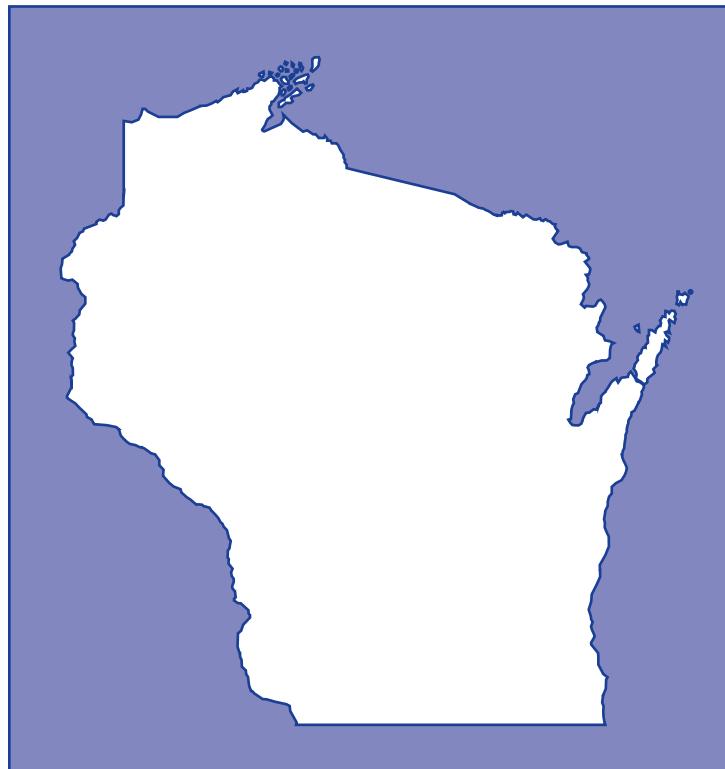


Water-Quality and Lake-Stage Data for Wisconsin Lakes, Water Year 2006



U.S. GEOLOGICAL SURVEY
Open-File Report 2007-1173

Prepared in cooperation with the
State of Wisconsin and local agencies



U.S. Department of the Interior
U.S. Geological Survey



Water-Quality and Lake-Stage Data for Wisconsin Lakes, Water Year 2006

A report by the Wisconsin Water Science Center Lake-Studies Team—
W.J. Rose (team leader), H.S. Garn, G.L. Goddard, S.B. Marsh, D.L. Olson, and D.M. Robertson

Open-File Report 2007-1173



**Prepared in cooperation with the
State of Wisconsin and with other agencies**

Middleton, Wisconsin
2007

**U.S. DEPARTMENT OF THE INTERIOR
DIRK KEMPTHORNE, Secretary**

U.S. Geological Survey
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CONTENTS

Introduction	1
Methods of data collection	4
Explanation of physical and chemical characteristics of lakes	12
Water temperature and thermal stratification.....	12
Specific conductance	13
Water clarity	13
pH	13
Dissolved oxygen	14
Phosphorus	15
Nitrogen.....	16
Chlorophyll a	16
Classification of lakes	17
References cited	19
Lake data.....	21
Big Cedar	
North Site, near West Bend, 432409088151600.....	22
South Site, near West Bend, 432224088154900.....	25
Delavan	
near Delavan, 423706088363400	30
at Center near Delavan Lake, 423556088365001	33
at North End near Lake Lawn, 423659088354401.....	41
at SW End near Delavan Lake, 423526088380101	41
Devils near Baraboo, 05404500	42
Geneva	
at Lake Geneva, 423525088260400	44
West End, near Williams Bay, 423329088323300.....	46
Green	
at County Trunk Highway A near Green Lake (East End), 434928088553601	54
Deep Hole, 434756089020500.....	55
East End, 434928088570000	61
Kawaguesaga near Minocqua, 455208089435800	65
Kegonsa, 425715089164700	69
Koshkonong near Newville, 05427235	70
Little Cedar	
North Site, near West Bend, 432255088134700.....	71
South Site, near West Bend, 432249088134500.....	74
Mendota at Madison, 05428000	78
Middle Genesee	
at Genesee Lake Road, near Oconomowoc, 430251088284700.....	79
near Oconomowoc, 430309088284800	80
Minocqua	
Deep Hole, at Minocqua	85
North Bay, at Minocqua	89
Monona at Madison, 05429000	91
Muskego (Big Muskego) near Wind Lake, 425109088075000.....	93
Oconomowoc	
No. 1 (Center) at Oconomowoc, 430551088273500	95
No. 2 (off Hewitt Point) at Oconomowoc, 430609088262200	100
Okauchee	
at Okauchee, 430723088252100	103
No. 1, near Okauchee, 430759088244200	108
No. 2, at Okauchee, 430645088264500	110
No. 3, at Okauchee, 430642088252400	112

No. 4, at Okauchee, 430757088261700	114
Pine at Chenequa, 430707088230500	116
Potter near Mukwonago, 424905088204000.....	121
Powers at Powers Lake, 423246088175800	127
Puckaway	
West Basin, near Marquette, 434515089124000.....	131
East Basin, near Marquette, 434542089073000.....	134
River Site, near Marquette, 434824089083200	137
Silver	
near Cumberland, 453420091551600.....	140
Deep Hole, near Cumberland, 453502091551700.....	142
At Beach, 453424091551600	147
NE Bay, 453535091550800	148
Southeast wetland, 453441091545300.....	149
Waubesa, 05429485	150
Whitefish	
near Gordon, 461231091524900	151
North Basin, 461321091520900.....	153
South Basin (Deep Hole), 461212091523200.....	156
Wind, at Outlet at Wind Lake, 424848088083100	161
at Wind Lake, 424915088083900	163
Winnebago	
at Oshkosh, 04082500	168
near Stockbridge, 04084255	170
Wisconsin Water Science Center publications pertaining to lakes	171
Appendix - Quality-Assurance/Quality-Control Plan	181

FIGURE

Figure 1. Map showing location of lake water-quality and lake-stage stations in Wisconsin	2
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TABLES

Table 1. Discontinued lake stations	5
2. Parameter identification numbers and laboratory reporting levels (LRL) for chemical parameters commonly measured in lakes, and analyzed at the National Water-Quality Laboratory (NWQL) or the Wisconsin State Laboratory of Hygiene (WSLH)	11

CONVERSION FACTORS, VERTICAL DATUM, AND ABBREVIATED WATER-QUALITY UNITS

Multiply	By	To Obtain
mile (mi)	1.609	kilometer
pound (lb)	453.6	gram
acre	0.4048	hectare
foot (ft)	0.3048	meter
meter (m)	3.281	foot
gallon (gal)	3.785	liter
square mile (mi^2)	2.590	square kilometer

Temperature, in degrees Celsius ($^{\circ}\text{C}$) can be converted to degrees Fahrenheit ($^{\circ}\text{F}$) by use of the following equation

$$^{\circ}\text{F} = 1.8(^{\circ}\text{C}) + 32$$

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Abbreviated water-quality units: Chemical concentrations and water temperature are given in metric units. Chemical concentration is given in milligrams per liter (mg/L) or micrograms per liter (mg/L). Milligrams per liter is a unit expressing the concentration of chemical constituents in solution as weight (milligrams) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter. For water with dissolved-solids concentrations less than 7,000 mg/L, the numerical values for concentrations expressed as mg/L and mg/L are the same as for concentrations in parts per million and parts per billion, respectively.

Specific conductance of water is expressed in microsiemens per centimeter at 25 degrees Celsius (mS/cm). This unit is equivalent to micromhos per centimeter (mmho/cm) at 25 degrees Celsius, formerly used by the U.S. Geological Survey.

WATER-QUALITY AND LAKE-STAGE DATA FOR WISCONSIN LAKES, WATER YEAR 2006

**By Wisconsin Water Science Center
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 locations of water-quality and lake-stage stations in Wisconsin for water year 2006 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. Thus, the period October 1, 2005 through September 30, 2006 is called "water year 2006."

The purpose of this report is to provide information about the chemical and physical 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 include measurements of in-lake water quality and lake stage. Time series of Secchi depths, surface total phosphorus and chlorophyll a concentrations collected during non-frozen periods are included for all lakes. 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, 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, 2006."

Water-resources data, including stage and discharge data at most streamflow-gaging stations, are available through the World Wide Web on the Internet. The Wisconsin Water Science Center's home page is at <http://wi.water.usgs.gov/>. Information on the Wisconsin Water Science Center's Lakes Program is found at wi.water.usgs.gov/lake/index.html and wi.water.usgs.gov/projects/index.html.

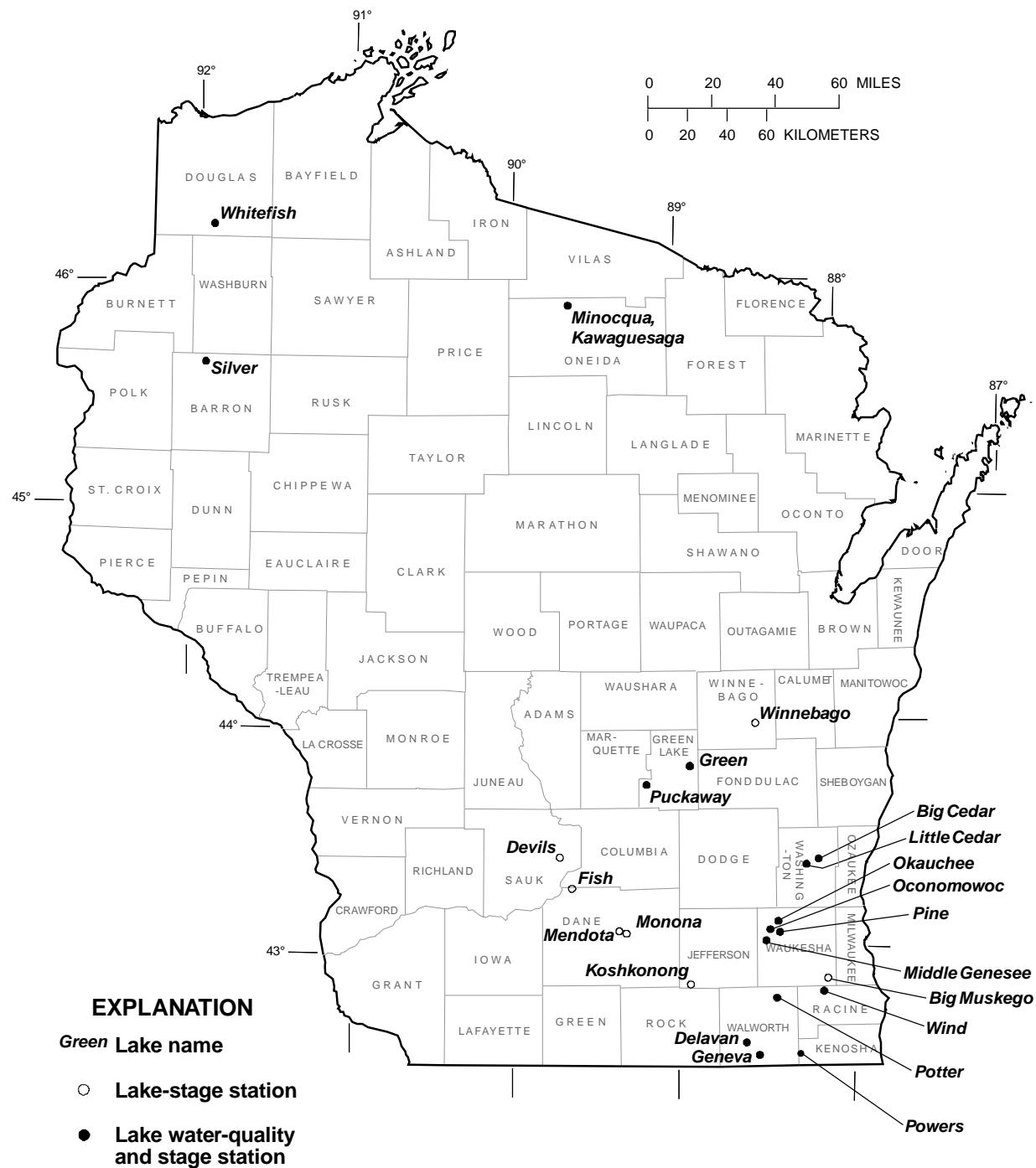


Figure 1. Location of lake water-quality and lake-stage stations in Wisconsin.

The USGS has done cooperative lake monitoring with local and other agencies since 1983. Cooperators in 2006 included:

Barron County Soil and Water Conservation Department
Big Cedar Lake Protection and Rehabilitation District
City of Chenequa
City of Delafield
City of Muskego
Dane County
Delavan Lake Sanitary District
Geneva Lake Environmental Agency
Green Lake Sanitary District
Lake Puckaway Protection and Rehabilitation District
Lauderdale Lakes Lake District
Little Cedar Lake Protection and Rehabilitation District
Middle Genesee Lake District
Okauchee Lake Management District
Potters Lake Protection and Rehabilitation District
Powers Lake District
Rock County Public Works Department
Town of Minocqua (Minocqua/Kawaguesaga Lake Protection Association)
Town of Wascott (Whitefish Lake Conservation Organization)
U.S. Army Corps of Engineers
Village of Oconomowoc Lake
Wind Lake Management District
Wisconsin Department of Natural Resources

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 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 or 054310157, 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 2006 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 and Merrill), and S.A. March (Middleton). The data were collected and processed by C.J. Bloom, G.L. Goddard, D.E. Housner, S.B. Marsh, B.W. Olson, D.L. Olson, P.C. Reneau, J.G. Schuler, and B.J. Siebers. S.B. Marsh assembled, edited, and formatted the report. Additional assistance in preparation of the report was provided by J.L. Bruce, M.M. Greenwood, and D.L. Olson.

METHODS OF DATA COLLECTION

Depth profiles of water temperature, dissolved oxygen, pH, and specific conductance were collected using multi-parameter meters. Prior to measurements, the meters were calibrated using standards for pH and conductance, and dissolved oxygen was calibrated using the air calibration method. Generally, field measurements in profiles were made at 0.5-m intervals if the maximum depth of the lake was 5 m or less and at 1.0-m intervals if the maximum depth was greater than 5 m.

Table 1. Discontinued lake stations

Station name	Site identification number	Period of record
Alma Lake near St. Germain	455426089254700	Oct. 1984–Sept. 1990, May 1992–Sept. 1996
Balsam Lake, off Cedar Island, at Balsam Lake	452755092264600	Feb. 1991–Aug. 1994
off Little Narrows, near Balsam Lake	452858092265300	May 1991–Aug. 1994
off Rock Island, near Balsam Lake	452754092234300	May 1991–Aug. 1994
Balsam Lake near Birchwood	453907091345800	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar.–Sept. 2001
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
North end, near Beaver Dam	433122088545700	June–Oct. 1991
Benedict Lake near Powers Lake	423201088180800	May 1998–Aug. 2000
Big Blacksmith Lake near Keshena	445401088334500	Feb. 1990–Aug. 1992
Big Hills (Hills) Lake near Wild Rose	440912089092000	June 1983–Aug. 1984, Feb.–Aug. 1987, Feb.–Aug. 1990, Feb.–Aug. 1993, Feb.–Aug. 1996, Feb.–Aug. 1999
Big Muskego Lake, at North Site, near Muskego	425301088061300	Feb.–Aug. 1988
Research Base, near Muskego	425235088075300	May–June 1994
Big Round Lake near Milltown	453142092180100	Feb.–Sept. 2001
Big St. Germain Lake, near St. Germain	455557089311000	Feb. 1992–Aug. 1996
near Lake Tomahawk	05390750	1991–2001
Big Sand Lake, Deep Hole, near Hertel	454910092134000	Feb.–Sept. 2001
East Site, near Hertel	454921092124300	Feb.–Sept. 2001
Big Sissabagama Lake, near Stone Lake	454724091303600	Apr. 1986–Sept. 1996, Oct. 1997–Sept. 2002
North Site, near Stone Lake	454800091312900	Mar. 1998–Sept. 2001
Booth Lake near East Troy	424800088254800	Feb. 1992–Aug. 1994, Feb. 2001–Aug. 2003
Buffalo Lake, Center Site, at Packwaukee	434558089260600	May 1998–Sept. 2001
East End, at Montello	434720089201600	May 1998–Sept. 2001
West End, near Endeavor	434414089282400	May 1998–Sept. 2001

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
Butternut Lake, near Park Falls	455854090310300	Oct. 2002–Oct. 2004
Deep Hole, near Park Falls	455803090310800	Mar. 2003–Sept. 2004
North Site, near Butternut	455904090303400	Mar. 2003–Sept. 2004
Far South Site, near Park Falls	455651090312700	Mar. 2003–Sept. 2004
Denoon Lake at Wind Lake	425044088100300	Feb. 1991–Aug. 1996
Druid Lake near Hartford	431643088243300	Feb. 1991–Sept. 1996
Eagle Lake near Kansaville	05544500	1936–64, 1975–77, 1979, Feb. 1993–Sept. 1996
Eagle Lake, at Deep Hole, near Kansaville	424207088072400	Feb. 1993–Aug. 1996
Eagle Spring Lake at Eagleville	425103088261500	Apr. 1991–Sept. 2001
Elizabeth Lake near Twin Lakes	423051088155300	Feb. 1995–Sept. 1997
Fish Lake near Sauk City	05406050	Nov. 1966–Sept. 1981, Apr. 1985–May 1987, May 1988, Apr. 1989– Oct. 1990, Oct. 1990– Nov. 1996, Nov. 1996– Sept. 2004
Forest Lake near Dundee	433632088100200	Mar. 1994–Aug. 1996, May–Aug. 2004, Feb. – Aug. 2005
Fowler Lake, Center, at Oconomowoc	430653088294601	Jan.–Dec. 1984, Oct. 1986–Sept. 1996
Fox Lake Deep Hole at Fox Lake	433458088560600	June 1991–Mar. 1993
Geneva Lake, Geneva Bay, at Lake Geneva	423455088263800	Apr. 1997–Feb. 1999
Williams Bay, at Williams Bay	423420088320500	Apr. 1997–Feb. 1999
Center, near Lake Geneva	423402088301400	Apr. 1997–Mar. 1999
East End, near Lake Geneva	423421088272300	Apr. 1997–May 2000
Hemlock Lake near Mikana	453421091333700	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar.–Sept. 2001
Hooker Lake at Salem	423335088060300	Feb. 1992–Aug. 1993
Kawaguesaga, South Site, near Minocqua	455145089442600	May–Sept. 2003
Kirby Lake near Cumberland (Site 1) near Cumberland	453554092042101 453608092035801	Nov. 1995–Oct. 1996 Nov. 1995–Nov. 1996
(Site 2) near Cumberland	453601092035301	Nov. 1995–Nov. 1996

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
(Site 3) near Cumberland	453612092034901	Nov. 1995–Nov. 1996
(Site 4) near Cumberland	453603092035701	Nov. 1995–Nov. 1996
(Site 5) near Cumberland	453608092041201	Nov. 1995–Nov. 1996
(Site 6) near Cumberland	453555092040901	Nov. 1995–Nov. 1996
Lac La Belle at Oconomowoc	430733088305900	Feb. 1984–Aug. 1985, Apr. –Aug. 1991, Feb. 2001–Aug. 2003
NW, at Oconomowoc	430809088313900	Feb. 1984–Aug. 1985
SE, at Oconomowoc	430707088301400	Feb. 1984–Aug. 1985
Lake Blass at Lake Delton	433545089482400	Mar. 1989–Aug. 1990
Lake Desair near Rice Lake	453446091465100	Aug. 2004
Lake Keesus, East Bay, near Merton	430957088183400	Apr. 1991–Aug. 1995
North Bay, near Merton	431006088191000	Apr. 1991–Aug. 1995
Lake Morris at Mount Morris	440654089120500	Jun. 1983–Sept. 1989
Lake Nebagamon, Northeast Bay, at Lake Nebagamon	463050091412300	May 1992–Aug. 1995
Southeast Bay, at Lake Nebagamon	462928091413500	Mar. 1992–Sept. 1995
West Bay, at Lake Nebagamon	463034091425300	May 1992–Aug. 1995
Lake Noquebay near Crivitz	451511087550900	Feb. 1987–Aug. 1988, Apr. 1991–Aug. 1994
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, Auxiliary, Number 1, near Lauderdale	424640088341900	June 1999–Sept. 2000
Green, near Lauderdale	424652088341500	Nov. 1993–Nov. 1994, Aug. 2002
Middle Lake at Lauderdale	424621088335500	Nov. 1993–Nov. 1994, Feb. 1999–Sept. 2005
Mill, at Lauderdale	424555088335700	Nov. 1993–Nov. 1994, Aug. 2002
Legend Lake (site 1) near Shawano	445342088312700	Feb. 1990–Feb. 1992
Little Arbor Vitae near Woodruff	455446089370300	Feb. 1991–Sept. 2002
Little Green Lake, at Center, near Markesan	434412088590700	Feb. 1991–Aug. 2003
Little Muskego Lake at Muskego	425425088083500	Oct. 1986–Aug. 2002
Little Rock Lake near Woodruff	455946089415702	Oct. 1983–Sept. 1996
Little St. Germain Lake, near Eagle River	05390700	(a)
Upper East Bay, at St. Germain	455532089253900	Dec. 1996–Mar. 97, Mar. 1999, Mar. 2000–Aug. 2003

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
Northeast Bay, near St. Germain	455545089262500	Apr. 1991–Aug. 1994, Aug. 1996–Aug. 1997, Mar. 1999–Aug. 2003
South Bay, near St. Germain	455437089270800	Apr. 1991–Aug. 1994, Aug. 1996–Aug. 1997, Mar. 1999–Aug. 2003
West Bay, at St. Germain	455428089282400	Apr. 1991–Aug. 1994, Aug. 1996–Aug. 1997, Mar. 1999–Aug. 2003
Little Sand Lake - Site No. 2 - near Mole Lake	452826088544101	May 1996–Sept. 2003
Long (Kee Nong Go-Mong) Lake at Wind Lake	424937088103400	Feb. 1988–Aug. 1989, Feb. 1991–Aug. 1996
Loon Lake near Shawano	445009088303700	Feb. 1991–Aug. 1993
Lost Lake near Beaver Dam	432640088580500	June–Oct. 1991
McKenzie Lakes		
McKenzie (Big McKenzie)		
Deep Hole, near Spooner	455507092013500	Feb. 1987–Aug. 1998
Northern Site, near Spooner	455540092022000	June 1997–Aug. 1998
South Site, near Spooner	455437092022300	June 1997–Aug. 1998
Lower McKenzie, near Webb Lake	455902092011900	June 1997–Aug. 1998
Middle McKenzie, near Spooner	455635092021800	June 1997–Aug. 1998
Mary (Marie) Lake at Twin Lakes	423128088151200	Feb. 1995–Aug. 1997
Max Lake near Woodruff	460128089423501	Mar. 1988–Dec. 1996
Mead Lake, East Bay near Willard	444720090445000	Apr. 1991–Aug. 1995
West Bay near Willard	444733090460100	Feb. 1991–Sept. 1995
Minocqua, South Bay, at Minocqua	455206089425200	May–Sept. 2003
Montello Lake at Montello	434748089195800	Feb. 1995–Aug. 1998
Moon Lake near St. Germain	455504089260500	Feb. 1992–Aug. 1996
Morgan Lake near Fence	454622088324801	Oct. 1987–Sept. 1998.
Moshawquit Lake near Shawano	445352088295800	Feb. 1990–Aug. 1992
Muskego (Big Muskego)		
Auxiliary Number 1, near Muskego	425329088054000	June 1996–Aug. 2000
Bass Bay, near Muskego	425344008807010	Feb. 1988–Aug. 2002

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
near Wind Lake	425109088075000	Oct. 1987–Sept. 1989, Jan. 1991–Sept. 2002
South Site, near Muskego	425212088072800	Feb. 1988–Aug. 2002
Muskellunge Lake near Eagle River	455700089224900	June 2000–Aug. 2001
Muskellunge Lake, near Lake Outlet near Eagle River	455706089232400	Nov. 2000–Oct. 2001
Nagawicka Lake, at Deep Hole, at Delafield	430417088230300	Feb. 2003–Sept. 2004
Namekagon Lakes		
Garden, near Cable	461224091033200	Mar. 1998–Aug. 1999
Jackson, near Cable	461457091065900	Mar. 1998–Aug. 1999
Namekagon		
Deep Hole, near Cable	461308091065100	Mar. 1998–Aug. 1999
East Basin, near Cable	461228091044300	Mar. 1998–Aug. 1999
Northeast Basin, near Cable	461410091050700	Mar. 1998–Aug. 1999
Park Lake (site 1) at Pardeeville	433239089175800	Feb. 1986–Aug. 1987, May–Nov. 1993
(site 2) at Pardeeville	433226089175500	May–Nov. 1993
(site 3) at Pardeeville	433245089173000	May–Nov. 1993
(site 4) at Pardeeville	433257089165100	May–Nov. 1993
Pike Lake near Hartford	431916088200501	Dec. 1998–Dec. 2000
Pike Lake-QW Site-near Hartford	431835088200600	Feb.–Aug. 2000
Pretty Lake, at Deep Hole, near Dousman	425722088295000	Feb. 1993–Aug. 1997
Red Cedar Lake, at Mikana	453522091360600	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Oct. 2000–Sept. 2001
Deep Hole, near Mikana	453725091345100	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar. –Sept. 2001
South End, at Mikana	453519091352500	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar. –Sept. 2001
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
Shell Lake at Shell Lake	05334000	Aug. 1936–Sept. 1999
Silver Lake near Oconomowoc	430436088293300	Apr. 1992–Aug. 1996
Silver Lake near West Bend	432322088125000	Feb. 1996–Aug. 1997
Sinissippi Lake, off Anthony Is., at Hustisford	432113088361100	Feb. 1991–Aug. 1993

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
off Butternut Is., near Hustisford	432240088363900	Apr. 1991–Aug. 1993
off Sam Point, near Hustisford	432300088374200	Apr. 1991–Aug. 1993
Spirit Lake near Keshena	445400088320100	Apr.–Aug. 1992
Spooner Lake, Deep Hole, near Spooner	455034091493300	June 2002–Aug. 2004
Southeast Site, near Spooner	454945091483900	June 2002–Aug. 2004
Stewart Lake at Mt. Horeb	430117089442701	May 1992–Sept. 1993
Tichigan Lake near Waterford	424854088123300	Mar. 1994–Aug. 1996, Apr. 2003–Aug. 2004
Tombeau Lake near Powers Lake	423153088184800	May 1998–Aug. 2000
Twin Lake, East Twin, near Westfield	435430089350700	June 2002–Aug. 2004
Upper Nemahbin, Center, near Delafield	430400088254900	June 1993–Oct. 1995, Feb. –Sept. 2005
West Twin, near Westfield	435438089352300	June 2002–Aug. 2004

(a) Wisconsin Valley Improvement Co. currently collects stage data for this site.

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 were performed on samples that were filtered in the field through a 0.45-mm (micrometer) pore-size filter. Total or total recoverable constituents were determined by analyzing unfiltered water samples. Preservation and shipment of samples followed standard protocols established by the laboratories. Water-quality data were archived in the Water Quality Data Base (QWDATA) of the National Water Information System (NWIS). Additional descriptive information about water-quality data is available in the data report: "Water Resources Data – Wisconsin, 2006". NWIS parameter codes and minimum laboratory reporting levels for chemical constituents are given in table 2.

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

Table 2. Parameter identification numbers and laboratory reporting levels (LRL) for chemical parameters commonly measured in lakes, and analyzed at the National Water Quality Laboratory (NWQL) or the Wisconsin State Laboratory of Hygiene (WSLH)

Parameter Name	Units	CAS Number ¹	Parameter Code ²	(NWQL)			(WSLH)		
				Standard Analysis		Low-Level Analysis			
				LRL	Lab Code	LRL	Lab Code	LRL	Test Code
Calcium, diss. (Ca)	mg/L	7440-70-2	00915	0.020	659	0.002	1895	0.02	I230IUD
Magnesium, diss. (Mg)	mg/L	7439-95-4	00925	0.004	663	0.001	1897	0.02	I390IUD
Sodium, diss. (Na)	mg/L	7440-23-5	00930	0.09	675	0.025	1898	0.09	I80IUD
Potassium, diss. (K)	mg/L	7440-09-7	00935	0.24	54	0.01	833	0.3	I540IUD
Sulfate, diss. (SO ₄)	mg/L	14808-79-8	00945	0.31	1572	0.01	1263	1.0	I600DLD
Chloride, diss. (Cl)	mg/L	16887-00-6	00940	0.29	1571	0.01	1259	0.1	I240ELD
Fluoride, diss. (F)	mg/L	16984-48-8	00950	0.100	31	0.01	1260	0.03	I330FLD
Iron, diss. (Fe)	(µg/L)	7439-89-6	01046	10	645	3	1896	10	I370IUD
Manganese, diss. (Mn)	(µg/L)	7439-96-5	01056	2.2	648	1	1793	0.4	I400IUD
Silica, diss. (SiO ₂)	mg/L	7631-86-9	00955	0.1	56	0.02	1899	0.008	I560LLD
Nitrogen, NO ₂ +NO ₃ , diss.	mg/L	--	00631	0.05	1975	0.005	1979	0.01	I460MLD
Nitrogen, ammonia, diss.	mg/L	7664-41-7	00608	0.02	1976	0.002	1980	0.013	I440NLD
Nitrogen, amm.+org., total ⁴	mg/L	17778-88-0	00625	0.100	1985	--	--	0.2	I470BLT
Nitrogen, amm.+org.,diss.	mg/L	--	00623	--	--	--	--	--	I470DLD
Nitrogen, total ⁵	mg/L	--	00600	--	--	--	--	--	--
Nitrogen, dissolved	mg/L	--	00602	--	--	--	--	--	--
Phosphorus, total	mg/L	7723-14-0	00665	0.05	1984	0.004	2333	0.005	I520PLT
Phosphorus, ortho, diss.	mg/L	14265-44-2	00671	0.01	1262	0.002	1978	0.002	I530CLD
Chlorophyll a, phytoplankton	(µg/L)	479-61-8	70953	0.1	586	--	--	--	--
Chlorophyll a, phytoplankton	(µg/L)	479-61-8	32210	--	--	--	--	0.26	I250UNF

1: CAS (Chemical Abstracting Services) number = unique identification for each constituent

2: Parameter Code - unique number for storage of data in database

3: Calculated as difference between total ammonia + organic nitrogen and ammonia nitrogen

4: Also known as Total Kjeldahl Nitrogen (TKN)

5: Calculated as sum of TKN + Nitrogen as (NO₂+NO₃)

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 extent of thermal stratification in lakes depends on the interaction between the lake's shape, water clarity, solar heating, and wind-driven mixing. Complete mixing of the lake is usually inhibited by thermal stratification in summer and by ice cover in winter. Thermal stratification affects 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 6 m (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 usually 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 (epilimnion) and the underlying colder water (hypolimnion). This barrier is often marked by a sharp temperature gradient known as the "thermocline (metalimnion)." During the stratified summer period, these three distinct layers of lake water are often present. 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 warmer temperatures.

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 20-cm.-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, zooplankton, water color, and suspended sediment. Algae are often the most dominant influence on clarity in lakes and, therefore, Secchi depth is usually correlated with the algal abundance. Secchi depths are generally the least during 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 during the day causes an increase in pH. The result is a daily cycle in 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.

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

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 some types of chemical reactions. 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 early life stages of 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. Complete anoxia, however, is often not detected because of meter constraints. 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. When phosphorus concentrations exceed 0.025 mg/L at the time of spring overturn in lakes and reservoirs, these water bodies may occasionally experience excess or nuisance growth of algae or other aquatic plants (U.S. Environmental Protection Agency, 1986). In many regions of the country, including the upper Midwest, 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 in Wisconsin lakes, 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 nitrogen to 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. Total nitrogen is the sum of ammonia, organic nitrogen, and nitrate-plus-nitrite nitrogen. The near-surface concentration is commonly 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) and other green plants. 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 during summer when algal populations are highest. 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 and evaluate Wisconsin lakes according to their water quality or trophic state: Lillie and Mason's (1983) water-quality index and Carlson's (1977) trophic state index (TSI). In previous USGS data reports, a modification of Carlson's trophic state index for Wisconsin lakes by Lillie and others (1993) had been used; however, this approach did not properly classify oligotrophic and highly eutrophic lakes and, therefore, was discontinued.

Lillie and Mason's (1983) water quality indices for Wisconsin lakes were developed based on summer measurements of total phosphorus and chlorophyll a concentrations, and Secchi depth from a random set of lakes in Wisconsin. These data were used to classify the lakes's water quality as shown below:

Water-quality index	Total phosphorus range (mg/L)	Chlorophyll a range ($\mu\text{g/L}$)	Water clarity range (Secchi depth, in meters)
"Excellent"	<0.001	<1.0	>6.0
"Very good"	.001-.009	1.0-4.9	3.0-6.0
"Good"	.010-.029	5.0-9.9	2.0-2.9
"Fair"	.030-.049	10.0-14.9	1.5-1.9
"Poor"	.050-.149	15.0-30.0	1.0-1.4
"Very poor"	>.150	>30.0	<1.0

Carlson's (1977) TSI approach to lake classification assigns numerical ranges to the three trophic conditions 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 hypereutrophic.

Carlson's (1977) TSI values are also based on near-surface total phosphorus and chlorophyll a concentrations, and Secchi depths. The indices were developed to place these three characteristics on similar scales to allow comparison of different lakes. TSI values based on phosphorus concentrations (TSI_P), Secchi depths (TSI_{SD}), and chlorophyll a concentrations (TSI_C) typically are computed only for measurements collected during the open-water period.

TSI values for a lake can be calculated using the following equations (Carlson, 1977):

$$TSI_P = 4.15 + 14.42 \times (\ln [\text{total phosphorus concentration} \times 1,000])$$

$$TSI_{SD} = 60.0 - 14.41 \times (\ln \text{Secchi depth})$$

$$TSI_C = 30.6 + 9.81 \times (\ln \text{chlorophyll a concentration})$$

where: total phosphorus is in milligrams per liter,

Secchi depth is in meters, and

chlorophyll a is in micrograms per liter.

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

Trophic level	Trophic State Index	Total phosphorus (mg/L)	Secchi depth (m)	Chlorophyll a (µg/L)
Eutrophic	50	0.024	2.0	7.2
Mesotrophic	40	0.012	4.0	2.6
Oligotrophic				

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LAKE DATA

Remarks codes and symbols used in the following tables:

[<, less than; M, present but not quantified; --, not available; E, estimated]

432409088151600 BIG CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat 43°24'09", long 88°15'16", in NE ¼ SW ¼ sec.20, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, near West Bend.

PERIOD OF RECORD.--February 2000 to current year.

REMARKS.--Lake sampled on north side at a depth of 12 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

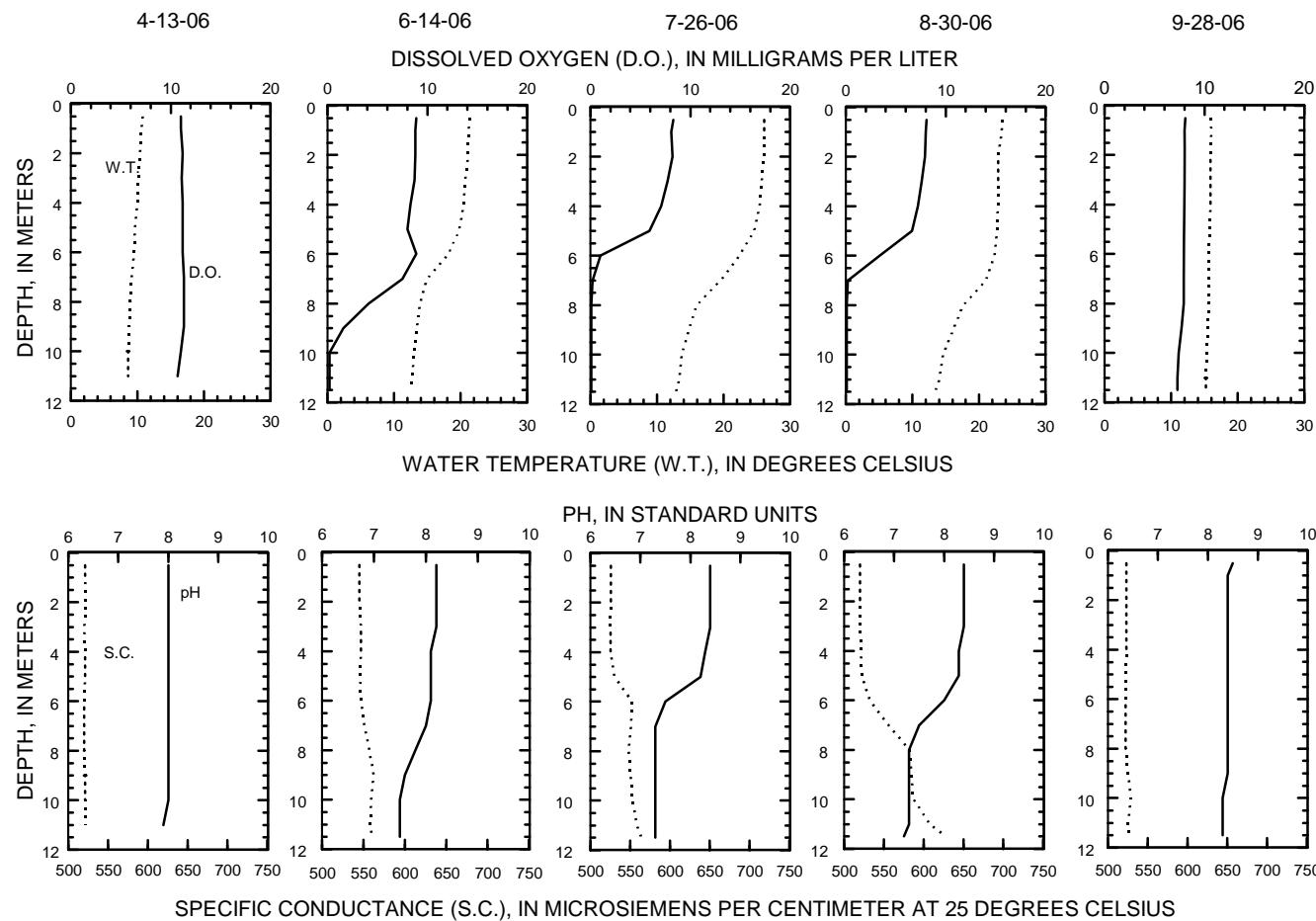
WATER-QUALITY DATA, APRIL 13 TO SEPTEMBER 28, 2006

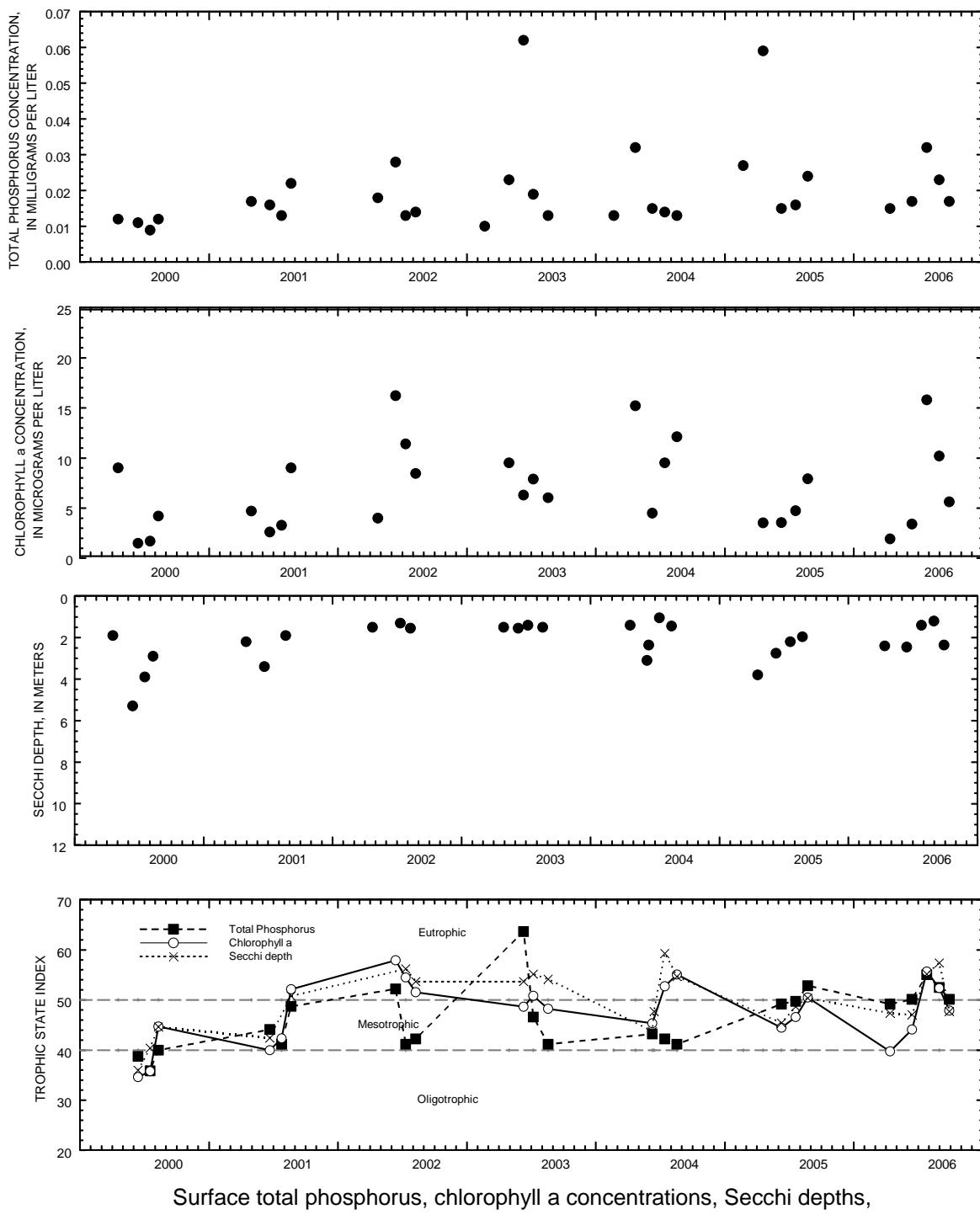
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans-parency Secchi disc, meters (00078)	Sam-pling depth, meters (00098)	Temper-ature, water, deg C (00010)	Specif. conduc-tance, wat er, uS/cm (00095)	pH, water, unfltrd wat unf field, std units (00400)	Chloro-phyll a wat unf trichr. method, solved oxyge n, mg/L (00300)	Phos-phorus, water, unfltrd ug/L (32210)	Sam-pling method, method, code (00665) (82398)
APR 2006										
13...	0940	--	--	.50	10.8	521	8.0	11.0	1.92	.015 50
13...	0951	--	--	11.0	8.6	522	7.9	10.7	--	.012 50
13...	0955	10.24	2.40	--	--	--	--	--	--	--
JUN										
14...	1040	--	--	.50	21.3	545	8.2	8.9	3.42	.017 50
14...	1052	--	--	11.5	12.4	560	7.5	.2	--	.030 50
14...	1055	10.20	2.45	--	--	--	--	--	--	--
JUL										
26...	1400	--	--	.50	26.1	526	8.4	8.3	15.8	.032 50
26...	1409	--	--	11.5	12.9	564	7.3	.1	--	.037 50
26...	1410	10.23	1.40	--	--	--	--	--	--	--
AUG										
30...	1430	--	--	.50	23.5	520	8.4	8.1	10.2	.023 50
30...	1439	--	--	11.5	13.4	628	7.2	.1	--	.038 50
30...	1440	10.14	1.20	--	--	--	--	--	--	--
SEP										
28...	1420	--	--	.50	15.9	523	8.5	8.1	5.63	.017 50
28...	1428	--	--	11.5	15.2	526	8.3	7.3	--	.016 50
28...	1430	10.26	2.35	--	--	--	--	--	--	--

432409088151600 BIG CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, APRIL 13 TO SEPTEMBER 28, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Big Cedar Lake, North Site, near West Bend, Wisconsin.

432224088154900 BIG CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat $43^{\circ}22'24''$, long $88^{\circ}15'49''$, in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, near West Bend.

PERIOD OF RECORD.--February 2000 to current year.

REMARKS.--Lake sampled on south side at deep hole. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 13 TO SEPTEMBER 28, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Trans-			Specif.	pH,	Chloro-			Ortho-	Total	
		Gage height, feet (00065)	Secchi disc, meters (00078)	Sam- pling depth, meters (00098)			unfltrd field, std 25 degC (00400)	Diss- olved oxygen, units (00300)	water, method, uncorr, mg/L (00300)	Phos- phorus, water, unfltrd ug/L (32210)		
APR 2006												
13...	1020	--	--	.50	6.3	520	8.0	12.3	1.73	.008	.006	.69
13...	1036	--	--	30.0	4.6	520	8.0	12.0	--	.009	--	--
13...	1040	10.24	6.70	--	--	--	--	--	--	--	--	--
JUN												
14...	0930	--	--	.50	20.5	538	8.1	8.7	2.18	.019	--	--
14...	0947	--	--	30.0	5.1	558	7.5	1.1	--	.020	--	--
14...	0950	10.20	4.25	--	--	--	--	--	--	--	--	--
JUL												
26...	1300	--	--	.50	25.5	513	8.4	8.7	8.33	.027	.002	--
26...	1319	--	--	30.0	5.0	549	7.4	.4	--	.034	--	--
26...	1320	10.23	2.65	--	--	--	--	--	--	--	--	--
AUG												
30...	1315	--	--	.50	23.4	507	8.4	9.3	8.20	.032	--	--
30...	1333	--	--	30.0	5.0	584	7.4	.1	--	.034	--	--
30...	1335	10.14	2.05	--	--	--	--	--	--	--	--	--
SEP												
28...	1320	--	--	.50	16.5	507	8.5	8.9	4.60	.016	--	--
28...	1338	--	--	30.0	5.1	581	7.5	.1	--	.054	--	--
28...	1340	10.26	3.50	--	--	--	--	--	--	--	--	--

432224088154900 BIG CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

WATER-QUALITY DATA, APRIL 13 TO SEPTEMBER 28, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Ammonia water, fltrd, mg/L (00098)	Ammonia org-N, water, fltrd, mg/L (00608)	Ammonia org-N, water, fltrd, mg/L (00623)	Nitrite water, unfltrd mg/L (00625)	Nitrate water, fltrd, mg/L (00631)	Tur- bidity, NTU (00076)	Appar- ent color, Hard- ness, water, Pt-Co units (00081)	Calcium water, CaCO ₃ mg/L (00900)	Magnes- ium, water, fltrd, mg/L (00915)	Sodium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00930)	Potas- sium, water, fltrd, mg/L (00935)
			+ as N (00623)	+ as N (00625)	+	+ as N (00631)							
APR 2006													
13...	.50	.043	--	.44	.254	<1.0	5	220	34.9	33.0	21.3	2.00	
13...	30.0	--	--	--	--	--	--	--	--	--	--	--	
13...	--	--	--	--	--	--	--	--	--	--	--	--	
JUN													
14...	.50	--	--	--	--	--	--	--	--	--	--	--	
14...	30.0	--	--	--	--	--	--	--	--	--	--	--	
14...	--	--	--	--	--	--	--	--	--	--	--	--	
JUL													
26...	.50	.022	.49	--	<.019	--	--	--	--	--	--	--	
26...	30.0	--	--	--	--	--	--	--	--	--	--	--	
26...	--	--	--	--	--	--	--	--	--	--	--	--	
AUG													
30...	.50	--	--	--	--	--	--	--	--	--	--	--	
30...	30.0	--	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	--	--	
SEP													
28...	.50	--	--	--	--	--	--	--	--	--	--	--	
28...	30.0	--	--	--	--	--	--	--	--	--	--	--	
28...	--	--	--	--	--	--	--	--	--	--	--	--	

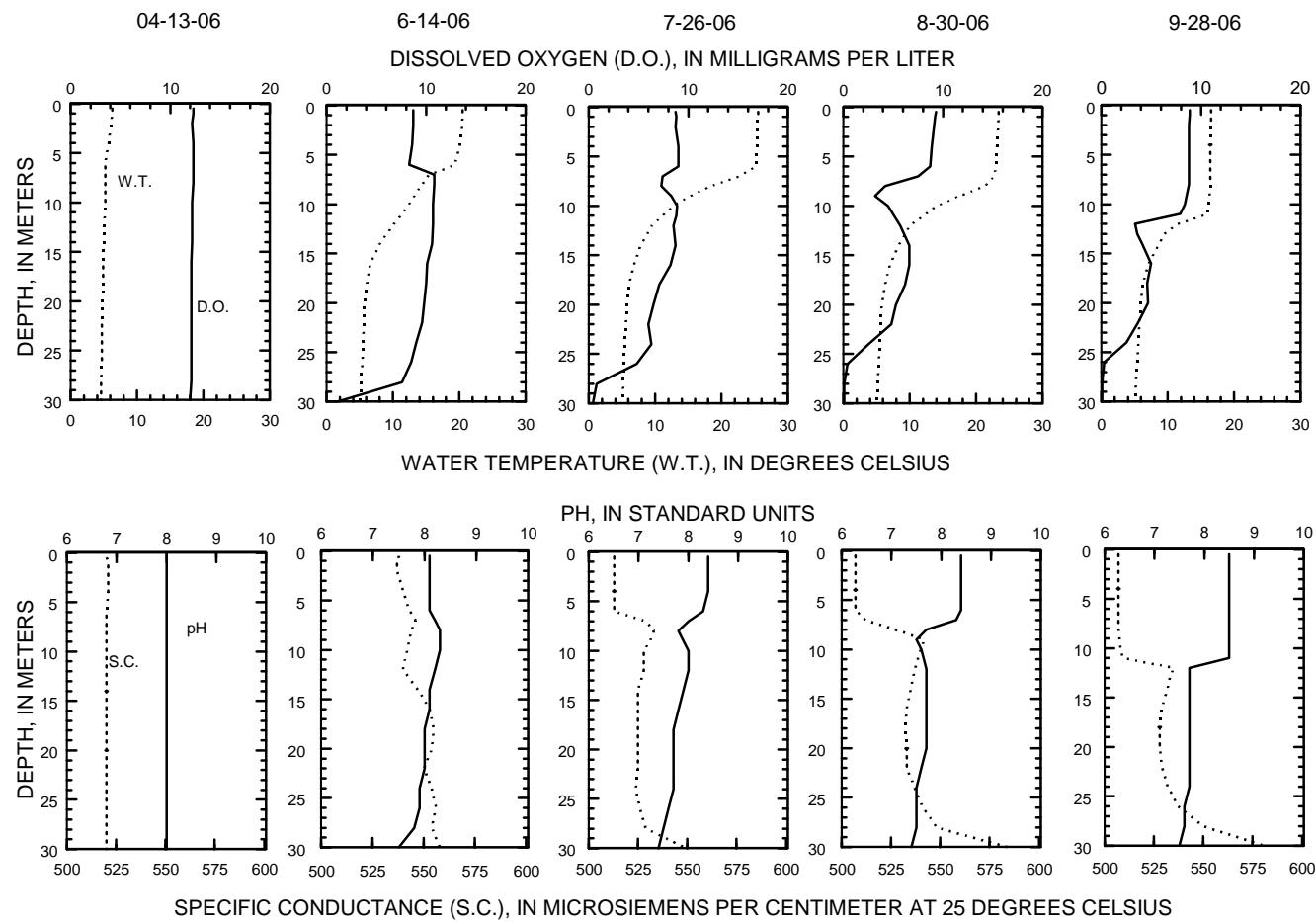
432224088154900 BIG CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

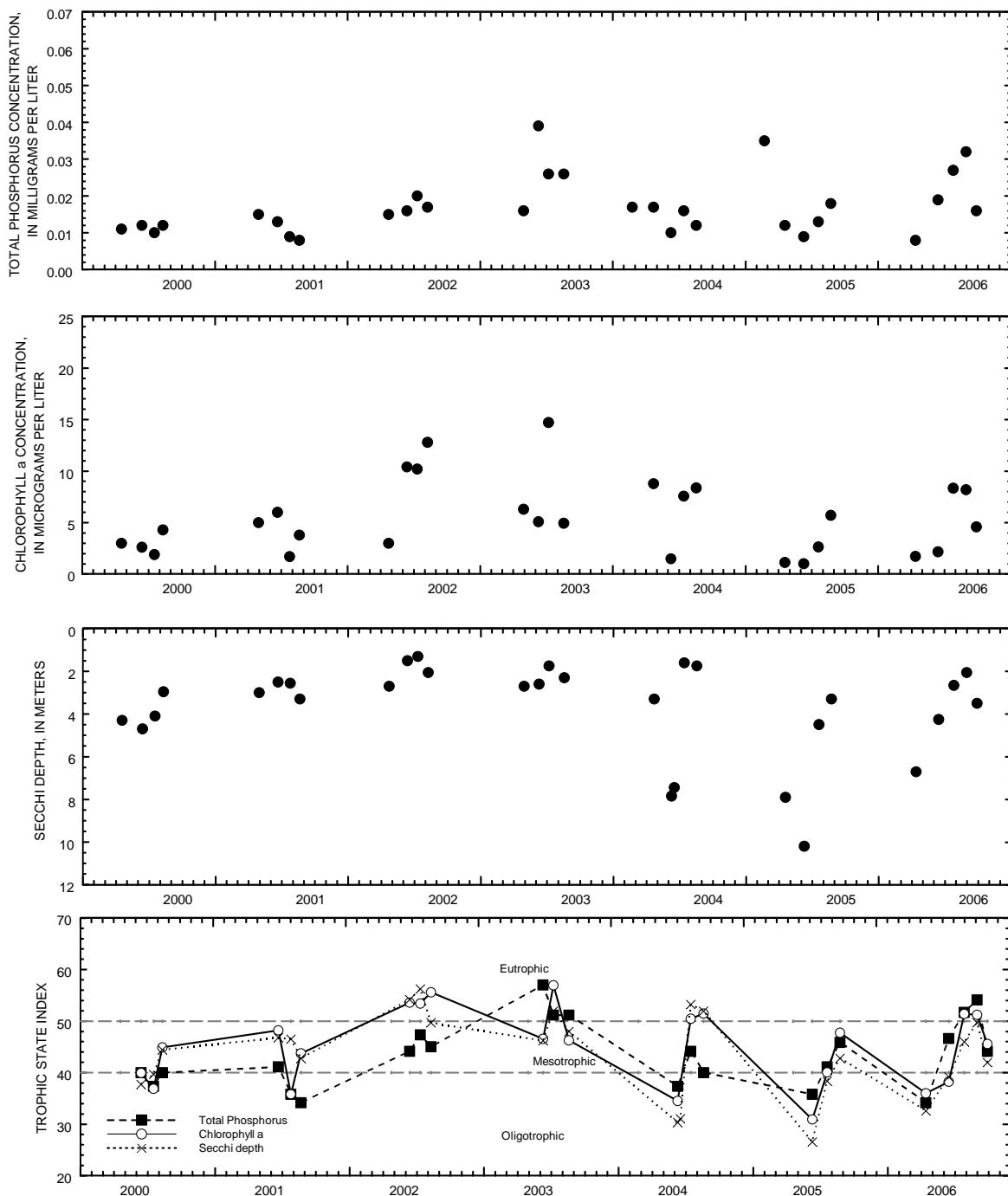
WATER-QUALITY DATA, APRIL 13 TO SEPTEMBER 28, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	ANC, wat unf fixed		Chlor- ide, lab, water, fltrd,		Sulfate water, fltrd,	Silica, water, fltrd,	Iron, water, fltrd,	Mangan- ese, water, fltrd,	Residue on at 180degC wat flt	Sam- pling method, code
	Sam- pling depth, meters (00098)	mg/L as CaCO ₃ (00417)	mg/L (00940)	mg/L (00945)	mg/L (00955)	ug/L (01046)	ug/L (01056)	ug/L (70300)	(82398)	
APR 2006										
13...	.50	189	46.5	22.5	1.63	<100	<.5	290	50	
13...	30.0	--	--	--	--	--	--	--	50	
13...	--	--	--	--	--	--	--	--	--	
JUN										
14...	.50	--	--	--	--	--	--	--	50	
14...	30.0	--	--	--	--	--	--	--	50	
14...	--	--	--	--	--	--	--	--	--	
JUL										
26...	.50	--	--	--	--	--	--	--	50	
26...	30.0	--	--	--	--	--	--	--	50	
26...	--	--	--	--	--	--	--	--	--	
AUG										
30...	.50	--	--	--	--	--	--	--	50	
30...	30.0	--	--	--	--	--	--	--	50	
30...	--	--	--	--	--	--	--	--	--	
SEP										
28...	.50	--	--	--	--	--	--	--	50	
28...	30.0	--	--	--	--	--	--	--	50	
28...	--	--	--	--	--	--	--	--	--	

432224088154900 BIG CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, APRIL 13 TO SEPTEMBER 28, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Big Cedar Lake, South Site, near West Bend, Wisconsin.

423706088363400 DELAVAN LAKE NEAR DELAVAN, WI

LOCATION.--Lat $42^{\circ}36'27''$, long $88^{\circ}36'19''$ referenced to North American Datum of 1927, in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.28, T.2 N., R.16 E., Walworth County, WI, 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 mi² of which 2.30 mi² probably is noncontributing.

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 NGVD of 1929. Prior to Sept. 5, 1989, staff gage at bridge on North Shore Drive at same datum.

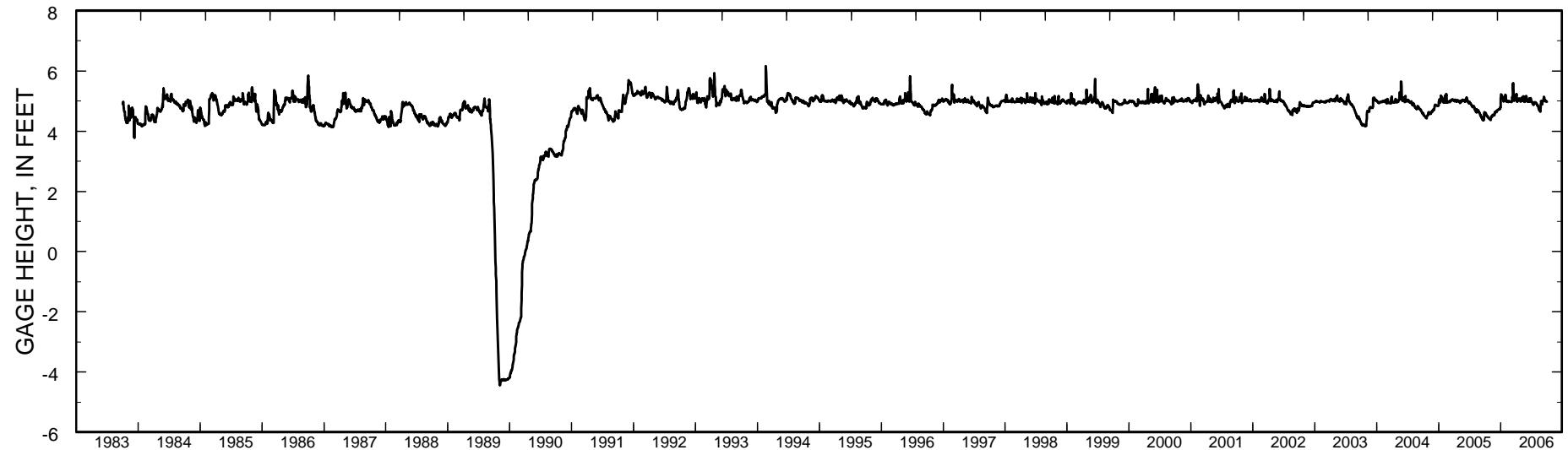
REMARKS.--Lake was ice covered from Dec. 7 to Mar. 28. Lake levels controlled by Delavan Lake Sanitary District.

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, 5.71 ft, Mar. 13; minimum, 4.34 ft, Nov. 5.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4.60	4.39	4.64	4.79	5.17	4.97	5.09	5.09	5.15	4.97	4.91	4.90
2	4.59	4.38	4.64	4.89	5.12	4.97	5.10	5.11	5.13	4.97	4.90	4.89
3	4.60	4.37	4.63	5.09	5.07	4.97	5.24	5.11	5.11	4.98	4.89	4.89
4	4.60	4.37	4.65	5.19	5.04	4.96	5.22	5.11	5.09	4.98	4.88	4.98
5	4.60	4.37	4.65	5.22	5.01	4.97	5.10	5.07	5.07	4.97	4.86	5.00
6	4.59	4.49	4.64	5.21	4.97	4.99	4.99	5.04	5.03	4.95	4.85	5.01
7	4.56	4.50	4.63	5.20	4.97	4.99	4.99	5.02	5.01	4.93	4.86	5.01
8	4.54	4.50	4.64	5.19	4.97	4.99	5.01	5.01	5.00	4.92	4.84	5.01
9	4.52	4.50	4.67	5.17	4.97	5.10	5.00	5.00	4.98	4.91	4.82	4.99
10	4.52	4.49	4.67	5.15	4.98	5.13	4.98	5.01	5.01	4.90	4.81	5.00
11	4.51	4.48	4.68	5.14	4.98	5.10	5.00	5.04	5.00	4.90	4.79	5.03
12	4.51	4.48	4.68	5.13	4.98	5.08	5.02	5.12	4.98	4.89	4.77	5.07
13	4.51	4.49	4.68	5.12	4.97	5.57	5.04	5.15	4.97	4.88	4.75	5.12
14	4.51	4.49	4.69	5.11	4.97	5.60	5.05	5.15	4.98	4.92	4.73	5.14
15	4.50	4.53	4.70	5.08	4.96	5.40	5.05	5.11	5.00	4.93	4.71	5.12
16	4.48	4.55	4.72	5.06	5.00	5.25	5.07	5.07	5.00	4.93	4.70	5.09
17	4.48	4.55	4.72	5.04	5.01	5.14	5.09	5.05	4.99	4.92	4.69	5.06
18	4.47	4.54	4.72	5.02	5.00	5.06	5.08	5.03	5.07	4.93	4.68	5.04
19	4.45	4.53	4.73	4.99	5.00	5.01	5.07	4.99	5.08	4.91	4.69	5.01
20	4.44	4.52	4.73	5.01	4.99	5.03	5.07	4.98	5.00	4.95	4.68	4.99
21	4.43	4.52	4.73	5.03	4.98	5.05	5.07	4.99	5.00	4.96	4.66	4.99
22	4.43	4.53	4.73	5.04	4.99	5.06	5.06	5.00	4.99	4.96	4.65	5.01
23	4.43	4.55	4.73	5.05	4.99	5.08	5.05	4.99	5.00	4.95	4.65	5.01
24	4.43	4.54	4.73	5.05	4.99	5.08	5.04	4.99	4.99	4.94	4.80	5.02
25	4.42	4.53	4.73	5.05	4.98	5.08	5.02	5.07	5.00	4.93	4.89	5.01
26	4.41	4.53	4.74	5.05	4.98	5.07	5.00	5.13	5.10	4.93	4.93	5.00
27	4.41	4.53	4.74	5.03	4.97	5.07	5.00	5.13	5.09	4.94	5.00	5.00
28	4.41	4.60	4.75	5.01	4.97	5.08	4.99	5.14	5.04	4.94	5.01	4.99
29	4.40	4.63	4.75	5.14	---	5.07	4.98	5.13	4.99	4.94	4.94	4.98
30	4.39	4.63	4.77	5.21	---	5.07	5.05	5.14	4.97	4.93	4.92	4.98
31	4.39	---	4.79	5.20	---	5.09	---	5.17	---	4.92	4.91	---
Mean	4.49	4.50	4.70	5.09	5.00	5.10	5.05	5.07	5.03	4.93	4.81	5.01
Max	4.60	4.63	4.79	5.22	5.17	5.60	5.24	5.17	5.15	4.98	5.01	5.14
Min	4.39	4.37	4.63	4.79	4.96	4.96	4.98	4.98	4.97	4.88	4.65	4.89



Stage hydrograph for Delavan Lake, 1983 - 2006.

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

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

DRAINAGE AREA.--41.4 mi², of which 2.3 mi² is non-contributing. Area of Delavan Lake, 2,072 acres.

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. Samples for determination of chlorophyll a concentration are collected from the top 0.5 m of the lake and analyzed by the Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, OCTOBER 5, 2005 TO MAY 25, 2006

(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Transparency Secchi disc, meters (00078)	Samplng depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, watr uS/cm (00095)	pH, watr unfltrd 25 degC (00040)	Chloro- phyll a watr unf field, solved std units (00300)	Dis- trichr. solved method, oxygen, uncorr, mg/L (32210)	Phos- phorus, water, unfltrd ug/L (00665)	Ortho- phate, water, fltrd, mg/L as P (00671)	Total water, unfltrd mg/L (00600)
OCT 2005												
05...	0815	4.60	2.10	.50	19.0	--	--	--	--	.061	--	--
13...	1335	4.51	2.70	.50	16.5	--	--	--	--	.077	--	--
18...	1340	4.47	3.40	.50	17.0	--	--	--	--	.088	--	--
26...	1110	4.41	3.20	.50	13.0	--	--	--	--	.106	--	--
NOV												
01...	1130	4.39	3.40	.50	10.0	--	--	--	--	.098	--	--
14...	1330	4.49	2.90	--	--	--	--	--	--	--	--	--
14...	1335	--	--	.50	10.0	540	8.2	9.5	5.49	.089	.058	.74
14...	1351	--	--	16.0	10.0	540	8.2	9.1	--	.090	.059	--
MAR 2006												
20...	1030	5.03	1.20	--	--	--	--	--	--	--	--	--
20...	1035	--	--	.50	3.1	531	8.4	13.7	15.9	.069	.021	.96
20...	1051	--	--	16.0	3.0	531	8.4	13.3	--	.07	.018	--
APR												
17...	1330	5.09	2.80	--	--	--	--	--	--	--	--	--
17...	1335	--	--	.50	9.9	535	8.3	11.4	6.39	.025	.009	.95
17...	1351	--	--	16.0	8.2	536	8.2	10.5	--	.043	.014	.95
26...	1350	5.00	2.40	.50	12.0	--	--	--	--	.035	--	--
MAY												
02...	1040	5.11	4.30	.50	12.5	--	--	--	--	.034	--	--
10...	1030	5.01	6.40	.50	14.5	--	--	--	--	.060	--	--
17...	1200	5.05	5.60	--	--	--	--	--	--	--	--	--
17...	1205	--	--	.50	13.6	548	8.3	9.3	2.39	.036	.015	.79
17...	1213	--	--	8.0	13.2	548	8.2	9.0	--	.033	.015	--
17...	1217	--	--	12.0	11.7	554	7.9	5.6	--	.037	.017	--
17...	1221	--	--	16.0	10.8	562	7.5	1.0	--	.078	.085	--
25...	1130	5.07	4.60	.50	15.5	--	--	--	--	.035	--	--

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

WATER-QUALITY DATA, OCTOBER 5, 2005 TO MAY 25, 2006--CONTINUED

(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Ammonia water, mg/L (00098)	Ammonia org-N, water, mg/L (00608)	Nitrite + nitrate water, mg/L (00625)	Turbdty white det ang 90+/-30 fltrd, corrctd mg/L as N (00631)	Color, light water, Pt-Co NTRU	Hard- ness, water, mg/L as CaCO3 units (63676)	Magnes- ium, water, mg/L fltrd, mg/L (00900)	Sodium, water, mg/L fltrd, mg/L (00915)	Potas- sium, water, mg/L fltrd, mg/L (00925)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00935) (90410)
OCT 2005												
05...	.50	--	--	--	--	--	--	--	--	--	--	--
13...	.50	--	--	--	--	--	--	--	--	--	--	--
18...	.50	--	--	--	--	--	--	--	--	--	--	--
26...	.50	--	--	--	--	--	--	--	--	--	--	--
NOV												
01...	.50	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	.50	.093	.66	.086	--	--	--	--	--	--	--	--
14...	16.0	--	--	--	--	--	--	--	--	--	--	--
MAR 2006												
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	.50	.012	.76	.198	--	--	--	--	--	--	--	--
20...	16.0	--	--	--	--	--	--	--	--	--	--	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	.50	E.008	.65	.301	<2.0	12	220	35.4	31.8	27.7	2.83	176
17...	16.0	.028	.65	.299	<2.0	10	220	35.5	31.9	27.8	2.81	176
26...	.50	--	--	--	--	--	--	--	--	--	--	--
MAY												
02...	.50	--	--	--	--	--	--	--	--	--	--	--
10...	.50	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	.50	.082	.68	.106	--	--	--	--	--	--	--	--
17...	8.0	--	--	--	--	--	--	--	--	--	--	--
17...	12.0	--	--	--	--	--	--	--	--	--	--	--
17...	16.0	--	--	--	--	--	--	--	--	--	--	--
25...	.50	--	--	--	--	--	--	--	--	--	--	--

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

WATER-QUALITY DATA, OCTOBER 5, 2005 TO MAY 25, 2006--CONTINUED

(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters (00098)	Chlor-	Sulfate	Fluor-	Silica,	Iron,	Mangan-	Residue on evap.	Sam- pling method, code (82398)
		ide, water, fltrd, mg/L (00940)	water, water, fltrd, mg/L (00945)	ide, water, fltrd, mg/L (00950)	water, water, fltrd, mg/L (00955)	water, water, fltrd, mg/L (01046)	ese, water, fltrd, ug/L (01056)	at 180degC wat flt ug/L (70300)	
OCT 2005									
05...	.50	--	--	--	--	--	--	--	50
13...	.50	--	--	--	--	--	--	--	50
18...	.50	--	--	--	--	--	--	--	50
26...	.50	--	--	--	--	--	--	--	50
NOV									
01...	.50	--	--	--	--	--	--	--	50
14...	--	--	--	--	--	--	--	--	--
14...	.50	--	--	--	--	--	--	--	50
14...	16.0	--	--	--	--	--	--	--	50
MAR 2006									
20...	--	--	--	--	--	--	--	--	--
20...	.50	--	--	--	--	--	--	--	50
20...	16.0	--	--	--	--	--	--	--	50
APR									
17...	--	--	--	--	--	--	--	--	--
17...	.50	60.7	25.4	.22	.3	<6	.7	304	50
17...	16.0	60.4	25.3	.23	.5	<6	.6	299	50
26...	.50	--	--	--	--	--	--	--	50
MAY									
02...	.50	--	--	--	--	--	--	--	50
10...	.50	--	--	--	--	--	--	--	50
17...	--	--	--	--	--	--	--	--	--
17...	.50	--	--	--	--	--	--	--	50
17...	8.0	--	--	--	--	--	--	--	50
17...	12.0	--	--	--	--	--	--	--	50
17...	16.0	--	--	--	--	--	--	--	50
25...	.50	--	--	--	--	--	--	--	50

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

WATER-QUALITY DATA, JUNE 1 TO SEPTEMBER 26, 2006

(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat unf uS/cm (00095)	Specif. unfltrd 25 degC (00040)	pH, water, wat unf std units (00300)	Dis- solved oxygen, method, uncorr, mg/L (00300)	Chloro- phyll a wat unf trichr. method, uncorr, ug/L (32210)	Ortho- phos- phorus, water, unfltrd mg/L (00665)	Total phosphate, water, mg/L (00671)	Nitro- gen, water, mg/L (00600)
								Chloro- phyll a wat unf trichr. method, uncorr, ug/L (32210)		Ortho- phos- phorus, water, unfltrd mg/L (00665)	Total phosphate, water, mg/L (00671)	Nitro- gen, water, mg/L (00600)	
JUN													
01...	1045	5.15	3.70	.50	22.0	--	--	--	--	.029	--	--	--
08...	1045	5.00	3.40	.50	22.5	--	--	--	--	.035	--	--	--
13...	1250	4.97	2.40	--	--	--	--	--	--	--	--	--	--
13...	1255	--	--	.50	21.8	554	8.4	10.4	15.6	.045	<.006	--	--
13...	1301	--	--	6.0	19.8	556	8.2	8.0	--	.038	E.003	--	--
13...	1306	--	--	11.0	13.1	558	7.5	2.6	--	.082	.037	--	--
13...	1311	--	--	16.0	12.4	564	7.3	.1	--	.193	.162	--	--
22...	1110	4.99	2.30	.50	21.5	--	--	--	--	.056	--	--	--
29...	1015	4.99	3.00	.50	22.0	--	--	--	--	.069	--	--	--
JUL													
06...	1345	4.95	3.70	.50	24.0	--	--	--	--	.032	--	--	--
13...	1020	4.88	2.60	.50	24.0	--	--	--	--	.050	--	--	--
20...	1350	4.95	1.80	--	--	--	--	--	--	--	--	--	--
20...	1355	--	--	.50	26.0	548	8.6	8.8	15.0	.039	E.004	--	--
20...	1401	--	--	6.0	25.7	550	8.5	7.9	--	.036	E.004	--	--
20...	1408	--	--	13.0	13.1	573	7.3	.1	--	.30	.232	--	--
20...	1411	--	--	16.0	12.6	579	7.2	.0	--	.41	.331	--	--
28...	1045	4.94	2.00	.50	26.5	--	--	--	--	.039	--	--	--
AUG													
15...	1355	4.71	1.30	--	--	--	--	--	--	--	--	--	--
15...	--	--	.50	25.8	534	8.5	8.5	12.4	.026	E.004	--	--	--
15...	1404	--	--	4.0	25.0	535	8.4	7.6	--	.038	--	--	--
15...	1407	--	--	7.0	24.8	536	8.3	6.7	--	.019	E.004	--	--
15...	1409	--	--	9.0	20.7	560	7.4	.1	--	.092	--	--	--
15...	1411	--	--	11.0	15.6	566	7.2	.1	--	.27	--	--	--
15...	1413	--	--	13.0	13.7	573	7.2	.1	--	.37	.344	--	--
15...	1415	--	--	15.0	13.1	578	7.2	.1	--	.42	--	--	--
15...	1416	--	--	16.0	12.8	591	7.1	.1	--	.53	.479	--	--
23...	1015	4.65	1.70	.50	24.8	--	--	--	--	.040	--	--	--
31...	0830	4.91	2.10	.50	22.8	--	--	--	--	.044	--	--	--
SEP													
06...	1430	5.01	1.80	.50	24.8	--	--	--	--	.040	--	--	--
14...	1030	5.14	2.60	.50	19.5	--	--	--	--	.051	--	--	--
19...	1225	5.01	1.70	--	--	--	--	--	--	--	--	--	--
19...	1225	--	1.70	--	--	--	--	--	--	--	--	--	--
19...	1230	--	--	.50	19.4	540	8.5	8.8	19.0	.076	.016	.71	--
19...	1241	--	--	11.0	19.3	540	8.4	8.2	--	.071	.008	--	--
19...	1244	--	--	14.0	13.4	600	7.3	.1	--	.45	.430	--	--
19...	1246	--	--	15.5	12.9	616	7.1	.0	--	.55	.524	--	--
26...	0940	5.00	2.10	.50	17.0	--	--	--	--	.078	--	--	--

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

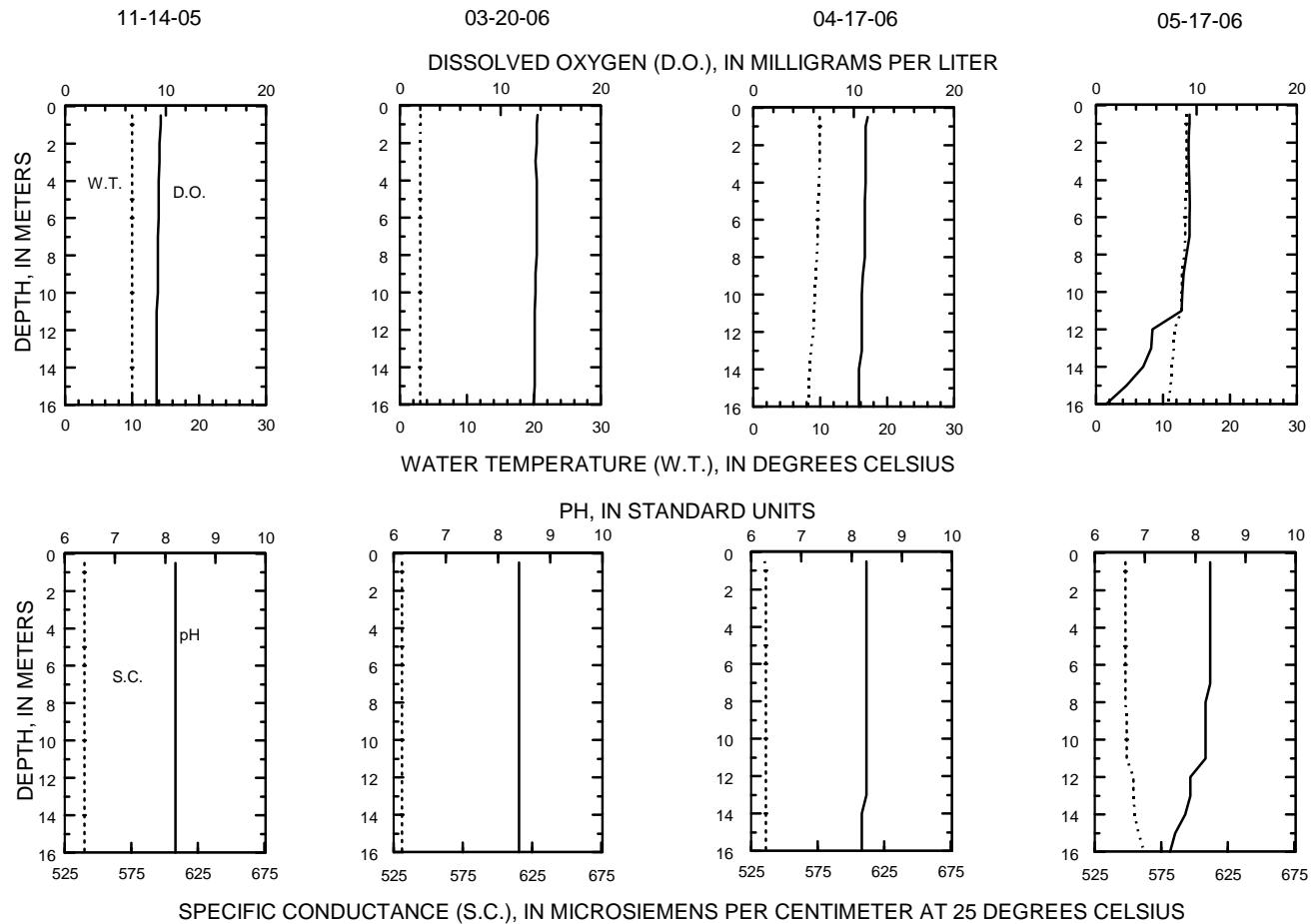
WATER-QUALITY DATA, JUNE 1 TO SEPTEMBER 26, 2006--CONTINUED

(Milligrams per liter unless otherwise indicated)

Date	Ammonia		Nitrite		Sam- pling depth, meters (98)	Sam- pling method, code (82398)
	Sam- pling depth, meters (98)	Ammonia water, mg/L (00608)	org-N, water, mg/L (00625)	nitrate water mg/L (00631)		
	+ fltrd,	+ unfltrd	+ fltrd,	+ as N		
JUN						
01...	.50	--	--	--	50	
08...	.50	--	--	--	50	
13...	--	--	--	--	--	
13...	.50	.025	.90	E.010	50	
13...	6.0	--	--	--	50	
13...	11.0	--	--	--	50	
13...	16.0	--	--	--	50	
22...	.50	--	--	--	50	
29...	.50	--	--	--	50	
JUL 2006						
06...	.50	--	--	--	50	
13...	.50	--	--	--	50	
20...	--	--	--	--	--	
20...	.50	.022	.77	<.016	50	
20...	6.0	--	--	--	50	
20...	13.0	--	--	--	50	
20...	16.0	--	--	--	50	
28...	.50	--	--	--	50	
AUG						
15...	--	--	--	--	--	
15...	.50	.018	.76	<.016	50	
15...	4.0	--	--	--	50	
15...	7.0	--	--	--	50	
15...	9.0	--	--	--	50	
15...	11.0	--	--	--	50	
15...	13.0	--	--	--	50	
15...	15.0	--	--	--	50	
15...	16.0	--	--	--	50	
23...	.50	--	--	--	50	
31...	.50	--	--	--	50	
SEP						
06...	.50	--	--	--	50	
14...	.50	--	--	--	50	
19...	--	--	--	--	--	
19...	--	--	--	--	--	
19...	.50	.015	.69	.019	50	
19...	11.0	--	--	--	50	
19...	14.0	--	--	--	50	
19...	15.5	--	--	--	50	
26...	.50	--	--	--	50	

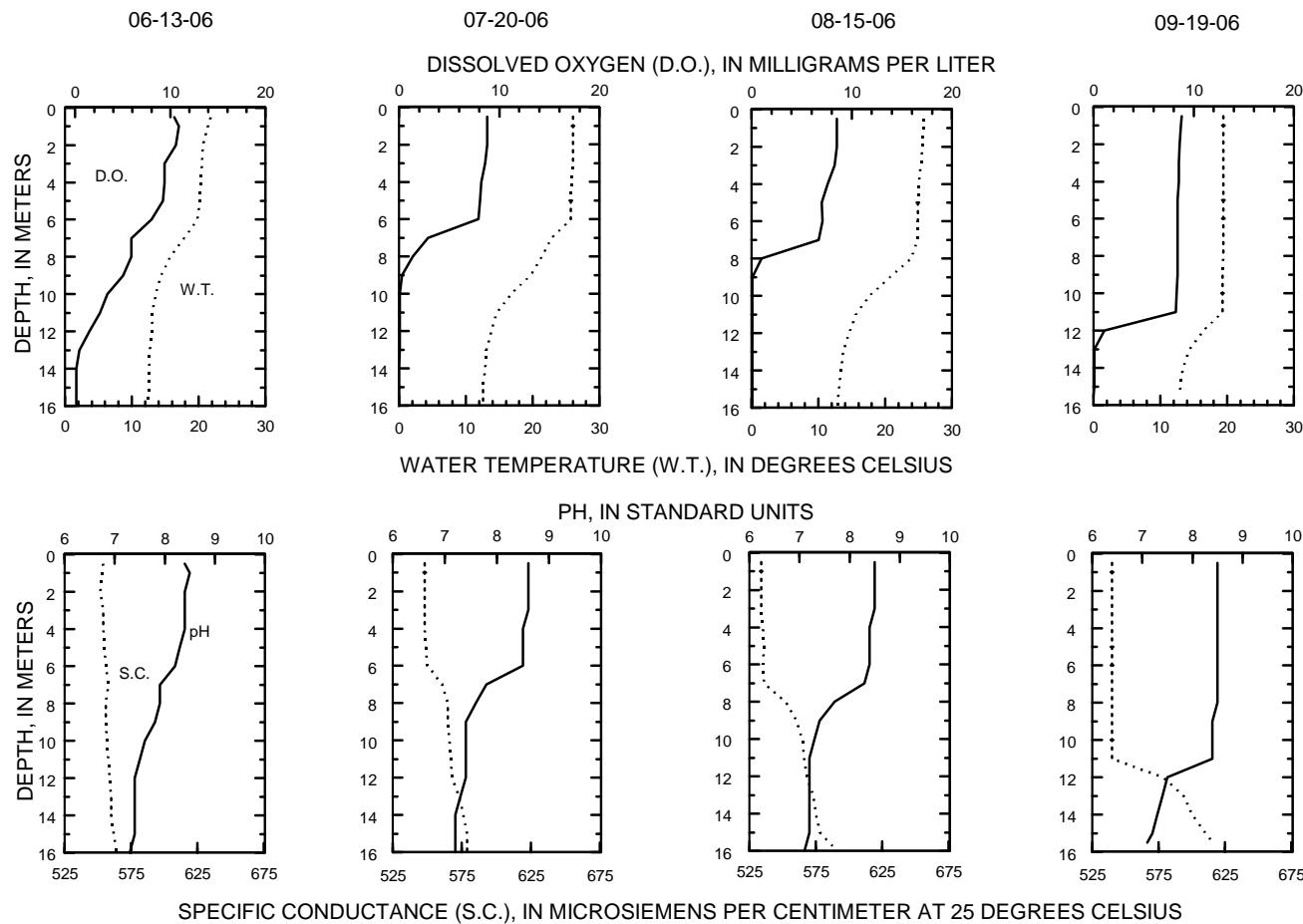
423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

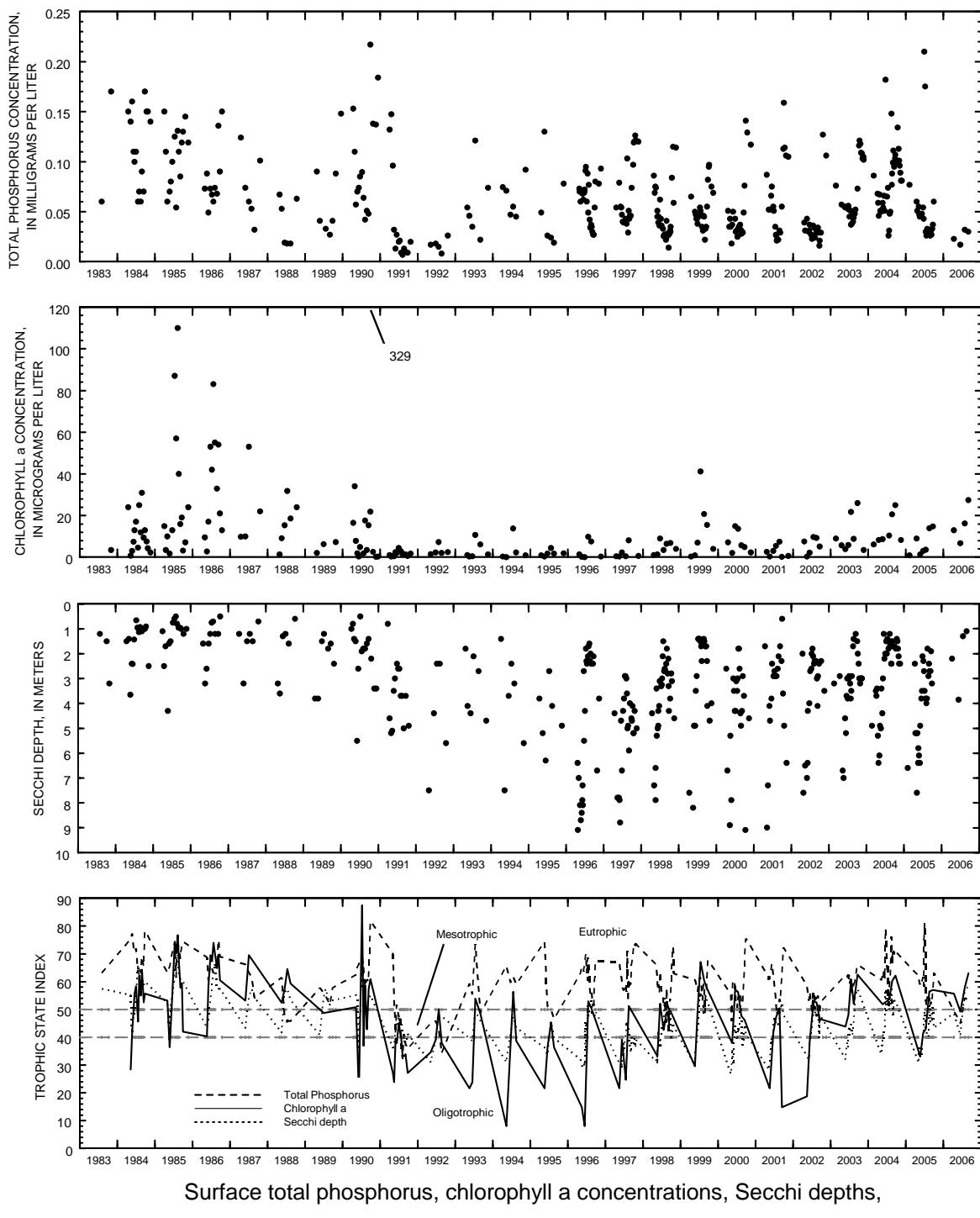
LAKE-DEPTH PROFILES, NOVEMBER 14, 2005 TO MAY 17, 2006



423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

LAKE-DEPTH PROFILES, JUNE 13 TO SEPTEMBER 19, 2006





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

LOCATION.--Lat $42^{\circ}36'59''$, long $88^{\circ}35'44''$, in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi², of which 2.3 mi² is non-contributing.

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

Date	Time	Trans- parency Secchi disc, meters (00078)
APR 2006		
17...	1430	2.80
MAY		
17...	1835	6.20
JUN		
13...	1410	3.70
JUL		
20...	1510	1.80
AUG		
15...	1540	1.30

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

LOCATION.--Lat $42^{\circ}35'26''$, long $88^{\circ}38'01''$, in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.32, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi², of which 2.3 mi² is non-contributing.

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

Date	Time	Trans- parency Secchi disc, meters (00078)
APR 2006		
17...	1415	2.90
JUN		
13...	1345	2.00
JUL		
20...	1445	1.90
AUG		
15...	1510	1.50

05404500 DEVILS LAKE NEAR BARABOO, WI

LOCATION.--Lat $43^{\circ}25'35''$, long $89^{\circ}43'40''$ referenced to North American Datum of 1927, in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.13, T.11 N., R.6 E., Sauk County, WI, Hydrologic Unit 07070004, in Devils Lake State Park, 3.5 mi south of Baraboo.

DRAINAGE AREA.--4.79 mi², 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 NGVD of 1929.

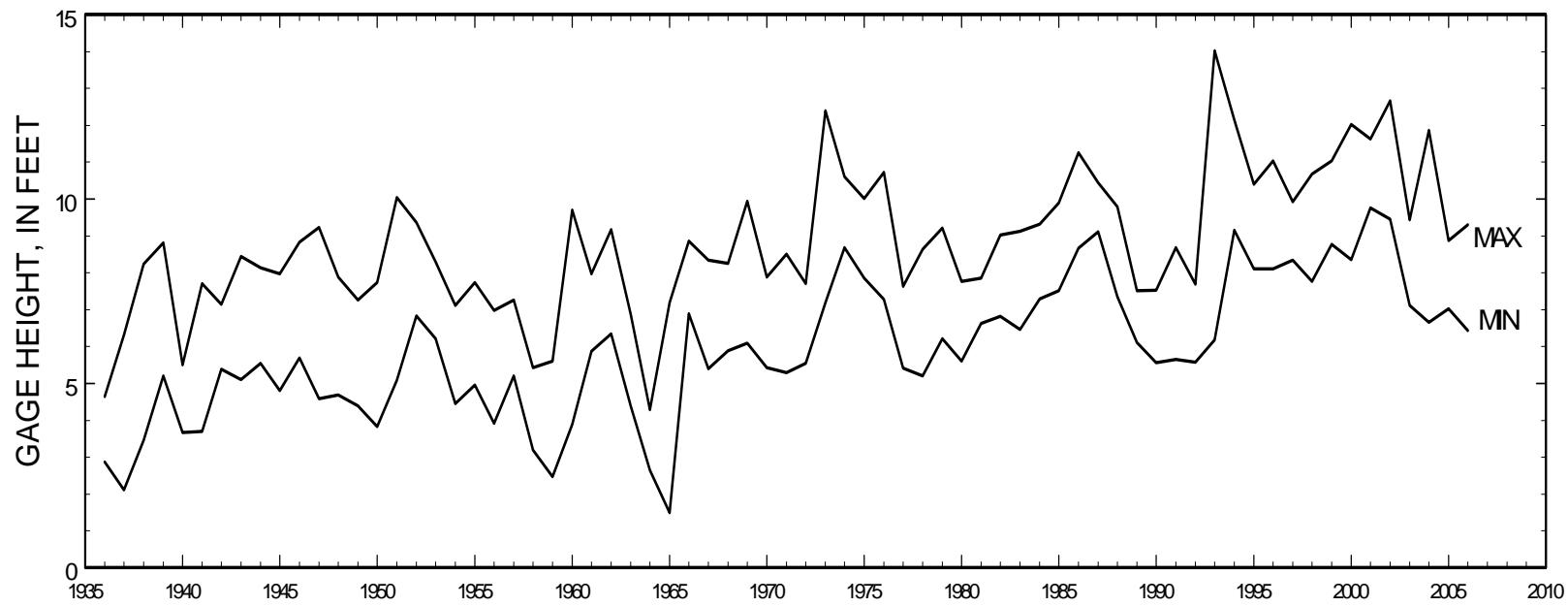
REMARKS.--Lake has no surface outlet. Water removed from lake by siphon October 1-16 and September 6-22, 24-30. Water was diverted into lake (during runoff events) during the year.

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, 9.31 ft, June 1-3; minimum recorded, 6.40 ft, Nov. 5.

**GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6.99	6.48	6.50	6.46	6.55	6.48	6.79	7.84	9.30	8.70	8.19	7.95
2	6.98	6.47	6.49	6.52	6.54	6.47	6.81	7.90	9.30	8.70	8.17	7.93
3	6.97	6.45	6.49	6.56	6.54	6.47	6.90	7.95	9.30	8.67	8.15	7.92
4	6.96	6.44	6.50	6.56	6.54	6.47	6.93	7.98	9.28	8.64	8.12	7.95
5	6.95	6.45	6.49	6.56	6.54	6.48	6.95	8.00	9.26	8.61	8.09	7.94
6	6.93	6.52	6.48	6.56	6.53	6.50	6.96	8.01	9.24	8.59	8.10	7.92
7	6.88	6.52	6.47	6.55	6.53	6.50	7.19	8.01	9.21	8.56	8.10	7.89
8	6.84	6.51	6.47	6.55	6.52	6.51	7.33	8.01	9.19	8.53	8.07	7.85
9	6.81	6.49	6.48	6.55	6.52	6.52	7.37	8.03	9.15	8.50	8.05	7.80
10	6.79	6.48	6.47	6.54	6.52	6.53	7.40	8.06	9.16	8.48	8.04	7.77
11	6.76	6.47	6.47	6.54	6.51	6.54	7.42	8.07	9.12	8.48	8.01	7.80
12	6.75	6.46	6.47	6.54	6.51	6.56	7.45	8.17	9.09	8.48	7.99	7.94
13	6.73	6.47	6.47	6.53	6.50	6.67	7.47	8.22	9.06	8.47	7.96	8.02
14	6.71	6.45	6.48	6.53	6.50	6.70	7.49	8.30	9.04	8.46	7.93	8.01
15	6.68	6.47	6.49	6.53	6.49	6.71	7.50	8.38	9.02	8.45	7.90	7.98
16	6.67	6.53	6.49	6.52	6.52	6.73	7.53	8.48	8.99	8.43	7.88	7.96
17	6.66	6.51	6.49	6.51	6.53	6.75	7.58	8.57	8.97	8.40	7.86	7.93
18	6.65	6.50	6.48	6.51	6.53	6.75	7.59	8.62	8.97	8.37	7.85	7.90
19	6.63	6.49	6.48	6.50	6.53	6.75	7.61	8.65	8.95	8.34	7.86	7.86
20	6.61	6.49	6.48	6.50	6.52	6.75	7.63	8.66	8.92	8.41	7.84	7.81
21	6.60	6.47	6.47	6.51	6.51	6.75	7.63	8.66	8.91	8.40	7.82	7.78
22	6.59	6.47	6.47	6.51	6.51	6.75	7.63	8.66	8.90	8.37	7.80	7.77
23	6.58	6.46	6.47	6.50	6.51	6.75	7.63	8.66	8.87	8.35	7.78	7.77
24	6.57	6.44	6.47	6.49	6.50	6.75	7.63	8.67	8.84	8.32	7.97	7.77
25	6.55	6.43	6.47	6.49	6.49	6.75	7.66	8.78	8.82	8.30	8.06	7.75
26	6.54	6.43	6.46	6.48	6.49	6.75	7.66	8.90	8.81	8.28	8.07	7.71
27	6.53	6.46	6.46	6.47	6.48	6.75	7.65	8.93	8.80	8.28	8.05	7.68
28	6.52	6.50	6.46	6.49	6.48	6.75	7.65	8.95	8.77	8.27	8.03	7.65
29	6.51	6.50	6.46	6.54	---	6.75	7.64	8.95	8.74	8.25	8.02	7.61
30	6.49	6.49	6.46	6.55	---	6.76	7.76	9.08	8.72	8.24	8.00	7.58
31	6.49	---	6.46	6.55	---	6.79	---	9.26	---	8.22	7.98	---
Mean	6.71	6.48	6.48	6.52	6.52	6.65	7.41	8.43	9.02	8.44	7.99	7.84
Max	6.99	6.53	6.50	6.56	6.55	6.79	7.76	9.26	9.30	8.70	8.19	8.02
Min	6.49	6.43	6.46	6.46	6.48	6.47	6.79	7.84	8.72	8.22	7.78	7.58



Annual minimum and maximum water levels for Devils Lake, 1936-2006.

423525088260400 GENEVA LAKE AT LAKE GENEVA, WI

LOCATION.--Lat $42^{\circ}35'25''$, long $88^{\circ}26'04''$ referenced to North American Datum of 1927, in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.2 N., R.17 E., Walworth County, WI, Hydrologic Unit 07120006, at Geneva Lake dam at Center Street at Lake Geneva.

DRAINAGE AREA.--28.7 mi².

PERIOD OF RECORD.--October 1997 to August 2002, December 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 862.08 ft above NGVD of 1929. Intermittent staff-gage readings January to March.

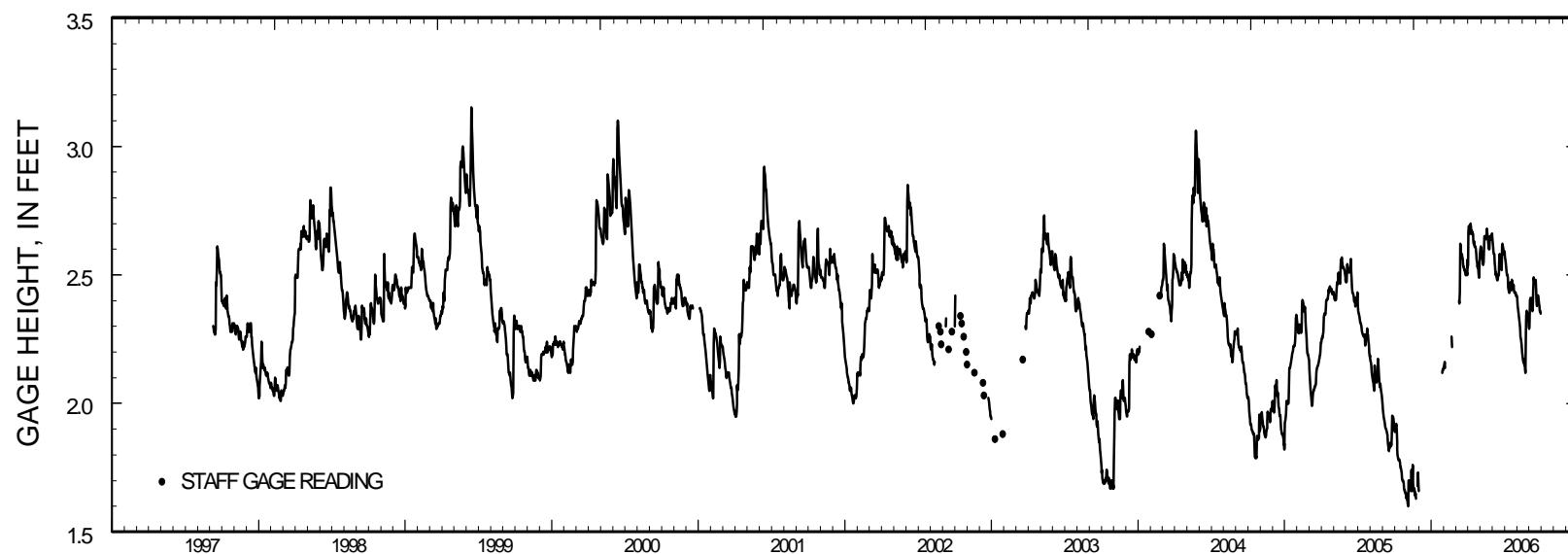
REMARKS.--Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 3.29 ft, June 13, 2000; minimum gage height, 1.44 ft, Nov. 5, 2005 (affected by wind).

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 2.96 ft, Mar. 13 (affected by wind); minimum gage height, 1.44 ft, Nov. 5 (affected by wind).

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES
[*e*, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.89	1.64	e1.66	---	2.14	---	2.53	2.58	2.65	2.59	2.42	2.30
2	1.89	1.64	---	---	2.14	---	2.54	2.60	2.63	2.57	2.41	2.29
3	1.91	1.62	---	---	2.15	---	2.67	2.61	2.61	2.56	2.38	2.30
4	1.91	1.61	---	e1.83	2.16	---	2.69	2.60	2.59	2.55	2.37	2.40
5	1.92	1.60	---	---	2.14	---	2.68	2.59	2.58	2.53	2.35	2.41
6	1.90	1.70	---	---	---	---	2.66	2.57	2.58	2.51	2.35	2.41
7	1.85	1.70	---	---	---	---	2.69	2.56	2.55	2.50	2.34	2.41
8	1.82	1.68	---	---	---	---	2.70	2.55	2.53	2.50	2.32	2.40
9	1.80	1.70	---	---	---	---	2.69	2.54	2.50	2.49	2.31	2.37
10	1.79	1.67	---	---	---	e2.40	2.67	2.55	2.51	2.45	2.29	2.36
11	1.78	1.66	---	---	---	2.39	2.66	2.61	2.50	2.44	2.26	2.39
12	1.78	1.67	---	---	2.43	2.67	2.65	2.49	2.43	2.25	2.44	
13	1.78	1.74	---	---	2.62	2.66	2.65	2.48	2.43	2.24	2.49	
14	1.78	1.66	---	---	2.60	2.66	2.65	2.48	2.46	2.22	2.48	
15	1.77	1.70	---	---	2.58	2.63	2.64	2.49	2.47	2.20	2.47	
16	1.75	1.76	---	---	2.57	2.62	2.64	2.50	2.47	2.18	2.47	
17	1.75	1.69	---	---	2.58	2.63	2.66	2.50	2.47	2.17	2.47	
18	1.74	1.66	---	---	2.57	2.61	2.68	2.55	2.45	2.16	2.48	
19	1.73	1.67	---	---	2.56	2.61	2.66	2.58	2.44	2.17	2.44	
20	1.71	1.67	---	e1.96	---	2.54	2.61	2.65	2.54	2.48	2.15	2.40
21	1.70	1.66	---	---	2.53	2.60	2.63	2.57	2.47	2.15	2.38	
22	1.70	1.64	---	---	e2.26	2.53	2.58	2.61	2.57	2.46	2.14	2.40
23	1.70	1.65	---	---	e2.22	2.52	2.56	2.60	2.53	2.45	2.12	2.42
24	1.69	1.63	---	---	2.52	2.55	2.60	2.52	2.46	2.28	2.42	
25	1.67	---	---	---	2.51	2.53	2.65	2.52	2.44	2.34	2.41	
26	1.66	---	---	---	2.50	2.54	2.65	2.61	2.43	2.36	2.39	
27	1.66	---	---	---	2.50	2.52	2.64	2.62	2.43	2.35	2.38	
28	1.65	1.68	---	---	2.50	2.50	2.64	2.61	2.43	2.34	2.36	
29	1.65	1.73	---	e2.12	---	2.51	2.49	2.65	2.60	2.43	2.35	2.36
30	1.65	1.68	---	2.13	---	2.50	2.55	2.66	2.58	2.42	2.33	2.35
31	1.63	---	---	2.13	---	2.56	---	2.66	---	2.42	2.31	---
Mean	1.76	---	---	---	---	2.61	2.62	2.55	2.47	2.28	2.40	
Max	1.92	---	---	---	---	2.70	2.68	2.65	2.59	2.42	2.49	
Min	1.63	---	---	---	---	2.49	2.54	2.48	2.42	2.12	2.29	



Stage hydrograph for Geneva Lake, 1997-2006.

423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

LOCATION.--Lat 42°33'29", long 88°32'33", in NE ¼ SE ¼ sec.12, T.1 N., R.16 E., Walworth County, Hydrologic Unit 07120006, 1.3 mi south of Williams Bay.

DRAINAGE AREA.--28.7 mi².

PERIOD OF RECORD.--April 1997 to current year.

REMARKS.--Lake sampled at deep hole at a depth of about 43 m. Water-quality analyses done by Wisconsin State Laboratory of Hygiene. Samples for determination of chlorophyll a concentration are collected from the top 0.5 m of the lake.

WATER-QUALITY DATA, NOVEMBER 14, 2005 TO JUNE 13, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat unf us/cm (00095)	Unfltrd field, 25 degC (00040)	Dis- solved oxygen, std units (00400)	Chloro- phyll a wat unf mg/L (00300)	Ortho- phate, Phorus, water, unfltrd method, uncorr, ug/L (32210)	Chloro- phyll a wat unf mg/L (00665)	Ortho- phate, water, unfltrd mg/L (00671)
NOV 2005												
14...	0940	1.66	5.60	--	--	--	--	--	--	--	--	--
14...	0945	--	--	.50	10.8	503	8.1	8.1	2.78	.057	.006	
14...	1016	--	--	31.0	10.2	506	7.8	6.2	--	.025	--	
14...	1020	--	--	35.0	9.1	508	7.6	2.3	--	.091	--	
14...	1027	--	--	42.0	8.9	508	7.5	1.0	--	.104	--	
APR 2006												
17...	1100	2.63	5.60	--	--	--	--	--	--	--	--	--
17...	1105	--	--	.50	6.1	491	8.2	13.2	2.58	.008	.002	
17...	1147	--	--	42.0	5.2	491	8.3	13.0	--	.009	.003	
JUN												
13...	1025	2.48	8.80	--	--	--	--	--	--	--	--	--
13...	1030	--	--	.50	20.0	510	8.4	9.3	.440	.010	.003	
13...	1038	--	--	8.0	19.3	510	8.3	9.4	--	.005	--	
13...	1051	--	--	21.0	8.0	504	8.1	10.0	--	.007	--	
13...	1104	--	--	34.0	6.9	506	7.9	8.8	--	.005	--	
13...	1110	--	--	40.0	6.8	506	7.8	8.2	--	.007	--	
13...	1113	--	--	43.0	6.6	508	7.7	6.7	--	.012	--	

423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

WATER-QUALITY DATA, NOVEMBER 14, 2005 TO JUNE 13, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Ammonia		Nitrite		Appar- ent		Magnes- ium, mg/L	Sodium, mg/L	Potas- sium, mg/L
		Ammonia water, fltrd, (00098)	org-N, water, unfltrd (00608)	nitrate water, fltrd, (00625)	Tur- bidity, as N (00631)	Pt-Co NTU (00076)	Hard- ness, water, unfltrd mg/L as units (00081)	Calcium water, CaCO ₃ mg/L (00900)	filtrd, water, mg/L (00915)	filtrd, water, mg/L (00925)
NOV 2005										
14...	--	--	--	--	--	--	--	--	--	--
14...	.50	<.015	.47	<.019	--	--	--	--	--	--
14...	31.0	--	--	--	--	--	--	--	--	--
14...	35.0	--	--	--	--	--	--	--	--	--
14...	42.0	--	--	--	--	--	--	--	--	--
APR 2006										
17...	--	--	--	--	--	--	--	--	--	--
17...	.50	<.015	.30	<.019	<1.0	5	220	33.8	34.1	18.6
17...	42.0	<.015	.37	<.019	<1.0	5	230	34.0	34.5	19.0
JUN										
13...	--	--	--	--	--	--	--	--	--	--
13...	.50	.019	.31	<.019	--	--	--	--	--	--
13...	8.0	--	--	--	--	--	--	--	--	--
13...	21.0	--	--	--	--	--	--	--	--	--
13...	34.0	--	--	--	--	--	--	--	--	--
13...	40.0	--	--	--	--	--	--	--	--	--
13...	43.0	--	--	--	--	--	--	--	--	--

423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

WATER-QUALITY DATA, NOVEMBER 14, 2005 TO JUNE 13, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Sam- pling end pt, lab,	ANC, wat unf fixed	Chlor- ide, water,	Sulfate fltrd,	Silica, water,	Iron, water,	Mangan- ese, water,	Residue on at 180degC		Sam- pling method, code
									evap.	180degC	
				CaCO ₃	mg/L	mg/L	mg/L	ug/L	ug/L	mg/L	
				(00098)	(00417)	(00940)	(00945)	(00955)	(01046)	(01056)	(70300)
											(82398)
NOV 2005											
14...	--	--	--	--	--	--	--	--	--	--	
14...	.50	--	--	--	--	--	--	--	--	50	
14...	31.0	--	--	--	--	--	--	--	--	50	
14...	35.0	--	--	--	--	--	--	--	--	50	
14...	42.0	--	--	--	--	--	--	--	--	50	
APR 2006											
17...	--	--	--	--	--	--	--	--	--	--	
17...	.50	184	39.0	31.3	1.79	<100	<.5	294	294	50	
17...	42.0	183	38.8	31.2	1.84	<100	<.5	294	294	50	
JUN											
13...	--	--	--	--	--	--	--	--	--	--	
13...	.50	--	--	--	--	--	--	--	--	50	
13...	8.0	--	--	--	--	--	--	--	--	50	
13...	21.0	--	--	--	--	--	--	--	--	50	
13...	34.0	--	--	--	--	--	--	--	--	50	
13...	40.0	--	--	--	--	--	--	--	--	50	
	43.0	--	--	--	--	--	--	--	--	50	

423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

WATER-QUALITY DATA, JULY 20 TO SEPTEMBER 21, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Trans-		Sam-	Temper-	conduc-	water,	unfltrd	Diss-	Chloro-		Ortho-	Total	
		Gage	Secchi							phyll a	wat unf	Phos-	phate,	nitro-
		height,	disc,	depth,	water,	deg C	us/cm	25 degC	std	oxygen,	uncorr,	water,	water,	gen,
		(00065)	(00078)	(00098)	(00010)	(00095)	(00400)	(00040)	(00300)	(mg/L)	(00300)	(32210)	mg/L	mg/L
JUL 2006														
20...	1130	2.48	5.90	--	--	--	--	--	--	--	--	--	--	--
20...	1135	--	--	.50	25.0	515	8.3	8.3	2.72	.011	<.002	--	--	--
20...	1142	--	--	7.0	24.9	515	8.3	8.3	--	.018	--	--	--	--
20...	1155	--	--	20.0	8.8	508	8.0	8.8	--	.015	--	--	--	--
20...	1209	--	--	34.0	7.0	509	7.8	6.7	--	.015	--	--	--	--
20...	1214	--	--	39.0	6.9	511	7.7	4.5	--	.025	--	--	--	--
20...	1218	--	--	43.0	6.8	514	7.6	3.3	--	.034	--	--	--	--
AUG														
15...	1055	2.20	6.40	--	--	--	--	--	--	--	--	--	--	--
15...	1100	--	--	.50	25.1	515	8.3	7.6	1.15	.013	<.002	--	--	--
15...	1109	--	--	9.0	24.8	515	8.3	7.5	--	.012	--	--	--	--
15...	1119	--	--	19.0	9.1	504	7.9	6.8	--	.012	--	--	--	--
15...	1133	--	--	33.0	7.2	506	7.8	5.1	--	.017	--	--	--	--
15...	1138	--	--	38.0	6.9	506	7.7	3.8	--	.024	--	--	--	--
15...	1142	--	--	42.0	6.8	510	7.5	1.3	--	.065	--	--	--	--
SEP														
21...	1405	2.38	5.90	--	--	--	--	--	--	--	--	--	--	--
21...	1410	--	--	.50	18.9	510	8.3	8.5	4.44	.014	.002	--	--	--
21...	1421	--	--	11.0	18.7	509	8.3	8.2	--	.011	<.002	--	--	--
21...	1427	--	--	17.0	10.0	510	7.9	5.7	--	.012	.003	--	--	--
21...	1435	--	--	25.0	8.2	509	7.9	5.5	--	.009	.004	.47	--	--
21...	1443	--	--	33.0	7.3	510	7.6	3.3	--	.027	.019	.70	--	--
21...	1453	--	--	43.0	6.9	516	7.6	.0	--	.099	.082	--	--	--

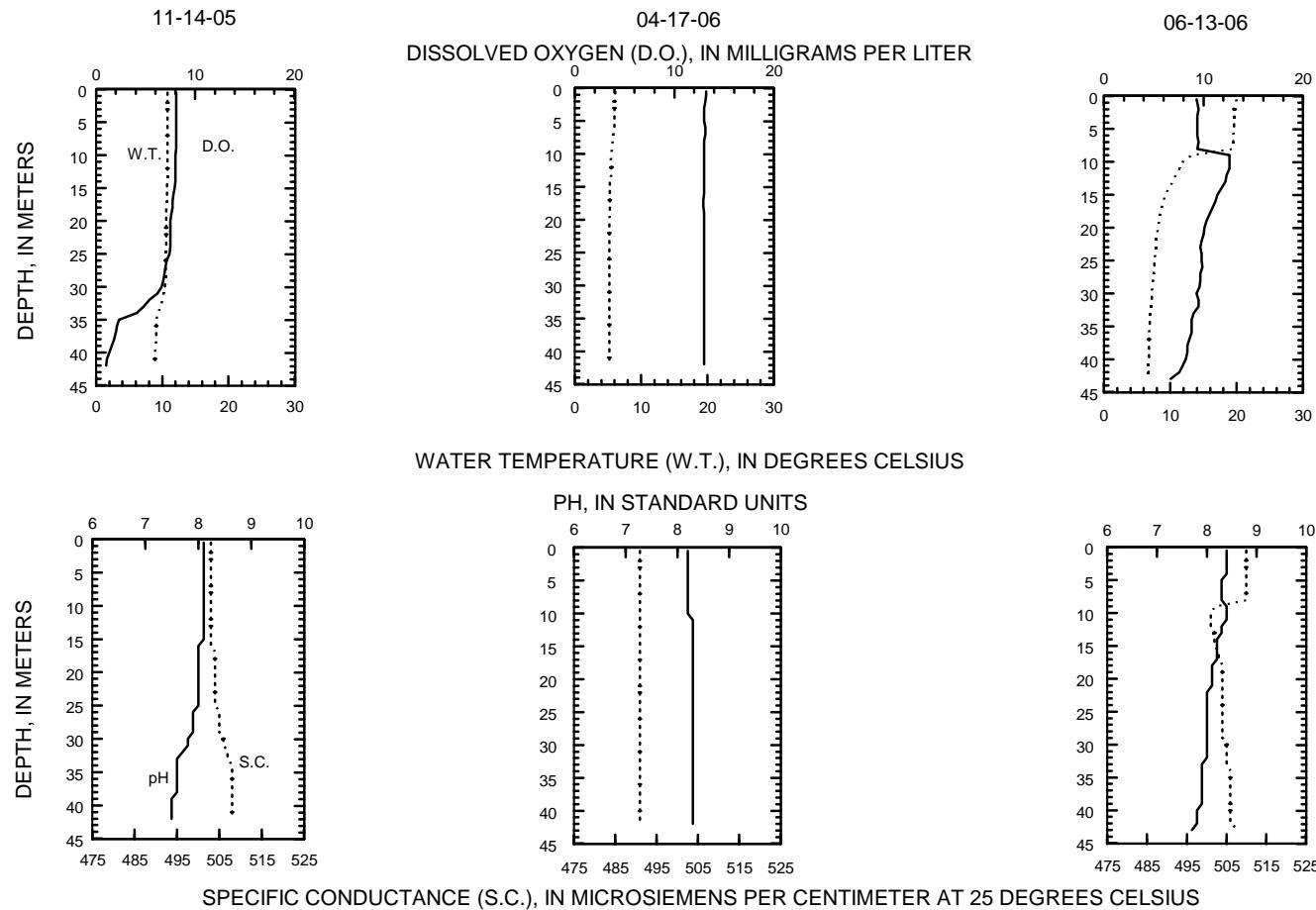
423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

WATER-QUALITY DATA, JULY 20 TO SEPTEMBER 21, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Ammonia		Nitrite		Sam- pling depth, meters (00098)	Sam- pling method, code (82398)
	Ammonia water, filtrd,	org-N, unfiltrd	+	+		
	mg/L as N (00608)	mg/L as N (00625)	water filtrd,	nitrate mg/L as N (00631)		
JUL 2006						
20...	--	--	--	--	--	
20...	.50	.018	.41	<.019	50	
20...	7.0	--	--	--	50	
20...	20.0	--	--	--	50	
20...	34.0	--	--	--	50	
20...	39.0	--	--	--	50	
20...	43.0	--	--	--	50	
AUG						
15...	--	--	--	--	--	
15...	.50	<.015	.50	<.019	50	
15...	9.0	--	--	--	50	
15...	19.0	--	--	--	50	
15...	33.0	--	--	--	50	
15...	38.0	--	--	--	50	
15...	42.0	--	--	--	50	
SEP						
21...	--	--	--	--	--	
21...	.50	<.015	.53	<.019	50	
21...	11.0	<.015	.45	<.019	50	
21...	17.0	<.015	.43	<.019	50	
21...	25.0	<.015	.44	.032	50	
21...	33.0	<.015	.50	.201	50	
21...	43.0	.228	.85	<.019	50	

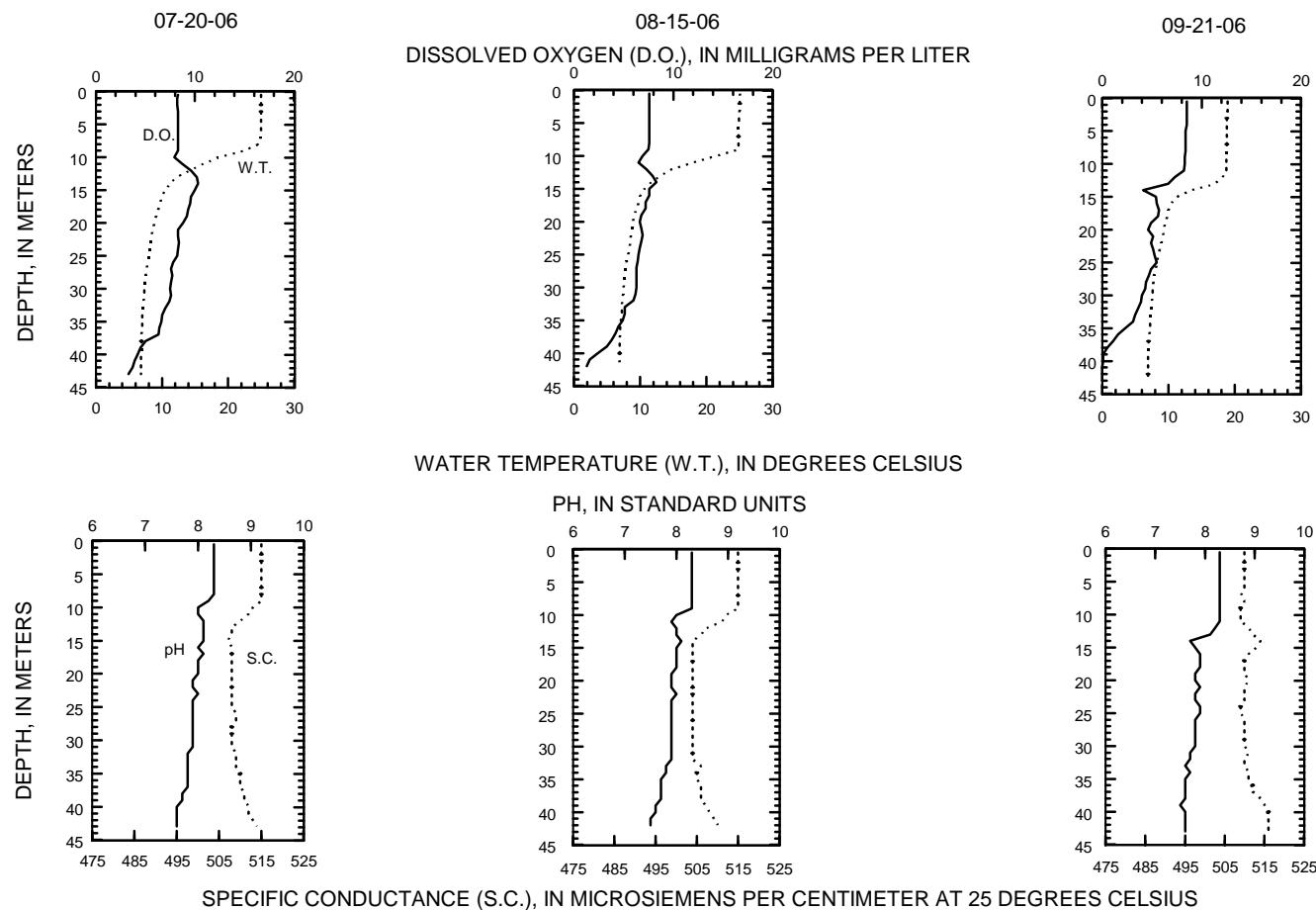
423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

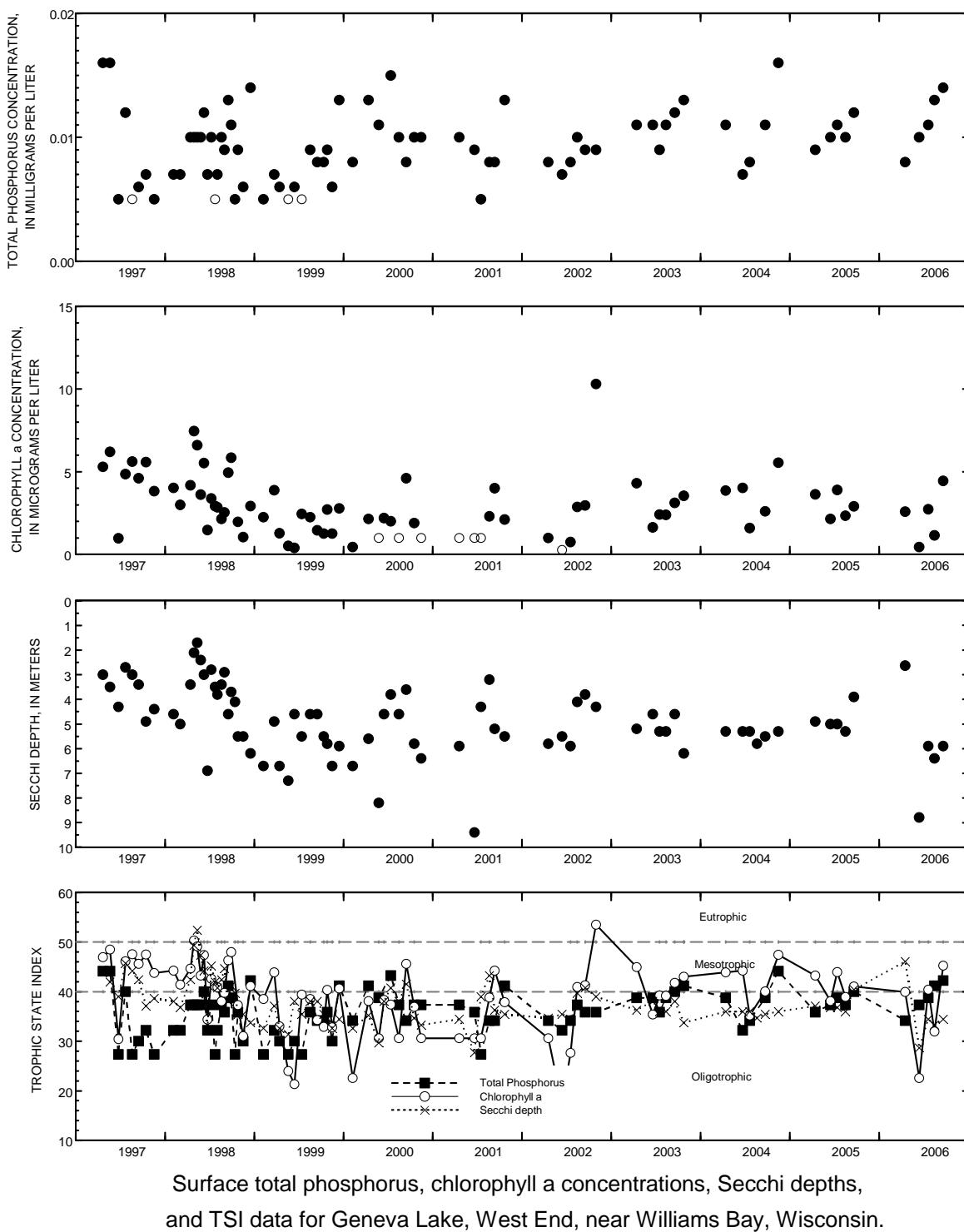
LAKE-DEPTH PROFILES, NOVEMBER 14, 2005 TO JUNE 13, 2006



423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

LAKE-DEPTH PROFILES, JULY 20 TO SEPTEMBER 21, 2006





(Open circles on the first two plots indicate laboratory detection limit for selected analyses.
Actual concentrations for these particular analyses are less than the plotted circles.)

434928088553601 GREEN LAKE AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, WI

LOCATION.--Lat $43^{\circ}49'28''$, long $88^{\circ}55'36''$ referenced to North American Datum of 1927, in NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.27, T.16 N., R.13 E., Green Lake County, WI, Hydrologic Unit 04030201, on left bank at downstream side of County Trunk Highway A, 2.3 mi southeast of Green Lake.

DRAINAGE AREA.--103 mi².

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

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

REMARKS.--Lake level regulated by dam at outlet at Green Lake. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded gage height, 7.64 ft, Jun 17, 2004; minimum recorded, 5.27 ft, Nov. 5, 2005.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 7.11 ft, May 16, 17; minimum recorded gage height, 5.27 ft, Nov. 5.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5.57	5.35	5.54	5.52	5.79	5.80	6.30	6.84	6.86	6.46	6.32	6.04
2	5.57	5.33	5.54	5.57	5.78	5.83	6.31	6.87	6.83	6.47	6.32	6.03
3	5.57	5.32	5.53	5.60	5.80	5.83	6.37	6.88	6.79	6.45	6.32	6.03
4	5.58	5.32	5.55	5.62	5.82	5.83	6.39	6.88	6.78	6.42	6.30	6.02
5	5.59	5.31	5.54	5.64	5.83	5.84	6.38	6.87	6.76	6.40	6.27	6.01
6	5.60	5.45	5.52	5.64	5.83	5.86	6.39	6.85	6.73	6.39	6.31	6.00
7	5.54	5.45	5.51	5.65	5.81	5.86	6.48	6.85	6.74	6.38	6.31	6.00
8	5.51	5.44	5.51	5.64	5.80	5.87	6.53	6.84	6.72	6.37	6.29	6.00
9	5.50	5.51	5.52	5.65	5.80	5.89	6.55	6.84	6.67	6.35	6.27	5.97
10	5.49	5.43	5.51	5.65	5.80	5.90	6.57	6.87	6.63	6.31	6.24	5.95
11	5.48	5.42	5.50	5.65	5.81	5.93	6.59	6.94	6.62	6.30	6.22	5.97
12	5.48	5.42	5.49	5.65	5.81	5.98	6.63	7.05	6.59	6.31	6.20	6.02
13	5.48	5.53	5.49	5.66	5.80	6.08	6.64	7.07	6.57	6.31	6.19	6.04
14	5.49	5.42	5.49	5.65	5.80	6.11	6.65	7.09	6.53	6.32	6.20	6.04
15	5.48	5.43	5.52	5.65	5.80	6.12	6.66	7.10	6.51	6.33	6.17	6.04
16	5.45	5.56	5.54	5.65	5.83	6.14	6.66	7.11	6.51	6.32	6.14	6.03
17	5.46	5.49	5.53	5.67	5.85	6.15	6.67	7.10	6.50	6.32	6.13	6.04
18	5.45	5.48	5.52	5.67	5.85	6.16	6.67	7.09	6.50	6.30	6.12	6.06
19	5.43	5.48	5.51	5.65	5.84	6.17	6.68	7.06	6.49	6.28	6.11	6.02
20	5.42	5.49	5.49	5.65	5.83	6.17	6.69	7.05	6.46	6.29	6.10	5.99
21	5.40	5.48	5.49	5.66	5.83	6.17	6.70	7.01	6.47	6.28	6.10	5.96
22	5.41	5.46	5.49	5.66	5.82	6.18	6.73	6.99	6.49	6.28	6.07	5.95
23	5.39	5.48	5.49	5.67	5.82	6.19	6.74	6.95	6.46	6.30	6.05	5.97
24	5.38	5.49	5.50	5.68	5.81	6.19	6.74	6.92	6.45	6.31	6.06	5.99
25	5.37	5.45	5.50	5.65	5.82	6.20	6.76	6.92	6.43	6.30	6.11	5.98
26	5.37	5.44	5.50	5.65	5.81	6.21	6.77	6.92	6.52	6.32	6.12	5.97
27	5.36	5.47	5.50	5.65	5.81	6.22	6.77	6.89	6.51	6.31	6.11	5.97
28	5.36	5.52	5.51	5.65	5.81	6.23	6.76	6.93	6.50	6.31	6.10	5.95
29	5.35	5.56	5.51	5.74	---	6.24	6.76	6.92	6.49	6.30	6.10	5.94
30	5.35	5.54	5.50	5.77	---	6.24	6.80	6.91	6.47	6.31	6.07	5.94
31	5.36	---	5.52	5.77	---	6.29	---	6.88	---	6.32	6.06	---
Mean	5.46	5.45	5.51	5.65	5.81	6.06	6.61	6.95	6.59	6.34	6.18	6.00
Max	5.60	5.56	5.55	5.77	5.85	6.29	6.80	7.11	6.86	6.47	6.32	6.06
Min	5.35	5.31	5.49	5.52	5.78	5.80	6.30	6.84	6.43	6.28	6.05	5.94

434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

LOCATION.--Lat 43°47'56", long 89°02'05", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.2, T.15 N., R.12 E., Green Lake County, Hydrologic Unit 04030201, about 5 miles southwest of the City of Green Lake.

PERIOD OF RECORD.--May 2004 to current year. Lake sampled by Wisconsin Department of Natural Resources prior to 2004.

REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene. A "*" indicates data that were collected by Mary Jane Bumby, Self-Help Volunteer.

WATER-QUALITY DATA, OCTOBER 1, 2005 TO SEPTEMBER 28, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans-parency Secchi disc, meters (00078)	Sam-pling depth, meters (00098)	Temper-ature, water, deg C (00010)	Conduc-tance, wat er, uS/cm (00095)	Specif. conduc-tance, 25 degC (00400)	water, unf ltrd	water, field, std units (00400)	Dis-solved oxygen, mg/L (00300)	Chloro-phyll a, wat unf	Phos-phorus, trichr. method, uncorr, ug/L (32210)	Ortho-phate, water, unfltrd mg/L (00665)	Total water, filtrd mg/L (00671)	Nitro-gen, water, unfltrd mg/L (00600)
OCT 2005															
*01...	1200	5.57	6.10	.10	18.9	--	--	--	--	--	--	--	--	--	
*18...	1200	5.45	6.70	.10	16.7	--	--	--	--	--	--	--	--	--	
MAY 2006															
03...	0935	6.88	1.90	--	--	--	--	--	--	--	--	--	--	--	
03...	0940	--	--	.50	8.2	485	8.5	14.8	16.7	.040	.004	.61			
03...	1048	--	--	68.0	4.3	489	8.1	12.8	--	.037	--	--			
*22...	1200	6.99	1.10	.10	13.9	--	--	--	--	--	--	--	--	--	
JUN															
*01...	----	--	1.70	--	--	--	--	--	--	--	--	--	--	--	
12...	1010	6.59	9.00	--	--	--	--	--	--	--	--	--	--	--	
12...	1015	--	--	.50	19.8	487	8.6	9.1	1.00	.013	--	--			
12...	1123	--	--	68.0	4.4	575	6.8	.0	--	.118	--	--			
*20...	1005	6.46	10.7	.10	21.1	--	--	--	--	--	--	--	--	--	
*27...	1050	6.51	7.90	.10	21.1	--	--	--	--	--	--	--	--	--	
JUL															
*02...	1200	6.47	6.70	.10	22.2	--	--	--	--	--	--	--	--	--	
*06...	1200	6.39	5.80	.10	23.9	--	--	--	--	--	--	--	--	--	
*15...	1200	6.33	3.50	.10	26.7	--	--	--	--	--	--	--	--	--	
18...	1000	6.30	4.10	--	--	--	--	--	--	--	--	--	--	--	
18...	1005	--	--	.50	25.1	483	8.5	9.0	2.03	.015	--	--			
18...	1112	--	--	67.0	4.5	506	7.4	.8	--	.215	--	--			
*23...	1200	6.30	4.30	.10	25.6	--	--	--	--	--	--	--	--	--	

434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

WATER-QUALITY DATA, OCTOBER 1, 2005 TO SEPTEMBER 28, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	Time	Trans-			Sam-	Temper-	Specif.	pH,	Chloro-			Ortho-	Total	
		Gage	parency	Secchi					wat	unf	Phos-	phate,	nitro-	
		height,	disc,	depth,	meters	water,	deg C	us/cm	unfltrd	Dis-	trichr.	phorus,	water,	gen,
		(00065)	(00078)	(00098)	(00010)	(00095)	(00040)	(00400)	(00300)	solved	method,	water,	fltrd,	water,
										oxygen,	uncorr,	unfltrd	mg/L	unfltrd
										mg/L	ug/L	mg/L	as P	mg/L
										(00300)	(32210)	(00665)	(00671)	(00600)
AUG 2006														
*03...	----	--	3.20	--	--	--	--	--	--	--	--	--	--	--
*12...	1200	6.20	3.70	.10	25.6	--	--	--	--	--	--	--	--	--
16...	1045	6.14	3.90	--	--	--	--	--	--	--	--	--	--	--
16...	1050	--	--	.50	24.7	471	8.5	8.5	1.42	.011	.003	--	--	--
16...	1110	--	--	20.0	6.6	493	8.1	8.5	--	.009	--	--	--	--
16...	1158	--	--	68.0	4.5	509	7.3	.0	--	.279	--	--	--	--
16...	1200	--	4.30	.10	25.6	--	--	--	--	--	--	--	--	--
20...	1200	6.10	4.10	.10	24.7	--	--	--	--	--	--	--	--	--
SEP														
*01...	1200	6.04	4.30	.10	22.2	--	--	--	--	--	--	--	--	--
*06...	----	--	5.00	--	--	--	--	--	--	--	--	--	--	--
*14...	1335	6.04	4.30	.10	20.0	--	--	--	--	--	--	--	--	--
20...	1300	5.99	5.00	--	--	--	--	--	--	--	--	--	--	--
20...	1305	--	--	.50	17.5	478	8.6	9.0	7.21	.014	--	--	--	--
20...	1322	--	--	17.0	8.1	499	8.0	5.5	--	.012	--	--	--	--
20...	1411	--	--	66.0	4.6	517	7.5	.1	--	.311	--	--	--	--
*28...	1310	5.95	5.20	.10	14.4	--	--	--	--	--	--	--	--	--

434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

WATER-QUALITY DATA, OCTOBER 1, 2005 TO SEPTEMBER 28, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	(00098)	Ammonia	Nitrite	Appar- ent							
			Ammonia water, mg/L (00608)	org-N, water, mg/L (00625)	nitrate water mg/L (00631)	Tur- bidity, NTU (00076)	Pt-Co	color, Hard- ness, water, mg/L (00081)	Calcium water, mg/L (00900)	Magnes- ium water, mg/L (00915)	Sodium water, mg/L (00925)	Potas- sium, water, mg/L (00930)
OCT 2005												
01...	.10	--	--	--	--	--	--	--	--	--	--	--
18...	.10	--	--	--	--	--	--	--	--	--	--	--
MAY 2006												
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	.50	<.015	.51	.101	<1.0	5	230	35.1	34.9	18.5	3.00	
03...	68.0	--	--	--	--	--	--	--	--	--	--	
22...	.10	--	--	--	--	--	--	--	--	--	--	
JUN												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	.50	--	--	--	--	--	--	--	--	--	--	--
12...	68.0	--	--	--	--	--	--	--	--	--	--	--
20...	.10	--	--	--	--	--	--	--	--	--	--	--
27...	.10	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	.10	--	--	--	--	--	--	--	--	--	--	--
06...	.10	--	--	--	--	--	--	--	--	--	--	--
15...	.10	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	.50	--	--	--	--	--	--	--	--	--	--	--
18...	67.0	--	--	--	--	--	--	--	--	--	--	--
23...	.10	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	.10	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	.50	<.015	.49	<.019	--	--	--	--	--	--	--	--
16...	20.0	--	--	--	--	--	--	--	--	--	--	--
16...	68.0	--	--	--	--	--	--	--	--	--	--	--
16...	.10	--	--	--	--	--	--	--	--	--	--	--
20...	.10	--	--	--	--	--	--	--	--	--	--	--
SEP												
01...	.10	--	--	--	--	--	--	--	--	--	--	--
14...	.10	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	.50	--	--	--	--	--	--	--	--	--	--	--
20...	17.0	--	--	--	--	--	--	--	--	--	--	--
20...	66.0	--	--	--	--	--	--	--	--	--	--	--
28...	.10	--	--	--	--	--	--	--	--	--	--	--

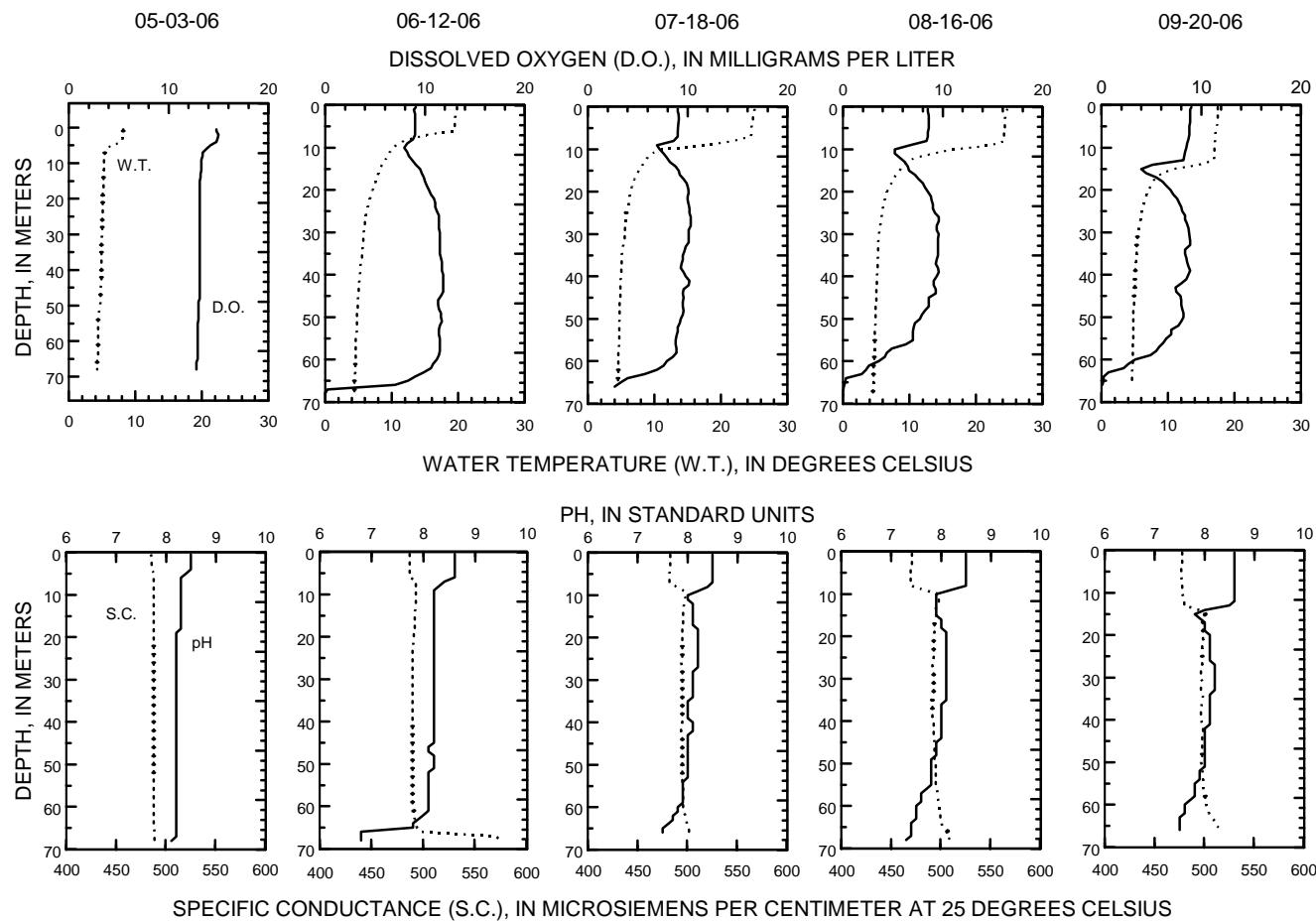
434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

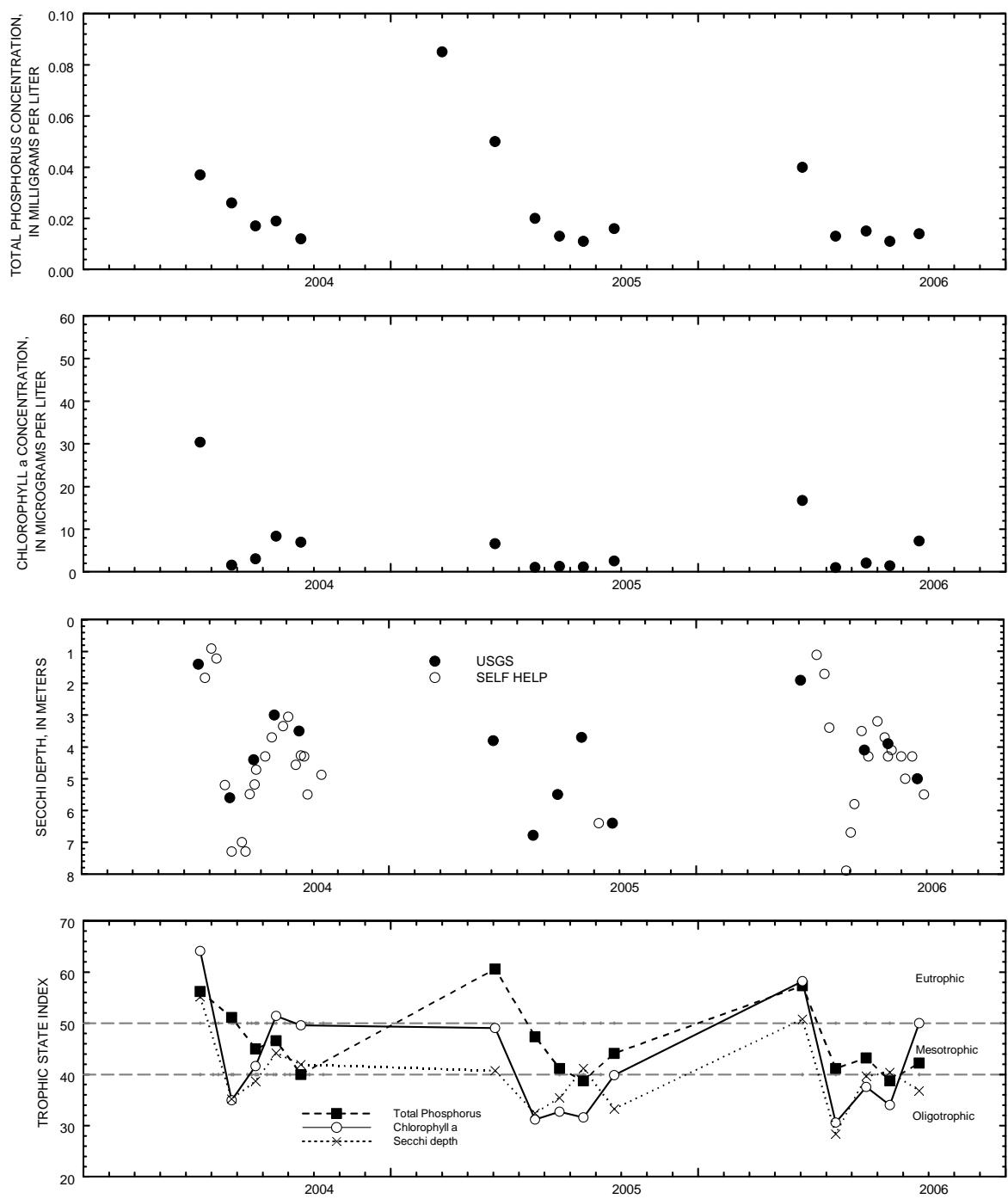
WATER-QUALITY DATA, OCTOBER 1, 2005 TO SEPTEMBER 28, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	ANC,	Residue							Sam-
	wat unf	fixed	Chlor-	Sulfate	Silica,	Iron,	Mangan-	on evap.	
	Sam-	end pt,	ide,	water,	water,	water,	ese,	at	Sam-
	pling	lab,	water,	fltrd,	fltrd,	fltrd,	fltrd,	180degC	pling
	depth,	mg/L as	CaCO ₃	mg/L	mg/L	mg/L	ug/L	wat filt	method,
	meters	(00098)	(00417)	(00940)	(00945)	(00955)	(01046)	(01056)	(70300)
									code
									(82398)
OCT 2005									
01...	.10	--	--	--	--	--	--	--	--
18...	.10	--	--	--	--	--	--	--	--
MAY 2006									
03...	--	--	--	--	--	--	--	--	--
03...	.50	183	35.3	29.8	<.022	<100	<.5	282	50
03...	68.0	--	--	--	--	--	--	--	50
22...	.10	--	--	--	--	--	--	--	--
JUN									
12...	--	--	--	--	--	--	--	--	--
12...	.50	--	--	--	--	--	--	--	50
12...	68.0	--	--	--	--	--	--	--	50
20...	.10	--	--	--	--	--	--	--	--
27...	.10	--	--	--	--	--	--	--	--
JUL									
02...	.10	--	--	--	--	--	--	--	--
06...	.10	--	--	--	--	--	--	--	--
15...	.10	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	.50	--	--	--	--	--	--	--	50
18...	67.0	--	--	--	--	--	--	--	50
23...	.10	--	--	--	--	--	--	--	--
AUG									
12...	.10	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	.50	--	--	--	--	--	--	--	50
16...	20.0	--	--	--	--	--	--	--	50
16...	68.0	--	--	--	--	--	--	--	50
16...	.10	--	--	--	--	--	--	--	--
20...	.10	--	--	--	--	--	--	--	--
SEP									
01...	.10	--	--	--	--	--	--	--	--
14...	.10	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	.50	--	--	--	--	--	--	--	50
20...	17.0	--	--	--	--	--	--	--	50
20...	66.0	--	--	--	--	--	--	--	50
28...	.10	--	--	--	--	--	--	--	--

434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

LAKE-DEPTH PROFILES, MAY 3 TO SEPTEMBER 20, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Green Lake, Deep Hole, near Green Lake, Wisconsin.

434928088570000 GREEN LAKE AT EAST END NEAR GREEN LAKE, WI

LOCATION.--Lat 43°49'28", long 88°57'00", in SE ¼ SE ¼ sec.28, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, about one mile southeast of the City of Green Lake.

PERIOD OF RECORD.--May 2004 current year. Lake sampled by Wisconsin Department of Natural Resources prior to 2004.

REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene. A "*" indicates data that were collected by Mary Jane Bumby, Self-Help Volunteer.

WATER-QUALITY DATA, OCTOBER 1, 2005 TO SEPTEMBER 20, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat er, uS/cm (00095)	Unfltrd field, 25 degC (00040)	Dis- solved oxygen, std units (00400)	Chloro- phyll a wat unf trichr. method, mg/L (00300)	Phos- phorus, water, ug/L (32210)	Sam- pling method, mg/L (00665)	Sam- pling code (82398)
									Specif. conduct- ance, wat er, uS/cm (00095)	Diss- olved oxygen, std units (00400)	Uncorr., mg/L (00300)	Unfltrd method, ug/L (32210)
OCT 2005												
*01...	1200	5.57	4.90	.10	18.9	--	--	--	--	--	--	--
*18...	1200	5.45	6.10	.10	16.7	--	--	--	--	--	--	--
MAY 2006												
03...	1250	6.88	1.80	--	--	--	--	--	--	--	--	--
03...	1255	--	--	.50	7.5	486	8.4	14.5	15.5	.043	50	
03...	1328	--	--	33.0	5.5	488	8.3	13.3	--	.034	50	
*22...	1200	6.99	.80	.10	15.6	--	--	--	--	--	--	--
JUN												
12...	1210	6.59	6.70	--	--	--	--	--	--	--	--	--
12...	1215	--	--	.50	18.8	488	8.6	9.3	1.56	.013	50	
12...	1247	--	--	32.0	5.2	492	8.1	10.0	--	.059	50	
20...	1040	6.46	10.1	.10	22.2	--	--	--	--	--	--	--
27...	1125	6.51	7.90	.10	21.7	--	--	--	--	--	--	--
JUL												
*02...	1200	6.47	4.60	.10	23.3	--	--	--	--	--	--	--
*06...	1200	6.39	4.30	.10	25.0	--	--	--	--	--	--	--
*15...	1200	6.33	3.50	.10	26.7	--	--	--	--	--	--	--
18...	1200	6.30	3.40	--	--	--	--	--	--	--	--	--
18...	1205	--	--	.50	26.9	484	8.5	8.8	2.08	.017	50	
18...	1238	--	--	33.0	5.6	497	7.9	8.8	--	.069	50	
*23...	1200	6.30	4.40	.10	25.6	--	--	--	--	--	--	--
AUG												
*12...	1200	6.20	3.70	.10	25.0	--	--	--	--	--	--	--
*16...	1200	6.14	4.00	.10	25.6	--	--	--	--	--	--	--
16...	1240	--	3.00	--	--	--	--	--	--	--	--	--
16...	1245	--	--	.50	25.2	474	8.5	8.5	1.65	.012	50	
16...	1305	--	--	20.0	6.9	496	7.9	7.3	--	.010	50	
16...	1318	--	--	33.0	5.5	496	7.9	7.7	--	.058	50	
*20...	1200	6.10	3.70	.10	24.4	--	--	--	--	--	--	--

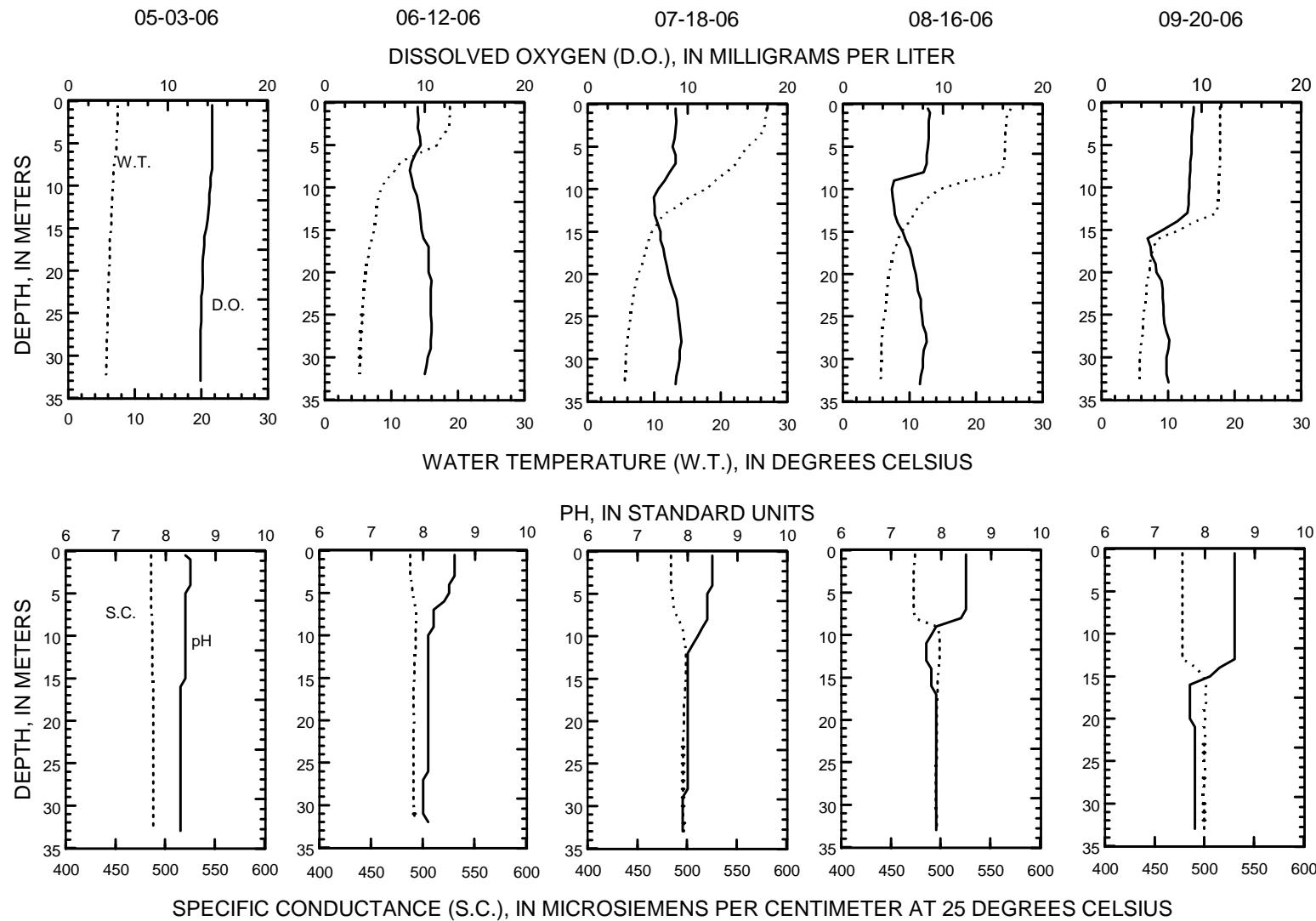
434928088570000 GREEN LAKE AT EAST END NEAR GREEN LAKE, WI

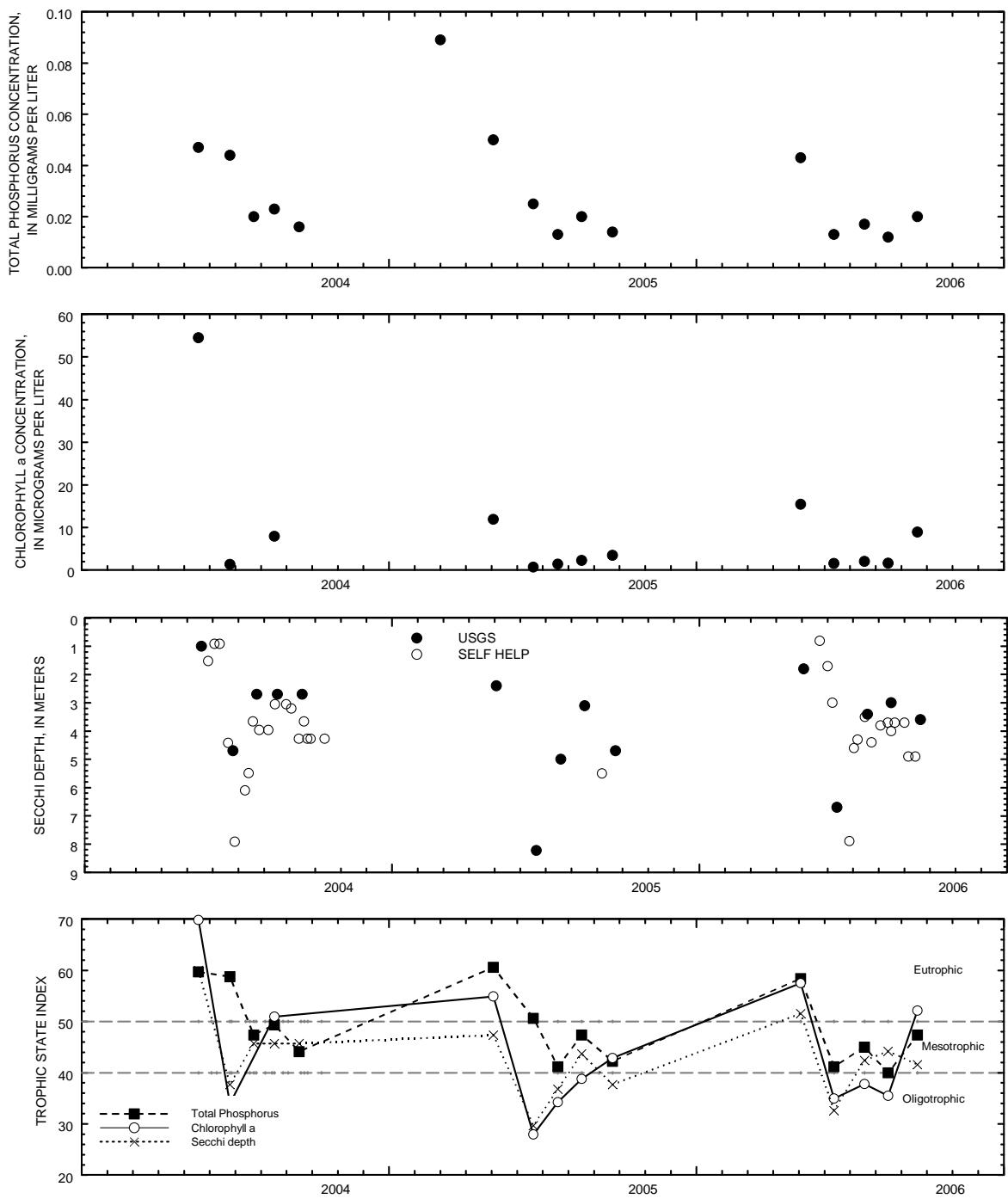
WATER-QUALITY DATA, OCTOBER 1, 2005 TO SEPTEMBER 20, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat er, uS/cm (00095)	pH, unfltrd water, std (00400)	Phos-			
								trichr. method,	phorus, water, unfltrd ug/L (32210)	Sam- pling method, mg/L (00665) (82398)	
SEP											
*01...	1200	6.04	3.70	.10	21.7	--	--	--	--	--	--
*14...	1402	6.04	4.90	.10	20.0	--	--	--	--	--	--
20...	1510	5.99	3.60	--	--	--	--	--	--	--	--
20...	1515	--	--	.50	17.8	478	8.6	9.2	8.96	.020	50
20...	1532	--	--	17.0	7.7	501	7.7	4.9	--	.014	50
20...	1548	--	--	33.0	5.6	500	7.8	6.7	--	.060	50

434928088570000 GREEN LAKE AT EAST END NEAR GREEN LAKE, WI

LAKE-DEPTH PROFILES, MAY 30 TO SEPTEMBER 20, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Green Lake, East End, near Green Lake, Wisconsin.

455208089435800 KAWAGUESAGA LAKE, DEEP HOLE, NEAR MINOCQUA, WI

LOCATION.--Lat 45°52'08", long 89°43'58", in NE ¼ NW ¼ SW ¼ sec.15, T.39 N., R.6 E., Oneida County, Hydrologic Unit 07070001, at Minocqua.

PERIOD OF RECORD.--April to September 2006.

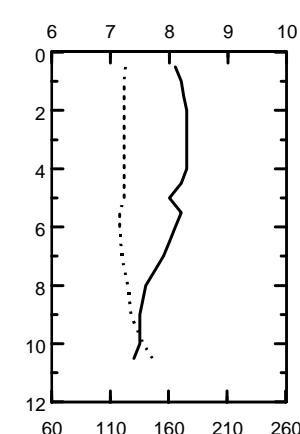
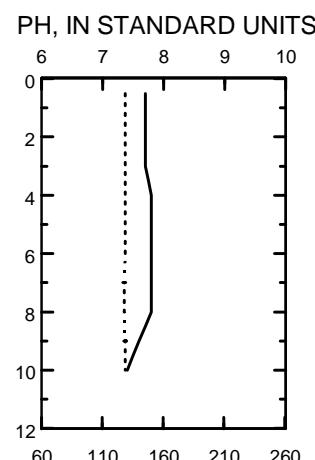
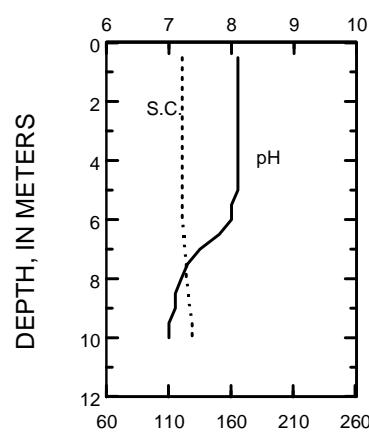
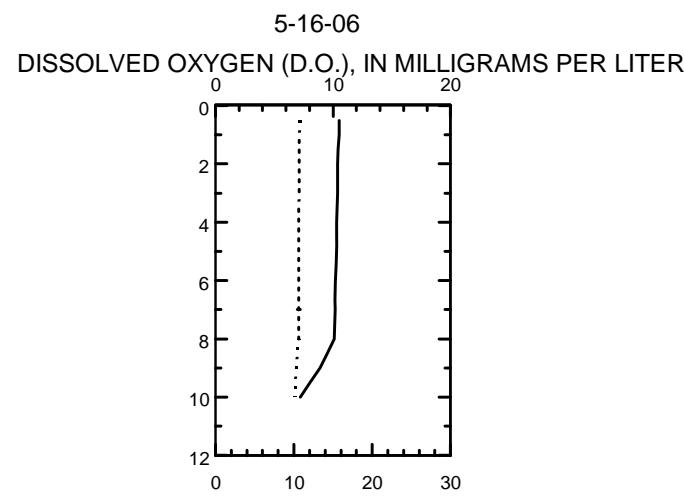
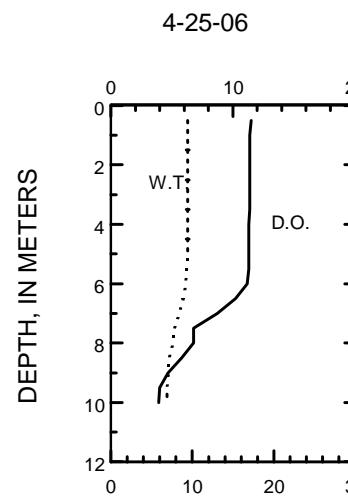
REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 14, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Transparency Secchi disc, meters (00078)	Samplng depth, meters (00098)	Temperatue, water, deg C (00010)	Specif. condac- tance, uS/cm (00095)	pH, water, 25 degC (00400)	Chloro- phyll a wat unf	Phos- trichr. phorus, ug/L (00300)	Sam- pling method, unfltrd (00665)	Sam- pling method, code (82398)
APR 2006											
25...	1020	--	--	.50	9.4	121	8.1	11.5	21.1	.022	50
25...	1040	--	--	10.0	6.9	129	7.0	3.9	--	.039	50
25...	1050	1583.92	2.00	--	--	--	--	--	--	--	--
MAY											
16...	1000	--	--	.50	10.8	13	7.7	10.5	11.5	.023	50
16...	1010	--	--	10.0	10.1	129	7.4	7.2	--	.029	50
16...	1020	1583.86	2.60	--	--	--	--	--	--	--	--
JUN											
16...	0925	--	--	.50	21.0	123	8.1	8.9	2.09	.011	50
16...	0937	--	--	10.0	11.3	138	7.5	.1	--	.028	50
16...	1000	1583.93	4.90	--	--	--	--	--	--	--	--
JUL											
18...	1130	1583.85	3.20	--	--	--	--	--	--	--	--
18...	1140	--	--	.50	26.1	117	8.5	9.2	2.13	.015	50
18...	1154	--	--	10.0	11.2	210	7.2	.2	--	.207	50
AUG											
23...	1340	--	--	.50	24.1	138	8.2	10.1	15.5	.018	50
23...	1349	--	--	7.5	16.9	153	7.1	.2	--	.046	50
23...	1354	--	--	10.0	11.8	250	7.2	.1	--	.186	50
23...	1415	1584.00	1.50	--	--	--	--	--	--	--	--
SEP											
14...	1006	1583.81	1.70	--	--	--	--	--	--	--	--
14...	1013	--	--	.50	18.1	126	7.7	7.5	11.8	.020	50
14...	1036	--	--	9.0	13.9	192	7.1	.2	--	.077	50
14...	1040	--	--	10.0	11.9	258	7.3	.2	--	.231	50

455208089435800 KAWAGUESAGA LAKE, DEEP HOLE, NEAR MINOCQUA, WI

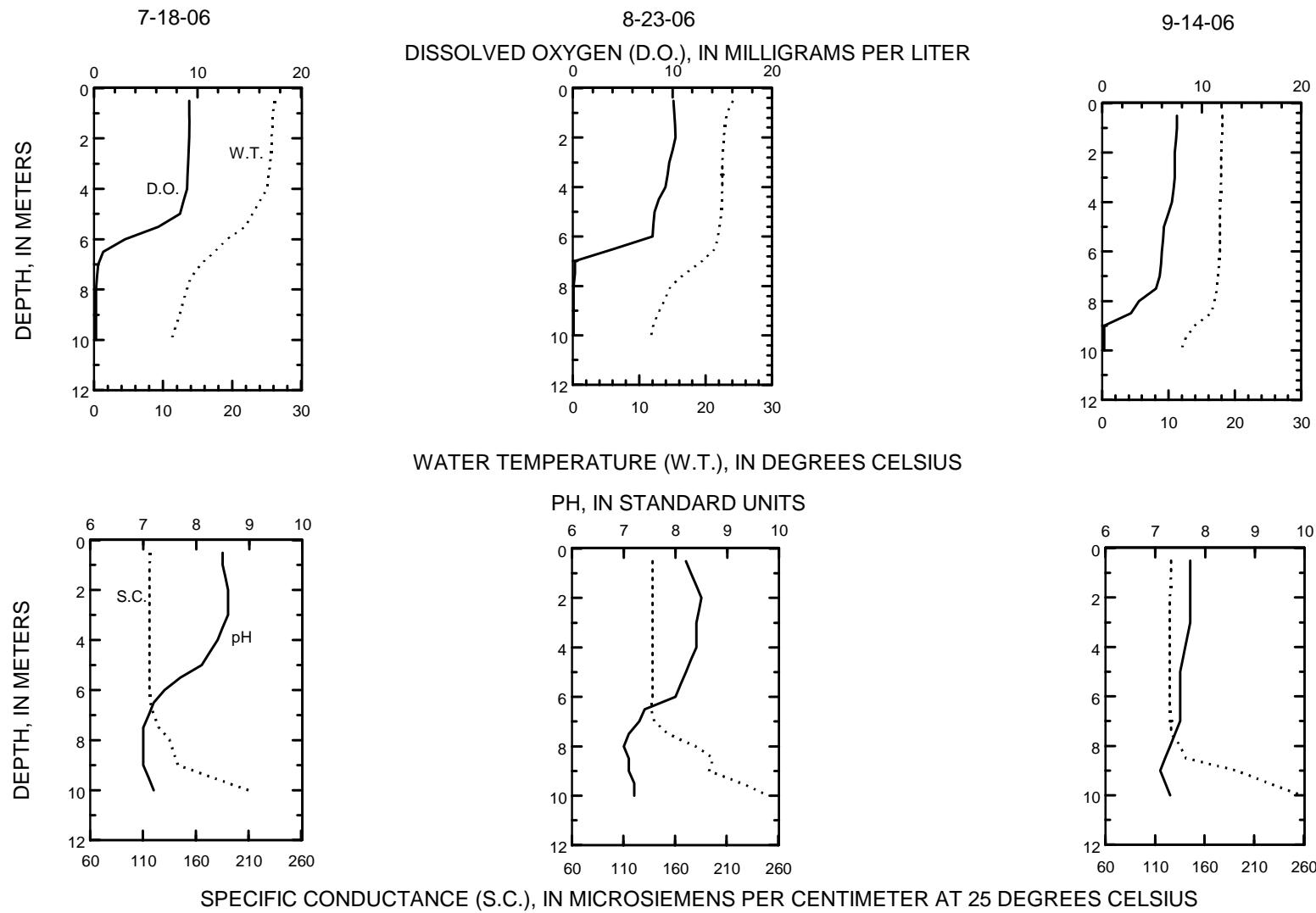
LAKE-DEPTH PROFILES, APRIL 25 TO JUNE 16, 2006

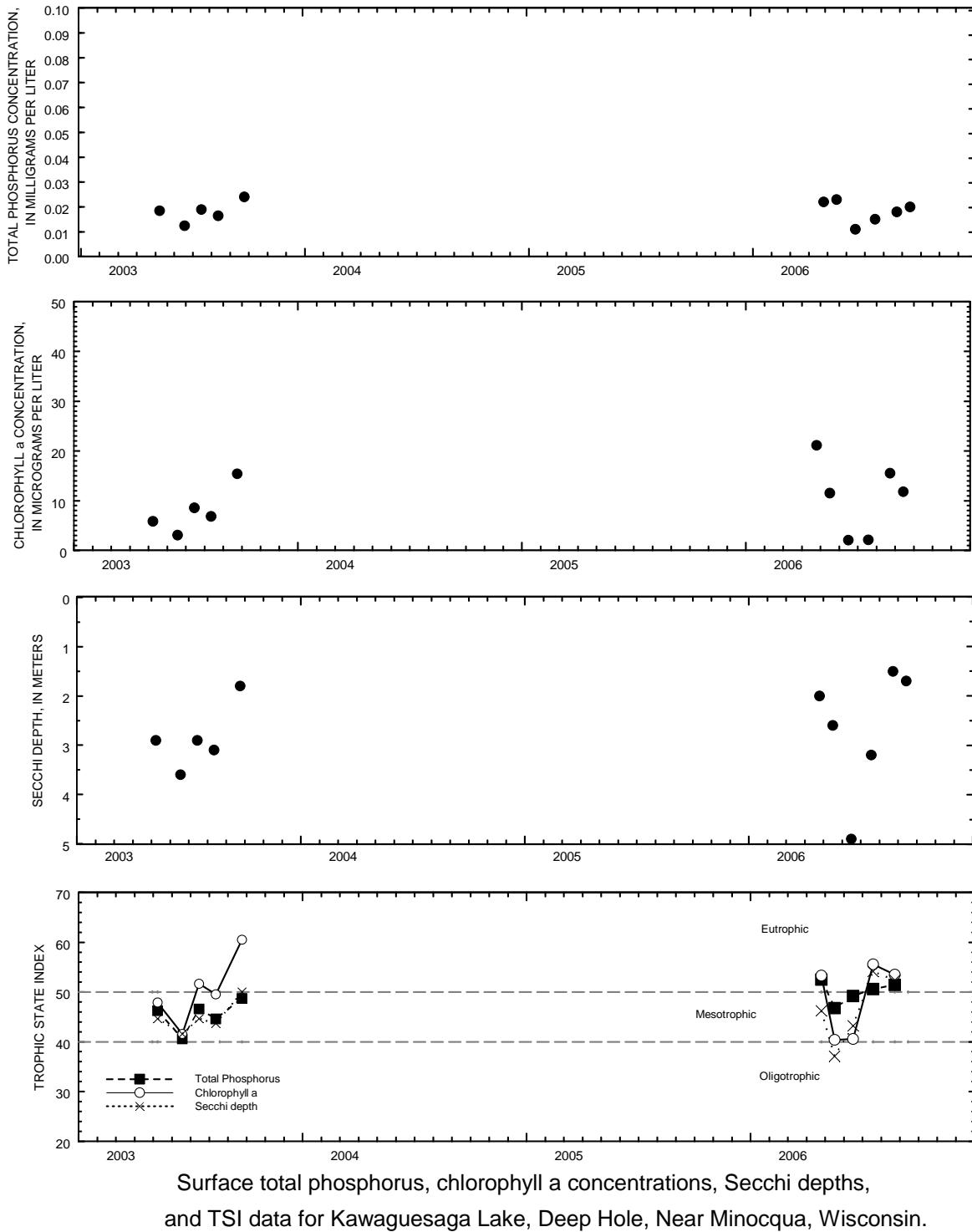


SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS

455208089435800 KAWAGUESAGA LAKE, DEEP HOLE, NEAR MINOCQUA, WI

LAKE-DEPTH PROFILES, JULY 18 TO SEPTEMBER 14, 2006





425715089164700 LAKE KEGONSA AT BARBER DRIVE NEAR STOUGHTON, WI

LOCATION.--Lat $42^{\circ}57'15''$, long $89^{\circ}16'47''$ referenced to North American Datum of 1927, in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.26, T.6 N., R.10 E., Dane County, WI, Hydrologic Unit 07090001, on downstream side of bridge on Barber Drive, 3.5 mi northwest of Stoughton.

DRAINAGE AREA.--386 mi².

PERIOD OF RECORD.--October 2003 to current year.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above sea level (levels from Wisconsin Department of Transportation benchmark).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 4.71 ft, May 23, 2004; minimum observed, 2.07 ft, Jan.27, 2006.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 4.11 ft, July 27; minimum observed, 2.07 ft, Jan 27.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.82	2.87	2.72	2.40	2.25	2.30	2.93	3.59	3.50	3.54	3.53	3.42
2	2.83	2.86	2.67	2.42	2.26	2.30	2.96	3.62	3.48	3.52	3.47	3.40
3	2.84	2.86	2.67	2.44	2.28	2.30	3.08	3.61	3.47	3.49	3.43	3.38
4	2.85	2.87	2.67	2.44	2.29	2.29	3.12	3.60	3.45	3.47	3.37	3.40
5	2.87	2.91	2.66	2.44	2.27	2.30	3.14	3.57	3.42	3.45	3.31	3.40
6	2.88	3.01	2.65	2.42	2.27	2.32	3.14	3.54	3.40	3.42	3.29	3.39
7	2.88	3.03	2.64	2.41	2.27	2.32	3.25	3.50	3.39	3.40	3.27	3.38
8	2.89	3.06	2.64	2.39	2.27	2.35	3.28	3.45	3.39	3.40	3.23	3.37
9	2.90	3.05	2.65	2.37	2.27	2.45	3.30	3.42	3.39	3.42	3.18	3.37
10	2.91	3.04	2.66	2.35	2.27	2.50	3.31	3.41	3.43	3.44	3.15	3.36
11	2.92	3.05	2.66	2.32	2.27	2.56	3.30	3.36	3.43	3.62	3.11	3.38
12	2.92	3.06	2.66	2.29	2.26	2.63	3.31	3.39	3.42	3.84	3.07	3.50
13	2.91	3.03	2.66	2.27	2.25	2.74	3.32	3.38	3.44	3.89	3.03	3.62
14	2.91	3.06	2.67	2.24	2.24	2.78	3.35	3.36	3.45	3.94	3.00	3.65
15	2.91	3.10	2.69	2.22	2.25	2.81	3.37	3.32	3.47	3.96	3.02	3.65
16	2.90	3.10	2.69	2.20	2.32	2.85	3.44	3.29	3.48	3.95	3.04	3.63
17	2.90	3.09	2.68	2.18	2.33	2.85	3.51	3.26	3.49	3.94	3.07	3.61
18	2.90	3.04	2.67	2.15	2.34	2.84	3.53	3.23	3.53	3.91	3.10	3.58
19	2.90	2.99	2.66	2.14	2.34	2.83	3.55	3.21	3.55	3.78	3.13	3.53
20	2.89	2.95	2.65	2.14	2.34	2.86	3.56	3.18	3.56	3.75	3.14	3.49
21	2.88	2.90	2.63	2.15	2.33	2.83	3.57	3.15	3.57	3.71	3.14	3.46
22	2.88	2.86	2.61	2.14	2.33	2.78	3.58	3.13	3.58	3.67	3.15	3.44
23	2.89	2.82	2.59	2.13	2.32	2.79	3.58	3.11	3.58	3.62	3.16	3.41
24	2.90	2.76	2.56	2.11	2.33	2.80	3.58	3.12	3.56	3.55	3.38	3.39
25	2.89	2.72	2.55	2.10	2.32	2.81	3.59	3.25	3.59	3.49	3.51	3.36
26	2.88	2.73	2.53	2.09	2.31	2.81	3.55	3.32	3.66	3.45	3.57	3.33
27	2.88	2.73	2.51	2.09	2.31	2.82	3.54	3.37	3.65	3.59	3.60	3.31
28	2.87	2.77	2.50	2.09	2.31	2.84	3.53	3.40	3.64	3.74	3.63	3.29
29	2.87	2.75	2.47	2.18	---	2.85	3.52	3.42	3.61	3.70	3.63	3.26
30	2.86	2.74	2.45	2.21	---	2.86	3.57	3.48	3.58	3.65	3.53	3.24
31	2.87	---	2.43	2.23	---	2.89	---	3.52	---	3.59	3.44	---
Mean	2.88	2.93	2.62	2.25	2.29	2.65	3.38	3.37	3.51	3.64	3.28	3.43
Max	2.92	3.10	2.72	2.44	2.34	2.89	3.59	3.62	3.66	3.96	3.63	3.65
Min	2.82	2.72	2.43	2.09	2.24	2.29	2.93	3.11	3.39	3.40	3.00	3.24

05427235 LAKE KOSHKONONG NEAR NEWVILLE, WI

LOCATION.--Lat $42^{\circ}51'27''$, long $88^{\circ}56'27''$ referenced to North American Datum of 1927, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.34, T.5 N., R.13 E., Jefferson County, WI, 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 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above NGVD of 1929 (Wisconsin Department of Transportation bench mark).

REMARKS.--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, 5.10 ft, Dec. 28, 29, 1999.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 8.17 ft, Apr. 16; minimum recorded gage height, 5.40 ft, Jan. 27.

**GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6.20	5.77	5.73	5.75	6.00	5.52	7.15	6.78	7.71	6.35	6.23	6.28
2	6.21	5.75	5.73	5.83	6.09	5.51	7.08	6.79	7.68	6.31	6.22	6.30
3	6.23	5.75	5.74	5.95	6.15	5.49	7.20	6.76	7.65	6.30	6.20	6.31
4	6.24	5.75	5.76	6.06	6.18	5.48	7.20	6.76	7.60	6.33	6.17	6.35
5	6.24	5.79	5.75	6.13	6.20	5.47	7.23	6.74	7.51	6.25	6.12	6.32
6	6.27	6.03	5.74	6.14	6.18	5.47	7.28	6.69	7.42	6.17	6.13	6.20
7	6.23	6.03	5.72	6.17	6.13	5.47	7.41	6.63	7.35	6.20	6.14	6.19
8	6.20	6.05	5.71	6.17	6.09	5.49	7.55	6.56	7.23	6.21	6.11	6.20
9	6.18	6.13	5.70	6.20	6.04	5.62	7.70	6.51	7.09	6.22	6.09	6.19
10	6.17	6.02	5.68	6.30	5.99	5.82	7.84	6.49	6.94	6.20	6.09	6.18
11	6.16	5.97	5.66	6.40	5.95	6.06	7.92	6.62	6.80	6.19	6.09	6.20
12	6.16	5.92	5.64	6.47	5.89	6.31	8.04	6.65	6.67	6.23	6.11	6.32
13	6.16	5.99	5.62	6.51	5.81	6.70	8.07	6.70	6.52	6.27	6.07	6.64
14	6.17	5.90	5.64	6.53	5.74	7.05	8.09	6.83	6.40	6.36	6.08	6.84
15	6.18	5.91	5.66	6.53	5.71	7.26	8.08	7.00	6.30	6.40	6.09	6.95
16	6.13	5.97	5.67	6.53	5.71	7.47	8.05	7.19	6.23	6.32	6.09	7.01
17	6.10	5.87	5.68	6.52	5.66	7.62	8.03	7.35	6.18	6.23	6.11	7.08
18	6.07	5.78	5.68	6.51	5.64	7.70	7.96	7.51	6.28	6.14	6.13	7.11
19	6.04	5.77	5.68	6.46	5.62	7.74	7.90	7.59	6.38	6.13	6.16	7.10
20	5.97	5.78	5.68	6.33	5.60	7.74	7.85	7.67	6.27	6.20	6.10	7.04
21	5.93	5.80	5.67	6.19	5.57	7.72	7.78	7.72	6.31	6.22	6.06	6.96
22	5.91	5.76	5.66	6.04	5.56	7.70	7.73	7.71	6.33	6.24	6.07	6.88
23	5.89	5.75	5.66	5.89	5.54	7.66	7.64	7.69	6.25	6.24	6.08	6.81
24	5.87	5.81	5.65	5.75	5.56	7.63	7.54	7.67	6.26	6.25	6.30	6.75
25	5.82	5.62	5.65	5.61	5.56	7.58	7.41	7.78	6.29	6.25	6.29	6.65
26	5.78	5.60	5.65	5.49	5.56	7.51	7.27	7.81	6.36	6.27	6.25	6.54
27	5.77	5.59	5.65	5.43	5.55	7.43	7.15	7.79	6.29	6.29	6.28	6.46
28	5.76	5.63	5.66	5.43	5.54	7.38	7.02	7.78	6.31	6.30	6.32	6.35
29	5.75	5.68	5.68	5.55	---	7.29	6.87	7.75	6.39	6.26	6.35	6.23
30	5.75	5.71	5.69	5.69	---	7.20	6.81	7.74	6.38	6.25	6.29	6.18
31	5.77	---	5.72	5.86	---	7.19	---	7.74	---	6.25	6.28	---
Mean	6.04	5.83	5.68	6.08	5.82	6.75	7.56	7.19	6.71	6.25	6.16	6.55
Max	6.27	6.13	5.76	6.53	6.20	7.74	8.09	7.81	7.71	6.40	6.35	7.11
Min	5.75	5.59	5.62	5.43	5.54	5.47	6.81	6.49	6.18	6.13	6.06	6.18

432255088134700 LITTLE CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat 43°22'55", long 88°13'47", in NW ¼ NE ¼ sec.33, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, 2.6 mi southwest of West Bend.

PERIOD OF RECORD.--February 1997 to August 1999, February 2003 to current year.

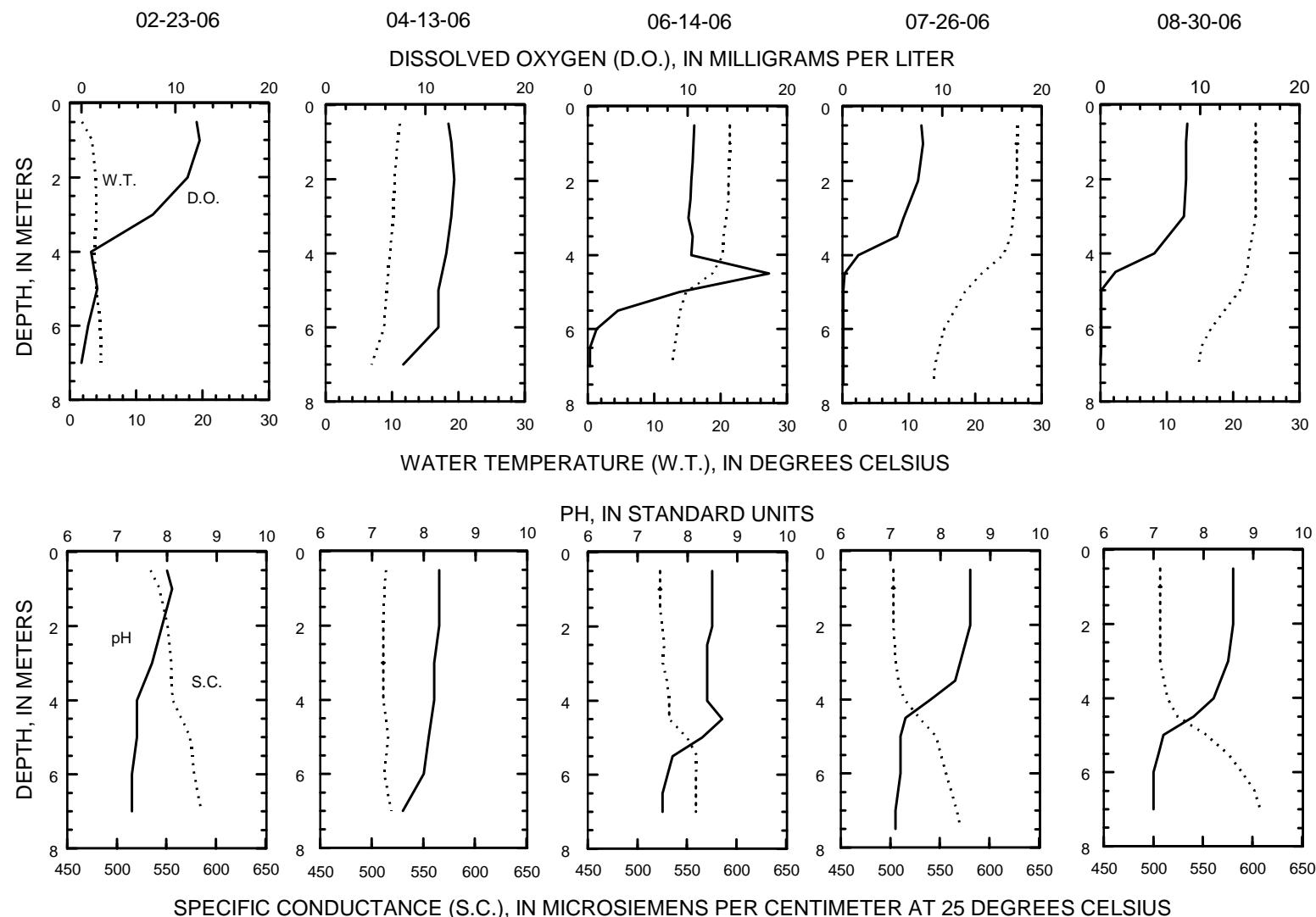
REMARKS.--Lake sampled at center of northern basin at deep hole. Lake ice-covered during February sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

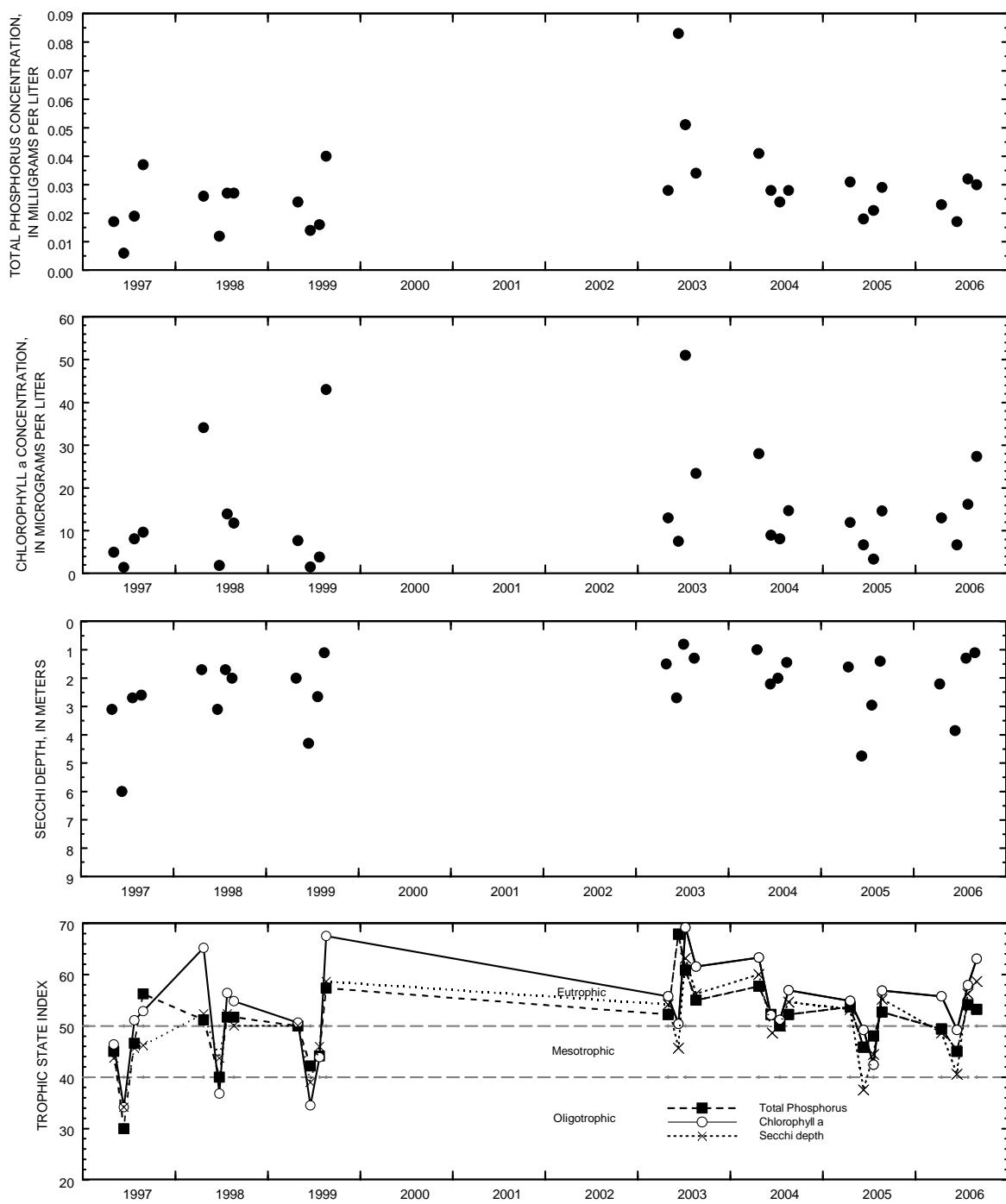
WATER-QUALITY DATA, FEBRUARY 23 TO AUGUST 30, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Trans-	Sam-	Specif.	pH,	Chloro-			Sam-
		parency	pling	Temper-	conduc-	water,	wat unf	phyll a	
		Secchi	disc,	tance,	unfltrd	Dist-	trichr.	phorus,	pling
			meters	water,	uS/cm	field,	solved	method,	method,
				deg C	25 degC	std	oxygen,	water,	code
			(00078)	(00098)	(00010)	(00095)	(00400)	(00300)	(00665)
						(00400)	(00300)	(32210)	(82398)
FEB 2006									
23...	1035	--	.50	1.8	534	8.0	12.3	--	.013
23...	1042	--	7.0	4.7	585	7.3	.0	--	.018
APR									
13...	1305	--	.50	11.2	514	8.3	12.3	13.0	.023
13...	1312	--	7.0	6.9	519	7.6	7.8	--	.030
13...	1315	2.20	--	--	--	--	--	--	--
JUN									
14...	1245	--	.50	21.4	523	8.5	10.7	6.68	.017
14...	1258	--	7.0	12.7	559	7.5	.2	--	.039
14...	1300	3.85	--	--	--	--	--	--	--
JUL									
26...	1545	--	.50	26.4	503	8.6	7.9	16.2	.032
26...	1555	--	7.5	13.7	571	7.1	.1	--	.052
26...	1600	1.30	--	--	--	--	--	--	--
AUG									
30...	1700	--	.50	23.4	507	8.6	8.7	27.4	.030
30...	1710	--	7.0	14.8	608	7.0	.0	--	.047
30...	1715	1.10	--	--	--	--	--	--	--

432255088134700 LITTLE CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, FEBRUARY 23 TO AUGUST 30, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Little Cedar Lake, North Site, near West Bend, Wisconsin.

432249088134500 LITTLE CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat 43°22'49", long 88°13'45", in NW ¼ SE ¼ sec.33, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, 2.8 mi southwest of West Bend.

PERIOD OF RECORD.--February 1997 to August 1999, February 2003 to current year.

REMARKS.--Lake sampled in southern basin at deep hole. Lake ice-covered during February sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 23 TO AUGUST 30, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Trans-	Sam-	Temper-	Specif.	pH,	Chloro-	Ortho-	Total
		parency	pling	tance, wat	conduc-	water,	phyll a	phos-	
		Secchi	depth,	water,	unfltrd	wat	wat unf	phate,	nitro-
			meters	meters	us/cm	std	trichr.	water,	
			(00078)	(00098)	(00010)	(00095)	(00400)	water,	
				deg C	25 degC	solved	method,	water,	
						oxygen,	uncorr,	water,	
						mg/L	unfltrd	mg/L	
						(00300)	(003210)	mg/L as P	
							(00665)	(00671)	(00600)
FEB 2006									
23...	1000	--	.50	2.8	518	8.2	11.3	--	.030
23...	1017	--	16.5	4.7	670	6.9	.0	--	.355
APR									
13...	1240	--	.50	10.1	509	8.1	11.9	5.39	.033
13...	1256	--	16.0	6.5	509	7.8	10.1	--	.029
13...	1300	2.90	--	--	--	--	--	--	--
JUN									
14...	1210	--	.50	21.3	517	8.5	10.6	8.57	.025
14...	1220	4.65	8.0	10.9	540	7.6	1.0	--	--
14...	1225	--	16.5	7.0	565	7.4	.2	--	.238
JUL									
26...	1505	--	.50	26.4	493	8.6	8.6	13.9	.029 <.002
26...	1516	--	16.0	7.2	544	7.2	.1	--	.247
26...	1520	1.55	--	--	--	--	--	--	--
AUG									
30...	1630	--	16.0	7.5	564	7.3	.0	--	.183
30...	1635	1.30	--	--	--	--	--	--	--
30...	1710	--	.50	23.3	490	8.6	9.7	17.3	.020

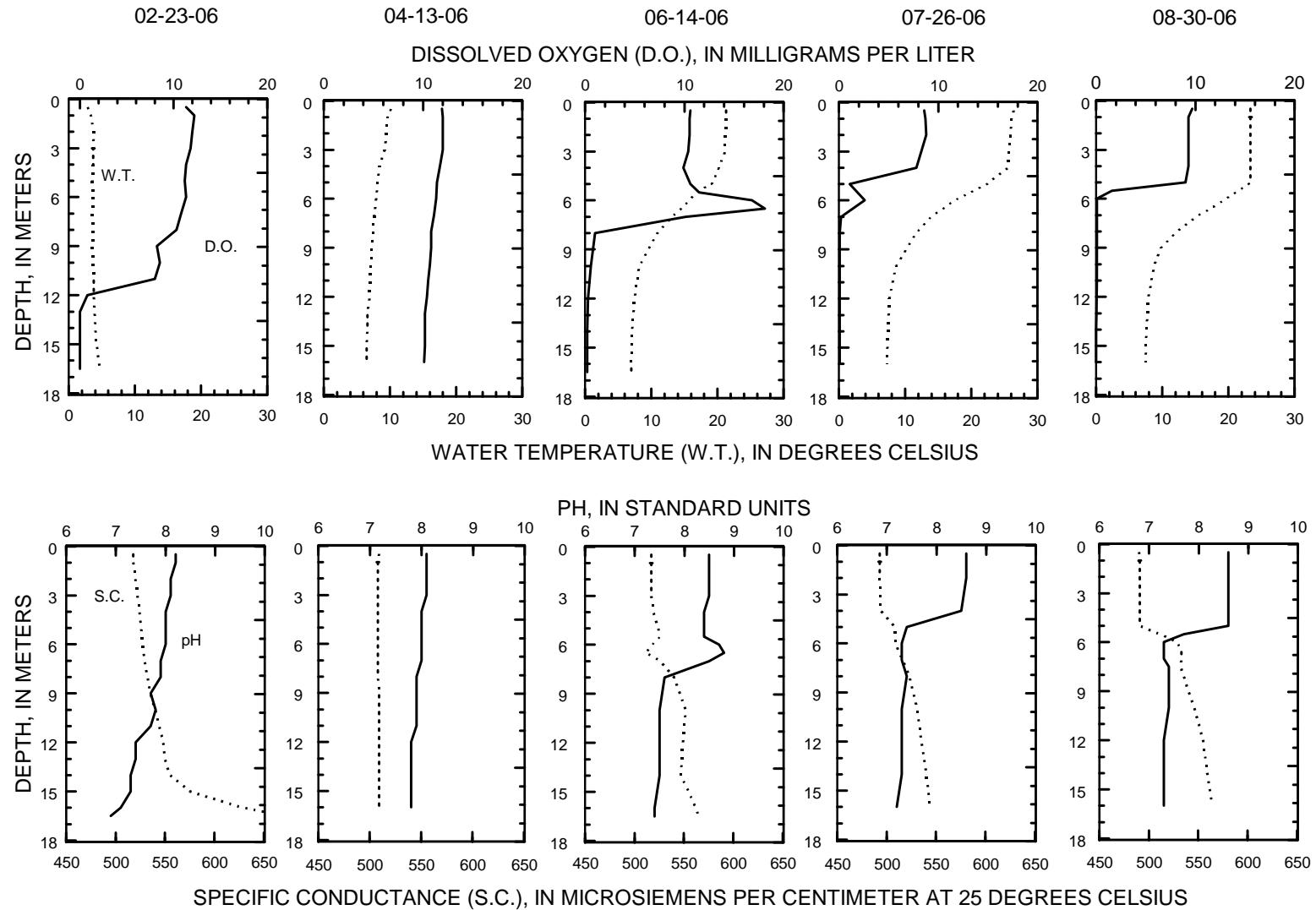
432249088134500 LITTLE CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

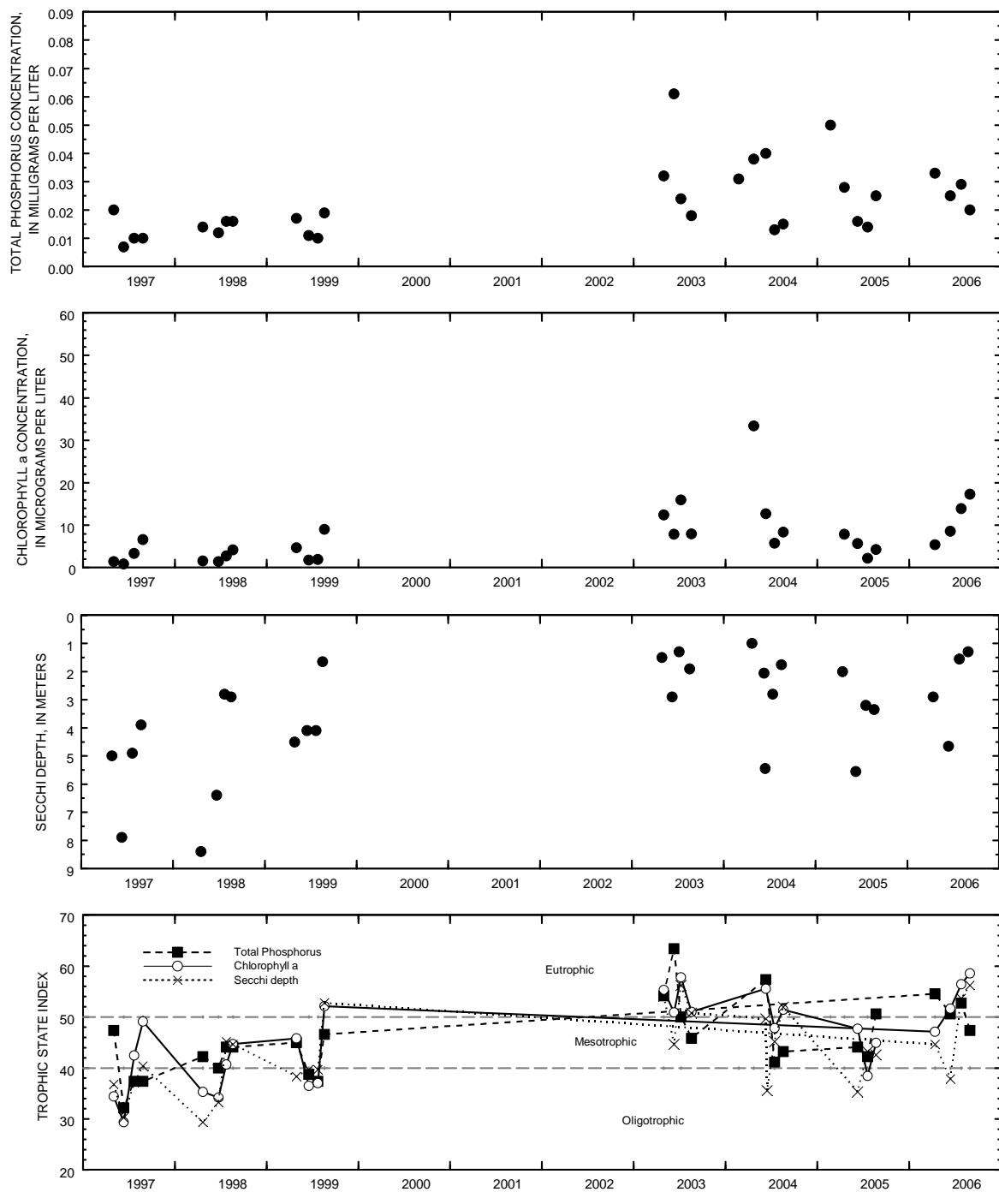
WATER-QUALITY DATA, FEBRUARY 23 TO AUGUST 30, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	ANC, wat unf fixed		Chlor- ide, mg/L as CaCO ₃ (00098)	Sulfate water, mg/L (00940)	Silica, water, mg/L (00945)	Iron, water, mg/L (00955)	Mangan- ese, ug/L (01046)	Residue on at 180degC wat flt method, mg/L (01056)	Sam- pling depth, meters (00098)	Sam- pling method, code (82398)
	Sam- pling depth, meters (00098)	Sam- pling depth, meters (00098)								
	Sam- pling depth, meters (00098)	Sam- pling depth, meters (00098)								
FEB 2006										
23...	.50	--	--	--	--	--	--	--	50	
23...	16.5	--	--	--	--	--	--	--	50	
APR										
13...	.50	183	46.7	19.5	1.31	<100	M	284	50	
13...	16.0	--	--	--	--	--	--	--	50	
13...	--	--	--	--	--	--	--	--	--	
JUN										
14...	.50	--	--	--	--	--	--	--	50	
14...	8.0	--	--	--	--	--	--	--	--	
14...	16.5	--	--	--	--	--	--	--	50	
JUL										
26...	.50	--	--	--	--	--	--	--	50	
26...	16.0	--	--	--	--	--	--	--	50	
26...	--	--	--	--	--	--	--	--	--	
AUG										
30...	16.0	--	--	--	--	--	--	--	50	
30...	--	--	--	--	--	--	--	--	--	
30...	.50	--	--	--	--	--	--	--	50	

432249088134500 LITTLE CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, FEBRUARY 23 TO AUGUST 30, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Little Cedar Lake, South Site, near West Bend, Wisconsin.

05428000 LAKE MENDOTA AT MADISON, WI

LOCATION.--Lat $43^{\circ}05'42''$, long $89^{\circ}22'12''$ referenced to North American Datum of 1927, in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.12, T.7 N., R.9 E., Dane County, WI, Hydrologic Unit 07090001, in county boat house at dam at outlet, in Madison.

DRAINAGE AREA.--233 mi² of which 36.6 mi² probably is noncontributing, Area of Lake Mendota, 15.2 mi².

PERIOD OF RECORD.--January 1916 to January 1985 (incomplete), February 1985 to current year.

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

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above NGVD of 1929, 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 at the higher datum.

REMARKS.--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, 12.75 ft, June 5, 2000; minimum observed, 8.02 ft, Feb. 24 to Mar. 10, 1920, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 10.52 ft, Sept. 17; minimum recorded, 8.43 ft, Dec. 26.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	9.64	9.58	8.98	8.50	8.87	9.03	9.52	9.92	10.28	9.92	9.93	10.12
2	9.65	9.54	8.94	8.55	8.88	9.03	9.54	9.99	10.26	9.90	9.93	10.11
3	9.65	9.50	8.90	8.60	8.89	9.04	9.69	10.01	10.22	9.89	9.91	10.10
4	9.66	9.47	8.89	8.62	8.91	9.04	9.70	10.02	10.20	9.88	9.87	10.15
5	9.67	9.45	8.81	8.64	8.91	9.06	9.71	10.02	10.16	9.85	9.84	10.16
6	9.69	9.54	8.75	8.64	8.91	9.09	9.72	10.0	10.14	9.83	9.86	10.16
7	9.64	9.50	8.73	8.65	8.90	9.09	9.83	9.99	10.14	9.81	9.88	10.15
8	9.62	9.47	8.72	8.66	8.91	9.12	9.87	9.98	10.11	9.78	9.86	10.14
9	9.61	9.48	8.70	8.66	8.90	9.20	9.89	9.98	10.06	9.77	9.84	10.12
10	9.61	9.39	8.67	8.66	8.91	9.23	9.90	10.02	10.06	9.73	9.84	10.09
11	9.61	9.36	8.63	8.66	8.92	9.26	9.89	10.07	10.03	9.79	9.81	10.14
12	9.62	9.32	8.60	8.66	8.92	9.30	9.93	10.09	10.01	9.89	9.78	10.29
13	9.63	9.34	8.56	8.67	8.91	9.38	9.92	10.09	9.99	9.89	9.74	10.41
14	9.63	9.26	8.54	8.66	8.92	9.40	9.92	10.11	9.98	9.89	9.74	10.45
15	9.63	9.27	8.56	8.66	8.93	9.40	9.91	10.12	9.97	9.88	9.70	10.47
16	9.62	9.32	8.56	8.67	8.99	9.43	9.93	10.14	9.95	9.86	9.68	10.46
17	9.62	9.25	8.54	8.67	9.00	9.44	9.98	10.17	9.92	9.85	9.66	10.47
18	9.62	9.21	8.53	8.67	9.00	9.44	9.96	10.20	9.92	9.82	9.67	10.46
19	9.62	9.18	8.51	8.68	9.00	9.44	9.96	10.18	9.92	9.79	9.67	10.44
20	9.61	9.17	8.50	8.69	9.00	9.44	9.94	10.17	9.88	9.86	9.65	10.40
21	9.60	9.14	8.49	8.70	9.00	9.45	9.92	10.15	9.86	9.86	9.63	10.38
22	9.61	9.10	8.48	8.70	9.01	9.43	9.92	10.13	9.85	9.85	9.63	10.38
23	9.60	9.10	8.47	8.71	9.01	9.43	9.89	10.11	9.83	9.85	9.62	10.40
24	9.59	9.12	8.47	8.71	9.01	9.44	9.87	10.12	9.80	9.83	9.78	10.42
25	9.58	9.00	8.48	8.72	9.01	9.44	9.84	10.27	9.80	9.81	9.97	10.40
26	9.58	8.97	8.47	8.71	9.01	9.44	9.81	10.31	9.90	9.81	10.12	10.38
27	9.58	8.96	8.48	8.71	9.02	9.44	9.78	10.31	9.95	9.87	10.14	10.39
28	9.57	8.99	8.48	8.73	9.02	9.45	9.76	10.30	9.96	9.97	10.15	10.37
29	9.58	9.00	8.48	8.81	---	9.45	9.75	10.28	9.95	9.97	10.16	10.34
30	9.58	8.97	8.49	8.85	---	9.45	9.85	10.28	9.93	9.96	10.16	10.34
31	9.59	---	8.49	8.86	---	9.50	---	10.29	---	9.95	10.14	---
Mean	9.62	9.27	8.61	8.68	8.95	9.32	9.84	10.12	10.00	9.86	9.85	10.30
Max	9.69	9.58	8.98	8.86	9.02	9.50	9.98	10.31	10.28	9.97	10.16	10.47
Min	9.57	8.96	8.47	8.50	8.87	9.03	9.52	9.92	9.80	9.73	9.62	10.09

430251088284700 MIDDLE GENESEE LAKE, AT GENESEE LAKE ROAD, NEAR OCONOMOWOC, WI

LOCATION.--Lat $43^{\circ}02'51''$, long $88^{\circ}28'47''$, in SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T. 7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at the southwest side of the lake about 2 miles south of Oconomowoc.

DRAINAGE AREA.--Unknown. Area of Middle Genesee Lake is 0.17 mi².

PERIOD OF RECORD.--April 1996 to current year.

GAGE.--Staff gage. Local observer, Tom Schubring provided most readings of gage. Datum of gage is about 0.0 ft above NGVD of 1929.

EXTREMES FOR THE PERIOD OF RECORD.--Maximum observed gage height, 867.18 ft, June 13, 2001; minimum observed, 863.88 ft, Oct. 31, 2005.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 866.65 ft, June 30; minimum observed, 863.89 ft, Oct. 31.

**GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Date	Gage Height, ft	Date	Gage Height, ft
October 4	864.27	June 13	866.43
12	864.23	13	866.45
18	864.05	19	866.55
21	864.01	21	866.61
26	863.99	30	866.65
31	863.88	July 5	866.61
November 10	864.05	8	866.53
17	864.07	14	866.47
30	864.01	19	866.41
April 13	865.37	26	866.33
14	865.39	28	866.45
21	865.49	August 3	866.33
May 7	865.73	9	866.27
14	865.97	15	866.13
20	866.09	22	865.99
25	866.21	26	866.17
31	866.49	September 20	866.09
June 1	866.49	29	865.97

430309088284800 MIDDLE GENESEE LAKE NEAR OCONOMOWOC, WI

LOCATION.--Lat 43°03'09", long 88°28'48", in NW ¼ SW ¼ sec.22, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, 1.8 mi south of Oconomowoc.

PERIOD OF RECORD.--February 1996 to September 2006 (discontinued).

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

WATER-QUALITY DATA, FEBRUARY 22 TO AUGUST 23, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat unf uS/cm (00095)	unfltrd field, 25 degC (00040)	Dis- solved std units (00400)	Chloro- phyll a wat unf method, solved oxygen, uncorr, mg/L (00300)	Ortho- phos- phorus, water, ug/L (32210)	Chloro- phyll a wat unf method, solved oxygen, uncorr, mg/L (00665)			Ortho- phosphate, water, mg/L (00671)	Total nitro- gen, water, mg/L (00600)
											Specif. conduct-	pH, water,	Chloro- phyll a wat unf method, solved oxygen, uncorr, mg/L (00300)		
FEB 2006															
22...	1335	--	--	.50	4.4	428	8.2	14.0	--	.014	--	--	--		
22...	1346	--	--	11.0	5.4	518	7.2	.0	--	.021	--	--	--		
APR															
12...	1305	--	--	.50	10.2	424	8.1	11.3	1.87	.012	.006	.89			
12...	1317	--	--	11.5	7.5	423	8.1	11.2	--	.016	--	--			
12...	1320	865.34	5.30	--	--	--	--	--	--	--	--	--			
JUN															
12...	1915	--	--	.50	21.7	440	8.2	9.7	1.54	.015	--	--			
12...	1927	--	--	12.0	13.7	471	7.6	.6	--	.034	--	--			
12...	1928	--	4.55	--	--	--	--	--	--	--	--	--			
JUL															
13...	1600	--	--	.50	27.6	424	8.5	8.8	3.29	.034	--	--			
13...	1612	--	--	11.5	13.8	474	7.4	.1	--	.048	--	--			
13...	1615	--	3.25	--	--	--	--	--	--	--	--	--			
AUG															
23...	1700	--	--	.50	25.6	409	8.7	10.1	3.23	.018	--	--			
23...	1714	--	--	11.5	14.0	529	7.3	.1	--	.049	--	--			
23...	1715	--	2.50	--	--	--	--	--	--	--	--	--			

430309088284800 MIDDLE GENESEE LAKE NEAR OCONOMOWOC, WI

WATER-QUALITY DATA, FEBRUARY 22 TO AUGUST 23, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Ammonia water, fltrd, (mg/L (00098)	Ammonia org-N, water, unfltrd, (mg/L (00608)	Nitrite water, water, fltrd, (mg/L (00625)	Nitrate water, water, fltrd, (mg/L (00631)	Tur- bidity, NTU (00076)	Appar- ent				Magnes- ium, water, water, fltrd, mg/L as CaCO ₃ (00081)	Sodium, water, fltrd, mg/L (00915)	Potas- sium, water, fltrd, mg/L (00925)	Sodium, water, fltrd, mg/L (00930)	Potas- sium, water, fltrd, mg/L (00935)
							color, water, unfltrd	Hard- ness, water, unfltrd	Calcium water, water, water,	Magnes- ium, water, water, fltrd, mg/L (00900)					
FEB 2006															
22...	.50	--	--	--	--	--	--	--	--	--	--	--	--	--	
22...	11.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
APR															
12...	.50	.209	.83	.055	<1.0	5	190	30.0	27.1	13.8	2.00				
12...	11.5	--	--	--	--	--	--	--	--	--	--	--	--	--	
12...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUN															
12...	.50	--	--	--	--	--	--	--	--	--	--	--	--	--	
12...	12.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
12...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL															
13...	.50	--	--	--	--	--	--	--	--	--	--	--	--	--	
13...	11.5	--	--	--	--	--	--	--	--	--	--	--	--	--	
13...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AUG															
23...	.50	--	--	--	--	--	--	--	--	--	--	--	--	--	
23...	11.5	--	--	--	--	--	--	--	--	--	--	--	--	--	
23...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

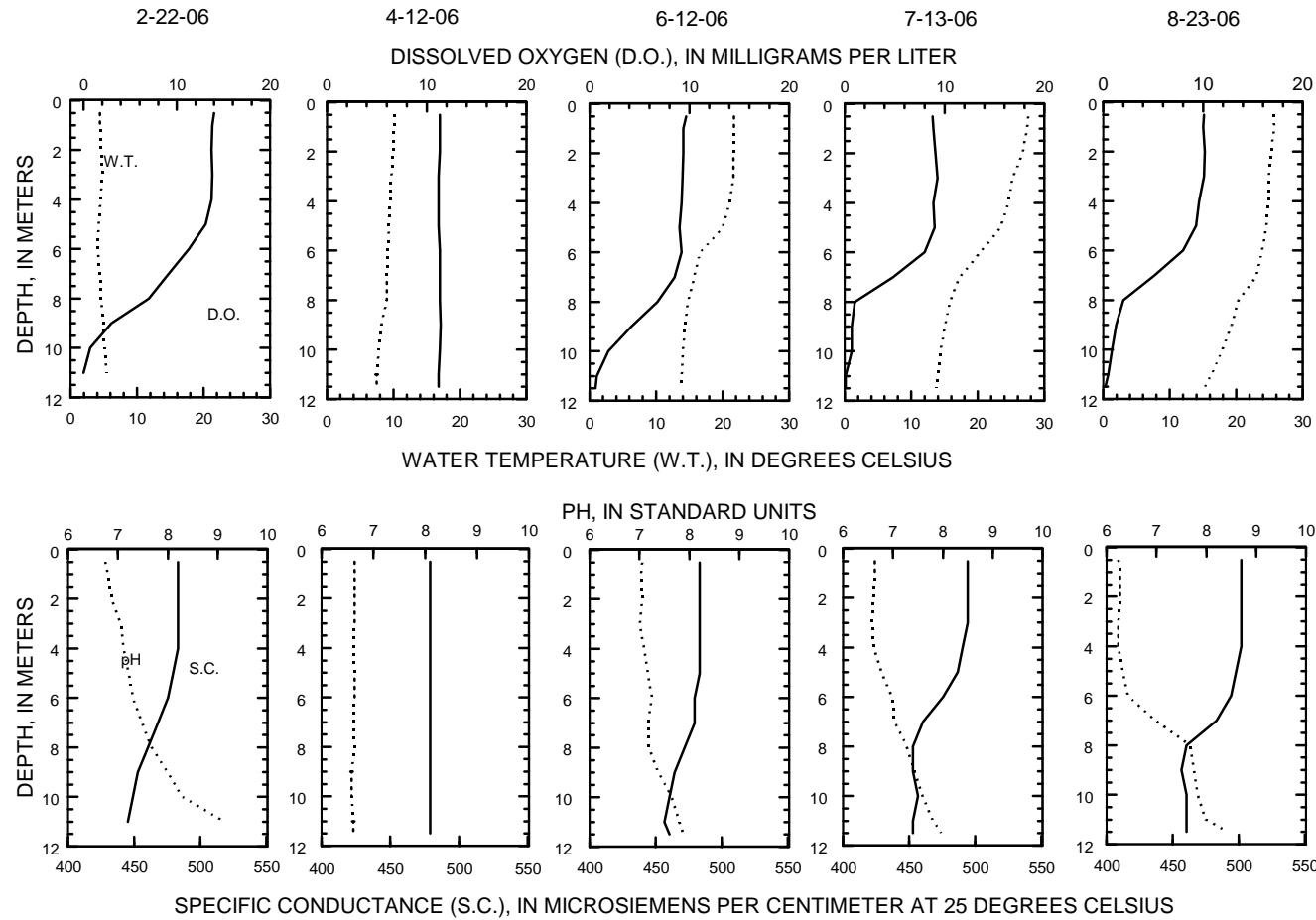
430309088284800 MIDDLE GENESEE LAKE NEAR OCONOMOWOC, WI

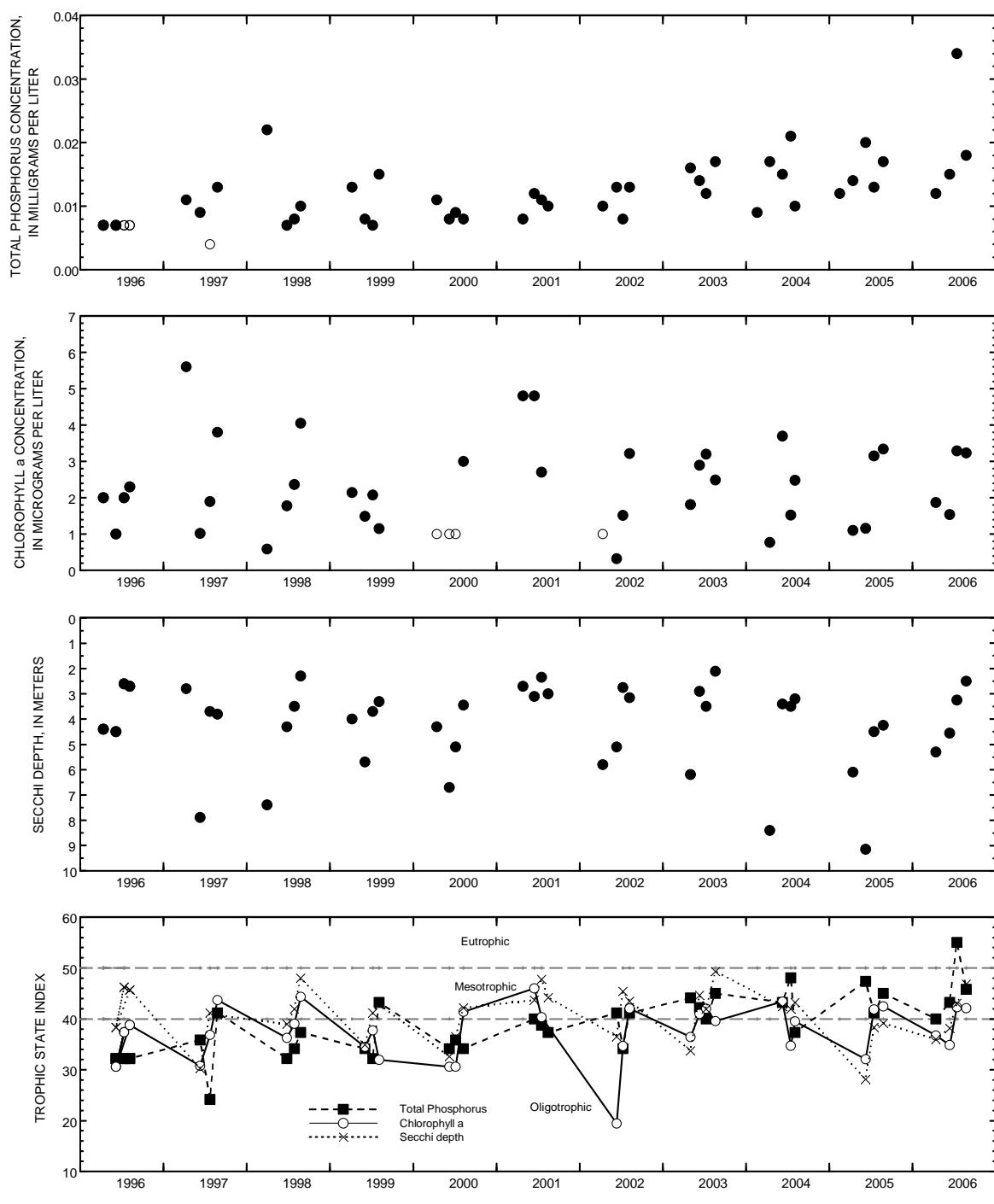
WATER-QUALITY DATA, FEBRUARY 22 TO AUGUST 23, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	ANC, wat unf fixed	Chlor- ide, mg/L as CaCO ₃	Sulfate water, mg/L	Silica, water, mg/L	Iron, water, mg/L	Mangan- ese, ug/L	Residue on at 180degC wat flt	Sam- pling method, code
	Sam- pling depth, meters	Sam- pling lab,	Sam- pling depth, meters	Sam- pling lab,	Sam- pling depth, meters	Sam- pling lab,	Sam- pling depth, meters	Sam- pling lab,
	(00098)	(00417)	(00940)	(00945)	(00955)	(01046)	(01056)	(70300)
FEB 2006								
22...	.50	--	--	--	--	--	--	50
22...	11.0	--	--	--	--	--	--	50
APR								
12...	.50	161	31.0	15.6	3.63	<100	<.5	226
12...	11.5	--	--	--	--	--	--	50
12...	--	--	--	--	--	--	--	--
JUN								
12...	.50	--	--	--	--	--	--	50
12...	12.0	--	--	--	--	--	--	50
12...	--	--	--	--	--	--	--	--
JUL								
13...	.50	--	--	--	--	--	--	50
13...	11.5	--	--	--	--	--	--	50
13...	--	--	--	--	--	--	--	--
AUG								
23...	.50	--	--	--	--	--	--	50
23...	11.5	--	--	--	--	--	--	50
23...	--	--	--	--	--	--	--	--

430309088284800 MIDDLE GENEESE LAKE NEAR OCONOMOWOC, WI

LAKE-DEPTH PROFILES, FEBRUARY 22 TO AUGUST 23, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Middle Genesee Lake, near Oconomowoc, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses.
Actual concentrations for these particular analyses are less than the plotted circles.)

455214089412800 MINOCQUA LAKE, DEEP HOLE, AT MINOCQUA, WI

LOCATION.--Lat 45°52'14", long 89°41'28", in SE ¼ SW ¼ NW ¼ sec.13, T.39 N., R.6 E., Oneida County, Hydrologic Unit 07070001, at Minocqua.

PERIOD OF RECORD.--May to September 2003, April to September 2006.

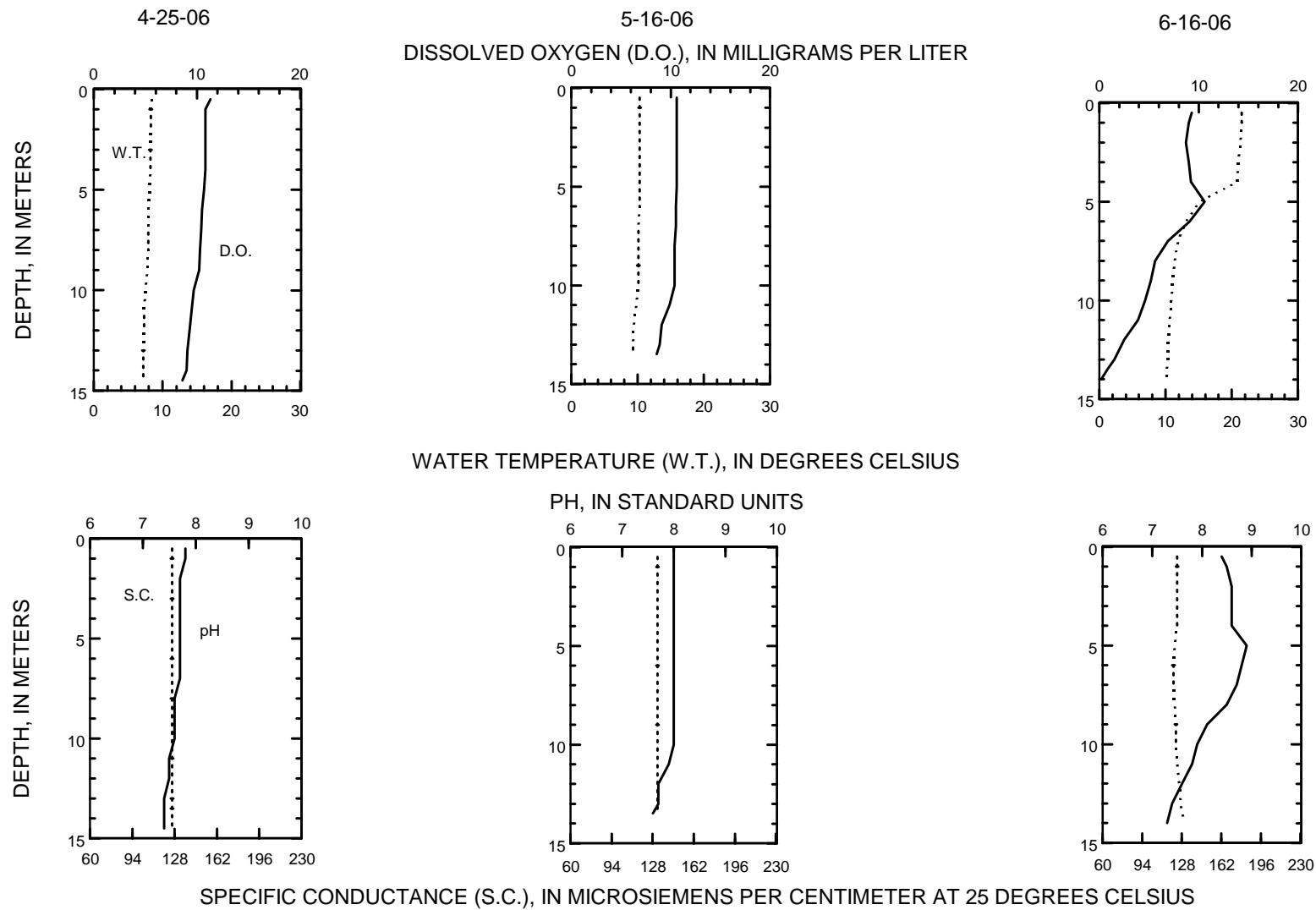
REMARKS.--Lake sampled near center at the deep hole. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 14, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat er us/cm (00095)	unfltrd field, std degC (00040)	Dis- solved oxygen, units mg/L (00300)	Chloro-		
									Specif.	pH, water,	phyll a wat unf
APR 2006											
25...	1315	--	--	.50	8.4	126	7.8	11.3	9.80	.020	50
25...	1335	--	--	14.5	7.2	126	7.4	8.6	--	.019	50
25...	1340	1583.92	2.60	--	--	--	--	--	--	--	--
MAY											
16...	1145	--	--	.50	10.3	132	8.0	10.6	9.41	.020	50
16...	1210	--	--	13.5	9.3	132	7.6	8.6	--	.026	50
16...	1215	1583.86	2.50	--	--	--	--	--	--	--	--
JUN											
16...	1230	--	--	.50	21.5	124	8.4	9.3	4.08	.014	50
16...	1244	--	--	14.0	10.1	130	7.3	.2	--	.086	50
16...	1300	1583.93	3.30	--	--	--	--	--	--	--	--
JUL											
18...	1000	1583.85	3.25	--	--	--	--	--	--	--	--
18...	1004	--	--	.50	25.4	118	8.5	9.1	2.56	.016	50
18...	1022	--	--	14.5	9.9	143	7.1	.1	--	.109	50
AUG											
23...	1625	--	--	.50	23.1	129	8.2	9.6	5.36	.017	50
23...	1645	1584.00	2.90	--	--	--	--	--	--	--	--
23...	1651	--	--	8.0	14.1	129	7.1	.2	--	.022	50
23...	1715	--	--	15.0	9.5	197	7.2	.1	--	.378	50
SEP											
14...	1148	--	--	.50	18.6	121	8.0	8.6	6.91	.016	50
14...	1212	--	--	10.5	11.0	130	7.0	.1	--	.028	50
14...	1225	--	--	14.0	9.7	168	7.1	.1	--	.289	50
14...	1245	1583.81	2.10	--	--	--	--	--	--	--	--

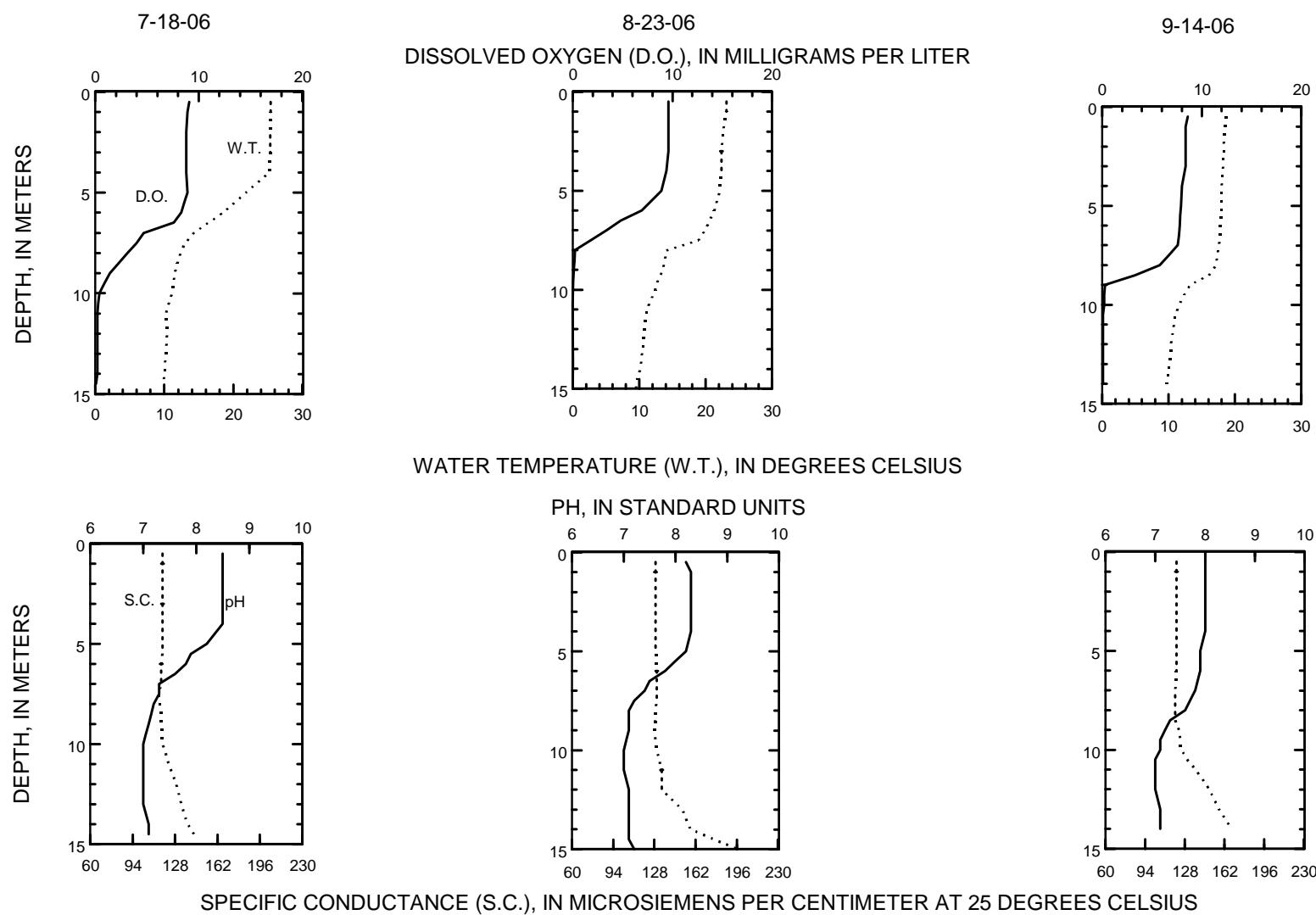
455214089412800 MINOCQUA LAKE, DEEP HOLE, AT MINOCQUA, WI

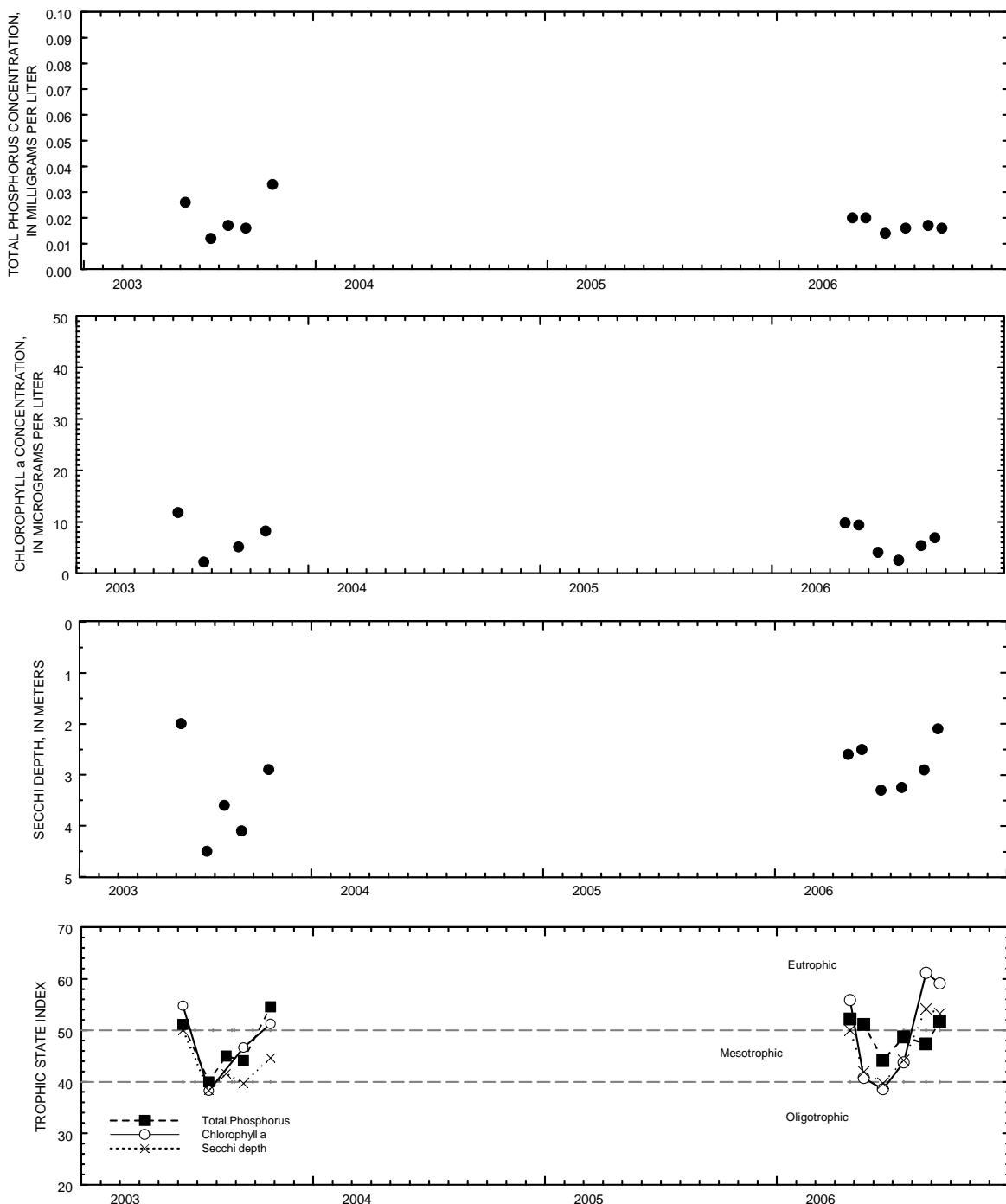
LAKE-DEPTH PROFILES, APRIL 25 TO JUNE 16, 2006



455214089412800 MINOCQUA LAKE, DEEP HOLE, AT MINOCQUA, WI

LAKE-DEPTH PROFILES, JULY 18 TO SEPTEMBER 14, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Minocqua Lake, Deep Hole, at Minocqua, Wisconsin.

455232089424100 MINOCQUA LAKE, NORTH BAY, AT MINOCQUA, WI

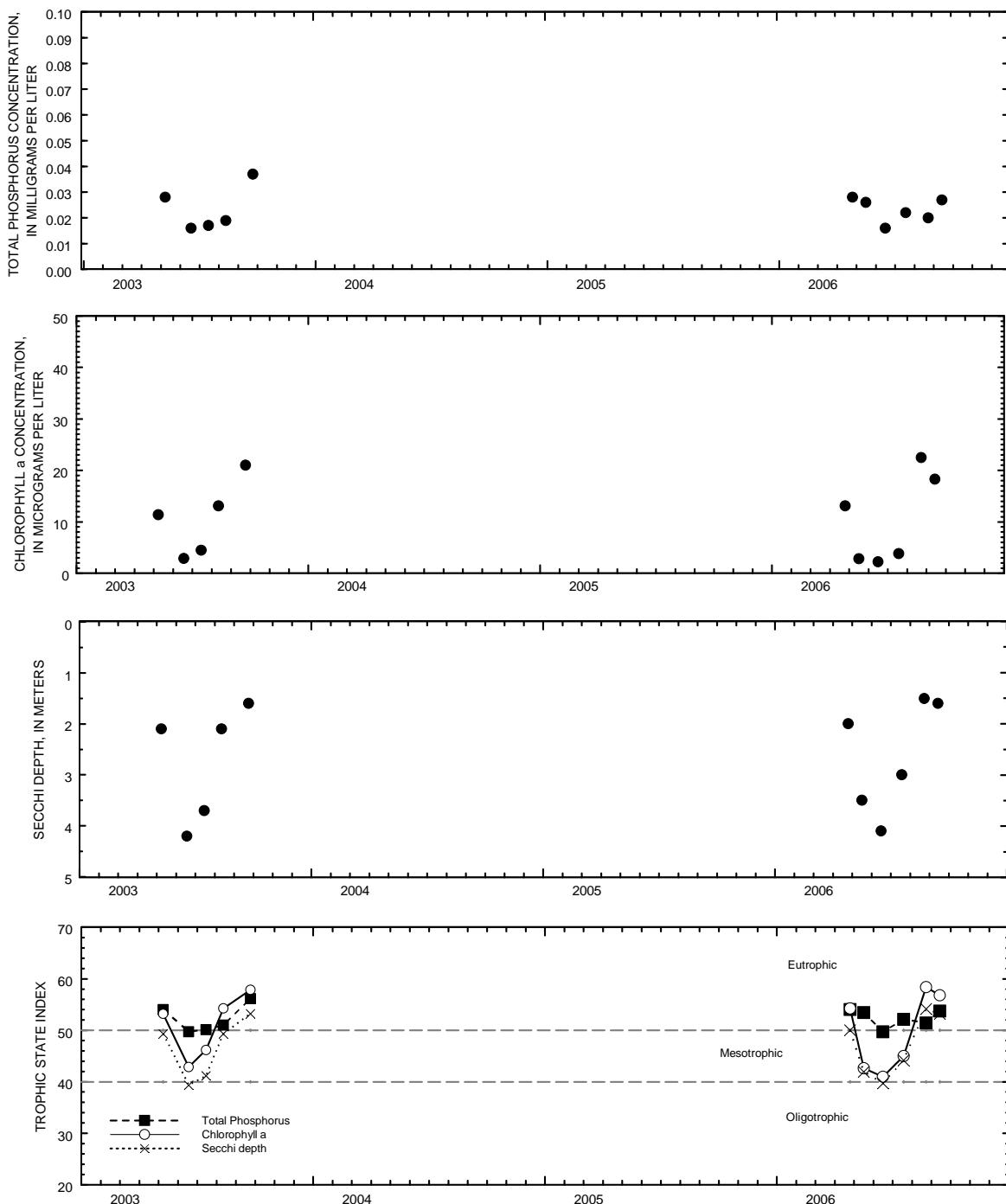
LOCATION.--Lat 45°52'32", long 89°42'41", in NE ¼ NW ¼ NW ¼ sec.14, T.39 N., R.6 E., Oneida County, Hydrologic Unit 07070001, at Minocqua.

PERIOD OF RECORD.--May to September 2003, April to September 2006.

REMARKS.--Lake sampled in the north bay. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 14, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, deg C (00010)	Conduc- tance, uS/cm (00095)	water, 25 degC (00040)	Specif. con- ductance, wat unf field, std (00400)	water, unfltrd field, solved oxygen, uncorr, mg/L (00300)	Chloro- phyll a		Phos- phorus, water, method, unfltrd mg/L (32210)	Sam- pling method, code (00665) (82398)
										pH,	Diss- trichr. method, water, uncorr, mg/L (00300)		
APR 2006													
25...	1100	--	--	.50	9.3	144	8.0	11.1	13.1	.028	50		
25...	1115	--	--	8.5	6.5	162	7.0	1.4	--	.039	50		
25...	1120	1583.92	2.00	--	--	--	--	--	--	--	--		
MAY													
16...	1055	--	--	.50	10.8	149	7.9	9.7	2.81	.026	50		
16...	1110	--	--	8.0	9.9	143	7.7	9.1	--	.039	50		
16...	1115	1583.86	3.50	--	--	--	--	--	--	--	--		
JUN													
16...	1115	--	--	.50	21.2	137	8.2	9.4	2.25	.016	50		
16...	1126	--	--	7.5	12.9	149	7.7	.6	--	.034	50		
16...	1145	1583.93	4.10	--	--	--	--	--	--	--	--		
JUL													
18...	0840	1583.85	3.00	--	--	--	--	--	--	--	--		
18...	0846	--	--	.50	25.5	133	8.5	9.0	3.83	.022	50		
18...	0858	--	--	8.5	12.9	179	7.2	.2	--	.055	50		
AUG													
23...	1440	--	--	.50	23.5	145	8.8	10.6	22.5	.020	50		
23...	1455	--	--	8.5	14.1	245	7.3	.1	--	.202	50		
23...	1510	1584.00	1.50	--	--	--	--	--	--	--	--		
SEP													
14...	1105	--	--	.50	18.2	138	7.8	7.2	18.3	.027	50		
14...	1126	--	--	8.0	15.5	237	7.3	.3	--	.107	50		
14...	1130	1583.81	1.60	--	--	--	--	--	--	--	--		



Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Minocqua Lake, North Bay, at Minocqua, Wisconsin.

05429000 LAKE MONONA AT MADISON, WI

LOCATION.--Lat $43^{\circ}03'48''$, long $89^{\circ}23'49''$ referenced to North American Datum of 1927, in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.23, T.7 N., R.9 E., Dane County, WI, Hydrologic Unit 07090001, in Brittingham Park, in Madison.

DRAINAGE AREA.--279 mi² of which 36.6 mi² probably is noncontributing, Area of Lake Monona, 5.3 mi².

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 NGVD of 1929, 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 at the higher datum.

REMARKS.--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, 7.48 ft, June 14, 15, 2000; minimum observed, 3.22 ft, Jan. 20, 1965, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 5.92 ft, Sept. 14-15; minimum recorded, 3.68 ft, Mar. 3-5.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4.73	4.46	4.61	3.99	3.81	3.69	4.19	5.26	5.17	5.19	5.42	5.82
2	4.72	4.53	4.56	4.02	3.81	3.69	4.23	5.26	5.15	5.16	5.38	5.79
3	4.73	4.59	4.57	4.05	3.80	3.69	4.34	5.23	5.14	5.15	5.36	5.76
4	4.72	4.63	4.59	4.04	3.79	3.69	4.37	5.17	5.12	5.13	5.32	5.79
5	4.71	4.68	4.58	4.03	3.77	3.69	4.40	5.11	5.10	5.10	5.30	5.77
6	4.70	4.79	4.58	4.01	3.75	3.71	4.44	5.07	5.09	5.07	5.32	5.74
7	4.67	4.85	4.59	4.00	3.74	3.71	4.61	5.03	5.08	5.04	5.34	5.72
8	4.64	4.89	4.59	3.98	3.73	3.74	4.64	5.00	5.08	5.02	5.32	5.68
9	4.62	4.89	4.61	3.96	3.73	3.86	4.66	4.97	5.07	5.00	5.30	5.65
10	4.60	4.87	4.62	3.95	3.72	3.90	4.68	4.96	5.11	5.00	5.30	5.62
11	4.59	4.87	4.62	3.94	3.72	3.93	4.71	4.90	5.11	5.11	5.29	5.65
12	4.58	4.87	4.62	3.93	3.72	3.96	4.77	4.93	5.10	5.31	5.26	5.78
13	4.58	4.83	4.61	3.92	3.71	4.02	4.84	4.94	5.09	5.35	5.24	5.89
14	4.58	4.84	4.62	3.90	3.70	4.02	4.90	4.94	5.09	5.37	5.22	5.91
15	4.56	4.85	4.59	3.90	3.69	4.04	4.93	4.91	5.10	5.36	5.17	5.91
16	4.55	4.85	4.54	3.90	3.73	4.09	5.04	4.91	5.09	5.35	5.14	5.90
17	4.55	4.83	4.47	3.87	3.74	4.09	5.16	4.91	5.10	5.34	5.12	5.88
18	4.55	4.81	4.43	3.83	3.74	4.09	5.20	4.92	5.11	5.33	5.13	5.82
19	4.54	4.79	4.40	3.81	3.74	4.09	5.23	4.90	5.11	5.31	5.12	5.76
20	4.53	4.76	4.37	3.80	3.74	4.11	5.22	4.88	5.12	5.37	5.10	5.71
21	4.52	4.71	4.33	3.79	3.73	4.10	5.21	4.86	5.12	5.37	5.08	5.68
22	4.51	4.68	4.30	3.78	3.73	4.08	5.21	4.85	5.12	5.34	5.07	5.67
23	4.50	4.65	4.27	3.77	3.72	4.09	5.19	4.84	5.11	5.34	5.07	5.63
24	4.49	4.57	4.23	3.75	3.72	4.11	5.19	4.89	5.11	5.29	5.36	5.60
25	4.48	4.54	4.20	3.73	3.71	4.11	5.18	5.12	5.13	5.27	5.66	5.55
26	4.48	4.55	4.17	3.72	3.70	4.12	5.15	5.16	5.25	5.25	5.82	5.52
27	4.47	4.56	4.15	3.71	3.70	4.14	5.14	5.18	5.26	5.39	5.84	5.48
28	4.47	4.63	4.11	3.72	3.70	4.15	5.10	5.18	5.25	5.52	5.85	5.43
29	4.47	4.64	4.09	3.80	---	4.15	5.09	5.18	5.23	5.49	5.85	5.40
30	4.47	4.62	4.07	3.82	---	4.17	5.24	5.19	5.22	5.47	5.87	5.36
31	4.47	---	4.04	3.82	---	4.20	---	5.19	---	5.45	5.86	---
Mean	4.57	4.72	4.42	3.88	3.74	3.98	4.88	5.03	5.13	5.27	5.37	5.70
Max	4.73	4.89	4.62	4.05	3.81	4.20	5.24	5.26	5.26	5.52	5.87	5.91
Min	4.47	4.46	4.04	3.71	3.69	3.69	4.19	4.84	5.07	5.00	5.07	5.36

425109088075000 MUSKEGO (BIG MUSKEGO) LAKE NEAR WIND LAKE, WI

LOCATION.--Lat $42^{\circ}51'09''$, long $88^{\circ}07'50''$ referenced to North American Datum of 1927, in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.33, T.5 N., R.20 E., Waukesha County, WI, Hydrologic Unit 07120006, on right bank at dam outlet of Muskego Lake, 700 ft north of Muskego Dam Drive, 2 mi northeast of Wind Lake.

DRAINAGE AREA.--33.9 mi².

PERIOD OF RECORD.--October 1987 to September 1989, January 1991 to September 2006 (discontinued). Prior to October 1993, published as Muskego Lake Outlet near Wind Lake, WI. October 1993 to September 2000, published as "Big Muskego Lake".

REVISED RECORDS.--OFR 02-135: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 760.00 ft above National Geodetic Vertical Datum of 1929. 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.

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, 1996 to Feb. 18, 1997, due to drawdown of lake.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage-height, 12.43 ft, Apr. 7; minimum observed, 10.24 ft, Nov. 13.

HEADWATER GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	10.46	10.60	11.03	11.27	11.84	11.71	11.78	11.77	11.86	11.64	11.69	11.64
2	10.46	10.54	11.03	11.33	11.86	11.71	11.78	11.80	11.84	11.67	11.67	11.61
3	10.44	10.57	11.03	11.35	11.87	11.70	12.00	11.77	11.82	11.66	11.74	11.59
4	10.46	10.59	11.05	11.35	11.90	11.70	12.07	11.79	11.77	11.68	11.71	11.61
5	10.43	10.71	11.07	11.35	11.87	11.70	12.13	11.78	11.74	11.65	11.68	11.64
6	10.44	10.77	11.07	11.35	11.84	11.72	12.14	11.76	11.69	11.63	11.68	11.65
7	10.54	10.71	11.07	11.35	11.84	11.72	12.31	11.73	11.72	11.61	11.70	11.65
8	10.52	10.77	11.07	11.34	11.83	11.73	12.22	11.71	11.71	11.57	11.69	11.63
9	10.48	10.72	11.07	11.34	11.81	11.85	12.16	11.71	11.74	11.57	11.66	11.69
10	10.47	10.75	11.07	11.34	11.80	11.92	12.13	11.74	11.71	11.67	11.71	11.65
11	10.46	10.74	11.07	11.34	11.80	11.95	12.06	11.80	11.67	11.66	11.69	11.66
12	10.44	10.67	11.07	11.34	11.79	12.00	12.06	11.91	11.65	11.65	11.64	11.76
13	10.43	10.45	11.07	11.41	11.78	12.15	12.04	11.97	11.62	11.62	11.61	11.89
14	10.41	10.79	11.07	11.59	11.77	12.29	12.01	12.01	11.61	11.66	11.60	11.89
15	10.42	10.84	11.07	11.62	11.77	12.30	12.00	12.04	11.59	11.67	11.59	11.89
16	10.42	10.71	11.07	11.62	11.82	12.30	12.00	12.01	11.55	11.64	11.57	11.87
17	10.38	10.86	11.07	11.62	11.81	12.25	11.97	12.00	11.52	11.61	11.56	11.86
18	10.40	10.86	11.07	11.62	11.80	12.18	11.90	12.01	11.63	11.66	11.58	11.84
19	10.46	10.87	11.07	11.61	11.80	12.11	11.85	11.98	11.70	11.60	11.57	11.84
20	10.47	10.87	11.07	11.62	11.79	12.13	11.84	11.94	11.71	11.62	11.56	11.84
21	10.51	10.88	11.07	11.64	11.77	12.05	11.81	11.95	11.71	11.65	11.52	11.82
22	10.51	10.90	11.07	11.64	11.75	11.93	11.81	11.92	11.75	11.63	11.51	11.83
23	10.59	10.89	11.07	11.64	11.75	11.89	11.81	11.88	11.78	11.62	11.51	11.83
24	10.64	11.03	11.08	11.64	11.74	11.86	11.80	11.86	11.73	11.55	11.58	11.84
25	10.64	11.04	11.11	11.64	11.73	11.84	11.86	11.91	11.73	11.56	11.63	11.80
26	10.60	11.03	11.16	11.64	11.72	11.80	11.71	11.95	11.75	11.55	11.65	11.80
27	10.59	10.98	11.18	11.64	11.72	11.78	11.74	11.91	11.73	11.64	11.66	11.79
28	10.58	10.94	11.19	11.65	11.71	11.79	11.70	11.86	11.73	11.73	11.66	11.79
29	10.56	10.88	11.20	11.77	---	11.75	11.69	11.84	11.72	11.74	11.66	11.75
30	10.54	11.01	11.22	11.82	---	11.74	11.73	11.86	11.71	11.73	11.67	11.75
31	10.60	---	11.25	11.84	---	11.63	---	11.90	---	11.71	11.65	---
Mean	10.50	10.80	11.09	11.53	11.80	11.91	11.94	11.87	11.71	11.64	11.63	11.76
Max	10.64	11.04	11.25	11.84	11.90	12.30	12.31	12.04	11.86	11.74	11.74	11.89
Min	10.38	10.45	11.03	11.27	11.71	11.63	11.69	11.71	11.52	11.55	11.51	11.59

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

LOCATION.--Lat 43°05'51", long 88°27'35", in NW ¼ SE ¼ 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. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, deg C (00010)	conduc- tance, uS/cm (00095)	water, unfltrd wat unf 25 degC (000400)	Dis- solved field, std units (000300)	Chloro- phyll a wat unf Phos- trichr. phorus, method, uncorr, mg/L (00300)	Ortho- phate, water, water, unfltrd mg/L (00665)	Total gen, water, filtrd, as P mg/L (00671)	Total nitro- water, water, unfltrd mg/L (00600)
APR 2006												
10...	1315	--	--	.50	6.6	550	8.2	11.8	.910	.009	<.002	.67
10...	1333	--	--	17.5	5.7	551	8.0	11.4	--	.008	--	--
10...	1340	8.06	6.80	--	--	--	--	--	--	--	--	--
JUN												
13...	1500	--	--	.50	21.9	538	8.3	9.7	1.67	.018	--	--
13...	1518	--	--	18.0	9.0	578	7.7	3.9	--	.023	--	--
13...	1520	8.22	6.45	--	--	--	--	--	--	--	--	--
JUL												
25...	1330	--	--	.50	25.6	528	8.3	8.8	3.10	.027	--	--
25...	1344	--	--	18.0	8.7	572	7.4	M	--	.029	--	--
25...	1345	--	2.30	--	--	--	--	--	--	--	--	--
AUG												
29...	1745	--	--	.50	23.4	528	8.4	8.6	2.67	.016	--	--
29...	1759	--	--	18.5	8.8	596	7.4	M	--	.032	--	--
29...	1800	8.26	3.65	--	--	--	--	--	--	--	--	--
OCT												
05...	1615	--	--	.50	16.4	534	8.4	9.5	2.76	.011	--	--
05...	1630	--	--	18.5	9.2	584	7.4	.1	--	.030	--	--
05...	1635	--	5.80	--	--	--	--	--	--	--	--	--

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

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Sam- pling water, fltrd,	Ammonia	Nitrite	Appar-							
			org-N, water, mg/L (00098)	+ water, unfltrd (00608)	nitrate water, fltrd, (00625)	Tur- bidity, as N (00631)	Pt-Co NTU (00076)	color, Hard- ness, water, unfltrd mg/L as (00081)	Calcium CaCO ₃ mg/L (00900)	Magnes- ium, water, fltrd, mg/L (00915)	Sodium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00930)
APR 2006												
10...	.50	.036	.49	.180	<1.0	10	250	42.4	34.0	20.5	2.00	
10...	17.5	--	--	--	--	--	--	--	--	--	--	
10...	--	--	--	--	--	--	--	--	--	--	--	
JUN												
13...	.50	--	--	--	--	--	--	--	--	--	--	
13...	18.0	--	--	--	--	--	--	--	--	--	--	
13...	--	--	--	--	--	--	--	--	--	--	--	
JUL												
25...	.50	--	--	--	--	--	--	--	--	--	--	
25...	18.0	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	--	
AUG												
29...	.50	--	--	--	--	--	--	--	--	--	--	
29...	18.5	--	--	--	--	--	--	--	--	--	--	
29...	--	--	--	--	--	--	--	--	--	--	--	
OCT												
05...	.50	--	--	--	--	--	--	--	--	--	--	
05...	18.5	--	--	--	--	--	--	--	--	--	--	
05...	--	--	--	--	--	--	--	--	--	--	--	

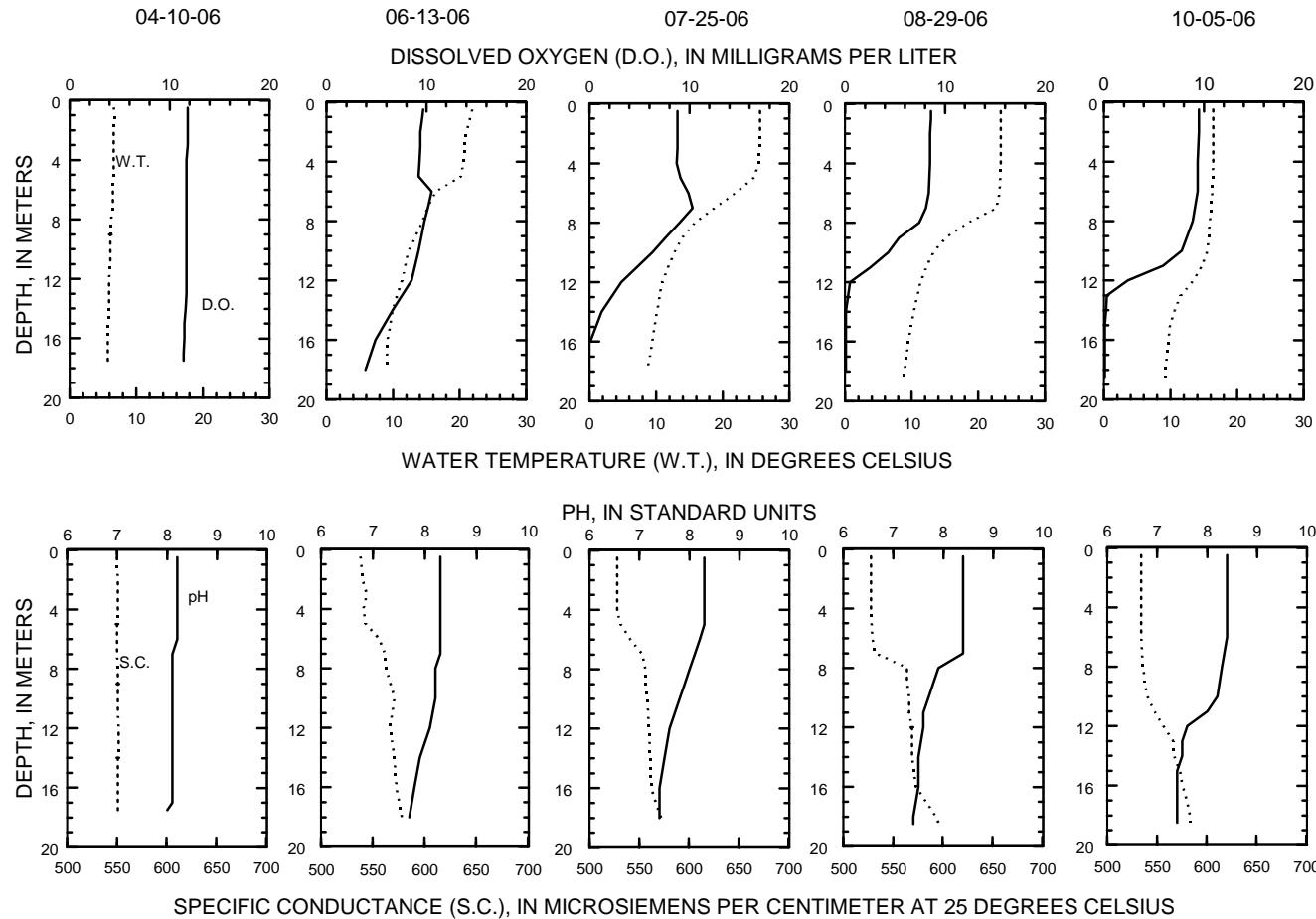
430551088273500 OCONOMOWOC LAKE NO. 1 (CENTER) AT OCONOMOWOC, WI

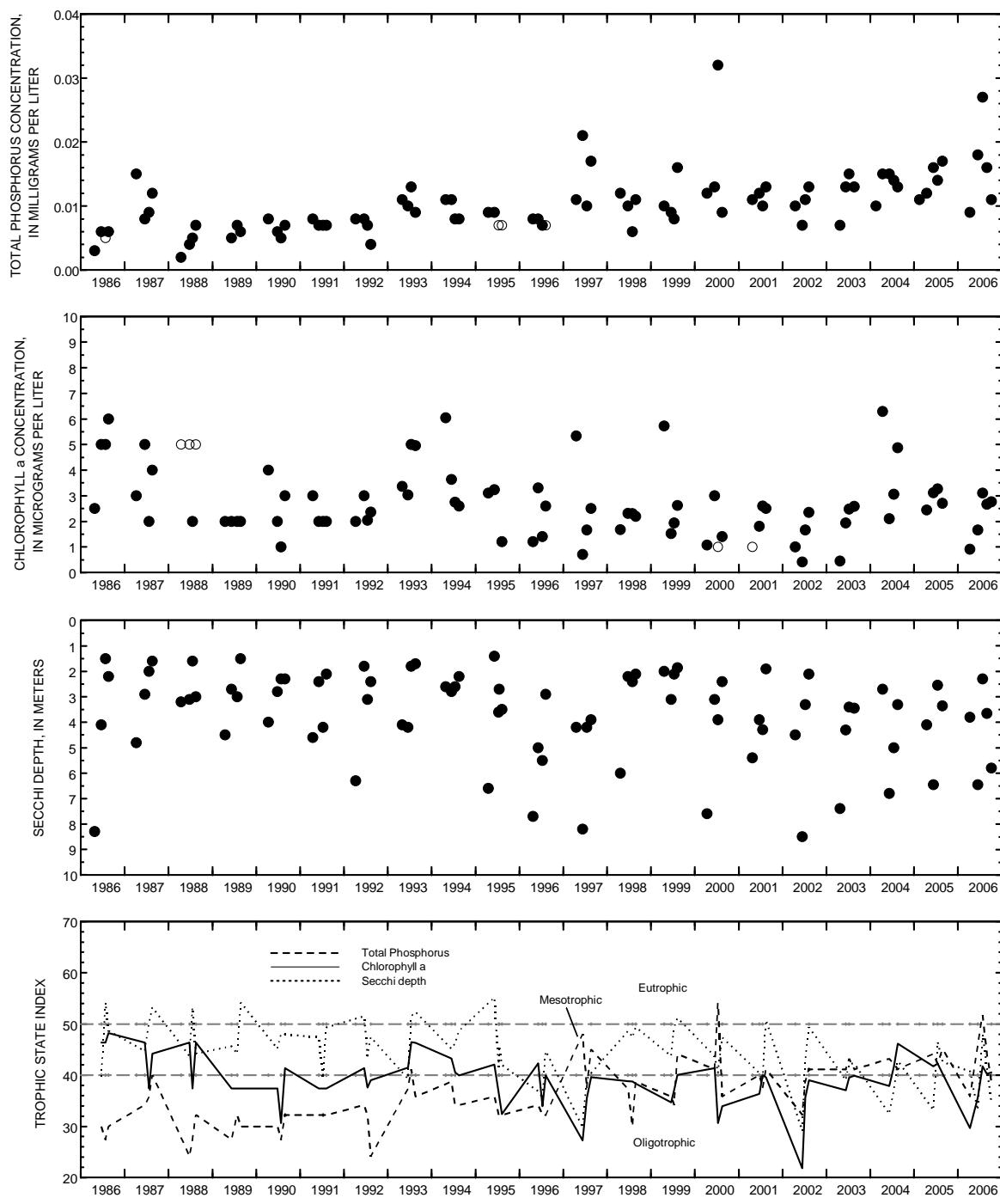
WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Residue								
	ANC, wat unf fixed	Chlor- ide, lab, water, water, filtrd, filtrd, mg/L as CaCO ₃	Sulfate water, water, filtrd, filtrd, mg/L	Silica, water, water, filtrd, filtrd, mg/L	Iron, water, water, filtrd, filtrd, ug/L	Mangan- ese, water, filtrd, wat filt ug/L	at 180degC 180degC, wat filt ug/L	Sam- pling method, code	
	(00098) (00417)	(00940) (00945)	(00955) (01046)	(01046) (01056)	(70300) (82398)				
APR 2006									
10...	.50	199	46.2	28.4	6.70	<100	M	350	50
10...	17.5	--	--	--	--	--	--	--	50
10...	--	--	--	--	--	--	--	--	--
JUN									
13...	.50	--	--	--	--	--	--	--	50
13...	18.0	--	--	--	--	--	--	--	50
13...	--	--	--	--	--	--	--	--	--
JUL									
25...	.50	--	--	--	--	--	--	--	50
25...	18.0	--	--	--	--	--	--	--	50
25...	--	--	--	--	--	--	--	--	--
AUG									
29...	.50	--	--	--	--	--	--	--	50
29...	18.5	--	--	--	--	--	--	--	50
29...	--	--	--	--	--	--	--	--	--

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

LAKE-DEPTH PROFILES, APRIL 10 TO OCTOBER 5, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Oconomowoc Lake, Center Site, at Oconomowoc, Wisconsin.

(Open circles on the first two plots 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 ¼ NW ¼ sec.1, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

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

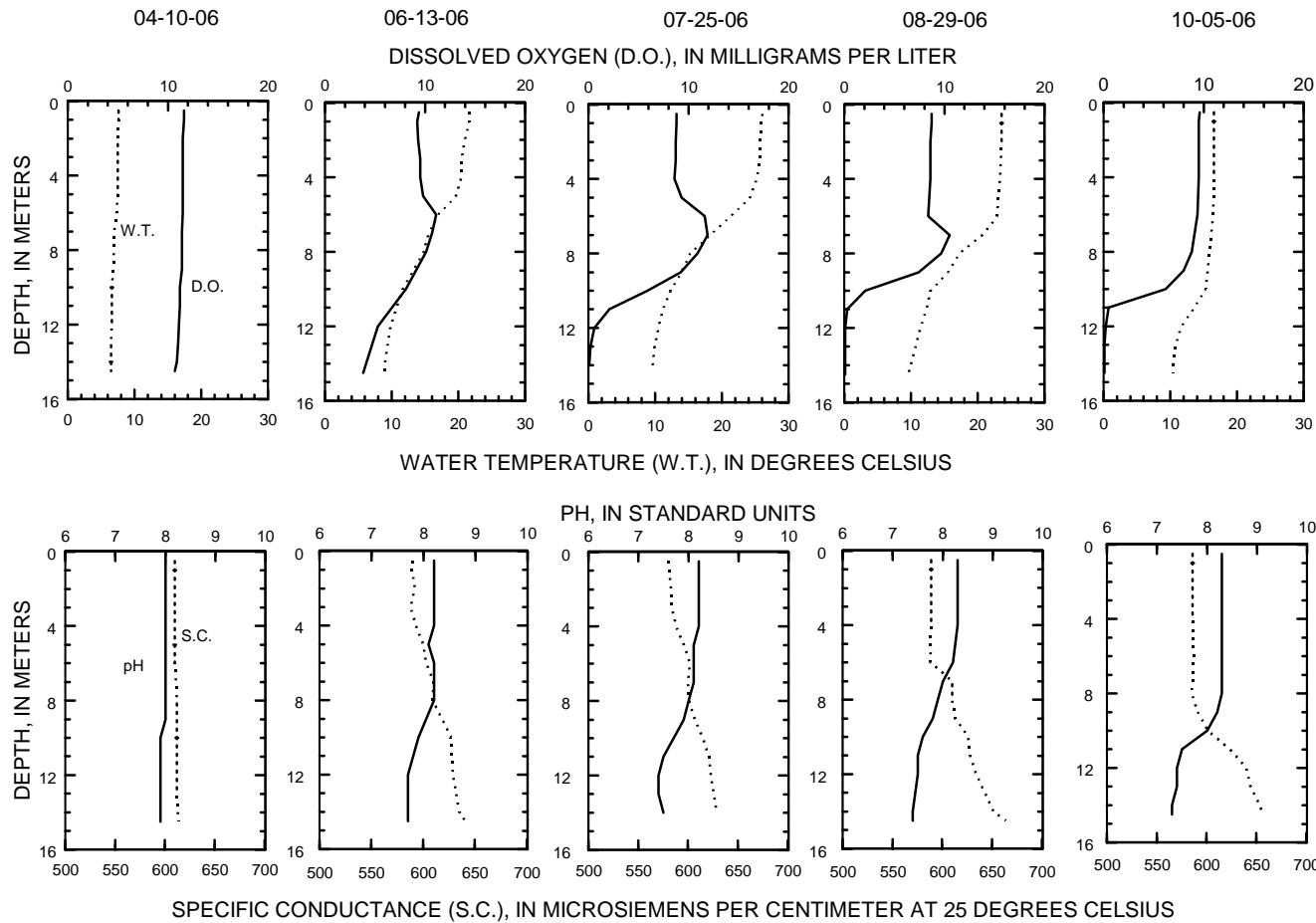
REMARKS.--Lake sampled at the deepest point in northeast bay near Hewitt Point. Lake ice-covered during February sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

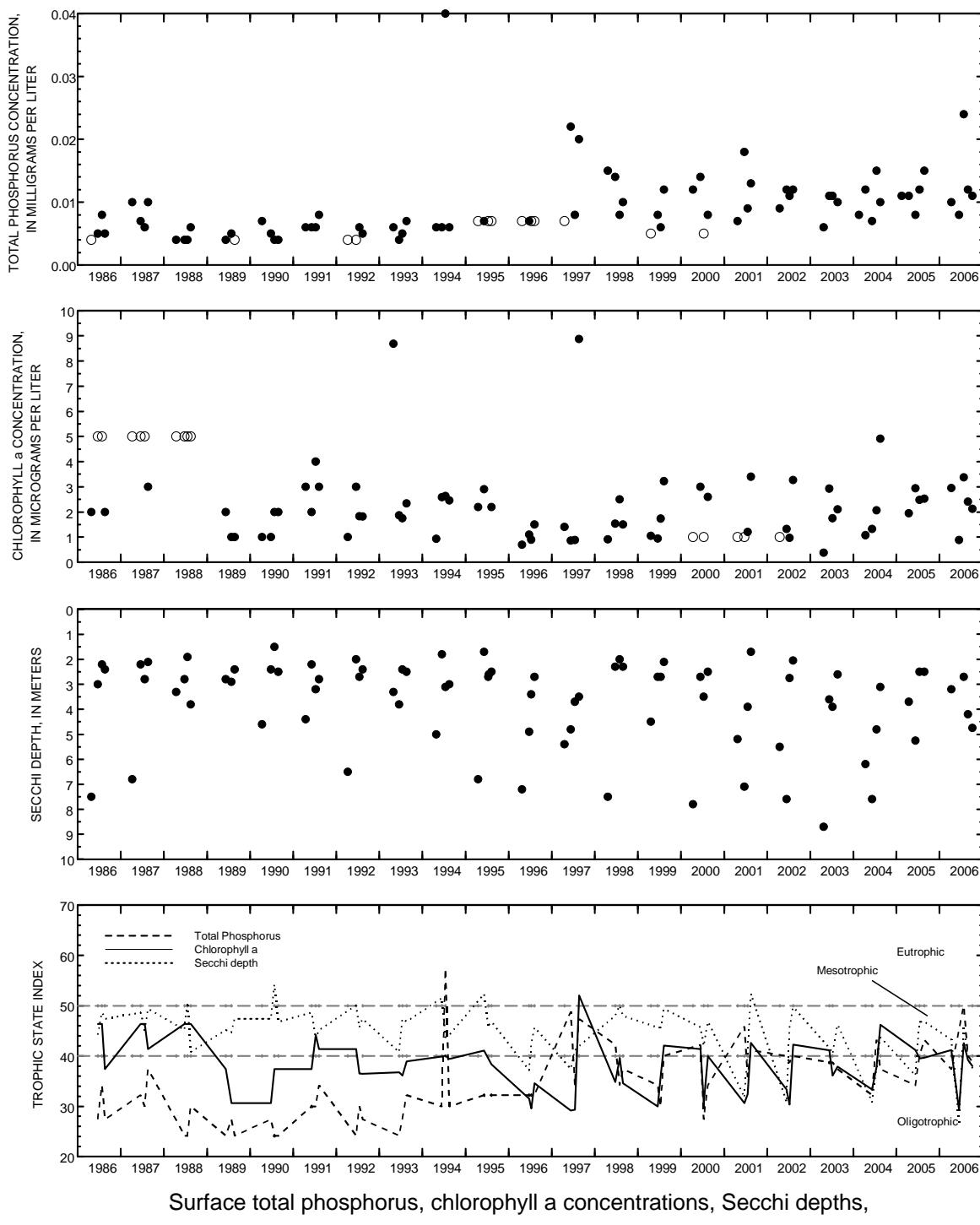
WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Specif. conduc- tance, wat er, uS/cm (00095)	pH, unfltrd water, wat er, 25 degC (00040)	Chloro- phyll a wat unf trichr. method, solved oxygen, std units (00400)	Phos- phorus, water, uncorr, method, mg/L (00300)	Sam- pling method, ug/L (32210)	Sam- pling method, mg/L (00665)	Sam- pling code (82398)
APR 2006												
10...	1350	--	--	.50	7.6	610	8.0	11.6	2.95	.010	50	
10...	1405	--	--	14.5	6.5	614	7.9	10.7	--	.011	50	
10...	1410	8.06	3.20	--	--	--	--	--	--	--	--	
JUN												
13...	1530	--	--	.50	21.7	590	8.2	9.4	.880	.008	50	
13...	1545	--	--	.50	8.9	640	7.7	3.8	--	.041	50	
13...	1550	8.22	>10.0	--	--	--	--	--	--	--	--	
JUL												
25...	1430	--	--	.50	26.1	580	8.2	8.8	3.37	.024	50	
25...	1444	--	--	14.0	9.6	629	7.5	.1	--	.032	50	
25...	1445	--	2.70	--	--	--	--	--	--	--	--	
AUG												
29...	1830	--	--	.50	23.6	589	8.3	8.7	2.41	.012	50	
29...	1842	--	--	14.5	9.6	664	7.4	.1	--	.042	50	
29...	1845	8.26	4.20	--	--	--	--	--	--	--	--	
OCT												
05...	1700	--	--	.50	16.5	586	8.3	9.6	2.13	.011	50	
05...	1712	--	--	14.5	10.4	657	7.3	.1	--	.038	50	
05...	1715	--	4.75	--	--	--	--	--	--	--	--	

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

LAKE-DEPTH PROFILES, APRIL 10 TO OCTOBER 5, 2006





430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI

LOCATION.--Lat 43°07'23", long 88°25'21", in SE ¼ SE ¼ sec.25, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

DRAINAGE AREA.--80.7 mi².

PERIOD OF RECORD.--February 1984 to September 2006 (discontinued).

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above NGVD of 1929.

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

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006

(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat er uS/cm (00095)	unfltrd wat er 25 degC (00040)	Dis- solved field, std units (00400)	Chloro- phyll a wat er solved method, oxygen, mg/L (00300)	Ortho- phos- phate, water, ug/L (32210)	Ortho- phos- phate, water, mg/L (00665)	Ortho- phos- phate, water, mg/L (00671)
APR 2006												
10...	0935	--	--	.50	6.2	549	8.1	12.0	4.55	.020	.003	.84
10...	0951	--	--	28.5	5.3	549	8.0	11.2	--	.014	--	--
10...	0955	4.89	4.90	--	--	--	--	--	--	--	--	--
JUN												
13...	1230	--	--	.50	21.4	548	8.2	9.0	2.05	.014	--	--
13...	1245	--	--	27.5	6.0	575	7.5	.4	--	.082	--	--
13...	1246	4.76	6.85	--	--	--	--	--	--	--	--	--
JUL												
25...	1720	--	--	.50	25.9	528	8.4	8.9	9.35	.035	--	--
25...	1737	--	--	27.5	5.9	562	7.5	.1	--	.023	--	--
25...	1740	4.86	1.70	--	--	--	--	--	--	--	--	--
AUG												
29...	1425	--	--	.50	23.6	528	8.3	7.9	4.82	.019	<.002	--
29...	1446	--	--	27.5	6.0	572	7.5	0.0	--	.037	--	--
29...	1450	4.91	3.25	--	--	--	--	--	--	--	--	--

430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006--CONTINUED

(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Ammonia water, fltrd, mg/L as N (00098)	Ammonia org-N, water, fltrd, mg/L as N (00608)	Ammonia org-N, water, unfltrd, mg/L as N (00623)	Nitrite nitrate water fltrd, mg/L as N (00625)	Appar- ent		Magnes- ium, water, water, mg/L as CaCO ₃ (00076)	Sodium, water, water, mg/L (00900)	Potas- sium, water, water, mg/L (00925)	Sodium, water, water, mg/L (00930)	Potas- sium, water, water, mg/L (00935)
			+	+	+	Tur- bidity, NTU (00081)	Pt-Co units (00081)	color, water, mg/L as filtrd, CaCO ₃ (0090)	Hard- ness, water, filtrd, mg/L (00915)			
APR 2006												
10...	.50	<.015	--	.54	.299	<1.0	10	260	47.4	34.0	16.7	2.00
10...	28.5	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
13...	.50	--	--	--	--	--	--	--	--	--	--	--
13...	27.5	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
25...	.50	--	--	--	--	--	--	--	--	--	--	--
25...	27.5	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
29...	.50	.041	.85	--	<.019	--	--	--	--	--	--	--
29...	27.5	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--

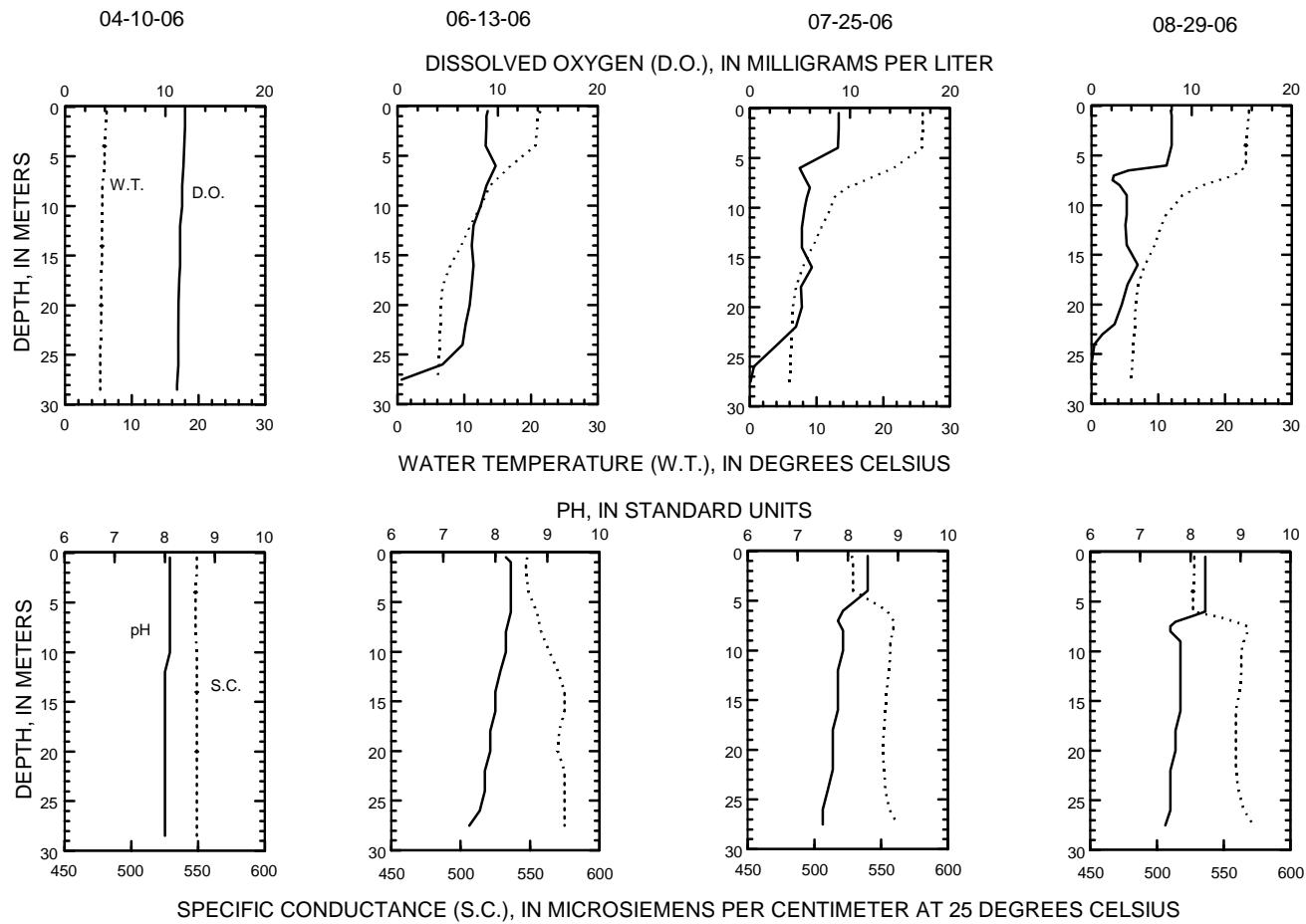
430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI

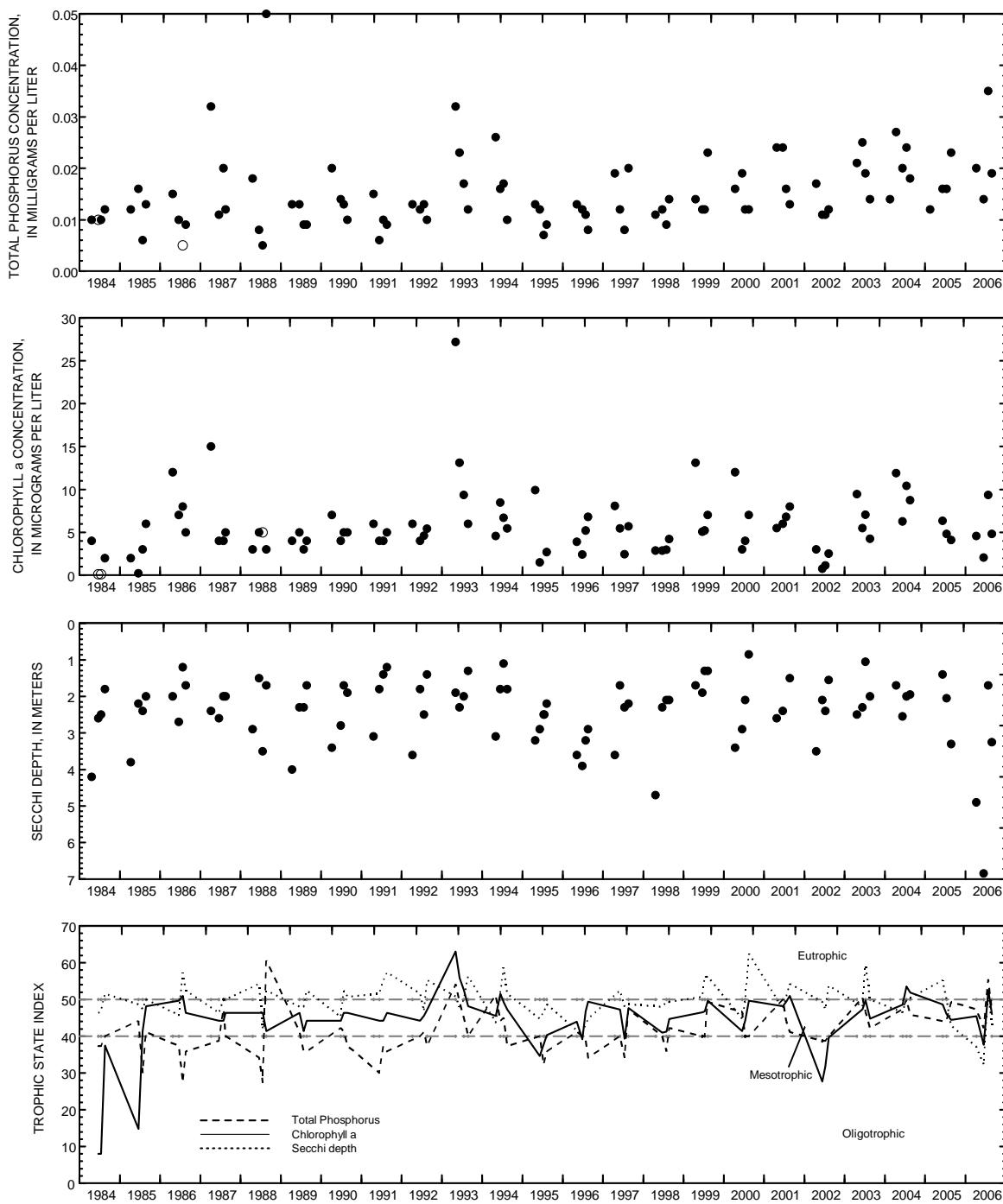
WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	ANC, wat unf fixed		Chlor- ide,		Sulfate	Silica,	Iron, water,	Mangan- ese,	Residue on at		Sam- pling method, code (82398)
	Sam- pling depth, meters (00098)	end pt, lab, mg/L as CaCO ₃ (00417)	fltrd, mg/L (00940)	fltrd, mg/L (00945)	fltrd, mg/L (00955)	fltrd, ug/L (01046)	fltrd, ug/L (01056)	wat filt (70300)	180degC		
APR 2006											
10...	.50	208	39.4	29.8	5.04	<100	<.5	352		50	
10...	28.5	--	--	--	--	--	--	--	--	50	
10...	--	--	--	--	--	--	--	--	--	--	
JUN											
13...	.50	--	--	--	--	--	--	--	--	50	
13...	27.5	--	--	--	--	--	--	--	--	50	
13...	--	--	--	--	--	--	--	--	--	--	
JUL											
25...	.50	--	--	--	--	--	--	--	--	50	
25...	27.5	--	--	--	--	--	--	--	--	50	
25...	--	--	--	--	--	--	--	--	--	--	
AUG											
29...	.50	--	--	--	--	--	--	--	--	50	
29...	27.5	--	--	--	--	--	--	--	--	50	
29...	--	--	--	--	--	--	--	--	--	--	

430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI

LAKE-DEPTH PROFILES, APRIL 10 TO AUGUST 29, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Okauchee Lake, near Okauchee, Wisconsin.

(Open circles on the first two plots 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 $\frac{1}{4}$ NW $\frac{1}{4}$ sec.30, T.8 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, near Okauchee.

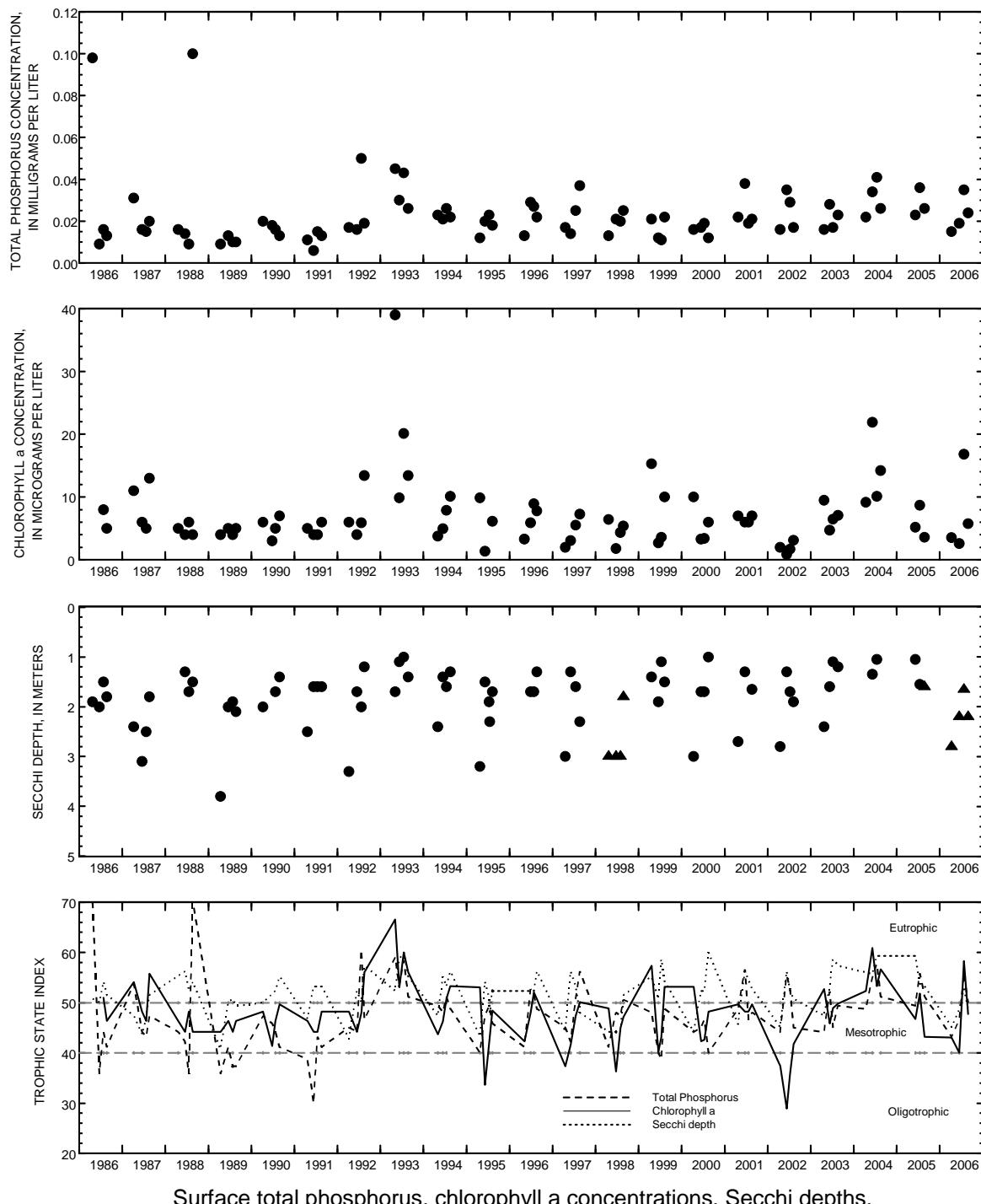
PERIOD OF RECORD.--April 1986 to September 2006 (discontinued).

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above NGVD of 1929.

REMARKS.--Lake sampled in Crane's Nest Bay, in the northeast part of the lake, at an approximate depth of 2 m. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat er uS/cm (00095)	Specif.	pH, water, unfltrd wat unf field, std units (00400)	Dis- solved oxy- gen, mg/L (00300)	Chloro- phyll a wat unf trichr. method, water, unfltrd ug/L (32210)	Phos- phorus, water, unfltrd mg/L (00665)	Sam- pling method, code (82398)
							conduct-	water,	solved	oxy- gen, mg/L	trichr. method, water, unfltrd ug/L	Phos- phorus, water, unfltrd mg/L
APR 2006												
10...	1020	--	--	.50	6.6	552	8.1	12.4	3.56	.015	50	
10...	1021	4.76	>2.80	--	--	--	--	--	--	--	--	
JUN												
13...	1310	--	--	.50	22.2	556	8.3	10.8	2.62	.019	50	
JUL												
25...	1820	--	--	.50	26.7	--	8.4	9.1	16.8	.035	50	
25...	1825	4.86	1.65	--	--	--	--	--	--	--	--	
AUG												
29...	1530	--	--	.50	23.4	567	8.2	8.6	5.74	.024	50	
29...	1535	4.91	>2.20	--	--	--	--	--	--	--	--	



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

LOCATION.--Lat 43°06'45", long 88°26'45", in SE ¼ NE ¼ sec.35, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

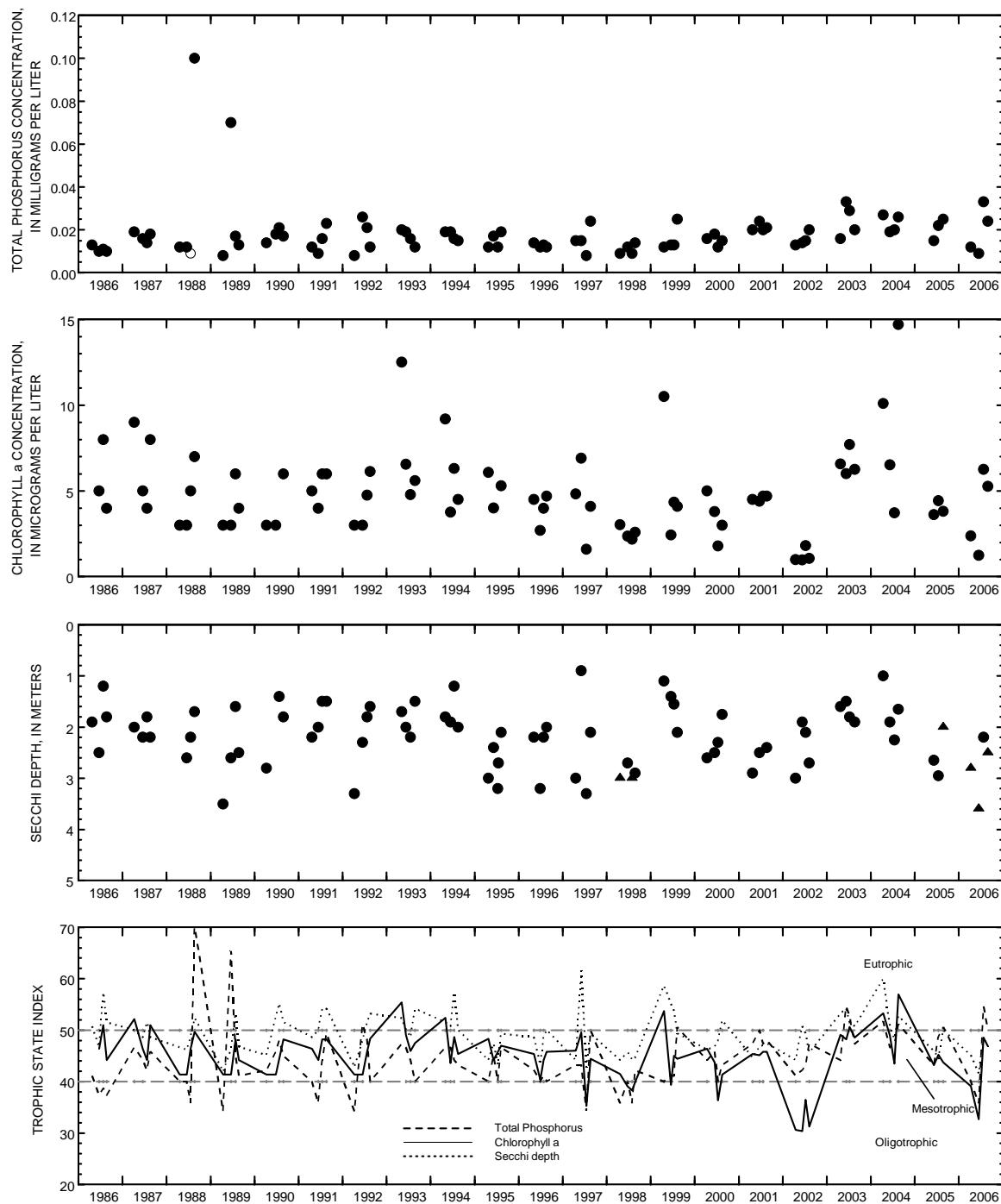
PERIOD OF RECORD.--April 1986 to September 2006 (discontinued).

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above NGVD of 1929.

REMARKS.--Lake sampled in Lower Okauchee Lake, at an approximate depth of 5 m. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat er uS/cm (00095)	Specif. 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Chloro- phyll a wat unf Dis- solved oxygen, uncorr, mg/L (00300)	Phos- trichr. method, unfltrd water, ug/L (32210)	Sam- pling method, code (00665) (82398)	
								Chloro- phyll a wat unf Dis- solved oxygen, uncorr, mg/L (00300)	Phos- trichr. method, unfltrd water, ug/L (32210)	Sam- pling method, code (00665) (82398)		
APR 2006												
10...	1140	--	--	.50	8.1	544	8.2	12.7	2.38	.012	50	
10...	1141	4.89	>2.20	--	--	--	--	--	--	--	--	
JUN												
13...	1145	--	--	.50	21.6	523	8.2	10.7	1.24	.009	50	
13...	1150	4.76	>3.60	--	--	--	--	--	--	--	--	
JUL												
25...	1605	--	--	.50	27.7	495	8.5	9.3	6.25	.033	50	
25...	1610	4.86	2.20	--	--	--	--	--	--	--	--	
AUG												
29...	1320	--	--	.50	23.7	504	8.2	6.8	5.27	.024	50	
29...	1325	4.91	>2.50	--	--	--	--	--	--	--	--	



Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Okauchee Lake, No. 2, near Okauchee, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses.)

Actual concentrations for these particular analyses are less than the plotted circles.)

(Triangles in Secchi plot indicate maximum depth at sampling site.)

Actual Secchi depth on these days was greater than the plotted triangles.)

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

LOCATION.--Lat $43^{\circ}06'42''$, long $88^{\circ}25'24''$, in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.36, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

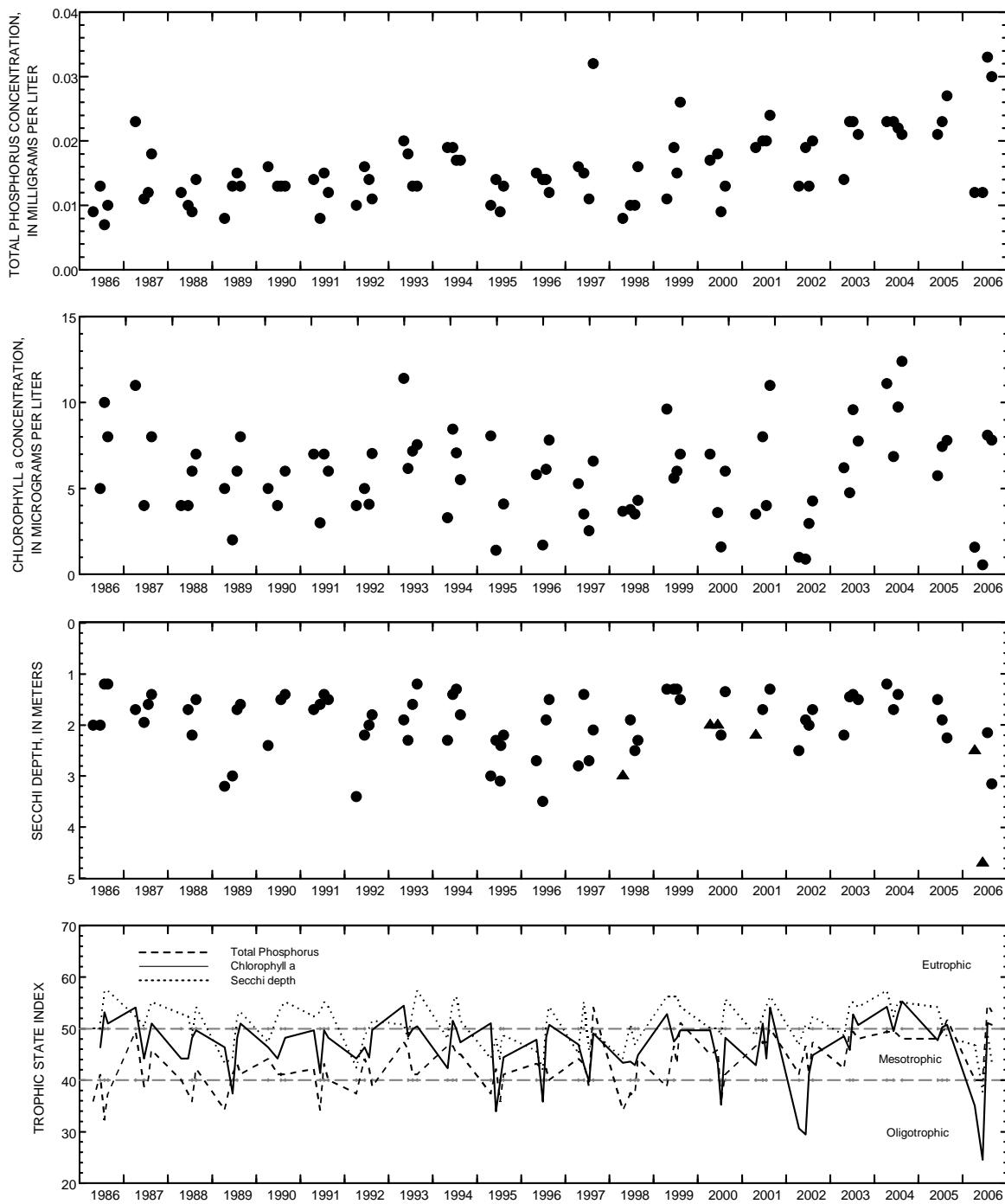
PERIOD OF RECORD.--April 1986 to September 2006 (discontinued).

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above NGVD of 1929.

REMARKS.--Lake sampled in Ice House Bay, in the southern part of the lake, at an approximate depth of 4 m. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Specif. conduc- tance, wat er uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Dis- solved oxygen, mg/L (00300)	Chloro- phyll a wat unf trichr. method, uncorr, ug/L (32210)	Phos- phorus, water, unfltrd method, mg/L (00665)	Sam- pling method, code (82398)
APR 2006											
10...	1110	--	--	.50	7.7	540	8.2	12.3	1.57	.012	50
10...	1115	4.89	>2.50	--	--	--	--	--	--	--	--
JUN											
13...	1220	--	--	.50	22.3	496	8.4	10.9	.540	.012	50
13...	1225	4.76	>4.70	--	--	--	--	--	--	--	--
JUL											
25...	1650	--	--	.50	26.9	509	8.5	9.6	8.09	.033	50
25...	1655	4.86	2.15	--	--	--	--	--	--	--	--
AUG											
29...	1355	--	--	.50	24.0	504	8.3	7.6	7.81	.030	50
29...	1400	4.91	3.15	--	--	--	--	--	--	--	--



Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Okauchee Lake, No. 3, near Okauchee, Wisconsin.

(Triangles in Secchi plot indicate maximum depth at sampling site.
Actual Secchi depth on these days was greater than the plotted triangles.)

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

LOCATION.--Lat $43^{\circ}07'57''$, long $88^{\circ}26'17''$, in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.25, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

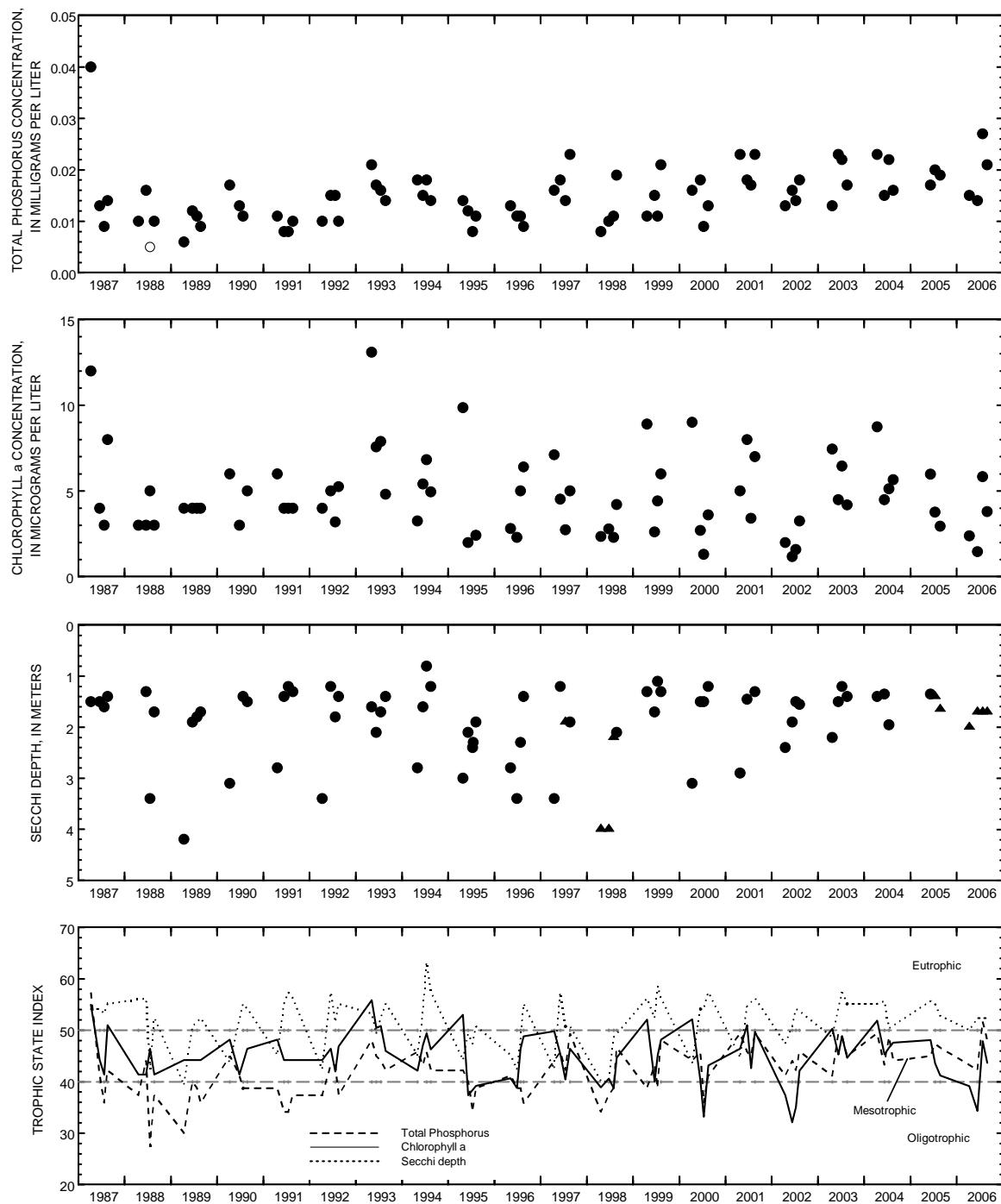
PERIOD OF RECORD.--June 1986 to September 2006 (discontinued).

LAKE-STAGE GAGE.--Datum of gage is 869.00 ft above NGVD of 1929.

REMARKS.--Lake sampled near McDowell (Crazyman's) Island, in the northwest bay of the lake, at an approximate depth of 2 m. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 10 TO AUGUST 29, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Specif. conduc- tance, wat er uS/cm (00095)	pH, water, unfltrd wat unf 25 degC (00040)	Chloro- phyll a wat unf trichr. method, oxygen, std units (00400)	Dis- solved field, std units (00300)	Phos- phorus, trichr. method, uncorr, mg/L (00300)	Sam- water, unfltrd ug/L (32210)	Sam- pling method, mg/L (00665)	Sam- pling method, code (82398)
APR 2006													
10...	1045	--	--	.50	7.8	544	8.1	12.1	2.39	.015	50		
10...	1050	4.89	>2.00	--	--	--	--	--	--	--	--		
JUN													
13...	1330	--	--	.50	21.8	532	8.2	8.6	1.46	.014	50		
13...	1335	4.76	>1.70	--	--	--	--	--	--	--	--		
JUL													
25...	1850	--	--	.50	26.8	515	8.5	10.3	5.83	.027	50		
25...	1855	4.86	1.70	--	--	--	--	--	--	--	--		
AUG													
29...	1600	--	--	.50	23.7	516	8.4	8.5	3.80	.021	50		
29...	1605	4.91	1.70	--	--	--	--	--	--	--	--		



Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Okauchee Lake, No. 4, near Okauchee, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses.
Actual concentrations for these particular analyses are less than the plotted circles.)

(Triangles in Secchi plot indicate maximum depth at sampling site.
Actual Secchi depth on these days was greater than the plotted triangles.)

430707088230500 PINE LAKE AT CHENEQUA, WI

LOCATION.--Lat 43°07'14", long 88°22'50", in SE ¼ NE ¼ NE ¼ sec.32, T.8 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, at Chenequa.

PERIOD OF RECORD.--April 2005 to September 2006 (discontinued).

REMARKS.--Lake sampled at deep hole at a depth of 29 m. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 12 TO OCTOBER 4, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Trans-	Sam-	Temper-	Specif.	pH,	Chloro-	Ortho-
		parency	pling	tance,	conduc-	water,	phyll a	phos-
		Secchi	disc,	water,	wat unf	unfltrd	wat unf	phate,
		meters	meters	deg C	us/cm	25 degC	method,	water,
		(00078)	(00098)	(00010)	(00095)	(00400)	trichr.	fltrd,
							solved	water,
							oxygen,	fltrd,
							uncorr,	mg/L
							unfltrd	mg/L
							(32210)	(00665)
								(00671)
APR 2006								
12...	0920	--	.50	6.0	399	8.1	12.3	.024
12...	0935	--	27.5	5.3	399	8.0	11.7	.025
12...	0940	4.00	--	--	--	--	--	--
JUN								
13...	1750	--	.50	21.9	396	8.5	9.9	.024
13...	1806	--	26.5	5.8	424	7.4	2.0	.094
13...	1810	4.75	--	--	--	--	--	--
JUL								
26...	1750	--	.50	26.2	386	8.5	8.5	.020
26...	1808	--	27.0	5.5	434	7.2	.1	.281
26...	1810	4.50	--	--	--	--	--	--
AUG								
24...	1050	--	.50	24.6	384	8.5	8.7	.029
24...	1108	--	27.0	5.8	466	7.3	.2	.297
24...	1110	2.95	--	--	--	--	--	--
OCT								
04...	1540	--	.50	16.9	383	8.5	9.0	.026
04...	1557	--	27.0	5.7	435	7.3	.0	.234
04...	1600	4.70	--	--	--	--	--	--

430707088230500 PINE LAKE AT CHENEQUA, WI

WATER-QUALITY DATA, APRIL 12 TO OCTOBER 4, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	(00098)	Ammonia	Nitrite	Appar- ent		Magnes- ium, mg/L	Sodium, mg/L	Potas- sium, mg/L	
			Ammonia water, fltrd,	org-N, water, unfltrd	nitrate water fltrd,	color, water, unfltrd	Hard- ness, water, unfltrd	mg/L as CaCO ₃	mg/L as Pt-Co units	mg/L as CaCO ₃
APR 2006										
12...	.50	.035	.59	<.019	<1.0	5	170	29.0	24.3	13.0
12...	27.5	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
JUN										
13...	.50	--	--	--	--	--	--	--	--	--
13...	26.5	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
JUL										
26...	.50	--	--	--	--	--	--	--	--	--
26...	27.0	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
AUG										
24...	.50	--	--	--	--	--	--	--	--	--
24...	27.0	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
OCT										
04...	.50	--	--	--	--	--	--	--	--	--
04...	27.0	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--

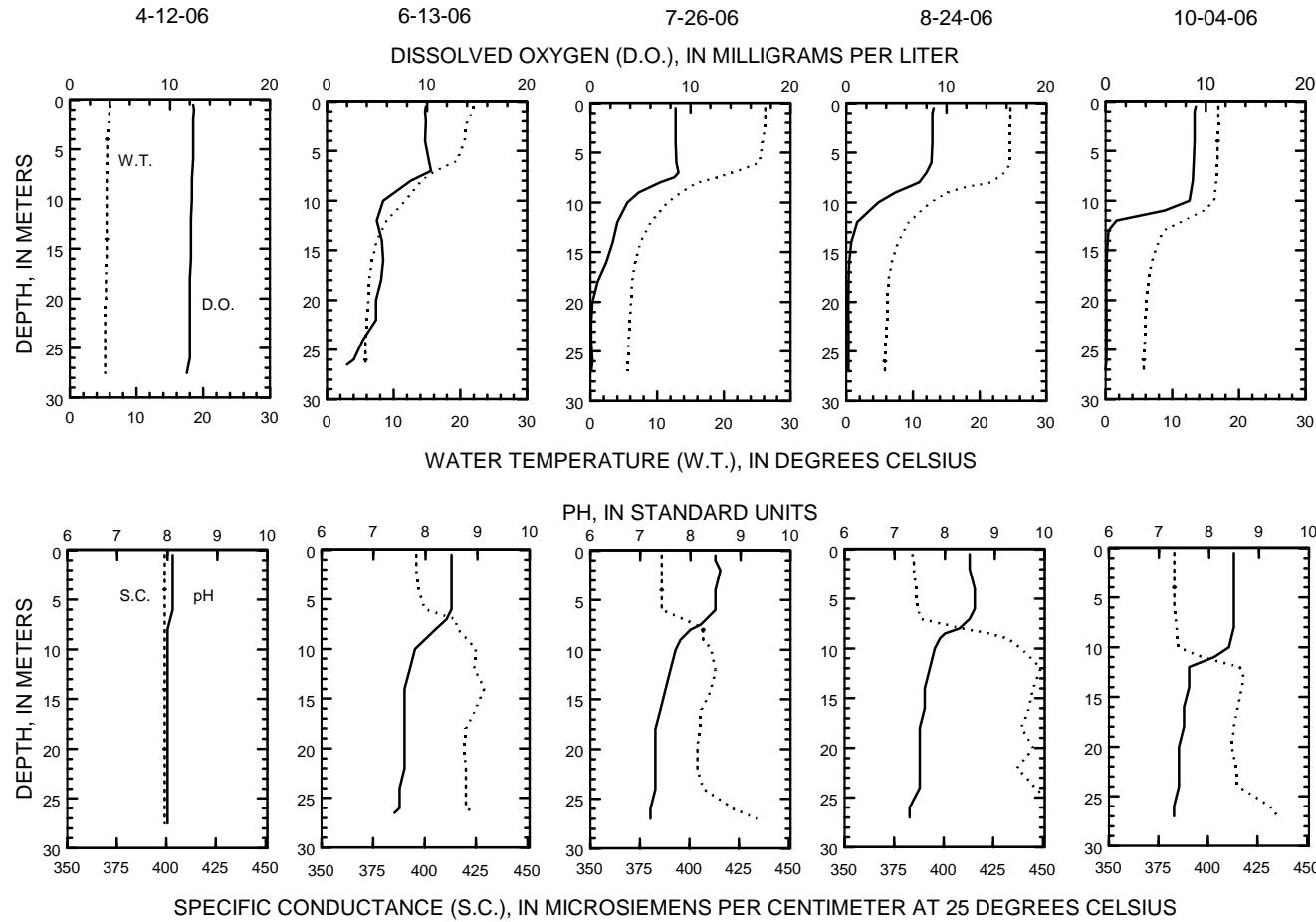
430707088230500 PINE LAKE AT CHENEQUA, WI

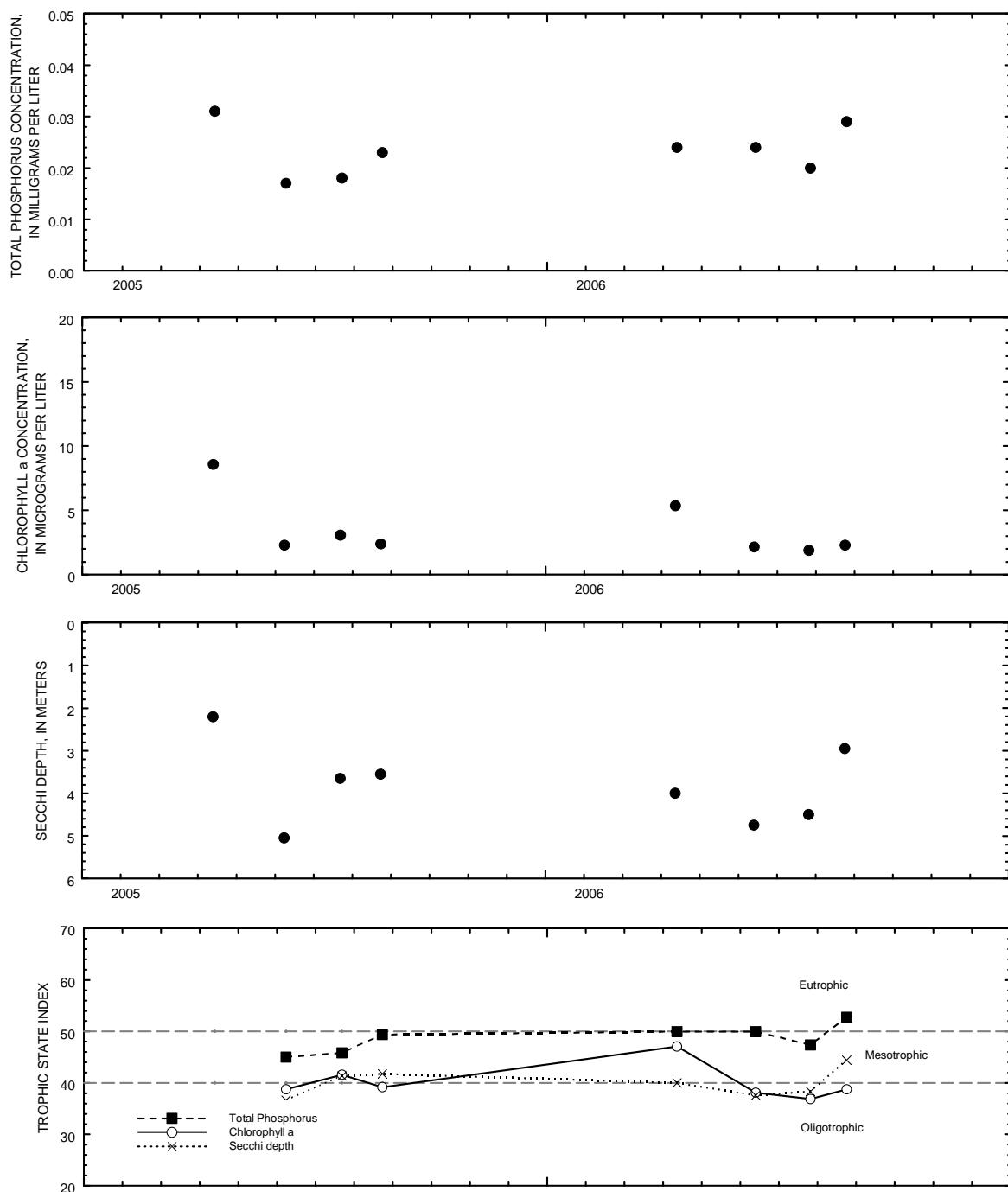
WATER-QUALITY DATA, APRIL 12 TO OCTOBER 4, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	ANC, wat unf fixed				Residue on			
	Sam- pling depth, meters (00098)	end pt, lab, mg/L as (00417)	Chlor- ide, water, mg/L as (00940)	Sulfate water, mg/L (00945)	Silica, water, mg/L (00955)	Iron, water, ug/L (01046)	Mangan- ese, water, ug/L (01056)	180degC wat flt (70300)
APR 2006								
12...	.50	148	27.8	21.1	<.022	<100	<.5	220
12...	27.5	--	--	--	--	--	--	50
12...	--	--	--	--	--	--	--	--
JUN								
13...	.50	--	--	--	--	--	--	50
13...	26.5	--	--	--	--	--	--	50
13...	--	--	--	--	--	--	--	--
JUL								
26...	.50	--	--	--	--	--	--	50
26...	27.0	--	--	--	--	--	--	50
26...	--	--	--	--	--	--	--	--
AUG								
24...	.50	--	--	--	--	--	--	50
24...	27.0	--	--	--	--	--	--	50
24...	--	--	--	--	--	--	--	--
OCT								
04...	.50	--	--	--	--	--	--	50
04...	27.0	--	--	--	--	--	--	50
04...	--	--	--	--	--	--	--	--

430707088230500 PINE LAKE AT CHENEQUA, WI

LAKE-DEPTH PROFILES, APRIL 12 TO OCTOBER 4, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Pine Lake at Chenequa, Wisconsin.

424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

LOCATION.--Lat 42°49'05", long 88°20'40", in NW ¼ SW ¼ 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 sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 22 TO SEPTEMBER 27, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Trans-		Temper-	Specif.	pH,	Chloro-		Ortho-			
		Gage height, feet	Secchi disc, meters				conductance, mhos/cm	water, field, uS/cm	phyll a	phosphate,	water, fltrd, mg/L	
		(00065)	(00078)	(00098)	(00010)	(00095)	(00400)	(00300)	trichr. method, water, uncorr, unfltrd	Phorus, water, mg/L	water, fltrd, mg/L	
FEB 2006												
22...	1110	--	--	.50	3.9	484	8.3	16.2	--	.027	--	
22...	1123	--	--	7.0	5.3	559	7.2	.0	--	.032	--	
APR												
05...	1140	8.44	.80	--	--	--	--	--	--	--	--	
05...	1145	--	--	.50	9.0	426	8.4	11.7	19.3	.045	.007	
05...	1152	--	--	7.0	7.9	425	7.9	11.2	--	.045	--	
JUN												
12...	1515	--	--	.50	21.9	455	8.5	10.3	8.11	.047	--	
12...	1528	--	--	7.0	14.4	490	7.2	.2	--	.126	--	
12...	1530	8.15	1.25	--	--	--	--	--	--	--	--	
JUL												
12...	1550	--	--	.50	26.2	423	8.3	8.4	7.88	.092	.010	
12...	1603	--	--	7.0	14.4	553	6.8	0.0	--	.127	--	
12...	1605	8.02	1.05	--	--	--	--	--	--	--	--	
27...	1945	7.92	.90	--	--	--	--	--	--	--	--	
27...	1950	--	--	.50	27.4	428	8.7	9.0	10.4	.042	--	
27...	2001	--	--	7.0	15.4	592	6.7	0.0	--	.474	--	
AUG												
08...	1345	--	--	.50	27.6	432	8.4	8.6	10.6	.056	--	
08...	1356	--	--	7.0	16.1	622	6.6	.1	--	.623	--	
08...	1400	7.78	.85	--	--	--	--	--	--	--	--	
31...	1230	--	--	.50	23.2	429	8.3	8.9	16.8	.049	--	
31...	1239	--	--	7.0	17.4	684	6.4	0.0	--	.209	--	
31...	1240	7.76	.75	--	--	--	--	--	--	--	--	
SEP												
27...	1445	--	.75	--	--	--	--	--	--	--	--	
27...	1450	--	--	.50	17.0	427	8.7	9.6	17.6	.046	--	
27...	1457	--	--	6.5	16.3	431	8.4	7.9	--	.052	--	

424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

WATER-QUALITY DATA, FEBRUARY 22 TO SEPTEMBER 27, 2006—CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	(00098)	Ammonia	Ammonia	Nitrite	Appar-	color,	Hard-	Magnes-	Sodium,	Potas-	
			+ Ammonia water, fltrd,	+ org-N, water, fltrd,	+ nitrate water, unfiltrd	ent						
		mg/L as N (00608)	mg/L as N (00623)	mg/L as N (00625)	mg/L as N (00631)	NTU (00076)	Pt-Co units (00081)	mg/L as CaCO ₃ (00900)	mg/L as CaCO ₃ (00915)	mg/L as CaCO ₃ (00925)	mg/L as CaCO ₃ (00930)	mg/L (00935)
FEB 2006												
22...	.50	--	--	--	--	--	--	--	--	--	--	--
22...	7.0	--	--	--	--	--	--	--	--	--	--	--
APR												
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	.50	<.015	--	1.0	<.019	2.0	10	180	38.4	19.6	22.2	2.00
05...	7.0	--	--	--	--	--	--	--	--	--	--	--
JUN												
12...	.50	--	--	--	--	--	--	--	--	--	--	--
12...	7.0	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
12...	.50	.024	.99	--	<.019	--	--	--	--	--	--	--
12...	7.0	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	.50	--	--	--	--	--	--	--	--	--	--	--
27...	7.0	--	--	--	--	--	--	--	--	--	--	--
AUG												
08...	.50	--	--	--	--	--	--	--	--	--	--	--
08...	7.0	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
31...	.50	--	--	--	--	--	--	--	--	--	--	--
31...	7.0	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	.50	--	--	--	--	--	--	--	--	--	--	--
27...	6.5	--	--	--	--	--	--	--	--	--	--	--

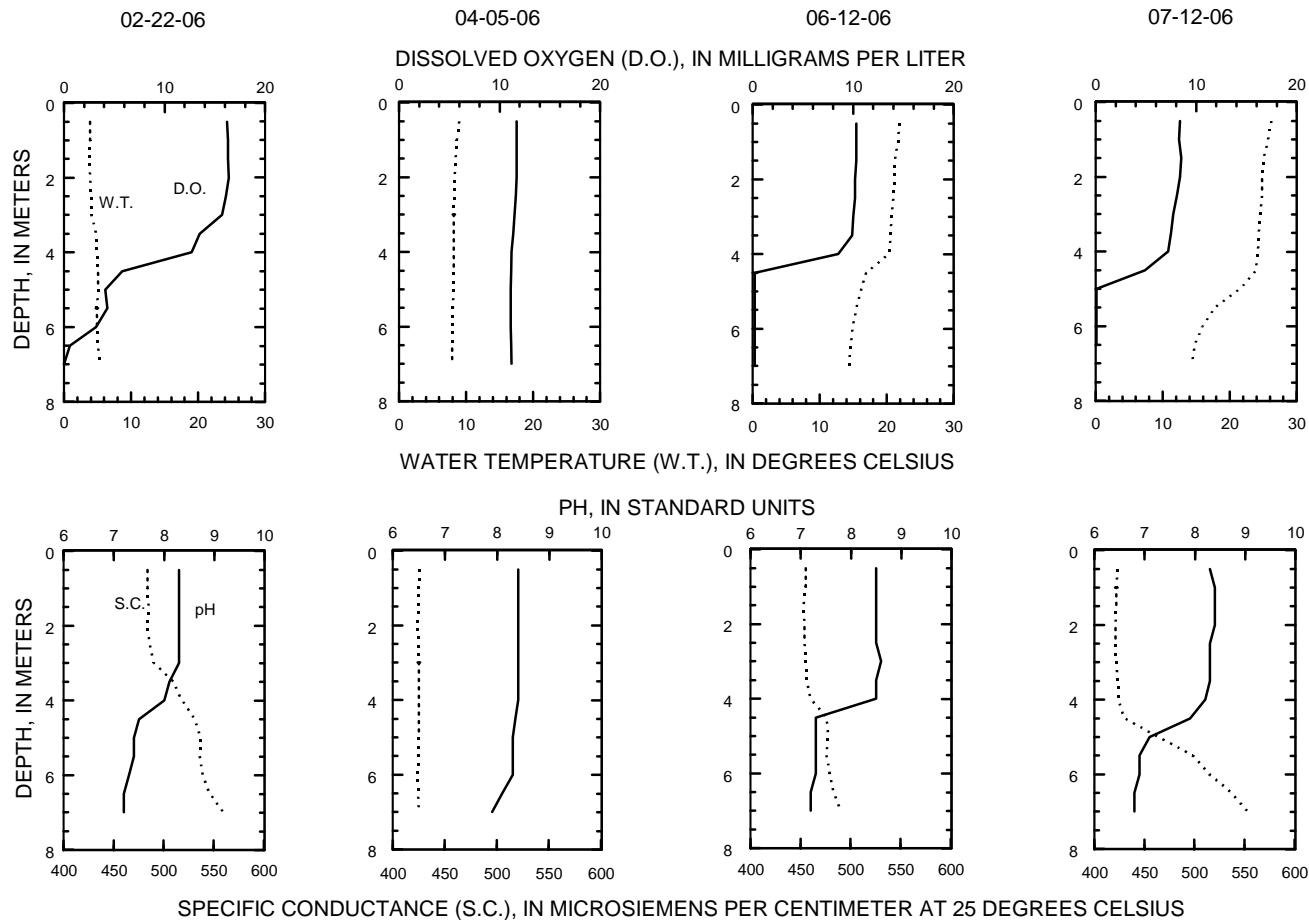
424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

WATER-QUALITY DATA, FEBRUARY 22 TO SEPTEMBER 27, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	ANC,	Chlor-					Residue	Sam- pling
	wat unf fixed	ide, water,	Sulfate fltrd,	Silica, water,	Iron, water,	Mangan- ese, water,	on at 180degC wat filt	
Sam- pling	end pt, lab,	mg/L as CaCO ₃	mg/L	mg/L	ug/L	ug/L	method,	meters
		(00098)	(00417)	(00940)	(00945)	(00955)	(01046)	(01056)
FEB 2006								
22...	.50	--	--	--	--	--	--	50
22...	7.0	--	--	--	--	--	--	50
APR								
05...	.50	146	46.0	6.9	7.81	<100	M	260
05...	7.0	--	--	--	--	--	--	50
JUN								
12...	.50	--	--	--	--	--	--	50
12...	7.0	--	--	--	--	--	--	50
JUL								
12...	.50	--	--	--	--	--	--	50
12...	7.0	--	--	--	--	--	--	50
27...	.50	--	--	--	--	--	--	50
27...	7.0	--	--	--	--	--	--	50
AUG								
08...	.50	--	--	--	--	--	--	50
08...	7.0	--	--	--	--	--	--	50
31...	.50	--	--	--	--	--	--	50
31...	7.0	--	--	--	--	--	--	50
SEP								
27...	.50	--	--	--	--	--	--	50
27...	6.5	--	--	--	--	--	--	50

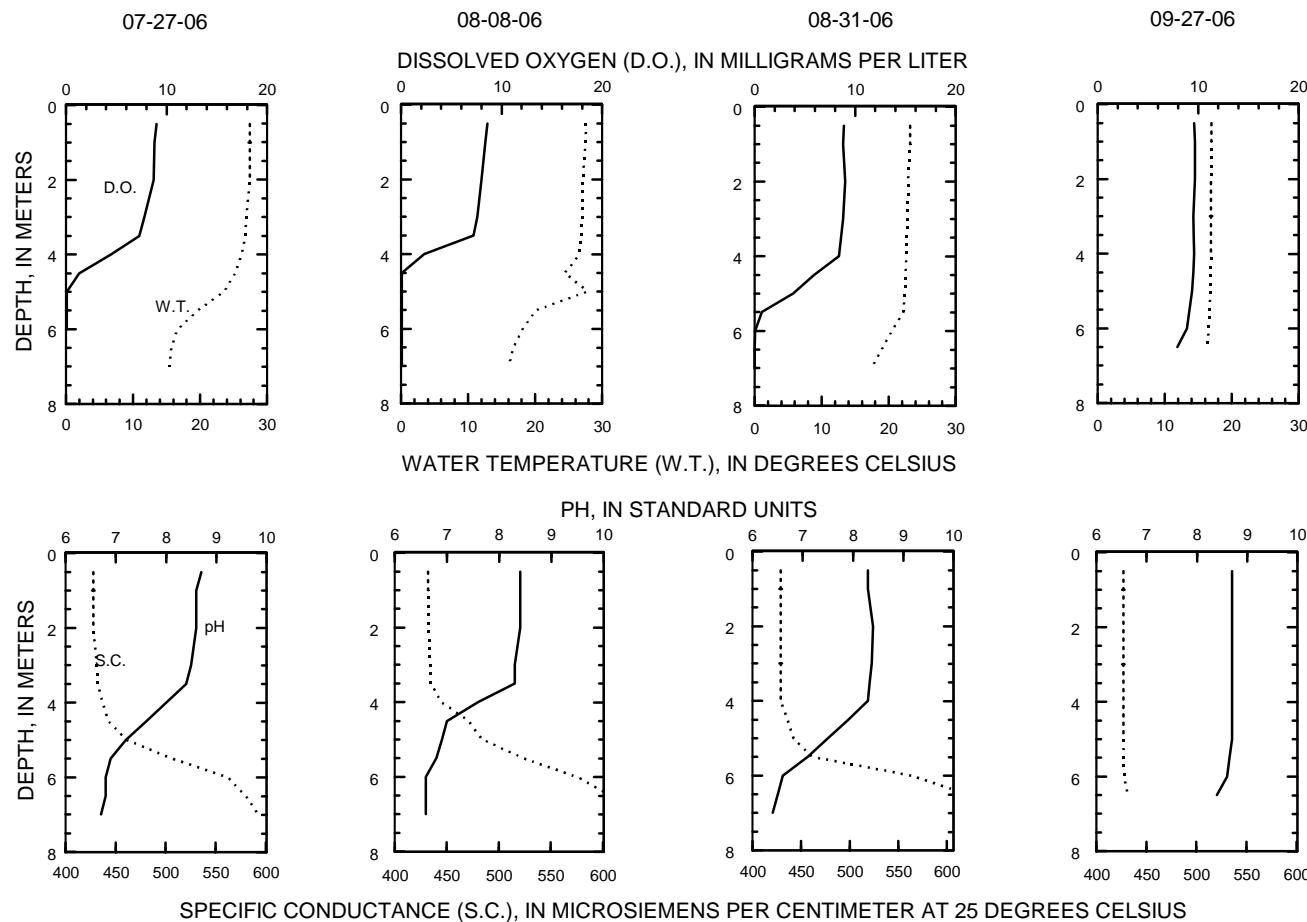
424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

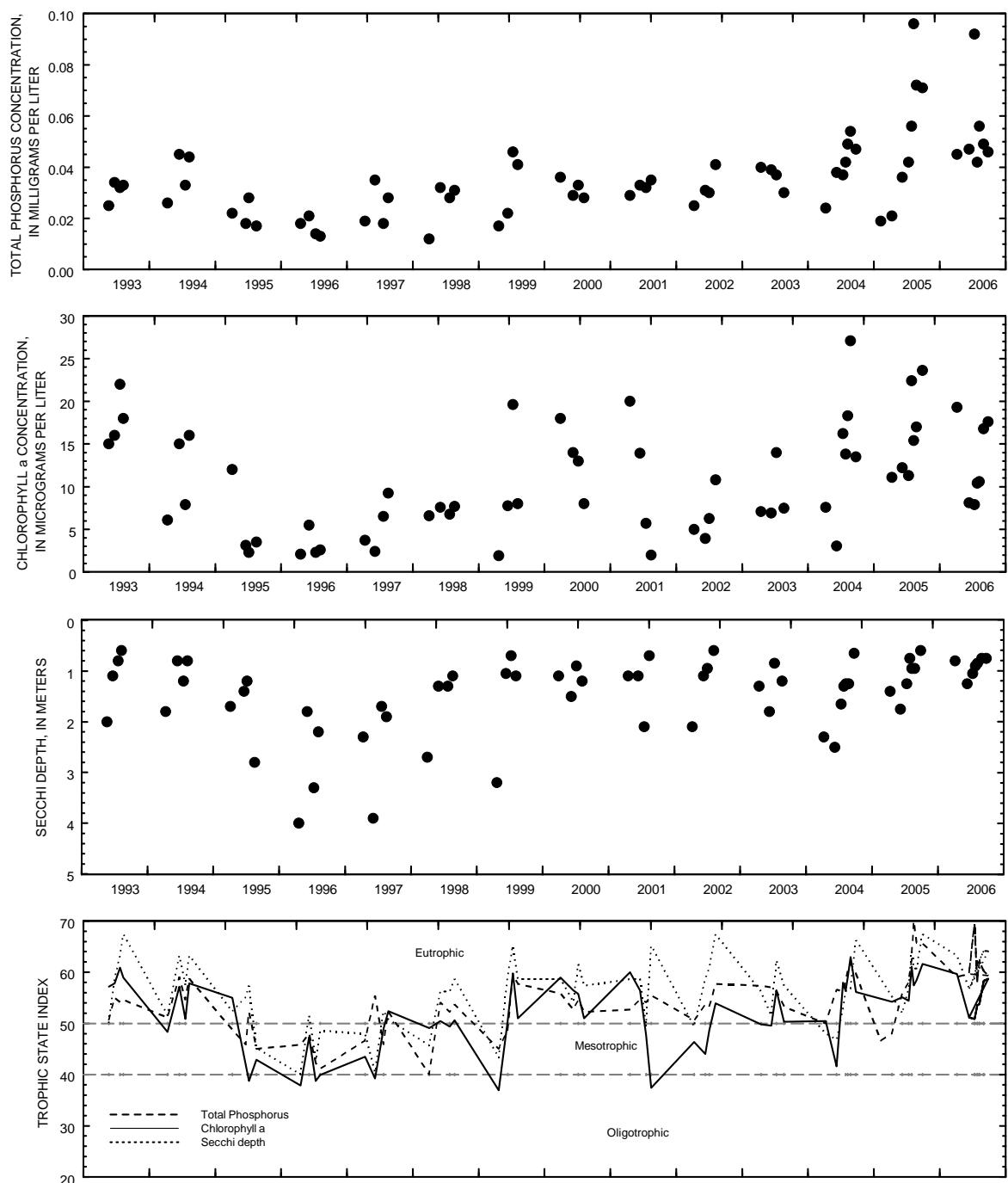
Lake-Depth Profiles, February 22 to July 12, 2006



424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

LAKE-DEPTH PROFILES, JULY 27 TO SEPTEMBER 27, 2006





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

423246088175800 POWERS LAKE AT POWERS LAKE, WI

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

DRAINAGE AREA.--3.42 mi².

PERIOD OF RECORD.--March 1986 to August 1996, and April 1998 to current year.

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

WATER-QUALITY DATA, JUNE 12 TO AUGUST 23, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Transparency Secchi disc, meters (00078)	Samplling depth, meters (00098)	Temperature, water, deg C (00010)	Conduc-	water, unfltrd wat unf uS/cm (00095)	Dis-	Chloro-	Ortho-	
									phyll a	phos-	
						specif.	pH,	water,	wat unf	phate,	
						conductance,	unfltrd	field,	solved	trichlorophorus,	
						25	std	oxygen,	method,	water,	
						degC	units	mg/L	uncorr,	unfltrd	fltrd,
						(000400)	(00300)	(0030)	ug/L	mg/L	mg/L
									(32210)	(00665)	(00671)
JUN 2006											
12...	1300	--	--	.50	21.2	516	8.3	10.4	4.17	.019	--
12...	1310	--	--	9.5	15.0	543	7.6	2.2	--	.012	--
12...	1315	9.89	3.30	--	--	--	--	--	--	--	--
JUL											
12...	1330	--	--	.50	25.4	500	8.4	8.8	3.58	.072	<.002
12...	1340	--	--	9.5	14.9	540	7.3	0.0	--	.042	--
12...	1345	9.64	2.70	--	--	--	--	--	--	--	--
AUG											
23...	1150	--	--	.50	25.3	500	8.6	9.7	3.49	.027	--
23...	1202	--	--	9.5	16.7	560	7.3	.2	--	.022	--
23...	1205	9.26	3.55	--	--	--	--	--	--	--	--

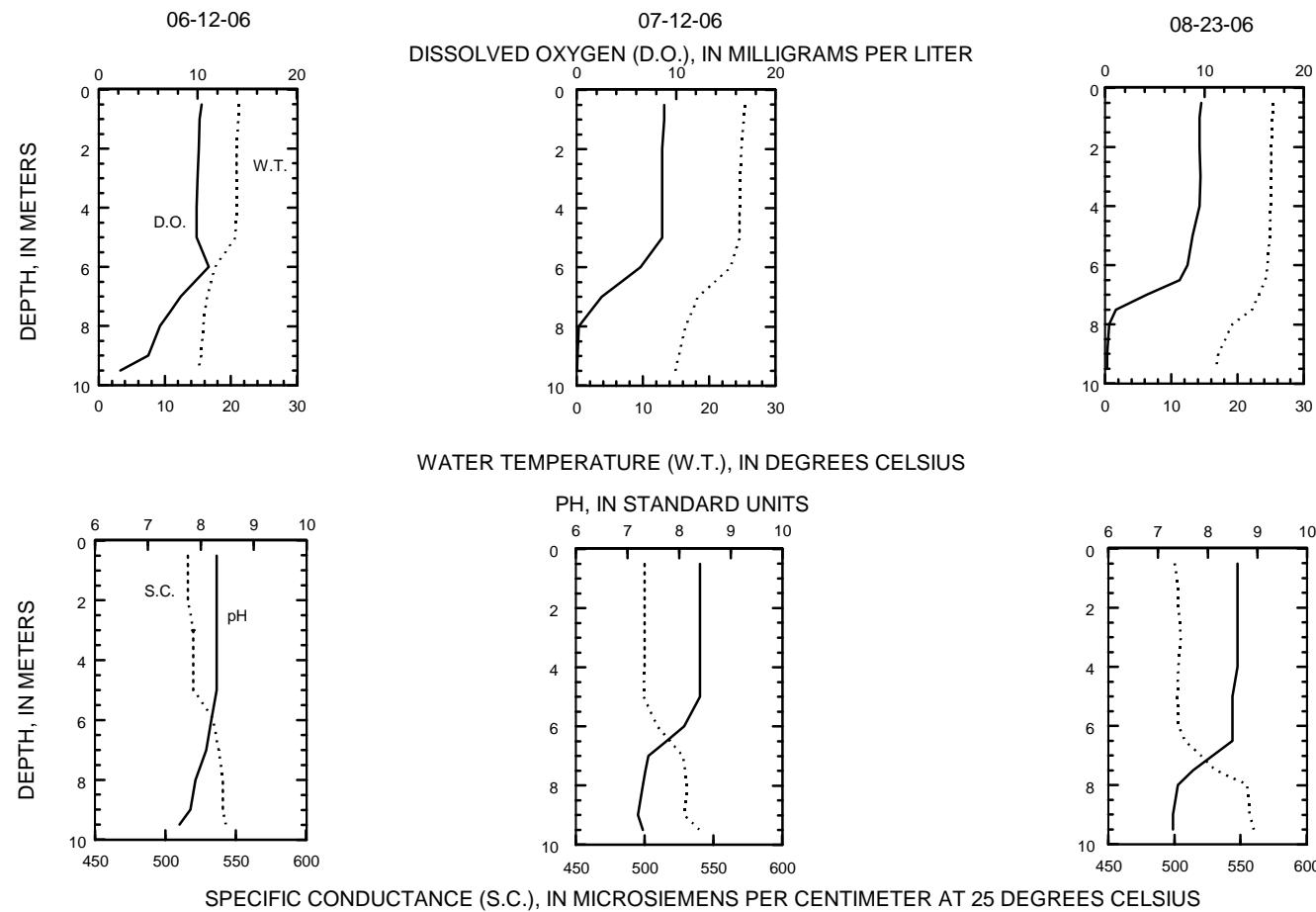
423246088175800 POWERS LAKE AT POWERS LAKE, WI

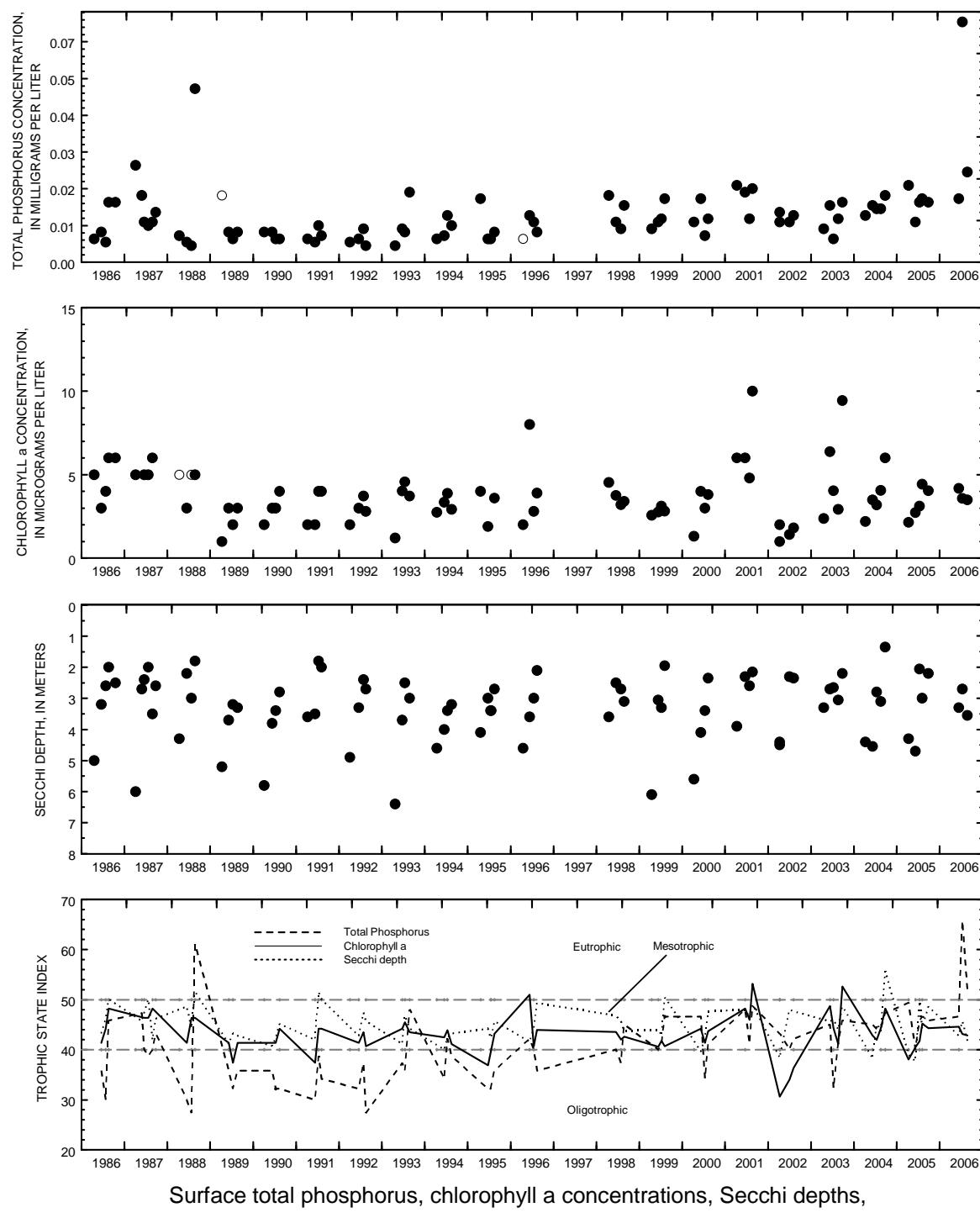
WATER-QUALITY DATA, JUNE 12 TO AUGUST 23, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	Ammonia		Nitrite		Sam- pling method, code
	Ammonia water, fltrd, depth, meters (00098)	org-N, water, fltrd, mg/L as N (00608)	nitrate water, fltrd, mg/L as N (00623)	mg/L as N (00631)	
JUN 2006					
12...	.50	--	--	--	50
12...	9.5	--	--	--	50
12...	--	--	--	--	--
JUL					
12...	.50	.034	.81	<.019	50
12...	9.5	--	--	--	50
12...	--	--	--	--	--
AUG					
23...	.50	--	--	--	50
23...	9.5	--	--	--	50
23...	--	--	--	--	--

423246088175800 POWERS LAKE AT POWERS LAKE, WI

LAKE-DEPTH PROFILES, JUNE 12 TO AUGUST 23, 2006





434515089124000 PUCKAWAY LAKE, WEST BASIN, NEAR MARQUETTE, WI

LOCATION.--Lat 43°45'15", long 89°12'40", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.31, T.15 N., R.11 E., Green Lake County, Hydrologic Unit 04030201, near Marquette.

DRAINAGE AREA.--948 mi².

PERIOD OF RECORD.--April 2005 to current year.

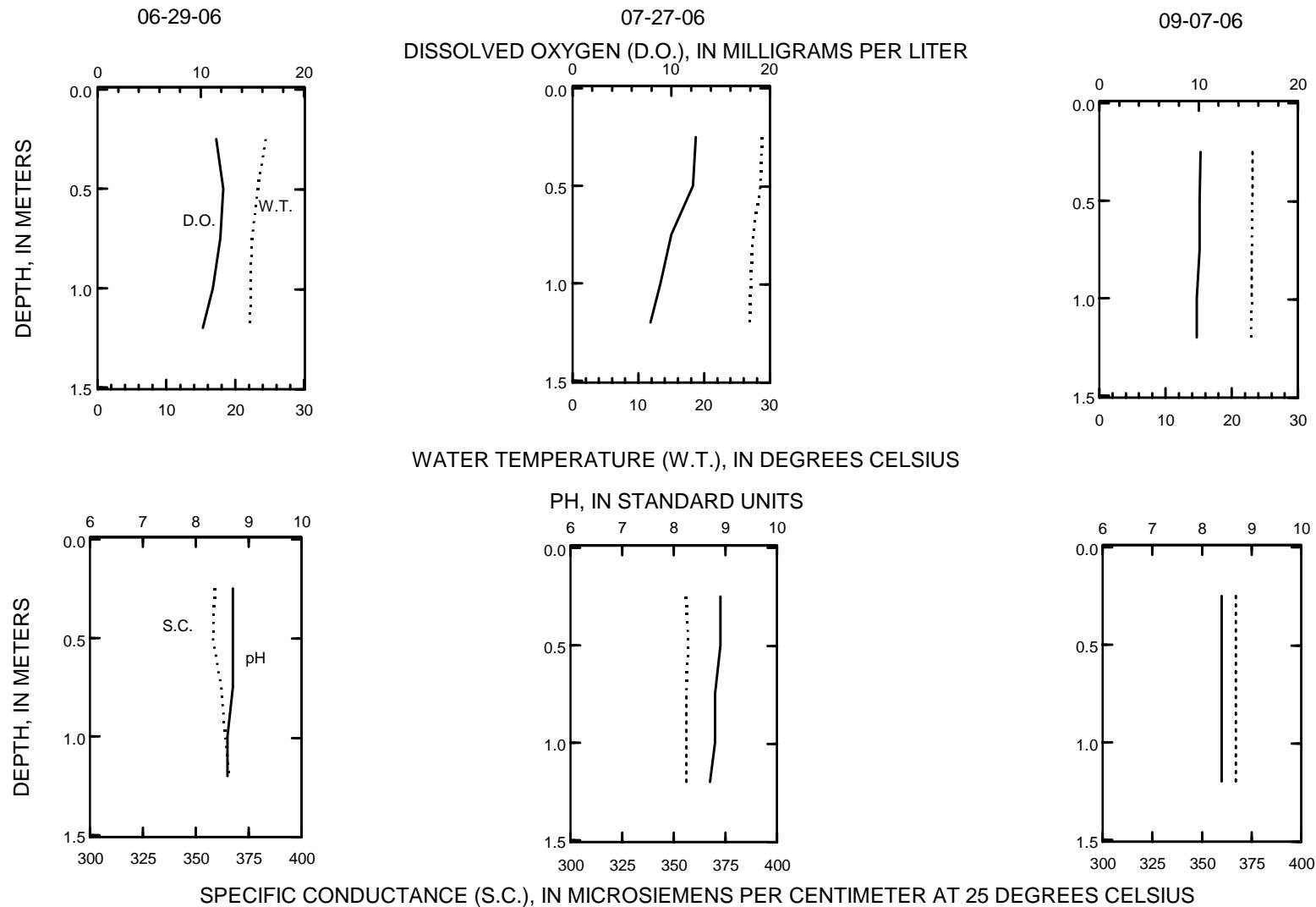
REMARKS.--Lake sampled in West Basin. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

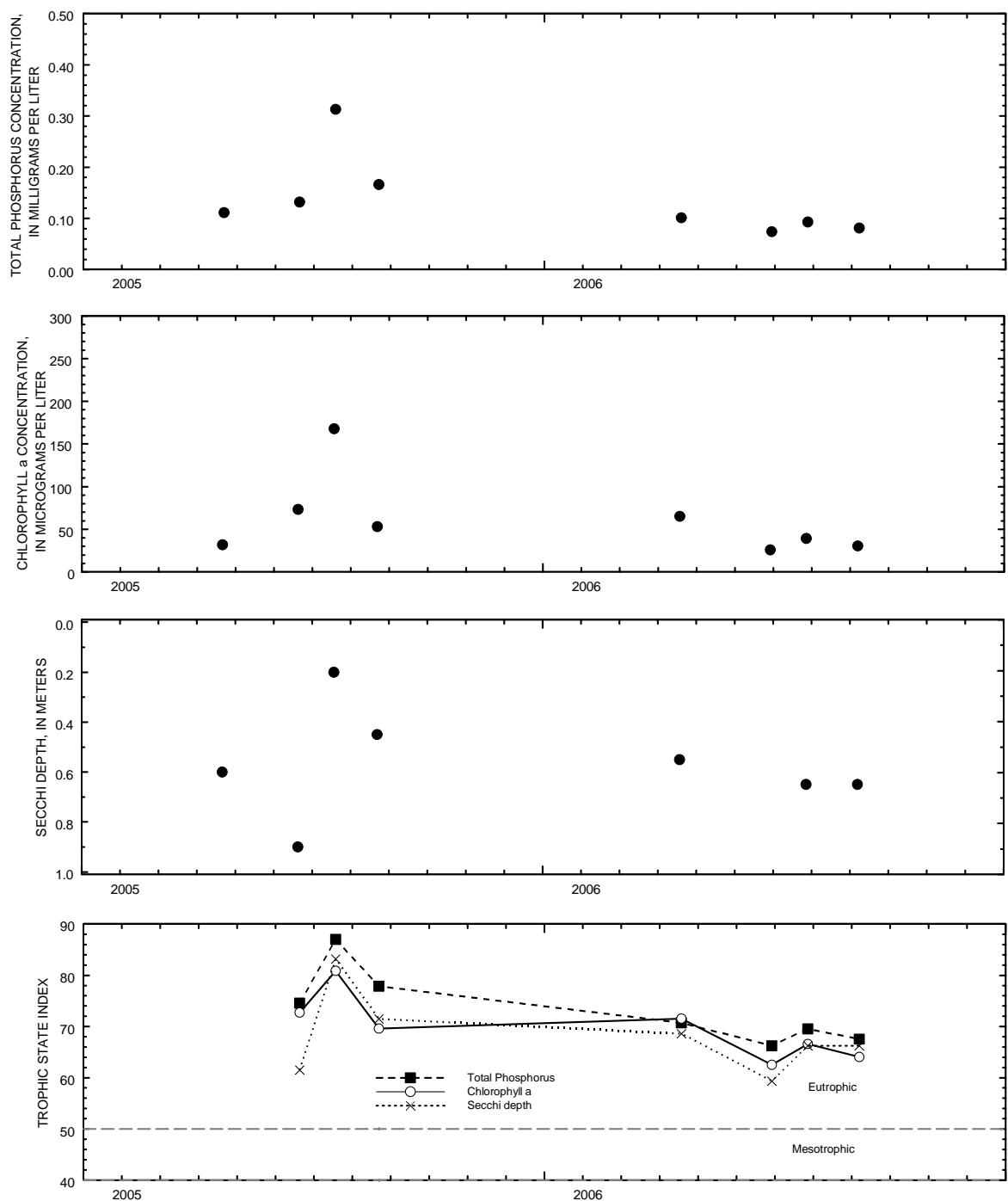
WATER-QUALITY DATA, APRIL 18 TO SEPTEMBER 7, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Transparency Secchi disc, meters (00078)	Samplng depth, meters (00098)	Temperature, water, deg C (00010)	Conduc- tance, wat unf uS/cm (00095)	Specif. water, unfltrd 25 degC (00040)	pH, water, unfltrd	Dis- solved oxygen, mg/L (00300)	Chloro- phyll a, wat unf	Phos- trichr. phorus, ug/L (32210)	Sam- pling water, method, unfltrd mg/L (00665)	Sam- pling method, code (82398)
APR 2006													
18...	1321	--	--	.50	13.8	368	8.6	11.3	65.1	.101	50		
18...	1330	--	.55	--	--	--	--	--	--	--	--	--	
JUN													
29...	1325	4.26	1.05	--	--	--	--	--	--	--	--	--	
29...	1331	--	--	.50	23.3	358	8.7	12.2	25.9	.074	50		
JUL													
27...	1446	--	--	.50	28.5	357	8.9	12.2	39.2	.093	50		
27...	1450	4.08	.65	--	--	--	--	--	--	--	--	--	
SEP													
07...	1501	--	--	.50	23.1	367	8.4	10.1	30.3	.081	50		
07...	1505	4.22	.65	--	--	--	--	--	--	--	--	--	

434515089124000 PUCKAWAY LAKE, WEST BASIN, NEAR MARQUETTE, WI

LAKE-DEPTH PROFILES, JUNE 29 TO SEPTEMBER 7, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Puckaway Lake, West Basin, Near Marquette, Wisconsin.

43454208907300 PUCKAWAY LAKE, EAST BASIN, NEAR MARQUETTE, WI

LOCATION.--Lat 43°45'42", long 89°07'30", in NW ¼ NW ¼ NW ¼ sec.19, T.15 N., R.12 E., Green Lake County, Hydrologic Unit 04030201, near Marquette.

DRAINAGE AREA.--748 mi².

PERIOD OF RECORD.--April 2005 to current year.

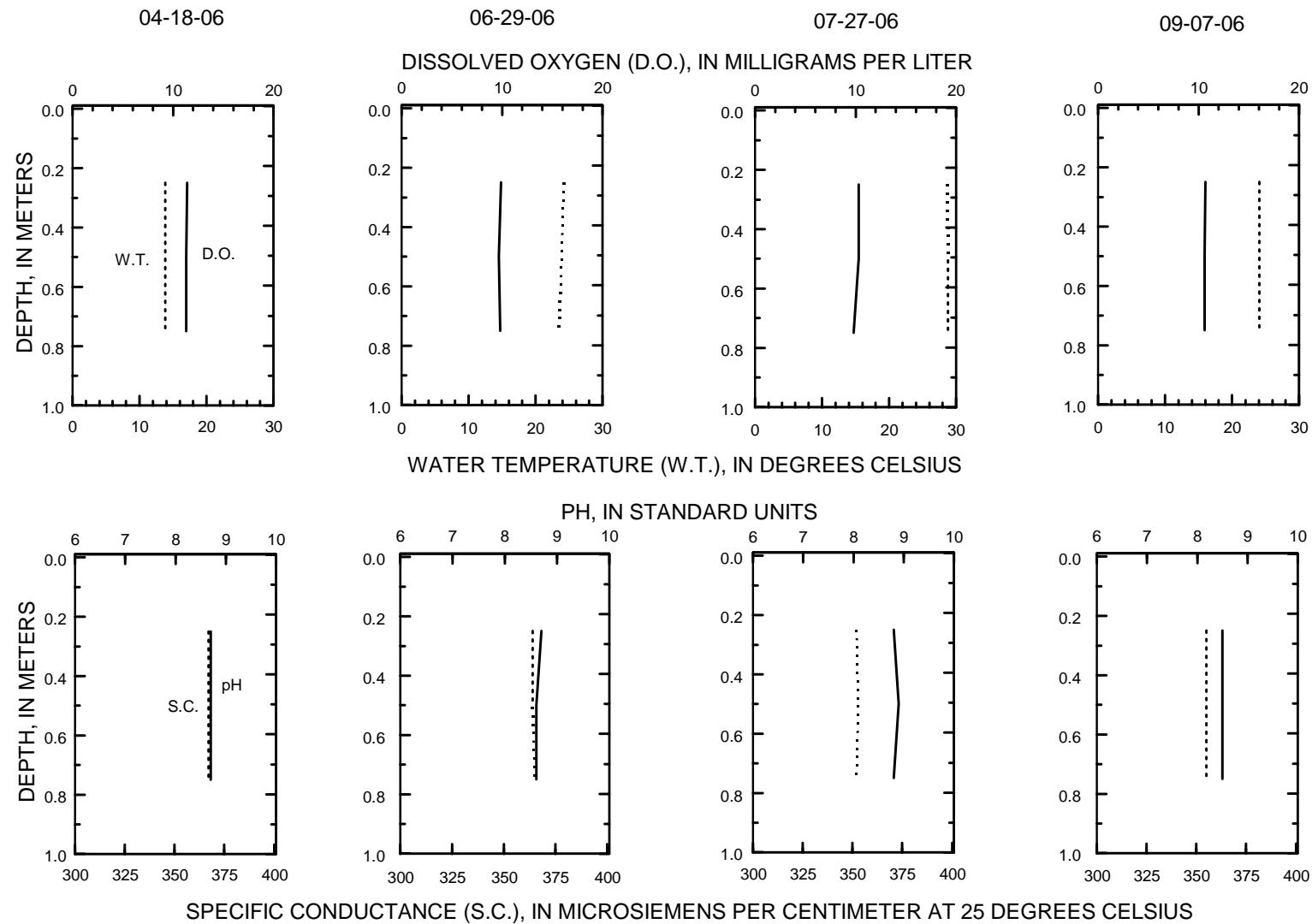
REMARKS.--Lake sampled in the east basin. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

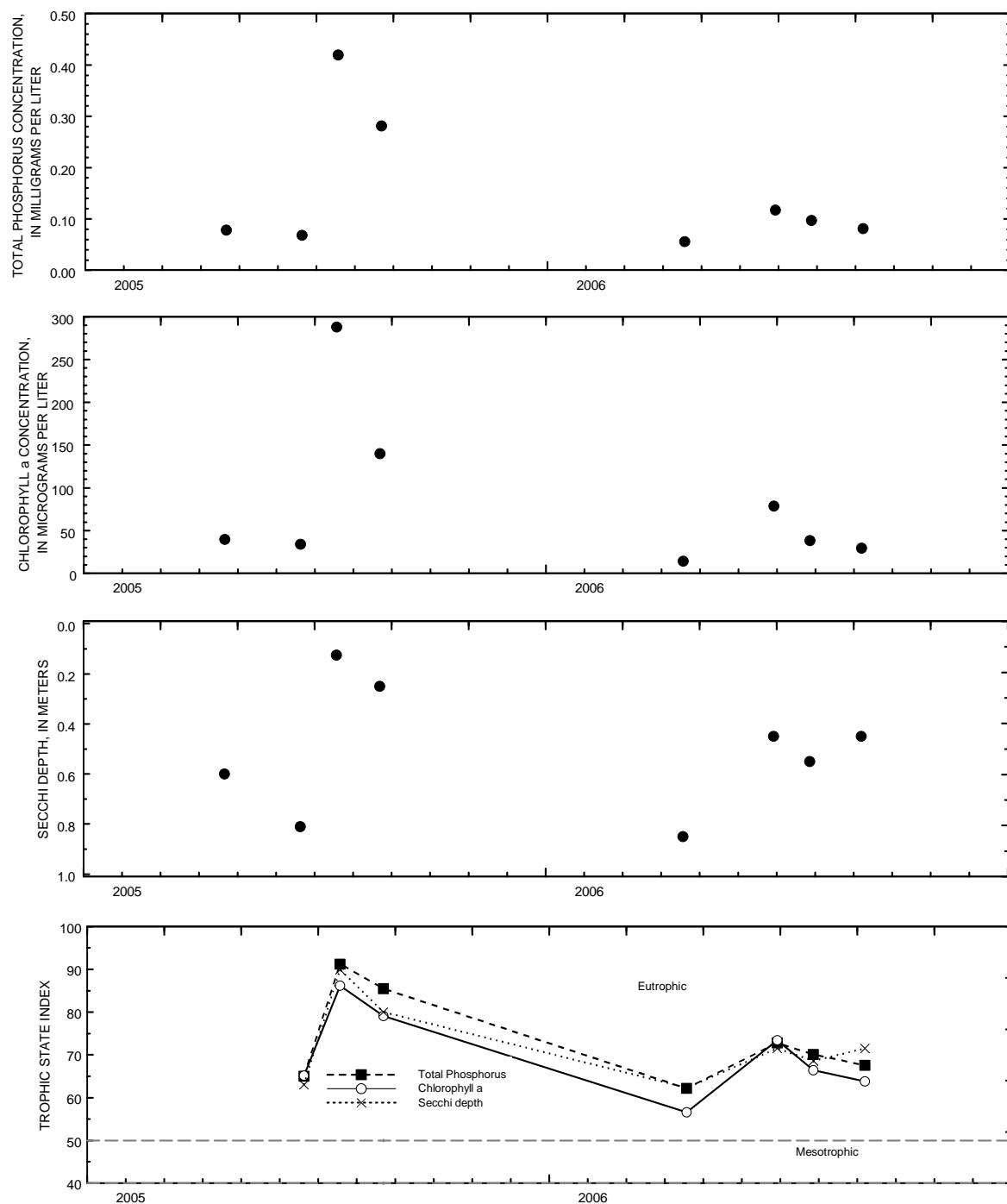
WATER-QUALITY DATA, APRIL 18 TO SEPTEMBER 7, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans-parency Secchi disc, meters (00078)	Sam-pling depth, meters (00098)	Temper-ature, water, deg C (00010)	Conduc-tance, wat er, uS/cm (00095)	Specif. conduc-tance, 25 degC (00040)	pH, water, unf ltrd (00400)	Chloro-phyll a, wat unf (00300)	Dis-trichr. solved oxygen, mg/L (00300)	Phos-phorus, uncorr, ug/L (32210)	Sam-pling method, water, unf ltrd (00665)	Sam-pling method, code (82398)
APR 2006													
18...	1421	--	--	.50	13.8	367	8.7	11.3	78.6	.117	50	--	--
18...	1425	--	.45	--	--	--	--	--	--	--	--	--	--
JUN													
29...	1415	4.26	.85	--	--	--	--	--	--	--	--	--	--
29...	1421	--	--	.50	23.9	364	8.6	9.7	14.1	.056	50	--	--
JUL													
27...	1531	--	--	.50	28.8	353	8.9	10.3	38.4	.097	50	--	--
27...	1535	4.08	.55	--	--	--	--	--	--	--	--	--	--
SEP													
07...	1541	--	--	.50	24.1	355	8.5	10.6	29.5	.081	50	--	--
07...	1545	4.22	.45	--	--	--	--	--	--	--	--	--	--

43454208907300 PUCKAWAY LAKE, EAST BASIN, NEAR MARQUETTE, WI

LAKE-DEPTH PROFILES, APRIL 18 TO SEPTEMBER 7, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Puckaway Lake, East Basin, Near Marquette, Wisconsin.

434824089083200 PUCKAWAY LAKE, RIVER SITE, NEAR MARQUETTE, WI

LOCATION.--Lat 43°48'24", long 89°08'32", in NW ¼ SE ¼ SW ¼ sec.1, T.15 N., R.11 E., Green Lake County, Hydrologic Unit 04030201, near Marquette.

DRAINAGE AREA.--748 mi².

PERIOD OF RECORD.--April 2005 to current year.

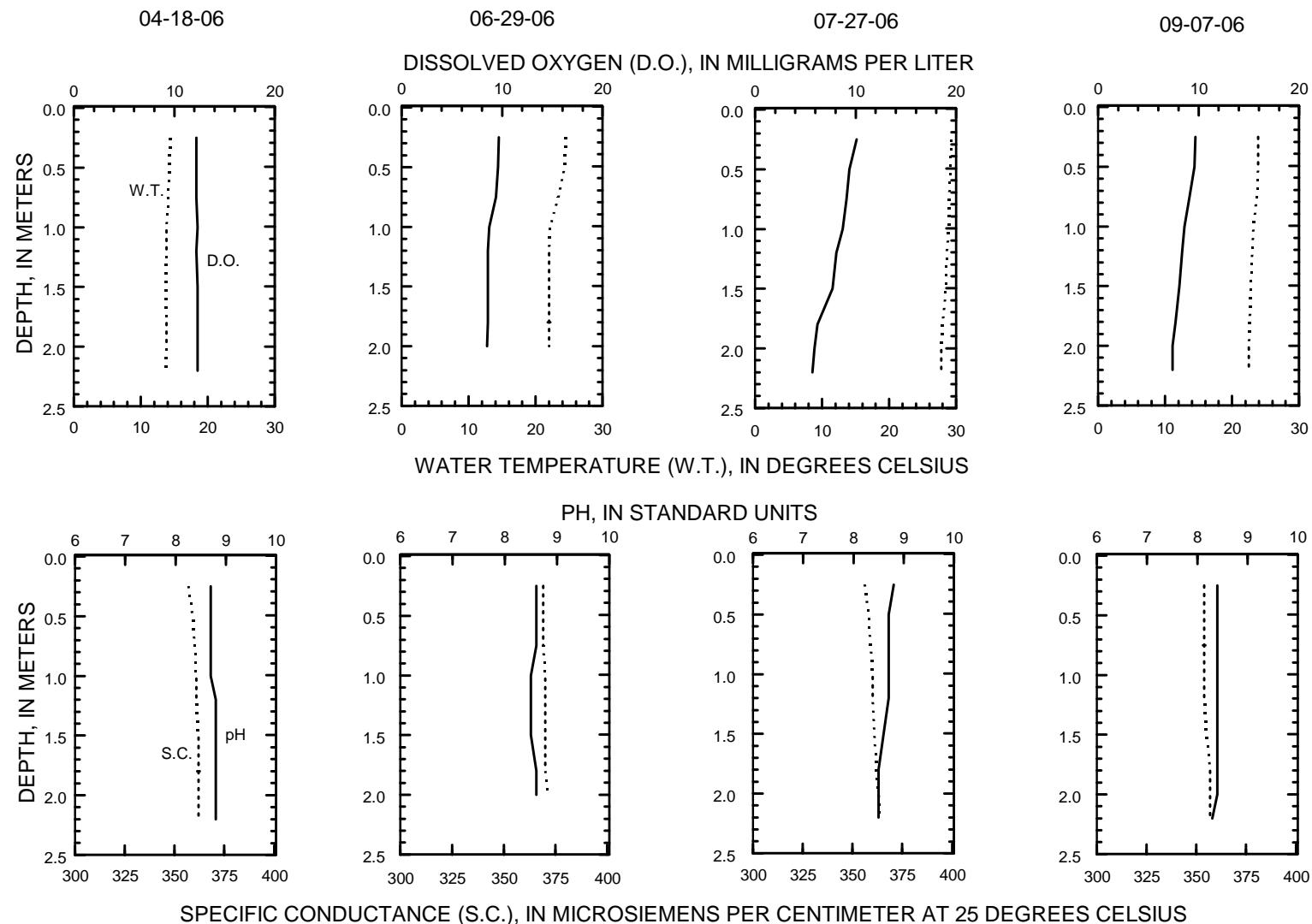
REMARKS.-- Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

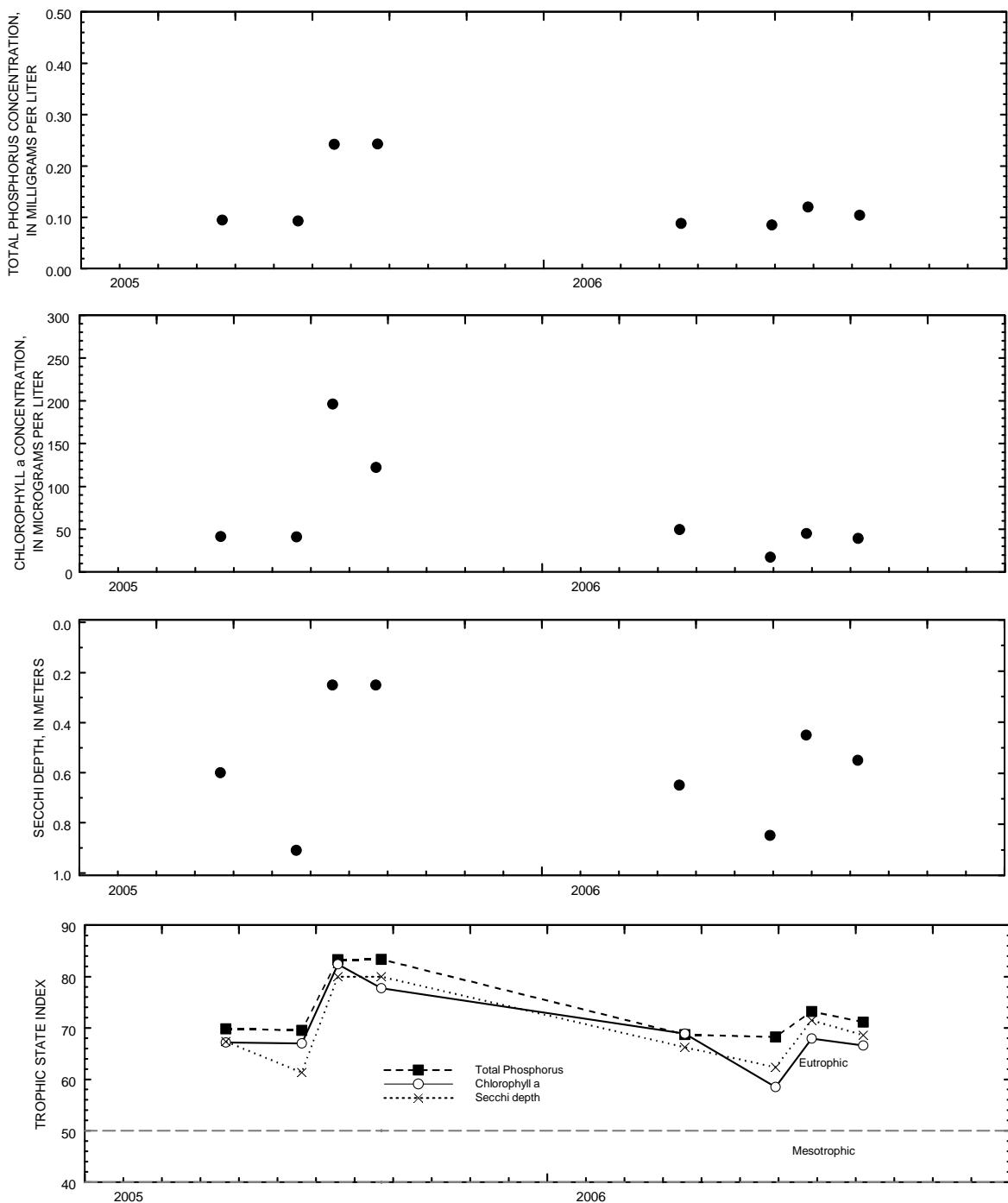
WATER-QUALITY DATA, APRIL 18 TO SEPTEMBER 7, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat er uS/cm (00095)	Specif. conduc- tance, wat er 25 degC (00040)	unfltrd field, std units (00400)	Dis- solved oxygen, mg/L (00300)	trichr. method, uncorr, mg/L (00300)	Chloro- phyll a wat unf trichr. method, unfltrd water, ug/L (32210)	Phos- phorus, water, ug/L (00665)	Sam- pling method, code (82398)
APR 2006													
18...	1531	--	--	.50	14.3	359	8.7	12.2	49.4	.088	50		
18...	1537	--	--	2.0	13.8	362	8.8	12.3	--	.062	50		
18...	1540	--	.65	--	--	--	--	--	--	--	--		
JUN													
29...	1450	4.26	.85	--	--	--	--	--	--	--	--		
29...	1456	--	--	.50	24.3	369	8.6	9.6	17.2	.085	50		
29...	1501	--	--	1.8	22.0	370	8.6	8.6	--	.058	50		
JUL													
27...	1601	--	--	.50	29.1	358	8.7	9.4	45.0	.120	50		
27...	1607	--	--	2.0	27.8	363	8.5	5.9	--	.128	50		
27...	1610	4.08	.45	--	--	--	--	--	--	--	--		
SEP													
07...	1616	--	--	.50	23.9	354	8.4	9.6	39.2	.104	50		
07...	1622	--	--	2.0	22.5	357	8.4	7.4	--	.097	50		
07...	1625	4.22	.55	--	--	--	--	--	--	--	--		

434824089083200 PUCKAWAY LAKE, RIVER SITE, NEAR MARQUETTE, WI

LAKE-DEPTH PROFILES, APRIL 18 TO SEPTEMBER 7, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Puckaway Lake, River Site, Near Marquette, Wisconsin.

453420091551600 SILVER LAKE NEAR CUMBERLAND, WI

LOCATION.—Lat $45^{\circ}34'20''$, long $91^{\circ}55'16''$, in SE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T.36 N., R 13 W., Barron County, Hydrologic Unit 07050007, at the south end of the lake about 300 feet south of the boat landing in Grant Park off County Highway B and about 5 miles northeast of Cumberland.

DRAINAGE AREA.—Unknown. Area of Silver Lake is 0.53 mi.² (July 1967).

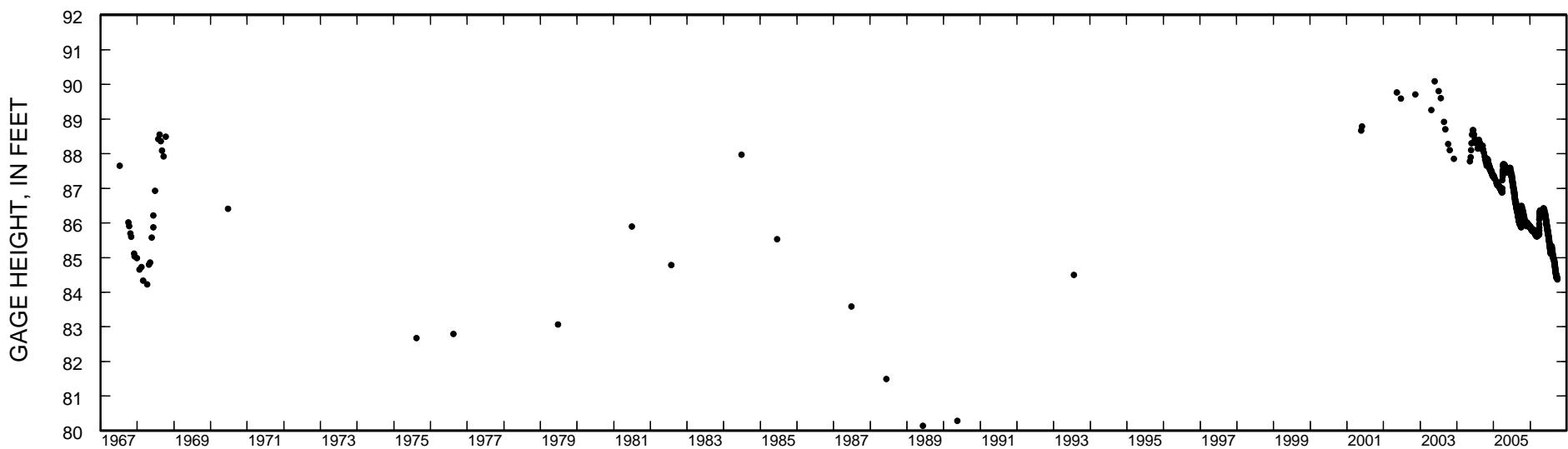
PERIOD OF RECORD.—October 2004 to September 2006 (discontinued).

GAGE.—Water-stage recorder. Datum of gage is 1165.31 ft above NGVD of 1929.

EXTREMES FOR THE CURRENT YEAR.—Maximum observed gage height, 86.49 ft, Oct. 6; minimum recorded, 84.37 ft, Sept. 29-30, 2006.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85.90	86.16	86.01	85.89	85.81	85.63	85.86	86.28	86.20	85.63	85.27	84.82
2	85.88	86.15	86.00	85.89	85.81	85.62	85.97	86.29	86.18	85.62	85.33	84.80
3	85.87	86.13	85.99	85.88	85.80	85.62	86.09	86.28	86.16	85.60	85.31	84.79
4	86.04	86.12	85.99	85.88	85.80	85.61	86.17	86.27	86.13	85.58	85.29	84.77
5	86.47	86.11	85.98	85.87	85.79	85.61	86.23	86.25	86.11	85.55	85.26	84.74
6	86.49	86.10	85.97	85.86	85.79	85.62	86.27	86.23	86.11	85.53	85.24	84.72
7	86.48	86.09	85.96	85.86	85.78	85.62	86.31	86.22	86.09	85.50	85.21	84.70
8	86.46	86.08	85.96	85.85	85.77	85.63	86.32	86.22	86.07	85.48	85.18	84.69
9	86.45	86.05	85.95	85.84	85.77	85.62	86.34	86.34	86.04	85.47	85.16	84.65
10	86.44	86.04	85.94	85.84	85.77	85.62	86.34	86.37	86.03	85.44	85.14	84.63
11	86.42	86.01	85.94	85.83	85.77	85.61	86.35	86.37	86.00	85.42	85.13	84.60
12	86.41	86.00	85.93	85.82	85.76	85.61	86.35	86.38	85.97	85.40	85.10	84.58
13	86.41	86.03	85.92	85.81	85.75	85.71	86.35	86.42	85.95	85.38	85.08	84.57
14	86.40	86.02	85.94	85.81	85.75	85.76	86.34	86.42	85.94	85.36	85.06	84.55
15	86.38	86.02	85.95	85.80	85.74	85.75	86.33	86.42	85.92	85.33	85.04	84.53
16	86.36	86.03	85.94	85.79	85.73	85.74	86.33	86.42	85.90	85.30	85.01	84.52
17	86.37	86.02	85.94	85.81	85.73	85.73	86.31	86.40	85.89	85.29	84.99	84.52
18	86.36	86.01	85.93	85.80	85.70	85.72	86.30	86.38	85.88	85.25	84.97	84.51
19	86.34	86.00	85.92	85.80	85.71	85.72	86.30	86.37	85.86	85.23	85.01	84.49
20	86.33	85.98	85.91	85.80	85.70	85.71	86.29	86.35	85.83	85.21	85.00	84.45
21	86.31	85.97	85.91	85.79	85.69	85.70	86.30	86.34	85.81	85.19	84.98	84.42
22	86.30	85.96	85.90	85.78	85.69	85.69	86.31	86.32	85.80	85.17	84.96	84.43
23	86.28	85.95	85.90	85.78	85.68	85.68	86.30	86.30	85.77	85.14	84.96	84.43
24	86.26	85.93	85.89	85.76	85.67	85.67	86.29	86.28	85.75	85.12	84.95	84.44
25	86.25	85.91	85.89	85.76	85.66	85.67	86.28	86.30	85.76	85.11	84.95	84.43
26	86.23	85.90	85.88	85.75	85.66	85.66	86.26	86.29	85.73	85.15	84.94	84.42
27	86.22	85.91	85.88	85.75	85.65	85.65	86.25	86.27	85.72	85.13	84.92	84.41
28	86.21	85.96	85.87	85.75	85.64	85.65	86.23	86.26	85.69	85.11	84.90	84.39
29	86.19	86.00	85.87	85.78	---	85.65	86.23	86.25	85.67	85.10	84.88	84.37
30	86.18	86.00	85.89	85.79	---	85.68	86.26	86.25	85.65	85.16	84.86	84.37
31	86.18	---	85.90	85.78	---	85.77	---	86.23	---	85.16	84.85	---
MEAN	86.29	86.02	85.93	85.81	85.73	85.67	86.26	86.32	85.92	85.33	85.06	84.56
MAX	86.49	86.16	86.01	85.89	85.81	85.77	86.35	86.42	86.20	85.63	85.33	84.82
MIN	85.87	85.90	85.87	85.75	85.64	85.61	85.86	86.22	85.65	85.10	84.85	84.37



Stage hydrograph for Silver Lake, 1967-2006.

453502091551700 SILVER LAKE, DEEP HOLE, NEAR CUMBERLAND, WI

LOCATION.—Lat 45°35'02", long. 91°55'17", in NE ¼ SE ¼ SW ¼ sec. 24, T.36 N., R 13 W., Barron County, Hydrologic Unit 07050007, near Cumberland.

DRAINAGE AREA.—Unknown. Area of Silver Lake is 0.53 mi.² (July 1967).

PERIOD OF RECORD.—October 2004 to September 2006 (discontinued).

REMARKS.—Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 19 TO SEPTEMBER 11, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, deg C (00010)	Conduc- tance, uS/cm (00095)	pH, wat unf 25 degC (00040)	water, unfltrd field, std units (00400)	Dis- solved oxygen, mg/L (00300)	Chloro- phyll a wat unf method, uncorr, ug/L (32210)	Ortho- phos- phate, water, unfltrd mg/L (00665)	Total nitro- gen, water, mg/L (00671)	Total water, unfltrd mg/L (00600)
APR 2006													
19...	1110	--	--	.50	7.9	25	8.6	11.0	5.03	.016	.006	.56	
19...	1131	--	--	22.0	5.3	25	7.8	9.2	--	.013	--	--	
19...	1145	86.30	2.80	--	--	--	--	--	--	--	--	--	
JUN													
06...	0900	--	--	.50	22.0	25	7.5	7.6	2.34	.010	--	--	
06...	0917	--	--	24.0	6.7	25	7.4	4.7	--	.025	--	--	
06...	0935	86.11	3.20	--	--	--	--	--	--	--	--	--	
JUL													
06...	1035	--	--	.50	24.0	53	7.8	6.4	1.55	.008	--	--	
06...	1055	--	--	23.0	7.0	61	6.2	.6	--	.037	--	--	
06...	1115	85.53	4.20	--	--	--	--	--	--	--	--	--	
AUG													
02...	1055	--	--	.50	26.1	26	8.2	7.6	7.35	.011	--	--	
02...	1115	--	--	21.5	7.1	27	6.1	.3	--	.027	--	--	
02...	1125	85.33	2.90	--	--	--	--	--	--	--	--	--	
SEP													
11...	1040	--	--	.50	19.8	27	8.3	8.6	10.8	.013	--	--	
11...	1049	--	--	9.0	12.8	27	6.5	3.6	--	.014	--	--	
11...	1057	--	--	21.0	7.1	36	6.2	.2	--	.055	--	--	
11...	1120	84.60	2.50	--	--	--	--	--	--	--	--	--	

453502091551700 SILVER LAKE, DEEP HOLE, NEAR CUMBERLAND, WI

WATER-QUALITY DATA, APRIL 19 TO SEPTEMBER 11, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	(00098)	Ammonia	Nitrite	Appar- ent		Magnes- ium, mg/L	Sodium, mg/L	Potas- sium, mg/L	
			Ammonia water, fltrd,	org-N, water, unfltrd	+	+				
APR 2006										
19...	.50	<.015	.47	.086	<1.0	5	9	2.10	.90	.70
19...	22.0	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	.50	--	--	--	--	--	--	--	--	--
06...	24.0	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
JUL										
06...	.50	--	--	--	--	--	--	--	--	--
06...	23.0	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
AUG										
02...	.50	--	--	--	--	--	--	--	--	--
02...	21.5	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--
SEP										
11...	.50	--	--	--	--	--	--	--	--	--
11...	9.0	--	--	--	--	--	--	--	--	--
11...	21.0	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--

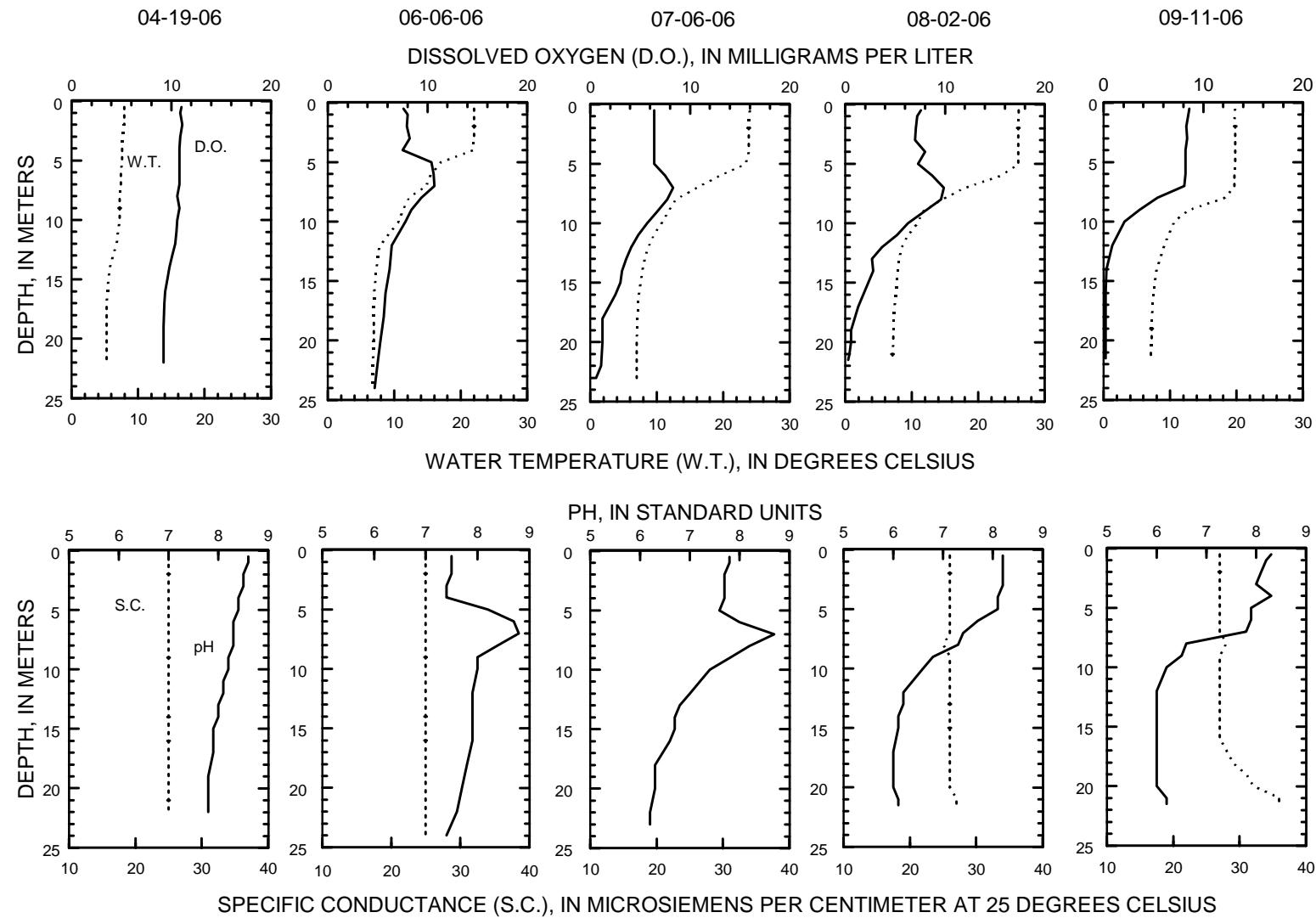
453502091551700 SILVER LAKE, DEEP HOLE, NEAR CUMBERLAND, WI

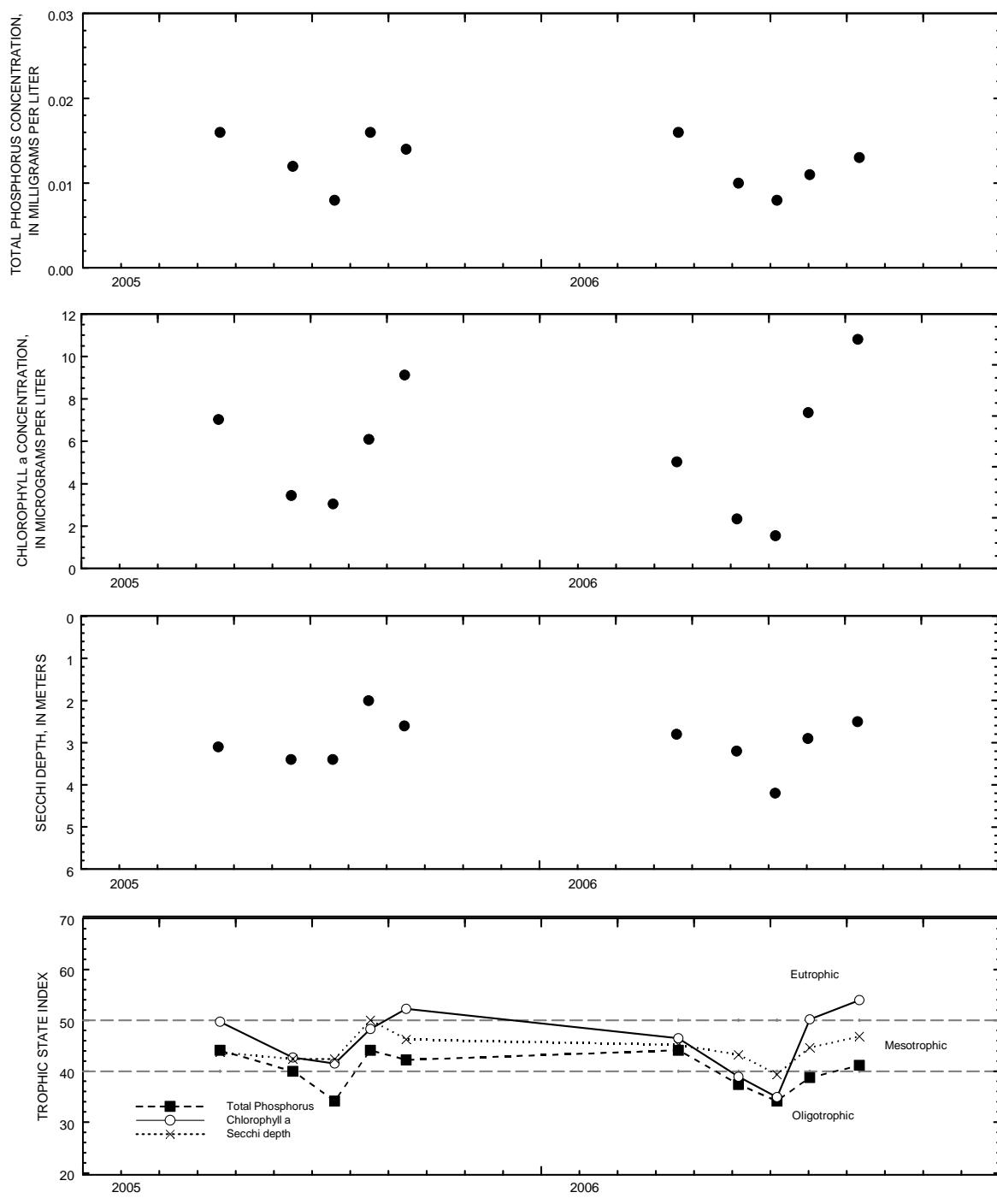
WATER-QUALITY DATA, APRIL 19 TO SEPTEMBER 11, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date			ANC, wat unf fixed	Chlor- ide, water, fltrd,	Sulfate water, fltrd,	Silica, water, fltrd,	Iron, water, fltrd,	Mangan- ese, water, fltrd,	Residue on evap.	Sam- pling method, code
	Sam- pling depth, meters	Sam- pling depth, meters	mg/L as CaCO ₃ (00098)	mg/L (00417)	mg/L (00940)	mg/L (00945)	ug/L (00955)	ug/L (01046)	180degC wat flt (01056)	
APR 2006										
19...	.50	8	1.2	<4.5	.228	<100	0.0	<50	50	
19...	22.0	--	--	--	--	--	--	--	50	
19...	--	--	--	--	--	--	--	--	--	
JUN										
06...	.50	--	--	--	--	--	--	--	50	
06...	24.0	--	--	--	--	--	--	--	50	
06...	--	--	--	--	--	--	--	--	--	
JUL										
06...	.50	--	--	--	--	--	--	--	50	
06...	23.0	--	--	--	--	--	--	--	50	
06...	--	--	--	--	--	--	--	--	--	
AUG										
02...	.50	--	--	--	--	--	--	--	50	
02...	21.5	--	--	--	--	--	--	--	50	
02...	--	--	--	--	--	--	--	--	--	
SEP										
11...	.50	--	--	--	--	--	--	--	50	
11...	9.0	--	--	--	--	--	--	--	50	
11...	21.0	--	--	--	--	--	--	--	50	
11...	--	--	--	--	--	--	--	--	--	

453502091551700 SILVER LAKE, DEEP HOLE, NEAR CUMBERLAND, WI

LAKE-DEPTH PROFILES, APRIL 19 TO SEPTEMBER 11, 2006





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

453424091551600 SILVER LAKE AT BEACH NEAR CUMBERLAND, WI

LOCATION.—Lat $45^{\circ}34'24''$, long $91^{\circ}55'16''$, in NE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T.36 N., R 13 W., Barron County, Hydrologic Unit 07050007, at the south end of the lake about 50 feet north of the boat landing in Grant Park off County Highway B and about 5 miles northeast of Cumberland.

DRAINAGE AREA.—Unknown. Area of Silver Lake is 0.53 mi.² (July 1967).

PERIOD OF RECORD.—October 2004 to September 2006 (discontinued).

REMARKS.—Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JUNE 6 TO SEPTEMBER 5, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Enterotoxigenic coccii, Defined Defined Substr. Tech., Tech., water, water, MPN/ MPN (99601)	E. coli, Defined Substr. Tech., water, MPN/ 100 mL (50468)
------	------	---	---

JUN 2006			
06...	0955	<1	4
JUL			
06...	1135	4	25
AUG			
22...	0900	<1	<1
22...	0901	<1	11
22...	0915	1	2
22...	0916	2	2
22...	0930	1	2
22...	0931	3	3
27...	2000	1	<1
SEP			
05...	1830	9	2

453535091550800 SILVER LAKE, NORTHEAST BAY, NEAR CUMBERLAND, WI

LOCATION.—Lat 45°35'35", long 91°55'08", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T.36 N., R 13 W., Barron County, Hydrologic Unit 07050007, about 5 miles northeast of Cumberland.

DRAINAGE AREA.—Unknown. Area of Silver Lake is 0.53 mi.² (July 1967).

PERIOD OF RECORD.—October 2004 to September 2006 (discontinued).

REMARKS.—Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JUNE 6 TO SEPTEMBER 5, 2006
(Milligrams per liter unless otherwise indicated)

		Enteroc-	E coli,
		cocci,	Defined
		Defined	Substr.
		Substr.	Tech.,
			Tech., water,
Date	Time	water,	MPN/
		MPN	100 mL
		(99601)	(50468)
JUN 2006			
06...	0945	1	6
JUL			
06...	1125	<1	<1
SEP			
05...	1830	<1	<1

453441091545300 SILVER LAKE NEAR SOUTHEAST WETLAND NEAR CUMBERLAND, WI

LOCATION.—Lat $45^{\circ}34'41''$, long $91^{\circ}54'53''$, in NE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T.36 N., R 13 W., Barron County, Hydrologic Unit 07050007, about 5 miles northeast of Cumberland.

DRAINAGE AREA.—Unknown. Area of Silver Lake is 0.53 mi.² (July 1967).

PERIOD OF RECORD.—October 2004 to September 2006 (discontinued).

REMARKS.—Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JUNE 6 TO SEPTEMBER 5, 2006
(Milligrams per liter unless otherwise indicated)

		Enteroc-	E coli,
		cocci,	Defined
		Defined	Substr.
		Substr.	Tech.,
		Tech.,	water,
Date	Time	water,	MPN/
		MPN	100 mL
		(99601)	(50468)

JUN 2006			
06...	0950	10	1
JUL			
06...	1130	16	3
SEP			
05...	1830	<1	3

05429485 LAKE WAUBESA AT MCFARLAND, WI

LOCATION.--Lat $43^{\circ}00'32''$, long $89^{\circ}18'19''$ referenced to North American Datum of 1927, in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.3, T.6 N., R.10 E., Dane County, WI, Hydrologic Unit 07090001, on left bank just upstream from bridge on U.S. Highway 51, downstream of dam at outlet of Lake Waubesa and 1.0 mi southwest of McFarland.

DRAINAGE AREA.--327 mi² of which 36.6 mi² probably is noncontributing.

PERIOD OF RECORD.--October 2003 to current year.

REVISED RECORDS.--WSP 805, WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above NGVD of 1929 (levels by Wisconsin Department of Natural Resources).

REMARKS.--Lake level regulated by dams at outlets of Lake Mendota and Lake Waubesa. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 6.30 ft, June 12, 2004; minimum observed, 3.50 ft, Feb.14, 2006, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 5.74 ft, Aug. 28-29; Sept. 13-14; minimum recorded, 3.50 ft, Feb.14.

**GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4.70	4.46	4.33	3.85	3.70	3.62	4.15	5.04	4.96	5.03	5.24	5.65
2	4.69	4.46	4.30	3.88	3.69	3.62	4.14	5.09	4.94	5.02	5.21	5.61
3	4.68	4.46	4.30	3.92	3.69	3.62	4.34	5.06	4.94	5.00	5.20	5.59
4	4.66	4.50	4.30	3.92	3.69	3.62	4.38	5.02	4.93	4.99	5.17	5.63
5	4.65	4.54	4.29	3.91	3.69	3.62	4.37	4.98	4.91	4.96	5.14	5.62
6	4.69	4.68	4.28	3.89	3.69	3.65	4.36	4.91	4.90	4.93	5.16	5.59
7	4.65	4.70	4.27	3.87	3.67	3.65	4.49	4.85	4.92	4.91	5.18	5.56
8	4.61	4.73	4.27	3.85	3.65	3.66	4.59	4.80	4.92	4.91	5.17	5.52
9	4.58	4.75	4.29	3.83	3.62	3.78	4.60	4.78	4.90	4.91	5.15	5.48
10	4.56	4.68	4.29	3.82	3.56	3.82	4.60	4.79	4.94	4.92	5.14	5.44
11	4.57	4.63	4.30	3.80	3.56	3.84	4.62	4.81	4.94	5.05	5.12	5.45
12	4.57	4.60	4.30	3.79	3.56	3.88	4.72	4.85	4.95	5.24	5.10	5.58
13	4.57	4.62	4.29	3.79	3.57	3.96	4.78	4.80	4.95	5.25	5.08	5.73
14	4.57	4.59	4.30	3.78	3.56	4.01	4.83	4.77	4.95	5.26	5.08	5.73
15	4.57	4.60	4.30	3.76	3.62	3.99	4.86	4.74	4.95	5.26	5.06	5.71
16	4.55	4.66	4.28	3.73	3.68	3.99	4.92	4.73	4.95	5.24	5.03	5.67
17	4.53	4.61	4.24	3.73	3.69	4.01	5.05	4.72	4.94	5.23	5.02	5.64
18	4.53	4.54	4.20	3.73	3.68	4.01	5.03	4.74	4.98	5.21	5.03	5.62
19	4.53	4.48	4.16	3.70	3.66	4.01	5.04	4.73	5.01	5.18	5.02	5.58
20	4.51	4.46	4.13	3.69	3.65	4.01	5.06	4.72	5.00	5.18	5.01	5.53
21	4.50	4.43	4.11	3.69	3.65	4.03	5.06	4.70	5.00	5.20	5.00	5.48
22	4.51	4.41	4.08	3.68	3.65	4.05	5.07	4.69	5.01	5.18	5.00	5.43
23	4.51	4.39	4.06	3.67	3.65	4.04	5.06	4.69	5.01	5.16	4.99	5.41
24	4.52	4.39	4.04	3.65	3.64	4.05	5.05	4.70	5.00	5.13	5.22	5.40
25	4.49	4.36	4.02	3.64	3.64	4.07	5.04	4.87	5.05	5.10	5.49	5.36
26	4.47	4.32	3.99	3.62	3.64	4.06	5.02	4.96	5.18	5.09	5.65	5.31
27	4.47	4.30	3.96	3.59	3.63	4.04	5.00	4.98	5.15	5.15	5.72	5.28
28	4.46	4.32	3.94	3.58	3.62	4.06	4.95	4.98	5.12	5.30	5.73	5.23
29	4.44	4.32	3.92	3.64	---	4.08	4.91	4.99	5.09	5.31	5.74	5.18
30	4.43	4.32	3.89	3.69	---	4.07	4.97	5.00	5.06	5.28	5.72	5.14
31	4.46	---	3.87	3.70	---	4.11	---	4.99	---	5.26	5.69	---
Mean	4.56	4.51	4.17	3.75	3.64	3.90	4.77	4.85	4.99	5.12	5.23	5.50
Max	4.70	4.75	4.33	3.92	3.70	4.11	5.07	5.09	5.18	5.31	5.74	5.73
Min	4.43	4.30	3.87	3.58	3.56	3.62	4.14	4.69	4.90	4.91	4.99	5.14

461231091524900 WHITEFISH (BARDON) LAKE NEAR GORDON, WI

LOCATION.—Lat. $46^{\circ} 12' 31''$, long. $91^{\circ} 52' 49''$, in SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 16, T.43 N., R 12 W., Douglas County, Hydrologic Unit 07030002, on a peninsula on west side of lake at 15376 South Rediger Road, and about 5 miles southwest of Gordon, WI.

DRAINAGE AREA.—Unknown. Area of Whitefish Lake is 1.30 mi.² (September 1967).

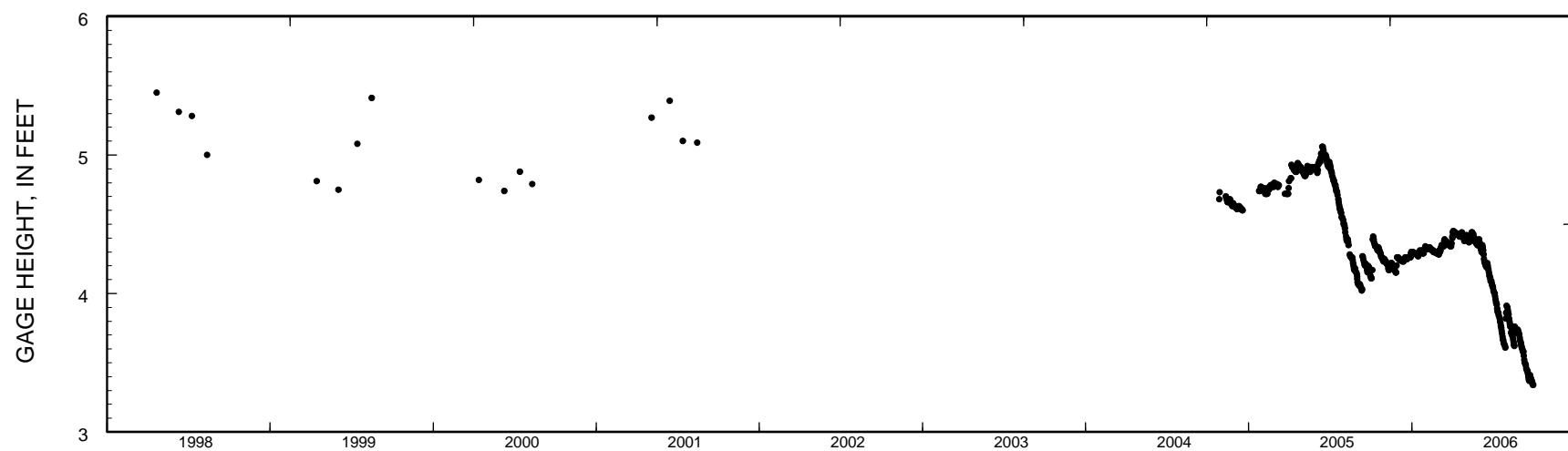
PERIOD OF RECORD.—October 2004 to September 2006 (discontinued).

GAGE.—Water-stage recorder. Datum of gage is 1029.35 ft above sea level.

EXTREMES FOR THE CURRENT YEAR.—Maximum recorded gage height, 4.45 ft, April 3-4; minimum recorded, 3.34 ft, September 29-30.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.12	4.25	4.26	4.30	4.34	4.28	4.41	4.41	4.37	4.04	3.91	3.65
2	4.11	4.24	4.25	4.30	4.33	4.31	4.44	4.42	4.35	4.02	3.90	3.64
3	4.11	4.23	4.25	4.29	4.33	4.31	4.45	4.42	4.34	4.01	3.88	3.62
4	4.17	4.23	4.25	4.30	4.33	4.30	4.45	4.41	4.32	4.00	3.86	3.61
5	4.39	4.22	4.25	4.29	4.33	4.31	4.44	4.39	4.30	3.98	3.85	3.60
6	4.41	4.22	4.24	4.29	4.33	4.33	4.44	4.38	4.34	3.96	3.82	3.59
7	4.39	4.21	4.24	4.29	4.33	4.33	4.44	4.37	4.35	3.94	3.80	3.58
8	4.37	4.21	4.24	4.29	4.32	4.35	4.43	4.37	4.33	3.93	3.78	3.58
9	4.36	4.20	4.24	4.29	4.32	4.35	4.43	4.40	4.31	3.92	3.76	3.55
10	4.35	4.18	4.24	4.29	4.33	4.34	4.43	4.42	4.28	3.89	3.76	3.52
11	4.34	4.17	4.23	4.28	4.33	4.34	4.43	4.42	4.25	3.87	3.72	3.50
12	4.34	4.17	4.23	4.28	4.32	4.34	4.43	4.42	4.23	3.86	3.71	3.49
13	4.34	4.21	4.23	4.28	4.32	4.38	4.43	4.43	4.22	3.86	3.70	3.48
14	4.34	4.21	4.24	4.28	4.32	4.39	4.43	4.44	4.21	3.84	3.69	3.46
15	4.32	4.21	4.25	4.27	4.32	4.38	4.43	4.44	4.20	3.82	3.67	3.45
16	4.31	4.22	4.25	4.27	4.31	4.38	4.43	4.43	4.19	3.80	3.65	3.44
17	4.33	4.22	4.26	4.29	4.31	4.38	4.41	4.43	4.21	3.79	3.63	3.44
18	4.33	4.21	4.26	4.29	4.31	4.37	4.41	4.41	4.22	3.77	3.62	3.42
19	4.32	4.20	4.25	4.30	4.31	4.37	4.41	4.40	4.20	3.75	3.76	3.40
20	4.31	4.19	4.25	4.31	4.30	4.37	4.41	4.40	4.18	3.73	3.75	3.38
21	4.30	4.19	4.25	4.30	4.30	4.36	4.42	4.39	4.17	3.71	3.74	3.37
22	4.29	4.18	4.25	4.30	4.30	4.36	4.44	4.37	4.15	3.69	3.72	3.39
23	4.29	4.19	4.26	4.30	4.30	4.35	4.43	4.37	4.13	3.67	3.73	3.41
24	4.27	4.17	4.26	4.30	4.30	4.35	4.43	4.36	4.12	3.66	3.73	3.39
25	4.26	4.16	4.26	4.29	4.30	4.35	4.41	4.36	4.11	3.64	3.74	3.38
26	4.26	4.15	4.26	4.29	4.29	4.35	4.40	4.36	4.09	3.63	3.73	3.37
27	4.25	4.15	4.26	4.29	4.29	4.34	4.40	4.35	4.09	3.62	3.72	3.36
28	4.24	4.20	4.26	4.29	4.29	4.34	4.38	4.35	4.07	3.61	3.71	3.35
29	4.23	4.26	4.26	4.32	---	4.34	4.39	4.35	4.06	3.82	3.70	3.34
30	4.25	4.26	4.29	4.32	---	4.36	4.41	4.39	4.05	3.86	3.68	3.34
31	4.25	---	4.30	4.32	---	4.40	---	4.37	---	3.86	3.66	---
MEAN	4.29	4.20	4.25	4.29	4.31	4.35	4.42	4.39	4.21	3.82	3.74	3.47
MAX	4.41	4.26	4.30	4.32	4.34	4.40	4.45	4.44	4.37	4.04	3.91	3.65
MIN	4.11	4.15	4.23	4.27	4.29	4.28	4.38	4.35	4.05	3.61	3.62	3.34



Stage hydrograph for Whitefish (Bardon) Lake, 1998-2006.

461321091520900 WHITEFISH (BARDON) LAKE, NORTH BASIN, NEAR GORDON, WI

LOCATION.--Lat $46^{\circ}13'21''$ long $91^{\circ}52'09''$, in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T.43 N., R 12 W., Douglas County, Hydrologic Unit 07030002, about 5 miles southwest of Gordon, WI.

DRAINAGE AREA.--Unknown. Area of Whitefish Lake is 1.30 mi.² (September 1967).

PERIOD OF RECORD.--March 1998 to August 2001, October 2004 to September 2006 (discontinued).

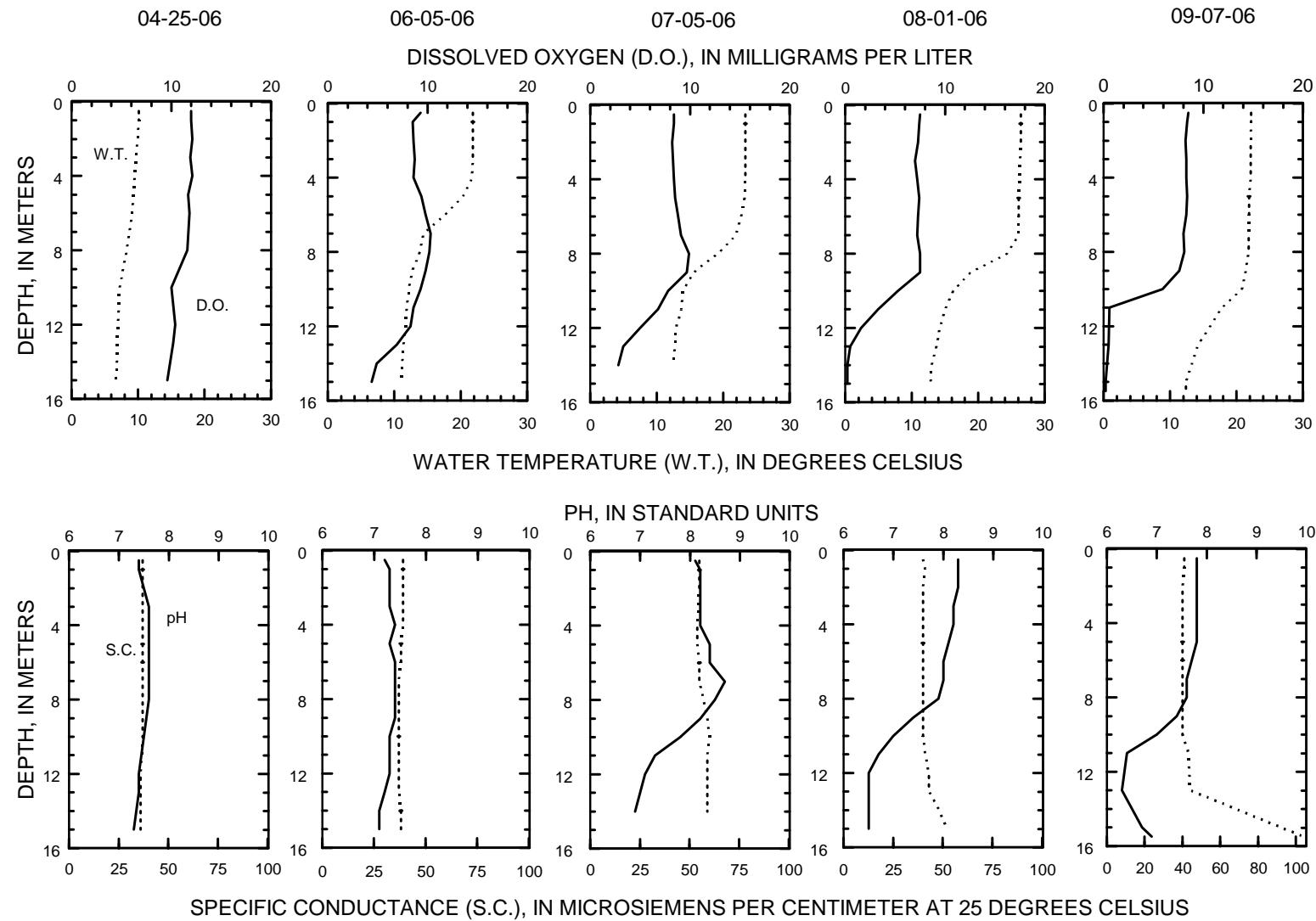
REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

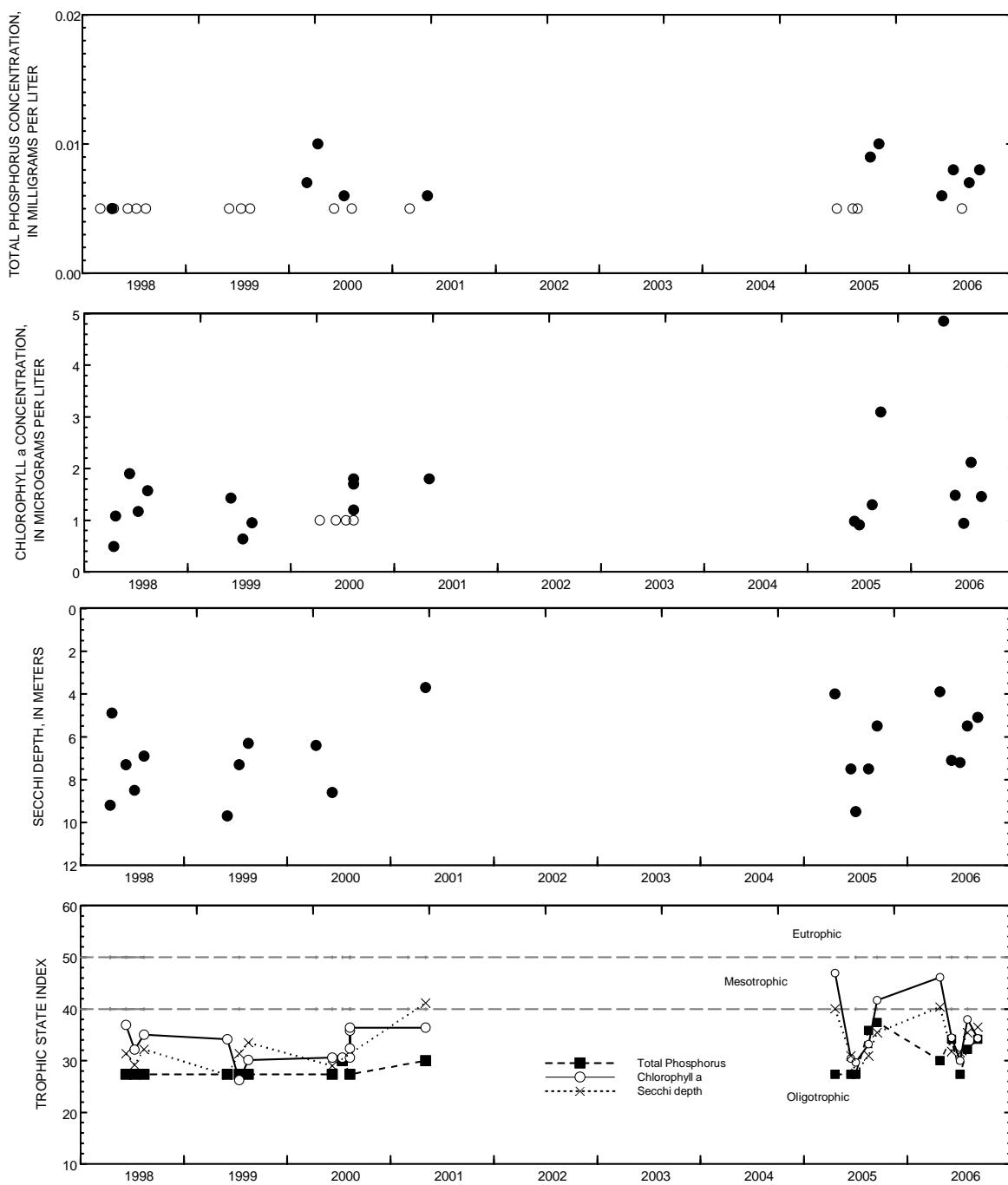
WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 7, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, deg C (00010)	Conduc- tance, uS/cm (00095)	water, 25 degC (00040)	unfltrd field, std units (00400)	Dis- solved oxygen, mg/L (00300)	trichr. method, wat uncorr, method, (32210)	Chloro- phyll a wat unf (00665)	Phos- phorus, ug/L (82398)	Sam- pling water, unfltrd mg/L (00665)	Sam- pling method, code (82398)
APR 2006														
25...	1320	--	--	.50	10.1	37	7.4	12.0	4.85	.006	50			
25...	1331	--	--	15.0	6.7	36	7.3	9.6	--	.010	50			
25...	1400	4.41	3.90	--	--	--	--	--	--	--	--			
JUN														
05...	1105	--	--	.50	21.8	39	7.2	9.3	1.48	.008	50			
05...	1120	--	--	15.0	11.1	38	7.1	4.4	--	.022	50			
05...	1135	4.30	7.10	--	--	--	--	--	--	--	--			
JUL														
05...	1105	--	--	.50	23.3	55	8.1	8.4	.940	<.005	50			
05...	1118	--	--	14.0	12.5	59	6.9	2.8	--	.022	50			
05...	1135	4.00	7.20	--	--	--	--	--	--	--	--			
AUG														
01...	1110	--	--	.50	26.4	40	8.3	7.5	2.12	.007	50			
01...	1125	--	--	15.0	12.8	52	6.5	.2	--	.033	50			
01...	1140	3.92	5.50	--	--	--	--	--	--	--	--			
SEP														
07...	1230	--	--	.50	22.2	41	7.8	8.5	1.46	.008	50			
07...	1242	--	--	13.0	14.2	44	6.3	.5	--	.017	50			
07...	1243	--	--	15.0	12.4	92	6.7	.2	--	.039	50			
07...	1305	3.58	5.10	--	--	--	--	--	--	--	--			

461321091520900 WHITEFISH (BARDON) LAKE, NORTH BASIN, NEAR GORDON, WI

LAKE-DEPTH PROFILES, APRIL 25 TO SEPTEMBER 7, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Whitefish Lake, North Site, near Gordon, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses.
Actual concentrations for these particular analyses are less than the plotted circles.)

461212091523200 WHITEFISH (BARDON) LAKE, SOUTH BASIN, NEAR GORDON, WI

LOCATION.--Lat 46°12'12" long 91°52'32", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 16, T.43 N., R 12 W., Douglas County, Hydrologic Unit 07030002, about 5 miles southwest of Gordon, WI.

DRAINAGE AREA.--Unknown. Area of Whitefish Lake is 1.30 mi.² (September 1967).

PERIOD OF RECORD.--March 1998 to August 2001, October 2004 to September 2006 (discontinued).

REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 7, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Trans- parency Secchi disc, meters (00078)	Sam- pling depth, meters (00098)	Temper- ature, water, deg C (00010)	Specif. conduc- tance, wat er, uS/cm (00095)	pH, unfltrd water, field, uS/cm (00400)	Chloro- phyll a wat unf trichr. water, method, solved oxygen, std units (00300)	Ortho- phos- phate, water, Phorus, water, unfltrd mg/L (32210)	Ortho- phos- phate, water, water, water, method, unfltrd mg/L (00665)	Ortho- phos- phate, water, water, water, method, unfltrd mg/L (00671)
APR 2006											
25...	1120	4.41	4.00	--	--	--	--	--	--	--	--
25...	1125	--	--	.50	9.7	37	7.5	12.3	5.48	.006	.002
25...	1141	--	--	29.5	5.0	37	7.2	8.4	--	.015	--
JUN											
05...	1005	4.30	7.90	--	--	--	--	--	--	--	--
05...	1010	--	--	.50	21.9	39	7.7	7.8	1.48	.012	--
05...	1029	--	--	28.0	5.4	41	7.7	.8	--	.017	--
JUL											
05...	1010	--	--	.50	23.0	49	8.2	9.0	.810	<.005	--
05...	1027	--	--	25.0	5.8	54	6.7	1.8	--	.023	--
05...	1045	4.00	7.50	--	--	--	--	--	--	--	--
AUG											
01...	1000	--	--	.50	25.9	40	7.9	7.5	1.67	.007	--
01...	1022	--	--	27.0	6.0	40	6.4	.3	--	.038	--
01...	1036	3.92	5.60	--	--	--	--	--	--	--	--
SEP											
07...	1110	--	--	.50	22.1	42	8.3	8.7	1.29	.009	--
07...	1119	--	--	17.0	7.7	40	6.4	1.9	--	.011	--
07...	1126	--	--	28.0	5.9	59	6.6	.3	--	.125	--
07...	1150	3.58	5.90	--	--	--	--	--	--	--	--

461212091523200 WHITEFISH (BARDON) LAKE, SOUTH BASIN, NEAR GORDON, WI

WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 7, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	Ammonia water, fltrd, mg/L (00098)	Ammonia org-N, water, unfltrd (00608)	Nitrite + nitrate water, fltrd, mg/L (00625)	Appar- ent color, water, Pt-Co (00631)	Magnes-			Potas- sium, water, water, mg/L (00930)	
						Calcium water, CaCO ₃ (00081)	ium water, mg/L (00900)	Sodium, water, mg/L (00925)		
APR 2006										
25...	--	--	--	--	--	--	--	--	--	--
25...	.50	<.015	.19	<.019	<1.0	<5	18	4.90	1.30	1.10
25...	29.5	--	--	--	--	--	--	--	--	--
JUN										
05...	--	--	--	--	--	--	--	--	--	--
05...	.50	--	--	--	--	--	--	--	--	--
05...	28.0	--	--	--	--	--	--	--	--	--
JUL										
05...	.50	--	--	--	--	--	--	--	--	--
05...	25.0	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
AUG										
01...	.50	--	--	--	--	--	--	--	--	--
01...	27.0	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
SEP										
07...	.50	--	--	--	--	--	--	--	--	--
07...	17.0	--	--	--	--	--	--	--	--	--
07...	28.0	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--

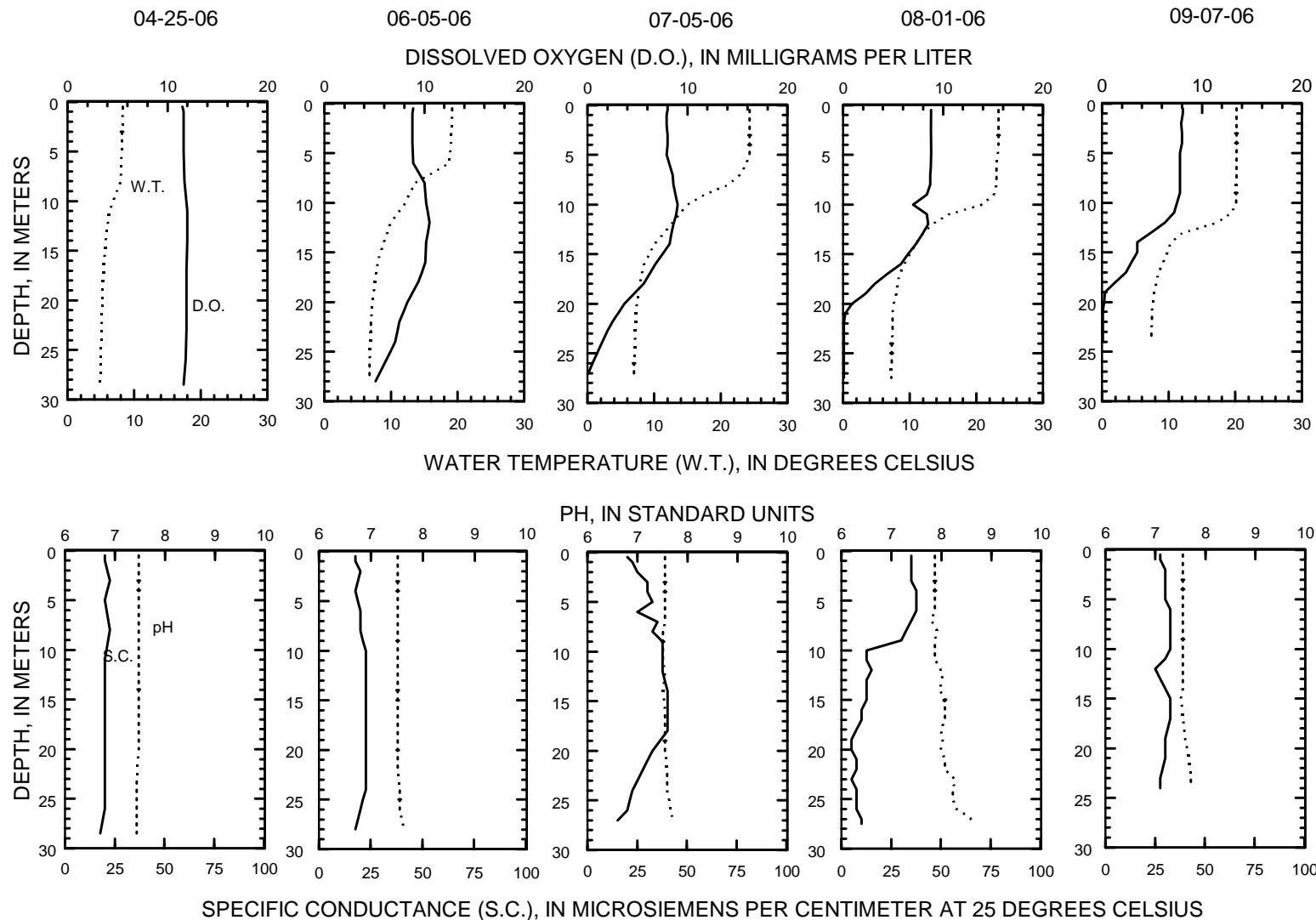
461212091523200 WHITEFISH (BARDON) LAKE, SOUTH BASIN, NEAR GORDON, WI

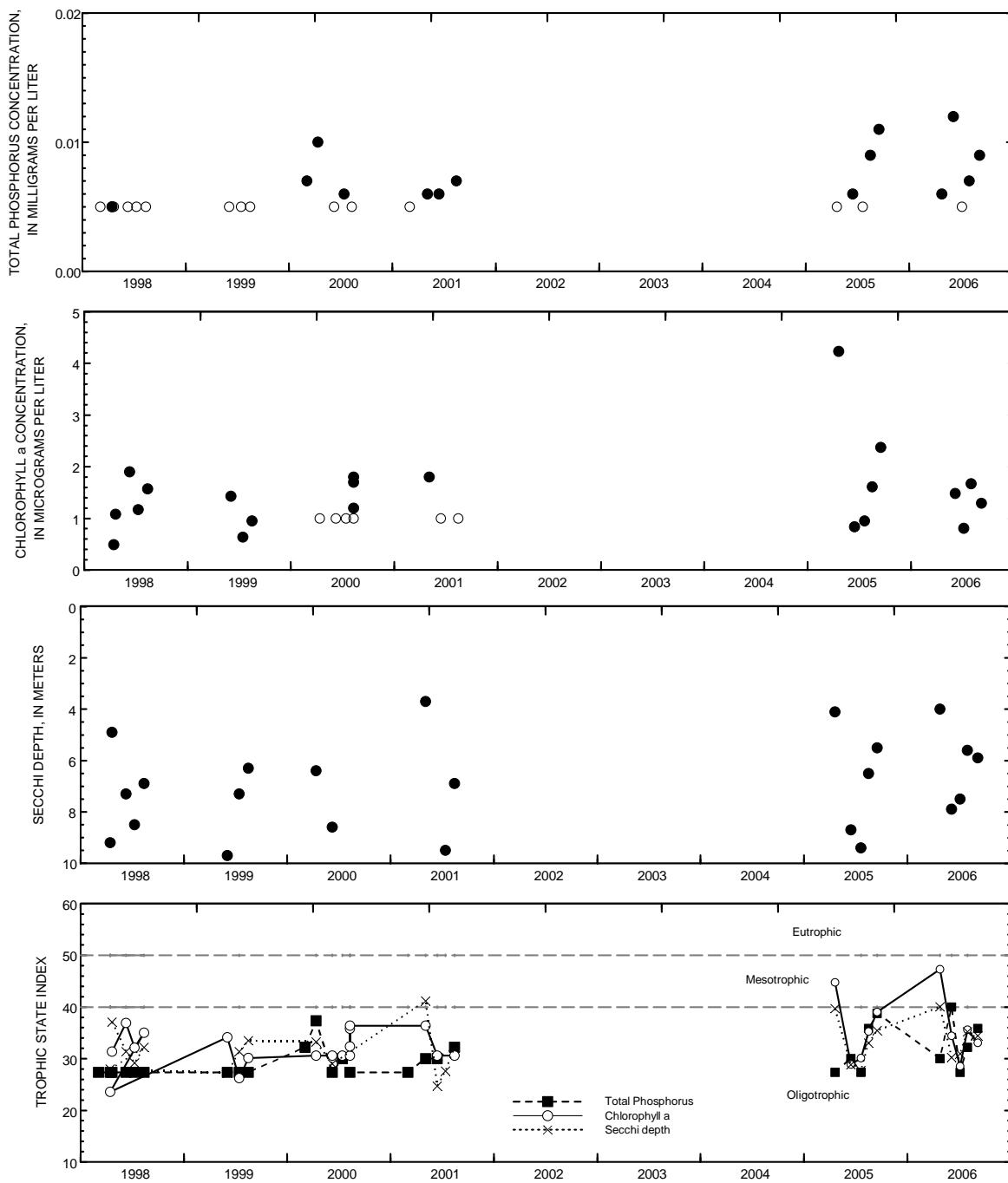
WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 7, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	ANC, wat unf fixed				Chlor- ide, Sulfate water, water, fltrd, fltrd,				Mangan- ese, Iron, water, water, fltrd, fltrd,		Residue on at 180degC evap.		Sam- pling method, code (82398)
	Sam- pling depth, meters (00098)	end pt, lab, mg/L as CaCO ₃ (00417)	as mg/L (00940)	Silica, mg/L (00945)	Iron, ug/L (00955)	Mangan- ese, ug/L (01046)	Iron, ug/L (01056)	water, wat filt (70300)	at 180degC (82398)	at 180degC (82398)	evap.		
APR 2006													
25...	--	--	--	--	--	--	--	--	--	--	--		
25...	.50	17	1.0	<4.5	.163	<100	<.5	<50	50				
25...	29.5	--	--	--	--	--	--	--	--	50			
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--		
05...	.50	--	--	--	--	--	--	--	--	50			
05...	28.0	--	--	--	--	--	--	--	--	50			
JUL													
05...	.50	--	--	--	--	--	--	--	--	50			
05...	25.0	--	--	--	--	--	--	--	--	50			
05...	--	--	--	--	--	--	--	--	--	--			
AUG													
01...	.50	--	--	--	--	--	--	--	--	50			
01...	27.0	--	--	--	--	--	--	--	--	50			
01...	--	--	--	--	--	--	--	--	--	--			
SEP													
07...	.50	--	--	--	--	--	--	--	--	50			
07...	17.0	--	--	--	--	--	--	--	--	50			
07...	28.0	--	--	--	--	--	--	--	--	50			
07...	--	--	--	--	--	--	--	--	--	--			

461212091523200 WHITEFISH (BARDON) LAKE, SOUTH BASIN, NEAR GORDON, WI

LAKE-DEPTH PROFILES, APRIL 25 TO SEPTEMBER 7, 2006





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Whitefish Lake, South Site near Gordon, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses.
Actual concentrations for these particular analyses are less than the plotted circles.)

424848088083100 WIND LAKE AT OUTLET AT WIND LAKE, WI

LOCATION.--Lat $42^{\circ}48'48''$, long $88^{\circ}08'31''$ referenced to North American Datum of 1927, in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.16, T.4 N., R.20 E., Racine County, WI, Hydrologic Unit 07120006, at Wind Lake.

DRAINAGE AREA.--39.6 mi².

PERIOD OF RECORD.--March 1985 to current year. Prior to October 2000, published as "Wind Lake Outlet".

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

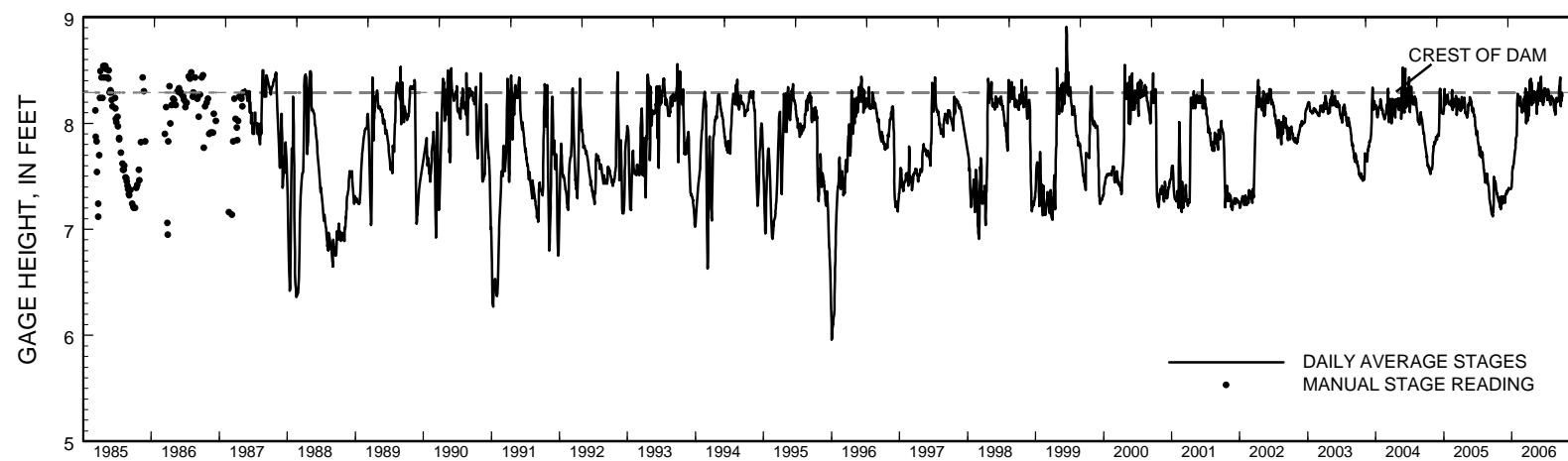
REMARKS.--Lake level regulated by dam with two 10-foot gates at outlet. Lake ice-covered Dec. 3 to Mar. 14. Prior to October 1987, published as Wind Lake at Wind Lake, Wis. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 8.93 ft, June 15, 1999; minimum recorded, 5.95 ft, Jan. 2, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 8.49 ft, Mar. 13,14; minimum recorded, 7.17 ft, Nov. 2,3, and 13.

**GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	7.45	7.21	7.34	7.42	8.28	8.14	8.12	8.25	8.21	8.30	8.25	8.21
2	7.45	7.20	7.33	7.48	8.28	8.16	8.07	8.24	8.30	8.30	8.24	8.20
3	7.45	7.19	7.33	7.54	8.27	8.17	8.18	8.24	8.37	8.30	8.24	8.21
4	7.45	7.19	7.36	7.56	8.26	8.19	8.22	8.24	8.42	8.30	8.23	8.21
5	7.44	7.20	7.35	7.57	8.24	8.21	8.26	8.23	8.44	8.29	8.22	8.23
6	7.43	7.31	7.35	7.58	8.21	8.23	8.28	8.24	8.41	8.27	8.22	8.24
7	7.41	7.28	7.35	7.58	8.20	8.23	8.40	8.25	8.30	8.25	8.23	8.24
8	7.38	7.29	7.35	7.59	8.24	8.21	8.41	8.26	8.22	8.23	8.22	8.23
9	7.37	7.29	7.37	7.59	8.25	8.25	8.27	8.27	8.23	8.22	8.21	8.22
10	7.36	7.27	7.37	7.60	8.24	8.23	8.20	8.29	8.23	8.24	8.23	8.21
11	7.35	7.25	7.37	7.62	8.22	8.15	8.37	8.24	8.22	8.23	8.22	8.23
12	7.34	7.24	7.37	7.63	8.21	8.11	8.42	8.14	8.21	8.23	8.20	8.31
13	7.34	7.24	7.37	7.65	8.18	8.33	8.26	8.09	8.20	8.22	8.18	8.35
14	7.33	7.26	7.38	7.67	8.16	8.32	8.25	8.11	8.20	8.32	8.17	8.27
15	7.33	7.30	7.38	7.68	8.17	8.14	8.36	8.23	8.20	8.30	8.15	8.33
16	7.31	7.31	7.39	7.70	8.22	8.06	8.39	8.30	8.19	8.28	8.13	8.39
17	7.31	7.30	7.38	7.71	8.25	8.01	8.27	8.25	8.17	8.27	8.12	8.43
18	7.30	7.28	7.38	7.72	8.23	8.00	8.17	8.20	8.31	8.26	8.13	8.41
19	7.30	7.28	7.38	7.74	8.21	8.01	8.23	8.17	8.29	8.23	8.13	8.25
20	7.28	7.28	7.38	7.76	8.19	8.09	8.29	8.24	8.20	8.24	8.11	8.17
21	7.28	7.28	7.38	7.80	8.17	8.26	8.29	8.32	8.25	8.24	8.09	8.16
22	7.27	7.28	7.38	7.82	8.15	8.29	8.26	8.36	8.26	8.22	8.08	8.23
23	7.28	7.28	7.38	7.83	8.14	8.14	8.25	8.38	8.28	8.20	8.09	8.29
24	7.28	7.30	7.38	7.86	8.12	8.06	8.24	8.34	8.29	8.19	8.18	8.26
25	7.26	7.25	7.38	7.87	8.11	8.02	8.23	8.28	8.32	8.18	8.23	8.21
26	7.25	7.26	7.38	7.87	8.10	8.05	8.19	8.23	8.33	8.17	8.23	8.24
27	7.24	7.28	7.38	7.88	8.11	8.15	8.21	8.29	8.26	8.19	8.23	8.26
28	7.23	7.32	7.39	7.91	8.12	8.24	8.22	8.34	8.29	8.24	8.23	8.25
29	7.22	7.33	7.39	8.06	---	8.29	8.24	8.35	8.33	8.25	8.24	8.26
30	7.21	7.34	7.40	8.18	---	8.27	8.30	8.31	8.31	8.25	8.23	8.28
31	7.22	---	7.42	8.26	---	8.18	---	8.21	---	8.26	8.22	---
Mean	7.33	7.27	7.37	7.73	8.20	8.17	8.26	8.25	8.27	8.25	8.19	8.26
Max	7.45	7.34	7.42	8.26	8.28	8.33	8.42	8.38	8.44	8.32	8.25	8.43
Min	7.21	7.19	7.33	7.42	8.10	8.00	8.07	8.09	8.17	8.17	8.08	8.16



Stage hydrograph for Wind Lake, 1985-2006.

424915088083900 WIND LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°49'15", long 88°08'39", in NW ¼ SW ¼ 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. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 5 TO OCTOBER 5, 2006
(Milligrams per liter unless otherwise indicated)

Date	Time	Gage height, feet (00065)	Transparency Secchi disc, meters (00078)	Samplng depth, meters (00098)	Temper- ature, water, deg C (00010)	Conduc- tance, wat unf uS/cm (00095)	Unfltrd 25 degC (00040)	Dis- trichr. field, std units (00400)	Solved oxygen, mg/L (00300)	Chloro- phyll a wat unf method, uncorr, mg/L (00300)	Phorus, ug/L (32210)	Ortho- phos- water, water, mg/L (00665)	Total nitro- water, mg/L (00600)
APR 2006													
05...	0935	--	--	.50	7.3	694	8.1	11.6	6.89	.029	.003	1.6	
05...	0950	--	--	15.0	6.9	693	8.0	11.2	--	.034	--	--	
05...	0955	8.26	2.00	--	--	--	--	--	--	--	--	--	
JUN													
12...	1640	--	--	.50	20.2	710	8.3	9.0	3.46	.028	--	--	
12...	1656	--	--	15.5	13.0	745	7.3	.2	--	.190	--	--	
12...	1700	8.21	2.83	--	--	--	--	--	--	--	--	--	
JUL													
13...	1320	--	--	.50	26.3	700	8.4	9.0	9.54	.080	.003	--	
13...	1332	--	--	15.0	13.0	733	7.0	0.0	--	.273	--	--	
13...	1335	8.22	1.65	--	--	--	--	--	--	--	--	--	
AUG													
23...	1400	--	--	.50	25.7	697	8.6	9.9	6.82	.028	--	--	
23...	1406	--	--	6.0	23.2	716	7.9	3.4	--	.017	--	--	
23...	1410	--	--	9.0	14.9	751	7.2	.2	--	.035	--	--	
23...	1413	--	--	12.0	13.6	760	7.2	.1	--	.158	--	--	
23...	1416	--	--	15.0	13.4	766	7.1	.1	--	.251	--	--	
23...	1420	8.09	2.15	--	--	--	--	--	--	--	--	--	
OCT													
05...	1350	--	--	.50	16.0	680	8.2	9.1	7.58	.026	--	--	
05...	1402	--	--	15.0	15.0	682	8.0	7.4	--	.039	--	--	
05...	1405	8.14	2.30	--	--	--	--	--	--	--	--	--	

424915088083900 WIND LAKE AT WIND LAKE, WI

WATER-QUALITY DATA, APRIL 5 TO OCTOBER 5, 2006--CONTINUED
(Milligrams per liter unless otherwise indicated)

Date	Sam- pling depth, meters	(00098)	Ammonia	Ammonia	Nitrite	Appar- ent							
			water, fltrd,	org-N, water, fltrd,	water, unfltrd	water fltrd,	Tur- bidity, NTU	unfltrd	water, Pt-Co units	Hard- ness, water, mg/L as CaCO ₃	Magnes- ium, water, filtrd,	Sodium, water, filtrd,	Potas- sium, water, filtrd,
		(00608)	(00623)	(00625)	(00631)	(00076)	(00081)	(00900)	(00915)	(00925)	(00930)	(00935)	
APR 2006													
05...	.50	.049	--	1.0	.633	1.9	30	240	48.6	29.5	53.0	3.00	
05...	15.0	--	--	--	--	--	--	--	--	--	--	--	
05...	--	--	--	--	--	--	--	--	--	--	--	--	
JUN													
12...	.50	--	--	--	--	--	--	--	--	--	--	--	
12...	15.5	--	--	--	--	--	--	--	--	--	--	--	
12...	--	--	--	--	--	--	--	--	--	--	--	--	
JUL													
13...	.50	.033	1.4	--	<.019	--	--	--	--	--	--	--	
13...	15.0	--	--	--	--	--	--	--	--	--	--	--	
13...	--	--	--	--	--	--	--	--	--	--	--	--	
AUG													
23...	.50	--	--	--	--	--	--	--	--	--	--	--	
23...	6.0	--	--	--	--	--	--	--	--	--	--	--	
23...	9.0	--	--	--	--	--	--	--	--	--	--	--	
23...	12.0	--	--	--	--	--	--	--	--	--	--	--	
23...	15.0	--	--	--	--	--	--	--	--	--	--	--	
23...	--	--	--	--	--	--	--	--	--	--	--	--	
OCT													
05...	.50	--	--	--	--	--	--	--	--	--	--	--	
05...	15.0	--	--	--	--	--	--	--	--	--	--	--	
05...	--	--	--	--	--	--	--	--	--	--	--	--	

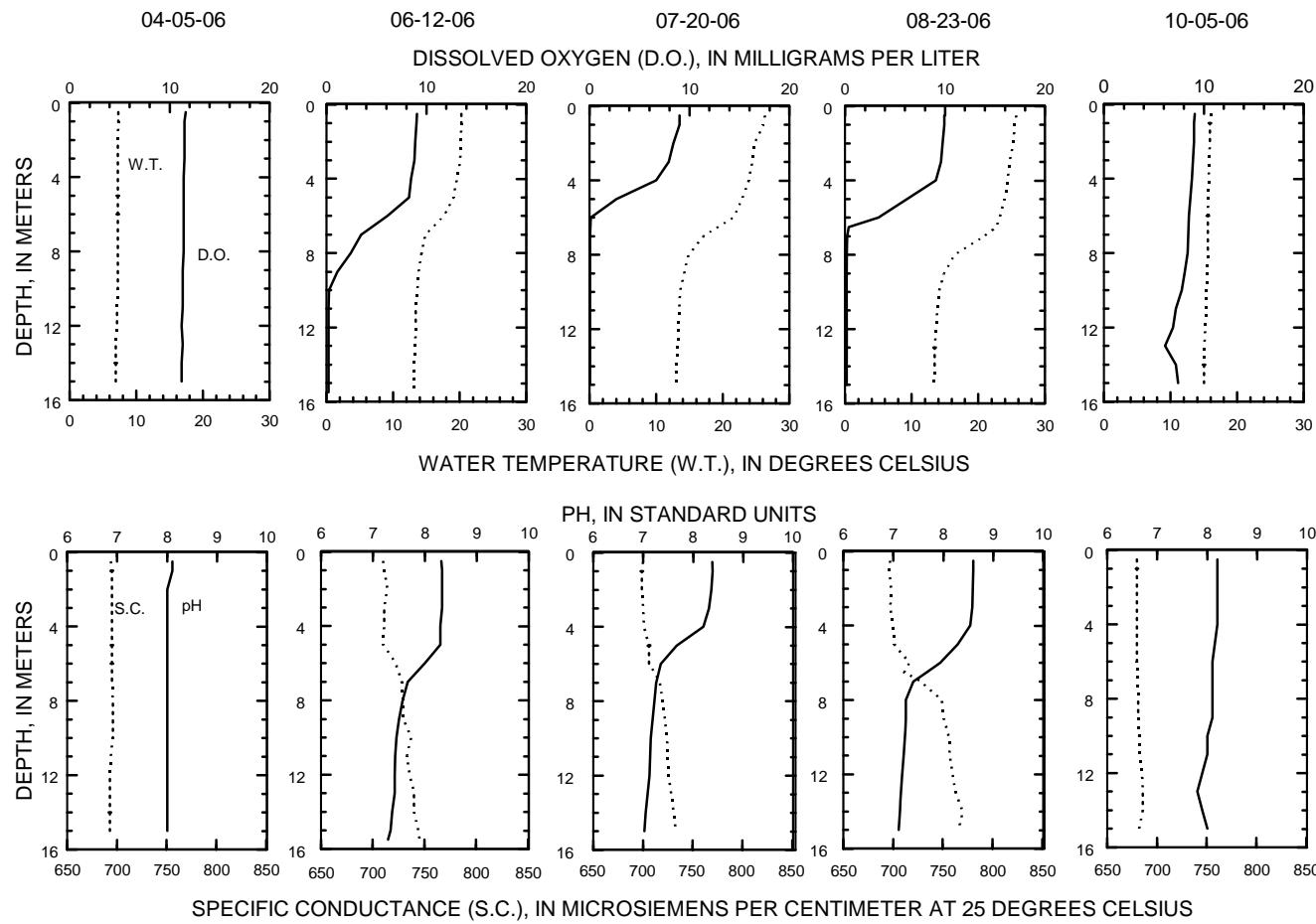
424915088083900 WIND LAKE AT WIND LAKE, WI

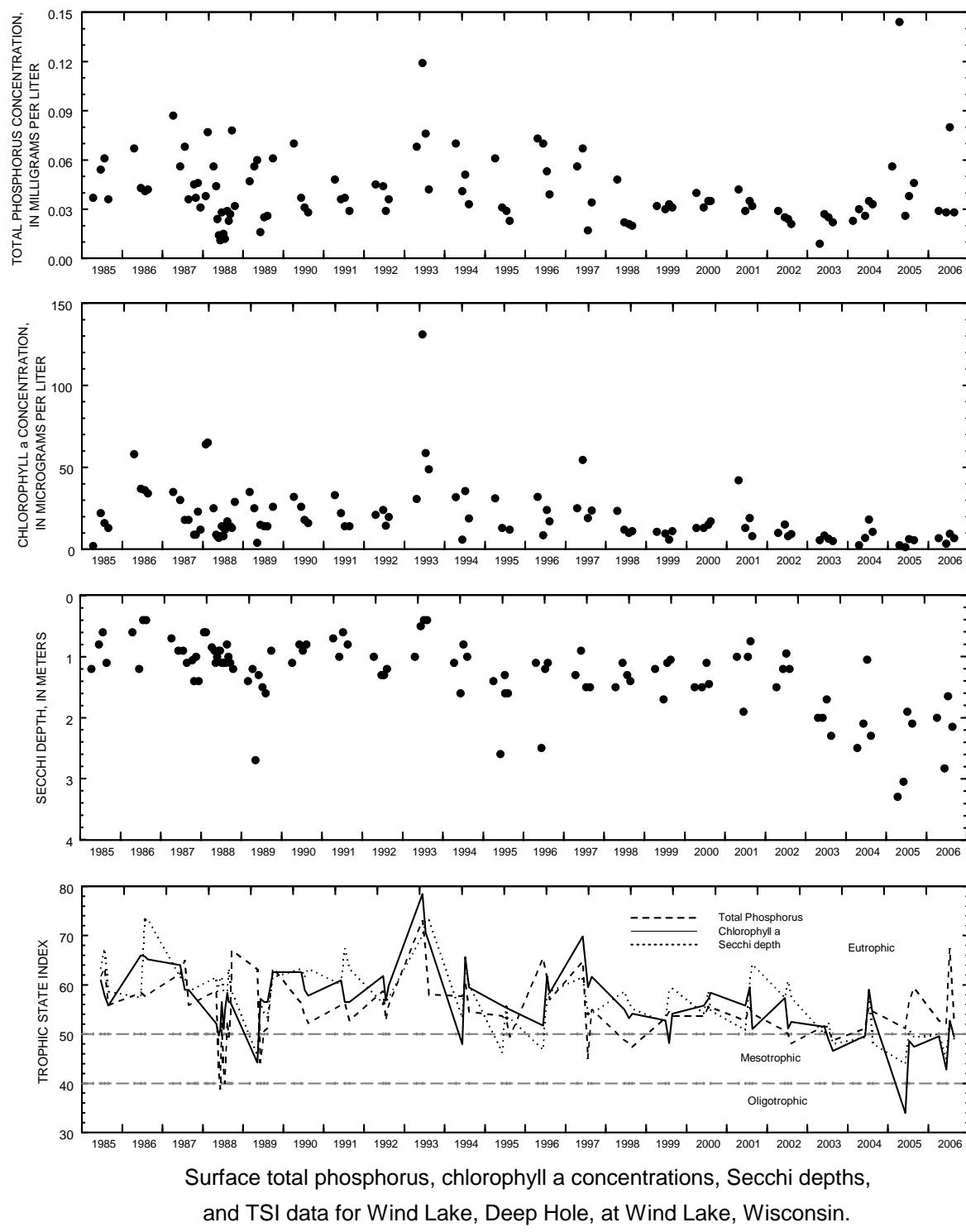
WATER-QUALITY DATA, APRIL 5 TO OCTOBER 5, 2006--CONTINUED
 (Milligrams per liter unless otherwise indicated)

Date	ANC, wat unf fixed							Mangan- ese, water, 180degC at Sam- pling	Residue on evap.
	Sam- pling depth, meters (00098)	end pt, lab, mg/L as (00417)	Chlor- ide, water, mg/L (00940)	Sulfate fltrd, water, mg/L (00945)	Silica, fltrd, water, mg/L (00955)	Iron, fltrd, water, ug/L (01046)	wat flt method, mg/L (01056)		
APR 2006									
05...	.50	148	98.2	56.6	.415	<100	M	452	50
05...	15.0	--	--	--	--	--	--	--	50
05...	--	--	--	--	--	--	--	--	--
JUN									
12...	.50	--	--	--	--	--	--	--	50
12...	15.5	--	--	--	--	--	--	--	50
12...	--	--	--	--	--	--	--	--	--
JUL									
13...	.50	--	--	--	--	--	--	--	50
13...	15.0	--	--	--	--	--	--	--	50
13...	--	--	--	--	--	--	--	--	--
AUG									
23...	.50	--	--	--	--	--	--	--	50
23...	6.0	--	--	--	--	--	--	--	50
23...	9.0	--	--	--	--	--	--	--	50
23...	12.0	--	--	--	--	--	--	--	50
23...	15.0	--	--	--	--	--	--	--	50
23...	--	--	--	--	--	--	--	--	--
OCT									
05...	.50	--	--	--	--	--	--	--	50
05...	15.0	--	--	--	--	--	--	--	50
05...	--	--	--	--	--	--	--	--	--

424915088083900 WIND LAKE AT WIND LAKE, WI

LAKE-DEPTH PROFILES, APRIL 5 TO OCTOBER 5, 2006





04082500 LAKE WINNEBAGO AT OSHKOSH, WI

LOCATION.--Lat $44^{\circ}00'35''$, long $88^{\circ}31'38''$ referenced to North American Datum of 1927, in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.25, T.18 N., R.16 E., Winnebago County, WI, Hydrologic Unit 04030203, 800 ft east of mouth of the upper Fox River.

DRAINAGE AREA.--5,880 mi².

PERIOD OF RECORD.--October 1938 to current year in reports of Geological Survey. Records from July 1882 to September 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 RECORDS.--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.--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 $\frac{1}{4}$ in. above the crest of Menasha 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 and gage-height telemeter 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 daily mean gage height, 2.98 ft, May 31; Minimum recorded, 1.59 ft, March 1.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.69	2.66	2.53	2.31	2.04	1.61	2.03	2.41	2.95	2.83	2.71	2.60
2	2.70	2.64	2.53	2.33	2.04	1.62	2.05	2.45	2.93	2.87	2.73	2.59
3	2.71	2.65	2.56	2.35	2.05	1.61	2.05	2.50	2.91	2.88	2.72	2.57
4	2.73	2.63	2.55	2.37	2.07	1.61	2.10	2.53	2.88	2.88	2.70	2.57
5	2.73	2.68	2.54	2.39	2.07	1.61	2.14	2.56	2.86	2.85	2.67	2.58
6	2.72	2.70	2.53	2.39	2.05	1.62	2.13	2.57	2.84	2.84	2.66	2.58
7	2.79	2.73	2.52	2.37	2.03	1.62	2.22	2.56	2.91	2.80	2.71	2.55
8	2.76	2.73	2.50	2.35	2.00	1.62	2.20	2.57	2.94	2.77	2.71	2.57
9	2.75	2.55	2.49	2.33	1.98	1.64	2.22	2.59	2.94	2.79	2.69	2.61
10	2.75	2.71	2.48	2.31	1.97	1.65	2.25	2.63	2.94	2.77	2.73	2.58
11	2.76	2.65	2.47	2.29	1.95	1.67	2.26	2.65	2.90	2.75	2.71	2.59
12	2.76	2.63	2.46	2.27	1.94	1.74	2.28	2.87	2.90	2.74	2.68	2.62
13	2.77	2.43	2.45	2.25	1.92	1.85	2.36	2.89	2.89	2.73	2.64	2.61
14	2.76	2.63	2.44	2.24	1.89	1.94	2.36	2.94	2.90	2.72	2.62	2.62
15	2.74	2.61	2.45	2.20	1.87	1.96	2.42	2.94	2.88	2.73	2.64	2.62
16	2.76	2.51	2.45	2.17	1.87	1.95	2.44	2.93	2.88	2.70	2.64	2.63
17	2.72	2.64	2.44	2.16	1.88	1.96	2.43	2.92	2.88	2.70	2.61	2.61
18	2.74	2.59	2.43	2.16	1.85	1.98	2.44	2.86	2.89	2.73	2.62	2.62
19	2.72	2.57	2.42	2.12	1.82	2.00	2.43	2.84	2.89	2.68	2.63	2.62
20	2.73	2.56	2.40	2.10	1.78	2.00	2.43	2.76	2.91	2.71	2.62	2.63
21	2.72	2.57	2.39	2.08	1.75	1.99	2.45	2.75	2.86	2.69	2.58	2.62
22	2.69	2.57	2.38	2.06	1.73	2.00	2.46	2.73	2.91	2.66	2.60	2.61
23	2.76	2.52	2.36	2.04	1.72	2.02	2.49	2.72	2.89	2.65	2.59	2.60
24	2.73	2.43	2.35	2.01	1.70	2.02	2.49	2.75	2.86	2.61	2.59	2.62
25	2.72	2.53	2.34	2.00	1.68	2.03	2.49	2.78	2.91	2.63	2.59	2.61
26	2.71	2.50	2.33	1.97	1.66	2.04	2.44	2.86	2.88	2.66	2.61	2.61
27	2.70	2.51	2.32	1.95	1.64	2.03	2.47	2.87	2.87	2.69	2.61	2.61
28	2.68	2.55	2.31	1.94	1.62	2.02	2.43	2.89	2.88	2.67	2.61	2.63
29	2.66	2.49	2.30	2.00	---	2.02	2.44	2.91	2.87	2.66	2.62	2.61
30	2.64	2.55	2.30	2.04	---	2.02	2.47	2.93	2.87	2.70	2.62	2.59
31	2.66	---	2.31	2.05	---	1.98	---	2.98	---	2.71	2.61	---
Mean	2.72	2.59	2.43	2.18	1.88	1.85	2.33	2.75	2.89	2.74	2.65	2.60
Max	2.79	2.73	2.56	2.39	2.07	2.04	2.49	2.98	2.95	2.88	2.73	2.63
Min	2.64	2.43	2.30	1.94	1.62	1.61	2.03	2.41	2.84	2.61	2.58	2.55

04084255 LAKE WINNEBAGO NEAR STOCKBRIDGE, WI

LOCATION.--Lat $44^{\circ}04'14''$, long $88^{\circ}19'44''$ referenced to North American Datum of 1983, Calumet County, WI, Hydrologic Unit 04030203, Stockbridge Indian Reservation, on east shore of Lake Winnebago, 300 ft south of County Highway E and 1.6 mi west of Stockbridge.

DRAINAGE AREA.--5,880 mi².

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.--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 $\frac{1}{4}$ in. above the crest of Menasha dam to crest during navigation season, plus additional 18 in. below crest during winter. Data-collection platform and gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily mean gage height, 3.85 ft, July 9, 11, 1993; minimum observed, 0.30 ft, Mar. 1, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum daily mean gage height, 2.92 ft, May 31, June 19; minimum recorded, 1.52 ft, Mar. 5.

**GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.66	2.64	2.52	2.26	2.00	1.57	2.01	2.31	2.91	2.87	2.71	2.50
2	2.64	2.62	2.54	2.28	2.00	1.59	1.97	2.41	2.87	2.87	2.69	2.50
3	2.67	2.58	2.50	2.30	2.01	1.58	2.03	2.49	2.84	2.84	2.68	2.52
4	2.68	2.60	2.51	2.32	2.05	1.58	2.15	2.56	2.83	2.82	2.67	2.53
5	2.71	2.55	2.50	2.34	2.05	1.57	2.10	2.55	2.83	2.82	2.64	2.54
6	2.82	2.68	2.49	2.34	2.02	1.60	2.07	2.53	2.86	2.80	2.67	2.52
7	2.65	2.70	2.47	2.32	1.98	1.59	2.03	2.55	2.87	2.79	2.66	2.54
8	2.64	2.66	2.45	2.29	1.96	1.59	2.13	2.54	2.87	2.79	2.63	2.54
9	2.65	2.81	2.44	2.28	1.94	1.61	2.20	2.55	2.84	2.74	2.65	2.45
10	2.66	2.73	2.42	2.25	1.92	1.62	2.20	2.60	2.81	2.69	2.61	2.43
11	2.67	2.61	2.43	2.23	1.91	1.63	2.22	2.63	2.82	2.67	2.59	2.42
12	2.70	2.61	2.42	2.22	1.89	1.71	2.28	2.79	2.82	2.68	2.61	2.48
13	2.71	2.83	2.40	2.21	1.87	1.85	2.31	2.81	2.84	2.68	2.62	2.55
14	2.74	2.55	2.39	2.19	1.84	1.94	2.33	2.80	2.81	2.68	2.66	2.58
15	2.76	2.48	2.40	2.13	1.83	1.94	2.36	2.86	2.83	2.71	2.64	2.58
16	2.70	2.79	2.40	2.11	1.84	1.93	2.28	2.90	2.87	2.71	2.59	2.58
17	2.73	2.71	2.39	2.12	1.85	1.94	2.31	2.88	2.87	2.69	2.58	2.61
18	2.71	2.62	2.37	2.12	1.81	1.96	2.34	2.84	2.89	2.67	2.57	2.73
19	2.67	2.58	2.36	2.07	1.77	1.97	2.34	2.79	2.92	2.65	2.56	2.70
20	2.66	2.58	2.35	2.05	1.73	1.97	2.39	2.74	2.85	2.65	2.56	2.62
21	2.64	2.58	2.34	2.02	1.71	1.96	2.43	2.70	2.87	2.61	2.58	2.56
22	2.68	2.51	2.31	1.99	1.69	1.99	2.45	2.68	2.87	2.62	2.55	2.50
23	2.61	2.52	2.31	1.97	1.68	1.99	2.46	2.68	2.81	2.60	2.53	2.58
24	2.62	2.58	2.30	1.97	1.66	1.99	2.43	2.70	2.81	2.62	2.48	2.61
25	2.63	2.53	2.29	1.97	1.65	2.00	2.39	2.74	2.79	2.62	2.54	2.64
26	2.63	2.44	2.28	1.92	1.63	2.00	2.46	2.81	2.80	2.67	2.55	2.60
27	2.64	2.45	2.27	1.88	1.61	1.98	2.38	2.81	2.84	2.63	2.56	2.58
28	2.64	2.48	2.26	1.89	1.59	1.98	2.34	2.84	2.83	2.65	2.55	2.57
29	2.64	2.57	2.26	1.97	---	1.98	2.28	2.87	2.85	2.64	2.54	2.58
30	2.64	2.54	2.25	2.01	---	1.96	2.23	2.89	2.84	2.66	2.51	2.59
31	2.64	---	2.27	2.00	---	2.01	---	2.92	---	2.70	2.50	---
Mean	2.67	2.60	2.38	2.13	1.84	1.83	2.26	2.70	2.85	2.70	2.60	2.56
Max	2.82	2.83	2.54	2.34	2.05	2.01	2.46	2.92	2.92	2.87	2.71	2.73
Min	2.61	2.44	2.25	1.88	1.59	1.57	1.97	2.31	2.79	2.60	2.48	2.42

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APPENDIX

Wisconsin Lakes Team Quality-Assurance Plan

Most lake studies and monitoring programs that are conducted by the USGS Wisconsin Water Science Center entail water sampling and analysis to determine water quality and biological productivity. Because all sampling and analysis is subject to error and random variability, a certain proportion of the sampling effort should include quality-assurance samples. These samples are collected and/or prepared solely for the purpose of assessing the magnitude of error and random variability so that the accuracy and precision of all data can be evaluated. The plan for this quality-assurance sampling is described below.

Three types of QA/QC samples are collected:

blanks

Provide information about accuracy and errors due to treatment or reagents

replicates

provide information about precision (variability)

standard additions (spikes)

provide information about accuracy and matrix interferences

Blank Sampling

B1. A **preservation blank** is prepared for each month of lake sampling. This consists of deionized water or inorganic blank water, to which is added any reagents or preservatives that are normally added to natural water samples. The blank is not taken to the field, but is shipped to the laboratory for analysis along with the natural water samples.

This blank sample is analyzed for the Nutrient Group¹ and chlorophyll-a.

B2. At one randomly-chosen lake each month, a **field blank** is prepared. This consists of deionized water or inorganic blank water treated exactly the same as regular samples. During winter, the field blank is analyzed for total phosphorus (TP) only; during summer, it is analyzed for TP and chlorophyll-a, and in the spring it is analyzed for the Nutrient Group and chlorophyll-a.

¹Nutrient Group = all phosphorus and nitrogen species that are commonly determined in lakes (total phosphorus, nitrate + nitrite, ammonia, total Kjeldahl nitrogen, total nitrogen)

Replicate Sampling

R1. At all lakes in the program, **triplicate samples** are taken near water surface in summer for analysis of total phosphorus and chlorophyll-a. At two of these lakes, a set of triplicate samples is also taken from near-bottom water, for analysis of total phosphorus.

R2. At three selected lakes in the spring (different lakes each year), **triplicate samples** are taken near water surface for analysis of Nutrient Group.

R3. At one lake each year, **5 replicate samples** are taken near water surface for analysis of total phosphorus and chlorophyll-a.

Standard Addition Testing

S1. At Delavan Lake and one other lake (to be determined each year), **5 replicate samples** are taken in August for a **standard addition (spike) test**. The spike consists of addition of a prepared phosphorus solution (standard) of known volume and concentration, such that the expected result of analysis is the natural water TP concentration plus the known addition. One sample from each set will receive no spike (the mean of these gives the natural water TP concentration).

Data and results of replicate sampling and field blank testing in water years 2001-2006 are shown in Table A1.

Table A1. Analyses of replicate samples from Wisconsin lakes in water years 2001-2006. See text for procedures used. Phosphorus data in milligrams per liter; chlorophyll data in micrograms per liter. Symbol "<" indicates less than given detection limit (DL); mean and standard deviation not calculated for datasets containing values less than DL.

Parameter	Lake	Date	Replicate Data				Mean	Standard Deviation	Percent Standard Deviation
Total Phosphorus	Buffalo	7/23/01	0.276	0.275	0.277		0.276	0.001	0.4
	Delavan	7/15/01	0.027	0.027	0.031		0.028	0.002	8.2
	Delavan	8/19/01	0.031	0.027	0.035		0.031	0.004	12.9
	Geneva	7/15/01	0.005	<0.005	<0.005				
	Little Green	7/23/01	0.069	0.074	0.072		0.072	0.003	3.5
	Middle	6/17/01	0.012	0.012	0.017	0.016	0.014	0.003	18.5
	Muskego	4/18/01	0.039	0.044	0.047		0.043	0.004	9.3
	Muskego	7/25/01	0.030	0.031	0.031		0.031	0.001	1.9
	Oconomowoc	7/17/01	0.010	0.011	0.010		0.010	0.001	5.6
	Oconomowoc	8/23/01	0.011	0.010	0.009		0.010	0.001	10.0
	Okauchee	8/20/01	0.013	0.015	0.015		0.014	0.001	8.1
	Red Cedar	7/9/01	0.021	0.022			0.022	0.001	3.3
	Delavan	7/15/02	0.026	0.026	0.027	0.031	0.028	0.002	8.7
	Geneva	7/16/02	0.008	0.008	0.008		0.008	0.000	0.0
	Little Muskego	7/1/02	0.016	0.016	0.017		0.016	0.001	3.5
	Potter	8/5/02	0.041	0.036	0.042	0.043	0.041	0.003	6.7
	Little St. Germain	7/22/02	0.061	0.060	0.059		0.060	0.001	1.7
	Delavan	4/14/03	0.057	0.057	0.057		0.057	0.000	0.0
	Delavan	8/12/03	0.044	0.043	0.041		0.043	0.002	3.6
	Lac La Belle	8/19/03	0.015	0.012	0.012		0.013	0.002	13.3
	Butternut	8/13/03	0.040	0.042			0.041	0.001	3.4
	Delavan	7/20/04	0.031	0.020	0.041		0.031	0.011	34.3*
	Big Cedar	8/18/04	0.012	0.011	0.012		0.012	0.001	4.9
	Big Cedar, South	7/19/05	0.015	0.015	0.009		0.013	0.003	26.6
	Delavan	8/16/05	0.032	0.029	0.027		0.029	0.003	8.6
	Middle	8/25/05	0.014	0.012	0.013	0.017	0.013	0.014	0.002
	Puckaway, West	7/18/05	0.309	0.310	0.313		0.311	0.002	0.7
	Upper Nemahbin	8/24/05	0.015	0.017	0.018	0.039	0.023	0.022	0.010
	Big Cedar	8/30/06	0.035	0.034	0.032		0.034	0.002	4.5
	Delavan	6/13/06	0.062	0.045			0.054	0.012	22.5
	Delavan	8/15/06	0.030	0.028	0.029	0.026	0.028	0.002	6.0
Total Phosphorus, near bottom	Geneva	7/15/01	0.017	0.020	0.021		0.019	0.002	10.8
	Red Cedar	7/9/01	0.187	0.228	0.262		0.226	0.038	16.6
	Wind	7/8/02	0.084	0.089	0.092		0.088	0.004	4.6
	Wind	8/19/03	0.194	0.192	0.165		0.184	0.016	8.8
	Wind	7/11/05	0.380	0.378	0.394		0.384	0.009	2.3
Dissolved Phosphorus	Wind	7/10/06	0.380	0.378	0.394		0.384	0.009	2.3
	Delavan	7/15/01	0.010	<0.002	<0.007				
	Geneva	4/17/01	<0.002	<0.002					
	Oconomowoc	8/23/01	0.002	<0.002	<0.002				
	Delavan	4/14/03	0.022	0.023	0.023		0.023	0.001	2.5

Parameter	Lake	Date	Replicate Data			Mean	Standard Deviation	Percent Standard Deviation
Dissolved Ammonia	Delavan	7/15/01	0.026	0.013	0.021	0.020	0.007	32.8
	Geneva	4/17/01	0.014	0.022		0.018	0.006	31.4
	Muskego	4/18/01	0.086	0.083	0.084	0.084	0.002	1.8
	Oconomowoc	8/23/01	0.027	0.028	0.022	0.026	0.003	12.5
	Delavan	4/14/03	<0.015	<0.015	<0.015			
Total Kjeldahl Nitrogen	Delavan	7/15/01	0.560	0.580	0.560	0.567	0.012	2.0
	Geneva	4/17/01	0.390	0.390		0.390	0.000	0.0
	Muskego	4/18/01	1.200	1.100	1.200	1.167	0.058	4.9
	Oconomowoc	8/23/01	0.490	0.500	0.520	0.503	0.015	3.0
	Delavan	4/14/03	0.640	0.640	0.620	0.633	0.012	1.8
Dissolved Nitrate plus Nitrite	Delavan	7/15/01	0.014	0.008	0.007	0.010	0.004	39.2
	Geneva	4/17/01	0.113	0.115		0.114	0.001	1.2
	Muskego	4/18/01	0.102	0.103	0.104	0.103	0.001	1.0
	Oconomowoc	8/23/01	0.370	0.371	0.369	0.370	0.001	0.3
	Delavan	4/14/04	<0.022	<0.022	<0.022			
Chlorophyll-a (micrograms per liter)	Buffalo	7/23/01	14.0	16.0	17.0	15.7	1.5	9.8
	Delavan	7/15/01	4.9	4.0	4.8	4.6	0.5	10.8
	Geneva	7/15/01	<1.0	<1.0	1.1			
	Little Green	7/23/01	23.0	24.0	24.0	23.7	0.6	2.4
	Middle	6/17/01	1.6	4.7		3.2	2.2	69.6
	Muskego	7/25/01	6.6	3.2	3.2	4.3	2.0	45.3
	Oconomowoc	7/17/01	2.6	2.8	2.3	2.6	0.3	9.8
	Okauchee	8/20/01	8.0	8.0	8.0	8.0	0.0	0.0
	Powers	7/25/01	4.8	5.0	5.5	5.1	0.4	7.1
	Red Cedar	7/9/01	5.2	3.7		4.5	1.1	23.8
	Delavan	7/15/02	9.7	6.9	8.0	8.2	1.2	14.1
	Geneva	7/16/02	0.74	1.00	0.96	0.9	0.1	15.6
	Little Muskego	7/1/02	1.74	1.50	1.34	1.5	0.2	13.2
	Potter	8/5/02	10.8	10.3	11.9	9.77	11.0	10.8
	Little St. Germain	7/22/02	63.8	62.2	69.7		65.2	4.0
	Lac La Belle	8/19/03	3.3	3.7	3.5		3.5	0.2
	Butternut	8/13/03	44.00	46.10	45.20		45.1	1.1
	Delavan	7/20/04	10.4	11.6	10.5		10.8	0.7
	Big Cedar	8/18/04	8.36	8.56	8.61		8.51	0.13
	Big Cedar, South	7/19/05	3.13	3.10	2.63		2.95	0.28
	Middle	8/25/05	4.45	4.48	4.82	4.70	4.40	4.58
	Puckaway, West	7/18/05	174.00	178.00	168.00		173.33	5.03
	Big Cedar, South	8/29/06	8.02	7.56	8.20		7.93	0.33
								4.16

*Algal bloom on lake.

Table A2. Data from tests of blanks, 2001-2006. All data in milligrams per liter, unless otherwise indicated.
 < = less than given detection limit; E = estimated value.

Delavan Lake. Analyses at USGS National Water Quality Laboratory, Lakewood, CO.

Parameter	2/19/01	4/17/01	7/15/01	2/21/02	4/17/02	7/14/02	2/20/03	4/16/03	4/7/06	6/13/06	8/14/06
Total P	E 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.006	E 0.002	< 0.004	< 0.004	E 0.002
Dissolved orthophosphate			< 0.007			< 0.007	< 0.007		< 0.007	< 0.006	< 0.006
Chlorophyll a	< 0.1	< 0.1		< 0.1		< 0.1	< 0.1			< 0.0260	
Chlorophyll b	< 0.1			< 0.1		< 0.1	< 0.1				< 0.0260
Total Kjeldahl Nitrogen (as N)			< 0.08		< 0.10	E 0.05	E 0.05		< 0.10		
Ammonia (as N)				< 0.02			0.037	0.034		< 0.015	
Nitrate + Nitrite (as N)				< 0.05			E 0.011	0.008		< 0.022	

Big Cedar Lake, south site, near West Bend, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	4/22/02	8/8/02
Total P	< 0.005	< 0.005
Dissolved orthophosphate	< 0.002	
Chlorophyll a	< 1.00	< 0.26
Total Kjeldahl Nitrogen (as N)	< 0.14	
Ammonia (as N)	< 0.013	
Nitrate + Nitrite (as N)	< 0.010	
Calcium, dissolved	< 0.20	
Magnesium, dissolved	< 0.20	
Potassium, dissolved	< 1.0	
Sodium, dissolved	< 0.10	
Iron, dissolved (micrograms per	< 100	
Manganese, dissolved (micrograms per	< 1	

Little Cedar Lake, south site, near West Bend, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	4/29/03
Total P	< 0.005
Dissolved orthophosphate	< 0.002
Total Kjeldahl Nitrogen (as N)	< 0.14
Ammonia (as N)	< 0.013
Nitrate + Nitrite (as N)	0.016

Little Cedar Lake, North site, near West Bend, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	2/21/03
Total P	< 0.005

Wind Lake at Wind Lake, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	6/13/06
Total P	< 0.005
Chlorophyll a	< 0.260

Table A3. Data from standard addition tests, 2003-2005, using stock solution containing 5.00 mg/L phosphorus.
See text for detail of procedures. All concentration data in milligrams per liter.

Lake, Date	Original Sample Concentration	Stock Solution Volume Added (milliliters)	Final Expected Concentration	Actual Detected Concentration	Percent Recovery
Delavan August 12, 2003	0.043	0.310	0.056	0.058	116%
	0.043	1.250	0.094	0.099	108%
Delavan August 16, 2005	0.029	0.188	0.036	0.037	103%
	0.029	0.75	0.059	0.063	107%

No Spike data in 2006