WATER QUALITY IN GAINES CREEK AND GAINES CREEK ARM, EUFAULA LAKE, OKLAHOMA

By Joanne K. Kurklin

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 86-4169

Prepared in cooperation with the

U.S. BUREAU OF RECLAMATION

Oklahoma City, Oklahoma

1990

DEPARTMENT OF THE INTERIOR

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CONVERSION FACTORS

Many numbers in this report are given in inch-pound units. These may be converted to metric units by using the conversion factors listed below:

Multiply inch-pound unit	By	To obtain metric (SI) unit
foot (ft)	0.3048	meter
mile	1.609	kilometer

Chemical concentrations and water temperatures in this report are given in metric units. Water temperatures are given in degrees Celsius (°C), which can be converted to degrees Fahrenheit (°F) by the following equation:

$$°F = 1.8\ (°C) + 32.$$

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ABSTRACT

Based on samples collected from May 1978 to May 1980 and analyzed for major anions, nitrogen, trace elements, phytoplankton, and bacteria, the water in Gaines Creek and the Gaines Creek arm of Eufaula Lake was similar with respect to suitability for municipal use. Water from Gaines Creek had a pH range of 5.7 to 7.6 and a maximum specific conductance of 97 microsiemens per centimeter at 25° Celsius, whereas water from the Gaines Creek arm of Eufaula Lake had a pH range of 6.0 to 9.2 and a maximum specific conductance of 260 microsiemens per centimeter at 25° Celsius. Dissolved oxygen, pH, temperature, and specific conductance values for the lake varied with depth.

With the exceptions of cadmium, iron, lead, and manganese, trace-element determinations of samples were within recommended national primary and secondary drinking-water standards. When compared to the National Academy of Sciences water-quality criteria, phytoplankton and bacteria counts exceeded recommendations; however, water from either Gaines Creek or Eufaula Lake could be treated similarly and used as a municipal water supply.

INTRODUCTION

Municipalities generally treat surface-water supplies before distributing the water to customers. Ordinary domestic requirements for drinking, cooking, and bathing can be met if there is no sediment in the drinking glass or bathtub; if the water is sterilized so that it doesn't contain disease causing water-borne organisms; if the water tastes good; and if the water has the proper hardness (American Society for Testing and Materials, 1967). Other requirements for lawns, gardens, swimming pools, and decorative fountains need to be considered. To meet these requirements, a municipality needs to select a natural water that meets national drinking-water regulations or that can be treated to meet those regulations.

PURPOSE AND SCOPE

The cities of Wilburton and McAlester, Oklahoma, have projected the need for an additional water source for municipal and industrial uses. The U.S. Bureau of Reclamation requested that the U.S. Geological Survey provide data for comparing the water quality of Gaines Creek near Higgins, Oklahoma, and of the Gaines Creek arm of Eufaula Lake (fig. 1). The purpose of this report is to characterize the water quality in Gaines Creek near the site of the proposed Higgins reservoir and in the Gaines Creek arm of Eufaula Lake, with emphasis on the suitability of the water for municipal use.

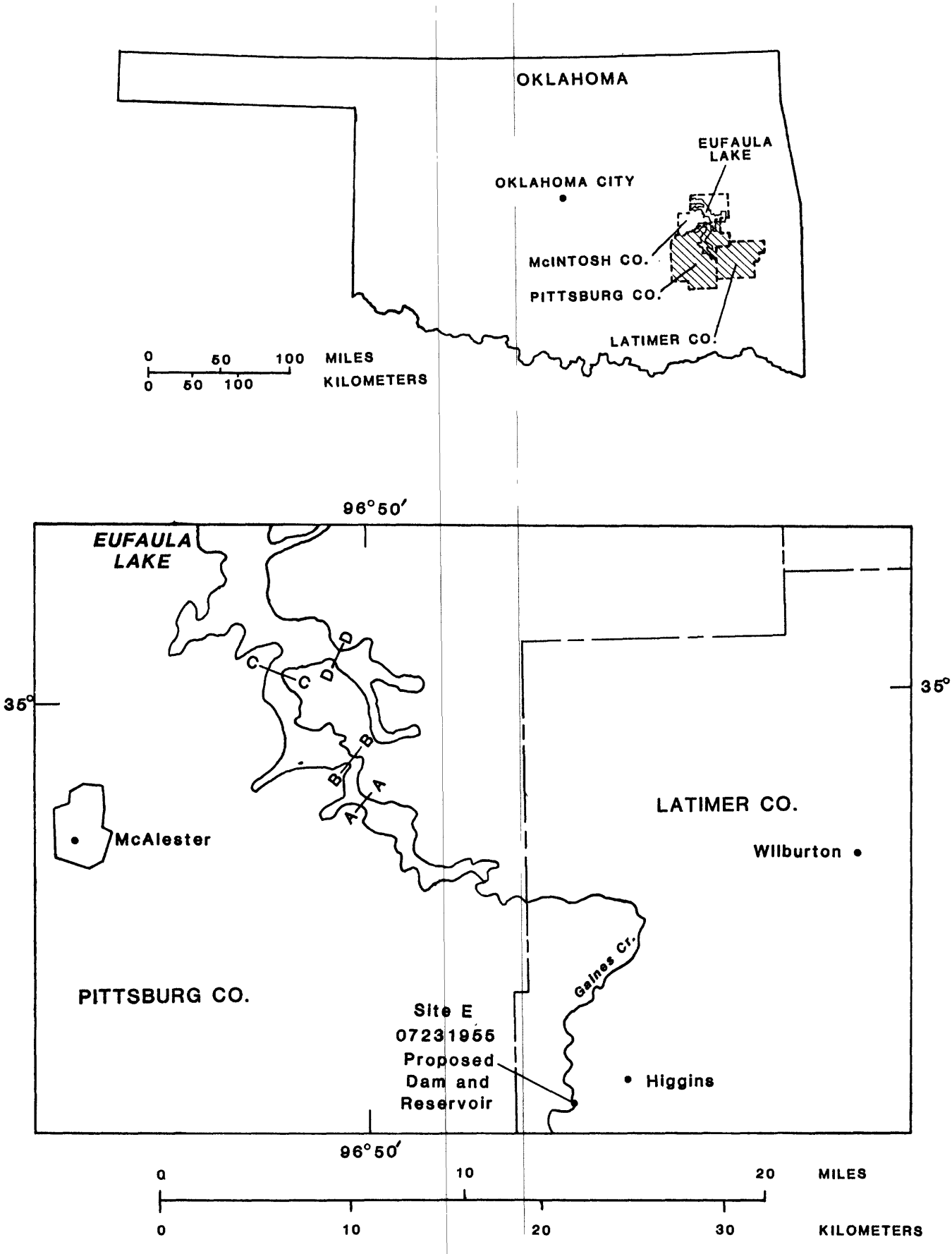

Figure 1.--Map of Eufaula Lake showing Gains Creek arm and associated water-sampling sites.

METHODOLOGY

Field determinations and water-quality sampling for this study were performed from May 1978 to May 1980. Four sampling transects between points on opposite lake shores, identified as A-A', B-B', C-C', and D-D' in figure 1, were established along the Gaines Creek arm of Eufaula Lake. Sampling sites were located at the midpoint of each transect; these sites are identified as sampling sites A-D. Sampling site E was established on Gaines Creek near Higgins, Oklahoma.

Each lake transect was sampled quarterly for physical properties, major inorganic constituents, major nutrients, trace elements, phytoplankton, and bacteria. Samples were collected 3 ft below the water surface and 1 ft above the lake bottom at the center point of a transect. Only mid-depth samples were collected when lake depths were shallow at a transect. Depth profiles for dissolved oxygen, pH, water temperature, and specific conductance also were made at the center point of a transect and at a minimum of two other verticals along each transect.

Gaines Creek near Higgins (site E) was visited each month and, when flow occurred, samples were collected and a discharge measurement was made. Stream samples were collected for major inorganic constituents, major nutrients, trace elements, phytoplankton, and bacteria. A series of longitudinal profiles, extending from the proposed pumping site on the lake, sampling site D, to the proposed dam site on Gaines Creek, sampling site E, were completed.

All water-quality samples were collected and analyzed by methods outlined by Brown and others (1970); Goerlitz and Brown (1972); and Greeson and others (1977). Biological analyses were made at the U.S. Geological Survey's laboratory in Doraville, Georgia. The remainder of the laboratory analyses were made at the Survey's laboratory in Arvada, Colorado. Microbiological analyses were performed by U.S. Geological Survey personnel in Oklahoma.

WATER QUALITY AS RELATED TO SUITABILITY FOR MUNICIPAL SUPPLY

To determine the suitability of a water source as a municipal or industrial supply, the physical, chemical, and microbiological data are compared to established drinking-water standards. Water-quality standards established by the U.S. Environmental Protection Agency are summarized in tables 1 and 2. Oklahoma State drinking-water standards are summarized in table 3.

Selected constituents from the national primary drinking-water regulations--the mandatory limits that apply to the physical, chemical, and microbiological characteristics of water that affect the health of consumers--are listed in table 1. They are applicable to virtually all public water systems and are enforceable by the State or Federal governments.

The national secondary drinking-water regulations (table 2) deal with the esthetic qualities of drinking water. They are not federally enforceable and are intended as guidelines for regulation by the State.

Table 1.--Selected national primary drinking-water standards[1]

Maximum contaminant level for inorganic chemicals

Contaminant	Level (milligrams per liter)
Arsenic	0.05
Barium	1
Cadmium	0.010
Chromium	0.05
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05

Maximum contaminant level for fluoride

Temperature Fahrenheit	Level (milligrams per liter)
80 - 91	1.4
72 - 79	1.6
65 - 71	1.8
59 - 64	2.0
55 - 58	2.2
50 - 54	2.4

Annual average of maximum daily air temperature

[1] U.S. Environmental Protection Agency (1976b)

Table 2.--Selected national secondary drinking-water standards[1]

Contaminant	Level (milligrams per liter except as indicated)
Chloride	250
Color	15 color units
Copper	1
Corrosivity	Non-corrosive
Foaming agents	0.5
Hydrogen sulfide	0.05
Iron	0.3
Manganese	0.05
pH	6.5 - 8.5 units
Sulfate	250
Total dissolved solids	500
Zinc	5

[1] U.S. Environmental Protection Agency (1979)

Table 3.--State drinking-water standards[1]

Parameter (dissolved phase)	Numerical limit (milligrams per liter)
Arsenic	.05
Barium	1.0
Cadmium	.01
Chromium	.05
Copper	1.0
Fluoride (at 90° F)	1.6
Lead	.05
Mercury	.002
Nitrate (as N)	10.0
Selenium	.01
Silver	.05
Zinc	5.0

[1] Oklahoma Water Resources Board, 1979

Selected water-quality data for Gaines Creek and the Gaines Creek arm of Eufaula Lake are summarized in table 4 (at back of report). Additional data for these sites are provided in table 5 (at back of report). The data from each of the five sites, when compared with the drinking-water standards, indicate that constituent concentrations from May 1978 to May 1980 were within the limits with the exceptions of cadmium, iron, lead, and manganese.

The following sections briefly describe physical properties, chemical constituents, and biota as they pertain to municipal water supplies. Results of sampling and analysis conducted during this study are summarized.

Physical Properties

Dissolved Oxygen

Dissolved oxygen in lake water has an essential biological role; for most organisms, oxygen is a requisite for life. Concentrations of dissolved oxygen are dependent on several factors including water temperature, agitation, and the degree of photosynthesis. In most lakes, the phytoplankton contribute the majority of the oxygen supply. Additional oxygen is added by exchanges with the atmosphere at the lake surface. Decreases in oxygen are due mostly to the respiration of plants, animals, and the aerobic bacteria involved in decay of organic matter. On a purely physical basis, the warming of the summer epilimnion could account for an oxygen decrease. The solubility of oxygen decreases as temperature increases. A deep stratum of the lake may be lacking in oxygen if light does not penetrate the lake. As a result, respiration and decomposition prevail in the deep strata and oxygen is depleted faster than it is produced.

Dissolved oxygen in bodies of water used for municipal water supplies is an indicator of satisfactory water quality in terms of minimal residuals of biologically available organic materials. In addition, dissolved oxygen in the water column prevents the chemical reduction and subsequent leaching of iron and manganese, principally from the sediments (U.S. Environmental Protection Agency, 1973). These metals cause taste problems or staining of plumbing fixtures and other surfaces that contact the water in the presence of oxygen (National Academy of Sciences, National Academy of Engineering, 1974).

Dissolved oxygen also is required for the biochemical oxidation of ammonia ultimately to nitrate in natural waters. This oxidation of ammonia decreases the chlorine demands of waters and increases the disinfection efficiency of chlorination (National Academy of Sciences, National Academy of Engineering, 1974).

The disadvantage of large concentrations of dissolved oxygen in water used as a source of municipal water supply is the increased corrosion of metal surfaces in both water-treatment facilities and distribution systems (National Academy of Science, National Academy of Engineering, 1974). Such corrosion, in addition to direct damage, can increase the concentration of iron (and other metals), which may cause taste or staining problems or both (U.S. Environmental Protection Agency, 1976).

Depth profiles of dissolved oxygen for each of the four lake transects are shown in figures 2-5. Generally, dissolved-oxygen concentrations were greatest near the water surface and least near the lake bottom. Maximum fluctuations occurred in early summer and early fall. Concentrations of dissolved oxygen ranged from 0 to 12.7 mg/L (milligrams per liter); percent saturation ranged from 0 to 121 (table 6, at back of report).

pH

The negative logarithm (base 10) of the hydrogen-ion concentration (moles per liter) was the original definition of pH (Hawley, 1971), but for most purposes pH can be equated to the negative logarithm of the hydrogen-ion activity (Weast, 1972). Hydrogen-ion activity is approximately equal to hydrogen-ion concentration in moles per liter. The intervals on the pH scale are exponential; therefore, a unit change in pH represents a 10-fold change in activity.

The pH of a natural water supply is significant because it affects water-treatment processes and may contribute to corrosion of water-works structures, distribution lines, and household plumbing fixtures. This corrosion can add such constituents as cadmium, copper, iron, lead, and zinc to the water. Adjustment of pH within the normal range of pH for most natural waters, 5.0 to 9.0, is relatively simple, and the variety of anticorrosion procedures currently in use make it unnecessary to recommend a more narrow range (National Academy of Sciences, National Academy of Engineering, 1972). Oklahoma's water-quality standards (Oklahoma Water Resources Board, 1979) state, "The pH values shall be between 6.5 and 9.0 for Oklahoma's water; unless pH values outside that range are due to natural conditions."

The normal range of pH in most lakes is 6.5 to 8.5 (Welch, 1952). During this study, pH of water in Gaines Creek and the Gaines Creek arm of Eufaula Lake ranged from 6.0 to 9.2 (figs. 2-5 and table 6). The pH values greater than the normal range probably were due to the effects of photosynthesis; that is, dissolved carbon dioxide was being utilized by organisms. The smaller pH values were measured in the lower depths. These values probably were due to an accumulation of acid-forming substances associated with decomposition activities.

Water Temperature

Ecologically, the thermal properties of water in lakes are the most important factors in determining the suitability of water as a natural environment and in regulating activities of aquatic organisms (Wetzel, 1975). Many physical and chemical processes that occur in a lake are affected by water temperatures.

The recommended guidelines for temperature in public water supply sources is "No temperature change that detracts from the potability of public water supplies and no temperature change that adversely affects the standard treatment process..." (National Academy of Sciences, National Academy of Engineering, 1972).

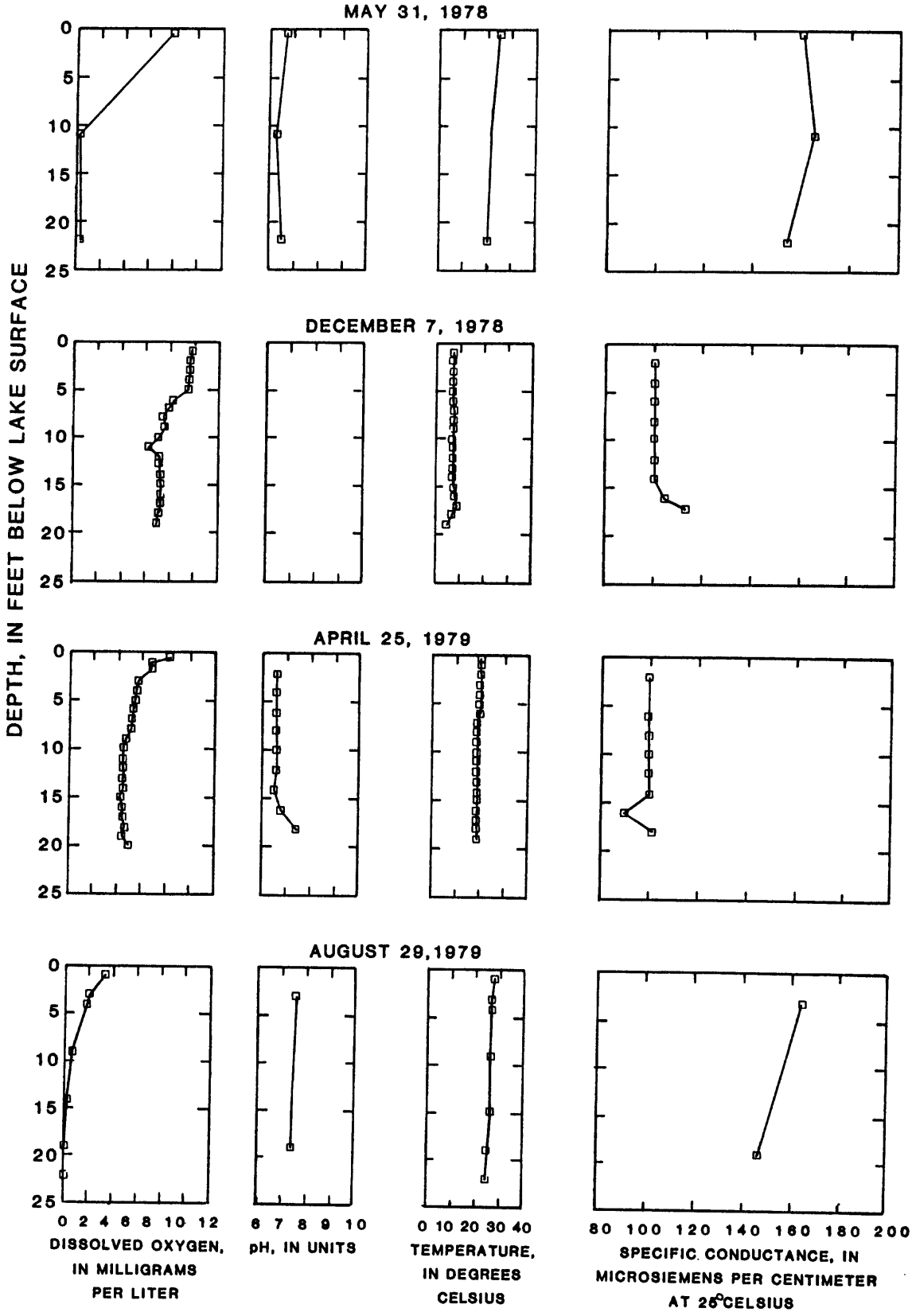

Figure 2.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site A for four dates.

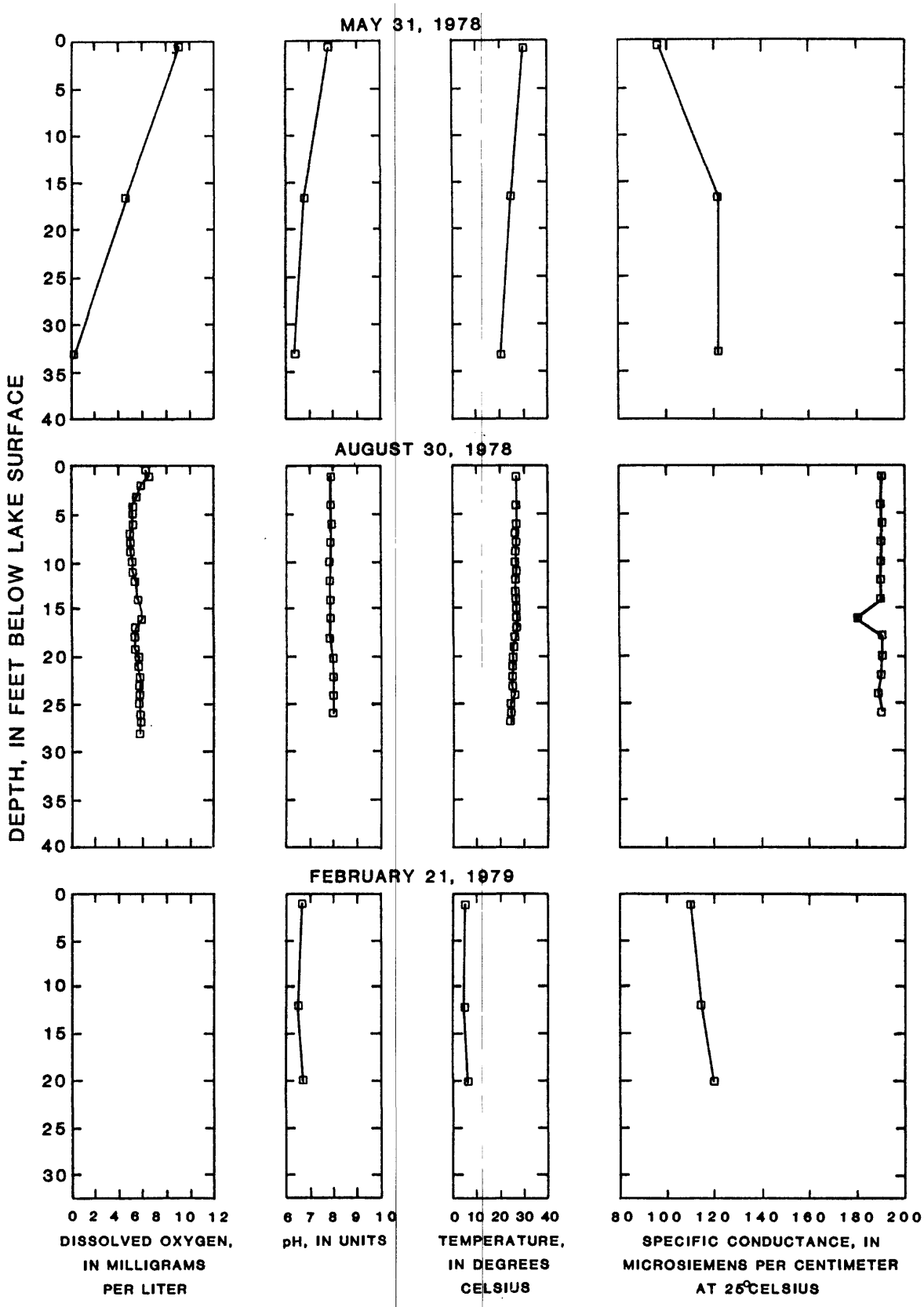

Figure 3.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site B for seven dates.

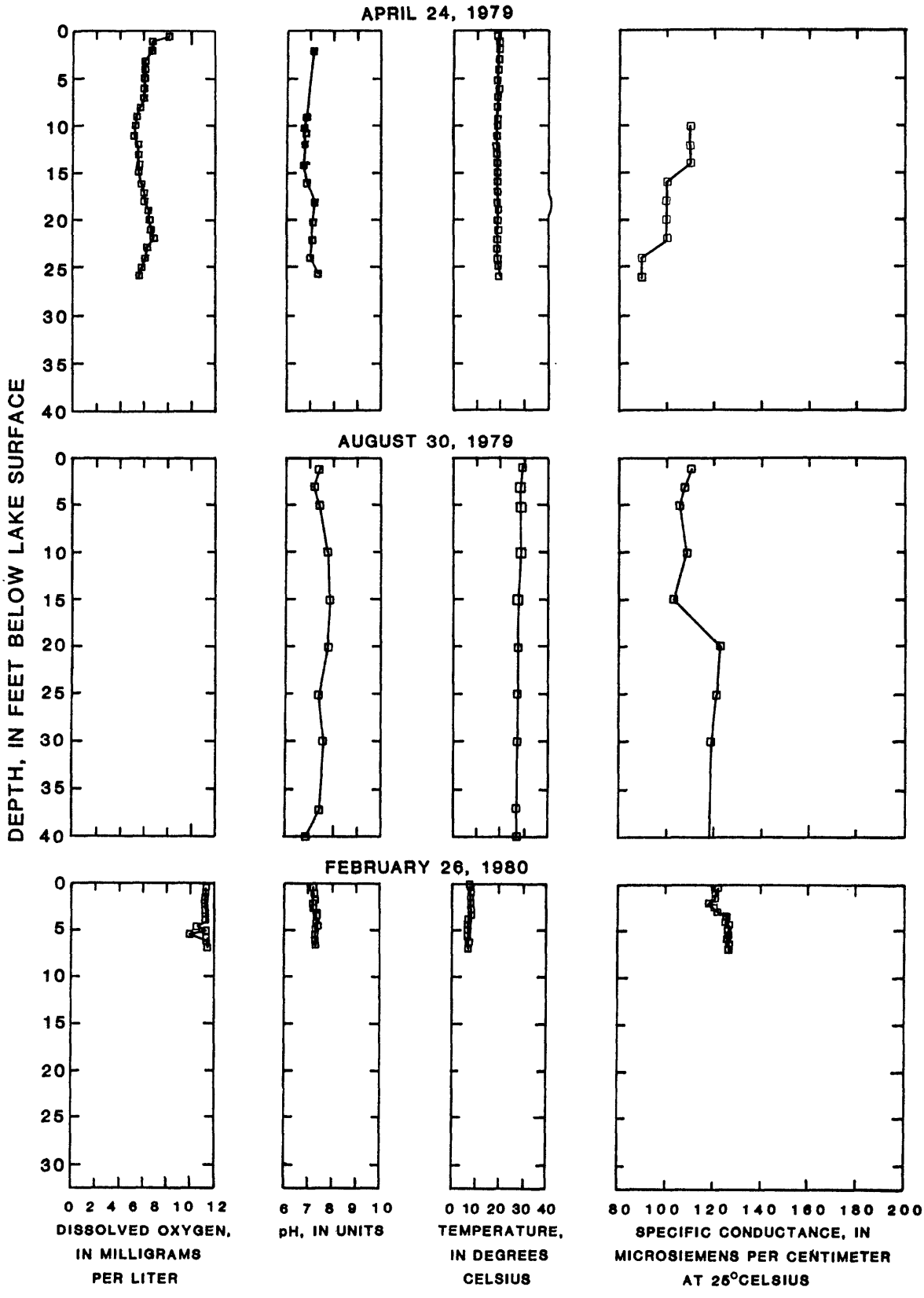

Figure 3.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site B for seven dates.--Continued.

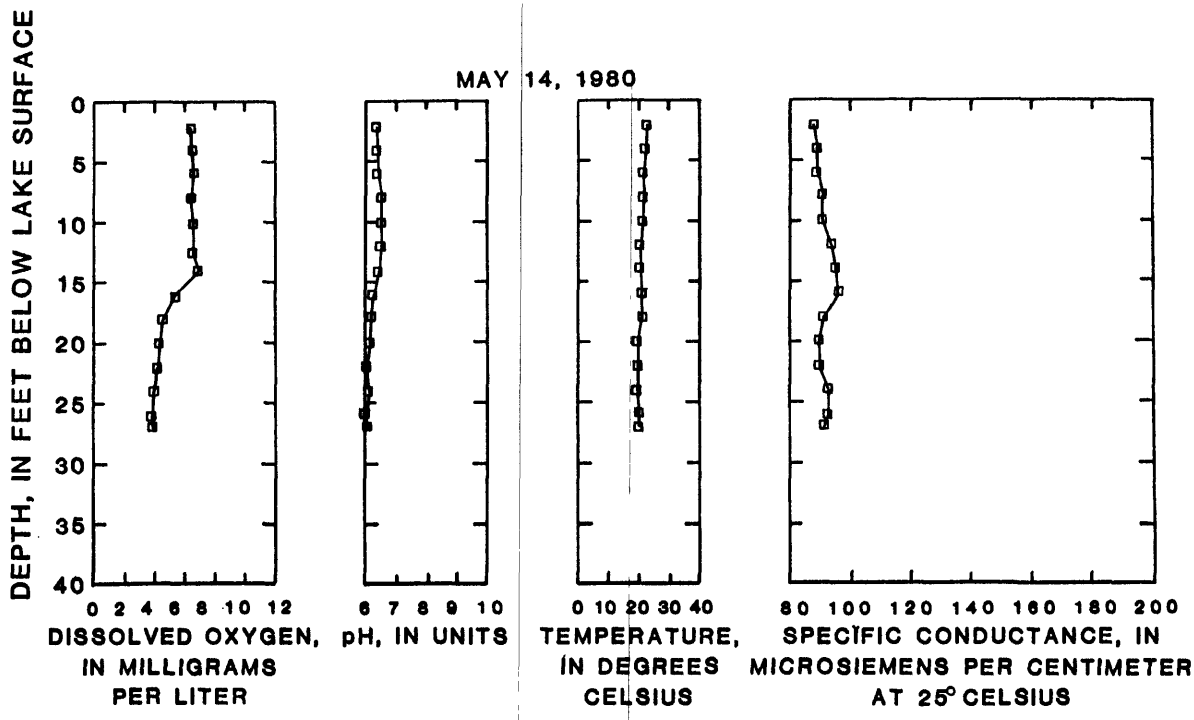

Figure 3.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site B for seven dates.--Continued.

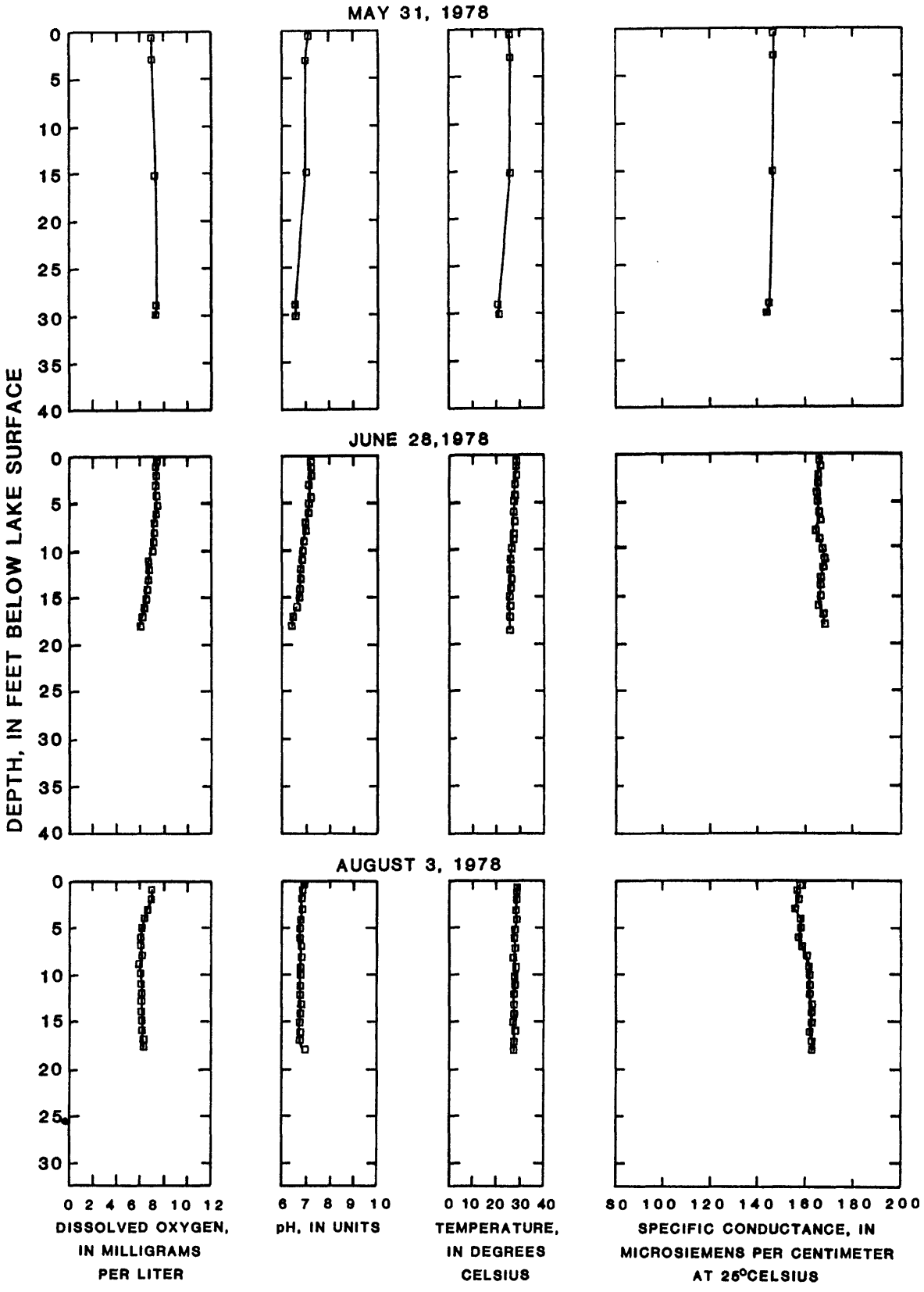

Figure 4.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site C for nine dates.

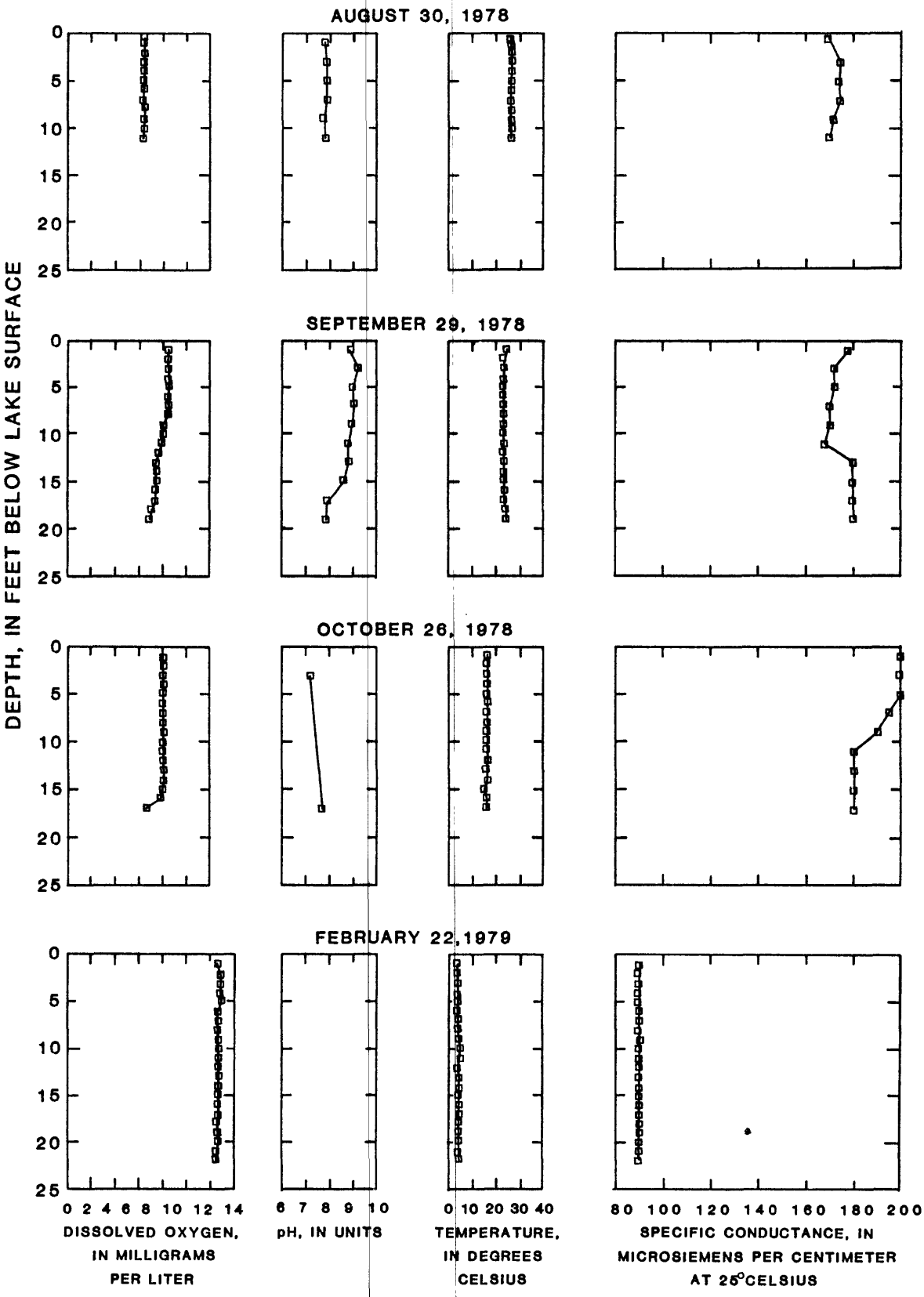

Figure 4.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site C for nine dates.--Continued.

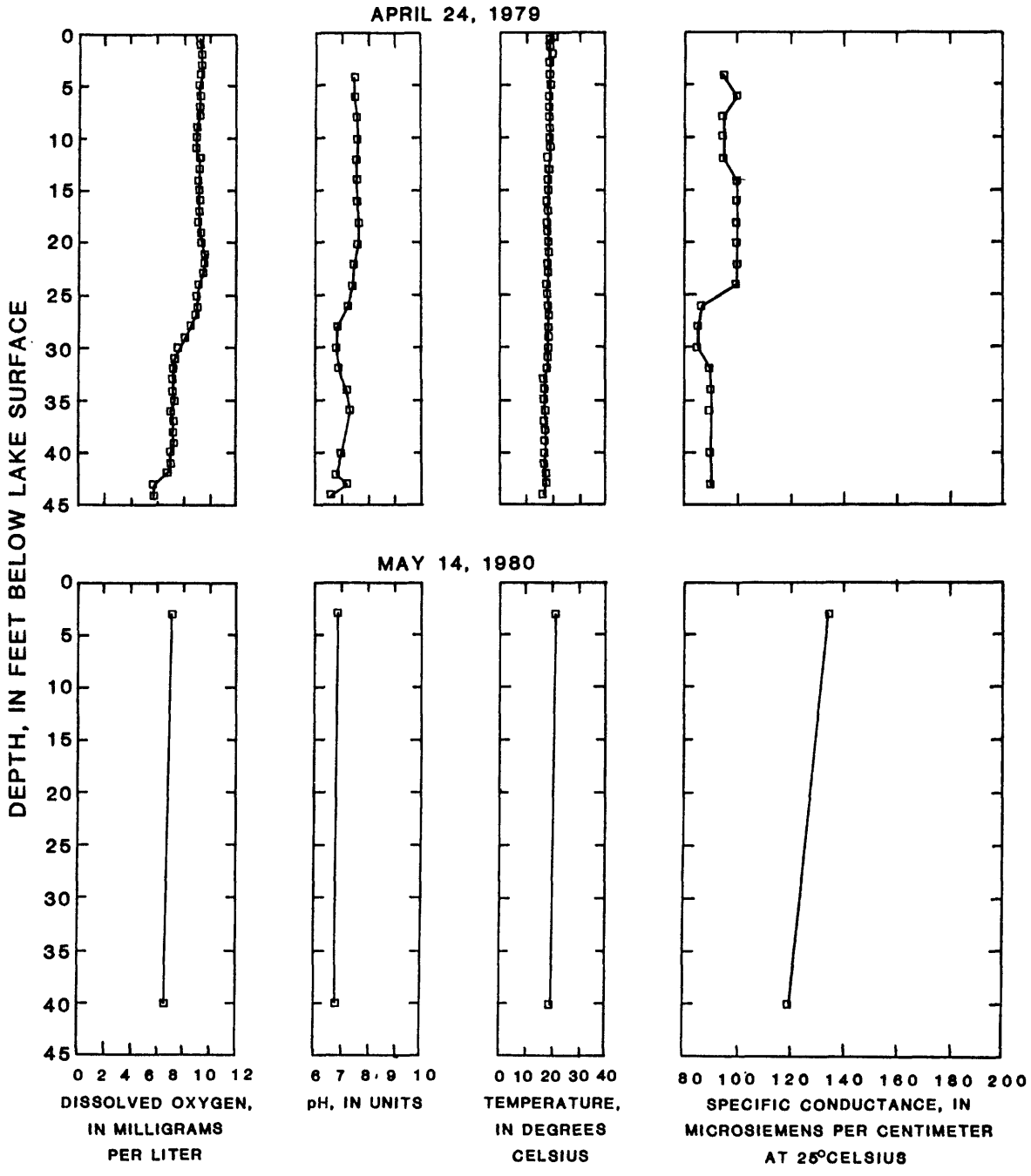

Figure 4.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site C for nine dates.--Continued.

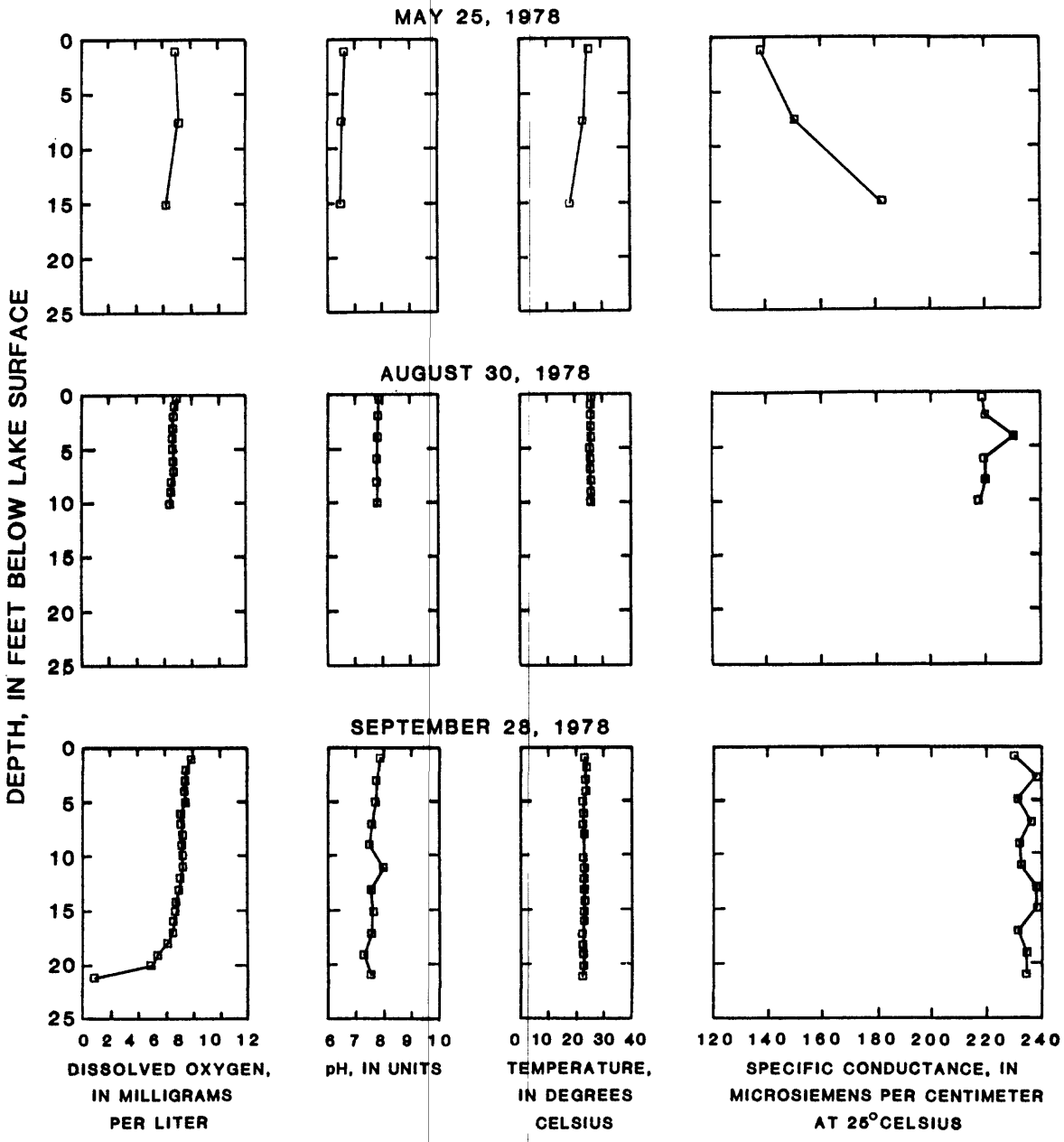

Figure 5.--Depth profiles of dissolved oxygen, pH, water temperature, and specific conductance at sampling site D for three dates.

Although water temperature varies both seasonally and areally, the extent of seasonal variation was not determined during this study due to the sampling frequency. Depth profiles of temperature made at sampling sites (figs. 2-5) were compared by site. Depth profiles for May had the greatest temperature variation with respect to depth. Warmer water was present near the surface and cooler water near the bottom. As summer progressed, water temperatures were less variable with depth. Some of the fall depth profiles indicated the beginning of a temperature reversal with bottom temperatures slightly higher than surface temperatures. The water temperature ranged from 4.5 °C in February 1979 to 30.0 °C in May 1978 (table 6).

Specific Conductance

Specific conductance is a measure of the ability of ions in solution to conduct an electrical current. Specific conductance is related to the type and concentration of ions in solution. Specific conductance generally is proportional to the dissolved-solids concentration and can be used to estimate the dissolved-solids concentration. Specific conductance increases with water temperature; however, all specific-conductance values reported in this study were temperature corrected to 25 °C (table 6). Depth profiles for specific conductance are shown in figures 2-5. Specific-conductance values had little variation with depth. The greatest variation occurred temporally, with smaller values in May increasing to larger values in the fall.

Chemical Constituents

Major anions

Sulfate concentrations ranging from 3 to 30 mg/L may be considered normal in lake water (Hutchinson, 1957). Sulfate is important in the formation of chlorophyll and is necessary for plant growth. A limited supply of sulfate can inhibit the development of phytoplankton populations (Reid and Wood, 1976).

The public water supplies of the 100 largest cities in the United States were determined to contain a median sulfate concentration of 26 mg/L and a maximum concentration of 572 mg/L (Durfor and Becker, 1964). Sulfate ions in drinking water can have cathartic effect on occasional users, but acclimatization is rapid (National Academy of Sciences, National Academy of Engineering, 1972).

The national secondary drinking-water standard for sulfate is 250 mg/L (table 2). Dissolved-sulfate concentrations were less than the drinking-water standard in all samples from the study area. Concentrations ranged from 3.1 to 41 mg/L in water from all sites (table 4 and fig. 6).

Chloride is present in all natural waters, but mostly in small concentration (Hem, 1970). Based on studies done for public water supplies of the 100 largest cities in the United States, the median chloride concentration was 13 mg/L with a range of 0 to 540 mg/L (Durfor and Becker, 1964).

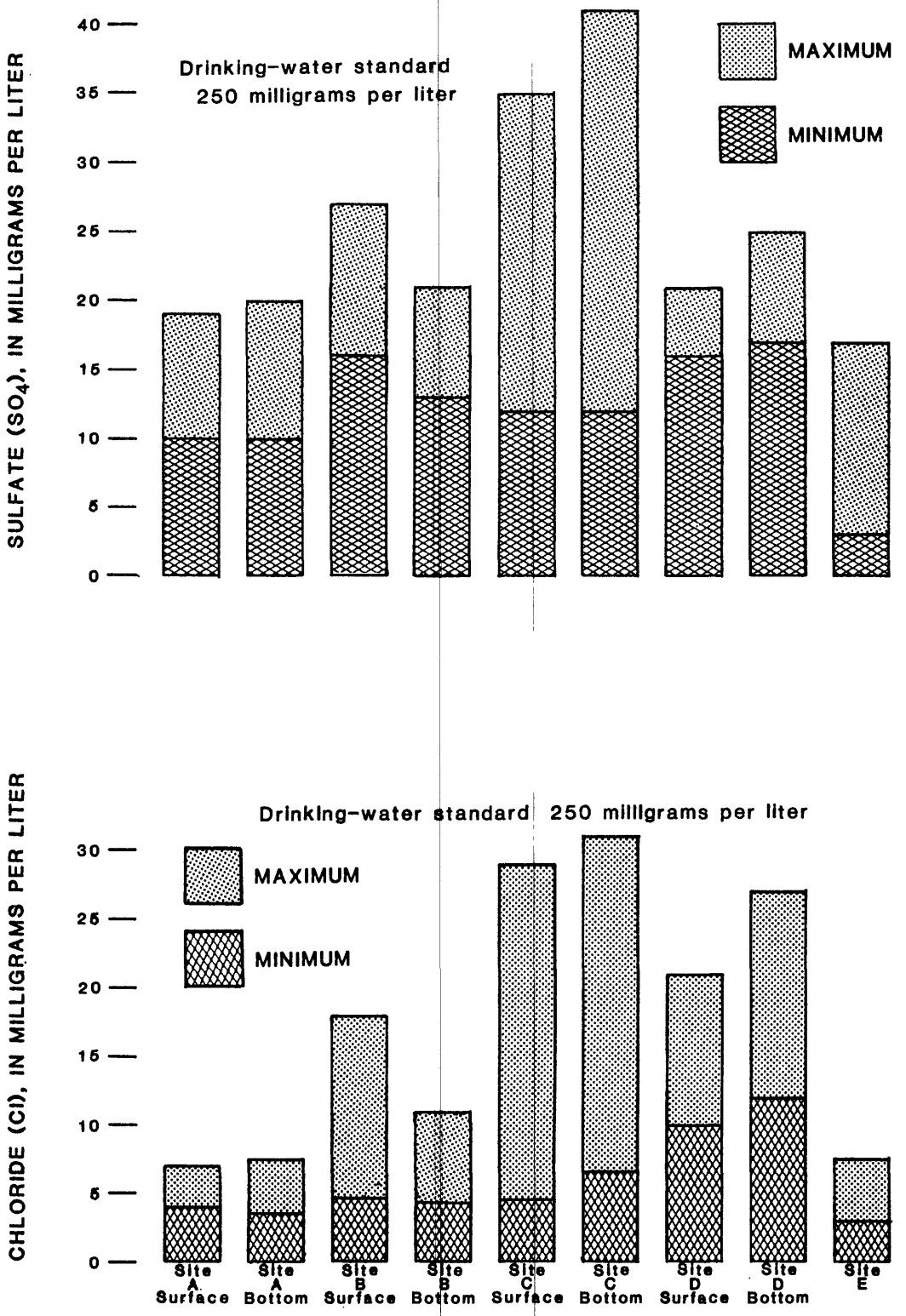

Figure 6.--Maximum and minimum concentrations for selected chemical constituents at sampling site A-E.

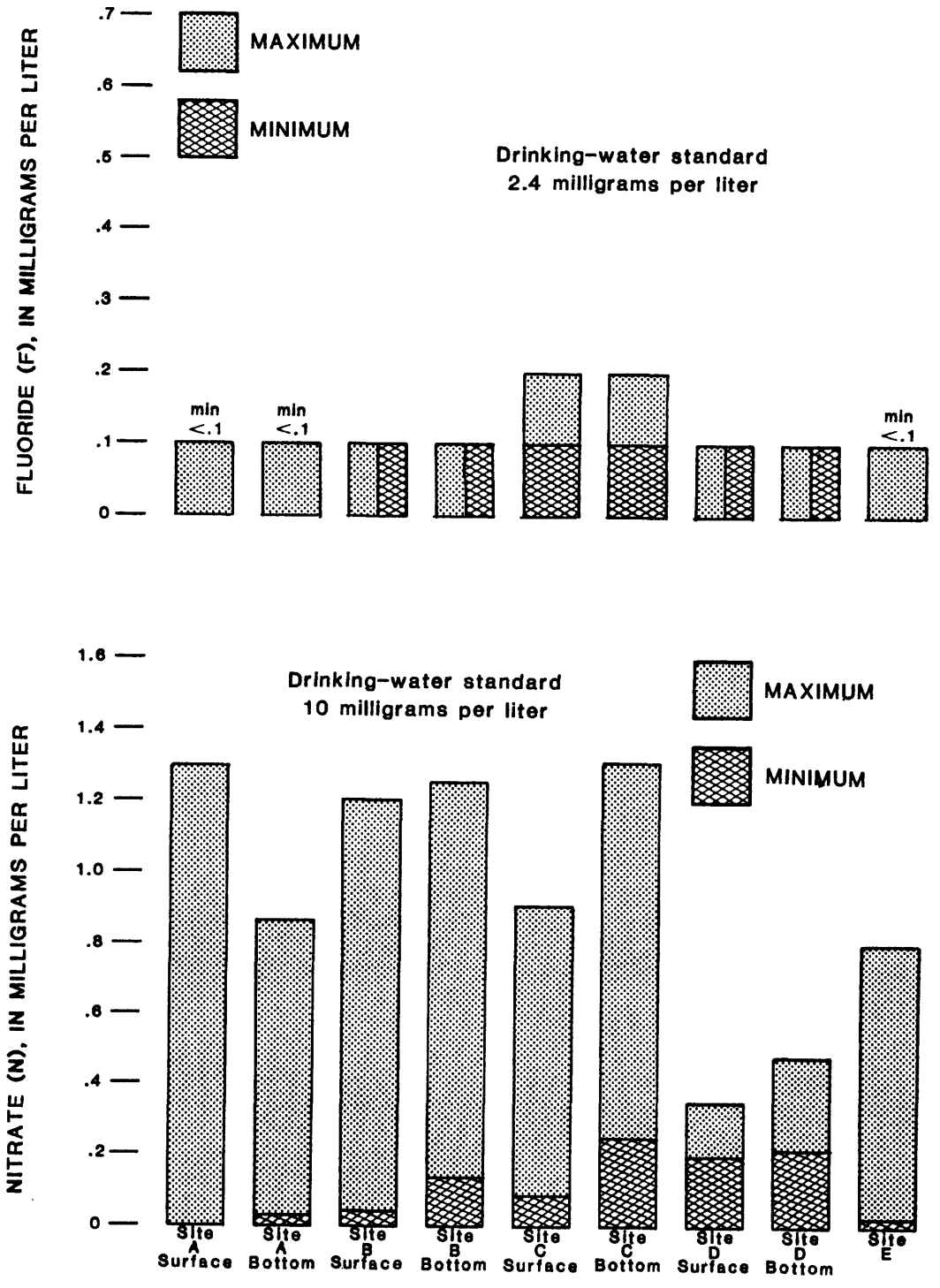

Figure 6.--Maximum and minimum concentrations for selected chemical constituents at sampling site A-E.--Continued.

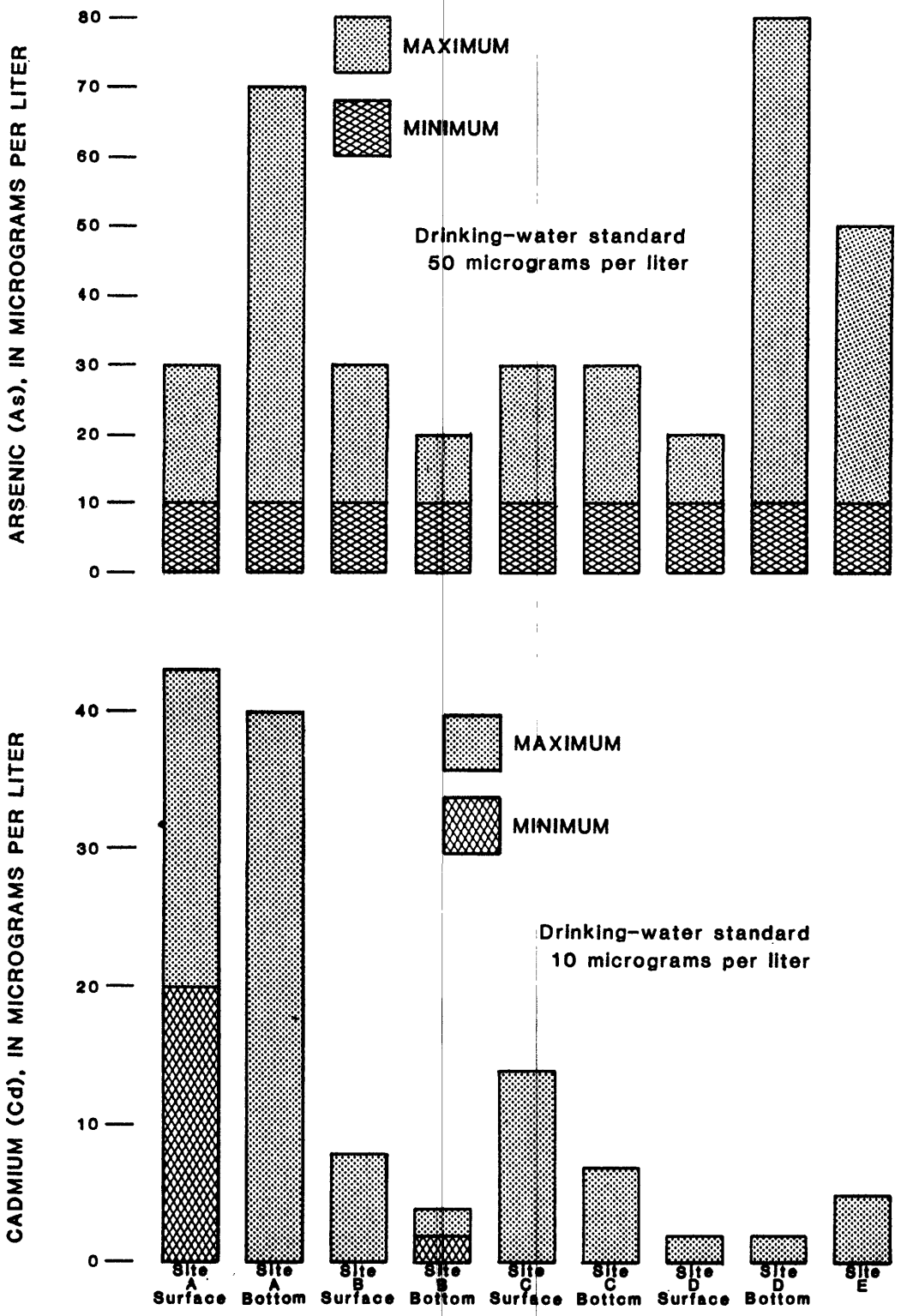

Figure 6.--Maximum and minimum concentrations for selected chemical constituents at sampling site A-E.--Continued.

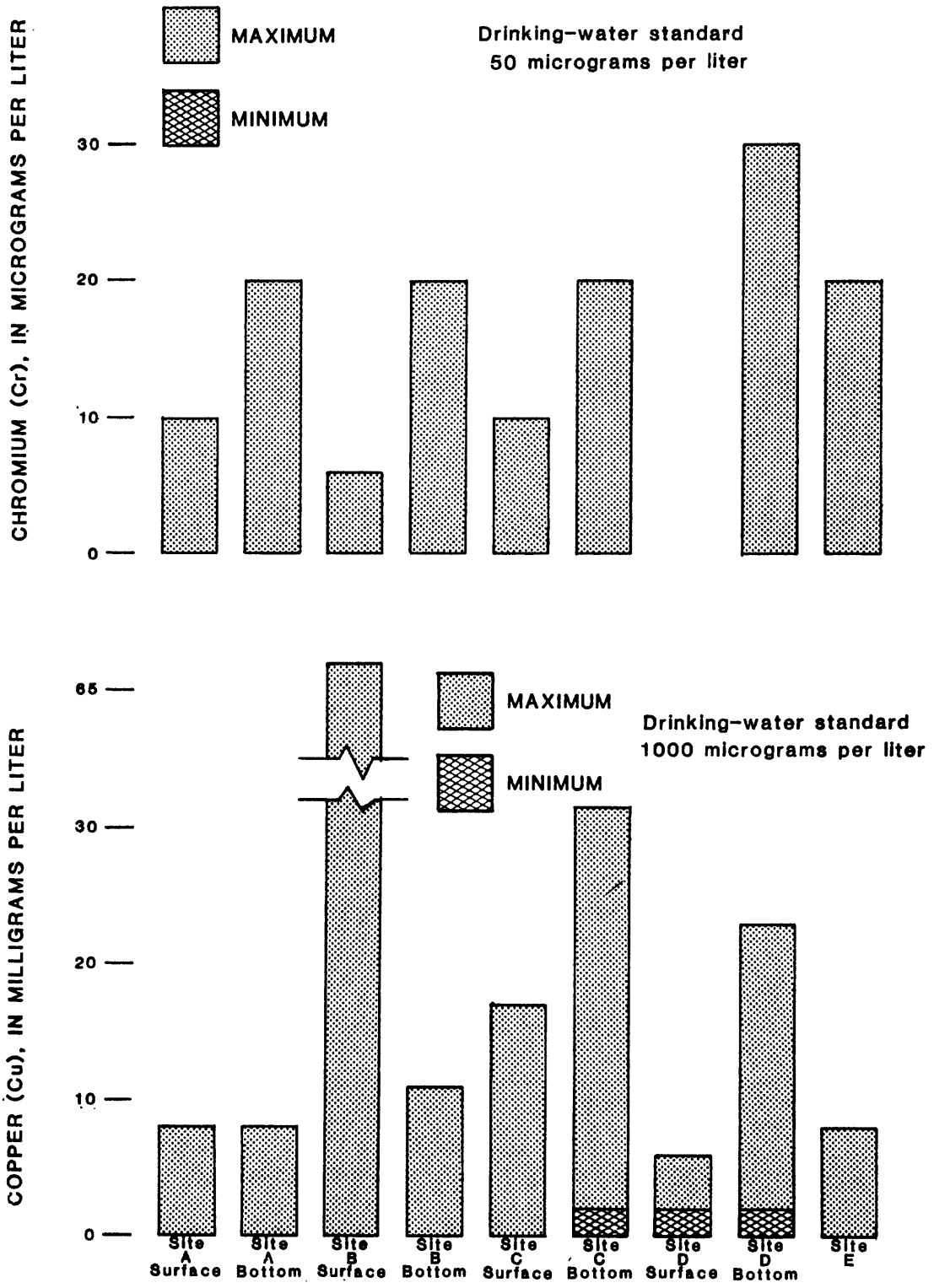

Figure 6.--Maximum and minimum concentrations for selected chemical constituents at sampling site A-E.--Continued.

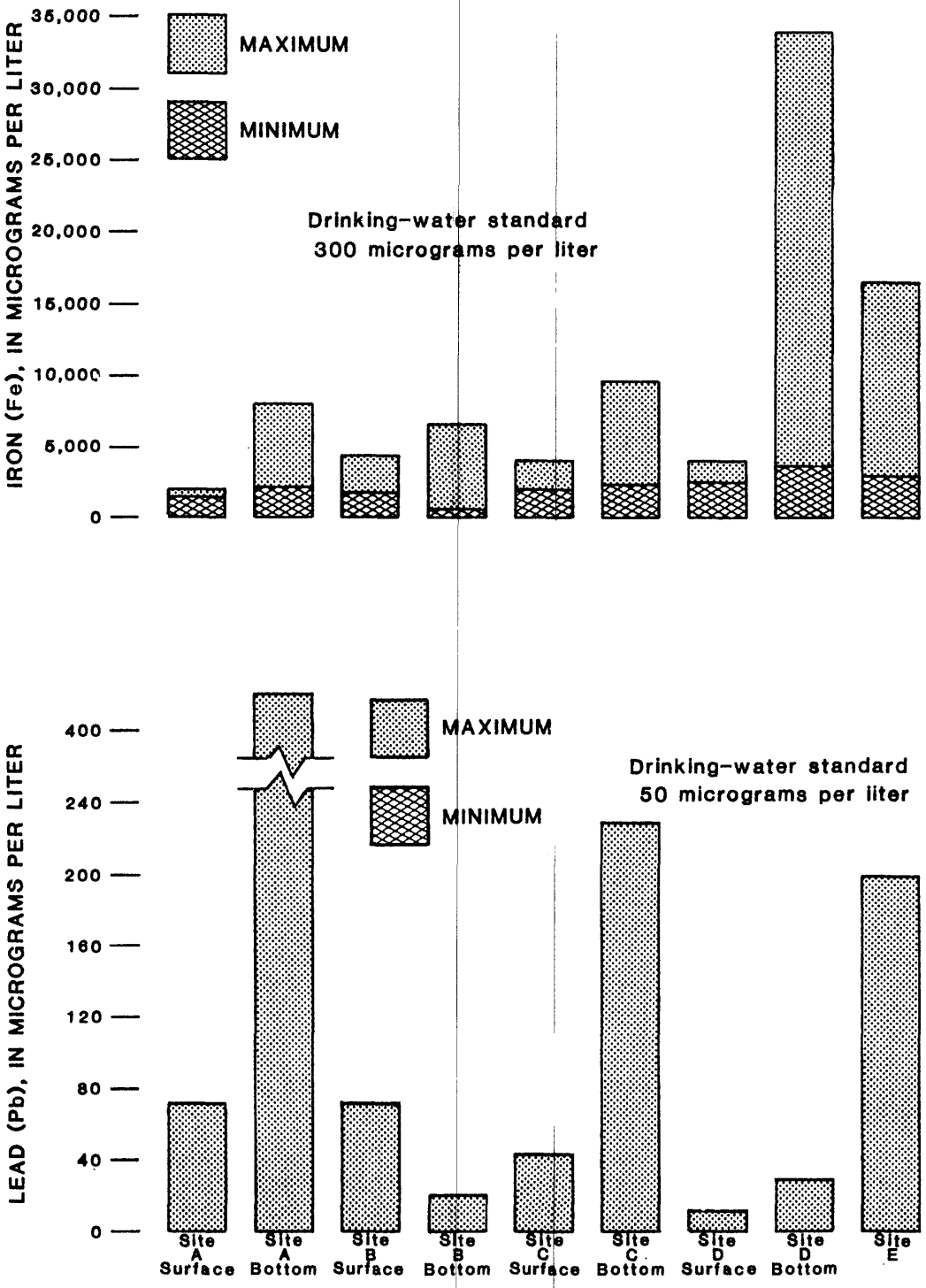

Figure 6.--Maximum and minimum concentrations for selected chemical constituents at sampling site A-E.--Continued.

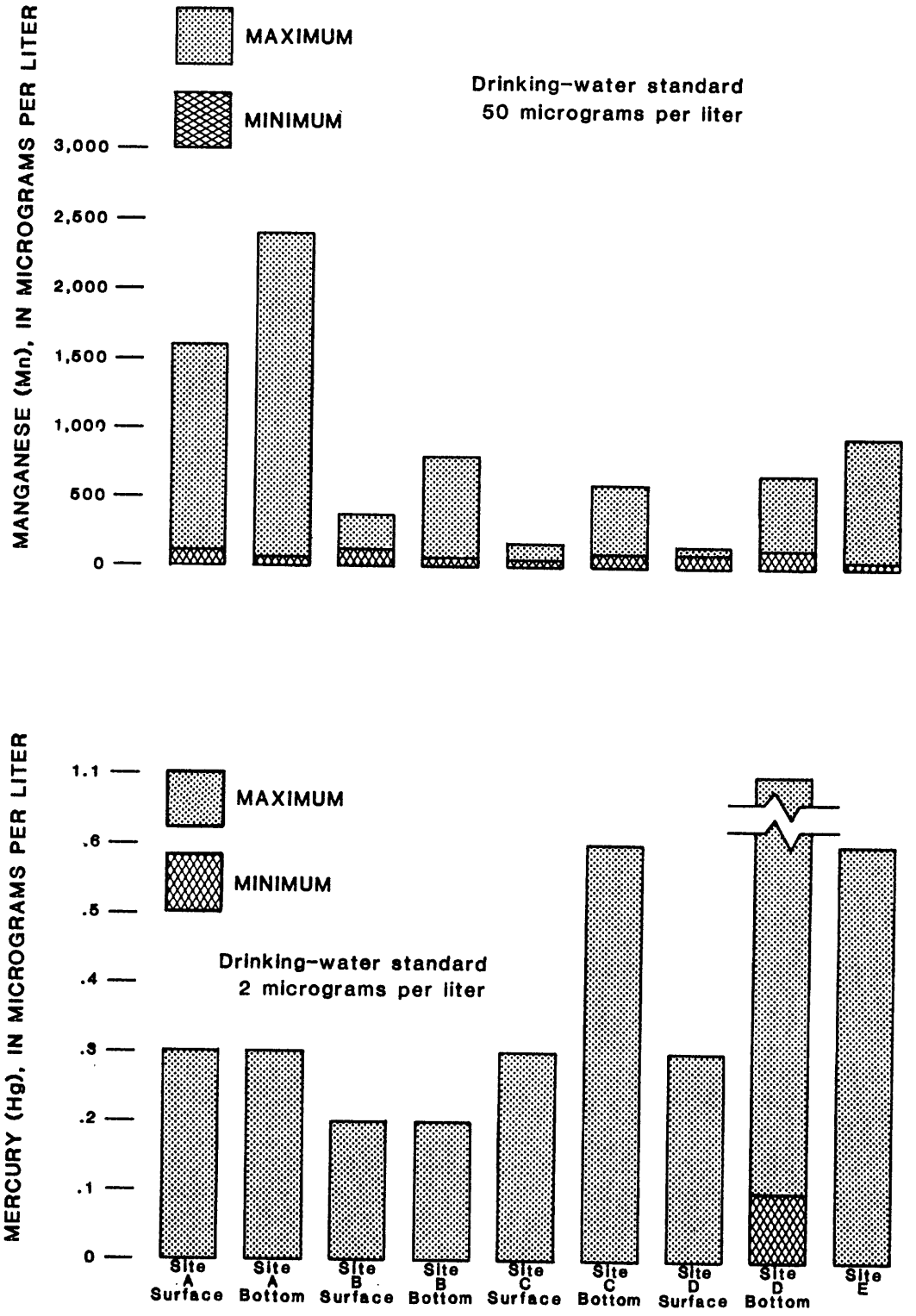

Figure 6.--Maximum and minimum concentrations for selected chemical constituents at sampling site A-E.--Continued.

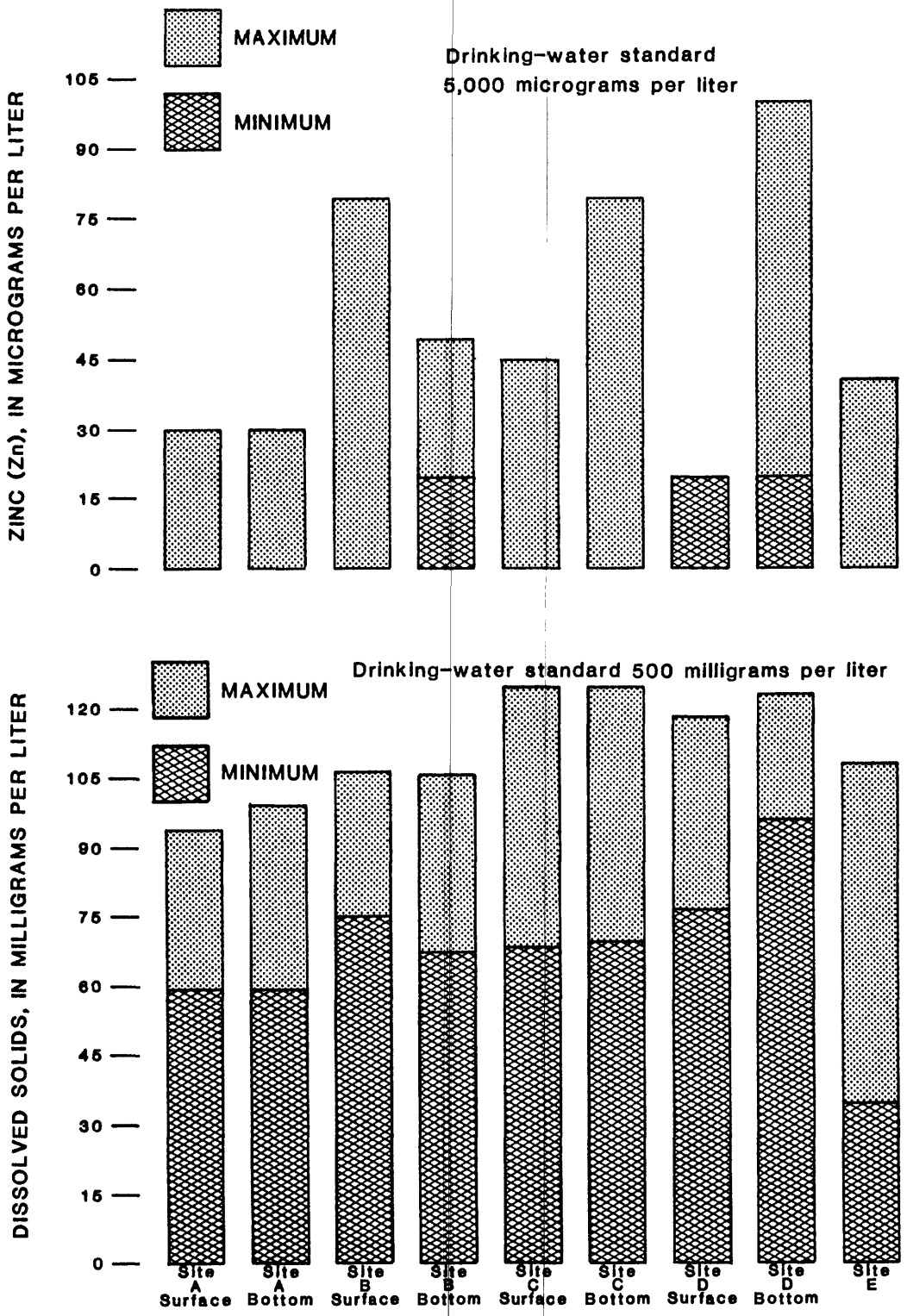

Figure 6.--Maximum and minimum concentrations for selected chemical constituents at sampling site A-E.--Continued.

Large concentrations of chloride, as part of the dissolved solids in water, can be detected by taste and can lead to consumer rejection of the water supply. The national secondary drinking-water standard for chloride is 250 mg/L (table 2). Dissolved chloride concentrations were less than the drinking-water standard in all samples from the study area. Concentrations ranged from 2.8 to 31 mg/L in water from all sites (table 4 and fig. 6).

Fluoride has potential beneficial effects, but excessive fluoride in drinking-water supplies produces dental fluorosis (an abnormal condition chiefly characterized by mottling of the teeth) that increases with increasing fluoride concentration greater than the recommended limit (National Academy of Sciences, National Academy of Engineering, 1972). Recommended concentrations of fluoride in drinking water are temperature dependent (table 2). Dissolved-fluoride concentrations were less than the drinking-water standard in all samples from the study area. Concentrations ranged from 0.0 to 0.1 mg/L in water from all sites (table 4 and fig. 6).

Nitrogen

Nitrogen is considered one of two major plant nutrients and commonly is identified as a limiting factor for aquatic-plant growth. The primary source of nitrogen is the atmosphere. Nitrogen also occurs in organic, ammonia, nitrite, and nitrate forms. Each form can be utilized by different organisms.

Nutrient enrichment is a natural process in lakes and reservoirs. Man has become a significant contributor of large concentrations of nitrogen to the aquatic systems by activities such as agriculture and urbanization. As more nutrients are made available, plant productivity may increase, and the natural eutrophication or enrichment process accelerates.

The recommended maximum nitrate-nitrogen concentration in public water supplies is 10 mg/L. All the nitrate concentrations determined in water from Gaines Creek and the Gaines Creek arm of Eufaula Lake sampling sites A-E (table 4 and fig. 6), were within drinking-water standards.

Trace Elements

Generally, trace elements occur in most natural waters at concentrations that are not toxic to humans, animals, and plants; they are, in many instances, essential to plant growth as micronutrients. Many trace elements are toxic to humans, animals, and plants when they occur in large concentrations. Large concentrations commonly occur as a result of mining or industrial activities. The presence of trace elements in water supplies has a variety of implications concerning the potability and ultimate other uses of drinking water (Rubin, 1976). Concentrations of selected trace elements in water from Gaines Creek and the Gaines Creek arm of Eufaula Lake (sampling sites A-E) are listed in table 4. Each trace element will be discussed separately in the following paragraphs. The concentrations generally were much less than the drinking-water standards, with the exception of cadmium, iron, lead, and manganese.

Analyses were made for both dissolved and total recoverable trace elements. As defined by the U.S. Geological Survey (1983), "Dissolved is that material in a representative water sample which passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of 'dissolved' constituents are made on subsamples of the filtrate." Total recoverable is defined as "...the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the 'total' amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample."

Arsenic.--Arsenic occurs ubiquitously in nature and is insoluble in water. Most forms of arsenic are toxic to humans, animals, and aquatic species. Although no form of arsenic is known to be essential, arsenic has been added in small quantities to animal food as a growth stimulant (National Academy of Sciences, National Academy of Engineering, 1972). Water samples collected from 130 sampling points in the United States had arsenic concentrations ranging from 5 to 336 µg/L (micrograms per liter) with a mean concentration of 64 µg/L (Kopp, 1969).

The national primary drinking-water standard for arsenic is 50 µg/L (table 1). Arsenic concentrations were less than the drinking-water standard in all samples from the study area. Concentrations ranged from 0 to 8 µg/L in water from most sites (table 4 and fig. 6).

Cadmium.--Cadmium is biologically a nonessential, nonbeneficial element. Concentrations of cadmium generally are very small in natural water. Cadmium can be added to the water system from electroplating plants and zinc-galvanized iron in which cadmium is a contaminant (National Academy of Sciences, National Academy of Engineering, 1972). Large concentrations of cadmium in drinking water are toxic to humans and animals. Water samples collected from 130 sampling points in the United States had detectable cadmium concentrations ranging from 1 to 20 µg/L with a mean concentration of 9.5 µg/L (Kopp, 1969).

The national primary drinking-water standard for cadmium is 10 µg/L (table 1). Concentrations of cadmium exceeded the national primary drinking-water standards at least once in water from sampling sites A and C (table 4 and fig. 6).

Chromium.--Chromium commonly is associated with industrial wastes; it also is a common element in the environment. Large concentrations of chromium are toxic to humans and animals. Although chromium can be detected in most biological systems, it has not been determined to be essential. Water samples collected from 130 sampling points in the United States had chromium concentrations ranging from 1 to 112 µg/L with a mean concentration of 9.7 µg/L (Kopp, 1969).

The national primary drinking-water standard for chromium is 50 µg/L (table 1). All chromium concentrations were less than the national primary drinking-water standard (table 4 and fig. 6).

Copper.--Copper, although widely distributed in the environment, occurs only in trace concentrations in natural waters because of solubility controls. Copper is essential in the nutrition of plants and animals but is toxic to some algae. Mining and industrial activities sometimes contaminate water with copper. Copper is esthetically significant in public water supplies because it can cause taste and discoloration problems (Rubin, 1976). Water samples collected from 130 sampling points in the United States had copper concentrations ranging from 1 to 280 µg/L with a mean concentration of 15 µg/L (Kopp, 1969).

The national secondary drinking-water standard for copper is 1,000 µg/L (table 2). Copper concentrations were much less than the secondary drinking-water standard. Water from Site B had the greatest copper concentation with a maximum of 67 µg/L (table 4 and fig. 6).

Iron.--Iron is an abundant and important element unsurpassed by any other heavy metal in the Earth's crust (Cole, 1975). It is essential to photosynthesizing plants; it is the metal part of some plant cytochromes that function in the transfer of electrons during photosynthesis. It also is a vital element in the respiratory pigments of many animal species and affects many chemical reactions in water. Excessive concentrations may be toxic. Large concentrations of dissolved iron will not be present in natural waters with near-neutral pH. Large concentrations, if they occur, will be found in the suspended phase. Iron is esthetically significant in public water supplies because it can cause taste and discoloration problems (Rubin, 1976).

The national secondary drinking-water standard for iron is 300 µg/L (table 2). This limit of 300 µg/L for iron was exceeded in numerous samples collected during the study. Large concentrations of total recoverable and dissolved iron were found in samples from all sites (tables 4 and fig. 6). The largest concentrations were for samples collected near the reservoir bottom.

Lead.--Lead is found in small concentrations in streams due to its minimal solubility. Large concentrations of lead are toxic to humans. Water samples collected from 130 sampling points in the United States had detectable lead concentrations ranging from 2 to 140 µg/L with a mean concentration of 23 µg/L (Kopp, 1969).

The national primary drinking-water standard for lead is 50 µg/L (table 1). The lead concentrations in water from the study area were much greater than the drinking-water standard (table 4 and fig. 6). Total recoverable-lead concentrations ranged from 0 to 420 µg/L.

Manganese.--Manganese concentrations in natural water generally are large in comparison to most trace elements other than iron. Manganese is a necessary nutrient for both plants and animals; manganese stimulates plankton growth. Excessive concentrations may be toxic to humans (Rubin, 1976).

The national secondary drinking-water standard of 50 µg/L for manganese (table 2) was established to prevent brownish staining of laundry and objectionable taste to certain beverages. Manganese concentrations in water from the study area commonly exceeded the secondary drinking-water standard. The greatest total recoverable-manganese value, 2,400 µg/L, was reported at site A (table 4 and fig. 6).

Mercury.--The natural concentration of mercury in most surface waters is thought to be less than 0.5 µg/L (Wershaw, 1970). Larger concentrations of mercury in natural water can result from mining, metallurgical, or other industrial wastes. In addition to the more commonly known sources of man's mercury contributions, the burning of fossil fuels has been reported as a source of mercury pollution (Bertine and Goldberg, 1971). Mercury and mercuric salts are toxic to humans.

Because of mercury's toxicity, a national primary drinking-water standard of 2 µg/L was established (table 1). All mercury concentrations were less than the drinking-water standard (table 4 and fig. 6). The largest total recoverable-mercury concentration was detected in a sample from site D.

Selenium.--Selenium in the elemental form is almost insoluble, but in an oxidized form, it can occur in appreciable concentrations in water. Selenium is toxic to humans, animals, and plants.

The national primary drinking-water standard for selenium is 10 µg/L (table 1). None of the selenium concentrations determined exceeded the established standard. The largest measured concentration for either dissolved or total recoverable selenium was 2 µg/L (tables 4 and 5).

Zinc.--Zinc has many industrial uses and is common in ores. Zinc has no known adverse physiological effects on humans except in very large concentrations (McKee and Wolf, 1963). Water samples collected from 130 sampling points in the United States had zinc concentrations ranging from 2 to 1,183 µg/L and a mean concentration of 64 µg/L (Kopp, 1969).

For considerations of taste, national secondary drinking-water regulations set an upper limit of 5,000 µg/L for zinc (table 2). Zinc concentrations were considerably less than the drinking-water standard. The largest zinc concentration was a total recoverable-zinc concentration of 100 µg/L determined in water from site D (table 4 and fig. 6).

Biota

Phytoplankton

Phytoplankton are primary producers in the aquatic food chain. Planktonic variability in lakes is determined by the physical, chemical, and biological characteristics of the individual lake. Some information about the degree of lake enrichment can be determined by the phytoplankton members present.

In a study done by W.D. Williams (Cole, 1975) some generalities were cited. The phytoplankton of oligotrophic waters (those that contain few nutrients) includes the desmid Staurastrum, the chrysophyte Dinobryon, noted for its tolerance of only small phosphate concentrations, and the diatoms Tabellaria and Cyclotella. The eutrophic lake (enriched in nutrients) has a different group of diatoms and a mixed group of blue-green algae that may eventually replace the diatoms. As the lake becomes eutrophic, the filamentous diatoms Melosira and Stephanodiscus appear first. If there is agricultural runoff or erosion from clear cutting, Asterionella may appear. Later, if sewage enters the lake, Fragillaria may appear.

Hern and others (1979) in a study of some Oklahoma lakes found that whereas desmids and many pennate diatoms are found in oligotrophic waters because they generally cannot tolerate large nutrient concentrations, Cyanophyta, Euglenophyta, centric diatoms, and members of the Chlorococcales generally are associated with eutrophic waters.

Generally, during the study, the greatest number of phytoplankton cells were in the surface samples (table 7, at back of report) where the light penetration was the greatest. The diatoms and blue-green algae were the dominate organisms.

Phytoplankton data (table 7) provide useful information to water-treatment operators. Counts of blue-green algae that exceed 50 percent of the total phytoplankton count usually indicate potential taste and odor problems. Phytoplankton data were collected at all sites. In one-third of the phytoplankton analyses from Gaines Creek, blue-green algae constituted more than 50 percent of the total cells per milliliter. Lake phytoplankton also frequently were dominated by blue-green algae, the most prevalent group.

Diversity of phytoplankton has been determined in several ways because of the observed species changes as a lake becomes enriched. Among the best indices of species are those that are largely independent of sample size (Wetzel, 1975). As defined by the U.S. Geological Survey (1983), "...diversity index is the numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

There n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the

community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the samples are different" (table 7). Predominance of one or two species results in small diversity values, large values occur when there are populations of several species. There is a general tendency for species diversity to decrease with increasing enrichment of the water. Presumably, the slower growth rates attainable in oligotrophic lakes permit a greater number of species with reasonably similar requirements to coexist within the temporal variations of regulating parameters than would be found in more enriched waters (Wetzel, 1975).

The significance of phytoplankton genera present at sampling sites A-E during this investigation are listed in table 8 (at back of report). Although several of the genera are widely distributed, many are indicative of specific conditions. Generally, the genera indicate that the water at sites A-E may be classified as: (1) Soft and acidic with little mineral content and conductivity; (2) calm or very slowly moving; and (3) warm and enriched with organic matter.

Another means of categorizing lakes on the basis of phytoplankton has been suggested by P.E. Greeson (U.S. Geological Survey, written commun., 1978) on the basis of phytoplankton data collected by the U.S. Geological Survey during the 1974 to 1976 water years (fig. 7). Phytoplankton present in Eufaula Lake indicate that the lake tends to be acidic, has significant organic and nutrient contents, and has little conductivity and dissolved solids. Phytoplankton indicative of both soft and hard water were present; both mesotrophic- and eutrophic-indicating plankton were present (table 7).

Bacteria

All recreational waters and drinking-water supply sources need to be free of pathogenic bacteria so as not to pose hazards to health. Procedures for detecting these bacteria are complex and time consuming; therefore, the coliform bacteria test is used as an indirect measure of this hazard.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. For this reason fecal coliform bacteria usually are used as indicators of the sanitary quality of water. These bacteria are defined as all organisms that produce blue colonies within 22 hours when incubated at 44.5 °C $\pm$0.2 °C on M-FC medium (nutrient medium for bacterial growth).

Other bacteria found in intestines of warm-blooded animals include fecal streptococcal bacteria. Their presence in water is considered to verify bacterial pollution. These bacteria are defined as all organisms that produce red or pink colonies within 48 hours at 35 °C $\pm$1.0 °C on M-enterroccus or KF streptococcus medium.

It is recommended (National Academy of Science, National Academy of Engineering, 1972) that the geometric mean of fecal coliform bacteria not exceed 2,000 colonies per 100 milliliters of water. No recommendation is cited for fecal streptococcal bacteria. Oklahoma's water-quality standards (Oklahoma Water Resources Board, 1979) recommend that "...the bacteria of the

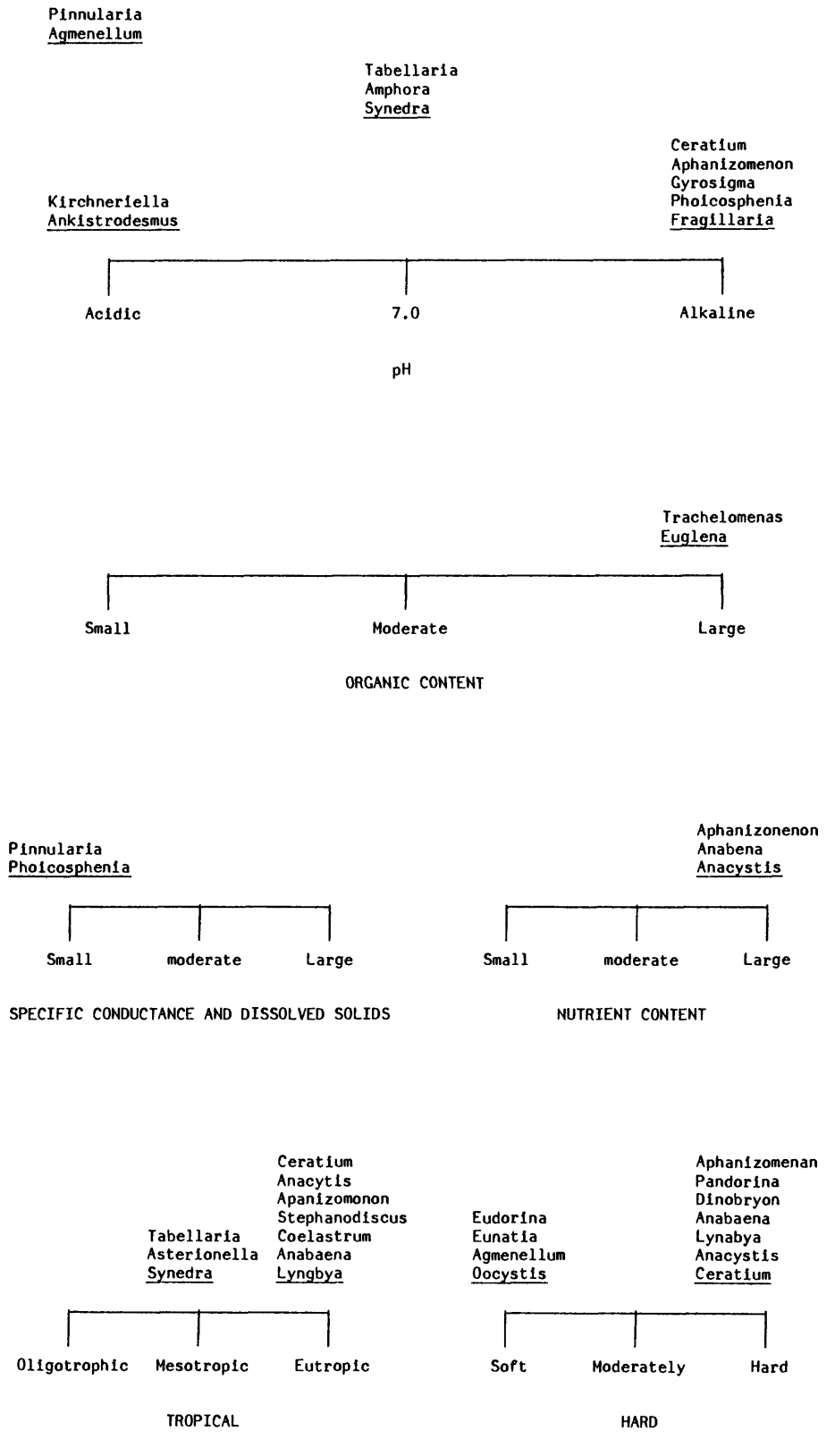

Figure 7.--Implied indicative associations of phytoplankton (modified from P. E. Greeson, U.S. Geological Survey, written commun., 1978).

fecal coliform group shall not exceed a monthly geometric mean of 200/100 mL, at a point of intake for a public or private water supply." This standard also applies to waters designated for primary body-contact recreation. Concentrations reported during the study (table 9, at back of report) were within recommended limits, except at site E, where, on two occasions, fecal coliform counts exceeded the limit.

CONCLUSIONS AND SUMMARY

Water from Gaines Creek and the Gaines Creek arm of Eufaula Lake is suitable for a public water source when compared with the national primary and secondary drinking water regulations. The chemical, physical, and biological qualities of the lake and creek water are similar. The most significant difference was larger coliform counts at the creek site.

Through the use of modern water-management techniques and a variety of available water-treatment processes, water from either the lake or creek could be used to produce an acceptable public water supply.

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Table 4.--Values of pH and concentrations of selected chemical constituents in water from sampling sites A-E

[Concentrations in milligrams per liter, except pH which is in standard units; ND, not detected]

Date	pH	Sulfate dissolved as SO4	Chloride dissolved as Cl	Fluoride dissolved as F	Solids, residue at 180 Deg. C dissolved	Nitrogen, nitrate total as N	Arsenic total as As	Cadmium total recoverable as Cd	Chromium, total recoverable as Cr	Copper, total recoverable as Cu	Iron, total recoverable as Fe	Lead, total recoverable as Pb	Manganese, total recoverable as Mn	Mercury total recoverable as Hg	Selenium, total as Se	Zinc, total recoverable as Zn
						SITE A, NEAR LAKE SURFACE										
05-31-78	6.7	14	6.9	0.1	87	0.00	0.002	<0.002	ND	0.008	1.9	ND	0.350	0.0002	<0.001	0.020
08-23-78	7.4	9.9	6.0	.1	94	.14	.003	ND	ND	.005	1.6	ND	1.6	<.0001	<.001	.020
12-21-78	7.3	12	6.0	<.1	59	.35	.001	<.020	.010	<.020	1.8	.072	.170	<.0001	<.001	.020
02-21-79	7.0	18	6.6	.1	64	1.34	.001	<.002	ND	<.020	1.8	.036	.120	.0003	<.001	.030
04-25-79	--	19	4.2	.1	70	.34	.001	.043	ND	.006	1.6	.016	.210	.0002	<.001	.020
08-29-79	7.4	--	--	--	--	.01	.003	ND	<.020	ND	1.4	ND	1.4	.0003	<.001	ND
						Extremes (dissolved values not included except for fluoride, chloride, and sulfate)										
Maximum	7.4	19	6.9	0.1	94	1.34	0.003	0.043	0.010	0.008	1.9	0.072	1.6	0.0003	<0.001	0.030
Minimum	6.7	9.9	4.2	<.1	59	.00	.001	ND	ND	ND	1.4	ND	.120	<.0001	<.001	ND
						SITE A, NEAR LAKE BOTTOM										
05-31-78	6.9	14	5.8	0.1	83	0.22	0.003	ND	ND	0.008	4.6	ND	1.4	0.0003	<0.001	0.020
08-23-78	7.0	10	7.5	.1	99	0.03	.007	ND	ND	.007	7.7	ND	2.4	<.0001	<.001	.030
12-21-78	7.2	12	5.8	<.1	62	0.46	.001	.040	<.020	.005	2.9	.420	.200	<.0001	<.001	.020
02-21-79	6.7	20	6.5	.1	59	0.88	.001	ND	.020	<.020	2.1	.004	.130	<.0001	<.001	.020
04-25-79	6.8	14	3.8	.1	61	0.32	.001	ND	<.020	.007	2.4	.014	.260	.0002	<.001	.030
08-29-79	7.6	--	--	--	--	0.06	.004	ND	<.020	ND	4.6	ND	1.6	.0003	<.001	<.020
						Extremes (dissolved values not included except for fluoride, chloride, and sulfate)										
Maximum	7.6	20	7.5	0.1	99	0.88	0.007	0.040	0.020	0.008	7.7	0.420	2.4	0.0003	<0.001	0.030
Minimum	6.7	10	3.8	<.1	59	.03	.001	ND	ND	ND	2.1	ND	.130	<.0001	<.001	<.020

Table 4.--Values of pH and concentrations of selected chemical constituents in water from sampling sites A-E--Continued

Date	pH	Sulfate dissolved as SO4	Chloride dissolved as Cl	Fluoride dissolved as F	Solids, residue at 180 Deg. C dissolved	Nitrogen, nitrate total as N	Arsenic total as As	Cadmium total recoverable as Cd	Chromium, total recoverable as Cr	Copper, total recoverable as Cu	Iron, total recoverable as Fe	Lead, total recoverable as Pb	Manganese, total recoverable as Mn	Mercury total recoverable as Hg	Selenium, total as Se	Zinc, total recoverable as Zn
SITE B, NEAR LAKE SURFACE																
05-31-78	6.9	16	7.2	0.1	105	0.03	0.001	ND	ND	0.005	2.3	ND	0.110	<0.0001	<0.001	0.020
08-23-78	7.2	18	18	.1	111	.14	.003	ND	<0.020	.006	4.1	ND	.370	<.0001	<.001	.020
02-21-79	6.7	18	7.1	.1	80	1.16	.001	ND	ND	.067	2.0	0.011	.140	<.0001	<.001	.030
04-24-79	7.4	17	4.9	.1	75	.29	.001	0.008	<.020	.017	1.8	.077	.160	.0002	<.001	.030
08-30-49	7.2	--	--	--	--	.06	.002	ND	<.020	ND	2.9	ND	.140	<.0001	<.001	ND
02-26-80	6.9	20	7.9	.1	90	.35	.001	ND	.008	.005	2.8	.014	.250	.0000	.000	.020
05-14-80	6.4	27	5.2	.1	82	.15	.001	ND	ND	.002	3.5	.015	.220	.0000	.000	.080
Extremes (dissolved values not included except for fluoride, chloride, and sulfate)																
Maximum	7.4	27	18	0.1	111	1.16	0.003	0.008	0.008	0.067	4.1	0.077	0.370	0.0002	<0.001	0.080
Minimum	6.4	16	4.9	.1	75	.03	.001	ND	ND	ND	1.8	ND	.110	.0000	.000	ND
SITE B, NEAR LAKE BOTTOM																
05-31-78	6.8	16	7.0	0.1	99	0.42	0.002	ND	0.005	0.007	6.4	ND	0.800	<0.0001	0.001	0.020
08-23-78	7.5	19	11	.1	105	.21	.001	0.004	ND	.011	.26	ND	.070	<.0001	<.001	.030
02-21-79	6.7	19	7.3	.1	67	1.24	.001	<.002	ND	.007	2.5	0.020	.160	<.0001	<.001	.020
04-24-79	7.4	13	4.3	.1	68	.30	.001	ND	<.020	.008	2.8	.009	.240	<.0001	<.001	.020
08-30-79	7.1	--	--	--	--	.27	.002	ND	.020	ND	5.1	ND	.230	.0002	<.001	.020
02-26-80	7.0	21	9.6	.1	95	.35	.001	ND	.006	.006	3.0	.014	.200	.0000	.000	.020
05-14-80	6.1	14	5.7	.1	77	.14	.002	ND	ND	.002	5.5	.020	.570	.0001	.000	.050
Extremes (dissolved values not included except for fluoride, chloride, and sulfate)																
Maximum	7.5	21	11	0.1	105	1.24	0.002	0.004	0.020	0.011	6.4	0.020	0.800	0.0002	0.001	0.050
Minimum	6.1	13	4.3	.1	67	.14	.001	ND	ND	ND	.26	ND	.070	.0000	.000	.020

Table 4.--Values of pH and concentrations of selected chemical constituents in water from sampling sites A-E--Continued

Date	pH	Sulfate dissolved as SO4	Chloride dissolved as Cl	Fluoride dissolved as F	Solids, residue at 180 Deg. C dissolved	Nitrogen, nitrate total as N	Arsenic total as As	Cadmium total recoverable as Cd	Chromium, total recoverable as Cr	Copper, total recoverable as Cu	Iron, total recoverable as Fe	Lead, total recoverable as Pb	Manganese, total recoverable as Mn	Mercury total recoverable as Hg	Selenium, total as Se	Zinc, total recoverable as Zn
SITE C, NEAR LAKE SURFACE																
05-31-78	7.0	16	9.8	0.1	85	0.35	0.001	ND	0.005	0.007	3.5	ND	0.070	<0.0001	<0.001	0.020
08-24-78	7.2	22	21	.1	111	.13	.002	ND	<.020	.006	3.6	ND	.160	<.0001	<.001	<.020
09-28-78	8.4	35	29	.2	122	.07	.002	ND	ND	.004	2.9	0.003	.120	<.0001	<.001	<.020
10-26-78	7.2	18	22	.1	125	.23	.002	ND	ND	.005	3.3	.006	.190	.0003	<.001	<.020
02-22-79	--	20	7.6	.1	70	.94	.001	ND	<.020	.008	2.0	.007	.140	<.0001	<.001	.020
04-24-79	6.6	12	4.1	.1	68	.40	.001	0.014	ND	<.020	2.7	.017	.090	.0002	<.001	.020
08-30-79	7.1	--	--	--	--	.31	.003	ND	<.020	ND	3.8	ND	.110	<.0001	.002	ND
02-27-80	--	21	10	.1	86	.32	.002	ND	.001	.017	3.2	.024	.100	.0001	.000	.040
05-14-80	6.9	29	12	.1	103	.26	.001	ND	ND	.002	3.7	.044	.130	.0000	.000	.050
Extremes (dissolved values not included except for fluoride, chloride, and sulfate)																
Maximum	8.4	35	29	0.2	125	0.94	0.003	0.014	0.010	0.017	3.8	0.044	0.190	0.0003	0.002	0.050
Minimum	6.9	12	4.1	.1	68	.07	.001	ND	ND	ND	2.0	ND	.070	.0000	.000	ND
SITE C, NEAR LAKE BOTTOM																
05-31-78	6.6	20	13	0.2	91	0.52	0.003	ND	<0.020	0.015	9.4	ND	0.630	<0.0001	<0.001	0.030
06-28-78*	6.8	12	13	.1	81	.26	.002	ND	ND	.011	3.6	<0.200	.110	.0006	<.001	.020
08-24-78	7.6	41	18	.1	125	1.37	.003	ND	<.020	.031	6.5	ND	.370	<.0001	<.001	.030
09-28-78	7.6	21	18	.2	116	.29	.002	ND	ND	.006	4.7	.006	.300	.0002	<.001	.020
10-26-78	7.7	23	31	.1	122	.24	.002	ND	ND	.007	4.7	.005	.400	.0003	<.001	.020
02-22-79	--	20	8.6	.1	74	.91	.001	ND	.020	.006	2.2	.003	.140	<.0001	<.001	<.020
04-24-79	--	13	6.1	.2	70	.49	.001	0.007	<.020	<.020	5.0	.064	.260	.0003	<.001	.030
08-30-79	6.9	--	--	--	--	.32	.002	ND	<.020	ND	4.4	ND	.220	.0006	<.001	<.020
02-27-80	--	18	12	.2	100	.33	.002	ND	.006	.016	3.4	.016	.120	.0000	.000	.020
05-14-80	6.8	26	19	.1	120	.27	.002	ND	ND	.002	5.0	.230	.270	.0000	.000	.080
Extremes (dissolved values not included except for fluoride, chloride, and sulfate)																
Maximum	7.7	41	31	0.2	125	1.37	0.003	0.007	0.020	0.031	9.4	0.230	0.630	0.0006	<0.001	0.080
Minimum	6.6	12	6.1	.1	70	.24	.001	ND	ND	ND	2.2	ND	.110	<.0001	.000	<.020

* Mid-depth

Table 4.--Values of pH and concentrations of selected chemical constituents in water from sampling sites A-E--Continued

Date	pH	Sulfate dissolved as SO4	Chloride dissolved as Cl	Fluoride dissolved as F	Solids, residue at 180 Deg. C dissolved	Nitrogen, nitrate total as N	Arsenic total as As	Cadmium total recoverable as Cd	Chromium, total recoverable as Cr	Copper, total recoverable as Cu	Iron, total recoverable as Fe	Lead, total recoverable as Pb	Manganese, total recoverable as Mn	Mercury total recoverable as Hg	Selenium, total as Se	Zinc, total recoverable as Zn
SITE D, NEAR LAKE SURFACE																
5-25-78	6.7	16	10	0.1	77	0.34	0.001	ND	<0.002	0.006	3.6	ND	0.100	0.0002	<0.001	0.020
9-28-78	7.8	21	21	.1	118	.22	.002	<0.002	ND	.004	2.8	0.005	.120	<.0001	<.001	.020
2-27-80	--	17	12	.1	104	.33	.002	ND	ND	.005	3.0	.014	.100	.0000	.000	.020
5-14-80	7.0	21	10	.1	107	.20	.002	ND	ND	.002	3.3	.008	.120	.0000	.000	.040
Extremes (dissolved values not included except for fluoride, chloride, and sulfate)																
Maximum	7.8	21	21	0.1	118	0.34	0.002	<0.002	<0.020	0.006	3.6	0.014	0.120	0.0002	<0.001	0.020
Minimum	6.7	16	10	.1	77	.20	.000	ND	ND	.002	2.8	ND	.100	.0000	.000	.020
SITE D, NEAR LAKE BOTTOM																
5-25-78	6.7	19	13	0.1	98	0.47	0.001	<0.002	0.005	0.007	3.9	ND	0.120	<0.0001	<0.001	0.020
7-28-78	7.5	24	27	.1	123	.33	.008	<.002	.030	.023	34	0.030	4.3	.0011	<.001	.100
2-27-80	--	17	12	.1	96	.35	.002	ND	ND	.005	3.0	.014	.100	.0000	.000	.020
5-14-80	6.5	25	13	.1	105	.22	.001	ND	ND	.002	3.7	.005	.150	.0001	.000	.020
Extremes (dissolved values not included except for fluoride, chloride, and sulfate)																
Maximum	7.5	25	27	0.1	123	0.47	0.008	<0.002	0.030	0.023	34	0.030	4.3	0.0011	<0.001	0.100
Minimum	6.5	17	12	.1	96	.22	.001	.000	.000	.002	3.0	ND	.100	.0000	.000	.020

Table 4.--Values of pH and concentrations of selected chemical constituents in water from sampling sites A-E--Continued

Date	Discharge Ft^3/s	pH	Sulfate dissolved as SO4	Chloride dissolved as Cl	Fluoride dissolved as F	Solids, residue at 180 Deg. C dissolved	Nitrogen, nitrate total as N	Arsenic total as As	Cadmium total recoverable as Cd	Chromium, total recoverable as Cr	Copper, total recoverable as Cu	Iron, total recoverable as Fe	Lead, total recoverable as Pb	Manganese, total recoverable as Mn	Mercury total recoverable as Hg	Selenium, total as Se	Zinc, total recoverable as Zn
							SITE E										
06-01-78	--	6.8	8.4	3.9	0.1	42	0.06	0.001	ND	ND	0.005	1.2	ND	0.210	<0.0001	<0.001	0.020
06-30-78	--	6.7	3.1	3.3	.1	46	.05	.002	ND	<.020	.005	2.1	<.200	.340	<.0001	<.001	ND
07-26-78	.00	7.1	4.7	4.8	.1	84	* .04	* .003	ND	ND	ND	* .080	ND	* .820	*<.0000	*<.001	*<.020
08-02-78	E1.0	7.2	8.2	5.2	.1	55	* .02	* .001	ND	ND	*<.020	* .130	*<.010	* .240	*<.0001	*<.001	*<.003
08-23-78	.00	7.2	5.4	5.5	.1	97	.03	.002	ND	ND	.007	1.0	ND	.900	<.0001	<.001	.020
02-20-79	52	6.6	8.5	5.0	.1	35	.80	<.001	ND	<.020	.005	.760	.025	.040	.0002	<.001	<.020
03-28-79	E130	5.7	7.0	2.9	.1	39	.41	.001	ND	<.020	.005	4.3	.010	.330	<.0001	*<.001	.020
04-24-79	--	6.9	10	2.8	.1	42	.22	.001	ND	ND	.008	1.2	.029	.080	<.0001	<.001	.040
07-19-79	7.3	7.2	6.3	3.4	.1	71	.01	.005	ND	.020	ND	2.0	ND	.780	<.0001	<.001	.030
08-29-79	5.4	7.6	--	--	--	--	.07	.002	ND	<.020	ND	6.6	ND	.290	.0006	<.001	.020
10-30-79	2.6	7.1	17	13	.1	108	.04	.002	.001	.005	.002	.790	.005	.900	.0002	.000	.000
11-19-79	--	6.8	12	6.1	.1	87	.11	.001	.001	.004	ND	16	.006	.290	.0002	.000	.010
01-09-80	--	6.7	9.4	5.1	.1	48	--	*<.001	.005	.003	.005	--	.075	--	* .0000	* .000	--
02-26-80	--	6.8	9.5	4.8	.0	46	.10	.003	ND	ND	.003	1.7	.012	.110	.0001	.000	.010
04-01-80	33	7.2	11	7.8	.1	60	.46	.001	.001	.007	.004	2.3	.008	.120	.0000	.000	.020
05-13-80	17	6.2	8.7	3.6	.0	56	.12	.001	ND	.002	.001	1.7	.002	.180	.0001	.000	.020
							Extremes (Dissolved values not included except for flouride, chloride, and sulfate)										
Maximum		7.6	17	13	0.1	108	0.80	0.005	0.005	0.020	0.008	16	0.075	0.900	0.0006	<0.001	0.040
Minimum		5.7	3.1	2.8	.0	35	.01	<.001	ND	ND	ND	.080	ND	.040	.0000	.000	ND

*Dissolved

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E

[US/CM, microsiemens per centimeter at 25° Celsius; DEG C, degrees Celsius; NTU, nephelometric turbidity units; MG/L, milligrams per liter; UG/L, micrograms per liter; CELLS PER ML, cells per milliliter; COLS/100 ML, colonies per 100 milliliters]

DATE	TIME	SAMPLING DEPTH (FEET)	DISSOLVED OXYGEN (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	PH (STANDARD UNITS) (LAB)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (US/CM) (LAB)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	ALKALINITY FIELD (MG/L AS CACO3
						SITE A						
MAY 1978												
31...	1300	21.0	0.2	2	6.9	20.0	120	65	65	44	--	-
31...	1340	3.00	7.9	98	6.7	25.0	132	20	8.2	46	--	-
AUG.												
23...	1305	3.00	--	--	7.4	--	137	40	4.0	46	0	4
23...	1310	19.0	--	--	7.0	--	137	53	110	48	--	5
DEC.												
21...	1200	3.00	--	--	7.3	7.5	94	80	32	28	10	1
21...	1225	21.0	--	--	6.7	7.0	82	40	31	22	8	1
FEB. 1979												
21...	1445	16.0	--	--	6.8	5.5	102	130	--	29	16	1
21...	1500	1.00	--	--	6.8	7.0	103	100	--	36	24	1
APR.												
25...	0831	19.0	--	--	6.8	--	85	90	54	28	14	1
25...	0845	3.00	--	--	6.9	--	86	70	38	33	19	1
AUG.												
29...	0910	19.0	.0	0	7.0	26.5	145	150	68	56	--	-
29...	0930	3.00	2.0	25	7.0	27.0	150	60	16	58	--	-

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SIO2)	DISSOLVED SOLIDS (TONS PER AC-FT)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NIT GE NITR TOT (MG AS N
					SITE A--Continued						
MAY 1978											
31...	11	3.9	7.7	27	0.5	2.2	6.8	0.11	1.0	0.030	4.
31...	12	4.0	9.2	29	.6	2.6	6.1	.12	.83	.000	3.
AUG.											
23...	12	3.9	10	31	.7	2.7	7.7	.13	1.0	.120	4.
23...	12	4.3	9.9	30	.6	2.7	8.0	.13	3.1	.050	14
DEC.											
21...	7.0	2.5	5.6	29	.5	1.9	7.4	.08	1.0	.380	4.
21...	5.2	2.3	5.6	32	.5	2.4	7.3	.08	1.0	.380	4.
FEB. 1979											
21...	7.0	2.7	7.2	34	.6	1.3	6.5	.08	1.3	.960	5.
21...	9.6	2.8	6.6	28	.5	1.3	6.5	.09	2.0	.990	8.
APR.											
25...	6.6	2.7	5.3	28	.5	2.0	6.5	.08	.80	.200	3.
25...	8.6	2.7	5.4	25	.4	2.0	6.5	.09	.84	.210	3.
AUG.											
29...	12	6.3	9.0	25	.5	2.2	7.4	.05	1.1	.050	4.
29...	13	6.2	9.6	25	.6	2.7	7.7	.06	.96	.030	4.

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
					SITE A--Continued					
MAY 1978										
31...	0.13	0.020	0.010	0.03	0.24	0.04	0.040	0.040	0.05	0.76
31...	.00	.010	.010	.03	.01	.01	.090	<.010	.00	.82
AUG.										
23...	.53	.010	.010	.03	.15	.13	.200	.100	.13	.87
23...	.22	.010	.010	.03	.04	.06	.560	.520	.67	3.1
DEC.										
21...	1.7	.010	<.010	.00	.36	.38	.040	.080	.10	.65
21...	1.7	.010	<.010	.00	.47	.38	.030	.060	.08	.54
FEB. 1979										
21...	4.2	.060	.010	.03	.94	.97	.080	.170	.22	.40
21...	4.4	.060	.010	.03	1.4	1.00	.060	.090	.12	.60
APR.										
25...	.89	.020	.020	.07	.34	.22	<.010	.700	.90	.20
25...	.93	.020	.020	.07	.36	.23	.060	.370	.48	.00
AUG.										
29...	.22	.020	.010	.03	.08	.06	.360	.290	.37	.58
29...	.13	<.010	.010	.03	.01	.04	.220	.160	.21	.70

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ORGANIC SUSPENDED TOTAL (MG/L AS C)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
					SITE A--Continued						
MAY 1978											
31...	0.85	0.72	0.81	0.120	0.010	5.3	8.0	<2.0	<1	3	ND
31...	.30	.73	.30	.070	.010	7.0	--	--	1	1	ND
AUG.											
23...	.53	.67	.43	.080	--	10	--	--	<1	3	ND
23...	1.8	2.5	1.3	.340	--	13	--	--	2	5	ND
DEC.											
21...	.42	.61	.34	.100	.030	--	--	--	<1	1	13
21...	.41	.51	.35	.090	.030	--	--	--	<1	1	26
FEB. 1979											
21...	.50	.32	.33	.080	.030	5.7	9.6	1.9	<1	<1	ND
21...	1.1	.54	1.0	.080	.030	--	7.5	1.1	<1	<1	ND
APR....											
25...	.26	.46	.00	.080	.030	--	--	--	1	<1	ND
25...	1.7	.42	1.3	.080	.030	--	--	--	<1	<1	ND
AUG.											
29...	.42	.64	.13	.090	.020	--	--	--	2	2	ND
29...	.25	.73	.09	.060	.020	--	--	--	2	1	ND

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	CHROMIUM, SUSPENDED RECOV (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, SUSPENDED RECOV (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
				SITE A--Continued					
MAY 1978									
31...	0	5	ND	3100	1500	ND	ND	0	1500
31...	0	ND	ND	1700	180	ND	ND	90	260
AUG.									
23...	0	ND	ND	1500	100	ND	ND	1200	390
23...	0	ND	ND	7500	200	ND	ND	300	2100
DEC.									
21...	0	ND	<20	1600	190	72	ND	20	150
21...	0	ND	6	2400	520	420	230	30	170
FEB. 1979									
21...	0	<20	<20	1900	150	4	ND	40	90
21...	0	ND	<20	1600	150	36	ND	20	100
APR.									
25...	0	<20	ND	2300	120	14	ND	80	180
23...	0	<20	ND	1400	160	16	ND	50	160
AUG.									
29...	0	<20	ND	4400	170	ND	ND	100	1500
29...	0	<20	ND	1300	80	ND	ND	100	1300

DATE	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)	ALGAL GROWTH POTENTIAL, BOTTLE TEST (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
					SITE A--Continued					
MAY 1978										
31...	0.3	<0.1	0	<1	20	5	560	--	K44	110
31...	.2	<.1	0	<1	10	<20	14000	--	K22	180
AUG.										
23...	.0	<.1	0	<1	20	ND	12000	0.3	1100	K31
23...	.0	<.1	0	<1	20	<20	12000	.3	40	160
DEC.										
21...	.0	<.1	0	<1	0	20	1500	--	--	--
21...	.0	<.1	0	<1	0	30	500	--	--	--
FEB. 1979										
21...	--	<.1	0	<1	0	<20	140	--	K47	K42
21...	.0	<.1	0	<1	0	30	87	--	K64	K50
APR.										
25...	.1	<.1	0	1	20	<20	1300	--	K20	240
25...	.2	<.1	0	1	10	<20	790	--	100	K160
AUG.										
29	.2	<.1	0	<1	0	<20	100000	--	K40	100
29...	.0	.3	0	<1	0	5	46000	--	K18	360

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	TIME	SAMPLING DEPTH (FEET)	DISSOLVED OXYGEN (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (US/CM)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
					SITE B						
MAY 1978											
31...	1945	--	--	--	--	--	--	120	130	49	--
31...	2000	--	--	--	--	--	--	80	40	86	--
AUG.											
23...	1430	--	--	--	--	--	--	60	36	48	12
23...	1435	--	--	--	--	--	--	100	100	54	12
FEB. 1979											
21...	1345	20.0	--	--	6.7	6.5	120	110	4.6	30	17
21...	1400	1.00	--	--	6.7	6.0	110	110	--	37	26
APR.											
24...	1115	26.0	--	--	7.3	--	--	60	31	34	11
24...	1116	3.0	5.6	62	7.3	19.5	90	90	56	28	12
AUG.											
30...	1602	37.0	--	--	7.4	27.5	109	150	100	43	--
30...	1616	3.00	--	--	7.2	28.5	108	90	38	43	--
FEB. 1980											
26...	1720	--	--	--	--	--	--	120	60	35	15
26...	1740	--	--	--	--	--	--	120	60	36	11
MAY											
14...	1245	26.0	4.0	--	6.1	20.0	92	120	130	30	14
14...	1400	3.00	6.4	--	6.4	22.5	88	200	88	28	12

DATE	ALKALINITY FIELD (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SIO2)	DISSOLVED SOLIDS (TONS PER AC-FT)
				SITE B--Continued					
MAY 1978									
31...	--	14	3.5	8.1	25	0.5	2.3	6.1	0.13
31...	--	28	3.8	8.4	17	.4	2.3	5.3	.14
AUG.									
23...	36	12	4.5	14	37	.9	2.8	4.5	.15
23...	42	13	5.3	13	33	.8	2.9	4.3	.14
FEB. 1979									
21...	13	6.8	3.1	7.3	33	.6	1.5	6.4	.09
21...	11	10	2.9	6.3	26	.5	1.6	6.4	.11
APR.									
24...	23	8.7	3.0	6.6	28	.5	2.2	6.2	.10
24...	16	6.9	2.6	5.8	29	.5	2.1	6.5	.09
AUG.									
30...	--	9.0	5.1	8.2	28	.6	2.7	5.8	.04
30...	--	9.2	4.9	7.8	27	.5	2.6	5.4	.04
FEB. 1980									
26...	20	8.4	3.4	9.0	34	.7	2.4	5.5	.12
26...	25	8.8	3.5	9.7	35	.7	2.5	5.3	.13
MAY									
14...	16	7.4	2.8	7.4	34	.6	1.0	6.8	.10
14...	16	6.8	2.6	6.9	32	.6	3.7	7.0	.11

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRATE TOTAL (MG/L AS NO3	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
				SITE B--Continued					
MAY 1978									
31...	1.3	0.389	5.6	1.7	0.030	0.021	0.07	0.45	0.41
31...	.4	.040	2.0	.18	.010	.010	.03	.04	.05
AUG.									
23...	2.7	.260	12	1.2	.020	.010	.03	.16	.27
23...	.9	.270	4.2	1.2	.030	.010	.03	.24	.28
FEB. 1979									
21...	1.9	1.5	8.4	6.6	.060	.050	.16	1.3	1.5
21...	1.7	1.3	7.5	5.8	.040	.020	.07	1.2	1.3
APR.									
24...	.7	.190	3.2	.84	.020	.010	.03	.31	.20
24...	.7	.210	3.5	.93	.020	.010	.03	.32	.22
AUG.									
30...	.9	.330	4.1	1.5	.040	.020	.07	.31	.35
30...	5.5	.420	24	1.9	.020	.020	.07	.08	.44
FEB. 1980									
26...	1.4	.300	6.1	1.3	.030	.010	.03	.38	.31
26...	2.6	.330	11	1.5	.020	.010	.03	.37	.34
MAY									
14...	4.8	.190	21	<.84	.030	.020	.07	.17	.21
14...	1.9	.20	8.4	<.89	.040	.020	.07	.19	.22

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)
					SITE B--Continued							
MAY 1978												
31...	0.080	0.010	0.01	0.81	0.33	0.73	0.32	0.160	0.010	9.2	7.2	1.6
31...	.090	<.010	.00	.42	.27	.33	.27	.070	.010	7.6	5.6	1.4
AUG.												
23...	.040	.300	.39	2.5	2.5	2.5	2.2	.100	--	6.8	--	--
23...	.040	.010	.01	.71	.40	.67	.39	.150	--	9.0	--	--
FEB. 1979												
21...	.070	1.6	2.1	.60	2.1	.53	.50	.080	.050	6.5	6.2	2.7
21...	.120	.220	.28	.50	1.3	.38	1.1	.010	<.010	6.3	--	--
APR.												
24...	.080	.380	.49	.42	2.0	.34	1.6	.070	.020	--	--	--
24...	.040	.630	.81	.46	1.7	.42	1.1	.080	.020	--	--	--
AUG.												
30...	.120	.030	.04	.61	.30	.49	.27	.100	.020	--	--	--
30...	.060	2.40	3.1	5.4	.89	5.3	.00	.060	.060	--	--	--
FEB. 1980												
26...	.100	.040	.05	1.0	.72	.90	.68	.110	.010	7.9	--	--
26...	.040	.120	.15	2.2	.82	2.2	.70	.100	.020	7.2	--	--
MAY												
14...	.080	.580	.75	4.6	2.9	4.5	2.3	.140	.020	11	8.6	2.3
14...	.080	.450	.58	1.7	1.1	1.6	.65	.120	.030	12	12	1.7

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
					SITE B--Continued					
MAY 1978										
31...	2	2	<1	ND	0	5	ND	6300	100	ND
31...	1	1	<1	ND	0	ND	ND	2100	190	ND
AUG.										
23...	1	3	2	ND	10	ND	ND	3800	290	ND
23...	<1	1	1	ND	0	ND	ND	60	200	ND
FEB. 1979										
21...	--	1	<1	ND	--	ND	ND	--	130	ND
21...	--	1	<1	ND	--	ND	<20	--	130	ND
APR.										
24...	<1	1	1	ND	10	ND	ND	1600	160	ND
24...	1	1	1	ND	0	<20	ND	2600	200	ND
AUG.										
30...	1	2	1	ND	20	ND	ND	4600	480	ND
30...	1	2	1	ND	0	<20	ND	2600	320	ND
FEB. 1980										
26...	0	1	1	0	8	0	7	2300	530	2
26...	0	1	1	0	5	1	3	2600	400	0
MAY										
14...	1	2	1	<1	0	0	3	5200	300	7
14...	0	1	1	<1	0	0	2	3100	430	5

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
				SITE B--Continued				
MAY 1978								
31...	790	<10	0.1	<0.1	1	<1	20	5
31...	100	<10	.1	<.1	0	<1	20	5
AUG.								
23...	310	60	0	<.1	0	<1	0	<20
23...	30	40	0	<.1	0	<1	0	20
FEB. 1979								
21...	--	120	--	.3	--	<1	--	20
21...	--	120	--	.2	--	<1	--	20
APR.								
24...	80	80	.2	<.1	0	1	20	<20
24...	120	120	.1	<.1	0	1	10	<20
AUG.								
30...	170	60	.1	<.1	0	<1	10	<20
30...	120	20	0	<.1	0	<1	0	<2
FEB. 1980								
26...	--	170	0	0	0	0	10	10
26...	--	120	0	0	0	0	10	10
MAY								
14...	--	360	1	0	0	0	20	30
14...	--	100	0	0	0	0	40	40

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)	ALGAL GROWTH POTEN-TIAL, BOTTLE TEST (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
		SITE B--Continued		
MAY 1978				
31...	2100	--	K44	K76
31...	32000	--	K42	K19
AUG.				
23...	5700	0.2	420	140
23...	--	.2	500	K92
FEB. 1979				
21...	--	--	K62	160
21...	--	--	K66	140
APR.				
24...	1700	--	K60	K50
24...	1100	--	K260	K110
AUG.				
30...	990	--	120	170
30...	130000	--	120	38
FEB. 1980				
26...	5700	--	--	--
26...	2900	--	--	--
MAY				
14...	410	--	26	--
14...	1400	--	18	--

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E-Continued

DATE	TIME	SAMPLING DEPTH (FEET)	DISSOLVED OXYGEN (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (US/CM)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	HARDNESS (MG/L AS CACO3)	ALKALINITY FIELD (MG/L AS CACO3)
					SITE C						
MAY 1978											
31...	1030	29.0	7.3	90	6.6	21.0	145	140	800	--	--
31...	1115	3.00	7.0	88	7.0	26.5	147	120	90	53	--
JUNE											
28...	1110	13.0	6.7	84	6.8	26.5	166	--	--	41	27
30...	0625	22.5	3.9	--	6.2	25.0	171	--	--	--	--
AUG.											
02...	--	--	--	--	--	--	--	--	--	--	--
02...	0001	--	--	--	--	--	--	--	--	--	--
24...	1300	31.0	6.3	78	7.6	27.0	153	320	140	59	22
24...	1340	3.00	6.4	79	7.2	29.0	193	100	78	61	34
SEPT.											
28...	1215	42.0	7.5	88	7.6	23.5	230	100	100	59	43
28...	1230	3.00	8.4	98	8.4	26.0	226	56	24	79	43
OCT.											
26...	0950	17.0	6.5	66	7.7	16.0	220	120	--	78	41
26...	1040	3.00	8.0	82	7.2	15.5	212	60	--	58	44
FEB. 1979											
22...	1201	1.00	12.5	98	--	4.5	130	120	78	46	16
22...	1230	22.0	12.5	98	--	4.5	130	140	60	36	16
APR.											
24...	0840	44.0	5.8	60	6.6	16.0	80	140	--	27	16
24...	0846	--	--	--	--	--	--	120	70	27	15
AUG.											
30...	1305	30.0	--	--	6.9	--	109	150	74	46	--
30...	1325	3.00	--	--	7.1	--	112	150	78	55	--
FEB. 1980											
27...	1145	--	--	--	--	--	--	120	60	45	30
27...	1200	--	--	--	--	--	--	120	70	45	31
MAY											
14...	0845	40.0	6.5	--	6.8	19.0	170	120	110	53	32
14...	1000	3.00	7.1	--	6.9	21.0	134	160	95	44	23

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SIO2)	DISSOLVED SOLIDS (TONS PER AC-FT)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)
				SITE C--Continued						
MAY 1978										
31...	--	--	--	--	--	--	7.0	0.12	2.8	0.52
31...	15	3.7	9.7	--	--	2.4	5.4	.12	.97	.26
JUNE										
28...	10	3.8	9.9	33	0.7	2.5	5.5	.11	.84	.30
30...	--	--	--	--	--	--	--	--	--	--
AUG.										
02...	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--
24...	16	4.7	17	37	1	3.0	4.4	.17	2.7	.98
24...	17	4.6	17	36	1	3.0	3.8	.15	1.8	1.79
SEPT.										
28...	15	5.2	14	33	.8	3.0	4.9	.16	1.2	.35
28...	23	5.3	15	28	.8	2.9	4.6	.17	1.2	.14
OCT.										
26...	22	5.6	17	31	.9	2.9	5.6	.17	.87	.28
26...	14	5.5	17	38	1	2.9	5.3	.17	.74	.32
FEB. 1979										
22..	7.9	6.5	8.4	27	.5	2.0	6.5	.09	1.6	1.09
22...	9.2	3.2	8.7	33	.7	1.8	6.4	.10	1.6	.98
APR.										
24...	6.8	2.5	5.6	29	.5	2.1	6.1	.09	.96	.39
24...	6.6	2.6	6.1	31	.5	2.3	6.3	.09	1.1	.51
AUG.										
30...	10	5.1	8.5	9	.6	--	7.1	.19	1.5	2.28
30...	14	4.9	--	--	--	2.7	6.6	.26	.97	.11
FEB. 1980										
27...	11	4.2	12	35	.8	2.6	10	.12	1.7	.31
27...	11	4.2	12	35	.8	2.6	6.0	.14	1.1	.33
MAY										
14...	13	4.9	16	38	1	2.7	5.8	.16	4.1	.29
14...	11	4.0	12	35	.8	2.8	6.9	.14	3.2	.26

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	NITROGEN, NITRATE TOTAL (MG/L AS NO3)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)
					SITE C--Continued					
MAY 1978										
31...	13	2.3	0.020	0.010	0.03	0.54	0.53	0.080	<0.010	0.00
31...	4.3	1.2	.030	.021	.07	.38	.28	.090	<.010	.00
JUNE										
28...	3.7	1.3	.020	.010	.03	.28	.31	.060	<.010	.00
30...	--	--	--	--	--	--	--	--	--	--
AUG.										
02...	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--
24...	12	4.3	.030	.010	.03	1.4	.99	.040	.010	.01
24...	7.7	--	.020	.010	.03	.15	1.8	.060	.050	.06
SEPT.										
28...	5.3	1.5	.010	<.010	.00	.30	.35	.030	<.010	.00
28...	5.2	.62	.010	<.010	.00	.08	.14	.280	.010	.01
OCT.										
26...	3.9	1.2	.010	<.010	.00	.25	.28	.030	.010	.01
26...	3.3	1.4	.010	<.010	.00	.24	.32	.020	.010	.01
FEB. 1979										
22...	7.1	4.9	.060	.010	.03	1.0	1.1	.150	.100	.13
22...	7.0	4.3	.080	.010	.03	.99	.99	.130	.150	.19
APR.										
24...	4.2	1.7	.040	.010	.03	.44	.40	.050	.400	.52
24...	5.0	2.3	.040	.010	.03	.53	.52	.050	.380	.49
AUG.										
30...	6.6	10	.060	.020	.07	.38	2.3	.050	.060	.08
30...	4.3	.49	.040	.030	.10	.35	.14	.070	--	--
FEB. 1980										
27...	7.4	1.4	.060	.010	.03	.38	.32	.150	.100	.13
27...	4.8	1.5	.020	.010	.03	.35	.34	.040	.030	.04
MAY										
14...	18	<1.3	.030	.040	.13	.30	.33	.080	.500	.64
14...	14	<1.2	.070	.030	.10	.33	.29	.180	.390	.50

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)
					SITE C--Continued						
MAY 1978											
31...	2.3	0.22	2.2	0.22	0.620	<0.010	10	6.7	--	<1	3
31...	.59	.34	.50	.34	.100	.010	6.9	--	1.0	<1	1
JUNE											
28...	.56	.35	.50	.35	.080	--	6.6	5.5	3.5	1	1
30...	--	--	--	--	--	--	--	--	--	--	--
AUG.											
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
24...	1.3	.33	1.3	.32	.110	--	7.5	--	--	2	1
24...	1.6	1.3	1.5	1.2	.100	--	7.1	--	--	1	1
SEPT.											
28...	.90	1.1	.87	1.1	.060	.010	--	--	--	1	1
28...	1.1	.41	.82	.40	.070	.010	--	--	--	1	1
OCT.											
26...	.62	.91	.59	.90	.100	.040	7.4	--	--	1	1
26...	.50	.81	.48	.80	.090	.020	6.4	--	--	1	1
FEB. 1979											
22...	.60	.53	.45	.43	.100	.040	7.5	7.5	--	<1	1
22...	.60	.47	.47	.32	.090	.040	7.5	8.6	1.3	<1	1
APR.											
24...	.52	1.9	.47	1.5	.080	.020	--	--	--	<1	<1
24...	.59	2.0	.54	1.6	.120	.020	--	--	--	<1	1
AUG.											
30...	1.1	.84	1.0	.78	.090	.040	--	--	--	1	1
30...	.62	--	.55	--	.080	--	--	--	--	1	2
FEB. 1980											
27...	1.3	1.1	1.1	1.0	.110	.020	6.2	3.6	--	1	1
27...	.73	.74	.69	.71	.090	.020	8.7	--	--	1	1
MAY											
14...	3.8	.33	3.7	.00	.120	.020	8.4	4.5	1.5	1	1
14...	2.9	.53	2.7	.14	.100	.020	7.9	5.9	.80	1	0

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEA DI SOL (UG AS
				SITE C--Continued						
MAY 1978										
31...	0	ND	10	ND	15	ND	9400	20	0	
31...	0	ND	0	5	7	ND	3400	110	0	
JUNE										
28...	0	ND	0	ND	11	ND	3600	40	100	
30...	--	--	--	--	--	--	--	--	--	
AUG.										
02...	--	--	--	--	--	--	--	--	--	
02...	--	--	--	--	--	--	--	--	--	
24...	0	ND	0	<20	0	40	6100	440	0	
24...	0	ND	10	ND	6	ND	3500	130	0	
SEPT.										
28...	0	ND	0	ND	6	ND	4600	70	6	
28...	0	ND	0	ND	4	ND	2800	20	3	
OCT.										
26...	0	ND	0	ND	7	ND	4600	70	5	
26...	0	<2	0	ND	0	<20	3200	90	0	<1
FEB. 1979										
22...	0	ND	10	ND	8	ND	1800	160	7	
22...	0	ND	0	20	6	ND	2000	160	3	
APR.										
24...	14	ND	0	ND	10	ND	2600	60	17	
24...	7	ND	10	ND	10	ND	4900	80	64	
AUG.										
30...	0	ND	0	<20	0	ND	4000	360	0	
30...	0	ND	0	<20	0	ND	3200	560	0	
FEB. 1980										
27...	0	0	0	1	14	3	2400	840	24	
27...	0	0	6	.00	11	5	3300	70	16	
MAY										
14...	--	<1	0	.00	0	2	4800	230	230	
14...	--	<1	0	.00	0	3	3200	540	39	

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)
				SITE C--Continued					
MAY 1978									
31...	590	40	0.1	<0.1	0	<1	20	<20	230
31...	60	<10	.0	<.1	0	<1	20	ND	290
JUNE									
28...	110	2	.6	<.1	0	<1	20	<3	3000
30...	--	--	--	--	--	--	--	--	--
AUG.									
02...	--	--	--	--	--	--	--	--	3600
02...	--	--	--	--	--	--	--	--	7500
24...	280	90	.0	<.1	0	<1	10	20	3700
24...	140	20	.0	<.1	0	<1	0	<20	7100
SEPT.									
28...	300	<10	.2	<.1	0	<1	20	ND	670
28...	120	<10	.0	<.1	0	<1	0	ND	6300
OCT.									
26...	400	<10	.3	<.1	0	<1	20	ND	4500
26...	150	40	.3	<.1	0	1	0	<3	4500
FEB. 1979									
22...	60	80	.1	<.1	0	<1	0	20	260
22...	60	80	.0	<.1	0	<1	0	<20	370
APR.									
24...	70	20	.2	<.1	0	1	0	20	360
24...	100	160	.3	<.1	0	1	20	<20	360
AUG.									
30...	170	50	.5	<.1	0	<1	0	<20	450
30...	80	30	.1	<.1	2	<1	0	20	4100
FEB. 1980									
27...	100	50	.1	.0	0	0	40	0	1900
27...	120	30	.0	.0	0	0	20	0	1200
MAY									
14...	270	80	.0	.0	0	0	60	20	78
14...	130	30	.0	.0	0	0	30	20	230

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
	SITE C--Continued	
MAY 1978		
31...	K60	K170
31...	K34	K27
JUNE		
28...	--	--
30...	K200	K22
AUG.		
02...	<1	K74
02...	K8	160
24...	K1200	K48
24...	K3	K4
SEPT.		
28...	K4	K35
28...	K3	K28
OCT.		
26...	K5	K4
26...	K3	K8
FEB. 1979		
22...	K39	K35
22...	K20	K20
APR.		
24...	K94	K12
24...	K32	K20
AUG.		
30...	K10	K11
30...	68	120
FEB. 1980		
27...	--	--
27...	--	--
MAY		
14...	K23	--
14...	K17	--

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	TIME	SAMPLING DEPTH (FEET)	DISSOLVED OXYGEN (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (US/CM)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
					SITE D						
MAY 1978											
25...	1100	14.0	6.3	70	6.7	19.5	180	140	100	55	--
25...	1130	3.00	6.9	85	6.7	24.5	190	150	95	49	--
AUG.											
02...	2200	--	--	--	--	--	--	--	--	--	--
02...	2205	--	--	--	--	--	--	--	--	--	--
SEPT.											
28...	1100	20.0	5.0	59	7.5	23.0	235	80	68	71	29
28...	1135	3.00	7.6	90	7.8	24.0	238	80	50	56	13
FEB. 1980											
27...	1235	--	--	--	--	--	--	120	66	45	13
27...	1245	--	--	--	--	--	--	100	120	45	13
MAY											
14...	1040	26.2	7.4	--	6.5	19.5	150	20	80	47	22
14...	1050	3.00	7.6	--	7.0	22.0	142	160	96	44	15

DATE	ALKALINITY FIELD (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SIO2)	DISSOLVED SOLIDS (TONS PER AC-FT)	NITROGEN TOTAL (MG/L AS N)	NITROGEN DISSOLVED (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)
					SITE D--Continued							
MAY 1978												
25...	--	15	4.3	12	31	0.7	2.5	5.7	0.13	0.97	--	0.47
25...	--	14	3.5	8.9	27	.6	2.3	5.5	.10	.85	--	.37
AUG.												
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
SEPT.												
28...	42	20	5.2	16	32	.9	3.0	5.1	.17	1.5	0.74	.28
28...	43	14	5.1	16	37	.1	3.0	4.6	.16	1.1	.64	.23
FEB. 1980												
27...	32	11	4.2	11	33	.7	2.5	6.0	.14	.99	.91	.35
27...	32	11	4.2	12	35	.8	2.5	6.7	.13	1.1	.88	.35
MAY												
14...	25	12	4.1	13	37	.9	1.2	5.7	.14	2.1	1.3	.26
14...	29	11	4.1	13	37	.9	2.7	5.7	.15	1.7	1.5	.27

DATE	NITROGEN, NITRATE TOTAL (MG/L AS NO3)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)
					SITE D--Continued						
MAY 1978											
25...	4.3	2.1	0.030	0.010	0.03	0.50	0.48	0.110	<0.010	--	0.00
25...	3.8	1.6	.030	.010	.03	.37	.38	.110	<.010	--	.00
AUG.											
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
SEPT.											
28...	6.8	1.2	.010	<.010	.00	.34	.28	.100	.030	--	.04
28...	4.9	1.0	.010	<.010	.00	.23	.23	.120	.010	--	.01
FEB. 1980											
27...	4.4	1.5	.020	.000	.00	.35	.35	.080	.000	0.10	.00
27...	4.9	1.5	.040	.000	.00	.39	.35	.060	.000	.07	.00
MAY											
14...	9.2	<1.2	.060	.030	.10	.28	.29	.080	.450	.10	.58
14...	7.7	<1.2	.050	.030	.10	.25	.30	.060	.460	.07	.59

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS TOTAL (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)
					SITE D--Continued						
MAY 1978											
25...	0.47	0.33	--	0.36	0.33	0.110	0.010	--	7.3	7.1	1.2
25...	.48	.31	--	.37	.31	.100	.010	--	--	5.8	1.5
AUG.											
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
SEPT.											
28...	1.2	.46	--	1.1	.43	.060	.010	--	--	--	--
28...	.88	.41	--	.76	.40	.040	.010	--	--	--	--
FEB. 1980											
27...	.64	.56	0.08	.56	.56	.090	.010	0.28	5.7	--	--
27...	.71	.53	.18	.65	.53	.120	.010	.37	6.0	--	--
MAY											
14...	1.8	1.0	.80	1.7	.55	.100	.020	.31	6.1	7.0	.90
14...	1.5	1.2	.30	1.4	.74	.090	.030	.28	7.4	5.8	--

DATE	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MAN NES SU PER REC (UG AS
					SITE D--Continued					
MAY 1978										
25...	1	<1	ND	5	ND	ND	3800	110	ND	
25...	1	<1	ND	10	ND	ND	3500	80	ND	
AUG.										
02...	--	--	--	--	--	--	--	--	--	
02...	--	--	--	--	--	--	--	--	--	
SEPT.										
28...	8	<1	ND	30	ND	ND	34000	60	ND	3
28...	1	1	ND	0	ND	ND	2600	170	ND	
FEB. 1980										
27...	1	1	0	0	0	3	2900	130	0	
27...	1	1	0	0	1	3	6600	150	0	
MAY										
14...	0	1	<1	0	0	4	3500	230	2	
14...	1	1	<1	0	0	4	3200	140	5	

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
					SITE D--Continued					
MAY 1978										
25...	<10	0.1	<0.1	0	<1	0	20	1400	110	310
25...	5	.2	<.1	0	<1	20	5	860	120	98
AUG.										
02...	--	--	--	--	--	--	--	2200	--	--
02...	--	--	--	--	--	--	--	2400	--	--
SEPT.										
28...	600	1.1	<.1	0	<1	100	ND	720	--	K20
28...	<10	0	<.1	0	<1	20	ND	1200	--	K55
FEB. 1980										
27...	20	0	.0	0	0	20	0	1400	--	--
27...	20	.1	.0	0	0	40	0	--	--	--
MAY										
14...	20	.1	.0	0	0	--	<3	78	--	--
14...	10	0	.0	0	0	40	5	540	--	--

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	TIME	DISCHARGE, INST. (CUBIC FEET PER SECOND)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	SPECIFIC CONDUCTANCE (US/CM)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD (MG/L AS CACO3)	ALKALINITY WAT WH TOT FET FIELD (MG/L AS CACO3)
						SITE E						
JUNE 1978												
01...	1430	--	5.6	--	6.4	25.5	69	10	5.0	23	23	--
30...	1030	--	4.8	--	6.4	28.0	83	12	4.7	27	2	25
JULY												
26...	0830	0.0	3.2	--	6.5	26.5	140	13	4.2	60	3	57
AUG.												
02...	0900	E1.0	4.3	--	6.8	26.5	100	6	5.0	32	0	32
23...	1130	.0	4.0	51	6.7	27.5	160	8	7.0	64	0	64
FEB. 1979												
20...	1530	52	--	61	6.6	5.0	82	50	18	20	16	4
MAR.												
28...	1200	E130	8.6	--	5.7	17.0	260	80	26	15	8	7
APR.												
24...	1820	--	8.4	--	7.5	20.5	42	50	17	14	7	7
JULY												
19...	1345	7.3	3.8	46	7.2	24.5	120	45	--	40	0	42
AUG.												
29...	1405	5.4	4.2	51	7.6	24.0	67	180	120	25	25	--
OCT.												
30...	1445	2.6	4.2	44	7.1	16.5	160	10	80	92	22	70
NOV.												
19...	1500	--	--	--	6.8	16.0	90	80	17	31	0	34
JAN. 1980												
09...	1430	--	--	--	6.7	2.0	88	5	.50	19	8	11
FEB.												
26...	1000	--	--	--	--	--	--	50	27	16	9	7
APR.												
01...	1300	33	--	--	7.2	12.5	50	80	39	14	5	10
MAY												
13...	1215	17	5.9	--	6.2	23.0	52	50	18	20	10	10

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN DISSOLVED (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)
						SITE E--Continued						
JUNE 1978												
01...	4.7	2.7	4.9	30	0.5	1.5	6.2	0.37	--	1.6	0.060	0.039
30...	6.3	2.7	4.3	24	.4	1.6	9.0	.52	--	2.3	.050	.040
JULY												
26...	16	4.9	5.8	17	.3	2.1	8.5	--	--	--	--	.040
AUG.												
02...	7.8	3.1	6.0	27	.5	2.5	6.1	--	--	--	--	.020
23...	18	4.7	7.6	20	.4	2.5	6.4	2.2	--	9.8	.00	.030
FEB. 1979												
20...	5.2	1.7	4.3	31	.4	.80	6.2	1.0	1.1	4.5	.800	.830
MAR.												
28...	3.2	1.6	3.8	34	.4	1.1	8.5	.82	2.9	3.6	.410	.480
APR.												
24...	2.9	1.6	3.6	34	.4	1.2	7.8	.46	.59	2.0	.220	.210
JULY												
19...	10	3.6	4.3	18	.3	2.2	9.4	.62	.54	2.7	.010	.030
AUG.												
29...	3.5	4.0	4.5	26	.4	2.0	5.1	.77	1.1	3.4	.070	.870
OCT.												
30...	27	6.0	4.9	10	.2	3.7	5.1	.68	.53	3.0	.040	.090
NOV.												
19...	7.4	3.0	4.7	22	.4	3.5	6.0	.87	--	3.9	.110	--
JAN. 1980												
09...	4.2	2.0	4.5	32	.5	1.6	3.7	--	--	--	--	--
FEB.												
26...	3.4	1.8	4.3	35	.5	1.1	5.1	.59	--	2.6	.100	--
APR.												
01...	3.0	1.7	5.6	40	.7	2.9	6.5	1.6	--	7.0	.460	--
MAY												
13...	4.5	2.2	4.5	31	.4	.90	7.7	1.5	.71	6.8	.120	.110

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)
					SITE E--Continued							
JUNE 1978												
01...	0.18	0.010	0.021	0.07	0.070	0.060	0.100	<0.010	--	0.00	0.30	--
30...	.18	.070	.010	.03	.120	.050	<.010	<.010	--	.00	.40	--
JULY												
26...	.18	--	<.010	.00	--	.040	--	<.010	--	.00	--	--
AUG.												
02...	.09	--	<.010	.00	--	.020	--	.010	--	.01	--	--
23...	.13	.020	<.010	.00	.010	.030	.090	.020	--	.03	2.2	--
FEB. 1979												
20...	3.7	.020	.010	.03	.820	.840	.020	.020	--	.03	.20	--
MAR.												
28...	2.1	<.010	.020	.07	.410	.500	.050	.420	--	.54	.41	--
APR.												
24...	.93	.040	<.010	.00	.260	.210	.040	<.010	0.05	.00	.20	0.00
JULY												
19...	.13	.020	<.010	.00	.030	.030	.170	.120	.21	.15	.59	.08
AUG.												
29...	3.9	.060	.010	.03	.130	.880	.090	.010	.11	.01	.64	.41
OCT.												
30...	.40	.040	.010	.03	.080	.100	.130	.060	.16	.08	.60	.17
NOV.												
19...	--	.020	--	--	.130	--	.120	--	.15	--	.74	.00
JAN. 1980												
09...	--	--	--	--	--	2.60	--	--	--	--	--	--
FEB.												
26...	--	.010	--	--	.110	--	.080	--	.10	--	.48	.00
APR.												
01...	--	.020	--	--	.480	--	.040	--	.05	--	1.1	.00
MAY												
13...	<.49	.010	.010	.03	.130	.120	.270	.200	.33	.26	1.4	.81

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	PHOSPHOROUS DISSOLVED (MG/L AS P)	PHOSPHATE, TOTAL (MG/L AS PO4)	PHOSPHOROUS TOTAL (MG/L AS PO4)	PHOSPHOROUS ORGANIC TOTAL (MG/L AS P)	PHOSPHOROUS ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)
					SITE E--Continued							
JUNE 1978												
01...	0.30	0.20	0.15	0.050	0.010	--	--	0.05	0.01	3.1	2.9	--
30...	.42	.40	.42	.030	--	--	--	.03	--	4.0	4.3	--
JULY												
26...	.32	--	.32	--	--	--	--	--	--	--	--	--
AUG.												
02...	.36	--	.35	--	--	--	--	--	--	--	4.3	--
23...	.30	2.1	.28	.050	--	--	--	.05	--	7.6	--	--
FEB. 1979												
20...	.26	.18	.24	.190	.040	--	--	.19	.04	3.7	2.8	1.8
MAR.												
28...	2.4	.36	2.0	.030	.010	--	--	.03	.01	4.4	--	--
APR.												
24...	.38	.16	.38	.030	.020	0.09	0.09	.03	.02	--	--	--
JULY												
19...	.51	.42	.39	.010	<.010	--	.03	.01	--	5.7	6.7	1.5
AUG.												
29...	.23	.55	.22	.090	.020	--	.28	.09	.02	8.4	7.5	.3
OCT.												
30...	.43	.47	.37	.040	.010	--	.12	.04	.01	8.2	6.6	.8
NOV.												
19...	--	.62	--	.050	--	--	.15	.05	--	11	--	--
JAN. 1980												
09...	--	--	--	--	--	--	--	--	--	--	--	--
FEB.												
26...	--	.40	--	.060	--	--	.18	.06	--	2.4	3.0	1.0
APR.												
01...	--	1.1	--	.060	--	--	.18	.06	--	5.2	--	--
MAY												
13...	.59	1.1	.39	.060	.020	--	.18	.06	.02	4.0	2.3	.8

Table 5.--Values of physical properties and concentrations of chemical constituents and biota in water from sampling sites A-E--Continued

DATE	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)
					SITE E--Continued							
JUNE 1978												
01...	<1	1	--	ND	0	ND	--	ND	1100	120	--	ND
30...	1	1	--	ND	10	ND	--	ND	2000	150	--	ND
JULY												
26...	--	3	--	ND	--	ND	--	ND	--	80	--	ND
AUG.												
02...	--	1	--	<2	--	ND	--	<20	--	130	--	<10
23...	<1	2	--	<20	0	ND	--	ND	920	80	--	ND
FEB. 1979												
20...	--	<1	--	ND	--	20	--	ND	--	130	--	ND
MAR.												
28...	--	<1	--	5	--	ND	--	<20	--	300	--	<10
APR.												
24...	1	<1	--	ND	0	ND	--	ND	760	440	--	ND
JULY												
19...	2	3	0	<2	0	30	0	<20	1300	670	0	<10
AUG.												
29...	1	1	0	ND	0	<20	0	ND	6500	80	0	ND
OCT.												
30...	1	1	0	<1	5	ND	1	1	720	70	5	ND
NOV.												
19...	1	<1	0	3	--	--	0	ND	16000	190	6	ND
JAN. 1980												
09...	--	<1	0	6	1	2	0	7	--	10	57	18
FEB												
26...	2	1	0	ND	0	ND	1	2	--	100	12	ND
APR.												
01...	0	1	1	ND	4	3	0	4	--	320	8	ND
MAY												
13...	0	1	--	<1	2	ND	0	4	--	200	0	4

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)	ALGAL GROWTH POTEN-TIAL, BOTTLE TEST (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
					SITE E-- Continued							
JUNE 1978												
01...	100	110	0.0	<0.1	0	<1	10	<20	14000	--	K2000	420
30...	100	240	.1	<.1	0	<1	0	9	1300	--	890	950
JULY												
26...	--	820	--	<.1	--	<1	--	<20	--	--	--	--
AUG.												
02...	--	240	--	<.1	--	<1	--	<3	--	--	--	120
23...	140	760	.0	<.1	0	<1	10	<20	7200	0.4	740	230
FEB. 1979												
20...	--	20	--	<.1	--	<1	--	<20	290	--	78	76
MAR.												
28...	--	40	--	<.1	--	<1	--	40	91	--	--	--
APR.												
24...	30	50	.0	<.1	0	<1	30	<20	100	--	360	220
JULY												
19...	70	710	.0	<.1	0	<1	30	4	1900	--	K60	86
AUG.												
29...	160	130	.6	<.1	0	<1	20	4	--	--	5500	9400
OCT.												
30...	90	810	.0	1.0	0	<1	0	10	1000	--	740	2800
NOV.												
19...	50	240	.2	<.1	0	<1	0	7	1700	--	--	--
JAN. 1980												
09...	--	7	--	<.1	--	<1	--	<3	2200	--	--	--
FEB.												
26...	--	70	.1	<.1	0	<1	10	<3	600	--	--	--
APR.												
01...	--	50	.0	<.1	0	<1	10	10	1100	--	--	--
MAY												
13...	--	120	.0	.1	0	<1	10	10	610	--	230	2000

Table 6.--Physical properties of water from sampling sites A-D

[ft, feet; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (µS/cm)
			SITE A			
05-31-78	0.5	7.9	98	6.7	25.0	160
	11.0	.1	1	6.3	21.5	165
	22.0	.2	2	6.5	20.0	154
12-07-78	1.0	9.8	82	--	7.0	--
	2.0	9.6	81	--	7.0	100
	3.0	9.6	81	--	7.0	--
	4.0	9.4	79	--	7.0	100
	5.0	9.2	77	--	7.0	--
	6.0	8.2	69	--	7.0	100
	7.0	7.9	66	--	7.0	--
	8.0	7.5	63	--	7.0	100
	9.0	7.5	63	--	7.0	--
	10.0	6.8	58	--	7.5	100
	11.0	6.2	52	--	7.0	--
	12.0	7.1	60	--	7.0	100
	13.0	7.1	60	--	7.0	--
	14.0	7.2	60	--	7.0	100
	15.0	7.2	62	--	7.5	--
	16.0	7.2	62	--	8.0	105
	17.0	7.2	62	--	8.5	--
	18.0	7.1	60	--	7.0	113
	19.0	6.8	56	--	6.5	--
04-25-79	0.5	8.4	94	--	20.5	--
	1.0	6.8	76	--	20.0	--
	2.0	6.8	76	6.6	20.0	100
	3.0	5.8	64	--	20.0	--
	4.0	5.5	61	6.6	19.5	--
	5.0	5.5	61	--	19.5	--
	6.0	5.4	60	6.6	19.5	100
	7.0	5.2	58	--	19.0	--
	8.0	5.1	57	6.6	19.0	100
	9.0	4.8	53	--	19.0	--
	10.0	4.6	51	6.6	19.0	100
	11.0	4.6	51	--	19.0	--
	12.0	4.6	51	6.6	19.0	100
	13.0	4.6	51	--	19.0	--
	14.0	4.6	51	6.5	19.0	100
	15.0	4.4	49	--	19.0	--
	16.0	4.6	51	6.8	19.0	90
	17.0	4.6	51	--	19.0	--

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (μS/cm)
			SITE A--Continued			
04-25-79	18.0	4.7	52	7.4	19.0	102
	19.0	4.6	51	--	19.0	--
	20.0	4.8	53	--	19.0	--
08-29-79	1.0	3.2	40	--	27.5	--
	3.0	2.0	25	7.6	27.0	165
	4.0	1.7	22	--	27.0	--
	9.0	0.7	9	--	27.0	--
	14.0	0.3	4	--	26.5	--
	19.0	0	0	7.4	26.5	147
	22.0	0	0	--	26.5	--
			SITE B			
05-31-78	0.50	9.1	121	7.8	30.0	97
	16.5	4.6	57	6.8	24.5	132
	33.0	0.1	0	6.4	21.0	122
08-30-78	0.5	6.3	79	--	--	--
	1.0	6.2	78	7.9	26.5	190
	2.0	5.8	72	--	--	--
	3.0	5.5	69	--	--	--
	4.0	5.3	66	7.9	26.0	190
	5.0	5.3	66	--	--	--
	6.0	5.3	60	7.9	26.0	190
	7.0	5.1	64	--	26.0	--
	8.0	5.0	62	7.9	26.0	190
	9.0	5.1	64	--	26.0	--
	10.0	5.3	60	7.9	26.0	190
	11.0	5.4	68	--	26.0	--
	12.0	5.5	69	7.9	26.0	190
	13.0	5.6	70	--	26.0	--
	14.0	5.7	71	7.9	26.0	190
	15.0	5.8	72	--	26.0	--
	16.0	6.0	75	7.9	26.0	180
	17.0	5.6	70	--	26.0	--
	18.0	5.6	70	7.9	26.0	190
	19.0	5.7	70	--	25.5	--
	20.0	5.8	72	8.0	25.5	190
	21.0	5.7	70	--	25.5	--
	22.0	5.7	70	8.0	25.5	190
	23.0	5.8	72	--	25.5	--
	24.0	5.8	72	8.0	26.0	189
	25.0	5.8	72	--	25.5	--

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (μS/cm)
			SITE B--Continued			
08-30-78	26.0	5.7	70	8.0	25.5	190
	27.0	5.7	70	--	25.0	--
	28.0	5.8	71	--	25.0	--
02-21-79	1.0	--	--	6.7	5.5	110
	12.0	--	--	6.5	5.5	115
	20.0	--	--	6.7	6.5	120
04-24-79	0.5	8.2	91	--	20.0	--
	1.0	6.8	76	--	20.0	--
	2.0	6.8	76	7.1	20.0	--
	3.0	6.1	68	--	19.5	--
	4.0	6.0	66	--	19.0	--
	5.0	6.0	66	--	19.0	--
	6.0	6.0	66	--	19.0	--
	7.0	6.0	66	--	19.0	--
	8.0	5.8	64	--	19.0	--
	9.0	5.3	58	6.8	19.0	--
	10.0	5.2	57	6.8	19.0	110
	11.0	5.2	57	6.8	19.0	--
	12.0	5.5	60	6.8	19.0	110
	13.0	5.5	60	--	19.0	--
	14.0	5.6	62	6.7	19.0	110
	15.0	5.6	62	--	19.0	--
	16.0	5.8	64	6.9	19.0	100
	17.0	6.0	66	--	19.0	--
	18.0	6.0	66	7.2	19.0	100
	19.0	6.4	70	--	19.0	--
	20.0	6.4	70	7.1	19.0	100
	21.0	6.6	72	--	19.0	--
	22.0	6.8	75	7.1	19.0	100
	23.0	6.2	68	--	19.0	--
	24.0	6.0	66	7.0	19.0	90
	25.0	5.8	64	--	19.0	--
	26.0	5.6	62	7.3	19.5	90
08-30-79	1.0	--	--	7.4	29.0	111
	3.0	--	--	7.2	28.5	108
	5.0	--	--	7.4	28.5	106
	10.0	--	--	7.8	29.0	109
	15.0	--	--	7.8	28.5	103
	20.0	--	--	7.8	28.0	112
	25.0	--	--	7.4	28.0	111
	30.0	--	--	7.6	28.0	109
	37.0	--	--	7.4	27.5	109
	40.0	--	--	6.9	27.5	109

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (μS/cm)
			SITE B--Continued			
02-26-80	0.5	11.3	95	7.2	8.0	122
	1.0	11.3	95	7.2	8.0	121
	1.5	11.3	95	7.2	8.0	121
	2.0	11.3	94	7.2	7.5	119
	2.5	11.3	94	7.2	7.5	121
	3.0	11.2	93	7.3	7.5	122
	3.5	11.2	92	7.3	7.0	126
	4.0	11.4	93	7.3	7.0	126
	4.5	10.6	87	7.4	7.0	127
	5.0	11.4	93	7.3	7.0	127
	5.5	10.0	82	7.3	7.0	127
	6.0	11.6	95	7.3	7.0	127
	6.5	11.5	94	7.3	7.0	127
	7.0	11.6	95	7.3	7.0	127
05-14-80	2.0	6.4	74	6.4	23.0	88
	4.0	6.4	73	6.4	22.5	89
	6.0	6.5	74	6.4	22.0	89
	8.0	6.5	73	6.5	21.5	91
	10.0	6.6	74	6.5	21.5	91
	12.0	6.6	73	6.5	21.0	94
	14.0	6.9	77	6.4	21.0	95
	16.0	5.4	59	6.2	20.5	96
	18.0	4.6	51	6.1	20.5	91
	20.0	4.4	48	6.1	20.0	90
	22.0	4.2	46	6.0	20.0	90
	24.0	4.0	43	6.1	20.0	93
	26.0	4.0	43	6.0	20.0	93
	27.0	4.0	43	6.1	20.0	92
			SITE C			
05-31-78	0.5	7.0	88	7.1	26.0	147
	3.0	7.0	88	7.0	26.5	147
	15.0	7.4	92	7.0	26.5	147
	29.0	7.3	90	6.6	21.0	145
	30.0	7.3	90	6.6	21.0	144
06-28-78	0.5	7.4	97	7.2	29.0	166
	1.0	7.4	97	7.2	29.0	166
	2.0	7.4	97	7.2	29.0	165
	3.0	7.4	97	7.1	28.5	165
	4.0	7.4	97	7.2	28.5	165
	5.0	7.4	97	7.1	28.5	165
	6.0	7.4	96	7.1	28.5	165

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (μS/cm)
			SITE C--Continued			
06-28-78	7.0	7.2	94	7.0	28.0	166
	8.0	7.2	94	7.0	28.0	164
	9.0	7.1	91	6.9	27.5	166
	10.0	7.0	89	6.9	27.0	167
	11.0	6.8	85	6.8	26.5	168
	12.0	6.8	85	6.8	26.5	167
	13.0	6.7	84	6.8	26.5	166
	14.0	6.6	82	6.7	26.0	166
	15.0	6.6	82	6.7	26.0	166
	16.0	6.5	81	6.6	26.0	166
	17.0	6.2	76	6.5	26.0	168
	18.0	6.1	76	6.4	26.0	168
08-03-78	0.5	6.9	91	7.0	29.0	158
	1.0	6.8	89	6.9	29.0	157
	2.0	6.7	88	6.9	29.0	157
	3.0	6.5	86	6.9	29.0	156
	4.0	6.4	84	6.8	29.0	158
	5.0	6.2	82	6.8	28.5	158
	6.0	6.2	82	6.8	28.5	158
	7.0	6.2	82	6.8	28.5	159
	8.0	6.2	82	6.8	28.5	161
	9.0	6.0	79	6.8	28.5	162
	10.0	6.1	80	6.8	28.5	162
	11.0	6.1	80	6.8	28.5	162
	12.0	6.2	81	6.8	28.5	162
	13.0	6.2	80	6.8	28.0	163
	14.0	6.2	80	6.8	28.0	163
	15.0	6.2	80	6.8	28.0	163
	16.0	6.2	80	6.8	28.0	162
	17.0	6.3	82	6.8	28.0	163
	18.0	6.3	82	6.9	28.0	163
08-24-78	3.0	6.4	79	7.2	29.0	193
	31.0	6.3	78	7.6	27.0	153
08-30-78	0.5	6.4	79	--	25.5	--
	1.0	6.4	79	7.8	25.5	210
	2.0	6.4	79	--	26.0	--
	3.0	6.4	79	7.9	26.0	215
	4.0	6.4	79	--	26.0	--
	5.0	6.4	79	7.9	26.0	214
	6.0	6.4	79	--	26.0	--
	7.0	6.3	78	7.9	26.0	215
	8.0	6.4	79	--	26.0	--

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (μS/cm)
			SITE C--Continued			
08-30-78	9.0	6.3	78	7.9	26.0	212
	10.0	6.3	78	--	26.0	--
	11.0	6.3	78	7.9	26.0	210
09-28-78	3.0	8.4	88	8.4	26.0	226
	42.0	7.5	98	7.6	23.5	230
09-29-78	1.0	8.4	99	8.9	23.5	218
	2.0	8.4	98	--	23.0	--
	3.0	8.4	98	9.2	23.0	212
	4.0	8.4	98	--	23.0	--
	5.0	8.4	98	9.0	23.0	212
	6.0	8.3	96	--	23.0	--
	7.0	8.3	96	9.0	23.0	210
	8.0	8.3	96	--	23.0	--
	9.0	8.0	93	8.9	23.0	210
	10.0	7.9	92	--	23.0	--
	11.0	7.9	92	8.8	23.0	198
	12.0	7.6	88	--	23.0	--
	13.0	7.3	85	8.8	23.0	210
	14.0	7.4	86	--	23.0	--
	15.0	7.4	86	8.6	23.0	210
	16.0	7.3	85	--	23.0	--
	17.0	7.3	85	7.9	23.0	210
	18.0	7.0	82	--	23.5	--
	19.0	6.8	80	7.8	23.5	210
10-26-78	1.0	8.0	82	--	15.5	240
	2.0	8.0	82	--	15.5	--
	3.0	8.0	82	7.2	15.5	240
	4.0	8.0	82	--	15.5	--
	5.0	8.0	82	--	15.5	240
	6.0	8.0	82	--	15.5	--
	7.0	8.0	82	--	15.5	235
	8.0	8.0	82	--	15.5	--
	9.0	8.0	82	--	15.5	230
	10.0	8.0	82	--	15.5	--
	11.0	8.0	82	--	15.5	220
	12.0	8.0	82	--	15.5	--
	13.0	8.0	82	--	15.5	220
	14.0	8.0	82	--	15.5	--
	15.0	7.9	79	--	15.0	220
	16.0	7.8	80	--	15.5	--
	17.0	6.5	66	7.7	16.0	220
02-22-79	1.0	12.5	98	--	4.5	130
	2.0	12.6	98	--	4.5	130

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (µS/cm)
			SITE C--Continued			
02-22-79	3.0	12.6	98	--	4.5	130
	4.0	12.6	98	--	4.5	130
	5.0	12.7	99	--	4.5	130
	6.0	12.5	98	--	4.5	130
	7.0	12.5	98	--	4.5	130
	8.0	12.5	98	--	4.5	130
	9.0	12.5	99	--	5.0	130
	10.0	12.5	99	--	5.0	130
	11.0	12.5	99	--	5.0	130
	12.0	12.5	98	--	4.5	130
	13.0	12.5	98	--	4.5	130
	14.0	12.5	98	--	4.5	130
	15.0	12.5	98	--	4.5	130
	16.0	12.5	98	--	4.5	130
	17.0	12.5	98	--	4.5	130
	18.0	12.5	98	--	4.5	130
	19.0	12.5	98	--	4.5	130
	20.0	12.5	98	--	4.5	130
	21.0	12.4	97	--	4.5	130
	22.0	12.4	97	--	4.5	130
04-24-79	0.5	9.3	103	--	20.0	--
	1.0	9.3	102	--	19.0	--
	2.0	9.3	102	--	19.0	--
	3.0	9.3	102	--	19.0	--
	4.0	9.3	102	7.5	19.0	95
	5.0	9.2	101	--	19.0	--
	6.0	9.2	101	7.5	19.0	100
	7.0	9.2	101	--	19.0	--
	8.0	9.2	101	7.6	19.0	95
	9.0	9.0	99	--	19.0	--
	10.0	9.0	99	7.6	19.0	95
	11.0	9.0	99	--	19.0	--
	12.0	9.1	99	7.6	18.5	95
	13.0	9.2	100	--	18.5	--
	14.0	9.2	99	7.6	18.0	100
	15.0	9.2	99	--	18.0	--
	16.0	9.2	99	7.6	18.0	100
	17.0	9.2	99	--	18.0	--
	18.0	9.2	99	7.6	18.0	100
	19.0	9.4	101	--	18.0	--
	20.0	9.4	101	7.6	18.0	100
	21.0	9.6	103	--	18.0	--
	22.0	9.6	103	7.5	18.0	100

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (μS/cm)
			SITE C--Continued			
04-24-79	23.0	9.2	99	--	18.0	--
	24.0	9.1	98	7.4	18.0	100
	25.0	9.0	97	--	18.0	--
	26.0	9.0	97	7.2	18.0	87
	27.0	9.0	97	--	18.0	--
	28.0	8.5	91	6.8	18.0	85
	29.0	8.1	87	--	18.0	--
	30.0	7.6	81	6.8	17.5	85
	31.0	7.4	79	--	17.5	--
	32.0	7.3	78	6.9	17.5	90
	33.0	7.2	76	--	17.0	--
	34.0	7.2	76	7.2	17.0	90
	35.0	7.3	77	--	17.0	--
	36.0	7.1	75	7.3	17.0	90
	37.0	7.2	76	--	17.0	--
	38.0	7.1	75	--	17.0	--
	39.0	7.2	76	--	17.0	--
	40.0	7.0	74	7.0	17.0	90
	41.0	7.0	74	--	17.0	--
	42.0	6.8	72	6.8	17.0	80
	43.0	5.8	61	7.2	17.0	90
	44.0	5.8	60	6.6	16.0	80
08-30-79	3.0	--	--	7.1	--	112
	30.0	--	--	6.9	--	109
05-14-80	3.0	7.1	--	6.9	21.0	134
	40.0	6.5	--	6.8	19.0	120
			SITE D			
05-25-78	1.0	6.9	85	6.7	25.0	139
	7.5	7.1	86	6.7	24.0	151
	15.0	6.3	70	6.7	19.5	182
08-30-78	0.5	6.8	86	7.8	26.5	219
	1.0	6.8	86	--	26.0	--
	2.0	6.7	85	7.8	26.0	220
	3.0	6.7	85	--	26.0	--
	4.0	6.7	85	7.8	26.0	230
	5.0	6.7	85	--	26.0	--
	6.0	6.7	85	7.8	26.0	220
	7.0	6.7	85	--	26.0	--
	8.0	6.6	84	7.8	26.0	220
	9.0	6.5	81	--	26.0	--
	10.0	6.5	81	7.8	25.5	218

Table 6.--Physical properties of water from sampling sites A-D--Continued

Date	Depth (ft)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	pH (units)	Temperature (°C)	Specific conductance (μS/cm)
			SITE D--Continued			
09-28-78	1.0	8.0	95	7.9	24.5	230
	2.0	7.6	90	--	24.0	--
	3.0	7.6	90	7.8	24.0	238
	4.0	7.5	88	--	23.5	--
	5.0	7.5	88	7.7	23.0	232
	6.0	7.2	85	--	23.0	--
	7.0	7.2	85	7.6	23.0	236
	8.0	7.2	85	--	23.0	--
	9.0	7.2	85	7.5	23.0	232
	10.0	7.2	85	--	23.0	--
	11.0	7.2	85	8.0	23.0	232
	12.0	7.1	84	--	23.0	--
	13.0	7.0	82	7.5	23.0	238
	14.0	6.8	80	--	23.0	--
	15.0	6.8	80	7.6	23.0	238
	16.0	6.6	78	--	23.0	--
	17.0	6.5	76	7.6	23.0	232
	18.0	6.2	73	--	23.0	--
	19.0	5.4	64	7.3	23.0	235
	20.0	5.0	59	--	23.0	--
	21.0	.8	9	7.5	23.0	235

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E

[CELLS/ML, cells per millliter]

Site A

DATE	MAY 25,78		MAY 31,78		AUG 23,78		AUG 23 78		DEC 21.78	
TIME	1300		1340		1305		1310		1200	
TOTAL CELLS/ML	560		14000		12000		12000		1500	
DIVERSITY: DIVISION	1.2		1.8		1.5		0.8		1.9	
.CLASS	1.2		1.8		1.5		0.8		1.9	
..ORDER	1.7		1.9		1.8		0.8		2.7	
...FAMILY	2 0		2.4		2.4		0.9		2.8	
....GENUS	2.2		3.6		3.3		1.0		3.1	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..ACHNANTHALES										
...ACHNANTHACEAE										
....COCCONEIS	29	5	--	-	--	-	--	-	--	-
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	--	-	970	7	1400	11	280	2	54	4
..EUNOTIALES										
...EUNOTIACEAE										
....EUNOTIA	--	-	--	-	--	-	--	-	--	-
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	580	4	430	4	*	0	31	2
....MELOSIRA	180#	32	--	-	580	5	180	1	15	1
..FRAGILARIALES										
...FRAGILARIACEAE										
....SYNEDRA	--	-	*	0	--	-	--	-	8	1
..NAVICULALES										
...GOMPHONEMACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	8	1
...NAVICULACEAE										
....FRUSTULIA	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	--	-	62	4
....STAURONEIS	29	5	--	-	--	-	--	-	--	-
..SURIRELLALES										
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	15	1
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	15	3	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE										
....DICTYOSPHAERIUM	--	-	--	-	470	4	--	-	--	-
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....MICRACTINIUM	--	-	480	3	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	390	3	78	1	70	1	46	3
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	97	1	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	97	1	--	-	--	-	--	-
....KIRCHNERIELLA	15	3	1200	8	1000	9	70	1	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	*	0	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	1200	8	--	-	--	-	--	-
....COELASTRUM	--	-	--	-	700	6	--	-	--	-
....CRUCIGENIA	29	5	780	5	1600	13	280	2	39	3
....GLOEOACTINIUM	--	-	--	-	--	-	280	2	--	-
....SCENEDESMUS	230#	42	440	3	2900#	25	670	6	340#	23
....TETRASTRUM	--	-	390	3	--	-	--	-	--	-
..TETRASPORALES										
...TETRASPORACEAE										
....TETRASPORA	--	-	--	-	160	1	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	62	4
...VOLVOCACEAE										
....GONIUM	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....COSMARIUM	--	-	*	0	--	-	--	-	--	-
....EUASTRUM	--	-	--	-	*	0	--	-	--	-
....STAURASTRUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--Continued

Site A

DATE	MAY 25,78		MAY 31,78		AUG 23,78		AUG 23,78		DEC 21,78	
TIME	1300		1340		1305		1310		1200	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHRYSOPHYTA										
.XANTHOPHYCEAE										
..MISCHOCOCCALES										
...SCIADACEAE										
....CENTRITRACTUS	--	-	190	1	--	-	--	-	--	-
....OPHIOCYTIUM	--	-	190	1	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	970	7	1400	12	--	-	--	-
....ANACYSTIS	--	-	4300#	30	930	8	--	-	210	14
....COCCOCHLORIS	--	-	1200	8	--	-	--	-	8	1
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	10000#	84	310#	21
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	290	2	120	1	--	-	23	2
....PHACUS	29	5	290	2	*	0	--	-	250#	17
....TRACHELOMONAS	--	-	190	1	78	1	--	-	8	1
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...PERIDINIACEAE										
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--Continued

	Site A			
DATE	DEC 21,78	FEB 21,79	FEB 21,79	FEB 21,79
TIME	1225	0000	1445	1500
TOTAL CELLS/ML	500	120	140	87
DIVERSITY: DIVISION	1.9	1.4	1.0	0.9
.CLASS	1.9	1.4	1.0	0.9
..ORDER	2.4	2.2	2.2	1.9
...FAMILY	2.9	2.8	2.2	1.9
....GENUS	3.1	2.8	0.0	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..ACHNANTHALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
..BACILLARIALES								
...NITZSCHIACEAE								
....NITZSCHIA	47	9	14	13	43#	30	--	-
..EUNOTIALES								
...EUNOTIACEAE								
....EUNOTIA	--	-	14	13	14	10	--	-
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	31	6	--	-	--	-	14#	17
....MELOSIRA	--	-	--	-	--	-	--	-
..FRAGILARIALES								
...FRAGILARIACEAE								
....SYNEDRA	8	2	--	-	--	-	29#	33
..NAVICULALES								
...GOMPHONEMACEAE								
....GOMPHONEMA	8	2	14	13	14	10	--	-
...NAVICULACEAE								
....FRUSTULIA	--	-	--	-	--	-	14#	17
....NAVICULA	54	11	14	13	--	-	--	-
....STAURONEIS	--	-	--	-	--	-	--	-
..SURIRELLALES								
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE								
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	29#	25	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	85#	17	--	-	43#	30	--	-
....CHLORELLA	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	16	3	14	13	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....COELASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-
....SCENEDESMUS	93#	18	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-
..TETRASPORALES								
...TETRASPORACEAE								
....TETRASPORA	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE	--	-	--	-	29#	20	29#	33
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-
...VOLVOCACEAE								
....GONIUM	--	-	--	-	--	-	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	--	-
....EUASTRUM	--	-	--	-	--	-	--	-
....STAURASTRUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--Continued

Site A

DATE	DEC 21,78		FEB 21,79		FEB 21,79		FEB 21,79	
TIME	1225		0000		1445		1500	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHRYSOPHYTA								
.XANTHOPHYCEAE								
..MISCHOCOCCALES								
...SCIADACEAE								
....CENTRITRACTUS	--	-	--	-	--	-	--	-
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....LYNGBYA	78#	15	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLEMOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	--	-
....PHACUS	62	12	--	-	--	-	--	-
....TRACHELOMONAS	23	5	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..DINOKONTAE								
...PERIDINIACEAE								
....PERIDINIUM	--	-	14	13	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--Continued

	Site A							
DATE	APR 25,79		APR 25,79		AUG 29,79		AUG 29,79	
TIME	0830		0831		0910		0930	
TOTAL CELLS/ML	1300		790		100000		46000	
DIVERSITY: DIVISION	1.4		0.9		0.8		1.3	
.CLASS	1.4		0.9		0.8		1.3	
..ORDER	2.1		0.9		0.8		1.4	
...FAMILY	2.4		1.1		1.0		2.2	
....GENUS	2.7		1.1		1.8		3.1	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..ACHNANTHALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
..BACILLARIALES								
...NITZSCHIACEAE								
....NITZSCHIA	52	4	13	2	*	0	*	0
..EUNOTIALES								
...EUNOTIACEAE								
....EUNOTIA	--	-	--	-	--	-	--	-
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	78	6	--	-	1300	1	1800	4
....MELOSIRA	--	-	26	3	*	0	890	2
..FRAGILARIALES								
...FRAGILARIACEAE								
....SYNEDRA	13	1	--	-	*	0	--	-
..NAVICULALES								
...GOMPHONEMACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....FRUSTULIA	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	--	-
....STAURONEIS	--	-	--	-	--	-	--	-
..SURIRELLALES								
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	*	0	300	1
....TETRAEDRON	--	-	--	-	*	0	300	1
...DICTYOSPHAERIACEAE								
....DICTYOSPHAERIUM	--	-	--	-	580	1	1000	2
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	580	1	1200	3
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	26	3	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	52	4	13	2	1400	1	2400	5
....CHLORELLA	--	-	--	-	*	0	*	0
....CHODATELLA	--	-	--	-	*	0	*	0
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	3700	4	2800	6
....OOCYSTIS	--	-	--	-	*	0	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....COELASTRUM	--	-	--	-	580	1	--	-
....CRUCIGENIA	52	4	--	-	1700	2	4100	9
....GLOEOACTINIUM	--	-	--	-	--	-	--	-
....SCENEDESMUS	410#	31	--	-	8500	8	15000#	32
....TETRASTRUM	52	4	52	7	*	0	1200	3
..TETRASPORALES								
...TETRASPORACEAE								
....TETRASPORA	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	39	3	--	-	--	-	--	-
...VOLVOCACEAE								
....GONIUM	210#	15	--	-	--	-	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	--	-
....EUASTRUM	--	-	--	-	--	-	--	-
....STAURASTRUM	--	-	--	-	--	-	300	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--Continued

	Site A							
DATE	APR 25,79		APR 25,79		AUG 29,79		AUG 29,79	
TIME	0830		0831		0910		0930	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHRYSOPHYTA								
.XANTHOPHYCEAE								
..MISCHOCOCCALES								
...SCIADACEAE								
....CENTRITRACTUS	--	-	--	-	--	-	--	-
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	300	1
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	15000	15	4700	10
....ANACYSTIS	--	-	--	-	67000#	66	8900#	19
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	360#	27	640#	82	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	13	2	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	26	2	--	-	*	0	740	2
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..DINOKONTAE								
...PERIDINIACEAE								
....PERIDINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--Continued

Site B

DATE	APR 24,79		APR 24,79		AUG 30,79		AUG 30,79	
TIME	1115		1116		1602		1616	
TOTAL CELLS/ML	1700		1100		990		130000	
DIVERSITY: DIVISION	2.0		1.2		0.6		0.4	
.CLASS	2.0		1.2		0.6		0.4	
..ORDER	2.4		1.9		0.9		0.5	
...FAMILY	2.8		2.0		1.1		0.5	
....GENUS	3.4		2.0		1.5		1.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..ACHNANTHALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	6	1	--	-
..BACILLARIALES								
...NITZSCHIACEAE								
....NITZSCHIA	77	5	51	5	18	2	*	0
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	39	2	--	-	72	7	910	1
....MELOSIRA	51	3	90	8	750#	76	*	0
....STEPHANODISCUS	90	5	--	-	--	-	--	-
..FRAGILARIALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	6	1	--	-
..NAVICULALES								
...NAVICULACEAE								
....NAVICULA	--	-	--	-	6	1	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	6	1	*	0
....SCHROEDERIA	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	6	1	*	0
...DICTYOSPHAERIACEAE								
....DICTYOSPHAERIUM	26	2	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	13	1	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	330#	20	51	5	36	4	*	0
....CHLORELLA	--	-	--	-	--	-	*	0
....CHODATELLA	13	1	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	6900	5
....OOCYSTIS	51	3	--	-	24	2	--	-
....SELENASTRUM	13	1	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	*	0
....SCENEDESMUS	100	6	100	9	--	-	810	1
....TETRASTRUM	51	3	--	-	48	5	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	64	4	--	-	--	-	*	0
....CHLOROGONIUM	13	1	--	-	--	-	--	-
CHRYSOPHYTA								
.CHRYSOPHYCEAE								
..CHROMULINALES								
...CHRYSOCOCCACEAE								
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE								
..MISCHOCOCCALES								
...SCIADACEAE								
....OPHIOCYTIUM	13	1	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	140	9	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--Continued

Site B

DATE	APR 24,79		APR 24,79		AUG 30,79		AUG 30,79	
TIME	1115		1116		1602		1616	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	55000#	41
....ANACYSTIS	480#	29	150	14	--	-	69000#	51
..NOSTOCALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	640#	57	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	26	2	13	1	--	-	*	0
....EUTREPTIA	--	-	--	-	6	1	--	-
....PHACUS	--	-	--	-	6	1	*	0
....TRACHELOMONAS	64	4	13	1	--	-	--	-

DATE	FEB 26,80		FEB 26,80		MAY 14,80		MAY 14,80	
TIME	1720		1740		1245		1400	
TOTAL CELLS/ML	5700		2900		410		1400	
DIVERSITY: DIVISION	1.4		1.4		0.4		1.4	
.CLASS	1.4		1.4		0.4		1.4	
..ORDER	1.8		1.7		0.6		1.8	
...FAMILY	2.0		2.3		2.4		2.3	
....GENUS	2.4		3.0		2.4		3.2	

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..ACHNANTHALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
..BACILLARIALES								
...NITZSCHIACEAE								
....NITZSCHIA	150	3	120	4	--	-	78	5
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	170	3	190	6	--	-	13	1
....MELOSIRA	170	3	850#	29	--	-	130	9
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..FRAGILARIALES								
...FRAGILARIACEAE								
....SYNEDRA	*	0	*	0	--	-	--	-
..NAVICULALES								
...NAVICULACEAE								
....NAVICULA	--	-	--	-	13	3	13	1
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
....SCHROEDERIA	--	-	--	-	13	3	26	2
....TETRAEDRON	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE								
....DICTYOSPHAERIUM	55	1	230	8	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	52	13	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	620	11	550#	19	52	13	78	5
....CHLORELLA	--	-	--	-	--	-	26	2
....CHODATELLA	--	-	*	0	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	13	1
....KIRCHNERIELLA	300	5	400	14	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....SELENASTRUM	69	1	--	-	--	-	26	2
....TREUBARIA	--	-	--	-	--	-	13	1
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	130#	31	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site B

DATE	FEB 26,80		FEB 26,80		MAY 14,80		MAY 14,80	
TIME	1720		1740		1245		1400	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
...SCENEDESMACEAE								
....COELASTRUM	--	-	--	-	--	-	130	9
....CRUCIGENIA	170	3	58	2	--	-	--	-
....SCENEDESMUS	210	4	170	6	130#	31	470#	33
....TETRASTRUM	--	-	58	2	--	-	100	7
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	*	0	*	0	13	3	26	2
....CHLOROGONIUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.CHRYSOPHYCEAE								
..CHROMULINALES								
...CHRYSOCOCCACEAE								
....CHRYSOCOCCUS	--	-	29	1	--	-	--	-
.XANTHOPHYCEAE								
..MISCHOCOCCALES								
...SCIADACEAE								
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	110	2	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	3300#	58	200	7	--	-	39	3
..NOSTOCALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	230#	16
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	280	5	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	13	3	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	41	1	*	0	--	-	13	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site C

DATE	MAY 31,78	MAY 31,78	JUN 28,78	AUG 2,78	AUG 2,78	AUG 24,78
TIME	1030	1115	1110	0000	0001	1330
TOTAL CELLS/ML	230	290	3000	3600	3600	3700
DIVERSITY: DIVISION	0.3	0.7	1.4	0.6	0.6	0.4
.CLASS	0.3	0.7	1.4	0.6	0.6	0.4
..ORDER	0.7	0.7	1.8	0.7	0.7	0.4
...FAMILY	0.7	0.7	2.0	0.7	0.7	0.4
....GENUS	0.7	1.1	2.4	0.8	0.8	0.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..BACILLARIALES												
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	--	-	--	-	--	-	--	-
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	15	5	--	-	41	1	41	1	130	3
....MELOSIRA	210#	88	230#	80	1600#	54	3200#	87	3200#	87	3300#	90
....STEPHANODISCUS	--	-	--	-	70	2	--	-	--	-	--	-
..FRAGILARIALES												
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
..NAVICULALES												
...NAVICULACEAE												
....NAVICULA	15	6	--	-	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	*	0	--	-	--	-	--	-
...DICTYOSPHAERIACEAE												
....DICTYOSPHAERIUM	--	-	--	-	86	3	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	*	0	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	15	6	--	-	--	-	--	-	--	-	*	0
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	32	1	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	16	1	--	-	--	-	--	-
....COELASTRUM	--	-	--	-	59	2	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	65	2	--	-	--	-	100	3
....SCENEDESMUS	--	-	--	-	210	7	*	0	*	0	26	1
....TETRASTRUM	--	-	--	-	22	1	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	--	-	28	1	28	1	--	-
...VOLVOCACEAE												
....EUDORINA	--	-	--	-	320	11	--	-	--	-	--	-
....PANDORINA	--	-	--	-	81	3	--	-	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....COSMARIUN	--	-	15	5	*	0	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site C

DATE / TIME	MAY 31,78 1030		MAY 31,78 1115		JUN 28,78 1110		AUG 2,78 0000		AUG 2,78 0001		AUG 24,78 1330	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	220	6	220	6	--	-
....ANACYSTIS	--	-	--	-	--	-	41	1	41	1	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	*	0	--	-	--	-	--	-
..NOSTOCALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	310	10	120	3	120	3	90	2
..OSCILLATORIALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	15	5	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	15	5	54	2	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..DINOKONTAE												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site C

DATE	AUG 24,78		SEP 28,78		SEP 28,78		OCT 26,78		OCT 26,78	
TIME	1340		1215		1230		0950		1040	
TOTAL CELLS/ML	7100		670		6300		4500		4500	
DIVERSITY: DIVISION	1.0		1.0		1.7		0.8		0.3	
.CLASS	1.0		1.0		1.7		0.8		0.3	
..ORDER	1.6		1.0		2.1		1.3		1.3	
...FAMILY	1.7		1.4		2.4		1.4		1.3	
....GENUS	2.0		1.9		2.5		1.4		1.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	--	-	--	-	32	1	89	2	110	2
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	120	2	25	4	32	1	89	2	97	2
....MELOSIRA	1300#	18	290#	43	64	1	44	1	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-
..FRAGILARIALES										
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
..NAVICULALES										
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
....SCHROEDERIA	*	0	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE										
....DICTYOSPHAERIUM	130	2	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE										
....PEDIASTRUM	87	1	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	12	2	--	-	--	-	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	*	0	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	50	7	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	*	0	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-
....COELASTRUM	--	-	--	-	--	-	360	8	--	-
....CRUCIGENIA	--	-	250#	37	--	-	--	-	--	-
....SCENEDESMUS	58	1	--	-	64	1	--	-	--	-
....TETRASTRUM	--	-	50	7	130	2	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	*	0	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	1100#	18	--	-	--	-
...VOLVOCACEAE										
....EUDORINA	--	-	--	-	--	-	--	-	--	-
....PANDORINA	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	44	1	--	-
....COSMARIUM	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	640	10	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	990#	16	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site C

DATE	AUG 24,78		SEP 28,78		SEP 28,78		OCT 26,78		OCT 26,78	
TIME	1340		1215		1230		0950		1040	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	3700#	52	--	-	--	-	440	10	1100#	25
....ANACYSTIS	450	6	--	-	380	6	44	1	240	5
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-
..NOSTOCALES										
...NOSTOCACEAE										
....ANABAENA	1200#	17	--	-	2600#	42	3300#	74	2900#	64
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	--	-	69	2
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	130	2	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	*	0	--	-	32	1	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE										
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-

DATE	FEB 22,79		FEB 22,79		APR 24,79		APR 24,79		AUG 30,79	
TIME	1201		1230		0845		0846		1305	
TOTAL CELLS/ML	260		370		360		360		450	
DIVERSITY: DIVISION	1.0		1.3		1.6		1.2		0.8	
.CLASS	1.0		1.3		1.6		1.2		0.8	
..ORDER	1.2		1.4		1.6		1.2		0.8	
...FAMILY	1.7		1.8		2.1		1.4		0.9	
....GENUS	1.9		1.8		2.4		1.4		1.3	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	5	2	--	-	--	-	--	-	--	-
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	--	-	26	7	26	7	35	8
....MELOSIRA	--	-	10	3	130#	36	--	-	340#	76
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-
..FRAGILARIALES										
...FRAGILARIACEAE										
....SYNEDRA	--	-	5	1	--	-	--	-	--	-
..NAVICULALES										
...NAVICULACEAE										
....NAVICULA	--	-	10	3	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	5	1
....SCHROEDERIA	--	-	5	1	13	4	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE										
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	25	10	25	7	52	14	39	11	5	1
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site C

DATE / TIME	FEB 22,79 1201		FEB 22,79 1230		APR 24,79 0845		APR 24,79 0846		AUG 30,79 1305	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
....SELENASTRUM	15	6	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	140#	55	200#	54	77#	21	52	14	10	2
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	5	2	--	-	--	-	--	-	--	-
...VOLVOCACEAE										
....EUDORINA	--	-	--	-	--	-	--	-	--	-
....PANDORINA	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
....COSMARIUM	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	52	14	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	61#	24	110#	30	--	-	250#	68	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-
..NOSTOCALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	45	10
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	13	4	--	-	5	1
....PHACUS	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	5	2	5	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE										
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site C

DATE	AUG 30,79		FEB 27,80		FEB 27,80		MAY 14,80		MAY 14,80	
TIME	1325		1145		1200		0845		1000	
TOTAL CELLS/ML	4100		1900		1200		78		230	
DIVERSITY: DIVISION	1.3		1.7		1.2		0.0		1.1	
.CLASS	1.3		1.7		1.2		0.0		1.1	
..ORDER	1.9		2.2		1.4		0.0		1.5	
...FAMILY	2.0		2.6		1.5		0.0		1.5	
....GENUS	2.5		3.2		1.8		0.0		1.8	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	81	2	280	15	78	6	--	-	--	-
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	200	5	220	11	65	5	--	-	13	6
....MELOSIRA	1700#	41	300#	15	140	12	78#	100	130#	56
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-
..FRAGILARIALES										
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
..NAVICULALES										
...NAVICULACEAE										
....NAVICULA	*	0	--	-	--	-	--	-	26	11
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	27	1	--	-	--	-	--	-	--	-
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE										
....DICTYOSPHAERIUM	81	2	--	-	52	4	--	-	--	-
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	68	2	170	9	13	1	--	-	13	6
....CHLORELLA	27	1	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	13	1	--	-	--	-
....KIRCHNERIELLA	*	0	--	-	--	-	--	-	--	-
....OOCYSTIS	27	1	52	3	--	-	--	-	--	-
....SELENASTRUM	--	-	170	9	13	1	--	-	--	-
....TREUBARIA	--	-	--	-	13	1	--	-	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	100	5	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-
....CDELASTRUM	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	52	3	--	-	--	-	--	-
....SCENEDESMUS	27	1	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	52	3	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	39	2	--	-	--	-	--	-
...VOLVOCACEAE										
....EUDORINA	--	-	--	-	--	-	--	-	--	-
....PANDORINA	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
....COSMARIUM	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	13	1	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	13	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site C

DATE	AUG 30,79		FEB 27,80		FEB 27,80		MAY 14,80		MAY 14,80	
TIME	1325		1145		1200		0845		1000	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	430	10	--	-	--	-	--	-	--	-
....ANACYSTIS	430	10	440#	23	820#	67	--	-	52#	22
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-
..NOSTOCALES										
...NOSTOCACEAE										
....ANABAENA	990#	24	--	-	--	-	--	-	--	-
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	*	0	13	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...GLENODINIACEAE										
....GLENODINIUM	--	-	26	1	--	-	--	-	--	-
...PERIDINIACEAE										
....PERIDINIUM	*	0	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site D

DATE	MAY 25,78		MAY 25,78		AUG 2,78		AUG 2,78		SEP 28,78	
TIME	1100		1130		2200		2205		1100	
TOTAL CELLS/ML	1400		860		2200		2400		720	
DIVERSITY: DIVISION	1.2		1.4		0.5		0.8		1.1	
.CLASS	1.2		1.4		0.5		0.8		1.1	
..ORDER	1.5		1.5		0.5		0.8		1.7	
...FAMILY	1.5		1.6		0.5		0.9		1.7	
....GENUS	1.7		1.6		0.6		1.0		2.2	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..ACHNANTHALES										
...ACHNANTHACEAE										
....ACHNANTHES	23	2	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	*	0	--	-
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	46	3	--	-	--	-	*	0	--	-
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	--	-	*	0	*	0	27	4
....MELOSIRA	280#	20	470#	54	1900#	88	2000#	94	180#	25
....STEPHANODISCUS	--	-	--	-	17	1	--	-	--	-
..FRAGILARIALES										
...FRAGILARIACEAE										
....SYNEDRA	--	-	15	2	--	-	--	-	--	-
..NAVICULALES										
...NAVICULACEAE										
....NAVICULA	23	2	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	15	2	*	0	40	2	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	--	-	65	3	--	-
....SCENEDESMUS	--	-	29	3	--	-	32	1	18	2
....TETRASTRUM	93	7	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	9	1
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	830#	61	--	-	--	-	--	-	280#	40
....ANACYSTIS	69	5	--	-	--	-	--	-	62	9
....COCCOCHLORIS	--	-	--	-	*	0	--	-	--	-
..NOSTOCALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	210	10	210	9	140#	20
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	290#	34	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	15	2	--	-	--	-	--	-
....TRACHELOMONAS	--	-	29	3	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site D

DATE	SEP 28,78		FEB 27,80		MAY 14,80		MAY 14,80	
TIME	1135		1235		1840		1850	
TOTAL CELLS/ML	1200		1400		78		540	
DIVERSITY: DIVISION	1.5		1.4		0.7		1.3	
.CLASS	1.5		1.4		0.7		1.3	
..ORDER	2.1		1.6		1.3		2.0	
...FAMILY	2.2		1.9		1.3		2.2	
....GENUS	2.5		2.7		1.8		2.2	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..ACHNANTHALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-
..BACILLARIALES								
...NITZSCHIACEAE								
....NITZSCHIA	--	-	58	4	13#	17	13	2
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	38	3	170	12	13#	17	--	-
....MELOSIRA	150	13	320#	22	39#	50	120#	21
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..FRAGILARIALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
..NAVICULALES								
...NAVICULACEAE								
....NAVICULA	*	0	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....SCHROEDERIA	--	-	--	-	13#	17	--	-
....TETRAEDRON	--	-	--	-	--	-	13	2
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	290#	20	--	-	13	2
....CLOSTERIOPSIS	8	1	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	260#	18	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	13	2
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	--	-	26	5
....TETRASTRUM	17	1	120	8	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	230#	20	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	470#	41	--	-	--	-	--	-
....ANACYSTIS	34	3	200	14	--	-	190#	36
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..NOSTOCALES								
...NOSTOCACEAE								
....ANABAENA	180#	15	--	-	--	-	--	-
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	160#	29
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	13	1	--	-	--	-	--	-
....PHACUS	*	0	--	-	--	-	--	-
....TRACHELOMONAS	13	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..DINOKONTAE								
...GLENODINIACEAE								
....GLENODINIUM	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site E

DATE	JUN 1,78		JUN 30,78		AUG 23,78		FEB 20,79		MAR 28,79	
TIME	1430		1030		1130		1530		1200	
TOTAL CELLS/ML	14000		1300		7200		290		91	
DIVERSITY: DIVISION	1.0		1.5		1.7		1.5		0.9	
.CLASS	1.0		1.5		1.7		1.5		0.9	
..ORDER	1.1		1.5		2.0		2.1		2.2	
...FAMILY	1.2		1.9		2.6		2.1		2.5	
....GENUS	1.6		3.1		3.0		2.3		2.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..ACHNANTHALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	--	-	*	0	58	1	5	2	--	-
..EUNOTIALES										
...EUNOTIACEAE										
....EUNOTIA	--	-	--	-	--	-	--	-	13	14
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	320	2	--	-	120	2	20	7	13	14
....MELOSIRA	--	-	11	1	770	11	--	-	--	-
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-
..FRAGILARIALES										
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	20	7	--	-
....SYNEDRA	--	-	*	0	--	-	20	7	13	14
..NAVICULALES										
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	13	14
...GOMPHONEMACEAE										
....GOMPHONEMA	--	-	--	-	--	-	30	11	--	-
...NAVICULACEAE										
....NAVICULA	*	0	--	-	--	-	--	-	13	14
..SURIRELLALES										
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	5	2	--	-
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
....SCHROEDERIA	--	-	--	-	120	2	--	-	--	-
....TETRAEDRON	*	0	11	1	38	1	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	*	0	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	240	2	27	2	58	1	--	-	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....CLOSTERIOPSIS	*	0	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	180	1	54	4	38	1	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	270	4	--	-	--	-
....TREUBARIA	--	-	--	-	*	0	--	-	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	21	2	380	5	--	-	--	-
...SCENEDESMACEAE										
....COELASTRUM	470	3	--	-	--	-	--	-	--	-
....CRUCIGENIA	120	1	130	10	380	5	--	-	--	-
....SCENEDESMUS	710	5	440#	35	1300#	18	--	-	--	-
....TETRASTRUM	240	2	86	7	--	-	--	-	--	-
..TETRASPORALES										
...TETRASPORACEAE										
....TETRASPORA	--	-	--	-	150	2	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	58	1	5	2	26#	29
...PHACOTACEAE										
....CEPHALOMONAS	--	-	--	-	--	-	--	-	--	-
...VOLVOCACEAE										
....GONIUM	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	38	1	--	-	--	-
....EUASTRUM	--	-	--	-	*	0	--	-	--	-
....STAURASTRUM	--	-	--	-	38	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site E

DATE TIME	JUN 1,78 1430		JUN 30,78 1030		AUG 23,78 1130		FEB 20,79 1530		MAR 28,79 1200	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHRYSOPHYTA										
.CHRYSOPHYCEAE										
..OCHROMONADALES										
...SYNURACEAE										
....SYNURA	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	290	2	--	-	2800#	39	--	-	--	-
....ANACYSTIS	11000#	76	220#	18	--	-	--	-	--	-
....COCCOCHLORIS	--	-	27	2	--	-	--	-	--	-
....DACTYLOCOCCOPSIS	--	-	86	7	--	-	--	-	--	-
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	180	1	--	-	--	-	150#	53	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	88	1	64	5	360	5	--	-	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-
....PHACUS	*	0	11	1	--	-	--	-	--	-
....TRACHELOMONAS	380	3	64	5	150	2	30	11	--	-
...PERANEMACEAE										
....CALYCOMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	*	0	*	0	--	-	--	-
...PERIDINIACEAE										
....PERIDINIUM	--	-	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site E

DATE	APR 24,79		JUL 19,79		AUG 29,79		OCT 30,79		NOV 19,79	
TIME	1820		1345		1400		1445		1500	
TOTAL CELLS/ML	100		1900		710		1000		1700	
DIVERSITY: DIVISION	1.3		0.9		1.5		1.5		1.6	
.CLASS	1.3		0.9		1.5		1.5		1.6	
..ORDER	1.5		1.0		2.0		2.3		1.9	
...FAMILY	1.5		1.5		2.3		2.7		2.3	
....GENUS	1.5		2.7		3.2		3.0		2.8	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..ACHNANTHALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	19	2	--	-
....COCCONEIS	--	-	--	-	6	1	--	-	13	1
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	13	13	--	-	99	14	240#	24	160	10
..EUNOTIALES										
...EUNOTIACEAE,										
....EUNOTIA	--	-	--	-	--	-	--	-	--	-
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	39	2	46	7	65	6	13	1
....MELOSIRA	--	-	--	-	29	4	9	1	--	-
....SKELETONEMA	--	-	--	-	--	-	19	2	--	-
..FRAGILARIALES										
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	6	1	37	4	67	4
..NAVICULALES										
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE										
....GOMPHONEMA	--	-	--	-	6	1	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	23	3	56	5	--	-
..SURIRELLALES										
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	13	1
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	12	2	--	-	170	10
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	13	1	--	-	9	1	--	-
...MICRACTINIACEAE										
....COLENKINIA	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	13	13	26	1	17	2	37	4	790#	47
....CHLORELLA	--	-	--	-	--	-	260#	25	67	4
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	23	3	19	2	13	1
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	170	9	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....COELASTRUM	--	-	600#	31	--	-	--	-	--	-
....CRUCIGENIA	--	-	260	14	23	3	--	-	--	-
....SCENEDESMUS	--	-	520#	27	81	11	37	4	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES										
...TETRASPORACEAE										
....TETRASPORA	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	13	13	13	1	--	-	--	-	--	-
...PHACOTACEAE										
....CEPHALOMONAS	--	-	--	-	--	-	--	-	13	1
...VOLVOCACEAE										
....GONIUM	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
....EUASTRUM	--	-	--	-	--	-	--	-	--	-
....STAURASTRUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site E

DATE	APR 24,79		JUL 19,79		AUG 29,79		OCT 30,79		NOV 19,79	
TIME	1820		1345		1400		1445		1500	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHRYSOPHYTA										
.CHRYSOPHYCEAE										
..OCHROMONADALES										
...SYNURACEAE										
....SYNURA	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	64#	63	13	1	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	160	8	--	-	--	-	--	-
....ANACYSTIS	--	-	52	3	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	130	8
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	93	13	--	-	80	5
....EUTREPTIA	--	-	--	-	12	2	--	-	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-	27	2
....PHACUS	--	-	13	1	17	2	--	-	13	1
....TRACHELOMONAS	--	-	39	2	210#	30	180#	17	67	4
...PERANEMACEAE										
....CALYCOMONAS	--	-	--	-	--	-	37	4	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...GLENODINIACEAE										
....GLENODINIUM	--	-	13	1	--	-	--	-	--	-
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE										
....PERIDINIUM	--	-	--	-	--	-	--	-	27	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site E

DATE	JAN 9,80		FEB 26,80		APR 1,80		MAY 13,80	
TIME	1430		1000		1300		1215	
TOTAL CELLS/ML	2200		600		1100		610	
DIVERSITY: DIVISION	0.4		1.7		1.8		1.8	
.CLASS	0.4		1.7		1.8		1.8	
..ORDER	0.5		2.1		2.3		2.5	
...FAMILY	0.6		2.1		2.6		3.0	
....GENUS	0.6		2.1		2.7		3.3	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..ACHNANTHALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-
..BACILLARIALES								
...NITZSCHIACEAE								
....NITZSCHIA	160	7	52	9	100	9	13	2
..EUNOTIALES								
...EUNOTIACEAE								
....EUNOTIA	--	-	--	-	--	-	--	-
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	40	2	--	-	26	2	26	4
....MELOSIRA	--	-	--	-	26	2	26	4
....SKELETONEMA	--	-	--	-	--	-	--	-
..FRAGILARIALES								
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	78	13	120	11	--	-
..NAVICULALES								
...CYMBELLACEAE								
....CYMBELLA	--	-	13	2	--	-	--	-
...GOMPHONEMACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	13	2	13	1	26	4
..SURIRELLALES								
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
....SCHROEDERIA	--	-	--	-	--	-	13	2
....TETRAEDRON	20	1	--	-	--	-	13	2
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	1900#	90	--	-	120	11	39	6
....CHLORELLA	--	-	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	13	2
....SELENASTRUM	--	-	--	-	--	-	39	6
....TREUBARIA	--	-	--	-	--	-	--	-
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	180#	16	78	13
....TETRASTRUM	--	-	--	-	--	-	--	-
..TETRASPORALES								
...TETRASPORACEAE								
....TETRASPORA	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	13	1	130#	21
...PHACOTACEAE								
....CEPHALOMONAS	--	-	--	-	--	-	--	-
...VOLVOCACEAE								
....GONIUM	--	-	52	9	--	-	--	-
..ZYGNEMATALES								
...DESMIOIACEAE								
....CLOSTERIUM	--	-	--	-	--	-	--	-
....EUASTRUM	--	-	--	-	13	1	--	-
....STAURASTRUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 7.--Phytoplankton counts, number of genera, and diversity index at sampling sites A-E--continued

Site E

DATE	JAN 9,80		FEB 26,80		APR 1,80		MAY 13,80	
TIME	1430		1000		1300		1215	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHRYSOPHYTA								
.CHRYSOPHYCEAE								
..OCHROMONADALES								
...SYNURACEAE								
....SYNURA	--	-	26	4	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	13	2	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	39	6
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	440#	40	130#	21
....COCCOCHLORIS	--	-	--	-	--	-	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	340#	57	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	13	2	26	2	26	4
....EUTREPTIA	--	-	--	-	--	-	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	26	2	--	-
...PERANEMACEAE								
....CALYCOMONAS	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..DINOKONTAE								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	--	-
...PERIDINIACEAE								
....PERIDINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 percent
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 percent

Table 8.--Significance of phytoplankton genera present at sampling sites A-E

Genus	Group	Significance
Actinastrum	Green	Widely distributed
Ankistrodesmus	Green	Widely distributed; commonly occurring A. falcatus generally found in acid waters of high temperature where there is a dense conglomeration of other algae
Chlamydomonas	Green	Widely distributed; generally found in calm or very slowly moving waters
Coelastrum	Green	Widely distributed in slowly moving waters; an insignificant component indicating eutrophic conditions
Crucigenia	Green	Widely distributed
Dictyosphaerium	Green	Widely distributed; generally indicative of soft to moderately hard water

Table 8.--Significance of phytoplankton genera present at sampling sites A-E--Continued

Genus	Group	Significance
Eudorina	Green	Generally indicative of soft water
Kirchneriella	Green	Somewhat uncommon in occurrence; generally indicative of acidic conditions
Oocystis	Green	Generally indicative of soft water or oligotrophic waters; some species can be indicative of the presence of organic acids.
Pandorina	Green	Rarely found in abundance; generally indicative of hard water
Pediastrum	Green	Widely distributed; found in all type of water; some species indicative o particular environmental conditions

Table 8.--Significance of phytoplankton genera present at sampling sites A-E--Continued

Genus	Group	Significance
Scenedesmus	Green	Widely distributed; found in all types of water; commonly occurring S. quadricauda is one of the most nearly ubiquitous algal species
Tetraedon	Green	Widely distributed
Tetrastrum	Green	Somewhat uncommon in occurrence
Cyclotella	Centric diatom	Widely distributed
Melosira	Centric diatom	Widely distributed; most commonly found centric diatom; one of the most ubiquitous of the algal genera; some species indicative of particular environmental conditions
Stephanodiscus	Centric diatom	Widely distributed; an insignificant component of algae indicating eutrophic conditions

Table 8.--Significance of phytoplankton genera present at sampling sites A-E--Continued

Genus	Group	Significance
Achnanthes	Pennate diatom	Widely distributed; freshwater species generally are epiphytic
Cymbella	Pennate diatom	Widely distributed; a distinctly freshwater genus
Gomphonema	Pennate diatom	Widely distributed; freshwater species generally are epiphytic
Navicula	Pennate diatom	Widely distributed; found in all types of water; some species indicative of particular environmental conditions
Nitzchia	Pennate diatom	Widely distributed; found in all types of water; some species indicative of particular environmental conditions

Table 8.--Significance of phytoplankton genera present at sampling sites A-E--Continued

Genus	Group	Significance
Pinnularia	Pennate diatom	Widely distributed; generally indicative of calm or slowly moving, slightly acidic water having little mineral content
Rhoicosphenia	Pennate diatom	Widely distributed; the single species, R. curvata, commonly found in flowing alkaline waters with little conductivity; generally intolerant of saline conditions
Synedra	Pennate diatom	Widely distributed; found in all types of water; common species generally prefer circumneutral water of moderate to large conductivity including brackish water; generally indicative of mesotrophic to eutrophic conditions
Dinobryon	Golden-brown	Widely distributed; generally indicative of hard water

Table 8.--Significance of phytoplankton genera present at sampling sites A-E--Continued

Genus	Group	Significance
Agmenellum	Blue-green	Widely distributed; generally indicative of soft water and acidi conditions
Anacystis (Microcystis)	Blue-green	Very common in hard water or eutroph waters during high temperature conditions; a common component of algae blooms; notorious as a spoil of water for domestic uses, swimmi and recreation; usually causes dea of fish when present in large masses; indicative of hard water with large nutrient content when occurring in large numbers with Anabaena or Aphanizomenon
Oscillatoria	Blue-green	Widely distributed; found in all typ of water; one of the most ubiquito of the algae genera

Table 8.--Significance of phytoplankton genera present at sampling sites A-E--Continued

Genus	Group	Significance
Euglena	Euglenoid	Very indicative of waters enriched in organic matter (for example downstream from domestic sewage outfalls); can occur in such abundance as to color the water a deep green
Trachelomonas	Euglenoid	Very indicative of warm waters having a large content of organic matter; can occur in such abundance as to color the water brown

Table 9.--Microbiological data for sampling sites A-E

Date	Fecal coliform bacteria (colonies/100 milliliters)		Fecal streptococcal bacteria (colonies/100 milliliters)	
	Surface	Bottom	Surface	Bottom
		SITE A		
05-31-78	22	44	180	110
08-23-78	1,100	40	31	160
02-21-79	64	47	50	42
04-25-79	--	20	--	240
08-29-79	18	40	360	100
		SITE B		
05-31-78	42	44	19	76
08-23-78	420	500	140	92
02-21-79	66	62	140	160
04-24-79	60	260	50	110
08-30-79	120	130	38	170
02-26-80	29	12	--	--
05-14-80	18	26	44	30
		SITE C		
05-31-78	34	60	27	170
06-30-78		200[1]		22[1]
08-02-78	8	0	160	74
08-24-78	3	1,200	4	48
09-28-78	3	4	28	35
10-26-78	3	5	8	4
02-22-79	39	20	35	20
04-24-79	94	32	12	20
08-30-79	68	10	120	11
		SITE D		
05-25-78	116	114	98	306
09-28-78	--	--	55	20
10-05-78	52	4.0	6.0	21

[1] mid-depth

Table 9.--Microbiological data for sampling sites A-E--Continued

Date	Fecal coliform bacteria (colonies/100 milliliters)	Fecal streptococcal bacteria (colonies/100 milliliters)
	SITE E	
06-01-78	2,000	420
06-30-78	890	950
08-02-78	--	120
08-23-78	740	230
02-20-79	78	76
04-04-79	230	430
04-24-79	360	220
07-19-79	60	86
08-29-79	5,500	9,400
10-30-79	750	2,800
01-09-80	190	130
02-26-80	180	60
04-01-80	910	840
05-13-80	230	2,000

*U.S. Government Printing Office: 1990-768-273