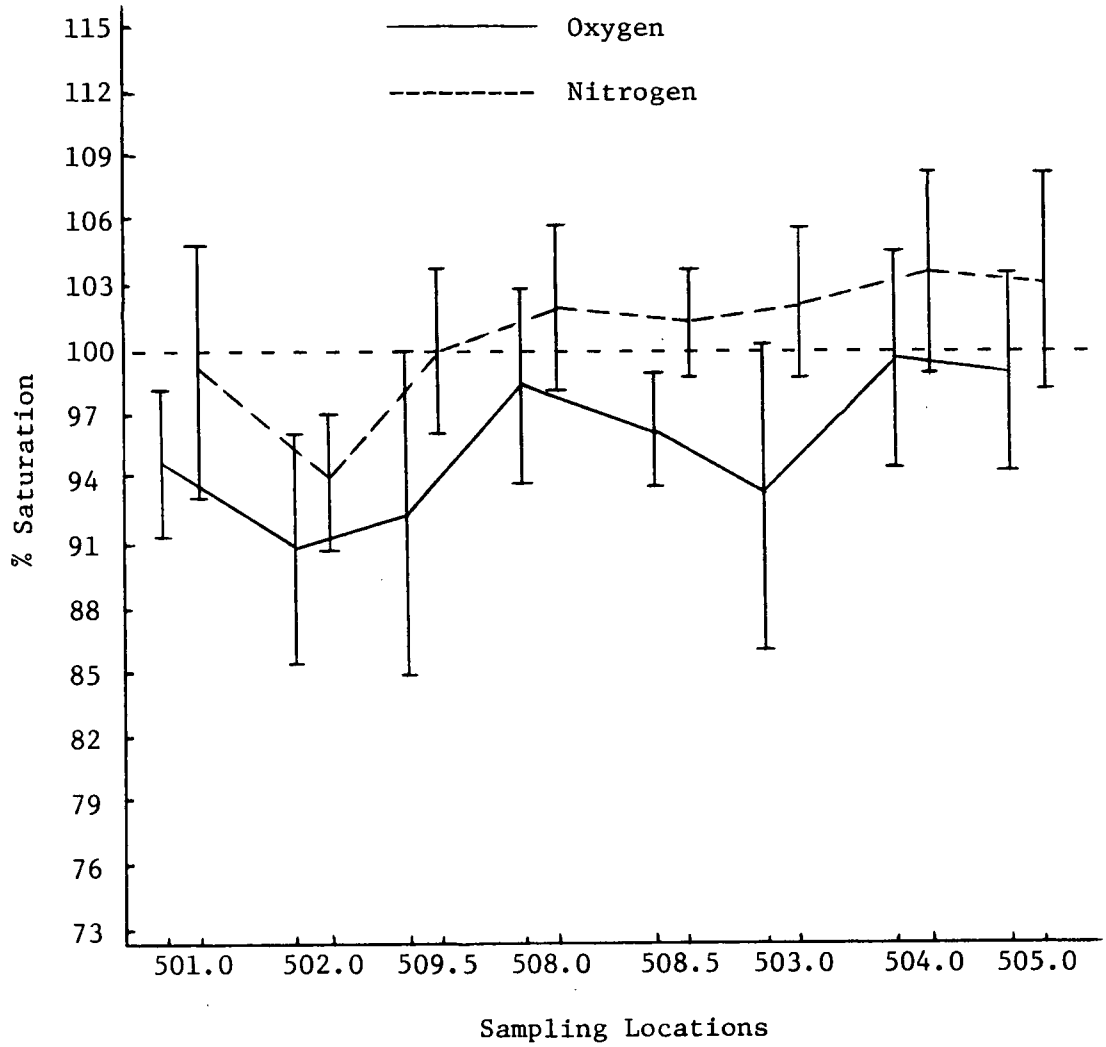

Figure 1.7-3 Mean dissolved gas saturation values for the various sampling locations on Lake Keowee and the associated standard deviations for March 4, 1977.

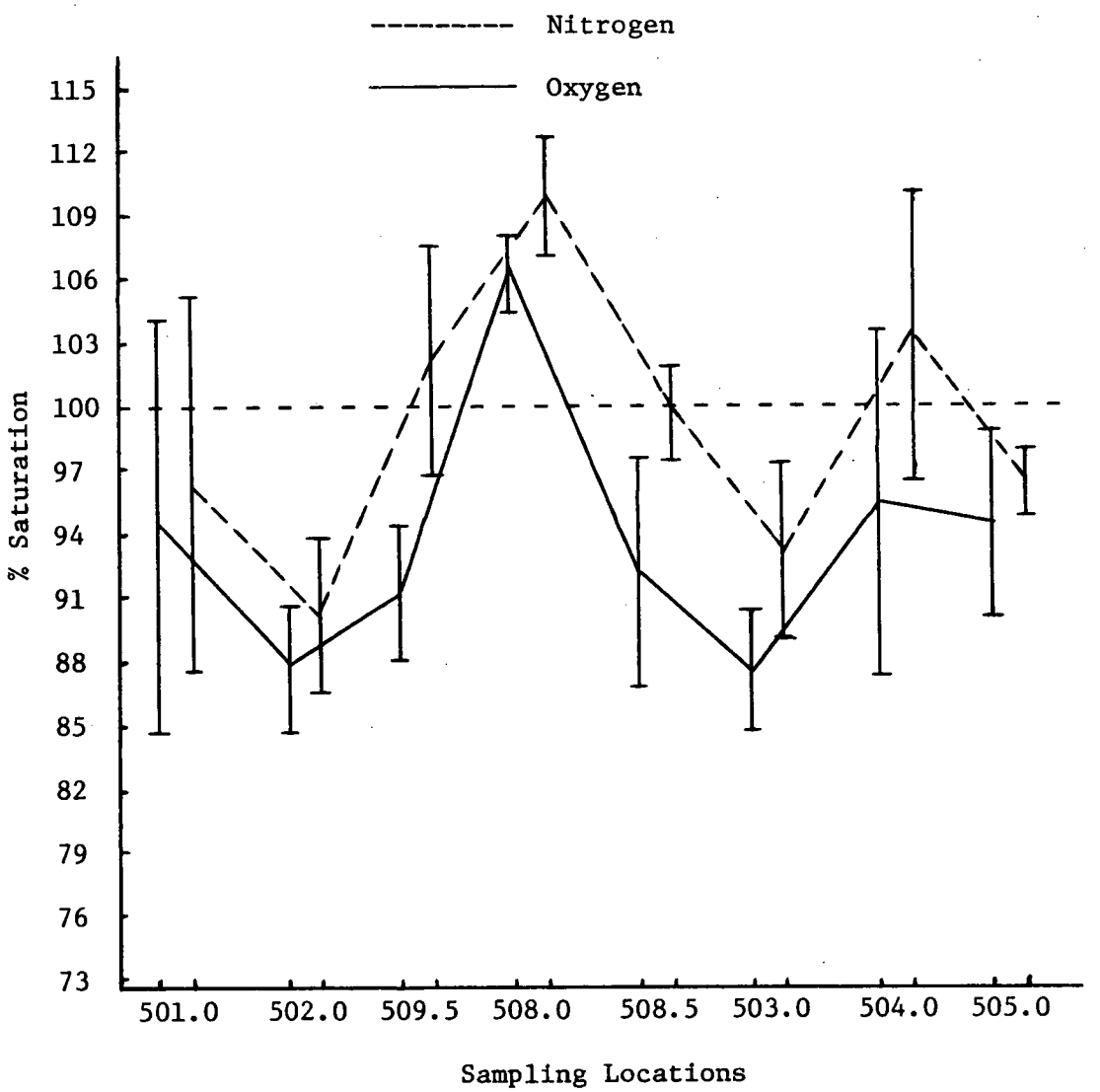

Figure 1.7-4 Mean dissolved gas saturation values for the various sampling locations on Lake Keowee and the associated standard deviations for April 1, 1977.

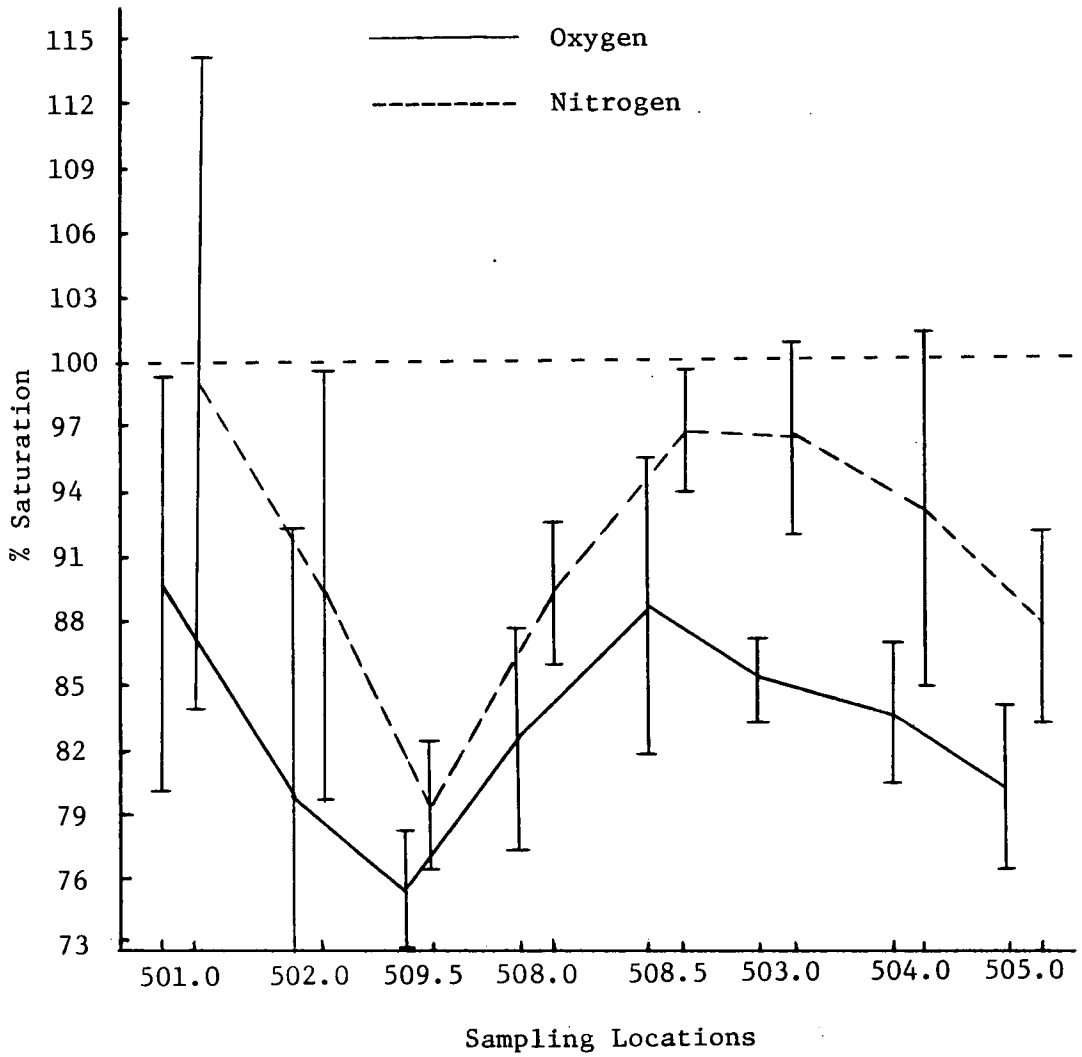

Figure 1.7-5 Mean dissolved gas saturation values for the various sampling locations on Lake Keowee and the associated standard deviations for November 18, 1977.

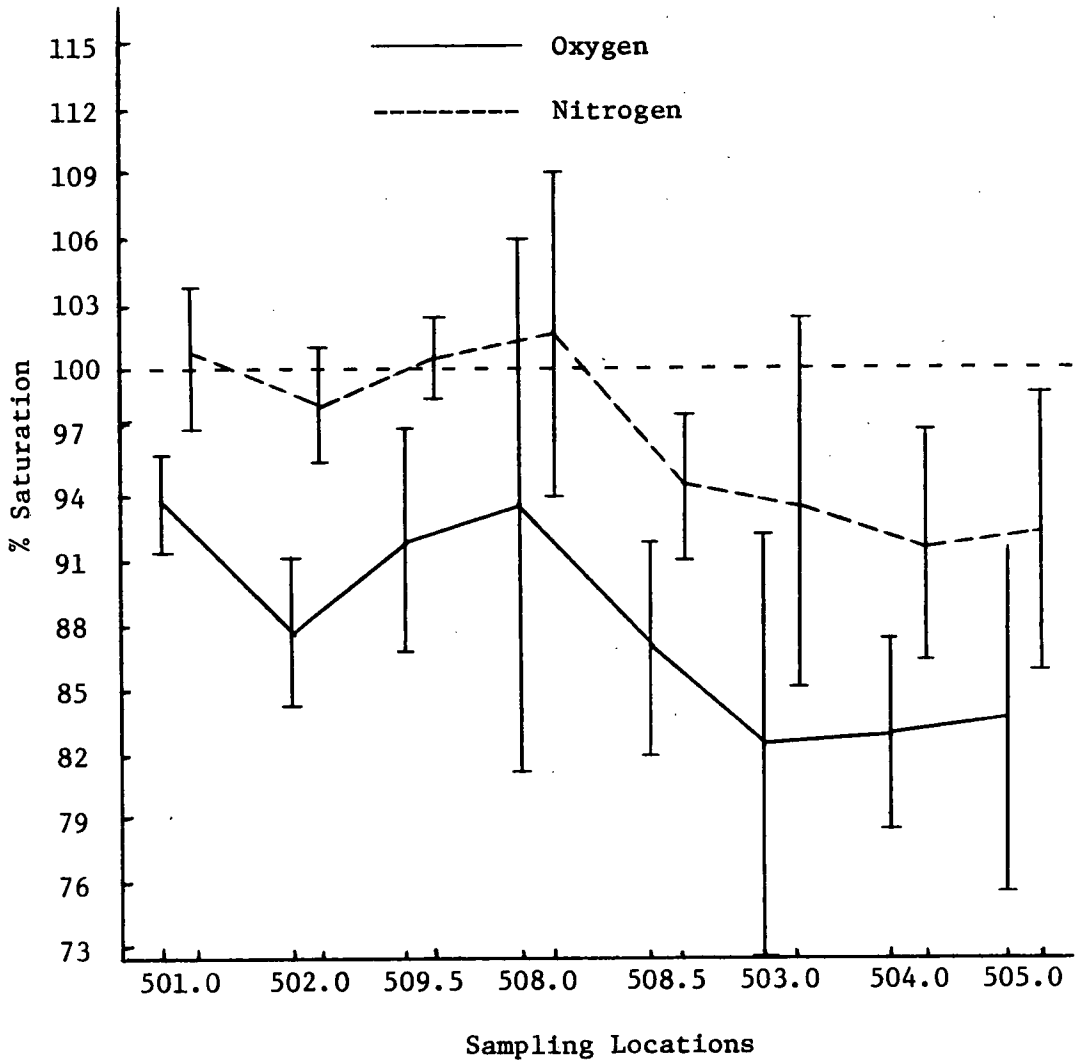

Figure 1.7-6 Mean dissolved gas saturation values for the various sampling locations on Lake Keowee and the associated standard deviations for December 9, 1977.

SECTION II

ANNUAL OPERATING REPORT

2. INTRODUCTION

This section of the Annual Operating Report is submitted pursuant to Section 6.6.1.2 of the Oconee Nuclear Station Technical Specifications. This section summarizes operation of Oconee Nuclear Station Units 1, 2, and 3 from January 1, 1977 through December 31, 1977.

2.1 REPORT FOR JANUARY, 1977

2.1.1 OPERATIONS SUMMARY

2.1.1.1 Unit 1

2.1.1.1.1 Operating Experience

Oconee Unit 1 began the month of January at 100 percent full power. On January 15, 1977 the unit was shutdown for steam generator tube repairs on the "1B" OTSG. Repairs were completed on January 25, 1977 but the outage was extended due to the failure of a position indication tube on the group 3 rod 4 control rod drive during startup. The unit was placed back in service the evening of January 25, 1977 and reached 100 percent full power on January 27, 1977. The unit remained at the power level until January 30, 1977 when the unit ranback to 53 percent full power due to group 4 rods dropping into core. The unit was returned to 100 percent full power the same day and remained at that level for the duration of the month.

2.1.1.1.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during January, 1977.

1. Revisions 6 and 7 of Station Modification ON-98 were completed. The modification involves the installation of pH, flow and turbidity instrumentation for the oil collection basin.

2. Revision 0 of Station Modification ON-332 was completed. The modification involves the replacement of the 1-pen total vent flow recorder with a 2-pen recorder. The second pen will monitor Reactor Building purge exhaust flow.

3. Revisions 0 and 1 of Station Modification ON-396 were completed. The modification involves the relocation of gaseous waste disposal radiation monitors R1A-37 and 38 to the sixth floor of the Auxiliary Building and adds a sample line and air purge capability for background reduction.

4. Revision 0 of Station Modification ON-593 was completed. The modification involves the inspection of all General Electric type HFA and HGA relays and replacement of all defective relay coils as recommended by NRC OIE Bulletin 76-02.

5. Revision 0B of Station Modification ON-619 was completed. The modification involves the replacement of the non-radioactive waste disposal dumpster with a trash compactor.

6. Revision 0 of Station Modification ON-676 was completed. The modification involved the addition of elasped time meters to the Reactor Building purge, mini-purge and spent fuel pool ventilation fans.

7. Revisions 0 and 1 of Station Modification ON-685 were completed. The modification involved maintenance on the spent fuel pool 100 ton cranes to reduce wear on the block sheave bushings and the crane cables.

8. Revision 0 of Station Modification ON-720 was completed. The modification involves the addition of a 600V-208V-120V transformer to supply power for lighting panels and wall outlets in the warehouse and shop.

9. Revision 0 of Station Modification ON-722 was completed. The main steam radiation monitors, RIA-16 and 17, were modified to improve check source operation.

10. Revisions 1 and 2 of Station Modification ON-725 were completed. The modification involved the plugging and stabilizing of leaking and questionable "1B" steam generator tubes.

11. Revision 0 of Station Modification ON-737 was completed. The modification involved changes to the off gas fill head in the radwaste solidification area ventilation systems which will reduce contamination of the radwaste shipping cask.

12. Revision 0 of Station Modification ON-741 was completed. The modification involved various electrical and mechanical changes necessary for the installation of the Chem-Nuclear Mobile radwaste solidification units to the Interim Radwaste Building.

13. Revisions 0A and 0B of Station Modification ON-751 were completed. The modification replaced valves SD-84 and 85 and FDW-258 and 259 with more reliable Kerotest valves.

2.1.1.1.3 MAINTENANCE MONTH OF January 1977 UNIT # 1

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
NAME NUMBER	MANUFACTURER -MODEL/SIZE	W.R. Nbr.	CAUSE	RESULT			
Chem Add-18	Grinnell - Diaph.1-1/2"	19182	Bad Diaphragm	Leakage	None	Replaced Diaphragm	None Req'd
OTSG Tube Leak	Babcock & Wilcox	95749	Not been determine	Tube Leakage		Plugged Tubes	Unit off-line
Personnel Hatch Interl.	W. J. Wooley	19591	Needed Adjustment	Not closing properly	None	Cleaned and adjusted cables	Unit off-line
"O" Ring Press Gauge Vent Valve	Velan	19489	Bad Seat	Leakage	None	Lapped seat	Unit off-line
Vent Valve On Main Steam Line	Velan	18970	Packing	Leakage	None	Repacked	Unit Off-line
RC 14	Velan 3/4"	19494	Packing	"	"	Repacked	" " "
RC-3P	Rockwell Globe 2 1/2"	19495	"	"	"	Repacked Valve	" " "
RC-3B	" " "	19496	"	"	"	" "	" " "
RC-14	Velan 3/4"	19498	"	"	"	" "	" " "
Building Spray 23	Velan 1"	19488	Bad Seat	"	"	Burr on globe filed off	" " "
SD-154	Velan	19599	Packing	"	"	Repacked Valve	" " "
SD-152	Velan	19597	"	"	"	" "	" " "

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
NAME NUMBER	MANUFACTURER -MODEL/SIZE	W.R. Nbr.	CAUSE	RESULT			
SD-153	Velan	19598	Packing	Leakage	None	Repacked Valve	Unit off-line
RC-14	Velan 3/4"	19497	"	"	"	" "	" " "
CRD-54 Vent Valve	Diamond Power	19110	Rounded off	cannot be vented with tool	:	Replaced Bonnet	" " "
B Steam/Gen Inst. Root V.	Velan	19582	Bad Gasket	Leakage	"	Replaced Bonnet	" " "
SD-151 Turb. Stop Valve	Velan	19643	Packing	Leakage	"	Repacked	" " "
HP-120	Leslie 2 1/2"	18744	Bad Seat	"	"	Repacked	" " "
RC-66	Dresser 2 1/2" X 6"	18953	Bad Seat	"	"	Relapped Seat	" " "
HP-322	Velan Globe 1"	19487	Bad Seat	"	"	" "	" " "
OTSG FDW Nozzle	Babcock & Wilcox	19629	Gaskets	"	"	Repaired by replacement of gaskets	" " "

DOCKET NO. 50-269

2.1.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH January, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
1/15/77	Unit was shutdown from 100 percent full power to repair tube leaks on the "1B" once-through steam generator.	222.20	A	RO 269/77-2 RO 269/77-3	The leaking tube and one other questionable tube was plugged. The OTSG vendor, Babcox and Wilcox is conducting a detailed evaluation of the tube failures	Liquid: 21.3% of annual release Gaseous: 40.0% of annual release (See summary)
1/25/77	Previous outage extended due to the failure of a control rod drive PI tube during startup.	20.75	A		The control rod drive PI tube was replaced.	
1/30/77	Unit ran back to 53 percent full power from 100 percent due to dropped Group 4 control rods. Summary: A discussion of the inadvertent radioactivity release on January 19, 1977 associated with the outage beginning January 15, 1977 is contained in RO-269/77-3 transmitted by our letter of February 3, 1977 to Mr. N. C. Moseley, NRC/OIE, Atlanta, Georgia.		H		Relatched rods	

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.1.1.2 Unit 2

2.1.1.2.1 Operating Experience

The unit operated at 100 percent full power until January 12, 1977 when power was reduced to 95 percent full power for a performance test. Full power operation resumed on the same day. On January 20, 1977 power was reduced to 92 percent full power for repair work on the "2D2" heater drain pump. Full power operation resumed the same day and continued until January 26, 1977 when power was reduced to 87 percent full power to repair a faulty temperature sensor on the reactor coolant piping. The unit returned to 100 percent full power the same day and continued at this level for the remainder of the month.

2.1.1.2.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during January, 1977.

1. Revision 0 of station modification ON-10 was completed. The modification involved the installation of a key-operated bypass switch to allow operation of the fuel transfer carriage drive mechanism from outside the Reactor Building. The bypass switch will eliminate the need for personnel to enter the Reactor Building for fuel transfer carriage testing.

2. Revisions 6 and 7 of Station Modification ON-98 were completed. The modification involves the installation of pH, flow and turbidity instrumentation for the oil collection basins.

3. Revision 0 of Station Modification ON-332 was completed. The modification involves the replacement of the 1-pen total vent flow recorder with a 2-pen recorder. The second pen will monitor Reactor Building purge exhaust flow.

4. Revisions 0 and 1 of Station Modification ON-396 were completed. The modification involves the relocation of gaseous waste disposal radiation monitors RIA-37 and 38 to the sixth floor of the Auxiliary Building and adds a sample line and air purge capability for background reduction.

5. Revision 0 of Station Modification ON-537 was completed. The modification involved the installation of thermocouple wells in each low pressure service water pipe to or from the Reactor Building cooling units.

6. Revision 0 of Station Modification ON-559 was completed. The modification will effectively disable the by-pass dampers on the Reactor Building purge filters and seal the exit of the bypass dampers.

7. Revision 0 of Station Modification ON-593 was completed. The modification involves the inspection of all General Electric type HFA and HGA relays and replacement of all defective relay coils, as recommended by NRC OIE Bulletin 76-02.

8. Revisions 0, 1, 3 and 4 of Station Modification ON-614 were completed. The modification involved the replacement of valves HP-66, 2HP 146, 2HP146A, 2HP146B and 2HP147 with Kerotest valves. Also, valve hangers were modified.

9. Revision 0 of Station Modification ON-616 was completed. The piping on the Keowee governor compressor after cooler was modified to facilitate maintenance on the cooler.

10. Revision OB of Station Modification ON-619 was completed. The modification involves the replacement of the non-radioactive waste disposal dumpster with a trash compactor.

11. Revision 0 of Station Modification ON-673 was completed. The modification involved the transfer of the Administration Building electrical load to a non-loadshed load center.

12. Revision 0 of Station Modification ON-676 was completed. The modification involved the addition of elasped time meters to the Reactor Building purge, mini-purge and spent fuel ventilation fans.

13. Revision 0 of Station Modification ON-720 was completed. The modification involves the addition of a 600V-208V-120V transformer to supply power for lighting panels and wall outlets in the warehouse and shop.

14. Revision 0 of Station Modification ON-726 was completed. The modification involves the redesign of the control rod drive power supplying failure detector annunciator.

MAINTENANCE

MONTH OF JANUARY 1977 UNIT # 2

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE	CORRECTIVE ACTION	PRECAUTIONS FOR
NAME NUMBER	MANUFACTURER -MODEL/SIZE	W.R. Nbr.	CAUSE	RESULT	OPERATION		REACTOR SAFETY
Building Spray -2	Aloyco 8"	19473	Torque Switch & Limit Switch	Would not open & Close properly	None	Set torque switch & limit switch	None req'd

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2.1.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH January, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
	Summary: There were no outages or forced power reduction of over 20 percent of design power level this month. There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.1.1.3 Unit 3

2.1.1.3.1 Operating Experience

Oconee Unit 3 operated at essentially 100 percent full power for the entire month of January, 1977.

2.1.1.3.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during Janaury, 1977.

1. Revisions 6 and 7 of Station Modification ON-98 were completed. The modification involves the installation of pH, flow and turbidity instrumentation for the oil collection basin.

2. Revision 0 of Station Modification ON-522 was completed. The modification involved removing the floor slab from the Reactor Building stairway opening to the basement area and properly storing the slab. Removal of the slab will facilitate maintenance activities and has no safety-related implications.

3. Revision 0 of Station modification ON-537 was completed. The modification involved the installation of thermocouple wells in each low pressure service water pipe to or from the Reactor Building cooling units.

4. Revision 0 of Station Modification ON-559 was completed. The modification will effectively disable the by-pass dampers on the Reactor Building purge filters and seal the exit of the bypass dampers.

5. Revision 0 of Station Modification ON-593 was completed. The modification involves the inspection of all General Electric type HFA and HGA relays and replacement of all defective relay coils, as recommended by NRC OIE Bulletion 76-02.

6. Revision 0 of Station Modification ON-616 was completed. The piping on the Keowee govenor compressor aftercooler was modified to facilitate maintenance on the cooler.

7. Revision 0B of Station Modification ON-619 was completed. The modification involves the replacement of the non-radioactive waste disposal dumpster with a trash compactor.

8. Revisions 0 and 1 of Station Modification ON-685 were completed. The modification involved maintenance on the spent fuel pool 100 ton cranes to reduce wear on the block sheave bushings and the crane cables.

9. Revision 0 of Station Modification ON-720 was completed. The modification involves the addition of a 600V-208V-120V transformer to supply power for lighting panels and wall outlets in the warehouse and shop.

10. Revision 0 of Station Modification ON-726 was completed. The modification involves the redesign of the control rod drive power supply failure detector annunciator.

11. Revision 0 of Station Modification ON-737 was completed. The modification involved changes to the off gas fill head in the radwaste to the solidification area ventilation system which will reduce contamination of the radwaste shipping cask.

12. Revision 0 of Station Modification ON-741 was completed. The modifiinvolved various electrical and mechanical changes necessary for the installation of the Chem-Nuclear Mobile radwaste solidification units to the Interim Radwaste Building.

MAINTENANCE

MONTH OF JANUARY -1977 UNIT # 3

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE	CORRECTIVE ACTION	PRECAUTIONS FOR
NAME NUMBER	MANUFACTURER -MODEL/SIZE	W.R. Nbr.	CAUSE	RESULT	OPERATION		REACTOR SAFETY
RC-7	Rockwell SV 1"	19782	Packing	Leakage	None	Tighten Packing	None Req'd

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2.1.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH January, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE

Summary: There was no outages or forced reductions in power this month. There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.2 REPORT FOR FEBRUARY, 1977

2.2.1 OPERATIONS SUMMARY

2.2.1.1 Unit 1

2.2.1.1.1 Operating Experience

The unit was at 100 percent full power on February 1, 1977 when a reactor shutdown was initiated to repair a leak in the control rod drive vent mechanism. Unit startup was commenced on February 8, 1977 and approximately 100 percent full power operation was reached on February 10, 1977. Full power operation continued until February 28, 1977 when increases in radiation levels in the secondary system indicated a primary-to-secondary leak in the "1B" once-through steam generator. While evaluating this incident, a control rod drop occurred due to a control rod stator causing high quadrant tilt. A reactor shutdown was initiated. The tube leak was repaired and the control rod stator replaced.

2.2.1.1.2 Changes, Test and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during February, 1977.

1. Revision 0 of Station Modification ON-548 was completed. The modification involved the relocation of meterlogical equipment to a height of 10 meters above the base elevation of the microwave tower from a lower location. The relocation will standardize the data obtained from this equipment.

2. Revision 0 of Station Modification ON-559 was completed. The modification will effectively disable the by-pass dampers on the Reactor Building purge filters and seal the exit of the bypass dampers to prevent leakage.

3. Revision 1 of Station Modification ON-624 was completed. The modification will replace a Keowee turbine guide bearing oil cooler.

4. Revision 0 of Station Modification ON-649 was completed. The modification will add a monorail above the leak rate compressor motors to facilitate maintenance.

5. Revision 0 of Station Modification ON-667 was completed. The modification will upgrade the seismic supports of transformers CT-1, 2 and 3.

6. Revision 0 of Station Modification ON-736 was completed. The modification will remove the trace heater from the liquid waste discharge tanker fill line. This line is no longer being used.

7. Revision 0 of Station Modification ON-763 was completed. The modification will provide a method to contain and transfer potentially radioactive condensate leakoff in the Turbine Building.

8. Revision 0A of Station Modification ON-764 was completed. The modification will install a temporary extension of the four air inlet ducts nearest the control rod drive service structure to direct more cooling air on the structure.

MAINTENANCE

MONTH OF FEBRUARY 1977 UNIT # 1

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER -MODEL/SIZE	W.R. Nbr.	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
LWD - 226	Velan Globe 1"	19848	Linkage	Valve Inoperable by the Reach Rod	None	Replaced set screw in reach rod	None Req'd
CA-18	Grinnell 1 1/2"	19834	Bad Diaph.	Leakage	"	Installed new diaphragm	Unit Down
LD Filter "B"	Fluid Dynamics	19974	Worn Gasket	Leakage	"	Replaced Filter Gasket	" "
RC-22	Velan Globe 1"	19858	Loose Packing	"	"	Repacked	" "
FDW-253	Velan	19859	Steam Cut	Leakage	"	Welded Steam Cut Installed new gasket	" "
"B" L.D. Filter	Fluid Dynamics	19847	Worn Gasket.	Leakage	"	Replaced gasket	" "
CRD - Motor Tube Closure Plug	Diamond Power	52305	Nick in "o" Ring	Leakage	"	Lapped seating surface	Unit Down

DOCKET NO. 50 - 269

2.2.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH February, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
2/1/77	Reactor was shutdown from 100 percent full power to repair a leak in the control rod drive vent mechanism.	169.49	A		Repaired control rod drive closure assembly leak and replaced deteriorated control rod drive mechanism power cables.	
2/28/77	Unit shutdown from 100 percent full power to repair OTSG tube leak and replace control rod stator.	3.20	A	Ro 269/77-8	Leak in "1B" steam generator was repaired and a failed control rod stator was replaced. Investigating long-term solutions.	

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.2.1.2 Unit 2

2.2.1.2.1 Operating Experience

The unit operated at essentially 100 percent full power the entire month of February, 1977.

2.2.1.2.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during February, 1977.

1. Revision 1 of Station Modification ON-13 was completed. This modification replaces the Electro Hydraulic Control first stage pressure transmitters with more reliable Rosemount transmitters.

2. Revisions 0, 2 and 3 of Station Modification ON-442 was completed. The modification involved the installation of an interlock on the Reactor Building purge which will prevent the operation of the mini-purge fans when the large purge fans are in operation.

3. Revision 0 of Station Modification ON-548 was completed. The modification involved the relocation of meteological equipment to a height of 10 meters above the base elevation of the microwave tower from a lower location. The relocation will standardize the data obtained from this equipment.

4. Revision 1 of Station Modification ON-624 was completed. The modification will replace a failed Keowee turbine guide bearing oil cooler.

5. Revision 0 of Station Modification ON-649 was completed. The modification will add a monorail above the leak rate compressor motors to facilitate maintenance.

6. Revision 0 of Station Modification ON-667 was completed. The modification will upgrade the seismic support of transformers CT-1, 2 and 3.

7. Revision 0 of Station Modification ON-736 was completed. The modification will remove the trace heater from the liquid waste discharge tanker fill line. This line is no longer being used.

8. Revision 0 of Station Modification ON-747 was completed. The modification will add a strip heater to the borated water storage tank (BWST) temperature transmitter enclosure. The heater will improve the reliability of the BWST level instrumentation.

9. Revisions 0 of Station Modification ON-763 was completed. The modification will provide a method to contain and transfer potentially radioactive condensate leakoff in the Turbine Building.

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OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF FEBRUARY -1977 UNIT# 2

PAGE ____ of ____

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFET
Aux-Serv. Water Pmp	Ingersoll Rand	19460	Bad Packing	Leakage	None	Repacked	None Req'd
GWD-59	Velan Globe 1"	19529	Valve Failed	"	"	Replaced Valve	" "
HPI Pmp "A" Motor	Westinghouse	12110	Bad Rotor	Trips	"	Replaced Rotor	" "
Root Valve LPI Sys.	Velan	20577	Packing	Leakage	"	Tighten Packing	" "
LP-28	B&W 14"	20598	Packing	"	"	" "	" "

Note: No generating time lost.

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2.2.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours) REPORT MONTH February, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
	Summary: There were no outages or forced power reductions this month. There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.2.1.3 Unit 3

2.2.1.3.1 Operating Experience

The unit operated at 100 percent full power until February 14, 1977 when the unit was shutdown to repair a tube leak in the "2B" once-through steam generator. Power escalation was commenced on February, 23, 1977 but on February 24, 1977 the unit was shutdown from approximately 70 percent full power to correct high chloride concentration in the Reactor Coolant System. Unit startup was commenced on February 25, 1977 but the reactor was held at 15% full power for repairs to a trip coil on the generator. Power escalation resumed on February 26, 1977, and reached 98% full power by the end of the month.

2.2.1.3.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during February, 1977.

1. Revision 0 of Station Modification ON-10 was completed. The modification involved the installation of a key-operated bypass switch to allow operation of the fuel transfer carriage drive mechanism from outside the Reactor Building. The bypass switch will eliminate the need for personnel to enter the Reactor Building for fuel transfer carriage testing.

2. Revision 0 of Station Modification ON-332 was completed. The modification involved the installation of a two pen recorder in place of the present total vent flow recorder. The second pen will be used to monitor Reactor Building purge exhaust flow.

3. Revision OB of Station Modification ON-398 was completed. The modification will increase the capacity of the feedwater pump seal leakage collection system.

4. Revisions 0 and 1 of Station Modification ON-495 were completed. The modification involves the installation of portable shield blocks in the letdown filter hatch area for letdown and seal supply filter changes.

5. Revision OB of Station Modification ON-502 was completed. The modification replaced and relocated valves RC-4 and RC-66 to increase the reliability of these valves.

6. Revision 0 of Station Modification ON-548 was completed. The modification involved the relocation of meteological equipment to a height of 10 meters above the base elevation of the microwave tower from a lower location. The relocation will standardize the data obtained from this equipment.

7. Revision 0 of Station Modification ON-578 was completed. The modification deleted the RIA 4X and 3RIA 4X relays from the circuitry on the spent fuel pool ventilation system. The change removes the automatic shutdown by high radiation signal which would cause vented air to bypass the filters.

8. Revision 1 of Station Modification ON-624 was completed. The modification will replace a failed Keowee turbine guide bearing oil cooler.

9. Revision 4 of Station Modification ON-640 was completed. The modification will replace 3RC-1, reactor coolant spray control valve, with a solenoid operated valve.

10. Revision 0 of Station Modification ON-649 was completed. The modification will add a monorail above the leak rate compressor motors to facilitate maintenance.

11. Revision 0 of Station Modification ON-667 was completed. The modification will upgrade the seismic supports of transformers CT-1, 2 and 3.

12. Revision 0 of Station Modification ON-676 was completed. The modification involved the addition of elasped time meters to the Reactor Building purge, mini-purge and spent fuel ventilation fans.

13. Revision 0 of Station Modification ON-736 was completed. The modification will remove the trace heater from the liquid waste discharge tanker fill line. This line is no longer being used.

14. Revision 0A of Station Modification ON-750 was completed. The modification will replace 3GWD-58, the reactor coolant pump seal filter vent valve, with a Kerotest valve.

15. Revision 0 of Station Modification ON-763 was completed. The modification will provide a method to contain and transfer potentially radioactive condensate leakoff in the Turbine Building.

16. Revision 0 of Station Modification ON-771 was completed. The modification involved the addition of a "tee" and two valves in the shell drain line for the "3A1" feedwater heater to allow instrumentation to be attached for testing purposes.

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OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF FEBRUARY - 1977 UNIT# 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFET
HP-206	Velan Globe 1"	20280	Loose Packing	Leakage	None	Repacked Valve	Unit Down
RC-3 Suppressor	Grinnel	20560	Pipe Movement	Damage to Restraint	None	Rebuilt Suppressor Repair Restraint	None Require
Hydraulic Suppressor	Grinnel	51870	Pipe Movement	Damage to Restraint	None	" "	" "
3B Letdown Filter	Fluid Dynamics	20690	Worn Gasket	Leakage	"	Replaced Filter	None Require
RT Valve	Velan Globe 1"	52167	Dirt Collected on Seat Surf.	Leakage	"	Cleaned Stem & Seat Surface Repacked	Unit Down
Root Valve RC System	Velan	20293	Loose Packing	Leakage	"	Repacked Valve	Unit Down
HP-240	Velan Globe 1"	20291	Insufficient Packing	Leakage	"	Repacked Valve	" "
Root Valve RC System.		20287	"	"	"	Repacked Valve	" "
Nitrogen -125	Velan Globe 1"	20286	"	"	"	" "	" "
HP-200	Velan Globe 1"	20329	Plug Seal	Leakage	None	Repacked and put Teflon on Plug	" "
CF-5	Rockwell Gate 1"	20305	Bad Weld	Leakage	None	Rewelded	" "
HP-254	Velan Globe 1"	20284	Plug Leak	"	"	Teflon the plug	" "
CRD Mtr Tube	Diamond Power	20310	Head Leaks	"	"	Replaced Closure insert and Vent Valve	" "
Emerg. Fd Water Pump Tank	Bingham Willamette	19884	Rust Build-Up	Oil Leak	"	Cleaned rust from oil deflector ring	" "
HP-214	Velan Globe	20281	Loose Packing	Leakage		Repacked Valve	" "

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF February UNIT# 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFET
HP - 144	Velan Stopcheck 1 1/2"	20283	Loose Packing	Leakage	None	Repacked	Unit Down
HP - 145	Velan Stopcheck 1 1/2"	20282	"	"	"	"	" "
HP - 356	Velan Globe 1"	20285	"	"	"	"	" "
OTSG "3B"	B & W	95781	Unknown	Leakage	"	Plugged	" "

DOCKET NO. 50 - 287

2.2.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours) REPORT MONTH February, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
2/14/77	Unit shutdown from 100 percent full power to repair OTSG tube leak.	222.46	A	Ro 287/77-2	The tube leak in the "3B" steam generator was repaired. Investigating long-term solutions.	
2/24/77	The unit was shutdown from approximately 70 percent full power pursuant to Technical Specification 3.1.5.4 to correct high chloride concentration in RCS.	36.38	D	Ro 287/77-3	Condition was corrected. Also repaired trip coil on generator.	
	Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.3 REPORT FOR MARCH, 1977

2.3.1 OPERATIONS SUMMARY

2.3.1.1 Unit 1

2.3.1.1.1 Operating Experience

The unit was shutdown for repair of a tube leak in the "1B" OTSG until March 13, 1977. Power escalation commenced on that date and reached 90 percent full power on March 14, 1977. The unit was held at this power level due to maintenance on the "B" hotwell pump. On March 17, 1977 the unit ranback to 60 percent full power when the "1B" feedwater pump turbine tripped. The unit was returned to 90 percent full power the same day. On March 18, 1977 power was increased to 95 percent full power and on March 19, 1977 power was reduced to 65 percent full power for performance of control valve and turbine valve movement tests. The unit was returned to 100 percent full power on March 20, 1977 and continued power operation until March 23, 1977 when the unit was shutdown to repair a tube leak on the "1B" OTSG. On March 30, 1977 the outage was extended because of repairs to a turbine turning gear oil pump and the unit remained shutdown the balance of the month.

2.3.1.1.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during March, 1977.

1. Revision 0 of Station Modification ON-535 was completed. The modification will involve the redesign of the platform blocks on the second level radioactive waste drumming station hoist area to provide a minimum load strength of 17,000 lbs.

2. Revision 0 of Station Modification ON-629 was completed. The modification involves the illumination of the protected area fence and valves and gauges in the bulk hydrogen storage shed.

3. Revision 0 of Station Modification ON-654 was completed. The modification will provide air intakes in the east wall of the Turbine Building to improve ventilation.

4. Revision 0 of Station Modification ON-704 was completed. This modification will eliminate glare on the spent fuel pool closed circuit television monitors created by the pool area lighting by replacing certain lamps with "glare stopper" lamps.

5. Revision 3 of Station Modification ON-725 was completed. The modification involved the plugging and stabilizing of leaking and questionable "1B" steam generator tubes.

6. Revision 0 of Station Modification ON-729 was completed. The modification involves welding connecting angles of certain switching station relay house cabinets to the embedded steel at each shock mount. This modification upgrades the seismic restraints of these cabinets.

7. Revision 0 of Station Modification ON-757 was completed. The modification will remove the incore instrumentation at location R-7 from service and weld a cap over the location to repair a leak. Safety implications of this modification were evaluated.

8. Revision 0 of Station Modification ON-783 was completed. The modification blanks the auxiliary feedwater nozzles that empty into the OTSG open tube lanes to help eliminate vibration in the lane.

2.3.1.1.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF MARCH UNIT# 1

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE?
MS-24	Crane - Gate 1"	18586	Bad Switch	Inoperable electrically	none	Replaced Switch	none req'd
Personnel Hatch inter-lock	W. J. Wooley	20854	Out of adjustment	Not opening properly	None	Adjusted ratchet paw	" "
HP-79	Lonergan 2" X 3"	20432	Gasket	Leakage	None	Replaced Gasket	Unit Down
HP-57	Velan Gate 2 1/2"	19798	Broken Stem Nut	Hard to Operate	None	Replaced Valve	" "
OTSG Tubes 1 B	B & W	20392	Unknown	Tube leakage	None	Plugged tubes	" "
Closure Plug CRD Tube	Diamond Power	20856	Gasket	Leakage	"	Replaced Gaskets & Lapped Seating	Unit Down
OTSG Tubes 1 B	B & W	95806	Unknown	Tube leakage	None	Repaired	" "
FLow Meter HPI Sys.	Foxboro	20428	Pipe Plug	Leakage	None	Replaced Pipe Plug	Unit Off Line
FDW-247	Crane Check	20913	Gasket	Leakage	"	Replaced B/B Gasket	" "
FDW- 37	Crane Check 24 "	20914	Worn Gasket on Hinge Pin	Leakage	"	Replaced Gasket	" "
HP-283	Velan Globe 1 1/2"	21147	Loose Packing	Leakage	"	Replaced packing	None req'd
HP-286	Velan Globe 1 1/2"	21386	Loose Packing	Leakage	"	Replaced packing	" "

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
NAME NUMBER	MANUFACTURER -MODEL/SIZE	W.R. Nbr.	CAUSE	RESULT			
HP - 284	Velan Globe 1 1/2"	21388	Loose packing	Leakage	None	Replaced Packing	None req'd
CRD - Vent Valve	Diamond Power	21406	Bad Seat	Leakage	"	Replaced Vent Valve	" "
AS- Water Pump	Ingersoll Rand	21159	Low in oil in bearing housing	Running Hot	"	Changed oil and repacked pump	" "
CS-72	Saunders 2"	20430	Loose Nut	Leakage	None	Tightened nut on valve	None req'd
FDW-104	Grinnell Diaph. 6"	20912	Loose packing	"	None	Adjusted Packing	" "

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2.3.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH March, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
3/1/77	Continuation of previous outage for OTSG tube repairs	300.53	A	Ro 269/77-11	Leaking and questionable tubes were plugged. Investigation in progress.	
3/23/77	Unit was shutdown from 100 percent full power to repair a tube leak in the "1B" OTSG	177.74	A		Leaking and questionable tubes were plugged. Investigation in progress.	
3/30/77	Previous outage extended to repair a turbine turning gear oil pump.	35.52	A		Pump was repaired.	

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.3.1.2 Unit 2

2.3.1.2.1 Operating Experience

The unit operated at 100 percent full power until March 4, 1977 when power was reduced to perform maintenance on the 2D2 heater drain pump. Power was increased to 100 percent full power on March 5, 1977. On March 7, 1977 power was reduced to 94 percent full power to secure the 2D2 heater drain pump. Repairs, including replacement of an o-ring seal and packing sleeve, were made.

Power was reduced to 70 percent full power on March 14, 1977 to correct the high temperature on the inboard bearing on the 2B and 2C condensate booster pumps. Modifications were also made to the 2B and 2C condensate booster pumps oil system. Repairs were completed on March 15, 1977 and power was increased to 90 percent full power and held at this level to stabilize feedwater swings. On March 21, 1977, the "B" HPI pump came on automatically. The "A" HPI pump was determined to have a low oil level in the upper bearing and a sheared pump shaft. The "A" HPI pump was replaced. Power level continued at 90 percent full power until March 23, 1977 when the reactor was inadvertently tripped during a control rod drive breaker test due to a personnel error.

The unit was brought back on line the same day and the power level reached 65 percent full power on March 24, 1977. The unit was held at this level to repair a main steam valve and then increased to 70 percent full power and held due to maneuvering limitations. Power was then increased to 78 percent full power when the group 6 control rods dropped causing power to runback to 66 percent full power. Fuses were replaced on rod 3 and and investigation is being conducted to determine the cause of the drop.

On March 25, 1977 power was increased to 90 percent full power and remained at this level due to continuing repairs on the 2D2 heater drain pump. On March 27, 1977 repairs were completed and power was increased to 100 percent full power.

On March 29, 1977 control rod 2 of group 1 dropped while performing a control rod drive movement test. Power was reduced to 55 percent full power and then to 35 percent full power to stabilize the reactor. The dropped rod was picked up and power was increased to 100 percent full power. This power level was held for the remainder of the month.

2.3.1.2.2 Changes, Tests and Experiments not Requiring Prior NRC Approval.

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during March, 1977.

1. Revision 0 of Station Modification ON-629 was completed. The modification involves the illumination of the protected area fence and valves and gauges in the bulk hydrogen storage shed.

2. Revision 0 of Station Modification ON-654 was completed. The modification will provide air intakes in the east wall of the Turbine Building to improve ventilation.

3. Revision 0 of Station Modification ON-704 was completed. This modification will eliminate glare on the spent fuel pool closed circuit television monitors created by the pool area lighting by replacing certain lamps with "glare stopper" lamps.

4. Revision 0 of Station Modification ON-729 was completed. The modification involves welding connecting angles of certain switching station relay house cabinets to the embedded steel at each shock mount. This modification upgrades the seismic restraints of these cabinets.

2.3.1.2.3

MAINTENANCE

MONTH OF MARCH UNIT # 2

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
NAME NUMBER	MANUFACTURER -MODEL/SIZE	W.R. Nbr.	CAUSE	RESULT			
LP-95	Aloyco Gate 6"	11495	Broken pins	inoperable	none	replaced lock nut & key	

DOCKET NO. 50 - 270

2.3.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH March, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
3/14/77	Power was reduced from 94 percent to 70 percent full power to correct high temperature on bearings of the 2B and 2C condensate booster pumps.		A		Condition corrected. Modifications were made to pump oil system.	
3/23/77	Reactor tripped from 90 percent full power due to personnel error during a control rod drive breaker test.	7.27	A		Conditions leading to incident investigated and corrected.	
3/29/77	Reactor runback from 100 percent to 55 percent then 35 percent full power after control rod 2 group 1 dropped into core.		A		Picked up dropped rod. Investigation of cause.	
	Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.3.1.3 Unit 3

2.3.1.3.1 Operating Experience

The unit maintained 100 percent full power until March 15, 1977 when a steam leak on the high pressure turbine exhaust piping caused power to be reduced to 10 percent full power. Repairs were made and on March 16, 1977 power was increased to 90 percent full power to await xenon equilibrium. Power was increased to 100 percent full power on March 18, 1977.

On March 19, 1977 an instrument air line failure on valve to close reducing flow to the "B" OTSG. Power automatically ranback to 41 percent full power 3FDW-40 was placed under manual control and the unit was returned to 100 percent full power operation on March 20, 1977. Full power operation continued for the remainder of the month.

2.3.1.3.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during March, 1977.

1. Revision 0 of Station Modification ON-006 was completed. The modification upgraded the Unit 3 polar cranes to withstand a higher load limit.

2. Revision 0 of Station Modification ON-629 was completed. The modification involves the illumination of the protected area fence and valves and gauges in the bulk hydrogen storage shed.

3. Revision 0 of Station Modification ON-654 was completed. The modification will provide air intakes in the east wall of the Turbine Building to improve ventilation.

4. Revisions 0 and 1 of Station Modification ON-655 were completed. The modification involves the installation of a prefabricated environmentally controlled gauge calibration room in the Unit 1 Auxiliary Building.

5. Revision 0 of Station Modification ON-729 was completed. The modification involves welding connecting angles of certain switching station relay house cabinets to the embedded steel at each shock mount. This modification upgrades the seismic restraints of these cabinets.

6. Revision 0 of Station Modification ON-772 was completed. The modification involved the plugging and stabilizing of leaking and questionable "3B" steam generator tubes.

2.3.1.3.3

MAINTENANCE MONTH OF MARCH UNIT # 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER -MODEL/SIZE	W.R. Nbr.	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
FDW-106	Rockwell Stop Valve 1"	20356	Bad Packing	Leakage	None	Repacked	None req'd
SF-76	Velan Globe 1"	20294	Bad Gasket	B/B. Leak	None	Replaced gasket	" "
LP-21	Rockwell	20174	Loose Packing	Leakage	None	Tightened packing	None req'd
Personnel Hatch Inner Door	W. J. Wooley	90811	Loose Nut	Not closing properly	None	Adjusted Valve	None req'd
Hydraulic Suppressor	Grinnell	51869	Failed Seals	Leakage	None	Replaced Suppressor	None req'd
HPI Loop Flow orfice	Ingersoll Rand	18335	Bad Gasket	Leakage	None	Replaced Gasket	None req'd
3B Seal Supply	Fluid Dynamics	20760	Bad "o" Ring	Leakage	None	Installed new "O" Ring	None req'd
3B Seal Supply d/p Transmitter Isol. Valve		21253	Worn Threads on packing nut	Leakage	None	Replaced packing nut	None req'd
Piping leak upstream of MS 92	Lonergan Relief	19922	Worn gasket	Leakage	None	Replaced gasket	None req'd

DOCKET NO. 50 - 287

2.3.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH March, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
3/15/77	Reactor power was reduced from 100 percent to 10 percent full power. Turbine was taken off line to repair a steam leak on a high pressure turbine exhaust piping weld.	5.13	A		Weld leak was repaired.	

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.4 REPORT FOR APRIL, 1977

2.4.1 OPERATIONS SUMMARY

2.4.1.1 Unit 1

2.4.1.1.1 Operating Experience

The unit was shutdown for maintenance on the turning gear oil pump and turbine bearings until April 3, 1977 when startup commenced. The unit tripped however from 12 percent full power due to high reactor coolant system pressure caused by the loss of the "B" loop feedwater control. The unit was returned to service after repair of the control module circuitry and reached 100 percent full power operation on April 5, 1977.

On April 23, 1977 power was reduced to 50 percent full power to perform a routine test on control rod withdrawal. While at this power level, control valve and stop valve movement tests were also performed.

On April 24, 1977 a turbine trip occurred due to high water level in the moisture separator due to a failed drain valve causing a reactor trip. Repairs were made and the unit was returned to 50 percent full power on April 25, 1977 for completion of the control rod withdrawal tests.

On April 26, 1977 power was increased to 90 percent full power and then reduced to 80 percent full power due to a steam leak on the "A" bleed line. Repairs were made and on April 28, 1977 the unit reached 100 percent full power operation. This power level was maintained the remainder of the month.

2.4.1.1.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during April 1977.

1. Revisions 0, 1, 2 and 4 of Station Modification ON-566 were completed. The modification involves the replacement of the "1A" and "1B" OTSG root valves with more reliable Kerotest valves.

2. Revision 0A and 1 of Station Modification ON-619 was completed. The modification involves the replacement of the non-radioactive waste disposal dumpster with a trash compactor.

3. Revision 0 of Station Modification ON-639 was completed. The modification will replace the "Y-strainer" upstream of the purifier feed pump with a duplex strainer.

4. Revision 1 of Station Modification ON-655 was completed. The modification involves the installation of a prefabricated environmentally controlled gauge calibration room in the Unit 1 Auxiliary Building.

5. Revision 0 of Station Modification ON-664 was completed. The modification will add angle bracing between the two A-frames making up each of the shield wire pull-off frames on the roof of the Turbine Building.

6. Revision 0 of Station Modification ON-669 was completed. The modification involved the installation of an air conditioning unit in the wall of the fifth floor canteen.

7. Revision 0 of Station Modification ON-673 was completed. The modification will change the area radiation monitor circuitry so the operator can read the "high" alarm setpoint on the module meter.

8. Revision 0 of Station Modification ON-711 was completed. The modification involves the seismic upgrade of the structural steel superstructure of the relay houses for the 230 KV switching station, D. C. test panal, battery chargers and D.C. panelboards.

9. Revision 0 of Station Modification ON-712 was completed. The modification will revise setpoints on the undervoltage relays as required to insure minimum operating voltage to safety-related equipment.

10. Revision 4 of Station Modification ON-725 was completed. The modification involved the removal of tubes from service in the "1B" OTSG.

11. Revision 0 of Station Modification ON-734 was completed. The modification involved the addition of a redundant "hi-hi" temperature switch to shutdown the lube oil purifier heaters at high temperatures.

12. Revision 0 of Station Modification ON-747 was completed. The modification involves the addition of a strip heater to the borated water storage tank temperature transmitters to prevent freezing of these lines during cold weather.

13. Revision OB of Station Modification ON-764 was completed. The modification will install a temporary extension of the four air inlet ducts nearest the control rod drive service structure to direct more cooling air on the structure.

2.4.1.1.3

MAINTENANCE

MONTH OF April 1977 UNIT # 1

OPERATION'S	COMPONENT			MALFUNCTION		EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
NAME NUMBER	MANUFACTURER -MODEL/SIZE		W.R. Nbr.	CAUSE	RESULT			
CA-11	Grinnell	3"	22150	B/B Gasket	Leakage	None	Replaced Diaphragm	None Req'd
LPSW-82	Crane	8"	22205	Loose Packing	Leakage	None	Tighten Packing	None
CS-70	Grinnell	1"	21564	Loose Set Screw	Inoperable	None	Replaced Set Screws and tighten	None
Suppressor FDW-piping	Grinnell		52574	Failed Seals	Leakage	None	Replaced suppressor	Unit Down
Suppressor Main Steam Piping	Grinnell		52416	Failed Seals	Leakage	None	Replaced Suppressor	Unit Down

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2.4.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH April, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
4/1/77	Continuation of previous outage for repair of turning gear oil pump bearing and inspection of turbine bearing for damage.	66.94	A		Repair and inspection were made.	
4/3/77	The unit tripped from 12 percent full power due to a failure in the ICS feedwater control module circuitry.	2.46	A		The control module circuitry was repaired.	
4/24/77	The unit tripped from 50 percent full power due to high level in the moisture separator reheater resulting from a failed drain valve.	11.24	A		Valve was repaired.	
4/26/77	Power was reduced to 80 percent full power due to a steam leak on the "A" reactor coolant bleed line.		A		Leak was repaired.	
	Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.4.1.2 Unit 2

2.4.1.2.1 Operating Experience

The unit operated at 100 percent full power until April 22, 1977 when the unit decreased power to 63 percent full power to perform control valve and stop valve movement tests. The unit was returned to 100 percent full power on April 24, 1977.

On April 29, 1977 power was decreased to approximately 94 percent full power to make repairs to the "B" feedwater loop controller. Repairs were completed and power was escalated to 98 percent full power the same day. The unit operated at this level for the remainder of the month.

2.4.1.2.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during April, 1977.

1. Revision 0 and 1 of Station Modification ON-264. The modification involved the installation of a solenoid valve in the suction supply line of the oil purifier. The valve will close on loss of power or stopping of purifier.

2. Revision 1 of Station Modification ON-419 was completed. The modification involved staking the inner shaft sleeve to the shaft on the "2A" high pressure injection pump.

3. Revision 0A and 1 of Station Modification ON-619 was completed. The modification involves the replacement of the non-radioactive waste disposal dumpster with a trash compactor.

4. Revision 1 of Station Modification ON-655 was completed. The modification involves the installation of a prefabricated environmentally controlled gauge calibration room in the Unit 1 Auxiliary Building.

5. Revision 0 of Station Modification ON-664 was completed. The modification will add angle bracing between the two A-frames making up each of the shield wire pull-off frames on the roof of the Turbine Building.

6. Revision 0 of Station Modification ON-669 was completed. The modification involved the installation of an air conditioning unit in the wall of the fifth floor canteen.

7. Revision 0 of Station Modification ON-711 was completed. The modification involves the seismic upgrade of the structural steel superstructure of the relay houses for the 230 KV switching station, D.C. test panel, battery chargers and D.C. panelboards.

8. Revision 0 of Station Modification ON-712 was completed. The modification will revise setpoints on the undervoltage relays as required to insure minimum operating voltage to safety-related equipment.

9. Revision 0 of Station Modification ON-734 was completed. The modification involved the addition of a redundant "hi-hi" temperature switch to shutdown the lube oil purifier heaters at high temperatures.

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER -MODEL/SIZE	W.R. Nbr.	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
HPI Letdown Filter 2B	Greenville Valve & Fitting	21614	Worn Hose	Leakage	None	Replaced flexible hose.	None Req'd
LPI-21	Rockwell 14"	21608	Set Screw on gear	Inoperable	None	Adjusted pinion gear and tighten set screw .	None req'd
CS-68	Grinnell 1 1/2"	22543	Ruptured diaphragm	Leakage	None	Replaced diaphragm	None req'd
CBAST	Lapp CPES-4	22280	Worn Seals	Leakage	None	Replaced seals	None req'd
HPI-Motor "2"	Westinghouse 600 HP	52633	Worn shaft	inoperable	None	Repaired motor rotor	None req.

DOCKET NO. 50 - 270

2.4.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH April, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE

Summary: There were no outages or forced reductions in power this month. There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.4.1.3 Unit 3

2.4.1.3.1 Operating Experience

The unit began the month at 100 percent full power and due to system load demand operated around this power level until April 19, 1977 with the exception of two reactor trips.

The first trip occurred on April 6, 1977 due to the loss of the 125 volt D.C. power supply to the Electro-Hydraulic Control System. The unit was returned to 90 percent full power by April 7, 1977 and power was held at this level for xenon equilibrium. The unit reached 100 percent power on April 8, 1977.

The second trip occurred on April 13, 1977 due to a flux/flow/imbalance problem. The reactor commenced startup the same day and reached 90 percent full power on April 14, 1977. Power was held at 90 percent for xenon equilibrium and was increased to 100 percent full power by April 15, 1977.

From April 19, 1977 until the end of the month the unit operated around 96 percent full power due to chemistry problems. Investigations were being made to correct the problem.

2.4.1.3.2 Changes, Tests and Experiments not Requiring Prior NRC Approval.

The following changes, tests and experiments were carried out without prior NRC approval pursuant to the provisions of 10CFR50.59 during April, 1977.

1. Revision OA and 1 of Station Modification ON-619 was completed. The modification involves the replacement of the non-radioactive waste disposal dumpster with a trash compactor.

2. Revision 1 of Station Modification ON-655 was completed. The modification involves the installation of a prefabricated environmentally controlled gauge calibration room in the Unit 1 **Auxiliary Building.**

3. Revision 0 of Station Modification ON-664 was completed. The modification will add angle bracing between the two A-frames making up each of the shield wire pull-off frames on the roof of the Turbine Building.

4. Revision 0 of Station Modification ON-669 was completed. The modification involved the installation of an air conditioning unit in the wall of the fifth floor canteen.

5. Revision 0 of Station Modification ON-711 was completed. The modification involves the seismic upgrade of the structural steel superstructure of the relay houses for the 230 KV switching station, D.C. test panal, battery chargers and D.C. panelboards.

6. Revision 0 of Station Modification ON-712 was completed. The modification will revise setpoints on the undervoltage relays as required to ensure minimum operating voltage to safety-related equipment.

7. Revision 0 of Station Modification ON-734 was completed. The modification involved the addition of a redundant "hi-lo" temperature switch to shutdown the lube oil purifier heaters at high temperatures.

2.4.1.3.3

MAINTENANCE

MONTH OF April 1977 UNIT # 3

OPERATION'S		COMPONENT		MALFUNCTION		EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
NAME	NUMBER	MANUFACTURER -MODEL/SIZE	W.R. Nbr.	CAUSE	RESULT			
		No safety-related components worked on.						

DOCKET NO. 50 - 287

UNIT NAME Oconee Unit 3

REPORT MONTH April, 1977

2.4.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
4/7/77	Reactor tripped from 100 percent full power due to momentary loss of the 125V DC power to the turbine control system.	6.10	A		125 DC power restored.	
4/13/77	Reactor tripped from 99 percent full power due to flux/flow/imbalance problem.	6.11	A			
	Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.5 REPORT FOR MAY, 1977

2.5.1 OPERATIONS SUMMARY

2.5.1.1 Unit 1

2.5.1.1.1 Operating Experience

The unit operated at 100 percent full power until May 7, 1977, when the unit was shutdown to repair a tube leak on the "1B" steam generator. The unit was returned to service on May 23, 1977 and power was escalated to 70 percent full power. While performing an Emergency Feedwater System test at this power level on May 24, 1977, the unit tripped when condenser vacuum was lost due to a failed valve.

On May 25, 1977 the unit was returned to 70 percent full power and held at this level due to waste water storage problems. On May 30, 1977 power was increased to 90 percent full power and held at this level the remainder of the month.

2.5.1.1.2 Changes, Tests and Experiments not requiring prior NRC approval.

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during May, 1977.

1. Revision 0 of Station Modification ON-373 was completed. The modification will change high pressure extraction valve HPE-36 from an open/close valve to a throttle valve.

2. Revisions 5 and 6 of Station Modification ON-725 were completed. The modification involved the removal of tubes from service in the "IB" OTSG.

3. Revision 0 of Station Modification ON-814 was completed. This modification changes the Administration Building ventilation system by adding a supply duct to the whole body count room from the canteen area.

4. Revision 0A of Station Modification ON-820 was completed. The modification involved changing the turbine main stop valve test logic to incorporate simultaneous testing of MSV 1 and MSV 3 together and MSV-2 and MSV-4 together.

2.5.1.1.3

MAINTENANCE
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OPERATION'S DATE NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
FDW - 104	Crane Gate 4"	22685	Bad Packing	Leakage	None	Replaced Packing	None Req'd
HP-249 -	Velan Globe 1 1/2"	22693	"	"	"	" "	" "
HP-118	" Gate 4"	22696	"	"	"	" "	" "
HP-107	Crane Gate 6"	22697	"	"	"	" "	" "
HP-98	Crane Gate 6"	22694	"	"	"	" "	" "
MS-88	Velan Globe 2"	22679	"	"	"	" "	" "
LPI Pump C Suction Pressure Gauge Isol Valve	Velan	90840	"	"	"	" "	" "

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2.5.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH May, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
5/7/77	The unit was shutdown from 100 percent full power to repair tube leaks in the "1B" OTSG.	382.00	A		Tubes were plugged. Investigation of cause and possible solutions in progress.	
5/24/77	The unit tripped from 70 percent full power when condenser vacuum was lost during an emergency feedwater pump test due to a failed valve	4.26	A		Valve was repaired.	
5/25/77	Unit held at 70 percent full power due to waste water storage problem.		F		Waste processing continuing.	

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.5.1.2 Unit 2

2.5.1.2.1 Operating Experience

The unit operated at 100 percent full power until May 6, 1977 when the reactor coolant loop A flow was momentarily lost to the ICS during an inspection of the flow instrumentation. The unit ranback to 75 percent full power. Power was escalated to the power level cutoff and then to 100 percent full power the same day.

On May 28, 1977 the unit was taken off line to commence refueling.

2.5.1.2.2 Changes, Tests, and Experiments not Requiring Prior NRC Approval.

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during May, 1977.

1. Revision 0 of Station Modification ON-373 was completed. The modification will change high pressure extraction valve HPE-36 from an open/close valve to a throttle valve.

2. Revision 0 of Station Modification ON-814 was completed. This modification changes the Administration Building ventilation system by adding a supply duct to the whole body count room from the canteen area.

2.5.1.2.3

MAINTENANCE
OCONEE NUCLEAR STATION
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OPERATION'S NAME	NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
		NO SAFETY RELATED WORK PERFORMED THIS MONTH						

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2.5.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours) REPORT MONTH May, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
5/28/77	Unit was shutdown from approximately 98 percent full power for refueling.	76.26	C		Refueling commenced.	

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.5.1.3 Unit 3

2.5.1.3.1 Operating Experience

The unit began the month at 96 percent full power due to a chemistry problem. On May 4, 1977 the problem was corrected and power was escalated to 100 percent full power. Power level was held at approximately 100 percent full power the remainder of the month except for one power drop to approximately 60 percent full power for testing purposes.

2.5.1.3.2 Changes, Tests and Experiments not Requiring Prior NRC Approval.

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during May, 1977.

1. Revision 0 of Station Modification ON-373 was completed. The modification will change high pressure extraction valve HPE-36 from an open/close valve to a throttle valve.

2. Revision 0 of Station Modification ON-814 was completed. This modification changes the Administration Building ventilation system by adding a supply duct to the whole body count room from the canteen area.

3. Revision 0 of Station Modification ON-830 was completed. The modification involved the installation of General Electric instrumentation in the "3B2" moisture separator reheater to collect data for generic studies on reheater reliability.

MAINTENANCE
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MONTH OF MAY 1977 UNIT# 3

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OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
RPS Flow Transmitter	Bailey Meter Company	22380	Ruptured Bellows	Transmitter Failure to Operate	none	Replaced Amplifier, Bellows and calibrated	None Required

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2.5.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH May, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
	Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values. No outages or forced reductions in power this month.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.6 REPORT FOR JUNE, 1977

2.6.1 OPERATIONS SUMMARY

2.6.1.1 Unit 1

2.6.1.1.1 Operating Experience

The month of June began with Unit 1 of 90 percent full power due to waste water storage problems. Power remained at this level until June 3, 1977 when power escalation began.

Power was increased as space became available for waste storage and reached 98 percent full power on June 6, 1977. At this time the unit tripped when testing was inadvertently conducted on the Unit 1 turbine shaft oil pump instead of the Unit 2 pump.

The unit was returned to service the same day but at 26 percent full power the turbine tripped causing reactor power to runback to approximately 12 percent full power. Investigation revealed no cause for the trip. Normal power escalation commenced on June 7, 1977. The unit reached 100 percent full power on June 9, 1977 and remained at this power level for the remainder of the month.

2.6.1.1.2 Changes, Test and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during June, 1977.

1. Revisions 0,2,3,4,5,6,7,8,9,10 and 11 of Station Modification ON-306 were completed. The modification involves changes to the reactor coolant bleed and miscellaneous waste evaporators to improve the operation of the Waste Management System.

2. Revisions 0 and 1 of Station Modification ON-573 were completed. The modification will improve the security system by adding magnetic locks to the doors in the main guard house and in adjacent hallways.

3. Revisions OA, 1 and 3 of Station Modification ON-698 were completed. The modification involved the replacement of RIA 33 and RIA 34 with a General Atomics radiation monitoring system.

4. Revisions 0 and 1 of Station Modification ON-710 were completed. The modification upgraded the seismic quality of the 230 kV transformers at Keowee by adding restraints to the bases.

5. Revision 0 of Station Modification ON-713 was completed. The modification upgraded the seismic design of the 230 kV switching station relay house by adding channels and connecting plates across the cable trench adjacent to the columns.

6. Revisions 0 and 1 of Station Modification ON-717 were completed. The modification involves the installation of an annunciator in the Unit 1 Control Room for the waste water treatment system pH strip chart recorder.

7. Revision 0 of Station Modification ON-774 was completed. The modification added a bridge stop bracket on the Unit 1 and 2 spent fuel pool bridge rail.

8. Revision OA of Station Modification ON-820 was completed. The modification involved changing the turbine main stop valve test logic to incorporate simultaneous testing of MSV-1 and MSV-3 together and MSV-2 and MSV-4 together.

9. Revision 0 of Station Modification ON-825 was completed. The modification will connect electrical power to the planning trailer from 1XGB switchgear compartment F2AB.

2.6.1.1.3

MAINTENANCE
OCONEE NUCLEAR STATION
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MONTH OF JUNE 1977 UNIT# 1

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
	No safety-related work performed for the month of June for Unit #1.						

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2.6.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours) REPORT MONTH June, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
6/6/77	The unit tripped from 98 percent full power due to a turbine shaft oil pump trip caused by technician error.	12.16	H		Administrative action was taken.	
6/6/77	Turbine tripped.	.73	H		Investigation showed no reason for the trip.	

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.6.1.2 Unit 2

2.6.1.2.1 Operating Experience

Unit 2 was shutdown for annual refueling outage for the entire month of June, 1977.

2.6.1.2.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during June, 1977.

1. Revisions 0,2,3,4,5,6,7,8,9,10 and 11 of Station Modification ON-306 were completed. The modification involves changes to the reactor coolant bleed and miscellaneous waste evaporators to improve the operation of the Waste Management System.

2. Revision 0 of Station Modification ON-450 was completed. The modification installed a deflector plate around the quench tank rupture disc.

3. Revisions 0 and 1 of Station Modification ON-573 were completed. The modification will improve the security system by adding magnetic locks to the doors in the main guard house and in adjacent hallways.

4. Revision 0 of Station Modification ON-626 was completed. The modification involved rewiring the bridge circuits and adding mechanical bumpers to the fuel transfer bridges.

5. Revision 0 of Station Modification ON-646 was completed. The modification provides a signal from the Electro-Hydraulic Control System to close the moisture separator reheater drain valves to the condenser during the turbine shell warming mode of operation.

6. Revisions OA, 1 and 3 of Station Modification ON-698 were completed. The modification involved the replacement of RIA 33 and RIA 34 with a General Atomics radiation monitoring system.

7. Revisions 0 and 1 of Station Modification ON-710 were completed. The modification upgraded the seismic quality of the 230 kV transformers at Keowee by adding restraints to the bases.

8. Revision 0 of Station Modification ON-713 was completed. The modification upgraded the seismic design of the 230 kV switching station relay house by adding channels and connecting plates across the cable trench adjacent to the columns.

9. Revision 0 of Station Modification ON-721 was completed. The modification will establish an interlock between the Reactor Building purge exhaust throttle fan (mini-purge) and the alert alarm on RIA-45.

10. Revision 0 of Station Modification ON-742 was completed. The modification will replace the "Dekoron" trace heating on the process line of the borated water storage tank level instrumentation with "Nelson" heat tracing.

11. Revision 0 of Station Modification ON-759 was completed. The modification involves the addition of a fifty millisecond time delay in the fast acting intercept valve circuits of the turbine control system to prevent noise spikes.

12. Revision 0 of Station Modification ON-774 was completed. The modification added a bridge stop bracket on the Unit 1 and 2 spent fuel pool bridge rail.

13. Revision 0A of Station Modification ON-820 was completed. The modification involved changing the turbine main stop valve test logic to incorporate simultaneous testing of MSV-1 and MSV-3 together, and MSV-2 and MSV-4 together.

14. Revision 0 of Station Modification ON-824 was completed. The modification involved maintenance on the spare high pressure injection pump motor to return it to operability.

15. Revision 0 of Station Modification ON-825 was completed. The modification will connect electrical power to the planning trailer from 1XGB switchgear compartment F2AB.

16. Revision 0 of Station Modification ON-846 was completed. The modification involves the replacement of the mag-bronze fuel grapple actuator cam with a stainless steel cam.

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MONTH OF June 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
HP-249	Velan Globe 1 1/2"	22971	Bad Packing	Leakage	None	Repacked	Unit Down
LP-75	Crane Gate 8"	22975	" "	"	"	"	" "
HP-100	" " 6"	22969	" "	"	"	"	" "
N-125	Velan Globe 1"	23220	Packing	Leakage	"	"	" "
HP-259	Velan Globe 1 1/2"	23223	"	"	"	"	" "
FDW-99	Crane Check 6"	20616	Bad Gasket	"	"	Replaced Gasket	" "
LP-28	Chapman Gate 4"	21917	Bad Packing	"	"	Replaced Packing	" "
HP-148	Velan Globe 1"	22965	" "	"	"	Repacked	" "
HP-114	Velan Globe 3"	22966	" "	"	"	"	" "
HP-118	Velan Globe 4"	22968	" "	"	"	"	" "
HP-128	Velan Globe 4"	22970	" "	"	"	"	" "
HP-250	" " 1 1/2"	22972	" "	"	"	"	" "
LP-34	Crane Gate 10"	23054	" "	"	"	"	" "
LP-33	Chapman Check 10"	23055	Hinge Pin Gasket	"	"	Replaced Hinge Pin Gaskets	" "
BS-4	Crane Gate 10"	23057	Packing	"	"	Repacked	" "
FDW-299	Velan Globe 2"	23074	Broken Stem	"	"	Replaced Stem	
RC-38	Velan Globe 1"	23219	Bad Packing	"	"	Repacked	
RCS-Root Valve	Velan Globe	23228	Bad Packing	"	"	"	
LPI-2B Letdown Cooler	Graham Mfg.	24515	Worn Flange	"	"	Torque Flanges	" "

2.6-6a

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MONTH OF June 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
LP-69	Aloyco Gate 8"	22973	Bad Packing	Leakage	None	Repacked	Unit Down
HP-98	Crane 6"	22967	Bad Packing	"	"	"	" "
LP-7	Gate 14"	22977	" "	"	"	"	" "
LPI-Sys Piping to LP-11		23235	Broken Weld	"	"	Rewelded	" "
Letdown Cooler	Graham Mfg.	16776	Tube Leak	"		Replaced with new cooler	" "
RC-66	Velan Globe 1/2"	22953	Worn Seat	"	"	Replaced Gaskets Bushings	" "
HP-35	Velan Globe 1"	53135	Worn Threads on Seat	"	"	Replaced Valve	" "
PR-7	Grinnell Diaphram 2"	23380	Torque Switch out of Adjust.	Inoperable Electrically	"	Adjusted Switch	" "
Instru Isoloc on S/G Hd Vent	Velan Globe 3/4"	23211	Broken Wheel	Unable to operate manually	"	Replaced hand wheel	" "
Pzr. Steam Space Vent Line		16784	Corrosion	Line Blocked	"	Removed and cleaned	" "
MS-143	Velan Globe 1" 600#	18873	Worn Gasket	Leakage	"	Replaced Gasket	" "
BS-11	Crane 8" 300#	23053	Worn Gasket	"	"	" "	" "
BS-6	Crane 10" 300#	23058	" "	"	"	" "	" "
CS-20	Velan Globe 2" 600#	22964	Bad Packing	"	"	Repacked	" "
R.B. Emerg Hatch	W. J. Wooley	90818	Worn Gasket	"	"	Replaced Gasket	

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MONTH OF June -1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
RC-44	Velan Globe 1"	23224	Bad Pkg.	Leakage	None	Repacked	Unit Down
HP-356	Globe 1"	23214	Bad Pkg.	Leakage	None	Repacked	" "
RC-24	Velan Globe 1 1/2"	23209	Bad Pkg.	"	"	"	" "
RC-19	Velan Globe 1"	23216	" "	"	"	"	" "
N-122	Velan Globe 1"	23217	" "	"	"	"	" "
FDW-308	Gate 6"	21583	" "	"	"	"	" "
HP-144	Velan Stop Ck 1 1/2"	23213	" "	"	"	"	" "
LPI Pump	Ingersol Rand	23051	Bad Gasket	Flange Leakage	"	Replaced Flange Gasket	" "
LPI Pump Vent Line	" "	23056	Threads Worn	Leaking	"	Tefloned Threads	" "
CBAST Pmp Stand Pipe Cap	Lapp Mfg. Company	23059	Worn Threads	Leaking	"	Clean threads. Repl. with teflon.	" "
LPSW Supply Line Filter Holder	Cuno Filter Company	23090	Broken Retaining Ring	Leakage	"	Replaced Ring	" "
FDW-101	Crane Check 6"	22872	Worn Hinge Pin		"	Replaced Hinge Pin Gasket	" "
Nitrogen Valve on upper steam line.	Globe Velan 1"	18874	Packing	"	"	Repacked	" "
RCS-Inst. Valve 23P	Velan Globe 1"	23215	Packing	"	"	Repacked	" "

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UNIT NAME Oconee Unit 2

REPORT MONTH June, 1977

OUTAGES OR FORCED REDUCTIONS IN POWER

2.6.1.2.4

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
6/1/77	Refueling outage continues.	720	C			

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with the outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.6.1.3 Unit 3

2.6.1.3.1 Operating Experience

Oconee Unit 3 was operating at 97 percent full power at the beginning of the month. Indications of small OTSG leaks were noted. On June 2, 1977, power was reduced to 94 percent full power to reroute moisten separator reheater drains to the hotwell to reduce secondary side activity.

On June 9, 1977, power was reduced to 70 percent full power due to a BTU limit alarm. Power was increased to 95 percent full power on June 10, 1977 then the unit was shutdown due to a steam generator tube leak. Repairs were also made to the "3B1" reactor coolant pump. Normal power escalation began on June 27, 1977 with the unit reaching 99 percent full power by the end of the month.

2.6.1.3.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during June, 1977.

1. Revisions 0,2,3,4,5,6,7,8,9,10 and 11 of Station Modification ON-306 were completed. The modification involves changes to the reactor coolant bleed and miscellaneous waste evaporators improve the operation of the Waste Management System.

2. Revision 0 of Station Modification ON-378 was completed. The modification involved the addition of isolation valves in the impulse lines of the generator core monitor.

3. Revisions 0 and 1 of Station Modification ON-573 were completed. The modification will improve the security system by adding magnetic locks to the doors in the main guard house and in adjacent hallways.

4. Revisions 0A, 1 and 3 of Station Modification ON-698 were completed. The modification involved the replacement of RIA-33 and RIA-34 with a General Atomics radiation monitoring system.

5. Revisions 0 and 1 of Station Modification ON-710 were completed. The modification upgraded the seismic quality of the 230 kV transformers at Keowee by adding restraints to the bases.

6. Revision 0 of Station Modification ON-713 was completed. The modification upgraded the seismic design of the 230 kV switching station relay house by adding channels and connecting plates across the cable trench adjacent to the columns.

7. Revision 0 of Station Modification ON-722 was completed. The mainstream radiation monitors, RIA-16 and 17, were modified to improve check source operation.

8. Revision 1 of Station Modification ON-722 was completed. The modification involved the removal of tubes from service in the "3B" OTSG.

9. Revision 0 of Station Modification ON-825 was completed. The modification will connect electrical power to the planning trailer from 1XGB switchgear compartment FZAB.

10. Revision 0 of Station Modification ON-830 was completed. The modification involved the installation of General Electric instrumentation in the "3B2" moisture separator reheater to collect data for generic studies on reheater reliability.

2.6.1.3.3

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MONTH OF June 1977 UNIT# 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
Personnel Hatch	W. J. Wooley	23475	Broken set screw & Key in gear.	Not Oper. properly	None	Replaced set screw and key in gear	None req'd
HP-3 Valve	Rockwell Globe 2 1/2"	23328	Loose packing	Leakage	None	Replaced Packing	" "
HP-126 Valve	Velan Stop Ck. 2 1/2"	20290	Worn Gasket	B/B Leakage	None	Replaced Gasket & Repacked	Unit off-line
OTSG tubes	B&W	95892	Unknown	Leakage	None	Tube plugged	Unit Down
HP-140	Velan Globe 4"	22389	Packing	Leakage	None	Repacked	Unit Down
FDW-149	Velan Globe 1/2"	20636	B/B Gasket	Leakage	None	Repacked	Unit Down
RCS Root Valves	Velan Globe	20457	Packing	Leakage	"	Repacked Valves	" "
PR-2	Pratt Butterfly 48"	23322	Broken Diaphram	Inoperable	"	Replaced Diaphragm	Not Req'd
RC-38	Velan Globe 1"	23325	Worn plug	Leakage	"	Replaced plug	Unit down
RC-74	Velan Globe 1/2"	23327	Packing	Leakage	"	Repacked	" "
LPI-PMP	Ingersoll Rand	23513	Worn Seal	Leakage	"	Replaced Mechanical Seal	" "
FDW Nozzle		23509	Worn Gasket	Leakage	"	Replaced Gaskets	" "

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2.6.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH June, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
6/9/77	Power reduced to 70 percent full power to correct BTU limit alarm.		A			
6/10/77	The unit was shutdown from 95 percent full power to repair a leak in the "3B" steam generator.	212.52	A	RO 287/77-8	Tubes were plugged. Investigation of problem and possible solutions in progress.	
6/19/77	Above outage extended to correct low oil level on reactor coolant pump.	178.61	A		Condition corrected.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.7 REPORT FOR JULY, 1977

2.7.1 OPERATIONS SUMMARY

2.7.1.1 Unit 1

2.7.1.1.1 Operating Experience

The month of July began with the unit at 100% Power. On July 5th the unit was taken off line to repair a leaking coolant storage valve on the bleed transfer pump. The unit was returned to service on the same day. On July 6, 1977, the unit reached 55 percent full power and remained at this power level to extend core life. On July 11, 1977, power was increased to 80 percent full power due to system load. On July 13, 1977, power was increased to 86 percent full power due to system load. On July 21, 1977, power was increased to 90 percent full power due to system load. On July 30, 1977, power was decreased to 86 percent full power to extend core life. The unit remained at this power level the remainder of the month.

2.7.1.1.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during July, 1977.

1. Revisions 3 and 4 of Station Modification ON-290 were completed. This modification to Warehouse No. 4 will provide for material storage under controlled conditions.

2. Revisions 10 and 11 of Station Modification ON-306 were completed. The modification involves changes to the reactor coolant bleed and miscellaneous waste evaporators to improve the operation of the Waste Management System.

3. Revision 0 of Station Modification ON-307 was completed. The modification will change the setting range of the SIW relay on Jocassee's black and white static relay panels to a more appropriate range.

4. Revision 0 of Station Modification ON-365 was completed. The modification involves the addition of flow orifices and differential pressure gauges with integral alarm switches to the component cooling lines to the reactor coolant pumps.

5. Revision 0 of Station Modification ON-648 was completed. The modification involves the addition of an interlock monitoring circuit to ACB #3 and ACB #4 interlock circuitry at Keowee to allow a pushbutton check of the interlock's operability.

6. Revision 0 of Station Modification ON-683 was completed. The modification involves changes to Keowee timing circuits to allow the key inhibit switch to be used when breaker maintenance is conducted.

7. Revision 0 of Station Modification ON-731 was completed. The modification involved the addition of columns inside the 230 kV switching station relay house to brace the concrete block walls. This modification will improve the seismic loading capability of the walls.

8. Revision 0 of Station Modification ON-775 was completed. The modification involves the addition of "acknowledge" and "test" pushbuttons on the local statalarm panel in the Unit 1 and 2 electrical equipment room.

9. Revision 0 of Station Modification ON-776 was completed. The modification involves the removal of a 90° elbow upstream of the particulate filter of RIA-48, -49, -44 and -45.

2.7.1.1.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF JULY 1977 UNIT#1

PAGE ____ of ____

OPERATION'S NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
LPSW-18	Walworth Globe 8"	23854	Bad Switch	Inoperable	None	Changed and Reset Torque Switch	None Required
CCW-101		23740	Loose Packing Gland nuts	Leakage	None	Tightened gland nuts	None Required

DOCKET NO. 50-269

2.7.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH July, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
7/5/77	Unit was taken off line to repair a leaking coolant storage valve on the bleed transfer pump.	10.22	A		Valve repaired.	

SUMMARY: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.7.1.2 Unit 2

2.7.1.2.1 Operating Experience

Unit 2 was shut down for refueling until July 17, 1977. At that time, the outage was extended for maintenance on the steam generators.

2.7.1.2.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during July, 1977.

1. Revisions 3 and 4 of Station Modification ON-290 were completed. This modification to Warehouse No. 4 will provide for material storage under controlled conditions.

2. Revision 10 and 11 of Station Modification ON-306 was completed. The modification involves changes to the reactor coolant bleed and miscellaneous waste evaporator to improve the operations of the Waste Management System.

3. Revision 0 of Station Modification ON-307 was completed. The modification will change the setting range of the SIW relay on Jocassee's black and white static relay panels to a more appropriate range.

4. Revisions 0, 3 and 5 of Station Modification ON-504 were completed. The modification involves the installation of additional orifices on first stage reheat supply piping to moisture separator reheaters.

5. Revision OB of Station Modification ON-530 was completed. The modification involves the installation of jib cranes above each reactor coolant pump cavity on the fourth level. The jib cranes will eliminate the need to use the polar crane for reactor coolant pump maintenance.

6. Revision 0 of Station Modification ON-543 was completed. The modification involves upgrading the seismic design of Reactor Building miscellaneous access platforms MKA-16 and MKA-17.

7. Revision 0 of Station Modification ON-545 was completed. The modification will provide a source of permanent power to the Reactor Building sky climbers and will replace the existing electrical components and controls to meet outdoor requirements.

8. Revision 2 of Station Modification ON-605 was completed. The modification will revise the "D" heater emergency bypass piping to the condenser to allow the "D" flash tank to properly dump to the condenser.

9. Revision 0 of Station Modification ON-644 was completed. The modification involves the replacement of Velan valve 2FDW-115 with an Orbit valve.

10. Revision 0 of Station Modification ON-648 was completed. The modification involves the addition of an interlock monitoring circuit to ACB #3 and ACB #4 interlock circuitry at Keowee to allow a pushbutton check of the interlock's operability.

11. Revision 4 and 5 of Station Modification ON-681 was completed. The modification revises hydraulic suppressors on the main steam valves by removing fixed bleed orifice plugs from the snubber valve.

12. Revision 0 of Station Modification ON-683 was completed. The modification involves changes to Keowee timing circuits to allow the key inhibit switch to be used when breaker maintenance is conducted.

13. Revisions OB and 1 of Station Modification ON-705 was completed. The modification involves the installation of instrumentation to provide positive indication that flow exists in at least one boron dilution drain line.

14. Revision 0 of Station Modification ON-723 was completed. The modification involved the installation of a vent line with an isolation valve from the heater drain pump casing to a high point on the side of the heater to assure water to the suction of the pump.

15. Revision 1 of Station Modification ON-726 was completed. The modification will allow proper operation of signals to the "CRD Trouble" annunciator until these power signals can be modified to allow their failure detectors to work properly.

16. Revision 0 of Station Modification ON-727 was completed. The modification involves the addition of two corrosion resistent bushings to the lever and one to the solenoid of valve RC-66, pressurizer electromatic relief valve, to ensure free motion of the lever pin.

17. Revision 0 of Station Modification ON-731 was completed. The modification involved the addition of columns inside the 230 kV switching station relay house to brace the concrete block walls. This modification will improve the seismic loading capability of the walls.

18. Revisions OA and OB of Station Modification ON-749 were completed. The modification involved the replacement of high pressure injection valve 2HP-204, with a Kerotest valve.

19. Revision 0 of Station Modification ON-758 was completed. The modification involves the replacement of type "HGA" relays in the thrust bearing wear detector circuitry of the turbine control system with type "MRD" relays and the addition of a key switch to disable the thrust bearing wear detector trip during testing.

20. Revision 0 and 1 of Station Modification ON-768 was completed. The modification provides for an increase in capacity and temperature rating of the control rod drive structure cooling fans.

21. Revision 0 of Station Modification ON-776 was completed. The modification involves the removal of 90 degree elbows upstream of the particulate filters of RIA -48, -49, -44 and -45.

22. Revisions 0 and 1 of Station Modification ON-794 were completed. The modification will revise the sprocket set screw arrangement on the fuel transfer system drive motor to prevent the sprocket key from working loose.

23. Revisions 0 and 1 of Station Modification ON-814 was completed. The modification changes the Administration Building ventilation system by adding a supply duct to the whole body count room from the canteen area.

24. Revisions OA, 1, 2 and OB of Station Modification ON-845 were completed. The modification involves the installation of data collection instrumentation in the "2B" steam generator.

25. Revision 0 of Station Modification ON-855 was completed. The modification involved the removal from service of tubes in the "2B" OTSG.

26. Revision OA of Station Modification ON-856 was completed. The modification will temporarily install thermocouples on the control rod drive service structure for air temperature monitoring and will provide an alarm for high temperature.

27. Revision 0 of Station Modification ON-861 was completed. The modification will remove a section of SPND #49 in location M-14 and will seal the end of this incore detector tube.

28. Revision 0 of Station Modification ON-871 was completed. The modification involves the installation of a steel plate on the bottom of the "2A2" moisture separator reheater first stage tube bundle to prevent tube bundle erosion.

29. Revision OA and OB of Station Modification ON-872 was completed. The modification involves drilling a hole in the "2B" OTSG to retrieve a dropped instrument. Safety implications were evaluated and the modification was found to have no adverse affect on nuclear safety.

2.7.1.2.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF JULY 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
LPSW-18	Walworth Globe 8"	23885	Loose Packing	Leakage	None	Tighten Packing	Unit Down
CF-2		23222	"	"	"	" "	" "
BS-1	Aloyco Globe 8"	12974	Bad Gasket	"	"	Replaced Gasket	" "
LPI "A" Cooler		23808	Flange Gasket Worn	"	"	Replaced & Retorqued Gasket	" "
RBCU Motor 2C		52929	Motor Burned Out	Inoperable		Repaired Motor	" "
RBCU Motor 2A		52928	Motor Burned Out	Inoperable	"	" "	" "
CS-67	Grinnell 3"	24144	Broken Pin in Valve Handle	Inoperable	"	Repalced shear pin in valve handle	" "
HP-7	Leslie 2 1/2"	23203	Out of Adjustment	Not working Properly	"	Readjusted	" "
Tendon Cap Leakage		90968	Bad Caps	Leakage	"	Replaced plugs	" "
MS-92	Lonergan 3"X4"	19806	Worn Seat	Leakage	"	Relapped seat	" "
LP-95	Aloyco Globe 6"	23825	Bad Weld	"	"	Rewelded	" "
MS-93	Flowline 6"	18183	Out of Stroke	Not operating correctly	"	Cleaned and restroked	" "

2.7.1.2.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF July 1977 UNIT# 2

OPERATION'S ACE NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
FDW-37	Crane Check 24"	20484	Hinge Pin Gasket	Leakage	"	Replaced Hinge Pin Gasket	Unit Down
LP-95	Aloyco Globe 6"	23882	Packing	"	"	Tighten Packing	Unit Down
Instrument Valve	Velan	20416	"	"	"	Repacked	" "
LP-96	Globe Velan 2"	23060	"	"	"	"	" "
Instru Isol Valve	Velan	22677	"	"	"	"	" "
Instru Isol Valve	Velan	22676	"	"	"	"	" "
Instru Isol Valve	Velan	23218	"	"	"	"	" "

DOCKET NO. 50-270

2.7.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH July 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
7/1/77	Continuation of refueling outage	384	C			
7/17/77	Extension of outage for maintenance on the steam generators	360	B		Instrument inadvertently dropped into steam generator retrieved.	

SUMMARY: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.7.1.3 Unit 3

2.7.1.3.1 Operating Experience

The unit operated at 99 percent full power until July 7, 1977, when a high chloride concentration in the reactor coolant system resulted in a power decrease to 48 percent full power. The condition was corrected and power was escalated to 88 percent full power due to waste bleed volume. Power was increased as waste problem was corrected and by July 14, 1977, the unit reached 97 percent full power.

On July 14, 1977, the unit was shut down to repair a tube leak in the "3B" OTSG. The unit was brought back on line on July 27, 1977, and reached 60 percent full power that same day. Power was held at this level to allow waste processing. On July 30, 1977, power was increased and 89 percent full power was reached by the end of the month.

2.7.1.3.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during July, 1977.

1. Revisions 3 and 4 of Station Modification ON-290 were completed. This modification to Warehouse No. 4 will provide for material storage under controlled conditions.

2. Revision 10 and 11 of Station Modification ON-306 was completed. The modification involves changes to the reactor coolant bleed and miscellaneous waste evaporators to improve the operation of the Waste Management System.

3. Revision 0 of Station Modification ON-307 was completed. The modification will change the setting range of the SIW relay on Jocassee's black and white static relay panels to a more appropriate range.

4. Revision 0 of Station Modification ON-545 was completed. The modification will provide a source of permanent power to the Reactor Building sky climbers and will replace the existing electrical components and controls to meet outdoor requirements.

5. Revision 0 of Station Modification ON-648 was completed. The modification involves the addition of an interlock monitoring circuit to ACB #3 and ACB #4 interlock circuits.

6. Revision 0 of Station Modification ON-663 was completed. The modification added ductwork to the ventilation system to provide fresh air to operating personnel in the Interim Waste Building.

7. Revision 0 of Station Modification ON-683 was completed. The modification involves changes to Keowee timing circuits to allow the key inhibit switch to be used when breaker maintenance is conducted.

8. Revision 1 of Station Modification ON-726 was completed. The modification will allow proper operation of signals to the "CRD Trouble" annunciator until these power signals can be modified to allow their failure detectors to work properly.

9. Revision 0 of Station Modification ON-731 was completed. The modification involved the addition of columns inside the 230 kV switching station relay house to brace the concrete block walls. This modification will improve the seismic loading capability of the walls.

10. Revision 0 of Station Modification ON-776 was completed. The modification involves the removal of 90 degree elbows upstream of the particulate filter of RIA -48, -49, -44 and -45.

11. Revision 0A of Station Modification ON-820 was completed. The modification involved changing the turbine main stop valve test logic to incorporate simultaneous testing of MSV-1 and MSV-3 together, and MSV-2 and MSV-4 together.

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OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF July 1977 UNIT# 3

PAGE ____ of ____

OPERATION'S DATE NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
HPI Seal Supply Filter	Fluid Dynamics	23794	Worn Gasket	Leakage	None	Replaced Gasket	None Req.
Nitrogen Valve-233		22053	Bad Packing and gasket	Leakage	None	Replaced Gasket and packing.	None Req.
OTSG Tube #1 & #2 Row 77	B&W	95937	Unknown	Leakage	None	Welded stabilizer plugs in tubes # 1&2	Unit Down
OTSG Main Fdw Nozzle	B&W	24019	Worn Gaskets	Leakage	None	Replaced gaskets	Unit Down

DOCKET NO. 50-287

2.7.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH July 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
7/7/77	Forced reduction in power from 99 percent full power to 48 percent full power to correct high chloride concentration in reactor coolant system		D		Condition corrected	
7/14/77	Unit was shut down from 97 percent full power due to a tube leak on the "3B" steam generator	292.28	A	RO 287/77-10	Tube leak repaired. Investigation of cause and solutions in progress.	-
7/27/77	Unit held at 60 percent full power due to waste processing volume.		H		Power was increased as waste situation permitted.	

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.8 REPORT FOR AUGUST, 1977

2.8.1 OPERATIONS SUMMARY

2.8.1.1 Unit 1

2.8.1.1.1 Operating Experience

The unit was at approximately 85 percent full power at the beginning of the month. On August 2, 1977, power was reduced to approximately 83 percent full power until August 5, 1977. On August 5, 1977, the unit was shut down for refueling and remained shut down for the remainder of the month.

2.8.1.1.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during August, 1977.

1. Revision 2C of Station Modification ON-370 was completed. The modification deleted the auto-start creep function on the reactor coolant pumps oil lift AC circuits and added a three minute time out on the DC lift pumps. This change will facilitate the control and monitoring of the oil lift pump operation.

2. Revision 0 of Station Modification ON-537 was completed. The modification involves the installation of thermocouple wells in each pipe carrying low pressure service water to and from the Reactor Building cooling unit.

3. Revision 2 of Station Modification ON-559 was completed. The modification will effectively disable the by-pass dampers on the Reactor Building purge filters and seal the exit of the bypass to prevent leakage.

4. Revision 0 of Station Modification ON-622 was completed. The Auxiliary Building wall was modified to allow access to the change room of the hot machine shop from outside of the Auxiliary Building.

5. Revision 0 of Station Modification ON-626 was completed. The modification involved rewiring the bridge circuits and adding mechanical bumpers to the fuel transfer bridge.

6. Revision 0 of Station Modification ON-646 was completed. The modification provides a signal from the Electro-Hydraulic Control System to close the moisture separator reheater drain valves to the condenser during the turbine shell warming mode of operation.

7. Revision 0 of Station Modification ON-661 was completed. The modification involved the installation of a climbing safety device on both of the spent fuel pool decontamination pit ladders.

8. Revisions 2 and 3 of Station Modification ON-681 were completed. The modification revises hydraulic suppressors on the main steam valves by removing fixed bleed orifice plugs from the snubber valve.

9. Revision 0 of Station Modification ON-695 was completed. The modification will add flush connections to various locations in the low pressure service water system.

10. Revision 2 of Station Modification ON-717 was completed. The modification involves the installation of separate control room alarms for pH control at the oil retention pond and waste water collection basins. The alarms will have reflash capability.

11. Revision 0 of Station Modification ON-742 was completed. The modification will delete the "Dekoron" trace heating on the process line of the borated water storage tank level instrumentation. "Nelson" trace heaters will be installed to improve the reliability of the equipment.

12. Revision OD of Station Modification ON-751 was completed. The modification replaces valves SD-19, SD-20 and SD-70, steam drain valves, with Kerotest valves.

13. Revision 0 of Station Modification ON-759 was completed. The modification involves the addition of a fifty millisecond time delay in the fast acting intercept valve circuits of the turbine control system to prevent noise spikes.

14. Revision 0 of Station Modification ON-796 was completed. The modification removed a section from the inside corner wall of the entrance to the letdown storage tank to provide easier access to the area.

15. Revision 0 of Station Modification ON-836 was completed. The modification involved the rerouting of drains to the condenser instead of the blowdown tank.

16. Revision 0 of Station Modification ON-854 was completed. The modification involved the replacement of the existing drain plug on the hydraulic tanks of the fuel handling equipment with a quick disconnect plug.

17. Revision OB of Station Modification ON-858 was completed. The modification provided water, electricity, public address and telephone services to the security and canteen trailers.

18. Revision 0 of Station Modification ON-864 was completed. The modification involved changes to the feedwater temperature circuits of the Integrated Control System.

2.8.1.1.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF August 1977 UNIT# 1

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
MS-92	Lonergan Relief 6"	19351	Worn Seat	Leakage	None	Relapped Seat	Ref. Outage
MS-103	Turb. Stop Valve 2"	23008	Loose Pkg	Leakage	None	Adjusted Packing	Ref. Outage
HP-71	Lonergan	24107	Worn Gasket	Leakage	None	Replaced Gasket	" "
HP-65	Globe Velan 1/2"	25112	Worn Packing	Leakage	None	Repacked	" "
LP-2	Walworth Gate 12"	17835	Loose Packing	Leakage	None	Repacked	" "
LP-1	Walworth Gate 12"	17834	Bad Packing	Leakage	None	Repacked	" "
RB Pers. Hatch Door Interlock	W. J. Wooley	24696	Out of Adjustment	Not closing properly	None	Adjusted Cable and Ratch Paws	" "
Relief V. on HPI Sys	Lonergan Relief Valve	22681	Worn Gasket & Stem	Leakage	None	Replaced Gasket & Stem	" "
CS-69	Grinnell 3/4"	24129	Worn Diaph Gasket	"	"	Replaced Gasket	" "
LPI-18	Walworth Gate 10"	24996	Bad Pkg.	Leakage	"	Repacked	" "
LP-94	Aloyco Gate 6"	18795	Bad Pkg.	Leakage	"	"	" "
RC-43	Velan Globe 1 1/2"	24952	Bad Pkg.	Leakage	"	"	" "
CC-24	Crane Swing Check 6"	91065	B/B Gasket	"	"	Replaced Gasket	" "
RC-36	Velan Globe 1"	24951	Bad Pkg.	"	"	Repacked	" "
RC-16	Velan Gate 1"	24957	Bad Pkg.	"	"	Repacked	" "
HP-120	Leslie Globe 2 1/2"	24673	Worn Seat	"	"	Lapped Seat	" "

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF August 1977 UNIT# 1

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
Nitrogen #130 Valve	Globe 1"	24470	Worn Seat	Leakage	None	Lapped Seat	Ref. Outage
GWD-58	Velan Globe 1"	23901	Worn Seat	Leakage	None	Lapped Seat	Ref. Outage
FDW-101	Crane Check 6"	24198	Worn Gasket	B/B Leakage	None	Replaced Gasket	" "
MS-140	Lonergan Relief	23182	Worn Seat	Leakage	None	Replaced Gasket	
RBCU Mtr		17967	Worn Parts	Running high amps	None	Replaced Motor	" "
Tendon Caps		90856	Bad Washers	Leakage	None	Replaced Washers	" "
FDW-48	Crane Check 6"	22206	Hinge Pin Gasket	Leakage	None	Install New Hinge Pin Gasket	" "
MS-93	G.E. Supplied Valve	16993	Seal Gaskets	Leakage	None	Replaced Seal Gasket	" "
HP-71	Relief Valve	22161	Worn Seat	Leakage	None	Lapped Seat	" "
RC-46	Velan Globe 1"	25953	Worn Packing	Leakage	None	Loose Packing	" "
GWD-153	Velan Globe 1"	25669	Worn Seat	Leakage	None	Lapped Seat	" "
LPI-1	Crane Gate 8"	25128	Worn Packing	"	"	Replaced Packing	" "
LPI-11	Crane Gate 10"	25121	"	"	"	" "	" "
BS-13	Crane Gate 8"	25117	"	"	"	" "	" "
MS-79	Crane Gate 12"	23946	"	"	"	" "	" "

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF August 1977 UNIT# 1

OPERATION'S AME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
CS-65	Grinnell 2"	23285	Diaphragm Leak	Leakage	None	Replaced Diaphragm	Ref. Outage
MS-24	Crane Gate 6"	23015	B/B Leak	"	"	Lapped Seat	" "
HP-27	Rockwell/Edward Globe 4"	24994	Bad Pkg	"	"	Repacked	" "
HP-26	Rockwell/Edward Globe 4"	24993	Bad Pkg.	"	"	"	" "
RCP Root Valve		24959	Bad Packing	"	"	"	" "

DOCKET NO. 50-269

2.8.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH August 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
8/5/77	Refueling Shutdown **Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.**	633.92	C			

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.8.1.2 Unit 2

2.8.1.2.1 Operating Experience

The unit was in cold shutdown at the beginning of the month to complete steam generator maintenance. On-line operation was delayed due to valve repairs on 2LP-14 and 2LP-21, low pressure injection system valves, testing including Zero Power Physics Testing, a weld leak in the high pressure injection system and control rod drive stator failures. On August 28, 1977, the unit came back on line and power escalation proceeded normally with the unit reaching 75 percent full power by the end of the month.

2.8.1.2.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during August, 1977.

1. Revision 2 of Station Modification ON-379 was completed. The modification involved the recessing of two retaining clips on each reactor coolant pump motor upper oil pot air seal into the thrust runner seal housing. The modification will increase the integrity of the air seal.

2. Revision 0 of Station Modification ON-424 was completed. The modification involved the addition of breathing air headers in the Reactor Building and the Auxiliary Building.

3. Revision 0 of Station Modification ON-529 was completed. The modification changed the 1900 and 2000 ohm resistors on GE ET-16 indicating lamps to 2550 ohm resistors.

4. Revision 0 of Station Modification ON-622 was completed. The Auxiliary Building wall was modified to allow access to the change room of the hot machine shop from outside of the Auxiliary Building.

5. Revisions 0, 1 and 2 of Station Modification ON-650 were completed. The modification will move the power source of Reactor Building cooling unit (RBCU) "A" from XS1 MCC to X of Load Center and the power source of RBCU "B" from XS2 MCC to X9 Load Center.

6. Revision 0 of Station Modification ON-661 was completed. The modification involved the installation of a climbing safety device on both of the spent fuel pool decontamination pit ladders.

7. Revision 0 of Station Modification ON-695 was completed. The modification will add flush connections to various locations in the low pressure service water system.

8. Revisions OA, 2, 3 of Station Modification ON-705 were completed. The modification involves the installation of instrumentation to provide positive indication that flow exists in at least one boron dilution drain line.

9. Revision OC of Station Modification ON-749 was completed. The modification involved the replacement of liquid waste disposal valve 2LWD-230 with a Kerotest valve.

10. Revisions 0 and 1 of Station Modification ON-765 were completed. The modification involved the installation of target rock solenoid operated valves in place of existing pressurizer spray valve 2RC-1.

11. Revision 0 of Station Modification ON-770 was completed. The modification revised the pneumatic control system to the second stage moisture separator and reheater.

12. Revision 0 of Station Modification ON-779 was completed. The modification extended the existing reactor vessel lifting cable storage platform to enhance personnel safety.

13. Revision 0 of Station Modification ON-796 was completed. The modification removed a section from the inside corner of the entrance to the letdown storage tank to provide easier access to the area.

14. Revision 0 of Station Modification ON-801 was completed. The modification involves the installation of viscosity type upper bearing thrust runner pumps to replace the present centrifugal type pumps.

15. Revision 0 of Station Modification ON-837 was completed. The modification involved the installation of a resistor in the output of feedwater pump turbine vibration monitor to cut the maximum current seen by the monitor.

16. Revision OB of Station Modification ON-858 was completed. The modification provided water, electricity, public address and telephone services to the security and canteen trailers.

17. Revision 0 of Station Modification ON-896 was completed. The modification revised the position of 2HP-66, the reactor coolant pump "2B1" seal injection throttle valve, and the piping around the valve.

18. Revision 0 of Station Modification ON-897 was completed. The modification will remove the center control rod drive vent and line to vent tank and install a regular control rod drive cap.

2.8.1.2.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF AUGUST 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
LP-39	Velan Globe 3/4"	24526	Worn Gasket	Leakage	None	Tightened Packing	Unit Down
CF-1	Walworth Gate 14"	24936	Worn Packing	Leakage	None	Adjusted Packing	" "
HP-285	Kerotest Globe 1 1/2"	24785	Cracked Seat	Leakage	None	Replaced Stem Assembly and lapped seat	" "
MS-33	Crane Gate 6"	24799	Loose Packing	Leakage	None	Repacked	
LP-73	Crane Gate 8"	24525	Loose Packing	Leakage	None	Tightened Packing	" "
MS-102	Crane Stop Valve	24557	Bad Packing	"	"	Repacked Packing	" "
MS-105	Crane Stop Valve	24558	"	"	"	" "	" "
MS-104	Crane Stop Valve	24559	"	"	"	" "	" "
MS-103	" " "	24560	"	"	"	" "	" "
MS-83	Crane Check 6"	24521	"	"	"	" "	" "
R.B. Pers. Hatch	W. J. Wooley	90961	Stretched Gasket	"	"	Installed shim under gasket	" "
NI-1 Detector	Westinghouse	24135	Detector	Failed low	"	Replaced detector	" "
HP-66	Velan Globe	24940		Inoperable	"	Replaced Valve	" "
GWD-59	Velan Globe	24618	Worn Seat	Leakage	"	Replaced diaphram & Lapped Seat	" "
GWD-58	Velan Globe 1"	24647	"	"		Lapped Seat	" "

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF August 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
LWD-230	Velan Globe	24801	Broken Stem	Inoperable	None	Replaced Stem	Unit Down
LWD-229	Velan Globe 1"	24619	Broken Handwheel	Inoperable	None	Replaced stem & wheel	" "
GWD-54	" " 1"	24644	Worn Seat	Leakage	None	Lapped Seat	" "
LP-21	Rockwell Gate 14"	23379	Motor Burned out	Smoking	"	Replaced Motor	" "
RC-68	Velan Globe	20487	Worn Seat	Leakage	"	Replaced Valve	" "
RC-67	" "	20486	Worn Seat	Leakage	"	Replaced Valve	" "
HP-66 Piping		24765	Weld Leak	Leakage	"	Repaired Weld	" "
CBAST Tank		16751	Broken Weld	Leakage	"	" "	" "

DOCKET NO. 50-270

2.8.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH August 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
8/1/77	Outage continued due to steam generator maintenance, control rod drive stator failures and other maintenance.	663.58	A			-

Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.8.1.3 Unit 3

2.8.1.3.1 Operating Experience

The month of August began with the unit holding for Xenon equilibrium at 91 percent full power. On August 2, 1977, 100 percent full power was reached and the unit remained at this power level until August 20, 1977. At this time while performing a control rod movement test rod 2 group 3 dropped into the core due to a shorted stator. Power was reduced to 50 percent full power. The unit was shut down the same day to repair the stator. On August 22, 1977 the unit was returned to service. Power was increased to 57 percent full power. At this point the "3B" feedwater pump turbine tripped. Power remained at approximately 57 percent until August 24, 1977 when power escalation was commenced. On August 25, 1977, 100 percent power was reached but on the same day the "3B" feedwater pump turbine tripped again and the unit ran back to 60 percent full power. On August 26, 1977 power was increased to 100 percent full power and remained at this power level the remainder of the month.

2.8.1.3.2 Changes, Tests and Experiments not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during August, 1977.

1. Revision 2 of Station Modification ON-559 was completed. The modification will effectively disable the bypass dampers on the Reactor Building purge filters and seal the exit of the bypass to prevent leakage.

2. Revision 0 of Station Modification ON-622 was completed. The Auxiliary Building wall was modified to allow access to the change room of the hot machine shop from outside of the Auxiliary Building.

3. Revision 0 of Station Modification ON-695 was completed. The modification will add flush connections to various locations in the low pressure service water system.

4. Revision 0 of Station Modification ON-742 was completed. The modification will delete the "Dekoron" trace heating on the process line of the borated water storage tank level instrumentation. "Nelson" trace heaters will be installed to improve the reliability of the equipment.

5. Revision 2 of Station Modification ON-772 was completed. The modification will remove tubes 1 and 2 of row 77 of the "3B" steam generator by stabilizing the upper ends and explosively plugging the lower ends.

6. Revisions 0 and 1 of Station Modification ON-791 were completed. The modification involved the replacement of all concentrated boric acid storage tank batch counters with a newer model.

7. Revision 0 of Station Modification ON-796 was completed. The modification removed a section from the inside corner of the entrance to the letdown storage tank to provide easier access to the area.

8. Revision OB of Station Modification ON-858 was completed. The modification provided water, electricity, public address and telephone services to the security and canteen trailers.

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF AUGUST 1977 UNIT# 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
Transformer 3 X 10		24358	Worn Bushings	Leakage of Freon	None	Added Freon Gas	None Req'd
CS-65	Grinnell Diaph 2"	24325	Bad Diaph.	Leakage	None	Replaced Diaphragm	" "
CBAST Pmp Accumulator	Sharp Control	20774	Bad Seal	Leakage	None	Installed new accumulator	None Req'd
CBAST Pmp 3A	Lapp	24718	Bad Coupling	Excessive noise	None	Replace bad coupling	None req'd
HP-64	Velan Globe 1/2"	24857	Loose Packing	Packing Leak	None	Adjusted packing	None req'd
RC-43	Velan Globe 1 1/2"	23969	Cracked Seat	Leakage	"	Repacked valve. To be Replaced during refuel.	Unit down
RC-45	Velan Globe 1 1/2"	23970	Cracked Seat	Leakage	"	Repacked valve. Valve to be replaced during refueling.	Unit down
CBAST Pmp.	Lapp	11940	Worn parts	Inoperable	"	Replaced pump parts	" "

DOCKET NO. 50-287

2.8.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH August 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
8/20/77	Unit was shut down from 100 percent full power due to a failed stator in control rod 2 group 3. Summary: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.	35.59	A		Stator was repaired	

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.9 REPORT FOR SEPTEMBER, 1977

2.9.1 OPERATIONS SUMMARY

2.9.1.1 Unit 1

2.9.1.1.1 Operating Experience

The unit was in refueling shutdown at the beginning of the month. Required maintenance and periodic testing were in progress. Refueling was completed on September 17, 1977. The outage was extended for maintenance on the steam generators until September 27, 1977. Preparations for unit startup, including completion of maintenance and periodic testing, were in progress for the remainder of the month.

2.9.1.1.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during September 1977.

1. Revisions 1A, 4, and 5 of Station Modification ON-246 were completed. The modification involved the replacement of low pressure injection 1LP-14 with Fisher Vee-Ball valves.

2. Revision 2 of Station Modification ON-379 was completed. The modification recessed the radial retainer clips on the thrust runner air seal in the reactor coolant pump motor oil system into the thrust runner seal housing to prevent the fretting of the seal ring and the loss of oil from the upper oil pot.

3. Revisions 0A, 1, 8 and 9 of Station Modification ON-502 were completedd. The modification replaced and relocated valves RC-4 and RC-66 to increase the reliability of these valves.

4. Revision 0 of Station Modification ON-529 was completed. The modification changed the 1900 and 2000 ohm resisters on GE ET-16 indicating lamps to 2550 ohm resisters.

5. Revision 0 of Station Modification ON-545 was completed. The modification provided a source of permanent power to service the Reactor Building sky climbers by replacing the existing electrical components with weatherproof electrical components.

6. Revision 0 of Station Modification ON-594 was completed. The modification involved the inspection of all General Electric type HFA and HGA relays at Oconee Nuclear Station including those at Keowee Hydro Station and replacement of defective relay coils.

7. Revisions 0, 1 and 2 of Station Modification ON-605 were completed. The "D" heater emergency bypass piping to the condenser was modified to allow the "D" flash tank to properly dump to the condenser.

8. Revision 9 of Station Modification ON-635 was completed. The modification involved the installation of a feedback mechanism which will assure that the setpoint for the flowrate of liquid waste discharged from the station is not exceeded.

9. Revision 0 of Station Modification ON-659 was completed. The modification involved the installation of ground level pressure gauges to indicate SF_6 gas pressure inside electrical penetrations EMB-1 and -2. This modification will assure personnel safety when reading the gauges.

10. Revision 1 of Station Modification ON-665 was completed. The modification involved the installation of thermocouples on turbine bearings to indicate the temperatures of the bearings.

11. Revisions 0B, 2 and 4 of Station Modification ON-698 were completed. The modification involved the replacement of RIA-33 and RIA-34 with a General Atomics radiation monitoring system.

12. Revisions 0A, 0B, 2 and 3 of Station Modification ON-705 were completed. The modification involves the installation of instrumentation to provide positive indication that flow exists in at least one boron dilution drain line.

13. Revision 0 of Station Modification ON-706 was completed. The modification involved the installation of an acrylic collimator on the face of the scintillation crystals of RIA-47 and RIA-49, the Reactor Building airborne activity monitors.

14. Revision 0 of Station Modification ON-735 was completed. The modification involved the addition of fuses to protect the 0.5 KVA transformer which supplies power to the cooling fans for the pressurizer heater control circuits.

15. Revision 0 of Station Modification ON-740 was completed. The modification involved the installation of a locking device on the Keowee governor solenoid cap screw to prevent the cap screw nut from backing off. The modification was done at the manufacturer's recommendation.

16. Revisions 0C and 0B of Station Modification ON-748 were completed. The modification involved the replacement of valves NI-116, nitrogen supply to quench tank, NI-128, nitrogen supply to core flood tank "A", 1HP-285, seal supply to RCP "B1" outside stop check valve and 1HP-147, seal supply to RCP "B1" stop check valve with Kerotest valves.

17. Revision 0 of Station Modification ON-758 was completed. The modification involved the replacement of all General Electric type HGA relays in the thrust bearing wear detector test circuit and the addition of a key switch to disable the thrust bearing wear detector trip during the turbine trip test.

18. Revision 0 of Station Modification ON-770 was completed. The modification revised the pneumatic control system to the second stage moisture separator and reheater.

19. Revision 0 of Station Modification ON-801 was completed. The modification involves the installation of viscosity type upper bearing thrust runner pumps to replace the present centrifugal type pumps.

20. Revision 0 of Station Modification ON-808 was completed. The modification involved the replacement of the bronze control rod guide cage assembly on the fuel handling bridges with a new stainless steel design.

21. Revisions 0 and 1 of Station Modification ON-817 were completed. The modification revised the trips related to the turbine electro-hydraulic control to enhance operation of the unit and prevent spurious trips.

22. Revision 0 of Station Modification ON-833 was completed. The modification involved the replacement of one standard axial power shaping control rod (APSR) containing sixteen silver - indium - cadmium absorbers with an APSR containing fifteen silver - indium - cadmium absorbers and one Inconel absorber.

23. Revision 0 of Station Modification ON-839 was completed. The modification involves the installation of a pump, piping and valves to transfer reactor coolant bleed evaporator bottoms and miscellaneous waste evaporator bottoms to the Interim Waste Building bottom storage tank.

24. Revision 0 of Station Modification ON-851 was completed. The fuel elevator's control circuiting was modified to require manual switch holddown for continuous operation.

25. Revisions 0 and 1 of Station Modification ON-852 were completed. The modification revised valve CCW-8 motor, open torque switch bypass contact to allow for an extended bypass interval as the valve disc travels off the seat.

26. Revisions 0A and 0B of Station Modification ON-891 were completed. The modification added a door to the temporary material areas offices in Warehouse #2.

27. Revision 0A of Station Modification ON-892 was completed. The modification involved the replacement of General Electric CD-31 coupling capacitors on the main set-up transformers.

28. Revision 0 of Station Modification ON-897 was completed. The modification will remove the center control rod drive vent and line to vent tank and install a regular control rod drive cap.

29. Revision 0 of Station Modification ON-911 was completed. The modification supplied power to the General Electric tool trailer temporarily located east of the Turbine Building.

30. Revision 0 of Station Modification ON-912 was completed. The modification relocates FDW-99, emergency feedwater line "A" check valve, to provide for easier operation of the valve.

31. Revision 0 of Station Modification ON-919 was completed. The modification involves the replacement of valve 1RC-1, pressurizer spray control valve, with an approved valve and operator.

2.9.1.1.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF Sept 77 UNIT# 1

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE	CORRECTIVE ACTION	PRECAUTIONS FOR
AME NUMBER	MANUFACTURER - MODEL/SIZE	W.R. NBR	CAUSE	RESULT	OPERATION		REACTOR SAFETY
RC-66	Dresser Relief 2 1/2"	26298	Worn Seat	Leakage	None	Lapped Seat with Diamond Compound	Refueling
DW-87	Grinnell 1"	26406	Worn Diap	Leakage	None	Replaced Diaphram	"
RC-5	Rockwell Globe 1"	24473	Motor	Inoperable from Cont. Room	None	Replaced Motor	"
RC-66	Dresser Relief 2 1/2"	24208	Bad Gask.	Leakage	None	Replaced Gasket	"
CC-7	Walworth Gate 8"	90862	Gasket	Leakage	None	Replaced Gasket	"
RC-68	Dresser Relief 2 1/2"	25860	Worn out Valve	Leakage	None	Replaced with New V.	"
RC-67	Dresser Relief 2 1/2"	25861	" "	"	"	" " " "	"
CC-76	Crane Swing Ck 3"	25041	Worn Gasket	"	"	Replace Gasket	"
CC-8	William Powell Gate 8"	90861	"	"	"	" "	"
CS-173		24283	Bad Diaph	"	"	Replaced Diaphragm	"
HP-217	Velan Globe 1"	24119	Bad Diaph	"	"	Repacked	"
MS-94		24417	Worn Seat	Leakage	"	Relapped Seat	"
HP-43	Lonergan Relief 2X2 ½"	24455	Bad Flng	"	"	Replaced Flange	"
MS-79	Crane Gate 12"	10825	Worn Seat	Leakage	"	Dressed Wedge & Seat	"
OTSG Tube	B&W	53688	Unknown	Leakage	"	Tubes Plugged	"
FDW-108	Rockwell	53778	Packing	Leakage	"	Repacked	"
FDW-106	Rockwell	52602	Packing	Leakage	"	Repacked	"
LP-105	Gate	53489	Out of Adjustm.	Not Working Properly	"	Adjusted Switch	"

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF Sept 1977 UNIT# 1

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
LPI-13	Crane Gate 10"	24123	Packing	Leakage	None	Repacked	Refueling
CC-7	Walworth Gate 8"	25685	Switch	Will not Open Elect	None	Adjusted Torque Switch and cleaned contacts	Refueling
HP-126	Velan Globe 2 1/2"	25956	Packing	Leakage	"	Repacked & Replaced Gaskets	"
HP-127	Velan Globe 2 1/2"	24954	Packing	Leakage	"	" "	"
HP-246	Velan Globe 1"	24955	"	"	"	" "	"
HP-126	Velan Globe 2 1/2"	25922	Worn Seat	"	"	" "	"
HP-127	Velan Globe	25923	" "	"	"	" "	"
CS-70	Grinnell 1"	25924	Diaphragm	Inoperable	"	Replaced diaphragm	"
MS-140	Lonergan Relief	24416	Incorrect Settings of Guide Rings	Not Operating Correctly	"	Adjusted Guide Ring Setting	"
Letdown Filter	Fluid Dynamics	26228	Loose Bolts	Leakage	"	Tightened Bolts	"
SF-61	Crane Gate 8"	24968	B/B Leakage Gasket	Leakage	"	Replaced B/B. Gasket & Repacked	"
SD-2		25182	Worn Gasket	Leakage	"	Replaced Packing & Gasket	"
Tendon Caps		90859	Worn Washers	Leakage	"	Replaced Washers	"
Letdown Cooler "A"		10819	Hole in Tubes	Leakage	"	Replaced Cooler	"
RC-3	Rockwell Globe 2 1/2"	24958	Bad Pkg	Packing Leak	"	Replaced Packing	"

2.9.1.1.3

Additional Items to September's Report

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF Sept. 1977 UNIT# 1

PAGE ____ of ____

OPERATION'S NAME	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
R.B. Spray Pump		53591	Out of alignment	Inoperable	None	Replaced the Pump	Unit Down

DOCKET NO. 50-269

2.9.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH September, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
9/1/77	Refueling continued.	408.00	C			
9/18/77	Outage continued for steam generator maintenance.	312	B		Maintenance conducted.	

SUMMARY: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.9.1.2 Unit 2

2.9.1.2.1 Operating Experience

The unit was at 75 percent full power at the beginning of September. Power escalation testing was in progress. On September 3, 1977, power was increased to 96 percent full power and a main steam stop valve (MSSU) test was conducted. On September 4, 1977, power was decreased to 75 percent full power for transient testing on the "2B" steam generator. On the same day, power was reduced to approximately 15 percent full power to implement an EHC modification to decrease the closure time on the MSSV's. Normal power escalation began later that day and the unit reached 96 percent on September 6, 1977.

On September 9, 1977,, the reactor was shutdown due to indications of a reactor coolant system leak. On September 17, 1977, the leak was determined to originate from SOAK instrument line penetrations of the "2B" steam generator. Also, a stator was replaced on control rod 1, group 2 during the outage. On September 20, 1977, heatup was commenced. During reactor startup it was determined that the "AA" phase of a control rod in group 5 was burned out. The stator was replaced and heatup was commenced on September 22, 1977.

On September 23, 1977, while at hot shutdown, a leak developed in the EHC system on the line to the MSSV's. The leak was repaired and startup commenced the same day. At approximately 27 percent full power control rod 3 group 6 dropped into the core due to a stator failure. The reactor was shutdown to replace the stator. On September 24, 1977, normal power escalation resumed and 96 percent full power was reached on September 26, 1977.

On September 27, 1977, power was reduced to approximately 63 percent due to a suspected OTSG tube leak. The leak was too small to determine the location and power was increased to 68 percent by September 28, 1977 and remained at this level for the rest of the month.

2.9.1.2.2 Changes, Test and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during September, 1977.

1. Revision 2 of Station Modification ON-559 was completed. The modification will effectively disable the bypass dampers on the Reactor Building purge filters and seal the exit of the bypass oil cooler.

2. Revision 0 of Station Modification ON-594 was completed. The modification involved the inspection of all General Electric type HFA and HGA relays at Oconee Nuclear Station including those at Keowee Hydro Station and replacement of defective relay coils.

3. Revision 0 of Station Modification ON-635 was completed. The modification involved the installation of a feedback mechanism which will assure that the setpoint for the flowrate of liquid waste discharged from the station is not exceeded.

4. Revisions 0B, 2 and 4 of Station Modification ON-698 were completed. The modification involved the replacement of RIA-33 and RIA-34 with a General Atomics radiation monitoring system.

5. Revision 0 of Station Modification ON-706 was completed. The modification involved the installation of an acrylic collimator on the face of the scintillation crystals of RIA-47 and RIA-49, the Reactor Building airborne activity monitors.

6. Revision 0 of Station Modification ON-735 was completed. The modification involved the addition of fuses to protect the 0.5 KVA transformer which supplies power to the cooling fans for the pressurizer heater control circuits.

7. Revision 0 of Station Modification ON-740 was completed. The modification involved the installation of a locking device on the Keowee governor solenoid cap screw to prevent cap screw nut from backing off. The modification was initiated at the manufacturer's recommendation.

8. Revision 0 of Station Modification ON-839 was completed. The modification involves the installation of a pump, piping and valves to transfer reactor coolant bleed evaporator bottoms and miscellaneous waste evaporator bottoms to the Interim Waste Building bottom storage tank.

9. Revision 0 of Station Modification ON-851 was completed. The fuel elevator's control circuiting was modified to require continuous manual switch holddown for operation.

10. Revision 2 of Station Modification ON-875 was completed. The modification involved the addition of orificies in the main turbine stop valves to decrease closure time.

11. Revision 0A of Station Modification ON-891 was completed. The modification added a door to the temporary materials area offices in Warehouse #2.

12. Revision 0A of Station Modification ON-892 was completed. The modification involved the replacement of General Electric CD-31 coupling capacitors on the main step-up transformers.

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OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF Sept. 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFE
FDW-101	Crane Check 6"	25667	B/B Gasket	Leakage	None	Replace B/B. Gasket	Unit Down
CA -10	Grinnell 3"	25451	Worn Diaphragm	Leakage	None	Replaced Diaphragm	" "
CS-66	Grinnell 3"	25664	Bad Diaphragm	Inoperable	None	Replaced Diaphragm	" "
CRD Stator	B&W	25970	Bad Stator	Inoperable	None	Replaced Stator	" "
CS-67	Grinnell 3"	25670	B/B Gasket	Leakage	None	Replaced Bonnet Assy.	" "
OTSG 2B Primary Handhole	B&W	25674	Worn Gasket	Leakage	None	Replaced Gasket	" "
FDW-104	Crane Gate 4"	25302	Loose Pkg	Leakage	None	Adjusted Packing	" "
SD-152		25705	Bad Packing	Leakage	None	Repacked Valve	" "
SD-146	Velan Gate 1"	25185	" "	"	"	" "	" "
R.B. Pers. Hatch	W. J. Wooley	25986	Slipped Shaft	"	"	Adjusted Linkage	" "
Mech Seal Line on 2B HPI Pmp		24571	Orfice	"	"	Replaced Orfice	" "
SD-13 Vlv		25703	Packing	"	"	Repacked	
Hyd Supp.	Grinnell	53614	Loose Eyebolt	"	"	Replaced eyebolt	" "
Hyd Supp	Grinnell	53543	Rod out of Adjustment	"	"	Adjusted Rod	" "

DOCKET NO. 50-270

2.9.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH September, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
9/04/77	Unit taken off - line to modify the turbine mainstream stop valve (MSSV)	6.00	B		Modification to slow closure of MSSV completed.	
9/11/77	Unit shutdown from approximately 94 percent full power to investigate indications of a primary leak.	196.24	A	RO 270/77-11	Leak around OTSG "2B" vibration testing instrumentation seal repaired.	
9/19/77	Outage extended to replace failed stator on control rod 1 group 2.	47.60	A		Stator replaced	

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

DOCKET NO. 50-270

2.9.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH September, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
9/21/77	Outage extended to replace failed stator on control rod 6 group 5.	33.92	A		Replaced stator.	
9/23/77	Outage extended to repair leaking pipe fitting on EHC system.	7.88	A		Repaired leaking pipe fitting on EHC system.	
9/23/77	Unit shutdown from 27 percent full power to replace failed stator on control rod 3 group 6.	31.86	A		Replaced stator.	
9/27/77	Power reduced from approximately 96 percent to 63 percent fuel power to investigate suspected OTSG leak.		A	RO 270/77-12	Investigation in progress.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.9.1.3 Unit 3

2.9.1.3.1 Operating Experience

Oconee Unit 3 operated at 100 percent full power until September 2, 1977. At this time, the 24 time limit allowed by technical specifications for return of an inoperable Reactor Building Spray Pump (RBSP) ended. Unit shutdown was commenced as required by the specification. The pump which had a burned out motor was repaired and returned to service on September 3, 1977 and unit startup was commenced. The unit reached 97 percent full power by September 5, 1977 and approximately 100 percent by September 7, 1977. On September 8, 1977, power was reduced to 26 percent full power to correct a stator coolant problem. The unit returned to approximately 100 percent full power on September 8, 1977 and remained at this level for the rest of the month.

2.9.1.3.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during September, 1977.

1. Revision 1 of Station Modification ON-453 was completed. The modification involved the installation of check valves in the reheat stop intercept valve steam leakoff lines from the high pressure turbine to the low pressure turbine to prevent air leakage to condenser steam leakoff line.

2. Revision 0 of Station Modification ON-594 was completed. The modification involved the inspection of all General Electric type HFA and HGA relays at Oconee Nuclear Station including those at Keowee Hydro Station and replacement of defective relay coils.

3. Revision 0 of Station Modification ON-635 was completed. The modification involved the installation of a feedback mechanism which will assure that the setpoint for the flowrate of liquid waste discharged from the station is not exceeded.

4. Revisions 0B, 2 and 4 of Station Modification ON-698 were completed. The modification involved the replacement of RIA-33 and RIA-34 with a General Atomic radiation monitoring system.

5. Revision 0 of Station Modification ON-735 was completed. The modification involved the addition of fuses to protect the 0.5 KVA transformer which supplies power to the cooling fans for the pressurizer heater control circuits.

6. Revision 0 of Station Modification ON-740 was completed. The modification involved the installation of locking device on the Keowee governor solenoid cap screw to prevent the cap screw nut from backing off. The modification was done at the manufacturer's recommendation.

7. Revision 0 of Station Modification ON-785 was completed. The modification replaced the existing center sections of the spent fuel pool personnel safety barrier with two removable chains.

8. Revision 0 of Station Modification ON-839 was completed. The modification involves the installation of a pump, piping and valves to transfer reactor coolant bleed evaporator bottoms and miscellaneous waste evaporator bottoms to the Interim Waste Building bottom storage tank.

9. Revision 0 of Station Modification ON-851 was completed. The fuel elevator's control circuiting was modified.

10. Revision 0A of Station Modification ON-891 was completed. The modification added a door to the temporary materials area offices in Warehouse #2.

2.9.1.3.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF Sept. 77 UNIT# 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
RIA-36 Relief V.		26004	Worn Gasket	Leakage	None	Replaced Gasket	None Req'd
HPI Valve-36	Velan Globe 1"	25150	Worn Seat	Leakage	None	Relapped Seat	" "

DOCKET NO. 50-287

2.9.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH September, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
11/2/77	Unit shutdown from 100 percent full power per Oconee Technical Specification 3.3 due to Reactor Building spray pump out of service more than 24 hours.	7.29	A	RO 287/77-11	The RB Spray Pump was repaired and returned to service.	
11/8/77	Unit power reduced to 26 percent due to stator coolant problem.		A		Problem corrected.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.10 REPORT FOR OCTOBER, 1977

2.10.1 OPERATIONS SUMMARY

2.10.1.1 Unit 1

2.10.1.1.1 Operating Experience

Preparations for startup from an outage for steam generator maintenance were in progress at the beginning of October, 1977. On October 4, 1977, startup was terminated to correct excessive Reactor Coolant Pump (RCP) seal leakage on the "1B1" RCP. Repairs were completed on October 10, 1977 and unit start-up resumed. Zero Power Physics Testing was conducted on October 14, 1977 and approximately 16 percent full power was reached by October 18, 1977. At this level, the unit tripped due to the loss of the "1A" feedwater pump. The pump was returned to service and the unit was brought back on line the same day.

Power was escalated to 40 percent full power by October 19, 1977 for testing Problems with quadrant tilt caused a power reduction to 30 percent full power on October 21, 1977 for further testing. On October 25, 1977, power was again escalated to 40 percent full power and on October 30, 1977, power reached approximately 75 percent full power and remained at this level for the rest of the month. Tests to determine the cause of the tilt problem were still in progress.

2.10.1.1.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during October, 1977.

1. Revision 0 of Station Modification ON-513 was completed. The modification replaced various seismic monitoring equipment with more modern equipment.

2. Revision 0 of Station Modification ON-543 was completed. The modification upgraded access platforms in the Reactor Building to meet present seismic design criteria.

3. Revisions 2 and 4 of Station Modification ON-650 were completed. The modification will move the power service of Reactor Building cooling unit (RBCU) "A" from XS1 MCC to X8 Load Center and RBCU "C" from XS2 MCC to X9 Load Center.

4. Revision 0 of Station Modification ON-662 was completed. The modification involved the replacement of Keowee emergency start pushbuttons with switches similar to those used for electric valves.

5. Revision 5 of Station Modification ON-698 was completed. The modification involved the replacement of RIA-33 and RIA-34 with a General Atomics radiation monitoring system.

6. Revision 0 of Station Modification ON-746 was completed. The modification involved the installation of a 6 foot fence around the area where the full waste solidification casks are stored.

7. Revision 0 and 1 of Station Modification ON-768 was completed. The modification provides for an increase in capacity and temperature rating of the control rod drive structure cooling fans.

8. Revision 0 of Station Modification ON-822 was completed. The modification involved the removal of the controlled access function from the main, northwest and south gates and disabled the east personnel gate by movement of the restricted area fence.

9. Revision 0 of Station Modification ON-849 was completed. The modification provided a regulated power supply to the Health Physics counting room.

10. Revision 0A of Station Modification ON-858 was completed. The modification provided electrical, water, public address and telephone services to the interim security trailer and canteen trailer.

11. Revision 0 of Station Modification ON-875 was completed. The modification involved the addition of orifices to the main turbine stop valves to increase closure time.

12. Revision 0 of Station Modification ON-893 was completed. The modification involved the movement of the hydrogen gas analyzer moisture separator, filter and float trap upstream of the gas pump.

13. Revision 0 of Station Modification ON-894 was completed. The modification involved changes to the reactor coolant pump seal housing to accommodate a replaceable seal insert.

14. Revision 0 of Station Modification ON-933 was completed. The modification involved the replacement of valve RC-5, the pressurizer steam space sample valve with an approved valve and operator.

2.10.1.1.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF October 1977 UNIT# 1

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OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
	No safety related work performed						

DOCKET NO. 50-269

2.10.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH October, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
10/01/77	Outage for steam generator maintenance continued.	87.40	B		Maintenance completed.	
10/04/77	Outage continued to correct reactor coolant pump seal leakage.	236.60	B		Reactor coolant pump seal leakage corrected.	
10/14/77	Zero Power Physics testing.	85.05	B		N/A	
10/18/77	Unit tripped from approximately 16 percent full power due to loss of "A" feedwater pump.	8.91	A		Problem was corrected and pump placed back in service.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.10.1.2 Unit 2

2.10.1.2.1 Operating Experience

Oconee Unit 2 was held at approximately 68 percent full power at the beginning of the month to investigate a small OTSG tube leak. Due to its size, the location of the leak could not be determined. On October 6, 1977, power was increased to 80 percent full power. On October 7, 1977, the reactor was shutdown. The leak was determined to be in "2B" OTSG, but leak tests and other efforts failed to pinpoint the location.

On October 28, 1977, power was increased to 30 percent full power and held due to quadrant tilt problems. Power was then increased to 50 percent and on October 29, 1977 to 70 percent to determine if the leakage was increasing. Power was held at 70 percent full power the remainder of the month.

2.10.1.2.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during October, 1977.

1. Revisions 1A, 2, 3 and 5 of Station Modification ON-246 were completed. The modification involved the replacement of low pressure injection valves 2LP-12 and 2LP-14 with Fisher Vee-Ball valves.

2. Revisions 0 and 1 of Station Modification ON-605 were completed. The "D" heater emergency bypass piping to the condenser was modified to allow the "D" flash tank to properly dump to the condenser.

3. Revision 4 of Station Modification ON-650 was completed. The modification involves the movement of the power source of Reactor Building cooling units "A" and "C" from XS1 and XS2 motor control centers to X8 and X9 load centers respectively.

4. Revision 0 of Station Modification ON-659 was completed. The modification involved the installation of ground level pressure gauges to indicate SF_6 gas pressure inside electrical penetrations EMV-1 and -Z. This modification will assure personnel safety when reading the gauges.

5. Revision 0 of Station Modification ON-662 was completed. The modification involved the replacement of Keowee emergency start pushbuttons with switches similar to those used for electric valves.

6. Revision 5 of Station Modification ON-698 was completed. The modification involved the replacement of RIA-33 and RIA-34 with a General Atomics radiation monitoring system.

7. Revision 0 of Station Modification ON-746 was completed. The modification involved the installation of a 6 foot fence around the area where the full waste solidification casks are stored.

8. Revision 0A of Station Modification ON-752 was completed. The modification involved the replacement of valve 2FDW-296, 2FDW-298 and 2FDW-302 with Keotest valves.

9. Revision 0 and 1 of Station Modification ON-783 was completed. The modification blanks the auxiliary feedwater nozzles that empty into the OTSG open tube lanes to help eliminate vibration in the lane.

10. Revision 0 of Station Modification ON-822 was completed. The modification involved the removal of the controlled access function from the main, northeast and south gates and disabled the east personnel gate by movement of the restricted area fence.

11. Revision 3 of Station Modification ON-845 was completed. The modification involved the removal of the auxiliary feedwater camera probe and the blind flanges on the auxiliary feedwater header and replaced the original auxiliary feedwater nozzle and riser.

12. Revision 0 of Station Modification ON-849 was completed. The modification provided a regulated power supply to the Health Physics counting room.

13. Revision 0A of Station Modification ON-858 was completed. The modification provided electrical, water, public address and telephone services to the interim security trailer and canteen trailer.

14. Revision 0 of Station Modification ON-864 was completed. The modification involves the deletion of signal limiters on the feedwater temperature input to the BTU limit circuit.

2.10.1.2.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF October 1977 UNIT# 2

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OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
	No safety related work performed						

DOCKET NO. 50-270

2.10.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH October, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
10/01/77	Power held at 68 percent full power to investigate tube leak in "2B" OTSG		A	RO 270/77-12	Investigation continued.	
10/07/77	Unit shutdown to investigate indicated tube leak in "2B" OTSG	497.00	A	RO 270/77-12	Investigation did not reveal location of leak.	
10/28/77	Power held in steps of 30 percent, 50 percent and 70 percent full power to determine if leak was increasing.		A	RO 270/77-12	Investigation continued.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 100 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.10.1.3 Unit 3

2.10.1.3.1 Operating Experience

Oconee Unit 3 was at 98 percent full power at the beginning of October, 1977. On October 13, 1977, the unit tripped due to the loss of DC power to the turbine controls. The unit was placed back on line the same day and reached 85 percent full power by October 14, 1977. Power was decreased to 70 percent on October 20, 1977 due to a low oil level in the upper oil pot of the "3B1" reactor coolant pump. On October 21, 1977, the unit was shutdown for refueling.

2.10.1.3.2 Changes, Tests and Experiments not requiring prior NRC approval.

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during October, 1977.

1. Revision 0 of Station Modification ON-538 was completed. The modification involved wiring changes to the annunciator panels in the control room.

2. Revision 0 of Station Modification ON-662 was completed. The modification involved the replacement of Keowee emergency start pushbuttons with switches similar to those used for electric valves.

3. Revision 5 of Station Modification ON-698 was completed. The modification involved the replacement of RIA-33 and RIA-34 with a General Atomics radiation monitoring system.

4. Revision 0A of Station Modification ON-719 was completed. The modification changed electrolytic capacitors across the "A" relay of all trace heat alarm panels from 250 microforad to 1000 microforad and revised individual heat trace field wiring.

5. Revision 0 of Station Modification ON-746 was completed. The modification involved the installation of a 6 foot fence around the area where the full waste solidification casks are stored.

6. Revision 0 of Station Modification ON-759 was completed. The modification involves the addition of a fifty millisecond time delay in the fast acting intercept valve circuits of the turbine control system to prevent noise spikes.

7. Revisions 1 and 2 of Station Modification ON-762 were completed. The modification involved the application of Furmanite to stop leaks in 3FDW-46, the OTSG "B" normal header check valve, until permanent repair can be made.

8. Revision 0 of Station Modification ON-808 was completed. The modification involved replacement of the bronze control rod guide cage assembly on the fuel handling bridge with a new stainless steel design.

9. Revision o of Station Modification ON-822 was completed. The modification involved the removal of the controlled access function from the main, northeast and south gates and disabled the east personnel gate by movement of the restricted area fence.

10. Revision 0 of Station Modification ON-846 was completed. The modification involves the replacement of the Mag-bronze fuel grapple actuator cam with a stainless steel cam.

11. Revision 0 of Station Modification ON-849 was completed. The modification provided a regulated power supply to the Health Physics counting room.

12. Revision 0A of Station Modification ON-858 was completed. The modification provided electrical, water, public address and telephone services to the interim security trailer and canteen trailer.

13. Revision 0 and 1 of Station Modification ON-893 were completed. The modification involved the movement of the hydrogen gas analyzer moisture separator, filter and float trap upstream of the gas pump.

2.10.1.3.3

MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF October 1977 UNIT# 3

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OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
	No safety related work performed						

2.10-9a

DOCKET NO. 50-287

2.10.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH October, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
10/13/77	Unit tripped due to indicated loss of DC power to the EHC system.	9.66	A			
10/20/77	Power reduced to 70 percent full power due to low oil level in the upper oil pot of the "3B1" reactor pump.		A		Problem corrected during next outage.	
10/21/77	Refueling outage.	244.38	C		N/A	
SUMMARY:	There was no single release radioactivity or unusual radiation specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.11 REPORT FOR NOVEMBER, 1977

2.11.1 OPERATIONS SUMMARY

2.11.1.1 Unit 1

2.11.1.1.1 Operating Experience

At the beginning of November, 1977, Unit 1 was held at 75 percent full power to investigate a core tilt anomaly. On November 4, 1977, reactor shutdown was initiated due to indications of a steam generator tube leak. Shutdown was stopped at 25 percent full power to determine the steam generator involved and the amount of leakage.

Sampling and leakage calculations indicated no significant leakage. Power was increased to 40 percent on September 5, 1977 and held to obtain data and evaluate the leak indications. Power was increased and held for intervals at 50 percent on November 6, 60 percent later on the 6th and 70 percent on November 7, 1977. Power level was then increased to 75 percent and held to evaluate core tilt anomalies. The core tilt decreased and on November 23, 1977 power escalation commenced. The power level reached 100 percent full power on November 24, 1977 and remained at this level for the rest of the month.

2.11.1.1.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during November, 1977.

1. Revision 0 of Station Modification ON-SPR-109 was completed. The modification connected the RIA process and area monitors to control room alarms such that alarms can be received, acknowledged and reset for another alarm.

2. Revision 1 of Station Modification ON-489 was completed. The feedwater system was modified to allow valves FDW-74, -75, -76, -77 and -78 to be opened electrically for feedwater recirculation and cleanup.

3. Revision 0 of Station Modification ON-797 was completed. The modification replaced the existing wind speed/wind direction system with an Esterline Angus Model 601 system.

4. Revision 0 of Station Modification ON-881 was completed. The modification provided electrical service, high pressure service water and service air to the Chem-Nuclear Mini-Mobile Waste Solidification Unit.

5. Revision 0 of Station Modification ON-910 was completed. The modification involved cutting the moisture separator reheater tube bundle side plates per General Electric instructions to allow for thermal growth of the tubes.

6. Revision 1 of Station Modification ON-938 was completed. The modification involved the removal of a wall between a file room and the canteen storage area in the Administration Building.

2.11.1.1.3

MAJOR SAFETY RELATED
MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF November, 1977 UNIT# 1

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE	CORRECTIVE ACTION	PRECAUTIONS FOR
NAME NUMBER	MANUFACTURER - MODEL/SIZE	W.R. NBR	CAUSE	RESULT	OPERATION		REACTOR SAFETY
RB spray pump "1A1"	Engersoll-Rand 4X11A	27286	Mechanical Seal failure	Pump inoperable	None	Seal replaced.	N/A

DOCKET NO. 50-269

2.11.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH November, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
11/1/77	Unit held at 75 percent full power to investigate core tilt anomaly.		H		Investigate of core tilt anomaly by Duke and B&W.	
11/4/77	Unit power reduced to 25 percent full power to investigate indications of steam generator tube leak. Power level increased in steps til 11/7/77.		F		Further evaluation determined that no leak was present.	
11/7/77	Power held at 75 percent to investigate core tilt anomaly.		H		Investigation continued.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.11.1.2 Unit 2

2.11.1.2.1 Operating Experience

Oconee Unit 2 was being held at 70 percent full power on November 1, 1977 due to maneuvering limits and investigations of a possible steam generator tube leak. On November 2, 1977, power was increased to 90 percent full power. The unit was shutdown on November 3, 1977 to repair the leak but no determination of the location of the leak could be made due to the small leakage rate. Repairs were made to the turning gear oil pump and the emergency bearing oil pump, and startup was commenced on November 9, 1977.

During startup, a leak was found on the powdex system discharge line. The unit was shutdown to repair the line and several damaged powdex cells and to adjust secondary side chemistry. On November 10, 1977, heatup was initiated and by November 12, 1977, 25 percent full power was reached. On November 13, 1977, while performing a steam generator transient test, the emergency feedwater pump tripped on overspeed causing the generator to come off line. The reactor was made critical again on the same day and power was increased to 25 percent full power by November 14, 1977.

Power was increased and held in steps to allow monitoring of the leak until November 29, 1977 when the unit began decreasing power to 27 percent in order to replace a gasket on the stator cooling system. Repairs were made and the unit reached 70 percent full power by the end of the month.

2.11.1.2.2 Changes, Tests and Experiments not requiring prior NRC approval.

The follwing changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during November, 1977.

1. Revision 0 of Station Modification ON-SPR-190 was completed. The modification connected the RIA process and area monitors to control room alarms such that alarms can be received, acknowledged and reset for another alarm.

2. Revision 1 of Station Modification ON-530 was completed. The modification involved the installation of jib cranes to facilitate reactor coolant pump motor maintenance.

3. Revision 0 of Station Modification ON-881 was completed. The modification provided electrical service, high pressure service water and service air to the Chem-Nuclear Mini-Mobile Waste Solidification unit.

4. Revision 1 of Station Modification ON-938 was completed. The modification involved the removal of a wall between a file room and the canteen storage area in the Administration Building.

2.11.1.2.3

MAJOR SAFETY RELATED
MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF November, 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
	No safety related work performed.						

DOCKET NO. 50-270

2.11.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH November, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
11/1/77	Power held at 70 percent full power to investigate possible OTSG tube leak.		A	RO 270/77-12	Investigation continued.	
11/3/77	Unit was shutdown to repair OTSG tube leak.	201.84	A	RO 270/77-12	Location of leak could not be determined. A leak on the powdex system was repaired.	
11/13/77	Unit tripped from 25 percent full power during test on emergency feedwater pump.	7.97	B		Pump was returned to operable status.	
11/29/77	Power decreased to 27 percent to replace a gasket on the stator cooling system.		A		Gasket replaced.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.11.1.3 Unit 3

2.11.1.3.1 Operating Experience

Oconee Unit 3 was shutdown for refueling the entire month of November, 1977. Startup procedures were in progress at the end of the month.

2.11.1.3.2 Changes, Tests and Experiments not requiring prior NRC approval.

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during November, 1977.

1. Revision 0 of Station Modification ON-SPR-190 was completed. The modification connected the RIA process and area monitors to control room alarms such that alarms can be received, acknowledged and reset for another alarm.

2. Revision 0 of Station Modification ON-646 was completed. The modification provides a signal from the Electro-Hydraulic Control System to close the moisture separator reheater drain valves to the condenser during the turbine shell warming mode of operation.

3. Revision 0A of Station Modification ON-705 was completed. The modification involves the installation of instrumentation to provide positive indication that flow exists in at least one boron dilution drain line.

4. Revision 0C of Station Modification ON-750 was completed. The modification involves the replacement of valve 3HP-223, the "3B1" RCP and supply vent valve, with a Kerotest valve.

5. Revision 0A of Station Modification ON-753 was completed. The modification involved the replacement of steam drain system valves 3SD-8, 3SD-115, 3SD-161, 3SD-163, 3SD-168, 3SD-215, 3SD-283, 3SD-373 and 3SD-410 with Kerotest valves.

6. Revision 0 of Station Modification ON-767 was completed. The modification involved the replacement of existing control rod gate drives with improved gate drives as proposed by Diamond Power Company.

7. Revision 0 of Station Modification ON-792 was completed. The modification involved the installation of valve N-137, core flood tank nitrogen supply valve, such that valve is more accessible.

8. Revision 1 of Station Modification ON-830 was completed. The modification involved the restoration of the 3B2 moisture separator reheater to its original configuration after testing by General Electric.

9. Revision 0 of Station Modification ON-854 was completed. The modification involved the removal of the existing hydraulic tank drain plug on the fuel handling equipment and replacement of the plug by a ball valve and quick disconnects.

10. Revision 0 of Station Modification ON-881 was completed. The modification provided electrical service, high pressure service water and service air to the Chem-Nuclear Mini-Mobile Waste Solidification Unit.

11. Revision 1 of Station Modification ON-938 was completed. The modification involved the removal of a wall between a file room and the canteen storage area in the Administration Building.

12. Revision 0 of Station Modification ON-944 was completed. The modification increases the moisture separator reheater first and second stage non-condensing vent line orifice size to prevent moisture separator reheater tube bundle steam erosion.

13. Revision 0 of Station Modification ON-945 was completed. The modification converts the tube bundles in the moisture separator reheaters to a floating U-bend design to prevent moisture separator reheater tube support plate buckling.

14. Revision 0 of Station Modification ON-954 was completed. The modification involves the installation of acoustic leak detection hardware in the moisture separator reheaters.

2.11.1.3.3

MAJOR SAFETY RELATED MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF November, 1977 UNIT# 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
Penetration WA-1	Viking Industries Type J	90836	Worn gasket		None	New penetration installed.	None required.
27EYC1X	Cutler Hammer - D/26MRD	91072	Magnetic carrier failure		None	New relay installed.	None required.
RPS power range detection	Westinghouse WL236 36-B	54192	Signal cable failure		None	Cable replaced.	Redundant indication available.

DOCKET NO. 50-287

2.11.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours) REPORT MONTH November, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
11/1/77	Refueling outage.	720.00	C		N/A	

SUMMARY: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.12 REPORT FOR DECEMBER, 1977

2.12.1 OPERATIONS SUMMARY

2.12.1.1 Unit 1

2.12.1.1.1 Operating Experience

Oconee 1 began the month of December at 100 percent full power. On December 9, 1977, a ground developed on the generator. The generator was taken off line and the ground problem was found in the diode cabinet. Dust was blown from the cabinet and the problem cleared. The reactor remained at approximately 13 percent power during this time. The generator was returned to service on December 12, 1977.

The unit returned to approximately 100 percent full power on the 12th of the month and ran smoothly until December 16, 1977. While decreasing Tave for a test, the reactor ran back to 82 percent full power due to feedwater limits. The reactor was returned to the power level cut off. The test was canceled. Equilibrium xenon was established and reactor power was increased to 100 percent on December 16, 1977.

Reactor shutdown was commenced on December 20, 1977 due to a Reactor Coolant System leak. Entry was made into the Reactor Building to look for primary leaks. The leak was determined to be on the pressurizer, but due to heat and poor visibility the exact location could not be determined. Shutdown was commenced. On December 21, 1977, a cooldown was complete and visual inspection revealed that the leak was from RC-2 and RC-17. The two valves were repacked and heatup commenced on December 22, 1977. Heatup continued and on December 24th, the reactor was critical. The generator was placed on line the same day. The unit reached 100 percent full power on December 28, 1977.

Another reactor coolant leak developed on December 29, 1977. The reactor was reduced to 40 percent power and the leak was determined to be at the "A" narrow range pressure transmitter. The leak was isolated and reactor power was increased. The unit reached 100 percent full power on December 29, 1977.

On December 30, 1977, OTSG "A" main block valve was closed instead of the Unit 2 valve, which resulted in an ICS runback due to feedback limit. The reactor tripped on high pressure. The unit was returned to service the same day and 100 percent full power was reached on December 31, 1977.

2.12.1.1.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during December, 1977.

1. Revision 0 of Station Modification ON-721 was completed. The modification established an interlock between the RB purge exhaust throttle mini purge fan with a alert alarm on RIA-45.

2. Revision 0 of Station Modification ON-784 was completed. The modification involved the installation of a support member to the hotwell pump suction piping to prevent the suction header from moving laterally.

3. Revision 0 of Station Modification ON-892 was completed. The modification involved the replacement of General Electric type CD-31 coupling capacitors on Keowee, the red and yellow buses and transformers CT-1 and CT-2.

4. Revision 0 of Station Modification ON-968 was completed. The modification involved the installation of an additional alarm reflash unit for the fire detection system.

2.12.1.1.3

MAJOR SAFETY RELATED MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF December, 1977 UNIT# 1

OPERATION'S	COMPONENT		MALFUNCTION		EFFECT ON SAFE	CORRECTIVE ACTION	PRECAUTIONS FOR
NAME NUMBER	MANUFACTURER - MODEL/SIZE	W.R. NBR	CAUSE	RESULT	OPERATION		REACTOR SAFETY
	No safety related work performed.						

DOCKET NO. 50-269

2.12.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH December, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
12/09/77	The generator was taken off line due to a ground problem in a diode cabinet. Ground postulated to have resulted from dust in the cabinet.	13.13	A	N/A	Dust cleared from cabinet.	
12/20/77	The unit was shutdown due to leaks pass the packing on RC-2, spray control bypass valve and RC-17, surge line drain valve.	92.40	A	RO 269/77-30	The valves were repacked.	
12/28/77	Power reduced to 40 percent full power. Leak on the "A" narrow range pressure transmitter was isolated.	-	A		Transmitter was repaired.	

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

DOCKET NO. 50-269

2.12.1.1.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 1

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH December, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
12/30/77	FDW-31, OTSG "A" main block valve was closed instead of 2FDW-31 resulting in a reactor trip.	5.43	G		Condition corrected.	

SUMMARY: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.12.1.2 Unit 2

2.12.1.2.1 Operating Experience

Oconee Unit 2 was operating at 78 percent full power on December 1, 1977. Due to maneuvering limitations, the main steam lines, RIA-40 and Turbine Building sump were being monitored in order to detect any increase in radiation that could be coming through the suspected tube leak in the "2B" OTSG. A shutdown was initiated the same day to repair the leak.

On December 2, 1977, the primary leak was determined to be a packing leak on 2RC-16, the water space sample valve on the pressurizer. Work was completed on 2RC-16 the same day.

At this time, Chemistry samples showed activity in OTSG; therefore, heatup was delayed until further sampling showed that the activity was within prescribed limits.

On December 3, 1977 a 2CC-8 failed to close. A work order was issued and the valve was repaired and retested.

On December 6, 1977, heatup was commenced. Chemistry problems still existed and heatup was held at 300°F due to chemistry in 2B OTSG. On December 7, 1977, heatup was continued, but a problem with the mechanical trip solenoid on the Turbine delayed unit startup.

On December 8, 1977, the generator was placed on line and power was increased to 50 percent full power. After a five hour hold, power was increased at approximately 1 percent per 8 hours to allow monitoring primary to secondary leak.

On Decenber 15, 1977, power was increased to 80 percent full power and held due to station procedure limit on primary to secondary side leakage.

During the 80 percent power hold, the mainstream lines RIA-40, Turbine Building sump, hotwell sump, yard drainage, powdex cell, and Reactor Coolant System average gross gas activity were monitored closely to detect any increase in radiation due to the suspected tube leak.

On December 21, 1977, core power distribution measurements were performed using the calibrated incore detectors.

It was then decided to decrease power at 1 percent every two hours until leak was less than .5 gpm. This was determined by RIA-40 and RCS gross gas activity. At 75 percent full power, leakage was approximately .35 gpm. A program to monitor activity and to watch for an increase in leakage was established.

Power level remained at 75 percent until December 29, 1977. At this time, Rod 4 Group 6 dropped into the core and the reactor ran back to 48 percent full power. It was determined that phase AA fuse had failed; therefore, the fuse was replaced and the control rod engaged. The fuse failed again. Power was reduced to control quadrant tilt. Shutdown was initiated later in the day to repair the problem.

During the outage, the stator on control rod 4, group 6 was replaced, S.O.A.K. instrumentation was removed, 2 RC-16 was repacked, and an evaluation of the suspected OTSG tube leak continued.

2.12.1.2.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during December, 1977.

1. Revision 0 of Station Modification ON-784 was completed. The modification involved the installation of a support member to the hotwell pump suction piping to prevent the suction header from moving laterally.

2. Revision 0B of Station Modification ON-892 was completed. The modification involved the replacement of General Electric type CD-31 coupling capacitors on Keowee, the red and yellow buses and transformers CT-1 and CT-2.

3. Revision 0 of Station Modification ON-968 was completed. The modification involved the installation of an additional alarm reflash unit for the fire detection system.

2.12.1.2.3

MAJOR SAFETY RELATED
MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF December, 1977 UNIT# 2

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
RC-16, Pressurizer water space sample valve	Velan 1" gate valve		Packing leak			Valve repacked.	Unit shut-down.

DOCKET NO. 50-270

2.12.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH December, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
12/01/77	Unit shutdown to repair a packing leak on 2RC-16 pressurizer water space sample valve.	19.52	A	N/A	Valve was repacked.	
12/02/77	Unit shutdown continued due to chemistry.	119.48	D	N/A	Chemistry problem corrected.	
12/07/77	Unit shutdown continued to correct turbine trip solenoid problem.	12.81	A	N/A	Problem corrected.	
12/29/77	Control rod 4 group 6 dropped into core causing power reduction to 48 percent full power.	-	B	N/A	Unit shutdown was initiated subsequently.	

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

DOCKET NO. 50-270

2.12.1.2.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 2

(Over 20 Percent of Design Power Level and Longer Than Four Hours) REPORT MONTH December, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
12/29/77	Unit shutdown from 48 percent full power to repair dropped control rod.	49.28	A	RO 270/77-17	Stator replaced.	

SUMMARY: There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.12.1.3 Unit 3

2.12.1.3.1 Operating Experience

Unit 3 began the month of December with zero power physics tests in progress. On December 4, 1977, the generator was placed on line. During power escalation testing, a tilt problem was noted and power level was held at 25 percent full power. On December 5, 1977, the control rods in group 8 were checked for couplings. Control rod 3 was found to be uncoupled. Later that day, Unit 3 initiated shutdown. The generator went off line at 2046 and was placed back on line at 0138 on December 6, 1977 for a manual turbine trip test. The turbine tripped at 0150. Maintenance work to recouple control rod 3 in group 8 was completed by December 8, 1977. On December 9, 1977, Unit 3 started heating up. On the same day, a control rod patch verification test was performed. It was determined that control rod 9 group 1 had a shorted stator. The stator was replaced on December 10, 1977 and Unit 3 resumed heatup.

On December 12, 1977, the generator was placed on line. On December 13, 1977, the power level reached 40 percent full power where it was held for power escalation testing. On December 15, 1977, power was increased to 75 percent full power. Unit 3 reached 100 percent full power on December 20, 1977 and remained at this power level for the rest of the month.

2.12.1.3.2 Changes, Tests and Experiments Not Requiring Prior NRC Approval

The following changes, tests and experiments were carried out without prior NRC approval pursuant to 10CFR50.59 during December, 1977.

1. Revision 0 of Station Modification ON-661 was completed. The modification involved the installation of a ladder climbing safety device on the spent fuel pool decontamination pit ladders.

2. Revision 0 of Station Modification ON-673 was completed. The modification will change the area radiation monitor circuitry so the operator can read the "high" alarm setpoint on the module meter.

3. Revision 0 of Station Modification ON-784 was completed. The modification involved the installation of a support member to the hotwell pump suction piping to prevent the suction header from moving laterally..

4. Revision 0 of Station Modification ON-968 was completed. The modification involved the installation of an additional alarm reflash unit for the fire detection system.

2.12.1.3.3

MAJOR SAFETY RELATED
MAINTENANCE
OCONEE NUCLEAR STATION
MONTHLY DATA SHEET

MONTH OF December, 1977 UNIT# 3

OPERATION'S NAME NUMBER	COMPONENT MANUFACTURER - MODEL/SIZE	W.R. NBR	MALFUNCTION CAUSE	MALFUNCTION RESULT	EFFECT ON SAFE OPERATION	CORRECTIVE ACTION	PRECAUTIONS FOR REACTOR SAFETY
Control rod 3 group 6	Diamond Power	27594	O'ring failure		Unit shutdown for repairs.	O'ring replaced. Rod recoupled.	Unit shutdown.
RPS Channel A power range detector	Westinghouse WL 23636-B	27523	Signal cable failure		None	Detector replaced.	Redundant indication available.

DOCKET NO. 50-287

2.12.1.3.4 OUTAGES OR FORCED REDUCTIONS IN POWER

UNIT NAME Oconee Unit 3

(Over 20 Percent of Design Power Level and Longer Than Four Hours)

REPORT MONTH December, 1977

DATE	CAUSE / SYSTEM OR COMPONENT AFFECTED	DURATION (HOURS)	REASON	REPORTABLE OCCURRENCE NO.	CORRECTIVE ACTIONS	RADIOACTIVITY RELEASE OR RADIATION EXPOSURE
12/1/77	Refueling outage continued.	76.81	C		N/A.	
12/5/77	Unit was shutdown to recouple a control rod. During the outage, a manual turbine trip test was conducted.	4.87	B		Test conducted.	
12/6/77	Control rod 3 of group 8 was recoupled as outage continued and a stator replaced on control rod 9 group 1.	151.63	A		Control rod recoupled and stator replaced.	
SUMMARY:	There was no single release of radioactivity or unusual radiation exposure specifically associated with any outage which accounted for more than 10 percent of the allowable annual values.					

A-EQUIPMENT FAILURE (EXPLAIN)
B-MAINTENANCE OR TESTING
C-REFUELING
D-REGULATORY RESTRICTION
E-OPERATOR TRAINING AND LICENSE EXAMINATION
F-ADMINISTRATIVE
G-OPERATIONAL ERROR (EXPLAIN)
H-OTHER (EXPLAIN)

2.13 ENVIRONMENTAL MONITORING

This information will be provided in a separate submittal.

2.14 PERSONNEL EXPOSURE AND MONITORING

Table 2.14-1 contains a tabulation (supplementing the requirements of 10 CFR 20.407) of the number of personnel receiving exposures greater than 100 mrem in the reporting period and their associated man-rem exposure, according to duty function, e.g., routine plant surveillance and inspection, routine plant maintenance, special plant maintenance, routine fueling operation, special refueling operation, and other job-related exposures for the period January 1, 1977 through December 31, 1977.

TABLE 2.14-1

DATE: 02/01/78 DUKE POWER COMPANY - OCONEE NUCLEAR STATION

TIME: 21:07:51 TABULATION OF NUMBER OF PERSONNEL AND PERSON-REM BY WORK AND JOB FUNCTION FOR 1977

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 MREM)			TOTAL PERSON-REM (>100 MREM)		
	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS AND OTHERS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS AND OTHERS
REACTOR OPERATIONS & SURVEILLANCE						
MAINTENANCE PERSONNEL	136	213	56	32.270	42.685	18.055
OPERATING PERSONNEL	133	4	-	71.890	.565	-
HEALTH PHYSICS PERSONNEL	67	5	43	29.430	.820	7.355
SUPERVISORY PERSONNEL	11	1	1	1.135	.150	.230
ENGINEERING PERSONNEL	71	15	16	34.505	3.085	2.835
ROUTINE MAINTENANCE						
MAINTENANCE PERSONNEL	150	244	39	43.825	118.925	8.500
OPERATING PERSONNEL	91	-	-	13.635	-	-
HEALTH PHYSICS PERSONNEL	34	10	36	2.485	.335	3.220
SUPERVISORY PERSONNEL	4	1	-	2.365	.030	-
ENGINEERING PERSONNEL	40	19	46	9.790	2.375	11.860
INSERVICE INSPECTION						
MAINTENANCE PERSONNEL	21	100	41	3.350	54.340	31.735
OPERATING PERSONNEL	4	-	-	.095	-	-
HEALTH PHYSICS PERSONNEL	7	1	26	.335	.010	2.925
SUPERVISORY PERSONNEL	-	1	-	-	.260	-
ENGINEERING PERSONNEL	26	12	95	10.900	1.820	87.395
SPECIAL MAINTENANCE						
MAINTENANCE PERSONNEL	141	235	37	86.110	119.935	7.885
OPERATING PERSONNEL	111	-	-	25.400	-	-
HEALTH PHYSICS PERSONNEL	43	11	37	6.545	.455	4.800
SUPERVISORY PERSONNEL	12	-	-	4.185	-	-
ENGINEERING PERSONNEL	64	26	76	25.295	11.740	49.450
WASTE PROCESSING						
MAINTENANCE PERSONNEL	35	48	23	2.770	4.700	9.905
OPERATING PERSONNEL	86	-	-	17.670	-	-
HEALTH PHYSICS PERSONNEL	26	6	9	1.475	.015	.110
SUPERVISORY PERSONNEL	3	-	-	.450	-	-
ENGINEERING PERSONNEL	9	2	2	.710	.040	.120
REFUELING						
MAINTENANCE PERSONNEL	155	230	53	60.275	109.650	13.040
OPERATING PERSONNEL	128	-	-	50.945	-	-
HEALTH PHYSICS PERSONNEL	46	11	46	7.565	.495	25.530
SUPERVISORY PERSONNEL	7	-	-	.265	-	-
ENGINEERING PERSONNEL	62	21	57	11.385	6.270	10.370

TABLE 2.14-1

DATE: 02/02/78 DUKE POWER COMPANY - OCONEE NUCLEAR STATION

TIME: 08:42:51 TABULATION OF NUMBER OF PERSONNEL AND PERSON-REM BY WORK AND JOB FUNCTION FOR 1977

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 MREM)			TOTAL PERSON-REM (>100 MREM)		
	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS AND OTHERS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS AND OTHERS
TOTAL						
MAINTENANCE PERSONNEL	638	1070	249	228.600	450.235	89.120
OPERATING PERSONNEL	553	4	-	179.635	.565	-
HEALTH PHYSICS PERSONNEL	219	40	197	47.835	2.630	43.940
SUPERVISORY PERSONNEL	37	3	1	8.380	.440	.230
ENGINEERING PERSONNEL	272	95	292	92.585	25.330	162.030
GRAND TOTAL	1719	1212	739	557.035	479.200	295.320

NOTE: These dose values are based on self-reading pocket dosimeters only. An adjustment factor of 0.9 may be multiplied times the 1977 reported dose values to obtain approximate TLD dose values.

REGULATORY DOCKET FILE COPY

DUKE POWER COMPANY
STEAM PRODUCTION DEPARTMENT

OCONEE NUCLEAR STATION
ANNUAL OPERATING REPORT
1977

VOLUME 2

Docket # 50-269
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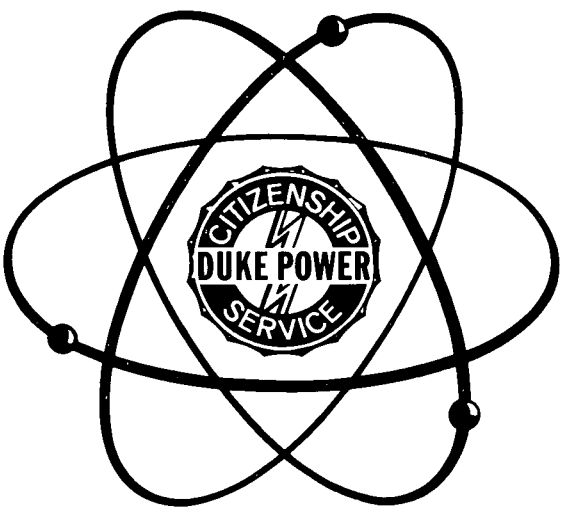
Date 3-31-78 of Document
REGULATORY DOCKET FILE

DUKE POWER COMPANY
STEAM PRODUCTION DEPARTMENT

OCONEE NUCLEAR STATION
ANNUAL OPERATING REPORT
1977

VOLUME 2



DUKE POWER COMPANY

OCONEE NUCLEAR STATION

ANNUAL REPORT

PERIOD ENDING DECEMBER 31, 1977

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SECTION I

WATER QUALITY

TYPE I DATA

LAKES KEOWEE AND HARTWELL

YEAR 1977

(Pages 1-318 Contained in Previous Oconee Operating Reports)

APPENDIX A

TABULATED WATER QUALITY DATA

LAKES KEOWEE AND HARTWELL

SECTION I TYPE I DATA

SECTION II TYPE II DATA

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SECTION V CONTINUOUS RECORDING DATA

Negative Values -1.0 through -3.0 Used in Depth Columns Represent:

-1.0 = Composites taken from 0.3 m, mid-depth and bottom

-2.0 = Composities taken from each depth sampled

-3.0 = Composities taken from 0.3 m, mid-deph euphotic zone, and at depths of 1% incident light

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 1 PAGE 1

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
500.0	01/11/77	1420	0.3	8.5	11.2	6.8	18	330	0.4	6.0	5	8	1.7		6.54			97.76
			1.5	8.3	11.1	6.7	18	330										96.39
			3.0	8.2	11.1	6.7	18	330										96.15
			5.0	8.2	11.1	6.7	18	330			7	8	1.5		6.50			96.15
			6.5	8.2	11.0	6.6	18	330										95.28
			8.0	8.2	11.0	6.6	18	330										95.28
			10.0	8.1	11.0	6.5	18	330			5	8	1.7		6.50			95.04
			12.5	8.0	11.0	6.5	18	330										94.80
			15.0	8.0	10.8	6.4	18	330			5	8	1.7		6.29			93.08
			17.5	8.0	10.8	6.4	18	330										93.08
			20.0	8.0	10.8	6.4	18	330			3	8	1.5		6.29			93.08
			22.5	8.0	10.8	6.3	18	330										93.08
			25.0	8.0	10.6	6.2	18	330			5	8	1.5		6.54			91.35
500.0	02/14/77	1350	0.3	5.4	11.8	6.6	20	360	1.0	4.6	5	8	2.5		5.88			95.44
			1.5	5.4	11.8	6.6	20	360										95.44
			3.0	5.3	11.8	6.4	20	360										95.22
			5.0	5.3	11.8	6.4	20	360			4	8	1.7		5.67			95.22
			6.5	5.3	11.7	6.3	20	360										94.41
			8.0	5.3	11.7	6.3	19	360										94.41
			10.0	5.2	11.7	6.2	19	360			5	8	1.7		5.71			94.19
			12.5	4.9	11.6	6.2	19	350										92.73
			15.0	4.9	11.5	6.1	19	350			4	8	1.5		5.59			91.93
			17.5	4.9	11.5	6.1	19	350										91.93
			20.0	4.9	11.5	6.0	19	350			5	8	1.4		6.00			91.93
			22.5	4.8	11.5	6.0	19	350										91.71
			25.0	4.8	11.4	5.9	19	350			5	8	1.4		5.71			90.91
			27.5	4.7	11.3	5.9	19	350										89.91
			29.0	4.7	11.3	5.8	20	340			5	8	1.4		6.04			89.91
500.0	03/14/77	1320	0.3	12.8	12.0	6.8	17	380	1.2	5.8	5	13	1.7		6.34			115.67
			1.5	11.5	11.7	6.8		380										109.58
			3.0	11.2	11.7	6.7		390										108.69
			5.0	10.8	11.7	6.7	18	390			7	9	1.6		6.30			107.71
			6.5	10.3	11.6	6.7		390										105.84
			8.0	9.4	11.9	6.6		390										106.31
			10.0	8.5	11.5	6.5	18	390			5	10	1.5		6.75			100.38
			12.5	8.2	11.4	6.5		390										98.75
			15.0	7.5	11.1	6.5	20	380			5	10	1.5		6.87			94.47
			17.5	7.1	10.7	6.5		380										90.17
			20.0	6.9	10.5	6.5	23	380			5	9	2.0		7.21			88.05
			22.5	6.9	10.4	6.5		380										87.21
			25.0	6.8	10.2	6.5	20	380			6	10	2.3		7.25			85.33
			27.5	6.8	9.9	6.6	20	370			6	8	1.9		7.29			82.82
500.0	04/12/77	1320	0.3	18.4	11.4	6.8	16	380	0.2	4.0	9	9	1.5		5.92			123.59
			1.5	17.3	11.3	6.8		380										120.22
			3.0	15.3	11.1	6.8		380										112.27
			5.0	14.3	10.7	6.6	16	380			9	9	1.9		6.00			106.13

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB-IDTY JTU	ALKA-LIN. MG/L	CLOR-IDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			6.5	14.2	10.7	6.5		380										105.93
			8.0	14.0	10.8	6.5		380										106.50
			10.0	13.7	10.8	6.4	16	380			12	10	1.5		6.34			105.89
			12.5	12.8	10.6	6.4		380										102.17
			15.0	12.4	10.4	6.3	17	370			14	10	1.7		6.38			99.50
			17.5	11.3	10.1	6.3		370										94.08
			20.0	9.8	9.8	6.3	18	370			8	9	2.0		6.92			88.47
			22.5	9.0	9.6	6.3		360										84.88
			25.0	7.5	9.5	6.3	18	360			6	10	2.0		6.87			80.85
			27.5	7.3	8.8	6.3		360										74.53
			29.0	7.3	8.7	6.3	18	350			100	12	2.0		10.27			73.68
500.0	05/10/77	1340	0.3	22.7	9.7	7.2	18	370	1.7	6.7	2	8	1.0		5.84			113.96
			1.5	22.1	9.8	7.3	18	370										114.34
			3.0	21.7	10.0	7.3	18	370										115.76
			5.0	21.4	10.2	7.3	18	370			3	7	1.0		6.09			117.28
			6.5	21.3	10.5	7.3	18	370										120.46
			8.0	19.2	10.5	6.9	18	380										115.05
			10.0	18.6	10.1	6.3	19	390			3	7	1.1		6.55			109.73
			12.5	16.1	9.1	6.1	19	390										93.61
			15.0	14.5	8.6	6.1	19	390			4	7	1.1		6.80			85.63
			17.5	13.7	8.3	6.0	19	390										81.38
			20.0	13.1	8.0	6.0	20	390			6	7	1.4		6.88			77.55
			22.5	12.5	7.6	5.9	20	390										72.84
			25.0	10.6	6.5	5.9	21	390			7	7	2.0		7.66			59.63
			27.5	9.6	5.8	6.0	21	380			7	7	1.4		7.75			52.09
500.0	06/14/77	1315	-2.0												7.29			
500.0	06/14/77	1316	-2.0												7.29			
			0.3	25.9	8.9	7.3	21	340	0.5	7.6	5	3	1.2					111.04
500.0	06/14/77	1316	0.3	25.9	8.9	7.3	21	350			5	3	1.1					111.04
			1.5	25.8	9.1	7.3	21	350										113.26
			3.0	25.6	9.2	7.3	21	350										113.96
			5.0	25.4	9.4	7.2	21	350										115.87
			6.5	24.2	9.6	7.1	21	360										116.11
			8.0	23.8	10.0	6.9	21	370										120.09
			10.0	21.6	9.7	6.5	22	380			5	3	1.3					112.03
500.0	06/14/77	1316	10.0	21.6	9.8	6.4	22	380			5	3	1.5					113.19
			12.5	20.2	8.8	6.3	22	380										98.53
			15.0	19.1	7.7	6.2	22	380										84.19
			17.5	17.8	6.6	6.0	23	380										70.95
			20.0	16.2	5.5	6.0	23	370			5	4	1.4					56.75
500.0	06/14/77	1316	20.0	16.2	5.6	6.0	23	370			4	5	1.4					57.78
			22.5	14.6	4.5	5.9	24	380										44.89
			25.0	13.2	3.2	5.9	26	380										31.08
			27.5	11.2	1.7	5.9	28	380										15.79
			29.0	10.8	1.4	5.9	28	380			9	20	1.3					12.88
500.0	06/14/77	1316	29.0	10.8	1.4	5.9	28	380			8	22	1.3					12.88

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 1

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
500.0	07/12/77	1335	-2.0												6.58			
500.0	07/12/77	1336	-2.0												6.54			
			0.3	31.1	8.3	7.6	22	240	1.8	12.1	5	8	1.6					113.65
500.0	07/12/77	1336	0.3	31.0	8.5	7.6	22	240			8	8	1.4					116.23
			1.5	30.4	8.6	7.7	22	230										116.67
			3.0	30.2	8.9	7.7	22	230										120.42
			5.0	28.0	9.6	7.8	22	240										124.63
			6.5	25.9	9.6	7.0	22	240										119.78
			8.0	24.6	8.9	6.6	22	240										108.15
			10.0	22.9	7.9	6.4	22	230			11	6	1.5					93.02
500.0	07/12/77	1336	10.0	22.8	7.8	6.3	22	220			9	6	1.8					91.74
			12.5	21.5	7.0	6.3	22	210										80.66
			15.0	20.5	6.2	6.2	22	200										69.87
			17.5	19.3	5.0	6.1	22	190										54.90
			20.0	18.4	4.2	6.1	24	180			5	8	1.9					45.53
500.0	07/12/77	1336	20.0	18.4	3.8	6.1	24	160			10	8	1.6					41.19
			22.5	15.4	2.4	6.1	25	130										24.32
			25.0	15.0	0.9	6.6	46	160			33	6	1.7					9.04
500.0	07/12/77	1336	25.0	15.1	1.1	6.4	38	130			28	7	1.4					11.08
500.0	08/08/77	1330	-2.0												7.91			
500.0	08/08/77	1331	-2.0												7.91			
			0.3	28.6	8.6	8.1	19	280	1.8	5.0	6	11	1.8					112.50
500.0	08/08/77	1331	0.3	28.4	8.7	8.1	19	270			9	8	3.2					113.52
			1.5	27.3	8.9	8.2	19	280										113.53
			3.0	27.2	9.1	8.2	18	280										115.79
			5.0	26.5	8.9	7.7	18	310										112.00
			6.5	26.3	7.9	6.7	18	320										99.17
			8.0	25.4	7.0	6.4	18	320										86.29
			10.0	24.4	6.9	6.3	18	310			2	7	1.3					83.65
500.0	08/08/77	1331	10.0	24.3	7.0	6.3	18	290			2	8	1.5					84.76
			12.5	23.2	5.9	6.3	18	270										69.87
			15.0	22.3	5.0	6.2	18	270										58.47
			17.5	21.4	4.2	6.2	20	240										48.29
			20.0	20.5	3.7	6.2	20	210			4	8	2.1					41.70
500.0	08/08/77	1331	20.0	20.5	3.6	6.2	20	170			3	9	2.2					40.57
			22.5	19.0	1.4	6.2	22	90										15.27
			25.0	17.5	0.0	6.3	26	80										0.00
			27.5	16.0	0.0	6.3	26	70										0.00
			29.0	14.3	0.0	6.4	31	30			28	21	1.8					0.00
500.0	08/08/77	1331	29.0	14.3	0.1	6.4	30	20			28	21	1.9					0.99
500.0	09/12/77	1335	-2.0												9.20			
500.0	09/12/77	1336	-2.0												9.45			
			0.3	27.3	7.9	7.0	18	350	1.5	6.7	4	9	1.4					100.77
500.0	09/12/77	1336	0.3	27.3	7.9	7.0	18	350			4	7	1.3					100.77
			1.5	27.1	7.9	7.0	18	350										100.27
			3.0	27.0	8.0	7.0	18	350										101.29

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			5.0	26.8	7.8	6.9	18	350										98.52
			6.5	26.8	7.7	6.7	18	350										97.25
			8.0	26.7	7.6	6.6	19	350										95.87
			10.0	26.7	7.6	6.6	19	340			6	6	1.4					95.87
500.0	09/12/77	1336	10.0	26.7	7.6	6.6	19	330			4	7	1.6					95.87
			12.5	26.6	8.0	6.7	19	330										100.80
			15.0	25.3	3.5	5.7	20	290										43.04
			17.5	24.3	2.4	5.7	20	260										29.06
			20.0	23.4	1.6	5.8	21	230			3	6	1.3					19.03
500.0	09/12/77	1336	20.0	23.3	1.5	5.8	21	220			3	9	1.3					17.80
			22.5	22.7	0.6	5.8	22	100										7.04
			25.0	20.8	0.0	6.2	30	10										0.00
			27.5	15.2	0.0	6.9	60	-70										0.00
			30.0	13.7	0.0	7.0	62	-40			40	33	1.9					0.00
500.0	09/12/77	1336	30.0	13.7	0.0	7.0	62	-30			33	32	1.7					0.00
500.0	10/10/77	1345	-2.0												10.20			
500.0	10/10/77	1346	-2.0												10.45			
			0.3	23.2	6.8	6.2	18	380	1.2	6.0	3	11	2.3					80.53
500.0	10/10/77	1346	0.3	23.2	6.9	6.1	18	380			3	11	2.3					81.71
			1.5	23.1	6.7	6.1	18	380										79.16
			3.0	23.0	6.7	6.1	18	380										78.98
			5.0	23.0	6.7	6.1	18	370										78.98
			6.5	22.9	6.7	6.1	18	370										78.89
			8.0	22.9	6.7	6.1	18	370										78.89
			10.0	22.9	6.7	6.2	18	360			3	11	2.1					78.89
500.0	10/10/77	1346	10.0	22.9	6.7	6.2	18	360			3	12	1.5					78.89
			12.5	22.9	6.8	6.2	18	350										80.07
			15.0	22.9	6.8	6.2	18	340										80.07
			17.5	22.8	6.8	6.2	18	330										79.98
			20.0	22.8	6.9	6.2	18	320			3	9	2.1					81.15
500.0	10/10/77	1346	20.0	22.8	6.9	6.2	19	300			3	10	1.8					81.15
			22.5	22.8	7.0	6.2	19	270										82.33
			25.0	22.6	7.2	6.4	19	240										84.49
			27.5	19.6	0.0	6.5	65	-80										0.00
			29.0	15.0	0.0	7.1	91	-80			14	21	2.0					0.00
500.0	10/10/77	1346	29.0	15.0	0.0	7.1	92	-80			16	22	1.9					0.00
500.0	11/14/77	1345	-2.0												6.05			
500.0	11/14/77	1346	-2.0												6.13			
			0.3	17.9	8.0	6.5	18	400	0.8	4.6	4	8	2.4					86.18
500.0	11/14/77	1346	0.3	17.9	8.0	6.5	18	400			4	8	3.0					86.18
			1.5	17.9	7.9	6.5	18	390										85.11
			3.0	17.8	7.9	6.5	18	390										84.93
			5.0	17.7	7.9	6.5	18	390										84.75
			6.5	17.7	7.9	6.5	18	390										84.75
			8.0	17.6	7.9	6.5	19	390										84.57
			10.0	17.6	7.9	6.5	19	390			4	8	2.2					84.57

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
500.0	11/14/77	1346	10.0	17.6	7.9	6.5	19	390			3	8	2.3					84.57
			12.5	17.5	7.9	6.5	19	390										84.40
			15.0	17.5	7.9	6.5	19	380										84.40
			17.5	17.5	7.9	6.5	19	380										84.40
			20.0	17.5	7.9	6.5	19	380			4	8	1.7					84.40
500.0	11/14/77	1346	20.0	17.5	7.9	6.5	19	380			4	7	1.7					84.40
			22.5	17.5	7.9	6.5	19	380										84.40
			25.0	17.4	7.9	6.4	19	380										84.22
			27.5	17.1	7.7	6.4	20	370										81.58
			28.0	17.1	7.8	6.4	19	370			7	8	1.9					82.64
500.0	11/14/77	1346	28.0	17.1	7.8	6.4	19	370			7	8	1.8					82.64
500.0	12/12/77	1352	-2.0												6.00			
500.0	12/12/77	1353	-2.0												6.05			
			0.3	13.1	9.1	6.3	17	400	0.3	5.2	4	8	1.4					88.21
500.0	12/12/77	1353	0.3	13.1	9.1	6.3	17	400			4	7	1.5					88.21
			1.5	12.9	9.1	6.3	17	390										87.88
			3.0	12.8	9.0	6.3	17	390										86.75
			5.0	12.7	9.0	6.3	17	390										86.59
			6.5	12.6	9.0	6.3	17	390										86.43
			8.0	12.6	9.0	6.3	17	390										86.43
			10.0	12.6	9.0	6.3	17	380			7	3	1.6					86.43
500.0	12/12/77	1353	10.0	12.6	9.0	6.3	17	380			7	4	1.6					86.43
			12.5	12.6	9.1	6.3	17	370										87.39
			15.0	12.6	9.1	6.3	17	370										87.39
			17.5	12.6	9.1	6.3	18	370										87.39
			20.0	12.5	9.1	6.3	18	360			7	4	1.6					87.22
500.0	12/12/77	1353	20.0	12.5	9.1	6.3	18	350			7	4	1.5					87.22
			22.5	12.5	9.1	6.3	18	350										87.22
			25.0	12.4	9.1	6.3	18	350										87.06
			27.5	12.3	9.1	6.3	18	340										86.90
			28.0	12.3	9.1	6.3	18	340			7	4	1.8					86.90
500.0	12/12/77	1353	28.0	12.3	9.2	6.3	18	340			7	6	2.0					87.85
500.5	01/11/77	1400	0.3	8.2	11.1	6.9	18	330	0.6	5.0	6	8	1.4		6.46			96.15
			1.5	8.0	11.0	6.8	18	320										94.80
			3.0	7.9	11.0	6.7	18	320										94.56
			5.0	7.9	10.8	6.6	18	320			7	8	1.3		6.46			92.84
			6.5	7.9	10.8	6.6	18	325										92.84
			8.0	7.8	10.8	6.5	18	320										92.61
			10.0	7.7	10.8	6.4	18	320			6	8	1.4		6.42			92.38
			12.5	7.5	10.6	6.2	18	320										90.22
			15.0	7.5	10.5	6.1	18	320			7	8	1.9		6.62			89.37
500.5	02/14/77	1335	0.3	5.8	12.2	6.6	21	370	0.9	5.0	4	8	1.5		6.58			99.62
			1.5	5.8	12.3	6.6	21	370										100.44
			3.0	5.7	12.3	6.6	21	370										100.20
			5.0	5.5	12.2	6.4	21	370			5	8	1.4		5.96			98.91
			6.5	5.4	12.2	6.4	21	370										98.68

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			8.0	4.9	11.8	6.3	21	370										94.33
			10.0	4.8	11.7	6.3	21	360			5	8	1.8		6.33			93.31
			12.5	4.6	11.6	6.2	21	360										92.08
			15.0	4.5	11.3	6.1	22	360			7	8	1.7		6.70			89.49
			17.5	4.4	11.1	6.1	23	360										87.70
			20.0	4.4	10.8	6.1	23	360			7	8	1.7		6.71			85.33
501.0	01/11/77	1450	0.3	8.7	11.0	6.8	18	330	0.5	6.0	5	8	2.3		6.17			96.51
			1.5	8.7	11.0	6.8	18	330										96.51
			3.0	8.6	11.0	6.7	18	330										96.26
			5.0	8.5	10.9	6.6	18	330			6	8	1.3		6.17			95.14
			6.5	8.5	10.9	6.6	18	330										95.14
			8.0	8.5	10.9	6.6	18	330										95.14
			10.0	8.5	10.8	6.6	18	330			5	8	1.6		6.42			94.27
			12.5	8.5	10.8	6.5	18	330										94.27
			15.0	8.5	10.8	6.4	18	330			4	8	1.3		6.46			94.27
			17.5	8.5	10.8	6.4	18	330										94.27
			20.0	8.5	10.7	6.3	18	330			5	8	2.6		6.21			93.39
			22.5	8.5	10.7	6.3	18	330										93.39
			25.0	8.5	10.6	6.2	18	330			4	8	1.9		6.21			92.52
			27.5	8.5	10.6	6.1	18	330			4	8	1.2		6.21			92.52
501.0	02/14/77	1410	0.3	7.0	11.9	6.6	18	300	0.9	5.2	5	8	1.4		5.59			100.04
			1.5	7.0	11.9	6.5	18	300										100.04
			3.0	6.9	11.9	6.5	18	290										99.79
			5.0	6.9	11.9	6.4	18	290			4	8	1.4		5.59			99.79
			6.5	6.8	11.9	6.3	18	290										99.55
			8.0	6.6	11.9	6.3	18	280										99.06
			10.0	6.3	11.9	6.2	18	280			4	7	2.4		5.34			98.34
			12.5	6.1	11.9	6.1	18	270										97.87
			15.0	5.8	12.0	6.1	18	260			4	8	2.5		5.71			97.99
			17.5	5.5	11.8	6.0	18	260										95.67
			20.0	5.1	11.6	6.0	18	250			5	8	1.5		5.71			93.16
			22.5	5.0	11.5	5.9	18	240										92.14
			25.0	5.0	11.5	5.9	18	230			5	8	1.6		5.50			92.14
			27.5	5.0	11.4	5.8	18	210										91.34
			30.0	5.0	11.2	5.8	18	200			5	8	1.3		5.79			89.74
			32.5	5.0	11.2	5.7	18	180										89.74
			35.0	5.0	11.0	5.7	18	170			35	8	1.5		6.33			88.14
501.0	03/14/77	1345	0.3	12.7	11.7	6.8	17	380	1.2	5.8	5	8	1.7		6.30			112.57
			1.5	11.6	11.5	6.8		380										108.01
			3.0	11.4	11.5	6.8		380										107.42
			5.0	11.2	11.6	6.7	17	380			4	7	1.8		6.34			107.76
			6.5	11.2	11.8	6.7		370										109.62
			8.0	10.9	12.2	6.7		370										112.52
			10.0	8.8	11.8	6.6	18	370			4	10	2.1		6.38			103.79
			12.5	7.9	11.6	6.6		370										99.72
			15.0	7.4	11.4	6.6	18	360			4	11	2.7		6.71			96.79

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			17.5	7.2	11.3	6.6		360										95.46
			20.0	7.0	11.3	6.6	18	350			4	8	2.3		7.00			94.99
			22.5	6.8	11.1	6.6		340										92.85
			25.0	6.8	11.0	6.6	20	320			4	9			6.96			92.02
			27.5	6.8	10.8	6.6		320										90.35
			30.0	6.8	10.6	6.6	20	290			4	10	1.8		5.71			88.67
			32.5	6.8	10.3	6.6	18	280			4	9	1.9		6.75			86.16
501.0	04/12/77	1350	0.3	19.3	11.3	6.9	16	380	0.5	4.0	7	7	1.8		5.59			124.08
			1.5	17.3	11.2	6.8		380										119.16
			3.0	15.2	10.8	6.6		380										109.02
			5.0	14.5	10.7	6.6	16	380			9	10	1.9		5.59			106.54
			6.5	14.3	10.9	6.6		380										108.11
			8.0	14.0	10.9	6.6		380										107.49
			10.0	13.4	10.9	6.6	16	380			9	9	1.9		5.96			106.26
			12.5	12.9	11.0	6.6		380										106.23
			15.0	12.3	11.1	6.6	17	370			8	9	1.8		6.00			106.00
			17.5	11.5	11.1	6.6		370										103.96
			20.0	9.8	10.6	6.6	17	370			7	12	2.1		6.67			95.70
			22.5	8.7	10.3	6.6		370										90.36
			25.0	8.4	10.2	6.7	18	370			6	12	1.9		6.21			88.80
			27.5	8.2	10.2	6.8		360										88.35
			30.0	8.2	10.0	6.9	18	360			7	9	1.8		6.71			86.62
			32.5	8.2	9.8	7.1		350										84.89
			34.0	8.2	9.1	7.2	18	340			15	9	1.7		7.00			78.82
501.0	05/10/77	1410	0.3	23.0	9.9	7.0	18	330	1.7	6.8	3	8	1.0		6.09			116.71
			1.5	21.9	9.9	7.1	18	330										115.12
			3.0	21.7	10.2	7.2	18	330										118.07
			5.0	21.3	10.3	7.2	18	330			2	6	1.0		6.09			118.16
			6.5	19.3	10.9	7.1	18	330										119.69
			8.0	18.9	10.8	6.7	18	330										117.71
			10.0	17.9	10.2	6.3	19	330			2	7	1.1		6.46			109.89
			12.5	15.2	9.7	6.3	19	320										97.92
			15.0	14.1	9.4	6.3	19	320			3	7	1.1		6.46			92.88
			17.5	13.7	9.4	6.3	19	320										92.17
			20.0	13.1	9.4	6.3	20	310			5	7	1.0		6.55			91.12
			22.5	12.2	9.2	6.3	20	310										87.69
			25.0	10.7	8.8	6.3	20	310			4	7	1.1		7.25			80.87
			27.5	9.5	8.6	6.3	20	300										77.03
			30.0	8.9	8.3	6.3	20	300			3	7	1.2		7.58			73.19
			32.5	8.7	8.0	6.4	20	290										70.18
			34.0	8.7	7.6	6.4	20	270			4	7	1.1		7.62			66.67
501.0	06/14/77	1330	-2.0												6.84			
501.0	06/14/77	1331	-2.0												6.59			
			0.3	25.9	8.9	7.4	20	350	0.6	9.2	7	4	1.1					111.04
501.0	06/14/77	1331	0.3	25.9	9.0	7.4	20	350			5	3	1.3					112.29
			1.5	25.7	9.1	7.4	20	350										112.99

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			3.0	25.6	9.2	7.4	20	360										113.96
			5.0	25.3	9.4	7.4	20	360										115.59
			6.5	24.4	9.8	7.4	20	360										118.80
			8.0	23.7	10.3	7.2	20	380										123.41
			10.0	21.5	10.7	6.6	20	390			6	3	1.1					123.30
501.0	06/14/77	1331	10.0	21.5	10.8	6.6	20	390			8	4	1.1					124.45
			12.5	20.2	10.2	6.4	20	400										114.20
			15.0	18.9	9.0	6.2	21	400										98.09
			17.5	18.0	8.4	6.1	21	400										90.68
			20.0	15.7	7.7	6.1	22	410			6	4	1.1					78.50
501.0	06/14/77	1331	20.0	15.7	7.7	6.1	22	410			5	4	1.2					78.50
			22.5	14.4	7.0	6.0	22	410										69.56
			25.0	12.8	6.5	6.0	22	410										62.65
			27.5	11.4	6.2	6.0	23	410										57.91
			30.0	9.9	6.0	6.0	23	410			6	5	1.3					54.31
501.0	06/14/77	1331	30.0	9.8	5.9	6.0	23	410			7	4	1.5					53.26
			32.5	9.4	5.6	5.9	23	410										50.03
			33.0	9.4	5.5	5.9	23	410										49.13
501.0	07/12/77	1400	-2.0												6.42			
501.0	07/12/77	1401	-2.0												6.46			
			0.3	31.3	8.2	7.6	22	230	1.8	8.2	10	7	1.1					112.58
501.0	07/12/77	1401	0.3	31.2	8.4	7.6	22	220			10	6	1.2					115.17
			1.5	30.6	8.6	7.7	22	220										116.98
			3.0	30.3	8.9	7.7	22	210										120.58
			5.0	27.8	9.5	7.9	22	210										122.71
			6.5	25.6	10.2	7.6	20	210										126.34
			8.0	24.4	9.9	6.7	20	210										120.02
			10.0	22.9	8.2	6.4	20	210			5	6	1.2					96.55
501.0	07/12/77	1401	10.0	22.8	8.2	6.3	20	210			10	6	1.1					96.44
			12.5	21.4	7.5	6.3	20	200										86.23
			15.0	20.2	7.1	6.2	20	190										79.49
			17.5	19.2	6.6	6.2	20	190										72.32
			20.0	18.2	6.1	6.2	22	180			7	5	1.2					65.99
501.0	07/12/77	1401	20.0	18.1	6.0	6.2	22	180			10	5	1.2					64.84
			22.5	16.8	5.0	6.1	22	170										52.54
			25.0	14.6	4.1	6.1	24	170										40.90
			27.5	12.6	3.8	6.1	24	170										36.49
			30.0	10.7	3.6	6.2	24	160			9	8	1.7					33.08
501.0	07/12/77	1401	30.0	10.7	3.6	6.2	24	150			11	8	1.2					33.08
			32.5	10.2	3.4	6.2	24	140										30.96
			34.0	9.9	3.1	6.2	24	150										28.06
501.0	08/08/77	1400	-2.0												7.21			
501.0	08/08/77	1401	-2.0												6.58			
			0.3	29.3	8.5	8.1	19	300	1.7	6.2	4	7	1.5					112.63
501.0	08/08/77	1401	0.3	29.2	8.5	8.1	19	300			4	7	1.8					112.34
			1.5	28.7	8.2	8.3	19	300										107.41

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 1

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			3.0	28.6	8.5	8.3	19	310										111.19
			5.0	26.6	8.4	6.7	18	340										105.84
			6.5	26.4	8.1	6.9	18	360										101.80
			8.0	25.4	6.4	6.4	18	360										78.89
			10.0	24.6	6.1	6.3	18	360			2	7	1.6					74.12
501.0	08/08/77	1401	10.0	24.4	6.0	6.3	18	350			2	6	1.7					72.74
			12.5	23.2	5.6	6.3	18	350										66.32
			15.0	22.3	5.3	6.3	18	350										61.98
			17.5	21.5	5.1	6.3	18	350										58.77
			20.0	20.5	4.9	6.3	18	340			2	8	1.4					55.22
501.0	08/08/77	1401	20.0	20.4	4.9	6.3	19	340			2	7	2.5					55.10
			22.5	19.1	4.2	6.3	19	330										45.92
			25.0	17.6	2.2	6.2	21	340										23.55
			27.5	13.9	1.4	6.2	22	340										13.78
			30.0	11.7	1.7	6.3	22	340			4	9	1.9					16.01
501.0	08/08/77	1401	30.0	11.7	1.8	6.3	22	340			4	8	2.9					16.95
			32.0	10.8	1.7	6.3	22	330										15.65
501.0	09/12/77	1415	-2.0												8.08			
501.0	09/12/77	1416	-2.0												8.16			
			0.3	27.3	7.9	6.9	18	380	1.5	6.8	3	8	2.3					100.77
501.0	09/12/77	1416	0.3	27.3	8.0	6.9	18	380			3	7	1.2					102.05
			1.5	26.8	8.0	6.9	18	380										101.04
			3.0	26.8	8.0	6.8	18	390										101.04
			5.0	26.7	8.0	6.7	18	390										100.92
			6.5	26.7	7.8	6.7	18	390										98.40
			8.0	26.7	7.6	6.5	18	390										95.87
			10.0	26.4	6.4	6.2	18	390			3	7	1.3					80.44
501.0	09/12/77	1416	10.0	26.4	6.4	6.2	18	390			3	7	1.3					80.44
			12.5	25.4	4.4	5.9	18	390										54.24
			15.0	24.8	4.1	5.9	18	390										49.94
			17.5	24.4	4.1	5.9	18	380										49.70
			20.0	23.4	3.5	5.9	19	370			2	9	1.2					41.64
501.0	09/12/77	1416	20.0	23.4	3.6	5.9	19	370			4	9	1.7					42.83
			22.5	22.3	3.0	5.9	20	360										35.08
			25.0	21.2	1.5	5.9	21	350										17.17
			27.5	18.1	0.0	6.1	25	350										0.00
			30.0	12.3	0.1	6.1	24	370			5	9	1.7					0.95
501.0	09/12/77	1416	30.0	12.3	0.1	6.1	24	370			4	7	1.6					0.95
			32.0	11.2	0.2	6.1	24	370										1.85
501.0	10/10/77	1410	-2.0												8.83			
501.0	10/10/77	1411	-2.0												8.75			
			0.3	23.5	6.0	6.1	18	400	1.8	6.0	2	9	1.4					71.55
501.0	10/10/77	1411	0.3	23.5	5.8	6.1	18	400			3	10	1.4					69.17
			1.5	23.4	5.9	6.1		400										70.20
			3.0	23.4	5.9	6.1		400										70.20
			5.0	23.3	5.9	6.1		400										70.03

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			6.5	23.3	5.8	6.1		390										68.85
			8.0	23.3	5.8	6.1		390										68.85
			10.0	23.2	5.7	6.1	18	390			2	8	1.4					67.50
501.0	10/10/77	1411	10.0	23.2	5.6	6.1	18	390			2	9	1.4					66.32
			12.5	23.2	5.8	6.1		380										68.69
			15.0	23.2	6.1	6.1		370										72.24
			17.5	23.1	5.9	6.0		360										69.71
			20.0	23.1	5.9	6.1	18	350			2	8	1.9					69.71
501.0	10/10/77	1411	20.0	23.1	5.8	6.1	18	340			2	8	1.4					68.53
			22.5	23.0	5.8	6.1		310										68.37
			25.0	21.4	0.3	5.9		280										3.44
			27.5	17.4	0.1	6.1		310										1.06
			30.0	13.0	0.1	6.0	26	310			11	13	1.6					0.96
501.0	10/10/77	1411	30.0	13.0	0.1	6.0	26	310			10	15	1.6					0.96
501.0	11/14/77	1410	-2.0												5.71			
501.0	11/14/77	1411	-2.0												6.05			
			0.3	18.0	8.0	6.5	18	390	0.7	4.7	3	8	1.9					86.36
501.0	11/14/77	1411	0.3	18.0	8.0	6.5	18	390			3	8	1.6					86.36
			1.5	18.0	8.0	6.5	18	390										86.36
			3.0	17.9	8.0	6.5	18	390										86.18
			5.0	17.9	8.0	6.5	18	380										86.18
			6.5	17.8	8.0	6.5	18	380										86.00
			8.0	17.8	8.0	6.5	18	380										86.00
			10.0	17.8	8.0	6.5	18	380			3	8	1.7					86.00
501.0	11/14/77	1411	10.0	17.8	8.0	6.5	18	380			3	8	2.3					86.00
			12.5	17.8	8.0	6.5	18	370										86.00
			15.0	17.7	8.0	6.5	18	370										85.82
			17.5	17.7	8.0	6.5	18	370										85.82
			20.0	17.7	8.1	6.5	18	360			3	8	1.9					86.90
501.0	11/14/77	1411	20.0	17.7	8.1	6.5	18	360			3	8	1.6					86.90
			22.5	17.7	8.2	6.5	18	350										87.97
			25.0	17.7	8.2	6.5	18	350										87.97
			27.5	17.6	8.3	6.5	18	340										88.86
			30.0	17.5	8.2	6.5	19	320			3	8	1.7					87.60
501.0	11/14/77	1411	30.0	17.5	8.4	6.5	19	320			3	8	2.0					89.74
			32.5	11.6	0.1	6.2	34	190										0.93
			34.0	11.1	0.1	6.3	38	210										0.92
501.0	12/12/77	1420	-2.0												6.00			
501.0	12/12/77	1421	-2.0												5.96			
			0.3	13.5	8.9	6.3	16	370	0.5	5.8	3	7	1.6					86.93
501.0	12/12/77	1421	0.3	13.5	8.9	6.3	16	370			3	7	2.0					86.93
			1.5	13.4	8.9	6.3	16	370										86.76
			3.0	13.4	9.0	6.3	17	370										87.74
			5.0	13.2	8.9	6.3	17	360										86.44
			6.5	13.2	8.8	6.3	17	360										85.47
			8.0	13.2	8.8	6.3	17	360										85.47

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WATER QUALITY RESEARCH DATA TYPE 1

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			10.0	13.2	8.8	6.3	17	360			3	7	2.2					85.47
501.0	12/12/77	1421	10.0	13.2	8.8	6.3	17	360			4	7	2.4					85.47
			12.5	13.2	8.8	6.3	17	360										85.47
			15.0	13.2	8.8	6.2	17	350										85.47
			17.5	13.2	8.7	6.2	17	350										84.49
			20.0	13.2	8.7	6.2	17	350			3	6	1.7					84.49
501.0	12/12/77	1421	20.0	13.2	8.7	6.2	17	350			3	7	1.6					84.49
			22.5	13.2	8.7	6.2	17	340										84.49
			25.0	13.2	8.7	6.2	17	340										84.49
			27.5	13.1	8.7	6.2	18	340										84.33
			30.0	13.1	8.7	6.2	18	340			3	7	1.9					84.33
501.0	12/12/77	1421	30.0	13.1	8.7	6.2	18	330			4	6	1.4					84.33
			32.5	13.1	8.7	6.2	18	330										84.33
			34.0	13.1	8.7	6.2	18	330										84.33
501.5	01/11/77	1530	0.3	9.5	10.7	6.7	17	330	0.5	6.0	4	8	1.5		6.09			95.84
			1.5	9.5	10.7	6.6	17	330										95.84
			3.0	9.5	10.7	6.6	17	330										95.84
			5.0	9.4	10.7	6.6	17	330			5	8	1.4		6.09			95.59
			6.5	9.4	10.7	6.6	17	330										95.59
			8.0	9.4	10.7	6.5	17	330										95.59
			10.0	9.3	10.6	6.5	17	330			4	8	1.1		6.34			94.45
			12.5	9.3	10.6	6.4	17	330										94.45
			15.0	9.3	10.6	6.4	17	330			4	8	1.3		6.09			94.45
			17.5	9.3	10.6	6.4	17	330										94.45
			20.0	9.3	10.6	6.4	17	330			4	8	1.2		6.21			94.45
			22.5	9.2	10.6	6.3	17	330										94.20
			25.0	9.2	10.6	6.2	17	330			4	8	1.2		6.00			94.20
501.5	02/14/77	1425	0.3	8.4	11.4	6.6	18	330	1.0	5.2	7	7	1.4		5.26			99.25
			1.5	8.3	11.4	6.5	18	330										99.00
			3.0	8.1	11.5	6.4	18	330										99.36
			5.0	7.9	11.5	6.3	18	330			5	8	2.3		6.25			98.86
			6.5	7.8	11.6	6.3	18	330										99.47
			8.0	7.3	11.6	6.2	18	330										98.24
			10.0	6.4	11.6	6.2	18	330			4	8	1.5		4.80			96.10
			12.5	5.8	11.5	6.1	18	330										93.90
			15.0	5.5	11.4	6.0	18	320			4	8	1.4		5.13			92.42
			17.5	5.4	11.3	6.0	18	320										91.40
			20.0	5.4	11.1	5.9	18	320			4	8	1.5		5.17			89.78
			22.5	5.4	10.7	5.9	18	320			5	8	1.4		5.21			86.54
501.5	03/14/77	1355	0.3	13.1	11.3	6.6	17	380	1.4	5.2	5	11	1.5		6.50			109.54
			1.5	12.7	11.3	6.6		380										108.72
			3.0	11.9	11.2	6.6		380										106.06
			5.0	11.7	11.2	6.6	17	380			5	9	1.5		6.25			105.48
			6.5	11.7	11.4	6.6		380										107.36
			8.0	11.3	11.6	6.5		370										108.06
			10.0	10.4	11.4	6.5	17	370			5	7	1.5		6.30			104.20

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			12.5	9.5	11.3	6.5		360										101.22
			15.0	8.4	11.3	6.5	17	350			4	8	1.4		6.34			98.38
			17.5	8.1	11.3	6.5		340										97.63
			20.0	7.6	11.1	6.5	17	340			4	8	1.3		6.67			94.71
			22.5	7.3	11.0	6.5		330										93.16
			25.0	7.1	10.8	6.5	17	310			6	8	1.4		6.71			91.01
			27.5	7.0	10.6	6.5	17	310			4	8	1.4		6.96			89.11
501.5	04/12/77	1410	0.3	19.2	11.3	6.8	16	330	1.5	3.0	12	9	2.0		5.55			123.82
			1.5	17.4	11.1	6.7		330										118.34
			3.0	16.0	10.7	6.7		340										109.74
			5.0	15.2	10.3	6.7	16	340			18	6	1.1		5.55			103.97
			6.5	14.7	10.5	6.7		340										104.96
			8.0	14.0	10.5	6.8		340										103.55
			10.0	13.5	10.5	6.8	16	330			7	8	1.1		5.96			102.56
			12.5	13.0	10.5	6.8		320										101.59
			15.0	12.7	10.5	6.9	16	320			7	8	1.4		6.00			101.02
			17.5	11.5	10.5	6.9		300										98.34
			20.0	10.3	10.3	7.0	17	300			7	9	1.8		6.13			93.98
			22.5	9.3	10.0	7.1		300										89.10
			25.0	8.7	9.6	7.1	17	300			5	7	1.5		6.46			84.22
			27.5	8.5	9.3	7.3		280										81.17
			30.0	8.4	8.9	7.4	17	260			7	8	1.5		6.79			77.48
501.5	05/10/77	1430	0.3	22.9	9.6	6.8	18	360	1.6	6.8	3	8	1.1		6.05			113.04
			1.5	22.7	9.8	6.8	18	360										115.13
			3.0	22.1	10.1	6.7	18	360										117.84
			5.0	21.2	10.4	6.5	18	360			3	7	1.0		6.13			119.04
			6.5	19.4	10.2	6.5	18	360										112.24
			8.0	19.2	10.2	6.4	18	360										111.76
			10.0	17.9	9.6	6.3	18	350			3	6	0.9		6.25			103.42
			12.5	16.2	9.4	6.3	18	350										96.99
			15.0	14.8	9.1	6.3	18	350			3	6	1.0		6.50			91.14
			17.5	14.0	8.9	6.3	19	350										87.77
			20.0	13.5	8.9	6.3	19	340			3	6	1.1		6.80			86.93
			22.5	12.3	8.7	6.3	19	340										83.08
			25.0	11.0	8.2	6.3	20	330			3	6	1.2		6.96			75.76
			27.5	9.7	7.4	6.3	20	330			3	6	1.2					66.63
501.5	06/14/77	1350	-2.0												6.59			
501.5	06/14/77	1351	-2.0												6.59			
			0.3	26.1	9.0	7.3	21	350	0.6	8.2	6	4	1.2					112.70
501.5	06/14/77	1351	0.3	26.1	9.1	7.3	21	360			8	5	1.2					113.96
			1.5	25.8	9.2	7.3	21	360										114.51
			3.0	25.7	9.4	7.2	21	360										116.71
			5.0	25.2	9.9	7.1	21	370										121.45
			6.5	24.2	10.0	6.9	21	370										120.94
			8.0	23.3	10.2	6.5	21	370										121.08
			10.0	21.7	9.6	6.3	21	370			6	3	1.0					111.13

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STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
501.5	06/14/77	1351	10.0	21.7	9.7	6.3	21	370			6	4	1.1					112.28
			12.5	19.8	8.3	6.1	21	370										92.13
			15.0	18.8	7.9	6.1	21	370										86.01
			17.5	17.7	7.6	6.1	21	360										81.53
			20.0	16.3	7.4	6.1	22	360			8	6	1.8					76.58
501.5	06/14/77	1351	20.0	16.2	7.5	6.1	22	350			8	6						77.38
			22.5	14.3	6.9	6.1	22	350										68.44
			25.0	12.8	6.4	6.1	23	340										61.69
			27.5	10.8	5.7	6.1	24	340										52.47
			30.0	10.2	5.3	6.1	24	320			7	11	1.4					48.27
501.5	06/14/77	1351	30.0	10.2	5.3	6.1	24	320			7	9	1.2					48.27
			32.5	10.0	5.1	6.1	24	290										46.28
			34.0	10.0	4.9	6.1	24	270										44.47
501.5	07/12/77	1425	-2.0												6.00			
501.5	07/12/77	1426	-2.0												5.96			
			0.3	31.4	8.3	6.4	22	270	1.8	7.0	6	7	1.9					114.11
501.5	07/12/77	1426	0.3	31.3	8.4	7.4	22	270			21	6	1.1					115.33
			1.5	30.7	8.8	7.5	22	280										119.86
			3.0	29.9	9.0	6.4	22	280										121.13
			5.0	27.9	9.2	6.7	21	290										119.14
			6.5	25.8	8.2	6.3	20	300										102.06
			8.0	24.2	7.2	6.2	20	300										87.08
			10.0	23.1	6.7	6.2	20	290			10	6	1.1					79.16
501.5	07/12/77	1426	10.0	23.0	6.7	6.1	20	290			13	7	1.2					78.98
			12.5	21.7	6.2	6.1	20	290										71.77
			15.0	20.7	5.9	6.1	20	290										66.79
			17.5	20.0	5.6	6.1	20	290										62.43
			20.0	18.9	5.1	6.1	20	280			6	6	1.1					55.58
501.5	07/12/77	1426	20.0	18.9	5.1	6.1	20	280			6	7	1.4					55.58
			21.0	18.5	4.8	6.2	20	280										52.09
501.5	08/08/77	1420	-2.0												6.92			
501.5	08/08/77	1421	-2.0												6.92			
			0.3	29.4	8.5	7.9	18	300	1.7	6.8	3	7	1.5					112.92
501.5	08/08/77	1421	0.3	29.4	8.8	8.0	18	310			3	7	2.1					116.91
			1.5	28.7	8.9	8.0	18	320										116.57
			3.0	28.5	9.1	8.0	18	320										118.89
			5.0	26.4	7.5	6.4	18	370										94.26
			6.5	25.6	6.7	6.3	18	370										82.99
			8.0	25.1	6.3	6.2	18	370										77.10
			10.0	24.4	6.0	6.2	18	370			2	7	2.1					72.74
501.5	08/08/77	1421	10.0	24.3	6.0	6.2	18	370			3	7	1.5					72.65
			12.5	23.6	5.8	6.2	18	360										69.33
			15.0	22.4	5.5	6.2	18	360										64.39
			17.5	21.6	5.3	6.2	18	360										61.21
			20.0	20.6	4.9	6.2	18	360			3	7	1.5					55.34
501.5	08/08/77	1421	20.0	20.5	4.9	6.2	18	350			2	7	2.6					55.22

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB-IDTY JTU	ALKA-LIN. MG/L	CLOR-IDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			22.5	19.2	4.3	6.2	19	350										47.11
			25.0	17.1	2.8	6.2	20	360										29.66
			27.5	14.2	1.7	6.2	22	360										16.83
			30.0	11.4	1.3	6.2	22	360			5	9	1.7					12.14
501.5	08/08/77	1421	30.0	11.4	1.3	6.2	22	360			4	9	1.8					12.14
			31.0	11.3	1.1	6.3	22	350										10.24
501.5	09/12/77	1440	-2.0												7.71			
501.5	09/12/77	1441	-2.0												8.00			
			0.3	27.7	7.9	6.8	18	380	1.2	6.0	3	7	1.4					101.79
501.5	09/12/77	1441	0.3	27.7	8.0	6.8	18	380			3	7	1.4					103.07
			1.5	27.1	8.1	6.8	18	390										102.81
			3.0	26.8	8.0	6.7	18	390										101.04
			5.0	26.7	7.3	6.4	18	390										92.09
			6.5	26.7	7.0	6.4	18	380										88.30
			8.0	26.7	7.3	6.4	18	380										92.09
			10.0	26.4	5.8	6.1	18	380			3	7	1.3					72.90
501.5	09/12/77	1441	10.0	26.4	5.9	6.1	18	380			3	7	1.5					74.15
			12.5	25.8	5.0	6.0	18	370										62.23
			15.0	24.9	4.2	5.9	18	360										51.22
			17.5	24.2	3.8	5.9	19	350										45.96
			20.0	23.3	3.4	5.9	19	340			2	7	1.2					40.36
501.5	09/12/77	1441	20.0	23.3	3.4	5.9	19	330			2	7	1.8					40.36
			22.5	22.1	2.4	5.9	20	310										28.00
			25.0	20.6	1.1	6.0	21	260										12.42
			27.5	16.7	0.0	6.1	25	150										0.00
			30.0	12.3	0.0	6.2	27	150			7	12	1.4					0.00
501.5	09/12/77	1441	30.0	12.2	0.0	6.2	27	150			12	13	1.6					0.00
			32.5	11.5	0.0	6.3	28	150										0.00
			34.0	11.4	0.0	6.3	28	150										0.00
501.5	10/10/77	1435	-2.0												9.58			
501.5	10/10/77	1436	-2.0												8.70			
			0.3	23.5	6.9	6.1	18	400	1.2	5.5	2	9	1.7					82.28
501.5	10/10/77	1436	0.3	23.5	6.9	6.1	18	400			2	9	1.7					82.28
			1.5	23.4	6.8	6.1	18	400										80.90
			3.0	23.3	6.5	6.1	18	400										77.16
			5.0	23.2	6.5	6.0	18	400										76.98
			6.5	23.2	6.6	6.0	18	400										78.16
			8.0	23.2	6.6	6.0	18	390										78.16
			10.0	23.2	6.6	6.1	18	390			3	9	1.8					78.16
501.5	10/10/77	1436	10.0	23.2	6.6	6.1	18	390			2	8	1.6					78.16
			12.5	23.1	6.6	6.1	18	390										77.98
			15.0	23.1	6.7	6.1	18	380										79.16
			17.5	23.1	6.7	6.1	18	370										79.16
			20.0	23.0	6.8	6.1	18	350			4	7	1.7					80.16
501.5	10/10/77	1436	20.0	23.0	6.9	6.1	18	340			5	8	1.8					81.34
			22.5	22.8	6.8	6.1	18	320										79.98

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 1 PAGE 15

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			25.0	22.5	6.3	6.1	18	300										73.84
			27.5	17.0	0.0	6.1	30	180										0.00
			30.0	12.7	0.0	6.3	36	210			9	20	2.0					0.00
501.5	10/10/77	1436	30.0	12.7	0.0	6.3	36	220			10	21	2.3					0.00
501.5	11/14/77	1430	-2.0												5.71			
501.5	11/14/77	1431	-2.0												5.71			
			0.3	18.0	7.7	6.4	18	410	0.4	5.0	3	8	1.9					83.13
501.5	11/14/77	1431	0.3	18.0	7.8	6.5	18	410			3	8	1.7					84.21
			1.5	18.0	7.7	6.5	18	400										83.13
			3.0	18.0	7.7	6.4	18	400										83.13
			5.0	18.0	7.7	6.4	18	400										83.13
			6.5	18.0	7.7	6.4	18	400										83.13
			8.0	18.0	7.6	6.4	18	400										82.05
			10.0	18.0	7.6	6.4	18	400			3	8	1.8					82.05
501.5	11/14/77	1431	10.0	18.0	7.6	6.4	18	390			3	8	1.8					82.05
			12.5	17.9	7.6	6.4	18	390										81.87
			15.0	17.9	7.6	6.4	18	390										81.87
			17.5	17.9	7.6	6.4	18	390										81.87
			20.0	17.9	7.7	6.4	18	390			3	8	1.8					82.95
501.5	11/14/77	1431	20.0	17.8	7.7	6.4	18	390			5	8	1.8					82.78
			22.5	17.8	7.7	6.4	18	390										82.78
			25.0	17.7	7.6	6.4	18	380										81.53
			26.0	17.7	7.6	6.4	18	380			3	8	2.3					81.53
501.5	11/14/77	1431	26.0	17.7	7.6	6.5	18	370			4	8	2.6					81.53
501.5	12/12/77	1445	-2.0												5.59			
501.5	12/12/77	1446	-2.0												5.88			
			0.3	13.9	8.8	6.3	33	370	0.4	4.5	4	6	1.4					86.61
501.5	12/12/77	1446	0.3	13.9	8.8	6.3	33	370			3	6	1.4					86.61
			1.5	13.9	8.9	6.3	33	370										87.60
			3.0	13.7	9.0	6.3	33	360										88.24
			5.0	13.5	9.0	6.3	33	360										87.91
			6.5	13.5	9.0	6.3	33	350										87.91
			8.0	13.5	9.0	6.3	33	350										87.91
			10.0	13.5	9.0	6.3	33	350			3	6	1.4					87.91
501.5	12/12/77	1446	10.0	13.5	9.0	6.3	33	350			4	6	1.5					87.91
			12.5	13.4	8.9	6.3	32	350										86.76
			15.0	13.4	8.9	6.3	32	340										86.76
			17.5	13.4	8.8	6.3	32	330										85.79
			20.0	13.4	8.8	6.3	32	320			5	6	1.5					85.79
501.5	12/12/77	1446	20.0	13.3	8.8	6.3	32	310			3	6	1.4					85.63
			22.5	13.3	8.8	6.3	33	320										85.63
			25.0	13.3	8.8	6.3	32	300										85.63
			27.5	13.3	8.8	6.3	33	320										85.63
			30.0	13.3	8.8	6.3	34	340			3	6	1.5					85.63
501.5	12/12/77	1446	30.0	13.3	8.8	6.4	34	300			4	6	1.6					85.63
			32.5	13.3	8.7	6.4	35	320										84.65

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 1

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			34.0	13.3	8.6	6.4	35	280										83.68
502.0	01/11/77	1340	0.3	10.1	10.7	6.7	17	340	0.7	5.0	5	7	1.4		6.30			97.29
			1.5	10.1	10.7	6.6	17	340										97.29
			3.0	10.0	10.6	6.5	17	330										96.21
			5.0	10.0	10.6	6.4	17	330			6	7	1.3		6.30			96.21
			6.5	10.0	10.6	6.3	17	340										96.21
			8.0	10.0	10.6	6.3	17	340										96.21
			10.0	10.0	10.6	6.3	17	340			6	7	1.1		6.00			96.21
			12.5	9.9	10.5	6.3	17	340										95.05
			15.0	9.9	10.4	6.3	17	340			4	7	1.7		5.80			94.14
			17.5	9.9	10.4	6.3	17	350										94.14
			20.0	9.8	10.4	6.1	17	350			5	7	1.1		6.09			93.89
			22.5	9.8	10.4	6.1	17	340										93.89
			25.0	9.8	10.3	6.1	17	335			6	7	1.1		5.84			92.99
502.0	02/14/77	1420	0.3	9.4	11.1	6.4	18	330	0.9	5.3	4	8	1.3		6.71			99.16
			1.5	9.3	11.2	6.6	18	330										99.80
			3.0	9.3	11.4	6.4	18	330										101.58
			5.0	9.3	11.5	6.4	18	330			5	8	1.2		5.01			102.47
			6.5	9.2	11.5	6.5	17	330										102.20
			8.0	8.2	11.4	6.5	17	330										98.75
			10.0	7.6	11.4	6.1	17	330			4	8	1.5		5.26			97.27
			12.5	6.9	11.4	6.1	17	330										95.60
			15.0	6.4	11.4	6.0	18	320			4	8	7.8		5.05			94.44
			17.5	5.9	11.3	5.9	18	320										92.49
			20.0	5.9	11.2	5.8	18	320			4	7	1.4		5.05			91.67
			22.5	5.8	11.2	5.8	18	320			4	9	1.7		5.01			91.45
502.0	03/14/77	1410	0.3	13.8	11.2	6.7	17	390	1.2	5.8	7	6	1.3		6.71			110.03
			1.5	13.7	11.3	6.6		390										110.80
			3.0	12.4	11.1	6.6		390										106.19
			5.0	12.0	11.2	6.6	17	390			5	8	1.2		6.75			106.36
			6.5	11.9	11.2	6.6		390										106.06
			8.0	11.7	11.2	6.5		390										105.48
			10.0	10.9	11.0	6.5	17	380			4	8	1.6		6.30			101.45
			12.5	10.1	10.7	6.5		370										97.29
			15.0	9.9	10.8	6.5	17	370			5	8	1.3		6.25			97.76
			17.5	8.9	10.6	6.5		360										93.48
			20.0	8.4	10.4	6.6	17	340			5	8	1.2		6.38			90.54
			22.5	8.3	10.0	6.7	17	330			5	9	1.3		6.92			86.84
502.0	04/12/77	1425	0.3	19.7	11.4	6.9	15	360	0.6	3.0	9	10	1.4		5.59			126.26
			1.5	17.8	11.2	6.8		360										120.41
			3.0	15.7	10.5	6.7		350										107.05
			5.0	15.0	10.1	6.6	15	350			12	9	1.3		5.63			101.55
			6.5	14.7	10.0	6.6		350										99.96
			8.0	14.3	10.0	6.6		340										99.19
			10.0	13.7	9.8	6.7	15	340			15	5	1.4		5.63			96.09
			12.5	13.4	9.8	6.7		320										95.54

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			15.0	13.2	9.8	6.8	15	320			20	7	1.3		5.42			95.18
			17.5	12.8	9.8	6.9		310										94.46
			20.0	12.4	9.9	7.1	15	290			17	7	1.2		5.34			94.71
			22.5	9.4	9.1	7.3		280										81.30
			25.0	9.1	8.4	7.4	17	270			7	7	1.6		6.54			74.46
502.0	05/10/77	1450	0.3	22.8	9.8	6.7	18	380	1.6	7.0	4	7	1.2					115.26
			1.5	22.2	9.8	6.6	18	380										114.47
			3.0	21.7	10.0	6.5	18	390										115.76
			5.0	20.7	10.1	6.4	17	390			3	7	0.9		6.84			114.33
			6.5	19.5	9.8	6.3	17	390										108.07
			8.0	19.3	9.8	6.2	17	390										107.61
			10.0	17.2	8.5	6.2	17	390			3	7	1.0		5.88			90.24
			12.5	16.2	8.5	6.2	17	390										87.70
			15.0	15.3	8.6	6.3	18	390			3	7	1.0		6.17			86.98
			17.5	15.0	8.6	6.3	18	390										86.47
			20.0	14.6	8.5	6.3	18	390			3	7	1.1		6.25			84.80
			22.5	13.6	8.2	6.3	18	380										80.25
			25.0	10.6	7.0	6.4	18	380			3	8	1.3		6.96			64.21
502.0	06/14/77	1415	-2.0												6.46			
502.0	06/14/77	1416	-2.0												6.50			
			0.3	26.2	8.9	7.2	21	370	0.5	8.1	7	4	1.2					111.59
502.0	06/14/77	1416	0.3	26.2	8.9	7.2	21	370			7	3	1.2					111.59
			1.5	25.8	9.2	7.2	21	370										114.51
			3.0	25.7	9.4	7.1	21	380										116.71
			5.0	25.2	9.6	6.9	21	390										117.77
			6.5	24.2	9.4	6.4	21	400										113.69
			8.0	23.2	9.1	6.2	21	410										107.77
			10.0	21.9	8.4	6.1	21	410			7	4	1.1					97.68
502.0	06/14/77	1416	10.0	21.9	8.4	6.1	21	410			7	4						97.68
			12.5	20.8	7.6	6.1	21	400										86.22
			15.0	19.6	7.8	6.1	20	400										86.20
			17.5	18.9	8.0	6.1	20	400										87.19
			20.0	18.3	8.1	6.1	19	400			6	8	1.0					87.72
502.0	06/14/77	1416	20.0	18.3	8.2	6.1	19	400			6	8	1.2					88.80
			22.5	14.6	6.8	6.0	19	400										67.84
			25.0	13.6	5.9	6.0	20	400			7	8	1.1					57.74
502.0	06/14/77	1416	25.0	13.6	5.9	6.0	20	390			7	7	1.3					57.74
502.0	07/12/77	1440	-2.0												6.30			
502.0	07/12/77	1441	-2.0												6.25			
			0.3	31.7	8.3	7.3	22	290	1.7	6.0	4	6	1.0					114.57
502.0	07/12/77	1441	0.3	31.7	8.4	7.3	22	290			4	7	1.3					115.95
			1.5	31.6	8.8	7.3	22	300										121.31
			3.0	30.6	9.1	6.9	22	310										123.78
			5.0	27.4	8.4	6.5	21	310										107.42
			6.5	26.1	7.8	6.3	21	310										97.68
			8.0	24.4	7.2	6.2	20	310										87.28

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			10.0	23.3	7.0	6.2	20	310			4	6	1.0					83.09
502.0	07/12/77	1441	10.0	23.1	7.0	6.2	20	310			4	7	1.1					82.71
			12.5	21.7	6.8	6.2	20	300										78.71
			15.0	21.4	6.8	6.2	20	300										78.18
			17.5	20.7	6.7	6.2	20	300										75.84
			20.0	20.5	6.7	6.2	20	290			4	6	1.1					75.51
502.0	07/12/77	1441	20.0	20.4	6.6	6.2	20	290			3	6	1.0					74.22
			22.5	16.9	4.9	6.2	20	290										51.65
			25.0	14.7	3.8	6.1	22	280			5	7	1.3					37.98
502.0	07/12/77	1441	25.0	14.8	3.8	6.2	22	280			6	6	1.4					38.06
502.0	08/08/77	1440	-2.0												7.04			
502.0	08/08/77	1441	-2.0												6.83			
			0.3	29.7	8.5	7.7	18	320	1.6	5.9	4	7	1.6					113.81
502.0	08/08/77	1441	0.3	29.7	8.6	7.7	18	320			4	7	1.7					115.15
			1.5	29.1	8.8	7.8	18	330										116.01
			3.0	28.6	8.8	7.8	18	380										115.12
			5.0	26.5	7.5	6.4	18	380										94.38
			6.5	25.8	6.7	6.2	18	380										83.39
			8.0	25.3	6.3	6.2	18	380										77.47
			10.0	24.7	6.0	6.1	18	380			3	7	1.5					72.99
502.0	08/08/77	1441	10.0	24.7	6.0	6.1	18	380			3	7	1.8					72.99
			12.5	23.6	5.7	6.1	18	380										68.13
			15.0	23.2	5.6	6.1	18	380										66.32
			17.5	22.9	5.7	6.1	18	370										67.11
			20.0	22.2	5.7	6.2	18	370			2	7	1.4					66.58
502.0	08/08/77	1441	20.0	22.1	5.7	6.2	18	370			3	7	1.5					66.50
			22.5	19.5	4.6	6.2	18	370										50.73
			25.0	16.3	2.5	6.1	20	370			35	8	2.0					25.87
502.0	08/08/77	1441	25.0	16.1	2.5	6.1	20	370			37	7	1.7					25.71
502.0	09/12/77	1500	-2.0												7.17			
502.0	09/12/77	1501	-2.0												7.71			
			0.3	27.4	7.1	6.3	18	410	1.5	5.8	3	7	1.4					90.79
502.0	09/12/77	1501	0.3	27.4	7.1	6.3	18	410			3	7	1.3					90.79
			1.5	27.0	7.1	6.3	18	410										89.90
			3.0	26.8	7.1	6.3	18	410										89.68
			5.0	26.7	6.7	6.2	18	410										84.52
			6.5	26.7	6.6	6.2	18	410										83.26
			8.0	26.6	6.4	6.1	18	410										80.64
			10.0	26.5	5.8	6.0	18	410			2	8	1.5					72.99
502.0	09/12/77	1501	10.0	26.5	5.9	6.0	18	410			2	7	1.3					74.24
			12.5	25.7	4.4	5.9	18	410										54.63
			15.0	25.4	4.3	5.8	18	410										53.00
			17.5	25.2	4.1	5.8	18	410										50.30
			20.0	24.7	4.0	5.8	18	410			21	8	1.4					48.66
502.0	09/12/77	1501	20.0	24.7	4.0	5.9	18	410			22	7	1.5					48.66
			22.5	22.7	3.1	5.9	19	410										36.42

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			25.0	21.3	2.0	5.9	20	410			10	8	1.4					22.94
502.0	09/12/77	1501	25.0	21.3	2.1	5.9	20	400			8	10	1.5					24.09
502.0	10/10/77	1500	-2.0												7.04			
502.0	10/10/77	1501	-2.0												7.08			
			0.3	23.6	6.9	6.1	17	420	1.0	5.0	3	9	1.7					82.48
502.0	10/10/77	1501	0.3	23.6	7.0	6.1	17	410			3	9	1.7					83.67
			1.5	23.6	6.9	6.1	17	420										82.48
			3.0	23.5	6.8	6.1	17	420										81.09
			5.0	23.4	6.7	6.1	17	420										79.71
			6.5	23.4	6.7	6.0	17	410										79.71
			8.0	23.4	6.6	6.0	17	410										78.52
			10.0	23.3	6.6	6.0	17	410			3	8	1.3					78.34
502.0	10/10/77	1501	10.0	23.3	6.6	6.0	17	410			3	8	1.3					78.34
			12.5	23.3	6.6	6.0	17	410										78.34
			15.0	23.3	6.6	6.0	17	410										78.34
			17.5	23.3	6.6	6.0	17	410										78.34
			20.0	23.3	6.6	6.0	17	410			3	8	1.3					78.34
502.0	10/10/77	1501	20.0	23.3	6.6	6.0	18	410			3	8	1.3					78.34
			22.5	23.2	6.3	5.9	18	410										74.61
			25.0	22.0	6.5	5.7	20	410			6	14	1.6					75.75
502.0	10/10/77	1501	25.0	22.3	6.3	5.7	19	400			8	15	1.8					73.67
502.0	11/14/77	1450	-2.0												5.01			
502.0	11/14/77	1451	-2.0												5.63			
			0.3	18.4	7.8	6.4	17	410	0.4	4.3	4	8	2.4					84.56
502.0	11/14/77	1451	0.3	18.4	7.8	6.4	17	410			3	7	2.8					84.56
			1.5	18.4	7.8	6.4	17	410										84.56
			3.0	18.4	7.8	6.4	18	410										84.56
			5.0	18.3	7.8	6.4	18	410										84.47
			6.5	18.1	7.7	6.4	18	410										83.21
			8.0	18.1	7.7	6.4	18	410										83.21
			10.0	18.1	7.7	6.4	18	410			4	8	2.4					83.21
502.0	11/14/77	1451	10.0	18.1	7.7	6.4	18	410			3	8	2.5					83.21
			12.5	18.0	7.7	6.4	18	410										83.13
			15.0	18.0	7.7	6.4	18	410										83.13
			17.5	18.0	7.7	6.4	18	410										83.13
			20.0	18.0	7.7	6.4	18	410			3	8	2.7					83.13
502.0	11/14/77	1451	20.0	18.0	7.7	6.4	18	410			3	8	2.5					83.13
			22.5	18.0	7.7	6.4	18	410										83.13
			24.0	18.0	7.7	6.5	18	400										83.13
502.0	12/12/77	1505	-2.0												5.51			
502.0	12/12/77	1506	-2.0												5.59			
			0.3	14.2	8.8	6.2	16	360	0.2	4.3	4	6	1.4					87.12
502.0	12/12/77	1506	0.3	14.2	8.8	6.2	16	360			4	6	1.6					87.12
			1.5	14.1	8.9	6.2	16	350										87.94
			3.0	14.0	8.8	6.2	16	350										86.78
			5.0	13.8	8.7	6.2	16	350										85.47

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB-IDTY JTU	ALKA-LIN. MG/L	CLOR-IDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			6.5	13.8	8.7	6.2	16	350										85.47
			8.0	13.8	8.7	6.2	16	350										85.47
			10.0	13.8	8.8	6.2	16	340			4	6	1.5					86.45
502.0	12/12/77	1506	10.0	13.8	8.8	6.2	16	340			4	6	1.5					86.45
			12.5	13.8	8.8	6.2	16	330										86.45
			15.0	13.7	8.8	6.2	16	330										86.28
			17.5	13.6	8.8	6.2	16	330										86.12
			20.0	13.6	8.8	6.2	16	320			3	6	1.4					86.12
502.0	12/12/77	1506	20.0	13.6	8.8	6.3	16	310			3	6	1.6					86.12
			22.5	13.6	8.8	6.3	16	310										86.12
			24.0	13.6	8.7	6.3	16	300										85.14
503.0	01/11/77	1325	0.3	13.6	10.7	6.7	17	340	0.7	5.0	4	7	2.1		5.80			104.71
			1.5	12.6	10.6	6.6	17	340										101.79
			3.0	11.7	10.7	6.6	17	330										100.77
			5.0	10.7	10.4	6.4	17	330			7	7	1.2		5.51			95.57
			6.5	10.6	10.5	6.4	17	340										96.32
			8.0	10.4	10.4	6.4	17	340										95.06
			10.0	10.4	10.4	6.3	17	340			7	7	1.7		5.55			95.06
			12.5	10.2	10.4	6.2	17	340										94.73
			15.0	10.2	10.4	6.2	17	340			7	7	1.2		5.59			94.73
			17.5	10.2	10.4	6.2	17	350										94.73
			20.0	9.5	10.4	6.0	17	350			6	7	1.2		5.63			93.15
			22.5	9.5	10.1	6.0	17	350										90.47
			25.0	9.3	9.7	6.5	17	340			6	7	1.3		5.67			86.43
503.0	02/14/77	1500	0.3	12.2	11.5	6.5	18	350	0.8	5.0	5	8	1.5		4.76			109.61
			1.5	11.2	11.3	6.5	18	350										104.97
			3.0	10.4	11.3	6.4	17	350										103.29
			5.0	9.0	10.9	6.3	17	350			4	7	1.4		4.67			96.37
			6.5	8.5	10.8	6.3	17	350										94.27
			8.0	8.2	10.9	6.2	17	350										94.42
			10.0	7.3	11.1	6.2	17	350			5	7	1.5		4.76			94.01
			12.5	7.1	11.1	6.1	17	350										93.54
			15.0	6.6	11.0	6.0	18	340			5	8	1.3		5.42			91.57
			17.5	6.5	10.9	6.0	18	340										90.52
			20.0	6.4	10.9	5.9	18	340			6	8	1.4		4.92			90.30
			22.5	6.4	10.7	5.9	18	340			5	8	1.4		4.96			88.64
503.0	03/14/77	1425	0.3	15.0	11.5	6.5	17	390	1.1	6.0	7	8	1.2		6.80			115.63
			1.5	14.2	11.6	6.5		390										114.84
			3.0	13.4	11.5	6.5		390										112.11
			5.0	12.4	11.7	6.4	17	390			3	6	1.3		6.80			111.94
			6.5	10.9	11.2	6.4		390										103.30
			8.0	9.9	10.8	6.4		390										97.76
			10.0	9.3	10.7	6.4	17	390			6	9	1.3		7.21			95.34
			12.5	9.0	10.5	6.4		390										92.83
			15.0	8.8	10.4	6.4	17	380			6	8	2.0		5.71			91.48
			17.5	8.7	10.4	6.4		380										91.24

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			20.0	8.7	10.3	6.4	17	370			4	6	1.4		6.00			90.36
			22.5	8.7	10.2	6.4		360										89.49
			25.0	8.6	10.1	6.5	17	350			4	6	1.2		6.05			88.38
503.0	04/12/77	1445	0.3	19.3	10.8	6.5	16	400	0.5	3.7	7	9	1.3		6.00			118.59
			1.5	18.6	10.9	6.5		400										118.42
			3.0	17.0	10.8	6.5		410										114.19
			5.0	15.5	10.6	6.5	15	410			8	6	1.6		5.71			107.64
			6.5	14.3	10.4	6.5		400										103.15
			8.0	12.7	10.1	6.5		400										97.17
			10.0	11.5	10.1	6.5	14	400			8	7	1.3		5.51			94.60
			12.5	11.3	9.9	6.5		400										92.22
			15.0	10.9	9.8	6.6	14	390			7	8	1.5		5.55			90.38
			17.5	10.2	9.5	6.7		390										86.53
			20.0	10.2	9.5	6.8	14	380			5	8	2.1		5.88			86.53
			22.5	9.9	9.3	6.9		380										84.18
			25.0	9.8	9.1	7.0	15	370			4	8	1.8		5.92			82.15
			26.0	9.8	9.0	7.1	15	370			5	9	1.6		5.72			81.25
503.0	05/10/77	1505	0.3	22.1	9.6	6.6	18	350	1.6	6.8	2	7	1.0		5.84			112.01
			1.5	21.7	9.6	6.5	18	360										111.13
			3.0	21.2	9.9	6.4	18	360										113.32
			5.0	20.4	9.9	6.3	18	360			3	7	1.4		5.80			111.33
			6.5	19.2	9.6	6.2	18	360										105.19
			8.0	18.3	9.4	6.2	18	360										101.80
			10.0	17.7	9.3	6.2	18	360			3	7	1.0		5.80			99.77
			12.5	16.0	9.1	6.2	17	360										93.33
			15.0	15.2	9.3	6.2	16	360			3	7	2.6		5.93			93.88
			17.5	13.5	9.1	6.2	16	360										88.88
			20.0	12.7	8.9	6.2	16	350			3	7	1.0		6.01			85.63
			22.5	10.9	8.1	6.2	17	350										74.70
			25.0	10.7	7.8	6.3	17	350			3	7	1.3		6.01			71.68
			26.0	10.5	7.4	6.3	17	350			3	7	1.0		6.01			67.76
503.0	06/14/77	1440	-2.0												6.05			
503.0	06/14/77	1441	-2.0												6.01			
			0.3	25.9	8.8	6.7	20	390	0.4	6.8	6	3	1.1					109.80
503.0	06/14/77	1441	0.3	25.9	8.9	6.7	20	390			5	4	1.1					111.04
			1.5	25.8	9.0	6.7	20	390										112.02
			3.0	25.7	9.2	6.6	20	390										114.23
			5.0	24.8	9.2	6.4	20	400										112.06
			6.5	23.3	8.7	6.2	20	400										103.27
			8.0	22.8	8.8	6.2	20	400										103.50
			10.0	21.3	8.6	6.2	20	400			7	4	1.6					98.66
503.0	06/14/77	1441	10.0	21.2	8.7	6.2	20	400			5	4	1.5					99.58
			12.5	19.7	8.9	6.2	20	400										98.57
			15.0	19.1	9.3	6.2	19	400										101.68
			17.5	17.3	9.2	6.1	19	410										97.88
			20.0	13.5	7.3	6.0	19	410			6	3	1.0					71.30

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
503.0	06/14/77	1441	20.0	13.5	7.3	6.0	19	410			6	4	1.0					71.30
			22.5	12.2	6.9	6.0	19	410										65.77
			25.0	11.6	6.6	6.0	19	410										61.98
			26.0	11.4	6.3	6.0	19	400			6	8	1.2					58.84
503.0	06/14/77	1441	26.0	11.4	6.2	6.0	19	400			6	6	1.1					57.91
503.0	07/12/77	1505	-2.0												5.80			
503.0	07/12/77	1506	-2.0												5.80			
			0.3	31.2	8.3	7.1	22	310	1.6	5.5	4	7	1.0					113.80
503.0	07/12/77	1506	0.3	31.1	8.5	7.1	22	310			5	7	1.1					116.39
			1.5	30.4	8.7	6.9	22	320										118.03
			3.0	29.0	8.5	6.7	22	330										111.76
			5.0	27.9	8.3	6.3	21	330										107.48
			6.5	25.1	7.3	6.1	21	340										89.34
			8.0	23.8	7.1	6.1	20	340										85.26
			10.0	22.4	7.3	6.2	20	330			4	6	1.0					85.47
503.0	07/12/77	1506	10.0	22.9	7.6	6.2	20	330			3	7	1.0					89.49
			12.5	21.2	7.5	6.2	20	330										85.85
			15.0	20.3	7.4	6.2	20	330										83.03
			17.5	19.4	7.4	6.2	19	330										81.43
			20.0	14.3	6.7	6.2	19	330			2	6	1.3					66.45
503.0	07/12/77	1506	20.0	14.2	6.7	6.2	20	320			2	6	1.0					66.33
			22.5	13.5	5.8	6.2	20	320										56.65
			25.0	12.8	5.2	6.2	20	320			3	6	1.2					50.12
503.0	07/12/77	1506	25.0	12.9	5.2	6.2	20	320			3	8	1.0					50.21
503.0	08/08/77	1510	-2.0												6.38			
503.0	08/08/77	1511	-2.0												6.30			
			0.3	27.2	7.4	6.4	18	380	1.5	6.2	3	7	1.6					94.16
503.0	08/08/77	1511	0.3	27.3	7.4	6.4	18	380			4	7	1.5					94.39
			1.5	27.1	7.3	6.4	18	380										92.66
			3.0	27.0	7.2	6.3	18	390										91.16
			5.0	26.7	7.0	6.3	18	390										88.30
			6.5	25.9	6.7	6.2	18	390										83.59
			8.0	25.5	6.4	6.1	18	390										79.08
			10.0	24.9	6.1	6.2	18	390			3	7	1.5					74.39
503.0	08/08/77	1511	10.0	25.0	6.4	6.2	18	390			3	7	1.3					78.14
			12.5	23.8	6.2	6.2	18	390										74.46
			15.0	23.4	6.2	6.1	16	390										73.76
			17.5	21.8	5.9	6.1	16	390										68.45
			20.0	20.2	5.8	6.2	16	390			3	7	1.6					64.94
503.0	08/08/77	1511	20.0	20.3	6.0	6.1	16	390			4	7	1.4					67.32
			22.5	18.1	5.5	6.1	16	390										59.44
			25.0	17.0	5.0	6.1	16	390										52.86
			27.0	16.2	4.6	6.1	16	380			3	7	1.3					47.46
503.0	08/08/77	1511	27.0	16.3	4.4	6.2	16	370			3	7	1.5					45.53
503.0	09/12/77	1525	-2.0												7.25			
503.0	09/12/77	1526	-2.0												7.29			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			0.3	27.6	5.5	5.9	18	420	1.2	3.5	7	6	1.4					70.68
503.0	09/12/77	1526	0.3	27.6	5.5	5.9	18	420			8	7	1.5					70.68
			1.5	27.2	5.5	5.9	18	420										69.98
			3.0	27.2	5.6	5.9	18	420										71.26
			5.0	26.9	5.7	5.9	18	420										72.08
			6.5	26.6	5.5	5.9	18	420										69.30
			8.0	26.1	5.6	5.9	18	420										70.12
			10.0	25.2	5.3	5.9	17	420			6	6	1.4					65.02
503.0	09/12/77	1526	10.0	25.2	5.5	5.9	17	420			5	7	1.4					67.47
			12.5	23.9	5.4	5.9	17	420										65.00
			15.0	23.3	5.2	5.9	17	420										61.72
			17.5	22.8	4.7	5.9	17	420										55.28
			20.0	22.1	4.1	5.8	17	420			6	7	1.3					47.83
503.0	09/12/77	1526	20.0	22.2	4.2	5.8	17	420			12	7	1.2					49.06
			22.5	21.1	3.8	5.8	17	420										43.40
			25.0	20.4	3.5	5.8	17	410										39.36
			26.0	19.7	3.3	5.9	17	410			4	7	1.3					36.55
503.0	09/12/77	1526	26.0	19.7	3.3	5.9	17	410			4	6	1.3					36.55
503.0	10/10/77	1535	-2.0												6.67			
503.0	10/10/77	1536	-2.0												6.38			
			0.3	24.6	6.7	6.0	17	420	1.0	10.5	3	7	1.4					81.41
503.0	10/10/77	1536	0.3	24.6	6.8	6.0	17	420			3	8	1.4					82.63
			1.5	24.5	6.8	6.0	17	420										82.53
			3.0	23.8	6.6	6.0	17	420										79.26
			5.0	23.6	6.5	6.0	17	420										77.70
			6.5	23.5	6.5	6.0	17	420										77.51
			8.0	23.5	6.5	6.0	17	420										77.51
			10.0	23.4	6.5	6.0	17	420			4	7	1.4					77.33
503.0	10/10/77	1536	10.0	23.4	6.4	5.9	17	420			3	7	1.4					76.14
			12.5	23.3	6.1	5.9	17	420										72.41
			15.0	23.2	6.1	5.9	17	420										72.24
			17.5	23.1	6.1	5.9	18	420										72.07
			20.0	22.6	5.8	5.9	18	420			8	8	1.4					68.06
503.0	10/10/77	1536	20.0	22.7	5.9	5.9	17	420			10	8	1.8					69.31
			22.5	22.1	6.1	5.9	18	420										71.17
			25.0	21.4	5.6	5.9	18	410			16	9	1.9					64.38
503.0	10/10/77	1536	25.0	21.4	5.6	5.9	18	410			18	9	1.7					64.38
503.0	11/14/77	1510	-2.0												5.38			
503.0	11/14/77	1511	-2.0												5.59			
			0.3	19.0	7.6	6.2	17	420	0.4	4.2	4	7	1.8					82.92
503.0	11/14/77	1511	0.3	19.0	7.6	6.2	17	420			4	7	1.7					82.92
			1.5	18.9	7.5	6.3	17	420										81.74
			3.0	18.8	7.5	6.3	17	420										81.65
			5.0	18.7	7.6	6.3	17	420										82.66
			6.5	18.5	7.6	6.3	17	420										82.48
			8.0	18.2	7.6	6.4	17	420										82.22

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			10.0	18.2	7.6	6.4	17	420			5	7	1.8					82.22
503.0	11/14/77	1511	10.0	18.2	7.7	6.4	17	420			5	7	1.9					83.30
			12.5	18.2	7.7	6.4	17	420										83.30
			15.0	18.0	7.8	6.4	17	420										84.21
			17.5	17.9	7.9	6.4	17	420										85.11
			20.0	17.7	7.9	6.4	18	420			7	7	3.5					84.75
503.0	11/14/77	1511	20.0	17.7	7.9	6.4	18	420			7	7	1.8					84.75
			22.5	17.6	7.9	6.4	17	420										84.57
			25.0	17.5	7.9	6.4	17	420			7	7	1.8					84.40
503.0	11/14/77	1511	25.0	17.5	7.9	6.5	17	420			8	7	2.0					84.40
503.0	12/12/77	1535	-2.0												4.55			
503.0	12/12/77	1536	-2.0												5.51			
			0.3	15.8	8.7	6.2	16	420	0.3	4.0	4	6	1.5					88.87
503.0	12/12/77	1536	0.3	15.6	8.7	6.2	16	420			4	6	1.5					88.52
			1.5	15.1	8.6	6.2	15	420										86.64
			3.0	15.0	8.6	6.2	15	420										86.47
			5.0	14.6	8.6	6.2	15	420										85.80
			6.5	14.6	8.8	6.2	15	420										87.79
			8.0	14.2	8.7	6.2	16	420										86.13
			10.0	14.2	8.7	6.2	16	410			4	6	1.4					86.13
503.0	12/12/77	1536	10.0	14.0	8.9	6.2	16	410			4	6	1.6					87.77
			12.5	13.6	9.0	6.3	16	410										88.07
			15.0	13.1	9.2	6.3	16	410										89.18
			17.5	12.9	9.1	6.3	16	420										87.88
			20.0	12.6	9.1	6.3	16	410			4	6	1.6					87.39
503.0	12/12/77	1536	20.0	12.6	9.1	6.3	16	410			4	6	1.4					87.39
			22.5	12.6	9.1	6.3	16	400										87.39
			25.0	12.5	9.1	6.3	16	400										87.22
			26.0	12.5	9.1	6.3	16	390			4	6	1.4					87.22
503.0	12/12/77	1536	26.0	12.5	9.1	6.3	16	390			4	6	1.5					87.22
504.0	01/11/77	1240	0.3	15.7	10.6	6.9	17	320	0.6	5.0	4	7	1.4		4.42			108.06
			1.5	15.7	10.7	6.8	17	320										109.08
			3.0	15.5	11.0	6.6	17	320										111.70
			5.0	14.9	11.4	6.4	17	320			7	7	1.6		4.11			114.40
			6.5	12.9	10.6	6.4	17	320										102.37
			8.0	12.0	10.2	6.3	17	320										96.86
			10.0	11.8	10.1	6.1	17	320			5	7	1.7		4.35			95.38
			12.5	11.6	10.0	6.1	17	320										93.92
			15.0	11.4	10.0	6.0	17	320			5	7	1.4		4.47			93.40
			17.5	11.2	10.0	6.0	17	320										92.90
			20.0	11.0	10.0	5.9	17	320			7	7	1.6		4.37			92.40
			22.5	11.0	10.0	5.8	17	320										92.40
			25.0	10.9	10.0	5.8	17	315			6	7	1.6		4.44			92.23
			27.5	10.9	10.0	5.7	17	315										92.23
			30.0	10.7	9.9	5.7	17	310			5	7	2.0		4.42			90.98
			32.5	10.7	9.9	5.6	17	310										90.98

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			35.0	10.7	9.8	5.5	17	300			6	7	1.9		4.36			90.06
504.0	02/14/77	1530	0.3	13.4	11.0	6.6	18	150	0.7	5.4	5	8	1.4		4.67			107.24
			1.5	13.3	11.4	6.5	18	150										110.93
			3.0	13.1	11.8	6.4	18	150										114.39
			5.0	10.7	11.2	6.3	18	150			5	8	1.4		4.47			102.93
			6.5	10.5	11.2	6.3	18	150										102.56
			8.0	8.9	10.7	6.2	17	150										94.36
			10.0	8.4	10.4	6.1	17	150			5	8	1.5		4.72			90.54
			12.5	8.2	10.4	6.1	17	150										90.09
			15.0	7.9	10.3	6.0	17	150			4	7	1.3		4.48			88.55
			17.5	7.7	10.3	5.9	17	140										88.10
			20.0	7.7	10.3	5.8	17	140			5	7	1.4		4.44			88.10
			22.5	7.7	10.2	5.7	17	130										87.25
			25.0	7.7	10.2	5.7	17	120			5	7	1.3		4.67			87.25
			27.5	7.7	10.2	5.6	17	120										87.25
			30.0	7.7	10.2	5.6	17	120			5	7	1.4		4.59			87.25
			32.5	7.7	10.2	5.6	17	110										87.25
			34.0	7.3	10.1	5.6	17	100			5	7	1.3		4.80			85.54
504.0	03/14/77	1445	0.3	15.9	11.5	6.5	17	400	1.0	6.0	4	8	1.3		6.05			117.71
			1.5	15.8	11.8	6.5		400										120.54
			3.0	14.7	11.7	6.5		400										116.95
			5.0	13.9	11.7	6.5	17	410			4	8	1.4		6.21			115.16
			6.5	13.4	11.8	6.5		410										115.04
			8.0	12.6	11.7	6.4		410										112.35
			10.0	10.8	11.2	6.4	17	410			4	8	1.2		6.00			103.11
			12.5	9.6	10.8	6.4		410										96.99
			15.0	9.1	10.6	6.4	17	410			4	7	1.2		4.63			93.96
			17.5	8.9	10.5	6.4		400										92.59
			20.0	8.7	10.4	6.4	17	400			3	9	1.2		5.71			91.24
			22.5	8.5	10.3	6.5		390										89.90
			25.0	8.3	10.2	6.6	17	390			4	8	1.2		5.80			88.58
			27.5	8.2	10.0	6.6		370										86.62
			30.0	8.2	9.5	6.7	17	360			4	6	1.2		6.05			82.29
			32.5	8.2	9.4	6.7		360										81.42
			35.0	8.2	9.2	6.7	17	360			4	7	1.5		5.84			79.69
504.0	04/12/77	1520	0.3	19.7	10.9	6.5	15	410	1.1	4.0	6	7	1.6		5.80			120.72
			1.5	18.5	10.8	6.4		410										117.21
			3.0	17.8	10.8	6.4		410										116.11
			5.0	17.7	11.1	6.4	15	410			8	7	1.6		6.09			119.08
			6.5	17.4	11.4	6.4		410										121.54
			8.0	15.7	11.2	6.5		410										114.18
			10.0	13.6	10.8	6.5	15	410			7	7	1.4		5.47			105.69
			12.5	12.2	10.4	6.5		410										99.13
			15.0	11.3	10.3	6.5	14	410			9	6	2.0		5.34			95.95
			17.5	10.7	10.2	6.5		400										93.74
			20.0	10.0	9.9	6.5	15	400			5	7	1.6		5.72			89.85

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB-IDTY JTU	ALKA-LIN. MG/L	CLOR-IDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			22.5	9.7	9.8	6.6		400										88.24
			25.0	9.4	9.6	6.7	15	390			8	7	1.5		5.80			85.76
			27.5	9.2	9.4	6.8		380										83.54
			30.0	9.0	9.2	6.8	15	380			6	7	1.4		5.88			81.34
			32.5	9.0	9.0	6.9		380										79.57
			35.0	9.0	8.8	7.0	15	380			11	7	1.9		5.92			77.80
			36.0	9.0	8.7	7.1		380										76.92
504.0	05/10/77	1535	0.3	22.4	9.6	6.5	18	380	1.5	6.2	2	7	1.3		6.09			112.39
			1.5	22.2	9.8	6.5	18	380										114.47
			3.0	21.3	9.8	6.3	18	380										112.43
			5.0	20.7	9.8	6.3	18	380			3	7	1.1		6.59			110.94
			6.5	20.5	10.0	6.2	18	380										112.70
			8.0	20.2	10.3	6.2	18	390										115.32
			10.0	19.2	10.3	6.2	18	400			3	7	1.0		5.34			112.86
			12.5	14.7	9.8	6.1	16	400										97.96
			15.0	13.2	9.6	6.1	16	400			3	7	0.9		5.30			93.24
			17.5	12.5	9.5	6.1	16	400										91.06
			20.0	11.7	9.4	6.1	16	400			3	7	1.0					88.53
			22.5	10.9	9.1	6.1	16	400										83.93
			25.0	10.4	8.9	6.1	17	400			3	7	1.0		6.92			81.35
			27.5	10.1	8.7	6.1	17	400										79.10
			30.0	9.8	8.5	6.1	17	390			2	7	1.4		6.71			76.74
			32.5	9.7	8.3	6.1	17	390										74.73
			35.0	9.7	8.0	6.1	17	390			3	6	1.0		5.88			72.03
504.0	06/14/77	1505	-2.0												6.01			
504.0	06/14/77	1506	-2.0												6.05			
			0.3	25.7	9.2	6.7	21	390	0.4	6.9	7	3	1.1					114.23
504.0	06/14/77	1506	0.3	25.7	9.3	6.7	21	390			7	6	1.2					115.47
			1.5	25.4	9.4	6.6	21	400										115.87
			3.0	25.2	9.4	6.4	21	400										115.32
			5.0	24.3	9.1	6.3	20	400										110.19
			6.5	23.7	9.0	6.2	20	410										107.83
			8.0	22.9	9.0	6.2	20	410										105.97
			10.0	21.2	8.7	6.2	20	410			7	8	1.3					99.58
504.0	06/14/77	1506	10.0	21.1	8.8	6.2	20	400			6	3	1.2					100.50
			12.5	18.8	9.3	6.2	19	400										101.25
			15.0	17.5	9.0	6.2	18	410										96.15
			17.5	16.3	8.8	6.2	18	410										91.07
			20.0	15.3	8.5	6.2	18	410			5	3	0.9					85.97
504.0	06/14/77	1506	20.0	15.3	8.6	6.2	18	410			6	6	0.9					86.98
			22.5	12.4	8.2	6.1	19	410										78.45
			25.0	12.0	7.8	6.1	19	410										74.07
			27.5	11.2	7.5	6.1	19	410										69.67
			30.0	10.8	7.2	6.0	19	410			6	3	1.1					66.28
504.0	06/14/77	1506	30.0	10.8	7.1	6.0	19	410			7	4						65.36
			32.5	10.7	6.7	6.0	19	410										61.57

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			35.0	10.7	6.4	6.0	19	410			6	21	1.1					58.81
504.0	06/14/77	1506	35.0	10.7	6.4	6.0	19	400			6	24	1.0					58.81
504.0	07/12/77	1530	-2.0												5.63			
504.0	07/12/77	1531	-2.0												5.59			
			0.3	30.2	8.6	6.9	21	330	1.8	5.0	8	6	1.0					116.36
504.0	07/12/77	1531	0.3	30.1	8.8	6.8	21	330			7	7	1.2					118.91
			1.5	29.4	8.8	6.5	21	340										116.91
			3.0	27.5	8.0	6.3	21	340										102.56
			5.0	25.2	7.3	6.2	21	350										89.55
			6.5	24.6	7.5	6.2	20	350										91.14
			8.0	23.4	7.7	6.2	20	350										91.61
			10.0	22.0	7.6	6.2	20	340			8	6	0.9					88.57
504.0	07/12/77	1531	10.0	21.9	7.8	6.3	20	340			6	6	1.0					90.70
			12.5	20.3	7.8	6.3	19	340										87.52
			15.0	19.4	7.8	6.3	18	340										85.83
			17.5	18.6	7.7	6.3	18	340										83.65
			20.0	17.6	7.5	6.3	18	340			5	6	0.8					80.29
504.0	07/12/77	1531	20.0	17.5	7.5	6.2	18	340			4	6	1.0					80.12
			22.5	16.1	7.1	6.2	18	340										73.03
			25.0	14.8	6.8	6.3	19	340										68.10
			27.5	12.4	6.4	6.2	19	340										61.23
			30.0	11.0	6.0	6.2	18	340			6	6	0.8					55.44
504.0	07/12/77	1531	30.0	11.1	5.9	6.2	18	340			4	6	0.8					54.66
			32.5	10.7	5.6	6.3	19	340										51.46
			35.0	10.6	5.4	6.2	19	330			4	6	0.8					49.53
504.0	07/12/77	1531	35.0	10.7	5.2	6.3	19	330			4	6	0.8					47.78
504.0	08/08/77	1535	-2.0												6.25			
504.0	08/08/77	1536	-2.0												6.30			
			0.3	29.0	8.2	6.7	18	380	1.4	5.5	3	7	1.3					107.82
504.0	08/08/77	1536	0.3	29.0	8.3	6.7	18	380			4	7	1.6					109.13
			1.5	27.7	8.2	6.6	18	390										105.65
			3.0	26.4	7.0	6.2	18	400										87.98
			5.0	25.7	6.3	6.1	18	400										78.22
			6.5	25.1	5.8	6.1	18	400										70.98
			8.0	24.6	5.8	6.1	18	400										70.48
			10.0	23.6	5.8	6.1	18	400			2	7	1.4					69.33
504.0	08/08/77	1536	10.0	23.6	5.9	6.1	18	400			2	7	1.6					70.52
			12.5	22.7	6.2	6.2	18	390										72.84
			15.0	21.6	6.5	6.2	16	390										75.07
			17.5	20.7	6.5	6.2	16	390										73.58
			20.0	20.1	6.3	6.2	16	390			2	7	1.6					70.38
504.0	08/08/77	1536	20.0	20.0	6.5	6.2	16	390			2	7	1.6					72.46
			22.5	19.1	6.5	6.2	16	390										71.07
			25.0	12.7	6.4	6.2	17	390										61.57
			27.5	12.0	5.3	6.2	17	400										50.33
			30.0	12.0	5.3	6.2	17	400			3	7	1.7					50.33

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
504.0	08/08/77	1536	30.0	11.9	5.2	6.3	17	400			3	7	1.3					49.24
			32.5	11.0	4.8	6.3	18	400										44.35
			35.0	11.0	4.7	6.2	18	400			3	7	1.4					43.42
504.0	08/08/77	1536	35.0	11.0	4.4	6.3	22	400			4	7	1.8					40.65
504.0	09/12/77	1545	-2.0												7.00			
504.0	09/12/77	1546	-2.0												7.25			
			0.3	27.8	5.8	6.1	18	420	1.2	3.0	7	7	1.4					74.92
504.0	09/12/77	1546	0.3	27.8	5.9	6.1	18	420			7	7	1.6					76.21
			1.5	27.7	5.5	6.0	18	420										70.86
			3.0	27.2	5.3	6.0	18	420										67.44
			5.0	27.1	5.4	6.0	18	420										68.54
			6.5	27.0	5.4	6.0	18	420										68.37
			8.0	26.9	5.5	6.0	18	420										69.55
			10.0	26.2	5.2	6.0	18	420			8	7	1.3					65.19
504.0	09/12/77	1546	10.0	26.2	5.3	6.0	18	420			4	7	1.4					66.45
			12.5	25.2	5.4	6.0	18	420										66.24
			15.0	23.8	5.6	6.0	17	420										67.25
			17.5	23.5	5.5	6.0	17	420										65.59
			20.0	22.9	5.2	6.1	17	420			2	6	1.2					61.23
504.0	09/12/77	1546	20.0	22.8	5.3	6.1	17	420			2	6	1.4					62.33
			22.5	21.9	4.8	6.1	17	420										55.81
			25.0	20.3	4.5	6.1	17	420										50.49
			27.5	17.4	4.1	6.1	17	420										43.71
			30.0	13.8	4.1	6.1	17	430			2	7	1.5					40.27
504.0	09/12/77	1546	30.0	13.8	4.1	6.1	17	430			2	7	1.7					40.27
			32.5	12.3	3.8	6.1	16	430										36.28
			35.0	11.9	3.4	6.1	17	420										32.19
504.0	09/12/77	1546	35.0	11.9	3.4	6.1	17	420										32.19
504.0	10/10/77	1555	-2.0												6.46			
504.0	10/10/77	1556	-2.0												6.46			
			0.3	25.2	6.9	6.0	18	420	0.4	6.0	3	8	1.6					84.65
504.0	10/10/77	1556	0.3	25.2	6.9	6.0	18	420			3	7	1.4					84.65
			1.5	24.9	6.7	6.0	18	430										81.70
			3.0	24.7	6.6	6.0		420										80.29
			5.0	24.5	6.5	5.9		430										78.89
			6.5	24.0	6.2	5.9		430										74.81
			8.0	23.9	6.1	5.9		430										73.43
			10.0	23.5	5.6	5.8	18	430			3	9	1.2					66.78
504.0	10/10/77	1556	10.0	23.5	5.6	5.8	18	430			3	8	1.6					66.78
			12.5	23.3	5.4	5.7		430										64.10
			15.0	23.0	4.6	5.7		430										54.22
			17.5	22.9	3.7	5.6		440										43.56
			20.0	22.5	3.4	5.6	18	440			3	8	1.6					39.85
504.0	10/10/77	1556	20.0	22.5	3.4	5.6	18	440			3	7	2.4					39.85
			22.5	22.0	3.2	5.7		440										37.29
			25.0	21.4	3.1	5.7		440										35.64

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			27.5	16.4	3.1	5.8		450										32.18
			30.0	14.5	3.0	5.7	18	450			3	8	1.7					29.87
504.0	10/10/77	1556	30.0	14.3	2.9	5.8	18	450			4	9	1.4					28.76
			32.5	13.3	2.7	5.8		450										26.27
			35.0	12.6	2.4	5.9	18	440			6	9	1.4					23.04
504.0	10/10/77	1556	35.0	12.6	2.2	5.9	18	440			9	9	1.4					21.12
504.0	11/14/77	1535	-2.0												5.55			
504.0	11/14/77	1536	-2.0												5.63			
			0.3	20.4	7.6	6.4	17	430	0.4	4.2	5	7	2.1					85.47
504.0	11/14/77	1536	0.3	20.4	7.7	6.3	17	430			4	8	1.9					86.59
			1.5	20.4	7.7	6.3	17	430										86.59
			3.0	20.3	7.7	6.3	17	430										86.40
			5.0	19.0	7.2	6.3	17	430										78.55
			6.5	19.0	7.4	6.3	17	430										80.74
			8.0	19.0	7.4	6.3	17	430										80.74
			10.0	18.9	7.4	6.3	17	430			4	8	2.0					80.65
504.0	11/14/77	1536	10.0	18.9	7.4	6.3	17	430			6	8	1.8					80.65
			12.5	18.7	7.1	6.2	17	430										77.22
			15.0	18.7	7.1	6.2	17	430										77.22
			17.5	18.6	7.1	6.2	17	430										77.14
			20.0	18.6	6.9	6.2	17	430			7	8	1.8					74.96
504.0	11/14/77	1536	20.0	18.6	6.8	6.1	17	430			4	8	2.9					73.88
			22.5	18.5	6.8	6.1	17	430										73.80
			25.0	18.4	6.5	6.1	18	430										70.47
			27.5	18.0	6.0	6.0	18	440										64.77
			30.0	16.5	2.7	5.8	18	440			4	8	2.8					28.11
504.0	11/14/77	1536	30.0	16.4	2.6	5.8	18	440			4	8	2.9					26.99
			32.5	14.1	1.6	5.8	18	440										15.80
			35.0	13.4	1.2	5.8	19	440			4	8	2.8					11.69
504.0	11/14/77	1536	35.0	13.4	1.2	5.8	19	440			4	8	3.1					11.69
504.0	12/12/77	1620	-2.0												5.51			
504.0	12/12/77	1621	-2.0												5.51			
			0.3	16.9	8.7	6.3	16	430	0.2	3.5	4	6	1.4					91.70
504.0	12/12/77	1621	0.3	16.9	8.7	6.3	16	430			6	6	1.6					91.70
			1.5	16.9	8.9	6.3	16	420										93.81
			3.0	16.9	8.9	6.2	16	430										93.81
			5.0	16.8	9.0	6.1	16	430										94.57
			6.5	15.0	8.1	6.1	16	430										81.44
			8.0	14.9	8.4	6.2	16	420										84.29
			10.0	14.9	8.4	6.2	16	420			7	6	1.5					84.29
504.0	12/12/77	1621	10.0	14.9	8.4	6.2	16	420			5	6	1.4					84.29
			12.5	14.8	8.4	6.2	16	420										84.13
			15.0	14.7	8.4	6.2	16	420										83.97
			17.5	14.7	8.5	6.2	16	420										84.97
			20.0	14.6	8.5	6.2	16	420			4	6	1.5					84.80
504.0	12/12/77	1621	20.0	14.6	8.5	6.2	16	420			5	6	1.4					84.80

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			22.5	14.6	8.4	6.2	16	410										83.80
			25.0	14.6	8.3	6.1	16	410										82.80
			27.5	14.5	8.2	6.1	16	410										81.65
			30.0	14.5	8.1	6.1	16	410			5	6	1.5					80.65
504.0	12/12/77	1621	30.0	14.5	8.1	6.1	16	410			5	6	1.6					80.65
			32.5	14.5	8.0	6.1	16	410										79.66
			34.0	14.5	8.0	6.1	16	410										79.66
505.0	01/11/77	1600	0.3	14.3	11.0	6.7	17	340	0.5	5.0	5	8	1.2		5.76			109.11
			1.5	13.9	11.0	6.7	17	340										108.27
			3.0	13.2	10.8	6.6	17	350										104.89
			5.0	12.3	10.4	6.5	17	350			5	8	1.1		6.38			99.31
			6.5	12.3	10.4	6.5	17	350										99.31
			8.0	12.1	10.4	6.5	17	350										98.94
			10.0	12.0	10.4	6.4	17	350			5	8	1.2		5.80			98.76
			12.5	11.8	10.2	6.3	16	350										96.33
			15.0	11.5	10.0	6.3	16	350			5	8	1.0		5.67			93.66
			17.5	11.3	10.0	6.3	16	350										93.15
			20.0	11.2	10.0	6.3	16	350			4	8	1.3		5.63			92.90
			22.5	11.0	10.0	5.7	30	350										92.40
			25.0	11.0	10.0	5.6	42	340			5	8	1.6		5.38			92.40
			27.5	11.0	10.0	5.6	41	340										92.40
			30.0	10.9	10.0	5.6	41	340			5	8	3.6		5.63			92.23
505.0	02/14/77	1550	0.3	12.9	10.9	6.5	18	340	0.6	5.0	4	8	1.5		4.96			105.26
			1.5	12.9	10.9	6.5	18	340										105.26
			3.0	12.8	11.2	6.4	18	340										107.96
			5.0	12.8	11.4	6.3	18	340			4	8	1.3		4.63			109.89
			6.5	12.5	11.4	6.3	18	340										109.27
			8.0	10.3	11.1	6.1	17	340										101.28
			10.0	8.8	10.7	6.1	17	330			4	8	1.4		4.43			94.11
			12.5	8.4	10.6	5.9	17	330										92.29
			15.0	8.1	10.6	5.9	17	330			4	7	1.5		4.41			91.59
			17.5	7.8	10.5	5.8	16	330										90.04
			20.0	7.7	10.5	5.8	16	320			5	7	1.5		4.63			89.81
			22.5	7.5	10.4	5.7	16	320										88.52
			25.0	7.4	10.4	5.6	16	320			4	8	1.5		5.42			88.30
			27.5	7.3	10.3	5.6	16	320										87.23
			30.0	7.3	10.3	5.5	17	290			5	8	1.4		4.31			87.23
			32.5	7.3	10.3	5.5	17	290										87.23
			35.0	7.3	10.3	5.4	17	280			6	8	1.3		5.80			87.23
			37.5	7.3	10.2	5.4	16	250										86.38
			38.0	7.3	10.0	5.4	16	240			6	9	1.3		5.18			84.69
505.0	03/14/77	1510	0.3	14.9	10.9	7.0	17	400	1.2	5.5	8	8	1.7		6.21			109.38
			1.5	14.8	11.3	6.7		410										113.18
			3.0	14.7	11.5	6.7		410										114.95
			5.0	13.9	11.5	6.7	17	410			4	8	1.5		6.13			113.19
			6.5	13.5	11.6	6.6		420										113.30

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			8.0	13.1	11.7	6.5		420										113.42
			10.0	11.3	11.4	6.4	17	390			6	9	1.8		5.92			106.19
			12.5	9.3	10.7	6.4		390										95.34
			15.0	9.3	10.6	6.4	16	420			6	6	1.6		5.71			94.45
			17.5	8.8	10.4	6.3		420										91.48
			20.0	8.8	10.3	6.3	16	420			4	8	1.8		5.71			90.60
			22.5	8.5	10.1	6.3		420										88.16
			25.0	8.4	10.0	6.3	16	420			5	7	1.9		5.84			87.06
			27.5	8.3	9.8	6.4		420										85.10
			30.0	8.3	9.7	6.4	16	420			4	7	2.0		5.80			84.23
			32.5	8.3	9.4	6.4	16	410			7	6	1.7		5.84			81.63
505.0	04/12/77	1540	0.3	19.8	11.0	6.6	15	380	1.1	4.0	6	7	1.9		5.92			122.10
			1.5	18.8	11.1	6.6		380										120.85
			3.0	18.2	11.1	6.6		380										120.09
			5.0	17.3	11.1	6.6	15	380			6	7	1.5		5.88			118.09
			6.5	16.1	10.7	6.6		380										110.07
			8.0	15.5	10.6	6.6		380										107.64
			10.0	15.2	10.6	6.4	15	370			8	7	1.5		5.92			107.00
			12.5	12.2	10.2	6.4		370										97.22
			15.0	11.6	10.0	6.4	13	350			7	6	1.4		5.59			93.92
			17.5	11.2	9.9	6.4		350										91.97
			20.0	10.4	9.6	6.4	14	340			6	7	1.4		5.47			87.75
			22.5	10.2	9.4	6.5		330										85.62
			25.0	9.7	9.0	6.5	15	330			10	7	1.4		5.84			81.04
			27.5	9.3	8.6	6.6		320										76.63
			30.0	9.3	8.3	6.7	15	290			14	7	1.5		5.92			73.96
			32.5	9.3	8.0	6.9		280										71.28
			35.0	9.3	7.8	7.0	16	260			20	7	1.4		5.92			69.50
505.0	05/10/77	1610	0.3	22.7	9.9	6.7	18	340	1.3	6.2	3	7	1.3		5.76			116.30
			1.5	21.9	10.3	6.6	18	340										119.77
			3.0	21.5	10.4	6.4	18	340										119.85
			5.0	20.8	10.3	6.3	18	340			3	7	1.0		5.80			116.85
			6.5	20.2	10.2	6.3	18	340										114.20
			8.0	19.8	10.5	6.2	18	340										116.55
			10.0	19.0	10.5	6.2	18	340			3	7	1.4		6.09			114.56
			12.5	15.7	10.0	6.1	16	340										101.95
			15.0	13.7	9.5	6.1	16	330			3	7	1.4					93.15
			17.5	12.7	9.2	6.0	16	330										88.51
			20.0	11.8	8.9	6.0	16	330			3	7	0.9					84.05
			22.5	11.2	8.6	6.0	17	330										79.89
			25.0	10.7	8.2	6.0	17	330			4	7	1.2					75.36
			27.5	10.2	8.0	6.0	17	320										72.86
			30.0	10.0	7.5	6.0	17	320			8	7	1.1		7.59			68.07
			32.5	9.8	7.1	6.0	18	310										64.10
			35.0	9.8	6.9	6.0	18	310			12	7	1.2		6.09			62.29
			36.0	9.8	6.8	6.1	18	300										61.39

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
															6.34			
505.0	06/14/77	1525	-2.0												6.09			
505.0	06/14/77	1526	-2.0															
			0.3	25.7	9.1	7.0	20	380	0.6	8.3	11	6	1.2					112.99
505.0	06/14/77	1526	0.3	25.7	9.2	6.9	20	380			5	6	1.3					114.23
			1.5	25.4	9.3	6.9	20	380										114.64
			3.0	25.0	9.4	6.8	20	390										114.77
			5.0	24.6	9.4	6.5	20	390										114.23
			6.5	23.8	9.6	6.3	20	400										115.29
			8.0	22.7	9.2	6.3	20	400										108.08
			10.0	21.4	10.0	6.3	20	400			14	6	1.2					114.98
505.0	06/14/77	1526	10.0	21.3	10.0	6.3	20	400			5	6	1.3					114.72
			12.5	19.2	9.9	6.3	19	400										108.48
			15.0	17.5	9.6	6.3	18	410										102.56
			17.5	16.3	8.8	6.1	19	410										91.07
			20.0	14.9	7.9	6.1	19	410			7	5	1.1					79.28
505.0	06/14/77	1526	20.0	14.9	8.0	6.1	19	410			5	5	1.5					80.28
			22.5	13.3	7.3	6.1	20	410										71.03
			25.0	11.8	6.8	6.1	20	420										64.22
			27.5	11.2	6.1	6.0	21	420										56.67
			30.0	10.7	6.0	6.0	21	420			5	6	1.1					55.14
505.0	06/14/77	1526	30.0	10.7	6.0	6.0	21	420			6	4	2.2					55.14
			32.5	10.4	5.8	6.0	21	420										53.01
			35.0	10.4	5.5	6.0	21	420										50.27
			37.5	10.4	5.4	5.9	21	420										49.36
			38.0	10.4	5.3	5.9	21	410			7	5	1.0					48.44
505.0	06/14/77	1526	38.0	10.4	5.2	5.9	21	410			8	5	2.6					47.53
			39.0	10.4	5.0	5.9	21	410										45.70
															6.00			
505.0	07/12/77	1605	-2.0												5.71			
505.0	07/12/77	1606	-2.0															
			0.3	29.9	8.4	7.0	21	290	1.4	7.0	14	4	0.9					113.06
505.0	07/12/77	1606	0.3	29.9	8.6	7.0	21	290			12	3	1.1					115.75
			1.5	29.8	8.9	6.8	22	290										119.47
			3.0	27.7	8.5	6.3	21	300										109.52
			5.0	26.0	7.5	6.2	21	290										93.80
			6.5	25.2	7.3	6.2	22	290										89.55
			8.0	24.5	7.3	6.2	21	280										88.60
			10.0	22.7	7.2	6.2	21	270			10	4	1.1					84.58
505.0	07/12/77	1606	10.0	22.4	7.7	6.2	21	270			10	4	1.0					90.15
			12.5	21.1	7.6	6.2	20	260										86.80
			15.0	19.9	7.5	6.2	19	260										83.43
			17.5	19.0	7.2	6.2	19	250										78.55
			20.0	17.8	6.9	6.2	19	240			8	5	1.0					74.18
505.0	07/12/77	1606	20.0	17.8	6.9	6.2	19	230			8	4	1.1					74.18
			22.5	16.9	6.3	6.2	19	220										66.40
			25.0	15.6	5.6	6.2	20	220										56.98
			27.5	13.4	4.7	6.1	20	210										45.82

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			30.0	12.4	4.2	6.1	21	200			20	4	1.1					40.18
SOS.0	07/12/77	1606	30.0	12.3	4.1	6.2	21	190			35	6	0.9					39.15
			32.5	11.0	3.7	6.2	22	180										34.18
			35.0	11.0	3.6	6.3	22	160			64	4	1.0					33.26
SOS.0	07/12/77	1606	35.0	11.0	3.6	6.3	22	140			66	7	1.4					33.26
SOS.0	08/08/77	1630	-2.0												6.30			
SOS.0	08/08/77	1631	-2.0												6.30			
			0.3	28.7	8.5	7.1	18	360			3	10	1.5					111.34
SOS.0	08/08/77	1631	0.3	28.6	8.6	7.1	18	360			4	7	3.6					112.50
			1.5	28.6	8.7	7.1	18	360										113.81
			3.0	28.6	8.8	7.0	18	360										115.12
			5.0	27.1	8.6	6.6	18	370										109.16
			6.5	26.3	6.7	6.2	18	380										84.11
			8.0	25.8	6.3	6.1	17	380										78.41
			10.0	24.9	5.8	6.1	17	380			3	7	3.5					70.73
SOS.0	08/08/77	1631	10.0	24.7	6.0	6.1	17	370			3	8	1.4					72.99
			12.5	23.2	6.4	6.1	16	370										75.79
			15.0	22.4	6.3	6.1	16	370										73.76
			17.5	21.7	6.0	6.1	16	360										69.45
			20.0	20.7	5.8	6.1	16	350			3	7	1.5					65.65
SOS.0	08/08/77	1631	20.0	20.7	5.9	6.1	16	340			3	7	1.5					66.79
			22.5	20.1	5.5	6.2	16	330										61.44
			25.0	18.7	5.1	6.2	17	320										55.46
			27.5	17.1	4.4	6.2	18	300										46.62
			30.0	15.9	3.9	6.2	18	280			7	8	1.6					39.92
SOS.0	08/08/77	1631	30.0	15.6	3.7	6.2	18	250			11	11	1.8					37.64
			32.5	12.9	2.4	6.2	19	180										23.17
			34.0	12.9	2.1	7.1	24	130										20.28
SOS.0	09/12/77	1630	-2.0												6.79			
SOS.0	09/12/77	1631	-2.0												7.33			
			0.3	28.6	6.8	6.2	18	420	1.0	4.4	4	7	1.4					88.95
SOS.0	09/12/77	1631	0.3	28.6	6.9	6.2	18	420			4	7	1.3					90.26
			1.5	27.8	6.9	6.2	18	420										89.12
			3.0	27.4	6.0	6.1	18	420										76.73
			5.0	27.3	6.1	6.1	18	420										77.81
			6.5	27.2	6.2	6.1	18	420										78.89
			8.0	27.2	6.3	6.1	18	420										80.16
			10.0	26.8	6.1	6.0	18	420			4	7	1.3					77.04
SOS.0	09/12/77	1631	10.0	26.8	6.1	6.0	18	420			3	8	1.5					77.04
			12.5	24.9	5.1	5.9	17	420										62.19
			15.0	24.3	5.5	6.0	16	410										66.60
			17.5	23.7	5.5	6.0	16	400										65.89
			20.0	23.3	4.9	5.9	17	400			3	9	1.3					58.16
SOS.0	09/12/77	1631	20.0	23.3	4.9	5.9	17	400			3	10	1.5					58.16
			22.5	22.6	2.0	5.9	20	390										23.47
			25.0	21.0	2.9	6.0	19	390										33.04

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB-IDTY JTU	ALKA-LIN. MG/L	CLOR-IDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			27.5	18.7	2.0	6.0	20	380										21.75
			30.0	16.5	1.2	6.1	21	380			6	10	1.6					12.49
505.0	09/12/77	1631	30.0	16.5	1.1	6.1	21	380			6	10	1.3					11.45
			32.0	15.0	0.4	6.1	23	370										4.02
505.0	10/10/77	1625	-2.0												6.50			
505.0	10/10/77	1626	-2.0												6.84			
			0.3	24.8	6.9	6.1	17	420	0.6	5.0	3	8	1.5					84.04
505.0	10/10/77	1626	0.3	24.8	6.9	6.1	17	410			3	9	2.0					84.04
			1.5	24.8	7.0	6.1	17	410										85.26
			3.0	24.2	6.8	6.1	17	420										82.24
			5.0	24.0	6.8	6.1	17	420										82.05
			6.5	23.9	6.8	6.1	17	410										81.85
			8.0	23.9	6.8	6.1	17	410										81.85
			10.0	23.8	6.8	6.1	17	410			2	8	1.5					81.66
505.0	10/10/77	1626	10.0	23.8	6.8	6.1	17	410			2	9	1.5					81.66
			12.5	23.6	6.6	6.0	17	420										78.89
			15.0	23.4	5.5	5.8	16	420										65.44
			17.5	23.0	5.4	5.8	16	410										63.66
			20.0	22.8	5.6	5.8	16	410			5	7	1.5					65.86
505.0	10/10/77	1626	20.0	22.8	5.7	5.8	16	410			4	7	1.4					67.04
			22.5	22.3	5.3	5.8	17	410										61.98
			25.0	21.7	2.2	5.7	18	410										25.46
			27.5	19.5	0.4	5.6	20	410										4.41
			30.0	16.5	0.0	5.9	26	410			13	14	1.5					0.00
505.0	10/10/77	1626	30.0	16.5	0.0	5.9	26	400			15	15	1.5					0.00
			32.0	14.8	0.0	6.0	28	410										0.00
505.0	11/14/77	1606	-2.0												5.55			
505.0	11/14/77	1607	-2.0												5.30			
			0.3	19.1	7.6	6.4	17	410	0.2	4.8	4	8	3.1					83.10
505.0	11/14/77	1607	0.3	19.1	7.6	6.4	17	410			4	7	4.1					83.10
			1.5	19.1	7.6	6.4	17	410										83.10
			3.0	19.1	7.6	6.4	17	410										83.10
			5.0	19.1	7.6	6.4	17	410										83.10
			6.5	19.0	7.6	6.4	17	400										82.92
			8.0	19.0	7.7	6.4	17	400										84.01
			10.0	19.0	7.6	6.4	17	400			4	7	3.1					82.92
505.0	11/14/77	1607	10.0	18.9	7.6	6.4	17	390			3	7	2.8					82.83
			12.5	18.8	7.6	6.4	17	390										82.74
			15.0	18.7	7.6	6.3	17	390										82.66
			17.5	18.7	7.5	6.3	17	380										81.57
			20.0	18.6	7.4	6.3	17	380			5	7	1.9					80.39
505.0	11/14/77	1607	20.0	18.6	7.4	6.3	17	380			5	7	1.9					80.39
			22.5	18.6	7.6	6.3	17	370										82.57
			25.0	18.6	7.7	6.4	17	360										83.65
			27.5	18.5	7.4	6.3	18	340										80.31
			30.0	18.4	7.0	6.3	18	330			6	7	1.9					75.89

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
505.0	11/14/77	1607	30.0	18.4	6.9	6.3	18	280				6	7	1.9				74.80
			32.5	16.5	0.6	6.1	27	260										6.24
			34.0	15.8	0.1	6.3	36	270										1.02
505.0	12/12/77	1655	-2.0												5.47			
505.0	12/12/77	1656	-2.0												5.26			
			0.3	15.6	8.5	6.2	15	430				4	6	1.5				86.48
505.0	12/12/77	1655	1.5	15.6	8.6	6.2	15	430										87.50
			3.0	15.5	8.7	6.2	15	430										88.34
			5.0	15.2	8.7	6.2	15	430										87.82
			6.5	15.2	8.7	6.2	15	430										87.82
			8.0	15.2	8.8	6.2	15	430										88.83
			10.0	15.0	8.8	6.3	15	430				4	6	1.5				88.48
505.0	12/12/77	1655	12.5	14.9	8.8	6.2	15	430										88.31
			15.0	14.8	8.8	6.2	15	430										88.14
			17.5	14.7	8.8	6.3	15	420										87.96
			20.0	14.6	8.8	6.3	15	420				4	6	1.5				87.79
505.0	12/12/77	1655	22.5	14.5	8.9	6.3	15	420										88.62
			25.0	14.2	8.9	6.3	15	420										88.11
			27.5	14.1	8.8	6.3	15	420										86.95
			30.0	14.0	8.8	6.3	14	410				7	6	1.5				86.78
505.0	12/12/77	1655	32.5	13.8	8.8	6.3	14	410										86.45
			33.0	13.8	8.7	6.2	14	410										85.47
506.0	01/11/77	1620	0.3	11.5	10.4	6.3	17	340	0.5	4.5		5	8	1.7	5.17			97.41
			1.5	11.4	10.4	6.3	17	340										97.14
			3.0	11.3	10.4	6.4	17	340										96.88
			5.0	11.3	10.4	6.5	16	340				5	7	1.1	5.71			96.88
			6.5	11.2	10.4	6.4	16	340										96.61
			8.0	11.2	10.4	6.4	16	340										96.61
			10.0	11.1	10.4	6.4	16	340				5	8	1.2	5.71			96.35
			12.5	11.1	10.4	6.3	16	340										96.35
			15.0	11.1	10.4	6.3	16	340				6	7	1.2	5.01			96.35
			17.5	11.0	10.2	6.3	16	340										94.24
			20.0	11.0	10.2	6.3	16	340				6	7	1.5	5.09			94.24
			22.5	10.9	10.2	6.3	16	340										94.07
			25.0	10.7	10.2	6.2	16	340				5	8	1.3	4.84			93.74
506.0	02/14/77	1615	0.3	11.5	11.0	6.5	18	320	0.2	4.0		4	8	1.3	5.13			103.03
			1.5	11.4	11.1	6.5	18	320										103.68
			3.0	11.4	11.1	6.4	18	320										103.68
			5.0	10.9	11.0	6.3	18	320				4	9	1.4	5.13			101.45
			6.5	10.7	11.2	6.2	17	300										102.93
			8.0	10.2	11.2	6.2	17	300										102.01
			10.0	9.2	10.8	6.0	17	300				4	7	1.3	4.84			95.98
			12.5	9.0	10.7	6.0	17	290										94.60
			15.0	8.5	10.6	5.9	17	290				4	8	1.2	4.80			92.52
			17.5	8.4	10.6	5.9	17	270										92.29
			20.0	8.2	10.5	5.9	17	260				4	7	1.2	4.59			90.95

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			22.5	7.9	10.3	5.9	17	230										88.55
			25.0	7.8	10.2	5.9	17	200				5	7	1.3		4.38		87.47
			27.5	7.6	9.9	5.9	17	190				6	7	1.2		4.45		84.47
506.0	03/14/77	1525	0.3	14.6	11.1	6.8	16	390	1.0	5.0		7	7	1.5		6.17		110.74
			1.5	14.4	11.1	6.8		390										110.31
			3.0	13.6	11.3	6.8		390										110.58
			5.0	13.4	11.4	6.7	16	390				6	6	1.7		5.88		111.14
			6.5	13.3	11.5	6.6		390										111.90
			8.0	12.9	11.5	6.6		390										111.06
			10.0	11.8	11.4	6.4	17	390				6	7	2.0		5.55		107.66
			12.5	9.8	10.8	6.4		390										97.50
			15.0	9.5	10.6	6.4	16	390				6	6	1.7		5.67		94.95
			17.5	9.3	10.5	6.4		390										93.56
			20.0	9.0	10.3	6.3	16	390				7	7	1.6		5.67		91.06
			22.5	8.9	10.1	6.3		380										89.07
			25.0	8.6	10.0	6.3	16	380				7	9	1.2		5.96		87.51
			27.5	8.6	9.8	6.4		360										85.76
			30.0	8.5	9.5	6.4	16	360				9	9	1.1		6.00		82.92
			32.5	8.5	9.4	6.4		350										82.05
			35.0	8.5	9.3	6.5	16	330				8	9	1.1		6.17		81.17
			37.5	8.5	9.1	6.5	16	330				14	9	1.8		5.88		79.43
506.0	04/12/77	1555	0.3	20.2	11.2	6.7	15	390	0.5	4.5		8	7	5.7		5.80		125.40
			1.5	19.3	11.3	6.7		390										124.08
			3.0	18.1	11.1	6.7		390										119.96
			5.0	16.6	10.8	6.6	15	400				7	6	1.8		6.09		112.79
			6.5	16.2	10.8	6.6		400										111.43
			8.0	15.3	10.6	6.5		400										107.21
			10.0	14.3	10.5	6.4	14	400				8	7	1.3		5.38		104.15
			12.5	12.5	10.1	6.3		400										96.81
			15.0	11.5	9.8	6.4	13	390				8	7	1.3		5.01		91.79
			17.5	11.2	9.7	6.4		390										90.11
			20.0	10.8	9.5	6.4	14	380				10	6	1.3		5.55		87.46
			22.5	10.3	9.1	6.5		380										83.03
			25.0	9.8	8.7	6.6	15	370				24	6	2.7		5.80		78.54
			27.5	9.5	8.2	6.6		370										73.45
			30.0	9.4	8.0	6.7	15	370				13	7	1.4		7.25		71.47
506.0	05/10/77	1625	0.3	22.8	10.2	7.0	18	370	1.2	6.3		4	7	1.0		5.80		119.97
			1.5	22.4	10.5	6.9	18	370										122.93
			3.0	21.9	10.9	6.6	18	370										126.75
			5.0	20.6	10.8	6.4	18	370				2	7	1.0		5.80		121.99
			6.5	20.1	10.6	6.4	18	370										118.42
			8.0	19.7	10.6	6.4	18	370										117.40
			10.0	18.9	10.6	6.2	18	370				4	7	1.1		5.76		115.53
			12.5	15.8	10.0	6.2	16	370										102.15
			15.0	14.0	9.5	6.1	16	370				4	7	0.9		5.30		93.68
			17.5	13.2	9.3	6.1	16	370										90.32

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			20.0	12.3	9.0	6.1	16	360			4	7	1.2		5.72			85.94
			22.5	11.6	8.5	6.0	16	360										79.83
			25.0	10.9	8.0	6.0	17	360			4	7	1.5		5.97			73.78
			27.5	10.4	7.4	6.0	17	360										67.64
			30.0	10.2	7.0	6.0	18	340			8	7	1.1					63.76
506.0	06/14/77	1550	-2.0												6.01			
506.0	06/14/77	1551	-2.0												6.05			
			0.3	25.9	9.2	7.1	20	370	0.8	9.8	4	5	1.3					114.79
506.0	06/14/77	1551	0.3	25.9	9.3	7.1	20	370			4	5	1.1					116.03
			1.5	25.8	9.7	7.1	20	380										120.73
			3.0	25.0	10.0	7.1	20	390										122.10
			5.0	24.2	10.0	6.7	20	390										120.94
			6.5	23.5	9.9	6.5	20	400										118.06
			8.0	22.8	10.2	6.4	20	400										119.97
			10.0	21.4	9.8	6.4	20	400			4	6	1.1					112.68
506.0	06/14/77	1551	10.0	21.4	9.8	6.4	20	400			5	6	1.1					112.68
			12.5	19.4	9.5	6.2	18	410										104.54
			15.0	17.6	9.0	6.2	18	410										96.35
			17.5	16.7	8.8	6.2	18	410										92.19
			20.0	15.2	8.0	6.1	18	410			4	5	1.3					80.75
506.0	06/14/77	1551	20.0	15.2	8.0	6.1	18	410			4	5	1.1					80.75
			22.5	14.1	7.2	5.9	19	410										71.14
			25.0	12.4	5.9	5.9	20	410										56.44
			27.5	11.5	5.2	5.9	20	410										48.70
			29.0	11.2	4.8	5.9	20	410			11	5	1.4					44.59
506.0	06/14/77	1551	29.0	11.2	4.7	5.9	20	410			12	5	1.2					43.66
506.0	07/12/77	1630	-2.0												5.96			
506.0	07/12/77	1631	-2.0												5.88			
			0.3	30.2	8.5	7.1	22	320	0.3	6.0	13	6	1.1					115.01
506.0	07/12/77	1631	0.3	30.2	8.8	7.1	22	320			15	7	1.1					119.07
			1.5	29.8	9.1	6.7	22	330										122.16
			3.0	27.7	9.1	6.6	22	330										117.25
			5.0	25.9	8.6	6.4	21	330										107.30
			6.5	25.2	8.3	6.3	21	330										101.82
			8.0	23.8	8.1	6.3	20	330										97.27
			10.0	23.2	8.2	6.3	20	330			11	4	2.7					97.11
506.0	07/12/77	1631	10.0	23.1	8.4	6.3	20	330			10	5	2.4					99.25
			12.5	21.6	8.0	6.3	20	330										92.40
			15.0	20.3	7.5	6.2	19	330										84.16
			17.5	19.3	7.1	6.2	20	330										77.96
			20.0	18.4	6.7	6.2	20	330			16	6	0.9					72.64
506.0	07/12/77	1631	20.0	18.4	6.7	6.2	20	330			14	5	0.9					72.64
			22.5	16.9	5.9	6.1	20	330										62.19
			25.0	15.5	5.1	6.1	20	330										51.78
			27.5	13.9	4.4	6.2	22	330										43.30
			28.0	13.7	4.2	6.2	22	330			25	6	1.3					41.18

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
506.0	07/12/77	1631	28.0	13.7	4.2	6.2	21	330			19	6	1.1					41.18
506.0	08/08/77	1710	-2.0												6.38			
506.0	08/08/77	1711	-2.0												6.38			
			0.3	29.0	8.7	7.4	18	360			5	9	1.7					114.39
506.0	08/08/77	1711	0.3	28.8	8.7	7.4	18	360			4	7	1.7					114.10
			1.5	28.7	8.9	7.3	18	370										116.57
			3.0	28.7	9.0	7.2	18	370										117.88
			5.0	26.3	7.8	6.4	17	400										97.91
			6.5	25.7	7.2	6.3	17	400										89.40
			8.0	25.1	7.3	6.3	16	400										89.34
			10.0	24.7	7.2	6.3	16	400			3	7	1.7					87.59
506.0	08/08/77	1711	10.0	24.7	7.3	6.3	16	400			4	7	1.4					88.81
			12.5	23.5	7.1	6.2	16	400										84.67
			15.0	22.7	6.7	6.2	16	400										78.71
			17.5	21.9	5.9	6.2	16	390										68.60
			20.0	21.3	5.5	6.2	17	390			6	6	2.1					63.09
506.0	08/08/77	1711	20.0	21.3	5.5	6.2	17	390			7	7	1.4					63.09
			22.5	20.7	5.2	6.2	17	390										58.86
			25.0	19.6	4.4	6.2	17	380										48.62
			27.5	18.0	3.6	6.2	18	380										38.86
			30.0	15.5	2.3	6.2	19	380			30	8	1.7					23.35
506.0	08/08/77	1711	30.0	15.5	2.3	6.1	18	380			29	9	1.4					23.35
			31.0	15.2	2.0	6.3	19	370										20.18
506.0	09/12/77	1655	-2.0												7.42			
506.0	09/12/77	1656	-2.0												7.71			
			0.3	28.6	7.9	6.5	18	410	0.8	5.0	2	8	1.4					103.34
506.0	09/12/77	1656	0.3	28.6	7.9	6.5	18	410			2	9	2.3					103.34
			1.5	27.8	7.9	6.5	18	410										102.04
			3.0	27.5	7.7	6.4	18	410										98.71
			5.0	27.3	7.4	6.3	18	410										94.39
			6.5	27.2	7.0	6.2	18	410										89.07
			8.0	27.1	7.2	6.2	17	410										91.39
			10.0	26.1	6.0	6.0	17	410			5	9	1.4					75.13
506.0	09/12/77	1656	10.0	26.1	6.0	6.0	16	410			6	8	1.6					75.13
			12.5	24.8	6.2	6.0	16	410										75.52
			15.0	24.2	5.8	6.0	16	400										70.14
			17.5	23.7	5.5	5.9	16	400										65.89
			20.0	23.3	4.9	5.9	17	400			6	8	1.3					58.16
506.0	09/12/77	1656	20.0	23.3	4.9	5.9	17	390			11	11	1.3					58.16
			22.5	23.0	4.1	5.9	17	380										48.33
			25.0	22.9	3.3	5.9	18	360										38.85
			27.5	20.2	2.0	6.0	20	350										22.39
			30.0	16.9	0.2	6.1	23	350			18	12	1.3					2.10
506.0	09/12/77	1656	30.0	16.9	0.2	6.1	22	350			20	12	1.4					2.10
506.0	10/10/77	1647	-2.0												7.29			
506.0	10/10/77	1648	-2.0												7.29			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			0.3	23.9	6.9	6.1	17	370	0.5	6.0	2	8	1.6					83.06
506.0	10/10/77	1648	0.3	23.9	6.9	6.1	17	370			2	9	1.6					83.06
			1.5	23.9	6.9	6.1	17	370										83.06
			3.0	23.6	6.8	6.0	17	370										81.28
			5.0	23.6	6.8	6.0	17	360										81.28
			6.5	23.6	6.8	6.0	17	360										81.28
			8.0	23.5	6.9	6.0	17	360										82.28
			10.0	23.5	6.8	6.0	17	360			2	11	1.5					81.09
506.0	10/10/77	1648	10.0	23.5	6.9	6.1	17	360			3	10	1.6					82.28
			12.5	23.5	7.0	6.1	17	350										83.48
			15.0	23.4	7.1	6.1	17	350										84.47
			17.5	23.1	7.0	6.0	16	340										82.71
			20.0	22.8	6.9	6.0	16	330			6	8	1.5					81.15
506.0	10/10/77	1648	20.0	22.8	7.0	6.0	16	330			7	10	1.9					82.33
			22.5	22.4	7.0	6.0	32	290										81.95
			25.0	16.7	6.3	6.0	16	240										66.00
			27.5	15.2	1.5	5.9	68	120										15.14
			30.0	14.6	0.0	6.3	80	-30			28	20	2.3					0.00
506.0	10/10/77	1648	30.0	14.5	0.0	6.4	80	-30			30	19	2.1					0.00
			32.5	14.4	0.0	6.7	86	-190										0.00
			35.0	14.4	0.0	6.7	90	-190			34	20	1.8					0.00
506.0	10/10/77	1648	35.0	14.4	0.0	6.9	90	-190			35	20	1.7					0.00
506.0	11/14/77	1640	-2.0												5.59			
506.0	11/14/77	1641	-2.0												5.63			
			0.3	18.6	7.6	6.4	16	400			4	7	1.8					82.57
506.0	11/14/77	1641	0.3	18.6	7.6	6.4	16	400			4	7	2.1					82.57
			1.5	18.6	7.6	6.4	16	400										82.57
			3.0	18.6	7.6	6.4	16	400										82.57
			5.0	18.6	7.6	6.4	16	390										82.57
			6.5	18.6	7.6	6.4	16	390										82.57
			8.0	18.6	7.7	6.4	16	390										83.65
			10.0	18.6	7.7	6.4	16	380			5	7	4.5					83.65
506.0	11/14/77	1641	10.0	18.6	7.7	6.4	16	380			4	7	2.1					83.65
			12.5	18.5	7.7	6.4	16	380										83.57
			15.0	18.5	7.8	6.4	16	380										84.65
			17.5	18.4	7.8	6.4	16	380										84.56
			20.0	18.4	7.8	6.4	16	370			4	7	2.3					84.56
506.0	11/14/77	1641	20.0	18.4	7.9	6.5	16	370			4	7	2.1					85.65
			22.5	18.3	8.0	6.5	16	370										86.64
			25.0	18.1	8.0	6.5	16	360										86.46
			27.5	18.0	8.0	6.5	16	360										86.36
			30.0	18.0	8.0	6.5	16	350			7	7	1.8					86.36
506.0	11/14/77	1641	30.0	18.0	8.0	6.5	16	330			7	7	2.1					86.36
			32.5	17.9	7.7	6.5	17	320										82.95
			35.0	17.4	6.8	6.5	20	280										72.49
			37.0	15.1	0.1	6.4	46	100			19	16	2.0					1.00

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB-IDTY JTU	ALKA-LIN. MG/L	CLOR-IDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
506.0	11/14/77	1641	37.0	15.1	0.1	6.4	44	120			23	22	2.1					1.00
506.0	12/12/77	1710	-2.0												5.22			
506.0	12/12/77	1711	-2.0												5.47			
			0.3	14.6	8.8	6.3	15	430			5	6	2.4					87.79
506.0	12/12/77	1710	1.5	14.6	8.9	6.3	15	430										88.79
			3.0	14.6	8.9	6.3	14	430										88.79
			5.0	14.5	8.9	6.3	14	420										88.62
			6.5	14.5	8.9	6.3	14	420										88.62
			8.0	14.5	8.9	6.3	14	420										88.62
			10.0	14.4	8.9	6.3	14	420			6	6	3.6					88.45
506.0	12/12/77	1710	12.5	14.3	8.9	6.3	14	420										88.28
			15.0	14.2	9.0	6.3	14	420										89.10
			17.5	14.1	9.0	6.3	14	420										88.92
			20.0	14.0	9.1	6.3	14	420			4	6	1.8					89.74
506.0	12/12/77	1710	22.5	13.5	9.1	6.3	14	420										88.88
			25.0	13.5	9.1	6.3	14	420										88.88
			27.5	13.3	9.0	6.3	14	410										87.57
			29.0	13.3	8.9	6.3	14	410			7	6	1.5					86.60
507.0	01/11/77	1645	0.3	9.4	9.2	6.6	15	350	0.4	5.0	3	7	1.4		4.51			82.19
			1.5	9.4	9.2	6.6	15	350										82.19
			3.0	9.3	9.2	6.5	15	350										81.97
			5.0	9.3	9.2	6.3	15	350			3	7	2.2		4.51			81.97
			6.5	9.3	9.2	6.3	15	340										81.97
			8.0	9.3	9.2	6.2	15	340										81.97
			10.0	9.3	9.2	6.2	15	340			3	7	1.1		4.55			81.97
			12.5	9.2	9.2	6.1	15	340										81.76
			15.0	9.2	9.2	6.0	15	340			3	7	1.0		4.55			81.76
			17.5	9.1	9.0	6.0	15	340										79.78
			20.0	9.0	8.9	5.9	14	330			4	7	1.0		4.80			78.69
507.0	02/14/77	1635	0.3	8.2	11.0	6.5	16	340	0.4	4.8	4	8	1.3		5.67			95.28
			1.5	8.2	11.0	6.4	16	340										95.28
			3.0	8.1	10.9	6.3	16	340										94.18
			5.0	7.6	10.6	6.2	16	340			4	7	1.5		5.22			90.44
			6.5	7.6	10.6	6.2	16	340										90.44
			8.0	7.6	10.5	6.1	16	330										89.59
			10.0	7.6	10.4	6.1	16	330			4	8	1.5		5.80			88.74
			12.5	7.5	10.2	6.0	15	320										86.81
			15.0	7.5	10.1	6.0	15	310			4	7	1.4		5.47			85.96
507.0	03/14/77	1545	0.3	13.8	11.5	6.7	16	370	1.0	6.0	6	10	1.4		5.51			112.97
			1.5	13.1	11.6	6.6		370										112.45
			3.0	12.8	11.6	6.6		370										111.81
			5.0	11.2	11.2	6.5	16	370			5	10	1.3		5.92			104.05
			6.5	10.8	11.1	6.4		360										102.19
			8.0	10.2	10.9	6.4		360										99.28
			10.0	9.9	10.8	6.4	14	360			6	11	1.1		5.26			97.76
			12.5	9.4	10.7	6.4		350										95.59

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			15.0	9.2	10.4	6.4	14	370			6	11	1.1		5.18			92.43
			17.5	8.9	9.5	6.5	14	370			6	7	1.0		5.18			83.77
507.0	04/12/77	1605	0.3	17.7	11.2	6.8	15	360	0.5	3.9	7	7	1.4		5.76			120.15
			1.5	16.7	11.1	6.7		360										116.28
			3.0	14.7	10.6	6.6		350										105.96
			5.0	13.7	10.3	6.6	13	350			6	6	1.3		4.97			100.99
			6.5	13.3	10.2	6.6		350										99.25
			8.0	13.1	10.1	6.6		350										97.91
			10.0	12.7	10.0	6.6	13	340			6	6	1.6		4.68			96.21
			12.5	12.6	9.9	6.6		330										95.07
			15.0	12.6	9.8	6.7	13	330			6	5	1.5		4.68			94.11
			17.5	12.6	9.6	6.8		320										92.19
			18.0	12.6	9.6	6.8	13	310			7	5	1.3		4.68			92.19
507.0	05/10/77	1648	0.3	22.8	9.6	7.1	18	350	1.1	7.2	2	7	1.2		6.84			112.91
			1.5	22.5	9.8	7.1	18	350										114.87
			3.0	22.3	10.4	7.1	17	360										121.62
			5.0	20.5	11.2	6.8	17	370			2	7	1.3		5.72			126.23
			6.5	18.5	10.4	6.5	16	370										112.87
			8.0	17.9	10.2	6.4	16	370										109.89
			10.0	16.5	10.0	6.3	15	370			2	6	1.1		5.55			104.12
			12.5	15.7	9.8	6.3	15	360										99.91
			15.0	15.0	9.3	6.2	15	360			2	6	1.1		5.22			93.51
			17.5	14.9	8.6	6.1	15	360										86.30
			20.0	13.2	6.8	6.0	16	360			2	6	1.3		5.26			66.04
507.0	06/14/77	1605	-2.0												5.97			
507.0	06/14/77	1606	-2.0												5.59			
			0.3	25.8	9.4	7.1	21	350	1.2	8.5	3	5	1.1					117.00
507.0	06/14/77	1606	0.3	25.7	9.5	7.1	21	360			4	6	1.7					117.96
			1.5	25.4	9.6	7.2	21	360										118.34
			3.0	25.0	10.0	7.2	20	370										122.10
			5.0	24.0	10.0	6.9	20	380										120.66
			6.5	22.8	10.1	6.6	20	380										118.79
			8.0	21.3	9.9	6.5	19	380										113.57
			10.0	19.6	9.7	6.4	18	380			4	6	1.1					107.20
507.0	06/14/77	1606	10.0	19.7	9.9	6.4	18	380			4	6	1.1					109.65
			12.5	18.2	9.7	6.3	18	380										104.94
			15.0	17.2	9.4	6.3	17	380										99.80
			17.5	16.8	9.2	6.3	16	380										96.67
			20.0	16.7	9.0	6.3	16	370			6	5	1.1					94.28
507.0	06/14/77	1606	20.0	16.7	8.9	6.3	16	370			6	5	1.1					93.24
			21.0	16.7	8.6	6.3	16	370										90.09
507.0	07/12/77	1650	-2.0												5.13			
507.0	07/12/77	1651	-2.0												5.05			
			0.3	28.7	8.8	7.0	20	350	0.4	6.5	11	6	2.0					115.26
507.0	07/12/77	1651	0.3	28.5	9.0	6.9	20	350			5	6	1.8					117.58
			1.5	28.2	9.5	6.8	20	360										123.64

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			3.0	25.5	9.2	6.7	20	360										113.68
			5.0	22.7	8.3	6.6	18	360										97.51
			6.5	21.9	8.1	6.6	18	360										94.19
			8.0	21.7	8.1	6.6	18	360										93.76
			10.0	21.6	8.1	6.5	18	360			12	6	1.2					93.55
507.0	07/12/77	1651	10.0	21.6	8.1	6.6	18	360			4	6	1.1					93.55
			12.5	21.4	8.2	6.6	18	360										94.28
			15.0	21.2	8.1	6.6	18	360										92.71
			17.5	21.0	8.0	6.5	18	360										91.16
			20.0	21.0	7.9	6.6	18	350			5	6	0.9					90.02
507.0	07/12/77	1651	20.0	21.0	7.8	6.6	18	350			5	6	1.3					88.88
507.0	08/08/77	1750	-2.0												5.55			
507.0	08/08/77	1751	-2.0												5.55			
			0.3	26.8	7.9	7.0	17	370			6	8	1.9					99.78
507.0	08/08/77	1751	0.3	26.8	7.9	7.0	17	370			7	7	1.9					99.78
			1.5	26.8	8.1	7.0	16	380										102.31
			3.0	25.7	7.9	6.7	15	390										98.09
			5.0	25.0	8.0	6.7	15	390										97.68
			6.5	23.9	7.9	6.6	14	390										95.10
			8.0	23.6	7.9	6.6	14	390										94.43
			10.0	23.5	7.9	6.5	14	390			3	8	3.8					94.21
507.0	08/08/77	1751	10.0	23.5	7.9	6.5	14	390			3	8	1.5					94.21
			12.5	23.2	7.9	6.5	14	390										93.56
			15.0	23.1	7.8	6.5	14	380										92.16
			17.5	23.1	7.8	6.5	14	380										92.16
			20.0	23.1	7.6	6.6	14	370			4	8	1.4					89.80
507.0	08/08/77	1751	20.0	23.1	7.5	6.6	14	370			3	8	1.3					88.62
			22.0	23.1	7.2	6.6	14	360										85.07
507.0	09/12/77	1720	-2.0												6.63			
507.0	09/12/77	1721	-2.0												6.96			
			0.3	27.8	8.2	6.6	17	400	0.4	7.1	4	8	1.4					105.92
507.0	09/12/77	1721	0.3	27.8	8.2	6.6	17	400			4	8	1.6					105.92
			1.5	26.7	8.2	6.6	16	410										103.44
			3.0	26.3	8.0	6.5	16	410										100.42
			5.0	25.7	7.8	6.4	16	410										96.85
			6.5	25.4	7.7	6.4	16	410										94.92
			8.0	25.2	7.6	6.4	16	400										93.24
			10.0	24.9	7.5	6.4	15	400			6	7	1.6					91.46
507.0	09/12/77	1721	10.0	24.9	7.5	6.4	15	400			6	9	1.4					91.46
			12.5	24.8	7.5	6.4	15	400										91.35
			15.0	24.7	7.5	6.4	15	400										91.24
			17.5	24.7	7.4	6.4	15	390										90.03
			20.0	24.7	7.3	6.4	15	390			6	7	1.4					88.81
507.0	09/12/77	1721	20.0	24.7	7.3	6.4	15	380			8	7	1.5					88.81
			21.0	24.7	7.2	6.4	15	380										87.59
507.0	10/10/77	1718	-2.0												6.13			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
507.0	10/10/77	1719	-2.0												6.55			
			0.3	23.2	7.5	6.3	16	380	0.6	10.0	3	7	2.1					88.82
507.0	10/10/77	1719	0.3	23.2	7.6	6.2	16	380			2	8	2.0					90.01
			1.5	23.2	7.6	6.2	16	380										90.01
			3.0	23.1	7.5	6.2	16	380										88.62
			5.0	22.9	7.4	6.2	16	380										87.13
			6.5	22.9	7.4	6.2	16	370										87.13
			8.0	22.8	7.4	6.2	16	370										87.03
			10.0	22.8	7.4	6.1	16	370			3	6	2.1					87.03
507.0	10/10/77	1719	10.0	22.8	7.5	6.1	16	370			3	7	2.1					88.21
			12.5	22.7	7.5	6.1	16	360										88.11
			15.0	22.5	7.4	6.2	16	360			6	7	2.2					86.73
507.0	10/10/77	1719	15.0	22.5	7.4	6.1	16	360			7	7	2.3					86.73
507.0	11/14/77	1705	-2.0												4.43			
507.0	11/14/77	1706	-2.0												4.76			
			0.3	17.4	8.5	6.6	14	420			3	7	1.8					90.62
507.0	11/14/77	1706	0.3	17.4	8.5	6.6	14	420			3	7	1.8					90.62
			1.5	17.4	8.5	6.6	14	420										90.62
			3.0	17.4	8.5	6.6	14	420										90.62
			5.0	17.4	8.5	6.6	14	420										90.62
			6.5	17.4	8.5	6.6	14	420										90.62
			8.0	17.3	8.5	6.6	14	420										90.43
			10.0	17.2	8.5	6.6	14	420			3	6	2.1					90.24
507.0	11/14/77	1706	10.0	17.2	8.5	6.6	14	420			3	6	2.7					90.24
			12.5	17.1	8.5	6.6	14	420										90.06
			15.0	17.1	8.5	6.6	14	420										90.06
			17.5	17.0	8.5	6.6	14	410										89.87
			20.0	17.0	8.5	6.6	14	410			3	6	1.9					89.87
507.0	11/14/77	1706	20.0	17.0	8.5	6.6	14	410			3	6	1.9					89.87
			21.0	17.0	8.5	6.6	14	410										89.87
507.0	12/12/77	1730	-2.0												3.76			
507.0	12/12/77	1731	-2.0												4.31			
			0.3	12.6	9.4	6.3	12	430			3	6	1.4					90.27
507.0	12/12/77	1731	0.3	12.6	9.4	6.3	12	430			3	6	1.8					90.27
			1.5	12.6	9.4	6.3	12	420										90.27
			3.0	12.6	9.4	6.2	12	420										90.27
			5.0	12.6	9.4	6.2	12	420										90.27
			6.5	12.5	9.4	6.2	12	420										90.10
			8.0	12.5	9.3	6.2	12	420										89.14
			10.0	12.5	9.3	6.2	12	420			3	5	1.4					89.14
507.0	12/12/77	1731	10.0	12.5	9.3	6.2	12	410			3	6	1.3					89.14
			12.5	12.5	9.3	6.2	12	410										89.14
			15.0	12.5	9.3	6.2	12	410										89.14
			17.5	12.5	9.3	6.2	12	410										89.14
			20.0	12.5	9.3	6.2	13	400			10	4	1.3					89.14
507.0	12/12/77	1731	20.0	12.5	9.3	6.2	13	400			10	4	1.3					89.14

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
508.0	01/11/77	1315	0.3	19.5	12.1	7.1	17	310	0.7	5.5	4	7	1.6		4.75			133.44
			1.5	18.3	12.2	7.2	17	315										132.13
			3.0	15.2	11.0	7.0	17	320										111.04
			5.0	12.5	10.1	6.9	17	330			5	7	1.2		5.76			96.81
			6.5	12.0	9.8	6.9	17	320										93.06
			8.0	12.0	9.7	6.9	17	320			4	7	1.2		5.55			92.11
508.0	02/14/77	1515	0.3	12.5	11.1	6.6	18	370	0.8	4.8	4	8	1.3		4.52			106.39
			1.5	12.3	10.9	6.5	18	370										104.09
			3.0	11.8	10.9	6.5	18	370										102.94
			5.0	11.5	10.8	6.4	18	370			5	8	1.3		4.71			101.15
			6.5	11.0	10.7	6.4	18	370			5	7	1.4		4.96			98.86
508.0	03/14/77	1440	0.3	17.3	11.4	6.5	17	400	1.0	6.0	4	8	1.3		6.05			121.28
			1.5	16.4	11.2	6.5		400										116.26
			3.0	15.3	11.0	6.5		400										111.26
			5.0	14.2	10.8	6.6	17	390			4	9	1.6		6.09			106.92
			6.5	12.8	10.1	6.7	17	390			4	8	1.2		6.38			97.35
508.0	04/12/77	1500	0.3	18.7	10.2	6.5	16	400	1.2	3.8	10	9	2.8		5.84			110.93
			1.5	18.2	10.1	6.5		410										109.27
			3.0	18.2	10.2	6.6		410										110.35
			5.0	17.3	10.2	6.6	16	400			7	9	2.2		5.76			108.52
			6.5	16.7	10.0	6.8		400										104.76
			8.0	15.0	9.3	6.9		400										93.51
			9.0	14.9	9.2	7.1	15	380			7	9	1.9		5.80			92.32
508.0	05/10/77	1520	0.3	23.2	9.1	6.6	18	370	1.6	5.9	4	7	1.4		5.80			107.77
			1.5	22.8	9.1	6.5	18	380										107.03
			3.0	22.0	9.1	6.3	18	380										106.06
			5.0	20.8	8.7	6.2	18	370			3	7	1.2		6.21			98.70
			6.0	20.8	8.6	6.2	18	370			2	7	1.1		5.96			97.57
508.0	06/14/77	1455	-2.0												6.09			
508.0	06/14/77	1456	-2.0												6.09			
			0.3	26.0	8.6	6.7	20	380	0.4	9.2	5	3	1.1					107.56
508.0	06/14/77	1456	0.3	26.0	8.6	6.7	20	380			7	3	1.0					107.56
			1.5	26.0	8.7	6.7	20	380										108.81
			3.0	25.8	8.7	6.7	20	380										108.28
			5.0	25.2	8.4	6.3	20	390										103.05
			6.0	24.0	7.6	6.1	20	390			6	3	1.1					91.70
508.0	06/14/77	1456	6.0	24.0	7.6	6.1	20	390			6	3	1.0					91.70
508.0	07/12/77	1520	-2.0												5.92			
508.0	07/12/77	1521	-2.0												5.67			
			0.3	30.6	8.0	6.9	21	320	1.6	6.0	5	6	1.1					108.82
508.0	07/12/77	1521	0.3	30.7	8.0	6.8	21	320			5	6	1.0					108.96
			1.5	29.3	7.5	6.3	21	330										99.38
			3.0	27.5	6.8	6.2	21	330										87.17
			5.0	26.5	6.2	6.1	21	330										78.02
			6.5	25.7	6.1	6.1	21	330			4	6	1.1					75.74
508.0	07/12/77	1521	6.5	25.5	6.2	6.2	21	330			4	6	1.0					76.61

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
508.0	08/08/77	1520	-2.0												6.79			
508.0	08/08/77	1521	-2.0												6.92			
			0.3	27.3	6.7	6.3	18	390	1.3	4.5	3	7	3.1					85.47
508.0	08/08/77	1521	0.3	27.3	6.7	6.3	18	390			5	7	1.6					85.47
			1.5	27.2	6.8	6.3	18	390										86.53
			3.0	26.6	6.3	6.1	18	390										79.38
			5.0	25.4	5.6	6.1	18	390										69.03
			6.5	25.4	5.6	6.1	18	390										69.03
			7.0	25.3	5.5	6.1	18	380			11	7	1.5					67.63
508.0	08/08/77	1521	7.0	25.4	5.5	6.1	18	380			10	7	1.3					67.80
508.0	09/12/77	1620	-2.0												7.21			
508.0	09/12/77	1621	-2.0												7.50			
			0.3	27.2	4.2	5.8	18	420	0.8	2.9	11	8	1.9					53.44
508.0	09/12/77	1621	0.3	27.2	4.1	5.8	18	410			11	8	1.7					52.17
			1.5	27.2	4.2	5.8	18	410										53.44
			3.0	27.2	4.2	5.9	18	410										53.44
			5.0	27.2	4.3	5.9	18	400										54.71
			6.5	27.2	4.5	5.9	18	400										57.26
			7.0	27.2	4.5	5.9	18	390			11	9	1.5					57.26
508.0	09/12/77	1621	7.0	27.1	4.6	5.9	18	380			11	9	1.5					58.39
508.0	10/10/77	1550	-2.0												6.55			
508.0	10/10/77	1551	-2.0												6.30			
			0.3	27.2	6.5	5.9	18	420	0.2	4.0	4	7	1.5					82.71
508.0	10/10/77	1551	0.3	27.5	6.7	6.0	18	420			4	8	1.4					85.89
			1.5	25.6	6.4	5.9	17	420										79.27
			3.0	24.7	6.2	6.0	17	410										75.43
			5.0	24.3	6.3	6.0	17	410										76.28
			6.5	24.2	6.4	6.0	17	410			3	7	1.6					77.40
508.0	10/10/77	1551	6.5	24.0	6.2	6.0	17	400			4	7	1.6					74.81
508.0	11/14/77	1525	-2.0												5.51			
508.0	11/14/77	1526	-2.0												5.55			
			0.3	21.3	7.8	6.4	18	420	0.4	4.2	4	8	1.9					89.48
508.0	11/14/77	1526	0.3	21.4	7.9	6.3	18	420			4	7	2.0					90.83
			1.5	21.2	7.9	6.3	18	420										90.43
			3.0	20.8	8.0	6.3	18	420										90.76
			5.0	19.0	7.5	6.3	17	420										81.83
			6.5	18.8	7.4	6.3	17	420										80.57
			8.0	18.7	7.4	6.3	17	420			4	8	1.9					80.48
508.0	11/14/77	1526	8.0	18.7	7.4	6.3	17	420			4	7	1.9					80.48
508.0	12/12/77	1605	-2.0												5.47			
508.0	12/12/77	1606	-2.0												5.26			
			0.3	17.7	9.0	6.2	16	400	0.2	4.0	6	6	1.4					96.55
508.0	12/12/77	1606	0.3	17.9	9.0	6.2	16	400			6	6	1.4					96.96
			1.5	17.5	9.0	6.2	16	400										96.15
			3.0	17.0	9.2	6.2	16	400										97.27
			5.0	16.0	9.1	6.2	16	400										93.33

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			6.5	15.0	8.7	6.2	16	400										87.48
			8.0	14.7	8.7	6.2	16	390			7	6	1.4					86.96
508.0	12/12/77	1606	8.0	14.7	8.7	6.2	16	390			7	6	1.6					86.96
508.5	01/11/77	1300	0.3	18.4	12.0	6.9	18	330	0.6	4.5	4	7	1.6		4.76			130.10
			1.5	15.0	11.1	6.9	17	320										111.61
			3.0	13.2	10.6	6.7	17	330										102.95
			5.0	12.5	10.3	6.4	17	330			6	7	1.5		4.17			98.72
			6.5	12.0	10.0	6.4	17	330										94.96
			8.0	11.7	9.9	6.3	17	330										93.24
			10.0	11.5	10.0	6.3	17	340			5	7	2.7		4.39			93.66
			12.5	11.4	9.7	6.2	17	340										90.60
			15.0	11.4	9.6	6.2	17	340			4	7	1.4		4.37			89.67
			17.5	11.4	9.5	6.2	17	340			6	7	1.0		4.09			88.73
508.5	02/14/77	1520	0.3	11.9	11.1	6.5	18	360	0.8	5.2	4	8	1.2		4.88			105.12
			1.5	11.9	11.3	6.5	18	360										107.01
			3.0	11.8	11.4	6.4	18	360										107.66
			5.0	10.4	10.9	6.4	18	360			4	8	1.3		4.63			99.63
			6.5	9.2	10.7	6.3	18	360										95.09
			8.0	8.5	10.2	6.3	17	350										89.03
			10.0	8.3	10.0	6.3	17	350			4	8	1.2		4.44			86.84
509.0	01/11/77	1335	0.3	10.0	10.0	7.3	18	320			5	8	1.2		6.34			90.76
509.0	02/14/77	1445	0.3	6.8	10.8	6.8	19	320			5	8	1.4		4.84			90.35
509.0	03/14/77	1420	0.3	9.2	10.3	7.0	17	380			5	8	1.2		6.84			91.54
509.0	04/12/77	1435	0.3	12.2	8.5	7.4	16	370			14	8	1.2		5.76			81.02
509.0	05/10/77	1500	0.3	13.8	7.6	6.6	18	350	1.5	6.6	3	7	1.1		7.29			74.66
509.0	06/14/77	1430	-2.0												6.05			
509.0	06/14/77	1431	-2.0												6.05			
			0.3	17.1	6.8	6.1	19	390			6	4	1.0					72.04
509.0	06/14/77	1431	0.3	17.3	6.7	6.2	19	380			6	4	3.1					71.28
509.0	07/12/77	1455	-2.0												6.05			
509.0	07/12/77	1456	-2.0												5.76			
			0.3	19.4	4.8	6.5	20	280			31	6	1.3					52.82
509.0	07/12/77	1456	0.3	19.5	5.0	6.4	20	290			3	6	1.0					55.14
509.0	08/08/77	1455	-2.0												6.75			
509.0	08/08/77	1456	-2.0												6.75			
			0.3	22.6	4.9	6.2	18	360			3	7	1.9					57.50
509.0	08/08/77	1456	0.3	22.7	5.0	6.2	16	340			3	7	1.7					58.74
509.0	09/12/77	1510	-2.0												7.79			
509.0	09/12/77	1511	-2.0												7.79			
			0.3	24.1	3.7	5.7	18	400			14	7	1.2					44.69
509.0	09/12/77	1511	0.3	24.3	3.8	5.8	18	400			14	6	1.3					46.01
509.0	10/10/77	1520	-2.0												6.50			
509.0	10/10/77	1521	-2.0												6.30			
			0.3	23.4	6.6	6.1	18	380			3	8	1.7					78.52
509.0	10/10/77	1521	0.3	23.4	6.7	6.2	18	360			4	9	1.5					79.71
509.0	11/14/77	1503	-2.0												5.63			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
509.0	11/14/77	1504	-2.0												5.14			
			0.3	18.1	7.8	6.3	18	410			4	7	2.6					84.29
509.0	11/14/77	1504	0.3	18.1	7.8	6.3	17	420			4	7	1.8					84.29
509.0	12/12/77	1525	-2.0												5.63			
509.0	12/12/77	1526	-2.0												5.59			
			0.3	13.6	8.9	6.3	13	400			4	6	1.5					87.10
509.0	12/12/77	1526	0.3	13.6	9.3	6.4	13	400			4	6	1.5					91.01
549.0	02/14/77	1650	0.3	7.6	10.2	6.5	15	350			5	7	1.9		4.89			87.03
			1.5	7.6	10.1	6.4	15	350										86.18
			3.0	7.6	10.0	6.3	15	340										85.32
			5.0	7.5	9.9	6.3	15	340			3	7	1.7		5.13			84.26
			6.5	7.5	9.8	6.3	15	340										83.41
			8.0	7.5	9.7	6.3	15	340			3	7	1.2		4.84			82.56
549.0	03/14/77	1600	0.3	10.0	10.8	6.4	14	300			4	4	1.1		4.89			98.02
			1.5	9.0	10.5	6.4		300										92.83
			3.0	8.9	10.4	6.4		300										91.71
			5.0	8.9	10.3	6.4	13	300			4	4	1.0		4.89			90.83
			6.5	8.9	10.2	6.5		300										89.95
			8.0	8.9	10.0	6.5		310										88.18
			10.0	8.8	9.6	6.6	13	290			4	5	1.1		5.18			84.44
549.0	04/12/77	1625	0.3	12.3	10.2	6.7	12	360			6	5	2.0		4.64			97.40
			1.5	12.3	10.1	6.8		350										96.45
			3.0	12.3	10.0	6.8		360										95.49
			5.0	12.3	9.9	6.9	12	350			6	6	1.5		4.64			94.54
			6.5	12.3	9.8	7.0		340										93.58
			8.0	12.3	9.6	7.1		340										91.67
			10.0	12.3	9.4	7.2	12	330			6	6	1.4		4.64			89.76
			12.5	12.2	8.8	7.4	12	310			10		1.3		4.64			83.88
549.0	05/10/77	1700	0.3	22.4	10.0	7.1	18	360			2	6	1.1		5.80			117.08
			1.5	22.1	10.1	7.1	18	360										117.84
			3.0	21.8	10.2	7.1	18	360										118.34
			5.0	21.2	10.2	6.9	18	360			2	6	1.3		5.76			116.75
			6.5	19.4	9.9	6.6	17	360										108.94
			8.0	17.7	9.1	6.6	16	360										97.62
			10.0	17.2	8.8	6.7	16	360			2	6	1.2		5.22			93.43
549.0	06/14/77	1625	-2.0												5.63			
549.0	06/14/77	1626	-2.0												5.68			
			0.3	24.4	10.1	7.1	20	350			4	6	1.2					122.44
549.0	06/14/77	1626	0.3	24.4	10.4	7.1	20	350			3	5	1.5					126.08
			1.5	23.2	10.5	6.8	20	360										124.35
			3.0	21.3	10.4	6.6	19	370										119.31
			5.0	17.7	9.8	6.5	17	360										105.13
			6.5	17.7	9.8	6.5	17	360										105.13
			8.0	17.7	9.7	6.4	17	360										104.06
			10.0	17.5	9.6	6.4	17	350			3	4	1.1					102.56
549.0	06/14/77	1626	10.0	17.5	9.5	6.4	17	350			4	4	1.1					101.49

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			12.5	17.3	9.4	6.4	17	350										100.01
			13.0	17.3	9.2	6.4	17	370										97.88
549.0	07/12/77	1705	-2.0												4.72			
549.0	07/12/77	1706	-2.0												5.01			
			0.3	20.5	8.7	6.5	17	380	0.4	7.5	2	6	1.1					98.05
549.0	07/12/77	1706	0.3	20.6	8.7	6.6	17	380			2	6	0.9					98.27
			1.5	20.4	8.6	6.6	18	380										96.71
			3.0	20.4	8.6	6.5	18	380										96.71
			5.0	20.4	8.5	6.6	17	380										95.59
			6.5	20.3	8.5	6.5	17	380										95.38
			8.0	20.4	8.4	6.5	17	370										94.46
			10.0	20.4	8.3	6.5	17	370			3	6	0.9					93.34
549.0	07/12/77	1706	10.0	20.4	8.2	6.5	17	370			3	6	0.9					92.21
			12.0	20.4	8.1	6.6	18	370										91.09
549.0	08/08/77	1800	-2.0												5.43			
549.0	08/08/77	1801	-2.0												5.47			
			0.3	22.7	8.1	6.5	14	400			3	7	1.3					95.16
549.0	08/08/77	1801	0.3	22.7	8.1	6.5	14	400			3	6	1.4					95.16
			1.5	22.6	7.7	6.5	14	400										90.35
			3.0	22.6	7.7	6.5	14	390										90.35
			5.0	22.6	7.7	6.5	14	390										90.35
			6.5	22.6	7.6	6.5	14	390										89.18
			8.0	22.6	7.6	6.5	14	390										89.18
			10.0	22.6	7.4	6.6	14	390			3	7	1.3					86.83
549.0	08/08/77	1801	10.0	22.6	7.3	6.6	14	380			3	6	1.4					85.66
549.0	09/12/77	1730	-2.0												6.21			
549.0	09/12/77	1731	-2.0												6.21			
			0.3	24.7	7.8	6.4	15	420			3	7	2.5					94.89
549.0	09/12/77	1731	0.3	24.8	7.8	6.4	15	420			4	7	1.5					95.01
			1.5	24.3	7.6	6.4	15	420										92.02
			3.0	24.2	7.6	6.4	15	420										91.92
			5.0	24.2	7.6	6.4	15	420										91.92
			6.5	24.1	7.5	6.4	15	410										90.60
			8.0	24.0	7.5	6.4	15	410										90.49
			10.0	24.0	7.4	6.4	15	410			3	8	1.4					89.29
549.0	09/12/77	1731	10.0	24.0	7.4	6.4	15	410			3	8	1.4					89.29
			12.5	23.9	7.3	6.3	15	400										87.87
			14.0	23.9	7.2	6.3	15	400										86.67
549.0	10/10/77	1740	-2.0												5.76			
549.0	10/10/77	1741	-2.0												5.76			
			0.3	22.8	7.8	6.4	16	390			3	7	1.5					91.74
549.0	10/10/77	1741	0.3	22.8	7.8	6.3	16	390			3	7	1.5					91.74
			1.5	22.8	7.8	6.3	16	390										91.74
			3.0	22.7	7.8	6.3	16	390										91.63
			5.0	22.6	7.7	6.3	16	380										90.35
			6.5	22.4	7.7	6.2	16	380										90.15

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			8.0	22.3	7.7	6.3	15	380										90.05
			10.0	22.2	7.6	6.2	16	370			4	8	1.5					88.77
549.0	10/10/77	1741	10.0	22.2	7.6	6.2	15	360			4	8	1.5					88.77
			11.0	22.1	7.6	6.2	15	360										88.67
549.0	11/14/77	1720	-2.0												4.39			
549.0	11/14/77	1721	-2.0												4.39			
			0.3	17.1	8.5	6.5	14	430			2	6	1.9					90.06
549.0	11/14/77	1721	0.3	17.1	8.5	6.5	14	430			2	6	1.8					90.06
			1.5	17.1	8.5	6.5	14	430										90.06
			3.0	17.1	8.5	6.5	14	430										90.06
			5.0	17.1	8.5	6.5	14	430										90.06
			6.5	17.1	8.5	6.5	14	430										90.06
			8.0	17.0	8.5	6.5	14	430										89.87
			10.0	17.0	8.5	6.5	14	420			2	6	1.9					89.87
549.0	11/14/77	1721	10.0	17.0	8.6	6.6	14	420			2	6	2.0					90.93
			12.5	16.9	8.6	6.6	14	420										90.65
			13.0	16.9	8.6	6.6	14	420										90.65
549.0	12/12/77	1745	-2.0												4.27			
549.0	12/12/77	1746	-2.0												4.27			
			0.3	12.8	9.2	6.2	12	420			10	4	1.4					88.68
549.0	12/12/77	1746	0.3	12.8	9.2	6.2	12	420			10	4	1.6					88.68
			1.5	12.8	9.2	6.2	12	420										88.68
			3.0	12.8	9.2	6.2	12	420										88.68
			5.0	12.8	9.2	6.2	12	420										88.68
			6.5	12.8	9.3	6.2	12	410										89.64
			8.0	12.7	9.2	6.2	12	410										88.51
			10.0	12.7	9.2	6.2	12	410			8	4	1.4					88.51
549.0	12/12/77	1746	10.0	12.7	9.2	6.2	12	400			10	4	1.3					88.51
			12.5	12.7	9.3	6.3	12	390										89.47

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
601.0	01/10/77	1445	0.3	7.0	10.4	6.7	22	280	3.6	3.0	4	9			5.71			86.98
			1.5	7.0	10.4	6.7	22	280										86.98
			3.0	7.0	10.4	6.7	22	280										86.98
			5.0	7.0	10.6	6.7	22	280			4	9			5.79			88.65
			6.5	7.0	10.6	6.7	22	280										88.65
			8.0	7.0	10.6	6.7	22	280										88.65
			10.0	7.0	10.6	6.7	22	280			4	9			5.54			88.65
			12.5	6.8	10.8	6.7	22	280										89.88
			15.0	6.8	10.8	6.7	22	280			4	9			6.83			89.88
			17.5	6.8	11.0	6.7	22	280										91.55
			20.0	6.8	11.0	6.6	22	280			4	9			5.54			91.55
			22.5	6.8	11.0	6.6	22	280										91.55
			25.0	6.8	11.2	6.6	22	280			9	9			5.87			93.21
601.0	02/14/77	1035	0.3	5.0	12.2	6.5	23	330	0.6	4.2	6	8	2.0		7.17			97.25
			1.5	5.0	12.2	6.4	23	330										97.25
			3.0	4.8	12.2	6.4	23	330										96.80
			5.0	4.8	12.1	6.2	23	330			5	8	2.0		7.00			96.01
			6.5	4.8	12.1	6.2	23	330										96.01
			8.0	4.8	12.1	6.1	23	320										96.01
			10.0	4.7	12.1	6.1	23	320			4	8	2.0		7.00			95.78
			12.5	4.7	12.1	6.1	23	320										95.78
			15.0	4.7	12.0	5.9	23	310			4	8	2.0		6.75			94.99
			17.5	4.6	11.8	5.9	23	310										93.19
			20.0	4.5	11.8	5.8	23	310			5	8	2.2		7.29			92.97
			22.5	4.4	11.7	5.8	23	300										91.97
			25.0	4.4	11.6	5.8	22	300			6	8	2.0		6.79			91.19
			27.5	4.4	11.6	5.8	22	300			14	8	2.3		6.79			91.19
601.0	03/14/77	1025	0.3	11.1	11.9	6.8	25	380	1.1	5.0	11	9			6.91			109.69
			1.5	10.7	11.9	6.8		380										108.80
			3.0	10.5	12.0	6.7		390										109.32
			5.0	10.2	12.1	6.7	25	390			4	9			7.41			109.65
			6.5	9.8	12.1	6.7		390										108.68
			8.0	9.6	12.0	6.6		390										107.22
			10.0	9.0	11.8	6.5	25	390			4	9			7.41			103.80
			12.5	7.9	11.4	6.4		380										97.50
			15.0	7.3	11.0	6.4	25	370			4	8			7.62			92.68
			17.5	6.9	10.5	6.4		360										87.60
			20.0	6.8	10.5	6.4	25	320			5	10			7.58			87.39
			22.5	6.7	10.3	6.4		300										85.51
			25.0	6.7	10.1	6.4	25	280			4	10			7.33			83.85
			26.0	6.7	9.9	6.5		280										82.19
601.0	04/12/77	1015	0.3	18.8	10.9	6.7	24	400	1.0	2.0	14	12			6.96			118.07
			1.5	16.8	10.5	6.4		400										109.77
			3.0	15.0	9.4	6.3		400										94.03
			5.0	14.5	9.4	6.3	22	430			17	10			6.92			93.12
			6.5	14.4	9.4	6.3		430										92.94

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURBIDTY JTU	ALKALIN. MG/L	CHLORIDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			8.0	14.1	9.4	6.3		420										92.40
			10.0	13.8	9.5	6.3	22	420			17	12			7.21			92.85
			12.5	12.9	9.7	6.3		420										93.20
			15.0	12.2	9.5	6.2	24	430			10	12			7.33			90.09
			17.5	11.3	8.7	6.2		420										80.63
			20.0	10.1	8.3	6.2	24	420			7	11			7.74			75.08
			22.5	9.1	8.3	6.2		420										73.20
			25.0	8.2	8.0	6.2	24	410			5	10			7.41			68.94
			27.0	8.2	7.7	6.2	24	380			5	10			7.70			66.36
601.0	05/10/77	1000	0.3	23.2	10.4	7.9	24	320	1.0	4.8	4	8	1.7		7.04			122.54
			1.5	23.2	9.8	8.0	24	320										115.47
			3.0	22.2	9.6	7.8	24	320										111.57
			5.0	19.2	6.8	6.9	24	340			4	8	1.8		6.96			74.13
			6.5	18.5	6.4	6.6	25	360										69.10
			8.0	17.7	6.0	6.4	26	360										64.04
			10.0	15.6	5.7	6.4	25	360			13	8	1.9		7.75			57.70
			12.5	14.4	6.3	6.4	24	350										62.29
			15.0	13.8	6.6	6.4	24	350			9	8	1.9		7.75			64.50
			17.5	13.3	6.3	6.4	25	350										60.99
			20.0	11.9	6.1	6.4	26	350			12	8	2.0					57.47
			22.5	11.6	5.2	6.5	26	340										48.59
			25.0	11.4	5.2	6.6	26	330			13	8	2.1		9.41			48.32
			26.0	11.2	5.1	6.6	27	310			280	10	2.0		10.11			47.13
601.0	06/14/77	1005	-2.0												7.75			
601.0	06/14/77	1006	-2.0												8.08			
			0.3	26.5	9.7	8.5	28	280	0.6	5.8	7	10	2.0					121.44
601.0	06/14/77	1006	0.3	26.4	9.8	8.5	28	280			6	7	2.0					122.54
			1.5	26.2	10.2	8.5	28	290										127.23
			3.0	25.6	10.5	8.5	28	300										129.39
			5.0	24.3	10.0	8.1	28	320										120.47
			6.5	23.4	9.6	6.9	30	370										113.64
			8.0	21.3	7.4	6.2	32	380										84.46
			10.0	19.3	5.9	6.1	30	380			4	7	1.9					64.45
601.0	06/14/77	1006	10.0	19.2	5.9	6.0	30	380			4	7	2.1					64.32
			12.5	15.8	3.3	5.9	30	380										33.53
			15.0	14.7	2.3	5.9	30	380										22.87
			17.5	14.0	2.2	5.9	30	380										21.58
			20.0	13.4	2.5	5.9	30	380			14	7	2.0					24.24
601.0	06/14/77	1006	20.0	13.4	2.5	5.9	30	370			14	7	2.5					24.24
			22.5	13.1	2.8	5.9	30	370										27.00
			25.0	12.8	3.1	5.9	30	360										29.72
			27.0	12.7	3.3	5.9	30	350			29	7	2.2					31.58
601.0	06/14/77	1006	27.0	12.7	3.2	5.9	30	350			30	7	2.3					30.63
601.0	07/12/77	1020	-2.0												7.74			
601.0	07/12/77	1021	-2.0												7.74			
			0.3	30.6	8.6	7.6	28	240	1.2	9.8	6	8	2.4					116.38

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M.	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
601.0	07/12/77	1021	0.3	30.6	8.6	7.6	28	240			4	7	2.7					116.38
			1.5	30.6	8.7	7.6	28	240										117.73
			3.0	30.3	8.9	7.5	28	240										119.96
			5.0	29.4	9.1	7.1	28	250										120.28
			6.5	26.4	6.3	6.3	32	250										78.78
			8.0	25.8	6.0	6.2	30	240										74.30
			10.0	22.8	3.0	6.0	32	230			4	9	2.2					35.10
601.0	07/12/77	1021	10.0	21.7	2.1	6.0	34	220			4	9	2.5					24.18
			12.5	19.4	0.8	6.0	34	220										8.75
			15.0	16.8	0.0	6.1	34	210										0.00
			17.5	15.4	0.0	6.1	34	220										0.00
			20.0	14.7	0.0	6.1	34	220			12	9	2.0					0.00
601.0	07/12/77	1021	20.0	14.7	0.0	6.1	34	220			15	10	2.6					0.00
			22.5	14.0	0.1	6.1	34	220										0.98
			25.0	13.6	0.8	6.1	32	220										7.78
			27.0	13.6	0.8	6.1	32	210			30	10	2.4					7.78
601.0	07/12/77	1021	27.0	13.6	0.8	6.1	32	210			25	10	2.3					7.78
601.0	08/08/77	1015	-2.0												9.78			
601.0	08/08/77	1016	-2.0												9.82			
			0.3	29.1	7.9	7.4	24	300	0.3	7.0	4	8	2.2					103.61
601.0	08/08/77	1016	0.3	29.1	7.9	7.3	24	300			4	11	2.2					103.61
			1.5	29.0	8.0	7.4	24	300										104.65
			3.0	28.9	8.0	7.3	24	300										104.52
			5.0	28.4	7.9	7.2	24	300										102.56
			6.5	27.7	7.0	6.8	26	280										89.73
			8.0	27.4	6.2	6.6	26	270										78.88
			10.0	26.6	2.4	6.3	34	200			8	11	2.8					30.08
601.0	08/08/77	1016	10.0	26.4	2.3	6.3	35	170			7	12	3.1					28.76
			12.5	22.6	0.0	6.3	34	30										0.00
			15.0	19.7	0.0	6.3	36	20										0.00
			17.5	17.4	0.0	6.6	45	-60										0.00
			20.0	16.3	0.0	6.7	52	-60			7	20	4.1					0.00
601.0	08/08/77	1016	20.0	16.2	0.0	6.7	52	-50			6	15	3.1					0.00
			22.5	15.2	0.0	6.6	47	-20										0.00
			25.0	14.6	0.0	6.5	40	20										0.00
			26.0	14.6	0.0	6.5	38	10			36	14	2.4					0.00
601.0	08/08/77	1016	26.0	14.6	0.0	6.5	38	20			38	14	2.3					0.00
601.0	09/12/77	1020	-2.0												11.85			
601.0	09/12/77	1021	-2.0												12.76			
			0.3	27.3	6.3	6.3	24	320	0.9	4.8	6	9	2.1					79.95
601.0	09/12/77	1021	0.3	27.3	6.3	6.3	24	320			5	4	2.1					79.95
			1.5	27.3	6.3	6.3	24	320										79.95
			3.0	27.3	6.4	6.3	24	290										81.22
			5.0	27.3	6.5	6.3	24	280										82.49
			6.5	27.3	6.5	6.3	24	260										82.49
			8.0	27.2	6.5	6.2	24	250										82.29

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			10.0	26.8	3.5	5.9	26	190			4	8	2.3					43.98
601.0	09/12/77	1021	10.0	26.8	3.4	5.9	26	180			4	9	2.3					42.72
			12.5	24.7	0.0	6.1	40	-100										0.00
			15.0	22.9	0.0	6.2	55	-110										0.00
			17.5	20.8	0.0	6.4	53	-120										0.00
			20.0	18.9	0.0	6.5	61	-100			14	31	2.8					0.00
601.0	09/12/77	1021	20.0	18.9	0.0	6.5	60	-100			14	32	3.0					0.00
			22.5	17.3	0.0	6.5	60	-80										0.00
			25.0	16.6	0.0	6.5	53	-60			11	30	2.7					0.00
601.0	09/12/77	1021	25.0	16.6	0.0	6.5	53	-60			10	30	2.9					0.00
601.0	10/10/77	1045	-2.0												9.15			
601.0	10/10/77	1046	-2.0												9.20			
			0.3	23.7	5.0	6.2	26	370	0.7	3.9	5	14	2.9					59.60
601.0	10/10/77	1046	0.3	23.7	5.0	6.2	26	370			5	13	3.0					59.60
			1.5	23.7	5.0	6.2	26	370										59.60
			3.0	23.7	5.0	6.2	26	360										59.60
			5.0	23.7	5.0	6.2	26	360										59.60
			6.5	23.7	5.0	6.2	26	360										59.60
			8.0	23.7	5.0	6.2	26	350										59.60
			10.0	23.7	5.0	6.2	26	340			5	13	2.9					59.60
601.0	10/10/77	1046	10.0	23.7	5.0	6.2	26	340			4	12	2.9					59.60
			12.5	23.6	5.0	6.2	26	330										59.46
			15.0	23.6	5.0	6.2	26	310										59.46
			17.5	23.6	5.0	6.3	26	290										59.46
			20.0	22.6	0.9	6.1	37	160			29	16	3.5					10.50
601.0	10/10/77	1046	20.0	22.5	0.7	6.2	36	120			31	18	3.6					8.16
			22.5	21.2	0.0	6.6	64	-10										0.00
			24.0	19.8	0.0	6.7	74	-10										0.00
601.0	11/14/77	1035	-2.0												6.83			
601.0	11/14/77	1036	-2.0												6.92			
			0.3	17.5	6.8	6.5	26	430	0.6	3.2	7	11	3.0					72.27
601.0	11/14/77	1036	0.3	17.5	6.8	6.5	26	430			7	10	3.2					72.27
			1.5	17.5	6.9	6.5	26	430										73.34
			3.0	17.5	6.8	6.5	26	430										72.27
			5.0	17.5	6.9	6.4	26	430										73.34
			6.5	17.5	6.9	6.4	26	430										73.34
			8.0	17.5	6.9	6.4	26	430										73.34
			10.0	17.5	6.8	6.4	26	430			7	10	3.1					72.27
601.0	11/14/77	1036	10.0	17.5	6.8	6.4	26	430			7	10	3.2					72.27
			12.5	17.5	6.7	6.4	26	430										71.21
			15.0	17.5	6.8	6.4	26	420										72.27
			17.5	17.4	7.0	6.4	26	420										74.25
			20.0	17.0	6.9	6.5	26	420			12	10	3.4					72.58
601.0	11/14/77	1036	20.0	17.0	6.9	6.4	27	420			12	10	3.3					72.58
			22.5	16.9	7.1	6.4	30	430										74.45
			25.0	16.6	7.0	6.4	30	420										72.73

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY. JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			26.0	16.6	7.1	6.4	30	420			22	9	4.0					73.77
601.0	11/14/77	1036	26.0	16.6	7.0	6.4	30	420			25	11	5.0					72.73
601.0	12/12/77	1030	-2.0												6.46			
601.0	12/12/77	1031	-2.0												6.71			
			0.3	12.6	8.6	6.2	24	410	0.5	4.0	8	7	2.1					82.16
601.0	12/12/77	1031	0.3	12.6	8.6	6.2	24	410			6	6	2.0					82.16
			1.5	12.6	8.6	6.2	24	410										82.16
			3.0	12.6	8.6	6.2	24	400										82.16
			5.0	12.5	8.6	6.2	24	400										82.01
			6.5	12.5	8.6	6.2	24	400										82.01
			8.0	12.4	8.6	6.2	24	390										81.86
			10.0	12.4	8.7	6.2	24	390			6	6	2.0					82.81
601.0	12/12/77	1031	10.0	12.4	8.7	6.2	24	390			7	6	2.0					82.81
			12.5	12.2	8.8	6.2	24	380										83.45
			15.0	12.0	8.8	6.2	24	380										83.14
			17.5	12.0	8.8	6.2	24	380										83.14
			20.0	11.8	8.9	6.2	24	370			9	6	2.1					83.62
601.0	12/12/77	1031	20.0	11.8	9.0	6.2	24	360			9	6	2.0					84.56
			22.5	11.7	9.0	6.2	26	350										84.33
			24.0	11.4	9.0	6.3	26	340										83.64
602.0	01/10/77	1620	0.3	6.5	10.8	6.7	21	280	3.6	2.5	8	8			6.42			89.23
			1.5	6.5	10.9	6.6	21	270										90.06
			3.0	6.5	10.9	6.6	21	270										90.06
			5.0	6.5	10.9	6.6	21	270			5	9			5.42			90.06
			6.5	6.5	11.0	6.6	21	270										90.88
			8.0	6.5	11.0	6.6	21	270										90.88
			10.0	6.5	11.1	6.6	21	270			8	9			5.42			91.71
			12.5	6.5	11.2	6.6	21	270										92.53
			15.0	6.5	11.4	6.6	21	270							5.58			94.19
602.0	02/14/77	1110	0.3	5.8	12.4	6.5	21	310	0.8	4.8	9	8	1.9		6.25			100.74
			1.5	5.7	12.3	6.4	21	310										99.69
			3.0	5.6	12.3	6.4	21	300										99.45
			5.0	5.5	12.2	6.3	21	300			6	8	1.8		6.46			98.41
			6.5	5.5	12.2	6.2	21	290										98.41
			8.0	5.5	12.1	6.2	21	290										97.60
			10.0	5.5	12.1	6.1	21	290			6	8	1.9		6.67			97.60
			12.5	5.2	11.9	6.0	21	290										95.31
			15.0	5.2	11.7	5.9	21	280			5	8			6.58			93.71
			18.0	5.1	11.6	5.9	21	260			6	8	1.9		6.25			92.69
602.0	03/14/77	1100	0.3	11.0	11.9	6.9	24	370	1.2	5.0	5	11			7.17			109.39
			1.5	10.9	11.8	6.8		380										108.28
			3.0	10.7	11.7	6.8		380										106.97
			5.0	10.5	11.6	6.8	24	380			5	11			7.37			105.68
			6.5	10.4	11.7	6.7		380										106.40
			8.0	9.8	11.5	6.6		380										103.29
			10.0	9.2	11.2	6.5	24	370			4	10			7.37			99.03

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			12.5	8.0	10.4	6.5		370										89.17
			15.0	7.9	10.2	6.6	24	340			3	10			7.08			87.24
			17.5	7.9	9.8	6.8	24	260			3	12			7.08			83.82
602.0	04/12/77	1100	0.3	19.3	10.8	7.0	20	370	1.1	2.1	17	8			6.46			117.99
			1.5	17.6	10.3	6.9		370										109.70
			3.0	16.2	9.6	6.9		360										98.55
			5.0	15.3	9.0	6.9	19	360			23	9			6.46			90.56
			6.5	15.0	8.8	7.0		360										88.03
			8.0	14.8	8.8	7.1		360										87.69
			10.0	14.5	8.7	7.2	20	350			20	10			6.46			86.18
			12.5	14.1	8.4	7.4		350										82.57
			15.0	13.0	7.4	7.5	22	350			12	10			7.21			71.23
			16.0	12.4	6.7	7.6	20	350			22	10			7.29			63.77
602.0	05/10/77	1030	0.3	22.6	9.2	7.5	21	340	1.0	5.9	6	7	1.6		6.92			107.41
			1.5	22.4	9.6	7.4	21	350										111.82
			3.0	21.8	10.0	7.0	21	360										115.43
			5.0	19.3	9.1	6.6	21	360			3	7	1.6		6.96			99.41
			6.5	18.7	8.3	6.3	22	360										89.81
			8.0	16.9	6.5	6.3	24	360										68.16
			10.0	15.6	5.9	6.3	24	360			8	8	1.7		8.21			59.72
			12.5	14.9	5.6	6.3	24	360										55.91
			15.0	14.4	5.0	6.3	25	350			23	8	1.8		7.79			49.43
			17.5	13.5	4.0	6.3	26	350										38.87
			19.0	12.6	2.4	6.3	29	340			30	10	1.9		9.49			22.93
602.0	06/14/77	1045	-2.0												8.49			
602.0	06/14/77	1046	-2.0												8.53			
			0.3	25.8	9.6	7.9	26	310	0.4	6.0	3	7	2.2					118.88
602.0	06/14/77	1046	0.3	25.8	9.7	7.9	26	310			5	7	1.8					120.12
			1.5	25.7	9.9	7.9	26	310										122.30
			3.0	25.6	10.2	7.9	26	330										125.70
			5.0	24.2	10.0	7.3	26	330										120.33
			6.5	23.7	10.2	7.1	26	350										121.59
			8.0	21.6	6.8	6.1	30	350										78.13
			10.0	18.9	3.1	5.9	34	350			5	8	2.2					33.61
602.0	06/14/77	1046	10.0	18.9	3.2	5.9	34	350			6	9	2.2					34.70
			12.5	17.1	1.4	5.9	38	340										14.75
			15.0	16.2	1.0	5.9	38	340										10.26
			17.5	14.7	0.4	5.9	38	340										3.97
			19.0	14.5	0.3	5.9	38	330			2	10	2.0					2.97
602.0	06/14/77	1046	19.0	14.5	0.3	5.9	38	330			2	9	2.0					2.97
602.0	07/12/77	1050	-2.0												8.74			
602.0	07/12/77	1051	-2.0												8.41			
			0.3	31.0	7.2	8.0	28	220	1.3	9.7	7	10	2.0					97.95
602.0	07/12/77	1051	0.3	30.9	7.3	8.0	28	220			12	10	2.0					99.18
			1.5	30.6	8.0	8.0	28	210										108.26
			3.0	30.4	7.8	8.0	28	210										105.28

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			5.0	28.6	7.7	7.1	28	200										100 .21
			6.5	26.9	6.0	6.4	28	180										75 .49
			8.0	25.8	3.9	6.2	30	150										48 .29
			10.0	23.0	1.1	6.1	36	130			8	10	2.6					12 .90
602.0	07/12/77	1051	10.0	23.0	1.1	6.2	36	90			14	9	2.5					12 .90
			12.5	19.8	0.0	6.3	50	60										0 .00
			15.0	17.9	0.1	6.4	50	40										1 .07
			17.5	16.1	0.1	6.5	52	40										1 .02
			18.0	16.1	0.1	6.5	52	40			40	18	3.7					1 .02
602.0	07/12/77	1051	18.0	16.2	0.1	6.5	50	50			48	18	2.3					1 .02
602.0	08/08/77	1045	-2.0												10.19			
602.0	08/08/77	1046	-2.0												10.32			
			0.3	29.4	7.4	7.7	25	260	0.5	6.1	3	10	1.8					97 .81
602.0	08/08/77	1046	0.3	29.4	7.5	7.7	24	260			3	12	2.1					99 .13
			1.5	29.4	7.5	7.7	24	250										99 .13
			3.0	29.3	7.2	7.7	24	250										94 .92
			5.0	28.0	7.6	7.4	24	260										98 .16
			6.5	27.5	6.2	6.8	24	250										79 .08
			8.0	27.2	4.0	6.5	24	210										50 .64
			10.0	26.2	0.9	6.3	30	70			8	34	2.8					11 .22
602.0	08/08/77	1046	10.0	26.0	0.9	6.3	30	-30			9	34	3.1					11 .19
			12.5	22.6	0.0	6.5	52	-90										0 .00
			15.0	20.1	0.0	6.9	68	-160										0 .00
			17.5	18.1	0.0	7.0	71	-140			18	10	3.4					0 .00
602.0	08/08/77	1046	17.5	18.1	0.0	7.0	71	-130			20	13	2.9					0 .00
602.0	09/12/77	1050	-2.0												11.31			
602.0	09/12/77	1051	-2.0												11.06			
			0.3	27.2	6.7	6.5	24	310	0.9	4.2	4	10	2.2					84 .82
602.0	09/12/77	1051	0.3	27.2	6.7	6.5	24	310			5	10	2.1					84 .82
			1.5	27.1	6.8	6.5	24	310										85 .87
			3.0	27.1	6.8	6.5	24	300										85 .87
			5.0	27.1	6.9	6.5	24	290										87 .13
			6.5	27.1	7.0	6.5	24	290										88 .40
			8.0	27.1	7.0	6.5	24	270										88 .40
			10.0	26.9	6.3	6.3	26	260			6	11	2.2					79 .26
602.0	09/12/77	1051	10.0	26.8	6.1	6.3	26	250			5	10	2.3					76 .65
			12.5	25.4	0.0	6.3	46	-100										0 .00
			15.0	23.3	0.0	6.5	66	-100										0 .00
			17.0	20.2	0.0	6.6	77	-100			19	39	2.9					0 .00
602.0	09/12/77	1051	17.0	20.2	0.0	6.6	77	-100			19	40	2.8					0 .00
602.0	10/10/77	1125	-2.0												7.75			
602.0	10/10/77	1126	-2.0												7.17			
			0.3	23.1	6.6	6.5	21	360	0.8	3.0	9	12	2.5					77 .58
602.0	10/10/77	1126	0.3	23.1	6.6	6.4	21	370			8	10	2.6					77 .58
			1.5	23.1	6.5	6.4	21	370										76 .41
			3.0	23.1	6.4	6.6	21	360										75 .23

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			5.0	23.1	6.5	6.6	21	350										76.41
			6.5	23.1	6.5	6.7	21	350										76.41
			8.0	23.1	6.5	6.7	21	340										76.41
			10.0	23.1	6.5	6.7	22	330			11	9	2.8					76.41
602.0	10/10/77	1126	10.0	23.1	6.5	6.7	22	330			10	10	2.1					76.41
			12.5	23.1	6.6	6.7	22	320										77.56
			15.0	23.1	6.5	6.7	22	310										76.41
			17.5	23.1	6.5	6.7	22	300										76.41
			19.0	23.1	6.5	6.8	21	240			24	10	2.2					76.41
602.0	10/10/77	1126	19.0	23.0	6.6	6.7	24	170			34	10	2.1					77.41
602.0	11/14/77	1100	-2.0												7.17			
602.0	11/14/77	1101	-2.0												5.96			
			0.3	16.6	8.2	6.7	22	420	0.6	4.2	7	9	3.0					85.20
602.0	11/14/77	1101	0.3	16.6	8.2	6.7	22	420			7	9	3.1					85.20
			1.5	16.6	8.2	6.6	22	420										85.20
			3.0	16.6	8.1	6.7	22	420										84.16
			5.0	16.6	8.2	6.7	22	420										85.20
			6.5	16.6	8.2	6.7	22	420										85.20
			8.0	16.5	8.2	6.6	22	420										84.94
			10.0	16.5	8.2	6.7	22	410				9	2.3					84.94
602.0	11/14/77	1101	10.0	16.5	8.2	6.7	22	410				9	2.1					84.94
			12.5	16.5	8.2	6.6	22	410										84.94
			15.0	16.5	8.1	6.7	22	410										83.91
			17.5	16.5	8.1	6.7	22	410										83.91
			20.0	16.5	8.2	6.7	22	400				9	2.1					84.94
602.0	11/14/77	1101	20.0	16.4	8.4	6.7	22	400			1	9	2.1					86.75
602.0	12/12/77	1115	-2.0												6.30			
602.0	12/12/77	1116	-2.0												6.67			
			0.3	11.2	9.8	6.5	24	410	0.4	3.0	7	6	2.1					90.57
602.0	12/12/77	1116	0.3	11.2	9.8	6.5	24	410			8	6	2.1					90.57
			1.5	11.0	9.7	6.4	24	410										89.17
			3.0	11.0	9.7	6.4	24	410										89.17
			5.0	11.0	9.8	6.4	24	410										90.09
			6.5	11.0	9.8	6.4	24	410										90.09
			8.0	11.0	9.8	6.5	24	400										90.09
			10.0	11.0	9.8	6.5	24	400			12	6	1.9					90.09
602.0	12/12/77	1116	10.0	11.0	9.8	6.5	24	400			8	6	1.8					90.09
			12.5	10.9	9.7	6.5	24	400										89.01
			15.0	10.9	9.6	6.5	24	390										88.09
			17.5	10.9	9.6	6.4	24	390										88.09
			18.0	10.9	9.5	6.4	24	390			8	6	1.9					87.17
602.0	12/12/77	1116	18.0	10.9	9.5	6.4	24	380			7	6	2.0					87.17
603.0	01/10/77	1550	0.3	6.6	10.4	6.8	19	270	3.6	2.0	8	8			6.75			86.13
			1.5	6.6	10.4	6.8	20	270										86.13
			3.0	6.5	10.2	6.9	20	270										84.27
			5.0	6.5	10.2	6.9	20	270			8	8			6.75			84.27

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURBIDTY JTU	ALKALIN. MG/L	CHLORIDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			6.5	6.5	10.2	6.9	20	270										84.27
			8.0	6.5	10.2	6.9	20	270										84.27
			10.0	6.5	10.2	6.9	20	260			8	8			6.21			84.27
603.0	02/14/77	1135	0.3	6.0	12.6	6.7	22	290	0.9	4.0	6	8	2.2		6.46			102.85
			1.5	6.0	12.6	6.6	22	290										102.85
			3.0	5.8	12.4	6.5	22	290										100.74
			5.0	5.8	12.3	6.4	22	280			6	8	3.4		6.38			99.92
			6.5	5.7	12.2	6.4	23	280										98.87
			8.0	5.7	12.2	6.3	24	280										98.87
			10.0	5.5	12.0	6.3	24	280			8	8	2.9		6.38			96.79
603.0	03/14/77	1125	0.3	12.8	11.8	7.0	27	330	1.2	3.8	7	13			7.83			113.16
			1.5	11.7	11.2	6.9		320										104.94
			3.0	11.5	11.1	6.9		320										103.43
			5.0	11.5	11.1	6.9	27	320			6	10			7.83			103.43
			6.5	11.4	11.1	6.9		320										103.15
			8.0	11.2	10.6	6.8		300										97.97
			10.0	10.9	10.0	6.8	27	280			5	11			8.08			91.76
603.0	04/12/77	1125	0.3	19.5	11.1	7.2	17	370	1.4	1.9	24	9			6.00			121.79
			1.5	17.7	10.3	7.1		370										109.93
			3.0	16.3	9.4	7.1		360										96.78
			5.0	15.5	8.6	7.1	17	360			30	8			6.00			86.88
			6.5	15.4	8.5	7.2		360										85.70
			8.0	15.4	8.3	7.3		350										83.68
			10.0	15.2	7.9	7.6	20	350			50	9			6.83			79.34
			11.0	15.2	7.6	7.7	21	350			60	7			7.50			76.32
603.0	05/10/77	1100	0.3	22.6	9.4	7.1	21	290	1.1	6.0	3	8	1.5		6.84			109.74
			1.5	22.4	9.6	7.1	21	290										111.82
			3.0	22.2	9.7	6.7	21	280										112.73
			5.0	20.2	8.5	6.5	22	280			4	8	1.6		7.17			94.68
			6.5	18.7	6.6	6.5	25	270										71.41
			8.0	18.3	6.1	6.5	25	260										65.72
			10.0	17.3	5.2	6.5	27	240			8	9	1.9					55.04
			12.5	16.8	4.8	6.5	27	220			11	9	1.9					50.18
603.0	06/14/77	1105	-2.0												8.00			
603.0	06/14/77	1106	-2.0												7.75			
			0.3	25.6	9.0	6.8	24	350	0.5	4.9		7	1.4					110.91
603.0	06/14/77	1106	0.3	25.6	9.0	6.8	24	350				7	1.6					110.91
			1.5	25.5	9.2	6.8	24	360										113.10
			3.0	25.3	9.1	6.6	24	360										111.33
			5.0	24.8	8.5	6.4	26	370										103.01
			6.5	24.2	7.5	6.2	26	370										90.24
			8.0	23.0	5.6	6.0	30	370										65.68
			10.0	21.8	3.5	6.0	32	370			1	8	2.2					40.40
603.0	06/14/77	1106	10.0	21.8	3.5	6.0	32	370			1	9	2.4					40.40
			12.0	21.0	2.3	6.0	34	360										26.07
603.0	07/12/77	1120	-2.0												7.70			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
603.0	07/12/77	1121	-2.0												7.91			
			0.3	30.8	8.7	8.0	26	200	1.5	7.0	7	8	1.7					118.05
603.0	07/12/77	1121	0.3	30.8	8.7	8.0	26	200			12	8	1.6					118.05
			1.5	30.5	8.7	8.0	26	190										117.58
			3.0	30.4	8.6	7.7	26	190										116.07
			5.0	28.2	7.6	6.5	26	180										98.41
			6.5	27.6	4.9	6.2	28	150										62.65
			8.0	26.1	1.9	6.1	32	130										23.67
			10.0	24.5	0.1	6.1	40	120			22	13	2.5					1.20
603.0	07/12/77	1121	10.0	24.5	0.1	6.1	40	100			25	13	2.3					1.20
			11.0	24.1	0.1	6.2	42	90										1.20
603.0	08/08/77	1125	-2.0												8.91			
603.0	08/08/77	1126	-2.0												8.95			
			0.3	29.4	8.2	7.8	24	290	0.7	4.2	4	10	2.2					108.38
603.0	08/08/77	1126	0.3	29.4	8.2	7.8	24	290			4	14	1.7					108.38
			1.5	29.3	8.3	7.7	24	290										109.42
			3.0	29.0	8.1	7.4	24	300										105.96
			5.0	27.8	7.4	6.8	22	310										95.10
			6.5	27.1	4.4	6.3	24	300										55.56
			8.0	26.7	2.5	6.2	28	200										31.37
			10.0	25.5	0.3	6.3	42	170			24	12	3.9					3.68
603.0	08/08/77	1126	10.0	25.4	0.3	6.3	44	150			25	13	3.7					3.67
603.0	09/12/77	1115	-2.0												8.86			
603.0	09/12/77	1116	-2.0												9.20			
			0.3	27.1	7.0	6.4	24	350	0.9	3.0	12	10	2.6					88.40
603.0	09/12/77	1116	0.3	27.1	7.0	6.4	24	350			12	10	2.3					88.40
			1.5	27.1	6.7	6.3	24	350										84.61
			3.0	26.9	6.6	6.3	24	350										83.04
			5.0	26.8	6.9	6.3	24	330										86.70
			6.5	26.8	6.6	6.3	25	320										82.93
			8.0	25.4	1.0	5.9	34	290										12.26
			10.0	24.0	2.8	6.0	30	280			130	10	3.6					33.61
603.0	09/12/77	1116	10.0	24.0	2.8	6.0	30	270			135	9	4.1					33.61
603.0	10/10/77	1145	-2.0												6.71			
603.0	10/10/77	1146	-2.0												6.46			
			0.3	22.8	7.2	6.4	18	390	0.8	3.8	6	10	1.6					84.25
603.0	10/10/77	1146	0.3	22.8	7.2	6.4	18	390			6	9	2.0					84.25
			1.5	22.8	7.3	6.4	18	390										85.42
			3.0	22.8	7.3	6.4	18	390										85.42
			5.0	22.8	7.3	6.4	18	390										85.42
			6.5	22.8	7.3	6.4	18	380										85.42
			8.0	22.7	7.3	6.4	18	380										85.32
			10.0	22.5	6.8	6.3	20	380			7	9	2.0					79.30
603.0	10/10/77	1146	10.0	22.5	7.1	6.3	20	370			8	9	2.2					82.79
			11.0	22.2	6.5	6.3	24	360										75.54
603.0	11/14/77	1130	-2.0												6.42			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
603.0	11/14/77	1131	-2.0												6.42			
			0.3	16.2	8.2	6.6	22	420	0.6	4.7	1	9	2.4					84.17
603.0	11/14/77	1131	0.3	16.2	8.2	6.6	22	420			1	9	2.4					84.17
			1.5	16.2	8.2	6.5	22	420										84.17
			3.0	16.1	8.2	6.5	22	420										83.92
			5.0	16.1	8.2	6.5	22	410										83.92
			6.5	16.1	8.2	6.6	22	410										83.92
			8.0	16.0	8.3	6.6	22	410										84.69
			10.0	16.0	8.4	6.6	22	400			12	9	2.5					85.71
603.0	11/14/77	1131	10.0	16.0	8.5	6.6	22	400			13	9	2.4					86.73
603.0	12/12/77	1140	-2.0												6.42			
603.0	12/12/77	1141	-2.0												6.38			
			0.3	11.9	9.6	6.3	19	390	0.6	3.0	9	6	1.8					90.45
603.0	12/12/77	1141	0.3	11.9	9.7	6.3	19	390			8	6	1.7					91.39
			1.5	11.6	9.6	6.3	20	390										89.70
			3.0	11.5	9.5	6.3	20	390										88.52
			5.0	11.4	9.5	6.3	21	380										88.28
			6.5	11.4	9.6	6.3	21	370										89.21
			8.0	11.4	9.7	6.3	22	360										90.14
			10.0	10.8	9.4	6.4	24	360			12	6	2.3					86.10
603.0	12/12/77	1141	10.0	10.8	9.5	6.5	24	350			27	6	2.0					87.01
604.0	01/10/77	1520	0.3	6.6	10.4	6.9	17	280	4.4	2.0	15	8			5.84			86.13
			1.5	6.6	10.4	7.0	17	280										86.13
			3.0	6.6	10.4	7.1	17	270										86.13
			5.0	6.5	10.4	7.1	17	270			10	8			5.84			85.92
			6.5	6.5	10.4	7.1	17	270										85.92
			8.0	6.5	10.4	7.2	17	260										85.92
			10.0	6.5	10.6	7.2	17	260			13	7			5.80			87.58
604.0	02/14/77	1155	0.3	6.8	12.4	6.6	19	260			9	8	1.4		6.04			103.20
			1.5	6.8	12.4	6.6	19	250										103.20
			3.0	6.6	12.4	6.5	19	240										102.70
			5.0	6.4	12.3	6.4	19	240			6	8	1.7		5.92			101.38
			6.5	6.3	12.2	6.4	19	240										100.31
			8.0	6.1	12.2	6.4	19	250										99.83
			9.0	6.0	12.0	6.4	19	250			6	8	2.2		5.83			97.95
604.0	03/14/77	1145	0.3	13.8	10.3	6.6	21	350	1.1	3.8	7	12			7.83			100.67
			1.5	13.8	10.3	6.6		350										100.67
			3.0	13.8	10.2	6.6		340										99.69
			5.0	13.7	10.2	6.6	21	340			7	12			10.11			99.50
			6.5	13.7	10.2	6.7		340										99.50
			8.0	13.7	10.2	6.7		340										99.50
			10.0	13.7	10.0	6.8	21	310			7	15			8.08			97.55
604.0	04/12/77	1145	0.3	18.8	9.8	6.9	16	370	1.6	3.5	9	7			5.92			106.15
			1.5	17.8	9.6	7.0		360										102.68
			3.0	17.3	9.5	7.1		360										100.55
			5.0	16.6	9.0	7.1	16	360			11	9			5.96			93.52

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			6.5	16.2	8.8	7.2		360										90 .33
			8.0	16.0	8.6	7.3		350										87 .75
			10.0	16.0	8.4	7.5	16	350			22	8			6.09			85 .71
			12.0	15.9	8.0	7.6	17	350			22	8			6.34			81 .46
604.0	05/10/77	1120	0.3	22.3	8.6	6.8	19	320	1.2	5.9	4	8	1.2		7.63			100 .06
			1.5	22.0	8.6	6.8	19	320										99 .72
			3.0	21.9	8.6	6.8	19	320										99 .49
			5.0	21.9	8.7	6.8	19	310			5	8	1.1		6.88			100 .65
			6.5	21.9	8.8	6.8	19	310										101 .80
			8.0	21.7	8.8	6.8	20	310										101 .34
			10.0	21.4	8.6	6.8	21	300			5	7	1.3		6.96			98 .38
604.0	06/14/77	1125	-2.0												6.13			
604.0	06/14/77	1126	-2.0												6.13			
			0.3	24.7	8.7	6.4	20	380	0.5	5.0	4	7	1.3					105 .30
604.0	06/14/77	1126	0.3	24.7	8.7	6.4	20	380			4	7	1.2					105 .30
			1.5	24.7	8.7	6.4	20	370										105 .30
			3.0	24.5	8.6	6.3	20	370										103 .85
			5.0	24.4	8.5	6.3	20	370										102 .52
			6.5	24.4	8.5	6.3	20	360										102 .52
			8.0	24.4	8.5	6.3	20	360										102 .52
			10.0	24.4	8.5	6.3	20	350			3	7	2.8					102 .52
604.0	06/14/77	1126	10.0	24.4	8.5	6.3	20	350			4	7	1.4					102 .52
			12.0	24.4	8.4	6.3	20	340										101 .31
604.0	07/12/77	1141	-2.0												7.21			
			0.3	30.5	8.3	6.8	22	300	1.5	7.9	7	8	1.4					112 .17
604.0	07/12/77	1141	0.3	30.5	8.3	6.7	22	300			4	8	1.9					112 .17
			1.5	29.7	8.2	6.6	22	300										109 .23
			3.0	29.0	7.8	6.4	22	300										102 .04
			5.0	28.2	7.8	6.3	22	290										101 .00
			6.5	27.6	7.4	6.3	22	290										94 .62
			8.0	27.4	6.9	6.2	22	290										87 .79
			10.0	26.1	3.2	6.0	27	270			5	11	1.7					39 .86
604.0	07/12/77	1141	10.0	26.1	3.2	6.0	27	280			6	10	1.6					39 .86
			11.0	26.1	3.1	6.1	27	270										38 .62
604.0	08/08/77	1140	0.3	30.4	8.6	8.1	22	290	0.6	3.8	7	8	1.6					116 .07
604.0	08/08/77	1141	0.3	30.4	8.7	8.1	22	300			8	8	2.2					117 .42
			1.5	30.2	8.8	7.9	22	300										118 .46
			3.0	28.8	8.7	6.9	21	340										113 .52
			5.0	27.4	6.7	6.4	22	340										85 .24
			6.5	26.9	5.6	6.2	22	340										70 .45
			8.0	26.4	4.3	6.2	22	330										53 .77
			10.0	26.0	2.8	6.1	24	330			24	10	1.8					34 .84
604.0	08/08/77	1141	10.0	26.0	2.8	6.2	24	330			26	10	2.0					34 .84
604.0	09/12/77	1130	0.3	27.3	6.9	6.0	18	380	1.1	2.8	10	10	1.4					87 .57
604.0	09/12/77	1131	0.3	27.3	6.9	6.0	18	380			10	7	1.3					87 .57
			1.5	26.8	6.5	6.0	18	370										81 .68

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB-IDTY JTU	ALKA-LIN. MG/L	CLOR-IDE MG/L	SO4 MG/L	HARDNESS MG/L-CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
			3.0	26.8	6.5	6.0	18	360										81.68
			5.0	26.7	6.5	6.0	18	360										81.58
			6.5	26.5	5.6	5.9	18	350										70.11
			8.0	26.1	2.8	5.8	26	340										34.88
			9.0	25.7	1.7	5.8	29	330			22	12	2.5					21.00
604.0	09/12/77	1131	9.0	25.7	1.7	5.8	29	330			24	11	2.5					21.00
604.0	10/10/77	1205	0.3	22.4	7.5	6.3	16	410	0.7	3.5	7	8	1.2					87.36
604.0	10/10/77	1206	0.3	22.3	7.5	6.4	16	410			7	9	1.4					87.26
			1.5	22.3	7.5	6.4	16	410										87.26
			3.0	22.3	7.5	6.4	16	400										87.26
			5.0	22.3	7.5	6.3	16	400										87.26
			6.5	22.3	7.6	6.4	16	400										88.42
			8.0	22.3	7.6	6.4	16	390										88.42
			10.0	22.3	7.7	6.4	16	390			9	10	1.6					89.59
604.0	10/10/77	1206	10.0	22.2	7.8	6.4	16	380			8	10	1.4					90.65
604.0	11/14/77	1200	0.3	17.7	8.3	6.4	18	430	0.7	3.2	7	8	1.6					88.59
604.0	11/14/77	1201	0.3	17.5	8.3	6.4	18	430			8	8	2.3					88.22
			1.5	17.1	8.5	6.4	18	420										89.60
			3.0	16.6	8.5	6.4	18	420										88.32
			5.0	16.4	8.5	6.4	18	420										87.78
			6.5	16.4	8.6	6.5	18	420										88.82
			8.0	16.2	8.6	6.5	18	420										88.28
			10.0	16.2	8.7	6.5	18	410			7	8	2.2					89.31
604.0	11/14/77	1201	10.0	16.0	8.7	6.5	18	410			10	8	3.0					88.77
			11.0	16.0	8.8	6.5	18	410										89.79
604.0	12/12/77	1205	0.3	12.8	9.4	6.0	19	410	0.5	5.8	9	6	1.4					90.14
604.0	12/12/77	1206	0.3	12.8	9.4	6.0	19	410			7	6	1.5					90.14
			1.5	12.8	9.4	6.1	19	410										90.14
			3.0	12.7	9.4	6.0	19	410										89.97
			5.0	12.7	9.4	6.0	19	400										89.97
			6.5	12.7	9.4	6.0	19	400										89.97
			8.0	12.7	9.5	6.0	19	390										90.93
			10.0	12.6	9.6	6.1	20	390			10	6	1.3					91.72
604.0	12/12/77	1206	10.0	12.6	9.6	6.1	20	380			8	6	1.5					91.72
605.0	01/10/77	1500	0.3	6.8	10.4	7.1	22	250			5	8			6.59			86.55
605.0	02/14/77	1100	0.3	9.3	10.7	5.9	31	260			8	8	2.5		6.67			94.85
605.0	03/14/77	1025	0.3	13.4	11.1	6.6	23	370			7	5			6.34			107.66
605.0	04/12/77	1045	0.3	18.8	9.8	7.4	24	350			12	8			6.71			106.15
605.0	05/10/77	1125	0.3	20.1	9.7	6.5	25	340			6	7	1.6		6.88			107.82
605.0	06/14/77	1030	-2.0												6.42			
605.0	06/14/77	1031	-2.0												6.42			
			0.3	24.6	8.8	6.1	38	340			6	6	1.8					106.39
605.0	06/14/77	1031	0.3	24.6	8.8	6.2	26	350			5	6	1.5					106.39
605.0	07/12/77	1030	-2.0												6.59			
605.0	07/12/77	1031	-2.0												6.59			
			0.3	25.9	7.7	7.7	30	250			6	7	2.9					95.58

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	TEMP. C	D.O. MG/L	PH	COND UMHOS	ORP MV	SURF LIGHT LY/MIN	EUPHO DEPTH M	TURB- IDTY JTU	ALKA- LIN. MG/L	CLOR- IDE MG/L	SO4 MG/L	HARDNESS MG/L- CACO3	RESID. CL MG/L	FECAL COLI. NO/100ML	% SAT. DISS OX
605.0	07/12/77	1031	0.3	25.9	7.6	7.6	24	260			4	7	2.1					94.34
605.0	08/08/77	1050	-2.0												7.17			
605.0	08/08/77	1051	-2.0												7.08			
			0.3	25.5	6.1	6.9	24	300			4	6	1.9					74.99
605.0	08/08/77	1051	0.3	25.5	6.1	6.8	21	310			3	8	1.8					74.99
605.0	09/12/77	1115	-2.0												8.66			
605.0	09/12/77	1116	-2.0												8.95			
			0.3	25.5	6.6	6.3	25	340			8	10	1.4					81.14
605.0	09/12/77	1116	0.3	25.5	6.5	6.1	25	340			8	8	1.4					79.91
605.0	10/10/77	1115	-2.0												6.38			
605.0	10/10/77	1116	-2.0												6.34			
			0.3	24.3	6.5	6.7	26	340			5	9	2.2					78.30
605.0	10/10/77	1116	0.3	24.3	6.6	6.6	22	370			5	9	2.0					79.51
605.0	11/14/77	1058	-2.0												5.55			
605.0	11/14/77	1059	-2.0												5.63			
			0.3	18.8	8.1	6.6	26	420			4	6	3.0					87.74
605.0	11/14/77	1059	0.3	18.8	8.0	7.0	22	410			4	6	3.5					86.65
605.0	12/12/77	1045	-2.0												6.21			
605.0	12/12/77	1046	-2.0												5.51			
			0.3	14.9	9.7	6.4	32	390			5	6	2.3					96.84
605.0	12/12/77	1046	0.3	14.9	9.7	6.9	24	360			6	6	1.4					96.84

APPENDIX A

SECTION II

WATER QUALITY
TYPE II DATA
LAKES KEOWEE AND HARTWELL

YEAR 1977

(Pages 1-117 Contained in Previous Oconee Operating Reports)

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 2 PAGE 1

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
500.0	01/11/77	1420	0.3	0.10		0.44	< 0.005	0.006							0.9
			3.0												1.1
			5.0	0.099		0.24	< 0.005	0.011							
			10.0	0.10		0.32	< 0.005	0.006							
			15.0	0.16		0.27	< 0.005	0.005							
			20.0	0.096		0.29	< 0.005	0.008							
			25.0	0.097		0.24	< 0.005	0.008							2.0
500.0	02/14/77	1350	0.3	0.20		0.13	< 0.005	0.006							1.5
			3.0												0.7
			5.0	0.17		0.15	0.005	0.006							
			10.0	0.20		0.14	0.006	0.007							
			15.0	0.13		0.14	0.006	0.006							
			20.0	0.32		0.16	0.005	0.006							
			25.0	0.14		0.12	< 0.005	0.007							
			29.0	0.14		0.19	< 0.005	0.006							0.6
500.0	03/14/77	1320	0.3	0.16		0.20	< 0.005	0.016							3.8
			3.0												2.8
			5.0	0.18		0.14	< 0.005	0.005							
			10.0	0.16		0.11	< 0.005	0.005							
			15.0	0.16		0.11	< 0.005	0.008							
			20.0	0.17		0.34	< 0.005	0.006							
			25.0	0.17		0.50	< 0.005	0.010							
			27.5	0.15		0.29	< 0.005	0.007							2.1
500.0	04/12/77	1320	0.3	0.14		0.11	< 0.005	0.009							3.5
			3.0												3.2
			5.0	0.19		0.41	< 0.005	0.009							
			10.0	0.14		0.31	< 0.005	0.007							
			15.0	0.14		0.36	< 0.005	0.010							
			20.0	0.17		0.39	< 0.005	0.008							
			25.0	0.18		0.33	< 0.005	0.007							
			29.0	0.19		0.39	< 0.005	0.062							3.4
500.0	05/10/77	1340	0.3	0.095		0.061	< 0.005	0.008							1.9
			3.0												1.4
			5.0	0.096		0.064	< 0.005								
			10.0	0.089		0.045	< 0.005	0.012							
			15.0	0.13		0.066	< 0.005	0.011							
			20.0	0.17		0.092	< 0.005	0.033							
			25.0	0.20		1.1	< 0.005	0.013							
			27.5	0.26		0.17	< 0.005	0.013							1.1
500.0	06/14/77	1315	0.3	0.043		0.053	0.007	< 0.005							1.2
500.0	06/14/77	1316	0.3	0.033		0.024	< 0.005	< 0.005							
			3.0												1.6
			10.0	0.093		0.056	< 0.005	< 0.005							
500.0	06/14/77	1316	10.0	0.091				< 0.005							
			20.0	0.15		0.071	0.005	< 0.005							
500.0	06/14/77	1316	20.0	0.15		0.059	< 0.005	< 0.005							

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 2 PAGE 2

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			29.0	0.24		0.10	< 0.005	0.011							1.4
500.0	06/14/77	1316	29.0	0.26		0.11	0.005	0.010							
500.0	07/12/77	1335	0.3	0.054		0.17	0.005	0.013							0.9
500.0	07/12/77	1336	0.3	0.039		0.12		0.013							
			3.0												3.8
			10.0	0.095		0.16	0.005	0.011							
500.0	07/12/77	1336	10.0	0.12		0.25	< 0.005	0.011							
			20.0	0.21		0.25	< 0.005	0.010							
500.0	07/12/77	1336	20.0	0.14		0.16	< 0.005	0.010							
			25.0	0.23		0.20	0.005	0.012							2.5
500.0	07/12/77	1336	25.0	0.22		0.26	< 0.005	0.013							
500.0	08/08/77	1330	0.3	0.045		0.34	0.005	0.018							1.6
500.0	08/08/77	1331	0.3	0.059		0.69	0.005	0.021							
			3.0												1.8
			10.0	0.063		0.16	0.005	0.009							
500.0	08/08/77	1331	10.0	0.064		0.17	0.008	0.008							
			20.0	0.19		0.37	0.007	0.008							
500.0	08/08/77	1331	20.0	0.16		0.32	0.007	0.010							
			29.0	0.048		0.42	0.006	0.031							1.7
500.0	08/08/77	1331	29.0	0.041		0.40	0.006	0.027							
500.0	09/12/77	1335	0.3	0.034		0.18	< 0.005	0.013							2.6
500.0	09/12/77	1336	0.3	0.016		0.12	< 0.005	0.009							
			3.0												1.5
			10.0	0.019		0.12	< 0.005	0.008							
500.0	09/12/77	1336	10.0	0.058		0.19	< 0.005	0.013							
			20.0	0.085		0.13	< 0.005	0.010							
500.0	09/12/77	1336	20.0	0.078		0.12	< 0.005	0.009							
			30.0	0.024		0.40	< 0.005	0.008							0.9
500.0	09/12/77	1336	30.0	0.010		0.44	< 0.005	0.032							
500.0	10/10/77	1345	0.3	0.10		0.25	< 0.005	0.005							1.2
500.0	10/10/77	1346	0.3	0.076		0.26	0.005	0.005							
			3.0												2.4
			10.0	0.083		0.24	< 0.005	0.007							
500.0	10/10/77	1346	10.0	0.066		0.094	< 0.005	0.007							
			20.0	0.066		0.28	< 0.005	0.006							
500.0	10/10/77	1346	20.0	0.065		0.22	< 0.005	0.005							
			29.0	0.064		0.86	< 0.005	0.005							1.1
500.0	10/10/77	1346	29.0	0.037		0.81	< 0.005	0.006							
500.0	11/14/77	1345	0.3	0.11		0.52	0.005	0.008							0.9
500.0	11/14/77	1346	0.3	0.16		0.69	0.007	0.008							
			3.0												0.7
			10.0	0.11		0.45	0.008	0.008							
500.0	11/14/77	1346	10.0	0.12		0.51	< 0.005	0.008							
			20.0	0.090		0.14	< 0.005	0.014							
500.0	11/14/77	1346	20.0	0.12		0.18	< 0.005	0.009							
			28.0	0.090		0.24	< 0.005	0.011							0.8

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
500.0	11/14/77	1346	28.0	0.090		0.18	< 0.005	0.013							
500.0	12/12/77	1352	0.3	0.11		0.070	< 0.005	< 0.005							1.0
500.0	12/12/77	1353	0.3	0.13		0.072	< 0.005	< 0.005							
			3.0												1.5
			10.0	0.14		0.084	< 0.005	< 0.005							
500.0	12/12/77	1353	10.0	0.12		0.080	< 0.005	< 0.005							
			20.0	0.12		0.069	< 0.005	< 0.005							
500.0	12/12/77	1353	20.0	0.11		0.068	< 0.005	< 0.005							
			28.0	0.19		0.11	< 0.005	< 0.005							0.8
500.0	12/12/77	1353	28.0	0.15		0.10	< 0.005	< 0.005							
500.5	01/11/77	1400	0.3	0.11		0.075	< 0.005	0.011							1.2
			3.0												1.4
			5.0	0.11		0.070	< 0.005	0.009							
			10.0	0.11		0.083	< 0.005	0.008							
			15.0	0.12		0.31	< 0.005	0.007							1.3
500.5	02/14/77	1335	0.3	0.16		0.13	< 0.005	0.007							0.7
			3.0												1.1
			5.0	0.18		0.11	< 0.005	0.009							
			10.0	0.21		0.26	< 0.005	0.008							
			15.0	0.38		0.22	< 0.005	0.011							
			20.0	0.30		0.18	< 0.005	0.012							0.8
501.0	01/11/77	1450	0.3	0.11		0.32	< 0.005	0.007							
			5.0	0.11		0.25	< 0.005	0.007							
			10.0	0.16		0.26	< 0.005	0.006							
			15.0	0.12		0.20	< 0.005	0.006							
			20.0	0.10		0.12	< 0.005	0.006							
			25.0	0.088		0.077	< 0.005	0.006							
			27.5	0.082		0.062	< 0.005	0.006							
501.0	02/14/77	1410	0.3	0.14		0.087	< 0.005	0.007							
			5.0	0.21		0.098	< 0.005	0.006							
			10.0	0.22		0.17	0.009	0.006							
			15.0	0.25			0.006	0.005							
			20.0	0.25		0.14	0.005	0.006							
			25.0	0.18		0.26	0.005	0.005							
			30.0	0.14		0.16	0.005	0.005							
			35.0	0.16		0.22	0.005	0.010							
501.0	03/14/77	1345	0.3	0.15		0.23	< 0.005	0.011							
			5.0	0.13		0.29	< 0.005	0.012							
			10.0	0.17		0.28	< 0.005	0.006							
			15.0	0.19		0.44	0.005	< 0.005							
			20.0	0.16		0.48	< 0.005	< 0.005							
			25.0	0.19			< 0.005	0.008							
			30.0	0.14		0.34	< 0.005	< 0.005							
			32.5	0.14		0.29	< 0.005	< 0.005							
501.0	04/12/77	1350	0.3	0.14		0.31	< 0.005	0.009							
			5.0	0.15		0.35	< 0.005	0.008							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.17		0.33	< 0.005	0.007							
			15.0	0.15		0.32	< 0.005	0.008							
			20.0	0.18		0.36	< 0.005	0.007							
			25.0	0.16		0.32	< 0.005	0.006							
			30.0	0.16		0.16	< 0.005	0.010							
			34.0	0.22		0.20	< 0.005	0.012							
501.0	05/10/77	1410	0.3	0.10		0.061	< 0.005	0.010							
			5.0	0.081		0.055	< 0.005	0.011							
			10.0	0.12		0.097	< 0.005	0.009							
			15.0	0.12		0.062	< 0.005	0.019							
			20.0	0.13		0.080	< 0.005	0.009							
			25.0	0.16		0.045	< 0.005	0.009							
			30.0	0.17		0.071	< 0.005	0.008							
			34.0	0.15		0.071	< 0.005	0.011							
501.0	06/14/77	1330	0.3	0.076		0.037		< 0.005							
501.0	06/14/77	1331	0.3	0.089		0.11		< 0.005							
			10.0	0.074		0.11	< 0.005	< 0.005							
501.0	06/14/77	1331	10.0	0.071		0.10	< 0.005	< 0.005							
			20.0	0.12		0.057	< 0.005	< 0.005							
501.0	06/14/77	1331	20.0	0.11		0.097	< 0.005	< 0.005							
			30.0	0.22		0.11		< 0.005							
501.0	06/14/77	1331	30.0	0.23		0.08	< 0.005	< 0.005							
501.0	07/12/77	1400	0.3	0.042		0.11	< 0.005	0.010							
501.0	07/12/77	1401	0.3	0.059		0.13	< 0.005	0.008							
			10.0	0.076		0.15	< 0.005	0.006							
501.0	07/12/77	1401	10.0	0.074		0.14	< 0.005	0.006							
			20.0	0.13		0.16	< 0.005	0.011							
501.0	07/12/77	1401	20.0	0.13		0.15	< 0.005	0.006							
			30.0	0.27		0.12	0.005	0.006							
501.0	07/12/77	1401	30.0	0.25		0.11	< 0.005	0.007							
501.0	08/08/77	1400	0.3	0.046		0.17	0.007	0.008							
501.0	08/08/77	1401	0.3	0.056		0.22	0.007	0.007							
			10.0	0.096		0.16	0.023	0.15							
501.0	08/08/77	1401	10.0	0.073		0.14	0.015	0.022							
			20.0	0.11		0.17	0.006	0.006							
501.0	08/08/77	1401	20.0	0.14		0.32	0.005	0.005							
			30.0	0.27		0.18	0.005	0.006							
501.0	08/08/77	1401	30.0	0.25		0.15	0.006	0.007							
501.0	09/12/77	1415	0.3	0.071		0.34	< 0.005	0.026							
501.0	09/12/77	1416	0.3	0.016		0.12	< 0.005	0.010							
			10.0	0.051		0.15	< 0.005	0.012							
501.0	09/12/77	1416	10.0	0.023		0.12	< 0.005	0.008							
			20.0	0.079		0.11	< 0.005	0.014							
501.0	09/12/77	1416	20.0	0.21		0.22	< 0.005	0.007							
			30.0	0.24		0.23	< 0.005	0.007							
501.0	09/12/77	1416	30.0	0.22		0.14	< 0.005	0.008							

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STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
501.0	10/10/77	1410	0.3	0.074		0.081	< 0.005	< 0.005							
501.0	10/10/77	1411	0.3	0.075		0.080	< 0.005	0.005							
			10.0	0.072		0.10	< 0.005	0.005							
501.0	10/10/77	1411	10.0	0.076		0.10	< 0.005	< 0.005							
			20.0	0.10		0.27	< 0.005	0.008							
501.0	10/10/77	1411	20.0	0.076		0.093	< 0.005	0.006							
			30.0	0.13		0.14	< 0.005	0.005							
501.0	10/10/77	1411	30.0	0.13		0.17	< 0.005	0.005							
501.0	11/14/77	1410	0.3	0.10		0.15	0.006	0.011							
501.0	11/14/77	1411	0.3	0.085		0.13	< 0.005	0.010							
			10.0	0.081		0.15	< 0.005	0.010							
501.0	11/14/77	1411	10.0	0.12		0.16	0.011	0.015							
			20.0	0.098		0.14	< 0.005	0.011							
501.0	11/14/77	1411	20.0	0.078		0.10	< 0.005	0.017							
			30.0	0.077		0.11	< 0.005	0.012							
501.0	11/14/77	1411	30.0	0.083		0.13	< 0.005	0.014							
501.0	12/12/77	1420	0.3	0.15		0.10	< 0.005	< 0.005							
501.0	12/12/77	1421	0.3	0.18		0.12	< 0.005	< 0.005							
			10.0	0.16		0.12	< 0.005	< 0.005							
501.0	12/12/77	1421	10.0	0.21		0.15	< 0.005	< 0.005							
			20.0	0.13		0.10	< 0.005	< 0.005							
501.0	12/12/77	1421	20.0	0.13		0.10	< 0.005	< 0.005							
			30.0	0.15		0.12	< 0.005	< 0.005							
501.0	12/12/77	1421	30.0	0.12		0.089	< 0.005	< 0.005							
501.5	01/11/77	1530	0.3	0.093		0.055	< 0.005	0.006							0.9
			3.0												0.9
			5.0	0.090		0.069	< 0.005	0.007							
			10.0	0.086		0.065	< 0.005	0.006							
			15.0	0.089		0.073	< 0.005	0.012							
			20.0	0.090		0.062	< 0.005	0.007							
			25.0	0.088		0.055	< 0.005	0.008							1.3
501.5	02/14/77	1425	0.3	0.14		0.084	0.007	0.007							0.9
			3.0												0.9
			5.0	0.20			< 0.005	0.006							
			10.0	0.19		0.21	0.006	0.006							
			15.0	0.18		0.14	0.005	0.007							
			20.0	0.13		0.19	0.005	0.006							
			22.5	0.13		0.21	0.007	< 0.005							0.5
501.5	03/14/77	1355	0.3	0.14		0.090	< 0.005	< 0.005							2.0
			3.0												1.5
			5.0	0.13		0.10	< 0.005	0.005							
			10.0	0.14		0.089	< 0.005	< 0.005							
			15.0	0.13		0.084	< 0.005	< 0.005							
			20.0	0.12		0.081	< 0.005	0.007							
			25.0	0.13		0.076	< 0.005	< 0.005							
			27.5	0.12		0.089	< 0.005	0.005							1.7

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
SO1.5	04/12/77	1410	0.3	0.19		0.18	< 0.005	0.009							2.5
			3.0												2.3
			5.0	0.11		0.10	< 0.005	0.011							
			10.0	0.12		0.10	< 0.005	0.006							
			15.0	0.17		0.15	< 0.005	0.006							
			20.0	0.18		0.37	< 0.005	0.010							
			25.0	0.16		0.17	< 0.005	0.006							
			30.0	0.16		0.17	< 0.005	0.006							2.4
SO1.5	05/10/77	1430	0.3	0.10		1.0	< 0.005	0.007							1.2
			3.0												1.5
			5.0	0.099		0.055	< 0.005	0.039							
			10.0	0.084		0.028	< 0.005	0.008							
			15.0	0.098		0.036	< 0.005	0.005							
			20.0	0.12		0.064	< 0.005	0.008							
			25.0	0.16		0.095	< 0.005	0.009							
			27.5	0.18		0.10	< 0.005	0.006							1.1
SO1.5	06/14/77	1350	0.3	0.060		0.046	< 0.005	< 0.005							1.1
SO1.5	06/14/77	1351	0.3	0.066		0.013	< 0.005	< 0.005							
			3.0												0.9
			10.0	0.080		0.038		< 0.005							
SO1.5	06/14/77	1351	10.0	0.092		0.096	< 0.005	< 0.005							
			20.0	0.14		0.076	< 0.005	< 0.005							
SO1.5	06/14/77	1351	20.0	0.12		0.064	< 0.005	0.010							
			30.0	0.21		0.23	0.005	< 0.005							
SO1.5	06/14/77	1351	30.0	0.21		0.055	< 0.005	< 0.005							
			32.5												0.9
SO1.5	07/12/77	1425	0.3	0.048		0.099	< 0.005	0.007							1.8
SO1.5	07/12/77	1426	0.3	0.032		0.065	< 0.005	0.006							
			3.0												1.4
			10.0	0.097		0.081	< 0.005	0.007							
SO1.5	07/12/77	1426	10.0	0.098		0.13	< 0.005	0.006							
			20.0	0.11		0.11	< 0.005	0.005							
SO1.5	07/12/77	1426	20.0	0.12		0.18	0.005	0.005							
			21.0												3.3
SO1.5	08/08/77	1420	0.3	0.054		0.16	0.009	0.011							2.1
SO1.5	08/08/77	1421	0.3	0.050		0.38	0.007	0.007							
			3.0												2.1
			10.0	0.093		0.19	0.005	0.007							
SO1.5	08/08/77	1421	10.0	0.090		0.15	< 0.005	< 0.005							
			20.0	0.11		0.16	< 0.005	< 0.005							
SO1.5	08/08/77	1421	20.0	0.13		0.21	< 0.005	0.005							
			30.0	0.22		0.14	0.006	0.007							
SO1.5	08/08/77	1421	30.0	0.22		0.13	0.007	0.008							
			31.0												0.9
SO1.5	09/12/77	1440	0.3	0.019		0.19	< 0.005	0.010							0.4
SO1.5	09/12/77	1441	0.3	0.018		0.18	< 0.005	0.008							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			3.0												1.5
			10.0	0.030		0.14	< 0.005	0.008							
501.5	09/12/77	1441	10.0	0.066		0.24	< 0.005	0.007							
			20.0	0.059		0.15	< 0.005	0.009							
501.5	09/12/77	1441	20.0	0.075		0.33	0.009	0.009							
			30.0	0.13		0.17	< 0.005	0.006							
501.5	09/12/77	1441	30.0	0.15		0.19	< 0.005	0.008							0.1
			34.0												1.4
501.5	10/10/77	1435	0.3	0.070		0.24	< 0.005	0.008							
501.5	10/10/77	1436	0.3	0.071		0.19	< 0.005	0.006							1.7
			3.0												
			10.0	0.086		0.20	< 0.005	0.007							
501.5	10/10/77	1436	10.0	0.068		0.20	< 0.005	0.006							
			20.0	0.068		0.19	< 0.005	0.005							
501.5	10/10/77	1436	20.0	0.090		0.20	< 0.005	< 0.005							0.7
			30.0	0.040		0.35	< 0.005	0.014							
501.5	10/10/77	1436	30.0	0.063		0.42	< 0.005	0.005							0.5
501.5	11/14/77	1430	0.3	0.10		0.13	0.005	0.014							
501.5	11/14/77	1431	0.3	0.087		0.10	< 0.005	0.015							0.6
			3.0												
			10.0	0.083		0.096	< 0.005	0.013							
501.5	11/14/77	1431	10.0	0.10		0.13	< 0.005	0.010							
			20.0	0.10		0.10	< 0.005	0.012							
501.5	11/14/77	1431	20.0	0.10		0.11	< 0.005	0.014							1.1
			26.0	0.11		0.38	< 0.005	0.014							
501.5	11/14/77	1431	26.0	0.12		0.44	0.006	0.013							1.1
501.5	12/12/77	1445	0.3	0.11		0.070	< 0.005	< 0.005							
501.5	12/12/77	1446	0.3	0.12		0.074	< 0.005	< 0.005							1.3
			3.0												
			10.0	0.12		0.072	< 0.005	< 0.005							
501.5	12/12/77	1446	10.0	0.12		0.076	< 0.005	< 0.005							
			20.0	0.12		0.080	< 0.005	< 0.005							
501.5	12/12/77	1446	20.0	0.11		0.059	< 0.005	< 0.005							
			30.0	0.13		0.070	< 0.005	< 0.005							
501.5	12/12/77	1446	30.0	0.14		0.11	< 0.005	< 0.005							1.2
			34.0												
502.0	01/11/77	1340	0.3	0.087		0.047	< 0.005	0.011							
			5.0	0.091		0.053	< 0.005	0.006							
			10.0	0.085		0.046	< 0.005	0.006							
			15.0	0.095		0.061	< 0.005	0.005							
			20.0	0.088		0.053	< 0.005	0.005							
			25.0	0.10		0.055	< 0.005	0.006							
502.0	02/14/77	1420	0.3	0.15		0.066	< 0.005	< 0.005							
			5.0	0.12		0.061	< 0.005	< 0.005							
			10.0	0.34		0.16	< 0.005	< 0.005							
			15.0	0.25		0.19	< 0.005	0.005							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			20.0	0.22		0.070	< 0.005	0.006							
			22.5	0.13		0.088	< 0.005	0.006							
502.0	03/14/77	1410	0.3	0.11		0.096	< 0.005	0.005							
			5.0	0.12		0.073	< 0.005	< 0.005							
			10.0	0.12		0.37	< 0.005	< 0.005							
			15.0	0.12		0.099	< 0.005	0.008							
			20.0	0.11		0.082	< 0.005	0.005							
			22.5	0.11		0.086	< 0.005	0.005							
502.0	04/12/77	1425	0.3	0.14		0.11	< 0.005	0.007							
			5.0	0.12		0.084	< 0.005	0.009							
			10.0	0.12		0.12	< 0.005	0.010							
			15.0	0.12		0.14	< 0.005	0.012							
			20.0	0.11		0.16	< 0.005	0.012							
			25.0	0.17		0.17	< 0.005	0.008							
502.0	05/10/77	1450	0.3	0.12		0.074	< 0.005	0.006							
			5.0	0.097		0.049	< 0.005	0.006							
			10.0	0.098		0.072	< 0.005	0.006							
			15.0	0.12		0.064	< 0.005	0.011							
			20.0	0.12		0.12	< 0.005	0.006							
			25.0	0.20		0.13	< 0.005	0.005							
502.0	06/14/77	1415	0.3	0.068		0.16	< 0.005	< 0.005							
502.0	06/14/77	1416	0.3	0.069		0.082	< 0.005	< 0.005							
			10.0	0.079		0.12		< 0.005							
502.0	06/14/77	1416	10.0			0.079	< 0.005	< 0.005							
			20.0	0.074		0.049	< 0.005	< 0.005							
502.0	06/14/77	1416	20.0	0.079		0.13	< 0.005	< 0.005							
			25.0	0.18		0.091	0.005	< 0.005							
502.0	06/14/77	1416	25.0	0.16		0.082	< 0.005	< 0.005							
502.0	07/12/77	1440	0.3	0.037		0.089	< 0.005	0.006							
502.0	07/12/77	1441	0.3	0.049		0.13	0.005	0.005							
			10.0	0.081		0.11	< 0.005	0.005							
502.0	07/12/77	1441	10.0	0.084		0.10	< 0.005	0.005							
			20.0	0.083		0.081	< 0.005	0.006							
502.0	07/12/77	1441	20.0	0.11		0.14	< 0.005	0.006							
			25.0	0.20		0.12	< 0.005	0.006							
502.0	07/12/77	1441	25.0	0.22		0.11	< 0.005	0.006							
502.0	08/08/77	1440	0.3	0.037		0.077	< 0.005	0.010							
502.0	08/08/77	1441	0.3	0.049		0.14	0.011	0.023							
			10.0	0.088		0.12	0.007	0.007							
502.0	08/08/77	1441	10.0	0.086		0.14	0.006	0.007							
			20.0	0.11		0.13	0.005	0.006							
502.0	08/08/77	1441	20.0	0.091		0.12	0.006	0.009							
			25.0	0.20		0.19	0.006	0.043							
502.0	08/08/77	1441	25.0	0.21		0.17	0.006	0.064							
502.0	09/12/77	1500	0.3	0.035		0.13	< 0.005	0.010							
502.0	09/12/77	1501	0.3	0.021		0.13	< 0.005	0.015							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.031		0.16	< 0.005	0.012							
502.0	09/12/77	1501	10.0	0.024		0.12	< 0.005	0.008							
			20.0	0.041		0.12	< 0.005	0.007							
502.0	09/12/77	1501	20.0	0.12		0.14	< 0.005	0.008							
			25.0	0.12		0.13	< 0.005	0.012							
502.0	09/12/77	1501	25.0	0.12		0.13	< 0.005	0.016							
502.0	10/10/77	1500	0.3	0.087		0.23	< 0.005	0.005							
502.0	10/10/77	1501	0.3	0.079		0.23	< 0.005	0.005							
			10.0	0.083		0.087	< 0.005	0.006							
502.0	10/10/77	1501	10.0	0.079		0.087	< 0.005	0.006							
			20.0	0.076		0.084	< 0.005	0.006							
502.0	10/10/77	1501	20.0	0.076		0.074	< 0.005	0.006							
			25.0	0.085		0.18	< 0.005	0.006							
502.0	10/10/77	1501	25.0	0.060		0.30	< 0.005	0.006							
502.0	11/14/77	1450	0.3	0.097		0.49	< 0.005	0.013							
502.0	11/14/77	1451	0.3	0.12		0.49	0.006	0.018							
			10.0	0.14		0.47	< 0.005	0.015							
502.0	11/14/77	1451	10.0	0.098		0.54	< 0.005	0.014							
			20.0	0.10		0.61	0.006	0.013							
502.0	11/14/77	1451	20.0	0.12		0.56	0.006	0.014							
502.0	12/12/77	1505	0.3	0.11		0.059	< 0.005	< 0.005							
502.0	12/12/77	1506	0.3	0.12		0.062	< 0.005	< 0.005							
			10.0	0.11		0.059	< 0.005	< 0.005							
502.0	12/12/77	1506	10.0	0.11		0.060	< 0.005	< 0.005							
			20.0	0.11		0.059	< 0.005	< 0.005							
502.0	12/12/77	1506	20.0	0.13		0.076	< 0.005	< 0.005							
503.0	01/11/77	1325	0.3	0.10		0.092	< 0.005	0.010							
			5.0	0.12		0.068	< 0.005	0.007							
			10.0	0.11		0.091	< 0.005	0.006							
			15.0	0.092		0.052	< 0.005	0.006							
			20.0	0.095		0.057	< 0.005	0.005							
			25.0	0.11		0.075	< 0.005	0.006							
503.0	02/14/77	1500	0.3	0.17		0.073	< 0.005	0.006							
			5.0	0.18		0.078	< 0.005	0.007							
			10.0	0.46		0.087	< 0.005								
			15.0	0.16		0.067	< 0.005	0.006							
			20.0	0.13		0.084	0.005	0.006							
			22.5	0.20		0.093	< 0.005	0.007							
503.0	03/14/77	1425	0.3	0.10		0.062	< 0.005	< 0.005							
			5.0	0.11		0.067	< 0.005	0.008							
			10.0	0.12		0.096	< 0.005	< 0.005							
			15.0	0.16		0.41	< 0.005	< 0.005							
			20.0	0.12		0.11	< 0.005	< 0.005							
			25.0	0.11		0.082	< 0.005	< 0.005							
503.0	04/12/77	1445	0.3	0.10		0.12	< 0.005	0.008							
			5.0	0.13		0.15	< 0.005	0.007							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.10		0.15	< 0.005	0.012							
			15.0	0.16		0.24	0.006	0.008							
			20.0	0.14		1.20	0.007	0.008							
			25.0	0.15		0.82	0.005	0.008							
			26.0	0.14		0.34	< 0.005	0.006							
503.0	05/10/77	1505	0.3	0.090		0.050	< 0.005	< 0.005							
			5.0	0.15		0.12	< 0.005	0.008							
			10.0	0.090		0.047	< 0.005	0.005							
			15.0	0.11			< 0.005	0.006							
			20.0	0.097		0.078	< 0.005	0.008							
			25.0	0.13		0.30	0.005	0.005							
			26.0	0.12		0.037	< 0.005	0.005							
503.0	06/14/77	1440	0.3	0.088		0.071		< 0.005							
503.0	06/14/77	1441	0.3	0.073		0.16	< 0.005	< 0.005							
			10.0	0.10		0.081	< 0.005	0.005							
503.0	06/14/77	1441	10.0	0.11		0.094	< 0.005	0.005							
			20.0	0.084		0.13	< 0.005	< 0.005							
503.0	06/14/77	1441	20.0	0.10		0.12	< 0.005	< 0.005							
			26.0	0.16		0.14	< 0.005	< 0.005							
503.0	06/14/77	1441	26.0	0.15		0.12	< 0.005	0.005							
503.0	07/12/77	1505	0.3	0.024		0.074	< 0.005	0.007							
503.0	07/12/77	1506	0.3	0.025		0.091	< 0.005	< 0.005							
			10.0	0.074		0.12	< 0.005	< 0.005							
503.0	07/12/77	1506	10.0	0.068		0.10	< 0.005	< 0.005							
			20.0	0.086		0.22	< 0.005	< 0.005							
503.0	07/12/77	1506	20.0	0.073		0.11	< 0.005	< 0.005							
			25.0	0.12		0.14	< 0.005	< 0.005							
503.0	07/12/77	1506	25.0	0.11		0.12	< 0.005	0.005							
503.0	08/08/77	1510	0.3	0.12		0.16	< 0.005	< 0.005							
503.0	08/08/77	1511	0.3	0.097		0.14	0.005	0.280							
			10.0	0.099		0.14	< 0.005	0.005							
503.0	08/08/77	1511	10.0	0.13		0.090	< 0.005	0.005							
			20.0	0.083		0.093	< 0.005	0.010							
503.0	08/08/77	1511	20.0	0.085		0.13	< 0.005	0.006							
			27.0	0.099		0.095	< 0.005	0.006							
503.0	08/08/77	1511	27.0	0.10		0.13	< 0.005	< 0.005							
503.0	09/12/77	1525	0.3	0.050		0.14	< 0.005	0.014							
503.0	09/12/77	1526	0.3	0.055		0.13	< 0.005	0.011							
			10.0	0.042		0.14	< 0.005	0.010							
503.0	09/12/77	1526	10.0	0.034		0.14	< 0.005	0.011							
			20.0	0.054		0.14	< 0.005	0.013							
503.0	09/12/77	1526	20.0	0.047		0.13	< 0.005	0.009							
			26.0	0.081		0.12	< 0.005	0.008							
503.0	09/12/77	1526	26.0	0.088		0.14	< 0.005	0.007							
503.0	10/10/77	1535	0.3	0.079		0.081	< 0.005	0.008							
503.0	10/10/77	1536	0.3	0.079		0.084	< 0.005	0.009							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.078		0.095	< 0.005	0.011							
503.0	10/10/77	1536	10.0	0.077		0.10	< 0.005	0.011							
			20.0	0.074		0.084	< 0.005	0.019							
503.0	10/10/77	1536	20.0	0.073		0.25	< 0.005	0.019							
			25.0	0.088		0.27	< 0.005	0.014							
503.0	10/10/77	1536	25.0	0.091		0.13	0.005	0.015							
503.0	11/14/77	1510	0.3	0.098		0.15	0.005	0.018							
503.0	11/14/77	1511	0.3	0.093		0.15	0.006	0.015							
			10.0	0.10		0.16	0.007	0.013							
503.0	11/14/77	1511	10.0	0.11		0.21	< 0.005	0.015							
			20.0	0.16		0.23		0.018							
503.0	11/14/77	1511	20.0	0.093		0.14	0.005	0.014							
			25.0	0.13		0.15	< 0.005	0.017							
503.0	11/14/77	1511	25.0	0.11		0.16	0.007	0.019							
503.0	12/12/77	1535	0.3	0.13		0.081	< 0.005	< 0.005							
503.0	12/12/77	1536	0.3	0.13		0.072	< 0.005	< 0.005							
			10.0	0.11		0.057	< 0.005	< 0.005							
503.0	12/12/77	1536	10.0	0.19		0.077	< 0.005	< 0.005							
			20.0	0.14		0.053	< 0.005	< 0.005							
503.0	12/12/77	1536	20.0	0.12		0.049	< 0.005	< 0.005							
			26.0	0.12		0.049	< 0.005	< 0.005							
503.0	12/12/77	1536	26.0	0.13		0.052	< 0.005	< 0.005							
504.0	01/11/77	1240	0.3	0.12		0.16	< 0.005	0.013							1.5
			3.0												1.1
			5.0	0.14		0.19	< 0.005	0.009							
			10.0	0.12		0.23	0.007	0.008							
			15.0	0.15		0.15	< 0.005	0.007							
			20.0	0.12		0.20	< 0.005	0.009							
			25.0	0.12		0.30	< 0.005	0.007							
			30.0	0.14		0.26	< 0.005	0.007							
			35.0	0.13		0.23	< 0.005	0.007							
504.0	02/14/77	1530	0.3	0.11		0.069	0.007	0.008							2.1
			3.0												0.9
			5.0	0.13		0.094	0.005	0.006							0.9
			10.0	0.44		0.070	< 0.005	0.014							
			15.0	0.14		0.056	< 0.005	0.006							
			20.0	0.26		0.083	< 0.005	0.006							
			25.0	0.13		0.058	< 0.005	0.007							
			30.0	0.15		0.17	< 0.005	0.007							
			34.0	0.11		0.076	< 0.005	0.009							0.8
504.0	03/14/77	1445	0.3	0.11		0.095	< 0.005	< 0.005							1.7
			3.0												1.9
			5.0	0.12		0.13	< 0.005	< 0.005							
			10.0	0.10		0.11	< 0.005	< 0.005							
			15.0	0.10		0.092	< 0.005	0.005							
			20.0	0.10		0.066	< 0.005	< 0.005							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			25.0	0.12		0.084	< 0.005	< 0.005							
			30.0	0.11		0.077	< 0.005	< 0.005							
			35.0	0.12		0.11	< 0.005	< 0.005							2.4
504.0	04/12/77	1520	0.3	0.10		0.33	< 0.005	0.006							2.9
			3.0												3.7
			5.0	0.11		0.25	< 0.005	0.008							
			10.0	0.093		0.26	< 0.005	0.006							
			15.0	0.15		0.41	< 0.005	0.007							
			20.0	0.11		0.36	< 0.005	0.006							
			25.0	0.12		0.17	< 0.005	0.006							
			30.0	0.12		0.16	< 0.005	0.006							
			35.0	0.15		0.15	< 0.005	0.008							3.7
504.0	05/10/77	1535	0.3	0.19		0.14	< 0.005	< 0.005							2.5
			3.0												1.2
			5.0	0.11		0.049	< 0.005	0.005							
			10.0	0.072		0.13	< 0.005	< 0.005							
			15.0	0.099		0.070	< 0.005	0.005							
			20.0	0.11		0.048	< 0.005	< 0.005							
			25.0	0.13		0.072	< 0.005	0.005							
			30.0	0.15		0.11	< 0.005	0.005							
			35.0	0.14		0.045	< 0.005	< 0.005							1.7
504.0	06/14/77	1505	0.3	0.092		0.038	< 0.005	< 0.005							1.0
504.0	06/14/77	1506	0.3	0.10		0.093		0.005							
			3.0												1.1
			10.0	0.090		0.050	< 0.005	0.008							
504.0	06/14/77	1506	10.0	0.091		0.083	0.009	0.006							
			20.0	0.073		0.051	< 0.005	0.012							
504.0	06/14/77	1506	20.0	0.083		0.065	< 0.005	0.005							
			30.0	0.13		0.099	< 0.005	< 0.005							
504.0	06/14/77	1506	30.0	0.15		0.053	< 0.005	0.006							
			35.0	0.16		0.081	< 0.005	0.009							1.0
504.0	06/14/77	1506	35.0	0.16		0.096	0.006	0.010							
504.0	07/12/77	1530	0.3	0.060		0.13	0.005	0.009							1.5
504.0	07/12/77	1531	0.3	0.058		0.12	< 0.005	0.011							
			3.0												2.0
			10.0	0.092		0.12	0.005	0.009							
504.0	07/12/77	1531	10.0	0.20		0.12	< 0.005	0.010							
			20.0	0.089		0.12	< 0.005	0.009							
504.0	07/12/77	1531	20.0	0.079		0.12	< 0.005	0.008							
			30.0	0.18		0.12	0.006	0.009							
504.0	07/12/77	1531	30.0	0.15		0.069	< 0.005	0.010							
			35.0	0.15		0.078	< 0.005	0.011							3.9
504.0	07/12/77	1531	35.0	0.16		0.093	< 0.005	0.013							
504.0	08/08/77	1535	0.3	0.073		0.080	< 0.005	0.015							0.7
504.0	08/08/77	1536	0.3	0.074		0.10	0.005	0.040							
			3.0												3.2

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.10		0.10	0.005	0.032							
504.0	08/08/77	1536	10.0	0.10		0.16	< 0.005	0.023							
			20.0	0.093		0.13	0.005	0.009							
504.0	08/08/77	1536	20.0	0.12		0.12	0.007	0.007							
			30.0	0.16		0.096	0.005	0.005							
504.0	08/08/77	1536	30.0	0.16		0.090	< 0.005	< 0.005							
			35.0	0.16		0.096	< 0.005	< 0.005							2.8
504.0	08/08/77	1536	35.0	0.19		0.12	< 0.005	0.007							
504.0	09/12/77	1545	0.3	0.060		0.15	< 0.005	0.008							0.9
504.0	09/12/77	1546	0.3	0.071		0.26	< 0.005	0.010							
			3.0												1.2
			10.0	0.044		0.16	< 0.005	0.011							
504.0	09/12/77	1546	10.0	0.052		0.21	< 0.005	0.006							
			20.0	0.042		0.17	< 0.005	0.005							
504.0	09/12/77	1546	20.0	0.061		0.20	< 0.005	0.005							
			30.0	0.15		0.25	< 0.005	0.005							
504.0	09/12/77	1546	30.0	0.13		0.35	< 0.005	0.005							
			35.0												0.4
504.0	10/10/77	1555	0.3	0.083		0.21	< 0.005	0.008							0.8
504.0	10/10/77	1556	0.3	0.091		0.15	< 0.005	0.009							
			3.0												1.2
			10.0	0.070		0.10	< 0.005	0.008							
504.0	10/10/77	1556	10.0	0.082		0.25	< 0.005	0.008							
			20.0	0.17		0.22	0.007	0.008							
504.0	10/10/77	1556	20.0	0.21		0.25	0.007	0.008							
			30.0	0.21		0.23	0.008	0.008							
504.0	10/10/77	1556	30.0	0.20		0.058	0.006	0.008							
			35.0	0.21		0.068	0.007	0.008							0.6
504.0	10/10/77	1556	35.0	0.21		0.070	0.007	0.007							
504.0	11/14/77	1535	0.3	0.11		0.19	0.009	0.015							1.0
504.0	11/14/77	1536	0.3	0.098		0.14	0.012	0.015							
			3.0												0.8
			10.0	0.095		0.19	0.006	0.013							
504.0	11/14/77	1536	10.0	0.090		0.12	< 0.005	0.013							
			20.0	0.097		0.14	< 0.005	0.013							
504.0	11/14/77	1536	20.0	0.11		0.66	< 0.005	0.015							
			30.0	0.23		0.61	0.006	0.015							
504.0	11/14/77	1536	30.0	0.22		0.60	0.010	0.020							
			35.0	0.24		0.66	0.005	0.013							0.9
504.0	11/14/77	1536	35.0	0.24		0.67	0.008	0.014							
504.0	12/12/77	1620	0.3	0.12		0.057	< 0.005	< 0.005							1.1
504.0	12/12/77	1621	0.3	0.12		0.053	< 0.005	< 0.005							
			3.0												1.0
			10.0	0.12		0.087	< 0.005	< 0.005							
504.0	12/12/77	1621	10.0	0.11		0.079	< 0.005	< 0.005							
			20.0	0.11		0.076	< 0.005	< 0.005							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
S04.0	12/12/77	1621	20.0	0.11		0.068	< 0.005	< 0.005							
			30.0	0.14		0.11	< 0.005	< 0.005							
S04.0	12/12/77	1621	30.0	0.14		0.11	< 0.005	< 0.005							
			34.0												2.1
S05.0	01/11/77	1600	0.3	0.089		0.048	< 0.005	0.008							
			5.0	0.087		0.067	< 0.005	0.007							
			10.0	0.10		0.041	< 0.005	0.008							
			15.0	0.12		0.035	< 0.005	0.018							
			20.0	0.084		0.042	< 0.005	0.010							
			25.0	0.11		0.060	< 0.005	0.025							
			30.0	0.11		0.067	< 0.005	0.015							
S05.0	02/14/77	1550	0.3	0.11		0.14	< 0.005	0.005							
			5.0	0.11		0.084	0.005	0.005							
			10.0	0.11		0.099	0.005	0.005							
			15.0	0.16		0.099	0.007	0.006							
			20.0	0.10		0.076	< 0.005	0.005							
			25.0	0.11		0.075	< 0.005	0.005							
			30.0	0.090		0.084	< 0.005	0.006							
			35.0	0.081		0.070	< 0.005	0.007							
			38.0	0.086		0.12	< 0.005	0.007							
S05.0	03/14/77	1510	0.3	0.17		0.14	0.005	0.005							
			5.0	0.14		0.11	< 0.005	< 0.005							
			10.0	0.18		0.41	< 0.005	< 0.005							
			15.0	0.11		0.34	< 0.005	< 0.005							
			20.0	0.18		0.41	< 0.005	0.005							
			25.0	0.13		0.46	< 0.005	< 0.005							
			30.0	0.14		0.45	< 0.005	< 0.005							
			32.5	0.11		0.31	0.005	< 0.005							
S05.0	04/12/77	1540	0.3	0.14		0.18	0.005	0.007							
			5.0	0.11		0.13	< 0.005	0.007							
			10.0	0.096		0.14	0.005	0.007							
			15.0	0.096		0.13	< 0.005	0.007							
			20.0	0.11		0.11	< 0.005	0.006							
			25.0	0.10		0.16	< 0.005	0.006							
			30.0	0.13		0.20	< 0.005	0.011							
			35.0	0.12		0.13	< 0.005	0.013							
S05.0	05/10/77	1610	0.3	0.10		0.046	< 0.005	0.005							
			5.0	0.10		0.045	< 0.005	0.007							
			10.0	0.12		0.062	< 0.005	0.006							
			15.0	0.14		0.084	< 0.005	0.005							
			20.0	0.086		0.053	< 0.005	0.005							
			25.0	0.14		0.23	< 0.005	0.005							
			30.0	0.17		0.10	< 0.005	0.008							
			35.0	0.16		0.10	< 0.005	0.012							
S05.0	06/14/77	1525	0.3	0.092		0.10	0.005	< 0.005							
S05.0	06/14/77	1526	0.3	0.093		0.13	< 0.005	0.005							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.10		0.22		< 0.005							
SOS.0	06/14/77	1526	10.0	0.11		0.19		< 0.005							
			20.0	0.099		0.18		< 0.005							
SOS.0	06/14/77	1526	20.0	0.23		0.22		< 0.005							
			30.0	0.15		0.12	< 0.005	< 0.005							
SOS.0	06/14/77	1526	30.0	0.17		0.12	< 0.005	0.005							
			38.0	0.17		0.10	< 0.005	0.005							
SOS.0	06/14/77	1526	38.0	0.15		0.081	< 0.005	0.007							
SOS.0	07/12/77	1605	0.3	0.082		0.12	< 0.005	0.010							
SOS.0	07/12/77	1606	0.3	0.071		0.16	0.009	0.012							
			10.0	0.090		0.14		0.011							
SOS.0	07/12/77	1606	10.0	0.091		0.13	< 0.005	0.018							
			20.0	0.092		0.17	< 0.005	0.013							
SOS.0	07/12/77	1606	20.0	0.098		0.24	< 0.005	0.012							
			30.0	0.17		0.14	0.010	0.017							
SOS.0	07/12/77	1606	30.0	0.14		0.12	0.006	0.016							
			35.0	0.16		0.12	< 0.005	0.019							
SOS.0	07/12/77	1606	35.0	0.17		0.17	0.006	0.026							
SOS.0	08/08/77	1630	0.3	0.070		0.12	< 0.005	0.017							
SOS.0	08/08/77	1631	0.3	0.19		0.65	< 0.005	0.010							
			10.0	0.10		0.73	0.020	0.024							
SOS.0	08/08/77	1631	10.0	0.093		0.13	< 0.005	0.580							
			20.0	0.094		0.14	0.005	0.009							
SOS.0	08/08/77	1631	20.0	0.12		0.15	0.005	0.005							
			30.0	0.12		0.21	< 0.005	0.005							
SOS.0	08/08/77	1631	30.0	0.13		0.18	< 0.005	0.007							
SOS.0	09/12/77	1630	0.3	0.053		0.16	< 0.005	0.005							
SOS.0	09/12/77	1631	0.3	0.041		0.10	< 0.005	0.005							
			10.0	0.033		0.13	< 0.005	0.005							
SOS.0	09/12/77	1631	10.0	0.064		0.18	< 0.005	0.005							
			20.0	0.031		0.17	< 0.005	< 0.005							
SOS.0	09/12/77	1631	20.0	0.045		0.16	< 0.005	0.005							
			30.0	0.11		0.15	< 0.005	0.005							
SOS.0	09/12/77	1631	30.0	0.11		0.13	< 0.005	0.005							
SOS.0	10/10/77	1625	0.3	0.078		0.10	0.010	0.010							
SOS.0	10/10/77	1626	0.3	0.081		0.37	0.010	0.010							
			10.0	0.085		0.10	0.008	0.008							
SOS.0	10/10/77	1626	10.0	0.085		0.12	0.008	0.008							
			20.0	0.082		0.12	0.008	0.008							
SOS.0	10/10/77	1626	20.0	0.068		0.14	0.008	0.008							
			30.0	0.078		0.18	0.009	0.009							
SOS.0	10/10/77	1626	30.0	0.058		0.19	0.008	0.008							
SOS.0	11/14/77	1606	0.3	0.11		0.82	0.005	0.011							
SOS.0	11/14/77	1607	0.3	0.14		0.94	0.026	0.026							
			10.0	0.14		0.63	0.012	0.015							
SOS.0	11/14/77	1607	10.0	0.11		0.64	0.007	0.014							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			20.0	0.096		0.18	0.006	0.016							
505.0	11/14/77	1607	20.0	0.096		0.17	0.006	0.015							
			30.0	0.097		0.19	0.007	0.015							
505.0	11/14/77	1607	30.0	0.10		0.24	0.005	0.014							
505.0	12/12/77	1655	0.3	0.11		0.10	< 0.005	< 0.005							
505.0	12/12/77	1655	10.0	0.10		0.10	< 0.005	< 0.005							
505.0	12/12/77	1655	20.0	0.13		0.10	< 0.005	< 0.005							
505.0	12/12/77	1655	30.0	0.12		0.084	< 0.005	< 0.005							
506.0	01/11/77	1620	0.3	0.12		0.067	< 0.005	0.010							
			5.0	0.086		0.036	< 0.005	0.008							
			10.0	0.084		0.046	< 0.005	0.008							
			15.0	0.084		0.040	< 0.005	0.009							
			20.0	0.091		0.063	< 0.005	0.009							
			25.0	0.10		0.048	< 0.005	0.011							
506.0	02/14/77	1615	0.3	0.095		0.11	< 0.005	0.006							
			5.0	0.094		0.099	0.008	0.006							
			10.0	0.088		0.066	< 0.005	0.005							
			15.0	0.089		0.044	< 0.005	0.005							
			20.0	0.083		0.045	< 0.005	0.006							
			25.0	0.10		0.12	< 0.005	0.006							
			27.5	0.088		0.064	< 0.005	0.010							
506.0	03/14/77	1525	0.3	0.10		0.24	< 0.005	0.005							
			5.0	0.10		0.35	< 0.005	< 0.005							
			10.0	0.12		0.21	< 0.005	< 0.005							
			15.0	0.13		0.30	< 0.005	< 0.005							
			20.0	0.11		0.31	< 0.005	< 0.005							
			25.0	0.11		0.11	< 0.005	< 0.005							
			30.0	0.094		0.056	< 0.005	< 0.005							
			35.0	0.098		0.091	< 0.005	< 0.005							
			37.5	0.12		0.18	0.007	< 0.005							
506.0	04/12/77	1555	0.3	0.11		0.12	< 0.005	0.007							
			5.0	0.14		0.12	< 0.005	0.009							
			10.0	0.097		0.15	< 0.005	0.006							
			15.0	0.098		0.15	< 0.005	0.009							
			20.0	0.097		0.12	< 0.005	0.007							
			25.0	0.34		0.27	< 0.005	0.011							
			30.0	0.11		0.11	< 0.005	0.011							
506.0	05/10/77	1625	0.3	0.081		0.066	< 0.005	0.006							
			5.0	0.093		0.041	< 0.005	0.006							
			10.0	0.14		0.080	< 0.005	0.006							
			15.0	0.085		0.10	< 0.005	0.006							
			20.0	0.13		0.33	< 0.005	0.007							
			25.0	0.16		0.12	< 0.005	0.005							
			30.0	0.17		0.13	< 0.005	0.009							
506.0	06/14/77	1550	0.3	0.082		0.021	< 0.005	0.005							
506.0	06/14/77	1551	0.3	0.074		0.058	< 0.005	0.005							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.079		0.051	< 0.005	< 0.005							
506.0	06/14/77	1551	10.0	0.083		0.036	< 0.005	0.005							
			20.0	0.19		0.096	0.007	0.006							
506.0	06/14/77	1551	20.0	0.11		0.043	< 0.005	< 0.005							
			29.0	0.24		0.057	< 0.005	0.007							
506.0	06/14/77	1551	29.0	0.19		0.064	0.007	0.007							
506.0	07/12/77	1630	0.3	0.075		0.17	0.006	0.012							
506.0	07/12/77	1631	0.3	0.071		0.16	0.006	0.014							
			10.0	0.087		0.18	< 0.005	0.012							
506.0	07/12/77	1631	10.0	0.089		0.19	0.005	0.012							
			20.0	0.11		0.23	0.009	0.012							
506.0	07/12/77	1631	20.0	0.096		0.19	0.010	0.013							
			28.0	0.15		0.29	0.012	0.015							
506.0	07/12/77	1631	28.0	0.17		0.23	0.008	0.014							
506.0	08/08/77	1710	0.3	0.087		0.086	0.005	0.005							
506.0	08/08/77	1711	0.3	0.051		0.089	0.005	0.005							
			10.0	0.067		0.11	0.005	0.027							
506.0	08/08/77	1711	10.0	0.074		0.11	0.006	0.098							
			20.0	0.12		0.40	0.005	0.080							
506.0	08/08/77	1711	20.0	0.077		0.12	0.005	0.019							
			30.0	0.13		0.15	0.005	0.016							
506.0	08/08/77	1711	30.0	0.13		0.13	0.007	0.014							
506.0	09/12/77	1655	0.3	0.033		0.11	< 0.005	0.005							
506.0	09/12/77	1656	0.3	0.069		0.16	< 0.005	0.013							
			10.0	0.024		0.11	< 0.005	0.005							
506.0	09/12/77	1656	10.0	0.041		0.14	< 0.005	0.006							
			20.0	0.023		0.11	< 0.005	0.005							
506.0	09/12/77	1656	20.0	0.053		0.16	< 0.005	0.007							
			30.0	0.065		0.17	< 0.005	0.008							
506.0	09/12/77	1656	30.0	0.068		0.18	< 0.005	0.009							
506.0	10/10/77	1647	0.3	0.093		0.12	0.008	0.008							
506.0	10/10/77	1648	0.3	0.081		0.12	< 0.005	0.008							
			10.0	0.077		0.13	0.008	0.008							
506.0	10/10/77	1648	10.0	0.083		0.12	0.008	0.008							
			20.0	0.066		0.11	0.008	0.008							
506.0	10/10/77	1648	20.0	0.070		0.36	0.007	0.007							
			30.0	0.050		0.48	0.007	0.012							
506.0	10/10/77	1648	30.0	0.040		0.50	0.009	0.010							
			35.0	0.067		0.34	0.006	0.008							
506.0	10/10/77	1648	35.0	0.065		0.29	0.009	0.009							
506.0	11/14/77	1640	0.3	0.094		0.15	0.006	0.020							
506.0	11/14/77	1641	0.3	0.11		0.18	0.025	0.025							
			10.0	0.14		0.23	0.013	0.013							
506.0	11/14/77	1641	10.0	0.094		0.21	0.013	0.013							
			20.0	0.099		0.17	0.015	0.026							
506.0	11/14/77	1641	20.0	0.092		0.16	0.008	0.020							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			30.0	0.087		0.16	0.007	0.014							
506.0	11/14/77	1641	30.0	0.097		0.16	0.022	0.022							
			37.0	0.051		0.40	0.005	0.023							
506.0	11/14/77	1641	37.0	0.056		0.50	0.005	0.031							
506.0	12/12/77	1710	0.3	0.15		0.12	< 0.005	< 0.005							
506.0	12/12/77	1710	10.0	0.20		0.17	< 0.005	< 0.005							
506.0	12/12/77	1710	20.0	0.13		0.10	< 0.005	< 0.005							
506.0	12/12/77	1710	29.0	0.10		0.076	< 0.005	< 0.005							
507.0	01/11/77	1645	0.3	0.083		0.031	< 0.005	0.009							1.2
			3.0												1.2
			5.0	0.096		0.067	< 0.005	0.008							
			10.0	0.073		0.023	< 0.005	0.008							
			15.0	0.076		0.030	< 0.005	0.007							
			20.0	0.071		0.028	< 0.005	0.008							1.0
507.0	02/14/77	1635	0.3	0.085		0.070	< 0.005	0.027							1.0
			3.0												1.0
			5.0	0.081		0.078	< 0.005	0.007							
			10.0	0.086		0.093	0.008	0.007							
			15.0	0.077		0.083	< 0.005	0.006							1.0
507.0	03/14/77	1545	0.3	0.10		0.13	< 0.005	< 0.005							1.9
			3.0												1.3
			5.0	0.088		0.12	< 0.005	< 0.005							
			10.0	0.081		0.085	< 0.005	< 0.005							
			15.0	0.087		0.068	< 0.005	< 0.005							
			17.5	0.068		0.090	< 0.005	< 0.005							0.9
507.0	04/12/77	1605	0.3	0.097		0.13	< 0.005	0.008							3.3
			3.0												2.4
			5.0	0.098		0.12	< 0.005	0.010							
			10.0	0.092		0.41	< 0.005	0.006							
			15.0	0.092		0.17	< 0.005	0.006							
			18.0	0.11		0.14	< 0.005	0.010							4.2
507.0	05/10/77	1648	0.3	0.10		0.11	< 0.005	0.008							1.2
			3.0												1.4
			5.0	0.11		0.11	< 0.005	0.008							
			10.0	0.076		0.10	< 0.005	0.007							
			15.0	0.082		0.15	< 0.005	0.007							
			20.0	0.13		0.13	< 0.005	0.011							1.0
507.0	06/14/77	1605	0.3	0.074		0.028	< 0.005	< 0.005							0.8
507.0	06/14/77	1606	0.3	0.088		0.015	0.009	0.005							
			3.0												1.4
			10.0	0.078		0.035	< 0.005	0.005							
507.0	06/14/77	1606	10.0	0.077		0.042	0.005	< 0.005							
			20.0	0.062		0.034	< 0.005	0.014							1.0
507.0	06/14/77	1606	20.0	0.078		0.062	< 0.005	0.017							
507.0	07/12/77	1650	0.3	0.25		0.32	0.016	0.020							3.6
507.0	07/12/77	1651	0.3	0.084		0.36	0.010	0.012							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			3.0												2.0
			10.0	0.083		0.15	0.007	0.015							
507.0	07/12/77	1651	10.0	0.069		0.24	0.010	0.013							
			20.0	0.059		0.10	0.005	0.012							3.7
507.0	07/12/77	1651	20.0	0.056		0.32	0.006	0.012							
507.0	08/08/77	1750	0.3	0.054		0.12	0.005	0.008							2.5
507.0	08/08/77	1751	0.3	0.063		0.080	0.006	0.008							
			3.0												2.0
			10.0	0.063		0.072	0.005	0.005							
507.0	08/08/77	1751	10.0	0.064		0.12	0.005	0.007							
			20.0	0.067		0.12	0.005	0.007							
507.0	08/08/77	1751	20.0	0.070		0.13	0.006	0.006							
			22.0												1.6
507.0	09/12/77	1720	0.3	0.012		0.11	< 0.005	0.034							1.9
507.0	09/12/77	1721	0.3	0.012		0.34	< 0.005	0.006							
			3.0												2.3
			10.0	0.031		0.19	< 0.005	0.006							
507.0	09/12/77	1721	10.0	0.046		0.21	< 0.005	0.006							
			20.0	0.038		0.19	< 0.005	0.012							
507.0	09/12/77	1721	20.0	0.030		0.14	< 0.005	0.006							
			21.0												1.4
507.0	10/10/77	1718	0.3	0.089		0.37	0.008	0.010							0.7
507.0	10/10/77	1719	0.3	0.076		0.38	0.008	0.008							
			3.0												1.0
			10.0	0.076		0.39	0.008	0.008							
507.0	10/10/77	1719	10.0	0.076		0.42	0.008	0.008							
			15.0	0.073		0.46	0.009	0.009							1.0
507.0	10/10/77	1719	15.0	0.29		0.40	0.009	0.011							
507.0	11/14/77	1705	0.3	0.086		0.16	0.005	0.024							1.0
507.0	11/14/77	1706	0.3	0.077		0.12	0.005	0.013							
			3.0												0.7
			10.0	0.085		0.14	0.007	0.016							
507.0	11/14/77	1706	10.0	0.067		0.13	0.008	0.014							
			20.0	0.075		0.14	0.016	0.016							
507.0	11/14/77	1706	20.0	0.076		0.14	0.009	0.013							
			21.0												0.7
507.0	12/12/77	1730	0.3	0.092		0.036	< 0.005	< 0.005							1.1
507.0	12/12/77	1731	0.3	0.087		0.036	< 0.005	< 0.005							
			3.0												0.7
			10.0	0.087		0.036	< 0.005	< 0.005							
507.0	12/12/77	1731	10.0	0.086		0.030	< 0.005	< 0.005							
			20.0	0.087		0.066	< 0.005	< 0.005							0.8
507.0	12/12/77	1731	20.0	0.078		0.052	< 0.005	< 0.005							
508.0	01/11/77	1315	0.3	0.11		0.054	< 0.005	0.007							1.7
			3.0												1.1
			5.0	0.092		0.051	< 0.005	0.006							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			8.0	0.087		0.048	< 0.005	0.006							1.2
508.0	02/14/77	1515	0.3	0.21		0.052	< 0.005	0.006							0.8
			3.0												0.8
			5.0	0.11		0.075	0.006	0.009							
			6.5	0.098		0.091	0.007	0.005							0.7
508.0	03/14/77	1440	0.3	0.11		0.10	< 0.005	< 0.005							1.1
			3.0												1.1
			5.0	0.12		0.28	< 0.005	< 0.005							
			6.5	0.10		0.084	< 0.005	< 0.005							1.7
508.0	04/12/77	1500	0.3	0.20		0.55	0.006	0.010							2.2
			3.0												2.0
			5.0	0.14		0.48	0.005	0.007							
			9.0	0.14		0.42	< 0.005	0.007							2.0
508.0	05/10/77	1520	0.3	0.12		0.062	< 0.005	0.010							1.3
			3.0												1.1
			5.0	0.14		0.066	< 0.005	0.005							
			6.0	0.11		0.033	< 0.005	0.005							1.5
508.0	06/14/77	1455	0.3	0.090		0.073	< 0.005	< 0.005							0.9
508.0	06/14/77	1456	0.3	0.067		0.071	< 0.005	< 0.005							
			3.0												0.9
			6.0	0.11		0.13	0.005	< 0.005							0.8
508.0	06/14/77	1456	6.0	0.13		0.16	< 0.005	< 0.005							
508.0	07/12/77	1520	0.3	0.064		0.16	0.005	0.006							3.8
508.0	07/12/77	1521	0.3	0.059		0.12	< 0.005	0.008							
			3.0												3.2
			6.5	0.11		0.16	< 0.005	0.011							3.6
508.0	07/12/77	1521	6.5	0.098		0.11	< 0.005	0.011							
508.0	08/08/77	1520	0.3	0.12		0.064	< 0.005	< 0.005							3.4
508.0	08/08/77	1521	0.3	0.079		0.075	< 0.005	0.006							
			3.0												3.9
			7.0	0.081		0.12	0.010	0.012							3.0
508.0	08/08/77	1521	7.0	0.088		0.11	< 0.005	0.009							
508.0	09/12/77	1620	0.3	0.036		0.18	0.010	0.006							1.0
508.0	09/12/77	1621	0.3	0.097		0.24	< 0.005	0.006							
			3.0												1.3
			7.0	0.080		0.18	< 0.005	0.006							1.2
508.0	09/12/77	1621	7.0	0.075		0.18	< 0.005	0.006							
508.0	10/10/77	1550	0.3	0.11		0.092	< 0.005	0.006							1.0
508.0	10/10/77	1551	0.3	0.10		0.075	< 0.005	0.006							
			3.0												0.1
			6.5	0.080		0.20	< 0.005	0.008							1.0
508.0	10/10/77	1551	6.5	0.081		0.21	< 0.005	0.008							
508.0	11/14/77	1525	0.3	0.11		0.13	0.010	0.017							0.8
508.0	11/14/77	1526	0.3	0.12		0.14	0.009	0.015							
			3.0												0.9
			8.0	0.11		0.13	0.005	0.015							0.5

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
508.0	11/14/77	1526	8.0	0.11		0.14	0.006	0.015							
508.0	12/12/77	1605	0.3	0.11		0.063	< 0.005	< 0.005							2.2
508.0	12/12/77	1606	0.3	0.11		0.058	< 0.005	< 0.005							
			3.0												0.5
			8.0	0.11		0.047	< 0.005	< 0.005							0.4
508.0	12/12/77	1606	8.0	0.11		0.052	< 0.005	< 0.005							
508.5	01/11/77	1300	0.3	0.14		0.30	0.007	0.007							
			5.0	0.14		0.20	< 0.005	0.006							
			10.0	0.16		0.20	< 0.005	0.006							
			15.0	0.086		0.032	< 0.005	0.007							
			17.5	0.086		0.031	< 0.005	0.006							
508.5	02/14/77	1520	0.3	0.095		0.054	< 0.005	0.006							
			5.0	0.10		0.077	< 0.005	0.005							
			10.0	0.087		0.050	< 0.005	0.008							
509.0	01/11/77	1335	0.3	0.087		0.041	< 0.005	0.010							1.1
509.0	02/14/77	1445	0.3	0.15		0.12	< 0.005	0.006							0.6
509.0	03/14/77	1420	0.3	0.12		0.086	< 0.005	0.005							1.6
509.0	04/12/77	1435	0.3	0.17		0.13	< 0.005	0.011							2.1
509.0	05/10/77	1500	0.3	0.13		0.086	< 0.005	0.005							1.1
509.0	06/14/77	1430	0.3	0.079		0.10	< 0.005	< 0.005							0.6
509.0	06/14/77	1431	0.3	0.11		0.12	< 0.005	< 0.005							
509.0	07/12/77	1455	0.3	0.060		0.12	< 0.005	0.009							1.4
509.0	07/12/77	1456	0.3	0.10		0.10	< 0.005	0.014							
509.0	08/08/77	1455	0.3	0.15		0.20	0.006	0.008							2.9
509.0	08/08/77	1456	0.3	0.12		0.29	0.005	0.005							
509.0	09/12/77	1510	0.3	0.055		0.16	< 0.005	0.008							1.4
509.0	09/12/77	1511	0.3	0.055		0.16	< 0.005	0.007							
509.0	10/10/77	1520	0.3	0.084		0.24	< 0.005	0.010							1.2
509.0	10/10/77	1521	0.3	0.084		0.11	0.005	0.009							
509.0	11/14/77	1503	0.3	0.17		0.57	0.005	0.019							1.2
509.0	11/14/77	1504	0.3	0.097		0.15	< 0.005	0.016							
509.0	12/12/77	1525	0.3	0.15		0.080	< 0.005	< 0.005							0.5
509.0	12/12/77	1526	0.3	0.11		0.060	< 0.005	< 0.005							
549.0	02/14/77	1650	0.3	0.068		0.055	< 0.005	0.008							
			5.0	0.74		0.049	< 0.005	0.005							
			8.0	0.13		0.041	< 0.005	0.005							
549.0	03/14/77	1600	0.3	0.074		0.088	< 0.005	< 0.005							
			5.0	0.066		0.072	< 0.005	< 0.005							
			10.0	0.21		0.042	< 0.005	< 0.005							
549.0	04/12/77	1625	0.3	0.15		0.26	0.005	0.006							
			5.0	0.10		0.17	< 0.005	0.013							
			10.0	0.10		0.21	< 0.005	0.007							
			12.5	0.10		0.20	< 0.005	0.008							
549.0	05/10/77	1700	0.3	0.092		0.044	< 0.005	0.005							
			5.0	0.093		0.067	< 0.005	0.007							
			10.0	0.13		0.13	< 0.005	0.005							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
549.0	06/14/77	1625	0.3	0.086		0.034	< 0.005	0.007							
549.0	06/14/77	1626	0.3	0.097		0.048	< 0.005	< 0.005							
			10.0	0.068		0.034	< 0.005	0.006							
549.0	06/14/77	1626	10.0	0.078		0.045	< 0.005	< 0.005							
549.0	07/12/77	1705	0.3	0.083		0.18	0.006	0.012							
549.0	07/12/77	1706	0.3	0.055		0.13	< 0.005	0.012							
			10.0	0.056		0.12	< 0.005	0.012							
549.0	07/12/77	1706	10.0	0.075		0.15	0.006	0.012							
549.0	08/08/77	1800	0.3	0.056		0.10	0.007	0.009							
549.0	08/08/77	1801	0.3	0.053		0.090	0.005	0.038							
			10.0	0.054		0.11	0.005	0.055							
549.0	08/08/77	1801	10.0	0.052		0.11	0.005	0.021							
549.0	09/12/77	1730	0.3	0.049		0.082	< 0.005	0.005							
549.0	09/12/77	1731	0.3	0.057		0.11	< 0.005	0.007							
			10.0	0.053		0.089	< 0.005	< 0.005							
549.0	09/12/77	1731	10.0	0.055		0.075	< 0.005	< 0.005							
549.0	10/10/77	1740	0.3	0.067		0.11	0.010	0.012							
549.0	10/10/77	1741	0.3	0.076		0.10	0.005	0.009							
			10.0	0.077		0.15	0.010	0.010							
549.0	10/10/77	1741	10.0	0.060		0.11	0.012	0.012							
549.0	11/14/77	1720	0.3	0.068		0.14	0.010	0.012							
549.0	11/14/77	1721	0.3	0.070		0.10	0.006	0.011							
			10.0	0.071		0.091	0.005	0.014							
549.0	11/14/77	1721	10.0	0.085		0.16	0.007	0.012							
549.0	12/12/77	1745	0.3	0.10		0.083	< 0.005	< 0.005							
549.0	12/12/77	1746	0.3	0.16		0.11	< 0.005	< 0.005							
			10.0	0.088		0.061	< 0.005	< 0.005							
549.0	12/12/77	1746	10.0	0.083		0.066	< 0.005	< 0.005							

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 2

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BCD MG/L
601.0	01/11/77	1445	-1.0												1.6
601.0	02/14/77	1035	-1.0												1.0
			0.3	0.28		0.079	0.006	0.013							
			5.0	0.28		0.10	< 0.005	0.017							
			10.0	0.27		0.085	< 0.005	0.021							
			15.0	0.30		0.11	0.005	0.014							
			20.0	0.44		0.12	0.006	0.012							
			25.0	0.25		0.085	0.005	0.012							
			27.5	0.31		0.13	0.007	0.015							
601.0	03/14/77	1025	-1.0												1.9
601.0	04/12/77	1015	-1.0												2.3
601.0	05/10/77	1000	-1.0												1.9
			0.3	0.10		0.061	< 0.005	0.013							
			5.0	0.21		0.096	< 0.005	0.016							
			10.0	0.28		0.078	< 0.005	0.013							
			15.0	0.30		0.056	< 0.005	0.011							
			20.0	0.37		0.074	< 0.005	0.014							
			25.0	0.40		0.11	< 0.005								
			26.0	0.39		0.093	< 0.005								
601.0	06/14/77	1005	-1.0												2.0
			0.3	0.029		0.056	0.010	0.020							
601.0	06/14/77	1006	0.3	0.027		0.080	0.009	0.024							
			10.0	0.20		0.063	0.005	0.013							
601.0	06/14/77	1006	10.0	0.20		0.072	< 0.005	0.010							
			20.0	0.36		0.056	0.010	0.013							
601.0	06/14/77	1006	20.0	0.37		0.053	0.008	0.014							
			27.0	0.37		0.067	0.009	0.016							
601.0	06/14/77	1006	27.0	0.37		0.056	0.006	0.026							
601.0	07/12/77	1020	-1.0												2.0
			0.3	0.067		0.38	0.010	0.011							
601.0	07/12/77	1021	0.3	0.092		0.30	0.008	0.010							
			10.0	0.24		0.28	0.007	0.011							
601.0	07/12/77	1021	10.0	0.26		0.37		0.011							
			20.0	0.26		0.26	0.006	0.014							
601.0	07/12/77	1021	20.0	0.30		0.53	< 0.005	0.013							
			27.0	0.34		0.19	0.018	0.024							
601.0	07/12/77	1021	27.0	0.35		0.22	0.010	0.019							
601.0	08/08/77	1015	-1.0												1.4
			0.3	0.028		0.27	0.006	0.024							
601.0	08/08/77	1016	0.3	0.028		0.26	0.006	0.019							
			10.0	0.14		0.13	0.006	0.029							
601.0	08/08/77	1016	10.0	0.13		0.15	0.006	0.027							
			20.0	0.071		0.63	0.008	0.031							
601.0	08/08/77	1016	20.0	0.038		0.73	0.008	0.027							
			26.0	0.048		0.49	0.028	0.028							
601.0	08/08/77	1016	26.0	0.044		0.36	0.027	0.027							

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WATER QUALITY RESEARCH DATA TYPE 2 PAGE 2

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
601.0	09/12/77	1020	-1.0												2.1
			0.3	0.028		0.12	< 0.005	0.017							
601.0	09/12/77	1021	0.3	0.024		0.11	< 0.005	0.009							
			10.0	0.048		0.17	< 0.005	0.013							
601.0	09/12/77	1021	10.0	0.041		0.18	< 0.005	0.011							
			20.0	0.022		5.3	0.008	0.010							
601.0	09/12/77	1021	20.0	0.032		5.3	0.009	0.024							
			25.0	0.021		5.6	0.011	0.026							
601.0	09/12/77	1021	25.0	0.026		5.1	0.014	0.024							
601.0	10/10/77	1045	-1.0												1.6
			0.3	0.080		0.26	0.006	0.010							
601.0	10/10/77	1046	0.3	0.076		0.28	0.005	0.006							
			10.0	0.074		0.26	< 0.005	0.005							
601.0	10/10/77	1046	10.0	0.082		0.27	< 0.005	0.005							
			20.0	0.10		0.60	< 0.005	0.005							
601.0	10/10/77	1046	20.0	0.085		0.60	< 0.005	0.005							
601.0	11/14/77	1035	-1.0												1.7
			0.3	0.13		0.49	< 0.005	0.015							
601.0	11/14/77	1036	0.3	0.15		0.52	< 0.005	0.016							
			10.0	0.17		0.50	< 0.005	0.016							
601.0	11/14/77	1036	10.0	0.17		0.52	< 0.005	0.014							
			20.0	0.16		0.55	0.005	0.021							
601.0	11/14/77	1036	20.0	0.16		0.53	< 0.005	0.011							
			26.0	0.18		0.57	0.005	0.006							
601.0	11/14/77	1036	26.0	0.24		0.57	0.009	0.009							
601.0	12/12/77	1030	-1.0												1.1
			0.3	0.14		0.069	0.007	0.007							
601.0	12/12/77	1031	0.3	0.14		0.071	0.005	0.005							
			10.0	0.14		0.065	0.006	0.006							
601.0	12/12/77	1031	10.0	0.14		0.072	0.006	0.006							
			20.0	0.18		0.087	0.007	0.007							
601.0	12/12/77	1031	20.0	0.15		0.069	0.006	0.007							
602.0	01/10/77	1620	-1.0												1.9
602.0	02/14/77	1110	-1.0												1.2
			0.3	0.31		0.080	0.006	0.014							
			5.0	0.24		0.099	0.005	0.015							
			10.0	0.25		0.20	0.005	0.012							
			15.0					0.011							
			18.0	0.33		0.12	< 0.005	0.013							
602.0	03/14/77	1100	-1.0												2.4
602.0	04/12/77	1100	-1.0												3.4
602.0	05/10/77	1030	-1.0												1.9
			0.3	0.14		0.081	< 0.005	0.013							
			5.0	0.16		0.080	< 0.005	0.013							
			10.0	0.34		0.089	< 0.005								
			15.0	0.33		0.092	< 0.005	0.024							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BCD MG/L
			19.0	0.35		0.12	< 0.005	0.078							
602.0	06/14/77	1045	-1.0												1.7
			0.3	0.099		0.055		0.016							
602.0	06/14/77	1046	0.3	0.035		0.046		0.012							
			10.0	0.36		0.073	< 0.005	0.013							
602.0	06/14/77	1046	10.0	0.35		0.068	< 0.005	0.007							
			19.0	0.31		0.065		0.020						4	
602.0	06/14/77	1046	19.0	0.35		0.098		0.019						1	
602.0	07/12/77	1050	-1.0												2.5
			0.3	0.041		0.14	< 0.005	0.013							
602.0	07/12/77	1051	0.3	0.042		0.24	< 0.005	0.013							
			10.0	0.31		0.13	< 0.005	0.013							
602.0	07/12/77	1051	10.0	0.29		0.25	< 0.005	0.014							
			18.0	0.065		0.46	< 0.005	0.025							
602.0	07/12/77	1051	18.0	0.038		0.43	< 0.005	0.024							
602.0	08/08/77	1045	-1.0												2.1
			0.3	0.036		0.075	0.024								
602.0	08/08/77	1046	0.3	0.029		0.058	0.024	0.028							
			10.0	0.048		0.29	0.013	0.043							
602.0	08/08/77	1046	10.0	0.051		0.26	0.040	0.040							
			17.5	0.055		0.90	0.046	0.057							
602.0	08/08/77	1046	17.5	0.029		0.83	0.052	0.076							
602.0	09/12/77	1050	-1.0												2.9
			0.3	0.036		0.17	0.005	0.026							
602.0	09/12/77	1051	0.3	0.030		0.14	< 0.005	0.011							
			10.0	0.031		0.16	< 0.005	0.014							
602.0	09/12/77	1051	10.0	0.024		0.20	< 0.005	0.011							
			17.0	0.006		6.5	< 0.005	0.011							
602.0	09/12/77	1051	17.0	0.005		7.1	< 0.005	0.014							
602.0	10/10/77	1125	-1.0												2.1
			0.3	0.12		0.27	< 0.005	< 0.005							
602.0	10/10/77	1126	0.3	0.12		0.27	< 0.005	< 0.005							
			10.0	0.13		0.30	< 0.005	< 0.005							
602.0	10/10/77	1126	10.0	0.11		0.13	< 0.005	< 0.005							
			19.0	0.12		0.14	< 0.005	< 0.005							
602.0	10/10/77	1126	19.0	0.11		0.13	< 0.005	< 0.005							1.8
602.0	11/14/77	1100	-1.0												
			0.3	0.19		0.46	< 0.005	< 0.005							
602.0	11/14/77	1101	0.3	0.19		0.56	0.008	0.011							
			10.0	0.17		0.14	0.010	0.010						7	
602.0	11/14/77	1101	10.0	0.16		0.10	0.006	0.006						7	
			20.0	0.16		0.14	< 0.005	0.017						6	
602.0	11/14/77	1101	20.0	0.15		0.13	< 0.005	0.022						1	
602.0	12/12/77	1115	-1.0												1.1
			0.3	0.19		0.049	0.007	0.007							
602.0	12/12/77	1116	0.3	0.18		0.046	0.007	0.007							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
			10.0	0.19		0.039	0.006	0.007							
602.0	12/12/77	1116	10.0	0.17		0.030	0.005	0.007							
			18.0	0.18		0.039	0.006	0.006							
602.0	12/12/77	1116	18.0	0.18		0.034	0.006	0.006							
603.0	01/10/77	1550	-1.0												1.3
603.0	02/14/77	1135	-1.0												1.1
			0.3	0.42		0.067	< 0.005	0.019							
			5.0	0.35		0.13	< 0.005	0.019							
			10.0	0.32		0.11	< 0.005	0.018							
603.0	03/14/77	1125	-1.0												3.2
603.0	04/12/77	1125	-1.0												2.8
603.0	05/10/77	1100	-1.0												2.2
			0.3	0.11		0.054	< 0.005	0.017							
			5.0	0.16		0.060	< 0.005	0.018							
			10.0	0.30		0.16	< 0.005	0.017							
			12.5	0.30		0.20	< 0.005	0.019							
603.0	06/14/77	1105	-1.0												1.6
			0.3	0.049		0.028	< 0.005	0.008						4	
603.0	06/14/77	1106	0.3	0.081		0.027	< 0.005	0.007						4	
			10.0	0.22		0.14	< 0.005	0.012						1	
603.0	06/14/77	1106	10.0	0.23		0.14	< 0.005	0.011						1	
603.0	07/12/77	1120	-1.0												3.3
			0.3	0.040		0.15	< 0.005	0.016							
603.0	07/12/77	1121	0.3	0.035		0.074	< 0.005	0.014							
			10.0	0.11		0.28	< 0.005	0.018							
603.0	07/12/77	1121	10.0	0.070		0.33	< 0.005	0.019							
603.0	08/08/77	1125	-1.0												2.5
			0.3	0.059		0.12	0.010	0.031							
603.0	08/08/77	1126	0.3	0.029		0.072	0.015	0.029							
			10.0	0.15		0.42	0.042	0.078							
603.0	08/08/77	1126	10.0	0.14		0.37	0.038	0.076							
603.0	09/12/77	1115	-1.0												4.3
			0.3	0.088		0.19	< 0.005	0.029							
603.0	09/12/77	1116	0.3	0.029		0.13	< 0.005	0.034							
			10.0	0.26		0.44	0.013	0.016							
603.0	09/12/77	1116	10.0	0.28		0.47	0.025	0.016							
603.0	10/10/77	1145	-1.0												0.5
			0.3	0.098		0.073	< 0.005	0.005							
603.0	10/10/77	1146	0.3	0.11		0.27	< 0.005	0.005							
			10.0	0.11		0.23	< 0.005	0.013							
603.0	10/10/77	1146	10.0	0.11		0.28	0.006	0.007							
603.0	11/14/77	1130	-1.0												1.5
			0.3	0.16		0.12	< 0.005	0.018						2	
603.0	11/14/77	1131	0.3	0.17		0.10	< 0.005	0.023						2	
			10.0	0.17		0.12	< 0.005	0.042							
603.0	11/14/77	1131	10.0	0.16		0.11	0.006	0.022							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BOD MG/L
603.0	12/12/77	1140	-1.0												0.8
			0.3	0.15		0.059	0.007	0.010							
603.0	12/12/77	1141	0.3	0.15		0.042	0.006	0.009							
			10.0	0.24		0.071	< 0.005	< 0.005							
603.0	12/12/77	1141	10.0	0.19		0.062	< 0.005	< 0.005							
604.0	01/10/77	1520	-1.0												1.0
604.0	02/14/77	1155	-1.0												0.5
			0.3	0.18		0.099	< 0.005	0.009							
			5.0	0.13		0.074	< 0.005	0.007							
			9.0	0.25		0.14	0.005	0.011							
604.0	03/14/77	1145	-1.0												3.2
604.0	04/12/77	1145	-1.0												1.9
604.0	05/10/77	1120	-1.0												1.6
			0.3	0.095		0.048	< 0.005	0.011							
			5.0	0.13		0.035	< 0.005	0.011							
			10.0	0.16		0.081	0.005	0.014							
604.0	06/14/77	1125	-1.0												0.9
			0.3	0.090		0.078		< 0.005							
604.0	06/14/77	1126	0.3	0.078		0.033		< 0.005							
			10.0	0.12				< 0.005							
604.0	06/14/77	1126	10.0	0.11		0.19		< 0.005							
604.0	07/12/77	1140	-1.0												2.3
			0.3	0.043		0.13	< 0.005	0.017							
604.0	07/12/77	1141	0.3	0.055		0.41	< 0.005	0.015							
			10.0	0.085		0.33	< 0.005	0.014							
604.0	07/12/77	1141	10.0	0.078		0.18	< 0.005	0.016							
604.0	08/08/77	1140	-1.0												3.8
			0.3	0.037		0.097	0.012	0.028							
604.0	08/08/77	1141	0.3	0.061		0.36	0.024	0.032							
			10.0	0.054		0.30	0.030	0.058							
604.0	08/08/77	1141	10.0	0.064		0.30	0.048	0.19							
604.0	09/12/77	1130	-1.0												0.3
			0.3	0.048		0.16	< 0.005	0.054							
604.0	09/12/77	1131	0.3	0.046		0.14	< 0.005	0.051							
			9.0	0.089		0.36	< 0.005	0.013							
604.0	09/12/77	1131	9.0	0.090		0.38	< 0.005	0.011							
604.0	10/10/77	1205	-1.0												0.8
			0.3	0.074		0.075	< 0.005	0.008							
604.0	10/10/77	1206	0.3	0.097		0.11	< 0.005	0.008							
			10.0	0.080		0.079	0.009	0.009							
604.0	10/10/77	1206	10.0	0.072		0.068	< 0.005	0.009							
604.0	11/14/77	1200	-1.0												1.5
			0.3	0.091		0.11	< 0.005	0.011							
604.0	11/14/77	1201	0.3	0.10		0.51	< 0.005	0.015							
			10.0	0.10		0.43	< 0.005	0.013							
604.0	11/14/77	1201	10.0	0.13		0.89	< 0.005	0.011							

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 2 PAGE 6

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	NO3-NO2-N MG/L	KJELDAHL N MG/L	NH3-N MG/L	ORTHO PO4-P MG/L	TOTAL P MG/L	TOTAL ORG C MG/L	TOTAL DISS C MG/L	TOTAL PART C MG/L	TOTAL INORG C MG/L	COD MG/L	5-DAY BOD MG/L	14-DAY BCD MG/L
604.0	12/12/77	1205	-1.0												0.4
			0.3	0.12		0.050	< 0.005	< 0.005							
604.0	12/12/77	1206	0.3	0.13		0.076	< 0.005	< 0.005							
			10.0	0.10		0.044	< 0.005	< 0.005							
604.0	12/12/77	1206	10.0	0.13		0.051	< 0.005	< 0.005							
605.0	01/10/77	1500	0.3												2.9
605.0	02/14/77	1100	0.3	0.15		0.14	0.005	0.010							0.9
605.0	03/14/77	1025	0.3												0.7
605.0	04/12/77	1045	0.3												2.4
605.0	05/10/77	1125	0.3	0.20		0.14	< 0.005	0.009							1.7
605.0	06/14/77	1030	0.3	0.12		0.17		0.009							3.8
605.0	06/14/77	1031	0.3	0.11		0.079		0.009							
605.0	07/12/77	1030	0.3	0.15		0.40	0.008	0.013							2.9
605.0	07/12/77	1031	0.3	0.13		0.32	< 0.005	0.009							
605.0	08/08/77	1050	0.3	0.095		0.12	0.006	0.015							1.5
605.0	08/08/77	1051	0.3	0.088		0.24	0.006	0.013							
605.0	09/12/77	1115	0.3	0.077		0.16	< 0.005	0.026							2.2
605.0	09/12/77	1116	0.3	0.075		0.16	< 0.005	0.024							
605.0	10/10/77	1115	0.3	0.082		0.22	< 0.005	0.006							1.0
605.0	10/10/77	1116	0.3	0.085		0.31	< 0.005	0.005							
605.0	11/14/77	1058	0.3	0.13		0.51	0.012	0.017							1.5
605.0	11/14/77	1059	0.3	0.12		0.50	0.007	0.013							
605.0	12/12/77	1045	0.3	0.17		0.11	< 0.005	< 0.005							0.9
605.0	12/12/77	1046	0.3	0.097		0.049	< 0.005	< 0.005							

APPENDIX A

SECTION III

WATER QUALITY
TYPE III DATA
LAKES KEOWEE AND HARTWELL

YEAR 1977

(Pages 1-105 Contained in Previous Oconee Operating Reports)

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 3

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
500.0	01/11/77	1420	0.3	0.22	0.05	1.6	0.62	3.6						
			5.0	0.13	0.05	1.6	0.61	4.1						
			10.0	0.17	0.05	1.6	0.61	3.6						
			15.0	0.13	0.05	1.5	0.62	3.6						
			20.0	0.15	0.05	1.5	0.62	3.9						
			25.0	0.15	0.05	1.6	0.62	4.2						
500.0	02/14/77	1350	-2.0						0.2					
			0.3	0.28	0.05	1.4	0.58	3.3						
			5.0	0.21	0.05	1.3	0.59	3.4						
			10.0	0.21	0.05	1.3	0.60	3.5						
			15.0	0.25	0.05	1.3	0.57	3.3						
			20.0	0.26	0.05	1.4	0.61	3.4						
			25.0	0.26	0.05	1.3	0.60	3.4						
			29.0	0.27	0.05	1.4	0.62	3.4						
500.0	03/14/77	1320	0.3	0.25	0.05	1.6	0.57	3.1						
			5.0	0.19	0.05	1.6	0.56	3.1						
			10.0	0.26	0.05	1.7	0.61	3.1						
			15.0	0.26	0.05	1.7	0.64	3.1						
			20.0	0.60	0.05	1.8	0.66	3.2						
			25.0	0.33	0.05	1.8	0.67	3.1						
			27.5	0.80	0.05	1.8	0.68	3.2						
500.0	04/12/77	1320	0.3	0.47	0.05	1.5	0.53	3.1						
			5.0	0.46	0.05	1.5	0.55	3.1						
			10.0	0.73	0.05	1.6	0.57	3.1						
			15.0	0.71	0.05	1.6	0.58	3.2						
			20.0	0.60	0.05	1.7	0.65	3.4						
			25.0	0.46	0.05	1.7	0.64	3.3						
			29.0	3.3	1.0	2.3	1.1	3.3						
500.0	05/10/77	1340	-2.0						0.4					
			0.3	0.54	0.01	1.5	0.51	3.1						
			5.0	0.22	0.01	1.6	0.51	3.1						
			10.0	0.15	0.01	1.7	0.56	3.2						
			15.0	0.25	0.03	1.8	0.56	3.2						
			20.0	0.34	0.02	1.8	0.58	3.2						
			25.0	0.31	0.10	2.0	0.65	3.4						
			27.5	0.86	0.10	2.0	0.67	3.5						
500.0	06/14/77	1315	-2.0			1.9	0.62							
500.0	06/14/77	1316	-2.0			1.9	0.62							
			0.3	0.14				3.1						
500.0	06/14/77	1316	0.3	0.11				3.3						
			10.0	0.14				3.6						
500.0	06/14/77	1316	10.0	0.23				3.3						
			20.0	0.16				3.4						
500.0	06/14/77	1316	20.0	0.16				3.4						
			29.0	0.56				3.6						
500.0	06/14/77	1316	29.0	0.57				3.8						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
500.0	07/12/77	1335	-2.0			1.6	0.63							
500.0	07/12/77	1336	-2.0			1.6	0.62							
			0.3	0.23	0.01			3.4						
500.0	07/12/77	1336	0.3	0.21	0.01			3.5						
			10.0	0.13	0.05			3.5						
500.0	07/12/77	1336	10.0	0.19	0.04			3.5						
			20.0	0.24	0.13			3.7						
500.0	07/12/77	1336	20.0	0.22	0.16			3.7						
			25.0	0.66	0.64			3.7						
500.0	07/12/77	1336	25.0	6.0	0.70			3.2						
500.0	08/08/77	1330	-2.0			2.0	0.71							
500.0	08/08/77	1331	-2.0			2.0	0.71							
			0.3	0.24	0.07			3.4						
500.0	08/08/77	1331	0.3	0.49	0.07			6.9						
			10.0	0.21	0.11			1.6						
500.0	08/08/77	1331	10.0	0.22	0.13			1.7						
			20.0	0.35	0.25			3.7						
500.0	08/08/77	1331	20.0	0.43	0.29			3.2						
			29.0	5.1	2.4			4.2						
500.0	08/08/77	1331	29.0	4.0	2.2			4.0						
500.0	09/12/77	1335	-2.0			2.4	0.78							
500.0	09/12/77	1336	-2.0			2.5	0.78							
			0.3	0.18	0.01			3.1						
500.0	09/12/77	1336	0.3	0.17	0.01			3.0						
			10.0	0.29	0.06			3.0						
500.0	09/12/77	1336	10.0	0.30	0.08			3.0						
			20.0	0.71	0.33			3.1						
500.0	09/12/77	1336	20.0	0.91	0.39			3.2						
			30.0	9.4	3.1			3.8						
500.0	09/12/77	1336	30.0	9.0	3.0			3.8						
500.0	10/10/77	1345	-2.0			2.8	0.78							
500.0	10/10/77	1346	-2.0			2.9	0.78							
			0.3	0.12	0.06			3.2						
500.0	10/10/77	1346	0.3	0.10	0.07			3.2						
			10.0	0.15	0.08			3.2						
500.0	10/10/77	1346	10.0	0.14	0.08			3.2						
			20.0	0.23	0.11			3.2						
500.0	10/10/77	1346	20.0	0.31	0.12			3.2						
			29.0	13.	3.5			4.0						
500.0	10/10/77	1346	29.0	13.	3.7			3.9						
500.0	11/14/77	1345	-2.0			1.5	0.56							
500.0	11/14/77	1346	-2.0			1.5	0.58							
			0.3	0.36	0.05			3.4						
500.0	11/14/77	1346	0.3	0.34	0.05			3.4						
			10.0	0.31	0.06			3.4						
500.0	11/14/77	1346	10.0	0.34	0.06			3.4						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			20.0	0.52	0.04			3.4						
500.0	11/14/77	1346	20.0	0.45	0.05			3.4						
			28.0	0.77	0.05			3.4						
500.0	11/14/77	1346	28.0	0.84	0.04			3.4						
500.0	12/12/77	1352	-2.0			1.5	0.55							
500.0	12/12/77	1353	-2.0			1.5	0.56							
			0.3	0.18	0.04			3.2						
500.0	12/12/77	1353	0.3	0.17	0.04			3.2						
			10.0	0.17	0.03			3.2						
500.0	12/12/77	1353	10.0	0.16	0.03			3.2						
			20.0	0.21	0.03			3.2						
500.0	12/12/77	1353	20.0	0.17	0.04			3.2						
			28.0	0.26	0.04			3.2						
500.0	12/12/77	1353	28.0	0.23	0.03			3.2						
500.5	01/11/77	1400	0.3	0.13	0.05	1.5	0.66	4.1						
			5.0	0.12	0.05	1.5	0.66	4.2						
			10.0	0.19	0.05	1.5	0.65	4.2						
			15.0	0.26	0.05	1.6	0.64	4.3						
500.5	02/14/77	1335	-2.0						0.3					
			0.3	0.23	0.05	1.6	0.63	3.5						
			5.0	0.27	0.05	1.4	0.60	3.6						
			10.0	0.33	0.05	1.5	0.63	3.5						
			15.0	0.44	0.05	1.5	0.72	3.8						
			20.0	0.44	0.05	1.6	0.66	3.9						
501.0	01/11/77	1450	0.3	0.14	0.05	1.5	0.59	4.4						
			5.0	0.15	0.05	1.5	0.59	3.8						
			10.0	0.17	0.05	1.6	0.59	3.8						
			15.0	0.11	0.05	1.6	0.60	3.4						
			20.0	0.12	0.05	1.5	0.60	4.3						
			25.0	0.12	0.05	1.5	0.60	3.8						
			27.5	0.13	0.05	1.5	0.60	3.8						
501.0	02/14/77	1410	-2.0						0.5					
			0.3	0.24	0.05	1.3	0.57	3.4						
			5.0	0.23	0.05	1.3	0.57	3.5						
			10.0	0.24	0.05	1.2	0.57	3.4						
			15.0	0.27	0.05	1.3	0.60	3.3						
			20.0	0.22	0.05	1.3	0.60	3.7						
			25.0	0.22	0.05	1.2	0.61	3.4						
			30.0	0.19	0.05	1.3	0.62	3.3						
			35.0	0.66	0.42	1.4	0.69	3.3						
501.0	03/14/77	1345	0.3	0.35	0.05	1.6	0.56	3.0						
			5.0	0.21	0.05	1.6	0.57	3.1						
			10.0	0.15	0.05	1.6	0.58	3.1						
			15.0	0.17	0.05	1.7	0.60	3.1						
			20.0	0.19	0.05	1.8	0.61	3.0						
			25.0	0.21	0.05	1.8	0.60	3.0						

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WATER QUALITY RESEARCH DATA TYPE 3

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			30.0	0.21	0.05	1.3	0.60	3.0						
			32.5	0.20	0.05	1.7	0.61	3.1						
501.0	04/12/77	1350	0.3	0.24	0.05	1.4	0.51	3.1						
			5.0	0.32	0.05	1.4	0.51	3.1						
			10.0	0.34	0.05	1.5	0.54	3.1						
			15.0	0.50	0.05	1.5	0.55	3.1						
			20.0	0.33	0.05	1.7	0.59	3.3						
			25.0	0.29	0.06	1.5	0.60	3.3						
			30.0	0.58	0.14	1.7	0.60	3.3						
			34.0	1.0		1.7	0.67	3.3						
501.0	05/10/77	1410	-2.0						0.5					
			0.3	0.12	0.01	1.6	0.51	3.1						
			5.0	0.11	0.01	1.6	0.51	3.1						
			10.0	0.11	0.01	1.7	0.54	3.1						
			15.0	0.30	0.01	1.7	0.54	3.1						
			20.0	0.32	0.02	1.7	0.56	3.2						
			25.0	0.27	0.02	1.9	0.61	3.4						
			30.0	2.0	0.03	2.0	0.63	3.3						
			34.0	0.36	0.05	2.0	0.64	3.4						
501.0	06/14/77	1330	-2.0			1.8	0.57							
501.0	06/14/77	1331	-2.0			1.7	0.57							
			0.3	0.11				3.7						
501.0	06/14/77	1331	0.3	0.07				3.5						
			10.0	0.06				3.3						
501.0	06/14/77	1331	10.0	0.03				3.6						
			20.0	0.09				3.3						
501.0	06/14/77	1331	20.0	0.07				3.2						
			30.0	0.12				3.4						
501.0	06/14/77	1331	30.0	0.16				3.4						
501.0	07/12/77	1400	-2.0			1.6	0.59							
501.0	07/12/77	1401	-2.0			1.6	0.60							
			0.3	0.17	0.01			3.0						
501.0	07/12/77	1401	0.3	0.15	0.01			3.0						
			10.0	0.45	0.01			3.1						
501.0	07/12/77	1401	10.0	0.16	0.01			3.1						
			20.0	0.16	0.02			3.0						
501.0	07/12/77	1401	20.0	0.39	0.02			3.0						
			30.0	0.34	0.18			3.3						
501.0	07/12/77	1401	30.0	0.38	0.18			3.3						
501.0	08/08/77	1400	-2.0			1.8	0.66		0.2					
501.0	08/08/77	1401	-2.0			1.6	0.63		0.1					
			0.3	0.20	0.04			1.7		0.1				
501.0	08/08/77	1401	0.3	0.31	0.04			2.2		0.1				
			10.0	0.30	0.07			1.6						
501.0	08/08/77	1401	10.0	0.13	0.07			1.4						
			20.0	0.14	0.09			1.7						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
501.0	08/08/77	1401	20.0	0.13	0.10			1.8						
			30.0	0.25	0.42			1.8						
501.0	08/08/77	1401	30.0	0.26	0.42			1.5						
501.0	09/12/77	1415	-2.0			2.1	0.69							
501.0	09/12/77	1416	-2.0			2.1	0.71							
			0.3	0.17	0.02			3.1						
501.0	09/12/77	1416	0.3	0.12	0.03			3.1						
			10.0	0.08	0.06			3.1						
501.0	09/12/77	1416	10.0	0.09	0.08			3.1						
			20.0	0.11	0.22			3.1						
501.0	09/12/77	1416	20.0	0.19	0.31			3.3						
			30.0	0.25	0.96			3.4						
501.0	09/12/77	1416	30.0	0.21	0.93			3.3						
501.0	10/10/77	1410	-2.0			2.4	0.69							
501.0	10/10/77	1411	-2.0			2.4	0.67							
			0.3	0.26	0.09			3.2						
501.0	10/10/77	1411	0.3	0.19	0.09			3.2						
			10.0	0.10	0.09			3.2						
501.0	10/10/77	1411	10.0	0.08	0.09			3.2						
			20.0	0.07	0.15			3.2						
501.0	10/10/77	1411	20.0	0.09	0.18			3.2						
			30.0	0.95	1.6			3.5						
501.0	10/10/77	1411	30.0	1.5	1.6			3.5						
501.0	11/14/77	1410	-2.0			1.4	0.54		0.1					
501.0	11/14/77	1411	-2.0			1.5	0.56		0.1					
			0.3	0.36	0.05			3.4		< 0.1				
501.0	11/14/77	1411	0.3	0.44	0.05			3.4		0.1				
			10.0	0.26	0.05			3.4						
501.0	11/14/77	1411	10.0	0.36	0.05			3.4						
			20.0	0.32	0.06			3.4						
501.0	11/14/77	1411	20.0	0.45	0.07			3.4						
			30.0	0.41	0.12			3.4						
501.0	11/14/77	1411	30.0	0.45	0.12			3.4						
501.0	12/12/77	1420	-2.0			1.5	0.55							
501.0	12/12/77	1421	-2.0			1.5	0.54							
			0.3	0.25	0.10			3.2						
501.0	12/12/77	1421	0.3	0.25	0.10			3.2						
			10.0	0.28	0.10			3.2						
501.0	12/12/77	1421	10.0	0.25	0.11			3.2						
			20.0	0.24	0.10			3.2						
501.0	12/12/77	1421	20.0	0.27	0.10			3.2						
			30.0	0.33	0.11			3.2						
501.0	12/12/77	1421	30.0	0.31	0.11			3.2						
501.5	01/11/77	1530	0.3	0.13	0.05	1.5	0.57	4.0						
			5.0	0.19	0.05	1.5	0.57	4.3						
			10.0	0.18	0.05	1.6	0.57	3.6						

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STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			15.0	0.12	0.05	1.5	0.57	4.6						
			20.0	0.11	0.05	1.6	0.54	4.5						
			25.0	0.09	0.05	1.5	0.55	4.2						
501.5	02/14/77	1425	-2.0						0.2					
			0.3	0.24	0.05	1.2	0.55	3.3						
			5.0	0.18	0.05	1.6	0.55	3.3						
			10.0	0.20	0.05	1.0	0.56	3.3						
			15.0	0.18	0.05	1.1	0.58	3.3						
			20.0	0.19	0.05	1.1	0.59	3.3						
			22.5	0.16	0.05	1.1	0.60	3.3						
501.5	03/14/77	1355	0.3	0.25	0.05	1.7	0.55	3.1						
			5.0	0.18	0.05	1.6	0.55	3.1						
			10.0	0.19	0.05	1.6	0.56	3.1						
			15.0	0.18	0.05	1.6	0.57	3.1						
			20.0	0.21	0.05	1.7	0.59	3.0						
			25.0	0.39	0.05	1.7	0.60	3.0						
			27.5	0.26	0.05	1.8	0.60	3.0						
501.5	04/12/77	1410	0.3	0.56	0.05	1.4	0.50	3.1						
			5.0	0.61	0.05	1.4	0.50	3.1						
			10.0	0.31	0.05	1.5	0.54	3.1						
			15.0	0.33	0.05	1.5	0.55	3.2						
			20.0	0.36	0.05	1.5	0.58	3.4						
			25.0	0.42	0.06	1.6	0.60	3.3						
			30.0	0.66	0.05	1.7	0.62	3.2						
501.5	05/10/77	1430	-2.0						0.5					
			0.3	0.11	0.01	1.6	0.50	3.1						
			5.0	0.75	0.01	1.6	0.52	3.1						
			10.0	0.10	0.01	1.6	0.55	3.2						
			15.0	0.36	0.01	1.7	0.55	3.1						
			20.0	0.17	0.01	1.8	0.56	3.2						
			25.0	0.14	0.01	1.8	0.60	3.3						
			27.5	0.14	0.03		0.81	3.4						
501.5	06/14/77	1350	-2.0			1.7	0.57							
501.5	06/14/77	1351	-2.0			1.7	0.57							
			0.3	0.08				3.2						
501.5	06/14/77	1351	0.3	0.07				3.2						
			10.0	0.09				3.3						
501.5	06/14/77	1351	10.0	0.07				3.3						
			20.0	0.09				3.2						
501.5	06/14/77	1351	20.0	0.86				3.2						
			30.0	0.17				3.4						
501.5	06/14/77	1351	30.0	0.17				3.5						
501.5	07/12/77	1425	-2.0			1.5	0.55							
501.5	07/12/77	1426	-2.0			1.5	0.54							
			0.3	0.15	0.01			3.0						
501.5	07/12/77	1426	0.3	0.24	0.01			3.0						

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STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			10.0	0.29	0.01			3.1						
501.5	07/12/77	1426	10.0	0.17	0.01			3.1						
			20.0	0.16	0.01			3.0						
501.5	07/12/77	1426	20.0	0.13	0.01			3.0						
501.5	08/08/77	1420	-2.0			1.7	0.65							
501.5	08/08/77	1421	-2.0			1.7	0.65							
			0.3	0.20	0.04			1.6						
501.5	08/08/77	1421	0.3	0.15	0.04			3.8						
			10.0	0.21	0.09			1.9						
501.5	08/08/77	1421	10.0	0.13	0.10			1.5						
			20.0	0.15	0.12			1.6						
501.5	08/08/77	1421	20.0	0.19	0.13			2.1						
			30.0	1.2	0.65			1.4						
501.5	08/08/77	1421	30.0	0.25	0.64			1.3						
501.5	09/12/77	1440	-2.0			2.0	0.66							
501.5	09/12/77	1441	-2.0			2.1	0.67							
			0.3	0.08	0.02			3.0						
501.5	09/12/77	1441	0.3	0.10	0.02			3.0						
			10.0	0.11	0.12			3.1						
501.5	09/12/77	1441	10.0	0.14	0.15			3.1						
			20.0	0.16	0.36			3.1						
501.5	09/12/77	1441	20.0	0.12	0.43			3.1						
			30.0	0.67	1.9			3.3						
501.5	09/12/77	1441	30.0	1.0	1.9			3.4						
501.5	10/10/77	1435	-2.0			2.7	0.69							
501.5	10/10/77	1436	-2.0			2.4	0.66							
			0.3	0.11	0.05			3.2						
501.5	10/10/77	1436	0.3	0.08	0.05			3.1						
			10.0	0.10	0.07			3.2						
501.5	10/10/77	1436	10.0	0.12	0.07			3.1						
			20.0	0.20	0.12			3.1						
501.5	10/10/77	1436	20.0	0.26	0.16			3.1						
			30.0	3.4	2.4			3.5						
501.5	10/10/77	1436	30.0	3.2	2.4			3.5						
501.5	11/14/77	1430	-2.0			1.4	0.54							
501.5	11/14/77	1431	-2.0			1.4	0.54							
			0.3	0.29	0.07			3.4						
501.5	11/14/77	1431	0.3	0.31	0.07			3.4						
			10.0	0.35	0.07			3.4						
501.5	11/14/77	1431	10.0	0.30	0.08			3.4						
			20.0	0.38	0.07			3.4						
501.5	11/14/77	1431	20.0	0.30	0.09			3.4						
			26.0	0.35	0.16			3.4						
501.5	11/14/77	1431	26.0	0.27	0.12			3.4						
501.5	12/12/77	1445	-2.0			1.4	0.51							
501.5	12/12/77	1446	-2.0			1.5	0.52							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			0.3	0.17	0.06			3.2						
SO1.5	12/12/77	1446	0.3	0.19	0.06			3.3						
			10.0	0.19	0.06			3.2						
SO1.5	12/12/77	1446	10.0	0.21	0.06			3.2						
			20.0	0.19	0.06			3.2						
SO1.5	12/12/77	1446	20.0	0.19	0.06			3.2						
			30.0	0.22	0.07			3.2						
SO1.5	12/12/77	1446	30.0	0.17	0.07			3.2						
SO2.0	01/11/77	1340	0.3	0.11	0.05	1.6	0.56	4.1						
			5.0	0.13	0.05	1.6	0.56	4.4						
			10.0	0.13	0.05	1.5	0.55	4.0						
			15.0	0.14	0.05	1.4	0.56	4.2						
			20.0	0.20	0.05	1.5	0.57	4.5						
			25.0	0.08	0.05	1.4	0.57	4.1						
SO2.0	02/14/77	1420	-2.0						0.2					
			0.3	0.21	0.05	1.8	0.54	3.3						
			5.0	0.26	0.05	1.1	0.55	3.4						
			10.0	0.18	0.05	1.2	0.55	3.4						
			15.0	0.17	0.05	1.1	0.56	3.5						
			20.0	0.17	0.05	1.1	0.56	3.5						
			22.5	0.18	0.05	1.1	0.55	3.4						
SO2.0	03/14/77	1410	0.3	0.31	0.05	1.8	0.54	3.2						
			5.0	0.25	0.05	1.8	0.55	3.2						
			10.0	0.28	0.05	1.6	0.56	3.3						
			15.0	0.23	0.05	1.6	0.55	3.3						
			20.0	0.20	0.05	1.6	0.58	3.3						
			22.5	0.23	0.05	1.8	0.59	3.3						
SO2.0	04/12/77	1425	0.3	0.47	0.05	1.4	0.51	3.2						
			5.0	0.56	0.05	1.4	0.52	3.1						
			10.0	0.62	0.05	1.4	0.52	3.0						
			15.0	0.64	0.05	1.3	0.53	3.0						
			20.0	0.58	0.05	1.3	0.51	3.1						
			25.0	0.44	0.05	1.6	0.62	3.2						
SO2.0	05/10/77	1450	-2.0						0.6					
			0.3	0.16				3.1						
			5.0	0.17	0.01	1.9	0.51	3.2						
			10.0	0.15	0.01	1.5	0.52	3.4						
			15.0	0.27	0.01	1.6	0.53	3.2						
			20.0	0.07	0.01	1.6	0.55	3.1						
			25.0	0.09	0.02	1.8	0.60	3.3						
SO2.0	06/14/77	1415	-2.0			1.7	0.54							
SO2.0	06/14/77	1416	-2.0			1.7	0.55							
			0.3	0.08				3.3						
SO2.0	06/14/77	1416	0.3	0.09				3.2						
			10.0	0.07				3.3						
SO2.0	06/14/77	1416	10.0	0.06				3.3						

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 3

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			20.0	0.07				3.2						
S02.0	06/14/77	1416	20.0	0.08				3.2						
			25.0	0.20				3.3						
S02.0	06/14/77	1416	25.0	0.27				3.3						
S02.0	07/12/77	1440	-2.0			1.6	0.56							
S02.0	07/12/77	1441	-2.0			1.6	0.55							
			0.3	0.17	0.01			3.0						
S02.0	07/12/77	1441	0.3	0.12	0.01			3.1						
			10.0	0.10	0.01			3.1						
S02.0	07/12/77	1441	10.0	0.10	0.03			3.1						
			20.0	0.19	0.03			3.0						
S02.0	07/12/77	1441	20.0	0.29	0.03			3.0						
			25.0	0.24	0.18			3.2						
S02.0	07/12/77	1441	25.0	0.32	0.17			3.2						
S02.0	08/08/77	1440	-2.0			1.8	0.62							
S02.0	08/08/77	1441	-2.0			1.7	0.63							
			0.3	0.11	0.05			0.77						
S02.0	08/08/77	1441	0.3	0.25	0.06			1.4						
			10.0	0.19	0.13			1.2						
S02.0	08/08/77	1441	10.0	0.14	0.13			1.4						
			20.0	0.18	0.14			1.3						
S02.0	08/08/77	1441	20.0	0.21	0.14			1.2						
			25.0	2.2	0.81			1.9						
S02.0	08/08/77	1441	25.0	3.1	0.79			1.7						
S02.0	09/12/77	1500	-2.0			1.8	0.65							
S02.0	09/12/77	1501	-2.0			2.0	0.66							
			0.3	0.12	0.04			3.1						
S02.0	09/12/77	1501	0.3	0.10	0.04			3.1						
			10.0	0.24	0.06			3.1						
S02.0	09/12/77	1501	10.0	0.07	0.08			3.1						
			20.0	0.21	0.16			3.2						
S02.0	09/12/77	1501	20.0	0.47	0.37			3.1						
			25.0	0.60	1.0			3.1						
S02.0	09/12/77	1501	25.0	0.61	0.96			3.2						
S02.0	10/10/77	1500	-2.0			1.8	0.62							
S02.0	10/10/77	1501	-2.0			1.8	0.63							
			0.3	0.12	0.03			3.2						
S02.0	10/10/77	1501	0.3	0.11	0.04			3.2						
			10.0	0.11	0.05			3.2						
S02.0	10/10/77	1501	10.0	0.11	0.04			3.2						
			20.0	0.16	0.06			3.2						
S02.0	10/10/77	1501	20.0	0.15	0.06			3.2						
			25.0	0.45	1.4			3.4						
S02.0	10/10/77	1501	25.0	0.63	1.4			3.4						
S02.0	11/14/77	1450	-2.0			1.2	0.49							
S02.0	11/14/77	1451	-2.0			1.4	0.52							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			0.3	0.28	0.04			3.4						
502.0	11/14/77	1451	0.3	0.39	0.04			3.4						
			10.0	0.30	0.05			3.4						
502.0	11/14/77	1451	10.0	0.27	0.05			3.4						
			20.0	0.29	0.06			3.4						
502.0	11/14/77	1451	20.0	0.21	0.05			3.4						
502.0	12/12/77	1505	-2.0			1.4	0.49							
502.0	12/12/77	1506	-2.0			1.4	0.51							
			0.3	0.15	0.06			3.2						
502.0	12/12/77	1506	0.3	0.18	0.06			3.2						
			10.0	0.18	0.06			3.2						
502.0	12/12/77	1506	10.0	0.19	0.06			3.2						
			20.0	0.20	0.06			3.2						
502.0	12/12/77	1506	20.0	0.18	0.05			3.2						
503.0	01/11/77	1325	0.3	0.18	0.05	1.4	0.56	4.5						
			5.0	0.22	0.05	1.3	0.55	4.6						
			10.0	0.22	0.05	1.3	0.56	4.6						
			15.0	0.22	0.05	1.3	0.57	4.5						
			20.0	0.13	0.05	1.3	0.58	4.6						
			25.0	0.17	0.05	1.3	0.59	4.6						
503.0	02/14/77	1500	-2.0						0.2					
			0.3	0.16	0.05	1.0	0.55	3.4						
			5.0	0.18	0.05	1.0	0.53	3.4						
			10.0	0.98	0.05	1.0	0.55	3.5						
			15.0	0.34	0.05	1.2	0.59	3.7						
			20.0	0.42	0.05	1.0	0.59	3.9						
			22.5	0.37	0.05	1.0	0.60	3.9						
503.0	03/14/77	1425	0.3	0.36	0.05	1.8	0.56	3.2						
			5.0	0.17	0.05	1.8	0.56	3.2						
			10.0	0.21	0.05	2.0	0.54	3.1						
			15.0	0.27	0.05	1.4	0.54	3.3						
			20.0	0.21	0.05	1.5	0.55	3.3						
			25.0	0.24	0.05	1.5	0.56	3.4						
503.0	04/12/77	1445	0.3	0.46	0.05	1.5	0.55	3.1						
			5.0	0.37	0.05	1.4	0.54	3.1						
			10.0	0.47	0.05	1.4	0.49	3.1						
			15.0	0.36	0.05	1.4	0.50	3.1						
			20.0	0.53	0.05	1.5	0.52	3.1						
			25.0	0.26	0.05	1.5	0.53	3.1						
			26.0	0.29	0.05	1.5	0.48	3.1						
503.0	05/10/77	1505	-2.0						0.4					
			0.3	0.08	0.01	1.5	0.51	3.2						
			5.0	0.13	0.01	1.5	0.50	3.2						
			10.0	0.12	0.01	1.5	0.50	3.3						
			15.0	0.12	0.01	1.6	0.47	3.3						
			20.0	0.10	0.01	1.6	0.49	3.0						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			25.0	0.08	0.03	1.6	0.49	3.2						
			26.0	0.15	0.02	1.6	0.49	3.2						
503.0	06/14/77	1440	-2.0			1.6	0.50							
503.0	06/14/77	1441	-2.0			1.6	0.49							
			0.3	0.12				3.3						
503.0	06/14/77	1441	0.3	0.13				3.2						
			10.0	0.13				3.4						
503.0	06/14/77	1441	10.0	0.09				3.1						
			20.0	0.12				3.2						
503.0	06/14/77	1441	20.0	0.09				3.3						
			26.0	0.14				3.2						
503.0	06/14/77	1441	26.0	0.14				3.2						
503.0	07/12/77	1505	-2.0			1.5	0.50							
503.0	07/12/77	1506	-2.0			1.5	0.50							
			0.3	0.20	0.01			3.0						
503.0	07/12/77	1506	0.3	0.15	0.01			3.0						
			10.0	0.20	0.02			3.0						
503.0	07/12/77	1506	10.0	0.11	0.02			3.0						
			20.0	5.8	0.01			3.0						
503.0	07/12/77	1506	20.0	1.4	0.02			3.0						
			25.0	0.75	0.06			3.0						
503.0	07/12/77	1506	25.0	0.18	0.06			3.0						
503.0	08/08/77	1510	-2.0			1.6	0.58							
503.0	08/08/77	1511	-2.0			1.6	0.56							
			0.3	0.15	0.09			1.6						
503.0	08/08/77	1511	0.3	0.20	0.09			1.4						
			10.0	0.26	0.10			1.4						
503.0	08/08/77	1511	10.0	0.22	0.10			0.90						
			20.0	0.14	0.09			0.93						
503.0	08/08/77	1511	20.0	0.18	0.08			1.3						
			27.0	0.22	0.11			0.95						
503.0	08/08/77	1511	27.0	0.25	0.11			1.3						
503.0	09/12/77	1525	-2.0			1.9	0.61							
503.0	09/12/77	1526	-2.0			1.9	0.62							
			0.3	0.33	0.10			3.1						
503.0	09/12/77	1526	0.3	0.26	0.10			3.1						
			10.0	0.18	0.07			3.0						
503.0	09/12/77	1526	10.0	0.21	0.07			3.0						
			20.0	0.23	0.10			3.0						
503.0	09/12/77	1526	20.0	0.16	0.10			3.0						
			26.0	0.11	0.16			3.0						
503.0	09/12/77	1526	26.0	0.16	0.16			3.0						
503.0	10/10/77	1535	-2.0			1.7	0.59							
503.0	10/10/77	1536	-2.0			1.6	0.58							
			0.3	0.21	0.06			3.2						
503.0	10/10/77	1536	0.3	0.13	0.05			3.2						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			10.0	0.18	0.04			3.2						
503.0	10/10/77	1536	10.0	0.14	0.04			3.2						
			20.0	0.35	0.08			3.4						
503.0	10/10/77	1536	20.0	0.36	0.08			3.4						
			25.0	0.67	0.20			3.6						
503.0	10/10/77	1536	25.0	0.74	0.21			3.6						
503.0	11/14/77	1510	-2.0			1.3	0.52							
503.0	11/14/77	1511	-2.0			1.4	0.51							
			0.3	0.35	0.04			3.4						
503.0	11/14/77	1511	0.3	0.30	0.05			3.4						
			10.0	0.27	0.04			3.4						
503.0	11/14/77	1511	10.0	0.37	0.04			3.4						
			20.0	0.52	0.04			3.5						
503.0	11/14/77	1511	20.0	0.34	0.04			3.5						
			25.0	0.41	0.04			3.5						
503.0	11/14/77	1511	25.0	0.64	0.05			3.5						
503.0	12/12/77	1535	-2.0			1.1	0.44							
503.0	12/12/77	1536	-2.0			1.4	0.49							
			0.3	0.19	0.06			3.2						
503.0	12/12/77	1536	0.3	0.26	0.06			3.2						
			10.0	0.21	0.08			3.2						
503.0	12/12/77	1536	10.0	0.25	0.08			3.2						
			20.0	0.30	0.05			3.3						
503.0	12/12/77	1536	20.0	0.32	0.05			3.3						
			26.0	0.34	0.05			3.3						
503.0	12/12/77	1536	26.0	0.33	0.05			3.4						
504.0	01/11/77	1240	0.3	0.23	0.05	0.88	0.54	4.3						
			5.0	0.21	0.05	0.79	0.52	4.1						
			10.0	0.16	0.05	0.87	0.53	4.2						
			15.0	0.17	0.05	0.90	0.54	4.3						
			20.0	0.21	0.05	0.88	0.53	4.4						
			25.0	0.19	0.05	0.89	0.54	4.2						
			30.0	0.18	0.05	0.88	0.54	4.1						
			35.0	0.20	0.05	0.89	0.52	4.2						
504.0	02/14/77	1530	-2.0						0.4					
			0.3	0.30	0.05	1.0	0.53	3.4						
			5.0	0.23	0.05	1.0	0.48	3.4						
			10.0	0.45	0.05	1.0	0.54	3.5						
			15.0	0.24	0.05	0.94	0.52	3.4						
			20.0	0.16	0.05	0.94	0.51	3.6						
			25.0	0.29	0.05	1.0	0.53	3.4						
			30.0	0.31	0.05	1.0	0.51	3.4						
			34.0	0.34	0.05	1.0	0.56	3.4						
504.0	03/14/77	1445	0.3	0.21	0.05	1.5	0.56	3.3						
			5.0	0.25	0.05	1.6	0.54	3.2						
			10.0	0.31	0.05	1.5	0.55	3.2						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			15.0	0.19	0.05	1.0	0.52	3.2						
			20.0	0.20	0.05	1.4	0.54	3.2						
			25.0	0.21	0.05	1.4	0.56	3.3						
			30.0	0.19	0.05	1.5	0.56	3.3						
			35.0	0.16	0.05	1.4	0.57	3.2						
504.0	04/12/77	1520	0.3	0.34	0.05	1.5	0.50	3.0						
			5.0	0.55	0.05	1.6	0.51	3.1						
			10.0	0.38	0.05	1.4	0.48	3.0						
			15.0	0.41	0.05	1.4	0.45	3.0						
			20.0	0.31	0.05	1.5	0.48	3.0						
			25.0	0.42	0.06	1.5	0.50	3.1						
			30.0	0.36	0.06	1.5	0.52	3.2						
			35.0	0.54	0.10	1.5	0.53	3.3						
504.0	05/10/77	1535	-2.0						0.9					
			0.3	0.12	0.01	1.6	0.51	3.2						
			5.0	0.14	0.01	1.8	0.51	3.1						
			10.0	0.19	0.01	1.4	0.45	3.0						
			15.0	0.11	0.01	1.4	0.44	3.1						
			20.0	0.15				3.2						
			25.0	0.22	0.01	1.9	0.53	3.2						
			30.0	0.11	0.03	1.8	0.54	3.2						
			35.0	0.14	0.01	1.5	0.52	3.2						
504.0	06/14/77	1505	-2.0			1.6	0.49							
504.0	06/14/77	1506	-2.0			1.6	0.50							
			0.3	0.13				3.6						
504.0	06/14/77	1506	0.3	0.21				3.3						
			10.0	0.16				3.5						
504.0	06/14/77	1506	10.0	0.11				3.2						
			20.0	0.12				3.1						
504.0	06/14/77	1506	20.0	0.16				3.1						
			30.0	0.07				3.2						
504.0	06/14/77	1506	30.0	0.12				3.2						
			35.0	0.44				3.3						
504.0	06/14/77	1506	35.0	0.40				3.3						
504.0	07/12/77	1530	-2.0			1.4	0.52							
504.0	07/12/77	1531	-2.0			1.4	0.51							
			0.3	0.20	0.01			3.1						
504.0	07/12/77	1531	0.3	0.18	0.01			3.1						
			10.0	0.16	0.02			3.1						
504.0	07/12/77	1531	10.0	0.23	0.02			3.0						
			20.0	0.12	0.01			3.0						
504.0	07/12/77	1531	20.0	0.12	0.02			3.0						
			30.0	0.13	0.02			3.2						
504.0	07/12/77	1531	30.0	0.14	0.03			3.1						
			35.0	0.24	0.06			3.1						
504.0	07/12/77	1531	35.0	0.59	0.05			3.2						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
504.0	08/08/77	1535	-2.0			1.6	0.55		0.2					
504.0	08/08/77	1536	-2.0			1.6	0.56		0.2					
			0.3	0.17	0.08			0.80		< 0.1				
504.0	08/08/77	1536	0.3	0.19	0.08			1.0		< 0.1				
			10.0	0.23	0.10			1.0						
504.0	08/08/77	1536	10.0	0.17	0.10			1.6						
			20.0	0.10	0.07			1.3						
504.0	08/08/77	1536	20.0	0.22	0.07			1.2						
			30.0	0.23	0.07			0.96						
504.0	08/08/77	1536	30.0	0.16	0.07			0.89						
			35.0	0.19	0.09			0.96						
504.0	08/08/77	1536	35.0	0.90	0.04			1.2						
504.0	09/12/77	1545	-2.0			1.8	0.61							
504.0	09/12/77	1546	-2.0			1.9	0.61							
			0.3	0.21	0.06			3.1						
504.0	09/12/77	1546	0.3	0.25	0.07			3.1						
			10.0	0.24	0.08			3.1						
504.0	09/12/77	1546	10.0	0.09	0.07			3.0						
			20.0	0.07	0.02			3.0						
504.0	09/12/77	1546	20.0	0.06	0.01			3.0						
			30.0	0.05	0.03			3.1						
504.0	09/12/77	1546	30.0	0.09	0.02			3.1						
504.0	10/10/77	1555	-2.0			1.7	0.54							
504.0	10/10/77	1556	-2.0			1.7	0.54							
			0.3	0.12	0.09			3.2						
504.0	10/10/77	1556	0.3	0.10	0.09			3.2						
			10.0	0.14	0.07			3.2						
504.0	10/10/77	1556	10.0	0.08	0.07			3.1						
			20.0	0.09	0.15			3.1						
504.0	10/10/77	1556	20.0	0.11	0.15			3.1						
			30.0	0.13	0.11			3.2						
504.0	10/10/77	1556	30.0	0.10	0.11			3.3						
			35.0	0.25	0.20			3.3						
504.0	10/10/77	1556	35.0	0.20	0.25			3.3						
504.0	11/14/77	1535	-2.0			1.4	0.50		0.1					
504.0	11/14/77	1536	-2.0			1.4	0.52		0.1					
			0.3	0.23	0.05			3.4		< 0.1				
504.0	11/14/77	1536	0.3	0.26	0.05			3.4		< 0.1				
			10.0	0.27	0.05			3.3						
504.0	11/14/77	1536	10.0	0.31	0.06			3.4						
			20.0	0.40	0.10			3.4						
504.0	11/14/77	1536	20.0	0.39	0.11			3.4						
			30.0	0.34	0.23			3.4						
504.0	11/14/77	1536	30.0	0.19	0.23			3.4						
			35.0	0.24	0.51			3.4						
504.0	11/14/77	1536	35.0	0.18	0.51			3.4						

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 3

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
504.0	12/12/77	1620	-2.0			1.4	0.49							
504.0	12/12/77	1621	-2.0			1.4	0.49							
			0.3	0.20	0.06			3.2						
504.0	12/12/77	1621	0.3	0.19	0.06			3.2						
			10.0	0.22	0.09			3.2						
504.0	12/12/77	1621	10.0	0.21	0.08			3.2						
			20.0	0.20	0.07			3.2						
504.0	12/12/77	1621	20.0	0.22	0.08			3.2						
			30.0	0.24	0.14			3.2						
504.0	12/12/77	1621	30.0	0.25	0.14			3.2						
505.0	01/11/77	1600	0.3	0.16	0.05	1.4	0.55	4.6						
			5.0	0.15	0.05	1.6	0.58	4.4						
			10.0	0.17	0.05	1.4	0.56	3.4						
			15.0	0.10	0.05	1.4	0.53	3.9						
			20.0	0.14	0.05	1.4	0.52	4.4						
			25.0	0.20	0.05	1.3	0.52	4.0						
			30.0	0.14	0.05	1.4	0.52	3.9						
505.0	02/14/77	1550	-2.0						0.2					
			0.3	0.20	0.05	1.1	0.54	3.3						
			5.0	0.21	0.05	1.0	0.52	3.2						
			10.0	0.20	0.05	0.92	0.52	3.2						
			15.0	0.24	0.05	0.91	0.52	3.2						
			20.0	0.24	0.05	1.0	0.52	3.2						
			25.0	0.24	0.05	1.3	0.53	3.2						
			30.0	0.27	0.05	0.92	0.49	3.3						
			35.0	0.27	0.05	1.5	0.50	3.3						
			38.0	0.25	0.05	1.3	0.47	3.3						
505.0	03/14/77	1510	0.3	0.22	0.05	1.5	0.60	3.2						
			5.0	0.22	0.05	1.5	0.58	3.3						
			10.0	0.33	0.05	1.5	0.53	3.3						
			15.0	0.21	0.05	1.4	0.54	3.2						
			20.0	0.21	0.05	1.4	0.54	3.3						
			25.0	0.17	0.05	1.4	0.57	3.3						
			30.0	0.17	0.05	1.4	0.56	3.1						
			32.5	0.22	0.05	1.4	0.57	3.1						
505.0	04/12/77	1540	0.3	0.39	0.05	1.5	0.53	3.2						
			5.0	0.45	0.05	1.5	0.52	3.1						
			10.0	0.38	0.05	1.5	0.53	3.1						
			15.0	0.44	0.05	1.5	0.45	3.0						
			20.0	0.32	0.05	1.4	0.48	3.1						
			25.0	0.33	0.05	1.5	0.51	3.2						
			30.0	0.81	0.05	1.5	0.53	3.3						
			35.0	0.97	0.12	1.5	0.53	3.2						
505.0	05/10/77	1610	-2.0						0.7					
			0.3	0.29	0.01	1.5	0.49	3.3						
			5.0	0.25	0.02	1.5	0.50	3.1						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			10.0	0.28	0.03	1.6	0.51	3.4						
			15.0	0.18				3.3						
			20.0	0.16				3.2						
			25.0	0.22				3.4						
			30.0	0.42	0.09	2.2	0.51	3.4						
			35.0	0.96	0.15	1.6	0.51	3.4						
505.0	06/14/77	1525	-2.0			1.7	0.51							
505.0	06/14/77	1526	-2.0			1.6	0.51							
			0.3	0.09				3.2						
505.0	06/14/77	1526	0.3	0.09				3.1						
			10.0	0.08				3.2						
505.0	06/14/77	1526	10.0	0.08				3.2						
			20.0	0.10				3.1						
505.0	06/14/77	1526	20.0	0.10				3.1						
			30.0	0.13				3.3						
505.0	06/14/77	1526	30.0	0.18				3.2						
			38.0	0.21				3.3						
505.0	06/14/77	1526	38.0	0.22				3.3						
505.0	07/12/77	1605	-2.0			1.5	0.55							
505.0	07/12/77	1606	-2.0			1.4	0.54							
			0.3	0.16	0.02			3.1						
505.0	07/12/77	1606	0.3	0.17	0.02			3.1						
			10.0	0.14	0.03			3.0						
505.0	07/12/77	1606	10.0	0.32	0.04			3.0						
			20.0	0.18	0.06			3.0						
505.0	07/12/77	1606	20.0	0.17	0.06			3.0						
			30.0	0.69	0.41			3.2						
505.0	07/12/77	1606	30.0	0.57	0.35			3.1						
			35.0	0.75	0.46			3.1						
505.0	07/12/77	1606	35.0	0.60	0.47			3.2						
505.0	08/08/77	1630	-2.0			1.6	0.56							
505.0	08/08/77	1631	-2.0			1.6	0.56							
			0.3	0.24	0.04			1.2						
505.0	08/08/77	1631	0.3	0.24	0.04			1.2						
			10.0	0.21	0.08			6.5						
505.0	08/08/77	1631	10.0	0.42	0.08			7.3						
			20.0	0.17	0.08			1.3						
505.0	08/08/77	1631	20.0	0.26	0.09			1.4						
			30.0	1.8	0.35			1.5						
505.0	08/08/77	1631	30.0	0.72	0.32			2.1						
505.0	09/12/77	1630	-2.0			1.7	0.62							
505.0	09/12/77	1631	-2.0			1.9	0.63							
			0.3	0.07	0.11			3.1						
505.0	09/12/77	1631	0.3	0.09	0.12			3.0						
			10.0	0.11	0.19			3.0						
505.0	09/12/77	1631	10.0	0.12	0.22			3.0						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			20.0	0.08	0.36			3.0						
SOS.0	09/12/77	1631	20.0	0.14	0.40			3.0						
			30.0	0.27	1.1			3.1						
SOS.0	09/12/77	1631	30.0	0.27	1.0			3.1						
SOS.0	10/10/77	1625	-2.0			1.7	0.55							
SOS.0	10/10/77	1626	-2.0			1.8	0.57							
			0.3	0.12	0.07			3.2						
SOS.0	10/10/77	1626	0.3	0.10	0.07			3.2						
			10.0	0.09	0.07			3.2						
SOS.0	10/10/77	1626	10.0	0.10	0.07			3.2						
			20.0	0.16	0.21			3.2						
SOS.0	10/10/77	1626	20.0	0.14	0.24			3.2						
			30.0	0.26	2.9			3.4						
SOS.0	10/10/77	1626	30.0	0.32	3.1			3.4						
SOS.0	11/14/77	1606	-2.0			1.4	0.50							
SOS.0	11/14/77	1607	-2.0			1.3	0.50							
			0.3	0.32	0.05			3.3						
SOS.0	11/14/77	1607	0.3	0.26	0.04			3.3						
			10.0	0.31	0.04			3.3						
SOS.0	11/14/77	1607	10.0	0.37	0.05			3.3						
			20.0	0.10	0.33			3.3						
SOS.0	11/14/77	1607	20.0	0.12	0.35			3.4						
			30.0	0.30	0.45			3.3						
SOS.0	11/14/77	1607	30.0	0.26	0.45			3.4						
SOS.0	12/12/77	1655	-2.0			1.4	0.48							
SOS.0	12/12/77	1656	-2.0			1.3	0.49							
			0.3	0.19	0.08			3.2						
SOS.0	12/12/77	1656	0.3		0.09									
			10.0	0.19	0.08			3.2						
SOS.0	12/12/77	1656	10.0		0.07									
			20.0	0.20	0.06			3.2						
SOS.0	12/12/77	1656	20.0		0.05									
			30.0	0.31	0.04			3.2						
SOS.0	12/12/77	1656	30.0		0.04									
SO6.0	01/11/77	1620	0.3	0.15	0.05	1.2	0.53	4.4						
			5.0	0.09	0.05	1.4	0.54	4.0						
			10.0	0.17	0.05	1.4	0.54	4.4						
			15.0	0.11	0.05	1.2	0.49	4.0						
			20.0	0.09	0.05	1.2	0.51	4.4						
			25.0	0.12	0.05	1.1	0.51	4.4						
SO6.0	02/14/77	1615	-2.0							0.4				
			0.3	0.20	0.05	1.2	0.52	3.3						
			5.0	0.15	0.05	1.2	0.52	3.3						
			10.0	0.21	0.05	1.1	0.51	3.3						
			15.0	0.18	0.05	1.1	0.50	3.3						
			20.0	0.25	0.05	1.0	0.51	3.3						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			25.0	0.32	0.05	0.93	0.50	3.5						
			27.5	0.36	0.05	0.96	0.50	3.4						
506.0	03/14/77	1525	0.3	0.26	0.05	1.5	0.59	3.1						
			5.0	0.21	0.05	1.4	0.58	3.0						
			10.0	0.14	0.05	1.3	0.56	3.0						
			15.0	0.18	0.05	1.4	0.53	3.0						
			20.0	0.17	0.05	1.4	0.53	3.0						
			25.0	0.22	0.05	1.5	0.54	3.0						
			30.0	0.20	0.06	1.5	0.55	3.0						
			35.0	0.14	0.06	1.5	0.59	3.1						
			37.5	0.31	0.07	1.4	0.58	3.2						
506.0	04/12/77	1555	0.3	0.39	0.05	1.5	0.50	3.2						
			5.0	0.49	0.05	1.6	0.51	3.1						
			10.0	0.43	0.05	1.4	0.46	3.2						
			15.0	0.46	0.05	1.3	0.43	3.0						
			20.0	0.47	0.05	1.4	0.50	3.1						
			25.0	0.81	0.05	1.5	0.50	3.2						
			30.0	0.50	0.62	1.8	0.67	3.2						
506.0	05/10/77	1625	-2.0						0.6					
			0.3	0.28	0.01	1.5	0.50	3.4						
			5.0	0.17	0.01	1.5	0.50	3.4						
			10.0	0.18	0.01	1.5	0.49	3.4						
			15.0	0.18	0.02	1.4	0.44	3.4						
			20.0	0.25	0.03	1.5	0.48	3.0						
			25.0	0.20	0.04	1.6	0.48	3.0						
			30.0	0.41				3.2						
506.0	06/14/77	1550	-2.0			1.6	0.49							
506.0	06/14/77	1551	-2.0			1.6	0.50							
			0.3					3.3						
506.0	06/14/77	1551	0.3	0.26				3.3						
			10.0					3.2						
506.0	06/14/77	1551	10.0					3.2						
			20.0					3.1						
506.0	06/14/77	1551	20.0	0.25				3.1						
			29.0	0.27				3.3						
506.0	06/14/77	1551	29.0					3.4						
506.0	07/12/77	1630	-2.0			1.5	0.54							
506.0	07/12/77	1631	-2.0			1.5	0.52							
			0.3	0.18	0.01			3.1						
506.0	07/12/77	1631	0.3	0.21	0.01			3.2						
			10.0	0.23	0.04			3.0						
506.0	07/12/77	1631	10.0	0.18	0.04			3.0						
			20.0	0.33	0.11			3.0						
506.0	07/12/77	1631	20.0	0.25	0.10			3.0						
			28.0	0.36	0.29			3.1						
506.0	07/12/77	1631	28.0	0.34	0.29			3.1						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
506.0	08/08/77	1710	-2.0			1.6	0.58		0.4					
506.0	08/08/77	1711	-2.0			1.6	0.58		0.4					
			0.3	0.14	0.05			0.86		< 0.1				
506.0	08/08/77	1711	0.3	0.18	0.05			0.89		0.1				
			10.0	0.23	0.08			1.1						
506.0	08/08/77	1711	10.0	0.41	0.08			1.1						
			20.0	0.52	0.15			4.0						
506.0	08/08/77	1711	20.0	0.36	0.16			1.2						
			30.0	0.86	0.57			1.5						
506.0	08/08/77	1711	30.0	0.91	0.58			1.3						
506.0	09/12/77	1655	-2.0			1.9	0.65							
506.0	09/12/77	1656	-2.0			2.0	0.66							
			0.3	0.06	0.11			3.0						
506.0	09/12/77	1656	0.3	0.21	0.12			3.0						
			10.0	0.18	0.17			3.0						
506.0	09/12/77	1656	10.0	0.18	0.19			3.0						
			20.0	0.23	0.48			2.9						
506.0	09/12/77	1656	20.0	0.52	0.52			3.1						
			30.0	0.93	1.6			3.1						
506.0	09/12/77	1656	30.0	0.91	1.5			3.1						
506.0	10/10/77	1647	-2.0			1.9	0.62							
506.0	10/10/77	1648	-2.0			1.8	0.68							
			0.3	0.08	0.06			3.2						
506.0	10/10/77	1648	0.3	0.18	0.06			3.2						
			10.0	0.13	0.08			3.2						
506.0	10/10/77	1648	10.0	0.14	0.08			3.2						
			20.0	0.23	0.17			3.1						
506.0	10/10/77	1648	20.0	0.27	0.25			3.1						
			30.0	1.9	3.8			3.4						
506.0	10/10/77	1648	30.0	2.6	3.8			3.4						
			35.0	3.3	4.2			3.4						
506.0	10/10/77	1648	35.0	3.5	4.2			3.4						
506.0	11/14/77	1640	-2.0			1.4	0.51		0.1					
506.0	11/14/77	1641	-2.0			1.4	0.52		0.1					
			0.3	0.32	0.08			3.3		< 0.1				
506.0	11/14/77	1641	0.3	0.31	0.08			3.3		< 0.1				
			10.0	0.32	0.08			3.3						
506.0	11/14/77	1641	10.0	0.30	0.08			3.3						
			20.0	0.34	0.06			3.3						
506.0	11/14/77	1641	20.0	0.36	0.05			3.3						
			30.0	0.26	0.06			3.3						
506.0	11/14/77	1641	30.0	0.20	0.07			3.3						
			37.0	2.9	4.0			3.4						
506.0	11/14/77	1641	37.0	4.3	4.0			3.5						
506.0	12/12/77	1710	-2.0			1.3	0.48							
506.0	12/12/77	1711	-2.0			1.4	0.48							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			0.3	0.17	0.05			3.2						
506.0	12/12/77	1711	0.3		0.04									
			10.0	0.17	0.04			3.2						
506.0	12/12/77	1711	10.0		0.03									
			20.0	0.17	0.03			3.2						
506.0	12/12/77	1711	20.0		0.03									
			29.0	0.33	0.03			3.2						
506.0	12/12/77	1711	29.0		0.03									
507.0	01/11/77	1645	0.3	0.09	0.05	1.1	0.43	4.0						
			5.0	0.12	0.07	1.1	0.43	3.6						
			10.0		0.06	1.1	0.44	3.8						
			15.0	0.17	0.06	1.1	0.44	3.5						
			20.0	0.16	0.05	1.2	0.44	3.8						
507.0	02/14/77	1635	-2.0						0.5					
			0.3	0.27	0.05	1.3	0.59	3.4						
			5.0	0.29	0.05	1.3	0.48	3.3						
			10.0	0.28	0.05	1.5	0.50	3.4						
			15.0	0.28	0.05	1.4	0.48	3.1						
507.0	03/14/77	1545	0.3	0.14	0.05	1.3	0.55	3.1						
			5.0	0.12	0.05	1.5	0.53	3.0						
			10.0	0.14	0.05	1.3	0.49	2.8						
			15.0	0.15	0.05	1.3	0.47	2.8						
			17.5	0.10	0.05	1.3	0.47	2.8						
507.0	04/12/77	1605	0.3	0.25	0.05	1.5	0.49	3.2						
			5.0	0.33	0.05	1.3	0.42	3.0						
			10.0	0.22	0.05	1.2	0.41	2.9						
			15.0	0.25	0.05	1.2	0.41	2.9						
			18.0	0.25	0.05	1.2	0.41	2.9						
507.0	05/10/77	1648	-2.0						0.4					
			0.3	0.19	0.01	1.9	0.51	3.1						
			5.0	0.20	0.01	1.5	0.48	3.2						
			10.0	0.93	0.01	1.5	0.44	2.9						
			15.0	0.24	0.01	1.4	0.42	2.8						
			20.0	0.42	0.01	1.4	0.43	3.0						
507.0	06/14/77	1605	-2.0			1.6	0.48							
507.0	06/14/77	1606	-2.0			1.5	0.45							
			0.3	0.11				3.3						
507.0	06/14/77	1606	0.3	0.11				3.3						
			10.0	0.12				3.1						
507.0	06/14/77	1606	10.0	0.23				3.1						
			20.0	0.16				3.0						
507.0	06/14/77	1606	20.0	0.15				2.9						
507.0	07/12/77	1650	-2.0			1.3	0.46							
507.0	07/12/77	1651	-2.0			1.3	0.44							
			0.3	0.47	0.05			3.2						
507.0	07/12/77	1651	0.3	0.16	0.05			3.2						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			10.0	0.19	0.05			3.0						
507.0	07/12/77	1651	10.0	0.15	0.06			2.9						
			20.0	0.10	0.05			3.0						
507.0	07/12/77	1651	20.0	0.10	0.06			2.9						
507.0	08/08/77	1750	-2.0			1.4	0.50							
507.0	08/08/77	1751	-2.0			1.4	0.50							
			0.3	0.21	0.03			1.2						
507.0	08/08/77	1751	0.3	0.22	0.03			1.3						
			10.0	0.22	0.04			0.72						
507.0	08/08/77	1751	10.0	0.21	0.05			1.2						
			20.0	0.19	0.04			1.2						
507.0	08/08/77	1751	20.0	0.17	0.04			1.3						
507.0	09/12/77	1720	-2.0			1.7	0.58							
507.0	09/12/77	1721	-2.0			1.8	0.60							
			0.3	0.41	0.05			3.1						
507.0	09/12/77	1721	0.3	0.15	0.04			3.0						
			10.0	0.21	0.06			2.8						
507.0	09/12/77	1721	10.0	0.23	0.05			2.8						
			20.0	0.39	0.06			2.8						
507.0	09/12/77	1721	20.0	0.38	0.06			2.8						
507.0	10/10/77	1718	-2.0			1.6	0.52							
507.0	10/10/77	1719	-2.0			1.7	0.56							
			0.3	0.10	0.02			3.2						
507.0	10/10/77	1719	0.3	0.13	0.02			3.2						
			10.0	0.11	0.03			3.2						
507.0	10/10/77	1719	10.0	0.14	0.03			3.2						
			15.0	0.23	0.03			3.1						
507.0	10/10/77	1719	15.0	0.25	0.04			3.1						
507.0	11/14/77	1705	-2.0			1.1	0.41							
507.0	11/14/77	1706	-2.0			1.2	0.43							
			0.3	0.18	0.02			3.2						
507.0	11/14/77	1706	0.3	0.15	0.02			3.2						
			10.0	0.25	0.02			3.1						
507.0	11/14/77	1706	10.0	0.15	0.02			3.1						
			20.0	0.17	0.02			3.0						
507.0	11/14/77	1706	20.0	0.19	0.01			3.0						
507.0	12/12/77	1730	-2.0			0.93	0.35							
507.0	12/12/77	1731	-2.0			1.1	0.38							
			0.3	0.11	0.01			2.8						
507.0	12/12/77	1731	0.3	0.11	0.01			2.8						
			10.0	0.13	0.01			2.8						
507.0	12/12/77	1731	10.0	0.14	0.01			2.8						
			20.0	0.17	0.02			2.8						
507.0	12/12/77	1731	20.0	0.16	0.01			2.8						
508.0	01/11/77	1315	0.3	0.14	0.05	0.98	0.56	4.5						
			5.0	0.17	0.05	1.4	0.55	4.4						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			8.0	0.20	0.05	1.3	0.56	4.5						
508.0	02/14/77	1515	-2.0						1.6					
			0.3	0.21	0.05	0.92	0.54	3.4						
			5.0	0.35	0.05	0.98	0.55	3.4						
			6.5	0.20	0.05	1.1	0.54	3.4						
508.0	03/14/77	1440	0.3	0.21	0.05	1.5	0.56	3.3						
			5.0	0.18	0.05	1.5	0.57	3.2						
			6.5	0.20	0.05	1.6	0.58	3.2						
508.0	04/12/77	1500	0.3	0.59	0.05	1.5	0.51	3.1						
			5.0	0.33	0.05	1.5	0.49	3.0						
			9.0	0.43	0.05	1.5	0.50	3.1						
508.0	05/10/77	1520	-2.0						0.3					
			0.3	0.78	0.01	1.5	0.50	3.1						
			5.0	0.06	0.01	1.6	0.54	3.1						
			6.0	0.44	0.01	1.5	0.54	3.1						
508.0	06/14/77	1455	-2.0			1.6	0.51							
508.0	06/14/77	1456	-2.0			1.6	0.51							
			0.3	0.21				3.2						
508.0	06/14/77	1456	0.3	0.12				3.1						
			6.0	0.23				3.3						
508.0	06/14/77	1456	6.0	0.17				3.3						
508.0	07/12/77	1520	-2.0			1.5	0.53							
508.0	07/12/77	1521	-2.0			1.4	0.53							
			0.3	0.19	0.01			3.1						
508.0	07/12/77	1521	0.3	0.14	0.01			3.1						
			6.5	0.20	0.02			3.1						
508.0	07/12/77	1521	6.5	0.19	0.02			3.1						
508.0	08/08/77	1520	-2.0			1.7	0.62		0.4					
508.0	08/08/77	1521	-2.0			1.7	0.65		0.5					
			0.3	0.21	0.14			0.64		< 0.1				
508.0	08/08/77	1521	0.3	0.17	0.13			0.75		0.1				
			7.0	1.8	0.18			0.99						
508.0	08/08/77	1521	7.0	1.2	0.38			1.1						
508.0	09/12/77	1620	-2.0			1.8	0.66							
508.0	09/12/77	1621	-2.0			1.9	0.67							
			0.3	0.36	0.19			3.0						
508.0	09/12/77	1621	0.3	0.34	0.18			3.0						
			7.0	0.37	0.16			3.0						
508.0	09/12/77	1621	7.0	0.38	0.17			3.0						
508.0	10/10/77	1550	-2.0			1.7	0.56							
508.0	10/10/77	1551	-2.0			1.6	0.56							
			0.3	0.14	0.11			3.2						
508.0	10/10/77	1551	0.3	0.13	0.11			3.2						
			6.5	0.11	0.07			3.2						
508.0	10/10/77	1551	6.5	0.12	0.07			3.2						
508.0	11/14/77	1525	-2.0			1.4	0.49		0.1					

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
508.0	11/14/77	1526	-2.0			1.4	0.50		0.1					
			0.3	0.34	0.05			3.4		< 0.1				
508.0	11/14/77	1526	0.3	0.29	0.06			3.4		< 0.1				
			8.0	0.28	0.07			3.4						
508.0	11/14/77	1526	8.0	0.31	0.06			3.4						
508.0	12/12/77	1605	-2.0			1.4	0.48							
508.0	12/12/77	1606	-2.0			1.3	0.49							
			0.3	0.20	0.05			3.2						
508.0	12/12/77	1606	0.3	0.21	0.06			3.2						
			8.0	0.22	0.06			3.1						
508.0	12/12/77	1606	8.0	0.20	0.06			3.2						
508.5	01/11/77	1300	0.3	0.21	0.05	1.0	0.55	4.1						
			5.0	0.18	0.05	0.78	0.54	4.2						
			10.0	0.17	0.05	0.87	0.54	4.3						
			15.0	0.18	0.05	0.88	0.53	4.3						
			17.5	0.16	0.05	0.75	0.54	3.8						
508.5	02/14/77	1520	-2.0						0.8					
			0.3	0.24	0.05	1.1	0.52	3.4						
			5.0	0.17	0.05	1.0	0.52	3.4						
			10.0	0.27	0.05	0.94	0.51	3.4						
509.0	01/11/77	1335	0.3	0.11	0.20	1.6	0.57	3.7						
509.0	02/14/77	1445	0.3	0.16	0.05	1.0	0.57	3.4	0.3					
509.0	03/14/77	1420	0.3	0.30	0.05	1.8	0.57	3.3						
509.0	04/12/77	1435	0.3	0.59	0.05	1.4	0.55	3.1						
509.0	05/10/77	1500	0.3	0.10	0.03	2.0	0.56	3.2	0.4					
509.0	06/14/77	1430	-2.0			1.6	0.50							
509.0	06/14/77	1431	-2.0			1.6	0.50							
			0.3	0.11				3.2						
509.0	06/14/77	1431	0.3	0.08				3.2						
509.0	07/12/77	1455	-2.0			1.5	0.56							
509.0	07/12/77	1456	-2.0			1.4	0.55							
			0.3	2.1	0.04			3.0						
509.0	07/12/77	1456	0.3	0.14	0.03			3.0						
509.0	08/08/77	1455	-2.0			1.7	0.61							
509.0	08/08/77	1456	-2.0			1.7	0.61							
			0.3	0.21	0.13			2.0						
509.0	08/08/77	1456	0.3	0.18	0.14			2.9						
509.0	09/12/77	1510	-2.0			2.0	0.68							
509.0	09/12/77	1511	-2.0			2.0	0.68							
			0.3	0.36	0.19			3.1						
509.0	09/12/77	1511	0.3	0.39	0.19			3.1						
509.0	10/10/77	1520	-2.0			1.7	0.55							
509.0	10/10/77	1521	-2.0			1.6	0.56							
			0.3	0.10	0.06			3.2						
509.0	10/10/77	1521	0.3	0.13	0.06			3.2						
509.0	11/14/77	1503	-2.0			1.4	0.52							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
509.0	11/14/77	1504	-2.0			1.4	0.40							
			0.3	0.27	0.04			3.4						
509.0	11/14/77	1504	0.3	0.33	0.05			3.4						
509.0	12/12/77	1525	-2.0			1.4	0.52							
509.0	12/12/77	1526	-2.0			1.4	0.51							
			0.3	0.17	0.06			3.2						
509.0	12/12/77	1526	0.3	0.20	0.06			3.2						
549.0	02/14/77	1650	-2.0						0.4					
			0.3	0.44	0.05	1.2	0.46	3.0						
			5.0	0.28	0.05	1.3	0.46	3.1						
			8.0	0.25	0.05	1.2	0.45	3.1						
549.0	03/14/77	1600	0.3	0.24	0.05	1.2	0.46	2.8						
			5.0	0.16	0.05	1.2	0.46	2.8						
			10.0	0.14	0.05	1.3	0.47	2.8						
549.0	04/12/77	1625	0.3	0.22	0.05	1.2	0.40	2.9						
			5.0	0.28	0.05	1.2	0.40	2.8						
			10.0	0.30	0.05	1.2	0.40	2.8						
			12.5	0.43	0.05	1.2	0.40	2.9						
549.0	05/10/77	1700	-2.0						0.8					
			0.3	0.15	0.01	1.5	0.50	3.2						
			5.0	0.17	0.01	1.5	0.49	3.1						
			10.0	0.16	0.01	1.4	0.42	2.8						
549.0	06/14/77	1625	-2.0			1.5	0.46							
549.0	06/14/77	1626	-2.0			1.5	0.47							
			0.3	0.18				3.3						
549.0	06/14/77	1626	0.3	0.12				3.3						
			10.0	0.13				3.0						
549.0	06/14/77	1626	10.0	0.11				3.0						
549.0	07/12/77	1705	-2.0			1.2	0.42							
549.0	07/12/77	1706	-2.0			1.3	0.43							
			0.3	0.08	0.04			3.0						
549.0	07/12/77	1706	0.3	0.04	0.04			2.9						
			10.0	0.06	0.04			2.9						
549.0	07/12/77	1706	10.0	0.11	0.04			2.9						
549.0	08/08/77	1800	-2.0			1.4	0.47		0.1					
549.0	08/08/77	1801	-2.0			1.4	0.48		0.2					
			0.3	0.12	0.04			1.0		< 0.1				
549.0	08/08/77	1801	0.3	0.27	0.07			0.90		0.1				
			10.0	0.19	0.03			1.1						
549.0	08/08/77	1801	10.0	0.21	0.03			1.1						
549.0	09/12/77	1730	-2.0			1.6	0.54							
549.0	09/12/77	1731	-2.0			1.6	0.54							
			0.3	0.14	0.03			2.8						
549.0	09/12/77	1731	0.3	0.18	0.02			2.8						
			10.0	0.10	0.03			2.8						
549.0	09/12/77	1731	10.0	0.12	0.03			2.8						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
549.0	10/10/77	1740	-2.0			1.5	0.49							
549.0	10/10/77	1741	-2.0			1.5	0.49							
			0.3	0.13	0.02			3.2						
549.0	10/10/77	1741	0.3	0.13	0.02			3.2						
			10.0	0.16	0.02			3.1						
549.0	10/10/77	1741	10.0	0.13	0.02			3.0						
549.0	11/14/77	1720	-2.0			1.1	0.40		0.1					
549.0	11/14/77	1721	-2.0			1.1	0.40		0.1					
			0.3	0.23	0.02			3.0		< 0.1				
549.0	11/14/77	1721	0.3	0.18	0.02			3.0		< 0.1				
			10.0	0.31	0.01			3.0						
549.0	11/14/77	1721	10.0	0.28	0.02			3.1						
549.0	12/12/77	1745	-2.0			1.1	0.37							
549.0	12/12/77	1746	-2.0			1.1	0.37							
			0.3	0.11	0.01			2.8						
549.0	12/12/77	1746	0.3	0.12	0.01			2.9						
			10.0	0.12	0.01			2.8						
549.0	12/12/77	1746	10.0	0.21	0.01			2.8						

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STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
601.0	01/10/77	1445	0.3	0.17	0.05	1.2	0.66							
			5.0	0.32	0.05	1.2	0.68							
			10.0	0.22	0.05	1.1	0.68							
			15.0	0.17	0.05	1.6	0.69							
			20.0	0.22	0.05	1.1	0.68							
			25.0	0.32	0.05	1.2	0.70							
601.0	02/14/77	1035	-2.0						0.4					
			0.3	0.21	0.05	1.8	0.65	3.7						
			5.0	0.26	0.05	1.7	0.67	3.8						
			10.0	0.42	0.05	1.7	0.67	3.7						
			15.0	0.19	0.05	1.6	0.67	3.7						
			20.0	0.20	0.05	1.9	0.62	3.7						
			25.0	0.23	0.05	1.6	0.68	3.7						
			27.5	0.34	0.05	1.6	0.68	3.6						
601.0	03/14/77	1025	0.3	0.35	0.05	1.6	0.71							
			5.0	0.19	0.05	1.8	0.71							
			10.0	0.20	0.05	1.8	0.71							
			15.0	0.17	0.05	1.9	0.70							
			20.0	0.21	0.05	1.9	0.69							
			25.0	0.15	0.05	1.8	0.69							
601.0	04/12/77	1015	0.3	0.82	0.05	1.7	0.66							
			5.0	0.93	0.05	1.7	0.65							
			10.0	0.85	0.05	1.8	0.66							
			15.0	0.55	0.05	1.8	0.69							
			20.0	0.44	0.05	1.9	0.73							
			25.0	0.37	0.05	1.8	0.71							
			27.0	0.39	0.05	1.9	0.72							
601.0	05/10/77	1000	-2.0						0.3					
			0.3	0.38	0.01	1.8	0.62	2.5						
			5.0	0.32	0.01	1.9	0.54	3.0						
			10.0	0.81	0.02	2.0	0.67	3.3						
			15.0	0.73	0.02	2.0	0.67	3.4						
			20.0	0.95	0.12			3.6						
			25.0		0.12	2.5	0.77	3.6						
			26.0		0.34	2.5	0.94	3.6						
601.0	06/14/77	1005	-2.0			2.0	0.67							
601.0	06/14/77	1006	-2.0			2.1	0.69							
			0.3	0.16				3.2						
601.0	06/14/77	1006	0.3	0.17				3.2						
			10.0	0.23				3.3						
601.0	06/14/77	1006	10.0	0.24				3.3						
			20.0	0.66				3.6						
601.0	06/14/77	1006	20.0	0.66				3.7						
			27.0	0.69				3.7						
601.0	06/14/77	1006	27.0	1.1				3.7						
601.0	07/12/77	1020	-2.0			1.9	0.73							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
601.0	07/12/77	1021	-2.0			1.9	0.73							
			0.3	0.20	0.02			2.7						
601.0	07/12/77	1021	0.3	0.11	0.03			2.7						
			10.0	0.14	0.07			3.2						
601.0	07/12/77	1021	10.0	0.16	0.09			3.3						
			20.0	0.79	0.51			3.6						
601.0	07/12/77	1021	20.0	0.72	0.50			3.6						
			27.0	1.3	0.43			3.5						
601.0	07/12/77	1021	27.0	0.84	0.44			3.6						
601.0	08/08/77	1015	-2.0			2.5	0.86		0.3					
601.0	08/08/77	1016	-2.0			2.5	0.87		0.3					
			0.3	0.20	0.06			2.3						
601.0	08/08/77	1016	0.3	0.24	0.07			3.0						
			10.0	0.14	0.50			3.0						
601.0	08/08/77	1016	10.0	0.15	0.50			3.0						
			20.0	4.3	1.1			3.1						
601.0	08/08/77	1016	20.0	3.8	1.0			3.1						
			26.0	1.9	0.65			2.8						
601.0	08/08/77	1016	26.0	1.9	0.64			2.8						
601.0	09/12/77	1020	-2.0			3.1	1.0							
601.0	09/12/77	1021	-2.0			3.3	1.1							
			0.3	0.26	0.06			3.1						
601.0	09/12/77	1021	0.3	0.30	0.07			3.1						
			10.0	0.42	0.29			3.3						
601.0	09/12/77	1021	10.0	0.44	0.99			3.3						
			20.0	5.9	1.6			4.5						
601.0	09/12/77	1021	20.0	6.0	1.6			4.5						
			25.0	5.5	1.5			4.3						
601.0	09/12/77	1021	25.0	5.9	1.5			4.4						
601.0	10/10/77	1045	-2.0			2.3	0.83							
601.0	10/10/77	1046	-2.0			2.3	0.84							
			0.3	0.24	0.11			3.7						
601.0	10/10/77	1046	0.3	0.18	0.11			3.7						
			10.0	0.17	0.12			3.7						
601.0	10/10/77	1046	10.0	0.15	0.12			3.7						
			20.0	0.67	0.82			4.4						
601.0	10/10/77	1046	20.0	0.90	0.84			4.4						
601.0	11/14/77	1035	-2.0			1.7	0.63		0.2					
601.0	11/14/77	1036	-2.0			1.7	0.65		0.2					
			0.3	0.55	0.03			3.5		< 0.1				
601.0	11/14/77	1036	0.3	0.57	0.03			3.5		< 0.1				
			10.0	0.62	0.03			3.5						
601.0	11/14/77	1036	10.0	0.61	0.03			3.5						
			20.0	0.93	0.05			3.7						
601.0	11/14/77	1036	20.0	1.1	0.06			3.7						
			26.0	1.2	0.07			3.8						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
601.0	11/14/77	1036	26.0	1.5	0.08			4.0						
601.0	12/12/77	1030	-2.0			1.6	0.60							
601.0	12/12/77	1031	-2.0			1.7	0.60							
			0.3	0.35	0.02			3.2						
601.0	12/12/77	1031	0.3	0.33	0.03			3.2						
			10.0	0.37	0.02			3.2						
601.0	12/12/77	1031	10.0	0.33	0.02			3.2						
			20.0	0.38	0.02			3.1						
601.0	12/12/77	1031	20.0	0.37	0.03			3.1						
602.0	01/10/77	1620	0.3	0.34	0.05	1.5	0.65							
			5.0	0.21	0.05	1.2	0.59							
			10.0	0.37	0.05	1.1	0.65							
			15.0	0.35	0.05	1.2	0.63							
602.0	02/14/77	1110	-2.0						0.8					
			0.3	0.36	0.05	1.5	0.61	3.6						
			5.0	0.21	0.05	1.6	0.60	3.5						
			10.0	0.21	0.05	1.7	0.59	3.5						
			15.0	0.24	0.05	1.6	0.63							
			18.0	0.39	0.05	1.5	0.61	3.6						
602.0	03/14/77	1100	0.3	0.17	0.05	1.8	0.65							
			5.0	0.14	0.05	1.9	0.64							
			10.0	0.16	0.05	1.9	0.64							
			15.0	0.51	0.05	1.8	0.63							
			17.5	0.16	0.05	1.8	0.63							
602.0	04/12/77	1100	0.3	0.99	0.05	1.6	0.60							
			5.0	1.1	0.05	1.6	0.60							
			10.0	0.82	0.05	1.6	0.60							
			15.0	0.48	0.05	1.8	0.66							
			16.0	0.80	0.05	1.8	0.68							
602.0	05/10/77	1030	-2.0						0.4					
			0.3	0.32	0.01	1.8	0.59	3.1						
			5.0	0.49	0.01	1.8	0.60	3.1						
			10.0	0.57	0.03	2.2	0.66	3.3						
			15.0	1.9	0.08	2.0	0.68	3.3						
			19.0	1.4	0.28	2.4	0.85	3.7						
602.0	06/14/77	1045	-2.0			2.2	0.73							
602.0	06/14/77	1046	-2.0			2.2	0.74							
			0.3	0.23				3.6						
602.0	06/14/77	1046	0.3	0.25				3.4						
			10.0	0.34				3.5						
602.0	06/14/77	1046	10.0	0.99				3.6						
			19.0	1.1				3.6						
602.0	06/14/77	1046	19.0	0.15				3.7						
602.0	07/12/77	1050	-2.0			2.2	0.79							
602.0	07/12/77	1051	-2.0			2.1	0.77							
			0.3	4.9	0.03			3.2						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
602.0	07/12/77	1051	0.3	0.10	0.03			3.2						
			10.0	0.25	0.23			3.4						
602.0	07/12/77	1051	10.0	0.45	0.26			3.5						
			18.0	2.9	1.3			3.7						
602.0	07/12/77	1051	18.0	2.9	1.3			3.8						
602.0	08/08/77	1045	-2.0			2.7	0.84		0.3					
602.0	08/08/77	1046	-2.0			2.7	0.87		0.3					
			0.3	0.46	0.10			2.3						
602.0	08/08/77	1046	0.3	0.20	0.11			2.3						
			10.0	1.1	0.49			2.5						
602.0	08/08/77	1046	10.0	1.2	0.60			2.8						
			17.5	6.3	1.7			2.9						
602.0	08/08/77	1046	17.5	6.4	1.7			2.9						
602.0	09/12/77	1050	-2.0			3.0	0.93							
602.0	09/12/77	1051	-2.0			2.9	0.93							
			0.3	0.16	0.09			3.4						
602.0	09/12/77	1051	0.3	0.16	0.09			3.4						
			10.0	0.52	0.28			3.5						
602.0	09/12/77	1051	10.0	0.60	0.30			3.5						
			17.0	8.0	2.4			4.6						
602.0	09/12/77	1051	17.0	8.3	2.6			4.6						
602.0	10/10/77	1125	-2.0			2.0	0.67							
602.0	10/10/77	1126	-2.0			1.8	0.65							
			0.3	0.39	0.06			3.5						
602.0	10/10/77	1126	0.3	0.34	0.06			3.4						
			10.0	0.35	0.07			3.4						
602.0	10/10/77	1126	10.0	0.31	0.07			3.4						
			19.0	0.71	0.09			3.5						
602.0	10/10/77	1126	19.0	0.95	0.13			3.4						
602.0	11/14/77	1100	-2.0			1.8	0.65		0.1					
602.0	11/14/77	1101	-2.0			1.5	0.54		0.1					
			0.3	0.39	0.03			3.3		< 0.1				
602.0	11/14/77	1101	0.3	0.42	0.03			3.2		< 0.1				
			10.0	0.33	0.03			3.2						
602.0	11/14/77	1101	10.0	0.36	0.04			3.2						
			20.0	0.36	0.03			3.2						
602.0	11/14/77	1101	20.0	0.54	0.03			3.2						
602.0	12/12/77	1115	-2.0			1.6	0.56							
602.0	12/12/77	1116	-2.0			1.7	0.59							
			0.3	0.31	0.03			3.3						
602.0	12/12/77	1116	0.3	0.31	0.03			3.3						
			10.0	0.27	0.03			3.3						
602.0	12/12/77	1116	10.0	0.26	0.04			3.3						
			18.0	0.28	0.03			3.3						
602.0	12/12/77	1116	18.0	0.28	0.03			3.3						
603.0	01/10/77	1550	0.3	0.36	0.05	1.6	0.67							

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			5.0	0.37	0.05	1.6	0.67							
			10.0	0.37	0.05	1.4	0.66							
603.0	02/14/77	1135	-2.0						0.3					
			0.3	0.33	0.05	1.5	0.66	4.0						
			5.0	0.35	0.05	1.5	0.64	4.0						
			10.0	0.33	0.05	1.5	0.64	4.1						
603.0	03/14/77	1125	0.3	0.34	0.05	1.9	0.75							
			5.0	0.32	0.05	1.9	0.75							
			10.0	0.27	0.05	2.0	0.75							
603.0	04/12/77	1125	0.3	0.89	0.05	1.5	0.55							
			5.0	1.1	0.05	1.5	0.55							
			10.0	1.7	0.05	1.7	0.63							
			11.0	1.9	0.05	1.9	0.67							
603.0	05/10/77	1100	-2.0						0.3					
			0.3	0.26	0.01	1.8	0.57	3.2						
			5.0	0.27	0.02	1.8	0.65	3.3						
			10.0	0.45	0.10			3.4						
			12.5	1.4	0.09			3.5						
603.0	06/14/77	1105	-2.0			2.1	0.67							
603.0	06/14/77	1106	-2.0			2.0	0.67							
			0.3	0.17				3.6						
603.0	06/14/77	1106	0.3	0.15				3.6						
			10.0	0.29				3.8						
603.0	06/14/77	1106	10.0	0.31				3.8						
603.0	07/12/77	1120	-2.0			1.9	0.72							
603.0	07/12/77	1121	-2.0			2.0	0.71							
			0.3	0.10	0.01			3.2						
603.0	07/12/77	1121	0.3	0.10	0.10			3.3						
			10.0	0.80	1.0			4.0						
603.0	07/12/77	1121	10.0	0.77	1.0			4.3						
603.0	08/08/77	1125	-2.0			2.2	0.83		0.3					
603.0	08/08/77	1126	-2.0			2.2	0.84		0.5					
			0.3	0.18	0.10			2.5						
603.0	08/08/77	1126	0.3	0.16	0.12			2.5						
			10.0	1.2	0.73			3.2						
603.0	08/08/77	1126	10.0	1.4	0.73			3.3						
603.0	09/12/77	1115	-2.0			2.2	0.82							
603.0	09/12/77	1116	-2.0			2.3	0.84							
			0.3	0.26	0.08			3.5						
603.0	09/12/77	1116	0.3	0.23	0.09			3.5						
			10.0	2.4	0.22			3.7						
603.0	09/12/77	1116	10.0	2.3	0.24			3.7						
603.0	10/10/77	1145	-2.0			1.7	0.60							
603.0	10/10/77	1146	-2.0			1.6	0.60							
			0.3	0.20	0.05			3.3						
603.0	10/10/77	1146	0.3	0.24	0.06			3.3						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			10.0	0.30	0.07			3.4						
603.0	10/10/77	1146	10.0	0.31	0.07			3.3						
603.0	11/14/77	1130	-2.0			1.6	0.59		0.2					
603.0	11/14/77	1131	-2.0			1.6	0.59		0.2					
			0.3	0.74	0.03			3.6		< 0.1				
603.0	11/14/77	1131	0.3	0.89	0.03			3.6		< 0.1				
			10.0	2.2	0.03			3.7						
603.0	11/14/77	1131	10.0	0.93	0.03			3.6						
603.0	12/12/77	1140	-2.0			1.6	0.59							
603.0	12/12/77	1141	-2.0			1.6	0.58							
			0.3	0.41	0.06			3.4						
603.0	12/12/77	1141	0.3	0.55	0.05			3.5						
			10.0	0.54	0.05			3.6						
603.0	12/12/77	1141	10.0	0.65	0.04			3.6						
604.0	01/10/77	1520	0.3	0.46	0.05	1.4	0.57							
			5.0	0.16	0.05	1.4	0.57							
			10.0	0.43	0.05	1.4	0.56							
604.0	02/14/77	1155	-2.0						0.2					
			0.3	0.34	0.05	1.4	0.62	3.6						
			5.0	0.25	0.05	1.4	0.59	3.7						
			9.0	0.35	0.05	1.3	0.63	3.7						
604.0	03/14/77	1145	0.3	0.41	0.05	2.0	0.69							
			5.0	0.45	0.08	2.5	0.94							
			10.0	0.48	0.09	2.0	0.75							
604.0	04/12/77	1145	0.3	0.49	0.05	1.5	0.53							
			5.0	0.51	0.05	1.5	0.54							
			10.0	0.84	0.05	1.5	0.57							
			12.0	0.93	0.05	1.6	0.57							
604.0	05/10/77	1120	-2.0						0.4					
			0.3	0.30	0.01	2.1	0.58	3.2						
			5.0	0.31	0.01	1.8	0.58	3.2						
			10.0	0.32	0.02	1.8	0.60	3.2						
604.0	06/14/77	1125	-2.0			1.6	0.52							
604.0	06/14/77	1126	-2.0			1.6	0.52							
			0.3	0.14				3.3						
604.0	06/14/77	1126	0.3	0.15				3.3						
			10.0	0.15				3.3						
604.0	06/14/77	1126	10.0	0.15				3.2						
604.0	07/12/77	1140	-2.0				0.66							
604.0	07/12/77	1141	-2.0			1.8	0.66							
			0.3	0.17	0.07			3.6						
604.0	07/12/77	1141	0.3	0.15	0.08			3.6						
			10.0	0.33	0.46			3.7						
604.0	07/12/77	1141	10.0	0.60	0.47			3.7						
604.0	08/08/77	1140	0.3	0.26	0.07			2.5						
604.0	08/08/77	1141	0.3	0.32	0.08			2.5						

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
			10.0	1.7	0.43			2.5						
604.0	08/08/77	1141	10.0	1.2	0.43			2.4						
604.0	09/12/77	1130	0.3	0.28	0.11			3.2						
604.0	09/12/77	1131	0.3	0.48	0.13			3.2						
			9.0	1.5	0.46			3.6						
604.0	09/12/77	1131	9.0	1.3	0.45			3.7						
604.0	10/10/77	1205	0.3	0.20	0.07			3.1						
604.0	10/10/77	1206	0.3	0.22	0.07			3.2						
			10.0	0.31	0.08			3.1						
604.0	10/10/77	1206	10.0	0.46	0.08			3.1						
604.0	11/14/77	1200	0.3	0.53	0.07			3.5						
604.0	11/14/77	1201	0.3	1.0	0.06			3.5						
			10.0	0.73	0.08			3.5						
604.0	11/14/77	1201	10.0	0.57	0.07			3.5						
604.0	12/12/77	1205	0.3	0.43	0.11			3.4						
604.0	12/12/77	1206	0.3	0.39	0.11			3.4						
			10.0	0.42	0.11			3.4						
604.0	12/12/77	1206	10.0	0.40	0.11			3.4						
605.0	01/10/77	1500	0.3	0.20	0.05	1.7	0.57							
605.0	02/14/77	1100	0.3	0.28	0.05	1.7	0.59	3.4	0.4					
605.0	03/14/77	1025	0.3	1.0	0.05	1.6	0.57							
605.0	04/12/77	1045	0.3	0.54	0.12	1.6	0.66							
605.0	05/10/77	1125	0.3	0.38	0.15	1.8	0.58	3.1	0.3					
605.0	06/14/77	1030	-2.0			1.7	0.53							
605.0	06/14/77	1031	-2.0			1.7	0.53							
			0.3	0.10				3.4						
605.0	06/14/77	1031	0.3	0.12				3.2						
605.0	07/12/77	1030	-2.0			1.7	0.57							
605.0	07/12/77	1031	-2.0			1.7	0.57							
			0.3	0.94				3.2						
605.0	07/12/77	1031	0.3	0.23	0.04			3.2						
605.0	08/08/77	1050	-2.0			1.8	0.65		0.2					
605.0	08/08/77	1051	-2.0			1.8	0.63		0.2					
			0.3	0.19	0.24			2.7						
605.0	08/08/77	1051	0.3	0.18	0.10			2.7						
605.0	09/12/77	1115	-2.0			2.2	0.77							
605.0	09/12/77	1116	-2.0			2.3	0.78							
			0.3	0.54	0.34			3.5						
605.0	09/12/77	1116	0.3	0.41	0.17			3.4						
605.0	10/10/77	1115	-2.0			1.6	0.58							
605.0	10/10/77	1116	-2.0			1.6	0.57							
			0.3	0.23	0.17			3.1						
605.0	10/10/77	1116	0.3	0.15	0.22			3.1						
605.0	11/14/77	1058	-2.0			1.4	0.50		0.1					
605.0	11/14/77	1059	-2.0			1.4	0.52		0.1					
			0.3	0.32	0.45			3.4		< 0.1				

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	FE MG/L	MN MG/L	CA MG/L	MG MG/L	SI MG/L	AL MG/L	HG UG/L	SETTLEABLE MATTER ML/L	TOTAL DISSOLVED SOLIDS-MG/L	TOTAL SUSPENDED SOLIDS-MG/L	TOTAL SOLIDS MG/L
605.0	11/14/77	1059	0.3	0.30	0.08			3.4		< 0.1				
605.0	12/12/77	1045	-2.0			1.4	0.66							
605.0	12/12/77	1046	-2.0			1.4	0.49							
			0.3	0.18				3.2						
605.0	12/12/77	1046	0.3	0.21	0.11			3.2						

APPENDIX A

SECTION IV

WATER QUALITY
TYPE IV DATA
LAKES KEOWEE AND HARTWELL

YEAR 1977

(Pages 1-17 Contained in Previous Oconee Operating Reports)

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 4

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	AS UG/L	B UG/L	CD UG/L	CR UG/L	CU UG/L	SE UG/L	K MG/L	NA MG/L	NI UG/L	PB UG/L	ZN UG/L
500.0	02/14/77	1350	-2.0			0.2	2.0	6.6		0.42	1.4		4.2	53.
500.0	05/10/77	1340	-2.0			0.3	5.3	40.		0.73	1.7		1.1	18.
500.0	06/14/77	1315	-2.0							0.80	1.3			
500.0	06/14/77	1316	-2.0							0.79	1.3			
500.0	07/12/77	1335	-2.0							0.75	1.3			
500.0	07/12/77	1336	-2.0							0.77	1.2			
500.0	08/08/77	1330	-2.0							0.68	1.6		2.0	
500.0	08/08/77	1331	-2.0							0.71	1.6		2.5	
500.0	09/12/77	1335	-2.0							0.66	1.6			
500.0	09/12/77	1336	-2.0							0.67	1.6			
500.0	10/10/77	1345	-2.0							0.89	1.6			
500.0	10/10/77	1346	-2.0							0.89	1.6			
500.0	11/14/77	1345	-2.0							0.85	1.6			
500.0	11/14/77	1346	-2.0							0.82	1.6			
500.0	12/12/77	1352	-2.0							0.81	1.6			
500.0	12/12/77	1353	-2.0							0.79	1.6			
500.5	02/14/77	1335	-2.0			0.3	2.0	6.5		0.40	1.6		4.2	35.
501.0	02/14/77	1410	-2.0			0.5	4.0	7.0		0.41	3.2		2.7	61.
501.0	05/10/77	1410	-2.0			0.5	8.7	9.5		0.75	1.7		1.3	< 10.
501.0	06/14/77	1330	-2.0							0.77	1.3			
501.0	06/14/77	1331	-2.0							0.79	1.3			
501.0	07/12/77	1400	-2.0							0.80	1.3			
501.0	07/12/77	1401	-2.0							0.82	1.4			
501.0	08/08/77	1400	-2.0					6.4		0.69	1.6		2.5	1.6
501.0	08/08/77	1401	-2.0					3.2		0.67	1.5		1.8	1.3
501.0	09/12/77	1415	-2.0							0.59	1.6			
501.0	09/12/77	1416	-2.0							0.62	1.6			
501.0	10/10/77	1410	-2.0							0.83	1.6			
501.0	10/10/77	1411	-2.0							0.82	1.6			
501.0	11/14/77	1410	-2.0			< 0.1		3.9		0.80	1.6		1.7	< 10.
501.0	11/14/77	1411	-2.0			< 0.1		2.9		0.81	1.6		1.9	< 10.
501.0	12/12/77	1420	-2.0							0.78	1.5			
501.0	12/12/77	1421	-2.0							0.79	1.5			
501.5	02/14/77	1425	-2.0			11.	2.0	8.0		0.37	1.4		2.2	38.
501.5	05/10/77	1430	-2.0			0.7	5.6	3.9		0.73	1.7		1.6	21.
501.5	06/14/77	1350	-2.0							0.75	1.3			
501.5	06/14/77	1351	-2.0							0.74	1.2			
501.5	07/12/77	1425	-2.0							0.78	1.2			
501.5	07/12/77	1426	-2.0							0.79	1.2			
501.5	08/08/77	1420	-2.0							0.64	1.5		1.5	
501.5	08/08/77	1421	-2.0							0.61	1.4		1.5	
501.5	09/12/77	1440	-2.0							0.58	1.5			
501.5	09/12/77	1441	-2.0							0.60	1.5			
501.5	10/10/77	1435	-2.0							0.81	1.5			
501.5	10/10/77	1436	-2.0							0.80	1.5			
501.5	11/14/77	1430	-2.0							0.79	1.6			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	AS UG/L	B UG/L	CD UG/L	CR UG/L	CU UG/L	SE UG/L	K MG/L	NA MG/L	NI UG/L	PB UG/L	ZN UG/L
501.5	11/14/77	1431	-2.0							0.80	1.6			
501.5	12/12/77	1445	-2.0							0.76	1.5			
501.5	12/12/77	1446	-2.0							0.76	1.5			
502.0	02/14/77	1420	-2.0			0.1	1.0	3.5		0.36	1.4		1.7	38.
502.0	05/10/77	1450	-2.0			0.1	4.3	2.9		0.69	1.6		2.1	23.
502.0	06/14/77	1415	-2.0							0.75	1.3			
502.0	06/14/77	1416	-2.0							0.75	1.2			
502.0	07/12/77	1440	-2.0							0.75	1.5			
502.0	07/12/77	1441	-2.0							0.75	1.4			
502.0	08/08/77	1440	-2.0							0.62	1.4		1.5	
502.0	08/08/77	1441	-2.0							0.64	1.4		2.3	
502.0	09/12/77	1500	-2.0							0.58	1.5			
502.0	09/12/77	1501	-2.0							0.60	1.5			
502.0	10/10/77	1500	-2.0							0.79	1.1			
502.0	10/10/77	1501	-2.0							0.78	1.5			
502.0	11/14/77	1450	-2.0							0.78	1.5			
502.0	11/14/77	1451	-2.0							0.78	1.5			
502.0	12/12/77	1505	-2.0							0.72	1.4			
502.0	12/12/77	1506	-2.0							0.75	1.5			
503.0	02/14/77	1500	-2.0			0.2	2.0	4.5		0.36	1.4		2.4	78.
503.0	05/10/77	1505	-2.0			0.2	3.2	4.2		0.65	1.5		1.0	32.
503.0	06/14/77	1440	-2.0							0.72	1.2			
503.0	06/14/77	1441	-2.0							0.72	1.2			
503.0	07/12/77	1505	-2.0							0.82	1.5			
503.0	07/12/77	1506	-2.0							0.81	1.4			
503.0	08/08/77	1510	-2.0							0.57	1.3		1.5	
503.0	08/08/77	1511	-2.0							0.56	1.2		1.5	
503.0	09/12/77	1525	-2.0							0.55	1.5			
503.0	09/12/77	1526	-2.0							0.54	1.4			
503.0	10/10/77	1535	-2.0							0.79	1.5			
503.0	10/10/77	1536	-2.0							0.78	1.5			
503.0	11/14/77	1510	-2.0							0.77	1.5			
503.0	11/14/77	1511	-2.0							0.77	1.5			
503.0	12/12/77	1535	-2.0							0.71	1.4			
503.0	12/12/77	1536	-2.0							0.71	1.5			
504.0	02/14/77	1530	-2.0			6.7	2.0	4.0		0.36	1.4		1.4	130.
504.0	05/10/77	1535	-2.0			0.9	2.0	5.1		0.68	1.6		1.0	< 10.
504.0	06/14/77	1505	-2.0							0.73	1.2			
504.0	06/14/77	1506	-2.0							0.72	1.2			
504.0	07/12/77	1530	-2.0							0.90	1.3			
504.0	07/12/77	1531	-2.0							0.91	1.2			
504.0	08/08/77	1535	-2.0					5.0		0.54			1.5	1.1
504.0	08/08/77	1536	-2.0					4.8		0.58	1.5		1.3	1.2
504.0	09/12/77	1545	-2.0							0.55	1.5			
504.0	09/12/77	1546	-2.0							0.55	1.5			
504.0	10/10/77	1555	-2.0							0.75	1.5			

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 4

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	AS UG/L	B UG/L	CD UG/L	CR UG/L	CU UG/L	SE UG/L	K MG/L	NA MG/L	NI UG/L	PB UG/L	ZN UG/L
504.0	10/10/77	1556	-2.0							0.75	1.5			
504.0	11/14/77	1535	-2.0			< 0.1		3.5		0.75	1.5		1.4	< 10.
504.0	11/14/77	1536	-2.0			< 0.1		6.0		0.76	1.5		1.7	< 10.
504.0	12/12/77	1620	-2.0							0.71	1.4			
504.0	12/12/77	1621	-2.0							0.72	1.4			
505.0	02/14/77	1550	-2.0			5.5	18.	5.5		0.38	1.4		3.4	67.
505.0	05/10/77	1610	-2.0			0.7	2.5	4.1		0.67	1.6		1.3	17.
505.0	06/14/77	1525	-2.0							0.75	1.2			
505.0	06/14/77	1526	-2.0							0.76	1.2			
505.0	07/12/77	1605	-2.0							0.73	1.1			
505.0	07/12/77	1606	-2.0							0.76	1.2			
505.0	08/08/77	1630	-2.0										1.5	
505.0	08/08/77	1631	-2.0							0.56	1.6			
505.0	09/12/77	1630	-2.0							0.54	1.4			
505.0	09/12/77	1631	-2.0							0.56	1.5			
505.0	10/10/77	1625	-2.0							0.76	1.5			
505.0	10/10/77	1626	-2.0							0.77	1.5			
505.0	11/14/77	1606	-2.0							0.76	1.5			
505.0	11/14/77	1607	-2.0							0.75	1.5			
505.0	12/12/77	1655	-2.0							0.73	1.4			
505.0	12/12/77	1656	-2.0							0.75	1.4			
506.0	02/14/77	1615	-2.0			2.7	3.0	6.5		0.39	1.4		0.8	38.
506.0	05/10/77	1625	-2.0			0.6	3.1	5.2		0.66	1.5		1.1	< 10.
506.0	06/14/77	1550	-2.0							0.72	1.2			
506.0	06/14/77	1551	-2.0							0.75	1.3			
506.0	07/12/77	1630	-2.0							0.80	1.1			
506.0	07/12/77	1631	-2.0							0.81	1.1			
506.0	08/08/77	1710	-2.0					3.0		0.58	1.6		1.5	1.2
506.0	08/08/77	1711	-2.0					3.0		0.58	1.4		1.5	1.2
506.0	09/12/77	1655	-2.0							0.55	1.5			
506.0	09/12/77	1656	-2.0							0.53	1.4			
506.0	10/10/77	1647	-2.0							0.79	1.5			
506.0	10/10/77	1648	-2.0							0.78	1.5			
506.0	11/14/77	1640	-2.0			< 0.1		2.4		0.75	1.5		1.1	< 10.
506.0	11/14/77	1641	-2.0			< 0.1		3.2		0.78	1.6		1.1	< 10.
506.0	12/12/77	1710	-2.0							0.73	1.4			
506.0	12/12/77	1711	-2.0							0.73	1.4			
507.0	02/14/77	1635	-2.0			0.3	21.	3.0		0.37	1.4		4.0	78.
507.0	05/10/77	1648	-2.0			0.4	3.2	4.2		0.64	1.5		5.4	23.
507.0	06/14/77	1605	-2.0							0.70	1.2			
507.0	06/14/77	1606	-2.0							0.68	1.2			
507.0	07/12/77	1650	-2.0							0.87	1.1			
507.0	07/12/77	1651	-2.0							0.86	1.1			
507.0	08/08/77	1750	-2.0							0.51	1.3		1.5	
507.0	08/08/77	1751	-2.0								1.4			
507.0	09/12/77	1720	-2.0							0.51	1.4			

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	AS UG/L	B UG/L	CD UG/L	CR UG/L	CU UG/L	SE UG/L	K MG/L	NA MG/L	NI UG/L	PB UG/L	ZN UG/L
507.0	09/12/77	1721	-2.0							0.54	1.4			
507.0	10/10/77	1718	-2.0							0.74	1.5			
507.0	10/10/77	1719	-2.0							0.76	1.5			
507.0	11/14/77	1705	-2.0							0.66	1.4			
507.0	11/14/77	1706	-2.0							0.67	1.4			
507.0	12/12/77	1730	-2.0							0.63	1.2			
507.0	12/12/77	1731	-2.0							0.64	1.2			
508.0	02/14/77	1515	-2.0			0.8	5.0	14.		0.47	1.8		2.8	64.
508.0	05/10/77	1520	-2.0			0.6	3.0	5.8		0.74	1.6		1.0	< 10.
508.0	06/14/77	1455	-2.0							0.73	1.2			
508.0	06/14/77	1456	-2.0							0.73	1.2			
508.0	07/12/77	1520	-2.0							0.77	1.3			
508.0	07/12/77	1521	-2.0							0.73	1.3			
508.0	08/08/77	1520	-2.0					4.1		0.62	1.4		1.5	1.3
508.0	08/08/77	1521	-2.0					5.1		0.64	1.4		1.8	8.0
508.0	09/12/77	1620	-2.0							0.60	1.5			
508.0	09/12/77	1621	-2.0							0.60	1.5			
508.0	10/10/77	1550	-2.0							0.81	1.5			
508.0	10/10/77	1551	-2.0							0.60	1.5			
508.0	11/14/77	1525	-2.0			0.2		2.7		0.76	1.4		< 1.0	< 10.
508.0	11/14/77	1526	-2.0			< 0.1		2.2		0.76	1.5		< 1.0	< 10.
508.0	12/12/77	1605	-2.0							0.74	1.4			
508.0	12/12/77	1606	-2.0							0.75	1.4			
508.5	02/14/77	1520	-2.0			0.3	6.0	11.		0.39	1.5		1.3	180.
509.0	02/14/77	1445	0.3			0.6	5.0	12.		0.49	1.6		6.4	78.
509.0	05/10/77	1500	0.3			0.2	3.1	4.2		0.67	1.6		2.7	21.
509.0	06/14/77	1430	-2.0							0.75	1.3			
509.0	06/14/77	1431	-2.0							0.73	1.3			
509.0	07/12/77	1455	-2.0							0.70	1.4			
509.0	07/12/77	1456	-2.0							0.72	1.4			
509.0	08/08/77	1455	-2.0							0.68	1.9		3.0	
509.0	08/08/77	1456	-2.0							0.58	1.3		1.5	
509.0	09/12/77	1510	-2.0							0.61	1.4			
509.0	09/12/77	1511	-2.0							0.62	1.5			
509.0	10/10/77	1520	-2.0							0.75	1.5			
509.0	10/10/77	1521	-2.0							0.84	1.5			
509.0	11/14/77	1503	-2.0							0.78	1.5			
509.0	11/14/77	1504	-2.0							0.78	1.5			
509.0	12/12/77	1525	-2.0							0.75	1.4			
509.0	12/12/77	1526	-2.0							0.75	1.4			
549.0	02/14/77	1650	-2.0			0.3	3.0	8.0		0.32	1.3		5.7	49.
549.0	05/10/77	1700	-2.0			0.4	4.0	5.6		0.65	1.5		5.3	< 10.
549.0	06/14/77	1625	-2.0							0.70	1.2			
549.0	06/14/77	1626	-2.0							0.69	1.2			
549.0	07/12/77	1705	-2.0							0.85	1.3			
549.0	07/12/77	1706	-2.0							0.83	1.3			

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 4 PAGE 5

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	AS UG/L	B UG/L	CD UG/L	CR UG/L	CU UG/L	SE UG/L	K MG/L	NA MG/L	NI UG/L	PB UG/L	ZN UG/L
549.0	08/08/77	1800	-2.0					4.5		0.49	0.95		2.0	
549.0	08/08/77	1801	-2.0					4.5		0.50	0.94			1.7
549.0	09/12/77	1730	-2.0							0.48	1.4			
549.0	09/12/77	1731	-2.0							0.47	1.4			
549.0	10/10/77	1740	-2.0							0.73	1.5			
549.0	10/10/77	1741	-2.0							0.72	1.4			
549.0	11/14/77	1720	-2.0			< 0.1		2.9		0.63	1.3		< 1.0	< 10.
549.0	11/14/77	1721	-2.0			< 0.1		4.8		0.63	1.3		1.1	< 10.
549.0	12/12/77	1745	-2.0							0.61	1.2			
549.0	12/12/77	1746	-2.0							0.61	1.2			

DUKE POWER COMPANY

WATER QUALITY RESEARCH DATA TYPE 4 PAGE 1

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	AS UG/L	B UG/L	CD UG/L	CR UG/L	CU UG/L	SE UG/L	K MG/L	NA MG/L	NI UG/L	PB UG/L	ZN UG/L
601.0	06/14/77	1035	-2.0			6.0	3.0	5.0		0.52	2.1		2.5	48.
601.0	09/10/77	1000	-2.0			2.0	3.0	6.5		0.97	2.0		3.2	19.
601.0	06/14/77	1005	-2.0							1.0	1.3			
601.0	06/14/77	1006	-2.0							1.0	1.4			
601.0	07/12/77	1020	-2.0							1.1	2.0			
601.0	07/12/77	1021	-2.0							1.0	1.9			
601.0	08/08/77	1015	-2.0			0.1		5.3		1.1	1.8		2.3	16.
601.0	08/08/77	1016	-2.0			0.1		2.9		1.0	1.5		2.5	13.
601.0	09/12/77	1020	-2.0							1.1	3.0			
601.0	09/12/77	1021	-2.0							0.99	3.2			
601.0	10/10/77	1045	-2.0							1.1	3.4			
601.0	10/10/77	1046	-2.0							1.1	3.3			
601.0	11/14/77	1035	-2.0			1.0		3.1		1.2	2.9		1.2	18.
601.0	11/14/77	1036	-2.0			< 0.1		7.4		1.2	2.9		1.4	10.
601.0	12/12/77	1030	-2.0							0.99	2.8			
601.0	12/12/77	1031	-2.0							0.99	2.7			
602.0	06/14/77	1110	-2.0			0.4	3.0	8.0		0.45	2.0		3.8	73.
602.0	09/10/77	1030	-2.0			0.4	2.1	4.1		0.88	2.3		5.1	55.
602.0	06/14/77	1045	-2.0							1.0	1.3			
602.0	06/14/77	1046	-2.0							1.0	1.4			
602.0	07/12/77	1050	-2.0							1.0	2.2			
602.0	07/12/77	1051	-2.0							1.0	2.3			
602.0	08/08/77	1045	-2.0			0.2		3.7		1.0	1.6		2.5	14.
602.0	08/08/77	1046	-2.0			0.2		5.2		0.97	1.6		2.5	17.
602.0	09/12/77	1050	-2.0							0.99	3.3			
602.0	09/12/77	1051	-2.0							0.94	3.2			
602.0	10/10/77	1125	-2.0							0.94	2.6			
602.0	10/10/77	1126	-2.0							0.93	2.5			
602.0	11/14/77	1100	-2.0			< 0.1		2.8		0.90	2.2		< 1.0	< 10.
602.0	11/14/77	1101	-2.0			< 0.1		3.3		0.93	2.3		< 1.0	< 10.
602.0	12/12/77	1115	-2.0							0.92	2.6			
602.0	12/12/77	1116	-2.0							0.95	2.7			
603.0	06/14/77	1135	-2.0			0.4	2.0	5.0		0.42	2.1		1.1	53.
603.0	09/10/77	1100	-2.0			0.5	3.2	4.4		0.76	2.1		6.2	32.
603.0	06/14/77	1105	-2.0							1.0	1.4			
603.0	06/14/77	1106	-2.0							1.0	1.4			
603.0	07/12/77	1120	-2.0							0.92	1.8			
603.0	07/12/77	1121	-2.0							0.89	1.8			
603.0	08/08/77	1125	-2.0			0.2		5.8		1.1	1.4		2.5	16.
603.0	08/08/77	1126	-2.0			0.1		2.1		1.0	1.2		1.5	11.
603.0	09/12/77	1115	-2.0							1.1	3.3			
603.0	09/12/77	1116	-2.0							1.2	3.3			
603.0	10/10/77	1145	-2.0							0.82	1.9			
603.0	10/10/77	1146	-2.0							0.81	1.8			
603.0	11/14/77	1130	-2.0			< 0.1		4.7		1.0	2.1		1.4	< 10.
603.0	11/14/77	1131	-2.0			< 0.1		6.5		1.1	2.1		1.7	< 10.

STATION NUMBER	DATE MO/DA/YR	TIME HR	DEPTH IN METERS	AS UG/L	B UG/L	CD UG/L	CR UG/L	CU UG/L	SE UG/L	K MG/L	NA MG/L	NI UG/L	PB UG/L	ZN UG/L
603.0	12/12/77	1140	-2.0							0.89	2.2			
603.0	12/12/77	1141	-2.0							0.87	2.1			
604.0	02/14/77	1155	-2.0			2.4	3.0	24.		0.47	1.6		6.8	62.
604.0	05/10/77	1120	-2.0			2.1	2.1	3.1		0.76	1.9		7.1	24.
604.0	06/14/77	1125	-2.0							0.97	1.2			
604.0	06/14/77	1126	-2.0							0.95	1.2			
604.0	07/12/77	1140	-2.0							0.88	1.5			
604.0	07/12/77	1141	-2.0							0.87	1.5			
605.0	02/14/77	1100	0.3			4.7	5.0	19.		0.52	2.1		32.	140.
605.0	05/10/77	1125	0.3			3.2				0.82	2.0		12.	19.
605.0	06/14/77	1030	-2.0							1.1	1.4			
605.0	06/14/77	1031	-2.0							1.0	1.3			
605.0	07/12/77	1030	-2.0							0.97	2.1			
605.0	07/12/77	1031	-2.0							1.0	2.2			
605.0	08/08/77	1050	-2.0			0.9		34.		0.90	0.70		57.	32.
605.0	08/08/77	1051	-2.0			0.4		25.		0.67	0.44		23.	25.
605.0	09/12/77	1115	-2.0							1.3	2.5			
605.0	09/12/77	1116	-2.0							0.78	2.2			
605.0	10/10/77	1115	-2.0							0.88	1.8			
605.0	10/10/77	1116	-2.0							0.92	1.8			
605.0	11/14/77	1058	-2.0			0.6		47.		0.98	2.9		41.	18.
605.0	11/14/77	1059	-2.0			3.7		43.		1.1	2.3		68.	20.
605.0	12/12/77	1045	-2.0							1.2	2.2			
605.0	12/12/77	1046	-2.0							0.79	1.6			

APPENDIX A

SECTION V

WATER QUALITY

CONTINUOUS RECORDING TEMPERATURE DATA

LAKE KEOWEE AND KEOWEE HYDRO STATION

YEAR 1977

(Pages 1-96 Contained in Previous Oconee Semi-Annual Reports)

CONTINUOUS WATER TEMPERATURE DATA

STATION - 502
MONTH - January
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	11.2	6.9	9.2	1.221	62
1.5	11.0	6.9	9.2	1.205	62
3.0	11.0	7.0	9.2	1.165	62
4.6	10.7	6.9	9.1	1.132	62
6.1	10.8	6.9	9.1	1.130	62
7.6	10.8	6.8	9.1	1.104	62
9.1	10.8	6.8	9.1	1.111	62
12.2	10.5	6.5	8.7	1.092	62
15.2	10.5	6.6	8.8	1.048	62
18.3	10.4	6.4	8.6	1.009	62
BOTTOM	10.8	6.3	8.5	1.063	62

MONTH - February
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	11.5	7.4	9.2	0.889	56
1.5	11.4	7.4	9.1	0.840	56
3.0	11.2	7.5	9.0	0.857	56
4.6	10.7	7.4	8.8	0.867	56
6.1	10.9	7.4	8.8	0.856	56
7.6	10.9	7.3	8.7	0.826	56
9.1	10.9	7.3	8.6	0.807	56
12.2	10.0	6.5	8.0	0.792	56
15.2	9.7	6.3	7.7	0.836	56
18.3	9.3	5.8	7.0	0.797	56
BOTTOM	7.4	5.8	6.4	0.439	56

MONTH - March
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	16.5	10.4	13.5	1.656	62
1.5	15.9	10.3	13.2	1.613	62
3.0	15.6	10.4	13.0	1.572	62
4.6	15.5	9.9	12.4	1.453	62
6.1	15.6	9.6	12.0	1.400	62
7.6	15.5	9.0	11.4	1.592	62
9.1	15.4	8.8	11.0	1.605	62
12.2	12.4	8.2	10.0	1.247	62
15.2	12.1	8.0	9.8	1.239	62
18.3	11.6	7.5	9.0	1.174	62
BOTTOM	8.9	7.1	7.7	0.402	62

CONTINUOUS WATER TEMPERATURE DATA

STATION - 502
MONTH - April
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	22.8	14.6	18.9	2.654	53
1.5	22.4	14.6	18.4	2.450	53
3.0	21.4	14.7	17.2	2.196	53
4.6	21.1	14.5	16.0	1.889	53
6.1	19.9	13.9	15.1	1.113	53
7.6	16.3	12.9	14.4	0.710	53
9.1	15.3	12.4	14.0	0.682	53
12.2	15.0	11.9	13.3	0.680	53
15.2	15.2	11.8	13.1	0.704	53
18.3	14.0	10.6	12.6	0.764	53
BOTTOM	10.1	8.0	8.6	0.417	53

MONTH - May
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	26.4	21.6	23.9	1.270	52
1.5	26.2	21.5	23.5	1.089	52
3.0	24.5	20.3	23.0	0.924	52
4.6	23.8	19.4	22.0	1.066	52
6.1	23.2	19.2	21.2	1.215	52
7.6	22.5	18.4	20.3	1.192	52
9.1	21.5	17.3	19.3	1.168	52
12.2	19.3	15.1	17.3	1.354	52
15.2	18.4	14.9	16.5	1.180	52
18.3	17.9	14.3	15.9	1.121	52
BOTTOM	10.8	9.4	10.0	0.396	52

MONTH - June
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	30.0	24.9	27.2	1.287	60
1.5	29.5	24.9	27.0	1.219	60
3.0	29.5	24.8	26.7	1.247	60
4.6	28.8	23.8	26.0	1.310	60
6.1	27.5	19.8	24.7	1.080	60
7.6	27.5	18.6	23.4	0.989	60
9.1	23.5	21.2	22.3	0.479	60
12.2	20.9	19.5	20.1	0.384	60
15.2	19.9	18.3	19.1	0.408	60
18.3	19.1	17.5	18.4	0.431	60
BOTTOM	11.5	10.4	10.9	0.285	60

CONTINUOUS WATER TEMPERATURE DATA

STATION - 502
MONTH - July
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	32.2	26.9	29.9	1.284	44
1.5	32.0	26.9	29.8	1.285	44
3.0	32.0	26.9	29.3	1.261	44
4.6	30.4	26.9	28.0	0.733	44
6.1	30.5	24.5	26.3	0.981	44
7.6	26.5	23.2	24.8	0.670	44
9.1	25.1	22.3	23.9	0.676	44
12.2	23.4	20.2	22.0	0.811	44
15.2	22.8	19.9	21.4	0.855	44
18.3	22.4	19.1	20.7	0.882	44
BOTTOM	12.8	11.1	12.1	0.506	44

MONTH - August
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	31.2	27.0	29.2	1.082	62
1.5	30.9	27.0	28.9	1.002	62
3.0	30.8	27.0	28.5	0.969	62
4.6	29.3	26.9	27.7	0.581	62
6.1	28.5	26.5	27.1	0.322	62
7.6	27.1	25.5	26.4	0.298	62
9.1	26.6	24.9	25.8	0.378	62
12.2	25.9	23.1	24.5	0.602	62
15.2	25.6	22.7	24.1	0.641	62
18.3	25.2	22.1	23.6	0.687	62
BOTTOM	16.4	12.7	14.5	1.015	62

MONTH - September
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	31.0	26.0	27.7	1.125	60
1.5	29.4	26.0	27.5	0.879	60
3.0	28.9	26.0	27.4	0.771	60
4.6	28.4	26.0	27.0	0.631	60
6.1	28.1	26.0	27.0	0.526	60
7.6	27.5	26.0	26.8	0.374	60
9.1	27.5	26.0	26.7	0.316	60
12.2	27.7	25.6	26.2	0.329	60
15.2	27.6	25.1	26.1	0.388	60
18.3	26.3	24.1	25.6	0.417	60
BOTTOM	21.3	15.9	18.2	1.442	59

CONTINUOUS WATER TEMPERATURE DATA

STATION - 502
MONTH - October
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	26.3	20.0	22.7	1.946	62
1.5	26.0	20.0	22.7	1.955	62
3.0	26.0	20.0	22.6	1.972	62
4.6	26.0	20.0	22.6	1.973	62
6.1	26.0	20.0	22.5	1.972	62
7.6	26.0	20.0	22.5	1.973	62
9.1	26.0	20.0	22.5	1.974	62
12.2	25.7	19.8	22.3	1.989	62
15.2	25.8	19.9	22.5	1.966	62
18.3	25.8	19.8	22.4	1.970	62
BOTTOM	22.6	18.6	20.8	1.230	62

MONTH - November
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	20.5	16.1	18.3	1.307	60
1.5	20.2	16.1	18.3	1.289	60
3.0	20.2	16.1	18.3	1.281	60
4.6	20.0	16.0	18.3	1.279	60
6.1	20.0	16.0	18.2	1.277	60
7.6	20.0	16.0	18.2	1.274	60
9.1	20.0	16.0	18.2	1.272	60
12.2	19.7	15.8	18.0	1.256	60
15.2	19.8	16.0	18.1	1.253	60
18.3	19.9	16.0	18.1	1.251	60
BOTTOM	19.5	15.8	17.6	1.216	60

MONTH - December
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	16.0	11.9	14.1	1.096	55
1.5	16.0	11.9	14.1	1.083	55
3.0	15.9	11.9	14.0	1.079	55
4.6	15.9	11.9	14.0	1.090	55
6.1	15.9	11.9	14.0	1.092	55
7.6	15.9	11.9	13.9	1.088	55
9.1	15.9	11.9	13.9	1.096	55
12.2	15.9	11.9	13.7	1.086	55
15.2	15.8	11.9	13.8	1.120	55
18.3	15.9	11.9	13.9	1.142	55
BOTTOM	15.6	11.7	13.3	1.228	55

CONTINUOUS WATER TEMPERATURE DATA

STATION - 503
MONTH - January
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	14.4	7.5	10.7	1.971	61
1.5					0
3.0	13.6	7.4	10.1	1.511	60
4.6	13.3	9.7	10.8	0.786	25
6.1					0
7.6					0
9.1	12.7	7.5	9.5	1.158	61
12.2	12.5	7.5	9.5	1.086	61
15.2	12.2	7.3	9.1	1.006	61
18.3	11.8	7.4	9.1	0.917	61
BOTTOM	11.8	7.1	8.9	1.111	59

MONTH - February
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	13.6	8.8	11.0	1.134	56
1.5					0
3.0	12.7	8.1	10.2	1.138	56
4.6	12.0	7.1	9.4	1.145	46
6.1					0
7.6					0
9.1	10.6	6.3	8.2	0.946	56
12.2	10.0	6.3	7.9	0.847	56
15.2	9.5	6.0	7.3	0.782	55
18.3	9.2	5.9	7.2	0.728	56
BOTTOM	8.3	5.4	6.8	0.780	56

MONTH - March
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	16.5	12.1	14.1	1.365	43
1.5	16.0	11.7	13.5	1.331	42
3.0	15.7	11.6	13.4	1.199	42
4.6	15.1	9.6	12.1	1.422	41
6.1					0
7.6					0
9.1	14.2	8.0	9.8	1.479	42
12.2	13.1	8.0	9.0	1.123	42
15.2	10.5	7.9	8.7	0.707	43
18.3	10.0	7.7	8.6	0.583	43
BOTTOM	9.6	7.1	8.0	0.642	43

CONTINUOUS WATER TEMPERATURE DATA

STATION - 503
MONTH - April
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	22.4	19.4	20.8	0.885	33
1.5	21.7	19.0	20.2	0.833	33
3.0	21.7	17.2	19.6	1.078	33
6.1					0
9.1	18.2	13.2	15.0	1.251	33
12.2	14.7	12.3	13.6	0.605	33
15.2	13.3	11.0	12.2	0.543	33
18.3					0
21.3	11.4	9.7	10.4	0.400	33
24.4	10.5	9.1	9.7	0.330	33
BOTTOM	9.9	9.1	9.5	0.218	33

MONTH - May
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	27.0	19.7	23.4	1.584	62
1.5	26.1	19.2	22.8	1.600	62
3.0	25.1	19.3	22.7	1.457	62
6.1					0
9.1	22.2	15.6	19.2	1.692	61
12.2	20.5	14.4	17.0	1.711	62
15.2	17.5	12.2	14.8	1.361	62
18.3					0
21.3	12.8	10.0	11.2	0.800	61
24.4	11.3	9.5	10.3	0.390	62
BOTTOM	11.1	9.4	10.0	0.308	62

MONTH - June
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	30.2	24.9	27.5	1.231	60
1.5	29.6	24.5	27.0	1.201	60
3.0	29.5	24.8	27.0	1.164	60
6.1					0
9.1	26.7	21.3	22.8	0.962	60
12.2	24.0	19.4	20.5	0.782	60
15.2	21.3	16.0	17.9	0.908	60
18.3					0
21.3	12.7	11.5	11.8	0.4581	10
24.4	14.3	10.1	11.8	1.085	60
BOTTOM	13.5	10.0	11.3	0.818	60

CONTINUOUS WATER TEMPERATURE DATA

STATION - 503
MONTH - July
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	33.0	27.0	30.3	1.424	62
1.5	32.4	26.5	29.7	1.394	62
3.0	31.6	25.9	29.1	1.375	62
6.1					0
9.1	26.5	22.7	24.2	0.989	62
12.2	24.5	20.4	22.2	1.007	62
15.2	23.0	18.4	20.4	1.101	62
18.3					0
21.3					0
24.4	18.9	11.9	15.5	1.843	62
BOTTOM	19.9	11.5	15.2	2.077	62

MONTH - August
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	31.4	27.1	28.8	1.053	60
1.5	30.9	26.1	28.2	1.053	60
3.0	29.6	25.8	27.3	0.941	48
6.1					0
9.1	27.5	24.7	26.0	0.607	60
12.2	26.6	23.5	24.7	0.696	60
15.2	24.2	21.5	23.1	0.697	60
18.3					0
21.3					0
24.4	21.5	15.8	18.9	1.301	60
BOTTOM	21.7	16.2	18.7	1.274	60

MONTH - September
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	31.0	26.7	28.0	1.035	60
1.5	30.3	26.0	27.3	0.928	60
3.0					0
6.1					
9.1	27.5	25.9	26.7	0.359	60
12.2	26.9	25.0	25.5	0.481	59
15.2	25.9	23.8	24.5	0.380	60
18.3					0
21.3					0
24.4	22.9	18.0	21.3	1.341	60
BOTTOM	22.6	17.1	19.8	1.283	60

CONTINUOUS WATER TEMPERATURE DATA

STATION - 503
MONTH - October
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	27.5	20.6	23.3	2.128	60
1.5	26.6	20.5	22.9	2.016	60
3.0	25.5	20.1	22.2	1.527	49
6.1	25.0	20.0	22.0	1.513	49
9.1	26.4	19.8	22.4	2.006	60
12.2	25.9	19.7	22.3	1.958	60
15.2	25.0	19.3	21.9	1.795	60
18.3	23.8	18.7	20.9	1.580	49
21.3	23.1	17.3	19.9	1.758	49
24.4	22.9	17.0	19.9	1.790	60
BOTTOM	21.9	17.0	19.4	1.470	60

MONTH - November
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	22.3	17.5	19.4	1.384	60
1.5	21.8	16.7	18.9	1.406	60
3.0	20.9	16.4	18.6	1.296	60
6.1	20.5	16.0	18.3	1.323	60
9.1	19.9	15.8	18.0	1.326	60
12.2	19.9	15.6	18.0	1.339	60
15.2	19.7	15.4	17.7	1.375	60
18.3	19.5	15.0	17.3	1.458	60
21.3	19.0	14.2	16.6	1.622	60
24.4	18.9	14.0	16.3	1.632	60
BOTTOM	18.6	13.9	16.1	1.570	60

MONTH - December
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	18.0	13.0	15.6	1.198	62
1.5	17.2	12.7	15.0	1.128	62
3.0	16.7	12.3	14.6	1.118	62
6.1	16.4	12.3	14.3	1.156	62
9.1	16.3	12.1	13.9	1.166	62
12.2	16.1	12.1	13.8	1.154	62
15.2	15.7	11.8	13.5	1.145	62
18.3	15.2	11.5	13.0	1.143	62
21.3	14.5	10.5	12.5	1.167	62
24.4	14.0	10.0	12.1	1.246	61
BOTTOM	13.7	10.0	11.9	1.221	61

CONTINUOUS WATER TEMPERATURE DATA

STATION - 504
MONTH - January
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	16.7	11.5	14.3	1.544	62
1.5	16.6	11.6	14.2	1.516	62
3.0	16.5	10.2	14.0	1.619	62
4.6					0
6.1	14.2	8.7	11.1	1.349	62
7.6	13.2	8.6	10.6	1.200	62
9.1	13.0	8.4	10.2	1.104	62
12.2	12.6	8.5	9.7	1.041	43
18.3	11.5	8.5	9.9	0.985	62
24.4					0
BOTTOM	11.6	8.6	9.9	0.883	62

MONTH - February
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	15.5	12.0	13.1	0.751	56
1.5	15.5	11.9	13.1	0.757	56
3.0	15.5	10.3	12.9	0.911	56
4.6					0
6.1	15.4	8.8	11.1	1.482	56
7.6	13.4	8.6	10.0	1.342	56
9.1	12.9	8.2	9.2	1.064	56
12.2	12.0	8.1	8.7	0.584	56
18.3	9.6	7.8	8.3	0.359	56
24.4					0
BOTTOM	8.6	7.6	8.1	0.344	56

MONTH - March
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	17.4	13.9	15.5	0.950	62
1.5	17.4	13.9	15.5	0.953	62
3.0	17.4	13.8	15.4	0.960	62
4.6					0
6.1	17.4	11.5	14.4	1.393	62
7.6	17.3	9.7	13.2	1.513	62
9.1	17.0	9.2	11.8	1.520	62
12.2	14.6	8.7	10.0	0.878	62
18.3	10.0	8.3	9.1	0.476	62
24.4					0
BOTTOM	8.7	7.9	8.2	0.214	62

CONTINUOUS WATER TEMPERATURE DATA

STATION - 504
MONTH - April
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	22.6	16.3	19.0	1.916	57
1.5	21.2	16.3	18.8	1.799	57
3.0	20.8	16.2	18.7	1.772	57
4.6					0
6.1	20.2	15.4	17.8	1.883	57
7.6	20.2	12.7	16.5	2.103	57
9.1	20.1	11.7	14.8	1.824	57
12.2	14.5	10.7	12.5	0.781	57
18.3	12.1	9.8	11.0	0.665	57
24.4					0
BOTTOM	9.2	8.6	9.0	0.161	57

MONTH - May
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	26.3	19.7	22.6	1.482	61
1.5	26.6	19.8	22.5	1.589	61
3.0	25.6	19.8	22.0	1.298	61
4.6					0
6.1	23.1	19.6	21.4	1.014	61
7.6	22.9	19.2	21.1	1.014	61
9.1	22.6	17.6	20.4	1.027	61
12.2	17.9	13.8	15.6	1.038	61
18.3	14.6	11.9	13.1	0.863	62
24.4					0
BOTTOM	9.7	9.2	9.4	0.123	62

MONTH - June
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3					0
1.5					0
3.0					0
4.6					0
6.1					0
7.6					0
9.1					0
12.2					0
18.3	18.0	14.5	16.3	0.805	60
24.4					0
BOTTOM	10.2	9.6	9.9	0.150	60

CONTINUOUS WATER TEMPERATURE DATA

STATION - 504
MONTH - July
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	30.5	26.4	28.2	1.162	19
1.5	30.4	26.3	28.0	1.180	19
3.0	29.2	26.3	27.6	0.906	19
6.1	26.7	25.3	26.1	0.375	19
9.1	25.9	23.7	24.6	0.632	19
12.2	23.1	21.9	22.6	0.286	19
15.2	21.9	21.0	21.4	0.232	19
18.3	20.9	17.6	19.5	1.014	60
BOTTOM	11.0	10.1	10.5	0.242	60

MONTH - August
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	30.0	26.8	28.3	0.847	56
1.5	29.8	26.5	27.9	0.768	49
3.0	29.2	26.5	27.6	0.658	49
6.1	27.3	26.0	26.6	0.312	55
9.1	26.7	24.4	25.5	0.519	52
12.2	24.7	22.7	24.0	0.502	56
15.2	23.7	21.6	22.8	0.609	56
18.3	22.6	20.7	21.8	1.527	41
BOTTOM	11.5	10.9	11.2	0.201	44

MONTH - September
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	28.7	26.5	27.4	0.617	28
1.5	28.0	26.5	27.3	0.380	30
3.0	27.7	26.5	27.1	0.288	23
6.1	27.6	26.0	26.9	0.359	30
9.1	26.9	25.0	26.2	0.389	30
12.2	25.7	24.4	24.9	0.334	30
15.2	24.6	24.0	24.2	0.204	30
18.3	24.2	23.6	23.9	0.164	30
BOTTOM	12.4	11.8	12.1	0.159	30

CONTINUOUS WATER TEMPERATURE DATA

STATION - 504
MONTH - October
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	27.7	21.0	24.1	2.092	62
1.5	27.5	21.1	24.1	2.072	62
3.0	26.5	25.0	25.6	0.514	10
6.1	27.5	21.1	23.7	2.105	62
9.1	27.0	20.5	23.0	1.866	62
12.2	25.5	20.2	22.6	1.619	62
15.2	24.3	20.0	22.3	1.498	62
18.3	24.0	19.7	22.1	1.481	62
BOTTOM	13.1	11.4	12.7	0.281	62

MONTH - November
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	22.6	18.6	20.3	1.182	60
1.5	22.6	18.0	20.3	1.186	60
3.0					0
6.1	22.0	17.2	19.7	1.204	60
9.1	21.0	17.0	19.0	1.222	60
12.2	20.4	16.7	18.6	1.114	60
15.2	20.0	16.5	18.4	1.100	60
18.3	19.7	16.4	18.2	1.038	60
BOTTOM	13.6	13.0	13.3	0.181	60

MONTH - December
YEAR - 1977

DEPTH (m)	MAX (°C)	MIN (°C)	MEAN (°C)	STD. DEV. (°C)	NO. MEASURE-MENTS
0.3	18.9	15.6	17.2	0.817	62
1.5	18.9	15.5	17.2	0.854	62
3.0					0
6.1	18.7	13.4	15.9	1.384	62
9.1	17.6	13.1	15.0	1.224	62
12.2	16.6	12.9	14.6	1.152	62
15.2	16.4	12.8	14.4	1.145	62
18.3	16.3	12.7	14.3	1.159	62
BOTTOM	14.8	12.5	13.5	0.601	62

KEOWEE TAILRACE TEMPERATURE (°C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
1-1-77	12.1	12.5		X
1-2-77	12.2	12.2		X
1-3-77	12.0	13.1*	13.2	1600
1-4-77	12.7	12.1		X
1-5-77	12.0	12.0		X
1-6-77	11.8	11.9		X
1-7-77	11.8	14.9*	14.1	2100
1-8-77	13.0	12.1		X
1-9-77	11.7	11.6		X
1-10-77	11.8	13.7*	13.5	1900
1-11-77	13.1	13.4	12.7	0800
1-12-77	11.9	13.3	12.9	1000
1-13-77	12.4	---	12.4	0900
1-14-77	---	11.1		X
1-15-77	11.2	11.2		X
1-16-77	11.0	10.9	13.5	2300

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
1-17-77	13.0	11.9*	11.6	1200
1-18-77	11.2	11.2*	11.3	1900
1-19-77	11.5	11.5*	11.5	1000
1-20-77	11.0	11.8*	11.5	1900
1-21-77	10.5	---*	11.1	0900
1-22-77	11.0	10.7	---	0700
1-23-77	9.9	9.7		X
1-24-77	9.5	9.4		X
1-25-77	9.5	11.2*	12.2	1900
1-26-77	11.2	10.0		X
1-27-77	9.5	9.6		X
1-28-77	9.5	9.6		X
1-29-77	10.3	10.3		X
1-30-77	9.9	9.9		X
1-31-77	9.6	9.5		X

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
2-1-77	9.4	10.5	11.5	0800
2-2-77	9.7	10.0		X
2-3-77	9.6	9.7		X
2-4-77	9.5	9.7		X
2-5-77	9.5	11.3		X
2-6-77	12.1	10.6		X
2-7-77	9.9	9.6		X
2-8-77	9.5	9.5		X
2-9-77	11.1	9.1	9.0	1700
2-10-77	9.0	9.4	9.2	1200
2-11-77	9.0	9.0		X
2-12-77	9.0	9.0		X
2-13-77	9.0	9.2		X
2-14-77	9.1	9.4		X
2-15-77	9.1	9.1	9.8	2000
2-16-77	10.2	11.3		X
2-17-77	12.2	11.9	11.7	0800
2-18-77	10.0	9.7		X
2-19-77	9.3	9.7		X
2-20-77	11.4	12.1		X
2-21-77	11.6	11.4*		
2-22-77	10.3	10.2	10.1	2000
2-23-77	9.5	10.4*		
2-24-77	10.7	10.9	10.9	1500
2-25-77	10.0	9.8		X
2-26-77	9.7	10.5		X
2-27-77	10.3	10.4		X
2-28-77	10.9	10.9*		

Key * = Temperature taken during power generation

--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
3-1-77	11.6	11.7		X
3-2-77	12.1	11.7		X
3-3-77	10.8	11.7	11.0	1100
3-4-77	11.4	11.1		X
3-5-77	10.2	10.4		X
3-6-77	10.9	10.9		X
3-7-77	11.1	10.8		X
3-8-77	12.9	12.0	13.6	0800
3-9-77	10.7	11.2		X
3-10-77	10.5	11.2		X
3-11-77	11.5	11.5		X
3-12-77	11.8	11.3		X
3-13-77	10.5	10.0		X
3-14-77	11.5	13.0	13.5	1000
3-15-77	11.0	11.6	14.0	2200
3-16-77	12.0	12.1	11.8	1000

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
3-17-77	12.3	13.5	14.8	1400
3-18-77	11.2	14.8	14.5	0900
3-19-77	11.0	11.3		X
3-20-77	11.5	12.5		X
3-21-77	14.1	14.2		---
3-22-77	13.6	16.9		---
3-23-77	14.8	15.0		---
3-24-77	14.9	14.2		---
3-25-77	12.5	12.2		---
3-26-77	11.7	12.2		---
3-27-77	12.3	12.5		---
3-28-77	12.2	12.5		---
3-29-77	11.7	15.3		---
3-30-77	14.7	14.3		---
3-31-77	13.5	16.0		---

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
4-1-77	12.6	15.7		---
4-2-77	14.3	13.8		---
4-3-77	13.5	13.3	15.5	1000
4-4-77	12.5	15.7*	15.2	1400
4-5-77	12.9	17.0*	16.9	1600
4-6-77	15.4	15.7	15.0	0800
4-7-77	15.0	14.0	15.4	0800
4-8-77	12.8	14.3	17.5	2100
4-9-77	16.4	17.2*	17.0	1900
4-10-77	14.8	14.7		X
4-11-77	---	---	---	2000
4-12-77	---	15.0	17.3	2100
4-13-77	14.8	16.4*	16.2	2000
4-14-77	16.1	17.6*	16.6	1300
4-15-77	15.0	19.1	17.7	1200
4-16-77	14.5	17.1*	18.0	2000
4-17-77	15.1	15.0	18.3	2000
4-18-77	15.0	15.0		X
4-19-77	14.4	14.6	18.0	2100
4-20-77	14.7	18.1*	18.2	1700
4-21-77	15.2	16.0	18.4	2000
4-22-77	19.7	14.7		X
4-23-77	14.5	14.7		X
4-24-77	14.4	20.1*	19.4	2200
4-25-77	18.9	20.2*	19.5	1100
4-26-77	18.0	16.7	18.9	0800
4-27-77	16.8	17.4	18.9	1000
4-28-77	16.6	16.7		X
4-29-77	15.0	18.9	19.1	1200
4-30-77	18.1	18.0		X

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (°C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
5-1-77	17.8	18.0		X
5-2-77	18.3	20.0*	19.9	1100
5-3-77	18.4	20.0*	19.8	2100
5-4-77	18.3	18.6		X
5-5-77	18.8	20.2	20.5	1400
5-6-77	18.0	19.2		X
5-7-77	19.0	20.6		X
5-8-77	20.7	20.9*	21.1	1700
5-9-77	19.3	20.3	21.0	0900
5-10-77	20.0	20.7	20.8	1100
5-11-77	20.4*	20.5	20.6	0700
5-12-77	20.4	20.8	20.5	0200
5-13-77	19.4	20.0		X
5-14-77	20.0	20.4		X
5-15-77	19.9	20.4		X
5-16-77	20.5	20.9		X

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
5-17-77	20.7	21.9*	21.9	1700
5-18-77	20.8	22.4*	22.1	1700
5-19-77	21.0	22.4*	22.0	1500
5-20-77	20.6	22.0	22.2	1300
5-21-77	21.2	21.6*	21.8	1100
5-22-77	21.1	21.1		X
5-23-77	21.0	22.3	22.3	1600
5-24-77	21.5	22.1	22.5	1100
5-25-77	21.6	22.5	22.5	1000
5-26-77	21.5	22.2	22.1	1100
5-27-77	21.8	22.8	22.6	1500
5-28-77	21.9	22.1		X
5-29-77	22.6*	21.9		
5-30-77	23.2	22.0		X
5-31-77	23.4	21.6		X

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
6-1-77	21.8	21.8		
6-2-77	21.8	23.5		
6-3-77	22.1	22.2		
6-4-77	22.4	22.6		
6-5-77	22.0	22.0		
6-6-77	23.4	24.0*	23.3	1200
6-7-77	23.8	23.6	24.1	1200
6-8-77	23.1	22.8		X
6-9-77	21.6	23.8	24.6	2400
6-10-77	24.2	24.5	23.9	1400
6-11-77	22.1	22.4		X
6-12-77	22.8	24.6	24.7	1600
6-13-77	22.8	24.9*	24.7	1600
6-14-77	24.9	23.0	25.2	0200
6-15-77	22.4	22.3		X
6-16-77	22.6	---*	---	1700
6-17-77	---	---	---	1300
6-18-77	---	---		X
6-19-77	---	---	---	0800
6-20-77	---	26.1*	25.4	1500
6-21-77	23.2	23.0		X
6-22-77	23.2	23.3		X
6-23-77	23.5	24.0	25.2	1100
6-24-77	22.9	24.0	25.1	1100
6-25-77	23.0	23.2	23.8	2200
6-26-77	23.4	23.0	23.0	2100
6-27-77	22.4	25.3	24.7	2200
6-28-77	25.1*	25.7*		
6-29-77	22.5	22.6		X
6-30-77	22.7	25.4*	25.8	1600

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (°C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
7-1-77	23.0	24.5	24.4	1500
7-2-77	22.5	22.6		X
7-3-77	24.7	23.8		X
7-4-77	24.7	26.3	26.6	1400
7-5-77	23.2	25.8	26.0	1500
7-6-77	23.5	23.8		X
7-7-77	23.4	24.9	25.9	1400
7-8-77	23.5	23.7		X
7-9-77	23.5	23.6	26.1	2100
7-10-77	24.4	24.0	26.1	2100
7-11-77	24.0	24.1	25.8	2000
7-12-77	24.4	26.6	26.8	1400
7-13-77	24.2	27.3*	27.4	1500
7-14-77	24.2	25.7*	25.7	1900
7-15-77	24.2	26.2*	26.3	1700
7-16-77	23.9	23.5	25.3	2300
7-17-77	24.2	23.7	26.6	2100
7-18-77	23.9	25.2*	25.1	1900
7-19-77	24.1	25.6*	25.6	1900
7-20-77	24.0	24.0		X
7-21-77	23.5	26.3	24.5	1400
7-22-77	25.1	26.3	23.6	1200
7-23-77	23.9	23.5		X
7-24-77	23.7	23.6		X
7-25-77	23.9	24.0		X
7-26-77	24.0	24.0		X
7-27-77	24.5	24.6		X
7-28-77	24.5	26.1	24.6	1400
7-29-77	25.2	25.0		X
7-30-77	25.0	25.3		X
7-31-77	25.0	25.5		---

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
8-1-77	25.2	25.6	26.0	0700
8-2-77	25.2	25.3		X
8-3-77	25.1	25.1		X
8-4-77	25.0	25.9	26.2	1200
8-5-77	25.5	25.7		X
8-6-77	25.4	25.8		X
8-7-77	25.5	25.5		X
8-8-77	25.1	25.3		X
8-9-77	25.1	25.4		X
8-10-77	25.0	25.4*	26.1	1900
8-11-77	25.2	26.4*	26.9	1700
8-12-77	24.7	26.3*	26.1	1500
8-13-77	25.1	24.6		X
8-14-77	24.4	24.8		X
8-15-77	25.0	25.7	---	---
8-16-77	25.5	25.7		X

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
8-17-77	25.4	26.7*	---	1700
8-18-77	26.0	26.5	26.6	1500
8-19-77	26.0	26.8		X
8-20-77	26.5	26.5		X
8-21-77	25.9	26.0		X
8-22-77	25.7	26.3		X
8-23-77	25.9	26.0		X
8-24-77	25.8	26.3	26.6	1200
8-25-77	25.8	26.0		X
8-26-77	25.8	26.0		X
8-27-77	26.1	26.3		X
8-28-77	25.7	26.0		X
8-29-77	25.6	26.1		X
8-30-77	25.6	26.3		X
8-31-77	25.8	26.3		X

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
9-1-77	25.6	26.0		X
9-2-77	25.6	27.0	27.4	1200
9-3-77	26.0	26.6		X
9-4-77	26.0	26.3		X
9-5-77	26.2	26.7		X
9-6-77	26.6	27.0		X
9-7-77	26.5	26.9		X
9-8-77	27.0	27.6	27.6	0800
9-9-77	27.2	27.5*	27.8	1100
9-10-77	26.5	26.9		X
9-11-77	26.5	26.9		X
9-12-77	26.7	27.1	27.1	1200
9-13-77	26.8	27.0		X
9-14-77	27.0	27.1	27.0	1200
9-15-77	26.4	27.1*	27.1	2000
9-16-77	26.8	26.7*	26.7	2000

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
9-17-77	26.7	26.5*	26.6	1200
9-18-77	25.9	25.8		X
9-19-77	25.6	26.6*	26.7	1300
9-20-77	26.0	26.9*	26.3	0100
9-21-77	26.0	26.6	26.5	1400
9-22-77	26.0	27.0*	27.0	2000
9-23-77	26.0	26.1		X
9-24-77	25.7	26.5	25.9	1300
9-25-77	25.8	26.0		X
9-26-77	25.7	27.0*	27.0	1900
9-27-77	26.3	27.5*	27.5	2000
9-28-77	26.4	27.2*	27.1	2000
9-29-77	26.6	27.2	27.6	1500
9-30-77	26.2	27.3*	26.8	1100

Key * = Temperature taken during power generation

--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
10-1-77	26.3	25.9		X
10-2-77	25.7	25.6		X
10-3-77	25.8	27.3*	27.2	2000
10-4-77	26.1	26.0	26.7	1200
10-5-77	25.5	26.3*	26.3	1500
10-6-77	26.0	26.1*	26.1	1200
10-7-77	26.3	26.9	---	1100
10-8-77	25.4	24.8		X
10-9-77	24.7	24.7		
10-10-77	24.4	25.1		
10-11-77	24.4	24.6		
10-12-77	24.0	24.1		
10-13-77	24.2	23.9		
10-14-77	23.5	23.9		
10-15-77	23.6	23.8		
10-16-77	23.3	23.4		X

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
10-17-77	23.5	23.9	23.6	1200
10-18-77	22.9	23.4	23.5	2000
10-19-77	22.9	24.0	22.9	0800
10-20-77	23.4	22.5		X
10-21-77	22.0	22.1	22.3	1100
10-22-77	21.5	21.8		X
10-23-77	21.6	22.0		X
10-24-77	21.5	21.4	21.6	0800
10-25-77	21.5	21.3	21.3	0900
10-26-77	21.2	21.5*	21.2	2400
10-27-77	21.1	21.3	21.1	1100
10-28-77	21.1	21.4		X
10-29-77	21.1	21.0		X
10-30-77	20.9	20.9		X
10-31-77	20.8	21.3	21.6	0900

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (°C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
11-1-77	21.0	21.0	21.2	1900
11-2-77	21.2	20.9		X
11-3-77	20.9	21.0	21.8	0900
11-4-77	20.7	21.0	21.4	1200
11-5-77	20.8	20.8		X
11-6-77	20.8	20.5		X
11-7-77	20.3	20.0		X
11-8-77	20.0	20.0		X
11-9-77	20.0	---	21.0	0900
11-10-77	---	20.8	---	1400
11-11-77	20.2	19.5	19.7	0800
11-12-77	19.7	19.5		X
11-13-77	19.5	19.2		X
11-14-77	19.0	19.8*	19.4	0800
11-15-77	19.0	19.0	19.1	0800
11-16-77	18.7	19.2	19.1	1500

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION TEMP	TIME
11-17-77	18.8	19.9	19.5	1300
11-18-77	19.1	19.1	19.0	0800
11-19-77	18.5	18.5		X
11-20-77	18.5	18.4		X
11-21-77	18.5	18.6		X
11-22-77	18.5	19.0	19.1	1900
11-23-77	18.4	19.1*	18.4	1700
11-24-77	18.5	17.8		X
11-25-77	18.0	17.5		X
11-26-77	18.0	18.4*	19.2	1900
11-27-77	18.8	17.2		X
11-28-77	17.5	17.5		X
11-29-77	17.3	18.4	18.2	2100
11-30-77	17.4	17.2		X

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

KEOWEE TAILRACE TEMPERATURE (^{o}C) DATA

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION	
			TEMP	TIME
12-1-77	17.1	17.9*	18.0	1900
12-2-77	17.0	17.2	17.4	0900
12-3-77	17.5*	17.2	17.4	0900
12-4-77	16.8	16.7		X
12-5-77	16.5	16.6		X
12-6-77	16.5	17.5*	17.5	1900
12-7-77	17.1	16.7*	16.9	0900
12-8-77	16.3	16.3	16.5	0900
12-9-77	16.0	15.8	16.8	2200
12-10-77	16.5	15.8	15.9	1000
12-11-77	15.5	15.4		X
12-12-77	15.2	15.5	15.5	0800
12-13-77	15.0	15.0		X
12-14-77	15.0	14.9	16.3	2000
12-15-77	15.2	14.9		X
12-16-77	14.7	15.0	16.3	0900

DATE	TEMP.@ 0600	TEMP.@ 1800	DURING MAXIMUM POWER GENERATION	
			TEMP	TIME
12-17-77	14.8	14.7		X
12-18-77	14.5	14.5		X
12-19-77	---	---	---	1100
12-20-77	---	---*	---	1700
12-21-77	---	16.6*	16.5	2000
12-22-77	15.2	15.1*	15.4	0900
12-23-77	14.5	14.8*	14.7	1100
12-24-77	14.0	13.7		X
12-25-77	13.9	14.0		X
12-26-77	14.0	14.0		X
12-27-77	13.7	13.5		
12-28-77	13.3	14.6	14.9	1100
12-29-77	13.3	13.5	14.4	0900
12-30-77	13.2	13.9*	13.7	1500
12-31-77	14.2*	13.4	14.2	0700

Key * = Temperature taken during power generation
--- = Equipment Malfunction

X = No power generation during 24 hour period

APPENDIX B

SECTION 1

PERIPHYTON DATA

1.3.3 PERIPHYTON

LAKE KEOWEE

YEAR 1977

(Pages 1-24 Contained in Annual Report 1976)

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period December 30, 1976 to February 1, 1977.

Taxon	LOCATIONS 500.0 units·cm^{-2}	500.0 %	501.0 units·cm^{-2}	501.0 %	502.0 units·cm^{-2}	502.0 %	508.0 units·cm^{-2}	508.0 %	504.0[1] units·cm^{-2}	504.0[1] %	506.0 units·cm^{-2}	506.0 %
Class: Bacillariophyceae	2,790	79.8	6,220	90.4	4,922	90.4	15,403	87.2			22,557	88.7
Class: Chlorophyceae	708	20.2	639	9.3	525	9.6	2,257	12.7			2,733	10.8
Chlamydomonas spp.			12	0.2	23	0.4						
Cosmarium sp.	8	0.2										
Diogenes sp.	538	15.4	353	5.1	342	6.3	1,367	7.7			273	1.1
Mougeotia sp. A.											273	1.1
M. sp. B	34	1.0	68	1.0			114	0.6				
Pseudendoclonium brasiliensis			12	0.2							273	1.1
Ulothrix cf. *zonata*							46	0.3				
Coccoid greens	128	3.6	194	2.8	160	2.9	729	4.1			1,914	7.5
Class: Myxophyceae			23	0.2							137	0.5
Oscillatoria geminata											137	0.5
O. sp.			23	0.2								
Total periphyton	3,498		6,882		5,447		17,660				25,427	

[1] Sampler missing

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period February 1 to March 1, 1977.

Taxon	LOCATIONS											
	500.0		501.0		502.0		508.0		504.0[1]		506.0	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae	1,304	91.6	1,384	97.6	1,458	90.1	1.458	88.9	4,340	90.2	3,896	92.0
Class: Chlorophyceae	120	8.4	34	2.4	160	9.9	183	11.1	443	9.1	337	8.0
Chlamydomonas spp.	23	1.6			23	1.4			34	0.7	34	0.8
Cosmarium angulosum var. *coninnum*											34	0.8
Diogenes sp.	17	1.2			23	1.4	23	1.4				
Mougeotia sp. A									34	0.7		
M. sp. B							46	2.8	102	2.1	34	0.8
Scenedesmus quadricauda											34	0.8
Coccoid greens	80	5.6	34	2.4	114	7.1	114	6.9	273	5.6	205	4.8
Class: Dinophyceae									34	0.7		
Peridinium pusillum									34	0.7		
Total periphyton	1,424		1,418		1,618		1,641		4,817		4.233	

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period March 1 to March 29, 1977.

Taxon	LOCATIONS											
	500.0		501.0		502.0		508.0		504.0		506.0	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm-2	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae	23,721	90.1	3,212	86.2	2,188	84.3	2,734	87.9	10,938	86.0	8,545	90.6
Class: Chrysophyceae							34	1.1	615	4.8	68	0.7
Epipyxis ramosa							34	1.1	615	4.8	68	0.7
Class: Chlorophyceae	2,323	8.7	444	11.9	238	9.1	341	11.0	614	4.8	546	5.7
Ankistrodesmus falcatus									68	0.5	68	0.7
A. falcatus var. mirabilis											68	0.7
Chlamydomonas spp.	137	0.5			34	1.3	34	1.1	137	1.1	68	0.7
Diogenes spp.	205	0.8	171	4.6								
Monoraphidium contortum	68	0.2							136	1.1		
Mougeotia spp. B	110	1.6	34	0.9	68	2.6	68	2.2				
Pseudendoclonium brasiliensis	68	0.2										
Coccoid greens	1,735	5.4	239	6.4	136	5.2	239	7.7	273	2.1	342	3.6
Class: Cryptophyceae	68	0.2							274	2.2	68	0.7
Cryptomonas phaseolus									137	1.1		
Rhodomonas minuta	68	0.2							137	1.1	68	0.7
Class: Myxophyceae	137	0.5			68	2.6			205	1.6		
Anabaena spp.					68	2.6						
Oscillatoria geminata									137	1.1		
O. tenuissima									68	0.5		
Unidentified blue-green filament	137	0.5										
Dlass: Dinophyceae	68	0.2	68	1.8	102	3.9			68	0.5	204	2.1
Peridinium pusillum			68	1.8	102	3.9					68	0.7
P. spp.	68	0.2							68	0.5	136	1.4
Total periphyton	26,317		3,724		2,596		3,109		12,714		9,431	

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period March 29 to April 29, 1977.

Taxon	LOCATIONS											
	500.0		501.0		502.0		508.0		504.0		506.0	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae	65,986	90.5	25,819	87.0	13,740	91.0	114,810	95.8	105,404	84.8	113,150	91.3
Class: Chrysophyceae	136	0.2			136	0.8	554	0.5	8,299	6.7	1,380	1.1
Dinobryon bavaricum	68	0.1			68	0.4					276	0.2
Epipyxis ramosa	68	0.1			68	0.4	554	0.5	8,299	6.7	830	0.7
Mallomonas sp.											276	0.2
Class: Chlorophyceae	6,029	8.2	3,687	12.4	1,161	7.5	4,148	3.4	10,512	8.4	9,129	7.4
Ankistrodesmus falcatus	184	0.2	184	0.6	68	0.4						
Chlamydomonas spp.	136	0.2	737	2.5			276	0.2	1,106	0.9	830	0.7
Diogenes sp.	2,660	3.6	1,844	6.2	68	0.4	276	0.2				
Monoraphidium contortum					68	0.4					276	0.2
Mougeotia sp. B	274	0.4							3,043	2.4		
Stigeoclonium subsecundum												
Tetraedron minutum	115	0.2										
Coccoid greens	2,660	3.6	922	3.1	957	6.3	3,596	3.0	6,363	5.1	8,023	6.5
											276	0.2
Class: Cryptophyceae	319	0.5			68	0.4						
Cryptomonas phaseolus	68	0.1										
C. sp.	115	0.2			68	0.4					276	0.2
Rhodomonas minuta	136	0.2										
Class: Myxophyceae	251	0.4	184	0.6			276	0.2				
Oscillatoria geminata	115	0.2					276	0.2				
O. tenuissima												
O. sp.	136	0.2	184	0.6								
Class: Dinophyceae	183	0.3										
Peridinium pusillum	68	0.1										
P. sp.	115	0.2										
Total periphyton	72,904		29,690		15,105		119,788		124,215		123,935	

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period April 29 to May 31, 1977.

Taxon	LOCATIONS 500.0 units·cm^{-2}	500.0 %	501.0 units·cm^{-2}	501.0 %	502.0 units·cm^{-2}	502.0 %	508.0 units·cm^{-2}	508.0 %	504.0 units·cm^{-2}	504.0 %	506.0 units·cm^{-2}	506.0 %
Class: Bacillariophyceae	254,794	87.1	23,652	67.3	40,810	80.4	82,161	65.7	139,155	51.6	311,545	78.6
Class: Chrysophyceae	276	0.1	410	1.2	5,114	10.1	2,440	2.0	106,786	39.6	18,527	4.7
Dinobryon bavaricum					415	0.8	271	0.2	553	0.2		
D. sp.			410	1.2	554	1.1						
Epipyxis ramosa					1,936	3.8	1,356	1.1	99,041	36.7	8,890	2.2
Mallomonas tonsurata	276	0.1										
Unidentified chrysophyte					2,214	4.4	813	0.7	7,192	2.7	9,637	2.4
Class: Chlorophyceae	35,688	12.2	9,845	28.0	3,314	6.5	29,284	23.4	15,695	5.7	56,975	14.4
Ankistrodesmus falcatus									276	0.1		
Chlamydomonas spp.	1,107	0.4	1,094	3.1	553	1.1	271	0.2	276	0.1	2,250	0.6
Cosmarium angulosum var. *concinnum*							271	0.2				
Cosmarium parvulum									276	0.1		
C. sp.									276	0.1		
Diegenes sp.	22,132	7.6	4,922	14.0	830	1.6	1,898	1.5	1,106	0.4	36,632	9.2
Monoraphidium contortum			137	0.4			271	0.2				
Mougeotia sp. B	3,043	1.0					21,964	17.6	8,230	3.0	6,796	1.7
Pseudendoclonium brasiliensis	2,490	0.8	3,008	8.6	830	1.6						
Scenedesmus acuminatus									276	0.1	987	0.2
S. bijuga							271	0.2				
S. opoliensis var. *contracta*									276	0.1		
Staurastrum tetracerum					138	0.3						
Stigeoclonium sp.	276	0.1										
Coccoid greens	6,640	2.3	684	1.9	958	1.9	4,338	3.5	4,703	1.7	10,310	2.6
Class: Cryptophyceae	829	0.3	820	2.3	415	0.8			276	0.1		
Cryptomonas phaseolus	553	0.2							276	0.1		
Rhodomonas minuta	276	0.1	820	2.3	415	0.8						
Class: Myxophyceae	830	0.3	273	0.8	553	1.1	10,846	8.7	7,193	2.7	7,627	1.9
Oscillatoria geminata	554	0.2	273	0.8	415	0.8	10,846	8.7	6,640	2.5	5,137	1.3
O. spp.	276	0.1			138	0.3			553	0.2	2,490	0.6
Class: Euglenophyceae			137	0.4			271	0.2			1,264	0.3
Euglena sp.			137	0.4			271	0.2			1,264	0.3
Class: Dinophyceae					554	1.1			552	0.2	276	0.1
Glenodinium sp.									276	0.1	276	0.1
Peridinium aciculiterum									276	0.1		
P. pusillum					554	1.1						
P. spp.												
Total periphyton	292,417		35,137		50,760		125,002		269,657		396,214	

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period May 31 to June 30, 1977.

Taxon	500.0[1]		501.0		502.0		508.0		504.0		506.0	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae			29,050	82.7	10,117	77.1	74,698	78.3	28,358	83.8	40,160	86.1
Class: Chrysophyceae			553	1.6	205	1.6	1,936	2.0	2,248	6.6	2,454	5.3
Dinobryon bavaricum											223	0.5
Dinobryon sp.							276	0.3				
Epipyxis ramosa							554	0.6	1,268	3.7	669	1.4
Mallomonas tonsurata			553	1.6								
Unidentified chrysophytes			553	1.6	205	1.6	1,106	1.2	980	2.9	1,562	3.4
Class: Chlorophyceae			5,255	15.0	2,528	19.3	16,600	17.4	3,054	9.0	3,792	8.1
Ankistrodesmus falcatus var. *mirabilis*			138	0.4								
Arthrodesmus sp.							276	0.3				
Chlamydomonas spp.			277	0.8	410	3.1	553	0.6				
Cosmarium angulosum var. *concinnum*					273	2.1	830	0.9			223	0.5
C. sp.							276	0.3				
Crucigenia tetrapedia											223	0.5
Diogenes sp.			3,734	10.6	1,025	7.8	6,642	7.0	1,268	3.7	223	0.5
Mougeotia sp. A							830	0.9				
M. sp. B					137	1.0	5,533	5.8	461	1.4		
Pseudendoclonium brasiliensis											223	0.5
Scenedesmus acuminatus									137	0.4		
Coccoid greens			1,106	3.1	683	5.2	1,660	1.7	1,152	3.4	2,900	6.2
Class: Cryptophyceae			138	0.4	273	2.1	276	0.3			223	0.5
Cryptomonas sp.			138	0.4	205	1.6						
Rhodomonas minuta					68	0.5	276	0.3			223	0.5
Class: Myxophyceae							1,382	1.4				
Oscillatoria geminata							1,106	1.2				
O. spp.							276	0.3				
Class: Euglenophyceae							276	0.3				
Euglena sp.							276	0.3				
Class: Dinophyceae			138	0.4			276	0.3	173	0.5		
Peridinium aciculiferum							276	0.3	173	0.5		
P. inconspicuum			138	0.4								
Total periphyton			35,144		13,123		95,444		33,833		46,629	

[1]Top and bottom slides for densities missing

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period June 30 to July 28, 1977.

Taxon	LOCATIONS											
	500.0[1]		501.0		502.0		508.0		504.0		506.0	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae			11,256	84.9	10,458	81.4	130,025	56.0	154,096	55.7	54,180	74.4
Class: Chrysophyceae					410	3.2			2,773	1.0	690	1.0
Dinobryon bavaricum					68	0.5			461	0.2	230	0.3
Epipyxis ramosa					68	0.5			553	0.2	230	0.3
Unidentified chrysophytes					274	2.1			1,659	0.6	230	0.3
Class: Chlorophyceae			1,367	10.3	1,640	12.8	92,952	40.0	111,122	40.2	14,753	20.3
Chlamydomonas spp.			182	1.4	342	2.7	1,107	0.5	2,306	0.8	1,383	1.9
Cosmarium angulosum var. *concinnum*			46	0.3					461	0.2		
C. asphaerosporum var. *strigosum*							553	0.2	461	0.2		
C. contentum									461	0.2		
C. rasiborskii											230	0.3
C. sp.							553	0.2	461	0.2		
Crucigenia tetrapedia							553	0.2				
Dictyosphaerium sp.			410	3.1	547	4.3	4,150	1.8	11,066	4.0	1,152	1.6
Gonatozygon monotaenium					68	0.5	553	0.2				
Mougeotia sp. A							3,873	1.7	7,746	2.8	692	1.0
Mougeotia sp. B					68	0.5	75,248	32.4	83,272	30.1	6,686	9.2
Pseudendoclonium brasiliensis			228	1.7	137	1.1						
Staurastrum clevii					68	0.5					230	0.3
Coccoid greens			501	3.8	410	3.2	6,362	2.7	4,888	1.8	4,380	6.0
Class: Cryptophyceae			182	1.4	68	0.5			461	0.2		
Cryptomonas phaseolus			91	0.7					461	0.2		
C. sp.					68	0.5						
Rhodomonas minuta			91	0.7								
Class: Myxophyceae							6,915	3.0	5,347	1.9	2,996	4.1
Anacystis cyanea							553	0.2				
Oscillatoria geminata							3,596	1.6	3,688	1.3	2,074	2.9
O. spp.							2,490	1.1	1,659	0.6	922	1.3
Phormidium cf. *valderianum*							276	0.1				
Class: Euglenophyceae							276	0.1				
Euglena sp.							276	0.1				
Class: Dinophyceae			456	3.4	273	2.1	1,936	0.8	2,673	1.0	230	0.3
Peridinium aciculiferum			182	1.4			276	0.1	461	0.2		
P. cf. *inconspicuum*					68	0.5			1,106	0.4		
P. pusillum			274	2.1							230	0.3
P. spp.					205	1.6	1,660	0.7	1,106	0.4		
Total periphyton			13,261		12,849		232,104		276,472		72,849	

[1] Sampler missing

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period July 28 to August 31, 1977.

Taxon	LOCATIONS											
	500.0		501.0		502.0		508.0		504.0[1]		506.0[1]	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae	97,753	74.1	53,490	69.0	23,401	73.8	130,952	57.4				
Class: Chrysophyceae			461	0.6			12,810	5.6				
Epipyxis ramosa							2,766	1.2				
Unidentified chrysophytes			461	0.6			10,144	4.4				
Class: Chlorophyceae	32,276	25.2	21,209	27.2	4,840	15.7	78,386	34.3				
Chlamydomonas spp.	5,533	4.2	6,916	8.9	922	2.9	1,383	0.6				
Cosmarium angulosum var. concinnum							461	0.2				
C. asphaerosporum var. strigosum			554	0.7	346	1.1	2,306	1.0				
C. phaseolus var. minor	922	0.7										
Diogenes sp.	1,844	1.4			634	2.0						
Gonatozygon monotaenium			184	0.2								
Mougeotia sp. A							15,216	6.7				
M. sp. B	16,600	12.6	7,838	10.1	634	2.0	52,104	22.8				
Pseudendoclonium brasiliensis	1,844	1.4			518	1.6						
Staurastrum pentacerum			184	0.2								
Coccoid greens	5,533	4.2	5,533	7.1	1,786	5.6	6,916	3.0				
Class: Cryptophyceae	922	0.7	922	1.2	807	2.5	922	0.4				
Cryptomonas phaseolus	922	0.7	922	1.2	461	1.4	461	0.2				
C. sp.					346	1.1						
Rhodomonas minuta							461	0.2				
Class: Myxophyceae	922	0.7					2,766	1.2				
Oscillatoria geminata							2,766	1.2				
O. spp.	922	0.7										
Class: Euglenophyceae							922	0.4				
Euglena sp.							922	0.4				
Class: Dinophyceae			1,476	1.9	2,651	8.4	1,383	0.6				
Peridinium aciculiferum					654	2.0	461	0.2				
P. spp.			1,476	1.9	2,017	6.4	922	0.4				
Total periphyton	131,873		77,558		31,699		288,141					

[1]Sampler missing

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period August 31 to September 29, 1977.

Taxon	LOCATIONS 500.0 units·cm^{-2}	500.0 %	501.0 units·cm^{-2}	501.0 %	502.0 units·cm^{-2}	502.0 %	508.0[1] units·cm^{-2}	508.0[1] %	504.0[1] units·cm^{-2}	504.0[1] %	506.0 units·cm^{-2}	506.0 %
Class: Bacillariophyceae	98,934	72.0	6,425	58.0	16,132	70.2					93,142	67.8
Class: Chrysophyceae	3,458	3,6	410	3.7	273	1.2					3,689	2.7
Kephyrion sp.	1,614	1.7										
Unidentified chrysophyte	1,844	1.9	410	3.7	273	1.2						
Class: Chlorophyceae	19,366	20.2	3,286	29.6	5,193	22.6					38,732	28.2
Ankistrodesmus falcatus											922	0.7
Chlamydomonas spp.	2,306	2.4	688	6.2							3,689	2.7
Cosmarium asphaerosporum var. strigosum	4,611	4.8	957	8.6	2,187	9.5					8,300	6.0
C. sp.	922	1.0	137	1.2	547	2.4						
Diogenes sp.	692	0.7	274	2.5	273	1.2					922	0.7
Mougeotia sp. A											3,689	2.7
M. sp. B	5,072	5.3	820	7.4	273	1.2					19,366	14.1
Pseudendoclonium brasiliensis	1,152	1.2										
Staurastrum pentacerum	461	0.5										
Coccoid greens	4,150	4.3	410	3.7	1,640	7.1					1,844	1.3
Class: Cryptophyceae	1,613	1.7	410	3.7	273	1.2						
Cryptomonas phaseolus	461	0.5										
C. sp.	1,152	1.2	410	3.7								
Rhodomonas minuta					273	1.2						
Class: Myxophyceae	461	0.5			546	2.4					922	0.7
Anabaena sp.					273	1.2						
Oscillatoria geminata											922	0.7
O. spp.	461	0.5			273	1.2						
Class: Euglenophyceae	461	0.5										
Euglena sp.	461	0.5										
Class: Dinophyceae	1,383	1.5	547	4.9	546	2.4					922	0.7
Peridinium aciculiferum	461	0.5	137	1.2	273	1.2					922	0.7
P. spp.	922	1.0	410	3.7	273	1.2						
Total periphyton	95,676		11,078		22,963						157,407	

[1]Sampler missing

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period September 29 to October 31, 1977.

Taxon	LOCATIONS											
	500.0[1]		501.0		502.0		508.0		504.0		506.0	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae			13,398	68.1	44,157	74.4	12,920	43.4	343,750	84.8	220,636	86.7
Class: Chrysophyceae			273	1.4	409	0.7	683	2.3	5,534	1.3	11,066	4.3
Dinobryon bavaricum									692	0.2		
Epipyxis ramosa					136	0.2	273	0.9	1,384	0.3	6,916	2.7
Unidentified chrysophyte			273	1.4	273	0.5	410	1.4	3,458	0.8	4.150	1.6
Class: Chlorophyceae			5,605	28.6	14,212	23.8	15,720	52.8	51,875	12.8	21,442	8.5
Ankistrodesmus falcatus			684	3.5	273	0.5			2,766	0.7	2,075	0.8
A. falcatus var. mirabilis					136	0.2						
A. fusiformis					136	0.2						
Characium ambiguum			136	0.7					1,383	0.3		
Chlamydomonas spp.			684	3.5	410	0.7	68	0.2	2,075	0.5	2,075	0.8
Cosmarium asphaerosporum var. strigosum			410	2.1	957	1.6	410	1.4	2,766	0.7	692	0.3
C. ornatum var. perornatum							68	0.2			692	0.3
C. sp.											692	0.3
Diogenes sp.			1,094	5.6	1,777	3.0	478	1.6	4,150	1.0	1,383	0.5
Monoraphidium contortum									692	0.2	692	0.3
Mougeotia sp. A					1,094	1.8	3,896	13.1	9,683	2.4	2,075	0.8
M. sp. B					4,374	7.4	10,390	34.9	12,450	3.1	3,458	1.4
Pseudendoclonium brasiliensis					2,324	3.9			1,384	0.3		
Scenedesmus bijuga			273	1.4	136	0.2			692	0.2		
S. dimorphous					136	0.2						
S. quadricauda					136	0.2			692	0.2		
S. sp.					136	0.2						
Staurastrum pentacerum											692	0.3
Tetraedron minimum					273	0.5						
Coccoid greens			2,324	11.8	1,914	3.2	410	1.4	13,142	3.2	6,916	2.7
Class: Cryptophyceae			273	1.4	136	0.2					692	0.3
Cryptomonas phaseolus											692	0.3
C. sp.			273	1.4								
Rhodomonas minuta					136	0.2						
Class: Myxophyceae			136	0.7	273	0.5	478	1.6	4,150	1.0		
Oscillatoria geminata			136	0.7	273	0.5	478	1.6	2,075	0.5		
O. sp.									2,075	0.5		
Class: Euglenophyceae					136	0.2						
Euglena sp.					136	0.2						
Class: Dinophyceae											692	0.3
Peridinium sp.											692	0.3
Total periphyton			19,685		59,323		29,801		405,309		254,528	

[1]Sampler missing

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period October 31 to November 29, 1977.

Taxon	LOCATIONS											
	500.0		501.0		502.0		508.0[1]		504.0		506.0	
	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%	units·cm^{-2}	%
Class: Bacillariophyceae	49,353	91.4	11,210	87.2	11,142	91.1			42,722	89.8	68,629	87.9
Class: Chrysophyceae	273	0.5	68	0.5	68	0.6			205	0.4	1,162	1.5
Dinobryon sp.											68	0.1
Epipyxis ramosa											752	1.0
Kephyrion sp.					68	0.6			68	0.1		
Unidentified chrysophyte	273	0.5	68	0.5					137	0.3	342	0.4
Class: Chlorophyceae	3,829	7.0	1,297	10.0	818	6.4			3,894	8.0	7,450	9.6
Ankistrodesmus falcatus	137	0.2	68	0.5					137	0.3	410	0.5
A. fusiformis	410	0.8									68	0.1
Characium ambiguum			137	1.1	68	0.6			68	0.1	137	0.2
Chlamydomonas spp.	410	0.8	137	1.1	205	1.7			68	0.1	684	0.9
Closterium longissima var. tropica			68	0.5								
Cosmarium angulosum var. concinnum	410	0.8							68	0.1		
C. asphaerosporum var. strigosum	547	1.0									68	0.1
C. sp.			68	0.5								
Crucigenia tetrapedia											68	0.1
Diogenes sp.					68	0.6						
Docidium baculum											68	0.1
Kirchneriella subsolitaria	137	0.2										
Monoraphidium contortum					68	0.6					137	0.2
Mougeotia sp. A					137	1.1			478	1.0	205	0.3
M. sp. B									1,435	3.0	684	0.9
Planktosphaeria gelatinosa									68	0.1		
Pseudendoclonium brasiliensis			205	1.6	68	0.6			889	1.9	2,050	2.6
Scenedesmus bijuga	137	0.2	68	0.5							684	0.9
S. quadricauda	273	0.5			68	0.6					342	0.4
S. sp.	410	0.8	68	0.5	68	0.6			205	0.4	957	1.2
Selenastrum minutum	137	0.2										
Staurastrum pentacerum											68	0.1
Tetraedron minimum	137	0.2									205	0.3
Coccoid greens	684	1.3	478	3.7	68	0.6			478	1.0	615	0.8
Class: Cryptophyceae	273	0.5	68	0.5	136	1.2			68	0.1	68	0.1
Cryptomonas phaseolus	273	0.5			68	0.6						
C. sp.			68	0.5	68	0.6					68	0.1
Rhodomonas minuta									68	0.1		
Class: Myxophyceae	410	0.7							614	1.2	478	0.6
Anabaena sheremetevii									68	0.1		
Oscillatoria geminata	273	0.5							546	1.1	478	0.6
Phormidium sp.	137	0.2										
Class: Euglenophyceae			68	0.5							205	0.3
Euglena sp.			68	0.5							68	0.1
Trachelomonas volvocina var. punctata											137	0.2
Class: Dinophyceae	137	0.2	137	1.1					68	0.1	68	0.1
Peridinium spp.			137	1.1					68	0.1	68	0.1
Dinoflagellate cyst.	137	0.2										
Class: Haptophyceae					68	0.6						
Chrysochromulina parva					68	0.6						
Total periphyton	54,002		12,848		12,232				47,571		78,060	

[1]Top and bottom slides for densities missing

Periphyton densities (units·cm^{-2}) and percent composition at locations in Lake Keowee, SC, for the period November 29 to December 29, 1977.

Taxon	LOCATIONS 500.0 units·cm^{-2}	500.0 %	501.0 units·cm^{-2}	501.0 %	502.0 units·cm^{-2}	502.0 %	508.0 units·cm^{-2}	508.0 %	504.0 units·cm^{-2}	504.0 %	506.0 units·cm^{-2}	506.0 %
Class: Bacillariophyceae	13,489	88.2	5,708	93.3	12,578	92.9	19,550	95.0	15,927	83.8	29,393	83.0
Class: Chrysophyceae	23	0.2									1,778	5.0
Epipyxis ramosa											1,094	3.1
Kephyrion sp.	23	0.2										
Unidentified chrysophytes											684	1.9
Class: Chlorophyceae	1,551	10.2	375	6.3	751	5.5	1,026	5.0	3,075	16.2	4,031	11.5
Ankistrodesmus falcatus	68	0.4			137	1.0			137	0.7	547	1.5
Characium ambiguum									137	0.7	68	0.2
Chlamydomonas spp.	228	1.5	34	0.6	68	0.5	68	0.3	68	0.4	68	0.2
Closteriopsis longissima var. tropica	23	0.2										
Cosmarium angulosum var. concinnum							137	0.7				
C. asphaerosporum var. strigosum	46	0.3										
C. sp.											68	0.2
Diogenes sp.							137	0.7				
Monoraphidium contortum	68	0.4	34	0.6	68	0.5					68	0.2
M. setiforme	23	0.2			68	0.5						
Mougeotia sp. A	46	0.3			68	0.5	137	0.7	957	5.0		
M. sp. B									820	4.3	410	1.2
Pseudendoclonium brasiliensis	456	3.0	102	1.7					410	2.2	1,299	3.7
Scenedesmus bijuga	92	0.6							68	0.4	410	1.2
S. quadricauda	23	0.2									273	0.8
Tetraedron caudatum											68	0.2
Coccoid greens	478	3.1	205	3.4	342	2.5	547	2.6	478	2.5	752	2.1
Class: Cryptophyceae	137	0.9			68	0.5					137	0.4
Cryptomonas phaseolus					68	0.5					137	0.4
C. sp.	137	0.9										
Class: Myxophyceae	23	0.2	34	0.6	137	1.0					68	0.2
Oscillatoria geminata	23	0.2	34	0.6	137	1.0					68	0.2
Class: Dinophyceae	68	0.4										
Peridinium pusillum	68	0.4										
Total periphyton	15,291		6,117		13,534		20,576		19,002		35,407	

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC, for the period December 30, 1976 to February 1, 1977.

Taxon	Locations					
	500.0	501.0	502.0	508.0	504.0[1]	506.0
Achnanthes deflexa				0.3		
A. lanceolata						0.2
A. cf. marginulata		0.2				
A. microcephala	19.1	51.7	17.3	43.4		19.6
A. sp.	1.0	5.9	2.2	0.6		0.7
Amphora ovalis var. pediculus			1.4			
Anomoneis vitrea	8.8	4.4	2.2	3.3		0.9
A. serians var. brachysira		0.2	0.7	0.3		0.2
Cocconeis placentula var. lineata				0.3		
Cyclotella stelligera	4.1	1.5	5.1	1.4		8.9
Cymbella cf. cesatii			0.7			0.2
C. gracilis	1.0					
C. microcephala		3.6	2.9	1.1		0.7
C. minuta		0.5	0.7	0.3		1.2
C. tumida						0.2
Eunotia curvata var. capitata	1.0					
E. flexuosa		P				
E. flexuosa var. eurycephala			0.4			0.7
E. naeglii		0.1				3.9
E. pectinalis						0.2
E. sp.						0.5
Frustalia rhomboides var. capitata		2.7	0.7			0.1
Gomphonema acuminatum var. coronata			0.7	2.6		
G. gracile	1.0	0.4		2.0		1.2
G. parvulum	2.1	0.7		1.1		1.8
G. puiggarianum	12.4		0.7			
G. sp.				0.6		
Melosira distans	2.1	2.1	2.5	0.4		11.4
M. italica			2.9			
M. italica var. tenuissima	1.0	0.4				0.5
Navicula cryptocephala				0.9		0.5
N. hustedtii						0.2
N. notha	1.0	2.7	0.7	3.1		1.6
N. subtilissima	1.0		0.7			
N. sp.		1.5				0.5
Nitzschia palea						0.2
N. sp.		0.2				0.9
Pinnularia sp.						0.2
Synedra cf. famelica	3.1		6.5	8.0		2.1
S. rumpens	4.1	3.8	5.1	2.9		
S. ulna				1.1		1.6
S. sp.	23.7	13.1	37.5	20.7		27.5
Tabellaria fenestrata	11.9	2.7	7.9	3.4		10.3
T. flocculosa	1.5	1.5	0.7	2.3		1.0
Number of cells counted	194	406	140	350		140
Number of taxa observed	18	22	22	22		32

[1]Sampler missing

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC, for the period February 1 to March 1, 1977.

Taxon	Locations					
	500.0	501.0	502.0	508.0	504.0	506.0
Achnanthes microcephala	22.0	48.3	17.5	6.5	16.7	18.3
A. sp.	0.8	3.5				
Anomoeneis vitrea	21.1	21.0	26.6	2.6	0.5	7.5
A. serians var. brachysira	0.8					
Asterionella formosa	1.6					
Cyclotella stelligera	5.3	2.4	6.5	2.6	4.4	5.3
Cymbella hybrida	0.8					0.4
C. microcephala		2.8				0.4
C. minuta	0.8	0.7	0.8		0.5	
Denticula elegans	0.8					
Eunotia flexuosa			0.8		0.5	0.9
E. flexuosa var. eurycephala		0.7				0.4
E. naeglii			1.5	1.3	1.6	2.2
E. perpusilla					0.5	
E. sp.				1.3		
Fragilaria vaucheriae					0.5	
F. sp.			1.5	2.6	1.6	
Frustulia rhomboides var. capitata						0.4
Gomphonema clevei			0.8			
G. gracile				1.3	0.5	1.5
G. parvulum	0.8				2.2	0.9
G. puiggarianum	1.6					
G. sp.	0.8	2.1	0.8			
Melosira distans	0.8	1.0	1.5		3.3	3.5
M. italica	0.8		0.8			
M. italica var. tennuissima	1.6	1.0	1.1			0.2
Meridion circulare				1.3		
Navicula aikenensis			0.8			
N. notha	2.8	0.7	0.8		1.4	0.4
N. sp.			1.5			
Nitzschia sp.						0.4
Pinnularia caudata			0.8			
P. sp.						0.4
Synedra cf. famelica	8.9	5.2	9.9	15.7	19.2	11.0
S. fusciculata var. truncata			0.8			
S. parasitica					0.3	
S. rumpens				2.6	1.1	
S. ulna				5.2		0.4
S. sp.	9.8	4.2	12.9	15.7	39.5	37.0
Tabellaria fenestrata	17.9	4.2	11.4	34.6	4.9	7.0
T. flocculosa		2.1	1.1	6.5	0.5	1.1
Number of cells counted	123	143	132	153	182	227
Number of taxa observed	19	15	21	14	19	21

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC for the period March 1 to March 29, 1977.

Taxon	Locations 500.0	501.0	502.0	508.0	504.0	506.0
Achnanthes exigua				2.0		
A. lanceolata		0.2		2.0		
A. microcephala	68.3	45.6	37.8	10.5	10.4	13.8
A. sp.	9.6	2.3	2.3		0.4	1.4
Anomoeneis vitrea	4.7	9.7	1.9	1.0	3.2	1.6
A. serians var. brachysira		0.4		1.0		0.2
Asterionella formosa			0.3	0.7	1.1	
Cocconeis placentula var. lineata		0.4	0.3			
Cyclotella stelligera	1.2	3.8	5.3	8.5	9.7	2.8
Cymbella microcephala	0.9	4.2	1.9			0.5
C. minuta	0.6	0.4	0.3	0.7	0.8	
Denticula elegans		0.4			0.3	
Eunotia flexuosa				0.7	0.6	
E. flexuosa var. eurycephala					0.3	0.5
E. naegelii					1.7	0.5
E. pectinalis			0.6			0.5
E. sp.					0.3	
Fragilaria vaucheriae				1.4	1.1	
Gomphonema acuminatum var. coronata	0.3					
G. angustatum					0.3	
G. gracile	0.3	0.4	0.6			
G. parvulum	0.3		0.6	1.4	2.8	0.9
G. puiggarianum	1.9					
G. sp.	0.3					
Melosira distans		3.8	6.2	11.2	14.0	1.1
M. italica var. tenuissima				1.4	0.6	
M. varians			0.6			
Navicula cryptocephala	0.6					0.5
N. decussis						0.2
N. hustedtii			0.3		0.3	
N. minima				0.7		
N. mutica var. tropica				0.3		
N. notha	1.2	0.8	1.8	5.1	1.2	1.6
N. subtillissima				0.3	0.4	
N. sp.	0.3	0.4		0.7	0.3	0.5
Nitzschia plaea			0.6	1.4	0.6	0.9
N. sp.	0.3	0.4	1.0		0.8	
Synedra cf. famelica	1.2	3.4	4.4	18.4	3.0	5.1
S. rumpens	0.3			4.1	0.7	
S. rumpens var. familiaris	0.3		3.6			3.2
S. ulna				1.4		0.5
S. sp.	6.5	20.8	26.9	21.1	42.8	61.1
Surirella sp.					0.3	
Tabellaria fenestrata	0.6	2.3	2.3	4.1	2.2	2.8
T. flocculosa			0.2			
Number of cells counted	322	236	308	147	361	218
Number of taxa observed	20	18	22	24	27	21

Periphyton diatom species composition by percent of total number at locations in Lake Keowee, SC for the period March 29 to April 29, 1977.

Taxon	Locations					
	500.0	501.0	502.0	508.0	504.0	506.0
Achnanthes microcephala	86.2	84.5	62.2	32.8	39.8	63.5
A. sp.		0.9		0.3		0.6
Anomoeneis vitrea	0.6	1.9	3.1	0.1	3.6	2.2
Cyclotella meneghiniana		0.2				0.2
C. stelligera			1.6	0.2	1.2	1.4
Cymbella microcephala	0.2	0.2	0.6	0.1	0.6	0.6
C. minuta					0.8	0.8
Eunotia curvata				0.6		
E. exigua				0.2		
E. flexuosa		0.1		0.2	0.2	
E. naegelii			0.8	1.4	3.0	0.6
E. zazuminensis		0.1				
E. sp.	0.2			0.2		
Gomphonema gracile		0.7	0.4	4.4	3.0	0.8
G. parvulum	4.8	2.2	2.5	20.4	10.6	8.4
Melosira distans	0.1	0.3	0.6	0.2	1.6	1.6
M. distans var. alpigena					0.8	
M. granulata			0.4			
Navicula arvensis					0.2	
N. cryptocephala	0.2				1.0	0.6
N. mutica var. tropica					0.2	
N. notha	0.4	0.1	0.8		0.8	0.6
N. paucivisitata					0.2	
N. pupula					P	
N. subtilissima			P			
Nitzschia agnita			0.2			
N. palea	0.2					
Pinnularia biceps						0.6
Synedra delicatissima	0.3	1.4	1.2	1.4	0.5	0.6
S. cf. fasciculata				0.6		
S. radians		0.4				
S. rumpens	4.0	2.7	12.4	14.9	5.6	3.4
S. rumpens var. familiaris	0.6	0.4	2.4	1.4	0.2	0.2
S. rumpens var. meneghiniana				0.4		
S. socia			1.2	0.2		
S. ulna				2.0	0.4	0.2
S. ulna var. ramesii		P				
S. spp.	2.3	3.1	9.8	14.9	23.4	11.4
Tabellaria fenestrata		0.7		3.3	2.1	1.6
T. flocculosa		0.2			0.4	0.2
Number of cells counted	524	502	255	504	502	501
Number of taxa observed	13	19	17	22	24	21

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC for the period April 29 to May 31, 1977.

Taxon	Locations					
	500.0	501.0	502.0	508.0	504.0	506.0
Achnanthes lanceolata			0.1			
A. microcephala	82.8	72.5	47.3	29.5	21.2	69.4
A. sp.	0.4	0.2	0.2	0.8	0.4	
Anomoeneis vitrea	3.2	13.3	24.1	14.7	39.7	16.1
Asterionella formosa					0.2	
Cyclotella stelligera	0.2	1.2	1.3	1.4	4.9	0.6
Cymbella gracilis					0.2	
C. microcephala	1.0	1.4	4.4	1.4	0.6	2.0
C. minuta			0.5	1.4	0.8	
Eunotia curvata var. capitata				0.4		
E. flexuosa				0.2		
E. flexuosa var. eurycephala					0.5	
E. anegelii				3.5	1.9	
E. pectinalis		0.2	0.2			
E. sp.				0.2		
Fragilaria construens			0.2			
Gomphonema acuminatum var. capitata						0.4
G. angustatum		0.2				
G. gracile		0.2		0.4	0.2	0.6
G. parvulum	2.6	0.2	0.8	2.6	0.9	1.5
G. puiggarianum			0.2			
G. sp.		0.4	0.2	0.2		
Melosira distans	0.2	1.1	2.5	0.6	6.9	0.4
M. italica			0.2			
M. italica var. tenuissima			0.1		0.4	
Navicula cryptocephala			0.6			0.2
N. notha	2.3	1.0	2.1	4.6	2.6	3.3
N. subtillissima					0.2	
N. viridula var. linearis					0.2	
N. sp.		0.2	0.2		0.4	
Neidium affine var. longiceps		0.2				
Nitzschia lorenziana var. subtilis			0.2			
N. palea					0.2	
N. sp.			0.4	0.6	0.8	0.2
Synedra cf. famelica		0.6	0.9	7.7	1.0	0.2
S. rumpens	1.3		1.3	2.8	0.2	0.2
S. rumpens var. familiaris	0.8	0.6	0.2	0.8		0.4
S. ulna				0.2		
S. sp.	2.6	3.9	10.6	17.1	14.4	2.7
Tabellaria fenestrata	2.5	2.3	0.5	8.2	0.8	1.6
T. flocculosa	0.2	0.1	1.0	0.9	0.1	0.2
Number of cells counted	465	488	530	508	481	519
Number of taxa observed	13	19	26	23	25	17

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC for the period May 31 to June 30, 1977.

Taxon	Locations 500.0[1]	501.0	502.0	508.0	504.0	506.0
Achnanthes lanceolata			0.2			
A. lewisiana			0.4			
A. linearis f. curta				0.4	0.4	0.2
A. microcephala		78.7	62.0	43.3	50.4	56.6
Anomoeneis serians var. brachysira						0.2
A. vitrea		8.2	22.8	29.4	25.9	13.8
Asterionella formosa					P	
Cocconeis placentula var. lineata					P	
Cyclotella stelliaera		1.2	0.4	1.8	1.8	1.0
Cymbella microcephala		2.8	4.8	3.1	3.4	7.4
C. minuta		1.0	0.6	2.5	1.5	1.8
Denticula elegans		0.2		0.2		0.2
Eunotia cf. exigua					0.2	
E. naegelii					0.4	
E. sp.						0.2
Frustulia rhomboides var. amphipleuroides					0.2	
F. rhomboides var. saxonica				0.2		
Gomphonema acuminatum			0.2			
G. dichotomum			P			
G. gracile		0.2		0.4		0.6
G. parvulum		1.2	0.8	1.0	1.8	0.6
Melosira distans		1.4	1.6	2.2	1.0	0.8
M. distans var. alpigena				0.2		
M. granulata				0.2		0.4
Navicula aikenensis			0.8			
N. arvensis						0.2
N. cryptocephala		1.0	1.2	1.4	2.8	6.0
N. cf. minima						0.2
N. mutica var. tropica				0.2		
N. notha		2.0	1.0	2.4	2.2	1.2
N. paucivisitata				0.2	0.4	0.2
N. pupula			P			
N. pupula var. capitata			0.2			
N. salinarum var. intermedia			0.8	0.4	0.8	0.4
N. subtilissima		0.4		0.8	1.3	2.6
N. sp.		0.2			0.4	0.5
Nitzschia agnita						0.6
N. lorenziana var. subtilis					0.2	0.6
N. palea			0.4			
Pinnularia biceps		0.4			0.6	0.4
P. sp.					0.2	
Stauroneis smithii						0.2
Synedra delicatissima		0.2				
S. famelica				0.4		
S. rumpens		0.4	1.0	1.8	1.0	0.4
S. rumpens var. familiaris		0.2		0.4		
S. rumpens var. meneghiniana		0.2	0.2			
S. sp.		0.2		1.8	1.2	1.0
Tabellaria fenestrata			0.6	2.9	0.6	0.8
T. flocculosa		0.2	0.2	2.6	1.4	1.0
Number of cells counted		502	502	510	502	502
Number of taxa observed		20	22	25	26	29

[1]Top and bottom slides for densities missing

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC for the period June 30 to July 28, 1977.

Taxon	Locations					
	500.0[1]	501.0	502.0	508.0	504.0	506.0
Achnanthes deflexa			0.4		0.2	
A. exigua		0.2	P			
A. microcephala		72.3	61.5	70.4	60.3	50.0
A. serians var. brachysira		0.8	0.2	0.2		
A. vitrea		5.2	8.3	13.4	22.0	17.1
Asterionella formosa						0.4
Cyclotella pseudostelligera			1.2	0.2		
C. stelligera		2.2	2.4	0.8	1.8	0.4
Cymbella microcephala		3.4	6.3	1.0	0.6	
C. minuta		1.0	3.2	0.2	1.2	0.8
Eunotia curvata					0.2	0.4
E. flexuosa						0.8
E. naegelii					0.6	3.2
Frustulia rhombodies						
F. rhomboides var. crassinerva					0.2	
F. rhombodies var. saxonica			P		0.2	
F. rhombodies var. virida					P	
Gomphonema acuminatum					0.2	
G. acuminatum var. coronata		0.2		0.2	0.2	
G. gracile			0.4	1.4	0.8	0.8
G. parvulum		0.8	0.8	1.0	0.4	6.7
Melosira distans		0.6	3.6	1.6	1.4	0.8
M. distans var. alpigina				0.4		
M. granulata				0.2		
M. sp.		0.4				
Navicula arvensis		0.2				
N. cryptocephala		4.4	5.1	1.6	1.4	4.4
N. elginensis			0.4			
N. hustedtii		0.2				
N. notha		1.0	2.4	0.2	0.4	1.2
N. paucivisitata		0.2		0.2		
N. pupula				0.2		
N. seminulum var. hustedtii		0.2				
N. subtilissima		2.4		0.4	1.2	0.4
N. sp.			0.2		0.2	
Neidium affine			0.4			
N. sp.					0.4	
Nitzschia agnita		0.2	0.4			
N. dissipata		0.2			0.2	
N. lorenziana var. subtilis			1.6	0.4	0.2	
N. palea		1.2		0.2		
N. sublinearis		0.2				
N. sp.		0.2				
Pinnularia mesolepta		P				
Stauroneis anceps			0.4			
Surirella angusta				0.2		
Synedra delicatissima				0.2		0.4
S. famelica				0.2		0.8
S. rumpens		1.4	0.4	2.0	1.6	6.0
S. rumpens var. meneghiniana						0.4
S. socia						0.4
S. ulna				0.2	0.2	0.8
S. sp.		0.6	0.4	1.6	1.4	3.6
Tabellaria fenestrata			0.4	0.2	1.8	
T. flocculosa		0.4		1.2	0.8	0.4
Number of cells counted		502	258	501	501	252
Number of taxa observed		27	24	28	28	22

[1]Sampler missing

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC for the period July 28 to August 31, 1977.

Taxon	Locations					
	500.0	501.0	502.0	508.0	504.0[1]	506.0[1]
Achnanthes exigua	0.2					
A. linearis			0.4			
A. microcephala	83.5	75.2	51.2	41.9		
A. saxonica	0.1					
Anomoeneis serians var. brachysira	0.2	0.4				
A. vitrea	0.8	4.8	13.4	32.1		
Caloneis sp.				0.2		
Cyclotella stelligera	1.4	3.2	3.1	1.6		
Cymbella microcephala	0.6	6.0	2.4	1.6		
C. minuta	1.2	1.2	1.2	1.2		
Denticula elegans			0.8	0.8		
Diploneis elliptica	0.2					
Eunotia curvata				0.4		
E. flexuosa				0.4		
E. naegelii			0.8	6.7		
E. zazuminensis				0.4		
Gomphonema acuminatum var. coronata	1.2		0.4			
G. gracile	1.8		0.4			
G. parvulum	0.4		2.0	0.4		
Hantzschia amphioxys	0.2					
Melosira distans		2.8	8.1	2.0		
M. granulata				0.8		
Navicula accomoda	0.2	0.4				
N. cryptocephala	4.4	3.2	3.1	1.6		
N. cf. hambergii			0.8			
N. notha	0.4		3.0	0.8		
N. paucivisitata	0.8	0.4				
N. pupula			0.4			
N. pupula var. mutata				0.4		
N. subtilissima	0.4	1.2	0.8	0.4		
N. viridula var. rostellata		0.4				
N. sp.	0.2					
Nitzschia dissipata	0.2		0.4			
N. frustulum	0.2					
N. lorenziana var. subtilis			0.2			
N. palea		0.4	0.4			
N. sp.			0.2			
Synedra delicatissima		0.4		0.4		
S. famelica				0.4		
S. parasitica	0.2					
S. rumpens	0.6		3.1	0.8		
S. sp.	0.4		2.0	0.4		
Tabellaria fenestrata	0.2			1.6		
T. flocculosa			1.2	3.1		
Number of cells counted	502	250	254	256		
Number of taxa observed	25	14	25	24		

[1]Sampler missing

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC, for the period August 31 to September 29, 1977.

Taxon	Locations 500.0	501.0	502.0	508.0[1]	504.0[1]	506.0
Achnanthes lanceolata var. dubia			0.4			
A. cf. nauckiana			0.2			
A. microcephala	83.0	63.9	61.0			41.6
A. saxonica	0.2					
Anomoeneis serinus var. brachysira		0.4				
A. vitrea	0.8	9.5	6.4			18.7
Asterionella formosa		0.4				
Cyclotella pseudostelligera		0.4				
C. stelligera	0.6	3.2	3.6			9.5
Cymbella amphicephala						0.2
C. microcephala	1.0	3.2	2.4			2.1
C. minuta	0.4	0.8	1.2			2.9
Denticula elegans			2.2			0.2
Eunotia exigua						0.2
E. flexuosa						0.2
E. naegelii	0.4					
E. pectinalis			0.4			
E. zasuminensis						1.3
Frustalia rhomboides var. capitata						0.5
Gomphonema acuminatum						0.2
G. acuminatum var. coronata						1.6
G. angustatum var. producta	0.8					
G. gracile	2.2	0.4	0.8			2.4
G. parvulum	4.0	3.2				0.9
G. sp.						0.2
Melosira distans	0.8	1.6	6.4			5.0
M. distans var. alpigena						0.4
M. granulata	0.6		0.4			0.5
M. granulata var. angustissima	0.2					
M. italica var. tenuissima		1.2				
Navicula accomoda						0.2
N. cryptocephala	1.2	4.8	7.2			5.0
N. mutica var. undulata		0.2				
N. notha	1.0	2.0	0.8			0.4
N. paucivisitata		0.4	1.6			
N. pupula		0.4				
N. salinarum var. intermedia						0.4
N. subtilissima			1.2			0.9
N. sp.						0.2
Nitzschia agnita			0.4			
N. frustulum		0.4				
N. lorenziana var. subtilis		0.2				P
N. palea	0.2	0.4	0.4			
N. cf. romana						0.2
N. sublinearis		0.4				
Pinnularia biceps			0.4			
Stauroneis smithii	0.2					
S. phoenicenteron						P
Synedra delicatissima						0.2
S. famelica						0.2
S. rumpens	1.0	0.8	0.4			0.6
S. ulna						0.2
S. sp.	1.1	1.6	2.0			2.2
Tabellaria fenestrata						0.7
T. flocculosa		0.4	0.4			0.4
Number of cells counted	500	252	251			541
Number of taxa observed	19	24	22			35

[1]Sampler missing

Periphytic diatom species composition by percent of total number for the period September 29 to October 31, 1977.

Taxon	Locations					
	500.0[1]	501.0	502.0	508.0	504.0	506.0
Achnanthes deflexa				0.4		
A. lanceolata			0.4			
A. lanceolata var. dubia		0.4				
A. linearis f. curta		0.2				
A. microcephala		49.5	44.9	55.4	45.2	64.5
A. minutissima		0.4				
Asterionella formosa					0.4	
Anomoeneis vitrea		21.2	25.5	21.0	29.4	20.3
Cyclotella stelligera		2.1	6.4	0.8	4.8	3.6
Cymbella microcephala		4.6	0.4	6.2	0.4	0.8
C. minuta		1.4	0.7	0.8		0.8
Eunotia curvata					0.4	
E. flexuosa					0.4	0.4
E. naegelii			0.7		4.2	
E. pectinalis			0.7			
E. zasuminensis			1.1	0.4		
Fragilaria capucina					0.4	
Frustulia rhomboides var. capitata		0.5				
Gomphonema gracile				0.4		
G. parvulum		0.4	0.4			
Melosira ambigua					0.4	
M. distans			6.0	0.6	4.2	2.4
M. graunulata			0.2			0.2
M. varians		6.0				
Navicula arvensis				0.4		0.4
N. cryptocephala		8.8	1.1	4.2	1.6	1.6
N. notha		0.9		1.4	1.2	
N. paucivisitata		0.7		0.4		
N. pupula				0.2		
N. subtilissima		0.7	0.4	1.0		
N. viridula var. rostellata						0.4
Nitzschia acuta					0.4	
N. frustulum		1.1	0.2			
N. lorenziana var. subtilis					0.4	
N. palea			0.7	0.4		
N. paleacea		0.2				
Surirella angustata			0.4			
Synedra delicatissima		0.7		0.4	0.8	0.4
S. filiformis var. exilis			0.2	0.4		
S. rumpens		0.4	0.4	0.8		1.2
S. rumpens var. familiaris						0.4
S. rumpens var. fragilorides				0.8		
S. ulna					0.4	
S. sp.			7.9		2.8	
Tabellaria fenestrata			0.9	1.8	0.6	
T. flocculosa				1.8		
Number of cells counted		283	267	250	250	251
Number of taxa observed		19	21	22	20	15

[1]Top and bottom slides for densities missing

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC, for the period October 31 to November 29, 1977.

Taxon	Locations 500.0	501.0	502.0	508.0[1]	504.0	506.0
Achnanthes exigua		0.2				
A. levanderi					0.1	
A. lewisiana						0.1
A. linearis					0.2	
A. microcephala	86.0	69.2	55.2		54.5	71.0
A. minutissima		0.2				0.2
A. spp.			0.2			
Anomoeoneis vitrea	1.2	1.6	8.4		13.2	8.8
Asterionella formosa						0.2
Cyclotella meneghiniana						0.1
C. stelligera	1.2	3.2	3.4		2.8	3.4
Cymbella microcephala			0.4		0.2	
C. minuta			0.6		0.6	0.2
Eunotia curvata		0.2			0.4	
E. exigua			0.2		0.2	
E. flexuosa			1.4		0.6	
E. naegelii					6.2	0.2
E. zasuminensis	0.4	0.6	0.2		0.6	0.8
Gomphonema acuminatum	0.4					
G. acuminatum var. coronata			0.2		0.4	
G. angustatum var. producta	0.8	1.2	0.6		1.2	0.2
G. gracile			0.2		0.2	
G. parvulum	4.0	1.8	0.4		1.4	1.4
G. sp.			0.2		0.2	
Melosira distans	1.2	1.4	2.0		2.6	1.8
M. granulata						0.4
M. granulata var. angustissima		0.1				
Navicula cryptocephalia		0.4	2.2		1.0	0.8
N. notha		0.6	0.8		0.6	
N. paucivisitata			0.2			
N. pupula		0.2				
N. salinarum		0.2				
N. salinarum var. intermedia					0.2	0.3
N. subtilissima		0.2				0.2
N. spp.						0.2
Nitzschia dissipata			0.4			0.2
N. palea						0.4
Pinnularia biceps						0.2
Synedra delicatissima		0.4	0.4		0.4	
S. rumpens	0.4	0.6	0.8		0.6	
S. rumpens var. familiaris						0.2
S. rumpens var. scotica		0.2				
S. ulna			1.0			
S. spp.	4.4	17.3	20.2		10.4	8.4
Tabellaria fenestrata		0.2			0.4	0.4
T. flocculosa			0.4		0.8	
Number of cells counted	250	502	500		500	500
Number of taxa observed	10	21	24		26	25

[1]Top and bottom slides for densities missing

Periphytic diatom species composition by percent of total number at locations in Lake Keowee, SC, for the period November 29 to December 29, 1977.

Taxon	Locations 500.0	501.0	502.0	508.0	504.0	506.0
Achnanthes lanceolata	0.2					
A. lanceolata var. dubia		0.4				
A. microcephala	45.6	38.0	48.4	36.1	42.0	57.2
Amphora ovalis			0.2			
Anomoeoneis vitrea	1.0	8.0	4.8	0.6	5.6	2.4
Asterionella formosa	0.2	0.4				
Caloneis sp.	0.2					
Cyclotella stelligera	8.6	2.4	5.4		8.0	4.0
Cymbella microcephala	0.6			0.6	0.8	0.4
C. minuta		0.4	1.0	0.6	0.8	
Denticula elegans			0.2			
Epithemia zebra	0.1					
E. curvata				0.3		
E. exigua				0.3		
E. flexuosa			0.2	0.8		
E. naegelii	0.8			3.7	6.0	0.4
E. pectinalis	0.2					
E. zasuminensis	0.4		0.6	0.3	0.4	
E. sp.	0.4					
Fragilaria capucina					0.2	
F. vaucheriae	0.2					
Gomphonema acuminatum var. coronata		0.4				
G. gracile				0.9		
G. parvulum	0.8	1.6	0.6	11.2	3.2	4.0
G. puiggarianum		0.4				
G. sp.				0.3		
Melosira ambigua	0.3	1.2				
M. distans	10.2	10.4	6.2	1.6	7.2	4.4
M. granulata	0.6					0.4
M. granulata var. angustissima		0.8				
Navicula accomoda	0.4					
N. anglica var. subsala	0.2					
N. cryptocephala	0.8	3.2	1.8	2.2	0.8	0.4
N. elginensis var. neglecta			0.1			
N. mutica var. tropica			0.2			
N. notha	0.2	0.8	0.8		0.4	0.8
N. rhyncocephala	0.2		0.2			
N. subtilissima	0.2		0.2			0.4
Nitzschia lorenziana var. subtilis	0.2					
N. palea						0.4
Synedra delicatissima			0.4			
S. famelica				1.6	0.4	
S. parasitica	0.2					
S. rumpens	0.4	0.8		5.0	1.6	
S. rumpens var. familiaris				0.6		
S. rumpens var. scotica					0.8	
S. ulna	0.4		0.6	1.2		
S. spp.	26.6	29.2	26.7	21.8	16.4	24.0
Tabellaria fenestrata	1.0		1.6	8.7	4.8	0.8
T. flocculosa	0.2	0.4		1.6	1.2	

APPENDIX B

SECTION 2

PHYTOPLANKTON CHLOROPHYLL AND POPULATION DATA

1.3.4 RECEIVING WATER STUDY LAKE KEOWEE

YEAR 1977

(PAGES 1-119 CONTAINED IN ANNUAL REPORT 1976)

Summary of Lake Keowee Total Chlorophyll Concentrations (mg/m^3), 1977

Location	Sample Type	Jan 11	Feb 15	Mar 15	Apr 13	May 10	Jun 15	Jul 12	Aug 9	Sep 12	Oct 13	Nov 17	Dec 14	Year Mean
500.0	EZC[1]	1.28	1.74	1.71	2.23	2.69	3.07	2.50	2.43	8.11	2.26	1.27	0.88	2.51
	LDS[2]	1.75	1.84	0.83	0.46	1.04	0.75	0.70	0.69	0.84	1.11	1.03	1.32	1.03
501.0	EZC	1.64	1.84	2.29	1.99	1.20	2.30	2.48	3.96	6.51	0.82	1.51	1.71	2.35
	LDS	1.30	1.43	0.76	0.52	0.60	0.89	0.64	3.28	0.47	0.62	0.61	0.96	1.00
502.0	EZC	1.08	1.41	1.71	2.10	2.21	3.07	2.16	3.12	5.16	0.82	1.12	1.42	2.12
	LDS	1.21	1.62	0.86	0.53	0.67	0.79	0.67	0.62	0.85	0.96	1.02	1.10	0.91
503.0	EZC	1.02	1.48	1.34	1.02	1.60	2.90	2.60	5.47	1.61	0.60	0.89	1.17	1.81
	LDS	1.50	1.23	0.86	0.48	0.67	0.62	0.46	0.98	0.36	1.60	1.20	1.20	0.93
505.0	EZC	1.69	1.64	2.36	2.94	2.11	2.53	2.79	3.55	3.22	0.71	1.18	1.20	2.16
	LDS	1.29	1.14	0.81	0.43	0.46	0.38	0.40	0.33	0.43	0.34	1.00	1.53	0.71
506.0	EZC	1.80	2.60	3.25	2.77	2.57	2.48	3.48	4.51	4.38	0.86	1.38	1.58	2.64
	LDS	1.73	1.23	0.66	0.57	0.63	0.75	0.66	0.49	0.65	0.78	1.22	1.64	0.92
508.0	EZC	1.29	1.01	1.14	0.48	1.17	1.58	0.98	1.30	0.94	0.91	1.05	1.50	1.11
	LDS	0.85	1.48	1.20	0.65	1.12	1.30	0.86	1.40	0.98	1.08	0.76	1.26	1.08
508.5	EZC	1.34	1.55	1.08	0.95	1.23	2.91	2.31	2.05	0.98	0.91	0.83	0.65	1.40
	LDS	1.02	1.00	0.63	0.46	0.46	0.68	0.64	0.44	0.48	0.40	0.81	0.84	0.66
509.5	SUR[3]	1.32	1.55	0.91	0.62	1.03	0.65	0.81	1.12	0.83	1.07	1.02	1.44	1.03
	LDS	1.32	1.26	1.00	0.52	1.08	0.77	0.86	0.48	0.84	0.82	0.70	1.24	0.91

[1]Euphotic zone composite

[2]Lower depth sample

[3]Near surface, 1 meter deep sample

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 01/11/77
TIME: 1250 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	29.9	19.6	5.46	3.7
ANKISTRODESMUS FALCATUS	1.3	0.8	0.07	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	2.7	0.43	0.2
CHLAMYDOMONAS SPP.	2.7	1.7	0.23	0.1
COSMARIUM SPP.	1.3	0.8	0.75	0.5
MONORAPHIDIUM CONTORTUM	2.7	1.7	0.11	0.0
MONORAPHIDIUM SETIFORME	6.9	4.5	1.20	0.8
MOUGEOTIA SPP.	1.3	0.8	1.88	1.2
SCENEDESMUS DENTICULATUS	2.7	1.7	0.52	0.3
COCCOID GREENS	6.9	4.5	0.20	0.1
BACILLARIOPHYCEAE	79.0	52.1	98.20	67.1
CYCLOTELLA STELLIGERA	5.5	3.6	2.98	2.0
EUNOTIA SP. A	16.6	10.9	5.28	3.6
MELOSIRA DISTANS V. A	12.5	8.2	2.31	1.5
RHIZOSOLENIA ERIENSIS	20.8	13.7	77.77	53.1
SYNEDRA SP. A	23.6	15.5	9.87	6.7
CHRYSOPHYCEAE	2.6	1.7	1.95	1.3
CHROMULINA SPP.	1.3	0.8	0.28	0.1
MALLOMONAS ACAROIDES	1.3	0.8	1.67	1.1
CRYPTOPHYCEAE	26.2	17.2	16.86	11.5
CHROOMONAS ACUTA	8.3	5.4	0.92	0.6
CRYPTOMONAS OVATA	12.5	8.2	12.93	8.8
CRYPTOMONAS PHASEOLUS	4.1	2.7	1.24	0.8
CRYPTOMONAS REFLEXA	1.3	0.8	1.75	1.2
DINOPHYCEAE	8.3	5.4	21.63	14.7
PERIDINIUM INCONSPICUUM	8.3	5.4	21.63	14.7
UNKNOWN	5.5	3.6	2.10	1.4
0774-2-28	5.5	3.6	2.10	1.4
SAMPLE TOTALS:	151.5	99.8	146.21	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1250 SAMPLE DEPTH: 20.0 M

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	18.4	23.7	7.69	12.5
ANKISTRODESMUS FALCATUS	3.1	4.0	0.17	0.3
ANKISTRODESMUS FUSIFORMIS	2.0	2.5	0.21	0.3
ARTHRODESMUS SUBULATUS	1.0	1.2	0.98	1.6
KIRCHNERIELLA SPP.	1.0	1.2	0.01	0.0
MONORAPHIDIUM CONTORTUM	1.0	1.2	0.04	0.0
MONORAPHIDIUM SETIFORME	6.2	8.0	0.08	0.1
OOCYSTIS PUSILLA	1.0	1.2	0.07	0.1
COCCOID GREENS	3.1	4.0	0.09	0.1
BACILLARIOPHYCEAE	32.1	41.5	41.85	68.3
CYCLOTELLA STELLIGERA	3.1	4.0	1.65	2.7
EUNOTIA SP. A	8.3	10.7	2.63	4.3
MELOSIRA ITALICA VAR. TENUISSIMA	9.3	12.0	5.22	8.5
RHIZOSOLENIA ERIENSIS	8.3	10.7	31.03	50.6
SYNEDRA SP. A	3.1	4.0	1.30	2.1
CHRYSOPHYCEAE	4.1	5.3	1.88	3.1
CHROMULINA SPP.	3.1	4.0	0.63	1.0
MALLOMONAS ACAROIDES	1.0	1.2	1.25	2.0
CRYPTOPHYCEAE	14.5	18.7	7.38	12.0
CHROOMONAS ACUTA	4.1	5.3	0.46	0.7
CRYPTOMONAS OVATA	5.2	6.7	5.37	8.7
CRYPTOMONAS PHASEOLUS	5.2	6.7	1.54	2.5
UNKNOWN	8.2	10.6	0.42	0.7
0574-2-03	1.0	1.2	0.05	0.1
0774-2-22	4.1	5.3	0.18	0.3
0774-2-28	3.1	4.0	1.17	1.9
SAMPLE TOTALS:	77.3	99.9	61.24	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 01/11/77
TIME: 1320 SAMPLE DEPTH: 6.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	47.9	28.9	7.50	7.2
ANKISTRODESMUS FALCATUS	1.3	0.7	0.07	0.0
ANKISTRODESMUS FUSIFORMIS	2.7	1.6	0.28	0.2
KIRCHNERIELLA SPP.	1.3	0.7	0.02	0.0
MONORAPHIDIUM CONTORTUM	2.7	1.6	0.11	0.1
MONORAPHIDIUM SETIFORME	22.2	13.4	3.86	3.7
MOUGEOTIA SPP.	1.3	0.7	1.88	1.8
OOCYSTIS PUSILLA	2.7	1.6	0.20	0.1
SCENEDESMUS DIMORPHUS	1.3	0.7	0.55	0.5
SCENEDESMUS QUADRICAUDA	1.3	0.7	0.13	0.1
COCCOID GREENS	11.1	6.7	0.35	0.3
BACILLARIOPHYCEAE	66.5	40.2	59.26	57.2
CYCLOTELLA STELLIGERA	5.5	3.3	2.95	2.8
EUNOTIA SP. A	6.7	4.1	2.22	2.1
MELOSIRA DISTANS V. A	8.3	5.0	1.54	1.4
MELOSIRA ITALICA VAR. TENUISSIMA	8.3	5.0	4.65	4.4
RHIZOSOLENIA ERIENSIS	9.7	5.8	36.29	35.0
SYNEDRA SP. A	27.8	16.8	11.62	11.2
CHRYSOPHYCEAE	6.7	4.0	2.64	2.5
CHROMULINA SPP.	4.1	2.4	0.84	0.8
KEPHYRION SPP.	1.3	0.7	0.12	0.1
MALLOMONAS ACAROIDES	1.3	0.7	1.67	1.6
CRYPTOPHYCEAE	27.6	16.6	13.94	13.4
CHROOMONAS ACUTA	9.7	5.8	1.08	1.0
CRYPTOMONAS OVATA	8.3	5.0	8.62	8.3
CRYPTOMONAS PHASEOLUS	8.3	5.0	2.48	2.4
CRYPTOMONAS REFLEXA	1.3	0.7	1.75	1.7
DINOPHYCEAE	6.9	4.1	18.02	17.4
PERIDINIUM INCONSPICUUM	6.9	4.1	18.02	17.4
UNKNOWN	9.5	5.7	2.18	2.1
0774-2-22	5.5	3.3	1.58	1.5
0774-2-28	1.3	0.7	0.52	0.5
0974-2-07	2.7	1.6	0.07	0.0
SAMPLE TOTALS:	165.1	99.8	103.57	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1320 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	27.8	20.5	6.66	7.9
ANKISTRODESMUS FALCATUS	5.2	3.8	0.28	0.3
ANKISTRODESMUS FALCATUS VAR. MIRABILIS	1.0	0.7	0.11	0.1
ANKISTRODESMUS FUSIFORMIS	3.1	2.2	0.32	0.4
CRUCIGENIA TETRAPEDIA	1.0	0.7	0.04	0.0
GLOEOCYSTIS PLANCTONICA	1.0	0.7	0.09	0.1
MONORAPHIDIUM SETIFORME	4.1	3.0	0.72	0.8
MOUGEOTIA SPP.	1.0	0.7	0.23	0.3
SCENEDESMUS DENTICULATUS	1.0	0.7	0.19	0.2
COCCOID GREENS	10.4	7.6	0.33	0.4
BACILLARIOPHYCEAE	57.0	42.1	45.83	54.9
CYCLOTELLA STELLIGERA	10.4	7.6	5.52	6.6
EUNOTIA SP. A	8.3	6.1	2.67	3.2
MELOSIRA DISTANS V. A	4.1	3.0	0.76	0.9
MELOSIRA ITALICA VAR. TENUISSIMA	13.5	9.9	7.54	9.0
RHIZOSOLENIA ERIENSIS	6.2	4.5	23.27	27.9
SYNEDRA SP. A	14.5	10.7	1.08	1.3
CHRYSOPHYCEAE	5.0	3.6	0.06	0.1
CHROMULINA SPP.	1.0	0.7	0.02	0.0
KEPHYRION SPP.	2.0	1.4	0.18	0.2
MALLOMONAS PSEUDOCORONATA	1.0	0.7	0.35	0.4
OCHROMONAS SPP.	1.0	0.7	0.31	0.4
HAPTOPHYCEAE	2.0	1.4	0.38	0.5
CHRYSOCHROMULINA PARVA	2.0	1.4	0.38	0.5
CRYPTOPHYCEAE	31.1	22.9	15.42	18.5
CHROOMONAS ACUTA	13.5	9.9	1.55	1.9
CRYPTOMONAS OVATA	10.4	7.6	10.75	12.9
CRYPTOMONAS PHASEOLUS	6.2	4.5	1.85	2.2
CRYPTOMONAS REFLEXA	1.0	0.7	1.31	1.6
DINOPHYCEAE	4.1	3.0	1.79	2.1
PERIDINIUM INCONSPICUUM	4.1	3.0	1.79	2.1
UNKNOWN	8.2	6.0	2.20	2.6
0774-2-22	6.2	4.5	1.77	2.1
0774-2-28	1.0	0.7	0.39	0.5
0974-2-07	1.0	0.7	0.02	0.0
SAMPLE TOTALS:	135.2	99.8	83.36	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 01/11/77
TIME: 1140 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	72.4	32.8	32.17	19.4
ANKISTRODESMUS FALCATUS	12.5	5.6	0.66	0.4
ANKISTRODESMUS FUSIFORMIS	4.1	1.8	0.43	0.2
ARTHRODESMUS SUBULATUS	2.0	0.9	12.03	7.3
CLOSTERIUM CERATIUM	4.1	1.8	2.38	1.4
MONORAPHIDIUM CONTORTUM	4.1	1.8	0.17	0.1
MONORAPHIDIUM SETIFORME	33.4	15.1	5.81	3.5
SCENEDESMUS DENTICULATUS	2.0	0.9	0.39	0.2
SCENEDESMUS QUADRICAUDA	2.0	0.9	0.19	0.1
STAURASTRUM CURVATUM VAR. ELONGATUM	2.0	0.9	9.83	5.9
COCCOID GREENS	6.2	2.8	0.20	0.1
BACILLARIOPHYCEAE	91.7	41.6	96.98	58.8
CYCLOTELLA STELLIGERA	4.1	1.8	2.21	1.3
EUNOTIA SP. A	4.1	1.8	1.32	0.8
MELOSIRA DISTANS V. A	18.8	8.5	3.47	2.1
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	1.8	2.33	1.4
RHIZOSOLENIA ERIENSIS	18.8	8.5	70.16	42.5
SYNEDRA SP. A	41.8	19.0	17.47	10.6
CHRYSOPHYCEAE	10.2	4.6	5.10	3.0
CHROMULINA SPP.	6.2	2.8	1.27	0.7
MALLOMONAS ACAROIDES	2.0	0.9	2.52	1.5
SYNURA SPP.	2.0	0.9	1.31	0.7
CRYPTOPHYCEAE	37.5	17.0	18.45	11.1
CHROOMONAS ACUTA	18.8	8.5	2.08	1.2
CRYPTOMONAS OVATA	14.6	6.6	15.12	9.1
CRYPTOMONAS PHASEOLUS	4.1	1.8	1.24	0.7
DINOPHYCEAE	4.1	1.8	10.84	6.5
PERIDINIUM INCONSPICUUM	4.1	1.8	10.84	6.5
UNKNOWN	4.1	1.8	1.19	0.7
0774-2-22	4.1	1.8	1.19	0.7
SAMPLE TOTALS:	220.0	99.8	164.75	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1140 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	45.6	31.7	5.70	9.3
ANKISTRODESMUS FALCATUS	6.9	4.8	0.38	0.6
ANKISTRODESMUS FUSIFORMIS	6.9	4.8	0.72	1.2
MONORAPHIDIUM SETIFORME	23.6	16.4	4.11	6.7
SCENEDESMUS DENTICULATUS	1.3	0.9	0.12	0.2
COCCOID GREENS	6.9	4.8	0.22	0.3
BACILLARIOPHYCEAE	60.8	42.3	39.00	64.2
ACHNANTHES MICROCEPHALA	1.3	0.9	0.16	0.2
CYCLOTELLA STELLIGERA	5.5	3.8	0.95	1.5
EUNOTIA SP. A	9.7	6.7	3.08	5.0
MELOSIRA DISTANS V. A	18.0	12.5	3.34	5.5
RHIZOSOLENIA ERIENSIS	5.5	3.8	20.73	34.1
SYNEDRA SP. A	20.8	14.5	8.71	14.3
CHRYSOPHYCEAE	1.3	0.9	0.28	0.5
CHROMULINA SPP.	1.3	0.9	0.28	0.5
CRYPTOPHYCEAE	26.3	18.3	9.88	16.3
CHROOMONAS ACUTA	11.1	7.7	1.23	2.0
CRYPTOMONAS OVATA	5.5	3.8	5.74	9.5
CRYPTOMONAS PHASEOLUS	9.7	6.7	2.89	4.8
DINOPHYCEAE	1.3	0.9	0.60	1.0
PERIDINIUM INCONSPICUUM	1.3	0.9	0.60	1.0
UNKNOWN	8.1	5.6	2.27	3.7
0774-2-22	4.1	2.8	1.18	1.9
0774-2-28	2.7	1.8	1.05	1.7
0974-2-07	1.3	0.9	0.03	0.0
SAMPLE TOTALS:	143.4	99.9	60.74	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 01/11/77
TIME: 1356 SAMPLE DEPTH: 6.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	42.3	29.2	13.50	11.5
ANKISTRODESMUS FALCATUS	4.1	2.8	0.22	0.1
ANKISTRODESMUS FUSIFORMIS	3.1	2.1	0.37	0.3
CLOSTERIUM CERATIUM	3.1	2.1	1.78	1.5
FRANCEIA DROESCHERI	3.1	2.1	0.58	0.5
MONORAPHIDIUM CONTORTUM	3.1	2.1	0.13	0.1
MONORAPHIDIUM SETIFORME	14.5	10.0	2.53	2.1
MOUGEOTIA SPP.	2.0	1.3	7.05	6.0
SCENEDESMUS DENTICULATUS	3.1	2.1	0.59	0.5
SCENEDESMUS QUADRICAUDA	1.0	0.7	0.01	0.0
COCCOID GREENS	1.0	0.7	0.16	0.1
BACILLARIOPHYCEAE	68.4	47.2	77.36	66.0
CYCLOTELLA STELLIGERA	4.1	2.8	2.32	2.0
EUNOTIA ZAZUMINENSIS	1.0	0.7	0.43	0.4
EUNOTIA SP. A	19.7	13.6	6.26	5.3
MELOSIRA DISTANS V. A	6.2	4.3	1.58	1.3
RHIZOSOLENIA ERIENSIS	15.6	10.7	58.12	49.7
SYNEDRA SP. A	21.8	15.0	9.12	7.7
CHRYSOPHYCEAE	3.0	2.0	1.55	1.3
CHROMULINA SPP.	1.0	0.6	0.52	0.4
KEPHYRION SPP.	1.0	0.6	0.19	0.1
MALLOMONAS ACAROIDES	1.0	0.6	0.02	0.0
CRYPTOPHYCEAE	22.8	15.7	1.59	1.4
CHROOMONAS ACUTA	10.4	7.1	8.15	7.0
CRYPTOMONAS OVATA	5.2	3.5	1.37	1.2
CRYPTOMONAS PHASEOLUS	7.2	4.9	5.63	4.8
DINOPHYCEAE	2.0	1.3	13.92	11.9
PERIDINIUM DEFLANDREI	1.0	0.6	11.92	10.2
UNIDENTIFIED DINOPHYCEAE	1.0	0.6	2.01	1.7
UNKNOWN	6.1	4.2	1.97	1.6
0774-2-22	4.1	2.8	1.18	1.0
0774-2-28	2.0	1.3	0.78	0.6
SAMPLE TOTALS:	144.6	99.8	117.06	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1356 SAMPLE DEPTH: 20.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	31.8	19.3	12.30	8.3
ANKISTRODESMUS FALCATUS	3.1	1.8	0.17	0.1
ANKISTRODESMUS FUSIFORMIS	1.0	0.6	0.10	0.1
ARTHRODESMUS SUBULATUS	1.0	0.6	0.98	0.7
FRANCEIA DROESCHERI	2.0	1.2	0.39	0.3
MONORAPHIDIUM CONTORTUM	2.0	1.2	0.08	0.1
MONORAPHIDIUM SETIFORME	14.5	8.8	0.53	0.4
MOUGEOTIA SPP.	2.0	1.2	0.82	0.6
COCCOID GREENS	6.2	3.7	0.19	0.1
BACILLARIOPHYCEAE	89.1	54.2	109.98	74.4
CYCLOTELLA STELLIGERA	3.1	1.8	1.65	1.1
EUNOTIA ZAZUMINENSIS	1.0	0.6	0.45	0.3
EUNOTIA SP. A	14.5	8.8	4.62	3.1
MELOSIRA DISTANS V. A	17.6	10.7	3.27	2.2
MELOSIRA ITALICA VAR. TENUISSIMA	14.5	8.8	8.12	5.5
RHIZOSOLENIA ERIENSIS	22.8	13.8	85.34	57.7
SYNEDRA SP. A	15.6	9.5	6.52	4.4
CHRYSOPHYCEAE	1.0	0.6	1.25	0.8
MALLOMONAS ACAROIDES	1.0	0.6	1.25	0.8
HAPTOPHYCEAE	2.0	1.2	0.38	0.3
CHRYSOCHROMULINA PARVA	2.0	1.2	0.38	0.3
CRYPTOPHYCEAE	28.0	17.0	14.10	9.5
CHROOMONAS ACUTA	10.4	6.3	1.15	0.8
CRYPTOMONAS OVATA	7.2	4.3	7.52	5.1
CRYPTOMONAS PHASEOLUS	9.4	5.6	5.78	3.9
CRYPTOMONAS REFLEXA	2.0	1.2	0.63	0.4
DINOPHYCEAE	3.1	1.8	0.09	0.1
PERIDINIUM INCONSPICUUM	3.1	1.8	0.09	0.1
UNKNOWN	8.1	4.9	1.62	1.1
0574-2-03	2.0	1.2	0.64	0.4
0774-2-22	5.2	3.1	0.48	0.3
0974-2-07	1.0	0.6	0.02	0.0
SAMPLE TOTALS:	164.1	99.8	147.74	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0
TIME: 1520

SAMPLE TYPE: EZC
SAMPLE DEPTH: 6.0 M

SAMPLE DATE: 01/11/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	39.0	28.1	6.75	7.2
ANKISTRODESMUS FALCATUS	2.0	1.4	0.11	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	2.9	0.43	0.5
CLOSTERIUM CERATIUM	1.0	0.7	0.05	0.0
CRUCIGENIA TETRAPEDIA	1.0	0.7	0.05	0.0
KIRCHNERIELLA SPP.	3.1	2.2	0.05	0.0
MONORAPHIDIUM CONTORTUM	1.0	0.7	0.04	0.0
MONORAPHIDIUM SETIFORME	16.6	12.0	2.85	3.1
MOUGEOTIA SPP.	1.0	0.7	0.41	0.4
SCENEDESMUS DENTICULATUS	4.1	2.9	0.78	0.8
SCENEDESMUS QUADRICAUDA	1.0	0.7	0.19	0.2
COCCOID GREENS	4.1	2.9	0.13	0.1
BACILLARIOPHYCEAE	59.1	42.7	56.81	61.5
CYCLOTELLA STELLIGERA	3.1	2.2	0.65	0.7
EUNOTIA SP. A	24.8	18.0	7.91	8.5
MELOSIRA DISTANS V. A	1.0	0.7	0.19	0.2
RHIZOSOLENIA ERIENSIS	10.4	7.5	38.79	42.0
SYNEDRA SP. A	19.7	14.2	8.25	8.9
CHRYSOPHYCEAE	5.2	3.8	0.42	0.5
CHROMULINA SPP.	2.0	1.4	0.55	0.6
DINOBRYON SPP.	3.1	2.2	0.55	0.6
MALLOMONAS PSEUDOCORONATA	1.0	0.7	0.11	0.1
CRYPTOPHYCEAE	23.8	17.2	11.54	12.5
CHROOMONAS ACUTA	10.4	7.5	1.55	1.7
CRYPTOMONAS OVATA	7.2	5.2	7.55	8.2
CRYPTOMONAS PHASEOLUS	5.2	3.8	1.55	1.7
CRYPTOMONAS REFLEXA	1.0	0.7	1.34	1.4
DINOPHYCEAE	5.2	3.8	13.48	14.6
PERIDINIUM INCONSPICUUM	5.2	3.8	13.48	14.6
UNKNOWN	5.0	3.6	0.45	0.5
0774-2-22	2.0	1.4	0.58	0.6
0774-2-28	2.0	1.4	0.78	0.8
0974-2-07	1.0	0.7	0.02	0.0
SAMPLE TOTALS:	138.2	99.8	92.28	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1520 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	68.3	30.9	10.27	10.4
ANKISTRODESMUS FALCATUS	6.2	2.8	0.34	0.3
ANKISTRODESMUS FUSIFORMIS	4.1	1.8	0.43	0.4
DICTYOSPHAERIUM PULCHELLUM	2.0	0.9	1.63	1.6
GOLENKINIA RADIATA	2.0	0.9	0.33	0.3
KIRCHNERIELLA SPP.	6.2	2.8	0.14	0.1
MONORAPHIDIUM SETIFORME	33.4	15.1	5.81	5.9
SCENEDESMUS DENTICULATUS	4.1	1.8	0.79	0.8
SCENEDESMUS QUADRICAUDA	4.1	1.8	0.58	0.6
COCCOID GREENS	6.2	2.8	0.20	0.2
BACILLARIOPHYCEAE	99.9	45.3	55.21	56.3
CYCLOTELLA STELLIGERA	6.2	2.8	3.32	3.4
EUNOTIA ZAZUMINENSIS	2.0	0.9	0.91	0.9
EUNOTIA SP. A	6.2	2.8	1.98	2.0
MELOSIRA DISTANS V. A	10.4	4.7	1.93	1.9
MELOSIRA ITALICA VAR. TENUISSIMA	12.5	5.6	6.99	7.1
RHIZOSOLENIA ERIENSIS	4.1	1.8	15.59	15.9
SYNEDRA SP. A	58.5	26.5	24.46	24.9
CHRYSOPHYCEAE	8.3	3.7	1.69	1.7
CHROMULINA SPP.	8.3	3.7	1.69	1.7
CRYPTOPHYCEAE	37.5	17.0	19.26	19.6
CHROOMONAS ACUTA	6.2	2.8	0.69	0.7
CRYPTOMONAS OVATA	12.5	5.6	12.96	13.2
CRYPTOMONAS PHASEOLUS	18.8	8.5	5.60	5.7
DINOPHYCEAE	4.1	1.8	10.84	11.0
PERIDINIUM INCONSPICUUM	4.1	1.8	10.84	11.0
UNKNOWN	2.0	0.9	0.59	0.6
0774-2-22	2.0	0.9	0.59	0.6
SAMPLE TOTALS:	220.1	99.8	97.88	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 01/11/77
TIME: 1450 SAMPLE DEPTH: 6.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	41.0	20.3	32.11	15.4
ANKISTRODESMUS FALCATUS	2.0	1.0	0.11	0.0
ANKISTRODESMUS FUSIFORMIS	6.2	3.0	0.52	0.2
ARTHRODESMUS SUBULATUS	2.0	1.0	12.60	6.0
CLOSTERIUM CERATIUM	2.0	1.0	1.18	0.5
CRUCIGENIA TETRAPEDIA	2.0	1.0	0.14	0.0
MONORAPHIDIUM SETIFORME	16.7	8.3	1.49	0.7
MOUGEOTIA SPP.	2.0	1.0	14.00	6.7
SCENEDESMUS DENTICULATUS	2.0	1.0	0.33	0.1
SCENEDESMUS SPP.	2.0	1.0	0.14	0.0
COCCOID GREENS	4.1	2.0	0.80	0.3
BACILLARIOPHYCEAE	95.8	47.6	80.91	38.8
EUNOTIA ZAZUMINENSIS	2.0	1.0	0.91	0.4
EUNOTIA SP. A	4.6	2.2	0.64	0.3
MELOSIRA DISTANS V. A	29.2	14.5	5.64	2.7
RHIZOSOLENIA ERIENSIS	14.7	7.3	54.56	26.2
SYNEDRA SP. A	33.3	16.5	14.97	7.2
UNIDENTIFIED PENNATE DIATOMS	2.0	1.0	0.72	0.3
CHRYSOPHYCEAE	6.1	3.0	0.03	0.0
CHROMULINA SPP.	4.1	2.0	0.04	0.0
KEPHYRION SPP.	2.0	1.0	0.00	0.0
CRYPTOPHYCEAE	31.2	15.5	10.79	5.2
CHROOMONAS ACUTA	4.1	2.0	1.39	0.7
CRYPTOMONAS OVATA	4.1	2.0	3.32	1.6
CRYPTOMONAS PHASEOLUS	23.0	11.4	6.08	2.9
DINOPHYCEAE	16.4	8.2	80.43	38.7
PERIDINIUM DEFLANDREI	14.3	7.1	79.91	38.4
PERIDINIUM INCONSPICUUM	2.0	1.0	0.52	0.2
UNKNOWN	2.0	1.0	0.75	0.4
0774-2-22	8.3	4.1	0.59	0.3
0774-2-28			3.16	1.5
SAMPLE TOTALS:	201.0	99.8	207.64	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1450 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	46.5	23.7	13.71	12.6
ANKISTRODESMUS FALCATUS	1.3	0.6	0.07	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	2.0	0.43	0.3
ARTHRODESMUS SUBULATUS	1.3	0.6	0.09	0.0
CLOSTERIUM CERATIUM	1.3	0.6	0.79	0.7
MONORAPHIDIUM CONTORTUM	1.3	0.6	0.05	0.0
MONORAPHIDIUM SETIFORME	18.0	9.2	1.26	1.2
SCENEDESMUS DENTICULATUS	1.3	0.6	0.43	0.4
SCENEDESMUS SPP.	1.3	0.6	0.52	0.5
COCCOID GREENS	16.6	8.5	7.22	6.6
BACILLARIOPHYCEAE	70.5	36.0	6.47	6.0
CYCLOTELLA STELLIGERA	2.7	1.3	0.62	0.6
EUNOTIA ZAZUMINENSIS	1.3	0.6	0.28	0.3
EUNOTIA SP. A	16.6	8.5	1.80	1.7
MELOSIRA DISTANS V. A	9.2	4.7	1.38	1.3
NAVICULA SUBTILISSIMA	1.3	0.6	0.66	0.6
RHIZOSOLENIA ERIENSIS	12.5	6.4	4.63	4.3
SYNEDRA SP. A	26.4	13.5	1.80	1.7
CHRYSOPHYCEAE	3.3	1.7	0.03	0.0
CHROMULINA SPP.	5.3	2.7	0.11	0.1
DINOBRYON BAVARICUM	8.0	4.1	0.20	0.2
DINOBRYON SPP.	1.3	0.6	0.07	0.1
MALLOMONAS ACAROIDES	1.3	0.6	0.68	0.6
MALLOMONAS PSEUDOCORONATA	1.3	0.6	0.36	0.3
PSEUDOKEPHYRION SPP.	2.7	1.3	0.74	0.7
SYNURA SPP.	2.7	1.3	0.14	0.1
CRYPTOPHYCEAE	40.2	20.5	15.61	14.4
CHROOMONAS ACUTA	15.2	7.7	1.19	1.1
CRYPTOMONAS OVATA	6.4	3.3	1.18	1.1
CRYPTOMONAS PHASEOLUS	16.6	8.5	12.97	12.0
CRYPTOMONAS REFLEXA	1.3	0.6	0.75	0.7
UNKNOWN	15.1	7.7	0.90	0.8
0774-2-22	9.2	4.7	0.77	0.7
0774-2-28	2.7	1.3	0.05	0.0
0974-2-07	2.7	1.3	0.07	0.0
SAMPLE TOTALS:	195.2	99.8	108.53	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 01/11/77
TIME: 1710 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	68.1	23.0	63.77	26.6
ANKISTRODESMUS FALCATUS	8.3	2.8	0.45	0.1
ANKISTRODESMUS FALCATUS VAR. MIRABILIS	2.0	0.6	0.24	0.1
ANKISTRODESMUS FUSIFORMIS	2.0	0.6	0.21	0.0
ARTHRODESMUS INCUS VAR. EXTENSUS	2.0	0.6	6.91	2.8
ARTHRODESMUS SUBULATUS	4.1	1.3	24.07	10.0
CLOSTERIUM CERATIUM	2.0	0.6	1.19	0.4
GLOEOCYSTIS PLANCTONICA	2.0	0.6	0.40	0.1
MONORAPHIDIUM SETIFORME	39.7	13.4	6.90	2.8
SCENEDESMUS DENTICULATUS	2.0	0.6	0.39	0.1
STAURASTRUM PENTACERUM	2.0	0.6	22.91	9.5
COCCOID GREENS	2.0	0.6	0.05	0.0
BACILLARIOPHYCEAE	145.8	49.4	129.22	54.0
ASTERIONELLA FORMOSA	8.3	2.8	4.46	1.8
CYCLOTELLA STELLIGERA	10.4	3.5	5.54	2.3
EUNOTIA FLEXUOSA	2.0	0.6	25.08	10.5
EUNOTIA SP. A	14.6	4.9	4.63	1.9
MELOSIRA DISTANS V. A	25.0	8.4	4.63	1.9
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	1.3	2.33	1.0
RHIZOSOLENIA ERIENSIS	14.6	4.9	54.56	22.8
SYNEDRA SP. A	66.8	22.6	27.95	11.7
CHRYSOPHYCEAE	6.0	2.0	5.65	2.3
CHROMULINA SPP.	2.0	0.6	0.42	0.1
MALLOMONAS ACAROIDES	2.0	0.6	2.52	1.0
MALLOMONAS PSEUDOCORONATA	2.0	0.6	2.72	1.1
CRYPTOPHYCEAE	58.3	19.7	24.20	10.1
CHROOMONAS ACUTA	16.7	5.6	1.85	0.7
CHROOMONAS REFLEXA	6.2	2.1	2.53	1.0
CRYPTOMONAS OVATA	12.5	4.2	12.96	5.4
CRYPTOMONAS PHASEOLUS	22.9	7.7	6.85	2.8
DINOPHYCEAE	6.1	2.0	13.49	5.6
PERIDINIUM INCONSPICUUM	2.0	0.6	5.42	2.2
PERIDINIUM PUSILLUM	4.1	1.3	8.07	3.3
UNKNOWN	10.3	3.4	2.44	1.0
0774-2-22	8.3	2.8	2.38	0.9
0974-2-07	2.0	0.6	0.05	0.0
SAMPLE TOTALS:	294.6	99.8	238.80	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1710 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	23.6	20.5	3.80	5.6
ANKISTRODESMUS FALCATUS	1.0	0.8	0.05	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	1.7	0.21	0.3
CRUCIGENIA TETRAPEDIA	1.0	0.8	0.04	0.0
KIRCHNERIELLA SPP.	1.0	0.8	0.04	0.0
MONORAPHIDIUM CONTORTUM	1.0	0.8	0.04	0.0
MONORAPHIDIUM SETIFORME	10.4	9.0	1.80	2.7
MOUGEOTIA SPP.	1.0	0.8	1.44	2.1
COCCOID GREENS	6.2	5.4	0.19	0.2
BACILLARIOPHYCEAE	55.8	48.7	48.86	73.0
CYCLOTELLA STELLIGERA	6.2	5.4	3.31	4.9
CYMBELLA SPP.	1.0	0.8	1.45	2.1
EUNOTIA SP. A	19.7	17.2	6.26	9.3
MELOSIRA DISTANS V. A	9.3	8.1	1.73	2.5
MELOSIRA ITALICA VAR. TENUISSIMA	2.0	1.7	1.16	1.7
RHIZOSOLENIA ERIENSIS	8.3	7.2	31.03	46.4
SYNEDRA SP. A	9.3	8.1	3.91	5.8
CHRYSOPHYCEAE	3.0	2.6	1.67	2.5
CHROMULINA SPP.	2.0	1.7	0.42	0.6
MALLOMONAS ACAROIDES	1.0	0.8	1.25	1.8
CRYPTOPHYCEAE	27.9	24.3	11.58	17.3
CHROOMONAS ACUTA	11.4	9.9	1.26	1.8
CRYPTOMONAS OVATA	7.2	6.2	7.52	11.2
CRYPTOMONAS PHASEOLUS	9.3	8.1	2.78	4.1
UNKNOWN	4.1	3.5	0.91	1.3
0774-2-22	3.1	2.7	0.88	1.3
0974-2-07	1.0	0.8	0.02	0.0
SAMPLE TOTALS:	114.4	99.8	66.84	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 01/11/77
TIME: 1640 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	83.3	35.4	12.36	8.9
ANKISTRODESMUS FALCATUS	6.2	2.6	0.34	0.2
MONORAPHIDIUM CONTORTUM	4.1	1.7	0.17	0.1
MONORAPHIDIUM SETIFORME	66.8	28.4	11.63	8.4
COCCOID GREENS	6.2	2.6	0.20	0.1
BACILLARIOPHYCEAE	79.1	33.6	92.86	67.5
CYCLOTELLA STELLIGERA	6.2	2.6	3.32	2.4
EUNOTIA SP. A	12.5	5.3	3.97	2.8
MELOSIRA DISTANS V. A	8.3	3.5	1.54	1.1
NAVICULA NOTHA	2.0	0.8	0.74	0.5
RHIZOSOLENIA ERIENSIS	18.8	8.0	70.16	51.0
SYNEDRA SP. A	31.3	13.3	13.10	9.5
CHRYSOPHYCEAE	8.2	3.4	5.88	4.2
CHROMULINA SPP.	4.1	1.7	0.84	0.6
MALLOMONAS ACAROIDES	4.1	1.7	5.04	3.6
CRYPTOPHYCEAE	52.0	22.1	25.12	18.2
CHROOMONAS ACUTA	25.0	10.6	2.78	2.0
CRYPTOMONAS OVATA	12.5	5.3	12.96	9.4
CRYPTOMONAS PHASEOLUS	12.5	5.3	9.73	7.1
CRYPTOMONAS REFLEXA	2.0	0.8	2.64	1.9
UNKNOWN	12.4	5.2	4.15	3.0
0774-2-22	6.2	2.6	1.78	1.3
0774-2-28	6.2	2.6	2.37	1.7
SAMPLE TOTALS:	235.0	99.8	137.39	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1640 SAMPLE DEPTH: 20.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	53.4	24.8	32.28	24.5
ANKISTRODESMUS FALCATUS	3.1	1.4	0.17	0.1
ANKISTRODESMUS FUSIFORMIS	3.1	1.4	0.32	0.2
ARTHRODESMUS SUBULATUS	2.0	0.9	14.97	11.4
CLOSTERIUM CERATIUM	1.0	0.4	0.59	0.4
COELASTRUM MICROPORUM	2.0	0.9	1.88	1.4
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	1.0	0.4	0.10	0.1
MONORAPHIDIUM CONTORTUM	2.0	0.9	0.08	0.1
MONORAPHIDIUM SAXATILE	1.0	0.4	0.11	0.1
MONORAPHIDIUM SETIFORME	28.0	13.0	4.88	3.7
OOCYSTIS PARVA	1.0	0.4	0.07	0.1
PLANKTOSPHAERIA GELATINOSA	2.0	0.9	0.40	0.3
SCENEDESMUS QUADRICAUDA	1.0	0.4	0.09	0.1
STAURASTRUM PENTACERUM	1.0	0.4	14.40	11.0
COCCOID GREENS	5.2	2.4	0.16	0.1
BACILLARIOPHYCEAE	95.4	44.5	61.96	47.2
CYCLOTELLA STELLIGERA	13.5	6.3	7.17	5.5
EUNOTIA SP. A	16.6	7.7	5.27	4.0
MELOSIRA DISTANS V. A	16.6	7.7	3.07	2.3
MELOSIRA ITALICA VAR. TENUISSIMA	13.5	6.3	7.54	5.7
RHIZOSOLENIA ERIENSIS	7.2	3.3	27.15	20.6
SYNEDRA SP. A	28.0	13.0	11.73	8.9
CHRYSOPHYCEAE	8.1	3.7	5.90	4.5
CHROMULINA SPP.	2.0	0.9	0.42	0.3
MALLOMONAS ACAROIDES	4.1	1.9	5.05	3.8
OCHROMONAS SPP.	1.0	0.4	0.31	0.2
UNIDENTIFIED CHRYSOPHYCEAE	1.0	0.4	0.14	0.1
CRYPTOPHYCEAE	49.4	23.1	24.37	18.5
CHROOMONAS ACUTA	13.5	6.3	1.50	1.1
CHROOMONAS REFLEXA	5.2	2.4	2.13	1.6
CRYPTOMONAS OVATA	15.6	7.2	16.13	12.2
CRYPTOMONAS PHASEOLUS	15.6	7.2	4.64	3.5
DINOPHYCEAE	3.0	1.3	5.03	3.8
PERIDINIUM PUSILLUM	2.0	0.9	4.01	3.0
UNIDENTIFIED DINOPHYCEAE	1.0	0.4	1.02	0.7
UNKNOWN	4.0	1.8	0.65	0.4
0774-2-22	2.0	0.9	0.59	0.4
0974-2-07	2.0	0.9	0.05	0.0
SAMPLE TOTALS:	213.8	99.8	131.21	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 01/11/77
TIME: 1035 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	63.0	45.4	8.83	14.1
ANKISTRODESMUS FALCATUS	8.3	5.9	0.45	0.7
ANKISTRODESMUS FALCATUS VAR. MIRABILIS	1.0	0.7	0.11	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	2.9	0.43	0.6
GOLENKINIA RADIATA	2.0	1.4	0.33	0.5
MONORAPHIDIUM CONTORTUM	3.1	2.2	0.13	0.2
MONORAPHIDIUM SETIFORME	38.4	27.7	6.69	10.7
QUADRIGULA CLOSTERIOIDES	1.0	0.7	0.18	0.3
SCENEDESMUS BIJUGA	1.0	0.7	0.18	0.3
SCENEDESMUS DENTICULATUS	1.0	0.7	0.19	0.3
COCCOID GREENS	3.1	2.2	0.09	0.1
BACILLARIOPHYCEAE	46.7	33.6	36.69	59.0
CYCLOTELLA STELLIGERA	4.1	2.9	2.20	3.5
EUNOTIA SP. A	15.6	11.2	4.94	7.9
MELOSIRA DISTANS V. A	10.4	7.5	1.92	3.0
RHIZOSOLENIA ERIENSIS	6.2	4.5	23.27	37.4
SYNEDRA SP. A	10.4	7.5	4.34	6.9
CRYPTOPHYCEAE	21.7	15.6	13.37	21.4
CHROOMONAS ACUTA	8.3	5.9	0.92	1.4
CRYPTOMONAS OVATA	11.4	8.2	11.82	19.0
CRYPTOMONAS PHASEOLUS	2.0	1.4	0.61	0.9
DINOPHYCEAE	1.0	0.7	2.01	3.2
UNIDENTIFIED DINOPHYCEAE	1.0	0.7	2.01	3.2
UNKNOWN	6.1	4.4	1.24	1.9
0774-2-22	4.1	2.9	1.18	1.9
0974-2-07	2.0	1.4	0.05	0.0
SAMPLE TOTALS:	138.5	99.9	62.16	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 01/11/77
TIME: 1035 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	55.7	29.3	11.17	8.9
ANKISTRODESMUS FALCATUS	4.1	2.1	0.22	0.2
ANKISTRODESMUS FUSIFORMIS	3.1	1.6	0.32	0.2
CRUCIGENIA TETRAPEDIA	1.0	0.5	0.09	0.1
MONORAPHIDIUM CONTORTUM	3.1	1.6	0.13	0.1
MONORAPHIDIUM SETIFORME	37.4	19.7	6.51	5.2
MOUGEOTIA SPP.	1.0	0.5	1.41	1.1
PLANKTOSPHAERIA GELATINOSA	1.0	0.5	1.63	1.3
SCENEDESMUS DENTICULATUS	2.0	1.0	0.39	0.3
STAURASTRUM PARADOXUM VAR. PARVUM	1.0	0.5	0.38	0.3
COCCOID GREENS	2.0	1.0	0.06	0.0
BACILLARIOPHYCEAE	91.2	48.1	93.97	75.3
CYCLOTELLA STELLIGERA	4.1	2.1	2.20	1.8
EUNOTIA SP. A	13.5	7.1	4.28	3.4
MELOSIRA DISTANS V. A	4.1	2.1	0.76	0.6
MELOSIRA ITALICA	8.3	4.3	9.09	7.3
MELOSIRA ITALICA VAR. TENUISSIMA	3.1	1.6	1.74	1.4
NAVICULA NOTHA	1.0	0.5	0.37	0.3
NAVICULA SUBTILISSIMA	1.0	0.5	0.28	0.2
NITZSCHIA PALEA	1.0	0.5	0.51	0.4
RHIZOSOLENIA ERIENSIS	15.6	8.2	58.18	46.7
SYNEDRA SP. A	39.5	20.8	16.51	13.2
CHRYSOPHYCEAE	4.2	2.2	0.66	0.5
CHROMULINA SPP.	1.0	0.5	0.21	0.2
UNIDENTIFIED CHRYSOPHYCEAE	3.1	1.6	0.44	0.4
CRYPTOPHYCEAE	27.9	14.7	16.74	13.4
CHROOMONAS ACUTA	12.4	6.5	1.38	1.1
CRYPTOMONAS OVATA	14.5	7.6	15.05	12.1
CRYPTOMONAS PHASEOLUS	1.0	0.5	0.30	0.2
MYXOPHYCEAE	2.0	1.0	0.05	0.0
ANACYSTIS INCERTA	1.0	0.5	0.02	0.0
ANACYSTIS SPP.	1.0	0.5	0.02	0.0
UNKNOWN	8.2	4.3	2.10	1.6
0774-2-22	7.2	3.8	2.07	1.6
0974-2-07	1.0	0.5	0.02	0.0
SAMPLE TOTALS:	189.1	99.7	124.71	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 1030 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	229.5	43.3	21.34	8.4
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.7	0.37	0.1
GLOEOCYSTIS VESICULOSA	4.1	0.7	1.10	0.4
MONORAPHIDIUM SETIFORME	79.4	14.9	13.81	5.4
OOCYSTIS PUSILLA	4.1	0.7	1.20	0.5
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	4.1	0.7	0.56	0.2
COCCOID GREENS	133.7	25.2	4.28	1.7
BACILLARIOPHYCEAE	116.8	22.0	156.86	62.3
ASTERIONELLA FORMOSA	12.5	2.3	6.65	2.6
CYCLOTELLA STELLIGERA	25.0	4.7	13.31	5.2
MELOSIRA DISTANS V. A	20.9	3.9	3.86	1.5
NITZSCHIA SPP.	4.1	0.7	2.25	0.8
RHIZOSOLENIA ERIENSIS	33.4	6.3	124.73	49.6
SYNEDRA SPP.	20.9	3.9	5.99	2.3
CHRYSOPHYCEAE	66.8	11.8	9.76	3.8
CHROMULINA SPP.	12.5	2.3	2.55	1.0
UNIDENTIFIED CHRYSOPHYCEAE	50.1	8.3	7.22	2.8
HAPTOPHYCEAE	4.1	0.7	0.77	0.3
CHRYSOCHROMULINA PARVA	4.1	0.7	0.77	0.3
CRYPTOPHYCEAE	87.5	16.5	18.15	7.1
CHROOMONAS ACUTA	45.9	8.5	5.10	2.0
CHROOMONAS COERULEA	20.9	3.9	2.73	1.0
CHROOMONAS NORDSTEDTII	4.1	0.7	1.28	0.5
CRYPTOMONAS PHASEOLUS	12.5	2.3	3.73	1.4
CRYPTOMONAS REFLEXA	4.1	0.7	5.28	2.1
DINOPHYCEAE	20.9	3.9	40.58	16.1
UNIDENTIFIED DINOPHYCEAE	20.9	3.9	40.58	16.1
UNKNOWN	8.2	1.5	3.97	1.5
0974-2-07	4.1	0.7	0.11	0.0
0976-2-02	4.1	0.7	3.86	1.5
SAMPLE TOTALS:	529.6	99.9	251.46	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0
TIME: 1030

SAMPLE TYPE: LDS
SAMPLE DEPTH: 23.0 M

SAMPLE DATE: 02/15/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	154.1	29.7	27.39	9.6
ANKISTRODESMUS FALCATUS	4.1	0.7	0.22	0.0
COSMARIUM TENUE	4.1	0.7	1.91	0.6
CRUCIGENIA TETRAPEDIA	4.1	0.7	0.36	0.1
DICTYOSPHAERIUM PULCHELLUM	4.1	0.7	0.32	0.1
MONORAPHIDIUM SETIFORME	75.2	14.5	13.09	4.6
MOUGEOTIA SPP.	4.1	0.7	0.57	0.2
SCENEDESMUS SPP.	8.3	1.6	1.23	0.4
COCCOID GREENS	50.1	9.7	1.66	0.5
BACILLARIOPHYCEAE	112.9	21.7	188.42	66.8
CYCLOTELLA STELLIGERA	33.4	6.4	17.75	6.3
MELOSIRA DISTANS V. A	8.3	1.6	1.55	0.5
NITZSCHIA SPP.	12.5	2.4	6.77	2.4
RHIZOSOLENIA ERIENSIS	41.8	8.0	155.91	55.3
SYNEDRA SP. A	12.5	2.4	5.24	1.8
SYNEDRA SPP.	4.1	0.7	1.19	0.4
CHRYSOPHYCEAE	50.0	9.6	1.28	0.5
CHROMULINA SPP.	12.5	2.4	2.54	0.9
MALLOMONAS SPP.	4.1	0.7	5.42	1.9
UNIDENTIFIED CHRYSOPHYCEAE	33.4	6.4	4.84	1.7
HAPTOPHYCEAE	25.0	4.8	5.44	1.9
CHRYSOCHROMULINA PARVA	25.0	4.8	5.44	1.9
CRYPTOPHYCEAE	71.0	13.7	9.44	3.3
CHROOMONAS ACUTA	62.7	12.1	6.95	2.4
CRYPTOMONAS PHASEOLUS	8.3	1.6	2.49	0.8
DINOPHYCEAE	12.5	2.4	2.43	0.8
PERIDINIUM PUSILLUM	4.1	0.7	8.07	2.8
UNIDENTIFIED DINOPHYCEAE	8.3	1.6	16.22	5.7
UNKNOWN	87.6	16.9	13.99	4.9
0574-2-03	33.4	6.4	1.80	0.6
0774-2-24	25.0	4.8	1.12	0.4
0774-2-28	29.2	5.6	11.06	3.9
SAMPLE TOTALS:	516.9	99.8	281.79	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 1055 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	254.5	36.9	53.52	13.3
ANKISTRODESMUS FALCATUS	4.1	0.5	0.22	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4.1	0.5	0.42	0.0
MONORAPHIDIUM BRAUNII	4.1	0.5	0.53	0.0
MONORAPHIDIUM CONTORTUM	4.1	0.5	0.17	0.0
MONORAPHIDIUM SETIFORME	100.3	14.5	17.45	4.3
COCCOID GREENS	87.7	12.7	12.80	3.2
UNIDENTIFIED CHLOROPHYCEAE	50.1	7.2	34.90	8.7
BACILLARIOPHYCEAE	150.3	21.8	229.29	57.5
CYCLOTELLA SPP.	12.5	1.8	5.84	1.4
MELOSIRA DISTANS V. A	58.5	8.4	180.82	45.3
RHIZOSOLENIA ERIENSIS	54.3	7.8	20.66	5.1
SYNEDRA SP. A	20.9	3.0	8.73	2.1
SYNEDRA SPP.	4.1	0.5	13.39	3.3
CHRYSOPHYCEAE	62.5	9.0	14.42	3.6
CHROMULINA SPP.	16.7	2.4	3.39	0.8
KEPHYRION SPP.	4.1	0.5	0.36	0.0
MALLOMONAS SPP.	8.3	1.2	10.85	2.7
UNIDENTIFIED CHRYSOPHYCEAE	33.4	4.8	4.81	1.2
HAPTOPHYCEAE	83.6	12.1	15.55	3.9
CHRYSOCHROMULINA PARVA	83.6	12.1	15.55	3.9
CRYPTOPHYCEAE	62.6	9.0	13.99	3.5
CHROOMONAS ACUTA	41.8	6.0	4.63	1.2
CRYPTOMONAS OVATA	4.1	0.5	4.32	1.1
CRYPTOMONAS PHASEOLUS	16.7	2.4	4.97	1.2
DINOPHYCEAE	33.4	4.8	64.75	16.2
PERIDINIUM PUSILLUM	16.7	2.4	32.28	8.0
UNIDENTIFIED DINOPHYCEAE	16.7	2.4	32.47	8.1
UNKNOWN	41.7	6.0	2.14	0.5
0574-2-03	29.2	4.2	1.58	0.4
0774-2-24	12.5	1.8	0.56	0.1
SAMPLE TOTALS:	688.6	99.8	398.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 02/15/77
TIME: 1055 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	208.5	49.0	23.05	12.4
ANKISTRODESMUS FALCATUS	16.7	3.9	0.91	0.4
ANKISTRODESMUS FUSIFORMIS	8.3	1.9	0.86	0.4
CHLORELLA SPP.	25.0	5.8	2.83	1.5
CLOSTERIUM CERATIUM	4.1	0.9	2.38	1.2
CRUCIGENIA TETRAPEDIA	4.1	0.9	0.36	0.1
DICTYOSPHAERIUM PULCHELLUM	8.3	1.9	1.63	0.8
MONORAPHIDIUM SETIFORME	66.8	15.7	11.63	6.3
COCCOID GREENS	75.2	17.6	2.40	1.3
BACILLARIOPHYCEAE	87.3	20.5	120.68	65.4
CYCLOTELLA STELLIGERA	4.1	0.9	2.21	1.2
EUNOTIA SP. A	4.1	0.9	1.32	0.7
MELOSIRA DISTANS V. A	8.3	1.9	1.54	0.8
MELOSIRA ITALICA	8.3	1.9	9.13	4.9
NITZSCHIA SPP.	8.3	1.9	4.54	2.4
RHIZOSOLENIA ERIENSIS	25.0	5.8	93.54	50.7
SYNEDRA SPP.	29.2	6.8	8.39	4.5
CHRYSOPHYCEAE	41.7	9.8	6.26	3.3
CHROMULINA SPP.	4.1	0.9	0.84	0.4
UNIDENTIFIED CHRYSOPHYCEAE	37.6	8.8	5.41	2.9
HAPTOPHYCEAE	4.1	0.9	0.77	0.4
CHRYSOCHROMULINA PARVA	4.1	0.9	0.77	0.4
CRYPTOPHYCEAE	75.0	17.6	17.23	9.3
CHROOMONAS ACUTA	29.2	6.8	3.22	1.7
CHROOMONAS COERULEA	16.7	3.9	2.19	1.2
CRYPTOMONAS OVATA	4.1	0.9	4.32	2.3
CRYPTOMONAS PHASEOLUS	25.0	5.8	7.47	4.0
DINOPHYCEAE	8.3	1.9	16.23	8.8
UNIDENTIFIED DINOPHYCEAE	8.3	1.9	16.23	8.8
SAMPLE TOTALS:	424.9	99.9	184.25	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 0930 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	363.0	55.7	36.20	10.0
ANKISTRODESMUS FALCATUS	12.5	1.9	0.68	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.6	0.43	0.1
CRUCIGENIA TETRAPEDIA	4.1	0.6	0.36	0.1
MONORAPHIDIUM CONTORTUM	12.5	1.9	0.53	0.1
MONORAPHIDIUM SETIFORME	112.8	17.3	17.63	5.1
SCENEDESMUS QUADRICAUDA	4.1	0.6	0.39	0.1
SELENASTRUM MINUTUM	8.3	1.2	0.31	0.1
STAURASTRUM PARADOXUM VAR. PARVUM	4.1	0.6	1.54	0.4
TETRAEDRON SPP.	8.3	1.2	0.12	0.1
COCCOID GREENS	192.2	29.5	6.15	1.7
BACILLARIOPHYCEAE	166.9	25.6	282.08	78.8
CYCLOTELLA SPP.	8.3	1.2	3.89	1.0
MELOSIRA DISTANS V. A	25.0	3.8	4.63	1.3
MELOSIRA ITALICA	12.5	1.9	13.70	3.8
NITZSCHIA SPP.	8.3	1.2	4.51	1.3
RHIZOSOLENIA ERIENSIS	62.7	9.6	233.87	65.3
SYNEDRA RADIANS	12.5	1.9	5.73	1.6
SYNEDRA SP. A	37.6	5.7	15.72	4.3
CHRYSOPHYCEAE	16.5	2.5	8.39	2.3
DINOBRYON SERTULARIA	4.1	0.6	0.81	0.2
MALLOMONAS ACAROIDES	4.1	0.6	5.04	1.4
OCHROMONAS SPP.	8.3	1.2	2.53	0.7
HAPTOPHYCEAE	29.2	4.4	5.44	1.5
CHRYSOCHROMULINA PARVA	29.2	4.4	5.44	1.5
CRYPTOPHYCEAE	45.8	7.0	16.91	4.7
CHROOMONAS ACUTA	20.9	3.2	2.31	0.6
CRYPTOMONAS OVATA	4.1	0.6	4.32	1.2
CRYPTOMONAS PHASEOLUS	16.7	2.5	4.98	1.4
CRYPTOMONAS REFLEXA	4.1	0.6	5.28	1.5
UNKNOWN	29.2	4.4	8.71	2.4
1074-2-02	29.2	4.4	8.71	2.4
SAMPLE TOTALS:	650.6	99.9	357.74	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 02/15/77
TIME: 0930 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	208.5	41.3	25.09	10.5
ANKISTRODESMUS FALCATUS	20.9	4.1	1.14	0.4
CHLORELLA SPP.	8.3	1.6	0.94	0.3
CLOSTERIUM CERATIUM	4.1	0.8	2.38	1.0
COSMARIUM TENUE	8.3	1.6	3.82	1.6
CRUCIGENIA TETRAPEDIA	4.1	0.8	1.47	0.6
GOLENKINIA RADIATA	4.1	0.8	0.66	0.2
MONORAPHIDIUM SETIFORME	66.8	13.2	11.66	4.9
SELENASTRUM MINUTUM	12.5	2.4	0.47	0.2
COCCOID GREENS	79.4	15.7	2.54	1.0
BACILLARIOPHYCEAE	150.1	29.7	148.57	62.9
ASTERIONELLA FORMOSA	8.3	1.6	4.46	1.8
CYCLOTELLA STELLIGERA	25.0	4.9	13.32	5.6
CYCLOTELLA SPP.	4.1	0.8	1.94	0.8
MELOSIRA DISTANS V. A	62.7	12.4	11.59	4.9
NAVICULA SPP.	4.1	0.8	3.31	1.4
RHIZOSOLENIA ERIENSIS	29.2	5.7	109.13	46.2
SYNEDRA SPP.	16.7	3.3	4.79	2.0
CHRYSOPHYCEAE	33.3	6.5	5.63	2.3
MALLOMONAS SPP.	4.1	0.8	5.44	2.3
UNIDENTIFIED CHRYSOPHYCEAE	29.2	5.7	0.19	0.1
HAPTOPHYCEAE	16.7	3.3	3.10	1.3
CHRYSOCHROMULINA PARVA	16.7	3.3	3.10	1.3
CRYPTOPHYCEAE	87.5	17.3	33.47	14.2
CHROOMONAS ACUTA	58.5	11.5	6.49	2.7
CRYPTOMONAS EROSA	8.3	1.6	13.05	5.5
CRYPTOMONAS OBOVATA	4.1	0.8	4.90	2.0
CRYPTOMONAS PHASEOLUS	12.5	2.4	3.73	1.5
CRYPTOMONAS REFLEXA	4.1	0.8	5.28	2.2
DINOPHYCEAE	8.3	1.6	16.23	6.8
UNIDENTIFIED DINOPHYCEAE	8.3	1.6	16.23	6.8
SAMPLE TOTALS:	504.4	99.8	236.12	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 1130 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	275.4	40.7	37.04	8.7
ANKISTRODESMUS FALCATUS	8.3	1.2	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	8.3	1.2	0.86	0.2
CHLAMYDOMONAS SPP.	4.1	0.6	0.34	0.0
CHLORELLA SPP.	4.1	0.6	0.47	0.1
MONORAPHIDIUM SETIFORME	146.3	21.6	25.45	6.0
MOUGEOTIA SPP.	4.1	0.6	5.67	1.3
SCENEDESMUS SPP.	4.1	0.6	0.61	0.1
SELENASTRUM MINUTUM	12.5	1.8	0.47	0.1
COCCOID GREENS	83.6	12.3	2.67	0.6
BACILLARIOPHYCEAE	196.1	29.0	285.18	67.2
ASTERIONELLA FORMOSA	4.1	0.6	2.23	0.5
CYCLOTELLA STELLIGERA	33.4	4.9	17.25	4.1
MELOSIRA DISTANS VAR. ALPIGENA	4.1	0.6	0.90	0.2
MELOSIRA DISTANS V. A	33.4	4.9	6.18	1.4
NITZSCHIA SPP.	12.5	1.8	6.77	1.5
RHIZOSOLENIA ERIENSIS	62.7	9.2	233.87	55.2
SYNEDRA RUMPENS	12.5	1.8	3.48	0.8
SYNEDRA SP. A	33.4	4.9	13.97	3.2
CHRYSOPHYCEAE	4.1	0.6	0.60	0.1
UNIDENTIFIED CHRYSOPHYCEAE	4.1	0.6	0.60	0.1
HAPTOPHYCEAE	25.0	3.7	4.66	1.1
CHRYSOCHROMULINA PARVA	25.0	3.7	4.66	1.1
CRYPTOPHYCEAE	62.5	9.2	30.01	7.1
CHROOMONAS ACUTA	33.4	4.9	3.71	0.8
CRYPTOMONAS EROSA	4.1	0.6	6.52	1.5
CRYPTOMONAS OVATA	16.7	2.4	17.28	4.0
CRYPTOMONAS PHASEOLUS	8.3	1.2	2.49	0.5
DINOPHYCEAE	20.8	3.0	40.49	9.5
PERIDINIUM PUSILLUM	8.3	1.2	16.14	3.8
UNIDENTIFIED DINOPHYCEAE	12.5	1.8	24.35	5.7
UNKNOWN	91.7	13.5	25.55	6.0
0574-2-02	4.1	0.6	0.31	0.0
0574-2-03	4.1	0.6	0.22	0.0
0774-2-24	16.7	2.4	0.75	0.1
0774-2-28	58.5	8.6	22.12	5.2
0976-2-03	8.3	1.2	2.14	0.5
SAMPLE TOTALS:	675.6	99.8	423.56	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LOS SAMPLE DATE: 02/15/77
TIME: 1130 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	350.4	55.2	85.85	33.7
ANKISTRODESMUS FUSIFORMIS	4.1	0.6	0.43	0.2
CLOSTERIUM CERATIUM	4.1	0.6	2.38	0.9
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	16.7	2.6	1.70	0.7
DICTYOSPHAERIUM EHRENBERGIANUM	8.3	1.3	3.76	1.5
MONORAPHIDIUM CONTORTUM	4.1	0.6	0.17	0.0
MONORAPHIDIUM SETIFORME	175.5	27.6	30.54	12.0
SELENASTRUM MINUTUM	4.1	0.6	0.15	0.0
STAURASTRUM CURVATUM	4.1	0.6	18.40	7.2
STAURASTRUM PARADOXUM VAR. PARVUM	4.1	0.6	1.54	0.6
COCCOID GREENS	87.7	13.8	7.80	3.1
UNIDENTIFIED CHLOROPHYCEAE	37.6	5.9	23.92	9.4
BACILLARIOPHYCEAE	70.7	11.1	58.33	22.9
ACHNANTHES MICROCEPHALA	4.1	0.6	0.50	0.2
CYCLOTELLA STELLIGERA	16.7	2.6	8.87	3.5
CYCLOTELLA SPP.	8.3	1.3	3.89	1.5
MELOSIRA DISTANS V. A	12.5	1.9	2.31	0.9
MELOSIRA ITALICA	4.1	0.6	4.56	1.7
RHIZOSOLENIA ERIENSIS	8.3	1.3	31.18	12.2
SYNEDRA SP. A	16.7	2.6	6.98	2.7
CHRYSOPHYCEAE	50.0	7.8	7.81	3.0
CHROMULINA SPP.	16.7	2.6	3.39	1.3
DINOBRYON SPP.	4.1	0.6	0.57	0.2
KEPHYRION SPP.	8.3	1.3	0.73	0.2
UNIDENTIFIED CHRYSOPHYCEAE	20.9	3.2	3.00	1.1
HAPTOPHYCEAE	25.0	3.9	4.66	1.8
CHRYSOCHROMULINA PARVA	25.0	3.9	4.66	1.8
CRYPTOPHYCEAE	116.8	18.3	72.70	28.5
CHROOMONAS ACUTA	54.3	8.5	6.03	2.3
CHROOMONAS NORDSTEDTII	4.1	0.6	1.28	0.5
CRYPTOMONAS EROSA	20.9	3.2	32.54	12.8
CRYPTOMONAS OVATA	29.2	4.6	30.25	11.9
CRYPTOMONAS PHASEOLUS	8.3	1.3	2.49	0.9
DINOPHYCEAE	12.5	1.9	24.35	9.5
UNIDENTIFIED DINOPHYCEAE	12.5	1.9	24.35	9.5
UNKNOWN	8.3	1.3	0.45	0.1
0574-2-03	8.3	1.3	0.45	0.1
SAMPLE TOTALS:	633.7	99.7	254.17	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 1435 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	384.1	44.8	79.54	13.3
ANKISTRODESMUS FUSIFORMIS	4.1	0.4	0.43	0.0
MONORAPHIDIUM SETIFORME	242.4	28.3	42.18	7.1
MOUGEOTIA SPP.	12.5	1.4	17.02	2.8
SCENEDESMUS QUADRICAUDA	4.1	0.4	0.39	0.0
SCENEDESMUS SPP.	4.1	0.4	0.61	0.1
COCCOID GREENS	91.9	10.7	2.94	0.4
UNIDENTIFIED CHLOROPHYCEAE	25.0	2.9	15.95	2.7
BACILLARIOPHYCEAE	238.0	27.7	437.74	73.7
ASTERIONELLA FORMOSA	12.5	1.4	6.69	1.1
CYCLOTELLA STELLIGERA	20.9	2.4	11.09	1.8
MELOSIRA DISTANS V. A	50.1	5.8	9.27	1.5
NITZSCHIA SPP.	8.3	0.9	4.51	0.7
RHIZOSOLENIA ERIENSIS	104.5	12.2	389.78	65.6
SYNEDRA SP. A	33.4	3.9	13.97	2.3
SYNEDRA SPP.	8.3	0.9	2.39	0.4
CHRYSOPHYCEAE	50.1	5.8	7.96	1.3
CHROMULINA SPP.	12.5	1.4	2.54	0.4
UNIDENTIFIED CHRYSOPHYCEAE	37.6	4.3	5.41	0.9
HAPTOPHYCEAE	108.6	12.6	120.21	20.2
CHRYSOCHROMULINA PARVA	108.6	12.6	120.21	20.2
CRYPTOPHYCEAE	41.7	4.8	14.65	2.4
CHROOMONAS ACUTA	20.9	2.4	2.31	0.3
CRYPTOMONAS OVATA	8.3	0.9	8.65	1.4
CRYPTOMONAS PHASEOLUS	12.5	1.4	3.73	0.6
DINOPHYCEAE	16.6	1.9	32.42	5.4
PERIDINIUM PUSILLUM	4.1	0.4	8.07	1.3
UNIDENTIFIED DINOPHYCEAE	12.5	1.4	24.35	4.1
UNKNOWN	16.6	1.9	0.86	0.1
0574-2-03	12.5	1.4	0.67	0.1
0774-2-24	4.1	0.4	0.18	0.0
SAMPLE TOTALS:	855.7	99.8	593.45	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 02/15/77
TIME: 1435 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	241.9	39.7	38.61	15.0
ANKISTRODESMUS FALCATUS	4.1	0.6	0.32	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.6	0.75	0.2
MONORAPHIDIUM BRAUNII	4.1	0.6	0.53	0.2
MONORAPHIDIUM CONTORTUM	8.3	1.3	0.35	0.1
MONORAPHIDIUM SETIFORME	163.0	26.7	28.36	11.0
MOUGEOTIA SPP.	4.1	0.6	5.67	2.2
SCENEDESMUS SPP.	8.3	1.3	1.23	0.5
COCCOID GREENS	45.9	7.5	1.47	0.6
BACILLARIOPHYCEAE	158.3	25.9	150.84	58.8
ASTERIONELLA FORMOSA	4.1	0.6	2.23	0.8
CYCLOTELLA STELLIGERA	66.8	10.9	35.51	13.8
CYCLOTELLA SPP.	4.1	0.6	1.94	0.7
MELOSIRA DISTANS V. A	29.2	4.7	5.41	2.1
NITZSCHIA SPP.	4.1	0.6	2.25	0.8
RHIZOSOLENIA ERIENSIS	25.0	4.1	9.54	3.7
SYNEDRA SP. A	20.9	3.4	8.73	3.4
SYNEDRA SPP.	4.1	0.6	1.19	0.5
CHRYSOPHYCEAE	83.5	13.7	13.02	5.1
CHROMULINA SPP.	16.7	2.7	3.39	1.3
UNIDENTIFIED CHRYSOPHYCEAE	66.8	10.9	9.63	3.7
HAPTOPHYCEAE	25.0	4.1	4.66	1.8
CHRYSOCHROMULINA PARVA	25.0	4.1	4.66	1.8
CRYPTOPHYCEAE	79.3	13.0	47.91	18.7
CHROOMONAS ACUTA	20.9	3.4	2.31	0.9
CRYPTOMONAS EROSA	12.5	2.0	17.58	6.9
CRYPTOMONAS OVATA	16.7	2.7	17.28	6.7
CRYPTOMONAS PHASEOLUS	29.2	4.7	8.71	3.4
UNKNOWN	20.8	3.4	1.01	0.4
0574-2-03	8.3	1.3	0.45	0.2
0774-2-24	12.5	2.0	0.56	0.2
SAMPLE TOTALS:	608.8	99.9	256.08	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 1410 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	338.1	35.6	56.46	8.5
ANKISTRODESMUS FALCATUS	12.5	1.3	0.68	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.4	0.43	0.0
CRUCIGENIA TETRAPEDIA	8.3	0.8	0.73	0.1
DICTYOSPHAERIUM PULCHELLUM	4.1	0.4	1.63	0.2
GOLENKINIA RADIATA	4.1	0.4	0.66	0.1
MONORAPHIDIUM CONTORTUM	20.9	2.2	0.89	0.1
MONORAPHIDIUM SETIFORME	167.2	17.6	29.39	4.4
MOUGEOTIA SPP.	12.5	1.3	17.02	2.5
SCENEDESMUS SPP.	16.7	1.7	2.47	0.3
COCCOID GREENS	87.7	9.2	2.80	0.4
BACILLARIOPHYCEAE	246.2	25.9	414.47	63.1
ASTERIONELLA FORMOSA	33.4	3.5	17.85	2.7
CYCLOTELLA STELLIGERA	25.0	2.6	13.31	2.0
MELOSIRA DISTANS V. A	29.2	3.0	5.41	0.8
MELOSIRA ITALICA	29.2	3.0	31.98	4.8
NITZSCHIA SPP.	8.3	0.8	4.51	0.6
RHIZOSOLENIA ERIENSIS	87.7	9.2	327.41	49.8
SYNEDRA SP. A	33.4	3.5	13.97	2.1
CHRYSOPHYCEAE	12.4	1.3	11.45	1.7
MALLOMONAS SPP.	8.3	0.8	10.85	1.6
UNIDENTIFIED CHRYSOPHYCEAE	4.1	0.4	0.60	0.0
HAPTOPHYCEAE	137.9	14.5	25.65	3.9
CHRYSOCHROMULINA PARVA	137.9	14.5	25.65	3.9
CRYPTOPHYCEAE	83.3	8.7	22.26	3.3
CHROOMONAS ACUTA	50.1	5.2	5.56	0.8
CRYPTOMONAS OBOVATA	4.1	0.4	4.90	0.7
CRYPTOMONAS OVATA	4.1	0.4	4.32	0.6
CRYPTOMONAS PHASEOLUS	25.0	2.6	7.47	1.1
DINOPHYCEAE	58.3	6.1	110.80	16.8
GLENODINIUM SPP.	12.5	1.3	14.11	2.1
PERIDINIUM INCONSPICUUM	4.1	0.4	10.84	1.6
PERIDINIUM PUSILLUM	29.2	3.0	56.50	8.6
UNIDENTIFIED DINOPHYCEAE	12.5	1.3	24.35	3.7
UNKNOWN	70.8	7.4	15.11	2.2
0574-2-02	4.1	0.4	0.31	0.0
0574-2-03	20.9	2.2	1.12	0.1
0574-2-04	4.1	0.4	0.65	0.0
0774-2-24	8.3	0.8	0.37	0.0
0774-2-28	33.4	3.5	12.64	1.9
SAMPLE TOTALS:	947.0	99.8	656.23	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 02/15/77
TIME: 1410 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	308.9	45.9	38.38	8.6
ANKISTRODESMUS FALCATUS	8.3	1.2	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.6	0.43	0.1
CHLAMYDOMONAS SPP.	8.3	1.2	0.69	0.1
CHLORELLA SPP.	12.5	1.8	1.41	0.3
CRUCIGENIA TETRAPEDIA	8.3	1.2	1.47	0.3
MONORAPHIDIUM BRAUNII	16.7	2.4	2.12	0.4
MONORAPHIDIUM SETIFORME	167.2	24.8	29.09	6.6
SELENASTRUM MINUTUM	4.1	0.6	0.15	0.0
COCCOID GREENS	79.4	11.8	2.54	0.5
BACILLARIOPHYCEAE	200.2	29.7	333.87	76.0
ASTERIONELLA FORMOSA	20.9	3.1	11.66	2.6
CYCLOTELLA STELLIGERA	25.0	3.7	13.34	3.0
CYCLOTELLA SPP.	8.3	1.2	3.80	0.8
MELOSIRA DISTANS V. A	25.0	3.7	4.63	1.0
NITZSCHIA SPP.	4.1	0.6	2.25	0.5
RHIZOSOLENIA ERIENSIS	75.2	11.1	280.64	63.9
SYNEDRA RADIANS	12.5	1.8	5.73	1.3
SYNEDRA SP. A	29.2	4.3	12.23	2.7
CHRYSOPHYCEAE	4.1	0.6	0.60	0.1
UNIDENTIFIED CHRYSOPHYCEAE	4.1	0.6	0.60	0.1
HAPTOPHYCEAE	25.0	3.7	4.66	1.0
CHRYSOCHROMULINA PARVA	25.0	3.7	4.66	1.0
CRYPTOPHYCEAE	41.7	6.1	32.20	7.3
CHROOMONAS ACUTA	16.7	2.4	11.85	2.7
CRYPTOMONAS EROSA	8.3	1.2	13.05	2.9
CRYPTOMONAS OVATA	16.7	2.4	17.28	3.9
DINOPHYCEAE	4.1	0.6	8.11	1.8
UNIDENTIFIED DINOPHYCEAE	4.1	0.6	8.11	1.8
UNKNOWN	87.5	13.0	20.99	4.7
0574-2-03	4.1	0.6	0.22	0.0
0774-2-28	45.9	6.8	17.38	3.9
0974-2-07	20.9	3.1	0.58	0.1
0974-2-24	8.3	1.2	2.31	0.5
1074-2-02	8.3	1.2	2.49	0.5
SAMPLE TOTALS:	671.5	99.8	438.84	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 1235 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	221.0	31.1	36.57	8.6
ANKISTRODESMUS FALCATUS	4.1	0.5	0.22	0.0
COSMARIUM SPP.	4.1	0.5	2.27	0.5
MONORAPHIDIUM BRAUNII	8.3	1.1	1.06	0.2
MONORAPHIDIUM CONTORTUM	4.1	0.5	0.47	0.1
MONORAPHIDIUM SETIFORME	100.3	14.1	17.45	4.1
MOUGEOTIA SPP.	8.3	1.1	11.35	2.7
SCENEDESMUS BIJUGA	4.1	0.5	0.73	0.2
SCENEDESMUS SPP.	4.1	0.5	0.61	0.1
COCCOID GREENS	83.6	11.7	2.67	0.6
BACILLARIOPHYCEAE	187.8	26.4	250.77	59.6
CYCLOTELLA STELLIGERA	12.5	1.7	6.65	1.5
CYCLOTELLA SPP.	20.9	2.9	9.73	2.3
MELOSIRA DISTANS V. A	45.9	6.4	8.50	2.0
NITZSCHIA SPP.	8.3	1.1	4.51	1.0
RHIZOSOLENIA ERIENSIS	54.3	7.6	202.68	48.2
SYNEDRA SP. A	41.8	5.8	17.47	4.1
SYNEDRA SPP.	4.1	0.5	1.19	0.2
CHRYSOPHYCEAE	116.9	16.4	22.27	5.2
CHROMULINA SPP.	91.8	12.9	18.66	4.4
UNIDENTIFIED CHRYSOPHYCEAE	25.0	3.5	3.61	0.8
HAPTOPHYCEAE	29.2	4.1	5.44	1.3
CHRYSOCHROMULINA PARVA	29.2	4.1	5.44	1.3
CRYPTOPHYCEAE	87.6	12.3	36.01	8.6
CHROOMONAS ACUTA	45.9	6.4	5.14	1.2
CRYPTOMONAS OVATA	25.0	3.5	25.93	6.2
CRYPTOMONAS PHASEOLUS	16.7	2.3	4.98	1.2
MYXOPHYCEAE	4.1	0.5	0.06	0.0
AGMENELLUM QUADRIDUPLICATUM	4.1	0.5	0.06	0.0
DINOPHYCEAE	29.2	4.1	56.68	13.5
PERIDINIUM PUSILLUM	12.5	1.7	24.21	5.8
UNIDENTIFIED DINOPHYCEAE	16.7	2.3	32.47	7.7
UNKNOWN	33.4	4.7	12.64	3.0
0774-2-28	33.4	4.7	12.64	3.0
SAMPLE TOTALS:	709.2	99.8	420.48	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 02/15/77
TIME: 1235 SAMPLE DEPTH: 9.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	229.4	31.9	31.28	8.9
ANKISTRODESMUS FALCATUS	4.1	0.5	0.22	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	0.5	0.43	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4.1	0.5	0.42	0.1
MONORAPHIDIUM BRAUNII	4.1	0.5	0.53	0.1
MONORAPHIDIUM CONTORTUM	8.3	1.1	0.35	0.1
MONORAPHIDIUM SETIFORME	121.2	16.8	21.09	6.0
MOUGEOTIA SPP.	4.1	0.5	5.67	1.6
COCCOID GREENS	79.4	11.0	2.54	0.7
BACILLARIOPHYCEAE	229.4	31.9	240.13	68.8
CYCLOTELLA STELLIGERA	50.1	6.9	26.63	7.6
MELOSIRA DISTANS V. A	45.9	6.3	8.50	2.4
MELOSIRA ITALICA	37.6	5.2	41.11	11.7
NAVICULA CRYPTOCEPHALA	4.1	0.5	1.55	0.4
NITZSCHIA GRACILIS	8.3	1.1	2.35	0.6
NITZSCHIA SPP.	12.5	1.7	6.77	1.9
RHIZOSOLENIA ERIENSIS	37.6	5.2	140.32	40.2
SYNEDRA SP. A	25.0	3.4	10.48	3.0
SYNEDRA SPP.	8.3	1.1	2.39	0.6
CHRYSOPHYCEAE	87.7	12.2	21.16	6.0
CHROMULINA SPP.	62.7	8.7	12.72	3.6
MALLOMONAS SPP.	4.1	0.5	5.42	1.5
UNIDENTIFIED CHRYSOPHYCEAE	20.9	2.9	3.02	0.8
HAPTOPHYCEAE	33.4	4.6	6.22	1.7
CHRYSOCHROMULINA PARVA	33.4	4.6	6.22	1.7
CRYPTOPHYCEAE	58.4	8.1	23.54	6.7
CHROOMONAS ACUTA	16.7	2.3	1.85	0.5
CRYPTOMONAS OVATA	12.5	1.7	12.96	3.7
CRYPTOMONAS PHASEOLUS	29.2	4.0	8.74	2.5
DINOPHYCEAE	8.3	1.1	16.18	4.6
PERIDINIUM PUSILLUM	4.1	0.5	8.07	2.3
UNIDENTIFIED DINOPHYCEAE	4.1	0.5	8.11	2.3
UNKNOWN	70.9	9.8	10.96	3.1
0574-2-02	8.3	1.1	0.62	0.2
0574-2-03	12.5	1.7	0.87	0.2
0774-2-24	20.9	2.9	0.94	0.2
1074-2-02	29.2	4.0	8.71	2.4
SAMPLE TOTALS:	717.4	99.8	349.49	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 02/15/77
TIME: 1300 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	212.8	39.2	42.59	11.7
ANKISTRODESMUS FALCATUS	8.3	1.5	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.7	0.43	0.1
FRANCEIA DROESCHERI	4.1	0.7	0.79	0.2
MONORAPHIDIUM CONTORTUM	12.5	2.3	0.53	0.1
MONORAPHIDIUM SETIFORME	79.4	14.6	13.81	3.8
SCENEDESMUS SPP.	4.1	0.7	0.66	0.1
COCCOID GREENS	62.7	11.5	2.00	0.5
UNIDENTIFIED CHLOROPHYCEAE	37.6	6.9	23.92	6.6
BACILLARIOPHYCEAE	137.6	25.3	248.49	69.0
ASTERIONELLA FORMOSA	4.1	0.7	2.23	0.6
CYCLOTELLA SPP.	4.1	0.7	1.94	0.5
MELOSIRA DISTANS V. A	8.3	1.5	1.54	0.4
NITZSCHIA SPP.	8.3	1.5	4.51	1.2
RHIZOSOLENIA ERIENSIS	58.5	10.7	218.27	60.6
SYNEDRA SP. A	33.4	6.1	13.97	3.8
SYNEDRA SPP.	20.9	3.8	5.99	1.6
CHRYSOPHYCEAE	4.1	0.7	5.04	1.4
MALLOMONAS ACAROIDES	4.1	0.7	5.04	1.4
HAPTOPHYCEAE	37.6	6.9	6.99	1.9
CHRYSOCHROMULINA PARVA	37.6	6.9	6.99	1.9
CRYPTOPHYCEAE	41.6	7.6	10.84	3.0
CHROOMONAS ACUTA	25.0	4.6	2.78	0.7
CRYPTOMONAS OVATA	4.1	0.7	4.32	1.2
CRYPTOMONAS PHASEOLUS	12.5	2.3	3.73	1.0
MYXOPHYCEAE	4.1	0.7	7.37	2.0
ANABAENA SPP.	4.1	0.7	7.37	2.0
DINOPHYCEAE	8.2	1.5	16.18	4.5
PERIDINIUM PUSILLUM	4.1	0.7	8.07	2.2
UNIDENTIFIED DINOPHYCEAE	4.1	0.7	8.11	2.2
UNKNOWN	95.9	17.6	22.33	6.2
0574-2-03	8.3	1.5	0.45	0.1
0774-2-15	4.1	0.7	0.02	0.0
0774-2-24	29.2	5.3	1.31	0.3
0774-2-28	54.3	10.0	20.54	5.7
SAMPLE TOTALS:	541.9	99.8	359.86	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5
TIME: 1300

SAMPLE TYPE: LDS
SAMPLE DEPTH: 22.0 M

SAMPLE DATE: 02/15/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	196.0	34.0	20.36	6.9
ANKISTRODESMUS FALCATUS	20.9	3.6	1.43	0.5
ANKISTRODESMUS FUSIFORMIS	4.1	0.7	0.36	0.1
CRUCIGENIA TETRAPEDIA	4.1	0.7	1.88	0.6
DICTYOSPHAERIUM EHRENBERGIANUM	8.3	1.4	0.53	0.2
MONORAPHIDIUM BRAUNII	4.1	0.7	0.36	0.1
MONORAPHIDIUM SETIFORME	71.0	12.3	12.36	4.2
SCENEDESMUS SPP.	8.3	1.4	1.33	0.4
COCCOID GREENS	75.2	13.0	2.40	0.8
BACILLARIOPHYCEAE	204.4	35.5	200.30	69.2
ASTERIONELLA FORMOSA	12.5	2.2	6.65	2.3
CYCLOTELLA STELLIGERA	54.1	9.4	28.85	10.0
CYCLOTELLA SPP.	8.3	1.4	3.80	1.3
MELOSIRA DISTANS V. A	25.0	4.3	4.63	1.6
NITZSCHIA ACICULARIS	4.1	0.7	1.86	0.6
NITZSCHIA SPP.	8.3	1.4	44.55	15.4
RHIZOSOLENIA ERIENSIS	33.4	5.8	124.73	43.1
SYNEDRA RADIANS	116.7	20.2	7.64	2.6
SYNEDRA SP. A	41.8	7.2	17.47	6.0
CHRYSOPHYCEAE	54.2	9.4	13.14	4.5
CHROMULINA SPP.	8.3	1.4	1.69	0.6
MALLOMONAS SPP.	4.1	0.7	5.42	1.9
UNIDENTIFIED CHRYSOPHYCEAE	41.8	7.2	6.01	2.1
HAPTOPHYCEAE	16.7	2.9	3.01	1.0
CHRYSOCHROMULINA PARVA	16.7	2.9	3.01	1.0
CRYPTOPHYCEAE	41.8	7.2	20.03	6.9
CHROOMONAS ACUTA	20.9	3.6	2.51	0.9
CRYPTOMONAS OVATA	16.7	2.9	17.52	6.0
CRYPTOMONAS PHASEOLUS	4.1	0.7	1.00	0.3
DINOPHYCEAE	8.3	1.4	16.72	5.8
UNIDENTIFIED DINOPHYCEAE	8.3	1.4	16.72	5.8
UNKNOWN	54.2	9.4	15.77	5.4
0574-2-02	12.5	2.2	0.94	0.3
0774-2-28	37.6	6.5	14.82	5.1
0976-2-01	4.1	0.7	0.61	0.2
SAMPLE TOTALS:	575.5	99.9	289.78	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 02/15/77
TIME: 0835 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	308.5	41.5	122.47	24.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.5	0.43	0.0
CHLORELLA SPP.	4.1	0.5	0.47	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4.1	0.5	0.42	0.0
COSMARIUM SPP.	16.7	2.2	9.09	1.7
GOLENKINIA RADIATA	4.1	0.5	0.66	0.1
MONORAPHIDIUM CONTORTUM	4.1	0.5	0.17	0.0
MONORAPHIDIUM SETIFORME	137.9	18.5	24.00	4.7
MOUGEOTIA SPP.	4.1	0.5	5.67	1.1
SCENEDESMUS SPP.	12.5	1.6	1.85	0.3
SELENASTRUM MINUTUM	4.1	0.5	0.15	0.0
STAURASTRUM SUBCRUCIATUM	4.1	0.5	76.03	15.0
COCCOID GREENS	108.6	14.6	3.47	0.6
BACILLARIOPHYCEAE	171.0	23.0	300.47	59.3
CYCLOTELLA STELLIGERA	4.1	0.5	2.24	0.4
CYCLOTELLA SPP.	16.7	2.2	7.77	1.5
EUNOTIA SP. A	8.3	1.1	2.65	0.5
MELOSIRA DISTANS V. A	25.0	3.3	5.63	1.1
RHIZOSOLENIA ERIENSIS	71.0	9.5	265.05	52.3
SYNEDRA SP. A	37.6	5.0	15.72	3.1
SYNEDRA SPP.	8.3	1.1	2.39	0.5
CHRYSOPHYCEAE	12.5	1.6	1.80	0.3
UNIDENTIFIED CHRYSOPHYCEAE	12.5	1.6	1.80	0.3
HAPTOPHYCEAE	25.0	3.3	4.66	0.9
CHRYSOCHROMULINA PARVA	25.0	3.3	4.66	0.9
CRYPTOPHYCEAE	129.4	17.4	44.34	8.7
CHROOMONAS ACUTA	75.2	10.1	8.35	1.6
CRYPTOMONAS EROSA	8.3	1.1	13.05	2.5
CRYPTOMONAS OVATA	12.5	1.6	12.96	2.5
CRYPTOMONAS PHASEOLUS	33.4	4.5	9.96	1.9
MYXOPHYCEAE	4.1	0.5	0.23	0.0
OSCILLATORIA GEMINATA	4.1	0.5	0.23	0.0
DINOPHYCEAE	4.1	0.5	8.11	1.6
UNIDENTIFIED DINOPHYCEAE	4.1	0.5	8.11	1.6
UNKNOWN	87.6	11.8	24.16	4.7
0574-2-03	16.7	2.2	0.90	0.1
0574-2-04	4.1	0.5	0.65	0.1
0774-2-28	33.4	4.5	12.64	2.4
1074-2-02	33.4	4.5	9.96	1.9
SAMPLE TOTALS:	742.2	99.8	506.27	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 02/15/77
TIME: 0835 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	417.2	45.3	95.56	29.2
ANKISTRODESMUS FALCATUS	4.1	0.4	0.22	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	16.7	1.8	1.70	0.5
CRUCIGENIA TETRAPEDIA	4.1	0.4	0.36	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.4	1.50	0.5
MONORAPHIDIUM BRAUNII	4.1	0.4	0.53	0.2
MONORAPHIDIUM CONTORTUM	4.1	0.4	0.17	0.1
MONORAPHIDIUM SETIFORME	213.1	23.2	37.09	11.3
MOUGEOTIA SPP.	8.3	0.9	1.35	0.4
OOCYSTIS BORGEI	4.1	0.4	0.38	0.1
SELENASTRUM MINUTUM	12.5	1.3	0.47	0.1
COCCOID GREENS	91.9	10.0	2.94	0.9
UNIDENTIFIED CHLOROPHYCEAE	50.1	5.4	11.90	3.6
BACILLARIOPHYCEAE	158.4	17.2	141.13	43.2
CYCLOTELLA STELLIGERA	25.0	2.7	13.31	4.1
CYCLOTELLA SPP.	8.3	0.9	3.69	1.1
EUNOTIA SP. A	4.1	0.4	1.32	0.4
MELOSIRA DISTANS V. A	54.3	5.9	10.05	3.1
NITZSCHIA SPP.	12.5	1.3	6.77	2.1
RHIZOSOLENIA ERIENSIS	25.0	2.7	93.54	28.6
SYNEDRA SP. A	29.1	3.2	12.22	3.7
CHRYSOPHYCEAE	74.9	8.2	12.20	3.7
CHROMULINA SPP.	25.0	2.7	5.03	1.5
CHRYSOCOCCUS SPP.	4.1	0.4	0.30	0.1
MALLOMONAS ACAROIDES	4.1	0.4	0.42	0.1
MALLOMONAS SPP.	4.1	0.4	5.42	1.7
UNIDENTIFIED CHRYSOPHYCEAE	37.6	4.1	5.44	1.7
HAPTOPHYCEAE	33.4	3.6	6.22	1.9
CHRYSOCHROMULINA PARVA	33.4	3.6	6.22	1.9
CRYPTOPHYCEAE	129.4	14.0	41.30	12.6
CHROOMONAS ACUTA	96.1	10.4	10.67	3.3
CRYPTOMONAS EROSA	4.1	0.4	6.52	2.0
CRYPTOMONAS OVATA	20.9	2.3	24.64	7.5
CRYPTOMONAS PHASEOLUS	8.3	0.9	2.49	0.8
DINOPHYCEAE	8.3	0.9	166.23	50.9
UNIDENTIFIED DINOPHYCEAE	8.3	0.9	166.23	50.9
UNKNOWN	96.1	10.4	4.51	1.4
0574-2-03	20.9	2.3	1.12	0.3
0774-2-24	75.2	8.1	3.38	1.0
SAMPLE TOTALS:	917.7	99.8	326.25	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 1045 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	222.5	52.4	50.05	23.3
CHLAMYDOMONAS SPP.	2.0	0.4	0.17	0.1
CHLORELLA SPP.	2.0	0.4	0.27	0.1
COSMARIUM SPP.	4.1	0.9	2.27	1.0
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.4	1.50	0.7
GLOEOCYSTIS GIGAS	12.5	2.9	6.97	3.2
GOLENKINIA RADIATA	2.0	0.4	0.33	0.2
MONORAPHIDIUM BRAUNII	6.2	1.4	0.78	0.4
MONORAPHIDIUM CONTORTUM	2.0	0.4	0.08	0.0
MONORAPHIDIUM SETIFORME	4.8	1.1	0.87	0.4
OOCYSTIS PUSILLA	2.0	0.4	0.45	0.2
OOCYSTIS SPP.	31.3	7.3	11.91	5.5
STAURASTRUM CURVATUM VAR. ELONGATUM	2.0	0.4	0.87	0.4
STAURASTRUM PARADOXUM VAR. PARVUM	2.0	0.4	0.77	0.4
COCCOID GREENS	87.7	20.6	22.80	10.6
UNIDENTIFIED CHLOROPHYCEAE	22.9	5.4	14.62	6.8
BACILLARIOPHYCEAE	164.4	38.6	86.18	40.1
ASTERIONELLA FORMOSA	12.5	2.9	6.15	2.9
CYCLOTELLA STELLIGERA	4.1	1.0	2.15	1.0
MELOSIRA DISTANS V. A	22.9	5.4	2.45	1.1
NITZSCHIA SPP.	4.1	1.0	2.25	1.0
RHIZOSOLENIA ERIENSIS	18.8	4.4	7.26	3.4
SYNEDRA SPP.	2.0	0.4	0.55	0.2
CHRYSOPHYCEAE	54.1	12.7	14.83	6.9
CHROMULINA SPP.	10.4	2.4	2.38	1.1
DINOBRYON BAVARICUM	10.4	2.4	1.00	0.5
DINOBRYON SERTULARIA	4.1	1.0	0.81	0.4
KEPHYRION SPP.	8.3	1.9	2.76	1.3
MALLOMONAS SPP.	10.4	2.4	1.56	0.7
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.9	2.25	1.0
HAPTOPHYCEAE	12.5	2.9	2.33	1.1
CHRYSOCHROMULINA PARVA	12.5	2.9	2.33	1.1
CRYPTOPHYCEAE	39.5	9.3	1.43	0.7
CHROOMONAS ACUTA	27.1	6.4	0.01	0.0
CRYPTOMONAS EROSA	2.0	0.4	0.26	0.1
CRYPTOMONAS OVATA	6.2	1.4	1.04	0.5
CRYPTOMONAS PHASEOLUS	4.1	1.0	0.13	0.0
DINOPHYCEAE	20.8	4.9	4.02	1.9
PERIDINIUM PUSILLUM	14.6	3.4	2.57	1.2
UNIDENTIFIED DINOPHYCEAE	6.2	1.4	1.45	0.7
UNKNOWN	12.5	2.9	1.33	0.6
0574-2-03	6.2	1.4	0.35	0.2
0574-2-04	6.2	1.4	0.98	0.4

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	423.9	99.8	214.15	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0
TIME: 1045
SAMPLE TYPE: LDS
SAMPLE DEPTH: 20.0 M
SAMPLE DATE: 03/15/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	131.1	36.3	16.32	7.5
ANKISTRODESMUS FALCATUS	4.1	1.1	0.22	0.1
COSMARIUM SPP.	4.1	1.1	0.27	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.5	0.75	0.3
MONORAPHIDIUM CONTORTUM	4.1	1.1	0.17	0.1
MONORAPHIDIUM SETIFORME	60.6	16.8	10.54	4.9
OOCYSTIS SPP.	2.0	0.5	0.14	0.1
SCENEDESMUS SPP.	4.1	1.1	0.66	0.3
COCCOID GREENS	50.5	13.9	1.60	0.7
BACILLARIOPHYCEAE	104.2	28.9	15.63	7.3
ASTERIONELLA FORMOSA	6.1	1.7	3.32	1.5
CYCLOTELLA STELLIGERA	4.1	1.1	2.05	1.0
MELOSIRA DISTANS V. A	27.3	7.5	5.52	2.6
RHIZOSOLENIA ERIENSIS	9.2	2.5	13.05	6.1
SYNEDRA RADIANS	35.4	9.8	0.77	0.4
SYNEDRA SP. A	10.1	2.8	0.73	0.3
CHRYSOPHYCEAE	2.0	0.5	0.10	0.0
CHROMULINA SPP.	2.0	0.5	0.07	0.0
MALLOMONAS SPP.	2.0	0.5	0.13	0.1
UNIDENTIFIED CHRYSOPHYCEAE	2.0	0.5	0.07	0.0
HAPTOPHYCEAE	14.4	4.0	0.78	0.4
CHRYSOCHROMULINA PARVA	14.4	4.0	0.78	0.4
CRYPTOPHYCEAE	45.5	12.7	1.30	0.6
CHROOMONAS ACUTA	4.1	1.1	0.33	0.2
CRYPTOMONAS OVATA	14.4	4.0	0.55	0.3
CRYPTOMONAS PHASEOLUS	8.3	2.3	0.55	0.3
DINOPHYCEAE	8.3	2.3	0.34	0.2
UNIDENTIFIED DINOPHYCEAE	8.3	2.3	0.34	0.2
UNKNOWN	4.1	1.1	0.11	0.0
0574-2-03	4.1	1.1	0.11	0.0
0974-2-07				
SAMPLE TOTALS:	360.0	99.8	214.14	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 1115 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	413.1	50.2	84.17	21.7
ANKISTRODESMUS FALCATUS	4.1	0.4	0.22	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4.1	0.4	0.42	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	12.5	1.5	7.33	1.8
ELAKATOTHRIX GELATINOSA	4.1	0.4	0.48	0.1
FRANCEIA DROESCHERI	12.5	1.5	2.37	0.6
GLOEOCYSTIS GIGAS	4.1	0.4	18.59	4.8
GOLENKINIA RADIATA	16.7	2.0	2.67	0.6
MONORAPHIDIUM SETIFORME	108.6	13.2	18.91	4.8
OOCYSTIS SPP.	58.5	7.1	3.56	0.9
SCENEDESMUS BIJUGA	4.1	0.4	0.36	0.0
SCENEDESMUS SPP.	4.1	0.4	0.51	0.1
SELENASTRUM MINUTUM	20.9	2.5	0.79	0.2
COCCOID GREENS	121.2	14.7	3.87	1.0
UNIDENTIFIED CHLOROPHYCEAE	37.6	4.5	2.92	0.8
BACILLARIOPHYCEAE	166.8	20.2	209.98	54.3
ASTERIONELLA FORMOSA	4.1	0.5	2.23	0.6
CYCLOTELLA STELLIGERA	16.7	2.0	8.87	2.2
MELOSIRA DISTANS V. A	66.8	8.1	12.37	3.2
NITZSCHIA SPP.	8.3	1.0	4.51	1.2
RHIZOSOLENIA ERIENSIS	45.9	5.5	171.50	44.4
SYNEDRA SP. A	25.0	3.0	1.48	0.4
CHRYSOPHYCEAE	129.4	15.7	20.54	5.3
CHROMULINA SPP.	66.8	8.1	13.57	3.5
DINOBRYON BAVARICUM	16.7	2.0	2.22	0.6
KEPHYRION SPP.	33.4	4.0	2.94	0.8
UNIDENTIFIED CHRYSOPHYCEAE	12.5	1.5	1.80	0.5
HAPTOPHYCEAE	45.9	5.5	8.55	2.2
CHRYSOCHROMULINA PARVA	45.9	5.5	8.55	2.2
CRYPTOPHYCEAE	20.7	2.5	8.52	2.2
CHROOMONAS ACUTA	4.1	0.5	0.46	0.1
CRYPTOMONAS OVATA	4.1	0.4	4.32	1.1
CRYPTOMONAS PHASEOLUS	12.5	1.5	3.73	0.9
EUGLENOPHYCEAE	4.1	0.5	2.20	0.5
TRACHELOMONAS SPP.	4.1	0.4	2.20	0.5
DINOPHYCEAE	24.9	3.0	51.33	13.2
PERIDINIUM INCONSPICUUM	4.1	0.4	10.84	2.8
PERIDINIUM PUSILLUM	8.3	1.0	16.14	4.1
UNIDENTIFIED DINOPHYCEAE	12.5	1.5	24.35	6.3
UNKNOWN	16.7	2.0	0.90	0.2
0574-2-03	16.7	2.0	0.90	0.2
SAMPLE TOTALS:	821.6	99.8	386.22	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 1115 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	199.9	38.2	43.71	14.3
ANKISTRODESMUS FALCATUS	12.5	2.3	0.68	0.2
COSMARIUM SPP.	4.1	0.7	2.27	0.7
CRUCIGENIA TETRAPEDIA	4.1	0.7	0.36	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	12.5	2.3	3.76	1.2
MONORAPHIDIUM SETIFORME	66.8	12.8	11.63	3.8
OOCYSTIS BORGEI	4.1	0.7	7.28	2.3
OOCYSTIS SPP.	12.5	2.3	0.76	0.2
SCENEDESMUS QUADRICAUDA	4.1	0.7	0.39	0.1
SCENEDESMUS SPP.	8.3	1.5	1.23	0.4
TETRAEDRON SPP.	4.1	0.7	3.06	1.0
COCCOID GREENS	50.1	9.6	1.60	0.5
UNIDENTIFIED CHLOROPHYCEAE	16.7	3.2	10.63	3.5
BACILLARIOPHYCEAE	116.7	22.3	183.64	60.3
ASTERIONELLA FORMOSA	12.5	2.3	6.69	2.2
CYCLOTELLA STELLIGERA	16.7	3.2	8.87	2.9
MELOSIRA DISTANS V. A	20.9	4.0	3.86	1.2
NITZSCHIA SPP.	4.1	0.7	0.25	0.0
RHIZOSOLENIA ERIENSIS	33.4	6.4	129.73	42.6
SYNEDRA SP. A	4.1	0.7	1.74	0.5
SYNEDRA SPP.	8.3	1.5	12.39	4.0
TABELLARIA FLOCCULOSA	16.7	3.2	33.07	10.8
CHRYSOPHYCEAE	117.0	22.4	51.78	17.0
CHROMULINA SPP.	83.6	16.0	16.97	5.5
UNIDENTIFIED CHRYSOPHYCEAE	33.4	6.4	4.81	1.5
HAPTOPHYCEAE	29.2	5.6	5.44	1.7
CHRYSOCHROMULINA PARVA	29.2	5.6	5.44	1.7
CRYPTOPHYCEAE	45.9	8.8	40.98	13.4
CRYPTOMONAS EROSA	16.7	3.2	26.14	8.5
CRYPTOMONAS OVATA	8.3	1.5	8.62	2.8
CRYPTOMONAS PHASEOLUS	20.9	4.0	6.22	2.0
DINOPHYCEAE	4.1	0.7	8.07	2.6
PERIDINIUM PUSILLUM	4.1	0.7	8.07	2.6
UNKNOWN	8.3	1.5	0.23	0.0
0974-2-07	8.3	1.5	0.23	0.0
SAMPLE TOTALS:	521.1	99.8	303.87	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 0955 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	250.0	40.7	105.79	24.7
ANKISTRODESMUS FALCATUS	12.5	2.0	0.68	0.1
ARTHRODESMUS SUBULATUS	8.3	1.3	48.14	11.3
COSMARIUM SPP.	4.1	0.6	2.27	0.5
CRUCIGENIA TETRAPEDIA	4.1	0.6	0.36	0.1
DICTYOSPHAERIUM PULCHELLUM	4.1	0.6	1.63	0.3
GOLENKINIA RADIATA	4.1	0.6	0.66	0.1
MONORAPHIDIUM CONTORTUM	4.1	0.6	0.17	0.0
MONORAPHIDIUM SETIFORME	112.8	18.4	15.63	3.6
MOUGEOTIA SPP.	8.3	1.3	1.35	0.3
OOCYSTIS SPP.	12.5	2.0	0.76	0.1
COCCOID GREENS	45.5	7.4	1.47	0.3
UNIDENTIFIED CHLOROPHYCEAE	29.2	4.7	10.60	2.4
BACILLARIOPHYCEAE	204.6	33.3	270.08	63.4
ASTERIONELLA FORMOSA	33.4	5.4	17.85	4.1
CYCLOTELLA STELLIGERA	20.9	3.4	11.09	2.6
MELOSIRA DISTANS V. A	66.8	10.9	12.37	2.9
RHIZOSOLENIA ERIENSIS	58.5	9.5	218.27	51.2
SYNEDRA SP. A	25.0	4.0	10.48	2.4
CHRYSOPHYCEAE	91.7	14.9	14.97	3.5
CHROMULINA SPP.	45.9	7.4	9.33	2.1
DINOBRYON BAVARICUM	4.1	0.6	0.55	0.1
KEPHYRION SPP.	16.7	2.7	0.47	0.1
UNIDENTIFIED CHRYSOPHYCEAE	25.0	4.0	3.61	0.8
HAPTOPHYCEAE	37.6	6.1	6.99	1.6
CHRYSOCHROMULINA PARVA	37.6	6.1	6.99	1.6
CRYPTOPHYCEAE	20.6	3.3	19.08	4.4
CHROOMONAS ACUTA	4.1	0.6	0.46	0.1
CRYPTOMONAS EROSA	8.3	1.3	13.05	3.0
CRYPTOMONAS OVATA	4.1	0.6	4.32	1.0
CRYPTOMONAS PHASEOLUS	4.1	0.6	1.24	0.2
DINOPHYCEAE	4.1	0.6	0.11	0.0
UNIDENTIFIED DINOPHYCEAE	4.1	0.6	0.11	0.0
UNKNOWN	4.1	0.6	0.65	0.1
0574-2-04	4.1	0.6	0.65	0.1
SAMPLE TOTALS:	612.7	99.8	425.70	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 0955 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	76.6	28.8	18.37	9.4
ANKISTRODESMUS FALCATUS	2.0	0.7	0.11	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	0.7	0.21	0.1
COSMARIUM SPP.	6.2	2.3	3.41	1.7
DICTYOSPHAERIUM EHRENBERGIANUM	6.2	2.3	4.23	2.2
DICTYOSPHAERIUM PULCHELLUM	2.0	0.7	0.40	0.2
MONORAPHIDIUM SETIFORME	16.7	6.2	2.90	1.5
MOUGEOTIA SPP.	4.1	1.5	5.67	2.9
OOCYSTIS SPP.	6.2	2.3	0.38	0.2
SELENASTRUM MINUTUM	4.1	1.5	0.15	0.1
COCCOID GREENS	27.1	10.2	0.86	0.4
BACILLARIOPHYCEAE	97.7	36.7	143.03	73.8
ASTERIONELLA FORMOSA	8.3	3.1	8.46	4.4
CYCLOTELLA STELLIGERA	6.2	2.3	3.32	1.7
CYCLOTELLA SPP.	2.0	0.7	0.97	0.5
EUNOTIA SP. A	2.0	0.7	0.66	0.3
MELOSIRA DISTANS V. A	18.8	7.0	3.47	1.8
NAVICULA PUPULA	2.0	0.7	1.59	0.8
RHIZOSOLENIA ERIENSIS	31.3	11.7	116.93	60.3
SYNEDRA RADIANS	6.2	2.3	2.86	1.5
SYNEDRA SP. A	20.9	7.8	8.73	4.5
CHRYSOPHYCEAE	22.8	8.5	3.56	1.8
CHROMULINA SPP.	6.2	2.3	1.27	0.6
KEPHYRION SPP.	2.0	0.7	0.18	0.1
UNIDENTIFIED CHRYSOPHYCEAE	14.6	5.4	2.10	1.1
CRYPTOPHYCEAE	50.0	18.8	6.73	3.5
CHROOMONAS ACUTA	43.8	16.4	4.87	2.5
CRYPTOMONAS PHASEOLUS	6.2	2.3	1.86	0.9
DINOPHYCEAE	10.3	3.8	21.65	11.1
PERIDINIUM INCONSPICUUM	2.0	0.7	5.42	2.7
UNIDENTIFIED DINOPHYCEAE	8.3	3.1	16.23	8.3
UNKNOWN	8.2	3.0	0.28	0.1
0574-2-03	2.0	0.7	0.11	0.0
0974-2-07	6.2	2.3	0.17	0.0
SAMPLE TOTALS:	265.6	99.8	193.65	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 1150 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	89.0	33.9	16.21	11.6
ANKISTRODESMUS FALCATUS	2.0	0.7	0.11	0.0
GOLENKINIA RADIATA	4.1	1.5	0.66	0.4
MONORAPHIDIUM BRAUNII	2.0	0.7	0.26	0.1
MONORAPHIDIUM SETIFORME	25.0	9.5	4.36	3.1
OOCYSTIS SUBMARINA	4.1	1.5	1.60	1.1
OOCYSTIS SPP.	6.2	2.3	0.38	0.2
SCENEDESMUS BIJUGA	4.1	1.5	0.36	0.2
SCENEDESMUS BRASILIENSIS	4.1	1.5	0.80	0.5
SCENEDESMUS QUADRICAUDA	2.0	0.7	0.19	0.1
COCCOID GREENS	25.0	9.5	0.80	0.5
UNIDENTIFIED CHLOROPHYCEAE	10.4	3.9	6.64	4.7
BACILLARIOPHYCEAE	79.1	30.2	55.40	39.8
ASTERIONELLA FORMOSA	18.8	7.1	10.04	7.2
CYCLOTELLA STELLIGERA	8.3	3.1	4.43	3.2
MELOSIRA DISTANS V. A	37.6	14.3	6.95	5.0
RHIZOSOLENIA ERIENSIS	8.3	3.1	31.18	22.4
SYNEDRA RADIANS	4.1	1.5	1.91	1.3
SYNEDRA SP. A	2.0	0.7	0.87	0.6
CHRYSOPHYCEAE	29.1	11.1	5.08	3.6
CHROMULINA SPP.	16.7	6.3	3.39	2.4
KEPHYRION SPP.	2.0	0.7	0.18	0.1
UNIDENTIFIED CHRYSOPHYCEAE	10.4	3.9	1.50	1.0
HAPTOPHYCEAE	6.2	2.3	1.16	0.8
CHRYSOCHROMULINA PARVA	6.2	2.3	1.16	0.8
CRYPTOPHYCEAE	24.9	9.5	12.06	8.6
CHROOMONAS ACUTA	8.3	3.1	0.92	0.6
CRYPTOMONAS OVATA	8.3	3.1	8.64	6.2
CRYPTOMONAS PHASEOLUS	8.3	3.1	2.49	1.7
DINOPHYCEAE	22.8	8.7	48.66	35.0
PERIDINIUM INCONSPICUUM	6.2	2.3	16.26	11.7
PERIDINIUM PUSILLUM	6.2	2.3	12.10	8.7
UNIDENTIFIED DINOPHYCEAE	10.4	3.9	20.29	14.6
UNKNOWN	10.3	3.9	0.40	0.2
0574-2-03	4.1	1.5	0.22	0.1
0974-2-07	6.2	2.3	0.17	0.1
SAMPLE TOTALS:	261.4	99.8	138.99	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 1150 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	141.1	34.9	22.60	10.7
ANKISTRODESMUS FALCATUS	12.5	3.1	0.68	0.3
CHLORELLA SPP.	2.0	0.5	0.23	0.1
COSMARIUM SPP.	2.0	0.5	1.13	0.5
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.5	0.14	0.1
MONORAPHIDIUM CONTORTUM	4.1	1.0	0.27	0.1
MONORAPHIDIUM SETIFORME	50.1	12.4	0.72	0.3
MOUGEOTIA SPP.	2.0	0.5	0.60	0.3
OOCYSTIS PUSILLA	2.0	0.5	0.19	0.1
SCENEDESMUS QUADRICAUDA	2.0	0.5	0.30	0.1
SCENEDESMUS SPP.	2.0	0.5	0.53	0.3
TETRAEDRON MUTICUM	2.0	0.5	0.80	0.4
COCCOID GREENS	56.4	13.9	1.32	0.6
UNIDENTIFIED CHLOROPHYCEAE	2.0	0.5	0.16	0.1
BACILLARIOPHYCEAE	118.4	29.3	108.16	51.8
ASTERIONELLA FORMOSA	2.0	0.5	1.10	0.5
CYCLOTELLA STELLIGERA	2.0	0.5	0.97	0.5
CYCLOTELLA SPP.	2.0	0.5	0.02	0.1
MELOSIRA DISTANS V. A	27.1	6.7	5.44	2.6
MELOSIRA ITALICA	25.0	6.2	27.12	13.0
NITZSCHIA SPP.	2.0	0.5	1.22	0.6
RHIZOSOLENIA ERIENSIS	14.3	3.5	54.56	26.1
SYNEDRA SP. A	31.3	7.7	13.09	6.3
SYNEDRA SPP.	10.4	2.6	0.99	0.5
UNIDENTIFIED PENNATE DIATOMS	2.0	0.5	0.72	0.3
CHRYSOPHYCEAE	34.7	8.6	7.61	3.6
CHROMULINA SPP.	22.5	5.6	5.68	2.7
KEPHYRION SPP.	2.0	0.5	1.13	0.5
OCHROMONAS SPP.	4.1	1.0	0.59	0.3
UNIDENTIFIED CHRYSOPHYCEAE	10.4	2.6	0.50	0.2
CRYPTOPHYCEAE	60.4	14.9	16.90	8.1
CHROOMONAS ACUTA	33.4	8.3	3.72	1.8
CRYPTOMONAS OVATA	4.1	1.0	4.32	2.1
CRYPTOMONAS PHASEOLUS	20.8	5.1	8.22	3.9
CRYPTOMONAS REFLEXA	2.0	0.5	0.64	0.3
DINOPHYCEAE	27.1	6.7	5.20	2.5
PERIDINIUM PUSILLUM	6.2	1.5	1.10	0.5
UNIDENTIFIED DINOPHYCEAE	20.9	5.1	4.10	1.9
UNKNOWN	16.7	4.1	0.68	0.3
0574-2-03	8.3	2.0	0.45	0.2
0974-2-07	8.3	2.0	0.23	0.1
SAMPLE TOTALS:	403.0	99.8	208.67	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 1410 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	249.8	44.6	74.96	21.6
ARTHRODESMUS SUBULATUS	4.1	0.7	24.07	6.9
CHLORELLA SPP.	8.3	1.4	0.94	0.2
CLOSTERIUM CERATIUM	8.3	1.4	4.77	1.3
COSMARIUM SPP.	4.1	0.7	2.27	0.6
CRUCIGENIA TETRAPEDIA	4.1	0.7	0.36	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.7	1.50	0.4
DICTYOSPHAERIUM PULCHELLUM	8.3	1.4	1.22	0.3
GOLENKINIA RADIATA	8.3	1.4	1.33	0.3
MONORAPHIDIUM SETIFORME	50.1	8.9	8.72	2.5
MOUGEOTIA SPP.	8.3	1.4	11.35	3.2
OOCYSTIS SPP.	8.3	1.4	0.50	0.1
SCENEDESMUS BIJUGA	4.1	0.7	0.36	0.1
SCENEDESMUS BRASILIENSIS	4.1	0.7	0.80	0.2
SELENASTRUM MINUTUM	12.5	2.2	0.47	0.1
COCCOID GREENS	91.9	16.4	2.94	0.8
UNIDENTIFIED CHLOROPHYCEAE	20.9	3.7	13.29	3.8
BACILLARIOPHYCEAE	112.5	20.1	132.65	38.3
CYCLOTELLA STELLIGERA	4.1	0.7	2.21	0.6
CYCLOTELLA SPP.	12.5	2.2	5.84	1.6
MELOSIRA DISTANS V. A	54.3	9.7	10.05	2.9
RHIZOSOLENIA ERIENSIS	29.2	5.2	109.13	31.5
SYNEDRA RADIANS	4.1	0.7	1.91	0.5
SYNEDRA SP. A	8.3	1.4	3.49	1.0
CHRYSOPHYCEAE	79.1	14.1	22.43	6.4
CHROMULINA SPP.	29.2	5.2	5.93	1.7
DINOBRYON BAVARICUM	12.5	2.2	1.66	0.4
KEPHYRION SPP.	4.1	0.7	0.36	0.1
MALLOMONAS SPP.	8.3	1.4	10.85	3.1
UNIDENTIFIED CHRYSOPHYCEAE	25.0	4.4	3.61	1.0
CRYPTOPHYCEAE	58.3	10.4	20.32	5.8
CHROOMONAS ACUTA	29.2	5.2	3.24	0.9
CRYPTOMONAS EROSA	4.1	0.7	6.52	1.8
CRYPTOMONAS OVATA	4.1	0.7	4.32	1.2
CRYPTOMONAS PHASEOLUS	20.9	3.7	6.22	1.8
DINOPHYCEAE	45.8	8.1	94.65	27.3
PERIDINIUM INCONSPICUUM	8.3	1.4	21.68	6.2
PERIDINIUM PUSILLUM	8.3	1.4	16.14	4.6
UNIDENTIFIED DINOPHYCEAE	29.2	5.2	56.82	16.4
UNKNOWN	12.4	2.2	0.42	0.1
0774-2-24	4.1	0.7	0.18	0.0
0974-2-07	8.3	1.4	0.23	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	557.9	99.8	345.45	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 1410 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	151.5	34.1	32.79	11.2
ANKISTRODESMUS FALCATUS	4.1	0.9	0.22	0.0
ASTEROCOCCUS LIMNETICUS	2.0	0.4	3.08	1.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.4	0.21	0.0
CRUCIGENIA TETRAPEDIA	6.2	1.4	0.27	0.0
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.4	0.75	0.2
DICTYOSPHAERIUM PULCHELLUM	2.0	0.4	0.81	0.2
FRANCEIA DROESCHERI	2.0	0.4	0.39	0.1
GOLENKINIA RADIATA	4.1	0.9	0.66	0.2
MONORAPHIDIUM CONTORTUM	4.1	0.9	0.17	0.0
MONORAPHIDIUM SETIFORME	71.0	16.0	12.36	4.2
MOUGEOTIA SPP.	2.0	0.4	2.83	0.9
OOCYSTIS SPP.	14.6	3.2	0.89	0.3
SCENEDESMUS BIJUGA	2.0	0.4	0.18	0.0
COCCOID GREENS	18.8	4.2	0.60	0.2
UNIDENTIFIED CHLOROPHYCEAE	14.6	3.2	9.30	3.2
BACILLARIOPHYCEAE	150.0	33.8	211.38	73.1
ASTERIONELLA FORMOSA	8.3	1.8	4.46	1.5
CYCLOTELLA STELLIGERA	10.4	2.3	5.54	1.9
MELOSIRA DISTANS VAR. ALPIGENA	8.3	1.8	1.80	0.6
MELOSIRA DISTANS V. A	27.1	6.1	5.02	1.7
MELOSIRA ITALICA VAR. TENUISSIMA	10.4	2.3	5.83	2.0
NAVICULA NOTHA	2.0	0.4	0.74	0.2
RHIZOSOLENIA ERIENSIS	45.9	10.3	171.50	59.3
SYNEDRA RADIANS	18.8	4.2	8.59	2.9
SYNEDRA SP. A	18.8	4.2	7.86	2.7
CHRYSOPHYCEAE	77.0	17.3	17.93	6.1
CHROMULINA SPP.	31.3	7.0	6.36	2.2
KEPHYRION SPP.	2.0	0.4	0.18	0.0
MALLOMONAS SPP.	2.0	0.4	2.71	0.9
OCHROMONAS SPP.	16.7	3.7	5.06	1.7
UNIDENTIFIED CHRYSOPHYCEAE	25.0	5.6	3.61	1.2
HAPTOPHYCEAE	10.4	2.3	1.94	0.6
CHRYSOCHROMULINA PARVA	10.4	2.3	1.94	0.6
CRYPTOPHYCEAE	47.8	10.7	19.18	6.6
CHROOMONAS ACUTA	29.2	6.5	3.24	1.1
CRYPTOMONAS EROSA	2.0	0.4	3.26	1.1
CRYPTOMONAS OVATA	10.4	2.3	10.80	3.7
CRYPTOMONAS PHASEOLUS	6.2	1.4	1.86	0.6
DINOPHYCEAE	2.0	0.4	5.42	1.8
PERIDINIUM INCONSPICUUM	2.0	0.4	5.42	1.8
UNKNOWN	4.0	0.9	0.17	0.0
0574-2-03	2.0	0.4	0.11	0.0
0974-2-07	2.0	0.4	0.05	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	442.7	99.8	288.83	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 1445 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	152.0	47.1	22.77	12.5
ANKISTRODESMUS FUSIFORMIS	2.0	0.6	0.21	0.1
CHLORELLA SPP.	4.1	1.2	0.47	0.2
COSMARIUM SPP.	4.1	1.2	2.27	1.2
GOLENKINIA RADIATA	4.1	1.2	0.66	0.3
MONORAPHIDIUM BRAUNII	8.3	2.5	1.06	0.5
MONORAPHIDIUM CONTORTUM	6.2	1.9	0.26	0.1
MONORAPHIDIUM SETIFORME	39.7	12.3	6.90	3.8
OOCYSTIS SPP.	20.9	6.4	1.27	0.7
SELENASTRUM MINUTUM	8.3	2.5	0.31	0.1
COCCOID GREENS	41.8	12.9	1.33	0.7
UNIDENTIFIED CHLOROPHYCEAE	12.5	3.8	7.97	4.4
BACILLARIOPHYCEAE	47.9	14.8	87.38	48.4
ASTERIONELLA FORMOSA	8.3	2.5	4.46	2.4
MELOSIRA DISTANS V. A	14.6	4.5	2.70	1.5
NITZSCHIA SPP.	4.1	1.2	2.25	1.2
RHIZOSOLENIA ERIENSIS	20.9	6.4	77.95	43.2
CHRYSOPHYCEAE	60.3	18.6	10.30	5.6
CHROMULINA SPP.	25.0	7.7	5.09	2.8
DINOBRYON BAVARICUM	8.3	2.5	1.11	0.6
KEPHYRION SPP.	8.3	2.5	0.73	0.4
OCHROMONAS SPP.	4.1	1.2	1.26	0.7
UNIDENTIFIED CHRYSOPHYCEAE	14.6	4.5	2.10	1.1
HAPTOPHYCEAE	20.9	6.4	3.88	2.1
CHRYSOCHROMULINA PARVA	20.9	6.4	3.88	2.1
CRYPTOPHYCEAE	14.3	4.4	8.14	4.5
CHROOMONAS ACUTA	2.0	0.6	0.23	0.1
CRYPTOMONAS EROSA	2.0	0.6	3.26	1.8
CRYPTOMONAS OVATA	2.0	0.6	2.16	1.1
CRYPTOMONAS PHASEOLUS	8.3	2.5	2.49	1.3
DINOPHYCEAE	20.7	6.4	47.33	26.2
PERIDINIUM INCONSPICUUM	10.4	3.2	27.10	15.0
PERIDINIUM PUSILLUM	6.2	1.9	12.10	6.7
UNIDENTIFIED DINOPHYCEAE	4.1	1.2	8.11	4.5
UNKNOWN	6.2	1.9	0.33	0.1
0574-2-03	6.2	1.9	0.33	0.1
SAMPLE TOTALS:	322.3	99.8	180.16	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 1445 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	99.2	27.0	24.20	12.7
ANKISTRODESMUS FALCATUS	2.0	0.5	0.11	0.0
CLOSTERIUM CERATIUM	2.0	0.5	1.19	0.6
COSMARIUM SPP.	4.1	1.1	2.27	1.2
CRUCIGENIA APICULATA	2.0	0.5	1.15	0.6
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.5	0.09	0.0
DICTYOSPHAERIUM PULCHELLUM	2.0	0.5	0.81	0.4
MONORAPHIDIUM CONTORTUM	2.0	0.5	0.08	0.0
MONORAPHIDIUM SETIFORME	39.7	10.8	6.90	3.6
OOCYSTIS SPP.	8.3	2.2	0.50	0.2
SCENEDESMUS BIJUGA	2.0	0.5	0.18	0.0
SCENEDESMUS QUADRICAUDA	2.0	0.5	0.19	0.1
SCENEDESMUS QUADRICAUDA VAR. ALTERANS	2.0	0.5	0.19	0.1
STAURASTRUM PARADOXUM VAR. PARVUM	2.0	0.5	0.77	0.4
COCCOID GREENS	12.5	3.4	0.40	0.2
UNIDENTIFIED CHLOROPHYCEAE	14.6	3.9	9.33	4.9
BACILLARIOPHYCEAE	147.9	40.4	128.07	67.2
ASTERIONELLA FORMOSA	6.2	1.6	3.34	1.7
CYCLOTELLA STELLIGERA	20.9	5.7	11.09	5.8
CYMBELLA SPP.	2.0	0.5	2.91	1.5
MELOSIRA DISTANS V. A	43.8	11.9	8.11	4.2
MELOSIRA ITALICA	14.6	3.9	15.99	8.4
NAVICULA CRYPTOCEPHALA	4.1	1.1	1.54	0.8
RHIZOSOLENIA ERIENSIS	18.8	5.1	70.16	37.4
SYNEDRA SP. A	31.3	8.5	13.19	6.9
SYNEDRA SPP.	6.2	1.6	1.79	0.9
CHRYSOPHYCEAE	31.2	8.5	7.00	3.6
CHROMULINA SPP.	8.3	2.2	1.65	0.8
OCHROMONAS SPP.	12.5	3.4	3.79	2.0
UNIDENTIFIED CHRYSOPHYCEAE	10.4	2.8	1.50	0.7
HAPTOPHYCEAE	6.2	1.6	1.16	0.6
CHRYSOCHROMULINA PARVA	6.2	1.6	1.16	0.6
CRYPTOPHYCEAE	72.9	19.9	18.91	9.9
CHROOMONAS ACUTA	45.9	12.5	5.12	2.7
CRYPTOMONAS EROSA	2.0	0.5	3.28	1.7
CRYPTOMONAS OVATA	4.1	1.1	4.32	2.3
CRYPTOMONAS PHASEOLUS	20.9	5.7	6.22	3.2
DINOPHYCEAE	4.0	1.1	9.47	5.0
PERIDINIUM INCONSPICUUM	2.0	0.5	5.42	2.8
UNIDENTIFIED DINOPHYCEAE	2.0	0.5	4.05	2.1
UNKNOWN	4.1	1.1	0.22	0.1
0574-2-03	4.1	1.1	0.22	0.1

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	365.5	99.8	189.06	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 1300 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	145.5	36.4	34.45	11.9
BOTRYOCOCCUS BRAUNII	2.0	0.5	2.92	1.0
COSMARIUM SPP.	2.0	0.5	1.13	0.4
CRUCIGENIA TETRAPEDIA	2.0	0.5	0.18	0.1
GOLENKINIA RADIATA	2.0	0.5	0.33	0.1
MONORAPHIDIUM SETIFORME	76.0	19.2	12.36	4.3
MOUGEOTIA SPP.	6.2	1.5	8.51	2.9
OOCYSTIS SPP.	16.2	4.1	1.01	0.3
SCENEDESMUS SPP.	2.0	0.5	0.30	0.1
SELENASTRUM MINUTUM	4.1	1.0	0.15	0.1
COCCOID GREENS	27.1	6.7	0.86	0.3
UNIDENTIFIED CHLOROPHYCEAE	10.1	2.5	0.65	0.2
BACILLARIOPHYCEAE	133.2	33.3	179.58	61.9
ASTERIONELLA FORMOSA	2.0	0.5	1.12	0.4
CYCLOTELLA STELLIGERA	4.1	1.0	2.97	1.0
CYCLOTELLA SPP.	2.0	0.5	0.73	0.3
MELOSIRA DISTANS V. A	41.8	10.4	7.85	2.7
MELOSIRA ITALICA	6.2	1.5	6.66	2.3
MELOSIRA ITALICA VAR. TENUISSIMA	20.9	5.2	11.38	3.9
NITZSCHIA SPP.	6.2	1.5	3.32	1.1
RHIZOSOLENIA ERIENSIS	37.6	9.4	140.25	48.4
SYNEDRA RADIANS	2.0	0.5	0.96	0.3
SYNEDRA SP. A	10.4	2.6	4.36	1.5
CHRYSOPHYCEAE	47.7	11.9	12.97	4.5
CHROMULINA SPP.	12.5	3.1	2.54	0.9
KEPHYRION SPP.	2.0	0.5	0.48	0.2
MALLOMONAS ACAROIDES	4.1	1.0	1.04	0.4
OCHROMONAS SPP.	6.2	1.5	0.85	0.3
UNIDENTIFIED CHRYSOPHYCEAE	22.9	5.7	3.25	1.1
HAPTOPHYCEAE	8.3	2.1	1.55	0.5
CHRYSOCHROMULINA PARVA	8.3	2.1	1.55	0.5
CRYPTOPHYCEAE	34.6	8.7	14.56	5.0
CHROOMONAS ACUTA	18.8	4.7	2.08	0.7
CRYPTOMONAS OVATA	8.3	2.1	3.73	1.3
CRYPTOMONAS PHASEOLUS	12.5	3.1	8.75	3.0
DINOPHYCEAE	20.7	5.2	43.02	14.8
PERIDINIUM INCONSPICUUM	4.1	1.0	10.84	3.7
PERIDINIUM PUSILLUM	6.2	1.5	12.05	4.1
UNIDENTIFIED DINOPHYCEAE	10.4	2.6	20.12	6.9
UNKNOWN	4.0	1.0	1.17	0.4
0574-2-03	2.0	0.5	0.00	0.0
0974-2-07	2.0	0.5	0.05	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	399.0	99.8	286.45	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 1300 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	179.3	36.4	55.02	22.1
COSMARIUM SPP.	12.5	2.5	6.88	2.7
CRUCIGENIA TETRAPEDIA	4.1	0.8	0.36	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	12.5	2.5	11.85	4.7
MONORAPHIDIUM CONTORTUM	4.1	0.8	0.17	0.0
MONORAPHIDIUM SETIFORME	83.6	16.9	14.54	5.8
MOUGEOTIA SPP.	4.1	0.8	5.67	2.2
OOCYSTIS SPP.	20.9	4.2	1.27	0.5
SCENEDESMUS SPP.	4.1	0.8	0.65	0.2
COCCOID GREENS	12.5	2.5	0.43	0.3
UNIDENTIFIED CHLOROPHYCEAE	20.9	4.2	13.05	5.3
BACILLARIOPHYCEAE	116.6	23.6	101.33	41.1
ASTERIONELLA FORMOSA	37.6	7.6	20.08	8.1
MELOSIRA DISTANS VAR. ALPIGENA	4.1	0.8	0.99	0.4
MELOSIRA DISTANS V. A	25.0	5.0	4.55	1.8
NITZSCHIA SPP.	4.1	0.8	2.25	0.9
RHIZOSOLENIA ERIENSIS	16.7	3.3	62.36	25.2
SYNEDRA SP. A	25.0	5.0	10.48	4.2
SYNEDRA SPP.	4.1	0.8	1.16	0.5
CHRYSOPHYCEAE	58.5	11.8	4.65	1.9
CHROMULINA SPP.	20.9	4.2	4.44	1.8
UNIDENTIFIED CHRYSOPHYCEAE	37.6	7.6	0.21	0.1
HAPTOPHYCEAE	16.7	3.3	3.16	1.2
CHRYSOCHROMULINA PARVA	16.7	3.3	3.16	1.2
CRYPTOPHYCEAE	75.1	15.2	17.66	7.1
CHROOMONAS ACUTA	41.8	8.4	4.53	1.8
CRYPTOMONAS OVATA	4.1	0.8	4.33	1.7
CRYPTOMONAS PHASEOLUS	29.2	5.9	8.71	3.5
DINOPHYCEAE	29.1	5.9	59.55	24.0
PERIDINIUM INCONSPICUUM	4.1	0.8	10.84	4.4
UNIDENTIFIED DINOPHYCEAE	25.0	5.0	48.70	19.6
UNKNOWN	16.6	3.3	0.68	0.2
0574-2-03	8.3	1.6	0.45	0.1
0974-2-07	8.3	1.6	0.23	0.0
SAMPLE TOTALS:	491.9	99.8	247.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 03/15/77
TIME: 1310 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	212.4	44.2	46.34	19.4
ANKISTRODESMUS FALCATUS	8.3	1.7	0.45	0.1
CLOSTERIUM CERATIUM	4.1	0.8	2.38	1.0
COSMARIUM SPP.	4.1	0.8	2.26	0.9
DICTYOSPHAERIUM EHRENBERGIANUM	20.9	4.3	5.40	2.3
GOLENKINIA RADIATA	16.7	3.4	2.67	1.1
LAGERHEIMIA SPP.	4.1	0.8	0.67	0.3
MONORAPHIDIUM BRAUNII	8.3	1.7	0.06	0.0
MONORAPHIDIUM SETIFORME	75.2	15.6	13.09	5.5
MOUGEOTIA SPP.	4.1	0.8	5.67	2.3
OOCYSTIS SPP.	25.0	5.2	1.52	0.6
SCENEDESMUS SPP.	4.1	0.8	0.61	0.2
COCCOID GREENS	29.2	6.0	0.93	0.3
UNIDENTIFIED CHLOROPHYCEAE	8.3	1.7	5.31	2.2
BACILLARIOPHYCEAE	108.4	22.5	104.60	43.9
ASTERIONELLA FORMOSA	12.5	2.6	6.69	2.8
CYCLOTELLA STELLIGERA	4.1	0.8	2.25	0.9
MELOSIRA DISTANS V. A	41.8	8.7	72.73	30.5
NITZSCHIA SPP.	4.1	0.8	2.25	0.9
RHIZOSOLENIA ERIENSIS	20.9	4.3	7.74	3.2
SYNEDRA SP. A	4.1	0.8	1.99	0.8
SYNEDRA SPP.	20.9	4.3	5.11	2.1
CHRYSOPHYCEAE	66.8	13.9	14.19	5.9
CHROMULINA SPP.	25.0	5.2	5.01	2.1
UNIDENTIFIED CHRYSOPHYCEAE	41.8	8.7	9.18	3.8
HAPTOPHYCEAE	8.3	1.7	1.55	0.6
CHRYSOCHROMULINA PARVA	8.3	1.7	1.55	0.6
CRYPTOPHYCEAE	49.9	10.4	17.05	7.2
CHROOMONAS ACUTA	33.4	6.9	3.71	1.5
CRYPTOMONAS EROSA	4.1	0.8	6.55	2.8
CRYPTOMONAS OVATA	4.1	0.8	4.33	1.8
CRYPTOMONAS PHASEOLUS	8.3	1.7	2.43	1.0
DINOPHYCEAE	29.2	6.0	56.82	23.9
UNIDENTIFIED DINOPHYCEAE	29.2	6.0	56.82	23.9
UNKNOWN	4.1	0.8	0.22	0.0
0574-2-03	4.1	0.8	0.22	0.0
SAMPLE TOTALS:	479.1	99.8	237.71	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 1310 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	82.8	28.6	17.70	10.9
ASTEROCOCCUS LIMNETICUS	2.0	0.6	0.77	0.4
CHLAMYDOMONAS SPP.	2.0	0.6	0.17	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.6	0.21	0.1
COSMARIUM SPP.	8.3	2.8	4.54	2.8
MONORAPHIDIUM CONTORTUM	2.0	0.6	0.08	0.0
MONORAPHIDIUM SETIFORME	45.9	15.9	8.00	4.9
OOCYSTIS PUSILLA	2.0	0.6	0.60	0.3
OOCYSTIS SPP.	6.2	2.1	0.38	0.2
COCCOID GREENS	8.3	2.8	0.26	0.1
UNIDENTIFIED CHLOROPHYCEAE	4.1	1.4	0.65	0.4
BACILLARIOPHYCEAE	70.5	24.4	88.13	54.7
ASTERIONELLA FORMOSA	4.1	1.4	2.23	1.4
CYCLOTELLA STELLIGERA	4.1	1.4	2.21	1.4
CYCLOTELLA SPP.	4.1	1.4	1.94	1.2
MELOSIRA DISTANS V. A	22.9	7.9	4.25	2.6
NITZSCHIA SPP.	2.0	0.6	1.12	0.7
RHIZOSOLENIA ERIENSIS	18.8	6.5	70.16	43.6
SYNEDRA RADIANS	2.0	0.6	0.95	0.5
SYNEDRA SP. A	12.5	4.3	5.24	3.2
CHRYSOPHYCEAE	66.6	23.0	15.83	9.8
CHROMULINA SPP.	18.8	6.5	3.81	2.3
KEPHYRION SPP.	2.0	0.6	0.18	0.1
MALLOMONAS ACAROIDES	2.0	0.6	0.52	0.3
OCHROMONAS SPP.	18.8	6.5	5.69	3.5
UNIDENTIFIED CHRYSOPHYCEAE	25.0	8.6	5.61	3.4
CRYPTOPHYCEAE	56.2	19.4	18.96	11.7
CHROOMONAS ACUTA	35.5	12.3	5.94	3.6
CRYPTOMONAS EROSA	2.0	0.6	3.26	2.0
CRYPTOMONAS OVATA	8.3	2.8	8.64	5.3
CRYPTOMONAS PHASEOLUS	10.4	3.6	1.11	0.7
DINOPHYCEAE	10.4	3.6	20.29	12.6
UNIDENTIFIED DINOPHYCEAE	10.4	3.6	20.29	12.6
UNKNOWN	2.0	0.6	0.05	0.0
0974-2-07	2.0	0.6	0.05	0.0
SAMPLE TOTALS:	288.5	99.8	160.98	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5
TIME: 0850
SAMPLE TYPE: SUR
SAMPLE DEPTH: 1.0 M
SAMPLE DATE: 03/15/77

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	191.8	35.3	59.88	17.3
ANKISTRODESMUS FALCATUS	16.7	3.0	0.91	0.2
ARTHRODESMUS SUBULATUS	4.1	0.7	24.07	6.9
DICTYOSPHAERIUM EHRENBERGIANUM	12.5	2.3	2.25	0.6
MONORAPHIDIUM SETIFORME	58.5	10.7	10.18	2.9
MOUGEOTIA SPP.	8.3	1.5	11.35	3.2
OOCYSTIS SPP.	4.1	0.7	0.25	0.0
SCENEDESMUS BIJUGA	8.3	1.5	0.73	0.2
COCCOID GREENS	66.8	12.3	2.14	0.6
UNIDENTIFIED CHLOROPHYCEAE	12.5	2.3	7.97	2.3
BACILLARIOPHYCEAE	150.1	27.6	178.35	51.6
ASTERIONELLA FORMOSA	8.3	1.5	4.46	1.2
CYCLOTELLA STELLIGERA	25.0	4.5	13.31	3.8
CYCLOTELLA SPP.	4.1	0.7	1.94	0.5
MELOSIRA DISTANS V. A	58.5	10.7	10.82	3.1
RHIZOSOLENIA ERIENSIS	37.6	6.9	140.32	40.6
SYNEDRA RADIANS	12.5	2.3	5.23	1.5
SYNEDRA SP. A	4.1	0.7	1.74	0.5
CHRYSOPHYCEAE	62.6	11.5	10.50	3.0
CHROMULINA SPP.	25.0	4.6	5.09	1.4
UNIDENTIFIED CHRYSOPHYCEAE	37.6	6.9	5.41	1.5
HAPTOPHYCEAE	4.1	0.7	0.27	0.0
CHRYSOCHROMULINA PARVA	4.1	0.7	0.27	0.0
CRYPTOPHYCEAE	79.1	14.5	21.80	6.3
CHROOMONAS ACUTA	45.9	8.4	5.11	1.4
CRYPTOMONAS OBOVATA	4.1	0.7	4.90	1.4
CRYPTOMONAS OVATA	4.1	0.7	4.32	1.2
CRYPTOMONAS PHASEOLUS	25.0	4.6	7.47	2.1
DINOPHYCEAE	37.6	6.9	73.05	21.1
UNIDENTIFIED DINOPHYCEAE	37.6	6.9	73.05	21.1
UNKNOWN	16.6	3.0	0.68	0.1
0574-2-03	8.3	1.5	0.45	0.1
0974-2-07	8.3	1.5	0.23	0.0
SAMPLE TOTALS:	541.9	99.8	345.06	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 03/15/77
TIME: 0850 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	220.9	32.0	48.68	12.8
ANKISTRODESMUS FALCATUS	4.1	0.5	0.22	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	0.5	0.43	0.1
COSMARIUM SPP.	12.5	1.8	6.82	1.8
CRUCIGENIA TETRAPEDIA	8.3	1.2	0.55	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.5	0.75	0.1
MONORAPHIDIUM SETIFORME	100.3	14.5	17.45	4.6
MOUGEOTIA SPP.	4.1	0.5	11.35	3.0
OOCYSTIS SPP.	20.9	3.0	1.27	0.3
SCENEDESMUS BIJUGA	4.1	0.5	0.36	0.0
COCCOID GREENS	45.9	6.6	1.47	0.3
UNIDENTIFIED CHLOROPHYCEAE	12.5	1.8	7.97	2.1
BACILLARIOPHYCEAE	162.6	23.5	190.06	50.2
ASTERIONELLA FORMOSA	37.6	5.4	20.08	5.3
CYCLOTELLA STELLIGERA	20.9	3.0	11.09	2.9
MELOSIRA DISTANS V. A	4.1	0.5	0.77	0.2
MELOSIRA ITALICA VAR. TENUISSIMA	29.2	4.2	16.32	4.3
NITZSCHIA PALEA	4.1	0.5	2.07	0.5
NITZSCHIA SPP.	4.1	0.5	2.25	0.5
RHIZOSOLENIA ERIENSIS	33.4	4.8	124.73	33.0
SYNEDRA RADIANS	12.5	1.8	5.73	1.5
SYNEDRA SP. A	16.7	2.4	6.98	1.8
CHRYSOPHYCEAE	133.6	19.4	27.53	7.2
CHROMULINA SPP.	50.1	7.2	10.18	2.6
OCHROMONAS SPP.	33.4	4.8	10.13	2.6
UNIDENTIFIED CHRYSOPHYCEAE	50.1	7.2	7.22	1.9
HAPTOPHYCEAE	12.5	1.8	2.33	0.6
CHRYSOCHROMULINA PARVA	12.5	1.8	2.33	0.6
CRYPTOPHYCEAE	95.9	13.9	32.91	8.6
CHROOMONAS ACUTA	50.1	7.2	5.56	1.4
CRYPTOMONAS EROSA	8.3	1.2	13.05	3.4
CRYPTOMONAS OVATA	4.1	0.5	4.32	1.1
CRYPTOMONAS PHASEOLUS	33.4	4.8	9.96	2.6
DINOPHYCEAE	37.6	5.4	73.05	19.3
UNIDENTIFIED DINOPHYCEAE	37.6	5.4	73.05	19.3
UNKNOWN	24.9	3.6	3.06	0.7
0574-2-03	4.1	0.5	0.22	0.0
0974-2-07	12.5	1.8	0.35	0.0
1074-2-02	8.3	1.2	2.49	0.6
SAMPLE TOTALS:	688.0	99.8	377.65	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 04/13/77
TIME: 1100 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	91.6	31.1	17.45	12.0
CRUCIGENIA QUADRATA	4.1	1.3	0.20	0.1
CRUCIGENIA TETRAPEDIA	6.2	2.1	0.50	0.3
DICTYOSPHAERIUM EHRENBERGIANUM	6.2	2.1	10.15	7.0
GOLENKINIA RADIATA	2.0	0.6	0.33	0.2
OOCYSTIS PARVA	37.6	12.8	5.14	3.5
COCCOID GREENS	35.5	12.0	1.13	0.7
BACILLARIOPHYCEAE	158.7	54.0	92.28	64.0
ASTERIONELLA FORMOSA	33.4	11.3	17.85	12.3
CYCLOTELLA STELLIGERA	83.6	28.4	44.39	30.8
MELOSIRA DISTANS V. A	35.5	12.0	6.57	4.5
RHIZOSOLENIA ERIENSIS	6.2	2.1	23.38	16.2
CHRYSOPHYCEAE	4.1	1.3	0.73	0.5
DINOBRYON DIVERGENS	4.1	1.3	0.73	0.5
CRYPTOPHYCEAE	35.3	12.0	5.55	3.8
CHROOMONAS ACUTA	29.2	9.9	3.85	2.7
CHROOMONAS REFLEXA	4.1	1.3	1.68	1.2
CRYPTOMONAS PHASEOLUS	2.0	0.6	0.02	0.0
DINOPHYCEAE	4.0	1.3	28.01	19.4
PERIDINIUM DEFLANDREI	2.0	0.6	23.95	16.6
UNIDENTIFIED DINOPHYCEAE	2.0	0.6	4.05	2.8
SAMPLE TOTALS:	293.7	99.9	143.96	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1100 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	21.7	29.6	0.99	3.1
MONORAPHIDIUM SETIFORME	2.0	2.7	0.36	1.1
COCCOID GREENS	19.7	26.9	0.63	2.0
BACILLARIOPHYCEAE	25.7	35.0	13.56	42.9
CYCLOTELLA STELLIGERA	12.4	16.9	6.62	21.0
EUNOTIA SP. A	1.0	1.3	0.32	1.0
MELOSIRA DISTANS V. A	9.3	12.7	1.73	5.5
NITZSCHIA SPP.	1.0	1.3	0.56	1.7
RHIZOSOLENIA ERIENSIS	1.0	1.3	3.87	12.2
SYNEDRA SP. A	1.0	1.3	0.43	1.3
CHRYSOPHYCEAE	9.3	12.7	15.09	47.8
MALLOMONAS CAUDATA	9.3	12.7	15.09	47.8
CRYPTOPHYCEAE	5.1	6.9	1.53	4.8
CHROOMONAS ACUTA	4.1	5.6	0.46	1.4
CRYPTOMONAS OVATA	1.0	1.3	1.07	3.4
UNKNOWN	11.4	15.5	0.36	1.1
0477-2-01	11.4	15.5	0.36	1.1
SAMPLE TOTALS:	73.2	99.9	31.55	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 04/13/77
TIME: 1143 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	9.2	16.5	5.24	7.7
ANKISTRODESMUS FALCATUS	1.0	1.7	0.05	0.0
OOCYSTIS PARVA	2.0	3.5	0.14	0.2
STAURASTRUM PARADOXUM VAR. A	1.0	1.7	4.86	7.2
COCCOID GREENS	5.2	9.3	0.16	0.2
BACILLARIOPHYCEAE	27.9	50.1	21.88	32.5
CYCLOTELLA STELLIGERA	11.4	20.5	6.07	9.0
EUNOTIA SP. A	1.0	1.7	0.32	0.5
MELOSIRA DISTANS V. A	6.2	11.1	1.15	1.7
NITZSCHIA PALEA	1.0	1.7	0.51	0.7
RHIZOSOLENIA ERIENSIS	3.1	5.5	11.63	17.2
SYNEDRA SP. A	5.2	9.3	2.17	3.2
CHRYSOPHYCEAE	2.0	3.5	1.86	2.7
DINOBRYON DIVERGENS	1.0	1.7	0.18	0.2
MALLOMONAS CAUDATA	1.0	1.7	1.67	2.5
CRYPTOPHYCEAE	2.0	3.5	0.53	0.7
CHROOMONAS ACUTA	1.0	1.7	0.11	0.1
CHROOMONAS REFLEXA	1.0	1.7	0.42	0.6
DINOPHYCEAE	14.5	26.0	37.76	56.1
PERIDINIUM INCONSPICUUM	14.5	26.0	37.76	56.1
SAMPLE TOTALS:	55.6	99.9	67.28	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1143 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	19.6	24.4	5.12	9.9
MONORAPHIDIUM SETIFORME	2.0	2.4	0.36	0.7
MOUGEOTIA SPP.	1.0	1.2	4.23	8.2
COCCOID GREENS	16.6	20.6	0.53	1.0
BACILLARIOPHYCEAE	32.0	39.8	26.50	51.5
ASTERIONELLA FORMOSA	8.3	10.3	4.44	8.6
CYCLOTELLA STELLIGERA	4.1	5.1	2.20	4.2
MELOSIRA DISTANS V. A	9.3	11.5	1.73	3.3
RHIZOSOLENIA ERIENSIS	4.1	5.1	15.51	30.1
SYNEDRA SP. A	6.2	7.7	2.60	5.0
CHRYSOPHYCEAE	7.2	8.9	11.74	22.8
MALLOMONAS CAUDATA	7.2	8.9	11.74	22.8
CRYPTOPHYCEAE	17.5	21.7	4.96	9.6
CHROOMONAS ACUTA	10.4	12.9	1.15	2.2
CHROOMONAS REFLEXA	1.0	1.2	0.42	0.8
CRYPTOMONAS OVATA	2.0	2.4	2.15	4.1
CRYPTOMONAS PHASEOLUS	4.1	5.1	1.23	2.4
DINOPHYCEAE	1.0	1.2	2.69	5.2
PERIDINIUM INCONSPICUUM	1.0	1.2	2.69	5.2
UNKNOWN	3.0	3.7	0.36	0.7
0774-2-22	1.0	1.2	0.29	0.5
0477-2-01	2.0	2.4	0.06	0.1
SAMPLE TOTALS:	80.3	99.9	51.39	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 04/13/77
TIME: 1006 SAMPLE DEPTH: 4.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	43.7	16.5	11.23	3.1
ANKISTRODESMUS FALCATUS VAR. ACICULARIS	2.0	0.7	0.17	0.0
STAURASTRUM PARADOXUM VAR. A	2.0	0.7	9.78	2.7
COCCOID GREENS	39.7	15.0	1.27	0.3
BACILLARIOPHYCEAE	110.6	41.7	224.29	62.9
CYCLOTELLA STELLIGERA	8.3	3.1	4.43	1.2
MELOSIRA DISTANS V. A	12.5	4.7	2.31	0.6
RHIZOSOLENIA ERIENSIS	54.3	20.5	202.68	56.9
SYNEDRA SP. A	35.5	13.4	14.85	4.2
CHRYSOPHYCEAE	54.2	20.4	5.21	1.5
CHROMULINA SPP.	6.5	2.3	1.27	0.4
DINOBRYON BAVARICUM	16.7	6.3	2.22	0.6
DINOBRYON CYLINDRICUM	31.3	11.8	1.72	0.5
CRYPTOPHYCEAE	10.2	3.8	2.16	0.6
CHROOMONAS ACUTA	6.2	2.3	0.69	0.2
CHROOMONAS REFLEXA	2.0	0.7	0.84	0.2
CRYPTOMONAS PHASEOLUS	2.0	0.7	0.62	0.2
DINOPHYCEAE	43.8	16.5	112.48	31.5
PERIDINIUM INCONSPICUUM	41.8	15.8	108.42	30.4
UNIDENTIFIED DINOPHYCEAE	2.0	0.7	4.05	1.1
UNKNOWN	2.0	0.7	0.79	0.2
0774-2-28	2.0	0.7	0.79	0.2
SAMPLE TOTALS:	264.5	99.9	356.18	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1006 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	15.4	20.4	3.59	6.5
MONORAPHIDIUM CONTORTUM	1.0	1.3	0.04	0.1
MONORAPHIDIUM SETIFORME	2.0	2.6	0.36	0.6
MOUGEOTIA SPP.	1.0	1.3	2.82	5.1
COCCOID GREENS	11.4	15.1	0.36	0.6
BACILLARIOPHYCEAE	35.0	46.5	37.86	68.2
CYCLOTELLA STELLIGERA	2.0	2.6	1.10	2.0
EUNOTIA SP. A	4.1	5.4	1.31	2.4
MELOSIRA DISTANS V. A	4.1	5.4	0.76	1.4
NITZSCHIA SPP.	1.0	1.3	0.56	1.0
RHIZOSOLENIA ERIENSIS	7.2	9.5	2.15	3.9
SYNEDRA SP. A	16.6	22.1	6.95	12.5
CHRYSOPHYCEAE	3.1	4.1	5.03	9.1
MALLOMONAS CAUDATA	3.1	4.1	5.03	9.1
CRYPTOPHYCEAE	13.4	17.8	2.95	5.3
CHROOMONAS ACUTA	10.4	13.8	1.15	2.1
CHROOMONAS REFLEXA	1.0	1.3	0.42	0.8
CRYPTOMONAS OVATA	1.0	1.3	1.07	1.9
CRYPTOMONAS PHASEOLUS	1.0	1.3	0.30	0.5
DINOPHYCEAE	2.0	2.6	0.70	1.3
PERIDINIUM INCONSPICUUM	1.0	1.3	2.69	4.9
PERIDINIUM PUSILLUM	1.0	1.3	0.00	0.0
UNKNOWN	6.2	8.2	0.55	1.0
0774-2-28	1.0	1.3	0.39	0.7
0477-2-01	5.2	6.9	0.16	0.3
SAMPLE TOTALS:	75.1	99.9	54.71	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 — SAMPLE TYPE: EZC — SAMPLE DATE: 04/13/77
TIME: 1245 — SAMPLE DEPTH: 4.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	76.8	34.4	27.28	16.7
ANKISTRODESMUS FALCATUS	2.0	0.8	0.11	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	0.8	0.21	0.1
ARTHRODESMUS SUBULATUS	4.1	1.8	24.07	14.7
FRANCEIA DROESCHERI	2.0	0.8	0.39	0.2
OOCYSTIS PARVA	6.2	2.7	0.45	0.2
SCENEDESMUS ABUNDANS	2.0	0.8	0.16	0.1
COCCOID GREENS	58.5	26.3	1.87	1.1
BACILLARIOPHYCEAE	81.3	36.5	59.51	36.5
CYCLOTELLA STELLIGERA	10.4	4.6	5.54	3.4
EUNOTIA SP. A	14.6	6.5	4.63	2.8
MELOSIRA DISTANS V. A	8.3	3.7	1.54	0.9
RHIZOSOLENIA ERIENSIS	8.3	3.7	31.18	19.1
SYNEDRA SP. A	39.7	17.8	16.59	10.1
CHRYSOPHYCEAE	18.7	8.4	3.76	2.3
CHROMULINA SPP.	16.7	7.5	3.39	2.0
DINOBRYON DIVERGENS	2.0	0.8	0.36	0.2
CRYPTOPHYCEAE	14.4	6.4	8.19	5.0
CHROOMONAS ACUTA	4.1	1.8	0.46	0.2
CRYPTOMONAS OVATA	6.2	2.7	6.48	3.9
CRYPTOMONAS PHASEOLUS	4.1	1.8	1.24	0.7
DINOPHYCEAE	244.9	111.1	62.30	38.2
PERIDINIUM INCONSPICUUM	20.9	9.4	54.21	33.2
PERIDINIUM PUSILLUM	2.0	0.8	4.03	2.4
UNIDENTIFIED DINOPHYCEAE	2.0	0.8	4.05	2.4
UNKNOWN	6.2	2.7	1.78	1.0
0774-2-22	6.2	2.7	1.78	1.0
SAMPLE TOTALS:	222.3	99.8	162.84	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1245 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	8.1	15.1	1.26	4.9
ANKISTRODESMUS FALCATUS	1.0	1.8	0.05	0.2
MONORAPHIDIUM SETIFORME	4.1	7.6	0.72	2.8
SCENEDESMUS DIMORPHUS	1.0	1.8	0.41	1.6
COCCOID GREENS	2.0	3.7	0.06	0.2
BACILLARIOPHYCEAE	22.6	42.3	15.27	59.5
CYCLOTELLA STELLIGERA	6.2	11.6	3.31	12.9
EUNOTIA SP. A	1.0	1.8	0.32	1.2
MELOSIRA DISTANS V. A	1.0	1.8	0.19	0.7
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	7.6	2.32	9.0
NITZSCHIA LORENZIANA VAR. SUBTILIS	1.0	1.8	5.20	20.3
SYNEDRA SP. A	9.3	17.4	3.91	15.2
CHRYSOPHYCEAE	2.0	3.7	1.76	6.8
KEPHYRION SPP.	1.0	1.8	0.09	0.3
MALLOMONAS CAUDATA	1.0	1.8	1.67	6.5
CRYPTOPHYCEAE	20.7	38.7	7.31	28.5
CHROOMONAS ACUTA	10.4	19.4	1.15	4.5
CRYPTOMONAS OVATA	4.1	7.6	4.30	16.7
CRYPTOMONAS PHASEOLUS	6.2	11.6	1.85	7.2
SAMPLE TOTALS:	53.4	99.9	25.61	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 04/13/77
TIME: 1435 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	124.8	21.3	28.10	3.5
ANKISTRODESMUS FALCATUS	4.1	0.7	0.22	0.0
CHLAMYDOMONAS SPP.	4.1	0.7	0.32	0.0
COSMARIUM SPP.	4.1	0.7	2.45	0.3
MONORAPHIDIUM SETIFORME	8.3	1.4	0.60	0.1
OOCYSTIS PUSILLA	8.3	1.4	0.88	0.1
PLANKTOSPHAERIA GELATINOSA	4.1	0.7	19.57	2.5
STAURASTRUM PARADOXUM VAR. A	4.1	0.7	2.80	0.4
COCCOID GREENS	87.7	15.0	46.43	5.8
BACILLARIOPHYCEAE	258.8	44.2	2.33	0.3
ASTERIONELLA FORMOSA	4.1	0.7	1.33	0.2
CYCLOTELLA STELLIGERA	25.0	4.2	1.32	0.2
EUNOTIA SP. A	4.1	0.7	2.73	0.3
MELOSIRA DISTANS V. A	41.8	7.1	40.53	5.0
RHIZOSOLENIA ERIENSIS	108.6	18.5	3.44	0.4
SYNEDRA SP. A	75.2	12.8	1.33	0.2
CHRYSOPHYCEAE	91.9	15.7	2.55	0.3
CHROMULINA SPP.	12.5	2.1	10.56	1.3
DINOBRYON BAVARICUM	79.4	13.5	1.85	0.2
CRYPTOPHYCEAE	25.0	4.2	2.85	0.3
CHROOMONAS ACUTA	16.7	2.8	2.99	0.3
CRYPTOMONAS PHASEOLUS	8.3	1.4	28.46	3.5
DINOPHYCEAE	66.8	11.4	143.73	18.0
PERIDINIUM DEFLANDREI	12.5	2.1	140.99	17.7
PERIDINIUM INCONSPICUUM	54.3	9.2	3.34	0.4
UNKNOWN	16.6	2.8	3.16	0.4
0774-2-28	8.3	1.4	0.23	0.0
0974-2-07	8.3	1.4		
SAMPLE TOTALS:	583.9	99.9	795.07	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1435 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	14.3	33.2	1.43	7.1
ANKISTRODESMUS FALCATUS	1.0	2.3	0.05	0.2
ANKISTRODESMUS FUSIFORMIS	1.0	2.3	0.10	0.5
COSMARIUM SPP.	1.0	2.3	0.56	2.8
MONORAPHIDIUM SETIFORME	2.0	4.6	0.36	1.8
OOCYSTIS PUSILLA	1.0	2.3	0.07	0.3
COCCOID GREENS	8.3	19.3	0.26	1.3
BACILLARIOPHYCEAE	15.4	35.7	9.11	45.5
CYCLOTELLA STELLIGERA	1.0	2.3	0.55	2.7
MELOSIRA DISTANS V. A	4.1	9.5	0.76	3.8
RHIZOSOLENIA ERIENSIS	1.0	2.3	3.87	19.4
SYNEDRA SP. A	9.3	21.6	3.91	19.5
CHRYSOPHYCEAE	3.1	7.2	5.03	25.1
MALLOMONAS CAUDATA	3.1	7.2	5.03	25.1
CRYPTOPHYCEAE	8.2	19.0	1.31	6.5
CHROOMONAS ACUTA	6.2	14.4	0.69	3.4
CRYPTOMONAS PHASEOLUS	2.0	4.6	0.61	3.0
DINOPHYCEAE	1.0	2.3	2.69	13.5
PERIDINIUM INCONSPICUUM	1.0	2.3	2.69	13.5
UNKNOWN	1.0	2.3	0.39	1.9
0774-2-28	1.0	2.3	0.39	1.9
SAMPLE TOTALS:	43.0	99.9	19.97	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 04/13/77
TIME: 1515 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	162.8	39.0	47.67	10.6
GLOEOCYSTIS GIGAS	8.3	1.9	37.18	8.3
MOUGEOTIA SPP.	4.1	0.9	5.67	1.2
COCCOID GREENS	150.4	36.0	4.81	1.0
BACILLARIOPHYCEAE	129.4	31.0	232.18	51.8
MELOSIRA DISTANS V. A	8.3	1.9	1.54	0.3
RHIZOSOLENIA ERIENSIS	54.3	13.0	202.68	45.2
SYNEDRA SP. A	66.8	16.0	27.95	6.2
CHRYSOPHYCEAE	33.2	7.9	14.43	3.2
CHROMULINA SPP.	20.9	5.0	4.24	0.9
DINOBRYON BAVARICUM	4.1	0.9	0.55	0.1
MALLOMONAS CAUDATA	4.1	0.9	6.74	1.5
MALLOMONAS TONSURATA	4.1	0.9	2.90	0.6
CRYPTOPHYCEAE	16.6	3.9	7.92	1.7
CHROOMONAS ACUTA	12.5	2.9	1.39	0.3
CRYPTOMONAS EROSA	4.1	0.9	6.52	1.4
DINOPHYCEAE	54.3	13.0	140.95	31.4
PERIDINIUM INCONSPICUUM	54.3	13.0	140.95	31.4
UNKNOWN	20.6	4.9	4.69	1.0
0574-2-03	4.1	0.9	0.22	0.0
0774-2-22	4.1	0.9	1.19	0.2
0774-2-28	8.3	1.9	3.16	0.7
0974-2-07	4.1	0.9	0.11	0.0
SAMPLE TOTALS:	416.9	99.9	447.87	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1515 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	18.4	23.0	1.13	2.2
ANKISTRODESMUS FALCATUS	2.0	2.5	0.11	0.2
MONORAPHIDIUM CONTORTUM	1.0	1.2	0.04	0.0
MONORAPHIDIUM SETIFORME	1.0	1.2	0.18	0.3
OOCYSTIS PUSILLA	1.0	1.2	0.07	0.1
PLANKTOSPHAERIA GELATINOSA	1.0	1.2	0.20	0.4
SCENEDESMUS BIJUGA	1.0	1.2	0.09	0.1
SCENEDESMUS QUADRICAUDA	1.0	1.2	0.09	0.1
COCCOID GREENS	10.4	13.0	0.33	0.6
BACILLARIOPHYCEAE	35.0	43.7	35.27	72.2
CYCLOTELLA STELLIGERA	4.1	5.1	2.20	4.5
EUNOTIA SP. A	2.0	2.5	0.65	1.3
MELOSIRA DISTANS V. A	6.2	7.7	1.15	2.3
MELOSIRA ITALICA VAR. TENUISSIMA	7.2	9.0	4.06	8.3
RHIZOSOLENIA ERIENSIS	6.2	7.7	23.27	47.7
SYNEDRA SP. A	9.3	11.6	3.91	8.0
CHRYSOPHYCEAE	5.0	6.2	3.91	8.0
CHROMULINA SPP.	2.0	2.5	0.42	0.8
DINOBRYON BAVARICUM	1.0	1.2	0.13	0.2
MALLOMONAS CAUDATA	2.0	2.5	3.35	6.8
CRYPTOPHYCEAE	19.6	24.4	5.46	11.1
CHROOMONAS ACUTA	14.5	18.1	1.61	3.3
CRYPTOMONAS OVATA	3.1	3.8	3.22	6.6
CRYPTOMONAS PHASEOLUS	2.0	2.5	0.61	1.2
DINOPHYCEAE	1.0	1.2	2.69	5.5
PERIDINIUM INCONSPICUUM	1.0	1.2	2.69	5.5
UNKNOWN	1.0	1.2	0.29	0.6
0774-2-22	1.0	1.2	0.29	0.6
SAMPLE TOTALS:	80.0	99.9	48.77	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0
TIME: 1320
SAMPLE TYPE: EZC
SAMPLE DEPTH: 5.0 M
SAMPLE DATE: 04/13/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	26.9	28.3	2.07	4.2
ANKISTRODESMUS FALCATUS	3.1	3.2	0.17	0.3
GLOEOCYSTIS GIGAS	1.0	1.0	0.57	1.1
MONORAPHIDIUM SETIFORME	4.1	4.3	0.72	1.4
COCCOID GREENS	18.7	19.7	0.59	1.2
BACILLARIOPHYCEAE	46.6	49.0	36.68	75.1
CYCLOTELLA STELLIGERA	3.1	3.2	1.65	3.3
EUNOTIA SP. A	6.2	6.5	1.97	4.0
MELOSIRA DISTANS V. A	15.6	16.4	2.88	5.9
RHIZOSOLENIA ERIENSIS	4.1	4.3	15.51	31.7
SYNEDRA SP. A	15.6	16.4	6.52	13.3
TABELLARIA FENESTRATA	2.0	2.1	8.13	16.6
CHRYSOPHYCEAE	5.0	5.2	2.84	5.8
DINOBRYON CYLINDRICUM	1.0	1.0	0.05	0.1
KEPHYRION SPP.	2.0	2.1	0.18	0.3
MALLOMONAS ACAROIDES	1.0	1.0	1.25	2.5
MALLOMONAS PSEUDOCORONATA	1.0	1.0	1.35	2.7
CRYPTOPHYCEAE	14.4	15.1	5.16	10.5
CHROOMONAS ACUTA	10.4	10.9	1.15	2.3
CRYPTOMONAS OVATA	1.0	1.0	1.07	2.2
CRYPTOMONAS PHASEOLUS	2.0	2.1	0.30	0.6
CRYPTOMONAS REFLEXA	1.0	1.0	2.63	5.4
DINOPHYCEAE	1.0	1.0	2.00	4.1
PERIDINIUM PUSILLUM	1.0	1.0	0.02	0.0
UNKNOWN	1.0	1.0	0.02	0.0
0974-2-07				
SAMPLE TOTALS:	94.9	99.9	48.81	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1320 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	23.5	29.3	6.62	14.5
ANKISTRODESMUS FALCATUS	2.0	2.5	0.14	0.3
GYROMITUS CORDIFORMIS	1.0	1.2	0.90	1.9
MONORAPHIDIUM CONTORTUM	1.0	1.2	0.04	0.1
MONORAPHIDIUM SETIFORME	1.0	1.2	0.18	0.3
OOCYSTIS PUSILLA	2.0	2.5	0.14	0.3
SCENEDESMUS QUADRICAUDA	1.0	1.2	0.19	0.4
STAURASTRUM CURVATUM	1.0	1.2	4.57	10.0
COCCOID GREENS	14.5	18.1	0.46	1.0
BACILLARIOPHYCEAE	17.5	21.8	17.71	38.9
CYCLOTELLA STELLIGERA	5.2	6.5	2.76	6.0
EUNOTIA SP. A	1.0	1.2	0.32	0.7
MELOSIRA DISTANS V. A	2.0	2.5	0.38	0.8
RHIZOSOLENIA ERIENSIS	3.1	3.8	11.63	25.5
SYNEDRA SP. A	6.2	7.7	2.60	5.7
CHRYSOPHYCEAE	6.1	7.6	7.13	15.6
CHROMULINA SPP.	2.0	2.5	0.42	0.9
MALLOMONAS CAUDATA	4.1	5.1	6.71	14.7
CRYPTOPHYCEAE	26.8	33.4	8.50	18.6
CHROOMONAS ACUTA	14.5	18.1	1.61	3.5
CHROOMONAS REFLEXA	1.0	1.2	0.42	0.9
CRYPTOMONAS OVATA	4.1	5.1	2.30	5.0
CRYPTOMONAS PHASEOLUS	7.2	9.0	2.16	4.7
DINOPHYCEAE	2.0	2.5	5.39	11.8
PERIDINIUM INCONSPICUUM	2.0	2.5	5.39	11.8
UNKNOWN	4.1	5.1	0.13	0.2
0477-2-01	4.1	5.1	0.13	0.2
SAMPLE TOTALS:	80.0	99.9	45.51	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 04/13/77
TIME: 1345 SAMPLE DEPTH: 5.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	11.3	10.2	1.22	0.9
CLOSTERIUM CERATIUM	1.0	0.9	0.59	0.4
MONORAPHIDIUM SETIFORME	2.0	1.8	0.36	0.2
COCCOID GREENS	8.3	7.5	0.26	0.2
BACILLARIOPHYCEAE	67.4	61.4	90.18	73.0
CYCLOTELLA STELLIGERA	3.1	2.8	1.65	1.3
MELOSIRA DISTANS V. A	5.2	4.7	0.96	0.7
MELOSIRA ITALICA VAR. TENUISSIMA	24.9	22.6	13.92	11.2
RHIZOSOLENIA ERIENSIS	15.6	14.2	58.18	47.1
SYNEDRA ULNA	1.0	0.9	4.42	3.5
SYNEDRA SP. A	16.6	15.1	6.95	5.6
TABELLARIA FENESTRATA	1.0	0.9	4.06	3.2
CHRYSOPHYCEAE	13.4	12.2	3.28	2.6
DINOBRYON BAVARICUM	11.4	10.3	1.52	1.2
KEPHYRION SPP.	1.0	0.9	0.09	0.0
MALLOMONAS CAUDATA	1.0	0.9	1.67	1.3
CRYPTOPHYCEAE	7.2	6.5	1.76	1.4
CHROOMONAS ACUTA	6.2	5.6	0.69	0.5
CRYPTOMONAS OVATA	1.0	0.9	1.07	0.8
DINOPHYCEAE	10.4	9.4	26.97	21.8
PERIDINIUM INCONSPICUUM	10.4	9.4	26.97	21.8
SAMPLE TOTALS:	109.7	99.9	123.43	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 1345 SAMPLE DEPTH: 20.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	32.1	37.8	1.89	5.7
MONORAPHIDIUM CONTORTUM	1.0	1.1	0.04	0.1
MONORAPHIDIUM SETIFORME	4.1	4.8	0.72	2.1
OOCYSTIS PARVA	1.0	1.1	0.27	0.8
COCCOID GREENS	26.0	30.6	0.83	2.5
BACILLARIOPHYCEAE	32.0	37.7	22.06	66.3
CYCLOTELLA STELLIGERA	7.2	8.5	3.86	11.6
EUNOTIA SP. A	3.1	3.6	0.98	2.9
FRAGILARIA SPP.	1.0	1.1	0.36	1.0
MELOSIRA DISTANS V. A	9.3	10.9	1.73	5.2
RHIZOSOLENIA ERIENSIS	3.1	3.6	11.63	35.0
SYNEDRA SP. A	8.3	9.7	3.47	10.4
CRYPTOPHYCEAE	19.6	23.1	9.22	27.7
CHROOMONAS ACUTA	7.2	8.5	0.80	2.4
CHROOMONAS REFLEXA	1.0	1.1	0.42	1.3
CRYPTOMONAS OVATA	6.2	7.3	6.45	19.4
CRYPTOMONAS PHASEOLUS	5.2	6.1	1.54	4.6
UNKNOWN	1.0	1.1	0.03	0.0
0477-2-01	1.0	1.1	0.03	0.0
SAMPLE TOTALS:	84.7	99.9	33.22	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 04/13/77
TIME: 904 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	14.4	21.2	0.95	1.7
DICTYOSPHAERIUM EHRENBERGIANUM	1.0	1.4	0.37	0.7
MONORAPHIDIUM SETIFORME	1.0	1.4	0.18	0.3
COCCOID GREENS	12.4	18.2	0.39	0.7
BACILLARIOPHYCEAE	30.9	45.5	36.77	69.6
ASTERIONELLA FORMOSA	2.0	2.9	1.11	2.1
CYCLOTELLA STELLIGERA	3.1	4.5	1.65	3.1
MELOSIRA DISTANS V. A	4.1	6.0	0.76	1.4
RHIZOSOLENIA ERIENSIS	7.2	10.6	27.15	51.4
SYNEDRA SP. A	14.5	21.3	6.08	11.5
CHRYSOPHYCEAE	2.0	2.9	3.35	6.3
MALLOMONAS CAUDATA	2.0	2.9	3.35	6.3
CRYPTOPHYCEAE	17.5	25.7	8.60	16.2
CHROOMONAS ACUTA	7.2	10.6	0.80	1.5
CHROOMONAS REFLEXA	1.0	1.4	0.42	0.7
CRYPTOMONAS OVATA	6.2	9.1	6.45	12.2
CRYPTOMONAS PHASEOLUS	3.1	4.5	0.92	1.7
DINOPHYCEAE	1.0	1.4	2.69	5.1
PERIDINIUM INCONSPICUUM	1.0	1.4	2.69	5.1
UNKNOWN	2.0	2.9	0.42	0.8
0774-2-28	1.0	1.4	0.39	0.7
0477-2-01	1.0	1.4	0.03	0.0
SAMPLE TOTALS:	67.8	99.9	52.81	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 04/13/77
TIME: 904 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	27.8	28.6	13.25	22.2
ANKISTRODESMUS FALCATUS	1.0	1.0	0.05	0.0
ARTHRODESMUS SUBULATUS	1.0	1.0	5.98	10.0
GLOEOCYSTIS GIGAS	1.0	1.0	2.31	3.8
MONORAPHIDIUM SETIFORME	3.1	3.2	0.54	0.9
OOCYSTIS PUSILLA	1.0	1.0	0.07	0.1
PLANKTOSPHAERIA GELATINOSA	1.0	1.0	3.26	5.4
SCENEDESMUS DIMORPHUS	1.0	1.0	0.41	0.6
COCCOID GREENS	18.7	19.3	0.59	1.0
BACILLARIOPHYCEAE	34.1	35.2	26.13	43.8
CYCLOTELLA STELLIGERA	5.2	5.3	2.76	4.6
EUNOTIA SP. A	1.0	1.0	0.32	0.5
MELOSIRA DISTANS V. A	2.0	2.0	0.38	0.6
MELOSIRA ITALICA VAR. TENUISSIMA	10.4	10.7	5.80	9.7
RHIZOSOLENIA ERIENSIS	3.1	3.2	11.63	19.5
SYNEDRA SP. A	12.4	12.8	5.21	8.7
CHRYSOPHYCEAE	8.2	8.4	9.01	15.1
CHROMULINA SPP.	2.0	2.0	0.42	0.7
DINOBRYON SERTULARIA	1.0	1.0	0.20	0.3
MALLOMONAS CAUDATA	5.2	5.3	8.38	14.0
CRYPTOPHYCEAE	23.7	24.4	5.76	9.6
CHROOMONAS ACUTA	16.6	17.1	1.84	3.0
CHROOMONAS REFLEXA	2.0	2.0	0.84	1.4
CRYPTOMONAS OVATA	2.0	2.0	2.15	3.6
CRYPTOMONAS PHASEOLUS	3.1	3.2	0.92	1.5
DINOPHYCEAE	2.0	2.0	5.39	9.0
PERIDINIUM INCONSPICUUM	2.0	2.0	5.39	9.0
UNKNOWN	1.0	1.0	0.03	0.0
0477-2-01	1.0	1.0	0.03	0.0
SAMPLE TOTALS:	96.8	99.9	59.58	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0
TIME: 1035
SAMPLE TYPE: EZC
SAMPLE DEPTH: 10.0 M
SAMPLE DATE: 05/10/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	235.3	58.5	46.43	21.3
ARTHRODESMUS SUBULATUS	2.0	0.4	12.03	5.5
ASTEROCOCCUS LIMNETICUS	4.1	1.0	7.71	3.5
COSMARIUM TENUE	2.0	0.4	0.95	0.4
COSMARIUM SPP.	2.0	0.5	1.13	0.5
ELAKATOTHRIX GELATINOSA	6.2	1.5	0.72	0.3
GLOEOCYSTIS GIGAS	2.0	0.4	4.64	2.1
GOLENKINIA RADIATA	8.3	2.0	1.33	0.6
MOUGEOTIA SPP.	2.0	0.4	11.33	5.2
OOCYSTIS PUSILLA	4.1	1.0	0.11	0.0
SELENASTRUM MINUTUM	194.3	48.3	0.68	0.3
COCCOID GREENS	95.7	23.7	9.80	4.5
BACILLARIOPHYCEAE	2.0	0.4	0.65	0.3
ACHNANTHES MICROCEPHALA	12.5	3.2	4.68	2.1
ASTERIONELLA FORMOSA	8.3	2.0	22.56	10.4
CYCLOTELLA STELLIGERA	25.0	6.2	0.63	0.2
MELOSIRA DISTANS V. A	20.9	5.3	1.36	0.6
MELOSIRA ITALICA	14.5	3.6	0.56	0.2
RHIZOSOLENIA ERIENSIS	2.0	0.4	0.36	0.1
SYNEDRA TENERA	10.4	2.5	1.62	0.7
SYNEDRA SP. A	6.1	1.5	0.82	0.3
CHRYSOPHYCEAE	2.0	0.4	0.27	0.1
CHROMULINA SPP.	39.5	9.8	12.00	5.5
DINOBRYON BAVARICUM	27.1	6.7	3.11	1.4
CRYPTOPHYCEAE	4.1	1.0	0.52	0.2
CHROOMONAS ACUTA	8.3	2.0	4.99	2.3
CRYPTOMONAS EROSA	2.0	0.5	58.22	26.9
CRYPTOMONAS PHASEOLUS	2.0	0.5	5.55	2.6
DINOPHYCEAE	2.0	0.4	0.55	0.2
PERIDINIUM INCONSPICUUM	2.0	0.4	0.59	0.2
UNIDENTIFIED DINOPHYCEAE				
UNKNOWN				
0774-2-22				
SAMPLE TOTALS:	401.5	99.8	216.86	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 1035 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	19.6	31.6	1.66	8.3
ANKISTRODESMUS FALCATUS	1.0	1.6	0.05	0.2
GYROMITUS CORDIFORMIS	1.0	1.6	0.90	4.5
MONORAPHIDIUM SETIFORME	1.0	1.6	0.18	0.9
COCCOID GREENS	16.6	26.8	0.53	2.6
BACILLARIOPHYCEAE	31.0	50.0	12.74	63.6
CYCLOTELLA STELLIGERA	5.2	8.4	2.76	13.8
MELOSIRA DISTANS VAR. ALPIGENA	1.0	1.6	0.22	1.1
MELOSIRA DISTANS V. A	10.4	16.8	1.92	9.6
MELOSIRA ITALICA VAR. TENUISSIMA	12.4	20.0	6.96	34.8
SYNEDRA SP. A	2.0	3.2	0.86	4.3
CRYPTOPHYCEAE	10.3	16.6	2.89	14.4
CHROOMONAS ACUTA	5.2	8.4	0.57	2.8
CRYPTOMONAS OVATA	1.0	1.6	1.07	5.3
CRYPTOMONAS PHASEOLUS	4.1	6.6	1.23	6.1
DINOPHYCEAE	1.0	1.6	2.69	13.4
PERIDINIUM INCONSPICUUM	1.0	1.6	2.69	13.4
SAMPLE TOTALS:	61.9	99.9	19.99	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0
TIME: 1107

SAMPLE TYPE: EZC
SAMPLE DEPTH: 12.0 M

SAMPLE DATE: 05/10/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE				
ASTEROCOCCUS LIMNETICUS	191.9	49.5	30.67	11.9
MOUGEOTIA SPP.	2.0	0.5	3.08	1.2
OOCYSTIS PUSILLA	8.3	2.1	11.35	4.3
STAURASTRUM PARADOXUM VAR. A	6.2	1.6	0.90	0.3
COCCOID GREENS	2.0	0.5	9.78	3.8
BACILLARIOPHYCEAE	173.4	44.7	5.55	2.1
ASTERIONELLA FORMOSA	125.0	32.2	138.80	54.3
CYCLOTELLA STELLIGERA	20.9	5.3	14.16	5.5
EUNOTIA ZAZUMINENSIS	14.6	3.7	7.76	3.0
MELOSIRA DISTANS VAR. ALPIGENA	8.3	2.1	3.65	1.4
MELOSIRA DISTANS V. A	4.1	1.0	0.90	0.3
RHIZOSOLENIA ERIENSIS	31.3	8.0	5.79	2.2
SYNEDRA TENERA	20.9	5.3	77.95	30.5
SYNEDRA SP. A	6.2	1.6	1.81	0.7
TABELLARIA FENESTRATA	12.5	3.2	15.22	5.9
CHRYSOPHYCEAE	6.2	1.6	24.56	9.6
DINOBRYON BAVARICUM	6.1	1.5	0.55	0.2
DINOBRYON SERTULARIA	4.1	1.0	0.40	0.2
CRYPTOPHYCEAE	2.0	0.5	0.93	0.4
CHROOMONAS ACUTA	20.8	5.3	2.08	0.8
CHROOMONAS REFLEXA	18.8	4.8	0.84	0.3
MYXOPHYCEAE	2.0	0.5	0.52	0.2
ANACYSTIS SPP.	6.2	1.6	0.52	0.2
DINOPHYCEAE	6.2	1.6	31.95	12.5
PERIDINIUM INCONSPICUUM	31.2	8.0	75.90	29.7
UNIDENTIFIED DINOPHYCEAE	2.0	0.5	4.05	1.6
UNKNOWN	6.2	1.6	1.78	0.6
0774-2-22	6.2	1.6	1.78	0.6
SAMPLE TOTALS:	387.4	99.8	255.64	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 1107 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	6.0	10.0	1.44	4.5
ANKISTRODESMUS FUSIFORMIS	1.0	1.6	0.10	0.3
GYROMITUS CORDIFORMIS	1.0	1.6	0.90	2.8
MONORAPHIDIUM CONTORTUM	1.0	1.6	0.04	0.1
MONORAPHIDIUM SETIFORME	2.0	3.3	0.36	1.1
COCCOID GREENS	1.0	1.6	0.03	0.1
BACILLARIOPHYCEAE	30.9	51.9	20.88	65.9
ACHNANTHES MICROCEPHALA	1.0	1.6	0.12	0.3
ASTERIONELLA FORMOSA	1.0	1.6	0.55	1.7
CYCLOTELLA STELLIGERA	6.2	10.4	3.31	10.4
MELOSIRA DISTANS V. A	11.4	19.1	2.11	6.6
RHIZOSOLENIA ERIENSIS	3.1	5.2	11.63	36.7
SYNEDRA TENERA	2.0	3.3	0.60	1.8
SYNEDRA SP. A	5.2	8.7	2.17	6.8
UNIDENTIFIED PENNATE DIATOMS	1.0	1.6	0.36	1.1
CHRYSOPHYCEAE	7.1	11.9	5.46	17.2
CHROMULINA SPP.	1.0	1.6	0.21	0.6
KEPHYRION SPP.	1.0	1.6	0.09	0.2
MALLOMONAS ACAROIDES	4.1	6.8	5.01	15.8
UNIDENTIFIED CHRYSOPHYCEAE	1.0	1.6	0.14	0.4
CRYPTOPHYCEAE	15.5	26.0	3.85	12.1
CHROOMONAS ACUTA	8.3	13.9	0.92	2.9
CRYPTOMONAS OVATA	1.0	1.6	1.07	3.3
CRYPTOMONAS PHASEOLUS	6.2	10.4	1.85	5.8
SAMPLE TOTALS:	59.5	99.9	31.65	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 05/10/77
TIME: 0940 SAMPLE DEPTH: 9.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	114.2	34.0	21.17	5.5
ANKISTRODESMUS FUSIFORMIS	4.1	1.2	0.43	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.5	0.21	0.0
COSMARIUM PHASEOLUS F. MINOR	2.0	0.5	3.16	0.8
COSMARIUM SPP.	2.0	0.5	1.13	0.3
GOLENKINIA RADIATA	2.0	0.5	0.33	0.0
MONORAPHIDIUM SETIFORME	6.2	1.8	1.07	0.2
MOUGEOTIA SPP.	8.3	2.4	11.35	2.9
QUADRIGULA CLOSTERIOIDES	2.0	0.5	0.38	0.1
SCENEDESMUS DENTICULATUS	2.0	0.5	0.39	0.1
COCCOID GREENS	83.6	24.9	2.67	0.7
BACILLARIOPHYCEAE	127.1	37.9	108.63	28.5
ASTERIONELLA FORMOSA	4.1	1.2	2.23	0.5
CYCLOTELLA STELLIGERA	2.0	0.5	1.10	0.2
EUNOTIA SP. A	4.1	1.2	1.33	0.3
MELOSIRA DISTANS V. A	58.5	17.4	10.82	2.8
RHIZOSOLENIA ERIENSIS	20.9	6.2	77.95	20.5
SYNEDRA TENERA	4.1	1.2	1.20	0.3
SYNEDRA SP. A	33.4	9.9	13.97	3.6
CHRYSOPHYCEAE	22.8	6.7	3.10	0.8
CHROMULINA SPP.	2.0	0.5	0.42	0.1
DINOBRYON BAVARICUM	18.8	5.6	2.50	0.6
KEPHYRION SPP.	2.0	0.5	0.18	0.0
CRYPTOPHYCEAE	29.1	8.6	8.27	2.1
CHROOMONAS ACUTA	18.8	5.6	2.08	0.5
CRYPTOMONAS OVATA	4.1	1.2	4.32	1.1
CRYPTOMONAS PHASEOLUS	6.2	1.8	1.87	0.5
DINOPHYCEAE	37.5	11.1	237.38	62.5
PERIDINIUM ACICULIFERUM	6.2	1.8	156.06	41.0
PERIDINIUM INCONSPICUUM	31.3	9.3	81.32	21.4
UNKNOWN	4.1	1.2	1.19	0.3
0774-2-22	4.1	1.2	1.19	0.3
SAMPLE TOTALS:	334.8	99.8	379.77	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 0940 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	20.6	20.1	3.88	6.1
ANKISTRODESMUS FALCATUS VAR. ACICULARIS	2.0	1.9	0.17	0.2
GYROMITUS CORDIFORMIS	2.0	1.9	1.80	2.8
MOUGEOTIA SPP.	1.0	0.9	1.41	2.2
COCCOID GREENS	15.6	15.2	0.49	0.7
BACILLARIOPHYCEAE	43.4	42.4	33.32	52.4
CYCLOTELLA STELLIGERA	6.2	6.0	3.31	5.2
MELOSIRA DISTANS V. A	9.3	9.0	1.73	2.7
MELOSIRA ITALICA VAR. TENUISSIMA	19.7	19.2	11.02	17.3
RHIZOSOLENIA ERIENSIS	4.1	4.0	15.51	24.4
SYNEDRA SP. A	4.1	4.0	1.73	2.7
CHRYSOPHYCEAE	2.0	1.9	0.26	0.4
CHROMULINA SPP.	1.0	0.9	0.21	0.3
DINOBRYON CYLINDRICUM	1.0	0.9	0.05	0.1
CRYPTOPHYCEAE	29.6	28.3	7.86	12.3
CHROOMONAS ACUTA	16.6	16.2	1.84	2.9
CRYPTOMONAS OVATA	3.1	3.0	3.22	5.0
CRYPTOMONAS PHASEOLUS	9.3	9.0	2.78	4.3
DINOPHYCEAE	7.2	7.0	18.20	28.6
PERIDINIUM INCONSPICUUM	6.2	6.0	16.18	25.4
UNIDENTIFIED DINOPHYCEAE	1.0	0.9	2.01	3.1
SAMPLE TOTALS:	102.2	99.9	63.54	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 05/10/77
TIME: 1140 SAMPLE DEPTH: 9.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	72.6	27.7	10.32	4.0
ANKISTRODESMUS FUSIFORMIS	2.0	0.7	0.21	0.0
MONORAPHIDIUM CONTORTUM	2.0	0.7	0.08	0.0
MOUGEOTIA SPP.	4.1	1.5	5.67	2.2
QUADRIGULA CLOSTERIOIDES	2.0	0.7	0.76	0.3
SCENEDESMUS SPP.	2.0	0.7	0.30	0.1
SCHROEDERIA SETIGERA	2.0	0.7	1.40	0.5
COCCOID GREENS	58.5	22.3	1.87	0.7
BACILLARIOPHYCEAE	100.0	38.1	150.81	59.3
CYCLOTELLA STELLIGERA	12.5	4.7	6.65	2.6
EUNOTIA SP. A	4.1	1.5	1.32	0.5
MELOSIRA DISTANS V. A	39.7	15.1	7.34	2.8
RHIZOSOLENIA ERIENSIS	35.5	13.5	132.52	52.1
SYNEDRA TENERA	4.1	1.5	1.20	0.4
SYNEDRA SP. A	4.1	1.5	1.74	0.7
CHRYSOPHYCEAE	33.1	12.6	5.01	1.9
CHROMULINA SPP.	4.1	1.5	0.84	0.3
DINOBRYON BAVARICUM	12.5	4.7	1.66	0.6
DINOBRYON DIVERGENS	6.2	2.3	1.10	0.4
KEPHYRION SPP.	2.0	0.7	0.18	0.0
UNIDENTIFIED CHRYSOPHYCEAE	8.3	3.1	1.20	0.4
CRYPTOPHYCEAE	22.7	8.6	11.00	4.3
CHROOMONAS ACUTA	8.3	3.1	0.92	0.3
CRYPTOMONAS EROSA	2.0	0.7	3.26	1.2
CRYPTOMONAS OVATA	4.1	1.5	4.32	1.7
CRYPTOMONAS PHASEOLUS	8.3	3.1	2.49	0.9
DINOPHYCEAE	29.2	11.1	75.90	29.8
PERIDINIUM INCONSPICUUM	29.2	11.1	75.90	29.8
UNKNOWN	4.1	1.5	1.19	0.4
0774-2-22	4.1	1.5	1.19	0.4
SAMPLE TOTALS:	261.7	99.8	254.23	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 1140 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	16.3	26.9	1.36	2.8
ANKISTRODESMUS FALCATUS	1.0	1.6	0.05	0.1
FRANCEIA DROESCHERI	1.0	1.6	0.19	0.4
MONORAPHIDIUM CONTORTUM	1.0	1.6	0.04	0.0
MONORAPHIDIUM SETIFORME	2.0	3.3	0.36	0.7
PLANKTOSPHAERIA GELATINOSA	2.0	3.3	0.40	0.8
COCCOID GREENS	9.3	15.3	0.29	0.6
BACILLARIOPHYCEAE	18.4	30.4	13.76	29.4
CYCLOTELLA STELLIGERA	6.2	10.2	3.31	7.0
MELOSIRA DISTANS V. A	6.2	10.2	1.15	2.4
NAVICULA NOTHA	1.0	1.6	0.37	0.7
RHIZOSOLENIA ERIENSIS	2.0	3.3	7.75	16.5
SYNEDRA TENERA	1.0	1.6	0.30	0.6
SYNEDRA SP. A	2.0	3.3	0.86	1.8
CHRYSOPHYCEAE	3.1	5.1	3.76	8.0
MALLOMONAS ACAROIDES	3.1	5.1	3.76	8.0
CRYPTOPHYCEAE	14.4	23.8	8.65	18.5
CHROOMONAS ACUTA	2.0	3.3	0.23	0.4
CRYPTOMONAS EROSA	3.1	5.1	4.87	10.4
CRYPTOMONAS OVATA	1.0	1.6	1.07	2.3
CRYPTOMONAS PHASEOLUS	8.3	13.7	2.47	5.3
DINOPHYCEAE	7.2	11.9	18.88	40.4
PERIDINIUM INCONSPICUUM	7.2	11.9	18.88	40.4
UNKNOWN	1.0	1.6	0.29	0.6
0774-2-22	1.0	1.6	0.29	0.6
SAMPLE TOTALS:	60.4	99.9	46.72	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 05/10/77
TIME: 1400 SAMPLE DEPTH: 10.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	49.6	25.3	15.84	6.5
CRUCIGENIA FENESTRATA	2.0	1.0	0.17	0.1
MONORAPHIDIUM SETIFORME	2.0	1.0	0.36	0.1
MOUGEOTIA SPP.	2.0	1.0	2.83	1.2
OOCYSTIS PUSILLA	2.0	1.0	0.15	0.1
STAURASTRUM CURVATUM	2.0	1.0	9.20	3.8
TETRAEDRON MINIMUM	2.0	1.0	1.91	0.8
COCCOID GREENS	37.6	19.2	1.20	0.5
BACILLARIOPHYCEAE	79.2	40.5	76.12	31.5
CYCLOTELLA STELLIGERA	6.2	3.1	3.32	1.3
MELOSIRA DISTANS V. A	35.5	18.1	6.57	2.7
MELOSIRA ITALICA VAR. TENUISSIMA	14.6	7.4	8.16	3.3
RHIZOSOLENIA ERIENSIS	14.6	7.4	54.56	22.6
SYNEDRA SP. A	8.3	4.2	3.49	1.4
CHRYSOPHYCEAE	18.7	9.5	2.40	1.0
DINOBRYON BAVARICUM	16.7	8.5	2.22	0.9
KEPHYRION SPP.	2.0	1.0	0.18	0.1
CRYPTOPHYCEAE	4.1	2.0	0.46	0.1
CHROOMONAS ACUTA	4.1	2.0	0.46	0.1
DINOPHYCEAE	37.5	19.1	144.18	59.8
PERIDINIUM ACICULIFERUM	2.0	1.0	52.02	21.6
PERIDINIUM INCONSPICUUM	35.5	18.1	92.16	38.2
UNKNOWN	6.2	3.1	1.78	0.7
0774-2-22	6.2	3.1	1.78	0.7
SAMPLE TOTALS:	195.3	99.9	240.81	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 1400 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	11.3	20.3	0.67	1.0
FRANCEIA DROESCHERI	1.0	1.8	0.19	0.3
MONORAPHIDIUM SETIFORME	1.0	1.8	0.18	0.3
COCCOID GREENS	9.3	16.7	0.29	0.4
BACILLARIOPHYCEAE	27.9	50.2	28.12	44.3
ACHNANTHES MICROCEPHALA	1.0	1.8	0.12	0.2
CYCLOTELLA STELLIGERA	5.2	9.3	2.76	4.3
MELOSIRA DISTANS V. A	7.2	12.9	1.34	2.1
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	7.3	2.32	3.6
RHIZOSOLENIA ERIENSIS	5.2	9.3	19.39	30.5
SYNEDRA SP. A	5.2	9.3	2.17	3.4
CHRYSOPHYCEAE	4.0	7.2	2.74	4.3
KEPHYRION SPP.	1.0	1.8	0.09	0.1
MALLOMONAS ACAROIDES	2.0	3.6	2.50	3.9
UNIDENTIFIED CHRYSOPHYCEAE	1.0	1.8	0.14	0.2
CRYPTOPHYCEAE	11.3	20.3	6.04	9.5
CHROOMONAS ACUTA	5.2	9.3	0.57	0.9
CRYPTOMONAS EROSA	1.0	1.8	1.62	2.5
CRYPTOMONAS OVATA	3.1	5.5	3.22	5.0
CRYPTOMONAS PHASEOLUS	2.0	3.6	0.61	0.9
DINOPHYCEAE	1.0	1.8	25.88	40.7
PERIDINIUM ACICULIFERUM	1.0	1.8	25.88	40.7
SAMPLE TOTALS:	55.5	99.9	63.47	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 05/10/77
TIME: 1437 SAMPLE DEPTH: 12.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	109.8	35.7	47.80	19.4
ANKISTRODESMUS FALCATUS	2.0	0.6	0.11	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	0.6	0.21	0.0
COSMARIUM SPP.	2.0	0.6	1.13	0.5
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.6	0.56	0.2
FRANCEIA DROESCHERI	2.0	0.6	0.39	0.1
GLOEOCYSTIS GIGAS	2.0	0.6	4.64	1.8
GOLENKINIA RADIATA	2.0	0.6	0.33	0.1
MONORAPHIDIUM SETIFORME	6.2	2.0	1.09	0.4
MOUGEOTIA SPP.	12.5	4.0	17.02	6.9
OOCYSTIS PUSILLA	8.3	2.7	1.80	0.7
STAURASTRUM CURVATUM	4.1	1.3	18.40	7.5
COCCOID GREENS	64.7	21.0	2.07	0.8
BACILLARIOPHYCEAE	122.9	40.0	96.45	39.2
CYCLOTELLA STELLIGERA	2.0	0.6	1.10	0.4
EUNOTIA SP. A	2.0	0.6	0.66	0.2
MELOSIRA DISTANS V. A	77.3	25.1	14.30	5.8
MELOSIRA ITALICA VAR. TENUISSIMA	6.2	2.0	3.49	1.4
RHIZOSOLENIA ERIENSIS	18.8	6.1	70.16	28.5
SYNEDRA TENERA	2.0	0.6	0.60	0.2
SYNEDRA SP. A	14.6	4.7	5.11	2.1
CHRYSOPHYCEAE	33.3	10.8	7.76	3.1
CHROMULINA SPP.	12.5	4.0	2.54	1.0
DINOBRYON BAVARICUM	18.8	6.1	2.50	1.0
MALLOMONAS PSEUDOCORONATA	2.0	0.6	2.72	1.1
CRYPTOPHYCEAE	12.4	4.0	3.32	1.3
CHROOMONAS ACUTA	10.4	3.3	1.15	0.4
CRYPTOMONAS OVATA	2.0	0.6	2.16	0.8
MYXOPHYCEAE	2.0	0.6	0.79	0.3
ANABAENA SPP.	2.0	0.6	0.79	0.3
DINOPHYCEAE	16.5	5.3	88.60	36.1
PERIDINIUM ACICULIFERUM	2.0	0.6	55.02	22.4
PERIDINIUM INCONSPICUUM	12.5	4.0	32.52	13.2
UNIDENTIFIED DINOPHYCEAE	2.0	0.6	1.05	0.4
UNKNOWN	10.2	3.3	0.72	0.2
0574-2-03	6.2	2.0	0.33	0.1
0574-2-04	2.0	0.6	0.32	0.1
0974-2-07	2.0	0.6	0.05	0.0
SAMPLE TOTALS:	307.1	99.9	245.46	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 1437 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	16.4	16.7	6.66	9.2
ANKISTRODESMUS FALCATUS	3.1	3.1	0.17	0.2
MONORAPHIDIUM CONTORTUM	1.0	1.0	0.04	0.0
MONORAPHIDIUM SETIFORME	2.0	2.0	0.36	0.5
STAURASTRUM PARADOXUM VAR. A	1.0	1.0	4.86	6.8
TETRAEDRON MINIMUM	1.0	1.0	0.95	1.3
COCCOID GREENS	8.3	8.4	0.26	0.3
BACILLARIOPHYCEAE	64.0	65.4	57.90	80.8
ATTHEYA ZACHARIASI	1.0	1.0	2.27	3.1
CYCLOTELLA STELLIGERA	3.1	3.1	1.65	2.3
EUNOTIA SP. A	1.0	1.0	0.32	0.4
MELOSIRA DISTANS V. A	17.6	17.9	3.27	4.5
MELOSIRA ITALICA VAR. TENUISSIMA	12.4	12.6	6.96	9.7
RHIZOSOLENIA ERIENSIS	7.2	7.3	27.15	37.9
SYNEDRA TENERA	1.0	1.0	0.30	0.4
SYNEDRA SP. A	18.7	19.1	7.82	10.9
TABELLARIA FENESTRATA	2.0	2.0	8.13	11.3
CRYPTOPHYCEAE	14.4	14.7	3.74	5.2
CHROOMONAS ACUTA	7.2	7.3	0.80	1.1
CRYPTOMONAS OVATA	1.0	1.0	1.07	1.5
CRYPTOMONAS PHASEOLUS	6.2	6.3	1.85	2.5
DINOPHYCEAE	1.0	1.0	2.69	3.7
PERIDINIUM INCONSPICUUM	1.0	1.0	2.69	3.7
UNKNOWN	2.0	2.0	0.59	0.8
0774-2-22	2.0	2.0	0.59	0.8
SAMPLE TOTALS:	97.8	99.9	71.59	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 05/10/77
TIME: 1240 SAMPLE DEPTH: 9.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	64.5	23.8	14.86	6.7
MONORAPHIDIUM SETIFORME	6.2	2.2	1.09	0.5
MOUGEOTIA SPP.	2.0	0.7	2.83	1.2
STAURASTRUM CURVATUM	2.0	0.7	9.20	4.1
COCCOID GREENS	54.3	20.0	1.73	0.7
BACILLARIOPHYCEAE	100.0	36.9	107.16	48.6
CYCLOTELLA STELLIGERA	29.2	10.7	15.53	7.0
EUNOTIA SP. A	2.0	0.7	0.66	0.3
MELOSIRA DISTANS V. A	29.2	10.7	5.41	2.4
RHIZOSOLENIA ERIENSIS	20.9	7.7	77.95	35.4
SYNEDRA TENERA	2.0	0.7	0.60	0.2
SYNEDRA SP. A	16.7	6.1	6.98	3.1
CHRYSOPHYCEAE	8.3	3.0	1.11	0.5
DINOBRYON BAVARICUM	8.3	3.0	1.11	0.5
CRYPTOPHYCEAE	62.5	23.0	19.19	8.7
CHROOMONAS ACUTA	31.3	11.5	3.47	1.5
CHROOMONAS REFLEXA	2.0	0.7	0.84	0.3
CRYPTOMONAS OVATA	8.3	3.0	8.64	3.9
CRYPTOMONAS PHASEOLUS	20.9	7.7	6.26	2.8
DINOPHYCEAE	29.2	10.7	75.90	34.4
PERIDINIUM INCONSPICUUM	29.2	10.7	75.90	34.4
UNKNOWN	6.2	2.2	1.78	0.8
0774-2-22	6.2	2.2	1.78	0.8
SAMPLE TOTALS:	270.7	99.9	220.01	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 1240 SAMPLE DEPTH: 11.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	38.5	24.1	7.97	7.3
MONORAPHIDIUM CONTORTUM	2.7	1.6	0.11	0.1
MONORAPHIDIUM SETIFORME	2.7	1.6	0.48	0.4
PLANKTOSPHAERIA GELATINOSA	1.3	0.8	0.27	0.2
STAURASTRUM CURVATUM	1.3	0.8	6.11	5.6
COCCOID GREENS	30.5	19.1	0.97	0.9
BACILLARIOPHYCEAE	62.0	38.8	31.31	28.8
CYCLOTELLA STELLIGERA	2.7	1.6	1.47	1.3
EUNOTIA SP. A	1.3	0.8	0.44	0.4
MELOSIRA DISTANS V. A	23.6	14.8	4.37	4.0
MELOSIRA ITALICA VAR. TENUISSIMA	11.1	6.9	6.20	5.7
NAVICULA NOTHA	1.3	0.8	0.49	0.4
RHIZOSOLENIA ERIENSIS	2.7	1.6	10.36	9.5
SYNEDRA TENERA	1.3	0.8	0.40	0.3
SYNEDRA SP. A	18.0	11.2	7.55	6.9
CHRYSOPHYCEAE	16.3	10.2	3.99	3.6
CHROMULINA SPP.	4.1	2.5	0.84	0.7
DINOBRYON BAVARICUM	5.5	3.4	0.73	0.6
DINOBRYON DIVERGENS	2.7	1.6	0.49	0.4
KEPHYRION SPP.	2.7	1.6	0.24	0.2
MALLOMONAS ACAROIDES	1.3	0.8	1.67	1.5
CRYPTOPHYCEAE	17.8	11.1	7.03	6.4
CHROOMONAS ACUTA	8.3	5.2	0.92	0.8
CHROOMONAS REFLEXA	1.3	0.8	0.56	0.5
CRYPTOMONAS OVATA	4.1	2.5	4.31	3.9
CRYPTOMONAS PHASEOLUS	4.1	2.5	1.24	1.1
MYXOPHYCEAE	1.3	0.8	0.05	0.0
ANACYSTIS SPP.	1.3	0.8	0.05	0.0
DINOPHYCEAE	22.2	13.9	57.69	53.2
PERIDINIUM INCONSPICUUM	22.2	13.9	57.69	53.2
UNKNOWN	1.3	0.8	0.39	0.3
0774-2-22	1.3	0.8	0.39	0.3
SAMPLE TOTALS:	159.4	99.8	108.46	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 05/10/77
TIME: 1255 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	9.2	7.6	0.45	0.2
MONORAPHIDIUM CONTORTUM	1.0	0.8	0.04	0.0
MONORAPHIDIUM SETIFORME	1.0	0.8	0.18	0.1
COCCOID GREENS	7.2	6.0	0.23	0.1
BACILLARIOPHYCEAE	82.8	69.0	137.64	78.2
CYCLOTELLA STELLIGERA	1.0	0.8	0.55	0.3
MELOSIRA DISTANS V. A	18.7	15.5	3.45	1.9
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	3.4	2.30	1.3
NAVICULA NOTHA	1.0	0.8	0.37	0.2
NITZSCHIA PALEA	1.0	0.8	0.51	0.3
RHIZOSOLENIA ERIENSIS	32.2	26.8	120.25	68.3
SYNEDRA TENERA	2.0	1.6	0.50	0.3
SYNEDRA SP. A	22.8	19.0	9.58	5.4
CHRYSOPHYCEAE	7.2	6.0	0.96	0.5
DINOBRYON BAVARICUM	7.2	6.0	0.96	0.5
CRYPTOPHYCEAE	7.2	6.0	1.67	0.9
CHROOMONAS ACUTA	3.1	2.5	0.34	0.1
CHROOMONAS REFLEXA	1.0	0.8	0.45	0.2
CRYPTOMONAS PHASEOLUS	3.1	2.5	0.92	0.5
DINOPHYCEAE	13.5	11.2	35.07	19.9
PERIDINIUM INCONSPICUUM	13.5	11.2	35.07	19.9
SAMPLE TOTALS:	119.9	99.9	175.83	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 1255 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	6.1	6.4	0.49	0.8
MONORAPHIDIUM SETIFORME	2.0	2.1	0.36	0.6
COCCOID GREENS	4.1	4.3	0.13	0.2
BACILLARIOPHYCEAE	48.5	51.1	30.76	54.8
CYCLOTELLA STELLIGERA	4.1	4.3	2.20	3.9
MELOSIRA DISTANS V. A	4.1	4.3	0.76	1.3
MELOSIRA ITALICA VAR. TENUISSIMA	27.0	28.5	15.08	26.8
NITZSCHIA PALEA	2.0	2.1	1.03	1.8
RHIZOSOLENIA ERIENSIS	2.0	2.1	7.75	13.8
SYNEDRA SP. A	9.3	9.8	3.91	6.9
CHRYSOPHYCEAE	2.0	2.1	1.34	2.3
KEPHYRION SPP.	1.0	1.0	0.09	0.1
MALLOMONAS ACAROIDES	1.0	1.0	1.25	2.2
CRYPTOPHYCEAE	35.1	37.0	20.21	36.0
CHROOMONAS ACUTA	11.4	12.0	1.26	2.2
CHROOMONAS REFLEXA	7.2	7.6	2.94	5.2
CRYPTOMONAS EROSA	2.0	2.1	3.24	5.7
CRYPTOMONAS OVATA	11.4	12.0	11.82	21.0
CRYPTOMONAS PHASEOLUS	3.1	3.2	0.92	1.6
DINOPHYCEAE	1.0	1.0	2.69	4.8
PERIDINIUM INCONSPICUUM	1.0	1.0	2.69	4.8
UNKNOWN	2.0	2.1	0.59	1.0
0774-2-22	2.0	2.1	0.59	1.0
SAMPLE TOTALS:	94.7	99.9	56.10	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 05/10/77
TIME: 835 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	8.2	6.7	6.00	3.9
COELASTRUM MICROPORUM	1.0	0.8	0.94	0.6
STAURASTRUM PARADOXUM VAR. A	1.0	0.8	4.86	3.1
COCCOID GREENS	6.2	5.1	0.19	0.1
BACILLARIOPHYCEAE	63.2	52.2	62.81	40.8
ASTERIONELLA FORMOSA	8.3	6.8	6.44	4.2
CYCLOTELLA STELLIGERA	4.1	3.3	2.20	1.4
EUNOTIA ZAZUMINENSIS	5.2	4.3	2.27	1.4
EUNOTIA SP. A	2.0	1.6	0.65	0.4
MELOSIRA DISTANS V. A	5.2	4.3	0.96	0.6
MELOSIRA ITALICA VAR. TENUISSIMA	12.4	10.2	6.96	4.5
RHIZOSOLENIA ERIENSIS	10.4	8.6	38.79	25.2
SYNEDRA SP. A	15.6	12.9	6.52	4.2
CHRYSOPHYCEAE	2.0	1.6	2.50	1.6
MALLOMONAS ACAROIDES	2.0	1.6	2.50	1.6
CRYPTOPHYCEAE	15.4	12.7	6.26	4.0
CHROOMONAS ACUTA	8.3	6.8	0.42	0.2
CHROOMONAS REFLEXA	1.0	0.8	0.42	0.2
CRYPTOMONAS OVATA	4.1	3.3	4.30	2.8
CRYPTOMONAS PHASEOLUS	2.0	1.6	0.61	0.4
DINOPHYCEAE	29.1	24.0	75.53	49.1
PERIDINIUM INCONSPICUUM	29.1	24.0	75.53	49.1
UNKNOWN	3.0	2.4	0.40	0.2
0574-2-03	2.0	1.6	0.14	0.0
0774-2-22	1.0	0.8	0.24	0.1
SAMPLE TOTALS:	120.9	99.9	153.54	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 05/10/77
TIME: 0835 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	8.2	9.2	5.27	5.5
ANKISTRODESMUS FALCATUS	1.0	1.1	0.05	0.0
MONORAPHIDIUM SETIFORME	1.0	1.1	0.18	0.1
STAURASTRUM PARADOXUM VAR. A	1.0	1.1	4.86	5.1
COCCOID GREENS	5.2	5.8	0.16	0.1
BACILLARIOPHYCEAE	39.3	44.2	35.84	37.8
CYCLOTELLA STELLIGERA	2.0	2.2	1.10	1.1
EUNOTIA ZAZUMINENSIS	4.1	4.6	1.81	1.9
EUNOTIA SP. A	1.0	1.1	0.32	0.3
MELOSIRA DISTANS V. A	3.1	3.4	0.57	0.6
MELOSIRA ITALICA VAR. TENUISSIMA	18.7	21.0	10.44	11.0
RHIZOSOLENIA ERIENSIS	5.2	5.8	19.39	20.5
SYNEDRA SP. A	5.2	5.8	2.17	2.2
CHRYSOPHYCEAE	2.0	2.2	2.50	2.6
MALLOMONAS ACAROIDES	2.0	2.2	2.50	2.6
CRYPTOPHYCEAE	23.7	26.7	11.09	11.7
CHROOMONAS ACUTA	10.4	11.7	1.15	1.2
CHROOMONAS REFLEXA	2.0	2.2	0.84	0.8
CRYPTOMONAS EROSA	2.0	2.2	3.24	3.4
CRYPTOMONAS OVATA	4.1	4.6	4.30	4.5
CRYPTOMONAS PHASEOLUS	5.2	5.8	1.54	1.6
DINOPHYCEAE	15.5	17.4	39.78	42.0
PERIDINIUM INCONSPICUUM	14.5	16.3	37.76	39.9
UNIDENTIFIED DINOPHYCEAE	1.0	1.1	2.01	2.1
SAMPLE TOTALS:	88.7	99.9	94.50	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1115 SAMPLE DEPTH: 6.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	112.0	29.0	52.67	23.2
ARTHRODESMUS SUBULATUS	4.1	1.0	24.07	10.6
CHLORELLA SPP.	2.0	0.5	0.23	0.1
COSMARIUM SPP.	4.1	1.0	2.22	1.0
CRUCIGENIA TETRAPEDIA	4.1	1.0	0.36	0.2
DICTYOSPHAERIUM PULCHELLUM	16.7	4.2	4.29	1.9
GOLENKINIA RADIATA	10.4	2.7	1.67	0.7
MOUGEOTIA SPP.	6.2	1.6	8.51	3.7
OOCYSTIS PARVA	6.2	1.6	0.90	0.4
OOCYSTIS SPP.	2.0	0.5	0.38	0.2
QUADRIGULA CLOSTERIOIDES	4.1	1.0	0.76	0.3
SELENASTRUM MINUTUM	33.4	8.6	1.55	0.7
COCCOID GREENS	16.5	4.2	1.07	0.5
UNIDENTIFIED CHLOROPHYCEAE	35.1	9.1	7.97	3.5
BACILLARIOPHYCEAE	2.0	0.5	25.33	11.1
ACHNANTHES SPP.	4.1	1.0	0.37	0.2
ASTERIONELLA FORMOSA	6.2	1.6	2.23	1.0
CYCLOTELLA STELLIGERA	100.3	25.8	3.32	1.5
MELOSIRA DISTANS VAR. ALPIGENA	8.3	2.1	1.55	0.7
MELOSIRA DISTANS V. A	4.1	1.0	15.59	6.9
RHIZOSOLENIA ERIENSIS	41.4	10.7	1.88	0.8
CHRYSOPHYCEAE	16.0	4.2	2.19	1.0
CHROMULINA SPP.	14.0	3.6	1.94	0.9
DINOBRYON BAVARICUM	4.1	1.0	0.45	0.2
DINOBRYON CYLINDRICUM	2.0	0.5	0.52	0.2
MALLOMONAS ACAROIDES	8.3	2.1	0.55	0.2
OCHROMONAS SPP.	2.0	0.5	0.72	0.3
UNIDENTIFIED CHRYSOPHYCEAE	14.4	3.7	2.72	1.2
HAPTOPHYCEAE	14.4	3.7	2.72	1.2
CHRYSOCHROMULINA PARVA	14.4	3.7	2.72	1.2
CRYPTOPHYCEAE	14.4	3.7	2.66	1.2
CHROOMONAS ACUTA	2.0	0.5	0.06	0.0
CRYPTOMONAS PHASEOLUS	112.7	29.0	13.71	6.0
MYXOPHYCEAE	4.1	1.0	2.25	1.0
ANABAENA SPP.	16.7	4.2	0.58	0.2
ANACYSTIS INCERTA	91.9	23.7	8.92	3.9
ANACYSTIS MONTANA	33.4	8.6	11.53	5.0
DINOPHYCEAE	20.9	5.4	57.67	25.4
PERIDINIUM CINCTUM	2.0	0.5	40.35	17.7
PERIDINIUM PUSILLUM	8.3	2.1	5.37	2.3
PERIDINIUM SPP.	10.4	2.7	16.23	7.1
UNIDENTIFIED DINOPHYCEAE	18.7	4.8	0.68	0.3
UNKNOWN	6.2	1.6	0.33	0.1
0574-2-03				

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0974-2-07	12.5	3.2	0.35	0.1
SAMPLE TOTALS:	384.3	99.8	225.80	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1125 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	18.5	16.3	1.57	2.7
ANKISTRODESMUS FUSIFORMIS	1.0	0.8	0.10	0.1
CRUCIGENIA TETRAPEDIA	1.0	0.8	0.09	0.1
MONORAPHIDIUM BRAUNII	4.1	3.6	0.52	0.9
SCENEDESMUS QUADRICAUDA	4.1	3.6	0.58	1.0
COCCOID GREENS	8.3	7.3	0.26	0.4
BACILLARIOPHYCEAE	71.3	62.8	34.19	60.3
CYCLOTELLA STELLIGERA	17.6	15.5	9.38	16.5
CYMBELLA AFFINIS	1.0	0.8	0.96	1.7
EUNOTIA ZAZUMINENSIS	1.0	0.8	0.45	0.8
EUNOTIA SP. A	2.0	1.7	0.65	1.1
MELOSIRA DISTANS V. A	19.7	17.3	3.65	6.4
MELOSIRA ITALICA	6.2	5.4	6.88	12.1
MELOSIRA ITALICA VAR. TENUISSIMA	15.6	13.7	8.70	15.3
NAVICULA CRYPTOCEPHALA	1.0	0.8	0.38	0.7
NITZSCHIA SPP.	1.0	0.8	0.56	1.0
SYNEDRA SP. A	6.2	5.4	2.60	4.6
CHRYSOPHYCEAE	15.4	13.5	16.75	29.5
CHROMULINA SPP.	1.0	0.8	0.21	0.4
MALLOMONAS ACAROIDES	12.4	10.9	15.05	26.5
MALLOMONAS SPP.	1.0	0.8	1.34	2.4
UNIDENTIFIED CHRYSOPHYCEAE	1.0	0.8	0.14	0.2
CRYPTOPHYCEAE	7.6	6.2	4.07	7.2
CHROOMONAS ACUTA	2.0	1.7	0.23	0.4
CRYPTOMONAS OVATA	3.1	2.7	3.22	5.6
CRYPTOMONAS PHASEOLUS	2.0	1.7	0.61	1.0
UNKNOWN	1.0	0.8	0.02	0.0
0974-2-07	1.0	0.8	0.02	0.0
SAMPLE TOTALS:	113.3	99.9	56.63	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1140 SAMPLE DEPTH: 9.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	128.9	35.4	25.67	11.9
ANKISTRODESMUS FALCATUS	4.1	1.1	0.22	0.1
COSMARIUM SPP.	6.2	1.7	3.41	1.5
CRUCIGENIA TETRAPEDIA	22.9	6.3	2.02	0.9
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	1.1	0.94	0.4
DICTYOSPHAERIUM PULCHELLUM	4.1	1.1	0.81	0.4
MOUGEOTIA SPP.	2.0	0.5	2.83	1.3
OOCYSTIS SPP.	10.4	2.8	0.63	0.3
QUADRIGULA CLOSTERIOIDES	4.1	1.1	1.14	0.5
COCCOID GREENS	52.2	14.3	1.67	0.7
UNIDENTIFIED CHLOROPHYCEAE	18.8	5.1	11.96	5.5
BACILLARIOPHYCEAE	24.7	6.7	15.85	7.3
CYCLOTELLA STELLIGERA	4.1	1.1	5.21	2.4
EUNOTIA ZAZUMINENSIS	8.3	2.2	3.65	1.7
MELOSIRA DISTANS VAR. ALPIGENA	8.3	2.2	1.80	0.8
MELOSIRA DISTANS V. A	2.0	0.5	0.38	0.1
RHIZOSOLENIA ERIENSIS	2.0	0.5	7.79	3.6
CHRYSOPHYCEAE	22.8	6.2	5.41	2.5
DINOBRYON BAVARICUM	10.4	2.8	1.38	0.6
MALLOMONAS ACAROIDES	2.0	0.5	2.52	1.2
UNIDENTIFIED CHRYSOPHYCEAE	10.4	2.8	1.50	0.7
HAPTOPHYCEAE	27.1	7.4	5.05	2.3
CHRYSOCHROMULINA PARVA	27.1	7.4	5.05	2.3
CRYPTOPHYCEAE	10.2	2.8	3.96	1.8
CHROOMONAS ACUTA	6.2	1.7	0.66	0.3
CRYPTOMONAS PHASEOLUS	2.0	0.5	0.66	0.3
CRYPTOMONAS REFLEXA	2.0	0.5	2.64	1.2
MYXOPHYCEAE	110.6	30.4	10.23	4.7
AGMENELLUM QUADRIDUPLICATUM	2.0	0.5	0.03	0.0
ANACYSTIS INCERTA	4.1	1.1	0.06	0.0
ANACYSTIS MONTANA	104.5	28.7	10.03	4.7
DINOPHYCEAE	18.4	5.0	147.67	68.7
PERIDINIUM CINCTUM	4.1	1.1	115.35	53.7
PERIDINIUM INCONSPICUUM	4.1	1.1	10.84	5.0
PERIDINIUM PUSILLUM	2.0	0.5	4.03	1.8
PERIDINIUM SPP.	2.0	0.5	5.27	2.4
UNIDENTIFIED DINOPHYCEAE	6.2	1.7	12.17	5.6
UNKNOWN	20.7	5.6	0.94	0.4
0574-2-03	4.1	1.1	0.22	0.1
0974-2-07	14.6	4.0	0.40	0.1
0976-2-01	2.0	0.5	0.30	0.1
SAMPLE TOTALS:	363.4	99.8	214.69	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1140 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	35.5	20.7	4.88	7.0
CRUCIGENIA QUADRATA	1.3	0.7	0.17	0.2
DICTYOSPHAERIUM PULCHELLUM	1.3	0.7	0.27	0.3
MONORAPHIDIUM CONTORTUM	2.7	1.5	0.11	0.1
SCENEDESMUS ACUMINATUS	1.3	0.7	0.68	1.0
SCENEDESMUS QUADRICAUDA	2.7	1.5	0.26	0.3
SELENASTRUM MINUTUM	1.3	0.7	0.05	0.0
COCCOID GREENS	20.8	12.1	0.66	0.9
UNIDENTIFIED CHLOROPHYCEAE	4.1	2.4	2.65	3.8
BACILLARIOPHYCEAE	76.1	44.5	43.86	63.2
ASTERIONELLA FORMOSA	2.7	1.5	1.48	2.1
CYCLOTELLA STELLIGERA	11.1	6.5	5.90	8.5
MELOSIRA DISTANS V. A	34.7	20.3	6.42	9.2
MELOSIRA ITALICA	12.5	7.3	13.67	19.7
MELOSIRA ITALICA VAR. TENUISSIMA	5.5	3.2	3.10	4.4
RHIZOSOLENIA ERIENSIS	2.7	1.5	10.36	14.9
SYNEDRA SP. A	6.9	4.0	2.90	4.1
CHRYSOPHYCEAE	30.3	17.7	15.89	22.9
MALLOMONAS ACAROIDES	8.3	4.8	10.05	14.5
OCHROMONAS SPP.	16.6	9.7	5.05	7.3
PSEUDOKEPHYRION SPP.	1.3	0.7	0.18	0.3
UNIDENTIFIED CHRYSOPHYCEAE	4.1	2.4	0.60	0.9
CRYPTOPHYCEAE	20.6	12.0	0.37	0.5
CHROOMONAS ACUTA	15.2	8.9	1.69	2.4
CRYPTOMONAS OVATA	1.3	0.7	1.43	2.1
CRYPTOMONAS PHASEOLUS	4.1	2.4	1.24	1.8
UNKNOWN	8.2	4.8	0.26	0.4
0574-2-03	1.3	0.7	0.07	0.1
0974-2-07	6.9	4.0	0.19	0.2
SAMPLE TOTALS:	170.7	99.9	69.28	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1015 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	204.0	33.2	80.26	14.9
ARTHRODESMUS SUBULATUS	4.1	0.6	24.07	4.4
COSMARIUM SPP.	8.3	1.3	4.54	0.8
CRUCIGENIA TETRAPEDIA	33.4	5.4	2.94	0.5
ELAKATOTHRIX GELATINOSA	4.1	0.6	0.24	0.0
GLOEOCYSTIS GIGAS	12.5	2.0	27.88	5.2
GOLENKINIA RADIATA	8.3	1.3	1.33	0.2
MOUGEOTIA SPP.	8.3	1.3	11.35	2.1
OOCYSTIS PUSILLA	4.1	0.6	1.20	0.2
SCENEDESMUS QUADRICAUDA	4.1	0.6	0.39	0.0
SELENASTRUM MINUTUM	4.1	0.6	0.15	0.0
COCCOID GREENS	108.6	17.7	3.47	0.6
UNIDENTIFIED CHLOROPHYCEAE	4.1	0.6	2.65	0.4
BACILLARIOPHYCEAE	20.7	3.3	18.66	3.4
ACHNANTHES SPP.	4.1	0.6	0.75	0.1
MELOSIRA DISTANS V. A	12.5	2.0	2.31	0.4
RHIZOSOLENIA ERIENSIS	4.1	0.6	15.59	2.9
CHRYSOPHYCEAE	45.8	7.4	57.66	10.7
CHRYSOSPHAERELLA LONGISPINA	8.3	1.3	52.56	9.8
DINOBRYON BAVARICUM	29.2	4.7	3.89	0.7
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.3	1.20	0.2
HAPTOPHYCEAE	66.8	10.9	12.43	2.3
CHRYSOCHROMULINA PARVA	66.8	10.9	12.43	2.3
CRYPTOPHYCEAE	29.1	4.7	7.10	1.3
CHROOMONAS ACUTA	25.0	4.0	2.78	0.5
CRYPTOMONAS OVATA	4.1	0.6	4.32	0.8
MYXOPHYCEAE	171.3	27.9	15.60	2.9
ANACYSTIS INCERTA	8.3	1.3	0.11	0.0
ANACYSTIS MONTANA	163.0	26.6	15.48	2.8
DINOPHYCEAE	54.1	8.8	343.54	64.0
PERIDINIUM ACICULIFERUM	4.1	0.6	104.04	19.4
PERIDINIUM PUSILLUM	16.7	2.7	32.28	6.0
PERIDINIUM WISCONSINENSE	4.1	0.6	150.38	28.0
UNIDENTIFIED DINOPHYCEAE	29.2	4.7	56.82	10.6
UNKNOWN	20.8	3.3	0.69	0.1
0574-2-03	4.1	0.6	0.22	0.0
0974-2-07	16.7	2.7	0.46	0.0
SAMPLE TOTALS:	612.6	99.8	535.97	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1015 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	27.5	22.8	17.27	23.4
ANKISTRODESMUS FUSIFORMIS	1.0	0.8	0.10	0.1
ARTHRODESMUS SUBULATUS	1.0	0.8	5.98	8.1
CRUCIGENIA TETRAPEDIA	3.1	2.5	0.22	0.3
DICTYOSPHAERIUM PULCHELLUM	1.0	0.8	0.40	0.5
GLOEOCYSTIS GIGAS	2.0	1.6	6.93	9.4
GOLENKINIA RADIATA	1.0	0.8	0.16	0.2
GYROMITUS CORDIFORMIS	2.0	1.6	1.80	2.4
OOCYSTIS PARVA	1.0	0.8	0.02	0.0
SCENEDESMUS BIJUGA	2.0	1.6	0.32	0.4
SCHROEDERIA SETIGERA	1.0	0.8	0.69	0.9
COCCOID GREENS	12.4	10.3	0.39	0.5
BACILLARIOPHYCEAE	59.0	49.0	47.36	64.3
ASTERIONELLA FORMOSA	1.0	0.8	0.55	0.7
CYCLOTELLA STELLIGERA	12.4	10.3	6.62	8.9
MELOSIRA DISTANS V. A	26.0	21.6	4.81	6.5
MELOSIRA ITALICA	9.3	7.7	10.23	13.8
NITZSCHIA SPP.	1.0	0.8	0.56	0.7
RHIZOSOLENIA ERIENSIS	6.2	5.1	23.27	31.5
SYNEDRA SP. A	3.1	2.5	1.30	1.7
CHRYSOPHYCEAE	10.3	8.5	1.47	1.9
DINOBRYON BAVARICUM	2.0	1.6	0.27	0.3
UNIDENTIFIED CHRYSOPHYCEAE	8.3	6.8	1.19	1.6
HAPTOPHYCEAE	1.0	0.8	0.19	0.2
CHRYSOCHROMULINA PARVA	1.0	0.8	0.19	0.2
CRYPTOPHYCEAE	11.3	9.3	3.05	4.1
CHROOMONAS ACUTA	7.2	5.9	0.80	1.0
CRYPTOMONAS PHASEOLUS	3.1	2.5	0.92	1.2
CRYPTOMONAS REFLEXA	1.0	0.8	1.31	1.8
MYXOPHYCEAE	1.0	0.8	0.01	0.0
AGMENELLUM QUADRIDUPLICATUM	2.0	1.6	0.02	0.0
DINOPHYCEAE	1.0	0.8	2.00	2.7
PERIDINIUM PUSILLUM	1.0	0.8	0.04	0.0
UNIDENTIFIED DINOPHYCEAE	8.2	6.8	0.24	0.3
UNKNOWN	1.0	0.8	0.04	0.0
0774-2-24	7.2	5.9	0.20	0.3
0974-2-07				
SAMPLE TOTALS:	120.3	99.9	73.64	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1215 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	237.5	27.8	41.76	4.0
ANKISTRODESMUS FALCATUS	4.1	0.4	0.22	0.0
COSMARIUM TINCTUM	16.7	1.9	6.38	0.6
CRUCIGENIA TETRAPEDIA	45.9	5.3	54.00	5.2
DICTYOSPHAERIUM EHRENBERGIANUM	12.5	1.4	2.06	0.2
DICTYOSPHAERIUM PULCHELLUM	4.1	0.4	1.03	0.1
GOLENKINIA RADIATA	12.5	1.4	2.00	0.2
MOUGEOTIA SPP.	4.1	0.4	5.67	0.5
OOCYSTIS PARVA	4.1	0.4	1.20	0.1
OOCYSTIS SPP.	4.1	0.4	0.25	0.0
SCENEDESMUS BIJUGA	25.0	2.9	2.25	0.2
SCHROEDERIA SETIGERA	8.3	0.9	5.60	0.5
COCCOID GREENS	83.6	9.8	2.67	0.2
UNIDENTIFIED CHLOROPHYCEAE	12.5	1.4	7.87	0.7
BACILLARIOPHYCEAE	541.1	63.4	86.26	8.4
CYCLOTELLA STELLIGERA	4.1	0.4	2.22	0.2
MELOSIRA DISTANS V. A	25.0	2.9	4.63	0.4
RHIZOSOLENIA ERIENSIS	20.9	2.4	77.84	7.5
UNIDENTIFIED PENNATE DIATOMS	4.1	0.4	1.45	0.1
CHRYSOPHYCEAE	116.8	13.7	28.04	2.7
CHROMULINA SPP.	16.7	1.9	3.39	0.3
CHRYSOSPHAERELLA LONGISPINA	8.3	0.9	12.61	1.2
DINOBRYON BAVARICUM	66.8	7.8	8.87	0.8
KEPHYRION SPP.	8.3	0.9	0.74	0.0
UNIDENTIFIED CHRYSOPHYCEAE	16.7	1.9	2.49	0.2
HAPTOPHYCEAE	112.8	13.2	20.99	2.0
CHRYSOCHROMULINA PARVA	112.8	13.2	20.99	2.0
CRYPTOPHYCEAE	12.5	1.4	2.17	0.2
CHROOMONAS ACUTA	8.3	0.9	2.17	0.2
CRYPTOMONAS PHASEOLUS	4.1	0.4	0.00	0.0
MYXOPHYCEAE	167.2	19.6	15.54	1.5
ANACYSTIS MONTANA	167.2	19.6	15.54	1.5
DINOPHYCEAE	104.9	12.3	830.01	80.9
PERIDINIUM ACICULIFERUM	20.9	2.4	520.02	50.7
PERIDINIUM INCONSPICUUM	8.3	0.9	21.66	2.1
PERIDINIUM PUSILLUM	25.0	2.9	48.45	4.7
PERIDINIUM WISCONSINENSE	4.1	0.4	150.38	14.6
UNIDENTIFIED DINOPHYCEAE	45.9	5.3	89.25	8.7
UNKNOWN	45.9	5.3	1.83	0.1
0574-2-03	20.9	2.4	1.13	0.1
0974-2-07	25.0	2.9	0.70	0.0
SAMPLE TOTALS:	850.9	99.8	1026.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1215 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	10.1	9.5	7.90	9.0
ARTHRODESMUS SUBULATUS	1.0	0.9	5.98	6.8
DICTYOSPHAERIUM PULCHELLUM	1.0	0.9	0.20	0.2
MONORAPHIDIUM CONTORTUM	1.0	0.9	0.04	0.0
SCENEDESMUS QUADRICAUDA	1.0	0.9	0.09	0.1
SCENEDESMUS SPP.	1.0	0.9	0.15	0.2
COCCOID GREENS	3.1	2.9	0.09	0.1
UNIDENTIFIED CHLOROPHYCEAE	2.0	1.8	1.32	1.5
BACILLARIOPHYCEAE	39.2	36.9	63.92	73.0
CYCLOTELLA STELLIGERA	7.2	6.7	3.86	4.4
MELOSIRA DISTANS V. A	7.2	6.7	1.33	1.5
MELOSIRA ITALICA	5.2	4.9	5.68	6.5
NITZSCHIA SPP.	1.0	0.9	0.56	0.6
RHIZOSOLENIA ERIENSIS	13.5	12.7	50.42	57.6
SYNEDRA SP. A	4.1	3.8	1.73	2.0
SYNEDRA SPP.	1.0	0.9	0.24	0.3
CHRYSOPHYCEAE	23.8	22.4	7.04	8.0
CHROMULINA SPP.	11.4	10.7	2.32	2.6
MALLOMONAS ACAROIDES	1.0	0.9	1.25	1.4
OCHROMONAS SPP.	11.4	10.7	3.46	3.9
CRYPTOPHYCEAE	20.6	19.4	6.25	7.1
CHROOMONAS ACUTA	13.5	12.7	1.50	1.7
CRYPTOMONAS OVATA	2.0	1.8	1.25	1.4
CRYPTOMONAS PHASEOLUS	4.1	3.8	1.23	1.4
CRYPTOMONAS REFLEXA	1.0	0.9	1.30	1.5
DINOPHYCEAE	1.0	0.9	0.01	0.0
UNIDENTIFIED DINOPHYCEAE	1.0	0.9	0.40	0.5
UNKNOWN	11.4	10.7	0.16	0.2
0574-2-03	3.1	2.9	0.23	0.3
0974-2-07	8.3	7.8		
SAMPLE TOTALS:	106.1	99.9	87.49	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1510 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	97.0	29.8	71.00	28.6
ARTHRODESMUS SUBULATUS	2.0	0.6	12.00	4.8
COSMARIUM SPP.	2.0	0.6	1.13	0.4
CRUCIGENIA TETRAPEDIA	29.0	9.0	2.57	1.0
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.6	0.37	0.1
DICTYOSPHAERIUM PULCHELLUM	4.0	1.2	0.81	0.3
ELAKATOTHRIX GELATINOSA	2.0	0.6	0.25	0.1
GLOEOCYSTIS VESICULOSA	2.0	0.6	0.55	0.2
MOUGEOTIA SPP.	6.0	1.8	0.51	0.2
OOCYSTIS SPP.	4.0	1.2	0.50	0.2
PLANKTOSPHAERIA GELATINOSA	2.0	0.6	0.07	0.0
SELENASTRUM MINUTUM	2.0	0.6	0.03	0.0
STAURASTRUM CURVATUM VAR. ELONGATUM	2.0	0.6	0.03	0.0
STAURASTRUM CUSPIDATUM	2.0	0.6	0.34	0.1
COCCOID GREENS	31.0	9.5	1.00	0.4
UNIDENTIFIED CHLOROPHYCEAE	14.0	4.3	1.05	0.4
BACILLARIOPHYCEAE	20.7	6.4	30.65	12.1
CYCLOTELLA STELLIGERA	12.0	3.7	0.38	0.1
MELOSIRA DISTANS V. A	2.0	0.6	0.38	0.1
RHIZOSOLENIA ERIENSIS	6.0	1.8	23.38	9.2
CHRYSOPHYCEAE	79.0	24.3	38.30	15.1
CHRYSOSPHAERELLA LONGISPINA	27.0	8.3	27.38	10.8
DINOBRYON BAVARICUM	33.0	10.2	5.05	2.0
DINOBRYON CYLINDRICUM	4.0	1.2	0.45	0.2
MALLOMONAS ACAROIDES	2.0	0.6	0.53	0.2
OCHROMONAS SPP.	2.0	0.6	0.27	0.1
UNIDENTIFIED CHRYSOPHYCEAE	10.0	3.1	1.40	0.6
HAPTOPHYCEAE	22.0	7.0	2.27	0.9
CHRYSOCHROMULINA PARVA	22.0	7.0	2.27	0.9
CRYPTOPHYCEAE	8.0	2.5	1.46	0.6
CHROOMONAS ACUTA	2.0	0.6	0.26	0.1
CRYPTOMONAS PHASEOLUS	6.0	1.8	1.20	0.5
MYXOPHYCEAE	56.0	17.3	3.60	1.4
AGMENELLUM QUADRIDUPLICATUM	2.0	0.6	0.03	0.0
ANACYSTIS INCERTA	2.0	0.6	0.34	0.1
ANACYSTIS MONTANA	52.0	16.1	3.23	1.3
DINOPHYCEAE	4.0	1.2	9.72	3.8
PERIDINIUM WISCONSINENSE	2.0	0.6	0.20	0.1
UNIDENTIFIED DINOPHYCEAE	2.0	0.6	9.52	3.7
UNKNOWN	27.0	8.3	1.40	0.6
0574-2-03	2.0	0.6	0.00	0.0
0974-2-07	14.0	4.3	1.40	0.6
0976-2-01	10.4	3.2	1.53	0.6

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	323.4	99.7	247.05	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1510 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	21.7	23.3	8.68	14.9
ANKISTRODESMUS FALCATUS VAR. MIRABILIS	1.0	1.0	0.11	0.2
ARTHRODESMUS SUBULATUS	1.0	1.0	5.98	10.3
SCENEDESMUS QUADRICAUDA	1.0	1.0	0.09	0.1
COCCOID GREENS	15.6	16.7	0.49	0.8
UNIDENTIFIED CHLOROPHYCEAE	3.1	3.3	1.98	3.4
BACILLARIOPHYCEAE	36.2	38.9	37.07	63.7
CYCLOTELLA STELLIGERA	5.2	5.5	2.76	4.7
MELOSIRA DISTANS V. A	12.4	13.3	2.30	3.9
MELOSIRA ITALICA	5.2	5.5	3.68	6.3
RHIZOSOLENIA ERIENSIS	6.2	6.6	23.27	40.0
SYNEDRA SP. A	7.2	7.7	3.04	5.2
CHRYSOPHYCEAE	20.7	22.2	7.76	13.3
DINOBRYON BAVARICUM	3.1	3.3	0.41	0.7
MALLOMONAS ACAROIDES	3.1	3.3	3.76	6.4
OCHROMONAS SPP.	9.3	10.0	2.83	4.8
UNIDENTIFIED CHRYSOPHYCEAE	5.2	5.5	0.74	1.2
HAPTOPHYCEAE	1.0	1.0	0.19	0.3
CHRYSOCHROMULINA PARVA	1.0	1.0	0.19	0.3
CRYPTOPHYCEAE	10.3	11.0	2.30	3.9
CHROOMONAS ACUTA	8.3	8.9	0.92	1.5
CRYPTOMONAS OVATA	1.0	1.0	1.07	1.8
CRYPTOMONAS PHASEOLUS	1.0	1.0	0.30	0.5
DINOPHYCEAE	1.0	1.0	0.01	0.0
UNIDENTIFIED DINOPHYCEAE	1.0	1.0	0.01	0.0
UNKNOWN	2.0	2.1	0.05	0.0
0974-2-07	2.0	2.1	0.05	0.0
SAMPLE TOTALS:	92.9	99.8	58.09	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1430 SAMPLE DEPTH: 9.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	212.6	24.6	30.29	11.7
ASTEROCOCCUS LIMNETICUS	4.1	0.4	1.54	0.6
COSMARIUM SPP.	4.1	0.4	2.27	0.8
CRUCIGENIA TETRAPEDIA	62.7	7.2	5.51	2.1
GLOEOCYSTIS VESICULOSA	37.6	4.3	4.93	1.8
GOLENKINIA RADIATA	4.1	0.4	0.66	0.2
MONORAPHIDIUM CONTORTUM	4.1	0.4	0.17	0.0
MOUGEOTIA SPP.	4.1	0.4	5.67	2.2
SCENEDESMUS BIJUGA	4.1	0.4	0.73	0.2
SCENEDESMUS SPP.	8.3	0.9	1.23	0.4
COCCOID GREENS	79.5	9.2	2.54	0.9
BACILLARIOPHYCEAE	58.3	6.7	65.60	25.2
MELOSIRA DISTANS V. A	16.7	1.9	3.09	1.2
MELOSIRA ITALICA VAR. TENUISSIMA	25.0	2.9	13.99	5.4
RHIZOSOLENIA ERIENSIS	12.5	1.4	46.77	18.0
SYNEDRA SP. A	4.1	0.4	1.74	0.6
CHRYSOPHYCEAE	95.8	11.1	42.69	16.4
CHROMULINA SPP.	4.1	0.4	0.84	0.3
CHRYSOSPHAERELLA LONGISPINA	45.9	5.3	33.65	12.9
DINOBRYON BAVARICUM	16.7	1.9	2.52	1.0
KEPHYRION SPP.	4.1	0.4	0.37	0.1
OCHROMONAS SPP.	12.5	1.4	3.77	1.4
UNIDENTIFIED CHRYSOPHYCEAE	12.5	1.4	1.80	0.7
HAPTOPHYCEAE	37.6	4.3	6.99	2.7
CHRYSOCHROMULINA PARVA	37.6	4.3	6.99	2.7
CRYPTOPHYCEAE	20.9	2.4	18.77	7.2
CHROOMONAS ACUTA	12.5	1.4	14.39	5.5
CRYPTOMONAS EROSA	8.3	0.9	13.05	5.0
CRYPTOMONAS OVATA	4.1	0.4	1.34	0.5
MYXOPHYCEAE	346.9	40.1	20.55	7.9
AGMENELLUM QUADRIDUPLICATUM	20.9	2.4	0.27	0.1
ANACYSTIS INCERTA	12.5	1.4	0.07	0.0
ANACYSTIS MONTANA	313.5	36.3	20.21	7.8
DINOPHYCEAE	33.4	3.8	68.99	26.5
GLENODINIUM ARMATUM	4.1	0.4	66.98	25.7
PERIDINIUM INCONSPICUUM	4.1	0.4	1.84	0.7
PERIDINIUM SPP.	4.1	0.4	1.54	0.5
UNIDENTIFIED DINOPHYCEAE	20.9	2.4	0.58	0.2
UNKNOWN	50.3	5.8	4.25	1.6
0574-2-03	8.3	0.9	0.55	0.2
0774-2-34	16.7	1.9	0.61	0.2
0974-2-07	20.9	2.4	0.58	0.2
0976-2-01	4.1	0.4	0.61	0.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	859.3	99.8	256.16	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1430 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	36.1	25.5	4.29	5.9
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	3.1	2.1	0.31	0.4
GYROMITUS CORDIFORMIS	1.0	0.7	0.90	1.2
MONORAPHIDIUM CONTORTUM	1.0	0.7	0.04	0.0
MONORAPHIDIUM SETIFORME	2.0	1.4	0.36	0.5
MOUGEOTIA SPP.	1.0	0.7	1.41	1.9
SCENEDESMUS SPP.	3.1	2.1	0.46	0.6
COCCOID GREENS	24.9	17.6	0.79	1.1
BACILLARIOPHYCEAE	49.5	34.9	42.15	58.8
CYCLOTELLA STELLIGERA	14.5	10.2	7.73	10.8
MELOSIRA DISTANS V. A	21.8	15.4	4.04	5.6
MELOSIRA ITALICA VAR. TENUISSIMA	1.0	0.7	0.58	0.8
NAVICULA CRYPTOCEPHALA	1.0	0.7	0.38	0.5
NITZSCHIA SUBLINEARIS	2.0	1.4	1.47	2.0
RHIZOSOLENIA ERIENSIS	7.2	5.0	2.16	3.0
SYNEDRA SP. A	1.0	0.7	0.43	0.6
UNIDENTIFIED PENNATE DIATOMS	1.0	0.7	0.36	0.5
CHRYSOPHYCEAE	22.6	15.9	10.48	14.6
CHROMULINA SPP.	1.0	0.7	0.21	0.3
DINOBRYON BAVARICUM	1.0	0.7	0.13	0.2
KEPHYRION SPP.	1.0	0.7	0.09	0.1
MALLOMONAS ACAROIDES	3.1	2.1	3.76	5.3
MALLOMONAS SPP.	2.0	1.4	2.69	3.8
OCHROMONAS SPP.	9.3	6.5	2.83	3.9
UNIDENTIFIED CHRYSOPHYCEAE	5.2	3.6	0.77	1.1
CRYPTOPHYCEAE	18.7	13.2	2.07	2.9
CHROOMONAS ACUTA	18.7	13.2	2.07	2.9
DINOPHYCEAE	1.0	0.7	11.92	16.6
PERIDINIUM DEFLANDREI	1.0	0.7	11.92	16.6
UNKNOWN	13.4	9.4	0.62	0.8
0574-2-03	9.3	6.5	0.50	0.7
0974-2-07	4.1	2.9	0.11	0.1
SAMPLE TOTALS:	141.3	99.8	71.55	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1320 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	47.5	22.0	50.53	17.9
ARTHRODESMUS SUBULATUS	2.0	0.9	12.03	4.2
GOLENKINIA RADIATA	2.0	0.9	0.33	0.1
MOUGEOTIA SPP.	6.2	2.8	11.35	4.0
SCENEDESMUS SPP.	2.0	0.9	0.30	0.1
STAURASTRUM PENTACERUM	2.0	0.9	22.91	8.1
COCCOID GREENS	29.2	13.5	0.93	0.3
UNIDENTIFIED CHLOROPHYCEAE	4.1	1.9	2.65	0.9
BACILLARIOPHYCEAE	53.9	25.0	31.45	11.1
CYCLOTELLA STELLIGERA	10.4	4.8	5.54	1.9
CYCLOTELLA SPP.	2.0	0.9	0.97	0.3
MELOSIRA DISTANS V. A	33.4	15.5	6.18	2.2
MELOSIRA ITALICA	2.0	0.9	2.28	0.8
RHIZOSOLENIA ERIENSIS	4.1	1.9	15.59	5.5
SYNEDRA SP. A	2.0	0.9	0.87	0.3
CHRYSOPHYCEAE	41.4	19.1	11.93	4.2
CHROMULINA SPP.	12.5	5.8	2.54	0.9
DINOBRYON BAVARICUM	12.5	5.8	1.66	0.5
MALLOMONAS ACAROIDES	2.0	0.9	2.52	0.8
MALLOMONAS GLOBOSA	2.0	0.9	2.40	0.8
OCHROMONAS SPP.	6.2	2.8	1.89	0.6
UNIDENTIFIED CHRYSOPHYCEAE	6.2	2.8	0.90	0.3
HAPTOPHYCEAE	12.5	5.8	2.33	0.8
CHRYSOCHROMULINA PARVA	12.5	5.8	2.33	0.8
CRYPTOPHYCEAE	20.8	9.6	3.45	1.2
CHROOMONAS ACUTA	14.6	6.7	1.62	0.5
CRYPTOMONAS PHASEOLUS	6.2	2.8	1.86	0.6
MYXOPHYCEAE	6.2	2.8	0.80	0.2
ANACYSTIS MONTANA	6.2	2.8	0.80	0.2
DINOPHYCEAE	29.0	13.4	180.00	64.1
PERIDINIUM ACICULIFERUM	2.0	0.9	52.02	18.5
PERIDINIUM INCONSPICUUM	6.2	2.8	16.26	5.7
PERIDINIUM WISCONSINENSE	2.0	0.9	75.15	26.7
UNIDENTIFIED DINOPHYCEAE	18.8	8.7	36.52	13.0
UNKNOWN	4.0	1.8	0.17	0.0
0574-2-03	2.0	0.9	0.11	0.0
0974-2-07	2.0	0.9	0.05	0.0
SAMPLE TOTALS:	215.3	99.7	280.73	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1320 SAMPLE DEPTH: 11.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	29.9	19.2	10.91	3.3
DICTYOSPHAERIUM EHRENBERGIANUM	1.3	0.8	0.25	0.0
DICTYOSPHAERIUM PULCHELLUM	1.3	0.8	0.27	0.0
GOLENKINIA RADIATA	1.3	0.8	0.22	0.0
OOCYSTIS SPP.	1.3	0.8	0.16	0.0
SCENEDESMUS QUADRICAUDA	1.3	0.8	0.26	0.0
STAURASTRUM PARADOXUM VAR. A	1.3	0.8	6.50	2.0
COCCOID GREENS	18.0	11.6	0.57	0.1
UNIDENTIFIED CHLOROPHYCEAE	4.1	2.6	2.65	0.8
BACILLARIOPHYCEAE	51.1	32.9	41.45	12.9
CYCLOTELLA STELLIGERA	13.9	8.9	7.38	2.3
CYMBELLA AFFINIS	1.3	0.8	1.28	0.4
MELOSIRA DISTANS V. A	23.6	15.2	4.37	1.3
NITZSCHIA SPP.	1.3	0.8	0.75	0.2
RHIZOSOLENIA ERIENSIS	6.9	4.4	25.92	8.0
SYNEDRA SP. A	4.1	2.6	1.74	0.5
CHRYSOPHYCEAE	15.0	9.6	7.78	2.4
DINOBRYON BAVARICUM	5.5	3.5	1.29	0.4
MALLOMONAS ACAROIDES	4.1	2.6	5.02	1.5
OCHROMONAS SPP.	4.1	2.6	1.26	0.3
UNIDENTIFIED CHRYSOPHYCEAE	1.3	0.8	0.29	0.0
HAPTOPHYCEAE	6.9	4.4	1.29	0.4
CHRYSOCHROMULINA PARVA	6.9	4.4	1.29	0.4
CRYPTOPHYCEAE	20.7	13.3	4.63	1.4
CHROOMONAS ACUTA	13.9	8.9	1.55	0.4
CRYPTOMONAS OVATA	1.3	0.8	1.43	0.4
CRYPTOMONAS PHASEOLUS	5.5	3.5	1.65	0.5
DINOPHYCEAE	26.0	16.7	253.60	79.3
PERIDINIUM ACICULIFERUM	1.3	0.8	34.55	10.8
PERIDINIUM CINCTUM	2.7	1.7	76.71	23.9
PERIDINIUM INCONSPICUUM	6.9	4.4	18.02	5.6
PERIDINIUM PUSILLUM	4.1	2.6	8.05	2.5
PERIDINIUM WISCONSINENSE	2.7	1.7	100.01	31.2
UNIDENTIFIED DINOPHYCEAE	8.3	5.3	16.14	5.0
UNKNOWN	5.5	3.5	0.15	0.0
0974-2-07	5.5	3.5	0.15	0.0
SAMPLE TOTALS:	155.1	99.8	319.83	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 06/15/77
TIME: 1330 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	145.9	31.8	54.80	14.3
CRUCIGENIA TETRAPEDIA	25.0	5.4	2.20	0.5
GLOEOCYSTIS GIGAS	8.3	1.8	18.59	4.8
GOLENKINIA RADIATA	4.1	0.8	0.66	0.1
MOUGEOTIA SPP.	16.7	3.6	22.70	5.9
OOCYSTIS SPP.	4.1	0.8	0.25	0.0
COCCOID GREENS	75.2	16.4	2.40	0.6
UNIDENTIFIED CHLOROPHYCEAE	12.5	2.7	7.97	2.0
BACILLARIOPHYCEAE	45.7	9.9	90.35	23.7
CYCLOTELLA STELLIGERA	4.1	0.8	2.21	0.5
MELOSIRA DISTANS V. A	16.7	3.6	3.09	0.8
NITZSCHIA LORENZIANA VAR. SUBTILIS	4.1	0.8	20.93	5.5
RHIZOSOLENIA ERIENSIS	16.7	3.6	62.36	16.4
SYNEDRA SP. A	4.1	0.8	1.74	0.5
CHRYSOPHYCEAE	137.7	30.0	38.13	9.9
CHROMULINA SPP.	20.9	4.5	4.24	1.1
CHRYSOSPHAERELLA LONGISPINA	20.9	4.5	14.71	3.8
DINOBRYON BAVARICUM	58.5	12.7	10.00	2.6
KEPHYRION SPP.	4.1	0.8	0.36	0.0
OCHROMONAS SPP.	25.0	5.4	7.59	1.9
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.8	1.20	0.3
HAPTOPHYCEAE	50.1	10.9	9.32	2.4
CHRYSOCHROMULINA PARVA	50.1	10.9	9.32	2.4
MYXOPHYCEAE	41.8	9.1	4.26	1.1
ANACYSTIS MONTANA	41.8	9.1	4.26	1.1
DINOPHYCEAE	20.7	4.5	182.71	48.0
PERIDINIUM PUSILLUM	12.5	2.7	24.21	6.3
PERIDINIUM WISCONSINENSE	4.1	0.8	150.38	39.5
UNIDENTIFIED DINOPHYCEAE	4.1	0.8	8.11	2.1
UNKNOWN	16.6	3.6	0.68	0.1
0574-2-03	8.3	1.8	0.45	0.1
0974-2-07	8.3	1.8	0.23	0.0
SAMPLE TOTALS:	458.5	99.9	380.29	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 1330 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	12.3	19.0	3.53	10.2
DICTYOSPHAERIUM PULCHELLUM	1.0	1.5	0.40	1.1
MOUGEOTIA SPP.	2.0	3.0	2.82	8.2
COCCOID GREENS	9.3	14.3	0.29	0.8
BACILLARIOPHYCEAE	16.3	25.1	13.46	39.1
ACHNANTHES SPP.	1.0	1.5	0.18	0.5
ASTERIONELLA FORMOSA	1.0	1.5	0.55	1.6
CYCLOTELLA STELLIGERA	5.2	8.0	2.76	8.0
MELOSIRA DISTANS V. A	4.1	6.3	0.76	2.2
NITZSCHIA SPP.	1.0	1.5	0.56	1.6
RHIZOSOLENIA ERIENSIS	2.0	3.0	7.75	22.5
SYNEDRA SP. A	2.0	3.0	0.86	2.5
CHRYSOPHYCEAE	9.3	14.3	6.55	19.1
MALLOMONAS ACAROIDES	4.1	6.3	5.01	14.5
OCHROMONAS SPP.	5.2	8.0	1.57	4.5
HAPTOPHYCEAE	1.0	1.5	0.19	0.5
CHRYSOCHROMULINA PARVA	1.0	1.5	0.19	0.5
CRYPTOPHYCEAE	19.6	30.3	6.47	18.8
CHROOMONAS ACUTA	10.4	16.0	1.15	3.3
CRYPTOMONAS OVATA	2.0	3.0	2.15	6.2
CRYPTOMONAS PHASEOLUS	6.2	9.5	1.85	5.4
CRYPTOMONAS REFLEXA	1.0	1.5	1.31	3.8
DINOPHYCEAE	2.0	3.0	4.01	11.6
PERIDINIUM PUSILLUM	2.0	3.0	4.01	11.6
UNKNOWN	4.1	6.3	0.11	0.3
0974-2-07	4.1	6.3	0.11	0.3
SAMPLE TOTALS:	64.6	99.8	34.38	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 06/15/77
TIME: 0915 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	20.4	21.1	3.44	5.1
CHLAMYDOMONAS SPP.	2.0	2.0	0.17	0.2
MONORAPHIDIUM BRAUNII	4.1	4.2	0.52	0.7
MOUGEOTIA SPP.	1.0	1.0	1.41	2.1
OOCYSTIS SPP.	1.0	1.0	0.06	0.1
SCENEDESMUS SPP.	2.0	2.0	0.30	0.4
COCCOID GREENS	9.3	9.6	0.32	0.5
UNIDENTIFIED CHLOROPHYCEAE	1.0	1.0	0.61	0.9
BACILLARIOPHYCEAE	47.3	49.0	50.31	75.5
CYCLOTELLA STELLIGERA	5.2	5.3	2.76	4.1
MELOSIRA DISTANS V. A	14.5	15.0	2.69	4.0
MELOSIRA ITALICA	6.2	6.4	6.80	10.2
MELOSIRA ITALICA VAR. TENUISSIMA	7.2	7.4	4.06	6.1
NAVICULA CRYPTOCEPHALA	2.0	2.0	0.76	1.1
NITZSCHIA SPP.	2.0	2.0	1.12	1.7
RHIZOSOLENIA ERIENSIS	7.2	7.4	2.71	4.1
SYNEDRA SP. A	2.0	2.0	0.86	1.3
TABELLARIA FENESTRATA	1.0	1.0	0.01	0.0
CHRYSOPHYCEAE	14.3	14.8	7.21	10.8
CHROMULINA SPP.	3.1	3.2	0.66	1.0
CHRYSOSPHAERELLA LONGISPINA	1.0	1.0	3.66	5.5
DINOBRYON BAVARICUM	1.0	1.0	0.12	0.2
MALLOMONAS ACAROIDES	1.0	1.0	1.35	2.0
OCHROMONAS SPP.	2.0	2.0	0.63	0.9
UNIDENTIFIED CHRYSOPHYCEAE	6.2	6.4	0.85	1.3
CRYPTOPHYCEAE	12.4	12.8	3.51	5.3
CHROOMONAS ACUTA	5.2	5.3	0.57	0.9
CRYPTOMONAS OVATA	1.0	1.0	1.07	1.6
CRYPTOMONAS PHASEOLUS	6.2	6.4	1.85	2.8
DINOPHYCEAE	1.0	1.0	2.01	3.0
UNIDENTIFIED DINOPHYCEAE	1.0	1.0	2.01	3.0
UNKNOWN	1.0	1.0	0.05	0.0
0574-2-03	1.0	1.0	0.05	0.0
SAMPLE TOTALS:	96.4	99.8	66.55	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 06/15/77
TIME: 0915 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	15.0	8.6	11.19	10.3
SCHROEDERIA SETIGERA	1.3	0.7	0.93	0.8
STAURASTRUM PARADOXUM VAR. A	1.3	0.7	6.50	6.0
COCCOID GREENS	6.9	3.9	0.22	0.2
UNIDENTIFIED CHLOROPHYCEAE	5.5	3.1	3.53	3.2
BACILLARIOPHYCEAE	78.8	45.4	57.32	52.8
CYCLOTELLA STELLIGERA	25.0	14.4	13.28	12.2
EUNOTIA SP. A	1.3	0.7	0.44	0.4
MELOSIRA DISTANS V. A	34.7	20.0	6.42	5.9
NITZSCHIA LORENZIANA VAR. SUBTILIS	1.3	0.7	6.96	6.4
RHIZOSOLENIA ERIENSIS	6.9	3.9	25.92	23.9
SYNEDRA RADIANS	5.5	3.1	2.54	2.3
SYNEDRA SP. A	4.1	2.3	1.74	1.6
CHRYSOPHYCEAE	44.0	25.3	16.40	15.1
CHROMULINA SPP.	1.3	0.7	0.28	0.2
DINOBRYON BAVARICUM	1.3	0.7	0.18	0.1
MALLOMONAS ACAROIDES	5.5	3.1	6.70	6.1
MALLOMONAS SPP.	1.3	0.7	1.80	1.6
OCHROMONAS SPP.	15.2	8.7	4.63	4.2
UNIDENTIFIED CHRYSOPHYCEAE	19.4	11.1	2.80	2.5
CRYPTOPHYCEAE	22.0	12.6	8.69	8.0
CHROOMONAS ACUTA	12.5	7.2	1.38	1.2
CRYPTOMONAS OVATA	4.1	2.3	4.31	3.9
CRYPTOMONAS PHASEOLUS	4.1	2.3	1.27	1.1
CRYPTOMONAS REFLEXA	1.3	0.7	1.75	1.6
DINOPHYCEAE	6.7	3.8	1.38	1.3
PERIDINIUM INCONSPICUUM	1.3	0.7	3.60	3.3
PERIDINIUM PUSILLUM	1.3	0.7	2.68	2.5
UNIDENTIFIED DINOPHYCEAE	4.1	2.3	8.09	7.4
UNKNOWN	6.8	3.9	0.26	0.2
0574-2-03	2.7	1.5	0.15	0.1
0974-2-07	4.1	2.3	0.11	0.1
SAMPLE TOTALS:	173.3	99.9	108.27	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 1030 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	463.1	48.6	65.88	6.7
ANKISTRODESMUS FALCATUS	4.1	0.4	0.22	0.0
ARTHRODESMUS SPP.	37.6	3.9	16.28	1.6
CHLAMYDOMONAS SPP.	12.5	1.3	1.04	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	16.7	1.7	1.70	0.1
COSMARIUM SPP.	8.3	0.8	4.54	0.4
CRUCIGENIA TETRAPEDIA	4.1	0.4	0.18	0.0
DACTYLOCOCCUS INFUSIONUM	12.5	1.3	8.96	0.9
DICTYOSPHAERIUM PULCHELLUM	8.3	0.8	0.81	0.0
GLOEOCYSTIS VESICULOSA	4.1	0.4	1.10	0.1
MONORAPHIDIUM PUSILLUM	45.9	4.8	4.46	0.4
MOUGEOTIA SPP.	8.3	0.8	11.35	1.1
OOCYSTIS LACUSTRIS	12.5	1.3	5.41	0.5
OOCYSTIS SPP.	8.3	0.8	0.50	0.0
SCENEDESMUS BIJUGA	4.1	0.4	0.36	0.0
SELENASTRUM MINUTUM	12.5	1.3	0.47	0.0
COCCOID GREENS	263.3	27.6	8.42	0.8
BACILLARIOPHYCEAE	37.4	3.9	46.24	4.8
CYCLOTELLA STELLIGERA	25.0	2.6	13.31	1.3
RHIZOSOLENIA ERIENSIS	8.3	0.8	31.18	3.2
SYNEDRA SP. A	4.1	0.4	1.74	0.1
CHRYSOPHYCEAE	87.6	9.1	44.70	4.6
CHROMULINA SPP.	20.9	2.1	4.24	0.4
MALLOMONAS ACAROIDES	8.3	0.8	10.08	1.0
MALLOMONAS SPP.	16.7	1.7	21.70	2.2
OCHROMONAS SPP.	16.7	1.7	5.06	0.5
UNIDENTIFIED CHRYSOPHYCEAE	25.0	2.6	3.61	0.3
HAPTOPHYCEAE	33.4	3.5	6.21	0.6
CHRYSOCHROMULINA PARVA	33.4	3.5	6.21	0.6
CRYPTOPHYCEAE	79.3	8.3	27.42	2.8
CHROOMONAS ACUTA	29.2	3.0	3.24	0.3
CRYPTOMONAS OVATA	12.5	1.3	12.96	1.3
CRYPTOMONAS PHASEOLUS	37.6	3.9	11.21	1.1
MYXOPHYCEAE	83.5	8.7	4.21	0.4
AGMENELLUM QUADRIDUPLICATUM	4.1	0.4	0.03	0.0
ANACYSTIS INCERTA	16.7	1.7	0.16	0.0
ANACYSTIS MONTANA	62.7	6.5	4.01	0.4
DINOPHYCEAE	62.4	6.5	761.49	79.3
PERIDINIUM CINCTUM	4.1	0.4	115.35	12.0
PERIDINIUM DEFLANDREI	8.3	0.8	95.82	9.9
PERIDINIUM INCONSPICUUM	12.5	1.3	32.52	3.3
PERIDINIUM KEYENSE	12.5	1.3	184.55	19.2
PERIDINIUM WISCONSINENSE	8.3	0.8	300.77	31.3
UNIDENTIFIED DINOPHYCEAE	16.7	1.7	32.47	3.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
UNKNOWN	104.4	10.9	3.03	0.3
0974-2-03	4.1	0.4	0.22	0.0
0974-2-07	100.3	10.5	2.80	0.2
SAMPLE TOTALS:	951.1	99.8	959.22	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 07/12/77
TIME: 1030 SAMPLE DEPTH: 22.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	88.8	22.6	19.15	11.5
ANKISTRODESMUS FALCATUS	6.2	1.5	0.34	0.2
CHLAMYDOMONAS SPP.	2.0	0.5	0.17	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.5	0.21	0.1
MONORAPHIDIUM SETIFORME	2.0	0.5	0.36	0.2
OOCYSTIS SUBMARINA	2.0	0.5	0.20	0.1
OOCYSTIS SPP.	2.0	0.5	0.12	0.0
SCENEDESMUS BIJUGA	6.2	1.5	0.55	0.3
SCENEDESMUS QUADRICAUDA	4.1	1.0	0.39	0.2
SELENASTRUM MINUTUM	8.3	2.1	0.31	0.1
STAURASTRUM CURVATUM VAR. ELONGATUM	2.0	0.5	9.83	5.9
TETRAEDRON MINIMUM	4.1	1.0	3.83	2.3
COCCOID GREENS	45.9	11.7	1.47	0.8
UNIDENTIFIED CHLOROPHYCEAE	2.0	0.5	1.32	0.8
BACILLARIOPHYCEAE	106.2	27.1	87.02	52.6
CYCLOTELLA STELLIGERA	18.8	4.8	9.98	6.0
MELOSIRA DISTANS V. A	20.9	5.3	3.86	2.3
MELOSIRA ITALICA	54.3	13.8	59.39	35.9
NITZSCHIA ANGUSTATA	2.0	0.5	1.72	1.0
NITZSCHIA SPP.	6.2	1.5	3.38	2.0
RHIZOSOLENIA ERIENSIS	2.0	0.5	7.79	4.7
SYNEDRA SP. A	2.0	0.5	0.87	0.5
CHRYSOPHYCEAE	45.8	11.7	26.40	15.9
CHROMULINA SPP.	6.2	1.5	1.27	0.7
MALLOMONAS ACAROIDES	16.7	4.2	20.16	12.2
OCHROMONAS SPP.	10.4	2.6	3.16	1.9
UNIDENTIFIED CHRYSOPHYCEAE	12.5	3.1	1.80	1.0
CRYPTOPHYCEAE	41.6	10.6	17.43	10.5
CHROOMONAS ACUTA	6.2	1.5	0.69	0.4
CRYPTOMONAS OVATA	8.3	2.1	8.64	5.2
CRYPTOMONAS PHASEOLUS	27.1	6.9	8.09	4.9
MYXOPHYCEAE	4.0	1.0	0.19	0.1
ANACYSTIS INCERTA	2.0	0.5	0.06	0.0
ANACYSTIS MONTANA	2.0	0.5	0.13	0.0
DINOPHYCEAE	6.2	1.5	12.17	7.3
UNIDENTIFIED DINOPHYCEAE	6.2	1.5	12.17	7.3
UNKNOWN	98.1	25.1	2.80	1.6
0574-2-03	2.0	0.5	0.11	0.0
0974-2-07	96.1	24.5	2.69	1.6
SAMPLE TOTALS:	390.7	99.8	165.19	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 5C1.0 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 1100 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	363.3	42.1	200.47	17.6
ANKISTRODESMUS FALCATUS	8.3	0.6	0.45	0.0
ARTHRODESMUS SPP.	33.4	2.5	14.47	1.2
CHLAMYDOMONAS SPP.	4.1	0.3	0.34	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	25.0	1.8	2.55	0.2
COSMARIUM PHASEOLUS F. MINOR	4.1	0.3	6.32	0.5
CRUCIGENIA TETRAPEDIA	8.3	0.6	0.73	0.0
DACTYLOCOCCUS INFUSIONUM	71.0	5.3	118.74	10.5
GLOEOCYSTIS VESICULOSA	8.3	0.6	2.20	0.1
MONORAPHIDIUM SAXATILE	12.5	0.9	1.39	0.1
MOUGEOTIA SPP.	12.5	0.9	17.02	1.5
OOCYSTIS SUBMARINA	8.3	0.6	1.60	0.1
OOCYSTIS SPP.	16.7	1.2	1.01	0.0
SCENEDESMUS QUADRICAUDA	4.1	0.3	0.39	0.0
SCENEDESMUS SPP.	4.1	0.3	0.61	0.0
SELENASTRUM MINUTUM	79.4	5.9	3.01	0.2
STIGEOCLONIUM SPP.	4.1	0.3	21.25	1.8
COCCOID GREENS	259.1	19.4	8.29	0.7
BACILLARIOPHYCEAE	29.2	2.1	55.65	4.9
CYCLOTELLA STELLIGERA	16.7	1.2	8.87	0.7
RHIZOSOLENIA ERIENSIS	12.5	0.9	46.77	4.1
CHRYSOPHYCEAE	75.1	5.6	42.61	3.7
CHROMULINA SPP.	20.9	1.5	4.24	0.3
MALLOMONAS ACAROIDES	4.1	0.3	5.04	0.4
MALLOMONAS SPP.	20.9	1.5	27.12	2.4
OCHROMONAS SPP.	12.5	0.9	3.79	0.3
UNIDENTIFIED CHRYSOPHYCEAE	16.7	1.2	2.40	0.2
HAPTOPHYCEAE	50.1	3.7	9.32	0.8
CHRYSOCHROMULINA PARVA	50.1	3.7	9.32	0.8
CRYPTOPHYCEAE	71.0	5.3	10.23	0.9
CHROOMONAS ACUTA	58.5	4.3	6.49	0.5
CRYPTOMONAS PHASEOLUS	12.5	0.9	3.73	0.3
MYXOPHYCEAE	292.4	21.8	25.53	2.2
AGMENELLUM QUADRIDUPLICATUM	4.1	0.3	0.05	0.0
ANABAENA SPP.	4.1	0.3	7.37	0.6
ANACYSTIS INCERTA	20.9	1.5	0.20	0.0
ANACYSTIS MONTANA	263.3	19.7	17.90	1.5
DINOPHYCEAE	91.6	6.8	776.60	66.7
PERIDINIUM CINCTUM	4.1	0.3	115.35	10.2
PERIDINIUM INCONSPICUUM	16.7	1.2	43.37	3.8
PERIDINIUM KEYENSE	4.1	0.3	61.51	5.4
PERIDINIUM PUSILLUM	29.2	2.1	56.50	5.0
PERIDINIUM WISCONSINENSE	12.5	0.9	451.16	39.9
UNIDENTIFIED DINOPHYCEAE	25.0	1.8	46.70	4.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
UNKNOWN	162.8	12.1	8.33	0.7
0574-2-02	4.1	0.3	0.31	0.0
0574-2-03	25.0	1.8	1.35	0.1
0774-2-28	8.3	0.6	3.16	0.2
0974-2-07	125.4	9.3	3.51	0.3
SAMPLE TOTALS:	1335.5	99.8	1128.78	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LOS SAMPLE DATE: 07/12/77
TIME: 1100 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	37.2	9.3	7.41	4.6
SCENEDESMUS BIJUGA	4.1	1.0	0.36	0.2
SCENEDESMUS QUADRICAUDA	2.0	0.5	0.19	0.1
SPHAEROCYSTIS SCHROETERI	2.0	0.5	2.13	1.3
COCCOID GREENS	22.9	5.7	0.73	0.4
UNIDENTIFIED CHLOROPHYCEAE	6.2	1.5	3.98	2.5
BACILLARIOPHYCEAE	101.9	25.7	41.41	25.9
ASTERIONELLA FORMOSA	2.0	0.5	1.11	0.7
CYCLOTELLA STELLIGERA	18.8	4.7	9.98	6.2
MELOSIRA DISTANS V. A	60.6	15.3	11.21	7.0
MELOSIRA ITALICA	4.1	1.0	4.56	2.8
MELOSIRA ITALICA VAR. TENUISSIMA	8.3	2.0	4.66	2.9
RHIZOSOLENIA ERIENSIS	2.0	0.5	7.79	4.8
SYNEDRA SP. A	2.0	0.5	0.87	0.5
SYNEDRA SPP.	4.1	1.0	1.19	0.7
CHRYSOPHYCEAE	31.1	7.8	11.25	7.0
DINOBRYON SERTULARIA	2.0	0.5	0.40	0.2
MALLOMONAS ACAROIDES	6.2	1.5	7.56	4.7
PSEUDOKEPHYRION SPP.	2.0	0.5	0.27	0.1
UNIDENTIFIED CHRYSOPHYCEAE	20.9	5.2	3.00	1.8
CRYPTOPHYCEAE	27.0	6.8	13.07	8.1
CHROOMONAS ACUTA	6.2	1.5	0.69	0.4
CRYPTOMONAS OVATA	8.3	2.0	8.64	5.4
CRYPTOMONAS PHASEOLUS	12.5	3.1	3.73	2.3
MYXOPHYCEAE	2.0	0.5	0.13	0.0
ANACYSTIS MONTANA	2.0	0.5	0.13	0.0
DINOPHYCEAE	4.0	1.0	80.61	50.6
PERIDINIUM INCONSPICUUM	2.0	0.5	5.42	3.4
PERIDINIUM WISCONSINENSE	2.0	0.5	75.19	47.2
UNKNOWN	192.2	48.6	5.38	3.3
0974-2-07	192.2	48.6	5.38	3.3
SAMPLE TOTALS:	395.4	99.8	159.29	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 0950 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	346.2	47.9	66.25	7.8
ANKISTRODESMUS FALCATUS	4.1	0.5	0.22	0.0
CHLAMYDOMONAS SPP.	12.5	1.7	1.04	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	8.3	1.1	0.85	0.1
CRUCIGENIA TETRAPEDIA	4.1	0.5	0.36	0.0
DICTYOSPHAERIUM EHRENBERGIANUM	8.3	1.1	0.56	0.0
GOLENKINIA RADIATA	4.1	0.5	0.66	0.0
MOUGEOTIA SPP.	8.3	1.1	22.70	2.6
OOCYSTIS SPP.	16.7	2.3	1.01	0.1
SCENEDESMUS BIJUGA	4.1	0.5	0.36	0.0
SELENASTRUM MINUTUM	12.5	1.7	0.47	0.0
STAURASTRUM PARADOXUM VAR. A	4.1	0.5	19.57	2.3
COCCOID GREENS	242.4	33.6	7.75	0.9
UNIDENTIFIED CHLOROPHYCEAE	16.7	2.3	10.63	1.2
BACILLARIOPHYCEAE	58.3	8.0	177.61	21.0
CYCLOTELLA STELLIGERA	4.1	0.5	2.21	0.2
RHIZOSOLENIA ERIENSIS	37.6	5.2	140.32	16.6
SYNEDRA SPP.	8.3	1.1	2.39	0.2
TABELLARIA FENESTRATA	8.3	1.1	32.67	3.8
CHRYSOPHYCEAE	37.3	5.1	24.65	2.9
CHROMULINA SPP.	4.1	0.5	0.84	0.1
DINOBRYON BAVARICUM	8.3	1.1	1.67	0.1
MALLOMONAS ACAROIDES	8.3	1.1	10.08	1.1
MALLOMONAS SPP.	8.3	1.1	10.85	1.2
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.1	1.20	0.1
HAPTOPHYCEAE	87.7	12.1	16.32	1.9
CHRYSOCHROMULINA PARVA	87.7	12.1	16.32	1.9
MYXOPHYCEAE	75.1	10.4	4.60	0.5
ANACYSTIS INCERTA	4.1	0.5	0.06	0.0
ANACYSTIS MONTANA	71.0	9.8	4.54	0.5
DINOPHYCEAE	79.1	10.9	551.21	65.4
PERIDINIUM ACICULIFERUM	12.5	1.7	312.13	37.0
PERIDINIUM INCONSPICUUM	4.1	0.5	10.84	1.2
PERIDINIUM KEYENSE	8.3	1.1	123.03	14.6
PERIDINIUM PUSILLUM	29.2	4.0	56.50	6.7
UNIDENTIFIED DINOPHYCEAE	25.0	3.4	48.70	5.7
UNKNOWN	37.6	5.2	1.05	0.1
0974-2-07	37.6	5.2	1.05	0.1
SAMPLE TOTALS:	721.3	99.8	841.73	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LOS SAMPLE DATE: 07/12/77
TIME: 0950 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	133.1	24.3	36.41	24.6
ANKISTRODESMUS FALCATUS	4.1	0.7	0.22	0.1
ARTHRODESMUS SUBULATUS	4.1	0.7	24.07	16.3
CHLAMYDOMONAS SPP.	4.1	0.7	0.34	0.2
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4.1	0.7	0.42	0.2
COSMARIUM PHASEOLUS F. MINOR	4.1	0.7	6.32	4.2
CRUCIGENIA TETRAPEDIA	25.0	4.5	1.83	1.2
MONORAPHIDIUM CONTORTUM	4.1	0.7	0.17	0.1
MONORAPHIDIUM SAXATILE	4.1	0.7	0.46	0.3
COCCOID GREENS	79.4	14.5	2.54	1.7
BACILLARIOPHYCEAE	116.6	21.3	54.30	36.8
ASTERIONELLA FORMOSA	4.1	0.7	2.23	1.5
CYCLOTELLA STELLIGERA	8.3	1.5	4.43	3.0
MELOSIRA DISTANS V. A	58.5	10.7	10.82	7.3
MELOSIRA ITALICA VAR. TENUISSIMA	20.9	3.8	11.66	7.9
NAVICULA CRYPTOCEPHALA	4.1	0.7	1.54	1.0
NITZSCHIA SPP.	8.3	1.5	4.51	3.0
RHIZOSOLENIA ERIENSIS	4.1	0.7	15.59	10.5
SYNEDRA SP. A	8.3	1.5	3.49	2.3
CHRYSOPHYCEAE	16.6	3.0	4.40	2.9
OCHROMONAS SPP.	12.5	2.2	3.79	2.5
UNIDENTIFIED CHRYSOPHYCEAE	4.1	0.7	0.60	0.4
HAPTOPHYCEAE	8.3	1.5	1.55	1.0
CHRYSOCHROMULINA PARVA	8.3	1.5	1.55	1.0
CRYPTOPHYCEAE	79.3	14.5	34.35	23.3
CHROOMONAS ACUTA	25.0	4.5	2.78	1.8
CRYPTOMONAS OVATA	20.9	3.8	21.61	14.6
CRYPTOMONAS PHASEOLUS	33.4	6.1	9.96	6.7
DINOPHYCEAE	4.1	0.7	10.54	7.1
PERIDINIUM SPP.	4.1	0.7	10.54	7.1
UNKNOWN	188.0	34.4	5.76	3.9
0974-2-07	183.9	33.6	5.14	3.4
0976-2-01	4.1	0.7	0.61	0.4
SAMPLE TOTALS:	546.0	99.9	147.33	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: SC3.0 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 1140 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	496.7	46.9	101.06	8.3
ARTHRODESMUS SPP.	4.1	0.3	1.80	0.1
BOTRYOCOCCUS SUDETICUS	4.1	0.3	35.34	2.9
CHLAMYDOMONAS SPP.	8.3	0.7	0.69	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	29.2	2.7	2.98	0.2
CRUCIGENIA TETRAPEDIA	16.7	1.5	1.28	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	20.9	1.9	2.25	0.1
MONORAPHIDIUM SAXATILE	4.1	0.3	0.46	0.0
MOUGEOTIA SPP.	8.3	0.7	28.38	2.3
OOCYSTIS PARVA	8.3	0.7	0.90	0.0
OOCYSTIS SPP.	37.6	3.5	2.29	0.1
SCENEDESMUS QUADRICAUDA	4.1	0.3	0.39	0.0
SELENASTRUM MINUTUM	66.8	6.3	2.54	0.2
COCCOID GREENS	263.3	24.9	8.42	0.7
UNIDENTIFIED CHLOROPHYCEAE	20.9	1.9	13.29	1.1
BACILLARIOPHYCEAE	41.6	3.9	61.44	5.1
CYCLOTELLA STELLIGERA	12.5	1.1	6.65	0.5
NITZSCHIA SPP.	8.3	0.7	4.51	0.3
RHIZOSOLENIA ERIENSIS	12.5	1.1	46.77	3.9
SYNEDRA SP. A	8.3	0.7	3.49	0.2
CHRYSOPHYCEAE	104.1	9.8	28.68	2.3
CHROMULINA SPP.	33.4	3.1	6.78	0.5
DINOBRYON BAVARICUM	33.4	3.1	6.11	0.5
KEPHYRION SPP.	4.1	0.3	0.36	0.0
MALLOMONAS ACAROIDES	4.1	0.3	5.04	0.4
MALLOMONAS SPP.	4.1	0.3	5.42	0.4
OCHROMONAS SPP.	8.3	0.7	2.53	0.2
UNIDENTIFIED CHRYSOPHYCEAE	16.7	1.5	2.40	0.2
HAPTOPHYCEAE	96.1	9.1	17.88	1.4
CHRYSOCHROMULINA PARVA	96.1	9.1	17.88	1.4
CRYPTOPHYCEAE	8.3	0.7	2.49	0.2
CRYPTOMONAS PHASEOLUS	8.3	0.7	2.49	0.2
MYXOPHYCEAE	133.7	12.6	8.34	0.6
ANACYSTIS INCERTA	8.3	0.7	0.06	0.0
ANACYSTIS MONTANA	125.4	11.8	8.27	0.6
DINOPHYCEAE	91.7	8.6	975.28	81.4
PERIDINIUM ACICULIFERUM	8.3	0.7	208.08	17.3
PERIDINIUM KEYENSE	25.0	2.3	369.10	30.8
PERIDINIUM PUSILLUM	8.3	0.7	16.14	1.3
PERIDINIUM WISCONSINENSE	8.3	0.7	300.77	25.1
UNIDENTIFIED DINOPHYCEAE	41.8	3.9	81.17	6.7
UNKNOWN	83.6	7.9	2.34	0.1
0974-2-07	83.6	7.9	2.34	0.1

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	1055.8	99.7	1197.52	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LOS SAMPLE DATE: 07/12/77
TIME: 1140 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	76.6	29.3	24.21	28.7
ARTHRODESMUS SUBULATUS	2.0	0.7	12.03	14.3
CHLAMYDOMONAS SPP.	2.0	0.7	0.17	0.2
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	6.2	2.3	0.63	0.7
CRUCIGENIA TETRAPEDIA	6.2	2.3	0.55	0.6
DACTYLOCOCCUS INFUSIONUM	6.2	2.3	7.84	9.3
DICTYOSPHAERIUM PULCHELLUM	4.1	1.5	0.61	0.7
MONORAPHIDIUM CONTORTUM	2.0	0.7	0.08	0.1
QUADRIGULA CLOSTERIOIDES	2.0	0.7	0.38	0.4
SCENEDESMUS BIJUGA	4.1	1.5	0.55	0.6
COCCOID GREENS	41.8	16.0	1.33	1.5
BACILLARIOPHYCEAE	36.9	14.1	32.16	38.1
ASTERIONELLA FORMOSA	4.1	1.5	2.23	2.6
CYCLOTELLA STELLIGERA	2.0	0.7	1.10	1.3
CYCLOTELLA SPP.	2.0	0.7	0.97	1.1
MELOSIRA DISTANS V. A	10.4	3.9	1.93	2.2
MELOSIRA ITALICA	6.2	2.3	6.85	8.1
NITZSCHIA SPP.	2.0	0.7	1.12	1.3
RHIZOSOLENIA ERIENSIS	4.1	1.5	15.59	18.5
SYNEDRA SP. A	4.1	1.5	1.74	2.0
SYNEDRA SPP.	2.0	0.7	0.59	0.7
CHRYSOPHYCEAE	20.4	7.7	9.38	11.1
CHROMULINA SPP.	4.1	1.5	0.84	1.0
DINOBRYON BAVARICUM	2.0	0.7	0.27	0.3
MALLOMONAS ACAROIDES	2.0	0.7	2.52	2.9
MALLOMONAS ELONGATA VAR. AMERICANA	6.2	2.3	4.50	5.3
OCHROMONAS SPP.	2.0	0.7	0.63	0.7
UNIDENTIFIED CHRYSOPHYCEAE	4.1	1.5	0.60	0.7
CRYPTOPHYCEAE	35.4	13.5	11.70	13.9
CHROOMONAS ACUTA	10.4	3.9	1.15	1.3
CRYPTOMONAS OVATA	4.1	1.5	4.32	5.1
CRYPTOMONAS PHASEOLUS	20.9	8.0	6.22	7.4
DINOPHYCEAE	2.0	0.7	4.05	4.8
UNIDENTIFIED DINOPHYCEAE	2.0	0.7	4.05	4.8
UNKNOWN	69.7	34.3	2.62	3.1
0574-2-03	4.1	1.5	0.22	0.2
0974-2-07	85.6	32.7	2.39	2.8
SAMPLE TOTALS:	261.0	99.8	84.15	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 1345 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	483.7	32.1	123.44	7.4
ARTHRODESMUS SUBULATUS	8.3	0.5	48.14	2.9
ARTHRODESMUS SPP.	8.3	0.5	3.61	0.2
CHLAMYDOMONAS SPP.	4.1	0.2	0.34	0.0
COSMARIUM SPP.	25.0	1.6	13.64	0.8
CRUCIGENIA TETRAPEDIA	66.8	4.4	5.21	0.3
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.2	0.56	0.0
DICTYOSPHAERIUM PULCHELLUM	16.7	1.1	2.45	0.1
GLOEOCYSTIS VESICULOSA	4.1	0.2	1.10	0.0
MONORAPHIDIUM BRAUNII	4.1	0.2	0.53	0.0
MONORAPHIDIUM SAXATILE	4.1	0.2	0.46	0.0
MOUGEOTIA SPP.	20.9	1.3	28.36	1.7
OOCYSTIS PARVA	4.1	0.2	1.20	0.0
OOCYSTIS SPP.	12.5	0.8	0.76	0.0
QUADRIGULA CLOSTERIOIDES	4.1	0.2	1.52	0.0
SCENEDESMUS BIJUGA	25.0	1.6	2.20	0.1
SCENEDESMUS QUADRICAUDA	8.3	0.5	0.78	0.0
SELENASTRUM MINUTUM	62.7	4.1	2.38	0.1
TETRAEDRON MINIMUM	4.1	0.2	3.83	0.2
COCCOID GREENS	196.4	13.1	6.28	0.3
BACILLARIOPHYCEAE	271.2	18.0	502.13	30.5
ASTERIONELLA FORMOSA	16.7	1.1	8.92	0.5
CYCLOTELLA STELLIGERA	16.7	1.1	8.87	0.5
EUNOTIA ZAZUMINENSIS	25.0	1.6	10.95	0.6
EUNOTIA SP. A	4.1	0.2	1.32	0.0
MELOSIRA DISTANS V. A	54.3	3.6	10.05	0.6
MELOSIRA ITALICA	29.2	1.9	31.98	1.9
NAVICULA SPP.	4.1	0.2	3.31	0.2
RHIZOSOLENIA ERIENSIS	100.3	6.6	374.19	22.8
SYNEDRA SP. A	8.3	0.5	3.49	0.2
TABELLARIA FENESTRATA	12.5	0.8	49.01	2.9
CHRYSOPHYCEAE	171.0	11.3	36.71	2.2
CHROMULINA SPP.	50.1	3.3	10.18	0.6
DINOBRYON BAVARICUM	71.0	4.7	9.45	0.5
DINOBRYON SERTULARIA	8.3	0.5	2.45	0.1
KEPHYRION SPP.	16.7	1.1	1.47	0.0
MALLOMONAS ACAROIDES	8.3	0.5	10.08	0.6
OCHROMONAS SPP.	4.1	0.2	1.26	0.0
UNIDENTIFIED CHRYSOPHYCEAE	12.5	0.8	1.80	0.1
HAPTOPHYCEAE	96.1	6.4	17.88	1.0
CHRYSOCHROMULINA PARVA	96.1	6.4	17.88	1.0
CRYPTOPHYCEAE	45.8	3.0	15.21	0.9
CHROOMONAS ACUTA	8.3	0.5	0.92	0.0
CRYPTOMONAS OVATA	4.1	0.2	4.32	0.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CRYPTOMONAS PHASEOLUS	33.4	2.2	9.96	0.6
MYXOPHYCEAE	146.3	9.7	9.36	0.5
ANACYSTIS MONTANA	146.3	9.7	9.36	0.5
DINOPHYCEAE	112.7	7.5	929.84	56.6
PERIDINIUM ACICULIFERUM	16.7	1.1	416.17	25.3
PERIDINIUM CINCTUM	12.5	0.8	346.05	21.1
PERIDINIUM INCONSPICUUM	8.3	0.5	21.68	1.3
PERIDINIUM PUSILLUM	16.7	1.1	32.28	1.9
UNIDENTIFIED DINOPHYCEAE	58.5	3.9	113.64	6.9
UNKNOWN	171.3	11.4	4.90	0.2
0574-2-03	4.1	0.2	0.22	0.0
0974-2-07	167.2	11.1	4.68	0.2
SAMPLE TOTALS:	1496.1	99.7	1639.51	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 07/12/77
TIME: 1345 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	64.1	15.2	8.01	9.1
ANKISTRODESMUS FALCATUS	2.0	0.4	0.11	0.1
COSMARIUM PHASEOLUS F. MINOR	2.0	0.4	3.16	3.6
CRUCIGENIA TETRAPEDIA	6.2	1.4	0.55	0.6
GYROMITUS CORDIFORMIS	2.0	0.4	1.80	2.0
MONORAPHIDIUM SAXATILE	2.0	0.4	0.23	0.2
MONORAPHIDIUM SETIFORME	2.0	0.4	0.36	0.4
SCENEDESMUS BIJUGA	4.1	0.9	0.36	0.4
SELENASTRUM MINUTUM	2.0	0.4	0.07	0.0
COCCOID GREENS	41.8	9.9	1.33	1.5
BACILLARIOPHYCEAE	43.5	10.3	31.04	35.5
CYCLOTELLA STELLIGERA	2.0	0.4	1.10	1.2
CYCLOTELLA SPP.	2.0	0.4	0.97	1.1
MELOSIRA DISTANS V. A	14.6	3.4	2.70	3.0
MELOSIRA ITALICA	22.9	5.4	25.12	28.7
NITZSCHIA SPP.	2.0	0.4	1.12	1.2
CHRYSOPHYCEAE	31.0	7.3	18.90	21.6
DINOBRYON SERTULARIA	2.0	0.4	2.04	2.3
MALLOMONAS ACAROIDES	8.3	1.9	10.08	11.5
MALLOMONAS GLOBOSA	2.0	0.4	2.40	2.7
OCHROMONAS SPP.	10.4	2.4	3.16	3.6
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.9	1.20	1.3
CRYPTOPHYCEAE	41.7	9.9	14.69	16.8
CHROOMONAS ACUTA	20.9	4.9	2.31	2.6
CRYPTOMONAS OVATA	8.3	1.9	8.64	9.8
CRYPTOMONAS PHASEOLUS	12.5	2.9	3.73	4.2
DINOPHYCEAE	4.0	0.9	8.09	9.2
PERIDINIUM PUSILLUM	2.0	0.4	4.03	4.6
UNIDENTIFIED DINOPHYCEAE	2.0	0.4	4.05	4.6
UNKNOWN	236.1	56.1	6.61	7.5
0974-2-07	236.1	56.1	6.61	7.5
SAMPLE TOTALS:	420.4	99.8	87.36	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 1430 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	567.6	49.9	138.44	14.6
ARTHRODESMUS SUBULATUS	8.3	0.7	48.14	5.1
ARTHRODESMUS SPP.	20.9	1.8	9.04	0.9
CHLAMYDOMONAS SPP.	16.7	1.4	1.38	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	16.7	1.4	1.70	0.1
COSMARIUM SPP.	12.5	1.1	6.82	0.7
CRUCIGENIA TETRAPEDIA	50.1	4.4	3.51	0.3
GLOEOCYSTIS GIGAS	8.3	0.7	27.88	2.9
MONORAPHIDIUM SAXATILE	4.1	0.3	0.46	0.0
OOCYSTIS SUBMARINA	4.1	0.3	0.80	0.0
OOCYSTIS SPP.	25.0	2.2	1.52	0.1
QUADRIGULA CLOSTERIOIDES	8.3	0.7	3.04	0.3
SCENEDESMUS BIJUGA	4.1	0.3	0.36	0.0
SCENEDESMUS QUADRICAUDA	4.1	0.3	0.78	0.0
SELENASTRUM MINUTUM	75.2	6.6	2.85	0.3
COCCOID GREENS	275.8	24.3	8.82	0.9
UNIDENTIFIED CHLOROPHYCEAE	33.4	2.9	21.26	2.2
BACILLARIOPHYCEAE	125.1	11.0	210.77	22.4
ASTERIONELLA FORMOSA	8.3	0.7	4.46	0.4
CYCLOTELLA STELLIGERA	12.5	1.1	6.65	0.7
EUNOTIA SP. A	4.1	0.3	1.32	0.1
MELOSIRA DISTANS V. A	41.8	3.6	7.73	0.8
RHIZOSOLENIA ERIENSIS	50.1	4.4	187.09	19.9
SYNEDRA SP. A	8.3	0.7	3.49	0.3
CHRYSOPHYCEAE	70.7	6.2	38.25	4.0
CHROMULINA SPP.	16.7	1.4	3.39	0.3
CHRYSOSPHAERELLA LONGISPINA	8.3	0.7	23.12	2.4
DINOBRYON BAVARICUM	33.4	2.9	4.44	0.4
MALLOMONAS SPP.	4.1	0.3	5.42	0.5
OCHROMONAS SPP.	4.1	0.3	1.26	0.1
UNIDENTIFIED CHRYSOPHYCEAE	4.1	0.3	0.60	0.0
HAPTOPHYCEAE	54.3	4.7	10.10	1.0
CHRYSOCHROMULINA PARVA	54.3	4.7	10.10	1.0
CRYPTOPHYCEAE	37.6	3.3	8.08	0.8
CHROOMONAS ACUTA	16.7	1.4	1.85	0.1
CRYPTOMONAS PHASEOLUS	20.9	1.8	6.22	0.6
MYXOPHYCEAE	104.4	9.1	6.57	0.6
AGMENELLUM QUADRIDUPLICATUM	8.3	0.7	0.13	0.0
ANACYSTIS MONTANA	96.1	8.4	6.44	0.6
DINOPHYCEAE	83.4	7.3	522.57	55.6
PERIDINIUM ACICULIFERUM	8.3	0.7	208.08	22.1
PERIDINIUM INCONSPICUUM	12.5	1.1	32.52	3.4
PERIDINIUM KEYENSE	12.5	1.1	184.55	19.6
UNIDENTIFIED DINOPHYCEAE	50.1	4.4	97.41	10.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
UNKNOWN	91.6	8.0	3.07	0.3
0574-2-07	87.7	7.7	2.45	0.2
0976-2-01	4.1	0.3	0.61	0.0
SAMPLE TOTALS:	1134.9	99.9	937.88	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 07/12/77
TIME: 1430 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	74.5	17.2	5.01	3.3
CHLAMYDOMONAS SPP.	2.0	0.4	0.17	0.1
CRUCIGENIA TETRAPEDIA	4.1	0.9	0.36	0.2
GLOEOCYSTIS VESICULOSA	2.0	0.4	0.27	0.1
MONORAPHIDIUM SAXATILE	2.0	0.4	0.23	0.1
OOCYSTIS SPP.	2.0	0.4	0.12	0.0
QUADRIGULA CLOSTERIOIDES	6.2	1.4	1.52	1.0
SCENEDESMUS BIJUGA	6.2	1.4	0.55	0.3
SCENEDESMUS QUADRICAUDA	2.0	0.4	0.19	0.1
SELENASTRUM MINUTUM	6.2	1.4	0.23	0.1
COCCOID GREENS	41.8	9.7	1.33	0.9
BACILLARIOPHYCEAE	135.3	31.4	80.00	54.6
ASTERIONELLA FORMOSA	4.1	0.9	2.23	1.5
CYCLOTELLA STELLIGERA	20.9	4.8	11.09	7.5
MELOSIRA DISTANS V. A	50.1	11.6	9.27	6.3
MELOSIRA ITALICA VAR. TENUISSIMA	35.5	8.2	19.82	13.5
NAVICULA CRYPTOCEPHALA	6.2	1.4	2.31	1.5
NITZSCHIA SPP.	2.0	0.4	1.12	0.7
RHIZOSOLENIA ERIENSIS	8.3	1.9	31.18	21.3
SYNEDRA SP. A	4.1	0.9	1.74	1.1
SYNEDRA SPP.	4.1	0.9	1.19	0.8
CHRYSOPHYCEAE	16.4	3.7	5.06	3.4
DINOBRYON SERTULARIA	2.0	0.4	0.40	0.2
MALLOMONAS ACAROIDES	2.0	0.4	2.52	1.7
OCHROMONAS SPP.	2.0	0.4	0.63	0.4
UNIDENTIFIED CHRYSOPHYCEAE	10.4	2.4	1.50	1.0
CRYPTOPHYCEAE	37.4	8.6	11.57	7.8
CHROOMONAS ACUTA	6.2	1.4	0.69	0.4
CRYPTOMONAS OVATA	2.0	0.4	2.16	1.4
CRYPTOMONAS PHASEOLUS	29.2	6.7	8.71	5.9
MYXOPHYCEAE	2.0	0.4	0.13	0.0
ANACYSTIS MONTANA	2.0	0.4	0.13	0.0
DINOPHYCEAE	10.3	2.3	40.19	27.4
PERIDINIUM DEFLANDREI	2.0	0.4	23.95	16.3
UNIDENTIFIED DINOPHYCEAE	8.3	1.9	16.23	11.0
UNKNOWN	154.5	35.8	4.38	2.9
0574-2-03	2.0	0.4	0.11	0.0
0974-2-07	152.5	35.4	4.27	2.9
SAMPLE TOTALS:	430.4	99.8	146.36	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 1240 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	137.0	22.7	24.17	17.3
ANKISTRODESMUS FALCATUS	2.0	0.3	0.11	0.0
ARTHRODESMUS SPP.	4.1	0.6	1.80	1.3
CHLAMYDOMONAS SPP.	2.0	0.3	0.17	0.1
COSMARIUM PHASEOLUS F. MINOR	4.1	0.6	6.32	4.5
CRUCIGENIA TETRAPEDIA	14.6	2.4	1.33	0.9
OOCYSTIS SPP.	8.3	1.3	0.50	0.3
QUADRIGULA LACUSTRIS	2.0	0.3	0.38	0.2
SCENEDESMUS ACUMINATUS	2.0	0.3	0.51	0.3
SCENEDESMUS QUADRICAUDA	2.0	0.3	0.19	0.1
SELENASTRUM MINUTUM	4.1	0.6	0.15	0.1
STAURASTRUM PARADOXUM VAR. A	2.0	0.3	9.78	7.0
COCCOID GREENS	89.8	14.9	2.87	2.0
BACILLARIOPHYCEAE	101.9	16.9	53.17	38.2
ACHNANTHES MICROCEPHALA	2.0	0.3	0.25	0.1
CYCLOTELLA STELLIGERA	6.2	1.0	3.32	2.3
CYCLOTELLA SPP.	2.0	0.3	0.97	0.7
MELOSIRA DISTANS V. A	77.3	12.8	14.30	10.3
NITZSCHIA SPP.	4.1	0.6	2.25	1.6
RHIZOSOLENIA ERIENSIS	8.3	1.3	31.18	22.4
SYNEDRA SP. A	2.0	0.3	0.87	0.6
CHRYSOPHYCEAE	49.8	8.2	14.18	10.2
CHROMULINA SPP.	4.1	0.6	0.84	0.6
DINOBRYON BAVARICUM	4.1	0.6	0.55	0.3
MALLOMONAS ACAROIDES	4.1	0.6	5.04	3.6
OCHROMONAS SPP.	14.6	2.4	4.43	3.1
UNIDENTIFIED CHRYSOPHYCEAE	22.9	3.8	3.31	2.3
HAPTOPHYCEAE	2.0	0.3	0.38	0.2
CHRYSOCHROMULINA PARVA	2.0	0.3	0.38	0.2
CRYPTOPHYCEAE	14.4	2.3	3.94	2.8
CHROOMONAS ACUTA	10.4	1.7	1.15	0.8
CRYPTOMONAS OVATA	2.0	0.3	2.16	1.5
CRYPTOMONAS PHASEOLUS	2.0	0.3	0.62	0.4
MYXOPHYCEAE	2.0	0.3	0.13	0.0
ANACYSTIS MONTANA	2.0	0.3	0.13	0.0
DINOPHYCEAE	14.4	2.3	34.92	25.1
PERIDINIUM INCONSPICUUM	6.2	1.0	16.26	11.7
PERIDINIUM SPP.	4.1	0.6	10.54	7.5
UNIDENTIFIED DINOPHYCEAE	4.1	0.6	8.11	5.8
UNKNOWN	279.9	46.5	7.94	5.7
0574-2-03	4.1	0.6	0.22	0.1
0974-2-07	275.8	45.8	7.72	5.5

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	601.4	99.9	138.86	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 07/12/77
TIME: 1240 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	137.5	25.9	12.50	8.3
ARTHRODESMUS SPP.	4.1	0.7	1.80	1.2
CRUCIGENIA TETRAPEDIA	25.0	4.7	2.10	1.4
PLANKTOSPHAERIA GELATINOSA	4.1	0.7	3.27	2.1
QUADRIGULA CLOSTERIOIDES	4.1	0.7	1.14	0.7
SCENEDESMUS BIJUGA	16.7	3.1	1.47	0.9
SELENASTRUM MINUTUM	4.1	0.7	0.15	0.1
COCCOID GREENS	79.4	15.0	2.54	1.6
BACILLARIOPHYCEAE	104.1	19.6	85.28	56.9
CYCLOTELLA STELLIGERA	8.3	1.5	4.43	2.9
MELOSIRA DISTANS V. A	54.3	10.2	10.05	6.7
MELOSIRA ITALICA	29.2	5.5	31.98	21.3
NAVICULA CRYPTOCEPHALA	4.1	0.7	1.54	1.0
NITZSCHIA LORENZIANA VAR. SUBTILIS	4.1	0.7	20.93	13.9
TABELLARIA FENESTRATA	4.1	0.7	16.33	10.9
CHRYSOPHYCEAE	49.8	9.3	26.76	17.8
DINOBRYON SERTULARIA	4.1	0.7	2.45	1.6
MALLOMONAS ACAROIDES	8.3	1.5	10.08	6.7
MALLOMONAS SPP.	4.1	0.7	5.42	3.6
OCHROMONAS SPP.	25.0	4.7	7.59	5.0
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.5	1.20	0.8
HAPTOPHYCEAE	4.1	0.7	0.77	0.5
CHRYSOCHROMULINA PARVA	4.1	0.7	0.77	0.5
CRYPTOPHYCEAE	79.3	14.9	19.65	13.1
CHROOMONAS ACUTA	54.3	10.2	6.03	4.0
CRYPTOMONAS OVATA	8.3	1.5	8.64	5.7
CRYPTOMONAS PHASEOLUS	16.7	3.1	4.98	3.3
MYXOPHYCEAE	24.9	4.6	0.72	0.4
ANACYSTIS INCERTA	8.3	1.5	0.04	0.0
ANACYSTIS MONTANA	8.3	1.5	0.53	0.3
PHORMIDIUM ANGUSTISSIMA	8.3	1.5	0.15	0.1
UNKNOWN	129.5	24.4	4.06	2.7
0574-2-03	16.7	3.1	0.90	0.6
0974-2-07	112.8	21.3	3.16	2.1
SAMPLE TOTALS:	529.2	99.8	149.77	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 5D8.5 SAMPLE TYPE: EZC SAMPLE DATE: 07/12/77
TIME: 1300 SAMPLE DEPTH: 6.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	254.3	35.8	45.68	3.9
ARTHRODESMUS SPP.	4.1	0.5	1.80	0.1
CRUCIGENIA TETRAPEDIA	33.4	4.7	1.73	0.1
DICTYOSPHAERIUM PULCHELLUM	4.1	0.5	0.61	0.0
GLOEOCYSTIS VESICULOSA	8.3	1.1	2.20	0.1
MONORAPHIDIUM SAXATILE	4.1	0.5	0.46	0.0
MOUGEOTIA SPP.	8.3	1.1	22.70	2.0
OOCYSTIS SPP.	20.9	2.9	1.27	0.1
SCENEDESMUS BIJUGA	4.1	0.5	0.36	0.0
SELENASTRUM MINUTUM	33.4	4.7	1.27	0.1
TETRAEDRON MINIMUM	4.1	0.5	3.83	0.3
COCCOID GREENS	121.2	17.1	3.87	0.3
UNIDENTIFIED CHLOROPHYCEAE	8.3	1.1	5.31	0.4
BACILLARIOPHYCEAE	95.7	13.4	153.03	13.4
CYCLOTELLA STELLIGERA	4.1	0.5	2.21	0.1
CYCLOTELLA SPP.	8.3	1.1	3.89	0.3
EUNOTIA SP. A	4.1	0.5	1.32	0.1
MELOSIRA DISTANS V. A	29.2	4.1	5.41	0.4
MELOSIRA ITALICA	12.5	1.7	13.70	1.2
RHIZOSOLENIA ERIENSIS	33.4	4.7	124.73	10.9
SYNEDRA SP. A	4.1	0.5	1.74	0.1
CHRYSOPHYCEAE	45.8	6.4	17.17	1.4
CHROMULINA SPP.	12.5	1.7	2.54	0.2
DINOBRYON BAVARICUM	16.7	2.3	3.34	0.2
MALLOMONAS ACAROIDES	8.3	1.1	10.08	0.8
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.1	1.20	0.1
HAPTOPHYCEAE	25.0	3.5	4.66	0.4
CHRYSOCHROMULINA PARVA	25.0	3.5	4.66	0.4
CRYPTOPHYCEAE	16.5	2.3	10.35	0.9
CHROOMONAS ACUTA	4.1	0.5	0.46	0.0
CRYPTOMONAS OVATA	8.3	1.1	8.64	0.7
CRYPTOMONAS PHASEOLUS	4.1	0.5	1.24	0.1
MYXOPHYCEAE	58.5	8.2	3.74	0.3
ANACYSTIS MONTANA	58.5	8.2	3.74	0.3
DINOPHYCEAE	112.6	15.8	896.74	79.0
PERIDINIUM ACICULIFERUM	8.3	1.1	208.08	18.3
PERIDINIUM INCONSPICUUM	8.3	1.1	21.68	1.9
PERIDINIUM KEYENSE	37.6	5.3	553.65	48.8
PERIDINIUM PUSILLUM	29.2	4.1	56.50	4.9
UNIDENTIFIED DINOPHYCEAE	29.2	4.1	56.82	5.0
UNKNOWN	100.2	14.1	2.91	0.2
0974-2-03	4.1	0.5	0.22	0.0
0974-2-07	96.1	13.5	2.69	0.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	708.6	99.8	1134.31	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LOS SAMPLE DATE: 07/12/77
TIME: 1300 SAMPLE DEPTH: 20.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	141.0	27.1	11.73	8.2
ANKISTRODESMUS FALCATUS	2.0	0.3	0.11	0.0
ARTHRODESMUS SPP.	2.0	0.3	0.90	0.6
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.3	0.21	0.1
COSMARIUM SPP.	2.0	0.3	1.13	0.8
CRUCIGENIA TETRAPEDIA	20.9	4.0	1.75	1.2
DICTYOSPHAERIUM PULCHELLUM	2.0	0.3	0.20	0.1
FRANCEIA DROESCHERI	2.0	0.3	0.39	0.2
MONORAPHIDIUM SAXATILE	2.0	0.3	0.23	0.1
MOUGEOTIA SPP.	2.0	0.3	2.83	2.0
OOCYSTIS SPP.	6.2	1.1	0.63	0.4
SCENEDESMUS BIJUGA	2.0	0.3	0.18	0.1
SCENEDESMUS QUADRICAUDA	2.0	0.3	0.09	0.0
SELENASTRUM MINUTUM	2.0	0.3	0.07	0.0
COCCOID GREENS	91.9	17.7	2.94	2.0
BACILLARIOPHYCEAE	64.2	12.3	83.68	59.4
CYCLOTELLA STELLIGERA	6.2	1.1	3.32	2.3
CYCLOTELLA SPP.	2.0	0.3	0.97	0.6
MELOSIRA DISTANS V. A	27.1	5.2	5.02	3.5
RHIZOSOLENIA ERIENSIS	16.7	3.2	62.36	44.3
SYNEDRA TENERA	2.0	0.3	0.60	0.4
SYNEDRA SP. A	6.2	1.1	2.62	1.8
SYNEDRA SPP.	2.0	0.3	0.59	0.4
TABELLARIA FENESTRATA	2.0	0.3	8.16	5.8
CHRYSOPHYCEAE	35.3	6.8	10.78	7.6
CHROMULINA SPP.	4.1	0.7	0.84	0.6
MALLOMONAS GLOBOSA	2.0	0.3	2.40	1.7
OCHROMONAS SPP.	20.9	4.0	6.33	4.4
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.6	1.20	0.8
CRYPTOPHYCEAE	31.1	5.9	14.20	10.0
CHROOMONAS ACUTA	10.4	2.0	1.15	0.8
CRYPTOMONAS EROSA	4.1	0.7	6.52	4.6
CRYPTOMONAS OVATA	2.0	0.3	2.16	1.5
CRYPTOMONAS PHASEOLUS	14.6	2.8	4.35	3.0
MYXOPHYCEAE	22.9	4.4	2.00	1.4
ANACYSTIS MONTANA	22.9	4.4	2.00	1.4
DINOPHYCEAE	6.1	1.1	12.15	8.6
PERIDINIUM PUSILLUM	2.0	0.3	4.03	2.8
UNIDENTIFIED DINOPHYCEAE	4.1	0.7	8.11	5.7
UNKNOWN	217.2	41.9	6.19	4.3
0574-2-03	4.1	0.7	0.22	0.1
0974-2-07	213.1	41.1	5.96	4.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	517.8	99.8	140.75	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 07/12/77
TIME: 0900 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	131.1	37.5	21.07	11.0
ANKISTRODESMUS FALCATUS	2.0	0.5	0.11	0.0
ARTHRODESMUS SUBULATUS	2.0	0.5	12.03	6.3
CRUCIGENIA TETRAPEDIA	18.8	5.3	1.27	0.6
OOCYSTIS SPP.	14.6	4.1	0.89	0.4
SCENEDESMUS BIJUGA	8.3	2.3	0.64	0.3
SCENEDESMUS CARINATUS	4.1	1.1	2.19	1.1
SELENASTRUM MINUTUM	8.3	2.3	0.31	0.1
COCCOID GREENS	71.0	20.3	2.27	1.2
UNIDENTIFIED CHLOROPHYCEAE	2.0	0.5	1.32	0.7
BACILLARIOPHYCEAE	66.4	18.9	79.81	42.0
CYCLOTELLA STELLIGERA	10.4	2.9	5.54	2.9
CYCLOTELLA SPP.	4.1	1.1	1.94	1.0
MELOSIRA DISTANS V. A	22.9	6.5	4.25	2.2
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	1.1	2.33	1.2
NAVICULA NOTHA	2.0	0.5	0.74	0.3
RHIZOSOLENIA ERIENSIS	16.7	4.7	62.36	32.8
SYNEDRA SP. A	6.2	1.7	2.62	1.3
CHRYSOPHYCEAE	28.9	8.2	8.31	4.3
CHROMULINA SPP.	4.1	1.1	0.84	0.4
DINOBRYON BAVARICUM	2.0	0.5	0.27	0.1
MALLOMONAS ACAROIDES	2.0	0.5	2.52	1.3
OCHROMONAS SPP.	10.4	2.9	3.16	1.6
UNIDENTIFIED CHRYSOPHYCEAE	10.4	2.9	1.50	0.7
CRYPTOPHYCEAE	18.6	5.3	6.68	3.5
CHROOMONAS ACUTA	8.3	2.3	0.92	0.4
CRYPTOMONAS EROSA	2.0	0.5	3.26	1.7
CRYPTOMONAS PHASEOLUS	8.3	2.3	2.49	1.3
MYXOPHYCEAE	8.3	2.3	0.53	0.2
ANACYSTIS MONTANA	8.3	2.3	0.53	0.2
DINOPHYCEAE	10.1	2.8	70.83	37.3
PERIDINIUM ACICULIFERUM	2.0	0.5	52.02	27.4
PERIDINIUM INCONSPICUUM	2.0	0.5	5.42	2.8
PERIDINIUM SPP.	2.0	0.5	5.27	2.7
UNIDENTIFIED DINOPHYCEAE	4.1	1.1	8.11	4.2
UNKNOWN	85.6	24.5	2.39	1.2
0974-2-07	85.6	24.5	2.39	1.2
SAMPLE TOTALS:	349.0	99.8	189.64	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LOS SAMPLE DATE: 07/12/77
TIME: 0900 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	49.7	11.9	47.63	22.3
CRUCIGENIA TETRAPEDIA	8.3	1.9	0.64	0.3
DACTYLOCOCCUS INFUSIONUM	2.0	0.4	1.68	0.7
GLOEOCYSTIS VESICULOSA	6.2	1.4	2.48	1.1
MOUGEOTIA SPP.	2.0	0.4	2.83	1.3
SCENEDESMUS BIJUGA	2.0	0.4	0.18	0.0
STAURASTRUM PARADOXUM VAR. A	8.3	1.9	39.14	18.3
COCCOID GREENS	20.9	5.0	0.66	0.3
BACILLARIOPHYCEAE	131.0	31.4	73.63	34.5
ASTERIONELLA FORMOSA	10.4	2.5	5.58	2.6
CYCLOTELLA STELLIGERA	6.2	1.4	3.32	1.5
CYMBELLA AFFINIS	2.0	0.4	1.93	0.9
MELOSIRA DISTANS V. A	56.4	13.5	10.43	4.9
MELOSIRA ITALICA	16.7	4.0	18.27	8.5
MELOSIRA ITALICA VAR. TENUISSIMA	25.0	6.0	13.99	6.5
NAVICULA NOTHA	2.0	0.4	0.74	0.3
NITZSCHIA SPP.	2.0	0.4	1.12	0.5
RHIZOSOLENIA ERIENSIS	4.1	0.9	15.59	7.3
SYNEDRA SP. A	6.2	1.4	2.62	1.2
CHRYSOPHYCEAE	62.4	14.9	21.44	10.0
MALLOMONAS ACAROIDES	6.2	1.4	7.56	3.5
MALLOMONAS GLOBOSA	2.0	0.4	2.40	1.1
OCHROMONAS SPP.	22.9	5.5	6.96	3.2
UNIDENTIFIED CHRYSOPHYCEAE	31.3	7.5	4.51	2.1
CRYPTOPHYCEAE	31.2	7.4	10.07	4.7
CHROOMONAS ACUTA	12.5	3.0	1.39	0.6
CRYPTOMONAS OVATA	4.1	0.9	4.32	2.0
CRYPTOMONAS PHASEOLUS	14.6	3.5	4.35	2.0
MYXOPHYCEAE	4.0	0.9	0.08	0.0
AGMENELLUM QUADRIDUPLICATUM	2.0	0.4	0.02	0.0
PHORMIDIUM ANGUSTISSIMA	2.0	0.4	0.05	0.0
DINOPHYCEAE	8.2	1.9	56.02	26.3
PERIDINIUM DEFLANDREI	4.1	0.9	47.91	22.4
UNIDENTIFIED DINOPHYCEAE	4.1	0.9	8.11	3.8
UNKNOWN	129.5	31.1	4.12	1.9
0974-2-07	125.4	30.1	3.51	1.6
0976-2-01	4.1	0.9	0.61	0.2
SAMPLE TOTALS:	416.0	99.9	213.02	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1145 SAMPLE DEPTH: 6.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	9045.0	98.8	1129.02	80.2
ANKISTRODESMUS FALCATUS	8.3	0.0	0.45	0.0
ARTHRODESMUS SPP.	618.6	6.7	267.87	19.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	8284.7	90.5	845.04	60.0
CRUCIGENIA TETRAPEDIA	16.7	0.1	1.47	0.1
KIRCHNERIELLA SPP.	8.3	0.0	0.15	0.0
MONORAPHIDIUM BRAUNII	8.3	0.0	1.06	0.0
SCENEDESMUS DENTICULATUS	8.3	0.0	1.58	0.1
SELENASTRUM MINUTUM	8.3	0.0	0.31	0.0
STAURASTRUM TETRACERUM	16.7	0.1	8.91	0.6
COCCOID GREENS	66.8	0.7	2.14	0.1
BACILLARIOPHYCEAE	8.3	0.0	4.43	0.3
CYCLOTELLA STELLIGERA	8.3	0.0	4.43	0.3
CRYPTOPHYCEAE	50.0	0.5	11.14	0.7
CHROOMONAS ACUTA	25.0	0.2	2.78	0.1
CHROOMONAS REFLEXA	8.3	0.1	3.37	0.2
CRYPTOMONAS PHASEOLUS	16.7	0.1	4.98	0.3
MYXOPHYCEAE	8.3	0.0	0.03	0.0
AGMENELLUM QUADRIDUPLICATUM	8.3	0.0	0.03	0.0
DINOPHYCEAE	25.0	0.2	262.30	18.6
PERIDINIUM KEYENSE	16.7	0.1	246.06	17.4
UNIDENTIFIED DINOPHYCEAE	8.3	0.0	16.23	1.1
UNKNOWN	8.3	0.0	0.53	0.0
0974-2-07	8.3	0.0	0.23	0.0
SAMPLE TOTALS:	9144.9	99.9	1407.17	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1145 SAMPLE DEPTH: 22.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	31.8	33.9	7.77	19.1
ANKISTRODESMUS FALCATUS	1.0	1.0	0.05	0.1
ARTHRODESMUS SPP.	1.3	1.3	0.45	1.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	14.5	15.4	1.48	3.6
CRUCIGENIA TETRAPEDIA	2.0	2.1	0.13	0.3
MONORAPHIDIUM SETIFORME	2.0	2.1	0.36	0.8
OOCYSTIS PUSILLA	2.0	2.1	0.14	0.3
STAURASTRUM PARADOXUM VAR. A	1.0	1.0	0.86	2.1
COCCOID GREENS	8.3	8.8	0.99	2.4
BACILLARIOPHYCEAE	39.2	41.8	15.99	39.4
CYCLOTELLA STELLIGERA	1.3	1.4	0.55	1.4
EUNOTIA ZAZUMINENSIS	5.2	5.5	0.22	0.5
MELOSIRA DISTANS VAR. ALPIGENA	1.0	1.0	0.09	0.2
MELOSIRA DISTANS V. A	10.4	11.1	1.82	4.5
MELOSIRA ITALICA VAR. TENUISSIMA	14.5	15.4	12.00	29.6
NITZSCHIA SPP.	1.0	1.0	0.56	1.4
SYNEDRA TENERA	2.0	2.1	0.13	0.3
SYNEDRA SP. A	4.1	4.3	0.73	1.8
CHRYSOPHYCEAE	1.0	1.0	0.25	0.6
MALLOMONAS ACAROIDES	1.0	1.0	0.25	0.6
CRYPTOPHYCEAE	20.6	21.9	15.46	38.1
CHROOMONAS ACUTA	1.0	1.0	0.42	1.0
CHROOMONAS REFLEXA	1.3	1.3	0.08	0.2
CRYPTOMONAS EROSA	5.2	5.5	0.82	2.0
CRYPTOMONAS OVATA	1.0	1.0	0.07	0.2
CRYPTOMONAS PHASEOLUS	10.4	11.1	13.06	32.2
CRYPTOMONAS REFLEXA	2.0	2.1	1.03	2.5
MYXOPHYCEAE	1.0	1.0	0.01	0.0
AGMENELLUM QUADRIDUPLICATUM	1.0	1.0	0.01	0.0
SAMPLE TOTALS:	93.6	99.8	40.50	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1215 SAMPLE DEPTH: 8.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	7715.5	97.5	1667.19	63.7
ANKISTRODESMUS FALCATUS	8.3	0.1	0.45	0.0
ARTHRODESMUS INCUS	8.3	0.1	27.88	1.0
ARTHRODESMUS SPP.	2474.5	31.2	1071.48	41.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4957.4	62.6	505.66	19.3
COSMARIUM SPP.	8.3	0.1	4.54	0.2
GOLENKINIA RADIATA	8.3	0.1	1.33	0.0
MONORAPHIDIUM SAXATILE	8.3	0.1	0.92	0.0
PEDIASTRUM TETRAS VAR. TETRAODON	8.3	0.1	6.14	0.2
QUADRIGULA CLOSTERIOIDES	8.3	0.1	0.76	0.0
SELENASTRUM MINUTUM	8.3	0.1	0.31	0.0
STAURASTRUM CURVATUM	8.3	0.1	36.80	1.4
STAURASTRUM TETRACERUM	8.3	0.1	4.45	0.2
COCCOID GREENS	200.6	2.5	6.42	0.2
BACILLARIOPHYCEAE	66.8	0.8	50.60	1.9
CYCLOTELLA STELLIGERA	16.7	0.2	8.87	0.3
MELOSIRA DISTANS V. A	25.0	0.3	4.63	0.2
RHIZOSOLENIA ERIENSIS	8.3	0.1	31.18	1.2
SYNEDRA TENERA	8.3	0.1	2.41	0.1
SYNEDRA SP. A	8.3	0.1	3.49	0.1
CHRYSOPHYCEAE	8.3	0.1	1.69	0.1
CHROMULINA SPP.	8.3	0.1	1.69	0.1
CRYPTOPHYCEAE	33.4	0.4	6.83	0.3
CHROOMONAS ACUTA	16.7	0.2	1.85	0.1
CRYPTOMONAS PHASEOLUS	16.7	0.2	4.98	0.2
DINOPHYCEAE	50.1	0.6	885.44	33.8
PERIDINIUM INCONSPICUUM	8.3	0.1	21.68	0.8
PERIDINIUM KEYENSE	16.7	0.2	246.06	9.4
PERIDINIUM PUSILLUM	8.3	0.1	16.14	0.6
PERIDINIUM WISCONSINENSE	16.7	0.2	601.55	23.0
UNKNOWN	33.5	0.4	1.27	0.0
0374-22-03	8.3	0.1	0.21	0.0
0574-22-03	8.3	0.1	0.45	0.0
0774-22-24	8.3	0.1	0.37	0.0
0974-22-07	8.3	0.1	0.23	0.0
SAMPLE TOTALS:	7937.0	99.8	2613.06	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1215 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	254.5	57.5	75.52	27.6
ARTHRODESMUS SUBULATUS	4.1	0.9	24.07	8.8
ARTHRODESMUS SPP.	87.7	19.8	38.00	13.9
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	96.1	21.7	9.80	3.5
CRUCIGENIA TETRAPEDIA	8.3	1.8	0.64	0.2
MONORAPHIDIUM SAXATILE	8.3	1.8	0.92	0.3
OOCYSTIS PUSILLA	4.1	0.9	0.60	0.2
COCCOID GREENS	45.9	10.3	1.47	0.5
BACILLARIOPHYCEAE	116.8	26.4	32.74	11.9
CYCLOTELLA STELLIGERA	12.5	2.8	6.65	2.4
EUNOTIA ZAZUMINENSIS	25.0	5.6	10.95	4.0
MELOSIRA DISTANS V. A	75.2	17.0	13.91	5.1
SYNEDRA TENERA	4.1	0.9	1.20	0.4
CHRYSOPHYCEAE	12.3	2.7	1.25	0.5
CHROMULINA SPP.	4.1	0.9	0.84	0.3
KEPHYRION SPP.	4.1	0.9	0.36	0.1
MALLOMONAS ACAROIDES	4.1	0.9	5.04	1.8
CRYPTOPHYCEAE	33.4	7.5	6.05	2.2
CHRODMONAS ACUTA	20.7	4.7	2.31	0.8
CRYPTOMONAS PHASEOLUS	12.5	2.8	3.73	1.3
DINOPHYCEAE	4.1	0.9	150.38	55.1
PERIDINIUM WISCONSINENSE	4.1	0.9	150.38	55.1
UNKNOWN	20.7	4.6	1.83	0.6
0574-2-03	8.3	1.8	0.45	0.1
0974-2-07	8.3	1.8	0.23	0.0
1175-2-04	4.1	0.9	1.14	0.4
SAMPLE TOTALS:	441.8	99.8	272.80	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1040 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	7966.6	98.6	1680.37	86.0
ANKISTRODESMUS FALCATUS	8.3	0.1	0.45	0.0
ANKISTRODESMUS FUSIFORMIS	8.3	0.1	0.86	0.0
ARTHRODESMUS SPP.	2608.3	32.3	1129.40	57.8
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	5057.8	62.6	515.89	26.4
COSMARIUM TENUE	41.8	0.5	19.10	0.9
GOLENKINIA RADIATA	16.7	0.2	2.67	0.1
KIRCHNERIELLA SPP.	25.0	0.3	0.47	0.0
MONORAPHIDIUM BRAUNII	8.3	0.1	1.06	0.0
MONORAPHIDIUM CONTORTUM	8.3	0.1	0.35	0.0
STAURASTRUM TETRACERUM	8.3	0.1	4.45	0.2
COCCOID GREENS	175.5	2.1	5.61	0.2
CHRYSOPHYCEAE	50.0	0.6	6.74	0.3
CHROMULINA SPP.	16.7	0.2	3.39	0.1
DINOBRYON BAVARICUM	8.3	0.1	1.11	0.0
KEPHYRION SPP.	25.0	0.3	2.20	0.1
MYXOPHYCEAE	25.0	0.3	1.13	0.0
AGMENELLUM QUADRIDUPLICATUM	16.7	0.2	0.06	0.0
ANACYSTIS MONTANA	8.3	0.1	1.07	0.0
DINOPHYCEAE	25.0	0.3	262.30	13.4
PERIDINIUM KEYENSE	16.7	0.2	246.06	12.6
UNIDENTIFIED DINOPHYCEAE	8.3	0.1	16.23	0.8
UNKNOWN	8.3	0.1	0.23	0.0
0974-2-07	8.3	0.1	0.23	0.0
SAMPLE TOTALS:	8074.9	99.9	1950.75	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1040 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	25.6	25.9	18.05	23.4
ARTHRODESMUS INCUS	1.0	1.0	3.46	4.5
ARTHRODESMUS SPP.	3.1	3.1	1.35	1.7
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	3.1	3.1	0.31	0.4
COSMARIUM PHASEOLUS F. MINOR	1.0	1.0	1.57	2.0
MONORAPHIDIUM SAXATILE	1.0	1.0	0.11	0.1
MOUGEOTIA SPP.	1.0	1.0	1.41	1.8
OOCYSTIS PUSILLA	1.0	1.0	0.07	0.1
PLANKTOSPHAERIA GELATINOSA	1.0	1.0	0.20	0.3
SCENEDESMUS QUADRICAUDA	1.0	1.0	0.04	0.0
STAURASTRUM CURVATUM	2.0	2.0	0.15	0.2
COCCOID GREENS	10.4	10.5	0.33	0.4
BACILLARIOPHYCEAE	53.6	54.3	43.74	56.8
CYCLOTELLA STELLIGERA	7.2	7.3	3.86	5.0
EUNOTIA ZAZUMINENSIS	11.4	11.5	4.99	6.5
MELOSIRA DISTANS VAR. ALPIGENA	2.0	2.0	0.44	0.6
MELOSIRA DISTANS V. A	17.6	17.8	3.27	4.2
MELOSIRA ITALICA VAR. TENUISSIMA	2.1	2.1	1.16	1.5
RHIZOSOLENIA ERIENSIS	5.2	5.2	19.39	25.2
SYNEDRA TENERA	1.0	1.0	0.30	0.4
SYNEDRA SP. A	5.2	5.2	2.13	2.8
TABELLARIA FENESTRATA	2.0	2.0	8.13	10.5
CHRYSOPHYCEAE	6.3	6.3	2.96	3.8
DINOBRYON BAVARICUM	2.0	2.0	0.27	0.3
KEPHYRION SPP.	2.0	2.0	0.15	0.2
MALLOMONAS ACAROIDES	2.2	2.2	0.50	0.7
CRYPTOPHYCEAE	6.2	6.2	0.86	1.1
CRYPTOMONAS PHASEOLUS	5.2	5.2	0.54	0.7
CRYPTOMONAS REFLEXA	1.0	1.0	0.32	0.4
DINOPHYCEAE	5.1	5.1	1.21	1.6
GLENODINIUM ARMATUM	3.1	3.1	0.21	0.3
UNIDENTIFIED DINOPHYCEAE	2.0	2.0	1.00	1.3
UNKNOWN	2.0	2.0	0.05	0.0
0374-2-03	1.0	1.0	0.02	0.0
0974-2-07	1.0	1.0	0.02	0.0
SAMPLE TOTALS:	98.5	99.8	76.92	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1245 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	2854.1	91.6	625.66	39.7
ANKISTRODESMUS FALCATUS	12.5	0.4	0.68	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	0.1	0.43	0.0
ARTHRODESMUS INCUS	8.3	0.2	27.88	1.7
ARTHRODESMUS SPP.	902.8	29.0	390.94	24.9
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	1697.0	54.5	173.10	11.0
COSMARIUM TENUE	8.3	0.2	3.82	0.2
CRUCIGENIA TETRAPEDIA	8.3	0.2	0.73	0.0
GOLENKINIA RADIATA	4.1	0.1	0.66	0.0
MONORAPHIDIUM SAXATILE	4.1	0.1	0.46	0.0
OOCYSTIS PARVA	20.9	0.6	2.71	0.2
SCENEDESMUS QUADRICAUDA	4.1	0.1	0.19	0.0
STAURASTRUM CURVATUM	4.1	0.1	18.40	1.2
COCCOID GREENS	175.5	5.6	5.61	0.4
BACILLARIOPHYCEAE	75.0	2.4	26.89	1.7
CYCLOTELLA STELLIGERA	33.4	1.0	17.75	1.1
MELOSIRA DISTANS V. A	33.4	1.0	6.18	0.4
SYNEDRA TENERA	4.1	0.1	1.20	0.1
SYNEDRA SP. A	4.1	0.1	1.74	0.1
CHRYSOPHYCEAE	16.6	0.5	2.21	0.1
DINOBRYON BAVARICUM	12.5	0.4	1.66	0.1
PSEUDOKEPHYRION SPP.	4.1	0.1	0.55	0.0
CRYPTOPHYCEAE	12.4	0.3	6.48	0.4
CRYPTOMONAS PHASEOLUS	8.3	0.2	2.49	0.2
CYANOMONAS SPP.	4.1	0.1	3.99	0.2
DINOPHYCEAE	150.2	4.8	907.30	57.7
GLENODINIUM ARMATUM	58.5	1.8	97.72	6.2
PERIDINIUM INCONSPICUUM	12.5	0.4	32.52	2.0
PERIDINIUM KEYENSE	37.6	1.2	553.65	35.2
PERIDINIUM PUSILLUM	4.1	0.1	8.07	0.5
PERIDINIUM WISCONSINENSE	4.1	0.1	150.38	9.5
UNIDENTIFIED DINOPHYCEAE	33.4	1.0	64.94	4.1
UNKNOWN	4.1	0.1	1.14	0.0
1175-2-04	4.1	0.1	1.14	0.0
SAMPLE TOTALS:	3112.4	99.9	1569.72	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1245 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	186.9	59.9	67.01	43.2
ARTHRODESMUS SUBULATUS	2.0	0.6	12.03	7.7
ARTHRODESMUS SPP.	31.3	10.0	13.57	8.7
CHLAMYDOMONAS SPP.	2.0	0.6	0.17	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	68.9	22.1	7.03	4.5
CRUCIGENIA TETRAPEDIA	4.1	1.3	0.27	0.2
ELAKATOTHRIX GELATINOSA	2.0	0.6	0.12	0.1
GOLENKINIA RADIATA	2.0	0.6	0.33	0.2
MONORAPHIDIUM SAXATILE	4.1	1.3	0.46	0.3
MOUGEOTIA SPP.	6.2	1.9	11.35	7.3
OOCYSTIS PUSILLA	2.0	0.6	0.15	0.1
QUADRIGULA CLOSTERIOIDES	2.0	0.6	0.38	0.2
SCENEDESMUS DENTICULATUS	2.0	0.6	0.39	0.2
STAURASTRUM CURVATUM	2.0	0.6	9.20	5.9
STAURASTRUM PARADOXUM VAR. A	2.0	0.6	9.78	6.3
COCCOID GREENS	54.3	17.4	1.73	1.1
BACILLARIOPHYCEAE	93.6	30.0	64.83	41.7
CYCLOTELLA STELLIGERA	6.2	1.9	3.32	2.1
EUNOTIA ZAZUMINENSIS	8.3	2.6	3.65	2.3
MELOSIRA DISTANS V. A	33.4	10.7	6.18	4.0
MELOSIRA ITALICA	12.5	4.0	13.70	8.8
MELOSIRA ITALICA VAR. TENUISSIMA	22.9	7.3	12.82	8.2
RHIZOSOLENIA ERIENSIS	6.2	1.9	23.38	15.1
SYNEDRA SP. A	4.1	1.3	1.74	1.1
CHRYSOPHYCEAE	4.1	1.3	5.04	3.2
MALLOMONAS ACAROIDES	4.1	1.3	5.04	3.2
CRYPTOPHYCEAE	8.3	2.6	2.49	1.6
CRYPTOMONAS PHASEOLUS	8.3	2.6	2.49	1.6
DINOPHYCEAE	6.2	1.9	14.90	9.6
PERIDINIUM INCONSPICUUM	4.1	1.3	10.84	7.0
UNIDENTIFIED DINOPHYCEAE	2.0	0.6	4.05	2.6
UNKNOWN	12.5	4.0	0.35	0.2
0974-2-07	12.5	4.0	0.35	0.2
SAMPLE TOTALS:	311.5	99.9	154.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1510 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	350.3	58.3	117.74	8.6
ANKISTRODESMUS FALCATUS VAR. ACICULARIS	4.1	0.6	0.35	0.0
ARTHRODESMUS INCUS	8.3	1.3	27.88	2.0
ARTHRODESMUS SPP.	87.7	14.6	38.00	2.8
CHLAMYDOMONAS SPP.	16.7	2.7	1.38	0.1
CLOSTERIUM CERATIUM	4.1	0.6	2.38	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	121.2	20.2	12.36	0.9
CRUCIGENIA TETRAPEDIA	4.1	0.6	0.36	0.0
GLOEOCYSTIS VESICULOSA	4.1	0.6	0.55	0.0
MONORAPHIDIUM SAXATILE	4.1	0.6	0.46	0.0
MOUGEOTIA SPP.	4.1	0.6	11.35	0.8
SCENEDESMUS QUADRICAUDA	4.1	0.6	0.39	0.0
STAURASTRUM PARADOXUM VAR. A	4.1	0.6	19.57	1.4
COCCOID GREENS	83.6	13.9	2.67	0.1
BACILLARIOPHYCEAE	54.2	9.0	18.02	1.3
CYCLOTELLA STELLIGERA	8.3	1.3	4.43	0.3
EUNOTIA ZAZUMINENSIS	16.7	2.7	7.30	0.5
MELOSIRA DISTANS V. A	20.9	3.4	3.86	0.2
SYNEDRA TENERA	8.3	1.3	2.41	0.1
CHRYSOPHYCEAE	28.9	4.8	13.05	0.9
CHROMULINA SPP.	4.1	0.6	0.84	0.0
DINOBRYON BAVARICUM	4.1	0.6	0.55	0.0
KEPHYRION SPP.	4.1	0.6	0.36	0.0
MALLOMONAS ACAROIDES	8.3	1.3	10.08	0.7
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.3	1.20	0.1
CRYPTOPHYCEAE	33.2	5.5	19.21	1.4
CHROOMONAS REFLEXA	8.3	1.3	3.37	0.2
CRYPTOMONAS EROSA	4.1	0.6	6.52	0.4
CRYPTOMONAS OVATA	4.1	0.6	4.32	0.3
CRYPTOMONAS PHASEOLUS	16.7	2.7	4.98	0.3
DINOPHYCEAE	116.8	19.4	1171.47	87.4
PERIDINIUM DEFLANDREI	20.9	3.4	239.55	17.8
PERIDINIUM INCONSPICUUM	25.0	4.1	65.05	4.8
PERIDINIUM KEYENSE	12.5	2.0	184.55	13.7
PERIDINIUM PUSILLUM	37.6	6.2	72.64	5.4
PERIDINIUM WISCONSINENSE	16.7	2.7	601.55	44.7
UNIDENTIFIED DINOPHYCEAE	4.1	0.6	8.11	0.6
UNKNOWN	16.5	2.7	3.59	0.2
0224-2-22	4.1	0.6	1.19	0.0
0924-2-07	4.1	0.6	0.11	0.0
1175-2-04	8.3	1.3	2.29	0.1
SAMPLE TOTALS:	599.9	99.8	1343.11	99.5

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1510 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	18.2	31.8	7.12	27.5
CHLAMYDOMONAS SPP.	1.0	1.7	0.08	0.3
COSMARIUM ORNATUM VAR. PERORNATUM	1.1	1.7	5.49	21.2
CRUCIGENIA TETRAPEDIA	3.1	5.4	0.27	1.0
GOLENKINIA RADIATA	1.0	1.7	0.16	0.6
MONORAPHIDIUM CONTORTUM	1.0	1.7	0.04	0.1
MONORAPHIDIUM SETIFORME	2.0	3.5	0.36	1.3
OOCYSTIS PUSILLA	2.0	3.5	0.22	0.8
SCENEDESMUS DENTICULATUS	1.0	1.7	0.19	0.7
SCENEDESMUS QUADRICAUDA	2.0	3.5	0.14	0.5
COCCOID GREENS	4.1	7.1	0.13	0.5
BACILLARIOPHYCEAE	29.8	52.1	12.84	49.6
CYCLOTELLA STELLIGERA	3.1	5.4	1.65	6.4
EUNOTIA ZAZUMINENSIS	1.1	1.7	0.80	3.0
MELOSIRA DISTANS V. A	13.5	23.5	2.50	9.6
MELOSIRA ITALICA	4.1	7.1	1.54	5.9
MELOSIRA ITALICA VAR. TENUISSIMA	2.0	3.5	1.16	4.4
NITZSCHIA SPP.	1.1	1.7	0.56	2.1
SYNEDRA TENERA	2.0	3.5	0.60	2.3
CHRYSOPHYCEAE	1.0	1.7	0.21	0.8
CHROMULINA SPP.	1.0	1.7	0.21	0.8
CRYPTOPHYCEAE	6.1	10.6	5.60	21.6
CHROOMONAS ACUTA	1.0	1.7	0.11	0.4
CRYPTOMONAS EROSA	3.1	5.4	4.87	18.8
CRYPTOMONAS PHASEOLUS	2.0	3.5	0.61	2.3
UNKNOWN	2.0	3.5	0.05	0.2
0974-2-07	2.0	3.5	0.05	0.2
SAMPLE TOTALS:	57.1	99.9	25.84	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1445 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	688.7	77.4	232.37	22.5
ANKISTRODESMUS FUSIFORMIS	4.1	0.4	0.43	0.0
ARTHRODESMUS INCUS	12.5	1.4	41.82	3.9
ARTHRODESMUS SPP.	313.5	35.2	135.74	12.9
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	167.2	18.8	17.05	1.6
COSMARIUM SPP.	4.1	0.4	2.27	0.2
CRUCIGENIA TETRAPEDIA	16.7	1.8	0.91	0.0
GOLENKINIA RADIATA	4.1	0.4	0.66	0.0
KIRCHNERIELLA SPP.	8.3	0.9	0.15	0.0
MONORAPHIDIUM SAXATILE	4.1	0.4	0.46	0.0
MOUGEOTIA SPP.	4.1	0.4	5.67	0.5
OOCYSTIS SPP.	8.3	0.9	0.50	0.0
QUADRIGULA CLOSTERIOIDES	8.3	0.9	1.52	0.1
SCENEDESMUS BIJUGA	12.5	1.4	1.10	0.1
SCENEDESMUS DENTICULATUS	4.1	0.4	0.79	0.0
SPHAEROZOSMA GRANULATUM	16.7	1.8	2.57	0.2
STAURASTRUM CURVATUM	4.1	0.4	18.40	1.7
STAURASTRUM TETRACERUM	8.3	0.9	4.45	0.4
COCCOID GREENS	87.7	9.8	2.80	0.2
BACILLARIOPHYCEAE	58.3	6.5	24.02	2.3
CYCLOTELLA STELLIGERA	12.5	1.4	6.65	0.6
EUNOTIA ZAZUMINENSIS	33.4	3.7	14.61	1.3
MELOSIRA DISTANS V. A	8.3	0.9	1.54	0.1
SYNEDRA TENERA	4.1	0.4	1.20	0.1
CHRYSOPHYCEAE	24.9	2.7	3.28	0.3
DINOBRYON BAVARICUM	8.3	0.9	1.11	0.1
KEPHYRION SPP.	12.5	1.4	1.10	0.1
MALLOMONAS ALLANTOIDES	4.1	0.4	1.07	0.1
CRYPTOPHYCEAE	20.9	2.3	6.22	0.5
CRYPTOMONAS PHASEOLUS	20.9	2.3	6.22	0.5
DINOPHYCEAE	95.9	10.7	777.03	74.6
GLENODINIUM ARMATUM	29.2	3.2	48.86	4.6
PERIDINIUM INCONSPICUUM	16.7	1.8	43.37	4.1
PERIDINIUM KEYENSE	45.9	5.1	676.68	64.5
UNIDENTIFIED DINOPHYCEAE	4.1	0.4	8.11	0.7
SAMPLE TOTALS:	888.7	99.8	1047.95	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1445 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	17.2	28.0	6.17	13.4
ANKISTRODESMUS FALCATUS	2.0	3.2	0.11	0.2
ANKISTRODESMUS FUSIFORMIS	1.0	1.6	0.10	0.2
GOLENKINIA RADIATA	1.0	1.6	0.16	0.3
MONORAPHIDIUM CONTORTUM	2.0	3.2	0.08	0.1
OOCYSTIS LACUSTRIS	1.0	1.6	0.53	1.1
PLANKTOSPHAERIA GELATINOSA	1.0	1.6	0.20	0.4
SCENEDESMUS QUADRICAUDA	1.0	1.6	0.14	0.3
STAURASTRUM CURVATUM	1.0	1.6	4.57	9.9
COCCOID GREENS	7.2	11.7	0.23	0.5
BACILLARIOPHYCEAE	31.8	51.8	30.52	66.5
CYCLOTELLA STELLIGERA	1.0	1.6	0.55	1.2
EUNOTIA ZAZUMINENSIS	1.0	1.6	0.45	1.0
MELOSIRA DISTANS VAR. ALPIGENA	2.0	3.2	0.44	0.9
MELOSIRA DISTANS V. A	7.2	11.7	1.34	2.9
MELOSIRA ITALICA VAR. TENUISSIMA	10.4	16.9	15.80	34.5
RHIZOSOLENIA ERIENSIS	2.0	3.2	7.75	16.9
SYNEDRA TENERA	1.0	1.6	0.30	0.6
SYNEDRA SP. A	3.1	5.0	1.30	2.8
TABELLARIA FENESTRATA	3.1	5.0	12.49	27.2
UNIDENTIFIED PENNATE DIATOMS	1.0	1.6	0.36	0.7
CHRYSOPHYCEAE	2.0	3.2	2.50	5.4
MALLOMONAS ACAROIDES	2.0	3.2	2.50	5.4
CRYPTOPHYCEAE	9.3	15.1	4.89	10.6
CHROOMONAS ACUTA	1.0	1.6	0.12	0.2
CRYPTOMONAS OVATA	3.1	5.0	3.22	7.0
CRYPTOMONAS PHASEOLUS	5.2	8.4	1.54	3.3
DINOPHYCEAE	1.0	1.6	1.73	3.7
GLENODINIUM ARMATUM	1.0	1.6	1.73	3.7
SAMPLE TOTALS:	61.3	99.9	45.83	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1320 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	480.0	75.2	110.73	30.0
ARTHRODESMUS INCUS	4.1	0.6	13.94	3.7
ARTHRODESMUS SPP.	167.2	26.2	72.39	19.6
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	150.4	23.5	15.34	4.1
CRUCIGENIA TETRAPEDIA	8.3	1.3	0.73	0.1
DICTYOSPHAERIUM PULCHELLUM	4.1	0.6	0.40	0.1
GLOEOCYSTIS PLANCTONICA	4.1	0.6	0.80	0.2
OOCYSTIS PUSILLA	8.3	1.3	0.60	0.2
QUADRIGULA CLOSTERIOIDES	4.1	0.6	0.76	0.2
SCENEDESMUS QUADRICAUDA	4.1	0.6	0.19	0.0
TETRAEDRON CAUDATUM	4.1	0.6	1.67	0.4
COCCOID GREENS	121.2	19.0	3.87	1.0
BACILLARIOPHYCEAE	66.5	10.4	34.04	9.2
CYCLOTELLA STELLIGERA	8.3	1.3	4.43	1.2
EUNOTIA ZAZUMINENSIS	8.3	1.3	3.65	1.0
EUNOTIA SP. A	4.1	0.6	1.32	0.3
MELOSIRA DISTANS V. A	37.6	5.8	6.95	1.8
NITZSCHIA PALEA	4.1	0.6	2.07	0.5
RHIZOSOLENIA ERIENSIS	4.1	0.6	15.59	4.2
CHRYSOPHYCEAE	24.8	3.8	7.54	2.0
CHROMULINA SPP.	4.1	0.6	0.84	0.2
DINOBRYON BAVARICUM	4.1	0.6	0.55	0.1
KEPHYRION SPP.	12.5	1.9	1.10	0.3
MALLOMONAS ACAROIDES	4.1	0.6	5.04	1.3
CRYPTOPHYCEAE	8.3	1.3	2.49	0.6
CRYPTOMONAS PHASEOLUS	8.3	1.3	2.49	0.6
DINOPHYCEAE	45.7	7.1	212.35	57.7
PERIDINIUM INCONSPICUUM	25.0	3.9	65.25	17.7
PERIDINIUM KEYENSE	8.3	1.3	123.03	33.4
PERIDINIUM PUSILLUM	8.3	1.3	16.14	4.3
UNIDENTIFIED DINOPHYCEAE	4.1	0.6	8.11	2.2
UNKNOWN	12.5	1.9	0.35	0.0
0974-2-07	12.5	1.9	0.35	0.0
SAMPLE TOTALS:	637.8	99.9	367.51	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1320 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	354.4	76.5	89.04	43.1
ANKISTRODESMUS FALCATUS	8.3	1.7	0.45	0.2
ANKISTRODESMUS FUSIFORMIS	4.1	0.8	0.43	0.2
ARTHRODESMUS INCUS	8.3	1.7	27.88	13.5
ARTHRODESMUS SPP.	87.7	18.9	38.00	18.4
CHLAMYDOMONAS SPP.	4.1	0.8	0.34	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	133.2	28.9	13.64	6.6
COSMARIUM TENUE	8.3	1.7	3.82	1.8
CRUCIGENIA TETRAPEDIA	4.1	0.8	0.18	0.0
KIRCHNERIELLA SPP.	4.1	0.8	0.07	0.0
MONORAPHIDIUM SAXATILE	4.1	0.8	0.46	0.2
SCENEDESMUS DENTICULATUS	4.1	0.8	0.79	0.4
SCENEDESMUS QUADRICAUDA	4.1	0.8	0.39	0.2
COCCOID GREENS	79.4	17.1	2.54	1.2
BACILLARIOPHYCEAE	66.6	14.3	31.75	15.4
CYMBELLA SPP.	4.1	0.8	5.83	2.8
MELOSIRA DISTANS V. A	16.7	3.6	3.09	1.5
MELOSIRA ITALICA VAR. TENUISSIMA	33.4	7.2	18.65	9.0
SYNEDRA TENERA	8.3	1.7	2.41	1.2
SYNEDRA SP. A	4.1	0.8	1.74	0.8
CHRYSOPHYCEAE	4.1	0.8	0.36	0.2
KEPHYRION SPP.	4.1	0.8	0.36	0.2
CRYPTOPHYCEAE	12.4	2.6	4.17	2.0
CHROOMONAS REFLEXA	4.1	0.8	1.68	0.8
CRYPTOMONAS PHASEOLUS	8.3	1.7	2.49	1.2
DINOPHYCEAE	16.6	3.5	80.43	38.9
PERIDINIUM DEFLANDREI	4.1	0.8	47.91	23.2
PERIDINIUM INCONSPICUUM	12.5	2.7	32.52	15.7
UNKNOWN	8.3	1.7	0.23	0.1
0974-2-07	8.3	1.7	0.23	0.1
SAMPLE TOTALS:	462.4	99.8	206.01	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 08/09/77
TIME: 1330 SAMPLE DEPTH: 7.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	935.4	73.4	195.88	23.5
ANKISTRODESMUS FALCATUS VAR. ACICULARIS	8.3	0.6	0.70	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	0.3	0.43	0.0
ARTHRODESMUS INCUS	4.1	0.3	13.94	1.7
ARTHRODESMUS SPP.	225.7	17.7	97.73	11.7
CLOSTERIUM CERATIUM	4.1	0.3	2.38	0.3
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	497.4	39.0	50.73	6.1
CRUCIGENIA TETRAPEDIA	8.3	0.6	0.64	0.1
DACTYLOCOCCUS INFUSIONUM	8.3	0.6	0.64	0.1
MONORAPHIDIUM BRAUNII	4.1	0.3	0.53	0.1
MONORAPHIDIUM SETIFORME	4.1	0.3	0.72	0.1
SCENEDESMUS DENTICULATUS	4.1	0.3	0.79	0.1
STAURASTRUM CURVATUM	4.1	0.3	18.40	2.2
TETRAEDRON CAUDATUM	4.1	0.3	4.67	0.6
COCCOID GREENS	154.6	12.1	14.94	1.8
BACILLARIOPHYCEAE	200.1	15.7	114.40	13.7
CYCLOTELLA STELLIGERA	62.7	4.9	33.29	4.0
EUNOTIA SP. A	4.1	0.3	1.32	0.2
MELOSIRA DISTANS VAR. ALPIGENA	8.3	0.6	1.80	0.2
MELOSIRA DISTANS V. A	96.1	7.5	17.78	2.1
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	0.3	2.33	0.3
NITZSCHIA LORENZIANA VAR. SUBTILIS	4.1	0.3	20.33	2.4
NITZSCHIA SPP.	4.1	0.3	2.25	0.3
RHIZOSOLENIA ERIENSIS	8.3	0.6	31.58	3.8
SYNEDRA SP. A	8.3	0.6	3.49	0.4
CHRYSOPHYCEAE	37.3	2.9	16.22	1.9
CHROMULINA SPP.	4.1	0.3	0.84	0.1
DINOBRYON BAVARICUM	4.1	0.3	0.55	0.1
KEPHYRION SPP.	16.7	1.3	1.47	0.2
MALLOMONAS ACAROIDES	8.3	0.6	10.08	1.2
SYNURA SPINOSA	4.1	0.3	3.60	0.4
CRYPTOPHYCEAE	8.3	0.6	1.27	0.2
CHROOMONAS ACUTA	4.1	0.3	0.45	0.1
CRYPTOMONAS PHASEOLUS	4.1	0.3	0.82	0.1
EUGLENOPHYCEAE	4.1	0.3	5.30	0.6
EUGLENA SPP.	4.1	0.3	5.30	0.6
DINOPHYCEAE	62.5	4.9	490.32	58.8
GLENODINIUM ARMATUM	29.2	2.3	48.86	5.9
PERIDINIUM INCONSPICUUM	4.1	0.3	10.68	1.3
PERIDINIUM KEYENSE	29.2	2.3	430.66	51.6
UNKNOWN	25.0	2.0	2.16	0.3
0774-2-28	4.1	0.3	1.58	0.2
0974-2-07	20.9	1.6	0.58	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	1272.6	99.9	830.00	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 08/09/77
TIME: 1330 SAMPLE DEPTH: 20.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	11.0	15.3	1.52	4.9
CRUCIGENIA TETRAPEDIA	2.0	2.7	0.09	0.2
GLOEOCYSTIS VESICULOSA	1.0	1.3	0.27	0.8
MONORAPHIDIUM SAXATILE	1.0	1.3	0.11	0.3
MONORAPHIDIUM SETIFORME	1.0	1.3	0.18	0.5
OOCYSTIS PUSILLA	1.0	1.3	0.07	0.2
QUADRIGULA CLOSTERIOIDES	1.0	1.3	0.37	1.2
SCENEDESMUS BIJUGA	1.0	1.3	0.18	0.6
SCENEDESMUS QUADRICAUDA	2.0	2.7	0.19	0.6
COCCOID GREENS	1.0	1.3	0.03	0.1
BACILLARIOPHYCEAE	44.4	61.9	15.79	51.7
CYCLOTELLA STELLIGERA	2.0	2.7	1.10	3.6
EUNOTIA SP. A	1.0	1.3	0.32	1.0
MELOSIRA DISTANS V. A	31.2	43.5	5.77	18.9
MELOSIRA ITALICA VAR. TENUISSIMA	6.2	8.6	3.48	11.4
RHIZOSOLENIA ERIENSIS	1.0	1.3	1.87	6.2
SYNEDRA SP. A	2.0	2.7	0.86	2.8
UNIDENTIFIED PENNATE DIATOMS	1.0	1.3	0.36	1.1
CHRYSOPHYCEAE	7.1	9.9	0.52	1.7
CHROMULINA SPP.	1.0	1.3	0.21	0.6
MALLOMONAS ACAROIDES	4.1	5.7	5.01	16.4
UNIDENTIFIED CHRYSOPHYCEAE	2.0	2.7	0.29	0.9
CRYPTOPHYCEAE	5.1	7.1	2.31	7.5
CRYPTOMONAS OVATA	1.0	1.3	1.07	3.5
CRYPTOMONAS PHASEOLUS	4.1	5.7	1.23	4.0
EUGLENOPHYCEAE	1.0	1.3	2.31	7.5
EUGLENA SPP.	1.0	1.3	2.31	7.5
DINOPHYCEAE	1.0	1.3	2.69	8.8
PERIDINIUM INCONSPICUUM	1.0	1.3	2.69	8.8
UNKNOWN	2.0	2.7	0.32	1.0
0774-2-22	1.0	1.3	0.29	0.9
0974-2-07	1.0	1.3	0.02	0.0
SAMPLE TOTALS:	71.6	99.8	30.49	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SJR SAMPLE DATE: 08/09/77
TIME: 920 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	73.1	41.7	10.57	16.9
ANKISTRODESMUS FALCATUS	1.3	0.7	0.07	0.1
ARTHRODESMUS SPP.	11.1	6.3	4.81	7.7
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	13.9	7.9	1.41	2.2
CRUCIGENIA TETRAPEDIA	2.7	1.5	0.21	0.3
GOLENKINIA RADIATA	1.3	0.7	0.22	0.3
MONORAPHIDIUM SAXATILE	2.7	1.5	0.30	0.4
MOUGEOTIA SPP.	1.3	0.7	1.88	3.0
SCENEDESMUS QUADRICAUDA	4.1	2.3	0.52	0.8
COCCOID GREENS	34.7	19.8	1.11	1.7
BACILLARIOPHYCEAE	89.8	51.3	41.74	66.8
CYCLOTELLA STELLIGERA	2.7	1.5	1.47	2.3
EUNOTIA ZAZUMINENSIS	1.3	0.7	0.60	0.9
MELOSIRA DISTANS V. A	47.2	26.9	8.74	14.0
MELOSIRA ITALICA	1.3	0.7	1.51	2.4
MELOSIRA ITALICA VAR. TENUISSIMA	31.9	18.2	17.83	28.5
RHIZOSOLENIA ERIENSIS	2.7	1.5	10.36	16.6
SYNEDRA SP. A	2.7	1.5	0.14	0.2
CHRYSOPHYCEAE	1.3	0.7	0.14	0.2
DINOBRYON BAVARICUM	1.3	0.7	0.14	0.2
CRYPTOPHYCEAE	4.1	2.3	1.24	1.9
CRYPTOMONAS PHASEOLUS	4.1	2.3	1.24	1.9
DINOPHYCEAE	3.9	2.2	0.82	1.3
GLENODINIUM ARMATUM	1.3	0.7	0.32	0.5
PERIDINIUM INCONSPICUUM	1.3	0.7	0.50	0.8
UNIDENTIFIED DINOPHYCEAE	1.3	0.7	0.09	0.1
UNKNOWN	2.7	1.5	0.07	0.1
0974-2-07	2.7	1.5	0.07	0.1
SAMPLE TOTALS:	174.9	99.9	62.41	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 09/12/77
TIME: 1425 SAMPLE DEPTH: 5.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	4740.6	96.9	6168.31	97.1
ARTHRODESMUS SUBULATUS	25.0	0.1	144.37	2.2
ARTHRODESMUS SPP.	3738.3	90.4	5948.70	93.7
CHLAMYDOMONAS SPP.	25.0	0.1	2.08	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	551.5	3.6	56.25	0.8
MONORAPHEDIUM PUSILLUM	25.0	0.1	2.43	0.0
OOCYSTIS SPP.	25.0	0.1	1.52	0.0
SCENEDESMUS BIJUGA	25.0	0.1	2.20	0.0
SELENASTRUM MINUTUM	50.1	0.3	1.90	0.0
COCCOID GREENS	275.7	1.8	8.82	0.1
BACILLARIOPHYCEAE	25.0	0.1	13.31	0.2
CYCLOTELLA STELLIGERA	25.0	0.1	13.31	0.2
CHRYSOPHYCEAE	75.0	0.4	43.74	0.6
MALLOMONAS SPP.	25.0	0.1	32.54	0.5
OCHROMONAS SPP.	25.0	0.1	7.59	0.1
UNIDENTIFIED CHRYSOPHYCEAE	25.0	0.1	3.61	0.0
CRYPTOPHYCEAE	75.0	0.4	46.87	0.7
CRYPTOMONAS EROSA VAR. REFLEXA	25.0	0.1	13.48	0.2
CRYPTOMONAS OVATA	25.0	0.1	25.92	0.4
CRYPTOMONAS PHASEOLUS	25.0	0.1	7.47	0.1
MYXOPHYCEAE	100.1	0.6	3.23	0.0
ANACYSTIS INCERTA	50.1	0.3	0.35	0.0
ANACYSTIS MONTANA	25.0	0.1	1.60	0.0
PHORMIDIUM ANGUSTISSIMA	25.0	0.1	1.27	0.0
DINOPHYCEAE	25.0	0.1	65.03	1.0
PERIDINIUM INCONSPICUUM	25.0	0.1	65.03	1.0
UNKNOWN	150.4	0.9	4.21	0.0
0974-2-07	150.4	0.9	4.21	0.0
SAMPLE TOTALS:	5191.1	99.9	6344.73	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 09/12/77
TIME: 1425 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	116.3	42.6	28.60	32.3
ANKISTRODESMUS FALCATUS	8.3	3.0	0.45	0.5
ANKISTRODESMUS FUSIFORMIS	2.0	0.7	0.21	0.2
ARTHRODESMUS SPP.	54.3	19.9	23.52	26.6
CHLAMYDOMONAS SPP.	6.2	2.2	0.52	0.5
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	12.5	4.5	1.27	1.4
CRUCIGENIA TETRAPEDIA	2.0	0.7	0.09	0.1
SCENEDESMUS DENTICULATUS	2.0	0.7	0.39	0.4
SCENEDESMUS QUADRICAUDA	2.0	0.7	0.19	0.2
STAURASTRUM TETRACERUM	2.0	0.7	1.11	1.2
COCCOID GREENS	25.0	9.1	0.80	0.9
BACILLARIOPHYCEAE	47.8	17.5	24.09	27.2
CYCLOTELLA STELLIGERA	18.8	6.9	9.98	11.3
MELOSIRA DISTANS V. A	16.7	6.1	3.09	3.4
MELOSIRA ITALICA	8.3	3.0	9.13	10.3
NAVICULA NOTHA	2.0	0.7	0.74	0.8
NITZSCHIA SPP.	2.0	0.7	1.12	1.2
CHRYSOPHYCEAE	14.4	5.2	4.43	5.0
DINOBRYON SERTULARIA	2.0	0.7	0.40	0.4
MALLOMONAS ACAROIDES	2.0	0.7	2.52	2.8
UNIDENTIFIED CHRYSOPHYCEAE	10.4	3.8	1.50	1.7
CRYPTOPHYCEAE	54.1	19.8	26.14	29.5
CHROOMONAS ACUTA	4.1	1.5	0.46	0.5
CRYPTOMONAS EROSA VAR. REFLEXA	6.2	2.2	3.37	3.8
CRYPTOMONAS OVATA	12.5	4.5	12.96	14.6
CRYPTOMONAS PHASEOLUS	31.3	11.4	9.34	10.5
DINOPHYCEAE	2.0	0.7	4.05	4.5
UNIDENTIFIED DINOPHYCEAE	2.0	0.7	4.05	4.5
UNKNOWN	37.6	13.8	1.05	1.1
0974-2-07	37.6	13.8	1.05	1.1
SAMPLE TOTALS:	272.2	99.8	88.38	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 09/12/77
TIME: 1500 SAMPLE DEPTH: 8.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	8862.6	96.8	8111.93	93.6
ARTHRODESMUS INCUS VAR. EXTENSUS	20.8	0.1	69.10	0.7
ARTHRODESMUS SUBULATUS	20.8	0.1	120.30	1.3
ARTHRODESMUS SPP.	7902.7	91.9	7751.68	89.5
CHLAMYDOMONAS SPP.	104.4	0.5	8.66	0.1
CLOSTERIUM SPP.	20.8	0.1	5.09	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	208.9	1.0	21.30	0.2
COSMARIUM SPP.	20.8	0.1	11.36	0.1
CRUCIGENIA TETRAPEDIA	20.8	0.1	1.52	0.0
MONORAPHEDIUM PUSILLUM	20.8	0.1	2.02	0.0
OOCYSTIS PUSILLA	20.8	0.1	3.00	0.0
OOCYSTIS SPP.	41.7	0.2	2.54	0.0
QUADRIGULA CLOSTERIOIDES	20.8	0.1	3.80	0.0
SELENASTRUM MINUTUM	20.8	0.1	0.79	0.0
STAURASTRUM PARADOXUM VAR. A	20.8	0.1	97.60	1.1
COCCOID GREENS	396.9	2.0	12.70	0.1
BACILLARIOPHYCEAE	62.4	0.3	28.36	0.3
CYCLOTELLA STELLIGERA	20.8	0.1	11.09	0.1
NITZSCHIA SPP.	20.8	0.1	11.28	0.1
SYNEDRA SPP.	20.8	0.1	5.99	0.0
CHRYSOPHYCEAE	125.0	0.6	45.24	0.5
DINOBRYON BAVARICUM	20.8	0.1	2.77	0.0
MALLOMONAS SPP.	20.8	0.1	27.11	0.3
OCHROMONAS SPP.	20.8	0.1	6.32	0.0
UNIDENTIFIED CHRYSOPHYCEAE	62.6	0.3	9.02	0.1
HAPTOPHYCEAE	20.8	0.1	3.88	0.0
CHRYSOCHROMULINA PARVA	20.8	0.1	3.88	0.0
CRYPTOPHYCEAE	125.0	0.6	84.14	0.9
CRYPTOMONAS EROSA	20.8	0.1	32.63	0.3
CRYPTOMONAS EROSA VAR. REFLEXA	20.8	0.1	11.23	0.1
CRYPTOMONAS OVATA	20.8	0.1	21.60	0.2
CRYPTOMONAS PHASEOLUS	62.6	0.3	18.67	0.2
MYXOPHYCEAE	83.3	0.4	2.52	0.0
ANACYSTIS INCERTA	41.7	0.2	0.37	0.0
ANACYSTIS MONTANA	20.8	0.1	1.52	0.0
PHORMIDIUM ANGUSTISSIMA	20.8	0.1	0.62	0.0
DINOPHYCEAE	83.2	0.4	374.53	4.3
PERIDINIUM DEFLANDREI	20.8	0.1	239.44	2.7
PERIDINIUM INCONSPICUUM	20.8	0.1	54.18	0.6
PERIDINIUM PUSILLUM	20.8	0.1	40.33	0.4
UNIDENTIFIED DINOPHYCEAE	20.8	0.1	40.56	0.4
UNKNOWN	104.3	0.5	3.46	0.0
0574-2-03	20.8	0.1	1.12	0.0
0974-2-07	83.5	0.4	2.33	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	9466.6	99.7	8654.10	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LOS SAMPLE DATE: 09/12/77
TIME: 1500 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	103.7	44.9	32.59	31.7
ANKISTRODESMUS FALCATUS	1.3	0.5	0.07	0.0
ARTHRODESMUS SPP.	66.7	28.9	28.88	28.1
CHLAMYDOMONAS SPP.	2.7	1.1	0.23	0.2
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	9.7	4.2	0.99	0.9
CRUCIGENIA TETRAPEDIA	4.1	1.7	0.21	0.2
MONORAPHEDIUM PUSILLUM	1.3	0.5	0.13	0.1
SCENEDESMUS QUADRICAUDA	4.1	1.7	0.39	0.3
TETRAEDRON MINIMUM	1.3	0.5	1.27	1.2
COCCOID GREENS	12.5	5.4	0.40	0.3
BACILLARIOPHYCEAE	67.6	29.3	36.20	35.2
ASTERIONELLA FORMOSA	9.7	4.2	5.19	5.0
CYCLOTELLA STELLIGERA	13.9	6.0	7.38	7.1
MELOSIRA DISTANS VAR. ALPIGENA	2.7	1.1	0.60	0.5
MELOSIRA DISTANS V. A	18.0	7.8	3.34	3.2
MELOSIRA ITALICA	12.5	5.4	13.67	13.3
MELOSIRA ITALICA VAR. TENUISSIMA	9.7	4.2	5.42	5.2
SYNEDRA SP. A	1.3	0.5	0.58	0.5
CHRYSOPHYCEAE	29.0	12.5	7.69	7.4
CHROMULINA SPP.	4.1	1.7	0.64	0.6
MALLOMONAS ACAROIDES	1.3	0.5	1.67	1.6
OCHROMONAS SPP.	11.1	4.8	3.36	3.2
UNIDENTIFIED CHRYSOPHYCEAE	12.5	5.4	1.60	1.7
CRYPTOPHYCEAE	10.9	4.7	9.78	9.5
CRYPTOMONAS EROSA VAR. REFLEXA	1.3	0.5	0.74	0.7
CRYPTOMONAS OVATA	8.3	3.5	8.62	8.3
CRYPTOMONAS PHASEOLUS	1.3	0.5	0.41	0.4
MYXOPHYCEAE	1.3	0.5	0.02	0.0
PHORMIDIUM ANGUSTISSIMA	1.3	0.5	0.02	0.0
DINOPHYCEAE	1.3	0.5	15.93	15.5
PERIDINIUM DEFLANDREI	1.3	0.5	15.93	15.5
UNKNOWN	16.6	7.1	0.46	0.4
0974-2-07	16.6	7.1	0.46	0.4
SAMPLE TOTALS:	230.6	99.8	102.69	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 09/13/77
TIME: 0955 SAMPLE DEPTH: 7.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	4484.2	93.6	1822.09	80.4
ANKISTRODESMUS FALCATUS	4.1	0.0	0.22	0.0
ARTHRODESMUS INCUS VAR. EXTENSUS	4.1	0.0	13.82	0.6
ARTHRODESMUS SPP.	4088.0	85.4	1770.12	78.1
CHLAMYDOMONAS SPP.	58.5	1.2	4.85	0.2
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	91.9	1.9	9.37	0.4
COSMARIUM SPP.	12.5	0.2	6.82	0.3
CRUCIGENIA TETRAPEDIA	8.3	0.1	0.73	0.0
DICTYOSPHAERIUM PULCHELLUM	12.5	0.2	1.42	0.0
MONORAPHEDIUM PUSILLUM	8.3	0.1	0.81	0.0
OOCYSTIS SPP.	25.0	0.5	1.78	0.0
SCENEDESMUS ABUNDANS	4.1	0.0	0.65	0.0
SCENEDESMUS BIJUGA	4.1	0.0	0.36	0.0
SELENASTRUM MINUTUM	12.5	0.2	0.47	0.0
STAURASTRUM TETRACERUM	4.1	0.0	2.22	0.0
TETRAEDRON MINIMUM	4.1	0.0	3.83	0.1
COCCOID GREENS	142.1	2.9	4.54	0.2
BACILLARIOPHYCEAE	125.1	2.5	57.38	2.5
ASTERIONELLA FORMOSA	20.9	0.4	11.16	0.4
CYCLOTELLA STELLIGERA	37.6	0.7	19.97	0.8
MELOSIRA DISTANS V. A	25.0	0.5	4.63	0.2
MELOSIRA ITALICA VAR. TENUISSIMA	33.4	0.6	18.65	0.8
SYNEDRA SP. A	4.1	0.0	1.74	0.0
SYNEDRA SPP.	4.1	0.0	1.19	0.0
CHRYSOPHYCEAE	29.1	0.5	13.47	0.5
MALLOMONAS ACAROIDES	4.1	0.0	5.04	0.2
MALLOMONAS SPP.	4.1	0.0	5.42	0.2
UNIDENTIFIED CHRYSOPHYCEAE	20.9	0.4	3.00	0.1
CRYPTOPHYCEAE	58.4	1.2	18.44	0.8
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.0	2.24	0.0
CRYPTOMONAS PHASEOLUS	54.3	1.1	16.19	0.7
MYXOPHYCEAE	8.2	0.1	0.29	0.0
OSCILLATORIA GEMINATA	4.1	0.0	0.14	0.0
PHORMIDIUM ANGUSTISSIMA	4.1	0.0	0.15	0.0
DINOPHYCEAE	54.0	1.0	351.84	15.5
PERIDINIUM DEFLANDREI	4.1	0.0	47.91	2.1
PERIDINIUM INCONSPICUUM	16.7	0.3	43.37	1.9
PERIDINIUM KEYENSE	4.1	0.0	61.51	2.7
PERIDINIUM PUSILLUM	4.1	0.0	8.07	0.3
PERIDINIUM WISCONSINENSE	4.1	0.0	150.38	6.6
UNIDENTIFIED DINOPHYCEAE	20.9	0.4	40.58	1.7
UNKNOWN	25.0	0.5	0.70	0.0
0974-2-07	25.0	0.5	0.70	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	4784.0	99.8	2264.22	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LOS SAMPLE DATE: 09/13/77
TIME: 0955 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	139.3	45.2	31.33	32.5
ANKISTRODESMUS FALCATUS	4.1	1.3	0.22	0.2
ARTHRODESMUS SPP.	58.5	19.0	25.33	26.3
CHLAMYDOMONAS SPP.	2.0	0.6	0.17	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	27.1	8.8	2.77	2.8
CRUCIGENIA TETRAPEDIA	2.0	0.6	0.18	0.1
ELAKATOTHRIX GELATINOSA	2.0	0.6	0.12	0.1
SCENEDESMUS BIJUGA	4.1	1.3	0.36	0.3
SCENEDESMUS QUADRICAUDA	6.2	2.0	0.56	0.6
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	2.0	0.6	0.56	0.5
COCCOID GREENS	31.3	10.1	1.00	1.0
BACILLARIOPHYCEAE	56.0	18.2	27.61	28.6
CYCLOTELLA STELLIGERA	16.7	5.4	8.87	9.2
MELOSIRA DISTANS V. A	27.1	8.8	5.02	5.2
MELOSIRA ITALICA VAR. TENUISSIMA	6.2	2.0	3.49	3.6
NAVICULA EXIGUA	2.0	0.6	1.17	1.2
SYNEDRA SP. A	2.0	0.6	0.87	0.9
TABELLARIA FENESTRATA	2.0	0.6	8.16	8.4
CHRYSOPHYCEAE	29.0	9.4	8.53	8.8
MALLOMONAS ACAROIDES	2.0	0.6	2.52	2.6
MALLOMONAS GLOBOSA	2.0	0.6	2.40	2.4
UNIDENTIFIED CHRYSOPHYCEAE	25.0	8.1	3.61	3.7
CRYPTOPHYCEAE	31.1	10.1	21.78	22.6
CRYPTOMONAS EROSA	4.1	1.3	6.52	6.7
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	1.3	2.24	2.3
CRYPTOMONAS OVATA	8.3	2.7	8.64	8.9
CRYPTOMONAS PHASEOLUS	14.6	4.7	4.35	4.5
MYXOPHYCEAE	24.9	8.1	1.64	1.7
ANABAENA SPP.	2.0	0.6	1.14	1.1
PHORMIDIUM ANGUSTISSIMA	22.9	7.4	0.50	0.5
EUGLENOPHYCEAE	2.0	0.6	4.65	4.8
EUGLENA SPP.	2.0	0.6	4.65	4.8
UNKNOWN	25.0	8.1	0.70	0.7
0974-2-07	25.0	8.1	0.70	0.7
SAMPLE TOTALS:	307.3	99.9	96.26	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 09/12/77
TIME: 1520 SAMPLE DEPTH: 3.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	868.4	78.8	293.60	56.9
ANKISTRODESMUS FALCATUS	16.7	1.5	0.91	0.1
ARTHRODESMUS SPP.	576.8	52.3	249.77	48.5
CHLORELLA SPP.	8.3	0.7	0.94	0.1
CLOSTERIUM SPP.	4.1	0.3	1.01	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	158.8	14.4	16.20	3.1
COSMARIUM PHASEOLUS F. MINOR	4.1	0.3	6.32	1.2
COSMARIUM SPP.	4.1	0.3	2.27	0.4
CRUCIGENIA TETRAPEDIA	8.3	0.7	0.73	0.1
MONORAPHIDIUM CONTORTUM	8.3	0.7	0.35	0.0
MOUGEOTIA SPP.	4.1	0.3	5.67	1.1
SCENEDESMUS BIJUGA	4.1	0.3	0.36	0.0
SCENEDESMUS QUADRICAUDA	8.3	0.7	1.17	0.2
SELENASTRUM GRACILE	4.1	0.3	1.62	0.3
STAURASTRUM PARADOXUM VAR. PARVUM	4.1	0.3	1.54	0.3
TETRAEDRON SPP.	4.1	0.3	3.06	0.5
COCCOID GREENS	50.1	4.5	1.60	0.3
BACILLARIOPHYCEAE	79.3	7.1	35.36	6.8
CYCLOTELLA STELLIGERA	58.5	5.3	31.07	6.0
MELOSIRA DISTANS V. A	16.7	1.5	3.09	0.6
SYNEDRA SPP.	4.1	0.3	1.19	0.2
CHRYSOPHYCEAE	41.5	3.7	11.75	2.2
CHROMULINA SPP.	4.1	0.3	0.84	0.1
MALLOMONAS SPP.	4.1	0.3	5.42	1.0
OCHROMONAS SPP.	4.1	0.3	1.26	0.2
UNIDENTIFIED CHRYSOPHYCEAE	29.2	2.6	4.21	0.8
HAPTOPHYCEAE	8.3	0.7	1.55	0.3
CHRYSOCHROMULINA PARVA	8.3	0.7	1.55	0.3
CRYPTOPHYCEAE	24.8	2.2	18.12	3.4
CHROOMONAS ACUTA	4.1	0.3	0.46	0.0
CRYPTOMONAS EROSA	4.1	0.3	6.52	1.2
CRYPTOMONAS OVATA	8.3	0.7	8.64	1.6
CRYPTOMONAS PHASEOLUS	8.3	0.7	2.49	0.4
MYXOPHYCEAE	4.1	0.3	0.23	0.0
PHORMIDIUM ANGUSTISSIMA	4.1	0.3	0.23	0.0
DINOPHYCEAE	24.6	2.2	152.11	29.5
PERIDINIUM ACICULIFERUM	4.1	0.3	104.04	20.2
PERIDINIUM INCONSPICUUM	4.1	0.3	10.84	2.1
PERIDINIUM PUSILLUM	8.3	0.7	16.14	3.1
PERIDINIUM SPP.	8.3	0.7	21.08	4.0
UNKNOWN	50.0	4.5	2.00	0.3
0574-2-03	4.1	0.3	0.22	0.0
0574-2-07	41.6	3.7	1.17	0.2
0576-2-01	4.1	0.3	0.61	0.1

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	1101.2	99.8	514.76	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 09/12/77
TIME: 1520 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	42.3	28.1	17.60	30.9
ARTHRODESMUS SPP.	10.4	6.9	4.50	7.9
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	7.2	4.8	0.74	1.3
MONORAPHEDIUM PUSILLUM	1.0	0.6	0.10	0.1
SCENEDESMUS BIJUGA	1.0	0.6	0.09	0.1
SCENEDESMUS QUADRICAUDA VAR. ALTERANS	1.0	0.6	0.09	0.1
SELENASTRUM MINUTUM	1.0	0.6	0.03	0.0
STAURASTRUM PENTACERUM	1.0	0.6	11.40	20.0
COCCOID GREENS	19.7	13.1	0.63	1.1
BACILLARIOPHYCEAE	36.2	24.1	22.67	39.8
ASTERIONELLA FORMOSA	3.1	2.0	1.66	2.9
CYCLOTELLA STELLIGERA	5.2	3.4	2.76	4.8
MELOSIRA DISTANS V. A	15.6	10.4	2.88	5.0
MELOSIRA ITALICA VAR. TENUISSIMA	7.2	4.8	4.06	7.1
NITZSCHIA GRACILIS	3.1	2.0	0.87	1.5
NITZSCHIA LORENZIANA VAR. SUBTILIS	2.0	1.3	10.41	18.3
CHRYSOPHYCEAE	5.1	3.3	1.85	3.2
MALLOMONAS ACAROIDES	1.0	0.6	1.25	2.2
UNIDENTIFIED CHRYSOPHYCEAE	4.1	2.7	0.59	1.0
CRYPTOPHYCEAE	19.6	13.0	7.15	12.5
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	1.3	1.11	1.9
CRYPTOMONAS OVATA	1.0	0.6	1.07	1.8
CRYPTOMONAS PHASEOLUS	16.6	11.0	4.95	8.7
MYXOPHYCEAE	1.0	0.6	0.05	0.0
PHORMIDIUM ANGUSTISSIMA	1.0	0.6	0.05	0.0
EUGLENOPHYCEAE	1.0	0.6	2.31	4.0
EUGLENA SPP.	1.0	0.6	2.31	4.0
DINOPHYCEAE	2.0	1.3	4.03	7.1
UNIDENTIFIED DINOPHYCEAE	2.0	1.3	4.03	7.1
UNKNOWN	42.6	28.4	1.19	2.0
0974-2-07	42.6	28.4	1.19	2.0
SAMPLE TOTALS:	149.8	99.8	56.87	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 09/12/77
TIME: 1715 SAMPLE DEPTH: 4.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	1612.5	84.2	544.17	52.2
ANKISTRODESMUS FALCATUS	4.1	0.2	0.22	0.0
ARTHRODESMUS SPP.	1157.8	60.5	501.35	48.2
CHLAMYDOMONAS SPP.	16.7	0.8	1.38	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	229.9	12.0	23.44	2.2
COSMARIUM TENUE	4.1	0.2	1.91	0.1
COSMARIUM SPP.	4.1	0.2	2.27	0.2
CRUCIGENIA TETRAPEDIA	4.1	0.2	0.36	0.0
MONORAPHIDIUM SAXATILE	12.5	0.6	1.39	0.1
OOCYSTIS SPP.	4.1	0.2	0.25	0.0
SCENEDESMUS BIJUGA	8.3	0.4	0.73	0.0
SCENEDESMUS QUADRICAUDA	4.1	0.2	0.78	0.0
SCENEDESMUS SPP.	4.1	0.2	1.23	0.1
SELENASTRUM MINUTUM	4.1	0.2	0.15	0.0
TETRAEDRON MINIMUM	4.1	0.2	3.83	0.3
COCCOID GREENS	150.4	7.8	4.81	0.4
BACILLARIOPHYCEAE	91.7	4.7	47.06	4.4
CYCLOTELLA STELLIGERA	45.9	2.4	24.41	2.3
MELOSIRA DISTANS V. A	16.7	0.8	3.09	0.2
MELOSIRA ITALICA	12.5	0.6	13.70	1.3
NITZSCHIA SPP.	4.1	0.2	2.25	0.2
SYNEDRA SPP.	12.5	0.6	3.59	0.3
CHRYSOPHYCEAE	41.4	2.1	26.90	2.5
KEPHYRION SPP.	8.3	0.4	0.73	0.0
MALLOMONAS ACAROIDES	4.1	0.2	5.04	0.4
MALLOMONAS MAJORENSIS	4.1	0.2	1.71	0.1
MALLOMONAS SPP.	12.5	0.6	16.27	1.5
OCHROMONAS SPP.	8.3	0.4	2.53	0.2
UNIDENTIFIED CHRYSOPHYCEAE	4.1	0.2	0.60	0.0
CRYPTOPHYCEAE	58.2	3.0	41.40	3.9
CHROOMONAS ACUTA	4.1	0.2	0.46	0.0
CRYPTOMONAS EROSA	4.1	0.2	6.52	0.6
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.2	2.24	0.2
CRYPTOMONAS OVATA	25.0	1.3	25.93	2.4
CRYPTOMONAS PHASEOLUS	20.9	1.0	6.22	0.5
MYXOPHYCEAE	16.6	0.8	0.83	0.0
AGMENELLUM QUADRIDUPLICATUM	4.1	0.2	0.03	0.0
ANACYSTIS MONTANA	12.5	0.6	0.80	0.0
DINOPHYCEAE	75.0	3.9	379.10	36.4
GLENODINIUM ARMATUM	8.3	0.4	13.96	1.3
GLENODINIUM SPP.	8.3	0.4	12.74	1.2
PERIDINIUM DEFLANDREI	25.0	1.3	287.46	27.6
UNIDENTIFIED DINOPHYCEAE	33.4	1.7	64.94	6.2
UNKNOWN	16.7	0.8	0.46	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0974-2-07	16.7	0.8	0.46	0.0
SAMPLE TOTALS:	1912.1	99.8	1039.95	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LOS SAMPLE DATE: 09/12/77
TIME: 1715 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	38.1	24.4	14.43	16.4
ANKISTRODESMUS FALCATUS	1.0	0.6	0.05	0.0
ARTHRODESMUS INCUS VAR. EXTENSUS	1.0	0.6	3.44	3.9
ARTHRODESMUS SUBULATUS	1.0	0.6	5.98	6.8
ARTHRODESMUS SPP.	8.3	5.3	3.60	4.1
CHLAMYDOMONAS SPP.	1.0	0.6	0.08	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	3.1	1.9	0.31	0.3
CRUCIGENIA TETRAPEDIA	1.0	0.6	0.06	0.0
OOCYSTIS SPP.	1.0	0.6	0.06	0.0
SCENEDESMUS QUADRICAUDA	3.1	1.9	0.24	0.2
SELENASTRUM MINUTUM	1.0	0.6	0.03	0.0
COCCOID GREENS	16.6	10.6	0.53	0.6
BACILLARIOPHYCEAE	57.8	37.1	36.00	41.0
CYCLOTELLA STELLIGERA	18.7	12.0	9.94	11.3
MELOSIRA DISTANS V. A	16.6	10.6	3.07	3.5
MELOSIRA ITALICA	1.0	0.6	1.13	1.2
MELOSIRA ITALICA VAR. TENUISSIMA	12.4	7.9	6.96	7.9
NAVICULA CRYPTOCEPHALA	1.0	0.6	0.38	0.4
NITZSCHIA SPP.	4.1	2.6	2.24	2.5
RHIZOSOLENIA ERIENSIS	2.0	1.2	7.75	8.8
SYNEDRA SP. A	1.0	0.6	0.43	0.4
TABELLARIA FENESTRATA	1.0	0.6	4.06	4.6
CHRYSOPHYCEAE	16.5	10.5	7.86	8.9
MALLOMONAS ACAROIDES	4.1	2.6	5.01	5.7
MALLOMONAS GLOBOSA	1.0	0.6	1.19	1.3
UNIDENTIFIED CHRYSOPHYCEAE	11.4	7.3	1.64	1.8
CRYPTOPHYCEAE	21.7	13.9	15.54	17.7
CRYPTOMONAS EROSA	3.1	1.9	4.87	5.5
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	1.2	1.11	1.2
CRYPTOMONAS OVATA	6.2	3.9	6.45	7.3
CRYPTOMONAS PHASEOLUS	10.4	6.6	3.09	3.5
MYXOPHYCEAE	2.0	1.2	0.11	0.1
ANACYSTIS MONTANA	1.0	0.6	0.06	0.0
OSCILLATORIA GEMINATA	1.0	0.6	0.05	0.0
EUGLENOPHYCEAE	4.1	2.6	9.25	10.5
EUGLENA SPP.	4.1	2.6	9.25	10.5
DINOPHYCEAE	2.0	1.2	4.03	4.6
UNIDENTIFIED DINOPHYCEAE	2.0	1.2	4.03	4.6
UNKNOWN	13.5	8.6	0.37	0.4
0974-2-07	13.5	8.6	0.37	0.4
SAMPLE TOTALS:	155.7	99.9	87.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 09/12/77
TIME: 1645 SAMPLE DEPTH: 6.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	4217.0	89.8	1675.13	64.0
ANKISTRODESMUS FALCATUS	16.7	0.3	0.91	0.0
ARTHRODESMUS INCUS	16.7	0.3	55.76	2.1
ARTHRODESMUS SPP.	3586.4	76.4	1552.92	59.4
CHLAMYDOMONAS SPP.	54.3	1.1	4.51	0.1
CLOSTERIUM SPP.	4.1	0.0	1.01	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	79.4	1.6	8.10	0.3
COSMARIUM SPP.	16.7	0.3	9.09	0.3
KIRCHNERIELLA OBESA	4.1	0.0	3.93	0.1
MONORAPHEDIUM PUSILLUM	20.9	0.4	2.02	0.0
OOCYSTIS SPP.	4.1	0.0	0.25	0.0
SCENEDESMUS BIJUGA	4.1	0.0	0.36	0.0
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	12.5	0.2	2.79	0.1
SELENASTRUM MINUTUM	20.9	0.4	0.79	0.0
STAURASTRUM TETRACERUM	4.1	0.0	2.22	0.0
TETRAEDRON MINIMUM	20.9	0.4	19.16	0.7
COCCOID GREENS	351.1	7.4	11.23	0.4
BACILLARIOPHYCEAE	112.7	2.3	73.93	2.8
CYCLOTELLA STELLIGERA	79.4	1.6	42.17	1.6
MELOSIRA ITALICA VAR. TENUISSIMA	20.9	0.4	11.66	0.4
NITZSCHIA SPP.	8.3	0.1	4.51	0.1
RHIZOSOLENIA ERIENSIS	4.1	0.0	15.59	0.5
CHRYSOPHYCEAE	83.4	1.7	25.19	0.9
DINOBRYON BAVARICUM	20.9	0.4	2.77	0.1
KEPHYRION SPP.	12.5	0.2	1.10	0.0
MALLOMONAS ACAROIDES	4.1	0.0	5.04	0.1
MALLOMONAS SPP.	8.3	0.1	10.85	0.4
UNIDENTIFIED CHRYSOPHYCEAE	37.6	0.8	5.41	0.2
CRYPTOPHYCEAE	58.4	1.2	44.05	1.6
CRYPTOMONAS EROSA VAR. REFLEXA	8.3	0.1	4.49	0.1
CRYPTOMONAS OVATA	33.4	0.7	34.57	1.3
CRYPTOMONAS PHASEOLUS	16.7	0.3	4.98	0.1
MYXOPHYCEAE	41.6	0.8	1.65	0.0
AGMENELLUM QUADRIDUPLICATUM	4.1	0.0	0.03	0.0
ANACYSTIS INCERTA	12.5	0.2	0.15	0.0
ANACYSTIS MONTANA	20.9	0.4	1.33	0.0
PHORMIDIUM ANGUSTISSIMA	4.1	0.0	0.13	0.0
DINOPHYCEAE	146.0	3.0	792.29	30.2
PERIDINIUM DEFLANDREI	29.2	0.6	335.37	12.8
PERIDINIUM INCONSPICUUM	25.0	0.5	65.05	2.4
PERIDINIUM KEYENSE	16.7	0.3	246.06	9.4
PERIDINIUM PUSILLUM	29.2	0.6	56.50	2.1
UNIDENTIFIED DINOPHYCEAE	45.9	0.9	89.29	3.4
UNKNOWN	29.2	0.6	0.81	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0974-2-07	29.2	0.6	0.81	0.0
SAMPLE TOTALS:	4688.3	99.7	2613.09	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 09/12/77
TIME: 1645 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	60.1	34.0	39.11	35.6
ANKISTRODESMUS FALCATUS	1.3	0.7	0.07	0.0
ARTHRODESMUS SPP.	22.2	12.6	9.62	8.7
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	1.3	0.7	0.14	0.1
COSMARIUM SPP.	2.7	1.5	1.51	1.3
MONORAPHIDIUM CONTORTUM	1.3	0.7	0.05	0.0
MONORAPHEDIUM PUSILLUM	2.7	1.5	0.26	0.2
OOCYSTIS PUSILLA	1.3	0.7	0.20	0.1
SCENEDESMUS QUADRICAUDA	2.7	1.5	0.19	0.1
SELENASTRUM MINUTUM	1.3	0.7	0.05	0.0
STAURASTRUM CUSPIDATUM	1.3	0.7	19.11	17.4
STAURASTRUM PARADOXUM VAR. A	1.3	0.7	6.50	5.9
STAURASTRUM TETRACERUM	1.3	0.7	0.74	0.6
COCCOID GREENS	19.4	11.0	0.62	0.5
BACILLARIOPHYCEAE	59.2	33.6	27.63	25.2
ACHNANTHES SPP.	1.3	0.7	0.25	0.2
CYCLOTELLA STELLIGERA	19.4	11.0	10.33	9.4
MELOSIRA DISTANS VAR. ALPIGENA	2.7	1.5	0.60	0.5
MELOSIRA DISTANS V. A	9.7	5.5	1.80	1.6
MELOSIRA ITALICA VAR. TENUISSIMA	18.0	10.2	10.08	9.2
PINNULARIA SPP.	1.3	0.7	2.39	2.1
SYNEDRA SP. A	1.3	0.7	0.58	0.5
SYNEDRA SPP.	5.5	3.1	1.59	1.4
CHRYSOPHYCEAE	10.9	6.1	6.01	5.4
DINOBRYON BAVARICUM	1.3	0.7	0.18	0.1
MALLOMONAS ACAROIDES	4.1	2.3	5.02	4.5
UNIDENTIFIED CHRYSOPHYCEAE	5.5	3.1	0.80	0.7
CRYPTOPHYCEAE	36.1	20.5	33.74	30.8
CRYPTOMONAS EROSA	12.5	7.1	19.54	17.8
CRYPTOMONAS OVATA	9.7	5.5	10.06	9.1
CRYPTOMONAS PHASEOLUS	13.9	7.9	4.14	3.7
DINOPHYCEAE	1.3	0.7	2.69	2.4
UNIDENTIFIED DINOPHYCEAE	1.3	0.7	2.69	2.4
UNKNOWN	8.3	4.7	0.23	0.2
0974-2-07	8.3	4.7	0.23	0.2
SAMPLE TOTALS:	175.9	99.8	109.44	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 09/13/77
TIME: 1030 SAMPLE DEPTH: 3.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	358.9	60.6	82.44	28.6
ANKISTRODESMUS FALCATUS	4.1	0.6	0.22	0.0
ARTHRODESMUS SPP.	154.6	26.1	66.96	23.2
CHLAMYDOMONAS SPP.	8.3	1.4	0.69	0.2
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	79.4	13.4	8.10	2.8
CRUCIGENIA TETRAPEDIA	12.5	2.1	1.10	0.3
MONORAPHEDIUM PUSILLUM	4.1	0.6	0.40	0.1
SCENEDESMUS BIJUGA	4.1	0.6	0.36	0.1
SCENEDESMUS QUADRICAUDA	4.1	0.6	0.78	0.2
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	4.1	0.6	1.12	0.3
COCCOID GREENS	83.6	14.1	2.67	0.9
BACILLARIOPHYCEAE	100.2	16.9	29.23	10.1
ASTERIONELLA FORMOSA	12.5	2.1	6.69	2.3
CYCLOTELLA STELLIGERA	16.7	2.8	8.87	3.0
MELOSIRA DISTANS VAR. ALPIGENA	16.7	2.8	3.61	1.2
MELOSIRA DISTANS V. A	54.3	9.1	10.05	3.4
CHRYSOPHYCEAE	33.2	5.6	10.54	3.6
CHROMULINA SPP.	4.1	0.6	0.84	0.2
MALLOMONAS SPP.	4.1	0.6	5.42	1.8
OCHROMONAS SPP.	4.1	0.6	1.26	0.4
UNIDENTIFIED CHRYSOPHYCEAE	20.9	3.5	3.00	1.0
CRYPTOPHYCEAE	29.0	4.8	15.09	5.2
CHROOMONAS ACUTA	4.1	0.6	0.46	0.1
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.6	2.24	0.7
CRYPTOMONAS OVATA	8.3	1.4	8.64	3.0
CRYPTOMONAS PHASEOLUS	12.5	2.1	3.73	1.2
MYXOPHYCEAE	4.1	0.6	0.12	0.0
PHORMIDIUM ANGUSTISSIMA	4.1	0.6	0.12	0.0
EUGLENOPHYCEAE	4.1	0.6	9.30	3.2
EUGLENA SPP.	4.1	0.6	9.30	3.2
DINOPHYCEAE	16.5	2.7	139.65	48.5
PERIDINIUM CINCTUM	4.1	0.6	115.35	40.0
PERIDINIUM PUSILLUM	4.1	0.6	8.07	2.8
UNIDENTIFIED DINOPHYCEAE	8.3	1.4	16.23	5.6
UNKNOWN	45.9	7.7	1.28	0.4
0974-2-C7	45.9	7.7	1.28	0.4
SAMPLE TOTALS:	591.9	99.9	287.68	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 09/13/77
TIME: 1030 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	434.1	71.7	156.40	66.0
ARTHRODESMUS INCUS VAR. EXTENSUS	4.1	0.6	13.62	5.7
ARTHRODESMUS SPP.	305.1	50.4	132.12	55.0
CHLAMYDOMONAS SPP.	4.1	0.6	0.34	0.1
CLOSTERIUM SPP.	4.1	0.6	1.01	0.4
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	54.3	8.9	5.54	2.3
MONORAPHEDIUM PUSILLUM	8.3	1.3	0.81	0.3
OOCYSTIS PUSILLA	4.1	0.6	0.60	0.2
QUADRIGULA LACUSTRIS	8.3	1.3	2.26	0.9
SCENEDESMUS QUADRICAUDA	8.3	1.3	0.78	0.3
COCCOID GREENS	33.4	5.5	1.07	0.4
BACILLARIOPHYCEAE	53.9	8.8	20.19	8.4
CYCLOTELLA STELLIGERA	8.3	1.3	4.43	1.8
MELOSIRA DISTANS V. A	25.0	4.1	4.63	1.9
NAVICULA CRYPTOCEPHALA	4.1	0.6	1.54	0.6
NAVICULA SPP.	4.1	0.6	3.31	1.3
NITZSCHIA SPP.	8.3	1.3	4.51	1.8
SYNEDRA SP. A	4.1	0.6	1.74	0.7
CHRYSOPHYCEAE	24.9	4.1	9.09	3.7
MALLOMONAS SPP.	4.1	0.6	5.42	2.2
OCHROMONAS SPP.	4.1	0.6	1.26	0.5
UNIDENTIFIED CHRYSOPHYCEAE	16.7	2.7	2.40	1.0
CRYPTOPHYCEAE	24.9	4.1	15.63	6.5
CRYPTOMONAS EROSA VAR. REFLEXA	8.3	1.3	4.49	1.8
CRYPTOMONAS OVATA	8.3	1.3	8.64	3.6
CRYPTOMONAS PHASEOLUS	8.3	1.3	2.49	1.0
MYXOPHYCEAE	12.4	2.0	0.25	0.1
AGMENELLUM QUADRIDUPLICATUM	4.1	0.6	0.03	0.0
PHORMIDIUM ANGUSTISSIMA	8.3	1.3	0.21	0.0
DINOPHYCEAE	16.6	2.7	35.19	14.6
PERIDINIUM INCONSPICUUM	4.1	0.6	10.84	4.5
UNIDENTIFIED DINOPHYCEAE	12.5	2.0	24.35	10.1
UNKNOWN	37.6	6.2	1.05	0.4
0974-2-07	37.6	6.2	1.05	0.4
SAMPLE TOTALS:	604.4	99.8	239.82	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 09/13/77
TIME: 1045 SAMPLE DEPTH: 2.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	647.1	75.2	240.93	73.1
ARTHRODESMUS INCUS VAR. EXTENSUS	4.1	0.4	13.82	4.2
ARTHRODESMUS SPP.	489.0	56.9	211.76	64.3
CHLAMYDOMONAS SPP.	8.3	0.9	0.69	0.2
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	62.7	7.2	6.39	1.9
COSMARIUM SPP.	4.1	0.4	2.27	0.6
MONORAPHEDIUM PUSILLUM	8.3	0.9	0.81	0.2
SCENEDESMUS BIJUGA	4.1	0.4	0.36	0.1
SCENEDESMUS BRASILIENSIS	4.1	0.4	0.80	0.2
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	4.1	0.4	1.12	0.3
SCENEDESMUS SPP.	4.1	0.4	0.30	0.0
SELENASTRUM WESTII	4.1	0.4	0.96	0.2
COCCOID GREENS	50.1	5.8	1.60	0.4
BACILLARIOPHYCEAE	83.3	9.6	33.94	10.2
CYCLOTELLA STELLIGERA	41.6	4.8	22.19	6.7
MELOSIRA DISTANS V. A	29.2	3.3	5.41	1.6
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	0.4	2.33	0.7
NITZSCHIA SPP.	4.1	0.4	2.25	0.6
SYNEDRA SP. A	4.1	0.4	1.74	0.5
CHRYSOPHYCEAE	37.4	4.3	11.43	3.4
CHROMULINA SPP.	4.1	0.4	0.84	0.2
MALLOMONAS ACAROIDES	4.1	0.4	5.04	1.5
OCHROMONAS SPP.	8.3	0.9	2.53	0.7
UNIDENTIFIED CHRYSOPHYCEAE	20.9	2.4	3.00	0.9
HAPTOPHYCEAE	4.1	0.4	0.77	0.2
CHRYSOCHROMULINA PARVA	4.1	0.4	0.77	0.2
CRYPTOPHYCEAE	16.6	1.9	8.05	2.4
CRYPTOMONAS OVATA	4.1	0.4	4.32	1.3
CRYPTOMONAS PHASEOLUS	12.5	1.4	3.73	1.1
MYXOPHYCEAE	24.8	2.8	0.66	0.1
AGMENELLUM QUADRIDUPLICATUM	4.1	0.4	0.03	0.0
ANACYSTIS INCERTA	8.3	0.9	0.15	0.0
ANACYSTIS MONTANA	4.1	0.4	0.26	0.0
PHORMIDIUM ANGUSTISSIMA	8.3	0.9	0.21	0.0
DINOPHYCEAE	16.7	1.9	32.47	9.8
UNIDENTIFIED DINOPHYCEAE	16.7	1.9	32.47	9.8
UNKNOWN	29.2	3.3	0.81	0.2
0974-2-07	29.2	3.3	0.81	0.2
SAMPLE TOTALS:	859.2	99.8	329.09	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 09/13/77
TIME: 1045 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	128.9	44.8	35.75	37.4
ANKISTRODESMUS FALCATUS	4.1	1.4	0.22	0.2
ARTHRODESMUS SUBULATUS	2.0	0.6	12.03	12.6
ARTHRODESMUS SPP.	37.6	13.1	16.28	17.0
CHLAMYDOMONAS SPP.	2.0	0.6	0.17	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	37.6	13.1	3.83	4.0
CRUCIGENIA TETRAPEDIA	10.4	3.6	0.91	0.9
DICTYOSPHAERIUM PULCHELLUM	2.0	0.6	0.81	0.8
OOCYSTIS SPP.	2.0	0.6	0.12	0.1
SCENEDESMUS QUADRICAUDA	2.0	0.6	0.39	0.4
COCCOID GREENS	29.2	10.1	0.93	0.9
BACILLARIOPHYCEAE	68.8	23.9	32.11	33.6
ASTERIONELLA FORMOSA	12.5	4.3	6.69	7.0
CYCLOTELLA STELLIGERA	18.8	6.5	9.98	10.4
MELOSIRA DISTANS V. A	20.9	7.2	3.86	4.0
MELOSIRA ITALICA	4.1	1.4	4.56	4.7
MELOSIRA ITALICA VAR. TENUISSIMA	12.5	4.3	6.99	7.3
CHRYSOPHYCEAE	12.4	4.3	6.24	6.5
MALLOMONAS ACAROIDES	4.1	1.4	5.04	5.2
UNIDENTIFIED CHRYSUPHYCEAE	8.3	2.8	1.20	1.2
CRYPTOPHYCEAE	12.3	4.2	5.77	6.0
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	0.6	1.12	1.1
CRYPTOMONAS OVATA	2.0	0.6	2.16	2.2
CRYPTOMONAS PHASEOLUS	8.3	2.8	2.49	2.6
MYXOPHYCEAE	4.1	1.4	0.10	0.1
PHORMIDIUM ANGUSTISSIMA	4.1	1.4	0.10	0.1
EUGLENOPHYCEAE	6.2	2.1	13.95	14.6
EUGLENA SPP.	6.2	2.1	13.95	14.6
UNKNOWN	54.3	18.9	1.52	1.5
C974-2-C7	54.3	18.9	1.52	1.5
SAMPLE TOTALS:	287.0	99.8	95.46	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 09/13/77
TIME: 0915 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	176.8	55.5	90.35	55.7
ARTHRODESMUS INCUS VAR. EXTENSUS	4.1	1.2	13.82	8.5
ARTHRODESMUS SUBULATUS	2.0	0.6	12.03	7.4
ARTHRODESMUS SPP.	104.5	32.4	45.24	27.9
CHLAMYDOMONAS SPP.	4.1	1.2	0.34	0.2
CLOSTERIUM SPP.	2.0	0.6	0.50	0.3
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	29.2	9.0	2.98	1.8
COSMARIUM PHASEOLUS F. MINOR	2.0	0.6	3.16	1.9
CRUCIGENIA TETRAPEDIA	2.0	0.6	0.18	0.1
KIRCHNERIELLA LUNARIS	2.0	0.6	1.05	0.6
MONORAPHIDIUM SETIFORME	2.0	0.6	0.36	0.2
SCENEDESMUS QUADRICAUDA VAR. ALTERANS	2.0	0.6	0.19	0.1
STAURASTRUM PARADOXUM VAR. A	2.0	0.6	9.78	6.0
COCCOID GREENS	20.9	6.4	0.66	0.4
BACILLARIOPHYCEAE	78.8	24.4	27.66	17.0
ASTERIONELLA FORMOSA	8.3	2.5	4.46	2.7
CYCLOTELLA STELLIGERA	12.5	3.8	6.65	4.1
MELOSIRA DISTANS V. A	45.9	14.2	8.50	5.2
MELOSIRA ITALICA VAR. TENUISSIMA	2.0	0.6	1.16	0.7
NAVICULA CRYPTOCEPHALA	2.0	0.6	0.77	0.4
NAVICULA NOTHA	2.0	0.6	0.74	0.4
PINNULARIA SPP.	2.0	0.6	3.60	2.2
SYNEDRA SP. A	4.1	1.2	1.74	1.0
CHRYSOPHYCEAE	12.4	3.8	4.02	2.4
MALLOMONAS ACAROIDES	2.0	0.6	2.52	1.5
UNIDENTIFIED CHRYSOPHYCEAE	10.4	3.2	1.50	0.9
CRYPTOPHYCEAE	22.7	7.0	18.35	11.3
CRYPTOMONAS EROSA	6.2	1.9	9.79	6.0
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	0.6	1.12	0.6
CRYPTOMONAS OVATA	4.1	1.2	4.32	2.6
CRYPTOMONAS PHASEOLUS	10.4	3.2	3.11	1.9
EUGLENOPHYCEAE	2.0	0.6	4.65	2.8
EUGLENA SPP.	2.0	0.6	4.65	2.8
DINOPHYCEAE	6.2	1.9	16.26	10.0
PERIDINIUM INCONSPICUUM	6.2	1.9	16.26	10.0
UNKNOWN	20.8	6.4	0.63	0.3
0574-2-03	2.0	0.6	0.11	0.0
0974-2-07	18.8	5.8	0.52	0.3
SAMPLE TOTALS:	321.7	99.9	161.94	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 09/13/77
TIME: 0915 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	172.3	47.9	74.09	35.9
ANKISTRODESMUS FALCATUS	2.0	0.5	0.11	0.0
ARTHRODESMUS INCUS VAR. EXTENSUS	4.1	1.1	13.82	6.7
ARTHRODESMUS SPP.	110.7	30.8	47.96	23.2
CHLAMYDOMONAS SPP.	2.0	0.5	0.17	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	29.2	8.1	2.98	1.4
COSMARIUM SPP.	2.0	0.5	1.13	0.5
MONORAPHIDIUM CONTORTUM	2.0	0.5	0.08	0.0
MOUGEOTIA SPP.	2.0	0.5	2.83	1.3
OOCYSTIS SPP.	2.0	0.5	0.12	0.0
SCENEDESMUS BIJUGA	4.1	1.1	0.36	0.1
SCENEDESMUS QUADRICAUDA	2.0	0.5	0.19	0.0
STAURASTRUM TETRACERUM	4.1	1.1	2.22	1.0
TETRAEDRON MINIMUM	2.0	0.5	1.91	0.9
COCCOID GREENS	4.1	1.1	0.13	0.0
BACILLARIOPHYCEAE	81.1	22.5	37.32	18.1
ASTERIONELLA FORMOSA	4.1	1.1	2.23	1.0
CYCLOTELLA STELLIGERA	12.5	3.4	6.65	3.2
MELOSIRA DISTANS V. A	41.8	11.6	7.73	3.7
MELOSIRA ITALICA VAR. TENUISSIMA	14.6	4.0	8.16	3.9
NITZSCHIA LORENZIANA VAR. SUBTILIS	2.0	0.5	10.46	5.0
SYNEDRA SP. A	2.0	0.5	0.87	0.4
SYNEDRA SPP.	4.1	1.1	1.19	0.5
CHRYSOPHYCEAE	24.9	6.9	14.90	7.2
MALLOMONAS ACAROIDES	8.3	2.3	10.08	4.8
MALLOMONAS SPP.	2.0	0.5	2.71	1.3
UNIDENTIFIED CHRYSOPHYCEAE	14.6	4.0	2.10	1.0
CRYPTOPHYCEAE	29.1	8.1	32.92	15.9
CRYPTOMONAS EROSA	16.7	4.6	26.11	12.6
CRYPTOMONAS OVATA	4.1	1.1	4.32	2.0
CRYPTOMONAS PHASEOLUS	8.3	2.3	2.49	1.2
MYXOPHYCEAE	18.6	5.1	1.21	0.5
AGMENELLUM QUADRIDUPLICATUM	2.0	0.5	0.01	0.0
ANACYSTIS CYANEA	2.0	0.5	0.85	0.4
PHORMIDIUM ANGUSTISSIMA	14.6	4.0	0.35	0.1
EUGLENOPHYCEAE	2.0	0.5	4.65	2.2
EUGLENA SPP.	2.0	0.5	4.65	2.2
DINOPHYCEAE	10.3	2.8	40.19	19.5
PERIDINIUM DEFLANDREI	2.0	0.5	23.95	11.6
UNIDENTIFIED DINOPHYCEAE	8.3	2.3	16.23	7.8
UNKNOWN	20.8	5.7	0.63	0.3
0574-2-03	2.0	0.5	0.11	0.0
0974-2-07	18.8	5.2	0.52	0.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	359.1	99.8	205.94	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 10/23/77
TIME: 1010 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	80.0	44.3	17.37	4.1
ANKISTRODESMUS FALCATUS	9.7	5.3	0.53	0.1
ANKISTRODESMUS FUSIFORMIS	22.2	12.3	2.31	0.5
ARTHRODESMUS SPP.	5.5	3.0	2.40	0.5
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.7	1.4	0.28	0.0
MONORAPHIDIUM SAXATILE	25.0	13.8	2.77	0.6
MONORAPHIDIUM SETIFORME	1.3	0.7	0.24	0.0
MOUGEOTIA SPP.	1.3	0.7	1.88	0.4
QUADRIGULA CLOSTERIOIDES	1.3	0.7	0.50	0.1
STAURASTRUM CURVATUM	1.3	0.7	6.11	1.4
COCCOID GREENS	9.7	5.3	0.31	0.0
BACILLARIOPHYCEAE	42.7	23.6	22.22	5.2
ACHNANTHES SPP.	1.3	0.7	0.25	0.0
CYCLOTELLA STELLIGERA	18.0	9.9	9.59	2.2
MELOSIRA ITALICA VAR. TENUISSIMA	16.6	9.2	9.30	2.2
NITZSCHIA SPP.	1.3	0.7	0.75	0.1
SYNEDRA SP. A	5.5	3.0	2.32	0.5
CHRYSOPHYCEAE	6.8	3.7	2.80	0.6
CHROMULINA SPP.	5.5	3.0	1.12	0.2
MALLOMONAS ACAROIDES	1.3	0.7	1.67	0.4
HAPTOPHYCEAE	9.7	5.3	1.80	0.4
CHRYSOCHROMULINA PARVA	9.7	5.3	1.80	0.4
CRYPTOPHYCEAE	19.1	10.5	7.62	1.7
CHROOMONAS ACUTA	1.3	0.7	0.15	0.0
CRYPTOMONAS EROSA	1.3	0.7	2.17	0.5
CRYPTOMONAS EROSA VAR. REFLEXA	1.3	0.7	0.74	0.1
CRYPTOMONAS PHASEOLUS	15.2	8.4	4.55	1.0
DINOPHYCEAE	15.1	8.3	366.10	87.3
GLENODINIUM ARMATUM	1.3	0.7	2.32	0.5
PERIDINIUM DEFLANDREI	5.5	3.0	63.72	15.2
PERIDINIUM WISCONSINENSE	8.3	4.6	300.05	71.6
UNKNOWN	6.7	3.7	0.98	0.2
0574-2-03	2.7	1.4	0.15	0.0
0774-2-22	2.7	1.4	0.79	0.1
0974-2-07	1.3	0.7	0.03	0.0
SAMPLE TOTALS:	180.1	99.8	418.92	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 10/13/77
TIME: 1010 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/ML	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	70.1	42.4	9.45	6.2
ANKISTRODESMUS FALCATUS	9.3	5.6	0.51	0.3
ANKISTRODESMUS FUSIFORMIS	11.4	6.9	1.18	0.7
ARTHRODESMUS SPP.	5.2	3.1	2.25	1.4
CHLAMYDOMONAS SPP.	2.0	1.2	0.17	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	1.2	0.21	0.1
CRUCIGENIA TETRAPEDIA	1.0	0.6	0.09	0.0
MONORAPHIDIUM SAXATILE	21.8	13.2	2.42	1.6
MONORAPHIDIUM SETIFORME	1.0	0.6	0.18	0.1
QUADRIGULA CLOSTERIOIDES	4.1	2.4	1.32	0.8
SCENEDESMUS BIJUGA	3.1	1.8	0.27	0.1
SELENASTRUM MINUTUM	1.0	0.6	0.03	0.0
STAURASTRUM TETRACERUM	1.0	0.6	0.55	0.3
COCCOID GREENS	7.2	4.3	0.23	0.1
BACILLARIOPHYCEAE	45.5	27.5	23.00	15.2
CYCLOTELLA STELLIGERA	28.0	16.9	14.91	9.8
EUNOTIA ZAZUMINENSIS	2.0	1.2	0.90	0.6
MELOSIRA DISTANS V. A	3.1	1.8	0.57	0.3
MELOSIRA ITALICA VAR. TENUISSIMA	10.4	6.3	5.80	3.8
NAVICULA NOTHA	1.0	0.6	0.37	0.2
SYNEDRA SP. A	1.0	0.6	0.43	0.2
CHRYSOPHYCEAE	5.1	3.0	3.17	2.0
CHROMULINA SPP.	3.1	1.8	0.63	0.4
MALLOMONAS GLOBOSA	1.0	0.6	1.19	0.7
MALLOMONAS SPP.	1.0	0.6	1.34	0.8
HAPTOPHYCEAE	2.0	1.2	0.38	0.2
CHRYSOCHROMULINA PARVA	2.0	1.2	0.38	0.2
CRYPTOPHYCEAE	26.9	16.2	16.90	11.1
CRYPTOMONAS EROSA	5.2	3.1	8.12	5.3
CRYPTOMONAS EROSA VAR. REFLEXA	3.1	1.8	1.67	1.1
CRYPTOMONAS OVATA	2.0	1.2	2.15	1.4
CRYPTOMONAS PHASEOLUS	16.6	10.0	4.95	3.2
MYXOPHYCEAE	1.0	0.6	0.04	0.0
ANACYSTIS INCERTA	1.0	0.6	0.04	0.0
DINOPHYCEAE	9.3	5.6	97.09	64.4
GLENODINIUM ARMATUM	1.0	0.6	1.73	1.1
PERIDINIUM DEFLANDREI	8.3	5.0	95.36	63.2
UNKNOWN	5.0	3.0	0.67	0.4
0374-2-03	1.0	0.6	0.02	0.0
0574-2-04	2.0	1.2	0.32	0.2
0774-2-22	1.0	0.6	0.29	0.1
0974-2-07	1.0	0.6	0.02	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	164.9	99.8	150.75	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 10/13/77
TIME: 1040 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	91.0	57.4	13.61	28.7
ANKISTRODESMUS FALCATUS	12.5	7.8	0.68	1.4
ANKISTRODESMUS FUSIFORMIS	9.7	6.1	1.01	2.1
ARTHRODESMUS SPP.	15.2	9.5	6.62	14.0
CHLAMYDOMONAS SPP.	1.3	0.8	0.11	0.2
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	18.0	11.3	1.84	3.9
CRUCIGENIA TETRAPEDIA	1.3	0.8	0.12	0.2
MONORAPHIDIUM BRAUNII	1.3	0.8	0.17	0.3
MONORAPHIDIUM SAXATILE	12.5	7.8	1.38	2.9
MONORAPHIDIUM SETIFORME	2.7	1.7	0.48	1.0
SCENEDESMUS BIJUGA	5.5	3.4	0.48	1.0
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	1.3	0.8	0.37	0.7
COCCOID GREENS	9.7	6.1	0.31	0.6
BACILLARIOPHYCEAE	34.6	21.8	17.86	37.8
CYCLOTELLA STELLIGERA	18.0	11.3	9.59	20.3
MELOSIRA DISTANS V. A	2.7	1.7	0.51	1.0
MELOSIRA ITALICA VAR. TENUISSIMA	13.9	8.7	7.75	16.4
CHRYSOPHYCEAE	4.0	2.5	3.32	7.0
KEPHYRION SPP.	1.3	0.8	0.12	0.2
MALLOMONAS GLOBOSA	2.7	1.7	3.19	6.7
CRYPTOPHYCEAE	15.1	9.5	8.35	17.6
CRYPTOMONAS EROSA	1.3	0.8	2.17	4.5
CRYPTOMONAS OVATA	2.7	1.7	2.87	6.0
CRYPTOMONAS PHASEOLUS	11.1	7.0	3.31	7.0
DINOPHYCEAE	1.3	0.8	3.50	7.4
PERIDINIUM SPP.	1.3	0.8	3.50	7.4
UNKNOWN	12.4	7.8	0.52	1.1
0574-2-04	1.3	0.8	0.21	0.4
0974-2-07	11.1	7.0	0.31	0.6
SAMPLE TOTALS:	158.4	99.9	47.19	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 10/13/77
TIME: 1040 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	23.6	43.4	2.38	4.0
ANKISTRODESMUS FALCATUS	3.1	5.7	0.17	0.2
CHLAMYDOMONAS SPP.	4.1	7.5	0.34	0.5
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	1.0	1.8	0.10	0.1
MONORAPHIDIUM SAXATILE	2.0	3.6	0.23	0.3
MONORAPHIDIUM SETIFORME	5.2	9.5	0.90	1.5
OOCYSTIS PUSILLA	1.0	1.8	0.14	0.2
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	1.0	1.8	0.27	0.4
COCCOID GREENS	6.2	11.4	0.19	0.3
BACILLARIOPHYCEAE	9.1	16.7	3.51	6.0
CYCLOTELLA STELLIGERA	1.0	1.8	0.55	0.9
EUNOTIA ZAZUMINENSIS	4.1	7.5	1.81	3.1
EUNOTIA SP. A	1.0	1.8	0.32	0.5
MELOSIRA DISTANS V. A	2.0	3.6	0.38	0.6
SYNEDRA SP. A	1.0	1.8	0.43	0.7
CHRYSOPHYCEAE	3.1	5.7	0.44	0.7
UNIDENTIFIED CHRYSOPHYCEAE	3.1	5.7	0.44	0.7
CRYPTOPHYCEAE	16.5	30.3	11.74	20.2
CRYPTOMONAS EROSA	4.1	7.5	6.49	11.2
CRYPTOMONAS OVATA	2.0	3.6	2.15	3.7
CRYPTOMONAS PHASEOLUS	10.4	19.1	3.09	5.3
EUGLENOPHYCEAE	1.0	1.8	2.31	4.0
EUGLENA SPP.	1.0	1.8	2.31	4.0
DINOPHYCEAE	1.0	1.8	37.41	64.7
PERIDINIUM WISCONSINENSE	1.0	1.8	37.41	64.7
SAMPLE TOTALS:	54.3	99.9	57.82	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 10/13/77
TIME: 930 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	45.1	31.8	18.05	10.5
ANKISTRODESMUS FALCATUS	2.0	1.4	0.11	0.0
ANKISTRODESMUS FUSIFORMIS	9.3	6.5	0.97	0.5
ARTHRODESMUS SPP.	3.1	2.1	1.35	0.7
ASTEROCOCCUS LIMNETICUS	1.0	0.7	3.07	1.7
CLOSTERIUM CERATIUM	3.1	2.1	1.78	1.0
COELASTRUM MICROPORUM	1.0	0.7	1.88	1.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	5.2	3.6	0.53	0.3
KIRCHNERIELLA OBESA	1.0	0.7	1.30	0.7
MONORAPHIDIUM SAXATILE	5.2	3.6	0.57	0.3
MONORAPHIDIUM SETIFORME	2.0	1.4	0.36	0.2
OOCYSTIS PUSILLA	3.1	2.1	0.22	0.1
QUADRIGULA CLOSTERIOIDES	2.0	1.4	0.75	0.4
SCENEDESMUS QUADRICAUDA	4.1	2.9	0.49	0.2
STAURASTRUM CURVATUM	1.0	0.7	4.57	2.6
COCCOID GREENS	2.0	1.4	0.06	0.0
BACILLARIOPHYCEAE	71.6	50.6	30.79	18.0
CYCLOTELLA STELLIGERA	23.9	16.9	12.70	7.4
EUNOTIA ZAZUMINENSIS	11.4	8.0	4.99	2.9
MELOSIRA DISTANS V. A	23.9	16.9	4.42	2.5
MELOSIRA ITALICA VAR. TENUISSIMA	2.0	1.4	1.16	0.6
NITZSCHIA SPP.	1.0	0.7	0.56	0.3
RHIZOSOLENIA ERIENSIS	1.0	0.7	3.87	2.2
SYNEDRA TENERA	3.1	2.1	0.90	0.5
SYNEDRA SP. A	5.2	3.6	2.17	1.2
CHRYSOPHYCEAE	2.0	1.4	1.40	0.8
CHROMULINA SPP.	1.0	0.7	0.21	0.1
MALLOMONAS GLOBOSA	1.0	0.7	1.19	0.7
HAPTOPHYCEAE	4.1	2.9	0.77	0.4
CHRYSOCHROMULINA PARVA	4.1	2.9	0.77	0.4
CRYPTOPHYCEAE	3.0	2.1	1.69	0.9
CRYPTOMONAS OVATA	1.0	0.7	1.07	0.6
CRYPTOMONAS PHASEOLUS	2.0	1.4	0.61	0.3
DINOPHYCEAE	9.2	6.5	117.54	68.8
GLENODINIUM ARMATUM	4.1	2.9	6.94	4.0
PERIDINIUM DEFLANDREI	3.1	2.1	35.76	20.9
PERIDINIUM WISCONSINENSE	2.0	1.4	74.83	43.8
UNKNOWN	6.1	4.3	0.43	0.2
0374-2-03	3.1	2.1	0.08	0.0
0774-2-22	1.0	0.7	0.29	0.1
0974-2-07	2.0	1.4	0.05	0.0
SAMPLE TOTALS:	141.0	99.7	170.70	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 10/13/77
TIME: 930 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	36.9	27.4	11.50	14.6
ANKISTRODESMUS FALCATUS	5.2	3.8	0.28	0.3
ANKISTRODESMUS FALCATUS VAR. ACICULARIS	1.0	0.7	0.06	0.1
ANKISTRODESMUS FUSIFORMIS	5.2	3.8	0.54	0.6
ARTHRODESMUS INCUS	1.0	0.7	3.48	4.4
ARTHRODESMUS SPP.	1.0	0.7	0.45	0.5
CLOSTERIUM CERATIUM	2.0	1.4	1.18	1.5
CLOSTERIUM INCURVUM	1.0	0.7	0.89	1.1
COSMARIUM SPP.	1.0	0.7	0.56	0.7
GOLENKINIA RADIATA	1.0	0.7	0.16	0.2
MONORAPHIDIUM SAXATILE	6.2	4.6	0.69	0.8
MONORAPHIDIUM SETIFORME	3.1	2.3	0.54	0.6
OOCYSTIS PUSILLA	1.0	0.7	0.07	0.0
QUADRIGULA CLOSTERIOIDES	1.0	0.7	0.37	0.4
SCENEDESMUS DENTICULATUS	1.0	0.7	0.19	0.2
SCENEDESMUS QUADRICAUDA	3.1	2.3	0.29	0.3
STAURASTRUM TETRACERUM	3.1	2.3	1.66	2.1
BACILLARIOPHYCEAE	87.9	65.6	55.09	70.4
ATTHEYA ZACHARIASI	1.0	0.7	2.27	2.9
CYCLOTELLA STELLIGERA	17.6	13.1	9.38	12.0
EUNOTIA ZAZUMINENSIS	26.0	19.4	11.36	14.5
EUNOTIA SP. A	2.0	1.4	0.65	0.8
MELOSIRA DISTANS V. A	12.4	9.2	2.30	2.9
MELOSIRA ITALICA	2.0	1.4	2.27	2.9
MELOSIRA ITALICA VAR. TENUISSIMA	12.4	9.2	6.96	8.9
RHIZOSOLENIA ERIENSIS	4.1	3.0	15.51	19.8
SYNEDRA SP. A	10.4	7.7	4.34	5.5
CHRYSOPHYCEAE	2.0	1.4	2.45	3.1
MALLOMONAS ACAROIDES	1.0	0.7	1.25	1.6
MALLOMONAS GLOBOSA	1.0	0.7	1.19	1.5
HAPTOPHYCEAE	4.1	3.0	0.77	0.9
CHRYSOCHROMULINA PARVA	4.1	3.0	0.77	0.9
CRYPTOPHYCEAE	1.0	0.7	0.30	0.3
CRYPTOMONAS PHASEOLUS	1.0	0.7	0.30	0.3
MYXOPHYCEAE	1.0	0.7	8.05	10.2
ANABAENA SCHEREMETIEVI	1.0	0.7	8.05	10.2
UNKNOWN	1.0	0.7	0.02	0.0
0374-2-03	1.0	0.7	0.02	0.0
SAMPLE TOTALS:	133.9	99.8	78.20	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 10/13/77
TIME: 1110 SAMPLE DEPTH: 4.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	70.1	36.8	12.48	14.4
ANKISTRODESMUS FALCATUS	6.9	3.6	0.38	0.4
ANKISTRODESMUS FUSIFORMIS	5.5	2.8	0.57	0.6
ARTHRODESMUS SPP.	11.1	5.8	4.81	5.5
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	5.5	2.8	0.56	0.6
COSMARIUM SPP.	2.7	1.4	1.51	1.7
CRUCIGENIA TETRAPEDIA	5.5	2.8	0.42	0.4
MONORAPHIDIUM SAXATILE	11.1	5.8	1.23	1.4
MONORAPHIDIUM SETIFORME	1.3	0.6	0.24	0.2
SCENEDESMUS DIMORPHUS	1.3	0.6	0.13	0.1
SCENEDESMUS QUADRICAUDA	5.5	2.8	0.65	0.7
STAURASTRUM PARADOXUM VAR. PARVUM	1.3	0.6	0.51	0.5
TETRAEDRON CAUDATUM	2.7	1.4	1.11	1.2
COCCOID GREENS	9.7	5.1	0.31	0.3
BACILLARIOPHYCEAE	98.2	51.6	53.22	61.7
ACHNANTHES MICROCEPHALA	1.3	0.6	0.16	0.1
CYCLOTELLA STELLIGERA	37.5	19.7	19.92	23.1
EUNOTIA ZAZUMINENSIS	31.9	16.7	13.97	16.2
MELOSIRA DISTANS V. A	9.7	5.1	1.80	2.0
MELOSIRA ITALICA VAR. TENUISSIMA	5.5	2.8	3.10	3.5
RHIZOSOLENIA ERIENSIS	2.7	1.4	10.36	12.0
SYNEDRA TENERA	1.3	0.6	0.40	0.4
SYNEDRA SP. A	8.3	4.3	3.48	4.0
CHRYSOPHYCEAE	2.6	1.3	1.89	2.1
DINOBRYON SPP.	1.3	0.6	0.22	0.2
MALLOMONAS ACAROIDES	1.3	0.6	1.67	1.9
HAPTOPHYCEAE	11.1	5.8	2.06	2.3
CHRYSOCHROMULINA PARVA	11.1	5.8	2.06	2.3
CRYPTOPHYCEAE	1.3	0.6	0.41	0.4
CRYPTOMONAS PHASEOLUS	1.3	0.6	0.41	0.4
DINOPHYCEAE	1.3	0.6	15.93	18.4
PERIDINIUM DEFLANDREI	1.3	0.6	15.93	18.4
UNKNOWN	5.5	2.8	0.15	0.1
0974-2-07	5.5	2.8	0.15	0.1
SAMPLE TOTALS:	190.1	99.8	86.18	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 10/13/77
TIME: 1110 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	42.4	23.8	13.95	7.8
ANKISTRODESMUS FALCATUS	5.5	3.0	0.30	0.1
ANKISTRODESMUS FUSIFORMIS	5.5	3.0	0.57	0.3
BOTRYOCOCCUS BRAUNII	1.3	0.7	1.16	0.6
CHLAMYDOMONAS SPP.	2.7	1.5	0.23	0.1
MONORAPHIDIUM SETIFORME	19.4	10.9	3.38	1.9
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	1.3	0.7	0.37	0.2
STAURASTRUM PARADOXUM VAR. A	1.3	0.7	6.50	3.6
TETRAEDRON MINIMUM	1.3	0.7	1.27	0.7
COCCOID GREENS	4.1	2.3	0.13	0.0
BACILLARIOPHYCEAE	118.9	66.9	88.57	50.2
CYCLOTELLA STELLIGERA	36.1	20.3	19.19	10.8
EUNOTIA ZAZUMINENSIS	27.8	15.6	12.14	6.8
MELOSIRA DISTANS VAR. ALPIGENA	4.1	2.3	0.90	0.5
MELOSIRA DISTANS V. A	1.3	0.7	0.25	0.1
MELOSIRA ITALICA VAR. TENUISSIMA	29.1	16.3	16.28	9.2
NAVICULA NOTHA	1.3	0.7	0.49	0.2
NAVICULA SPP.	1.3	0.7	1.10	0.6
NITZSCHIA LORENZIANA VAR. SUBTILIS	1.3	0.7	6.96	3.9
SYNEDRA SP. A	9.7	5.4	4.06	2.3
TABELLARIA FENESTRATA	6.9	3.8	27.16	15.4
CHRYSOPHYCEAE	1.3	0.7	0.42	0.2
OCHROMONAS SPP.	1.3	0.7	0.42	0.2
CRYPTOPHYCEAE	8.1	4.5	8.77	4.9
CRYPTOMONAS EROSA	4.1	2.3	6.51	3.6
CRYPTOMONAS OVATA	1.3	0.7	1.43	0.8
CRYPTOMONAS PHASEOLUS	2.7	1.5	0.82	0.4
MYXOPHYCEAE	1.3	0.7	0.64	0.3
ANABAENA SPP.	1.3	0.7	0.64	0.3
DINOPHYCEAE	5.5	3.0	63.72	36.1
PERIDINIUM DEFLANDREI	5.5	3.0	63.72	36.1
SAMPLE TOTALS:	177.5	99.8	176.09	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: EZC SAMPLE DATE: 10/13/77
TIME: 1255 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	107.7	50.4	20.97	16.7
ANKISTRODESMUS FALCATUS	6.2	2.9	0.34	0.2
ANKISTRODESMUS FUSIFORMIS	2.0	0.9	0.21	0.1
ARTHRODESMUS INCUS	2.0	0.9	6.97	5.5
ARTHRODESMUS SPP.	12.5	5.8	5.42	4.3
CHLAMYDOMONAS SPP.	10.4	4.8	0.66	0.6
CLOSTERIUM CERATIUM	2.0	0.9	1.19	0.9
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	6.2	2.9	0.63	0.5
GOLENKINIA RADIATA	2.0	0.9	0.33	0.2
MONORAPHIDIUM SAXATILE	10.4	4.8	1.15	0.9
MONORAPHIDIUM SETIFORME	4.1	1.9	0.72	0.5
SCENEDESMUS BIJUGA	2.0	0.9	0.18	0.1
SCENEDESMUS DENTICULATUS	2.0	0.9	0.39	0.3
SCENEDESMUS QUADRICAUDA	10.4	4.8	1.37	1.1
COCCOID GREENS	35.5	16.6	1.13	0.9
BACILLARIOPHYCEAE	56.0	26.2	31.33	25.0
EUNOTIA ZAZUMINENSIS	2.0	0.9	0.91	0.7
MELOSIRA DISTANS V. A	39.7	18.6	7.34	5.8
MELOSIRA ITALICA	4.1	1.9	4.56	3.6
MELOSIRA ITALICA VAR. TENUISSIMA	2.0	0.9	1.16	0.9
RHIZOSOLENIA ERIENSIS	4.1	1.9	15.59	12.4
SYNEDRA SP. A	4.1	1.9	1.74	1.3
CHRYSOPHYCEAE	4.1	1.9	0.84	0.6
CHROMULINA SPP.	4.1	1.9	0.84	0.6
CRYPTOPHYCEAE	18.6	8.7	11.38	9.0
CRYPTOMONAS EROSA	4.1	1.9	6.52	5.2
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	0.9	1.12	0.8
CRYPTOMONAS PHASEOLUS	12.5	5.8	3.73	2.9
DINOPHYCEAE	10.3	4.8	58.38	46.6
GLENODINIUM ARMATUM	6.2	2.9	10.47	8.3
PERIDINIUM DEFLANDREI	4.1	1.9	47.91	38.3
UNKNOWN	16.6	7.7	2.07	1.6
0774-2-22	6.2	2.9	1.78	1.4
0974-2-07	10.4	4.8	0.29	0.2
SAMPLE TOTALS:	213.3	99.8	125.00	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LOS SAMPLE DATE: 10/13/77
TIME: 1255 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	19.3	29.8	19.27	39.0
ANKISTRODESMUS FALCATUS	7.2	11.1	0.40	0.8
ANKISTRODESMUS FUSIFORMIS	1.0	1.5	0.10	0.2
ARTHRODESMUS INCUS	3.1	4.7	10.40	21.1
ARTHRODESMUS SUBULATUS	1.0	1.5	5.98	12.1
CLOSTERIUM INCURVUM	1.0	1.5	0.89	1.8
COSMARIUM SPP.	2.0	3.0	1.13	2.2
MONORAPHIDIUM SETIFORME	1.0	1.5	0.18	0.3
SCENEDESMUS QUADRICAUDA	1.0	1.5	0.09	0.1
COCCOID GREENS	2.0	3.0	0.06	0.1
BACILLARIOPHYCEAE	42.3	65.4	29.22	59.3
CYCLOTELLA STELLIGERA	10.4	16.0	5.52	11.2
CYMBELLA SPP.	1.0	1.5	1.45	2.9
EUNOTIA ZAZUMINENSIS	10.4	16.0	4.54	9.2
EUNOTIA SP. A	1.0	1.5	0.32	0.6
MELOSIRA DISTANS V. A	4.1	6.3	0.76	1.5
NITZSCHIA PALEA	2.0	3.0	1.03	2.0
RHIZOSOLENIA ERIENSIS	3.1	4.7	11.63	23.6
SYNEDRA TENERA	3.1	4.7	0.90	1.8
SYNEDRA SP. A	7.2	11.1	3.04	6.1
CRYPTOPHYCEAE	3.0	4.6	0.73	1.4
CHROOMONAS ACUTA	1.0	1.5	0.11	0.2
CRYPTOMONAS PHASEOLUS	2.0	3.0	0.61	1.2
SAMPLE TOTALS:	64.6	99.8	49.23	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 10/13/77
TIME: 1330 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	60.2	34.1	17.69	13.8
ANKISTRODESMUS FALCATUS	5.5	3.1	0.30	0.2
ANKISTRODESMUS FUSIFORMIS	2.7	1.5	0.28	0.2
ARTHRODESMUS INCUS	2.7	1.5	9.27	7.3
ARTHRODESMUS SPP.	1.3	0.7	0.60	0.4
CLOSTERIUM CERATIUM	1.3	0.7	0.79	0.6
COSMARIUM SPP.	1.3	0.7	0.75	0.5
CRUCIGENIA TETRAPEDIA	1.3	0.7	0.12	0.0
MONORAPHIDIUM SAXATILE	18.0	10.2	2.00	1.5
QUADRIGULA CLOSTERIOIDES	5.5	3.1	2.02	1.5
SCENEDESMUS DENTICULATUS	2.7	1.5	0.52	0.4
SCENEDESMUS QUADRICAUDA	4.1	2.3	0.39	0.3
SPHAEROZOSMA GRANULATUM	1.3	0.7	0.21	0.1
COCCOID GREENS	12.5	7.1	0.40	0.3
BACILLARIOPHYCEAE	63.7	36.1	26.30	20.7
CYCLOTELLA STELLIGERA	23.6	13.4	12.54	9.8
EUNOTIA ZAZUMINENSIS	11.1	6.3	4.85	3.8
MELOSIRA DISTANS V. A	16.6	9.4	3.08	2.4
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	2.3	2.32	1.8
SYNEDRA SP. A	8.3	4.7	3.46	2.7
CHRYSOPHYCEAE	1.3	0.7	1.59	1.2
MALLOMONAS GLOBOSA	1.3	0.7	1.59	1.2
HAPTOPHYCEAE	8.3	4.7	1.55	1.2
CHRYSOCHROMULINA PARVA	8.3	4.7	1.55	1.2
CRYPTOPHYCEAE	20.6	11.6	7.97	6.2
CHROOMONAS ACUTA	1.3	0.7	0.15	0.1
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	2.3	2.24	1.7
CRYPTOMONAS OVATA	1.3	0.7	1.43	1.1
CRYPTOMONAS PHASEOLUS	13.9	7.8	4.14	3.2
DINOPHYCEAE	18.0	10.2	71.00	56.0
GLENODINIUM ARMATUM	13.9	7.8	23.21	18.3
PERIDINIUM DEFLANDREI	4.1	2.3	47.79	37.7
UNKNOWN	3.9	2.1	0.63	0.4
0374-2-03	1.3	0.7	0.03	0.0
0574-2-03	1.3	0.7	0.07	0.0
0774-2-28	1.3	0.7	0.52	0.4
SAMPLE TOTALS:	176.0	99.7	126.77	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LOS SAMPLE DATE: 10/13/77
TIME: 1330 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	24.5	15.5	10.80	9.0
ANKISTRODESMUS FALCATUS	3.1	1.9	0.17	0.1
ANKISTRODESMUS FUSIFORMIS	1.0	0.6	0.10	0.0
ARTHRODESMUS SUBULATUS	1.0	0.6	5.98	5.0
ARTHRODESMUS SPP.	1.0	0.6	0.45	0.3
COSMARIUM PHASEOLUS F. MINOR	1.0	0.6	1.57	1.3
FRANCEIA DROESCHERI	1.0	0.6	0.19	0.1
GYROMITUS CORDIFORMIS	1.0	0.6	0.90	0.7
MONORAPHIDIUM SAXATILE	2.0	1.2	0.23	0.1
MONORAPHIDIUM SETIFORME	4.1	2.6	0.72	0.6
SCENEDESMUS QUADRICAUDA	1.0	0.6	0.19	0.1
COCCOID GREENS	8.3	5.2	0.26	0.2
BACILLARIOPHYCEAE	115.1	73.3	90.16	75.4
CYCLOTELLA STELLIGERA	13.5	8.6	7.17	6.0
EUNOTIA ZAZUMINENSIS	17.6	11.2	7.72	6.4
MELOSIRA DISTANS V. A	28.0	17.8	5.19	4.3
MELOSIRA ITALICA VAR. TENUISSIMA	31.2	19.8	17.40	14.5
NAVICULA SPP.	1.0	0.6	0.82	0.6
NITZSCHIA SPP.	1.0	0.6	0.56	0.4
RHIZOSOLENIA ERIENSIS	10.4	6.6	38.79	32.4
SYNEDRA SP. A	10.4	6.6	4.34	3.6
TABELLARIA FENESTRATA	2.0	1.2	8.13	6.8
CHRYSOPHYCEAE	8.2	5.2	2.20	1.8
CHROMULINA SPP.	1.0	0.6	0.21	0.1
MALLOMONAS ALLANTOIDES	1.0	0.6	0.26	0.2
OCHROMONAS SPP.	5.2	3.3	1.57	1.3
UNIDENTIFIED CHRYSOPHYCEAE	1.0	0.6	0.14	0.1
CRYPTOPHYCEAE	7.1	4.5	3.98	3.3
CRYPTOMONAS EROSA	1.0	0.6	1.62	1.3
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	1.2	1.11	0.9
CRYPTOMONAS PHASEOLUS	4.1	2.6	1.23	1.0
DINOPHYCEAE	1.0	0.6	11.92	9.9
PERIDINIUM DEFLANDREI	1.0	0.6	11.92	9.9
UNKNOWN	1.0	0.6	0.39	0.3
0774-2-28	1.0	0.6	0.39	0.3
SAMPLE TOTALS:	156.9	99.8	119.46	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 10/13/77
TIME: 1150 SAMPLE DEPTH: 4.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	64.0	29.9	24.43	14.1
ANKISTRODESMUS FALCATUS	14.6	6.8	0.80	0.4
ANKISTRODESMUS FUSIFORMIS	2.0	0.9	0.21	0.1
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.9	0.21	0.1
MONORAPHIDIUM CONTORTUM	2.0	0.9	0.08	0.0
MONORAPHIDIUM SAXATILE	6.2	2.9	0.69	0.4
OOCYSTIS PUSILLA	4.1	1.9	0.30	0.1
SCENEDESMUS BIJUGA	6.2	2.9	0.55	0.3
SCENEDESMUS QUADRICAUDA	6.2	2.9	0.78	0.4
STAURASTRUM CURVATUM	4.1	1.9	18.40	10.6
TETRAEDRON MINIMUM	2.0	0.9	1.91	1.1
COCCOID GREENS	14.6	6.8	0.46	0.2
BACILLARIOPHYCEAE	127.1	59.4	59.78	34.6
CYCLOTELLA STELLIGERA	45.9	21.4	24.41	14.1
MELOSIRA DISTANS V. A	41.8	19.5	7.73	4.4
MELOSIRA ITALICA VAR. TENUISSIMA	31.3	14.6	17.49	10.1
RHIZOSOLENIA ERIENSIS	2.0	0.9	7.79	4.5
SYNEDRA TENERA	2.0	0.9	0.60	0.3
SYNEDRA SP. A	4.1	1.9	1.74	1.0
CRYPTOPHYCEAE	14.4	6.7	6.60	3.8
CHROOMONAS ACUTA	2.0	0.9	0.23	0.1
CRYPTOMONAS EROSA	2.0	0.9	3.26	1.8
CRYPTOMONAS PHASEOLUS	10.4	4.8	3.11	1.8
DINOPHYCEAE	4.0	1.8	80.61	46.6
PERIDINIUM INCONSPICUUM	2.0	0.9	5.42	3.1
PERIDINIUM WISCONSINENSE	2.0	0.9	75.19	43.5
UNKNOWN	4.1	1.9	1.19	0.6
0774-2-22	4.1	1.9	1.19	0.6
SAMPLE TOTALS:	213.6	99.8	172.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 5C8.0 SAMPLE TYPE: LDS SAMPLE DATE: 10/13/77
TIME: 1150 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	42.1	27.8	7.29	5.0
ANKISTRODESMUS FALCATUS	6.9	4.5	0.38	0.2
ANKISTRODESMUS FUSIFORMIS	5.5	3.6	0.57	0.4
CHLAMYDOMONAS SPP.	1.3	0.8	0.11	0.0
COCCOMONAS SPP.	1.3	0.8	0.61	0.4
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4.1	2.7	0.42	0.2
MONORAPHIDIUM CONTORTUM	2.7	1.7	0.11	0.0
MONORAPHIDIUM SAXATILE	8.3	5.5	0.92	0.6
SCENEDESMUS BIJUGA	1.3	0.8	0.12	0.0
SELENASTRUM MINUTUM	2.7	1.7	0.10	0.0
SELENASTRUM WESTII	1.3	0.8	0.16	0.1
SPHAEROCYSTIS SCHROETERI	1.3	0.8	3.40	2.3
SPHAEROZOSMA GRANULATUM	1.3	0.8	0.21	0.1
COCCOID GREENS	4.1	2.7	0.13	0.0
BACILLARIOPHYCEAE	82.9	54.9	39.13	27.4
CYCLOTELLA STELLIGERA	18.0	11.9	9.59	6.7
EUNOTIA ZAZUMINENSIS	26.4	17.5	11.54	8.1
EUNOTIA SP. A	1.3	0.8	0.44	0.3
MELOSIRA DISTANS V. A	2.7	1.7	0.51	0.3
MELOSIRA ITALICA VAR. TENUISSIMA	18.0	11.9	10.08	7.0
NITZSCHIA SPP.	1.3	0.8	0.75	0.5
SYNEDRA TENERA	1.3	0.8	0.40	0.2
SYNEDRA SP. A	13.9	9.2	5.81	4.0
HAPTOPHYCEAE	6.9	4.5	1.29	0.9
CHRYSOCHROMULINA PARVA	6.9	4.5	1.29	0.9
CRYPTOPHYCEAE	5.4	3.5	2.67	1.8
CRYPTOMONAS OVATA	1.3	0.8	1.43	1.0
CRYPTOMONAS PHASEOLUS	4.1	2.7	1.24	0.8
MYXOPHYCEAE	2.6	1.7	0.49	0.3
AGMENELLUM QUADRIDUPLICATUM	1.3	0.8	0.08	0.0
ANABAENA SPP.	1.3	0.8	0.40	0.2
DINOPHYCEAE	9.5	6.2	91.15	63.9
GLENODINIUM ARMATUM	5.5	3.6	9.28	6.5
PERIDINIUM DEFLANDREI	2.7	1.7	31.86	22.3
PERIDINIUM WISCONSINENSE	1.3	0.8	50.00	35.1
UNKNOWN	1.3	0.8	0.39	0.2
0774-2-22	1.3	0.8	0.39	0.2
SAMPLE TOTALS:	150.7	99.8	142.44	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 10/13/77
TIME: 1210 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	70.0	34.7	20.40	17.1
ANKISTRODESMUS FALCATUS	11.1	5.5	0.61	0.5
ANKISTRODESMUS FUSIFORMIS	2.7	1.3	0.28	0.2
ARTHRODESMUS SUBULATUS	1.3	0.6	8.00	6.7
ARTHRODESMUS SPP.	8.3	4.1	3.61	3.0
CHLAMYDOMONAS SPP.	9.7	4.8	0.80	0.6
CRUCIGENIA TETRAPEDIA	2.7	1.3	0.24	0.2
MONORAPHIDIUM SAXATILE	9.7	4.8	1.08	0.9
OOCYSTIS PUSILLA	1.3	0.6	0.40	0.3
SCENEDESMUS BIJUGA	1.3	0.6	0.12	0.1
SCENEDESMUS QUADRICAUDA	2.7	1.3	0.26	0.2
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	1.3	0.6	0.37	0.3
SPHAEROZOSMA GRANULATUM	2.7	1.3	0.42	0.3
TETRAEDRON MINIMUM	4.1	2.0	3.82	3.2
COCCOID GREENS	11.1	5.5	0.35	0.2
BACILLARIOPHYCEAE	106.6	53.0	51.23	43.2
CYCLOTELLA STELLIGERA	25.0	12.4	13.28	11.2
EUNOTIA ZAZUMINENSIS	34.7	17.2	15.18	12.8
EUNOTIA SP. A	1.3	0.6	0.44	0.3
MELOSIRA DISTANS VAR. ALPIGENA	2.7	1.3	0.60	0.5
MELOSIRA DISTANS V. A	18.0	8.9	3.34	2.8
MELOSIRA ITALICA	9.7	4.8	10.63	8.9
MELOSIRA ITALICA VAR. TENUISSIMA	9.7	4.8	5.42	4.5
SYNEDRA SP. A	5.5	2.7	2.32	1.9
HAPTOPHYCEAE	2.7	1.3	0.51	0.4
CHRYSOCHROMULINA PARVA	2.7	1.3	0.51	0.4
CRYPTOPHYCEAE	9.4	4.6	6.48	5.4
CHROOMONAS ACUTA	1.3	0.6	0.15	0.1
CRYPTOMONAS EROSA	2.7	1.3	4.34	3.6
CRYPTOMONAS EROSA VAR. REFLEXA	1.3	0.6	0.74	0.6
CRYPTOMONAS PHASEOLUS	4.1	2.0	1.24	1.0
EUGLENOPHYCEAE	1.3	0.6	3.09	2.6
EUGLENA SPP.	1.3	0.6	3.09	2.6
DINOPHYCEAE	2.6	1.2	36.38	30.7
PERIDINIUM DEFLANDREI	1.3	0.6	15.93	13.4
PERIDINIUM KEYENSE	1.3	0.6	20.45	17.2
UNKNOWN	8.2	4.0	0.30	0.2
0574-2-03	2.7	1.3	0.15	0.1
0974-2-07	5.5	2.7	0.15	0.1
SAMPLE TOTALS:	200.8	99.8	118.43	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 10/13/77
TIME: 1210 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	37.8	32.3	13.13	12.8
ANKISTRODESMUS FALCATUS	3.1	2.6	0.17	0.1
ANKISTRODESMUS FUSIFORMIS	3.1	2.6	0.32	0.3
ARTHRODESMUS INCUS	1.0	0.8	3.46	3.4
ARTHRODESMUS SPP.	2.0	1.7	0.90	0.8
CLOSTERIUM CERATIUM	1.0	0.8	0.59	0.5
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	1.0	0.8	0.10	0.1
COSMARIUM SPP.	1.0	0.8	0.56	0.5
CRUCIGENIA TETRAPEDIA	1.0	0.8	0.06	0.0
MONORAPHIDIUM CONTORTUM	1.0	0.8	0.04	0.0
MONORAPHIDIUM SAXATILE	7.2	6.1	0.80	0.7
MONORAPHIDIUM SETIFORME	2.0	1.7	0.36	0.3
SCENEDESMUS DENTICULATUS	3.1	2.6	0.59	0.5
SCENEDESMUS QUADRICAUDA	2.0	1.7	0.29	0.2
STAURASTRUM CURVATUM	1.0	0.8	4.57	4.5
COCCOID GREENS	8.3	7.1	0.26	0.2
BACILLARIOPHYCEAE	53.9	46.2	23.91	23.5
CYCLOTELLA STELLIGERA	18.7	16.0	9.94	9.7
EUNOTIA ZAZUMINENSIS	10.4	8.9	4.54	4.4
MELOSIRA DISTANS V. A	10.4	8.9	1.92	1.8
MELOSIRA ITALICA VAR. TENUISSIMA	8.3	7.1	4.64	4.5
NAVICULA SPP.	1.0	0.8	0.82	0.8
SYNEDRA TENERA	1.0	0.8	0.30	0.2
SYNEDRA SP. A	4.1	3.5	1.73	1.7
CHRYSOPHYCEAE	4.1	3.5	5.31	5.2
MALLOMONAS ACAROIDES	1.0	0.8	1.25	1.2
MALLOMONAS PSEUDOCORONATA	3.1	2.6	4.06	4.0
HAPTOPHYCEAE	5.2	4.4	0.96	0.9
CHRYSOCHROMULINA PARVA	5.2	4.4	0.96	0.9
CRYPTOPHYCEAE	4.1	3.5	1.48	1.4
CRYPTOMONAS EROSA VAR. REFLEXA	1.0	0.8	0.55	0.5
CRYPTOMONAS PHASEOLUS	3.1	2.6	0.92	0.9
DINOPHYCEAE	9.3	7.9	56.36	55.5
GLENODINIUM ARMATUM	5.2	4.4	8.68	8.5
PERIDINIUM DEFLANDREI	4.1	3.5	47.68	46.9
UNKNOWN	2.0	1.7	0.31	0.2
0974-2-07	1.0	0.8	0.02	0.0
1175-2-04	1.0	0.8	0.28	0.2
SAMPLE TOTALS:	116.4	99.8	101.49	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 10/13/77
TIME: 835 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	57.6	36.9	21.20	18.4
ANKISTRODESMUS FALCATUS	8.3	5.3	0.45	0.3
ANKISTRODESMUS FUSIFORMIS	3.1	1.9	0.32	0.2
ARTHRODESMUS INCUS	2.0	1.2	6.93	6.0
ARTHRODESMUS SUBULATUS	1.0	0.6	5.98	5.2
ARTHRODESMUS SPP.	5.2	3.3	2.25	1.9
CHLAMYDOMONAS SPP.	1.0	0.6	0.08	0.0
CLOSTERIUM CERATIUM	1.0	0.6	0.59	0.5
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	7.2	4.6	0.74	0.6
COSMARIUM SPP.	2.0	1.2	1.13	0.9
FRANCEIA DROESCHERI	1.0	0.6	0.19	0.1
MONORAPHIDIUM SAXATILE	9.3	5.9	1.03	0.9
MONORAPHIDIUM SETIFORME	3.1	1.9	0.54	0.4
SCENEDESMUS BIJUGA	3.1	1.9	0.27	0.2
SCENEDESMUS QUADRICAUDA	1.0	0.6	0.09	0.0
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	1.0	0.6	0.27	0.2
COCCOID GREENS	8.3	5.3	0.26	0.2
BACILLARIOPHYCEAE	66.2	42.5	30.78	26.8
CYCLOTELLA STELLIGERA	13.5	8.6	7.17	6.2
EUNOTIA ZAZUMINENSIS	18.7	12.0	8.18	7.1
EUNOTIA SP. A	3.1	1.9	0.98	0.8
MELOSIRA DISTANS VAR. ALPIGENA	2.0	1.2	0.44	0.3
MELOSIRA DISTANS V. A	9.3	5.9	1.73	1.5
MELOSIRA ITALICA	6.2	3.9	6.82	5.9
SYNEDRA TENERA	1.0	0.6	0.30	0.2
SYNEDRA SP. A	11.4	7.3	4.78	4.1
UNIDENTIFIED PENNATE DIATOMS	1.0	0.6	0.36	0.3
CHRYSOPHYCEAE	4.0	2.5	2.87	2.5
DINOBRYON BAVARICUM	2.0	1.2	0.27	0.2
MALLOMONAS ACAROIDES	1.0	0.6	1.25	1.0
MALLOMONAS SPP.	1.0	0.6	1.34	1.1
HAPTOPHYCEAE	6.2	3.9	1.16	1.0
CHRYSOCHROMULINA PARVA	6.2	3.9	1.16	1.0
CRYPTOPHYCEAE	6.1	3.9	2.87	2.4
CRYPTOMONAS EROSA VAR. REFLEXA	1.0	0.6	0.55	0.4
CRYPTOMONAS OVATA	1.0	0.6	1.07	0.9
CRYPTOMONAS PHASEOLUS	4.1	2.6	1.23	1.0
EUGLENOPHYCEAE	1.0	0.6	2.31	2.0
EUGLENA SPP.	1.0	0.6	2.31	2.0
DINOPHYCEAE	7.2	4.6	52.89	46.1
GLENODINIUM ARMATUM	3.1	1.9	5.21	4.5
PERIDINIUM DEFLANDREI	4.1	2.6	47.68	41.5
UNKNOWN	7.2	4.6	0.60	0.5
0374-2-03	5.2	3.3	0.13	0.1

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0774-2-32	1.0	0.6	0.18	0.1
1175-2-04	1.0	0.6	0.28	0.2
SAMPLE TOTALS:	155.5	99.8	114.70	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LOS SAMPLE DATE: 10/13/77
TIME: 835 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	47.3	38.9	15.35	20.6
ANKISTRODESMUS FALCATUS	7.2	5.9	0.40	0.5
ANKISTRODESMUS FUSIFORMIS	6.2	5.1	0.64	0.8
ARTHRODESMUS INCUS	1.0	0.8	3.46	4.6
ARTHRODESMUS SPP.	3.1	2.5	1.35	1.8
CLOSTERIUM CERATIUM	1.0	0.8	0.59	0.7
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	1.6	0.21	0.2
COSMARIUM PHASEOLUS F. MINOR	1.0	0.8	1.57	2.1
MONORAPHIDIUM SAXATILE	10.4	8.5	1.15	1.5
MONORAPHIDIUM SETIFORME	3.1	2.5	0.54	0.7
QUADRIGULA CLOSTERIOIDES	1.0	0.8	0.37	0.5
SCENEDESMUS QUADRICAUDA	2.0	1.6	0.19	0.2
STAURASTRUM CURVATUM	1.0	0.8	4.57	6.1
COCCOID GREENS	8.3	6.8	0.26	0.3
BACILLARIOPHYCEAE	61.0	50.2	30.76	41.4
CYCLOTELLA STELLIGERA	12.4	10.2	6.62	8.9
EUNOTIA ZAZUMINENSIS	13.5	11.1	5.90	7.9
EUNOTIA SP. A	1.0	0.8	0.32	0.4
MELOSIRA DISTANS V. A	18.7	15.4	3.46	4.6
MELOSIRA ITALICA VAR. TENUISSIMA	8.3	6.8	4.64	6.2
RHIZOSOLENIA ERIENSIS	2.0	1.6	7.75	10.4
SYNEDRA TENERA	1.0	0.8	0.30	0.4
SYNEDRA SP. A	4.1	3.3	1.73	2.3
CHRYSOPHYCEAE	4.0	3.2	2.81	3.7
CHROMULINA SPP.	1.0	0.8	0.21	0.2
KEPHYRION SPP.	1.0	0.8	0.09	0.1
MALLOMONAS ACAROIDES	2.0	1.6	2.50	3.3
HAPTOPHYCEAE	2.0	1.6	0.38	0.5
CHRYSOCHROMULINA PARVA	2.0	1.6	0.38	0.5
CRYPTOPHYCEAE	2.0	1.6	0.61	0.8
CRYPTOMONAS PHASEOLUS	2.0	1.6	0.61	0.8
MYXOPHYCEAE	1.0	0.8	0.04	0.0
ANACYSTIS INCERTA	1.0	0.8	0.04	0.0
DINOPHYCEAE	2.0	1.6	23.84	32.1
PERIDINIUM DEFLANDREI	2.0	1.6	23.84	32.1
UNKNOWN	2.0	1.6	0.32	0.4
0774-2-22	1.0	0.8	0.29	0.3
0974-2-07	1.0	0.8	0.02	0.0
SAMPLE TOTALS:	121.3	99.8	74.15	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 11/17/77
TIME: 1040 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	249.9	48.3	21.06	7.0
ANKISTRODESMUS FALCATUS	8.3	1.6	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.7	0.43	0.1
ARTHRODESMUS SPP.	4.1	0.7	1.80	0.6
CHLAMYDOMONAS SPP.	12.5	2.4	1.04	0.3
CLOSTERIUM CERATIUM	4.1	0.7	2.38	0.8
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.7	0.75	0.2
MONORAPHEDIUM PUSILLUM	4.1	0.7	0.40	0.1
MONORAPHIDIUM SETIFORME	4.1	0.7	0.22	0.1
SCENEDESMUS BIJUGA	33.4	6.4	2.78	0.9
SCENEDESMUS QUADRICAUDA	8.3	1.6	0.31	0.1
SELENASTRUM MINUTUM	8.3	1.6	0.67	0.2
TETRAEDRON CAUDATUM	4.1	0.7	0.68	0.2
COCCOID GREENS	146.3	28.3	2.65	0.8
UNIDENTIFIED CHLOROPHYCEAE	4.1	0.7	0.83	0.3
BACILLARIOPHYCEAE	74.8	14.4	98.97	31.4
CYCLOTELLA STELLIGERA	8.3	1.6	4.43	1.4
EUNOTIA ZAZUMINENSIS	4.1	0.7	1.82	0.6
MELOSIRA DISTANS V. A	12.5	2.4	2.36	0.7
RHIZOSOLENIA ERIENSIS	16.6	3.2	62.36	19.8
SYNEDRA SP. A	25.0	4.8	14.48	4.6
SYNEDRA SPP.	4.1	0.7	11.69	3.7
TABELLARIA FENESTRATA	4.1	0.7	16.33	5.2
CHRYSOPHYCEAE	37.3	7.2	17.58	5.6
CHROMULINA SPP.	4.1	0.7	0.58	0.2
MALLOMONAS ACAROIDES	4.1	0.7	5.04	1.6
MALLOMONAS SPP.	4.1	0.7	5.42	1.7
OCHROMONAS SPP.	16.6	3.2	5.06	1.6
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.6	1.20	0.4
HAPTOPHYCEAE	4.1	0.7	0.77	0.2
CHRYSOCHROMULINA PARVA	4.1	0.7	0.77	0.2
CRYPTOPHYCEAE	79.1	15.3	51.34	16.3
CHROOMONAS ACUTA	12.5	2.4	1.33	0.4
CRYPTOMONAS EROSA	8.3	1.6	13.05	4.1
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.7	0.24	0.1
CRYPTOMONAS OVATA	25.0	4.8	25.93	8.2
CRYPTOMONAS PHASEOLUS	29.1	5.6	8.71	2.8
MYXOPHYCEAE	16.6	3.2	0.25	0.1
ANACYSTIS INCERTA	16.6	3.2	0.25	0.1
DINOPHYCEAE	4.1	0.7	10.44	3.3
PERIDINIUM ACICULIFERUM	4.1	0.7	0.44	0.1
CHLOROMONADOPHYCEAE	4.1	0.7	0.85	0.2
GONYOSTONUM LATUM	4.1	0.7	0.85	0.2
UNKNOWN	45.9	8.8	1.28	0.4

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0974-2-07	45.9	8.8	1.28	0.4
SAMPLE TOTALS:	516.0	99.8	296.18	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 11/17/77
TIME: 1040 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	47.4	23.0	11.28	3.8
ANKISTRODESMUS FALCATUS	12.5	6.0	0.68	0.2
ANKISTRODESMUS FUSIFORMIS	8.3	4.0	0.86	0.3
COSMARIUM PHASEOLUS F. MINOR	4.1	2.0	0.32	0.1
CRUCIGENIA TETRAPEDIA	2.0	1.0	0.02	0.0
MONORAPHIDIUM SAXATILE	2.0	1.0	0.02	0.0
MONORAPHIDIUM SETIFORME	2.0	1.0	0.36	0.1
SCENEDESMUS DENTICULATUS	2.0	1.0	0.39	0.1
TETRAEDRON MINIMUM	2.0	1.0	0.39	0.1
COCCOID GREENS	12.5	6.0	0.40	0.1
BACILLARIOPHYCEAE	97.9	47.7	169.52	58.9
CYCLOTELLA STELLIGERA	2.0	1.0	1.10	0.3
EUNOTIA ZAZUMINENSIS	12.5	6.0	5.47	1.9
EUNOTIA SP. A	2.0	1.0	0.66	0.2
MELOSIRA DISTANS V. A	16.7	8.1	3.60	1.2
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	2.0	2.33	0.8
RHIZOSOLENIA ERIENSIS	39.7	19.3	148.11	51.5
SYNEDRA SP. A	20.9	10.1	8.73	3.0
CHRYSOPHYCEAE	10.0	4.9	11.96	4.1
MALLOMONAS ACAROIDES	2.0	1.0	2.52	0.8
MALLOMONAS SPP.	6.2	3.0	8.13	2.8
SYNURA SPP.	2.0	1.0	1.31	0.4
HAPTOPHYCEAE	4.1	2.0	0.77	0.2
CHRYSOCHROMULINA PARVA	4.1	2.0	0.77	0.2
CRYPTOPHYCEAE	35.2	17.1	18.66	6.4
CHROOMONAS ACUTA	4.1	2.0	0.46	0.1
CRYPTOMONAS EROSA	4.1	2.0	6.52	2.2
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	1.0	1.13	0.3
CRYPTOMONAS OVATA	4.1	2.0	4.32	1.5
CRYPTOMONAS PHASEOLUS	20.9	10.2	6.22	2.1
DINOPHYCEAE	8.2	3.9	75.35	26.1
GLENODINIUM ARMATUM	2.0	1.0	3.49	1.2
PERIDINIUM DEFLANDREI	6.2	3.0	71.86	24.9
UNKNOWN	2.0	0.9	0.05	0.0
0974-2-07	2.0	0.9	0.05	0.0
SAMPLE TOTALS:	205.0	99.8	287.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 11/17/77
TIME: 1105 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	128.4	29.9	24.41	7.7
ANKISTRODESMUS FALCATUS	16.7	3.9	0.91	0.2
ANKISTRODESMUS FUSIFORMIS	6.2	1.4	0.65	0.2
ARTHRODESMUS SUBULATUS	2.0	0.5	12.03	3.8
CHLAMYDOMONAS SPP.	8.3	1.9	0.65	0.2
CHLORELLA SPP.	4.1	0.9	0.47	0.1
CLOSTERIUM CERATIUM	4.1	0.9	2.38	0.7
COSMARIUM SPP.	4.1	0.9	2.27	0.7
CRUCIGENIA TETRAPEDIA	8.3	1.9	0.73	0.2
FRANCEIA DROESCHERI	2.0	0.5	0.37	0.1
MONORAPHIDIUM CONTORTUM	2.0	0.5	0.08	0.0
MONORAPHEDIUM PUSILLUM	6.2	1.4	0.60	0.2
OOCYSTIS SPP.	4.1	0.9	0.25	0.1
SCENEDESMUS ABUNDANS	4.1	0.9	0.48	0.1
SCENEDESMUS BIJUGA	6.2	1.4	0.55	0.2
SCENEDESMUS QUADRICAUDA	4.1	0.9	0.39	0.1
COCCOID GREENS	45.5	10.7	1.47	0.5
BACILLARIOPHYCEAE	120.9	28.2	131.65	41.5
ACHNANTHES MICROCEPHALA	2.0	0.5	0.25	0.1
CYCLOTELLA STELLIGERA	12.5	2.9	6.65	2.1
EUNOTIA ZAZUMINENSIS	12.5	2.9	5.47	1.7
EUNOTIA SP. A	12.5	2.9	3.97	1.2
MELOSIRA DISTANS V. A	37.6	8.7	6.95	2.2
RHIZOSOLENIA ERIENSIS	27.1	6.3	101.34	32.0
SYNEDRA SP. A	16.7	3.9	6.98	2.2
CHRYSOPHYCEAE	20.6	4.7	5.64	1.8
CHROMULINA SPP.	4.1	0.9	0.84	0.3
MALLOMONAS SPP.	2.0	0.5	2.72	0.9
PSEUDOKEPHYRION SPP.	2.0	0.5	0.27	0.1
UNIDENTIFIED CHRYSOPHYCEAE	12.5	2.9	1.80	0.6
HAPTOPHYCEAE	35.5	8.2	6.60	2.1
CHRYSOCHROMULINA PARVA	35.5	8.2	6.60	2.1
CRYPTOPHYCEAE	72.8	16.9	44.23	14.0
CHROOMONAS ACUTA	6.2	1.4	0.69	0.2
CRYPTOMONAS EROSA	2.0	0.5	3.26	1.0
CRYPTOMONAS EROSA VAR. REFLEXA	10.4	2.4	5.62	1.8
CRYPTOMONAS OVATA	25.0	5.8	25.93	8.2
CRYPTOMONAS PHASEOLUS	29.2	6.8	8.71	2.8
MYXOPHYCEAE	16.6	3.8	0.28	0.1
AGMENELLUM QUADRIDUPLICATUM	2.0	0.5	0.03	0.0
ANACYSTIS INCERTA	14.6	3.4	0.24	0.1
DINOPHYCEAE	26.9	6.2	100.08	31.7
GLENODINIUM ARMATUM	2.0	0.5	3.49	1.1
PERIDINIUM ACICULIFERUM	2.0	0.5	52.02	16.5

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
PERIDINIUM PUSILLUM	6.2	1.4	12.10	3.8
UNIDENTIFIED DINOPHYCEAE	16.7	3.9	32.47	10.3
UNKNOWN	6.1	1.4	0.42	0.1
0974-2-07	4.1	0.9	0.11	0.0
0976-2-01	2.0	0.4	0.30	0.0
SAMPLE TOTALS:	427.8	99.7	313.34	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LDS SAMPLE DATE: 11/17/77
TIME: 1105 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	57.8	22.8	6.04	4.4
ANKISTRODESMUS FUSIFORMIS	4.1	1.6	0.43	0.3
CHLAMYDOMONAS SPP.	2.0	0.7	0.17	0.1
MONORAPHIDIUM CONTORTUM	2.0	0.7	0.08	0.1
MONORAPHEDIUM PUSILLUM	25.0	9.8	2.43	1.7
SCENEDESMUS BIJUGA	10.4	4.1	0.91	0.6
SCENEDESMUS QUADRICAUDA	6.2	2.4	0.78	0.5
SELENASTRUM WESTII	2.0	0.7	0.24	0.1
TETRAEDRON CAUDATUM	2.0	0.7	0.83	0.6
COCCOID GREENS	4.1	1.6	0.12	0.0
BACILLARIOPHYCEAE	74.8	29.5	89.72	66.3
CYCLOTELLA STELLIGERA	4.1	1.6	2.21	1.6
EUNOTIA ZAZUMINENSIS	2.0	0.7	0.91	0.6
EUNOTIA SP. A	14.5	5.7	4.63	3.4
MELOSIRA DISTANS V. A	16.7	6.6	3.09	2.2
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	1.6	2.33	1.7
NITZSCHIA SPP.	2.0	0.7	1.12	0.8
RHIZOSOLENIA ERIENSIS	18.8	7.4	70.16	51.8
SYNEDRA SP. A	12.5	4.9	5.24	3.8
CHRYSOPHYCEAE	35.3	13.9	8.85	6.5
MALLOMONAS SPP.	2.0	0.7	2.71	2.0
OCHROMONAS SPP.	8.3	3.2	2.53	1.8
UNIDENTIFIED CHRYSOPHYCEAE	25.0	9.8	3.61	2.6
HAPTOPHYCEAE	16.7	6.6	3.10	2.2
CHRYSOCHROMULINA PARVA	16.7	6.6	3.10	2.2
CRYPTOPHYCEAE	41.5	16.4	26.54	19.6
CHROOMONAS ACUTA	2.0	0.7	0.23	0.1
CRYPTOMONAS EROSA	4.1	1.6	0.55	0.4
CRYPTOMONAS EROSA VAR. REFLEXA	6.2	2.4	3.37	2.4
CRYPTOMONAS OVATA	10.4	4.1	10.80	7.9
CRYPTOMONAS PHASEOLUS	18.8	7.4	5.60	4.1
MYXOPHYCEAE	10.3	4.0	0.13	0.0
AGMENELLUM QUADRIDUPLICATUM	2.0	0.7	0.03	0.0
ANACYSTIS INCERTA	8.3	3.2	0.10	0.0
CHLOROMONADOPHYCEAE	2.0	0.7	0.42	0.3
GONYOSTONUM LATUM	2.0	0.7	0.42	0.3
UNKNOWN	14.6	5.7	0.40	0.3
0974-2-07	14.6	5.7	0.40	0.3
SAMPLE TOTALS:	253.0	99.9	135.24	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 11/17/77
TIME: 1000 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	266.5	43.1	28.47	5.5
ANKISTRODESMUS FALCATUS	16.7	2.7	0.91	1.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.7	0.86	1.1
CHLAMYDOMONAS SPP.	8.3	1.3	0.63	1.2
CHLORELLA SPP.	29.2	4.7	3.30	6.4
CLOSTERIUM CERATIUM	8.3	1.3	4.77	9.2
DICTYOSPHAERIUM PULCHELLUM	4.1	0.6	1.63	3.2
MONORAPHEDIUM PUSILLUM	4.1	0.6	0.42	0.8
MONORAPHIDIUM SETIFORME	12.5	2.0	1.25	2.4
OOCYSTIS SPP.	4.1	0.6	0.55	1.1
SCENEDESMUS BIJUGA	12.5	2.0	1.35	2.6
SCENEDESMUS DIMORPHUS	8.3	1.3	1.67	3.2
SCENEDESMUS QUADRICAUDA	25.0	4.0	1.67	3.2
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	4.1	0.6	0.55	1.1
TETRAEDRON CAUDATUM	4.1	0.6	0.37	0.7
TETRASTRUM HETERACANTHUM	4.1	0.6	0.64	1.2
COCCOID GREENS	117.0	18.9	3.07	6.0
BACILLARIOPHYCEAE	175.1	28.3	32.02	62.7
CYCLOTELLA STELLIGERA	4.1	0.6	0.85	1.7
EUNOTIA ZAZUMINENSIS	25.0	4.0	0.50	1.0
MELOSIRA DISTANS V. A	45.9	7.4	0.53	1.0
NITZSCHIA SPP.	4.1	0.6	0.43	0.8
RHIZOSOLENIA ERIENSIS	79.4	12.8	29.53	58.0
SYNEDRA SP. A	8.3	1.3	0.39	0.8
SYNEDRA SPP.	8.3	1.3	0.37	0.7
CHRYSOPHYCEAE	33.2	5.4	1.54	3.0
MALLOMONAS GLOBOSA	4.1	0.6	0.45	0.9
MALLOMONAS SPP.	4.1	0.6	0.52	1.0
OCHROMONAS SPP.	8.3	1.3	0.54	1.1
UNIDENTIFIED CHRYSOPHYCEAE	16.7	2.7	0.66	1.3
HAPTOPHYCEAE	25.0	4.0	0.66	1.3
CHRYSOCHROMULINA PARVA	25.0	4.0	0.65	1.3
CRYPTOPHYCEAE	45.8	7.4	1.65	3.2
CHROOMONAS ACUTA	16.7	2.7	0.85	1.7
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.6	0.42	0.8
CRYPTOMONAS OVATA	4.1	0.6	0.23	0.5
CRYPTOMONAS PHASEOLUS	20.9	3.4	0.30	0.6
MYXOPHYCEAE	4.1	0.6	0.05	0.1
AGMENELLUM QUADRIDUPLICATUM	4.1	0.6	0.02	0.0
ANACYSTIS INCERTA	16.7	2.7	0.03	0.1
ANACYSTIS MONTANA	4.1	0.6	0.02	0.0
DINOPHYCEAE	8.3	1.3	1.63	3.1
PERIDINIUM ACICULIFERUM	4.1	0.6	1.04	2.0
UNIDENTIFIED DINOPHYCEAE	4.1	0.6	0.11	0.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
UNKNOWN	37.6	6.1	1.05	0.2
0974-2-07	37.6	6.1	1.05	0.2
SAMPLE TOTALS:	616.3	99.7	502.78	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 11/17/77
TIME: 1000 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	186.9	37.0	72.48	22.4
ANKISTRODESMUS FALCATUS	16.7	3.3	0.91	0.3
ANKISTRODESMUS FUSIFORMIS	4.1	0.8	0.43	0.1
ARTHRODESMUS SUBULATUS	4.1	0.8	24.07	7.4
CLOSTERIUM CERATIUM	4.1	0.8	22.38	7.0
COSMARIUM SPP.	8.3	1.6	24.55	7.6
CRUCIGENIA TETRAPEDIA	8.3	1.6	0.36	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.8	0.75	0.2
GOLENKINIA RADIATA	8.3	1.6	1.33	0.4
MONORAPHEDIUM PUSILLUM	16.7	3.3	1.62	0.5
MONORAPHIDIUM SETIFORME	8.3	1.6	1.45	0.4
MOUGEOTIA SPP.	4.1	0.8	5.67	1.7
OOCYSTIS PUSILLA	4.1	0.8	0.60	0.2
PEDIASTRUM TETRAS	4.1	0.8	0.65	0.2
SCENEDESMUS BIJUGA	29.2	5.8	2.57	0.8
SELENASTRUM WESTII	4.1	0.8	0.48	0.1
STAURASTRUM PARADOXUM VAR. A	4.1	0.8	19.57	6.0
TETRAEDRON MINIMUM	4.1	0.8	3.83	1.2
COCCOID GREENS	50.1	9.9	1.60	0.5
BACILLARIOPHYCEAE	125.2	24.8	67.79	21.0
CYCLOTELLA STELLIGERA	12.5	2.4	6.65	2.1
EUNOTIA ZAZUMINENSIS	12.5	2.4	5.47	1.7
EUNOTIA SP. A	41.8	8.3	13.25	4.1
MELOSIRA DISTANS V. A	41.8	8.3	7.73	2.4
RHIZOSOLENIA ERIENSIS	8.3	1.6	31.14	9.6
SYNEDRA SP. A	8.3	1.6	3.89	1.2
CHRYSOPHYCEAE	20.7	4.0	9.16	2.8
MALLOMONAS SPP.	4.1	0.8	5.42	1.7
OCHROMONAS SPP.	8.3	1.6	2.55	0.8
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.6	1.20	0.4
HAPTOPHYCEAE	33.4	6.6	6.02	1.9
CHRYSOCHROMULINA PARVA	33.4	6.6	6.02	1.9
CRYPTOPHYCEAE	62.4	12.3	41.77	12.9
CHROOMONAS ACUTA	4.1	0.8	0.46	0.1
CRYPTOMONAS EROSA	8.3	1.6	13.05	4.0
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.8	2.02	0.6
CRYPTOMONAS OVATA	16.7	3.3	17.28	5.3
CRYPTOMONAS PHASEOLUS	29.2	5.8	8.73	2.7
MYXOPHYCEAE	25.0	5.0	0.32	0.1
AGMENELLUM QUADRIDUPLICATUM	4.1	0.8	0.01	0.0
ANACYSTIS INCERTA	20.9	4.1	0.31	0.1
EUGLENOPHYCEAE	4.1	0.8	9.30	2.8
EUGLENA SPP.	4.1	0.8	9.30	2.8
DINOPHYCEAE	8.2	1.6	112.16	34.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
PERIDINIUM ACICULIFERUM	4.1	0.8	104.04	32.3
UNIDENTIFIED DINOPHYCEAE	4.1	0.8	8.11	2.5
CHLOROMONADOPHYCEAE	8.3	1.6	1.71	0.5
GONYOSTONUM LATUM	8.3	1.6	1.71	0.5
UNKNOWN	29.2	5.8	0.81	0.2
0974-2-07	29.2	5.8	0.81	0.2
SAMPLE TOTALS:	503.4	99.7	321.75	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 11/17/77
TIME: 1220 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	241.5	34.8	53.61	22.9
ANKISTRODESMUS FALCATUS	12.5	1.8	0.68	0.2
ANKISTRODESMUS FUSIFORMIS	8.3	1.2	1.08	0.4
ARTHRODESMUS SUBULATUS	4.1	0.5	24.07	10.3
COSMARIUM SPP.	4.1	0.5	2.27	0.9
CRUCIGENIA TETRAPEDIA	12.5	1.8	1.01	0.4
MONORAPHIDIUM CONTORTUM	8.3	1.2	0.35	0.1
MONORAPHEDIUM PUSILLUM	8.3	1.2	0.81	0.3
QUADRIGULA CLOSTERIOIDES	4.1	0.5	1.52	0.6
SCENEDESMUS BIJUGA	45.9	6.6	4.04	1.7
SCENEDESMUS QUADRICAUDA	4.1	0.5	0.78	0.3
TETRAEDRON CAUDATUM	4.1	0.5	1.67	0.7
TETRAEDRON MINIMUM	4.1	0.5	3.83	1.6
COCCOID GREENS	108.6	15.7	3.47	1.4
UNIDENTIFIED CHLOROPHYCEAE	12.5	1.8	7.97	3.4
BACILLARIOPHYCEAE	212.7	30.7	104.46	44.7
CYCLOTELLA STELLIGERA	16.7	2.4	8.87	3.8
CYMBELLA AFFINIS	4.1	0.5	3.86	1.6
EUNOTIA ZAZUMINENSIS	33.4	4.8	14.61	6.2
EUNOTIA SP. A	8.3	1.2	2.65	1.1
MELOSIRA DISTANS V. A	66.8	9.6	12.37	5.3
RHIZOSOLENIA ERIENSIS	8.3	1.2	31.18	13.3
SYNEDRA TENERA	4.1	0.5	1.20	0.5
SYNEDRA SP. A	71.0	10.2	25.70	11.0
CHRYSOPHYCEAE	45.7	6.5	20.00	8.5
CHROMULINA SPP.	8.3	1.2	2.69	1.1
MALLOMONAS ACAROIDES	8.3	1.2	10.08	4.3
OCHROMONAS SPP.	12.5	1.8	3.79	1.6
SYNURA SPP.	4.1	0.5	2.62	1.1
UNIDENTIFIED CHRYSOPHYCEAE	12.5	1.8	1.80	0.7
HAPTOPHYCEAE	4.1	0.5	0.77	0.3
CHRYSOCHROMULINA PARVA	4.1	0.5	0.77	0.3
CRYPTOPHYCEAE	100.1	14.4	51.75	22.1
CHROOMONAS ACUTA	12.5	1.8	4.39	1.9
CHROOMONAS COERULEA	29.2	4.2	3.83	1.6
CRYPTOMONAS EROSA	12.5	1.8	19.58	8.3
CRYPTOMONAS EROSA VAR. REFLEXA	16.7	2.4	8.99	3.8
CRYPTOMONAS OVATA	12.5	1.8	12.96	5.5
CRYPTOMONAS PHASEOLUS	16.7	2.4	2.98	1.2
MYXOPHYCEAE	29.1	4.2	0.21	0.0
AGMENELLUM QUADRIDUPLICATUM	4.1	0.5	0.01	0.0
ANACYSTIS INCERTA	25.0	3.6	0.20	0.0
CHLOROMONADOPHYCEAE	4.1	0.5	0.85	0.3
GONYOSTONUM LATUM	4.1	0.5	0.85	0.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
UNKNOWN	54.3	7.8	1.52	0.6
0974-2-07	54.3	7.8	1.52	0.6
SAMPLE TOTALS:	691.6	99.8	233.20	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 11/17/77
TIME: 1220 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	62.0	22.2	6.76	2.0
ANKISTRODESMUS FALCATUS	8.3	2.9	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	12.5	4.4	1.30	0.3
CRUCIGENIA TETRAPEDIA	6.2	2.2	0.73	0.2
GOLENKINIA RADIATA	2.0	0.7	0.33	0.1
MONORAPHEDIUM PUSILLUM	8.3	2.9	0.81	0.2
MONORAPHIDIUM SETIFORME	10.4	3.7	1.81	0.5
SCENEDESMUS DENTICULATUS	2.0	0.7	0.39	0.1
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	2.0	0.7	0.56	0.1
SELENASTRUM MINUTUM	2.0	0.7	0.07	0.0
COCCOID GREENS	8.3	2.9	0.26	0.0
BACILLARIOPHYCEAE	177.0	63.5	297.94	90.3
CYCLOTELLA STELLIGERA	6.2	2.2	3.32	1.0
EUNOTIA ZAZUMINENSIS	33.4	12.0	14.61	4.4
EUNOTIA SP. A	8.3	2.9	2.65	0.8
MELOSIRA DISTANS V. A	22.9	8.2	4.25	1.3
NAVICULA NOTHA	2.0	0.7	0.74	0.2
NAVICULA SPP.	2.0	0.7	1.65	0.5
RHIZOSOLENIA ERIENSIS	68.9	24.8	257.25	78.0
SYNEDRA TENERA	4.1	1.4	1.20	0.3
SYNEDRA SP. A	29.2	10.5	12.23	3.7
CHRYSOPHYCEAE	10.1	3.6	6.35	1.9
CHROMULINA SPP.	4.1	1.4	0.84	0.2
MALLOMONAS ACAROIDES	2.0	0.7	2.52	0.7
MALLOMONAS SPP.	2.0	0.7	2.72	0.8
PSEUDOKEPHYRION SPP.	2.0	0.7	0.27	0.0
HAPTOPHYCEAE	4.1	1.4	0.77	0.2
CHRYSOCHROMULINA PARVA	4.1	1.4	0.77	0.2
CRYPTOPHYCEAE	20.6	7.3	17.55	5.3
CHROOMONAS ACUTA	4.1	1.4	0.46	0.1
CRYPTOMONAS EROSA	8.3	2.9	13.05	3.9
CRYPTOMONAS OVATA	2.0	0.7	2.16	0.6
CRYPTOMONAS PHASEOLUS	6.2	2.2	1.86	0.5
UNKNOWN	4.0	1.4	0.12	0.0
0974-2-07	2.0	0.7	0.05	0.0
0477-2-01	2.0	0.7	0.06	0.0
SAMPLE TOTALS:	277.8	99.7	329.51	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0
TIME: 1410

SAMPLE TYPE: EZC
SAMPLE DEPTH: 5.0 M

SAMPLE DATE: 11/17/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	65.8	23.2	31.88	11.7
ANKISTRODESMUS FALCATUS	12.5	4.4	0.68	0.2
ANKISTRODESMUS FUSIFORMIS	10.4	3.6	1.08	0.4
BOTRYOCOCCUS SUDETICUS	2.0	0.7	22.09	8.1
CLOSTERIUM CERATIUM	6.2	2.2	3.58	1.3
FRANCEIA DROESCHERI	2.0	0.7	0.39	0.1
MONORAPHIDIUM CONTORTUM	2.0	0.7	0.08	0.0
MONORAPHEDIUM PUSILLUM	4.2	1.4	0.40	0.1
MONORAPHIDIUM SETIFORME	2.0	0.7	0.36	0.1
PLANKTOSPHAERIA GELATINOSA	2.0	0.7	0.40	0.1
SCENEDESMUS BIJUGA	2.0	0.7	0.36	0.1
SCENEDESMUS DENTICULATUS	6.2	2.2	1.19	0.4
SCENEDESMUS QUADRICAUDA	4.2	1.4	0.39	0.1
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	2.0	0.7	0.56	0.2
COCCOID GREENS	8.3	2.9	0.26	0.1
BACILLARIOPHYCEAE	120.9	42.8	151.14	56.0
EUNOTIA ZAZUMINENSIS	10.4	3.6	4.56	1.6
EUNOTIA SP. A	8.3	2.9	2.65	0.9
MELOSIRA DISTANS V. A	10.4	3.6	1.93	0.7
RHIZOSOLENIA ERIENSIS	31.3	11.0	116.93	43.2
SYNEDRA TENERA	2.0	0.7	0.60	0.2
SYNEDRA SP. A	58.5	20.7	24.46	9.0
CHRYSOPHYCEAE	12.3	4.3	13.60	5.0
CHROMULINA SPP.	2.0	0.7	0.42	0.1
MALLOMONAS ACAROIDES	4.1	1.4	5.04	1.8
MALLOMONAS SPP.	6.2	2.2	8.13	3.0
HAPTOPHYCEAE	10.4	3.6	1.94	0.7
CHRYSOCHROMULINA PARVA	10.4	3.6	1.94	0.7
CRYPTOPHYCEAE	56.3	19.9	39.82	14.7
CHROOMONAS ACUTA	14.6	5.1	1.65	0.6
CRYPTOMONAS EROSA	16.7	5.9	26.11	9.6
CRYPTOMONAS OVATA	6.2	2.2	5.48	2.0
CRYPTOMONAS PHASEOLUS	18.8	6.6	5.60	2.0
DINOPHYCEAE	6.1	2.1	30.93	11.4
GLENODINIUM ARMATUM	4.1	1.4	6.98	2.5
PERIDINIUM DEFLANDREI	2.0	0.7	23.95	8.8
UNKNOWN	10.4	3.6	0.29	0.1
0974-2-07	10.4	3.6	0.29	0.1
SAMPLE TOTALS:	282.2	99.8	269.63	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 11/17/77
TIME: 1410 SAMPLE DEPTH: 30.5 M

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	70.2	24.4	12.61	4.2
ANKISTRODESMUS FALCATUS	8.3	2.8	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	14.6	5.0	1.52	0.5
CLOSTERIUM CERATIUM	2.0	0.6	1.19	0.4
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.6	0.21	0.0
COSMARIUM PHASEOLUS F. MINOR	4.1	1.4	6.32	2.1
CRUCIGENIA TETRAPEDIA	4.1	1.4	0.32	0.1
MONORAPHIDIUM CONTORTUM	2.0	0.6	0.08	0.0
MONORAPHEDIUM PUSILLUM	2.0	0.6	0.20	0.0
MONORAPHIDIUM SETIFORME	2.0	0.6	0.36	0.1
SCENEDESMUS DENTICULATUS	6.2	2.1	1.19	0.4
COCCOID GREENS	22.9	7.9	0.73	0.2
BACILLARIOPHYCEAE	158.2	55.1	196.89	67.6
CYCLOTELLA STELLIGERA	2.0	0.6	1.10	0.3
EUNOTIA ZAZUMINENSIS	4.1	1.4	1.80	0.6
EUNOTIA SP. A	6.2	2.1	1.98	0.7
MELOSIRA DISTANS V. A	37.6	13.1	5.95	2.0
MELOSIRA ITALICA VAR. TENUISSIMA	8.3	2.8	5.66	1.9
NAVICULA NOTHA	2.0	0.6	0.74	0.2
RHIZOSOLENIA ERIENSIS	39.7	13.8	148.11	50.8
SYNEDRA TENERA	2.0	0.6	0.60	0.2
SYNEDRA SP. A	54.3	18.9	22.71	7.8
TABELLARIA FENESTRATA	2.0	0.6	8.16	2.8
CHRYSOPHYCEAE	2.0	0.6	2.52	0.8
MALLOMONAS ACAROIDES	2.0	0.6	2.52	0.8
HAPTOPHYCEAE	12.5	4.3	2.33	0.8
CHRYSOCHROMULINA PARVA	12.5	4.3	2.33	0.8
CRYPTOPHYCEAE	33.3	11.6	25.14	8.6
CRYPTOMONAS EROSA	8.3	2.8	13.05	4.5
CRYPTOMONAS OVATA	6.2	2.1	6.48	2.2
CRYPTOMONAS PHASEOLUS	18.8	6.5	5.60	1.9
DINOPHYCEAE	6.1	2.1	51.40	17.6
GLENODINIUM ARMATUM	2.0	0.6	3.49	1.2
PERIDINIUM DEFLANDREI	4.1	1.4	47.91	16.4
UNKNOWN	4.1	1.4	0.11	0.0
0974-2-07	4.1	1.4	0.11	0.0
SAMPLE TOTALS:	286.4	99.8	291.02	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 11/17/77
TIME: 1450 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	216.4	25.8	30.90	4.2
ANKISTRODESMUS FALCATUS	20.9	2.5	1.14	0.2
ANKISTRODESMUS FUSIFORMIS	12.5	1.5	1.30	0.2
CLOSTERIUM CERATIUM	4.1	0.5	2.38	0.3
CRUCIGENIA TETRAPEDIA	8.3	1.0	0.55	0.1
DICTYOSPHAERIUM PULCHELLUM	4.1	0.5	1.63	0.2
KIRCHNERIELLA SPP.	4.1	0.5	0.07	0.0
MONORAPHIDIUM CONTORTUM	4.1	0.5	0.17	0.0
MONORAPHIDIUM PUSILLUM	29.1	3.5	2.83	0.4
MONORAPHIDIUM SETIFORME	2.1	0.2	5.00	0.7
QUADRIGULA CLOSTERIOIDES	4.1	0.5	1.52	0.2
SCENEDESMUS BIJUGA	4.1	0.5	0.73	0.1
SCENEDESMUS DENTICULATUS	25.0	3.0	4.76	0.6
SCENEDESMUS DIMORPHUS	8.3	1.0	3.34	0.4
SCENEDESMUS QUADRICAUDA	20.9	2.5	1.96	0.3
TETRAEDRON REGULARE VAR. INCUS	4.1	0.5	2.28	0.3
COCCOID GREENS	33.4	4.0	1.07	0.1
BACILLARIOPHYCEAE	413.4	49.5	532.17	71.0
CYCLOTELLA STELLIGERA	16.7	2.0	8.87	1.2
EUNOTIA ZAZUMINENSIS	50.1	6.0	21.91	2.9
EUNOTIA SP. A	20.9	2.5	6.66	0.9
MELOSIRA DISTANS V. A	79.6	9.5	14.69	2.0
MELOSIRA ITALICA VAR. TENUISSIMA	25.0	3.0	13.99	1.9
RHIZOSOLENIA ERIENSIS	108.6	13.0	405.37	54.1
SYNEDRA TENERA	8.3	1.0	2.44	0.3
SYNEDRA SP. A	100.3	12.0	41.93	5.6
TABELLARIA FENESTRATA	4.1	0.5	16.33	2.2
CHRYSOPHYCEAE	20.9	2.5	2.62	0.3
MALLOMONAS ACAROIDES	4.1	0.5	5.04	0.7
MALLOMONAS GLOBOSA	4.1	0.5	4.08	0.5
MALLOMONAS SPP.	12.5	1.5	16.27	2.2
HAPTOPHYCEAE	33.4	4.0	6.21	0.8
CHRYSOCHROMULINA PARVA	33.4	4.0	6.21	0.8
CRYPTOPHYCEAE	116.8	13.9	83.89	11.2
CHROOMONAS ACUTA	25.0	3.0	2.78	0.4
CRYPTOMONAS EROSA	37.6	4.5	58.76	7.8
CRYPTOMONAS OVATA	8.3	1.0	8.65	1.2
CRYPTOMONAS PHASEOLUS	45.9	5.5	13.70	1.8
EUGLENOPHYCEAE	4.1	0.5	9.30	1.2
EUGLENA SPP.	4.1	0.5	9.30	1.2
DINOPHYCEAE	16.7	2.0	27.92	3.7
GLENODINIUM ARMATUM	16.7	2.0	27.92	3.7
UNKNOWN	12.5	1.5	1.42	0.2
0774-2-22	4.1	0.5	1.19	0.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0924-2-07	8.3	0.9	0.23	0.0
SAMPLE TOTALS:	833.9	99.8	717.95	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0
TIME: 1450

SAMPLE TYPE: LDS
SAMPLE DEPTH: 30.0 M

SAMPLE DATE: 11/17/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	45.1	15.0	7.23	2.4
ANKISTRODESMUS FALCATUS	4.1	1.3	0.22	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	0.6	0.12	0.0
CLOSTERIUM CERATIUM	2.0	0.6	1.21	0.4
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.6	0.20	0.0
MONORAPHEDIUM PUSILLUM	2.0	0.6	0.09	0.0
MONORAPHIDIUM SETIFORME	2.0	0.6	0.03	0.0
PLANKTOSPHAERIA GELATINOSA	2.0	0.6	0.04	0.0
SCENEDESMUS DENTICULATUS	12.5	4.1	0.38	0.1
SCENEDESMUS QUADRICAUDA	2.0	0.6	0.19	0.0
TETRAEDRON CAUDATUM	2.0	0.6	0.18	0.0
COCCOID GREENS	8.3	2.7	0.26	0.0
BACILLARIOPHYCEAE	184.6	62.0	216.52	74.4
CYCLOTELLA STELLIGERA	6.2	2.0	3.32	1.1
EUNOTIA ZAZUMINENSIS	12.5	4.1	3.47	1.1
EUNOTIA SP. A	6.2	2.0	1.98	0.6
MELOSIRA DISTANS V. A	6.2	2.0	1.15	0.3
MELOSIRA ITALICA VAR. TENUISSIMA	50.1	16.7	27.98	9.6
NITZSCHIA SPP.	2.0	0.6	1.11	0.3
RHIZOSOLENIA ERIENSIS	37.7	12.5	148.11	50.9
SYNEDRA TENERA	4.1	1.3	2.03	0.7
SYNEDRA SP. A	6.2	2.0	1.33	0.5
UNIDENTIFIED PENNATE DIATOMS	2.0	0.7	0.72	0.2
CHRYSOPHYCEAE	14.6	4.9	0.77	0.3
CHROMULINA SPP.	6.2	2.0	2.27	0.8
MALLOMONAS ACAROIDES	2.0	0.6	0.25	0.1
MALLOMONAS SPP.	2.0	0.6	0.71	0.2
OCHROMONAS SPP.	4.1	1.4	0.26	0.1
HAPTOPHYCEAE	14.6	4.9	0.72	0.2
CHRYSOCHROMULINA PARVA	14.6	4.9	0.72	0.2
CRYPTOPHYCEAE	16.7	5.4	3.15	1.1
CHROOMONAS ACUTA	4.1	1.3	0.52	0.2
CRYPTOMONAS EROSA	4.1	1.3	0.66	0.2
CRYPTOMONAS PHASEOLUS	8.3	2.7	1.97	0.7
DINOPHYCEAE	4.1	1.4	47.91	16.5
PERIDINIUM DEFLANDREI	4.1	1.4	47.91	16.5
UNKNOWN	14.6	4.9	0.73	0.2
0574-2-03	12.5	4.1	0.67	0.2
0974-2-07	2.0	0.6	0.05	0.0
SAMPLE TOTALS:	298.7	99.7	291.13	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 11/17/77
TIME: 1255 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	258.3	37.9	28.06	6.9
ANKISTRODESMUS FALCATUS	8.3	1.2	0.45	0.1
CHLAMYDOMONAS SPP.	8.3	1.2	0.69	0.1
COSMARIUM PHASEOLUS F. MINOR	4.1	0.6	6.32	1.5
CRUCIGENIA TETRAPEDIA	4.1	0.6	0.18	0.0
FRANCEIA DROESCHERI	4.1	0.6	0.79	0.1
MONORAPHIDIUM CONTORTUM	4.1	0.6	0.17	0.0
MONORAPHEDIUM PUSILLUM	20.9	3.0	2.02	0.5
MONORAPHIDIUM SETIFORME	4.1	0.6	0.72	0.1
PEDIASTRUM TETRAS	4.1	0.6	0.25	0.0
SCENEDESMUS BIJUGA	33.4	4.9	2.94	0.7
SCENEDESMUS QUADRICAUDA	8.3	1.2	0.78	0.1
SELENASTRUM WESTII	4.1	0.6	0.48	0.1
TETRAEDRON MINIMUM	8.3	1.2	7.66	1.9
COCCOID GREENS	142.1	20.9	4.54	1.1
BACILLARIOPHYCEAE	241.8	35.5	297.28	74.4
CYCLOTELLA STELLIGERA	25.0	3.6	13.31	3.3
EUNOTIA ZAZUMINENSIS	54.3	7.9	23.74	5.9
EUNOTIA SP. A	8.3	1.2	2.65	0.6
MELOSIRA DISTANS V. A	8.3	1.2	1.54	0.3
MELOSIRA ITALICA	4.1	0.6	4.56	1.1
NAVICULA SPP.	4.1	0.6	3.31	0.8
NITZSCHIA SPP.	4.1	0.6	2.25	0.5
RHIZOSOLENIA ERIENSIS	58.5	8.6	218.27	54.7
SYNEDRA SP. A	45.9	6.7	19.21	4.8
SYNEDRA SPP.	29.2	4.3	8.39	2.1
CHRYSOPHYCEAE	41.4	6.0	11.47	2.8
CHROMULINA SPP.	8.3	1.2	1.69	0.4
KEPHYRION SPP.	8.3	1.2	0.73	0.1
MALLOMONAS SPP.	4.1	0.6	5.42	1.3
OCHROMONAS SPP.	4.1	0.6	1.26	0.3
PSEUDOKEPHYRION SPP.	4.1	0.6	0.55	0.1
UNIDENTIFIED CHRYSOPHYCEAE	12.5	1.8	1.80	0.4
HAPTOPHYCEAE	8.3	1.2	1.55	0.3
CHRYSOCHROMULINA PARVA	8.3	1.2	1.55	0.3
CRYPTOPHYCEAE	49.9	7.3	17.46	4.3
CHROOMONAS ACUTA	8.3	1.2	0.92	0.2
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.6	2.24	0.5
CRYPTOMONAS OVATA	4.1	0.6	4.32	1.0
CRYPTOMONAS PHASEOLUS	33.4	4.9	9.96	2.4
MYXOPHYCEAE	37.4	5.5	1.88	0.4
AGMENELLUM QUADRIDUPLICATUM	4.1	0.6	0.06	0.0
ANABAENA SPP.	4.1	0.6	1.58	0.3
ANACYSTIS INCERTA	29.2	4.3	0.23	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
DINOPHYCEAE	20.9	3.0	40.58	10.1
UNIDENTIFIED DINOPHYCEAE	20.9	3.0	40.58	10.1
UNKNOWN	20.9	3.0	0.58	0.1
0974-2-07	20.9	3.0	0.58	0.1
SAMPLE TOTALS:	678.9	99.8	398.89	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LOS SAMPLE DATE: 11/17/77
TIME: 1255 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	95.0	29.0	46.34	13.1
ANKISTRODESMUS FALCATUS	14.6	4.4	0.80	0.2
ANKISTRODESMUS FUSIFORMIS	12.5	3.8	1.30	0.3
ARTHRODESMUS SUBULATUS	4.1	1.2	2.07	0.6
ARTHRODESMUS SPP.	2.0	0.6	0.98	0.2
CRUCIGENIA TETRAPEDIA	2.0	0.6	0.18	0.0
DICTYOSPHAERIUM PULCHELLUM	2.0	0.6	0.83	0.2
FRANCEIA DROESCHERI	2.0	0.6	0.34	0.1
KIRCHNERIELLA LUNARIS	2.0	0.6	0.98	0.2
MONORAPHEDIUM PUSILLUM	0.4	0.1	0.16	0.0
MONORAPHIDIUM SETIFORME	2.0	0.6	0.37	0.1
OOCYSTIS PUSILLA	2.0	0.6	0.98	0.2
SCENEDESMUS DENTICULATUS	4.1	1.2	0.55	0.1
SCENEDESMUS QUADRICAUDA	10.4	3.1	3.83	1.0
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	4.1	1.2	0.53	0.1
TETRAEDRON MINIMUM	16.7	5.1	4.82	1.3
COCCOID GREENS	185.7	56.9	284.82	81.3
BACILLARIOPHYCEAE	2.0	0.6	1.26	0.3
CYCLOTELLA STELLIGERA	41.8	12.8	18.26	5.0
EUNOTIA ZAZUMINENSIS	4.1	1.2	1.32	0.3
EUNOTIA SP. A	20.5	6.3	3.89	1.0
MELOSIRA DISTANS V. A	58.5	17.9	22.71	6.3
RHIZOSOLENIA ERIENSIS	54.3	16.6	22.71	6.5
SYNEDRA SP. A	4.1	1.2	1.30	0.3
TABELLARIA FENESTRATA	4.1	1.2	0.33	0.0
CHRYSOPHYCEAE	2.0	0.6	0.37	0.1
DINOBRYON SPP.	2.0	0.6	1.16	0.3
MALLOMONAS SPP.	6.2	1.9	1.16	0.3
HAPTOPHYCEAE	20.7	6.3	14.58	4.1
CHRYSOCHROMULINA PARVA	4.1	1.2	0.53	0.1
CRYPTOPHYCEAE	4.1	1.2	0.37	0.1
CRYPTOMONAS EROSA	12.5	3.8	3.71	1.0
CRYPTOMONAS OVATA	10.2	3.1	0.10	0.0
CRYPTOMONAS PHASEOLUS	2.0	0.6	0.10	0.0
MYXOPHYCEAE	8.4	2.5	0.11	0.0
AGMENELLUM QUADRIDUPLICATUM	4.1	1.2	0.11	0.0
ANACYSTIS INCERTA				
UNKNOWN				
0974-2-07				
SAMPLE TOTALS:	326.0	99.8	350.22	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 11/17/77
TIME: 1315 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	65.6	24.3	27.69	15.6
ANKISTRODESMUS FUSIFORMIS	8.3	3.0	0.86	0.4
ARTHRODESMUS SUBULATUS	2.0	0.7	12.03	6.8
CLOSTERIUM CERATIUM	2.0	0.7	1.15	0.6
CLOSTERIUM INCURVUM	2.0	0.7	1.79	1.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	4.1	1.5	0.42	0.2
COSMARIUM PHASEOLUS F. MINOR	4.1	1.5	6.32	3.6
CRUCIGENIA TETRAPEDIA	2.0	0.7	0.18	0.1
KIRCHNERIELLA SPP.	2.0	0.7	0.03	0.0
MONORAPHEDIUM PUSILLUM	6.2	2.3	0.60	0.3
MONORAPHIDIUM SETIFORME	2.0	0.7	0.36	0.2
SCENEDESMUS BIJUGA	4.1	1.5	0.36	0.2
SCENEDESMUS QUADRICAUDA	6.2	2.3	0.78	0.4
SELENASTRUM MINUTUM	2.0	0.7	0.07	0.0
SELENASTRUM WESTII	2.0	0.7	0.24	0.1
TETRAEDRON MINIMUM	2.0	0.7	1.91	1.0
COCCOID GREENS	14.6	5.4	0.46	0.2
BACILLARIOPHYCEAE	171.6	63.4	133.92	76.1
EUNOTIA ZAZUMINENSIS	20.9	7.7	9.13	5.1
EUNOTIA SP. A	2.0	0.7	0.66	0.3
MELOSIRA DISTANS V. A	41.8	15.5	7.73	4.3
MELOSIRA ITALICA VAR. TENUISSIMA	22.9	8.5	12.82	7.3
RHIZOSOLENIA ERIENSIS	16.7	6.2	6.36	3.5
SYNEDRA TENERA	10.4	3.8	3.02	1.7
SYNEDRA SP. A	52.2	19.3	21.84	12.4
TABELLARIA FENESTRATA	4.1	1.5	16.33	9.3
CHRYSOPHYCEAE	4.1	1.5	2.94	1.6
CHROMULINA SPP.	2.0	0.7	0.42	0.2
MALLOMONAS ACAROIDES	2.0	0.7	0.52	0.3
HAPTOPHYCEAE	4.1	1.5	0.77	0.4
CHRYSOCHROMULINA PARVA	4.1	1.5	0.77	0.4
CRYPTOPHYCEAE	12.4	4.6	6.48	3.6
CHROOMONAS ACUTA	2.0	0.7	0.23	0.1
CRYPTOMONAS EROSA	2.0	0.7	3.26	1.8
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	0.7	1.12	0.6
CRYPTOMONAS PHASEOLUS	6.2	2.3	1.87	1.0
DINOPHYCEAE	2.0	0.7	3.49	1.9
GLENODINIUM ARMATUM	2.0	0.7	3.49	1.9
UNKNOWN	10.3	3.8	0.34	0.1
0574-2-03	2.0	0.7	0.11	0.1
0974-2-07	8.3	3.0	0.23	0.1
SAMPLE TOTALS:	269.2	99.8	175.66	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 11/17/77
TIME: 1315 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	101.3	24.8	11.30	4.2
ANKISTRODESMUS FALCATUS	8.3	2.0	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	1.0	0.43	0.1
CHLAMYDOMONAS SPP.	2.0	0.4	0.17	0.0
CHLORELLA SPP.	4.1	1.0	0.47	0.1
COSMARIUM SPP.	2.0	0.4	0.13	0.0
CRUCIGENIA QUADRATA	6.2	1.5	0.67	0.2
GOLENKINIA RADIATA	2.0	0.4	0.33	0.1
MONORAPHIDIUM CONTORTUM	2.0	0.4	0.08	0.0
MONORAPHEDIUM PUSILLUM	4.1	1.0	0.40	0.1
MONORAPHIDIUM SETIFORME	8.3	2.0	0.45	0.1
MOUGEOTIA SPP.	2.0	0.4	0.83	0.3
OOCYSTIS SPP.	2.0	0.4	0.82	0.3
SCENEDESMUS BIJUGA	10.4	2.5	0.91	0.3
SCENEDESMUS QUADRICAUDA	6.2	1.5	0.58	0.2
COCCOID GREENS	37.6	9.2	2.20	0.8
BACILLARIOPHYCEAE	183.2	44.9	23.65	8.5
CYCLOTELLA STELLIGERA	4.1	1.0	2.21	0.8
CYMBELLA SPP.	2.0	0.4	0.91	0.3
EUNOTIA ZAZUMINENSIS	4.1	1.0	1.82	0.7
EUNOTIA SP. A	22.9	5.6	7.28	2.6
MELOSIRA DISTANS VAR. ALPIGENA	8.3	2.0	1.80	0.6
MELOSIRA DISTANS V. A	37.6	9.2	6.95	2.5
MELOSIRA ITALICA VAR. TENUISSIMA	14.6	3.5	0.16	0.1
NAVICULA CRYPTOCEPHALA	2.0	0.4	0.77	0.3
PINNULARIA SPP.	2.0	0.4	3.60	1.3
RHIZOSOLENIA ERIENSIS	45.9	11.2	1.50	0.5
SYNEDRA SP. A	39.7	9.7	1.59	0.6
CHRYSOPHYCEAE	35.2	8.6	0.68	0.2
CHROMULINA SPP.	4.1	1.0	0.84	0.3
OCHROMONAS SPP.	8.3	2.0	0.53	0.2
PSEUDOKEPHYRION SPP.	2.0	0.4	0.27	0.1
SYNURA SPP.	4.1	1.0	0.62	0.2
UNIDENTIFIED CHRYSOPHYCEAE	16.7	4.1	2.64	1.0
HAPTOPHYCEAE	10.4	2.5	1.94	0.7
CHRYSOCHROMULINA PARVA	10.4	2.5	1.94	0.7
CRYPTOPHYCEAE	29.1	7.2	0.92	0.3
CHROOMONAS ACUTA	8.3	2.0	0.92	0.3
CRYPTOMONAS OVATA	2.0	0.4	0.16	0.1
CRYPTOMONAS PHASEOLUS	18.8	4.6	0.63	0.2
MYXOPHYCEAE	22.9	5.6	0.73	0.3
AGMENELLUM QUADRIDUPLICATUM	2.0	0.4	0.04	0.0
ANACYSTIS INCERTA	20.9	5.1	0.68	0.2
DINOPHYCEAE	2.0	0.4	5.27	2.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
PERIDINIUM SPP.	2.0	0.4	5.27	2.0
UNKNOWN	22.9	5.6	0.69	0.2
0574-2-03	2.0	0.4	0.11	0.0
0974-2-07	20.9	5.1	0.58	0.2
SAMPLE TOTALS:	407.0	99.8	260.96	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 11/17/77
TIME: 0905 SAMPLE DEPTH: 1.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	279.0	43.3	52.62	19.3
ANKISTRODESMUS FALCATUS	8.3	1.2	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	12.5	1.9	1.30	0.4
ARTHRODESMUS SUBULATUS	4.1	0.6	24.07	8.9
CHLAMYDOMONAS SPP.	4.1	0.6	0.34	0.1
CLOSTERIUM CERATIUM	4.1	0.6	2.38	0.8
COSMARIUM PHASEOLUS F. MINOR	4.1	0.6	6.32	2.3
CRUCIGENIA TETRAPEDIA	4.1	0.6	0.36	0.1
GYROMITUS CORDIFORMIS	4.1	0.6	3.64	1.3
MONORAPHIDIUM CONTORTUM	8.3	1.2	0.35	0.1
MONORAPHEDIUM PUSILLUM	12.5	1.9	1.21	0.4
NEPHROCYTIUM AGHARDIANUM	4.1	0.6	0.96	0.3
SCENEDESMUS ABUNDANS	4.1	0.6	0.32	0.1
SCENEDESMUS BIJUGA	16.7	2.6	1.47	0.5
SCENEDESMUS QUADRICAUDA	4.1	0.6	0.35	0.1
SELENASTRUM MINUTUM	8.3	1.2	0.31	0.1
TETRAEDRON CAUDATUM	8.3	1.2	0.34	0.1
COCCOID GREENS	167.2	26.0	5.35	1.9
BACILLARIOPHYCEAE	179.3	27.9	172.10	63.6
CYCLOTELLA STELLIGERA	8.3	1.2	4.43	1.6
EUNOTIA ZAZUMINENSIS	8.3	1.2	3.65	1.3
EUNOTIA SP. A	4.1	0.6	1.33	0.5
MELOSIRA DISTANS V. A	41.8	6.5	7.73	2.8
NITZSCHIA SPP.	4.1	0.6	2.25	0.8
RHIZOSOLENIA ERIENSIS	33.4	5.2	124.33	46.1
SYNEDRA SP. A	37.6	5.8	15.72	5.8
SYNEDRA SPP.	37.6	5.8	10.79	3.9
UNIDENTIFIED PENNATE DIATOMS	4.1	0.6	1.45	0.5
CHRYSOPHYCEAE	24.9	3.8	22.29	8.2
MALLOMONAS GLOBOSA	4.1	0.6	4.81	1.7
MALLOMONAS SPP.	12.5	1.9	16.27	6.0
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.2	1.22	0.4
HAPTOPHYCEAE	8.3	1.2	1.55	0.5
CHRYSOCHROMULINA PARVA	8.3	1.2	1.55	0.5
CRYPTOPHYCEAE	29.1	4.5	10.87	4.0
CHROOMONAS ACUTA	16.7	2.6	1.85	0.6
CRYPTOMONAS EROSA	4.1	0.6	6.52	2.4
CRYPTOMONAS PHASEOLUS	8.3	1.2	2.49	0.9
MYXOPHYCEAE	33.3	5.1	0.40	0.1
AGMENELLUM QUADRIDUPLICATUM	4.1	0.6	0.14	0.1
ANACYSTIS INCERTA	29.2	4.5	0.25	0.1
DINOPHYCEAE	4.1	0.6	8.11	3.0
UNIDENTIFIED DINOPHYCEAE	4.1	0.6	8.11	3.0
UNKNOWN	83.6	13.0	2.34	0.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0974-2-07	83.6	13.0	2.34	0.8
SAMPLE TOTALS:	641.6	99.7	270.31	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LOS SAMPLE DATE: 11/17/77
TIME: 0905 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	149.3	28.5	21.47	6.5
ANKISTRODESMUS FALCATUS	8.3	1.5	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	8.3	1.5	1.73	0.5
ARTHRODESMUS SPP.	2.0	0.3	0.39	0.1
CHLAMYDOMONAS SPP.	4.2	0.7	0.35	0.1
CLOSTERIUM CERATIUM	6.2	1.2	3.58	1.1
CRUCIGENIA QUADRATA	2.0	0.3	0.13	0.0
CRUCIGENIA TETRAPEDIA	4.2	0.7	0.33	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	2.0	0.3	0.37	0.1
GOLENKINIA RADIATA	4.2	0.7	0.66	0.2
MONORAPHIDIUM CONTORTUM	12.5	2.4	0.55	0.2
MONORAPHEDIUM PUSILLUM	10.4	1.9	0.09	0.0
MONORAPHIDIUM SETIFORME	6.2	1.2	0.67	0.2
MOUGEOTIA SPP.	4.2	0.7	5.16	1.6
SCENEDESMUS ABUNDANS	2.0	0.3	0.18	0.0
SCENEDESMUS BIJUGA	20.9	3.5	1.83	0.5
SCENEDESMUS QUADRICAUDA	8.3	1.5	1.40	0.4
COCCOID GREENS	43.8	8.2	1.05	0.3
BACILLARIOPHYCEAE	244.1	46.7	187.75	57.1
CYCLOTELLA STELLIGERA	8.3	1.5	4.43	1.3
EUNOTIA ZAZUMINENSIS	20.9	3.9	9.12	2.8
EUNOTIA SP. A	29.2	5.5	9.77	2.9
MELOSIRA DISTANS V. A	50.1	9.6	9.77	2.9
MELOSIRA ITALICA VAR. TENUISSIMA	71.0	13.6	39.65	12.0
RHIZOSOLENIA ERIENSIS	27.1	5.1	101.32	30.7
SYNEDRA SP. A	29.2	5.5	1.33	0.4
SYNEDRA SPP.	8.3	1.5	0.39	0.1
CHRYSOPHYCEAE	22.7	4.3	6.02	1.8
KEPHYRION SPP.	2.0	0.3	0.27	0.0
MALLOMONAS SPP.	2.0	0.3	0.55	0.1
OCHROMONAS SPP.	8.3	1.5	1.30	0.3
UNIDENTIFIED CHRYSOPHYCEAE	10.4	1.9	4.52	1.3
HAPTOPHYCEAE	12.5	2.4	4.46	1.3
CHRYSOCHROMULINA PARVA	12.5	2.4	4.46	1.3
CRYPTOPHYCEAE	27.1	5.1	6.02	1.8
CHROOMONAS ACUTA	8.3	1.5	0.33	0.1
CRYPTOMONAS OVATA	4.2	0.7	0.44	0.1
CRYPTOMONAS PHASEOLUS	14.6	2.7	5.24	1.6
MYXOPHYCEAE	16.6	3.0	0.44	0.1
AGMENELLUM QUADRIDUPLICATUM	4.2	0.7	0.44	0.1
ANACYSTIS INCERTA	12.5	2.3	0.00	0.0
DINOPHYCEAE	10.4	1.9	0.99	0.3
PERIDINIUM ACICULIFERUM	2.0	0.3	0.44	0.1
PERIDINIUM KEYENSE	2.0	0.3	30.75	9.5

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
PERIDINIUM PUSILLUM	2.0	0.3	4.03	1.2
UNIDENTIFIED DINOPHYCEAE	4.1	0.7	8.14	2.4
UNKNOWN	29.1	5.5	0.87	0.2
0574-2-03	2.0	0.3	0.11	0.0
0974-2-07	27.1	5.1	0.76	0.2
SAMPLE TOTALS:	521.8	99.8	325.98	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1025 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	62.0	11.5	32.60	5.7
ANKISTRODESMUS FALCATUS	8.3	1.5	0.45	0.0
ANKISTRODESMUS FUSIFORMIS	8.3	1.5	0.86	0.1
CLOSTERIUM CERATIUM	8.3	1.5	4.77	0.8
KIRCHNERIELLA SPP.	8.3	1.5	0.15	0.0
MONORAPHIDIUM SETIFORME	8.3	1.5	1.45	0.2
SCENEDESMUS CENTICULATUS	4.1	0.7	0.79	0.1
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	4.1	0.7	0.56	0.1
STAURASTRUM PARADOXUM VAR. A	4.1	0.7	19.57	3.4
TETRAEDRON MINIMUM	4.1	0.7	3.83	0.6
COCCOID GREENS	4.1	0.7	0.13	0.0
BACILLARIOPHYCEAE	158.6	29.7	271.41	48.2
CYCLOTELLA STELLIGERA	12.5	2.3	6.65	1.2
MELOSIRA DISTANS V. A	8.3	1.5	1.54	0.2
MELOSIRA ITALICA VAR. TENUISSIMA	37.6	7.0	20.99	3.7
RHIZOSOLENIA ERIENSIS	62.7	11.7	233.87	41.6
SYNEDRA NANA	12.5	2.3	1.15	0.2
SYNEDRA SPP.	25.0	4.6	7.19	1.2
CHRYSOPHYCEAE	16.6	3.1	21.36	3.7
MALLOMONAS ACAROIDES	4.1	0.7	5.04	0.8
MALLOMONAS PSEUDOCORONATA	12.5	2.3	16.32	2.9
HAPTOPHYCEAE	8.3	1.5	1.55	0.2
CHRYSOCHROMULINA PARVA	8.3	1.5	1.55	0.2
CRYPTOPHYCEAE	49.9	9.3	21.18	3.7
CHROOMONAS ACUTA	16.7	3.1	1.85	0.3
CRYPTOMONAS EROSA	4.1	0.7	6.52	1.1
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.7	2.24	0.4
CRYPTOMONAS OVATA	4.1	0.7	4.32	0.7
CRYPTOMONAS PHASEOLUS	20.9	3.9	6.22	1.1
MYXOPHYCEAE	4.1	0.7	1.05	0.1
ANABAENA SPP.	4.1	0.7	1.05	0.1
DINOPHYCEAE	20.8	3.8	202.48	36.0
PERIDINIUM DEFLANDREI	16.7	3.1	191.64	34.1
PERIDINIUM INCONSPICUUM	4.1	0.7	10.84	1.9
UNKNOWN	213.0	39.9	10.18	1.8
0574-2-03	4.1	0.7	0.22	0.0
0774-2-26	29.2	5.4	8.33	1.4
1277-2-01	179.7	33.6	1.61	0.2
SAMPLE TOTALS:	533.3	99.8	561.84	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 500.0 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 1025 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	55.5	11.6	14.03	3.7
ANKISTRODESMUS FALCATUS	6.2	1.3	0.34	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	0.4	0.21	0.0
CLOSTERIUM CERATIUM	4.1	0.8	2.38	0.6
COSMARIUM PHASEOLUS F. MINOR	2.0	0.4	3.16	0.8
FRANCEIA DROESCHERI	6.2	1.3	1.18	0.3
MONORAPHIDIUM PUSILLUM	2.0	0.4	0.20	0.0
MONORAPHIDIUM SETIFORME	8.3	1.7	1.45	0.3
PLANKTOSPHAERIA GELATINOSA	2.0	0.4	0.81	0.2
SCENEDESMUS DENTICULATUS	10.4	2.1	1.98	0.5
SELENASTRUM MINUTUM	4.1	0.8	0.15	0.0
TETRAEDRON MINIMUM	2.0	0.4	1.91	0.5
COCCOID GREENS	6.2	1.3	0.20	0.0
BACILLARIOPHYCEAE	185.6	39.0	307.04	83.7
CYCLOTELLA STELLIGERA	8.3	1.7	4.43	1.2
MELOSIRA DISTANS V. A	2.0	0.4	5.41	1.4
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	0.8	16.32	4.4
RHIZOSOLENIA ERIENSIS	60.5	12.7	257.25	70.1
SYNEDRA SP. A	12.5	2.6	5.22	1.4
SYNEDRA SPP.	35.5	7.5	10.19	2.7
TABELLARIA FENESTRATA	2.0	0.4	8.16	2.2
HAPTOPHYCEAE	6.2	1.3	1.16	0.3
CHRYSOCHROMULINA PARVA	6.2	1.3	1.16	0.3
CRYPTOPHYCEAE	68.7	14.5	34.31	9.3
CHROOMONAS ACUTA	31.3	6.5	3.47	0.9
CRYPTOMONAS EROSA	4.1	0.8	6.52	1.7
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	0.4	1.12	0.3
CRYPTOMONAS OVATA	18.8	3.9	19.44	5.3
CRYPTOMONAS PHASEOLUS	12.5	2.6	3.73	1.0
MYXOPHYCEAE	2.0	0.4	0.05	0.0
ANACYSTIS INCERTA	2.0	0.4	0.05	0.0
DINOPHYCEAE	2.0	0.4	5.42	1.4
PERIDINIUM INCONSPICUUM	2.0	0.4	5.42	1.4
UNKNOWN	154.4	32.5	4.50	1.2
0724-2-22	8.3	1.7	2.38	0.6
0724-2-28	2.0	0.4	0.24	0.0
0924-2-07	2.0	0.4	0.05	0.0
1227-2-01	142.1	29.9	1.27	0.3
SAMPLE TOTALS:	474.4	99.8	366.54	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1055 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	49.5	8.2	12.38	1.5
ANKISTRODESMUS FALCATUS	4.1	0.6	0.22	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	0.6	0.43	0.0
CLOSTERIUM CERATIUM	8.3	1.3	4.77	0.6
CRUCIGENIA TETRAPEDIA	4.1	0.6	0.36	0.0
DICTYOSPHAERIUM PULCHELLUM	4.1	0.6	3.27	0.4
MONORAPHIDIUM SETIFORME	8.3	1.3	1.45	0.1
PLANKTOSPHAERIA GELATINOSA	4.1	0.6	0.81	0.1
QUADRIGULA CLOSTERIOIDES	4.1	0.6	0.76	0.0
COCCOID GREENS	8.3	1.3	0.26	0.0
BACILLARIOPHYCEAE	296.3	49.3	598.83	77.5
MELOSIRA DISTANS V. A	25.0	4.1	4.63	0.6
MELOSIRA ITALICA VAR. TENUISSIMA	71.0	11.8	39.65	5.1
RHIZOSOLENIA ERIENSIS	108.6	18.0	405.37	52.5
SYNEDRA NANA	8.3	1.3	0.76	0.0
SYNEDRA SP. A	25.0	4.1	10.48	1.3
SYNEDRA SPP.	25.0	4.1	7.19	0.9
TABELLARIA FENESTRATA	33.4	5.5	130.71	16.9
CHRYSOPHYCEAE	16.5	2.7	16.77	2.1
CHROMULINA SPP.	4.1	0.6	0.84	0.1
MALLOMONAS ACAROIDES	4.1	0.6	5.04	0.6
MALLOMONAS PSEUDOCORONATA	8.3	1.3	10.88	1.4
HAPTOPHYCEAE	8.3	1.3	1.55	0.2
CHRYSOCHROMULINA PARVA	8.3	1.3	1.55	0.2
CRYPTOPHYCEAE	100.2	16.6	43.15	5.5
CHROOMONAS ACUTA	16.7	2.7	1.85	0.2
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.6	2.24	0.2
CRYPTOMONAS OVATA	20.9	3.4	21.61	2.7
CRYPTOMONAS PHASEOLUS	58.5	9.7	17.43	2.2
DINOPHYCEAE	8.3	1.3	95.82	12.4
PERIDINIUM DEFLANDREI	8.3	1.3	95.82	12.4
UNKNOWN	121.1	20.1	3.39	0.4
0774-2-22	8.3	1.3	2.38	0.3
1277-2-01	112.8	18.7	1.01	0.1
SAMPLE TOTALS:	600.2	99.9	771.90	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 501.0 SAMPLE TYPE: LOS SAMPLE DATE: 12/14/77
TIME: 1055 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	108.2	16.5	7.94	2.4
ANKISTRODESMUS FUSIFORMIS	8.3	1.2	0.86	0.2
CHLAMYDOMONAS SPP.	8.3	1.2	0.69	0.2
FRANCEIA CROESCHERI	8.3	1.2	1.58	0.4
MONORAPHIDIUM CONTORTUM	4.1	0.6	0.17	0.0
MONORAPHIDIUM PUSILLUM	4.1	0.6	0.40	0.1
MONORAPHIDIUM SETIFORME	4.1	0.6	0.72	0.2
SCENEDESMUS BIJUGA	20.9	3.2	1.83	0.5
SELENASTRUM MINUTUM	8.3	1.2	0.31	0.1
COCCOID GREENS	41.8	6.4	1.33	0.4
BACILLARIOPHYCEAE	166.1	25.6	236.60	74.7
CYCLOTELLA STELLIGERA	4.1	0.6	2.21	0.7
MELOSIRA DISTANS V. A	41.8	6.5	7.73	2.4
MELOSIRA ITALICA VAR. TENUISSIMA	16.7	2.5	9.32	2.9
NITZSCHIA SPP.	4.1	0.6	2.25	0.7
RHIZOSOLENIA ERIENSIS	54.3	8.4	202.68	64.0
SYNEDRA NANA	4.1	0.6	0.38	0.1
SYNEDRA SPP.	41.8	6.4	11.99	3.8
CHRYSOPHYCEAE	20.8	3.2	7.44	2.3
MALLOMONAS ACAROIDES	4.1	0.6	5.04	1.6
UNIDENTIFIED CHRYSOPHYCEAE	16.7	2.6	2.40	0.8
CRYPTOPHYCEAE	100.1	15.4	63.16	19.9
CHROOMONAS ACUTA	20.9	3.2	2.31	0.7
CRYPTOMONAS EROSA	8.3	1.2	13.05	4.1
CRYPTOMONAS EROSA VAR. REFLEXA	8.3	1.2	4.49	1.4
CRYPTOMONAS OVATA	33.4	5.1	34.57	10.9
CRYPTOMONAS PHASEOLUS	29.2	4.5	8.71	2.7
MYXOPHYCEAE	4.1	0.6	0.05	0.0
ANACYSTIS INCERTA	4.1	0.6	0.05	0.0
UNKNOWN	250.7	38.5	2.76	0.8
0574-2-03	4.1	0.6	0.22	0.0
0974-2-07	16.7	2.5	0.46	0.1
1277-2-01	229.9	35.3	2.08	0.6
SAMPLE TOTALS:	650.8	99.8	317.98	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1545 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	221.0	26.9	41.57	7.1
ANKISTRODESMUS FALCATUS	20.9	2.5	1.14	0.1
CLOSTERIUM CERATIUM	16.7	2.0	9.54	1.6
COSMARIUM PHASEOLUS F. MINOR	8.3	1.0	12.65	2.1
CRUCIGENIA TETRAPEDIA	4.1	0.5	0.36	0.0
MONORAPHIDIUM CONTORTUM	4.1	0.5	0.17	0.0
MONORAPHIDIUM SETIFORME	20.9	2.5	3.63	0.6
SCENEDESMUS BIJUGA	16.7	2.0	1.47	0.2
SELENASTRUM WESTII	4.1	0.5	0.24	0.0
TETRAEDRON CAUDATUM	12.5	1.5	5.01	0.8
TETRAEDRON MINIMUM	4.1	0.5	3.83	0.6
COCCOID GREENS	108.6	13.2	3.47	0.6
BACILLARIOPHYCEAE	208.6	25.4	467.65	81.0
CYCLOTELLA STELLIGERA	12.5	1.5	6.65	1.1
EUNOTIA SP. A	4.1	0.5	1.32	0.2
MELOSIRA DISTANS V. A	54.3	6.6	10.05	1.7
MELOSIRA ITALICA VAR. TENUISSIMA	8.3	1.0	4.66	0.8
NITZSCHIA SPP.	4.1	0.5	2.25	0.3
RHIZOSOLENIA ERIENSIS	96.1	11.7	358.60	62.1
SYNEDRA SPP.	8.3	1.0	2.39	0.4
TABELLARIA FENESTRATA	20.9	2.5	81.69	14.1
CHRYSOPHYCEAE	20.7	2.5	20.23	3.5
KEPHYRION SPP.	4.1	0.5	0.36	0.0
MALLOMONAS ACAROIDES	12.5	1.5	15.12	2.6
SYNURA SPP.	4.1	0.5	5.24	0.9
HAPTOPHYCEAE	25.0	3.0	4.66	0.8
CHRYSOCHROMULINA PARVA	25.0	3.0	4.66	0.8
CRYPTOPHYCEAE	87.5	10.6	30.42	5.2
CHROOMONAS ACUTA	50.1	6.1	5.56	0.9
CRYPTOMONAS EROSA	8.3	1.0	13.05	2.2
CRYPTOMONAS OVATA	4.1	0.5	4.32	0.7
CRYPTOMONAS PHASEOLUS	25.0	3.0	7.47	1.2
MYXOPHYCEAE	12.4	1.5	0.56	0.0
ANACYSTIS INCERTA	4.1	0.5	0.03	0.0
ANACYSTIS MONTANA	8.3	1.0	0.53	0.0
DINOPHYCEAE	4.1	0.5	8.07	1.3
PERIDINIUM PUSILLUM	4.1	0.5	8.07	1.3
CHLOROMONADOPHYCEAE	4.1	0.5	0.85	0.1
GONYOSTOMUM LATUM	4.1	0.5	0.85	0.1
UNKNOWN	234.0	28.6	2.42	0.4
0974-2-07	16.7	2.0	0.46	0.0
1277-2-01	217.3	26.5	1.95	0.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
SAMPLE TOTALS:	817.4	99.8	576.96	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 502.0 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 0945 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	78.6	17.2	39.35	7.1
ANKISTRODESMUS FUSIFORMIS	4.1	0.9	0.43	0.0
ASTEROCOCCUS LIMNETICUS	4.1	0.9	6.16	1.1
CLOSTERIUM CERATIUM	8.3	1.8	4.77	0.8
MONORAPHICIUM CONTORTUM	4.1	0.9	0.17	0.0
MONORAPHIDIUM PUSILLUM	4.1	0.9	0.40	0.0
MONORAPHICIUM SETIFORME	12.5	2.7	2.18	0.4
PLANKTOSPHAERIA GELATINOSA	4.1	0.9	0.81	0.1
SCENEDESMUS BIJUGA	4.1	0.9	0.36	0.0
SCENEDESMUS DENTICULATUS	8.3	1.8	1.58	0.2
STAURASTRUM CURVATUM VAR. ELONGATUM	4.1	0.9	19.67	3.6
STAURASTRUM TETRACERUM	4.1	0.9	2.22	0.4
COCCOID GREENS	16.7	3.6	0.53	0.0
BACILLARIOPHYCEAE	204.4	44.9	480.13	88.5
CYCLOTELLA STELLIGERA	4.1	0.9	2.21	0.4
MELOSIRA DISTANS V. A	25.0	5.5	4.63	0.8
NAVICULA SPP.	4.1	0.9	3.31	0.6
RHIZOSOLENIA ERIENSIS	96.1	21.1	358.60	66.0
SYNEDRA NANA	16.7	3.6	1.55	0.2
SYNEDRA SP. A	16.7	3.6	6.98	1.2
SYNEDRA SPP.	16.7	3.6	4.79	0.8
TABELLARIA FENESTRATA	25.0	5.5	98.03	18.0
CRYPTOPHYCEAE	54.1	11.9	21.42	3.9
CHROOMONAS ACUTA	16.7	3.6	1.85	0.3
CRYPTOMONAS EROSA	4.1	0.9	6.52	1.2
CRYPTOMONAS OVATA	4.1	0.9	4.32	0.7
CRYPTOMONAS PHASEOLUS	29.2	6.4	8.71	1.6
MYXOPHYCEAE	4.1	0.9	0.54	0.1
ANACYSTIS INCERTA	4.1	0.9	0.54	0.1
UNKNOWN	112.8	24.8	1.33	0.2
0974-2-07	16.7	3.6	0.46	0.0
1277-2-01	96.1	21.1	0.86	0.1
SAMPLE TOTALS:	454.0	99.8	542.78	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1130 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	237.2	30.0	39.28	8.0
ANKISTRODESMUS FALCATUS	8.3	1.0	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	12.5	1.5	1.51	0.3
ARTHRODESMUS SPP.	4.1	0.5	1.80	0.4
CHLAMYDOMONAS SPP.	16.7	2.1	1.38	0.3
CLOSTERIUM CERATIUM	4.1	0.5	2.38	0.5
COSMARIUM PHASEOLUS F. MINOR	4.1	0.5	6.32	1.3
CRUCIGENIA TETRAPEDIA	4.1	0.5	0.18	0.0
DICTYOSPHAERIUM PULCHELLUM	4.1	0.5	0.81	0.2
FRANCEIA DROESCHERI	4.1	0.5	0.79	0.2
MONORAPHIDIUM PUSILLUM	8.3	1.0	0.81	0.2
MONORAPHIDIUM SETIFORME	25.0	3.1	4.36	0.9
MOUGEOTIA SPP.	8.3	1.0	11.35	2.3
SCENEDESMUS BIJUGA	25.0	3.1	2.20	0.4
SCENEDESMUS QUADRICAUDA	8.3	1.0	1.17	0.2
SCENEDESMUS SPP.	4.1	0.5	0.61	0.1
COCCOID GREENS	96.1	12.1	3.07	0.6
BACILLARIOPHYCEAE	217.2	27.5	391.93	81.1
CYCLOTELLA STELLIGERA	20.9	2.6	11.09	2.3
MELOSIRA DISTANS V. A	37.6	4.7	6.95	1.4
RHIZOSOLENIA ERIENSIS	96.1	12.1	358.60	74.2
SYNEDRA NANA	16.7	2.1	1.53	0.3
SYNEDRA SP. A	4.1	0.5	1.74	0.4
SYNEDRA SPP.	41.8	5.3	11.99	2.5
CHRYSOPHYCEAE	24.8	3.1	12.65	2.6
KEPHYRION SPP.	4.1	0.5	0.36	0.1
MALLOMONAS ACAROIDES	4.1	0.5	5.04	1.0
MALLOMONAS PSEUDOCORONATA	4.1	0.5	5.44	1.1
UNIDENTIFIED CHRYSOPHYCEAE	12.5	1.5	1.80	0.4
HAPTOPHYCEAE	4.1	0.5	0.77	0.2
CHRYSOCHROMULINA PARVA	4.1	0.5	0.77	0.2
CRYPTOPHYCEAE	100.1	12.6	34.66	7.2
CHROOMONAS ACUTA	58.5	7.4	6.44	1.3
CRYPTOMONAS EROSA	8.3	1.0	13.05	2.7
CRYPTOMONAS EROSA VAR. REFLEXA	8.3	1.0	4.43	0.9
CRYPTOMONAS OVATA	4.1	0.5	4.32	0.9
CRYPTOMONAS PHASEOLUS	20.9	2.6	0.22	0.0
MYXOPHYCEAE	8.3	1.0	0.22	0.0
ANACYSTIS INCERTA	8.3	1.0	0.22	0.0
UNKNOWN	196.4	24.9	2.16	0.4
0974-2-07	20.9	2.6	0.58	0.1
1277-2-01	175.5	22.2	1.58	0.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
SAMPLE TOTALS:	788.1	99.9	481.67	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 503.0 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 1130 SAMPLE DEPTH: 25.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	75.9	21.4	35.96	10.5
ANKISTRODESMUS FALCATUS	8.3	2.3	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	2.0	0.5	0.21	0.0
ARTHRODESMUS SUBULATUS	2.0	0.5	12.03	3.5
CLOSTERIUM CERATIUM	6.2	1.7	3.58	1.0
COELASTRUM MICROPORUM	2.0	0.5	1.88	0.5
COSMARIUM PHASEOLUS F. MINOR	2.0	0.5	3.16	0.9
DICTYOSPHAERIUM PULCHELLUM	2.0	0.5	1.63	0.4
MONORAPHIDIUM CONTORTUM	4.1	1.1	0.17	0.0
MONORAPHIDIUM PUSILLUM	2.0	0.5	0.20	0.0
MONORAPHIDIUM SETIFORME	18.8	5.3	3.27	0.9
MOUGEOTIA SPP.	2.0	0.5	5.67	1.6
COCYSTIS PUSILLA	2.0	0.5	0.30	0.0
QUADRIGULA CLOSTERIOIDES	2.0	0.5	0.38	0.1
SCENEDESMUS BIJUGA	2.0	0.5	0.18	0.0
SCENEDESMUS CENTICULATUS	2.0	0.5	0.39	0.1
SELENASTRUM MINUTUM	2.0	0.5	0.07	0.0
TETRAEDRON MINIMUM	2.0	0.5	1.91	0.5
COCCOID GREENS	12.2	3.5	0.40	0.1
BACILLARIOPHYCEAE	181.3	51.3	244.15	72.3
CYCLOTELLA STELLIGERA	6.2	1.7	3.32	0.9
EUNOTIA ZAZUMINENSIS	4.1	1.1	2.73	0.8
EUNOTIA SP. A	4.1	1.1	1.32	0.3
MELOSIRA DISTANS VAR. ALPIGENA	4.1	1.1	0.90	0.2
MELOSIRA DISTANS V. A	37.6	10.6	6.95	2.0
MELOSIRA ITALICA VAR. TENUISSIMA	20.9	5.9	11.66	3.4
RHIZOSCLENIA ERIENSIS	54.3	15.3	202.68	60.1
SYNEDRA NANA	12.5	3.5	1.15	0.3
SYNEDRA SP. A	20.9	5.9	8.73	2.5
SYNEDRA SPP.	6.2	1.7	1.79	0.5
UNIDENTIFIED PENNATE DIATOMS	8.3	2.3	2.90	0.8
CHRYSOPHYCEAE	2.0	0.5	1.31	0.3
SYNURA SPP.	2.0	0.5	1.31	0.3
HAPTOPHYCEAE	12.5	3.5	2.33	0.6
CHRYSOCHROMULINA PARVA	12.5	3.5	2.33	0.6
CRYPTOPHYCEAE	58.4	16.4	29.08	8.5
CHROOMONAS ACUTA	2.0	0.5	2.55	0.7
CRYPTOMONAS EROSA	2.0	0.5	3.26	0.9
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	1.1	2.24	0.6
CRYPTOMONAS OVATA	16.7	4.7	17.28	5.1
CRYPTOMONAS PHASEOLUS	12.5	3.5	3.73	1.1
DINOPHYCEAE	2.0	0.5	23.95	7.1
PERIDINIUM DEFLANDREI	2.0	0.5	23.95	7.1
UNKNOWN	20.8	5.8	0.26	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
0974-2-07	4.1	1.1	0.11	0.0
1277-2-01	16.7	4.7	0.15	0.0
SAMPLE TOTALS:	352.7	99.7	337.11	99.8

LAKE KECWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: SCS.0 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1400 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	254.3	23.6	109.56	15.5
ANKISTRODESMUS FALCATUS	8.3	0.7	0.45	0.0
ANKISTRODESMUS FUSIFORMIS	8.3	0.7	0.86	0.1
CLOSTERIUM CERATIUM	8.3	0.7	4.77	0.6
CRUCIGENIA TETRAPEDIA	12.5	1.1	0.72	0.1
DICTYOSPHAERIUM PULCHELLUM	20.9	1.9	1.23	0.1
MONORAPHIDIUM CONTORTUM	12.5	1.1	0.53	0.0
MONORAPHIDIUM SETIFORME	25.0	2.3	4.36	0.6
MOUGEOTIA SPP.	4.1	0.3	5.67	0.8
SCENEDESMUS BIJUGA	33.4	3.1	3.67	0.5
SELENASTRUM MINUTUM	12.5	1.1	0.47	0.0
STAURASTRUM SUBCRUCIATUM	4.1	0.3	76.03	10.8
TETRAEDRON MINIMUM	8.3	0.7	7.66	1.0
COCCOID GREENS	96.1	8.9	3.07	0.4
BACILLARIOPHYCEAE	275.5	25.6	434.84	61.9
CYCLOTELLA STELLIGERA	8.3	0.7	4.43	0.6
EUNOTIA ZAZUMINENSIS	33.4	3.1	14.64	2.0
EUNOTIA SP. A	8.3	0.7	2.65	0.3
MELOSIRA DISTANS V. A	66.8	6.2	12.37	1.7
MELOSIRA ITALICA VAR. TENUISSIMA	12.5	1.1	6.99	0.9
NITZSCHIA SPP.	20.9	1.9	11.28	1.6
RHIZOSOLENIA ERIENSIS	100.3	9.3	374.19	53.3
SYNEDRA SP. A	8.3	0.7	3.49	0.5
SYNEDRA SPP.	16.7	1.5	4.79	0.6
CHRYSOPHYCEAE	37.6	3.5	24.97	3.5
MALLOMONAS ACAROIDES	4.1	0.3	5.04	0.7
SYNURA SPP.	4.1	0.3	15.72	2.2
UNIDENTIFIED CHRYSOPHYCEAE	29.2	2.7	4.21	0.6
HAPTOPHYCEAE	25.1	2.3	4.66	0.7
CHRYSOCHROMULINA PARVA	25.1	2.3	4.66	0.7
CRYPTOPHYCEAE	187.4	17.4	73.87	10.5
CHROOMONAS ACUTA	87.7	8.1	9.24	1.3
CRYPTOMONAS EROSA	16.7	1.5	19.58	2.8
CRYPTOMONAS EROSA VAR. REFLEXA	12.5	1.1	6.74	1.0
CRYPTOMONAS OVATA	20.9	1.9	21.61	3.0
CRYPTOMONAS PHASEOLUS	54.1	5.0	16.14	2.3
MYXOPHYCEAE	33.4	3.0	1.22	0.1
AGMENELLUM QUADRICUPLICATUM	4.1	0.3	0.14	0.0
ANACYSTIS INCERTA	16.7	1.5	0.21	0.0
ANACYSTIS MONTANA	8.3	0.7	0.53	0.0
OSCILLATORIA GEMINATA	4.1	0.3	0.35	0.0
DINOPHYCEAE	4.1	0.3	47.91	6.8
PERIDINIUM DEFLANDREI	4.1	0.3	47.91	6.8
CHLOROMONADOPHYCEAE	4.1	0.3	0.85	0.1

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
GONYOSTOMUM LATUM	4.1	0.3	0.85	0.1
UNKNOWN	250.7	23.3	3.13	0.4
0974-2-07	45.9	4.2	1.28	0.1
1277-2-01	204.8	19.1	1.84	0.2
SAMPLE TOTALS:	1072.2	99.8	701.05	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 505.0 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 1400 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	86.7	21.7	29.82	6.8
ANKISTRODESMUS FALCATUS	8.3	2.0	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	4.1	1.0	0.43	0.1
CLOSTERIUM CERATIUM	10.4	2.6	5.96	1.3
COELASTRUM MICROPORUM	2.0	0.5	1.88	0.4
COSMARIUM PHASEOLUS F. MINOR	2.0	0.5	3.16	0.7
CRUCIGENIA TETRAPEDIA	2.0	0.5	0.18	0.0
DICTYOSPHAERIUM PULCHELLUM	2.0	0.5	0.81	0.1
FRANCEIA DROESCHERI	2.0	0.5	0.39	0.0
MONORAPHIDIUM CONTORTUM	10.4	2.6	0.44	0.1
MONORAPHIDIUM SETIFORME	14.6	3.6	2.54	0.5
PLANKTOSPHAERIA GELATINOSA	4.1	1.0	0.81	0.1
SCENEDESMUS DENTICULATUS	2.0	0.5	0.39	0.0
STAURASTRUM PARADOXUM VAR. A	2.0	0.5	9.78	2.2
TETRAEDRON MINIMUM	2.0	0.5	1.91	0.4
COCCOID GREENS	18.8	4.7	0.60	0.1
BACILLARIOPHYCEAE	177.4	44.6	345.95	80.5
CYCLOTELLA STELLIGERA	4.1	1.0	2.21	0.5
EUNOTIA ZAZUMINENSIS	6.2	1.5	2.73	0.6
MELOSIRA DISTANS VAR. ALPIGENA	10.4	2.6	2.25	0.5
MELOSIRA DISTANS V. A	18.8	4.7	3.47	0.8
MELOSIRA ITALICA VAR. TENUISSIMA	18.8	4.7	10.49	2.4
RHIZOSOLENIA ERIENSIS	83.6	21.0	311.82	72.6
SYNEDRA SP. A	20.9	5.2	8.73	2.0
SYNEDRA SPP.	14.6	3.6	4.19	0.9
CHRYSOPHYCEAE	10.2	2.5	6.13	1.4
CHROMULINA SPP.	2.0	0.5	0.42	0.0
DINOBRYON SPP.	4.1	1.0	0.67	0.1
MALLOMONAS ACAROIDES	4.1	1.0	5.04	1.1
HAPTOPHYCEAE	12.5	3.1	2.33	0.5
CHRYSOCHROMULINA PARVA	12.5	3.1	2.33	0.5
CRYPTOPHYCEAE	79.1	19.9	33.36	7.7
CHROOMONAS ACUTA	33.4	8.4	3.71	0.8
CRYPTOMONAS EROSA	2.0	0.5	3.26	0.7
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	1.0	2.24	0.5
CRYPTOMONAS OVATA	16.7	4.2	17.28	4.0
CRYPTOMONAS PHASEOLUS	22.9	5.7	6.85	1.5
DINOPHYCEAE	4.1	1.0	10.84	2.5
PERIDINIUM INCONSPICUUM	4.1	1.0	10.84	2.5
UNKNOWN	27.0	6.7	0.82	0.1
0774-2-22	2.0	0.5	0.59	0.1
1277-2-01	25.0	6.2	0.22	0.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
SAMPLE TOTALS:	397.0	99.8	429.26	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1425 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	204.0	22.9	37.26	5.7
ANKISTRODESMUS FALCATUS	4.1	0.4	0.22	0.0
ANKISTRODESMUS FUSIFORMIS	16.7	1.8	1.73	0.2
ARTHRODESMUS SPP.	4.1	0.4	1.80	0.2
ASTEROCOCCUS LIMNETICUS	4.1	0.4	1.54	0.2
CHLAMYDOMONAS SPP.	4.1	0.4	0.34	0.0
CLOSTERIUM CERATIUM	16.7	1.8	9.54	1.4
DICTYOSPHAERIUM PULCHELLUM	8.3	0.9	1.01	0.1
MONORAPHIDIUM CONTORTUM	8.3	0.9	0.35	0.0
MONORAPHIDIUM SETIFORME	25.0	2.8	4.36	0.6
MOUGEOTIA SPP.	4.1	0.4	5.67	0.8
SCENEDESMUS BIJUGA	16.7	1.8	1.47	0.2
SCENEDESMUS CENTICULATUS	8.3	0.9	1.58	0.2
SCENEDESMUS QUADRICAUDA	16.7	1.8	2.35	0.3
TETRAEDRON CAUDATUM	8.3	0.9	3.34	0.5
COCCOID GREENS	58.5	6.6	1.87	0.2
BACILLARIOPHYCEAE	246.2	27.8	458.48	71.5
CYCLOTELLA STELLIGERA	29.2	3.3	15.53	2.4
MELOSIRA DISTANS V. A	71.0	8.0	13.14	2.0
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	0.4	2.33	0.3
RHIZOSOLENIA ERIENSIS	112.8	12.7	420.96	65.6
SYNEDRA NANA	12.5	1.4	1.15	0.1
SYNEDRA SP. A	4.1	0.4	1.74	0.2
SYNEDRA SPP.	12.5	1.4	3.59	0.5
CHRYSOPHYCEAE	29.1	3.2	15.10	2.3
MALLOMONAS ACAROIDES	8.3	0.9	10.08	1.5
SYNURA SPP.	4.1	0.4	2.62	0.4
UNIDENTIFIED CHRYSOPHYCEAE	16.7	1.8	2.40	0.3
HAPTOPHYCEAE	4.1	0.4	0.77	0.1
CHRYSOCHROMULINA PARVA	4.1	0.4	0.77	0.1
CRYPTOPHYCEAE	154.5	17.4	54.10	8.4
CHROOMONAS ACUTA	79.4	8.9	8.81	1.3
CRYPTOMONAS EROSA	8.3	0.9	13.05	2.0
CRYPTOMONAS OVATA	16.7	1.8	17.28	2.6
CRYPTOMONAS PHASEOLUS	50.1	5.6	14.94	2.3
MYXOPHYCEAE	12.4	1.3	0.58	0.0
ANACYSTIS INCERTA	4.1	0.4	0.05	0.0
ANACYSTIS MONTANA	8.3	0.9	0.53	0.0
DINOPHYCEAE	16.6	1.8	72.26	11.2
PERIDINIUM DEFLANDREI	4.1	0.4	47.91	7.4
UNIDENTIFIED DINOPHYCEAE	12.5	1.4	24.35	3.8
UNKNOWN	217.3	24.5	2.19	0.3
0974-2-07	12.5	1.4	0.35	0.0
1277-2-01	204.8	23.1	1.84	0.2

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
SAMPLE TOTALS:	884.2	99.7	640.77	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 506.0 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 1425 SAMPLE DEPTH: 30.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	170.8	28.5	19.81	5.3
ANKISTRODESMUS FALCATUS	20.9	3.5	1.14	0.3
ANKISTRODESMUS FUSIFORMIS	4.1	0.6	0.43	0.1
CHLAMYDOMONAS SPP.	33.4	5.5	2.72	0.7
COSMARIUM PHASEOLUS F. MINOR	4.1	0.6	6.32	1.7
CRUCIGENIA TETRAPEDIA	4.1	0.6	0.38	0.1
MONORAPHIDIUM PUSILLUM	4.1	0.6	0.40	0.1
MONORAPHIDIUM SETIFORME	25.0	4.1	4.33	1.1
SCENEDESMUS BIJUGA	16.7	2.7	1.43	0.3
SCENEDESMUS QUADRICAUDA	4.1	0.6	0.78	0.2
COCCOID GREENS	54.3	9.1	1.73	0.4
BACILLARIOPHYCEAE	204.5	34.2	304.66	83.3
CYCLOTELLA STELLIGERA	29.2	4.8	15.55	4.2
MELOSIRA CISTANS V. A	50.1	8.3	19.52	5.3
RHIZOSOLENIA ERIENSIS	71.0	11.9	265.05	72.5
SYNEDRA NANA	12.5	2.0	1.25	0.3
SYNEDRA SP. A	12.5	2.0	5.22	1.4
SYNEDRA SPP.	25.0	4.1	8.33	2.2
CHRYSOPHYCEAE	41.7	6.9	14.89	4.0
MALLOMONAS ACAROIDES	8.3	1.3	10.08	2.7
UNIDENTIFIED CHRYSOPHYCEAE	33.4	5.5	4.81	1.3
HAPTOPHYCEAE	8.3	1.3	1.55	0.4
CHRYSOCHROMULINA PARVA	8.3	1.3	1.55	0.4
CRYPTOPHYCEAE	108.6	18.1	23.45	6.4
CHROOMONAS ACUTA	58.5	9.8	6.45	1.7
CRYPTOMONAS EROSA VAR. REFLEXA	8.3	1.3	4.45	1.2
CRYPTOMONAS PHASEOLUS	41.8	7.0	12.55	3.4
UNKNOWN	62.6	10.4	0.88	0.2
0974-2-07	16.7	2.7	0.46	0.1
1277-2-01	45.9	7.6	0.41	0.1
SAMPLE TOTALS:	596.5	99.8	365.25	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1235 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	208.3	24.5	21.28	4.5
ANKISTRODESMUS FALCATUS	8.3	0.9	0.45	0.1
ANKISTRODESMUS FUSIFORMIS	12.5	1.4	1.30	0.2
CLOSTERIUM CERATIUM	4.1	0.4	2.38	0.5
COSMARIUM SPP.	8.3	0.9	4.54	0.9
DICTYOSPHAERIUM PULCHELLUM	12.5	1.4	1.42	0.3
MONORAPHIDIUM CONTORTUM	4.1	0.4	0.17	0.0
MONORAPHIDIUM SETIFORME	16.7	1.9	2.90	0.6
SCENEDESMUS ABUNDANS	4.1	0.4	0.65	0.1
SCENEDESMUS BIJUGA	33.4	3.9	2.94	0.6
SCENEDESMUS QUADRICAUDA	8.3	0.9	1.17	0.2
SCENEDESMUS SPP.	4.1	0.4	0.30	0.0
SELENASTRUM MINUTUM	8.3	0.9	0.31	0.0
COCCOID GREENS	83.6	9.8	2.67	0.5
BACILLARIOPHYCEAE	229.6	27.0	365.67	78.1
CYCLOTELLA STELLIGERA	12.5	1.4	6.65	1.4
MELOSIRA CISTANS V. A	66.8	7.8	12.37	2.6
MELOSIRA ITALICA	4.1	0.4	4.56	0.9
NITZSCHIA SPP.	37.6	4.4	20.31	4.3
RHIZOSOLENIA ERIENSIS	83.6	9.8	311.82	66.6
SYNEDRA SP. A	20.9	2.4	8.73	1.8
SYNEDRA SPP.	4.1	0.4	1.19	0.2
CHRYSOPHYCEAE	20.8	2.4	11.88	2.5
MALLOMONAS ACAROIDES	8.3	0.9	10.08	2.1
UNIDENTIFIED CHRYSOPHYCEAE	12.5	1.4	1.80	0.3
HAPTOPHYCEAE	8.3	0.9	1.55	0.3
CHRYSOCHROMULINA PARVA	8.3	0.9	1.55	0.3
CRYPTOPHYCEAE	91.6	10.8	53.60	11.4
CHROOMONAS ACUTA	25.0	2.9	2.78	0.5
CRYPTOMONAS EROSA	4.1	0.4	6.52	1.3
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.4	2.24	0.4
CRYPTOMONAS OVATA	33.4	3.9	34.57	7.3
CRYPTOMONAS PHASEOLUS	25.0	2.9	7.47	1.5
MYXOPHYCEAE	20.8	2.4	0.23	0.0
AGMENELLUM QUADRICUPLICATUM	4.1	0.4	0.06	0.0
ANACYSTIS INCERTA	16.7	1.9	0.16	0.0
CHLOROMONADOPHYCEAE	4.1	0.4	0.85	0.1
GONYOSTOMUM LATUM	4.1	0.4	0.85	0.1
UNKNOWN	263.3	31.0	26.76	5.7
0974-2-07	20.9	2.4	2.58	0.5
1277-2-01	242.4	28.6	2.18	0.4
SAMPLE TOTALS:	846.8	99.8	457.86	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.0 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 1235 SAMPLE DEPTH: 9.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	99.6	25.4	22.52	4.7
ANKISTRODESMUS FALCATUS	16.7	4.2	0.91	0.1
ANKISTRODESMUS FUSIFORMIS	20.9	5.3	2.17	0.4
CLOSTERIUM CERATIUM	8.3	2.1	4.77	1.0
COSMARIUM PHASEOLUS F. MINOR	2.0	0.5	3.16	0.6
DICTYOSPHAERIUM PULCHELLUM	2.0	0.5	0.81	0.1
MONORAPHIDIUM SETIFORME	22.9	5.8	4.00	0.8
PEDIASTRUM DUPLEX	2.0	0.5	1.39	0.2
SCENEDESMUS DENTICULATUS	2.0	0.5	0.39	0.0
SCENEDESMUS QUADRICAUDA	4.1	1.0	0.58	0.1
TETRAEDRON MINIMUM	4.1	1.0	3.83	0.8
COCCOID GREENS	14.6	3.7	0.46	0.0
BACILLARIOPHYCEAE	181.4	46.3	430.40	91.7
CYCLOTELLA STELLIGERA	4.1	1.0	2.21	0.4
EUNOTIA ZAZUMINENSIS	8.3	2.1	3.65	0.7
MELOSIRA DISTANS V. A	14.6	3.7	2.70	0.5
NAVICULA SPP.	2.0	0.5	1.65	0.3
RHIZOSOLENIA ERIENSIS	100.3	25.6	374.19	79.8
SYNEDRA NANA	10.4	2.6	0.96	0.2
SYNEDRA SP. A	20.9	5.3	8.73	1.8
SYNEDRA SPP.	12.5	3.1	3.59	0.7
TABELLARIA FENESTRATA	8.3	2.1	32.67	6.9
CHRYSOPHYCEAE	4.1	1.0	5.04	1.0
MALLOMONAS ACAROIDES	4.1	1.0	5.04	1.0
HAPTOPHYCEAE	4.1	1.0	0.77	0.1
CHRYSOCHROMULINA PARVA	4.1	1.0	0.77	0.1
CRYPTOPHYCEAE	18.5	4.7	6.93	1.4
CHROOMONAS ACUTA	2.0	0.5	0.23	0.0
CHROOMONAS REFLEXA	2.0	0.5	0.84	0.1
CRYPTOMONAS EROSA VAR. REFLEXA	6.2	1.5	3.37	0.7
CRYPTOMONAS PHASEOLUS	8.3	2.1	2.49	0.5
UNKNOWN	83.4	21.3	3.21	0.6
0774-2-22	8.3	2.1	2.38	0.5
0974-2-07	8.3	2.1	0.23	0.0
1277-2-01	66.8	17.0	0.60	0.1
SAMPLE TOTALS:	391.1	99.8	468.90	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: EZC SAMPLE DATE: 12/14/77
TIME: 1250 SAMPLE DEPTH: 5.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	170.6	25.9	29.27	7.5
ANKISTRODESMUS FALCATUS	4.1	0.6	0.22	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	0.6	0.43	0.1
ARTHRODESMUS SPP.	4.1	0.6	1.80	0.4
CLOSTERIUM CERATIUM	8.3	1.2	4.77	1.2
DICTYOSPHAERIUM PULCHELLUM	8.3	1.2	4.09	1.0
MONORAPHIDIUM CONTORTUM	4.1	0.6	0.17	0.0
MONORAPHIDIUM SETIFORME	33.4	5.1	5.81	1.5
MOUGEOTIA SPP.	4.1	0.6	5.67	1.4
OOCYSTIS LACUSTRIS	4.1	0.6	2.16	0.5
SCENEDESMUS BIJUGA	12.5	1.9	1.10	0.2
SCENEDESMUS QUADRICAUDA	8.3	1.2	0.58	0.1
COCCOID GREENS	75.2	11.4	2.40	0.6
BACILLARIOPHYCEAE	170.4	26.0	323.15	83.4
CYCLOTELLA STELLIGERA	4.1	0.6	2.21	0.5
EUNOTIA SP. A	4.1	0.6	1.32	0.3
MELOSIRA DISTANS V. A	37.6	5.7	6.95	1.7
NITZSCHIA SPP.	8.3	1.2	4.51	1.1
RHIZOSOLENIA ERIENSIS	79.4	12.1	296.23	76.5
SYNEDRA TENERA	4.1	0.6	1.20	0.3
SYNEDRA SP. A	8.3	1.2	3.49	0.9
SYNEDRA SPP.	25.0	3.8	7.14	1.8
CHRYSOPHYCEAE	20.7	3.1	16.72	4.3
MALLOMONAS ACAROIDES	8.3	1.2	10.08	2.6
MALLOMONAS PSEUDOCORONATA	4.1	0.6	5.44	1.4
UNIDENTIFIED CHRYSOPHYCEAE	8.3	1.2	1.20	0.3
HAPTOPHYCEAE	20.4	3.1	3.88	1.0
CHRYSOCHROMULINA PARVA	20.4	3.1	3.88	1.0
CRYPTOPHYCEAE	71.0	10.8	11.79	3.0
CHROOMONAS ACUTA	50.1	7.6	5.56	1.4
CRYPTOMONAS PHASEOLUS	20.9	3.1	6.22	1.6
MYXOPHYCEAE	4.1	0.6	0.13	0.0
AGMENELLUM QUADRICUPLICATUM	4.1	0.6	0.13	0.0
UNKNOWN	196.3	29.9	2.24	0.5
0974-2-07	25.0	3.8	0.70	0.1
1277-2-01	171.3	26.1	1.54	0.3
SAMPLE TOTALS:	654.5	99.8	387.21	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 508.5 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 1250 SAMPLE DEPTH: 23.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	88.8	25.9	20.59	4.9
ANKISTRODESMUS FALCATUS	6.2	1.8	0.34	0.1
ANKISTRODESMUS FUSIFORMIS	6.2	1.8	0.65	0.1
CLOSTERIUM CERATIUM	6.2	1.8	3.58	0.8
COSMARIUM PHASEOLUS F. MINOR	4.1	1.2	6.32	1.5
CRUCIGENIA QUADRATA	2.0	0.5	0.13	0.0
CRUCIGENIA TETRAPEDIA	2.0	0.5	0.55	0.1
MONORAPHIDIUM CONTORTUM	4.1	1.2	0.17	0.0
MONORAPHIDIUM SETIFORME	22.9	6.7	4.00	0.9
PLANKTOSPHAERIA GELATINOSA	2.0	0.5	0.40	0.0
SCENEDESMUS BIJUGA	8.3	2.4	0.73	0.1
SCENEDESMUS QUADRICAUDA	4.1	1.2	0.39	0.0
TETRAEDRON CAUDATUM	2.0	0.5	0.83	0.1
TETRAEDRON MINIMUM	2.0	0.5	1.91	0.4
COCCOID GREENS	16.7	4.9	0.53	0.1
BACILLARIOPHYCEAE	158.5	46.4	360.32	86.8
CYCLOTELLA STELLIGERA	6.2	1.8	3.32	0.8
MELOSIRA DISTANS V. A	12.5	3.6	2.31	0.6
MELOSIRA ITALICA VAR. TENUISSIMA	14.6	4.2	8.16	1.9
RHIZOSOLENIA ERIENSIS	89.8	26.3	335.21	80.7
SYNEDRA NANA	4.1	1.2	0.38	0.1
SYNEDRA SP. A	14.6	4.3	6.11	1.5
SYNEDRA SPP.	16.7	4.9	4.73	1.1
CHRYSOPHYCEAE	2.0	0.5	2.52	0.6
MALLOMONAS ACAROIDES	2.0	0.5	2.52	0.6
HAPTOPHYCEAE	10.4	3.0	1.94	0.4
CHRYSOCHROMULINA PARVA	10.4	3.0	1.94	0.4
CRYPTOPHYCEAE	31.1	9.1	29.02	6.9
CHROOMONAS ACUTA	4.1	1.2	0.46	0.1
CRYPTOMONAS EROSA	12.5	3.6	19.58	4.7
CRYPTOMONAS OVATA	6.2	1.8	6.48	1.5
CRYPTOMONAS PHASEOLUS	8.3	2.4	2.49	0.6
UNKNOWN	50.0	14.6	0.53	0.1
0974-2-07	4.1	1.2	0.11	0.0
1277-2-01	45.8	13.4	0.41	0.0
SAMPLE TOTALS:	340.8	99.8	414.93	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: SUR SAMPLE DATE: 12/14/77
TIME: 0835 SAMPLE DEPTH: 6.5 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	137.3	19.6	28.90	4.9
ANKISTRODESMUS FALCATUS	4.1	0.5	0.22	0.0
CHLAMYDOMONAS SPP.	8.3	1.1	0.69	0.1
CLOSTERIUM CERATIUM	8.3	1.1	4.77	0.8
COSMARIUM PHASEOLUS F. MINOR	8.3	1.1	12.65	2.1
DICTYOSPHAERIUM PULCHELLUM	4.1	0.5	0.20	0.0
FRANCEIA DROESCHERI	4.1	0.5	0.79	0.1
MONORAPHIDIUM SETIFORME	20.9	3.0	3.63	0.6
SCENEDESMUS BIJUGA	16.7	2.3	1.42	0.2
SCENEDESMUS DIMORPHUS	4.1	0.5	1.67	0.3
SCENEDESMUS QUADRICAUDA	8.3	1.1	1.17	0.2
COCCOID GREENS	50.1	7.1	1.60	0.3
BACILLARIOPHYCEAE	233.6	33.5	497.49	85.3
ASTERIONELLA FORMOSA	8.3	1.1	4.46	0.8
CYCLOTELLA STELLIGERA	8.3	1.1	4.43	0.8
MELOSIRA DISTANS V. A	29.2	4.1	5.41	0.9
MELOSIRA ITALICA	12.5	1.7	13.70	2.3
MELOSIRA ITALICA VAR. TENUISSIMA	8.3	1.1	4.66	0.8
RHIZOSOLENIA ERIENSIS	121.2	17.4	452.15	77.5
SYNEDRA NANA	8.3	1.1	0.76	0.1
SYNEDRA SP. A	8.3	1.1	3.49	0.6
SYNEDRA SPP.	29.2	4.1	8.39	1.4
CHRYSOPHYCEAE	25.0	3.5	8.45	1.4
MALLOMONAS PSEUDOCORONATA	4.1	0.5	5.44	0.9
UNIDENTIFIED CHRYSOPHYCEAE	20.9	3.0	3.00	0.5
CRYPTOPHYCEAE	95.9	13.7	45.40	7.7
CHROOMONAS ACUTA	33.4	4.7	20.71	3.5
CRYPTOMONAS EROSA	12.5	1.7	19.58	3.3
CRYPTOMONAS EROSA VAR. REFLEXA	4.1	0.5	2.24	0.3
CRYPTOMONAS OVATA	8.3	1.1	8.64	1.4
CRYPTOMONAS PHASEOLUS	37.6	5.3	11.21	1.9
MYXOPHYCEAE	8.3	1.1	0.53	0.0
ANACYSTIS MONTANA	8.3	1.1	0.53	0.0
UNKNOWN	196.3	28.1	2.35	0.3
0574-2-03	4.1	0.5	0.22	0.0
0974-2-07	20.9	3.0	0.58	0.1
1277-2-01	171.3	24.5	1.54	0.2
SAMPLE TOTALS:	696.4	99.8	583.14	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 509.5 SAMPLE TYPE: LDS SAMPLE DATE: 12/14/77
TIME: 0815 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT CF DENSITY	BIOVOLUME MM3/M3	PERCENT CF BIOVOLUME
CHLOROPHYCEAE	61.7	15.5	11.95	2.3
ANKISTRODESMUS FALCATUS	2.0	0.5	0.11	0.0
ANKISTRODESMUS FUSIFORMIS	4.1	1.0	0.43	0.0
CLOSTERIUM CERATIUM	8.3	2.1	4.77	0.9
MONORAPHIDIUM CONTORTUM	4.1	1.0	0.17	0.0
MONORAPHIDIUM PUSILLUM	2.0	0.5	0.20	0.0
MONORAPHIDIUM SETIFORME	6.2	1.5	1.09	0.2
OOCYSTIS PUSILLA	2.0	0.5	0.30	0.0
PLANKTOSPHAERIA GELATINOSA	4.1	1.0	0.81	0.1
SCENEDESMUS CENTICULATUS	4.1	1.0	0.79	0.1
SCENEDESMUS QUADRICAUDA	6.2	1.5	0.78	0.1
SELENASTRUM MINUTUM	2.0	0.5	0.07	0.0
TETRAEDRON MINIMUM	2.0	0.5	1.91	0.3
COCCOID GREENS	14.8	3.6	0.48	0.0
BACILLARIOPHYCEAE	194.0	49.0	410.04	81.2
MELOSIRA CISTANS V. A	22.9	5.7	4.25	0.8
MELOSIRA ITALICA VAR. TENUISSIMA	22.9	5.7	12.82	2.5
RHIZOSOLENIA ERIENSIS	102.4	25.9	381.98	75.7
SYNEDRA NANA	12.5	3.1	1.15	0.2
SYNEDRA SP. A	2.0	0.5	0.87	0.1
SYNEDRA SPP.	31.3	7.9	8.99	1.7
CHRYSOPHYCEAE	8.1	2.0	8.38	1.6
CHROMULINA SPP.	2.0	0.5	0.42	0.0
MALLOMONAS ACAROIDES	2.0	0.5	2.52	0.4
MALLOMONAS PSEUDOCORONATA	4.1	1.0	5.44	1.0
HAPTOPHYCEAE	6.2	1.5	1.16	0.2
CHRYSOCHROMULINA PARVA	6.2	1.5	1.16	0.2
CRYPTOPHYCEAE	54.0	13.6	24.31	4.7
CHROOMONAS ACUTA	6.2	1.5	0.69	0.1
CRYPTOMONAS EROSA	2.0	0.5	3.26	0.6
CRYPTOMONAS EROSA VAR. REFLEXA	2.0	0.5	1.12	0.2
CRYPTOMONAS OVATA	8.3	2.1	8.64	1.7
CRYPTOMONAS PHASEOLUS	35.5	8.9	10.58	2.0
DINOPHYCEAE	4.1	1.0	47.91	9.4
PERIDINIUM DEFLANDREI	4.1	1.0	47.91	9.4
UNKNOWN	66.8	16.9	0.72	0.1
0974-2-07	6.2	1.5	0.17	0.0
1277-2-01	60.6	15.3	0.54	0.1
SAMPLE TOTALS:	394.9	99.8	504.54	99.8

Physical-chemical variables associated with phytoplankton densities of Lake Keowee, SC, for 1974, 1976 and 1977.

Location	Densities X 10^6 units/m^3 without two desmid taxa[2]		Densities X 10^6 units/m^3 total sample		euphotic depth, m		Secchi disc depth, m		Nutrients[1] Ortho-Phosphate mg/l		Nutrients[1] Total Phosphate mg/l		Nutrients[1] Total Inorganic Nitrogen mg/l		Surface Temperature, C		ONS Mean ΔT, for week prior to sampling, C°		Mean CCW flow for week prior to sampling, m^3/min	
Month:August	1974	1977	1974	1977	1974	1977	1974	1977	1974	1977	1974	1977	1974	1977	1974	1977	1974	1977	1974	1977
500.0	680	241	692	9145	6.5	6.5	2.1	1.5	.007	.006	.022	.014	.31	.40	26.0	28.5				
501.0		476		7907		8.5		1.4	.011	.016	.019	.012	.22	.24	26.0	29.5				
502.0	734	409	734	8075	8.0	7.0	2.5	2.1	.015	.007	.022	.012	.20	.18	26.5	29.5				
503.0	474	512	478	3112	6.0	7.0	2.5	1.2	.006	.005	.020	.005	.28	.24	26.0	27.0				
505.0	504	391	504	600	6.5	7.0	3.0	2.3	.006	.009	.020	.017	.36	.52	25.5	28.5				
506.0	335	408	335	889	7.0	8.0	3.0	2.5	.005	.005	.018	.034	.26	.17	25.5	29.0				
508.0	437	321	441	638	5.0	7.5	2.0	2.6	.011	.007	.017	.008	.48	.18	26.0	27.5	4.6	5.3	4998	6378
Mean	527	394	531	4338	6.5	7.4	2.5	1.9	.009	.008	.020	.014	.30	.28	26.0	28.5				
Month:September	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
500.0	1655	901	3967	5191	5.0	5.5	2.2	1.4	.005	.005	.007	.015	.24	.18	26.0	27.0				
501.0	659	1355	721	9467	8.0	8.0	3.9	2.0	.005	.005	.005	.019	.27	.31	26.0	27.0				
502.0	454	604	462	4784	6.0	7.0	3.0	2.2	.005	.005	.007	.011	.10	.18	26.5	27.0				
503.0	243	365	257	1101	5.0	3.0	2.3	1.1	.006	.005	.007	.012	.35	.19	29.0	28.0				
505.0	567	1524	571	1912	5.0	4.0	2.5	2.2	.005	.005	.007	.005		.18	28.5	28.5				
506.0	595	1023	612	4688	4.0	6.0	2.9	2.3	.005	.005	.006	.007		.14	27.5	28.5				
508.0	288	358	288	592	5.0	3.0	2.4	1.2	.005	.007	.006	.007	.10	.24	30.0	27.0	8.0	5.8	7466	6980
Mean	637	876	982	3962	5.4	5.2	2.7	1.8	.005	.005	.006	.011	.21	.20	27.5	27.5				

[1]Ortho-phosphate, total phosphate, and total inorganic nitrogen values are means for 0.3, 5 and 10 m depth data in 1974 but 1977 values for each variable are means of 0.3 and 10 m depth data when available.

[2]The two desmid taxa are Arthrodesmus sp. and Cosmarium asphaerosporum var. strigosum.

Note: 1974 was the most recent year when phytoplankton data was available

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1977

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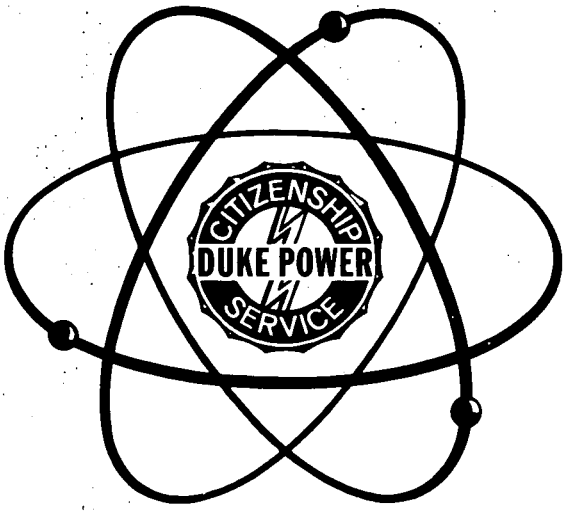

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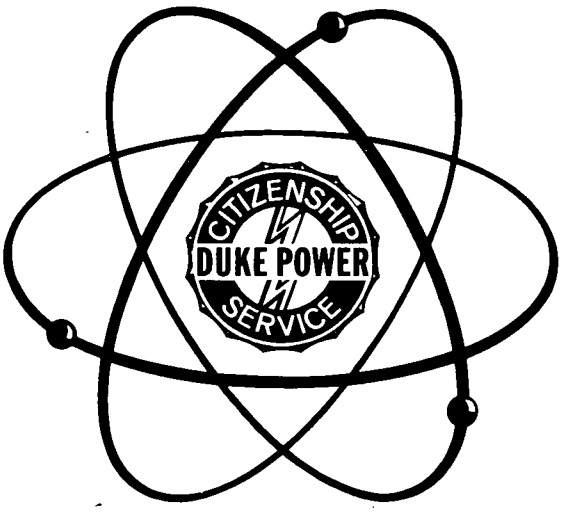

D U K E P O W E R C O M P A N Y

OCONEE NUCLEAR STATION

ANNUAL REPORT

PERIOD ENDING DECEMBER 31, 1977

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OCONEE NUCLEAR STATION

YEAR 1977

(Pages 1-36 Contained in Annual Report 1976)

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
JANUARY, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5		508.5		508		504	
DEPTH(METERS)	17	10	24	10	9	20	10		8	34	10	
CRUSTACEA												
COPEPODA												
NAUPLII	2.66	2.41	1.33	1.59	1.04	1.43	1.59		1.29	1.96	1.84	
CYCLOPOID COPEPODA												
CYCLOPOIDA COPEPODID	0.60	0.36	0.50	0.60	0.32	0.53	0.69		0.56	1.08	0.47	
CYCLOPS THOMASI	0.00	0.00	0.00	0.00	0.00	0.01	0.00		0.00	0.00	0.00	
MESOCYCLOPS EDAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
ORTHOCYCLOPS MODESTUS	0.01	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TROPOCYCLOPS PRASINUS	0.12	0.16	0.13	0.07	0.16	0.17	0.29		0.16	0.33	0.30	
TOTAL CYCLOPOID	0.73	0.53	0.63	0.67	0.48	0.72	1.00		0.72	1.36	0.71	
CALANOID COPEPODA												
CALANOIDA COPEPODID	1.30	1.37	0.06	0.07	0.09	0.12	0.13		0.15	0.09	0.18	
DIAPTOMUS MISSISSIPPIENSIS	0.17	0.29	0.03	0.03	0.04	0.05	0.00		0.02	0.02	0.04	
TOTAL CALANOID	1.47	1.66	0.09	0.10	0.13	0.17	0.13		0.22	0.11	0.22	
HARPACTICOID COPEPODA												
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TOTAL COPEPODA	4.86	4.62	2.05	2.36	1.65	2.37	2.74		2.23	3.43	2.77	
CLADOCERA												
IMMATURE CLADOCERA	0.00	0.00	0.00	0.00	0.00	0.03	0.00		0.00	0.00	0.00	
ALONA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.01	0.00	0.00		0.00	0.00	0.00	
BOSMINA COREGONI	0.05	0.39	0.00	0.16	0.00	0.08	0.75		0.38	0.16	0.16	
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
DIAPHANOSOMA LEUCHTENBERGIANUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
HOLOPEDIUM GIBBERUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
KURZIA LATISSIMA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TOTAL CLADOCERA	3.67	5.40	2.68	3.30	3.11	6.13	5.16		9.81	7.53	3.75	
TOTAL CRUSTACEA	8.53	10.00	4.73	4.66	4.76	8.50	7.90		12.04	10.96	6.52	
ROTIFERA												
ASPLANCHNA PRIODONTA	0.00	0.00	0.21	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
COLLOTHECA SPP.	0.78	0.68	0.48	0.64	0.09	0.65	0.56		0.16	0.44	0.81	
CONOCHILOIDES SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
CONOCHILUS UNICORNIS	0.04	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
KELLICOTTIA BOSTONIENSIS	0.24	0.25	0.13	0.13	0.17	0.17	0.16		0.08	0.38	0.68	
KERATELLA SPP.	0.37	0.30	0.14	0.21	0.13	0.16	0.05		0.00	0.00	0.00	
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
MONOSTYLA CRENATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
PLATYIAS QUADRICORNIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
POLYARTHRA VULGARIS	0.18	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
SYNCHAETA PECTINATA	0.11	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TRICHOCERCA PORCELLUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	
TOTAL ROTIFERA	5.07	4.88	0.95	1.39	0.99	1.13	2.77		1.25	1.23	1.89	
TOTAL ZOOPLANKTON	13.60	14.88	5.68	6.05	5.75	9.63	9.97		13.29	12.19	8.41	

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
JANUARY,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH(METERS)	25	10	20	10	28	10	28	10
CRUSTACEA								
COPEPODA								
NAUPLII	1.60	2.21	1.49	1.38	1.12	2.47	1.21	1.22
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	0.37	0.69	0.85	0.46	0.41	1.15	0.29	0.33
CYCLOPS THOMASI	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00
MESOCYCLOPS EDAX	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
ORTHOCYCLOPS MODESTUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TROPOCYCLOPS PRASINUS	0.07	0.06	0.15	0.09	0.33	1.04	0.80	0.98
TOTAL CYCLOPOID	0.44	0.66	1.05	0.55	0.79	2.21	1.62	1.31
CALANOID COPEPODA								
CALANOIDA COPEPODID	0.48	0.56	0.29	0.13	0.04	0.11	0.26	0.32
DIAPTOMUS MISSISSIPPIENSIS	0.06	0.01	0.23	0.02	0.06	0.02	0.19	0.13
TOTAL CALANOID	0.54	0.57	0.52	0.15	0.10	0.13	0.45	0.45
HARPACTICOID COPEPODA								
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
TOTAL COPEPODA	2.58	3.44	3.06	2.08	2.02	4.81	3.28	2.98
CLADOCERA								
IMMATURE CLADOCERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALONA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	1.13	1.00	0.91	0.65	1.52	1.51	0.71	0.32
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HOLOPEDIUM GIBBERUM	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KURZIA LATISSIMA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	1.14	1.34	9.71	8.12	1.89	2.29	3.51	2.75
TOTAL CRUSTACEA	3.72	4.78	12.77	10.20	3.91	7.09	6.79	5.73
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.01	0.00	0.01	0.01	0.20	0.13
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COLLOTHECA SPP.	0.75	0.14	0.43	0.92	0.80	1.10	0.39	0.72
CONOCHILOIDES SPP.	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONOCHILUS UNICORNIS	0.00	0.06	0.33	0.25	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.15	0.14	0.00	0.00	0.15	0.09	0.05	0.00
KERATELLA SPP.	0.44	0.60	0.00	0.00	0.00	0.00	0.00	0.00
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA CRENATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLATYIAS QUADRICORNIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA PORCELLUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	2.22	3.21	1.20	1.01	2.01	3.39	4.00	4.07
TOTAL ZOOPLANKTON	5.94	7.99	13.97	11.21	5.92	10.48	10.79	9.80

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
FEBRUARY,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5	508.5		508	504	
DEPTH (meters)	18	10	23	10	8	17	10	7	30	10
CRUSTACEA										
COPEPODA										
NAUPLII	3.44	4.63	1.39	2.09	0.94	0.92	0.94	1.17	0.91	0.67
CYCLOPOID COPEPODA										
CYCLOPOIDA COPEPODID	1.75	1.23	0.58	0.62	0.44	0.37	0.31	0.47	0.63	0.30
CYCLOPS THOMASI	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00
EUCYCLOPS AGILIS	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.00	0.00	0.03	0.02	0.00	0.01	0.00	0.00	0.00	0.00
TROPOCYCLOPS PRASINUS	0.24	0.05	0.13	0.14	0.09	0.05	0.11	0.06	0.06	0.09
TOTAL CYCLOPOID	1.99	1.33	0.76	0.78	0.53	0.45	0.42	0.53	0.69	0.39
CALANOID COPEPOCA										
CALANOIDA COPEPODID	0.59	1.40	0.09	0.12	0.02	0.06	0.03	0.03	0.00	0.04
DIAPTOMUS MISSISSIPPIENSIS	0.35	0.85	0.01	0.04	0.00	0.07	0.00	0.03	0.02	0.01
TOTAL CALANOID	0.94	2.25	0.10	0.16	0.02	0.13	0.03	0.06	0.02	0.05
HARPACTICOID COPEPODA										
HARPACTICOID SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
TOTAL COPEPODA	6.37	8.21	2.25	3.03	1.49	1.50	1.39	1.76	1.63	1.11
CLADOCERA										
IMMATURE CLADOCERA	0.00	0.00	0.00	0.00	0.00	0.35	0.14	0.09	0.34	0.10
ALONA QUADRANGULARIS	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
ALONA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.00
BOSMINA COREGONI	8.44	9.05	2.67	3.30	1.17	5.36	3.08	2.55	3.46	2.37
CHYDORUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.03	0.27	0.08	0.09	0.03	0.17	0.08	0.07	0.32	0.08
DAPHNIA LAEVIS	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.04	0.02
DAPHNIA PARVULA	0.07	0.00	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.07	0.00	0.08	0.04	0.02	0.01	0.00	0.04	0.06	0.01
HOLOPEDIUM GIBBERUM	0.00	0.21	0.08	0.03	0.03	0.02	0.00	0.03	0.05	0.01
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
SIDA CRYSTALLINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	8.61	9.53	2.94	3.46	1.32	5.93	3.35	2.84	4.81	2.59
TOTAL CRUSTACEA	14.98	17.74	5.19	6.49	2.81	7.43	4.74	4.60	6.44	3.70
ROTIFERA										
ASPLANCHNA PRIODONTA	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BRACHIONUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COLLOTHECA SPP.	1.11	0.78	0.94	1.14	0.54	0.51	0.74	0.53	0.49	0.53
CONOCHILOIDES SPP.	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.01
CONOCHILUS UNICORNIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.05	0.13	0.04	0.02	0.04	0.03	0.06	0.12	0.17	0.06
KERATELLA SPP.	0.90	0.99	0.14	0.19	0.12	0.12	0.18	0.23	0.20	0.14
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LECANE PLOENENSIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA LUNARIS	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLATYIAS QUADRICORNIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01
POLYARTHRA EURYPTERA	0.03	0.06	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.03
POLYARTHRA VULGARIS	0.92	1.43	0.06	0.07	0.06	0.02	0.03	0.02	0.00	0.03
SYNCHAETA PECTINATA	0.03	0.11	0.05	0.21	0.02	0.04	0.08	0.06	0.00	0.06
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	3.09	3.50	1.24	1.63	0.80	0.72	1.10	0.97	0.78	1.04
TOTAL ZOOPLANKTON	18.07	21.24	6.43	8.12	3.61	8.15	5.84	5.57	7.22	4.74

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
FEBRUARY,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	25	10	23	10	30	10	30	10
CRUSTACEA								
COPEPODA								
NAUPLII	3.09	5.08	1.06	0.79	0.44	0.80	0.84	1.20
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	1.72	3.10	0.57	0.31	0.21	0.35	0.76	1.22
CYCLOPS THOMASI	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.00	0.00	0.06	0.02	0.10	0.01	0.00	0.00
TROPOCYCLOPS PRASINUS	0.18	0.31	0.14	0.08	0.06	0.05	0.10	0.39
TOTAL CYCLOPOID	1.90	3.41	0.78	0.41	0.27	0.41	0.86	1.61
CALANOID COPEPODA								
CALANOIDA COPEPODID	2.52	5.02	0.03	0.06	0.01	0.07	0.06	0.18
DIAPTOMUS MISSISSIPPIENSIS	0.50	1.32	0.03	0.06	0.01	0.04	0.05	0.11
TOTAL CALANOID	3.02	6.34	0.06	0.12	0.02	0.11	0.11	0.29
HARPACTICOID COPEPODA								
HARPACTICOID SPP.	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HARPACTICOIDA COPEPODID	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TOTAL HARPACTICOID	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TOTAL COPEPODA	8.02	14.83	1.91	1.32	0.73	1.32	1.81	3.10
CLADOCERA								
IMMATURE CLADOCERA	0.00	0.00	0.00	0.00	0.03	0.04	0.02	0.02
ALONA QUADRANGULARIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALONA SPP.	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	5.68	10.93	2.80	2.45	0.92	0.91	2.04	2.32
CHYDORUS SPP.	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.02	0.07	0.09	0.04	0.08	0.09	0.13
DAPHNIA LAEVIS	0.00	0.02	0.01	0.00	0.01	0.02	0.00	0.00
DAPHNIA PARVULA	0.11	0.19	0.04	0.02	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.03	0.07	0.06	0.07	0.05	0.11	0.14	0.18
HOLOPEDIUM GIBBERUM	0.23	0.22	0.00	0.00	0.00	0.01	0.00	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
SIDA CRYSTALLINA	0.03	0.07	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	6.09	11.52	3.01	2.63	1.05	1.19	2.26	2.66
TOTAL CRUSTACEA	14.11	26.35	4.92	3.95	1.78	2.51	4.07	5.76
ROTIFERA								
ASPLANCHNA PRIODONTA	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02
BRACHIONUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
COLLOTHECA SPP.	0.82	0.94	0.66	0.78	0.80	1.49	1.29	1.41
CONOCHILOIDES SPP.	0.00	0.02	0.00	0.00	0.02	0.00	0.02	0.00
CONOCHILUS UNICORNIS	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.06
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.05	0.06	0.18	0.02	0.04	0.08	0.12	0.08
KERATELLA SPP.	1.14	1.37	0.17	0.09	0.13	0.30	0.54	1.05
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
LECANE PLOENENSIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA LUNARIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLATYIAS QUADRICORNIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
POLYARTHRA EURYPTERA	0.04	0.18	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.44	0.73	0.02	0.00	0.07	0.14	0.15	0.32
SYNCHAETA PECTINATA	0.29	3.57	0.05	0.08	0.06	0.33	0.66	0.89
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.01	0.02	0.00	0.00	0.01	0.03	0.06	0.09
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
TOTAL ROTIFERA	2.81	3.90	1.08	0.97	1.13	2.38	2.90	3.94
TOTAL ZOOPLANKTON	16.92	30.25	6.00	4.92	2.91	4.89	6.97	9.70

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
MARCH,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5	508.5		508	504	
DEPTH (meters)	20	10	25	10	10	20	10	8	34	10
CRUSTACEA										
COPEPODA										
NAUPLII	1.34	4.20	0.49	0.69	0.34	0.51	0.42	0.32	0.44	0.62
CYCLOPOID COPEPODA										
CYCLOPOIDA COPEPODID	2.02	3.81	0.14	0.44	0.14	0.26	0.16	0.05	0.23	0.08
CYCLOPS THOMASI	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
EUCYCLOPS AGILIS	0.10	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.04	0.19	0.00	0.01	0.00	0.08	0.03	0.04	0.06	0.06
TROPOCYCLOPS PRASINUS	0.03	0.07	0.01	0.05	0.01	0.06	0.03	0.01	0.08	0.04
TOTAL CYCLOPOID	2.19	4.27	0.15	0.50	0.15	0.43	0.23	0.10	0.37	0.18
CALANOID COPEPODA										
CALANOIDA COPEPODID	0.35	0.45	0.08	0.17	0.02	0.03	0.07	0.04	0.03	0.08
DIAPTOMUS MISSISSIPPIENSIS	0.43	0.00	0.03	0.03	0.02	0.04	0.04	0.02	0.03	0.02
TOTAL CALANOID	0.78	0.45	0.11	0.20	0.04	0.07	0.11	0.06	0.06	0.10
TOTAL COPEPODA	4.31	8.92	0.75	1.39	0.53	1.01	0.76	0.50	0.87	0.90
CLADOCERA										
IMMATURE CLADOCERA	0.42	0.56	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
ALONELLA SPP.	0.00	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.01	0.00	0.00	0.01	0.15	0.00	0.00	0.00
BOSMINA COREGONI	4.15	8.59	2.76	6.00	0.53	3.31	4.86	1.00	3.45	6.58
DAPHNIA AMBIGUA	0.28	0.16	0.09	0.20	0.00	0.23	0.32	0.04	0.15	0.26
DAPHNIA LAEVIS	0.00	0.07	0.00	0.00	0.00	0.02	0.00	0.00	0.03	0.00
DAPHNIA PARVULA	0.00	0.00	0.01	0.00	0.00	0.20	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.06	0.04	0.05	0.09	0.01	0.01	0.15	0.04	0.06	0.10
HOLOPEDIUM GIBBERUM	0.45	0.89	0.04	0.20	0.00	0.06	0.05	0.00	0.08	0.00
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEYDIGIA LEYDIGIA	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
SIMOCEPHALUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	5.40	10.95	2.96	6.49	0.67	3.85	5.49	1.12	4.01	7.05
TOTAL CRUSTACEA	9.71	19.87	3.71	7.88	1.20	4.86	6.25	1.62	4.88	7.95
ROTIFERA										
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COLLOTHECA SPP.	0.38	0.71	0.93	2.28	0.90	1.50	2.04	1.00	1.66	2.66
CONOCHILOIDES SPP.	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
CONOCHILUS UNICORNIS	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
DIPLEUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KERATELLA SPP.	0.12	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LECANE HORNEMANI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LECANE PLOENENSIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA LUNARIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.36	0.72	0.42	0.58	0.00	0.00	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.17	0.65	1.47	0.81	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	1.03	2.30	2.63	6.00	1.29	3.85	6.95	2.46	2.27	4.02
TOTAL ZOOPLANKTON	10.74	22.17	6.34	13.88	2.49	8.71	13.20	4.38	7.15	11.97

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
MARCH, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	25	10	25	10	30	10	28	10
CRUSTACEA								
COPEPODA								
NAUPLII	1.89	2.67	0.44	0.42	0.49	1.13	0.91	1.67
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	0.91	1.58	0.28	0.12	0.28	0.37	0.50	0.86
CYCLOPS THOMASI	0.00	0.00	0.00	0.00	0.05	0.02	0.12	0.17
EUCYCLOPS AGILIS	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.10	0.03	0.07	0.00	0.00	0.00	0.03	0.00
TROPOCYCLOPS PRASINUS	0.03	0.11	0.01	0.03	0.09	0.13	0.27	0.24
TOTAL CYCLOPOID	1.14	1.83	0.36	0.15	0.42	0.52	0.92	1.27
CALANOID COPEPODA								
CALANOIDA COPEPODID	0.42	0.42	0.07	0.06	0.06	0.10	0.13	0.42
DIAPTOMUS MISSISSIPPIENSIS	0.17	0.17	0.03	0.03	0.00	0.08	0.09	0.13
TOTAL CALANOID	0.59	0.59	0.10	0.09	0.06	0.18	0.22	0.55
TOTAL COPEPODA	3.62	5.09	0.90	0.66	0.97	1.83	2.05	3.49
CLADOCERA								
IMMATURE CLADOCERA	0.00	0.08	0.20	0.04	0.00	0.00	0.00	0.00
ALONELLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00
BOSMINA COREGONI	5.41	9.40	1.99	2.39	1.64	4.41	2.66	7.33
DAPHNIA AMBIGUA	0.21	0.28	0.54	0.21	0.17	0.08	0.38	0.13
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.00
DAPHNIA PARVULA	0.00	0.02	0.00	0.00	0.05	0.05	0.08	0.03
DIAPHANOSOMA LEUCHTENBERGIANUM	0.00	0.11	0.05	0.03	0.15	0.13	0.15	0.49
HOLOPEDIUM GIBBERUM	0.35	0.22	0.06	0.00	0.00	0.02	0.09	0.00
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIMOCEPHALUS SPP.	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	5.97	10.11	2.86	2.67	2.01	4.76	3.40	8.01
TOTAL CRUSTACEA	9.59	15.20	3.76	3.33	2.98	6.59	5.45	11.50
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.07	0.14	0.06
COLLOTHECA SPP.	1.04	2.12	0.89	1.57	1.72	3.71	2.00	3.30
CONOCHILOIDES SPP.	0.01	0.00	0.03	0.00	0.05	0.00	0.17	0.00
CONOCHILUS UNICORNIS	0.03	0.02	0.00	0.00	0.03	0.00	0.03	0.00
DIPLEUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.01	0.00	0.17	0.01	0.00	0.07	0.40	0.09
KERATELLA SPP.	0.37	0.45	0.24	0.21	0.61	1.02	2.15	4.74
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LECANE HORNEMANI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LECANE PLOENENSIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA LUNARIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.44	0.62	0.00	0.01	0.10	0.19	0.37	0.72
SYNCHAETA PECTINATA	1.70	3.44	1.08	2.54	3.01	8.55	7.28	17.33
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
TOTAL ROTIFERA	3.60	6.68	2.41	4.36	5.88	13.72	12.54	26.37
TOTAL ZOOPLANKTON	13.19	21.88	6.17	7.69	8.86	20.31	17.99	37.87

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
APRIL,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5	508.5		508	504	
DEPTH (meters)	20	10	25	10	9	20	10	8	34	10
CRUSTACEA										
COPEPODA										
NAUPLII	12.86	18.55	1.90	5.16	1.36	0.68	0.86	0.97	1.65	1.12
CYCLOPOID COPEPODA										
CYCLOPOIDA COPEPODID	1.71	1.45	0.02	0.34	0.06	0.01	0.08	0.02	0.00	0.06
CYCLOPS THOMASI	0.32	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CYCLOPS VERNALIS	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00
MESOCYCLOPS EDAX	0.18	0.00	0.02	0.04	0.00	0.01	0.00	0.00	0.03	0.01
TROPOCYCLOPS PRASINUS	0.57	0.89	0.11	0.20	0.02	0.06	0.04	0.03	0.03	0.07
TOTAL CYCLOPOID	2.78	2.50	0.17	0.58	0.08	0.09	0.12	0.06	0.07	0.15
CALANOID COPEPODA										
CALANOIDA COPEPODID	5.39	6.59	0.55	0.82	0.09	0.17	0.22	0.12	0.12	0.04
DIAPTOMUS MISSISSIPPIENSIS	0.51	1.81	0.13	0.26	0.00	0.02	0.05	0.01	0.04	0.03
TOTAL CALANOID	5.90	8.40	0.68	1.08	0.09	0.19	0.27	0.13	0.16	0.07
HARPACTICOID COPEPODA										
HARPACTICOID SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
TOTAL COPEPODA	21.54	29.45	2.75	6.82	1.53	0.96	1.26	1.16	1.28	1.44
CLADOCERA										
IMMATURE CLADOCERA	0.00	0.00	0.00	0.00	0.00	0.06	0.04	0.10	0.16	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	1.09	1.57	0.75	1.89	1.31	1.04	1.18	1.22	0.44	0.37
DAPHNIA AMBIGUA	1.87	1.08	0.48	1.07	0.34	0.17	0.16	0.25	0.34	0.11
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	0.00
DAPHNIA PARVULA	0.19	0.61	0.24	0.44	0.16	0.02	0.01	0.11	0.11	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.64	0.33	0.39	0.84	0.03	0.09	0.06	0.05	0.00	0.00
HOLOPEDIUM GIBBERUM	1.47	2.66	0.39	0.76	0.04	0.04	0.11	0.06	0.16	0.44
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.02
TOTAL CLADOCERA	5.26	11.44	3.25	5.00	1.89	1.44	1.79	1.69	3.26	1.67
TOTAL CRUSTACEA	26.80	40.89	6.00	11.82	3.42	2.40	3.05	2.85	4.54	3.11
ROTIFERA										
ASPLANCHNA PRIODONTA	0.08	0.20	0.06	0.14	0.00	0.00	0.00	0.01	0.00	0.00
CHROMOGASTER OVALIS	0.09	0.12	0.02	0.06	0.00	0.00	0.00	0.00	0.00	0.00
COLLOTHECA SPP.	0.08	0.12	0.06	0.08	0.00	0.11	0.28	0.13	0.10	0.00
CONOCHILOIDES SPP.	0.03	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00
CONOCHILUS UNICORNIS	0.04	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KERATELLA SPP.	0.08	0.16	0.14	0.30	0.00	0.06	0.04	0.03	0.03	0.00
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHILODINA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA EURYPTERA	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.14	0.58	0.04	0.17	0.00	0.00	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.34	0.99	0.31	0.25	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	0.86	2.45	0.67	2.21	0.52	0.42	1.04	0.39	0.47	1.03
TOTAL ZOOPLANKTON	27.66	43.34	6.67	14.03	3.94	2.82	4.09	3.24	5.01	4.14

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
APRIL, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	20	10	24	10	30	10	30	10
CRUSTACEA								
COPEPODA								
NAUPLII	17.90	13.39	0.72	1.52	1.50	2.06	2.35	4.24
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	1.51	1.46	0.08	0.08	0.10	0.34	0.72	1.65
CYCLOPS THOMASI	0.32	0.18	0.00	0.00	0.00	0.00	0.00	0.00
CYCLOPS VERNALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.03	0.03	0.04	0.00
MESOCYCLOPS EDAX	0.07	0.09	0.02	0.00	0.00	0.01	0.04	0.04
TROPOCYCLOPS PRASINUS	0.63	0.18	0.07	0.18	0.29	0.34	0.31	0.48
TOTAL CYCLOPOID	2.53	1.91	0.17	0.26	0.42	0.72	1.11	2.17
CALANOID COPEPODA								
CALANOICA COPEPODID	4.50	3.57	0.16	0.68	0.09	0.21	0.42	1.23
DIAPTOMUS MISSISSIPPIENSIS	1.11	0.46	0.06	0.18	0.09	0.05	0.18	0.34
TOTAL CALANOID	5.61	4.03	0.22	0.46	0.18	0.26	0.60	1.57
HARPACTICOID COPEPODA								
HARPACTICOID SPP.	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
TOTAL COPEPODA	26.04	19.33	1.11	2.24	2.13	3.04	4.06	7.98
CLADOCERA								
IMMATURE CLADOCERA	0.00	0.00	0.00	0.03	0.04	0.00	0.04	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	3.23	5.43	4.75	2.64	0.69	1.14	0.27	0.69
DAPHNIA AMBIGUA	1.58	1.54	0.42	0.36	0.00	0.14	0.16	0.00
DAPHNIA LAEVIS	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.40	0.55	0.05	0.04	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	1.80	3.12	0.15	0.56	0.28	1.06	0.88	2.42
HOLOPEDIUM GIBBERUM	1.66	1.73	0.03	0.06	0.04	0.14	0.09	0.04
LEPTODORA KINDTII	0.00	0.00	0.01	0.03	0.00	0.07	0.01	0.02
TOTAL CLADOCERA	8.75	12.07	2.39	3.09	1.05	2.55	1.45	3.27
TOTAL CRUSTACEA	34.79	31.40	3.50	5.33	3.18	5.59	5.51	11.25
ROTIFERA								
ASPLANCHNA PRIODONTA	0.11	0.37	0.00	0.00	0.00	0.00	0.00	0.00
CHROMOGASTER OVALIS	0.07	0.14	0.00	0.10	0.00	0.00	0.07	0.13
COLLOTHECA SPP.	0.31	0.40	0.30	0.74	0.13	0.43	0.14	0.76
CONOCHILOIDES SPP.	0.00	0.00	0.07	0.06	0.01	0.09	0.06	0.06
CONOCHILUS UNICORNIS	0.12	0.10	0.35	0.14	0.01	0.03	0.01	0.00
EUCHLANIS SPP.	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.09	0.03	0.02	0.00	0.18	0.48	0.47	1.37
KELLICOTTIA BOSTONIENSIS	0.00	0.00	0.14	0.18	0.00	0.14	0.14	0.11
KERATELLA SPP.	0.19	0.24	0.18	0.23	0.23	0.65	1.59	4.13
LECANE SPP.	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
PHILODINA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.03	0.00	0.03	0.11	0.05	0.26	0.21	0.32
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.28	0.30	0.02	0.16	0.06	0.14	0.27	0.32
SYNCHAETA PECTINATA	0.54	1.15	0.07	0.28	0.15	0.62	0.47	0.74
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	1.74	2.70	0.88	2.02	0.90	2.89	3.44	8.14
TOTAL ZOOPLANKTON	36.53	34.10	4.38	7.35	4.08	8.48	8.95	19.39

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
MAY,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5	508.5		508	504	
DEPTH (meters)	18	10	25	10	10	19	10	9	33	10
CRUSTACEA										
COPEPODA										
NAUPLII	16.24	26.49	3.59	6.26	0.70	1.90	4.14	3.75	3.03	9.18
CYCLOPOID COPEPODA										
CYCLOPOIDA COPEPODID	4.15	6.21	1.22	1.72	0.11	0.66	0.84	0.46	0.18	0.73
CYCLOPS THOMASI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.30	0.00
EUCYCLOPS AGILIS	0.07	0.23	0.00	0.00	0.02	0.00	0.00	0.00	0.30	0.00
MESOCYCLOPS EDAX	2.45	4.48	0.12	0.26	0.00	0.07	0.00	0.00	0.76	0.16
TROPOCYCLOPS PRASINUS	1.76	2.80	0.20	0.52	0.08	0.24	0.27	0.60	0.44	1.12
TOTAL CYCLOPOID	8.43	13.72	1.54	2.50	0.21	0.97	1.11	1.07	0.68	2.01
CALANOID COPEPODA										
CALANOIDA COPEPODID	1.18	1.20	0.43	1.15	0.08	0.21	0.39	0.33	0.38	0.38
DIAPTOMUS MISSISSIPPIENSIS	0.05	0.56	0.12	0.05	0.00	0.00	0.05	0.00	0.10	0.28
TOTAL CALANOID	1.23	1.76	0.55	1.20	0.08	0.21	0.44	0.33	0.48	0.66
HARPACTICOID COPEPODA										
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
TOTAL COPEPODA	25.90	41.97	5.68	9.96	0.99	3.08	5.69	5.15	4.21	11.85
CLADOCERA										
ALONA GUTATTA	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
BOSMINA COREGONI	0.05	0.00	2.24	3.80	0.93	0.77	0.37	0.66	1.64	0.89
CHYDORUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.16	0.25	0.27	0.33	0.07	0.15	0.26	0.22
DAPHNIA LAEVIS	0.00	0.10	0.00	0.00	0.08	0.01	0.00	0.03	0.05	0.05
DAPHNIA PARVULA	0.00	0.00	0.02	0.00	0.02	0.01	0.01	0.03	0.36	0.05
DIAPHANOSOMA LEUCHTENBERGIANUM	8.47	12.57	2.39	4.68	0.61	0.45	0.25	0.75	0.53	0.83
HOLOPEDIUM GIBBERUM	0.39	0.21	0.10	0.72	0.00	0.19	0.50	0.09	0.15	0.49
LEPTODORA KINDTII	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.30	0.00
TOTAL CLADOCERA	9.03	12.58	4.91	9.45	1.93	1.76	0.87	1.77	2.70	2.53
TOTAL CRUSTACEA	34.93	54.55	10.59	19.41	2.92	4.84	6.56	6.92	6.91	14.38
ROTIFERA										
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.20	0.00
CHROMOGASTER OVALIS	0.40	0.95	0.04	0.04	0.06	0.00	0.00	0.07	0.07	0.06
COLLOTHECA SPP.	0.67	0.27	0.41	1.29	0.85	0.73	0.57	0.91	0.73	0.93
CONOCHILOIDES SPP.	0.00	0.00	0.00	0.16	0.01	0.05	0.02	0.00	0.19	0.04
CONOCHILUS UNICORNIS	0.07	0.02	0.04	0.17	0.08	0.06	0.01	0.00	0.09	0.18
EUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
FILINIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.22	0.24	0.12	0.26	0.01	0.09	0.17	0.00	0.07	0.28
KELLICOTTIA BOSTONIENSIS	0.12	0.08	0.02	0.43	0.02	0.39	0.08	0.07	0.44	0.18
KERATELLA SPP.	0.39	0.56	0.54	0.43	0.03	0.11	0.03	0.07	0.21	0.45
LECANE SPP.	0.00	0.00	0.06	0.00	0.01	0.00	0.03	0.00	0.03	0.00
LEPADELLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.92	2.42	0.30	0.98	0.00	0.46	0.46	0.00
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.98	2.16	1.61	6.85	0.17	3.73	8.00	6.30	0.72	1.55
PTYGURA SPP.	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
SYNCHAETA PECTINATA	0.01	0.00	0.54	2.27	0.01	0.78	1.81	1.60	1.19	3.48
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA SIMILIS	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	2.86	4.36	4.30	14.63	1.55	6.92	14.42	7.41	9.24	24.62
TOTAL ZOOPLANKTON	37.79	58.91	14.89	34.04	4.47	11.76	20.98	14.33	16.15	39.00

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
MAY, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	23	10	25	10	33	10	33	10
CRUSTACEA								
COPEPODA								
NAUPLII	6.27	13.47	2.52	3.14	3.58	11.06	4.66	11.94
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	3.01	7.26	0.40	0.61	0.93	2.80	1.83	4.75
CYCLOPS THOMASI	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.68	1.59	0.10	0.01	0.10	0.35	0.18	0.23
TROPOCYCLOPS PRASINUS	0.93	2.21	0.61	0.60	0.89	1.83	0.99	3.43
TOTAL CYCLOPOID	4.62	11.06	1.11	1.22	1.92	4.98	3.06	8.41
CALANOID COPEPODA								
CALANOIDA COPEPODID	0.32	0.97	0.21	0.56	0.21	0.83	0.29	1.80
DIAPTOMUS MISSISSIPPIENSIS	0.08	0.08	0.06	0.06	0.08	0.14	0.05	0.29
TOTAL CALANOID	0.40	1.05	0.27	0.62	0.29	0.97	0.34	2.09
HARPACTICOID COPEPODA								
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL COPEPODA	11.29	25.58	3.90	4.98	5.79	17.01	8.06	22.44
CLADOCERA								
ALONA GUTATTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	0.53	0.08	1.31	1.26	1.05	3.63	0.95	2.21
CHYDORUS SPP.	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.08	0.00	0.25	0.13	0.13	0.20	0.13	0.25
DAPHNIA LAEVIS	0.07	0.00	0.05	0.08	0.04	0.00	0.00	0.07
DAPHNIA PARVULA	0.00	0.00	0.03	0.07	0.00	0.00	0.03	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	5.80	9.21	2.20	2.76	0.81	3.33	0.83	1.92
HOLOPEDIUM GIBBERUM	0.38	0.53	0.05	0.08	0.10	0.39	0.10	0.43
LEPTODORA KINDTII	0.00	0.00	0.06	0.01	0.00	0.00	0.00	0.07
TOTAL CLADOCERA	6.86	9.82	3.97	4.39	2.13	7.55	2.04	4.92
TOTAL CRUSTACEA	18.15	35.40	7.87	9.37	7.92	24.56	10.10	27.36
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHROMOGASTER OVALIS	0.21	1.26	0.08	0.08	0.02	0.12	0.00	0.05
COLLOTHECA SPP.	0.22	0.58	0.68	0.62	0.70	0.98	0.54	0.31
CONOCHILOIDES SPP.	0.01	0.00	0.07	0.00	0.09	0.00	0.22	0.05
CONOCHILUS UNICORNIS	0.04	0.00	0.20	0.15	0.12	0.06	0.06	0.00
EUCHLANIS SPP.	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
FILINIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.30	0.77	0.02	0.05	0.07	0.12	0.12	0.55
KELLICOTTIA BOSTONIENSIS	0.05	0.07	0.28	0.12	0.09	0.00	0.04	0.05
KERATELLA SPP.	0.45	0.85	0.33	0.60	0.45	1.53	0.91	3.48
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
LEPADELLA SPP.	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
PLOESOMA TRUNCATUM	0.04	0.14	0.70	1.95	0.95	2.60	0.64	2.79
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.54	2.25	1.94	6.12	0.52	1.31	0.98	2.42
PTYGURA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.04	0.21	0.40	1.49	0.40	1.76	0.46	1.14
TRICHOCERCA CYLINDRICA	0.00	0.03	0.01	0.01	0.00	0.05	0.02	0.00
TRICHOCERCA SIMILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
TOTAL ROTIFERA	1.90	6.16	4.71	11.20	3.43	8.53	4.05	10.84
TOTAL ZOOPLANKTON	20.05	41.56	12.58	20.57	11.35	33.09	14.15	38.20

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
JUNE,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5	508.5		508	504	
DEPTH (meters)	20	10	23	10	10	20	10	9	33	10
CRUSTACEA										
COPEPODA										
NAUPLII	9.99	20.86	3.43	4.92	2.09	2.52	7.23	3.10	3.55	8.62
CYCLOPOID COPEPODA										
CYCLOPOIDA COPEPODID	3.61	5.97	4.08	9.55	1.15	2.03	3.75	1.00	2.05	5.49
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
MESOCYCLOPS EDAX	0.15	0.05	0.08	0.14	0.17	0.11	0.04	0.03	0.05	0.23
TROPOCYCLOPS PRASINUS	4.48	5.29	1.54	1.85	0.83	0.63	0.54	0.38	0.38	0.72
TOTAL CYCLOPOID	8.24	11.31	5.70	11.54	2.15	2.77	4.33	1.41	2.49	6.44
CALANOID COPEPODA										
CALANOIDA COPEPODID	1.98	2.70	0.39	0.85	0.14	0.23	0.55	0.07	0.21	0.52
DIAPTOMUS MISSISSIPPIENSIS	1.36	0.12	0.04	0.00	0.01	0.02	0.00	0.00	0.01	0.00
TOTAL CALANOID	3.34	2.82	0.43	0.85	0.15	0.25	0.55	0.07	0.22	0.52
TOTAL COPEPODA	21.57	34.99	9.56	17.31	4.39	5.54	12.11	4.58	6.26	15.58
CLADOCERA										
ALONA SPP.	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
ALONA GUTATTA	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
DISPARALONA ACUTIROSTRIS	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
BOSMINA COREGONI	1.96	0.62	4.78	1.92	1.63	1.49	1.64	0.67	1.54	3.22
CHYDORUS SPHAERICUS	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
DAPHNIA AMBIGUA	0.05	0.00	0.08	0.07	0.21	0.05	0.00	0.07	0.05	0.09
DAPHNIA LAEVIS	0.00	0.06	0.17	0.21	0.13	0.08	0.00	0.03	0.10	0.14
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	2.97	0.53	1.64	0.92	0.23	0.65	0.20	0.11	0.53	0.65
HOLOPEDIUM GIBBERUM	1.27	2.29	1.99	2.98	0.03	0.76	1.99	0.13	0.53	1.71
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
TOTAL CLADOCERA	5.80	3.50	8.66	6.10	2.25	3.05	4.37	1.07	2.78	6.01
TOTAL CRUSTACEA	27.37	38.49	18.22	23.41	6.64	8.59	16.48	5.65	9.04	21.59
ROTIFERA										
ASPLANCHNA PRIODONTA	0.00	0.00	0.01	0.00	0.00	0.01	0.02	0.00	0.04	0.00
CHROMOGASTER OVALIS	0.04	0.25	0.02	0.06	0.00	0.00	0.00	0.01	0.00	0.08
COLLOTHECA SPP.	1.74	4.42	0.70	1.41	0.19	0.95	2.31	0.88	1.01	3.08
CONOCHILOIDES SPP.	0.00	0.02	0.02	0.00	0.03	0.01	0.00	0.04	0.02	0.03
CONOCHILUS UNICORNIS	0.73	0.51	1.49	0.98	0.38	1.87	1.34	1.01	1.26	0.57
GASTROPUS STYLIFER	0.04	0.20	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.54	0.18	0.10	0.21	0.08	0.11	0.03	0.05	0.14	0.05
KERATELLA SPP.	1.50	3.86	0.66	1.84	0.01	0.87	1.46	0.24	0.46	1.45
LECANE SPP.	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.03	0.10	0.02	0.00	0.00	0.00	0.08	0.00	0.00	0.04
POLYARTHRA EURYPTERA	0.02	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.02	0.16	0.06	0.15	0.07	0.15	0.19	0.14	0.13	0.30
PTYGURA SPP.	0.33	0.98	0.35	1.24	0.00	0.35	1.21	0.42	0.05	0.39
SYNCHAETA PECTINATA	0.00	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.01	0.02	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.02
TRICHOCERCA PLATESSA	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA SIMILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	5.00	10.82	3.45	6.06	0.79	4.38	6.62	2.95	3.17	5.90
TOTAL ZOOPLANKTON	32.37	49.31	21.67	29.47	7.43	12.97	23.10	8.60	12.21	27.49

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
JUNE, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	25	10	24	10	30	10	33	10
CRUSTACEA								
COPEPODA								
NAUPLII	6.72	16.33	3.98	6.80	2.16	7.39	2.82	6.96
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	3.17	7.83	2.72	4.38	3.68	7.52	3.32	7.18
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.17	0.00	0.17	0.00	0.05	0.12	0.04	0.00
TROPOCYCLOPS PRASINUS	4.35	3.14	0.71	1.01	0.39	0.61	0.15	0.78
TOTAL CYCLOPOID	7.69	10.97	3.60	5.39	4.12	8.25	3.51	7.96
CALANOID COPEPODA								
CALANOIDA COPEPODID	0.43	0.67	0.09	0.22	0.16	0.48	0.00	0.31
DIAPTOMUS MISSISSIPPIENSIS	0.04	0.00	0.00	0.00	0.00	0.18	0.06	0.10
TOTAL CALANOID	0.47	0.67	0.09	0.22	0.16	0.66	0.06	0.41
TOTAL COPEPODA	14.88	27.97	7.67	12.41	6.44	16.30	6.39	15.33
CLADOCERA								
ALONA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALONA GUTATTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	1.40	0.12	1.22	0.33	1.25	2.95	0.73	1.08
CHYDORUS SPHAERICUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.07	0.03	0.02	0.00	0.09	0.10
DAPHNIA LAEVIS	0.66	0.05	0.07	0.00	0.05	0.48	0.11	0.10
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	1.67	0.12	0.54	0.24	0.82	1.71	1.18	1.68
HOLOPEDIUM GIBBERUM	1.10	2.10	0.58	0.65	1.14	2.40	1.57	3.90
LEPTODORA KINDTII	0.00	0.12	0.02	0.00	0.00	0.00	0.00	0.05
TOTAL CLADOCERA	4.83	2.51	2.54	1.25	3.28	7.50	3.68	6.91
TOTAL CRUSTACEA	19.71	30.48	10.21	13.66	9.72	23.80	10.07	22.24
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.02
CHROMOGASTER OVALIS	0.07	0.14	0.00	0.03	0.02	0.00	0.01	0.05
COLLOTHECA SPP.	0.68	1.32	0.91	1.15	0.57	1.55	0.32	1.37
CONOCHILOIDES SPP.	0.00	0.02	0.02	0.00	0.05	0.00	0.17	0.00
CONOCHILUS UNICORNIS	1.35	0.22	1.52	0.37	1.06	0.48	1.60	0.45
GASTROPUS STYLIFER	0.01	0.02	0.00	0.00	0.02	0.06	0.00	0.07
KELLICOTTIA BOSTONIENSIS	0.64	0.32	0.07	0.00	0.07	0.05	0.12	0.09
KERATELLA SPP.	1.92	4.16	0.56	1.17	0.50	1.43	0.48	1.35
LECANE SPP.	0.01	0.04	0.00	0.00	0.00	0.00	0.01	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
PLOESOMA TRUNCATUM	0.03	0.06	0.02	0.01	0.00	0.03	0.00	0.00
POLYARTHRA EURYPTERA	0.01	0.04	0.03	0.05	0.00	0.06	0.01	0.05
POLYARTHRA VULGARIS	0.02	0.18	0.18	0.11	0.06	0.05	0.06	0.27
PTYGURA SPP.	0.88	2.92	0.40	0.86	0.22	0.26	0.02	0.07
SYNCHAETA PECTINATA	0.01	0.00	0.02	0.03	0.00	0.00	0.01	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.04
TRICHOCERCA PLATESSA	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00
TRICHOCERCA SIMILIS	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
TOTAL ROTIFERA	5.63	12.25	3.76	3.78	2.70	4.56	2.85	3.84
TOTAL ZOOPLANKTON	25.34	42.73	13.97	17.44	12.42	28.36	12.92	26.08

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
JULY,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5		508.5		508		504	
DEPTH (meters)	19	10	24	10	9	20	10		9		33	10
CRUSTACEA												
COPEPODA												
NAUPLII	6.87	10.99	3.50	5.01	2.51	2.73	3.20		1.70		3.08	4.82
CYCLOPOID COPEPODA												
CYCLOPOIDA COPEPODID	2.78	2.68	1.16	1.74	1.32	0.95	0.77		0.56		0.63	0.82
MESOCYCLOPS EDAX	0.00	0.00	0.17	0.00	0.05	0.16	0.01		0.00		0.17	0.01
PARACYCLOPS FIMBRIATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TROPOCYCLOPS PRASINUS	0.81	0.58	0.45	0.25	0.32	0.35	0.53		0.56		0.48	0.65
TOTAL CYCLOPOID	3.59	3.26	1.78	1.99	1.69	1.46	1.31		1.12		1.28	1.48
CALANOID COPEPODA												
CALANOIDA COPEPODID	2.03	0.97	0.36	0.35	0.35	0.31	0.19		0.07		0.31	0.35
DIAPTOMUS MISSISSIPPIENSIS	0.23	0.13	0.33	0.03	0.59	0.47	0.03		0.02		0.10	0.04
TOTAL CALANOID	2.26	1.10	0.69	0.38	0.94	0.78	0.22		0.09		0.41	0.39
HARPACTICOID COPEPODA												
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01		0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01		0.00	0.00
TOTAL COPEPODA	12.72	15.35	5.97	7.38	5.14	4.97	4.73		2.92		4.77	6.69
CLADOCERA												
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.04	0.02	0.00		0.00		0.00	0.00
BOSMINA COREGONI	4.77	1.21	2.51	0.50	1.40	2.25	1.10		0.88		1.31	1.65
CHYDORUS SPHAERICUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.00	0.05	0.02	0.00		0.00		0.00	0.00
DAPHNIA LAEVIS	0.00	0.00	0.02	0.00	0.01	0.00	0.00		0.01		0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01		0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.39	0.23	0.57	0.42	0.24	1.24	0.44		0.17		0.90	0.75
HOLOPEDIUM GIBBERUM	0.20	0.09	0.12	0.05	0.00	0.24	0.09		0.01		0.06	0.05
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TOTAL CLADOCERA	5.36	1.53	3.22	0.97	1.74	3.77	1.63		1.08		2.27	2.45
TOTAL CRUSTACEA	18.08	16.88	9.19	8.35	6.88	8.74	6.36		4.00		7.04	9.14
ROTIFERA												
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.01	0.00	0.00		0.00		0.00	0.00
BRACHIONUS SPP.	0.00	0.00	0.00	0.00	0.02	0.00	0.00		0.00		0.00	0.00
CHROMOGASTER OVALIS	0.02	0.00	0.02	0.05	0.00	0.01	0.00		0.00		0.00	0.00
COLLOTHECA SPP.	0.74	2.15	0.76	2.48	0.37	1.53	3.18		0.65		0.92	2.33
CONOCHILOIDES SPP.	0.00	0.00	0.07	0.06	0.37	0.10	0.04		0.04		0.11	0.07
CONOCHILUS UNICORNIS	0.64	0.65	0.55	0.74	0.57	0.85	0.93		0.42		0.54	1.03
DIPLEUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.01	0.00	0.00		0.00		0.00	0.00
EUCHLANIS SPP.	0.00	0.00	0.01	0.00	0.00	0.01	0.00		0.00		0.00	0.00
GASTROPUS STYLIFER	0.00	0.00	0.00	0.03	0.00	0.00	0.00		0.00		0.00	0.00
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.54	0.50	0.06	0.00	0.30	0.07	0.03		0.06		0.11	0.03
KERATELLA SPP.	1.35	2.46	0.15	0.22	0.01	0.14	0.18		0.08		0.13	0.23
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.01		0.00		0.01	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.02	0.00	0.00	0.01	0.00	0.00	0.00		0.00		0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
PLATYIAS QUADRICORNIS	0.00	0.00	0.00	0.00	0.00	0.01	0.00		0.00		0.00	0.00
PLOESOMA HUDSONI	0.02	0.03	0.02	0.03	0.00	0.00	0.00		0.00		0.00	0.00
PLOESOMA TRUNCATUM	0.09	0.12	0.14	0.18	0.01	0.09	0.19		0.01		0.04	0.18
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.11	0.12		0.00		0.06	0.17
POLYARTHRA VULGARIS	1.48	2.22	0.29	0.48	0.26	0.17	0.11		0.04		0.11	0.08
PTYGURA SPP.	3.15	6.07	1.73	4.66	0.16	3.01	6.42		0.83		1.96	4.54
SYNCHAETA PECTINATA	0.02	0.08	0.00	0.06	0.00	0.01	0.03		0.06		0.01	0.10
TRICHOCERCA CAPUCINA	0.02	0.00	0.07	0.22	0.00	0.14	0.29		0.32		0.08	0.51
TRICHOCERCA CYLINDRICA	0.08	0.12	0.00	0.05	0.00	0.01	0.00		0.00		0.00	0.03
TRICHOCERCA PLATESSA	0.00	0.00	0.00	0.00	0.03	0.00	0.00		0.00		0.00	0.00
TRICHOCERCA SIMILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TOTAL ROTIFERA	8.17	14.40	3.87	9.27	2.12	6.26	11.53		2.51		4.08	9.30
TOTAL ZOOPLANKTON	26.25	31.28	13.06	17.62	9.00	15.00	17.89		6.51		11.12	18.44

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
JULY,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	25	10	24	10	30	10	30	10
CRUSTACEA								
COPEPODA								
NAUPLII	5.12	10.67	2.62	3.35	2.32	5.98	5.28	7.98
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	4.71	4.19	1.05	0.97	1.58	1.93	2.56	4.33
MESOCYCLOPS EDAX	0.58	0.00	0.11	0.00	0.59	0.00	0.33	0.00
PARACYCLOPS FIMBRIATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
TROPOCYCLOPS PRASINUS	1.23	0.16	0.16	0.09	0.73	1.00	1.13	1.77
TOTAL CYCLOPOID	6.52	4.35	1.32	1.06	2.90	2.93	4.05	6.10
CALANOID COPEPODA								
CALANOIDA COPEPODID	0.99	0.25	0.14	0.23	0.53	0.54	0.72	0.58
DIAPTOMUS MISSISSIPPIENSIS	0.55	0.00	0.19	0.02	0.31	0.10	0.55	0.00
TOTAL CALANOID	1.54	0.25	0.33	0.25	0.84	0.64	1.27	0.58
HARPACTICOID COPEPODA								
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL COPEPODA	13.18	15.27	4.27	4.66	6.06	9.55	10.60	14.66
CLADOCERA								
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	2.88	0.84	1.39	0.64	5.01	3.97	3.40	0.92
CHYDORUS SPHAERICUS	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA LAEVIS	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	1.54	0.34	0.66	0.24	1.43	0.86	1.12	0.59
HOLOPEDIUM GIBBERUM	0.16	0.34	0.00	0.02	0.13	0.20	0.03	0.06
LEPTODORA KINDTII	0.03	0.00	0.00	0.00	0.09	0.00	0.03	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	4.61	1.56	2.05	0.93	6.57	5.03	4.58	1.57
TOTAL CRUSTACEA	17.79	16.83	6.32	5.59	12.63	14.58	15.18	16.23
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
BRACHIONUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHROMOGASTER OVALIS	0.01	0.00	0.00	0.00	0.02	0.11	0.05	0.00
COLLOTHECA SPP.	0.37	1.21	1.08	2.04	0.96	2.57	2.60	2.98
CONOCHILOIDES SPP.	0.00	0.00	0.14	0.05	0.09	0.20	0.54	0.00
CONOCHILUS UNICORNIS	0.52	0.44	0.93	1.42	0.72	0.81	1.82	0.62
DIPLEUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.16
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.00
KELLICOTTIA BOSTONIENSIS	0.28	0.00	0.15	0.00	0.00	0.09	0.09	0.00
KERATELLA SPP.	0.83	1.17	0.17	0.28	0.25	1.51	1.77	3.81
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
PLATYIAS QUADRICORNIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA HUDSONI	0.03	0.16	0.00	0.00	0.00	0.01	0.00	0.00
PLOESOMA TRUNCATUM	0.04	0.06	0.11	0.36	0.00	0.03	0.03	0.00
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.26	1.39	2.00	6.14
POLYARTHRA VULGARIS	1.73	1.90	0.15	0.35	0.10	0.52	0.28	0.99
PTYGURA SPP.	2.40	5.57	3.50	8.35	5.71	18.51	14.88	29.09
SYNCHAETA PECTINATA	0.16	0.86	0.09	0.07	0.06	0.53	0.16	0.94
TRICHOCERCA CAPUCINA	0.03	0.13	0.17	0.20	0.00	0.06	0.03	0.21
TRICHOCERCA CYLINDRICA	0.04	0.17	0.00	0.00	0.00	0.04	0.10	0.29
TRICHOCERCA PLATESSA	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00
TRICHOCERCA SIMILIS	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	6.45	11.73	6.52	13.14	8.18	26.42	24.41	45.38
TOTAL ZOOPLANKTON	24.24	28.56	12.84	18.73	20.81	41.00	39.59	61.61

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE

AUGUST,1977

ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	503		502		509.5		508.5		508	504	
DEPTH (meters)	19	10	24	10	9	18	10	9	33	10
CRUSTACEA											
COPEPODA											
NAUPLII	6.50	9.21	3.65	5.30	2.39	3.19	6.02	6.11	2.41	6.08
CYCLOPOID COPEPODA											
CYCLOPOIDA COPEPODID	1.67	1.32	0.91	0.99	0.36	0.60	0.67	0.52	0.66	1.45
EUCYCLOPS AGILIS	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TROPOCYCLOPS PRASINUS	0.38	0.23	0.36	0.29	0.45	0.18	0.26	0.17	0.21	0.19
TOTAL CYCLOPOID	2.09	1.55	1.27	1.28	0.82	0.78	0.93	0.69	0.87	1.64
CALANOID COPEPODA											
CALANOIDA COPEPODID	1.21	0.85	0.47	0.18	0.36	0.67	0.67	0.16	0.54	0.74
DIAPTOMUS MISSISSIPPIENSIS	0.50	0.00	0.35	0.10	0.09	0.26	0.02	0.08	0.41	0.02
TOTAL CALANOID	1.71	0.85	0.83	0.28	0.45	0.93	0.69	0.24	0.95	0.76
TOTAL COPEPODA	10.30	11.61	5.75	6.86	3.66	4.90	7.64	7.04	4.33	8.48
CLADOCERA											
ALONA GUTATTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	3.15	2.58	3.00	1.81	0.50	0.37	2.18	1.01	3.91	2.71
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.42	0.14	0.12	0.05	0.07	0.16	0.05	0.01	0.13	0.04
HOLOPEDIUM GIBBERUM	0.00	0.00	0.17	0.05	0.00	0.00	0.02	0.02	0.04	0.09
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	3.63	2.93	3.26	2.91	0.57	2.53	2.22	1.05	4.10	2.84
TOTAL CRUSTACEA	13.93	14.54	9.01	9.77	4.23	7.43	9.86	8.09	8.43	11.32
ROTIFERA											
ASPLANCHNA PRIODONTA	0.00	1.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHROMOGASTER OVALIS	0.02	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COLLOTHECA SPP.	0.54	1.03	4.15	10.33	0.00	0.30	5.46	6.26	0.14	7.03
CONOCHILOIDES SPP.	0.01	0.15	0.18	0.00	0.00	0.12	0.16	0.00	0.14	0.00
CONOCHILUS UNICORNIS	0.47	1.24	0.79	0.80	0.48	0.80	1.58	0.00	0.47	0.00
FILINIA SPP.	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03
HEXARTHRA MIRA	0.11	0.13	0.12	0.15	0.07	0.02	0.00	0.00	0.03	0.03
KELLICOTTIA BOSTONIENSIS	0.41	0.36	0.18	0.00	0.69	0.35	0.06	0.18	0.23	0.06
KERATELLA SPP.	3.15	4.61	0.52	0.76	0.11	0.41	0.54	0.87	0.15	0.20
LECANE SPP.	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.66	0.78	0.26	1.20	0.05	0.44	0.76	0.95	0.20	0.32
POLYARTHRA EURYPTERA	0.15	0.39	0.26	0.20	0.05	0.09	0.06	0.02	0.00	0.03
POLYARTHRA VULGARIS	0.17	0.23	0.76	0.12	0.16	0.09	0.37	0.03	0.06	0.16
PTYGURA SPP.	0.89	1.33	0.97	0.70	0.21	0.16	0.03	0.03	0.88	0.36
SYNCHAETA PECTINATA	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA SIMILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA STYLATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	7.28	11.21	9.56	20.44	3.27	7.73	11.00	15.40	4.29	10.95
TOTAL ZOOPLANKTON	21.21	25.55	18.57	30.21	7.50	15.16	20.86	23.49	12.72	22.27

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
AUGUST, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	24	10	24	10	30	10	33	10
CRUSTACEA								
COPEPODA								
NAUPLII	3.60	7.55	5.10	10.83	2.63	10.90	5.35	12.52
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	0.85	1.15	1.13	0.97	1.45	1.98	2.48	2.73
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
MESOCYCLOPS EDAX	0.03	0.00	0.07	0.00	0.25	0.00	0.13	0.00
TROPOCYCLOPS PRASINUS	0.53	0.49	0.32	0.48	0.15	0.42	0.37	0.54
TOTAL CYCLOPOID	1.41	1.64	1.42	1.45	1.82	2.40	3.01	3.27
CALANOID COPEPODA								
CALANOIDA COPEPODID	1.21	1.16	0.63	0.24	1.90	0.97	1.68	2.38
DIAPTOMUS MISSISSIPPIENSIS	0.43	0.06	0.32	0.00	0.53	0.09	0.50	0.05
TOTAL CALANOID	1.64	1.22	0.95	0.24	2.43	1.06	2.18	2.43
TOTAL COPEPODA	6.65	10.41	7.37	12.52	6.88	14.36	10.54	18.22
CLADOCERA								
ALONA GUTATTA	0.20	0.00	0.10	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	1.54	2.71	2.27	2.16	5.98	6.40	3.84	3.32
DAPHNIA AMBIGUA	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
DAPHNIA LAEVIS	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.00	0.06	0.21	0.00	0.00	0.00	0.15	0.25
HOLOPEDIUM GIBBERUM	0.07	0.22	0.07	0.00	0.00	0.00	0.06	0.05
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	4.83	2.99	2.55	2.24	6.13	6.46	4.05	3.82
TOTAL CRUSTACEA	11.48	13.40	9.92	14.76	13.01	20.82	14.59	22.04
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
COLLOTHECA SPP.	0.00	0.00	5.44	11.25	1.48	5.60	2.20	5.58
CONOCHILOIDES SPP.	0.00	0.00	0.15	0.05	0.10	0.00	0.51	0.00
CONOCHILUS UNICORNIS	0.00	0.00	1.14	0.58	0.50	0.35	1.22	0.00
FILINIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KERATELLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PTYGURA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA SIMILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA STYLATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	2.71	7.24	11.96	24.12	4.54	14.52	12.70	31.53
TOTAL ZOOPLANKTON	14.19	20.64	21.88	38.88	17.55	35.34	27.29	53.57

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
SEPTEMBER,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5	508.5		508	504	
DEPTH (meters)	20	10	24	10	10	20	10	9	34	10
CRUSTACEA										
COPEPODA										
NAUPLII	4.66	6.40	6.17	8.80	2.91	4.50	6.48	4.85	6.62	10.31
CYCLOPOID COPEPODA										
CYCLOPOIDA COPEPODID	1.54	1.51	2.01	3.13	0.42	0.68	0.61	0.46	0.83	1.71
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.07	0.00	0.12	0.00	0.03	0.55	0.06	0.06	0.25	0.30
ORTHOCYCLOPS MODESTUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.30	0.00
TROPOCYCLOPS PRASINUS	0.07	0.06	0.44	0.68	0.12	0.31	0.30	0.14	0.30	0.73
TOTAL CYCLOPOID	1.68	1.57	2.57	3.81	0.57	1.54	0.97	0.71	1.38	2.74
CALANOID COPEPODA										
CALANOIDA COPEPODID	0.93	0.30	1.41	0.70	0.35	0.86	0.77	0.45	0.97	1.91
DIAPTOMUS MISSISSIPPIENSIS	0.75	0.03	1.03	0.11	0.31	1.34	1.08	0.25	0.50	0.64
TOTAL CALANOID	1.68	0.33	2.44	0.81	0.66	2.20	1.85	0.70	1.47	2.55
TOTAL COPEPODA	8.02	8.30	11.18	13.42	4.14	8.24	9.30	6.26	9.47	15.60
CLADOCERA										
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
BOSMINA COREGONI	1.57	1.44	2.36	5.01	0.72	3.04	3.75	2.25	2.40	4.44
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.24	0.06	0.63	0.59	1.06	1.26	1.65	0.54	0.89	1.55
HOLOPEDIUM GIBBERUM	0.04	0.05	0.00	0.09	0.00	0.02	0.03	0.03	0.09	0.00
ILYOCRYPTUS SPINIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	1.85	1.55	3.05	5.69	1.79	4.32	5.46	2.84	3.38	6.54
TOTAL CRUSTACEA	9.87	9.85	14.23	19.11	5.93	12.56	14.76	9.10	12.85	22.14
ROTIFERA										
CHROMOGASTER OVALIS	0.79	0.24	0.28	0.57	0.00	0.00	0.00	0.05	0.00	0.07
COLLOTHECA SPP.	1.01	2.20	0.78	2.23	0.54	0.75	1.32	0.98	0.49	1.25
CONOCHILOIDES SPP.	0.05	0.06	0.19	0.29	0.31	0.04	0.07	0.09	0.08	0.19
CONOCHILUS UNICORNIS	2.27	0.88	2.27	2.09	0.47	1.40	1.48	0.78	1.39	2.13
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.00	0.06	0.00	0.00	0.04	0.25	0.05	0.24	0.10	0.03
KELLICOTTIA BOSTONIENSIS	0.29	0.00	0.12	0.00	0.65	0.47	0.37	0.51	1.09	0.32
KERATELLA SPP.	0.88	1.20	1.48	2.93	0.60	0.39	0.43	0.58	0.40	1.35
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
PLOESOMA TRUNCATUM	4.48	6.70	0.50	1.29	0.08	0.02	0.05	0.04	0.03	0.09
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.07	0.09	0.06	0.04	0.10
POLYARTHRA VULGARIS	0.14	0.15	0.12	0.06	0.15	0.03	0.07	0.08	0.13	0.19
PTYGURA SPP.	18.89	25.79	5.32	9.06	0.37	0.75	1.39	0.58	0.29	1.32
SYNCHAETA PECTINATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
TRICHOCERCA CAPUCINA	0.04	0.08	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00
TRICHOCERCA CYLINDRICA	0.68	1.58	0.03	0.24	0.01	0.02	0.05	0.00	0.02	0.13
TRICHOCERCA PLATESSA	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00
TRICHOCERCA SIMILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	29.52	39.44	11.02	18.76	3.23	4.23	5.39	4.02	4.07	7.42
TOTAL ZOOPLANKTON	39.39	49.29	25.25	37.87	9.16	16.79	20.15	13.12	16.92	29.56

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
SEPTEMBER,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH (meters)	25	10	24	10	28	10	28	10
CRUSTACEA								
COPEPODA								
NAUPLII	4.51	8.22	4.66	7.53	4.92	14.70	6.03	18.31
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	1.30	1.33	1.26	1.47	1.00	1.89	2.99	5.72
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
MESOCYCLOPS EDAX	0.02	0.00	0.16	0.05	0.14	0.00	0.64	0.00
ORTHOCYCLOPS MODESTUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TROPOCYCLOPS PRASINUS	0.10	0.13	0.15	0.06	0.49	1.83	2.18	3.35
TOTAL CYCLOPOID	1.42	1.46	1.57	1.58	1.63	3.72	5.85	9.07
CALANOID COPEPODA								
CALANOIDA COPEPODID	1.54	1.69	0.73	1.50	1.20	2.07	5.05	3.84
DIAPTOMUS MISSISSIPPIENSIS	0.78	0.00	1.85	1.08	0.82	0.35	2.14	0.00
TOTAL CALANOID	2.32	1.69	2.58	2.58	2.02	2.42	7.19	3.84
TOTAL COPEPODA	8.25	11.37	8.81	11.69	8.57	20.84	19.07	31.22
CLADOCERA								
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	2.54	2.96	3.03	5.87	2.60	6.04	6.42	7.51
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.00	0.00	0.83	0.83	0.47	1.36	1.45	0.38
HOLOPEDIUM GIBBERUM	0.02	0.24	0.07	0.05	0.02	0.23	0.08	0.37
ILYOCRYPTUS SPINIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
LEPTODORA KINDTII	0.00	0.00	0.06	0.00	0.04	0.00	0.04	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	2.56	3.20	3.99	6.80	3.13	7.63	8.19	8.33
TOTAL CRUSTACEA	10.81	14.57	12.80	18.49	11.70	28.47	27.26	39.55
ROTIFERA								
CHROMOGASTER OVALIS	0.56	0.92	0.00	0.04	0.10	0.21	0.94	1.43
COLLOTHECA SPP.	0.35	1.05	0.56	0.80	1.75	3.45	3.17	6.57
CONOCHILOIDES SPP.	0.32	1.61	0.13	0.16	0.12	0.03	0.16	0.52
CONOCHILUS UNICORNIS	0.73	1.55	0.99	1.71	0.83	2.10	5.54	2.23
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
HEXARTHRA MIRA	0.03	0.07	0.02	0.01	0.04	0.20	0.16	0.54
KELLICOTTIA BOSTONIENSIS	0.00	0.00	0.43	0.14	0.14	0.12	0.00	0.00
KERATELLA SPP.	2.25	5.42	0.46	0.76	2.24	5.01	10.15	17.14
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.68	1.57	0.02	0.06	0.14	0.34	0.74	2.79
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.14	0.34	0.12	0.07
POLYARTHRA VULGARIS	0.40	0.58	0.28	0.19	0.18	0.30	0.40	1.02
PTYGURA SPP.	3.66	12.37	0.76	1.07	3.55	6.41	8.40	16.48
SYNCHAETA PECTINATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.13
TRICHOCERCA CYLINDRICA	0.33	1.15	0.01	0.09	0.10	0.11	0.38	0.75
TRICHOCERCA PLATESSA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA SIMILIS	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	12.61	30.79	3.66	5.06	9.40	18.62	30.20	49.42
TOTAL ZOOPLANKTON	23.42	45.36	16.46	23.55	21.10	47.09	57.46	88.97

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE

OCTOBER,1977

ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		509.5	508.5		508	504	
DEPTH(METERS)	23	10	24	10	10	25	10	8	34	10
CRUSTACEA										
COPEPODA										
NAUPLII	8.18	9.30	4.84	5.35	3.69	2.74	3.61	3.24	2.59	3.85
CYCLOPOID COPEPODA										
CYCLOPOIDA COPEPODID	2.35	2.47	0.75	1.02	0.42	0.65	0.98	1.28	0.64	1.37
MESOCYCLOPS EDAX	0.14	0.13	0.09	0.00	0.03	0.08	0.00	0.00	0.14	0.00
TROPOCYCLOPS PRASINUS	1.32	1.54	1.20	0.95	1.20	0.03	0.11	0.05	0.04	0.00
TOTAL CYCLOPOID	3.81	4.14	2.04	1.97	1.65	0.76	1.09	1.33	0.79	1.37
CALANOID COPEPODA										
CALANOIDA COPEPODID	3.56	4.41	1.43	1.80	1.97	1.17	0.85	0.53	1.03	1.44
DIAPTOMUS MISSISSIPPIENSIS	0.85	1.35	0.65	0.90	1.60	0.92	0.35	0.08	0.83	0.48
TOTAL CALANOID	4.41	5.76	2.08	2.70	3.57	2.09	1.20	0.61	1.86	1.92
HARPACTICOID COPEPODA										
HARPACTICOID SPP.	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00
TOTAL COPEPODA	16.40	19.20	8.96	10.02	8.92	5.59	5.92	5.18	5.24	7.14
CLADOCERA										
IMMATURE CLADOCERA	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00
ALONA CIRCUMFIMBRIATA	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	1.17	1.34	3.65	3.65	1.59	1.20	4.07	1.95	1.19	3.43
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.01	0.00
DAPHNIA AMBIGUA	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.54	0.95	0.81	1.42	0.83	0.80	1.15	0.25	0.57	1.45
HOLOPEDIUM GIBBERUM	0.07	0.14	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00
ILYOCRYPTUS SPINIFER	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
LEPTODORA KINDTII	0.02	0.06	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.00
SIDA CRYSTALLINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	1.80	2.50	3.88	5.19	2.49	2.10	5.34	2.22	1.84	5.32
TOTAL CRUSTACEA	18.20	21.70	12.84	15.21	11.41	7.69	11.26	7.40	7.08	12.46
ROTIFERA										
CHROMOGASTER OVALIS	0.26	0.50	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04
COLLOTHECA SPP.	0.66	0.68	0.29	0.54	0.36	0.34	0.30	0.32	0.00	0.24
CONOCHILOIDES SPP.	0.26	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONOCHILUS UNICORNIS	0.24	0.32	0.51	0.56	0.56	0.00	0.00	0.00	0.00	0.58
GASTROPUS STYLIFER	0.11	0.00	0.06	0.03	0.03	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.05	0.00	0.03	0.14	0.14	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.03	0.05	0.03	0.48	0.69	0.85	0.67	0.59	0.75	1.35
KERATELLA SPP.	10.73	14.59	6.60	2.05	6.61	4.61	4.01	3.50	1.60	5.00
LECANE SPP.	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.07	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA EURYPTERA	0.24	0.94	0.03	0.08	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.06	0.28	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
PTYGURA SPP.	0.21	0.35	0.25	0.16	0.17	0.04	0.00	0.13	0.00	0.00
SYNCHAETA PECTINATA	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CAPUCINA	0.17	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.34	0.37	0.03	0.03	0.00	0.03	0.00	0.00	0.00	0.00
TRICHOCERCA PLATESSA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA STYLATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00
TOTAL ROTIFERA	14.89	19.89	8.13	7.29	9.09	4.23	5.21	4.40	2.78	7.71
TOTAL ZOOPLANKTON	33.09	41.59	20.97	22.50	20.50	11.92	16.47	11.80	9.86	20.17

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
OCTOBER,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH(METERS)	25	10	24	10	32	10	30	10
CRUSTACEA								
COPEPODA								
NAUPLII	3.74	6.09	1.33	2.66	4.02	3.84	3.54	8.82
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	0.87	0.82	1.22	0.65	1.31	1.45	3.94	3.84
MESOCYCLOPS EDAX	0.55	0.08	0.43	0.03	0.07	0.00	0.05	0.00
TROPOCYCLOPS PRASINUS	0.94	0.22	1.33	0.49	0.08	0.18	0.82	0.34
TOTAL CYCLOPOID	2.36	1.12	2.98	1.17	1.46	1.63	4.81	4.18
CALANOID COPEPODA								
CALANOIDA COPEPODID	3.66	2.08	2.77	0.55	0.52	1.11	2.84	1.50
DIAPTOMUS MISSISSIPPIENSIS	3.17	1.23	2.63	0.53	0.46	0.97	1.28	0.63
TOTAL CALANOID	6.83	3.31	5.40	1.08	0.98	2.08	4.12	2.13
HARPACTICOID COPEPODA								
HARPACTICOID SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HARPACTICOIDA COPEPODID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL COPEPODA	12.93	10.52	9.71	4.91	6.46	7.55	12.47	15.13
CLADOCERA								
IMMATURE CLADOCERA	0.00	0.04	0.00	0.00	0.00	0.04	0.09	0.00
ALONA CIRCUMFIMBRIATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
BOSMINA COREGONI	2.44	3.24	1.03	1.84	1.67	3.25	3.10	5.38
CERIODAPHNIA LACUSTRIS	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.03	0.09	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.07	0.00	0.00	0.01	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	3.83	2.38	3.19	0.99	1.09	1.02	1.85	1.62
HOLOPEDIUM GIBBERUM	0.00	0.07	0.00	0.01	0.00	0.00	0.00	0.00
ILYOCRYPTUS SPINIFER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEPTODORA KINDTII	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.03
SIDA CRYSTALLINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	6.64	5.62	5.02	2.62	2.76	4.40	5.04	7.03
TOTAL CRUSTACEA	19.57	16.14	14.73	7.53	9.22	11.95	17.51	22.16
ROTIFERA								
CHROMOGASTER OVALIS	0.00	0.00	0.01	0.00	0.00	0.01	0.39	0.66
COLLOTHECA SPP.	0.69	0.47	0.31	0.63	0.28	0.75	0.42	0.57
CONOCHILOIDES SPP.	0.25	0.96	0.00	0.01	0.05	0.02	0.06	0.00
CONOCHILUS UNICORNIS	0.27	0.21	0.35	0.38	0.29	0.32	0.57	0.52
GASTROPUS STYLIFER	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.05	0.05	0.05	0.25	0.00	0.05	0.00	0.00
KELLICOTTIA BOSTONIENSIS	1.66	0.50	0.43	0.43	1.21	0.55	0.89	0.36
KERATELLA SPP.	5.32	5.74	3.86	2.33	2.21	4.05	8.13	14.27
LECANE SPP.	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLYARTHRA EURYPTERA	0.08	0.09	0.00	0.00	0.02	0.10	0.26	0.43
POLYARTHRA VULGARIS	0.00	0.09	0.03	0.08	0.01	0.00	0.04	0.05
PTYGURA SPP.	0.27	0.74	0.03	0.04	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.16	0.31	0.02	0.02	0.03	0.00	0.04	0.15
TRICHOCERCA PLATESSA	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA STYLATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
TOTAL ROTIFERA	8.79	11.25	5.18	4.16	4.13	5.96	10.88	17.12
TOTAL ZOOPLANKTON	28.36	27.39	19.91	11.69	13.35	17.91	28.39	39.28

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
NOVEMBER, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	500		502		503.5		508.5		508		504	
DEPTH(METERS)	22	10	25	10	10	20	10		8		30	10
CRUSTACEA												
COPEPODA												
NAUPLII	2.82	3.02	0.26	1.64	1.02	0.33	0.76		0.50		0.40	0.45
CYCLOPOID COPEPODA												
CYCLOPOIDA COPEPODID	1.00	0.73	0.13	0.69	0.64	0.14	0.35		0.16		0.14	0.05
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
MESOCYCLOPS EDAX	0.02	0.00	0.01	0.00	0.00	0.00	0.15		0.00		0.13	0.00
TROPOCYCLOPS PRASINUS	0.23	0.24	0.08	0.19	0.33	0.32	0.76		0.45		0.35	0.35
TOTAL CYCLOPOID	1.25	0.97	0.22	0.88	0.97	0.46	1.26		0.69		0.58	0.39
CALANOID COPEPODA												
CALANOIDA COPEPODID	2.06	1.33	0.05	0.08	0.03	0.04	0.14		0.09		0.03	0.05
DIAPTOMUS MISSISSIPPIENSIS	0.22	0.03	0.01	0.00	0.00	0.01	0.00		0.05		0.00	0.02
TOTAL CALANOID	2.28	1.36	0.06	0.08	0.03	0.05	0.14		0.14		0.03	0.07
TOTAL COPEPODA	6.35	5.35	0.54	2.60	2.02	0.84	2.16		1.33		1.01	0.82
CLADOCERA												
IMMATURE CLADOCERA	0.03	0.00	0.00	0.13	0.03	0.00	0.00		0.00		0.00	0.00
BOSMINA COREGONI	0.38	0.28	0.44	0.00	0.00	0.71	0.27		0.60		0.05	0.00
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
CHYDORUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DAPHNIA AMBIGUA	0.08	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.35	0.26	0.17	0.36	0.00	0.00	0.00		0.00		0.00	0.00
HOLOPEDIUM GIBBERUM	0.00	0.03	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
LEYDIGIA LEYDIGI												
TOTAL CLADOCERA	3.84	3.58	0.61	1.82	1.87	0.97	3.33		3.75		1.77	1.01
TOTAL CRUSTACEA	10.19	8.93	1.15	4.42	3.89	1.81	5.49		5.08		2.78	1.83
ROTIFERA												
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
CHROMOGASTER OVALIS	0.00	0.05	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
COLLOTHECA SPP.	0.76	0.16	0.78	0.15	0.52	0.27	0.35		0.00		0.10	0.13
CONOCHILOIDES SPP.	0.63	0.00	0.27	0.15	0.00	0.58	0.00		0.59		0.31	0.25
CONOCHILUS UNICORNIS	3.43	5.97	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
GASTROPUS STYLIFER	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
HEXARTHRA MIRA	0.00	0.05	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.74	0.79	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
KERATELLA SPP.	1.61	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
POLYARTHRA VULGARIS	0.00	0.73	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
PTYGURA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
SYNCHAETA PECTINATA	0.00	0.21	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TRICHOCERCA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TRICHOCERCA PORCELLUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
UNIDENTIFIED ROTIFERA	0.05	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TOTAL ROTIFERA	7.24	10.47	3.36	3.77	2.65	2.99	2.18		2.88		2.52	2.75
TOTAL ZOOPLANKTON	17.43	19.40	4.51	8.19	6.54	4.80	7.67		7.96		5.30	4.58

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
NOVEMBER,1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH(METERS)	25	10	23	10	25	10	30	10
CRUSTACEA								
COPEPODA								
NAUPLII	1.52	2.57	0.27	0.55	0.49	0.61	0.43	0.64
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	0.59	0.69	0.36	0.76	0.21	0.15	0.31	0.19
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.00	0.00	0.01	0.03	0.02	0.01	0.00	0.00
TROPOCYCLOPS PRASINUS	0.13	0.23	0.28	0.35	0.43	0.64	0.87	0.52
TOTAL CYCLOPOID	0.72	0.92	0.65	1.14	0.66	0.80	1.18	0.71
CALANOID COPEPODA								
CALANOIDA COPEPODID	0.57	0.80	0.09	0.17	0.09	0.07	0.13	0.08
DIAPTOMUS MISSISSIPPIENSIS	0.03	0.03	0.04	0.09	0.02	0.00	0.00	0.01
TOTAL CALANOID	0.60	0.83	0.13	0.26	0.11	0.07	0.13	0.09
TOTAL COPEPODA	2.84	4.32	1.05	1.95	1.26	1.48	1.74	1.44
CLADOCERA								
IMMATURE CLADOCERA	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00
BOSMINA COREGONI	0.67	1.00	0.72	2.31	0.38	0.61	1.58	0.85
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHYDORUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.00	0.02	0.02	0.01	0.06	0.05	0.03	0.01
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.12	0.13	0.55	1.25	0.34	0.19	0.76	0.38
HOLOPEDIUM GIBBERUM	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEYDIGIA LEYDIGI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	0.79	1.15	1.29	3.63	1.04	0.88	2.41	1.25
TOTAL CRUSTACEA	3.63	5.47	2.34	5.58	2.30	2.36	4.15	2.69
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COLLOTHECA SPP.	0.44	0.55	0.42	0.64	0.95	1.53	1.06	1.34
CONOCHILOIDES SPP.	0.02	0.04	0.12	0.17	0.02	0.04	0.02	0.03
CONOCHILUS UNICORNIS	1.43	1.88	2.64	3.00	2.68	4.19	4.47	6.08
GASTROPUS STYLIFER	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
HEXARTHRA MIRA	0.00	0.00	0.00	0.00	0.03	0.05	0.02	0.00
KELLICOTTIA BOSTONIENSIS	0.45	0.69	0.31	0.77	0.33	0.75	0.67	0.76
KERATELLA SPP.	0.33	0.27	0.04	0.14	0.36	0.24	0.81	0.81
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
PLOESOMA TRUNCATUM	0.02	0.08	0.01	0.05	0.08	0.08	0.30	0.42
POLYARTHRA EURYPTERA	0.00	0.00	0.00	0.00	0.05	0.11	0.82	1.10
POLYARTHRA VULGARIS	0.36	1.23	0.05	0.14	0.20	0.16	0.42	1.00
PTYGURA SPP.	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.00	0.02	0.00	0.03	0.02	0.00	0.00	0.14
TRICHOCERCA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA PORCELLUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHOTRIA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED BDELLOIDA	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNIDENTIFIED ROTIFERA	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	3.08	4.98	3.59	4.91	4.69	7.21	8.71	11.76
TOTAL ZOOPLANKTON	6.71	10.45	5.93	10.49	6.99	9.57	12.86	14.45

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
DECEMBER, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	509		512		509.5		508.5		506		504	
DEPTH(METERS)	25	10	25	10	10	20	10		10		30	10
CRUSTACEA												
COPEPODA												
NAUPLII	1.05	1.39	1.29	1.14	1.29	0.82	1.35		0.43		1.12	1.29
CYCLOPOID COPEPODA												
CYCLOPOIDA COPEPODID	0.50	0.29	0.25	0.19	0.24	0.48	0.24		0.66		0.33	0.16
CYCLOPS THOMASI	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.01	0.00		0.00		0.00	0.00
MESOCYCLOPS EDAX	0.01	0.00	0.19	0.04	0.00	0.42	0.03		0.06		0.04	0.00
TROPOCYCLOPS PRASINUS	0.55	0.34	0.68	0.29	0.41	0.40	0.48		0.23		0.34	0.22
TOTAL CYCLOPOID	1.06	0.63	1.12	0.49	0.65	1.01	0.75		0.95		0.71	0.40
CALANOID COPEPODA												
CALANOIDA COPEPODID	0.22	0.25	0.09	0.04	0.04	0.32	0.00		0.06		0.04	0.00
DIAPTOMUS MISSISSIPPIENSIS	0.02	0.00	0.06	0.00	0.02	0.01	0.00		0.05		0.01	0.00
TOTAL CALANOID	0.24	0.05	0.15	0.04	0.06	0.03	0.00		0.11		0.05	0.00
HARPACTICOID COPEPODA												
HARPACTICOID SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TOTAL HARPACTICOID	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TOTAL COPEPODA	2.35	2.07	2.46	1.67	2.00	1.86	2.10		1.49		1.88	1.69
CLADOCERA												
IMMATURE CLADOCERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.01
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
BOSMINA COREGONI	0.77	0.68	1.43	0.63	1.04	0.84	0.56		3.25		1.40	0.96
CERIODAPHNIA LACUSTRIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
CERIODAPHNIA RETICULATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DAPHNIA AMBIGUA	0.03	0.00	0.11	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DAPHNIA LAEVIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.16	0.34	0.35	0.20	0.52	0.32	0.13		0.75		0.24	0.44
HOLOPEDIUM GIBBERUM	0.05	0.03	0.04	0.03	0.03	0.01	0.00		0.00		0.00	0.00
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TOTAL CLADOCERA	1.01	1.00	1.60	0.92	1.62	1.43	0.75		4.48		1.67	0.86
TOTAL CRUSTACEA	3.36	3.07	4.06	2.59	3.62	3.29	2.85		5.97		2.95	1.95
ROTIFERA												
ASPLANCHNA PRIODONTA	0.04	0.01	0.35	0.17	0.01	0.00	0.00		0.01		0.00	0.00
CHROMOGASTER OVALIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
COLLOTHECA SPP.	0.72	0.40	0.40	0.00	0.00	0.32	0.35		0.40		0.00	0.00
CONOCHILOIDES SPP.	0.85	0.77	0.77	0.43	0.03	0.05	0.06		0.38		0.03	0.00
CONOCHILUS UNICORNIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
DIPLEUCHLANIS SPP.	0.05	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
HEXARTHRA MIRA	0.83	0.68	0.17	0.08	0.00	0.00	0.00		0.00		0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.14	0.17	0.17	0.04	0.27	0.05	0.15		0.00		0.00	0.00
KERATELLA SPP.	0.00	0.00	0.00	0.00	0.59	0.00	0.00		0.00		0.00	0.00
LECANE SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
PLOESOMA TRUNCATUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
POLYARTHRA EURYPTERA	1.07	0.85	0.17	0.00	0.00	0.00	0.00		0.00		0.00	0.00
POLYARTHRA VULGARIS	0.16	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
PTYGURA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
SYNCHAETA PECTINATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TRICHOCERCA CAPUCINA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
UNIDENTIFIED BDELLOIDA	0.02	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
TOTAL ROTIFERA	8.54	7.71	2.55	2.73	2.36	1.03	1.24		1.45		0.94	0.87
TOTAL ZOOPLANKTON	11.90	10.78	6.61	5.32	5.68	4.32	4.09		7.42		3.89	2.82

ZOOPLANKTON STANDING CROP IN LAKE KEOWEE
DECEMBER, 1977
ALL VALUES ARE EXPRESSED IN NUMBERS PER LITER

LOCATION	501		503		505		506	
DEPTH(METERS)	25	10	25	10	30	10	30	10
CRUSTACEA								
COPEPODA								
NAUPLII	1.38	1.56	0.76	1.41	1.33	1.18	1.08	1.41
CYCLOPOID COPEPODA								
CYCLOPOIDA COPEPODID	0.29	0.20	0.46	0.49	0.28	0.37	0.41	0.71
CYCLOPS THOMASI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EUCYCLOPS AGILIS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MESOCYCLOPS EDAX	0.00	0.00	0.14	0.15	0.03	0.00	0.00	0.00
TROPOCYCLOPS PRASINUS	0.25	0.25	0.64	0.76	0.13	0.23	0.22	0.25
TOTAL CYCLOPOID	0.54	0.45	1.24	1.40	0.44	0.60	0.63	0.96
CALANOID COPEPODA								
CALANOIDA COPEPODID	0.03	0.04	0.05	0.08	0.08	0.03	0.04	0.00
DIAPTOMUS MISSISSIPPIENSIS	0.03	0.01	0.02	0.02	0.00	0.00	0.02	0.00
TOTAL CALANOID	0.06	0.05	0.07	0.10	0.08	0.03	0.06	0.00
HARPACTICOIDA COPEPODA								
HARPACTICOID SPP.	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00
TOTAL HARPACTICOID	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00
TOTAL COPEPODA	2.00	2.07	2.07	2.92	1.85	1.81	1.77	2.37
CLADOCERA								
IMMATURE CLADOCERA	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00
DISPARALONA ACUTIROSTRIS	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
BOSMINA COREGONI	0.14	0.13	2.25	2.43	0.29	0.20	1.42	0.74
CERIODAPHNIA LACUSTRIS	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
CERIODAPHNIA RETICULATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAPHNIA AMBIGUA	0.02	0.02	0.37	0.12	0.00	0.01	0.04	0.06
DAPHNIA LAEVIS	0.00	0.01	0.02	0.01	0.00	0.00	0.00	0.00
DAPHNIA PARVULA	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
DIAPHANOSOMA LEUCHTENBERGIANUM	0.08	0.04	0.32	1.02	0.25	0.10	0.30	0.13
HOLOPEDIUM GIBBERUM	0.00	0.00	0.01	0.03	0.00	0.02	0.01	0.02
LEPTODORA KINDTII	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CLADOCERA	0.25	0.21	3.62	3.61	0.54	0.33	1.67	0.95
TOTAL CRUSTACEA	2.25	2.28	5.69	6.53	2.39	2.14	3.44	3.32
ROTIFERA								
ASPLANCHNA PRIODONTA	0.00	0.00	0.12	0.03	0.01	0.08	0.09	0.00
CHROMOGASTER OVALIS	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.13
COLLOTHECA SPP.	0.28	0.38	0.32	0.60	0.31	0.31	0.30	0.40
CONOCHILOIDES SPP.	0.06	0.05	0.08	0.09	0.02	0.01	0.04	0.02
CONOCHILUS UNICORNIS	0.98	1.16	0.44	0.34	0.09	0.10	0.68	0.33
DIPLEUCHLANIS SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEXARTHRA MIRA	0.04	0.01	0.10	0.00	0.00	0.00	0.00	0.00
KELLICOTTIA BOSTONIENSIS	0.10	0.14	0.18	0.19	0.10	0.10	0.11	0.12
KERATELLA SPP.	0.63	0.49	0.35	0.37	1.15	1.17	1.90	1.28
LECANE SPP.	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SPP.	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
MACROCHAETUS SUBQUADRATUS	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
MONOSTYLA SPP.	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
PLOESOMA HUDSONI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLOESOMA TRUNCATUM	0.20	0.37	0.12	0.00	0.02	0.00	0.08	0.16
POLYARTHRA EURYPTERA	0.04	0.11	0.03	0.06	0.00	0.00	0.00	0.00
POLYARTHRA VULGARIS	0.47	0.64	0.04	0.07	0.39	0.25	0.95	1.41
PTYGURA SPP.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SYNCHAETA PECTINATA	0.11	0.14	0.00	0.00	0.00	0.03	0.18	0.52
TRICHOCERCA CAPUCINA	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TRICHOCERCA CYLINDRICA	0.00	0.00	0.01	0.04	0.01	0.01	0.14	0.06
UNIDENTIFIED BDELLOIDA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ROTIFERA	2.91	3.89	1.61	1.76	2.10	2.07	4.07	4.93
TOTAL ZOOPLANKTON	5.16	6.17	7.30	8.29	4.49	4.21	7.51	8.25

Leptodora kindtii and Chaoborus spp. standing crop in Lake Keowee from sample enumerations. All values are expressed as number of organisms per cubic meter. January through December, 1977.

Location		500.0		501.0		502.0		503.0		508.0	508.5		504.0		505.0		506.0		509.5
Depth (m)		B	10	B	10	B	10	B	10	B	B	10	B	10	B	10	B	10	B
Leptodora kindtii·m^{-3}	Jan	310	616	14		70		785	157	564	126	41	75	31	94	37	105	582	63
	Feb			55			34	97						74			59	131	
	Mar					35	72	25	73		82	33	60	78	72	49	309	360	35
	Apr	1781	1801	1564	837	721	1454	1717	2336	1644	1589	2353	1053	1799	961	3508	1440	2628	597
	May	608	713	1959	2611	1115	2007	512	784	795	210		528	1188	58	371	505	3441	191
	Jun	1147	1326	862	654	242	464	120	250	70	169	236	81	153	173	630	446	1529	101
	Jul	556	948	261	1062	105	100	196	84	59	175	203	22	97	444	983	1153	1895	75
	Aug	450	920	285	398	101	142	127	111	116	37	64	33	1186	649	1113	730	467	
	Sep	138	135	106	164	283	135	2416	629	158	910	1289	696	388	611	1514	2769	1943	
	Oct	3538	2188	5802	776		661	1905	170	359	209	191	143		67	291	839	665	892
	Nov	947	212	158	126	65		19		93							72		37
	Dec	216	208				36	15	66						14		27	36	
Chaoborus spp.·m^{-3}	Jan							20	40		65		28		37		18		
	Feb										36		40						
	Mar			71		19		146									91		
	Apr	331	36			188		46					65				66	47	
	May	277	713	851	1548	867	1469	1115	780				574	270	702		563	820	
	Jun	1152	566	421	124	453	1206	208	296	97	190	540	187	730	550		630	1904	66
	Jul	787	853	627	169	646	368	530	112	58	718	261	552	332	1105		1033	326	149
	Aug	996	794	200	364	308	296	318	56	99	130	412	352	454	587	466	903	737	218
	Sep	4260	2630	532	430	1870	1752	1028	1016	522	883	1315	782	1577	632	956	2417	2034	108
	Oct	612	274	1190	70		238	2585	510	190	1046	138	1058	256	744	351	916	740	161
	Nov	56	36	19							167		341	200	142	215	96	102	
	Dec		34			65		31				33	38		55		40	36	

APPENDIX B

SECTION 4

PHYTOPLANKTON POPULATION DATA

1.5 ENTRAINMENT STUDY

OCONEE NUCLEAR STATION

YEAR 1977

(PAGES 1-23 CONTAINED IN ANNUAL REPORT 1976)

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.0
TIME: 1010

SAMPLE TYPE: INT
SAMPLE DEPTH: 0.1 M

SAMPLE DATE: 01/12/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	58.0	34.5	32.30	28.3
ANKISTRODESMUS FALCATUS	2.6	1.5	0.14	0.1
ANKISTRODESMUS FUSIFORMIS	1.5	0.8	0.16	0.1
ARTHRODESMUS SUBULATUS	2.0	1.1	11.97	10.5
CLOSTERIUM CERATIUM	2.0	1.1	1.18	1.0
COCCOMONAS SPP.	0.5	0.2	0.22	0.2
COELASTRUM CAMBRICUM	0.5	0.2	3.97	3.4
DICTYOSPHAERIUM PULCHELLUM	0.5	0.2	0.40	0.3
GOLENKINIA RADIATA	0.5	0.2	0.08	0.0
KIRCHNERIELLA SPP.	1.0	0.5	0.01	0.0
MONORAPHIDIUM CONTORTUM	4.6	2.7	0.20	0.1
MONORAPHIDIUM SETIFORME	30.1	17.9	5.24	4.6
MOUGEOTIA SPP.	0.5	0.2	2.11	1.8
OOCYSTIS PUSILLA	0.5	0.2	0.03	0.0
SCENEDESMUS DENTICULATUS	1.5	0.8	0.29	0.2
SCENEDESMUS QUADRICAUDA	2.0	1.1	0.29	0.2
STAURASTRUM PENTACERUM	0.5	0.2	5.70	5.0
COCCOID GREENS	7.2	4.2	0.23	0.2
BACILLARIOPHYCEAE	89.2	53.1	73.45	64.5
CYCLOTELLA STELLIGERA	3.6	2.1	1.93	1.6
EUNOTIA SP. A	11.9	7.1	3.79	3.3
MELOSIRA DISTANS V. A	8.8	5.2	1.63	1.4
MELOSIRA ITALICA VAR. TENUISSIMA	18.2	10.8	10.15	8.9
NAVICULA NOTHA	1.0	0.5	0.37	0.3
RHIZOSOLENIA ERIENSIS	10.4	6.2	38.79	34.1
SYNEDRA ULNA	0.5	0.2	2.21	1.9
SYNEDRA SP. A	34.8	20.7	14.56	12.8
CHRYSOPHYCEAE	2.5	1.4	2.71	2.3
CHROMULINA SPP.	0.5	0.2	0.10	0.0
MALLOMONAS ACAROIDES	1.0	0.5	1.25	1.1
MALLOMONAS PSEUDOCORONATA	1.0	0.5	1.35	1.1
CRYPTOPHYCEAE	13.9	8.2	3.61	3.1
CHROOMONAS ACUTA	6.2	3.6	0.69	0.6
CHROOMONAS REFLEXA	2.0	1.1	0.84	0.7
CRYPTOMONAS OVATA	0.5	0.2	0.53	0.4
CRYPTOMONAS PHASEOLUS	5.2	3.1	1.54	1.3
DINOPHYCEAE	0.5	0.2	1.00	0.8
PERIDINIUM PUSILLUM	0.5	0.2	1.00	0.8
UNKNOWN	3.5	2.0	0.63	0.5
0774-2-22	2.0	1.1	0.59	0.5
0974-2-07	1.5	0.8	0.04	0.0
SAMPLE TOTALS:	167.6	99.7	113.73	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.6 SAMPLE TYPE: POS SAMPLE DATE: 01/12/77
TIME: 0850 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY x 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	53.5	36.7	14.26	13.4
ANKISTRODESMUS FALCATUS	1.0	0.6	0.05	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	1.3	0.21	0.2
ARTHRODESMUS SUBULATUS	0.5	0.3	2.99	2.8
CLOSTERIUM CERATIUM	1.0	0.6	0.59	0.5
MONORAPHIDIUM CONTORTUM	1.5	1.0	0.06	0.0
MONORAPHIDIUM SETIFORME	32.7	22.5	5.70	5.4
MOUGEOTIA SPP.	1.5	1.0	2.11	2.0
PLANKTOSPHAERIA GELATINOSA	0.5	0.3	1.01	0.9
QUADRIGULA CLOSTERIOIDES	1.0	0.6	0.37	0.3
SCENEDESMUS DENTICULATUS	1.0	0.6	0.19	0.1
SCENEDESMUS QUADRICAUDA	1.0	0.6	0.14	0.1
TETRAEDRON MINIMUM	0.5	0.3	0.47	0.4
COCCOID GREENS	9.3	6.4	0.29	0.2
BACILLARIOPHYCEAE	66.7	45.8	60.76	57.5
CYCLOTELLA STELLIGERA	4.1	2.8	2.20	2.0
CYCLOTELLA SPP.	1.0	0.6	0.48	0.4
FUNOTIA SP. A	17.6	12.1	5.60	5.3
MELOSIRA DISTANS V. A	3.1	2.1	0.57	0.5
RHIZOSOLENIA ERIENSIS	9.8	6.7	36.85	34.9
SYNEDRA ULNA	0.5	0.3	2.21	2.0
SYNEDRA SP. A	30.6	21.0	12.82	12.1
CHRYSOPHYCEAE	2.5	1.7	1.09	1.0
CHROMULINA SPP.	2.0	1.3	0.42	0.4
MALLOMONAS PSEUDOCORONATA	0.5	0.3	0.67	0.6
CRYPTOPHYCEAE	13.9	9.5	6.38	6.0
CHROOMONAS ACUTA	3.1	2.1	0.34	0.3
CHROOMONAS REFLEXA	1.0	0.6	0.42	0.3
CRYPTOMONAS OVATA	3.6	2.4	3.76	3.5
CRYPTOMONAS PHASEOLUS	6.2	4.2	1.85	1.7
DINOPHYCEAE	4.6	3.1	22.00	20.8
PERIDINIUM ACICULIFERUM	0.5	0.3	12.94	12.2
PERIDINIUM INCONSPICUUM	1.5	1.0	4.04	3.8
PERIDINIUM PUSILLUM	2.6	1.7	5.02	4.7
UNKNOWN	4.1	2.8	0.96	0.9
0774-2-22	2.6	1.7	0.74	0.7
0774-2-28	0.5	0.3	0.19	0.1
0974-2-07	1.0	0.6	0.02	0.0
SAMPLE TOTALS:	145.3	99.8	105.48	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.0
TIME: 0955

SAMPLE TYPE: INT
SAMPLE DEPTH: 0.1 M

SAMPLE DATE: 03/16/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	187.2	35.9	41.08	11.8
ANKISTRODESMUS FALCATUS	6.2	1.1	0.34	0.0
ANKISTRODESMUS FUSIFORMIS	2.0	0.3	0.21	0.0
COSMARIUM SPP.	2.0	0.3	1.13	0.3
CRUCIGENIA TETRAPEDIA	4.1	0.7	0.55	0.1
DICTYOSPHAERIUM EHRENBERGIANUM	8.3	1.5	1.88	0.5
MONORAPHIDIUM SETIFORME	73.1	14.0	12.72	3.6
MOUGEOTIA SPP.	10.4	2.0	14.19	4.1
OOCYSTIS PARVA	2.0	0.3	0.30	0.0
OOCYSTIS SPP.	6.2	1.1	0.76	0.2
SCENEDESMUS BIJUGA	2.0	0.3	0.18	0.0
TETRAEDRON SPP.	2.0	0.3	1.53	0.4
COCCOID GREENS	60.6	11.6	1.93	0.5
UNIDENTIFIED CHLOROPHYCEAE	8.3	1.5	5.31	1.5
BACILLARIOPHYCEAE	135.3	25.9	143.68	41.6
ASTERIONELLA FORMOSA	25.0	4.8	13.39	3.8
CYCLOTELLA STELLIGERA	10.4	2.0	5.54	1.6
EUNOTIA SP. A	2.0	0.3	0.66	0.1
MELOSIRA DISTANS V. A	33.4	6.4	6.18	1.7
MELOSIRA ITALICA VAR. TENUISSIMA	4.1	0.7	2.33	0.6
RHIZOSOLENIA ERIENSIS	27.1	5.2	101.34	29.3
SYNEDRA RADIANS	6.2	1.1	2.86	0.8
SYNEDRA SP. A	27.1	5.2	11.35	3.2
CHRYSOPHYCEAE	106.3	20.4	27.97	8.0
CHROMULINA SPP.	39.7	7.6	8.06	2.3
MALLOMONAS ACAROIDES	2.0	0.3	2.52	0.7
MALLOMONAS SPP.	2.0	0.3	2.71	0.7
OCHROMONAS SPP.	35.5	6.8	10.76	3.1
UNIDENTIFIED CHRYSOPHYCEAE	27.1	5.2	3.91	1.1
HAPTOPHYCEAE	4.1	0.7	0.77	0.2
CHRYSOCHROMULINA PARVA	4.1	0.7	0.77	0.2
CRYPTOPHYCEAE	58.3	11.1	18.27	5.2
CHROOMONAS ACUTA	41.8	8.0	4.63	1.3
CRYPTOMONAS OVATA	6.2	1.1	6.48	1.8
CRYPTOMONAS PHASEOLUS	6.2	1.1	1.86	0.5
CRYPTOMONAS REFLEXA	4.1	0.7	5.28	1.5
DINOPHYCEAE	20.7	3.9	111.67	32.3
PERIDINIUM PUSILLUM	4.1	0.7	8.07	2.3
PERIDINIUM WISCONSINENSE	2.0	0.3	75.19	21.8
UNIDENTIFIED DINOPHYCEAE	14.6	2.8	28.41	8.2
UNKNOWN	8.1	1.5	1.41	0.4
0574-2-03	2.0	0.3	0.11	0.0
0974-2-07	2.0	0.3	0.05	0.0
1074-2-02	4.1	0.7	1.24	0.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
SAMPLE TOTALS:	520.0	99.8	344.88	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.6
TIME: 0900

SAMPLE TYPE: POS
SAMPLE DEPTH: 10.0 M

SAMPLE DATE: 03/16/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	141.2	32.4	29.32	11.9
ANKISTRODESMUS FALCATUS	5.2	1.1	0.28	0.1
ARTHRODESMUS SUBULATUS	1.0	0.2	6.01	2.4
ASTEROCOCCUS LIMNETICUS	1.0	0.2	1.54	0.6
CHLAMYDOMONAS SPP.	2.0	0.4	0.17	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	1.0	0.2	0.10	0.0
CRUCIGENIA TETRAPEDIA	2.0	0.4	0.18	0.0
DICTYOSPHAERIUM EHRENBERGIANUM	4.1	0.9	0.75	0.3
DICTYOSPHAERIUM PULCHELLUM	1.0	0.2	0.10	0.0
MONORAPHIDIUM BRAUNII	1.0	0.2	0.13	0.0
MONORAPHIDIUM SETIFORME	49.1	11.3	8.54	3.4
OOCYSTIS SPP.	12.5	2.8	0.76	0.3
SCENEDESMUS BRASILIENSIS	1.0	0.2	0.20	0.0
SCENEDESMUS QUADRICAUDA	2.0	0.4	0.19	0.0
SCENEDESMUS SPP.	2.0	0.4	0.30	0.1
SELENASTRUM MINUTUM	1.0	0.2	0.03	0.0
COCCOID GREENS	41.8	9.6	1.33	0.5
UNIDENTIFIED CHLOROPHYCEAE	13.5	3.1	8.64	3.5
BACILLARIOPHYCEAE	110.3	25.3	104.37	42.6
ASTERIONELLA FORMOSA	13.5	3.1	7.25	2.9
CYCLOTELLA STELLIGERA	4.1	0.9	2.21	0.9
MELOSIRA DISTANS V. A	43.8	10.0	8.11	3.3
NITZSCHIA SPP.	5.2	1.1	2.82	1.1
RHIZOSOLENIA ERIENSIS	19.8	4.5	74.05	30.2
SYNEDRA RADIANS	10.4	2.3	4.77	1.9
SYNEDRA SP. A	9.4	2.1	3.93	1.6
SYNEDRA SPP.	4.1	0.9	1.19	0.4
CHRYSOPHYCEAE	40.4	9.2	11.17	4.5
CHROMULINA SPP.	12.5	2.8	2.54	1.0
KEPHYRION SPP.	1.0	0.2	0.09	0.0
MALLOMONAS ACAROIDES	2.0	0.4	2.52	1.0
MALLOMONAS SPP.	2.0	0.4	2.71	1.1
UNIDENTIFIED CHRYSOPHYCEAE	22.9	5.2	3.31	1.3
HAPTOPHYCEAE	6.2	1.4	1.16	0.4
CHRYSOCHROMULINA PARVA	6.2	1.4	1.16	0.4
CRYPTOPHYCEAE	71.9	16.5	21.54	8.7
CHROOMONAS ACUTA	44.9	10.3	4.98	2.0
CRYPTOMONAS OVATA	11.4	2.6	11.88	4.8
CRYPTOMONAS PHASEOLUS	15.6	3.5	4.67	1.9
DINOPHYCEAE	36.4	8.3	73.68	30.1
PERIDINIUM INCONSPICUUM	4.1	0.9	10.84	4.4
PERIDINIUM PUSILLUM	6.2	1.4	12.10	4.9
UNIDENTIFIED DINOPHYCEAE	26.1	6.0	50.73	20.7
UNKNOWN	28.0	6.4	3.27	1.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
0574-2-02	2.0	0.4	0.15	0.0
0574-2-03	8.3	1.9	0.45	0.1
0574-2-04	16.7	3.8	2.62	1.0
1074-2-04	1.0	0.2	0.04	0.0
SAMPLE TOTALS:	434.4	99.8	244.54	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.0 SAMPLE TYPE: INT SAMPLE DATE: 05/11/77
TIME: 0930 SAMPLE DEPTH: 0.1 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	18.7	13.1	1.28	0.8
MOUGEOTIA SPP.	0.5	0.3	0.70	0.4
COCCOID GREENS	18.2	12.7	0.58	0.3
BACILLARIOPHYCEAE	49.1	34.4	44.12	30.1
ASTERIONELLA FORMOSA	2.6	1.8	1.38	0.9
CYCLOTELLA STELLIGERA	8.3	5.8	4.41	3.0
EUNOTIA SP. A	1.0	0.7	0.32	0.2
MELOSIRA DISTANS V. A	7.8	5.4	1.44	1.0
MELOSIRA ITALICA VAR. TENUISSIMA	10.9	7.6	6.09	4.2
NAVICULA NOTHA	1.0	0.7	0.37	0.3
RHIZOSOLENIA ERIENSIS	4.6	3.2	17.45	11.9
SYNEDRA TENERA	0.5	0.3	0.15	0.1
SYNEDRA SP. A	10.4	7.3	4.34	3.0
TABELLARIA FENESTRATA	2.0	1.4	8.13	5.5
CHRYSOPHYCEAE	2.0	1.4	1.42	1.0
CHROMULINA SPP.	0.5	0.3	0.10	0.1
DINOBRYON BAVARICUM	0.5	0.3	0.06	0.0
MALLOMONAS ACAROIDES	1.0	0.7	1.25	0.8
CRYPTOPHYCEAE	33.7	23.6	18.20	12.4
CHROOMONAS ACUTA	23.4	16.4	3.05	2.1
CHROOMONAS REFLEXA	0.5	0.3	0.21	0.1
CRYPTOMONAS OVATA	3.1	2.2	2.26	1.5
CRYPTOMONAS PHASEOLUS	6.7	4.7	12.03	8.2
MYXOPHYCEAE	0.5	0.3	0.34	0.2
ANABAENA SPP.	0.5	0.3	0.03	0.0
DINOPHYCEAE	34.8	24.4	90.03	61.4
PERIDINIUM INCONSPICUUM	34.3	24.0	89.02	60.8
UNIDENTIFIED DINOPHYCEAE	0.5	0.3	1.00	0.7
UNKNOWN	3.6	2.5	1.03	0.7
0774-2-22	3.6	2.5	1.03	0.7
SAMPLE TOTALS:	142.4	99.9	146.30	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.6 SAMPLE TYPE: POS SAMPLE DATE: 05/11/77
TIME: 0850 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	21.6	15.3	15.86	10.0
ANKISTRODESMUS FALCATUS	0.5	0.3	0.02	0.0
ARTHRODESMUS SUBULATUS	0.6	0.4	4.00	2.5
GYROMITUS CORDIFORMIS	1.2	0.8	1.05	0.6
MOUGEOTIA SPP.	2.2	1.5	6.12	3.9
PLANKTOSPHAERIA GELATINOSA	1.0	0.7	1.01	0.6
SCENEDESMUS QUADRICAUDA	1.3	0.9	0.13	0.0
STAURASTRUM CURVATUM	0.6	0.4	3.05	1.9
COCCOID GREENS	14.2	10.1	0.45	0.2
BACILLARIOPHYCEAE	50.4	35.8	35.65	22.7
CYCLOTELLA STELLIGERA	9.0	6.4	4.79	3.0
EUNOTIA SPP.	0.5	0.3	1.53	0.9
MELOSIRA DISTANS V. A	8.3	5.9	1.54	0.9
MELOSIRA ITALICA VAR. TENUISSIMA	16.3	11.6	9.10	5.8
NITZSCHIA LORENZIANA VAR. SUBTILIS	0.6	0.4	3.48	2.2
RHIZOSOLENIA ERIENSIS	2.6	1.8	9.69	6.1
SYNEDRA SP. A	13.1	9.3	5.51	3.5
CHRYSOPHYCEAE	1.3	0.9	1.67	1.0
MALLOMONAS ACAROIDES	1.3	0.9	1.67	1.0
CRYPTOPHYCEAE	21.8	15.5	7.66	4.8
CHROOMONAS ACUTA	11.6	8.2	1.29	0.8
CRYPTOMONAS OVATA	4.5	3.2	4.66	2.9
CRYPTOMONAS PHASEOLUS	5.7	4.0	1.70	1.0
DINOPHYCEAE	36.6	26.0	93.64	59.6
PERIDINIUM INCONSPICUUM	34.0	24.2	88.26	56.2
PERIDINIUM PUSILLUM	1.3	0.9	2.68	1.7
UNIDENTIFIED DINOPHYCEAE	1.3	0.9	2.69	1.7
UNKNOWN	8.6	6.1	2.34	1.4
0774-2-22	8.1	5.7	2.32	1.4
1074-2-04	0.5	0.3	0.02	0.0
SAMPLE TOTALS:	140.3	99.8	156.85	99.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.0 SAMPLE TYPE: INT SAMPLE DATE: 07/13/77
TIME: 0950 SAMPLE DEPTH: 0.1 M

CLASS / SPECIES NAME	DENSITY X 1.0E+05 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	89.0	17.2	26.62	18.4
ANKISTRODESMUS FUSIFORMIS	1.0	0.1	0.21	0.1
ARTHRODESMUS SUBULATUS	1.0	0.1	6.01	4.1
CHLAMYDOMONAS SPP.	1.0	0.1	0.08	0.0
COSMARIUM SPP.	1.0	0.1	0.56	0.3
CRUCIGENIA APICULATA	1.0	0.1	1.15	0.8
CRUCIGENIA TETRAPEDIA	28.2	5.4	2.17	1.5
DACTYLOCOCCUS INFUSIONUM	7.3	1.4	11.48	7.9
GYROMITUS CORDIFORMIS	1.0	0.1	0.90	0.6
MONORAPHIDIUM CONTORTUM	1.0	0.1	0.04	0.0
MONORAPHIDIUM SAXATILE	1.0	0.1	0.11	0.0
MONORAPHIDIUM SETIFORME	1.0	0.1	0.16	0.1
MOUGEOTIA SPP.	1.0	0.2	1.41	0.9
OOCYSTIS SUBMARINA	1.0	0.1	0.20	0.1
OOCYSTIS SPP.	4.1	0.7	0.31	0.2
SCENEDESMUS BIJUGA	2.0	0.3	0.18	0.1
SCENEDESMUS SPP.	1.0	0.1	0.07	0.0
STAURASTRUM PARADOXUM VAR. PARVUM	1.0	0.1	0.38	0.2
COCCOID GREENS	34.4	6.6	1.10	0.7
BACILLARIOPHYCEAE	114.4	22.2	66.32	46.0
ACHNANTHES MINUTISSIMA	2.0	0.3	0.22	0.2
ASTERIONELLA FORMOSA	9.4	1.8	5.02	3.4
CYCLOTELLA STELLIGERA	17.7	3.4	9.43	6.5
MELOSIRA DISTANS VAR. ALPIGENA	1.0	0.1	0.22	0.1
MELOSIRA DISTANS V. A	49.1	9.5	9.08	6.3
MELOSIRA ITALICA	6.2	1.2	6.65	4.7
MELOSIRA ITALICA VAR. TENUISSIMA	13.5	2.6	7.58	5.2
NAVICULA CRYPTOCEPHALA	1.0	0.1	0.38	0.2
NITZSCHIA SPP.	5.2	1.0	2.82	1.9
RHIZOSOLENIA ERIENSIS	6.2	1.2	23.38	16.2
SYNEDRA SP. A	3.1	0.6	1.31	0.9
CHRYSOPHYCEAE	14.4	2.7	4.81	3.3
CHROMULINA SPP.	3.1	0.6	0.63	0.4
DINOBRYON SERTULARIA	1.0	0.1	1.22	0.8
MALLOMONAS ACAROIDES	1.0	0.1	1.26	0.8
OCHROMONAS SPP.	2.0	0.3	0.63	0.4
UNIDENTIFIED CHRYSOPHYCEAE	7.3	1.4	1.05	0.7
HAPTOPHYCEAE	1.0	0.1	0.19	0.1
CHRYSOCHROMULINA PARVA	1.0	0.1	0.19	0.1
CRYPTOPHYCEAE	35.4	6.8	13.96	9.7
CHROOMONAS ACUTA	17.7	3.4	1.97	1.3
CRYPTOMONAS EROSA	1.0	0.1	1.63	1.1
CRYPTOMONAS OVATA	7.3	1.4	7.56	5.2
CRYPTOMONAS PHASEOLUS	9.4	1.8	2.80	1.9

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
MYXOPHYCEAE	12.4	2.3	0.91	0.6
ANACYSTIS INCERTA	2.0	0.3	0.03	0.0
ANACYSTIS MONTANA	9.4	1.8	0.79	0.5
PHORMIDIUM ANGUSTISSIMA	1.0	0.1	0.08	0.0
DINOPHYCEAE	2.0	0.3	23.95	16.6
PERIDINIUM DEFLANDREI	2.0	0.3	23.95	16.6
UNKNOWN	245.4	47.7	6.98	4.8
0574-2-03	4.1	0.7	0.22	0.1
0974-2-07	241.3	46.9	6.75	4.7
SAMPLE TOTALS:	514.0	99.7	143.78	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.6 SAMPLE TYPE: POS SAMPLE DATE: 07/13/77
TIME: 0900 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	127.3	28.1	22.51	10.9
ANKISTRODESMUS FALCATUS	1.0	0.2	0.05	0.0
ARTHRODESMUS SUBULATUS	1.0	0.2	6.01	2.9
ARTHRODESMUS SPP.	2.0	0.4	0.90	0.4
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.4	0.21	0.1
COSMARIUM PHASEOLUS F. MINOR	1.0	0.2	1.58	0.7
COSMARIUM SPP.	1.0	0.2	0.56	0.2
CRUCIGENIA QUADRATA	1.0	0.2	0.06	0.0
CRUCIGENIA TETRAPEDIA	17.7	3.9	1.47	0.7
GLOEOCYSTIS VESICULOSA	1.0	0.2	0.62	0.4
GYROMITUS CORDIFORMIS	2.0	0.4	1.80	0.8
MONORAPHIDIUM CONTORTUM	2.0	0.4	0.08	0.0
MONORAPHIDIUM SAXATILE	2.0	0.4	0.23	0.1
OOCYSTIS SPP.	4.1	0.9	0.25	0.1
SCENEDESMUS ACUMINATUS	1.0	0.2	0.25	0.1
SCENEDESMUS BIJUGA	1.0	0.2	0.09	0.0
SCENEDESMUS QUADRICAUDA	4.1	0.9	0.39	0.1
SCENEDESMUS SPP.	1.0	0.2	0.15	0.0
SELENASTRUM MINUTUM	4.1	0.9	0.15	0.0
STAURASTRUM PARADOXUM VAR. A	1.0	0.2	4.89	2.3
COCCOID GREENS	77.3	17.1	2.47	1.2
BACILLARIOPHYCEAE	114.4	25.2	68.00	33.2
ACHNANTHES MICROCEPHALA	2.0	0.4	0.25	0.1
ASTERIONELLA FORMOSA	3.1	0.6	1.67	0.8
CYCLOTELLA STELLIGERA	18.8	4.1	9.98	4.8
EUNOTIA SPP.	1.0	0.2	3.08	1.5
MELOSIRA DISTANS V. A	59.5	13.1	11.01	5.4
MELOSIRA ITALICA	3.1	0.6	3.42	1.6
MELOSIRA ITALICA VAR. TENUISSIMA	9.4	2.0	5.24	2.5
NAVICULA CRYPTOCEPHALA	1.0	0.2	0.38	0.1
NITZSCHIA LORENZIANA VAR. SUBTILIS	1.0	0.2	5.23	2.5
NITZSCHIA SPP.	3.1	0.6	1.69	0.8
RHIZOSOLENIA ERIENSIS	6.2	1.3	23.38	11.4
SYNEDRA SP. A	6.2	1.3	2.62	1.2
CHRYSOPHYCEAE	24.9	5.5	6.72	3.2
CHROMULINA SPP.	1.0	0.2	0.21	0.1
MALLOMONAS ACAROIDES	2.0	0.4	2.52	1.2
OCHROMONAS SPP.	5.2	1.1	1.58	0.7
UNIDENTIFIED CHRYSOPHYCEAE	16.7	3.6	2.40	1.1
HAPTOPHYCEAE	2.0	0.4	0.38	0.1
CHRYSOCHROMULINA PARVA	2.0	0.4	0.38	0.1
CRYPTOPHYCEAE	43.6	9.6	9.93	4.8
CHROOMONAS ACUTA	20.9	4.6	2.31	1.1
CRYPTOMONAS OVATA	1.0	0.2	1.08	0.5

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CRYPTOMONAS PHASEOLUS	21.9	4.8	6.53	3.2
MYXOPHYCEAE	6.2	1.3	0.40	0.1
ANACYSTIS MONTANA	6.2	1.3	0.40	0.1
DINOPHYCEAE	12.2	2.6	92.30	45.2
PERIDINIUM CINCTUM	1.0	0.2	28.83	14.1
PERIDINIUM DEFLANDREI	4.1	0.9	47.91	23.4
PERIDINIUM INCONSPICUUM	2.0	0.4	5.42	2.6
PERIDINIUM PUSILLUM	1.0	0.2	2.01	0.9
UNIDENTIFIED DINOPHYCEAE	4.1	0.9	8.11	3.9
UNKNOWN	121.0	26.7	3.66	1.7
0574-2-03	1.0	0.2	0.05	0.0
0974-2-07	118.0	26.1	3.30	1.6
0976-2-01	2.0	0.4	0.30	0.1
SAMPLE TOTALS:	451.8	99.8	203.93	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.0 SAMPLE TYPE: INT SAMPLE DATE: 10/12/77
TIME: 1030 SAMPLE DEPTH: 0.1 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	77.1	39.4	26.32	14.6
ANKISTRODESMUS FALCATUS	7.3	3.7	0.40	0.2
ANKISTRODESMUS FUSIFORMIS	9.0	4.6	0.94	0.5
ARTHRODESMUS INCUS	1.0	0.5	3.46	1.9
ARTHRODESMUS SPP.	14.6	7.4	6.32	3.5
CHLAMYDOMONAS SPP.	1.0	0.5	0.08	0.0
CLOSTERIUM CERATIUM	1.7	0.8	0.99	0.5
CLOSTERIUM INCURVUM	0.6	0.3	0.59	0.3
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	5.2	2.6	0.53	0.2
CRUCIGENIA TETRAPEDIA	3.4	1.7	0.30	0.1
MONORAPHIDIUM SAXATILE	13.2	6.7	1.46	0.8
MONORAPHIDIUM SETIFORME	4.8	2.4	0.84	0.4
SCENEDESMUS DENTICULATUS	2.7	1.3	0.52	0.2
SCENEDESMUS QUADRICAUDA	1.7	0.8	0.24	0.1
STAURASTRUM CURVATUM	1.7	0.8	7.65	4.2
STAURASTRUM PARADOXUM VAR. PARVUM	1.0	0.5	0.38	0.2
TETRAEDRON CAUDATUM	1.7	0.8	0.69	0.3
TETRAEDRON MINIMUM	0.6	0.3	0.63	0.3
COCCOID GREENS	5.9	3.0	0.18	0.1
BACILLARIOPHYCEAE	97.1	49.6	48.11	26.9
CYCLOTELLA STELLIGERA	28.5	14.5	15.16	8.4
EUNOTIA ZAZUMINENSIS	9.3	4.7	4.10	2.2
EUNOTIA SP. A	1.0	0.5	0.33	0.1
MELOSIRA DISTANS V. A	16.0	8.1	2.96	1.6
MELOSIRA ITALICA	5.5	2.8	6.07	3.4
MELOSIRA ITALICA VAR. TENUISSIMA	28.8	14.7	16.11	9.0
NITZSCHIA PALEA	0.6	0.3	0.34	0.1
SYNEDRA TENERA	0.6	0.3	0.20	0.1
SYNEDRA SP. A	6.2	3.1	2.61	1.4
SYNEDRA SPP.	0.6	0.3	0.19	0.1
CHRYSOPHYCEAE	2.0	1.0	2.61	1.4
MALLOMONAS ACAROIDES	1.0	0.5	1.26	0.7
MALLOMONAS SPP.	1.0	0.5	1.35	0.7
HAPTOPHYCEAE	3.4	1.7	0.64	0.3
CHRYSOCHROMULINA PARVA	3.4	1.7	0.64	0.3
CRYPTOPHYCEAE	4.0	2.0	1.41	0.7
CRYPTOMONAS EROSA VAR. REFLEXA	0.6	0.3	0.37	0.2
CRYPTOMONAS PHASEOLUS	3.4	1.7	1.03	0.5
EUGLENOPHYCEAE	1.0	0.5	0.55	0.3
TRACHELOMONAS SPP.	1.0	0.5	0.55	0.3
DINOPHYCEAE	6.8	3.4	98.58	55.2
GLENODINIUM ARMATUM	2.4	1.2	4.06	2.2
PERIDINIUM DEFLANDREI	2.7	1.3	31.92	17.8
PERIDINIUM WISCONSINENSE	1.7	0.8	62.60	35.0

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
UNKNOWN	4.0	2.0	0.29	0.1
0774-2-22	0.6	0.3	0.19	0.1
0974-2-C7	3.4	1.7	0.09	0.0
SAMPLE TOTALS:	195.4	99.8	178.53	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.6 SAMPLE TYPE: POS SAMPLE DATE: 10/12/77
TIME: 950 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	76.2	43.9	18.36	18.2
ANKISTRODESMUS FALCATUS	9.0	5.2	0.49	0.4
ANKISTRODESMUS FUSIFORMIS	6.9	3.9	0.72	0.7
ARTHRODESMUS INCUS	0.6	0.3	2.31	2.3
ARTHRODESMUS SPP.	2.7	1.5	1.20	1.1
CHLAMYDOMONAS SPP.	0.6	0.3	0.05	0.0
CLOSTERIUM CERATIUM	0.6	0.3	0.39	0.3
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	11.8	6.8	1.20	1.2
COSMARIUM SPP.	1.3	0.7	0.75	0.7
CRUCIGENIA TETRAPEDIA	1.3	0.7	0.12	0.1
KIRCHNERIELLA LUNARIS	0.6	0.3	0.46	0.4
MONORAPHIDIUM CONTORTUM	1.3	0.7	0.05	0.0
MONORAPHIDIUM SAXATILE	6.9	3.9	0.77	0.7
MONORAPHIDIUM SETIFORME	4.1	2.3	0.72	0.7
QUADRIGULA CLOSTERIOIDES	2.0	1.1	0.50	0.5
SCENEDESMUS BIJUGA	2.7	1.5	0.24	0.2
SCENEDESMUS DENTICULATUS	1.3	0.7	0.52	0.5
SCENEDESMUS QUADRICAUDA	2.0	1.1	0.19	0.1
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	0.6	0.3	0.18	0.1
STAURASTRUM CURVATUM	1.3	0.7	6.11	6.0
STAURASTRUM TETRACERUM	1.3	0.7	0.74	0.7
COCCOID GREENS	17.3	10.0	0.55	0.5
BACILLARIOPHYCEAE	77.0	44.4	36.28	36.1
CYCLOTELLA STELLIGERA	25.0	14.4	13.28	13.2
EUNOTIA ZAZUMINENSIS	6.2	3.5	2.73	2.7
EUNOTIA SP. A	2.0	1.1	0.66	0.6
MELOSIRA DISTANS V. A	18.7	10.8	3.47	3.4
MELOSIRA ITALICA	2.7	1.5	3.03	3.0
MELOSIRA ITALICA VAR. TENUISSIMA	9.0	5.2	5.04	5.0
NAVICULA CRYPTOCEPHALA	2.0	1.1	0.76	0.7
NITZSCHIA PALEA	0.6	0.3	0.34	0.3
NITZSCHIA SPP.	0.6	0.3	0.37	0.3
RHIZOSOLENIA ERIENSIS	0.6	0.3	2.59	2.5
SYNEDRA TENERA	0.6	0.3	0.20	0.1
SYNEDRA SP. A	9.0	5.2	3.77	3.7
CHRYSOPHYCEAE	3.2	1.8	1.23	1.2
DINOBRYON BAVARICUM	0.6	0.3	0.09	0.0
MALLOMONAS ACAROIDES	0.6	0.3	0.83	0.8
UNIDENTIFIED CHRYSOPHYCEAE	2.0	1.1	0.30	0.2
HAPTOPHYCEAE	3.4	1.9	0.64	0.6
CHRYSOCHROMULINA PARVA	3.4	1.9	0.64	0.6
CRYPTOPHYCEAE	2.5	1.4	3.26	3.2
CRYPTOMONAS EROSA	1.3	0.7	2.17	2.1
CRYPTOMONAS EROSA VAR. REFLEXA	0.6	0.3	0.37	0.3

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CRYPTOMONAS OVATA	0.6	0.3	0.71	0.7
MYXOPHYCEAE	0.6	0.3	0.05	0.0
ANABAENA SPP.	0.6	0.3	0.05	0.0
DINOPHYCEAE	3.4	1.9	39.83	39.7
PERIDINIUM DEFLANDREI	3.4	1.9	39.83	39.7
UNKNOWN	6.6	3.7	0.61	0.6
0774-2-22	0.6	0.3	0.19	0.1
0774-2-28	0.6	0.3	0.26	0.2
0974-2-07	4.8	2.7	0.13	0.1
0477-2-01	0.6	0.3	0.02	0.0
SAMPLE TOTALS:	172.9	99.7	100.29	99.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.0
TIME: 0945

SAMPLE TYPE: INT
SAMPLE DEPTH: 0.1 M

SAMPLE DATE: 11/16/77

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	149.7	26.9	19.38	3.8
ANKISTRODESMUS FALCATUS	9.4	1.6	0.51	0.1
ANKISTRODESMUS FUSIFORMIS	9.6	1.7	0.97	0.2
ARTHRODESMUS SPP.	1.2	0.2	0.71	0.1
CHLAMYDOMONAS SPP.	6.2	1.1	0.52	0.1
COSMARIUM PHASEOLUS F. MINOR	1.0	0.2	1.58	0.3
CRUCIGENIA TETRAPEDIA	6.2	1.1	0.31	0.1
GOLENKINIA RADIATA	1.2	0.2	0.16	0.0
MONORAPHIDIUM CONTORTUM	1.0	0.2	0.35	0.1
MONORAPHEDIUM PUSILLUM	8.5	1.5	0.50	0.1
MONORAPHIDIUM SETIFORME	5.2	0.9	0.90	0.2
QUADRIGULA CLOSTERIOIDES	1.2	0.2	0.76	0.1
SCENEDESMUS BIJUGA	12.2	2.2	0.10	0.0
SCENEDESMUS DIMORPHUS	1.2	0.2	0.83	0.2
SCENEDESMUS QUADRICAUDA	1.2	0.2	0.80	0.2
SELENASTRUM MINUTUM	1.2	0.2	0.03	0.0
STAURASTRUM PARADOXUM VAR. A	1.2	0.2	0.89	0.2
COCCOID GREENS	6.2	1.1	0.07	0.0
BACILLARIOPHYCEAE	219.4	39.3	355.45	71.4
CYCLOTELLA STELLIGERA	1.2	0.2	2.21	0.4
EUNOTIA ZAZUMINENSIS	1.2	0.2	2.78	0.6
EUNOTIA SP. A	4.0	0.7	4.65	0.9
MELOSIRA DISTANS V. A	1.2	0.2	2.53	0.5
MELOSIRA ITALICA VAR. TENUISSIMA	4.0	0.7	2.56	0.5
NITZSCHIA SPP.	1.2	0.2	0.56	0.1
RHIZOSOLENIA ERIENSIS	82.1	14.8	307.93	61.9
SYNEDRA TENERA	1.2	0.2	0.30	0.1
SYNEDRA SP. A	50.4	9.0	20.19	4.1
SYNEDRA SPP.	1.2	0.2	1.48	0.3
CHRYSOPHYCEAE	13.5	2.4	7.78	1.6
MALLOMONAS SPP.	8.8	1.6	6.60	1.3
UNIDENTIFIED CHRYSOPHYCEAE	2.7	0.5	0.55	0.1
HAPTOPHYCEAE	2.7	0.5	2.08	0.4
CHRYSOCHROMULINA PARVA	58.1	10.4	11.62	2.3
CRYPTOPHYCEAE	16.4	2.9	9.72	2.0
CHROOMONAS ACUTA	4.5	0.8	5.00	1.0
CHROOMONAS NORDSTEDTII	5.9	1.1	0.57	0.1
CRYPTOMONAS EROSA	18.1	3.2	13.95	2.8
CRYPTOMONAS EROSA VAR. REFLEXA	2.2	0.4	0.12	0.0
CRYPTOMONAS OVATA	6.2	1.1	1.34	0.3
CRYPTOMONAS PHASEOLUS				
MYXOPHYCEAE				
ANACYSTIS INCERTA				
EUGLENOPHYCEAE				

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
EUGLENA SPP.	6.2	1.1	13.95	2.7
DINOPHYCEAE	19.7	3.5	67.83	13.5
GLENODINIUM ARMATUM	2.0	0.3	3.49	0.6
PERIDINIUM DEFLANDREI	3.1	0.5	35.93	7.2
UNIDENTIFIED DINOPHYCEAE	14.6	2.6	28.41	5.6
UNKNOWN	37.5	6.7	1.58	0.3
0774-2-22	2.0	0.3	0.59	0.1
0974-2-07	35.5	6.4	0.99	0.1
SAMPLE TOTALS:	553.8	99.7	499.04	99.8

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

STATION: 530.6 SAMPLE TYPE: POS SAMPLE DATE: 11/16/77
TIME: 0905 SAMPLE DEPTH: 10.0 M

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CHLOROPHYCEAE	83.5	25.4	50.69	13.9
ANKISTRODESMUS FALCATUS	5.2	1.5	0.28	0.0
ANKISTRODESMUS FUSIFORMIS	13.5	4.1	1.41	0.3
ARTHRODESMUS SUBULATUS	2.0	0.6	12.03	3.3
ARTHRODESMUS SPP.	1.0	0.3	0.45	0.1
CLOSTERIUM CERATIUM	3.1	0.9	1.79	0.4
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	2.0	0.6	0.21	0.0
COSMARIUM PHASEOLUS F. MINOR	2.0	0.6	3.16	0.8
FRANCEIA DROESCHERI	1.0	0.3	0.19	0.0
KIRCHNERIELLA SPP.	1.0	0.3	0.01	0.0
MONORAPHIDIUM CONTORTUM	1.0	0.3	0.04	0.0
MONORAPHEDIUM PUSILLUM	6.2	1.8	0.60	0.1
MONORAPHIDIUM SETIFORME	3.1	0.9	0.54	0.1
QUADRIGULA CLOSTERIOIDES	1.0	0.3	0.38	0.1
SCENEDESMUS BIJUGA	1.0	0.3	0.09	0.0
SCENEDESMUS DENTICULATUS	9.4	2.8	1.78	0.4
SCENEDESMUS QUADRICAUDA	5.2	1.5	0.49	0.1
SCENEDESMUS QUADRICAUDA VAR. LONGISPINA	3.1	0.9	0.63	0.1
SELENASTRUM MINUTUM	1.0	0.3	0.03	0.0
SPHAEROZOSMA GRANULATUM	1.0	0.3	0.16	0.0
STAURASTRUM PARADOXUM VAR. A	1.0	0.3	4.89	1.3
STAURASTRUM SUBCRUCIATUM	1.0	0.3	19.00	5.2
TETRAEDRON MINIMUM	2.0	0.6	1.91	0.5
COCCOID GREENS	16.7	5.1	0.53	0.1
BACILLARIOPHYCEAE	200.1	61.2	262.61	72.8
CYCLOTELLA STELLIGERA	7.3	2.2	3.88	1.0
EUNOTIA ZAZUMINENSIS	26.1	7.9	11.41	3.1
EUNOTIA SP. A	5.2	1.5	1.65	0.4
MELOSIRA DISTANS V. A	18.8	5.7	3.47	0.9
MELOSIRA ITALICA VAR. TENUISSIMA	13.5	4.1	7.58	2.1
NAVICULA NOTHA	2.0	0.6	0.74	0.2
RHIZOSOLENIA ERIENSIS	48.0	14.6	179.30	49.7
SYNEDRA TENERA	4.1	1.2	1.20	0.3
SYNEDRA SP. A	68.9	21.0	28.82	8.0
TABELLARIA FENESTRATA	6.2	1.8	24.50	6.8
CHRYSOPHYCEAE	8.1	2.4	8.13	2.2
MALLOMONAS GLOBOSA	2.0	0.6	2.40	0.6
MALLOMONAS SPP.	4.1	1.2	5.42	1.5
UNIDENTIFIED CHRYSOPHYCEAE	2.0	0.6	0.30	0.0
HAPTOPHYCEAE	10.4	3.1	1.94	0.5
CHRYSOCHROMULINA PARVA	10.4	3.1	1.94	0.5
CRYPTOPHYCEAE	17.5	5.3	11.08	3.0
CHROOMONAS ACUTA	2.0	0.6	0.23	0.0
CRYPTOMONAS EROSA	4.1	1.2	6.41	1.7

LAKE KEOWEE
PHYTOPLANKTON STANDING CROP
DUKE POWER COMPANY

CLASS / SPECIES NAME	DENSITY X 1.0E+06 UNITS/M3	PERCENT OF DENSITY	BIOVOLUME MM3/M3	PERCENT OF BIOVOLUME
CRYPTOMONAS EROSA VAR. REFLEXA	1.0	0.3	0.56	0.1
CRYPTOMONAS OVATA	1.0	0.3	1.08	0.2
CRYPTOMONAS PHASEOLUS	9.4	2.8	2.80	0.7
MYXOPHYCEAE	1.0	0.3	0.01	0.0
ANACYSTIS INCERTA	1.0	0.3	0.01	0.0
DINOPHYCEAE	3.0	0.9	25.70	7.1
GLENODINIUM ARMATUM	1.0	0.3	1.74	0.4
PERIDINIUM DEFLANDREI	2.0	0.6	23.95	6.6
UNKNOWN	3.1	0.9	0.08	0.0
0974-2-07	3.1	0.9	0.08	0.0
SAMPLE TOTALS:	326.7	99.7	360.26	99.7

APPENDIX B

SECTION 5

ZOOPLANKTON DATA

1.5 ENTRAINMENT STUDY

OCONEE NUCLEAR STATION

YEAR 1977

(Pages 1-172 Contained in Annual Report 1976)

Zooplankton Entrainment Field Data
Oconee Nuclear Station

Date	Location	Time of Sampling	Temp (C)	ΔT (C°)	Calibration Time (sec)*	Filtering Time(min)	Volume Filtered (ℓ)	No. CCW Pumps Operating	Unit I Power Level (%)***	Unit I Flow m^3/sec
01/12/77	Precondenser	0845	8.9	13.3	128	30	1384	2	101	29.2
	Postcondenser	0845	22.2		122	30	1452			
	Precondenser	1330	8.9	13.3	125	30	1417			
	Postcondenser	1330	22.2		90	30	1968			
03/16/77	Precondenser	0930	9.5	12.5	128	30	1384	2	91.6	29.1
	Postcondenser	0930	22.0		115	30	1540			
	Precondenser	1330	9.5	12.5	128	30	1384			
	Postcondenser	1330	22.0		143	30	1239			
05/11/77	Precondenser	0900	12.8	0	140**	30	1217	1	0	15.2
	Postcondenser	0900	12.8		130	30	1363			
	Precondenser	1115	12.8	0	123**	30	1385			
	Postcondenser	1115	12.8		135	30	1312			
07/13/77	Precondenser	0930	19.0	8.5	147	30	1205	3	82.0	41.5
	Postcondenser	0930	27.5		141	30	1256			
	Precondenser	1200	19.5	8.3	124	30	1429			
	Postcondenser	1200	27.8		119	30	1489			
10/12/77	Precondenser	1000	23.5	0	115	30	1540	3	0	41.9
	Postcondenser	1000	23.5		126	30	1406			
	Precondenser	1200	23.5	0	140	30	1265			
	Postcondenser	1200	23.5		100	30	1771			
11/16/77	Precondenser	0900	17.5	9.7	130	30	1363	2	72.3	29.4
	Postcondenser	0900	27.2		110	30	1610			
	Precondenser	1200	17.6	9.7	132	30	1342			
	Postcondenser	1200	27.3		105	30	1687			

* Time to fill 98.4 ℓ (26 gal.) container.
** Time to fill 94.6 ℓ (25 gal.) container.
*** Based on total theoretical megawatt thermal (MWt) output possible.

Zooplankton Entrainment Field Data
Oconee Nuclear Station

Date	Location	Time of Sampling	Temp. (C)	ΔT (C°)	Approximate Volume Filtered (ℓ)	Station Power Level (%)*	Station Flow m^3/sec
01/12/77	Intake	1115	9.0	13.0	2263	99.4	87.8
	Discharge	1150	22.0		1223		
	Intake	1430	9.0	13.0	2445		
	Discharge	1550	22.0		1202		
03/16/77	Intake	1050	9.0	12.0	1440	81.7	87.5
	Discharge	1150	21.0		2389		
	Intake	1510	9.0	12.0	2684		
	Discharge	1540	21.0		3238		
05/11/77	Intake	0905	13.0	8.2	1423	64.6	97.9
	Discharge	0950	21.2		1481		
	Intake	1130	14.0	8.4	1453		
	Discharge	1225	22.4		1034		
07/13/77	Intake	0930	19.5	8.0	3031	59.7	97.6
	Discharge	1030	27.5		4247		
	Intake	1230	19.5	8.0	1408		
	Discharge	1330	27.5		2350		
10/12/77	Intake	0905	23.5	2.5	2586	30.5	118.9
	Discharge	1000	26.0		3363		
	Intake	1200	23.5	2.5	1372		
	Discharge	1250	26.0		3958		
11/16/77	Intake	1025	17.5	9.5	3428	40.2	59.8
	Discharge	1050	27.0		4897		
	Intake	1335	17.5	9.5	2985		
	Discharge	1415	27.0		4374		

* Based on total theoretical megawatt thermal (MWt) output possible.

Zooplankton Immotility at Location 502.0
Lake Keowee
March 16, 1977

Sample Time	1240		1240		1630		1630	
Sample Depth	10 m to surface		bottom to surface		10 m to surface		bottom to surface	
Volume Filtered (ℓ)	2134		4293		1469		3878	
Taxa	Number Observed	Percent Immotile	Number Observed	Percent Immotile	Number Observed	Percent Immotile	Number Observed	Percent Immotile
Diaptomus mississippiensis	5	0.0	6	16.7	2	0.0	3	0.0
calanoid copepodid	7	0.0	10	10.0	6	16.7	4	25.0
Eucyclops agilis	4	0.0	3	0.0	0		1	0.0
Mesocyclops edax	4	0.0	7	0.0	1	0.0	9	11.1
Tropocyclops prasinus	8	0.0	9	0.0	4	0.0	1	0.0
cyclopoid copepodid	34	8.8	22	0.0	14	7.1	13	0.0
nauplii	86	4.7	55	0.0	35	0.0	44	2.3
Copepoda	148	4.7	112	1.8	62	3.2	75	4.0
Bosmina coregoni	165	0.0	160	1.9	139	0.7	96	1.0
Daphnia parvula	3	0.0	5	0.0	5	0.0	1	0.0
Diaphanosoma leuchtenbergianum	0		1	0.0	1	0.0	1	0.0
Holopedium gibberum	22	0.0	21	9.5	9	0.0	9	22.2
Cladocera	190	0.0	187	2.7	154	0.6	107	2.8
Crustacea	338	2.1	299	2.3	216	1.4	182	3.3

Zooplankton Entrainment Data
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Precondenser	0845	6	16.7	0.0
	Postcondenser	0845	7	0.0	
	Precondenser	1330	13	0.0	50.0
	Postcondenser	1330	6	50.0	
calanoid copepodid	Precondenser	0845	9	11.1	0.0
	Postcondenser	0845	10	10.0	
	Precondenser	1330	14	42.9	0.0
	Postcondenser	1330	24	8.3	
Mesocyclops edax	Precondenser	0845	1	0.0	
	Postcondenser	0845	0		
	Precondenser	1330	0		
	Postcondenser	1330	0		
Tropocyclops prasinus	Precondenser	0845	3	0.0	0.0
	Postcondenser	0845	4	0.0	
	Precondenser	1330	8	0.0	5.9
	Postcondenser	1330	17	5.9	
cyclopoid copepodid	Precondenser	0845	26	3.8	7.6
	Postcondenser	0845	36	11.1	
	Precondenser	1330	57	3.5	16.6
	Postcondenser	1330	41	19.5	
nauplii	Precondenser	0845	51	11.8	0.0
	Postcondenser	0845	109	0.9	
	Precondenser	1330	139	0.7	4.8
	Postcondenser	1330	182	5.5	
Copepoda	Precondenser	0845	96	9.4	0.0
	Postcondenser	0845	166	3.6	
	Precondenser	1330	231	3.8	5.2
	Postcondenser	1330	270	8.9	
Bosmina coregoni	Precondenser	0845	92	1.1	0.4
	Postcondenser	0845	69	1.4	
	Precondenser	1330	342	0.6	4.0
	Postcondenser	1330	131	4.6	
Daphnia parvula	Precondenser	0845	1	0.0	0.0
	Postcondenser	0845	1	0.0	
	Precondenser	1330	2	0.0	100.0
	Postcondenser	1330	1	100.0	

Zooplankton Entrainment Data
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaphanosoma leuchtenbergianum	Precondenser	0845	2	50.0	0.0
	Postcondenser	0845	4	25.0	
	Precondenser	1330	9	33.3	0.0
	Postcondenser	1330	3	33.3	
Holopedium gibberum	Precondenser	0845	2	50.0	0.0
	Postcondenser	0845	1	0.0	
	Precondenser	1330	3	0.0	
	Postcondenser	1330	0		
Leptodora kindtii	Precondenser	0845	0		
	Postcondenser	0845	0		
	Precondenser	1330	1	100.0	
	Postcondenser	1330	0		
Disparalona acutirostris	Precondenser	0845	0		
	Postcondenser	0845	0		
	Precondenser	1330	1	0.0	
	Postcondenser	1330	0		
immature Cladocera	Precondenser	0845	0		
	Postcondenser	0845	1	100.0	
	Precondenser	1330	0		
	Postcondenser	1330	0		
Cladocera	Precondenser	0845	97	3.1	0.9
	Postcondenser	0845	76	3.9	
	Precondenser	1330	359	1.7	4.3
	Postcondenser	1330	135	5.9	
Crustacea	Precondenser	0845	193	6.2	0.0
	Postcondenser	0845	242	3.7	
	Precondenser	1330	590	2.5	5.5
	Postcondenser	1330	405	7.9	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Data
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Precondenser	0930	2	50.0	0.0
	Postcondenser	0930	2	50.0	
	Precondenser	1330	20	40.0	0.0
	Postcondenser	1330	1	0.0	
calanoid copepodid	Precondenser	0930	2	50.0	0.0
	Postcondenser	0930	11	0.0	
	Precondenser	1330	1	0.0	
	Postcondenser	1330	0		
Cyclops thomasi	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1330	3	0.0	100.0
	Postcondenser	1330	1	100.0	
Eucyclops agilis	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1330	0		
	Postcondenser	1330	4	0.0	
Mesocyclops edax	Precondenser	0930	2	0.0	
	Postcondenser	0930	0		
	Precondenser	1330	1	0.0	0.0
	Postcondenser	1330	3	0.0	
Tropocyclops prasinus	Precondenser	0930	4	25.0	0.0
	Postcondenser	0930	8	0.0	
	Precondenser	1330	0		
	Postcondenser	1330	3	33.3	
cyclopoid copepodid	Precondenser	0930	10	20.0	0.0
	Postcondenser	0930	45	2.2	
	Precondenser	1330	36	19.4	0.0
	Postcondenser	1330	10	10.0	
nauplii	Precondenser	0930	42	0.0	1.9
	Postcondenser	0930	54	1.9	
	Precondenser	1330	55	9.1	0.0
	Postcondenser	1330	55	3.6	
Copepoda	Precondenser	0930	62	8.1	0.0
	Postcondenser	0930	120	2.5	
	Precondenser	1330	116	17.2	0.0
	Postcondenser	1330	77	6.5	

Zooplankton Entrainment Data
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Bosmina coregoni	Precondenser	0930	33	6.1	46.8
	Postcondenser	0930	10	50.0	
	Precondenser	1330	109	2.8	30.1
	Postcondenser	1330	25	32.0	
Daphnia ambigua	Precondenser	0930	4	0.0	0.0
	Postcondenser	0930	1	0.0	
	Precondenser	1330	0		
	Postcondenser	1330	0		
Daphnia laevis	Precondenser	0930	4	25.0	
	Postcondenser	0930	0		
	Precondenser	1330	0		
	Postcondenser	1330	0		
Daphnia parvula	Precondenser	0930	11	36.4	0.0
	Postcondenser	0930	5	20.0	
	Precondenser	1330	36	19.4	
	Postcondenser	1330	0		
Diaphanosoma leuchtenbergianum	Precondenser	0930	2	100.0	
	Postcondenser	0930	0		
	Precondenser	1330	3	66.7	0.0
	Postcondenser	1330	3	33.3	
Holopedium gibberum	Precondenser	0930	3	66.7	
	Postcondenser	0930	0		
	Precondenser	1330	0		
	Postcondenser	1330	1	100.0	
Leydigia leydigi	Precondenser	0930	0		
	Postcondenser	0930	1	0.0	
	Precondenser	1330	0		
	Postcondenser	1330	0		
Disparalona acutirostris	Precondenser	0930	1	0.0	
	Postcondenser	0930	0		
	Precondenser	1330	1	0.0	
	Postcondenser	1330	0		
immature Cladocera	Precondenser	0930	1	100.0	
	Postcondenser	0930	0		
	Precondenser	1330	8	25.0	
	Postcondenser	1330	0		

Zooplankton Entrainment Data
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Cladocera	Precondenser	0930	59	20.3	26.2
	Postcondenser	0930	17	41.2	
	Precondenser	1330	157	8.9	28.1
	Postcondenser	1330	29	34.5	
Crustacea	Precondenser	0930	121	14.0	0.0
	Postcondenser	0930	137	7.3	
	Precondenser	1330	273	12.5	1.9
	Postcondenser	1330	106	14.2	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Data
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Precondenser	0900	2	100.0	
	Postcondenser	0900	0		
	Precondenser	1115	0		
	Postcondenser	1115	0		
calanoid copepodid	Precondenser	0900	7	28.6	6.7
	Postcondenser	0900	6	33.3	
	Precondenser	1115	8	12.5	37.7
	Postcondenser	1115	11	45.5	
Eucyclops spp.	Precondenser	0900	0		
	Postcondenser	0900	0		
	Precondenser	1115	0		
	Postcondenser	1115	6	16.7	
Mesocyclops edax	Precondenser	0900	0		
	Postcondenser	0900	0		
	Precondenser	1115	0		
	Postcondenser	1115	1	0.0	
Tropocyclops prasinus	Precondenser	0900	15	13.3	1.1
	Postcondenser	0900	7	14.3	
	Precondenser	1115	7	28.6	0.0
	Postcondenser	1115	12	16.7	
Canthocamptus spp.	Precondenser	0900	1	0.0	
	Postcondenser	0900	0		
	Precondenser	1115	0		
	Postcondenser	1115	0		
cyclopoid copepodid	Precondenser	0900	12	0.0	25.0
	Postcondenser	0900	12	25.0	
	Precondenser	1115	13	7.7	0.0
	Postcondenser	1115	30	6.7	
nauplii	Precondenser	0900	11	0.0	0.0
	Postcondenser	0900	37	0.0	
	Precondenser	1115	24	4.2	25.5
	Postcondenser	1115	7	28.6	
Copepoda	Precondenser	0900	48	12.5	0.0
	Postcondenser	0900	62	9.7	
	Precondenser	1115	52	9.6	9.2
	Postcondenser	1115	67	17.9	

Zooplankton Entrainment Data
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Bosmina coregoni	Precondenser	0900	45	2.2	7.0
	Postcondenser	0900	33	9.1	
	Precondenser	1115	32	12.5	0.0
	Postcondenser	1115	43	4.7	
Chydorus	Precondenser	0900	0		
	Postcondenser	0900	0		
	Precondenser	1115	0		
	Postcondenser	1115	1	0.0	
Daphnia ambigua	Precondenser	0900	21	9.5	6.5
	Postcondenser	0900	13	15.4	
	Precondenser	1115	8	12.5	0.0
	Postcondenser	1115	23	8.7	
Daphnia laevis	Precondenser	0900	2	100.0	
	Postcondenser	0900	0		
	Precondenser	1115	0		
	Postcondenser	1115	0		
Diaphanosoma leuchtenbergianum	Precondenser	0900	62	35.5	22.5
	Postcondenser	0900	50	77.5	
	Precondenser	1115	40	37.5	43.1
	Postcondenser	1115	45	64.4	
Holopedium gibberum	Precondenser	0900	2	0.0	0.0
	Postcondenser	0900	1	0.0	
	Precondenser	1115	0		
	Postcondenser	1115	2	0.0	
Disparalona acutirostris	Precondenser	0900	0		
	Postcondenser	0900	1	0.0	
	Precondenser	1115	0		
	Postcondenser	1115	1	100.0	
Cladocera	Precondenser	0900	132	20.5	12.8
	Postcondenser	0900	98	30.6	
	Precondenser	1115	80	25.0	6.1
	Postcondenser	1115	115	29.6	
Crustacea	Precondenser	0900	180	18.3	5.1
	Postcondenser	0900	160	22.5	
	Precondenser	1115	132	18.9	7.8
	Postcondenser	1115	182	25.3	

Zooplankton Entrainment Data
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Precondenser	0930	2	100.0	
	Postcondenser	0930	3	66.7	
	Precondenser	1200	6	33.3	25.0
	Postcondenser	1200	2	50.0	
calanoid copepodid	Precondenser	0930	10	10.0	33.3
	Postcondenser	0930	5	40.0	
	Precondenser	1200	12	16.7	70.0
	Postcondenser	1200	4	75.0	
Eucyclops spp.	Precondenser	0930	1	0.0	
	Postcondenser	0930	0		
	Precondenser	1200	0		
	Postcondenser	1200	1	0.0	
Mesocyclops edax	Precondenser	0930	0		
	Postcondenser	0930	2	0.0	
	Precondenser	1200	1	0.0	0.0
	Postcondenser	1200	1	0.0	
Tropocyclops prasinus	Precondenser	0930	41	17.1	0.0
	Postcondenser	0930	42	16.7	
	Precondenser	1200	37	29.7	0.0
	Postcondenser	1200	21	28.6	
cyclopoid copepodid	Precondenser	0930	64	20.3	10.4
	Postcondenser	0930	28	28.6	
	Precondenser	1200	44	22.7	13.7
	Postcondenser	1200	36	33.3	
nauplii	Precondenser	0930	123	18.7	0.0
	Postcondenser	0930	126	16.7	
	Precondenser	1200	153	16.3	6.7
	Postcondenser	1200	114	21.9	
Harpacticoida sp.	Precondenser	0930	2	0.0	
	Postcondenser	0930	0		
	Precondenser	1200	0		
	Postcondenser	1200	0		
Copepoda	Precondenser	0930	241	19.1	0.4
	Postcondenser	0930	206	19.4	
	Precondenser	1200	253	19.8	8.1
	Postcondenser	1200	179	26.3	

Zooplankton Entrainment Data
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Bosmina coregoni	Precondenser	0930	11	18.2	0.0
	Postcondenser	0930	7	14.3	
	Precondenser	1200	52	1.9	
	Postcondenser	1200	30	3.3	
Daphnia ambigua	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		
Daphnia laevis	Precondenser	0930	1	100.0	
	Postcondenser	0930	0		
	Precondenser	1200	0		
	Postcondenser	1200	0		
Daphnia parvula	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		
Diaphanosoma leuchtenbergianum	Precondenser	0930	8	75.0	20.0
	Postcondenser	0930	5	80.0	
	Precondenser	1200	21	81.0	0.0
	Postcondenser	1200	14	35.7	
Disparalona acutirostris	Precondenser	0930	0		
	Postcondenser	0930	1	0.0	
	Precondenser	1200	0		
	Postcondenser	1200	1	100.0	
immature Cladocera	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1200	1	100.0	
	Postcondenser	1200	0		
Cladocera	Precondenser	0930	22	40.7	0.0
	Postcondenser	0930	13	38.5	
	Precondenser	1200	76	25.0	0.0
	Postcondenser	1200	45	15.6	
Crustacea	Precondenser	0930	263	20.9	0.0
	Postcondenser	0930	219	20.5	
	Precondenser	1200	329	21.0	4.0
	Postcondenser	1200	224	24.1	

Zooplankton Entrainment Data
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Precondenser	1000	13	38.5	0.0
	Postcondenser	1000	21	19.0	
	Precondenser	1200	6	33.3	0.0
	Postcondenser	1200	25	4.0	
calanoid copepodid	Precondenser	1000	19	21.1	0.0
	Postcondenser	1000	7	14.3	
	Precondenser	1200	29	44.8	0.0
	Postcondenser	1200	10	10.0	
Mesocyclops edax	Precondenser	1000	1	0.0	100.0
	Postcondenser	1000	1	100.0	
	Precondenser	1200	0		
	Postcondenser	1200	1	0.0	
Tropocyclops prasinus	Precondenser	1000	19	15.8	0.0
	Postcondenser	1000	20	10.0	
	Precondenser	1200	38	15.8	0.0
	Postcondenser	1200	29	6.9	
cyclopoid copepodid	Precondenser	1000	25	20.0	0.0
	Postcondenser	1000	10	10.0	
	Precondenser	1200	43	25.6	0.0
	Postcondenser	1200	22	9.1	
nauplii	Precondenser	1000	110	10.0	0.0
	Postcondenser	1000	48	2.1	
	Precondenser	1200	197	9.6	0.0
	Postcondenser	1200	142	0.7	
Copepoda	Precondenser	1000	187	15.0	0.0
	Postcondenser	1000	106	9.4	
	Precondenser	1200	313	16.3	0.0
	Postcondenser	1200	229	3.1	
Bosmina coregoni	Precondenser	1000	60	5.0	0.0
	Postcondenser	1000	59	0.0	
	Precondenser	1200	101	5.0	0.0
	Postcondenser	1200	98	1.0	
Daphnia ambigua	Precondenser	1000	0		
	Postcondenser	1000	0		
	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		

Zooplankton Entrainment Data
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
	Precondenser	1000	11	72.7	
Diaphanosoma	Postcondenser	1000	5	40.0	0.0
leuchtenbergianum	Precondenser	1200	9	55.6	
	Postcondenser	1200	13	30.8	0.0
	Precondenser	1000	4	100.0	
Leptodora	Postcondenser	1000	1	100.0	
kindtii	Precondenser	1200	2	100.0	
	Postcondenser	1200	0		
	Precondenser	1000	0		
Disparalona	Postcondenser	1000	0		
acutirostris	Precondenser	1200	0		
	Postcondenser	1200	1	0.0	
	Precondenser	1000	75	20.0	
	Postcondenser	1000	65	4.6	0.0
Cladocera	Precondenser	1200	113	10.6	
	Postcondenser	1200	112	4.5	0.0
	Precondenser	1000	262	16.4	
	Postcondenser	1000	171	7.6	0.0
Crustacea	Precondenser	1200	426	14.8	
	Postcondenser	1200	341	3.5	0.0
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Data
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Precondenser	0900	3	33.3	25.0
	Postcondenser	0900	2	50.0	
	Precondenser	1200	1	0.0	0.0
	Postcondenser	1200	3	0.0	
calanoid copepodid	Precondenser	0900	6	0.0	12.5
	Postcondenser	0900	16	12.5	
	Precondenser	1200	15	13.3	23.1
	Postcondenser	1200	27	33.3	
Mesocyclops edax	Precondenser	0900	1	0.0	0.0
	Postcondenser	0900	2	0.0	
	Precondenser	1200	0		
	Postcondenser	1200	1	0.0	
Tropocyclops prasinus	Precondenser	0900	26	3.8	6.4
	Postcondenser	0900	40	10.0	
	Precondenser	1200	45	11.1	6.3
	Postcondenser	1200	84	16.7	
cyclopoid copepodid	Precondenser	0900	13	23.1	0.0
	Postcondenser	0900	5	0.0	
	Precondenser	1200	19	36.8	5.0
	Postcondenser	1200	10	40.0	
nauplii	Precondenser	0900	29	3.4	4.6
	Postcondenser	0900	76	7.9	
	Precondenser	1200	55	20.0	0.0
	Postcondenser	1200	43	4.7	
Copepoda	Precondenser	0900	78	7.7	1.7
	Postcondenser	0900	141	9.2	
	Precondenser	1200	135	18.5	0.0
	Postcondenser	1200	168	17.3	
Bosmina coregoni	Precondenser	0900	43	4.7	2.4
	Postcondenser	0900	29	6.9	
	Precondenser	1200	96	3.1	9.1
	Postcondenser	1200	42	11.9	
Ceriodaphnia lacustris	Precondenser	0900	0		
	Postcondenser	0900	1	0.0	
	Precondenser	1200	0		
	Postcondenser	1200	0		

Zooplankton Entrainment Data
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
	Precondenser	0900	2	0.0	
Daphnia	Postcondenser	0900	0		
ambigua	Precondenser	1200	0		
	Postcondenser	1200	1	0.0	
	Precondenser	0900	31	61.3	0.0
Diaphanosoma	Postcondenser	0900	15	40.0	
leuchtenbergianum	Precondenser	1200	21	57.1	34.7
	Postcondenser	1200	25	72.0	
	Precondenser	0900	0		
Holopedium	Postcondenser	0900	0		
gibberum	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		
	Precondenser	0900	0		
Disparalona	Postcondenser	0900	0		
acutirostris	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		
	Precondenser	0900	76	27.6	0.0
	Postcondenser	0900	45	17.8	
Cladocera	Precondenser	1200	119	12.6	24.3
	Postcondenser	1200	68	33.8	
	Precondenser	0900	154	17.5	0.0
	Postcondenser	0900	186	11.3	
Crustacea	Precondenser	1200	254	15.7	7.5
	Postcondenser	1200	236	22.0	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Data
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Intake	1115	7	14.3	4.5
	Discharge	1150	11	18.2	
	Intake	1430	2	0.0	0.0
	Discharge	1550	8	0.0	
calanoid copepodid	Intake	1115	13	46.2	0.0
	Discharge	1150	22	27.3	
	Intake	1430	28	32.1	16.7
	Discharge	1550	23	43.5	
Mesocyclops edax	Intake	1115	0		
	Discharge	1150	2	0.0	
	Intake	1430	0		
	Discharge	1150	2	50.0	
Tropocyclops prasinus	Intake	1115	3	0.0	0.0
	Discharge	1150	30	0.0	
	Intake	1430	16	6.3	0.0
	Discharge	1550	17	5.9	
cyclopoid copepodid	Intake	1115	38	44.7	0.0
	Discharge	1150	81	14.8	
	Intake	1430	35	14.3	0.0
	Discharge	1550	52	13.5	
nauplii	Intake	1115	164	23.2	0.0
	Discharge	1150	213	3.3	
	Intake	1430	99	1.0	2.4
	Discharge	1550	117	3.4	
Copepoda	Intake	1115	225	27.6	0.0
	Discharge	1150	359	7.5	
	Intake	1430	180	8.9	1.8
	Discharge	1550	219	10.5	
Bosmina coregoni	Intake	1115	176	1.7	0.0
	Discharge	1150	150	0.0	
	Intake	1430	89	1.1	3.5
	Discharge	1550	22	4.5	
Daphnia parvula	Intake	1115	2	0.0	0.0
	Discharge	1150	1	0.0	
	Intake	1430	0		
	Discharge	1550	1	0.0	

Zooplankton Entrainment Data
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
	Intake	1115	3	100.0	
Diaphanosoma	Discharge	1150	2	50.0	
leuchtenbergianum	Intake	1430	5	80.0	0.0
	Discharge	1550	2	50.0	
	Intake	1115	1	100.0	
Holopedium	Discharge	1150	0		
gibberum	Intake	1430	2	0.0	25.0
	Discharge	1550	4	25.0	
	Intake	1115	1	0.0	
Sida	Discharge	1150	0		
crystallina	Intake	1430	0		
	Discharge	1550	0		
	Intake	1115	0		
immature	Discharge	1150	1	100.0	
Cladocera	Intake	1430	0		
	Discharge	1550	0		
	Intake	1115	183	3.8	0.0
	Discharge	1150	154	1.3	
Cladocera	Intake	1430	96	5.2	1.8
	Discharge	1550	29	6.9	
	Intake	1115	408	16.9	0.0
	Discharge	1150	513	5.7	
Crustacea	Intake	1430	276	7.6	3.1
	Discharge	1550	248	10.5	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Data
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Intake	1050	11	0.0	0.0
	Discharge	1150	4	0.0	
	Intake	1510	5	20.0	0.0
	Discharge	1540	9	0.0	
calanoid copepodid	Intake	1050	11	27.3	17.5
	Discharge	1150	5	40.0	
	Intake	1510	6	33.3	0.0
	Discharge	1540	6	0.0	
Cyclops thomasi	Intake	1050	0		
	Discharge	1150	0		
	Intake	1510	0		
	Discharge	1540	1	0.0	
Eucyclops spp.	Intake	1050	9	0.0	0.0
	Discharge	1150	1	0.0	
	Intake	1510	1	100.0	
	Discharge	1540	2	0.0	
Mesocyclops edax	Intake	1050	0		
	Discharge	1150	0		
	Intake	1510	1	0.0	
	Discharge	5140	0		
Tropocyclops prasinus	Intake	1050	4	0.0	0.0
	Discharge	1150	6	0.0	
	Intake	1510	0		
	Discharge	1540	3	0.0	
cyclopoid copepodid	Intake	1050	49	16.3	0.0
	Discharge	1150	20	5.0	
	Intake	1510	25	16.0	0.0
	Discharge	1540	22	4.5	
nauplii	Intake	1050	110	6.4	0.0
	Discharge	1150	69	1.4	
	Intake	1510	32	6.3	0.0
	Discharge	1540	84	0.0	
Copepoda	Intake	1050	194	9.3	0.0
	Discharge	1150	105	3.8	
	Intake	1510	70	14.3	0.0
	Discharge	1540	127	0.8	

Zooplankton Entrainment Data
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Alona spp.	Intake	1050	0		
	Discharge	1150	0		
	Intake	1510	1	100.0	
	Discharge	1540	1	0.0	
Bosmina coregoni	Intake	1050	29	3.4	3.0
	Discharge	1150	47	6.4	
	Intake	1510	32	6.3	0.0
	Discharge	1540	78	0.0	
Daphnia ambigua	Intake	1050	0		
	Discharge	1150	1	100.0	
	Intake	1510	0		
	Discharge	1540	0		
Daphnia laevis	Intake	1050	0		
	Discharge	1150	1	0.0	
	Intake	1510	1	0.0	
	Discharge	1540	0		
Daphnia parvula	Intake	1050	5	0.0	
	Discharge	1150	0		
	Intake	1510	5	60.0	0.0
	Discharge	1540	1	0.0	
Diaphanosoma leuchtenbergianum	Intake	150	2	50.0	
	Discharge	1150	0		
	Intake	1510	0		
	Discharge	1540	2	0.0	
Holopedium gibberum	Intake	1050	5	0.0	
	Discharge	1150	0		
	Intake	1510	5	20.0	0.0
	Discharge	1540	4	0.0	
Disparalona acutirostris	Intake	1050	1	0.0	
	Discharge	1150	0		
	Intake	1510	2	0.0	
	Discharge	1540	0		
Cladocera	Intake	1050	42	4.8	3.6
	Discharge	1150	49	8.2	
	Intake	1510	46	15.2	0.0
	Discharge	1540	86	1.0	

Zooplankton Entrainment Data
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Crustacea	Intake	1050	236	8.5	0.0
	Discharge	1150	154	5.2	
	Intake	1510	116	14.7	0.0
	Discharge	1540	213	0.5	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
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	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Data
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Intake	0905	2	0.0	50.0
	Discharge	0950	2	50.0	
	Intake	1130	5	20.0	0.0
	Discharge	1225	1	0.0	
calanoid copepodid	Intake	0905	7	42.9	0.0
	Discharge	0950	34	8.8	
	Intake	1130	16	37.5	0.0
	Discharge	1225	21	9.5	
Eucyclops spp.	Intake	0905	3	0.0	
	Discharge	0950	0		
	Intake	1130	0		
	Discharge	1225	0		
Tropocyclops prasinus	Intake	0905	4	0.0	4.5
	Discharge	0950	44	4.5	
	Intake	1130	17	11.8	0.5
	Discharge	1225	49	12.2	
cyclopoid copepodid	Intake	0905	14	14.3	0.0
	Discharge	0950	38	0.0	
	Intake	1130	14	14.3	0.0
	Discharge	1225	61	3.3	
nauplii	Intake	0905	57	0.0	0.6
	Discharge	0950	161	0.6	
	Intake	1130	51	5.9	0.0
	Discharge	1225	105	1.9	
Copepoda	Intake	0905	87	5.7	0.0
	Discharge	0950	279	2.5	
	Intake	1130	103	13.6	0.0
	Discharge	1225	237	5.1	
Bosmina coregoni	Intake	0905	65	1.5	0.6
	Discharge	0950	47	2.1	
	Intake	1130	41	4.9	0.4
	Discharge	1225	19	5.3	
Daphnia parvula	Intake	0905	0		
	Discharge	0950	0		
	Intake	1130	0		
	Discharge	1225	1	100.0	

Zooplankton Entrainment Data
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Daphnia ambigua	Intake	0905	8	0.0	25.0
	Discharge	0950	12	25.0	
	Intake	1130	13	7.7	18.8
	Discharge	1225	4	25.0	
Daphnia laevis	Intake	0905	0		
	Discharge	0950	1	100.0	
	Intake	1130	0		
	Discharge	1225	1	100.0	
Diaphanosoma leuchtenbergianum	Intake	0905	50	10.0	21.6
	Discharge	0950	34	29.4	
	Intake	1130	45	33.3	0.0
	Discharge	1225	19	26.3	
Holopedium gibberum	Intake	0905	1	0.0	0.0
	Discharge	0950	1	0.0	
	Intake	1130	3	0.0	12.5
	Discharge	1225	8	12.5	
Leptodora kindtii	Intake	0905	0		
	Discharge	0950	0		
	Intake	1130	0		
	Discharge	1225	1	100.0	
Disparalona acutirostris	Intake	0905	1	0.0	
	Discharge	0950	0		
	Intake	1130	0		
	Discharge	1225	0		
Cladocera	Intake	0905	124	4.8	11.5
	Discharge	0950	95	15.8	
	Intake	1130	103	17.5	4.0
	Discharge	1225	53	20.8	
Crustacea	Intake	0905	211	5.2	0.7
	Discharge	0950	374	5.9	
	Intake	1130	206	15.5	0.0
	Discharge	1225	290	7.9	
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Data
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Intake	0930	14	7.1	8.5
	Discharge	1030	20	15.0	
	Intake	1230	12	16.7	0.0
	Discharge	1330	6	16.7	
calanoid copepodid	Intake	0930	6	83.3	0.0
	Discharge	1030	40	47.5	
	Intake	120	19	73.7	0.0
	Discharge	1330	22	45.5	
Mesocyclops edax	Intake	0930	3	33.3	100.0
	Discharge	1030	2	100.0	
	Intake	1230	2	0.0	
	Discharge	1330	0		
Tropocyclops prasinus	Intake	0930	32	6.3	17.9
	Discharge	1030	104	23.1	
	Intake	1230	44	11.4	11.7
	Discharge	1330	23	21.7	
cyclopoid copepodid	Intake	0930	60	20.0	3.2
	Discharge	1030	102	22.5	
	Intake	1230	59	33.9	0.0
	Discharge	1330	38	31.6	
nauplii	Intake	0930	83	9.6	0.0
	Discharge	1030	255	5.1	
	Intake	1230	200	7.5	0.0
	Discharge	1330	140	3.6	
Copepoda	Intake	0930	198	14.6	1.7
	Discharge	1030	523	16.1	
	Intake	1230	336	16.7	0.0
	Discharge	1330	229	14.4	
Bosmina coregoni	Intake	0930	30	0.0	0.0
	Discharge	1030	50	0.0	
	Intake	1230	76	0.0	0.0
	Discharge	1330	58	0.0	
Daphnia ambigua	Intake	0930	0		
	Discharge	1030	1	100.0	
	Intake	1230	0		
	Discharge	1330	1	0.0	

Zooplankton Entrainment Data
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Daphnia laevis	Intake	0930	1	0.0	100.0
	Discharge	1030	1	100.0	
	Intake	1230	1	0.0	
	Discharge	1330	0		
Daphnia parvula	Intake	0930	1	0.0	
	Discharge	1030	0		
	Intake	1230	0		
	Discharge	1330	0		
Diaphanosoma leuchtenbergianum	Intake	0930	24	33.3	17.5
	Discharge	1030	20	45.0	
	Intake	1230	43	14.0	73.2
	Discharge	1330	13	76.9	
Holopedium gibberum	Intake	0930	1	0.0	0.0
	Discharge	1030	2	0.0	
	Intake	1230	0		
	Discharge	1330	1	0.0	
Cladocera	Intake	0930	57	14.0	1.2
	Discharge	1030	73	15.1	
	Intake	1230	120	5.0	9.2
	Discharge	1330	73	13.7	
Crustacea	Intake	0930	255	14.5	1.7
	Discharge	1030	596	15.9	
	Intake	1230	456	13.6	0.7
	Discharge	1330	302	14.2	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Data
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Intake	0905	7	14.3	0.0
	Discharge	1000	6	0.0	
	Intake	1200	17	47.1	5.6
	Discharge	1250	10	50.0	
calanoid copepodid	Intake	0905	21	33.3	14.3
	Discharge	1000	7	42.9	
	Intake	1200	52	48.1	49.3
	Discharge	1250	19	73.7	
Orthocyclops modestus	Intake	0905	0		
	Discharge	1000	0		
	Intake	1200	1	0.0	
	Discharge	1250	0		
Tropocyclops prasinus	Intake	0905	6	0.0	9.1
	Discharge	1000	11	9.1	
	Intake	1200	16	12.5	0.0
	Discharge	1250	20	5.0	
cyclopoid copepodid	Intake	0905	23	21.7	0.0
	Discharge	1000	17	0.0	
	Intake	1200	45	22.2	0.0
	Discharge	1250	59	15.3	
nauplii	Intake	0905	65	10.8	0.0
	Discharge	1000	90	6.7	
	Intake	1200	98	10.2	0.0
	Discharge	1250	148	4.7	
Copepoda	Intake	0905	122	16.4	0.0
	Discharge	1000	131	7.6	
	Intake	1200	229	24.0	0.0
	Discharge	1250	256	14.1	
Bosmina coregoni	Intake	0905	59	0.0	0.0
	Discharge	1000	23	0.0	
	Intake	1200	76	2.6	12.0
	Discharge	1250	42	14.3	
Diaphanosoma leuchtenbergianum	Intake	0905	3	33.3	0.0
	Discharge	1000	3	0.0	
	Intake	1200	6	50.0	71.4
	Discharge	1250	7	85.7	

Zooplankton Entrainment Data
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
	Intake	0905	1	0.0	
Holopedium gibberum	Discharge	1000	0		
	Intake	1200	1	0.0	
	Discharge	1250	0		
	Intake	0905	63	1.6	0.0
Cladocera	Discharge	0950	26	0.0	
	Intake	1200	83	6.0	19.6
	Discharge	1250	49	24.5	
	Intake	0905	185	11.4	0.0
Crustacea	Discharge	0950	157	6.4	
	Intake	1200	312	19.2	0.0
	Discharge	1250	305	15.7	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
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	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Data
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaptomus mississippiensis	Intake	1025	0		
	Discharge	1050	14	100.0	
	Intake	1335	2	100.0	
	Discharge	1415	10	0.0	
calanoid copepodid	Intake	1025	40	45.0	0.0
	Discharge	1050	19	42.1	
	Intake	1335	16	68.8	0.0
	Discharge	1415	44	40.9	
Mesocyclops edax	Intake	1025	0		
	Discharge	1050	2	100.0	
	Intake	1335	2	0.0	
	Discharge	1415	0		
Tropocyclops prasinus	Intake	1025	13	7.7	12.4
	Discharge	1050	73	19.2	
	Intake	1335	55	20.0	0.0
	Discharge	1415	21	4.8	
cyclopoid copepodid	Intake	1025	87	20.7	15.9
	Discharge	1050	60	33.3	
	Intake	1335	27	14.8	0.0
	Discharge	1415	76	10.5	
nauplii	Intake	1025	88	17.0	22.8
	Discharge	1050	89	36.0	
	Intake	1335	85	27.1	0.0
	Discharge	1415	37	8.1	
Copepoda	Intake	1025	228	22.8	15.8
	Discharge	1050	257	35.0	
	Intake	1335	187	27.3	0.0
	Discharge	1415	188	16.0	
Bosmina coregoni	Intake	1025	47	2.1	8.4
	Discharge	1050	58	10.3	
	Intake	1335	81	1.2	2.7
	Discharge	1415	51	3.9	
Daphnia ambigua	Intake	1025	0		
	Discharge	1050	1	100.0	
	Intake	1335	0		
	Discharge	1415	0		

Zooplankton Entrainment Data
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Immotile	Corrected Percent Immotile
Diaphanosoma leuchtenbergianum	Intake	1025	26	42.3	42.2
	Discharge	1050	18	66.7	
	Intake	1335	13	38.5	18.7
	Discharge	1415	8	50.0	
Holopedium gibberum	Intake	1025	6	100.0	
	Discharge	1050	1	0.0	
	Intake	1335	3	0.0	
	Discharge	1415	0		
Leptodora kindtii	Intake	1025	1	0.0	100.0
	Discharge	1050	1	100.0	
	Intake	1335	0		
	Discharge	1415	0		
Cladocera	Intake	1025	80	22.5	3.6
	Discharge	1050	79	25.3	
	Intake	1335	97	6.2	4.2
	Discharge	1415	59	10.2	
Crustacea	Intake	1025	308	22.7	13.0
	Discharge	1050	336	32.7	
	Intake	1335	284	20.1	0.0
	Discharge	1415	247	14.6	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Damage at Location 502.0
Lake Keowee
March 16, 1977

Sample Time	1240		1240		1630		1630	
Sample Depth	10 m to surface		bottom to surface		10 m to surface		bottom to surface	
Volume Filtered (ℓ)	2134		4293		1469		3878	
Taxa	Number Observed	Percent Damaged	Number Observed	Percent Damaged	Number Observed	Percent Damaged	Number Observed	Percent Damaged
Diaptomus mississippiensis	1	0.0	3	0.0	1	0.0	4	0.0
calanoid copepodid	10	0.0	1	100.0	3	0.0	9	11.1
Eucyclops agilis					0		1	0.0
Mesocyclops edax	3	0.0	11	0.0	2	0.0	10	0.0
Tropocyclops prasinus	5	0.0	4	0.0	5	0.0	4	0.0
cyclopoid copepodid	26	3.8	14	0.0	16	6.2	33	3.0
nauplii	68	1.5	33	0.0	53	3.8	55	0.0
Copepoda	113	1.8	66	1.5	80	3.7	116	1.7
Bosmina coregoni	256	0.0	120	0.0	191	1.6	237	0.0
Daphnia ambigua	6	0.0	5	20.0	6	0.0	4	0.0
Daphnia parvula					0		1	0.0
Diaphanosoma leuchtenbergianum	1	0.0	3	0.0	3	0.0	4	75.0
Holopedium gibberum	35	0.0	13	0.0	14	0.0	21	0.0
Cladocera	298	0.0	141	0.7	214	1.4	267	1.1
Crustacea	411	0.5	207	1.0	294	2.0	383	1.3

Zooplankton Entrainment Damage
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Precondenser	0845	0		
	Postcondenser	0845	1	100.0	
	Precondenser	1330	3	0.0	20.0
	Postcondenser	1330	5	20.0	
calanoid copepodid	Precondenser	0845	5	20.0	0.0
	Postcondenser	0845	11	9.1	
	Precondenser	1330	7	0.0	12.5
	Postcondenser	1330	16	12.5	
Tropocyclops prasinus	Precondenser	0845	2	0.0	
	Postcondenser	0845	0		
	Precondenser	1330	14	0.0	0.0
	Postcondenser	1330	18	0.0	
Cyclops vernalis	Precondenser	0845	0		
	Postcondenser	0845	0		
	Precondenser	1330	1	0.0	
	Postcondenser	1330	0		
cyclopoid copepodid	Precondenser	0845	18	11.1	0.0
	Postcondenser	0845	48	2.1	
	Precondenser	1330	30	0.0	0.0
	Postcondenser	1330	44	0.0	
nauplii	Precondenser	0845	73	2.7	0.0
	Postcondenser	0845	79	1.3	
	Precondenser	1330	68	0.0	0.8
	Postcondenser	1330	130	0.8	
Copepoda	Precondenser	0845	98	5.1	0.0
	Postcondenser	0845	139	2.9	
	Precondenser	1330	123	0.0	1.9
	Postcondenser	1330	213	1.9	
Alona sp.	Precondenser	0845	0		
	Postcondenser	0845	0		
	Precondenser	1330	0		
	Postcondenser	1330	1	0.0	
Bosmina coregoni	Precondenser	0845	107	0.0	0.0
	Postcondenser	0845	113	0.0	
	Precondenser	1330	257	0.0	0.0
	Postcondenser	1330	144	0.0	

Zooplankton Entrainment Damage
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Daphnia ambigua	Precondenser	0845	1	0.0	0.0
	Postcondenser	0845	0		
	Precondenser	1330	2	0.0	
	Postcondenser	1330	1	0.0	
Daphnia parvula	Precondenser	0845	1	0.0	0.0
	Postcondenser	0845	2	0.0	
	Precondenser	1330	0		
	Postcondenser	1330	0		
Diaphanosoma leuchtenbergianum	Precondenser	0845	2	100.0	100.0
	Postcondenser	0845	0		
	Precondenser	1330	1	0.0	
	Postcondenser	1330	2	100.0	
Holopedium gibberum	Precondenser	0845	2	50.0	
	Postcondenser	0845	0		
	Precondenser	1330	0		
	Postcondenser	1330	0		
Cladocera	Precondenser	0845	113	2.7	0.0
	Postcondenser	0845	115	0.0	
	Precondenser	1330	260	0.0	1.4
	Postcondenser	1330	148	1.4	
Crustacea	Precondenser	0845	211	3.8	0.0
	Postcondenser	0845	254	1.6	
	Precondenser	1330	383	0.0	1.6
	Postcondenser	1330	509	1.6	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Damage
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Precondenser	0930	2	50.0	0.0
	Postcondenser	0930	4	0.0	
	Precondenser	1330	6	0.0	0.0
	Postcondenser	1330	2	0.0	
calanoid copepodid	Precondenser	0930	2	0.0	0.0
	Postcondenser	0930	5	0.0	
	Precondenser	1330	5	20.0	0.0
	Postcondenser	1330	2	0.0	
Mesocyclops edax	Precondenser	0930	2	0.0	
	Postcondenser	0930	0		
	Precondenser	1330	0		
	Postcondenser	1330	0		
Tropocyclops prasinus	Precondenser	0930	5	20.0	0.0
	Postcondenser	0930	10	0.0	
	Precondenser	1330	0		
	Postcondenser	1330	1	0.0	
cyclopoid copepodid	Precondenser	0930	18	11.1	0.0
	Postcondenser	0930	37	5.4	
	Precondenser	1330	15	20.0	2.8
	Postcondenser	1330	9	22.2	
nauplii	Precondenser	0930	63	0.0	0.0
	Postcondenser	0930	83	0.0	
	Precondenser	1330	63	0.0	0.0
	Postcondenser	1330	26	0.0	
Copepoda	Precondenser	0930	92	4.3	0.0
	Postcondenser	0930	139	1.4	
	Precondenser	1330	89	4.5	0.5
	Postcondenser	1330	40	5.0	
Alona sp.	Precondenser	0930	1	0.0	
	Postcondenser	0930	0		
	Precondenser	1330	0		
	Postcondenser	1330	0		
Bosmina coregoni	Precondenser	0930	83	0.0	0.0
	Postcondenser	0930	14	0.0	
	Precondenser	1330	76	2.6	0.0
	Postcondenser	1330	50	0.0	

Zooplankton Entrainment Damage
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Daphnia ambigua	Precondenser	0930	34	17.6	0.0
	Postcondenser	0930	3	0.0	
	Precondenser	1330	9	11.1	19.6
	Postcondenser	1330	7	28.6	
Daphnia parvula	Precondenser	0930	2	50.0	
	Postcondenser	0930	0		
	Precondenser	1330	5	0.0	0.0
	Postcondenser	1330	1	0.0	
Diaphanosoma leuchtenbergianum	Precondenser	0930	2	50.0	0.0
	Postcondenser	0930	1	50.0	
	Precondenser	1330	3	33.3	0.0
	Postcondenser	1330	1	0.0	
Holopedium gibberum	Precondenser	0930	2	0.0	0.0
	Postcondenser	0930	2	0.0	
	Precondenser	1330	1	0.0	0.0
	Postcondenser	1330	1	0.0	
Cladocera	Precondenser	0930	124	6.5	0.0
	Postcondenser	0930	20	0.0	
	Precondenser	1330	94	4.3	0.0
	Postcondenser	1330	60	3.3	
Crustacea	Precondenser	0930	216	5.6	0.0
	Postcondenser	0930	159	1.3	
	Precondenser	1330	183	4.4	0.0
	Postcondenser	1330	100	4.0	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Damage
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Precondenser	0900	1	100.0	
	Postcondenser	0900	0		
	Precondenser	1115	1	0.0	
	Postcondenser	1115	0		
calanoid copepodid	Precondenser	0900	9	0.0	0.0
	Postcondenser	0900	12	0.0	
	Precondenser	1115	10	10.0	0.0
	Postcondenser	1115	10	0.0	
Mesocyclops edax	Precondenser	0900	0		
	Postcondenser	0900	5	0.0	
	Precondenser	1115	0		
	Postcondenser	1115	0		
Tropocyclops prasinus	Precondenser	0900	15	0.0	0.0
	Postcondenser	0900	13	0.0	
	Precondenser	1115	11	0.0	0.0
	Postcondenser	1115	13	0.0	
cyclopoid copepodid	Precondenser	0900	8	0.0	0.0
	Postcondenser	0900	14	0.0	
	Precondenser	1115	11	0.0	5.9
	Postcondenser	1115	17	5.9	
nauplii	Precondenser	0900	66	1.5	0.7
	Postcondenser	0900	90	2.2	
	Precondenser	1115	53	0.0	6.6
	Postcondenser	1115	61	6.6	
Copepoda	Precondenser	0900	99	2.0	0.0
	Postcondenser	0900	134	1.5	
	Precondenser	1115	86	1.2	3.8
	Postcondenser	1115	101	5.0	
Bosmina coregoni	Precondenser	0900	66	1.5	0.0
	Postcondenser	0900	90	0.0	
	Precondenser	1115	32	0.0	0.0
	Postcondenser	1115	92	0.0	
Daphnia ambigua	Precondenser	0900	30	20.0	0.0
	Postcondenser	0900	35	8.6	
	Precondenser	1115	18	0.0	3.6
	Postcondenser	1115	28	3.6	

Zooplankton Entrainment Damage
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Daphnia laevis	Precondenser	0900	2	0.0	0.0
	Postcondenser	0900	1	0.0	
	Precondenser	1115	1	0.0	
	Postcondenser	1115	0		
Daphnia parvula	Precondenser	0900	0		
	Postcondenser	0900	1	0.0	
	Precondenser	1115	2	0.0	0.0
	Postcondenser	1115	2	0.0	
Diaphanosoma leuchtenbergianum	Precondenser	0900	57	1.8	2.1
	Postcondenser	0900	53	3.8	
	Precondenser	1115	41	4.9	0.0
	Postcondenser	1115	50	4.0	
Holopedium gibberum	Precondenser	0900	0		
	Postcondenser	0900	0		
	Precondenser	1115	2	0.0	0.0
	Postcondenser	1115	1	0.0	
Cladocera	Precondenser	0900	155	5.2	0.0
	Postcondenser	0900	180	2.8	
	Precondenser	1115	96	2.1	0.0
	Postcondenser	1115	174	1.7	
Crustacea	Precondenser	0900	254	3.9	0.0
	Postcondenser	0900	314	2.2	
	Precondenser	1115	182	1.6	1.3
	Postcondenser	1115	275	2.9	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Damage
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Precondenser	0930	4	0.0	0.0
	Postcondenser	0930	6	0.0	
	Precondenser	1200	6	0.0	0.0
	Postcondenser	1200	2	0.0	
calanoid copepodid	Precondenser	0930	7	14.3	0.0
	Postcondenser	0930	11	9.1	
	Precondenser	1200	14	14.3	9.3
	Postcondenser	1200	9	22.2	
Mesocyclops edax	Precondenser	0930	3	0.0	0.0
	Postcondenser	0930	1	0.0	
	Precondenser	1200	1	0.0	0.0
	Postcondenser	1200	2	0.0	
Tropocyclops prasinus	Precondenser	0930	34	0.0	0.0
	Postcondenser	0930	50	0.0	
	Precondenser	1200	35	0.0	0.0
	Postcondenser	1200	21	0.0	
cyclopoid copepodid	Precondenser	0930	36	2.8	0.0
	Postcondenser	0930	61	1.6	
	Precondenser	1200	46	0.0	8.3
	Postcondenser	1200	36	8.3	
nauplii	Precondenser	0930	89	3.4	0.0
	Postcondenser	0930	95	1.1	
	Precondenser	1200	86	1.2	5.8
	Postcondenser	1200	87	6.9	
Copepoda	Precondenser	0930	173	2.9	0.0
	Postcondenser	0930	224	1.3	
	Precondenser	1200	188	1.6	6.1
	Postcondenser	1200	157	7.6	
Disparalona acutirostris	Precondenser	0930	2	0.0	0.0
	Postcondenser	0930	2	0.0	
	Precondenser	1200	78	0.0	0.0
	Postcondenser	1200	65	0.0	
Bosmina coregoni	Precondenser	0930	17	0.0	0.0
	Postcondenser	0930	16	0.0	
	Precondenser	1200	78	0.0	0.0
	Postcondenser	1200	65	0.0	

Zooplankton Entrainment Damage
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Chydorus sp.	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		
Daphnia laevis	Precondenser	0930	1	100.0	
	Postcondenser	0930	1	100.0	
	Precondenser	1200	0		
	Postcondenser	1200	0		
Daphnia parvula	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		
Diaphanosoma leuchtenbergianum	Precondenser	0930	2	50.0	0.0
	Postcondenser	0930	4	25.0	
	Precondenser	1200	19	5.3	6.9
	Postcondenser	1200	17	11.8	
Holopedium gibberum	Precondenser	0930	0		
	Postcondenser	0930	0		
	Precondenser	1200	2	50.0	
	Postcondenser	1200	0		
Cladocera	Precondenser	0930	22	9.1	0.0
	Postcondenser	0930	23	8.7	
	Precondenser	1200	103	1.9	0.5
	Postcondenser	1200	82	2.4	
Crustacea	Precondenser	0930	195	3.6	0.0
	Postcondenser	0930	247	2.0	
	Precondenser	1200	291	1.7	4.2
	Postcondenser	1200	239	5.9	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Damage
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Precondenser	1000	11	0.0	3.2
	Postcondenser	1000	31	3.2	
	Precondenser	1200	7	28.6	0.0
	Postcondenser	1200	15	6.7	
calanoid copepodid	Precondenser	1000	36	8.3	0.0
	Postcondenser	1000	67	4.5	
	Precondenser	1200	29	6.9	0.0
	Postcondenser	1200	59	5.1	
Mesocyclops edax	Precondenser	1000	1	0.0	
	Postcondenser	1000	0		
	Precondenser	1200	0		
	Postcondenser	1200	0		
Tropocyclops prasinus	Precondenser	1000	31	0.0	0.0
	Postcondenser	1000	42	0.0	
	Precondenser	1200	35	0.0	1.7
	Postcondenser	1200	58	1.7	
cyclopoid copepodid	Precondenser	1000	37	0.0	3.8
	Postcondenser	1000	52	3.8	
	Precondenser	1200	32	9.4	0.0
	Postcondenser	1200	67	1.5	
nauplii	Precondenser	1000	62	0.0	0.0
	Postcondenser	1000	105	0.0	
	Precondenser	1200	131	0.0	0.0
	Postcondenser	1200	142	0.0	
Copepoda	Precondenser	1000	178	1.7	0.3
	Postcondenser	1000	297	2.0	
	Precondenser	1200	234	3.0	0.0
	Postcondenser	1200	341	1.8	
Bosmina coregoni	Precondenser	1000	80	0.0	0.0
	Postcondenser	1000	133	0.0	
	Precondenser	1200	125	0.8	0.0
	Postcondenser	1200	146	0.0	
Daphnia ambigua	Precondenser	1000	0		
	Postcondenser	1000	1	0.0	
	Precondenser	1200	0		
	Postcondenser	1200	1	0.0	

Zooplankton Entrainment Damage
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaphanosoma leuchtenbergianum	Precondenser	1000	7	42.9	0.0
	Postcondenser	1000	20	0.0	
	Precondenser	1200	5	20.0	0.0
	Postcondenser	1200	16	12.5	
Holopedium gibberum	Precondenser	1000	0		
	Postcondenser	1000	1	0.0	
	Precondenser	1200	0		
	Postcondenser	1200	0		
Illyocryptus spinifer	Precondenser	1000	0		
	Postcondenser	1000	1	0.0	
	Precondenser	1200	0		
	Postcondenser	1200	0		
Leptodora kindtii	Precondenser	1000	2	100.0	
	Postcondenser	1000	2	100.0	
	Precondenser	1200	0		
	Postcondenser	1200	0		
Cladocera	Precondenser	1000	89	5.6	0.0
	Postcondenser	1000	158	1.3	
	Precondenser	1200	130	1.5	0.0
	Postcondenser	1200	163	1.2	
Crustacea	Precondenser	1000	267	3.0	0.0
	Postcondenser	1000	455	1.8	
	Precondenser	1200	364	2.5	0.0
	Postcondenser	1200	504	1.6	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Damage
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Precondenser	0900	1	0.0	0.0
	Postcondenser	0900	2	0.0	
	Precondenser	1200	1	0.0	0.0
	Postcondenser	1200	2	0.0	
calanoid copepodid	Precondenser	0900	14	7.1	0.0
	Postcondenser	0900	13	0.0	
	Precondenser	1200	19	10.5	0.2
	Postcondenser	1200	28	10.7	
Mesocyclops edax	Precondenser	0900	1	0.0	
	Postcondenser	0900	0		
	Precondenser	1200	0		
	Postcondenser	1200	0		
Tropocyclops prasinus	Precondenser	0900	47	2.1	0.0
	Postcondenser	0900	56	0.0	
	Precondenser	1200	45	0.0	0.0
	Postcondenser	1200	69	0.0	
cyclopoid copepodid	Precondenser	0900	5	0.0	7.1
	Postcondenser	0900	14	7.1	
	Precondenser	1200	17	0.0	15.4
	Postcondenser	1200	13	15.4	
nauplii	Precondenser	0900	46	0.0	0.0
	Postcondenser	0900	57	0.0	
	Precondenser	1200	66	0.0	0.0
	Postcondenser	1200	85	0.0	
Copepoda	Precondenser	0900	114	1.8	0.0
	Postcondenser	0900	142	0.7	
	Precondenser	1200	148	1.4	1.2
	Postcondenser	1200	197	2.5	
Bosmina coregoni	Precondenser	0900	71	0.0	0.0
	Postcondenser	0900	52	0.0	
	Precondenser	1200	89	0.0	0.0
	Postcondenser	1200	75	0.0	
Daphnia ambigua	Precondenser	0900	4	0.0	100.0
	Postcondenser	0900	1	100.0	
	Precondenser	1200	0		
	Postcondenser	1200	0		

Zooplankton Entrainment Damage
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaphanosoma leuchtenbergianum	Precondenser	0900	37	8.1	14.8
	Postcondenser	0900	23	21.7	
	Precondenser	1200	13	23.1	0.6
	Postcondenser	1200	17	23.5	
Holopedium gibberum	Precondenser	0900	0		
	Postcondenser	0900	0		
	Precondenser	1200	1	0.0	
	Postcondenser	1200	0		
Leydigia leydigi	Precondenser	0900	0		
	Postcondenser	0900	0		
	Precondenser	1200	0		
	Postcondenser	1200	1	0.0	
Cladocera	Precondenser	0900	112	2.7	5.4
	Postcondenser	0900	76	7.9	
	Precondenser	1200	103	2.9	1.4
	Postcondenser	1200	93	4.3	
Crustacea	Precondenser	0900	226	2.2	1.0
	Postcondenser	0900	218	3.2	
	Precondenser	1200	251	2.0	1.1
	Postcondenser	1200	290	3.1	
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				
	Precondenser				
	Postcondenser				

Zooplankton Entrainment Damage
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Intake	1115	2	0.0	0.0
	Discharge	1150	1	0.0	
	Intake	1430	2	0.0	100.0
	Discharge	1550	1	100.0	
calanoid copepodid	Intake	1115	10	0.0	4.3
	Discharge	1150	23	4.3	
	Intake	1430	6	0.0	0.0
	Discharge	1550	7	0.0	
Mesocyclops edax	Intake	1115	1	0.0	
	Discharge	1150	0		
	Intake	1430	0		
	Discharge	1550	0		
Tropocyclops prasinus	Intake	1115	15	0.0	0.0
	Discharge	1150	17	0.0	
	Intake	1430	4	0.0	0.0
	Discharge	1550	5	0.0	
cyclopoid copepodid	Intake	1115	41	4.9	0.0
	Discharge	1150	59	0.0	
	Intake	1430	19	5.3	2.6
	Discharge	1550	13	7.7	
nauplii	Intake	1115	89	7.9	0.0
	Discharge	1150	155	1.3	
	Intake	1430	60	0.0	0.0
	Discharge	1550	58	0.0	
Copepoda	Intake	1115	158	5.7	0.0
	Discharge	1150	255	1.2	
	Intake	1430	91	1.1	0.1
	Discharge	1550	84	1.2	
Bosmina coregoni	Intake	1115	262	0.0	0.0
	Discharge	1150	379	0.0	
	Intake	1430	151	0.0	0.0
	Discharge	1550	101	0.0	
Daphnia ambigua	Intake	1115	0		
	Discharge	1150	2	0.0	
	Intake	1430	0		
	Discharge	1550	0		

Zooplankton Entrainment Damage
Oconee Nuclear Station
January 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Daphnia parvula	Intake	1115	2	0.0	0.0
	Discharge	1150	2	0.0	
	Intake	1430	0		
	Discharge	1550	1	0.0	
Diaphanosoma leuchtenbergianum	Intake	1115	2	0.0	25.0
	Discharge	1150	4	25.0	
	Intake	1430	0		
	Discharge	1550	0		
Holopedium gibberum	Intake	1115	2	0.0	0.0
	Discharge	1150	0		
	Intake	1430	1	0.0	
	Discharge	1550	2	0.0	
Leptodora kindtii	Intake	1115	1	0.0	
	Discharge	1150	0		
	Intake	1430	0		
	Discharge	1550	0		
Cladocera	Intake	1115	269	0.0	0.3
	Discharge	1150	387	0.3	
	Intake	1430	152	0.0	0.0
	Discharge	1550	104	0.0	
Crustacea	Intake	1115	427	2.1	0.0
	Discharge	1150	642	0.6	
	Intake	1430	243	0.4	0.1
	Discharge	1550	188	0.5	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Damage
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Intake	1050	3	33.3	0.0
	Discharge	1150	3	0.0	
	Intake	1510	7	0.0	0.0
	Discharge	1540	4	0.0	
calanoid copepodid	Intake	1050	5	20.0	9.1
	Discharge	1150	11	27.3	
	Intake	1510	7	14.3	0.0
	Discharge	1540	5	0.0	
Cyclops thomasi	Intake	1050	1	0.0	
	Discharge	1150	0		
	Intake	1510	0		
	Discharge	1540	0		
Mesocyclops edax	Intake	1050	1	0.0	0.0
	Discharge	1150	2	0.0	
	Intake	1510	2	0.0	
	Discharge	1540	0		
Tropocyclops prasinus	Intake	1050	1	0.0	0.0
	Discharge	1150	4	0.0	
	Intake	1510	5	0.0	0.0
	Discharge	1540	7	0.0	
cyclopoid copepodid	Intake	1050	16	12.5	1.0
	Discharge	1150	15	13.3	
	Intake	1510	34	17.6	0.0
	Discharge	1540	26	3.8	
nauplii	Intake	1050	49	6.1	0.0
	Discharge	1150	52	0.0	
	Intake	1510	54	1.9	0.0
	Discharge	1540	35	0.0	
Copepoda	Intake	1050	76	9.2	0.0
	Discharge	1150	87	5.7	
	Intake	1510	109	7.3	0.0
	Discharge	1540	77	1.3	
Alona spp.	Intake	1050	0		
	Discharge	1150	0		
	Intake	1510	1	0.0	
	Discharge	1540	0		

Zooplankton Entrainment Damage
Oconee Nuclear Station
March 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Bosmina coregoni	Intake	1050	77	0.0	4.4
	Discharge	1150	68	4.4	
	Intake	1510	117	0.0	0.0
	Discharge	1540	116	0.0	
Daphnia ambigua	Intake	1050	14	0.0	0.0
	Discharge	1150	8	0.0	
	Intake	1510	34	2.9	3.4
	Discharge	1540	16	6.3	
Daphnia laevis	Intake	1050	0		
	Discharge	1150	4	0.0	
	Intake	1510	1	0.0	
	Discharge	1540	0		
Daphnia parvula	Intake	1050	1	0.0	0.0
	Discharge	1150	2	0.0	
	Intake	1510	2	0.0	66.7
	Discharge	1540	3	66.7	
Diaphanosoma leuchtenbergianum	Intake	1050	0		
	Discharge	1150	5	40.0	
	Intake	1510	2	100.0	
	Discharge	1540	4	0.0	
Holopedium gibberum	Intake	1050	2	0.0	0.0
	Discharge	1150	1	0.0	
	Intake	1510	5	0.0	
	Discharge	1540	0		
Cladocera	Intake	1050	94	0.0	5.7
	Discharge	1150	88	5.7	
	Intake	1510	162	1.9	0.3
	Discharge	1540	139	2.2	
Crustacea	Intake	1050	170	4.1	1.7
	Discharge	1150	175	5.7	
	Intake	1510	271	4.9	0.0
	Discharge	1540	216	1.9	
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Damage
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Intake	0905	0		
	Discharge	0950	1	0.0	
	Intake	1130	0		
	Discharge	1225	1	0.0	
calanoid copepodid	Intake	0905	7	28.6	0.0
	Discharge	0950	14	21.4	
	Intake	1130	15	40.0	0.0
	Discharge	1225	19	0.0	
Mesocyclops edax	Intake	0905	0		
	Discharge	0950	0		
	Intake	1130	1	0.0	
	Discharge	1225	0		
Tropocyclops prasinus	Intake	0905	12	0.0	9.1
	Discharge	0950	22	9.1	
	Intake	1130	23	4.3	0.0
	Discharge	1225	51	0.0	
cyclopoid copepodid	Intake	0905	14	14.3	0.0
	Discharge	0950	34	8.8	
	Intake	1130	24	12.5	0.0
	Discharge	1225	56	0.0	
nauplii	Intake	0905	49	14.3	2.9
	Discharge	0950	119	16.8	
	Intake	1130	108	2.8	4.8
	Discharge	1225	216	7.4	
Copepoda	Intake	0905	82	13.4	25.9
	Discharge	0950	81	35.8	
	Intake	1130	171	7.6	0.0
	Discharge	1225	343	4.7	
Bosmina coregoni	Intake	0905	67	0.0	0.0
	Discharge	0950	31	0.0	
	Intake	1130	93	1.1	0.0
	Discharge	1225	38	0.0	
Daphnia ambigua	Intake	0905	17	0.0	0.0
	Discharge	0950	9	0.0	
	Intake	1130	13	0.0	
	Discharge	1225	0		

Zooplankton Entrainment Damage
Oconee Nuclear Station
May 11, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
	Intake	0905	2	0.0	
Daphnia	Discharge	0950	0		
laevis	Intake	1130	0		
	Discharge	1225	1	0.0	
	Intake	0905	0		
Daphnia	Discharge	0950	0		
parvula	Intake	1130	1	100.0	
	Discharge	1225	0		
	Intake	0905	32	0.0	0.0
Diaphanosoma	Discharge	0950	8	0.0	
leuchtenbergianum	Intake	1130	38	5.3	5.0
	Discharge	1225	20	10.0	
	Intake	0905	0		
Holopedium	Discharge	0950	6	0.0	
gibberum	Intake	1130	1	0.0	0.0
	Discharge	1225	12	0.0	
	Intake	0905	1	0.0	
Leptodora	Discharge	0950	0		
kindtii	Intake	1130			
	Discharge	1225			
	Intake	0905	119	0.0	0.0
	Discharge	0950	54	0.0	
Cladocera	Intake	1130	146	2.7	0.1
	Discharge	1225	71	2.8	
	Intake	0905	201	5.5	16.9
	Discharge	0950	135	21.5	
Crustacea	Intake	1130	317	5.4	0.0
	Discharge	1225	414	4.3	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Damage
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Intake	0930	27	0.0	0.0
	Discharge	1030	5	0.0	
	Intake	1230	3	0.0	12.5
	Discharge	1330	8	12.5	
calanoid copepodid	Intake	0930	25	8.0	21.5
	Discharge	1030	18	27.8	
	Intake	1230	13	30.8	0.0
	Discharge	1330	14	28.6	
Eucyclops prionophorus	Intake	0930	0		
	Discharge	1030	0		
	Intake	1230	0		
	Discharge	1330	1	0.0	
Mesocyclops edax	Intake	0930	2	0.0	
	Discharge	1030	0		
	Intake	1230	1	0.0	100.0
	Discharge	1330	1	100.0	
Tropocyclops prasinus	Intake	0930	52	0.0	2.3
	Discharge	1030	43	2.3	
	Intake	1230	24	0.0	4.7
	Discharge	1330	43	4.7	
Cyclops vernalis	Intake	0930	1	0.0	0.0
	Discharge	1030	1	0.0	
	Intake	1230	1	0.0	
	Discharge	1330	0		
cyclopoid copepodid	Intake	0930	66	4.5	10.2
	Discharge	1030	63	14.3	
	Intake	1230	57	5.3	4.3
	Discharge	1330	64	9.4	
nauplii	Intake	0930	90	1.1	9.4
	Discharge	1030	144	10.4	
	Intake	1230	110	1.8	0.5
	Discharge	1330	132	2.3	
Copepoda	Intake	0930	263	2.3	8.9
	Discharge	1030	274	10.9	
	Intake	1230	209	4.3	1.9
	Discharge	1330	263	6.1	

Zooplankton Entrainment Damage
Oconee Nuclear Station
July 13, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Disparalona acutirostris	Intake	0930	0		
	Discharge	1030	0		
	Intake	1230	1	0.0	
	Discharge	1330	0		
Bosmina coregoni	Intake	0930	103	0.0	0.0
	Discharge	1030	36	0.0	
	Intake	1230	79	0.0	0.0
	Discharge	1330	98	0.0	
Daphnia ambigua	Intake	0930	2	0.0	
	Discharge	1030	0		
	Intake	1230	0		
	Discharge	1330	0		
Daphnia laevis	Intake	0930	2	0.0	
	Discharge	1030	0		
	Intake	1230	1	0.0	
	Discharge	1330	0		
Daphnia parvula	Intake	0930	0		
	Discharge	1030	0		
	Intake	1230	1	0.0	
	Discharge	1330	0		
Diaphanosoma leuchtenbergianum	Intake	0930	31	3.2	15.5
	Discharge	1030	11	18.2	
	Intake	1230	30	6.7	9.8
	Discharge	1330	19	15.8	
Holopedium gibberum	Intake	0930	1	0.0	
	Discharge	1030	0		
	Intake	1230	0		
	Discharge	1330	1	0.0	
Cladocera	Intake	0930	139	0.7	3.6
	Discharge	1030	47	4.3	
	Intake	1230	112	1.8	0.8
	Discharge	1330	118	2.5	
Crustacea	Intake	0930	402	1.7	8.4
	Discharge	1030	321	10.0	
	Intake	1230	321	3.4	1.6
	Discharge	1330	381	5.0	

Zooplankton Entrainment Damage
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Intake	0905	19	0.0	8.3
	Discharge	1000	12	8.3	
	Intake	1200	3	0.0	0.0
	Discharge	1250	7	0.0	
calanoid copepodid	Intake	0905	70	10.0	0.0
	Discharge	1000	76	5.3	
	Intake	1200	26	23.1	0.0
	Discharge	1250	52	7.7	
Mesocyclops edax	Intake	0905	2	0.0	0.0
	Discharge	1000	2	0.0	
	Intake	1200	0	0.0	
	Discharge	1250	1	1.0	0.0
Tropocyclops prasinus	Intake	0905	94	3.2	0.6
	Discharge	1000	53	3.8	
	Intake	1200	33	0.0	0.0
	Discharge	1250	74	0.0	
cyclopoid copepodid	Intake	0905	68	2.9	3.8
	Discharge	1000	45	6.7	
	Intake	1200	42	9.5	0.0
	Discharge	1250	57	0.0	
nauplii	Intake	0905	148	2.7	0.0
	Discharge	1000	97	0.0	
	Intake	1200	125	0.8	2.1
	Discharge	1250	104	2.9	
Copepoda	Intake	0905	401	4.0	0.0
	Discharge	1000	285	3.5	
	Intake	1200	229	4.8	0.0
	Discharge	1250	295	2.4	
Bosmina coregoni	Intake	0905	150	0.7	0.7
	Discharge	1000	73	1.4	
	Intake	1200	101	1.0	0.0
	Discharge	1250	182	0.0	
Daphnia ambigua	Intake	0905	1	0.0	
	Discharge	1000	0		
	Intake	1200	0		
	Discharge	1250	0		

Zooplankton Entrainment Damage
Oconee Nuclear Station
October 12, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaphanosoma leuchtenbergianum	Intake	0905	5	0.0	30.8
	Discharge	1000	13	30.8	
	Intake	1200	7	0.0	33.3
	Discharge	1250	15	33.3	
Holopedium gibberum	Intake	0905	2	0.0	0.0
	Discharge	1000	1	0.0	
	Intake	1200	0		
	Discharge	1250	0		
Leptodora kindtii	Intake	0905	1	0.0	
	Discharge	1000	0		
	Intake	1200	0		
	Discharge	1250	0		
Cladocera	Intake	0905	159	0.6	4.0
	Discharge	1000	87	4.6	
	Intake	1200	108	0.9	1.6
	Discharge	1250	197	2.5	
Crustacea	Intake	0905	560	3.0	0.8
	Discharge	1000	372	3.8	
	Intake	1200	337	3.6	0.0
	Discharge	1250	492	2.4	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

Zooplankton Entrainment Damage
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Diaptomus mississippiensis	Intake	1025	2	0.0	0.0
	Discharge	1050	2	0.0	
	Intake	1335	0		
	Discharge	1415	1	0.0	
calanoid copepodid	Intake	1025	17	5.9	0.0
	Discharge	1050	22	4.5	
	Intake	1335	19	15.8	30.1
	Discharge	1415	17	41.2	
Cyclops vernalis	Intake	1025	1	100.0	
	Discharge	1050	0		
	Intake	1335	0		
	Discharge	1415	0		
Mesocyclops edax	Intake	1025	0		
	Discharge	1050	2	0.0	
	Intake	1335	0		
	Discharge	1415	1	100.0	
Tropocyclops prasinus	Intake	1025	76	0.0	3.4
	Discharge	1050	87	3.4	
	Intake	1335	54	0.0	0.0
	Discharge	1415	71	0.0	
cyclopoid copepodid	Intake	1025	17	0.0	0.0
	Discharge	1050	25	0.0	
	Intake	1335	7	0.0	5.9
	Discharge	1415	17	5.9	
nauplii	Intake	1025	44	0.0	5.8
	Discharge	1050	52	5.8	
	Intake	1335	45	0.0	6.3
	Discharge	1415	48	6.3	
Copepoda	Intake	1025	157	1.3	2.4
	Discharge	1050	190	3.7	
	Intake	1335	125	2.4	5.5
	Discharge	1415	155	7.7	
Bosmina coregoni	Intake	1025	52	0.0	2.3
	Discharge	1050	87	2.3	
	Intake	1335	65	0.0	0.0
	Discharge	1415	96	0.0	

Zooplankton Entrainment Damage
Oconee Nuclear Station
November 16, 1977

Taxa	Location	Time Of Sampling	Number Observed	Percent Damaged	Corrected Percent Damaged
Ceriodaphnia lacustris	Intake	1025	2	0.0	
	Discharge	1050	0		
	Intake	1335	0		
	Discharge	1415	0		
Daphnia ambigua	Intake	1025	3	0.0	0.0
	Discharge	1050	1	0.0	
	Intake	1335	1	0.0	0.0
	Discharge	1415	3	0.0	
Daphnia parvula	Intake	1025	0		
	Discharge	1050	0		
	Intake	1335	0		
	Discharge	1415	1	0.0	
Holopedium gibberum	Intake	1025	0		
	Discharge	1050	1	0.0	
	Intake	1335	0		
	Discharge	1415	0		
Cladocera	Intake	1025	74	0.0	3.0
	Discharge	1050	100	3.0	
	Intake	1335	78	2.6	1.9
	Discharge	1415	135	4.4	
Crustacea	Intake	1025	231	0.9	2.6
	Discharge	1050	290	3.4	
	Intake	1335	203	2.5	3.8
	Discharge	1415	290	6.2	
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				
	Intake				
	Discharge				

APPENDIX C

Highlights of Activities

Southeast Reservoir Investigations

FY 1977

Highlights of Activities

Southeast Reservoir Investigations

FY 1977

To Be Published in:
Sport Fishery and Wildlife Research 1976-77
U. S. Department of the Interior
Fish and Wildlife Service

Purpose of the studies.

It is estimated that by the year 2000 the United States will require nearly 3 times our present electrical generating capacity. This need will result in the continued construction of steam generating power plants and the discharge of heated water to our environment. Heated water can change the behavior and life processes of aquatic animals. Additional alterations of our waters will result from the construction of pumped storage hydroelectric plants. Pumped storage is defined as the pumping of water to a higher reservoir for storage during periods of low power demand, so that the water can be used for generating electricity during periods of peak power needs. Rapid changes in water levels are the most dramatic habitat alterations caused by pumped storage power projects.

Southeast Reservoir Investigations were established to evaluate long term effects of power plants on fish and other aquatic life in reservoirs. Most research has been in Keowee and Jocassee Reservoirs in northwestern South Carolina. Keowee Reservoir (7,411 ha) serves as a cooling reservoir for the 2,658-MW Oconee Nuclear Station, supplies water for the 140-MW Keowee Hydrostation, and also serves as the lower pool for pumped storage operations. A 610-MW pumped storage hydroelectric plant is located on Jocassee Reservoir (3,063 ha), the upper reservoir for the pumped storage plant. Research on these reservoirs will provide recommendations on the location, design, and operation of future power plants to minimize alterations of our environment.

Zooplankton abundance.

Exposure to heated power plant effluents or entrainment in cooling water systems, may affect zooplankton populations; an essential component of a reservoir food web. Zooplankton populations in Keowee Reservoir were sampled with a plankton (fine mesh) net from 1973 to 1976 to determine if species composition and densities in various areas of the reservoir were being modified by the operation of Oconee Nuclear Station.

Species composition changed little during the years of study. No lethal temperatures were observed but a decrease in surface concentrations of zooplankton was noted. This decrease results from a redistribution of zooplankton by the condenser cooling water. The cooling water is drawn from a depth of 19-27 m beneath a skimmer wall (concrete dam with opening at the bottom). This allows only water with concentrations of organisms lower than found in surface water to pass through the power station cooling system. As a result, the discharge water has fewer plankters, thereby diluting the plankton community in the discharge area. The discharge area covers 10-30% of the total lake surface during about 8 months of the year. Overall, the skimmer wall appears to minimize the effect of using Keowee Reservoir water for plant cooling on zooplankton populations.

Relative abundance of young fish.

Large volumes of cool water (from 19-27 m deep) are withdrawn from Keowee Reservoir, circulated through the cooling system of the Oconee Nuclear Station, heated about 10 C, and discharged back into the reservoir. Since effects of heated water on young fish were generally unknown, this study measured changes in the relative abundance of mid-reservoir populations of young fish in Keowee Reservoir before (1973-74) and after (1975-77) the operation of the Oconee Nuclear Station.

Young fish (6-40 mm long) were sampled by trawl from March through September, 1973-1977, in four areas of Keowee Reservoir. Four species of fish were captured consistently each year. Yellow perch were first captured in March; black crappies in May 1973, in April 1974 and 1975, and March 1976; and sunfish in May of each year. Threadfin shad were stocked in the reservoir in January 1974 by the South Carolina Wildlife and Marine Resources Department. They reproduced the first year and young were captured in May 1974 and 1975 and April 1976.

The average catch for all species except threadfin shad declined at all stations between 1973 and 1976. The average number of yellow perch captured per trawl haul from all areas of the reservoir declined from 19.2 fish in 1973 to 0.5 fish in 1976. Average catch per trawl haul of black crappie declined from 4.3 fish in 1973 to 1.7 fish in 1976. Young sunfishes exhibited the greatest decline. Average catch per haul declined from 21.5 fish in 1973 to 0.2 fish in 1976. Lowest annual catches of yellow perch, black crappie and sunfishes were near the heated water discharge.

It is unclear whether the overall reduction of the three species results from a stabilization of environmental conditions and fish population levels as are common for new reservoirs and other natural changes or from the presence of a nuclear plant. The low catches near the heated effluent were attributed to possible avoidance of the area by adult spawners due to elevated temperatures or a flushing and diluting effect of water free of young fish being discharged by the nuclear plant (similar to that described in the zooplankton studies). Discharge water temperatures during the spring were not in the range considered lethal for these species. Threadfin shad usually are killed when water temperatures decline to 10 C. However, the discharge of heated water apparently has contributed to successful over-wintering of this species.

Life history studies.

Since changes in feeding, growth, and reproduction of fishes usually occur following temperature changes or other habitat modifications, research includes studies of the life history of selected species in Keowee Reservoir. Recently completed research includes work with black crappies. Young fish are less mobile than adults and often are unable to avoid heated water discharges. Young black crappies (5-17 mm long) were collected before and after the operation of the Oconee Nuclear Station from areas adjacent to and 11 km (6.8 miles) from the plant discharge point. The stomach contents were microscopically examined and the food organism identified and counted. The young black crappies fed entirely on microscopic organisms (zooplankton). There was not a significant difference in the kinds or numbers of organisms eaten in each area before and after the operation of the power plant.

Environmental changes are known to affect the number of eggs produced by fish in one year. Adult black crappies were collected in the spring prior to spawning before and after the operation of the nuclear plant to determine if temperature changes affected egg numbers. Ovaries were removed and total number of eggs counted. Black crappies contained between 17,900 and 226,600 eggs with the largest fish containing the largest number of eggs. However, numbers of eggs for fish of the same size were similar in all areas before and after the operation of the nuclear plant. It appears the heated effluent had no detrimental effect on the number of eggs produced or on the food eaten by the young.

Entrainment of young fishes due to pumped storage operations.

The regular interchange of water between the upper and lower reservoirs in a pumped storage system can have various effects on both impoundments, which may include: water quality alterations, displacement and mortality of adult fish; entrainment (involuntary movement) and mortality of fish eggs and young, and (because of the continuous and rapid water level fluctuations) reduced reproduction of species that spawn in shallow water. A study was initiated in 1977 to evaluate the passage of young fishes during generating and pumping modes of the Jocassee Hydrostation. About 1,100 m^3 of water were filtered weekly with 1-m plankton nets. These nets were used at both ends of the penstocks (a conduit for conducting water) in order to sample fish before and after passage through the turbines.

Nearly 6.3 times as many young fishes were passed during the pumping mode than during the generation mode. The primary species collected were yellow perch, black crappie, threadfin shad, and sunfishes.

The difference in density of young fishes passing through the Jocassee hydrostation during different operational modes appears to be related to the configuration of the basin surrounding the penstock openings, since the depth and design of the openings at both ends are similar. Abundances of young fishes in 1977 were similar between upper and lower reservoirs and concentrations were highest in the upper (0-7 m) water strata. Therefore, the pumping mode must entrain more surface water and consequently pass more young fishes due to the relatively restricted shallow (less than 30 m) channel it is drawing from, compared with the generating mode, which draws water from a relatively open area of deep water (more than 100 m).

Controlling the depth from which water is withdrawn through the turbines at both ends of the penstocks appears to be an important consideration for controlling the effects of pumped storage operations on water quality and biotic communities.

APPENDIX D

Southeast Reservoir Investigations

Report of Progress and Evaluation for FY 1978

Report of Progress and Evaluation for FY 78

Excerpts from

Proposed Annual Work Plan for FY 1979

U. S. Fish and Wildlife Service

Southeast Reservoir Investigations

Clemson, South Carolina 29631

for

Annual Report

Duke Power Company

Oconee Nuclear Station

Report of Progress and Evaluation for FY 1978

Program: Inland Fisheries and Reservoirs

Project Title: Population Dynamics of Fishes in Keowee and Jocassee Reservoirs (921)

Southeast Reservoir Investigations were established to evaluate long term effects of power plants on fish and other aquatic life in reservoirs. Most of the laboratory's efforts have been devoted to measuring changes in fish species composition and abundances, and changes in fish reproductive, growth and mortality rates in Keowee and Jocassee Reservoirs. All standard fishery techniques are used to describe and evaluate changes taking place because of power plant operations. Since some of the work units describe the collection of similar, related, information by different methods, many results will be reported together to describe changes in the fish communities. A special report which compiled all reports, publications and assembled data from 1972-1975 was prepared for Duke Power Company.

Work Unit Title: Shoreline Fish Populations

Progress: 1977 marked the fifth consecutive year of sampling the shoreline fish population of Lake Keowee by seine. All data has been recorded on computer cards and data sets are presently being formed. After all data has been satisfactorily verified, regression analysis will be performed on various population parameters to determine what changes have occurred. Preliminary analysis continues to show a reduction in all shoreline species except for spottail shiners.

Evaluation: Computer analysis has been slow because of difficulty in the formation of correct data sets. Analysis and a final report will be available in September, 1978, and seining will not appear as a separate work unit. Seining, however, will be used normally to collect specific information for other work units.

Work Unit Title: Gill Net Samples

Progress: The adult fish in Keowee and Jocassee Reservoirs are sampled with experimental gill nets to detect changes in relative abundance, species composition, and year class strength. Data on relative abundance and species composition has been summarized for Keowee Reservoir by stations, areas, and dates. Analysis of year class strength is progressing. By 1977, indications are that relative

abundance has declined for most species in Keowee Reservoir. Flat bullheads and black crappies appear to be the only major species increasing in abundance.

Changes in the adult fish population related to the operation of Oconee Nuclear Station are not obvious in 1977. However, there appears to be a winter concentration of fish near the Oconee Nuclear Station outfall and a special one year study was designed to study this phenomenon. (Part of objective Number 5, Project 923).

Data on relative abundance and species composition has been summarized for Jocassee Reservoir by station, area, and dates. Analysis of year class strength is progressing.

Changes in the adult fish population related to the operation of Jocassee Pumped Storage Station are not obvious in 1977.

Evaluation: Gill net samples are providing useful information concerning the abundance and distribution of the adult fish population. Gill net samples have also indicated possible biases in the August cove-rotenone samples, related to preferred temperatures, and this area needs further study. Therefore, a special study involving spring rotenone samples was designed and initiated (Cove Fish Populations Work Unit). The target completion date remains "continuing."

Work Unit Title: Cove Fish Populations

Progress: Cove rotenone samples are taken annually in Keowee and Jocassee Reservoirs to provide estimates of weight and numbers by size of each species present in near shore areas. In general, the standing crops of threadfin shad and largemouth bass have increased in Jocassee Reservoir. Some species are not reproducing and their standing crops have declined, included are: chain pickerel, quillback, golden shiner, brown bullhead and all species of redhorse. In Keowee Reservoir, the standing crops of flat bullhead, redbreast sunfish, and green sunfish increased between 1973 and 1977. The standing crops of other species have been variable and have not established long-term trends.

Evaluation: Cove rotenoneing and gill netting are the major techniques for describing the adult fish populations and for providing fish for life history studies. The data are useful for determining changes within a system and for comparing the community structures of numerous systems. The Oconee Nuclear Station and pumpback operation have been operating for a relatively short period of time. The standing crops of fish species that adapt to the new reservoirs should soon predominate and stabilize in both reservoirs, and major fluctuations

should result from man-made perturbations of the environment. The target completion date remains "continuing" to provide ample time for community stabilization to occur and to determine if changes seen in early life history stages are reflected in adult fish estimates. Good progress is being made analyzing data collected over the past 5 years. Special spring rotenone samples are being collected to help sort out possible biases resulting from changing water temperatures and the preferred temperatures of key species.

Work Unit Title: Age 0 Population Dynamics

Progress: Age 0 fish were sampled by trawl weekly from March-September 1973-76 at four representative areas in Keowee Reservoir. In 1977, additional stations were added at the mouths of three major tributaries. Limnetic populations of yellow perch, black crappie and sunfishes, at the four original sampling stations, remained about the same in 1976 and 1977 and were much lower than pre-operational data collected in 1973. Catches from the tributaries were higher than in the main reservoir. Threadfin shad are established in the reservoir after being stocked in 1974. The same 4 species of age 0 fish were sampled by trawl in Jocassee Reservoir in 1975-77. These data have not been analyzed but will be used to evaluate the effects of pumped-storage operations on Jocassee Reservoir.

Evaluation: A manuscript: Population Dynamics of Young-of-the-year Fish in a Reservoir Receiving Heated Effluent has been published in The Proceedings of the Conference on Assessing the Effects of Power-Plant-induced Mortality on Fish Populations. Young-of-the-year work in Keowee Reservoir related to the heated effluent will be finished by the target completion date of September, 1978. However, trawling will continue in the Jocassee Reservoir tailrace (in Keowee) and in a control area of Keowee Reservoir as part of our effort to measure and evaluate the movement of larval fish between reservoirs. Progress is continuing on schedule without problems.

Work Unit Title: Angler Harvest

Progress: The South Carolina Wildlife and Marine Resources Department under contract from SERI has conducted a survey to estimate angling pressure and sport fish yield on Keowee Reservoir since July 1973. The State is now processing creel data collected during the first six months of 1977. SERI's staff is correlating the data with temperature changes in Keowee and Jocassee Reservoirs and comparing these data with other data collected by the State in non-thermally altered reservoirs in South Carolina. The State is conducting a similar survey (not funded by SERI) on Jocassee Reservoir and providing the data for our use.

Evaluation: Recent analysis of data collected indicates the creel survey is providing information useful in evaluating the effects of heated effluent in Keowee Reservoir (and pumped storage operations in Jocassee Reservoir). The following recommendations have been made to improve

the creel surveys: (1) more samples of shorter durations; (2) continued analysis by all species as in 1976; (3) make calculations based on hectares, kilograms, kilograms/ha, etc. rather than in English units; and (4) make estimates of fishing success (in number and kilograms/hour) using both total effort and individual species effort.

Work Unit Title: Pumped storage mortality

Progress: Research was initiated in the Spring of 1977 to evaluate the effect of Jocassee Hydrostation operations on the entrainment of young-of-the-year fishes in Jocassee and Keowee Reservoirs. Sampling with 1-meter plankton nets at both ends of the penstocks was conducted from April through October, 1977. Preliminary findings indicate about 6 times as many young-of-the-year were passed during pumping than during generation.

Evaluation: Evaluation of data collected the first year indicated numerous modifications of sampling gear and project design were necessary to increase sampling efficiency, eliminate or minimize sampling bias, and to obtain sufficient data with broad application to fulfill our objectives. Since pumping always occurs on nights (after 1 a.m.) and weekends, scheduling of field work has created some problems. Considering that this is the first year work has been done on this unit, good progress is being made.

Report of Progress and Evaluation for FY 1978

Program: Inland Fisheries and Reservoir

Project Title: Limnology of Keowee and Jocassee Reservoirs (922)

Selected water quality and zooplankton parameters have been measured in Keowee and Jocassee Reservoirs before and during operation of Oconee Nuclear Plant and Jocassee pumped-storage station. In addition,benthic invertebrates have been studied in Keowee Reservoir. Relationships between these parameters and the operation of both the nuclear plant and pumped-storage plant are being studied and quantified for input into predictive models for siting future power plant complexes in the foothills of the Appalachian Mountains.

Work Unit Title: Water Quality

Progress: Monthly measurements of water temperature and dissolved oxygen continued to both Keowee and Jocassee Reservoirs and will continue since this unit is essential to all other investigations being carried out on the two reservoirs. A paper summarizing the effects of pumped storage operation on the trout habitat in Jocassee Reservoir was completed. Keowee Reservoir surface temperatures (1 - 6 M) were analyzed by simple regression and covariance techniques. Surface temperatures adjusted for meteorological conditions are annually 2 to 3 C warmer since operation of Oconee Nuclear Station began. Seasonally, winter temperatures are much higher; whereas, May, June and July temperatures were similar before and during operation of Oconee Nuclear Station because of the hypolimnetic withdrawal system. Temperature analysis at deeper depths will require three dimensional modeling.

Evaluation: Statistical modeling of water quality data is progressing well but outside help will be needed to develop deterministic models.

Work Unit Title: Zooplankton Studies

Progress: Zooplankton studies in Keowee were terminated in 1977. All collections have been processed, tabulated, and summarized. A special summary report was completed for Duke Power Company, and a final report will be completed by September, 1978. Sampling will continue on Jocassee Reservoir.

Evaluation: Zooplankton studies on Keowee Reservoir indicated that construction and operation of Oconee Nuclear Station had a minimal effect on reaservoir plankton. Sampling in Jocassee will continue to monitor plankton populations as levels of pumped storage operations increase and as additional pump storage plants are added to the system.

Work Unit Title: Keowee Benthic Studies

Progress: Small scale studies were completed to determine benthos distributional patterns. Benthic sampling completed in October, 1977 will be compared with similar collections from October, 1973. A special report on collections from 1973 to 1975 was completed for Duke Power Company.

Evaluation: The analyzing and summarizing of the benthic studies indicated that sampling in October of 1977 was necessary to document changes in populations and evaluate the effects of increased dissolved oxygen levels in deep water (resulting from the operation of Oconee Nuclear Station). The target completion date is changed to September, 1979 to provide ample time to process the data recently collected and write the final report. Additional data will not be collected under this work unit.

Work Unit Title: Water movement

Progress: Dye and equipment for tracing dye has been ordered. Continuous temperature monitoring over time and depth has provided insight into designing a dye project.

Evaluation: Contact with Corp of Engineer personnel indictes models developed by them for selective withdrawal analysis are not applicable to the Duke Power designed intake-discharge system. Dye, temperature, and biological studies will attempt to verify mathematical models developed in other similar systems.

Report of Progress and Evaluation for FY 1978

Program: Inland Fisheries and Reservoirs

Project Title: Life Histories of Keowee and Jocassee Reservoir Fishes (923)

Changes in diet, growth, and reproductive success of fishes usually occur following temperature changes or other habitat modifications. Consequently, the life history of four major game fish in Keowee Reservoir has been followed since the laboratory was established. The important role of threadfin shad in Keowee and Jocassee Reservoirs is obvious and this species was included in this project this year.

Work Unit Title: Life History of Largemouth Bass

Progress: Largemouth bass scales have been taken from fish collected during 1972-1977 with rotenone, electro-shocker and gill nets. Scales collected through 1977 have been examined, annuali measured, and ages determined. These scales were used to determine differences in largemouth bass growth rates before and after power plant generation and before and after the introduction of threadfin shad. A manuscript: "Changes in largemouth bass-prey relationships in a cooling reservoir after the introduction of threadfin shad" is near completion.

Diet studies were conducted on largemouth bass collected in 1973 before power generation and in 1973 and 1974 before threadfin shad were established in Keowee Reservoir. These data were compared with food found in the stomachs of largemouth bass collected in 1976 after power generation began and shad became dominant prey in the reservoir.

Evaluation: No problems have been encountered during the study and work in Keowee Reservoir is progressing on schedule. Routine sampling in Jocassee Reservoir has provided considerable life history information from that reservoir. The target completion date has been changed to 1979 to provide time to summarize that information.

Work Unit Title: Life History of Black Crappie

Progress: Scale samples for age and growth studies have been taken from all black crappies collected. These scales have been examined, year classes assigned, and measurements completed for back calculations of growth at previous ages. This information is presently being compiled on computer cards for analysis. This life history segment is in the final stages and will be completed by September, 1978.

Food of larval and juvenile crappies collected in 1973 and 1976 have been examined and analysis of data completed. A paper "Food of larval and juvenile black crappies in a South Carolina cooling reservoir" was submitted to the Transactions of the American Fisheries Society for publication.

Ovaries collected in 1973, 1976 and 1977 have been processed for fecundity estimates and analysis of the data completed. A manuscript "Response of black crappie fecundity to water temperature alterations caused by nuclear and pumped storage electrical power generation" is being reviewed.

Evaluation: Progress is continuing on schedule without problems and this work unit will be completed by September, 1978.

Work Unit Title: Life History of Yellow Perch

Progress: Food habits of larvae 6.0 - 15.9 mm have been completed for 1973 and 1976. Statistical analysis of amount and kind of food eaten by fish collected in the heated discharge cove and control station are almost complete. A manuscript "First food of larval yellow perch in a South Carolina cooling reservoir" is near completion.

All adult yellow perch life history information has been summarized. A paper "Reproduction, growth, and standing crops of yellow perch in southern reservoirs" has been completed and submitted to a Symposium on Selected Coolwater Fishes of North America.

Evaluation: Work is progressing satisfactorily and will be completed by the target completion date.

Work Unit Title: Life History of Bluegill

Progress: Age and growth data from adult bluegill scales collected from 1972-1977 by rotenone, gill net, and electro-shocker, have been compiled for computer analysis. Preliminary results show a drastic decrease in the adult population sampled since 1974 with an associated decrease in annual growth increments.

Evaluation: Fecundity estimates and food habits of adult bluegill will not be reviewed because of the inability to collect sufficient numbers of adult fish in recent years. Larval food habits, and age and growth studies will be complete by September, 1978.

Work Unit Title: Life History of Threadfin Shad

Progress: This is the first year for this work unit. However, a considerable amount of information on threadfin shad has been collected over the past 3 years while doing routine collecting for other projects. This data has been collated and reviewed. A study plan for the life of this work unit has been prepared. Emphasis will be placed on examining the role of the heated effluent in preventing winter kills, measuring and evaluating their passage through the pumped storage system, and determining the effects of the fluctuating water levels in Jocassee Reservoir on their reproduction.

Evaluation: Initial work is progressing satisfactorily and no problems are anticipated.

Report of Progress and Evaluation for FY 1978

Program: Inland Fisheries and Reservoirs

Project Title: Power Reservoir Modeling (926)

Modeling is now a common approach to predicting the impacts of power plants on aquatic systems. Predictive statistical and mathematical models are needed by the FWS and other agencies involved with power plant environmental impact statements. Mathematical modeling of aquatic systems is complex and requires reliable biological information. This laboratory has collected biological data from a cooling reservoir and pumped storage hydroelectric reservoir since 1972. Results show the usefulness and applicability of this data to modeling processes.

Work Unit Title: Model Development and Testing

Progress: Statistical models have been used to evaluate the impact of pumped storage hydroelectric operations on trout habitat in Jocassee Reservoir and to partition the effect of Oconee Nuclear Station and meteorological conditions on Keowee Reservoir water temperature. Data was provided the University of Tennessee for testing a mathematical model developed under contract from the Office of Biological Services (USFWS). A review has been completed of all (7) under construction and/or operating pumped storage facilities in Georgia and South Carolina. Some water quality and biological data has been collected from a pumped storage power plant reservoir in Georgia for planning and future model testing.

Evaluation: Southeast Reservoir Investigations has not acquired a person with a modeling background and we are dependent on help from other Service offices and other agencies. Consequently, output from this work unit has not reached full potential. Present budget levels (100%) preclude the hiring of a full-time biomathematician.

APPENDIX E

TABLE 1

OCONEE NUCLEAR STATION

PLUME MAPPING STUDY

February 24, 1977

Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat SR, PD White Boat RC, CB

Station		1-G		2-G		3-G		4-G		11-G		12-G		13-G		14-G		51-G		52-G	
time	start	920		932		941		948		955		1001		1013		1022		1031		1044	
	stop	926		939		947		953		959		1011		1021		1029		1042		1052	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		19.8	10.8	15.8	12.0	14.9	11.6	14.8	11.4	12.5	11.0	13.1	11.3	13.5	11.7	13.8	11.4	13.6	11.0	13.5	11.1
1		19.8	10.8	14.6	11.9	14.7	11.7	14.8	11.4	12.5	11.1	13.0	11.4	13.4	11.8	13.8	11.5	13.6	11.1	13.5	11.1
2		19.7	10.8	13.6	11.6	14.1	11.8	14.6	11.5	12.2	11.1	12.9	11.6	13.3	11.8	13.8	11.6	13.6	11.2	13.4	11.1
3		19.8	10.8	12.4	11.3	12.5	11.6	13.9	11.6	11.7	10.9	12.5	11.6	13.1	11.8	13.7	11.8	13.6	11.2	13.4	11.2
4		19.8	10.8	11.6	11.2	12.0	10.9	13.9	11.6	11.4	10.7	11.4	11.2	13.0	11.8	13.6	12.1	13.6	11.3	13.3	11.3
5		20.5	10.8	10.9	10.9	11.3	10.6	13.9	11.6	11.2	10.7	11.1	11.3	12.5	12.0	13.4	12.3	13.4	11.3	13.3	11.4
6		20.8	11.3	10.5	10.7	10.9	10.2	12.3	11.3	11.0	10.6	11.0	11.3	11.0	11.4	11.2	11.2	13.2	11.3	13.3	11.6
7		20.6	11.4	10.3	10.7	10.2	10.0	10.1	10.1	10.6	10.4	10.5	11.3	10.8	11.4	10.5	11.2	12.8	11.4	13.1	11.6
8		20.8	11.4	10.2	10.6	10.1	9.6	10.1	10.0	10.5	10.2	10.4	11.3	10.5	11.3	10.3	11.2	10.2	11.0	12.5	11.4
9		20.5	11.5	10.0	10.6	9.9	9.2	10.1	9.7	10.3	10.0	9.9	11.2	10.0	11.1	9.8	11.0	9.9	10.8	11.9	11.4
10		20.3	11.4	9.7	10.4			10.1	9.5	10.3	9.9	9.5	11.0	9.4	10.8	9.5	10.8	9.7	10.7	10.0	10.4
11				9.4	10.3			10.0	9.1	10.2	9.8	9.4	10.9	9.2	10.8	9.2	10.6	9.6	10.6	9.9	10.4
12				9.3	10.2					10.1	9.5	9.3	10.8	9.0	10.7	9.0	10.6	9.5	10.6	9.7	10.2
13				9.1	10.0					9.0	8.8	9.0	10.8	8.6	10.5	9.0	10.6	9.2	10.4	9.5	10.0
14				9.0	9.9					9.0	8.3	9.0	10.7	8.5	10.4	9.0	10.5	8.9	10.3	9.2	9.7
15				8.9	9.7							8.7	10.7	8.5	10.4	8.5	10.4	8.7	10.2	9.0	9.5
16				8.8	9.6							8.5	10.6	8.4	10.3	8.4	10.3	8.5	10.1	9.0	9.2
17				8.7	9.4							8.5	10.4	8.4	10.3	8.4	10.1	8.5	10.0	8.7	9.1
18				8.6	9.3							8.4	10.4	8.4	10.3	8.4	9.8	8.3	10.0	8.5	8.8
19				8.6	8.9							8.3	10.2	8.2	10.2	8.4	9.6	8.3	9.9	8.5	8.5
20				8.6	8.7							8.2	10.2	8.2	10.2	8.4	9.4	8.3	9.8		
21				8.6	8.4							8.2	10.2	8.2	10.1	8.2	9.1	8.3	9.8		
22												8.2	10.1	8.2	10.1	8.2	9.0	8.2	9.7		
23												8.2	10.1	8.2	10.1	8.2	8.8	8.2	9.5		
24												8.2	10.0	8.2	10.0			8.2	9.3		
25												8.1	9.9	8.1	9.9			8.2	8.8		
30												8.0	9.4	8.1	9.0						
35												7.8	8.6								
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat PD, SR White Boat RC, CB

Station		53-G		19-G		20-G		21-G		22-G		27-G		28-G		29-G		511-G		29-G	
time	start	1053		1105		1109		1115		1122		1137		1143		1152		1202		1252	
	stop	1056		1108		1113		1120		1126		1140		1150		1156		1206		1256	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		13.3	10.6	12.0	10.8	12.3	10.7	12.8	10.8	13.0	10.7	11.5	10.9	11.5	11.1	11.0	10.8	11.3	10.8	11.6	10.8
1		13.3	10.6	12.0	10.8	12.3	10.8	12.8	10.8	13.0	10.8	11.5	10.9	11.5	11.2	11.0	10.8	11.3	10.8	11.6	10.8
2		13.3	10.5	11.8	10.8	12.3	10.8	12.7	10.9	12.9	10.8	11.5	11.0	11.4	11.2	11.0	10.8	11.3	10.8	11.6	10.8
3		13.2	10.5	11.7	10.8	12.1	10.9	12.7	10.9	12.9	10.9	11.4	11.0	11.4	11.3	11.0	10.8	11.3	10.8	11.5	10.8
4		13.1	10.4	11.0	10.4	11.9	10.9	12.7	10.9	12.9	10.9	11.0	10.8	11.4	11.3	11.0	10.8	11.2	10.8	11.3	10.7
5		13.1	10.2	10.8	10.2	11.6	10.6	12.5	10.9	12.9	10.9	10.6	10.8	11.0	11.2	11.0	10.8	11.2	10.9	11.1	10.5
6				10.8	10.2	10.9	10.4	12.4	10.8	12.7	10.9	10.4	10.6	10.5	11.2	11.0	10.8	11.1	10.9	11.1	10.6
7				10.6	10.0	10.9	10.2	12.4	10.8	12.5	10.8	10.2	10.6	10.2	11.1	11.0	10.8	11.1	10.9	11.1	10.4
8				10.4	9.8	10.8	10.1	11.8	10.1	12.4	10.6	10.1	10.4	10.1	11.1	10.7	10.8	11.0	10.9	10.5	10.2
9				10.0	9.2	10.7	9.8	10.7	9.9	10.8	9.9	10.0	10.4	10.1	11.1	10.4	10.2	10.4	10.4	10.4	9.9
10				9.9	9.0	10.7	9.7	10.4	9.4	10.4	9.6	10.0	10.3	10.0	11.1	10.2	10.0	10.3	10.3	10.3	9.7
11														10.0	11.1			10.2	10.2		
12														10.0	11.0			9.8	9.8		
13														9.7	11.0			9.8	9.7		
14														9.5	10.8						
15														9.2	10.8						
16														9.0	10.6						
17														8.5	10.6						
18														8.5	10.4						
19														8.4	10.4						
20														8.4	10.4						
21														8.4	10.3						
22														8.3	10.2						
23														8.3	10.1						
24														8.2	10.0						
25														8.2	9.9						
30														8.1	9.6						
35														8.1	9.2						
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat SR, PD White Boat RC, CB

Station		33-G		37-G		38-G		39-G		40-G		41-G		42-G		43-G		44-G		501-G	
time	start	1310		1320		1326		1331		1337		1343		1346		1349		1352		1358	
	stop	1312		1325		1330		1335		1341		1345		1348		1351		1354		1400	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		20.0	11.2	10.0	10.5	10.0	10.8	10.0	10.8	10.0	10.8	9.4	10.8	9.5	10.8	9.6	10.8	9.6	10.8	7.6	11.9
1		20.0	11.2	10.0	10.5	10.0	10.8	10.0	10.8	10.0	10.8	9.4	10.7	9.5	10.7	9.6	10.8	9.6	10.8	7.5	11.4
2		20.1	11.2	10.0	10.5	10.0	10.8	10.0	10.8	10.0	10.8	9.4	10.5	9.5	10.6	9.6	10.7	9.6	10.8	7.5	11.4
3		20.1	11.2	10.0	10.4	10.0	10.8	9.9	10.8	10.0	10.8	9.4	10.4	9.4	10.4	9.6	10.6	9.6	10.6	7.5	11.4
4		20.6	11.4	10.0	10.4	10.0	10.8	9.9	10.8	9.9	10.8										
5		20.6	11.4	9.9	10.3	10.0	10.7	9.9	10.7	9.9	10.8										
6		20.5	11.6	9.8	10.2	9.9	10.7	9.9	10.7	9.9	10.7										
7		20.8	11.8	9.7	10.2	9.8	10.6	9.8	10.7	9.9	10.7										
8		20.8	12.0	9.4	9.9	9.7	10.5	9.8	10.6	9.9	10.7										
9		20.5	11.8	9.3	9.3	9.4	10.1	9.7	10.5	9.9	10.7										
10		20.1	11.9	9.2	9.0	9.3	10.0	9.7	10.4	9.9	10.7										
11																					
12																					
13																					
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Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat SR, PD White Boat RC, CB

Station																			500-G	
time	start																		1405	
	stop																		1407	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3																			6.4	11.0
1																			6.4	10.8
2																			6.4	10.4
3																			6.4	10.3
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
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24																				
25																				
30																				
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Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat SR, PD White Boat RC, CB

Station		5-W		6-W		7-W		8-W		9-W		10-W		15-W		16-W		17-W		18-W	
time	start	0925		0940		0953		1003		1015		1030		1048		1058		1102		1108	
	stop	0934		0950		1000		1013		1027		1040		1055		1100		1106		1112	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		10.0	10.8	11.9	10.8	12.5	10.6	13.7	10.4	13.7	10.5	13.2	10.5	12.4	9.9	12.6	10.2	13.2	10.0	13.4	9.7
1		10.0	10.9	11.8	10.7	12.5	10.6	13.6	10.4	13.7	10.5	13.1	10.6	12.4	9.9	12.6	10.3	13.2	10.0	13.4	9.7
2		9.9	10.9	11.4	10.8	12.4	10.6	13.3	10.5	13.6	10.6	13.0	10.6	12.4	9.9	12.6	10.4	13.2	10.0	13.3	9.8
3		9.9	10.9	10.6	10.7	12.3	10.6	12.6	10.3	13.5	10.6	13.0	10.6	12.2	9.9	12.5	10.5	13.1	10.0	13.3	9.8
4		9.8	10.9	10.5	10.6	12.1	10.6	11.8	10.4	13.3	10.6	12.9	10.6	12.0	10.0	12.5	10.5	13.0	10.1	13.2	9.8
5		9.8	10.9	9.5	10.6	10.5	10.6	11.4	10.4	13.1	10.5	12.7	10.6	11.7	9.9	12.2	10.6	12.9	10.1	13.2	9.8
6		9.6	10.9	9.3	10.6	10.3	10.5	11.0	10.4	11.5	10.3	11.0	10.4	10.7	10.0	12.1	10.5	12.7	10.1	13.1	9.8
7		9.4	11.0	8.9	10.6	10.2	10.6	10.6	10.4	11.0	10.3	10.2	10.4	10.7	9.9	11.9	10.6	11.8	9.9	13.0	9.8
8		9.0	11.0	8.5	10.7	10.1	10.6	10.3	10.4	10.6	10.4	9.8	10.4	10.4	9.9	11.0	10.8	11.1	10.0	10.8	9.9
9		8.9	11.0	8.2	10.7	9.8	10.5	10.1	10.3	10.5	10.4	9.5	10.4	10.3	9.9	10.5	11.2	11.0	10.0	10.7	10.2
10		8.8	11.0	8.1	10.7	9.6	10.5	9.6	10.2	10.2	10.3	9.3	10.4	10.2	9.9	10.4	11.2	10.5	10.0	10.5	10.4
11		8.6	11.0	8.1	10.8	9.3	10.4	9.2	10.2	9.5	10.3	9.0	10.4	9.5	10.1						
12		8.5	11.1	8.0	10.8	9.0	10.4	9.2	10.2	9.2	10.3	9.0	10.3	9.5	10.2						
13		8.5	11.1	8.0	10.8	8.8	10.5	9.2	10.2	9.1	10.3	8.9	10.2	9.3	9.8						
14		8.2	11.1	8.0	10.8	8.8	10.6	9.1	10.2	9.1	10.3	8.6	10.2	9.2	10.1						
15		8.1	11.2	8.0	10.8	8.7	10.6	9.0	10.2	9.0	10.3	8.5	10.2								
16		8.1	11.2	8.0	10.8	9.0	10.8	8.9	10.1	9.0	10.2	8.5	10.2								
17		8.1	11.2	8.0	10.8			8.8	10.1	9.1	10.2	8.3	10.2								
18		8.0	11.2	8.0	10.8			8.0	10.1	9.0	10.2	8.1	10.2								
19		7.9	11.2	8.0	11.2			8.6	10.1	8.9	10.2	8.1	10.3								
20		7.6	11.3	8.0	11.4			8.5	10.2	8.5	10.2	8.0	10.4								
21		7.5	11.2	7.9	11.5			8.2	10.2	8.5	10.2	8.0	10.4								
22		7.3	11.3	7.9	11.6			8.2	10.2	8.6	10.2	8.0	11.0								
23		7.3	11.3	7.9	11.7			8.2	10.2	8.5	10.5	8.0	10.1								
24		7.3	11.5					8.1	10.2			8.0	10.1								
25								8.0	10.2			8.0	10.0								
30								8.0	9.9			7.9	9.7								
35								7.8	10.1			7.9	9.9								
40								7.7	9.9												
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat SR, PD White Boat RC, CB

Station		AW		BW		23-W		24-W		25-W		26-W		30-W		31-W		32-W		510-W	
time	start	1114		1119		1130		1136		1141		1145		1257		1301		1313		1321	
	stop	1118		1122		1135		1140		1144		1150		1300		1312		1317		1325	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		13.4	10.0	12.6	9.8	11.8	10.2	11.9	10.0	12.2	10.1	12.3	9.8	11.0	10.0	11.0	10.3	11.0	10.3	10.4	10.4
1		13.3	9.9	12.5	9.8	11.8	10.2	12.0	10.1	12.2	10.2	12.3	10.0	11.0	10.0	11.0	10.3	11.0	10.2	10.3	10.4
2		13.4	9.9	12.5	9.8	11.7	10.2	11.9	10.2	12.1	10.1	12.3	10.1	11.0	10.0	10.9	10.3	11.0	10.3	10.3	10.5
3		13.3	9.9	12.4	9.8	11.5	10.2	11.9	10.2	12.1	10.2	12.3	10.2	10.8	10.0	10.8	10.3	11.0	10.3	10.3	10.5
4		13.3	9.9	12.3	9.8	11.0	10.3	11.9	10.2	12.1	10.2	12.3	10.1	10.5	10.0	10.6	10.3	11.0	10.3	10.3	10.5
5		13.2	9.8	12.2	9.8	10.4	10.2	11.8	10.2	12.1	10.2	12.3	10.1	10.4	10.0	10.5	10.3	11.0	10.3	10.2	10.5
6		13.2	9.8	12.2	9.9	10.4	10.2	11.7	10.2	12.1	10.2	12.3	10.2	10.4	10.0	10.4	10.2	11.0	10.4	10.3	10.5
7		13.1	9.8	12.2	9.9	10.3	10.2	11.5	10.1	12.0	10.3	12.2	10.1	10.4	10.0	10.2	10.2	10.9	10.4	10.2	10.5
8		13.0	9.7	12.2	9.9	10.3	10.2	11.4	10.1	12.0	10.4	12.2	10.1	10.3	10.0	10.1	10.2	10.6	10.5	10.2	10.4
9		12.5	9.8	12.2	10.0	10.3	10.2	10.9	10.1	11.9	10.4	12.1	10.1	10.3	10.2	10.0	10.2	10.2	10.8	10.2	10.4
10		12.1	9.6	12.1	10.4	10.2	10.2	10.9	10.0	11.8	10.7	12.2	10.3	10.3	10.2	9.9	10.2	10.0	12.0	10.2	10.3
11																9.5	10.2				
12																9.5	10.2				
13																9.4	10.2				
14																9.3	10.2				
15																9.0	10.2				
16																8.8	10.2				
17																8.7	10.0				
18																8.8	10.0				
19																8.6	10.0				
20																8.4	10.0				
21																8.4	10.0				
22																8.4	10.0				
23																8.4	10.0				
24																8.4	10.0				
25																8.4	9.9				
30																8.4	9.8				
35																8.4	9.7				
40																					
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Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat SR, PD White Boat RC, CB

Station		Fall Crk.-W		507-W		549-W		SC-11-W		C-W		34-W		35-W		36-W		45-W		46-W	
time	start	1335		1349		1356		1406		1416		1501		1505		1508		1512		1514	
	stop	1340		1351		1359		1409		1419		1503		1506		1510		1513		1515	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		10.6	10.7	9.4	10.9	8.3	10.8	9.7	11.0	10.2	10.7	10.9	10.5	10.8	10.7	10.4	10.8	10.7	10.7	10.7	11.1
1		10.5	10.7	9.4	10.9	8.3	10.7	9.7	11.0	10.2	10.9	10.9	10.4	10.8	10.7	10.5	10.8	10.7	10.6	10.7	11.1
2		10.4	10.7	9.4	10.9	8.3	10.6	9.7	11.0	10.2	10.8	10.8	10.3	10.8	10.7	10.4	10.8	10.6	10.5	10.7	11.5
3		10.3	10.7	9.2	10.8	8.2	10.6	9.6	11.0	10.2	10.8	10.8	10.3	10.7	10.7	10.3	10.8	10.6	10.3	10.7	11.3
4		10.1	10.7	9.2	10.8	8.1	10.6	9.6	11.0	10.1	10.8										
5		9.9	10.7	9.1	10.8	8.0	10.6	9.5	11.0	10.1	10.8										
6		9.9	10.7	9.1	10.7	8.0	10.6	9.3	11.0	10.0	10.8										
7		9.7	10.6	9.0	10.6	8.0	10.5	9.1	11.1	10.0	10.7										
8		9.3	10.6	9.0	10.6	8.0	10.5	9.0	11.2	10.0	10.7										
9		9.3	10.6	8.8	10.6	8.0	10.5	8.9	11.6	9.9	10.6										
10		9.1	10.6	8.7	10.5	8.0	10.5	8.8	11.6	9.9	10.6										
11		9.0	10.6																		
12		9.0	10.6																		
13		9.0	10.6																		
14		8.9	10.6																		
15		8.6	10.6																		
16		8.5	10.6																		
17		8.5	10.5																		
18		8.3	10.4																		
19		8.2	10.4																		
20		8.1	10.4																		
21		8.1	10.4																		
22		8.0	10.4																		
23		8.0	10.4																		
24		8.0	10.4																		
25		8.0	10.4																		
30		8.0	10.2																		
35																					
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 2-24-77 Grey Boat SR, PD White Boat RC, CB

Station		W-47		W-48																	
time	start	1516		1528																	
	stop	1517		1530																	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		10.7	11.5	8.8	10.6																
1		10.7	11.9	8.8	10.6																
2		10.7	12.1	8.7	10.6																
3		10.7	11.9	8.6	10.6																
4																					
5																					
6																					
7																					
8																					
9																					
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APPENDIX E

TABLE 2

OCONEE NUCLEAR STATION

PLUME MAPPING STUDY

August 30, 1977

Oconee Nuclear Station
Plume Mapping Study

Date 8-30-77 Grey Boat RC, TB White Boat SR, PD

Station		1-W		2-W		3-W		4-W		11-W		12-W		13-W		14-W		19-W		20-W	
time	start	915		925		935		945		953		1010		1030		1100		1125		1135	
	stop	920		932		941		950		1005		1025		1055		1110		1132		1141	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		28.5	5.1	26.9	5.7	27.0	6.3	28.1	4.9	27.2	6.1	27.0	6.7	27.1	7.1	26.8	5.7	27.3	8.6	27.8	8.4
1		28.5	5.0	26.8	5.5	26.9	5.6	28.0	4.9	27.0	6.1	26.8	6.4	26.8	7.0	26.5	5.7	27.1	8.5	27.6	8.4
2		28.2	5.1	26.8	5.5	26.7	5.5	27.7	4.8	26.9	5.8	26.4	6.0	26.4	6.0	26.3	5.6	26.9	8.0	27.4	8.1
3		28.0	5.1	26.6	5.4	26.6	5.4	27.5	4.8	26.8	5.7	26.2	5.9	26.1	5.9	26.0	5.5	26.7	8.1	27.2	7.8
4		28.0	4.8	26.5	5.3	26.5	5.4	27.4	4.8	26.7	5.7	26.0	5.9	25.9	6.0	25.8	5.4	26.5	8.2	26.9	7.5
5		28.2	4.7	26.4	5.6	26.5	5.4	27.2	4.9	26.5	5.7	25.8	5.8	25.8	5.8	25.7	5.4	26.2	7.9	26.7	7.6
6		28.4	4.8	26.2	5.6	26.3	5.4	27.0	5.0	26.3	5.5	25.5	5.6	25.5	5.8	25.5	5.5	25.7	6.2	26.6	6.4
7		28.4	5.2	26.0	5.5	26.1	5.3	26.8	5.0	26.3	5.4	25.1	5.6	25.3	5.8	25.3	5.5	25.6	5.9	26.2	5.8
8		28.0	4.6	25.5	4.9	26.0	5.1	26.7	5.0	26.0	5.4	24.9	5.6	24.9	5.6	24.8	5.6	25.4	5.6	26.0	5.4
9		28.2	4.5	25.2	4.7	25.8	5.0	26.5	5.0	25.8	5.2	24.5	5.3	24.6	5.5	24.3	5.5	25.1	5.3	25.7	5.4
10		28.2	4.8	25.0	4.7	25.6	4.8	26.1	4.9	25.7	5.1	24.3	5.3	24.3	5.4	24.1	5.5	24.7	4.9	25.1	5.1
11				24.9	4.7	25.5	4.6			25.5	4.9	23.8	5.2	23.9	5.2	23.8	5.5	24.6	4.9	24.7	4.8
12				24.9	4.7	25.3	4.6			25.5	4.8	23.6	5.3	23.7	5.3	23.3	5.5	24.4	4.7	24.5	4.7
13				24.9	4.7	25.2	4.5			25.5	4.7	23.4	5.3	23.4	5.3	23.1	5.6	24.2	4.6	24.3	4.7
14				24.9	4.7	25.2	4.5					23.3	5.4	23.3	5.4	23.0	5.6	24.0	4.6	24.3	4.7
15				24.9	4.7							22.9	5.6	22.9	5.5	22.8	5.6	23.9	4.6	24.3	4.7
16				24.9	4.7							22.5	5.6	22.5	5.5	22.5	5.6	23.7	4.7	24.2	4.6
17				24.9	4.6							22.3	5.5	22.2	5.5	22.3	5.5	23.6	4.3	24.1	4.5
18				24.9	4.6							22.1	5.4	22.2	5.5	21.8	5.3	23.6	4.4		
19												21.7	5.4	21.7	5.4	21.6	4.9				
20												21.3	5.3	21.4	5.1	21.3	4.9				
21												20.9	4.9	21.1	4.9	20.9	5.0				
22												20.6	4.5	20.8	4.6	20.5	4.5				
23												20.0	4.3	20.5	4.4	20.0	4.5				
24												19.7	4.3	20.3	4.3	19.8	4.4				
25												19.5	4.3	18.9	4.4	19.1	4.4				
30												16.0	3.2	14.9	3.3	15.8	3.0				
35														14.0	2.2	15.2	1.9				
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 8-30-77 Grey Boat PD, TB White Boat RC, SR

Station		21-W		22-W		33-W		36-W		35-W		34-W		45-W		46-W		47-W		37-W	
time	start	1146		1207		1320		1330		1338		1350		1356		1402		1412		1431	
	stop	1203		1212		1328		1337		1347		1354		1401		1411		1418		1445	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		27.0	8.3	27.4	7.7	29.7	4.8	28.5	8.4	27.7	6.7	29.0	7.0	29.4	8.7	29.7	8.8	29.7	9.0	29.5	9.0
1		26.7	8.4	26.7	7.4	29.6	4.9	28.4	8.3	27.7	6.8	28.3	6.7	28.4	8.7	28.2	8.8	28.5	8.8	27.8	8.2
2		26.2	7.9	26.4	7.0	29.5	4.9	27.6	7.6	27.6	6.8	27.9	6.5	27.7	8.3	27.7	8.7	27.4	8.1	27.7	7.8
3		25.9	7.4	26.3	7.0	29.5	4.7	27.0	6.5	27.4	6.4	27.7	6.2	27.5	8.1	27.5	8.6	27.3	7.2	27.5	7.5
4		25.5	6.4	26.2	6.7	29.8	4.8	27.0	6.3	26.9	5.9	27.7	6.5	27.4	8.1	27.2	8.4	27.2	6.8	27.4	7.3
5		25.3	6.4	25.8	6.1	29.7	5.0	27.0	6.4	26.2	5.7	27.5	6.1	27.0	6.9	26.9	7.0	27.2	7.1	27.2	7.1
6		25.0	6.4	25.7	6.1	28.9	4.4	26.9	6.4	25.8	5.7	27.2	6.0	26.8	6.7	26.7	6.7	26.8	6.6	27.0	6.9
7		24.7	6.1	25.5	6.1	29.5	4.7	26.8	6.4	24.8	5.3	25.9	4.7	26.7	6.0	26.5	5.0	26.5	5.8	26.7	6.6
8		24.6	6.0	25.4	6.1	29.9	4.5	26.3	6.0	24.5	5.2	25.4	4.6	26.5	5.6	26.3	5.5	26.4	5.2	26.5	6.2
9		23.9	5.2	24.9	5.4	29.9	4.5	25.5	5.2	24.5	5.2			25.7	3.1	25.8	3.6			26.3	6.1
10		23.6	5.3	24.5	5.2	29.2	4.6	25.4	5.2	24.4	5.2			25.6	2.3	25.4	2.9			26.2	6.1
11		23.2	5.3	24.3	5.2			25.0	5.0	24.3	5.2			25.5	2.0	25.1	2.1			26.1	6.1
12		22.9	5.6	24.2	5.4			24.5	4.8	24.3	5.1					24.8	2.2			25.5	5.7
13		22.5	5.9	23.8	5.4			24.3	4.7	24.3	5.1					24.5	2.2			25.4	5.5
14		22.2	6.0	23.7	5.4			24.3	4.6	24.1	5.1					24.4	2.1			25.0	5.3
15		21.9	6.0	23.4	5.3					23.7	5.0					24.0	1.1			24.9	5.2
16		21.7	5.9	23.3	5.2					23.5	5.0					23.8	0.8			24.7	5.1
17		21.4	5.7	23.2	5.1					23.4	4.9					23.5	0.4			24.4	5.0
18		21.2	5.6	23.1	5.1					23.1	4.8					23.3	0.2			23.5	4.7
19		20.8	5.6	23.1	5.0					22.6	4.6					23.1	0.1			22.8	4.2
20		20.6	5.5	22.9	4.7					22.4	4.4									21.9	4.1
21		19.9	5.1	22.7	4.5															21.6	4.0
22		19.6	4.6																	20.8	3.1
23		19.2	4.3																	19.6	1.9
24		18.4	4.1																	18.7	0.8
25		17.8	3.9																	18.2	0.5
30		14.7	1.8																	18.0	0.3
35		14.2	1.5																		
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 8-30-77 Grey Boat SR, RC White Boat TB, PD

Station		38-W		39-W		40-W		41-W		42-W		43-W		44-W		501.5		501.0		500.0	
time	start	1447		1504		1514		1534		1546		1605		1616		1623		1642		1705	
	stop	1501		1512		1527		1545		1602		1615		1619		1634		1700		1721	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		28.8	8.9	29.2	8.6	30.2	8.8	30.0	9.0	30.0	9.0	29.7	8.8	30.4	8.7	30.0	9.1	30.1	8.9	30.4	9.1
1		27.8	8.2	28.1	8.2	29.0	8.9	27.9	8.9	28.4	9.0	28.7	8.9	30.2	8.7	29.0	9.0	29.5	9.0	28.4	9.2
2		27.6	7.8	27.8	7.7	27.8	8.6	27.7	8.9	27.8	9.0	28.1	8.9	28.3	8.7	27.9	9.0	28.3	9.0	28.1	9.2
3		27.5	7.7	27.7	7.6	27.6	8.4	27.4	8.7	27.4	8.8	27.6	8.8	27.5	8.3	27.6	9.1	27.8	9.0	27.9	9.2
4		27.4	7.6	27.5	7.5	27.5	8.2	27.2	8.6	27.2	8.7	27.3	8.6	26.9	8.2	27.2	8.8	27.5	9.0	27.5	9.1
5		27.0	7.1	27.0	7.3	27.4	8.0	27.2	8.5	26.8	8.1	27.1	8.2			26.9	8.5	27.3	8.9	27.3	8.8
6		26.8	7.0	26.6	6.6	27.0	7.1	27.0	8.4	26.6	7.5	26.9	7.5			26.6	7.7	27.1	8.9	27.1	8.3
7		26.5	6.7	26.5	6.4	26.6	6.7	26.6	7.4	26.4	7.1	26.6	6.8			26.5	7.1	26.9	8.6	26.9	7.9
8		26.2	6.4	26.4	6.4	26.5	6.9	26.3	6.7	26.1	6.5	26.2	6.1			26.3	6.9	26.4	8.2	26.8	7.5
9		25.8	6.0	26.3	6.2	26.2	6.3	26.0	6.1	25.9	6.2	26.1	5.8			26.1	6.8	26.2	5.9	26.3	6.3
10		25.6	5.9	26.2	6.1	26.0	6.1	25.7	5.4	25.5	5.8	25.9	5.6			25.5	5.8	25.7	5.3	25.4	4.6
11		25.4	5.7	25.4	5.4	25.5	5.7	25.5	5.4	25.3	5.7	25.6	5.2			25.2	5.4	25.4	4.9	24.8	4.7
12		25.2	5.5	25.3	5.4	25.4	5.6	25.2	5.1	25.0	5.5	25.3	4.9			25.0	5.1	25.1	4.8	24.5	4.7
13		25.0	5.3	24.8	5.1	25.4	5.5	25.0	5.0	24.7	5.4	25.1	4.5			24.8	5.0	24.5	4.6	24.2	4.5
14		24.9	5.2	24.7	5.0	25.0	5.4	24.7	4.7	24.4	5.1					24.5	4.8	24.3	4.6	23.9	4.1
15		24.7	5.2	24.6	4.9	24.7	5.3	24.5	4.4	24.3	5.0					24.2	4.5	24.1	4.6	23.6	3.8
16		24.5	5.2			24.4	5.2	24.2	4.0	23.9	4.5					23.9	4.5	23.7	4.7	23.4	3.5
17		24.3	5.1			24.0	5.1	23.9	3.6	23.8	4.3					23.5	4.4	23.4	4.7	23.1	2.9
18		23.8	4.9			23.7	5.0	23.9	3.5	23.4	4.1					23.1	4.2	23.1	4.7	22.7	2.4
19		23.1	4.9			23.0	4.7			23.2	4.1					22.9	4.1	22.6	4.5	22.4	1.7
20		22.5	4.5			22.7	4.7			22.7	3.9					22.6	4.0	22.3	4.2	22.4	1.8
21		21.5	4.1			22.1	4.4			22.4	3.8					22.3	3.8	21.8	3.8	22.1	1.7
22		20.4	3.0			22.0	4.3			22.0	3.6					21.9	3.6	21.4	3.6	21.5	0.8
23		18.4	0.9			21.9	4.0			21.7	3.4					21.3	3.3	20.9	2.9	20.9	0.4
24		18.1	0.6							21.2	3.0					20.9	2.9	20.2	2.1	20.5	0
25		17.8	0.4							19.4	1.7					19.8	2.0	19.6	1.8	19.9	0
30		17.8	0.4							15.4	0.5					12.3	0.2	12.6	0.8	17.4	0
35																11.8	0.2	10.9	0.4		
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 8-30-77 Grey Boat RC, TB White Boat SR, PD

Station		5-G		509.0		6-G		7-G		8-G		9-G		10-G		15-G		16-G		17-G	
Time	start	0930		0945		0947		1000		1007		1015		1028		1058		1107		1124	
	stop	0940		0946		0959		1005		1014		1026		1044		1106		1121		1138	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		28.0	8.7	23.4	4.3	27.1	7.4	27.2	7.2	27.2	7.3	27.7	5.0	27.6	5.7	28.2	7.7	27.7	7.0	27.8	7.2
1		27.9	8.8			27.1	7.3	27.2	7.1	27.1	7.1	27.6	5.0	27.2	6.2	27.9	7.4	27.6	6.8	27.6	7.1
2		27.3	8.8			27.0	7.1	27.1	7.0	27.1	6.9	27.3	5.1	27.1	6.2	27.5	6.3	27.4	6.5	27.3	7.0
3		27.1	8.4			27.0	7.0	27.0	6.5	26.9	6.6	27.1	5.1	27.1	6.2	27.5	6.3	27.2	6.3	27.0	6.1
4		27.0	8.1			27.8	6.9	26.9	6.2	26.7	5.9	26.9	5.2	26.9	6.1	27.4	6.2	27.2	6.2	26.9	6.0
5		26.6	7.5			26.7	6.5	26.8	6.0	26.6	6.0	26.8	5.2	26.8	6.1	27.0	5.8	27.0	6.0	26.8	5.9
6		26.5	6.8			26.6	6.4	26.7	6.0	26.6	6.0	26.7	5.3	26.4	6.1	26.9	5.8	26.7	5.8	26.8	6.0
7		26.2	6.3			26.5	6.1	26.4	5.9	26.4	5.9	26.6	5.3	26.2	6.0	26.0	5.3	26.4	5.9	26.3	5.9
8		26.0	6.1			26.3	6.0	25.6	5.6	26.1	5.7	26.2	5.4	25.9	5.9	25.7	5.1	25.7	5.6	25.9	5.8
9		25.8	6.0			25.4	5.4	25.1	5.2	25.6	5.4	26.1	5.4	25.7	5.9	25.5	4.8	25.5	5.4	25.6	5.5
10		25.5	5.4			24.7	5.2	24.9	5.1	25.3	5.2	25.4	5.2	25.1	5.7	25.3	4.8	24.8	5.1	25.0	5.4
11		25.5	5.4			24.5	5.2	24.7	5.1	24.3	5.3	24.5	5.2	24.2	5.5	25.1	4.7	24.7	5.2	24.4	5.3
12		25.1	5.2			24.4	5.3	24.6	5.1	24.1	5.3	24.4	5.2	23.9	5.6			24.2	5.2	24.1	5.4
13		25.1	5.2			24.2	5.3	24.1	5.2	24.1	5.3	24.2	5.2	23.4	5.6			23.9	5.4	23.8	5.7
14		25.0	5.2			24.0	5.4	24.0	5.2	24.1	5.3	24.0	5.3	23.3	5.7			23.7	5.5	23.7	5.7
15		25.0	5.3			23.6	5.5	23.6	5.2	23.6	5.6	23.6	5.3	23.1	5.8			23.4	5.6	23.5	5.7
16		24.7	5.3			23.3	5.4	23.5	5.2	23.4	5.5	23.4	5.4	22.9	5.8			23.2	5.6	23.3	5.6
17		24.5	5.2			23.0	5.4			23.1	5.4	23.2	5.4	22.6	5.8			23.0	5.5	23.1	5.6
18		24.5	5.2			22.1	4.9			22.6	5.2	23.0	5.3	22.4	5.7			22.8	5.5	22.8	5.5
19		24.0	5.1			22.1	4.8			22.4	5.0	22.7	5.1	22.2	5.5			22.7	5.4	22.8	5.5
20		23.5	4.8			21.9	4.7			22.2	4.8	22.6	5.0	21.9	5.4			22.4	5.2	22.3	5.2
21		23.1	4.7			21.7	4.7			22.1	4.7	22.3	4.8	21.7	5.3			22.1	5.0	22.0	4.9
22		22.4	4.6			21.5	4.6			21.7	4.4			21.3	5.2			21.5	4.4	21.5	4.5
23		21.5	3.9			21.4	4.5			21.4	4.3			21.1	5.2			21.0	4.2	21.1	4.1
24		20.0	2.3			20.8	4.2			20.5	4.0			20.8	5.1			20.6	4.1	20.6	4.1
25		16.8	0.8			20.1	4.0			19.8	3.8			19.6	4.9			20.2	4.1	20.2	4.1
30										19.6	3.7			13.5	4.4			15.6	2.8	15.8	3.1
35														12.1	3.6			14.0	1.9	13.2	1.5
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 8-30-77 Grey Boat SR, RC White Boat TB, PD

Station		18-G		27-G		28-G		29-G		30-G		31-G		32-G		Fall Creek		Highway 11		507.0-G	
time	start	1140		1305		1317		1330		1345		1400		1412		1425		1445		1505	
	stop	1146		1314		1325		1340		1355		1410		1420		1435		1455		1510	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		27.9	6.7	27.6	8.7	27.7	8.8	28.1	8.4	27.5	8.6	27.6	8.5	27.6	8.6	26.8	8.1	26.6	8.0	26.5	8.7
1		27.7	5.7	27.3	8.7	26.6	9.0	27.0	8.7	27.0	8.6	27.0	8.8	27.0	8.7	26.4	8.0	26.0	8.2	25.9	8.9
2		27.4	5.4	27.0	8.6	26.3	8.9	26.5	8.8	26.2	8.8	26.0	9.0	26.3	8.8	25.8	8.1	25.7	8.0	25.4	8.4
3		27.3	5.4	26.7	8.5	26.0	8.7	26.3	8.4	26.0	8.7	25.8	8.8	26.0	8.6	25.5	7.8	25.5	8.0	24.2	7.9
4		27.2	5.5	26.0	8.6	25.9	8.5	26.1	8.3	25.7	8.1	25.5	8.6	25.8	8.2	25.0	7.4	25.2	7.5	24.1	7.9
5		27.2	5.6	25.5	6.9	25.5	7.3	26.0	7.6	25.5	7.3	25.1	7.5	25.5	7.2	24.9	7.3	24.9	7.3	24.0	7.9
6		27.2	5.6	25.3	6.3	25.2	6.8	25.9	7.2	25.3	7.0	24.9	6.8	25.4	6.9	24.6	7.2			24.0	7.8
7		27.0	5.8	25.1	5.9	25.0	6.2	25.7	7.1	25.1	6.2	24.6	6.5	25.2	6.5	24.5	7.0			24.0	7.8
8		26.0	5.8	24.9	5.7	24.8	5.7	25.3	6.0	24.9	6.1	24.3	6.1	24.9	5.7	24.0	6.8			24.0	7.8
9		25.9	5.5	24.7	5.4	24.5	5.6	25.1	5.1	24.5	6.0	24.0	6.3	24.5	5.7	24.0	6.6			24.0	7.8
10		25.5	5.3	24.5	5.1	24.0	5.1	24.9	5.0	24.3	6.0	23.9	6.3	24.2	5.6	23.9	6.5			24.0	7.8
11		24.9	4.9	24.2	5.1	23.7	5.1	24.5	4.9	24.0	6.0	23.7	6.3	24.0	5.7	23.8	6.5			23.9	7.8
12		24.4	4.9	23.8	5.5	23.5	5.5	24.3	5.0	24.0	5.9	23.5	6.3	23.9	5.6	23.8	6.4			23.9	7.8
13		24.1	4.9	23.6	5.6	23.2	5.6	24.0	5.0	23.6	6.0	23.0	6.2	23.7	5.5	23.8	6.4			23.9	7.8
14				23.4	5.6	23.0	5.7	24.0	5.0	23.5	5.8	22.6	6.4	23.5	5.5	23.8	6.4			23.9	7.8
15				23.2	5.6	22.8	5.5	23.8	5.0	23.3	5.6	22.3	6.3	23.5	5.5	23.8	6.4			23.9	7.7
16				23.0	5.5	22.2	5.5	23.8	4.9	23.2	5.6	22.0	6.1	23.4	5.4	23.7	6.3			23.9	7.7
17				22.7	5.3	22.0	5.3			23.1	5.5	21.8	5.9	23.2	5.3	23.6	6.2			23.9	7.7
18				22.5	4.9	21.7	5.1			22.9	5.4	21.5	5.7	23.1	5.2	23.5	6.1			23.9	7.7
19				22.3	4.7	21.5	4.9			22.7	5.2	21.1	5.1	23.0	4.9	23.5	6.1				
20				22.3	4.6	21.4	4.6			22.5	5.0	20.9	5.0	22.8	4.7	23.5	6.0				
21				22.0	4.3	21.2	4.4			22.2	4.4	20.7	4.8	22.8	4.3	23.5	5.9				
22				21.6	3.8	20.6	4.2			22.0	4.1	20.5	4.7			23.4	5.7				
23				21.5	3.5	20.3	3.7			21.8	3.6	20.3	4.5			23.4	5.4				
24				21.4	3.5	20.0	3.7			21.8	3.3	20.0	4.3			23.4	5.3				
25				21.3	3.1	19.6	3.3			21.8	3.0	19.5	3.7			23.4	5.1				
30						17.3	1.1					16.5	1.3								
35												15.0	0.2								
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 8-30-77 Grey Boat SR, RC White Boat TB, PD

Station		549-G																			
time	start	1520																			
	stop	1525																			
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		24.0	7.9																		
1		24.0	7.9																		
2		24.0	7.8																		
3		24.0	7.8																		
4		24.0	7.8																		
5		24.0	7.8																		
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
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APPENDIX E

TABLE 3

OCONEE NUCLEAR STATION

PLUME MAPPING STUDY

September 21, 1977

Oconee Nuclear Station
Plume Mapping Study

Date 9-21-77 Grey Boat PD, TB White Boat RC, J. Jenkins

Station		1-33G		2-G		3-G		4-G		11-G		12-G		13-G		14-G		19-G		20-G	
time	start	0931		0937		0948		0953		1008		1017		1038		1049		1110		1118	
	stop	0935		0945		0952		1005		1016		1037		1048		1106		1116		1125	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		26.5	5.7	26.5	6.2	26.5	6.1	27.5	5.5	26.7	5.9	26.6	6.1	27.4	6.0	27.0	5.8	26.6	6.7	26.7	6.7
1		26.5	5.8	26.5	6.2	26.5	6.2	27.5	5.5	26.6	5.9	26.6	6.0	26.6	6.0	26.9	5.7	26.6	6.6	26.5	6.7
2		26.0	5.7	26.5	6.2	26.5	6.1	27.0	5.4	26.6	5.9	26.6	6.1	26.6	6.0	26.8	5.7	26.4	6.6	26.4	6.6
3		25.9	6.0	26.5	6.3	26.5	6.1	26.9	5.5	26.6	5.9	26.5	6.1	26.5	6.1	26.8	5.7	26.4	6.5	26.3	6.5
4		26.5	6.2	26.4	6.2	26.4	6.0	26.8	5.5	26.6	5.9	26.4	6.2	26.5	6.1	26.8	5.7	26.3	6.5	26.3	6.5
5		26.1	5.9	26.4	6.1	26.4	5.9	26.7	5.4	26.6	6.0	26.4	6.2	26.5	6.2	26.7	5.7	26.3	6.5	26.3	6.5
6		25.3	5.7	26.4	6.1	26.3	5.8	26.5	5.4	26.6	6.0	26.3	6.2	26.4	6.2	26.6	5.8	26.2	6.5	26.2	6.5
7		25.5	5.3	26.3	6.1	26.2	5.8	26.4	5.4	26.5	6.1	26.1	6.1	26.2	6.1	26.5	5.8	26.2	6.5	26.2	6.5
8		25.3	5.3	26.2	6.0	26.2	6.0	26.2	5.4	26.5	6.1	26.0	6.1	26.0	5.9	26.5	5.9	26.2	6.6	26.1	6.6
9		25.7	5.6	26.0	6.0			25.9	5.2	26.4	6.2	25.8	6.0	25.7	5.8	25.8	6.1	26.2	6.6	26.1	6.6
10		25.5	5.5	25.9	5.9			25.8	5.6	25.5	5.8	25.5	5.8	25.4	5.7	25.5	5.9	26.1	6.2	26.1	6.6
11				25.6	5.8			25.5	5.6	25.1	5.6	25.3	5.7	24.9	5.7	24.9	5.7	25.7	6.1	25.9	6.5
12				25.2	5.7			25.0	5.4	24.9	5.6	25.0	5.7	24.7	5.7	24.6	5.6	24.9	5.8	24.7	6.2
13				25.0	5.7					24.8	5.4	24.8	5.7	24.5	5.7	24.4	5.5	24.6	5.8	24.6	6.0
14				24.5	5.6					24.6	5.5	24.6	5.6	24.4	5.6	24.3	5.6	24.5	5.4	24.5	6.0
15				24.4	5.5					24.6	5.5	24.4	5.6	24.3	5.6	24.2	5.4	24.5	5.7	24.4	6.1
16				24.2	5.1					24.5	5.5	24.1	5.4	24.1	5.4	24.1	5.3	24.4	5.6	24.2	5.2
17										24.2	5.0	24.1	5.4	24.0	5.3	24.0	5.2	24.2	5.2	24.0	5.0
18												23.8	4.8	23.9	5.2	23.8	5.0			23.9	4.6
19												23.7	4.5	23.7	4.7	23.7	4.8			23.7	4.4
20												23.6	4.5	23.5	4.6	23.6	4.8				
21												23.5	4.2	23.5	4.5	23.6	4.6				
22												23.5	4.3	23.3	4.0	23.4	4.2				
23												23.3	4.2	23.0	3.9	23.1	4.0				
24												22.8	4.1	22.8	3.6	22.6	3.5				
25												22.6	3.5	22.4	3.7	22.2	3.5				
30												17.3	2.5	17.7	2.3	18.3	2.2				
35												14.5	1.3	14.1	1.7	15.1	1.3				
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 9-21-77 Grey Boat PD, TB White Boat RC, J. Jenkins

Station		21-G		22-G		27-G		28-G		29-G		33-G		36-G		35-G		34-G		37-G	
time	start	1127		1140		1151		1300		1313		1326		1337		1400		1414		1428	
	stop	1137		1148		1201		1312		1320		1333		1351		1412		1418		1437	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		26.8	6.8	26.9	6.7	27.2	7.5	27.3	7.6	27.2	7.5	27.5	6.2	27.7	7.5	27.3	7.2	27.7	7.3	28.3	7.1
1		26.7	6.7	26.7	6.6	27.0	7.4	26.9	7.5	27.0	7.4	26.8	6.2	26.5	7.3	27.0	7.1	27.0	7.0	27.1	7.5
2		26.6	6.6	26.7	6.5	26.7	7.2	26.8	7.5	26.8	7.2	26.5	5.9	26.5	6.9	26.7	6.9	26.5	6.8	26.7	7.2
3		26.4	6.7	26.6	6.4	26.5	7.2	26.5	7.4	26.7	7.1	27.0	5.8	26.5	6.8	26.5	6.8	26.4	6.6	26.5	7.4
4		26.3	6.7	26.4	6.4	26.4	7.2	26.5	7.2	26.6	7.0	26.8	5.7	26.5	6.8	26.5	6.7	26.4	6.5	26.5	7.3
5		26.3	6.6	26.3	6.5	26.4	7.2	26.4	7.2	26.4	7.0	26.5	5.6	26.5	6.8	26.0	6.3	26.3	6.4	26.4	7.1
6		26.2	6.7	26.3	6.6	26.4	7.2	26.3	7.2	26.4	6.9	26.0	5.6	26.4	6.6	25.7	6.0	26.3	6.2	26.4	7.0
7		26.2	6.7	26.3	6.5	26.3	7.2	26.2	7.3	26.3	7.0	25.7	5.7	26.3	6.4	25.7	5.9			26.3	6.8
8		26.2	6.7	26.3	6.5	26.3	7.2	26.1	7.4	25.9	6.7	26.1	5.2	26.2	6.2	25.6	6.1			26.2	6.4
9		26.1	6.7	26.2	6.1	26.0	7.0	25.9	6.9	25.4	6.0	26.0	5.0	26.0	6.2	25.5	5.9			26.2	6.4
10		25.9	6.6	26.2	5.9	25.5	6.4	25.2	6.9	25.3	5.1	25.5	5.1	26.0	6.2	25.5	6.0			26.1	6.1
11		25.2	6.1			25.1	6.0	24.8	6.6	25.1	4.7			25.7	6.2	25.3	5.8			26.0	5.9
12		24.8	6.2			24.9	6.5	24.6	5.6	24.6	5.1			24.9	5.4	25.0	5.7			26.0	5.7
13		24.6	6.3			24.6	6.3	24.3	6.2					24.3	5.3	24.5	5.6			25.8	5.7
14		24.3	6.1			24.4	6.0	24.1	6.5					23.5	5.0	24.4	5.5			25.5	5.5
15		24.2	6.3			24.0	5.9	24.0	6.4					23.5	5.1	23.7	5.4			25.5	5.4
16		24.1	5.9			23.8	5.9	23.8	5.6					23.4	5.0	23.6	5.2			25.4	5.4
17		23.9	5.7			23.7	5.8	23.7	5.9					23.3	5.0	23.4	5.0			25.3	5.0
18		23.8	5.5			23.6	5.8	23.6	5.6					23.2	5.1	23.4	5.0			24.8	4.6
19		23.7	5.2			23.6	5.8	23.5	5.7					23.1	5.1	23.1	5.0			23.6	3.8
20		23.6	4.9			23.6	5.4	23.4	5.7					22.9	5.1	22.9	5.3			23.3	3.8
21		23.3	4.3			23.5	5.0	23.2	5.3					22.7	5.5					23.0	4.3
22		23.2	4.0			23.4	4.0	23.0	4.5					22.7	5.5					23.0	4.3
23		22.8	3.5			23.3	3.6	22.7	3.8					22.7	5.3					22.7	4.1
24		22.4	3.0					22.5	3.5											21.8	1.8
25		22.1	2.7					22.3	3.1												
30		17.7	1.9					17.1	0												
35		13.7	0.2					15.4	0												
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 9-21-77 Grey Boat TB, PD White Boat RC, J. Jenkins

Station		38-G		39-G		40-G		41-G		42-G		43-G		44-G		501.5		500.0		501.0	
time	start	1440		1450		1501		1510		1518		1527		1543		1549		1606		1621	
	stop	1446		1459		1506		1515		1526		1541		1545		1603		1617		1640	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		27.7	7.3	27.7	8.0	27.8	7.9	27.6	8.1	27.6	8.3	27.8	8.2	27.8	8.2	28.4	8.7	27.1	8.1	28.0	8.5
1		26.5	7.6	27.2	8.0	27.6	8.0	27.5	8.1	27.4	8.3	27.6	8.3	27.7	8.3	27.1	8.5	26.7	8.1	27.4	8.6
2		26.4	7.4	26.6	7.7	26.5	7.4	26.6	8.0	26.6	8.1	26.8	8.1	27.2	8.4	26.8	8.3	26.4	7.9	26.9	8.5
3		26.3	7.1	26.4	7.7	26.4	7.2	26.4	7.7	26.5	8.0	26.6	8.1	26.6	7.7	26.6	8.1	26.4	7.8	26.7	8.4
4		26.3	6.8	26.3	7.5	26.4	6.7	26.4	7.5	26.4	8.0	26.4	7.9	26.5	7.6	26.5	7.9	26.3	7.6	26.6	8.2
5		26.2	6.4	26.3	7.5	26.4	6.6	26.4	7.3	26.3	7.8	26.3	7.5	26.3	6.8	26.5	7.5	26.3	7.6	26.5	7.9
6		26.2	6.3	26.3	7.4	26.4	6.6	26.3	7.1	26.3	7.7	26.3	7.0	26.3	6.7	26.4	7.7	26.3	7.6	26.5	7.8
7		26.2	6.3	26.3	7.3	26.3	6.5	26.2	7.0	26.2	7.7	26.3	7.4	26.3	7.1	26.3	7.0	26.3	7.6	26.5	7.7
8		26.2	6.4	26.2	6.8	26.2	6.5	26.2	6.4	26.1	7.6	26.2	7.1			26.3	7.0	26.3	7.5	26.5	7.6
9		26.1	6.1	26.1	6.6	26.2	6.3	26.1	6.5	26.1	7.5	26.2	6.5			26.3	6.8	26.2	7.4	26.4	7.6
10		26.1	6.0	26.1	6.5	26.1	6.2	26.1	6.5	26.1	7.1	26.1	6.8			26.2	6.6	26.2	7.3	26.4	7.5
11		26.1	5.7	26.1	6.4	26.1	6.2	26.1	6.2	26.1	6.5	26.1	6.5			26.2	6.3	26.1	6.8	26.3	7.2
12		26.0	6.0	26.0	6.4	26.1	6.1	26.1	6.0	26.0	6.3	26.1	6.2			26.1	6.2	26.1	6.8	26.2	6.9
13		25.9	5.6	25.7	6.1	25.9	6.1	25.9	5.8	25.9	6.3	26.0	6.1			26.0	6.0	26.1	6.2	26.0	5.9
14		25.7	5.4	25.5	6.0	25.7	5.9	25.8	5.6	25.7	6.0	25.9	6.0			25.8	5.4	26.0	6.0	25.7	5.1
15		25.4	5.0	25.4	5.8	25.2	5.7	25.5	5.2	25.4	5.7	25.7	5.8			25.7	5.2	25.7	4.5	25.2	3.5
16		25.1	4.7	25.3	5.7	25.2	5.6			25.2	5.4	25.5	5.4			25.6	5.0	25.5	2.9	25.0	3.4
17		25.0	4.6	25.1	5.7	25.1	5.4			25.1	5.4	25.2	5.3			25.5	4.6	25.1	1.9	24.7	3.4
18				24.7	5.6	24.9	5.2			24.7	4.8	24.8	5.0			25.0	3.7	24.7	1.6	24.6	3.2
19				24.4	5.5					24.4	4.6	24.2	3.9			24.5	2.9	24.4	1.3	24.1	3.2
20				23.6	5.4					24.1	4.1	23.8	3.7			24.2	2.8	24.0	1.5	23.9	3.1
21				23.4	5.5					23.7	4.6	23.6	3.3			23.8	2.5	23.7	0.5	23.6	3.0
22				23.4	5.3					23.5	3.4	23.4	3.3			23.7	2.4	23.5	0	23.4	3.0
23				23.2	5.3					23.3	4.2	23.3	3.1					23.1	0	23.1	2.7
24				23.2	5.4					23.1	4.1	23.2	2.6					22.6	0	22.6	2.4
25				23.2	5.4					23.0	2.5	23.0	2.1					21.8	0	22.1	1.6
30				23.0	4.8					16.5	0.2	22.4	1.5					14.9	0	13.6	0
35																				10.8	0
40																				10.7	0
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 9-21-77 Grey Boat TB, PD White Boat RC, J. Jenkins

Station		5-W		6-W		7-W		8-W		9-W		10-W		15-W		16-W		17-W		18-W	
Time	start	0940		1000		1014		1025		1037		1052		1115		1125		1140		1153	
	stop	0950		1011		1022		1035		1048		1105		1120		1135		1150		1200	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		26.3	7.7	26.3	6.6	26.2	6.5	26.1	6.2	26.4	5.6	26.5	5.8	26.5	6.0	26.5	6.6	26.7	6.8	27.0	6.8
1		26.2	7.7	26.2	6.6	26.2	6.5	26.0	6.1	26.2	5.6	26.4	5.8	26.3	5.9	26.3	6.6	26.4	6.5	26.6	6.5
2		26.1	7.7	26.1	6.5	26.0	6.5	25.9	6.1	26.1	5.7	26.3	5.8	26.3	5.9	26.1	6.1	26.2	6.4	26.4	6.4
3		26.1	7.4	26.0	6.5	25.9	6.4	25.8	6.1	26.0	5.7	26.2	5.9	26.2	5.9	26.0	6.1	26.1	6.3	26.4	6.4
4		26.1	7.3	25.7	6.5	25.9	6.2	25.8	6.1	25.9	5.8	26.1	5.9	26.2	5.9	26.0	6.2	26.0	6.2	26.2	6.5
5		26.0	7.2	25.6	6.5	25.8	6.2	25.7	6.1	25.8	5.8	26.1	5.9	26.1	5.9	25.8	6.3	25.9	6.3	26.2	6.5
6		25.8	6.8	25.6	6.4	25.7	6.2	25.6	6.2	25.7	5.8	26.0	5.9	26.0	6.0	25.7	6.3	25.9	6.4	26.1	6.4
7		25.8	6.1	25.5	6.4	25.6	6.1	25.5	6.2	25.5	5.8	25.9	5.9	26.0	6.0	25.6	6.3	25.8	6.4	26.0	6.4
8		25.7	6.1	25.4	6.4	25.4	6.0	25.3	6.1	25.4	5.8	25.8	5.9	25.9	6.1	25.4	6.3	25.7	6.4	26.0	6.5
9		25.7	6.1	25.2	6.4	25.3	6.0	25.1	5.9	25.2	5.8	25.7	6.0	25.7	6.1	25.3	6.4	25.6	6.4	25.9	6.3
10		25.6	6.1	25.0	6.4	25.0	5.6	24.8	5.7	24.8	5.7	25.5	6.0	25.6	5.9	25.0	6.3	25.4	6.4	25.8	6.3
11		25.6	6.1	24.6	5.9	24.5	5.5	24.5	5.6	24.5	5.7	24.8	6.1	25.3	5.6	24.7	5.9	24.9	6.1	25.1	5.3
12		25.5	6.1	24.2	5.6	24.5	5.4	24.3	5.6	24.3	5.6	24.3	6.0	25.2	5.6	24.3	5.8	24.6	6.0	24.9	5.1
13		25.5	6.0	24.1	5.5	24.4	5.3	24.2	5.6	24.2	5.3	24.1	6.0			24.1	5.8	24.4	5.8	24.9	5.0
14		25.4	6.1	23.9	5.5	24.4	5.3	24.1	5.5	24.1	5.3	23.9	6.0			23.9	5.8	24.3	5.6	24.8	5.0
15		25.3	6.1	23.7	5.3	24.4	5.3	24.0	5.4	24.1	5.2	23.7	5.8			23.7	5.6	24.2	5.5		
16		25.2	6.0	23.6	5.1	24.4	5.1	23.9	5.3	23.9	5.0	23.5	5.5			23.6	5.3	24.1	5.4		
17		25.2	6.1	23.4	5.0			23.8	5.3	23.9	4.9	23.4	5.3			23.4	5.1	24.1	5.1		
18		25.0	6.0	23.2	4.8			23.8	5.0	23.8	4.8	23.3	5.3			23.3	5.1	24.0	5.1		
19		24.8	6.0	23.1	4.6			23.8	4.9	23.8	4.7	23.2	5.2			23.2	5.2	23.9	4.6		
20		24.5	5.8	22.7	4.7			23.7	4.9	23.7	4.6	23.0	5.0			22.9	4.6	23.8	4.2		
21		24.3	5.9	22.6	4.9			23.5	4.6	23.5	4.2	22.5	4.8			22.8	4.6	23.8	4.0		
22		23.9	5.8	22.5	5.0			23.4	4.6	23.4	3.9	22.2	4.8			22.4	4.3				
23		23.0	4.7	22.5	5.1			23.3	4.3	23.3	3.9	21.6	4.5			21.9	3.8				
24		22.6	4.0	22.5	4.9			23.2	4.1	23.3	3.7	21.3	4.6			21.4	3.3				
25		22.2	2.9	22.5	4.8			22.8	3.8			21.0	4.7			21.1	3.4				
30								21.6	2.8			16.0	3.8			17.5	2.3				
35												13.7	3.4			15.9	0.8				
40												13.7	3.1								
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 9-21-77 Grey Boat TB, PD White Boat RC, J. Jenkins

Station		23-W		24-W		25-W		26-W		30-W		31-W		32-W		Fall Creek		SC-11		507.0	
time	start	1300		1315		1330		1352		1415		1435		1450		1505		1525		1535	
	stop	1310		1324		1342		1404		1428		1449		1500		1518		1530		1545	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		27.1	7.3	27.0	7.3	27.6	7.5	27.5	7.5	27.0	8.1	27.0	8.0	26.9	8.0	26.3	7.7	25.9	8.0	26.0	8.5
1		26.4	6.9	26.4	6.9	26.2	6.8	26.5	6.8	26.2	7.9	26.1	8.1	26.3	8.0	26.0	7.3	25.3	7.9	25.5	8.4
2		26.2	6.9	26.1	6.9	26.0	6.8	26.0	6.6	25.9	7.6	25.8	7.7	25.8	7.6	25.8	7.2	25.1	7.7	25.0	8.2
3		26.1	6.9	26.0	6.8	25.9	6.8	26.0	6.6	25.8	7.4	25.7	7.6	25.7	7.5	25.4	7.0	25.0	7.6	24.8	8.0
4		26.0	6.9	26.0	6.8	25.7	7.0	25.9	6.7	25.7	7.4	25.6	7.5	25.5	7.4	25.3	7.2	25.0	7.6	24.8	7.9
5		25.9	6.9	25.9	6.9	25.7	6.9	25.8	6.8	25.6	7.3	25.5	7.4	25.4	7.3	25.0	6.9	24.9	7.5	24.5	7.7
6		25.9	6.9	25.8	6.9	25.6	6.9	25.8	6.7	25.5	7.2	25.3	7.2	25.4	7.3	24.4	7.2	24.9	7.3	24.2	7.6
7		25.8	6.9	25.7	7.0	25.6	6.8	25.7	6.7	25.3	7.1	25.2	7.1	25.2	7.2	24.2	7.1	24.8	7.2	24.2	7.6
8		25.7	6.9	25.7	7.0	25.5	6.8	25.6	6.4	25.2	6.9	25.1	6.9	25.1	7.0	24.0	7.1	24.8	7.1	24.1	7.6
9		25.7	6.8	25.6	7.0	25.4	6.4	25.5	6.1	25.1	7.0	24.9	7.2	24.8	7.0	23.9	7.0	24.8	7.0	24.0	7.5
10		25.2	5.9	25.1	6.2	25.1	5.3	25.3	6.2	24.9	7.0	24.8	7.2	24.6	6.8	23.7	6.7	24.8	7.0	24.0	7.5
11		24.9	6.3	24.5	6.0	24.4	6.0	24.5	6.0	24.3	7.2	24.2	7.2	24.2	7.0	23.5	7.0			23.9	7.5
12		24.8	6.3	24.3	6.2	24.1	6.4	24.0	6.5	24.1	7.1	24.0	7.1	23.9	6.7	23.4	7.0			23.9	7.4
13		24.7	6.3	24.1	6.2	23.9	6.3	24.0	6.4	24.0	7.0	23.6	6.9	23.8	6.5	23.3	7.0			23.9	7.4
14		24.6	5.9	24.0	6.2	23.8	6.2	23.8	6.3	23.8	6.8	23.5	6.8	23.7	6.4	23.2	7.0			23.8	7.3
15		24.5	5.4	23.9	6.1	23.7	6.2	23.6	6.2	23.7	6.6	23.4	6.6	23.6	6.3	23.1	6.9			23.8	7.2
16		24.5	5.4	23.8	6.1	23.6	6.1	23.6	6.1	23.6	6.6	23.3	6.5	23.5	6.1	22.9	6.9			23.7	7.2
17		24.5	5.3	23.8	6.2	23.5	6.1	23.5	6.1	23.6	6.6	23.3	6.5	23.5	6.0	22.9	6.9			23.7	7.1
18				23.7	6.1	23.5	6.2	23.3	5.4	23.5	6.6	23.2	6.4	23.4	5.7	22.8	6.8			23.7	7.1
19				23.6	5.6	23.4	5.6	23.2	5.3	23.3	6.4	23.0	6.1	23.4	5.6	22.7	6.8				
20				23.5	5.0	23.2	4.8	22.9	4.8	23.2	6.4	23.0	6.0	23.4	5.5	22.6	6.7				
21				23.3	4.9	22.9	4.5	22.5	4.3	23.0	6.0	22.5	5.8	23.4	5.0	22.0	6.3				
22				23.0	3.9	22.5	3.8	22.2	3.8	22.8	5.8	22.3	5.6	23.4	5.0	21.9	6.2				
23				23.0	3.8	22.5	3.8	22.0	3.7	22.7	5.6	22.2	5.2			21.7	5.6				
24				22.6	2.9	22.0	3.2	21.5	3.0	22.5	5.5	22.0	4.9			21.4	5.4				
25				22.3	2.4	21.5	2.9	21.1	2.9	22.2	5.0	21.8	4.7			20.4	4.0				
30				22.0	1.9	17.2	.8	18.5	.9	20.1	.4	19.3	.4			17.9	0.3				
35						15.8	.3									17.9	0.2				
40																					
45																					

Oconee Nuclear Station
Plume Mapping Study

Date 9-21-77 Grey Boat TB, PD White Boat RC, J. Jenkins

Station		549-W		45-W		46-W		47-W													
time	start	1557		1635		1645		1655													
	stop	1604		1644		1653		1700													
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		24.4	8.0	27.4	8.5	27.4	8.6	27.4	8.4												
1		24.2	7.9	26.5	8.3	26.4	8.0	26.5	7.7												
2		24.1	7.8	26.3	8.0	26.3	7.9	26.4	7.5												
3		23.9	7.6	26.0	7.5	26.0	7.4	26.4	7.3												
4		23.9	7.6	26.0	7.4	26.0	7.4	26.3	6.8												
5		23.9	7.5	25.9	7.2	25.9	7.3	26.3	6.7												
6		23.9	7.5	25.9	7.0	25.8	7.0	26.3	6.6												
7		23.9	7.5	25.8	6.8	25.8	6.8	26.3	6.4												
8		24.0	7.5	25.6	6.3	25.7	6.7	26.2	6.5												
9		24.0	7.5	25.6	6.2	25.5	6.3														
10		24.1	7.4	25.5	6.2	25.3	6.0														
11		24.1	7.4	24.9	6.2	24.5	6.7														
12		24.2	7.4	24.8	6.4	24.3	6.7														
13		24.2	7.4	24.7	6.4	24.2	6.7														
14				24.6	6.3	24.1	6.6														
15				24.6	6.2	23.8	6.5														
16				24.6	6.1	23.6	6.4														
17						26.5	6.3														
18						23.3	6.0														
19						23.3	6.0														
20						23.3	5.9														
21																					
22																					
23																					
24																					
25																					
30																					
35																					
40																					
45																					

APPENDIX E

TABLE 4

OCONEE NUCLEAR STATION

PLUME MAPPING STUDY

October 12, 1977

Oconee Nuclear Station
Plume Mapping Study

Date 10-12-77 Grey Boat TB, PD White Boat RC, CC

Station		10-G		1-G		2-G		3-G		4-G		9-G		8-G	
time	start	1005		1025		1032		1040		1040		1047		1052	
	stop	1020		1028		1035		1035		1045		1050		1105	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		25.2	6.7	28.0	7.0	24.5	6.6	24.5	6.5	27.0	6.9	25.8	6.6	25.5	6.7
1		25.2	6.8	28.1	7.5	24.4	6.6	24.5	6.5	26.1	6.9	25.5	6.6	24.9	6.6
2		25.0	6.8	24.1	6.8	24.4	6.6	24.4	6.5	25.5	6.6	24.7	6.5	24.6	6.6
4		24.6	6.5	24.2	6.4	24.2	6.6	24.2	6.6	25.0	6.3	24.4	6.1	24.2	6.6
6		23.9	5.5	24.2	6.3	24.0	6.5	24.0	6.5	24.4	5.9	24.0	6.6	23.9	6.5
8		23.7	5.3	24.1	6.5	23.8	5.9	23.7	5.8	23.6	5.2	23.9	5.8	23.8	6.1
10		23.7	5.2	26.6	6.7	23.7	5.6	23.7	5.7			23.6	5.2	23.7	5.7
12		23.4	4.8			23.2	5.2	23.6	5.0			23.5	5.1	23.6	5.0
14		23.3	4.8			23.5	4.7	23.5	4.7			23.4	5.0	23.4	4.6
16		23.1	3.7			23.3	4.2	23.3	4.4			23.2	4.2	23.2	4.6
18		22.9	3.5									23.0	3.5		
20		22.7	3.2									22.8	3.5		
25		21.6	3.5									22.6	3.1		
30		15.3	2.8												
35		13.2	2.5												
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 10-12-77 Grey Boat TB, PD White Boat RC, CC

Station		11-G		51-G		14-G		15-G		52-G		18-G		19-G	
time	start	1115		1121		1132		1141		1146		1202		1210	
	stop	1119		1130		1137		1144		1200		1207		1217	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		24.2	6.6	24.5	6.9	24.9	6.7	24.7	6.6	24.7	6.9	25.0	6.7	24.4	6.8
1		24.2	6.7	24.5	6.9	24.9	6.8	24.7	6.7	24.7	7.0	24.9	6.7	24.4	6.8
2		24.2	6.7	24.4	6.8	24.8	6.7	24.6	6.7	24.7	7.0	24.7	6.8	24.3	6.8
4		24.1	6.6	24.1	6.8	24.4	6.5	23.9	6.7	24.3	6.9	24.4	6.7	24.0	6.7
6		23.9	6.4	23.9	6.6	24.1	6.7	23.9	6.6	23.9	6.9	24.1	6.7	23.9	6.8
8		23.8	6.0	23.9	6.7	23.8	6.5			23.8	6.8	23.9	6.2	23.8	6.8
10		23.7	6.2	23.7	6.7	23.6	5.6			23.6	6.6	23.7	5.4	23.8	6.6
12		23.6	5.9	23.6	5.6	23.5	5.5			23.5	6.5	23.5	4.8	23.7	6.3
14				23.4	5.0	23.3	4.8			23.3	5.4				
16				23.2	4.3	23.1	4.7			23.1	5.3				
18				22.9	5.1					22.9	5.3				
20				22.7	5.9					22.5	5.2				
25				22.1	3.8					21.9	2.9				
30				16.9	1.6					17.2	1.3				
35				13.8	.3					13.2	.2				
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 10-12-77 Grey Boat TB, PD White Boat RC, CC

Station		53-G		22-G		23-G		54-G		26-G		28-G		31-G	
time	start	1218		1232		1307		1314		1325		1338		1359	
	stop	1230		1240		1312		1322		1332		1352		1410	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		24.4	6.9	24.5	6.8	24.4	6.9	24.1	6.9	24.5	7.0	24.0	7.1	23.8	6.9
1		24.4	6.9	24.5	6.8	24.2	6.9	24.1	7.0	24.1	6.9	23.7	7.0	23.6	6.9
2		24.3	6.9	24.4	6.8	23.9	6.9	24.1	7.0	24.0	6.9	23.6	7.0	23.5	6.9
4		24.1	6.9	24.2	6.8	23.7	6.8	23.7	6.9	23.9	6.8	23.5	6.8	23.4	6.9
6		23.9	6.8	24.0	6.8	23.7	6.8	23.6	7.0	23.8	6.7	23.5	6.9	23.3	6.9
8		23.8	6.8	23.9	6.8	23.6	6.8	23.5	7.0	23.7	6.7	23.4	6.7	23.3	6.9
10		23.7	6.2	23.8	6.7	23.6	6.8	23.4	6.8	23.7	6.8	23.4	6.6	23.3	6.9
12		23.5	5.7	23.6	6.2	23.5	6.7	23.4	6.8	23.6	6.6	23.4	6.6	23.3	7.0
14		23.4	5.6	23.5	5.8	23.4	6.0	23.4	6.0	23.4	5.9	23.3	6.8	23.2	7.1
16		23.3	5.5	23.2	5.0	23.4	6.0	23.0	6.1	23.3	5.4	23.2	6.9	23.2	7.2
18		22.9	5.8					22.9	6.3			22.9	6.7	23.1	7.3
20		22.8	5.9					22.6	6.3			22.5	6.8	22.8	7.5
25		21.7	1.7					21.8	4.7			21.6	5.3	21.4	6.7
30		17.0	.5					16.9	0			18.3	.1	16.7	0
35		14.7	.2					15.4	0					13.8	0
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 10-12-77 Grey Boat TB, PD White Boat RC, CC

Station		SC 11-G		549.0-G		10-W		8-W		7-W		6-W		34-W	
time	start	1418		1432		1000		1022		1035		1040		1055	
	stop	1424		1437		1008		1030		1039		1046		1059	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		23.3	7.3	21.7	7.7	24.9	6.6	24.2	6.7	24.0	6.7	23.8	6.7	23.5	6.4
1		23.1	7.3	21.7	7.7	24.9	6.6	24.2	6.7	24.0	6.7	23.7	6.6	23.5	6.4
2		22.9	7.2	21.7	7.7	24.9	6.6	24.1	6.6	24.0	6.7	23.6	6.5	23.5	6.4
4		22.7	7.2	21.7	7.7	24.5	6.3	24.1	6.6	24.0	6.7	23.5	6.5	23.5	6.5
6		22.6	7.2	21.7	7.7	23.9	5.7	23.8	6.4	23.9	6.6	23.5	6.5	23.5	6.5
8		22.6	7.2	21.7	7.7	23.6	5.2	23.7	6.0	23.8	6.4	23.4	6.6	23.4	6.4
10		22.5	7.2	21.7	7.6	23.4	5.1	23.6	5.6	23.7	6.0	23.4	6.6	23.4	6.6
12		22.4	7.2	21.7	7.6	23.3	4.6	23.5	5.2	23.5	5.5	23.3	6.6	23.3	6.5
14		22.2	7.2	21.7	7.6	23.1	4.3	23.3	4.5	23.4	5.6	23.3	6.5	23.2	6.4
16		22.0	7.2			22.9	3.6	23.1	4.4	23.3	5.8	23.2	6.2	23.0	5.8
18		21.9	7.2			22.6	3.3	23.1	4.2	22.2	5.0	23.0	5.5		
20		21.8	7.1			22.4	3.2	22.6	4.3			21.4	6.8		
25						21.4	3.1	22.3	3.6			20.7	6.9		
30						14.8	2.9	16.8	1.9						
35						12.9	2.6								
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 10-12-77 Grey Boat TB, PD White Boat RC, CC

Station		35-W		36-W		46-W		37-W		55-W		40-W		5-W	
time	start	1100		1110		1120		1130		1135		1140		1145	
	stop	1107		1113		1126		1134		1139		1144		1152	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		23.5	6.5	23.4	6.6	23.3	6.9	23.3	6.6	23.3	6.7	23.3	6.7	23.2	6.8
1		23.5	6.5	23.4	6.6	23.3	6.9	23.3	6.7	23.3	6.7	23.3	6.7	23.2	6.7
2		23.5	6.5	23.4	6.6	23.3	6.9	23.3	6.7	23.3	6.7	23.2	6.7	23.1	6.7
4		23.5	6.5	23.4	6.6	23.3	6.9	23.3	6.6	23.2	6.7	23.2	6.7	23.1	6.7
6		23.4	6.6	23.4	6.6	23.3	6.9	23.3	6.7	23.2	6.7	23.2	6.7	23.1	6.7
8		23.4	6.6			23.2	7.0	23.3	6.7	23.2	6.7	23.2	6.7	23.1	6.7
10		23.3	6.6			23.0	7.1	23.3	6.7	23.2	6.7	23.1	6.7	23.1	6.7
12		23.2	6.6			23.0	7.2			23.2	6.7	23.1	6.7	23.1	6.7
14		23.2	6.6			22.7	7.4					23.1	6.7	23.1	6.7
16		22.8	6.2			22.0	7.4							23.1	6.7
18		22.2	6.8			20.0	7.4							23.1	6.7
20		21.3	6.9			19.5	7.3							23.0	6.7
25		20.5	7.0											22.9	6.5
30															
35															
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 10-12-77 **Grey Boat** TB, PD **White Boat** RC, CC

Station		41-W		56-W		44-W		501.5-W		501.0-W		500.0-W		33-W	
time	start	1157		1205		1212		1225		1240		1250		1330	
	stop	1202		1211		1216		1232		1247		1257		1334	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		23.2	6.9	23.2	7.0	23.2	7.0	23.0	6.9	23.1	6.5	23.0	6.8	26.7	6.9
1		23.1	6.9	23.1	7.0	23.1	7.0	23.0	6.9	23.0	6.5	23.0	6.8	26.8	6.9
2		23.1	6.9	23.0	6.9	23.0	6.9	23.0	6.9	23.0	6.5	22.8	6.8	27.7	6.8
4		23.0	6.8	23.0	6.9	23.0	6.9	22.9	6.9	22.9	6.5	22.7	6.8	28.0	7.0
6		23.0	6.8	23.0	6.9	23.0	6.9	22.9	6.9	22.9	6.5	22.6	6.8	29.0	6.6
8		23.0	6.8	23.0	6.9	23.0	6.9	22.8	6.9	22.9	6.5	22.6	6.8	29.0	6.4
10		23.0	6.8	23.0	6.9	23.0	6.9	22.8	6.9	22.9	6.4	22.6	6.8	29.0	7.0
12		23.0	6.8	23.0	6.9	23.0	6.9	22.8	6.9	22.8	6.4	22.6	6.8		
14		23.0	6.8	23.0	6.9			22.8	6.9	22.8	6.4	22.6	6.8		
16		23.0	6.8	23.0	6.8			22.8	6.9	22.8	6.4	22.5	6.8		
18				23.0	6.7			22.8	6.9	22.8	6.4	22.5	6.8		
20				22.9	6.7			22.8	6.8	22.8	6.4	22.5	6.8		
25				22.8	6.2			22.5	6.6	22.0	3.1	22.4	6.4		
30								13.1	.5	13.0	.8	17.9	.6		
35															
40															
45															

APPENDIX E

TABLE 5

OCONEE NUCLEAR STATION

PLUME MAPPING STUDY

November 22, 1977

Oconee Nuclear Station
Plume Mapping Study

Date 11-22-77 Grey Boat RC, SR White Boat TB, CC

Station		10-W		1-W		2-W		3-W		4-W		8-W		9-W	
time	start	0920		0935		0943		0948		0954		1000		1010	
	stop	0930		0941		0947		0953		0957		1008		1015	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		19.4	8.0	20.5	7.8	20.7	8.1	20.1	7.9	19.9	7.9	20.5	8.0	19.9	7.9
1		19.4	8.0	20.0	7.8	20.1	8.0	19.7	7.9	19.7	7.9	20.0	8.0	19.8	7.9
2		19.4	8.0	21.6	7.8	19.6	7.9	19.5	7.6	19.6	7.9	19.1	7.9	19.6	7.9
4		19.4	8.0	20.0	7.8	18.6	7.9	18.7	7.6	19.5	7.8	19.0	7.8	19.1	7.8
6		19.4	7.9	23.2	7.9	18.5	7.9	18.1	7.5	19.4	7.8	18.4	7.9	18.9	7.8
8		18.5	7.5	23.8	8.2	18.2	7.7	17.8	7.5	18.4	7.6	18.1	7.7	18.5	7.7
10		17.9	7.4	23.6	8.2	18.0	7.6	17.8	7.4			17.9	7.5	18.0	7.3
12		17.7	7.2	23.4	8.0	18.0	7.6	17.8	7.4			17.8	7.6	17.8	7.3
14		17.6	7.2			17.8	7.5					17.6	7.5	17.7	7.3
16		17.5	7.3			17.5	7.4					17.5	7.5		
18		17.3	7.3									17.4	7.7		
20		17.2	7.3									17.2	7.7		
25		17.0	7.0									17.0	7.6		
30		16.6	6.2									16.5	7.6		
35		13.4	1.1									15.3	6.2		
40												13.6	.3		
45															

Oconee Nuclear Station
Plume Mapping Study

Date 11-22-77 Grey Boat RC, SR White Boat TB, CC

Station		11-W		51-W		14-W		15-W		52-W		18-W		19-W	
time	start	1017		1022		1033		1044		1043		1053		1104	
	stop	1021		1031		1037		1042		1051		1100		1109	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		19.3	8.1	19.6	8.1	19.7	8.0	19.4	8.1	19.6	8.2	19.6	8.1	19.3	8.2
1		19.3	8.1	19.4	8.0	19.6	8.1	19.4	8.1	19.3	8.0	19.5	8.1	19.3	8.2
2		19.0	8.1	19.0	8.0	19.4	8.0	18.9	8.0	19.3	8.1	19.4	8.1	19.1	8.2
4		18.9	8.1	18.8	8.0	19.4	8.0	18.8	8.0	18.9	8.1	18.9	8.0	18.4	8.2
6		18.5	7.9	18.5	8.1	18.9	8.0	18.5	7.9	18.3	8.2	18.5	7.9	18.3	8.2
8		18.4	7.7	18.3	8.0	18.3	7.9			18.2	8.2	18.3	7.8	18.1	8.1
10		18.1	7.6	18.1	7.9	18.0	7.6			18.0	8.1	18.0	7.5	18.0	8.2
12				18.0	7.8	17.8	7.5			17.9	8.0	17.9	7.6	17.9	8.1
14				17.9	7.6	17.6	7.6			17.8	7.9	17.8	7.5		
16				17.6	7.6	17.5	7.5			17.5	7.8	17.6	7.3		
18				17.5	7.6					17.4	7.8				
20				17.4	7.7					17.3	7.8				
25				17.0	7.6					16.9	7.6				
30				16.4	7.6					16.4	7.3				
35				15.4	6.6					15.3	4.8				
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 11-22-77 Grey Boat RC, SR White Boat TB, CC

Station		53-W		22-W		23-W		54-W		24-W		28-W		31-W	
time	start	1111		1122		1200		1211		1227		1240		1255	
	stop	1120		1130		1210		1225		1236		1249		1307	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		19.4	8.1	19.4	8.1	19.0	8.2	19.1	8.2	19.0	8.2	18.6	8.3	17.7	8.3
1		19.4	8.1	19.4	8.1	18.9	8.2	19.0	8.2	19.0	8.2	18.6	8.3	17.7	8.3
2		19.2	8.1	19.4	8.1	18.9	8.2	18.9	8.2	18.9	8.2	18.2	8.3	17.7	8.3
4		18.5	8.2	18.8	8.1	18.0	8.2	18.4	8.2	18.7	8.2	18.0	8.3	17.7	8.3
6		18.2	8.1	18.4	7.8	18.0	8.2	18.1	8.2	18.3	8.2	17.9	8.3	17.7	8.3
8		18.1	8.1	18.3	7.9	18.0	8.2	18.0	8.2	18.2	8.2	17.8	8.3	17.7	8.3
10		18.0	8.0	18.1	7.7	17.9	8.1	17.9	8.2	18.0	8.2	17.8	8.3	17.7	8.3
12		18.0	8.1	17.9	7.6	17.9	8.1	17.9	8.2	17.8	8.1	17.8	8.3	17.7	8.3
14		17.9	8.0	17.7	7.6	17.9	8.0	17.8	8.2	17.8	8.1	17.7	8.2	17.6	8.3
16		17.6	7.9	17.6	7.4	17.7	8.0	17.7	8.1	17.7	8.0	17.6	8.2	17.5	8.2
18		17.5	7.9					17.5	8.1			17.3	8.2	17.4	8.3
20		17.4	7.8					17.4	8.0			17.1	8.0	17.3	8.3
25		16.9	7.7					16.9	7.9			16.8	7.9	16.7	8.3
30								16.5	6.7			16.4	7.6	16.2	8.2
35								15.7	5.8			15.0	.5		
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 11-22-77 Grey Boat RC, SR White Boat TB, CC

Station		SC 11-W		549.0-W		7-G		6-G		34-G		35-G		36-G	
time	start	1315		1340		0938		0947		0959		1007		1016	
	stop	1325		1350		0944		0956		1005		1014		1020	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		17.3	8.6	16.0	9.0	19.5	8.3	19.0	8.3	18.4	8.1	18.4	8.2	17.9	8.1
1		17.3	8.6	16.0	9.0	19.5	8.3	19.0	8.3	18.2	8.1	18.0	8.1	17.8	8.1
2		17.0	8.6	16.0	9.0	18.9	8.2	18.6	8.3	17.6	7.9	17.5	8.1	17.4	8.1
4		16.9	8.6	16.0	9.0	18.7	8.2	18.1	8.0	17.5	8.0	17.5	8.1	17.4	8.1
6		16.8	8.6	16.0	8.9	18.4	8.1	18.0	7.9	17.5	8.0	17.4	8.1		
8		16.5	8.7	16.0	8.9	18.0	7.7	17.3	7.8	17.4	8.0	17.2	8.2		
10		16.5	8.8	16.0	8.9	17.8	7.7	17.0	8.0	17.2	8.2	17.1	8.2		
12		16.4	8.8	16.0	8.8	17.7	7.7	17.0	8.1	17.1	8.2	17.0	8.2		
14		16.3	8.7	15.9	8.6	17.7	7.7	16.8	8.2	16.9	8.2	17.0	8.3		
16		16.3	8.7			17.6	7.6	16.7	8.3	16.8	8.1	16.7	8.4		
18		16.0	8.7			17.1	7.7	16.0	8.6			16.3	8.4		
20		15.8	8.6					15.0	8.4			15.3	8.3		
25								14.7	8.2						
30															
35															
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 11-22-77 Grey Boat RC, SR White Boat TB, CC

Station		46-G		37-G		55-G		40-G		5-G		509.0-G		41-G	
time	start	1023		1034		1040		1045		1051		1058		1105	
	stop	1030		1038		1043		1048		1057		1059		1109	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		17.8	8.3	18.1	8.2	17.7	8.1	17.5	8.1	17.4	8.2	17.0	8.3	17.6	8.3
1		17.8	8.3	18.0	8.2	17.7	8.1	17.5	8.1	17.4	8.2			17.6	8.4
2		17.7	8.4	17.8	8.2	17.6	8.1	17.5	8.1	17.4	8.3			17.6	8.4
4		17.5	8.4	17.8	8.2	17.5	8.2	17.5	8.2	17.3	8.3			17.4	8.4
6		17.5	8.4	17.0	8.2	17.3	8.2	17.1	8.2	17.3	8.3			17.0	8.4
8		17.4	8.4	17.0	8.1	17.1	8.1	17.0	8.2	17.2	8.3			16.9	8.4
10		17.3	8.4	17.0	8.1	17.0	8.1	17.0	8.1	17.1	8.3			16.9	8.3
12		17.0	8.7	17.0	8.1	17.0	8.1	17.0	8.1	17.0	8.2			16.8	8.3
14		16.6	8.8					17.0	8.1	16.9	8.2			16.8	8.3
16		15.6	8.9							16.9	8.2			16.8	8.3
18		14.1	8.7							16.9	8.2				
20		14.0	8.6							16.9	8.2				
25										16.7	8.1				
30															
35															
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 11-22-77 Grey Boat RC, SR White Boat TB, CC

Station		56-G		44-G		501.5-G		501.0-G		500.0-G					
time	start	1110		1117		1130		1143		1159					
	stop	1116		1120		1138		1152		1206					
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		17.6	8.4	17.7	8.3	17.2	8.5	16.7	8.4	16.5	8.5				
1		17.6	8.4	17.5	8.4	17.1	8.6	16.7	8.4	16.5	8.5				
2		17.5	8.4	17.4	8.4	16.9	8.6	16.7	8.4	16.4	8.5				
4		17.4	8.4	16.9	8.3	16.8	8.5	16.7	8.4	16.4	8.5				
6		16.9	8.3	16.8	8.3	16.7	8.5	16.7	8.4	16.4	8.5				
8		16.9	8.3	16.8	8.3	16.7	8.5	16.7	8.4	16.4	8.4				
10		16.9	8.3	16.8	8.3	16.7	8.5	16.7	8.4	16.4	8.4				
12		16.8	8.3			16.7	8.6	16.7	8.4	16.4	8.4				
14		16.8	8.3			16.7	8.6	16.7	8.4	16.4	8.4				
16		16.8	8.3			16.6	8.6	16.7	8.4	16.4	8.4				
18		16.8	8.3			16.6	8.7	16.6	8.4	16.4	8.3				
20		16.8	8.3			16.6	8.7	16.5	8.4	16.4	8.4				
25		16.7	8.2			16.6	8.6	16.4	8.0	16.3	8.2				
30						15.9	7.0	15.8	6.3	16.0	7.5				
35						11.5	0.2	11.0	0.3						
40															
45															

APPENDIX E

TABLE 6

OCONEE NUCLEAR STATION

PLUME MAPPING STUDY

December 14, 1977

Oconee Nuclear Station
Plume Mapping Study

Date 12-14-77 Grey Boat TB, CC White Boat RC, SR

Station		10-G		1-G		2-G		3-G		4-G		8-G		9-G	
time	start	0930		1015		1021		1034		1040		1049		1056	
	stop	0945		1020		1028		1039		1043		1055		1100	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		17.0	9.1	21.0	8.8	19.0	9.4	17.5	9.2	17.8	9.1	17.8	9.3	17.4	9.2
1		17.0	9.2	20.5	8.8	18.0	9.4	17.4	9.3	17.6	9.2	17.3		17.3	
2		17.0	9.2	20.4	8.7	17.3	9.4	16.9	9.2	17.5	9.3	15.8		17.1	
4		17.0	9.4	20.0	8.4	15.3	8.8	15.7	8.8	17.0	9.3	15.4		16.1	
6		16.6	8.9	22.0	9.0	14.6	8.7	14.6	8.5	14.9	8.4	14.6		14.6	
8		14.4	8.7	22.0	9.4	14.5	8.6	14.4	8.4	14.4	8.2	14.4		14.4	
10		14.3	8.7	22.5	9.7	14.5	8.6	14.3	8.4			14.4		14.3	
12		14.1	8.7	22.5	10.0	14.4	8.5	14.1	8.2			14.3		14.2	
14		14.0	8.7			14.0	8.4					14.3		14.2	
16		14.0	8.8			13.9	8.1					14.0		14.1	
18		14.0	8.8									13.9		14.0	9.2
20		14.0	8.8									13.7			
25		13.9	8.7									13.6			
30		13.8	8.7									12.3			
35		13.8	8.6									11.6	8.6		
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 12-14-77 Grey Boat TB, CC White Boat RC, SR

Station		11-G		51-G		14-G		15-G		52-G		18-G		19-G	
time	start	1103		1109		1120		1127		1134		1146		1157	
	stop	1107		1119		1124		1132		1142		1152		1201	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		16.4	9.0	17.3	9.3	17.5	9.4	16.9	9.1	16.9	9.4	17.1	9.2	16.4	9.0
1		16.3		16.6		17.4		16.9		16.9		17.1		16.4	
2		16.1		16.0		16.9		16.5		16.4		16.8		16.3	
4		15.5		15.5		15.7		15.9		15.8		16.5		15.8	
6		14.9		14.7		14.7		14.8		14.9		15.0		15.0	
8		14.8	8.4	14.5		14.4		14.5		14.6		14.5		14.6	
10				14.4		14.3		14.4		14.5		14.4		14.6	
12				14.3		14.3		14.4	8.3	14.4		14.3		14.3	
14				14.2		14.2				14.2		14.1		14.2	
16				14.0		14.1	8.3			14.0		14.1	8.4	14.0	8.4
18				13.8						13.9					
20				13.8						13.8					
25				13.6						13.6					
30				13.4						13.4					
35				13.0						13.4	8.6				
40				12.9	8.3										
45															

Oconee Nuclear Station
Plume Mapping Study

Date 12-14-77 Grey Boat TB, CC White Boat RC, SR

Station		53-G		22-G		23-G		54-G		26-G		28-G		31-G	
time	start	1202		1212		1218		1226		1234		1242		1255	
	stop	1211		1215		1222		1232		1239		1250		1304	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		16.4	9.2	16.7	9.1	15.9	9.1	15.9	9.1	15.9	9.1	15.3	9.2	14.7	8.9
1		16.4		16.6		15.8		15.9		15.9		15.3		14.7	
2		16.4		16.4		15.8		15.8		15.9		15.3		14.6	
4		16.2		15.9		15.3		15.4		15.3		14.9		14.4	
6		15.0		14.7		14.7		14.9		14.9		14.6		14.3	
8		14.6		14.6		14.5		14.7		14.6		14.5		14.2	
10		14.5		14.5		14.4		14.4		14.4		14.3		13.9	
12		14.4		14.3	8.6	14.3	8.5	14.2		14.4		14.2		13.8	
14		14.1						14.1		14.3		14.1		13.8	
16		14.0						14.0		14.3	8.6	13.9		13.8	
18		13.9						13.9				13.9		13.6	
20		13.8						13.8				13.7		13.4	
25		13.6						13.5				13.4		13.2	
30		13.4						13.3				13.2		12.5	8.8
35		13.4	8.6					13.3	8.5			12.9			
40												12.9	8.7		
45															

Oconee Nuclear Station
Plume Mapping Study

Date 12-14-77 Grey Boat TB, CC White Boat RC, SR

Station		SC 11-G		549.0-G		33-G		7-W		6-W		34-W		35-W	
time	start	1308		1322		1400		1001		1010		1023		1033	
	stop	1312		1325		1404		1008		1018		1029		1040	
Depth (meters)		Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)	Temp (°C)	DO (mg/l)
0.3		13.2	9.3	12.2	9.4	21.3	9.1	16.7	9.7	16.3		15.6		14.6	
1		13.2		12.2		21.3	9.0	15.5		15.6		14.8		14.1	
2		13.1		12.2		21.3	9.1	15.4		14.9		14.1		14.0	
4		12.9		12.2		21.3	8.8	14.8		14.4		14.0		13.6	
6		12.6		12.2		21.3	9.1	14.4		13.8		13.7		13.6	
8		12.4		12.2		21.8	9.4	14.3		13.6		13.6		13.6	
10		12.3		12.2		22.1	9.6	14.1		13.6		13.6		13.2	
12		12.1		12.2		22.9	9.9	14.0		13.2		13.4		13.2	
14		12.0		12.2	8.8			13.9		13.2		13.3		13.1	
16		13.9						13.8		12.6				13.1	
18		13.8						13.7		12.0				12.6	
20		11.1	9.3					13.7		11.6				12.1	
25										11.1				10.9	
30															
35															
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 12-14-77 Grey Boat TB, CC White Boat RC, SR

Station		36-W		46-W		37-W		55-W		40-W		502.0-W		509.0-W	
time	start	1042		1047		1105		1112		1120		1130		1139	
	stop	1045		1058		1110		1119		1118		1138		1140	
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		14.2		13.8		14.0		13.8		13.7		13.4		13.3	9.3
1		14.1		13.8		14.0		13.8		13.6		13.4			
2		14.1		13.7		14.0		13.6		13.6		13.4			
4		13.8		13.7		13.9		13.6		13.4		13.4			
6		13.7		13.6		13.6		13.4		13.3		13.4			
8				13.5		13.4		13.2		13.3		13.4			
10				13.3		13.3		13.2		13.3		13.3			
12				13.1				13.2		13.3		13.1			
14				12.6				13.1		13.2		13.1			
16				10.9						13.1		13.1			
18				10.0						13.1		13.1			
20				9.9						13.0		13.1			
25												13.0			
30															
35															
40															
45															

Oconee Nuclear Station
Plume Mapping Study

Date 12-14-77 Grey Boat TB, CC White Boat RC, SR

Station		41-W		56-W		44-W		501.5-W		501.0-W		500.0-W			
time	start	1158		1205		1212		1220		1231		1245			
	stop	1202		1210		1215		1226		1240		1253			
Depth (meters)		Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)	Temp (°C)	DO (mg/1)
0.3		13.7		13.8		13.6		13.3		12.8		12.7			
1		13.7		13.8		13.6		13.2		12.8		12.7			
2		13.7		13.6		13.6		13.1		12.7		12.6			
4		13.7		13.6		13.4		13.1		12.7		12.5			
6		13.6		13.6		13.1		13.0		12.7		12.4			
8		13.4		13.2		13.1		13.0		12.7		12.2			
10		13.2		13.1		13.1		12.9		12.7		12.2			
12		13.1		13.1		13.1		12.9		12.6		12.2			
14		13.0		13.1		13.1		12.9		12.6		12.2			
16		13.0		13.1				12.9		12.6		12.2			
18				13.0				12.8		12.6		12.1			
20				13.0				12.8		12.6		12.1			
25				12.9				12.7		12.5		12.0			
30				12.9				12.8		12.5					
35										12.5					
40															
45															