Water-Quality and Lake-Stage Data for Wisconsin Lakes, Water Year 1996

U.S. GEOLOGICAL SURVEY
Open-File Report 97-123

Prepared in cooperation with the
State of Wisconsin and local agencies

WATER-QUALITY AND LAKE-STAGE DATA FOR WISCONSIN LAKES, WATER YEAR 1996

By Wisconsin District Lake-Studies Team

U.S. GEOLOGICAL SURVEY
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A report by the Wisconsin District Lake-Studies Team–
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Prepared in cooperation with
THE STATE OF WISCONSIN AND OTHER AGENCIES

Madison, Wisconsin
1997

U.S. DEPARTMENT OF THE INTERIOR
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By **Wisconsin District Lake-Studies Team**

INTRODUCTION

The U.S. Geological Survey (USGS), in cooperation with local and other agencies, collects data at selected lakes throughout Wisconsin. These data, accumulated over many years, provide a data base for developing an improved understanding of the water quality of lakes. To make these data available to interested parties outside the USGS, the data are published annually in this report series. The location of surface water-quality and lake-stage stations in Wisconsin for water year 1996 are shown in figure 1. A water year is the 12-month period from October 1 through September 30. It is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus the period October 1, 1995 through September 30, 1996, is called "water year 1996."

The purpose of this report is to provide information about the physical and chemical characteristics of Wisconsin lakes. Data that have been collected at specific lakes, and information to aid in the interpretation of those data, are included in this report. Data collected includes measurements of lake stage and in-lake water quality. Graphs of Secchi depths, surface total-phosphorus and chlorophyll-*a* concentrations versus time are included for lakes with two or more years of data. Graphs of vertical profiles of temperature, dissolved oxygen, pH, and specific conductance are included for sites where these parameters were measured. Descriptive information for each lake includes: location of the lake, drainage area of the lake's watershed, period for which data are available, revisions to previously published records, and pertinent remarks. Additional data, such as streamflow and water quality in tributary and outlet streams of some of the lakes, are published in another volume: "Water Resources Data-Wisconsin, 1996."

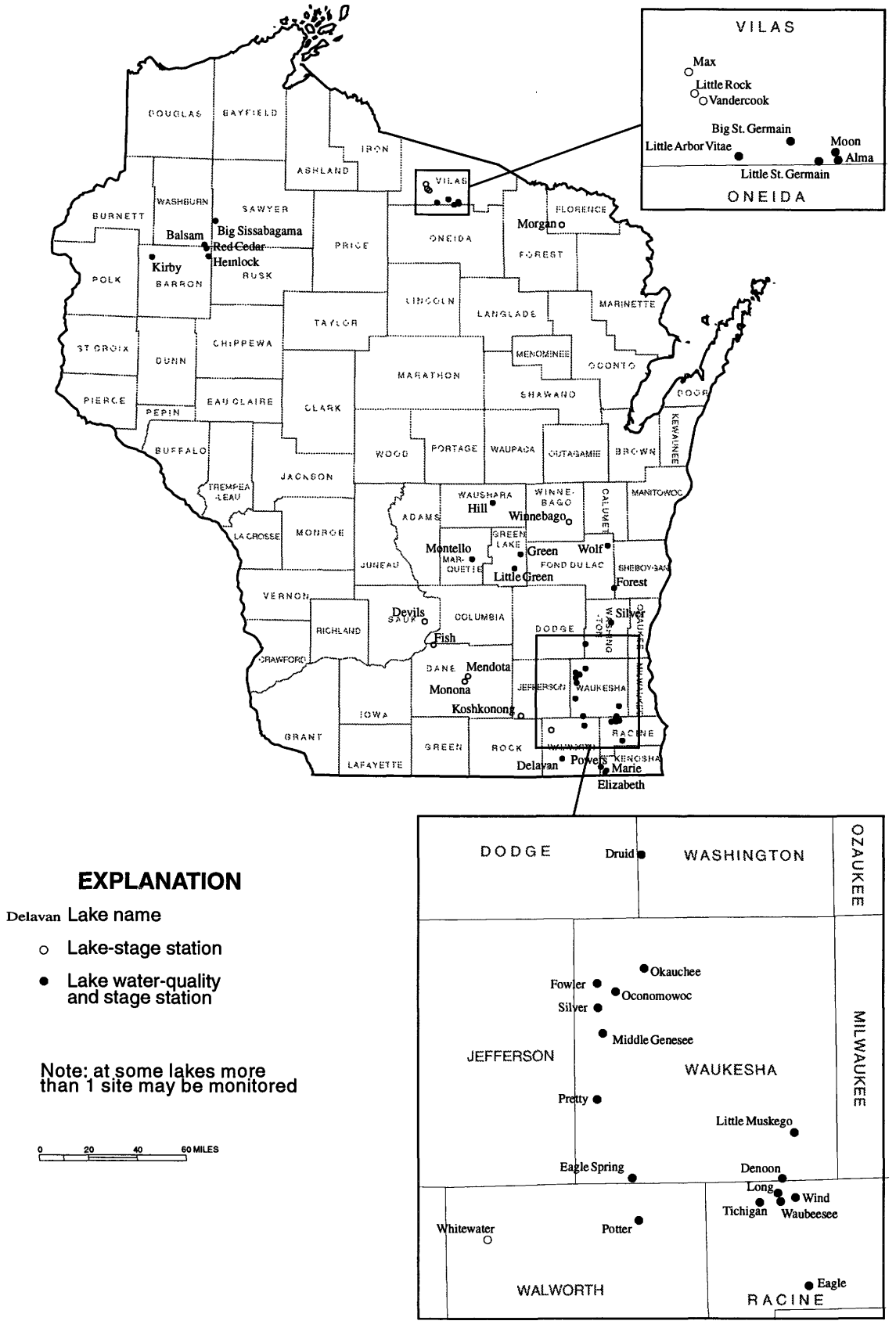

Figure 1. Location of lake water-quality and lake-stage stations in Wisconsin.

The USGS has done cooperative lake monitoring with local and other agencies since 1983. Cooperators in 1996 included:

Alma Lake - Moon Lake, Protection and Rehabilitation District
Big Hills Lake Management District
Big Muskego Lake District
City of Muskego
Dane County Department of Public Works
Druid Lake Protection and Rehabilitation District
Eagle Spring Lake Management District
Fowler Lake Management District
Green Lake Sanitary District
Kirby Lake Management District
Little Arbor Vitae Lake Protection and Rehabilitation District
Little Green Lake Protection and Rehabilitation District
Little Muskego Lake Protection and Rehabilitation District
Montello Lake Inland Protection and Rehabilitation District
Okauchee Lake Management District
Potters Lake Protection and Rehabilitation District
Powers Lake Management District
Pretty Lake Protection and Rehabilitation District
Rock County Public Works Department
Silver Lake Protection and Rehabilitation District
Town of Auburn
Town of Cedar Lake
Town of Delavan
Town of Kansasville
Town of Norway
Town of Sand Lake
Town of St. Germain
Town of Summit
Town of Waterford
Twin Lakes Protection and Rehabilitation District
U.S. Army Corps of Engineers
Village of Oconomowoc Lake
Whitewater Lake Management District
Wind Lake Management District
Wisconsin Department of Natural Resources
Wolf Lake Management District

Lake data collection sites are identified by a unique identification number. Lake water-quality sites are identified by a 15-digit number that is a concatenation of the site's latitude, longitude, and a two-digit sequence number. The sequence number is used to distinguish between sites located at the same latitude-longitude designation. The site identification number is permanently assigned to the site; actual latitude and longitude of the site are subject to update and are stored separately. For some of the lakes, which have historical records of lake stage, an eight-to-ten digit number is assigned according to downstream order. Gaps are left in the numerical series to allow for new stations; hence, the numbers are not consecutive. The first two digits of the complete eight-to-ten digit number, such as 04087000, 054310157, or 0407809265, designate the major river basin. For example, "04" designates the St. Lawrence River Basin and "05" designates the Upper Mississippi River Basin.

The water-quality lake stations that were discontinued prior to water year 1996 are listed in table 1. Discontinued lake-stage stations are not included in this table.

This report is the culmination of a concerted effort by a number of people who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to USGS policy and established guidelines. Technicians-in-charge of the field offices are: T.J. Popowski (Rice Lake), J.W. George (Merrill), and J. Habale (Madison). The data were collected and processed by G.L. Goddard, J.J. Hanig, D.E. Housner, G.L. Kjornes, S.L. McNamara, S.B. Marsh, E.A. Mergener, D.L. Olson, J.G. Schuler, and T.L. Seidel. S.H. Linder prepared the location map. P.A. Stark assembled, edited, and formatted the report. Additional assistance in preparation of the report was provided by K.A. Lonsdorf.

METHODS OF DATA COLLECTION

Depth profiles of water temperature, dissolved oxygen, pH, and specific conductance were collected using a multi-parameter meter. Prior to measurements, the meter is calibrated using standards for pH and conductance, and dissolved oxygen is calibrated using the air calibration method.

Table 1. Discontinued lake stations

Station name	Site identification number	Period of record
Balsam Lake, off Cedar Island, at Balsam Lake	452755092264600	Feb. 1991–Aug. 1994
Balsam Lake, off Little Narrows, near Balsam Lake	452858092265300	May 1991–Aug. 1994
Balsam Lake, off Rock Island, near Balsam Lake	452754092234300	May 1991–Aug. 1994
Bass Lake near Shawano	445215088300300	Feb. 1990–Aug. 1992
Bear Lake at Deep Hole near Haugen	453754091490900	Mar. 1992–Aug. 1993
Beaver Dam Lake South end at Beaver Dam	432814088515000	June–Oct. 1991
Beaver Dam Lake North end near Beaver Dam	433122088545700	June–Oct. 1991
Big Blacksmith Lake near Keshena	445401088334500	Feb. 1990–Aug. 1992
Big Muskego Lake at North Site near Muskego	425301088061300	Feb.–Aug. 1988
Big Muskego Lake, Research Base, near Muskego	425235088075300	May–June 1994
Big Muskego, South Site, near Muskego	425112088072800	Feb. 1988–Aug. 1995
Booth Lake near East Troy	424800088254800	Feb. 1992–Aug. 1994
Fox Lake Deep Hole at Fox Lake	433458088560600	June 1991–Mar. 1993
Hooker Lake at Salem	423335088060300	Feb. 1992–Aug. 1993
Lac La Belle Center at Oconomowoc	430733088305900	Feb. 1984–Aug. 1985, Feb.–Sep. 1991
Lac La Belle NW at Oconomowoc	430809088313900	Feb. 1984–Aug. 1985
Lac La Belle SE at Oconomowoc	430707088301400	Feb. 1984–Aug. 1985
Lake Blass at Lake Delton	433545089482400	Mar. 1989–Aug. 1990
Lake Keesus, East Bay, near Merton	4309570088183400	Apr. 1991Aug. 1995
Lake Keesus, North Bay, near Merton	431006088191000	Apr. 1991–Aug. 1995
Lake Morris at Mount Morris	440654089120500	Jun. 1983–Sep. 1989
Lake Nebagamon, Northeast Bay, at Lake Nebagamon	463050091412300	May 1992–Aug. 1995
Lake Nebaagmon, Southeast Bay, at Lake Nebagamon	462928091413500	Mar. 1992–Sep. 1995
Lake Nebagamon, West Bay, at Lake Nebagamon	463034091425300	May 1992–Aug. 1995
Lake Noquebay near Crivitz	451511087550900	Feb. 1987–Aug. 1988, Apr. 1991–Aug. 1994
Lake Noquebay, East end, near Crivitz	451540087525700	Apr. 1991–Aug. 1994
Lamotte Lake near Shawano	445305088361200	Feb. 1990–Aug. 1992
Lauderdale Lakes		
at Lauderdale	424554088332700	Oct. 1993–Oct. 1994
Green near Lauderdale	424652088341500	Nov. 1993–Nov. 1994
Middle at Lauderdale	424621088335500	Nov. 1993–Nov. 1994
Mill at Lauderdale	424555088335700	Nov. 1993–Nov. 1994
Legend Lake (site 1) near Shawano	445342088312700	Feb. 1990–Feb. 1992
Loon Lake near Shawano	445009088303700	Feb. 1991–Aug. 1993
Lost Lake near Beaver Dam	432640088580500	June–Oct. 1991
Mead Lake, East Bay near Willard	444720090445000	Apr. 1991–Aug. 1995
Mead Lake, West Bay near Willard	444733090460100	Feb. 1991–Sep. 1995
Moshawquit Lake near Shawano	445352088295800	Feb. 1990–Aug. 1992
Park Lake (site 1) at Pardeeville	433239089175800	Feb. 1986–Aug. 1987, May–Nov. 1993
Park Lake (site 2) at Pardeeville	433226089175500	May–Nov. 1993
Park Lake (site 3) at Pardeeville	433245089173000	May–Nov. 1993

Table 1. Discontinued lake stations

Station name	Site identification number	Period of record
Park Lake (site 4) at Pardeeville	433257089165100	May–Nov. 1993
Rice Lake at Deep Hole near Whitewater	424629088415700	Apr.–Nov. 1991
Round Lake near Shawano	445328088335000	Feb. 1990–Aug. 1992
Sand Lake (Deep Hole) near Keshena	445321088323101	June–Aug. 1992
Sinissippi Lake off Anthony Is. at Hustisford	432113088361100	Feb. 1991–Aug. 1993
Sinissippi Lake off Butternut Is. near Hustisford	432240088363900	Apr. 1991–Aug. 1993
Sinissippi Lake off Sam Point near Hustisford	432300088374200	Apr. 1991–Aug. 1993
Spirit Lake near Keshena	445400088320100	Apr.–Aug. 1992
Stewart Lake at Mt. Horeb	430117089442701	May 1992–Sep. 1993
Upper Nemahbin Lake, Center, near Delafield	430400088254900	June 1993–Aug. 1995
Upper Nemahbin Lake, South Site, near Delafield	430339088254800	June 1993–Aug. 1995
Upper Nemahbin Lake Outlet near Delafield	430334088255400	June 1993–Aug. 1995
Watosah-skice Lake near Keshena	445330088361400	Feb. 1990–Aug. 1992
Whitewater Lake off Heart Prairie near Whitewater	424533088420100	Apr.–Nov. 1991
Whitewater Lake near Whitewater	424608088414800	Apr.–Oct. 1991
Whitewater Lake North Bay near Whitewater	424625088405500	Apr.–Nov. 1991
Whitewater Lake South Bay near Whitewater	424501088422300	Apr.–Nov. 1991

In most lakes, water samples were collected at two depths - near the surface and near the bottom. Chemical analyses of water samples were performed using standard analytical methods by either the USGS National Water Quality Laboratory (Wershaw and others, 1987; Fishman and Friedman, 1989; Fishman, 1993) or the Wisconsin State Laboratory of Hygiene (Wisconsin State Laboratory of Hygiene, 1993). Analyses for dissolved constituents are performed on samples that were filtered in the field through a 0.45-µm (micrometer) pore-size filter. Total or total recoverable constituents are determined by analyzing unfiltered water samples. Preservation and shipment of samples follows standard protocols established by the laboratories.

Field measurement of vertical profiles of temperature, dissolved oxygen, pH, and specific conductance was done using a multi-parameter meter. Generally, measurements were made at intervals of about one-tenth of total depth or at a minimum interval of one foot.

Records of lake stage are considered complete when one or more manual or automatic measurements are obtained per day. Partial records of lake stage result when measurements are less frequent than daily. A complete description of manual or automatic measurements of lake stage are described by Rantz and others (1982).

EXPLANATION OF PHYSICAL AND CHEMICAL CHARACTERISTICS OF LAKES

Following are brief, generalized explanations of some of the common measurements of water quality and some of the physical processes occurring in lakes that influence these measures of water quality. More detailed explanations of water-quality data and lake processes are given by Wetzel (1983), Hem (1985), and Shaw and others (1993).

Water Temperature and Thermal Stratification

Water temperature in lakes is important because of its role in stratification and because of the temperature dependence of many chemical reactions and life processes of aquatic organisms. The interaction between meteorological conditions, lake shape, and water clarity are the primary factors which determine the temperature distribution in lakes. The extent of thermal stratification in lakes depends on solar heating, water clarity, and wind-driven mixing. Complete mixing of the lake is usually restricted by thermal stratification in summer and by ice cover in winter. Thermal stratification affects lake-water quality and the distribution of organisms in the lake. Summer thermal stratification can occur in any lake, but in Wisconsin it commonly occurs in lakes deeper than about 20 ft (Shaw and others, 1993).

The density of water increases with decreasing temperature down to a temperature of 4 °C, then decreases with decreasing temperature between 4°C and the freezing point of water (0°C). For a brief period in the spring after the ice is out, water temperature is uniform through the entire water column and wind action causes the lake to mix completely. This process is known as "spring turnover." As the lake absorbs the sun's energy, the surface water becomes warmer and its density decreases, making it more resistant to complete mixing. The difference in density caused by different water temperatures can prevent warm and cold water from mixing. In most lakes, therefore, a density "barrier" forms between the warmer surface water and the underlying colder water. This barrier is often marked by a sharp temperature gradient known as the "thermocline." During the stratified summer period, three distinct layers of lake water are present. The upper warm layer is known as the "epilimnion" and the cold lower layer is known as the "hypolimnion." The transition layer between the epilimnion and the hypolimnion has a steep temperature gradient (greatest temperature change per foot of depth), and is known as the "thermocline" or "metalimnion." As the temperature difference between surface and deep water increases, this "stratified" condition stabilizes and can persist until surface temperatures decrease in the fall, which decreases the stability of the stratification. The mixing of the lake water in the fall is known as "fall turnover."

Thermal stratification may also occur under ice cover in the winter. In the winter, the coldest water (near 0°C) under the ice at the surface of the lake is less dense than water deeper in the lake with a temperature near 4°C.

Specific Conductance

Specific conductance is a measure of the ability of water to conduct an electrical current and is an indicator of the concentration of dissolved solids in the water. Because conductance is temperature related, reported values are normalized at 25°C and are termed specific conductance. As the concentration of dissolved minerals increases, specific conductance increases. During winter and summer thermal stratification, concentrations of dissolved constituents near the lake bottom increase due to the decomposition of materials settling from the epilimnion, or release of dissolved materials (such as iron, manganese, and phosphorus) from the bottom sediments during anoxic periods. Therefore, differences in specific conductance with depth indicate differences in concentrations of dissolved solids.

Water Clarity

Water clarity, or transparency, is commonly measured using a Secchi disc. The range of depths within which photosynthetic activity occurs depends largely on depth of light penetration, which is influenced by water clarity. A Secchi disc, most commonly an 8-in.-diameter disc with alternating black-and-white quadrants, is lowered to a depth at which it is no longer visible. This depth is referred to as the Secchi depth. Clarity can be reduced by algae and zooplankton, water color, and suspended sediment. Algae are often the most dominant influence on clarity in most lakes and, therefore, Secchi depth is usually correlated with the algal abundance. Secchi depth is generally the least during late summer when algal populations are largest.

pH

The pH is a measure of the acidity of the water. It is defined as the negative logarithm of hydrogen-ion concentration and varies over a 14-unit log scale, with a pH of 7 being neutral. Values less than 7 indicate acidic conditions; the lower the value, the stronger the acidity. Values greater than 7 indicate alkaline conditions. The pH of water is influenced in part by photosynthesis and respiration of planktonic algae and aquatic plants. It is important because it affects the solubility of many chemical constituents, and because aquatic organisms have limited pH tolerances. Planktonic algae and aquatic plants produce oxygen and consume carbon dioxide as they photosynthesize during daytime; they consume oxygen and produce carbon dioxide when they respire at night. Carbon dioxide combines with the water molecule to form carbonic acid; therefore respiration causes a decrease in pH at night and photosynthesis causes an increase in pH in the day time. The result is a daily cycle of pH. Because phytoplankton are usually concentrated in the near-surface water, changes in pH in the epilimnion are more extreme than in the hypolimnion, where less photosynthesis usually occurs.

Values of pH greater than 8.5 have been shown to cause the release of phosphorus from lake sediments (James and Barko, 1991). As pH increases above 8.5 the release rate of phosphorus also increases. Lakes having good fish populations and productivity generally have a pH between 6.7 and 8.2.

Dissolved Oxygen

Dissolved oxygen is one of the most critical factors affecting a lake ecosystem because it is essential to most aquatic organisms, and it is involved in many chemical reactions. Very low dissolved oxygen concentrations can control chemical reactions that require oxygen. The solubility of oxygen in water is inversely related to temperature–that is, oxygen solubility decreases as water temperature increases. This relation is important because at warmer temperatures the metabolic rate of organisms increases but less oxygen is available for respiration. The primary sources of dissolved oxygen are from the air and from photosynthesis. The minimum dissolved-oxygen concentration specified in national water-quality criteria for warmwater aquatic life is 5.0 mg/L (U.S. Environmental Protection Agency, 1986).

In early summer, if thermal stratification develops, the metalimnion restricts the surface supply of dissolved oxygen to the hypolimnion. The hypolimnion can become isolated from the atmosphere. Thus, as summer progresses, the dissolved-oxygen concentration can decrease in response to decomposition of dead algae that settle from the epilimnion and in response to the biological and chemical oxygen demand of the sediments. The oxygen demand from these processes may completely deplete the oxygen (anoxia) in the water near the lake bottom. The oxygen depletion then progresses upward but usually is confined to the hypolimnion.

Anoxia in the hypolimnion is common in stratified eutrophic (nutrient-rich) lakes in Wisconsin. During anoxic conditions, many aquatic organisms cannot survive, but many other species (primarily bacteria) actually function only in such conditions. Therefore, a shift from oxic to anoxic conditions produces a rapid and dramatic change in the biological community and chemical environment. Anoxia also can cause release of phosphorus from the bottom sediments. This phosphorus then mixes throughout the water column during spring and fall turnover.

Phosphorus

Phosphorus is one of the essential nutrients for plant growth. High phosphorus concentrations can cause dense algal populations (blooms) and can therefore be a major cause of eutrophication in lakes. In many regions of the country, other nutrients, particularly nitrogen, tend to be in abundant supply. Phosphorus is often the nutrient in shortest supply, therefore limiting or controlling plant growth. About 90 percent of the lakes in Wisconsin are limited by phosphorus (Shaw and others, 1993). In water, dissolved orthophosphate is that part of total phosphorus that is most readily available for use by algae.

Internal phosphorus recycling occurs in many lakes. Phosphorus used by algae, aquatic plants, fish, and zooplankton is stored within these organisms. As these organisms die and decompose, this phosphorus is returned to the lake water and sediments. Anoxia in the hypolimnion makes phosphorus more soluble, adding further to the release of phosphorus from the falling particles and the lake sediments. During spring and fall turnover the phosphorus, which was released from the bottom sediments into the hypolimnion during anoxia, is mixed throughout the lake. The phosphorus is then available for algal growth. These phenomena are part of the internal-recycling processes of lakes.

Nitrogen

Nitrogen, like phosphorus, is an essential nutrient for plant and algal growth. Usually, nitrogen is in abundant supply from the atmosphere and other sources. If phosphorus is abundant relative to algal needs, nitrogen can become the limiting nutrient. In that case, algal blooms are more likely to be triggered by increases in nitrogen than by increases in phosphorus. Some bluegreen algal species can fix nitrogen from the atmosphere (Wetzel, 1983). Therefore, in situations where other types of algae are excluded because of a shortage of nitrogen, the nitrogen-fixing bluegreen algae have a competitive advantage and may be present in abundance.

Lakes with a total nitrogen to total phosphorus ratio larger than 15 to 1 near the surface may generally be considered phosphorus limited; a ratio from 10 to 1 to 15 to 1 indicates a transition situation; and a ratio smaller than 10 to 1 generally indicates nitrogen limitation (Lillie and Mason, 1983). Total nitrogen is the sum of ammonia and organic nitrogen, and nitrate and nitrite nitrogen. The near-surface concentration is used to compute the total nitrogen to phosphorus ratio because most algal species grow near the lake surface.

Chlorophyll *a*

Chlorophyll *a* is a photosynthetic pigment found in algae (Wetzel, 1983). Its concentration, therefore, is commonly used as a measure of the density of the algal population in a lake. Chlorophyll *a* concentrations are generally highest when algal populations are highest, usually during summer. Moderate populations of desirable algae are important in the food chain; however, excessive populations or algal blooms are undesirable. Algal blooms can cause taste and odor problems, and limit light penetration needed to support growth of submerged aquatic plants. Certain species of bluegreen algae can produce toxins (Rapavich and others, 1987).

CLASSIFICATION OF LAKES

Two methods are commonly used to classify Wisconsin lakes according to their water quality or trophic state: Lillie and Mason's (1983) water-quality index and a modification of Carlson's (1977) Trophic State Index (TSI) are commonly used. Both methods evaluate in-lake conditions. Three water-quality measures are used in these classification systems: near-surface concentrations of total phosphorus and chlorophyll *a*, and water clarity as indicated by the Secchi depth.

Lillie and Mason's (1983) water-quality index of Wisconsin lakes used random summer measurements of total phosphorus and chlorophyll *a* concentrations, and Secchi depth as shown below:

Water-quality index	Approximate total phosphorus range (mg/L)	Approximate chlorophyll *a* range (µg/L)	Approximate water clarity range (Secchi depth, in meters)
Excellent	<0.001	<1	>6.0
Very good	.001–.010	1–5	3.0–6.0
Good	.010–.030	5–10	2.0–3.0
Fair	.030–.050	10–15	1.5–2.0
Poor	.050–.150	15–30	1.0–1.5
Very poor	>.150	>30	<1.0

Three trophic conditions are generally used to describe the wide range of lake water-quality conditions. Oligotrophic lakes are typically clear, algal populations and phosphorus concentrations are low, and the deepest water is likely to contain oxygen throughout the year. Mesotrophic lakes typically have a moderate supply of nutrients, experience moderate algal blooms, and have occasional oxygen depletions at depth. Eutrophic lakes are nutrient rich with relatively severe water-quality problems, such as frequent seasonal algal blooms, oxygen depletion in lower parts of the lakes, and poor clarity. When eutrophic conditions are very severe, the lake is considered hyper-eutrophic.

The WDNR modified the lakes classification scheme developed by Carlson (1977) to apply specifically to Wisconsin lakes. The WDNR system (Lillie and others, 1993) uses surface total phosphorus and chlorophyll *a* concentrations, and Secchi depth for ice-free periods to calculate values for Trophic State Indexes. The WDNR has adopted the following TSI ranges to classify Wisconsin lakes: indexes of less than 40 define oligotrophic conditions, 40 to 50 define mesotrophic conditions, greater than 50 to 70 define eutrophic conditions, and greater than 70 define hyper-eutrophic conditions (Wisconsin Department of Natural Resources, 1992, p. 52-53). These ranges are used to make relative comparisons in all Wisconsin lake trophic-state evaluations by the WDNR and others.

The TSI for a lake can be calculated using the following equations (Lillie and others, 1993):

$TSI_{Secchi} = 60 - 33.2 (\log_{10} \text{Secchi depth})$

$TSI_{chlorophyll\ a} = 34.82 + (17.41 (\log_{10} \text{chlorophyll } a \text{ concentration}))$

$TSI_{total\ phosphorus} = 28.24 + (17.81 (\log_{10} \text{total phosphorus concentration}))$

where: Secchi depth is in meters,
chlorophyll *a* is in micrograms per liter, and
total phosphorus is in micrograms per liter.

The three trophic conditions are defined with the following boundaries for total phosphorus, Secchi disc, and chlorophyll *a*:

Trophic Level	Trophic State Index	Total phosphorus (µg/L)	Secchi disc (m)	Chlorophyll *a* (µg/L)
Eutrophic				
	50	17	2.0	7.5
Mesotrophic				
	40	4	4.0	2.0
Oligotrophic				

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LAKE DATA

455426089254700 ALMA LAKE NEAR ST. GERMAIN, WI

LOCATION.--Lat 45°54'26", long 89°25'47", in NE 1/4 sec.36, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, 3 mi east of St. Germain.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--October 1984 to September 1990, May 1992 to current year.

GAGE.--Staff gage read by Douglas Pagel.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.35 ft, Apr. 11, 12, 1986; minimum observed, 8.98 ft, Oct. 26, 27, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.82 ft, Aug. 14; minimum observed, 10.81 ft, Oct. 8.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	11.59	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	11.51	---	11.81
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	10.81	---	---	---	---	---	---	---	11.53	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	11.79	---
11	---	---	---	---	---	10.99	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	11.47	---	11.82	---
15	---	---	---	---	---	---	---	11.53	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	11.79	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	11.47	11.63	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	11.57	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	11.56	---	---	---
28	---	---	---	---	---	---	---	---	11.57	---	---	---
29	---	---	---	---	---	---	---	11.49	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

455426089254700 ALMA LAKE NEAR ST. GERMAIN, WI--CONTINUED

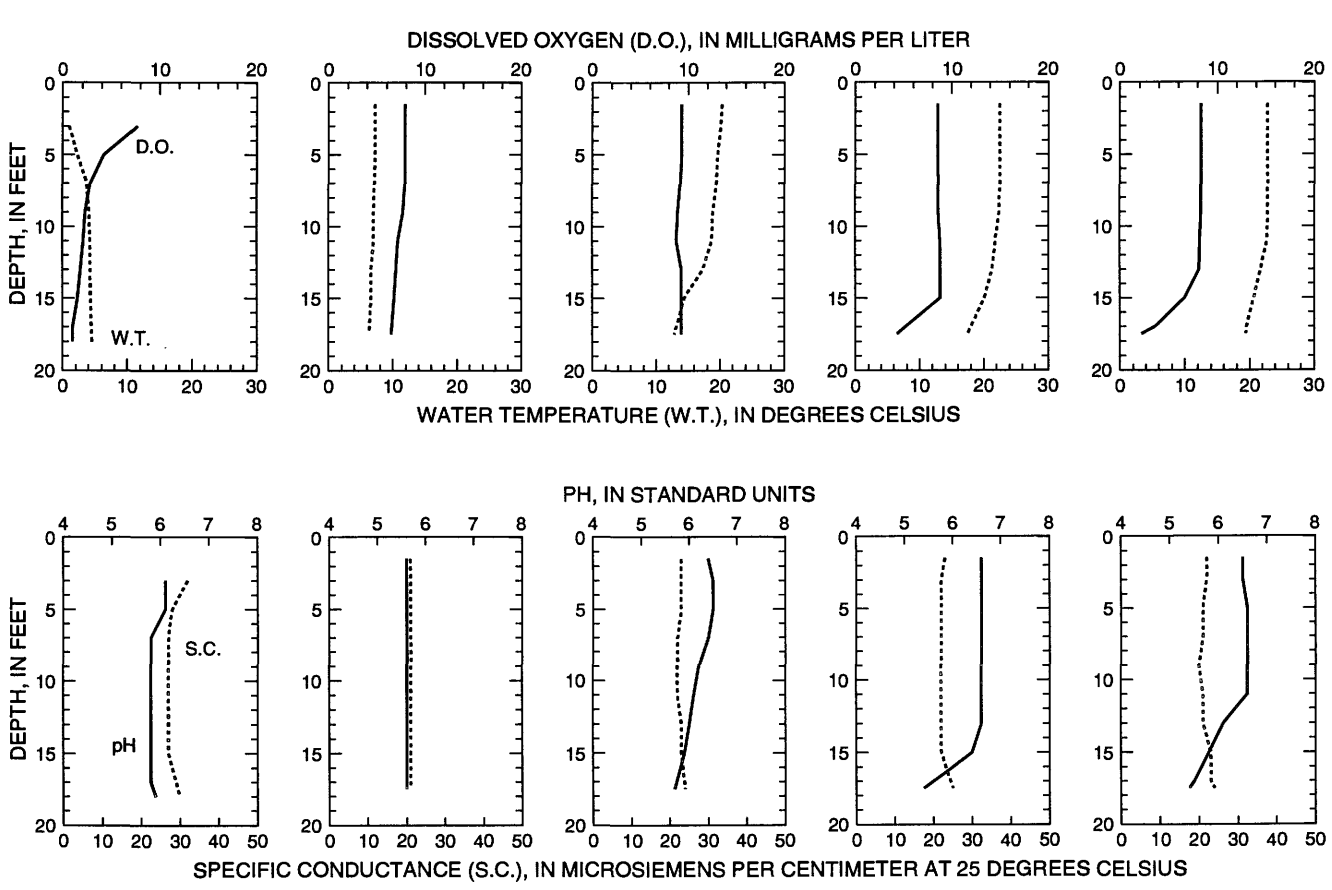
WATER-QUALITY RECORDS

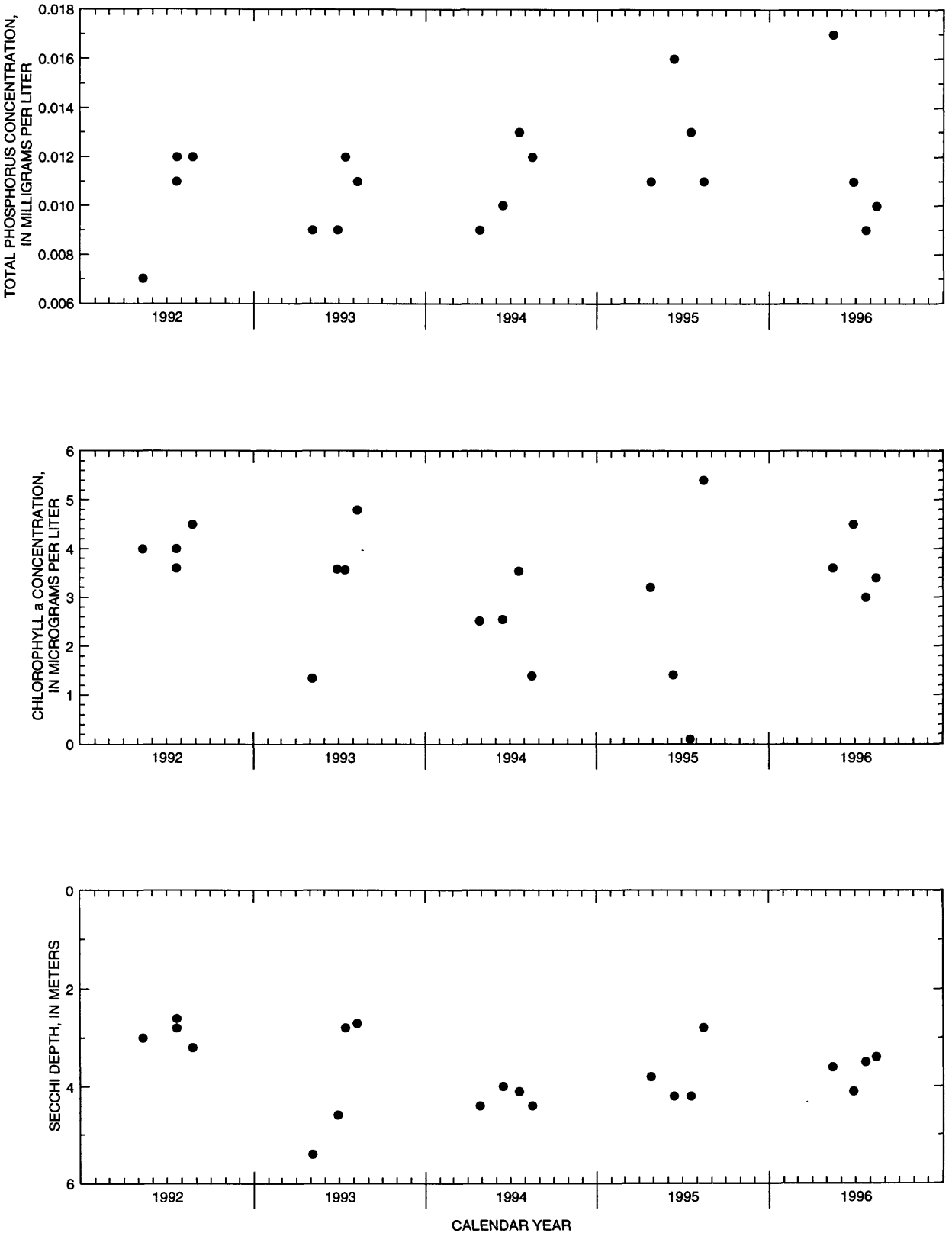
PERIOD OF RECORD.--October 1984 to September 1990 secchi depth only; February 1992 to current year.

REMARKS.--Lake sampled near center of southern lobe of lake at the deep hole. Lake ice-covered during March measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 11 TO AUGUST 14, 1996
(Milligrams per liter unless otherwise indicated)

	Mar. 11		May 15		June 27		July 23		Aug. 14	
Depth of sample (ft)	3.0	18	1.5	18	1.5	18	1.5	18	1.5	18
Lake stage (ft)	---		11.53		11.56		11.57		11.82	
Specific conductance (µS/cm)	32	30	21	21	23	24	23	25	22	24
pH (units)	6.1	5.9	5.6	5.6	6.4	5.7	6.6	5.4	6.5	5.4
Water temperature (°C)	1.0	4.5	7.0	6.5	20.5	13.0	22.5	17.5	23.0	19.5
Color (Pt-Co. scale)	---	---	15	10	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.60	0.60	---	---	---	---	---	---
Secchi-depth (meters)	---		3.6		4.1		3.5		3.4	
Dissolved oxygen	7.7	1.0	7.9	6.5	9.3	9.3	8.5	4.3	8.3	2.2
Hardness, as CaCO3	---	---	7	7	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	1.9	1.7	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	0.6	0.6	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	0.6	0.6	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.4	0.4	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	16	6	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	2.0	3.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	0.5	0.7	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.3	0.3	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	26	28	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.07	0.12	---	---	---	---	---	---
Nitrogen, ammonia, dissolved(as N)	---	---	0.12	0.13	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.48	0.47	---	---	---	---	---	---
Nitrogen, amm. + org., total (as	---	---	0.60	0.60	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.67	0.72	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.017	0.025	0.011	0.018	0.009	0.035	0.010	0.028
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	90	70	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	40	35	---	---	---	---	---	---
Chlorophyll a, phytoplankton(µg/L)	---	---	3.6	---	4.5	---	3.0	---	3.4	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Alma Lake near St. Germain, Wisconsin.

453907091345800 BALSAM LAKE NEAR BIRCHWOOD, WI

LOCATION.--Lat 45°39'07", long 91°34'58", in NE 1/4 NE 1/4 sec.34, T.37 N., R.10 W., Washburn County, Hydrologic Unit 07050007, 1.2 mi southwest of Birchwood.

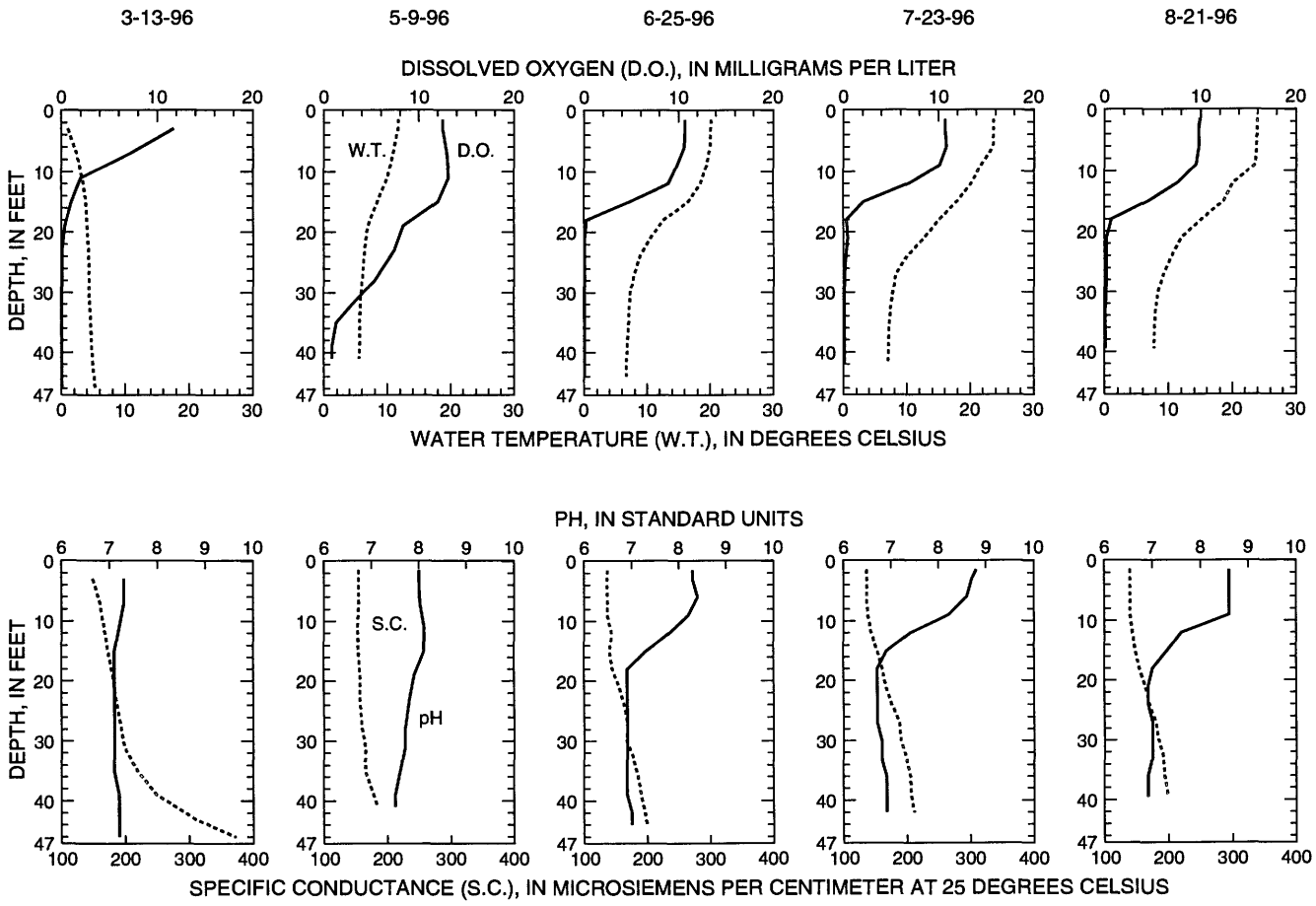
PERIOD OF RECORD.--March 1993 to August 1994 and March to September 1996.

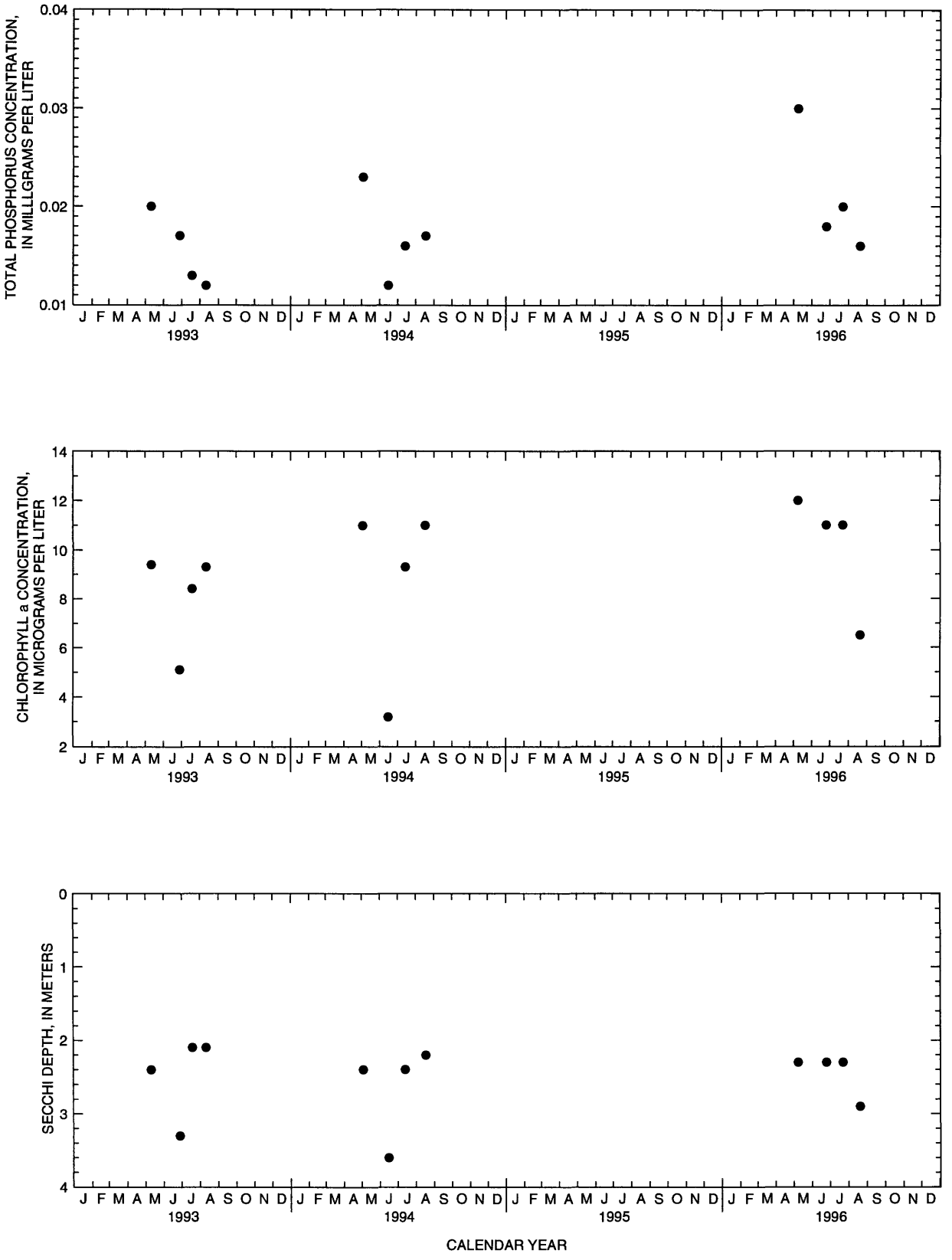
REMARKS.--Lake sampled near southern end of Balsam Lake at a lake depth of about 43 ft. Lake ice-covered during March sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 13 TO AUGUST 21, 1996

(Milligrams per liter unless otherwise indicated)

	Mar. 13		May 09		June 25		July 23		Aug. 21	
Depth of sample (ft)	3.0	43	1.5	40	1.5	44	1.5	42	1.5	40
Lake stage (ft)	10.05		10.69		10.65		10.84		10.70	
Specific conductance (µS/cm)	149	309	154	178	137	199	136	206	140	199
pH (units)	7.3	7.2	8.0	7.5	8.3	7.0	8.8	6.9	8.6	6.9
Water temperature (°C)	1.0	5.0	12.0	5.5	20.0	6.5	23.5	7.0	24.0	7.5
Secchi-depth (meters)	---		2.3		2.3		2.3		2.9	
Dissolved oxygen	11.7	0.0	12.5	0.8	10.7	0.0	10.7	0.1	9.9	0.1
Phosphorus, total (as P)	---	---	0.030	0.120	0.018	0.339	0.020	0.425	0.016	0.445
Chlorophyll a, phytoplankton (µg/L)	---	---	12	---	11	---	11	---	6.5	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Balsam Lake near Birchwood, Wisconsin.

440912089092000 BIG HILLS (HILLS) LAKE NEAR WILD ROSE, WI

LOCATION.--Lat 44°09'12", long 89°09'20", in SW 1/4 NE 1/4 sec. 2, T.19 N., R.11 E, Waushara County, Hydrologic Unit 04030202, 4.6 mi southeast of Wild Rose.

DRAINAGE AREA.--0.78 mi^2.

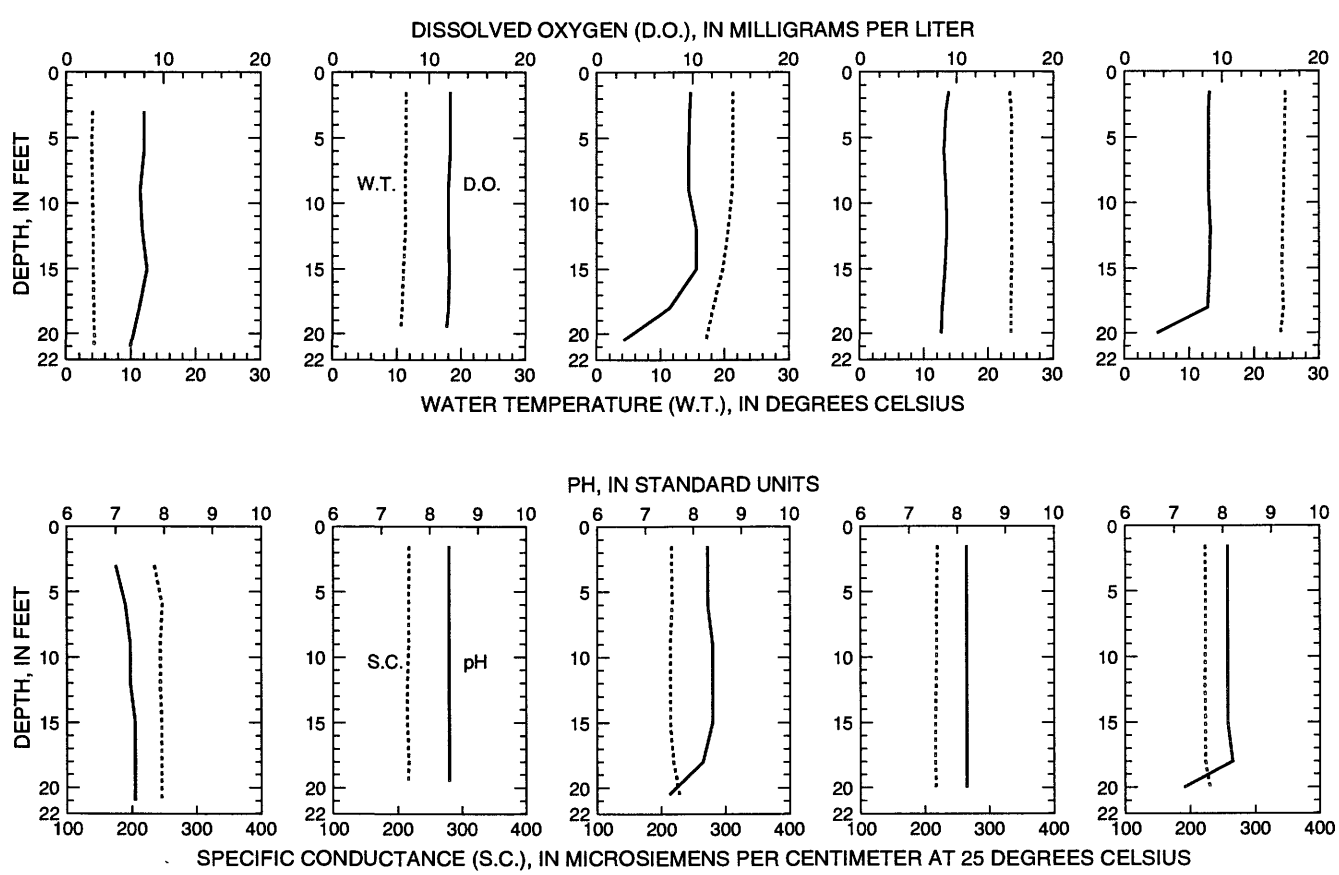
PERIOD OF RECORD.--June 1983 to August 1984, February to August 1987, February to August 1990, February to August 1993, and February to August 1996.

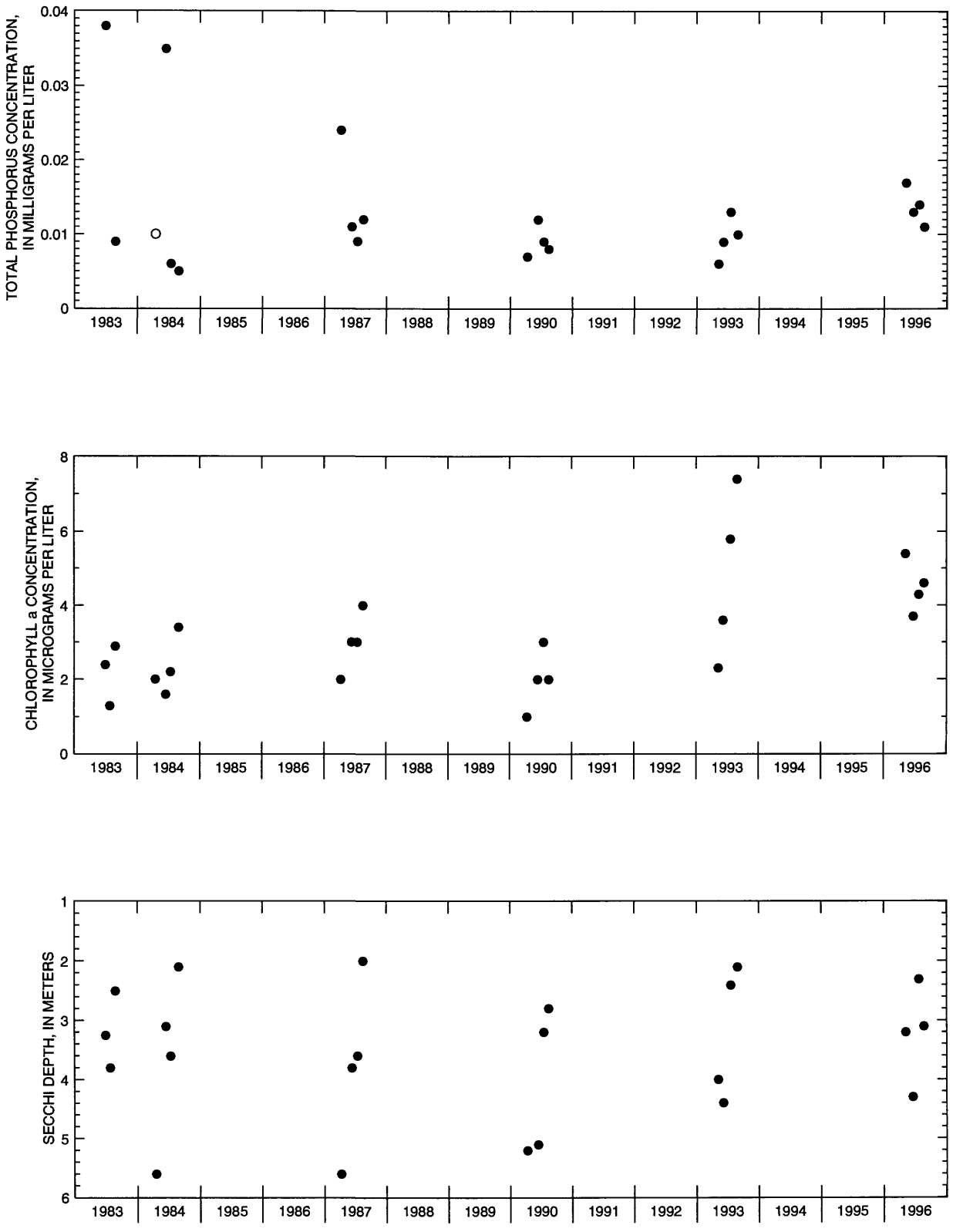
REMARKS.--Lake sampled at east end at deep hole. Lake ice-covered during February sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 13 TO AUGUST 23, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 13		May 08		June 21		July 26		Aug. 23	
Depth of sample (ft)	3.0	21	1.5	20	1.5	21	1.5	20	1.5	20
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	235	246	218	216	216	228	219	217	223	230
pH (units)	7.0	7.4	8.4	8.4	8.3	7.5	8.2	8.2	8.1	7.2
Water temperature (°C)	4.0	4.5	11.5	10.5	21.5	17.0	23.5	23.5	25.0	24.0
Color (Pt-Co. scale)	---	---	10	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.70	1.00	---	---	---	---	---	---
Secchi-depth (meters)	---		3.2		4.3		2.3		3.1	
Dissolved oxygen	8.0	6.6	12.2	11.8	9.8	2.8	9.2	8.4	8.7	3.3
Hardness, as CaCO3	---	---	110	110	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	24	24	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	12	13	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	1.8	1.7	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	100	100	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	8.0	8.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	5.2	5.1	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.0	0.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	132	130	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.29	0.27	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.40	0.60	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.60	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.68	0.87	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.017	0.023	0.013	0.058	0.014	0.019	0.011	0.023
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	5.4	---	3.7	---	4.3	---	4.6	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Big Hills Lake, near Wild Rose, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

425344088070100 BIG MUSKEGO LAKE, BASS BAY, NEAR MUSKEGO, WI

LOCATION.--Lat 42°53'44", long 88°07'01", in SW 1/4 NE 1/4 sec.15, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, 1.3 mi southeast of Muskego.

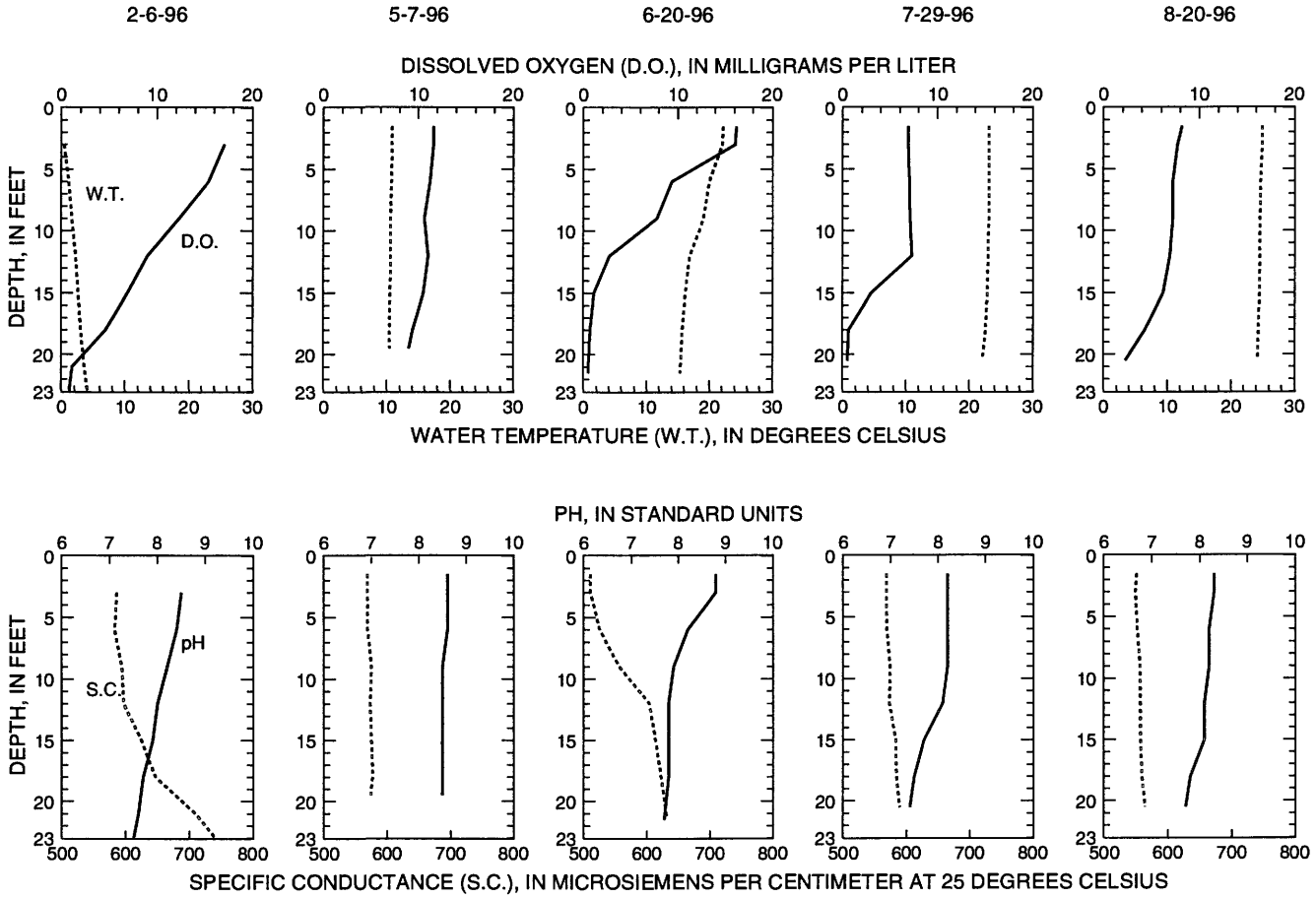
PERIOD OF RECORD.--February 1988 to current year.

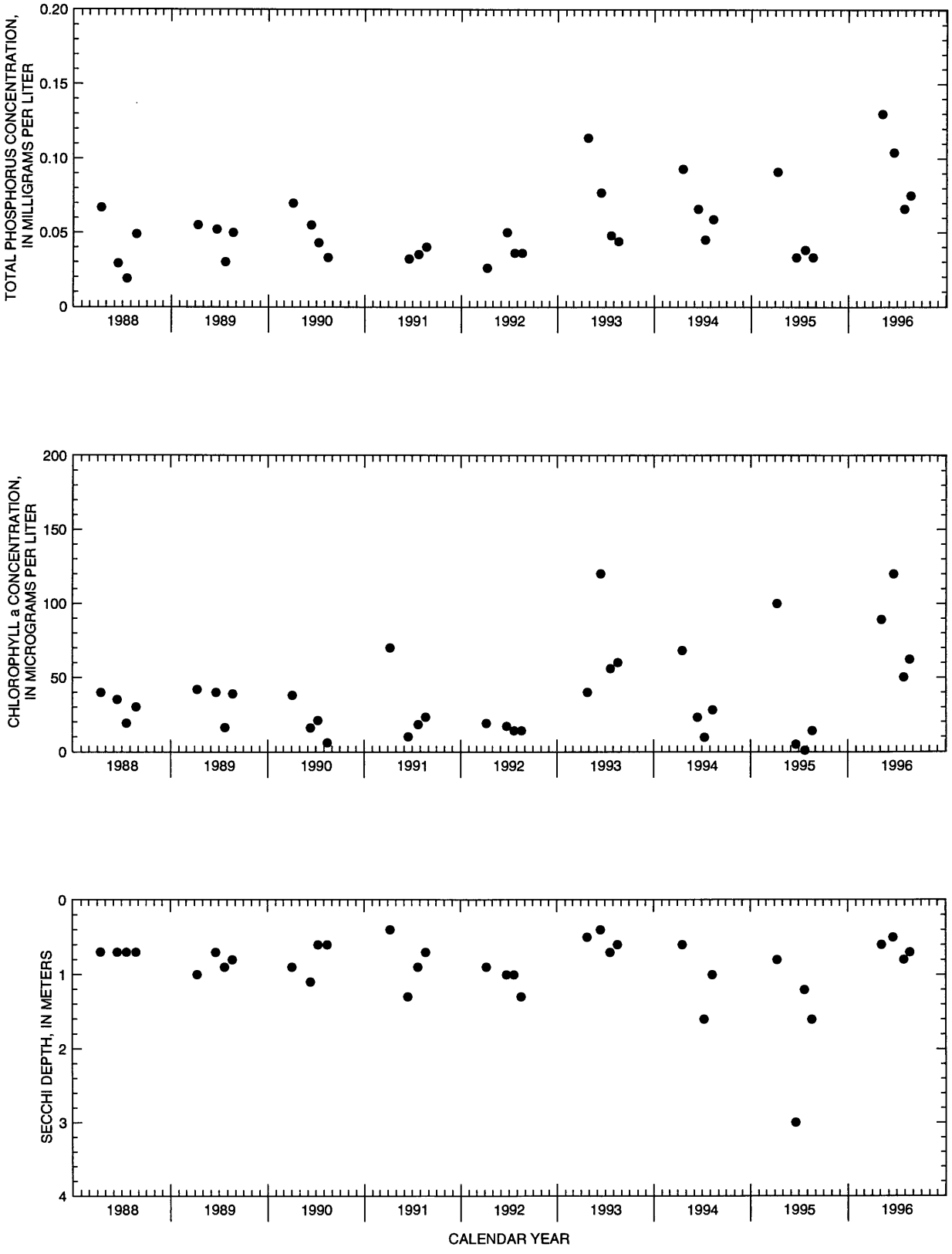
REMARKS.--Lake sampled near center of lake at the deep hole. Lake ice-covered during February measurements. Lake stages not recorded due to drainage of south site. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 06 TO AUGUST 20, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 06		May 07		June 20		July 29		Aug. 20	
Depth of sample (ft)	3.0	23	1.5	20	1.5	22	1.5	21	1.5	21
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	586	741	569	574	510	632	568	589	551	564
pH (units)	8.5	7.5	8.6	8.5	8.8	7.7	8.2	7.4	8.3	7.7
Water temperature (°C)	0.5	4.0	11.0	10.5	22.0	15.5	23.0	22.0	25.0	24.0
Color (Pt-Co. scale)	---	---	30	40	---	---	---	---	---	---
Turbidity (NTU)	---	---	8.9	15	---	---	---	---	---	---
Secchi-depth (meters)	---		0.6		0.5		0.8		0.7	
Dissolved oxygen	17.1	0.8	11.6	9.0	16.2	0.5	6.9	0.5	8.2	2.3
Hardness, as CaCO3	---	---	250	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	49	49	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	31	31	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	22	22	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	200	200	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	39	38	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	49	49	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.2	0.2	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	2.2	2.4	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	350	346	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.33	0.33	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.12	0.21	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	1.9	2.2	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	2.0	2.4	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	2.3	2.7	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.130	0.157	0.104	0.088	0.066	0.085	0.075	0.082
Phosphorus, ortho, dissolved (as P)	---	---	0.002	0.003	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	0.5	2	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	89	---	120	---	50	---	62	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Big Muskego Lake, Bass Bay, near Muskego, Wisconsin.

425109088075000 BIG MUSKEGO LAKE NEAR WIND LAKE, WI

LOCATION.--Lat 42°51'09", long 88°07'50", in SE 1/4 NE 1/4 sec.33, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, on left bank 8 ft upstream of dam outlet of Muskego Lake, 700 ft north of Muskego Dam Drive, 2 mi northeast of Wind Lake.

DRAINAGE AREA.--28.3 mi^2.

PERIOD OF RECORD.--October 1987 to September 1989, January 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 760.00 ft above sea level. October to December 1987 and January 1991 to September 1995, nonrecording gage at the same datum. December 1987 through September 1989, data collected using water-stage recorder at the same datum.

REMARKS.--Lake levels regulated by concrete dam with one 5-ft lift gate. Drawdown of lake for rehabilitation project started Sept. 14, 1995, and continued throughout the 1996 water year. Lake levels from mid-December to Sept. 30 affected by intermittent pumping. Lake levels after July 11 were less than 8.72 ft. Prior to October 1993, published as Muskego Lake Outlet near Wind Lake, WI.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 12.60 ft, Oct. 7, 1991 and Aug. 8, 1994; minimum instantaneous, less than 8.72 ft, July 12 to Sept. 30, 1996, due to drawdown of lake.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage-height, 11.31 ft, Oct. 8; minimum instantaneous, less than 8.72 ft, July 12 to Sept. 30, due to drawdown of lake.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.83	10.69	---	---	---	---	8.63	8.90	8.73	9.68	---	---
2	10.93	10.70	---	---	9.92	---	8.73	8.81	8.79	9.68	---	---
3	10.96	10.59	---	---	---	---	9.16	8.84	8.81	9.63	---	---
4	10.99	10.68	---	8.78	---	---	9.31	8.83	9.01	9.47	---	---
5	11.10	10.64	---	---	---	---	8.63	8.70	9.10	9.37	---	---
6	11.18	10.58	---	---	---	---	8.59	8.76	9.28	9.25	---	---
7	11.25	10.61	9.88	---	---	---	8.58	8.63	9.59	9.15	---	---
8	11.29	10.52	---	---	---	---	8.80	8.63	9.49	8.94	---	---
9	11.28	10.47	---	---	---	---	9.06	8.66	9.46	8.90	---	---
10	11.26	10.56	---	---	---	---	8.71	9.17	9.40	8.72	---	---
11	11.21	10.71	---	---	---	---	8.83	9.25	9.41	8.72	---	---
12	11.20	10.65	---	---	---	---	8.94	8.92	9.30	---	---	---
13	11.13	10.64	---	---	---	---	8.72	8.87	9.19	---	---	---
14	11.10	10.61	---	---	---	9.58	8.81	8.87	9.19	---	---	---
15	11.11	10.55	---	---	9.69	---	8.99	8.98	9.08	---	---	---
16	11.07	10.51	---	---	---	---	9.08	9.09	9.04	---	---	---
17	10.94	10.46	---	---	---	---	9.03	9.11	9.35	---	---	---
18	11.03	10.42	---	---	---	---	8.91	9.00	9.87	---	---	---
19	10.95	10.41	---	---	---	---	9.04	8.91	10.12	---	---	---
20	10.96	10.38	---	---	---	---	9.08	9.25	10.23	---	---	---
21	10.92	10.39	---	---	---	---	9.22	9.33	10.25	---	---	---
22	10.89	10.33	---	---	---	---	9.35	9.19	10.31	---	---	---
23	10.80	10.29	---	---	---	---	9.32	9.54	10.26	---	---	---
24	10.69	10.25	---	9.00	---	---	8.83	9.59	10.22	---	---	---
25	10.77	10.21	---	---	---	---	8.75	9.25	10.12	---	---	---
26	10.78	10.18	---	---	---	---	8.89	9.24	10.03	---	---	---
27	10.78	10.36	---	---	---	---	8.66	9.03	9.96	---	---	---
28	10.81	10.15	---	---	9.60	8.66	8.80	9.00	9.84	---	---	---
29	10.77	---	---	---	9.24	---	9.39	8.95	9.61	---	---	---
30	10.75	---	---	---	---	---	8.80	8.74	9.76	---	---	---
31	10.72	---	---	---	---	---	---	8.68	---	---	---	---
MEAN	10.98	---	---	---	---	---	8.92	8.99	9.56	---	---	---
MAX	11.29	---	---	---	---	---	9.39	9.59	10.31	---	---	---
MIN	10.69	---	---	---	---	---	8.58	8.63	8.73	---	---	---

05390750 BIG ST. GERMAIN LAKE NEAR LAKE TOMAHAWK, WI

LOCATION.--Lat 45°55'00", long 89°31'55" in NE 1/4 SE 1/4 sec.30, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, at dam outlet, 7.7 mi northeast of Lake Tomahawk.

DRAINAGE AREA.--73.1 mi^2.

PERIOD OF RECORD.--October 1991 to current year. Lake stages for previous years were recorded by Wisconsin Valley Improvement Company.

GAGE.--Nonrecording gage. Datum of gage is 1,580 ft, above sea level.

COOPERATION.--Lake stages provided by Wisconsin Valley Improvement Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 10.94 ft, Oct. 6, 1995; minimum observed, 8.16 ft, Jan. 26, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 10.94 ft, Oct. 6; minimum observed, 8.16 ft, Jan. 26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.80	10.76	9.80	9.02	9.02	8.80	8.58	9.76	10.48	10.52	10.58	10.50
2	10.80	10.76	---	9.02	9.00	---	---	9.80	10.52	10.60	10.58	10.48
3	10.78	10.76	---	---	---	---	---	9.82	10.56	10.56	10.58	10.48
4	10.80	10.76	---	---	---	---	8.68	9.84	10.58	10.54	10.58	10.52
5	10.84	10.74	9.60	8.98	---	8.82	8.68	9.88	10.56	10.54	10.60	10.54
6	10.94	10.74	---	---	8.96	---	---	9.92	10.64	10.54	10.78	10.56
7	10.90	10.72	---	---	---	---	---	9.94	10.62	10.52	10.80	10.58
8	10.86	10.70	9.52	---	---	8.82	---	9.96	10.60	10.56	10.78	10.58
9	10.82	10.68	---	8.90	8.90	---	8.66	9.98	10.58	10.56	10.76	10.60
10	10.78	10.68	---	---	---	---	---	10.00	10.60	10.50	10.72	10.58
11	10.70	10.66	---	---	---	---	---	10.04	10.64	10.52	10.68	10.58
12	10.64	10.66	9.40	8.86	---	8.70	8.68	10.08	10.62	10.56	10.64	10.56
13	10.60	10.66	---	---	8.90	---	---	10.08	10.60	10.58	10.62	10.56
14	10.58	10.60	---	---	---	---	---	10.10	10.56	10.58	10.60	10.56
15	10.54	---	9.32	---	---	8.62	---	10.14	10.52	10.60	10.58	10.56
16	10.48	---	---	8.82	8.88	---	8.78	10.16	10.50	10.64	10.54	10.54
17	10.46	10.30	---	---	---	---	---	10.20	10.52	10.64	10.56	10.54
18	10.44	---	---	---	---	8.58	---	10.24	10.56	10.78	10.56	10.52
19	10.46	---	9.27	8.78	---	---	9.02	10.26	10.56	10.74	10.54	10.50
20	10.46	---	---	---	8.82	---	---	10.40	10.54	10.70	10.50	10.50
21	10.44	10.08	---	---	---	---	---	10.44	10.52	10.68	10.50	10.50
22	10.48	---	9.18	---	---	8.56	9.18	10.46	10.58	10.66	10.58	10.52
23	10.50	---	---	8.22	8.80	---	9.22	10.48	10.58	10.62	10.56	10.52
24	10.62	9.96	---	---	---	---	9.28	10.52	10.62	10.58	10.56	10.52
25	10.60	---	---	---	---	---	9.40	10.54	10.60	10.54	10.54	10.52
26	10.60	---	9.10	8.16	---	8.56	9.52	10.54	10.60	10.50	10.54	10.52
27	10.64	---	---	---	8.80	---	9.54	10.56	10.66	10.52	10.52	10.56
28	10.68	9.88	---	---	---	---	9.58	10.54	10.68	10.54	10.50	10.56
29	10.68	---	9.06	---	---	8.58	9.62	10.50	10.62	10.58	10.50	10.58
30	10.68	---	---	9.02	---	---	9.70	10.48	10.58	10.58	10.50	10.58
31	10.68	---	---	---	---	---	---	10.48	---	10.58	10.50	---
MEAN	10.65	---	---	---	---	---	---	10.20	10.58	10.59	10.59	10.54
MAX	10.94	---	---	---	---	---	---	10.56	10.68	10.78	10.80	10.60
MIN	10.44	---	---	---	---	---	---	9.76	10.48	10.50	10.50	10.48

455557089311000 BIG ST. GERMAIN LAKE NEAR ST. GERMAIN, WI

LOCATION.--Lat 45°55'57", long 89°31'10", in NE 1/4 SW 1/4 sec.20, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, 2.5 mi northwest of St. Germain.

DRAINAGE AREA.--73.1 mi^2.

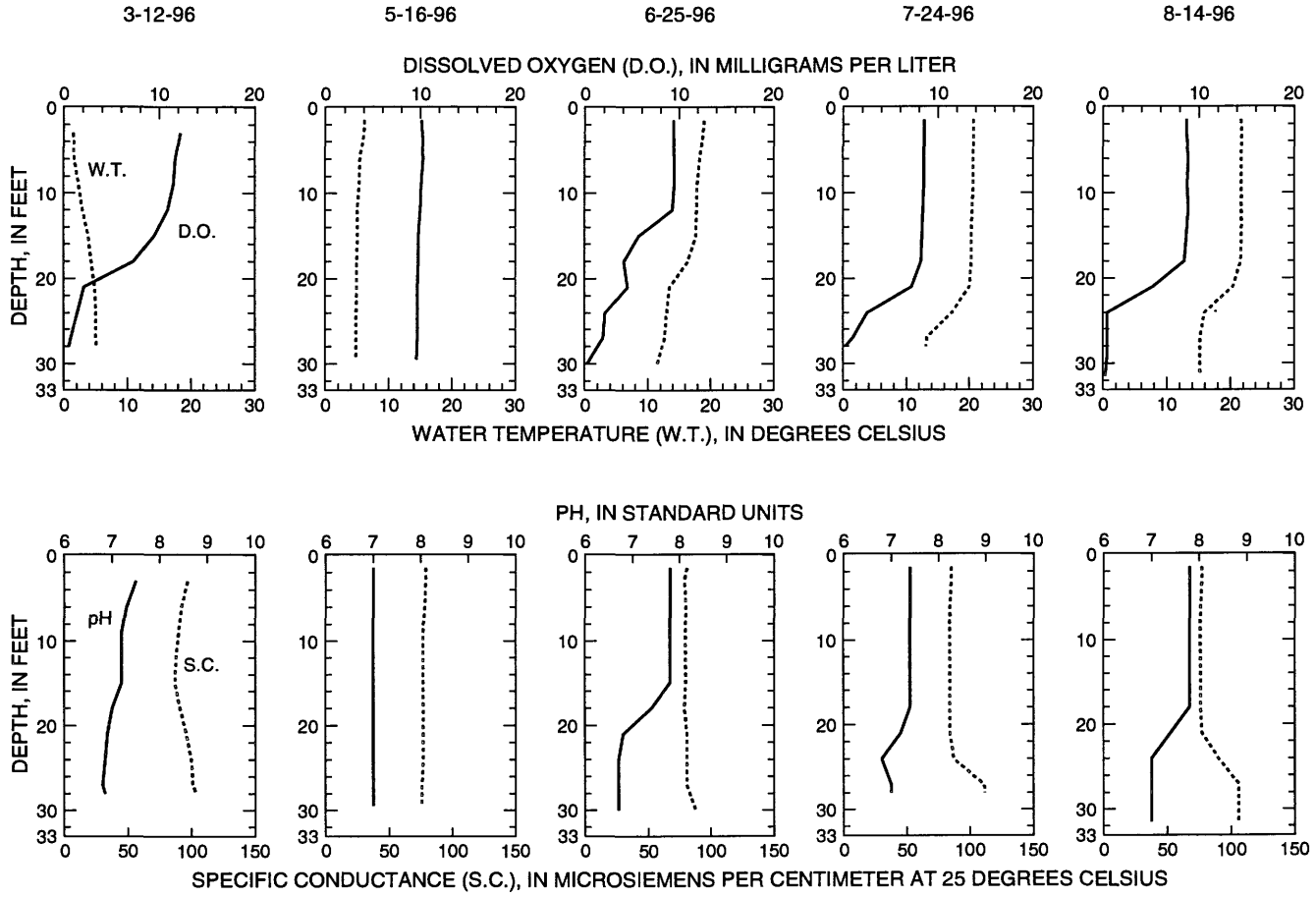
PERIOD OF RECORD.--February 1992 to current year.

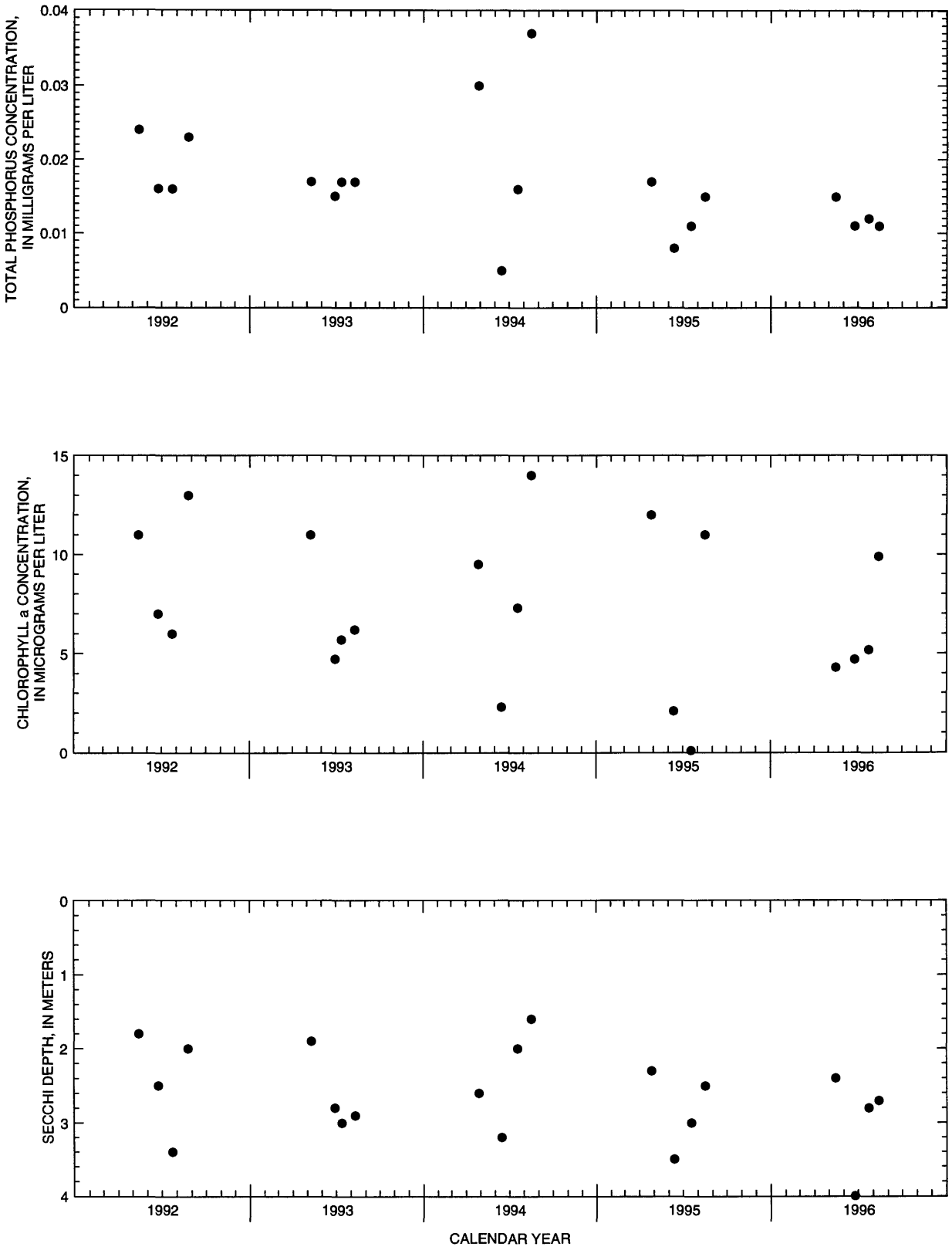
REMARKS.--Lake sampled near center of lake at the deep hole. Lake ice-covered during March measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 12 TO AUGUST 14, 1996

(Milligrams per liter unless otherwise indicated)

	Mar. 12		May 16		June 25		July 24		Aug. 14	
Depth of sample (ft)	3.0	28	1.5	30	1.5	30	1.5	28	1.5	32
Lake stage (ft)	8.59		10.20		10.60		10.57		10.62	
Specific conductance (µS/cm)	97	104	79	76	81	88	85	112	77	106
pH (units)	7.5	6.9	7.0	7.0	7.8	6.7	7.4	7.0	7.8	7.0
Water temperature (°C)	1.4	5.0	6.0	5.0	19.0	11.5	20.5	13.0	21.5	15.0
Color (Pt-Co. scale)	---	---	15	15	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.00	1.4	---	---	---	---	---	---
Secchi-depth (meters)	---		2.4		4.0		2.8		2.7	
Dissolved oxygen	12.2	0.5	10.1	9.6	9.4	0.2	8.5	0.2	8.7	0.2
Hardness, as CaCO3	---	---	35	35	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	9.3	9.4	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	2.8	2.8	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	2.0	2.0	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.6	0.6	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	35	33	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	7.0	7.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	2.6	2.4	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	13	13	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	74	62	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.14	0.14	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.30	0.40	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.30	0.40	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.44	0.54	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.015	0.020	0.011	0.029	0.012	0.095	0.011	0.081
Phosphorus, ortho, dissolved (as P)	---	---	0.009	0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	110	110	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	140	140	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	4.3	---	4.7	---	5.2	---	9.9	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Big St. Germain Lake near St. Germain, Wisconsin.

454724091303600 BIG SISSABAGAMA LAKE NEAR STONE LAKE, WI

LOCATION.--Lat 45°47'24", long 91°30'36", in NW 1/4 SE 1/4 sec.6, T.38 N., R.9 W., Sawyer County, Hydrologic Unit 07050001, near Stone Lake.

DRAINAGE AREA.--9.47 mi^2.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--April 1986 to current year.

GAGE.--Staff gage near lake outlet read by Richard Roehrich and John Eary.

EXTREMES FOR PERIOD OF RECORD: Maximum gage height observed, 6.09 ft, May 7 and Sept. 15, 1991; minimum observed, 4.78 ft, Sept. 15, 16, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 6.04 ft, Apr. 21–23; minimum observed, 5.49 ft, Mar. 13, and Sept. 20, 22–23.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.79	5.77	5.64	---	---	---	---	5.90	5.78	6.00	5.84	5.65
2	5.77	5.78	5.63	---	---	---	---	5.87	5.87	5.99	5.84	5.62
3	5.78	5.78	5.63	---	---	---	---	5.86	5.88	5.96	5.83	5.65
4	5.76	5.77	5.63	---	---	---	---	5.85	5.87	5.94	5.81	5.66
5	5.73	5.75	5.63	---	---	---	---	5.87	5.86	5.91	5.81	5.66
6	5.80	5.68	5.62	---	---	---	---	5.86	5.87	5.90	5.81	5.64
7	5.80	5.61	5.60	---	---	---	---	5.85	5.86	5.97	5.86	5.63
8	5.78	5.59	5.60	---	---	---	---	5.82	5.86	5.97	5.83	5.63
9	5.82	5.58	5.59	---	---	---	---	5.81	5.85	5.95	5.79	5.62
10	5.84	5.57	---	---	---	---	---	5.80	5.84	5.92	5.79	5.61
11	5.85	5.57	---	---	---	---	---	5.78	5.83	5.90	5.78	5.60
12	5.83	5.58	---	---	---	---	---	5.77	5.82	5.93	5.78	5.60
13	5.82	5.60	---	---	---	---	5.49	5.76	5.82	5.91	5.77	5.57
14	5.81	5.63	---	---	---	---	---	5.77	5.80	5.89	5.75	5.56
15	5.78	5.65	---	---	---	---	---	5.76	5.79	5.89	5.75	5.54
16	5.75	5.65	---	---	---	---	---	5.75	5.79	---	5.74	5.51
17	5.72	5.65	---	---	---	---	---	5.73	5.82	---	5.73	5.51
18	5.72	5.65	---	---	---	---	5.87	5.73	5.85	5.91	5.72	5.51
19	5.71	5.65	---	---	---	---	5.93	5.98	5.85	5.92	5.74	5.50
20	5.70	5.65	---	---	---	---	5.98	5.99	5.84	5.89	5.73	5.49
21	5.71	5.65	---	---	---	---	6.04	5.99	5.86	5.89	5.71	5.51
22	5.71	5.65	---	---	---	---	6.04	5.96	5.84	5.85	5.75	5.49
23	5.73	5.65	---	---	---	---	6.04	5.96	5.85	5.83	5.74	5.49
24	5.79	5.65	---	---	---	---	6.00	5.93	5.85	5.87	5.73	5.51
25	5.80	5.65	---	---	---	---	5.99	5.87	5.84	5.86	5.71	5.51
26	5.79	5.65	---	---	---	---	5.98	5.86	5.99	5.85	5.70	5.52
27	5.80	5.65	---	---	---	---	5.98	5.83	6.03	5.83	5.69	5.53
28	5.79	5.65	---	---	---	---	5.96	5.80	6.02	5.89	5.68	5.53
29	5.79	5.64	---	---	---	---	5.95	5.80	6.02	5.87	5.66	5.53
30	5.78	5.64	---	---	---	---	5.91	5.79	6.01	5.86	5.66	5.53
31	5.77	---	---	---	---	---	---	5.79	---	5.86	5.65	---
MEAN	5.77	5.65	---	---	---	---	---	5.84	5.87	---	5.75	5.56
MAX	5.85	5.78	---	---	---	---	---	5.99	6.03	---	5.86	5.66
MIN	5.70	5.57	---	---	---	---	---	5.73	5.78	---	5.65	5.49

WATER-QUALITY RECORDS

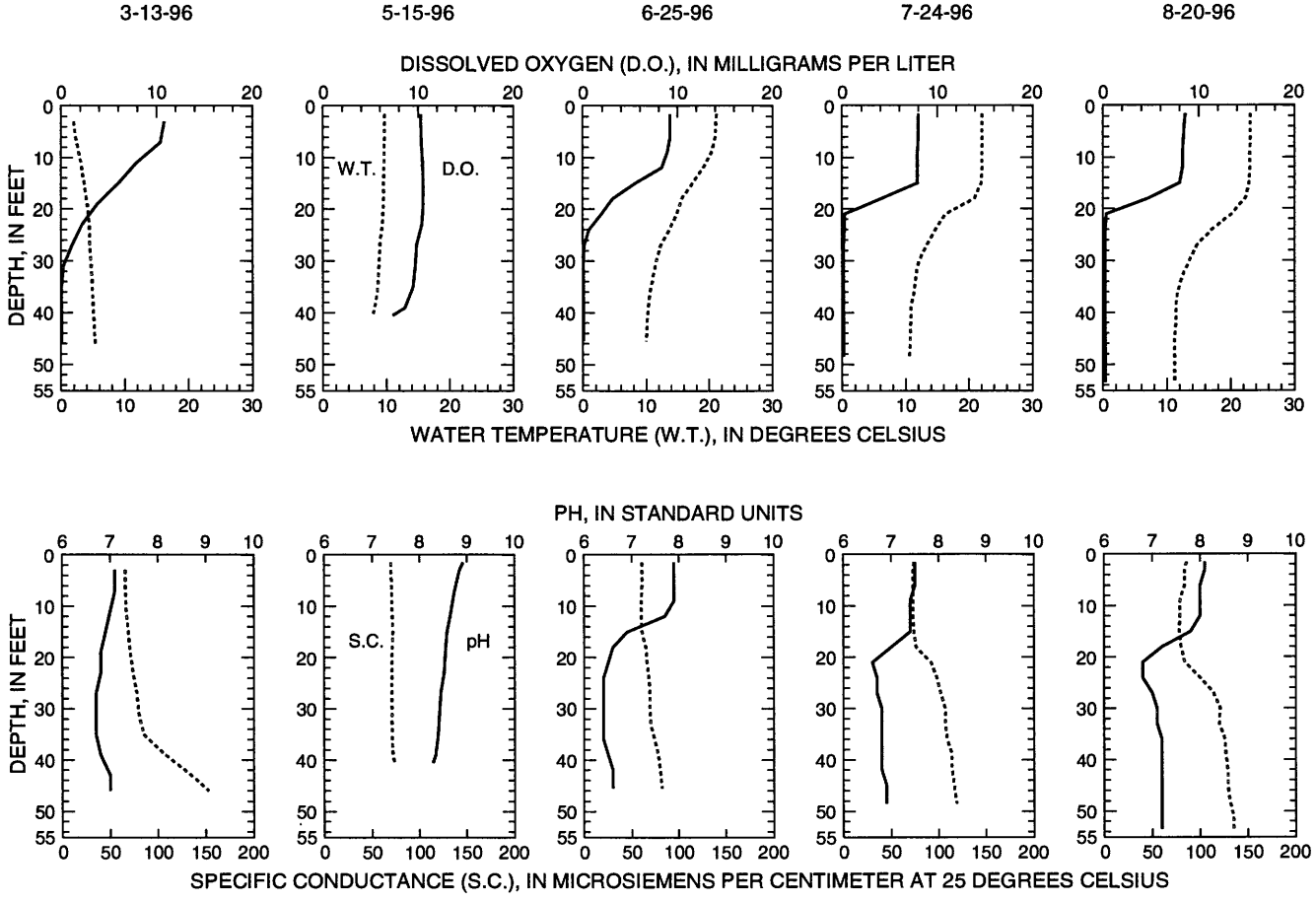
PERIOD OF RECORD.--March 1986 to current year.

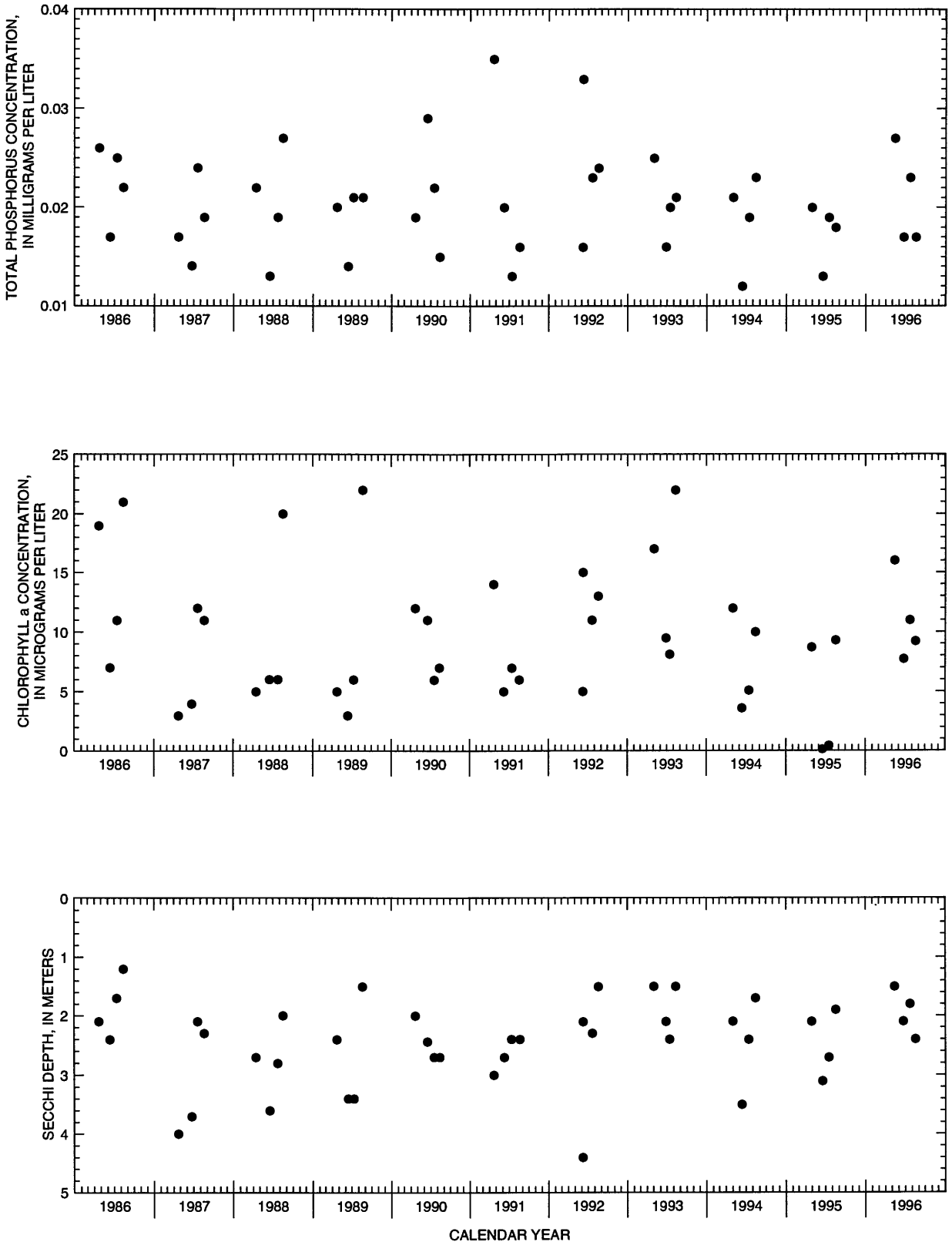
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during March measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 13 TO AUGUST 20, 1996

(Milligrams per liter unless otherwise indicated)

	Mar. 13		May 15		June 25		July 24		Aug. 20	
Depth of sample (ft)	3.0	43	1.5	39	1.5	46	1.5	49	1.5	54
Lake stage (ft)	5.49		5.72		5.83		5.86		5.72	
Specific conductance (µS/cm)	66	135	70	72	61	82	74	119	86	170
pH (units)	7.1	7.0	8.9	8.3	7.9	6.6	7.5	6.9	8.1	7.2
Water temperature (°C)	2.0	5.0	9.5	8.0	21.0	10.0	22.0	10.5	23.0	11.0
Color (Pt-Co. scale)	---	---	20	---	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.6	---	---	---	---	---	---	---
Secchi-depth (meters)	---		1.5		2.1		1.8		2.4	
Dissolved oxygen	10.8	0.0	10.2	8.6	9.2	0.0	8.0	0.1	8.6	0.2
Hardness, as CaCO3	---	---	31	---	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	8.1	---	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	2.5	---	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	1.5	---	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.8	---	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	31	---	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	5.0	---	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	1.0	---	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	---	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	5.3	---	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	44	---	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.08	---	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	---	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.60	---	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.60	---	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.68	---	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.027	---	0.017	0.051	0.023	0.119	0.017	0.196
Phosphorus, ortho, dissolved (as P)	---	---	0.002	---	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	180	---	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	8	---	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	16	---	7.7	---	11	---	9.2	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Big Sissabagama Lake near Stone Lake, Wisconsin.

423706088363400 DELAVAN LAKE NEAR DELAVAN, WI

LOCATION.--Lat 42°36'27", long 88°36'19", in SW 1/4 NE 1/4 sec.28, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, at Delavan Lake Sanitary District Lift Station No. 2 at Delavan Lake Yacht Club, 1.0 mi southeast of outlet, and 2.7 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing. Area of Delavan Lake, 2,072 acres.

PERIOD OF RECORD.--October 1983 to current year. October 1983 to September 1985 data published in Water Resources Investigation series report "Water Quality and Hydrology of Delavan Lake in Southeastern Wisconsin" by Stephen J. Field and Marvin D. Duerk.

GAGE.--Water-stage recorder. Datum of gage is 922.92 ft above sea level. Prior to Sept. 5, 1989, staff gage at bridge on North Shore Drive at same datum.

REMARKS.--No estimated daily gage heights. Records good. Lake was ice covered from Dec. 16 to Mar. 31. Lake levels controlled by Delavan Lake Sanitary District. Prior to Mar. 20, 1995, lake levels were controlled by Town of Delavan.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 6.19 ft, Feb. 21, 1994; minimum daily, -4.44 ft Nov. 6, 1989 (lake drawn down for lake rehabilitation program).

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.86 ft, June 18, 19; minimum, 4.55 ft, Sept. 25, 26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.80	4.99	5.07	4.90	4.96	4.93	4.91	4.99	5.01	4.97	4.85	4.74
2	4.79	5.06	5.07	4.90	4.94	4.92	4.91	4.98	5.14	4.96	4.84	4.73
3	4.78	5.06	5.07	4.90	4.92	4.90	4.91	4.96	5.17	4.95	4.83	4.73
4	4.78	5.04	5.08	4.90	4.90	4.89	4.92	4.96	5.18	4.94	4.82	4.72
5	4.77	5.04	5.09	4.90	4.88	4.89	4.92	4.95	5.18	4.93	4.81	4.72
6	4.91	5.03	5.07	4.90	4.87	4.88	4.92	4.94	5.23	4.93	4.89	4.71
7	4.97	5.05	5.07	4.90	4.86	4.88	4.92	4.93	5.30	4.92	4.91	4.70
8	4.97	5.04	5.06	4.90	4.85	4.87	4.92	4.92	5.25	4.91	4.92	4.70
9	4.96	5.03	5.05	4.90	4.88	4.87	4.92	4.94	5.16	4.90	4.91	4.70
10	4.95	5.06	5.03	4.89	4.92	4.86	4.92	5.05	5.11	4.88	4.89	4.69
11	4.94	5.12	5.02	4.91	4.95	4.85	4.92	5.04	5.05	4.87	4.88	4.68
12	4.93	5.08	5.01	4.92	4.96	4.86	4.92	5.01	5.00	4.86	4.87	4.66
13	4.92	5.05	5.01	4.92	4.96	4.87	4.92	5.01	4.98	4.86	4.87	4.63
14	4.92	5.04	5.01	4.91	4.97	4.88	4.91	5.02	4.99	4.86	4.86	4.61
15	4.89	5.03	5.00	4.91	4.98	4.89	5.01	5.02	5.00	4.86	4.84	4.61
16	4.87	5.03	4.97	4.90	4.98	4.89	5.06	5.02	5.00	4.85	4.82	4.60
17	4.86	5.02	4.95	4.92	4.97	4.88	5.07	5.02	5.31	4.88	4.82	4.59
18	4.85	5.02	4.93	5.00	4.95	4.88	5.09	5.03	5.81	4.96	4.81	4.58
19	4.85	5.02	4.93	5.01	4.95	4.89	5.12	5.03	5.82	4.97	4.81	4.58
20	4.86	5.03	4.93	5.00	4.94	4.89	5.16	5.10	5.67	4.95	4.82	4.57
21	4.87	5.03	4.93	5.01	4.93	4.88	5.14	5.26	5.51	4.94	4.82	4.57
22	4.87	5.01	4.93	5.01	4.92	4.89	5.11	5.17	5.36	4.92	4.82	4.57
23	4.87	5.00	4.93	5.02	4.91	4.89	5.07	5.07	5.21	4.92	4.82	4.57
24	4.89	4.99	4.93	5.03	4.93	4.89	5.05	5.02	5.10	4.91	4.82	4.56
25	4.88	4.99	4.92	5.03	4.93	4.92	5.02	5.00	5.00	4.90	4.81	4.56
26	4.89	4.98	4.92	5.04	4.93	4.91	4.99	5.00	4.99	4.88	4.80	4.60
27	4.93	5.02	4.91	5.05	4.94	4.90	4.96	4.98	4.99	4.89	4.78	4.66
28	4.98	5.08	4.91	5.04	4.94	4.90	4.92	4.98	4.98	4.89	4.77	4.66
29	4.98	5.06	4.91	5.03	4.94	4.90	4.95	5.02	4.97	4.88	4.76	4.63
30	4.98	5.06	4.90	5.01	---	4.90	4.99	5.02	4.97	4.87	4.76	4.62
31	4.97	---	4.90	4.98	---	4.92	---	5.01	---	4.86	4.75	---
MEAN	4.89	5.04	4.98	4.96	4.93	4.89	4.98	5.01	5.18	4.91	4.83	4.64
MAX	4.98	5.12	5.09	5.05	4.98	4.93	5.16	5.26	5.82	4.97	4.92	4.74
MIN	4.77	4.98	4.90	4.89	4.85	4.85	4.91	4.92	4.97	4.85	4.75	4.56

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'56", long 88°36'50", in SE 1/4 SW 1/4, sec.28, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

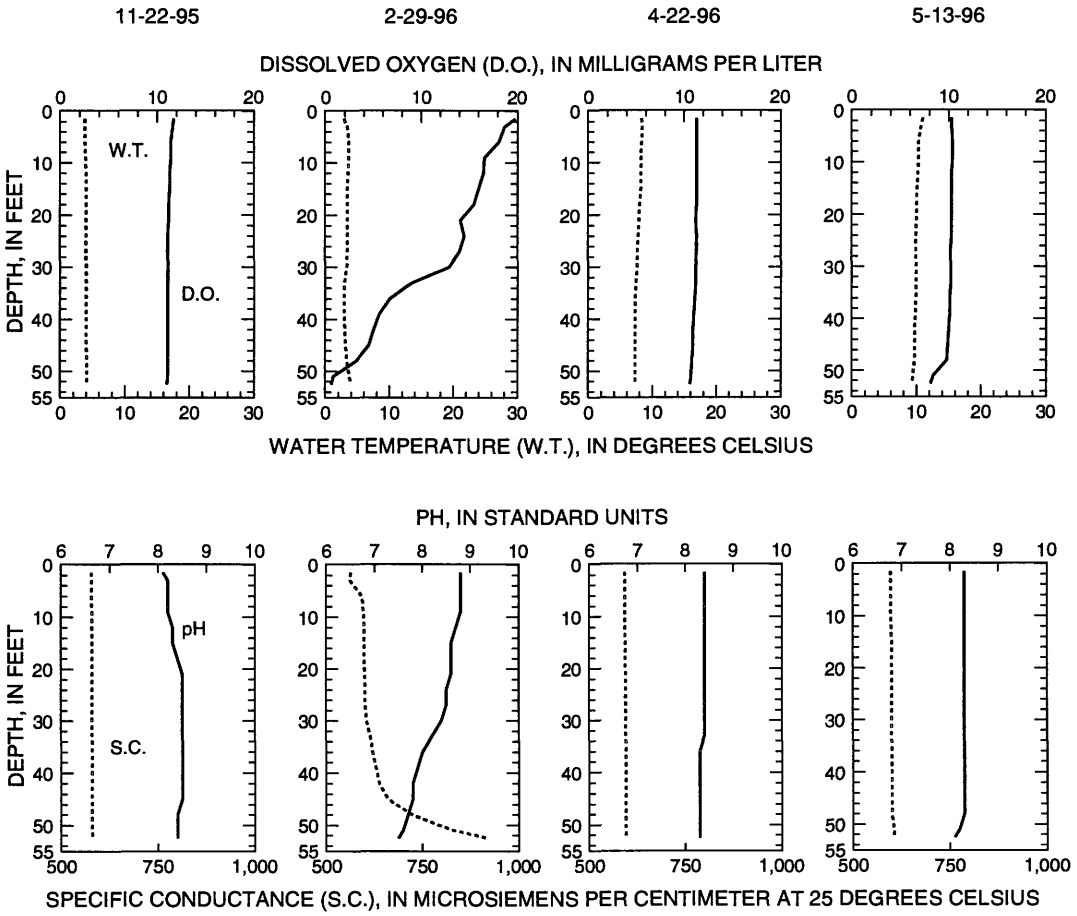
DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

REMARKS.--Lake ice-covered during February measurements. Water-quality analyses done by the U.S. Geological Survey National Water Quality Laboratory.

WATER-QUALITY DATA, NOVEMBER 22, 1995 TO MAY 13, 1996
(Milligrams per liter unless otherwise indicated)

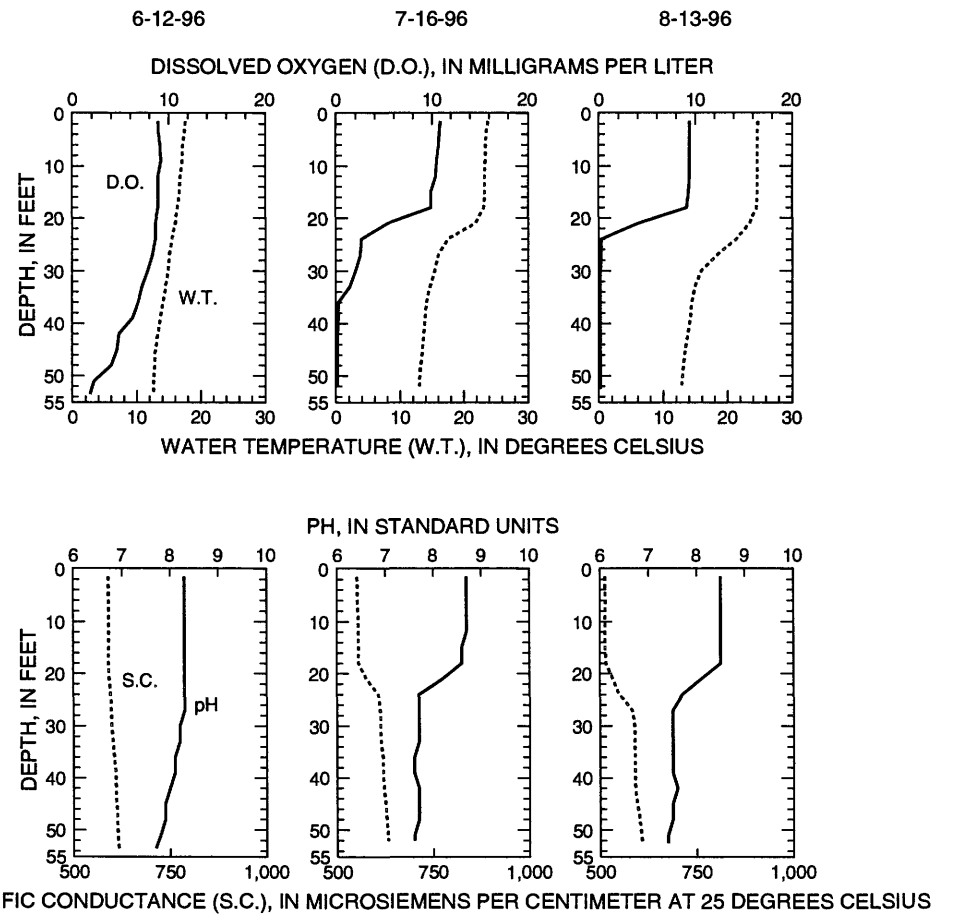
	Nov. 22		Feb. 29		Apr. 22		May 13	
Depth of sample (ft)	1.5	53	1.5	53	1.5	53	1.5	53
Lake stage (ft)	5.01		4.94		5.11		5.01	
Specific conductance (µS/cm)	578	580	563	920	592	595	597	606
pH (units)	8.1	8.4	8.8	7.5	8.4	8.3	8.3	8.1
Water temperature (°C)	4.0	4.0	3.0	4.0	8.5	7.5	11.0	9.5
Color (Pt-Co. scale)	---	---	---	---	7	10	---	---
Turbidity (NTU)	---	---	---	---	0.30	0.30	---	---
Secchi-depth (meters)	4.9		2.1		6.4		8.1	
Dissolved oxygen	11.7	11.0	19.8	0.6	11.3	10.6	10.3	8.1
Hardness, as CaCO3	---	---	---	---	240	240	---	---
Calcium, dissolved (Ca)	---	---	---	---	43	43	---	---
Magnesium, dissolved (Mg)	---	---	---	---	33	32	---	---
Sodium, dissolved (Na)	---	---	---	---	26	26	---	---
Potassium, dissolved (K)	---	---	---	---	3	3	---	---
Alkalinity, as CaCO3	---	---	---	---	190	190	---	---
Sulfate, dissolved (SO4)	---	---	---	---	30	30	---	---
Chloride, dissolved (Cl)	---	---	---	---	60	60	---	---
Fluoride, dissolved (F)	---	---	---	---	0.2	0.2	---	---
Silica, dissolved (SiO2)	---	---	---	---	0.6	0.8	---	---
Solids, dissolved, at 180°C	---	---	---	---	320	317	---	---
Nitrogen, NO2 + NO3, diss. (as N)	0.24	---	0.21	---	---	---	0.25	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.00	---	---	---	0.05	---
Nitrogen, amm. + org., total (as N)	0.60	---	0.60	---	0.70	0.80	0.60	---
Nitrogen, total (as N)	0.84	---	0.81	---	0.70	0.80	0.85	---
Phosphorus, total (as P)	0.078	0.086	0.069	0.240	0.071	0.086	0.069	0.084
Phosphorus, ortho, dissolved (as P)	0.066	0.042	0.001	0.190	0.032	0.012	0.043	0.055
Iron, dissolved (Fe) µg/L	---	---	---	---	10	12	---	---
Manganese, dissolved (Mn) µg/L	---	---	---	---	9	8	---	---
Chlorophyll a, phytoplankton (µg/L)	1.7	---	8.9	---	1.2	---	0.2	---

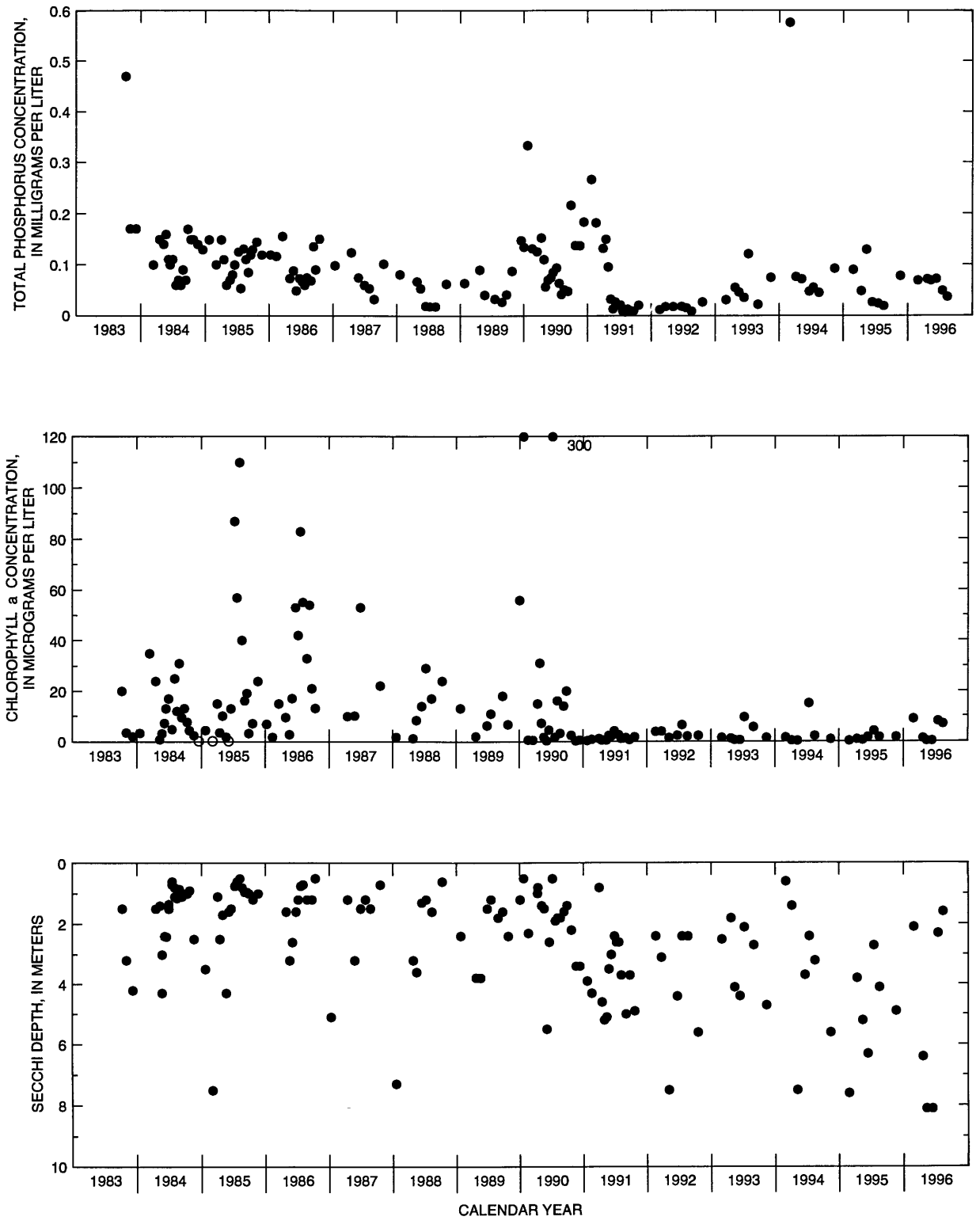


WATER-QUALITY DATA, JUNE 12 TO AUGUST 13, 1996
(Milligrams per liter unless otherwise indicated)

	June 12		July 16			
Depth of sample (ft)	1.5	54	1.5	21	36	52
Lake stage (ft)	5.00		4.85			
Specific conductance (µS/cm)	590	616	551	575	618	632
pH (units)	8.3	7.7	8.7	8.2	7.6	7.6
Water temperature (°C)	17.5	12.5	24.0	22.0	14.0	13.0
Secchi-depth (meters)	8.1		2.3			
Dissolved oxygen	8.9	1.8	10.9	5.3	0.2	0.1
Nitrogen, NO2 + NO3, diss. (as N)	0.29	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	0.00	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	0.60	---	---	---	---	---
Nitrogen, total (as N)	0.89	---	---	---	---	---
Phosphorus, total (as P)	0.072	0.170	---	0.070	0.170	0.450
Phosphorus, ortho, dissolved (as P)	0.018	0.100	---	0.039	0.140	0.210
Chlorophyll a, phytoplankton (µg/L)	0.1	---	9.8	---	---	---

	Aug. 13							
Depth of sample (ft)	1.5	6.0	18	24	30	39	48	53
Lake stage (ft)	4.87							
Specific conductance (µS/cm)	512	513	514	549	588	589	601	607
pH (units)	8.5	8.5	8.5	7.7	7.5	7.5	7.5	7.4
Water temperature (°C)	25.0	24.5	24.5	21.5	16.0	14.0	13.0	13.0
Secchi-depth (meters)	1.6							
Dissolved oxygen	9.4	9.4	9.1	0.2	0.1	0.1	0.1	0.1
Nitrogen, NO2 + NO3, diss. (as N)	<0.00	---	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	0.01	---	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	0.80	---	---	---	---	---	---	---
Nitrogen, total (as N)	0.80	---	---	---	---	---	---	---
Phosphorus, total (as P)	0.037	0.029	0.034	0.039	0.110	0.300	0.210	0.530
Phosphorus, ortho, dissolved (as P)	<0.001	---	<0.001	---	---	0.200	---	0.074
Chlorophyll a, phytoplankton (µg/L)	6.9	---	---	---	---	---	---	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Delavan Lake at Center near Delavan Lake, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

ADDITIONAL WATER-QUALITY DATA, APRIL 24 TO SEPTEMBER 25, 1996
(Milligrams per liter unless otherwise indicated)

	Apr. 24	May 01	May 21	May 30	June 05	June 10	June 20	June 25	July 02	July 09
Depth of sample (ft)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lake stage (ft)	5.05	4.99	5.26	5.02	5.18	5.11	5.67	5.00	4.96	4.90
Water temperature (°C)	10.0	8.5	14.5	14.0	16.0	16.5	22.5	25.5	25.3	----
Secchi-depth (meters)	9.1	7.0	8.7	8.4	7.9	7.3	2.7	5.5	4.3	1.8
Phosphorus, total (as P)	0.070	0.060	0.068	0.062	0.069	0.070	0.091	0.095	0.060	0.088

	July 23	July 31	Aug. 07	Aug. 20	Aug. 26	Sept.03	Sept.10	Sept.18	Sept. 25
Depth of sample (ft)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lake stage (ft)	4.92	4.86	4.91	4.82	4.80	4.73	4.69	4.58	4.56
Water temperature (°C)	22.5	22.0	25.0	24.0	24.5	24.5	25.0	19.5	17.5
Secchi-depth (meters)	2.4	2.1	1.7	2.3	2.0	2.4	2.4	2.4	2.1
Phosphorus, total (as P)	0.077	0.042	0.034	0.035	0.030	0.027	0.027	0.054	0.080

423659088354401 DELAVAN LAKE, AT NORTH END, NEAR LAKE LAWN, WI

LOCATION.--Lat 42°36'59", long 88°35'44", in NW 1/4 SW 1/4, sec.22, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

WATER-QUALITY DATA, APRIL 22 TO AUGUST 13, 1996

	Apr. 22	May 13	June 12	July 16	Aug. 13
Secchi-depth (meters)	4.7	5.6	7.5	2.0	1.4

423526088380101 DELAVAN LAKE, AT SW END, NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'26", long 88°38'01", in SE 1/4 NW 1/4, sec.32, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

WATER-QUALITY DATA, APRIL 22 TO AUGUST 13, 1996

	Apr. 22	May 13	June 12	July 16	Aug. 13
Secchi-depth (meters)	5.3	8.1	9.0	2.6	1.4

425044088100300 DENOON LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°50'44", long 88°10'03", in SW 1/4 SW 1/4 sec.32, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, at Wind Lake.

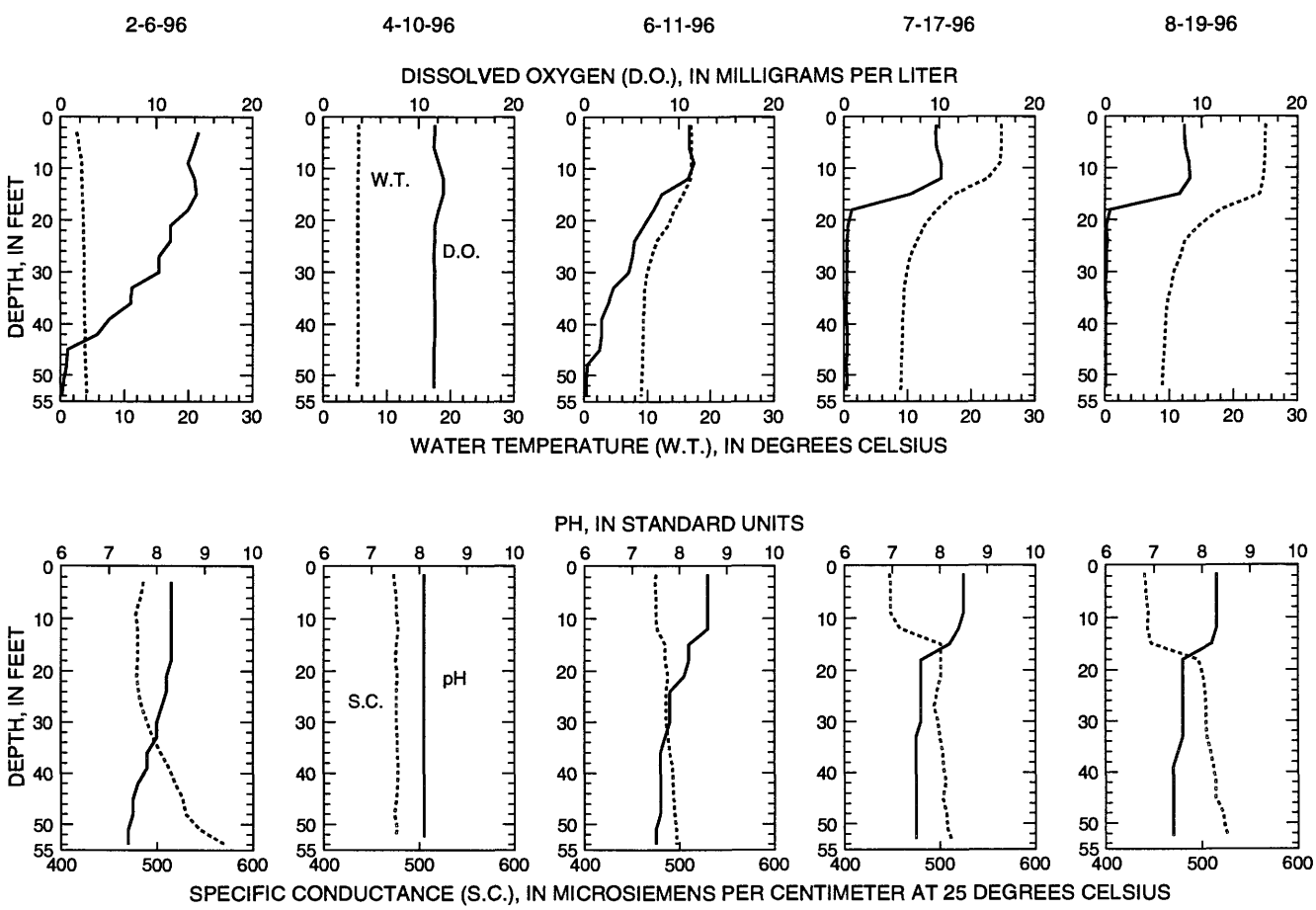
PERIOD OF RECORD.--February 1991 to current year.

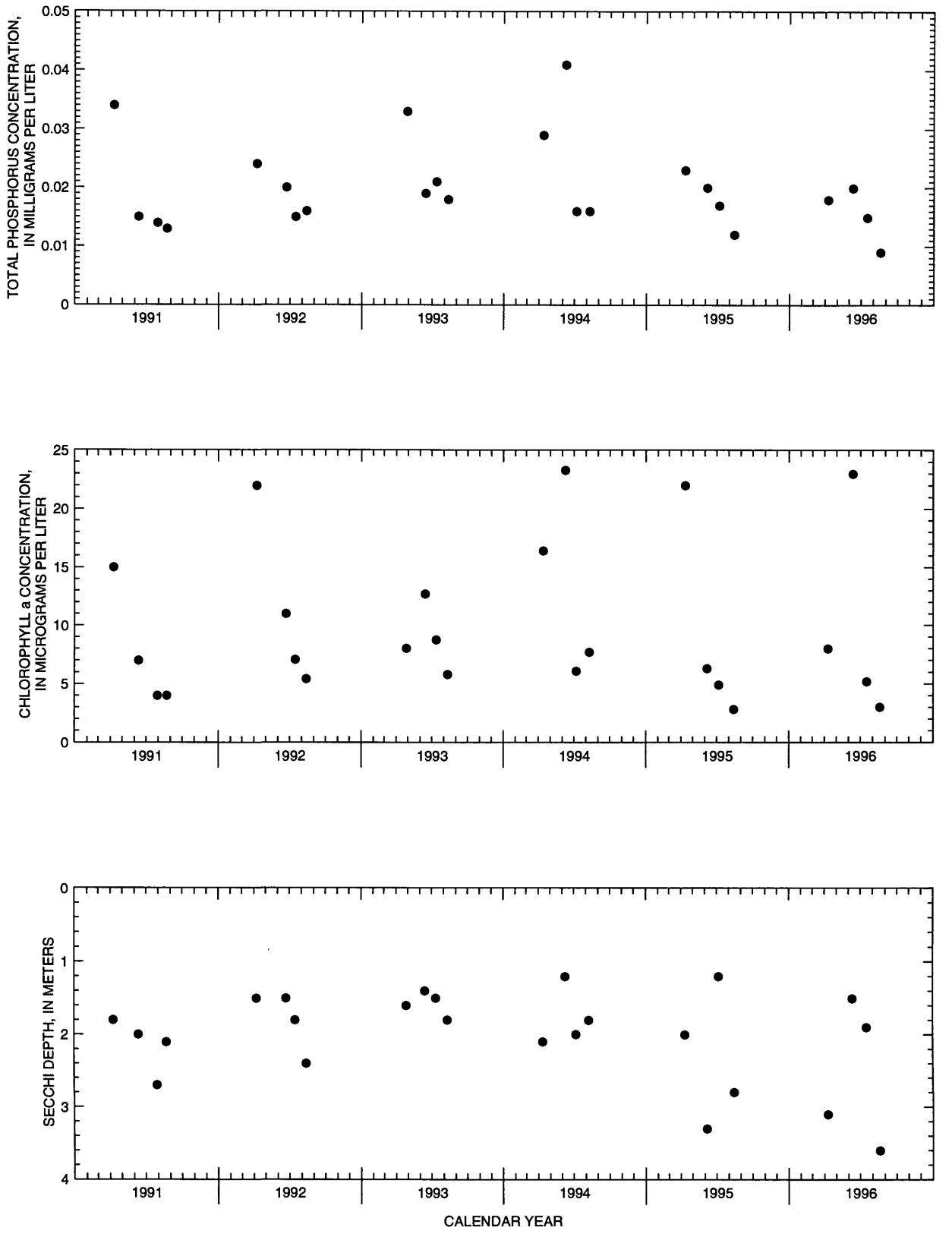
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 06 TO AUGUST 19, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 06		Apr. 10		June 11		July 17		Aug. 19	
Depth of sample (ft)	3.0	54	1.5	53	1.5	54	1.5	53	1.5	53
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	486	571	473	474	475	497	447	512	440	527
pH (units)	8.3	7.4	8.1	8.1	8.6	7.5	8.5	7.5	8.3	7.4
Water temperature (°C)	2.5	4.0	5.5	5.5	17.0	9.0	25.0	9.0	25.0	9.0
Color (Pt-Co. scale)	---	---	15	15	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.6	1.5	---	---	---	---	---	---
Secchi-depth (meters)	---		3.1		1.5		1.9		3.6	
Dissolved oxygen	14.4	0.1	11.7	11.6	11.1	0.2	9.7	0.2	8.2	0.0
Hardness, as CaCO3	---	---	200	200	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	39	40	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	26	25	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	17	16	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	3	4	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	170	170	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	29	30	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	35	35	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.6	0.6	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	278	274	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.17	0.18	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.15	0.16	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.65	0.94	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.80	1.1	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.97	1.3	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.018	0.018	0.020	0.074	0.015	0.137	0.009	0.190
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	0.6	0.7	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	8.0	---	23	---	5.2	---	3.0	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Denoon Lake at Wind Lake, Wisconsin.

05404500 DEVILS LAKE NEAR BARABOO, WI

LOCATION.--Lat 43°25'18", long 89°43'38", in SW 1/4 SE 1/4 sec.13, T.11 N., R.6 E., Sauk County, Hydrologic Unit 07070004, in Devils Lake State Park, 3.5 mi south of Baraboo.

DRAINAGE AREA.--4.79 mi^2. Area of Devils Lake, 361 acres.

PERIOD OF RECORD.--June 1922 to August 1930, June to August 1932, June 1934 to September 1981 (fragmentary). October 1981 to September 1984, data unpublished in district files. October 1984 to current year.

REVISED RECORDS.--WDR WI-78-1: Drainage area.

GAGE.--Water-stage recorder installed July 17, 1991. Datum of gage is 955.00 ft, above sea level.

REMARKS.--Records good. Lake has no surface outlet.

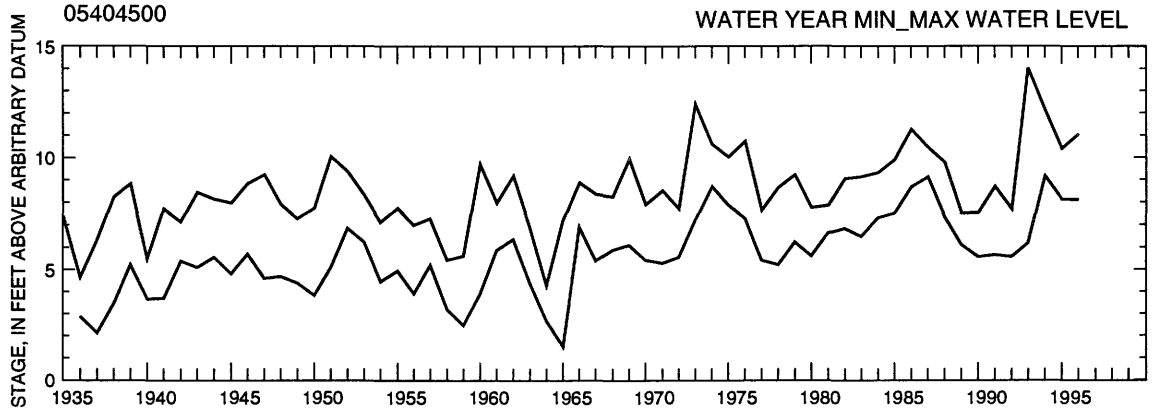
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 14.13 ft, July 18, 1993; minimum observed, 1.49 ft Feb. 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 11.08 ft, June 21; minimum recorded, 8.08 ft, Jan. 1.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.43	8.39	8.24	8.10	---	---	---	9.14	9.73	10.88	10.35	9.67
2	8.42	8.48	8.24	8.10	---	---	---	9.14	9.85	10.86	10.34	9.65
3	8.45	8.48	8.23	8.10	---	---	---	9.15	9.86	10.82	10.30	9.62
4	8.44	8.46	8.23	8.10	---	---	---	9.15	9.86	10.79	10.28	9.60
5	8.43	8.45	8.22	---	---	---	---	9.14	9.86	10.76	10.28	9.58
6	8.57	8.43	8.20	---	---	---	---	9.14	9.87	10.72	10.32	9.56
7	8.55	8.41	8.19	---	---	---	---	9.13	9.91	10.69	10.31	9.53
8	8.54	8.40	8.19	---	---	---	---	9.15	9.93	10.66	10.28	9.51
9	8.53	8.39	8.18	---	---	---	---	9.19	9.93	10.61	10.25	9.49
10	---	8.37	8.17	---	---	---	---	9.39	9.93	10.58	10.23	9.46
11	---	8.36	8.17	---	---	---	8.82	9.47	9.93	10.54	10.19	9.43
12	---	8.35	8.16	---	---	---	---	9.49	9.93	10.54	10.16	9.39
13	8.49	8.34	8.17	---	---	8.35	---	9.51	9.92	10.52	10.14	9.35
14	8.46	8.33	8.18	---	---	---	---	9.54	9.91	10.50	10.11	9.31
15	8.43	8.32	8.18	---	---	---	---	9.62	9.90	10.47	10.08	9.27
16	8.41	8.31	8.18	---	---	---	---	9.66	9.88	10.44	10.06	9.25
17	8.39	8.30	8.17	---	---	---	---	9.69	10.36	10.42	10.03	9.22
18	8.36	8.29	8.16	---	---	---	---	9.72	10.93	10.67	10.00	9.20
19	8.36	8.28	8.16	---	---	---	---	9.74	11.00	10.68	10.00	9.18
20	8.35	8.28	8.16	---	8.32	---	---	9.76	11.03	10.65	9.97	9.17
21	8.34	8.26	8.15	---	---	---	---	9.78	11.04	10.62	9.96	9.16
22	8.33	8.25	8.15	---	---	---	---	9.78	11.04	10.59	9.94	9.13
23	8.31	8.23	8.14	---	---	---	---	9.79	11.03	10.56	9.91	9.11
24	8.31	8.22	8.13	---	---	---	---	9.80	11.01	10.53	9.88	9.08
25	8.30	8.20	8.13	---	---	---	8.98	9.79	10.99	10.50	9.85	9.07
26	8.28	8.19	8.13	---	---	---	---	9.79	10.97	10.47	9.82	9.07
27	8.30	8.24	8.13	---	---	---	---	9.78	10.95	10.45	9.79	9.07
28	8.33	8.27	8.13	---	---	---	---	9.76	10.93	10.45	9.77	9.05
29	8.32	8.26	8.13	---	---	---	---	9.76	10.91	10.44	9.74	9.02
30	8.30	8.25	8.13	---	---	---	---	9.74	10.91	10.41	9.72	9.00
31	8.30	---	8.11	---	---	---	---	9.73	---	10.38	9.70	---
MEAN	---	8.33	8.17	---	---	---	---	9.53	10.38	10.59	10.06	9.31
MAX	---	8.48	8.24	---	---	---	---	9.80	11.04	10.88	10.35	9.67
MIN	---	8.19	8.11	---	---	---	---	9.13	9.73	10.38	9.70	9.00



431643088243300 DRUID LAKE NEAR HARTFORD, WI

LOCATION.--Lat 43°16'43" long 88°24'33", in NW 1/4 NE 1/4 sec.6, T.9 N., R.18 E., Washington County, Hydrologic Unit 07090001, 3.2 mi southwest of Hartford.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--June 1991 to current year.

GAGE.--Staff gage read by Bill Noennig at his residence.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 13.22 ft, June 19, 1996; minimum observed, 10.71 ft, Sept. 21, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 13.22 ft, June 19; minimum observed, 10.71 ft, Sept. 21.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	10.93	---	---	---
2	---	---	---	---	---	---	---	---	---	11.57	---	---
3	10.87	---	---	---	---	---	---	---	---	---	---	10.87
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	11.03	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	11.13	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	12.12	11.37	---	---
9	---	---	---	---	---	---	---	---	12.43	---	11.07	---
10	---	---	---	---	---	---	---	---	12.43	---	---	10.82
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	12.01	---	---	---
13	---	---	---	---	---	---	---	---	11.92	11.31	---	---
14	---	---	---	---	---	---	---	---	11.71	---	10.97	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	11.47	---	---	---
17	10.93	---	---	---	---	---	---	---	12.15	---	---	---
18	---	---	---	---	---	---	---	11.41	12.91	---	---	---
19	---	---	---	---	---	---	---	---	13.22	11.62	---	---
20	---	---	---	---	---	---	---	---	13.04	---	11.17	---
21	---	---	---	---	---	---	---	---	12.81	---	---	10.71
22	---	---	---	---	---	---	---	---	12.61	---	---	---
23	---	---	---	---	---	---	---	---	12.41	11.45	---	---
24	---	---	---	---	---	---	---	---	12.21	---	---	---
25	---	---	---	---	---	---	---	11.13	12.03	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	10.97	---
29	---	---	---	---	---	---	---	---	11.77	11.25	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	10.93	---	---	---	---

WATER-QUALITY RECORDS

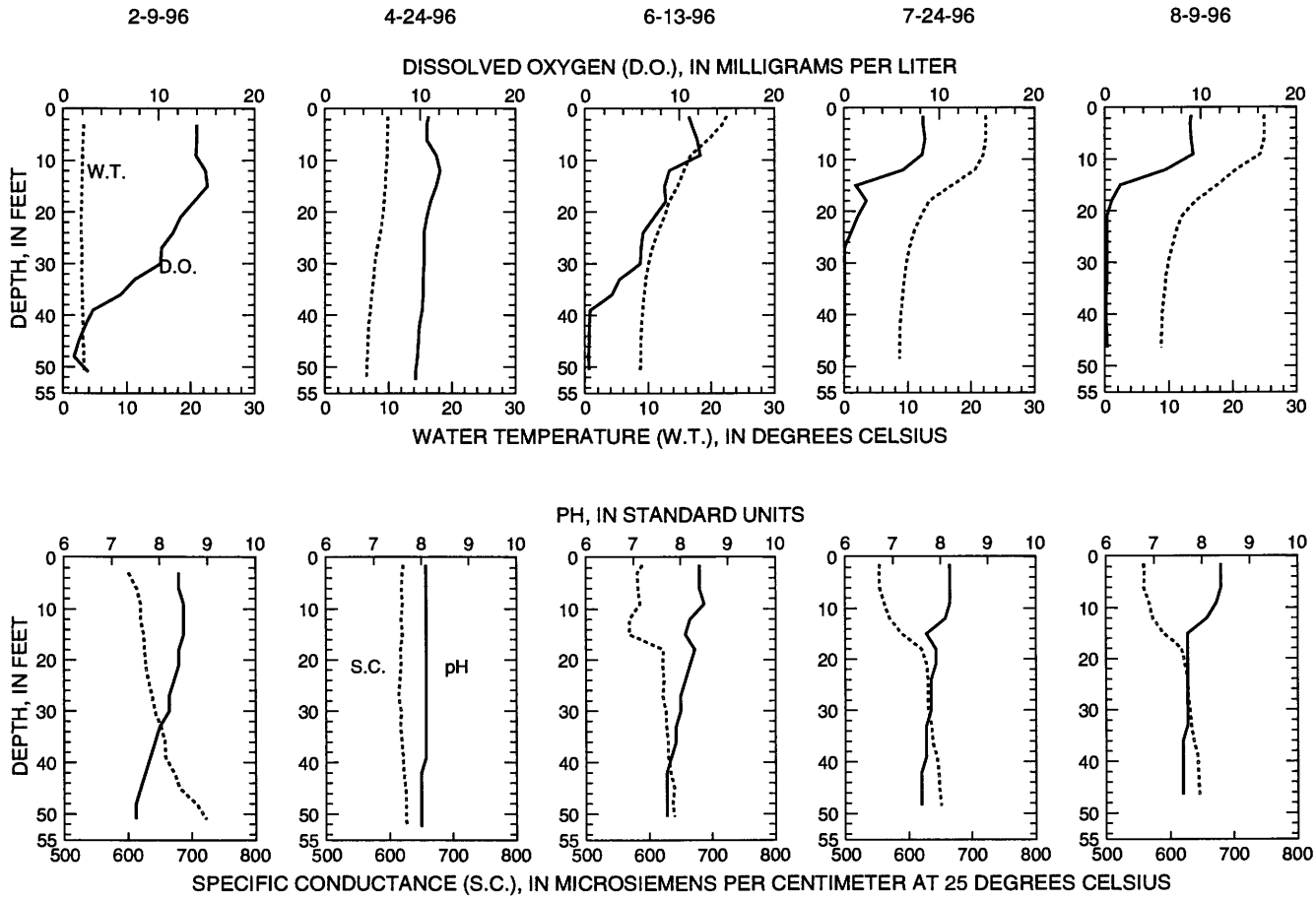
PERIOD OF RECORD.--February 1991 to current year.

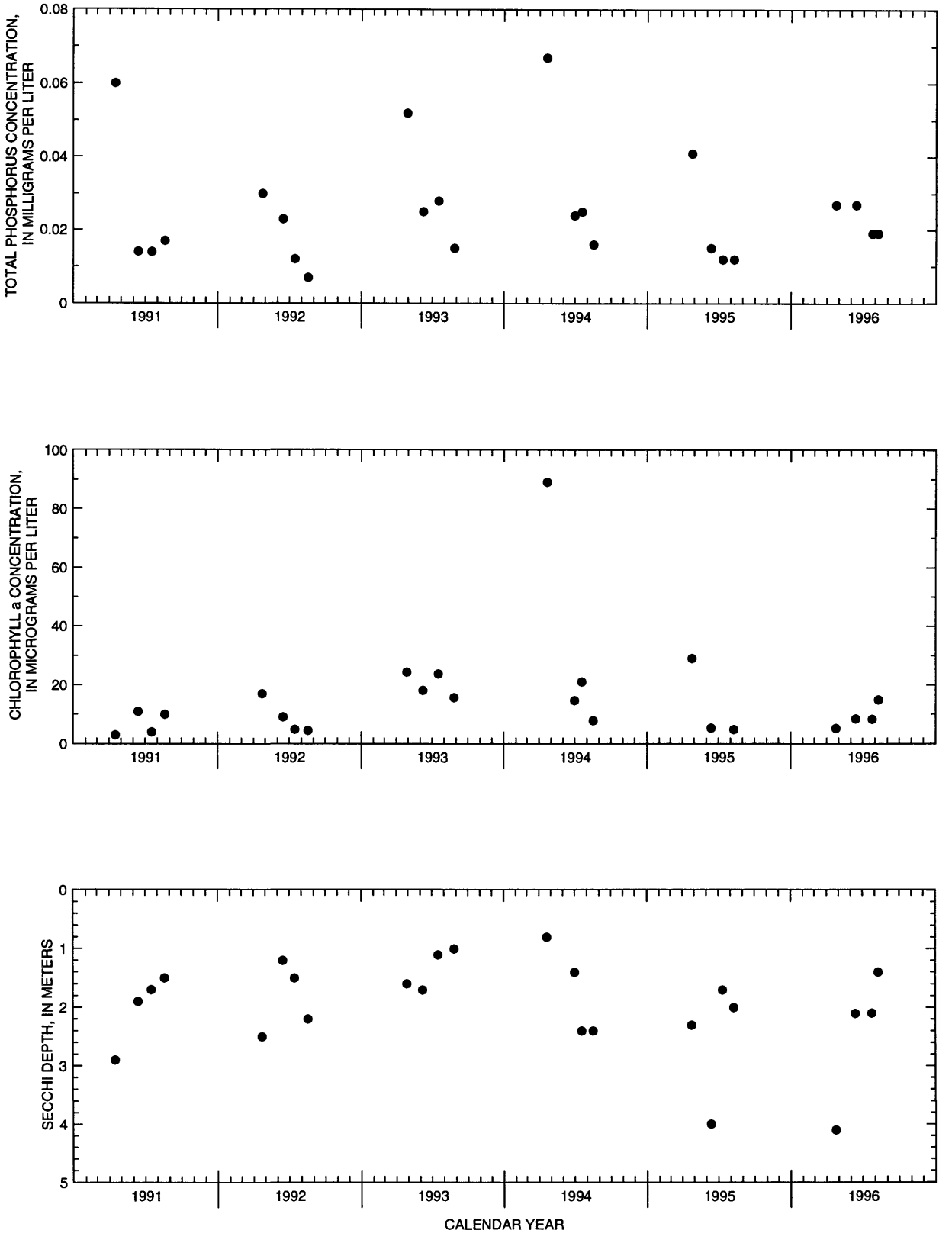
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 09 TO AUGUST 09, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 09		Apr. 24		June 13		July 24		Aug. 09	
Depth of sample (ft)	3.0	51	1.5	53	1.5	51	1.5	49	1.5	47
Lake stage (ft)	---		---		11.87		11.37		11.09	
Specific conductance (µS/cm)	601	723	622	627	589	640	554	651	559	646
pH (units)	8.4	7.5	8.1	8.0	8.4	7.7	8.2	7.6	8.4	7.6
Water temperature (°C)	3.0	3.5	10.0	6.5	22.5	8.5	22.5	8.5	25.0	9.0
Color (Pt-Co. scale)	---	---	35	---	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.60	---	---	---	---	---	---	---
Secchi-depth (meters)	---		4.1		2.1		2.1		1.4	
Dissolved oxygen	14.0	2.6	10.9	9.5	11.0	0.4	8.3	0.0	9.0	0.2
Hardness, as CaCO3	---	---	310	320	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	68	68	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	35	36	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	10	9.8	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2	2	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	270	280	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	30	30	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	27	27	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	---	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	4.7	4.9	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	374	376	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.64	0.62	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.17	0.31	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	---	0.69	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.10	1.0	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.74	1.6	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.027	0.036	0.027	0.241	0.019	0.517	0.019	0.493
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	0.004	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	---	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	15	---	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	5.1	---	8.5	---	8.3	---	15	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Druid Lake near Hartford, Wisconsin.

05544500 EAGLE LAKE NEAR KANSASVILLE, WI

LOCATION.--Lat 42°42'30", long 88°06'55", in SE 1/4 NE 1/4 (corrected), sec.22, T.3 N., R.20 E., Racine County, Hydrologic Unit 07120006, 1.5 mi northwest of Kansasville.

DRAINAGE AREA.--6.1 mi^2.

PERIOD OF RECORD.--1936-64, 1975-77, 1979, and February 1993 to current year (intermittent). Unpublished intermittent records from October 1940 to July 1979.

GAGE.--1936-79, nonrecording gage at different datum; 1993-96, assumed datum, staff located at residence of observer, Virginia Jochimsen.

EXTREMES FOR PERIOD 1936-64, 1975-77, 1979.--Maximum gage height observed, 7.80 ft, July 1, 1942; minimum observed, 4.31 ft, Jan. 22, 1964.

EXTREMES FOR PERIOD 1993-96.--Maximum gage height observer, 12.25 ft, Apr. 22, 1993; minimum observer, 10.37 ft, Feb. 2, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 12.09 ft, June 5; minimum observed, 10.51 ft, Sept. 25.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	11.54	---	---	---	---
2	---	11.65	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	11.53	---	---
4	11.29	---	---	---	---	---	---	---	---	---	---	10.83
5	---	---	---	---	11.28	---	---	---	12.09	---	---	---
6	---	---	---	---	---	---	11.49	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	11.23	---
8	---	11.63	---	---	---	---	---	11.48	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	11.39	---	11.47	---	---	11.41	---	---
11	11.47	---	---	---	---	---	---	---	---	---	---	10.79
12	---	---	---	---	---	---	---	---	11.68	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	11.09	---
15	---	11.69	---	---	---	---	---	11.59	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	11.79	---	---	11.37	---	---
18	11.39	---	---	---	---	---	---	---	---	---	---	10.75
19	---	---	---	---	---	---	---	---	11.75	---	---	---
20	---	---	---	---	---	---	---	---	---	---	11.01	---
21	---	---	---	---	---	---	---	---	---	---	10.99	---
22	---	11.71	---	---	---	---	11.79	11.85	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	11.79	---	---	11.33	---	---
25	11.43	---	---	---	---	---	---	---	---	---	---	10.51
26	---	---	---	---	---	---	---	---	11.71	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	10.89	---
29	---	---	---	---	---	---	---	11.63	---	11.26	---	---
30	---	11.76	---	---	---	11.51	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	11.29	---	---

424207088072400 EAGLE LAKE, AT DEEP HOLE, NEAR KANSASVILLE, WI

LOCATION.--Lat 42°42'07", long 88°07'24", in SE 1/4 SW 1/4 sec.22, T.3 N., R.20 E., Racine County, Hydrologic Unit 07120006, 1.5 mi northwest of Kansasville.

DRAINAGE AREA.--6.99 mi^2.

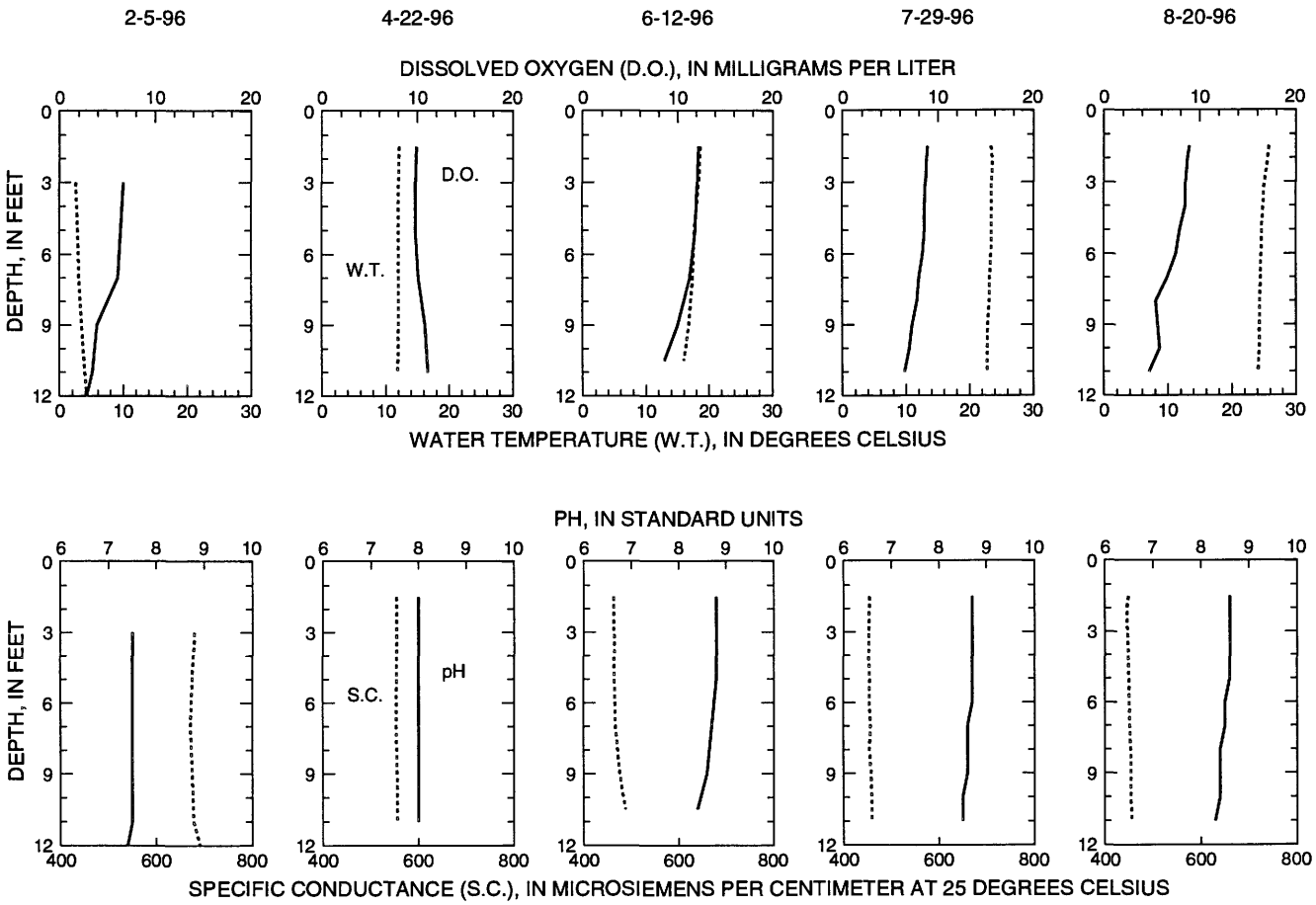
PERIOD OF RECORD.--February 1993 to current year.

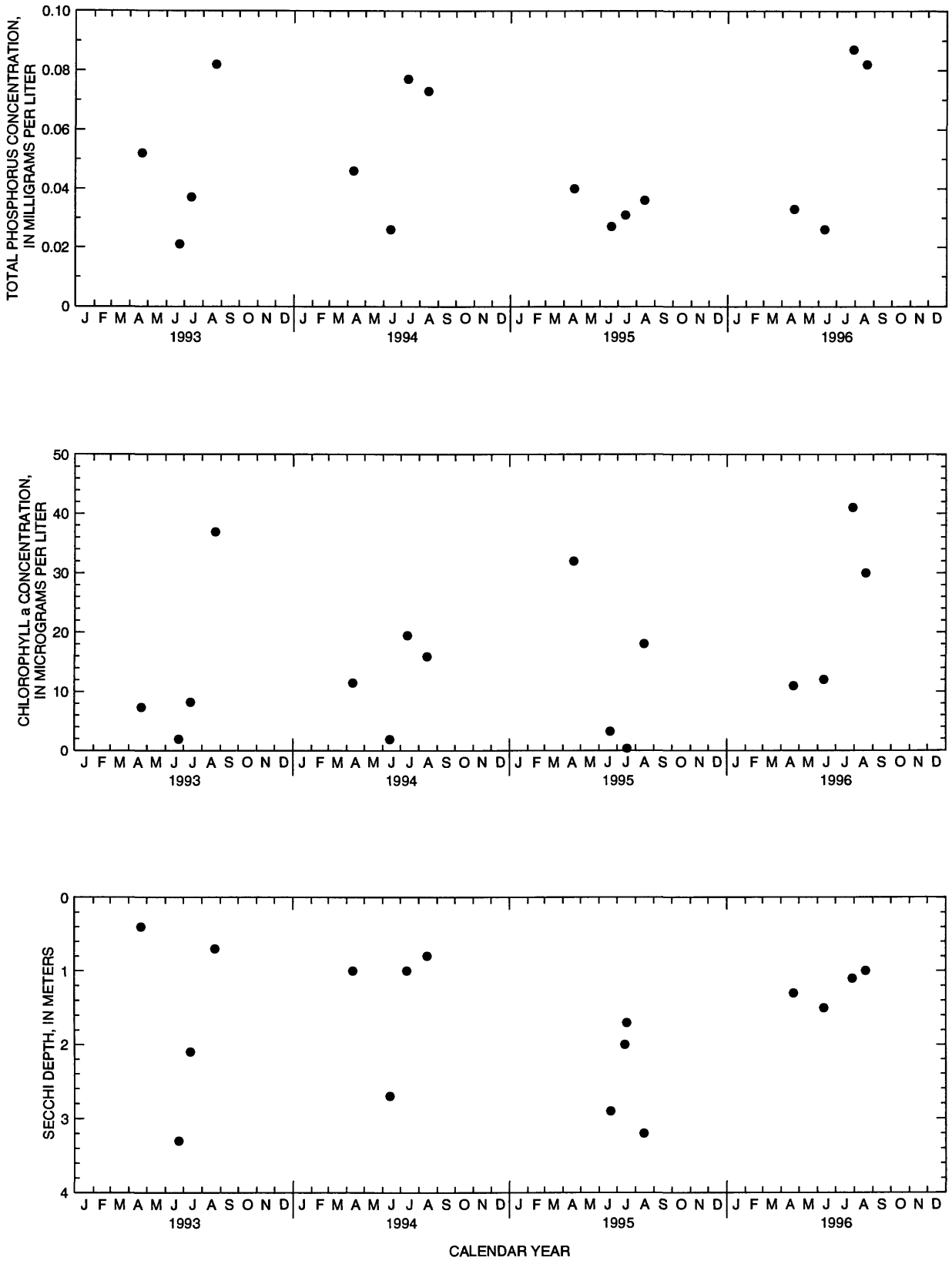
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 05 TO AUGUST 20, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 05		Apr. 22		June 12		July 29		Aug. 20	
Depth of sample (ft)	3.0	12	1.5	11	1.5	11	1.5	11	1.5	11
Lake stage (ft)	11.28		11.79		11.68		11.26		11.01	
Specific conductance (µS/cm)	680	691	554	555	463	487	454	459	448	456
pH (units)	7.5	7.4	8.0	8.0	8.8	8.4	8.7	8.5	8.6	8.3
Water temperature (°C)	2.5	4.0	12.0	12.0	18.5	16.0	23.5	23.0	26.0	24.0
Color (Pt-Co. scale)	---	---	25	20	---	---	---	---	---	---
Turbidity (NTU)	---	---	2.7	2.5	---	---	---	---	---	---
Secchi-depth (meters)	---		1.3		1.5		1.1		1.0	
Dissolved oxygen	6.7	2.8	9.9	11.1	12.2	8.6	8.9	6.5	8.9	4.7
Hardness, as CaCO3	---	---	260	260	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	53	53	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	30	30	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	17	17	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	4	4	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	150	160	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	63	63	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	41	41	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.2	0.2	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	6.0	6.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	342	340	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.30	0.29	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.90	0.80	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.90	0.80	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.2	1.1	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.033	0.029	0.026	0.031	0.087	0.079	0.082	0.078
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	0.6	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	11	---	12	---	41	---	30	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Eagle Lake (Deep Hole) near Kansasville, Wisconsin.

425103088261500 EAGLE SPRING LAKE AT EAGLEVILLE, WI

LOCATION.--Lat 42°51'03", long 88°26'15", in SE 1/4 NW 1/4 sec.36, T.5 N., R.17 E., Waukesha County, Hydrologic Unit 07120006, at Eagleville.

DRAINAGE AREA.--33.2 mi^2.

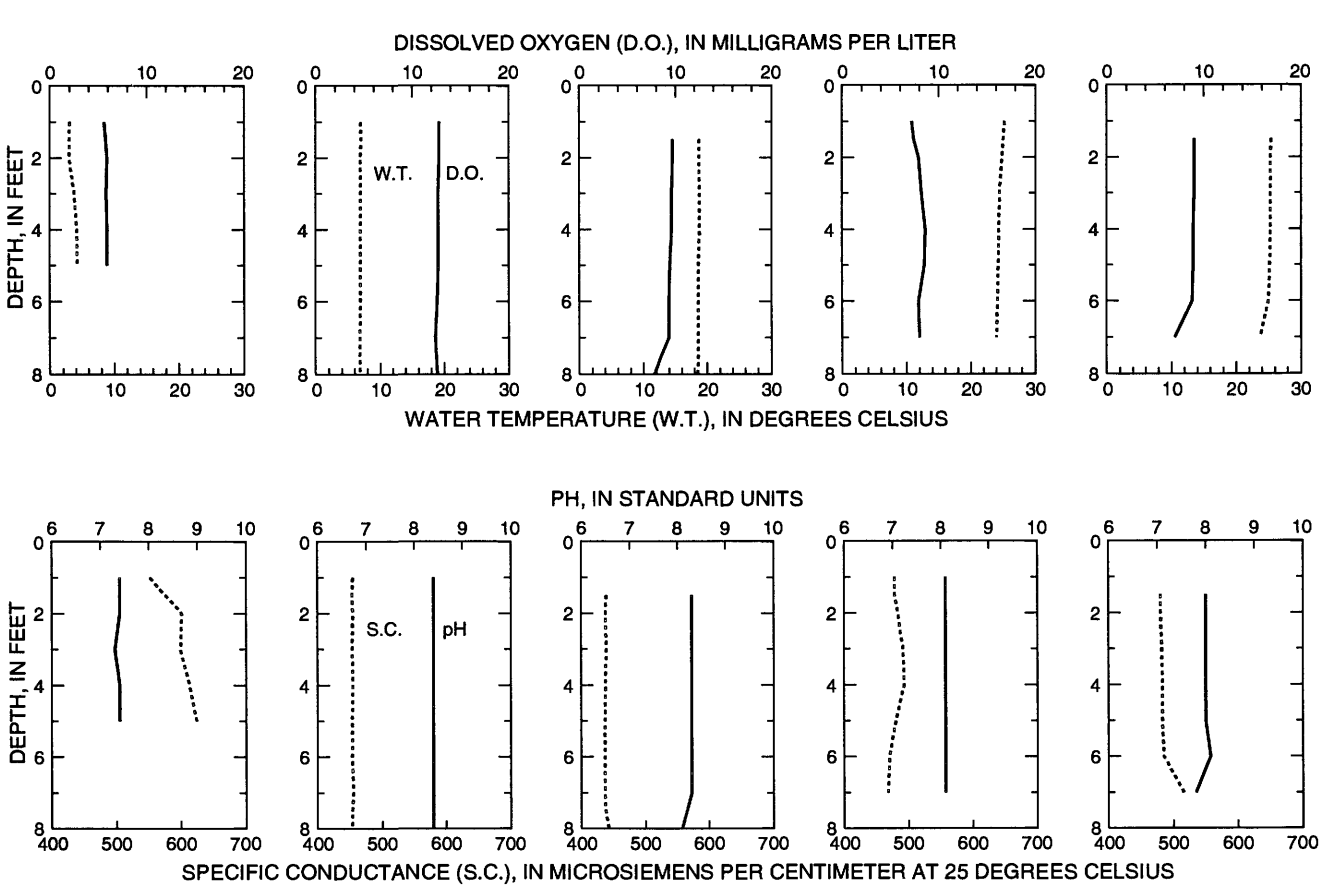
PERIOD OF RECORD.--April 1991 to current year.

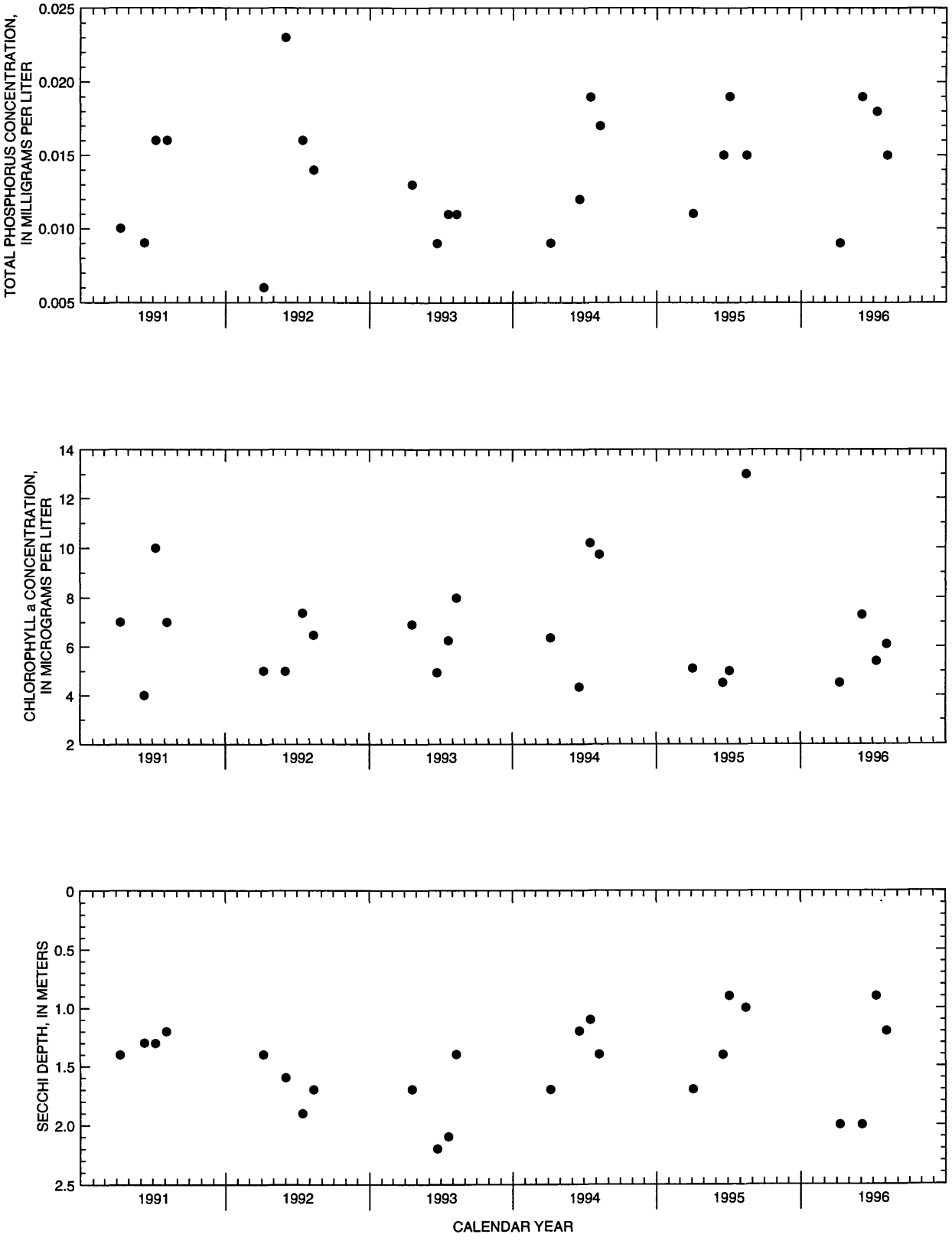
REMARKS.--Lake sampled near southeast end at a lake depth of about 8 ft. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene. Lake-stage readings from 1991 to 1993 (except 2/4/93 and 4/19/93) were previously reported 1 ft too high.

WATER-QUALITY DATA, FEBRUARY 08 TO AUGUST 05, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 08		Apr. 09		June 04		July 10		Aug. 05	
Depth of sample (ft)	1.0	5.0	1.5	7.5	1.5	7.5	1.5	6.0	1.5	7.0
Lake stage (ft)	9.61		9.67		9.56		9.53		9.55	
Specific conductance (µS/cm)	552	624	454	453	438	442	478	470	480	516
pH (units)	7.4	7.4	8.4	8.4	8.3	8.1	8.1	8.1	8.0	7.8
Water temperature (°C)	3.0	4.0	7.0	7.0	18.5	18.5	25.0	24.0	25.5	23.5
Color (Pt-Co. scale)	---	---	5	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.4	1.4	---	---	---	---	---	---
Secchi-depth (meters)	---		2.0		2.0		0.9		1.2	
Dissolved oxygen	5.6	5.9	12.8	12.6	9.7	8.5	7.4	7.9	9.0	7.0
Hardness, as CaCO3	---	---	230	230	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	49	48	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	27	26	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	6.1	6.0	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1	1	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	210	210	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	18	18	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	15	15	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	4.1	4.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	266	264	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	1.1	1.1	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.40	0.40	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.40	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.5	1.5	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.009	0.012	0.019	0.011	0.018	0.018	0.015	0.019
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	4.5	---	7.3	---	5.4	---	6.1	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Eagle Spring Lake at Eagleville, Wisconsin.

423051088155300 ELIZABETH LAKE NEAR TWIN LAKES, WI

LOCATION.--Lat 42°30'51", long 88°15'53", in NW 1/4 SW 1/4 sec.28, T.1 N., R.19 E., Kenosha County, Hydrologic Unit 07120006, near Twin Lakes.

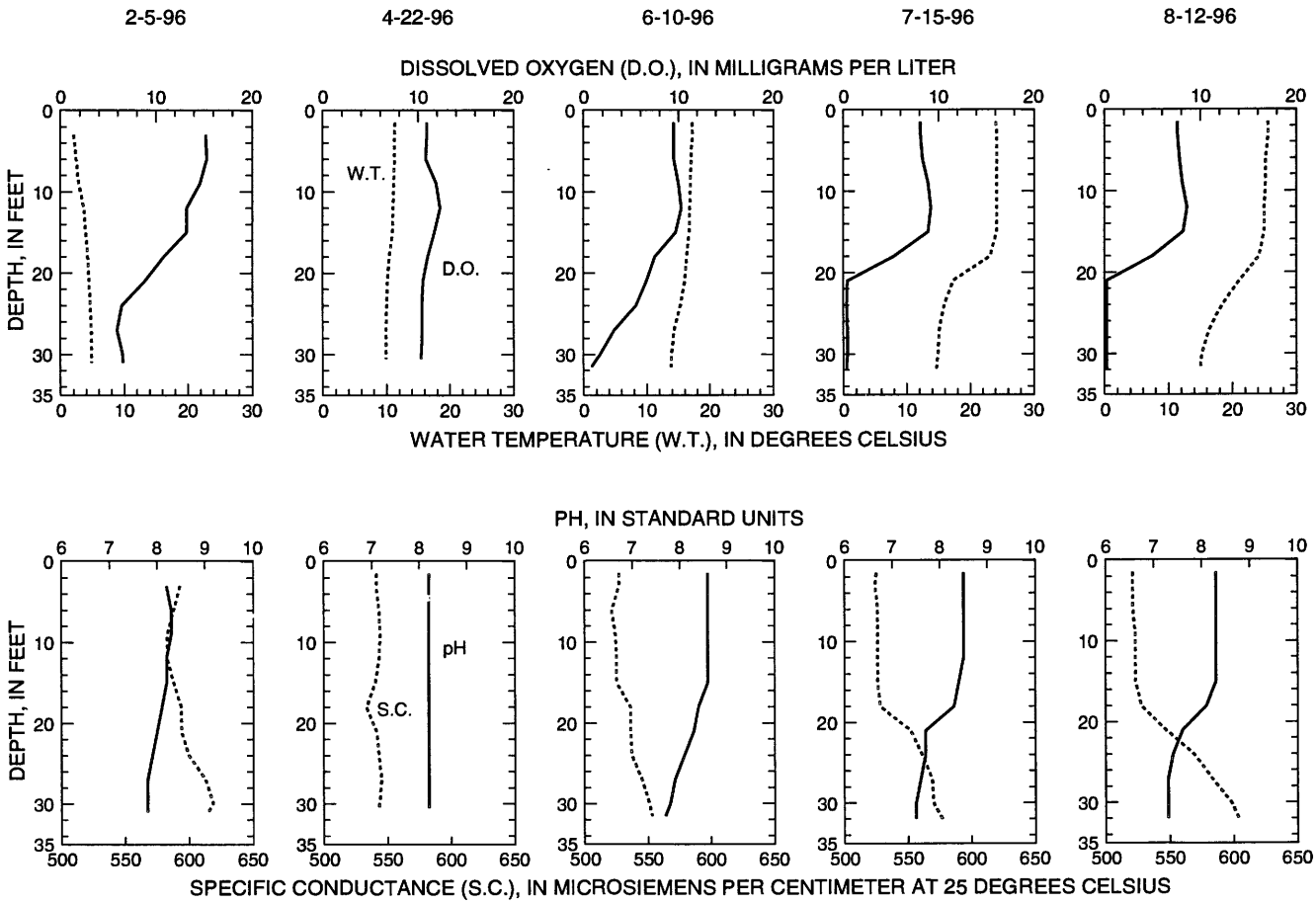
PERIOD OF RECORD.--February to August 1995.

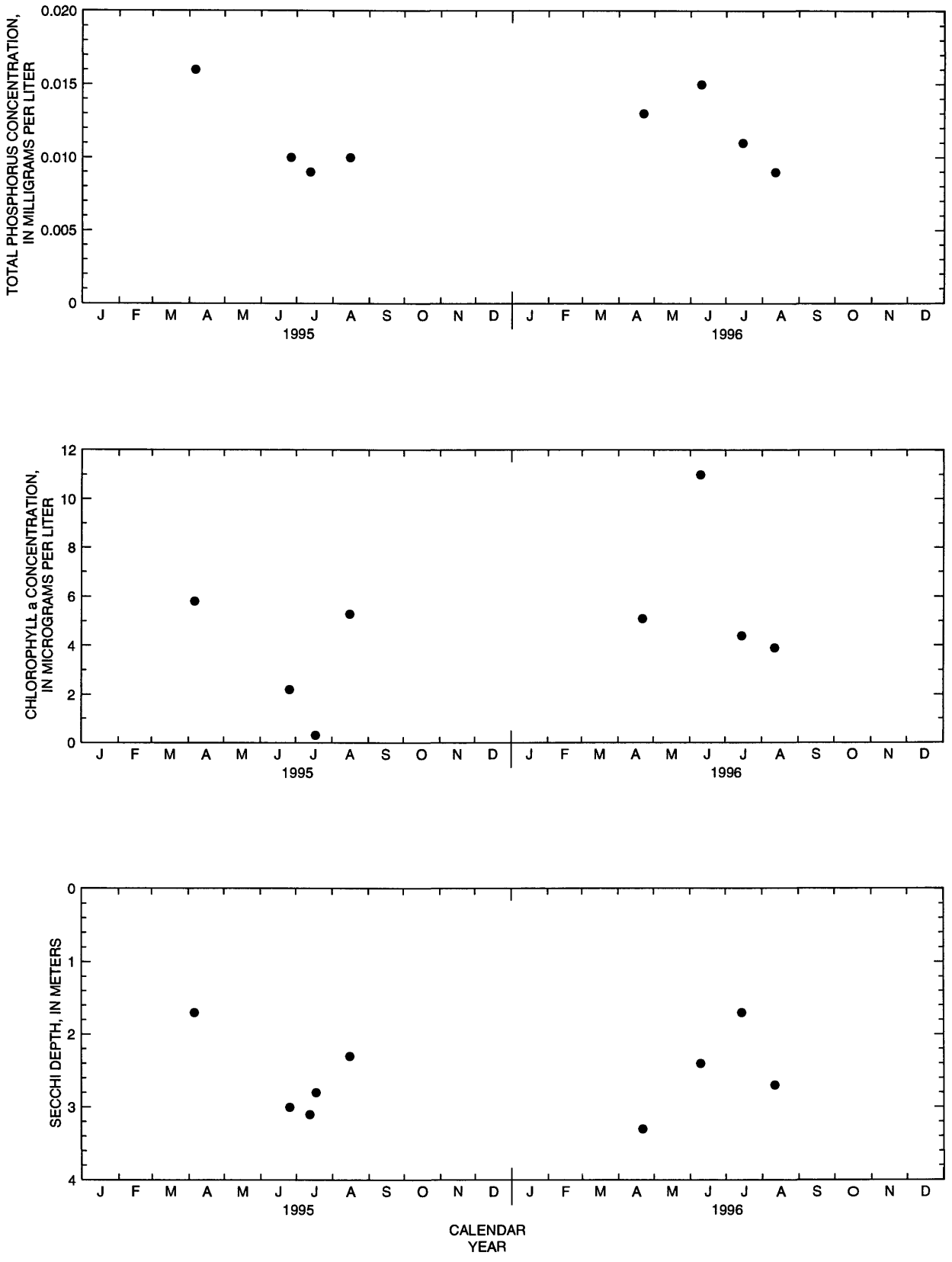
REMARKS.--Lake sampled at the deepest point near north side of lake. Lake was ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 05 TO AUGUST 12, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 05		Apr. 22		June 10		July 15		Aug. 12	
Depth of sample (ft)	3.0	31	1.5	31	1.5	32	1.5	32	1.5	32
Lake stage (ft)	11.03		10.98		12.15		11.50		11.54	
Specific conductance (µS/cm)	593	615	541	543	527	553	525	577	521	604
pH (units)	8.2	7.8	8.2	8.2	8.6	7.7	8.5	7.5	8.3	7.3
Water temperature (°C)	2.0	5.0	11.5	10.0	17.0	14.0	24.0	14.5	25.5	15.0
Color (Pt-Co. scale)	---	---	10	10	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.1	1.8	---	---	---	---	---	---
Secchi-depth (meters)	---		3.3		2.4		1.7		2.7	
Dissolved oxygen	15.2	6.5	10.9	10.3	9.5	0.8	8.1	0.3	7.6	0.2
Hardness, as CaCO3	---	---	240	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	39	39	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	35	36	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	20	21	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2	2	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	170	160	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	35	35	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	46	46	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.7	1.1	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	320	312	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.16	0.15	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.11	0.12	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.70	0.70	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.86	0.85	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.013	0.015	0.015	0.026	0.011	0.059	0.009	0.066
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	5.1	---	11	---	4.4	---	3.9	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Elizabeth Lake near Twin Lakes, Wisconsin.

05406050 FISH LAKE NEAR SAUK CITY, WI

LOCATION.--Lat 43°17'02", long 89°39'15" in NE 1/4 SW 1/4 sec.3, T.9 N., R.7 E., Dane County, Hydrologic Unit 07070005, on south side of lake near Ganser's Tavern and Dance Hall, 0.4 mi southwest of Crystal Lake, and 3.1 mi east of Sauk City.

DRAINAGE AREA.--2.23 mi^2. Area of Fish Lake, 252 acres.

PERIOD OF RECORD.--November 1966 to September 1981, April 1985 to May 1987, May 1988, April 1989 to October 11, 1990 (fragmentary); continuous record from Oct. 23, 1990 to current year.

REVISED RECORDS.--WDR WI-92-1: Drainage area. WDR WI-87-1: All published values for the 1987 water year are invalid. Two valid values for water years 1987 and 1988 are available: May 7, 1987, water surface 10.52 ft, and May 16, 1988, water surface 10.83 ft.

GAGE.--Water-stage recorder. Datum of gage is 848.07 ft above sea level. Prior to Oct. 23, 1990, nonrecording gage.

REMARKS.--Lake has no surface outlet.

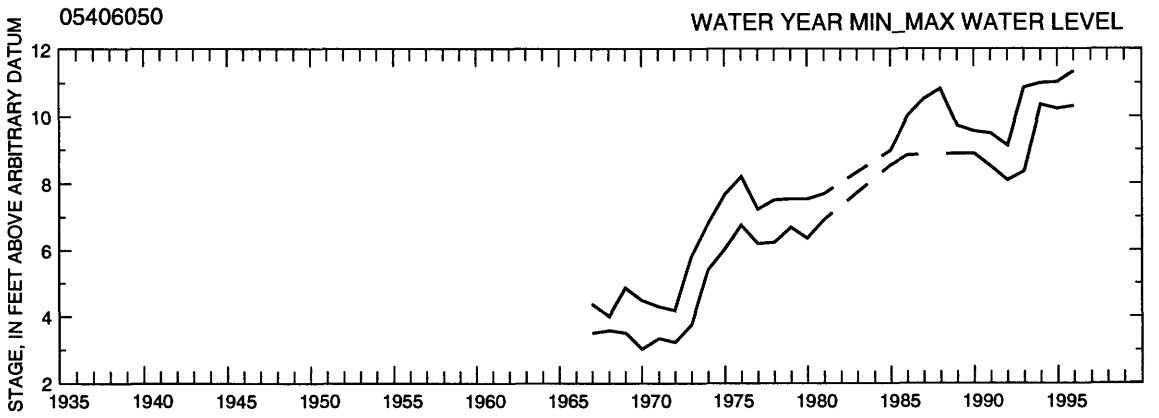
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.34 ft, June 21–23, 1996; minimum observed, 3.02 ft, Aug. 29, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.34 ft, June 21–23; minimum observed, 10.31 ft, Oct. 1, 2, and 5.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.32	10.49	10.49	---	---	---	---	10.68	10.73	11.27	11.02	10.80
2	10.31	10.53	10.48	---	---	---	---	10.66	10.81	11.26	11.01	10.79
3	10.33	10.52	10.48	---	---	---	---	10.66	10.81	11.24	11.00	10.78
4	10.32	10.50	10.48	10.46	---	---	---	10.66	10.80	11.22	10.98	10.77
5	10.32	10.49	10.48	---	---	---	---	10.65	10.80	11.20	11.01	10.76
6	10.46	10.49	10.48	---	---	---	---	10.65	10.82	11.18	11.11	10.74
7	10.46	10.48	10.47	---	---	---	---	10.64	10.88	11.16	11.11	10.73
8	10.45	10.47	10.47	---	---	---	---	10.65	10.89	11.14	11.09	10.72
9	10.45	10.46	10.48	---	10.68	---	---	10.66	10.88	11.12	11.07	10.72
10	10.44	10.47	---	---	---	---	---	10.79	10.88	11.10	11.05	10.71
11	10.43	10.48	---	---	---	---	---	10.79	10.88	11.08	11.03	10.69
12	10.43	10.47	---	---	---	---	---	10.76	10.88	11.08	11.01	10.67
13	10.42	10.46	---	---	---	10.68	---	10.75	10.88	11.07	11.00	10.64
14	10.40	10.46	---	---	---	---	---	10.75	10.88	11.06	10.98	10.60
15	10.38	10.45	---	---	---	---	---	10.77	10.87	11.04	10.96	10.58
16	10.36	10.45	---	---	---	---	---	10.77	10.85	11.02	10.95	10.58
17	10.35	10.45	---	---	---	---	---	10.78	11.14	11.01	10.93	10.56
18	10.34	10.44	---	---	---	---	---	10.79	11.27	11.14	10.92	10.54
19	10.35	10.44	---	---	---	---	---	10.79	11.27	11.16	10.93	10.53
20	10.37	10.45	---	---	---	---	---	10.80	11.27	11.14	10.97	10.53
21	10.37	10.44	---	---	---	---	---	10.81	11.28	11.12	10.96	10.52
22	10.35	10.42	---	---	---	---	---	10.80	11.34	11.11	10.95	10.51
23	10.35	10.42	---	---	---	---	---	10.81	11.33	11.09	10.94	10.50
24	10.35	10.41	---	---	---	---	---	10.80	11.33	11.08	10.92	10.49
25	10.34	10.40	---	---	---	---	---	10.78	11.32	11.07	10.91	10.48
26	10.34	10.40	---	---	---	---	---	10.78	11.31	11.06	10.89	10.49
27	10.40	10.48	---	---	---	---	---	10.77	11.30	11.07	10.87	10.51
28	10.44	10.49	---	---	---	---	---	10.77	11.30	11.07	10.86	10.49
29	10.44	10.49	---	---	---	---	---	10.76	11.28	11.06	10.85	10.47
30	10.42	10.49	---	---	---	---	---	10.74	11.28	11.05	10.83	10.46
31	10.42	---	---	---	---	---	---	10.73	---	11.03	10.81	---
MEAN	10.38	10.46	---	---	---	---	---	10.74	11.05	11.11	10.97	10.61
MAX	10.46	10.53	---	---	---	---	---	10.81	11.34	11.27	11.11	10.80
MIN	10.31	10.40	---	---	---	---	---	10.64	10.73	11.01	10.81	10.46



433632088100200 FOREST LAKE NEAR DUNDEE, WI

LOCATION.--Lat 43°36'32", long 88°10'02", in SW 1/4 NE 1/4 sec.12, T.13 N., R.19 E., Fond du Lac County, Hydrologic Unit 04040003, 3 mi south of Dundee.

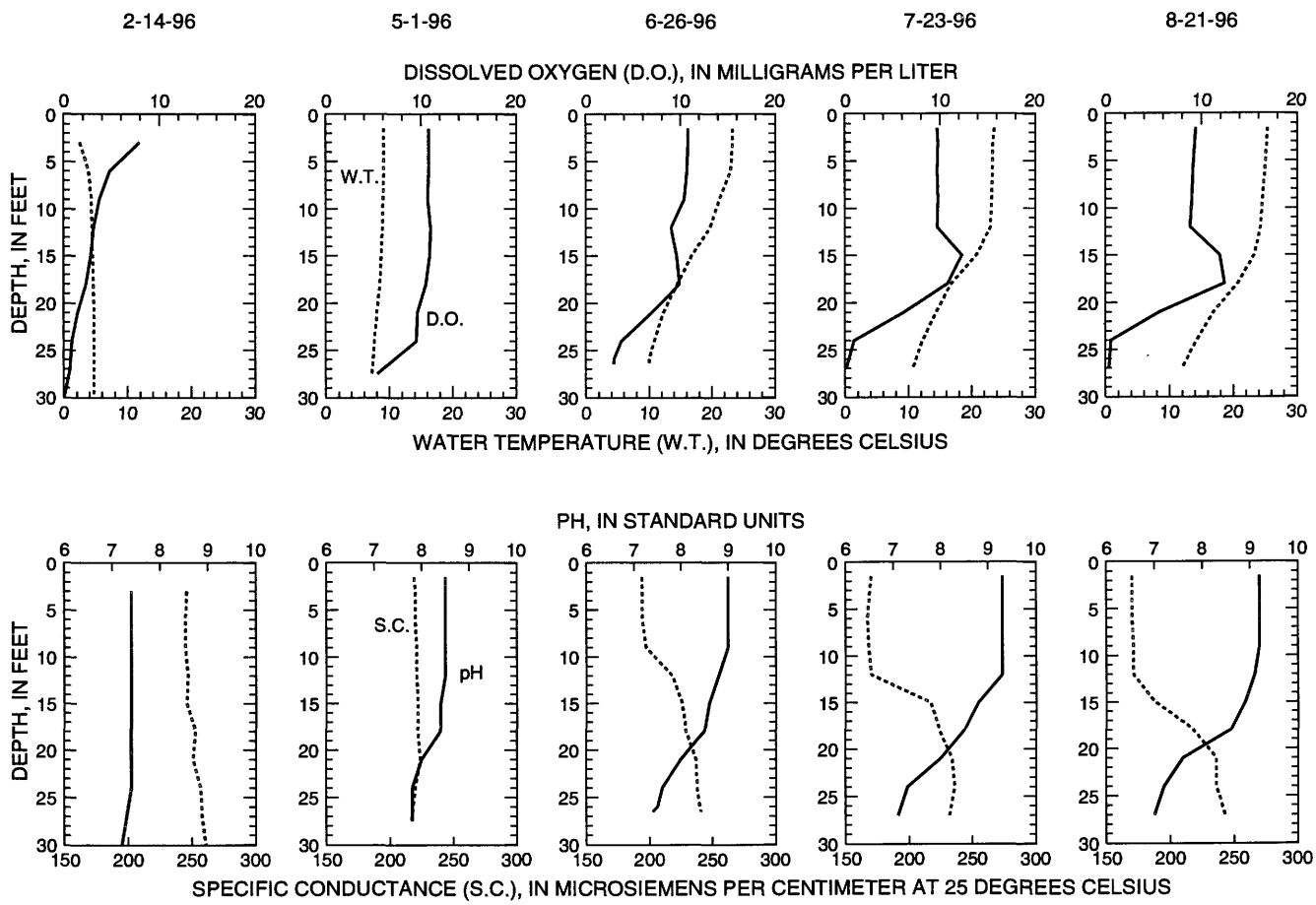
PERIOD OF RECORD.--March 1994 to current year.

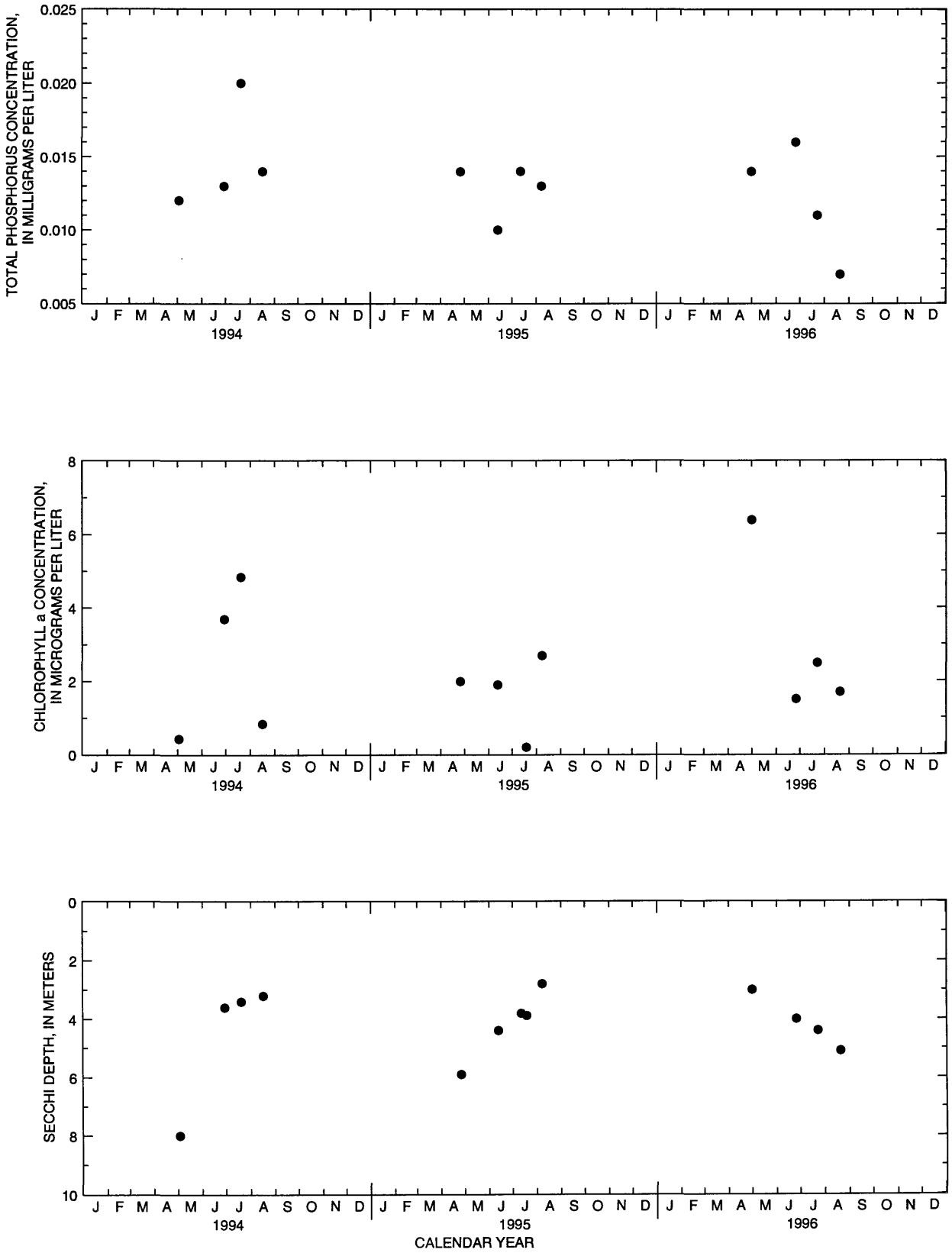
REMARKS.--Lake sampled at north end at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 14 TO AUGUST 21, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 14		May 01		June 26		July 23		Aug. 21	
Depth of sample (ft)	3.0	30	1.5	28	1.5	27	1.5	27	1.5	27
Lake stage (ft)	8.33		8.39		8.97		9.01		8.77	
Specific conductance (µS/cm)	246	261	219	217	194	241	170	232	170	243
pH (units)	7.4	7.2	8.5	7.8	9.0	7.4	9.3	7.1	9.2	7.0
Water temperature (°C)	2.5	4.5	9.0	7.0	23.5	10.0	23.5	10.5	25.5	12.0
Color (Pt-Co. scale)	---	---	10	10	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.70	0.80	---	---	---	---	---	---
Secchi-depth (meters)	---		3.0		4.0		4.4		5.1	
Dissolved oxygen	7.9	0.0	10.8	5.4	10.8	2.9	9.7	0.1	9.4	0.3
Hardness, as CaCO3	---	---	120	120	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	23	23	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	14	14	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	2.3	2.3	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.6	0.6	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	110	110	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	2.0	3.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	4.2	4.2	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.0	0.1	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	138	130	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	<0.01	<0.01	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.70	0.60	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.70	0.60	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.70	0.60	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.014	0.015	0.016	0.073	0.011	0.049	0.007	0.088
Phosphorus, ortho, dissolved (as P)	---	---	0.005	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	2	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	6.4	---	1.5	---	2.5	---	1.7	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Forest Lake near Dundee, Wisconsin.

430653088294601 CENTER OF FOWLER LAKE AT OCONOMOWOC, WI

LOCATION.--Lat 43°06'53", long 88°29'46", in SE 1/4 NW 1/4 sec.33, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, within City of Oconomowoc, at center of Fowler Lake.

DRAINAGE AREA.--87.8 mi^2.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--January to December 1984, October 1986 to current year.

GAGE.--Staff gage at outlet read by James E. Lamp from the Department of Public Works, City of Oconomowoc.

REMARKS.--Flows regulated at upstream lakes.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 9.96 ft, July 7, 1993; minimum observed, 7.72 ft, July 12, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 9.48 ft, June 28; minimum observed, 8.56 ft, June 4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	8.80	---	---	---	---	8.72	---	---	---	---	---
2	---	---	---	---	---	---	---	8.92	---	---	---	---
3	---	---	---	---	---	---	---	---	---	9.06	---	---
4	8.78	---	---	8.66	---	---	---	---	8.56	---	---	8.76
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	8.84	---	8.80	8.86	---	---	---	---	8.79	---
7	---	9.00	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	8.78	---	---	---	---	---	8.90	---
9	---	---	---	---	---	---	---	8.96	---	8.88	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	8.76	---	---	---	---	---
12	8.82	---	---	8.60	---	---	---	---	---	---	---	---
13	---	---	---	---	8.84	---	---	---	9.26	---	---	---
14	---	---	8.78	---	---	8.84	---	---	---	---	8.94	---
15	---	---	---	---	---	---	---	8.94	---	8.76	---	---
16	---	8.94	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	9.38	---	---	---
18	8.80	---	---	8.64	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	8.78	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	8.72	---
21	---	---	8.72	---	---	8.78	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	8.90	---	---	8.92	---	---	---	---
24	8.78	---	---	---	---	---	8.80	---	---	8.96	---	---
25	---	---	---	8.70	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	8.86	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	8.86	---	---	---	8.74	---	---	9.48	---	---	---
29	---	---	---	---	8.92	---	---	8.88	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	8.76	---	---	---	---	---	8.98	---	---

WATER-QUALITY RECORDS

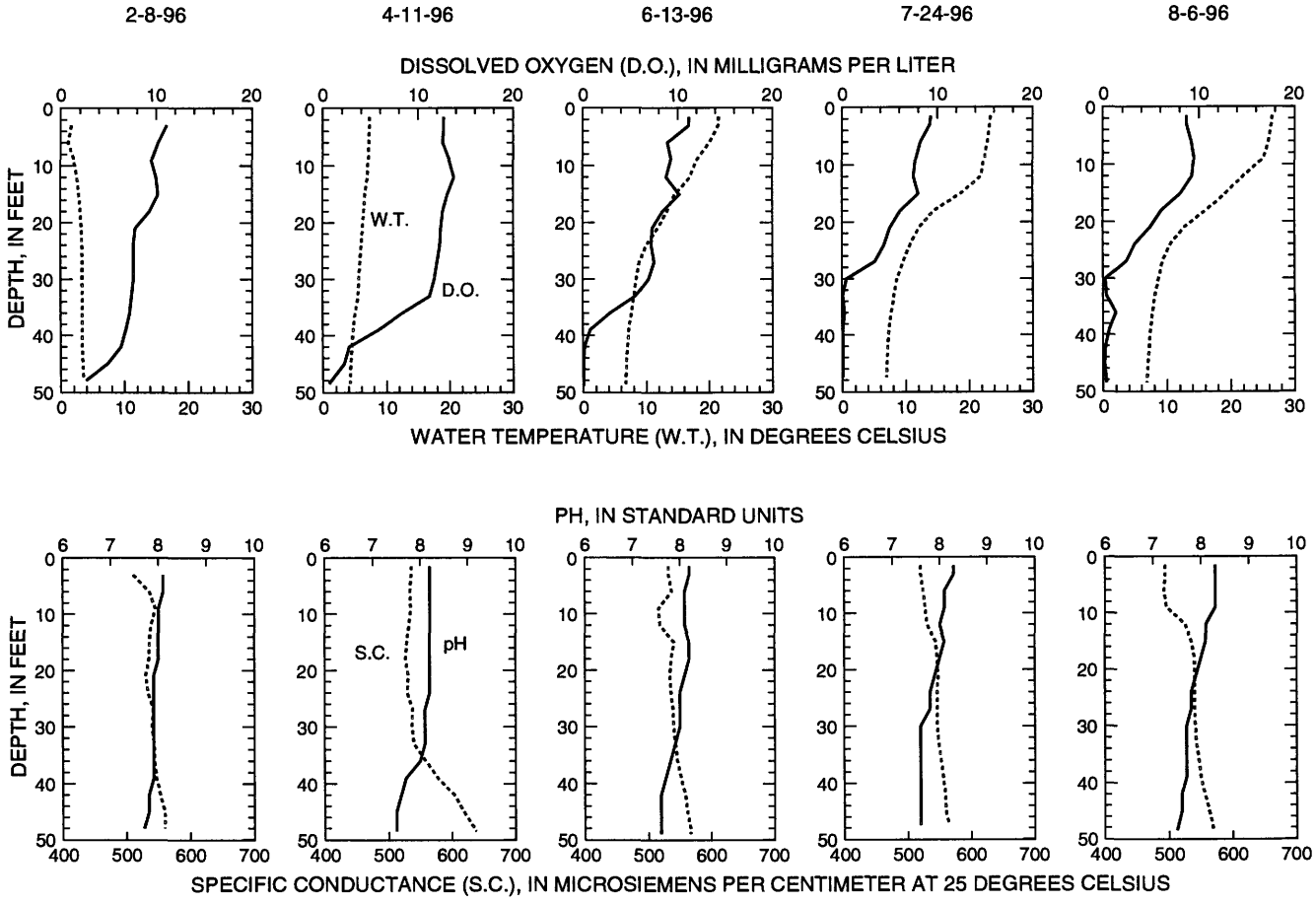
PERIOD OF RECORD.--January to December 1984 and February 1987 to current year.

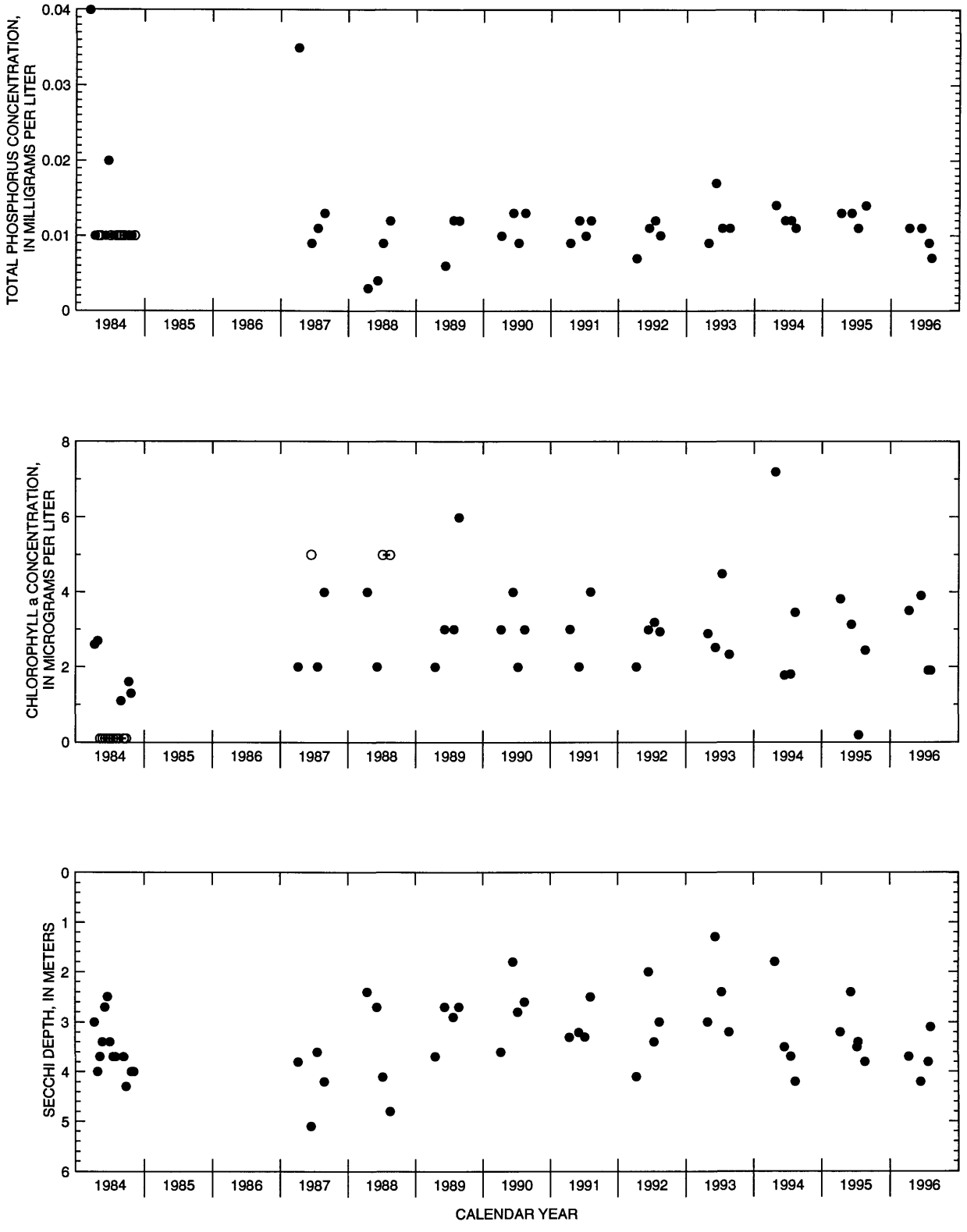
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 08 TO AUGUST 06, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 08		Apr. 11		June 13		July 24		Aug. 06	
Depth of sample (ft)	3.0	48	1.5	49	1.5	51	1.5	48	1.5	49
Lake stage (ft)	8.78		8.71		9.26		8.94		8.79	
Specific conductance (µS/cm)	511	560	536	638	532	567	520	565	494	570
pH (units)	8.1	7.7	8.2	7.5	8.2	7.6	8.3	7.6	8.3	7.5
Water temperature (°C)	1.5	3.5	7.5	4.0	21.5	6.5	23.5	7.0	26.5	7.0
Color (Pt-Co. scale)	---	---	15	10	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.80	1.00	---	---	---	---	---	---
Secchi-depth (meters)	---		3.7		4.2		3.8		3.1	
Dissolved oxygen	11.1	2.6	12.7	0.6	11.2	0.0	9.3	0.0	8.7	0.3
Hardness, as CaCO3	---	---	250	260	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	46	47	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	34	35	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	17	32	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2	2	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	210	220	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	26	27	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	37	61	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	2.9	7.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	324	384	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.19	0.22	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	0.28	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.40	0.52	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.80	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.59	1.0	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.011	0.035	0.011	0.114	0.009	0.049	0.007	0.144
Phosphorus, ortho, dissolved (as P)	---	---	0.002	0.009	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	0.4	54	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	3.5	---	3.9	---	1.9	---	1.9	---





Surface total phosphorus and chlorophyll a concentrations and Secchi depths for Center of Fowler Lake at Oconomowoc, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

434918088553601 GREEN LAKE AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, WI

LOCATION.--Lat 43°49'18", long 88°55'36" in NE 1/4 SE 1/4 SE 1/4 sec.27, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, on left bank at downstream side of County Trunk Highway A, 2.3 mi southeast of Green Lake.

DRAINAGE AREA.--103 mi^2.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 790.00 ft above sea level.

REMARKS.--No estimated daily gage heights. Records good except for October to February, which are fair. Lake level regulated by dam at outlet at Green Lake. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded gage height, 7.03 ft, June 20, 1996; minimum recorded, 5.41 ft, Jan. 17, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 7.03 ft, June 20; minimum recorded, 5.72 ft, Dec. 30, 31, Jan. 2, 3, 8, 9, and 10.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.09	6.18	5.98	5.74	6.12	6.12	6.27	6.48	6.31	6.68	6.39	6.21
2	6.04	6.29	5.96	5.74	6.11	6.12	6.28	6.47	6.42	6.67	6.38	6.20
3	6.09	6.32	5.96	5.75	6.10	6.12	6.28	6.46	6.44	6.64	6.36	6.19
4	6.10	6.26	5.94	5.76	6.08	6.10	6.31	6.45	6.44	6.61	6.35	6.18
5	6.07	6.24	5.99	5.75	6.07	6.10	6.31	6.43	6.44	6.60	6.37	6.18
6	6.29	6.23	5.98	5.74	6.06	6.09	6.31	6.43	6.45	6.58	6.44	6.17
7	6.38	6.23	5.92	5.74	6.05	6.08	6.31	6.42	6.49	6.57	6.45	6.16
8	6.38	6.21	5.90	5.74	6.04	6.08	6.31	6.41	6.52	6.55	6.44	6.16
9	6.41	6.18	5.96	5.74	6.03	6.06	6.31	6.40	6.53	6.50	6.40	6.17
10	6.42	6.17	5.87	5.74	6.03	6.02	6.31	6.46	6.53	6.48	6.37	6.17
11	6.42	6.19	5.83	5.75	6.05	6.01	6.31	6.47	6.53	6.46	6.36	6.17
12	6.41	6.15	5.80	5.76	6.06	6.00	6.31	6.45	6.54	6.45	6.36	6.13
13	6.41	6.14	5.80	5.76	6.06	6.02	6.32	6.44	6.54	6.46	6.34	6.09
14	6.40	6.12	5.84	5.76	6.06	6.06	6.31	6.43	6.53	6.46	6.34	6.07
15	6.33	6.11	5.83	5.76	6.06	6.09	6.34	6.44	6.50	6.45	6.31	6.05
16	6.27	6.09	5.82	5.76	6.06	6.11	6.38	6.43	6.50	6.44	6.29	6.03
17	6.25	6.08	5.81	5.76	6.05	6.12	6.38	6.43	6.86	6.42	6.28	6.02
18	6.20	6.08	5.80	5.86	6.04	6.12	6.40	6.45	6.97	6.51	6.26	6.01
19	6.19	6.06	5.80	5.99	6.03	6.13	6.45	6.45	7.02	6.56	6.26	6.01
20	6.20	6.09	5.80	6.00	6.02	6.13	6.50	6.44	7.02	6.53	6.27	6.00
21	6.19	6.05	5.78	6.01	6.01	6.12	6.52	6.44	7.00	6.52	6.26	6.00
22	6.13	6.02	5.78	6.06	6.00	6.12	6.52	6.44	6.96	6.52	6.29	6.02
23	6.09	6.01	5.78	6.07	6.00	6.13	6.51	6.40	6.89	6.50	6.29	6.00
24	6.14	5.99	5.77	6.10	6.01	6.16	6.50	6.37	6.85	6.49	6.29	6.01
25	6.10	5.97	5.76	6.10	6.03	6.22	6.52	6.36	6.80	6.47	6.28	5.99
26	6.07	5.96	5.75	6.10	6.06	6.23	6.50	6.36	6.77	6.45	6.25	5.97
27	6.11	5.98	5.74	6.16	6.11	6.23	6.47	6.34	6.75	6.43	6.24	6.01
28	6.14	6.00	5.74	6.15	6.13	6.24	6.45	6.32	6.74	6.42	6.23	6.00
29	6.14	5.99	5.74	6.15	6.13	6.24	6.44	6.32	6.73	6.43	6.23	5.97
30	6.11	5.98	5.73	6.14	---	6.25	6.49	6.31	6.72	6.42	6.22	5.96
31	6.09	---	5.74	6.14	---	6.27	---	6.31	---	6.41	6.22	---
MEAN	6.21	6.11	5.84	5.90	6.06	6.13	6.39	6.41	6.66	6.51	6.32	6.08
MAX	6.42	6.32	5.99	6.16	6.13	6.27	6.52	6.48	7.02	6.68	6.45	6.21
MIN	6.04	5.96	5.73	5.74	6.00	6.00	6.27	6.31	6.31	6.41	6.22	5.96

453421091333700 HEMLOCK LAKE NEAR MIKANA, WI

LOCATION.--Lat 45°34'21", long 91°33'37", in SE 1/4 SE 1/4 sec.26, T.36 N., R.10 W., Barron County, Hydrologic Unit 07050007, 2.5 mi southeast of Mikana.

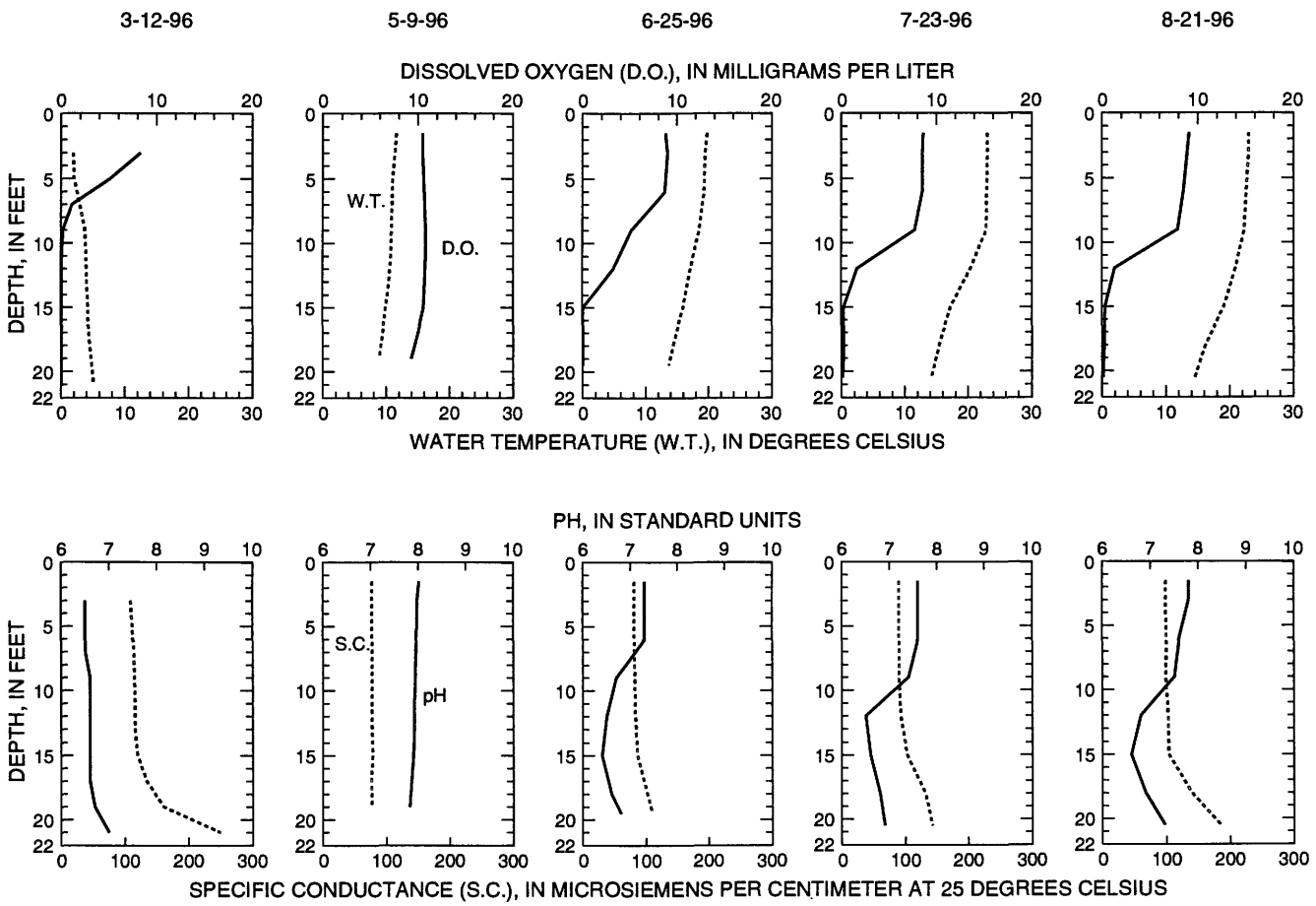
PERIOD OF RECORD.--March 1993 to August 1994 and March to September 1996.

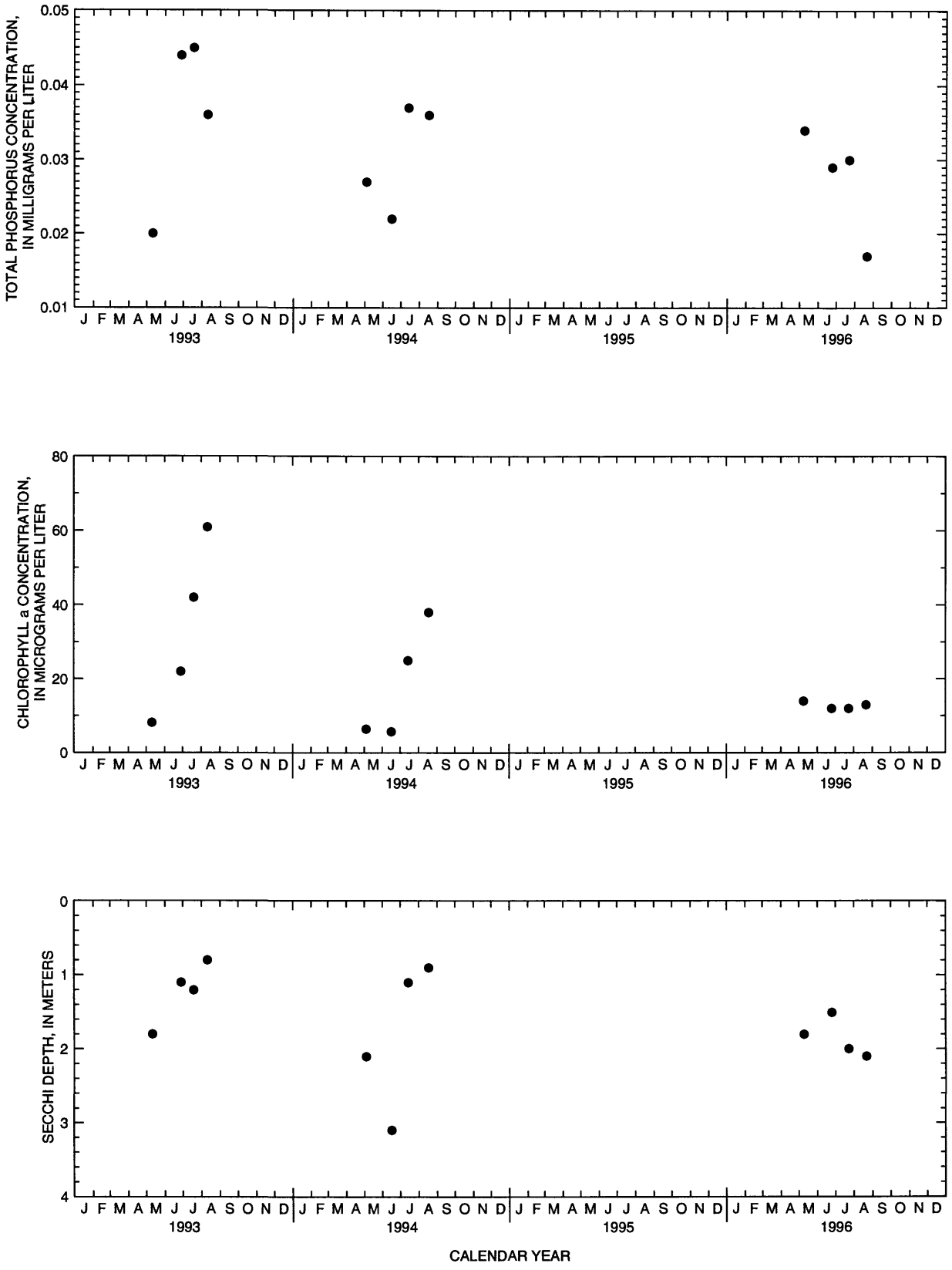
REMARKS.--Lake sampled at deep hole near center of lake. Lake ice-covered during March sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 12 TO AUGUST 21, 1996

(Milligrams per liter unless otherwise indicated)

	Mar. 12		May 09		June 25		July 23		Aug. 21	
Depth of sample (ft)	3.0	19	1.5	19	1.5	20	1.5	21	1.5	21
Lake stage (ft)	10.05		10.69		10.65		10.84		10.70	
Specific conductance (µS/cm)	109	161	77	77	81	110	90	143	99	185
pH (units)	6.5	6.7	8.0	7.8	7.3	6.8	7.6	6.9	7.8	7.3
Water temperature (°C)	2.0	4.5	11.5	9.0	20.0	13.5	23.0	14.0	23.0	14.5
Secchi-depth (meters)	---		1.8		1.5		2.0		2.1	
Dissolved oxygen	8.3	0.0	10.5	9.3	8.8	0.0	8.6	0.1	9.1	0.1
Phosphorus, total (as P)	---	---	0.034	0.045	0.029	0.197	0.030	0.530	0.017	0.325
Chlorophyll a, phytoplankton (µg/L)	---	---	14	---	12	---	12	---	13	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Hemlock Lake near Mikana, Wisconsin.

453554092042101 KIRBY LAKE NEAR CUMBERLAND, WI

LOCATION.--Lat 45°35'54", long 92°04'54", in SW 1/4 SW 1/4 sec.14, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, approximately 5 mi northwest of Cumberland.

PERIOD OF RECORD.--November 1995 through October 1996 (discontinued).

GAGE.--Water-stage recorder set to local arbitrary datum.

REMARKS.--Records are good. Records for many days before Mar. 13 are missing owing to recording equipment malfunction.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 9.24 ft, May 20, 1996; minimum observed, 7.61 ft, Oct 16.

GAGE HEIGHT, FEET, NOVEMBER 1995 TO OCTOBER 1996

DAILY MEAN VALUES

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	9.01	---	---	---	---	8.23	8.72	8.81	8.90	8.48	8.07	7.82
2	9.02	---	---	---	---	8.23	8.69	8.85	8.97	8.47	8.05	7.80
3	---	---	---	---	---	8.23	8.68	8.84	8.96	8.45	8.06	7.78
4	---	---	---	---	---	8.23	8.66	8.82	8.94	8.42	8.05	7.76
5	---	e8.65	---	---	---	8.23	8.72	8.81	8.91	8.44	8.04	7.74
6	---	---	---	---	---	8.23	8.74	8.80	8.89	8.44	8.06	7.73
7	---	---	---	---	---	8.23	8.73	8.77	8.87	8.52	8.05	7.71
8	---	---	---	---	---	8.23	8.73	8.75	8.84	8.49	8.04	7.70
9	---	---	---	---	---	8.23	8.72	8.73	8.83	8.47	8.02	7.70
10	---	---	---	---	---	8.20	8.71	8.71	8.81	8.45	8.01	7.68
11	---	---	---	---	---	8.24	8.68	8.69	8.78	8.43	8.00	7.66
12	---	---	---	---	---	8.31	8.65	8.68	8.77	8.41	7.97	7.65
13	---	e8.75	---	---	8.19	8.35	8.63	8.65	8.76	8.39	7.95	7.64
14	e8.85	e8.90	---	---	8.19	8.37	8.63	8.63	8.74	8.39	7.93	7.63
15	---	---	---	---	8.19	8.40	8.67	8.60	8.73	8.36	7.92	7.62
16	---	---	---	---	8.19	8.45	8.67	8.61	8.71	8.34	7.91	7.61
17	---	---	---	---	8.19	8.53	8.67	8.69	8.69	8.32	7.89	7.71
18	---	---	---	---	8.19	8.67	8.67	8.69	8.70	8.31	7.88	7.70
19	---	---	---	---	8.19	8.84	9.15	8.69	8.69	8.29	7.86	7.68
20	e8.75	---	---	---	8.18	8.93	9.24	8.68	8.66	8.28	7.85	7.67
21	---	---	---	---	8.17	8.95	9.19	8.68	8.64	8.26	7.84	7.66
22	---	---	---	---	8.17	8.95	9.13	8.68	8.62	8.27	7.84	7.66
23	---	---	---	---	8.15	8.93	9.08	8.68	8.59	8.25	7.83	7.79
24	---	---	8.45	---	8.15	8.91	9.05	8.67	8.58	8.22	7.83	7.82
25	---	---	8.45	---	8.22	8.89	9.00	8.66	8.56	8.20	7.81	7.81
26	---	---	---	---	8.23	8.87	8.96	8.82	8.55	8.18	7.82	7.81
27	---	---	---	---	8.23	8.85	8.92	8.99	8.54	8.16	7.85	7.80
28	---	---	---	---	8.23	8.82	8.89	8.99	8.55	8.14	7.85	7.78
29	---	---	---	---	8.23	8.79	8.85	8.96	8.53	8.12	7.84	7.81
30	---	---	---	---	8.23	8.75	8.82	8.92	8.51	8.11	7.83	7.85
31	---	---	---	---	8.23	---	8.78	---	8.50	8.09	---	7.83
MEAN	---	---	---	---	---	8.54	8.82	8.75	8.72	8.33	7.93	7.73
MAX	---	---	---	---	---	8.95	9.24	8.99	8.97	8.52	8.07	7.85
MIN	---	---	---	---	---	8.20	8.63	8.60	8.50	8.09	7.81	7.61

e Estimated

453608092035801 KIRBY LAKE (SITE 1) NEAR CUMBERLAND, WI

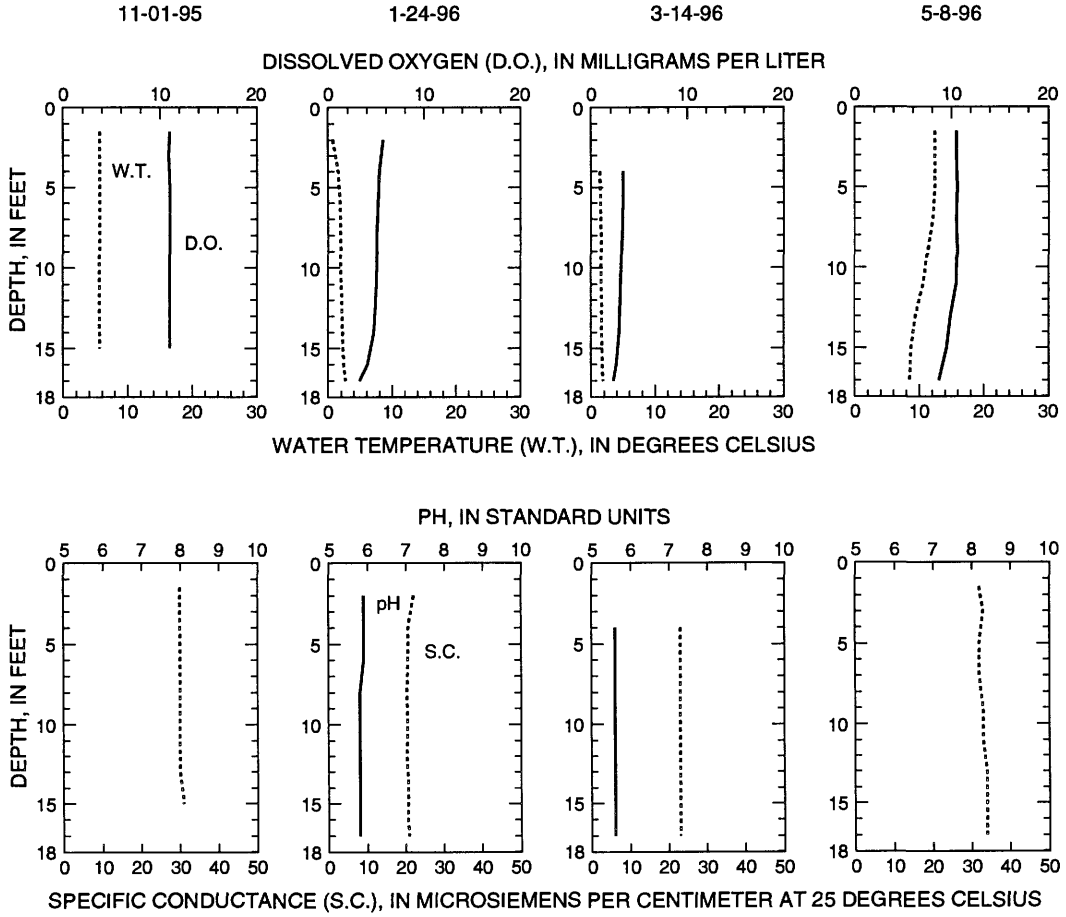
LOCATION.--Lat 45°36'08", long 92°03'58", in NE 1/4 SW 1/4 sec.14, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, approximately 5 mi northwest of Cumberland.

PERIOD OF RECORD.--November 1995 through November 1996 (discontinued).

REMARKS.--Water-quality analyses by Wisconsin State Laboratory of Hygiene. Lake was ice-covered during January and March measurements.

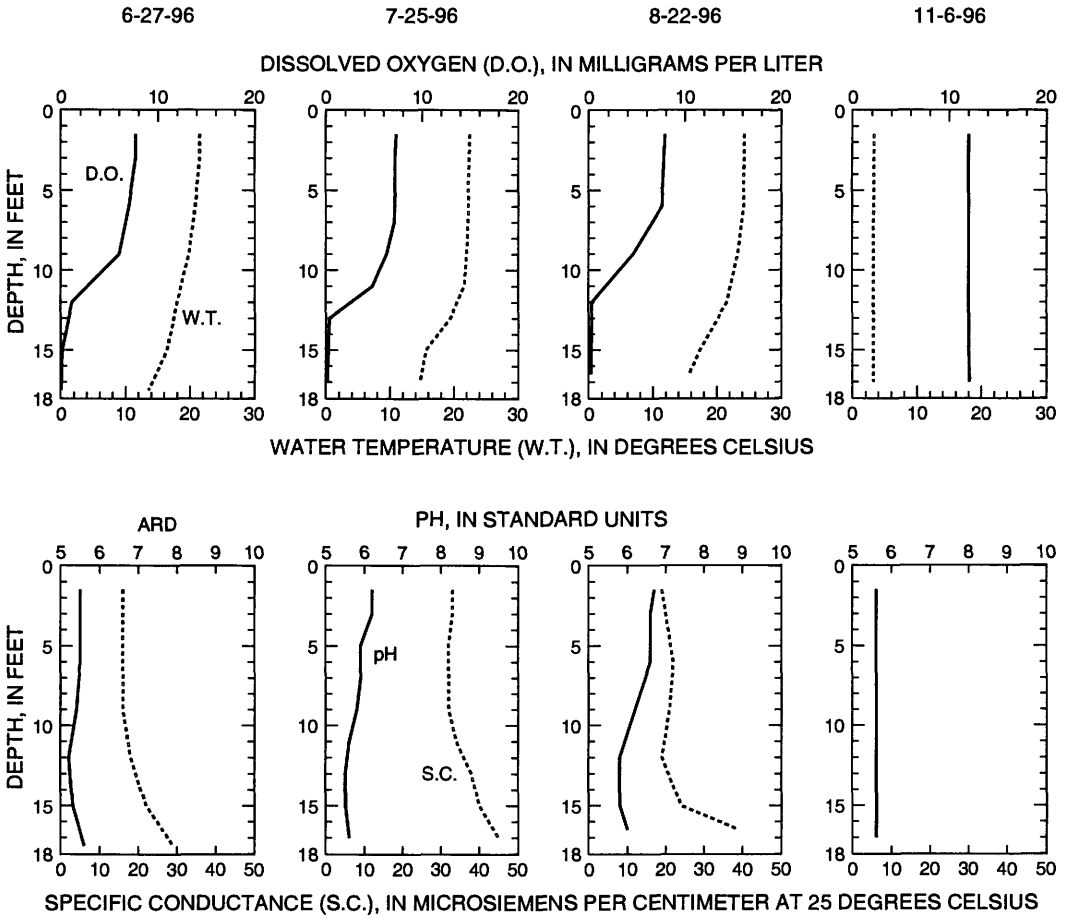
WATER-QUALITY DATA, NOVEMBER 01, 1995 TO MAY 10, 1996
(Milligrams per liter unless otherwise indicated)

	Nov. 01		Jan. 24		Mar. 14		May 08		May 10
Depth of sample (ft)	1.5	15	2.5	17	4.0	17	1.5	17	1.5
Lake stage (ft)	9.01		8.45		8.19		8.71		---
Specific conductance (µS/cm)	30	31	---	21	23	23	32	33	---
pH (units)	---	---	---	5.8	5.6	5.6	---	---	---
Water temperature (°C)	5.5	5.5	---	2.5	1.5	2.0	12.5	8.5	---
Secchi-depth (meters)	1.8		---		---		1.8		---
Dissolved oxygen	11.0	11.0	---	3.2	3.3	2.3	10.5	8.7	---
Alkalinity, as CaCO3	6	6	---	---	---	---	7	---	---
Chloride, dissolved (Cl)	---	---	---	---	---	---	---	---	0.9
Nitrogen, NO2 + NO3, diss. (as N)	---	---	---	---	---	---	0.08	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	---	---	---	---	<0.03	---	---
Nitrogen, organic, total (as N)	---	---	---	---	---	---	0.60	---	---
Nitrogen, amm. + org., total (as N)	---	---	---	---	---	---	0.60	---	---
Nitrogen, total (as N)	---	---	---	---	---	---	0.68	---	---
Phosphorus, total (as P)	0.023	0.022	0.030	0.018	0.024	0.027	0.030	0.023	---
Chlorophyll a, phytoplankton (µg/L)	6.4	---	---	---	---	---	7.4	---	---



WATER-QUALITY DATA, JUNE 27 TO NOVEMBER 06, 1996
(Milligrams per liter unless otherwise indicated)

	June 27		June 29	July 25		Aug. 22		Nov. 06
Depth of sample (ft)	1.5	18	18	1.5	17	1.5	17	1.5
Lake stage (ft)	8.99		8.96	8.56		8.27		7.81
Specific conductance (µS/cm)	16	29	29	33	45	19	39	---
pH (units)	5.5	5.6	5.6	6.2	5.6	6.7	6.0	6.1
Water temperature (°C)	21.5	13.5	13.5	22.5	14.5	24.5	15.5	3.3
Secchi-depth (meters)	1.7		---	2.0		2.0		2.0
Dissolved oxygen	7.7	0.0	0.0	7.3	0.1	7.9	0.2	12.0
Phosphorus, total (as P)	0.042	---	0.054	0.024	0.081	0.025	0.042	0.025
Chlorophyll a, phytoplankton (µg/L)	5.3	---	---	5.7	---	4.3	---	---



453601092035301 KIRBY LAKE (SITE 2) NEAR CUMBERLAND, WI

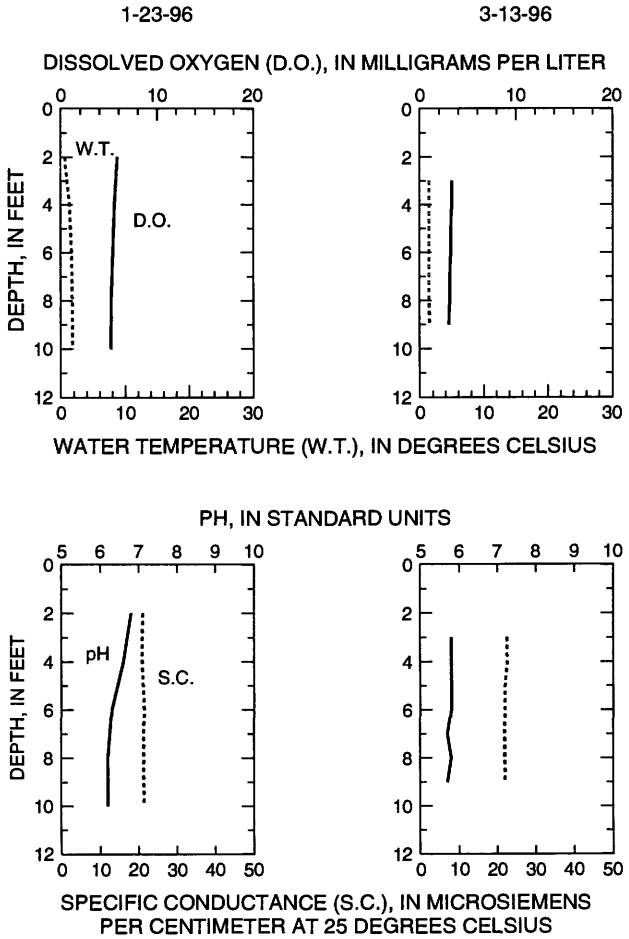
LOCATION.--Lat 45°36'01", long 92°03'53", in NE 1/4 SW 1/4 sec.14, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, approximately 5 mi northwest of Cumberland.

PERIOD OF RECORD.--November 1995 through November 1996 (discontinued).

REMARKS.--Water-quality analyses by Wisconsin State Laboratory of Hygiene. Lake was ice-covered during measurements.

WATER-QUALITY DATA, JANUARY 23 AND MARCH 13, 1996
(Milligrams per liter unless otherwise indicated)

	Jan. 23		Mar. 13	
Depth of sample (ft)	2.0	10	3.0	9.0
Lake stage (ft)	8.45		8.19	
Specific conductance (µS/cm)	21	21	23	22
pH (units)	6.8	6.2	5.8	5.7
Water temperature (°C)	0.5	2.0	1.5	1.5
Secchi-depth (meters)	---		---	
Dissolved oxygen	5.8	5.2	3.3	3.0
Phosphorus, total (as P)	0.018	0.017	0.027	0.023

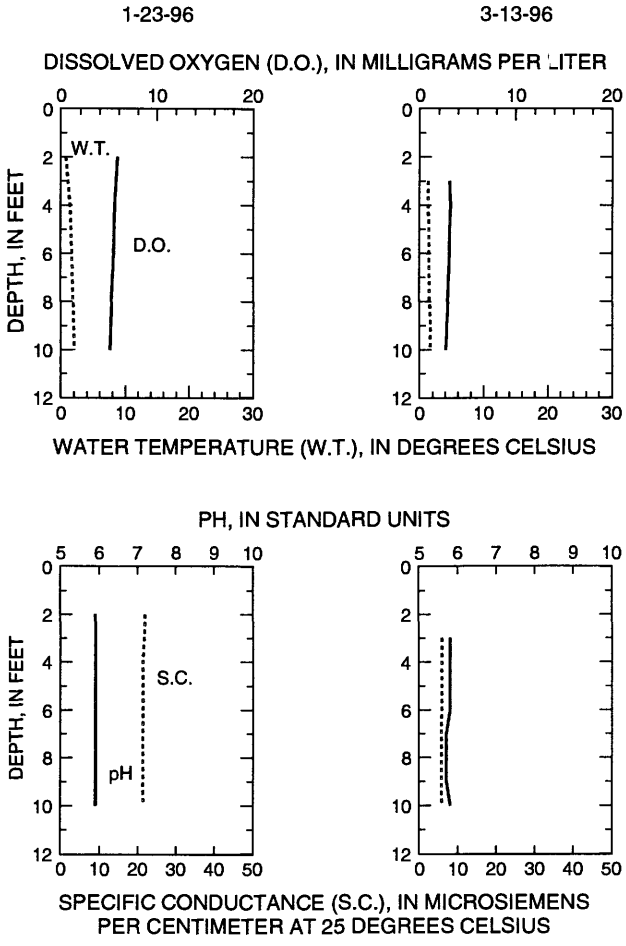


453612092034901 KIRBY LAKE (SITE 3) NEAR CUMBERLAND, WI

LOCATION.--Lat 45°36'12", long 92°03'49", in SW 1/4 NE 1/4 sec.14, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, approximately 5 mi northwest of Cumberland.

PERIOD OF RECORD.--November 1995 through November 1996 (discontinued).

REMARKS.--Lake was ice-covered during measurements.



453603092035701 KIRBY LAKE (SITE 4) NEAR CUMBERLAND, WI

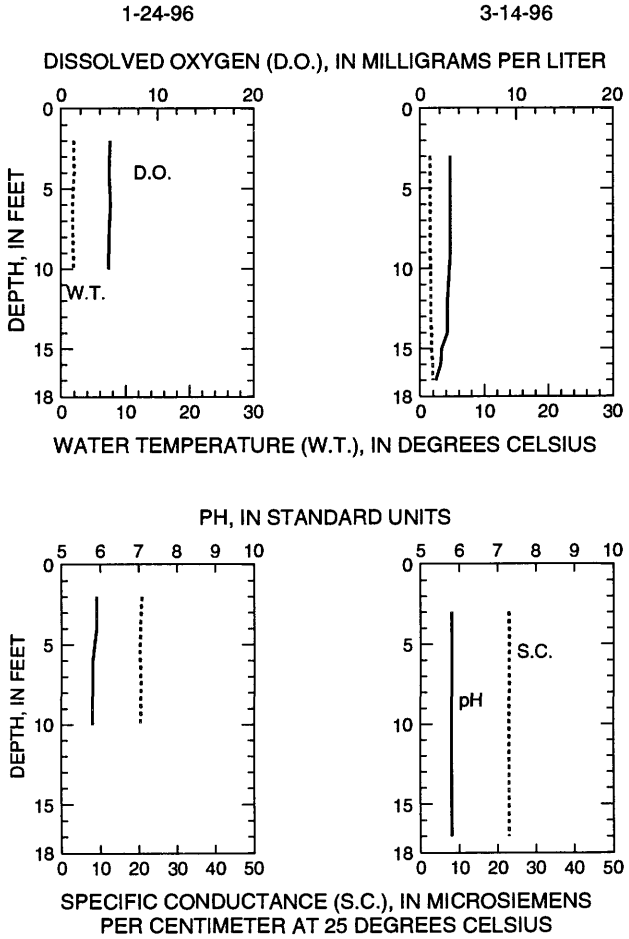
LOCATION.--Lat 45°36'03", long 92°03'57", in NE 1/4 SW 1/4 sec.14, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, approximately 5 mi northwest of Cumberland.

PERIOD OF RECORD.--November 1995 through November 1996 (discontinued).

REMARKS.--Water-quality analyses by Wisconsin State Laboratory of Hygiene. Lake was ice-covered during measurements.

WATER-QUALITY DATA, JANUARY 24 AND MARCH 14, 1996
(Milligrams per liter unless otherwise indicated)

	Jan. 24	Mar. 14
Depth of sample (ft)	2.0	3.0
Lake stage (ft)	8.45	8.19
Specific conductance (µS/cm)	21	23
pH (units)	5.9	5.8
Water temperature (°C)	2.0	1.5
Secchi-depth (meters)	---	---
Dissolved oxygen	5.1	3.1
Phosphorus, total (as P)	0.020	0.023



453608092041201 KIRBY LAKE (SITE 5) NEAR CUMBERLAND, WI

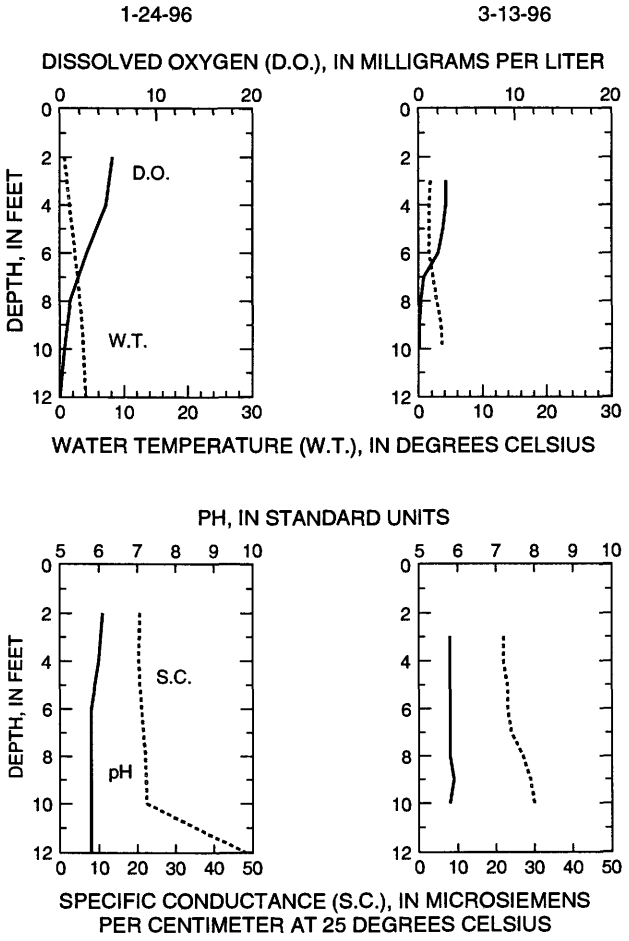
LOCATION.--Lat 45°36'08", long 92°04'12", in NW 1/4 SW 1/4 sec.14, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, approximately 5 mi northwest of Cumberland.

PERIOD OF RECORD.--November 1995 through November 1996 (discontinued).

REMARKS.--Water-quality analyses by Wisconsin State Laboratory of Hygiene. Lake was ice-covered during measurements.

WATER-QUALITY DATA, JANUARY 24 AND MARCH 13, 1996
(Milligrams per liter unless otherwise indicated)

	Jan. 24		Mar. 13	
Depth of sample (ft)	2.0	12	3.0	10
Lake stage (ft)	8.45		8.19	
Specific conductance (µS/cm)	21	48	22	30
pH (units)	6.1	5.8	5.8	5.8
Water temperature (°C)	0.5	4.0	2.0	3.5
Secchi-depth (meters)	---		---	
Dissolved oxygen	5.4	0.0	2.8	0.0
Phosphorus, total (as P)	0.025	0.037	0.030	0.060



453555092040901 KIRBY LAKE (SITE 6) NEAR CUMBERLAND, WI

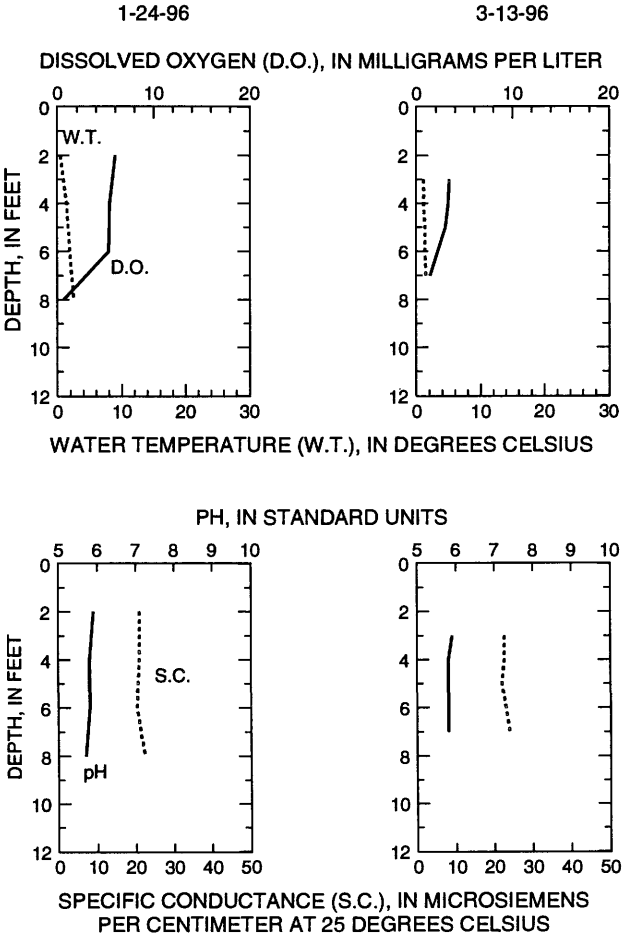
LOCATION.--Lat 45°35'55", long 92°04'09", in SW 1/4 SW 1/4 sec.14, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, approximately 5 mi northwest of Cumberland.

PERIOD OF RECORD.--November 1995 through November 1996 (discontinued).

REMARKS.--Water-quality analyses by Wisconsin State Laboratory of Hygiene. Lake was ice-covered during measurements.

WATER-QUALITY DATA, JANUARY 24 AND MARCH 13, 1996
(Milligrams per liter unless otherwise indicated)

	Jan. 24		Mar. 13	
Depth of sample (ft)	2.0	8.0	3.0	7.0
Lake stage (ft)	8.45		8.19	
Specific conductance (µS/cm)	21	22	23	24
pH (units)	5.9	5.7	5.9	5.8
Water temperature (°C)	0.5	2.5	1.0	1.5
Secchi-depth (meters)	---		---	
Dissolved oxygen	6.0	0.6	3.4	1.4
Phosphorus, total (as P)	0.025	0.019	0.024	0.023



05427235 LAKE KOSHKONONG NEAR NEWVILLE, WI

LOCATION.--Lat 42°51'27", long 88°56'27", in NW 1/4 NE 1/4 sec.34, T.5 N., R.13 E., Jefferson County, Hydrologic Unit 07090001, 80 ft east of Pottawatomi Trail Bridge at Bingham Point Estates, and 4.5 mi northeast of Newville.

DRAINAGE AREA.--2,560 mi^2, at lake outlet. Area of Lake Koshkonong, 16.3 mi^2.

PERIOD OF RECORD.--July 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above sea level.

REMARKS.--No estimated daily gage heights. Records good. Lake level regulated by dam at Indianford. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded gage height, 12.23 ft, Apr. 25, 1993; minimum recorded, 5.40 ft, Dec. 26, 27, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 10.70 ft, June 23; minimum recorded, 5.88 ft, Jan. 16.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.25	7.49	7.51	6.13	7.22	7.57	7.32	7.79	7.40	10.23	6.71	6.14
2	6.27	7.67	7.48	6.10	7.18	7.63	7.29	7.80	7.46	10.11	6.63	6.14
3	6.31	7.81	7.47	6.08	7.16	7.66	7.30	7.80	7.45	9.97	6.55	6.14
4	6.32	7.91	7.45	6.06	7.13	7.67	7.31	7.77	7.42	9.81	6.44	6.10
5	6.32	7.99	7.42	6.04	7.11	7.66	7.27	7.73	7.34	9.66	6.35	6.08
6	6.53	8.08	7.37	6.02	7.07	7.61	7.27	7.69	7.30	9.50	6.41	6.08
7	6.75	8.17	7.28	6.00	7.04	7.55	7.27	7.62	7.49	9.36	6.43	6.14
8	6.94	8.19	7.21	5.98	6.99	7.50	7.25	7.59	7.70	9.20	6.45	6.17
9	7.14	8.15	7.15	5.96	6.95	7.45	7.24	7.58	7.95	9.04	6.44	6.18
10	7.25	8.21	7.10	5.94	6.97	7.39	7.22	7.64	8.21	8.88	6.43	6.12
11	7.32	8.29	7.03	5.94	7.07	7.34	7.21	7.65	8.45	8.72	6.42	6.11
12	7.36	8.22	6.98	5.93	7.17	7.28	7.19	7.66	8.59	8.58	6.40	6.11
13	7.38	8.20	6.92	5.92	7.27	7.25	7.18	7.70	8.67	8.48	6.37	6.11
14	7.40	8.17	6.88	5.91	7.35	7.27	7.12	7.72	8.69	8.38	6.34	6.11
15	7.38	8.14	6.81	5.89	7.39	7.34	7.16	7.78	8.66	8.25	6.29	6.10
16	7.34	8.13	6.75	5.89	7.41	7.39	7.19	7.81	8.63	8.12	6.23	6.11
17	7.29	8.11	6.69	5.90	7.42	7.43	7.20	7.84	8.74	7.98	6.19	6.11
18	7.28	8.11	6.64	6.02	7.40	7.47	7.25	7.88	9.19	7.93	6.15	6.10
19	7.25	8.10	6.58	6.26	7.38	7.48	7.36	7.89	9.64	7.86	6.13	6.09
20	7.25	8.08	6.54	6.52	7.33	7.46	7.47	7.92	10.00	7.68	6.14	6.08
21	7.21	8.09	6.50	6.74	7.28	7.45	7.55	7.94	10.27	7.57	6.13	6.13
22	7.18	8.05	6.46	6.93	7.24	7.44	7.66	7.94	10.47	7.49	6.15	6.13
23	7.14	8.00	6.41	7.07	7.21	7.42	7.70	7.92	10.57	7.44	6.15	6.12
24	7.18	7.93	6.38	7.17	7.21	7.41	7.74	7.85	10.66	7.40	6.14	6.10
25	7.14	7.88	6.35	7.22	7.22	7.42	7.76	7.79	10.65	7.35	6.15	6.07
26	7.12	7.85	6.31	7.27	7.24	7.42	7.82	7.73	10.63	7.27	6.14	6.11
27	7.20	7.86	6.27	7.29	7.31	7.40	7.78	7.66	10.59	7.16	6.12	6.19
28	7.26	7.76	6.23	7.28	7.39	7.39	7.74	7.63	10.53	7.06	6.10	6.17
29	7.31	7.62	6.20	7.27	7.48	7.37	7.76	7.59	10.45	6.98	6.12	6.15
30	7.35	7.55	6.17	7.26	---	7.36	7.80	7.53	10.36	6.90	6.11	6.11
31	7.39	---	6.15	7.24	---	7.35	---	7.45	---	6.79	6.13	---
MEAN	7.06	7.99	6.80	6.43	7.23	7.45	7.41	7.74	9.01	8.30	6.29	6.12
MAX	7.40	8.29	7.51	7.29	7.48	7.67	7.82	7.94	10.66	10.23	6.71	6.19
MIN	6.25	7.49	6.15	5.89	6.95	7.25	7.12	7.45	7.30	6.79	6.10	6.07

455446089370300 LITTLE ARBOR VITAE LAKE NEAR WOODRUFF, WI

LOCATION.--Lat 45°54'46" long 89°37'03", in SW 1/4 SE 1/4 sec.28, T.40 N., R.7 E., Vilas County, Hydrologic Unit 07070001, 4 mi northeast of Woodruff.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--February 1991 to current year.

GAGE.--Staff gage read by Glyn A. Roberts.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.00 ft, Sept. 16, 1994; minimum observed, 7.72 ft, Feb. 28, June 12, 1991, and Oct. 13, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.96 ft, Aug. 5; minimum observed, 7.80 ft, Sept. 2.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	7.92	---	---	---	---
2	7.90	---	---	---	---	---	---	---	---	---	---	7.80
3	---	7.88	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	7.88	---	---	7.82	---	---
5	---	---	---	---	---	---	---	---	7.86	---	7.96	7.82
6	---	---	7.84	7.84	---	7.84	---	---	---	---	---	---
7	---	---	---	---	7.83	---	---	7.92	---	7.82	---	---
8	7.90	---	---	---	---	---	---	---	---	---	---	---
9	---	7.86	---	---	---	---	7.87	---	---	---	---	7.82
10	---	---	7.84	---	---	---	---	---	---	7.82	---	---
11	---	---	---	---	---	7.82	---	7.90	7.84	---	---	---
12	---	---	---	7.86	7.84	7.81	---	---	---	---	7.90	7.84
13	---	---	7.86	---	---	---	7.88	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	7.87
15	7.88	---	---	---	---	---	---	---	---	---	---	---
16	---	7.84	---	---	7.84	7.82	---	7.88	---	7.86	---	---
17	---	---	---	7.84	---	---	---	---	7.84	---	---	---
18	---	---	7.84	---	---	---	7.90	---	---	---	7.84	7.84
19	---	---	---	---	---	---	---	---	---	---	---	---
20	7.86	---	---	---	7.84	---	---	7.88	---	---	---	7.84
21	---	---	7.84	---	---	7.84	---	---	---	---	---	---
22	---	---	---	7.84	---	---	---	---	7.84	7.86	7.84	---
23	---	7.84	---	---	---	---	7.90	---	---	---	---	---
24	---	---	---	---	---	---	---	7.88	---	---	---	7.83
25	---	---	---	---	7.84	---	---	---	7.83	---	---	---
26	7.88	---	7.84	---	---	---	---	---	7.84	---	7.84	---
27	---	---	---	---	---	---	---	---	---	---	7.84	---
28	---	---	---	7.84	---	7.86	7.92	---	---	---	---	---
29	---	---	---	---	7.84	---	---	---	---	7.88	---	---
30	---	7.84	---	---	---	---	7.92	---	7.84	---	7.82	7.82
31	7.88	---	7.84	7.83	---	7.86	---	7.88	---	7.86	---	---

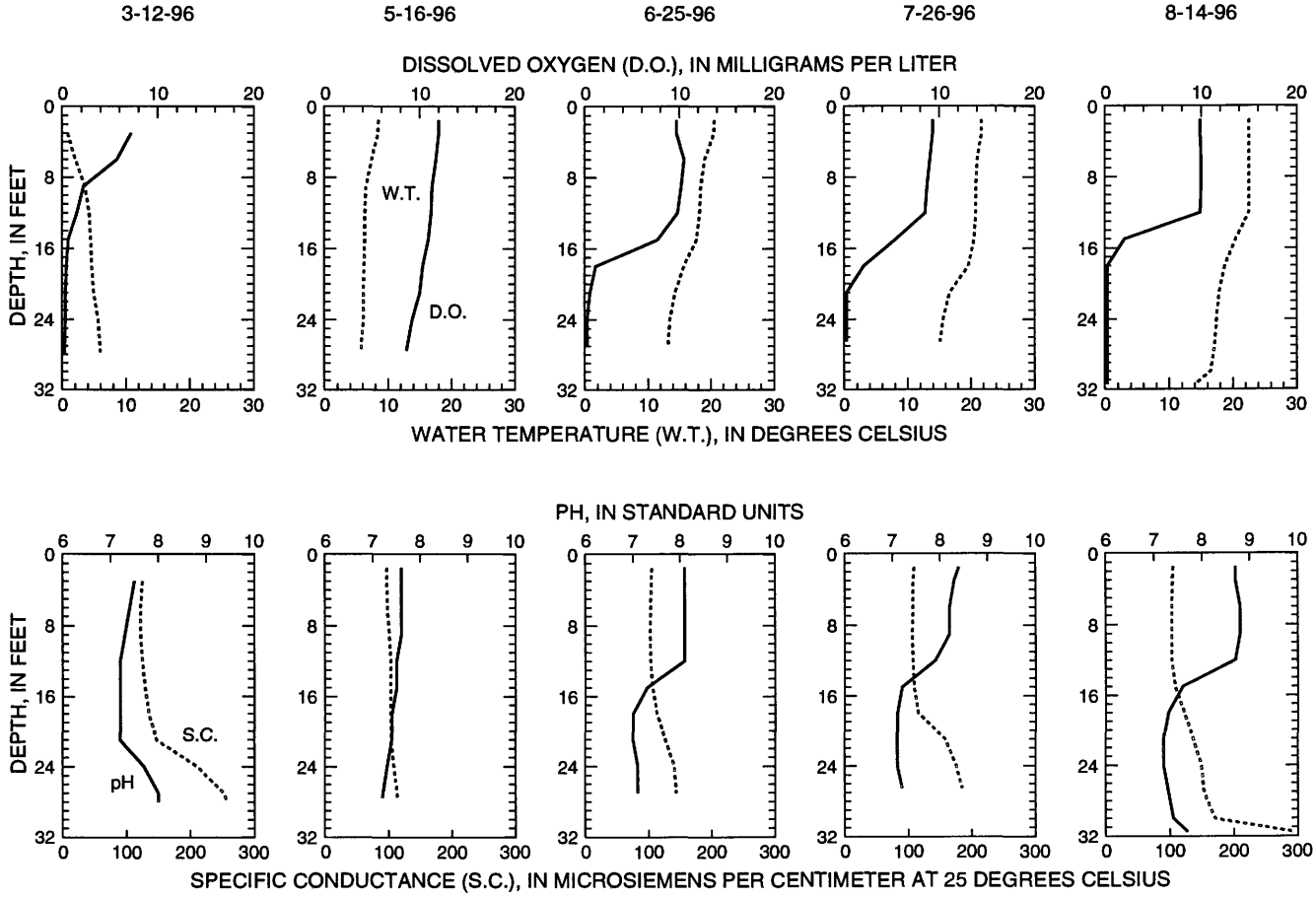
WATER-QUALITY RECORDS

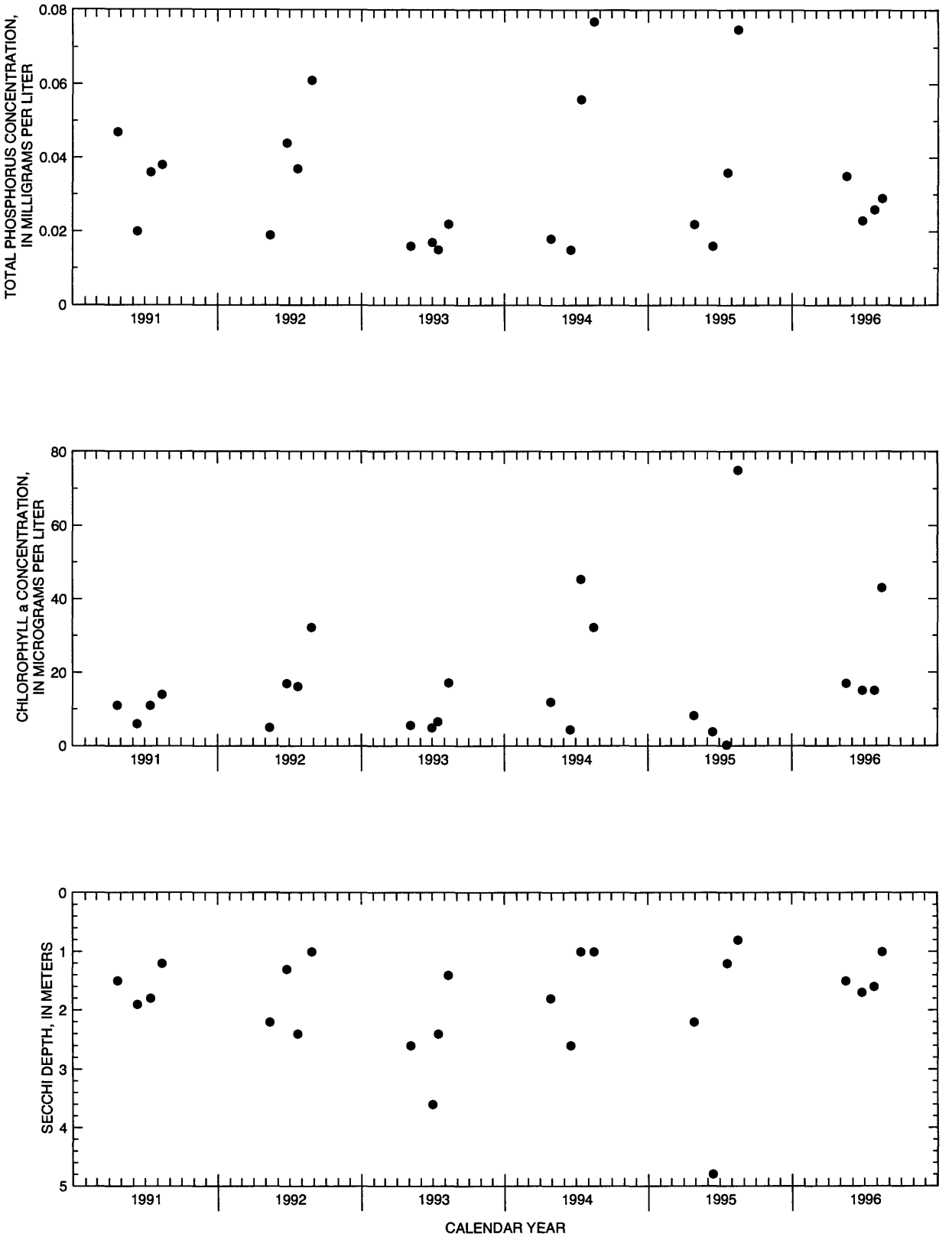
PERIOD OF RECORD.--February 1991 to current year.

REMARKS.--Lake sampled at the deep hole. Lake ice-covered during March measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 12 TO AUGUST 14, 1996
(Milligrams per liter unless otherwise indicated)

	Mar. 12		May 16		June 25		July 26		Aug. 14	
Depth of sample (ft)	3.0	28	1.5	28	1.5	27	1.5	27	1.5	32
Lake stage (ft)	7.81		7.86		7.83		7.84		7.87	
Specific conductance (µS/cm)	125	258	97	114	105	144	109	185	105	291
pH (units)	7.5	8.0	7.6	7.2	8.1	7.1	8.4	7.2	8.7	7.7
Water temperature (°C)	1.0	6.0	8.5	5.5	20.5	13.0	21.5	15.0	22.5	14.0
Color (Pt-Co. scale)	---	---	15	30	---	---	---	---	---	---
Turbidity (NTU)	---	---	2.0	7.0	---	---	---	---	---	---
Secchi-depth (meters)	---		1.5		1.7		1.6		1.0	
Dissolved oxygen	7.2	0.2	12.0	8.6	9.7	0.2	9.3	0.2	9.9	0.2
Hardness, as CaCO3	---	---	46	54	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	13	15	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	3.4	4.0	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	2.4	2.5	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.7	0.9	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	47	58	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	6.0	7.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	2.7	2.6	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	9.6	12	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	72	86	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.07	0.01	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	0.43	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.50	0.47	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.50	0.90	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.57	0.91	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.035	0.061	0.023	---	0.026	0.302	0.029	0.160
Phosphorus, ortho, dissolved (as P)	---	---	0.004	0.009	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	170	630	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	210	480	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	17	---	15	---	15	---	43	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Little Arbor Vitae Lake near Woodruff, Wisconsin.

434412088590700 LITTLE GREEN LAKE, AT CENTER, NEAR MARKESAN, WI

LOCATION--Lat 43°44'12", long 88°59'07", in SW 1/4 SW 1/4 sec.29, T.15 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, 2 mi north of Markesan.

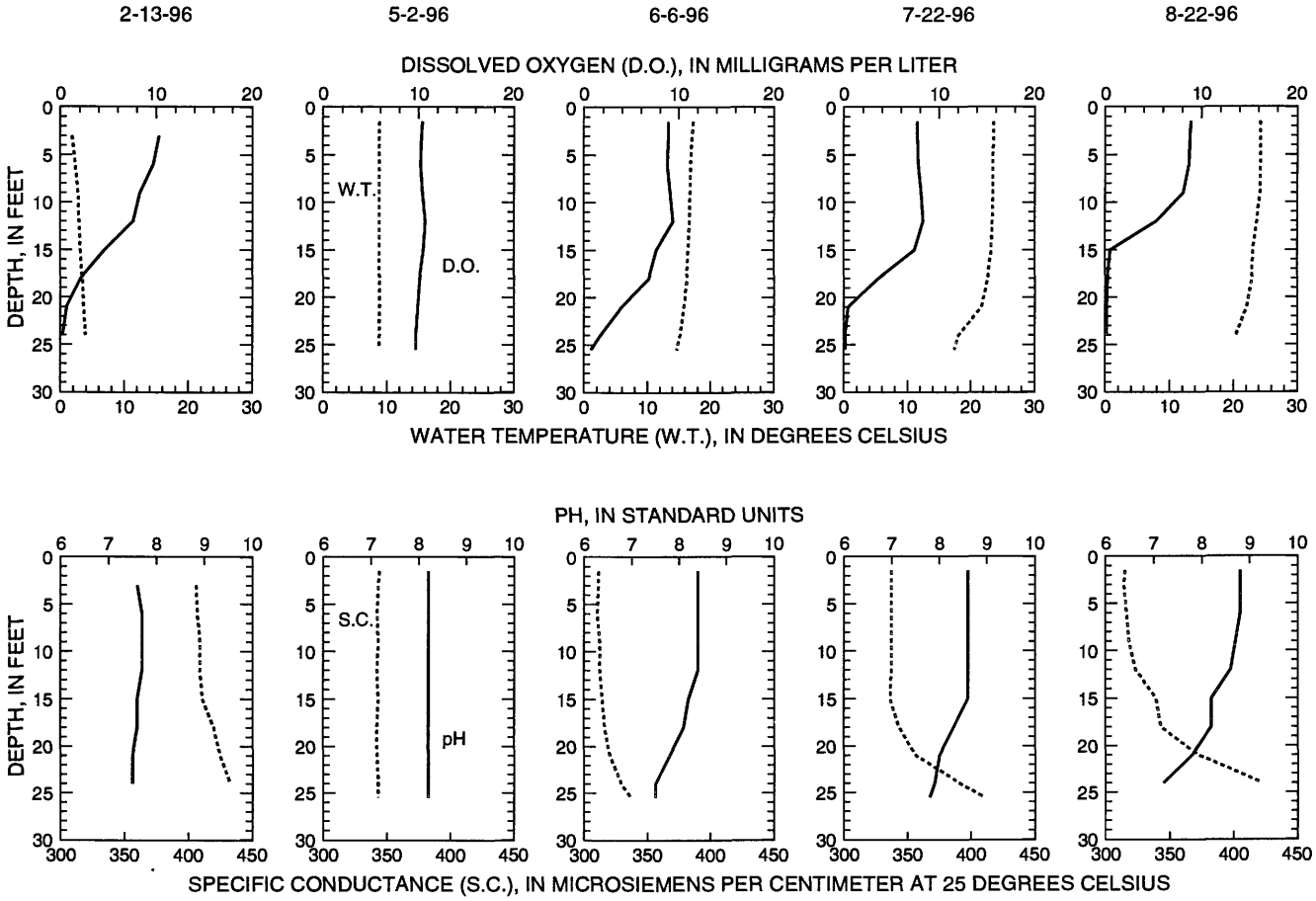
PERIOD OF RECORD.--February 1991 to current year.

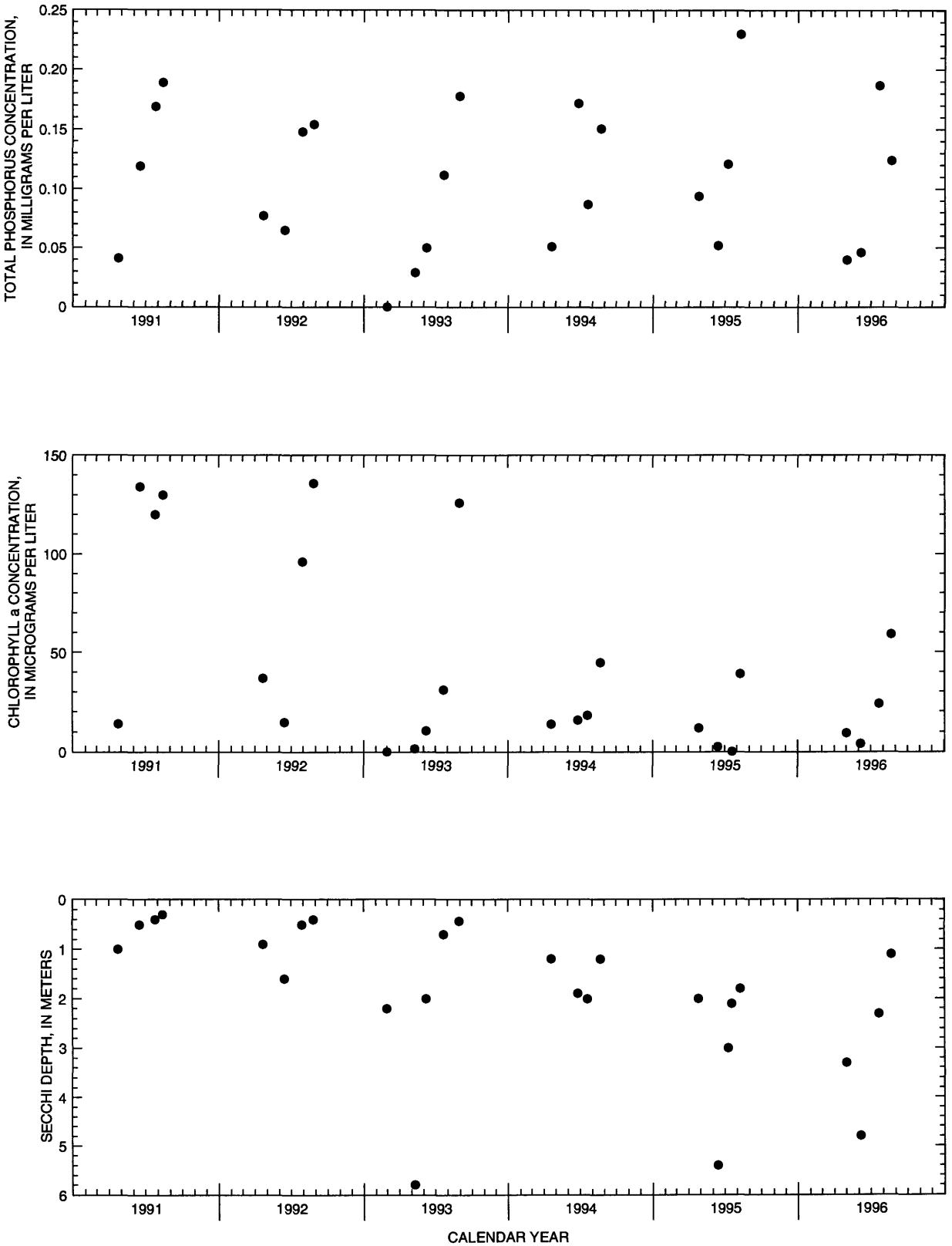
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 13 TO AUGUST 22, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 13		May 02		June 06		July 22		Aug. 22	
Depth of sample (ft)	3.0	24	1.5	26	1.5	26	1.5	26	1.5	24
Lake stage (ft)	---		6.47		6.39		6.51		6.24	
Specific conductance (µS/cm)	406	433	344	343	311	337	337	410	315	422
pH (units)	7.6	7.5	8.2	8.2	8.4	7.5	8.6	7.8	8.8	7.2
Water temperature (°C)	2.0	4.0	9.0	9.0	17.0	14.5	23.5	17.5	24.5	20.5
Color (Pt-Co. scale)	---	---	10	15	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.00	1.4	---	---	---	---	---	---
Secchi-depth (meters)	---		3.3		4.8		2.3		1.1	
Dissolved oxygen	10.3	0.2	10.4	9.7	8.9	0.7	7.7	0.1	8.9	0.1
Hardness, as CaCO3	---	---	160	160	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	31	31	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	21	21	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	7.0	6.6	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	4	4	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	160	160	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	9.0	9.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	15	15	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	1.0	1.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	196	196	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.06	0.06	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.70	0.70	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.76	0.76	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.040	0.040	0.046	0.116	0.187	0.522	0.124	1.1
Phosphorus, ortho, dissolved (as P)	---	---	0.004	0.005	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	1	1	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	9.4	---	3.9	---	24	---	59	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Little Green Lake near Markesan, Wisconsin.

425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI

LOCATION.--Lat 42°54'25", long 88°08'35", in SE 1/4 NW 1/4 sec.9, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, at Muskego.

DRAINAGE AREA.--11.6 mi^2.

PERIOD OF RECORD.--October 1986 to current year.

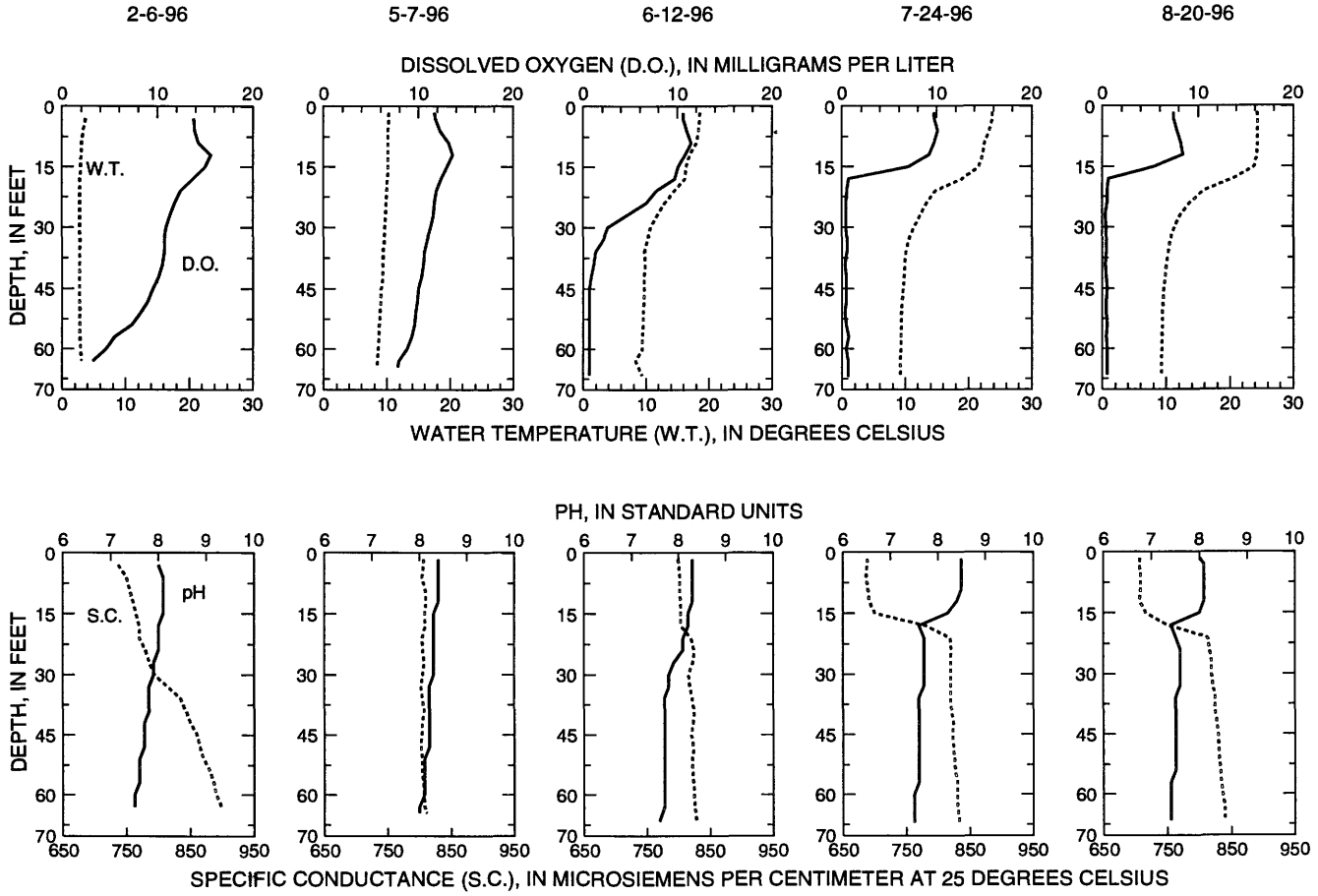
LAKE-STAGE GAGE.--Datum of gage is 693.40 ft above sea level.

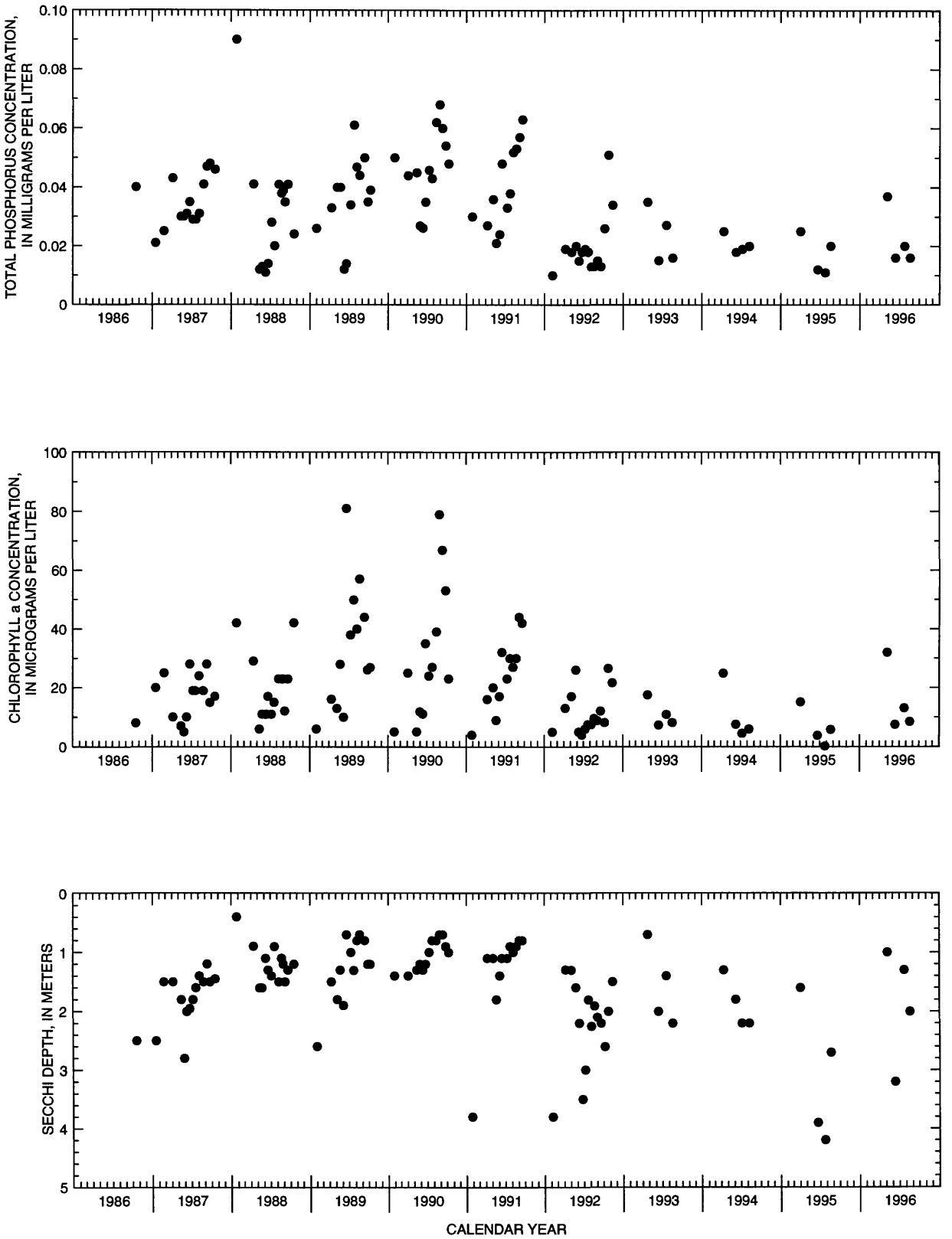
REMARKS.--Lake sampled about 1,000 ft north-northwest of dam outlet at the deep hole. An aeration system was operated from April to November for the years 1987-91. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene. Prior to October 1987, published under station number 425450088083500.

WATER-QUALITY DATA, FEBRUARY 06 TO AUGUST 20, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 06		May 07		June 12		July 24		Aug. 20	
Depth of sample (ft)	3.0	63	1.5	65	1.5	67	1.5	67	1.5	67
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	737	900	806	811	799	829	688	834	707	840
pH (units)	8.0	7.5	8.4	8.0	8.3	7.6	8.5	7.5	8.0	7.4
Water temperature (°C)	3.5	3.0	10.5	8.5	18.5	9.5	24.0	9.0	24.5	9.0
Color (Pt-Co. scale)	---	---	20	20	---	---	---	---	---	---
Turbidity (NTU)	---	---	5.1	2.3	---	---	---	---	---	---
Secchi-depth (meters)	---		1.0		3.2		1.3		2.0	
Dissolved oxygen	13.8	3.2	11.7	7.8	10.6	0.6	9.7	0.6	7.4	0.5
Hardness, as CaCO3	---	---	280	270	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	53	53	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	35	34	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	56	54	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	210	210	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	41	40	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	110	110	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.0	0.9	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	454	454	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.17	0.20	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	0.43	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.81	0.65	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.81	1.1	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.98	1.3	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.037	0.054	0.016	0.157	0.020	0.278	0.016	0.319
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	0.005	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	57	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	32	---	7.4	---	13	---	8.5	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Little Muskego Lake at Muskego, Wisconsin.

455946089415702 LITTLE ROCK LAKE NEAR WOODRUFF, WI

LOCATION.--Lat 45°59'46", long 89°41'57", in NW 1/4 NW 1/4 sec.36, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07070001, 7 mi north of Woodruff, 800 ft west of U.S. Highway 51, and 200 ft southeast of boat landing.

DRAINAGE AREA.--0.22 mi^2. Area of lake, 0.07 mi^2.

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above sea level.

REMARKS.--Records good. Lake does not have surface inlet or outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 28.10 ft, Apr. 7–9, 1986; minimum observed gage height, 25.06 ft, Aug. 8, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 27.57 ft, May 20 and Aug. 7; minimum observed gage height, 26.66 ft, Oct. 1, and 3–5.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.66	26.87	26.87	26.88	27.02	27.01	27.07	27.39	27.43	27.44	27.53	27.35
2	26.67	26.91	26.87	26.88	27.02	27.00	27.07	27.39	27.46	27.48	27.52	27.33
3	26.66	26.91	26.87	26.88	27.02	27.00	27.07	27.40	27.47	27.47	27.51	27.33
4	26.66	26.90	26.86	26.87	27.01	27.00	27.07	27.40	27.47	27.46	27.50	27.40
5	26.66	26.89	26.86	26.86	27.00	27.00	27.07	27.40	27.46	27.44	27.52	27.40
6	26.73	26.89	26.86	26.87	27.00	26.99	27.07	27.42	27.47	27.44	27.55	27.40
7	26.82	26.88	26.85	26.86	27.01	26.99	27.06	27.42	27.47	27.46	27.57	27.39
8	26.82	26.87	26.85	26.86	27.01	26.98	27.06	27.42	27.46	27.45	27.56	27.38
9	26.82	26.87	26.86	26.87	27.00	26.98	27.06	27.43	27.45	27.44	27.54	27.36
10	26.82	26.88	26.86	26.87	27.02	26.97	27.06	27.43	27.44	27.42	27.53	27.35
11	26.81	26.87	26.86	26.88	27.02	26.97	27.07	27.43	27.44	27.41	27.51	27.35
12	26.80	26.86	26.87	26.88	27.01	26.97	27.10	27.43	27.44	27.45	27.50	27.34
13	26.80	26.86	26.92	26.88	27.01	26.97	27.13	27.42	27.44	27.48	27.50	27.32
14	26.79	26.86	26.92	26.87	27.01	26.97	27.14	27.42	27.42	27.48	27.49	27.30
15	26.79	26.86	26.92	26.86	27.01	26.97	27.14	27.42	27.40	27.48	27.49	27.29
16	26.79	26.85	26.92	26.85	26.99	26.96	27.15	27.42	27.39	27.48	27.49	27.29
17	26.78	26.85	26.93	26.86	27.00	26.96	27.15	27.42	27.38	27.47	27.48	27.27
18	26.78	26.85	26.92	26.97	27.00	26.96	27.17	27.41	27.38	27.49	27.47	27.26
19	26.77	26.85	26.92	27.03	27.00	26.96	27.22	27.55	27.38	27.50	27.46	27.25
20	26.77	26.85	26.91	27.02	27.00	26.95	27.23	27.57	27.38	27.49	27.47	27.24
21	26.78	26.84	26.90	27.02	26.99	26.95	27.24	27.56	27.37	27.48	27.46	27.24
22	26.78	26.84	26.89	27.03	26.98	26.94	27.27	27.55	27.38	27.47	27.48	27.25
23	26.80	26.84	26.89	27.02	26.99	26.94	27.28	27.55	27.38	27.45	27.47	27.25
24	26.88	26.84	26.89	27.02	27.00	26.98	27.29	27.52	27.38	27.45	27.46	27.27
25	26.88	26.84	26.89	27.01	26.99	27.07	27.32	27.51	27.38	27.45	27.44	27.27
26	26.88	26.85	26.89	27.02	26.99	27.08	27.35	27.51	27.43	27.44	27.43	27.26
27	26.88	26.86	26.89	27.03	27.02	27.07	27.35	27.49	27.47	27.43	27.41	27.30
28	26.87	26.85	26.88	27.03	27.02	27.07	27.35	27.48	27.47	27.52	27.40	27.30
29	26.87	26.85	26.88	27.04	26.98	27.07	27.35	27.46	27.47	27.54	27.39	27.29
30	26.87	26.86	26.88	27.03	---	27.07	27.38	27.45	27.45	27.54	27.37	27.28
31	26.86	---	26.88	27.03	---	27.08	---	27.43	---	27.54	27.36	---
MEAN	26.79	26.86	26.89	26.94	27.00	27.00	27.18	27.45	27.43	27.47	27.48	27.31
MAX	26.88	26.91	26.93	27.04	27.02	27.08	27.38	27.57	27.47	27.54	27.57	27.40
MIN	26.66	26.84	26.85	26.85	26.98	26.94	27.06	27.39	27.37	27.41	27.36	27.24

05390700 LITTLE ST. GERMAIN LAKE NEAR EAGLE RIVER, WI

LOCATION--Lat 45°53'55", long 89°27'10", in SW 1/4 SE 1/4 sec.35, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, 9.6 mi west of Eagle River.

DRAINAGE AREA.--19.0 mi^2.

PERIOD OF RECORD.--October 1990 to current year.

GAGE.--Staff gage mounted on the dam wall at lake outlet. Datum of gage is 1,600 ft, above sea level.

REMARKS.--Lake level controlled at the dam outlet.

COOPERATION.--Gage readings furnished by Wisconsin Valley Improvement Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 13.94 ft, Aug. 14 and Oct. 7, 1995, and Aug. 7, 1996; minimum observed, 12.00 ft, Jan. 3 and Feb. 3, 1992.

EXTREMES FOR CURRENT PERIOD.--

WATER YEAR 1995.--Maximum gage height observed, 13.94 ft, Aug. 14; minimum observed, 12.28 ft, Mar. 10.

WATER YEAR 1996.--Maximum gage height observed, 13.94 ft, Oct. 7 and Aug. 7; minimum observed, 12.18 ft, Feb. 6.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.74	13.70	13.24	12.70	12.50	12.32	12.68	13.16	13.78	13.68	13.72	13.72
2	13.74	13.70	13.22	---	---	---	12.68	13.18	13.76	13.66	13.70	13.70
3	13.76	13.70	---	12.68	12.48	12.30	12.70	13.16	13.76	13.64	13.70	13.70
4	13.76	13.72	---	---	---	---	12.76	13.18	13.74	13.62	13.70	13.70
5	13.76	13.72	---	---	---	---	12.76	13.20	13.74	13.62	13.70	13.70
6	13.74	13.72	13.12	12.62	---	---	12.78	13.18	13.72	13.62	13.70	13.68
7	13.76	13.74	---	---	12.46	12.30	12.78	13.18	13.72	13.64	13.76	13.68
8	13.74	13.74	---	---	---	---	12.80	13.20	13.72	13.62	13.74	13.68
9	13.70	13.74	13.02	---	---	---	12.82	13.30	13.70	13.62	13.74	13.66
10	13.70	---	---	12.60	12.46	12.28	12.82	13.34	13.72	13.62	13.74	13.66
11	13.68	13.64	---	---	---	---	12.84	13.36	13.72	13.62	13.74	13.64
12	13.68	---	---	---	---	---	12.88	13.36	13.70	13.60	13.74	13.64
13	13.66	13.64	12.96	12.58	---	12.32	12.92	13.38	13.70	13.68	13.88	13.62
14	13.66	---	---	---	12.40	12.38	12.90	13.46	13.70	13.68	13.94	13.62
15	13.66	13.56	---	---	---	12.38	12.92	13.50	13.70	13.72	13.88	13.62
16	13.66	---	12.86	---	---	12.40	12.92	13.54	13.68	13.76	13.82	13.66
17	13.72	---	---	12.56	12.40	12.40	12.94	13.58	13.68	13.74	13.76	13.66
18	13.76	13.48	---	---	---	12.42	12.94	13.60	13.68	13.82	13.70	13.66
19	13.80	---	---	---	---	12.44	13.08	13.68	13.68	13.78	13.74	13.66
20	13.78	13.48	12.80	12.58	---	12.50	13.08	13.60	13.68	13.76	13.74	13.68
21	13.78	---	---	---	12.38	12.56	13.10	13.60	13.66	13.76	13.74	13.68
22	13.80	13.40	---	---	---	12.58	13.10	13.58	13.66	13.72	13.72	13.70
23	13.80	---	12.72	---	---	12.60	13.10	13.66	13.66	13.70	13.72	13.70
24	13.74	---	---	12.56	12.36	12.60	13.12	13.68	13.66	13.70	13.70	13.68
25	13.72	13.36	---	---	---	12.60	13.10	13.68	13.64	13.70	13.70	13.68
26	13.70	---	---	---	---	12.62	13.12	13.68	13.62	13.70	13.84	13.68
27	13.68	---	12.72	12.52	---	12.62	13.14	13.68	13.62	13.70	13.80	13.68
28	13.68	---	---	---	12.32	12.64	13.12	13.74	13.62	13.76	13.74	13.66
29	13.66	13.28	---	---	---	12.66	13.14	13.76	13.68	13.74	13.72	13.66
30	13.66	---	12.70	---	---	12.66	13.14	13.78	13.68	13.72	13.72	13.74
31	13.68	---	---	12.50	---	12.66	---	13.78	---	13.70	13.72	---
MEAN	13.72	---	---	---	---	---	12.94	13.48	13.69	13.69	13.75	13.67
MAX	13.80	---	---	---	---	---	13.14	13.78	13.78	13.82	13.94	13.74
MIN	13.66	---	---	---	---	---	12.68	13.16	13.62	13.60	13.70	13.62

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.78	13.74	13.60	12.72	12.26	12.40	12.70	13.86	13.70	13.72	13.74	13.70
2	13.78	13.80	---	12.72	12.24	---	12.76	13.84	13.76	13.76	13.72	13.72
3	13.84	13.80	---	---	---	---	---	13.82	13.76	13.74	13.70	13.72
4	13.82	13.78	---	---	---	---	---	13.82	13.78	13.74	13.72	13.78
5	13.80	13.76	13.50	12.68	---	12.40	12.80	13.82	13.82	13.72	13.72	13.80
6	13.90	13.76	---	---	12.18	---	---	13.86	13.84	13.72	13.86	13.82
7	13.94	13.78	---	---	---	---	---	13.88	13.87	13.76	13.94	13.82
8	13.88	13.80	13.42	---	---	12.42	---	13.88	13.86	13.80	13.84	13.80
9	13.86	13.80	---	12.64	12.22	---	12.84	13.90	13.84	13.80	13.74	13.78
10	13.82	13.82	---	---	---	---	---	13.88	13.84	13.76	13.76	13.74
11	13.72	13.80	---	---	---	---	---	13.82	13.84	13.72	13.76	13.78
12	13.76	13.80	13.24	12.58	---	12.40	12.86	13.80	13.88	13.78	13.76	13.76
13	13.78	13.78	---	---	12.26	---	---	13.80	13.82	13.80	13.78	13.76
14	13.78	13.78	---	---	---	---	---	13.74	13.78	13.78	13.76	13.74
15	13.78	---	13.18	---	---	12.40	---	13.72	13.72	13.78	13.78	13.74
16	13.76	---	---	12.42	12.30	---	13.04	13.72	13.72	13.78	13.78	13.72
17	13.72	13.70	---	---	---	---	---	13.70	13.72	13.78	13.76	13.70
18	13.74	---	---	---	---	12.42	---	13.70	13.76	13.88	13.76	13.68
19	13.76	---	13.14	12.40	---	---	13.18	13.74	13.74	13.84	13.74	13.68
20	13.78	---	---	---	12.32	---	---	13.72	13.74	13.76	13.74	13.66
21	13.80	13.68	---	---	---	---	13.28	13.70	13.72	13.72	13.74	13.66
22	13.80	---	13.08	---	---	12.44	13.34	13.70	13.78	13.72	13.82	13.70
23	13.76	---	---	12.44	12.34	---	13.36	13.70	13.74	13.74	13.76	13.70
24	13.86	13.66	---	---	---	---	13.42	13.70	13.78	13.76	13.70	13.70
25	13.84	---	---	---	---	---	13.48	13.68	13.74	13.76	13.70	13.70
26	13.84	---	12.90	12.36	---	12.58	13.62	13.66	13.74	13.74	13.74	13.70
27	13.82	---	---	---	12.36	12.62	13.68	13.68	13.82	13.72	13.72	13.72
28	13.82	13.64	---	---	---	---	13.72	13.68	13.84	13.74	13.70	13.72
29	13.80	13.64	12.80	---	---	12.66	13.80	13.68	13.80	13.78	13.70	13.74
30	13.76	---	---	12.28	---	---	13.84	13.68	13.76	13.78	13.70	13.74
31	13.72	---	---	---	---	---	---	13.68	---	13.76	13.70	---
MEAN	13.80	---	---	---	---	---	---	13.76	13.78	13.76	13.75	13.73
MAX	13.94	---	---	---	---	---	---	13.90	13.88	13.88	13.94	13.82
MIN	13.72	---	---	---	---	---	---	13.66	13.70	13.72	13.70	13.66

455545089262500 LITTLE ST. GERMAIN LAKE, NORTHEAST BAY, NEAR ST. GERMAIN, WI

LOCATION.--Lat 45°55'45", long 89°26'25", in SW 1/4 SE 1/4 sec.24, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, near St. Germain.

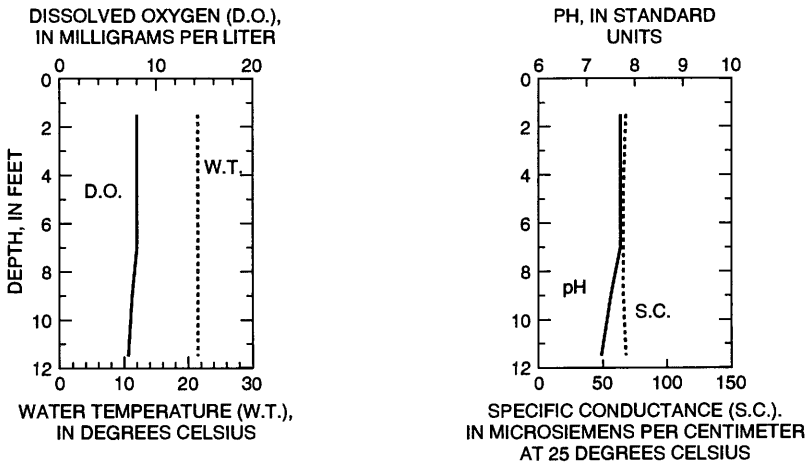
PERIOD OF RECORD.--April 1991 to August 1994, August 1996.

REMARKS.--Lake sampled in northeast bay at a lake depth of about 12 ft. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 15, 1996
(Milligrams per liter unless otherwise indicated)

	Aug. 15		
Depth of sample (ft)	1.5	7.0	12
Lake stage (ft)	---		
Specific conductance (µS/cm)	68	66	68
pH (units)	7.7	7.7	7.3
Water temperature (°C)	21.5	21.5	21.5
Secchi-depth (meters)	1.0		
Dissolved oxygen	8.0	8.0	7.1
Phosphorus, total (as P)	0.030	0.026	0.026
Chlorophyll a, phytoplankton (µg/L)	35	---	---

8-15-96



455437089270800 LITTLE ST. GERMAIN LAKE, SOUTH BAY, NEAR ST. GERMAIN, WI

LOCATION.--Lat 45°54'37", long 89°27'08", in NW 1/4 NE 1/4 sec.35, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, 1.7 mi east of St. Germain.

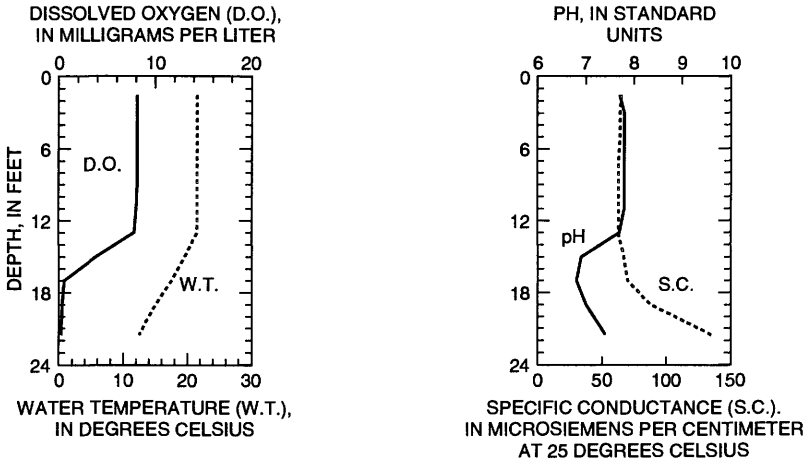
PERIOD OF RECORD.--April 1991 to August 1994, August 1996.

REMARKS.--Lake sampled in south bay at a lake depth of about 22 ft. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 15, 1996
(Milligrams per liter unless otherwise indicated)

	Aug. 15		
Depth of sample (ft)	1.5	11	22
Lake stage (ft)		---	
Specific conductance (µS/cm)	65	63	135
pH (units)	7.7	7.8	7.4
Water temperature (°C)	21.5	21.5	12.5
Secchi-depth (meters)		2.6	
Dissolved oxygen	8.1	8.0	0.2
Phosphorus, total (as P)	0.022	0.020	0.131
Chlorophyll a, phytoplankton (µg/L)	11	---	---

8-15-96



455428089282400 LITTLE ST. GERMAIN LAKE, WEST BAY, AT ST. GERMAIN, WI

LOCATION.--Lat 45°54'28", long 89°28'24", in SW 1/4 NE 1/4 sec.34, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, at St. Germain.

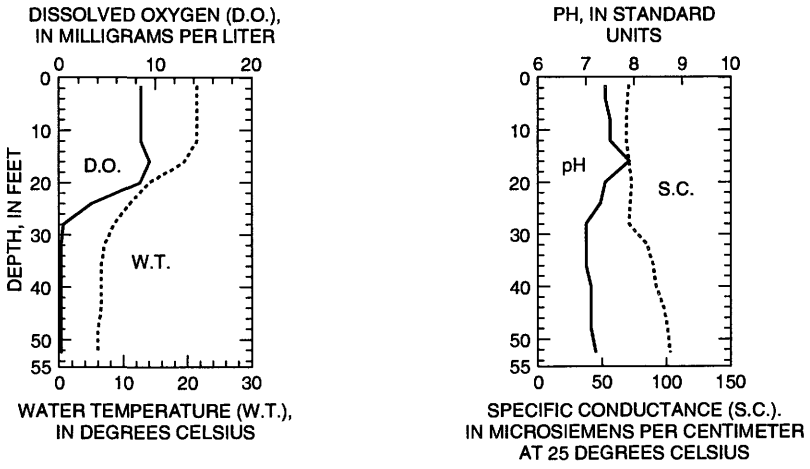
PERIOD OF RECORD.--April 1991 to August 1994, August 1996.

REMARKS.--Lake sampled in west bay at a lake depth of about 53 ft. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 15, 1996
(Milligrams per liter unless otherwise indicated)

	Aug. 15			
Depth of sample (ft)	1.5	20	32	53
Lake stage (ft)		13.80		
Specific conductance (µS/cm)	71	73	85	103
pH (units)	7.4	7.4	7.0	7.2
Water temperature (°C)	21.5	14.0	7.0	6.0
Secchi-depth (meters)		2.7		
Dissolved oxygen	8.5	8.4	0.2	0.2
Phosphorus, total (as P)	0.007	0.015	0.063	0.084
Chlorophyll a, phytoplankton (µg/L)	3.8	---	---	---

8-15-96

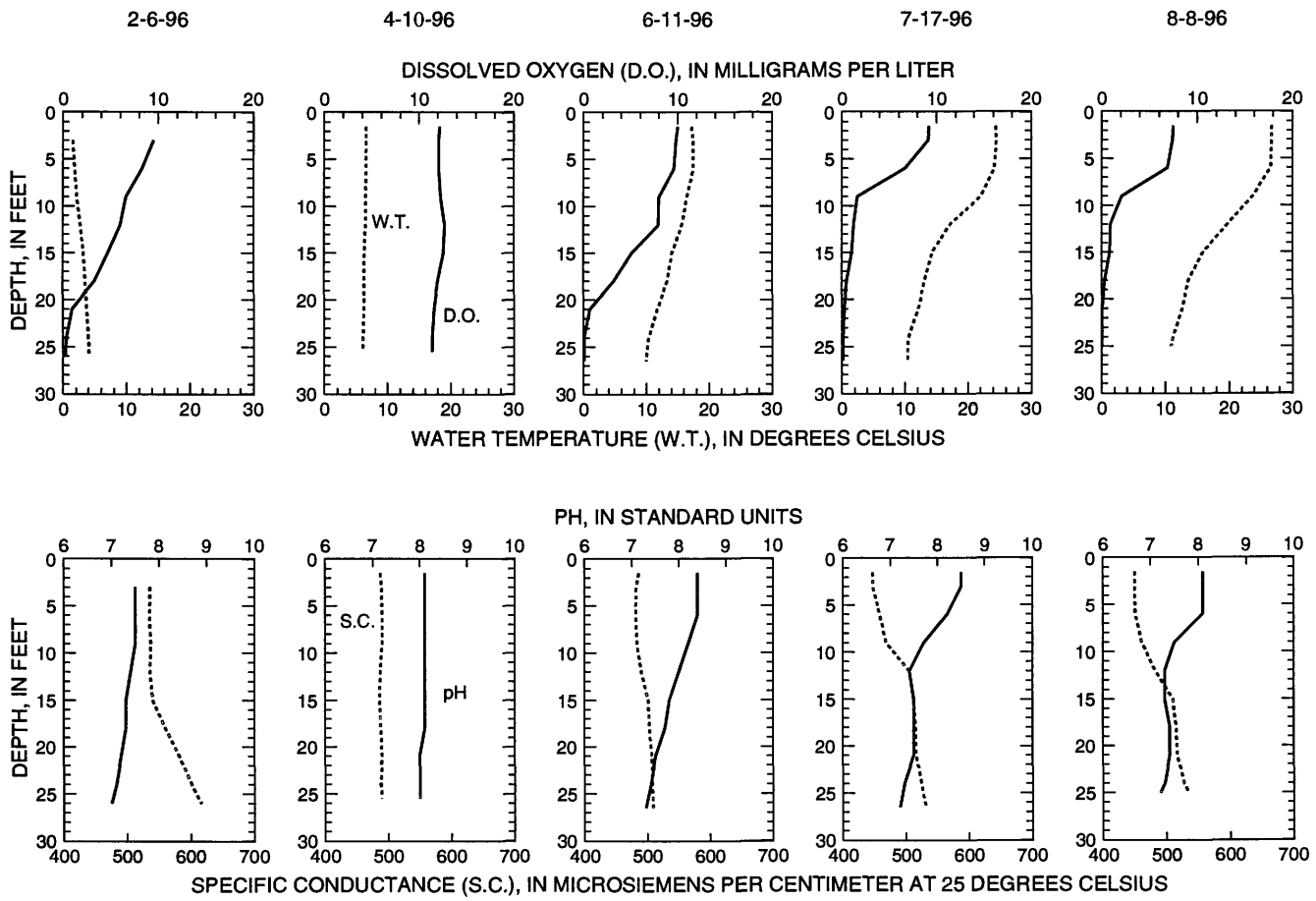


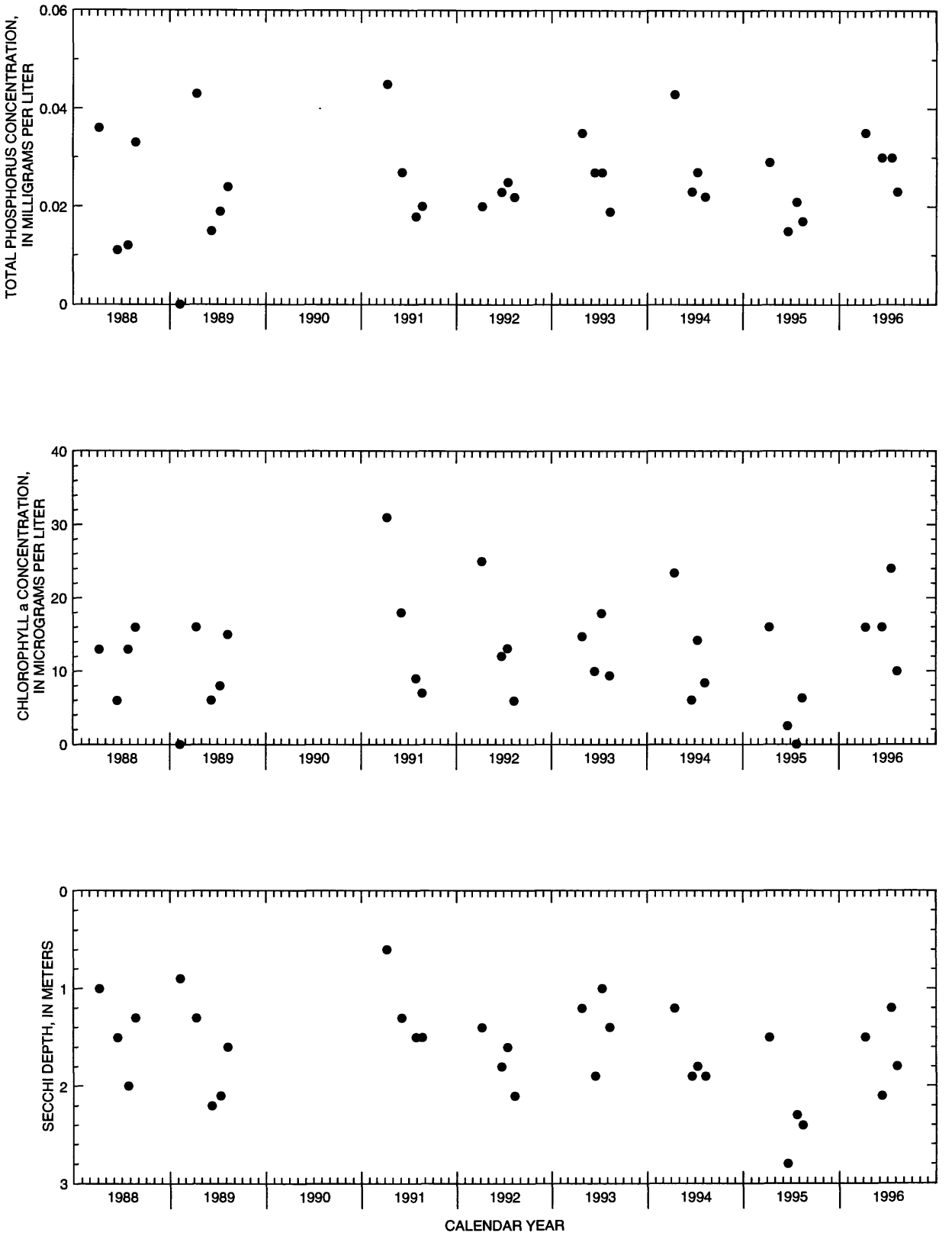
424937088103400 LONG (KEE NONG GO-MONG) LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°49'37", long 88°10'34" in NW 1/4 NE 1/4 sec.7, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.
DRAINAGE AREA.--4.29 mi^2.
PERIOD OF RECORD.--February 1988 to August 1989, February 1991 to current year.
REMARKS.--Lake sampled at the deepest point in southwest end of lake. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 06 TO AUGUST 08, 1996
(Milligrams per liter unless otherwise indicated)

	Feb. 06		Apr. 10		June 11		July 17		Aug. 08	
Depth of sample (ft)	3.0	26	1.5	26	1.5	27	1.5	27	1.5	25
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	536	616	487	489	486	509	447	531	450	534
pH (units)	7.5	7.0	8.1	8.0	8.4	7.3	8.5	7.2	8.1	7.2
Water temperature (°C)	1.5	4.0	6.5	6.0	17.0	10.0	24.5	10.5	26.5	11.0
Color (Pt-Co. scale)	---	---	50	50	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.4	1.4	---	---	---	---	---	---
Secchi-depth (meters)	---		1.5		2.1		1.2		1.8	
Dissolved oxygen	9.5	0.2	12.2	11.4	10.0	0.0	9.2	0.1	7.5	0.0
Hardness, as CaCO3	---	---	230	230	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	48	48	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	26	26	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	13	13	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	3	3	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	200	200	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	27	27	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	28	28	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	1.3	1.3	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	300	298	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.08	0.07	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	1.2	1.2	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	1.2	1.2	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.3	1.3	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.035	0.040	0.031	0.119	0.030	0.505	0.023	0.508
Phosphorus, ortho, dissolved (as P)	---	---	0.002	0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	20	20	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	0.7	2	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	16	---	17	---	24	---	10	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Long (Kee Nong Go-Mong) Lake at Wind Lake, Wisconsin.

423128088151200 MARY (MARIE) LAKE AT TWIN LAKES, WI

LOCATION.--Lat 42°31'28", long 88°15'12", in SW 1/4 SE 1/4 sec.21, T.1 N., R.19 E., Kenosha County, Hydrologic Unit 07120006, near Twin Lakes.

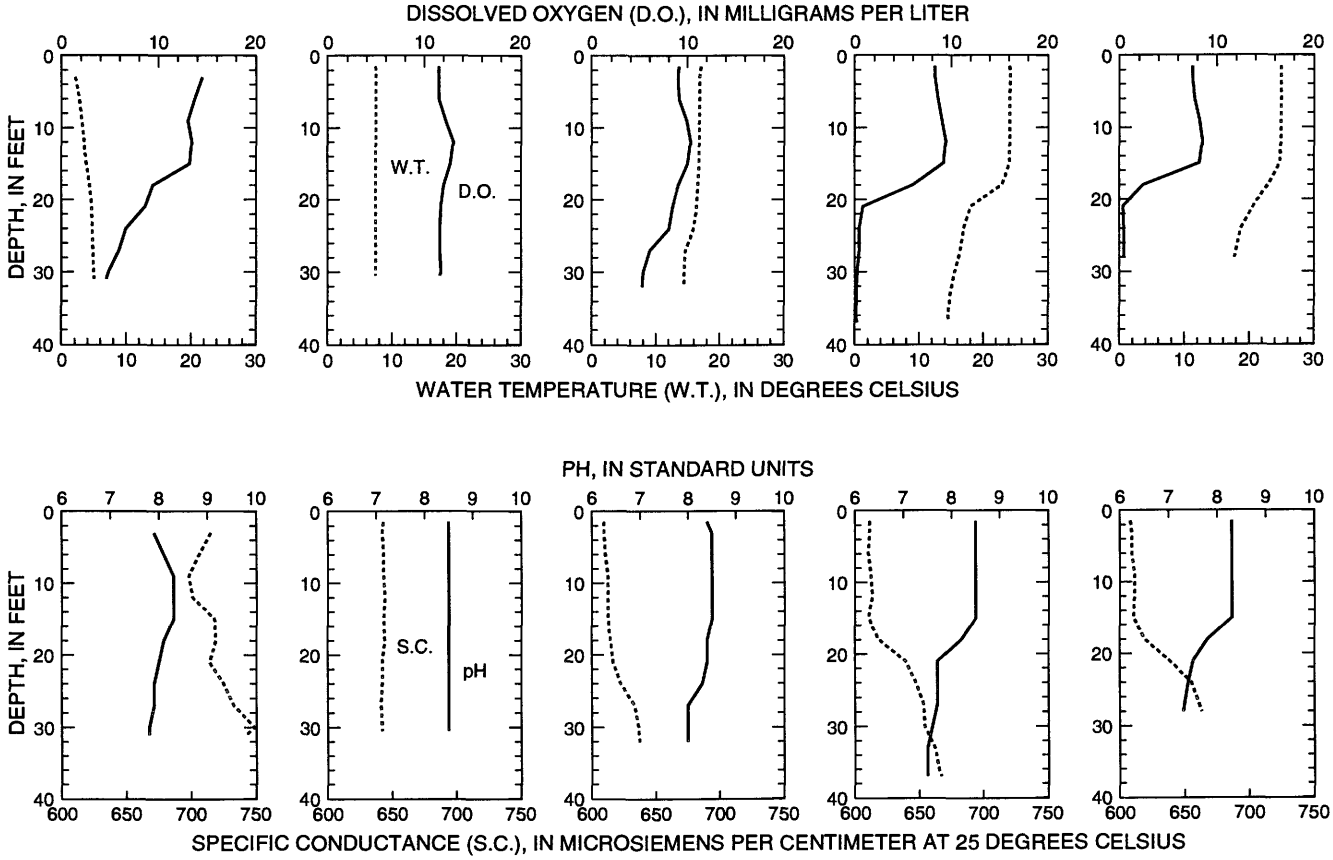
PERIOD OF RECORD.--February 1995 to current year.

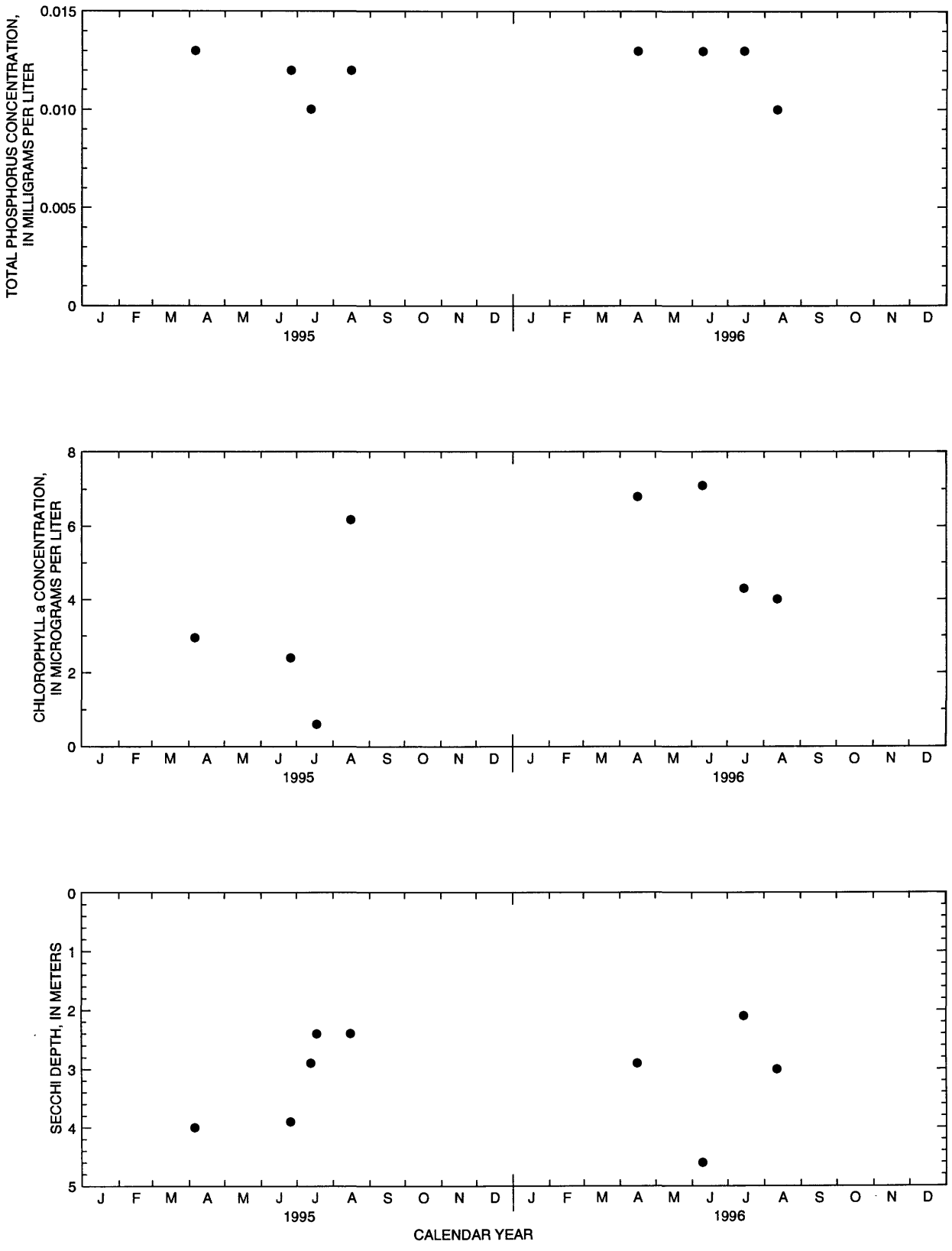
REMARKS.--Lake sampled slightly north of center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 05 TO AUGUST 12, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 05		Apr. 16		June 10		July 15		Aug. 12	
SDepth of sample (ft)	3.0	31	1.5	31	1.5	32	1.5	37	1.5	28
Lake stage (ft)	---		14.62		15.22		14.97		14.97	
Specific conductance (µS/cm)	715	743	643	642	609	637	611	667	608	663
pH (units)	7.9	7.8	8.5	8.5	8.4	8.0	8.5	7.5	8.3	7.3
Water temperature (°C)	2.0	5.0	7.5	7.5	17.0	14.5	24.0	14.5	25.0	17.5
Color (Pt-Co. scale)	---	---	5	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.90	0.90	---	---	---	---	---	---
Secchi-depth (meters)	---		2.9		4.6		2.1		3.0	
Dissolved oxygen	14.5	4.6	11.5	11.6	9.1	5.2	8.3	0.2	7.5	0.4
Hardness, as CaCO3	---	---	250	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	37	37	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	39	39	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	35	35	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2	2	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	190	190	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	41	41	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	74	74	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.4	0.4	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	360	360	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.06	0.06	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.80	0.70	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.86	0.76	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.013	0.011	0.013	0.024	0.013	0.083	0.010	0.040
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	6.8	---	7.1	---	4.3	---	4.0	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Mary (Marie) Lake at Twin Lakes, Wisconsin.

460128089423501 MAX LAKE NEAR WOODRUFF, WI

LOCATION.--Lat 46°01'28", long 89°42'35", in NW 1/4 NE 1/4 sec.23, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07070001, 8.5 mi north of Woodruff, 1,500 ft west of U.S. Highway 51.

DRAINAGE AREA.--Unknown. Area of lake, 0.036 mi^2.

PERIOD OF RECORD.--Unpublished intermittent data from March 1988 to September 1989; intermittent segments of daily data since July 1990; discontinued December 1996.

GAGE.--Staff gage and water-stage recorder. Datum of gages is about 1,613 ft above sea level.

REMARKS.--Records good. Lake does not have surface inlet or outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 6.75 ft, Aug. 7, 1996; minimum observed gage height, 3.97 ft, Nov. 16, 1989.

EXTREMES FOR CURRENT PERIOD.--Maximum recorded gage height, 6.75 ft, Aug. 7; minimum recorded, 5.52 ft, Oct. 1 and 5.

GAGE HEIGHT, FEET, OCTOBER 1995 THROUGH DECEMBER 1996

DAILY MEAN VALUES

	1995			1996								
DAY	OCT	NOV	DEC	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.52	5.85	---	5.93	---	---	---	6.71	6.43	6.33	6.41	---
2	5.53	5.89	---	---	---	---	---	6.70	6.42	6.32	6.41	---
3	5.53	5.89	---	---	---	---	---	6.69	6.41	6.30	6.40	---
4	5.53	5.88	---	---	---	---	---	6.67	6.49	6.29	6.40	6.53
5	5.52	5.88	---	---	---	---	---	6.71	6.48	6.28	6.41	---
6	5.62	5.87	---	---	---	---	---	6.74	6.47	6.28	6.41	---
7	5.70	5.87	---	---	---	---	6.54	6.75	6.46	6.28	6.41	---
8	5.70	5.87	---	---	6.51	---	6.56	6.73	6.45	6.27	6.40	---
9	5.70	5.87	---	---	6.52	---	6.55	6.72	6.43	6.27	6.42	---
10	5.70	5.87	---	---	6.53	---	6.53	6.70	6.43	6.26	6.42	---
11	5.70	5.88	---	---	6.53	---	6.51	6.68	6.44	6.25	6.42	---
12	5.70	5.88	5.91	---	6.52	---	6.60	6.67	6.44	6.24	6.42	---
13	5.69	5.88	---	---	6.52	---	6.67	6.67	6.41	6.23	6.42	---
14	5.70	5.88	---	---	6.51	---	6.66	6.66	6.39	6.22	6.42	---
15	5.71	5.88	---	---	---	---	6.65	6.65	6.38	6.21	6.42	---
16	5.70	---	---	---	6.51	---	6.64	6.64	6.37	6.21	6.50	---
17	5.70	---	---	---	---	---	6.63	6.62	6.36	6.30	6.58	---
18	5.69	---	---	---	---	---	6.67	6.61	6.35	6.31	6.58	---
19	5.69	---	---	---	---	---	6.68	6.59	6.34	6.31	6.59	---
20	5.69	---	---	---	---	---	6.66	6.60	6.32	6.30	6.59	---
21	5.72	---	---	---	---	---	6.65	6.59	6.32	6.29	6.58	---
22	5.72	---	---	---	---	---	6.64	6.59	6.34	6.29	6.59	---
23	5.74	---	---	---	---	---	6.62	6.58	6.33	6.35	---	---
24	5.82	---	---	---	---	---	6.62	6.56	6.34	6.39	---	---
25	5.82	---	---	---	---	---	6.61	6.54	6.32	6.38	---	---
26	5.81	---	---	---	---	---	6.59	6.53	6.32	6.38	---	---
27	5.82	---	---	---	---	---	6.59	6.51	6.36	6.37	---	---
28	5.82	---	---	---	---	6.59	6.72	6.49	6.36	6.36	---	---
29	5.82	---	---	---	---	---	6.74	6.47	6.35	6.38	---	---
30	5.83	---	---	---	---	---	6.72	6.46	6.34	6.44	---	---
31	5.82	---	---	---	6.57	---	6.72	6.45	---	6.42	---	---
MEAN	5.70	---	---	---	---	---	---	6.62	6.39	6.31	---	---
MAX	5.83	---	---	---	---	---	---	6.75	6.49	6.44	---	---
MIN	5.52	---	---	---	---	---	---	6.45	6.32	6.21	---	---

05428000 LAKE MENDOTA AT MADISON, WI

LOCATION.--Lat 43°05'42", long 89°22'12", in SE 1/4 sec.12, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, in city boat house at dam at outlet, in Madison.

DRAINAGE AREA.--233 mi^2. Area of Lake Mendota, 15.2 mi^2.

PERIOD OF RECORD.--December 1902 to May 1903, January 1916 to current year (incomplete).

REVISED RECORDS.--WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above sea level, or 5.60 ft below City of Madison datum. Prior to Oct. 1, 1979, at datum 7.82 ft higher; prior to Nov. 15, 1971, nonrecording gage at same site.

REMARKS.--No estimated daily gage heights. Records are good. Lake level regulated by concrete dam with two 12-foot gates and 20-foot lock at outlet. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.20 ft, July 14–15, 1993; minimum observed, 8.02 ft, Feb. 24 to Mar. 10, 1920, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 11.55 ft, June 24; minimum recorded, 9.34 ft, Nov. 25.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.70	9.74	9.47	9.47	9.84	10.20	10.00	10.11	10.05	11.37	10.88	10.16
2	9.69	9.85	9.46	9.46	9.83	10.19	9.99	10.11	10.13	11.37	10.83	10.13
3	9.71	9.86	9.47	9.46	9.82	10.18	10.01	10.10	10.15	11.34	10.77	10.11
4	9.72	9.83	9.47	9.45	9.81	10.17	10.01	10.10	10.13	11.31	10.71	10.09
5	9.73	9.78	9.51	9.45	9.80	10.16	9.99	10.09	10.11	11.29	10.70	10.07
6	9.92	9.76	9.50	9.44	9.81	10.16	9.98	10.07	10.18	11.26	10.82	10.04
7	9.97	9.78	9.47	9.44	9.79	10.14	9.98	10.06	10.36	11.25	10.87	10.02
8	9.98	9.75	9.48	9.43	9.79	10.12	9.97	10.07	10.42	11.23	10.87	10.00
9	10.00	9.69	9.49	9.42	9.79	10.11	9.96	10.08	10.43	11.18	10.84	9.98
10	9.98	9.70	9.45	9.42	9.81	10.09	9.95	10.24	10.44	11.15	10.80	9.95
11	9.96	9.76	9.43	9.44	9.89	10.08	9.95	10.27	10.44	11.10	10.78	9.94
12	9.94	9.70	9.45	9.44	9.97	10.07	9.97	10.26	10.44	11.09	10.77	9.89
13	9.92	9.68	9.46	9.43	9.99	10.07	9.94	10.26	10.44	11.09	10.74	9.84
14	9.91	9.66	9.48	9.43	10.01	10.08	9.94	10.24	10.42	11.07	10.71	9.80
15	9.85	9.64	9.49	9.42	10.01	10.07	9.96	10.26	10.39	11.04	10.65	9.75
16	9.80	9.62	9.49	9.42	10.00	10.08	9.96	10.26	10.37	11.00	10.59	9.72
17	9.75	9.60	9.49	9.42	9.99	10.07	9.94	10.27	10.76	10.96	10.54	9.70
18	9.74	9.59	9.49	9.52	9.98	10.07	9.96	10.27	11.22	11.17	10.49	9.67
19	9.73	9.56	9.49	9.65	9.97	10.06	9.99	10.27	11.34	11.25	10.45	9.64
20	9.74	9.58	9.49	9.72	9.96	10.06	10.06	10.28	11.39	11.23	10.46	9.62
21	9.71	9.55	9.49	9.76	9.96	10.04	10.06	10.31	11.41	11.21	10.45	9.62
22	9.68	9.51	9.49	9.77	9.96	10.02	10.08	10.29	11.43	11.22	10.43	9.61
23	9.65	9.50	9.49	9.79	9.96	10.01	10.07	10.29	11.43	11.22	10.41	9.58
24	9.68	9.46	9.48	9.80	9.96	10.02	10.05	10.26	11.43	11.21	10.37	9.58
25	9.64	9.44	9.48	9.80	9.98	10.04	10.09	10.23	11.44	11.18	10.35	9.54
26	9.63	9.43	9.47	9.83	10.00	10.04	10.08	10.21	11.43	11.14	10.33	9.55
27	9.69	9.47	9.47	9.87	10.08	10.03	10.04	10.17	11.42	11.10	10.29	9.57
28	9.74	9.47	9.46	9.87	10.16	10.03	10.03	10.16	11.42	11.07	10.26	9.55
29	9.73	9.46	9.46	9.87	10.20	10.02	10.07	10.14	11.40	11.05	10.24	9.52
30	9.70	9.46	9.46	9.85	---	10.01	10.13	10.10	11.41	10.99	10.21	9.49
31	9.69	---	9.47	9.85	---	10.01	---	10.07	---	10.93	10.19	---
MEAN	9.78	9.63	9.48	9.59	9.94	10.08	10.01	10.19	10.79	11.16	10.57	9.79
MAX	10.00	9.86	9.51	9.87	10.20	10.20	10.13	10.31	11.44	11.37	10.88	10.16
MIN	9.63	9.43	9.43	9.42	9.79	10.01	9.94	10.06	10.05	10.93	10.19	9.49

430309088284800 MIDDLE GENESEE LAKE NEAR OCONOMOWOC, WI

LOCATION.--Lat 43°03'09", long 88°28'48", in NW 1/4 SW 1/4 sec.22, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, 1.8 mi south of Oconomowoc.

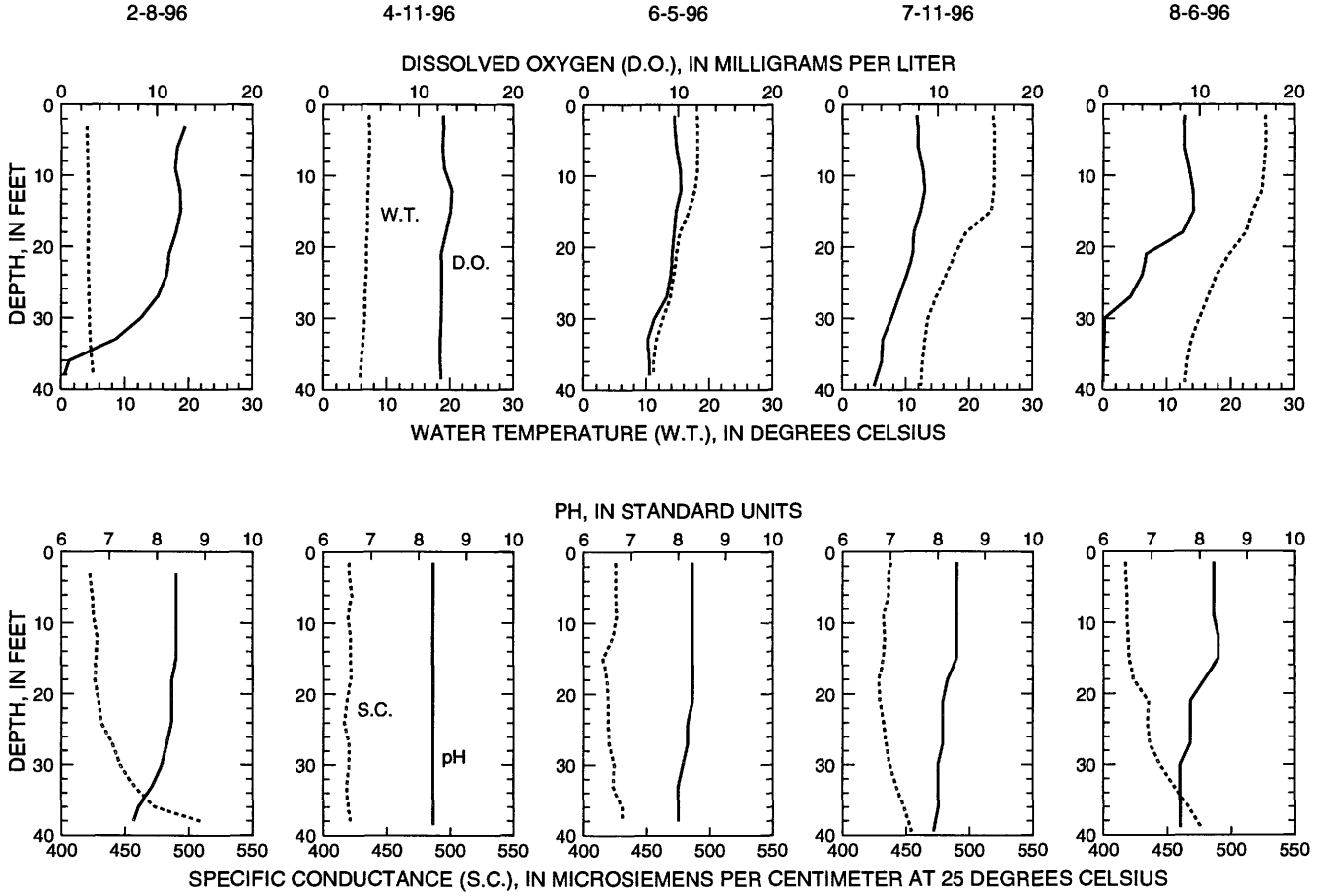
PERIOD OF RECORD.--February to August 1996.

REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 08 TO AUGUST 06, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 08		Apr. 11		June 05		July 11		Aug. 06	
Depth of sample (ft)	3.0	38	1.5	39	1.5	38	1.5	40	1.5	43
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	422	509	420	421	425	430	438	454	417	476
pH (units)	8.4	7.5	8.3	8.3	8.3	8.0	8.4	7.9	8.3	7.6
Water temperature (°C)	4.0	5.0	7.0	6.0	18.0	11.0	24.0	12.5	25.5	13.0
Color (Pt-Co. scale)	---	---	10	20	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.60	1.4	---	---	---	---	---	---
Secchi-depth (meters)		---		4.4		4.5		2.6		2.7
Dissolved oxygen	12.9	0.3	12.6	12.4	9.6	7.0	7.8	3.3	8.5	0.0
Hardness, as CaCO3	---	---	210	210	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	33	33	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	30	30	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	10	10	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2	2	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	180	180	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	18	18	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	23	23	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	1.9	1.9	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	252	250	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.02	0.06	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.21	0.23	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.59	0.57	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.80	0.80	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.82	0.86	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.007	0.011	0.007	0.007	<0.007	0.012	<0.007	0.022
Phosphorus, ortho, dissolved (as P)	---	---	0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	2.0	---	1.0	---	2.0	---	2.3	---



05429000 LAKE MONONA AT MADISON, WI

LOCATION.--Lat 43°03'48", long 89°23'49', in SW 1/4 sec.23, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, in Brittingham Park, in Madison.

DRAINAGE AREA.--279 mi^2. Area of Lake Monona, 5.3 mi^2.

PERIOD OF RECORD.--September 1915 to current year (fragmentary) in reports of the Geological Survey. For 1856 to March 1917 in reports of Wisconsin Railroad Commission, volume 19.

REVISED RECORDS.--WSP 1338: Lake area. WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above sea level, or 5.60 ft below City of Madison datum. Prior to Oct. 1, 1979, datum 3.61 ft higher; prior to Nov. 15, 1971, nonrecording gage at same site.

REMARKS.--No estimated daily gage heights. Records are good. Lake level regulated by concrete dam with four 12-foot stop-log sections and 12-foot lock at outlet of Lake Waubesa. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.28 ft, June 19, 1996; minimum observed, 3.22 ft, Jan. 20, 1965, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 7.28 ft, June 19; minimum recorded, 4.02 ft, Jan. 9 and 10.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.95	5.06	4.55	4.04	---	4.51	4.35	4.91	5.19	6.50	5.93	5.29
2	4.95	5.18	4.51	4.04	---	4.51	4.35	4.93	5.29	6.50	5.93	5.28
3	4.96	5.15	4.47	4.04	---	4.50	4.36	4.94	5.31	6.45	5.93	5.27
4	4.95	5.13	4.43	4.04	---	4.50	4.34	4.96	5.32	6.40	5.93	5.24
5	4.97	5.11	4.39	4.04	---	4.50	4.33	4.96	5.33	6.36	5.92	5.23
6	5.19	5.09	4.33	4.03	4.28	4.49	4.33	4.96	5.41	6.32	5.93	5.22
7	5.19	5.04	4.30	4.03	4.27	4.49	4.32	4.97	5.70	6.27	5.89	5.21
8	5.19	4.99	4.28	4.03	4.27	4.49	4.31	4.98	5.80	6.20	5.82	5.21
9	5.19	4.98	4.26	4.03	4.30	4.49	4.29	5.00	5.80	6.14	5.74	5.21
10	5.20	4.98	4.23	4.03	4.35	4.49	4.30	5.28	5.78	6.11	5.69	5.20
11	5.21	4.95	4.21	4.05	4.41	4.47	4.32	5.39	5.75	6.09	5.63	5.18
12	5.20	4.94	4.20	4.05	4.43	4.45	4.35	5.41	5.75	6.10	5.57	5.14
13	5.17	4.91	4.19	4.05	4.44	4.42	4.36	5.40	5.71	6.11	5.53	5.10
14	5.12	4.88	4.19	4.05	4.44	4.41	4.40	5.39	5.67	6.10	5.50	5.05
15	5.07	4.85	4.17	4.04	4.44	4.41	4.43	5.39	5.63	6.08	5.50	5.04
16	5.04	4.83	4.15	4.04	4.44	4.41	4.44	5.36	5.61	6.06	5.52	5.04
17	5.02	4.81	4.13	4.05	4.44	4.41	4.50	5.32	6.29	6.07	5.54	5.02
18	5.00	4.78	4.11	4.21	4.44	4.41	4.53	5.29	7.13	6.30	5.56	5.00
19	4.99	4.77	4.09	4.35	4.43	4.39	4.60	5.26	7.26	6.36	5.57	4.99
20	4.98	4.74	4.07	4.37	4.42	4.37	4.67	5.25	7.25	6.33	5.63	4.99
21	4.94	4.69	4.06	4.37	4.41	4.36	4.70	5.24	7.18	6.28	5.58	4.98
22	4.92	4.68	4.04	4.35	4.40	4.35	4.71	5.19	7.09	6.25	5.54	4.95
23	4.93	4.66	4.04	4.34	4.41	4.35	4.71	5.18	6.98	6.22	5.51	4.95
24	4.95	4.64	4.04	4.33	4.42	4.38	4.73	5.15	6.88	6.16	5.47	4.94
25	4.93	4.63	4.04	4.32	4.43	4.39	4.74	5.12	6.78	6.10	5.43	4.93
26	4.91	4.62	4.04	4.33	4.44	4.39	4.72	5.11	6.68	6.05	5.41	4.97
27	4.99	4.65	4.03	4.37	4.50	4.40	4.75	5.10	6.60	6.02	5.37	4.97
28	5.04	4.66	4.03	4.36	4.51	4.39	4.78	5.10	6.53	5.99	5.35	4.94
29	5.03	4.63	4.03	4.35	4.51	4.38	4.83	5.12	6.51	5.95	5.33	4.92
30	5.01	4.59	4.03	4.34	---	4.38	4.87	5.13	6.54	5.95	5.31	4.90
31	5.00	---	4.04	---	---	4.36	---	5.15	---	5.93	5.30	---
MEAN	5.04	4.85	4.18	---	---	4.43	4.51	5.16	6.16	6.19	5.61	5.08
MAX	5.21	5.18	4.55	---	---	4.51	4.87	5.41	7.26	6.50	5.93	5.29
MIN	4.91	4.59	4.03	---	---	4.35	4.29	4.91	5.19	5.93	5.30	4.90

434748089195800 LAKE MONTELLO AT MONTELLO, WI

LOCATION.--Lat 43°47'48", long 89°19'58", in SW 1/4 NE 1/4 sec.8, T.15 N., R.10 E., Marquette County, Hydrologic Unit 04030201, at Montello.

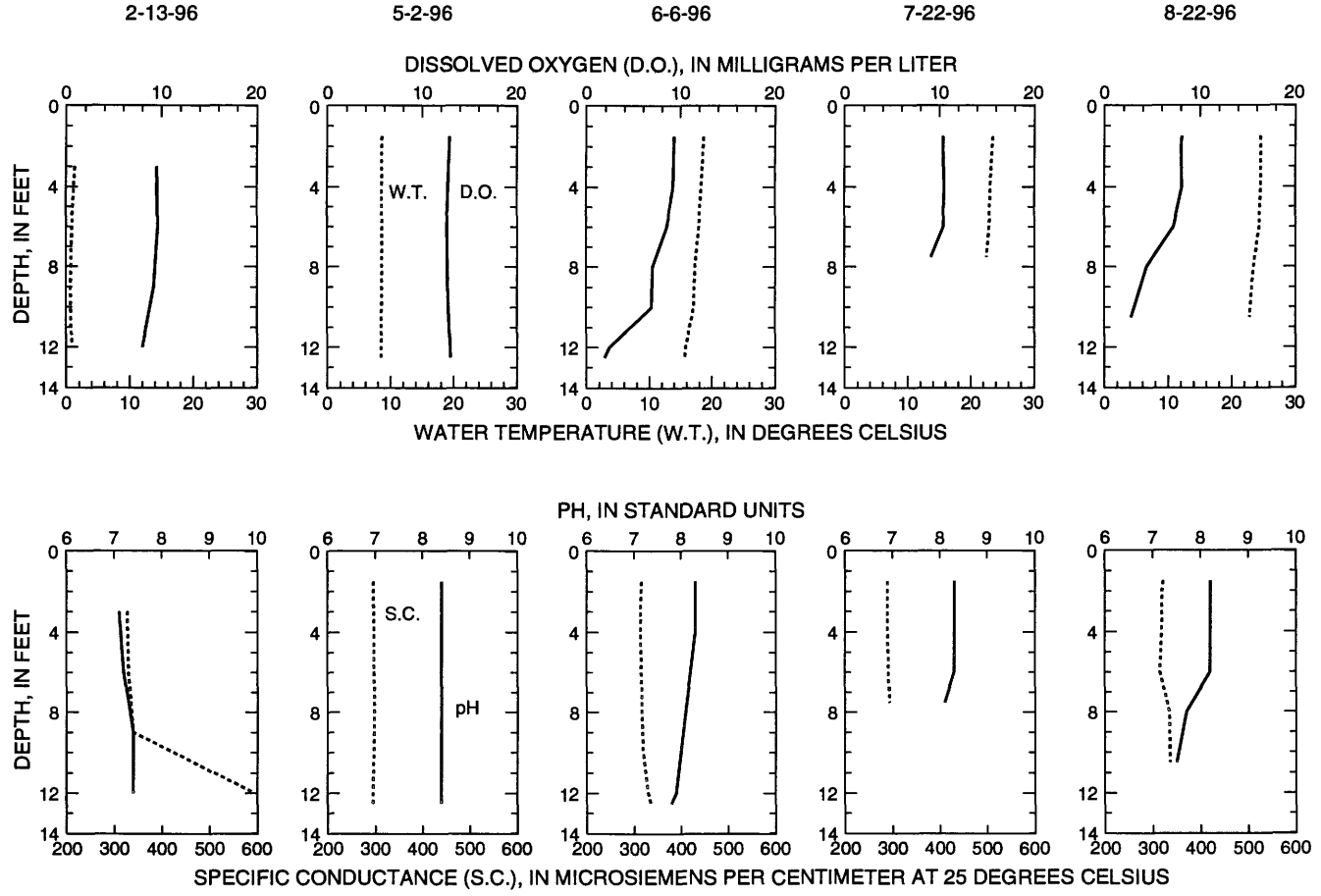
PERIOD OF RECORD.--February to August 1995. Lake-stage and secchi measurements for water years 1984 to 1990 were collected at a different site (station number 434813089204000).

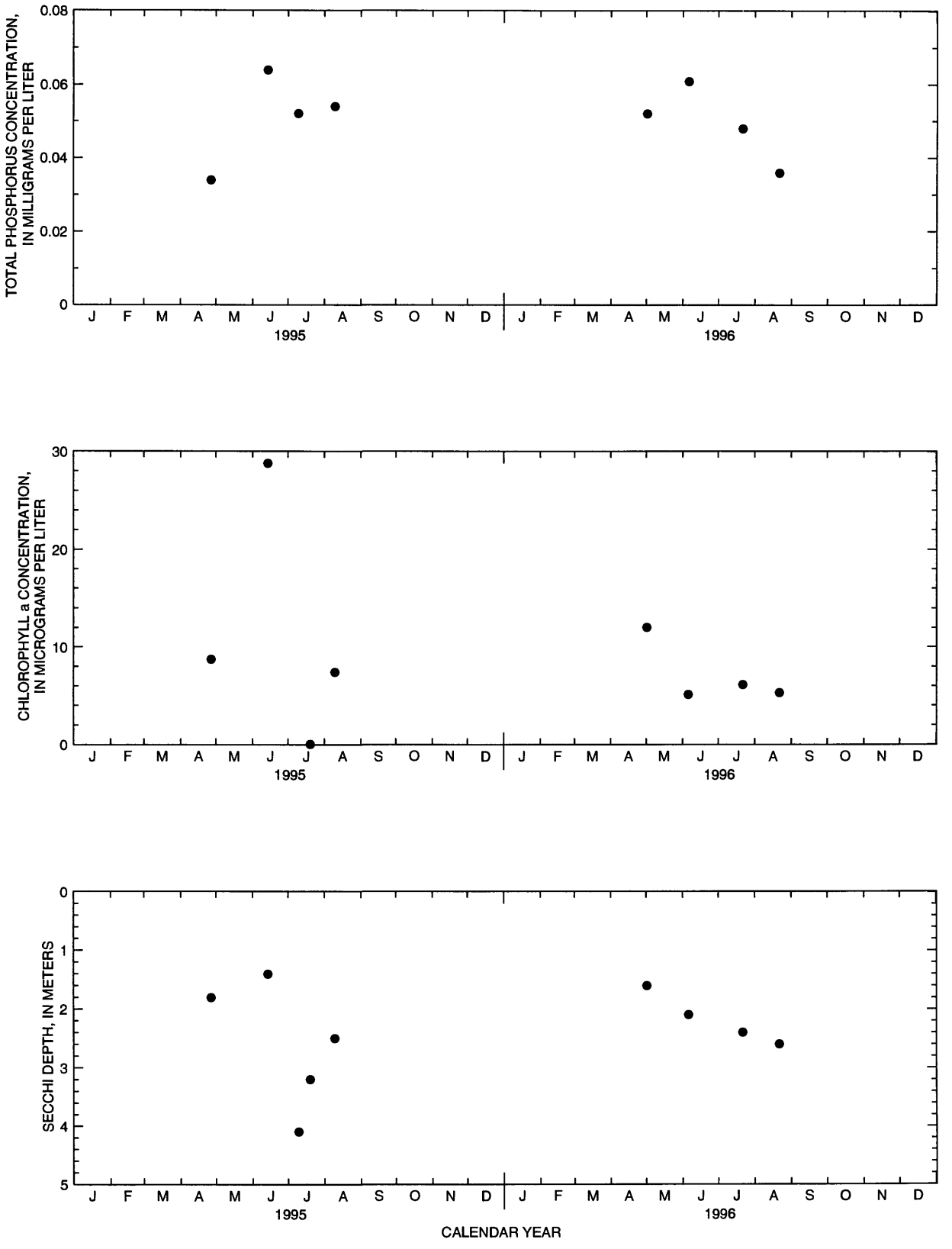
REMARKS.--Lake sampled near southeast end at the deep hole. The lake was ice-covered during the February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 13 TO AUGUST 22, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 13		May 02		June 06		July 22		Aug. 22	
Depth of sample (ft)	3.0	12	1.5	13	1.5	13	1.5	7.5	1.5	11
Lake stage (ft)	---		---		---		11.56		11.55	
Specific conductance (µS/cm)	327	596	295	295	315	336	289	293	321	336
pH (units)	7.1	7.4	8.4	8.4	8.3	7.8	8.3	8.1	8.2	7.5
Water temperature (°C)	1.5	1.0	8.5	8.5	18.5	15.5	23.5	22.5	24.5	23.0
Color (Pt-Co. scale)	---	---	50	50	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.7	2.1	---	---	---	---	---	---
Secchi-depth (meters)	---		1.6		2.1		2.4		2.6	
Dissolved oxygen	9.5	8.0	12.9	13.0	9.3	1.9	10.4	9.1	8.1	2.8
Hardness, as CaCO3	---	---	150	150	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	33	33	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	17	17	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	2.8	2.8	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1	1	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	140	150	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	9.0	9.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	5.3	5.4	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	4.7	4.6	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	182	180	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.54	0.54	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.70	0.70	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.2	1.2	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.052	0.050	0.061	0.085	0.048	0.048	0.036	0.069
Phosphorus, ortho, dissolved (as P)	---	---	0.006	0.005	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	0.1	0.1	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	16	16	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	12	---	5.1	---	6.1	---	5.3	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Montello Lake at Montello, Wisconsin.

455504089260500 MOON LAKE NEAR ST. GERMAIN, WI

LOCATION.--Lat 45°55'04", long 89°26'05", in SE 1/4 SE 1/4 sec.25, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, 2.9 mi northeast of St. Germain.

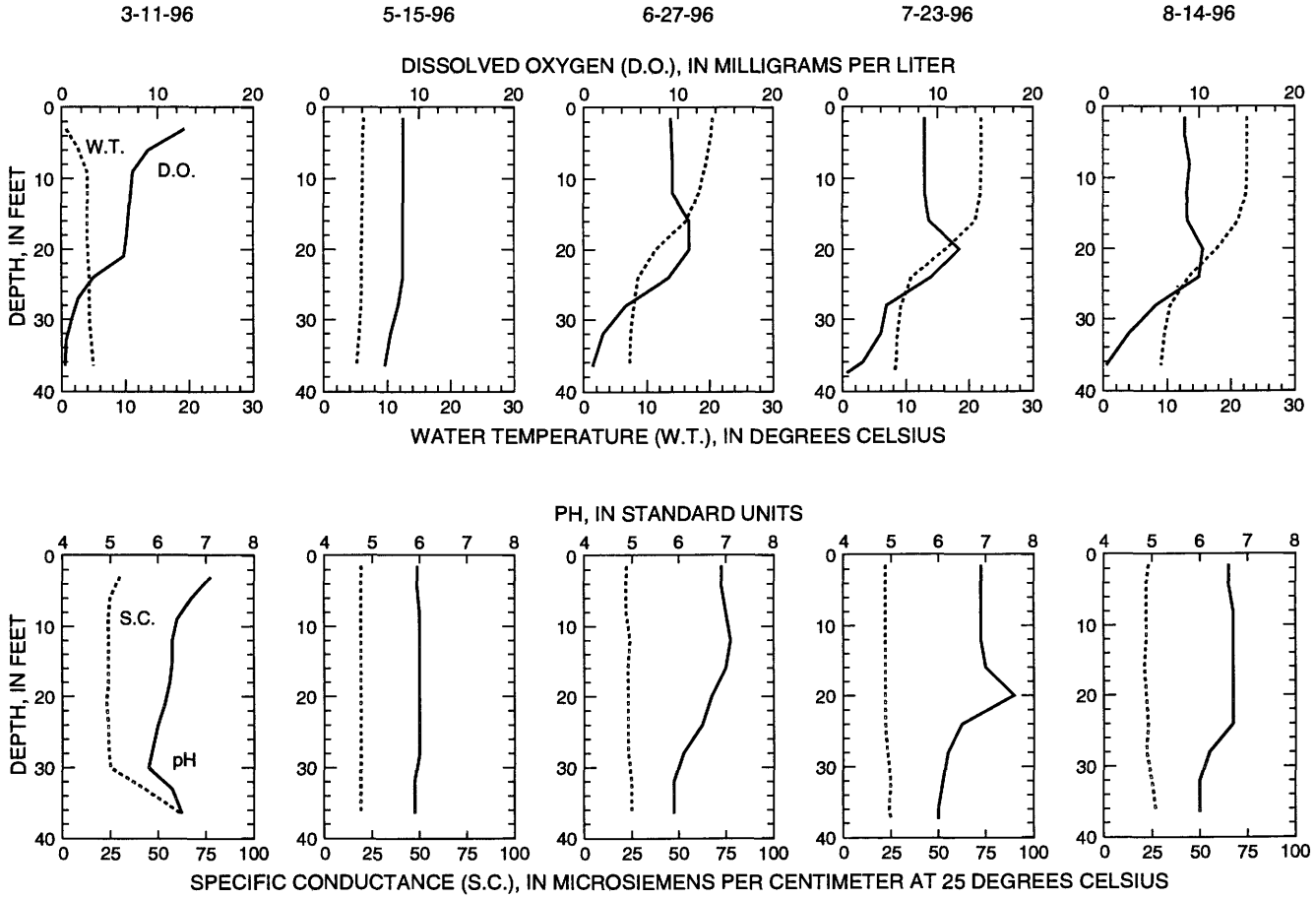
PERIOD OF RECORD.--May 1985 to September 1988 and October 1989 to September 1990, Secchi depth only; February 1992 to current year.

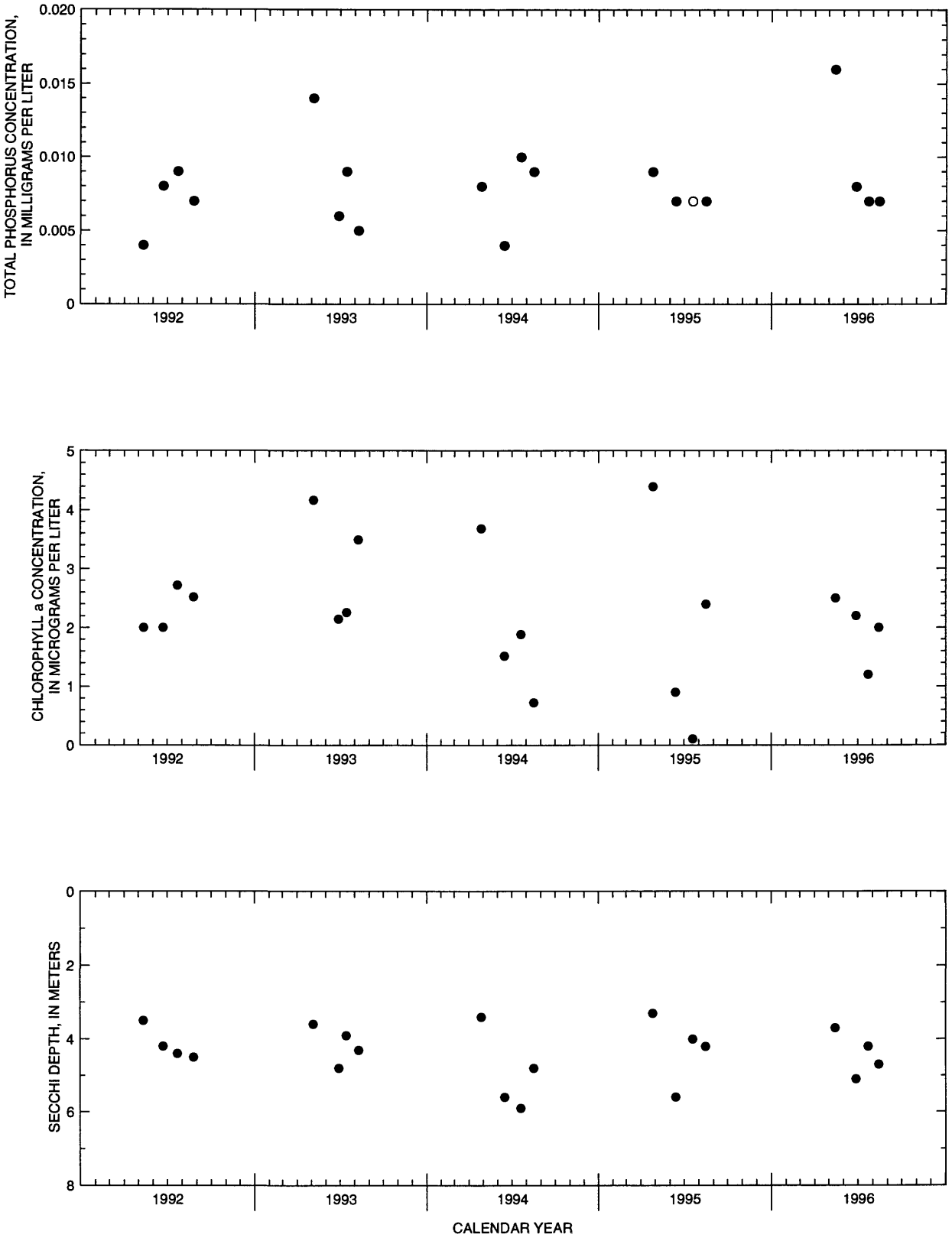
REMARKS.--The stage of Moon Lake is the same as Alma Lake; lake stages read at Alma Lake. Lake sampled near center at the deep hole. Lake ice-covered during March measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 11 TO AUGUST 14, 1996

(Milligrams per liter unless otherwise indicated)

	Mar. 11		May 15		June 27		July 23		Aug. 14	
Depth of sample (ft)	3.0	37	1.5	37	1.5	37	1.5	38	1.5	37
Lake stage (ft)	---		11.53		11.56		11.57		11.82	
Specific conductance (µS/cm)	30	62	19	19	22	25	22	25	23	27
pH (units)	7.1	6.5	6.0	5.9	6.9	5.9	6.9	6.0	6.6	6.0
Water temperature (°C)	0.5	5.0	6.0	5.0	20.5	7.0	22.0	8.0	22.5	9.0
Color (Pt-Co. scale)	---	---	10	10	---	---	---	---	---	---
Turbidity (NTU)	---	---	<0.50	<0.50	---	---	---	---	---	---
Secchi-depth (meters)	---		3.7		5.1		4.2		4.7	
Dissolved oxygen	12.8	0.3	8.3	6.4	9.2	0.9	8.6	0.4	8.5	0.3
Hardness, as CaCO3	---	---	8	8	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	2.0	2.0	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	0.7	0.8	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	0.6	0.6	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.4	0.4	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	7	7	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	3.0	3.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	0.6	0.5	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.2	0.3	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	28	28	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.10	0.11	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.50	0.40	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.50	0.40	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.60	0.51	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.016	0.013	0.008	0.090	0.007	0.036	0.007	0.008
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	70	80	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	10	8	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	2.5	---	2.2	---	1.2	---	2.0	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Moon Lake near St. Germain, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

454622088324801 MORGAN LAKE NEAR FENCE, WI

LOCATION.--Lat 45°46'22", long 88°32'48", in NE 1/4 NW 1/4 SW 1/4 sec.18, T.38 N., R.16 E., Florence County, Hydrologic Unit 04030108, at southwest end of lake on dirt road off Forest Service Road 2161, 6 mi west northwest of Fence.

DRAINAGE AREA.--Not determined. Area of lake, 44 acres.

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is approximately 1,400.00 ft above sea level.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 66.36 ft, June 21-22, 1993; minimum observed gage height, 63.61 ft, Oct. 19, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 66.35 ft, May 11; minimum observed gage height, 65.24 ft, Oct. 2-5.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65.25	65.61	65.70	65.74	65.89	65.90	65.89	66.25	66.17	66.24	66.16	65.93
2	65.24	65.66	65.71	65.73	65.89	65.89	65.89	66.25	66.22	66.26	66.15	65.93
3	65.24	65.65	65.71	65.73	65.89	65.88	65.88	66.26	66.23	66.24	66.13	65.92
4	65.24	65.65	65.70	65.73	65.89	65.89	65.89	66.26	66.24	66.23	66.12	65.91
5	65.24	65.65	65.71	65.74	65.88	65.89	65.90	66.27	66.24	66.22	66.14	65.89
6	65.35	65.66	65.70	65.73	65.88	65.86	65.90	66.29	66.28	66.19	66.17	65.87
7	65.43	65.65	65.70	65.73	65.88	65.85	65.90	66.30	66.29	66.18	66.22	65.87
8	65.43	65.64	65.70	65.73	65.88	65.85	65.90	66.30	66.30	66.17	66.22	65.86
9	65.43	65.63	65.71	65.74	65.88	65.85	65.88	66.30	66.30	66.16	66.19	65.86
10	65.45	65.63	65.71	65.74	65.89	65.85	65.88	66.33	66.30	66.16	66.17	65.84
11	65.46	65.64	65.71	65.74	65.88	65.84	65.87	66.35	66.30	66.12	66.16	65.85
12	65.46	65.64	65.71	65.73	65.88	65.83	65.89	66.34	66.28	66.14	66.16	65.81
13	65.45	65.62	65.71	65.73	65.88	65.83	65.93	66.33	66.27	66.18	66.16	65.80
14	65.44	65.62	65.76	65.73	65.88	65.83	65.94	66.33	66.24	66.18	66.13	65.77
15	65.43	65.62	65.77	65.72	65.88	65.83	65.94	66.33	66.23	66.17	66.11	65.76
16	65.44	65.63	65.76	65.72	65.88	65.83	65.96	66.30	66.22	66.17	66.10	65.75
17	65.44	65.63	65.76	65.72	65.88	65.83	65.96	66.30	66.23	66.16	66.10	65.74
18	65.43	65.63	65.76	65.80	65.89	65.83	65.97	66.32	66.25	66.21	66.08	65.74
19	65.41	65.63	65.76	65.85	65.89	65.83	66.03	66.32	66.25	66.23	66.06	65.73
20	65.42	65.63	65.76	65.86	65.89	65.80	66.08	66.33	66.26	66.22	66.05	65.71
21	65.46	65.64	65.76	65.86	65.86	65.79	66.11	66.31	66.26	66.21	66.04	65.72
22	65.48	65.64	65.76	65.85	65.86	65.78	66.12	66.30	66.28	66.18	66.06	65.75
23	65.50	65.64	65.75	65.83	65.86	65.78	66.12	66.29	66.25	66.17	66.05	65.75
24	65.57	65.64	65.75	65.83	65.86	65.82	66.14	66.28	66.24	66.17	66.04	65.76
25	65.57	65.64	65.74	65.83	65.86	65.90	66.18	66.25	66.24	66.17	66.03	65.75
26	65.58	65.66	65.74	65.83	65.86	65.90	66.20	66.24	66.24	66.16	65.99	65.75
27	65.58	65.68	65.74	65.90	65.87	65.90	66.20	66.23	66.29	66.15	65.98	65.75
28	65.58	65.69	65.73	65.90	65.88	65.90	66.21	66.22	66.30	66.16	65.98	65.75
29	65.58	65.69	65.73	65.92	65.89	65.90	66.21	66.21	66.29	66.17	65.98	65.75
30	65.58	65.70	65.73	65.91	---	65.90	66.24	66.18	66.28	66.16	65.94	65.75
31	65.58	---	65.73	65.90	---	65.90	---	66.17	---	66.16	65.93	---
MEAN	65.44	65.64	65.73	65.79	65.88	65.85	66.01	66.28	66.26	66.18	66.09	65.80
MAX	65.58	65.70	65.77	65.92	65.89	65.90	66.24	66.35	66.30	66.26	66.22	65.93
MIN	65.24	65.61	65.70	65.72	65.86	65.78	65.87	66.17	66.17	66.12	65.93	65.71

430551088273500 OCONOMOWOC LAKE NO. 1 (CENTER) AT OCONOMOWOC, WI

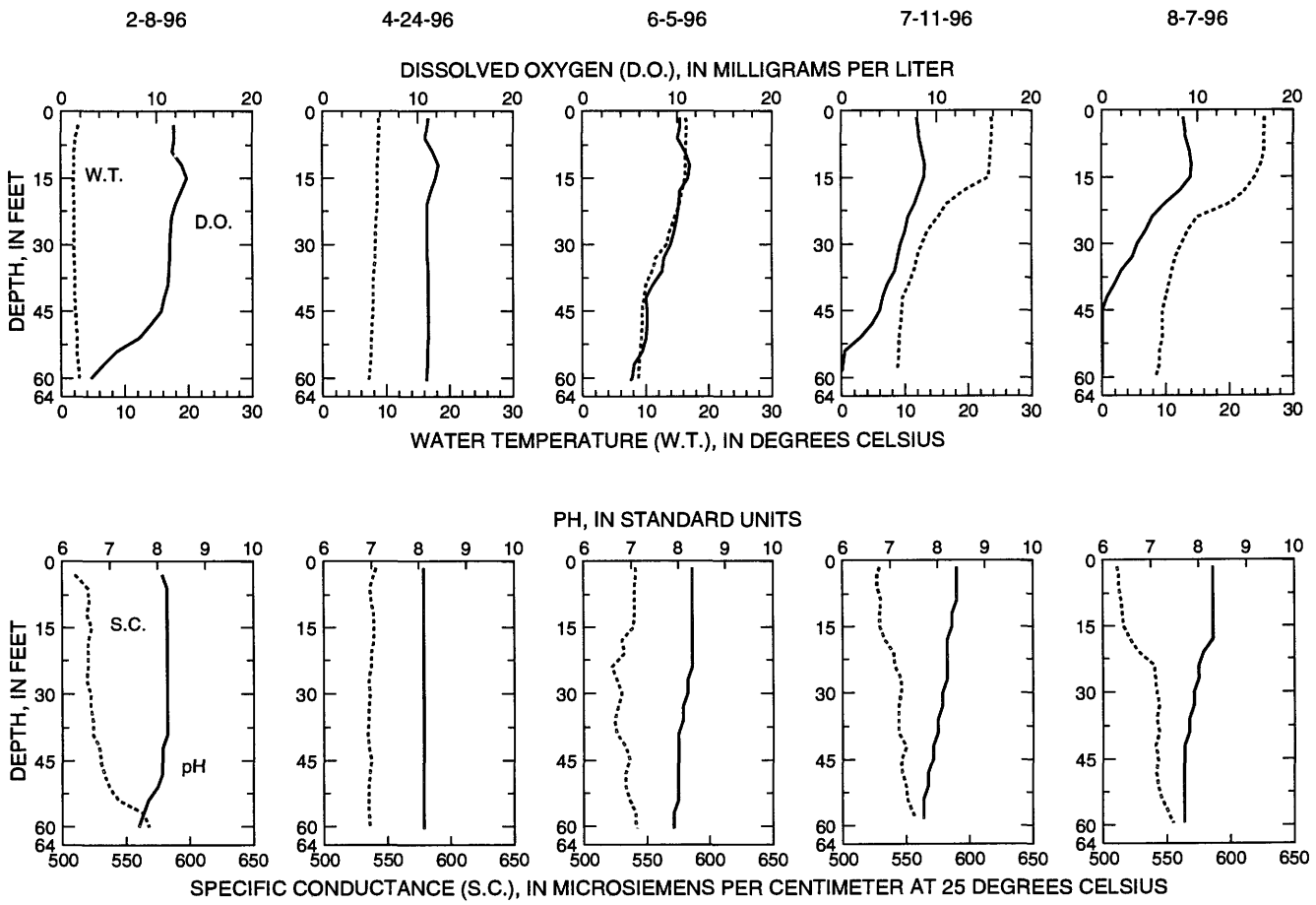
LOCATION.--Lat 43°05'51", long 88°27'35", in NW 1/4 SE 1/4 sec.2, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

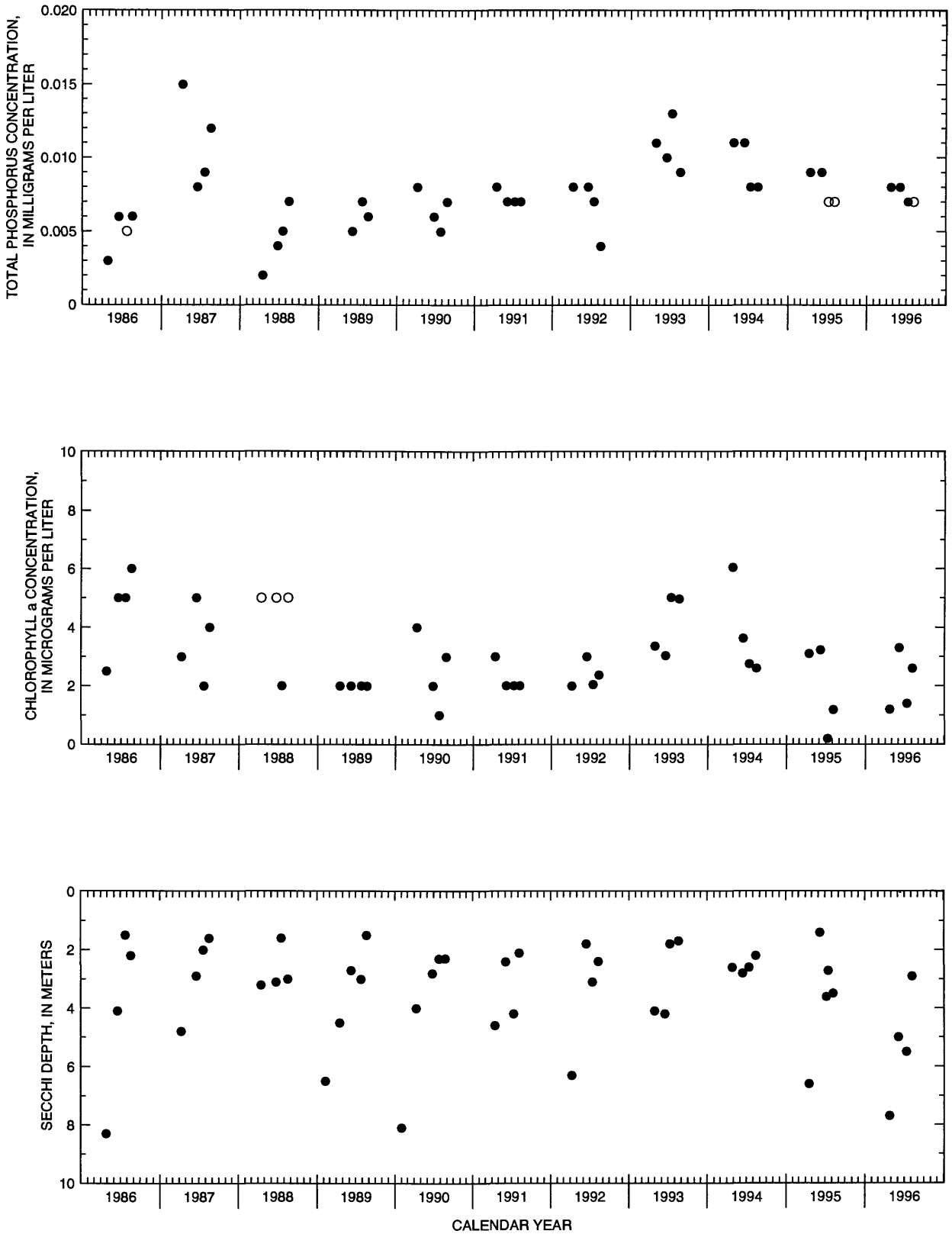
PERIOD OF RECORD.--March 1986 to current year.

REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 08 TO AUGUST 07, 1996
(Milligrams per liter unless otherwise indicated)

	Feb. 08		Apr. 24		June 05		July 11		Aug. 07	
Depth of sample (ft)	3.0	60	1.5	61	1.5	61	1.5	59	1.5	60
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	510	568	541	536	541	542	529	558	511	555
pH (units)	8.1	7.6	8.1	8.1	8.3	7.9	8.4	7.7	8.3	7.7
Water temperature (°C)	2.5	3.0	8.5	7.0	16.5	9.0	23.5	8.5	25.5	8.5
Secchi-depth (meters)	---		7.7		5.0		5.5		2.9	
Dissolved oxygen	11.8	3.1	11.1	10.9	10.3	5.0	7.9	0.0	8.5	0.0
Hardness, as CaCO3	---	---	250	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	46	47	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	33	33	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	14	14	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2	2	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	220	220	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	27	27	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	33	33	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	4.1	4.3	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	306	308	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.26	0.26	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.06	0.05	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.60	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.66	0.86	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.008	0.010	0.008	0.019	0.007	0.150	<0.007	0.159
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	1.2	---	3.3	3.4	1.4	---	2.6	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Oconomowoc Lake, No. 1 (Center) at Oconomowoc, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

430609088262200 OCONOMOWOC LAKE NO. 2 (OFF HEWITT POINT) AT OCONOMOWOC, WI

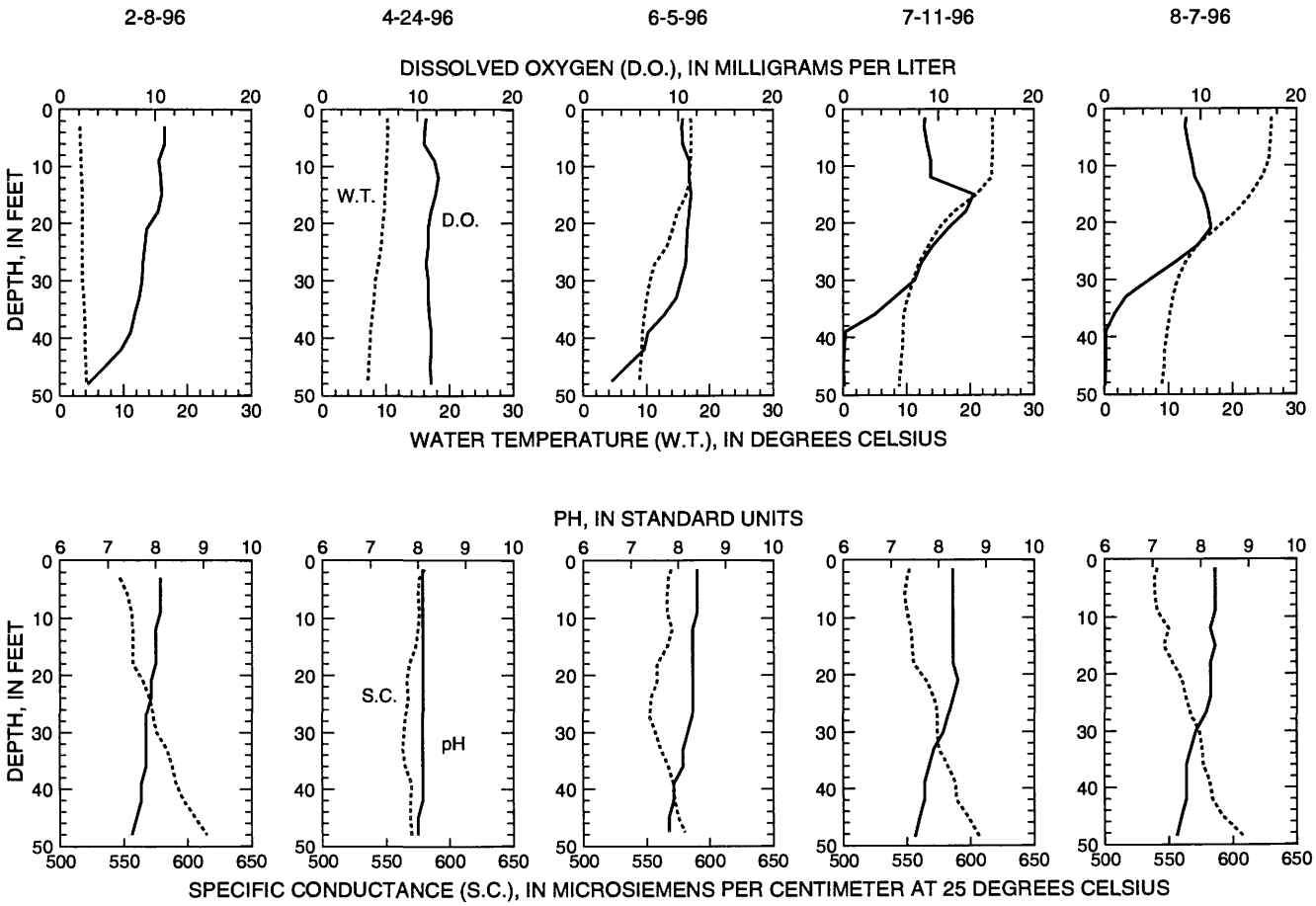
LOCATION.--Lat 43°06'09", long 88°26'22", in NW 1/4 NW 1/4 sec.1, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

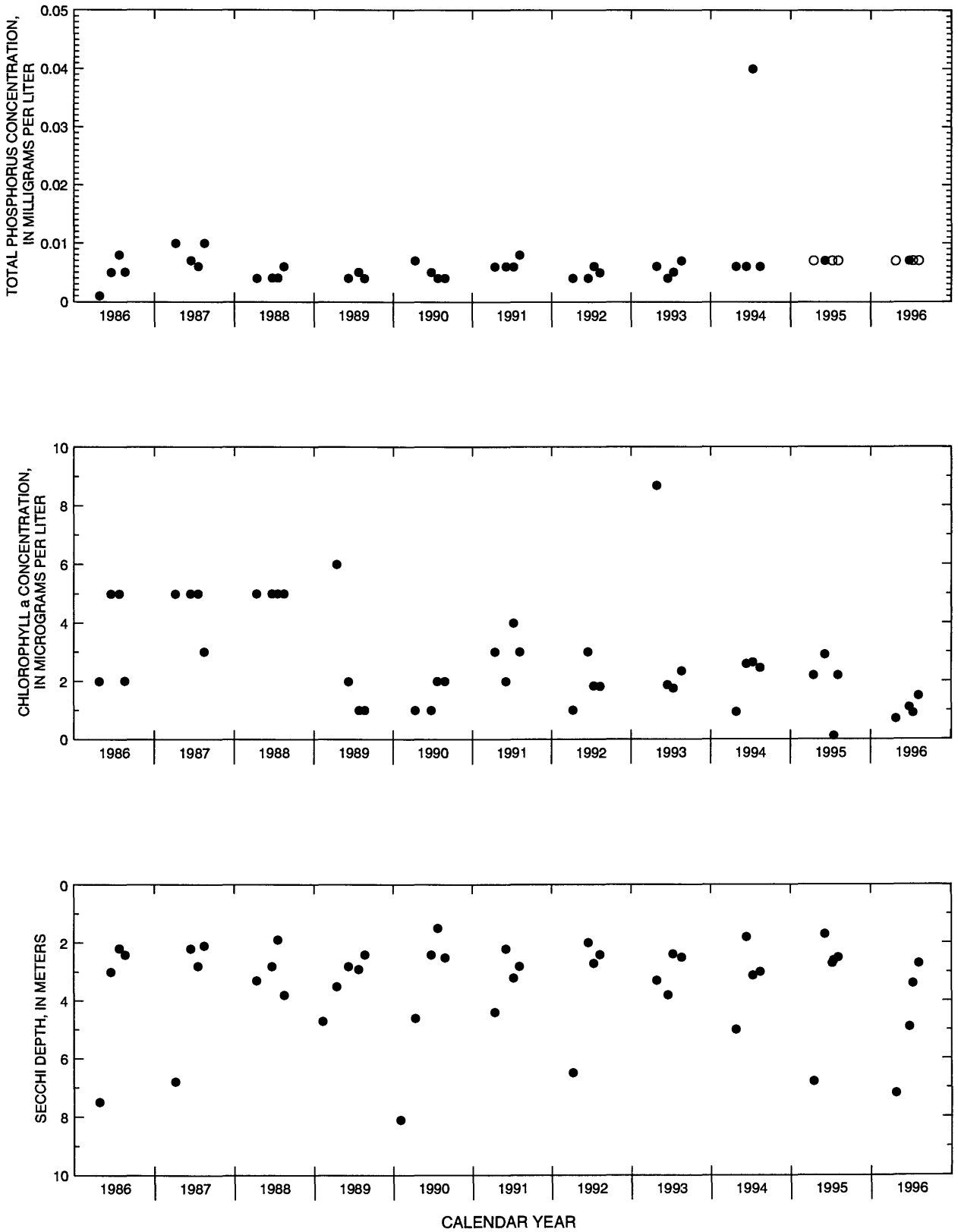
PERIOD OF RECORD.--March 1986 to current year.

REMARKS.--Lake sampled at the deepest point in northeast bay near Hewitt Point. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 08 TO AUGUST 07, 1996
(Milligrams per liter unless otherwise indicated)

	Feb. 08		Apr. 24		June 05		July 11		Aug. 07	
Depth of sample (ft)	3.0	48	1.5	48	1.5	48	1.5	49	1.5	49
Lake stage (ft)	---		---		---		---		---	
Specific conductance (µS/cm)	547	615	580	570	569	580	552	607	541	608
pH (units)	8.1	7.5	8.1	8.0	8.4	7.8	8.3	7.5	8.3	7.5
Water temperature (°C)	3.0	4.0	10.0	7.0	17.0	9.0	23.5	9.0	26.0	9.0
Secchi-depth (meters)	---		7.2		4.9		3.4		2.7	
Dissolved oxygen	11.0	2.9	10.9	11.4	10.5	3.0	8.6	0.1	8.5	0.0
Phosphorus, total (as P)	---	---	<0.007	<0.007	0.007	0.009	<0.007	0.046	<0.007	0.046
Chlorophyll a, phytoplankton (µg/L)	---	---	0.7	---	1.1	---	0.9	---	1.5	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Oconomowoc Lake, No. 2 (Hewitt Pt.) at Oconomowoc, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI

LOCATION.--Lat 43°07'23", long 88°25'21", in SE 1/4 SE 1/4, sec.25, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

DRAINAGE AREA.--80.7 mi^2.

PERIOD OF RECORD.--February 1984 to current year.

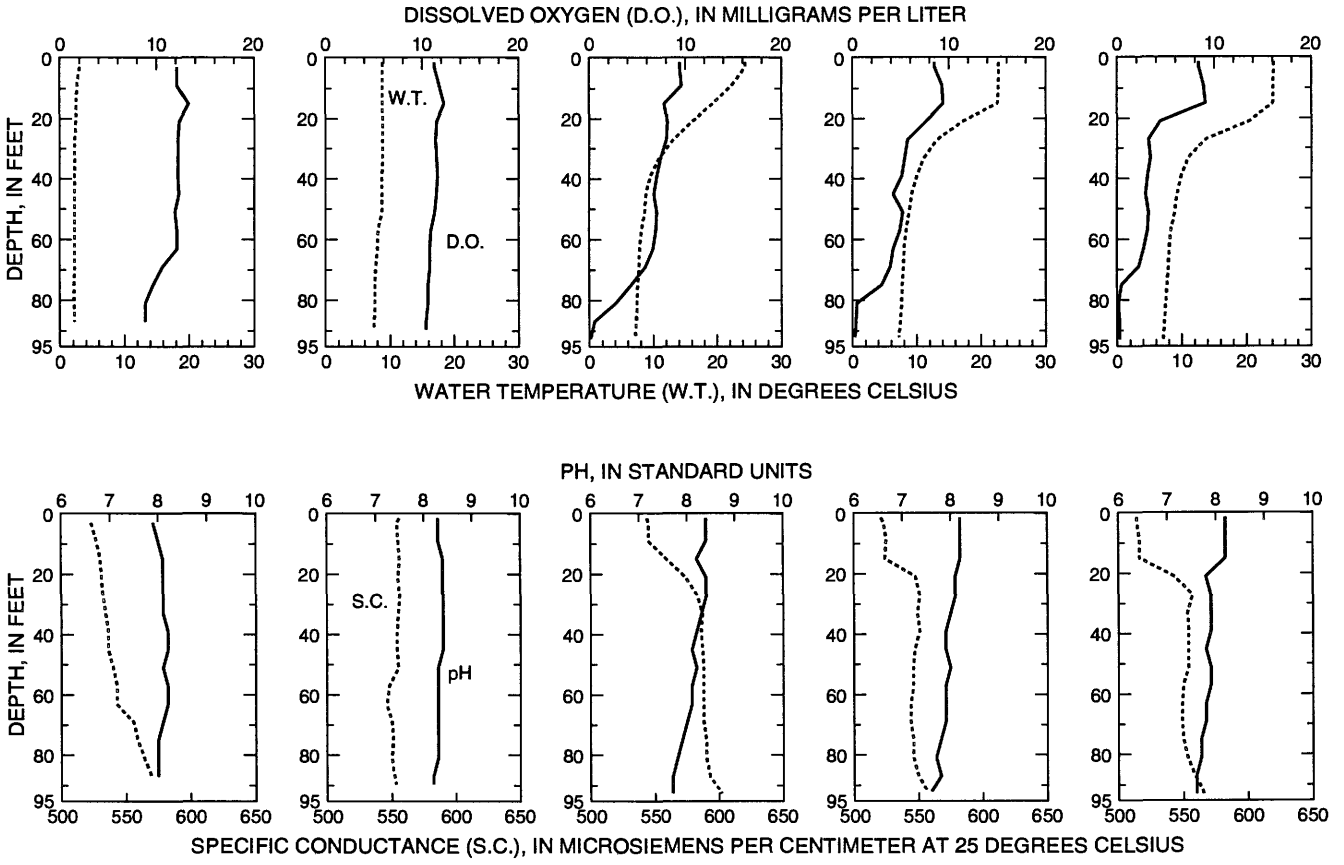
LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above sea level.

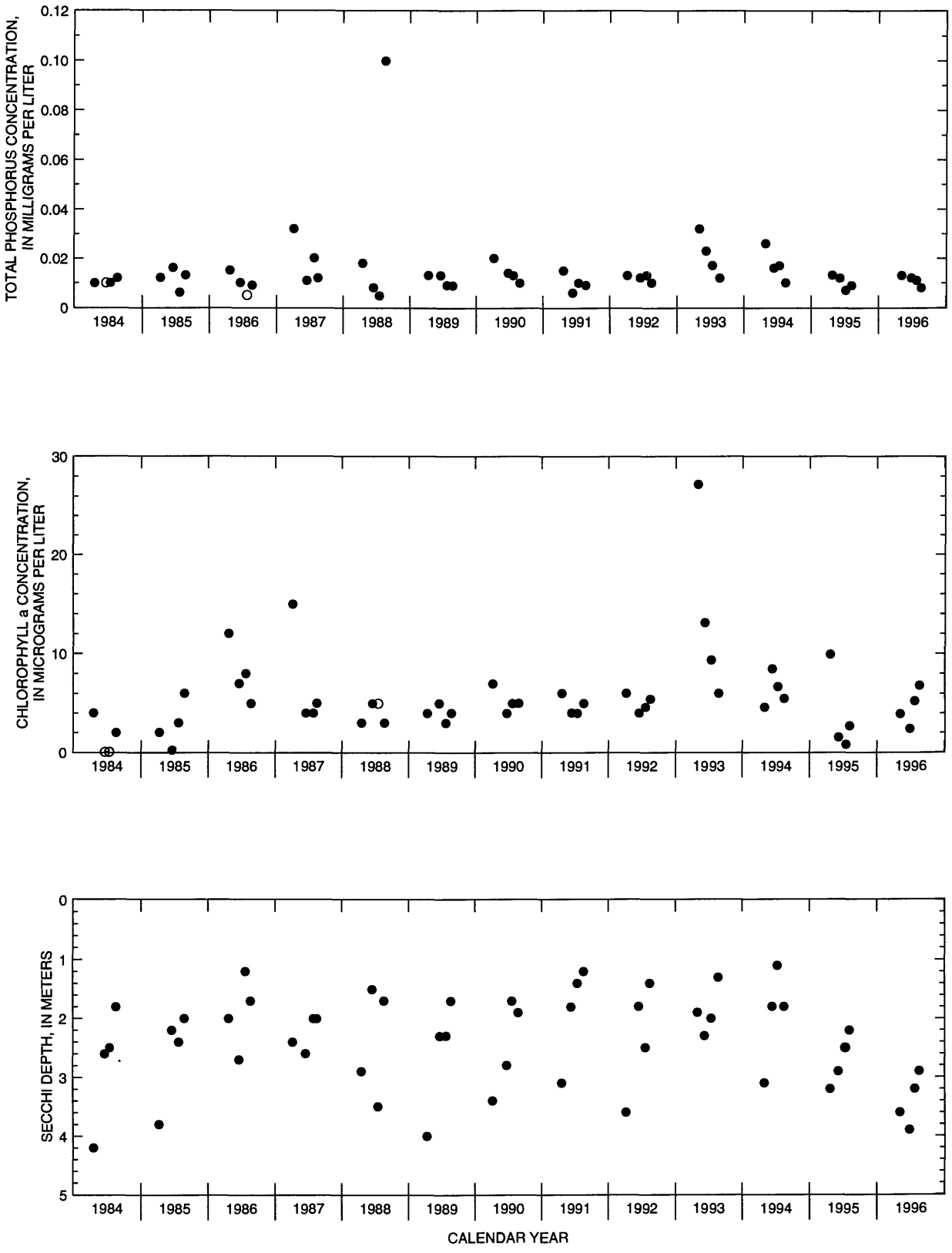
REMARKS.--A detailed water quality management plan has been developed for Okauchee Lake by Southeastern Wisconsin Regional Planning Commission; previous water-quality data are available in this report. Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 14 TO AUGUST 19, 1996

(Milligrams per liter unless otherwise indicatedd)

	Feb. 14		May 06		June 27		July 25		Aug. 19	
Depth of sample (ft)	3.0	87	1.5	90	1.5	93	1.5	92	1.5	93
Lake stage (ft)	4.70		4.77		5.02		4.74		4.79	
Specific conductance (µS/cm)	523	570	556	553	544	602	521	557	514	566
pH (units)	7.9	8.0	8.3	8.2	8.4	7.7	8.2	7.6	8.2	7.6
Water temperature (°C)	3.0	2.0	9.0	7.5	24.5	7.0	22.5	7.0	24.0	7.0
Color (Pt-Co. scale)	---	---	15	15	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.60	0.90	---	---	---	---	---	---
Secchi-depth (meters)	---		3.6		3.9		3.2		2.9	
Dissolved oxygen	12.1	8.8	11.3	10.4	9.4	0.1	8.5	0.2	8.4	0.2
Hardness, as CaCO3	---	---	270	260	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	52	51	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	34	33	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	12	12	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	230	230	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	25	24	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	29	29	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	2.3	2.6	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	316	318	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.38	0.35	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	0.04	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.40	0.46	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.50	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.78	0.85	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.013	0.014	0.012	0.084	0.011	0.102	0.008	0.167
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	0.9	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	3.9	---	2.4	---	5.2	---	6.8	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Okauchee Lake at Okauchee, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

430759088244200 OKAUCHEE LAKE, NO. 1, NEAR OKAUCHEE, WI

LOCATION.--Lat 43°07'59", long 88°24'42", in NE 1/4 NW 1/4 sec.30, T.8 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, near Okauchee.

PERIOD OF RECORD.--April 1986 to current year.

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above sea level.

REMARKS.--Lake sampled in Crane's Nest Bay, in the northeast part of the lake, at an approximate depth of 7 ft. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MAY 06 TO AUGUST 19, 1996
(Milligrams per liter unless otherwise indicated)

	May 06	June 27	July 25	Aug. 19
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.77	5.02	4.74	4.79
Specific conductance (µS/cm)	554	514	550	555
pH (units)	8.4	8.4	8.3	8.1
Water temperature (°C)	8.5	27.5	23.0	24.0
Secchi-depth (meters)	---	1.7	1.7	1.3
Dissolved oxygen	11.2	12.3	9.1	7.8
Phosphorus, total (as P)	0.013	0.029	0.027	0.022
Chlorophyll a, phytoplankton (µg/L)	3.3	5.9	8.9	7.8

430645088264500 OKAUCHEE LAKE, NO. 2, AT OKAUCHEE, WI

LOCATION.--Lat 43°06'45", long 88°26'45", in SE 1/4 NE 1/4 sec.35, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

PERIOD OF RECORD.--April 1986 to current year.

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above sea level.

REMARKS.--Lake sampled in Lower Okauchee Lake, at an approximate depth of 14 ft. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MAY 06 TO AUGUST 19, 1996
(Milligrams per liter unless otherwise indicated)

	May 06	June 27	July 25	Aug. 19
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.77	5.02	4.74	0.00
Specific conductance (µS/cm)	549	534	506	485
pH (units)	8.4	8.5	8.4	8.3
Water temperature (°C)	10.5	25.5	23.5	25.0
Secchi-depth (meters)	2.2	3.2	2.2	2.0
Dissolved oxygen	10.9	10.1	8.8	8.7
Phosphorus, total (as P)	0.014	0.012	0.013	0.012
Chlorophyll a, phytoplankton (µg/L)	4.5	2.7	4.0	4.7

430642088252400 OKAUCHEE LAKE, NO. 3, AT OKAUCHEE, WI

LOCATION.--Lat 43°06'42", long 88°25'24", in NE 1/4 SE 1/4 sec.36, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

PERIOD OF RECORD.--April 1986 to current year.

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above sea level.

REMARKS.--Lake sampled in Ice House Bay, in the southern part of the lake, at an approximate depth of 12 ft. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MAY 06 TO AUGUST 19, 1996
(Milligrams per liter unless otherwise indicated)

	May 06	June 27	July 25	Aug. 19
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.77	5.02	4.74	0.00
Specific conductance (µS/cm)	548	514	489	490
pH (units)	8.4	8.5	8.5	8.2
Water temperature (°C)	10.0	25.0	23.5	25.0
Secchi-depth (meters)	2.7	3.5	1.9	1.5
Dissolved oxygen	11.5	10.3	9.3	8.2
Phosphorus, total (as P)	0.015	0.014	0.014	0.012
Chlorophyll a, phytoplankton (µg/L)	5.8	1.7	6.1	7.8

430757088261700 OKAUCHEE LAKE, NO. 4, AT OKAUCHEE, WI

LOCATION.--Lat 43°07'57", long 88°26'17", in NW 1/4 NW 1/4 sec.25, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

PERIOD OF RECORD.--June 1986 to current year.

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above sea level.

REMARKS.--Lake sampled near McDowell (Crazyman's) Island, in the northwest bay of the lake, at an approximate depth of 5.5 ft. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MAY 06 TO AUGUST 19, 1996
(Milligrams per liter unless otherwise indicated)

	May 06	June 27	July 25	Aug. 19
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.77	5.02	3.75	4.79
Specific conductance (µS/cm)	550	519	513	511
pH (units)	8.4	8.5	8.5	8.4
Water temperature (°C)	10.0	24.5	22.5	24.5
Secchi-depth (meters)	2.8	3.4	2.3	1.4
Dissolved oxygen	11.2	10.9	9.1	8.6
Phosphorus, total (as P)	0.013	0.011	0.011	0.009
Chlorophyll a, phytoplankton (µg/L)	2.8	2.3	5.0	6.4

424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

LOCATION.--Lat 42°49'05", long 88°20'40", in NW 1/4 SW 1/4 sec.11, T.4 N., R.18 E., Walworth County, Hydrologic Unit 07120006, 3.3 mi south of Mukwonago.

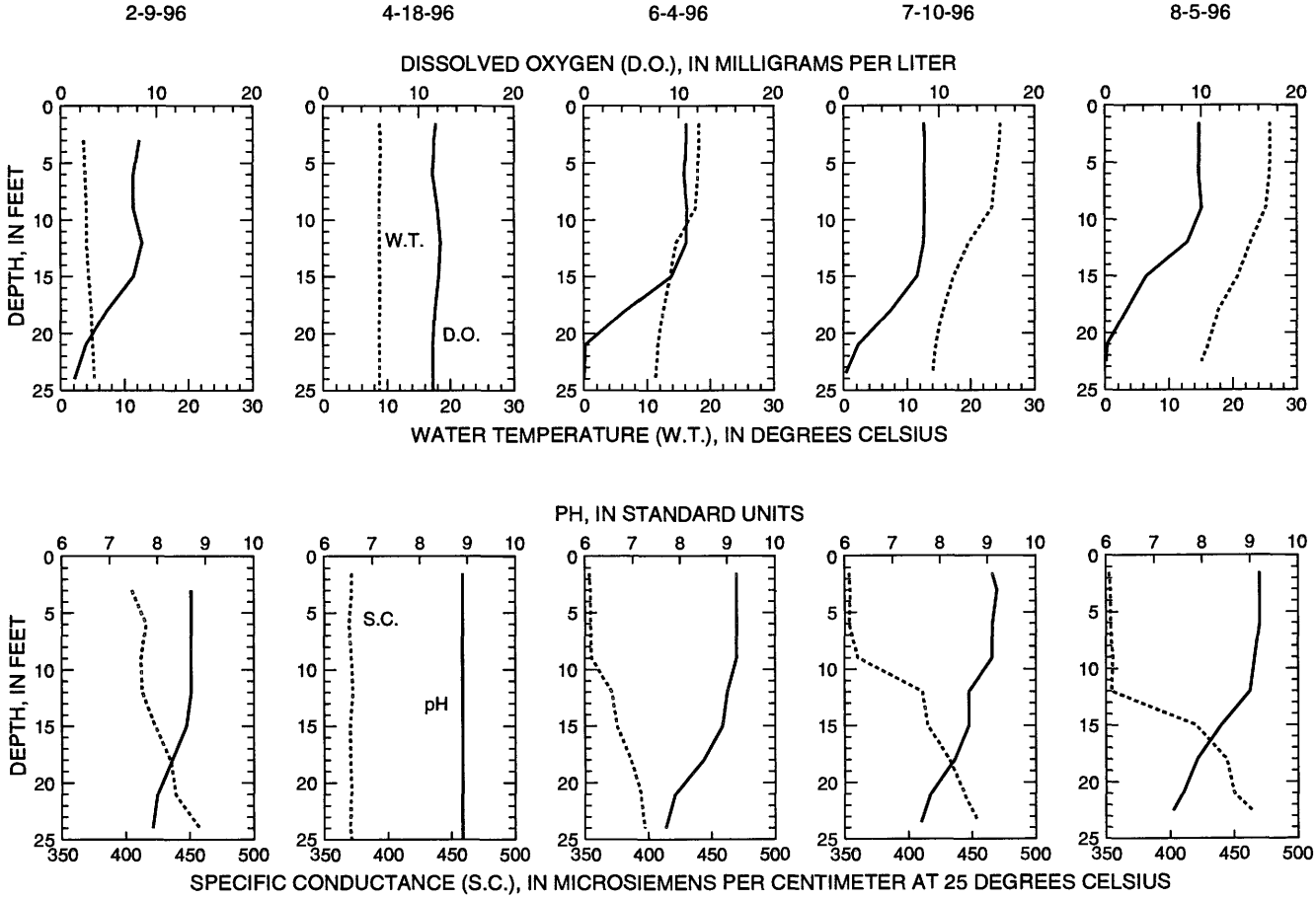
PERIOD OF RECORD.--February 1993 to current year.

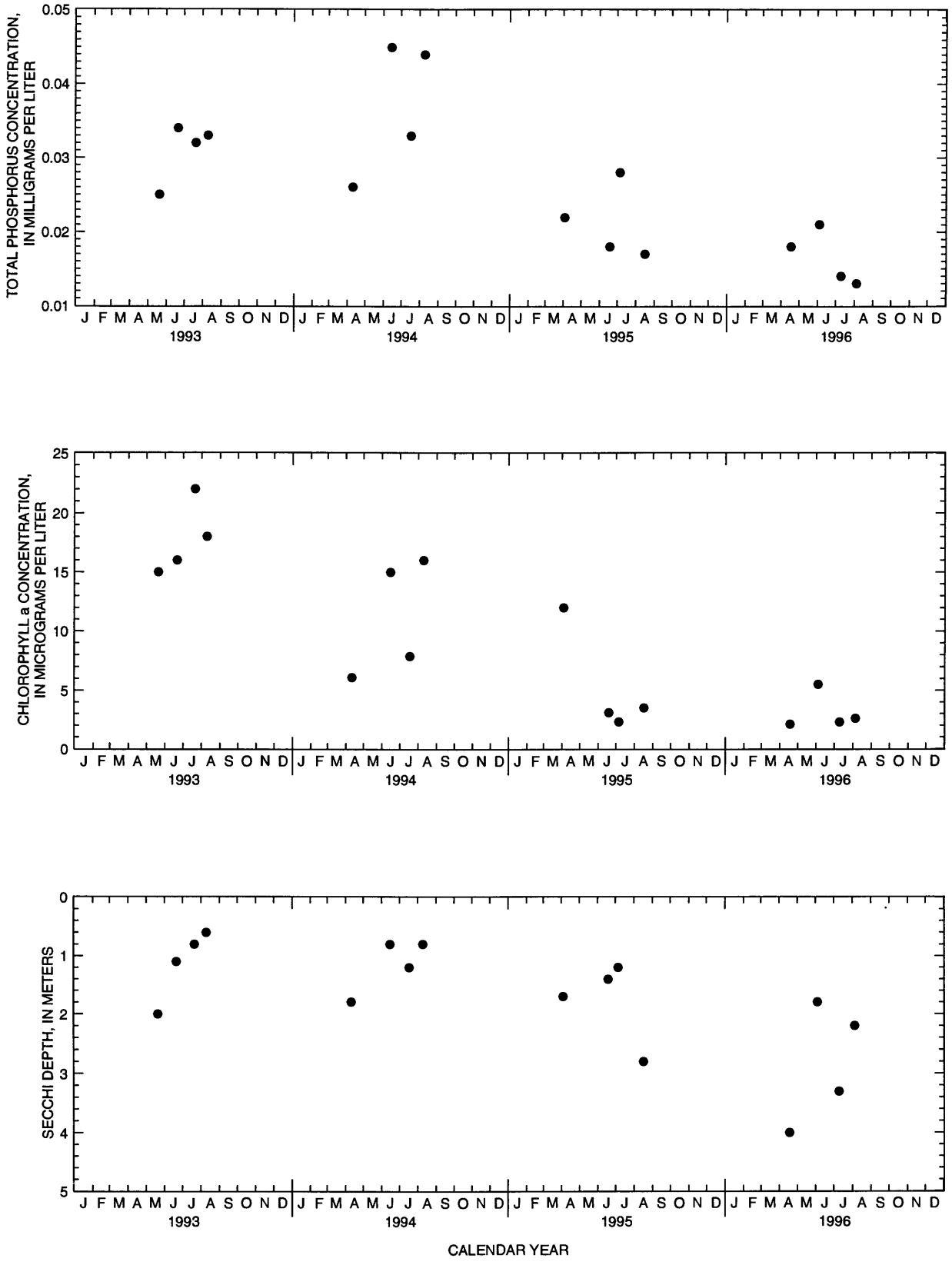
REMARKS.--Lake sampled at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene. Lake-stage values published in 1994 water year were 0.08 ft too low.

WATER-QUALITY DATA, FEBRUARY 09 TO AUGUST 05, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 09		Apr. 18		June 04		July 10		Aug. 05	
Depth of sample (ft)	3.0	24	1.5	25	1.5	24	1.5	24	1.5	23
Lake stage (ft)	7.98		8.12		8.22		8.10		7.91	
Specific conductance (µS/cm)	405	458	371	371	353	397	353	455	352	464
pH (units)	8.7	7.9	8.9	8.9	9.2	7.7	9.1	7.6	9.2	7.4
Water temperature (°C)	3.5	5.0	9.0	9.0	18.0	11.5	24.5	14.0	26.0	15.0
Color (Pt-Co. scale)	---	---	15	15	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.60	1.00	---	---	---	---	---	---
Secchi-depth (meters)	---		4.0		1.8		3.3		2.2	
Dissolved oxygen	8.2	1.4	11.8	11.5	10.8	0.0	8.4	0.2	9.8	0.1
Hardness, as CaCO3	---	---	150	150	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	25	25	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	22	21	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	20	20	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1	1	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	130	130	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	10	9.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	44	44	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.0	0.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	224	222	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	<0.01	<0.01	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.70	0.60	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.70	0.60	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.70	0.60	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.018	0.016	0.021	0.034	0.014	0.048	0.013	0.113
Phosphorus, ortho, dissolved (as P)	---	---	0.006	0.008	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	0.7	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	2.1	---	5.5	---	2.3	---	2.6	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Potter Lake near Mukwonago, Wisconsin.

423246088175800 POWERS LAKE AT POWERS LAKE, WI

LOCATION.--Lat 42°32'46", long 88°17'58", in NW 1/4 SE 1/4 sec.13, T.1 N., R.18 E., Walworth County, Hydrologic Unit 07120006, at Powers Lake.

DRAINAGE AREA.--3.42 mi^2.

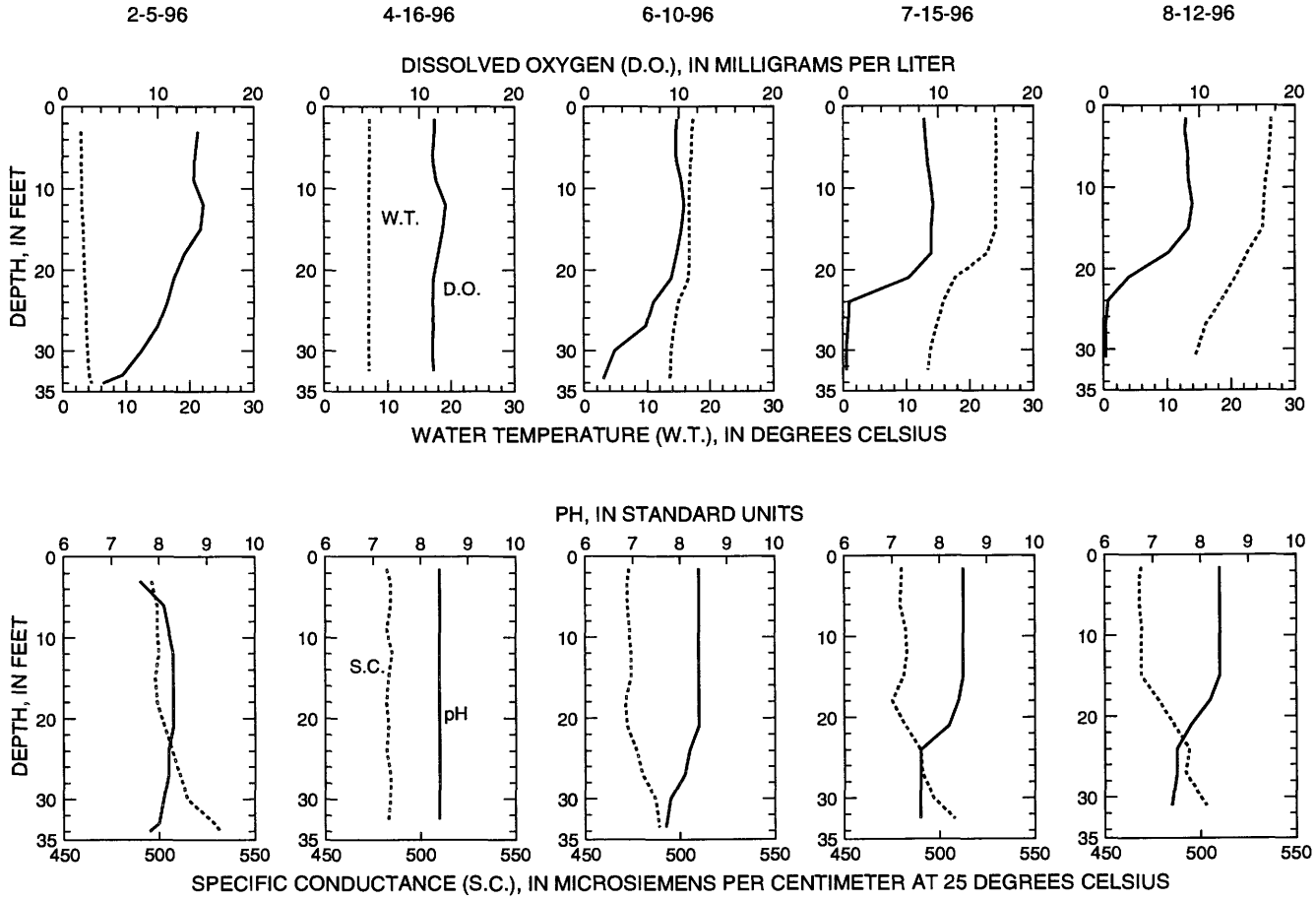
PERIOD OF RECORD.--March 1986 to current year.

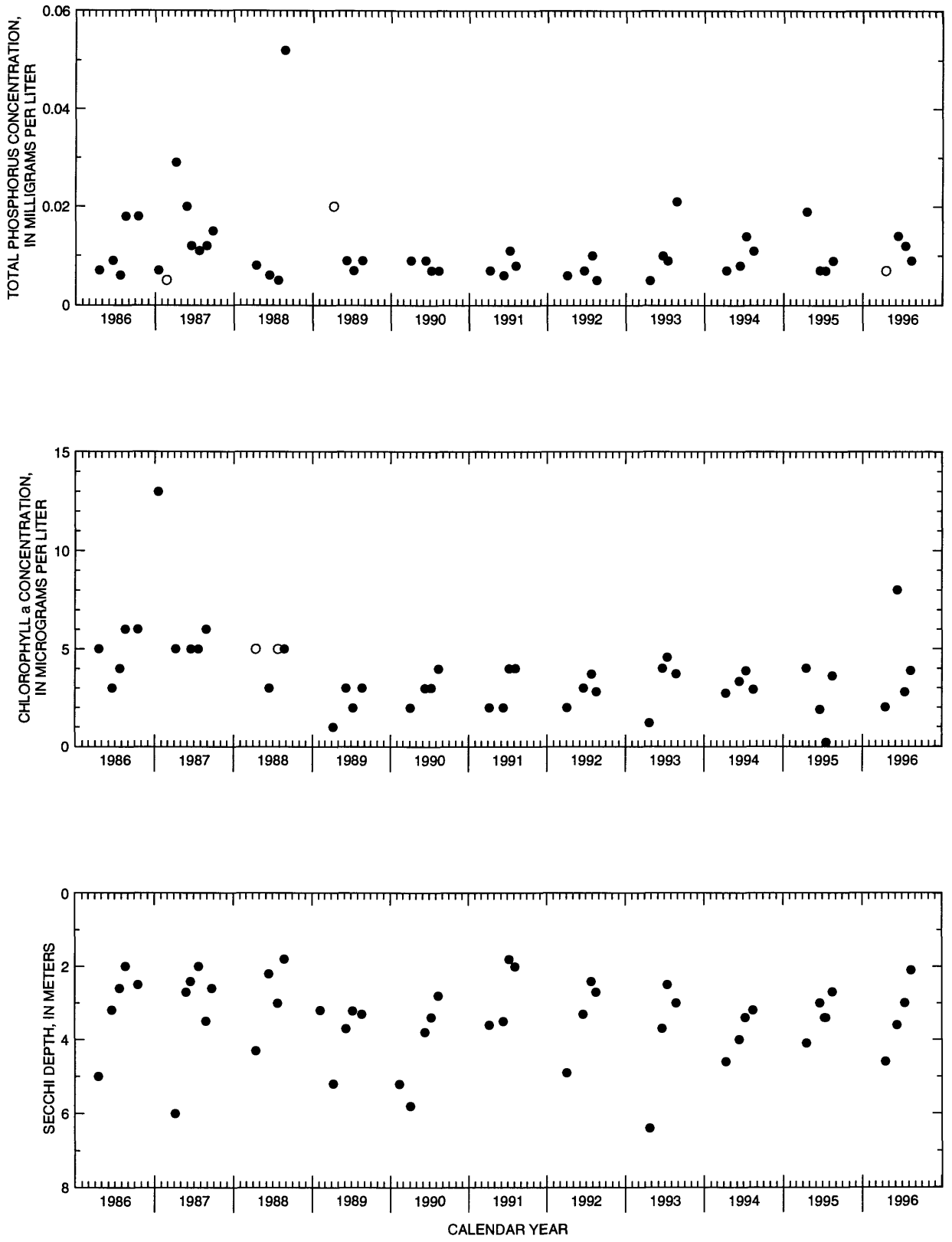
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 05 TO AUGUST 12, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 05		Apr. 16		June 10		July 15		Aug. 12	
Depth of sample (ft)	3.0	34	1.5	33	1.5	34	1.5	33	1.5	31
Lake stage (ft)	10.68		10.07		10.33		9.82		10.10	
Specific conductance (µS/cm)	496	532	482	483	473	489	480	508	469	503
pH (units)	7.6	7.8	8.4	8.4	8.4	7.7	8.5	7.6	8.4	7.4
Water temperature (°C)	3.0	4.5	7.0	7.0	17.5	13.5	24.0	13.5	26.5	14.5
Color (Pt-Co. scale)	---	---	5	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	<0.50	<0.50	---	---	---	---	---	---
Secchi-depth (meters)	---		4.6		3.6		3.0		2.1	
Dissolved oxygen	14.2	4.2	11.6	11.5	9.8	2.0	8.5	0.3	8.6	0.2
Hardness, as CaCO3	---	---	220	220	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	34	34	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	33	33	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	17	16	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2	2	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	180	180	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	32	32	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	35	35	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	5.9	5.9	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	310	308	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.02	0.02	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.50	0.50	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.52	0.52	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	<0.007	<0.007	0.014	0.031	0.012	0.065	0.009	0.040
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	2.0	---	8.0	---	2.8	---	3.9	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Powers Lake at Powers Lake, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

425722088295000 PRETTY LAKE, AT DEEP HOLE, NEAR DOUSMAN, WI

LOCATION.--Lat 42°57'22", long 88°29'50", in NE 1/4 NW 1/4 sec.28, T.6 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, 4.1 mi south of Dousman.

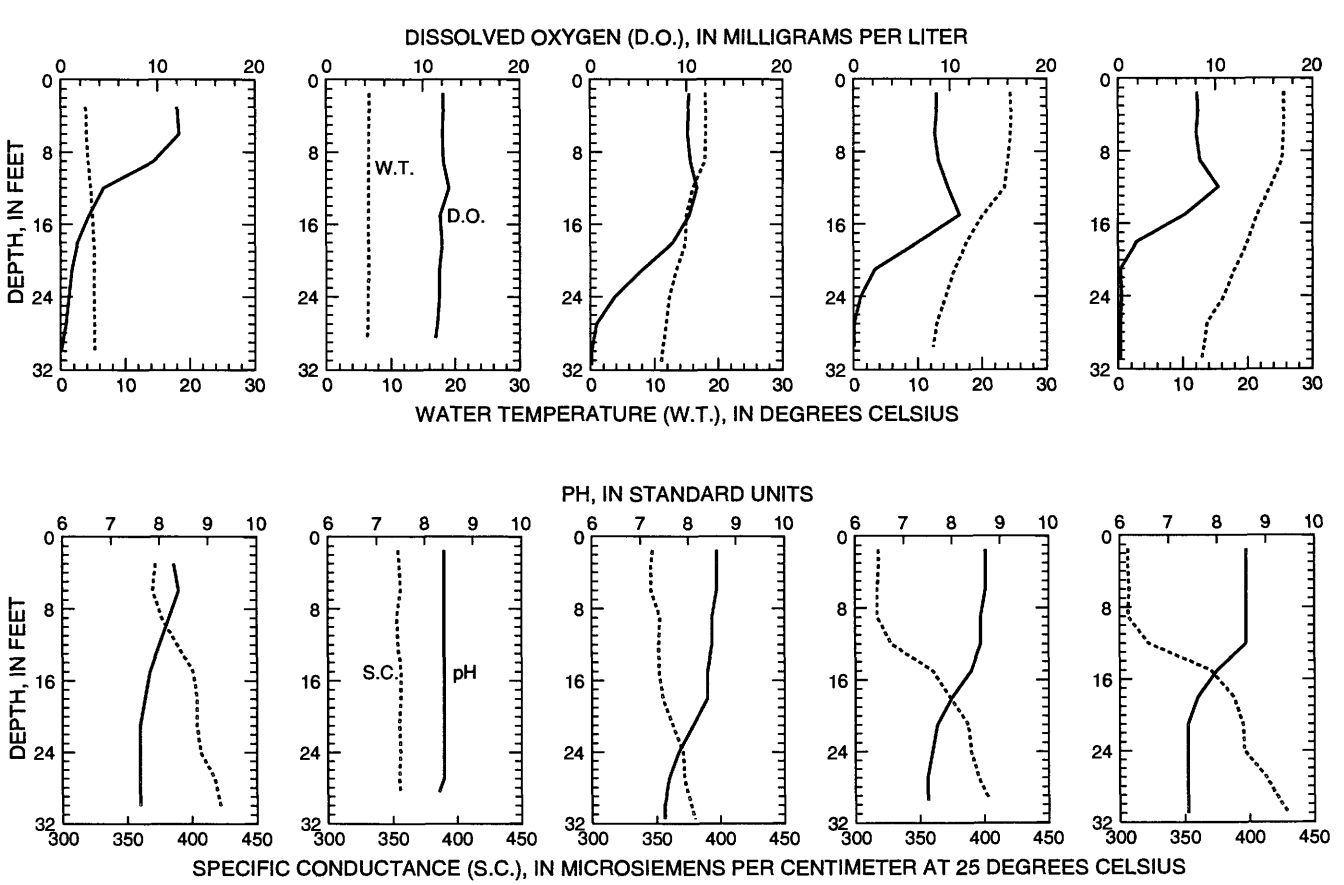
PERIOD OF RECORD.--February 1993 to current year.

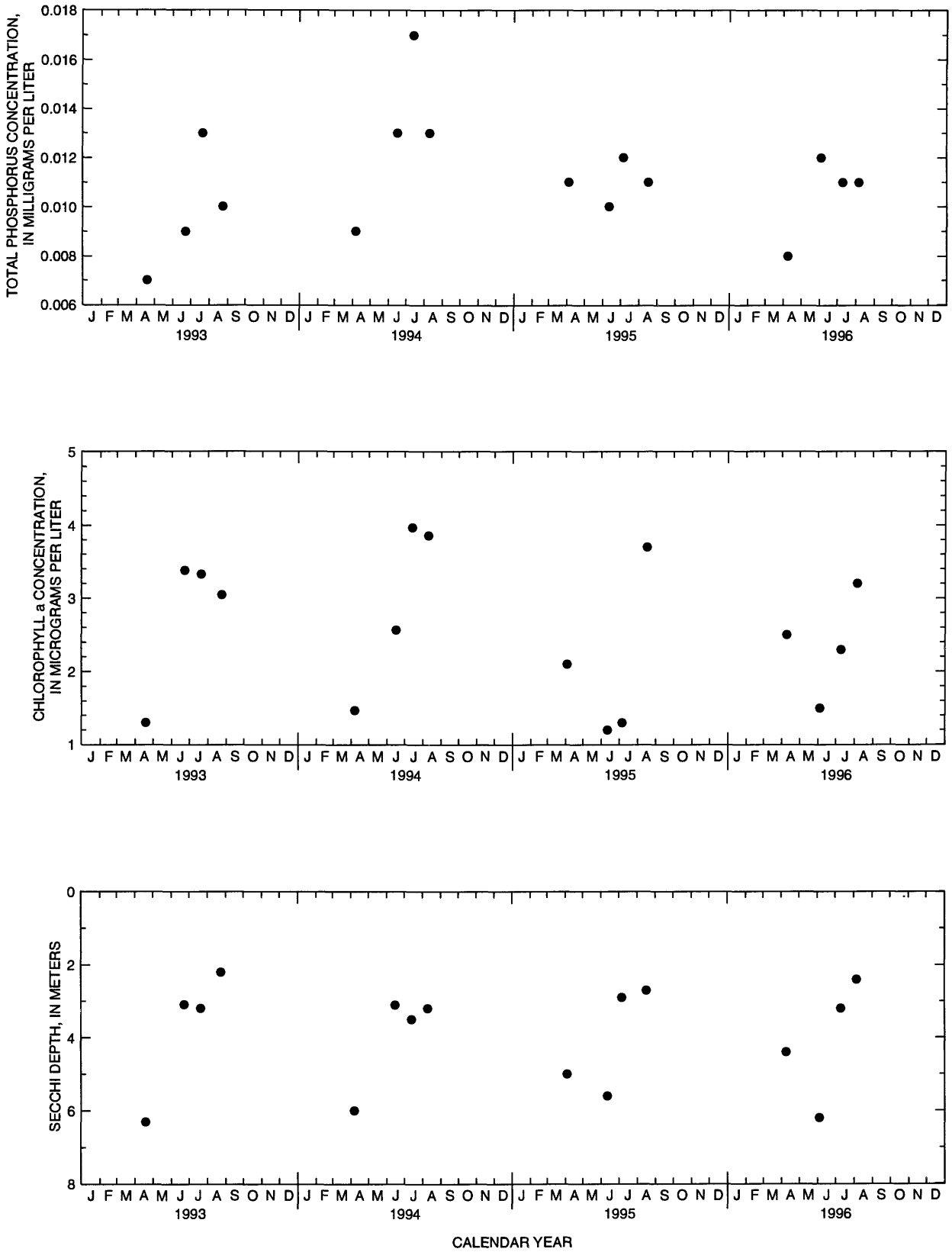
REMARKS.--Lake sampled near northeast end of lake at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 09 TO AUGUST 06, 1996

(Milligrams per liter unless otherise indicated)

	Feb. 09		Apr. 09		June 04		July 10		Aug. 06	
Depth of sample (ft)	3.0	30	1.5	29	1.5	32	1.5	30	1.5	31
Lake stage (ft)	---		862.46		863.48		863.30		863.42	
Specific conductance (µS/cm)	372	422	354	356	347	380	318	404	306	430
pH (units)	8.3	7.6	8.4	8.3	8.6	7.5	8.7	7.5	8.6	7.4
Water temperature (°C)	4.0	5.0	6.5	6.5	18.0	11.0	24.5	12.5	25.5	13.0
Color (Pt-Co. scale)	---	---	5	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	<0.50	<0.50	---	---	---	---	---	---
Secchi-depth (meters)	---		4.4		6.2		3.2		2.4	
Dissolved oxygen	12.0	0.0	12.1	11.3	10.3	0.1	8.6	0.0	8.1	0.2
Hardness, as CaCO3	---	---	180	180	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	29	29	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	25	25	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	7.7	7.4	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1	1	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	170	170	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	15	15	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	13	12	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.2	0.2	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	204	202	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.01	0.05	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.11	0.12	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.58	0.48	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.70	0.60	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.71	0.65	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.008	0.008	0.012	0.023	0.011	---	0.011	0.081
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	2.5	---	1.5	---	2.3	---	3.2	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Pretty Lake, at Deep Hole, near Dousman, Wisconsin.

453725091345100 RED CEDAR LAKE, DEEP HOLE, NEAR MIKANA, WI

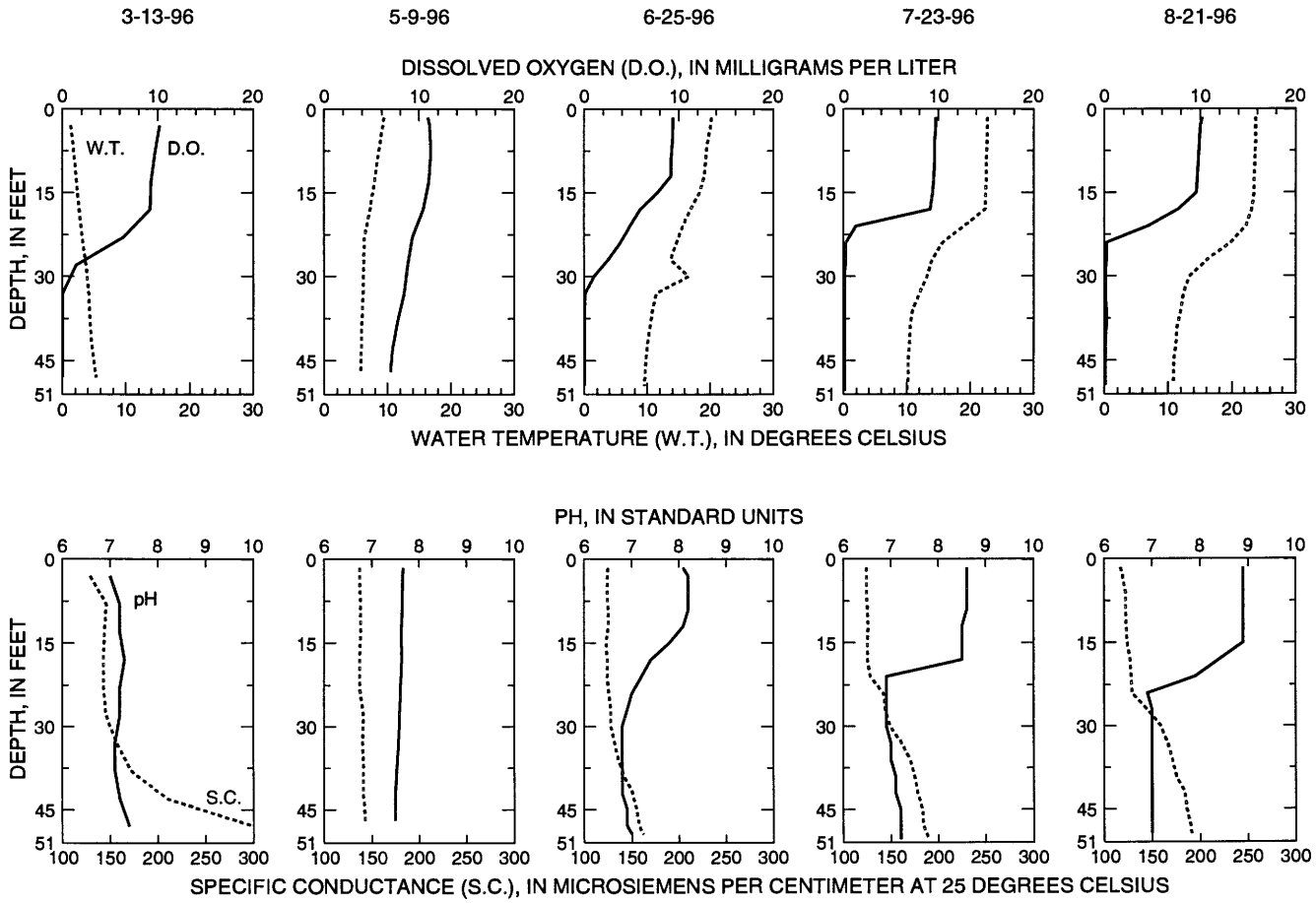
LOCATION.--Lat 45°37'25", long 91°34'51", in NW 1/4 NW 1/4 sec.11, T.36 N., R.10 W., Barron County, Hydrologic Unit 07050007, 2.4 mi northeast of Mikana.

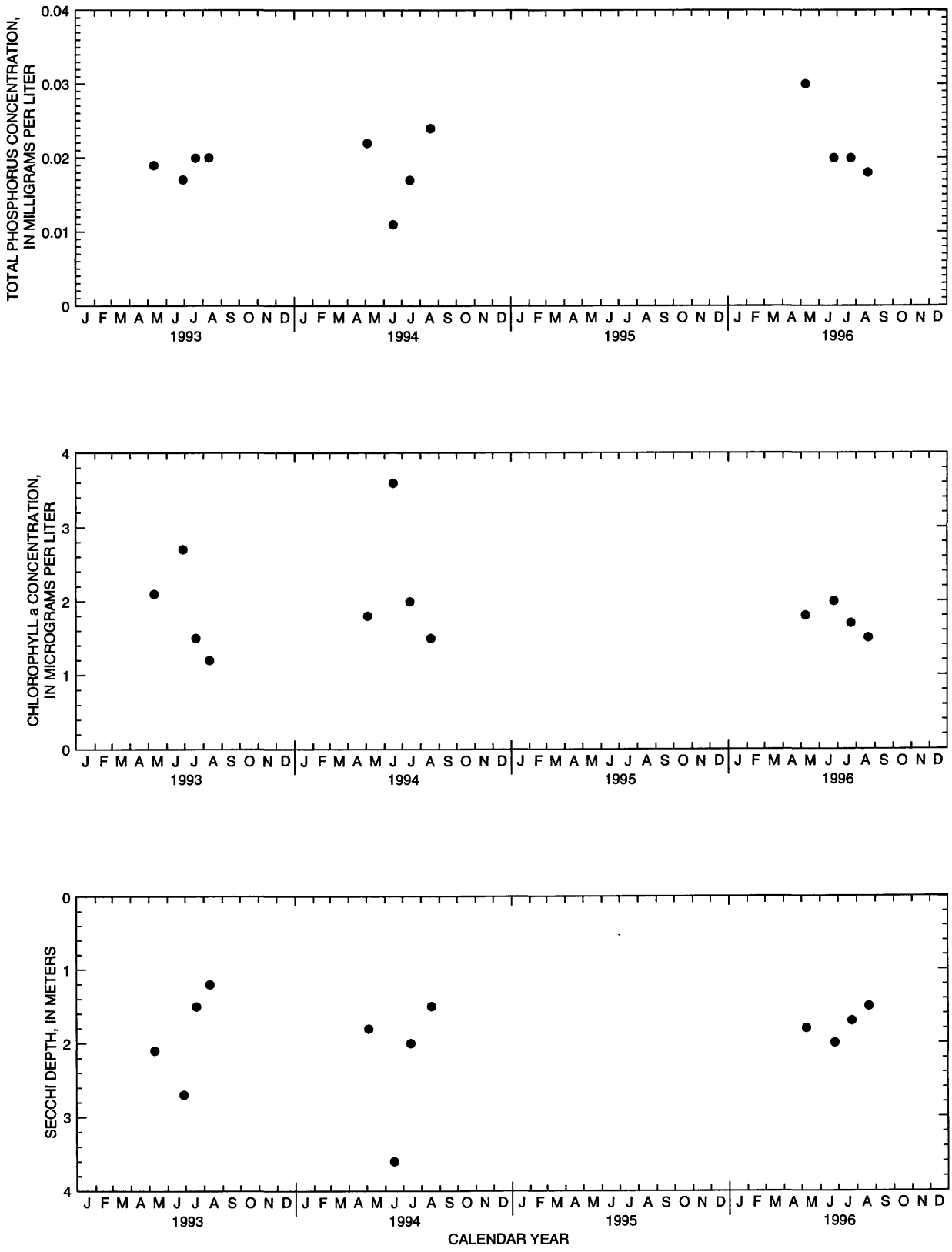
PERIOD OF RECORD.--March 1993 to August 1994 and March to September 1996.

REMARKS.--Lake sampled in northern part of lake at deep hole. Lake ice-covered during March sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 13 TO AUGUST 21, 1996
(Milligrams per liter unless otherwise indicated)

	Mar. 13		May 09		June 25		July 23		Aug. 21	
Depth of sample (ft)	3.0	48	1.5	46	1.5	50	1.5	51	1.5	50
Lake stage (ft)	10.05		10.69		10.65		10.84		10.70	
Specific conductance (µS/cm)	129	300	137	143	125	162	124	190	117	191
pH (units)	7.0	7.4	7.7	7.5	8.1	7.0	8.6	7.2	8.9	7.0
Water temperature (°C)	1.5	5.5	9.5	6.0	20.0	9.5	22.5	10.0	23.5	11.0
Secchi-depth (meters)	---		2.1		2.7		1.7		1.8	
Dissolved oxygen	10.2	0.0	10.9	7.1	9.4	0.0	9.7	0.1	10.2	0.1
Phosphorus, total (as P)	---	---	0.025	0.042	0.014	0.097	0.019	0.310	0.023	0.399
Chlorophyll a, phytoplankton (µg/L	---	---	12	---	8.0	---	20	---	18	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Red Cedar Lake (south end) at Mikana, Wisconsin.

453519091352500 RED CEDAR LAKE, SOUTH END, AT MIKANA, WI

LOCATION.--Lat 45°35'19", long 91°35'25", in SW 1/4 NE 1/4 sec.22, T.36 N., R.10 W., Barron County, Hydrologic Unit 07050007, at Mikana.

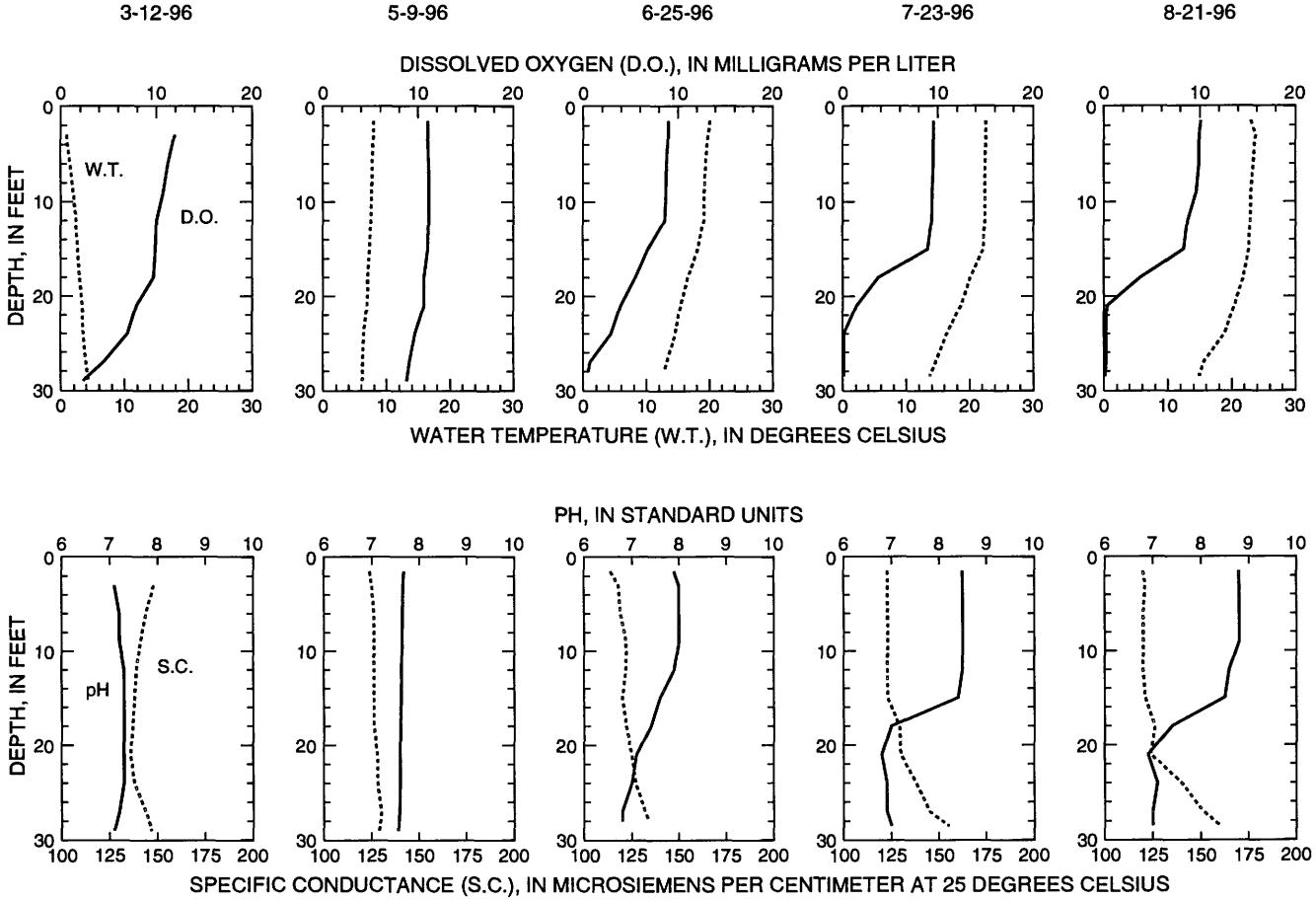
PERIOD OF RECORD.--March 1993 to August 1994 and March to September 1996.

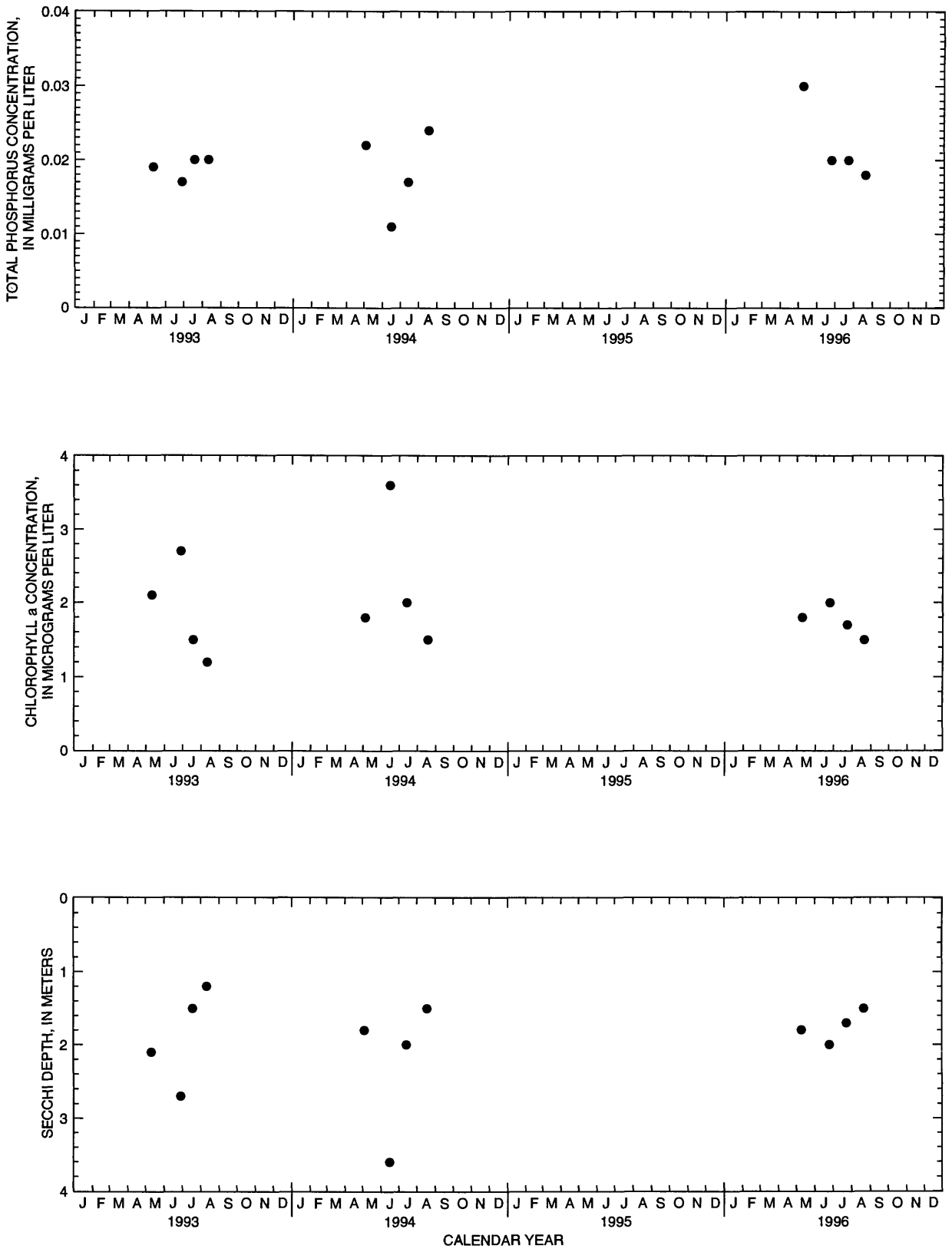
REMARKS.--Lake sampled 0.2 mi northwest of Honeymoon Island. Lake ice-covered during March sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, MARCH 12 TO AUGUST 21, 1996

(Milligrams per liter unless otherwise indicated)

	Mar. 12		May 09		June 25		July 23		Aug. 21	
Depth of sample (ft)	3.0	29	1.5	28	1.5	28	1.5	29	1.5	29
Lake stage (ft)	10.05		10.69		10.65		10.84		10.70	
Specific conductance (µS/cm)	148	147	124	129	114	134	123	155	120	160
pH (units)	7.1	7.1	7.7	7.6	7.9	6.8	8.5	7.0	8.8	7.0
Water temperature (°C)	1.0	4.5	8.0	6.0	20.0	13.0	22.5	13.5	23.0	15.0
Color (Pt-Co. scale)	---	---	20	25	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.3	1.4	---	---	---	---	---	---
Secchi-depth (meters)	---		1.8		2.0		1.7		1.5	
Dissolved oxygen	11.9	2.3	11.0	8.8	9.0	0.5	9.5	0.1	10.1	0.1
Hardness, as CaCO3	---	---	59	60	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	15	15	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	5.3	5.5	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	2.5	2.5	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1.0	0.9	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	58	60	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	4.0	3.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	2.2	2.2	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	13	14	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	88	98	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.14	0.15	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.12	0.05	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.40	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.54	0.55	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.030	0.030	0.020	0.025	0.020	0.067	0.018	0.185
Phosphorus, ortho, dissolved (as P)	---	---	0.005	0.004	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	200	150	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	95	210	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	14	---	11	---	21	---	13	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Red Cedar Lake (south end) at Mikana, Wisconsin.

430436088293300 SILVER LAKE NEAR OCONOMOWOC, WI

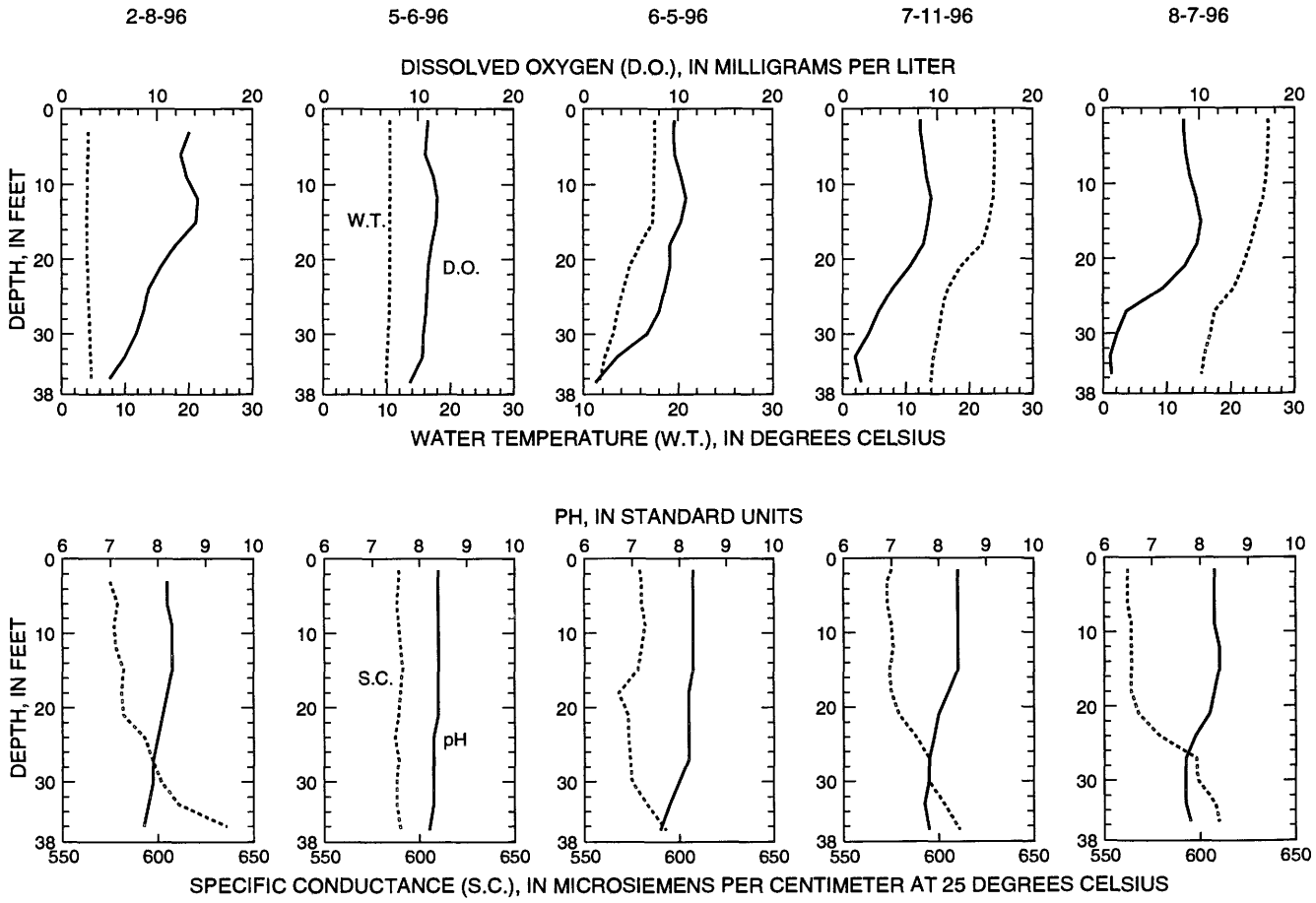
LOCATION.--Lat 43°04'36"long 88°29'33", in NE 1/4 NW 1/4 sec.16, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, near Oconomowoc.

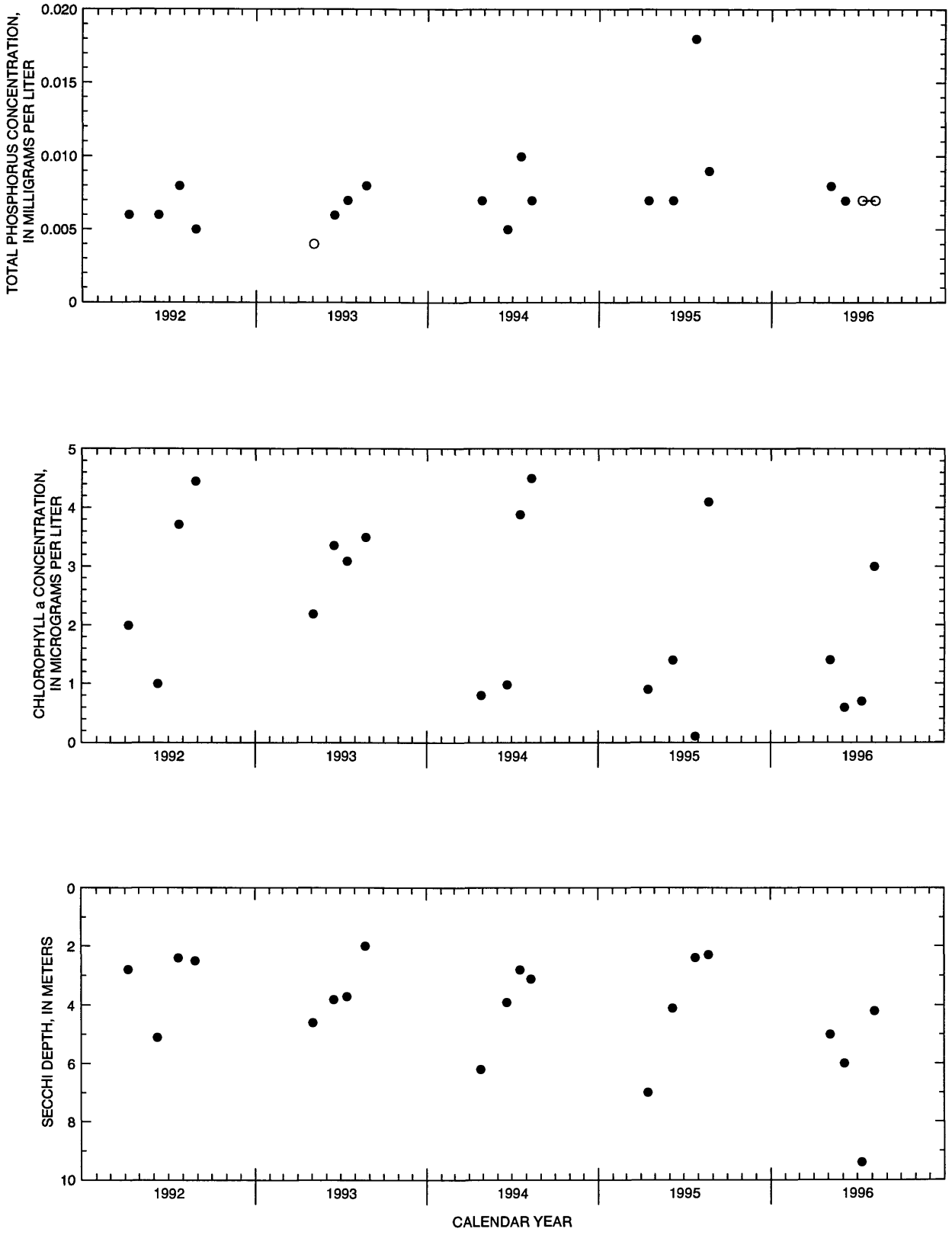
PERIOD OF RECORD.--April 1992 to current year.

REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 08 TO AUGUST 07, 1996
(Milligrams per liter unless otherwise indicated)

	Feb. 08		May 06		June 05		July 11		Aug. 07	
Depth of sample (ft)	3.0	36	1.5	37	1.5	37	1.5	37	1.5	36
Lake stage (ft)	---		11.15		11.21		11.44		11.33	
Specific conductance (µS/cm)	575	636	589	590	579	593	575	611	562	610
pH (units)	8.2	7.7	8.4	8.2	8.3	7.6	8.4	7.8	8.3	7.8
Water temperature (°C)	4.0	4.5	10.5	10.0	17.5	11.5	24.0	14.0	26.0	15.5
Color (Pt-Co. scale)	---	---	10	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.70	0.70	---	---	---	---	---	---
Secchi-depth (meters)	---		5.0		6.0		9.4		4.2	
Dissolved oxygen	13.4	5.0	11.0	9.1	9.6	1.2	8.2	1.9	8.4	0.8
Hardness, as CaCO3	---	---	230	230	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	36	36	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	33	33	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	28	28	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	180	180	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	30	30	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	60	60	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	6.2	6.6	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	330	332	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.32	0.31	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.22	0.26	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.58	0.54	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.80	0.80	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.1	1.1	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.008	0.007	0.007	0.007	<0.007	<0.008	<0.007	0.014
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	<0.4	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	1.4	---	0.6	---	0.7	---	3.0	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Silver Lake near Oconomowoc, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

432322088125000 SILVER LAKE NEAR WEST BEND, WI

LOCATION.--Lat 43°23'22", long 88°12'50", in NE 1/4 SW 1/4 sec.27, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, 1.4 mi southwest of West Bend.

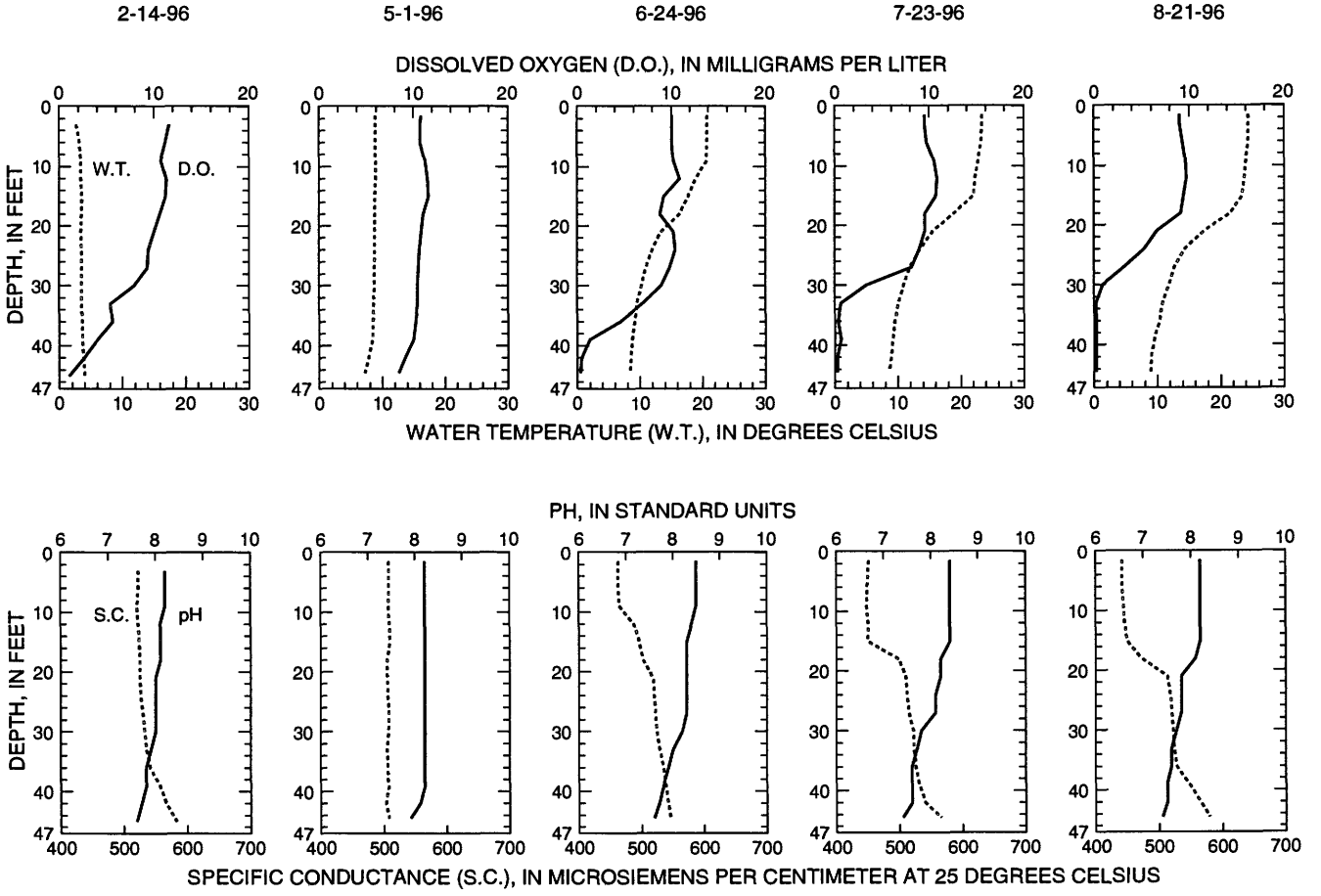
PERIOD OF RECORD.--February to August 1996.

REMARKS.--Lake sampled at northern end of southern lobe of lake at the deep hole. Lake ice-covered during February measurements. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 14 TO AUGUST 21, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 14		May 01		June 24		July 23		Aug. 21	
Depth of sample (ft)	3.0	45	1.5	45	1.5	45	1.5	45	1.5	45
Lake stage (ft)	---		---		11.22		11.98		11.29	
Specific conductance (µS/cm)	523	583	507	508	463	546	451	566	442	579
pH (units)	8.2	7.6	8.2	7.9	8.5	7.6	8.4	7.4	8.2	7.4
Water temperature (°C)	2.5	4.0	9.0	7.0	21.0	8.5	23.5	8.5	24.5	9.0
Color (Pt-Co. scale)	---	---	5	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.50	0.60	---	---	---	---	---	---
Secchi-depth (meters)	---		4.5		2.7		4.7		2.5	
Dissolved oxygen	11.6	1.0	10.8	8.4	10.1	0.3	9.5	0.2	9.0	0.2
Hardness, as CaCO3	---	---	250	260	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	44	44	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	35	36	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	8.5	8.5	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1	1	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	240	240	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	20	21	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	19	19	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	12	13	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	296	294	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.11	0.11	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.32	0.43	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.48	0.47	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.80	0.90	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.91	1.0	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.015	0.015	0.009	0.046	<0.007	0.072	0.008	0.065
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	<0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	2	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	2.1	---	3.5	---	1.7	---	2.5	---



424854088123300 TICHIGAN LAKE NEAR WATERFORD, WI

LOCATION.--Lat 42°48'54" long 88°12'33", in SE 1/4 SE 1/4 sec.11, T.4 N., R.19 E., Racine County, Hydrologic Unit 07120006, 3.5 mi north of Waterford.

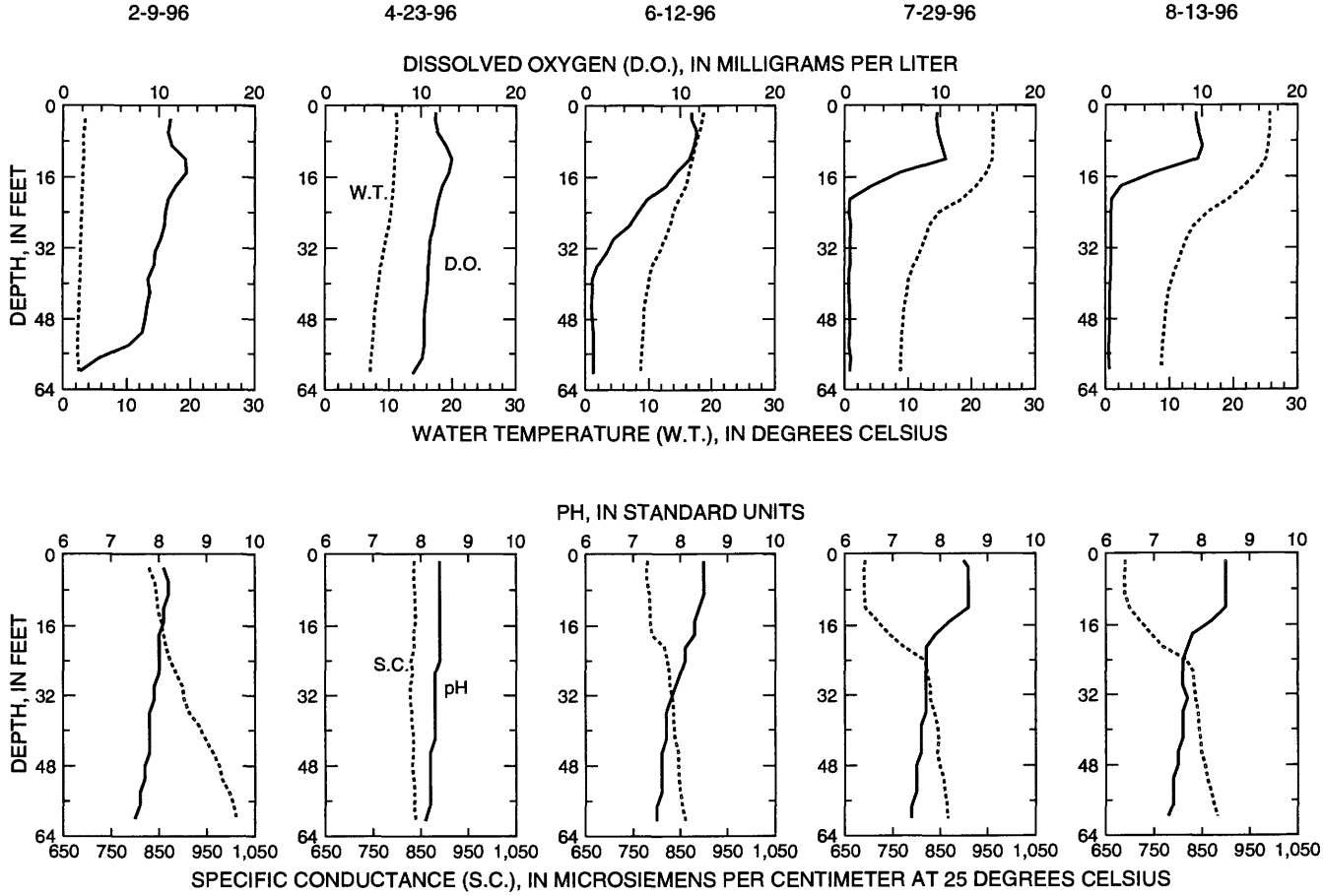
PERIOD OF RECORD.--March 1994 to current year.

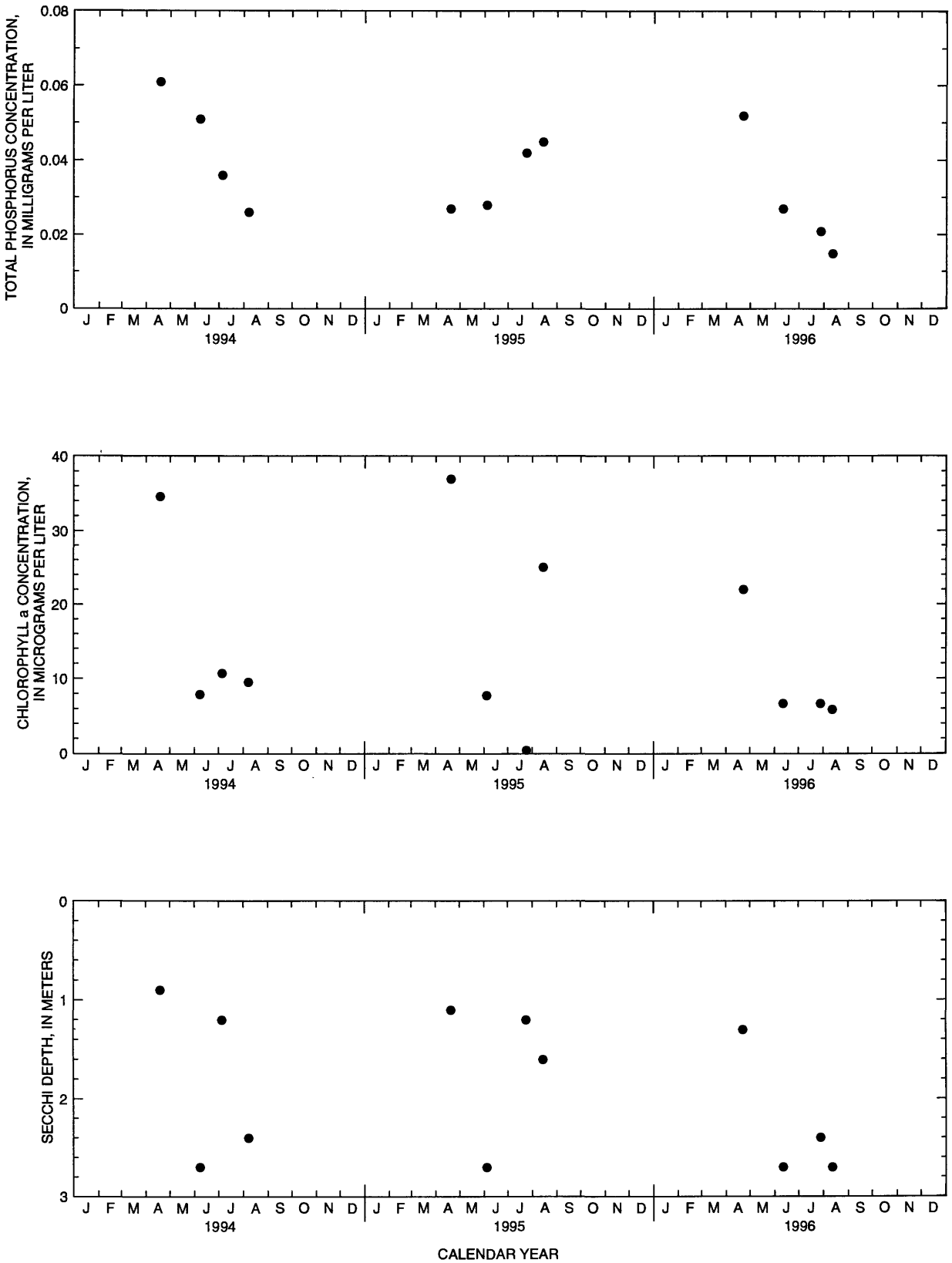
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 09 TO AUGUST 13, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 09		Apr. 23		June 12		July 29		Aug. 13	
Depth of sample (ft)	3.0	60	1.5	61	1.5	61	1.5	60	1.5	60
Lake stage (ft)	---		4.77		5.04		4.96		4.12	
Specific conductance (µS/cm)	829	1010	837	840	781	862	692	867	690	883
pH (units)	8.1	7.5	8.4	8.1	8.5	7.5	8.5	7.4	8.5	7.3
Water temperature (°C)	3.5	2.5	11.0	7.0	18.5	8.5	23.5	9.0	25.5	8.5
Color (Pt-Co. scale)	---	---	30	25	---	---	---	---	---	---
Turbidity (NTU)	---	---	2.7	2.1	---	---	---	---	---	---
Secchi-depth (meters)	---		1.3		2.7		2.4		2.7	
Dissolved oxygen	11.2	1.8	11.6	9.2	11.2	0.8	9.7	0.5	9.4	0.4
Hardness, as CaCO3	---	---	280	280	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	57	58	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	34	34	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	55	57	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	3	3	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	230	230	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	47	48	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	100	100	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.2	0.2	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	0.0	0.3	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	472	476	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.85	0.76	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	0.32	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	1.1	0.98	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	1.1	1.3	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.9	2.1	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.052	0.071	0.027	0.358	0.021	0.629	0.015	0.817
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	0.004	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	0.4	47	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	22	---	6.7	---	6.7	---	5.9	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Tichigan Lake near Waterford, Wisconsin.

455909089405602 VANDERCOOK LAKE NEAR WOODRUFF, WI

LOCATION.--Lat 45°59'09", long 89°40'56", in SW 1/4 NE 1/4 SE 1/4 sec.36, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07070001, at north end of lake on dirt road off County Trunk Highway M, 6.1 mi north of Woodruff.

DRAINAGE AREA.--1.11 mi^2. Area of lake, 0.17 mi^2.

PERIOD OF RECORD.--November 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above sea level.

REMARKS.--Precision of records (estimated to be about ±0.1 ft) is poorer than normal owing to equipment problems. Lake does not have surface inlet or outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 32.26 ft, Apr. 8–10, 1986; minimum observed gage height, 28.97 ft, Oct. 28, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 31.32 ft, Aug. 7; minimum observed gage height, 30.42 ft, Oct. 5.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.44	30.62	30.51	---	---	---	---	31.12	31.10	31.15	31.22	31.10
2	30.43	30.66	30.51	---	---	---	30.94	31.13	31.14	31.18	31.21	31.10
3	30.44	30.65	30.51	---	---	---	30.96	31.13	31.15	31.17	31.21	31.10
4	30.43	30.64	30.49	---	---	---	e30.96	31.12	31.15	31.16	31.20	31.17
5	30.42	30.64	30.50	---	---	---	e30.96	31.14	31.14	31.15	31.25	31.16
6	30.50	30.63	30.49	---	---	---	e30.96	31.16	31.15	31.14	31.29	31.15
7	30.58	30.62	30.48	---	---	---	e30.95	31.15	31.15	31.17	31.32	31.14
8	30.57	30.61	30.47	---	---	---	e30.95	31.13	31.15	31.17	31.30	31.13
9	30.57	30.60	30.47	---	---	---	e30.95	---	31.14	31.15	31.28	31.13
10	30.57	30.61	30.47	---	---	---	30.94	---	31.13	31.13	31.27	31.12
11	30.57	30.59	30.46	---	---	---	30.95	---	31.13	31.12	31.26	31.13
12	30.57	30.58	30.46	---	---	---	30.96	---	31.13	31.16	31.25	31.11
13	30.56	30.58	30.46	---	---	---	31.00	---	31.12	31.17	31.25	31.08
14	30.56	30.57	30.53	---	---	---	30.97	---	31.11	31.16	31.24	31.05
15	30.56	30.56	30.52	---	---	---	31.00	---	31.10	31.17	31.24	31.05
16	30.55	30.56	30.51	---	---	---	31.00	31.11	31.09	31.16	31.23	31.03
17	30.55	30.55	30.51	---	---	---	31.03	e31.18	31.08	31.16	31.22	31.01
18	30.53	30.56	30.51	---	---	---	31.03	e31.18	31.08	31.21	31.22	e31.01
19	30.53	30.54	30.52	---	---	---	31.07	31.25	31.08	31.22	31.21	e31.00
20	30.53	30.55	30.51	---	---	---	31.06	31.25	31.08	31.21	31.23	e30.99
21	30.56	30.54	30.51	---	---	---	31.06	31.22	31.09	31.20	31.22	e31.06
22	30.55	30.53	30.51	---	---	---	31.06	31.24	31.09	31.19	31.25	e31.05
23	30.57	30.52	30.52	---	---	---	31.05	31.22	31.08	31.18	31.23	e31.03
24	30.63	30.51	30.51	---	---	---	31.06	31.20	31.09	31.18	31.22	e31.02
25	30.63	30.51	30.51	---	---	---	31.09	31.19	31.09	31.18	31.21	e31.01
26	30.62	30.53	30.51	---	---	---	31.13	31.17	31.14	31.16	31.18	31.03
27	30.62	30.52	30.51	---	---	---	31.13	31.15	31.18	31.16	31.17	31.04
28	30.62	30.50	30.51	---	---	---	31.12	31.12	31.18	31.22	31.16	31.04
29	30.61	30.49	30.49	---	---	---	31.14	31.09	31.18	31.24	31.15	31.02
30	30.61	30.51	30.50	---	---	---	31.15	31.09	31.16	31.23	31.13	31.02
31	30.60	---	30.48	---	---	---	---	31.08	---	31.23	31.10	---
MEAN	30.55	30.57	30.50	---	---	---	---	---	31.12	31.18	31.22	31.07
MAX	30.63	30.66	30.53	---	---	---	---	---	31.18	31.24	31.32	31.17
MIN	30.42	30.49	30.46	---	---	---	---	---	31.08	31.12	31.10	30.99

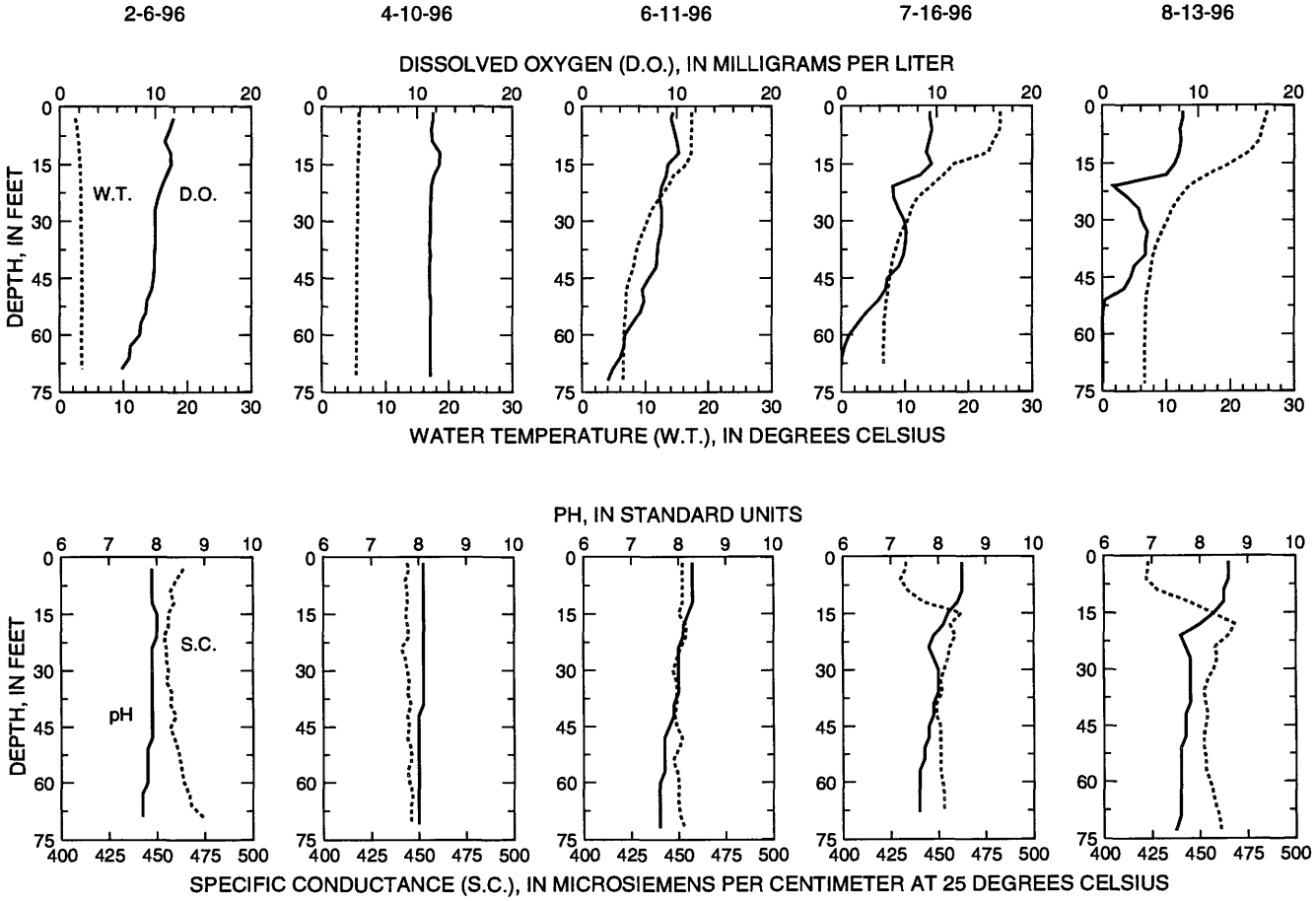
e Estimated

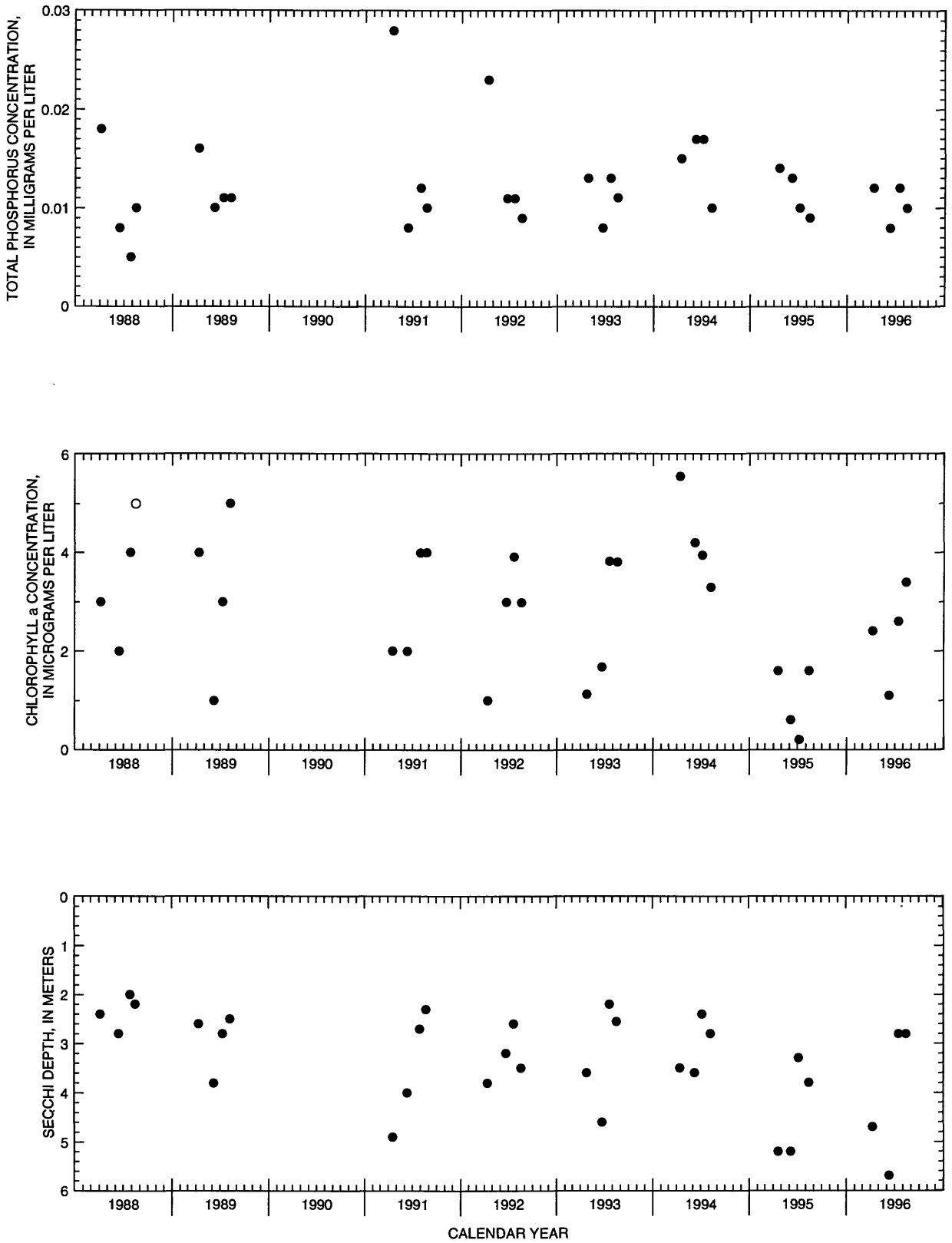
424857088101500 WAUBEESEE LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°48'57", long 88°10'15", in SE 1/4 SE 1/4 sec.7, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.
DRAINAGE AREA.--5.16 mi^2.
PERIOD OF RECORD.--February 1988 to August 1989, February 1991 to current year.
REMARKS.--Lake sampled near southwest end at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 06 TO AUGUST 13, 1996
(Milligrams per liter unless otherwise indicated)

	Feb. 06		Apr. 10		June 11		July 16		Aug. 13	
Depth of sample (ft)	3.0	69	1.5	71	1.5	72	1.5	68	1.5	73
Lake stage (ft)	4.93		4.90		5.32		5.76		4.88	
Specific conductance (µS/cm)	464	474	444	446	452	453	433	453	423	461
pH (units)	7.9	7.7	8.1	8.0	8.3	7.6	8.5	7.6	8.6	7.5
Water temperature (°C)	2.5	3.5	6.0	5.5	17.5	6.5	25.0	6.5	26.0	6.5
Color (Pt-Co. scale)	---	---	25	25	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.60	1.2	---	---	---	---	---	---
Secchi-depth (meters)	---		4.7		5.7		2.8		2.8	
Dissolved oxygen	11.9	6.5	11.7	11.4	9.6	2.7	9.3	0.0	8.4	0.0
Hardness, as CaCO3	---	---	210	210	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	42	42	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	25	25	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	13	13	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	3	3	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	170	170	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	29	29	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	27	27	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	1.0	1.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	268	264	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.20	0.20	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.03	<0.03	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.80	0.80	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.80	0.80	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.0	1.0	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.012	0.013	0.008	0.111	0.012	0.113	0.010	0.217
Phosphorus, ortho, dissolved (as P)	---	---	<0.002	0.002	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	<0.4	1	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	2.4	---	1.1	1.3	2.6	---	3.4	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Waubeesee Lake at Wind Lake, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

424608088414800 WHITEWATER LAKE NEAR WHITEWATER, WI

LOCATION.--Lat 42°46'08", long 88°41'48", in NW 1/4 NW 1/4 sec.35, T.4 N., R.15 E., Walworth County, Hydrologic Unit 07090001, at outlet, 5.0 mi southeast of Whitewater and 10.0 mi north of Delavan.

DRAINAGE AREA.--10.9 mi^2, of which 8.5 mi^2 is non-contributing.

PERIOD OF RECORD.--November 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 861.00 ft above sea level, revised, (Wisconsin Department of Natural Resources).

REMARKS.--No estimated daily gage heights. Records good. Point of zero flow of dam crest is 10.97 ft. Rainfall data published in 1991 under this station number are now stored under station number 424559088420300.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 11.42 ft, June 18, 19, 1996; minimum daily gage height, 8.89 ft, Oct. 2, 3, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 11.42 ft, June 18, 19; minimum daily gage height, 10.25 ft, Oct. 5.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.28	10.53	10.68	10.66	10.77	10.78	10.65	10.67	10.75	11.25	10.99	10.71
2	10.26	10.57	10.68	10.66	10.78	10.78	10.65	10.66	10.86	11.24	10.98	10.70
3	10.26	10.56	10.68	10.66	10.78	10.77	10.64	10.66	10.89	11.22	10.98	10.68
4	10.26	10.55	10.67	10.66	10.78	10.76	10.63	10.65	10.90	11.20	10.97	10.68
5	10.25	10.55	10.68	10.66	10.78	10.76	10.62	10.64	10.91	11.18	10.96	10.66
6	10.40	10.54	10.67	10.66	10.78	10.76	10.62	10.63	10.94	11.17	11.01	10.65
7	10.44	10.53	10.66	10.66	10.79	10.77	10.61	10.63	11.16	11.16	11.01	10.64
8	10.43	10.52	10.66	10.66	10.82	10.77	10.60	10.63	11.15	11.15	11.00	10.64
9	10.43	10.52	10.67	10.66	10.82	10.77	10.60	10.65	11.14	11.14	10.98	10.63
10	10.42	10.54	10.67	10.66	10.82	10.76	10.59	10.75	11.15	11.12	10.96	10.62
11	10.42	10.63	10.67	10.68	10.82	10.75	10.59	10.76	11.15	11.11	10.94	10.61
12	10.41	10.62	10.67	10.69	10.81	10.75	10.58	10.76	11.16	11.09	10.93	10.58
13	10.41	10.62	10.67	10.69	10.80	10.75	10.56	10.75	11.16	11.08	10.91	10.55
14	10.40	10.62	10.68	10.69	10.80	10.75	10.55	10.74	11.17	11.09	10.90	10.54
15	10.38	10.61	10.70	10.68	10.79	10.75	10.62	10.75	11.16	11.09	10.89	10.53
16	10.36	10.61	10.69	10.68	10.79	10.74	10.64	10.75	11.16	11.07	10.87	10.51
17	10.36	10.61	10.69	10.69	10.78	10.74	10.64	10.76	11.24	11.08	10.85	10.50
18	10.34	10.61	10.68	10.74	10.78	10.73	10.65	10.76	11.40	11.12	10.84	10.49
19	10.35	10.61	10.68	10.77	10.77	10.73	10.67	10.77	11.40	11.12	10.86	10.49
20	10.37	10.61	10.68	10.77	10.77	10.71	10.69	10.78	11.39	11.09	10.86	10.48
21	10.38	10.61	10.68	10.77	10.77	10.70	10.67	10.81	11.38	11.07	10.85	10.48
22	10.37	10.60	10.67	10.77	10.76	10.69	10.67	10.81	11.37	11.06	10.84	10.47
23	10.38	10.60	10.67	10.77	10.76	10.69	10.65	10.80	11.36	11.06	10.82	10.46
24	10.39	10.59	10.66	10.77	10.77	10.69	10.65	10.79	11.34	11.05	10.81	10.47
25	10.37	10.59	10.66	10.77	10.77	10.71	10.65	10.78	11.33	11.04	10.79	10.46
26	10.36	10.58	10.66	10.77	10.78	10.67	10.63	10.77	11.32	11.04	10.77	10.51
27	10.43	10.62	10.66	10.77	10.79	10.66	10.61	10.77	11.30	11.03	10.75	10.56
28	10.47	10.68	10.66	10.77	10.79	10.66	10.60	10.76	11.30	11.02	10.74	10.54
29	10.46	10.68	10.66	10.78	10.78	10.65	10.63	10.75	11.28	11.03	10.72	10.53
30	10.46	10.68	10.66	10.77	---	10.65	10.67	10.75	11.27	11.02	10.72	10.53
31	10.45	---	10.66	10.77	---	10.66	---	10.74	---	11.01	10.72	---
MEAN	10.38	10.59	10.67	10.71	10.79	10.73	10.63	10.73	11.18	11.10	10.88	10.56
MAX	10.47	10.68	10.70	10.78	10.82	10.78	10.69	10.81	11.40	11.25	11.01	10.71
MIN	10.25	10.52	10.66	10.66	10.76	10.65	10.55	10.63	10.75	11.01	10.72	10.46

424915088083900 WIND LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°49'15", long 88°08'39", in NW 1/4 SW 1/4 sec.9, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.

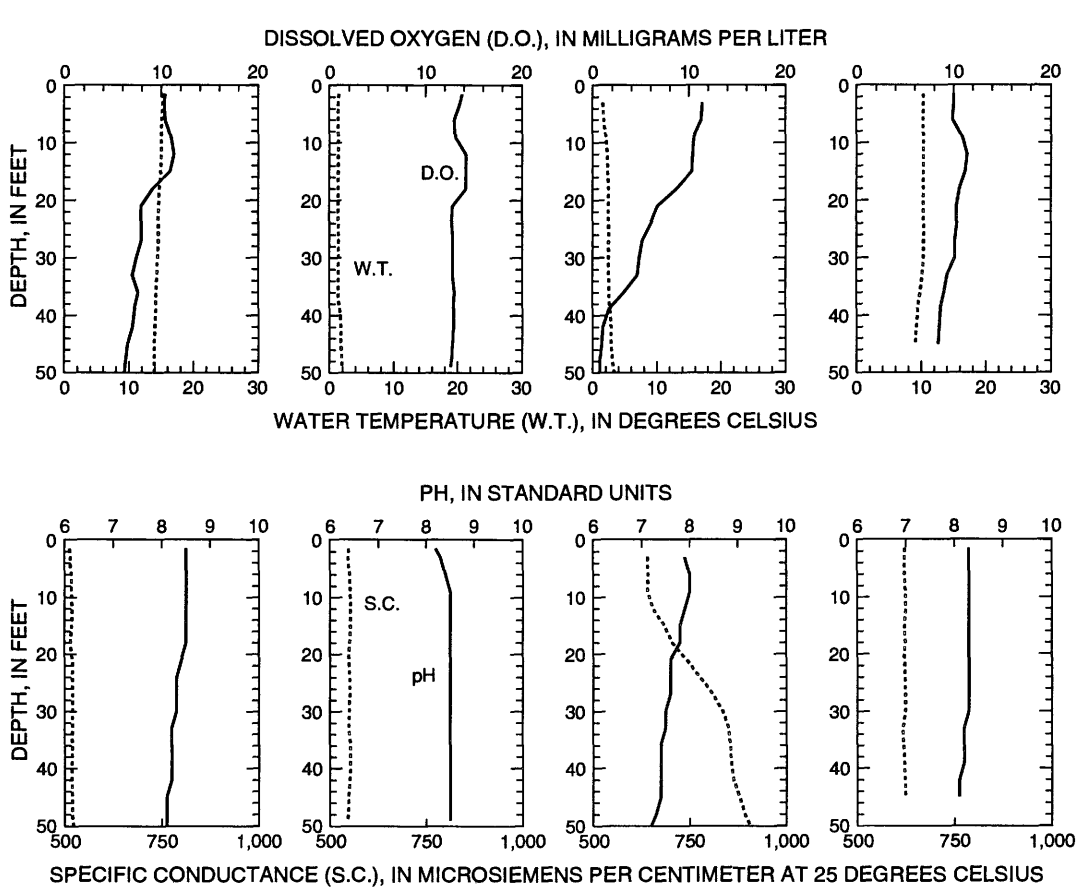
PERIOD OF RECORD.--February 1985 to current year.

REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, OCTOBER 11, 1995 TO APRIL 23, 1996

(Milligrams per liter unless otherwise indicated)

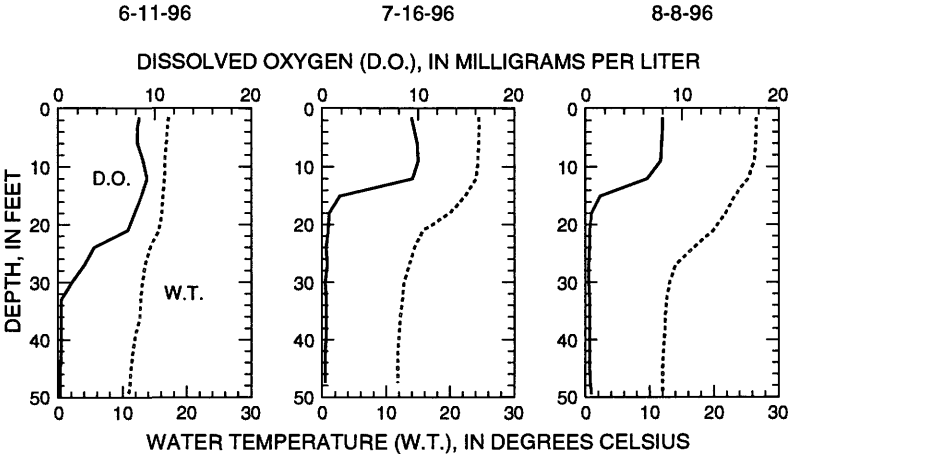
	Oct. 11		Dec. 07		Feb. 06		Apr. 23	
Depth of sample (ft)	1.5	50	1.5	49	3.0	50	1.5	45
Lake stage (ft)	8.11		7.36		7.40		7.96	
Specific conductance (µS/cm)	512	522	548	545	641	908	622	623
pH (units)	8.5	8.1	8.2	8.5	7.9	7.2	8.3	8.1
Water temperature (°C)	15.5	14.0	1.5	2.0	1.5	3.5	10.5	9.0
Color (Pt-Co. scale)	---	---	---	---	---	---	35	35
Turbidity (NTU)	---	---	---	---	---	---	3.2	2.7
Secchi-depth (meters)	1.0		1.1		---		1.1	
Dissolved oxygen	10.4	6.2	13.8	12.6	11.4	0.7	10.0	8.4
Hardness, as CaCO3	---	---	---	---	---	---	240	240
Calcium, dissolved (Ca)	---	---	---	---	---	---	49	48
Magnesium, dissolved (Mg)	---	---	---	---	---	---	29	28
Sodium, dissolved (Na)	---	---	---	---	---	---	31	31
Potassium, dissolved (K)	---	---	---	---	---	---	3	3
Alkalinity, as CaCO3	---	---	---	---	---	---	190	190
Sulfate, dissolved (SO4)	---	---	---	---	---	---	36	36
Chloride, dissolved (Cl)	---	---	---	---	---	---	62	62
Fluoride, dissolved (F)	---	---	---	---	---	---	0.1	0.2
Silica, dissolved (SiO2)	---	---	---	---	---	---	0.0	0.1
Solids, dissolved, at 180°C	---	---	---	---	---	---	360	362
Nitrogen, NO2 + NO3, diss. (as N)	---	---	---	---	---	---	0.19	0.16
Nitrogen, ammonia, dissolved (as N)	---	---	---	---	---	---	0.27	0.39
Nitrogen, organic, total (as N)	---	---	---	---	---	---	1.7	1.2
Nitrogen, amm. + org., total (as N)	---	---	---	---	---	---	2.0	1.6
Nitrogen, total (as N)	---	---	---	---	---	---	2.2	1.8
Phosphorus, total (as P)	0.056	0.091	0.039	0.046	0.039	0.374	0.073	0.057
Phosphorus, ortho, dissolved (as P)	---	---	---	---	---	---	<0.002	<0.002
Iron, dissolved (Fe) µg/L	---	---	---	---	---	---	<10	<10
Manganese, dissolved (Mn) µg/L	---	---	---	---	---	---	<0.4	3
Chlorophyll a, phytoplankton (µg/L)	54	---	29	---	---	---	32	---

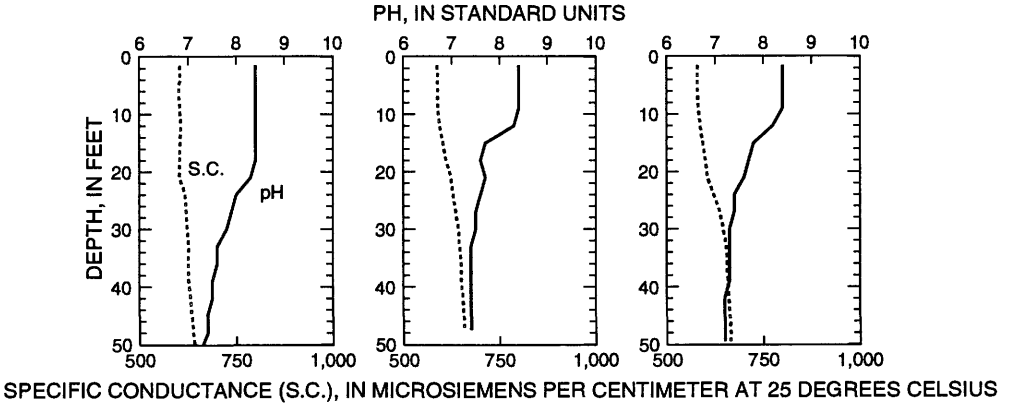


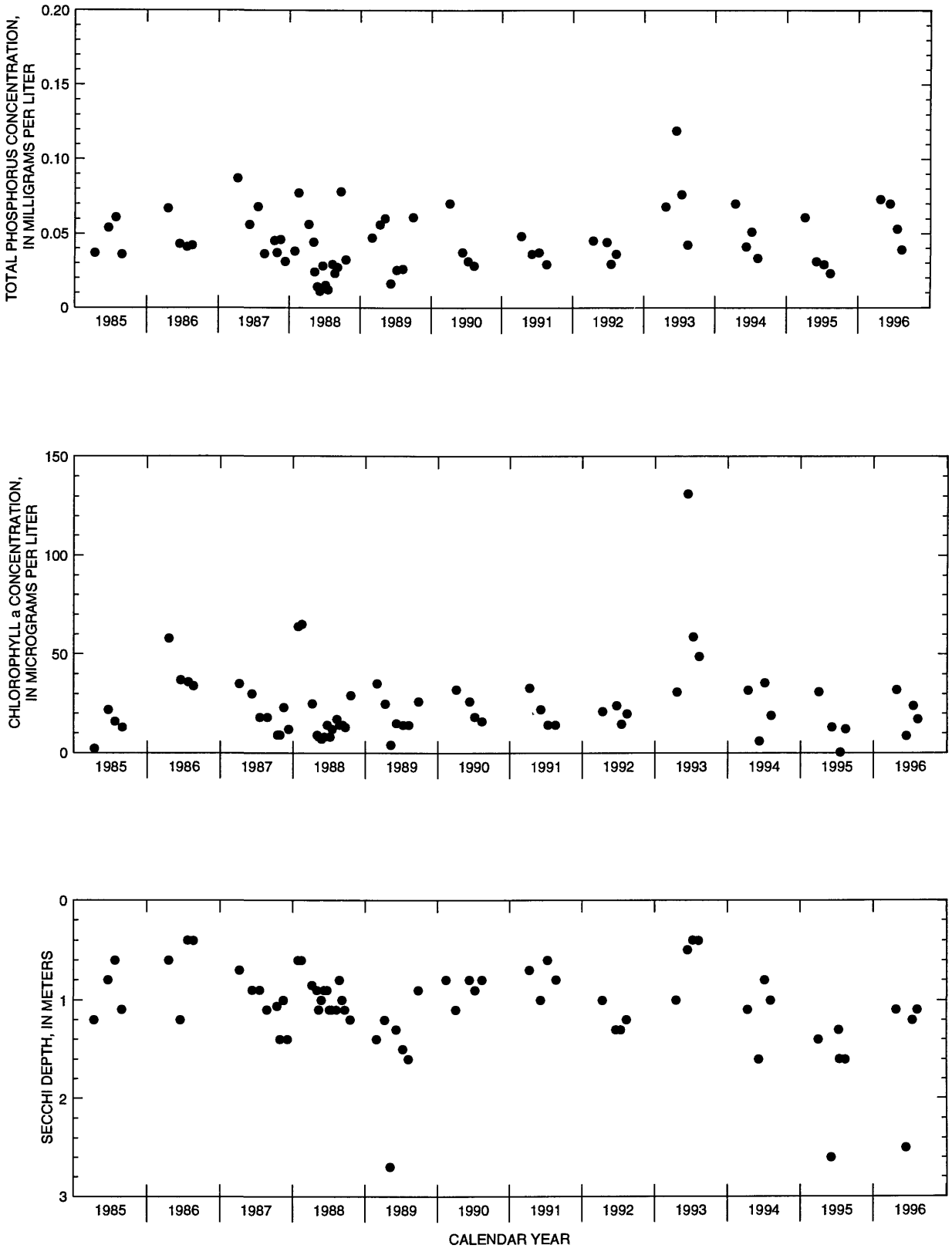
WATER-QUALITY DATA, JUNE 11 TO AAUGUST 08, 1996

(Milligrams per liter unless otherwise indicated)

	June 11		July 16		Aug. 08	
Depth of sample (ft)	1.5	50	1.5	48	1.5	50
Lake stage (ft)	8.41		8.22		8.29	
Specific conductance (µS/cm)	603	641	587	657	580	664
pH (units)	8.4	7.3	8.4	7.4	8.4	7.2
Water temperature (°C)	17.0	11.0	24.5	12.0	26.5	12.0
Secchi-depth (meters)	2.5		1.2		1.1	
Dissolved oxygen	8.4	0.2	9.3	0.3	8.0	0.6
Phosphorus, total (as P)	0.070	0.323	0.053	0.435	0.039	0.483
Chlorophyll a, phytoplankton (µg/L)	8.6	---	24	---	17	---







Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Wind Lake at Wind Lake, Wisconsin.

424848088083100 WIND LAKE OUTLET AT WIND LAKE, WI

LOCATION.--Lat 42°48'48" long 88°08'31", in NE 1/4 NW 1/4 sec.16, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.

DRAINAGE AREA.--39.6 mi^2.

PERIOD OF RECORD.--March 1985 to current year.

REVISED RECORDS.--WDR WI-91-1: 1988(m).

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 760.30 ft above sea level. Prior to Oct. 2, 1987, nonrecording gage at same site and datum.

REMARKS.--Lake ice-covered Nov. 29 to Mar. 24, and Mar. 26. Records good except for Apr. 24 to July 16, which are fair. Lake level regulated by dam with two 10-foot gates at outlet. Prior to October 1987, published as Wind Lake at Wind Lake, Wis.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 8.61 ft, Sept. 1, 1989; minimum recorded, 5.95 ft, Jan. 2, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 8.47 ft, June 10; minimum recorded, 5.95 ft, Jan. 2.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.03	7.66	7.23	5.99	7.32	7.47	7.88	8.13	8.20	8.15	8.17	8.08
2	8.08	7.71	7.22	5.96	7.35	7.44	7.87	8.05	8.26	8.16	8.16	8.07
3	8.10	7.68	7.25	5.98	7.36	7.36	7.90	8.00	8.30	8.19	8.16	8.06
4	8.10	7.63	7.29	6.01	7.38	7.32	7.99	8.03	8.33	8.22	8.15	8.05
5	8.14	7.56	7.35	6.03	7.40	7.34	7.94	8.12	8.36	8.20	8.14	8.03
6	8.15	7.48	7.34	6.05	7.40	7.36	7.85	8.16	8.36	8.18	8.27	8.02
7	8.10	7.46	7.36	6.07	7.41	7.36	7.78	8.12	8.35	8.16	8.29	8.01
8	8.13	7.44	7.36	6.09	7.42	7.36	7.71	8.07	8.40	8.17	8.29	8.02
9	8.12	7.40	7.35	6.11	7.44	7.36	7.70	8.06	8.43	8.19	8.27	8.04
10	8.11	7.42	7.30	6.11	7.49	7.35	7.71	8.16	8.44	8.23	8.26	8.02
11	8.11	7.53	7.24	6.14	7.56	7.34	7.72	8.23	8.41	8.22	8.26	8.02
12	8.08	7.53	7.18	6.17	7.63	7.38	7.75	8.24	8.36	8.22	8.25	7.99
13	8.05	7.53	7.13	6.18	7.68	7.44	7.79	8.24	8.28	8.22	8.24	7.97
14	8.06	7.52	7.09	6.19	7.65	7.52	7.83	8.20	8.22	8.21	8.22	7.94
15	8.06	7.52	7.04	6.20	7.59	7.60	8.01	8.22	8.20	8.22	8.19	7.92
16	7.83	7.51	6.99	6.21	7.54	7.62	8.18	8.24	8.20	8.22	8.16	7.91
17	7.57	7.50	6.93	6.24	7.51	7.65	8.31	8.24	8.29	8.24	8.15	7.90
18	7.46	7.48	6.88	6.37	7.48	7.64	8.30	8.19	8.32	8.34	8.14	7.89
19	7.40	7.46	6.84	6.53	7.42	7.64	8.25	8.11	8.30	8.30	8.17	7.88
20	7.38	7.45	6.80	6.63	7.38	7.61	8.18	8.10	8.25	8.22	8.19	7.86
21	7.33	7.45	6.76	6.71	7.39	7.54	8.10	8.18	8.10	8.16	8.19	7.86
22	7.28	7.41	6.71	6.79	7.41	7.54	8.02	8.20	8.14	8.14	8.19	7.86
23	7.27	7.41	6.66	6.86	7.45	7.55	7.96	8.25	8.19	8.16	8.19	7.85
24	7.30	7.39	6.62	6.94	7.45	7.57	7.90	8.28	8.31	8.16	8.17	7.85
25	7.33	7.36	6.59	6.99	7.46	7.58	7.94	8.32	8.23	8.16	8.15	7.83
26	7.37	7.34	6.53	7.05	7.49	7.64	7.97	8.34	8.16	8.16	8.14	7.87
27	7.46	7.36	6.47	7.12	7.55	7.70	8.04	8.34	8.24	8.15	8.14	7.92
28	7.54	7.33	6.39	7.16	7.55	7.79	8.12	8.34	8.21	8.14	8.13	7.90
29	7.57	7.28	6.28	7.21	7.51	7.83	8.23	8.31	8.17	8.15	8.11	7.90
30	7.57	7.24	6.17	7.24	---	7.85	8.23	8.29	8.14	8.16	8.10	7.88
31	7.59	---	6.11	7.28	---	7.87	---	8.24	---	8.17	8.10	---
MEAN	7.76	7.47	6.92	6.47	7.47	7.54	7.97	8.19	8.27	8.19	8.19	7.95
MAX	8.15	7.71	7.36	7.28	7.68	7.87	8.31	8.34	8.44	8.34	8.29	8.08
MIN	7.27	7.24	6.11	5.96	7.32	7.32	7.70	8.00	8.10	8.14	8.10	7.83

04082500 LAKE WINNEBAGO AT OSHKOSH, WI

LOCATION.--Lat 44°00'35", long 88°31'38", in NE 1/4 NE 1/4 sec.25, T.18 N., R.16 E., Winnebago County, Hydrologic Unit 04030203, at 905 Bay Shore Drive, 800 ft east of mouth of the upper Fox River.

DRAINAGE AREA.--5,880 mi^2, at lake outlet at Menasha Dam. Area of Lake Winnebago, 215 mi^2.

PERIOD OF RECORD.--October 1938 to current year in reports of Geological Survey. Records from 1882 to 1938 in files of Geological Survey and U.S. Army Corps of Engineers. A report on Fox River by U.S. Army Corps of Engineers, published as House Document No. 146, 67th Congress, 2nd session, contains semi-monthly records of inflow of Lake Winnebago for the period 1896-1917.

REVISED RECORD.--WDR WI-83-1: Drainage area.

GAGE.--Water-stage recorder. Nonrecording gage read once daily October 1938 to October 1978. Datum of gage is 745.05 ft above mean tide at New York City (levels by U.S. Army Corps of Engineers). Datum of Deuchman gage is 745.00 ft above mean tide at New York City.

REMARKS.--Estimated daily gage heights: May 11–19. Records good except for estimated daily gage heights, which are fair. Lake elevations controlled by dams at Menasha and Neenah, which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 ft. Present limits of regulation are from 21 1/4 in. above the crest of Menasha dam to crest during navigation season, plus additional 18 in. below crest during winter. Oshkosh staff gage gives true level of lake, while Deuchman gage readings are affected by loss of head in the channel between lake and dam. Data-collection platform at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.33 ft (Deuchman gage) Nov. 8, 1881; minimum observed, -2.00 ft (Deuchman gage) Nov. 28, 1891.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 3.67 ft, July 2; minimum recorded, 1.18 ft, Mar. 12, 13.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.05	2.67	2.06	1.75	1.78	1.34	1.90	2.78	3.09	3.28	3.05	2.93
2	3.14	2.67	2.06	1.74	1.78	1.32	1.92	2.79	3.14	3.28	3.03	2.92
3	3.13	2.66	2.05	1.73	1.78	1.31	1.93	2.81	3.17	3.25	3.01	2.91
4	3.12	2.72	2.06	1.72	1.77	1.29	1.98	2.81	3.23	3.19	2.99	2.92
5	3.16	2.66	1.94	1.71	1.76	1.29	2.01	2.80	3.21	3.13	2.98	2.92
6	3.14	2.63	2.05	1.69	1.75	1.28	2.03	2.78	3.19	3.10	3.01	2.91
7	3.19	2.58	2.05	1.68	1.74	1.26	2.05	2.73	3.30	3.04	3.02	2.91
8	3.25	2.57	2.03	1.66	1.74	1.25	2.07	2.75	3.26	2.97	3.03	2.94
9	3.25	2.60	2.03	1.65	1.72	1.23	2.09	2.74	3.23	3.00	3.05	2.98
10	3.25	2.51	2.01	1.64	1.70	1.22	2.11	2.84	3.22	2.98	3.03	2.96
11	3.23	2.46	1.99	1.63	1.69	1.20	2.13	2.80	3.19	2.94	2.99	2.93
12	3.21	2.51	1.97	1.63	1.68	1.19	2.12	2.70	3.17	2.95	2.97	2.93
13	3.12	2.46	1.96	1.61	1.66	1.19	2.14	2.70	3.14	2.98	2.98	2.90
14	3.01	2.44	1.99	1.60	1.64	1.23	2.17	2.70	3.13	3.00	2.95	2.87
15	3.03	2.38	1.97	1.58	1.61	1.27	2.20	2.70	3.11	2.98	2.95	2.86
16	3.02	2.37	1.96	1.57	1.58	1.32	2.22	2.70	3.08	2.99	2.93	2.88
17	2.90	2.37	1.94	1.56	1.56	1.36	2.28	2.80	3.32	3.01	2.93	2.87
18	2.89	2.34	1.93	1.60	1.53	1.41	2.28	2.80	3.41	3.05	2.93	2.85
19	2.83	2.31	1.92	1.65	1.50	1.44	2.33	2.90	3.40	3.19	2.92	2.85
20	2.80	2.21	1.90	1.65	1.47	1.48	2.43	2.95	3.37	3.17	2.96	2.82
21	2.76	2.19	1.89	1.66	1.44	1.50	2.52	2.97	3.35	3.12	2.96	2.82
22	2.77	2.23	1.87	1.67	1.41	1.53	2.54	2.99	3.33	3.09	2.96	2.82
23	2.74	2.19	1.86	1.68	1.38	1.57	2.61	3.05	3.34	3.10	3.00	2.84
24	2.59	2.17	1.85	1.70	1.36	1.61	2.64	3.06	3.27	3.09	2.97	2.81
25	2.63	2.12	1.83	1.71	1.35	1.68	2.58	3.00	3.28	3.09	2.96	2.83
26	2.61	2.10	1.82	1.74	1.35	1.72	2.59	3.00	3.28	3.09	2.98	2.85
27	2.63	2.12	1.81	1.78	1.37	1.73	2.68	3.02	3.28	3.07	2.96	2.75
28	2.66	2.10	1.80	1.78	1.37	1.75	2.69	3.01	3.29	3.04	2.94	2.80
29	2.62	2.09	1.79	1.79	1.36	1.78	2.77	3.02	3.25	3.07	2.95	2.82
30	2.64	2.08	1.77	1.79	---	1.81	2.68	3.04	3.27	3.07	2.94	2.83
31	2.64	---	1.76	1.79	---	1.86	---	3.06	---	3.06	2.93	---
MEAN	2.94	2.38	1.93	1.68	1.58	1.43	2.29	2.86	3.24	3.08	2.98	2.87
MAX	3.25	2.72	2.06	1.79	1.78	1.86	2.77	3.06	3.41	3.28	3.05	2.98
MIN	2.59	2.08	1.76	1.56	1.35	1.19	1.90	2.70	3.08	2.94	2.92	2.75

04084255 LAKE WINNEBAGO NEAR STOCKBRIDGE, WI

LOCATION.--Lat 44°04'17", long 88°19'52", Stockbridge Indian Reservation, Calumet County, Hydrologic Unit 04030203, on east shore of Lake Winnebago, 300 ft south of County Highway E and 1.6 mi west of Stockbridge.

DRAINAGE AREA.--5,880 mi^2, at lake outlet at Menasha Dam. Area of Lake Winnebago, 215 mi^2.

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 745.05 ft above mean tide of New York City (levels by U. S. Army Corps of Engineers).

REMARKS.--Records good. Lake elevations controlled by dams at Menasha and Neenah, which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 ft. Present limits of regulation are from 21 1/4 in. above the crest of Menasha dam to crest during navigation season, plus additional 18 in. below crest during winter. Data-collection platform at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 4.13 ft, July 9, 1993; minimum observed, 0.30 ft, Mar. 1, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 3.57 ft, June 29; minimum recorded, 1.10 ft, Mar. 11.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.19	2.59	2.04	1.71	1.74	1.29	1.86	2.80	3.04	3.28	3.04	2.92
2	3.10	2.80	2.02	1.71	1.74	1.29	1.89	2.79	3.19	3.27	3.02	2.91
3	3.08	2.92	2.02	1.69	1.73	1.26	1.90	2.76	3.24	3.22	3.00	2.90
4	3.09	2.81	2.02	1.68	1.73	1.24	1.95	2.73	3.21	3.19	2.98	2.90
5	2.93	2.75	2.06	1.66	1.72	1.24	1.98	2.70	3.19	3.15	2.99	2.89
6	3.06	2.66	2.06	1.65	1.71	1.23	2.00	2.69	3.12	3.11	3.04	2.87
7	3.23	2.62	2.02	1.64	1.68	1.22	2.02	2.69	3.06	3.08	3.08	2.88
8	3.22	2.63	1.99	1.62	1.69	1.21	2.03	2.67	3.16	3.05	3.09	2.89
9	3.21	2.56	2.01	1.61	1.67	1.18	2.06	2.69	3.17	2.98	3.05	2.93
10	3.24	2.48	1.98	1.59	1.66	1.16	2.07	2.68	3.17	2.98	3.00	2.95
11	3.23	2.51	1.95	1.59	1.66	1.14	2.08	2.73	3.16	2.96	2.99	2.95
12	3.19	2.48	1.93	1.58	1.64	1.13	2.08	2.75	3.14	2.97	3.02	2.88
13	3.17	2.42	1.91	1.57	1.61	1.14	2.09	2.75	3.13	2.99	3.01	2.85
14	3.20	2.39	1.95	1.55	1.60	1.18	2.11	2.74	3.10	3.01	3.03	2.86
15	3.16	2.39	1.94	1.54	1.57	1.22	2.18	2.68	3.07	3.02	2.99	2.83
16	3.05	2.37	1.92	1.52	1.54	1.27	2.24	2.71	3.03	3.03	2.94	2.76
17	2.97	2.32	1.90	1.52	1.51	1.31	2.23	2.77	3.19	3.00	2.94	2.75
18	2.86	2.31	1.89	1.56	1.48	1.36	2.24	2.85	3.29	3.06	2.91	2.78
19	2.83	2.28	1.88	1.62	1.45	1.41	2.34	2.91	3.36	3.10	2.94	2.77
20	2.86	2.29	1.87	1.61	1.42	1.45	2.43	2.93	3.37	3.09	2.98	2.76
21	2.93	2.28	1.85	1.61	1.40	1.47	2.51	2.96	3.35	3.11	2.96	2.77
22	2.82	2.22	1.84	1.62	1.37	1.50	2.53	2.99	3.33	3.14	3.00	2.81
23	2.68	2.17	1.82	1.63	1.35	1.52	2.56	2.94	3.28	3.15	2.98	2.78
24	2.74	2.14	1.81	1.66	1.32	1.56	2.59	2.88	3.27	3.15	3.01	2.81
25	2.64	2.08	1.80	1.67	1.30	1.66	2.61	2.92	3.29	3.13	3.01	2.77
26	2.57	2.04	1.78	1.70	1.31	1.68	2.62	2.93	3.30	3.08	2.92	2.67
27	2.61	1.92	1.77	1.75	1.33	1.68	2.65	2.90	3.29	3.05	2.90	2.83
28	2.63	2.07	1.76	1.74	1.34	1.71	2.62	2.88	3.31	3.04	2.92	2.87
29	2.69	2.05	1.74	1.75	1.32	1.75	2.51	2.92	3.33	3.08	2.93	2.81
30	2.62	2.04	1.72	1.75	---	1.77	2.75	2.99	3.33	3.08	2.92	2.75
31	2.56	---	1.72	1.74	---	1.83	---	3.02	---	3.06	2.93	---
MEAN	2.95	2.39	1.90	1.64	1.54	1.39	2.26	2.82	3.22	3.08	2.98	2.84
MAX	3.24	2.92	2.06	1.75	1.74	1.83	2.75	3.02	3.37	3.28	3.09	2.95
MIN	2.56	1.92	1.72	1.52	1.30	1.13	1.86	2.67	3.03	2.96	2.90	2.67

435152088123100 WOLF LAKE NEAR MT. CALVARY, WI

LOCATION.--Lat 43°51'52", long 88°12'31", in SW 1/4 SE 1/4 sec.10, T.16 N., R.19 E., Fond du Lac County, Hydrologic Unit 04030101, 3.2 mi northeast of Mt. Calvary.

DRAINAGE AREA.--3.43 mi2.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--November 1983 to September 1986, November 1992 to current year.

GAGE.--Stage measured by Alan Depies at lake outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 6.81 ft, Sept. 15, 1986; minimum observed, 4.42 ft, July 24, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 6.14 ft, June 26; minimum observed, 4.72 ft, Oct. 1.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.72	---	---	---	---	---	5.56	5.77	5.43	---	---	---
2	---	4.89	5.06	---	---	---	---	---	---	---	---	5.18
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	5.31	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	5.39	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	5.87	5.77	---	5.52	---	---	5.31	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	5.47	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	5.48	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	5.89	---	---	---	6.14	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	5.47	---
29	---	---	---	---	---	---	---	---	5.81	---	---	---
30	---	---	---	5.06	---	---	---	---	---	---	---	---
31	---	---	5.06	---	---	---	---	---	---	---	---	---

WATER-QUALITY RECORDS

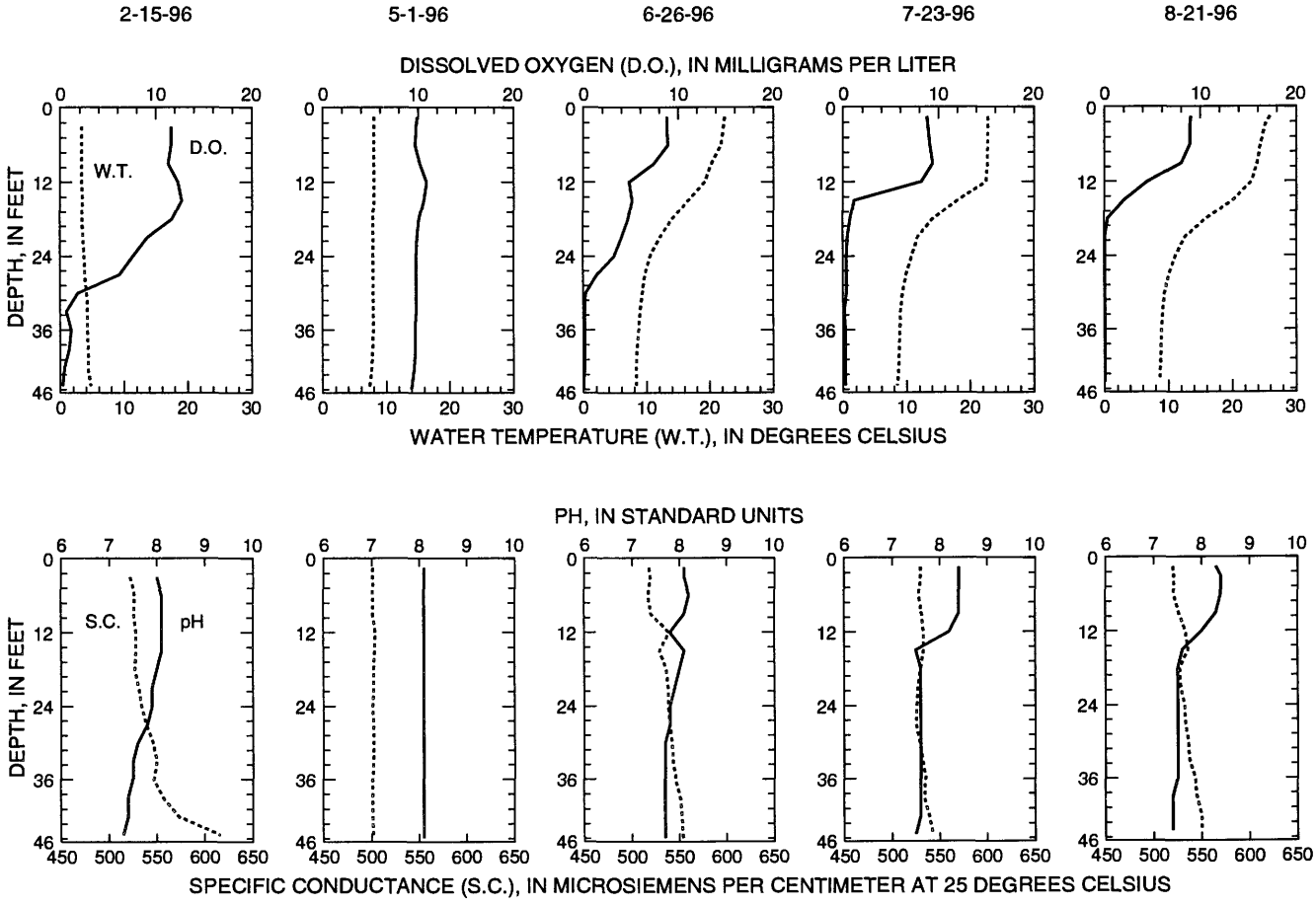
PERIOD OF RECORD.--February 1984 to September 1987, February 1993 to current year.

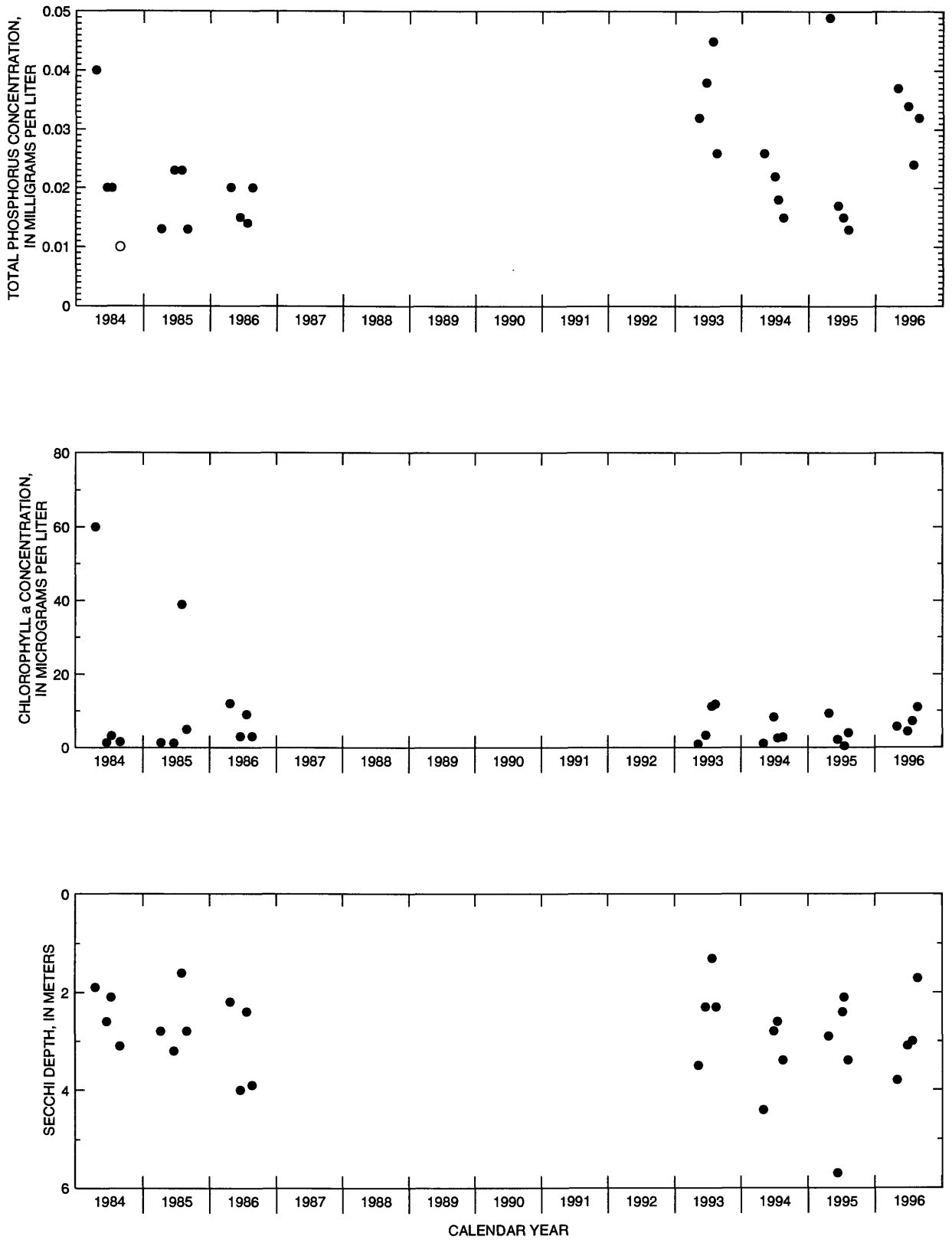
REMARKS.--Lake sampled near center at the deep hole. Lake ice-covered during February measurements. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 15 TO AUGUST 21, 1996

(Milligrams per liter unless otherwise indicated)

	Feb. 15		May 01		June 26		July 23		Aug. 21	
Depth of sample (ft)	3.0	45	1.5	46	1.5	46	1.5	45	1.5	45
Lake stage (ft)	5.87		5.89		6.14		5.48		5.47	
Specific conductance (µS/cm)	522	616	501	502	518	554	530	543	520	550
pH (units)	8.0	7.3	8.1	8.1	8.1	7.7	8.4	7.5	8.3	7.4
Water temperature (°C)	3.5	4.5	8.0	7.5	22.5	8.5	23.0	8.5	26.0	8.5
Color (Pt-Co. scale)	---	---	25	25	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.80	0.90	---	---	---	---	---	---
Secchi-depth (meters)	---		3.8		3.1		3.0		1.7	
Dissolved oxygen	11.6	0.2	9.9	9.3	8.8	0.0	8.8	0.2	9.0	0.0
Hardness, as CaCO3	---	---	250	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	41	42	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	35	35	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	6.5	6.4	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	5	5	---	---	---	---	---	---
Alkalinity, as CaCO3	---	---	200	200	---	---	---	---	---	---
Sulfate, dissolved (SO4)	---	---	34	36	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	28	28	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---	---	---
Silica, dissolved (SiO2)	---	---	2.6	2.8	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	304	308	---	---	---	---	---	---
Nitrogen, NO2 + NO3, diss. (as N)	---	---	0.08	0.08	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N	---	---	0.18	0.16	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.92	0.94	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	1.1	1.1	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.2	1.2	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.037	0.038	0.034	0.350	0.024	0.538	0.032	0.559
Phosphorus, ortho, dissolved (as P)	---	---	0.002	0.007	---	---	---	---	---	---
Iron, dissolved (Fe) µg/L	---	---	<10	<10	---	---	---	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	5	16	---	---	---	---	---	---
Chlorophyll a, phytoplankton (µg/L)	---	---	5.6	---	4.3	---	7.2	---	11	---





Surface total phosphorus and chlorophyll a concentrations, and Secchi depths for Wolf Lake near Mt. Calvary, Wisconsin.

(Circles indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

WISCONSIN DISTRICT PUBLICATIONS PERTAINING TO LAKES

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