

**CONCENTRATIONS AND LOADS OF POLYCHLORINATED
BIPHENYLS IN MAJOR TRIBUTARIES ENTERING GREEN BAY,
LAKE MICHIGAN, 1989-90**

By L.B. House, P.E. Hughes, and R.J. Waschbusch

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CONTENTS

	Page
Abstract	1
Introduction	1
Purpose and scope	1
Acknowledgments	1
Methods of investigation	3
Collection of water samples	3
Equipment used to collect samples for analysis of polychlorinated biphenyls	3
Procedure for sample collection	5
Onsite extraction of dissolved polychlorinated biphenyls	5
Quality assurance	5
Calculation of total polychlorinated biphenyls loads entering Green Bay	7
Concentrations of polychlorinated biphenyls in major tributaries	7
Loads of total polychlorinated biphenyls entering Green Bay	7
References cited	8

ILLUSTRATIONS

	Page
Figure 1. Map showing location of major tributaries to Green Bay, Lake Michigan, and sampling sites used in this study	2
2. Diagram showing system for collection and filtration of water samples	4
3. Diagram showing system for extraction of dissolved polychlorinated biphenyls	6
4-9. Graphs showing concentrations of total polychlorinated biphenyls (PCB's) in water from the:	
4. Escanaba River at mouth, USGS station number 040590345, 1989-90	9
5. Menominee River at mouth, USGS station number 04067651, 1989-90	10
6. Peshtigo River at mouth, USGS station number 04069530, 1989-90	11
7. Oconto River at mouth, USGS station number 04071775, 1989-90	12
8. Fox River at mouth, USGS station number 04085139, 1989-90	13
9. Fox River at De Pere, USGS station number 04085059, 1989-90	14
10-15. Graphs showing computed maximum daily loads of total polychlorinated biphenyls entering Green Bay and mean daily discharge from:	
10. Escanaba River at mouth at Escanaba, USGS station number 040590345, October 1988-September 1990	15
11. Menominee River at mouth at Marinette, USGS station number 04067651, October 1988-September 1990	16
12. Peshtigo River at mouth at Peshtigo, USGS station number 04069530, October 1988-September 1990	17
13. Oconto River at mouth at Oconto, USGS station number 04071775, October 1988-September 1990	18
14. Fox River at mouth at Green Bay, USGS station number 04085139, October 1988-September 1990	19
15. Fox River at De Pere, USGS station number 04085059, October 1988-September 1990	20

TABLES

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90	21
2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990	30

CONVERSION FACTORS AND ABBREVIATIONS

<i>Multiply</i>	<i>By</i>	<i>To obtain</i>
inch (in.)	25.4	millimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
cubic foot per second (ft ³ /s)	0.02832	cubic meter per second
ounce (oz)	28.35	gram
pound (lb)	0.4536	kilogram
pound per square inch (lb/in ²)	6.895	kilopascal
ton	907.2	kilogram
quart	0.9464	liter
gallon (gal)	3.785	liter
cubic inch (in ³)	16.39	milliliter

Water year in U.S. Geological Survey reports refers to the 12-month period beginning on October 1 and ending on September 30. The water year is designated by the calendar year in which it ends. Thus, the year ending September 30, 1990, is called the "1990 water year."

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ABSTRACT

The U.S. Geological Survey collected water samples from the five major tributaries to Green Bay, Lake Michigan, to determine the load of total polychlorinated biphenyls (PCB's) entering the bay. These samples were collected from January 1989 through early May 1990 from the Escanaba, Menominee, Peshtigo, Oconto, and Fox Rivers. Sampling sites were located near the mouth of each river and also just upstream of De Pere dam on the Fox River. Water samples were collected for analysis of total, dissolved, and particulate concentrations of PCB's at the nanogram-per-liter level. Loads of PCB's entering Green Bay were computed using a total-integration method. The methods used to collect water samples and compute the loads of total PCB's entering the bay are described in this report. Graphs showing total PCB's concentrations and loads are presented for each site, along with the corresponding data tables. These data indicate that the amount of total PCB's entering the bay from the Fox River is greater than from all other major tributaries combined.

INTRODUCTION

Green Bay is an arm of Lake Michigan adjacent to Wisconsin and the Upper Peninsula of Michigan (fig. 1). During 1989, the U.S. Environmental Protection Agency, Great Lakes National Program Office (USEPA-GLNPO), and the Wisconsin Department of Natural Resources (WDNR) began a study of the polychlorinated biphenyls (PCB's) in Green Bay as part of the Green Bay Mass Balance Study (U.S. Environmental Protection Agency, 1989). A previous investigation by Marti (1984) indicated that all the major tributaries to Green Bay transport

PCB's into the bay. Marti found that the Escanaba, the Menominee, the Peshtigo, the Oconto, and the Fox Rivers all had detectable concentrations of PCB's in the water. A subsequent investigation of the smaller tributaries to Green Bay by the U.S. Geological Survey (USGS) showed these small tributaries did not contribute detectable concentrations of PCB's to the bay (House, 1989).

During 1989 and 1990, the USGS studied these major tributaries to determine the loads of total PCB's entering Green Bay. This work was done in support of the USEPA Green Bay Mass Balance Study. The study described in this report was done in cooperation with the WDNR. Analysis for concentrations of PCB's was done by the University of Wisconsin at Superior, under contract to the USEPA Environmental Research Laboratory in Duluth, Minnesota.

Purpose and Scope

This report presents data collected by the USGS from January 1989 through early May 1990. This information was used by the USEPA and WDNR as input to their mass-balance modeling of PCB's in Green Bay and the lower Fox River. Data were collected at or near the mouth of the Escanaba, Menominee, Peshtigo, Oconto, and Fox Rivers. Data also were collected just upstream of De Pere on the Fox River (fig. 1).

Acknowledgments

An extraordinary effort was made by many of the hydrologic technicians of the USGS in Wisconsin. Their innovation and dedication to this difficult study contributed greatly to its success. The sampling effort required working long hours out-

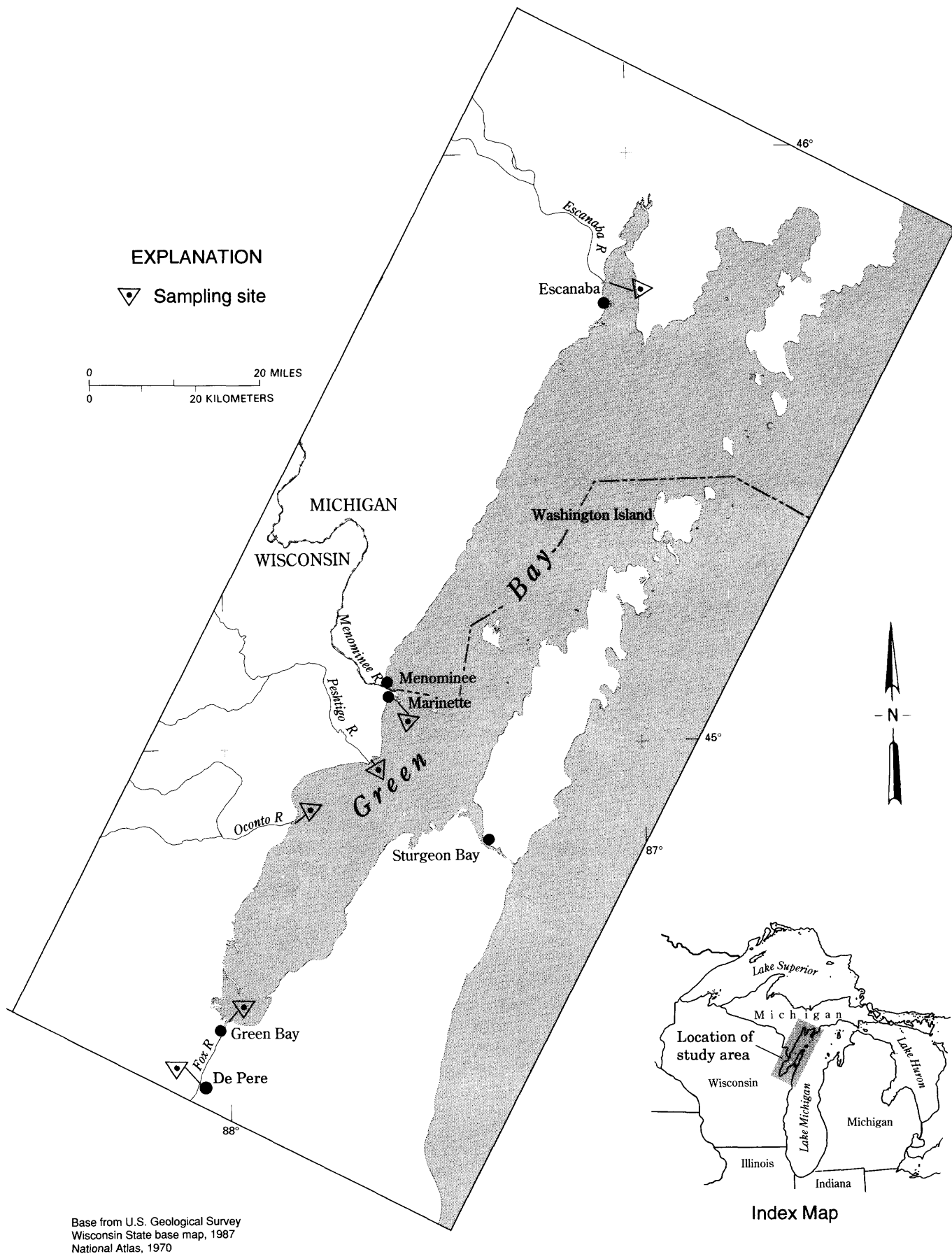


Figure 1. Location of major tributaries to Green Bay, Lake Michigan, and sampling sites used in this study.

doors in inclement weather and under other adverse conditions. Gerald Goddard and Halward (Nick) Hanson were the lead hydrologic technicians for this effort. They were assisted by Dave Hausner, Dan Olson, Joe Habale, Jim George, Jeff Hanig, Ken Koenig, Steve March, and Tom Wittwer.

METHODS OF INVESTIGATION

Collection of Water Samples

Frequent water samples were collected monthly or weekly at each tributary site (fig. 1) for analysis of dissolved and particulate concentrations of PCB's. Water samples were collected from the channel cross section using an equal-discharge centroid sampling scheme (Guy and Norman, 1970). Unlike most previous sampling efforts, the PCB's were filtered and extracted from the water samples onsite. The onsite filtration and extraction were done to minimize the change in partitioning between the dissolved and particulate fractions of PCB's that might occur in the time it took to transport the samples to the University of Wisconsin laboratory in Superior. A Hydrolab Surveyor-II¹ was used to make onsite measurements of water temperature, specific conductance, pH, and dissolved oxygen. Samples also were analyzed for total and dissolved organic carbon, inorganic constituent concentrations (including nutrients), and suspended solids by the Wisconsin State Laboratory of Hygiene in Madison, Wis. The onsite measurement data along with the results of the organic carbon and inorganic constituent analysis for the 1990 water year have been published in the USGS annual report series "Water Resources Data - Wisconsin" (Holmstrom and others, 1991).

Equipment Used to Collect Samples for Analysis of Polychlorinated Biphenyls

The USGS had two boats specifically equipped for sampling the water in the channel cross sections. Each boat was equipped with a 1400-watt, ac-dc generator, depth sounder, powered downrigger, and a set of pumps and sample-filtration equipment. The specifications for the pumps and filtration equipment were coordinated with the USEPA-GLNPO. An ac-powered submersible pump, which was lowered by the downrigger to the desired depth, provided a flow rate adequate to maintain both organic and

inorganic particulates in suspension within the sampling system. A diagram of the system for sample collection and filtration is shown in figure 2.

A single-head, variable-speed, Masterflex peristaltic pump was connected between the Tee fitting in the submersible-pump line and a stainless-steel multiple-plate filter holder. These multiple-plate units can hold as many as five 293-mm diameter, 0.7-micron pore size, glass-fiber filters, with flow distributed proportionally to each filter. Excess flow from the submersible pump line was discharged overboard from the Tee fitting in the submersible-pump line. The flow through the multiple-plate filter holder was monitored by a pressure gage installed in the sample line (fig. 2). Filters were replaced when the back pressure from the multiple-plate filter holder exceeded 35 kilopascals. A pulse-suppression system was used to dampen the flow pulses induced by the peristaltic pump and the filter-unit back pressure.

Excess water was evacuated from the multiple-plate filter holder before it was opened to remove the filters. This was necessary to prevent loss of particulate matter that otherwise might wash off of the saturated filter media. The evacuation was accomplished by raising and draining the submersible-pump line and then running the peristaltic pump until no more flow exited the system. The filter unit was tilted outward to enhance gravity drainage during this process. The glass-fiber filters were removed from the holder and retained for analysis of particulate PCB's. The filters were carefully sealed in aluminum foil to prevent contamination. The filtered sample water was collected in a 19-liter glass carboy for later extraction of dissolved PCB's.

In winter, the water samples were composited into insulated 19-liter stainless-steel canisters. The canisters were transported to a heated van before sample filtration and extraction to prevent freezing. The same filtration equipment used in the boat during summer was used inside the heated van in winter to filter the water samples.

The initial sample-analysis results showed that accumulation of PCB's in the sample-collection hoses was a potential problem. The water samples

¹Use of brand names in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

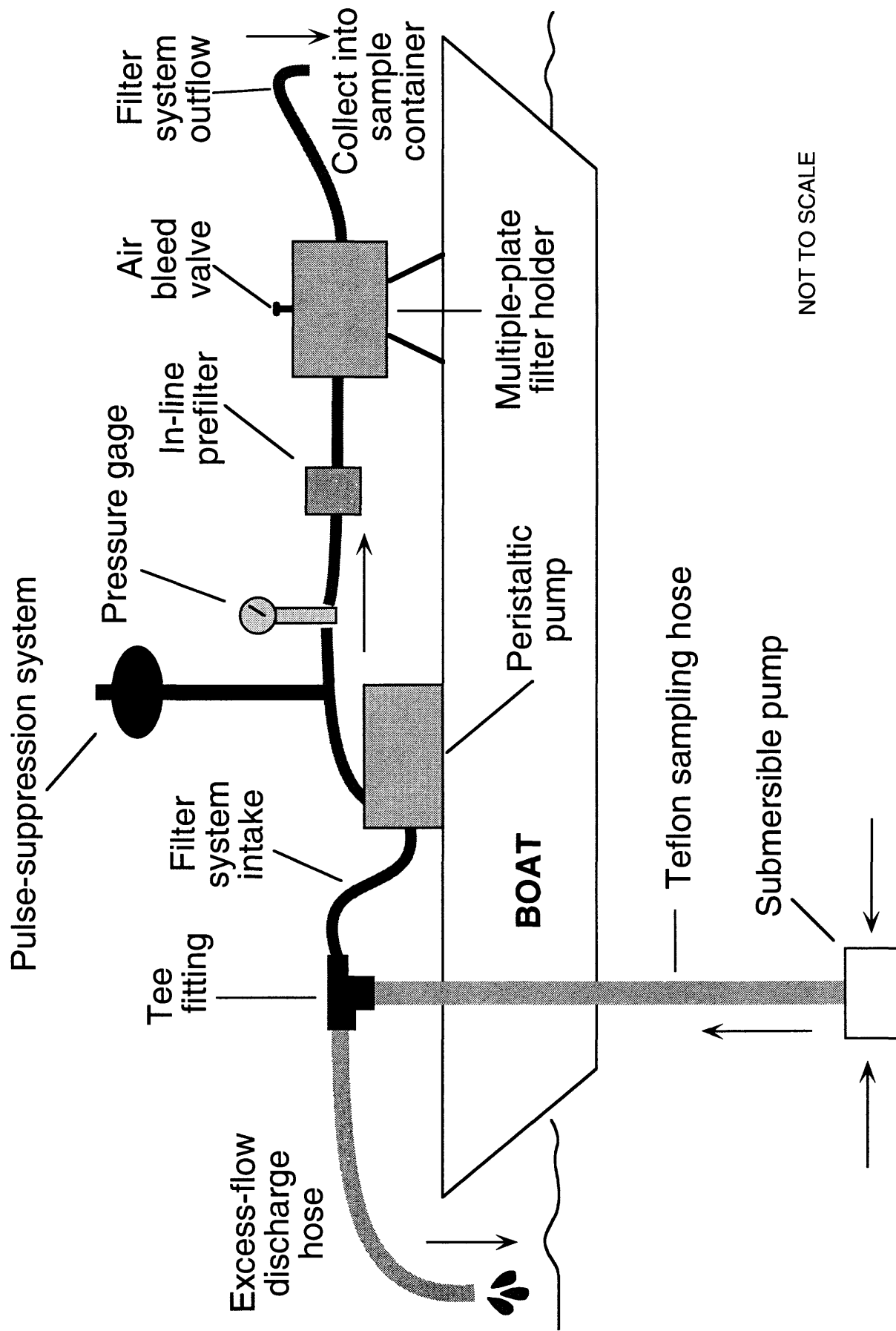


Figure 2. System for collection and filtration of water samples.

from tributary sites with small concentrations of PCB's could be contaminated with PCB's accumulation in the hoses from tributary sites with large concentration (notably the Fox River). This problem was avoided by using a different set of pump hoses and fittings for each site.

Procedure for Sample Collection

The following procedure was used to collect water samples and to measure onsite water properties:

1. Depths across a section of the river channel were measured at each of the tributary sampling sites at the beginning of the study. These data were used to divide the cross section into three approximately equal flow cells. The vertical centroid of these cells was identified on a map. Personnel used the delineated map location to approximately position themselves at each tributary site to sample the water in the cross section. A small two-person hovercraft was used to collect water samples during winter when use of a boat was impossible or unsafe.
2. At each of the cell centroids, water samples and onsite water properties were obtained at 0.2 and 0.8 times the total depth of water. It typically took about 1 hour in the boat for experienced personnel to collect and process a water sample from the six sampling points in a channel cross section. Additional time was spent launching and landing the boat or hovercraft used to collect the water samples along with time spent onsite extracting and processing samples. At the Fox River mouth site, samples were collected during both upstream and downstream flow conditions. Flow-direction data from a nearby streamflow-gaging station was used to determine the flow condition during the sampling period.
3. Water samples from each of the six cross-section sampling points (three flow-cell centroids, 0.2 and 0.8 depths) were composited into a single sample to reduce extraction time and analytical costs. Therefore, 1/6 of the total volume required for sample analyses was collected at each of the sampling points.
4. Secchi-disk measurements of water clarity were made at the three flow-cell centroid

locations for each cross section. Water for the inorganic analysis samples was collected from the end of the excess-discharge hose extending overboard from the Tee fitting (fig. 2).

5. Preprinted adhesive labels were affixed to each sample container, which then were delivered to the analytical laboratory. Log-in forms were completed and submitted with the sample containers. The USGS coordinated the development of a sample log-in form with the USEPA and the recipient laboratories.

Onsite Extraction of Dissolved Polychlorinated Biphenyls

Extraction of dissolved PCB's was done onshore. During winter, the sample filtration and extraction were done in a heated van. A diagram of the extraction system is shown in figure 3. The filtered water sample was contained in either a glass carboy or an insulated stainless-steel canister. Teflon tubing and stainless-steel fittings were used to connect the XAD resin column to an a/c-powered peristaltic pump (identical to that used in the filtration system). The average flow rate through the system was kept to less than 1 liter per minute. The flow rate was monitored with a floating-ball flowmeter installed in the discharge line and was verified by periodic measurements with a graduated cylinder. Care was taken to prevent air bubbles from entering the XAD column. The XAD column was sealed with Teflon caps after the sample container was empty and air bubbles started to enter the intake line. The sealed XAD columns were wrapped in aluminum foil, bubble-pack, and enclosed in a fitted cardboard box within a cooler for shipment to the laboratory.

Quality Assurance

The USGS followed the quality-assurance procedures identified in a separate document, "Quality Assurance Plan for Green Bay Mass Balance Study," dated July 5, 1988, and subsequent revisions. A copy of this plan is on file with the USGS in Madison, Wis. The plan was prepared in consultation with the USEPA-GLNPO. Quality assurance of onsite field methods was in the form of sample blanks or replicate samples prepared or collected onsite. The multiple-plate filter holder was used to collect sequential duplicate samples. The cost and weight of the multiple-plate filter holders did not allow the use of two units on-

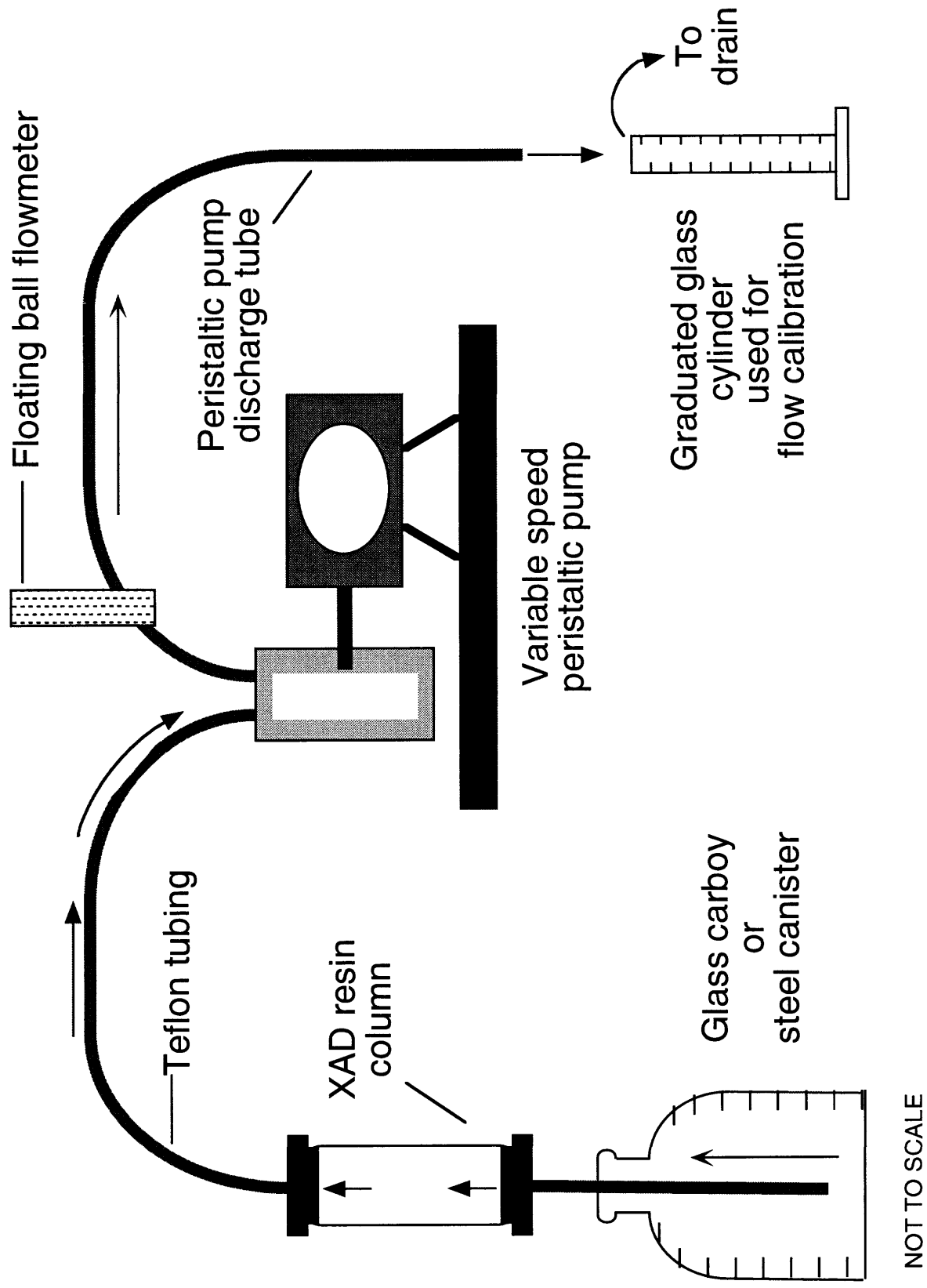


Figure 3. System for extraction of dissolved polychlorinated biphenyls.

board the boat to provide for simultaneous duplicate sampling.

The 293 mm glass fiber filters and XAD resin columns used by the USGS to filter and extract PCB's were prepared and inspected by the Wisconsin State Laboratory of Hygiene (WSLH) organics analysis section in Madison, Wis. The WSLH developed quality-assurance methods for this work in cooperation with the USEPA-GLNPO. These methods were beyond the scope of USGS involvement in this study.

Calculation of Total Polychlorinated Biphenyls Loads Entering Green Bay

Loads of total PCB's entering Green Bay from each tributary were calculated by use of the total-integration method. This method involves estimating the average total PCB's concentration for each day by use of linear interpolation between sample-concentration values. The estimated daily total PCB's concentration is multiplied by the average streamflow (from the nearest gaging station on that river) for that day to obtain a load of total PCB's in grams per day using the equation:

$$L_{\text{PCB}} = C_{\text{PCB}} \times Q_{\text{CFS}} \times 0.00245, \quad (1)$$

where

L_{PCB} is load of total PCB's, in grams per day,

C_{PCB} is average daily concentration of total PCB's, in nanograms per liter,

Q_{CFS} is average daily discharge, in cubic feet per second, and

0.00245 is a conversion factor to obtain total PCB's load in grams per day.

The total-integration method is best suited for computing loads where there is only a gradual change in concentration values between sequential samples or where frequent sampling provides a well-defined time series of concentrations.

Loads of total PCB's for the Fox River sampling site at the mouth were computed using net daily discharge in equation 1. The acoustical velocity meter (AVM) stream-gaging system in operation at this site was used to determine the net discharge or backwater flow for each day.

Loads of total PCB's were calculated for the period of October 1988-September 1990. For the

purpose of computing loads, concentrations of PCB's for months where no samples were collected were assumed to be equal to the average concentrations of PCB's at that site for that month during the sampling period. Therefore, loads of PCB's for the period October 1988-March 1989, and May 1990-September 1990, should be considered estimated, at best.

CONCENTRATIONS OF POLYCHLORINATED BIPHENYLS IN MAJOR TRIBUTARIES

Concentrations of the dissolved and particulate fractions of polychlorinated biphenyls were operationally defined by use of a 0.7-micrometer (micron) glass-fiber filter. Analysis of PCB's concentration was congener specific. Total PCB's concentration was calculated as the sum of the dissolved and particulate homolog concentrations. The methods of analysis used to determine the concentrations of PCB's were similar to those described by House (in press).

Graphs of total PCB's concentrations are shown in figures 4-9 for each tributary sampling site. A complete listing of dissolved, particulate, and total concentrations of PCB's for each site and sample date are presented in table 1. The maximum and minimum values for the concentration of total PCB's given in table 1 and shown in figures 4-9 reflect the most probable range of analytical accuracy for the laboratory methods used. The maximum PCB's concentration values were determined by using the value of the detection limit for congeners below the detection limit, and the minimum values were determined by using a zero value for congeners below the detection limit. Concentrations of total PCB's were calculated as the summation of all congeners (or homolog series).

LOADS OF TOTAL POLYCHLORINATED BIPHENYLS ENTERING GREEN BAY

Loads of total PCB's entering Green Bay from the major tributaries were calculated by the total-integration methods described in section on "Methods of Investigation." Loads of total PCB's were computed using the maximum concentration of total PCB's for each sample date. Graphs showing daily loads of total PCB's computed for

each major tributary sampling site are shown in figures 10-15. Daily total PCB's loads computed for each site are presented in table 2.

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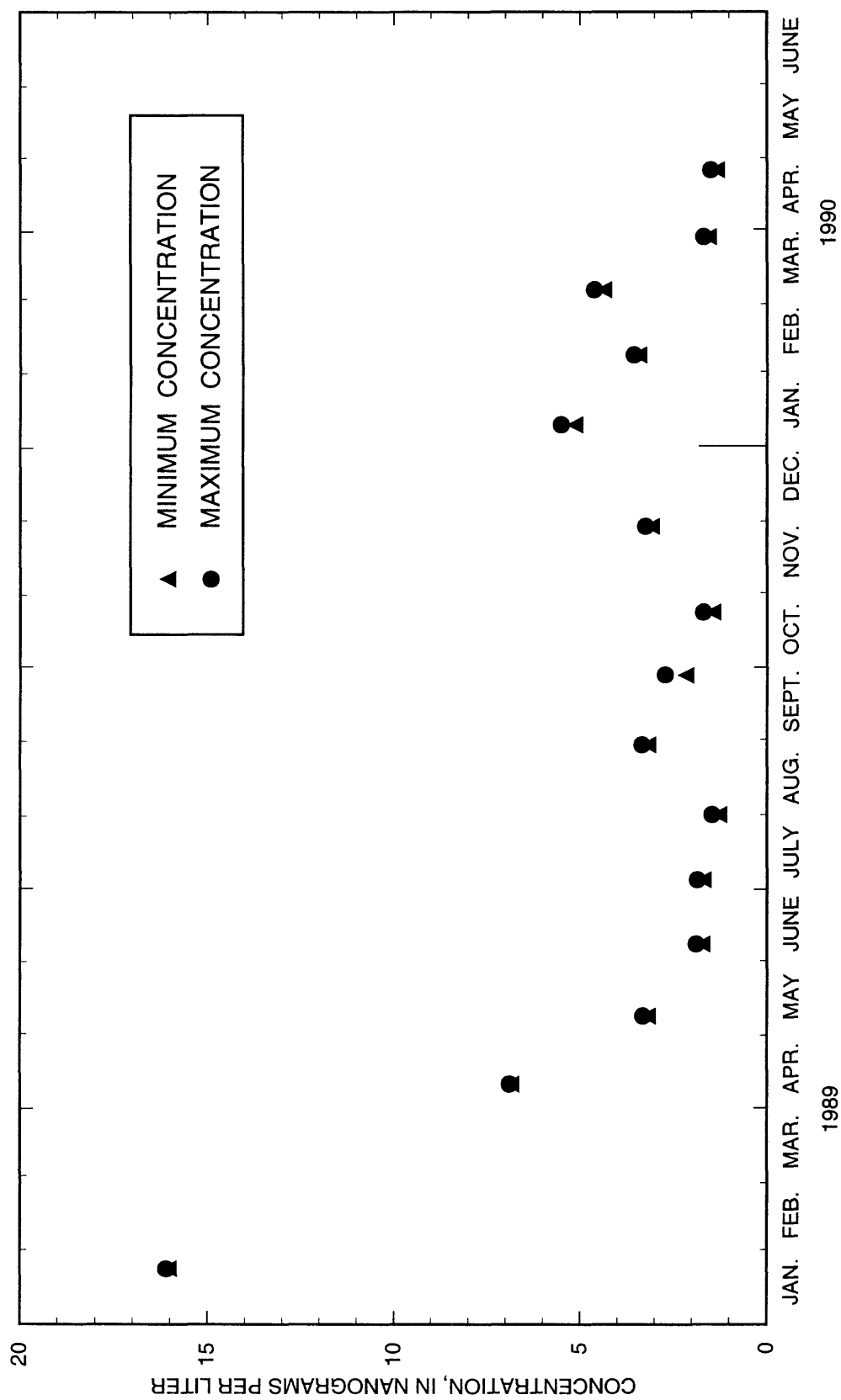


Figure 4. Concentrations of total polychlorinated biphenyls (PCB's) in water from the Escanaba River at USGS station number 040590345, 1989-90.

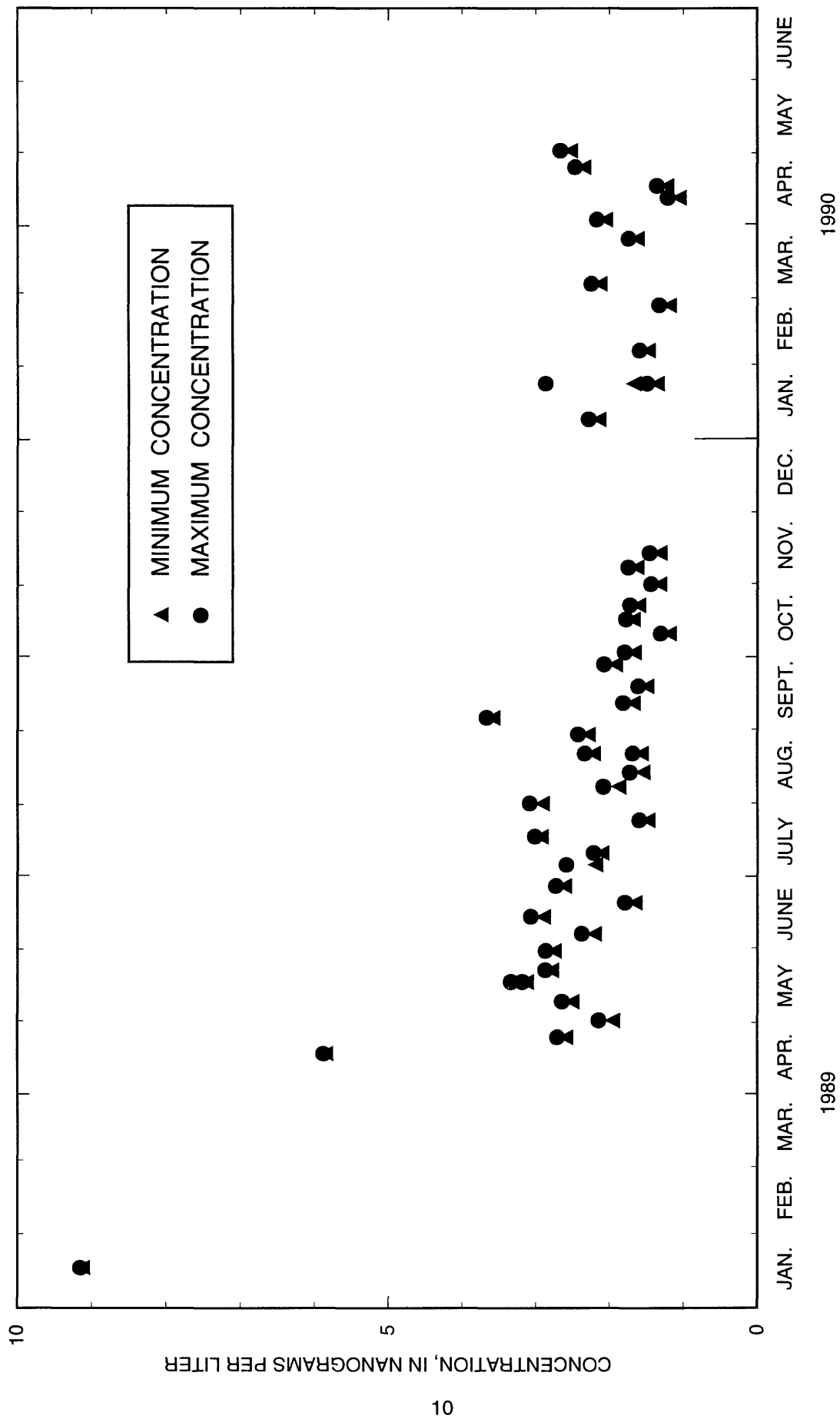


Figure 5. Concentrations of total polychlorinated biphenyls (PCBs) in water from the Menominee River at mouth, USGS station number 04067651, 1989-90.

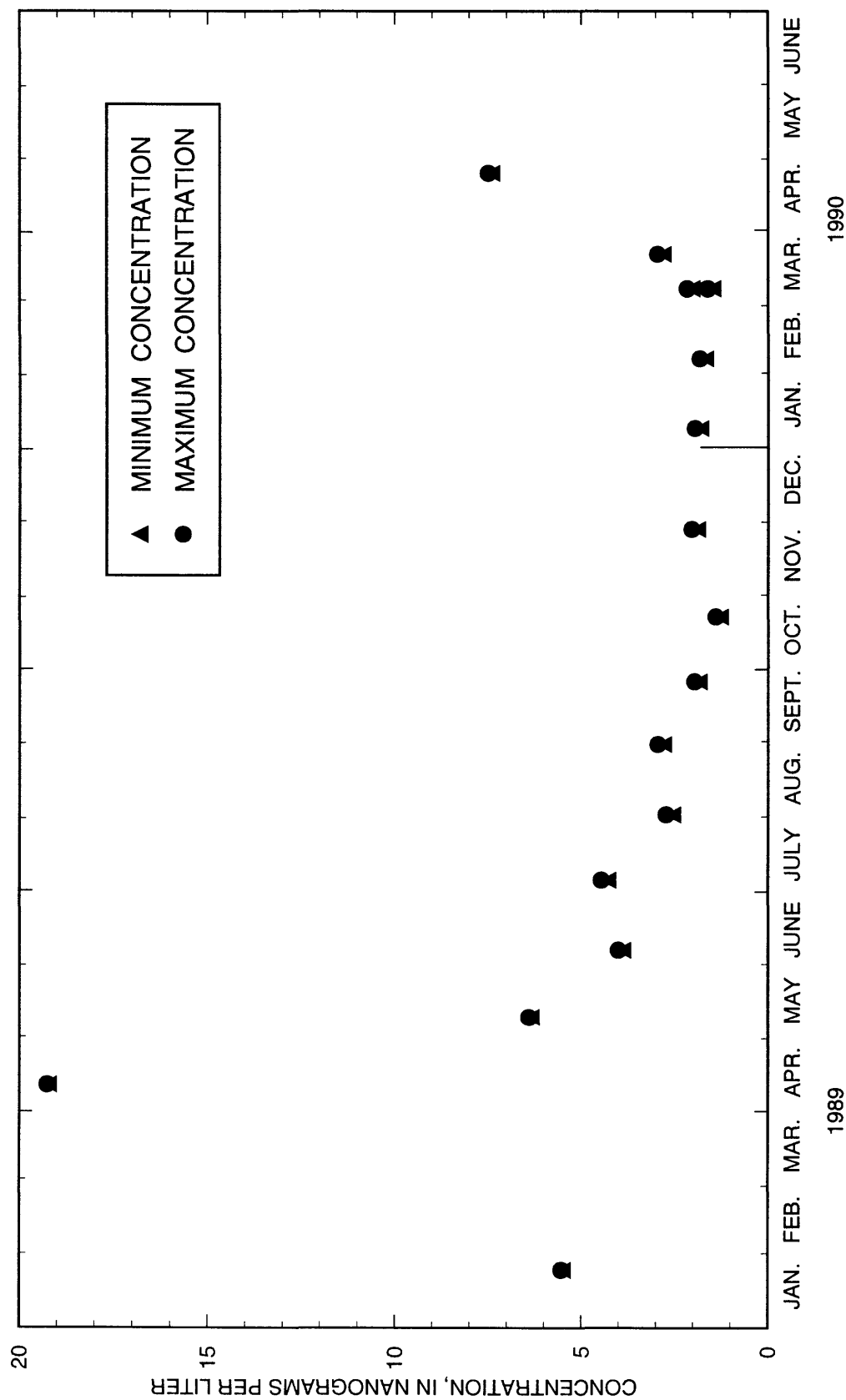


Figure 6. Concentrations of total polychlorinated biphenyls (PCB's) in water from the Peshtigo River at mouth, USGS station number 04069530, 1989-90.

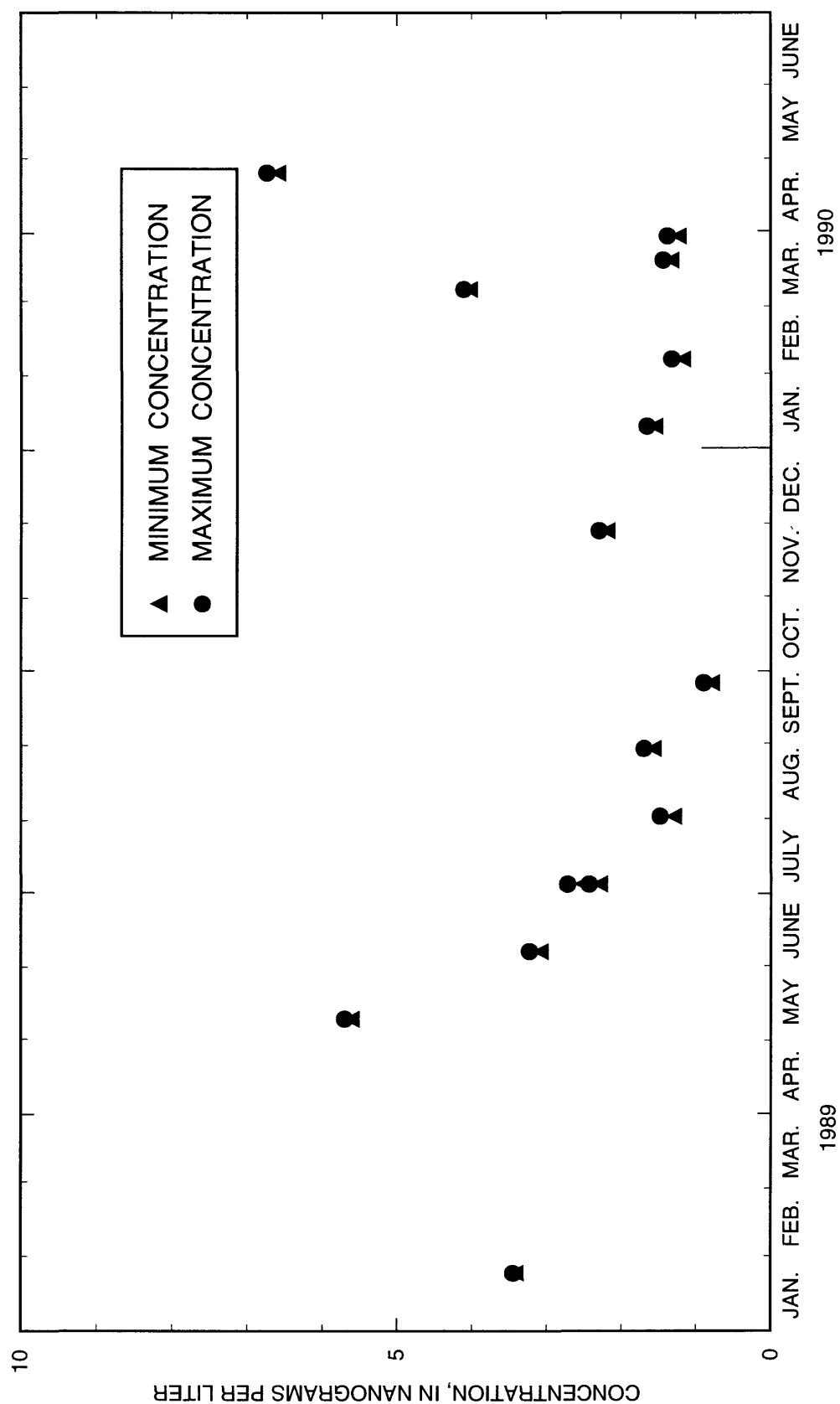


Figure 7. Concentrations of total polychlorinated biphenyls (PCBs) in water from the Oconto River at mouth, USGS station number 04071775, 1989-90.

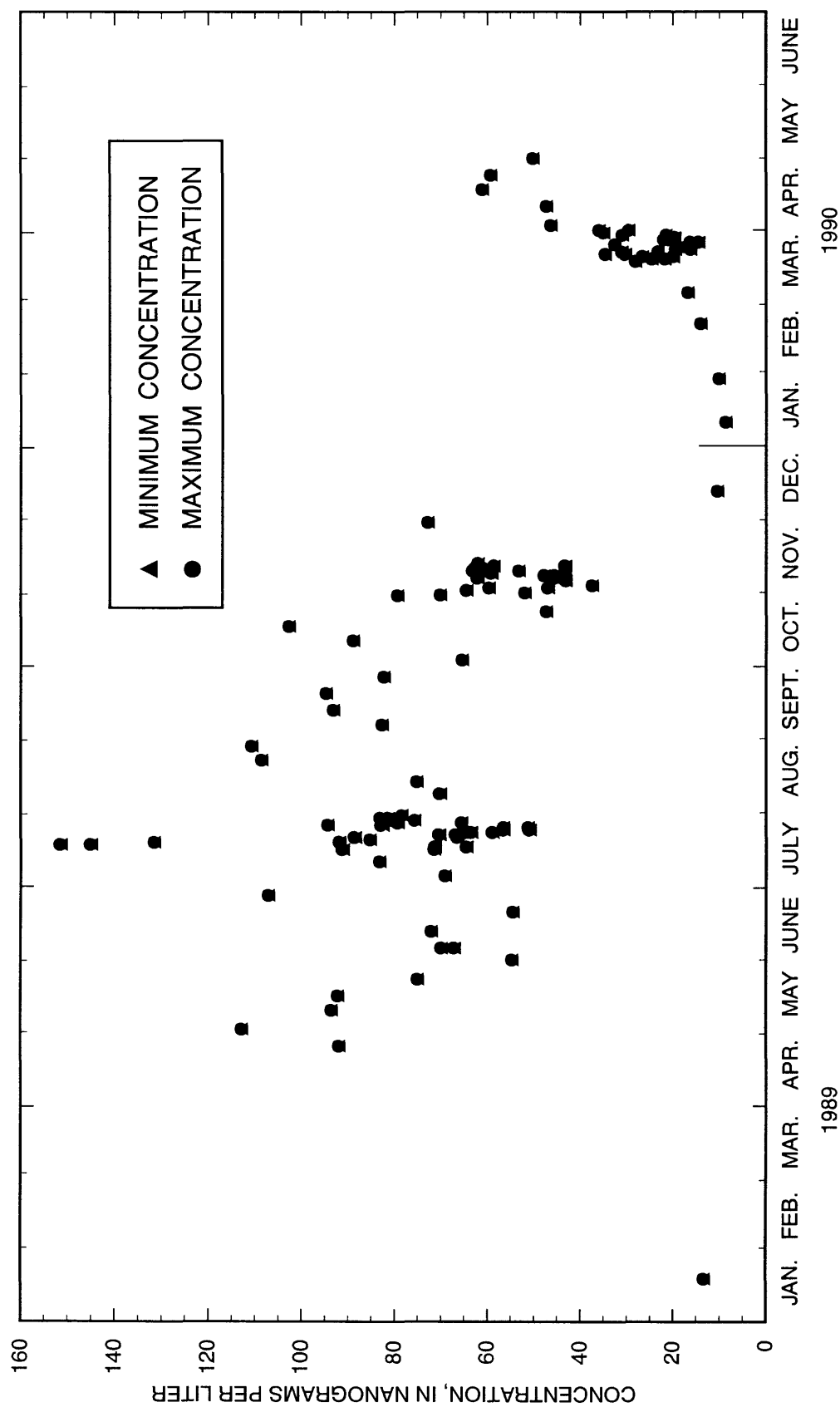


Figure 8. Concentrations of total polychlorinated biphenyls (PCBs) in water from the Fox River at mouth, USGS station number 04085139, 1989-90.

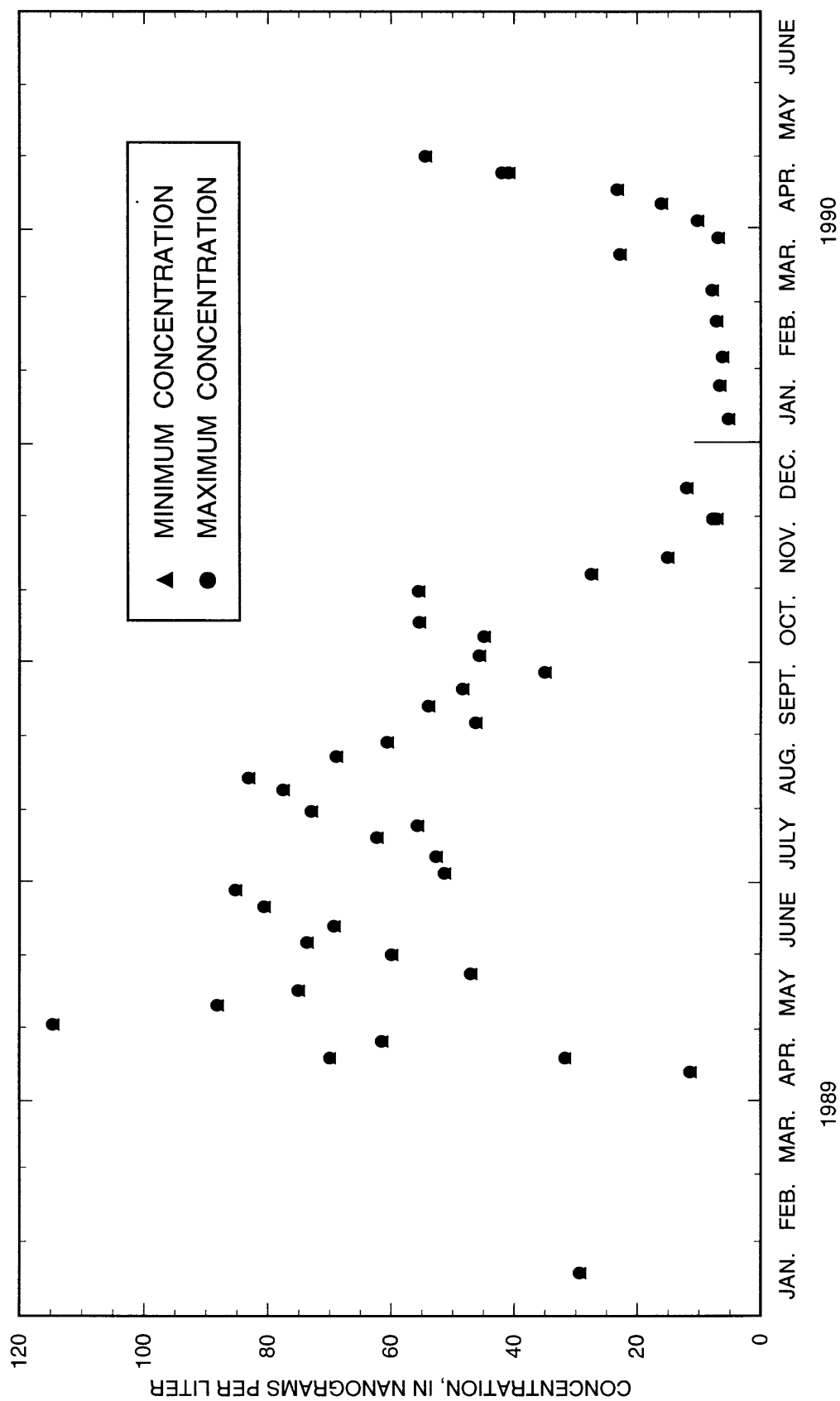


Figure 9. Concentrations of total polychlorinated biphenyls (PCB's) in water from the Fox River at De Pere, USGS station number 04085059, 1989-90.

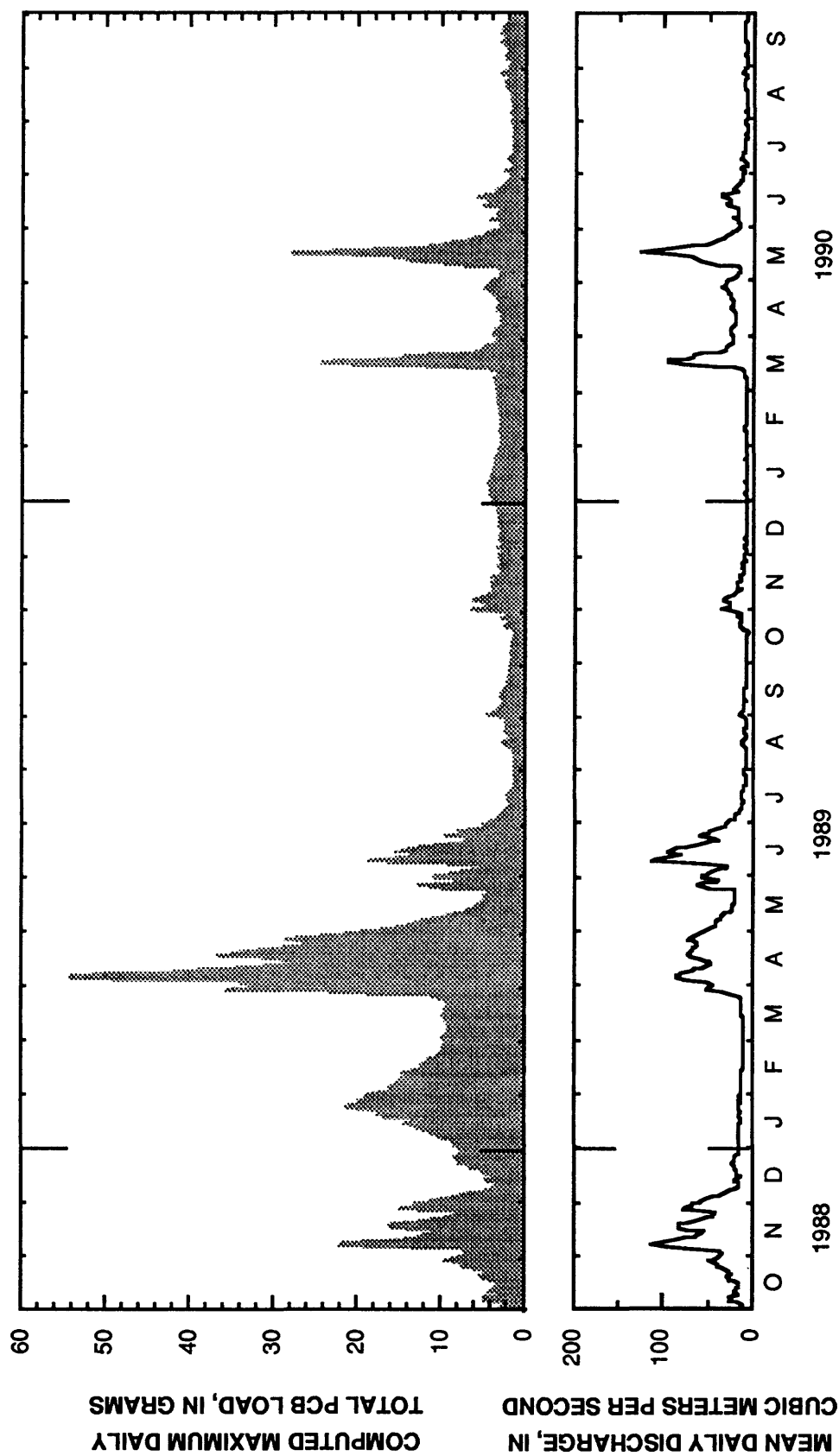


Figure 10. Computed maximum daily loads of total polychlorinated biphenyls (PCB's) entering Green Bay and mean daily discharge from Escanaba River at mouth at Escanaba, USGS station number 040590345, October 1988 - September 1990.

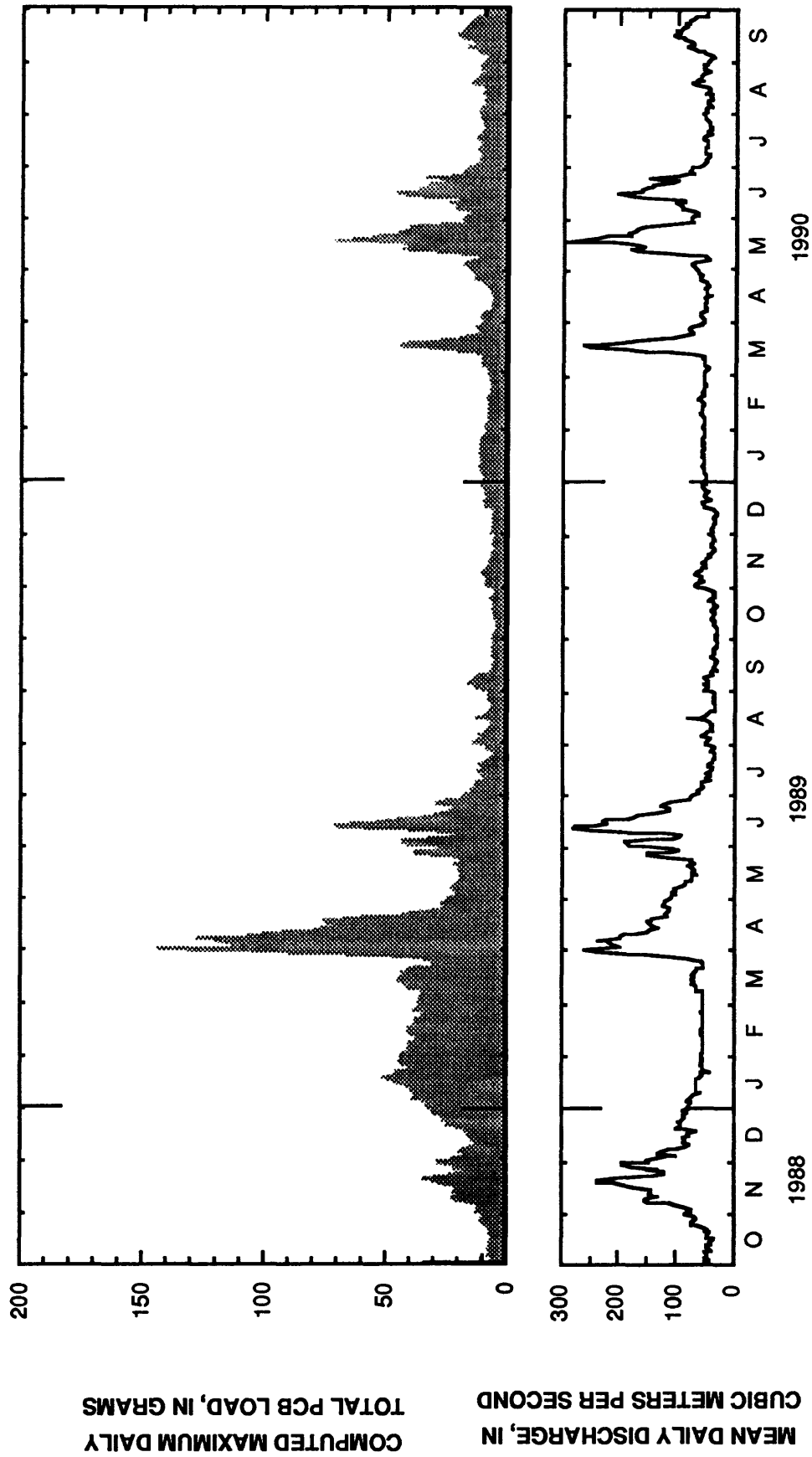


Figure 11. Computed maximum daily loads of total polychlorinated biphenyls (PCB's) entering Green Bay and mean daily discharge from Menominee River at mouth at Marinette, USGS station number 04067651, October 1988 - September 1990.

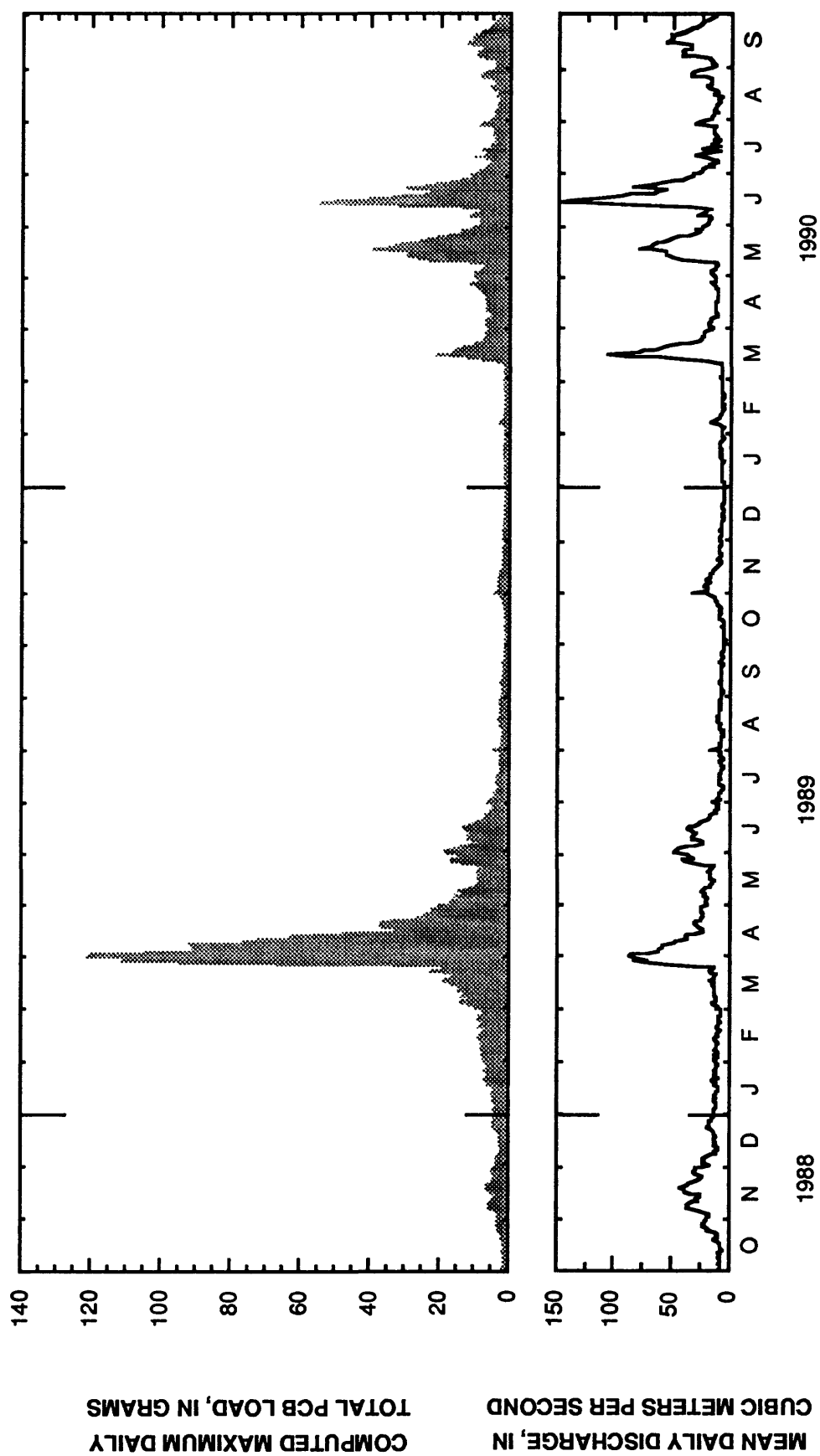


Figure 12. Computed maximum daily loads of total polychlorinated biphenyls (PCB's) entering Green Bay and mean daily discharge from Peshtigo River at mouth at Peshigo, USGS station number 04069500, October 1988 - September 1990.

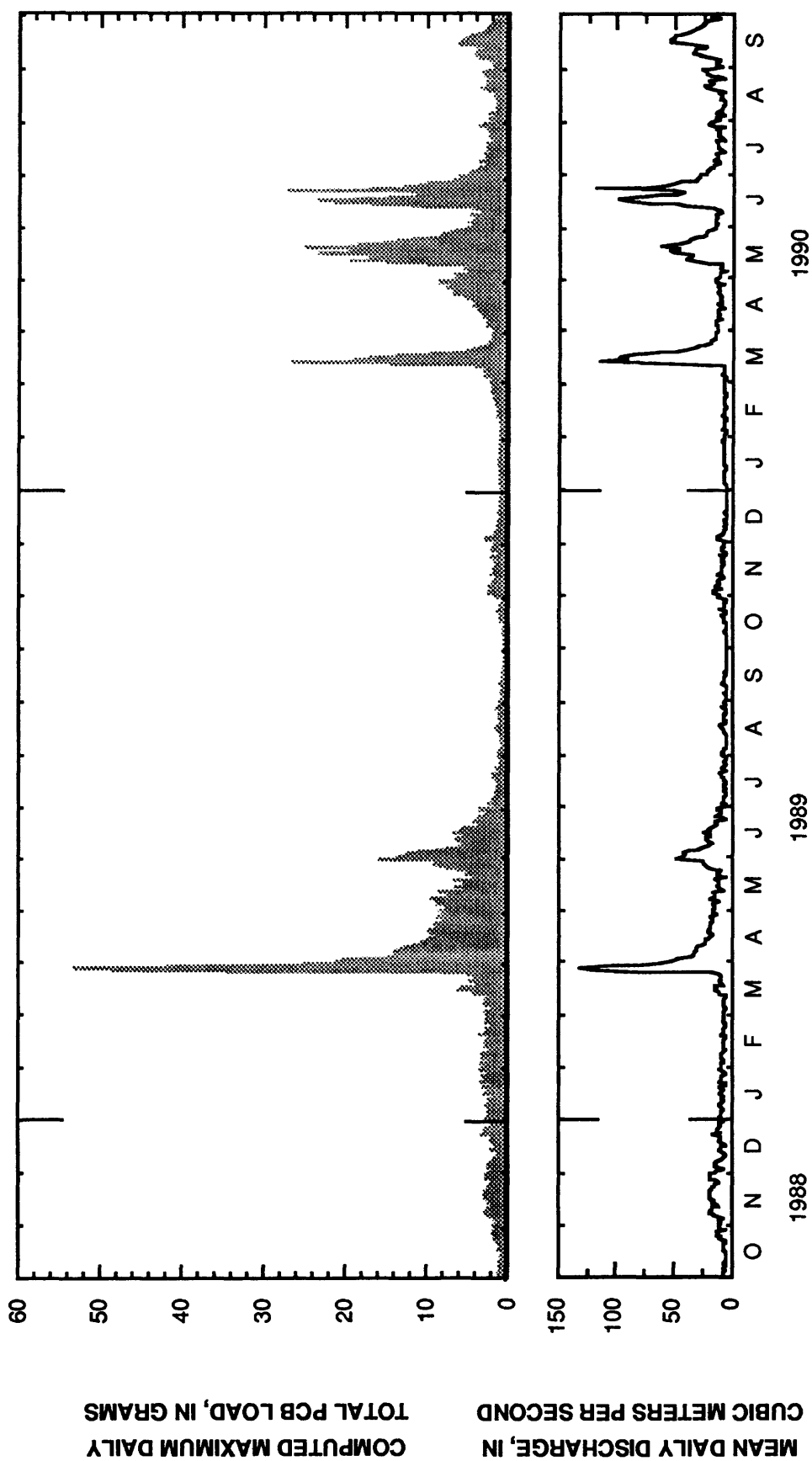


Figure 13. Computed maximum daily loads of total polychlorinated biphenyls (PCB's) entering Green Bay and mean daily discharge from Oconto River at mouth at Oconto, USGS station number 04071775, October 1988-September 1990.

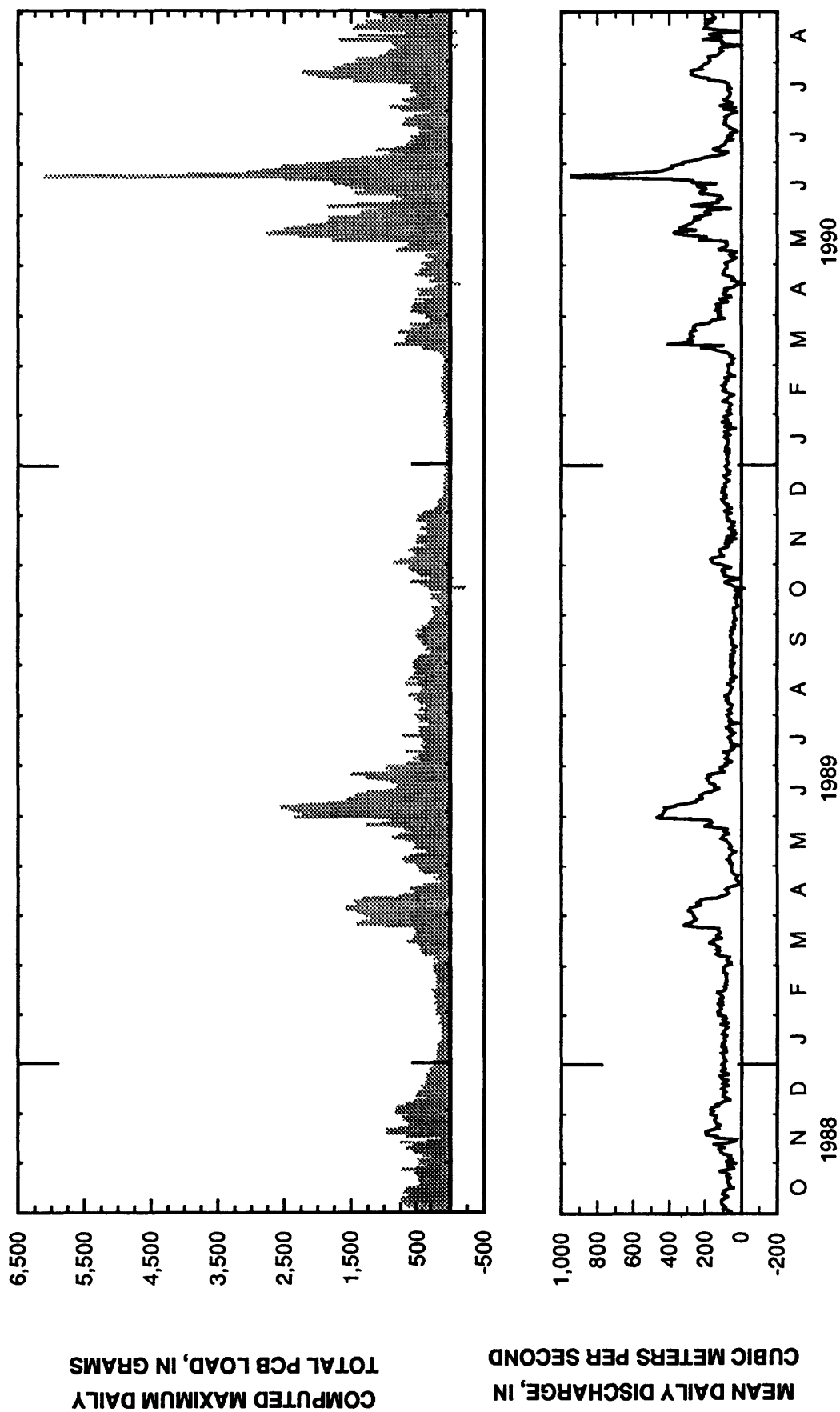


Figure 14. Computed maximum daily loads of total polychlorinated biphenyls (PCB's) entering Green Bay and mean daily discharge from Fox River at mouth at Green Bay, USGS station number 04085139, October 1988-September 1990.

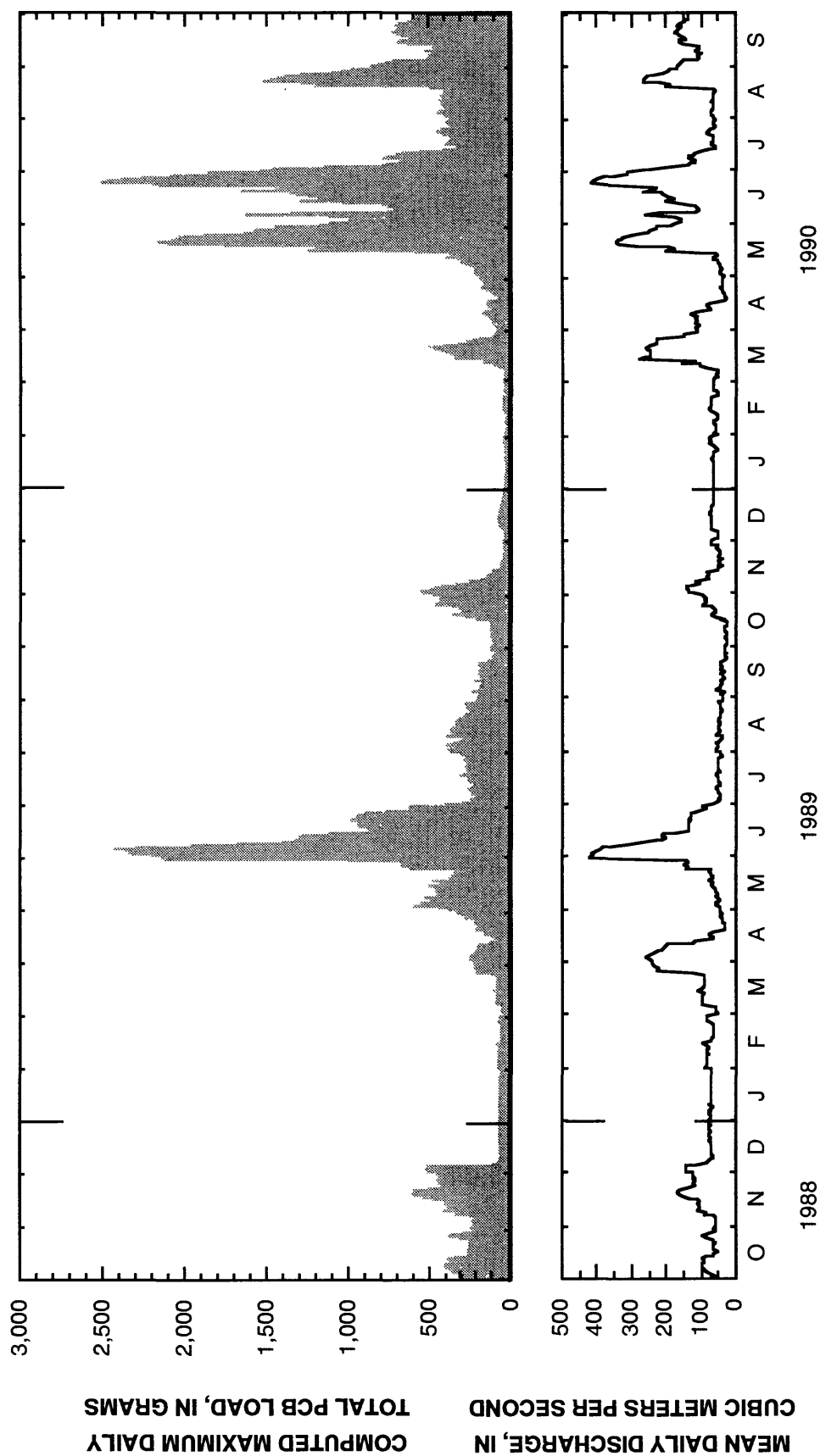


Figure 15. Computed maximum daily loads of total polychlorinated biphenyls (PCB's) entering Green Bay and mean daily discharge from Fox River at De Pere, USGS station number 04085059, October 1988-September 1990.

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90

[PCB's, polychlorinated biphenyls; concentrations in nanograms per liter; Min, minimum probable concentration; Max, maximum probable concentration; Mean daily discharge in cubic feet per second (ft³/s) and in meters per second (m³/s); lab, laboratory accident; lost, data missing; (--), total PCB could not be computed; y/m/d, year/month/day]

Note: PCB concentrations are presented here as reported by the analyzing laboratory and do not conform to USGS conventions regarding significant figures.

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		<u>Particulate PCB</u>		<u>Dissolved PCB</u>		<u>Total PCB</u>			
		Min	Max	Min	Max	Min	Max		
Escanaba River at mouth at Escanaba, USGS station number 040590345									
89/01/24	1500	3.3761	3.4162	12.6750	12.6974	16.0511	16.1136	544	15.4
89/04/11	1930	.9947	1.0337	5.8761	5.8862	6.8708	6.9199	2,010	56.9
89/05/09	1600	2.1406	2.2144	1.0686	1.1106	3.2092	3.3250	1,240	35.1
89/06/08	0800	.9001	.9840	.8287	.9078	1.7288	1.8918	1,940	54.9
89/07/05	1435	.5398	.6339	1.1600	1.2325	1.6998	1.8664	702	19.9
89/08/01	1530	.4087	.4962	.8922	.9784	1.3009	1.4746	320	9.06
89/08/30	1300	1.8261	1.8896	1.3893	1.4670	3.2154	3.3566	280	7.93
89/09/28	1440	1.1548	1.4995	1.0293	1.2258	2.1841	2.7253	282	7.99
89/10/24	1000	.6098	.8315	.8394	.8842	1.4492	1.7157	511	14.5
89/11/29	1200	2.2830	2.3734	.7989	.8928	3.0819	3.2662	288	8.16
90/01/10	1115	3.7645	3.9254	1.3996	1.5996	5.1641	5.5250	320	9.06
90/02/08	1035	2.3912	2.4618	1.0549	1.1027	3.4461	3.5645	299	8.47
90/03/07	1620	3.4051	3.4643	.9840	1.1691	4.3891	4.6334	309	8.75
90/03/29	1500	.7230	.7820	.8504	.8982	1.5734	1.6802	843	23.9
90/04/26	1015	.6892	.7604	.6658	.7476	1.3550	1.5080	1,050	29.7
Menominee River at mouth at Marinette, USGS station number 04067651									
89/01/18	1400	6.5692	6.5824	2.5566	2.5787	9.1258	9.1611	2,280	64.6
89/04/12	0945	3.1881	3.1985	lab	lab	(--)	(--)	5,360	152
89/04/18	1445	1.5908	1.6106	4.2691	4.2792	5.8599	5.8898	5,280	150
89/04/25	1315	1.0327	1.1038	1.5697	1.6094	2.6024	2.7132	3,950	112
89/05/02	1400	.8974	1.0020	1.0704	1.1513	1.9678	2.1533	3,860	109
89/05/10	0830	1.0522	1.1168	1.4661	1.5421	2.5183	2.6589	3,000	85
89/05/18	0830	2.3637	2.3704	.9197	.9759	3.2834	3.3463	2,490	70.5
89/05/18	1045	1.6781	1.6865	1.4622	1.5056	3.1403	3.1921	2,490	70.5
89/05/23	1300	1.0111	1.0514	1.7866	1.8254	2.7977	2.8768	2,760	78.2
89/05/31	1340	1.6738	1.7345	1.0915	1.1279	2.7653	2.8624	3,980	113

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		Particulate PCB		Dissolved PCB		Total PCB			
		Min	Max	Min	Max	Min	Max		
Menominee River at mouth at Marinette--Continued									
89/06/07	1700	.9687	1.0427	1.2528	1.3349	2.2215	2.3776	3,460	98
89/06/14	0915	1.9769	2.0543	.9362	1.0118	2.9131	3.0661	8,690	246
89/06/20	1250	.9667	1.0348	.6914	.7694	1.6581	1.8042	5,930	168
89/06/27	1200	1.1124	1.1817	1.5144	1.5402	2.6268	2.7219	4,200	119
89/07/06	0800	1.0073	1.0618	1.1957	1.5377	2.2030	2.5995	1,930	54.7
89/07/11	1140	1.1927	1.2594	.9233	.9659	2.1160	2.2253	1,650	46.7
89/07/18	1130	1.3350	1.3718	1.6008	1.6479	2.9358	3.0197	1,420	40.2
89/07/25	1300	.7121	.7765	.7881	.8294	1.5002	1.6059	1,190	33.7
89/08/01	1000	.9321	1.0338	1.9873	2.0570	2.9194	3.0908	1,850	52.4
89/08/08	1150	.9912	1.1040	.8922	.9872	1.8834	2.0912	1,700	48.1
89/08/14	1210	.8152	.9225	.7426	.8098	1.5578	1.7323	1,470	41.6
89/08/22	1215	.9286	.9735	.6497	.7203	1.5783	1.6938	1,280	36.2
89/08/22	1345	1.1710	1.2096	1.0549	1.1362	2.2259	2.3458	1,280	36.2
89/08/30	1700	.9215	.9994	1.3794	1.4358	2.3009	2.4352	1,170	33.1
89/09/06	1530	.8279	.8696	2.7618	2.8113	3.5897	3.6809	1,640	46.4
89/09/12	1235	.9013	.9473	.7914	.8760	1.6927	1.8233	1,480	41.9
89/09/19	1125	.6789	.7278	.8306	.8835	1.5095	1.6113	1,130	32
89/09/28	0825	1.1301	1.2274	.8022	.8565	1.9323	2.0839	1,120	31.7
89/10/03	1250	1.0136	1.0655	.6662	.7389	1.6798	1.8044	1,260	35.7
89/10/11	1200	.6283	.6853	.5723	.6293	1.2006	1.3146	1,330	37.7
89/10/17	1200	1.0136	1.0447	.6768	.7402	1.6904	1.7849	1,290	36.5
89/10/23	1210	.6295	.6834	.9864	1.0429	1.6159	1.7263	1,320	37.4
89/11/01	1255	.3230	.3600	1.0056	1.0833	1.3286	1.4433	2,200	62.3
89/11/08	1050	.8645	.9024	.7750	.8505	1.6395	1.7529	2,430	68.8
89/11/14	1400	.6754	.7389	.6548	.7255	1.3302	1.4644	1,760	49.8
89/11/29	1600	2.5441	2.6455	lab	lab	(--)	(--)	1,240	35.1
89/12/12	1300	1.2886	1.4098	lab	lab	(--)	(--)	1,240	35.1
90/01/09	1610	.9964	1.0532	1.1575	1.2444	2.1539	2.2976	1,860	52.7
90/01/24	1300	.8617	.9149	.8201	1.9611	1.6818	2.8760	1,970	55.8
90/01/24	1500	.5973	.6330	.7721	.8688	1.3694	1.5018	1,970	55.8
90/02/07	1535	.6931	.7366	.7901	.8675	1.4832	1.6041	1,970	55.8
90/02/26	1300	.4902	.5365	.7118	.7996	1.2020	1.3361	1,760	49.8
90/03/07	1120	.7980	.8539	1.3401	1.4046	2.1381	2.2585	1,970	55.8
90/03/26	1330	.6794	.7237	.9553	1.0110	1.6347	1.7347	2,700	76.5
90/04/03	1425	.9962	1.0677	1.0623	1.1099	2.0585	2.1776	2,090	59.2

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		Particulate PCB		Dissolved PCB		Total PCB			
		Min	Max	Min	Max	Min	Max		
Menominee River at mouth at Marinette--Continued									
90/04/12	1005	.4936	.5521	.5724	.6625	1.0660	1.2146	1,940	54.9
90/04/17	1440	.5618	.6098	.6698	.7506	1.2316	1.3604	1,720	48.7
90/04/25	1505	1.2662	1.2918	1.0914	1.1764	2.3576	2.4682	1,990	56.4
90/05/02	1450	1.3578	1.4288	1.1844	1.2459	2.5422	2.6747	2,440	69.1
Pestigo River at mouth near Peshtigo, USGS station number 04069530									
89/01/25	1055	1.3778	1.3969	4.1258	4.1410	5.5036	5.5379	412	11.7
89/04/12	1630	14.1641	14.1803	5.0669	5.0851	19.2310	19.2654	1,290	36.5
89/05/10	1515	2.2432	2.2773	4.1175	4.1398	6.3607	6.4171	801	22.7
89/06/07	1325	2.0187	2.0698	1.8669	1.9349	3.8856	4.0047	849	24
89/07/06	1100	2.1641	2.2196	2.1398	2.2447	4.3039	4.4643	365	10.3
89/08/02	0800	1.2398	1.3108	1.3225	1.4278	2.5623	2.7386	337	9.54
89/08/31	0830	.6668	.7328	2.1357	2.2068	2.8025	2.9396	282	7.99
89/09/26	1215	.3677	.4248	1.4797	1.5380	1.8474	1.9628	246	6.97
89/10/23	1500	.4310	.4831	.8361	.9031	1.2671	1.3862	352	9.97
89/11/28	1615	.9160	.9974	1.0000	1.0445	1.9160	2.0419	336	9.52
90/01/09	1220	.7767	.8336	1.0325	1.1049	1.8092	1.9385	285	8.07
90/02/07	1200	.8310	.8782	.8462	.9315	1.6772	1.8097	611	17.3
90/03/08	0850	.7853	.8414	1.2463	1.3258	2.0316	2.1672	255	7.22
90/03/08	0855	.7148	.7716	.7618	.8354	1.4766	1.6070	255	7.22
90/03/22	1230	1.9074	1.9700	.9151	.9866	2.8225	2.9566	1,480	41.9
90/04/25	1220	3.1346	3.1598	4.2844	4.3392	7.4190	7.4990	505	14.3
Oconto River at mouth at Oconto, USGS station number 04071775									
89/01/25	1500	.4700	.4942	2.9530	2.9562	3.4230	3.4504	346	9.80
89/04/13	0900	3.4827	3.4998	lab	lab	(--)	(--)	856	24.2
89/05/10	1545	1.0083	1.0846	4.6179	4.6202	5.6262	5.7048	525	14.9
89/06/07	0830	1.5912	1.6585	1.4959	1.5791	3.0871	3.2376	961	27.2
89/07/05	1500	1.3466	1.4032	1.1804	1.3214	2.5270	2.7246	279	7.90
89/07/05	1715	1.1332	1.1870	1.1647	1.2494	2.2979	2.4364	279	7.90
89/08/02	1045	.5391	.6221	.7644	.8552	1.3035	1.4773	322	9.12
89/08/30	0815	.4135	.4680	1.1632	1.2340	1.5767	1.7020	241	6.83
89/09/26	1510	.2562	.3083	lab	lab	(--)	(--)	194	5.49
89/09/26	1655	.1896	.2485	.6098	.6552	.7994	.9037	194	5.49

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		Particulate PCB		Dissolved PCB		Total PCB			
		Min	Max	Min	Max	Min	Max		
Oconto River at mouth at Oconto--Continued									
89/10/24	1330	lab	lab	.5920	.6428	(--)	(--)	302	8.55
89/11/28	1115	.4951	.5804	1.6985	1.7275	2.1936	2.3079	343	9.71
90/01/10	1610	.3535	.4031	1.2046	1.2565	1.5581	1.6596	254	7.19
90/02/07	0910	.2737	.3284	.9121	1.0024	1.1858	1.3308	264	7.48
90/03/08	1410	.7121	.7529	3.3222	3.3525	4.0343	4.1054	295	8.35
90/03/20	1235	.7195	.7580	.6168	.6815	1.3363	1.4395	1,440	40.8
90/03/30	1135	.4375	.5202	.8117	.8625	1.2492	1.3827	579	16.4
90/04/25	0900	3.2364	3.3045	3.3669	3.4345	6.6033	6.7390	411	11.6
Fox River at mouth at Green Bay, USGS station number 04085139									
89/01/19	0945	7.5999	7.6116	5.8104	5.8342	13.4103	13.4458	2,800	79.3
89/04/14	0915	lab	lab	7.6091	7.6436	(--)	(--)	2,920	82.7
89/04/20	0845	lost	lost	16.3066	16.3158	(--)	(--)	672	19.0
89/04/26	0830	75.7465	75.8590	16.1684	16.1779	91.9149	92.0369	722	20.4
89/05/03	0840	89.7126	89.7874	23.1525	23.1628	112.8651	112.9502	2,420	68.5
89/05/11	1000	78.4174	78.5003	15.1445	15.1551	93.5619	93.6554	2,030	57.5
89/05/17	1130	71.6198	71.7890	20.5829	20.5919	92.2027	92.3809	2,960	83.8
89/05/24	0850	55.0937	55.1287	20.0143	20.0496	75.1080	75.1783	2,640	74.8
89/06/01	0845	40.4490	40.4967	14.3223	14.3315	54.7713	54.8282	16,300	462
89/06/06	0945	51.5929	51.8219	15.5300	15.5469	67.1229	67.3688	15,200	430
89/06/06	1155	55.4384	55.5150	14.5381	14.6007	69.9765	70.1157	15,200	430
89/06/13	1330	51.8939	52.0692	20.1665	20.1769	72.0604	72.2461	8,240	233
89/06/21	0845	40.1473	40.2209	14.3815	14.4384	54.5288	54.6593	6,280	178
89/06/28	0845	92.0725	92.3129	15.0035	15.0185	107.0760	107.3314	3,300	93.4
89/07/06	0815	52.4724	52.5491	16.6416	16.6953	69.1140	69.2444	2,730	77.3
89/07/12	0800	62.3367	62.5398	20.8554	20.8653	83.1921	83.4051	2,140	60.6
89/07/17	1010	45.6408	45.8470	25.8290	25.8396	71.4698	71.6866	2,260	64
89/07/17	1535	66.6762	66.9748	24.4367	24.4444	91.1129	91.4192	2,260	64
89/07/18	0715	47.7020	47.8845	23.6289	23.6413	71.3309	71.5258	2,580	73.1
89/07/18	1630	43.1675	43.3471	21.3641	21.3768	64.5316	64.7239	2,580	73.1
89/07/19	0830	127.8773	128.1750	23.5594	23.5699	151.4367	151.7449	2,120	60
89/07/19	1515	122.8568	123.1170	22.1747	22.1820	145.0315	145.2990	2,120	60
89/07/20	1555	65.6573	65.8770	26.2012	26.2129	91.8585	92.0899	1,660	47
89/07/21	0715	60.6079	60.8416	24.6767	24.7312	85.2846	85.5728	1,310	37.1
89/07/21	1420	44.2821	44.5019	lab	lab	(--)	(--)	1,310	37.1

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		Particulate PCB		Dissolved PCB		Total PCB			
		Min	Max	Min	Max	Min	Max		
Fox River at mouth at Green Bay--Continued									
89/07/22	0715	68.5758	68.8710	19.8703	19.9217	88.4461	88.7927	2,450	69.4
89/07/22	1415	44.1040	44.3123	22.3811	22.4366	66.4851	66.7489	2,450	69.4
89/07/23	0730	40.9471	41.1762	25.8000	25.8548	66.7471	67.0310	1,700	48.1
89/07/23	1420	47.5232	47.8069	22.8085	22.8182	70.3317	70.6251	1,700	48.1
89/07/24	0745	46.0181	46.2274	18.7442	18.7858	64.7623	65.0132	3,090	87.5
89/07/24	1000	46.6857	46.8887	16.7785	16.8182	63.4642	63.7069	3,090	87.5
89/07/24	1510	41.5433	41.7395	17.3282	17.3730	58.8715	59.1125	3,090	87.5
89/07/25	0740	33.7779	33.9993	17.0998	17.1376	50.8777	51.1369	2,380	67.4
89/07/25	1600	41.4299	41.6090	15.1150	15.1244	56.5449	56.7334	2,380	67.4
89/07/26	0850	39.8636	39.9424	16.7491	16.7571	56.6127	56.6995	2,220	62.9
89/07/26	1600	36.1647	36.2316	15.0914	15.1413	51.2561	51.3729	2,220	62.9
89/07/27	0735	55.6679	56.1401	26.8672	26.9665	82.5351	83.1066	72	2.04
89/07/27	1405	68.8432	68.8772	25.4965	25.5531	94.3397	94.4303	72	2.04
89/07/28	0745	45.8857	45.9135	19.7154	19.7978	65.6011	65.7113	2,550	72.2
89/07/28	1425	53.7943	53.9612	25.4863	25.5529	79.2806	79.5141	2,550	72.2
89/07/29	0755	51.7653	51.9132	23.8982	23.9569	75.6635	75.8701	2,020	57.2
89/07/29	1500	55.3172	55.5765	24.8871	24.9044	80.2043	80.4809	2,020	57.2
89/07/30	0755	60.3436	60.5338	22.6647	22.7260	83.0083	83.2598	2,390	67.7
89/07/30	1425	57.4787	57.7004	23.8782	23.9418	81.3569	81.6422	2,390	67.7
89/07/31	0755	55.6899	55.8381	22.7514	22.8316	78.4413	78.6697	2,610	73.9
89/08/09	0810	47.0133	47.2427	23.1272	23.2004	70.1405	70.4431	2,420	68.5
89/08/14	1355	53.6129	53.8449	21.5502	21.5932	75.1631	75.4381	2,310	65.4
89/08/23	1345	84.6829	84.7436	23.9180	23.9836	108.6009	108.7272	2,280	64.6
89/08/29	1045	85.5471	85.6037	25.1753	25.2509	110.7224	110.8546	1,870	53
89/09/07	0900	60.3350	60.4043	22.4211	22.4729	82.7561	82.8772	2,120	60
89/09/13	1225	64.5180	64.6935	28.5844	28.6748	93.1024	93.3683	1,730	49
89/09/20	0845	77.2806	77.3410	17.4786	17.5578	94.7592	94.8988	1,740	49.3
89/09/27	1215	57.1927	57.2033	25.1864	25.2347	82.3791	82.4380	1,600	45.3
89/10/04	1425	47.4732	47.6525	17.9268	17.9913	65.4000	65.6438	1,520	43
89/10/12	0900	67.9974	68.2138	20.8746	20.9411	88.8720	89.1549	401	11.4
89/10/18	0930	85.0499	85.2235	17.6535	17.7024	102.7034	102.9259	1,130	32
89/10/24	1045	31.7793	31.9448	15.4220	15.4608	47.2013	47.4056	2,470	70
89/10/30	1520	lab	lab	15.3221	15.3784	(--)	(--)	1,970	55.8
89/10/31	0840	57.4777	57.6784	21.8145	21.8562	79.2922	79.5346	3,230	91.5
89/10/31	1615	44.2012	44.3569	25.9647	26.0090	70.1659	70.3659	3,230	91.5

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		Particulate PCB		Dissolved PCB		Total PCB			
		Min	Max	Min	Max	Min	Max		
Fox River at mouth at Green Bay--Continued									
89/11/01	0800	30.4998	30.7073	21.4196	21.4350	51.9194	52.1423	4,270	121
89/11/02	0835	52.6218	52.8840	lab	lab	(--)	(--)	5,670	160
89/11/02	1415	46.6994	46.8716	17.7617	17.7982	64.4611	64.6698	5,670	160
89/11/03	0835	34.8944	35.0483	12.0342	12.0769	46.9286	47.1252	5,870	166
89/11/03	1500	46.7903	46.8402	12.9498	12.9685	59.7401	59.8087	5,870	166
89/11/04	0945	27.0579	27.1983	10.3739	10.3844	37.4318	37.5827	6,010	170
89/11/06	1415	31.9016	31.9431	11.2462	11.3229	43.1478	43.2660	3,440	97.4
89/11/07	0800	32.7705	32.8213	12.9045	12.9416	45.6750	45.7629	4,090	116
89/11/07	1415	50.3926	50.6028	11.6780	11.7424	62.0706	62.3452	4,090	116
89/11/08	0645	33.6877	33.7191	11.9303	11.9779	45.6180	45.6970	3,970	112
89/11/08	1455	37.1220	37.1347	10.7799	10.8355	47.9019	47.9702	3,970	112
89/11/09	0755	32.5340	32.6802	10.7876	10.8423	43.3216	43.5225	4,310	122
89/11/09	1345	46.9428	47.1465	12.2072	12.2620	59.1500	59.4085	4,310	122
89/11/10	0800	41.4519	41.4908	11.8010	11.8657	53.2529	53.3565	4,280	121
89/11/10	1400	52.3104	52.5262	10.7939	10.8616	63.1043	63.3878	4,280	121
89/11/11	0820	50.8028	50.8059	10.2141	10.2715	61.0169	61.0774	3,640	103
89/11/11	1350	51.3412	51.5420	11.2807	11.3362	62.6219	62.8782	3,640	103
89/11/12	0815	31.8142	32.0162	11.4509	11.4736	43.2651	43.4898	2,720	77
89/11/12	1355	41.9302	41.9338	16.7551	16.8051	58.6853	58.7389	2,720	77
89/11/13	0830	49.9626	50.0155	12.1231	12.1988	62.0857	62.2143	2,490	70.5
89/11/30	0830	64.0732	64.2425	8.7807	8.7947	72.8539	73.0372	2,860	81
89/12/13	0745	6.9113	6.9447	3.5524	3.5982	10.4637	10.5429	3,030	85.8
90/01/11	0830	4.9945	5.0565	3.6798	3.7337	8.6743	8.7902	3,130	88.6
90/01/29	1415	5.8786	5.9301	4.1563	4.2299	10.0349	10.1600	2,900	82.1
90/02/06	1615	lab	lab	4.1206	4.1652	(--)	(--)	2,140	60.6
90/02/21	1100	9.0408	9.0888	4.9918	5.0526	14.0326	14.1414	3,440	97.4
90/03/06	1130	10.5729	10.6359	6.2213	6.2429	16.7942	16.8788	2,150	60.9
90/03/19	1605	21.5029	21.5388	6.6064	6.6849	28.1093	28.2237	9,630	273
90/03/20	0840	15.7255	15.7653	6.0494	6.0987	21.7749	21.8640	10,200	289
90/03/20	1545	18.6003	18.6289	5.9965	6.0940	24.5968	24.7229	10,200	289
90/03/21	0815	14.3210	14.3666	5.6349	5.6887	19.9559	20.0553	10,100	286
90/03/21	1505	20.3064	20.3302	6.3631	6.4184	26.6695	26.7486	10,100	286
90/03/22	0800	28.5220	28.5440	6.1404	6.1922	34.6624	34.7362	10,000	283
90/03/22	1545	24.1299	24.2029	6.1900	6.2463	30.3199	30.4492	10,000	283
90/03/23	0715	17.0341	17.1018	6.2081	6.2776	23.2422	23.3794	9,150	259

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		Particulate PCB		Dissolved PCB		Total PCB			
		Min	Max	Min	Max	Min	Max		
Fox River at mouth at Green Bay--Continued									
90/03/23	1535	25.8044	25.8603	5.2684	5.3240	31.0728	31.1843	9,150	259
90/03/24	0720	11.4682	11.5310	4.7233	4.7801	16.1915	16.3111	9,570	271
90/03/24	1450	15.1636	15.1698	4.2966	4.3498	19.4602	19.5196	9,570	271
90/03/25	0730	12.3796	12.4344	4.3339	4.3831	16.7135	16.8175	9,420	267
90/03/25	1535	14.8580	14.8879	4.1484	4.2037	19.0064	19.0916	9,420	267
90/03/26	0830	27.6978	27.7268	4.9046	4.9311	32.6024	32.6579	8,790	249
90/03/26	1720	27.6102	27.6189	lab	lab	(--)	(--)	8,790	249
90/03/27	1050	12.4644	12.4988	3.7699	3.8713	16.2343	16.3701	6,260	177
90/03/27	1500	10.5775	10.6319	3.9496	4.0074	14.5271	14.6393	6,260	177
90/03/28	0830	16.5560	16.6081	4.2662	4.3229	20.8222	20.9310	5,900	167
90/03/28	1435	17.1398	17.1997	4.8827	4.9591	22.0225	22.1588	5,900	167
90/03/29	0810	14.0099	14.0643	5.6346	5.6986	19.6445	19.7629	5,510	156
90/03/30	0810	24.4237	24.4667	6.5859	6.6261	31.0096	31.0928	3,260	92.3
90/03/30	1445	16.0727	16.1142	5.4445	5.4994	21.5172	21.6136	3,260	92.3
90/03/31	0730	27.6835	27.7467	7.3263	7.3939	35.0098	35.1406	4,670	132
90/04/01	0730	22.2411	22.2965	7.3837	7.4375	29.6248	29.7340	4,080	116
90/04/01	1455	27.5334	27.5890	8.4425	8.5110	35.9759	36.1000	4,080	116
90/04/03	0820	35.5660	35.6123	10.7849	10.8311	46.3509	46.4434	3,890	110
90/04/11	1405	35.0922	35.1058	12.0943	12.3592	47.1865	47.4650	4,410	125
90/04/18	0840	46.6656	46.7168	14.3972	14.5273	61.0628	61.2441	1,450	41.1
90/04/24	1520	44.0631	44.2108	15.2318	15.3240	59.2949	59.5348	1,650	46.7
90/05/01	1340	33.3476	33.4470	16.7439	16.8474	50.0915	50.2944	3,030	85.8
Fox River at De Pere, USGS station number 04085059									
89/01/19	1500	3.4552	3.4926	25.9135	25.9932	29.3687	29.4858	2,610	73.9
89/04/13	1345	7.2268	7.2400	4.2362	4.3291	11.4630	11.5691	4,070	115
89/04/19	0900	30.4908	30.4937	1.3330	1.3645	31.8238	31.8582	1,280	36.2
89/04/19	1115	42.4290	42.4479	27.6013	27.6013	70.0303	70.0492	1,280	36.2
89/04/26	1245	48.6610	48.8081	12.8609	12.8881	61.5219	61.6962	1,450	41.1
89/05/03	1245	96.2962	96.3532	18.2952	18.3919	114.5914	114.7451	2,140	60.6
89/05/11	1600	72.4144	72.4654	15.6608	15.8413	88.0752	88.3067	2,020	57.2
89/05/17	1600	56.3556	56.4315	18.7247	18.7361	75.0803	75.1676	2,380	67.4
89/05/24	1240	31.6619	31.7062	15.4612	15.4976	47.1231	47.2038	2,670	75.6
89/06/01	1450	50.8738	50.9186	9.1089	9.1371	59.9827	60.0557	14,600	413

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		Particulate PCB		Dissolved PCB		Total PCB			
		Min	Max	Min	Max	Min	Max		
Fox River at De Pere--Continued									
89/06/06	1530	63.6619	63.7640	9.9937	10.0571	73.6556	73.8211	13,500	382
89/06/13	1000	54.2859	54.3524	14.9529	15.1497	69.2388	69.5021	7,590	215
89/06/21	1400	63.4155	63.4824	17.1985	17.2602	80.6140	80.7426	4,780	135
89/06/28	1330	63.5219	63.6101	21.7437	21.8026	85.2656	85.4127	3,700	105
89/07/05	1030	36.7862	36.8348	14.5530	14.6353	51.3392	51.4701	1,730	49
89/07/12	1245	35.4775	35.6743	17.1898	17.1987	52.6673	52.8730	1,612	45.6
89/07/20	1230	45.3113	45.4398	17.0062	17.0598	62.3175	62.4996	1,704	48.3
89/07/25	1145	39.3389	39.4120	16.4158	16.4256	55.7547	55.8376	1,889	53.5
89/07/31	1420	53.3807	53.4487	19.6572	19.6691	73.0379	73.1178	1,720	48.7
89/08/09	1120	60.3337	60.4157	17.1784	17.2812	77.5121	77.6969	1,530	43.3
89/08/14	1000	64.9304	65.0002	18.2228	18.2821	83.1532	83.2823	1,820	51.5
89/08/23	1030	51.0423	51.1086	17.8795	17.9359	68.9218	69.0445	1,610	45.6
89/08/29	1500	43.8660	43.9395	16.7824	16.8534	60.6484	60.7929	1,880	53.2
89/09/06	1045	31.4730	31.5308	14.8305	14.8408	46.3035	46.3716	1,750	49.6
89/09/13	0850	38.7180	38.7853	15.2345	15.3016	53.9525	54.0869	1,330	37.7
89/09/20	1345	34.4602	34.5200	13.9312	14.0061	48.3914	48.5261	1,580	44.8
89/09/27	0810	24.0708	24.1000	10.9698	11.0410	35.0406	35.1410	1,010	28.6
89/10/04	0920	32.7995	32.8270	12.9174	12.9842	45.7169	45.8112	986	27.9
89/10/12	1225	33.0834	33.1430	11.8794	11.9472	44.9628	45.0902	1,190	33.7
89/10/18	1400	43.3342	43.3915	12.1262	12.1440	55.4604	55.5355	2,050	58.1
89/10/24	1515	28.7878	28.8347	lab	lab	(--)	(--)	2,610	73.9
89/10/31	1315	43.2698	43.3412	12.3208	12.3294	55.5906	55.6706	3,520	99.7
89/11/07	1115	20.7078	20.7722	6.8058	6.8455	27.5136	27.6177	3,660	104
89/11/14	0840	11.0962	11.1628	4.0042	4.0236	15.1004	15.1864	2,960	83.8
89/11/30	1415	5.1660	5.2541	2.6260	2.6798	7.7920	7.9339	2,610	73.9
89/11/30	1545	4.5202	4.6011	2.6836	2.7407	7.2038	7.3418	2,610	73.9
89/12/13	0845	6.0416	6.1173	5.9165	5.9867	11.9581	12.1040	2,670	75.6
90/01/11	1125	2.8106	2.8705	2.4563	2.5563	5.2669	5.4268	2,370	67.1
90/01/25	1030	3.2627	3.3375	3.3600	3.4576	6.6227	6.7951	2,110	59.8
90/02/06	1035	3.5088	3.5464	2.7143	2.7861	6.2231	6.3325	2,010	56.9
90/02/21	1635	3.9190	3.9724	3.2605	3.2976	7.1795	7.2700	2,640	74.8
90/03/06	1520	4.4038	4.4418	3.4614	3.5224	7.8652	7.9642	1,940	54.9
90/03/21	1115	17.5833	17.6618	5.2683	5.2855	22.8516	22.9473	9,190	260
90/03/28	1210	4.7442	4.7944	2.1775	2.1905	6.9217	6.9849	5,240	148

Table 1. Concentrations of polychlorinated biphenyls in water from major tributaries to Green Bay, 1989-90--Continued

Sampling date (y/m/d)	Time (24-hour)	Concentration (ng/L)						Mean daily discharge (ft³/s)	Mean daily discharge (m³/s)
		<u>Particulate PCB</u>		<u>Dissolved PCB</u>		<u>Total PCB</u>			
		Min	Max	Min	Max	Min	Max		
		Fox River at De Pere--Continued							
90/04/04	0840	6.6993	6.7728	3.5467	3.6104	10.2460	10.3832	4,260	121
90/04/11	1010	11.3858	11.4539	4.7100	4.7305	16.0958	16.1844	3,840	109
90/04/17	1025	16.5438	16.5890	6.7345	6.7485	23.2783	23.3375	2,360	66.8
90/04/24	1045	29.9118	29.9785	10.9696	10.9843	40.8814	40.9628	1,440	40.8
90/04/24	1210	30.9546	30.9817	11.1043	11.1163	42.0589	42.0980	1,440	40.8
90/05/01	1010	39.3855	39.4573	15.0319	15.0458	54.4174	54.5031	1,200	34

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990

[Total polychlorinated biphenyls in grams per day. Negative load values indicate a net upstream flow at mouth for that day]

DAY	1988			1989								
	OCT.*	NOV.*	DEC.*	JAN.*	FEB.*	MAR.*	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Escanaba River at mouth at Escanaba, USGS station number 040590345												
1	2.9	7.2	11.3	8.0	18.1	9.7	30.4	19.5	10.7	4.6	1.2	4.2
2	2.6	6.6	11.0	8.3	17.2	9.8	34.0	17.0	9.4	4.0	1.2	4.5
3	2.2	7.1	10.1	8.4	16.3	9.6	32.7	15.2	8.8	3.2	1.2	3.9
4	2.4	7.2	8.4	8.6	16.1	9.4	49.0	14.0	7.7	3.5	1.3	3.3
5	3.7	13.2	7.6	8.8	15.9	9.3	54.0	13.5	6.1	3.2	1.2	3.1
6	4.8	19.0	6.7	9.7	15.7	9.2	54.1	12.9	5.2	2.9	1.2	3.0
7	4.7	22.0	5.5	10.1	15.4	9.1	51.4	12.2	4.9	2.6	1.2	2.8
8	4.8	21.6	4.6	10.6	15.0	9.1	49.9	10.9	9.0	2.4	1.2	2.7
9	3.2	19.1	3.8	10.9	14.2	9.1	41.9	10.1	16.4	2.2	1.3	2.5
10	2.9	16.2	3.1	11.4	14.7	9.1	38.9	9.2	18.6	2.0	1.3	2.4
11	4.2	14.2	3.3	12.0	14.2	9.3	34.2	8.3	17.7	1.9	1.3	2.6
12	3.6	12.6	3.4	12.7	14.0	9.5	31.1	7.1	15.2	1.8	1.4	2.7
13	3.5	12.0	4.4	13.2	14.6	9.5	27.4	6.6	13.3	1.6	1.6	3.0
14	3.2	10.9	4.6	13.6	13.4	9.4	27.8	6.3	13.8	1.9	2.0	2.8
15	3.1	10.5	3.8	14.3	12.6	9.8	28.8	6.0	15.7	2.1	2.4	2.6
16	3.1	14.1	3.5	13.3	12.5	9.7	31.2	5.7	14.6	2.1	2.1	2.5
17	4.0	15.7	4.5	12.4	12.3	9.5	36.2	5.2	13.9	2.0	2.6	2.4
18	4.8	16.1	4.9	16.8	12.0	9.5	36.5	4.9	12.5	1.8	2.1	2.2
19	5.2	15.8	5.4	16.8	11.7	9.3	34.9	4.7	10.6	1.8	1.8	2.1
20	5.3	14.2	6.4	17.6	11.4	9.2	33.9	4.7	9.0	1.5	1.9	2.0
21	4.7	12.4	6.5	16.9	11.5	9.1	31.8	4.9	7.5	1.4	1.9	1.8
22	4.8	11.0	6.8	18.4	10.6	9.2	30.1	4.6	6.2	1.3	2.3	2.1
23	4.7	9.5	7.8	20.0	10.3	9.6	28.9	4.4	7.2	1.2	2.5	2.0
24	6.0	8.6	7.9	21.3	10.2	10.3	26.5	4.4	9.5	1.2	2.3	1.9
25	7.2	8.3	8.0	20.8	9.9	11.0	25.7	9.7	8.7	1.1	2.2	1.9
26	7.4	8.1	7.7	19.8	9.8	10.5	27.4	11.2	7.9	1.1	2.2	1.9
27	7.2	12.8	8.3	19.2	9.7	18.8	28.5	12.6	8.0	1.2	2.2	1.9
28	8.5	14.8	7.8	19.8	9.6	23.4	27.1	10.8	6.8	1.2	2.2	1.9
29	9.5	14.4	7.4	18.7	---	35.5	24.2	8.3	5.6	1.2	2.3	1.8
30	8.7	13.1	7.6	19.0	---	35.1	21.6	7.7	4.9	1.2	2.3	1.7
31	7.7	---	7.7	18.7	---	32.8	---	10.9	---	1.2	2.8	---
Total	150.6	388.3	199.8	450.1	368.9	393.4	1,030.1	283.5	305.4	62.4	56.7	76.2

Water year 1989 Total 3,765.4

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1989			1990								
	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY*	JUNE*	JULY*	AUG.*	SEPT.*
Escanaba River at mouth at Escanaba--Continued												
1	1.7	6.4	3.2	3.9	2.9	3.3	3.3	4.2	3.2	1.7	1.6	1.9
2	1.7	4.7	3.1	3.9	2.9	3.4	3.8	3.8	3.0	1.6	1.5	1.8
3	1.6	4.5	2.5	4.0	2.8	3.5	3.7	3.5	3.0	2.5	1.5	1.7
4	1.5	4.5	2.7	4.0	2.9	3.5	3.7	3.1	3.1	1.8	1.6	1.7
5	1.5	5.2	3.0	4.2	2.8	3.5	3.6	3.0	3.3	1.1	1.7	1.7
6	1.6	6.2	3.3	4.1	2.8	3.5	3.3	2.8	4.2	1.0	1.8	2.2
7	1.7	5.7	2.6	4.2	2.8	3.5	3.1	2.8	3.4	1.5	1.5	2.3
8	1.7	5.2	2.6	4.2	2.6	3.5	3.0	2.7	3.2	1.8	1.6	2.4
9	1.6	4.8	2.7	4.3	3.0	3.7	2.9	3.4	3.4	2.2	1.5	2.2
10	1.5	4.3	3.0	4.3	2.9	3.3	2.8	7.4	3.3	2.0	1.5	2.1
11	1.5	3.8	3.1	4.4	3.0	3.2	3.0	9.7	2.9	1.9	1.5	2.0
12	1.5	2.9	3.0	4.2	2.9	3.4	2.9	12.3	3.0	1.7	1.6	2.2
13	1.5	4.0	2.8	4.1	2.9	4.1	2.8	13.8	4.6	1.5	1.6	2.0
14	1.4	3.9	2.9	4.1	3.0	7.2	2.8	14.2	5.0	1.4	1.7	2.4
15	1.4	3.9	2.9	4.0	2.9	11.7	3.1	15.8	4.2	1.4	1.7	2.5
16	1.4	4.0	3.0	3.9	2.8	20.7	3.4	20.5	4.1	1.5	1.7	2.9
17	1.2	3.6	3.0	3.9	2.8	24.3	3.3	27.7	4.6	1.5	1.7	2.7
18	1.0	3.2	3.1	3.8	2.9	23.0	3.2	27.9	5.6	1.5	1.7	2.5
19	1.2	3.6	3.1	3.8	3.0	17.5	3.2	23.0	5.8	1.4	2.2	2.4
20	1.6	3.9	3.1	3.6	2.9	14.9	3.1	18.1	5.1	1.4	2.2	2.5
21	2.1	2.9	3.0	3.7	3.0	14.5	3.2	14.0	3.0	1.4	2.3	2.9
22	2.3	2.9	3.1	3.5	3.0	11.6	3.3	11.6	3.6	1.4	2.3	2.8
23	2.4	2.5	3.1	3.6	3.1	7.6	3.4	9.9	3.3	1.5	2.4	2.7
24	2.2	2.7	3.2	3.6	3.2	5.8	3.5	8.7	3.2	1.4	2.4	2.6
25	2.1	3.2	3.2	3.4	3.1	5.4	3.7	6.8	2.9	1.4	1.7	2.5
26	2.1	3.0	3.2	3.4	3.2	4.8	3.9	6.5	2.6	1.4	1.6	2.3
27	2.8	3.2	3.3	3.3	3.3	4.4	4.3	6.0	2.4	1.4	1.8	2.1
28	2.1	2.7	3.4	3.2	3.3	3.7	4.9	5.0	2.1	1.4	2.9	2.0
29	2.0	2.3	3.5	3.1	---	3.5	4.8	4.5	2.0	1.5	2.7	1.7
30	3.3	2.9	3.8	3.1	---	3.4	4.5	4.1	1.9	1.6	2.3	1.8
31	5.7	---	3.8	3.0	---	3.2	---	3.7	---	1.7	2.1	---
Total	58.9	116.6	95.3	117.8	82.7	232.6	103.5	300.5	105.0	48.5	57.9	67.5

Water year 1990 Total 1,386.8

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1988			1989								
	OCT.*	NOV.*	DEC.*	JAN.*	FEB.*	MAR.*	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Menominee River at mouth at Marinette, USGS station number 04067651												
1	7.0	12.2	21.2	30.2	43.4	36.0	143.1	21.9	40.7	16.8	13.8	10.0
2	6.2	10.6	22.1	32.6	43.2	35.8	113.2	20.5	42.6	14.5	12.8	13.1
3	6.1	11.8	19.1	32.9	40.9	35.7	109.4	20.6	43.1	14.2	11.4	12.9
4	6.4	10.8	17.0	34.3	38.4	35.5	115.4	19.6	42.9	14.7	10.0	13.6
5	7.4	12.2	14.4	33.1	40.5	35.3	118.0	21.6	32.0	13.4	8.9	15.8
6	6.8	14.8	19.2	38.7	40.3	33.2	119.4	21.0	23.2	12.2	11.4	14.5
7	6.9	16.5	17.7	37.5	40.1	34.9	127.2	22.7	20.3	13.0	9.6	13.6
8	6.9	21.2	16.5	37.7	39.9	34.8	106.8	21.9	20.1	12.5	8.7	13.4
9	7.4	22.2	14.4	37.8	37.5	40.1	106.1	20.4	28.1	11.7	6.9	12.1
10	5.9	22.0	12.9	32.8	37.3	41.6	100.2	19.6	40.6	8.4	7.0	11.2
11	6.4	19.1	12.2	39.4	37.1	41.4	91.7	19.9	58.8	9.1	6.3	6.8
12	6.8	20.0	14.2	39.4	36.9	43.1	79.7	19.1	68.7	10.2	6.2	6.7
13	6.8	21.5	14.3	41.1	38.9	44.6	76.1	18.1	70.6	9.0	6.5	5.9
14	5.7	20.8	14.9	42.9	40.7	42.7	69.4	19.2	64.1	9.2	6.3	4.9
15	6.3	20.7	16.1	44.8	38.6	44.2	70.5	18.9	53.1	11.9	7.6	5.9
16	5.7	21.2	15.2	46.8	40.3	42.3	74.5	17.9	50.3	10.2	12.5	5.1
17	5.0	25.5	15.2	48.9	40.1	42.1	74.7	19.9	44.6	9.9	9.1	4.9
18	6.6	28.0	17.1	50.8	38.0	43.5	75.6	19.8	34.7	10.3	8.1	5.2
19	7.0	30.6	14.0	48.7	37.8	41.7	66.8	20.3	29.5	11.5	7.7	4.5
20	6.7	34.0	20.0	46.0	35.5	39.6	59.2	20.4	26.7	10.0	7.5	5.2
21	6.4	34.0	24.4	43.6	37.4	37.8	42.7	21.5	22.0	8.0	6.1	6.1
22	7.1	29.7	23.3	45.6	37.2	30.7	39.6	18.2	23.3	7.1	6.3	6.0
23	6.8	22.9	24.3	34.0	35.0	30.5	35.6	19.5	20.7	6.6	6.3	6.0
24	7.9	20.8	26.1	40.6	34.8	30.4	30.4	17.9	22.2	5.5	6.2	5.9
25	9.5	17.4	26.5	40.3	34.7	33.6	26.6	21.4	26.3	4.8	6.6	6.2
26	10.6	17.5	25.9	42.5	34.5	38.5	25.3	30.7	28.8	5.1	7.7	6.4
27	10.6	21.7	26.1	44.5	38.2	46.6	24.8	37.7	27.8	6.6	6.8	6.2
28	10.2	19.1	29.1	44.2	36.2	66.3	26.7	37.6	25.1	7.7	7.1	5.7
29	9.3	25.5	30.4	39.6	---	89.0	24.6	29.3	18.5	8.2	7.7	5.5
30	9.3	28.0	28.7	43.8	---	105.1	24.0	24.3	18.2	8.1	7.0	5.3
31	10.2	---	32.1	41.5	---	130.7	---	27.8	---	11.2	7.4	---
Total	227.9	632.3	624.6	1,256.6	1,073.4	1,427.3	2,197.3	689.2	1,067.6	311.6	253.5	244.6

Water year 1989 Total 10,005.9

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1989			1990								
	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY*	JUNE*	JULY*	AUG.*	SEPT.*
Menominee River at mouth at Marinette--Continued												
1	6.0	7.8	6.7	9.8	8.9	7.7	9.7	15.8	17.7	14.3	11.4	9.5
2	5.0	9.0	6.5	9.4	9.1	8.1	9.8	16.0	17.0	13.0	12.0	9.0
3	5.6	8.6	5.6	9.4	8.5	8.1	11.0	17.6	14.9	11.6	10.4	8.4
4	4.7	7.4	6.2	9.5	7.8	8.2	10.6	18.2	15.5	11.0	11.3	7.6
5	4.5	8.5	5.9	9.6	8.1	8.2	10.4	16.7	16.8	11.6	10.4	8.2
6	4.3	8.2	6.1	10.2	7.9	10.3	9.7	15.2	20.8	11.0	8.7	10.2
7	4.1	8.7	5.8	10.9	7.8	10.8	8.0	11.1	21.4	10.4	9.3	11.6
8	4.2	10.4	5.4	10.4	8.1	10.7	6.8	11.8	21.4	10.4	9.8	12.6
9	4.4	10.3	5.4	10.5	8.4	10.6	6.6	12.5	21.9	11.6	9.8	14.5
10	4.5	9.3	6.0	11.6	7.9	9.9	6.6	19.0	23.9	11.6	8.4	16.7
11	4.3	8.2	6.0	10.4	7.8	10.8	6.3	28.9	20.5	12.3	8.6	14.1
12	4.3	7.7	5.6	10.4	7.8	10.2	5.8	41.1	19.8	11.6	9.3	14.1
13	5.5	6.5	5.2	11.0	7.7	13.2	5.6	44.0	34.2	11.0	8.4	14.7
14	5.0	6.4	5.7	10.3	7.6	20.8	5.4	41.4	41.9	10.7	10.3	17.4
15	5.5	7.3	5.7	10.9	7.2	26.7	5.9	38.6	40.5	10.8	9.0	18.2
16	5.6	6.7	6.3	11.4	7.5	32.4	5.1	42.9	45.7	11.2	9.0	19.2
17	5.6	6.6	9.2	10.8	7.8	42.9	5.7	52.7	36.5	12.1	9.6	20.7
18	6.4	6.4	9.3	11.3	8.4	44.3	6.5	71.3	36.5	12.7	9.4	18.6
19	5.5	5.5	8.8	11.3	7.6	40.6	7.1	63.7	33.9	12.0	13.6	19.6
20	5.7	6.2	9.9	10.7	6.8	31.5	7.5	56.5	32.6	9.3	14.9	18.0
21	4.8	5.9	7.0	10.1	6.4	27.2	8.4	53.5	31.9	10.5	11.4	16.9
22	5.9	5.3	8.6	11.2	7.1	19.8	7.9	43.5	25.4	10.5	13.2	15.4
23	5.6	4.9	8.6	11.1	6.6	17.6	8.9	44.8	22.1	9.5	12.0	16.3
24	7.0	5.5	9.2	10.5	6.6	14.3	10.0	41.9	28.0	9.4	12.1	14.9
25	6.3	5.8	8.8	10.9	6.5	11.3	11.9	40.3	33.8	9.9	11.6	14.6
26	4.7	5.8	8.3	10.6	5.8	11.5	13.7	40.2	22.8	10.0	9.2	13.0
27	4.9	5.7	8.9	9.9	6.8	12.0	13.5	37.3	18.8	10.1	9.2	12.1
28	5.2	5.4	9.5	9.7	7.2	12.9	13.2	27.5	16.2	10.7	11.1	9.4
29	4.7	5.0	10.6	9.0	---	12.5	13.4	17.2	18.2	10.9	10.8	8.9
30	5.3	5.5	10.7	8.7	---	9.8	14.8	17.8	16.9	11.3	11.1	8.5
31	7.1	---	9.2	9.1	---	10.5	---	18.5	---	11.1	10.0	---
Total	162.2	210.5	230.7	320.6	211.7	525.4	265.8	1,017.5	767.5	344.1	325.3	412.9

Water year 1990 Total 4,794.2

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1988			1989								
	OCT.*	NOV.*	DEC.*	JAN.*	FEB.*	MAR.*	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Peshtigo River at mouth near Peshtigo, USGS station number 04069530												
1	1.7	2.9	3.7	3.6	6.7	9.5	121.0	15.8	18.0	5.9	4.4	2.0
2	1.5	2.8	2.5	3.5	7.1	7.9	119.7	16.7	18.2	2.8	2.3	1.9
3	1.1	2.5	3.3	3.8	6.7	11.3	104.2	16.4	17.3	4.8	2.1	1.9
4	1.2	2.6	3.3	4.1	6.0	13.8	90.2	14.8	16.0	3.4	2.2	1.5
5	1.1	3.3	3.2	3.3	7.4	13.0	90.8	13.8	13.4	3.6	1.8	1.8
6	1.3	4.4	3.3	3.6	6.2	10.6	87.1	15.5	11.3	4.0	1.7	1.9
7	1.0	5.3	2.9	3.8	7.0	11.3	90.7	13.6	8.4	3.2	1.9	1.7
8	1.0	5.1	2.4	3.6	7.6	13.6	91.8	13.5	8.1	3.3	1.7	1.7
9	1.3	5.3	1.7	4.7	6.9	12.7	75.8	14.4	10.4	2.5	1.6	2.2
10	1.1	5.1	2.0	4.3	7.2	12.4	76.1	12.7	11.6	2.3	1.4	2.3
11	1.2	4.5	1.6	3.9	7.6	14.3	71.8	11.2	11.7	2.1	1.7	1.6
12	1.4	3.9	1.8	4.5	6.8	14.0	60.5	9.7	11.3	3.5	1.4	1.8
13	1.0	4.2	1.7	4.1	7.7	13.3	62.6	9.2	10.5	3.0	1.7	1.5
14	.9	3.7	2.2	4.2	8.6	15.0	55.8	8.3	10.8	3.3	2.4	1.7
15	1.1	3.6	2.2	3.8	7.8	16.5	47.3	8.3	11.8	2.8	2.4	1.5
16	1.1	4.7	2.6	4.0	6.5	15.5	32.6	6.6	13.0	3.3	2.1	1.4
17	1.3	5.7	2.6	4.1	8.0	18.9	32.9	8.6	12.7	2.8	2.3	1.5
18	1.2	5.7	2.6	5.8	7.1	18.0	36.2	8.7	11.5	2.5	3.0	1.4
19	1.4	6.1	2.4	5.4	5.8	16.3	34.5	8.2	10.0	2.3	2.3	1.5
20	1.9	6.1	2.6	4.9	6.7	15.9	36.8	8.2	9.2	2.2	2.7	1.3
21	1.3	5.4	2.9	6.8	8.6	14.5	36.7	9.0	7.1	1.8	2.5	1.9
22	1.6	5.0	2.9	4.8	7.6	18.4	33.7	8.2	7.3	1.7	2.2	1.3
23	1.5	4.4	3.4	6.0	6.9	22.2	27.5	7.1	6.6	2.3	2.6	1.2
24	1.8	4.1	4.3	6.0	6.1	19.0	26.6	6.2	6.4	2.4	2.4	1.1
25	2.7	3.7	4.2	5.6	8.0	17.9	24.1	9.2	5.1	2.6	2.0	1.3
26	2.4	3.3	3.8	6.0	8.6	32.8	23.4	13.6	4.3	1.5	2.3	1.2
27	2.9	4.2	4.1	6.8	8.3	66.5	21.6	16.3	5.0	2.2	2.2	1.2
28	3.3	4.1	4.3	5.6	7.2	94.2	22.0	16.4	3.9	2.0	2.3	1.1
29	3.3	4.6	4.0	5.9	---	111.1	21.9	12.7	4.4	2.3	2.1	1.1
30	3.2	4.2	3.8	5.6	---	97.3	20.2	13.7	4.0	2.0	2.5	1.0
31	3.1	---	3.7	6.2	---	110.5	---	14.1	---	2.8	2.0	---
Total	51.9	130.5	92.0	148.3	202.7	878.2	1,676.1	360.7	299.3	87.2	68.2	46.5

Water year 1989 Total 4,041.6

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1989			1990								
	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY*	JUNE*	JULY*	AUG.*	SEPT.*
Peshtigo River at mouth near Peshtigo--Continued												
1	1.0	4.3	1.6	1.1	1.2	1.4	5.1	10.0	8.9	9.8	5.4	4.0
2	1.0	3.0	1.6	1.0	1.3	1.6	6.7	9.1	8.4	8.5	4.7	3.2
3	.8	2.7	1.7	1.1	1.1	1.3	6.9	10.0	8.4	8.5	4.5	3.7
4	.9	2.7	1.5	1.2	1.0	1.4	6.8	10.0	8.0	6.9	4.1	3.3
5	.9	3.1	1.5	1.3	1.2	1.4	6.7	8.4	7.4	5.3	3.9	4.0
6	.9	2.9	1.5	1.3	1.6	1.4	6.5	7.4	8.2	6.1	3.2	4.4
7	.9	2.5	1.6	1.2	2.7	1.3	5.4	7.2	11.3	3.8	4.1	7.2
8	.8	3.1	1.4	1.2	2.1	1.1	5.0	6.3	9.6	4.3	3.6	9.4
9	1.0	3.1	1.2	1.3	1.6	1.1	5.0	7.5	8.7	5.2	3.4	9.1
10	.8	2.4	1.4	1.2	1.7	1.3	5.5	11.4	8.4	6.7	3.4	9.2
11	1.1	2.7	1.5	1.2	1.4	1.8	5.8	22.8	6.6	9.8	3.0	8.7
12	.8	2.6	1.2	1.3	1.2	3.6	6.6	26.8	13.2	7.2	2.4	7.7
13	.9	2.2	1.0	1.3	1.1	7.6	6.1	28.6	31.9	6.7	2.4	7.3
14	.9	2.5	1.1	1.2	1.3	11.6	6.3	29.3	46.9	3.0	2.8	7.5
15	.9	2.2	1.2	1.1	1.0	17.0	6.4	29.0	54.5	7.7	2.2	10.5
16	1.2	2.0	1.3	1.2	1.2	21.0	6.4	29.0	50.4	4.9	3.6	12.0
17	1.2	1.8	1.1	1.4	1.1	16.5	6.0	35.2	40.6	3.2	3.1	10.6
18	1.1	1.6	1.1	1.5	1.2	16.2	6.7	39.3	34.4	5.2	2.8	10.4
19	1.0	1.2	1.1	1.3	1.2	15.0	6.5	34.9	31.1	3.8	3.2	10.5
20	1.0	1.5	1.3	1.5	1.3	14.0	6.1	33.2	24.1	3.2	4.8	9.7
21	1.1	1.9	1.3	1.5	1.1	13.2	7.1	31.2	22.8	4.5	5.3	8.1
22	1.1	1.5	1.1	1.3	1.2	10.7	6.5	29.0	19.9	3.7	4.6	7.2
23	1.2	1.4	1.0	1.5	1.2	9.5	7.4	25.6	28.2	3.7	4.3	6.4
24	1.3	1.3	1.0	1.5	1.3	7.3	7.8	23.3	29.6	4.5	4.1	5.7
25	1.3	1.6	1.1	1.5	1.3	7.2	9.2	21.1	24.0	4.5	4.0	5.2
26	1.6	1.7	1.1	1.5	1.3	7.0	8.7	17.1	20.8	4.5	5.4	4.5
27	1.7	1.7	1.0	1.2	1.3	6.7	9.8	14.2	16.6	4.4	8.0	4.3
28	1.8	1.7	1.0	1.2	1.5	6.9	11.3	12.4	14.5	3.8	8.2	3.9
29	1.7	1.7	1.1	1.1	---	7.0	8.0	13.8	13.5	4.9	7.6	3.1
30	2.2	1.3	1.1	1.2	---	6.1	8.7	11.3	11.1	8.7	6.3	2.4
31	2.7	---	1.0	1.2	---	5.9	---	10.5	---	7.7	5.7	---
Total	36.8	65.9	38.7	39.6	37.7	225.1	207.0	604.9	622.0	174.7	134.1	203.2

Water year 1990 Total 2,389.7

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1988			1989								
	OCT.*	NOV.*	DEC.*	JAN.*	FEB.*	MAR.*	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Oconto River at mouth at Oconto, USGS station number 04071775												
1	0.8	1.6	2.3	2.2	2.9	2.6	21.2	8.6	13.6	1.5	1.1	0.9
2	1.0	1.4	1.9	2.5	2.8	2.6	19.3	7.4	13.4	1.4	1.2	.8
3	1.2	1.3	1.2	2.1	3.3	2.9	20.4	7.6	12.6	2.3	1.1	.8
4	1.0	1.7	2.5	2.3	2.2	2.2	14.7	7.8	12.5	1.9	1.0	.9
5	.8	1.2	2.4	2.1	2.3	2.2	14.1	8.7	10.9	1.8	.8	.9
6	.9	2.1	2.3	2.3	3.1	2.7	13.9	5.2	8.7	1.5	.8	.8
7	1.0	2.4	2.1	1.6	2.8	2.9	13.8	9.0	7.6	1.6	.8	.8
8	.8	2.8	1.7	2.4	3.2	2.9	13.5	9.4	5.9	1.2	.8	.8
9	.8	2.6	1.7	2.8	3.1	2.7	13.2	8.0	5.6	1.2	.9	.7
10	1.1	2.4	1.2	2.3	2.4	2.7	12.6	7.3	4.8	1.5	.9	.7
11	.8	2.3	1.1	2.4	2.1	2.2	11.5	7.3	5.6	1.4	.9	1.1
12	.8	1.6	1.3	2.2	2.4	2.4	9.9	8.4	6.3	1.3	.8	.9
13	.8	2.0	1.4	2.7	2.7	4.1	10.5	3.3	6.1	1.3	.8	.8
14	.9	2.3	2.0	1.8	2.4	4.3	9.9	5.3	5.2	1.2	1.0	.7
15	.8	2.1	1.6	1.9	2.6	6.1	9.7	6.5	5.4	1.1	1.1	.7
16	.8	2.5	1.6	3.0	2.8	5.1	8.9	5.4	6.6	1.2	1.5	.6
17	1.2	2.8	1.2	2.6	2.7	5.7	8.0	5.3	5.2	1.4	1.4	.6
18	1.0	2.8	1.6	2.3	2.1	2.7	9.5	5.1	5.8	1.2	1.6	.7
19	1.0	2.8	2.1	2.5	2.1	3.8	8.7	6.5	5.3	1.7	.9	.6
20	1.0	2.8	1.9	3.1	3.5	4.7	9.7	2.8	3.9	1.6	.8	.6
21	1.2	2.8	1.9	1.8	2.7	3.9	9.0	4.1	3.3	1.8	1.1	.5
22	.9	2.4	1.9	1.9	2.4	3.9	8.6	5.1	3.5	1.0	1.0	.5
23	.9	2.3	3.2	3.3	2.5	3.9	8.6	4.7	4.2	.9	1.1	.5
24	1.6	2.2	2.0	2.9	2.8	5.0	9.0	3.9	1.6	1.4	1.0	.5
25	1.4	2.1	2.9	2.9	2.1	8.0	8.1	6.0	2.7	1.0	1.1	.5
26	1.8	1.6	2.6	2.8	2.1	34.3	7.8	7.4	3.7	.9	.9	.4
27	1.7	2.1	2.6	3.1	2.7	48.3	7.7	8.3	2.9	1.0	.9	.4
28	1.8	2.7	2.0	1.9	2.6	53.2	8.7	9.0	2.4	1.0	1.5	.4
29	.9	2.7	2.1	2.3	---	41.8	6.1	8.7	2.4	.8	1.2	.5
30	1.3	2.7	2.4	3.4	---	34.0	8.1	8.4	3.5	.9	1.0	.4
31	1.7	---	1.5	3.1	---	24.9	---	15.8	---	1.2	1.0	---
Total	33.7	67.1	60.2	76.5	73.4	328.7	334.7	216.3	181.2	41.2	32.0	20.0

Water year 1989 Total 1,465.0

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1989			1990								
	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY*	JUNE*	JULY*	AUG.*	SEPT.*
Oconto River at mouth at Oconto--Continued												
1	0.4	1.7	1.6	0.9	0.9	2.1	1.8	6.5	4.9	4.8	2.0	1.2
2	.5	2.4	1.2	.9	.9	2.2	1.8	6.2	4.3	4.9	1.9	1.9
3	.5	2.3	2.6	1.0	.8	1.8	2.0	5.9	4.6	4.4	2.4	2.0
4	.5	1.4	2.8	1.0	.8	1.9	2.7	6.6	4.9	4.0	1.2	1.7
5	.5	1.8	1.7	1.1	1.1	3.0	2.6	3.3	4.5	3.5	1.9	1.5
6	.5	2.3	1.6	1.1	.9	2.6	2.9	4.8	4.0	3.4	2.4	2.2
7	.5	1.8	1.6	1.0	.9	2.6	2.0	5.4	4.0	2.3	1.7	3.6
8	.5	2.0	1.4	1.0	1.0	2.9	2.4	4.6	4.6	2.9	1.5	3.3
9	.6	2.0	1.2	1.1	1.0	2.7	3.0	5.0	2.8	3.6	1.5	4.1
10	.7	1.9	1.2	1.0	.8	2.2	2.8	10.1	3.1	2.8	1.5	3.9
11	.7	1.2	1.5	1.1	.9	4.0	3.3	15.1	3.4	2.8	1.0	3.8
12	.6	1.7	1.2	1.1	1.4	14.5	3.5	19.5	4.4	2.5	1.1	3.0
13	.6	2.2	1.2	.9	1.2	26.6	3.7	16.8	10.4	2.9	1.4	2.7
14	.6	1.7	1.2	.9	1.2	19.5	2.1	17.1	11.9	1.4	1.5	4.2
15	.6	1.7	1.2	1.2	1.2	19.0	3.5	16.1	16.8	2.1	1.5	6.1
16	.9	1.8	1.1	1.0	1.3	17.1	4.4	22.7	21.5	2.6	1.7	5.6
17	.8	1.7	1.1	1.1	1.1	13.9	3.8	23.4	23.4	2.6	1.9	5.8
18	.8	1.7	1.2	1.1	1.1	9.5	4.0	19.5	18.8	2.6	1.0	5.3
19	1.0	1.5	1.2	1.2	1.5	6.8	4.4	19.3	14.5	2.6	2.4	5.1
20	1.0	1.4	1.1	1.0	1.4	5.1	4.9	25.0	11.5	2.7	3.0	4.6
21	.7	1.7	1.1	1.0	1.5	4.2	4.3	19.4	10.0	1.3	3.4	3.8
22	.8	1.7	1.0	1.1	1.5	3.5	5.4	18.6	11.9	1.8	2.9	3.3
23	1.3	1.5	1.0	1.0	1.8	3.1	6.8	15.3	27.1	2.5	2.3	2.8
24	1.0	2.1	.9	1.1	1.4	2.4	6.5	13.8	17.1	1.9	2.7	2.8
25	.9	1.2	1.0	1.1	1.5	2.3	6.7	11.6	12.9	2.3	1.0	2.4
26	1.1	1.2	1.0	1.1	2.0	2.0	6.6	9.8	11.0	2.0	2.1	2.1
27	1.0	2.1	1.0	1.0	2.0	2.0	7.6	8.3	9.9	2.5	2.4	1.9
28	.8	1.9	.9	.9	1.9	2.0	4.9	8.1	7.4	1.2	2.9	2.0
29	.8	2.0	.9	1.1	---	1.8	6.9	7.0	6.8	2.7	2.8	1.0
30	1.7	1.7	.9	1.1	---	2.0	8.4	6.3	6.1	3.6	3.3	1.5
31	1.7	---	.9	1.0	---	1.8	---	5.4	---	3.1	2.7	---
Total	24.6	53.3	39.5	32.2	35.0	187.1	125.7	376.5	298.5	86.3	63.0	95.2

Water year 1990 Total 1,416.9

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1988			1989								
	OCT.*	NOV.*	DEC.*	JAN.*	FEB.*	MAR.*	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Fox River at mouth at Green Bay, USGS station number 04085139												
1	507.2	159.5	811.3	248.9	203.3	225.6	1,297.3	505.9	2,215.3	644.4	528.2	553.3
2	345.6	487.1	796.6	228.0	181.3	145.0	1,354.2	410.2	2,204.6	637.2	375.4	302.3
3	479.4	278.8	742.0	184.4	207.6	148.0	1,414.3	665.3	2,305.0	339.3	393.0	520.7
4	646.6	299.8	808.6	191.5	195.0	235.5	1,563.9	530.9	2,363.5	445.1	463.3	334.5
5	589.0	410.8	759.3	196.6	185.9	202.3	1,535.6	695.2	2,422.5	547.5	372.7	477.1
6	681.9	283.2	622.1	188.9	196.7	194.9	1,551.2	576.3	2,551.4	467.8	350.3	305.1
7	728.3	524.0	662.1	183.0	183.8	364.0	1,389.9	578.1	2,273.5	471.3	330.1	433.1
8	726.5	591.7	538.2	191.6	236.6	419.2	1,248.5	478.9	2,135.6	451.7	455.1	309.2
9	715.3	576.8	483.6	131.2	179.2	394.4	1,441.4	359.9	1,823.7	668.1	419.2	281.4
10	637.3	650.8	290.4	160.8	200.7	386.3	1,350.1	223.4	1,550.6	362.9	532.7	366.8
11	483.1	461.7	346.4	128.4	233.4	438.5	1,320.0	466.6	1,530.1	306.7	463.4	325.6
12	574.1	559.9	506.2	174.8	184.9	391.7	750.3	547.1	1,340.6	433.7	483.8	194.0
13	696.8	748.6	422.4	134.3	210.3	461.9	705.9	449.9	1,451.9	66.7	621.4	394.8
14	605.7	364.9	464.9	144.8	219.5	502.0	520.5	505.8	1,405.5	348.7	427.5	435.6
15	655.0	150.7	372.6	127.7	279.2	636.9	452.7	527.4	1,229.0	401.7	428.0	367.7
16	492.7	121.6	394.0	116.4	208.8	562.4	532.2	653.3	940.3	359.3	415.7	394.0
17	258.2	654.1	435.9	119.9	187.8	559.4	595.9	667.4	816.6	437.7	410.1	459.5
18	451.6	638.1	374.3	113.5	184.9	394.3	509.4	858.4	645.5	470.0	383.7	497.7
19	429.0	948.5	255.0	92.9	209.4	536.3	405.5	756.4	796.0	713.6	469.6	501.2
20	473.7	893.9	368.5	123.6	187.5	503.6	134.9	734.2	705.9	456.9	658.4	402.9
21	451.2	949.8	331.7	117.1	202.0	470.5	117.8	469.7	859.9	278.6	453.1	425.2
22	467.1	776.7	243.9	117.4	186.6	491.3	116.6	578.5	934.9	459.2	334.1	512.7
23	358.1	607.5	352.0	110.4	195.0	526.4	198.0	676.8	1,078.9	284.6	603.5	273.2
24	517.9	623.4	352.9	96.9	199.6	526.4	245.6	483.5	1,231.6	466.2	226.6	420.1
25	418.9	531.5	350.0	117.9	204.9	970.9	173.4	866.8	1,256.4	318.0	375.3	252.2
26	506.9	640.8	200.4	160.4	218.9	1,406.0	163.6	1,253.2	1,480.3	307.5	537.9	302.9
27	728.6	663.4	279.1	95.6	206.8	1,334.4	370.8	1,006.1	1,264.4	14.6	466.8	322.8
28	486.4	694.1	308.4	133.8	251.8	1,253.0	384.2	907.7	852.8	465.8	495.5	289.6
29	231.8	703.4	220.9	142.9	---	1,197.7	450.0	907.2	899.7	390.1	505.2	160.5
30	374.9	640.8	250.2	123.6	---	1,174.0	460.7	1,129.5	961.5	479.3	543.3	240.4
31	463.2	---	226.3	132.3	---	1,254.2	---	2,335.5	---	503.1	411.6	---
Total	16,182	16,635.9	13,570.2	4,529.5	5,741.4	18,307	22,754.4	21,805.1	43,527.5	12,997.3	13,934.5	11,056.1

Water year 1989 Total 201,040.9

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1989			1990								
	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY*	JUNE*	JULY*	AUG.*	SEPT.*
Fox River at mouth at Green Bay--Continued												
1	245.2	582.4	429.5	62.3	50.6	105.5	337.5	376.2	1,132.4	1,795.8	269.0	1,349.6
2	258.1	844.4	250.1	55.5	56.1	61.9	470.8	430.8	1,337.3	1,606.8	742.5	1,405.8
3	245.0	757.6	388.2	63.1	80.2	78.6	439.1	284.5	1,276.0	1,363.5	163.2	1,429.4
4	246.7	590.5	244.5	65.0	57.7	68.8	578.7	240.6	368.4	987.8	906.9	1,062.6
5	261.7	569.3	154.9	61.9	63.8	60.8	557.3	132.7	1,096.1	690.5	582.6	971.4
6	119.3	362.9	212.3	59.3	59.7	89.2	452.1	324.5	1,833.0	499.1	317.6	934.4
7	149.8	524.5	143.9	63.3	56.3	79.6	572.9	367.0	1,399.4	924.0	639.2	823.7
8	185.1	460.6	175.0	48.7	66.1	103.8	520.2	182.7	816.4	1,104.7	711.5	914.5
9	178.5	547.3	159.5	73.2	109.3	140.5	294.9	174.9	861.8	868.3	598.3	793.0
10	193.8	618.2	148.4	48.1	88.4	232.7	390.8	802.9	687.2	794.5	505.8	-77.8
11	268.1	533.1	105.4	67.6	80.7	297.3	514.3	709.4	697.1	642.2	468.7	868.6
12	87.8	356.1	101.3	65.6	63.3	421.5	245.6	541.1	815.1	617.6	472.2	764.5
13	302.9	378.5	78.8	61.1	38.3	184.3	267.5	547.0	1,395.6	582.9	523.4	818.5
14	110.5	516.2	81.5	58.5	77.4	831.1	473.7	624.1	1,453.3	287.8	579.3	1,658.3
15	86.4	269.1	101.4	57.0	97.6	705.4	436.6	588.1	1,267.9	510.6	467.7	804.1
16	310.9	496.2	78.2	57.4	120.0	582.5	368.0	1,771.4	1,199.9	571.8	591.8	993.0
17	-204.9	150.3	94.9	70.8	104.7	673.7	514.3	1,610.9	1,507.2	304.7	543.9	1,377.4
18	278.0	491.2	76.5	79.8	116.2	656.2	216.8	1,414.8	1,577.2	463.5	574.2	650.5
19	383.9	245.5	80.0	47.3	126.3	647.5	197.0	2,259.9	852.2	126.4	763.3	-66.4
20	467.0	148.9	82.0	67.9	98.4	585.0	-124.1	2,760.4	1,763.3	257.3	1,456.8	1,040.7
21	582.3	352.2	70.7	77.3	119.2	608.9	54.6	2,660.8	1,676.1	455.7	1,363.1	1,479.7
22	377.9	189.4	54.1	60.0	90.7	764.7	309.3	1,791.6	2,512.4	451.0	1,806.2	1,421.0
23	-26.3	439.5	70.0	25.1	90.1	590.4	206.7	2,485.2	6,091.5	622.8	1,979.8	1,385.1
24	294.0	348.8	79.5	83.7	121.0	436.6	240.5	2,348.8	3,963.7	695.9	2,151.1	1,240.5
25	430.1	271.8	80.9	50.8	40.6	443.2	390.0	2,154.1	3,071.8	636.8	2,107.3	1,073.8
26	490.6	346.8	56.1	51.5	72.4	598.0	525.6	1,963.9	2,829.4	677.6	2,215.5	1,288.9
27	480.5	221.2	63.8	98.7	101.2	265.9	464.0	1,864.6	2,639.8	620.2	1,706.9	955.2
28	598.1	506.4	47.9	66.9	93.4	299.5	448.8	1,817.4	2,503.8	663.2	1,765.3	1,026.5
29	619.2	408.3	66.3	72.2	---	299.9	417.3	1,547.2	2,533.0	549.6	1,676.0	1,037.1
30	360.2	496.3	66.6	90.5	---	213.0	347.8	1,830.8	2,153.9	412.4	1,586.7	1,096.4
31	579.1	---	73.1	67.8	---	374.8	---	1,423.8	---	139.3	1,430.1	---
Total	8,959.5	13,023.5	3,915.6	1,977.9	2,339.7	11,500.8	11,128.6	38,032.1	53,312.2	20,924.3	31,665.9	30,520.0

Water year 1990 Total 227,300.1

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1988			1989								
	OCT.*	NOV.*	DEC.*	JAN.*	FEB.*	MAR.*	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Fox River at De Pere, USGS station number 04085059												
1	267.2	230.0	454.2	71.0	81.3	50.5	228.6	386.7	2,136.4	409.2	379.1	204.5
2	289.8	227.9	512.7	68.2	79.3	47.6	233.3	435.2	2,199.8	297.1	383.8	197.9
3	253.2	230.2	517.9	69.0	78.9	53.4	250.4	593.8	2,317.8	245.9	350.2	198.5
4	284.8	235.4	506.6	69.1	76.9	57.1	248.2	500.5	2,339.0	247.3	364.4	148.0
5	354.5	230.1	513.7	69.7	76.1	53.5	238.2	550.8	2,359.8	219.5	392.2	239.1
6	368.9	231.4	108.5	68.6	78.3	58.4	225.4	437.2	2,425.7	210.6	353.0	200.2
7	380.3	255.9	81.1	69.5	76.0	88.5	215.6	485.7	2,296.1	240.2	314.2	190.0
8	396.5	340.3	73.7	65.5	76.0	92.0	208.6	524.2	1,958.1	229.7	265.8	188.6
9	406.8	325.3	67.7	62.3	74.1	88.4	201.5	461.3	1,681.0	247.1	291.2	181.2
10	397.5	415.1	59.5	71.0	75.4	88.8	201.6	442.7	1,402.9	261.3	393.6	172.2
11	366.6	384.3	63.2	68.7	76.9	88.7	194.6	440.1	1,322.9	237.3	358.3	218.9
12	370.0	386.9	65.6	68.6	74.5	89.2	126.2	458.3	1,232.9	209.3	350.6	164.9
13	391.4	384.3	67.8	68.0	74.4	83.3	116.7	438.2	1,297.1	229.3	369.4	175.9
14	346.3	405.2	67.7	68.1	75.4	84.2	79.9	469.6	1,278.9	248.0	368.8	183.0
15	274.7	379.4	67.0	67.2	88.8	103.9	93.8	498.6	1,115.3	259.0	356.2	198.4
16	263.9	407.8	67.5	67.4	65.7	90.2	124.0	426.5	853.3	261.5	335.7	153.4
17	220.4	474.2	67.6	66.7	65.1	86.7	158.5	439.2	869.9	261.2	308.8	191.7
18	262.7	535.4	67.6	67.3	64.8	83.2	153.1	481.6	886.3	310.2	337.3	179.8
19	257.0	595.6	68.0	67.7	62.6	85.2	164.5	378.0	931.6	287.9	337.8	172.0
20	253.6	603.5	70.4	67.7	63.3	85.8	213.1	359.1	938.8	259.7	316.4	187.4
21	254.8	604.5	67.7	67.9	62.4	82.0	200.3	358.0	943.4	265.9	289.4	197.1
22	245.8	593.8	67.7	66.0	60.5	81.8	203.4	329.1	914.8	273.6	276.2	141.0
23	256.1	500.8	70.0	66.5	62.1	81.5	191.9	345.6	986.4	277.6	272.0	131.0
24	254.0	422.2	70.4	66.0	62.9	86.8	218.8	311.9	947.1	270.0	253.1	93.7
25	323.5	424.2	67.7	67.2	62.4	111.9	207.2	616.3	941.7	260.7	250.3	110.4
26	380.3	440.4	67.4	68.0	61.9	208.4	222.6	580.0	942.8	269.0	263.4	105.3
27	382.4	425.1	71.4	65.8	64.6	209.5	274.1	667.7	895.6	288.8	272.5	87.7
28	297.6	450.0	69.6	64.3	75.5	202.5	281.5	633.3	768.0	280.1	237.1	96.9
29	232.1	423.2	68.7	64.7	---	220.7	296.2	678.5	580.1	244.3	281.2	121.6
30	231.9	441.0	71.0	64.1	---	224.0	333.4	994.1	624.1	300.8	217.4	122.3
31	245.4	---	70.0	66.1	---	223.0	---	2,116.6	---	307.0	199.3	---
Total	9,510.0	12,003.4	4,329.6	2,087.9	1,996.1	3,290.7	6,105.2	16,838.4	40,387.6	8,209.1	9,738.7	4,952.6

Water year 1989 Total 119,449.3

*Estimated

Table 2. Maximum daily loads of total polychlorinated biphenyls entering Green Bay from major tributaries, computed by the total-integration method, October 1988-September 1990--Continued

DAY	1989			1990								
	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY*	JUNE*	JULY*	AUG.*	SEPT.*
Fox River at De Pere--Continued												
1	115.6	545.6	48.2	40.8	31.2	43.7	83.9	159.7	1,109.1	1,534.7	372.5	851.3
2	103.3	550.2	39.9	38.9	36.2	43.4	95.6	213.2	978.9	1,456.8	392.9	811.1
3	106.1	493.8	35.8	38.3	32.4	38.9	89.0	217.6	992.4	1,146.4	415.6	768.7
4	110.4	460.6	38.9	36.3	32.0	36.5	109.4	221.2	971.0	794.5	448.7	726.3
5	105.5	426.0	40.9	37.9	31.8	40.9	113.9	212.4	1,117.1	762.4	435.1	515.9
6	120.7	340.5	40.0	35.9	31.2	37.9	117.5	231.7	1,627.2	682.0	397.9	507.3
7	116.5	247.7	42.7	35.5	32.6	39.2	125.5	243.1	1,342.4	667.7	404.5	503.8
8	110.6	257.9	62.4	33.8	35.8	41.9	132.6	268.2	747.7	786.4	418.1	464.6
9	105.1	176.7	68.1	33.7	35.9	70.4	149.7	302.9	674.0	763.9	421.6	482.9
10	123.8	149.1	70.9	32.7	32.4	93.8	172.5	294.6	722.6	700.9	423.6	523.4
11	121.8	143.3	72.2	31.6	31.0	105.2	152.9	322.7	754.3	670.6	436.7	463.7
12	132.2	125.7	75.2	30.8	32.4	167.0	106.3	398.6	785.7	565.7	418.2	475.0
13	120.7	113.4	78.4	31.9	33.1	134.0	111.7	310.1	1,025.4	412.9	402.3	442.4
14	110.0	110.0	76.3	33.2	36.3	341.2	136.0	368.9	1,291.9	330.4	433.3	635.1
15	125.1	70.4	73.8	33.1	44.3	334.2	148.2	587.3	1,181.1	333.3	407.5	694.4
16	213.8	61.8	68.0	33.5	45.5	345.1	144.0	1,242.9	1,127.1	401.6	410.8	672.8
17	166.8	49.3	71.3	35.5	45.1	368.6	135.5	1,111.8	1,236.4	386.0	378.5	605.6
18	277.6	62.8	68.3	37.2	45.9	396.5	74.9	1,198.1	1,311.9	376.7	407.6	618.5
19	358.3	51.8	62.1	36.2	46.6	431.3	63.6	1,752.1	1,354.5	364.5	497.9	671.0
20	304.5	55.7	61.4	36.5	45.6	471.6	80.6	2,100.5	1,652.1	365.2	1,203.2	700.2
21	300.5	40.1	60.3	37.6	46.9	500.4	98.6	2,159.4	1,444.3	376.3	1,108.9	727.8
22	285.4	46.0	56.3	36.5	45.6	416.6	109.0	2,079.4	1,417.3	413.6	1,283.6	703.6
23	319.7	48.1	53.5	29.8	45.1	318.4	128.4	2,045.7	2,158.9	442.0	1,519.0	695.6
24	356.0	43.3	50.6	35.7	34.2	269.5	146.0	2,032.6	2,194.6	456.7	1,473.0	667.5
25	462.4	38.1	51.1	35.0	33.6	231.1	176.7	1,881.9	2,501.3	426.3	1,431.1	707.2
26	445.6	37.3	48.6	37.9	37.1	195.0	168.8	1,634.0	2,466.7	365.8	1,388.0	690.1
27	416.9	42.7	47.7	44.7	42.6	109.4	151.0	1,578.0	2,380.0	346.9	1,296.0	627.0
28	436.1	42.7	45.7	43.0	42.8	92.2	162.8	1,563.3	2,251.5	377.0	1,106.0	602.2
29	417.7	37.4	44.4	42.6	---	94.5	170.1	1,425.7	2,083.8	397.5	1,034.5	577.5
30	435.2	49.6	43.3	44.4	---	75.3	190.6	1,443.4	1,852.4	387.3	977.0	579.6
31	474.8	---	42.3	39.8	---	82.1	---	1,177.4	---	356.1	859.3	---
Total	7,398.7	4,917.6	1,738.6	1,130.3	1,065.2	5,965.8	3,845.3	30,778.4	42,753.6	17,848.1	22,602.9	18,712.1

Water year 1990 Total 158,756.6

*Estimated