

**ANNUAL REPORT**  
of the  
*GREAT LAKES REGIONAL WATER USE  
DATA BASE REPOSITORY*  
*REPRESENTING 1988 WATER USE DATA*

**A report to the Governors and Premiers of the Great Lakes states and provinces  
Prepared at the request of the  
Council of Great Lakes Governors  
March 1990**

Tables in Appendix A of this report are presented in U.S. gallons. A version of this report presenting figures in litres is also available.

## EXECUTIVE SUMMARY

This report constitutes the annual report of the Water Resources Management Committee (WRMC) to the governors and premiers of the Great Lakes states and provinces on activities undertaken under the Great Lakes Charter during 1989. It includes an overview of WRMC activities over the past year and the second annual report of the Great Lakes Regional Water Use Database (GLRWDB), as an appendix.

The WRMC and its technical workgroup worked again this past year to achieve progress toward implementation of the principles enumerated in the Charter. The Committee made major strides, particularly in the refinement of the GLRWDB and the preliminary planning for a basinwide management program. Major accomplishments include:

- progress toward coordination and standardization of procedures used to estimate water use for the GLRWDB;
- significant improvement in the completeness and specificity of data submitted to the GLRWDB; and
- completion of a study, based on interviews conducted by the Center for the Great Lakes, clarifying the original intent of Charter provisions concerning a basinwide management program and suggesting next steps to be considered.

The Committee also discussed procedural issues concerning the prior notice and consultation (PN&C) process, helped facilitate consideration of two diversion proposals under the PN&C process, and monitored the progress of member states toward gaining authority to register and manage withdrawals.

Activities of the WRMC in the coming year will build on the ground work laid in 1989. Continued progress is expected in implementing Charter provisions relating to the GLRWDB, the PN&C process, and the basinwide management program. In particular, the Committee will work toward:

- further progress toward the goal of providing annual measured state and provincial data to the GLRWDB;
- refinements in the PN&C procedure, including resolving differences between the Charter and the U.S. Water Resources Development Act; and
- a workplan for preparing a basinwide management program and implementation of the initial steps of that workplan.

## SOMMAIRE

Voici le rapport annuel du Comité de gestion des ressources en eau présenté aux gouverneurs et aux premiers ministres des États et des provinces des Grands Lacs. Le rapport fait état des activités entreprises par le comité durant l'année 1989 aux termes de la Charte des Grands Lacs et comprend, en annexe, un compte rendu des travaux réalisés relativement à la banque régionale de données sur l'utilisation de l'eau des Grands Lacs.

Le comité et son groupe de travail technique ont oeuvré encore cette année à mettre en oeuvre les principes de la Charte. Des progrès significatifs ont été réalisés, notamment en ce qui a trait à l'amélioration de la banque de données et aux travaux préliminaires de planification pour la mise au point d'un programme de gestion des eaux du bassin des Grands Lacs. Les principales réalisations comprennent:

- l'avancement des travaux de coordination et de standardisation des méthodes d'estimation des données sur les usages de l'eau aux fins de la banque de données;
- des améliorations significatives quant à la précision et à l'exhaustivité des données inscrites dans la banque de données;
- la réalisation d'une étude, fondée sur des entrevues menées par le "Center for the Great Lakes", afin de clarifier la portée de certaines dispositions de la Charte relatives au programme de gestion des eaux du bassin des Grands Lacs et de formuler les prochaines étapes à franchir.

Le comité a aussi discuté certains points de procédure relativement au processus de notification et de consultation préalables, a prêté son concours à l'étude de deux projets de dérivation en vertu du processus de notification et de consultation préalables et a suivi les progrès des États membres concernant leur pouvoir de gérer et de réglementer les prélèvements d'eau.

Les activités du comité de gestion des ressources en eau pour l'année qui vient consisteront à poursuivre les travaux entrepris en 1989. Des progrès sont prévus quant à la mise en oeuvre des dispositions de la Charte relativement à la banque de données, au processus de notification et de consultation préalables et au programme de gestion des eaux du bassin des Grands Lacs. En particulier:

- le comité cherchera à améliorer davantage les données fournies par les États et les provinces à la banque de données;
- des mises au point seront apportées au processus de notification et de consultation préalables de façon à éliminer les différences entre la Charte et la loi américaine sur la mise en valeur des ressources en eau (Water Resources Development Act).
- le comité rédigera un plan de travail pour la réalisation d'un programme de gestion des eaux du bassin des Grands Lacs et procédera à l'implantation des premières étapes de ce plan de travail.

**ANNUAL REPORT OF THE  
WATER RESOURCES MANAGEMENT COMMITTEE**

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## REGIONAL OVERVIEW

The Great Lakes Charter expresses the commitment of the governors and premiers to three goals: conserving the levels and flows of the Great Lakes and their tributary and connecting waters; protecting the environmental balance of the Great Lakes ecosystem; and providing for the cooperative management of the basin's water resources. The Charter, although not legally binding, commits the signatory jurisdictions to both general and specific activities in support of these goals. These activities including prior notice and consultation on new or increased diversions or consumptive uses, establishment of a regional water-use database, and development of a cooperative water resources management program.

As the oversight authority for implementing the Charter, the Water Resources Management Committee (WRMC) reports annually to the governors and premiers on activities undertaken to implement the Charter. This report outlines the work of the WRMC and the signatory jurisdictions during 1989 toward fulfilling the Charter's commitments.

### Activities Relating to the Great Lakes Regional Water-Use Database

The Great Lakes Charter commits the states and provinces of the Great Lakes Basin to "pursue the development and maintenance of a common base of data and information regarding the use and management of Basin water resources." The Great Lakes Regional Water-Use Database (GLRWDB), the product of that commitment, now includes 1988 data on the location and type of water withdrawals, consumption, and diversion. The database, developed from state and provincial data submissions, is housed at the Great Lakes Commission and is available to all Great Lakes Charter members.

The GLRWDB identifies 1.2 trillion gallons per day (4.5 trillion litres per day) of water withdrawals or hydro-electric use in the basin for 1988. Most of this is hydro-electric use; actual 1988 withdrawals in the database total 54 billion gallons per day (205 bld), or about 1460 gallons per day for every person living in the basin. Consumptive use is still lower, at 1.8 bgd (6.9 bld). According to the GLRWDB, incoming and outgoing diversions balance to a net diversion into the basin of about 2.1 bgd (7.9 bld) Figure 1 shows water withdrawals, as reported to the GLRWDB, by jurisdiction.

In the past year, the Great Lakes states and provinces have worked with the Great Lakes Commission to improve the quality of the database, in addition to submitting 1988 data. These improvement activities, described more fully in a database report

included as an Appendix to this report, have been along two lines. The first includes efforts to upgrade the specificity and completeness of the data submitted by the states and provinces. The second line of activities consists of efforts to coordinate and improve assumptions made in categorizing water use by type and estimating water consumption.

## **1. Specificity and Completeness of Data**

The specificity and completeness of data in the database has improved greatly over the past year, although more needs to be done. With the submission of Ontario data for the first time this year, some data now exist in the database for all Great Lakes states and provinces. In addition, Minnesota was able to provide 1988 data this year, after submitting 1986 data last year.

In some cases, however, the data submitted are sketchy and/or from years other than 1988. Michigan provided the same data for this year's report that they submitted last year. These data are for 1985, do not cover all categories of water use, and cannot all be broken down by location or withdrawal type. In addition, Pennsylvania used 1986 data for some sub-basins, as staff limitations prevent compilation of complete data every year.

## **2. Coordination of Assumptions**

A technical workgroup convened by the WRMC conducted five conference calls over the past year to coordinate and improve definitions and procedures used to estimate water withdrawals and consumption. This workgroup accomplished two important tasks. First, the workgroup agreed on revised definitions of the water use categories which replace and clarify the original definitions. Second, the workgroup exchanged information on estimation of particular water use categories and agreed on general principles for estimating withdrawals and consumption. These refinements were necessary to avoid problems of double-counting and to improve data comparability between jurisdictions. Greater detail on these discussions is presented in the Appendix.

### **Basinwide Management Program**

The Charter calls for "the development of a cooperative water resources management program for the Great Lakes Basin." The program is to include coordinated policies designed to "minimize the consumptive use of the Basin's water resources," and to guide "conservation, development, protection, use, and management" for those resources.

Activities undertaken under the Charter, particularly the development of the water-use database, have contributed an important base of information for beginning this planning process. The improvements to the database described above move the region closer to having a reasonably complete picture of current water use in the basin. In addition to these efforts, preliminary planning for a basinwide management program is proceeding on a parallel track.

In the past year, the Council asked the Center for the Great Lakes to conduct a series of interviews with many of the original participants in the Charter's development. These interviews were designed to support the agenda-setting process for the management program by clarifying the original intent of the provisions concerning the program. Between May and August, the Center interviewed fifteen water managers and policy experts involved in the Charter's development and implementation.

Interviewees agreed on two overall objectives for the management program:

- to promote a regional approach to water management in the basin; and
- to help satisfy legal requirements for controls on diversions and consumptive uses.

In addition, interviewees provided insight and suggestions on the components of the management program, assessment of existing and future water demands, promotion of technologies that minimize water use, links between water quantity and quality issues, and preparation and implementation of the management program.

The Council staff also met with Center staff involved with this project to discuss ideas for a workplan for preparing the management program. In the near future, the WRMC and the Council staff will work together to produce a workplan. Implementation of the initial steps of the workplan will begin during the next year.

### Diversions Proposals

Two diversion proposals were considered pursuant to the Charter's prior notice and consultation (PN&C) procedure during 1989. Discussions were held under the PN&C process on proposals by the U.S. Army Corps of Engineers and the State of Wisconsin to divert water from Lake Michigan. The discussions on the Corps proposal were completed in July; discussions on the Wisconsin proposal are continuing.



In December 1988, the Corps wrote to each of the governors requesting a temporary increase in the Chicago River diversion whenever the Corps determined an emergency or maintenance situation warranted such an increase. The proposal would allow the Corps to increase the Chicago diversion by no more than 10,000 cubic feet per second (6.46 billion gallons per day) for 10 days during a given year to protect navigation on the Illinois River. The Council Chairman requested that designated representatives of the governors and premiers develop a response to this request. The governors and premiers, in their response, did not approve the Corps' request for "blanket authority" to determine when an increase might be necessary, but encouraged the Corps to come to the states and provinces with specific requests when appropriate.

In May 1989, Wisconsin initiated the PN&C process with a request for approval to provide adequate drinking water supplies to the village of Pleasant Prairie by diverting 3.2 million gallons per day (4.95 cubic feet per second) from Lake Michigan. Water from the proposed diversion would replace contaminated groundwater as the village's source of drinking water. After use, the water would move through Pleasant Prairie's existing pipes to a river in the Mississippi River Basin. Although the proposal falls under the 5 million gallon per day trigger level of the Charter, the prior notice and consultation process was used to seek approval for the proposal from the eight states. Letters were sent to each governor and state water management agency. Six states responded in writing that they had no objection to the proposal. Wisconsin is currently contacting officials in Pennsylvania and New York, which did not respond, for comments on the proposal.

### Procedural Questions on Prior Notice and Consultation

The Committee this year continued discussions aimed at resolving existing differences between the Charter and Section 1109 of the U.S. Water Resources Development Act (WRDA). The Charter provides that the Great Lakes states and provinces be notified and consulted prior to approval of any new or increased diversion or consumptive use exceeding five million gallons per day (averaged over 30 days). The WRDA, however, prohibits new diversions of any quantity without the approval of all eight Great Lakes governors.

In addition, the Committee discussed the possibility of creating an expedited procedure for emergency diversion proposals. Options on expedited procedures are also under discussion at the governors' level.

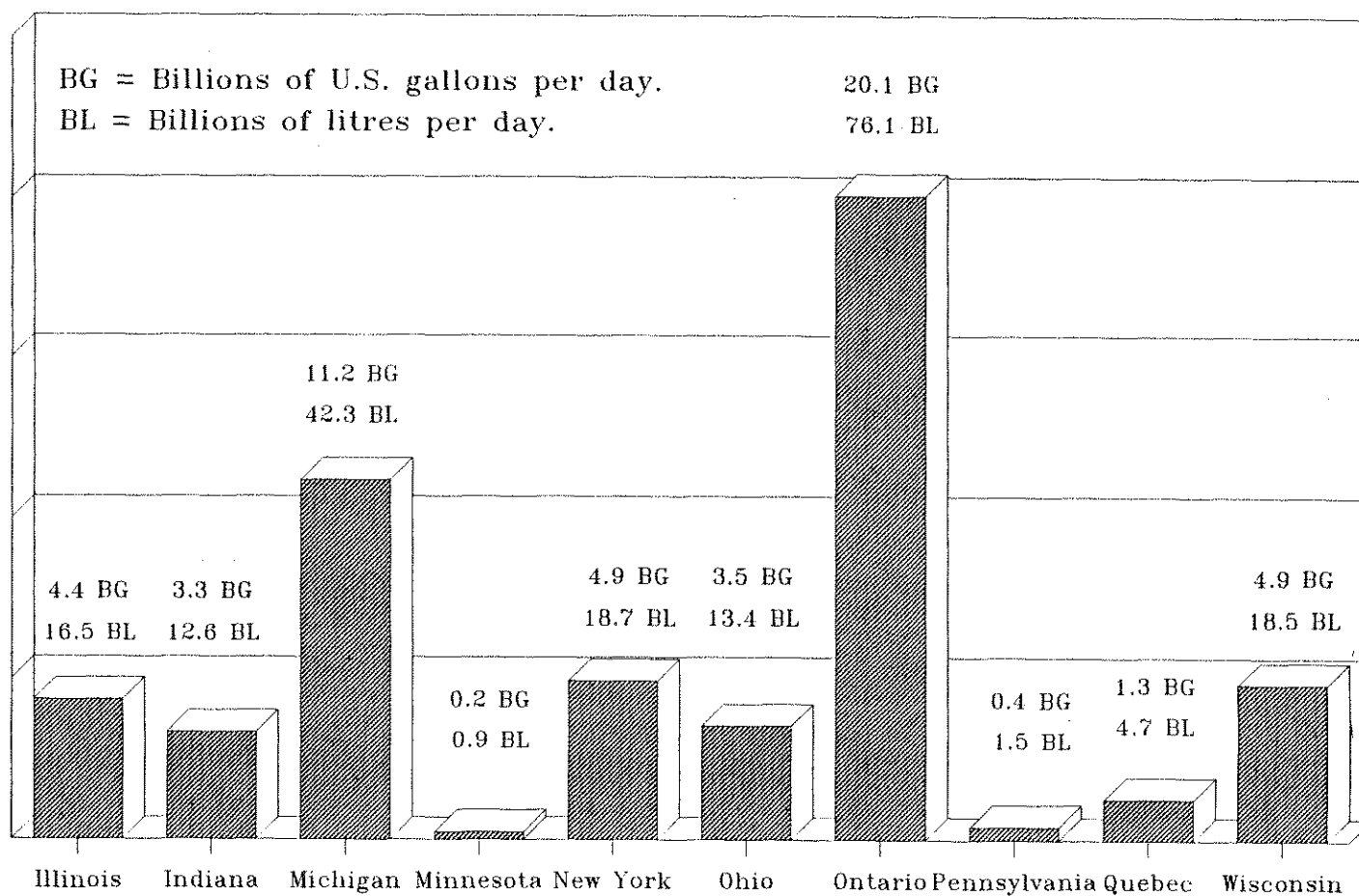
## Authority to Register and Manage Withdrawals

The Charter provides that the Great Lakes states and provinces will pursue the enactment of legislation authorizing the gathering of information on any new or increased withdrawal in excess of 100,000 gallons per day (averaged over 30 days). Participation by individual states in the prior notice and consultation process is contingent on having such authority and on having authority to manage withdrawals or diversions of over two million gallons per day. The states of Illinois, Wisconsin, Minnesota, and Ohio had such authority prior to 1989; the provinces of Ontario and Quebec also met these conditions.

During 1989, New York and Michigan made progress toward obtaining authority to register and manage water withdrawals. New York passed a bill requiring registration of water withdrawals in excess of 100,000 gallons per day; the requirement is to take effect on April 1, 1990. In addition, the New York legislation requires New York's Department of Environmental Conservation to confer with the state Water Resources Planning Committee to prepare recommendations for a regulatory program for water withdrawals. In Michigan, the Senate and House have each passed bills to allow the state to register water withdrawals. Although substantial differences exist between the House and Senate bills, there are indications that a bill will pass during 1990.

Indiana and Pennsylvania continue to lack statutory authority to register and manage withdrawals. Despite the continued commitment of the executive branches, no legislation is under active consideration by the legislatures of either state. Legislation is expected to be introduced in Pennsylvania next year, however.

Figure 1  
 1988 GREAT LAKES WATER WITHDRAWALS  
 (EXCLUDING HYDRO) BY JURISDICTION



Michigan data for 1988 are incomplete.

Source: Great Lakes Regional Water-Use Data Base.

Appendix A

**SECOND ANNUAL REPORT  
of the  
GREAT LAKES  
REGIONAL WATER USE DATA BASE  
REPOSITORY**

*to*

*The Great Lakes Water Resource Management Committee*

*February, 1990*

## ACKNOWLEDGMENTS

The Great Lakes Commission wishes to acknowledge the support and involvement of the Water Resources Management Committee, the Technical Work Group, and the Council of Great Lakes Governors in the activities of the Regional Water Use Data Base Repository and in the preparation of this report.

Establishment of the Regional Water Use Data Base was made possible through a grant from the National Oceanic and Atmospheric Administration (NOAA) administered through the Council of Great Lakes Governors.

The Commission also acknowledges the significant and outstanding contributions of the U.S. Geological Survey and Acres International, Ltd. in the design and development of the Data Base.

The principal authors of this report are Thomas R. Crane, Natural Resources Specialist and Carol A. Ratza, Communications Specialist of the Great Lakes Commission staff. Special thanks to staff members Rita Straith, Mary Repko, Kevin Kulpa and Brenda Mills for their assistance in data input and production as well as Dr. Michael J. Donahue, Executive Director for guidance and project oversight.

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## PREFACE

The following summary of the Great Lakes Regional Water Use Data Base Repository represents the second annual report to the Great Lakes Governors and Premiers on water use activities of the states and provinces in the Great Lakes Basin.

This report is presented by the Great Lakes Commission to the Council of Great Lakes Governors as part of a regional overview to the Governors and Premiers of activities of the Water Resources Management Committee.

The report provides summary water withdrawal, diversion, and consumptive use information for the Great Lakes Basin, the ten jurisdictions, and the six individual lake subbasins for multiple categories of use described later in the report.

The report begins with a brief description of individual priority issues for state and provincial attention prior to the submission of data for the 1990 Annual Report of the Great Lakes Regional Water Use Data Base Repository. Next the background of the system is presented, followed by a summary of WRMC Technical Work Group activities concerning operation of the data base. A brief description of the Great Lakes Regional Water Use Data Base is then followed by the Great Lakes Basin and individual jurisdiction summaries which appear in both narrative and table form. The summary tables for the lake subbasins and the individual categories of use are included as sub-appendices to conclude this report. All summary information presented in this report is aggregated in two units of measurement; million gallons (U.S.) per day and million litres per day.

## PRIORITY ISSUES REGARDING THE OPERATION OF THE REGIONAL WATER USE DATA BASE

In 1989, substantial progress was made in addressing the general issues and problems encountered in the preparation of the First Annual Report of the Regional Water Use Data Base Repository.

The largest remaining problem is the individual jurisdiction's ability to provide complete water use data that coincides with the calendar year of data that the report represents.

Another continuing problem is the timely submittal of data. The last of the 1988 water use data did not arrive until six weeks after the deadline date of September 15, 1989, established by the repository in consultation with the 10 participating jurisdictions.

The following are jurisdiction-specific issues and problems that require priority attention during 1990: There are no major problems requiring Committee attention from the states and provinces not listed here.

### Michigan

Michigan was unable to submit 1988 water use data to the Regional Water Use Data Base. This situation may be rectified by enactment of legislation recently introduced in the Michigan House of Representatives requiring water use reporting for the purpose of establishing a water use data management program. This deficiency must be addressed in 1990.

The summary data presented for the Michigan Great Lakes Basin is the same data submitted for the First Annual Report of the Regional Water Use Data Base.

The base year of this data is 1985 and represents only five categories of use: public water supply (category 1); self supply - irrigation (category 4); self supply - industrial (category 6); self supply - thermoelectric (fossil fuel plants) (category 7); and self supply - thermoelectric (nuclear plants) (category 8). Also, complete data were provided only for the last two categories; according to the Michigan DNR, categories 7 and 8 represent about 75 percent of the total water withdrawals from the Michigan Great Lakes Basin.

Also, the withdrawal and consumptive use data provided for public water supply (category 1), self supply - irrigation (category 4), and self supply - industrial (category 6) cannot presently be reported by individual subbasin or water withdrawal type.

Incorporation of statewide summary data represents a considerable problem for the data base repository. Statewide totals that cannot be "broken down" by subbasin or withdrawal type must be inserted into the summary tables by the repository prior to printing. Since these total figures cannot be entered in the data base program, automatic generation of multiple tables or summary reports with different units of measurement is not possible. Due to the incomplete nature of the data stored, the repository is prevented from mailing diskette copies of the yearly data to jurisdictions for their use.

### Minnesota

While Minnesota was successful in supplying detailed 1988 water use information to the Repository, the state must strive to submit its data by the September 15 deadline. Although this deadline precedes the usual schedule for the State to compile water use data, the problem may be reduced by giving higher priority to the compilation of Great Lakes water use data in the overall statewide water use data collection program.



## New York

New York did not report data on the New York State Barge Canal which diverts water from the Niagara River and returns it to Lake Ontario through several tributaries and the Oswego Canal.

## Pennsylvania

Pennsylvania utilized its 1986 and 1988 water use reports in submitting data to the Regional Water Use Data Base for the 1989 annual report. Some of the data presented in this report are from calendar years 1986 and 1987 for both the Lake Erie and Lake Ontario Basins. However, the figures presented in the Pennsylvania summary tables for both Lake Erie and Lake Ontario are all reported as 1988 data.

Pennsylvania's data collection and reporting operations are constrained by the number of personnel available. Data reported by various water users is not added to the Commonwealth's computerized data base annually. As examples, public water suppliers complete and submit an annual water supply report, but only one-half of the reports are entered into the system each year. Some 16,000 industrial water users are surveyed on a cycle, which totally updates the data files every third year. Other water users are added to the system on a recurring, but not necessarily annual basis. With the extremely limited number of users and withdrawals in the Great Lakes Basin area of Pennsylvania, manual tracking may provide the overview necessary to insure that appropriate information is furnished annually.

## BACKGROUND ON THE REGIONAL WATER USE DATA BASE REPOSITORY

Extensive background information on the establishment of the Regional Water Use Data Base Repository appears in the February 1989 report of the Water Resources Management Committee to the Great Lakes Governors and Premiers.

The Regional Water Use Data Base has been operational since the summer of 1988, following a multi-year cooperative effort in the design and development of the data base system. This included input from, and involvement of, numerous state, provincial and federal agencies. Much of the leadership on this effort was provided by the U.S. Geological Survey. The Great Lakes Commission contracted a consulting firm, Acres International Ltd., to develop, document and install the system and to provide state, provincial, and Commission staff training in the Fall of 1987.

The operation and use of this data base system represents one of several ongoing activities on behalf of the Great Lake states and provinces to fulfill the obligations of the Great Lakes Charter. Continued state/provincial interest in refining and expanding the data base is necessary to ensure that the data base can support other ongoing Charter initiatives such as the development of the Basin Water Resources Management Program.

STATE AND PROVINCIAL ACTIVITIES REGARDING  
THE REGIONAL WATER USE DATA BASE

In October 1988, the Water Resources Management Committee requested that the Great Lakes Commission convene a technical work group of representatives from the Great Lakes states and provinces to begin developing uniform estimation procedures for water withdrawal and consumptive use information and to address a series of regional priority issues regarding the operation of the Regional Water Use Data Base. These issues were identified in the February 1989 report of the Water Resources Management Committee to the Great Lakes Governors and Premiers and appeared in the First Annual Report of the Regional Water Use Data Base.

The Technical Work Group met via telephone conference call on five occasions between November 1988 and July 1989. The participants represented various state, provincial, and federal agencies and are listed in the acknowledgments of this report.

Within the framework of its charge, the work group decided to concentrate its efforts on ensuring that each jurisdiction would be able to report the most complete, uniform data possible to the repository. To do this, the group focused its early attention on refining and expanding the definitions of the nine active categories of use in the Regional Water Use Data Base.

A review of the December 1986 U.S. Geological Survey (U.S.G.S.) report, *Water Use Data Collection Programs and Regional Data Base in the Great Lakes - St. Lawrence River States and Provinces* (open File Report 86-546), and the February 1987 Water Resources Management Committee report, *Managing the Waters of the Great Lakes Basin*, provided the starting point for discussion.

The water use categories for the Regional Water Use Data Base are shown in Table 1

Table 1  
Water-Use Categories

<u>Number</u>	<u>Name</u>
1	Public Supply - Domestic and Industrial
2	Reserved for Future Use
3	Self Supply - Domestic (Residential, Commercial, Institutional)
4	Self Supply - Irrigation
5	Self Supply - Livestock
6	Self Supply - Industrial (Manufacturing and Mining)
7	Self Supply - Thermoelectric Power - Fossil Fuel Plants
8	Self Supply - Thermoelectric Power - Nuclear Plants
9	Self Supply - Hydroelectric Power
10	Other (Navigation, Water Quality, Environmental)

The original definitions of these categories appear in *Managing the Waters of the Great Lakes Basin* (pp. 21-22; French version pp 23-24). Table 2 incorporates the technical work group's revisions. The descriptions appearing in normal type represent the original definitions. Italics highlight the revisions or expansions that were arrived at through extended discussion.

**TABLE 2**  
CATEGORIES OF USE  
FOR  
THE REGIONAL WATER-USE DATA BASE  
- FINAL DEFINITIONS -

1. Public Water Supply - Water withdrawn for all uses by public and private water suppliers and delivered to users that do not supply their own water. (Water suppliers provide water for a variety of uses such as residential, commercial, industrial and public water use.)

2. Reserved for Future Use

3. Self Supply - Domestic (residential, commercial, institutional) - Water used for normal household purposes. Also referred to as residential water use, this category includes water used for drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns. *Commercial uses include water used by motels, hotels, restaurants, office buildings and institutions, both civilian and military. This category also includes water for mobile homes, hospitals, schools, fire fighting, and other similar uses that are not covered under a public supply. In addition, this category includes amusement and recreational services and activities for uses such as snowmaking and water slides. The coefficient for domestic per capita water use is 75 gallons per day (U.S.) unless otherwise indicated by the reporting state or province.*

4. Self Supply - Irrigation - Water artificially applied on lands to assist in the growing of crops and pastures or in the maintenance of recreational lands, such as parks and golf courses.

5. Self Supply - Livestock - *Water used by horses, cattle, sheep, goats, hogs, poultry, and other commercially important animals. Water used in fish hatchery operation is also included under this category.*

6. Self Supply - Industrial (manufacturing and mining) - Industrial water includes water used in the manufacture of metals, chemicals, paper, and allied products. Mining water use includes water used in the extraction or washing of minerals; solids, such as coal and ores; and liquids such as crude petroleum and natural gas. Water used in quarrying and milling is also included in the industrial category. *Brine extraction from oil and gas operations is not included.*

*Withdrawals and consumptive uses for industrial and mining purposes (including dewatering operations) recorded under another category (e.g., public supply) will not be recorded here. Water uses in a closed cycle (recirculation) will not be reported as a withdrawal. Other situations should be evaluated on a case-by-case basis.*

7. Self Supply - Thermoelectric Power (fossil fuel plants) - Water used by plants fueled by fossil fuels such as coal, oil, or natural gas. *Withdrawals and consumptive uses already recorded under another category (e.g., public supply) will not be reported here.*

8. Self Supply - Thermoelectric Power (nuclear plants) - *Water used by plants fueled by nuclear generation. Withdrawals and consumptive uses already recorded under another category (e.g., public supply) will not be reported here.*

9. Self Supply - Hydroelectric Power - Water used to drive turbines that generate electric power. This category includes both "instream use" where water is used on a once-through basis and "offstream use" where water is recycled through pumped-storage systems. Neither use is considered a consumptive use.

10. Other - *Water used for purposes not reported in categories one through nine. Examples include, but are not limited to, withdrawals and consumption for fish/wildlife, environmental, recreation, navigation, and water quality purposes. Specifically, water used to maintain levels for navigation, for recreation, for fish and wildlife habitat creation and enhancement (excluding fish hatchery operations included under Category 5), for flow augmentation (or diversion), for sanitation, pollution confinement, and other water quality purposes is included. Water used in temporary or intermediate emergency situations (e.g., fighting forest or peat fires) is also reported here.*

After refining the data base's categories and definitions, the technical work group proceeded to discuss estimation techniques, first for withdrawals, and then for consumptive uses. This discussion progressed by category and focused on areas of commonality for both withdrawal and consumption data.

This summary, shown as Table 3, is based on information that originally appeared in the 1986 U.S.G.S. report. Protracted discussion involving categories 4, 5 and 6 (self supply - irrigation, self supply - livestock and self supply - industrial) took place. There were pervasive differences between states and provinces regarding the collection and reporting of data for self supply - livestock and self supply - irrigation. The work group decided to present a data summary for irrigation and livestock describing the individual state and provincial approaches for these two categories.

To show the estimation methods for withdrawals for self supply - livestock, the work group reported the individual state and provincial water use coefficients, presented here in Tables 4 and 4A.

The work group viewed Category 6 (self supply - industrial), which includes manufacturing and mining, as an extremely important category; extended discussion of this category raised several key issues:

- o recycling of water in relation to both withdrawals and consumptive uses;
- o dewatering operations; and
- o the use of SIC (standard industrial classification) codes for estimating both withdrawals and consumption.

To address these issues the work group agreed that:

- o The recycling issue is an important one and should be considered for further discussion as the data base is refined.
- o Double counting of withdrawal data should be avoided. Dewatering and recirculation operations will not be recorded under the industrial category if they are recorded under another category such as public water supply. Otherwise, they will be included under self supply - industrial.
- o The preferred method for reporting information for the industrial category is to present actual data from individual plants. SIC code information should be used for contingencies when plant-specific data is lacking. The use of SIC codes in the future should be considered, but may be problematic due to the fact that the provinces do not use the SIC code system.
- o States and provinces should concentrate on providing complete, uniform data for all nine water use categories before efforts are made to break down the data within specific categories.

Understanding the above mentioned issues and limitations, the work group developed a summary table, shown as Table 5, of consumptive use coefficients presenting estimation techniques used by each jurisdiction for the nine categories of use.

At the close of its July conference call meeting, the work group agreed that it may be necessary to convene additional meetings on an "as needed" basis to address emerging issues in the operation of the Regional Water Use Data Base.

### TABLE 3

#### STATE & PROVINCIAL WATER USE DATA SUMMARY: IRRIGATION & LIVESTOCK

JURISDICTION	IRRIGATION	LIVESTOCK
ILLINOIS	Weekly rainfall deficits and number of acres irrigated Ill. State Water Survey (ILWS)	Fixed amount of H <sub>2</sub> O used per head for each type of animal and population of each of six types. Pop. data obtained through census.
INDIANA	Mandatory registration/reporting for capability exceeding 100,000 gal/day	Mandatory registration/reporting for capability exceeding 100,000 gal/day Estimate non-registered Livestock Pop. X Water Consumption values. Consumption derived from several sources. Each source is based on different variables using a range for computation.
MICHIGAN	(Involves data collection and intermittent surveying) Sample populations from 1977 survey of irrigators used to project withdrawal amounts.	Livestock Pop. X Per Cap. Consump. Data supplied by MDA and MSU. Six categories represent 99% of all MI livestock.
MINNESOTA	Appropriation permits with monthly use reports. Permits required for all users withdrawing more than 10,000 gal/day or 1 mil. gal/year.	(No. of animals in each of 17 classes X Per Capita Water Use) Data supplied by U.S.G.S., MDA, U.S. Census Bureau
NEW YORK	(# acres irr. X amount H <sub>2</sub> O applied in acre-feet). Figures derived by county values range 0.2-2.0 acre ft./acre. Values can be applied to Census data when only the # of acres irrigated is available.	(# animals by county X fixed consumption values) Livestock data obtained by U.S.G.S. from census.
OHIO	U.S.G.S. estimates irrigation water used and farm acreages. Data provided by OSU and Extension, Census of Agric. - Crop reporting estimates. Golf course - use average model to predict.	U.S.G.S. estimates; # of animals X Coefficient for each animal type.
ONTARIO	OMNR estimates using area irrigated (Statistics Canada Census data: 1985 most recent year) X calculated annual growing season soil moisture deficit. Permits required over 50,000 litres/day by OMOE.	OMNR estimates using annual OMAF livestock numbers and per animal withdrawal coefficients. Permits are not required for livestock watering.
PENNSYLVANIA	Calculated from # of acres irrigated times assumed application rate of 1/2 inch per week during freeze-free period minus six weeks. Estimates based on 1987 survey and census of agriculture data. Golf courses surveyed individually, not estimated.	Withdrawals estimated by # of livestock by county X per head withdrawal values. Data provided by PaDA and USDA.
QUEBEC	Estimated by Environment Quebec. No methods given. No permit required. Data acquired through survey.	Estimated by Environment Quebec. No methods given. No permit required. Data acquired through survey.
WISCONSIN	WDNR collects water use data on groundwater withdrawals exceeding 100,000 gal/day and all surface water withdrawals.	Withdrawals estimated by # of farm animals per county X standard consump. value for each type. Data provided by USDA.

**TABLE 4**  
**WATER USE COEFFICIENTS FOR SELF SUPPLY - LIVESTOCK**  
 (Withdrawal Estimates per Animal by Jurisdiction - gallons per day)

Self Supply Livestock	IL	IN	MI	MN	NY	OH	ONT	PA	QUE	WI
Dairy Cattle (milk cows)	35	15-30	12	18.4	10.5	35	35	20		
Beef Cattle	(12)	8-15	12	8.7	10.5	12	11	12	12	
Horse, Mule, Pony Burro, Donkey	12		10	12	10		11	12		
Hogs, Pigs	4	2-6	3	2.6	2	4	3	4	4	
Sheep, Lamb	2	10-12	1	2	.05	2	1.5	2	2	
Chicken	.06	*.05-.15	.03	L .061	L .065	.06	.05	0.1	L .06	
L Laying		*(.05-.26)		N .039	N.027				C .059	
N Non-Laying				C .03	C .035					
C Chicks				B 0.37	B .05					
B Broilers										
* Not Classified										
Turkey	.12		.12	.12	.008		.12	0.1		
Goats				M 6				1.5	2.0	
M Milk goats				O 1						
O Other										
Ducks				.04						
Geese				.04						
Other Poultry				.04						
Mink				.01			.01			
Rabbits, Chin- chillas				.05			.05			
All Fowl								0.1		

**TABLE 4A**

**WATER USE COEFFICIENTS FOR SELF SUPPLY - LIVESTOCK**  
 (Withdrawal Estimates per Animal by Jurisdiction - litres per day)

Self Supply Livestock	IL	IN	MI	MN	NY	OH	ONT	PA	QUE	WI
Dairy Cattle (milk cows)	132	57-114	45	69.6	39.7	132	132	132	75.7	
Beef Cattle	45	30-57	45	33	39.7	45	42	45	45	
Horse, Mule, Pony Burro, Donkey	45		38	45	38		42	45		
Hogs, Pigs	15	7.5-20	11	9.8	7.5	15	11	15	15	
Sheep, Lamb	7.5	38-45	3.8	7.5	.19	7.5	5.7	7.5	7.5	
Chicken	.2	*.19-.57	.11	L .23	L .25	.20	.19	.38	L .20	
L Laying		*(.57-.98)		N .15	N .10				C .22	
N Non-Laying				C .11	C .13					
C Chicks				B 1.4	B .19					
B Broilers										
* Not Classified										
Turkey	.45		.45	.45	.30		.45	.38		
Goats				M 20			5.7	7.5		
M Milk goats				O 3.8						
O Other										
Ducks				.15						
Geese				.15						
Other Poultry				.15						
Mink				.038			.05			
Rabbits, Chinchillas				.19			.2			
All Fowl								.1		

# TABLE 5

## CONSUMPTIVE USE COEFFICIENTS

Water Use Category	Illinois	Indiana	Michigan	Minnesota	New York	Ohio	Ontario	Pennsylvania	Quebec	Wisconsin	U.S.G.S. (NY Dist.)
Public Supply	(range for all states and provinces: 10-15%)										
Self Supply Domestic	(range for all states and provinces: 10-15%)										
Self Supply Irrigation	90%	90%	90%	90%	90%	90%	78%	90%	90%	70%	100%
	(coefficient for states and provinces without studies supporting other figures: 90%)										
Self Supply Livestock	(coefficient for all states and provinces: 80%)										
Self Supply Industrial	For both mfg. and mining varies by plant and SIC Code	6%	10%	For both mfg. and mining varies by plant and SIC Code	10% for mfg. and mining except for salt mines, est. @ 90%	33%	6.3%	For both mfg. and mining varies by plant and SIC Code	10% for pulp and paper industry	10-20% for both mfg. and mining	10%
Self Supply Thermo-electric (Fossil Fuel)	Varies with individual plants; est. using make-up water for each system	2%	1% for plants using once-through cooling; plant by plant analysis for wet cooling towers	measured; varies by indiv. plant		negligible estimates based on plant-specific design considerations	0.9%	Varies with individual plants	10%* *estimates obtained from USGS report	0.5-1%	10%
Self Supply Thermo-electric (Nuclear)	varies with individual plants; est. using make-up water for each system	2%		measured; varies by individual plant		14% estimates based on plant-specific design considerations	0.9%	Varies with individual plants	10%* *estimates obtained from USGS report	0.5-1%	10%
Self Supply Hydro	(coefficient for all states and provinces: 0%)										
Other	(Varies among states and provinces. Based on individual evaluations and best information available.)										



## DATA BASE DESCRIPTION AND DEFINITIONS

The Great Lakes Regional Water Use Data Base has been established for use on IBM PC-compatible microcomputers in conjunction with the dBASE III Plus commercial data base software package. The data base is housed at the offices of the Great Lakes Commission in Ann Arbor, Michigan. Routine data base operations are controlled by a customized program prepared using dBASE III Plus capabilities. This program includes standard data entry, retrieval and report generation options.

The Great Lakes Regional Water Use Data Base is designed to serve as a common repository of data and information on water use in the Great Lakes Basin as described in the Great Lakes Charter. The data base catalogs the set of annual data on withdrawals and consumptive uses of Great Lakes water by water-use category, subbasin and jurisdiction, as specified by the Water Resources Management Committee.

The 1988 water use data presented in this report were submitted to the Regional Water Use Data Base Repository by the Great Lakes states and provinces between August 1 and October 31, 1989.

Data submitted to the Regional Water Use Data Base Repository are provided in one of two units: million gallons (U.S.) per day (mgd) and million litres per day (mld). Each jurisdiction is required to select one of these on a consistent basis for all data submissions. The data base records corresponding to the jurisdictions are maintained in the selected units.

All values in the data base are initially set to zero. Numeric values are required for all active categories of use. A zero value implies either zero water use or water use not meeting the Charter trigger level of 100,000 gallons (380,000 litres) per day average over a 30 day period.

All nonzero values in the summary tables are positive except for incoming diversion values which are negative.

There are two measures of the quality of data provided for each data entry: level of accuracy and level of aggregation. The level of accuracy indicates whether withdrawals are measured or estimated. The level of aggregation provides an indication as to whether the withdrawal data originate from site-specific sources or from higher level aggregate sources such as county or census data bases.

Each type of water-use category includes three withdrawal/discharge types. These types are as follows:

Great Lakes Surface Water (GLSW) - defined as the Great Lakes, their connecting channels (the St. Clair River, the Detroit River, the Niagara River and the St. Marys River), and the St. Lawrence River.

Other Surface Water (OSW) - defined as tributary streams, lakes, ponds, and reservoirs within the Great Lakes Basin.

Groundwater (GW) - defined as all subsurface water distinct from surface water.

The following is a list of other important definitions pertaining to the use of the Great Lakes Regional Water Use Data Base summary tables:

Withdrawal Amount - The amount of water removed or taken from surface or groundwater.

Intrabasin Diversion - The amount of water transferred from the watershed of one of the Great Lakes into that of another.

Interbasin Diversion:- The amount of water transferred from the Great Lakes Basin into another watershed.

Consumptive Use: - That portion of water withdrawn or withheld from the Great Lakes and assumed to be lost or otherwise not returned to the Great Lakes Basin due to evaporation, incorporation into products or other processes.

### GREAT LAKES BASIN SUMMARY

The following tables and figures present the 1988 Great Lakes water use data submitted to the Regional Water Use Data Base Repository from nine of the ten Great Lakes states and provinces for the nine active categories of use.

The State of Michigan was unable to provide data to the repository for this annual report. Water use data previously submitted for the First Annual Report of the Regional Water Use Data Base Repository has again been included by Michigan's request.

Expanded descriptions of the status of the other state and provincial programs appear in the individual jurisdiction reports.

In total, water withdrawals in the Great Lakes Basin for 1988 were approximately 985 billion gallons per day (bgd) or about 3.7 trillion litres per day (tld). Of this, almost 60 percent (586 bgd) (2.2 tld) is used directly from/in the Great Lakes, their connecting channels, or the St. Lawrence River.

Daily water withdrawals of 985 billion gallons would be the equivalent of about 26,600 gallons of water for every person living in the Great Lakes Basin (assuming a population of 37,000,000). Put another way, 985 billion gallons of water per day is more than six times the average annual outflow of Lake Ontario (238,000 cfs; 154 bgd).

Self supply - hydroelectric, as noted in the First Annual Report of the Repository, is the largest single category of use and represents more than 94 percent (913 bgd; 3.5 tld) of the total amount of water used per day (Figure 1). Withdrawals for hydroelectric purposes are considered an in-stream use and not a withdrawal in the traditional sense. The hydroelectric category (category 9) is included because the data base is designed to report water uses not just water withdrawals. Figure 2 presents the ten jurisdictions' total 1988 withdrawals. However, subtracting hydroelectric uses from the total gives a clearer picture of the true water withdrawals from the Great Lakes (Figures 3 and 4). Water withdrawals from the remaining eight categories of use for 1988 were approximately 56 bgd or 205 billion litres per day (bld) (Figure 5). This would be the equivalent water use of about 1,500 gallons per day for every person living in the Basin.

Of the 56 bgd (205 bld) actually withdrawn from the Great Lakes, almost 97 percent of the reported amount (about 53.9 bgd; 204 bld) is returned. Consumptive uses of Great Lakes water for 1988 were about 1.8 bgd (6.8 bld).

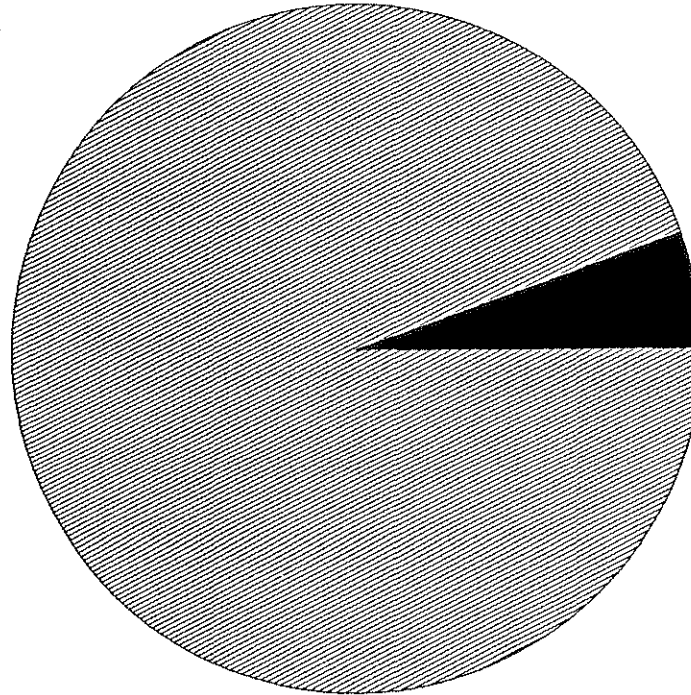
Combined, Ontario and Michigan account for more than 60 percent (1.1 bgd; 4.2 bld) of the total amount of water consumed per day.

Outgoing interbasin diversions were 1.6 bgd (6 bld); with nearly 100 percent of the total diverted from the Illinois Lake Michigan Basin. Incoming interbasin diversions reported to the data base were 3.7 bgd (13.9 bld), all into the Ontario Lake Superior Basin (the Ogoki and Long Lac diversions). These diversions were somewhat higher in 1988 than the long term average, which is about 5,600 cfs (3.6 bgd; 13.7 bld).

FIGURE 1

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS Hydroelectric vs. All Other Categories

Self-supply Hydroelectric  
929 BGal(U.S.)/day\*  
3,518 BL/day\*



Other Categories of Use  
55.7 BGal(U.S.)/day\*  
205.22 BL/day\*

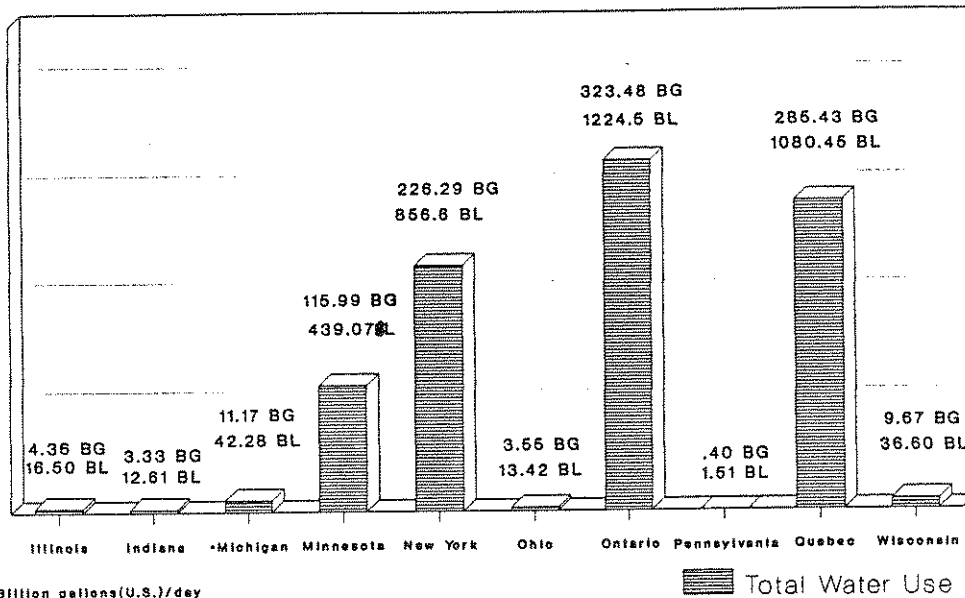
Self-Supply Hydroelectric represents  
94.5% of water withdrawals in the Basin.

\*1988 State of Michigan data incomplete.

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FIGURE 2

## TOTAL 1988 GREAT LAKES BASIN WATER WITHDRAWALS BY JURISDICTION



BG-Billion gallons(U.S.)/day  
BL-Billion litres/day

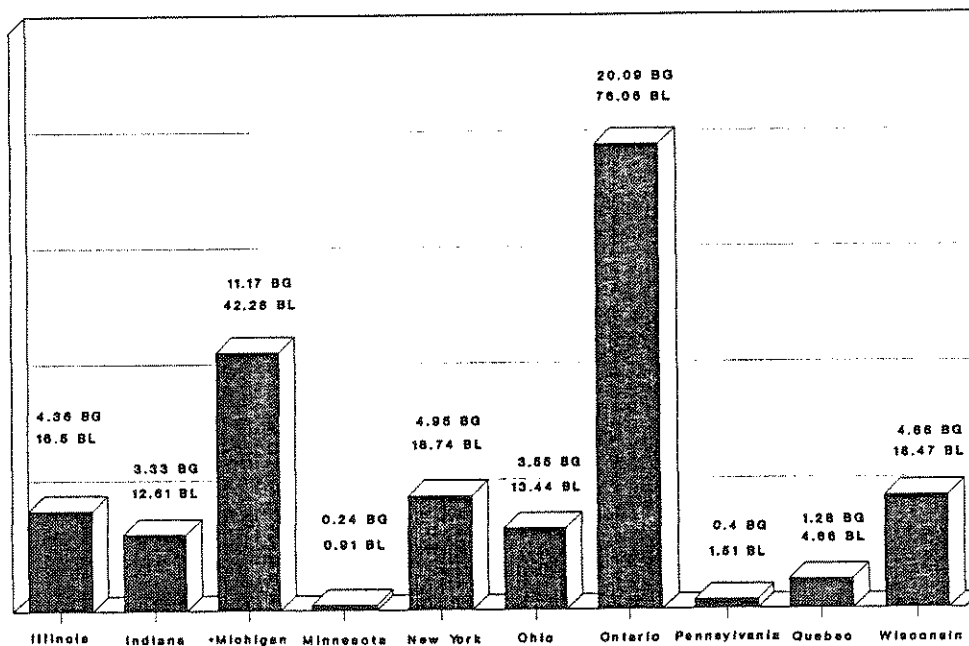
\*1988 State of Michigan data incomplete.

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FIGURE 3

## 1988 GREAT LAKES BASIN WATER WITHDRAWALS (EXCLUDING HYDRO) BY JURISDICTION

BG-Billion gallons (U.S.)/day BL-Billion litres/day



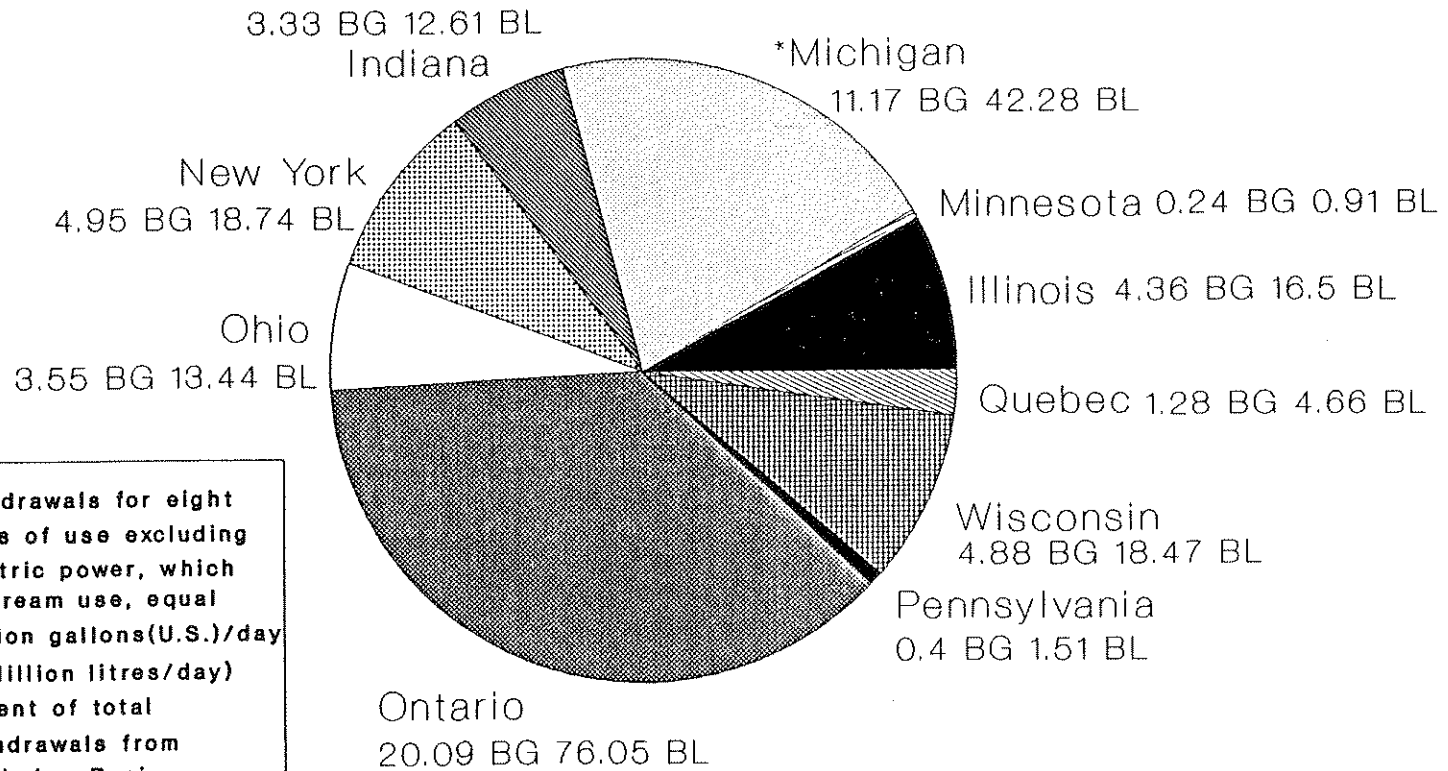
\*1988 State of Michigan data incomplete.

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FIGURE 4

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS (EXCLUDING HYDRO) BY JURISDICTION

BG=Billion gallons (U.S.)/day BL=Billion litres/day



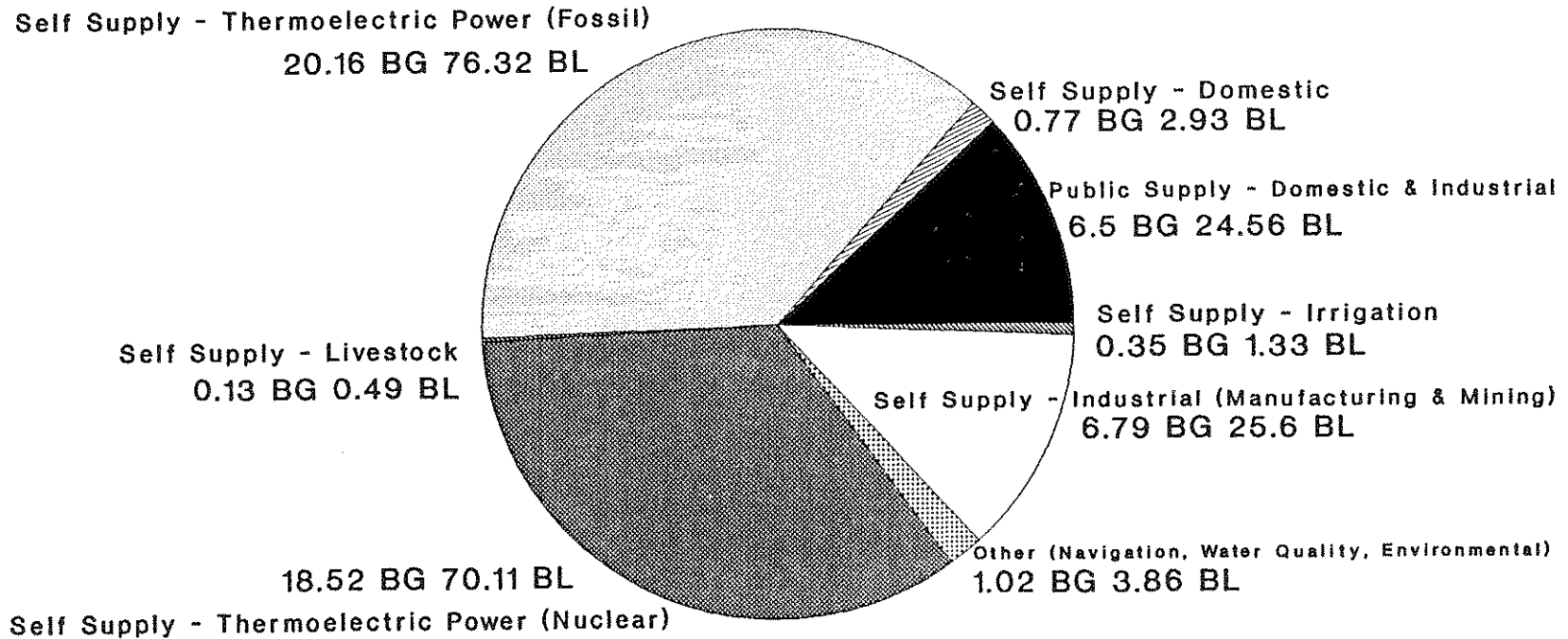
Total withdrawals for eight categories of use excluding hydroelectric power, which is an instream use, equal 54.21 Billion gallons(U.S.)/day (205.20 Million litres/day) or 4 percent of total water withdrawals from the Great Lakes Basin.

\*1988 State of Michigan data incomplete.

FIGURE 5

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS All Categories of Use Except Hydro\*

BG=Billion gallons (U.S.)/day BL=Billion litres/day



Non-Hydro uses (54.21 BGal(U.S.)/day 205.21 BL/day)  
equal 5% of total water withdrawals in the Great Lakes Basin

\*1988 State of Michigan data incomplete

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## JURISDICTION REPORTS

Following are summaries of individual state and provincial water use for 1988. The descriptions are brief by design. Questions on individual data collection and reporting programs or for specific categories of use should be directed to the appropriate jurisdiction.

Appendices A-1 and A-2 present the subbasin reports and individual water use category reports in summary table form.

### ILLINOIS

The water-use data collection activities in Illinois are undertaken by two state agencies: the Department of Transportation - Division of Water Resources and the Department of Energy and Natural Resources - State Water Survey.

The data submitted to the Regional Water Use Data Base for calendar year 1988 were provided by the Illinois Department of Transportation - Division of Water Resources.

Total withdrawals for 1988 from the Lake Michigan Basin of Illinois were 4.36 billion gallons per day (bgd) (Figure 6). Withdrawals for public supply and for thermoelectric power (nuclear plants) represent almost 77 percent of this total (3.34 bgd).

Consumptive uses for the Lake Michigan Basin of Illinois total 2.0 million gallons per day (mgd), all attributed to self supply - industrial uses.

Diversions from the Lake Michigan Basin of Illinois totaled approximately 1.6 bgd. Of this amount, more than 76 percent or 1.2 bgd are for public water supply. All diversions for Illinois are outgoing interbasin diversions; that is, water transferred from the Great Lakes Basin into another watershed.

The withdrawal data submitted by the Illinois DOT to the repository were 100 percent measured and 100 percent site-specific.

### INDIANA

Data for 1988 submitted to the Regional Water Use Data Base for the Lake Michigan and Lake Erie Basins of Indiana were provided by the Department of Natural Resources - Division of Water which is responsible for the water use data collection program in Indiana.

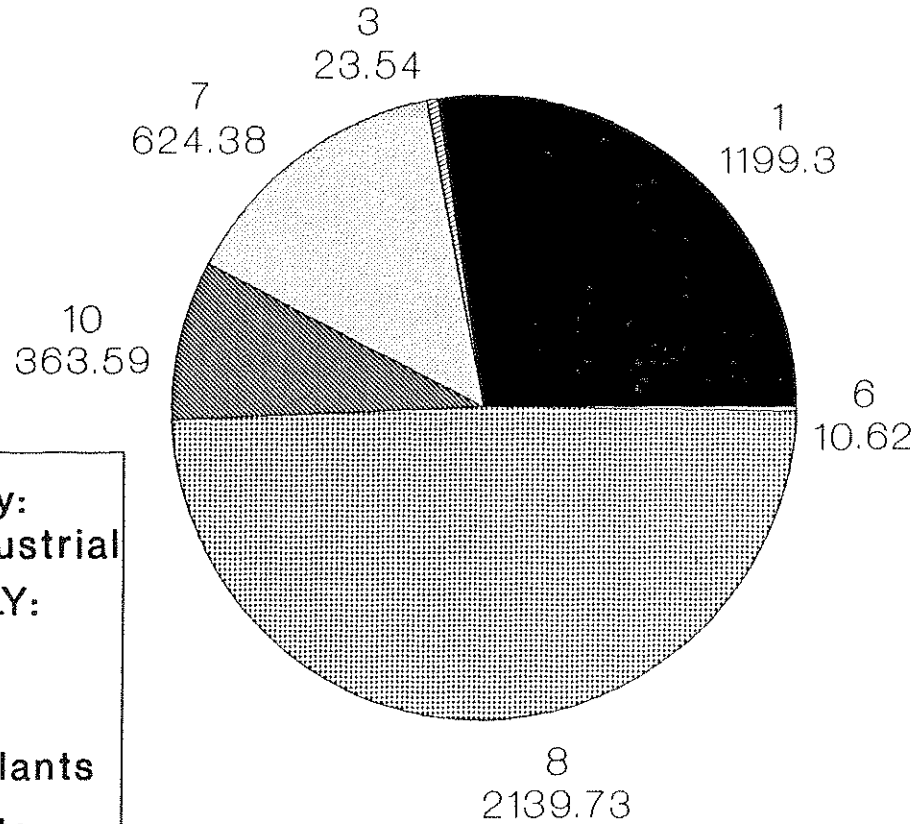
Total withdrawals from the two basins were over 3.3 billion gallons per day (bgd) (Figure 7). More than 98 percent (about 3.2 bgd) were from the Lake Michigan Basin, with slightly less than 2 percent (61 mgd) from the Lake Erie Basin.

Almost 93 percent (more than 3 bgd) of the water withdrawals from the Indiana Lake Michigan Basin were in two categories of use: self supply - industrial and self supply - thermoelectric (fossil fuel plants). Almost 70 percent of the total Indiana Lake Erie Basin withdrawals were for public water supply, some 42.6 mgd.

Consumptive uses for the two basins totaled more than 205 mgd; of this amount, about 195 mgd (almost 95 percent) was from the Lake Michigan Basin and approximately 10 mgd (about 5 percent) was from the Lake Erie Basin.

FIGURE 6

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS ILLINOIS (Million gallons(U.S.)/day)



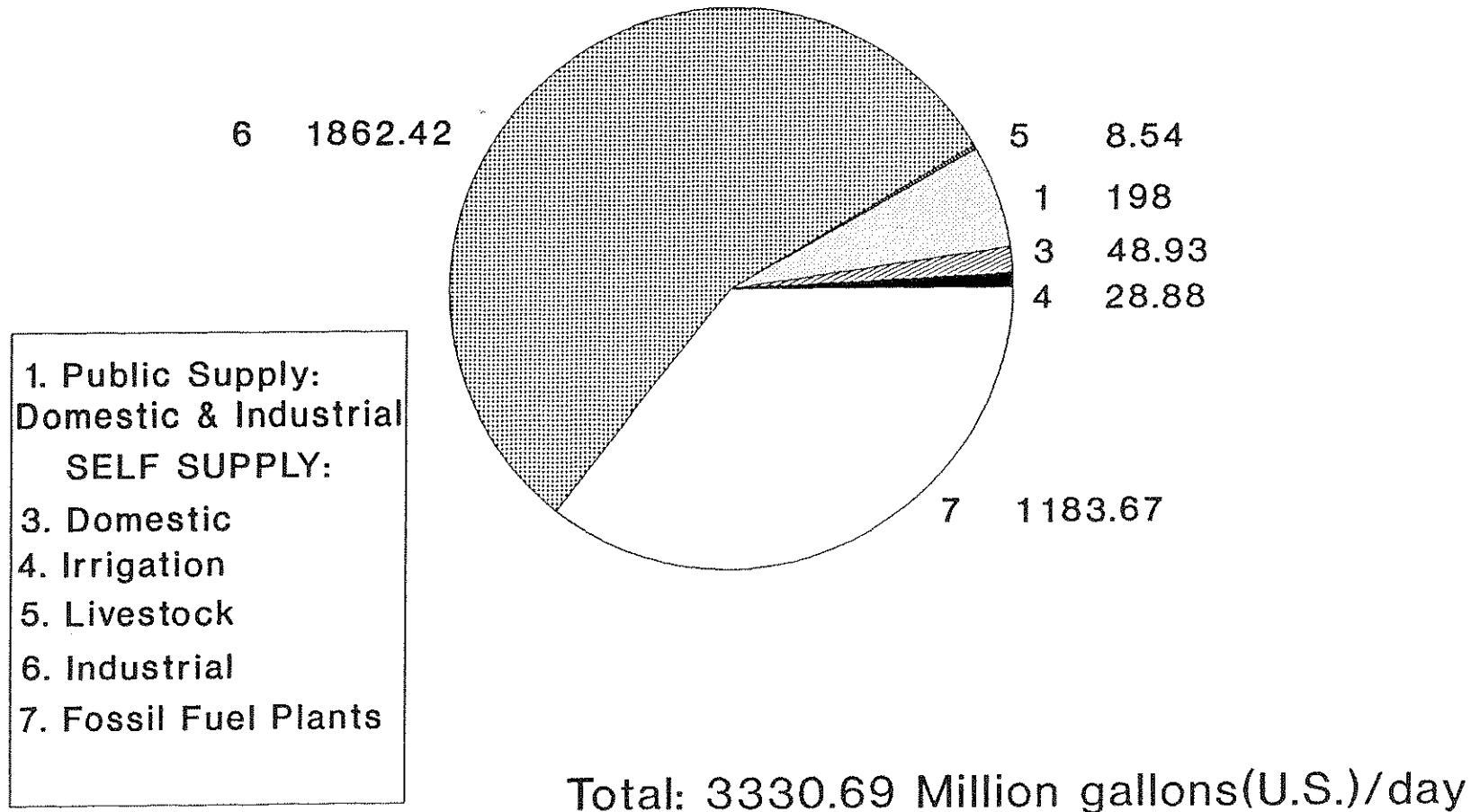
1. Public Supply:  
Domestic & Industrial  
SELF SUPPLY:  
3. Domestic  
6. Industrial  
7. Fossil Fuel Plants  
8. Nuclear Plants  
10. Other

Total: 4361.16 Million gallons(U.S.)/day



FIGURE 7

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS INDIANA (Million gallons(U.S.)/day)



Self supply - industrial is the major category for consumptive use in the Indiana Lake Michigan Basin, representing 111.4 mgd or about 57 percent of the total. For Lake Erie, public water supply uses consumed 6.4 mgd representing 60 percent of the total.

There are no interbasin or intrabasin diversions in the Indiana Great Lakes Basin that meet the Charter trigger level of 100,000 gallons (380,000 litres) per day average over a 30 day period.

For the Indiana Great Lakes Basin the data reported were 6 percent measured, 91 percent partially measured, 3 percent estimated and 98 percent site-specific.

## MICHIGAN

Water use data collection activities in Michigan are undertaken by the Department of Natural Resources, the Department of Public Health, and the U.S. Geological Survey.

Michigan was unable to submit water use data to the Regional Water Use Data Base Repository for calendar year 1988. Legislation has been introduced in the Michigan House requiring water use reporting for the purpose of establishing a water use data management program.

The data presented in this report for the Michigan Great Lakes Basin were provided by the Michigan Department of Natural Resources and are the same data appearing in the February 1989 report to the Governors and Premiers on 1987 water use.

The base year of the data is 1985. The information provided is from Michigan's water management plan (*Water Resources for the Future: Technical Document*, Great Lakes and Water Resources Planning Commission, September, 1987).

The Michigan data are for only five categories of use: public water supply (category 1); self supply - irrigation (category 4); self supply - industrial (category 6); self supply - thermoelectric (fossil fuel plants) (category 7); and self supply - thermoelectric (nuclear plants) (category 8). Complete 1985 data were provided for these last two categories which, according to the Michigan DNR, represent about 75 percent of the total water withdrawals from the Michigan Great Lakes Basin.

Withdrawal and consumptive use data provided for categories 1, 4 and 6 cannot presently be reported by individual subbasin or water withdrawal type. The available data were added to the state totals for the appropriate category to reflect more accurately the aggregate water withdrawals and uses in the state. The Michigan DNR estimates that the five water use categories combined represent 98 percent of its total water withdrawals.

Reported water withdrawals for the Lake Superior, Lake Michigan, Lake Huron and Lake Erie Basins of Michigan were approximately 12.2 billion gallons per day (bgd).

Withdrawals from the Lake Erie Basin account for at least 38 percent (4.2 bgd) of the total.

Self supply - thermoelectric (fossil fuel plants) withdrawals represent the largest single category accounting for almost 56 percent (6.2 bgd) of the total.

Consumptive uses in the Michigan Great Lakes Basin were approximately 589 million gallons per day with self supply - irrigation accounting for over 38 percent of the total.

There are no reported interbasin or intrabasin diversions in the Michigan Great Lakes Basin that meet the Charter trigger level of 100,000 gallons per day (380,000 litres per day) average over a 30 day period.

The Michigan data provided to the Repository is 11 percent measured, 87 percent partially measured, 2 percent estimated and 98 percent site-specific.

#### MINNESOTA

Water use data submitted to the Regional Water Use Data Base for the Lake Superior Basin of Minnesota were provided by the Department of Natural Resources, Division of Waters which, along with the U.S. Geological Survey, is responsible for the water use data collection activities in Minnesota.

Withdrawals from the Minnesota Lake Superior Basin for 1988 were approximately 116 billion gallons per day (bgd). One category, self supply - hydroelectric, represents more than 99 percent of the total (115.7 bgd). Hydropower water use was derived by the U.S.G.S. from power generation data supplied by the Minnesota Department of Energy. Figure 8 presents Minnesota's total withdrawals (minus hydroelectric) for 1988.

Consumptive uses for the Minnesota Lake Superior Basin totaled about 39 mgd. Self supply - industrial and public water supply combined used almost 93 percent of the total.

Minnesota has no intrabasin or interbasin diversions that meet the Charter trigger level requirement of 100,000 gallons per day (380,000 litres per day) average over a 30 day period.

The data reported for Lake Superior Basin of Minnesota were 99.8 percent measured, 0.1 percent partially measured, 0.1 percent estimated and 100 percent site-specific.

#### NEW YORK

Water use data collection in New York State is undertaken by the Department of Environmental Conservation, the Department of Health, and the U.S. Geological Survey. The 1988 data provided to the Regional Water Use Data Base for the Lake Erie, Lake Ontario and St. Lawrence River Basins of New York were provided by the New York Department of Environmental Conservation - Division of Water.

Withdrawals from the New York Great Lakes Basin for 1988 were 226.3 billion gallons per day (bgd); Lake Erie uses represented almost 22 percent (49.2 bgd) of the total; Lake Ontario uses represented 43 percent (97.7 bgd) and St. Lawrence River uses represented about 35 percent (79.4 bgd). Figure 9 presents New York's withdrawals (excluding hydroelectric) for 1988.

Withdrawals for self supply - hydroelectric purposes were by far the largest use for all three basins representing almost 98 percent of the total (221.3 bgd).

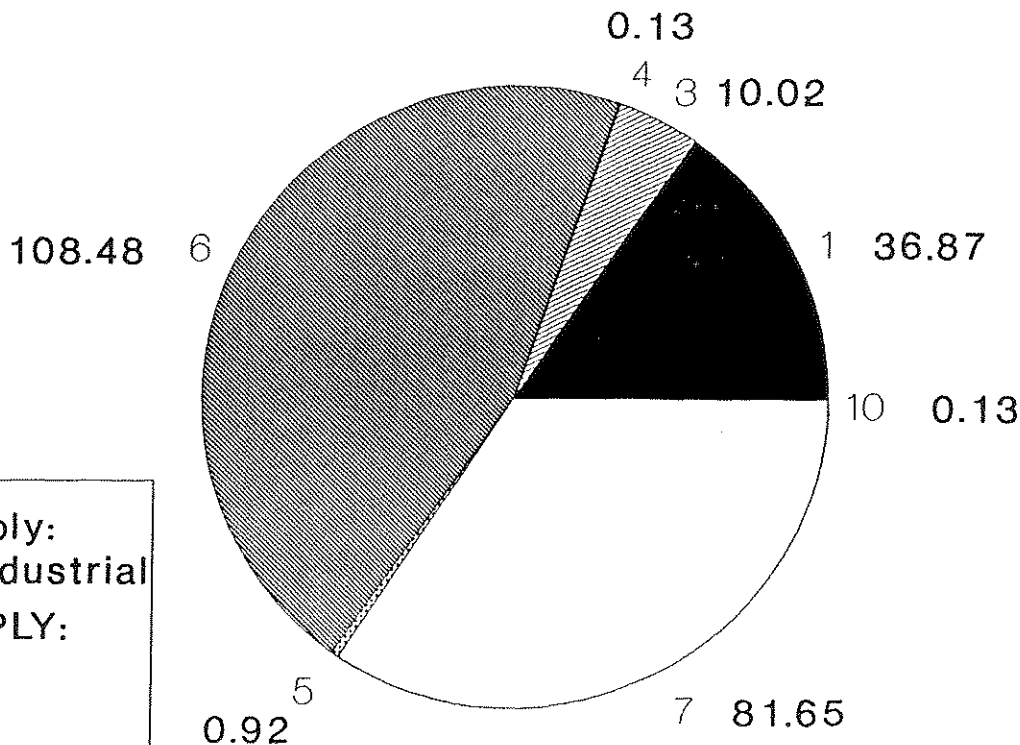
New York reported total consumptive uses of 12.34 mgd; 1.24 mgd for Lake Erie basin, 11.08 mgd Lake Ontario basin, and .02 mgd for the St. Lawrence River basin.

There are also no interbasin or intrabasin diversions in the New York Great Lakes Basin meeting the Charter trigger level of 100,000 gallons (380,000 litres) per day.

For the New York Great Lakes Basin the data reported were 99.6 percent partially measured, 0.4 percent estimated and 98.9 percent site-specific.

FIGURE 8

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS MINNESOTA (Million gallons(U.S.)/day) EXCLUDING HYDRO\*



- 1. Public Supply: Domestic & Industrial
- SELF SUPPLY:
- 3. Domestic
- 4. Irrigation
- 5. Livestock
- 6. Industrial
- 7. Fossil Fuel Plants
- 10. Other

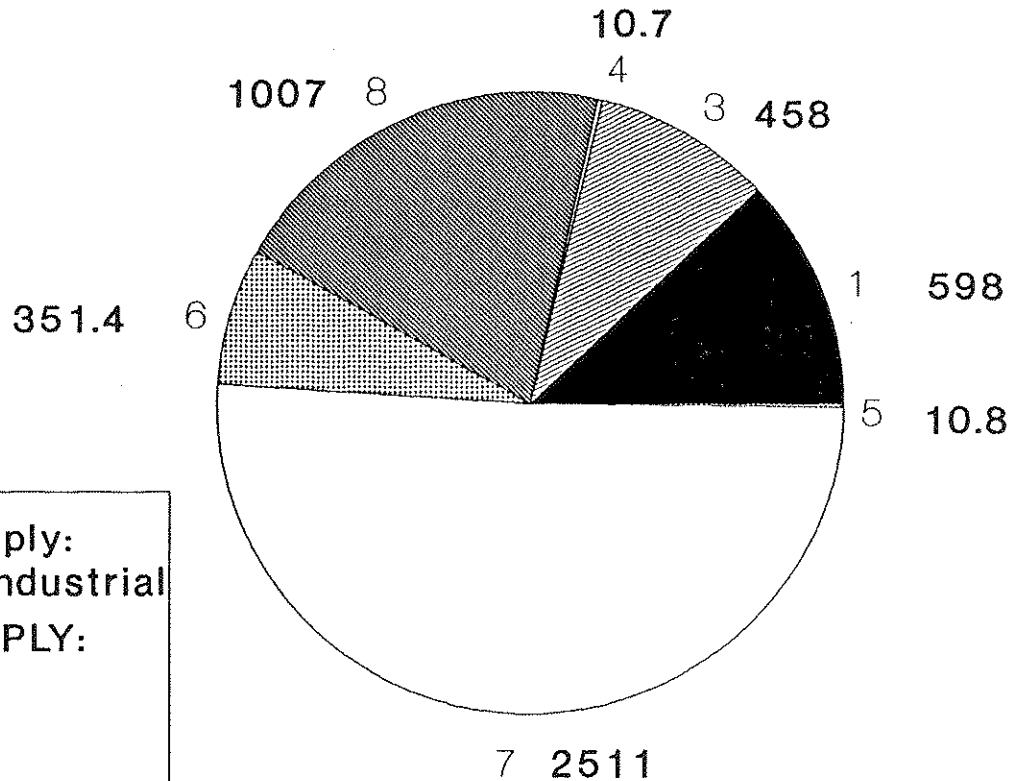
Total Withdrawal: 115992.2 MG/D  
Withdrawal excluding Hydro: 238.2 MG/D

MN withdraws 115,754 million gallons per day for Hydroelectric > 99% of their total water withdrawal.

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FIGURE 9

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS NEW YORK (Million gallons(U.S.)/day) EXCLUDING HYDRO\*



TOTAL Withdrawal: 226,287 MG/D  
Total excluding Hydro: 4,947 MG/D

NY withdraws 221,340 million gallons per day for Hydroelectric - 98% of their total water use.

- 1. Public Supply: Domestic & Industrial
- 2. SELF SUPPLY:
- 3. Domestic
- 4. Irrigation
- 5. Livestock
- 6. Industrial
- 7. Fossil Fuel Plants
- 8. Nuclear Plants

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## OHIO

Collection of water use data in Ohio is undertaken by the Ohio Department of Natural Resources - Division of Water; the Ohio Environmental Protection Agency and the U.S. Geological Survey.

Data for the Ohio Lake Erie Basin for 1988 were provided to the Regional Water Use Data Base by the Department of Natural Resources - Division of Water.

Total water withdrawals from the Ohio Lake Erie Basin for 1988 were approximately 3.55 billion gallons per day (bgd) (Figure 10).

Two categories combined, public water supply and self supply - thermoelectric (fossil fuel plants) represented more than 92 percent of total water withdrawals (3.27 bgd).

Consumptive uses for the Ohio Lake Erie Basin were 148.3 mgd; with public water supply responsible for about two thirds (98.8 mgd).

Interbasin diversions (outgoing) were about .17 mgd for the Lake Erie Basin of Ohio, all used for public water supply. Ohio has no intrabasin diversions meeting the Charter trigger level of 100,000 million gallons (380,000 litres) per day average over a 30 day period.

The water use data reported for 1988 were 100 percent estimated and 7.5 percent site-specific.

## ONTARIO

For Ontario, water use data collection activities are undertaken by the Ministry of the Environment and Environment Canada.

The 1988 water use data for the Ontario Great Lakes Basin, which includes Lakes Superior, Huron, Erie, Ontario, and the St. Lawrence River, were provided by the Ontario Ministry of Natural Resources - Conservation Authorities and Water Management Branch.

Total 1988 Great Lakes water withdrawals for Ontario were approximately 1.22 trillion litres per day (tld) or 323.5 billion gallons per day (bgd). Of this, self supply - hydroelectric uses represented nearly 94 percent (1.5 tld; 303 bgd). Figure 11 presents Ontario's total water withdrawals (excluding hydroelectric) for 1988.

Water withdrawals for the individual lake basins in Ontario are shown in Table 6.

Table 6

<u>Basin</u>	<u>Withdrawal Amount</u> <u>[billion litres per day; (bld)]</u>	<u>Approximate</u> <u>Percent of Total</u>
Superior	110.3	9
Huron	188.8	15
Erie	32.	3
Ontario	228.8	19
St. Lawrence	<u>664.6</u>	<u>54</u>
Total	1224.5	100

FIGURE 10

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS OHIO (Million gallons(U.S.)/day)

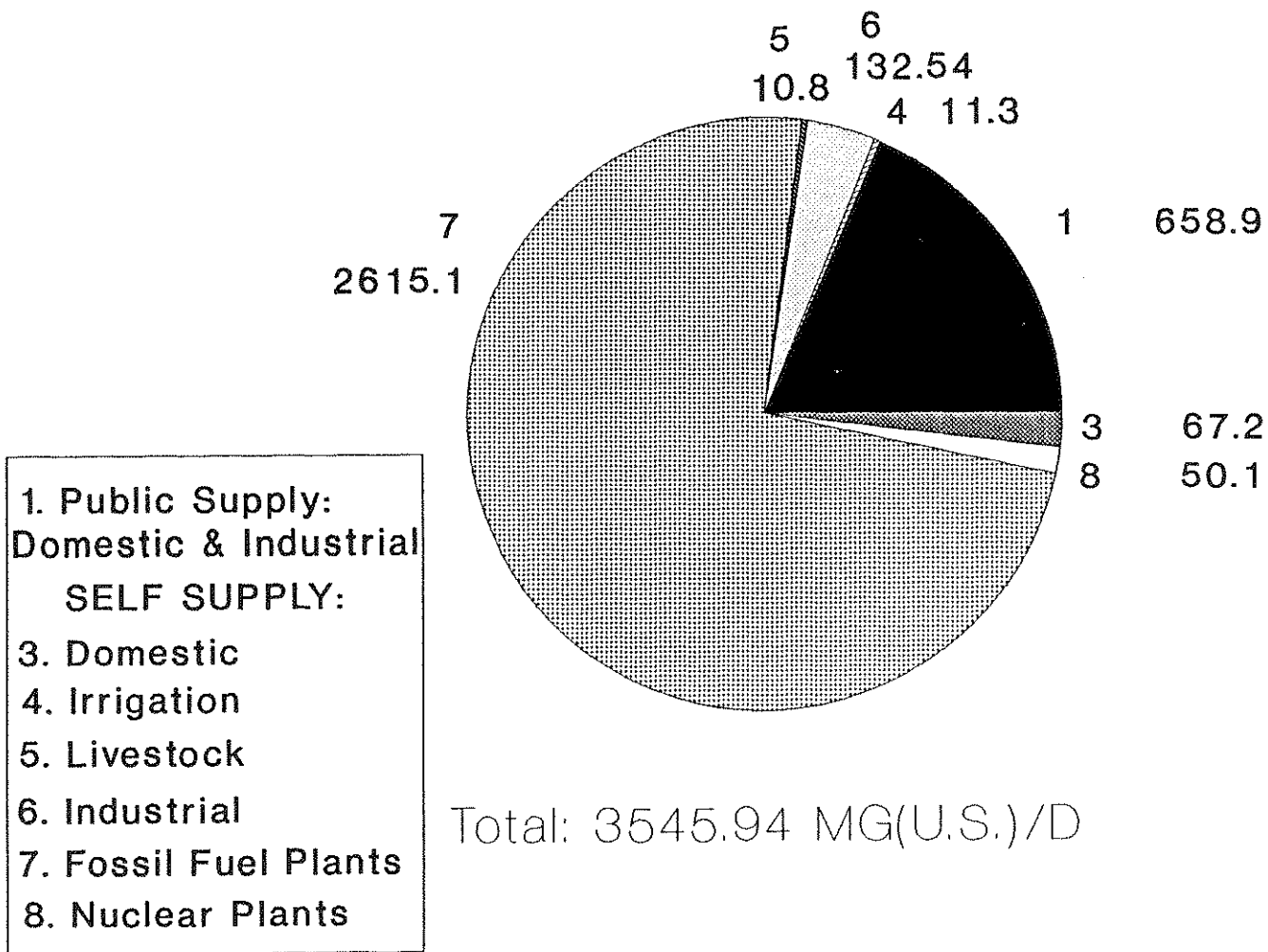
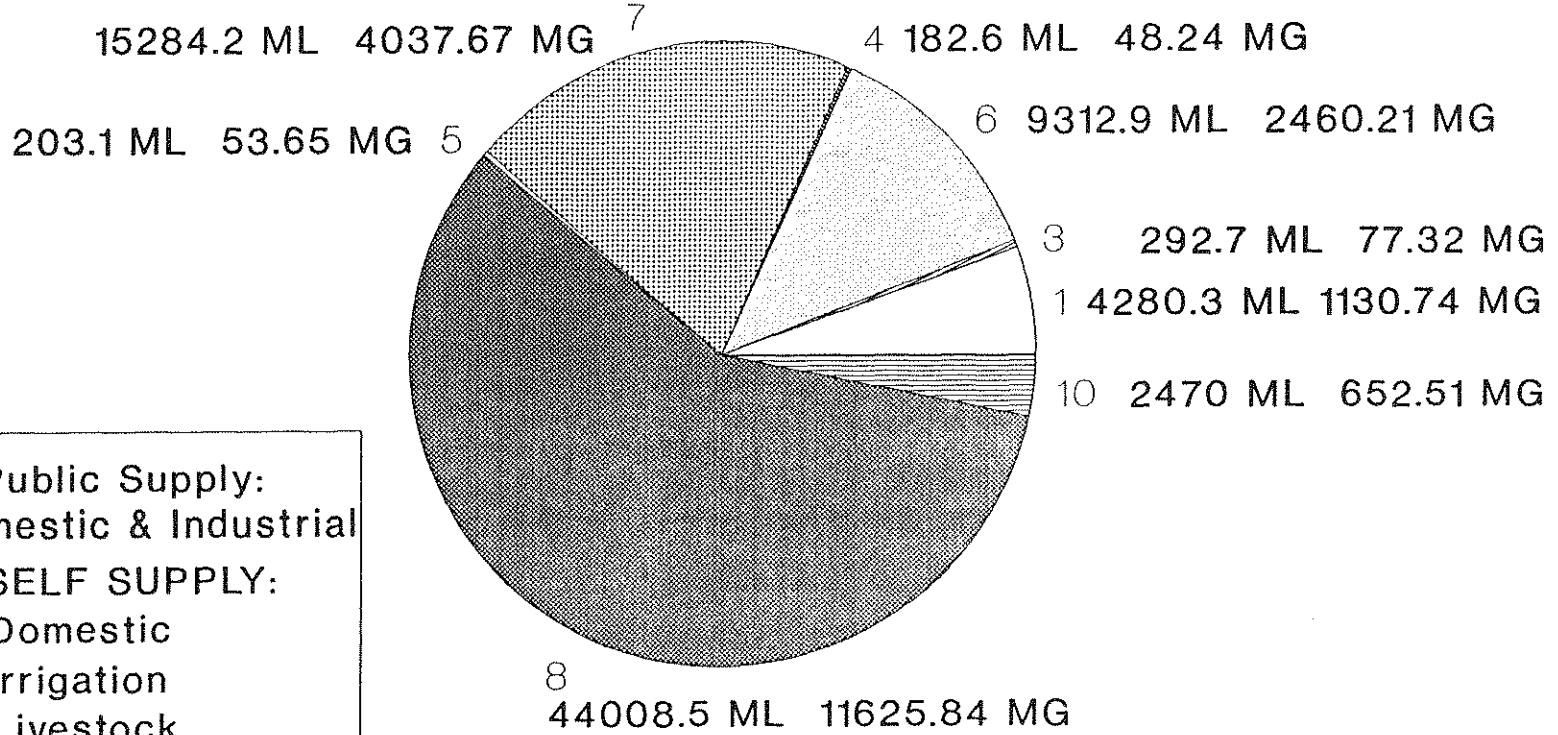


FIGURE 11

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS ONTARIO EXCLUDING HYDRO\*

Total Withdrawal: 1223775.6 ML 323479.69 MG  
Withdrawal excluding Hydro: 76034.22 ML 20086.18 MG



- 1. Public Supply: Domestic & Industrial
- 2. SELF SUPPLY:
- 3. Domestic
- 4. Irrigation
- 5. Livestock
- 6. Industrial
- 7. Fossil Fuel Plants
- 8. Nuclear Plants
- 10. Other

MG=Million gallons (U.S.)/day  
ML=Million litres/day

Ontario withdraws 1,148,467 million litres per day for Hydroelectric - 94% of their total water use.



Ontario reported incoming interbasin diversions for Lake Superior and intrabasin diversions (incoming or outgoing) for Lakes Huron, Erie and Ontario.

The diversion types and amounts are presented in Table 7.

Table 7

<u>Basin</u>	<u>Interbasin Diversion (bld)</u>	<u>Intrabasin Diversion (bld)</u>
Superior	-13.93	---
Huron		.14
Erie		18.67
Ontario		-18.81
Total	-13.93	

All of the incoming 13.93 bld, (representing the Ogoki and Long Lac diversions) to the Ontario Lake Superior watershed is used for hydroelectric purposes. This is slightly higher than the recent averages of the two diversions which is about 5,600 cubic feet per second (cfs) or 13.7 bld (3.6 bgd).

Consumptive uses for the Ontario Great Lakes Basin were approximately 1.8 bld with public water supply and self supply - thermoelectric together representing more than 58 percent of the total (1 bld).

Approximate consumptive uses for the individual lake basins in Ontario appear in Table 8.

Table 8

<u>Basin</u>	<u>Consumptive Uses (mld)</u>	<u>Approximate percent of Total</u>
Superior	44.8	2
Huron	468.5	26
Erie	441.1	25
Ontario	681.7	38
St. Lawrence	<u>165</u>	<u>9</u>
Total	1801.1	100

Ontario's withdrawal data for 1988 were 4.8 percent measured, 95 percent partially measured, .2 percent estimated and 99.8 percent site-specific.

## PENNSYLVANIA

Data for 1988 for the Lake Erie and Lake Ontario Basins of Pennsylvania were submitted to the Regional Water Use Data Base by the Department of Environmental Resources - Bureau of Water Resources Management which is responsible for the water use data collection program in Pennsylvania.

Total withdrawals from the two basins were about 399.1 million gallons per day (mgd) (Figure 12). Almost 100 percent (398.95 mgd) of the withdrawals were from the Lake Erie Basin. Only about .18 mgd or less than .1 percent were from the Lake Ontario Basin. For the Lake Erie Basin, withdrawals for self supply - thermoelectric (fossil fuel plants) were 300 mgd, more than 75 percent of the total.

Consumptive uses for the two basins were 13.1 mgd; with consumptive uses from Lake Ontario representing only about 0.001 percent or 50,000 gallons per day of this total. For Lake Erie, public water supply and self supply - industrial uses combined represent more than 76 percent of the 13 mgd consumed.

There are no interbasin or intrabasin diversions in the Pennsylvania Great Lakes Basin that meet the Charter trigger level of 100,000 mgd average over a 30 day period.

The Pennsylvania data were 11 percent measured, 12 percent partially measured, 77 percent estimated and 99.3 percent site-specific.

## QUEBEC

Data for calendar year 1988 were provided by the Ministère de l'Environnement - Direction du milieu hydrique which is responsible for the water use data collection program in Quebec.

Withdrawals in the St. Lawrence River Basin of Quebec were approximately 1.1 trillion litres per day (tld) or 285 billion gallons per day (bgd). Nearly 100 percent of the total (1.07 tld) was withdrawn for self supply - hydroelectric power purposes. Figure 13 presents Quebec's 1988 water withdrawals (minus hydroelectric).

Consumptive uses for the Quebec St. Lawrence River Basin were 532 mld (140.5 mgd); with public water supply representing nearly 72 percent of the total (385 mld).

There are no interbasin or intrabasin diversions of water in the Quebec St. Lawrence River Basin that meet the Charter trigger level of 380,000 litres (100,000 gpd) per day average over a 30 day period.

By volume, the Quebec data were 99.95 percent measured, 0.05 estimated and 100 percent site-specific.

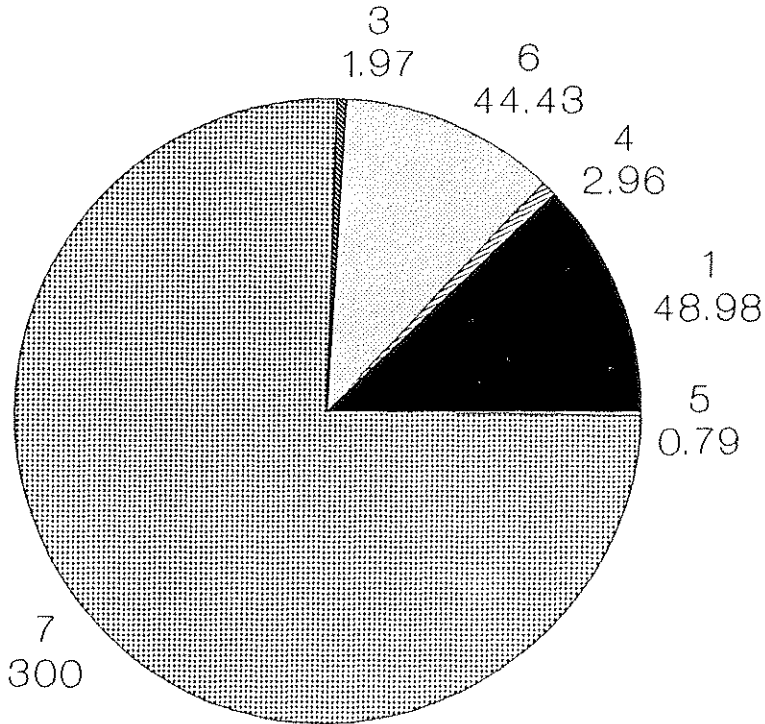
## WISCONSIN

Data for 1988 for the Lake Michigan and Lake Superior Basins of Wisconsin were submitted to the Regional Water Use Data Base by the Department of Natural Resources; Bureau of Water Resources Management which is responsible for the water use data collection program in Wisconsin.

Total withdrawals from the two basins for 1988 were approximately 9.7 billion gallons per day (bgd) (Figure 14). More than 98 percent (9.5 bgd) were from the Lake Michigan Basin with just under 2 percent (189.6 mgd) from the Lake Superior Basin.

FIGURE 12

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS PENNSYLVANIA (Million gallons(U.S.)/day)



Total: 399.13 MG(U.S.)/D

- 1. Public Supply: Domestic & Industrial
- 2. SELF SUPPLY:
- 3. Domestic
- 4. Irrigation
- 5. Livestock
- 6. Industrial
- 7. Fossil Fuel Plants

FIGURE 13

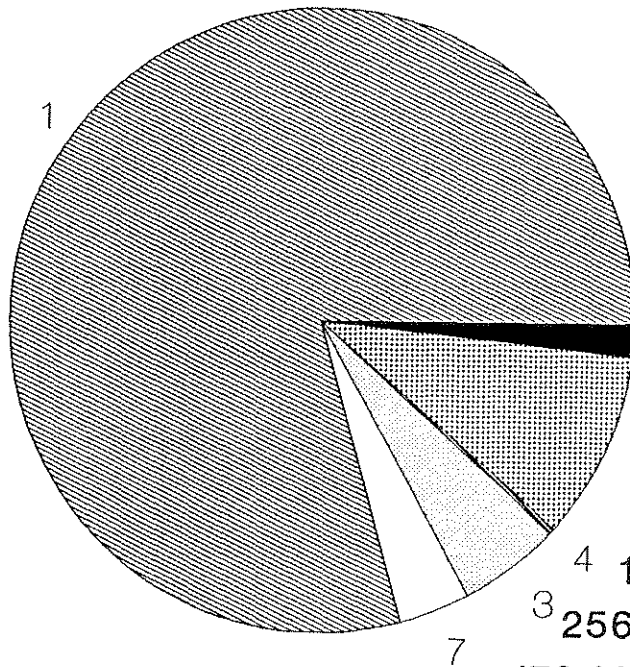
# 1988 GREAT LAKES BASIN WATER WITHDRAWALS QUEBEC

EXCLUDING HYDRO\*

Total Withdrawal: 1080454 ML 285426 MG

Total excluding Hydro: 4684 ML 1285 MG

3837 ML 1018.91 MG



5 84 ML 22.19 MG

6 475 ML 125.48 MG

4 14 ML 3.7 MG

3 256 ML 67.63 MG

7 178 ML 47 MG

- 1. Public Supply: Domestic & Industrial SELF SUPPLY:
- 3. Domestic
- 4. Irrigation
- 5. Livestock
- 6. Industrial
- 7. Fossil Fuel Plants

MG=Million gallons (U.S.)/day  
ML=Million litres/day

Quebec withdraws 1,075,590 million litres per day for Hydroelectric > 99% of their total water use.

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Almost 50 percent (4.6 bgd) of the water used in the Lake Michigan Basin was for self supply - hydroelectric power, with more than 92 percent (154 mgd) of the water used from Lake Superior for the same purpose. Wisconsin withdrew significantly less water for hydroelectric power generation during the drought year of 1988 than recorded for 1987, the first year of operation for the data base. A comparison of 1987-1988 hydroelectric withdrawals is presented in Figure 15.

Consumptive uses for the two basins were 163.5 mgd; 160.7 mgd (98 percent) from the Lake Michigan Basin and about 2.8 mgd (2 percent) from the Lake Superior Basin. Public water supply is the major category for consumptive use in the Lake Michigan Basin representing 55.2 mgd or more than one-third of the total use.

There are no interbasin or intrabasin diversions meeting the Charter trigger level of 100,000 gallons per day (380,000 litres) average over a 30 day period in the Wisconsin Lake Superior Basin.

For the Wisconsin Lake Michigan Basin, outgoing interbasin diversions total 0.1 mgd reported under public water supply.

For the Wisconsin Great Lakes Basin, the data reported were 4 percent measured, 96 percent estimated and 96 percent aggregated sources.

FIGURE 14

# 1988 GREAT LAKES BASIN WATER WITHDRAWALS WISCONSIN (Million gallons(U.S.)/day)

31

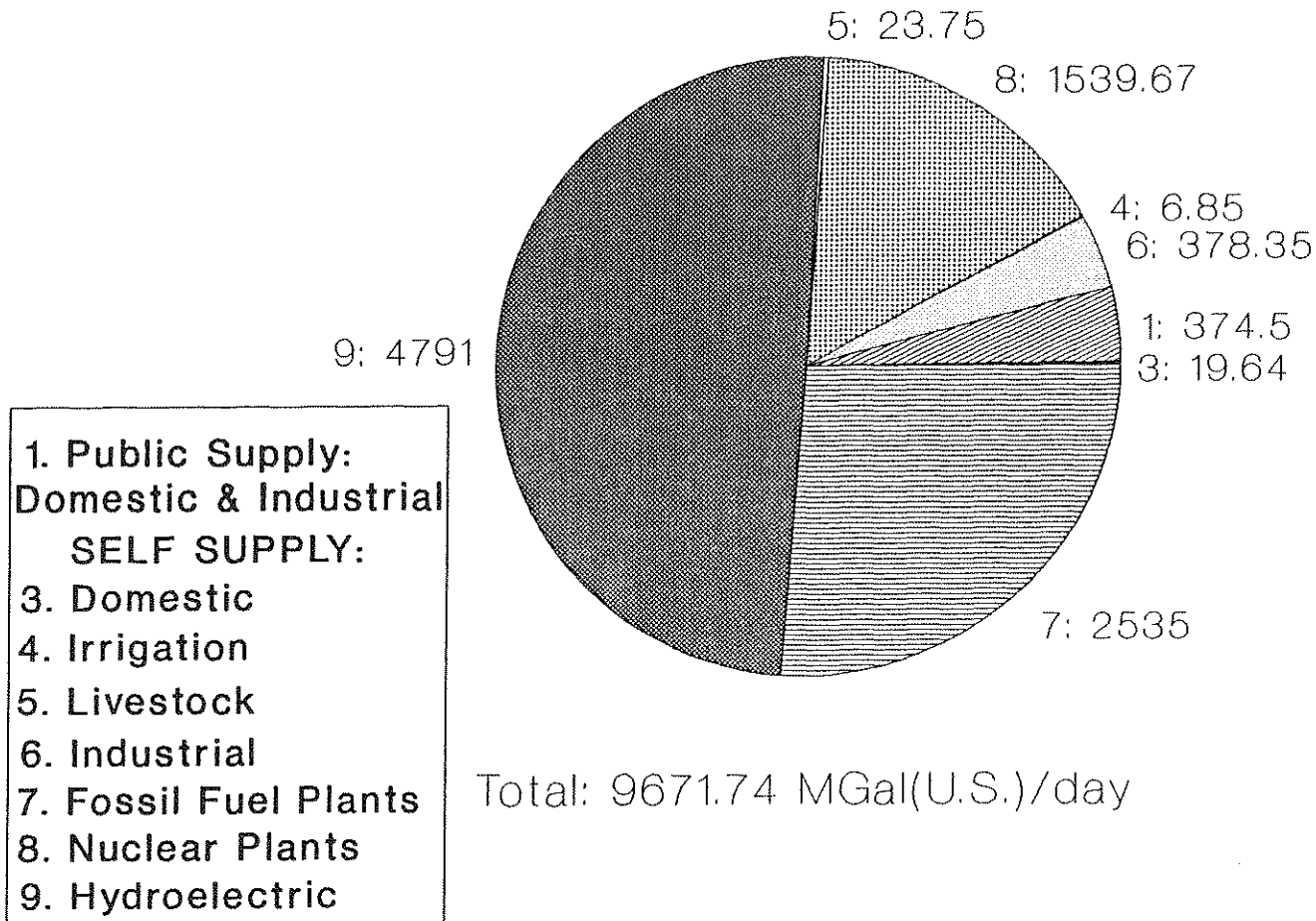
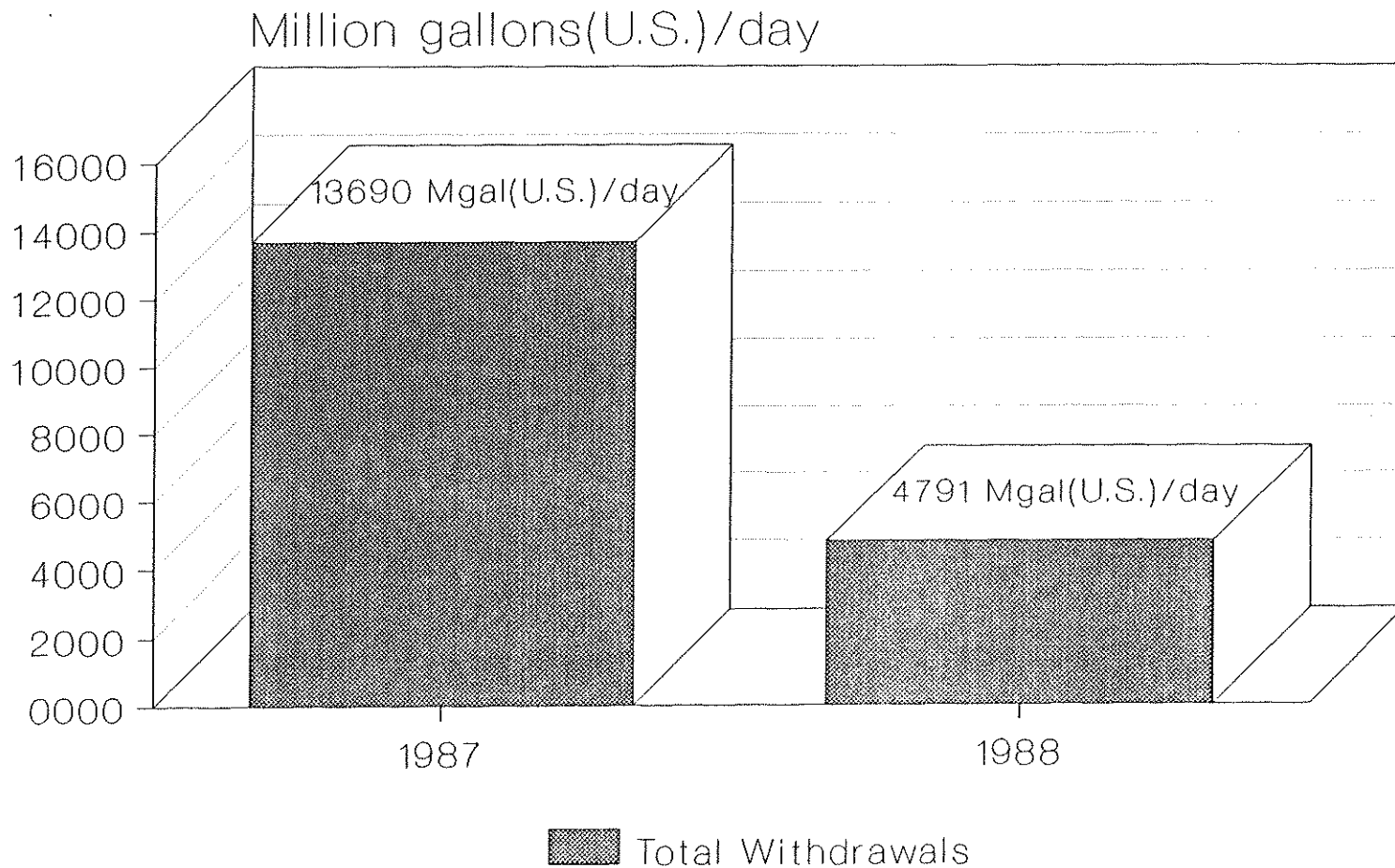


FIGURE 15

# WISCONSIN HYDROELECTRIC WATER USE COMPARISON: 1987-1988



APPENDIX A-1

*All reports generated by the repository are presented  
in two units of measurement: Million gallons (U.S.)/day  
and Million litres/day*



Section A-1.1 (Million Gallons (U.S.) Per Day)

1988 GREAT LAKES BASIN SUMMARY REPORT

1988 JURISDICTION REPORTS

1. ILLINOIS
2. INDIANA
3. MICHIGAN
4. MINNESOTA
5. NEW YORK
6. OHIO
7. ONTARIO
8. QUEBEC
9. PENNSYLVANIA
10. WISCONSIN

1988 BASIN SUMMARY REPORTS

1. LAKE SUPERIOR BASIN
2. LAKE MICHIGAN BASIN
3. LAKE HURON BASIN
4. LAKE ERIE BASIN
5. LAKE ONTARIO BASIN
6. ST. LAWRENCE RIVER BASIN
7. FIGURE 16 - WATER USE PERCENTAGES BY BASIN

a) Withdrawals, Diversions and Consumptive Use - All facilities

Water- Use Categ.	LAKE MICHIGAN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	1199.30	1199.30	0.00	1199.30	1199.30	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	23.54	5.84	0.00	23.54	5.84	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	10.62	8.62	2.00	10.62	8.62	2.00
7	624.38	0.00	0.00	624.38	0.00	0.00
8	2139.73	0.00	0.00	2139.73	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	363.59	363.59	0.00	363.59	363.59	0.00
Total	4361.16	1577.35	2.00	4361.16	1577.35	2.00

b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE MICHIGAN			TOTAL		
	GLSH	OSW	GW	GLSH	OSW	GW
1	1199.29	0.00	0.01	1199.29	0.00	0.01
2	0.00	0.00	0.00	0.00	0.00	0.00
3	23.40	0.04	0.10	23.40	0.04	0.10
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	10.62	0.00	0.00	10.62	0.00	0.00
7	624.38	0.00	0.00	624.38	0.00	0.00
8	2139.73	0.00	0.00	2139.73	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	363.59	0.00	0.00	363.59	0.00	0.00
Total	4361.01	0.04	0.11	4361.01	0.04	0.11

c) Diversions by Type - All facilities

Water- Use Categ.	LAKE MICHIGAN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	1199.30	0.00	1199.30
2	0.00	0.00	0.00	0.00
3	0.00	5.84	0.00	5.84
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	8.62	0.00	8.62
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	363.59	0.00	363.59
Total	0.00	1577.35	0.00	1577.35

SUMMARY REPORT - GREAT LAKES BASIN

DATE: 02/07/90

a) Water-Use by Category - All Basins, All Jurisdictions

UNITS: Mgal(US)/c  
YEAR OF DATA: 1988

Water-Use Category	All Facilities								Principal Facilities							
	Withdrawals				Diversions			Consumptive Use	Withdrawals				Diversions			Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL		GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
1	3844.00	1082.66	337.54	6488.20*	0.00	1199.57	1199.57	591.64*	3485.28	890.25	261.19	4637.72	0.00	1199.57	1199.57	464.75
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	193.57	148.31	432.37	774.25	0.00	5.34	5.84	39.73	31.53	22.21	50.58	104.32	0.00	5.79	5.79	9.08
4	9.29	53.97	53.43	352.71*	0.00	0.00	0.00	313.22*	0.00	11.31	24.28	35.59	0.00	0.00	0.00	31.34
5	4.65	3.92	122.87	131.44	0.00	0.00	0.00	95.42	0.65	1.14	1.60	3.39	0.00	0.00	0.00	2.19
6	4386.87	979.09	107.97	6791.93*	0.00	8.62	8.62	412.52*	4080.71	910.52	52.93	5044.16	0.00	8.62	8.62	271.98
7	19776.10	382.61	2.81	20161.52	0.00	0.00	0.00	175.73	13576.94	258.05	0.11	13935.10	0.00	0.00	0.00	94.71
8	18523.62	0.00	0.01	18523.63	0.00	0.00	0.00	160.69	16362.33	0.00	0.00	16362.33	0.00	0.00	0.00	132.59
9	538754.47	390665.45	0.00	929419.92	0.00	-3679.40	-3679.40	0.00	538754.47	390665.45	0.00	929419.92	0.00	-3679.40	-3679.40	0.00
10	1016.10	0.13	0.25	1016.48	0.00	363.59	363.59	0.24	1016.10	0.10	0.17	1016.37	0.00	363.59	363.59	0.13
Total	586508.58	393315.24	1057.27	985121.08*	0.00	-2101.78	-2101.78	1789.19*	577409.01	392759.03	390.85	970558.89	0.00	-2101.83	-2101.83	1006.77

b) Water-Use by Basin - All Categories, All Jurisdictions

Basin	All Facilities								Principal Facilities							
	Withdrawals				Diversions			Consumptive Use	Withdrawals				Diversions			Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL		GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Lake Superior	763.30	144802.64	16.28	145582.22	0.00	-3679.40	-3679.40	57.13	499.76	144802.35	7.09	145309.20	0.00	-3679.40	-3679.40	50.36
Lake Michigan	14895.94	5226.19	243.90	20366.03	0.00	1577.45	1577.45	399.89	11769.60	5044.89	163.97	16978.46	0.00	1577.40	1577.40	320.30
Lake Huron	28334.48	22108.85	82.45	50525.77	37.99	0.00	37.99	132.24	27681.96	22102.16	43.85	49827.97	37.99	0.00	37.99	101.84
Lake Erie	64969.67	595.56	315.65	65880.87	4931.10	0.17	4931.27	344.53	60521.66	499.75	107.15	61128.55	4931.10	0.17	4931.27	211.96
Lake Ontario	145087.58	11794.88	217.92	158100.38	-4969.09	0.00	-4969.09	191.22	145700.73	11551.21	13.58	157265.52	-4969.09	0.00	-4969.09	173.68
St. Lawrence River	331457.62	208737.13	181.07	540425.82	0.00	0.00	0.00	184.17	331235.30	208758.67	55.21	540049.19	0.00	0.00	0.00	148.62
Total	586508.58	393315.24	1057.27	985121.08*	0.00	-2101.78	-2101.78	1789.19*	577409.01	392759.03	390.85	970558.89	0.00	-2101.83	-2101.83	1006.77

c) Water-Use by Jurisdiction - All Categories, All Basins

Jurisdiction	All Facilities								Principal Facilities							
	Withdrawals				Diversions			Consumptive Use	Withdrawals				Diversions			Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL		GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Illinois	4361.01	0.04	0.11	4361.16	0.00	1577.35	1577.35	2.00	4360.97	0.00	0.01	4360.98	0.00	1577.30	1577.30	2.00
Indiana	3104.63	80.20	145.86	3330.69	0.00	0.00	0.00	205.52	3104.62	79.87	112.88	3297.37	0.00	0.00	0.00	196.35
*Michigan	8260.45	124.56	2.28	11166.29*	0.00	0.00	0.00	589.04*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Minnesota	36.60	115950.02	5.58	115992.20	0.00	0.00	0.00	39.10	36.51	115949.85	4.81	115991.17	0.00	0.00	0.00	38.68
New York	225693.20	311.00	282.70	226286.90	0.00	0.00	0.00	12.34	224858.00	0.00	0.00	224858.00	0.00	0.00	0.00	11.00
Ohio	3029.81	402.56	113.57	3545.94	0.00	0.17	0.17	148.29	3029.61	385.90	27.70	3443.21	0.00	0.17	0.17	117.75
Ontario	164565.26	158631.66	292.77	323479.69	0.00	-3679.40	-3679.40	475.80	164564.60	158591.27	132.11	323287.98	0.00	-3679.40	-3679.40	381.65
Pennsylvania	384.40	8.80	5.93	399.13	0.00	0.00	0.00	13.07	384.40	8.70	2.70	395.30	0.00	0.00	0.00	12.27
Quebec	172740.61	112592.21	93.52	285426.34	0.00	0.00	0.00	140.57	172740.35	112585.87	47.55	285373.77	0.00	0.00	0.00	116.98
Wisconsin	4332.60	5214.19	124.95	9671.74	0.00	0.10	0.10	163.46	4329.95	5157.57	63.09	9550.61	0.00	0.10	0.10	130.09
Total	586508.58	393315.24	1057.27	985121.08*	0.00	-2101.78	-2101.78	1789.19*	577409.01	392759.03	390.85	970558.89	0.00	-2101.83	-2101.83	1006.77

\* The total presented is larger than the sum of water use categories. This is due to the addition of state-wide data from Michigan. Michigan's withdrawals and consumptive uses for this category cannot presently be reported by individual subbasin or water withdrawal type.

a) Withdrawals, Diversions and Consumptive Use - Principal facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE MICHIGAN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	1199.30	1199.30	0.00	1199.30	1199.30	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	23.36	5.79	0.00	23.36	5.79	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	10.62	8.62	2.00	10.62	8.62	2.00
7	624.38	0.00	0.00	624.38	0.00	0.00
8	2139.73	0.00	0.00	2139.73	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	363.59	363.59	0.00	363.59	363.59	0.00
Total	4360.98	1577.30	2.00	4360.98	1577.30	2.00

b) Withdrawals by Source - Principal facilities

Water- Use Categ.	LAKE MICHIGAN			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW
1	1199.29	0.00	0.01	1199.29	0.00	0.01
2	0.00	0.00	0.00	0.00	0.00	0.00
3	23.36	0.00	0.00	23.36	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	10.62	0.00	0.00	10.62	0.00	0.00
7	624.38	0.00	0.00	624.38	0.00	0.00
8	2139.73	0.00	0.00	2139.73	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	363.59	0.00	0.00	363.59	0.00	0.00
Total	4360.97	0.00	0.01	4360.97	0.00	0.01

c) Diversions by Type - Principal facilities

Water- Use Categ.	LAKE MICHIGAN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	1199.30	0.00	1199.30
2	0.00	0.00	0.00	0.00
3	0.00	5.79	0.00	5.79
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	8.62	0.00	8.62
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	363.59	0.00	363.59
Total	0.00	1577.30	0.00	1577.30

DATE: 11/20/89

a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE MICHIGAN			LAKE ERIE			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	155.36	0.00	23.31	42.64	0.00	6.39	198.00	0.00	29.70
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	40.21	0.00	6.03	8.72	0.00	1.31	48.93	0.00	7.34
4	27.75	0.00	24.97	1.13	0.00	1.02	28.88	0.00	25.99
5	6.73	0.00	5.38	1.81	0.00	1.45	8.54	0.00	6.83
6	1855.89	0.00	111.36	6.53	0.00	0.39	1862.42	0.00	111.75
7	1183.56	0.00	23.67	0.11	0.00	0.00	1183.57	0.00	23.67
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.23	0.00	0.22	0.02	0.00	0.02	0.25	0.00	0.24
Total	3269.73	0.00	194.94	60.96	0.00	10.58	3330.69	0.00	205.52

b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE MICHIGAN			LAKE ERIE			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	96.72	0.00	58.64	0.00	34.95	7.69	96.72	34.95	66.33
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	20.42	19.79	0.00	0.05	8.67	0.00	20.47	28.46
4	0.00	9.10	18.65	0.00	0.31	0.82	0.00	9.41	19.47
5	0.00	1.14	5.59	0.00	0.00	1.81	0.00	1.14	7.40
6	1824.35	10.77	20.77	0.00	3.33	3.20	1824.35	14.10	23.97
7	1183.56	0.00	0.00	0.00	0.00	0.11	1183.56	0.00	0.11
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.11	0.12	0.00	0.02	0.00	0.00	0.13	0.12
Total	3104.63	41.54	123.56	0.00	38.66	22.30	3104.63	80.20	145.86

c) Diversions by Type - All facilities

Water- Use Categ.	LAKE MICHIGAN		LAKE ERIE		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00

Level of Accuracy of Withdrawal Data: 6% Measured 91% Partially Measured 3% Calculated or Estimated  
Level of Aggregation of Withdrawal Data Source: 98% Site-specific 2% Aggregated



a) Withdrawals, Diversions and Consumptive Use - All facilities

Water-Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			LAKE HURON			LAKE ERIE			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1224*	NR	123*
3	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
4	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	237*	0.00	225*
5	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
6	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	1318*	0.00	132*
7	260.77	0.00	3.39	1091.72	0.00	14.20	652.47	0.00	8.48	4221.04	0.00	54.87	6226.00	0.00	80.94
8	0.00	0.00	0.00	2161.29	0.00	28.10	0.00	0.00	0.00	0.00	0.00	0.00	2161.29	0.00	28.10
9	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
10	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
<b>Total</b>	<b>260.77</b>	<b>0.00</b>	<b>3.39</b>	<b>3253.01</b>	<b>0.00</b>	<b>42.30</b>	<b>652.47</b>	<b>0.00</b>	<b>8.48</b>	<b>4221.04</b>	<b>0.00</b>	<b>54.87</b>	<b>11166.29*</b>	<b>0.00</b>	<b>585.04*</b>

b) Withdrawals by Source - All facilities

Water-Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			LAKE HURON			LAKE ERIE			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
6	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
7	260.77	0.00	0.00	965.00	124.44	2.28	652.44	0.03	0.00	4220.95	0.09	0.00	6099.16	124.56	2.28
8	0.00	0.00	0.00	2161.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2161.29	0.00	0.00
9	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>Total</b>	<b>260.77</b>	<b>0.00</b>	<b>0.00</b>	<b>3126.29</b>	<b>124.44</b>	<b>2.28</b>	<b>652.44</b>	<b>0.03</b>	<b>0.00</b>	<b>4220.95</b>	<b>0.09</b>	<b>0.00</b>	<b>8260.45</b>	<b>124.56</b>	<b>2.28</b>

c) Diversions by Type - All facilities

Water-Use Categ.	LAKE SUPERIOR		LAKE MICHIGAN		LAKE HURON		LAKE ERIE		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	NR	0.00	NR	0.00	NR	0.00	NR	0.00	NR	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

\* This total figure cannot presently be reported by individual subbasin or water withdrawal type.

NR = Not Reporting

Level of Accuracy of Withdrawal Data: 11% Measured 87% Partially Measured 2% Calculated or Estimated

Level of Aggregation of Withdrawal Data Source: 98% Site-specific 2% Aggregated

a) Withdrawals, Diversions and Consumptive Use - Principal facilities

Water-Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			LAKE HURON			LAKE ERIE			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
3	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
4	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
5	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
6	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
10	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR	NR	0.00	NR
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

b) Withdrawals by Source - Principal facilities

Water-Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			LAKE HURON			LAKE ERIE			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
6	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

c) Diversions by Type - Principal facilities

Water-Use Categ.	LAKE SUPERIOR		LAKE MICHIGAN		LAKE HURON		LAKE ERIE		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	NR	0.00	NR	0.00	NR	0.00	NR	0.00	NR	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NR = Not Reported



DATE: 11/29/89

a) Withdrawals, Diversions and Consumptive Use - Principal facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE SUPERIOR			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	36.48	0.00	7.66	36.48	0.00	7.66
2	0.00	0.00	0.00	0.00	0.00	0.00
3	9.92	0.00	0.79	9.92	0.00	0.79
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.65	0.00	0.00	0.65	0.00	0.00
6	108.35	0.00	28.59	108.35	0.00	28.59
7	81.64	0.00	1.64	81.64	0.00	1.64
8	0.00	0.00	0.00	0.00	0.00	0.00
9	115754.00	0.00	0.00	115754.00	0.00	0.00
10	0.13	0.00	0.00	0.13	0.00	0.00
Total	115991.17	0.00	38.68	115991.17	0.00	38.68

b) Withdrawals by Source - Principal facilities

Water- Use Categ.	LAKE SUPERIOR			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW
1	26.92	4.88	4.68	26.92	4.88	4.68
2	0.00	0.00	0.00	0.00	0.00	0.00
3	8.17	1.75	0.00	8.17	1.75	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.65	0.00	0.00	0.65	0.00	0.00
6	0.00	108.35	0.00	0.00	108.35	0.00
7	0.77	80.87	0.00	0.77	80.87	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	115754.00	0.00	0.00	115754.00	0.00
10	0.00	0.00	0.13	0.00	0.00	0.13
Total	36.51	115949.85	4.81	36.51	115949.85	4.81

c) Diversions by Type - Principal facilities

Water- Use Categ.	LAKE SUPERIOR		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00

DATE: 11/20/89

a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE SUPERIOR			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	36.87	0.00	7.74	36.87	0.00	7.74
2	0.00	0.00	0.00	0.00	0.00	0.00
3	10.02	0.00	0.80	10.02	0.00	0.80
4	0.13	0.00	0.11	0.13	0.00	0.11
5	0.92	0.00	0.21	0.92	0.00	0.21
6	108.48	0.00	28.60	108.48	0.00	28.60
7	81.65	0.00	1.64	81.65	0.00	1.64
8	0.00	0.00	0.00	0.00	0.00	0.00
9	115754.00	0.00	0.00	115754.00	0.00	0.00
10	0.13	0.00	0.00	0.13	0.00	0.00
Total	115992.20	0.00	39.10	115992.20	0.00	39.10

b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE SUPERIOR			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW
1	26.96	4.88	5.03	26.96	4.88	5.03
2	0.00	0.00	0.00	0.00	0.00	0.00
3	8.17	1.80	0.05	8.17	1.80	0.05
4	0.00	0.08	0.05	0.00	0.08	0.05
5	0.65	0.04	0.23	0.65	0.04	0.23
6	0.05	108.35	0.08	0.05	108.35	0.08
7	0.77	80.87	0.01	0.77	80.87	0.01
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	115754.00	0.00	0.00	115754.00	0.00
10	0.00	0.00	0.13	0.00	0.00	0.13
Total	36.60	115950.02	5.58	36.60	115950.02	5.58

c) Diversions by Type - All facilities

Water- Use Categ.	LAKE SUPERIOR		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00

Level of Accuracy of Withdrawal Data: 99.8% Measured .1% Partially Measured .1% Calculated or Estimated  
Level of Aggregation of Withdrawal Data Source: 100% Site-specific



JURISDICTION REPORT - New York

DATE: 02/05/90

a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE ERIE			LAKE ONTARIO			ST. LAWRENCE RIVER			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	206.00	0.00	0.00	266.00	0.00	0.00	126.00	0.00	0.00	598.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	78.00	0.00	0.00	290.00	0.00	0.00	90.00	0.00	0.00	458.00	0.00	0.00
4	1.60	0.00	1.24	8.00	0.00	0.08	1.10	0.00	0.02	10.70	0.00	1.34
5	1.40	0.00	0.00	6.40	0.00	0.00	3.00	0.00	0.00	10.80	0.00	0.00
6	58.40	0.00	0.00	220.00	0.00	0.00	73.00	0.00	0.00	351.40	0.00	0.00
7	458.00	0.00	0.00	2053.00	0.00	8.00	0.00	0.00	0.00	2511.00	0.00	8.00
8	0.00	0.00	0.00	1007.00	0.00	3.00	0.00	0.00	0.00	1007.00	0.00	3.00
9	48390.00	0.00	0.00	93800.00	0.00	0.00	79150.00	0.00	0.00	221340.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	49193.40	0.00	1.24	97650.40	0.00	11.08	79443.10	0.00	0.02	226286.90	0.00	12.34

b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE ERIE			LAKE ONTARIO			ST. LAWRENCE RIVER			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	160.00	46.00	0.00	96.00	139.00	31.00	101.00	0.00	25.00	357.00	185.00	56.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	10.00	10.00	58.00	101.00	96.00	93.00	51.00	20.00	19.00	162.00	126.00	170.00
4	1.20	0.00	0.40	7.00	0.00	1.00	1.00	0.00	0.10	9.20	0.00	1.50
5	0.50	0.00	0.90	2.50	0.00	3.90	1.00	0.00	2.00	4.00	0.00	6.80
6	55.00	0.00	3.40	180.00	0.00	40.00	68.00	0.00	5.00	303.00	0.00	48.40
7	458.00	0.00	0.00	2053.00	0.00	0.00	0.00	0.00	0.00	2511.00	0.00	0.00
8	0.00	0.00	0.00	1007.00	0.00	0.00	0.00	0.00	0.00	1007.00	0.00	0.00
9	48390.00	0.00	0.00	93800.00	0.00	0.00	79150.00	0.00	0.00	221340.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	49074.70	56.00	62.70	97246.50	235.00	168.90	79372.00	20.00	51.10	225693.20	311.00	282.70

c) Diversions by Type - All facilities

Water- Use Categ.	LAKE ERIE		LAKE ONTARIO		ST. LAWRENCE RIVER		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Level of Accuracy of Withdrawal Data: 0% Measured 99.6% Partially Measured .4% Calculated or Estimated  
Level of Aggregation of Withdrawal Data Source: 98.9% Site-specific 1.1% Aggregated

a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE ERIE			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	658.90	0.17	98.84	658.90	0.17	98.84
2	0.00	0.00	0.00	0.00	0.00	0.00
3	67.20	0.00	10.08	67.20	0.00	10.08
4	11.30	0.00	10.17	11.30	0.00	10.17
5	10.80	0.00	8.64	10.80	0.00	8.64
6	132.54	0.00	13.26	132.54	0.00	13.26
7	2615.10	0.00	0.20	2615.10	0.00	0.20
8	50.10	0.00	7.10	50.10	0.00	7.10
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	3545.94	0.17	148.29	3545.94	0.17	148.29

b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE ERIE			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW
1	501.10	125.00	32.80	501.10	125.00	32.80
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	67.20	0.00	0.00	67.20
4	0.00	7.10	4.20	0.00	7.10	4.20
5	0.00	1.60	9.20	0.00	1.60	9.20
6	24.11	108.26	0.17	24.11	108.26	0.17
7	2454.50	160.60	0.00	2454.50	160.60	0.00
8	50.10	0.00	0.00	50.10	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	3029.81	402.55	113.57	3029.81	402.56	113.57

c) Diversions by Type - All facilities

Water- Use Categ.	LAKE ERIE		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.17	0.00	0.17
2	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00
Total	0.00	0.17	0.00	0.17

Level of Accuracy of Withdrawal Data: 0% Measured 0% Partially Measured 100% Calculated or Estimated  
Level of Aggregation of Withdrawal Data Source: 97.5% Site-specific 2.5% Aggregated

a) Withdrawals, Diversions and Consumptive Use - Principal facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE ERIE			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	652.90	0.17	97.94	652.90	0.17	97.94
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	125.11	0.00	12.51	125.11	0.00	12.51
7	2615.10	0.00	0.20	2615.10	0.00	0.20
8	50.10	0.00	7.10	50.10	0.00	7.10
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	3443.21	0.17	117.75	3443.21	0.17	117.75

b) Withdrawals by Source - Principal facilities

Water- Use Categ.	LAKE ERIE			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW
1	500.90	124.30	27.70	500.90	124.30	27.70
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	24.11	101.00	0.00	24.11	101.00	0.00
7	2454.50	160.60	0.00	2454.50	160.60	0.00
8	50.10	0.00	0.00	50.10	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	3029.51	385.90	27.70	3029.51	385.90	27.70

c) Diversions by Type - Principal facilities

Water- Use Categ.	LAKE ERIE		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.17	0.00	0.17
2	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00
Total	0.00	0.17	0.00	0.17

a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE SUPERIOR			LAKE HURON			LAKE ERIE			LAKE ONTARIO			ST. LAWRENCE RIVER			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	12.31	0.00	1.85	131.00	37.99	19.79	170.29	-37.99	25.55	674.51	0.00	101.18	141.83	0.00	21.27	1130.74	0.00	169.63
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	1.19	0.00	0.18	19.58	0.00	2.93	17.25	0.00	2.59	22.01	0.00	3.30	17.30	0.00	2.59	77.32	0.00	11.60
4	0.05	0.00	0.05	6.79	0.00	5.31	32.63	0.00	25.47	7.42	0.00	5.79	1.35	0.00	1.06	48.24	0.00	37.67
5	0.32	0.00	0.26	16.72	0.00	13.37	17.36	0.00	13.90	9.27	0.00	7.42	9.99	0.00	7.98	53.65	0.00	42.93
6	174.51	0.00	5.79	768.64	0.00	16.99	494.43	0.00	23.99	864.40	0.00	15.22	158.24	0.00	7.95	2460.21	0.00	70.93
7	264.23	0.00	2.69	236.96	0.00	1.19	2759.55	0.00	25.04	776.93	0.00	7.03	0.00	0.00	0.00	4037.67	0.00	35.95
8	0.00	0.00	0.00	7128.96	0.00	64.19	0.00	0.00	0.00	4456.06	0.00	40.15	40.81	0.00	2.75	11625.84	0.00	107.10
9	28687.03	-3679.40	0.00	41563.86	0.00	0.00	4316.58	4316.58	0.00	53639.19	-4316.58	0.00	175186.85	0.00	0.00	303393.51	-3679.40	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	652.51	652.51	0.00	0.00	-652.51	0.00	0.00	0.00	0.00	652.51	0.00	0.00
Total	29139.64	-3679.40	11.83	49873.30	37.99	123.76	8460.58	4931.10	116.53	60449.80	-4969.09	180.09	175556.38	0.00	43.59	323479.69	-3679.40	475.80

b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE SUPERIOR			LAKE HURON			LAKE ERIE			LAKE ONTARIO			ST. LAWRENCE RIVER			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSN	OSW	GW
1	11.04	1.27	0.00	64.46	34.66	32.68	71.49	41.71	57.09	572.25	89.95	12.31	28.37	109.68	3.78	747.61	277.28	105.85
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	1.19	0.00	0.00	19.58	0.00	0.00	17.25	0.00	0.00	22.01	0.00	0.00	17.30	0.00	0.00	77.32
4	0.00	0.03	0.03	0.00	5.71	1.08	0.00	22.03	10.59	0.00	5.23	2.19	0.00	0.98	0.37	0.00	33.97	14.27
5	0.00	0.00	0.32	0.00	0.00	16.72	0.00	0.00	17.36	0.00	0.00	9.27	0.00	0.00	9.99	0.00	0.00	53.65
6	162.12	10.28	2.11	681.22	75.03	12.39	459.69	25.73	9.01	755.01	106.30	3.09	124.95	28.27	5.02	2182.99	245.60	31.62
7	264.17	0.00	0.05	236.96	0.00	0.00	2759.55	0.00	0.00	776.93	0.00	0.00	0.00	0.00	0.00	4037.67	0.00	0.05
8	0.00	0.00	0.00	7128.96	0.00	0.00	0.00	0.00	0.00	4456.06	0.00	0.00	40.81	0.00	0.00	11625.84	0.00	0.00
9	0.00	28687.03	0.00	19570.43	21993.43	0.00	4316.58	0.00	0.00	42280.82	11358.37	0.00	79150.87	96035.99	0.00	145318.71	158074.81	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	652.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	0.00	0.00
Total	437.34	28698.60	3.70	27682.04	22108.82	82.45	8259.81	89.48	111.30	48841.08	11559.85	48.87	79345.01	96174.91	36.46	164565.26	158631.66	282.77

c) Diversions by Type - All facilities

Water- Use Categ.	LAKE SUPERIOR		LAKE HURON		LAKE ERIE		LAKE ONTARIO		ST. LAWRENCE RIVER		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	37.99	0.00	-37.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	-3679.40	0.00	0.00	4316.58	0.00	-4316.58	0.00	0.00	0.00	0.00	-3679.40
10	0.00	0.00	0.00	0.00	652.51	0.00	-652.51	0.00	0.00	0.00	0.00	0.00
Total	0.00	-3679.40	37.99	0.00	4931.10	0.00	-4969.09	0.00	0.00	0.00	0.00	-3679.40

Level of Accuracy of Withdrawal Data: 4.8% Measured 95% Partially Measured .2% Calculated or Estimated  
Level of Aggregation of Withdrawal Data Source: 99.8% Site-specific .2% Aggregated

a) Withdrawals, Diversions and Consumptive Use - Principal facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE SUPERIOR			LAKE HURON			LAKE ERIE			LAKE ONTARIO			ST. LAWRENCE RIVER			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	12.26	0.00	1.85	130.98	37.99	19.65	169.86	-37.99	25.49	674.04	0.00	101.13	140.94	0.00	21.13	1128.07	0.00	169.26
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	174.38	0.00	6.76	767.21	0.00	16.80	492.73	0.00	23.70	859.30	0.00	14.40	156.81	0.00	7.77	2450.44	0.00	69.42
7	264.17	0.00	2.64	236.96	0.00	1.19	2759.55	0.00	25.04	776.93	0.00	7.00	0.00	0.00	0.00	4037.61	0.00	35.87
8	0.00	0.00	0.00	7128.96	0.00	64.19	0.00	0.00	0.00	4456.06	0.00	40.15	40.81	0.00	2.75	11625.84	0.00	107.10
9	28687.03	-3679.40	0.00	41563.86	0.00	0.00	4316.58	4316.58	0.00	53639.19	-4316.58	0.00	175186.85	0.00	0.00	303393.51	-3679.40	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	652.51	652.51	0.00	0.00	-652.51	0.00	0.00	0.00	0.00	652.51	0.00	0.00
Total	29137.84	-3679.40	11.25	49827.97	37.99	101.84	8391.23	4931.10	74.23	60405.52	-4969.09	162.68	175525.42	0.00	31.65	323287.98	-3679.40	381.65

b) Withdrawals by Source - Principal facilities

Water- Use Categ.	LAKE SUPERIOR			LAKE HURON			LAKE ERIE			LAKE ONTARIO			ST. LAWRENCE RIVER			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	11.04	1.22	0.00	64.41	34.47	32.10	71.41	41.71	56.74	572.17	89.79	12.07	28.37	109.18	3.38	747.40	276.38	104.30
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	162.10	10.25	2.03	681.20	74.26	11.76	459.61	24.89	8.24	754.74	103.05	1.51	124.90	27.63	4.28	2182.54	240.08	27.82
7	264.17	0.00	0.00	236.96	0.00	0.00	2759.55	0.00	0.00	776.93	0.00	0.00	0.00	0.00	0.00	4037.61	0.00	0.00
8	0.00	0.00	0.00	7128.96	0.00	0.00	0.00	0.00	0.00	4456.06	0.00	0.00	40.81	0.00	0.00	11625.84	0.00	0.00
9	0.00	28687.03	0.00	19570.43	21993.43	0.00	4316.58	0.00	0.00	42280.82	11358.37	0.00	79150.87	96035.99	0.00	145318.71	158074.81	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	652.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	0.00	0.00
Total	437.31	28698.50	2.03	27681.96	22102.16	43.85	8259.65	66.60	64.99	48840.73	11551.21	13.58	79344.95	96172.80	7.66	164564.60	158591.27	132.11

c) Diversions by Type - Principal facilities

Water- Use Categ.	LAKE SUPERIOR		LAKE HURON		LAKE ERIE		LAKE ONTARIO		ST. LAWRENCE RIVER		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	37.99	0.00	-37.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	-3679.40	0.00	0.00	4316.58	0.00	-4316.58	0.00	0.00	0.00	0.00	-3679.40
10	0.00	0.00	0.00	0.00	652.51	0.00	-652.51	0.00	0.00	0.00	0.00	0.00
Total	0.00	-3679.40	37.99	0.00	4931.10	0.00	-4969.09	0.00	0.00	0.00	0.00	-3679.40



JURISDICTION REPORT - Pennsylvania

DATE: 02/05/90

a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE ERIE			LAKE ONTARIO			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	48.91	0.00	4.87	0.07	0.00	0.01	48.98	0.00	4.88
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	1.90	0.00	0.20	0.07	0.00	0.01	1.97	0.00	0.21
4	2.96	0.00	2.76	0.00	0.00	0.00	2.96	0.00	2.76
5	0.75	0.00	0.10	0.04	0.00	0.03	0.79	0.00	0.13
6	44.43	0.00	5.09	0.00	0.00	0.00	44.43	0.00	5.09
7	300.00	0.00	0.00	0.00	0.00	0.00	300.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	398.95	0.00	13.02	0.18	0.00	0.05	399.13	0.00	13.07

b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE ERIE			LAKE ONTARIO			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	45.30	1.41	2.20	0.00	0.00	0.07	45.30	1.41	2.27
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	1.90	0.00	0.00	0.07	0.00	0.00	1.97
4	0.00	2.16	0.80	0.00	0.00	0.00	0.00	2.16	0.80
5	0.00	0.07	0.68	0.00	0.03	0.01	0.00	0.10	0.69
6	39.10	5.13	0.20	0.00	0.00	0.00	39.10	5.13	0.20
7	300.00	0.00	0.00	0.00	0.00	0.00	300.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	384.40	8.77	5.78	0.00	0.03	0.15	384.40	8.80	5.93

c) Diversions by Type - All facilities

Water- Use Categ.	LAKE ERIE		LAKE ONTARIO		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00

Level of Accuracy of Withdrawal Data: 11% Measured 12% Partially Measured 77% Calculated or Estimated  
Level of Aggregation of Withdrawal Data Source: 99.3% Site-specific .7% Aggregated



JURISDICTION REPORT - Quebec

DATE: 02/05/90

a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	ST. LAWRENCE RIVER			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	1018.91	0.00	101.71	1018.91	0.00	101.71
2	0.00	0.00	0.00	0.00	0.00	0.00
3	67.63	0.00	6.76	67.63	0.00	6.76
4	3.70	0.00	3.33	3.70	0.00	3.33
5	22.19	0.00	17.70	22.19	0.00	17.70
6	125.48	0.00	11.07	125.48	0.00	11.07
7	47.02	0.00	0.00	47.02	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	284141.41	0.00	0.00	284141.41	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	285426.34	0.00	140.57	285426.34	0.00	140.57

b) Withdrawals by Source - All facilities

Water- Use Categ.	ST. LAWRENCE RIVER			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW
1	605.75	413.17	0.00	605.75	413.17	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	67.63	0.00	0.00	67.63
4	0.00	0.00	3.70	0.00	0.00	3.70
5	0.00	0.00	22.19	0.00	0.00	22.19
6	0.00	125.48	0.00	0.00	125.48	0.00
7	39.10	7.93	0.00	39.10	7.93	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	172095.77	112045.64	0.00	172095.77	112045.64	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	172740.61	112592.21	93.52	172740.61	112592.21	93.52

c) Diversions by Type - All facilities

Water- Use Categ.	ST. LAWRENCE RIVER		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00

Level of Accuracy of Withdrawal Data: 100% Measured  
Level of Aggregation of Withdrawal Data Source: 100% Site-specific

a) Withdrawals, Diversions and Consumptive Use - Principal facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	ST. LAWRENCE RIVER			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	1012.84	0.00	101.18	1012.84	0.00	101.18
2	0.00	0.00	0.00	0.00	0.00	0.00
3	47.55	0.00	4.76	47.55	0.00	4.76
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	124.95	0.00	11.04	124.95	0.00	11.04
7	47.02	0.00	0.00	47.02	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	284141.41	0.00	0.00	284141.41	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	285373.77	0.00	116.98	285373.77	0.00	116.98

b) Withdrawals by Source - Principal facilities

Water- Use Categ.	ST. LAWRENCE RIVER			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW
1	605.48	407.35	0.00	605.48	407.35	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	47.55	0.00	0.00	47.55
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	124.95	0.00	0.00	124.95	0.00
7	39.10	7.93	0.00	39.10	7.93	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	172095.77	112045.64	0.00	172095.77	112045.64	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	172740.35	112585.87	47.55	172740.35	112585.87	47.55

c) Diversions by Type - Principal facilities

Water- Use Categ.	ST. LAWRENCE RIVER		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00

## a) Withdrawals, Diversions and Consumptive Use - Principal facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	1.35	0.00	0.19	360.47	0.10	54.05	361.82	0.10	54.24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	4.67	0.00	3.26	4.67	0.00	3.26
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	318.79	0.00	31.87	318.79	0.00	31.87
7	24.84	0.00	0.24	2509.83	0.00	25.09	2534.67	0.00	25.33
8	0.00	0.00	0.00	1539.66	0.00	15.39	1539.66	0.00	15.39
9	154.00	0.00	0.00	4637.00	0.00	0.00	4791.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	180.19	0.00	0.43	9370.42	0.10	129.66	9550.61	0.10	130.09

## b) Withdrawals by Source - Principal facilities

Water- Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	1.10	0.00	0.25	263.17	40.98	56.32	264.27	40.98	56.57
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	4.67	0.00	0.00	4.67
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	316.94	1.85	0.00	316.94	1.85
7	24.84	0.00	0.00	2501.18	8.65	0.00	2526.02	8.65	0.00
8	0.00	0.00	0.00	1539.66	0.00	0.00	1539.66	0.00	0.00
9	0.00	154.00	0.00	0.00	4637.00	0.00	0.00	4791.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	25.94	154.00	0.25	4304.01	5003.57	62.84	4329.95	5157.57	63.09

## c) Diversions by Type - Principal facilities

Water- Use Categ.	LAKE SUPERIOR		LAKE MICHIGAN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.10	0.00	0.10
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.10	0.00	0.10

DATE: 11/20/89

## a) Withdrawals, Diversions and Consumptive Use - All facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	6.25	0.00	0.93	368.25	0.10	55.22	374.50	0.10	56.15
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.14	0.00	0.02	19.50	0.00	2.92	19.64	0.00	2.94
4	0.00	0.00	0.00	9.80	0.00	6.85	9.80	0.00	6.85
5	1.71	0.00	1.36	22.04	0.00	17.62	23.75	0.00	18.98
6	2.67	0.00	0.26	375.68	0.00	37.56	378.35	0.00	37.82
7	24.84	0.00	0.24	2510.19	0.00	25.09	2535.03	0.00	25.33
8	0.00	0.00	0.00	1539.67	0.00	15.39	1539.67	0.00	15.39
9	154.00	0.00	0.00	4637.00	0.00	0.00	4791.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	189.61	0.00	2.81	9482.13	0.10	160.65	9671.74	0.10	163.46

## b) Withdrawals by Source - All facilities

Water- Use Categ.	LAKE SUPERIOR			LAKE MICHIGAN			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	1.10	0.00	5.15	263.17	40.98	64.10	264.27	40.98	69.25
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.14	0.00	0.00	19.50	0.00	0.00	19.64
4	0.00	0.00	0.00	0.00	0.35	9.45	0.00	0.35	9.45
5	0.00	0.02	1.69	0.00	1.02	21.02	0.00	1.04	22.71
6	2.65	0.00	0.02	0.00	372.17	3.51	2.65	372.17	3.53
7	24.84	0.00	0.00	2501.18	8.65	0.36	2526.02	8.65	0.36
8	0.00	0.00	0.00	1539.66	0.00	0.01	1539.66	0.00	0.01
9	0.00	154.00	0.00	0.00	4637.00	0.00	0.00	4791.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	28.59	154.02	7.00	4304.01	5060.17	117.95	4332.60	5214.19	124.95

## c) Diversions by Type - All facilities

Water- Use Categ.	LAKE SUPERIOR		LAKE MICHIGAN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.10	0.00	0.10
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.10	0.00	0.10

Level of Accuracy of Withdrawal Data: 4% Measured 96% Calculated or Estimated  
 Level of Aggregation of Withdrawal Data Source: 4% Site-specific 96% Aggregated

## a) Withdrawals, Diversions and Consumptive Use - All Facilities

UNITS: Mgal(US)/e  
YEAR OF DATA: 1988

Water- Use Categ.	MICHIGAN*			MINNESOTA			ONTARIO			WISCONSIN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	0.00	0.00	0.00	36.87	0.00	7.74	12.31	0.00	1.85	6.25	0.00	0.93	55.43	0.00	10.52
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	10.02	0.00	0.80	1.19	0.00	0.18	0.14	0.00	0.02	11.35	0.00	1.00
4	0.00	0.00	0.00	0.13	0.00	0.11	0.05	0.00	0.05	0.00	0.00	0.18	0.00	0.00	0.16
5	0.00	0.00	0.00	0.92	0.00	0.21	0.32	0.00	0.26	1.71	0.00	1.36	2.95	0.00	1.83
6	0.00	0.00	0.00	108.48	0.00	28.60	174.51	0.00	5.79	2.67	0.00	0.26	285.66	0.00	35.65
7	260.77	0.00	3.39	81.65	0.00	1.64	264.23	0.00	2.69	24.84	0.00	0.24	631.49	0.00	7.96
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	115754.00	0.00	0.00	28687.03	-3679.40	0.00	154.00	0.00	0.00	144595.03	-3679.40	0.00
10	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
Total	260.77	0.00	3.39	115992.20*	0.00	39.10	29139.64	-3679.40	11.83	189.61	0.00	2.81	145582.22	-3679.40	57.13

## b) Withdrawals by Source - All Facilities

Water- Use Categ.	MICHIGAN*			MINNESOTA			ONTARIO			WISCONSIN			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	0.00	0.00	0.00	26.96	4.98	5.03	11.04	1.27	0.00	1.10	0.00	5.15	39.10	6.15	10.18
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	8.17	1.80	0.05	0.00	0.00	1.19	0.00	0.00	0.14	8.17	1.80	1.38
4	0.00	0.00	0.00	0.00	0.08	0.05	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.11	0.08
5	0.00	0.00	0.00	0.65	0.04	0.23	0.00	0.00	0.32	0.00	0.02	1.69	0.65	0.06	2.24
6	0.00	0.00	0.00	0.05	108.35	0.08	162.12	10.28	2.11	2.65	0.00	0.02	164.82	118.63	2.21
7	260.77	0.00	0.00	0.77	80.87	0.01	264.17	0.00	0.05	24.84	0.00	0.00	550.55	80.87	0.06
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	115754.00	0.00	0.00	28687.03	0.00	0.00	154.00	0.00	0.00	144595.03	0.00
10	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Total	260.77	0.00	0.00	36.60	115950.02	5.58	437.34	28698.60	3.70	28.59	154.02	7.00	763.30	144802.64	16.28

## c) Diversions by Type - All Facilities

Water- Use Categ.	MICHIGAN*		MINNESOTA		ONTARIO		WISCONSIN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	-3679.40	0.00	0.00	0.00	-3679.40
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	-3679.40	0.00	0.00	0.00	-3679.40

\* The State of Michigan was unable to report by subbasin for most categories of use.

## a) Withdrawals, Diversions and Consumptive Use - Principal Facilities

UNITS: Mgal(US)/d

YEAR OF DATA: 1988

Water- Use Categ.	MICHIGAN*			MINNESOTA			ONTARIO			WISCONSIN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	0.00	0.00	0.00	35.48	0.00	7.66	12.26	0.00	1.85	1.35	0.00	0.19	50.09	0.00	9.70
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	9.92	0.00	0.79	0.00	0.00	0.00	0.00	0.00	0.00	9.92	0.00	0.79
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00
6	0.00	0.00	0.00	108.35	0.00	28.59	174.38	0.00	6.76	0.00	0.00	0.00	282.73	0.00	35.35
7	0.00	0.00	0.00	81.64	0.00	1.64	264.17	0.00	2.64	24.84	0.00	0.24	370.65	0.00	4.52
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	115754.00	0.00	0.00	28687.03	-3679.40	0.00	154.00	0.00	0.00	144595.03	-3679.40	0.00
10	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
Total	0.00	0.00	0.00	115991.17	0.00	38.68	29137.84	-3579.40	11.25	180.19	0.00	0.43	145309.20	-3679.40	50.36

## b) Withdrawals by Source - Principal Facilities

Water- Use Categ.	MICHIGAN*			MINNESOTA			ONTARIO			WISCONSIN			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	0.00	0.00	0.00	26.92	4.88	4.68	11.04	1.22	0.00	1.10	0.00	0.25	39.06	6.10	4.93
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	8.17	1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.17	1.75	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00
6	0.00	0.00	0.00	0.00	108.35	0.00	162.10	10.25	2.03	0.00	0.00	0.00	162.10	118.60	2.03
7	0.00	0.00	0.00	0.77	80.87	0.00	264.17	0.00	0.00	24.84	0.00	0.00	289.78	80.87	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	115754.00	0.00	0.00	28687.03	0.00	0.00	154.00	0.00	0.00	144595.03	0.00
10	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Total	0.00	0.00	0.00	36.51	115949.85	4.81	437.31	28698.50	2.03	25.94	154.00	0.25	499.76	144802.35	7.09

## c) Diversions by Type - Principal Facilities

Water- Use Categ.	MICHIGAN*		MINNESOTA		ONTARIO		WISCONSIN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	-3679.40	0.00	0.00	0.00	-3679.40
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	-3679.40	0.00	0.00	0.00	-3679.40

\* The State of Michigan was unable to report by subbasin for most categories of use.



a) Withdrawals, Diversions and Consumptive Use - All Facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water-Use Categ.	ILLINOIS			INDIANA			MICHIGAN*			WISCONSIN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	1199.30	1199.30	0.00	155.36	0.00	23.31	0.00	0.00	0.00	368.25	0.10	55.22	1722.91	1199.40	78.53
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	23.54	5.84	0.00	40.21	0.00	6.03	0.00	0.00	0.00	19.50	0.00	2.92	83.25	5.84	8.95
4	0.00	0.00	0.00	27.75	0.00	24.97	0.00	0.00	0.00	9.80	0.00	6.85	37.55	0.00	31.82
5	0.00	0.00	0.00	6.73	0.00	5.38	0.00	0.00	0.00	22.04	0.00	17.62	28.77	0.00	23.00
6	10.52	9.52	2.00	1855.89	0.00	111.36	0.00	0.00	0.00	375.68	0.00	37.56	2242.19	8.62	150.92
7	624.38	0.00	0.00	1183.56	0.00	23.67	1091.72	0.00	14.20	2510.19	0.00	25.09	5409.85	0.00	62.96
8	2139.73	0.00	0.00	0.00	0.00	0.00	2161.29	0.00	28.10	1539.67	0.00	15.39	5840.69	0.00	43.49
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4637.00	0.00	0.00	4637.00	0.00	0.00
10	363.59	363.59	0.00	0.23	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	363.82	363.59	0.22
Total	4361.16	1577.35	2.00	3269.73	0.00	194.94	3253.01	0.00	42.30	9482.13	0.10	160.65	20366.03	1577.45	399.89

b) Withdrawals by Source - All Facilities

Water-Use Categ.	ILLINOIS			INDIANA			MICHIGAN*			WISCONSIN			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	1199.29	0.00	0.01	96.72	0.00	58.64	0.00	0.00	0.00	263.17	40.98	64.10	1559.18	40.98	122.75
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	23.40	0.04	0.10	0.00	20.42	19.79	0.00	0.00	0.00	0.00	0.00	19.50	23.40	20.46	39.39
4	0.00	0.00	0.00	0.00	9.10	18.65	0.00	0.00	0.00	0.00	0.35	9.45	0.00	9.45	28.10
5	0.00	0.00	0.00	0.00	1.14	5.59	0.00	0.00	0.00	0.00	1.02	21.02	0.00	2.16	26.61
6	10.62	0.00	0.00	1824.35	10.77	20.77	0.00	0.00	0.00	0.00	372.17	3.51	1834.97	382.94	24.28
7	624.38	0.00	0.00	1183.56	0.00	0.00	965.00	124.44	2.28	2501.18	8.65	0.36	5274.12	133.09	2.64
8	2139.73	0.00	0.00	0.00	0.00	0.00	2161.29	0.00	0.00	1539.66	0.00	0.01	5840.68	0.00	0.01
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4637.00	0.00	0.00	4637.00	0.00
10	363.59	0.00	0.00	0.00	0.11	0.12	0.00	0.00	0.00	0.00	0.00	0.00	363.59	0.11	0.12
Total	4361.01	0.04	0.11	3104.63	41.54	123.56	3126.29	124.44	2.28	4304.01	5060.17	117.95	14895.94	5226.19	243.90

c) Diversions by Type - All Facilities

Water-Use Categ.	ILLINOIS		INDIANA		MICHIGAN*		WISCONSIN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	1199.30	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1199.40
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	5.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.84
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	8.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.62
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	363.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	363.59
Total	0.00	1577.35	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1577.45

\* The State of Michigan was unable to report by subbasin for most categories of use.

## a) Withdrawals, Diversions and Consumptive Use - Principal Facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	ILLINOIS			INDIANA			MICHIGAN*			WISCONSIN			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	1199.30	1199.30	0.00	154.81	0.00	23.22	0.00	0.00	0.00	360.47	0.10	54.05	1714.58	1199.40	77.27
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	23.36	5.79	0.00	23.18	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	46.54	5.79	3.48
4	0.00	0.00	0.00	27.37	0.00	24.63	0.00	0.00	0.00	4.67	0.00	3.26	32.04	0.00	27.89
5	0.00	0.00	0.00	2.74	0.00	2.19	0.00	0.00	0.00	0.00	0.00	0.00	2.74	0.00	2.19
6	10.62	8.62	2.00	1855.26	0.00	111.32	0.00	0.00	0.00	318.79	0.00	31.87	2184.67	8.62	145.19
7	624.38	0.00	0.00	1183.56	0.00	23.67	0.00	0.00	0.00	2509.83	0.00	25.09	4317.77	0.00	48.76
8	2139.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1539.66	0.00	15.39	3679.39	0.00	15.39
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4637.00	0.00	0.00	4637.00	0.00	0.00
10	363.59	363.59	0.00	0.14	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	363.73	363.59	0.13
Total	4360.98	1577.30	2.00	3247.06	0.00	188.64	0.00	0.00	0.00	9370.42	0.10	129.66	16978.46	1577.40	320.30

## b) Withdrawals by Source - Principal Facilities

Water- Use Categ.	ILLINOIS			INDIANA			MICHIGAN*			WISCONSIN			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	1199.29	0.00	0.01	96.72	0.00	58.09	0.00	0.00	0.00	263.17	40.98	56.32	1559.18	40.98	114.42
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	23.36	0.00	0.00	0.00	20.41	2.77	0.00	0.00	0.00	0.00	0.00	0.00	23.36	20.41	2.77
4	0.00	0.00	0.00	0.00	8.92	18.45	0.00	0.00	0.00	0.00	0.00	4.67	0.00	8.92	23.12
5	0.00	0.00	0.00	0.00	1.14	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	1.60
6	10.62	0.00	0.00	1824.34	10.75	20.17	0.00	0.00	0.00	0.00	316.94	1.85	1834.95	327.69	22.02
7	624.38	0.00	0.00	1183.56	0.00	0.00	0.00	0.00	0.00	2501.18	8.65	0.00	4309.12	8.65	0.00
8	2139.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1539.66	0.00	0.00	3679.39	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4637.00	0.00	0.00	4637.00	0.00
10	363.59	0.00	0.00	0.00	0.10	0.04	0.00	0.00	0.00	0.00	0.00	0.00	363.59	0.10	0.04
Total	4360.97	0.00	0.01	3104.62	41.32	101.12	0.00	0.00	0.00	4304.01	5003.57	62.84	11769.60	5044.89	163.97

## c) Diversions by Type - Principal Facilities

Water- Use Categ.	ILLINOIS		INDIANA		MICHIGAN*		WISCONSIN		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	1199.30	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1199.40
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	5.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	8.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.62
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	363.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	363.59
Total	0.00	1577.30	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1577.40

\* The State of Michigan was unable to report by subbasin for most categories of use.

## a) Withdrawals, Diversions and Consumptive Use - All Facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water- Use Categ.	MICHIGAN*			ONTARIO			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	0.00	0.00	0.00	131.80	37.99	19.79	131.80	37.99	19.79
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	19.58	0.00	2.93	19.58	0.00	2.93
4	0.00	0.00	0.00	6.79	0.00	5.31	6.79	0.00	5.31
5	0.00	0.00	0.00	16.72	0.00	13.37	16.72	0.00	13.37
6	0.00	0.00	0.00	768.64	0.00	16.99	768.64	0.00	16.99
7	652.47	0.00	8.48	236.96	0.00	1.19	889.43	0.00	9.67
8	0.00	0.00	0.00	7128.96	0.00	64.19	7128.96	0.00	64.19
9	0.00	0.00	0.00	41563.86	0.00	0.00	41563.86	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	652.47	0.00	8.48	49873.30	37.99	123.76	50525.77	37.99	132.24

## b) Withdrawals by Source - All Facilities

Water- Use Categ.	MICHIGAN*			ONTARIO			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	0.00	0.00	0.00	64.46	34.66	32.68	64.46	34.66	32.68
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	19.58	0.00	0.00	19.58
4	0.00	0.00	0.00	0.00	5.71	1.08	0.00	5.71	1.08
5	0.00	0.00	0.00	0.00	0.00	16.72	0.00	0.00	16.72
6	0.00	0.00	0.00	681.22	75.03	12.39	681.22	75.03	12.39
7	652.44	0.03	0.00	236.96	0.00	0.00	889.40	0.03	0.00
8	0.00	0.00	0.00	7128.96	0.00	0.00	7128.96	0.00	0.00
9	0.00	0.00	0.00	19570.43	21993.43	0.00	19570.43	21993.43	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	652.44	0.03	0.00	27682.04	22108.82	82.45	28334.48	22108.85	82.45

## c) Diversions by Type - All Facilities

Water- Use Categ.	MICHIGAN*		ONTARIO		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	37.99	0.00	37.99	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	37.99	0.00	37.99	0.00

\* The State of Michigan was unable to report by subbasin for most categories of use.

## a) Withdrawals, Diversions and Consumptive Use - Principal Facilities

UNITS: Mgal(US)/d

YEAR OF DATA: 1988

Water- Use Categ.	MICHIGAN*			ONTARIO			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	0.00	0.00	0.00	130.98	37.99	19.65	130.98	37.99	19.65
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	767.21	0.00	16.80	767.21	0.00	16.80
7	0.00	0.00	0.00	236.96	0.00	1.19	236.96	0.00	1.19
8	0.00	0.00	0.00	7128.96	0.00	64.19	7128.96	0.00	64.19
9	0.00	0.00	0.00	41563.86	0.00	0.00	41563.86	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	49827.97	37.99	101.84	49827.97	37.99	101.84

## b) Withdrawals by Source - Principal Facilities

Water- Use Categ.	MICHIGAN*			ONTARIO			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	0.00	0.00	0.00	64.41	34.47	32.10	64.41	34.47	32.10
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	681.20	74.25	11.76	681.20	74.25	11.76
7	0.00	0.00	0.00	236.96	0.00	0.00	236.96	0.00	0.00
8	0.00	0.00	0.00	7128.96	0.00	0.00	7128.96	0.00	0.00
9	0.00	0.00	0.00	19570.43	21993.43	0.00	19570.43	21993.43	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	27681.96	22102.16	43.85	27681.96	22102.16	43.85

## c) Diversions by Type - Principal Facilities

Water- Use Categ.	MICHIGAN*		ONTARIO		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	37.99	0.00	37.99	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	37.99	0.00	37.99	0.00

\* The State of Michigan was unable to report by subbasin for most categories of use.

BASIN REPORT - Lake Erie

DATE: 02/05/90

a) Withdrawals, Diversions and Consumptive Use - All Facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water-Use Categ.	INDIANA			MICHIGAN			NEW YORK			OHIO			ONTARIO			PENNSYLVANIA			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	42.64	0.00	6.39	0.00	0.00	0.00	206.00	0.00	0.00	658.90	0.17	98.84	170.29	-37.99	25.55	48.91	0.00	4.87	1126.74	-37.82	135.65
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.72	0.00	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.20	0.00	10.08	17.25	0.00	2.59	1.90	0.00	0.20	173.07
4	1.13	0.00	1.02	0.00	0.00	0.00	1.60	0.00	1.24	11.30	0.00	10.17	32.63	0.00	25.47	2.96	0.00	2.76	49.62	0.00	40.66
5	1.81	0.00	1.45	0.00	0.00	0.00	1.40	0.00	0.00	10.80	0.00	8.64	17.36	0.00	13.90	0.75	0.00	0.10	32.12	0.00	24.09
6	6.53	0.00	0.39	0.00	0.00	0.00	58.40	0.00	0.00	132.54	0.00	13.26	494.43	0.00	23.99	44.43	0.00	5.09	736.33	0.00	42.73
7	0.11	0.00	0.00	4221.04	0.00	54.87	458.00	0.00	0.00	2615.10	0.00	0.20	2759.55	0.00	25.04	300.00	0.00	0.00	10353.80	0.00	80.11
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	7.10	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	7.10
9	0.00	0.00	0.00	0.00	0.00	0.00	48390.00	0.00	0.00	0.00	0.00	0.00	4316.58	4316.58	0.00	0.00	0.00	0.00	52706.58	4316.58	0.00
10	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	652.51	0.00	0.00	0.00	0.00	652.53	652.51	0.02
Total	60.96	0.00	10.58	4221.04	0.00	54.87	49193.40	0.00	1.24	3545.94	0.17	148.29	8460.58	4931.10	116.53	398.95	0.00	13.02	65880.87	4931.27	344.53

b) Withdrawals by Source - All Facilities

Water-Use Categ.	INDIANA			MICHIGAN			NEW YORK			OHIO			ONTARIO			PENNSYLVANIA			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	0.00	34.95	7.69	0.00	0.00	0.00	180.00	46.00	0.00	501.10	125.00	32.80	71.49	41.71	57.09	45.30	1.41	2.20	777.89	249.07	99.78
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.05	8.67	0.00	0.00	0.00	10.00	10.00	58.00	0.00	0.00	67.20	0.00	0.00	17.25	0.00	0.00	1.90	10.00	10.05	153.02
4	0.00	0.31	0.82	0.00	0.00	0.00	1.20	0.00	0.40	0.00	7.10	4.20	0.00	22.03	10.59	0.00	2.16	0.80	1.20	31.60	16.81
5	0.00	0.00	1.81	0.00	0.00	0.00	0.50	0.00	0.90	0.00	1.60	9.20	0.00	0.00	17.36	0.00	0.07	0.50	1.67	29.95	15.98
6	0.00	3.33	3.20	0.00	0.00	0.00	55.00	0.00	3.40	24.11	108.26	0.17	459.69	25.73	9.01	39.10	5.13	0.20	577.90	142.45	15.98
7	0.00	0.00	0.11	4220.95	0.09	0.00	458.00	0.00	0.00	2454.50	160.60	0.00	2759.55	0.00	0.00	300.00	0.00	0.00	10193.00	160.69	0.11
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	48390.00	0.00	0.00	0.00	0.00	0.00	4316.58	4316.58	0.00	0.00	0.00	0.00	52706.58	4316.58	0.00
10	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	652.51	0.00	0.00	0.00	0.00	652.51	652.51	0.02
Total	0.00	38.66	22.30	4220.95	0.09	0.00	49074.70	56.00	62.70	3029.81	402.56	113.57	8259.81	89.48	111.30	384.40	8.77	5.78	64969.67	595.56	315.65

c) Diversions by Type - All Facilities

Water-Use Categ.	INDIANA		MICHIGAN		NEW YORK		OHIO		ONTARIO		PENNSYLVANIA		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	-37.99	0.00	0.00	0.00	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4316.58	4316.58	0.00	0.00	4316.58	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	652.51	0.00	0.00	652.51	
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	4931.10	0.00	0.00	0.00	4931.10	

a) Withdrawals, Diversions and Consumptive Use - Principal Facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water-Use Categ.	INDIANA			MICHIGAN			NEW YORK			OHIO			ONTARIO			PENNSYLVANIA			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	42.59	0.00	6.39	0.00	0.00	0.00	0.00	0.00	0.00	652.90	0.17	97.94	169.86	-37.99	25.49	48.91	0.00	4.87	914.26	-37.82	134.69
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.31	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.05
4	0.99	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	0.00	2.56	3.55	0.00	3.45
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	6.31	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	125.11	0.00	12.51	492.73	0.00	23.70	44.33	0.00	4.84	668.48	0.00	41.43
7	0.11	0.00	0.00	0.00	0.00	0.00	458.00	0.00	0.00	2615.10	0.00	0.20	2759.55	0.00	25.04	300.00	0.00	0.00	6132.76	0.00	25.24
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	7.10	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	7.10
9	0.00	0.00	0.00	0.00	0.00	0.00	48390.00	0.00	0.00	0.00	0.00	0.00	4316.58	4316.58	0.00	0.00	0.00	0.00	52706.58	4316.58	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	652.51	0.00	0.00	0.00	0.00	652.51	652.51	0.00
Total	58.31	0.00	7.71	0.00	0.00	0.00	48848.00	0.00	0.00	3443.21	0.17	117.75	8391.23	4931.10	74.23	395.80	0.00	12.27	61128.55	4931.27	211.96

b) Withdrawals by Source - Principal Facilities

Water-Use Categ.	INDIANA			MICHIGAN			NEW YORK			OHIO			ONTARIO			PENNSYLVANIA			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	0.00	34.95	7.64	0.00	0.00	0.00	0.00	0.00	0.00	500.90	124.30	27.70	71.41	41.71	56.74	45.30	1.41	2.20	617.61	202.37	94.28
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.05	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.26
4	0.00	0.23	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	0.40	0.00	2.39	1.16
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	3.32	2.99	0.00	0.00	0.00	0.00	0.00	0.00	24.11	101.00	0.00	459.61	24.89	8.24	39.10	5.13	0.10	522.82	134.34	11.33
7	0.00	0.00	0.11	0.00	0.00	0.00	458.00	0.00	0.00	2454.50	160.60	0.00	2759.55	0.00	0.00	300.00	0.00	0.00	5972.05	160.60	0.11
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	48390.00	0.00	0.00	0.00	0.00	0.00	4316.58	4316.58	0.00	0.00	0.00	0.00	52706.58	4316.58	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	652.51	0.00	0.00	0.00	0.00	652.51	652.51	0.00
Total	0.00	38.55	11.76	0.00	0.00	0.00	48848.00	0.00	0.00	3029.61	385.90	27.70	8259.65	66.60	64.99	384.40	8.70	2.70	60521.66	499.75	107.15

c) Diversions by Type - Principal Facilities

Water-Use Categ.	INDIANA		MICHIGAN		NEW YORK		OHIO		ONTARIO		PENNSYLVANIA		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	-37.99	0.00	0.00	0.00	-37.99	0.17
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4316.58	0.00	0.00	0.00	4316.58	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652.51	0.00	0.00	0.00	652.51	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	4931.10	0.00	0.00	0.00	4931.10	0.17

BASIN REPORT - Lake Ontario

DATE: 02/05/90

a) Withdrawals, Diversions and Consumptive Use - All Facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water-Use Categ.	NEW YORK			ONTARIO			PENNSYLVANIA			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	266.00	0.00	0.00	674.51	0.00	101.18	0.07	0.00	0.01	940.58	0.00	101.19
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	290.00	0.00	0.00	22.01	0.00	3.30	0.07	0.00	0.01	312.08	0.00	3.31
4	8.00	0.00	0.08	7.42	0.00	5.79	0.00	0.00	0.00	15.42	0.00	5.87
5	6.40	0.00	0.00	9.27	0.00	7.42	0.04	0.00	0.03	15.71	0.00	7.45
6	220.00	0.00	0.00	864.40	0.00	15.22	0.00	0.00	0.00	1084.40	0.00	15.22
7	2053.00	0.00	8.00	776.93	0.00	7.03	0.00	0.00	0.00	2829.93	0.00	15.03
8	1007.00	0.00	3.00	4456.06	0.00	40.15	0.00	0.00	0.00	5463.06	0.00	43.15
9	93800.00	0.00	0.00	53639.19	-4316.58	0.00	0.00	0.00	0.00	147439.19	-4316.58	0.00
10	0.00	0.00	0.00	0.00	-652.51	0.00	0.00	0.00	0.00	0.00	-652.51	0.00
Total	97650.40	0.00	11.08	60449.80	-4969.09	180.09	0.18	0.00	0.05	158100.38	-4969.09	191.22

b) Withdrawals by Source - All Facilities

Water-Use Categ.	NEW YORK			ONTARIO			PENNSYLVANIA			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	96.00	139.00	31.00	572.25	89.95	12.31	0.00	0.00	0.07	668.25	228.95	43.38
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	101.00	96.00	93.00	0.00	0.00	22.01	0.00	0.00	0.07	101.00	96.00	115.08
4	7.00	0.00	1.00	0.00	5.23	2.19	0.00	0.00	0.00	7.00	5.23	3.19
5	2.50	0.00	3.90	0.00	0.00	9.27	0.00	0.03	0.01	2.50	0.03	13.18
6	180.00	0.00	40.00	755.01	106.30	3.09	0.00	0.00	0.00	935.01	106.30	43.09
7	2053.00	0.00	0.00	776.93	0.00	0.00	0.00	0.00	0.00	2829.93	0.00	0.00
8	1007.00	0.00	0.00	4456.06	0.00	0.00	0.00	0.00	0.00	5463.06	0.00	0.00
9	93800.00	0.00	0.00	42280.82	11358.37	0.00	0.00	0.00	0.00	136080.82	11358.37	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97246.50	235.00	168.90	48841.08	11559.85	48.87	0.00	0.03	0.15	146087.58	11794.88	217.92

c) Diversions by Type - All Facilities

Water-Use Categ.	NEW YORK		ONTARIO		PENNSYLVANIA		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	-4316.58	0.00	0.00	0.00	-4316.58	0.00
10	0.00	0.00	-652.51	0.00	0.00	0.00	-652.51	0.00
Total	0.00	0.00	-4969.09	0.00	0.00	0.00	-4969.09	0.00

BASIN REPORT - Lake Ontario

DATE: 02/05/90

a) Withdrawals, Diversions and Consumptive Use - Principal Facilities

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Water-Use Categ.	NEW YORK			ONTARIO			PENNSYLVANIA			TOTAL		
	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.	Withdr.	Diver.	Consum.
1	0.00	0.00	0.00	674.04	0.00	101.13	0.00	0.00	0.00	674.04	0.00	101.13
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	859.30	0.00	14.40	0.00	0.00	0.00	859.30	0.00	14.40
7	2053.00	0.00	8.00	776.93	0.00	7.00	0.00	0.00	0.00	2829.93	0.00	15.00
8	1007.00	0.00	3.00	4456.06	0.00	40.15	0.00	0.00	0.00	5463.06	0.00	43.15
9	93800.00	0.00	0.00	53639.19	-4316.58	0.00	0.00	0.00	0.00	147439.19	-4316.58	0.00
10	0.00	0.00	0.00	0.00	-652.51	0.00	0.00	0.00	0.00	0.00	-652.51	0.00
Total	96860.00	0.00	11.00	60405.52	-4969.09	162.68	0.00	0.00	0.00	157265.52	-4969.09	173.68

b) Withdrawals by Source - Principal Facilities

Water-Use Categ.	NEW YORK			ONTARIO			PENNSYLVANIA			TOTAL		
	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW	GLSW	OSW	GW
1	0.00	0.00	0.00	572.17	89.79	12.07	0.00	0.00	0.00	572.17	89.79	12.07
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	754.74	103.05	1.51	0.00	0.00	0.00	754.74	103.05	1.51
7	2053.00	0.00	0.00	776.93	0.00	0.00	0.00	0.00	0.00	2829.93	0.00	0.00
8	1007.00	0.00	0.00	4456.06	0.00	0.00	0.00	0.00	0.00	5463.06	0.00	0.00
9	93800.00	0.00	0.00	42280.82	11358.37	0.00	0.00	0.00	0.00	136080.82	11358.37	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	96860.00	0.00	0.00	48840.73	11551.21	13.58	0.00	0.00	0.00	145700.73	11551.21	13.58

c) Diversions by Type - Principal Facilities

Water-Use Categ.	NEW YORK		ONTARIO		PENNSYLVANIA		TOTAL	
	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin	Intrabasin	Interbasin
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	-4316.58	0.00	0.00	0.00	-4316.58	0.00
10	0.00	0.00	-652.51	0.00	0.00	0.00	-652.51	0.00
Total	0.00	0.00	-4969.09	0.00	0.00	0.00	-4969.09	0.00

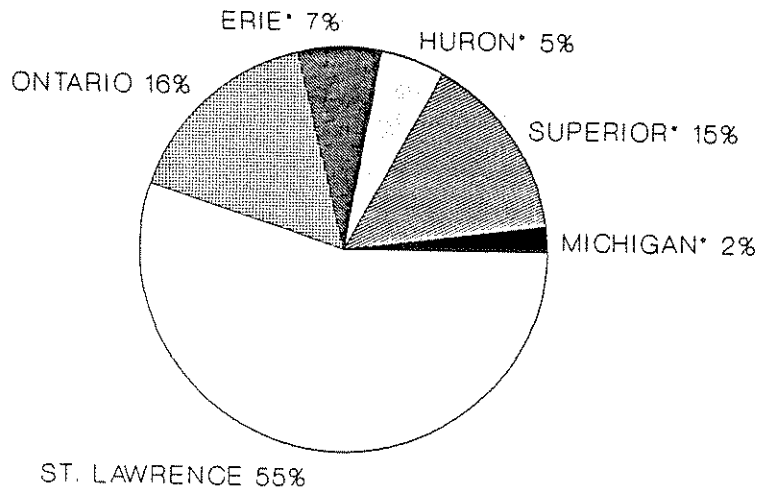






FIGURE 16

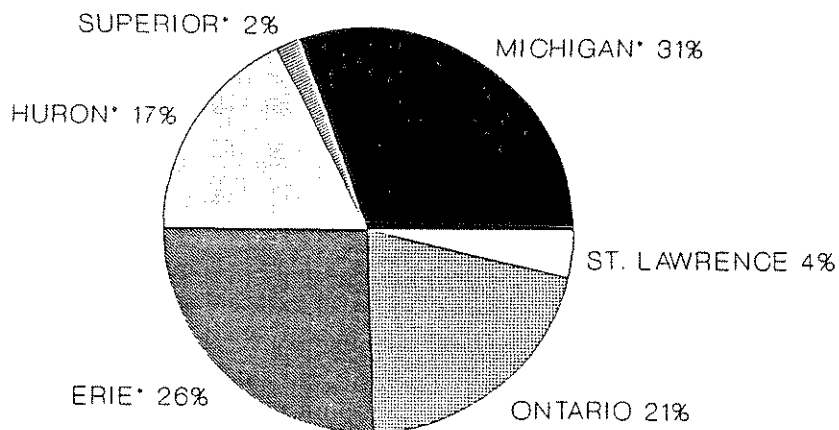
# 1988 GREAT LAKES WATER WITHDRAWALS BY BASIN



\*State of Michigan data incomplete.

GREAT LAKES COMMISSION  
The Argus II Building  
400 S. Fourth Street  
Ann Arbor, Michigan 48103-4816

# 1988 GREAT LAKES WATER WITHDRAWALS BY BASIN (EXCLUDING HYDROELECTRIC USES)



\*State of Michigan data incomplete.

GREAT LAKES COMMISSION  
The Argus II Building  
400 S. Fourth Street  
Ann Arbor, Michigan 48103-4816

APPENDIX A-2  
1988 WATER USE CATEGORY REPORTS

SECTION A-2.1 (Million Gallons (U.S.) Per Day)

1. Public Supply - Domestic & Industrial
3. Self Supply - Domestic (Residential, Commercial, Institutional)
4. Self Supply - Irrigation
5. Self Supply - Livestock
6. Self Supply - Industrial (Manufacturing & Mining)
7. Self Supply - Thermoelectric Power - Fossil Fuel Plants
8. Self Supply - Thermoelectric Power - Nuclear Plants
9. Self Supply - Thermoelectric Power - Hydroelectric Plants
10. Other (Navigation, Water Quality, Environmental, etc.)

a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 1988

Basin	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Lake Superior	39.10	6.15	10.18	55.43	0.00	0.00	0.00	10.52	39.06	6.10	4.93	50.09	0.00	0.00	0.00	9.70		
Lake Michigan	1559.18	40.98	122.75	1722.91	0.00	1199.40	1199.40	78.53	1559.18	40.98	114.42	1714.58	0.00	1199.40	1199.40	77.27		
Lake Huron	64.46	34.66	32.68	131.80	37.99	0.00	37.99	19.79	64.41	34.47	32.10	130.98	37.99	0.00	37.99	19.65		
Lake Erie	777.89	249.07	99.78	1126.74	-37.99	0.17	-37.82	135.65	617.61	202.37	94.28	914.26	-37.99	0.17	-37.82	134.69		
Lake Ontario	668.25	228.95	43.38	940.58	0.00	0.00	0.00	101.19	572.17	89.79	12.07	674.04	0.00	0.00	0.00	101.13		
St. Lawrence River	735.12	522.85	28.78	1286.75	0.00	0.00	0.00	122.97	633.86	516.54	3.38	1153.77	0.00	0.00	0.00	122.31		
<b>Total</b>	<b>3844.00</b>	<b>1082.66</b>	<b>337.54</b>	<b>5264.20</b>	<b>0.00</b>	<b>1199.57</b>	<b>1199.57</b>	<b>468.64</b>	<b>3486.28</b>	<b>890.25</b>	<b>261.19</b>	<b>4637.72</b>	<b>0.00</b>	<b>1199.57</b>	<b>1199.57</b>	<b>464.75</b>		

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Illinois	1199.29	0.00	0.01	1199.30	0.00	1199.30	1199.30	0.00	1199.29	0.00	0.01	1199.30	0.00	1199.30	1199.30	0.00		
Indiana	96.72	34.95	66.33	198.00	0.00	0.00	0.00	29.70	96.72	34.95	65.73	197.40	0.00	0.00	0.00	29.61		
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Minnesota	26.96	4.88	5.03	36.87	0.00	0.00	0.00	7.74	26.92	4.88	4.68	36.48	0.00	0.00	0.00	7.66		
New York	357.00	185.00	56.00	598.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Ohio	501.10	125.00	32.80	658.90	0.00	0.17	0.17	98.84	500.90	124.30	27.70	652.90	0.00	0.17	0.17	97.94		
Ontario	747.61	277.28	105.85	1130.74	0.00	0.00	0.00	169.63	747.40	276.38	104.30	1128.07	0.00	0.00	0.00	169.26		
Pennsylvania	45.30	1.41	2.27	48.98	0.00	0.00	0.00	4.88	45.30	1.41	2.20	48.91	0.00	0.00	0.00	4.87		
Quebec	605.75	413.17	0.00	1018.91	0.00	0.00	0.00	101.71	605.48	407.35	0.00	1012.84	0.00	0.00	0.00	101.18		
Wisconsin	264.27	40.98	69.25	374.50	0.00	0.10	0.10	56.15	264.27	40.98	56.57	361.82	0.00	0.10	0.10	54.24		
<b>Total</b>	<b>3844.00</b>	<b>1082.66</b>	<b>337.54</b>	<b>5264.20</b>	<b>0.00</b>	<b>1199.57</b>	<b>1199.57</b>	<b>468.64</b>	<b>3486.28</b>	<b>890.25</b>	<b>261.19</b>	<b>4637.72</b>	<b>0.00</b>	<b>1199.57</b>	<b>1199.57</b>	<b>464.75</b>		

a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 0

Basin	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Lake Superior	8.17	1.80	1.38	11.35	0.00	0.00	0.00	1.00	8.17	1.75	0.00	9.92	0.00	0.00	0.00	0.79		
Lake Michigan	23.40	20.46	39.39	83.25	0.00	5.84	5.84	8.95	23.36	20.41	2.77	46.54	0.00	5.79	5.79	3.48		
Lake Huron	0.00	0.00	19.58	19.58	0.00	0.00	0.00	2.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Lake Erie	10.00	10.05	153.02	173.07	0.00	0.00	0.00	14.18	0.00	0.05	0.26	0.31	0.00	0.00	0.00	0.05		
Lake Ontario	101.00	96.00	115.08	312.08	0.00	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
St. Lawrence River	51.00	20.00	103.93	174.93	0.00	0.00	0.00	9.35	0.00	0.00	47.55	47.55	0.00	0.00	0.00	4.76		
<b>Total</b>	<b>193.57</b>	<b>148.31</b>	<b>432.37</b>	<b>774.25</b>	<b>0.00</b>	<b>5.84</b>	<b>5.84</b>	<b>39.73</b>	<b>31.53</b>	<b>22.21</b>	<b>50.58</b>	<b>104.32</b>	<b>0.00</b>	<b>5.79</b>	<b>5.79</b>	<b>9.08</b>		

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Illinois	23.40	0.04	0.10	23.54	0.00	5.84	5.84	0.00	23.36	0.00	0.00	23.36	0.00	5.79	5.79	0.00		
Indiana	0.00	20.47	28.46	48.93	0.00	0.00	0.00	7.34	0.00	20.46	3.03	23.49	0.00	0.00	0.00	3.53		
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Minnesota	8.17	1.80	0.05	10.02	0.00	0.00	0.00	0.80	8.17	1.75	0.00	9.92	0.00	0.00	0.00	0.79		
New York	162.00	126.00	170.00	458.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Ohio	0.00	0.00	67.20	67.20	0.00	0.00	0.00	10.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Ontario	0.00	0.00	77.32	77.32	0.00	0.00	0.00	11.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Pennsylvania	0.00	0.00	1.97	1.97	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Quebec	0.00	0.00	67.63	67.63	0.00	0.00	0.00	6.76	0.00	0.00	47.55	47.55	0.00	0.00	0.00	4.76		
Wisconsin	0.00	0.00	19.64	19.64	0.00	0.00	0.00	2.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Total</b>	<b>193.57</b>	<b>148.31</b>	<b>432.37</b>	<b>774.25</b>	<b>0.00</b>	<b>5.84</b>	<b>5.84</b>	<b>39.73</b>	<b>31.53</b>	<b>22.21</b>	<b>50.58</b>	<b>104.32</b>	<b>0.00</b>	<b>5.79</b>	<b>5.79</b>	<b>9.08</b>		

a) Water-Use by Basin - All Jurisdictions

Basin	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Lake Superior	0.00	0.11	0.08	0.18	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Lake Michigan	0.00	9.45	28.10	37.55	0.00	0.00	0.00	31.82	0.00	8.92	23.12	32.04	0.00	0.00	0.00	0.00	27.89	
Lake Huron	0.00	5.71	1.08	6.79	0.00	0.00	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Lake Erie	1.20	31.60	16.81	49.62	0.00	0.00	0.00	48.56	0.00	2.39	1.16	3.55	0.00	0.00	0.00	0.00	3.45	
Lake Ontario	7.00	5.23	3.19	15.42	0.00	0.00	0.00	5.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
St. Lawrence River	1.00	0.98	4.17	6.15	0.00	0.00	0.00	4.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	9.20	53.07	53.43	115.71	0.00	0.00	0.00	88.22	0.00	11.31	24.28	35.59	0.00	0.00	0.00	0.00	31.34	

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Illinois	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Indiana	0.00	9.41	19.47	28.88	0.00	0.00	0.00	25.99	0.00	9.15	19.21	28.36	0.00	0.00	0.00	0.00	25.52	
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Minnesota	0.00	0.08	0.05	0.13	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
New York	9.20	0.00	1.50	10.70	0.00	0.00	0.00	1.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Ohio	0.00	7.10	4.20	11.30	0.00	0.00	0.00	10.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Ontario	0.00	33.97	14.27	48.24	0.00	0.00	0.00	37.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pennsylvania	0.00	2.16	0.80	2.96	0.00	0.00	0.00	2.76	0.00	2.16	0.40	2.56	0.00	0.00	0.00	0.00	2.55	
Quebec	0.00	0.00	3.70	3.70	0.00	0.00	0.00	3.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Wisconsin	0.00	0.35	9.45	9.80	0.00	0.00	0.00	6.85	0.00	0.00	4.67	4.67	0.00	0.00	0.00	0.00	3.26	
Total	9.20	53.07	53.43	115.71	0.00	0.00	0.00	88.22	0.00	11.31	24.28	35.59	0.00	0.00	0.00	0.00	31.34	



a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 0

Basin	All Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Lake Superior	0.65	0.06	2.24	2.95	0.00	0.00	0.00	1.83
Lake Michigan	0.00	2.16	26.61	28.77	0.00	0.00	0.00	23.00
Lake Huron	0.00	0.00	16.72	16.72	0.00	0.00	0.00	13.37
Lake Erie	0.50	1.67	29.95	32.12	0.00	0.00	0.00	24.09
Lake Ontario	2.50	0.03	13.18	15.71	0.00	0.00	0.00	7.45
St.Lawrence River	1.00	0.00	34.18	35.18	0.00	0.00	0.00	25.68
<b>Total</b>	<b>4.65</b>	<b>3.92</b>	<b>122.87</b>	<b>131.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>95.42</b>

	Principal Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
	0.65	0.00	0.00	0.65	0.00	0.00	0.00	0.00
	0.00	1.14	1.60	2.74	0.00	0.00	0.00	2.19
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>0.65</b>	<b>1.14</b>	<b>1.60</b>	<b>3.39</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.19</b>

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Illinois	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indiana	0.00	1.14	7.40	8.54	0.00	0.00	0.00	6.83
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Minnesota	0.65	0.04	0.23	0.92	0.00	0.00	0.00	0.21
New York	4.00	0.00	6.80	10.80	0.00	0.00	0.00	0.00
Ohio	0.00	1.60	9.20	10.80	0.00	0.00	0.00	8.64
Ontario	0.00	0.00	53.65	53.65	0.00	0.00	0.00	42.93
Pennsylvania	0.00	0.10	0.69	0.79	0.00	0.00	0.00	0.13
Quebec	0.00	0.00	22.19	22.19	0.00	0.00	0.00	17.70
Wisconsin	0.00	1.04	22.71	23.75	0.00	0.00	0.00	18.98
<b>Total</b>	<b>4.65</b>	<b>3.92</b>	<b>122.87</b>	<b>131.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>95.42</b>

	Principal Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	1.14	1.60	2.74	0.00	0.00	0.00	2.19
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.65	0.00	0.00	0.65	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>0.65</b>	<b>1.14</b>	<b>1.60</b>	<b>3.39</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.19</b>

a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 0

Basin	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Lake Superior	164.82	118.63	2.21	285.66	0.00	0.00	0.00	35.65	162.10	118.60	2.03	282.73	0.00	0.00	0.00	35.35		
Lake Michigan	1834.97	382.94	24.28	2242.19	0.00	8.62	8.62	150.92	1834.96	327.69	22.02	2184.67	0.00	8.62	8.62	145.19		
Lake Huron	681.22	75.03	12.39	768.64	0.00	0.00	0.00	16.99	681.20	74.26	11.76	767.21	0.00	0.00	0.00	16.80		
Lake Erie	577.90	142.45	15.98	736.33	0.00	0.00	0.00	42.73	522.82	134.34	11.33	668.48	0.00	0.00	0.00	41.43		
Lake Ontario	935.01	106.30	43.09	1084.40	0.00	0.00	0.00	15.22	754.74	103.05	1.51	859.30	0.00	0.00	0.00	14.40		
St. Lawrence River	192.95	153.75	10.02	356.72	0.00	0.00	0.00	19.02	124.90	152.59	4.28	281.77	0.00	0.00	0.00	18.81		
<b>Total</b>	<b>4386.87</b>	<b>979.09</b>	<b>107.97</b>	<b>5473.93</b>	<b>0.00</b>	<b>8.62</b>	<b>8.62</b>	<b>280.52</b>	<b>4080.71</b>	<b>910.52</b>	<b>52.93</b>	<b>5044.16</b>	<b>0.00</b>	<b>8.62</b>	<b>8.62</b>	<b>271.98</b>		

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Illinois	10.62	0.00	0.00	10.62	0.00	8.62	8.62	2.00	10.62	0.00	0.00	10.62	0.00	8.62	8.62	2.00		
Indiana	1824.35	14.10	23.97	1862.42	0.00	0.00	0.00	111.75	1824.34	14.07	23.16	1861.57	0.00	0.00	0.00	111.70		
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Minnesota	0.05	108.35	0.08	108.48	0.00	0.00	0.00	28.60	0.00	108.35	0.00	108.35	0.00	0.00	0.00	28.59		
New York	303.00	0.00	48.40	351.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Ohio	24.11	108.26	0.17	132.54	0.00	0.00	0.00	13.25	24.11	101.00	0.00	125.11	0.00	0.00	0.00	12.51		
Ontario	2182.99	245.60	31.62	2460.21	0.00	0.00	0.00	70.93	2182.54	240.08	27.82	2450.44	0.00	0.00	0.00	69.42		
Pennsylvania	39.10	5.13	0.20	44.43	0.00	0.00	0.00	5.09	39.10	5.13	0.10	44.33	0.00	0.00	0.00	4.84		
Quebec	0.00	125.48	0.00	125.48	0.00	0.00	0.00	11.07	0.00	124.95	0.00	124.95	0.00	0.00	0.00	11.04		
Wisconsin	2.65	372.17	3.53	378.35	0.00	0.00	0.00	37.82	0.00	376.94	1.85	378.79	0.00	0.00	0.00	37.87		
<b>Total</b>	<b>4386.87</b>	<b>979.09</b>	<b>107.97</b>	<b>5473.93</b>	<b>0.00</b>	<b>8.62</b>	<b>8.62</b>	<b>280.52</b>	<b>4080.71</b>	<b>910.52</b>	<b>52.93</b>	<b>5044.16</b>	<b>0.00</b>	<b>8.62</b>	<b>8.62</b>	<b>271.98</b>		

a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 0

Basin	All Facilities							
	Withdrawals				Diversions			Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Lake Superior	550.55	80.87	0.06	631.49	0.00	0.00	0.00	7.96
Lake Michigan	5274.12	133.09	2.64	5409.85	0.00	0.00	0.00	62.96
Lake Huron	889.40	0.03	0.00	889.43	0.00	0.00	0.00	9.67
Lake Erie	10193.00	160.69	0.11	10353.80	0.00	0.00	0.00	80.11
Lake Ontario	2829.93	0.00	0.00	2829.93	0.00	0.00	0.00	15.03
St. Lawrence River	39.10	7.93	0.00	47.02	0.00	0.00	0.00	0.00
Total	19776.10	382.61	2.81	20161.52	0.00	0.00	0.00	175.73

Basin	Principal Facilities							
	Withdrawals				Diversions			Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Lake Superior	289.78	80.87	0.00	370.65	0.00	0.00	0.00	4.52
Lake Michigan	4309.12	8.65	0.00	4317.77	0.00	0.00	0.00	48.76
Lake Huron	236.96	0.00	0.00	236.96	0.00	0.00	0.00	1.19
Lake Erie	5972.05	160.60	0.11	6132.76	0.00	0.00	0.00	25.24
Lake Ontario	2829.93	0.00	0.00	2829.93	0.00	0.00	0.00	15.00
St. Lawrence River	39.10	7.93	0.00	47.02	0.00	0.00	0.00	0.00
Total	13676.94	258.05	0.11	13935.10	0.00	0.00	0.00	94.71

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities							
	Withdrawals				Diversions			Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Illinois	524.38	0.00	0.00	524.38	0.00	0.00	0.00	0.00
Indiana	1183.56	0.00	0.11	1183.67	0.00	0.00	0.00	23.67
Michigan	6099.16	124.56	2.28	6226.00	0.00	0.00	0.00	80.94
Minnesota	0.77	80.87	0.01	81.65	0.00	0.00	0.00	1.64
New York	2511.00	0.00	0.00	2511.00	0.00	0.00	0.00	8.00
Ohio	2454.50	160.60	0.00	2615.10	0.00	0.00	0.00	0.20
Ontario	4037.61	0.00	0.05	4037.67	0.00	0.00	0.00	35.95
Pennsylvania	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00
Quebec	39.10	7.93	0.00	47.02	0.00	0.00	0.00	0.00
Wisconsin	2526.02	8.65	0.36	2535.03	0.00	0.00	0.00	25.33
Total	19776.10	382.61	2.81	20161.52	0.00	0.00	0.00	175.73

Jurisdiction	Principal Facilities							
	Withdrawals				Diversions			Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Illinois	524.38	0.00	0.00	524.38	0.00	0.00	0.00	0.00
Indiana	1183.56	0.00	0.11	1183.67	0.00	0.00	0.00	23.67
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Minnesota	0.77	80.87	0.00	81.64	0.00	0.00	0.00	1.64
New York	2511.00	0.00	0.00	2511.00	0.00	0.00	0.00	8.00
Ohio	2454.50	160.60	0.00	2615.10	0.00	0.00	0.00	0.20
Ontario	4037.61	0.00	0.00	4037.61	0.00	0.00	0.00	35.87
Pennsylvania	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00
Quebec	39.10	7.93	0.00	47.02	0.00	0.00	0.00	0.00
Wisconsin	2526.02	8.65	0.00	2534.67	0.00	0.00	0.00	25.33
Total	13676.94	258.05	0.11	13935.10	0.00	0.00	0.00	94.71

a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 0

Basin	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Lake Superior	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Lake Michigan	5840.68	0.00	0.01	5840.69	0.00	0.00	0.00	43.49	3679.39	0.00	0.00	3679.39	0.00	0.00	0.00	15.39		
Lake Huron	7128.96	0.00	0.00	7128.96	0.00	0.00	0.00	64.19	7128.96	0.00	0.00	7128.96	0.00	0.00	0.00	64.19		
Lake Erie	50.10	0.00	0.00	50.10	0.00	0.00	0.00	7.10	50.10	0.00	0.00	50.10	0.00	0.00	0.00	7.10		
Lake Ontario	5463.06	0.00	0.00	5463.06	0.00	0.00	0.00	43.15	5463.06	0.00	0.00	5463.06	0.00	0.00	0.00	43.15		
St. Lawrence River	40.81	0.00	0.00	40.81	0.00	0.00	0.00	2.75	40.81	0.00	0.00	40.81	0.00	0.00	0.00	2.75		
Total	18523.62	0.00	0.01	18523.63	0.00	0.00	0.00	160.69	16362.33	0.00	0.00	16362.33	0.00	0.00	0.00	132.59		

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Illinois	2139.73	0.00	0.00	2139.73	0.00	0.00	0.00	0.00	2139.73	0.00	0.00	2139.73	0.00	0.00	0.00	0.00		
Indiana	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Michigan	2161.29	0.00	0.00	2161.29	0.00	0.00	0.00	28.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Minnesota	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
New York	1007.00	0.00	0.00	1007.00	0.00	0.00	0.00	3.00	1007.00	0.00	0.00	1007.00	0.00	0.00	0.00	3.00		
Ohio	50.10	0.00	0.00	50.10	0.00	0.00	0.00	7.10	50.10	0.00	0.00	50.10	0.00	0.00	0.00	7.10		
Ontario	11625.84	0.00	0.00	11625.84	0.00	0.00	0.00	107.10	11625.84	0.00	0.00	11625.84	0.00	0.00	0.00	107.10		
Pennsylvania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Quebec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Wisconsin	1539.66	0.00	0.01	1539.67	0.00	0.00	0.00	15.39	1539.66	0.00	0.00	1539.66	0.00	0.00	0.00	15.39		
Total	18523.62	0.00	0.01	18523.63	0.00	0.00	0.00	160.69	16362.33	0.00	0.00	16362.33	0.00	0.00	0.00	132.59		

a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 0

Basin	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Lake Superior	0.00	144595.03	0.00	144595.03	0.00	-3679.40	-3679.40	0.00	0.00	144595.03	0.00	144595.03	0.00	-3679.40	-3679.40	0.00		
Lake Michigan	0.00	4637.00	0.00	4637.00	0.00	0.00	0.00	0.00	0.00	4637.00	0.00	4637.00	0.00	0.00	0.00	0.00		
Lake Huron	19570.43	21993.43	0.00	41563.86	0.00	0.00	0.00	0.00	19570.43	21993.43	0.00	41563.86	0.00	0.00	0.00	0.00		
Lake Erie	52706.58	0.00	0.00	52706.58	4316.58	0.00	4316.58	0.00	52706.58	0.00	0.00	52706.58	4316.58	0.00	4316.58	0.00		
Lake Ontario	136080.82	11358.37	0.00	147439.19	-4316.58	0.00	-4316.58	0.00	136080.82	11358.37	0.00	147439.19	-4316.58	0.00	-4316.58	0.00		
St.Lawrence River	330396.63	208081.62	0.00	538478.26	0.00	0.00	0.00	0.00	330396.63	208081.62	0.00	538478.26	0.00	0.00	0.00	0.00		
<b>Total</b>	<b>538754.47</b>	<b>390665.45</b>	<b>0.00</b>	<b>929419.92</b>	<b>0.00</b>	<b>-3679.40</b>	<b>-3679.40</b>	<b>0.00</b>	<b>538754.47</b>	<b>390665.45</b>	<b>0.00</b>	<b>929419.92</b>	<b>0.00</b>	<b>-3679.40</b>	<b>-3679.40</b>	<b>0.00</b>		

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities								Principal Facilities									
	Withdrawals				Diversions				Consumptive Use	Withdrawals				Diversions				Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	GLSW		OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL			
Illinois	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Indiana	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Minnesota	0.00	115754.00	0.00	115754.00	0.00	0.00	0.00	0.00	0.00	115754.00	0.00	115754.00	0.00	0.00	0.00	0.00		
New York	221340.00	0.00	0.00	221340.00	0.00	0.00	0.00	0.00	221340.00	0.00	0.00	221340.00	0.00	0.00	0.00	0.00		
Ohio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Ontario	145318.71	158074.81	0.00	303393.51	0.00	-3679.40	-3679.40	0.00	145318.71	158074.81	0.00	303393.51	0.00	-3679.40	-3679.40	0.00		
Pennsylvania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Quebec	172095.77	112045.64	0.00	284141.41	0.00	0.00	0.00	0.00	172095.77	112045.64	0.00	284141.41	0.00	0.00	0.00	0.00		
Wisconsin	0.00	4791.00	0.00	4791.00	0.00	0.00	0.00	0.00	0.00	4791.00	0.00	4791.00	0.00	0.00	0.00	0.00		
<b>Total</b>	<b>538754.47</b>	<b>390665.45</b>	<b>0.00</b>	<b>929419.92</b>	<b>0.00</b>	<b>-3679.40</b>	<b>-3679.40</b>	<b>0.00</b>	<b>538754.47</b>	<b>390665.45</b>	<b>0.00</b>	<b>929419.92</b>	<b>0.00</b>	<b>-3679.40</b>	<b>-3679.40</b>	<b>0.00</b>		

a) Water-Use by Basin - All Jurisdictions

UNITS: Mgal(US)/d  
YEAR OF DATA: 0

Basin	All Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Lake Superior	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00
Lake Michigan	363.59	0.11	0.12	363.82	0.00	363.59	363.59	0.22
Lake Huron	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lake Erie	652.51	0.02	0.00	652.53	652.51	0.00	652.51	0.02
Lake Ontario	0.00	0.00	0.00	0.00	-652.51	0.00	-652.51	0.00
St. Lawrence River	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1016.10	0.13	0.25	1016.48	0.00	363.59	363.59	0.24

Basin	Principal Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Lake Superior	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00
Lake Michigan	363.59	0.10	0.04	363.73	0.00	363.59	363.59	0.13
Lake Huron	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lake Erie	652.51	0.00	0.00	652.51	652.51	0.00	652.51	0.00
Lake Ontario	0.00	0.00	0.00	0.00	-652.51	0.00	-652.51	0.00
St. Lawrence River	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1016.10	0.10	0.17	1016.37	0.00	363.59	363.59	0.13

b) Water-Use by Jurisdiction - All Basins

Jurisdiction	All Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Illinois	363.59	0.00	0.00	363.59	0.00	363.59	363.59	0.00
Indiana	0.00	0.13	0.12	0.25	0.00	0.00	0.00	0.24
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Minnesota	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00
New York	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ohio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ontario	652.51	0.00	0.00	652.51	0.00	0.00	0.00	0.00
Pennsylvania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quebec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wisconsin	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1016.10	0.13	0.25	1016.48	0.00	363.59	363.59	0.24

Jurisdiction	Principal Facilities							Consumptive Use
	Withdrawals				Diversions			
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	TOTAL	
Illinois	363.59	0.00	0.00	363.59	0.00	363.59	363.59	0.00
Indiana	0.00	0.10	0.04	0.14	0.00	0.00	0.00	0.13
Michigan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Minnesota	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00
New York	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ohio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ontario	652.51	0.00	0.00	652.51	0.00	0.00	0.00	0.00
Pennsylvania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quebec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wisconsin	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1016.10	0.10	0.17	1016.37	0.00	363.59	363.59	0.13

## APPENDIX B

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The following individuals serve on the Water Resources Management Committee:

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