

Region V Fish Tissue Report

Principal Author

Max Anderson

STORET Computer Mapping

Kathy Stone

Table of Contents

	<u>Page</u>
List of Tables	iii
List of Figures	iv
List of Appendices	v
Summary	1
Introduction	2
Discussion of Region V States' Fish Tissue Status	
Illinois	4
Indiana	16
Michigan	23
Minnesota	29
Wisconsin	37
Conclusions	44
Recommendations	46
Appendix	47

List of Tables

- Table 1 - Illinois counties and their associated water bodies where FDA action level violations occurred
- Table 2 - Summary of fish tissue data from Illinois major water bodies
- Table 3 - Indiana counties and their associated water bodies where FDA action level violations occurred
- Table 4 - Michigan counties and their associated water bodies where FDA action level violations occurred
- Table 5 - Summary of fish tissue data from Michigan water bodies where FDA violations occurred
- Table 6 - Minnesota counties and their associated water bodies where FDA action level violations occurred
- Table 7 - Summary of fish tissue data from major Minnesota rivers where FDA violations occurred
- Table 8 - Wisconsin counties and their associated water bodies where FDA action level violations occurred
- Table 9 - Summary of fish tissue data from Wisconsin's major water bodies

List of Figures

- Figure 1 - Illinois counties where FDA violations occurred
- Figure 2 - Major Illinois water bodies showing percent FDA violations
- Figure 3 - Illinois STORET map showing PCB violations
- Figure 4 - Illinois STORET map showing DDT violations
- Figure 5 - Illinois STORET map showing dieldrin violations
- Figure 6 - Illinois STORET map showing mercury violations
- Figure 7 - Number of FDA action level violations in Indiana counties
- Figure 8 - Indiana STORET map showing dieldrin violations
- Figure 9 - Indiana STORET map showing P,P' DDE violations
- Figure 10 - Indiana STORET map showing mercury violations
- Figure 11 - Michigan counties where FDA violations occurred
- Figure 12 - Michigan water bodies showing percent FDA violations
- Figure 13 - Minnesota counties where FDA violations occurred
- Figure 14 - Major Minnesota rivers showing percent FDA violations
- Figure 15 - Minnesota STORET map showing PCB violations
- Figure 16 - Minnesota STORET map showing 1254 PCB violations
- Figure 17 - Wisconsin counties where FDA violations occurred
- Figure 18 - Major Wisconsin water bodies showing percent FDA violations

List of Appendices

- Appendix 1 - Summary of Great Lakes Fish Advisories of the Great Lakes States
- Appendix 2 - Illinois Fish Tissue Data That Exceeded FDA Action Levels
- Appendix 3 - Indiana Fish Tissue Data That Exceeded FDA Action Levels
- Appendix 4 - Michigan Fish Tissue Data That Exceeded FDA Action Levels
- Appendix 5 - Minnesota Fish Tissue Data That Exceeded FDA Action Levels
- Appendix 6 - Wisconsin Fish Tissue Data That Exceeded FDA Action Levels

Region V Fish Tissue Report

Summary

Fish tissue data are reported from all Region V States except for Ohio where no tissue data are presently available. The time period of this report extends from the spring of 1983 through the fall of 1985. Data were obtained from a STORET printout for Illinois, Indiana, Michigan, and Minnesota. Wisconsin's data came from the State's own computer system. The parameters listed in this report are chemicals with Food and Drug Administration action levels and include PCB's, DDT, dieldrin, mercury, and occasionally chlordane.

In order to better understand the overall status of fish tissue problems for each State, the chart below gives an overview of the total number of fish samples analysed during the study period, the number of violations which occurred, and the percent of violations. A more detailed description of fish tissue violations per State is described in the body of the report.

	Illinois	Indiana	Michigan	Minnesota	Wisconsin
Total number of fish analysed	972	276	314	931	3185
Total number of FDA violations	153	17	52	66	731
Percent of FDA violations	16%	6%	17%	7%	23%

Region V Fish Tissue Report

Introduction

In fulfillment of the requirements of the Guidance for State Water Monitoring and Wasteland Allocation Programs (EPA 44014-85-031), most Region V States are collecting and analyzing fish tissue from designated core network stations as well as other selected stations where toxic problems are suspected. Upon completion of the laboratory analyses, the data are entered into the STORET system where it becomes available for public use. This generally takes 12 to 18 months to complete.

The objective of this report is to identify lakes (where possible) and river reaches throughout Region V where toxic chemicals in fish tissue exceed the recommended FDA action levels as shown on the following page. It should be pointed out that this is the only document in the Region where fish tissue data that are generated as part of the State Water Monitoring and Wasteload Allocation Program is brought together under one cover. It therefore can serve as a comprehensive reference to fish toxicity problems and needs for State, Region, and Headquarters use.

All data, with the exception of Wisconsin and Ohio, were extracted from a STORET printout. Wisconsin's data was obtained from its own computer system. Ohio has not had a strong fish tissue analyses program, and therefore no report is included since it has not participated in the National program. The time period of this report is from the spring of 1983 through the fall of 1985.

Although much fish tissue data are provided by the STORET system, there still remains a significant amount that is being generated by state agencies, and is contained internally without being available through STORET or other computer systems. This is an inherent concern that needs to be resolved so that all state generated tissue data can be made available for general use.

The parameters for this report include only chemicals with Food and Drug Administration action levels. These are PCB's, DDT, dieldrin, mercury, and occasionally chlordane, and were the only chemicals that exceeded FDA levels. The FDA levels are written to include only fillets. However, where appropriate, whole fish samples are also included for informational purposes only.

Chemicals with Food and Drug Administration Action Levels

<u>Chemical</u>	FDA Action Level
	<u>(mg/kg)</u>
Chlordane	0.3
DDT	0.5
Dieldrin	0.3
Endrin	0.3
Heptachlor	0.3
PCBs	2.0
Mercury	1.0
Toxaphene	5.0

The Food and Drug Administration has set the above toxicity limits for the maximum protection of human health from the potential carcinogenic effects of exposure through ingestion of contaminated fish flesh. In order to better inform the general public about toxicity problems in fish, the USEPA Great Lakes National Program Office has compiled a paper entitled "Summary of Great Lakes Fish Advisories of the Great Lakes States (DeVault, David S. and G.P. Lahvis)." This paper serves as a general health advisory and cautions against the consumption of certain fish species taken from the Great Lakes and their appended tributaries. The complete text is shown as Appendix 1.

If additional information is needed, please contact Max Anderson at FTS 886-6228 or (312) 886-6228.

I L L I N O I S

Illinois

The fish tissue data presented for the State of Illinois represents samples collected between October 1983 and November 1985, and was obtained from a STORET printout.

A total of 972 fish samples were analysed, of which 153 or 16 percent exceeded Food and Drug Administration action levels. PCB's, DDT, and dieldrin were the chemicals in violation.

The Du Page and Des Plaines Rivers showed the highest percent of FDA exceedences in the State (67% and 62%) with PCB's and DDT being the chemicals of concern.

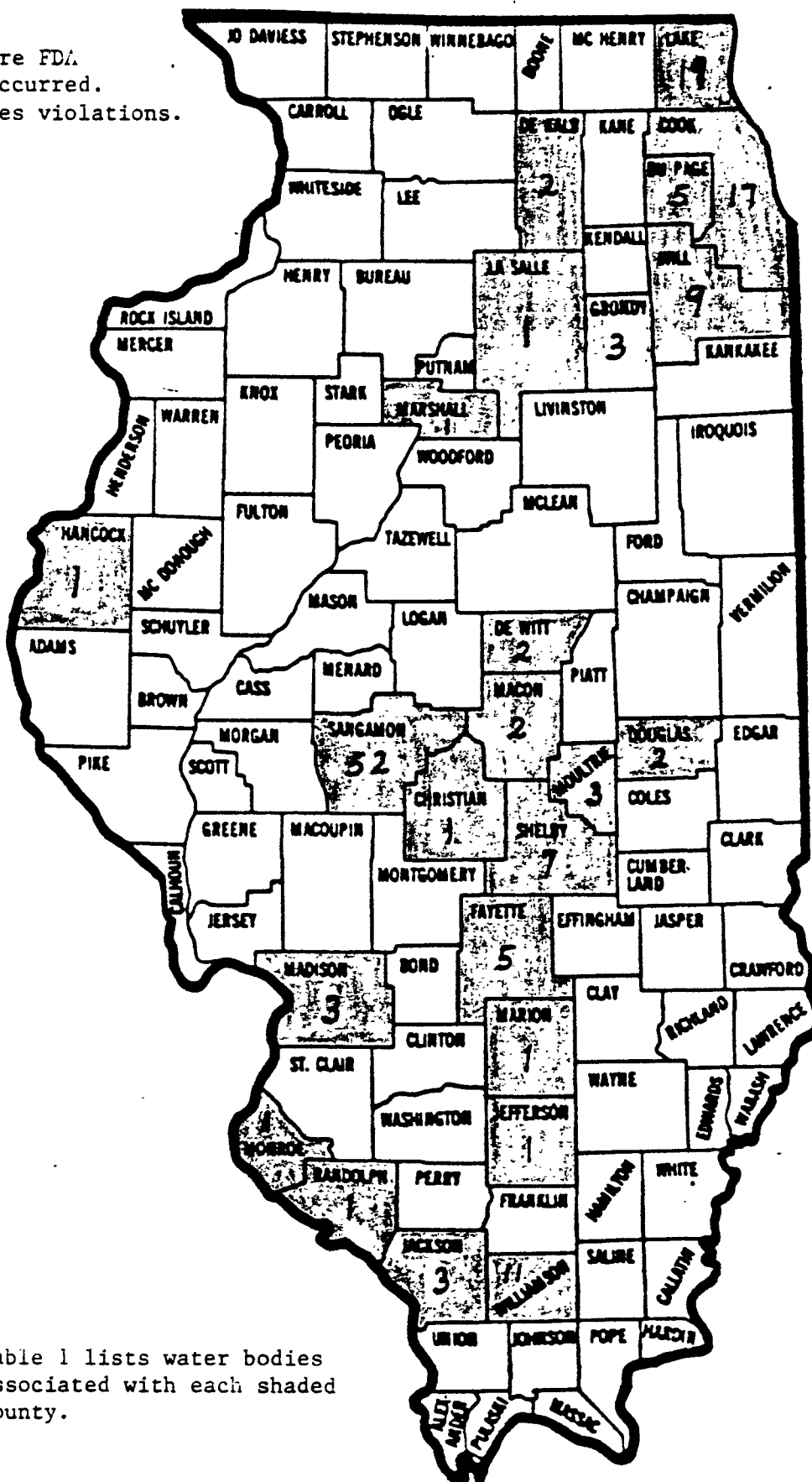
The greatest amount of fish tissue data available was from Lake Springfield where 162 samples were analysed. The chemicals of concern were DDT and dieldrin, where numerous (51) values were above FDA action levels. This area should be considered for further investigation. Fish species were not listed.

A significant number of samples were also collected from Lake Michigan in the areas of Foster Avenue, Waukegan Harbor, and the Great Lakes Naval Station. Both PCB and DDT values were high and ranged from 12.10 mg/kg to 2.20 mg/kg for PCB's and 4.00 mg/kg to 0.55 mg/kg for DDT. The FDA action levels are 2.00 mg/kg (PCB's) and 0.5 mg/kg (DDT). Chinook salmon, lake trout and carp were analysed. Data were not available as to the kind of sample (fillet, whole fish, etc.).

Crab Orchard Lake is another area of concern where PCB values ranged from 11.00 mg/kg to 2.10 mg/kg. Carp, large mouth bass and channel catfish were the fish species analysed. The Kaskaskia River showed some elevated dieldrin values in carp and channel catfish.

Table 1 and Figure 1 show counties and their associated water bodies where violations occurred. Table 2 and Figure 2 summarize the fish tissue data, while Appendix 2 lists the sampling stations, sampling date, FDA action level chemicals, and fish species.

A series of STORET maps showing river system sampling locations and FDA parameter violations are enclosed, and are listed as Figures 3, 4, 5, and 6.



Note: Table 1 lists water bodies associated with each shaded county.

Table 1 Illinois Counties and their associated water bodies
where FDA action level violations occurred

Christian County	Hancock County
South Fork Sangamon River	Mississippi River
Cook County	Jackson County
Salt Creek	Cedar Lake
Lake Michigan	Big Muddy River
Des Plaines River	Casey Fork
Lake Calumet River	
DeKalb County	Lake County
South Branch Kish River	Lake Michigan
DuPage County	LaSalle County
West Branch DuPage River	Illinois River
East Branch DuPage River	
Salt Creek	Macon County
	Lake Decatur
Douglas County	Madison County
Kaskaskia River	Canteen Creek
Lake Fork	Cahokia Canal
	Piasa Creek
DeWitt County	Marion County
Clinton Lake	East Fork Kaskaskia River
Fayette County	Marshall County
Kaskaskia River	Illinois River
Ramsey Creek	
Grundy County	Moultrie County
Illinois River	West Okaw River
Dresdon Cooling Lake	Jonathon Creek
	Randolf County
	Kaskaskia River

Table 1 continued

Sangamon County

Sangamon River

Lake Springfield

Shelby County

Kaskaskia River

Beck Creek

Richland Creek

Will County

Des Plaines River

Du Page River

Williamson County

Crab Orchard Lake

Table 2 Summary of fish tissue data from Illinois major water bodies

	DuPage River	Des Plaines River	Lake Springfield	Kaskaskia River	Illinois River	Crab Orchard Lake	Lake Michigan
Total Number of Fish Analysed	9	16	162	41	15	61	127
Total Number of FDA violations	6	10	51	12	4	11	23
Percent of FDA violations	67%	62%	31%	29%	27%	18%	18%

Note: See Appendix 2 for sampling locations and fish species collected

Percent of FDA Violations

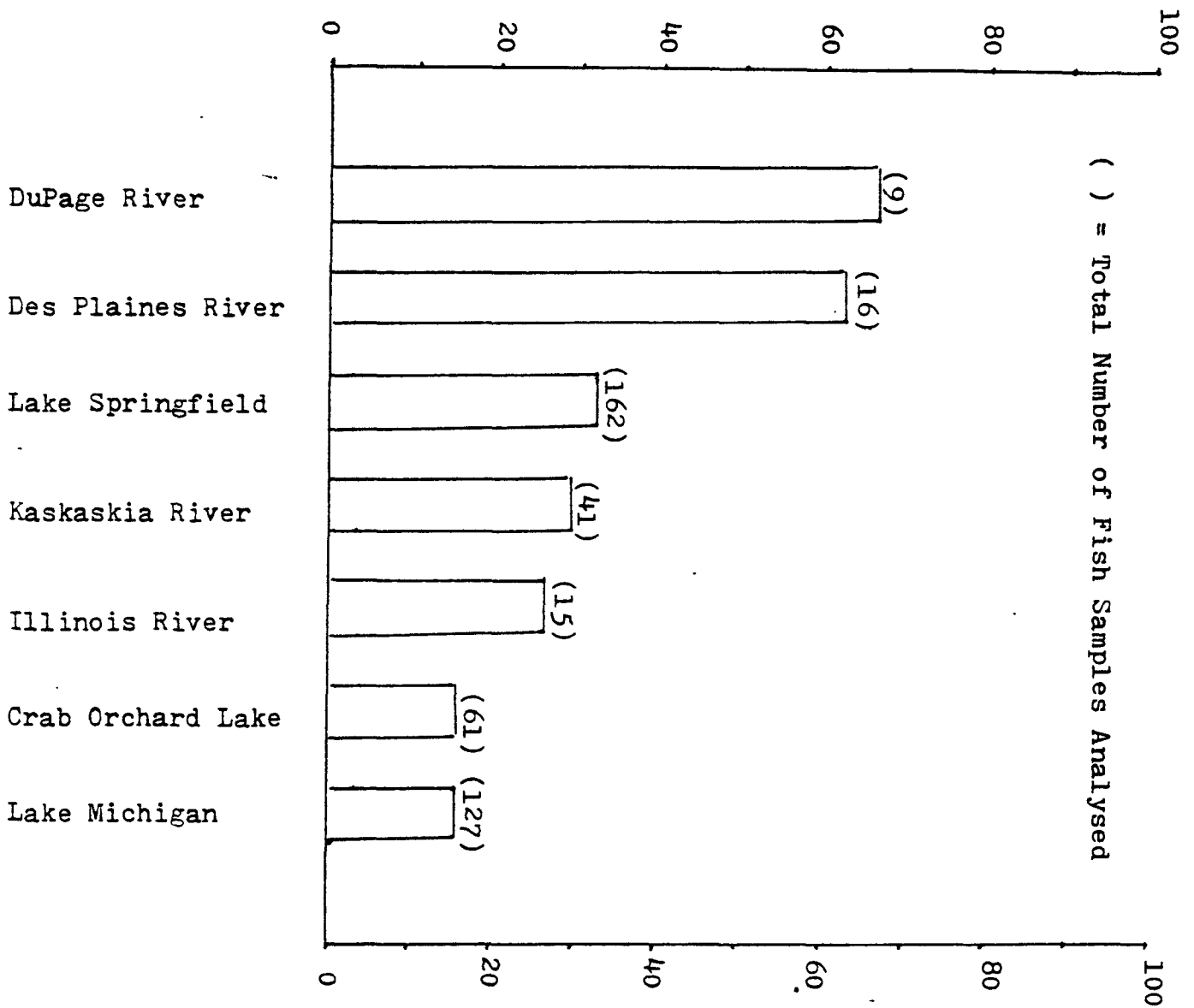


Figure 2 Major Illinois Water Bodies Showing Percent FDA Violations

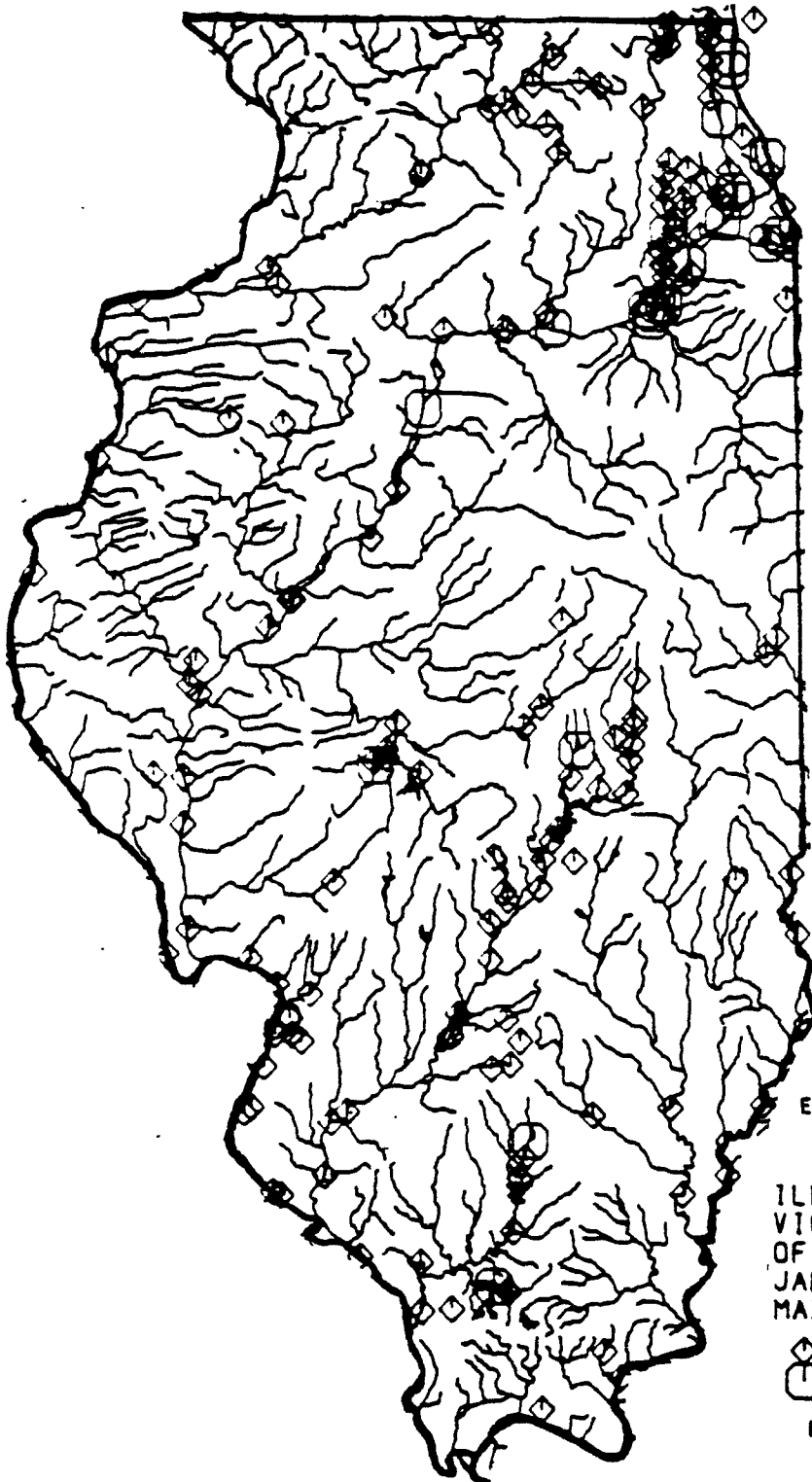
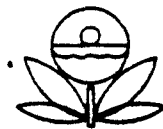


Figure 3



ENVIRONMENTAL PROTECTION AGENCY

STORET SYSTEM

ILLINOIS FISH TISSUE DATA
 VIOLATIONS OF FDA STANDARDS
 OF 2.0 MG/KG FOR PCBs
 JAN 83 TO DEC 86 DATA
 MAXIMA



<= 2.0000

> 2.0000

PROJECTION - ALBERS EQUAL AREA
 SCALE 1:3104540

Small symbol (diamond) denotes no violations
 Large symbol denotes violations

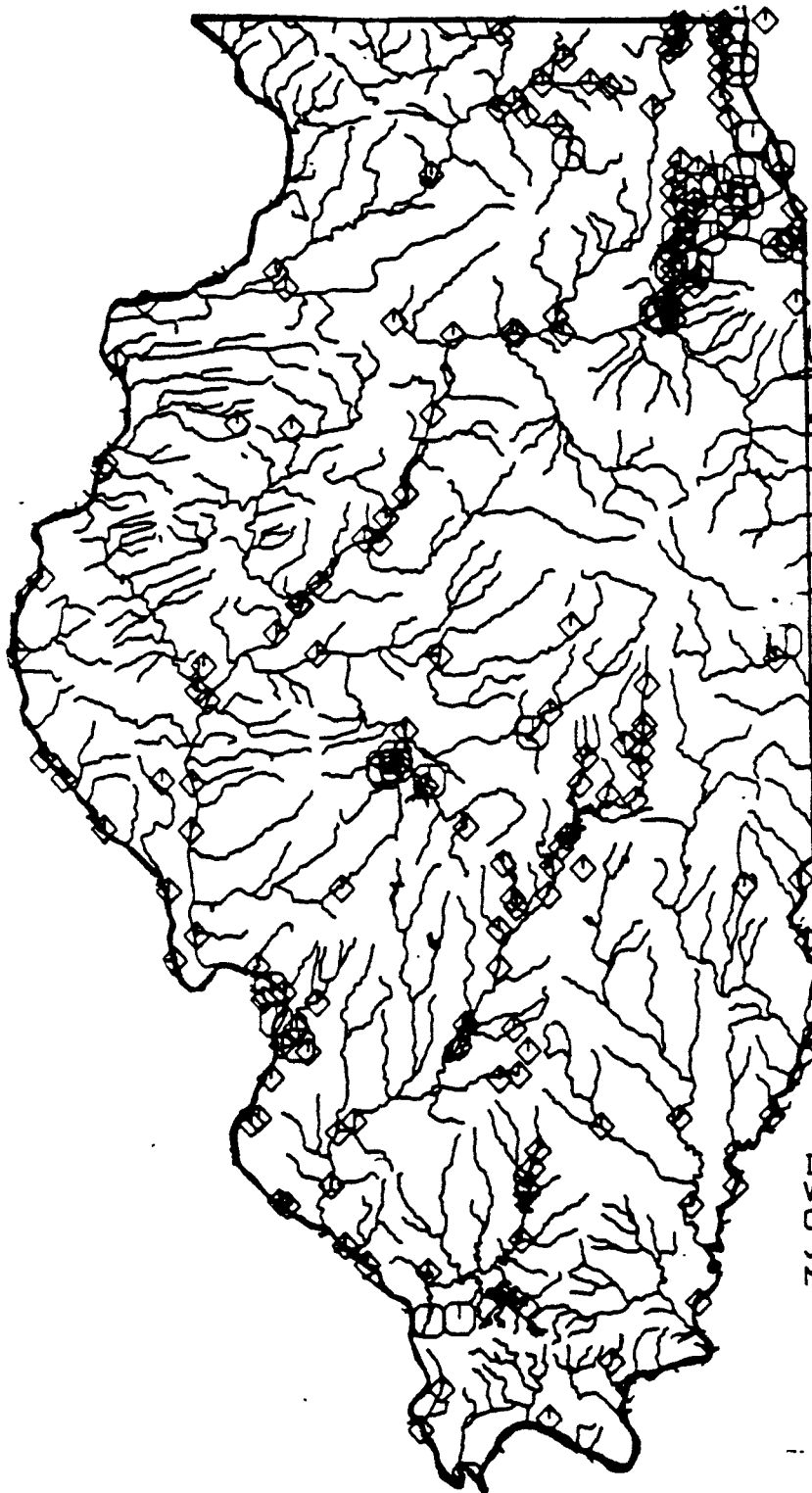


Figure 4



ENVIRONMENTAL PROTECTION AGENCY

STORET SYSTEM

ILLINOIS FISH TISSUE DATA
 VIOLATIONS OF FDA STANDARDS
 OF 0.5 MG/KG FOR DDT
 JAN 83 TO DEC 86 DATA
 MAXIMA



<= 0.5000

> 0.5000

PROJECTION - ALBERS EQUAL AREA
 SCALE 1:3104640

Small symbol (diamond) denotes no violations
 Large symbol denotes violations

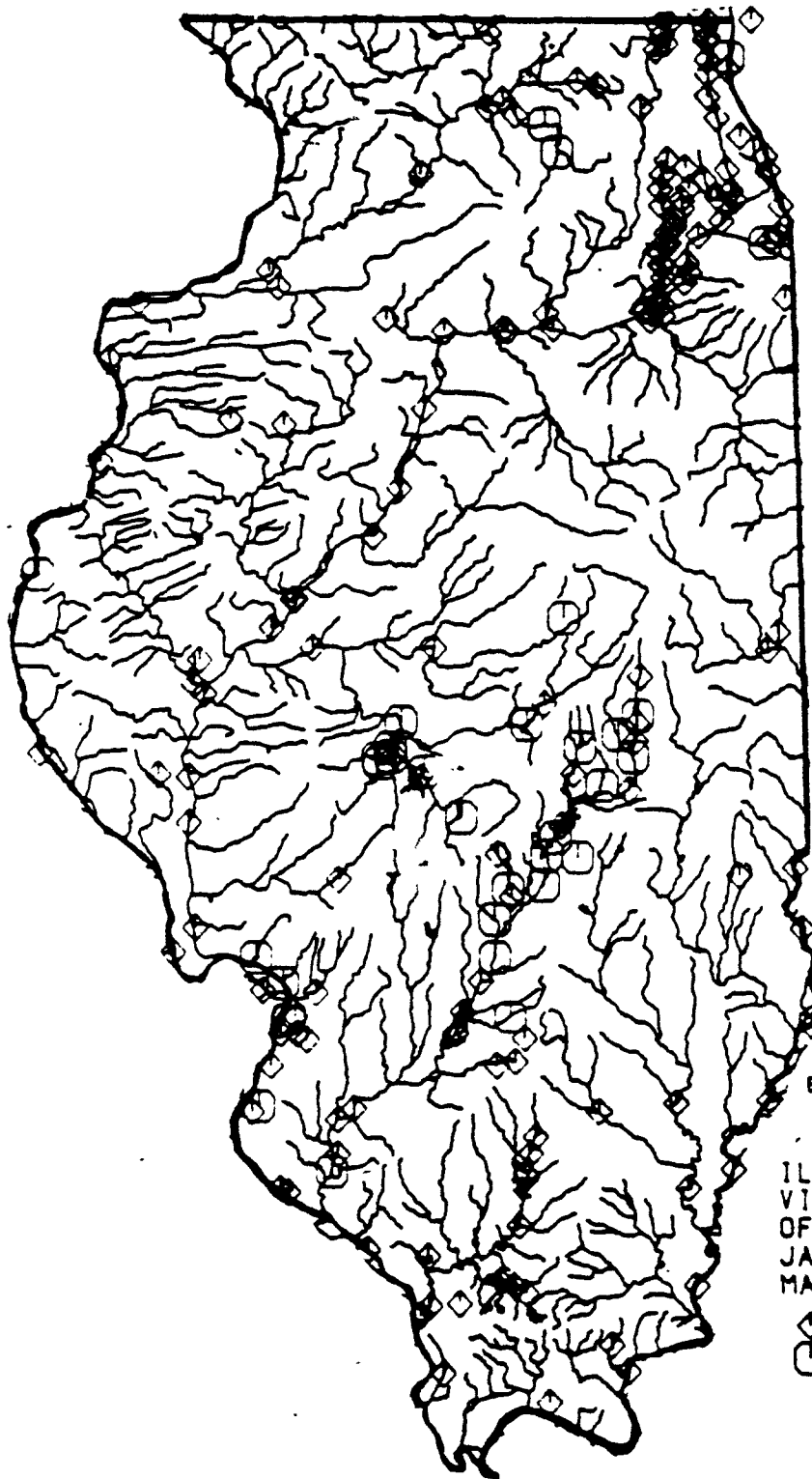


Figure 5



ENVIRONMENTAL PROTECTION AGENCY

STORET SYSTEM

ILLINOIS FISH TISSUE DATA
 VIOLATIONS OF FDA STANDARDS
 OF 0.3 MG/KG FOR DIELDRIN
 JAN 83 TO DEC 86 DATA
 MAXIMA



<= 0.3000
 > 0.3000

PROJECTION - ALBERS EQUAL AREA
 SCALE 1:3104640

Small symbol (diamond) denotes no violations
 Large symbol denotes violations

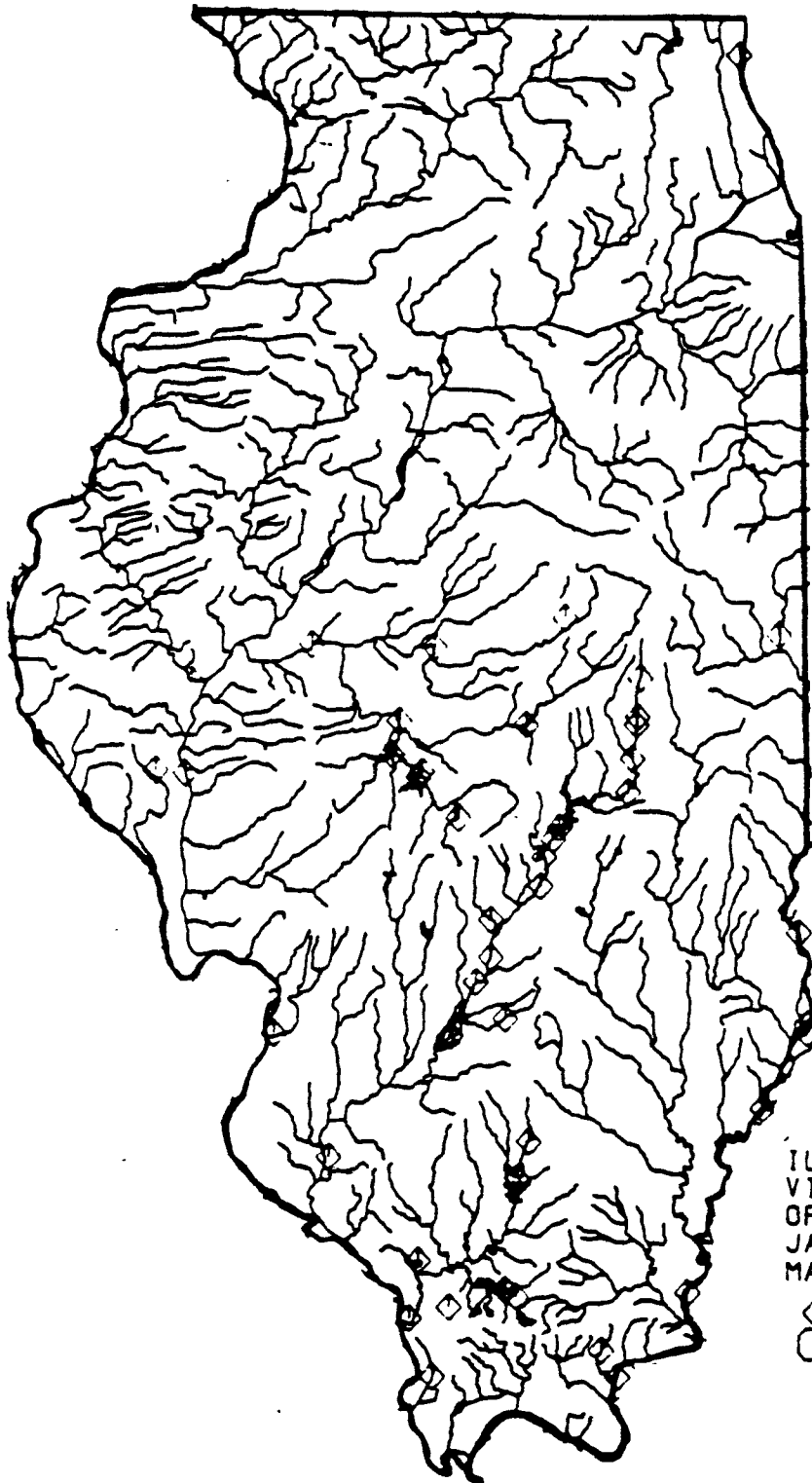


Figure 6



ENVIRONMENTAL PROTECTION AGENCY
STORET SYSTEM

ILLINOIS FISH TISSUE DATA
VIOLATIONS OF FDA STANDARDS
OF 1.0 MG/KG FOR MERCURY
JAN 83 TO DEC 86 DATA
MAXIMA



< 1.0000
> 1.0000

PROJECTION - ALBERS EQUAL AREA
SCALE 1:3104640

Small symbol (diamond) denotes no violations
Large symbol denotes violations

I N D I A N A

Indiana

The data from Indiana represent samples collected from October 7, 1983 to October 10, 1984. A total of 276 fish samples were analysed, of which 17 or 6 percent exceeded Food and Drug Administration (FDA) action levels.

The highest chemical concentrations were PCB's which occurred in fish taken from the Indianapolis Water Canal and St. Joseph River at Darden Bridge, with 13.25 and 12.07 mg/kg respectively. A White River catfish at Williams, Indiana showed 7.25 mg/kg PCB's (see Appendix 3).

Fish sampling was conducted in the Grand Calumet River/Indiana Harbor Canal area on October 4, 1984, but no data are available in STORET. Also, there are no data for calendar year 1985.

Figure 7 shows counties in Indiana where FDA violations occurred. The number within the shaded area represents the number of violations (also see Table 3).

A series of STORET maps showing river system sampling locations and FDA parameter violations are enclosed, and are listed as Figures 8, 9, and 10.



Figure 7 Number of FDA action level violations in Indiana counties.

Table 3 Indiana Counties and their associated water bodies
 where FDA action level violations occurred

Allen County

 Maumee River

Lawrence County

 White River

Marion County

 Indianapolis Water Canal

Morgan County

 White River

St. Joseph County

 St. Joseph River

Tippecanoe County

 Wabash River

Vigo County

 Wabash River

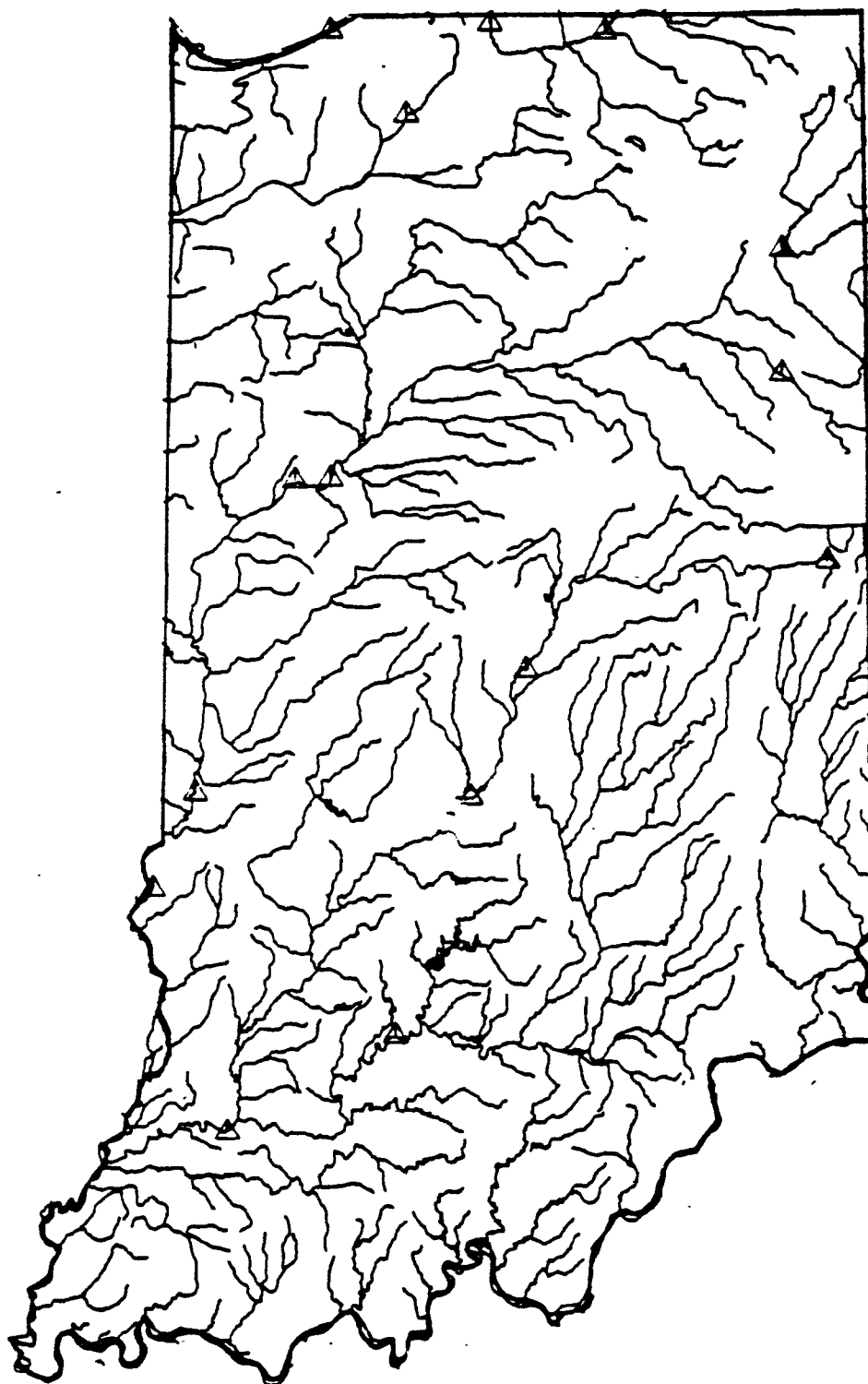
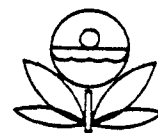


Figure 8



ENVIRONMENTAL PROTECTION AGENCY
STORET SYSTEM

INDIANA FISH TISSUE DATA
VIOLATIONS OF FDA STANDAR
OF 0.3 MG/KG FOR DIELDRI
JAN 83 TO DEC 86 DATA
MAXIMA



<= 0.3000

> 0.3000

PROJECTION - ALBERS EQUAL AREA
SCALE 1:2280960

Small symbol (triangle) denotes no violations
Large symbol denotes violations

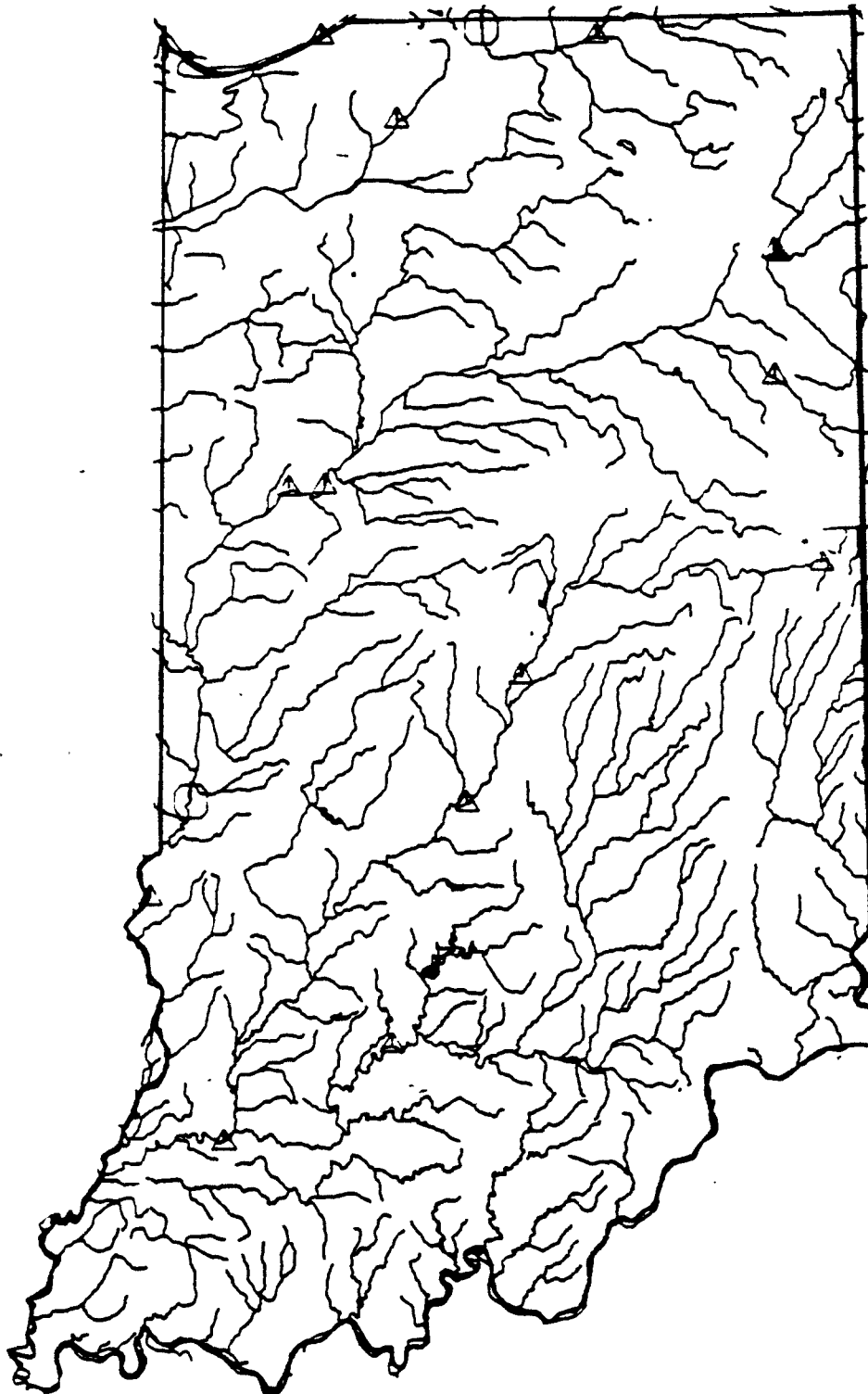
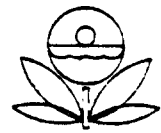


Figure 9



ENVIRONMENTAL PROTECTION AGENCY

STORET SYSTEM

INDIANA FISH TISSUE DATA
 VIOLATIONS OF FDA STANDARDS
 OF 0.5 MG/KG FOR PP DDE
 JAN 83 TO DEC 86 DATA
 MAXIMA



<= 0.5000

> 0.5000

PROJECTION - ALBERS EQUAL AREA
 SCALE 1:2280960

Small symbol (triangle) denotes no violations
 Large symbol denotes violations

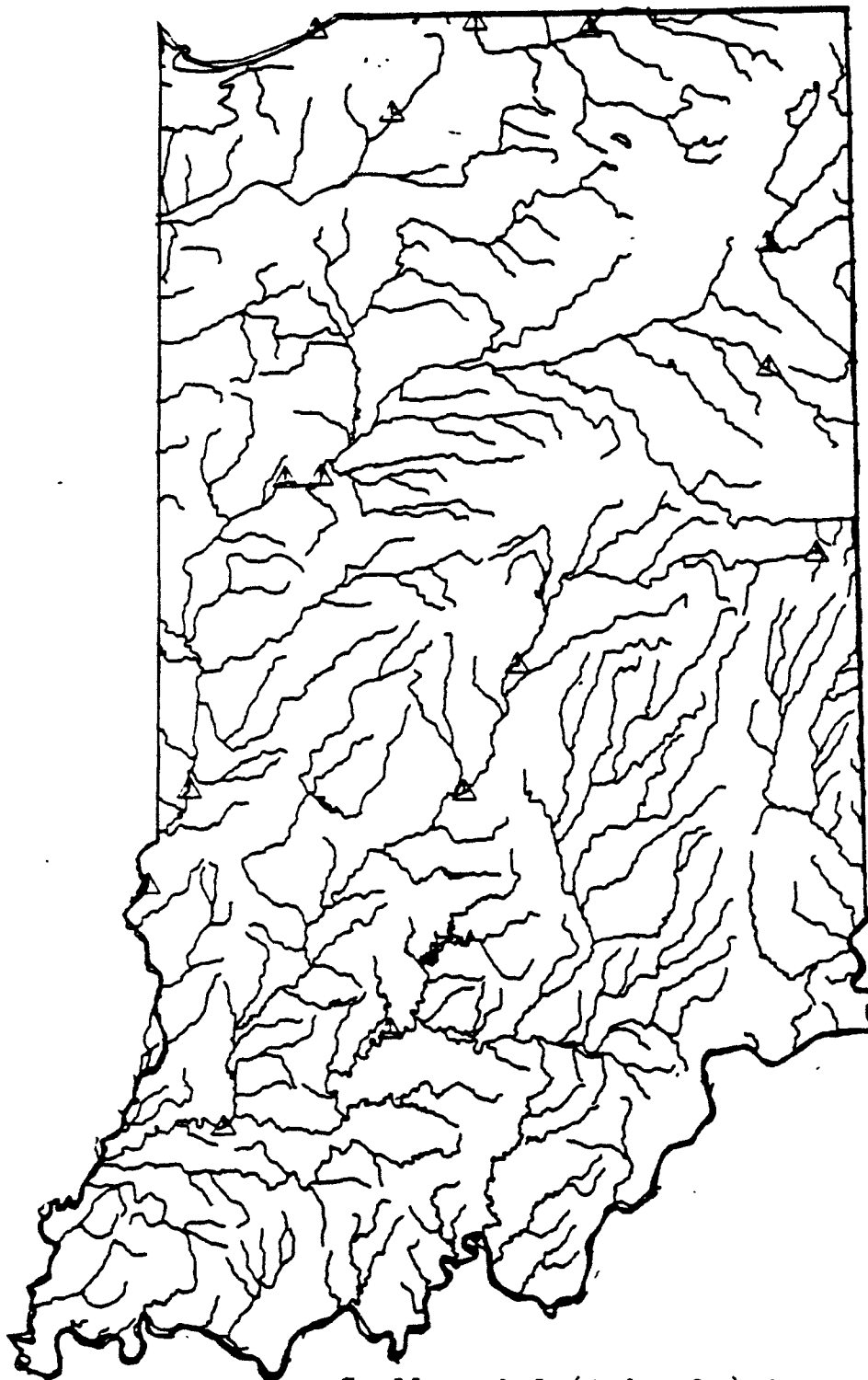
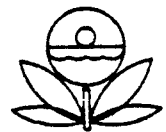


Figure 10



ENVIRONMENTAL PROTECTION AGENCY
STORET SYSTEM

INDIANA FISH TISSUE DATA
VIOLATIONS OF FDA STANDAR
OF 1.0 MG/KG FOR MERCURY
JAN 83 TO DEC 86 DATA
MAXIMA



<= 1.0000

> 1.0000

PROJECTION - ALBERS EQUAL AREA
SCALE 1:2280960

Small symbol (triangle) denotes no violations
Large symbol denotes violations

M I C H I G A N

Michigan

Sampling for fish tissue data for this report occurred between October 31, 1983 and May 28, 1985 and was obtained from a STORET printout. A total of 314 samples were analysed of which 52 or 17 percent exceeded Food and Drug Administration (FDA) action levels.

Except for one mercury violation, DDT in the form of P,P' DDE and P,P' DDD where the only other chemicals in violation. PCB data was not reported.

The Pine River in Midland County and the Clinton River in Macomb County showed the highest percent of FDA action level exceedences with 90 and 60 percent respectively. The Tittabawassee River showed nearly 50 percent.

Table 4 and Figure 11 show counties and associated water bodies where FDA violations occurred. Table 5 and Figure 12 summarize the fish tissue data for Michigan, while Appendix 4 lists the sampling stations, sampling date, FDA action level chemicals, and fish species.

Figure 11 Counties where FDA violations occurred.
Number denotes violations.



Note: Table 4 lists water bodies associated with each shaded county.

Table 4 Michigan Counties and their associated water bodies
 where FDA action level violations occurred

Berrien County

 St Joseph River

Iron County

 Brule River

Macomb County

 Clinton River

Midland County

 Tittabawassee River

 Pine River

 Chippewa River

Muskegon County

 White Lake

Ottawa County

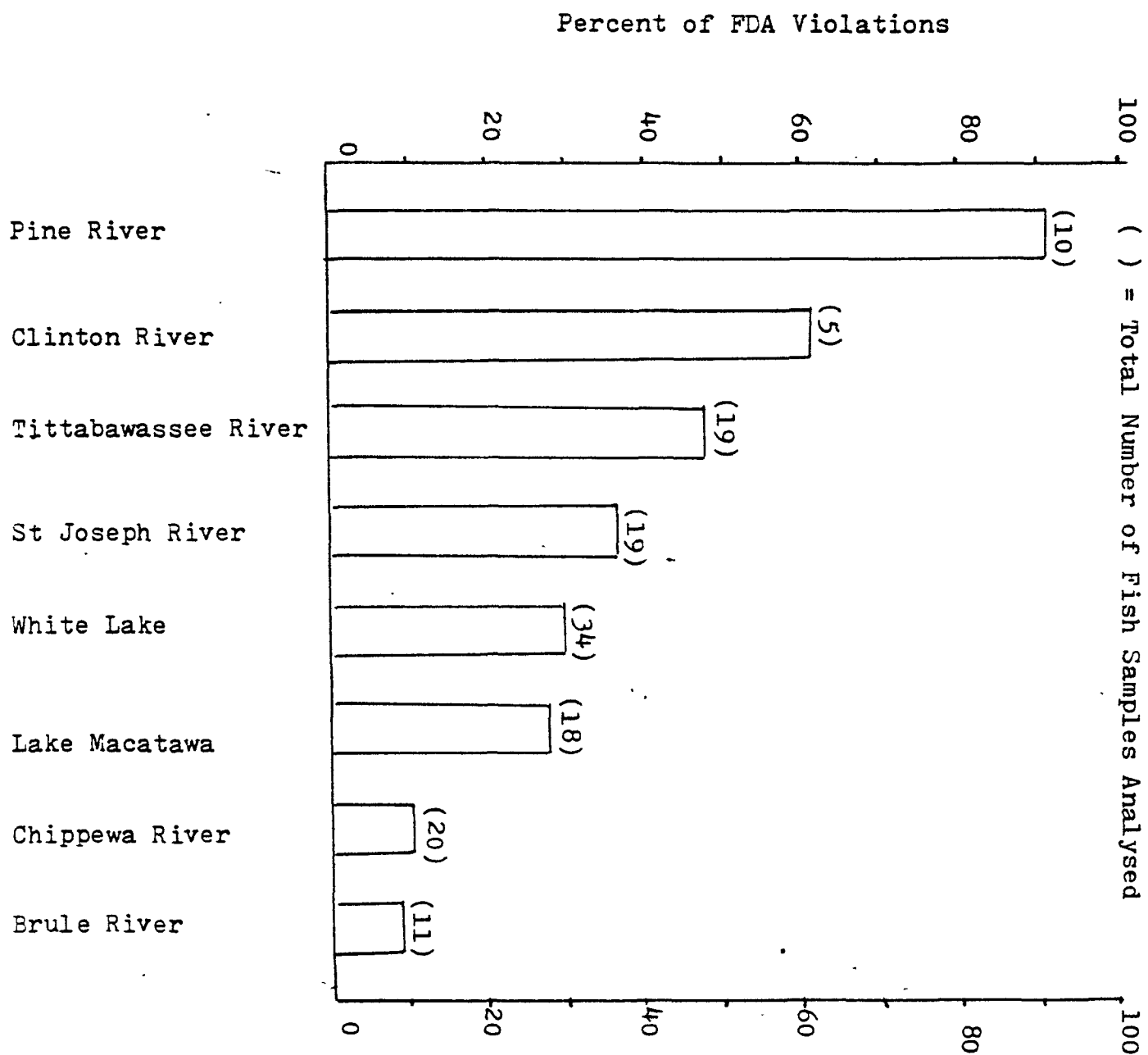
 Lake Macatawa

Table 5 Summary of fish tissue data from Michigan water bodies where FDA violations occurred

	Pine River	Clinton River	Tittabawassee River	St Joseph River	White Lake	Lake Macatawa	Chippewa River	Brule River
Total Number of Fish Analysed	10	5	19	19	34	18	20	11
Total Number of FDA violations	9	3	9	7	10	5	2	1
Percent of FDA violations	90%	60%	47%	37%	29%	28%	10%	9%

Note: See See Appendix 4 for sampling locations and fish species collected

Figure 12 Michigan Water Bodies Showing Percent FDA Violations



M I N N E S O T A

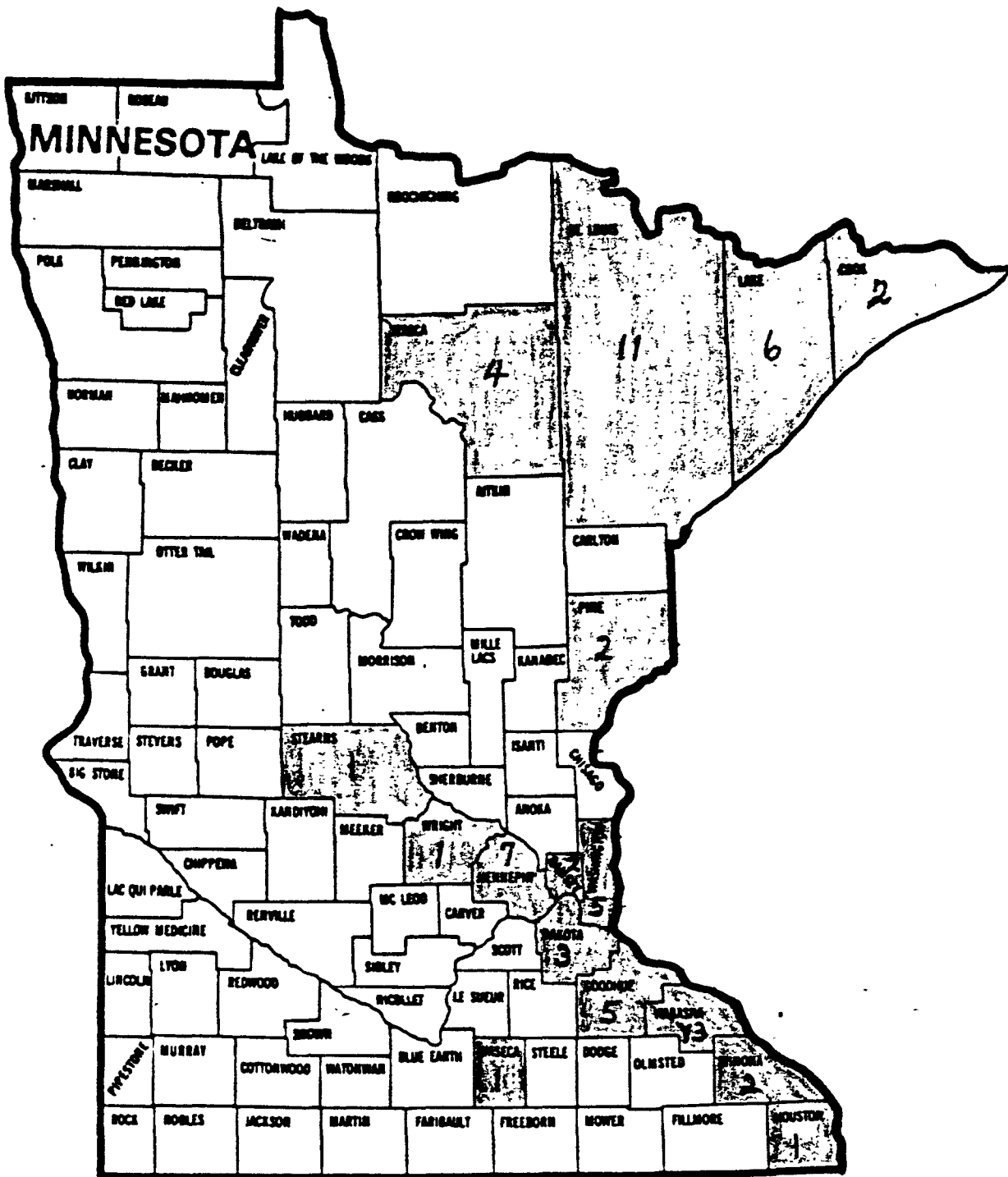
Minnesota

The fish tissue data presented for the State of Minnesota represents samples collected from June 1, 1983 to October 22, 1985. Data for this report was taken from a STORET printout. A total of 931 samples were analysed, of which 66 or 7 percent exceeded Food and Drug Administration (FDA) action levels.

Table 6 and Figure 13 show counties and associated water bodies where FDA violations occurred. Table 7 and Figure 14 summarize the fish tissue data. Appendix 5 lists the sampling stations, sampling date, FDA action level chemicals, and fish species. PCB values above the FDA levels of 2.00 mg/kg ranged from 2.00 mg/kg to 7.53 mg/kg. The highest concentrations were in fish collected from the Mississippi River. Mercury values above the FDA level of 1.00 mg/kg ranged from 1.00 mg/kg to 2.48 mg/kg. Mercury violations were in fish taken from lakes throughout the State.

A series of STORET maps showing river system sampling locations and FDA parameter violations are enclosed, and are listed as Figures 15 and 16.

Figure 13 Counties where FDA violations occurred. Number denotes violations.



Note: Table 6 lists water bodies associated with each shaded county.

Table 6 Minnesota Counties and their associated water bodies
where FDA action level violations occurred

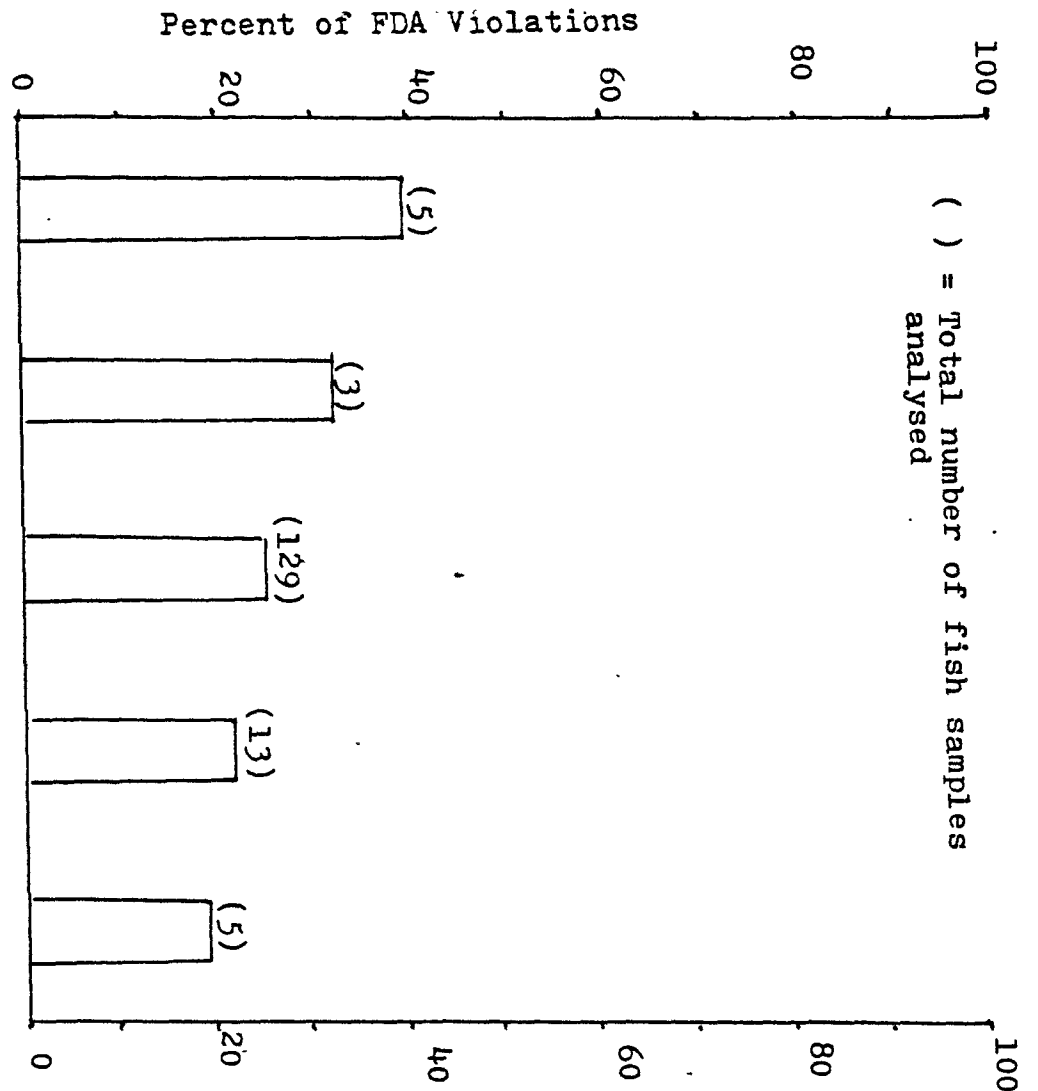
Cook County	Pine County
Lake Loon	Lake Big Pine
Lake Saganaga	
Dakota County	St Louis County
Mississippi River	Lake Bear Island
	Lake Stuart
Goodhue County	Lake Hustler
Mississippi River	Lake Ge-Be-On-Equat
	Lake Whiteface Reservoir
Hennepin County	Lake Coe
Minnesota River	Lake Lac La Croix
Mississippi River	
Houston County	Stearns County
Mississippi River	Saul River
Lake County	Wabasha County
Lake Superior	Mississippi River
Lake Greenwood	
Lake Sand	Waseca County
Lake Isabella	Lesueur River
Lake Basswood	
Lake Sandpit	Washington County
	St Croix River
	Mississippi River
Ramsey County	
Mississippi River	Winona County
	Mississippi River
Itasca County	
Lake Trout	Wright County
Lake Rice	Lake Pleasant
Big Fork River	

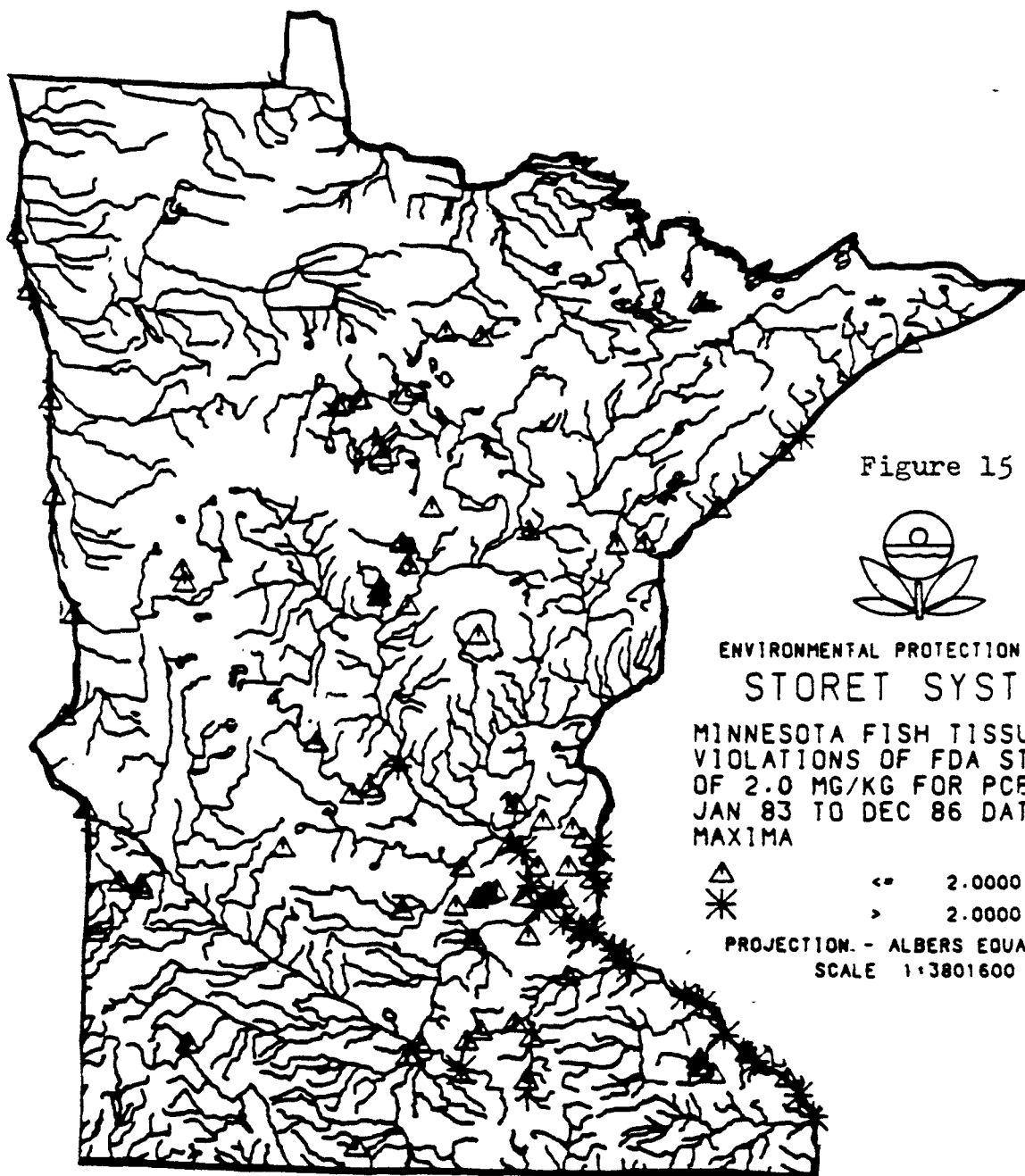
Table 7 Summary of fish tissue data from major Minnesota Rivers where FDA violations occurred

	Big Fork River	Lesueur River	Mississippi River	St Croix River	Minnesota River
Total Number of Fish Analysed	5	3	129	13	5
Total Number of FDA Violations	2	1	34	3	1
Percent of FDA Violations	40%	33%	26%	23%	20%

Note: See Appendix 5 for sampling locations and fish species collected

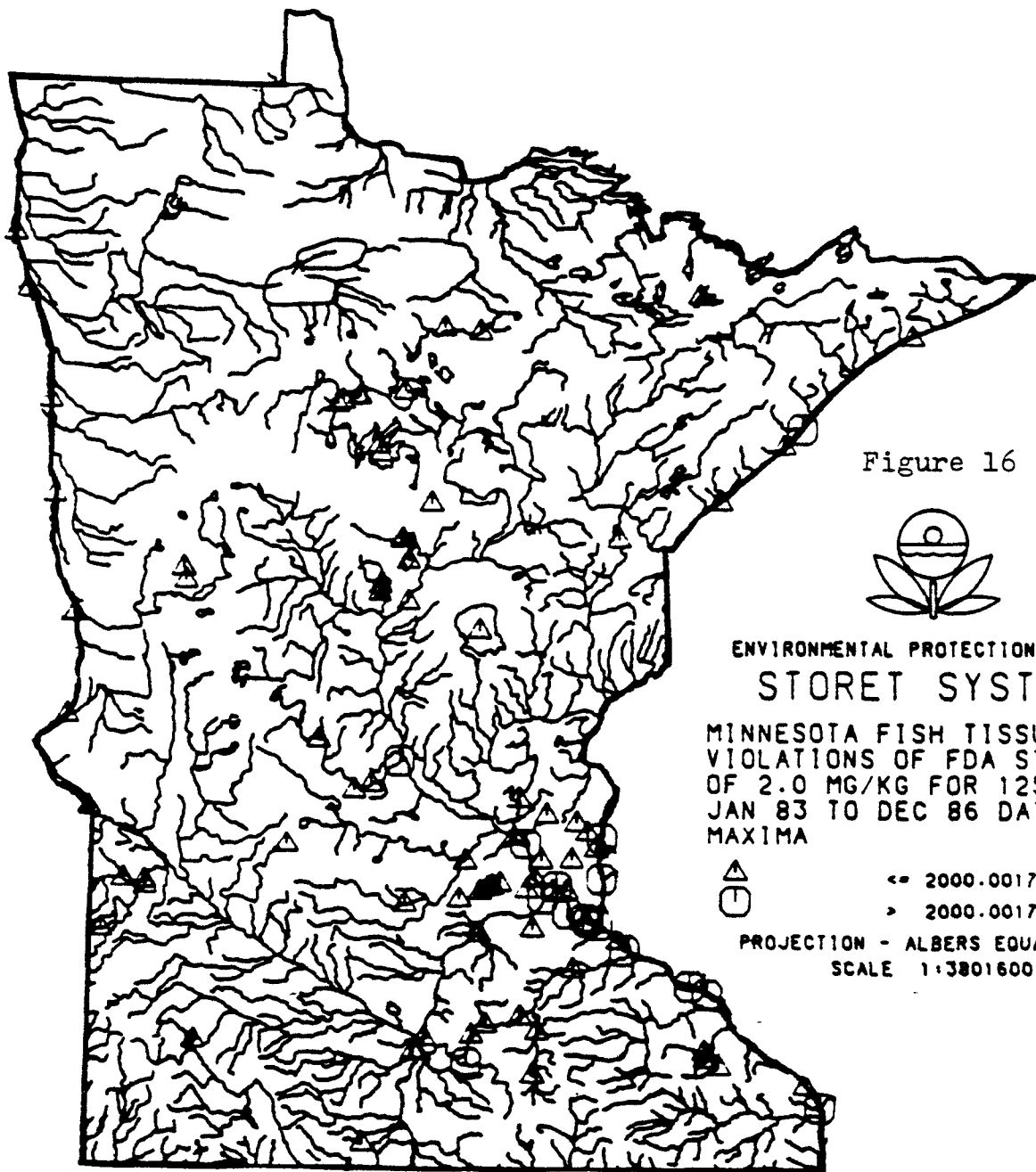
Figure 14 Major Minnesota Rivers Showing Percent FDA Violations





Triangle symbol denotes no violations

Star symbol denotes violations



Small symbol (triangle) denotes no violations
Large symbol denotes violations

W I S C O N S I N

Wisconsin

The fish tissue data presented for the State of Wisconsin represents samples collected from February 24, 1983 through November 18, 1985, and was obtained from a computer printout courtesy of Wisconsin Department of Natural Resources. A total of 3185 fish samples were analysed, of which 731 or 23% exceeded Food and Drug Administration (FDA) action levels. A significant number of samples (1015) were taken from Lake Michigan, Green Bay, and Sturgeon Bay. The remaining 2170 samples were collected from various other lakes and streams throughout the State.

Table 8 and Figure 17 show counties and associated water bodies where FDA violations occurred. Table 9 gives a breakdown of data from Wisconsin's major water bodies, which is also illustrated in Figure 18. Appendix 6 lists the sampling stations, sampling date, FDA action level chemicals, and fish species.

It is significant to note that some very high PCB values above the recommended 2.00 mg/kg level were found. The highest value recorded was 160.00 mg/kg in a carp fillet taken from Cedar Creek near Cedarburg. Additional high PCB values were recorded at various other locations throughout the State, with some exceeding the FDA values by ten to twenty times or greater (see Appendix 6).

An interesting phenomenon occurred in some of the lake trout samples. The chemical chlordane was found to be in violation in 32 fish samples, and of these, 26 or 81 percent were lake trout. This affinity to chlordane by lake trout over other fish species is unexplained, and perhaps should be explored in future work.

It appears that there could be a problem in the Kinnickinnic River at Baran Park, Chase Ave. and 27th St. in Milwaukee where 100 percent of the samples were in violation of FDA values.

PCB's ranged from 6.20 mg/kg to 52.00 mg/kg, and DDT from 0.70 to 2.23 mg/kg. Although the total number of samples were few (7), some followup work needs to be considered for this area.

Mercury violations occurred in 34 lakes throughout Wisconsin. The values ranged from 1.00 to 2.50 mg/kg. The FDA standard is 1.00 mg/kg.

Appendix 6 should be looked at carefully to identify additional locations where elevated chemical values occur.

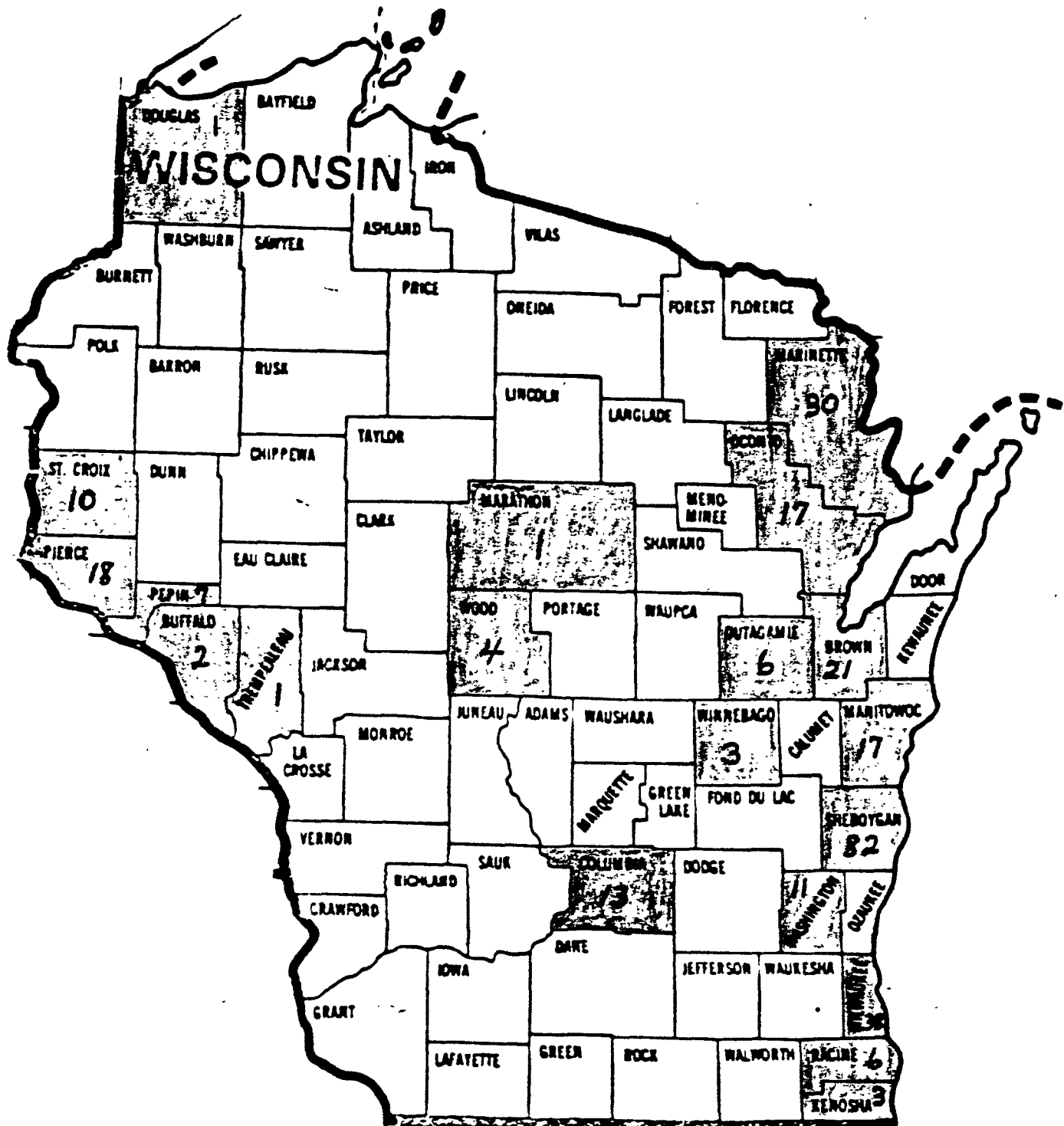


Figure 17 Counties where FDA violations occurred.
Number denotes violations.

Note: Table 8 lists water bodies associated with each shaded county.

Table 8 Wisconsin Counties and their associated rivers where
FDA action level violations occurred

Kenosha County Pike River	Outagamie County Fox River
Racine County Root River	Winnebago County Fox River
Washington County Cedar Creek	Oconto County Oconto River
Milwaukee County Milwaukee River	Marathon County Wisconsin River
St Croix County Kinnickinnic River	Wood County Wisconsin River
Marinette County Menomonee River Peshtigo River	Douglas County Black River
Sheboygan County Sheboygan River	Buffalo County Buffalo River Mississippi River
Manitowoc County Manitowoc River Twin East River Twin West River	Pierce County Mississippi River
Columbia County Fox River Wisconsin River	Pepin County Mississippi River
Brown County Fox River	Trempealeau County Trempealeau River

Table 9 Summary of fish tissue data from Wisconsin's major water bodies

	Kinnickinnic River	Manitowoc River	Cedar Creek	Green Bay	Sheboygan River	Milwaukee River	Menominee River	Peshigo River
Total Number of Fish Analysed	7	6	18	211	165	78	54	10
Total Number of FDA Violations	7	4	11	107	82	38	25	4
Percent of FDA Violations	100%	67%	61%	51%	50%	49%	46%	40%

	Sturgeon Bay	Lake Michigan	Fox River	Oconto River	Root River	Mississippi River	St Croix River	Wisconsin River
Total Number of Fish Analysed	103	701	162	79	31	173	21	125
Total Number of FDA Violations	38	216	43	17	6	27	3	6
Percent of FDA Violations	37%	31%	27%	22%	19%	16%	14%	5%

Note: See Appendix 6 for sampling locations and fish species collected

West Twin River (not listed above) near Two Rivers, Wisconsin showed a 38 percent FDA violation from a total of 29 samples.

43
Percent of FDA Violations

() = Total number of fish samples analysed

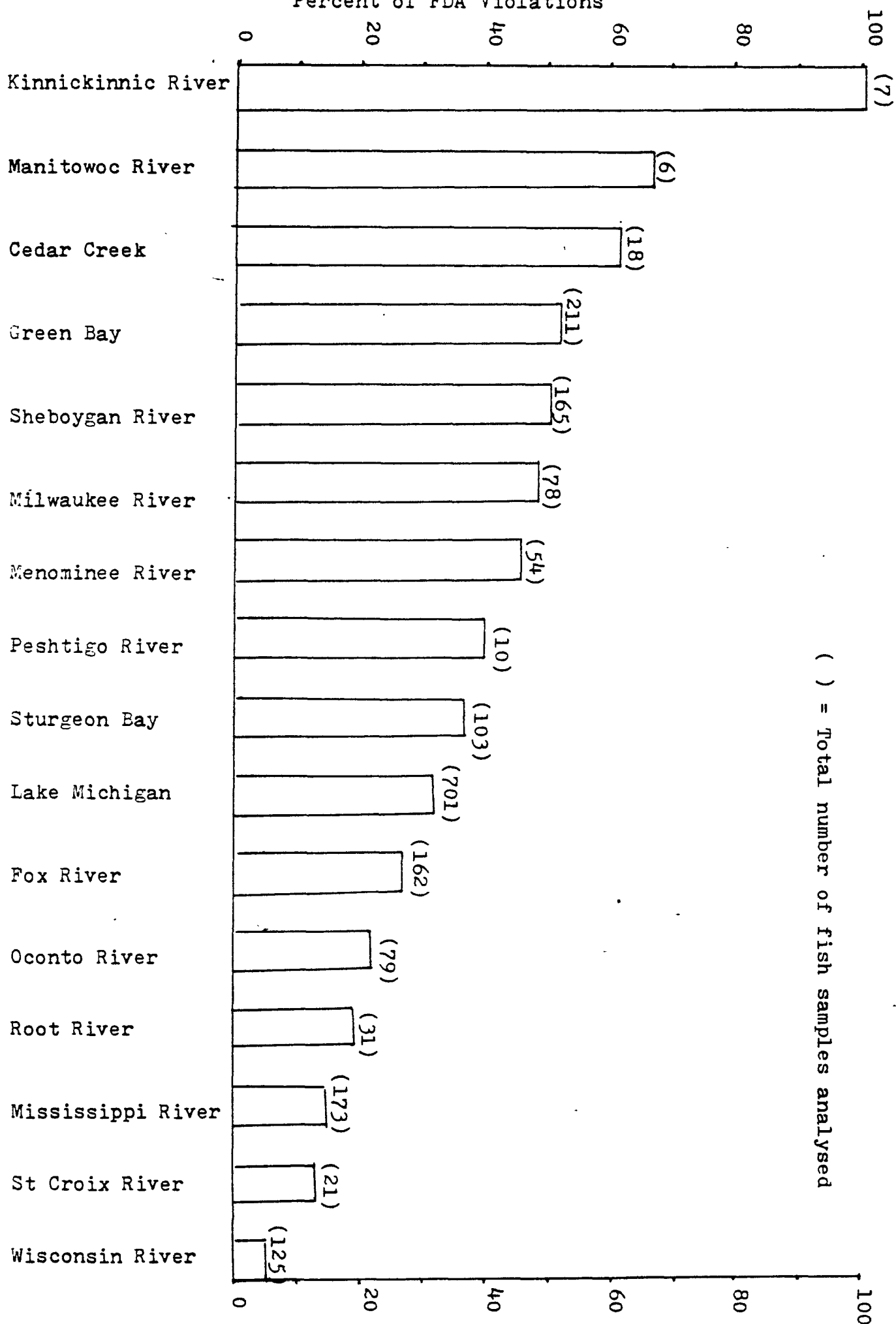


Figure 18 Major Wisconsin Water Bodies Showing Percent FDA Violations

Conclusions

The intent of this report is to pull together fish tissue data from the STORET System and other available sources for the purpose of providing, to the Region, a forum whereby fish tissue toxicity data can be brought together under one cover to be used as another water quality management tool. The future value of this document will be enhanced as more complete and comprehensive fish tissue data becomes available through various state-wide programs.

A review of the problems and concerns found to exist within the Region is discussed below.

Illinois

1. The Du Page and Des Plaines Rivers showed the greatest number of FDA violations in the State, with PCB's and DDT being the chemicals of concern.
2. A DDT and dieldrin problem exists in Lake Springfield. Further investigation needs to be conducted in this area.
3. PCB and DDT values were high in samples taken from Lake Michigan in the areas of Foster Avenue, Waukegan Harbor, and Great Lakes Naval Station.
4. Crab Orchard Lake is also an area of concern where PCB values in some fish were elevated above recommended FDA limits.

Indiana

1. The highest chemical concentrations were PCB's which occurred in fish taken from the Indianapolis Water Canal, St. Joseph River at Darden Bridge, and the White River at Williams.

Michigan

1. The Pine and Clinton Rivers showed the highest percent of FDA violations with 90 and 60 percent respectively. The Tittabawassee River showed nearly 50 percent. The chemicals were DDT in the form of P,P' DDE and P,P' DDD.

Minnesota

1. PCB values were highest in fish collected from the Mississippi River.
2. Mercury violations were found in fish taken from various lakes throughout the State.

Wisconsin

1. Some very high PCB values above the recommended 2.00 mg/kg FDA level were found. The highest value recorded was 160.00 mg/kg in a carp fillet taken from Cedar Creek near Cedarburg.
2. The chemical chlordane was found to be in violation in 32 fish samples, and of these, 26 or 81 percent were lake trout. This is unexplained and perhaps should be explored further.
3. It appears that there could be a problem in the Kinnickinnick River at Baran Park, Chase Avenue, and 27th Street in Milwaukee where 100 percent of the samples were in violation of FDA values. Although the total number of samples were few (7), some followup work needs to be considered for this area.
4. Mercury violations occurred in 34 lakes throughout Wisconsin.

Recommendations

1. It is recommended that this Fish Tissue Report continue to be produced on an annual basis as a means of assessing both short-term and long-term (monitoring) fish contaminant problems throughout the Region.
2. Ohio is the only State in Region V that is not actively participating in the National Monitoring and Wasteload Allocation Program for fish tissue monitoring. Because of this, much valuable fish toxicity data are not available. It is recommended that Ohio's laboratory capabilities program for analysing organic chemicals be accelerated so that a comprehensive fish contaminant program can soon be brought on line. This should be a high priority issue.
3. The bulk of the data for this report comes from the STORET System. However, it is a well known fact that a significant amount of fish contaminant data, which is not part of the National Ambient Monitoring Program, are being generated by Region V States and are stored in each States' own computer system. It is recommended that a strong effort be made, by working closely with each state agency, to extract these data for Region-wide as well as National use.
4. In the past, Illinois has entered into STORET the type of fish sample analysed such as fillet, whole fish, etc. For some reason this information was omitted from this year's printout. It is recommended that Illinois continue to include this information. Also, Illinois should identify the kinds of fish that are collected from Lake Springfield. These data are missing from STORET.

A P P E N D I X

Summary of Great Lakes Fish Advisories
of the
Great Lakes States

David S. DeVault
Garet P. Lahvis

Great Lakes National Program Office
United States Environmental Protection Agency
536 South Clark Street
Chicago, Illinois 60605

SPRING 1986

Introduction

The State Health Departments of New York, Michigan, Minnesota, Illinois, Indiana, Ohio, and Wisconsin have issued advisories for people who consume sport fish from the Great Lakes. The following is a summary of the current advisories. Each state also provides advice beyond that summarized in this report. Consumption advice to young women and children, for example, is generally more conservative than advice to adult males, but varies between States. The reader is referred to the Departments of Natural Resources in the individual states for further information.

Lake Michigan

General health advisories for consumption of fish in Michigan, Indiana, Illinois, and Wisconsin waters.

Group I.¹ Fish posing the lowest health risk.

- smelt
- perch
- bullhead
- coho salmon
- rainbow trout
- lake trout under 20 inches

Group II.² Women and children should not eat these fish.

- chinook salmon larger than 25 inches
- lake trout 20 to 25 inches
- smallmouth bass
- walleye under 20 inches
- northern pike

Group III.³ No one should eat these fish.

- walleye larger than 20 inches
- brown trout
- carp
- lake trout larger than 25 inches
- white sucker
- catfish
- white bass

To supplement these general advisories for Lake Michigan, the following Wisconsin tributaries have specific advisories:

<u>Tributary</u>	<u>Group I¹</u>	<u>Group II²</u>	<u>Group III³</u>
Lower Fox River	bullhead white sucker perch	northern pike walleye	carp larger than 16 inches
Upper Fox River	-----	bullhead black crappie northern pike largemouth bass	all other fish species
Sheboygan River	-----	-----	all fish species except trout and salmon (refer to general Lake Michigan advisory for trout and salmon)
Onion River	-----	-----	All fish species
Milwaukee River	perch	redhorse rock bass smallmouth bass under 13 inches	carp northern pike

¹ 90% or more of the samples analyzed are below USFDA action levels for PCB, DDT, dieldrin, and chlordane. These fish are, however, contaminated at low levels.

² 50% or more of the samples analyzed are below USFDA action levels for PCB, DDT, dieldrin, and chlordane.

³ 90 % or more of the samples analyzed are above USFDA action levels for PCB, DDT, dieldrin, and chlordane.

The following Michigan tributaries also have specific advisories:

Do not eat listed species caught from:

- Kalamazoo River (downstream from Kalamazoo) and Portage Creek (downstream from Milham Park); carp, suckers, catfish, and largemouth bass. No more than one meal per week for all other species.
- Lake Macatawa (Ottawa County): carp
- Hershey River (downstream from Reed City) bullhead and trout.
- St. Joseph's River (downstream of Berrien Springs Dam): carp
- Manistique River (downstream from M-90/Old US-2): carp.

Lake Superior

Wisconsin

All fish species are below USFDA action levels. These fish are, however, contaminated at low levels.

Michigan

Do not eat any fish from:

Deer Lake, Carp River, and Carp Creek (Marquette County)

Do not eat listed species caught from:

Torch Lake (Houghton County): walleye and saugers

Do not eat more than one meal per week of:

lake trout (all areas)

Minnesota

Unrestricted consumption of:

lake trout (open lake) 20-25"

chinook salmon (open lake) 25-30"

northern pike (St. Louis River) 15-20"

Limit consumption to six meals per month for:

northern pike (St. Louis Bay) 15-20"

shorthead redhorse (St. Louis River) 15-20"

Limit consumption to two meals per month for:

northern pike (St. Louis Bay) 20-30"

Limit consumption to one meal per month for:

walleye (St. Louis Bay) 15-20"

white sucker (St. Louis Bay) 15-20"

Lake Huron

Michigan

Do not eat any fish caught from:

Pine River (downstream from St. Louis)

Do not eat listed species caught from:

Shiawassee River (M-59 to Owosso): Carp

Tittabawassee River (downstream of Midland): carp and catfish

Do not eat more than one meal per week of:

- lake trout (all areas)
- salmon, trout and muskellunge (southern half of the lake)
- carp, catfish, salmon, and trout (Saginaw Bay)

Lake Erie

Michigan

Do not eat listed species caught from:

- Raisin River (downstream from Monroe): carp

Do not eat more than one meal per week of:

- carp, catfish and muskellunge (western end of the lake)
- muskellunge (Lake St. Clair, St. Clair River, Detroit River)
- carp (Belle Isle)

Ohio

Eat no fish from the lower two miles (from the harbor breakwater to the 24th Street Bridge in Ashtabula) of the Ashtabula River.

Eat no fish from the lower 5 miles (from the mouth to East 31st Street Bridge in Loraine, Ohio) of the Black River.

New York

Consume no more than one meal (1/2 pound) per week of any fish species.

Lake Ontario

New York

Do not consume:

- eel
- channel catfish
- lake trout
- chinook salmon
- coho salmon over 21"
- rainbow trout over 25"
- brown trout over 18"

Consume no more than meal per month:

- white perch
- smaller coho salmon
- rainbow and brown trout

ILLINOIS

Fish Tissue Data That Exceeded FDA Action Levels

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Ex. Sangamon R. Edinburg	85/06/12		0.828	0.47		B.M. Buffalo			
alt Creek Wolf Rd.	83/07/15		0.780			Carp			
	84/10/24		0.50			Carp			
k Mich Foster Ave	83/12/12	3.14	0.63			Chin Salmon			
	83/12/12	3.99				Chin Salmon			
	83/12/12	7.47				Chin Salmon			
	83/12/12	2.38				Chin Salmon			
es Plaines R. Franklin Pk.	83/07/13		0.70			Carp			
	83/07/13		0.73			Carp			
es Plaines R. W. Riverside	83/07/13	5.20	2.50			Carp			
es Plaines R. CCFP Dam 1	83/07/14	3.30				Carp			
Calumet R. Ashland Ave	83/10/12	3.35	0.54						
Calumet R. Calumet Pk	83/10/06	2.20				L.M. Bass			
es Plaines R. Lemont	83/07/12		0.81			L.M. Bass			
es Plaines R. Willow Spgs Rd.	83/07/12	6.70	4.80			Carp			
es Plaines R. 43rd St. Rt 66	83/07/12	2.20	1.60			Carp			
es Plaines R. Middle Ft Guit Rd.	84/07/19		4.30			Carp			
Br. Kish Rt 64 Sycamore	83/08/12		0.68	0.37		Carp			
	83/08/12		0.68	0.42					
Br DuPage R. Wash St. Naperville	83/05/03		0.59			Carp			
	83/05/03		0.59			L.M. Bass			
	83/05/03	2.20				White Sucker			
Br DuPage R. Rt. 53 Glen Ellyn	83/05/10		1.20			Carp			
alt Cr. Villa Park	83/07/15		1.70			Carp			
l R. Dresden Dam	83/07/14	4.92				Carp			
	83/07/11	2.90	0.55			Carp			
resden Cooling Lake	83/10/12	2.40				Ch Catfish			
edar Lk. near Makanda	85/05/17		0.55			L.M. Bass			
	85/05/17		2.40			Carp			

Illinois

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
9 Muddy R. 5 Mi. E. Grand Tower	84/09/28		0.97			Carp			
asey Fk Rt 34 Mt. Vernon	83/08/30	7.20				Carp			
k Mich Waukegon Harbor	83/08/16	5.80		0.88		Lake Trout			
	83/08/16	12.10		1.60		Lake Trout			
	83/10/05	2.20				Carp			
	83/10/05	5.50	1.50			Carp			
	83/10/05	5.30	3.10			Carp			
	83/10/05	4.80	1.90	0.57		Lake Trout			
	83/10/05	5.00	2.40	0.46		Lake Trout			
	83/10/05	8.00	4.00			Lake Trout			
	83/10/05	2.50	1.10			Lake Trout			
	83/10/05	3.50	1.50			Lake Trout			
	83/10/07	12.00	1.10			Carp			
	83/10/07	9.00	0.98			Carp			
	83/10/07	6.50	1.60			Carp			
	83/10/18	3.73	0.92			Lake Trout			
	83/10/18	7.25	1.70			Lake Trout			
k Mich Grt. Lks Naval Sta	84/12/14		0.61			Brown Trout			
	84/12/14		0.55			Chin Salmon			
	84/12/14	2.27	0.68			Chin Salmon			
	84/12/15	2.51	0.60			Chin Salmon			
Ill. R. Marse. Harbor	83/07/27	2.37				Carp			
k Decatur Decatur	85/06/19		0.57			Ch Catfish			
	85/06/19		0.54			Flathead Catfish			
Anteen Cr. SE Horseshoe L.	84/07/02		1.00			Carp			
ahokia Canal SE Horseshoe L.	84/07/02		0.57			Carp			
	84/07/02		0.88			Ch Catfish			
Ill River Rt 17 Lacon	83/07/29	2.02				Carp			
J Okaw R. Rt 32 Lovington	83/08/02	6.60		0.55		Carp			
	83/08/02	5.70		0.38		W. Crappie			

Illinois Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Des Plaines R. Lockport	83/07/11	3.50	0.91			Carp			
	83/07/11	4.87	1.46			Carp			
	83/07/11	3.90	0.97			Carp			
	83/07/11	2.24	0.58			Carp			
	83/07/11	2.61	0.72			Carp			
Des Plaines R. I-55	83/07/20	2.45				Carp			
Du Page R. Channahon	83/05/05	2.50				Carp			
Des Plaines R. Joliet Yacht Club	83/06/27	4.00				Carp			
Du Page R. Rt 59 Plainfield	83/05/06		0.70			Carp			
Grab Orchard Lk SW Marion	83/03/02	2.80				Carp			
	83/03/02	4.80				LM Bass			
	83/03/02	2.70				LM Bass			
	85/07/01	5.20				Carp			
	85/07/01	2.36				Carp			
	85/07/01	4.10				LM Bass			
	85/11/18	3.90				Carp			
	85/11/18	2.10				Carp			
	85/11/18	11.00				Ch Catfish			
	85/11/18	2.60				Carp			
	85/11/18	3.40				Carp			
Skaskia R. S.E. Cowden	83/08/25			0.39		Carp			
	83/08/25			0.46		Ch Catfish			
Skaskia R. Shelbyville Dam	83/08/24			1.10		Ch Catfish			
	83/08/24			1.10		Walleye			
Skaskia R. 5 M. SW Shelbyville	83/08/24			0.52		Carp			
Beck Cr 2 M. W. Herrick	83/07/25			0.60		White Sucker			
Pickland Cr. 3 Mi W. Strasburg	83/07/13			0.78		Ch Catfish			
k Calumet R. Riverdale	83/10/12			0.54		Carp			
Clinton L. E of Clinton	83/06/03			0.67		Ch Catfish			
	84/09/24			0.53		Ch Catfish			

Illinois

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Kaskaskia R. 4 mi W Hayes	83/06/28			0.56		Ch Catfish			
Lake Ek. Rt 36 Atwood	83/08/01			0.49		Carp			
Kaskaskia R. Vandalia	83/08/26			0.57		Carp			
	83/08/26			0.45		Carp			
	83/08/26			0.33		Ch Catfish			
	83/08/26			1.10		Walleye			
Ramsey Cr 3 mi S. Ramsey	83/07/21			0.39		Ch Catfish			
Miss R. Near Keokuk	84/08/22			0.40		Ch Catfish			
Piasa Cr NW Aton	84/06/26			0.37		Sucker			
E Fr Kaskaskia R. Alma	83/07/05			0.56		Carp			
Fountain Cr. W New Hanover	84/09/05			0.32		Carp			
Jonathon Cr Sullivan	83/08/03			0.54		Ch Catfish			
Kaskaskia R. Baldwin	85/07/16			0.35		Carp			
Sangamon R. Rt 36 Riverton	84/10/25			0.45		Carp			
K Springfield Site 1 Lindsey	84/07/24			0.36		Unknown			
	84/07/24		0.81	1.18					
	84/07/24		4.17	4.91					
	84/07/24		1.90	2.41					
	84/07/24			0.74					
	84/07/25			0.33					
	84/07/25		1.08	0.83					
	84/07/25			0.62					
	84/07/25			0.46					
	84/07/25		0.51	0.48					
	84/07/25			0.66					
	84/07/25			0.34					
	84/07/25			0.32					
	84/07/26			0.61					

Illinois

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Springfield Site 1 Lindsey	84/07/26			0.57		Unknown			
Springfield Site 2 Lindsey	84/07/24		0.58	0.45		Unknown			
	84/07/24		1.97	0.48					
	84/07/24		0.59	1.56					
	84/07/24			0.48					
	84/07/24			1.72					
	84/07/24			0.49					
	84/07/25			0.34					
	84/07/25			0.34					
	84/07/25			0.84					
Springfield Site 3 Licker Arm	84/07/24		1.00	0.56		Unknown			
	84/07/24		1.27	0.42					
	84/07/24		0.91	0.99					
	84/07/25		1.22	1.43					
	84/07/25		0.84	1.43					
	84/07/25		0.53	3.42					
	84/07/25		1.77	2.01					
	84/07/25		1.31	0.60					
	84/07/25		3.25	1.03					
	84/07/25			1.13					
	84/07/25			2.20					
	84/07/25			4.03					
	84/07/25			5.15					
Springfield Site 4 Sugar Cr. Arm	84/07/24		1.83	5.76		Unknown			
	84/07/24		0.87	0.68					
	84/07/24		0.75	0.81					
	84/07/25		0.56	2.52					
	84/07/25		1.11	2.16					
	84/07/26	3.34	1.38	1.12					

Continued

Note: In addition to the above chemical parameters for Lake Springfield, cadmium seemed high with many values over 1.00 mg/kg and as high as 7.00 mg/kg.

Indiana Fish Tissue Data That Exceeded FDA Action Levels

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Maumee R. @ Ft Wayne	84/09/11 84/09/12	2.844 2.104				Ch Catfish Carp	✓ ✓		
White R. @ Williams	83/09/27	5.331				Carp	✓		
	83/09/27	7.257				Channel catfish	✓		
	83/09/27	5.887				R. Carpsucker	✓		
Indianapolis Water Canal	83/09/08	2.479				Carp	✓		
	83/09/08	8.310				Lg mouth bass	✓		
	83/09/08	2.892				Lg mouth bass	✓		
	83/09/08	13.250				Quillback	✓		
White R @ Henderson Bridge	83/10/06	2.778				Ch Catfish	✓		
	83/10/06	6.775				Carp	✓		
St Joseph R. Darden Bridge	84/09/18	12.075				Carp	✓		
	84/09/18	2.490				Sm mouth bass	✓		
	84/09/18	3.256				S. Redhorse	✓		
Jabash R below Lafayette	83/09/07	3.316				Carp	✓		
	83/09/07	2.241				Carp	✓		
Jabash R above Terre Haute	83/09/07	2.236	1.32*			Carp	✓		

Q The chemical is p, p' DDE

APPENDIX 4

Michigan Fish Tissue Data That Exceeded FDA Action Levels

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
St Joseph R. Fish Ladder Berwin Twp	84/10/03		1.32*			Carp		✓	
	84/10/03		0.52*			Carp		✓	
	84/10/03		2.37*			Carp		✓	
	84/10/03		2.80*			Carp		✓	
	84/10/03		0.98*			Carp		✓	
	84/10/03		0.79*			Carp		✓	
	84/10/03		0.61*			Carp		✓	
Brule R. Mastodon Twp	84/08/28				1.00	Walleye		✓	
Clinton R. Clinton Twp	83/04/15		0.51*			Carp		✓	
	83/04/15		0.62*			Carp		✓	
	83/04/15		0.88*			Carp		✓	
Habawasseé R. Smiths Cross	84/04/03		2.37*			Carp		✓	
	84/04/03		4.43*			Carp		✓	
	84/04/03		1.71*			Carp		✓	
	84/04/03		2.07*			Carp		✓	
	84/04/03		1.54**			Carp		✓	
	84/04/03		9.31*			Carp		✓	
	84/04/03		1.28*			Carp		✓	
	84/04/03		0.86**			Carp		✓	
	84/04/03		1.22**			Carp		✓	
ie R. Homer Rd. Homer Twp	83/10/31		2.86*			Carp		✓	
	83/10/31		1.15*			White Sucker		✓	
	83/10/31		0.81*			White Sucker		✓	
	83/10/31		0.93*			White Sucker		✓	
	83/10/31		0.75*			Sm Bass		✓	
	83/10/31		1.92*			Sm Bass		✓	
	83/10/31		9.81*			Carp		✓	

Michigan

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Pine R, Homer Rd, Homer TWP	83/10/31		0.73 ^{**}			Carp		✓	
	83/10/31		0.65 ^{**}			Carp		✓	
	83/10/31		3.76 ^{**}			Carp		✓	
	83/10/31		2.43 ^{**}			White Sucker		✓	
	83/10/31		1.35 ^{**}			White Sucker		✓	
	83/10/31		1.76 ^{**}			White Sucker		✓	
	83/10/31		1.44 ^{**}			Sm mouth bass		✓	
	83/10/31		4.24 ^{**}			Sm mouth bass		✓	
White Lake, West Basin, White R. TWP	83/10/31		13.70 ^{**}			Carp		✓	
	84/07/24		0.74 [*]			Northern Pike		✓	
	84/07/24		0.54 [*]			Northern pike		✓	
	84/07/24		0.75 [*]			Northern pike		✓	
	84/07/24		3.00 [*]			Carp		✓	
	84/07/24		2.00 [*]			Carp		✓	
	84/07/24		1.80 [*]			Carp		✓	
	84/07/24		1.90 [*]			Carp		✓	
	84/07/24		0.53 [*]			Carp		✓	
	84/07/24		1.80 [*]			Carp		✓	
	84/07/24		0.53 [*]			Walleye		✓	
	84/04/10		2.60 [*]			Carp		✓	
Macatawa, West Basin, Park TWP	84/04/10		8.38 [*]			Carp		✓	
	84/04/10		0.59 [*]			Walleye		✓	
	84/04/10		0.76 [*]			Carp		✓	
	84/04/10		1.11 [*]			Carp		✓	
Chippewa R. Midland	84/09/09		1.75 [*]			Ch Catfish		✓	
	84/09/09		0.68 ^{**}			R. Redhorse		✓	
	84/09/09		0.70 ^{**}			Ch Catfish		✓	

* The Chemical is P, P' DDE
for all DDT values

** The Chemical is P, P' DDD
for all DDT values

APPENDIX 5

Minnesota Fish Tissue Data That Exceeded FDA Action Levels

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin on Fillet
		PCB's	DDT	Dieldrin	Mercury				
Lake Loon North of Lutsen	85/08/29				1.15	Northern Pike		✓	
LK Saginaw NW of Grd. Marais	85/07/18				1.80	Northern Pike		✓	
Mississippi R @ Hastings	83/07/06	5.750				Carp		✓	
	83/07/06	(1254) 4.890				Carp		✓	
Mississippi R. Confluence with ST. Croix R.	83/06/09	7.090				Ch Catfish		✓	
	83/06/09	(1254) 6.210				Ch Catfish		✓	
Mississippi R. No of Hastings	83/08/23	7.530				Carp		✓	
	83/08/23	(1254) 6.620				Carp		✓	
Mississippi R. @ Red Wing	83/06/20	2.810				Ch Catfish		✓	
	83/06/20	2.290				Ch Catfish		✓	
	83/06/20	2.590				Flathead Catfish		✓	
	83/06/20	3.830				Walleye		✓	
	83/06/20	(1254) 2.460				Ch Catfish		✓	
	83/06/20	(1254) 2.020				Ch Catfish		✓	
	83/06/20	(1254) 2.260				Flathead Catfish		✓	
	83/06/20	(1254) 3.310				Walleye		✓	
Mississippi R NW of Diamond Bluff, WI	83/08/12	2.110				Carp		✓	
Mississippi R @ Red Wing	83/02/24	2.400				Flathead Catfish		✓	
	83/08/25	2.000				Carp		✓	
	84/09/12	2.800				Carp		✓	
	84/09/12	2.400				White Bass		✓	
Minnesota R @ Ft Snelling Plk	83/08/17	2.940				Ch Catfish		✓	
	83/08/17	(1254) 2.540				Ch Catfish		✓	
Mississippi R. Minneapolis	83/10/11	2.510				Ch Catfish		✓	
Mississippi R below Coon Rapids Dam	83/06/08	5.520				Carp		✓	
	83/06/08	(1254) 4.620				Carp		✓	
Mississippi R @ La Crosse	83/08/01	3.160				Ch Catfish		✓	
	83/08/01	(1254) 2.770				Ch Catfish		✓	
Lake Superior East of Beaver Bay	85/09/08	6.130				Lake Trout		✓	
	85/09/08	(1254) 4.380				Lake Trout		✓	

Minnesota

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Miss R. Wabash St. St. Paul	85/10/22	2.62				SM Buffalo		✓	
	85/10/22	7.46				SM Buffalo		✓	
	85/10/22	(1254) 2.20				SM Buffalo		✓	
Lake Trout So of Coleraine	84/08/09				1.61	Northern Pike		✓	
Lake Rice So of Cohasset	85/07/23				1.13	Walleye		✓	
Big Fork R. Near B.F. Minn	85/08/20				1.30	Walleye		✓	
	85/08/20				1.36	Walleye		✓	
LK Greenwood near Isabella	84/07/27				1.10	Walleye		✓	
Lake Sand near Isabella	85/08/01				1.20	Walleye		✓	
LK Isabella near Forest Ctr	83/07/18				1.28	Northern Pike		✓	
Lake Basswood NE of Ely	85/08/13				1.40	Walleye		✓	
Lake Sandpit NE of Ely	84/08/02				1.19	Northern Pike		✓	
Lk Big Pine W of Finlayson	84/08/01				1.21	Walleye		✓	
	84/08/01				1.68	Walleye		✓	
LK Bear Island N of Babbitt	83/09/09				1.06	Northern Pike		✓	
Lake Stuart NW of Ely	85/09/18				1.06	Northern Pike		✓	
Lake Hustler NW of Ely	84/08/15				1.03	Northern Pike		✓	
	84/08/15				1.64	Northern Pike		✓	
Lk Se-Be-On-Equat NW of Ely	85/09/18				1.50	Northern Pike		✓	
	85/09/18				1.50	Walleye		✓	
	85/09/18				1.60	Walleye		✓	
	85/09/18				1.60	Walleye		✓	
LK Whiteface Resvr SE Makinen	84/08/09				2.48	Northern Pike		✓	
Lake COE SW of Aurora	83/07/13				1.00	Northern Pike		✓	
Lk Lac La Croix N of Crane Lk	84/08/10				1.30	Walleye		✓	
Sauk R NW of St Cloud	83/09/26	3.86				Carp		✓	
	83/09/26	(1254) 2.92				Carp		✓	
Mississippi R. at Wabasha	83/06/01	3.61				Ch Catfish		✓	
	83/06/01	(1254) 3.23				Ch Catfish		✓	

APPENDIX 5

Minnesota Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Mississippi R. So of Pepin, WI	83/08/23	3.700				Carp		✓	
	83/08/24	6.600				Carp		✓	
	83/08/24	4.600				Carp		✓	
	83/08/27	3.100				Ch Catfish		✓	
	84/09/11	6.300				Carp		✓	
	85/10/15	4.149				SM Buffalo		✓	
	85/10/15	5.465				SM Buffalo		✓	
	85/10/15	(1254) 3.700				SM Buffalo		✓	
	85/10/15	(1254) 5.040				SM Buffalo		✓	
Mississippi R. So of Buffalo WI	83/09/29	4.800				Carp		✓	
	84/09/04	2.300				Carp		✓	
	84/09/04	3.100				Carp		✓	
	84/09/04	5.400				Carp		✓	
	84/09/04	2.400				Ch Catfish		✓	
Esueat R. So of Jonesville	85/10/15	3.690				Carp		✓	
	85/10/15	(1254) 3.690				Carp		✓	
Le Croix R. @ Stillwater	84/09/14	3.100				BM Buffalo		✓	
Le Croix R. near Hudson	84/09/28	3.360				Ch Catfish		✓	
	84/09/28	(1254) 2.940				Ch Catfish		✓	
ss R. @ Grey Cloud Island	83/08/10	2.230				Carp		✓	
	83/10/11	5.860				Ch Catfish		✓	
	83/10/11	(1254) 4.790				Ch Catfish		✓	
Le Croix R. @ Marine - at - St Croix	85/07/26	6.030				Carp		✓	
	85/07/26	(1254) 5.240				Carp		✓	
Mississippi R. @ Winona	84/09/05	2.300				Carp		✓	
Mississippi R. @ Dakota	83/06/28	2.160				Ch Catfish		✓	
Lake Pleasant @ Annandale	84/09/27				1.53	Northern Pike		✓	

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin on Fillet
		PCB's	DDT	Dieldrin	Mercury				
Bass Lake	84/08/22				1.60	Walleye		✓	
	85/04/25				1.30	Walleye		✓	
	85/04/25				1.10	Walleye		✓	
	85/04/25				1.50	Walleye		✓	
Black Lake	85/09/16				1.50	Musky		✓	
	85/09/16				1.60	Musky		✓	
Camp Lake	85/06/13				1.00	Lg Mouth Bass		✓	
Camp 12 Lake	85/05/15				1.10	Lg Mouth Bass		✓	
	85/05/16				1.20	Northern Pike		✓	
Cheguamegn Lake	85/04/30				1.00	Lg Mouth Bass		✓	
Elk Lake	85/04/26				1.10	Musky		✓	
Foster Lake	85/06/30				1.10	Lg Mouth Bass		✓	
Franklin Lake	84/10/16				2.50	Walleye		✓	
	84/10/16				1.20	Walleye		✓	
Gile Flow	85/09/16				1.10	Walleye		✓	
	85/09/16				1.10	Walleye		✓	
	85/09/24				1.10	Walleye		✓	
	85/09/25				1.40	Walleye		✓	
Great Bass Lake	85/06/25				1.50	Lg Mouth Bass		✓	
lag Lake	84/07/31				2.20	Walleye		✓	
	84/07/31				1.50	Walleye		✓	
	85/06/25				1.20	Walleye		✓	
Loyce Lake	85/05/15				1.80	Walleye		✓	
Tickapoo R. Steuben	85/10/30				1.00	Sauger		✓	
Noguesby	85/04/23				1.40	Walleye		✓	
K Super	84/08/22				1.20	Walleye		✓	
	84/08/22				1.10	Walleye		✓	
o Bass Lake	85/06/12				1.60	Lg Mouth Bass		✓	
ong Lake	85/05/08				1.80	Sm Mouth Bass		✓	
	85/05/08				2.20	Walleye		✓	

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Lyman Lake	85/05/05				1.70	Walleye		✓	
Musser Lake	85/04/23				1.30	Walleye		✓	
N Bass Lake	85/06/13				1.40	Lg Mouth Bass		✓	
	85/07/11				1.40	Lg Mouth Bass		✓	
Owl Lake	85/06/03				1.50	Walleye		✓	
	85/06/03				1.50	Walleye		✓	
Rainbow Fl	85/10/02				1.20	Walleye		✓	
Round Lake	85/06/08				1.20	Walleye		✓	
	85/06/08				1.00	Walleye		✓	
Sand Lake	85/06/13				1.00	Walleye		✓	
	85/06/13				1.00	Walleye		✓	
	84/10/16				1.30	Northern Pike		✓	
	85/06/18				1.40	Walleye		✓	
Seventh Lake	85/07/17				1.20	Walleye		✓	
Shannon Lake	85/11/07				1.70	Lg Mouth Bass		✓	
Silver Bass Lake	85/05/10				1.20	Lg Mouth Bass		✓	
	85/05/10				1.70	Northern Pike		✓	
Siskiwit Lake	83/06/17				1.40	Walleye		✓	
Six Lake	85/07/16				1.00	Yellow Perch		✓	
	85/07/16				1.10	Yellow Perch		✓	
St. Louis R. ^{NR} Superior	85/04/18				1.00	Walleye		✓	
	85/04/18				1.40	Walleye		✓	
	85/04/18				1.20	Walleye		✓	
	85/04/18				1.00	Walleye		✓	
Sugar Camp Lake	84/10/09				1.30	Sm Mouth Bass		✓	
	84/10/09				2.20	Walleye		✓	
	85/06/18				1.20	Walleye		✓	
	85/06/17				1.20	Walleye		✓	

APPENDIX 6

Wisconsin

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin on Fillet
		PCB's	DDT	Dieldrin	Mercury				
Trout Lake	83/06/09				1.10	Walleye		✓	
	83/06/09				1.10	Walleye		✓	
	84/10/30				1.10	Walleye		✓	
	84/10/30				1.20	Walleye		✓	
Kan Zile Lake	85/07/30				1.10	Northern Pike		✓	
	85/07/30				1.60	Northern Pike		✓	
Windigo Lake	85/06/11				1.10	Walleye		✓	
	85/05/10				1.50	Walleye		✓	
Pike R. Carthage	83/07/26	12.00				Carp		✓	
	83/07/26	12.00				Carp		✓	
	84/10/10	6.20				Carp		✓	
Root R. Sixth St	83/09/26	6.60				Carp		✓	
	84/10/08	3.80				*Carp		✓	
	84/10/08	4.00				Gizzard Shad	✓		
	84/10/08	4.00				Gizzard Shad	✓		
	84/10/08	2.50				Chinook Salmon		✓	
	84/10/08	2.30				Carp		✓	
Cedar Cr. Abv Col. Dam	85/07/19	57.00				Carp		✓	
	85/07/19	8.60				Carp		✓	
	85/07/19	4.00				Rock Bass		✓	
Cedar Cr. at Cedarburg	84/07/30	39.00				Carp		✓	
	84/07/30	82.00				Carp		✓	
Cedar Cr. up Highland D	85/07/19	34.00				Carp		✓	
	85/07/19	160.00				Carp		✓	
	85/07/19	14.00				Northern Pike		✓	
	85/07/19	18.00				Northern Pike		✓	
	85/07/19	7.70				Rock Bass		✓	
	85/07/19	30.00				Carp		✓	

* Total Chlordane was 0.32 mg/kg in this fish sample

Wisconsin

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin on Fillet
		PCB's	DDT	Dieldrin	Mercury				
Milw. R. Below Grafton	85/09/27	3.80				Carp		✓	
Milw R. Co Hwy C	83/07/27	2.30				N Redhorse		✓	
	83/07/27	2.30				Northern Pike		✓	
	83/07/27	2.00				WH Sucker		✓	
	83/07/27	10.00				Carp		✓	
	84/07/30	4.20				Carp		✓	
	84/07/30	9.60				Carp		✓	
	84/07/30	3.10				G. Redhorse		✓	
	85/09/27	4.10				Carp		✓	
Milw R. Kletzch Pk	85/04/12	4.80				N Pike		✓	
	85/04/12	2.10				Walleye		✓	
Milw R. McQuon Rd	84/07/30	2.70				G. Redhorse		✓	
Milw R. Thiensville	84/07/30	2.90				Carp		✓	
	84/07/30	4.40				Carp		✓	
	84/07/30	6.90				Carp		✓	
	84/07/30	2.30				Carp		✓	
Inniskinnic R. Barran Pk Milw	83/08/08	22.00	1.65			Carp	✓		
	83/08/12	6.20				Wh Sucker	✓		
	83/08/16	6.20				Bluegill	✓		
	83/10/04	16.00	0.70			Carp	✓		
	83/10/04	12.00				N Pike	✓		
Inniskinnic R. Chase Ave. Milw	84/10/09	8.10	0.67			Carp	✓		
Inniskinnic R. 27th St. Milw	84/07/27	52.00	2.23			Carp	✓		
Kenomonee Estuary	85/10/02	7.60				Carp		✓	
	85/10/20	7.30				Carp		✓	
Kenomonee R. Hwy 57	83/08/02	3.50				Bluegill	✓		
	83/08/12	12.00	1.07			Carp	✓		
Milw R. Below Capitol	83/07/28	21.00				Carp		✓	
	83/07/28	6.60							

APPENDIX 6

Wisconsin

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin on Fillet
		PCB's	DDT	Dieldrin	Mercury				
Milw R. Below No Ave	83/08/02	20.00	0.70			Carp	✓		
	83/08/05	9.10				Bluegill	✓		
	83/08/08	7.90				Carp		✓	
	83/08/08	2.70				N Redhorse		✓	
	83/08/08	13.00				Gizzard Shad		✓	
	83/08/08	52.00				Carp		✓	
	83/08/10	15.00				Wh Sucker	✓		
	83/08/10	16.00	0.62			N Pike	✓		
	84/07/17	12.00				Carp		✓	
	84/07/17	15.00				Carp		✓	
	84/07/17	2.40				N Pike		✓	
	84/07/17	4.70				Sm Mouth Bass		✓	
	84/07/17	14.00				Gizzard Shad		✓	
	84/08/15	5.10				Gold Shiner	✓		
	85/10/02	17.00				Carp		✓	
Milw R. Kern Park	84/08/22	4.10				Carp		✓	
Milw R. Kletzsch PK	84/09/20	7.20				Carp		✓	
	84/09/20	2.70				N Pike		✓	
Milw R. Silver Spg Dr.	83/08/28	14.00				Carp		✓	
	83/08/28	14.00				Carp		✓	
Sheboygan R. Below Hwy 28	84/09/26	2.00				Chin Salmon		✓	
	84/09/26	4.50				Chin Salmon		✓	
Sheboygan R. Kiwanis PK.	84/10/19	2.30				Coho Salmon		✓	
	84/10/19	3.70				* Lake Trout		✓	
	84/10/19	3.60				Chin Salmon		✓	
	84/10/19	3.50				Chin Salmon		✓	
	84/10/19	3.60				Chin Salmon		✓	
	84/10/19	2.10				Chin Salmon		✓	
	84/10/19	2.70				Chin Salmon		✓	
	84/10/19	3.60				Chin Salmon		✓	

* Total Chlordane was 0.35 mg/kg in this fish sample

Wisconsin

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin on Fillet
		PCB's	DDT	Dieldrin	Mercury				
Sheboygan R. Kiwanis Pk	84/10/30	10.00				Walleye		✓	
	85/09/25	2.10				Chin Salmon		✓	
	85/09/25	2.80				Chin Salmon		✓	
	85/09/25	2.40				Chin Salmon		✓	
	85/09/25	2.30				Chin Salmon		✓	
	85/09/25	2.10				Chin Salmon		✓	
	85/09/25	2.80				Chin Salmon		✓	
	85/09/25	3.80				Chin Salmon		✓	
	85/09/25	2.40				Chin Salmon		✓	
	85/09/25	4.00				Chin Salmon		✓	
	85/09/25	2.60				Chin Salmon		✓	
	85/09/25	2.00				Chin Salmon		✓	
	85/09/25	2.60				Chin Salmon		✓	
	85/09/25	2.10				Brown Trout		✓	
	85/09/25	2.70				Coho Salmon		✓	
	85/09/25	3.10				Chin Salmon		✓	
	85/09/25	2.00				Coho Salmon		✓	
	85/09/25	3.20				Brown Trout		✓	
	85/09/25	2.70				Chin Salmon		✓	
	85/09/25	2.40				Brown Trout		✓	
	85/09/25	2.20				Brown Trout		✓	
	85/09/25	3.00				Brown Trout		✓	
	85/09/25	3.70				* Brown Trout		✓	
	85/09/25	2.90				Rainb Trout		✓	
	85/09/25	4.00				Brook Trout		✓	
	85/09/25	20.00				Carp		✓	
	85/09/25	10.00				N Pike		✓	
	85/09/25	2.10				Brown Trout		✓	
	86/04/01	2.20				Coho Salmon	✓		

* Total Chlordane was 0.30 mg/kg in this fish sample

APPENDIX 6

Wisconsin

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin on Fillet
		PCB's	DDT	Dieldrin	Mercury				
Sheboygan R. Kiwanis PK.	86/04/14	2.40				Coho Salmon	✓		
	86/04/14	2.00				Coho Salmon	✓		
	86/04/14	3.00				Coho Salmon	✓		
	86/04/29	3.70				Coho Salmon	✓		
	86/04/29	2.50				Coho Salmon	✓		
	86/05/13	5.10				Coho Salmon	✓		
	86/05/13	4.50				Coho Salmon	✓		
Sheboygan R. Kohler Dam	83/07/26	90.00				Carp		✓	
	83/07/26	45.00				SM Bass		✓	
	83/07/26	9.20				Rock Bass		✓	
	84/08/03	32.00				Walleye		✓	
	84/08/03	4.80				Walleye		✓	
	84/08/06	12.00				N Pike		✓	
	84/08/06	3.90				Rock Bass		✓	
	84/08/06	5.20				Rock Bass		✓	
	84/08/06	5.80				Carp		✓	
	84/08/06	12.00				Carp		✓	
	84/08/06	6.10				Carp		✓	
	85/09/16	6.10				Bluegill		✓	
	85/09/16	25.00				SM Bass		✓	
	85/09/16	12.00				SM Bass		✓	
	85/09/16	6.10				Rock Bass		✓	
	85/09/16	3.00				Brook Trout		✓	
	85/09/16	2.60				Brook Trout		✓	
	85/09/16	3.80				Brook Trout		✓	
Sheboygan R. Sheb Harbor	85/06/19	3.50				Brown Trout		✓	
	85/06/19	4.00				Rainb Trout		✓	
	85/06/19	5.00				Rainb Trout		✓	
	85/06/19	2.60				Brown Trout		✓	
	85/06/19	3.30				Rainb Trout		✓	

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin off Filet
		PCB's	DDT	Dieldrin	Mercury				
Sheboygan R. Sheb Harbor	85/06/19	2.00				Brook Trout		✓	
	85/06/19	2.30				Brook Trout		✓	
	85/06/19	2.90				Brook Trout		✓	
	85/06/19	3.30				Rainb Trout		✓	
	85/06/19	4.40				Rainb Trout		✓	
	85/06/19	2.10				Brown Trout		✓	
	85/06/19	2.40				Brown Trout		✓	
	85/06/19	2.00				Brook Trout		✓	
	85/06/19	2.00				Brook Trout		✓	
Sheboygan R. Sheboygan	83/08/22	3.60				Chin Salmon		✓	
	83/09/22	2.50				Coho Salmon		✓	
	83/09/22	3.30				Chin Salmon		✓	
	83/09/22	2.10				Chin Salmon		✓	
Sheboygan R. 8th Street	84/08/11	37.00				Ch Catfish			✓
Manitowoc R. Manitowoc	84/04/10	5.80				Ch Catfish			✓
	84/04/10	6.80				Ch Catfish			✓
	84/04/10	7.40				Ch Catfish			✓
	84/04/10	5.80				Ch Catfish			✓
Twin East Two Rivers	84/10/16	12.00				Carp		✓	
	84/10/16	3.70				Rainb Trout		✓	
Twin West Two Rivers	83/04/12	11.00				Carp		✓	
	83/04/13	3.20				Ch Catfish			✓
	83/04/13	3.90				Ch Catfish			✓
	84/04/10	12.00				Ch Catfish			✓
	84/04/10	9.20				Ch Catfish			✓
	84/04/10	20.00				Ch Catfish			✓
	84/10/16	3.10				Brown Trout		✓	
	84/10/16	4.30				Carp		✓	
	85/04/04	16.00				Ch Catfish			✓
	85/04/04	3.80				Ch Catfish			✓
	85/04/04	4.10				Ch Catfish			✓
B. Green Lake	84/11/28					* Lake Trout	✓		
	85/11/14					** Lake Trout		✓	
	85/11/14					*** Lake Trout		✓	

* TOTAL Chlordane was 0.44 mg/kg in this fish sample

** " " " 0.47 " " " " "

*** " " " 0.38 " " " " "

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin off Fillet
		PCB's	DDT	Dieldrin	Mercury				
Fox R. Gov Bend PK	85/07/17	2.30				BL Crappie		✓	
	85/07/17	6.30				L M Bass		✓	
	85/07/17	2.20				L M Bass		✓	
Fox R. Portage	83/08/17	19.00				Carp		✓	
	83/08/17	44.50				Carp		✓	
	83/08/17	3.60				BL Crappie		✓	
	83/08/17	2.50				Br Bullhead			✓
	83/08/17	3.10				L M Bass		✓	
	83/08/17	3.60				L M Bass		✓	
	83/08/17	5.30				Carp		✓	
	84/06/05	5.50				Carp		✓	
	84/06/05	8.00				Carp		✓	
	84/06/05	6.80				Carp		✓	
Fox R. Below Depere	83/06/13	2.30				Wh Sucker		✓	
	83/06/13	4.80				White Bass		✓	
	83/06/13	16.00				Walleye	✓		
	83/10/16	31.00				Carp	✓		
	83/10/16	44.00				Carp	✓		
	84/00/00	2.00				Wh Sucker		✓	
	84/00/00	2.00				Wh Sucker		✓	
	84/00/00	18.00	0.94			Carp	✓		
	84/00/00	12.00	0.90			Carp	✓		
	84/00/00	8.10				Walleye		✓	
	84/00/00	2.40				Walleye		✓	
	84/00/00	6.80	0.90			Carp		✓	
	84/04/12	4.70				White Bass		✓	
	85/08/01	3.10				Carp		✓	
	85/08/01	3.70				Carp		✓	

APPENDIX 6

WISCONSIN Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Fillet	Skin off Fillet
		PCB's	DDT	Dieldrin	Mercury				
Fox R. @ Depere	85/08/01	2.00				Walleye		✓	
	85/08/01	2.90				Walleye		✓	
	85/08/01	6.50				White Bass		✓	
	85/08/01	6.50				White Bass		✓	
	85/08/01	3.70				Wh Sucker		✓	
	85/08/01	12.00				Carp		✓	
Fox R. @ Kaukauna	83/09/07	3.40				Walleye		✓	
	83/09/07	3.20				Carp		✓	
	84/09/13	2.30				Walleye		✓	
	85/09/04	6.30				Carp		✓	
	85/09/04	5.80				Carp		✓	
	85/09/09	2.30				Walleye		✓	
Fox R. at Lk Butte des Morts	84/09/18	3.80				N Pike		✓	
	84/09/18	19.00				Carp		✓	
	85/09/05	3.40				Bf Bullhead			✓
Longo R. Below Stiles Dam	85/09/17	3.60				Rainb Trout		✓	
	85/09/17	3.90				Brown Trout		✓	
	85/09/17	2.00				Brown Trout		✓	
	85/09/17	3.40				Brown Trout		✓	
	85/09/17	3.00				Brown Trout		✓	
	85/09/17	4.00				Brown Trout		✓	
	85/09/17	4.10				Brown Trout		✓	
	85/09/17	4.50				Brown Trout		✓	
	85/09/17	3.60				Brown Trout		✓	
	85/09/17	4.90				Brown Trout		✓	
	85/09/17	2.50				Chin Salmon		✓	
	85/09/17	2.20				Chin Salmon		✓	
	85/10/13	3.20				Rainb Trout		✓	
	85/10/15	2.10				Chin Salmon		✓	

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Oconto R. at Mouth	84/05/29	3.80				Rainb Trout		✓	
	84/05/29	3.40				Brown Trout		✓	
	84/06/12	2.30				Rainb Trout		✓	
Peshigo R. below Bdgr Mill	84/05/31	3.00				Carp		✓	
	83/06/16	3.00				Walleye		✓	
	83/06/16	5.70				Carp		✓	
	83/06/21	4.60				Walleye		✓	
Menominee R. Ansel Chem	83/05/31	4.40				Carp		✓	
	83/05/31	3.70				Carp		✓	
Menominee R. below Ansel Chem	84/05/24	4.90				Carp		✓	
	84/05/24	5.30				Carp		✓	
Menominee R. Hattie Str	85/04/12	4.40				Brown Trout		✓	
	85/09/20	2.30				Chin Salmon		✓	
	85/09/26	2.00				Chin Salmon		✓	
	85/09/26	2.40				Rainb Trout		✓	
	85/09/26	3.00				Brown Trout		✓	
	85/09/26	2.40				Brown Trout		✓	
	85/09/26	3.60				Brown Trout		✓	
	85/09/26	3.20				Brown Trout		✓	
	85/09/26	4.00				Brown Trout		✓	
	85/09/26	3.40				Brown Trout		✓	
	85/09/26	2.80				Brown Trout		✓	
	85/09/26	2.10				Brown Trout		✓	
	85/09/26	5.10				Brown Trout		✓	
	85/09/26	2.00				Brown Trout		✓	
	85/09/26	3.60				Brown Trout		✓	
	85/09/26	4.20				Rainb Trout		✓	
Menominee R. Marinette	84/10/02	2.90				Brown Trout		✓	
	84/10/02	4.30				Brown Trout		✓	

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Wisconsin R. Lk Wausau	83/06/23	2.10				Carp		✓	
Wisconsin R. Nekoosa	84/06/15	3.00				Walleye	✓		
	84/06/15	6.00				Carp	✓		
	84/06/15	4.30				Carp	✓		
	84/06/15	2.80				Carp	✓		
Wisconsin R. @ Lk Wisconsin	85/10/11	5.10				Sturgeon		✓	
Black R. Blk R. Falls	84/09/28	4.70				Carp		✓	
Buffalo R. Co Hwy F	84/10/11	3.40				Carp		✓	
Trout Lake	84/10/26		0.51			Lake Trout			
	85/10/26		0.51			Lake Trout	✓		
St Croix R. Hudson	84/09/26	4.10				Carp		✓	
	84/09/27	2.00				Carp		✓	
St Croix R. Stillwater	84/09/14	3.10				B M Buffalo		✓	
Lk Superior Grid 1401	86/08/14	2.20	0.73			Whitefish	✓		
Grid 1409	84/08/24	3.20				Lake Trout		✓	
Lk Superior Gull Is Shd	84/10/16	3.20				* Lake Trout		✓	
	84/10/16	6.30				** Lake Trout		✓	
	85/10/13	3.90	2.21			*** Lake Trout		✓	
	85/10/13	5.80	3.11			**** Lake Trout		✓	
L Superior Van Tassel Point	84/08/16			0.50		Lake Trout	✓		
Green Bay Grid 1001	83/04/22	2.50				L Whitefish		✓	
	83/04/22	2.30				L Whitefish		✓	
	83/04/22	2.10				L Whitefish		✓	
	83/06/01	13.00				Carp	✓		
	83/06/01	36.00				Carp	✓		
	83/08/22	5.20				Carp		✓	
	83/08/22	6.00				Alewife	✓		
	83/08/22	7.20				Carp		✓	
	83/08/22	5.40				Alewife	✓		

* Total Chlordane was 0.39 mg/kg in this fish sample

** " " " 0.33 " " " "

*** " " " 0.38 " " " "

**** " " " 0.43 " " " "

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Green Bay Grid 1001	84/05/21	2.50				L Whitefish		✓	
	84/08/04	2.10				White Bass		✓	
	84/08/14	2.40				White Bass		✓	
	84/08/14	5.00				Alewife		✓	
	84/09/10	2.10				Spot Shiner	✓		
	84/09/10	2.50				Alewife		✓	
	84/09/27	7.30				N Pike		✓	
	85/09/25	2.40				Alewife	✓		
	85/09/25	3.90				Alewife	✓		
	85/09/25	3.90				Alewife	✓		
Green Bay Grid 606	83/07/06	2.70				Alewife		✓	
	83/09/06	2.10				Alewife	✓		
	83/09/06	9.00				* Lake Trout		✓	
	83/09/06	4.60				Lake Trout		✓	
Green Bay Grid 703	84/05/31	3.50				Brown Trout		✓	
	84/05/31	3.20				Brown Trout		✓	
	84/05/31	2.80				Brown Trout		✓	
	84/10/02	4.30				Chin Salmon		✓	
	85/03/15	2.60				Sp Lake		✓	
	85/03/15	2.20				Sp Lake		✓	
	85/04/11	2.30				Sp Lake		✓	
	85/04/11	2.20				Sp Lake		✓	
	85/04/15	2.50				Sp Lake		✓	
	85/05/08	3.20				Brown Trout		✓	
	85/05/11	3.80				Brown Trout		✓	
	85/05/11	2.70				Brown Trout		✓	
	85/05/11	3.70				Brown Trout		✓	
	85/05/31	2.80				Sp Lake		✓	
	85/05/31	2.20				Sp Lake		✓	
	85/05/31	2.80				Sp Lake		✓	
	85/06/03	2.40				Sp Lake		✓	

* Total Chlordane was 0.44 mg/kg in this fish sample

APPENDIX 6

Wisconsin

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Green Bay Grid 703	85/06/04	3.00				Sp Lake		✓	
	85/06/04	2.80				Sp Lake		✓	
	85/06/04	2.20				Sp Lake		✓	
	85/06/10	3.20				Sp Lake		✓	
	85/06/10	3.50				Sp Lake		✓	
	85/06/30	2.60				Brown Trout		✓	
	85/07/05	2.50				Brown Trout		✓	
	85/07/07	2.20				Chin Salmon		✓	
	85/07/11	2.00				Sp Lake		✓	
	85/07/11	3.60				Brown Trout		✓	
	85/07/11	5.70				Brown Trout		✓	
	85/07/11	2.40				Brown Trout		✓	
	85/07/11	4.20				Brown Trout		✓	
	85/07/12	4.70				Brown Trout		✓	
	85/07/12	2.20				Sp Lake		✓	
	85/07/12	3.40				Sp Lake		✓	
	85/07/12	4.00				Brown Trout		✓	
	85/07/17	2.50				Brown Trout		✓	
	85/07/21	2.20				Rainb Trout		✓	
	85/07/29	3.10				Brown Trout		✓	
	85/07/29	2.30				Brown Trout		✓	
	85/08/15	3.70				Sp Lake		✓	
Green Bay Grid 802	84/10/10	3.50				Brown Trout		✓	
	84/10/10	3.20				Brown Trout		✓	
	84/10/10	4.00				Brown Trout		✓	
	85/05/23	4.10				Brown Trout		✓	
Green Bay Grid 804	84/05/30	3.70				Brown Trout		✓	
	84/05/31	2.50				Brown Trout		✓	
Green Bay Grid 901	84/04/27	7.50				Brown Trout		✓	
	84/04/27	3.10				Brown Trout		✓	

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Green Bay Little Sturg Bay	83/05/19	4.00				Walleye		✓	
	83/05/24	12.30				Carp		✓	
	83/05/24	10.50				Carp		✓	
	83/08/02	10.50				Carp		✓	
	84/05/22	4.00				Brown Trout		✓	
	84/05/30	5.20				Brown Trout		✓	
	84/05/30	4.70				Walleye		✓	
	84/05/30	8.40				* Lake Trout		✓	
Green Bay off Little R.	85/05/21	2.00				Brook Trout		✓	
	85/05/23	5.50				Brown Trout		✓	
	85/05/23	2.60				Sp Lake		✓	
	85/05/23	2.60				Sp Lake		✓	
	85/05/23	2.10				Sp Lake		✓	
	85/05/23	2.60				Brown Trout		✓	
	85/05/23	3.10				Brown Trout		✓	
	85/05/23	4.80				Brown Trout		✓	
	85/05/23	4.80				Brown Trout		✓	
	85/05/23	3.00				Brown Trout		✓	
	85/05/25	2.0				Brown Trout		✓	
	85/05/25	2.10				Brown Trout		✓	
	85/07/12	2.20				Brown Trout		✓	
	85/09/04	3.50				Brown Trout		✓	
Green Bay Peshtigo Lt	85/07/08	2.50				Brown Trout		✓	
Green Bay Pt Sable	84/08/14	12.00				Carp		✓	
	84/08/14	16.00				Carp		✓	
	84/08/14	13.00				Carp		✓	
Green Bay Seagull Bar	85/05/22	3.00				Sp Lake		✓	
	85/05/22	2.90				Sp Lake		✓	
	85/05/22	2.40				Sp Lake		✓	

* Total Chlordane was 0.36 mg/kg in this fish sample

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Green Bay Sengull Bar	85/05/22	3.40				Brook Trout		✓	
	85/05/27	2.70				Sp Lake		✓	
	85/06/15	4.10				Brown Trout		✓	
	85/06/15	3.00				Sp Lake		✓	
	85/06/17	4.60				Brown Trout		✓	
	85/06/17	3.80				Brown Trout		✓	
	85/06/17	2.10				Sp Lake		✓	
	85/07/11	3.10				Brown Trout		✓	
Green Bay Sister Bay	85/04/00	2.20				Brown Trout		✓	
K Mich Baileys Harbor	84/04/26			0.30		Lake Chub		✓	
	84/04/26			0.36		Lake Chub		✓	
	85/04/07	5.80				Brown Trout		✓	
	85/04/07	4.30				Brown Trout		✓	
	85/06/29	2.60				Brown Trout		✓	
	85/06/29	2.10				Chin Salmon		✓	
	85/07/16	2.10				Brook Trout		✓	
	85/10/02	2.40				Brown Trout		✓	
K Michigan Grid 1004	85/04/26	2.90				Brown Trout		✓	
	85/05/25	17.00				Lake Trout		✓	
	85/06/25	3.80				Brown Trout		✓	
K Michigan Grid 1104	85/05/26	15.00				Lake Trout		✓	
K Michigan Grid 1204	85/05/25	9.80				Lake Trout		✓	
	85/05/25	5.70				Lake Trout		✓	
K Michigan Grid 1303	83/06/24	2.50				Chin Salmon		✓	
	83/08/16	2.10				Chin Salmon		✓	
	83/08/17	12.00		0.37		* Lake Trout		✓	
	83/08/17	2.40				** Lake Trout		✓	
	85/06/07	3.20				Chin Salmon		✓	
	85/06/19	4.00				Chin Salmon		✓	

* Total Chlordane was 1.08 mg/kg in this fish sample

** " " " 0.35 " " " " " "

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Lk Michigan Grid 1303	85/06/19	2.00				Chin Salmon		✓	
	85/06/19	2.00				Rainb Trout		✓	
	85/07/05	2.60				Lake Trout		✓	
	85/07/06	2.00				Lake Trout		✓	
	85/07/06	5.00				Lake Trout		✓	
	85/07/06	2.40				Lake Trout		✓	
	85/07/06	3.10				Lake Trout		✓	
	85/07/06	14.00				Lake Trout		✓	
	85/07/06	2.20				Chin Salmon		✓	
	85/07/06	2.70				Chin Salmon		✓	
	85/07/06	2.40				Lake Trout		✓	
	85/07/06	3.10				Lake Trout		✓	
	85/07/06	3.90				Lake Trout		✓	
	85/07/06	4.90				Lake Trout		✓	
Lk Michigan Grid 1502	85/07/20	2.20				Chin Salmon		✓	
	85/06/21	3.60				Lake Trout		✓	
	85/06/21	9.70				Lake Trout		✓	
	85/06/21	8.10				Lake Trout		✓	
	85/06/21	2.00				Brown Trout		✓	
	85/06/21	3.30				Brown Trout		✓	
	85/06/21	2.30				Brown Trout		✓	
	85/06/21	2.60				Brown Trout		✓	
	85/07/15	2.00				Brown Trout		✓	
	85/07/15	2.60				Chin Salmon		✓	
	85/07/15	2.40				Chin Salmon		✓	
	85/07/17	3.50				Lake Trout		✓	
	85/07/17	4.80				Lake Trout		✓	
	85/07/17	4.50				Lake Trout		✓	
	85/07/17	2.30				Brown Trout		✓	
	85/07/17	15.00				Lake Trout		✓	

APPENDIX 6

WISCONSIN Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Lk Michigan Grid 1502	85/07/17	10.00				Lake Trout		✓	
	85/07/17	4.80				Lake Trout		✓	
	85/07/17	11.00				Lake Trout		✓	
	85/07/17	7.10				Lake Trout		✓	
	85/07/17	5.30				Lake Trout		✓	
	85/07/17	6.30				Lake Trout		✓	
	85/07/17	2.60				Lake Trout		✓	
	85/07/17	3.30				Lake Trout		✓	
	85/07/17	7.80				Lake Trout		✓	
	85/07/17	8.00				* Lake Trout		✓	
	85/08/09	2.00				Brown Trout		✓	
	85/08/09	2.30				Brown Trout		✓	
	85/08/10	2.00				Chin Salmon		✓	
	85/08/10	3.30				Lake Trout		✓	
	85/08/10	4.40				Lake Trout		✓	
	85/08/10	2.70				Brown Trout		✓	
	85/08/10	2.20				Brown Trout		✓	
	85/08/10	2.10				Brown Trout		✓	
	85/08/10	3.50				Brown Trout		✓	
	85/08/10	5.60		0.31		Lake Trout		✓	
	85/08/10	4.30		0.37		** Lake Trout		✓	
	85/08/10	3.50				Brown Trout		✓	
	85/08/10	2.20				Chin Salmon		✓	
	85/08/10	2.20				Chin Salmon		✓	
	85/08/10	2.60				Lake Trout		✓	
	85/08/10	2.80				Lake Trout		✓	
	85/08/10	8.00				Lake Trout		✓	
	85/08/10	7.20				Lake Trout		✓	
	85/08/10	2.30				Chin Salmon		✓	

* Total Chlordane was 0.79 mg/kg for this fish sample

** " " " 0.51 " " " "

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Lake Michigan Grid 1502	85/08/10	2.60				Brown Trout		✓	
	85/08/10	2.90				Brown Trout		✓	
	85/08/10	4.20				Lake Trout		✓	
	85/08/10	3.20				Lake Trout		✓	
	85/08/10	5.20				Lake Trout		✓	
Lk Michigan Grid 1503	84/06/29			0.30		Lake Chub		✓	
	84/06/29			0.33		Lake Chub		✓	
	85/07/17	3.00				Lake Trout		✓	
	85/08/10	7.30				Lake Trout		✓	
Lk Michigan Grid 1701	85/07/25	2.50				* Lake Trout		✓	
k Michigan Grid 1702	85/10/10	5.00				** Lake Trout		✓	
	83/11/07	8.70				*** Lake Trout		✓	
	83/11/08	8.00				**** Lake Trout		✓	
k Michigan Grid 1705	83/10/08	7.00				***** Lake Trout		✓	
	83/10/10	8.20				Lake Trout		✓	
	83/10/10	4.30				Lake Trout		✓	
	83/11/07	6.30				Lake Trout		✓	
	83/11/08	5.60				Lake Trout		✓	
k Michigan Grid 1802	85/08/08	3.10				Lake Trout		✓	
	84/07/17			0.32		Lake Chub		✓	
k Michigan Grid 1901	84/09/04	2.60				Lake Trout		✓	
	84/08/09	3.00				Brown Trout		✓	
	84/08/26	2.50				Brook Trout		✓	
	85/05/15	3.70				Brown Trout		✓	
	85/06/06	3.80				Brown Trout		✓	
	85/06/25	3.90				Chin Salmon		✓	
	85/06/27	6.30				Rainb Trout		✓	
	85/06/29	2.50				Chin Salmon		✓	

* Total Chlo-dane was 0.38 mg/kg for this fish sample

** " " " 0.46 " " " "

*** " " " 0.57 " " " "

**** " " " 0.62 " " " "

***** " " " 1.23 " " " "

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin off Filet
		PCB's	DDT	Dieldrin	Mercury				
Lk Michigan Grid 1902	84/05/24	3.20				Chin Salmon		✓	
	84/05/24	2.00				Chin Salmon			✓
	84/05/24	2.60				Chin Salmon			✓
	84/05/24	2.80				Chin Salmon		✓	
Lk Michigan Grid 2002	85/04/25	2.00				Brown Trout		✓	
	85/05/10	2.80				Brown Trout		✓	
	85/06/17	2.10				Brown Trout		✓	
	85/06/21	2.40				Chin Salmon		✓	
Lk Michigan Grid 2003	84/03/01	2.00				Lake Trout		✓	
	85/06/17	6.80				Lake Trout		✓	
Lk Michigan Grid 2005	84/07/27			0.33		* SL Sculpin		✓	
Lk Michigan Grid 2102	85/06/01	4.00				Brown Trout		✓	
	85/06/01	2.10				Chin Salmon		✓	
	85/06/01	2.00				Chin Salmon		✓	
	85/06/01	2.20				Lake Trout		✓	
	85/06/01	3.00				Lake Trout		✓	
	85/06/01	2.50				Lake Trout		✓	
	85/06/01	5.00				Lake Trout		✓	
	85/06/01	6.90				Lake Trout		✓	
	85/06/01	8.60				Lake Trout		✓	
	85/06/01	3.30				Lake Trout		✓	
	85/06/01	4.40				Lake Trout		✓	
	85/06/01	9.00				Lake Trout		✓	
	85/06/01	4.80				Lake Trout		✓	
	85/06/01	5.80				Lake Trout		✓	
	85/06/01	8.40				Lake Trout		✓	
	85/06/01	3.30				Lake Trout		✓	
	85/06/01	4.30				Lake Trout		✓	
	85/07/20	2.80				** Lake Trout		✓	

* Total Chlordane was 0.34 mg/kg for this fish sample

** " " " 0.32 " " " " " "

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
K Michigan Grid 2102	85/06/01	2.90				Lake Trout		✓	
	85/07/20	7.30				Lake Trout		✓	
	85/07/20	2.50				Lake Trout		✓	
	85/07/20	2.70				Chin Salmon		✓	
	85/07/20	2.90				Coho Salmon		✓	
	85/07/20	2.50				Coho Salmon		✓	
	85/07/20	8.00				Lake Trout		✓	
	85/07/20	4.50				Lake Trout		✓	
	85/07/20	2.80				Chin Salmon		✓	
K Michigan Grid 2202	85/09/07	2.20				Brown Trout		✓	
	85/09/07	2.00				Lake Trout		✓	
	83/11/03	9.50		0.41		* Lake Trout		✓	
	83/11/03	2.20				Lake Trout		✓	
	83/11/03	2.40				* Lake Trout		✓	
	83/11/03	9.70				Lake Trout		✓	
	83/11/04	10.00				Lake Trout		✓	
	83/11/04	5.00				Lake Trout		✓	
	84/07/05					Lake Trout		✓	
	84/05/18	3.90				Rainb Trout		✓	
K Michigan Grid 2203	85/07/20	8.50				Lake Trout		✓	
	85/07/20	4.00				Lake Trout		✓	
	83/09/13	3.90				Lake Trout		✓	
K Michigan Grid 509	84/06/15			0.33		Lake Chub		✓	
	84/06/15			0.30		Lake Chub		✓	
	84/06/19			0.30		Lake Chub		✓	
K Michigan Grid 509	84/06/19			0.33		Lake Chub		✓	
	84/06/19			0.33		Lake Chub		✓	
	84/06/19			0.30		Lake Chub		✓	

* Total Chlordane was 1.05 mg/kg for this fish sample

* " " " 0.34 " " " " " "

APPENDIX 6

Wisconsin

Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Lk Michigan Grid 606	84/10/23	2.80				Lake Trout		✓	
	84/10/23	2.90				Alewife	✓		
	84/10/24	8.90				Lake Trout		✓	
Lk Michigan Grid 607	84/10/23	5.40		0.33		* Lake Trout		✓	
	84/10/23	3.70				** Lake Trout		✓	
Lk Michigan Grid 805	85/06/29	2.50				Chin Salmon		✓	
	85/06/29	2.50				Chin Salmon		✓	
Lk Michigan Grid 806	84/07/06	2.00				Brown Trout		✓	
	85/07/19	2.70				Chin Salmon		✓	
Lk Michigan Grid 905	84/06/22	3.70				Brown Trout		✓	
	84/07/09	4.20		0.32		*** Lake Trout		✓	
	84/07/09	3.30				**** Lake Trout		✓	
	84/07/09	2.20				Lake Trout		✓	
	84/07/09	2.40				Lake Trout		✓	
	84/07/09	6.80				Lake Trout		✓	
	84/10/16	2.10				Rainb Trout		✓	
	84/10/16	3.10				Brown Trout		✓	
	84/10/16	2.10				Brown Trout		✓	
	85/10/22	6.40				Lake Trout		✓	
	85/10/22	2.30				Lake Trout		✓	
	85/10/22	2.40				Lake Trout		✓	
	85/10/22	2.10				Lake Trout		✓	
	85/10/22	2.70				Lake Trout		✓	
	85/10/22	2.40				Lake Trout		✓	
	85/10/22	4.40				Lake Trout		✓	
	85/10/22	3.10				Lake Trout		✓	
	85/10/22	3.30				Lake Trout		✓	
	85/10/22	3.90				Lake Trout		✓	
	85/10/22	3.40				Lake Trout		✓	
	85/10/22	2.30				Lake Trout		✓	

* Total Chlordane was 0.48 mg/kg for this fish sample

** " " " 0.32 " " " " "

*** " " " 0.43 " " " " "

**** " " " 0.34 " " " " "

APPENDIX 6

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
LK Michigan Grid 905	85/10/22	2.80				Lake Trout		✓	
	85/10/22	3.60				Lake Trout		✓	
	85/10/22	3.70				Lake Trout		✓	
	85/10/22	4.90				Lake Trout		✓	
	85/10/22	5.30				Lake Trout		✓	
	85/10/22	2.50				Lake Trout		✓	
	85/10/22	4.20				Lake Trout		✓	
LK Michigan Lilly Bay	85/06/30	4.70				Brown Trout		✓	
LK Michigan ^{Milwaukee} Line Ave	83/08/23	3.40				Wh Sucker	✓		
	83/08/23	2.70				Yellow Perch	✓		
	83/08/23	2.90				Alewife	✓		
	83/08/24	2.70	0.71			Brown Trout	✓		
LK Mich Milwaukee Harbor Pier	83/08/02	4.20				Wh Sucker	✓		
	83/08/02	2.20				Yellow Perch	✓		
	83/08/04	3.80	0.84			Brown Trout	✓		
LK Mich North Bay	85/05/28	4.50				Brown Trout		✓	
LK Mich SS Yacht Club	83/08/23	3.10				Wh Sucker	✓		
	83/09/07	4.80	1.00			Brown Trout	✓		
LK Mich Sturgeon Bay	85/05/18	8.80				Lake Trout		✓	
	85/06/17	2.10				Lake Trout		✓	
	85/07/20	3.50				Chin Salmon		✓	
	85/08/14	3.10				Lake Trout		✓	
LK Mich Whitefish Point	85/07/05	3.10				Chin Salmon		✓	
LK Mich Windpt Reef	83/09/11	7.30				Lake Trout		✓	
	84/10/31	4.60				Lake Trout		✓	
	84/11/01	2.10				Lake Trout		✓	
Sturgeon Bay Portage PK	85/04/09	3.60				Brown Trout		✓	
	85/04/19	6.30				Lake Trout		✓	
	85/08/01	3.90				Brown Trout		✓	
	85/08/29	3.20				Brown Trout		✓	

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

Sampling Station	Sampling Date	FDA Action Level Chemicals (Mg/kg)				Fish Species	Whole Fish	Filet	Skin on Filet
		PCB's	DDT	Dieldrin	Mercury				
Sturgeon Bay Ship Canal	83/09/07	2.80				Walleye		✓	
	84/10/15	32.00				Carp		✓	
	84/10/15	19.00				Carp		✓	
	84/10/15	15.00				Carp		✓	
	85/08/28	5.50				Chin Salmon		✓	
Sturgeon Bay Strawberry Cr.	83/09/22	3.70				Chin Salmon		✓	
	83/09/22	3.70				Chin Salmon		✓	
	83/09/22	3.40				Chin Salmon		✓	
	83/09/22	3.40				Chin Salmon		✓	
	83/09/22	3.10				Chin Salmon		✓	
	83/09/22	2.30				Chin Salmon		✓	
	83/09/22	2.40				Chin Salmon		✓	
	83/10/07	2.70	1.12			Chin Salmon		✓	
	83/10/07	2.40	0.97			Chin Salmon		✓	
	83/10/07	2.20	0.60			Chin Salmon		✓	
	83/10/07		0.77			Chin Salmon		✓	
	83/10/07		0.66			Chin Salmon		✓	
	83/10/07	2.70	0.94			Chin Salmon		✓	
	84/05/11	3.60				Chin Salmon		✓	
	84/05/17	2.60				Chin Salmon		✓	
	84/10/19	2.20				*** Chin Salmon		✓	
	84/10/19	2.60				Chin Salmon		✓	
	84/10/19	4.70				*** Chin Salmon		✓	
	84/10/19	2.00				Chin Salmon		✓	
	84/10/19	2.60				Chin Salmon		✓	
	84/10/19	2.60				Chin Salmon		✓	
	85/10/03	2.00				Chin Salmon		✓	
	85/10/03	2.30				Chin Salmon		✓	
	85/10/03	2.90				Chin Salmon		✓	
	85/10/03	2.50				Chin Salmon		✓	

* Total Chlordane was 0.33 mg/kg for this fish sample

** " " " 0.34 " " " " "

*** " " " 0.32 " " " " "

Wisconsin Fish Tissue Data That Exceeded FDA Action Levels Continued

[illegible]