

Statewide Michigan PCB Total Maximum Daily Load (TMDL)

August 2013

Prepared for:

Michigan Department of Environmental Quality
and
United States Environmental Protection Agency, Region 5

Under Subcontract to:
Battelle
Duxbury, MA

USEPA Contract No. EP-C-08-001
Task Order 006

TABLE OF CONTENTS

TABLE OF CONTENTS	I
LIST OF FIGURES	III
LIST OF TABLES.....	III
LIST OF ACRONYMS.....	IV
1.0 INTRODUCTION	1
2.0 BACKGROUND	2
2.1 PROBLEM STATEMENT.....	2
2.1.1 TMDL Development Process	2
2.1.2 Recent PCB Trends	3
2.2 DATA COLLECTION AND ASSESSMENT OF WATER QUALITY	5
2.2.1 Data Collection and Summary Analysis.....	5
2.2.2 Discussion of Section 303(d) Listings	8
2.3 SCOPE OF WATER BODIES CONSIDERED UNDER THIS TMDL	10
3.0 APPLICABLE WQS AND NUMERIC TARGETS	12
3.1 WATER QUALITY STANDARDS	12
3.1.1 Designated Use Support.....	12
3.2 NUMERIC TMDL TARGET	13
3.3 APPLYING THE NUMERIC TMDL TARGET.....	13
4.0 MODELING APPROACH.....	15
4.1 ESTIMATING ATMOSPHERIC PCB LOADING	15
4.2 RELATING ATMOSPHERIC LOADING TO FISH TISSUE CONCENTRATION (PRINCIPLE OF PROPORTIONALITY)	18
4.2.1 Approach for Calculating Maximum Allowable Load.....	19
4.3 ATMOSPHERIC PCB CONCENTRATIONS	20
4.4 REGIONALIZATION	24
4.5 THRESHOLD PROPORTIONALITY CONSTANT	25
4.5.1 Selection of an Appropriate Upper Bound	25
4.5.2 Selection of a Target Fish Species	26
4.5.3 Calculation of Threshold Proportionality Constant.....	26
4.6 REQUIRED REDUCTION PERCENTAGE.....	28

5.0 SOURCE ASSESSMENT	29
5.1 SOURCES OF PCBS	29
5.1.1 Compilation of Source Data	29
5.2 DATA GAP ANALYSIS	30
5.2.1 Baseline Year Selection	31
5.2.2 Nonpoint Source PCB Loads	31
5.2.3 Point Sources to Water	31
6.0 TMDL DEVELOPMENT	33
6.1 LOAD ALLOCATION	34
6.2 WASTE LOAD ALLOCATION.....	37
6.3 MARGIN OF SAFETY.....	38
6.4 CRITICAL CONDITIONS AND SEASONAL VARIATION.....	38
7.0 REASONABLE ASSURANCE AND IMPLEMENTATION.....	40
7.1 OBSERVED REDUCTIONS IN ATMOSPHERIC PCB CONCENTRATIONS	40
7.2 CLEANUP OF LEGACY SOURCES.....	40
7.3 RESTRICTIONS OF LANDFILL DISPOSAL OF PCBS.....	41
7.4 REGULATIONS GOVERNING TRANSPORT OF PCBS	41
7.5 FEDERAL TOXIC SUBSTANCES CONTROL ACT	42
8.0 POST-TMDL MONITORING.....	43
8.1 MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY MONITORING	43
8.1.1 Fish Contaminant Monitoring Program	43
8.1.2 Water Chemistry Monitoring Program.....	43
8.1.3 Water Body NPDES Monitoring Program	43
8.1.4 Legacy Site Cleanup and Follow-Up Monitoring	44
8.2 ATMOSPHERIC PCB MONITORING.....	44
8.3 NEW MONITORING AND ASSESSMENT DATA	44
9.0 REFERENCES	46
APPENDIX A. LIST OF PCB-IMPAIRED INLAND WATER BODIES SUBMITTED FOR APPROVAL UNDER THIS TMDL.....	A-1
APPENDIX B. PCB TMDL QUESTIONS AND COMMENTS RESPONSE DOCUMENT FROM THE PUBLIC MEETING ON FEBRUARY 6, 2013, AND PUBLIC COMMENT PERIOD JANUARY 14-FEBRUARY 19, 2013.....	B-1

LIST OF FIGURES

Figure 1.	MDEQ's Five-year Rotating Watershed Monitoring Cycle.....	3
Figure 2.	Time Trend of PCB Gas Phase Atmospheric Concentrations at Great Lakes IADN Stations	5
Figure 3.	Impaired Lakes (a) Rivers, and Streams (b) Based on Fish Tissue PCB Data	9
Figure 4.	Impaired Rivers and Streams Based on Water Column PCB Data	10
Figure 5.	Photo of a Lake Trout	14
Figure 6.	Wet Deposition and Absorption Fluxes of PCBs at Urban Sites.....	16
Figure 7.	IADN Stations (Brule River not pictured)	17
Figure 8.	Ecological Drainage Units in Michigan.....	22
Figure 9.	Annual Average Atmospheric Gas Phase PCB Concentration (ng/m ³) by EDU.....	24
Figure 10.	Location of Legacy Polluted Sites in Michigan.....	31

LIST OF TABLES

Table 1.	Annual Rates of Change in Fish Tissue PCB Concentrations for Whole Fish Collected from Fixed Station Trend Monitoring Stations.....	4
Table 2.	Average PCB Fish Tissue Concentration for Edible Portion of Fish Collected through FCMP 2000-2009	7
Table 3.	Trigger Levels Used by the Michigan Department of Community Health to Establish Fish Consumption Advisories	12
Table 4.	Estimated 2010 Statewide Annual Atmospheric PCB Concentration (ng/m ³) Averaged by EDU	23
Table 5.	Lake Trout Data Used to Calculate a Threshold Proportionality Constant	28
Table 6.	Permitted Air Releases of PCBs, 2008.....	29
Table 7.	Geographic Datasets Obtained.....	30
Table 8.	Summary of Michigan's Statewide PCB TMDL.....	34
Table 9.	Estimated Average Anthropogenic PCB Concentrations by EDU	35
Table 10.	PCB Point Source Loads	38

LIST OF ACRONYMS

AOC	Area of Concern
ATM	Atmospheric
AUID	Assessment Unit Identification
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
EDU	Ecological Drainage Unit
FCMP	Fish Contaminant Monitoring Program
GLRI	Great Lakes Restoration Initiative
g/mol	Grams per Molecule
HUC	Hydrologic Unit Code
IADN	Integrated Atmospheric Deposition Network
Km	Kilometer
LA	Load Allocation
LC	Loading Capacity
MCGI	Michigan Center for Geographic Information
MDCH	Michigan Department of Community Health
MDEQ	Michigan Department of Environmental Quality
MDNRE	Michigan Department of Natural Resources and Environment
mg/kg	Milligrams per Kilogram
MiSWIM	Michigan Surface Water Information Management System
MOS	Margin of Safety
MRLC	Multi-Resolution Land Characteristic Consortium
MS4	Municipal Separate Storm Sewer System
ng/L	Nanograms per Liter
ng/m ³	Nanograms per Cubic Meter
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NREPA	Natural Resources and Environmental Protection Act
PCB	Polychlorinated biphenyl
POP	Population
PPM	Parts Per Million
RAD	Risk Associated Dose
SRD	Substantive Requirement Documents
TMDL	Total Maximum Daily Load
TSCA	Toxic Substance Control Act
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WLA	Waste Load Allocation
WQBEL	Water Quality-Based Effluent Limitations
WQS	Water Quality Standard

1.0 INTRODUCTION

Section 303(d) of the federal Clean Water Act and the United States Environmental Protection Agency's (USEPA) Water Quality Planning and Management Regulations (Title 40 of the Code of Federal Regulations [CFR] Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for all Category 5¹ water bodies that are not meeting Water Quality Standards (WQS) for a specific pollutant. These water bodies are included on a state's Section 303(d) list. The TMDL process establishes the allowable loadings of a pollutant to a water body based on the relationship between pollution sources and water quality conditions of a water body. This allowable loading represents the maximum quantity of a pollutant that the water body can receive without exceeding WQS. The TMDL process provides states with the basis for establishing water quality-based controls, which provide the pollutant reductions necessary for a water body to attain WQS (USEPA, 1991).

The 2012 Sections 303(d), 305(b), and 314 Integrated Report (Michigan Department of Environmental Quality² [MDEQ], 2012) identified 22,115 miles of rivers and streams and 144,692 acres of inland lakes and reservoirs as not supporting their designated use due to high concentrations of polychlorinated biphenyls (PCBs) in fish tissue. In addition, 49,691 miles of rivers and streams and 614 acres of lakes are not supporting their designated use due to PCBs in the water column (MDEQ, 2012).

The scope of this PCB TMDL covers inland water bodies in the state of Michigan, primarily impacted by atmospheric deposition of PCBs. These water bodies are described further in Section 2 and Appendix A. This document describes the statewide approach that Michigan has taken to develop a TMDL for PCBs. The report covers each step of the TMDL process and is organized as follows:

- Section 2: Background
- Section 3: Applicable WQS and Numeric Targets
- Section 4: Modeling Approach
- Section 5: Source Assessment
- Section 6: TMDL Development
- Section 7: Reasonable Assurance and Implementation
- Section 8: Post-TMDL Monitoring

¹ Category 5 means available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed (MDEQ, 2012).

² For a short period of time (October 2009-March 2011) the MDEQ was reorganized and known as the Michigan Department of Natural Resources and Environment (MDNRE). For consistency, MDEQ is used throughout this document when referencing the agency.

2.0 BACKGROUND

This section provides background information for PCB TMDL development. It is divided into the following subsections:

- Problem Statement
- Data Collection and Assessment of Water Quality
- Scope of Water Bodies Considered Under this TMDL

2.1 PROBLEM STATEMENT

PCBs are a class of synthetic, chlorinated organic chemicals produced mainly for their excellent insulating capabilities and chemical stability. They were produced in the form of complex mixtures for industrial use in the United States from 1929 to 1977, mostly by the company, Monsanto, which produced approximately 640,000 tons. Peak production occurred in 1970, and over half of total United States production occurred between 1960 and 1974 (de Voogt and Brinkman, 1989). Production is difficult to estimate because there were 209 congeners, 9 homologs, many technical mixtures, and many different trade names used throughout the production period (e.g., Aroclor, Askarel, Inerteen). PCBs were used in the United States for a number of applications, but primarily consisted of closed system and heat transfer fluids (transformers, capacitors, fluorescent light ballasts, etc.; 60 percent), plasticizers (25 percent), hydraulic fluids and lubricants (10 percent), and other uses (5 percent) (Keeler et al., 1993). A major use in Michigan for PCBs was in the production of recycled carbonless copy paper. The National Cash Register Company purchased a specific mixture of PCBs (Aroclor 1242) from Monsanto to be used as an ink carrier or solvent between 1957 and 1971. The solvent was also licensed for use to several other paper manufacturers in the Great Lakes region. The total use of PCBs for this purpose was about 28 percent of total plasticizer use and just over 6 percent of total Monsanto sales for the time period 1957 to 1971 (USEPA, 1977).

The USEPA banned production of PCBs in 1979 due to their toxic properties, and this class of chemicals was ultimately phased out of new uses in 1983. PCBs have been shown to cause a variety of adverse health effects, notably cancer in animals. Non-cancer effects include impacts to the nervous, immune, reproductive, and endocrine systems, among other adverse effects (USEPA, 2004). PCBs are relatively persistent (i.e., do not readily degrade) and hydrophobic; consequently the higher chlorinated congeners tend to accumulate in suspended and bottom sediments of aquatic systems. Also, PCBs hydrophobicity means they generally have low water solubility and high solubility in most organic solvents, oils, and fats. Therefore, PCBs concentrate in the fatty tissues of organisms and bioaccumulate in living tissues. Thus, despite the United States ban of PCB production, PCBs remain in the environment in soil, water, air, animal tissue, and vegetation. Because the industrial use of PCBs has been banned, the primary sources of PCBs to water likely are historical sediment contamination and ongoing atmospheric deposition (MDEQ, 2012).

2.1.1 TMDL Development Process

Because of the widespread impairment of Michigan's waters due to PCBs, a statewide TMDL has been developed for inland waters primarily impacted by atmospheric deposition of PCBs, by providing the pollutant reductions necessary to attain WQS.

Considerations used to prioritize TMDL development include the existing TMDL schedule (i.e., the number of TMDLs currently scheduled for each year), Michigan's five-year rotating watershed monitoring cycle (Figure 1), available staff and monetary resources to complete TMDLs, data and supporting information on quality and quantity of the pollutant causing the impairment, complexity of the problem and severity of the pollution, and the USEPA's recommendation to develop TMDLs within 13 years of listing (MDEQ, 2012).

A scheduled completion date for TMDLs to address PCB impairment of inland water bodies was proposed for 2013 in the 2012 Integrated Report. Great Lakes and connecting channels are currently scheduled for TMDL development in 2015 (MDEQ, 2012).

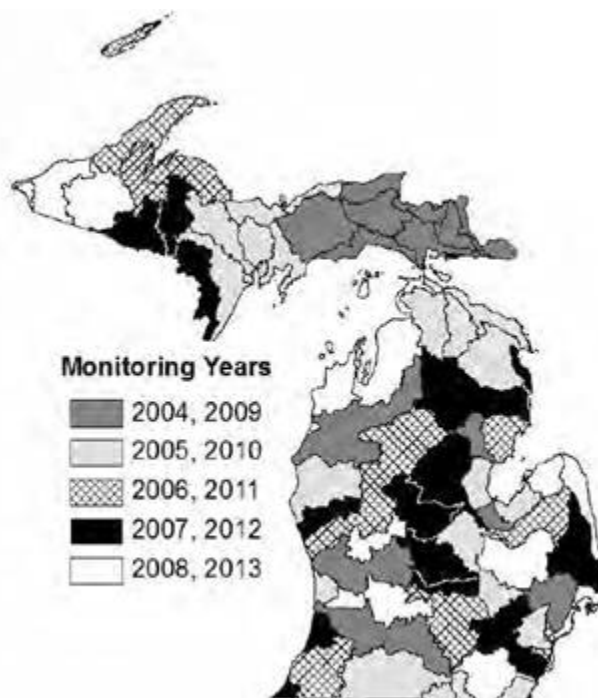


Figure 1. MDEQ's Five-year Rotating Watershed Monitoring Cycle.
(Source: MDEQ, 2008)

2.1.2 Recent PCB Trends

Overall, PCB concentrations in fish tissue and air are decreasing across Michigan. Trend analyses have been conducted on datasets for fish collected from inland water bodies at an interval of two to five years for Michigan's whole fish trend monitoring program (i.e., MDEQ Fish Contaminant Monitoring Program [FCMP]). These data include carp from five inland rivers, and lake trout, walleye, or largemouth bass from eight inland lakes. From 1990 to 2007, PCB concentrations in whole body fish samples from all 12 inland water bodies showed a statistically significant decrease, with an average annual decrease rate of 8.5 percent (Table 1; MDEQ, 2008).³

³ Fish tissue PCB concentrations for whole fish were not used to calculate the PCB TMDL.

Table 1. Annual Rates of Change in Fish Tissue PCB Concentrations for Whole Fish Collected from Fixed Station Trend Monitoring Stations. (Source: MDEQ, 2008)

Water Body	Species	Rate of Change (%)	P Value
<i>Inland Rivers</i>			
Grand River	Carp	-3.1	<0.005
Kalamazoo River	Carp	-7.2	<0.001
Muskegon River	Carp	-13.4	<0.001
River Raisin	Carp	-14.1	<0.001
St. Joseph River	Carp	-2.9	<0.05
<i>Inland Lakes</i>			
Lake Gogebic	Walleye	-15.9	<0.001
South Manistique Lake	Walleye	-4.3	<0.001
Higgins Lake	Lake Trout	-10.3	<0.001
Houghton Lake	Largemouth Bass	-12.1	<0.001
Gull Lake	Largemouth Bass	-6.4	<0.001
Gun Lake	Largemouth Bass	-6.3	<0.001
Pontiac Lake	Largemouth Bass	-6.0	<0.005
Average		-8.5	
Median		-6.8	

Air concentrations of PCBs measured by the Integrated Atmospheric Deposition Network (IADN) also showed a general decrease from 1992 through 2002 (USEPA, 2012; Environment Canada and USEPA, 2000 and 2005; Figure 2).

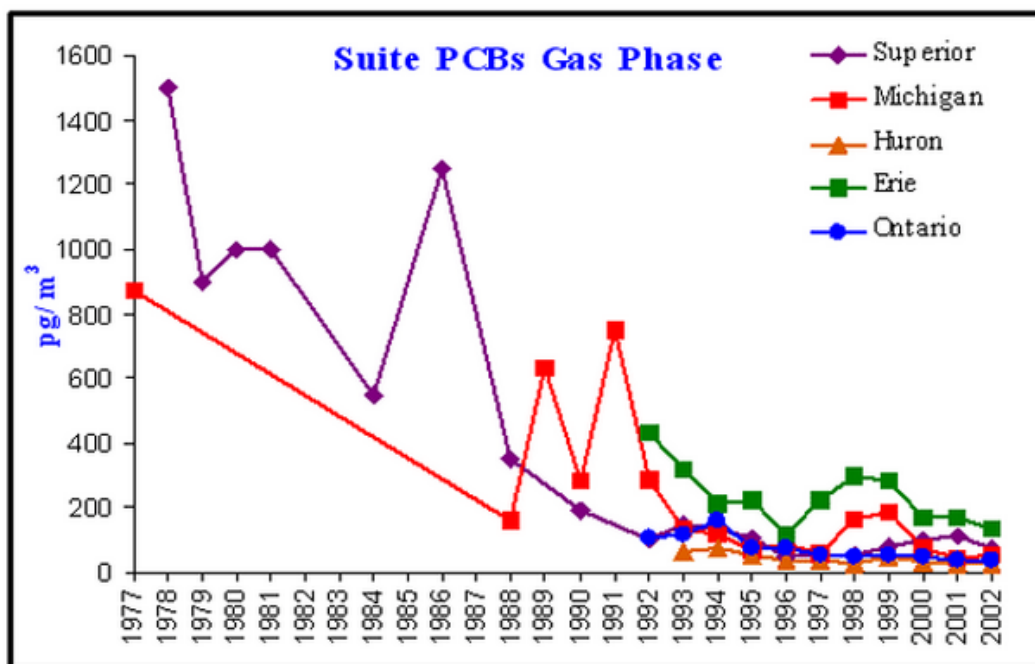


Figure 2. Time Trend of PCB Gas Phase Atmospheric Concentrations at Great Lakes IADN Stations. (Source: USEPA, 2012)

2.2 DATA COLLECTION AND ASSESSMENT OF WATER QUALITY

TMDLs must be developed for all water bodies contained on a state's Section 303(d) list. This section begins with a discussion of the state's data collection efforts used to support impairment determination, follows with a summary of waters impaired by PCBs, and concludes with a discussion of the scope of water bodies considered under this TMDL.

2.2.1 Data Collection and Summary Analysis

Michigan uses the National Hydrography Dataset (NHD) to organize and identify water bodies for the Section 303(d) list. A base assessment unit is a 12-digit hydrologic unit code (HUC), which may be split further into smaller assessment units depending on information such as land use, known areas of contamination, specific fish consumption advisories, physical barriers such as dams, etc. Each assessment unit is assigned an assessment unit identification (AUID) number and may consist of all water bodies in a 12-digit HUC (as a maximum) or specific stream segments or lakes located in that HUC (MDEQ, 2012).

Water column samples analyzed for PCBs are stored within the MDEQ Michigan Surface Water Information Management System (MiSWIM)⁴. PCBs were collected as part of the Water Chemistry Monitoring Program from the initiation of the program in 1998 through 2007. The goal of the sampling was to determine if PCBs were ubiquitous in Michigan. While concentrations varied widely, PCBs were present in all samples and only met the WQS of 0.026 nanograms per liter (ng/L) on one occasion (MDEQ, 2013). PCB water column concentrations ranged from 0.026 to 256 ng/L. PCB water column data are no longer collected due to the high cost of analyzing water samples, the knowledge that almost all waters exceed

⁴ Available on the MDEQ's Web site at *(The link provided was broken and has been removed)*.

the WQS, and because PCBs can be monitored accurately using fish tissue samples at a more reasonable cost.

Fish tissue samples are collected by a variety of agencies to provide data for assessment purposes as part of the FCMP. These agencies include, but are not limited to, the Michigan Department of Natural Resources, Fisheries Division; United States Fish and Wildlife Service, MDEQ, and tribal agencies. There are two major components of the FCMP: the edible portion monitoring program and the whole fish trend monitoring program. The edible portion program is used to make impairment determinations due to PCBs in fish tissue, since the primary objective of the edible-portion monitoring program is focused on developing sport fish consumption advisories and commercial fishing restrictions (Exponent, 2003). PCB concentrations in tissue are available from the FCMP for over 20 species collected between 1990 and 2009. The average statewide PCB concentration in edible portions of fish is 0.235 milligrams per kilogram (mg/kg), and exceeds the TMDL fish tissue target of 0.023 mg/kg for most of the species for the period 2000-2009 (Table 2). Because PCB concentrations in water and fish tissue have been declining since the early 1990s, it was determined that PCB data older than ten years starting from the 2010 Integrated Report would not be included in the evaluation of fish tissue data. In addition, total PCB concentrations in fish tissue prior to 2000 were analyzed as Aroclors but are now reported as total congeners. Therefore, fish tissue PCB data collected as part of the FCMP were summarized for the period 2000-2009 and used in the development of this TMDL.

It should be noted that different data periods are intentionally used for: (1) making an impairment determination; and (2) developing the TMDL. In general, PCB concentrations in air and fish are decreasing over time. This general knowledge is insufficient to remove a specific water body from the impaired waters list, as explicit demonstration of attainment is required to delist a water body. TMDL development, on the other hand, requires use of the most representative recent data to define the relationship between atmospheric concentration and fish tissue concentrations. For that reason, it is appropriate to use a more recent subset of the data for TMDL development than for impairment determination. An explanation of the development of the TMDL target for fish tissue can be found in Section 3.

Table 2. Average PCB Fish Tissue Concentration for Edible Portion of Fish Collected through FCMP 2000-2009. Results in bold exceed the TMDL target (0.023 mg/kg).

Species	Number of Samples	Average Concentration (mg/kg) ¹
Black Crappie	50	0.073
Brook Trout	12	0.072
Brown Bullhead	112	0.006
Brown Trout	40	0.159
Carp	733	0.641
Channel Catfish	120	0.260
Freshwater Drum	10	0.267
Lake Herring	5	0.001
Lake Trout	86	0.147
Lake Whitefish	20	0.058
Largemouth Bass	330	0.034
Northern Pike	331	0.058
Pumpkinseed	9	0.060
Rainbow Trout	20	0.020
Redhorse Sucker	129	0.091
Rock Bass	162	0.102
Smallmouth Bass	187	0.106
Splake	20	0.004
Walleye	316	0.125
White Bass	20	1.106
White Sucker	359	0.179
Yellow Bullhead	27	0.003
Yellow Perch	34	0.026
Total	3,132	0.235

¹All data collected from inland water bodies in Michigan are in this table, including samples from sites influenced by the Great Lakes and/or legacy sources of PCBs. Concentrations are the average result for the number of samples collected per fish species.

The MDCH uses the fish tissue monitoring data and the United States Food and Drug Administration's 2.0 parts per million (ppm) (or mg/kg) trigger level for total PCB concentrations when developing advisories for the general population (Table 3). In addition to general population advisories, the MDCH advises women of child-bearing years, and children under 15 years of age, to eat no more than one meal per week if total median PCB concentrations exceed 0.05 ppm (or mg/kg), and no more than 1 meal per month if total PCB concentrations exceed 0.2 ppm (Table 3) (MDEQ, 2010).

Table 3. Trigger Levels Used by the MDCH to Establish Fish Consumption Advisories⁵.
 (Source: MDEQ, 2010)

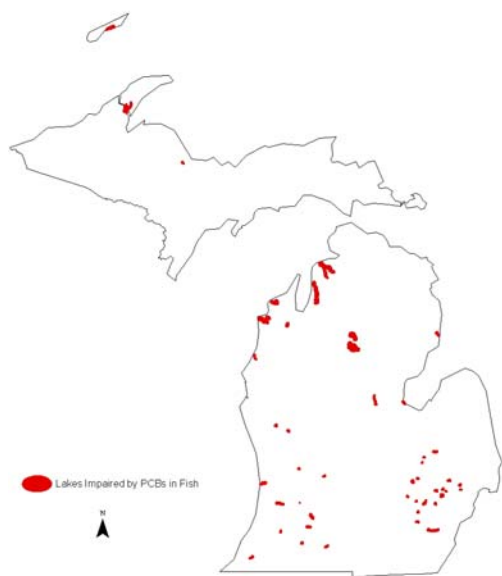
Group	Consumption Level	MDCH Trigger Level (Total PCB, ppm)
General Population	1 Meal Per Week	2.0
Women of Child-bearing Age and Children Under 15 Years	1 Meal Per Week	0.05
	1 Meal Per Month	0.2
	6 Meals Per Year	1.0
	No Consumption	1.9

2.2.2 Discussion of Section 303(d) Listings

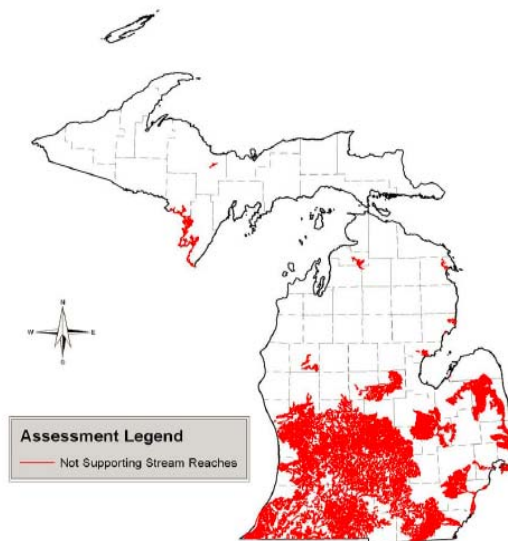
The MDEQ used the data described in Section 2.2.1 to define all water bodies in the state that are impaired by PCBs. Out of the 7,316 water body assessment units (composed of inland lakes, streams, and river segments) across the state of Michigan, 4,709 have been assessed for some impairment. Of these assessed segments, 2,255 AUIDs are defined as impaired due to PCBs: 102 AUIDs are impaired due to PCBs in fish tissue (Figure 3), 1,164 AUIDs are impaired due to water column concentrations exceeding the ambient WQS for PCBs (Figure 4), and 989 AUIDs are impaired due to PCBs in both the water column and fish tissue. Figure 3 shows lakes, rivers, and streams impairments; however, Figure 4 only shows rivers and streams impairments due to a lack of lake data. Many AUIDs are listed as impaired due to exceedances of both the fish tissue advisory trigger levels and ambient water column WQS. A detailed discussion of the methodology used for assessing the fish consumption designated use can be found in Section 3.1.5.

⁵ For additional information see:

Michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/GLWARM/Monitoring-Lake/fcmp-2010-report.pdf. These values are expected to change in 2013.



a) Impaired Lakes



b) Impaired Rivers and Streams

Figure 3. Impaired Lakes (a) Rivers and Streams (b) Based on Fish Tissue PCB Data. (Data Source: MDEQ, 2012)

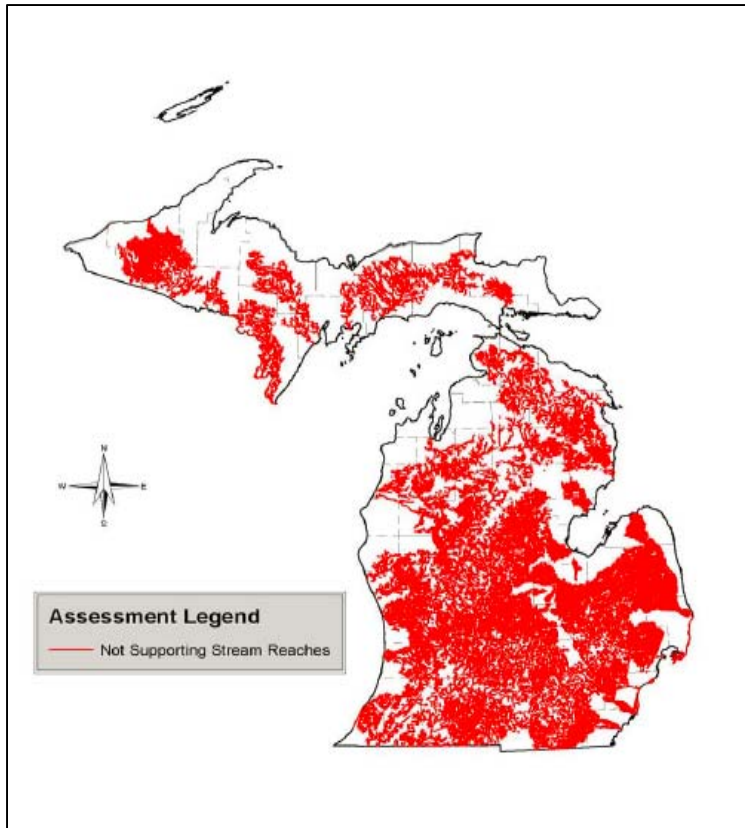


Figure 4. Impaired Rivers and Streams Based on Water Column PCB Data.
(Data Source: MDEQ, 2012)

2.3 SCOPE OF WATER BODIES CONSIDERED UNDER THIS TMDL

As discussed in Section 2.1, the 2012 Integrated Report proposed a schedule for completion of TMDLs to address PCB impairment of inland water bodies, Great Lakes, and connecting channels (MDEQ, 2012). The state of Michigan's plan for addressing waters impaired by PCBs is summarized below:

1. All of the inland water bodies of the state that were listed as impaired by PCBs were considered under this TMDL using an approach that will be discussed in Section 4 of this TMDL. The MDEQ (2012) lists 2013 as the target date for submittal of the PCB TMDL addressing inland waters. All but a few of the waters that were considered are expected to meet WQS after implementing source reductions, based on the fish tissue target detailed in Section 3 of this TMDL.
2. The following waters are not covered by this TMDL:
 - a. The Great Lakes and connecting channels (i.e., Lake St. Clair, the St. Clair River, the St. Mary's River, the Detroit River, and the Keweenaw waterway) will likely benefit from the atmospheric reductions called for in this TMDL. The level of pollutant reduction required to achieve WQS will be different than for inland waters, due to different atmospheric deposition rates and much longer response times. These water bodies will be considered under a separate TMDL focused on the Great Lakes

- that is scheduled for development in 2015. Contaminated legacy sites (i.e., AOCs and Superfund sites) impacted by PCBs are not covered by this TMDL. Formal clean-up plans are in place at these sites, and the water bodies are expected to meet the TMDL target once clean-up plans are complete and reductions described in this TMDL are met.
- b. Most inland water bodies impaired primarily by atmospheric sources are expected to meet WQS after the reductions in atmospheric loading called for in this TMDL are achieved. Separate TMDLs may be developed for the few water bodies not meeting WQS as needed.

A list of water bodies submitted for approval under this TMDL is included in Appendix A.

3.0 APPLICABLE WQS AND NUMERIC TARGETS

This section describes applicable WQS and target selection for this PCB TMDL. It consists of the following sections:

- WQS
- Numeric TMDL Target
- Applying the Numeric TMDL Target

3.1 WATER QUALITY STANDARDS

The Clean Water Act Section 303(c)(2)(A) requires states to identify appropriate water uses for all water bodies, and provide, where attainable, water quality (in the form of WQS) for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water. Designated uses describe the various uses of waters that are considered desirable, and identify those waters that should be protected. At a minimum, all surface waters in Michigan are designated and protected for all of the following uses: agriculture, navigation, industrial water supply, warm water fishery, other indigenous aquatic life and wildlife, partial body contact recreation, total body contact recreation (May 1 to October 31) and fish consumption. A select group of rivers and inland lakes, in addition to the Great Lakes and select connecting channels are designated and protected for coldwater fisheries and public water supply (R 323.1100, Designated Uses, of the Part 4 rules, WQS, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended [NREPA]).⁶ The WQS for water column PCB concentrations are 0.12 ng/L for the protection of wildlife and 0.026 ng/L for the protection of human health.

3.1.1 Designated Use Support

Every two years, the state of Michigan evaluates the extent to which waters of the state are attaining their designated uses. The principle of independent applicability is used when making a support determination for each water body. For example, if data for more than one parameter are available (i.e., water column and fish tissue concentrations), and both are used to determine support for the same designated use, then each data type is evaluated independently to determine support for the designated use. If either data type indicates that the designated use is not supported, then the water body is normally listed as not supporting the designated use (MDEQ, 2012). Many of Michigan's surface waters are impaired due to PCBs and consequently, do not support the other indigenous aquatic life and wildlife designated use and/or the fish consumption designated use (MDEQ, 2012). These are the impaired designated uses addressed by this TMDL.

Michigan uses multiple assessment types and parameters to determine indigenous aquatic life and wildlife designated use support and fish consumption designated use support. Water column concentrations are used to assess support of the other indigenous aquatic life and wildlife designated use. Data considered for the assessment of the fish consumption use include the concentration of PCBs in the water column, and fish consumption advisories issued by the Michigan Department of Community Health (MDCH) (MDEQ, 2012).

⁶ See *(The link provided was broken and has been removed)*.

3.2 NUMERIC TMDL TARGET

TMDLs are established at a level that attains and maintains the applicable WQS, including designated uses, numeric and narrative criteria, and antidegradation policy (40 CFR §130.7[c][1]). TMDL submittals must include a description of any applicable WQS, and must also identify numeric water quality targets, which are quantitative values used to measure whether or not applicable WQS are being attained. Depending on the designated use being addressed by the TMDL, the criteria used for setting a TMDL target may include human health, aquatic life, and wildlife criteria (USEPA, 2011). Where possible, the water quality criterion for the pollutant causing impairment is used as the numeric water quality target when developing the TMDL. Michigan's WQS include ambient water column numeric criteria for PCBs, but do not contain a fish tissue numeric criterion. As stated previously, Michigan's narrative portion of R 323.1057(1) states, "toxic substances shall not be present in the surface waters of the state at levels that are or may become injurious to the public health, safety, or welfare, plant and animal life, or the designated uses of the waters." The presence of fish consumption advisories justifies the use of a fish tissue target to interpret this narrative standard (USEPA, 2011). **Therefore, a fish tissue residue value is recommended as the target for the statewide PCB TMDL, since the consumption of fish by humans and wildlife is the most significant route of exposure.**

Michigan derived a fish tissue residue value of 0.023 mg/kg (wet weight) in edible fish portions using the same Risk Associated Dose (RAD) (0.000005 mg/kg/day), body weight (70 kg), and fish consumption rate (0.015 kg/d) that was used to derive the WQS of 0.026 ng/L that protects human health. A RAD is defined as a dose of a known or presumed carcinogenic substance, in mg/kg/day, that, over a lifetime of exposure, is estimated to be associated with a plausible upper bound incremental cancer risk equal to 1 in 100,000. The fish tissue residue value of 0.023 mg/kg is therefore consistent with the WQS because they both use the same toxicity endpoint and fish consumption rate.

To verify that a fish tissue residue value would be consistent with the WQS for PCBs, the calculation of a resulting water concentration based on the fish tissue residue value of 0.023 mg/kg was made. A trophic level 4 bioaccumulation factor of 1,086,000 liters/kg, used in the calculation of the WQS of 0.026 ng/L for the protection of human health, was used to estimate a water concentration that would be associated with the trophic level 4 fish tissue residue value of 0.023 mg/kg. The resulting water concentration value (0.021 ng/L) was calculated to be lower than the WQS (0.026 ng/L) for PCBs, indicating that the fish tissue residue value would be consistent with the WQS.

3.3 APPLYING THE NUMERIC TMDL TARGET

The selection of a numeric fish tissue target requires the selection of a fish tissue residue value, an appropriate fish species, and a statistical level at which to base compliance with the TMDL once reductions of environmental PCB concentrations have been made. Load reductions in PCBs required by the TMDL will be based on the decrease of PCB concentrations in fish tissue that is necessary to meet a fish tissue residue value of 0.023 mg/kg in the 90th percentile of an appropriate fish species. Achieving the target level for the 90th percentile of the most impacted fish species ensures that the overwhelming majority of species in lower trophic levels will meet the target level.

Because the PCB TMDL is applied statewide and considers a wide range of fish tissue concentrations, it would not be practical to base TMDL reductions on the requirement that every

fish in the state be in compliance with the fish tissue residue value of 0.023 mg/kg. A recommended approach is to base reductions in PCB concentrations in fish tissue on an appropriate level of protection. The 90th percentile has been deemed to provide an appropriate level of protection for the PCB TMDL, since 90 percent of the waters in the state would have a lower proportionality constant than the threshold value. Ninety percent of the waters of the state containing a top predator species with high bioaccumulation potential would be expected to attain WQS after the TMDL is implemented.

Several criteria for selecting a fish species on which to base PCB reductions were evaluated. Calculation of the load reduction necessary to attain the fish tissue residue value in the 90th percentile of water bodies in the state requires a sufficient number of samples. In order for fish tissue data for a selected fish species to be considered representative, the data must have been collected during a time period deemed to be representative of the baseline year of the TMDL. Because PCB concentrations in water and fish tissue have been declining since the early 1990s, it was determined that PCB data older than ten years would not be included in the evaluation of fish tissue data. In addition, total PCB concentrations in fish tissue prior to 2000 were analyzed as Aroclors. After this time period, total PCBs were analyzed and summed as individual PCB congeners. Therefore, fish tissue PCB data collected as part of the FCMP were summarized for the period 2000-2009 (Table 2 in Section 2.2.1). Fish tissue PCB data after 2009 were not available when the data were being compiled for the development of the TMDL.



Figure 5. Photo of a Lake Trout.
Photo Credit: Dan Rockafellow and Dick Mikula.

Fish tissue PCB data after 2009 were not available when the data were being compiled for the development of the TMDL.

Based on a review of available fish tissue PCB data, lake trout (*Salvelinus namaycush*) (Figure 5) were used to determine PCB load reductions, and resulting compliance with the TMDL. Lake trout were selected because they have the second highest concentration of PCBs (when sites with legacy PCB sources and/or Great Lakes influence are excluded from the assessment), they are a native species, a trophic level 4 fish, and a preferred sport fish species in Michigan. Furthermore, since the WQS for the protection of human health assume that the majority (76 percent) of the fish consumed by humans are from trophic level 4, it was considered appropriate to apply the fish tissue target residue value to a trophic level 4 fish.

Lake trout PCB data are only available from a limited number of water bodies so it was necessary to verify that lake trout is an appropriate species on which to base compliance with the PCB TMDL. The ability of lake trout to predict compliance with the TMDL target in water bodies where lake trout are not found was assessed and is summarized in Section 4.5.2.

4.0 MODELING APPROACH

This section describes the modeling approach for calculating the PCB TMDL. It consists of the following sections:

- Estimating Atmospheric PCB Loading
- Relating Atmospheric Loading to Fish Tissue Concentration (Principle of Proportionality)
- Atmospheric PCB Concentrations
- Regionalization
- Threshold Proportionality Constant
- Required Reduction Percentage

4.1 ESTIMATING ATMOSPHERIC PCB LOADING

The goal of a TMDL is to define the maximum allowable loading for the pollutant of concern that will result in attainment of applicable WQS, including designated uses. In some cases, it is not feasible to directly estimate or measure the actual pollutant load, and a surrogate measure is used to indirectly represent that load (USEPA, 2002). The atmospheric gas phase concentration of total PCBs is being used as a direct surrogate for PCB loading to surface waters from atmospheric sources for this TMDL because the technology required to precisely measure loadings at the water/air interface does not exist. There are several lines of evidence that provide a scientific justification for using atmospheric gas phase PCB concentrations as a surrogate for atmospheric loading.

First, the gas phase is by far the largest source (or pathway) by which PCBs enter surface water. As a semi-volatile persistent organic chemical group, atmospheric deposition of PCBs to surface waters can take place via three mechanisms:

1. Absorption of gas phase PCBs into the water body by diffusion across the air-water interface and dissolution into a dissolved phase in the water (gas exchange)
2. Washout of atmospheric PCBs during precipitation (wet deposition)
3. Deposition of particulate phase atmospheric PCBs into surface waters by atmospheric mixing processes (for very fine particles that are not heavy enough to be deposited by gravity alone) or gravity settling (dry deposition)

Any of these mechanisms can also deliver PCBs to the land and vegetation in a watershed followed by a series of complex hydrologic processes that may deliver water and potentially associated PCBs to the receiving water body. There is an extensive body of literature containing research and observations of all three of these mechanisms for the Great Lakes region. This body of literature identifies gas phase absorption (mechanism 1 above) as the major source pathway of PCBs to surface waters (e.g., Swackhamer and Armstrong, 1986; Sweet et al., 1993; Jeremiason et al., 1994; Pearson et al., 1996; Hoff et al., 1996; Green et al., 2000; Buehler and Hites, 2002; Blanchard et al., 2008). The primary reason for this finding is that measurements of different forms of PCBs in the atmosphere indicate that ≥ 90 percent of the PCBs in the air are in the gas phase rather than sorbed to aerosols or water droplets (Cotham and Bidleman, 1995; Chen et al., 1996; Simcik et al., 1998).

The portion of total atmospheric PCB loadings (or flux) due to wet deposition is small (Hillery et al., 1998; Blanchard et al., 2008). In general, the absorption depositional fluxes (loadings)

are an order of magnitude higher than the wet deposition fluxes, as exemplified for two urban sites in Figure 6. Dry deposition flux is even smaller than wet deposition flux.

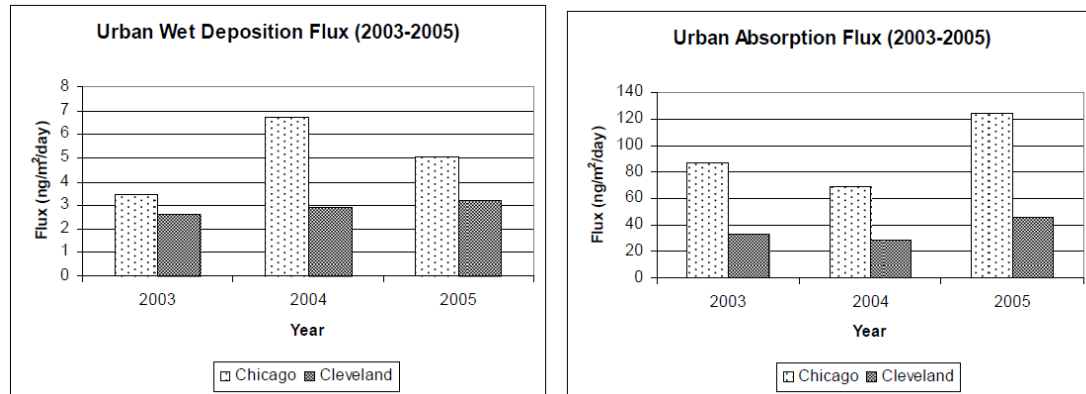


Figure 6. Wet Deposition and Absorption Fluxes of PCBs at Urban Sites. (Source: Blanchard et al., 2008)

Second, the gas phase acts similarly to other phases such as wet deposition. Washout in precipitation (rain and snow) can also be important (Simcik et al., 2000); but because washout deposition rates are dependent on partitioning from the gas phase into the liquid phase in the atmosphere, this deposition mechanism is also driven by the atmospheric gas phase concentration. Simcik et al. (2000) found that the half-lives of PCB precipitation-related deposition in the Great Lakes are not significantly different from the corresponding atmospheric gas phase decline half-lives.

Third, and the most compelling justification for using atmospheric gas phase concentration of total PCBs as a measure of atmospheric deposition, is the Great Lakes IADN and its various monitoring and research outputs (Buehler and Hites, 2002). IADN is a joint United States-Canada venture, required under the 1990 Clean Air Act to measure atmospheric deposition of chemicals of concern throughout the Great Lakes basin, including PCBs. The network consists of five Master Stations and several Satellite Stations for which IADN collects gas and particle air samples for 24 hours every 12 days using high-volume air samplers (Figure 7). Precipitation samples are taken for every rain and snow event and composited for 14 (Canada) or 28 days (United States) for analysis. The IADN data were used to develop the population and temperature-based gas phase PCB relationship that is being used to provide spatial and temporal atmospheric PCB concentration trends in the state of Michigan (Venier and Hites, 2010a).

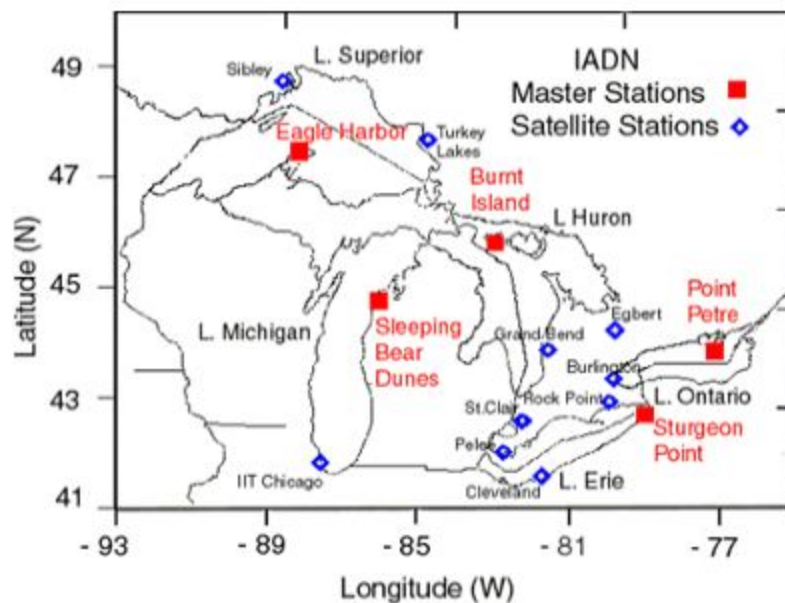


Figure 7. IADN Stations (Brule River not pictured).
(Source: Environment Canada and USEPA ,2012).

IADN also uses its data, supplemented with other data from surface water programs, to compute atmospheric deposition of chemicals of concern to the Great Lakes. Loadings of atmospheric deposition (L , in kg/yr) is calculated using the following equation that includes three processes: wet deposition, dry deposition, and net gas exchange (Blanchard et al., 2008):

$$L = C_p R_p A + C_a \phi_a v_d A + [k_{ol}(1 - \phi_a)C_a(RT/H)A - k_{ol}(1 - \phi_w)C_w A]$$

Atmospheric Deposition = Wet Deposition + Dry Deposition + Gas Phase Absorption – Volatilization (1)

The first term in the equation, wet deposition, is the product of the volume-weighted mean precipitation concentration, C_p (kg/m³), the rate of precipitation, R_p (m/yr), and the area of the lake, A (m²). The second term represents dry deposition, and is the product of the total atmospheric concentration of the pollutant, C_a (kg/m³), obtained from measurements collected at the five master IADN stations (Figure 7), the fraction of the compound in the particle phase, ϕ_a , the deposition velocity of the particles, v_d (m/yr), which is represented as 0.2 cm/s for all chemicals, and the area of the lake, A (m²).

The last term in the equation represents net gas exchange, and is divided into two components: absorption and volatilization. Absorption is the transfer of the compound in the gas phase from air to water. The variable, k_{ol} (m/yr) is the overall air-water mass transfer coefficient, R (atm m³/K/mol) is the ideal gas constant, T (K) is the temperature at the air-water interface, H (mol/atm/m³) is the Henry's Law constant, C_w (kg/m³) is the concentration of the compound in water, and A (m²) is the area of the lake. For absorption, $(1 - \phi_a)C_a$ is the air concentration of the compound in the gas phase. In the volatilization term, ϕ_w is the fraction of the compound on the particle phase in the water, thus making $(1 - \phi_w)C_w$ the dissolved phase concentration of the compound of interest. Volatilization can then be assumed to be the compound transferred from water to air.

The complete term of net gas exchange is the sum of the absorption and volatilization estimates. Positive net gas exchange indicates net absorption of the chemical from air to water, while negative net gas exchange indicates net volatilization from water to air. Gross atmospheric deposition (i.e., the sum of the three processes listed initially in this discussion) is computed with the above equation, but without the volatilization term at the end (Equation 2).

$$L = C_p R_p A + C_a \phi_a V_d A + [K_{ol} (1 - \phi_a) C_a (RT/H) A]$$

Atmospheric Deposition = Wet Deposition + Dry Deposition + Gas Phase Absorption **(2)**

Volatilization is excluded to represent only gross atmospheric deposition (what is being absorbed into the water bodies), and not the portion that volatilizes (leaves the water's surface). Given the above discussion, it is both scientifically and practically justified to use atmospheric gas phase PCB concentrations as a surrogate for atmospheric PCB loadings for the following reasons: (1) the portion of PCB loadings due to dry deposition as compared to wet deposition is small; (2) the gas phase concentration governs wet deposition; and (3) the gas phase absorption of PCBs in the atmosphere makes up greater than 90 percent of the total atmospheric deposition. Furthermore, even though the above argument was made using IADN data taken from stations around the Great Lakes, it is reasonable to believe that the relationship between atmospheric gas phase PCB concentrations over the state of Michigan (thereby inland lakes, rivers, and streams) and atmospheric PCB deposition would be the same as it is over the Great Lakes. Thus, it is appropriate to assume that a given percent reduction in atmospheric gas phase PCB concentration will produce an equivalent percent reduction in atmospheric PCB loading to surface waters in the state of Michigan.

4.2 RELATING ATMOSPHERIC LOADING TO FISH TISSUE CONCENTRATION (PRINCIPLE OF PROPORTIONALITY)

The approach for linking atmospheric pollutant loads to fish tissue concentrations for this TMDL is patterned after the statewide mercury TMDL developed by the Minnesota Pollution Control Agency (2007), which drew from the work of Jackson et al. (2000), and a regional mercury TMDL for the Northeast United States (New England Interstate Water Pollution Control Commission, 2007). The approach for this TMDL assumes that the steady-state pollutant concentration in a water body (and fish) is linearly proportional to the atmospheric load.

It is important to note that essentially all PCB modeling approaches (including all of the modeling approaches described in the USEPA TMDL guidance) are based upon the assumption of a linear relationship between PCB load and resulting environmental concentration. A PCB TMDL developed for an impaired reach of the Kawkawlin River⁷ in Bay County, Michigan, similarly assumes a one-to-one relationship between PCB loadings and fish tissue (MDEQ, 2002). This approach is referred to in the USEPA (2011) guidance as a "Level 1" approach and is one of the recommended methods for developing PCB TMDLs.

The selection of a steady-state approach for this TMDL means that time variability is not considered. The ability to consider time variability can be useful in estimating system response time to reductions in load, but is not an essential requirement for TMDL development. In fact, models with the capability of simulating time variable conditions are often applied to represent

⁷ This statewide TMDL will not supercede the existing PCB TMDLs for the Kawkawlin (2002) and Pere Marquette Rivers (2008).

steady-state conditions for purposes of TMDL application, and therefore provide results consistent with the Level 1 approach being used here.

The proportionality model used for this TMDL can be described mathematically in Equation 3 as:

$$\text{Pollutant concentration in water (or fish)} = a \times \text{Pollutant loading} \quad (3)$$

where:

a = Proportionality constant relating pollutant load to environmental (i.e., water or fish) concentration

The proportionality constant, a , is calculated from observed edible fish tissue data and estimated atmospheric PCB loading by rearranging Equation 3 as follows:

$$a = \text{Fish tissue concentration} / \text{Pollutant loading} \quad (4)$$

where:

a = Proportionality constant relating pollutant load to fish tissue concentration

Note that when site-specific characteristics (e.g., flushing rate, solids settling velocity, organic carbon content, bioaccumulation in fish) are available for a given water body, complex mechanistic water quality models can be used to calculate the proportionality constant between load and response for each water body under consideration. However, given the large number of water bodies that are being considered under this statewide TMDL, and the limited amount of data available across the state, it is not feasible to estimate unique proportionality constants for each water body requiring a TMDL.

Equation 4 was used to estimate proportionality constants for all of the water bodies where relevant fish tissue data exist. The variability of observed proportionality constants across the state for lake trout, a top predator fish species known to have high bioaccumulation potential, was evaluated to define an upper bound or threshold proportionality constant (i.e., one that represents a specified upper bound percentile of the observed distribution of proportionality constants for some target fish species). This proportionality constant was used to define the required level of load reduction necessary to achieve the TMDL targets for all impaired waters, as described below. The rationale for basing the TMDL on a threshold proportionality constant is that, by protecting waters where lake trout tissue PCB concentrations are high, the large majority of other waters in the state with fish containing lower levels of PCBs, will also be protected. An explanation of the calculation of the threshold proportionality constant can be found in Section 4.5.

4.2.1 Approach for Calculating Maximum Allowable Load

After a threshold proportionality constant has been defined, Equation 3 can be algebraically rearranged to define the maximum allowable pollutant loading rate that will achieve attainment of the desired water quality target in a given percentage of water bodies, i.e.:

$$\text{Pollutant loading}_{\max} = \text{Pollutant concentration}_{\text{target}} / a_{\text{thresh}} \quad (5)$$

where:

$\text{Pollutant loading}_{\max}$ = Maximum allowable pollutant loading that will attain the fish tissue target

$\text{Pollutant concentration}_{\text{target}}$ = Fish tissue target PCB concentration

a_{thresh} = Threshold proportionality constant, defining an upper bound of observed ratios of fish tissue concentration to pollutant load

4.3 ATMOSPHERIC PCB CONCENTRATIONS

Atmospheric PCB concentrations across Michigan were estimated based on the work described in Venier and Hites (2010b), who analyzed data for numerous persistent organic pollutants from the IADN. Samples were analyzed for the following locations (Figure 7) and time periods:

- Brule River, Wisconsin (1996-2002)
- Eagle Harbor, Michigan (1990-2007)
- Sleeping Bear Dunes, Michigan (1992-2007)
- Chicago, Illinois (1996-2007)
- Cleveland, Ohio (2003-2007)
- Sturgeon Point, New York (1992-2007)

Venier and Hites (2010b) converted observed gas-phase PCB concentrations to partial pressures using the Ideal Gas Law and the average atmospheric temperatures during the 24-hour sampling period measured at each site. They used the software package Minitab 15 to fit a linear regression to the logarithms of the atmospheric PCB partial pressures, resulting in the following equation (Equation 6):

$$\ln P = -14.1 - 1.5 \times 10^{-4} t - 5.31 \cdot (1000/T) + 0.0744 \cdot \log^2(\text{pop}) - 0.0744 \cdot \text{WS} - 0.0671 \cdot \cos(\text{WD}) \quad (6)$$

where:

- P = Atmospheric (atm) PCB
- t = time (Julian date after January 1, 1990)
- T = air temperature (°K)
- pop = population within 25 kilometer (km) radius
- WS = wind speed (mph)
- WD = wind direction (radians)

Analysis of Equation 6 showed that time, air temperature, and population density were the primary factors controlling atmospheric PCB concentration, so the equation was truncated as follows (Equation 7) for purposes of the PCB TMDL:

$$\ln P = -14.1 - 1.5 \times 10^{-4} t - 5.31 \cdot (1000/T) + 0.0744 \cdot \log^2(\text{pop}) \quad (7)$$

Equation 7 is designed for application at a specific location, while the TMDL is required to consider the entire state either as a whole or divided into regions.

To evaluate the spatial differences in atmospheric PCB concentrations across the state, Ecological Drainage Units (EDUs; Higgins et al., 2005) were used to aggregate areas of the state containing similar atmospheric concentrations of PCBs. EDUs are a method of spatially organizing the state based on areas of similar biotic and abiotic characteristics such as freshwater fish and invertebrate species composition and distribution, climate, and physiography. They generally range in size from 1,000 to 10,000 km². Although the EDU boundaries align with watershed boundaries, such that no impaired stream segments will span multiple regions, they are not necessarily true watershed boundaries (Higgins et al., 2005). The EDUs in Michigan are shown in Figure 8.

Equation 7 was used to estimate average atmospheric PCB concentration for each EDU as follows:

The annual average air temperature for each EDU was calculated from spatial data obtained from the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center⁸. The average population density (individuals per 25 km radius) was calculated for each EDU using 2010 census data from the Michigan Department of Technology, Management and Budget Center for Shared Solutions and Technology Partnerships⁹. Atmospheric gas phase PCB concentrations for 2010 were calculated as partial pressures (in units of atmospheres) for each EDU, based on population density and average temperature, using Equation 7. Atmospheric PCB partial pressures for each EDU were converted to concentration units (nanograms per cubic meter [ng/m³]) based on the average air temperature determined in Step 1 using the following equation based on the Ideal Gas Law as follows:

$$\text{Mass Concentration, ng/m}^3 = (\text{Partial Pressure, atm}) * (\text{average molecular weight}) * (10^{12} \text{ ng/kg}) * (1 \text{ (kg/m}^3\text{)/(g/L)}) / (\text{Henry's Law Constant } 0.08205746 \text{ L atm K}^{-1} \text{ mol}^{-1}) / (\text{Temperature } ^\circ\text{K}).$$

An average molecular weight of 288 g/mol was based on an assumed mixture of 65 percent Aroclor 1242 at 266.5 and 35 percent Aroclor 1254 at 328, from the reported measurements for the city of Chicago by Hu et al. (2010). The temperature in °K was obtained as T + 273.15, where T is the temperature in °C associated with the partial pressure being converted.

8 (The link provided was broken and has been removed.)

9 (The link provided was broken and has been removed.)

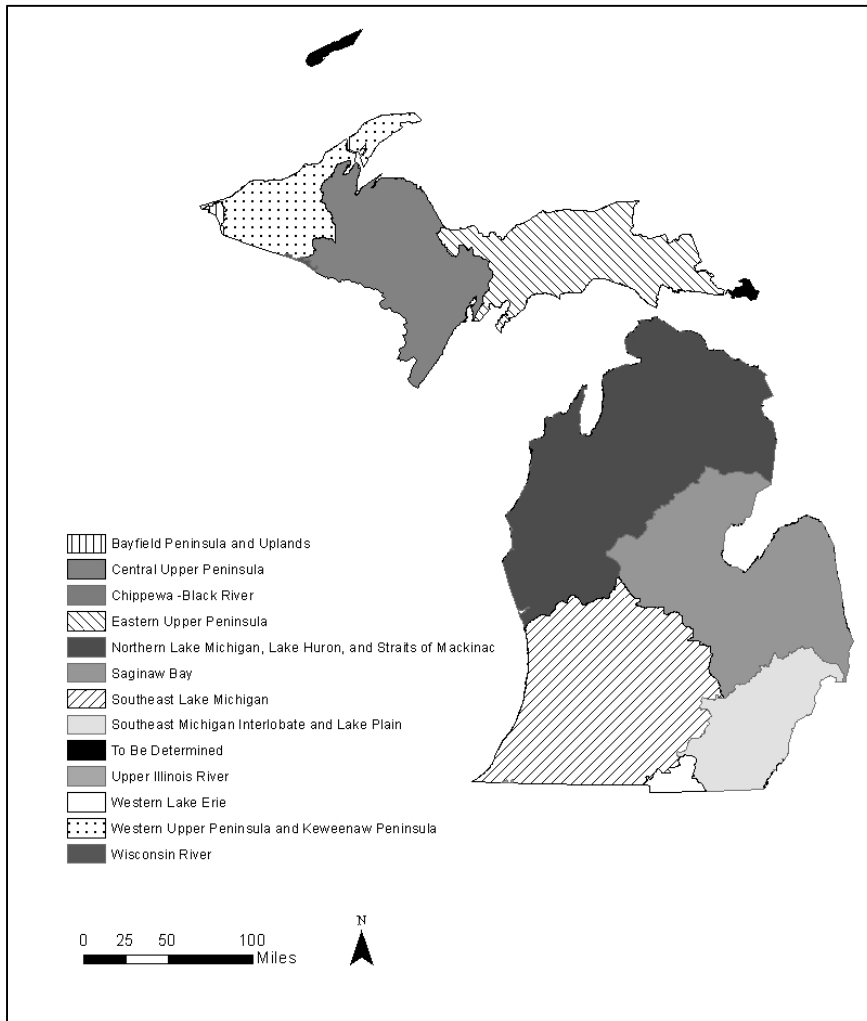


Figure 8. Ecological Drainage Units in Michigan.
 (Data source: Higgins et al, 2005)

Table 4 summarizes the resulting atmospheric PCB concentration averaged across each EDU in the state. These concentrations are mapped by EDU in Figure 8.

Table 4. Estimated 2010 Annual Atmospheric PCB Concentration (ng/m³) Averaged by EDU.

Ecological Drainage Unit (EDU)	Average Population Density (individuals per 25 km radius)	Average Total Gas Phase PCB Conc. (ng/m³)	Daily Maximum Total Gas Phase PCB Conc. (ng/m³)	Area of EDU (miles²)
Bayfield Peninsula and Uplands	<1,000	0.017	0.259	91.72
Chippewa-Black River	<1,000	0.017	0.230	0.45
Upper Illinois River	<1,000	0.017	0.279	7.49
Wisconsin River	<1,000	0.017	0.230	41.70
To Be Determined (includes Isle Royale and Drummond Island)	6,213	0.050	0.246	349.58
Western Upper Peninsula and Keweenaw Peninsula	11,199	0.052	0.315	3,295.46
Eastern Upper Peninsula	10,640	0.057	0.284	5,875.56
Central Upper Peninsula	19,117	0.062	0.363	6,707.16
Northern Lake Michigan, Lake Huron, and Straits of Mackinac	41,265	0.087	0.453	14,723.62
Western Lake Erie	43,243	0.102	0.482	457.01
Saginaw Bay	114,819	0.133	0.636	10,295.58
Southeast Lake Michigan	176,980	0.159	0.739	11,318.04
Southeast Michigan Interlobate and Lake Plain	830,371	0.278	1.372	4,121.54

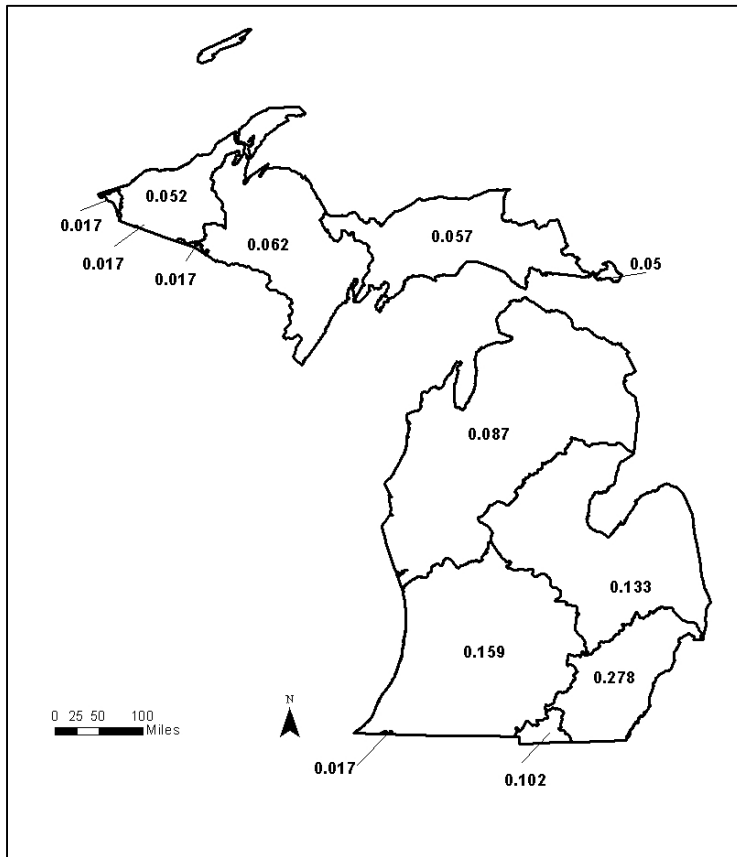


Figure 9. Annual Average Atmospheric Gas Phase PCB Concentration (ng/m³) by EDU.

4.4 REGIONALIZATION

Statewide TMDLs can be structured to produce a single statewide average loading reduction; conversely, they can be structured by dividing the state into geographic regions and produce a loading reduction unique to each region. Although detailed investigations were made into a variety of potential regionalization schemes, a policy decision was made by the MDEQ and USEPA to calculate a single, statewide average required reduction percentage for PCBs. The primary basis for this decision is that a consistent pattern between fish tissue and air concentration of PCBs was lacking throughout the state. There was no discernible regional pattern to justify breaking up the state into different regions based on PCB concentrations. The concern that this approach may be under-protective in some regions of the state (i.e., those requiring greater than average percent reductions) will be addressed in Section 7 through the use of post-TMDL monitoring to identify specific waters across the state that still do not meet WQS as a result of this TMDL. These waters may have site-specific TMDLs developed in the future if necessary. Lastly, as discussed in Section 2.1.2, both fish and atmospheric concentrations of PCBs have been declining since 2000, and continued declines will enable all parts of the state to meet reduction targets.

4.5 THRESHOLD PROPORTIONALITY CONSTANT

Fish tissue PCB concentrations are related to atmospheric PCB loadings by a proportionality constant. In this TMDL, gas phase atmospheric PCB concentrations are used as a surrogate for atmospheric PCB loadings. Therefore, in theory, a proportionality constant could be calculated for each water body where relevant fish tissue data are available. However, relevant fish tissue data were not available for every water body impaired by PCBs on the Section 303(d) impaired waters list to derive a site-specific proportionality constant. For water bodies lacking fish tissue data, it was necessary to develop an approach for estimating a proportionality constant. The approach uses the observed variability in calculated proportionality constants for waters where fish tissue data exist for lake trout to represent the variability of proportionality constants for all water bodies across the state. Statistical methods are then used to calculate a statewide threshold proportionality constant.

4.5.1 Selection of an Appropriate Upper Bound

The threshold proportionality constant is defined as one that represents a specified upper bound percentile of the observed distribution of proportionality constants for a target fish species, in this case lake trout. The selection of a 90th percentile value to represent the threshold upper bound results in a large majority (i.e., 90 percent) of the waters in the state having a lower proportionality constant than the threshold proportionality constant calculated as a statewide value. Use of this 90th percentile threshold proportionality constant in Equation 5 to develop the TMDL would therefore result in 90 percent of the waters in the state containing a top predator species with high bioaccumulation potential being expected to attain the target goal of the TMDL (i.e., 0.023 mg/kg) after the required reductions are made.

The choice of a specific percentile PCB to represent the upper bound of a threshold proportionality constant is a state policy decision. Both the Minnesota and the Northeast United States mercury TMDLs used the 90th percentile as the basis of protection in these TMDLs. The justification given for selecting the 90th percentile included:

- The 90th percentile of samples from a given water body has been used as assessment guidance by the USEPA (i.e., no more than 10 percent of the samples can exceed the standard) (Minnesota Pollution Control Agency, 2007).
- Targets were based on PCB tissue concentrations for a fish species having one of the highest levels of contamination. Achieving the target level for the 90th percentile of a top predator species with observed high levels of contamination ensures that the overwhelming majority of species in lower trophic levels will meet the target level.
- As fish tissue levels are reduced and the 90th percentile approaches the target value, the concentration difference between the 90th and higher percentiles is likely to be very small.
- Use of the 90th percentile allows for outlier water bodies that may have unique circumstances. The outliers can be addressed individually as part of the adaptive watershed management approach to TMDL implementation through implementing as many elements of multi-media programs as possible to reduce PCB loadings (USEPA, 2011).

There are tradeoffs that need to be considered in selecting the percentile to be used. Use of the 90th percentile may result in the need to develop additional TMDLs for those water bodies with proportionality constants higher than the 90th percentile value. Conversely, selection of a higher

percentile would result in required load reductions that would be larger than necessary to attain WQS for the large majority of water bodies.

4.5.2 Selection of a Target Fish Species

Michigan's FCMP database (including PCB data in fish tissue collected from 1980 to 2009) was used to identify the fish species to serve as the basis for required TMDL loading reductions. Only data from the edible portion monitoring program were considered since these are the data that support the fish consumption designated use. Fish tissue PCB concentrations have been sampled in a wide range of species across Michigan, and show varying degrees of bioaccumulation. Furthermore, multiple different species serve as the basis for fish consumption advisories across the state. For development of the statewide TMDL, lake trout was chosen as the target fish species and was used to determine from what levels PCBs in fish tissue would need to be reduced in order to meet the TMDL target.

Available fish tissue PCB concentration data for all species sampled across the state were evaluated to exclude sites with legacy PCB sources and/or Great Lakes influence. Based on this evaluation, it was determined that lake trout would be the species on which to base atmospheric load reductions to meet the fish tissue concentration target of 0.023 mg/kg for the TMDL.

PCB tissue levels in lake trout are among the highest observed for all species of fish throughout the state because of their location towards the top of the food chain, their high lipid content, and their relatively long life, and thus their potential for high bioaccumulation of toxic contaminants like PCBs. Load reductions based on using the 90th percentile of lake trout PCB tissue levels will be generally protective of tissue levels for other species of fish since lake trout tissue levels tend to be some of the highest. Furthermore, lake trout are a top predator, consistent with the trophic level of fish used to derive the human health water quality criterion of 0.026 ng/L.

4.5.3 Calculation of Threshold Proportionality Constant

Lake trout PCB tissue concentration data from Michigan were compiled and analyzed to calculate a statewide threshold proportionality constant for use in developing required PCB load reductions. The analysis consisted of:

- **Removing data collected prior to the year 2000:** Data collected prior to 2000 were judged to be non-representative of current conditions for two reasons. First, PCB concentrations in fish were much higher prior to 2000, and have since declined at a slower rate than pre-2000 (Table 1). Second, the analysis methodology for PCBs in fish changed in 2000 from reporting Total Aroclors (industrial mixtures) to Total Congeners. Data post-2000 for edible portions of fish tissue were available for seven water bodies (Table 5).
- **Calculating the mean PCB tissue concentration in lake trout for each water body:** Lake trout tissue PCB concentrations in an individual sample can depend upon the size of the fish. Potential length-related biases in the calculation of mean tissue PCB concentrations were removed by calculating the expected PCB concentration in a "standard length" fish in each water body. Statistical regressions between fish length and observed tissue concentrations were conducted for each water body. For those water bodies showing a statistically significant ($\alpha = 0.01$) regression between tissue

concentration and length, the mean PCB concentration was calculated using the site-specific regression and a fish length of 24 inches. This length was selected as the standard length because it was the average length of all lake trout that were analyzed. For those water bodies not showing a statistically significant regression between tissue concentration and length, the mean concentration in a standard length fish was calculated as the average of all observed tissue concentration data for that water body. Resulting PCB concentrations in fish tissue for each water body are shown in Table 5.

- **Calculating the proportionality constant associated with each water body:** Calculation of a proportionality constant requires an estimate of atmospheric load and observed fish tissue concentration data. Atmospheric gas phase PCB concentrations are being used as a surrogate for atmospheric load in this TMDL, as discussed previously in Section 4.1. The regression of Venier and Hites (2010b) as shown in Equation 6 was applied to calculate an atmospheric PCB concentration corresponding to each lake trout sampling location specific to the year the lake trout were collected. A proportionality constant for each water body was generated by calculating the ratio of mean lake trout tissue PCB concentration to atmospheric gas phase PCB concentrations (Table 5).
- **Calculating the statewide threshold proportionality constant:** The observed proportionality constants shown in Table 5 were assessed using Minitab statistical software. Maximum likelihood estimation, as implemented in the Minitab program and based on an assumption of a log-normal distribution, was used to calculate a 90th percentile value for the threshold proportionality constant. The 90th percentile threshold proportionality constant determined to represent a statewide value was calculated to be 3.293 (mg/kg)/(ng/m³).

Table 5. Lake Trout Data Used to Calculate a Threshold Proportionality Constant.

Water Body Name	Location	Collection Date	# Fish	Mean Tissue PCB (mg/kg)	Proportionality Constant (mg/kg)/(ng/m ³)	Average Atmospheric PCB at Time of Fish Sample Collection (ng/m ³)
Crystal Lake	Benzie County	9/6/2000	15	0.17	1.75	0.096
Elk Lake	Grand Traverse/ Antrim County	4/11/2006	9	0.12	1.24	0.095
Glen Lake	Leelanau County	6/1/2009	9	0.14	1.55	0.088
Green Lake	Grand Traverse County	6/4/2003	10	0.12	1.25	0.098
North Lake Leelanau	Leelanau County	10/21/2003	12	0.27	2.78	0.098
Siskiwit Lake	Isle Royale	6/29/2002	10	0.04	0.64	0.060
Torch Lake	Antrim County	3/15/2009	11	0.36	4.02	0.089
90th percentile value					3.293	

4.6 REQUIRED REDUCTION PERCENTAGE

The overall reduction percentage required to meet TMDL targets were determined through the following steps:

1. Calculating the average atmospheric PCB concentration in the state.
2. Combining the atmospheric PCB concentration with the threshold proportionality constant to calculate expected fish tissue concentrations for existing conditions.
3. Determining the percentage by which existing tissue concentration would need to be reduced to attain the 0.023 mg/kg fish tissue target statewide.

A single area-weighted average atmospheric gas phase PCB concentration was calculated to be 0.115 ng/m³ for the entire state. This value was multiplied by the area-weighted threshold proportionality constant of 3.293 (mg/kg)/(ng/m³) based on the 90th percentile values to produce an estimated fish tissue PCB concentration of 0.378 mg/kg. This concentration represents the existing PCB concentration in fish. Based on this analysis, a 94 percent reduction in year 2010 atmospheric gas phase PCB concentrations would be required to meet the fish tissue target of 0.023 mg/kg, since a one-to-one ratio reduction in atmospheric gas phase PCB concentrations will result in a one-to-one reduction of fish tissue PCB concentrations.

5.0 SOURCE ASSESSMENT

5.1 SOURCES OF PCBs

Because PCBs are a synthetic, man-made compound, they have no natural sources. Before the USEPA's ban of PCB production in 1979, sources of PCBs were a wide variety of electrical equipment including fluorescent light ballasts and industrial oils, lubricants, and other fluids. Release into the environment occurred through sewers, smokestacks, stormwater runoff, and direct application. Most PCBs that still remain in the environment are stored in sediment or tissue from legacy use (as opposed to new production) and are introduced to water bodies through outdated or illegal landfills and scrap yards and leaks or explosions of electrical equipment and other equipment that still contain PCBs (Agency for Toxic Substances and Disease Registry, 2001). PCBs can also be reintroduced to water bodies through the movement of contaminated sediments, volatilization from water or soil, wet and dry atmospheric deposition and revolatilization (Hazardous Substances Data Bank, 2003). There are several facilities with permits that are authorized to release PCBs into the air in Michigan (Table 6). The total loadings of PCBs to the atmosphere from these facilities were estimated to be about 1.06 lbs/year.

Table 6. Permitted Air Releases of PCBs, 2008.
(Source: Michigan Air Emission Reporting System [MAERS])

Facility Name	Location	Release of PCBs to Air (lbs)
Decorative Panels International, Inc.	Alpena, MI	0.012907
Flint Water Pollution Control Facility	Flint, MI	0.203654
Warren Wastewater Treatment Plant	Warren, MI	0.343097
Empire Iron Mining Partnership	Palmer, MI	0.003503
Pontiac Wastewater Treatment Plant	Pontiac, MI	0.390172
City of Battle Creek Wastewater Treatment Plant	Battle Creek, MI	0.104457
Sekisul Voltek LLC.	Coldwater, MI	0.000003
Total*		1.057792

*Numbers do not sum exactly due to rounding.

5.1.1 Compilation of Source Data

To identify the current sources of PCBs to Michigan's inland water bodies, all readily available information describing point sources (e.g., Superfund and other contaminated sites, National Pollutant Discharge Elimination System (NPDES) permitted stormwater dischargers), and nonpoint sources (e.g., atmospheric deposition) was compiled. PCB data spanned the period 1980 to 2011, with coverage varying spatially and by media. Fish data were obtained for the period 1980 to 2009, water data were obtained for the period 1998 to 2003, air data were obtained for the period 1990 to 2007, and sediment data were available for the period 2000 to 2002. In addition to environmental data, geographic datasets were also obtained to understand the spatial variation in PCB impairment, and other relevant contributing factors such as land cover (Table 7). These data were used to identify a range of point and nonpoint source loadings of PCBs.

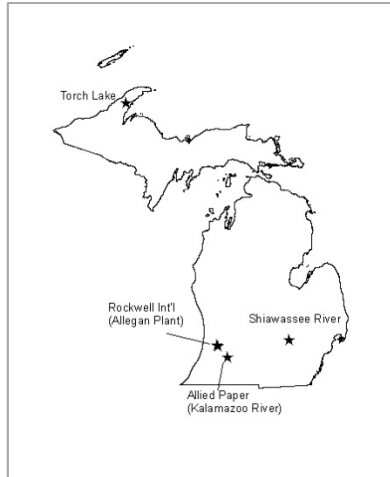
Table 7. Geographic Datasets Obtained.

Description of Data	Type of Dataset	Source
Streams and Rivers (lines) from version 10a of the Michigan Geographic Framework dataset.	Hydrography	Michigan Center for Geographic Information (MCGI)
Lakes and Rivers (polygons) from version 10a of the Michigan Geographic Framework dataset.	Hydrography	MCGI
Lake polygons for the State of Michigan.	Hydrography	MCGI
Lake contour data for lakes managed for recreational boating access	Hydrography	MCGI
Polygons representing the boundaries of cities in Michigan.	Political	MCGI
Polygons representing the boundaries of counties in Michigan.	Political	MCGI
Polygons representing Michigan village boundaries.	Political	MCGI
2006 National Land Cover data for the entire State of Michigan.		Multi-Resolution Land Characteristic Consortium (MRLC)
High resolution NHD data for the State of Michigan.	Hydrography	United States Geological Survey (USGS)
High resolution NHD data for the State of Michigan: HUC boundaries.	Watershed Boundaries	USGS
Assessment Unit IDs	Hydrography	MCGI
Impaired water body segments	Hydrography	MDEQ
Ecological drainage units	Ecoregion Boundaries	Kendra Cheruvellil (Michigan State University)

5.2 DATA GAP ANALYSIS

After compiling the appropriate databases, two major data gaps were identified: statewide atmospheric deposition of PCBs in populated regions of Michigan and specific load or concentration data from legacy point sources. The following steps were used to fill data gaps. The regression equation developed by Venier and Hites (2010b) was used to estimate atmospheric PCB concentrations as described previously in Section 4.

A subset of the impaired water bodies considered under this TMDL are impaired by legacy contaminated sources (e.g., Areas of Concern [AOCs], Superfund sites) (Figure 10). Those which have cleanup plans in place are expected to meet the TMDL target once the cleanup plan is complete and the reductions listed in this TMDL are met. These water bodies will be placed under the 4b category in Michigan’s Integrated Report until monitoring reflects the waters are in compliance with the WQS. Category 4b is intended for water bodies with a pollution control program in place that is expected to solve the pollution problems, such as Superfund and AOC cleanup plans.



a) Superfund Sites with PCBs as a primary contaminant of concern.



b) AOCs in Michigan¹⁰.

Figure 10. Location of Legacy Polluted Sites in Michigan. Note that the Deer Lake and Torch Lake AOCs are not impacted by PCBs.

5.2.1 Baseline Year Selection

Based on the available data, 2010 was chosen as the baseline year for PCBs. This was primarily based on the availability of population data from the 2010 census, which was required to estimate atmospheric deposition using the Venier and Hites (2010b) regression.

5.2.2 Nonpoint Source PCB Loads

Diffuse, or nonpoint sources of PCBs consist primarily of atmospheric deposition and stormwater runoff from the landscape. The original sources of PCBs are landfills, scrap yards, capacitors, transformers, and other electrical equipment, and PCBs from these sources are delivered to Michigan's water bodies through atmospheric deposition. As described in Section 4, PCBs from the atmosphere are deposited onto water bodies in three ways: wet deposition, dry deposition, and net gas exchange.

Since the gas phase of PCBs in the atmosphere makes up ≥ 90 percent of total PCB concentration, gas phase PCB concentration is used as a surrogate of total PCB atmospheric deposition. Atmospheric PCB loading to water bodies was estimated using the truncated Venier and Hites equation (Equation 7). Table 4 summarizes average regional atmospheric PCB concentrations for each EDU in the state for 2010.

5.2.3 Point Sources to Water

Point sources of PCBs under TMDL regulation consist of NPDES-permitted dischargers such as wastewater treatment plants and municipal stormwater discharges. Permitted air emissions (which are called point sources in air quality programs) are considered a nonpoint source PCB load and will be addressed under the Load Allocation (LA) portion of the TMDL. Similar to

¹⁰ Source: Strategy for Delisting Michigan's Great Lakes AOCs.
(The link provided was broken and has been removed.)

nonpoint stormwater runoff, PCBs in municipal stormwater areas are primarily from atmospheric deposition (LimnoTech, 2011). NPDES dischargers that have water quality-based effluent limits (WQBELs) for PCBs, and which discharge to inland waters were identified by the MDEQ and are presented in Table 10. Even though stormwater regulated under the NPDES stormwater program (i.e., Phase I and Phase II) is traditionally considered to be a point source, available data from NPDES regulated stormwater discharges are not detailed enough to estimate PCB loadings for specific outfalls. In addition, since PCBs in municipal stormwater areas are primarily from atmospheric deposition, reductions to this loading source will be addressed under the LA portion of the TMDL.

6.0 TMDL DEVELOPMENT

A TMDL is defined by the equation:

$$\text{TMDL (LC)} = \text{LA} + \text{WLA} + \text{MOS} \text{ (8)}$$

Where

TMDL = Total Maximum Daily Load (i.e., the Loading Capacity (LC) of the receiving water)

LA = sum of all Load Allocation for nonpoint sources

WLA = sum of all Waste Load Allocations for point sources

MOS = Margin of Safety

Development of TMDLs typically consists of two steps:

1. Determine the LC of the receiving water(s) (i.e., the maximum pollutant load that the water body can assimilate and attain WQS).
2. Allocate this LC among the three categories shown in Equation 8.

This statewide PCB TMDL is unique because it focuses on waters primarily impaired by atmospheric sources. As discussed in Section 4, atmospheric deposition of PCBs is not easily calculated, but can be suitably represented by the surrogate parameter of gas phase atmospheric PCB concentration. For this reason, the LA of the TMDL is specified in units of atmospheric PCB concentration instead of a load. In addition, those point sources suspected of containing significant levels of PCBs have been given WLAs at concentrations equal to the WQS, meaning that they will not be causing impairment.

The combination of the above factors, along with the use of an implicit MOS, means that the PCB reduction required to achieve the TMDL target is based entirely on the LA. This section presents the calculation of the TMDL, and is divided into the following sections:

- Load Allocation
- Waste Load Allocation
- Margin of Safety
- Critical Conditions/Seasonal Variation

A summary of Michigan's statewide PCB TMDL is provided in Table 8.

Table 8. Summary of Michigan’s Statewide PCB TMDL.

TMDL Components	Units	Statewide
Target Level and Reduction Factor		
Target Fish PCB Concentration (Fish Tissue Residue Value)	mg/kg	0.023
PCB Concentration for Standard Length Lake Trout	mg/kg	0.378
Reduction Factor		94%
PCB Load for Baseline Year 2010		
Point Source Load	lbs/day	1.48E-06
Maximum Daily Nonpoint Source Concentration	ng/m ³	0.571
Final TMDL		
Margin of Safety (MOS)		Implicit
Waste Load Allocation (WLA)	lbs/day	1.48E-06
Load Allocation (LA) (Maximum Daily Concentration Used as a Surrogate)	ng/m ³	0.034
PCB LA for In-State and Out-of-State Deposition Sources		
In-State Contribution to LA		45%
Out-of-State Contribution to LA		55%
Necessary Reduction from Anthropogenic Emission Sources for both In-State and Out-of-State Contribution		94%

6.1 LOAD ALLOCATION

The calculations in Section 4 demonstrated that a 94 percent reduction in statewide atmospheric PCB concentration is necessary to attain PCB levels that are protective of designated uses. Given an existing atmospheric gas phase concentration of 0.115 ng/m³, a 94 percent reduction results in an allowable annual average concentration of 0.007 ng/m³. As discussed further in the Reasonable Assurance Section (Section 7) it will take the state approximately 50 years to reach the TMDL atmospheric deposition PCB goal.

This TMDL only has regulatory authority over PCBs originating from within the state of Michigan. For that reason, it is necessary to divide existing PCB concentrations into separate components corresponding to: (1) out-of-state sources; and (2) within-state sources. The separation of in-state and out-of-state sources was made using Equation 7 (Section 4.3), which bases total atmospheric PCB concentration on local population. The PCB contribution due to out-of-state sources was defined for this TMDL by the PCB concentration predicted by Venier and Hites (2010a) for local populations associated with wilderness levels (12,500 people per 25 km radius based on the definition of population density in wilderness areas worldwide (Mittermeier et al., 2003). It is difficult to predict the origin of atmospheric PCBs from out of the state. Atmospheric mixing processes are very complex and change constantly. Over time, PCBs depositing on Michigan’s inland waters from out-of-state sources could come from other Great Lakes states, or as far away as China (University of Minnesota and LimnoTech, 2009; MacLeod et al., 2005). The PCB contribution due to in-state sources was defined as the difference between the total atmospheric PCB concentration and the concentration attributed to out-of-state sources. Results of this analysis are shown by EDU in Table 9. Several of the

EDUs in the state already had a population density <12,500 per 25 km radius, so for those EDUs, all atmospheric PCBs were assumed to be from out-of-state sources. Lastly, an average statewide contribution from in-state versus out-of-state atmospheric PCBs was estimated using a weighted average for each EDU by percentage of land area. **In-state sources make up 45 percent of the state's atmospheric PCB concentration, while out-of-state sources make up the remaining 55 percent.**

Table 9. Estimated Average Anthropogenic PCB Concentrations by EDU.

Ecological Drainage Unit	Average Population Density (individuals per 25 km radius)	Average Total PCB Conc. (ng/m ³)	Average In-State PCB Conc. (ng/m ³)	Average Out of State PCB Conc. (ng/m ³)
Bayfield Peninsula and Uplands	<1,000	0.017	-	0.017
Central Upper Peninsula	19,117	0.062	0.007	0.055
Chippewa-Black River	<1,000	0.017	-	0.017
Eastern Upper Peninsula	10,640	0.057	-	0.057
Northern Lake Michigan, Lake Huron, and Straits of Mackinac	41,265	0.087	0.025	0.062
Saginaw Bay	114,819	0.133	0.064	0.069
Southeast Lake Michigan	176,980	0.159	0.088	0.072
Southeast Michigan Interlobate and Lake Plain	830,371	0.278	0.207	0.072
To Be Determined (includes Isle Royale and Drummond Island)	6,213	0.050	-	0.050
Upper Illinois River	<1,000	0.017	-	0.017
Western Lake Erie	43,243	0.102	0.030	0.072
Western Upper Peninsula and Keweenaw Peninsula	11,199	0.052	-	0.052
Wisconsin River	<1,000	0.017	-	0.017
Area-weighted Statewide Average		0.115	0.051	0.064

If the TMDL was designed solely to reduce in-state sources, the necessary reductions from these sources would be calculated using Equation 9:

$$\% \text{ reduction to in-state deposition} = RF / (1 - \% \text{ out-of-state contribution}) \quad (9)$$

Where

RF = Required reduction factor in overall concentration

Given a required reduction factor of 94 percent, and an out-of-state contribution of 55 percent, Equation 9 indicates that in-state sources would need to be reduced by 209 percent if no reductions were made to out-of-state sources. In-state reductions in PCB atmospheric deposition will not achieve the TMDL target alone. Therefore, this TMDL assumes that reductions from out-of-state sources will be consistent with those required for in-state sources (i.e., **94 percent reduction will be required for both in-state and out-of-state sources**). While there are currently no other states developing statewide PCB TMDLs, there are several site-specific TMDLs being implemented throughout the Great Lakes region, and a range of

regional and statewide programs that are working on reductions to PCBs in other states (some of these are discussed in Section 7).

The observed and allowable atmospheric PCB concentrations have all been expressed so far in this document on an average annual basis, because annual averages appropriately reflect the long response time between changes in atmospheric concentration and changes in fish tissue concentrations. The USEPA encourages that TMDLs be expressed on a daily basis, so these annual average concentrations will also be expressed as daily maximum values in this TMDL. Atmospheric PCB concentrations are known to vary seasonally due to changes in air temperature, as indicated previously in Equation 7. Equation 7 was originally applied to define annual average atmospheric PCB concentrations across the state by using annual average temperatures for each EDU. It can also be used to define the daily maximum concentration associated with the annual average, by replacing the average temperature with the expected daily maximum temperature for each EDU.

Equation 7 was used to estimate daily maximum atmospheric PCB concentration for each EDU as follows:

1. The mean extreme maximum temperature (annual) for each EDU was calculated from spatial data obtained from the NOAA National Climatic Data Center¹¹.
2. The average population density (individuals per 25 kilometer radius) was calculated for each EDU using 2010 census data from the Michigan Department of Technology, Management and Budget Center for Shared Solutions and Technology Partnerships¹².
3. Atmospheric gas phase PCB concentrations for 2010 were calculated as partial pressures (in units of atmospheres) for each EDU, based on population density and average temperature, using Equation 7. Atmospheric PCBs partial pressures for each EDU were converted to concentration units (ng/m³) based on the maximum air temperature determined in Step 1 using the following equation based on the Ideal Gas Law:

$$\text{Mass Concentration, ng/m}^3 = (\text{Partial Pressure, atm}) * (\text{average molecular weight}) * (10^{12} \text{ ng/kg}) * (1 \text{ [kg/m}^3\text{]}/\text{[g/L]}) / (\text{Henry's Law Constant } 0.08205746 \text{ L atm K}^{-1} \text{ mol}^{-1}) / (\text{Temperature } ^\circ\text{K}).$$

An average molecular weight of 288 g/mol was based on an assumed mixture of 65 percent Aroclor 1242 at 266.5 g/mol and 35 percent Aroclor 1254 at 328 g/mol, from the reported measurements for the city of Chicago by Hu et al. (2010). The temperature in °K was obtained as T + 273.15, where T is the temperature in °C associated with the partial pressure being converted.

Table 4 summarizes the resulting daily maximum atmospheric PCB concentration for each EDU. A single area-weighted daily maximum atmospheric PCB concentration was calculated for the entire state by weighting the EDU-average PCB concentration by the area of each EDU; this resulted in a concentration of 0.571 ng/m³. It is noted that this value is the daily maximum

11 (The link provided was broken and has been removed.)

12 (The link provided was broken and has been removed.)

atmospheric PCB concentration that exactly corresponds with the annual average PCB concentration used as the basis for determining required load reductions. Specification of daily maximum concentrations in this manner does not change the required load reduction percentage of 94 percent. **When the 94 percent required reduction is applied to meet TMDL targets, the average daily maximum atmospheric PCB concentration is 0.034 ng/m³.**

6.2 WASTE LOAD ALLOCATION

The WLA is defined as the portion of the LC attributed to existing and future permitted point sources. As discussed in Section 5 (Source Assessment), PCB loads for point sources consist of regulated wastewater (i.e., industrial, landfills, and Superfund sites), air, and stormwater discharges. Stormwater regulated under the NPDES Municipal Separate Storm Sewer System (MS4) program (i.e., Phase I and Phase II communities) is considered to be a point source under TMDL regulation. However, available data from NPDES regulated stormwater discharges are not detailed enough to estimate PCB loadings for specific outfalls. In addition, since PCBs in municipal stormwater areas are primarily from atmospheric deposition, this loading source will be considered under the LA portion of the TMDL, and will be addressed with controls to atmospheric loading necessary to meet the LA. Michigan has a well-developed program to address and control stormwater pollution through the implementation of Best Management Practices as required by the Clean Water Act. Any PCBs in stormwater that are not addressed by reductions in atmospheric sources will be addressed by state municipal and industrial NPDES stormwater permit regulations.

WLAs were calculated for the nine facilities that have PCB WQBELs in their NPDES permits or substantive requirement documents (SRD) and discharge to an inland water body (Table 10). Superfund sites that have current on-site remediation are exempt from obtaining NPDES permits under Section 121(e) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). However, the CERCLA does mandate attainment of all applicable or relevant and appropriate requirements. Therefore, SRDs are issued by the state of Michigan to provide necessary surface water protection for on-site Superfund site cleanups. The WLA for each facility listed in Table 10 is equal to the permitted PCB effluent concentration, which is the human health WQS (0.026 ng/L), multiplied by the facility's design flow as authorized by their NPDES permit. This results in a total WLA of 1.48E-06 lbs/day for all permitted facilities.

Table 10. PCB Point Source Loads.

Designated Name	Permit No. or SRD No.	Authorized Flow (MGD)	Load (lbs/day)
G and H LF PRP Group	MIU990012	0.558	1.21E-07
GM - Pontiac SW Facility	MI0058908	1.44	3.10E-07
GM-Powertrain Flint North	MI0001597	0.022	4.80E-09
Liquid Disposal Inc-SF Site	MIU990003	0.05	1.10E-08
Organic Chemicals-SF Site	MIU990002	0.3	5.00E-08
Rose Twp Settling Defendant-SF	MIU990014	0.65	1.10E-07
Saginaw Twp-Center Rd LF	MI0054739	0.024	5.20E-09
U.S. EPA-Shiawassee River SF	MIU990023	0.013	2.80E-09
Wayne Disposal Inc LF	MI0056413	4	8.70E-07
Total WLA			1.48E-06

6.3 MARGIN OF SAFETY

The MOS is a required part of the TMDL to account for any uncertainty in the relationship between pollutant loading and receiving water quality (40 CFR, Part 130.7(c)(1)). The MOS can be either explicit (e.g., stated as an additional percentage load reduction) or implicit (i.e., conservative assumptions in the TMDL calculations or overall approach) in the calculations of the TMDL, or a combination of the two. For this PCB TMDL, the MOS is implicit because of the following conservative assumptions used to calculate the TMDL:

- The 90th percentile fish tissue concentration of PCBs for lake trout was used as a basis for this TMDL. Lake trout are large piscivorous fish, meaning that they are relatively high in the food web and represent fish that are also relatively high in fish tissue PCB concentrations. Therefore, the 90th percentile PCB concentration for lake trout is a relatively high concentration of PCBs, and most fish in the state will likely have a lower tissue PCB concentration. Calculating the TMDL based on this relatively high PCB tissue concentration incorporates a MOS into determining the percent reduction required of fish tissue to meet the target goal.
- The United States Food and Drug Administration and MDCH fish tissue PCB fish advisory trigger value is 2.0 mg/kg for the general population. This TMDL uses 0.023 mg/kg as the fish tissue target concentration for PCBs (as discussed in Section 3.2). Therefore, the difference between the fish target concentration of 0.023 mg/kg and the higher MDCH advisory trigger level of 0.2 mg/kg for sensitive populations includes a substantial MOS.

6.4 CRITICAL CONDITIONS AND SEASONAL VARIATION

TMDL calculations are required to consider critical environmental conditions such as seasonal variations in stream flow, loadings, and water quality parameters (40 CFR, Part 130.7(c)(1)). PCB concentrations in the atmosphere and water column can fluctuate seasonally; however, fish slowly accumulate PCBs over time. Due to the extremely slow response time of water and fish concentrations to changes in atmospheric loads, essentially no seasonal variation occurs in fish PCB concentrations due to seasonal variations in atmospheric concentrations. The PCB concentration in the fish represents an integration of all temporal variation up to the time of

sample collection. Variability among fish because of differences in size, diet, habitat, and other undefined factors are expected to be greater in sum than seasonal variability. Since organochlorine compounds, such as PCBs, are manifested over long periods of time (rather than seasonally), short-term variations in loading are not likely to result in significant variations in designated use effects (e.g., fish consumption) (USEPA, 2011).

There are critical conditions in the sense that certain water bodies and fish species are more likely to bioaccumulate PCBs because of individual water chemistry characteristics, and the biochemistry of individual fish species. This aspect of critical conditions has been addressed in this TMDL by using a top predator fish species known to have high bioaccumulation potential. Thus, the critical conditions are assumed to be adequately addressed in the existing analysis.

7.0 REASONABLE ASSURANCE AND IMPLEMENTATION

To achieve the PCB LC allocations described in Section 6.0, significant reductions in atmospheric nonpoint source must occur. This TMDL assumes that atmospheric nonpoint source PCB loads to Michigan waters will be reduced in the future and eventually meet the LA under this TMDL. TMDLs that allow for reduction in sources for which an NPDES permit is not required should provide a reasonable assurance that the controls will be implemented and maintained. As discussed below, there are numerous state and federal regulations and other activities that are expected to reduce future PCB concentrations to levels consistent with the TMDL.

This section addresses general implementation measures and reasonable assurances, for making progress towards achieving the water quality target in this TMDL. It is divided into separate discussions of:

- Observed Reductions in Atmospheric PCB Concentrations
- Cleanup of Legacy Sources
- Restriction of Landfill Disposal of PCBs
- Regulations Governing Transport of PCBs
- Federal Toxic Substances Control Act (TSCA)

7.1 OBSERVED REDUCTIONS IN ATMOSPHERIC PCB CONCENTRATIONS

This TMDL is designed to control PCB loads to inland Michigan waters from atmospheric deposition. Monitoring data over the last several decades have shown a steady and steep decline in atmospheric concentration of PCBs in the Great Lakes region (Figure 2).

This decline in atmospheric deposition of PCBs can be attributed to the ban on the manufacture and use of PCBs in the United States in the 1970s. As PCB containing equipment wears out and is replaced with non-PCB containing equipment; PCB containing oils and equipment are properly disposed of; and, processes which resulted in the manufacture of PCBs as a byproduct are identified and modified, PCBs are removed from the environment as evidenced in the downward trend of PCB atmospheric deposition monitoring data.

The regression developed by Venier and Hites (2010a) shows that atmospheric PCBs in the Great Lakes region are decreasing over time, with a half-life of approximately 12.5 years. If atmospheric concentrations maintain this rate of decline, they will achieve the TMDL reduction goal in approximately 50 years. The implementation actions discussed earlier in this section may accelerate this rate of decline, by actively removing historical sources of PCBs that have been previously volatilizing and contributing to elevated atmospheric PCB concentrations.

7.2 CLEANUP OF LEGACY SOURCES

Formal cleanup plans are in place at several sites influenced by legacy sources. The Great Lakes Legacy Act was signed into law in 2002, and authorized by Congress in 2008, to provide funding to clean up contaminated sediment in AOCs in the Great Lakes. While these AOCs focus on Great Lakes waters not considered by the TMDL, many of the cleanup plans extend inland to waters covered by this TMDL.

The CERCLA provides a federal "Superfund" to clean up uncontrolled or abandoned hazardous waste sites. Sites eligible for long-term cleanup action under the Superfund program are included on the National Priorities List, a list of environmentally contaminated sites, published by the USEPA, which pose an immediate or significant public health threat to the local community. Michigan currently has 86 sites on the National Priorities List¹³ many of which include contamination by PCBs. Cleanup plans are in place for all of these sites. The remediation of these legacy sites will provide two mechanisms for helping to achieve the TMDL. First, these cleanups will allow designated uses to be attained at legacy sites after atmospheric PCB concentrations are reduced to levels required by the TMDL. Second, these cleanups will contribute to the necessary reduction of local atmospheric PCB concentrations, as volatilization of PCBs from legacy sites can serve as a source of PCBs to the atmosphere.

Three initiatives seek to support the cleanup of legacy sites and reduce PCB pollution of water in the Great Lakes region. While these efforts are directed towards the Great Lakes, it is likely that any PCB reductions in the region will also result in PCB reductions in inland waters (especially reductions in atmospheric PCB concentrations). The Great Lakes Restoration Initiative (GLRI) is a collaboration of 16 federal agencies. The GLRI Action Plan listed cleanup of legacy sources of toxics as one of the initiative's priorities. A major goal is to delist all the AOCs, including six AOCs in Michigan prioritized to be delisted by 2014 (GLRI, 2010). The Binational Toxics Strategy is a joint effort of the United States and Canada started in 1997 to address the effects of toxic pollutants in the Great Lakes basin through goal-setting and tracking to assess progress on reducing contamination (USEPA and Environment Canada, 2009). In addition, the Great Lakes Water Quality Agreement was updated in September 2012 to address current threats to Great Lakes water quality.

7.3 RESTRICTIONS OF LANDFILL DISPOSAL OF PCBs

Volatilization of PCBs from Michigan landfills is another source of PCBs contributing to high local atmospheric PCB concentrations (Breivik et al., 2002). R 324.11514 of Part 115, Solid Waste Management, of the NREPA, was amended by 2004 PA 34 to prohibit PCBs from being delivered to a landfill for disposal, and also prohibits a landfill owner or operator from permitting the disposal of PCBs in their landfill.¹⁴ However, as mentioned in Section 5.1, there are certain regulated facilities that can still receive PCBs.

7.4 REGULATIONS GOVERNING TRANSPORT OF PCBs

Leakage and/or illegal dumping of PCB-contaminated liquid waste, and subsequent volatilization, are additional sources of PCBs to Michigan's atmosphere (ATSDR, 2001). Michigan regulations now require the use of uniform hazardous waste manifests for all regulated shipments of PCB waste as required in Part 147, PCB Disposal, of the NREPA as per the current Operational Memos 121-4 and 147-1¹⁵.

¹³ See *(The link provided was broken and has been removed.)*

¹⁴ See *(The link provided was broken and has been removed.)*

¹⁵ See *(The link provided was broken and has been removed.)*

7.5 FEDERAL TOXIC SUBSTANCES CONTROL ACT

The TSCA authorizes the USEPA to control any substance determined to cause unreasonable risk to public health or the environment. The TSCA includes, among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs. Thus, the TSCA legislated from the manufacture to disposal management of PCBs in the United States. The current PCB regulations were published pursuant to this act and can be found at 40 CFR, Part 761¹⁶.

¹⁶ See *(The link provided was broken and has been removed.)*

8.0 POST-TMDL MONITORING

Post-TMDL monitoring consists of collecting and analyzing data to evaluate how well a TMDL is working towards attaining WQS. This monitoring can assist in determining whether planned control actions are sufficient to attain WQS, or whether further measures need to be implemented. This section describes monitoring to measure PCB concentrations in fish, water, and air to track trends in water quality and to determine TMDL effectiveness.

8.1 MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY MONITORING

Three of the four monitoring goals described in the MDEQ's Water Quality Monitoring Strategy directly align with post-TMDL monitoring goals. These are as follows: (1) assess the current status and condition of waters of the state and determine whether WQS are being met; (2) measure spatial and temporal water quality trends; and (3) evaluate the effectiveness of water quality prevention and protection programs. These goals are assessed through evaluation of a variety of types of data. For post-TMDL monitoring involving PCBs, it is recommended that fish contaminant data collected by state agencies be assessed for PCBs at a frequency that is consistent with what has historically been done by the state to track trends in water quality. In addition to the programs described below, PCB data collected through the MDEQ's Michigan Inland Sediment Trend Monitoring Program and Michigan Wildlife Contaminant Monitoring Program may also be used to assess trends.

8.1.1 Fish Contaminant Monitoring Program

The FCMP is part of the MDEQ's Water Quality Monitoring Strategy. Edible portion fish contaminant data are used by the MDCH to develop the Michigan Fish Advisory. Whole fish data are used to track contaminant trends and caged fish data are used to identify sources of pollutants and evaluate spatial trends of contaminant concentrations.¹⁷ Both of these organizations will generate data that can be used to evaluate TMDL effectiveness.

8.1.2 Water Chemistry Monitoring Program

Until 2007, the MDEQ's Water Chemistry Monitoring Program included PCB analysis and was comprised of the elements listed below. These are relevant to post-TMDL monitoring if ambient water column PCB analysis is reinstated as they can be used to assess progress:

- Fixed station trend (Saginaw and Grand Traverse Bays, connecting channels, 31 tributaries).
- Watershed surveys (consistent with the 5-year basin cycle).
- Minimally impacted sites.
- Issue sites (TMDLs, nonpoint sources, etc.).

8.1.3 Water Body NPDES Monitoring Program

Effluent PCBs are measured and reported for those NPDES-permitted facilities that have effluent PCB WQBELs. These monitoring data are provided to the MDEQ and can be reviewed to determine whether the facilities are meeting WQBELs. In addition, caged-fish studies used to

¹⁷ See *(The link provided was broken and has been removed.)*

identify new point sources of PCBs being discharged will be used to justify inclusion of WQBELs for PCBs in future NPDES permits.

8.1.4 Legacy Site Cleanup and Follow-Up Monitoring

A limited amount of water chemistry, sediment, and fish tissue data are collected as part of legacy site cleanup plans (i.e., Superfund sites) that address PCBs. The Allied Paper Inc./Portage Creek/Kalamazoo River Superfund Site, referred to as the Kalamazoo River Superfund Project, has a long-term monitoring plan to document and monitor levels of PCBs in sediment, soil, water, and biota after remediation activities have occurred. This information will be reviewed in the future, and used to evaluate the progress made in reductions of PCBs.

8.2 ATMOSPHERIC PCB MONITORING

The United States and Canada jointly maintain the Great Lakes IADN Program. The IADN has been designed with one Master Station on each of the five Great Lakes, supplemented by a number of Satellite Stations to provide more spatial detail for deposition (Figure 7). The Master Stations offer the complete range of measurements made in the Network, measuring wet and dry deposition of Semivolatile Organic Compounds and trace metals. Satellite Stations may contain only a portion of the measurements made at the Master Stations.

Continued monitoring will occur by reviewing PCB concentrations measured at IADN stations as data become available to assess whether atmospheric PCB concentrations continue to decline as projected by the Venier and Hites (2010b) equation.

8.3 NEW MONITORING AND ASSESSMENT DATA

As part of Michigan's monitoring and assessment programs, new data, including fish tissue data, and some limited water column data, will be collected. New fish tissue data are typically considered and evaluated during the state's two-year integrated reporting cycle pursuant to Sections 305(b) and 303(d) of the Clean Water Act. There are three possible outcomes of the state's assessment of new fish tissue and/or water column data for any lake or river assessment unit:

1. The assessment unit is determined to be addressed by this TMDL if the fish tissue target PCB concentration is less than or equal to the fish tissue target concentration (0.023 mg/kg) or ambient water column PCB concentrations less than or equal to the water column target concentration (0.026 ng/L).
2. The assessment unit is placed in Category 3 of Michigan's Integrated Report due to insufficient data.
3. The assessment unit is placed in Category 5 (i.e., not attaining) of Michigan's Integrated Report if the fish tissue PCB concentration meets the criteria in the future assessment methodology for an impaired water body and is greater than 0.023 mg/kg.

Upon consideration of new fish tissue PCB data and other relevant information, the state may revise this TMDL during future integrated reporting cycles through revisions to Appendix A of this TMDL, provided that the state did not make any revisions to the TMDL targets, reduction factors, LCs, LAs, reduction goals, or any other element established in this TMDL.

The state will not revise any other portion of the original TMDL, other than Appendix A (the list of lake and river assessment units addressed by the TMDL). All other elements of the original TMDL along with its supporting documentation remain unchanged.

9.0 REFERENCES

- Agency for Toxic Substances and Disease Registry (ATSDR). 2001. ToxFAQs™ for Polychlorinated Biphenyls (PCBs) *(The link provided was broken and has been removed.)* Accessed April 2012.
- Blanchard, P., C.V. Audette, M.L. Hulting, I. Basu, K.A. Brice, C.H. Chan, H. Dryfhout-Clark, F. Froude, R.A. Hites, M. Neilson, and R. Wu. 2008. Atmospheric Deposition of Toxic Substances to the Great Lakes: IADN Results through 2005. Environment Canada and the United States Environmental Protection Agency. ISBN: 0-978-0-662-48287-1, Canada Catalogue No. En56-158/2005E, EPA Report No. EPA 905-R-08-001.
- Brevik, K., A. Sweetman, J.M. Pacyna, and K.C. Jones. 2002. Towards a Global Historical Emission Inventory for Selected PCB Congeners - A Mass Balance Approach. 2. Emissions. *Science of the Total Environment*. 290, 199-224.
- Buehler, S.S. and R.A. Hites. 2002. The Great Lakes Integrated Atmospheric Deposition Network. *Environmental Science and Technology*. 36: 354A-359A.
- Chen, S., L. Hsieh, and P. Hwang. 1996. Concentration, Phase Distribution, and Size Distribution of Atmospheric Polychlorinated Biphenyls Measured in Southern Taiwan. *Environment International*. 22: 411-423.
- Cotham, W.E. and T.F. Bidleman. 1995. Polycyclic Aromatic Hydrocarbons and Polychlorinated Biphenyls in Air at an Urban and a Rural Site near Lake Michigan. *Environmental Science and Technology*. 29: 2782-9.
- de Voogt, P., Brinkman, U.A.T. 1989. Production, Properties and Usage of Polychlorinated Biphenyls. In: Kimbrough RD, Jensen AA, editors. Halogenated Biphenyls, Terphenyls, Naphtalenes, Dibenzodioxins and Related Products. Topics in Environmental Health. *Quoted in Brevik (2002)*.
- Environment Canada and USEPA. 2012. Great Lakes Monitoring: Air Indicators Atmospheric Deposition of Toxic Pollutants. *(The link provided was broken and has been removed.)* Last updated June 26, 2012.
- Environment Canada and USEPA. 2005. Atmospheric Deposition of Toxic Substances to the Great Lakes: IADN Results through 2005. USEPA Report No. EPA-905-R-08-001.
- Environment Canada and USEPA. 2000. Atmospheric Deposition of Toxic Substances to the Great Lakes: IADN Results through 2000. USEPA Report No. EPA-905-R-08-001.
- Exponent. 2003. Fish Contaminant Monitoring Program: Review and Recommendations. Prepared for the Michigan Department of Environmental Quality. *(The link provided was broken and has been removed.)*
- GLRI. 2010. Great Lakes Restoration Initiative Action Plan FY2010-FY2014. *(The link provided was broken and has been removed.)*

- Green, M.L., J.V. DePinto, C. Sweet, and K.C. Hornbuckle. 2000. Regional Spatial and Temporal Interpolation of Atmospheric PCBs: Interpretation of Lake Michigan Mass Balance Data. *Environmental Science and Technology*. 34(9):1833-1841.
- Hazardous Substance Data Bank. 2003. Polychlorinated Biphenyls. Compiled by the National Library of Medicine. *(The link provided was broken and has been removed.)*
- Higgins, J.V., M.T. Bryer, M.L. Khoury, and T.W. Fitzhugh. 2005. A Freshwater Classification Approach for Biodiversity Conservation Planning. *Conservation Biology*. 19:432-445.
- Hillery, B.R., M.F. Simcik, I. Basu, R.M. Hoff, W.M.J. Strachan, D. Burniston, C.H. Chan, K.A. Brice, C.W. Sweet, and R.A. Hites. 1998. Atmospheric Deposition of Toxic Pollutants to the Great Lakes as Measured by the Integrated Atmospheric Deposition Network. *Environmental Science Technology*. 32, 2216-2221.
- Hoff, R.M., W.M.J. Strachan, C.W. Sweet, C.H. Chan, M. Shackleton, T.F. Bidleman, K.A. Brice, D.A. Burniston, S. Cussion, D.F. Gatz, K. Harlin, K., and W.H. Schroeder. 1996. Atmospheric Deposition of Toxic Chemicals to the Great Lakes: Review of Data through 1994. *Atmospheric Environment*. 30: 3505-3527.
- Hu, D., H. Lehmler, A. Martinez, K. Wang, and K. C. Hornbuckle. 2010. Atmospheric PCB Congeners across Chicago. *Atmospheric Environment*. 44(12): 1550-1557.
- Jackson, A.M., E.B. Swain, C.A. Andrews, and D. Rae. 2000. Minnesota's Mercury Contamination Reduction Initiative. *Fuel Processing Technology*. 65-66:79-99.
- Jeremiason, J.D., K.C. Hornbuckle, and S.J. Eisenreich. 1994. PCBs in Lake Superior, 1978-1992; Decreases in Water Concentrations Reflect Loss by Volatization. *Environmental Science and Technology*. 28: 903-914.
- Keeler G.J., J.M. Pacyna, T.F. Bidleman, J.O. Nriagu. 1993. Identification of Sources Contributing to the Contamination of the Great Waters (Revised) EPA/453/R-94/087. Washington, DC: United States Environmental Protection Agency, Office of Air Quality Planning and Standards.
- LimnoTech. 2011. Draft TMDL Support Document for PCBs in Lake Ontario. Prepared for: USEPA Region 2. https://extapps.dec.ny.gov/docs/water_pdf/lakeontariopcbtmdl.pdf.
- MacLeod, M., W.J. Riley, and T.E. McKone. 2005. Assessing the Influence of Climate Variability on Atmospheric Concentrations of Polychlorinated Biphenyls Using a Global-Scale Mass Balance Model (BETR-Global). *Environmental Science and Technology*. 39(17):6749-6756.
- MDEQ. 2013. Water Chemistry Status and Trends in Michigan's Rivers and Streams, 1998-2008, January 2013 (Draft).
- MDEQ. 2012. Water Quality and Pollution Control in Michigan 2010 Sections 303(d), 305(b), and 314 Integrated Report. MI/DEQ/WB-10/001. *(The link provided was broken and has been removed.)*

- MDEQ. 2010. Fish Contaminant Monitoring Program, 2010 Annual Edible Portion Report: Recommendations for Changes to the 2011 Michigan Department of Community Health Fish Consumption Advisory. MI/DEQ/WRD-11/028.
- MDEQ. 2008. Michigan Fish Contaminant Monitoring Program, 2008 Annual Report. MI/DEQ/WB-09/044. Michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/GLWARM/Monitoring-Lake/fcmp-2008-report.pdf.
- MDEQ. 2002. Total Maximum Daily Load for Polychlorinated Biphenyls for the Kawkawlin River, Bay County, Michigan. Surface Water Quality Division. August 2002.
(The link provided was broken and has been removed.)
- Minnesota Pollution Control Agency. 2007. Minnesota Statewide Mercury Total Maximum Daily Load. March 27, 2007. (The link provided was broken and has been removed.)
- Mittermeier, R.A., C.G. Mittermeier, T.M. Brooks, J.D. Pilgrim, W.R. Konstant, G.A.B. da Fonseca, and C. Kormos. 2003. Wilderness and Biodiversity Conservation. *Proceedings of the National Academy of Sciences of the United States of America*. 100(18): 10309-10313.
- New England Interstate Water Pollution Control Commission. 2007. Northeast Regional Mercury Total Maximum Daily Load.
- Pearson, R.F., K.C. Hornbuckle, S.J. Eisenreich, and D.L. Swackhamer. 1996. PCBs in Lake Michigan Water Revisited. *Environmental Science and Technology*. 30: 1429-1436.
- Simcik, M.F., R.M. Hoff, W.M. Strachan, C.W. Sweet, I. Basu, and R.A. Hites. 2000. Temporal Trends of Semivolatile Organic Contaminants in Great Lakes Precipitation. *Environmental Science and Technology*. 34: 361-367.
- Simcik, M.F., T.P. Franz, H. Zhang. and S.J. Eisenreich. 1998. Gas-Particle Portioning of PCBs and PAHs in the Chicago Urban and Adjacent Coastal Atmosphere: States of Equilibrium. *Environmental Science and Technology*. 32: 251-257.
- Swackhamer, D.L. and D.E. Armstrong. 1986. Estimation of the Atmospheric and Nonatmospheric Contribution and Losses of Polychlorinated Biphenyls to Lake Michigan on the Basis of Sediment Records of Remote Lakes. *Environmental Science and Technology*. 20:879-883.
- Sweet, C.W., R.J. Murphy, J.H. Bannasch, C.A. Kelsey, and J.J. Hong. 1993. Atmospheric Deposition of PCBs into Green Bay. *Journal of Great Lakes Research*. 19: 109-128.
- University of Minnesota and LimnoTech. 2009. Development of a Multi-Media Great Lakes Basin Model for Screening Chemicals of Emerging Concern --GLMOD. Prepared for the Great Lakes Commission.
- USEPA, Office of Toxic Substances. 1977. PCBs Involvement in the Pulp and Paper Industry. EPA Report #560/6-77-005.

- USEPA. 2002. Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1991. May 20, 2002 Memorandum. *(The link provided was broken and has been removed.)*
- USEPA. 2012. Great Lakes Monitoring: Air Indicators, Atmospheric Deposition of Toxic Pollutants. *(The link provided was broken and has been removed.)*
- USEPA. 2011. PCB TMDL Handbook EPA Report #841-R-11-006. *(The link provided was broken and has been removed.)*
- USEPA and Environment Canada. 2009. Great Lakes Binational Toxics Strategy, 2009 Biennial Report. *(The link provided was broken and has been removed.)*
- USEPA. 2004. Polychlorinated Biphenyl Inspection Manual. Office of Enforcement and Compliance Assurance.
- USEPA. 1991. Technical Support Document for Water Quality-Based Toxics Control. USEPA Report #505/2-90-001. *(The link provided was broken and has been removed.)*
- Venier, M.A. and R.A. Hites. 2010a. Time Trend Analysis of Atmospheric POPs Concentrations in the Great Lakes Region Since 1990. *Environmental Science and Technology*. 44: 8050-8055.
- Venier, M.A. and R. A. Hites. 2010b. Regression Model of Partial Pressures of PCBs, PAHs, and Organochlorine Pesticides in the Great Lakes' Atmosphere. *Environmental Science and Technology*. 44: 618-623.

APPENDIX A.

**LIST OF PCB-IMPAIRED INLAND WATER BODIES SUBMITTED
FOR APPROVAL UNDER THIS TMDL**

AUID	Assessment Unit Name	Location Description	PCB Impairment
040201020101-01	Rivers/Streams in HUC 040201020101	Includes: Unnamed Tributaries to Michigan Bay	Water
040201020102-01	Rivers/Streams in HUC 040201020102	Includes: Tenderfoot Creek	Water
040201020103-01	Rivers/Streams in HUC 040201020103	Includes: Cisco Branch Ontonagon River, Grosbeck Creek and Langford Creek	Water
040201020104-01	Rivers/Streams in HUC 040201020104	Includes: Blair Creek and Twomile Creek	Water
040201020105-01	Rivers/Streams in HUC 040201020105	Includes: Iddings Creek, Tenmile Creek, Toles Creek and Weir Creek	Water
040201020106-01	Rivers/Streams in HUC 040201020106	Includes: Caddis Creek, Sisson-Lilley Creek, Tenmile Creek and Wanagan Creek	Water
040201020107-01	Rivers/Streams in HUC 040201020107	Includes: Cisco Branch Ontonagon River, Custer Creek, Ratford Creek and Snuffbox Creek	Water
040201020108-01	Rivers/Streams in HUC 040201020108	Includes: Bluff Creek, Matheson Creek and Paulding Creek	Water
040201020108-02	Rivers/Streams in HUC 040201020108	Includes: Bluff Creek and Roselawn Creek	Water
040201020109-01	Rivers/Streams in HUC 040201020109	Includes: Choate Creek, Redlight Creek, Scott and Howe Creek and Sucker Creek	Water
040201020109-02	Rivers/Streams in HUC 040201020109	Includes: Sucker Creek	Water
040201020110-01	Rivers/Streams in HUC 040201020110	Includes: Kostlenick Creek and South Branch Ontonagon River	Water
040201020111-01	Rivers/Streams in HUC 040201020111	Includes: Cedar Creek, Farmer Creek, Junco Creek, Maple Leaf Creek, Mulligan Creek and South Branch Ontonagon River	Water
040201020201-01	Rivers/Streams in HUC 040201020201	Includes: Duck Creek and Forty Five Creek	Water
040201020201-02	Rivers/Streams in HUC 040201020201	Includes: Duck Creek	Water
040201020202-01	Rivers/Streams in HUC 040201020202	Includes: Cowslip Creek, Henderson Creek, Marathon Creek, Middle Branch Ontonagon River, Snap Jack Creek, Teds Creek, Wolf Creek and Zigzag Creek	Water
040201020203-01	Rivers/Streams in HUC 040201020203	Includes: Cedar Creek, Imp Creek, Tamarack River and Taylor Creek	Water
040201020204-01	Rivers/Streams in HUC 040201020204	Includes: Bonifas Creek, Marion Creek, Middle Branch Ontonagon River, Morrison Creek and Sargents Creek	Water
040201020204-04	Rivers/Streams in HUC 040201020204	Includes: McGinty Creek	Water
040201020205-01	Rivers/Streams in HUC 040201020205	Includes: Aho Creek, Interior Creek and Middle Branch Ontonagon River	Water
040201020205-03	Rivers/Streams in HUC 040201020205	Includes: Deadman Creek	Water
040201020206-01	Rivers/Streams in HUC 040201020206	Includes: Dorrie Creek, Dover Creek, Emanuel Creek, Mannis Creek, Payseor Creek, Rolston Creek and Trout Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040201020207-01	Rivers/Streams in HUC 040201020207	Includes: Meto Creek, Middle Branch Ontonagon River, Nevala Creek, Payne Creek and Tom Creek	Water
040201020208-01	Rivers/Streams in HUC 040201020208	Includes: Baltimore River, Pietila Creek and Pine Creek	Water
040201020209-01	Rivers/Streams in HUC 040201020209	Includes: Clear Creek, House Creek and Mile and One-half Creek	Water
040201020210-01	Rivers/Streams in HUC 040201020210	Includes: Baltimore River, Clear Creek and Hide Creek	Water
040201020211-01	Rivers/Streams in HUC 040201020211	Includes: Champagne Creek, Darling Creek, Lane Creek, Longtime Creek, Middle Branch Ontonagon River, Slough Creek and Spring Creek	Water
040201020301-02	Rivers/Streams in HUC 040201020301	Includes: East Branch Ontonagon River, Glitter Creek, Johns Creek and Preston Creek	Water
040201020302-01	Rivers/Streams in HUC 040201020302	Includes: Dunn Creek, Passmore Creek and Stony Creek	Water
040201020303-03	Rivers/Streams in HUC 040201020303	Includes: Includes: Jumbo River, Shane Creek, Tepee Creek, Walton Creek, Jake Creek, West Branch Jumbo River and Wildman Creek	Water
040201020304-01	Rivers/Streams in HUC 040201020304	Includes: East Branch Ontonagon River	Water
040201020304-02	Rivers/Streams in HUC 040201020304	Includes: East Branch Ontonagon River, Lake Thirteen Creek and Smith Creek	Water
040201020304-03	Rivers/Streams in HUC 040201020304	Includes: Spargo Creek	Water
040201020305-02	Rivers/Streams in HUC 040201020305	Includes: Beaver Creek	Water
040201020306-01	Rivers/Streams in HUC 040201020306	Includes: Adrian Creek, Buritts Creek, Debutant Creek, Dogwood Creek, East Branch Ontonagon River, Kits Creek, Onion Creek and Skoglund Creek	Water
040201020307-01	Rivers/Streams in HUC 040201020307	Includes: Bob Lake Creek	Water
040201020307-02	Rivers/Streams in HUC 040201020307	Includes: Hubbell Creek, Jug Creek, Larochele Creek, Newholm Creek and Pori Creek	Water
040201020307-03	Rivers/Streams in HUC 040201020307	Includes: Leveque Creek	Water
040201020308-02	Rivers/Streams in HUC 040201020308	Includes: Adventure Creek, Defoe Creek and Porterfield Creek	Water
040201020308-04	Rivers/Streams in HUC 040201020308	Includes: Bond Creek, East Branch Ontonagon River and Grade Creek	Water
040201020308-05	Rivers/Streams in HUC 040201020308	Includes: Adventure Creek	Water
040201020309-01	Rivers/Streams in HUC 040201020309	Includes: Deer Lick Creek, East Branch Ontonagon River and Tank Creek	Water
040201020309-02	Rivers/Streams in HUC 040201020309	Includes: East Branch Ontonagon River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040201020401-01	Rivers/Streams in HUC 040201020401	Includes: Nelson Creek	Water
040201020401-02	Rivers/Streams in HUC 040201020401	Includes: Marshall Creek	Water
040201020401-03	Rivers/Streams in HUC 040201020401	Includes: Gypo Creek, Santa Fe Creek, Slate River and Sparkling Creek	Water
040201020401-04	Rivers/Streams in HUC 040201020401	Includes: Banner Creek and Pelton River	Water
040201020402-01	Rivers/Streams in HUC 040201020402	Includes: Speckled Brook	Water
040201020402-02	Rivers/Streams in HUC 040201020402	Includes: Trout Brook	Water
040201020403-01	Rivers/Streams in HUC 040201020403	Includes: Merriweather Creek	Water
040201020403-02	Rivers/Streams in HUC 040201020403	Includes: Merriweather Creek	Water
040201020403-03	Rivers/Streams in HUC 040201020403	Includes: Unnamed Tributary to Merriweather Creek	Water
040201020404-01	Rivers/Streams in HUC 040201020404	Includes: Bingham Creek, Hendrick Creek, Knute Creek and Montgomery Creek	Water
040201020405-01	Rivers/Streams in HUC 040201020405	Includes: Cascade Creek and Sandhill Creek	Water
040201020406-01	Rivers/Streams in HUC 040201020406	Includes: Bebo Creek, Brown Creek, Livingston Creek, Match Creek, Mill Creek and Shoemaker Creek	Water
040201020407-01	Rivers/Streams in HUC 040201020407	Includes: Gleason Creek, Russell Creek, Stindt Creek, Trestle Creek, West Branch Ontonagon River, Whisky Hollow Creek and Woodpecker Creek	Water
040201020408-01	Rivers/Streams in HUC 040201020408	Includes: Cushman Creek, Erickson Creek, Johnson Creek, Schaat Creek and West Branch Ontonagon River	Water
040201020409-01	Rivers/Streams in HUC 040201020409	Includes: West Branch Ontonagon River, Austin Creek, East Branch Mill Creek, Gates Creek, Irish Creek, Mill Creek, Ontonagon River, Patty Creek, Plover Creek, Rockland Creek, Sandstone Creek and Sucker Creek	Water
040201020409-02	Rivers/Streams in HUC 040201020409	Includes: Unnamed Tributary to Ontonagon River	Water
040201020409-03	Rivers/Streams in HUC 040201020409	Includes: Ontonagon River	Water
040202020101-01	Rivers/Streams in HUC 040202020101	Includes: Kings Creek and Tahquamenon River	Water
040202020101-02	Rivers/Streams in HUC 040202020101	Includes: Tahquamenon River	Water
040202020101-03	Rivers/Streams in HUC 040202020101	Includes: Syphon Creek	Water
040202020102-01	Rivers/Streams in HUC 040202020102	Includes: Laketon Slough and Tahquamenon River	Water
040202020102-02	Rivers/Streams in HUC 040202020102	Includes: East Creek and Red Creek	Water
040202020103-01	Rivers/Streams in HUC 040202020103	Includes: Tahquamenon River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040202020103-02	Rivers/Streams in HUC 040202020103	Includes: Unnamed Tributary in HUC 040202020103	Water
040202020104-01	Rivers/Streams in HUC 040202020104	Includes: Teaspoon Creek	Water
040202020105-01	Rivers/Streams in HUC 040202020105	Includes: Carlson Creek and Petes Creek	Water
040202020105-02	Rivers/Streams in HUC 040202020105	Includes: McGraw Creek	Water
040202020105-04	Rivers/Streams in HUC 040202020105	Includes: East Lake Creek and Teaspoon Creek	Water
040202020106-02	Rivers/Streams in HUC 040202020106	Includes: Silver Creek and Tahquamenon River	Water
040202020107-01	Rivers/Streams in HUC 040202020107	Includes: Sixteen Creek, Tahquamenon River and Thirtynine Creek	Water
040202020201-01	Rivers/Streams in HUC 040202020201	Includes: Third Creek	Water
040202020202-01	Rivers/Streams in HUC 040202020202	Includes: First Creek and West Branch Sage River	Water
040202020203-01	Rivers/Streams in HUC 040202020203	Includes: East Branch Sage River	Water
040202020204-01	Rivers/Streams in HUC 040202020204	Includes: Sage River	Water
040202020301-01	Rivers/Streams in HUC 040202020301	Includes: Quinn Creek	Water
040202020301-02	Rivers/Streams in HUC 040202020301	Includes: Hendrie River and Naugle Creek	Water
040202020302-01	Rivers/Streams in HUC 040202020302	Includes: Anguilm Creek, South Branch Hendrie River, and Paquin Creek	Water
040202020303-01	Rivers/Streams in HUC 040202020303	Includes: West Branch Hendrie River	Water
040202020304-01	Rivers/Streams in HUC 040202020304	Includes: Unnamed Tributaries to Hendrie River	Water
040202020304-02	Rivers/Streams in HUC 040202020304	Includes: Hendrie River	Water
040202020305-01	Rivers/Streams in HUC 040202020305	Includes: Hendrie River	Water
040202020401-03	Rivers/Streams in HUC 040202020401	Includes: Creek Number Eight and East Branch Tahquamenon River	Water
040202020402-01	Rivers/Streams in HUC 040202020402	Includes: East Branch Tahquamenon River and Grants Creek	Water
040202020403-01	Rivers/Streams in HUC 040202020403	Includes: Creek Number Fourteen, East Branch Tahquamenon River and Riley Creek	Water
040202020404-01	Rivers/Streams in HUC 040202020404	Includes: Big Beaver Creek, East Branch Tahquamenon River, Little Beaver Creek and Riley Creek	Water
040202020501-01	Rivers/Streams in HUC 040202020501	Includes: Auger Creek	Water
040202020502-01	Rivers/Streams in HUC 040202020502	Includes: Gimlet Creek	Water
040202020503-01	Rivers/Streams in HUC 040202020503	Includes: Atwood Creek and Murphy Creek	Water
040202020503-02	Rivers/Streams in HUC 040202020503	Includes: North Branch Murphy Creek	Water
040202020504-01	Rivers/Streams in HUC 040202020504	Includes: Hiawatha Creek and Tahquamenon River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040202020505-01	Rivers/Streams in HUC 040202020505	Includes: Baird Creek, Freeman Creek, Penny Creek, Popp's Creek and Tahquamenon River	Water
040202020506-01	Rivers/Streams in HUC 040202020506	Includes: Callam Creek, Linton Creek, Middle Branch Linton Creek, North Branch Linton Creek, Rose Creek, South Branch Linton Creek and Tahquamenon River	Water
040202020507-01	Rivers/Streams in HUC 040202020507	Includes: Anchard Creek and Bowers Creek	Water
040202020507-02	Rivers/Streams in HUC 040202020507	Includes: Tahquamenon River	Water
040202020508-01	Rivers/Streams in HUC 040202020508	Includes: Lynch Creek and Tahquamenon River	Water
040202020508-02	Rivers/Streams in HUC 040202020508	Includes: Cheney Creek	Water
040301060101-01	Rivers/Streams in HUC 040301060101	Includes: Mallard Creek, Mitigwaki Creek, North Branch Paint River, Paint Creek, Thirtythree Creek, Unnamed Tributaries to Mitigwaki Lake, and Unnamed Tributaries to Paint Lake	Water
040301060102-01	Rivers/Streams in HUC 040301060102	Includes: Holmes Creek, North Branch Paint River, Winslow Creek, and Unnamed Tributary to Winslow Lake	Water
040301060103-01	Rivers/Streams in HUC 040301060103	Includes: Cook's Run	Water
040301060104-02	Rivers/Streams in HUC 040301060104	Includes: South Branch Paint River and Unnamed Tributaries to South Branch Paint River	Water
040301060105-01	Rivers/Streams in HUC 040301060105	Includes: Lode Creek, McAllister Creek, McRae Creek, South Branch Paint River, and Unnamed Tributaries to South Branch Paint River	Water
040301060106-01	Rivers/Streams in HUC 040301060106	Includes: Golden Creek	Water
040301060106-02	Rivers/Streams in HUC 040301060106	Includes: Bush Creek	Water
040301060106-03	Rivers/Streams in HUC 040301060106	Includes: North Branch Paint River and Stump Creek	Water
040301060401-01	Rivers/Streams in HUC 040301060401	Includes: Silver Creek	Water
040301060401-02	Rivers/Streams in HUC 040301060401	Includes: Edna Creek, McColman Creek, Paint River, and Unnamed Tributary to Edna Creek	Water
040301060402-01	Rivers/Streams in HUC 040301060402	Includes: East Branch Hemlock River, Old Joe Creek, West Branch Hemlock River	Water
040301060403-01	Rivers/Streams in HUC 040301060403	Includes: Hemlock River, Manila Creek, and Unnamed Tributaries to Hemlock River	Water
040301060403-02	Rivers/Streams in HUC 040301060403	Includes: Little Hemlock River, Nelson Creek, and Youngers Creek	Water
040301060403-03	Rivers/Streams in HUC 040301060403	Includes: Railroad Creek	Water
040301060404-01	Rivers/Streams in HUC 040301060404	Includes: Barnetts Creek, Paint River, Parks Creek, and Unnamed Tributaries to Paint River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040301060404-02	Rivers/Streams in HUC 040301060404	Includes: Morrison Creek	Water
040301060405-01	Rivers/Streams in HUC 040301060405	Includes: Cedar Creek, Chicagon Slough, Gravel Pit Creek, Olson Creek, Unnamed Tributaries to Emily Lake, Unnamed Tributaries to Wagner Lake, and Wagner Creek	Water
040301060406-02	Rivers/Streams in HUC 040301060406	Includes: Crystal Spring Creek, Fire Lake Creek, Paint River, Peterson Creek, Unnamed Tributary to Paint River, and Unnamed Tirbutary to Peterson Creek	Water
040301060407-01	Rivers/Streams in HUC 040301060407	Includes: Mud Lakes Outlet, Paint River, Saint Paul Creek, Swan Lake Outlet, and Unnamed Tributary to Swan Lake	Water
040301060407-02	Rivers/Streams in HUC 040301060407	Includes: Paint River	Water
040301060407-04	Rivers/Streams in HUC 040301060407	Includes: Briar Hill Creek	Water
040301060408-01	Rivers/Streams in HUC 040301060408	Includes: Little Tobin Creek, Paint River, Tim Bowers Creek, and Unnamed Tributaries to Paint River	Water
040301060408-03	Rivers/Streams in HUC 040301060408	Includes: Paint River	Water
040301060408-04	Rivers/Streams in HUC 040301060408	Includes: Dunn Creek	Water
040301060409-01	Rivers/Streams in HUC 040301060409	Includes: Paint River	Water
040301060409-03	Rivers/Streams in HUC 040301060409	Includes: Stager Creek	Water
040301060504-01	Rivers/Streams in HUC 040301060504	Includes: Brule River	Water
040301080301-01	Rivers/Streams in HUC 040301080301	Includes: North Branch Sturgeon River	Water
040301080302-01	Rivers/Streams in HUC 040301080302	Includes: Gestner Branch and West Branch Sturgeon River	Water
040301080303-01	Rivers/Streams in HUC 040301080303	Includes: Schultz Creek, Tom Kings Creek and West Branch Sturgeon River	Water
040301080304-01	Rivers/Streams in HUC 040301080304	Includes: East Branch Sturgeon River	Water
040301080305-01	Rivers/Streams in HUC 040301080305	Includes: East Branch Sturgeon River	Water
040301080305-02	Rivers/Streams in HUC 040301080305	Includes: Sixmile Creek	Water
040301080306-01	Rivers/Streams in HUC 040301080306	Includes: East Branch Sturgeon River	Water
040301080306-02	Rivers/Streams in HUC 040301080306	Includes: East Branch Skunk Creek and Skunk Creek	Water
040301080307-01	Rivers/Streams in HUC 040301080307	Includes: East Branch Sturgeon River	Water
040301080308-01	Rivers/Streams in HUC 040301080308	Includes: Jansen Creek, Menominee River and Mitchell Creek	Water
040301080309-01	Rivers/Streams in HUC 040301080309	Includes: Anderson Creek, East Branch Sturgeon River, Hancock Creek, Pocans Creek, Quarry Creek and Schultz Creek	Water
040301080401-01	Rivers/Streams in HUC 040301080401	Includes: Steel Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040301080401-02	SOUTH GROVELAND POND	12 miles NE. of Iron Mountain in the Copper Country State Forest.	Water
040301080401-03	Rivers/Streams in HUC 040301080401	Includes: Pine Creek	Water
040301080402-01	Rivers/Streams in HUC 040301080402	Includes: Harding Creek, Hosking Creek and Pine Creek	Water
040301080402-02	Rivers/Streams in HUC 040301080402	Includes: Seiberts Creek	Water
040301080403-01	Rivers/Streams in HUC 040301080403	Includes: Sturgeon River	Water
040301080403-02	Rivers/Streams in HUC 040301080403	Includes: Breen Creek	Water
040301080404-01	Rivers/Streams in HUC 040301080404	Includes: Sturgeon River	Water
040301080404-02	Rivers/Streams in HUC 040301080404	Includes: Cassidy Creek	Water
040301080405-01	Rivers/Streams in HUC 040301080405	Includes: Beaver Creek, Lost Creek and Sturgeon River	Water
040301080406-01	Rivers/Streams in HUC 040301080406	Includes: Fern Creek	Water
040301080406-02	Rivers/Streams in HUC 040301080406	Includes: Pine Creek	Water
040301080406-03	Rivers/Streams in HUC 040301080406	Includes: Waterworks Creek	Water
040301080407-02	Rivers/Streams in HUC 040301080407	Includes: Hamilton Creek	Water
040301080407-03	Rivers/Streams in HUC 040301080407	Includes: Cheney Creek	Water
040301080407-04	Rivers/Streams in HUC 040301080407	Includes: Earle Brook, Fitzgerald Creek and Turners Creek	Water
040301080701-01	Rivers/Streams in HUC 040301080701	Includes: Badwater Creek, Browning Creek, First Creek and Menominee River	Water
040301080702-01	Rivers/Streams in HUC 040301080702	Includes: Menominee River and Twin Falls Creek	Water
040301080702-03	Rivers/Streams in HUC 040301080702	Includes: Antoine Creek	Water
040301080801-01	Rivers/Streams in HUC 040301080801	Includes: Holmes Creek	Water
040301080801-02	Rivers/Streams in HUC 040301080801	Includes: Poterfield Creek and Unnamed Tributary to Poterfield Creek	Water
040301080801-03	Rivers/Streams in HUC 040301080801	Includes: Poterfield Creek	Water
040301080802-01	Rivers/Streams in HUC 040301080802	Includes: Camp Two Creek, Laurin Creek, Little Cedar River and Schetter Creek	Water
040301080803-01	Rivers/Streams in HUC 040301080803	Includes: Boyle Creek and Hays Creek	Water
040301080804-01	Rivers/Streams in HUC 040301080804	Includes: Little Cedar River, Ross Creek and Snow Creek	Water
040301080901-01	Rivers/Streams in HUC 040301080901	Includes: Little Shakey Creek, Shakey River and Swanson Creek	Water
040301080911-01	Rivers/Streams in HUC 040301080911	Includes: Hanson Creek, Lindberg Creek and Little River	Water
040301080912-01	Rivers/Streams in HUC 040301080912	Includes: Little River	Water
040301080912-02	Rivers/Streams in HUC 040301080912	Includes: Big Spring Creek and Kelley Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040301090201-01	Rivers/Streams in HUC 040301090201	Includes: Tenmile Creek	Water
040301090202-01	Rivers/Streams in HUC 040301090202	Includes: Camp Creek and Ford River	Water
040301090202-02	Rivers/Streams in HUC 040301090202	Includes: Twentyfour Mile Creek and West Branch Twentyfour Mile Creek	Water
040301090203-01	Rivers/Streams in HUC 040301090203	Includes: Tenmile Creek	Water
040301090204-01	Rivers/Streams in HUC 040301090204	Includes: Ford River	Water
040301090205-01	Rivers/Streams in HUC 040301090205	Includes: Fenlon Creek, Fivemile Creek and Ford River	Water
040301100101-01	Rivers/Streams in HUC 040301100101	Includes: Brown Creek, Halfway Creek, Kipple Creek, Koops Creek, Middle Branch Escanaba River and Second River	Water
040301100102-01	Rivers/Streams in HUC 040301100102	Includes: Black River and Bruce Creek	Water
040301100103-01	Rivers/Streams in HUC 040301100103	Includes: Black River	Water
040301100104-01	Rivers/Streams in HUC 040301100104	Includes: Rocky Creek and West Branch Middle Branch Escanaba River	Water
040301100105-01	Rivers/Streams in HUC 040301100105	Includes: Bell Creek and Middle Branch Escanaba River	Water
040301100106-01	Rivers/Streams in HUC 040301100106	Includes: Ely Creek, Green Creek and Schweitzer Creek	Water
040301100107-01	Rivers/Streams in HUC 040301100107	Includes: Goose Lake Outlet	Water
040301100107-03	Rivers/Streams in HUC 040301100107	Includes: Goose Lake Inlet	Water
040301100108-01	Rivers/Streams in HUC 040301100108	Includes: East Branch Escanaba River and Fifteen Creek	Water
040301100108-02	Rivers/Streams in HUC 040301100108	Includes: Warner Creek downstream of M35 North of Palmer	Water
040301100108-03	Rivers/Streams in HUC 040301100108	Includes: Warner Creek upstream of M35 North of Palmer	Water
040301100109-01	Rivers/Streams in HUC 040301100109	Includes: Green Creek	Water
040301100110-01	Rivers/Streams in HUC 040301100110	Includes: East Branch Escanaba River, Halfway Creek, O'Neal Creek and Uncle Tom Creek	Water
040301100111-01	Rivers/Streams in HUC 040301100111	Includes: Bear Creek, Flopper Creek and Middle Branch Escanaba River	Water
040301100201-01	Rivers/Streams in HUC 040301100201	Includes: Flat Rock Creek and Wild West Creek	Water
040301100202-01	Rivers/Streams in HUC 040301100202	Includes: McGregor Creek, Schwartz Creek and West Branch Escanaba River	Water
040301100203-01	Rivers/Streams in HUC 040301100203	Includes: Big Brook, Camp Eleven Creek and Little Brook	Water
040301100204-01	Rivers/Streams in HUC 040301100204	Includes: Bass Creek, Bryan Creek, Clear Creek and Poplar Creek	Water
040301100205-01	Rivers/Streams in HUC 040301100205	Includes: Cady Creek and West Branch Escanaba River	Water
040301100206-01	Rivers/Streams in HUC 040301100206	Includes: Chandler Brook, Gleason Creek, Miller Creek and West	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Branch Escanaba River	
040301100301-01	Rivers/Streams in HUC 040301100301	Includes: Bobs Creek, Escanaba River and Wilson Creek	Water
040301100302-01	Rivers/Streams in HUC 040301100302	Includes: Mud Creek and Sawmill Creek	Water
040301100303-01	Rivers/Streams in HUC 040301100303	Includes: Chynes Creek, Lindsey Creek, Little West Branch Escanaba River and Lone Pine Creek	Water
040301100304-01	Rivers/Streams in HUC 040301100304	Includes: Escanaba River and Swimming Hole Creek	Water
040301100305-01	Rivers/Streams in HUC 040301100305	Includes: Squaw Creek and Summer Meadow Creek	Water
040301100306-01	Rivers/Streams in HUC 040301100306	Includes: Hunters Brook	Water
040301100307-01	Rivers/Streams in HUC 040301100307	Includes: Escanaba River, Indian Creek and Mosquito Creek	Water
040301100308-01	Rivers/Streams in HUC 040301100308	Includes: Bichler Creek, Escanaba River and Silver Creek	Water
040301100308-03	Rivers/Streams in HUC 040301100308	Includes: Escanaba River and Reno Creek	Water
040301120201-01	Rivers/Streams in HUC 040301120201	Includes: West Branch Sturgeon River	Water
040301120202-01	Rivers/Streams in HUC 040301120202	Includes: Camp R Creek and Sturgeon River	Water
040301120203-01	Rivers/Streams in HUC 040301120203	Includes: Sturgeon River	Water
040301120204-01	Rivers/Streams in HUC 040301120204	Includes: Eighteenmile Creek, Johnson Creek and Mink Creek	Water
040301120205-01	Rivers/Streams in HUC 040301120205	Includes: Black Creek, Little Black Creek and Sturgeon River	Water
040301120206-01	Rivers/Streams in HUC 040301120206	Includes: Mormon Creek, Moses Creek and Sturgeon River	Water
040301120207-01	Rivers/Streams in HUC 040301120207	Includes: Bull Run and Sturgeon River	Water
040301120207-02	Rivers/Streams in HUC 040301120207	Includes: Sturgeon River	Water
040500020302-03	Rivers/Streams in HUC 040500020302	Includes: Pigeon River and Sawyer Creek	Water
040500030103-01	Rivers/Streams in HUC 040500030103	Includes: North Branch Kalamazoo River from Spring Arbor & Concord Drain upstream to Cross Lake including all tributaies except Swains Lake Drain.	Water
040500030104-01	Rivers/Streams in HUC 040500030104	Includes: North Branch Kalamazoo River upstream from confluence with South Branch Kalamazoo River to Spring Arbor & Concord Drain	Water
040500030201-01	Rivers/Streams in HUC 040500030201	Includes: South Branch Kalamazoo River from tributary upstream of Grover Rd to headwaters including all tributaries	Water
040500030202-01	Rivers/Streams in HUC 040500030202	Includes: South Branch Kalamazoo River from Cobb Lake outlet confluence to tributary upstream of Grover Road	Water
040500030202-02	Rivers/Streams in HUC 040500030202	Includes: Unnamed Tributaries to Cobb Lake and Hastings Lake and Unnamed Tributary to South Branch Kalamazoo River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500030203-02	Rivers/Streams in HUC 040500030203	Includes: South Branch Kalamazoo River from Beaver Creek upstream to Cobb Lake outlet tributary (excludes Beaver Creek, Conger Drain, Cobb Lake outlet tributary, and UnNamed Tributary near Hanover Road)	Water
040500030204-04	Rivers/Streams in HUC 040500030204	Includes: South Branch Kalamazoo River from Swains Lake Drain upstream to Beaver Creek	Water
040500030205-01	Rivers/Streams in HUC 040500030205	Includes: Lampson Run Drain from confluence with South Branch Kalamazoo River and all tributaries upstream to headwaters.	Water
040500030206-01	Rivers/Streams in HUC 040500030206	Includes: South Branch Kalamazoo River, exclusive, from Lampson Run Drain upstream to Swains Lake Drain.	Water
040500030206-02	Rivers/Streams in HUC 040500030206	Includes: South Branch Kalamazoo River, exclusive, from confluence with North Branch Kalamazoo River upstream to Lampson Run Drain	Water
040500030406-01	Rivers/Streams in HUC 040500030406	Includes: Kalamazoo River from Rice Creek confluence upstream to Wilder Creek confluence.	Water
040500030406-02	Rivers/Streams in HUC 040500030406	Includes: Kalamazoo River from Wilder Creek confluence upstream to North Branch/ South Branch Kalamazoo River split.	Water
040500030407-01	Rivers/Streams in HUC 040500030407	Includes: Kalamazoo River from Rice Creek confluence downstream to Talmadge Creek	Water
040500030407-02	Rivers/Streams in HUC 040500030407	Includes: Kalamazoo River from Talmadge Creek confluence downstream to Squaw Lake Drain confluence.	Water
040500030508-04	Rivers/Streams in HUC 040500030508	Includes: WHITFORD LAKE OUTLET downstream to the Kalamazoo River.	Water
040500040506-03	Rivers/Streams in HUC 040500040506	Includes: North Branch Willow Creek, West Branch Willow Creek and Willow Creek	Water
040601010701-01	Rivers/Streams in HUC 040601010701	Includes: James Creek and South Branch White River	Water
040601010701-02	Rivers/Streams in HUC 040601010701	Includes: Mullen Creek	Water
040601010702-01	Rivers/Streams in HUC 040601010702	Includes: Fivemile Creek	Water
040601010703-01	Rivers/Streams in HUC 040601010703	Includes: South Branch White River	Water
040601010703-03	Rivers/Streams in HUC 040601010703	Includes: Flinton Creek	Water
040601010704-01	Rivers/Streams in HUC 040601010704	Includes: Rattlesnake Creek and South Branch White River	Water
040601010704-02	Rivers/Streams in HUC 040601010704	Includes: BLACK (DELONG) CREEK	Water
040601010704-03	Rivers/Streams in HUC 040601010704	Includes: BLACK (DELONG) CREEK	Water
040601010704-05	Rivers/Streams in HUC 040601010704	Includes: Robinson Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601010705-01	Rivers/Streams in HUC 040601010705	Includes: South Branch White River	Water
040601010705-02	Rivers/Streams in HUC 040601010705	Includes: Mena Creek	Water
040601010705-03	Rivers/Streams in HUC 040601010705	Includes: East Branch Heald Creek, Martin Creek and West Branch Heald Creek	Water
040601010706-01	Rivers/Streams in HUC 040601010706	Includes: South Branch White River	Water
040601010706-03	Rivers/Streams in HUC 040601010706	Includes: Brayton Drain	Water
040601010707-02	Rivers/Streams in HUC 040601010707	Includes: Cushman Creek	Water
040601010707-03	Rivers/Streams in HUC 040601010707	Includes: South Branch White River	Water
040601010707-04	Rivers/Streams in HUC 040601010707	Includes: Skeel Creek	Water
040601010801-02	Rivers/Streams in HUC 040601010801	Includes: North Branch White River	Water
040601010802-01	Rivers/Streams in HUC 040601010802	Includes: Robinson Creek	Water
040601010803-02	Rivers/Streams in HUC 040601010803	Includes: Swinton Creek and Osborn Creek	Water
040601010803-03	Rivers/Streams in HUC 040601010803	Includes: North Branch White River	Water
040601010804-01	Rivers/Streams in HUC 040601010804	Includes: BEAR (NEWMAN) CREEK	Water
040601010804-03	Rivers/Streams in HUC 040601010804	Includes: Knutson Creek	Water
040601010804-04	Rivers/Streams in HUC 040601010804	Includes: North Branch White River	Water
040601010901-04	Rivers/Streams in HUC 040601010901	Includes: Cleveland Creek and White River	Water
040601010901-05	Rivers/Streams in HUC 040601010901	Includes: Sand Creek	Water
040601010902-02	Rivers/Streams in HUC 040601010902	Includes: Carlton Creek and Unnamed Tributaries to White River	Water
040601010903-01	Rivers/Streams in HUC 040601010903	Includes: PIERSON DRAIN	Water
040601010903-02	Rivers/Streams in HUC 040601010903	Includes: PIERSON DRAIN	Water
040601010904-05	Rivers/Streams in HUC 040601010904	Includes: Silver Creek	Water
040601010904-07	Rivers/Streams in HUC 040601010904	Includes: Wildcat Creek	Water
040601010904-08	Rivers/Streams in HUC 040601010904	Includes: Birch Brook	Water
040601010904-09	Rivers/Streams in HUC 040601010904	Includes: BUSH CREEK	Water
040601010904-10	Rivers/Streams in HUC 040601010904	Includes: BUTTERMILK CREEK	Water
040601010904-11	Rivers/Streams in HUC 040601010904	Includes: RACCOON CREEK (LOWER)	Water
040601010904-12	Rivers/Streams in HUC 040601010904	Includes: Mill Pond Creek	Water
040601020101-01	Rivers/Streams in HUC 040601020101	Includes: Big Creek	Water
040601020102-01	Rivers/Streams in HUC 040601020102	Includes: Denton Creek and North Branch Denton Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601020103-01	Rivers/Streams in HUC 040601020103	Includes: Backus Creek and Cut, The	Water
040601020104-01	Rivers/Streams in HUC 040601020104	Includes: Denton Creek and Spring Brook	Water
040601020201-01	Rivers/Streams in HUC 040601020201	Includes: Unnamed Tributary to Dead Stream	Water
040601020202-01	Rivers/Streams in HUC 040601020202	Includes: Unnamed Tributary near Wilson Road	Water
040601020202-02	Rivers/Streams in HUC 040601020202	Includes: Addis Creek, Cole Creek and Deer Farm Creek	Water
040601020203-01	Rivers/Streams in HUC 040601020203	Includes: Unnamed Tributary near Seven Mile Road	Water
040601020203-02	Rivers/Streams in HUC 040601020203	Includes: Haymarsh Creek	Water
040601020204-01	Rivers/Streams in HUC 040601020204	Includes: Unnamed Tributaries near Loon Lake and Rhoby Road	Water
040601020204-02	Rivers/Streams in HUC 040601020204	Includes: West Branch Muskegon River	Water
040601020205-01	Rivers/Streams in HUC 040601020205	Includes: Unnamed Tributary near Gray Road	Water
040601020205-02	Rivers/Streams in HUC 040601020205	Includes: West Branch Muskegon River	Water
040601020206-01	Rivers/Streams in HUC 040601020206	Includes: Unnamed Tributaries near Eight Mile Road and Nine Mile Road	Water
040601020206-02	Rivers/Streams in HUC 040601020206	Includes: Butterfield Creek	Water
040601020207-01	Rivers/Streams in HUC 040601020207	Includes: Muskegon River	Water
040601020207-02	Rivers/Streams in HUC 040601020207	Includes: Muskegon River	Water
040601020208-01	Rivers/Streams in HUC 040601020208	Includes: Unnamed Tributary near Kelly Road	Water
040601020208-02	Rivers/Streams in HUC 040601020208	Includes: Butterfield Creek	Water
040601020209-01	Rivers/Streams in HUC 040601020209	Includes: Unnamed Tributary to Muskegon River	Water
040601020209-02	Rivers/Streams in HUC 040601020209	Includes: Muskegon River	Water
040601020301-01	Rivers/Streams in HUC 040601020301	Includes: Mitchell Creek	Water
040601020302-01	Rivers/Streams in HUC 040601020302	Includes: Unnamed Tributary near 29 Road	Water
040601020302-03	Rivers/Streams in HUC 040601020302	Includes: Unnamed Tributary between Lake Mitchell and Lake Cadillac	Water
040601020303-01	Rivers/Streams in HUC 040601020303	Includes: Clam River	Water
040601020304-01	Rivers/Streams in HUC 040601020304	Includes: Clam River	Water
040601020305-01	Rivers/Streams in HUC 040601020305	Includes: Unnamed Tributary to Twin Lake	Water
040601020305-05	Rivers/Streams in HUC 040601020305	Includes: Mosquito Creek	Water
040601020306-01	Rivers/Streams in HUC 040601020306	Includes: Clam River, Marks Creek, Stick Creek and Taylor Creek	Water
040601020307-01	Rivers/Streams in HUC 040601020307	Includes: Clam River	Water
040601020308-01	Rivers/Streams in HUC 040601020308	Includes: Middle Branch Creek and Ryan Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601020308-02	Rivers/Streams in HUC 040601020308	Includes: North Branch Creek	Water
040601020309-01	Rivers/Streams in HUC 040601020309	Includes: West Branch Clam River	Water
040601020309-02	Rivers/Streams in HUC 040601020309	Includes: Middle Branch Creek and West Branch Clam River	Water
040601020310-01	Rivers/Streams in HUC 040601020310	Includes: Unnamed Tributary near Mulder Road	Water
040601020310-02	Rivers/Streams in HUC 040601020310	Includes: Clam River	Water
040601020310-03	Rivers/Streams in HUC 040601020310	Includes: Clam River	Water
040601020401-01	Rivers/Streams in HUC 040601020401	Includes: East Branch Wolf Creek, Pup Creek and Wolf Creek	Water
040601020402-01	Rivers/Streams in HUC 040601020402	Includes: Muskegon River	Water
040601020402-02	Rivers/Streams in HUC 040601020402	Includes: Muskegon River	Water
040601020402-03	Rivers/Streams in HUC 040601020402	Includes: Bear Creek and Muskegon River	Water
040601020403-01	Rivers/Streams in HUC 040601020403	Includes: South Branch Town Line Creek	Water
040601020404-01	Rivers/Streams in HUC 040601020404	Includes: Town Line Creek and Townline Creek	Water
040601020405-01	Rivers/Streams in HUC 040601020405	Includes: Prestie Creek and Unnamed Tributary near Arnold Lake Road	Water
040601020405-02	Rivers/Streams in HUC 040601020405	Includes: Floodwood Creek	Water
040601020406-01	Rivers/Streams in HUC 040601020406	Includes: Unnamed Tributaries to Cranberry Lake	Water
040601020406-02	Rivers/Streams in HUC 040601020406	Includes: Cranberry Creek and Muskegon River	Water
040601020406-03	Rivers/Streams in HUC 040601020406	Includes: Muskegon River	Water
040601020501-01	Rivers/Streams in HUC 040601020501	Includes: Unnamed Tributary to Green Creek	Water
040601020501-02	Rivers/Streams in HUC 040601020501	Includes: Green Creek	Water
040601020502-01	Rivers/Streams in HUC 040601020502	Includes: Appleby Creek, Beebe Creek, Crocker Creek, Franz Creek, Hicks Creek and Middle Branch River	Water
040601020503-01	Rivers/Streams in HUC 040601020503	Includes: Unnamed Tributaries near 70th Avenue	Water
040601020503-02	Rivers/Streams in HUC 040601020503	Includes: Middle Branch River and West Branch Middle Branch River	Water
040601020503-03	Rivers/Streams in HUC 040601020503	Includes: Unnamed Tributary to Middle Branch River	Water
040601020504-01	Rivers/Streams in HUC 040601020504	Includes: Unnamed Tributary near Twin Lakes Avenue	Water
040601020504-02	Rivers/Streams in HUC 040601020504	Includes: Dishwash Creek, Giss-I-Was Creek, Halford Creek, Little Norway Creek, Muskegon River and Whisky Creek	Water
040601020505-01	Rivers/Streams in HUC 040601020505	Includes: Lost Lake Outlet	Water
040601020505-02	Rivers/Streams in HUC 040601020505	Includes: Doc And Tom Creek, Hemlock Creek and Shingle Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601020506-01	Rivers/Streams in HUC 040601020506	Includes: Grindstone Creek and Whetstone Creek	Water
040601020506-02	Rivers/Streams in HUC 040601020506	Includes: Kinney Creek, Muskegon River and Norway Creek	Water
040601020506-03	Rivers/Streams in HUC 040601020506	Includes: Muskegon River	Water
040601020507-01	Rivers/Streams in HUC 040601020507	Includes: Chippewa Creek	Water
040601020507-02	Rivers/Streams in HUC 040601020507	Includes: Chippewa Creek, Muskegon River, Posted Creek and Sandy Run	Water
040601020507-05	Rivers/Streams in HUC 040601020507	Includes: Unnamed Tributary to Muskegon River	Water
040601020601-01	Rivers/Streams in HUC 040601020601	Includes: Blanchard Lake Outlet and Unnamed Tributary to Lake Miramichi	Water
040601020601-02	Rivers/Streams in HUC 040601020601	Includes: Bull Kill Creek and Sherlock Creek	Water
040601020602-01	Rivers/Streams in HUC 040601020602	Includes: East Branch Hersey Creek and Olson Creek	Water
040601020603-01	Rivers/Streams in HUC 040601020603	Includes: Unnamed Tributary near Nine Mile Road	Water
040601020603-02	Rivers/Streams in HUC 040601020603	Includes: Indian Creek and Lincoln Creek	Water
040601020604-01	Rivers/Streams in HUC 040601020604	Includes: Burt Creek, Hersey Creek, Hersey River and Kissinger Creek	Water
040601020605-01	Rivers/Streams in HUC 040601020605	Includes: Mud Creek and Muskegon River	Water
040601020605-02	Rivers/Streams in HUC 040601020605	Includes: Twin Creek	Water
040601020606-01	Rivers/Streams in HUC 040601020606	Includes: Hersey River, Hewitt Creek, Jewitt Creek, Johnson Creek, Knuth Creek and Lawrence Creek	Water
040601020606-02	Rivers/Streams in HUC 040601020606	Includes: Shaw Creek	Water
040601020607-01	Rivers/Streams in HUC 040601020607	Includes: Bull Hill Creek, Cat Creek, Muskegon River and Polick Creek	Water
040601020607-02	Rivers/Streams in HUC 040601020607	Includes: Muskegon River	Water
040601020701-01	Rivers/Streams in HUC 040601020701	Includes: Brown Creek and Unnamed Tributaries near One Mile Road (Osceola County) and 130th Ave (Mecosta County)	Water
040601020701-02	Rivers/Streams in HUC 040601020701	Includes: Blodgett Creek, Buckhorn Creek and Muskegon River	Water
040601020702-01	Rivers/Streams in HUC 040601020702	Includes: Unnamed Tributary near 195th Avenue	Water
040601020702-02	Rivers/Streams in HUC 040601020702	Includes: Ford Creek, Muskegon River and Paris Creek	Water
040601020702-03	Rivers/Streams in HUC 040601020702	Includes: Unnamed Tributary near 18 Mile Road	Water
040601020702-04	Rivers/Streams in HUC 040601020702	Includes: Dalziel Creek	Water
040601020702-05	Rivers/Streams in HUC 040601020702	Includes: Dalziel Creek	Water
040601020703-01	Rivers/Streams in HUC 040601020703	Includes: Haymarsh Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601020703-02	Rivers/Streams in HUC 040601020703	Includes: Ryan Creek	Water
040601020704-01	Rivers/Streams in HUC 040601020704	Includes: Cold Spring Creek and Muskegon River	Water
040601020704-02	Rivers/Streams in HUC 040601020704	Includes: Byers Creek, Higginson Creek, Muskegon River and Winters Creek	Water
040601020704-05	Rivers/Streams in HUC 040601020704	Includes: Unnamed Tributary to Muskegon River	Water
040601020704-06	Rivers/Streams in HUC 040601020704	Includes: Mitchell Creek	Water
040601020705-01	Rivers/Streams in HUC 040601020705	Includes: Bennett Creek, Betts Creek, Hodgers Creek, Ladner Creek, Macks Creek and Muskegon River	Water
040601020705-02	Rivers/Streams in HUC 040601020705	Includes: Unnamed Tributary to Muskegon River	Water
040601020706-01	Rivers/Streams in HUC 040601020706	Includes: Laverne Creek, Muskegon River, Rosy Run, South Mitchell Creek and Thumser Creek	Water
040601020801-01	Rivers/Streams in HUC 040601020801	Includes: Unnamed Tributary near M-20	Water
040601020801-04	Rivers/Streams in HUC 040601020801	Includes: Gilbert Creek and West Branch Little Muskegon River	Water
040601020802-01	Rivers/Streams in HUC 040601020802	Includes: Dye Creek, East Branch Little Muskegon River and East Schrader Creek	Water
040601020803-01	Rivers/Streams in HUC 040601020803	Includes: Cedar Creek	Water
040601020803-02	Rivers/Streams in HUC 040601020803	Includes: Shinglebolt Creek	Water
040601020803-03	Rivers/Streams in HUC 040601020803	Includes: Little Muskegon River	Water
040601020803-04	Rivers/Streams in HUC 040601020803	Includes: BROCKWAY CREEK	Water
040601020803-05	Rivers/Streams in HUC 040601020803	Includes: Sylvester Creek	Water
040601020804-01	Rivers/Streams in HUC 040601020804	Includes: Tamarack Creek	Water
040601020805-01	Rivers/Streams in HUC 040601020805	Includes: Tamarack Creek	Water
040601020805-02	Rivers/Streams in HUC 040601020805	Includes: WEATHERBY DRAIN	Water
040601020806-01	Rivers/Streams in HUC 040601020806	Includes: Unnamed Tributary near West County Line Road	Water
040601020806-04	Rivers/Streams in HUC 040601020806	Includes: Unnamed Tributaries to Rice Creek and Unnamed Tributaries to Little Whitefish Lake and Whitefish Lake	Water
040601020807-01	Rivers/Streams in HUC 040601020807	Includes: Big Creek	Water
040601020808-01	Rivers/Streams in HUC 040601020808	Includes: Unnamed Tributary near Six Mile Road	Water
040601020808-02	Rivers/Streams in HUC 040601020808	Includes: Little Muskegon River	Water
040601020808-03	Rivers/Streams in HUC 040601020808	Includes: Quigley Creek	Water
040601020808-04	Rivers/Streams in HUC 040601020808	Includes: Little Muskegon River	Water
040601020809-01	Rivers/Streams in HUC 040601020809	Includes: Rice Creek and Tamarack Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601020810-01	Rivers/Streams in HUC 040601020810	Includes: Unnamed Tributaries to Little Muskegon River	Water
040601020810-02	Rivers/Streams in HUC 040601020810	Includes: Little Muskegon River	Water
040601020810-03	Rivers/Streams in HUC 040601020810	Includes: Handy Creek	Water
040601020810-04	Rivers/Streams in HUC 040601020810	Includes: Unnamed Tributaries to Little Muskegon River	Water
040601020901-01	Rivers/Streams in HUC 040601020901	Includes: Muskegon River excluding 1 mile stretch from Hardy Dam downstream	Water
040601020901-03	Rivers/Streams in HUC 040601020901	Includes: Muskegon River from Hardy Dam downstream 1 mile	Water
040601020902-01	Rivers/Streams in HUC 040601020902	Includes: Unnamed Tributary to Twinwood Lake	Water
040601020903-03	Rivers/Streams in HUC 040601020903	Includes: Penoyer Creek	Water
040601020904-06	Rivers/Streams in HUC 040601020904	Includes: WHEELER DRAIN	Water
040601020905-01	Rivers/Streams in HUC 040601020905	Includes: Unnamed Tributaries to Fourth Lake, Fremont Lake, Second Lake, and Third Lake	Water
040601020905-02	Rivers/Streams in HUC 040601020905	Includes: Unnamed Tributary to Fremont Lake	Water
040601020905-05	Rivers/Streams in HUC 040601020905	Includes: BROOKS CREEK	Water
040601020905-06	Rivers/Streams in HUC 040601020905	Includes: Daisy Creek and Spring Creek	Water
040601020905-07	Rivers/Streams in HUC 040601020905	Includes: Lorden Lake Outlet and Unnamed Tributary to Lorden Lake	Water
040601020905-08	Rivers/Streams in HUC 040601020905	Includes: UNNAMED TRIBUTARY (TO FREMONT LAKE, SE	Water
040601020905-09	Rivers/Streams in HUC 040601020905	Includes: Graham Creek	Water
040601020905-10	Rivers/Streams in HUC 040601020905	Includes: KEMPF SCHOOL CREEK	Water
040601020905-11	Rivers/Streams in HUC 040601020905	Includes: Butler Creek and Williams Creek	Water
040601021001-03	Rivers/Streams in HUC 040601021001	Includes: Cedar Creek, Little Cedar Creek and Sweeter Creek	Water
040601021001-04	Rivers/Streams in HUC 040601021001	Includes: Cedar Creek, Little Henna Creek and West Branch Cedar Creek	Water
040601021002-05	Rivers/Streams in HUC 040601021002	Includes: Mosquito Creek	Water
040601030101-01	Rivers/Streams in HUC 040601030101	Includes: Manistee River	Water
040601030101-02	Rivers/Streams in HUC 040601030101	Includes: Frenchman Creek	Water
040601030102-01	Rivers/Streams in HUC 040601030102	Includes: Goose Creek	Water
040601030103-02	Rivers/Streams in HUC 040601030103	Includes: Manistee River	Water
040601030104-01	Rivers/Streams in HUC 040601030104	Includes: Manistee River	Water
040601030104-02	Rivers/Streams in HUC 040601030104	Includes: Unnamed Tributary to Manistee River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601030104-03	Rivers/Streams in HUC 040601030104	Includes: Portage Creek	Water
040601030105-01	Rivers/Streams in HUC 040601030105	Includes: Manistee River	Water
040601030105-02	Rivers/Streams in HUC 040601030105	Includes: Unnamed Tributary to Manistee River	Water
040601030105-03	Rivers/Streams in HUC 040601030105	Includes: Black Creek	Water
040601030106-01	Rivers/Streams in HUC 040601030106	Includes: Pickerel Lake Outlet	Water
040601030106-02	Rivers/Streams in HUC 040601030106	Includes: North Branch Manistee River	Water
040601030107-01	Rivers/Streams in HUC 040601030107	Includes: Big Cannon Creek	Water
040601030107-02	Rivers/Streams in HUC 040601030107	Includes: Big Cannon Creek	Water
040601030107-03	Rivers/Streams in HUC 040601030107	Includes: Big Cannon Creek	Water
040601030108-01	Rivers/Streams in HUC 040601030108	Includes: Collar Creek, Morrison Creek, North Branch Manistee River and Sand Creek	Water
040601030109-01	Rivers/Streams in HUC 040601030109	Includes: Manistee River	Water
040601030109-02	Rivers/Streams in HUC 040601030109	Includes: Unnamed Tributaries to Manistee River	Water
040601030109-03	Rivers/Streams in HUC 040601030109	Includes: Little Devil Creek	Water
040601030109-04	Rivers/Streams in HUC 040601030109	Includes: Big Devil Creek	Water
040601030201-01	Rivers/Streams in HUC 040601030201	Includes: Little Cannon Creek and Silver Creek	Water
040601030202-01	Rivers/Streams in HUC 040601030202	Includes: Manistee River	Water
040601030202-02	Rivers/Streams in HUC 040601030202	Includes: Maple Creek	Water
040601030202-03	Rivers/Streams in HUC 040601030202	Includes: Pierson Creek	Water
040601030202-04	Rivers/Streams in HUC 040601030202	Includes: Willow Creek	Water
040601030203-01	Rivers/Streams in HUC 040601030203	Includes: Ham Creek	Water
040601030204-01	Rivers/Streams in HUC 040601030203	Includes: Hopkins Creek	Water
040601030205-01	Rivers/Streams in HUC 040601030204	Includes: Manistee River	Water
040601030205-02	Rivers/Streams in HUC 040601030204	Includes: Bourne Creek, Filer Creek, and Spring Creek	Water
040601030206-01	Rivers/Streams in HUC 040601030205	Includes: Fife Lake Outlet and Inlet Creek	Water
040601030207-01	Rivers/Streams in HUC 040601030206	Includes: Manistee River	Water
040601030207-02	Rivers/Streams in HUC 040601030206	Includes: Golden Creek and Morrisy Creek	Water
040601030207-03	Rivers/Streams in HUC 040601030206	Includes: Chase Creek	Water
040601030208-01	Rivers/Streams in HUC 040601030207	Includes: Manistee River	Water
040601030208-02	Rivers/Streams in HUC 040601030207	Includes: Walton Outlet	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601030208-03	Rivers/Streams in HUC 040601030207	Includes: Manton Creek	Water
040601030209-01	Rivers/Streams in HUC 040601030208	Includes: Manistee River	Water
040601030209-02	Rivers/Streams in HUC 040601030208	Includes: Sands Creek	Water
040601030209-03	Rivers/Streams in HUC 040601030208	Includes: Silver Creek	Water
040601030209-04	Rivers/Streams in HUC 040601030208	Includes: Buttermilk Creek	Water
040601030301-01	Rivers/Streams in HUC 040601030301	Includes: Anderson Creek and West Branch Anderson Creek	Water
040601030302-01	Rivers/Streams in HUC 040601030302	Includes: Manistee River	Water
040601030302-02	Rivers/Streams in HUC 040601030302	Includes: Filer Creek and Soper Creek	Water
040601030302-03	Rivers/Streams in HUC 040601030302	Includes: Blind Creek	Water
040601030302-04	Rivers/Streams in HUC 040601030302	Includes: Apple Creek	Water
040601030303-01	Rivers/Streams in HUC 040601030303	Includes: Manistee River	Water
040601030303-02	Rivers/Streams in HUC 040601030303	Includes: Unnamed Tributaries to Manistee River	Water
040601030303-04	Rivers/Streams in HUC 040601030303	Includes: Cole Creek	Water
040601030303-05	Rivers/Streams in HUC 040601030303	Includes: Adams Creek	Water
040601030304-01	Rivers/Streams in HUC 040601030304	Includes: Cotton Creek and Fletcher Creek	Water
040601030305-02	Rivers/Streams in HUC 040601030305	Includes: Burkett Creek and Preston Creek	Water
040601030305-03	Rivers/Streams in HUC 040601030305	Includes: East Branch Wheeler Creek and Wheeler Creek	Water
040601030306-02	Rivers/Streams in HUC 040601030306	Includes: Cripple Creek, Seaton Creek and Tar Creek	Water
040601030306-04	Rivers/Streams in HUC 040601030306	Includes: Manistee River and Smail Creek	Water
040601030307-01	Rivers/Streams in HUC 040601030307	Includes: Perkins Creek and Slagle Creek	Water
040601030308-01	Rivers/Streams in HUC 040601030308	Includes: Manistee River	Water
040601030308-02	Rivers/Streams in HUC 040601030308	Includes: Eddington Creek	Water
040601030309-01	Rivers/Streams in HUC 040601030309	Includes: Johnson Creek, Sands Creek, and Peterson Creek	Water
040601030310-01	Rivers/Streams in HUC 040601030310	Includes: Manistee River	Water
040601030310-02	Rivers/Streams in HUC 040601030310	Includes: Unnamed Tributary near Pole Road and Unnamed Tributary to Manistee River	Water
040601030310-03	Rivers/Streams in HUC 040601030310	Includes: Hinton Creek	Water
040601030310-04	Rivers/Streams in HUC 040601030310	Includes: Arquilla Creek	Water
040601030310-05	Rivers/Streams in HUC 040601030310	Includes: Cedar Creek	Water
040601030401-01	Rivers/Streams in HUC 040601030401	Includes: Unnamed Tributary to North Branch Pine River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601030401-02	Rivers/Streams in HUC 040601030401	Includes: North Branch Pine River	Water
040601030401-03	Rivers/Streams in HUC 040601030401	Includes: Fairchild Creek	Water
040601030401-04	Rivers/Streams in HUC 040601030401	Includes: SPALDING CREEK	Water
040601030402-01	Rivers/Streams in HUC 040601030402	Includes: Unnamed Tributary to Rose Lake	Water
040601030402-03	Rivers/Streams in HUC 040601030402	Includes: East Branch Pine River	Water
040601030402-04	Rivers/Streams in HUC 040601030402	Includes: Diamond Lake Outlet Creek, Rose Lake Outlet and Rose Edgett Creek	Water
040601030403-01	Rivers/Streams in HUC 040601030403	Includes: Coe Creek and Dyer Creek	Water
040601030404-01	Rivers/Streams in HUC 040601030404	Includes: Little Beaver Creek and Sprague Creek	Water
040601030405-01	Rivers/Streams in HUC 040601030405	Includes: Sellers Creek	Water
040601030405-02	Rivers/Streams in HUC 040601030405	Includes: Dowling Creek and Poplar Creek	Water
040601030405-03	Rivers/Streams in HUC 040601030405	Includes: Silver Creek	Water
040601030405-04	Rivers/Streams in HUC 040601030405	Includes: Pine River	Water
040601030406-01	Rivers/Streams in HUC 040601030406	Includes: Hoxey Creek	Water
040601030406-02	Rivers/Streams in HUC 040601030406	Includes: Pine River	Water
040601030501-01	Rivers/Streams in HUC 040601030501	Includes: Dutchman Creek	Water
040601030501-02	Rivers/Streams in HUC 040601030501	Includes: Bear Creek, First Creek, Second Creek and Third Creek	Water
040601030502-01	Rivers/Streams in HUC 040601030502	Includes: Greens Creek and Little Bear Creek	Water
040601030503-01	Rivers/Streams in HUC 040601030503	Includes: Bear Creek and Lemon Creek	Water
040601030504-01	Rivers/Streams in HUC 040601030504	Includes: Bear Creek, Beaver Creek, Halls Creek, Horseshoe Creek and Little Beaver Creek	Water
040601030505-01	Rivers/Streams in HUC 040601030505	Includes: Bear Creek, Boswell Creek, Cedar Creek, Chicken Creek and Podunk Creek	Water
040601030601-01	Rivers/Streams in HUC 040601030601	Includes: North Branch Twin Creek, South Branch Twin Creek and Twin Creek	Water
040601030602-01	Rivers/Streams in HUC 040601030602	Includes: Lincoln Creek, Little Manistee River and Manistee Creek	Water
040601030602-02	Rivers/Streams in HUC 040601030602	Includes: Unnamed Tributary to Rockwell Lake	Water
040601030603-01	Rivers/Streams in HUC 040601030603	Includes: Cool Creek and Stronach Creek	Water
040601030604-01	Rivers/Streams in HUC 040601030604	Includes: Little Manistee River and Syers Creek	Water
040601030605-01	Rivers/Streams in HUC 040601030605	Includes: Little Manistee River	Water
040601030606-01	Rivers/Streams in HUC 040601030606	Includes: Little Manistee River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601030701-01	Rivers/Streams in HUC 040601030701	Includes: Manistee River	Water
040601030701-02	Rivers/Streams in HUC 040601030701	Includes: Manistee River	Water
040601030702-01	Rivers/Streams in HUC 040601030702	Includes: Manistee River	Water
040601030702-02	Rivers/Streams in HUC 040601030702	Includes: Pine Creek	Water
040601030702-03	Rivers/Streams in HUC 040601030702	Includes: Deer Lake Bayou, Sergeant Bayou, and Unnamed Tributary to Manistee River	Water
040601030703-01	Rivers/Streams in HUC 040601030703	Includes: Manistee River	Water
040601030703-02	Rivers/Streams in HUC 040601030703	Includes: Chief Creek and Larson Creek	Water
040601030703-03	Rivers/Streams in HUC 040601030703	Includes: Sickle Creek	Water
040601030704-01	Rivers/Streams in HUC 040601030704	Includes: Manistee River	Water
040601030704-02	Rivers/Streams in HUC 040601030704	Includes: Claybank Creek and Anderson Bayou.	Water
040601030705-02	Rivers/Streams in HUC 040601030705	Includes: Manistee River	Water
040601030705-03	Rivers/Streams in HUC 040601030705	Includes: Manistee River	Water
040601030705-04	Rivers/Streams in HUC 040601030705	Includes: Manistee River	Water
040601050501-01	Rivers/Streams in HUC 040601050501	Includes: Crofton Creek, Failing Creek, Hauenstein Creek, North Branch Boardman River and Palmer Creek	Water
040601050502-01	Rivers/Streams in HUC 040601050502	Includes: South Branch Boardman River and Taylor Creek	Water
040601050503-01	Rivers/Streams in HUC 040601050503	Includes: North Branch Boardman River	Water
040601050504-01	Rivers/Streams in HUC 040601050504	Includes: Boardman River, Carpenter Creek and Twentytwo Creek	Water
040601050505-01	Rivers/Streams in HUC 040601050505	Includes: Bancroft Creek, East Creek, Jackson Creek and Parker Creek	Water
040601050506-03	Rivers/Streams in HUC 040601050506	Includes: Boardman River, Jaxon Creek and Swainston Creek	Water
040601050507-01	Rivers/Streams in HUC 040601050507	Includes: Kids Creek	Water
040601050507-03	Rivers/Streams in HUC 040601050507	Includes: Kids Creek	Water
040601050507-04	Rivers/Streams in HUC 040601050507	Includes: MILLER CREEK	Water
040601050507-06	Rivers/Streams in HUC 040601050507	Includes: Boardman River, Beitner Creek and Jack's Creek	Water
040601050507-08	Rivers/Streams in HUC 040601050507	Includes: Boardman River	Water
040601060101-02	Rivers/Streams in HUC 040601060101	Includes: Strom Creek	Water
040601060101-03	Rivers/Streams in HUC 040601060101	Includes: Shoepac River and Wolf Creek	Water
040601060101-04	Rivers/Streams in HUC 040601060101	Includes: Norton Creek	Water
040601060101-05	Rivers/Streams in HUC 040601060101	Includes: Taylor Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601060102-01	Rivers/Streams in HUC 040601060102	Includes: Black Creek	Water
040601060103-02	Rivers/Streams in HUC 040601060103	Includes: Fork Creek, Helmer Creek, Locke Creek and Portage Creek	Water
040601060201-01	Rivers/Streams in HUC 040601060201	Includes: Grass Creek, Loon Creek, Pelican Creek, and West Branch Fox River	Water
040601060202-01	Rivers/Streams in HUC 040601060202	Includes: Unnamed Tributaries to Pickerel Lake and Second Lake (Alger County), Unnamed Tributary to Stanley Lake, and Unnamed Lake Outlet (Schoolcraft County)	Water
040601060202-04	Rivers/Streams in HUC 040601060202	Includes: Little Fox River	Water
040601060202-05	Rivers/Streams in HUC 040601060202	Includes: Casey Creek and Fox River	Water
040601060203-01	Rivers/Streams in HUC 040601060203	Includes: Hudson Creek and Fox River	Water
040601060204-01	Rivers/Streams in HUC 040601060204	Includes: Camp Seven Creek, East Branch Fox River, Haymeadow Creek and Snyder Creek	Water
040601060204-03	Rivers/Streams in HUC 040601060204	Includes: Clear Creek	Water
040601060205-01	Rivers/Streams in HUC 040601060205	Includes: Cold Creek, Deer Creek, East Branch Fox River and Spring Creek	Water
040601060206-01	Rivers/Streams in HUC 040601060206	Includes: Bev Creek and East Branch Fox River	Water
040601060207-01	Rivers/Streams in HUC 040601060207	Includes: Dead Creek	Water
040601060301-02	Rivers/Streams in HUC 040601060301	Includes: Driggs River and Negro Creek	Water
040601060301-03	Rivers/Streams in HUC 040601060301	Includes: Bear Creek, Black Creek, Driggs River, Mahoney Creek and Ross Creek	Water
040601060302-01	Rivers/Streams in HUC 040601060302	Includes: Walsh Creek	Water
040601060303-01	Rivers/Streams in HUC 040601060303	Includes: Marsh Creek, Unnamed Tributaries to Marsh Creek, and Walsh Ditch	Water
040601060304-01	Rivers/Streams in HUC 040601060304	Includes: Unnamed Tributaries to Walsh Ditch and Walsh Ditch	Water
040601060305-01	Rivers/Streams in HUC 040601060305	Includes: Clarks Ditch, Holland Ditch, and Unnamed Tributaries to Holland Ditch	Water
040601060306-01	Rivers/Streams in HUC 040601060306	Includes: Delta Creek and Driggs River	Water
040601060307-02	Rivers/Streams in HUC 040601060307	Includes: Mead Creek and Tad Creek	Water
040601060307-03	Rivers/Streams in HUC 040601060307	Includes: Toms Creek	Water
040601060308-01	Rivers/Streams in HUC 040601060308	Includes: Unit Number 1 Diversion Ditch and Unit Number 2 Diversion Ditch	Water
040601060308-02	Rivers/Streams in HUC 040601060308	Includes: Grays Creek, Manistique River and Sand Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601060308-03	Rivers/Streams in HUC 040601060308	Includes: Holland Creek and Manistique River	Water
040601060309-01	Rivers/Streams in HUC 040601060309	Includes: Black Creek and Duck Creek	Water
040601060310-01	Rivers/Streams in HUC 040601060310	Includes: Boucher Creek, Dougal Creek and Manistique River	Water
040601060310-02	Rivers/Streams in HUC 040601060310	Includes: Mezik Creek	Water
040601060310-03	Rivers/Streams in HUC 040601060310	Includes: Marsh Creek and Unnamed Tributaries to Mezik Creek	Water
040601060401-01	Rivers/Streams in HUC 040601060401	Includes: Beaver Creek and North Branch Stutts Creek	Water
040601060402-01	Rivers/Streams in HUC 040601060402	Includes: Fenton Creek and Middle Branch Stutts Creek	Water
040601060403-01	Rivers/Streams in HUC 040601060403	Includes: North Branch Stutts Creek	Water
040601060404-01	Rivers/Streams in HUC 040601060404	Includes: South Branch Stutts Creek and Stutts Creek	Water
040601060405-01	Rivers/Streams in HUC 040601060405	Includes: Metser Creek and Star Creek	Water
040601060406-01	Rivers/Streams in HUC 040601060406	Includes: Creighton River, Shotgun Creek and Stoner Creek	Water
040601060407-01	Rivers/Streams in HUC 040601060407	Includes: Creighton River	Water
040601060408-01	Rivers/Streams in HUC 040601060408	Includes: Hickey Creek, Prairie Creek and Stony Creek	Water
040601060409-01	Rivers/Streams in HUC 040601060409	Includes: Commencement Creek, Pine Creek, Section Nineteen Creek and West Branch Manistique River	Water
040601060410-01	Rivers/Streams in HUC 040601060410	Includes: Hickey Creek and West Branch Hickey Creek	Water
040601060411-01	Rivers/Streams in HUC 040601060411	Includes: Bear Slough, Brace Creek, Hay Meadow Creek, Hiawatha Creek and Stutts Creek	Water
040601060412-01	Rivers/Streams in HUC 040601060412	Includes: Hay Meadow Creek and West Branch Manistique River	Water
040601060501-01	Rivers/Streams in HUC 040601060501	Includes: Indian River and Squaw Creek	Water
040601060502-01	Rivers/Streams in HUC 040601060502	Includes: Grassy Creek and Little Indian River	Water
040601060503-01	Rivers/Streams in HUC 040601060503	Includes: Deer Creek, Grassy Creek and Indian River	Water
040601060503-04	Rivers/Streams in HUC 040601060503	Includes: Delias Run	Water
040601060504-01	Rivers/Streams in HUC 040601060504	Includes: Indian River, Leg Creek and Little Murphy Creek	Water
040601060505-01	Rivers/Streams in HUC 040601060505	Includes: Bear Creek, Carr Creek, and Kilpecker Creek.	Water
040601060505-02	Rivers/Streams in HUC 040601060505	Includes: Big Murphy Creek	Water
040601060506-01	Rivers/Streams in HUC 040601060506	Includes: Indian River and Iron Creek	Water
040601060507-02	Rivers/Streams in HUC 040601060507	Includes: The Big Ditch and Unnamed Tributaries to The Big Ditch	Water
040601060508-01	Rivers/Streams in HUC 040601060508	Includes: Smith Creek	Water
040601060509-01	Rivers/Streams in HUC 040601060509	Includes: Dufour Creek	Water
040601060509-02	Rivers/Streams in HUC 040601060509	Includes: Indian River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601060601-01	Rivers/Streams in HUC 040601060601	Includes: East Branch Bear Creek, Little Bear Creek, Bear Creek, and Pelky Creek	Water
040601060602-01	Rivers/Streams in HUC 040601060602	Includes: Clemons Creek, Little Duck Creek, Manistique River and Merwin Creek	Water
040601060603-02	Rivers/Streams in HUC 040601060603	Includes: Sturgeon Hole Creek	Water
040700020201-01	Rivers/Streams in HUC 040700020201	Includes: Lumpson Creek and Pine River	Water
040700020202-01	Rivers/Streams in HUC 040700020202	Includes: Blind Biscuit Creek, Hemlock Creek and Pine River	Water
040700020203-01	Rivers/Streams in HUC 040700020203	Includes: Biscuit Creek and Trout Brook	Water
040700020204-01	Rivers/Streams in HUC 040700020204	Includes: North Pine River, Prey Creek and Sullivan Creek	Water
040700020205-01	Rivers/Streams in HUC 040700020205	Includes: Black Creek, South Branch Black Creek and Sweiger Creek	Water
040700020206-01	Rivers/Streams in HUC 040700020206	Includes: North Pine River	Water
040700020207-01	Rivers/Streams in HUC 040700020207	Includes: Bear Creek and Little Bear Creek	Water
040700020207-02	Rivers/Streams in HUC 040700020207	Includes: Bear Creek	Water
040700020208-01	Rivers/Streams in HUC 040700020208	Includes: Chub Creek	Water
040700020209-01	Rivers/Streams in HUC 040700020209	Includes: Pine River	Water
040700020210-01	Rivers/Streams in HUC 040700020210	Includes: Elmhirst Creek, Hiawatha Run, Pine River and Silver Creek	Water
040700020211-01	Rivers/Streams in HUC 040700020211	Includes: Crooked Creek, Garden Hill Creek, Home Creek, Pine River and Rock Spring Creek	Water
040700020211-02	Rivers/Streams in HUC 040700020211	Includes: Pine River	Water
040700030309-01	Rivers/Streams in HUC 040700030309	Includes: Newton Creek	Water
040700040101-01	Rivers/Streams in HUC 040700040101	Includes: Sturgeon River	Water
040700040102-01	Rivers/Streams in HUC 040700040102	Includes: Club Stream	Water
040700040103-02	Rivers/Streams in HUC 040700040103	Includes: West Branch Sturgeon River	Water
040700040104-01	Rivers/Streams in HUC 040700040104	Includes: Pickerel Creek and Sturgeon River	Water
040700040105-01	Rivers/Streams in HUC 040700040105	Includes: Allen Creek, Marl Creek and West Branch Sturgeon River	Water
040700040106-01	Rivers/Streams in HUC 040700040106	Includes: Allen Creek, Blackjack Creek, Stewart Creek and Sturgeon River	Water
040700040107-01	Rivers/Streams in HUC 040700040107	Includes: Beebe Creek and Sturgeon River	Water
040700040201-01	Rivers/Streams in HUC 040700040201	Includes: Minnehaha Creek, Silver Creek and West Branch Minnehaha Creek	Water
040700040202-01	Rivers/Streams in HUC 040700040202	Includes: Cedar Creek and Mud Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040700040203-01	Rivers/Streams in HUC 040700040203	Includes: Brush Creek	Water
040700040204-01	Rivers/Streams in HUC 040700040204	Includes: Maple River	Water
040700040205-01	Rivers/Streams in HUC 040700040205	Includes: Lancaster Creek	Water
040700040205-02	Rivers/Streams in HUC 040700040205	Includes: Certon Creek and Cope Creek	Water
040700040206-01	Rivers/Streams in HUC 040700040206	Includes: Cold Creek and Maple River	Water
040700040207-01	Rivers/Streams in HUC 040700040207	Includes: Maple River	Water
040700040208-02	Rivers/Streams in HUC 040700040208	Includes: Crooked River, McPhee Creek and Whites Creek	Water
040700040209-01	Rivers/Streams in HUC 040700040209	Includes: Hasler Creek, Little Carp River and Maple River	Water
040700040301-01	Rivers/Streams in HUC 040700040301	Includes: Pigeon River and South Branch Pigeon River	Water
040700040302-01	Rivers/Streams in HUC 040700040302	Includes: Pigeon River	Water
040700040303-01	Rivers/Streams in HUC 040700040303	Includes: Cornwall Creek and Pigeon River	Water
040700040304-01	Rivers/Streams in HUC 040700040304	Includes: Little Pigeon River	Water
040700040305-01	Rivers/Streams in HUC 040700040305	Includes: Little Pigeon River and Pigeon River	Water
040700040306-01	Rivers/Streams in HUC 040700040306	Includes: Kimberly Creek, Little Pigeon River, Middle Branch Little Pigeon River, Morrow Creek and North Branch Little Pigeon River	Water
040700040307-01	Rivers/Streams in HUC 040700040307	Includes: Pigeon River and Wilkes Creek	Water
040700040401-01	Rivers/Streams in HUC 040700040401	Includes: Johnson Creek and Little Sturgeon River	Water
040700040402-01	Rivers/Streams in HUC 040700040402	Includes: Mullett Creek	Water
040700040402-02	Rivers/Streams in HUC 040700040402	Includes: Mullett Creek	Water
040700040403-01	Rivers/Streams in HUC 040700040403	Includes: Indian River, Scott Creek and Sturgeon River	Water
040700040404-01	Rivers/Streams in HUC 040700040404	Includes: Cheboygan River, Huron, Lake, Laperell Creek and Tannery Gully	Water
040700040404-02	Rivers/Streams in HUC 040700040404	Includes: Cheboygan River	Water
040700050101-01	Rivers/Streams in HUC 040700050101	Includes: West Branch Upper Rainy River	Water
040700050102-01	Rivers/Streams in HUC 040700050102	Includes: Little Rainy River	Water
040700050103-01	Rivers/Streams in HUC 040700050103	Includes: East Branch Rainy River and Rainy River	Water
040700050104-01	Rivers/Streams in HUC 040700050104	Includes: Rainy River	Water
040700050104-02	Rivers/Streams in HUC 040700050104	Includes: Cold Creek	Water
040700050201-01	Rivers/Streams in HUC 040700050201	Includes: Black River and Saunders Creek	Water
040700050202-01	Rivers/Streams in HUC 040700050202	Includes: Black River	Water
040700050203-01	Rivers/Streams in HUC 040700050203	Includes: East Branch Black River and Rattlesnake Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040700050204-01	Rivers/Streams in HUC 040700050204	Includes: Black River and Stewart Creek	Water
040700050205-01	Rivers/Streams in HUC 040700050205	Includes: Little McMasters Creek, McMasters Creek and West McMasters Creek	Water
040700050206-01	Rivers/Streams in HUC 040700050206	Includes: Canada Creek, Montague Creek, Packer Creek and Van Hetton Creek	Water
040700050207-01	Rivers/Streams in HUC 040700050207	Includes: Canada Creek and Oxbow Creek	Water
040700050208-02	Rivers/Streams in HUC 040700050208	Includes: Tomahawk Creek	Water
040700050209-01	Rivers/Streams in HUC 040700050209	Includes: Black River	Water
040700050210-01	Rivers/Streams in HUC 040700050210	Includes: Gokee Creek, Lewis Branch Adair Creek, Milligan Creek and Weed Creek	Water
040700050211-01	Rivers/Streams in HUC 040700050211	Includes: Black River and Gregg Creek	Water
040700050212-01	Rivers/Streams in HUC 040700050212	Includes: Adair Creek, Milligan Creek and Stony Creek	Water
040700050213-01	Rivers/Streams in HUC 040700050213	Includes: Black River, Bowen Creek and Sturgis Creek	Water
040700050213-02	Rivers/Streams in HUC 040700050213	Includes: Black River and Welch Creek	Water
040700050301-01	Rivers/Streams in HUC 040700050301	Includes: Mud Creek	Water
040700050302-02	Rivers/Streams in HUC 040700050302	Includes: Black River, Fisher Creek and Stewart Creek	Water
040700050303-02	Rivers/Streams in HUC 040700050303	Includes: Black River, Long Lake Creek and Owens Creek	Water
040700050304-01	Rivers/Streams in HUC 040700050304	Includes: Black River and Myers Creek	Water
040700060101-01	Rivers/Streams in HUC 040700060101	Includes: Beaver Creek, Indian Creek and Rayburn Creek	Water
040700060102-01	Rivers/Streams in HUC 040700060102	Includes: Bruster Creek, McGinn Creek and Robbs Creek	Water
040700060103-01	Rivers/Streams in HUC 040700060103	Includes: Bear Creek, Little Wolf Creek, Mohr Creek, Silver Brook, Silver Creek, Wildcat Creek and Yoder Creek	Water
040700060104-01	Rivers/Streams in HUC 040700060104	Includes: Butterfield Creek, Davis Creek, Widner Creek and Wolf Creek	Water
040700060105-01	Rivers/Streams in HUC 040700060105	Includes: Evans Creek, Schmitt Creek and Wolf Creek	Water
040700060201-01	Rivers/Streams in HUC 040700060201	Includes: Marsh Creek, Unnamed Tributaries to Marsh Creek, and Unnamed Tributary near Weaver Road	Water
040700060202-01	Rivers/Streams in HUC 040700060202	Includes: Pike Creek and Upper South Branch Thunder Bay River	Water
040700060203-01	Rivers/Streams in HUC 040700060203	Includes: Bullock Creek, Cole Creek, Turtle Creek, Upper South Branch Thunder Bay River and Weber Creek	Water
040700060204-01	Rivers/Streams in HUC 040700060204	Includes: Upper South Branch Thunder Bay River	Water
040700060301-01	Rivers/Streams in HUC 040700060301	Includes: Barger Creek, Sheridan Creek, Stanniger Creek and	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Thunder Bay River	
040700060302-01	Rivers/Streams in HUC 040700060302	Includes: Smith Creek from Thunder Bay River confluence upstream to Voyer Lake	Water
040700060302-02	Rivers/Streams in HUC 040700060302	Includes: Smith Creek from Voyer Lake upstream to Headwaters and Thunder Bay River	Water
040700060302-03	Rivers/Streams in HUC 040700060302	Includes: Haymeadow Creek	Water
040700060303-01	Rivers/Streams in HUC 040700060303	Includes: Fuller Creek, Hunt Creek and Sage Creek	Water
040700060304-01	Rivers/Streams in HUC 040700060304	Includes: Crooked Creek and Thunder Bay River	Water
040700060305-01	Rivers/Streams in HUC 040700060305	Includes: Gilchrist Creek, Greasy Creek, Lockwood Creek and Nugent Creek	Water
040700060306-01	Rivers/Streams in HUC 040700060306	Includes: Miller Creek and Unnamed Tributaries to Miller Creek	Water
040700060307-01	Rivers/Streams in HUC 040700060307	Includes: Thunder Bay River	Water
040700060308-02	Rivers/Streams in HUC 040700060308	Includes: Brush Creek and Little Brush Creek	Water
040700060309-01	Rivers/Streams in HUC 040700060309	Includes: Sucker Creek and Thunder Bay River	Water
040700060310-01	Rivers/Streams in HUC 040700060310	Includes: Anchor Creek, Jewett Creek and Thunder Bay River	Water
040700060401-01	Rivers/Streams in HUC 040700060401	Includes: North Branch Thunder Bay River	Water
040700060402-01	Rivers/Streams in HUC 040700060402	Includes: Quinn Creek	Water
040700060403-01	Rivers/Streams in HUC 040700060403	Includes: North Branch Thunder Bay River	Water
040700060404-01	Rivers/Streams in HUC 040700060404	Includes: North Branch Thunder Bay River	Water
040700060405-01	Rivers/Streams in HUC 040700060405	Includes: Erskine Creek, North Branch Thunder Bay River and Thunder Bay River	Water
040700060501-01	Rivers/Streams in HUC 040700060501	Includes: Little North Creek	Water
040700060502-01	Rivers/Streams in HUC 040700060502	Includes: Buff Creek, Cold Creek, Comstock Creek and West Branch River	Water
040700060503-01	Rivers/Streams in HUC 040700060503	Includes: Fish Creek, Pettis Creek, Sucker Creek and Vincent Creek	Water
040700060504-01	Rivers/Streams in HUC 040700060504	Includes: Holcomb Creek, North Branch Holcomb Creek and Stevens Creek	Water
040700060505-01	Rivers/Streams in HUC 040700060505	Includes: Big Ravine Creek, Lower South Branch Thunder Bay River and Simmons Creek	Water
040700060506-01	Rivers/Streams in HUC 040700060506	Includes: Butterfield Creek, Lower South Branch Thunder Bay River and Robinson Creek	Water
040700060507-01	Rivers/Streams in HUC 040700060507	Includes: King Creek, Lower South Branch Thunder Bay River and Thunder Bay River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040700060601-01	Rivers/Streams in HUC 040700060601	Includes: Truax Creek	Water
040700060602-01	Rivers/Streams in HUC 040700060602	Includes: Bean Creek	Water
040700060603-01	Rivers/Streams in HUC 040700060603	Includes: Gaffney Creek and Thunder Bay River	Water
040700060604-02	Rivers/Streams in HUC 040700060604	Includes: Kingsbury Creek and Thunder Bay River	Water
040700070101-01	Rivers/Streams in HUC 040700070101	Includes: Cameron Creek, Cedar Creek, Marsh Creek and Russell Creek	Water
040700070102-01	Rivers/Streams in HUC 040700070102	Includes: East Creek	Water
040700070103-01	Rivers/Streams in HUC 040700070103	Includes: South Branch Au Sable River and South Creek	Water
040700070104-01	Rivers/Streams in HUC 040700070104	Includes: Robinson Creek	Water
040700070105-01	Rivers/Streams in HUC 040700070105	Includes: Beaver Creek	Water
040700070106-01	Rivers/Streams in HUC 040700070106	Includes: Beaver Creek	Water
040700070106-02	Rivers/Streams in HUC 040700070106	Includes: Unnamed Tributary to South Branch Au Sable River	Water
040700070107-01	Rivers/Streams in HUC 040700070107	Includes: Asum Creek, Hudson Creek and South Branch Au Sable River	Water
040700070108-01	Rivers/Streams in HUC 040700070108	Includes: Thayer Creek	Water
040700070109-01	Rivers/Streams in HUC 040700070109	Includes: Douglas Creek, Hickey Creek and South Branch Au Sable River	Water
040700070110-01	Rivers/Streams in HUC 040700070110	Includes: Sauger Creek and South Branch Au Sable River	Water
040700070202-01	Rivers/Streams in HUC 040700070202	Includes: Chub Creek	Water
040700070203-01	Rivers/Streams in HUC 040700070203	Includes: North Branch Au Sable River and Turtle Creek	Water
040700070204-01	Rivers/Streams in HUC 040700070204	Includes: West Branch Big Creek	Water
040700070205-01	Rivers/Streams in HUC 040700070205	Includes: East Branch Big Creek	Water
040700070206-01	Rivers/Streams in HUC 040700070206	Includes: Middle Branch Big Creek	Water
040700070207-01	Rivers/Streams in HUC 040700070207	Includes: Crapo Creek and North Branch Au Sable River	Water
040700070208-01	Rivers/Streams in HUC 040700070208	Includes: West Branch Big Creek	Water
040700070209-01	Rivers/Streams in HUC 040700070209	Includes: Big Creek and East Branch Big Creek	Water
040700070209-02	Rivers/Streams in HUC 040700070209	Includes: Wright Creek	Water
040700070210-01	Rivers/Streams in HUC 040700070210	Includes: Carter Creek and North Branch Au Sable River	Water
040700070301-01	Rivers/Streams in HUC 040700070301	Includes: Kolke Creek inlet to Lake Tecon	Water
040700070302-01	Rivers/Streams in HUC 040700070302	Includes: Bradford Creek	Water
040700070303-01	Rivers/Streams in HUC 040700070303	Includes: Kolke Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040700070304-01	Rivers/Streams in HUC 040700070304	Includes: Unnamed Tributary to the East Branch Au Sable River	Water
040700070305-01	Rivers/Streams in HUC 040700070305	Includes: East Branch Au Sable River	Water
040700070305-02	Rivers/Streams in HUC 040700070305	Includes: East Branch Au Sable River	Water
040700070306-01	Rivers/Streams in HUC 040700070306	Includes: Au Sable River	Water
040700070306-02	Rivers/Streams in HUC 040700070306	Includes: Au Sable River and Simpson Creek	Water
040700070308-01	Rivers/Streams in HUC 040700070308	Includes: Au Sable River	Water
040700070309-01	Rivers/Streams in HUC 040700070309	Includes: Au Sable River, Barker Creek and Wakeley Creek	Water
040700070310-01	Rivers/Streams in HUC 040700070310	Includes: Au Sable River	Water
040700070401-01	Rivers/Streams in HUC 040700070401	Includes: Unnamed Tributary to the East Branch Big Creek	Water
040700070402-01	Rivers/Streams in HUC 040700070402	Includes: Unnamed Tributary to the East Branch Big Creek	Water
040700070403-01	Rivers/Streams in HUC 040700070403	Includes: Hunt Creek	Water
040700070404-01	Rivers/Streams in HUC 040700070404	Includes: West Branch Big Creek	Water
040700070405-01	Rivers/Streams in HUC 040700070405	Includes: East Branch Big Creek	Water
040700070406-01	Rivers/Streams in HUC 040700070406	Includes: Big Creek, Red Creek and West Branch Big Creek	Water
040700070501-01	Rivers/Streams in HUC 040700070501	Includes: Unnamed Tributary to Sohn Creek	Water
040700070501-02	Rivers/Streams in HUC 040700070501	Includes: Beaver Creek	Water
040700070501-03	Rivers/Streams in HUC 040700070501	Includes: Sohn Creek	Water
040700070501-04	Rivers/Streams in HUC 040700070501	Includes: Au Sable River, Gammey Creek and Whitewater Creek	Water
040700070502-01	Rivers/Streams in HUC 040700070502	Includes: Au Sable River, Honeywell Creek and Lost Creek	Water
040700070502-03	Rivers/Streams in HUC 040700070502	Includes: Antler Creek and Au Sable River	Water
040700070502-04	Rivers/Streams in HUC 040700070502	Includes: Au Sable River and Honeywell Creek	Water
040700070503-01	Rivers/Streams in HUC 040700070503	Includes: Gusler Creek, Joslin Creek and Perry Creek	Water
040700070503-02	Rivers/Streams in HUC 040700070503	Includes: Perry Creek	Water
040700070504-01	Rivers/Streams in HUC 040700070504	Includes: Au Sable River, Cauchy Creek and Cherry Creek	Water
040700070504-02	Rivers/Streams in HUC 040700070504	Includes: Loud Creek	Water
040700070504-03	Rivers/Streams in HUC 040700070504	Includes: Wolf Creek	Water
040700070504-04	Rivers/Streams in HUC 040700070504	Includes: Cherry Creek	Water
040700070505-01	Rivers/Streams in HUC 040700070505	Includes: Comins Creek	Water
040700070505-02	Rivers/Streams in HUC 040700070505	Includes: Au Sable River and Glennie Creek	Water
040700070601-01	Rivers/Streams in HUC 040700070601	Includes: Bryant Creek and Wallace Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040700070601-02	Rivers/Streams in HUC 040700070601	Includes Unnamed Tributary to Hunters Lake	Water
040700070602-01	Rivers/Streams in HUC 040700070602	Includes: McGillis Creek	Water
040700070602-02	Rivers/Streams in HUC 040700070602	Includes: Gimlet Creek	Water
040700070603-01	Rivers/Streams in HUC 040700070603	Includes: West Branch Pine River	Water
040700070603-02	Rivers/Streams in HUC 040700070603	Includes: Backus Creek	Water
040700070603-03	Rivers/Streams in HUC 040700070603	Includes: LOUD CREEK	Water
040700070604-01	Rivers/Streams in HUC 040700070604	Includes: Pine River	Water
040700070604-02	Rivers/Streams in HUC 040700070604	Includes: East Branch Pine River	Water
040700070604-03	Rivers/Streams in HUC 040700070604	Includes: East Branch Pine River	Water
040700070605-01	Rivers/Streams in HUC 040700070605	Includes: Kurtz Creek, McDonald Creek, Samyn Creek, South Branch Pine River and Vandercook Creek	Water
040700070606-01	Rivers/Streams in HUC 040700070606	Includes: Grey Creek	Water
040700070606-02	Rivers/Streams in HUC 040700070606	Includes: Roy Creek	Water
040700070607-01	Rivers/Streams in HUC 040700070607	Includes: Van Etten Creek	Water
040700070607-02	Rivers/Streams in HUC 040700070607	Includes: Tributaries to Van Etten Creek	Water
040700070608-01	Rivers/Streams in HUC 040700070608	Includes: Pine River	Water
040700070608-02	Rivers/Streams in HUC 040700070608	Includes: Duval Creek	Water
040700070609-01	Rivers/Streams in HUC 040700070609	Includes: Dry Creek, Phelan Creek and Van Etten Creek	Water
040700070609-02	Rivers/Streams in HUC 040700070609	Includes: Pine River	Water
040700070609-03	Rivers/Streams in HUC 040700070609	Includes: Coppler Creek and Hill Creek	Water
040700070701-01	Rivers/Streams in HUC 040700070701	Includes: BLOCKHOUSE CREEK	Water
040700070701-02	Rivers/Streams in HUC 040700070701	Includes: Ninemile Creek	Water
040700070701-03	Rivers/Streams in HUC 040700070701	Includes: Au Sable River	Water
040700070702-01	Rivers/Streams in HUC 040700070702	Includes: Au Sable River	Water
040700070703-01	Rivers/Streams in HUC 040700070703	Includes: Wilbur Creek	Water
040700070703-02	Rivers/Streams in HUC 040700070703	Includes: Wilbur Creek	Water
040700070704-02	Rivers/Streams in HUC 040700070704	Includes: Au Sable River	Water
040700070704-04	Rivers/Streams in HUC 040700070704	Includes: Bamfield Creek	Water
040700070705-02	Rivers/Streams in HUC 040700070705	Includes: Au Sable Creek, Harper Creek, Hubble Creek, Lime Creek, Mink Creek and South Branch River	Water
040700070706-02	Rivers/Streams in HUC 040700070706	Includes: Au Sable River, Baker Creek and Smith Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040700070706-03	Rivers/Streams in HUC 040700070706	Includes: Smith Creek	Water
040700070706-04	Rivers/Streams in HUC 040700070706	Includes: Hoppy Creek and Stewart Creek	Water
040700070707-01	Rivers/Streams in HUC 040700070707	Includes: Au Sable River	Water
040700070708-02	Rivers/Streams in HUC 040700070708	Includes: Au Sable River and Wildcat Creek	Water
040801010302-01	Rivers/Streams in HUC 040801010302	Includes: Hope Creek	Water
040801010302-02	Rivers/Streams in HUC 040801010302	Includes: Au Gres River	Water
040801010302-03	Rivers/Streams in HUC 040801010302	Includes: Nester Creek	Water
040801010303-01	Rivers/Streams in HUC 040801010303	Includes: Au Gres River, Latter Creek and Porterfield Creek	Water
040801010304-01	Rivers/Streams in HUC 040801010304	Includes: Johnson Creek	Water
040801010304-02	Rivers/Streams in HUC 040801010304	Includes: Johnson Creek	Water
040801010304-03	Rivers/Streams in HUC 040801010304	Includes: Whitney Creek	Water
040801010304-04	Rivers/Streams in HUC 040801010304	Includes: Crainer Creek	Water
040801010305-01	Rivers/Streams in HUC 040801010305	Includes: Au Gres River, County Line Drain and Scott Drain	Water
040801010305-02	Rivers/Streams in HUC 040801010305	Includes: Unnamed Tributary to the East Brach Au Gres River	Water
040801010305-03	Rivers/Streams in HUC 040801010305	Includes: Au Gres River	Water
040801010305-04	Rivers/Streams in HUC 040801010305	Includes: Elm Creek	Water
040801010306-01	Rivers/Streams in HUC 040801010306	Includes: Au Gres River	Water
040801010306-02	Rivers/Streams in HUC 040801010306	Includes: CEDAR CREEK DRAIN	Water
040801010307-01	Rivers/Streams in HUC 040801010307	Includes: Au Gres River and Burnt Drain	Water
040801010307-02	Rivers/Streams in HUC 040801010307	Includes: Old Channel East Branch Au Gres and Tributaries	Water
040801020201-01	Rivers/Streams in HUC 040801020201	Includes: Kawkawlin Creek and North Branch Kawkawlin River	Water
040801020202-01	Rivers/Streams in HUC 040801020202	Includes: Waldo Drain	Water
040801020203-01	Rivers/Streams in HUC 040801020203	Includes: Kawkawlin River	Water
040801020204-01	Rivers/Streams in HUC 040801020204	Includes: Bradford Creek, Dell Creek, Hoppler Creek, Kawkawlin River, Kindell Drain and Perry Creek	Water
040801020205-01	Rivers/Streams in HUC 040801020205	Includes: Crump Drain, Kawalski Drain, Monison Drain, North Branch Kawkawlin River and Renner Drain	Water
040801020205-02	Rivers/Streams in HUC 040801020205	Includes: Bedell Drain and North Branch Kawkawlin River	Water
040801020205-03	Rivers/Streams in HUC 040801020205	Includes: Hembling Drain, McNally Drain, and Unnamed Tributaries to Hembling Drain	Water
040801020206-01	Rivers/Streams in HUC 040801020206	Includes: Culver Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040801020206-02	Rivers/Streams in HUC 040801020206	Includes: Kawkawlin River	Water
040801030301-01	Rivers/Streams in HUC 040801030301	Includes: Bope Drain, Cameron Drain, Colfax Drain, Colona Drain, Linton Drain, McLean Drain, Pinnebog Drain, Rush Drain, Sandy Drain, Slack Drain, Unnamed Tributaries to Cameron Drain, Unnamed Tributaries to Colfax Drain, Unnamed Tributaries to Colona D	Water
040801030302-01	Rivers/Streams in HUC 040801030302	Includes: Bad Axe Creek, Bad Axe Drain, Richardson Drain, Symons Drain, Unnamed Tributaries to Bad Axe Creek, Unnamed Tributaries to Bad Axe Drain, and Unnamed Tributaries to Symons Drain	Water
040801030302-02	Rivers/Streams in HUC 040801030302	Includes: Bad Axe Creek, Bad Axe Drain, Richardson Drain, Symons Drain, Unnamed Tributaries to Bad Axe Creek, Unnamed Tributaries to Bad Axe Drain, and Unnamed Tributaries to Symons Drain upstream of Thomas Road	Water
040801030303-01	Rivers/Streams in HUC 040801030303	Includes: Bortman Creek, Moore Creek and Schram Branch	Water
040801030304-01	Rivers/Streams in HUC 040801030304	Includes: Silver Creek	Water
040801030304-02	Rivers/Streams in HUC 040801030304	Includes: Harrison Drain, Musselman Drain, Pinnebog River, Unnamed Tributaries to Musselman Drain, and Unnamed Tributaries to Pinnebog River	Water
040802010101-01	Rivers/Streams in HUC 040802010101	Includes: Avery Creek, Chatman Creek, Edwards Creek, Indian Lake Creek, Mansfield Creek, Middle Branch Tittabawassee River, Noren Creek, Parren Creek and Perrys Creek	Water
040802010102-01	Rivers/Streams in HUC 040802010102	Includes: Cooks Creek, East Branch Tittabawassee River, LaPorte Creek, Ray Creek and Spring Creek	Water
040802010103-01	Rivers/Streams in HUC 040802010103	Includes: Lake Four Outlet, Muma Creek and West Branch Tittabawassee River	Water
040802010104-01	Rivers/Streams in HUC 040802010104	Includes: Elk Lake Creek and Tittabawassee River	Water
040802010201-01	Rivers/Streams in HUC 040802010201	Includes: Cedar River and Cranberry Creek	Water
040802010201-02	Rivers/Streams in HUC 040802010201	Includes: Popple Creek and West Branch Cedar River	Water
040802010201-03	Rivers/Streams in HUC 040802010201	Includes: Middle Branch Cedar River	Water
040802010202-01	Rivers/Streams in HUC 040802010202	Includes: North Branch Cedar River	Water
040802010203-01	Rivers/Streams in HUC 040802010203	Includes: Cedar River upstream of Wiggins Lake, Howland Creek and Smith Creek	Water
040802010204-01	Rivers/Streams in HUC 040802010204	Includes: Cedar River downstream of Wiggins Lake, Doone Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		and Silver Creek	
040802010301-01	Rivers/Streams in HUC 040802010301	Includes: Loon Lake Creek, Newton Creek and Runyon Creek	Water
040802010302-01	Rivers/Streams in HUC 040802010302	Includes: Elm Creek and South Branch Tobacco River	Water
040802010303-01	Rivers/Streams in HUC 040802010303	Includes: Five Lakes Creek, McCuran Creek and South Branch Tobacco River	Water
040802010303-02	Rivers/Streams in HUC 040802010303	Includes: Duncan Drain, Gorr Drain, McKinnon Drain, and Unnamed Tributary to South Branch Tobacco River	Water
040802010304-01	Rivers/Streams in HUC 040802010304	Includes: Bailey Creek, Davidson Creek and South Branch Tobacco River	Water
040802010304-02	Rivers/Streams in HUC 040802010304	Includes: Carrow Creek	Water
040802010305-01	Rivers/Streams in HUC 040802010305	Includes: Clear Creek and Middle Branch Tobacco River	Water
040802010305-02	Rivers/Streams in HUC 040802010305	Includes: Middle Branch Tobacco River	Water
040802010306-01	Rivers/Streams in HUC 040802010306	Includes: Beaver Creek, Jose Creek, Mostellar Creek, North Branch Tobacco River and Spike Horn Creek	Water
040802010307-01	Rivers/Streams in HUC 040802010307	Includes: North Branch Tobacco River	Water
040802010307-02	Rivers/Streams in HUC 040802010307	Includes: Howe Creek and North Branch Tobacco River	Water
040802010308-01	Rivers/Streams in HUC 040802010308	Includes: Dow Creek and Little Cedar River	Water
040802010309-01	Rivers/Streams in HUC 040802010309	Includes: Most Downstream Segment of the Tobacco River at Wixom Lake, and Nestor and Coolidge Drains	Water
040802010309-02	Rivers/Streams in HUC 040802010309	Includes: Tobacco River below Ross Lake, and Bear and Venison Creeks	Water
040802010401-01	Rivers/Streams in HUC 040802010401	Includes: Long Lake Creek and Sugar River	Water
040802010402-01	Rivers/Streams in HUC 040802010402	Includes: South Branch Little Sugar River	Water
040802010402-02	Rivers/Streams in HUC 040802010402	Includes: Sugar River	Water
040802010403-01	Rivers/Streams in HUC 040802010403	Includes: Tea Creek and Tittabawassee River	Water
040802010403-03	Rivers/Streams in HUC 040802010403	Includes: Little Tobacco River and Tittabawassee River	Water
040802010404-01	Rivers/Streams in HUC 040802010404	Includes: Fish Creek and Little Molasses River	Water
040802010405-01	Rivers/Streams in HUC 040802010405	Includes: Molasses River	Water
040802010406-01	Rivers/Streams in HUC 040802010406	Includes: Guernsey Creek, Larrabee Creek and Tittabawassee River	Water
040802010406-02	Rivers/Streams in HUC 040802010406	Includes: Black Creek	Water
040802010406-03	Rivers/Streams in HUC 040802010406	Includes: Larrabee Creek	Water
040802010407-01	Rivers/Streams in HUC 040802010407	Includes: Davids Drain, Fowley Drain, Hess Drain, Payne Creek and	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Tittabawassee River	
040802010501-01	Rivers/Streams in HUC 040802010501	Includes: Jordon Creek and Spring Creek	Water
040802010502-01	Rivers/Streams in HUC 040802010502	Includes: North Branch Salt River	Water
040802010503-01	Rivers/Streams in HUC 040802010503	Includes: South Branch Salt River	Water
040802010504-01	Rivers/Streams in HUC 040802010504	Includes: North Branch Salt River	Water
040802010505-01	Rivers/Streams in HUC 040802010505	Includes: Bickerton Drain, Bluff Creek, Bliss Drain, High Drain, Howe Drain, and Unnamed Tributaries to Bluff Creek	Water
040802010506-01	Rivers/Streams in HUC 040802010506	Includes: Howard Creek and Salt River	Water
040802010507-01	Rivers/Streams in HUC 040802010507	Includes: Salt River	Water
040802010604-04	Rivers/Streams in HUC 040802010604	Includes: Snake Creek	Water
040802020101-01	Rivers/Streams in HUC 040802020101	Includes: Three Lake Creek	Water
040802020102-02	Rivers/Streams in HUC 040802020102	Includes: Atkinson Creek, Benjamin Creek and North Branch Chippewa River	Water
040802020103-01	Rivers/Streams in HUC 040802020103	Includes: Butts Creek, North Branch Chippewa River and Rattail Creek	Water
040802020104-01	Rivers/Streams in HUC 040802020104	Includes: Chippewa Creek	Water
040802020104-02	Rivers/Streams in HUC 040802020104	Includes: Brown Creek, Helmer Creek and West Branch Chippewa River	Water
040802020201-01	Rivers/Streams in HUC 040802020201	Includes: Bamber Creek, Chippewa River, Sherman Creek, Tanner Creek and West Branch Chippewa River	Water
040802020202-01	Rivers/Streams in HUC 040802020202	Includes: Chippewa River, Indian Creek and Squaw Creek	Water
040802020203-01	Rivers/Streams in HUC 040802020203	Includes: Delaney Creek and Walker Creek	Water
040802020204-01	Rivers/Streams in HUC 040802020204	Includes: Coldwater River	Water
040802020204-02	Rivers/Streams in HUC 040802020204	Includes: Coldwater River	Water
040802020204-04	Rivers/Streams in HUC 040802020204	Includes: Coldwater River	Water
040802020204-05	Rivers/Streams in HUC 040802020204	Includes: Walker Creek	Water
040802020204-08	Rivers/Streams in HUC 040802020204	Includes: Sucker Creek	Water
040802020205-01	Rivers/Streams in HUC 040802020205	Includes: North Branch Chippewa River, Stevenson Lake Tributaries and outlet	Water
040802020205-02	Rivers/Streams in HUC 040802020205	Includes: North Branch Chippewa River	Water
040802020205-03	Rivers/Streams in HUC 040802020205	Includes: North Branch Chippewa River	Water
040802020205-05	Rivers/Streams in HUC 040802020205	Includes: Schofield Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802020206-01	Rivers/Streams in HUC 040802020206	Includes: North Branch Chippewa River	Water
040802020206-02	Rivers/Streams in HUC 040802020206	Includes: Hogg Creek	Water
040802020206-03	Rivers/Streams in HUC 040802020206	Includes: North Branch Chippewa River	Water
040802020207-01	Rivers/Streams in HUC 040802020207	Includes: Chippewa River, Johnson Creek and Stony Brook	Water
040802020301-01	Rivers/Streams in HUC 040802020301	Includes: Pony Creek	Water
040802020301-03	Rivers/Streams in HUC 040802020301	Includes: Pony Creek	Water
040802020302-01	Rivers/Streams in HUC 040802020302	Includes: Miller Creek and Pine River	Water
040802020303-01	Rivers/Streams in HUC 040802020303	Includes: Pine River and Skunk Creek	Water
040802020303-02	Rivers/Streams in HUC 040802020303	Includes: Decker Creek and South Branch Pine River	Water
040802020303-03	Rivers/Streams in HUC 040802020303	Includes: Jewel Creek	Water
040802020304-01	Rivers/Streams in HUC 040802020304	Includes: Wolf Creek	Water
040802020305-01	Rivers/Streams in HUC 040802020305	Includes: Pine River	Water
040802020306-01	Rivers/Streams in HUC 040802020306	Includes: North Branch Pine River and Thatcher Creek	Water
040802020306-02	Rivers/Streams in HUC 040802020306	Includes: North Branch Pine River	Water
040802020306-03	Rivers/Streams in HUC 040802020306	Includes: Unnamed Tributary to the North Branch Pine River	Water
040802020307-01	Rivers/Streams in HUC 040802020307	Includes: Pine River and Tyman Branch	Water
040802020307-02	Rivers/Streams in HUC 040802020307	Includes: Mud Creek and Bass Lake Drain	Water
040802020308-01	Rivers/Streams in HUC 040802020308	Includes: Pine River	Water
040802020308-02	Rivers/Streams in HUC 040802020308	Includes: Carpenter Creek	Water
040802020309-01	Rivers/Streams in HUC 040802020309	Includes: Pine River	Water
040802020309-02	Rivers/Streams in HUC 040802020309	Includes: Unnamed Tributary to Pine River	Water
040802020310-01	Rivers/Streams in HUC 040802020310	Includes: Coles Creek and Unnamed Tributaries to Coles Creek	Water
040802020311-01	Rivers/Streams in HUC 040802020311	Includes: Honeyoey Creek	Water
040802020312-01	Rivers/Streams in HUC 040802020312	Includes: Pine River	Water
040802020312-02	Rivers/Streams in HUC 040802020312	Includes: Newark and Arcadia Drain and Unnamed Tributaries to Newark and Arcadia Drain	Water
040802020401-01	Rivers/Streams in HUC 040802020401	Includes: Upper Bush Creek, Rook Drain, Unnamed Tributaries to Bush Creek, and Unnamed Tributaries to Rook Drain	Water
040802020402-01	Rivers/Streams in HUC 040802020402	Includes: Lower Bush Creek, Taylor Drain, Unnamed Tributaries to Bush Creek, and Unnamed Tributaries to Taylor Drain	Water
040802020403-01	Rivers/Streams in HUC 040802020403	Includes: Pine River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802020403-02	Rivers/Streams in HUC 040802020403	Includes: Sugar Creek	Water
040802020403-03	Rivers/Streams in HUC 040802020403	Includes: Pine River	Water
040802020403-05	Rivers/Streams in HUC 040802020403	Includes: Horse Creek	Water
040802020404-01	Rivers/Streams in HUC 040802020404	Includes: Pine River and Sucker Creek	Water
040802020404-02	Rivers/Streams in HUC 040802020404	Includes: Pine River	Water
040802030105-01	Rivers/Streams in HUC 040802030105	Includes: Cranberry Creek	Water
040802030105-02	Rivers/Streams in HUC 040802030105	Includes: YELLOW RIVER DRAIN	Water
040802030105-04	Rivers/Streams in HUC 040802030105	Includes: Unnamed Tributary to Fausett Lake and Unnamed Tributary to Indian Lake	Water
040802030106-01	Rivers/Streams in HUC 040802030106	Includes: North Ore Creek	Water
040802030107-02	Rivers/Streams in HUC 040802030107	Includes: Buckhorn Creek and Shiawassee River	Water
040802030107-07	Rivers/Streams in HUC 040802030107	Includes: Shiawassee River	Water
040802030108-02	Rivers/Streams in HUC 040802030108	Includes: Shiawassee River	Water
040802030109-02	Rivers/Streams in HUC 040802030109	Includes: North Ore Creek	Water
040802030201-01	Rivers/Streams in HUC 040802030201	Includes: Atherton Drain, Jones Creek and Porter Drain	Water
040802030203-01	Rivers/Streams in HUC 040802030203	Includes: Hovey Drain	Water
040802030203-02	Rivers/Streams in HUC 040802030203	Includes: THREE MILE CREEK	Water
040802030203-03	Rivers/Streams in HUC 040802030203	Includes: Burns and Vernon Drain, Holly Drain, Mikan Drain, Unnamed Tributaries to Burns and Vernon Drain, and Unnamed Tributaries to Holly Drain	Water
040802030204-01	Rivers/Streams in HUC 040802030204	Includes: Jones Creek and Webb Creek	Water
040802030204-02	Rivers/Streams in HUC 040802030204	Includes: WEBB CREEK	Water
040802030208-01	Rivers/Streams in HUC 040802030208	Includes: Mickles Creek and Unnamed Tributary to Mickles Creek	Water
040802030208-02	Rivers/Streams in HUC 040802030208	Includes: Sixmile Creek	Water
040802030208-03	Rivers/Streams in HUC 040802030208	Includes: North State Drain and Unnamed Tributaries to North State Drain	Water
040802030305-01	Rivers/Streams in HUC 040802030305	Includes: Potato Creek	Water
040802030305-02	Rivers/Streams in HUC 040802030305	Includes: Potato Creek	Water
040802030306-01	Rivers/Streams in HUC 040802030306	Includes: Bearwallow Creek and Potato Creek	Water
040802030307-01	Rivers/Streams in HUC 040802030307	Includes: Beaver Creek and Beaver Drain	Water
040802030308-01	Rivers/Streams in HUC 040802030308	Includes: Beaver Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802030311-01	Rivers/Streams in HUC 040802030311	Includes: Beaver Creek and Morgan Creek	Water
040802030312-01	Rivers/Streams in HUC 040802030312	Includes: Pickerel Creek	Water
040802030401-01	Rivers/Streams in HUC 040802030401	Includes: Albert Drain, Bear Creek, East Branch Albert Drain, Fairchild Creek, Unnamed Tributaries to Albert Drain, Unnamed Tributaries to Bear Creek, Unnamed Tributaries to Fairchild Creek, Unnamed Tributaries to Wickham Drain, and Wickham Drain	Water
040802030402-01	Rivers/Streams in HUC 040802030402	Includes: SWAN CREEK	Water
040802030403-01	Rivers/Streams in HUC 040802030403	Includes: SWAN CREEK	Water
040802030404-01	Rivers/Streams in HUC 040802030404	Includes: Handy Creek and Whitmore Drain	Water
040802030405-01	Rivers/Streams in HUC 040802030405	Includes: Nelson Run, Weeks Drain and Whitmore Drain	Water
040802030406-01	Rivers/Streams in HUC 040802030406	Includes: Swan Creek	Water
040802030407-01	Rivers/Streams in HUC 040802030407	Includes: Unnamed Tributary near Gratiot Road	Water
040802030407-02	Rivers/Streams in HUC 040802030407	Includes: Beebe Drain and Unnamed Tributaries to Beebe Drain	Water
040802030407-03	Rivers/Streams in HUC 040802030407	Includes: Williams Creek	Water
040802030407-04	Rivers/Streams in HUC 040802030407	Includes: Swan Creek	Water
040802030407-05	Rivers/Streams in HUC 040802030407	Includes: MCCLELLAN RUN	Water
040802030408-01	Rivers/Streams in HUC 040802030408	Includes: Marsh Creek	Water
040802030409-01	Rivers/Streams in HUC 040802030409	Includes: Birch Run, Cole Drain and Horton Graham Drain	Water
040802030410-02	Rivers/Streams in HUC 040802030410	Includes: Ferguson Bayou	Water
040802030410-04	Rivers/Streams in HUC 040802030410	Includes: Unnamed Tributaries to Shiawassee River	Water
040802030410-05	Rivers/Streams in HUC 040802030410	Includes: Marsh Creek	Water
040802040101-01	Rivers/Streams in HUC 040802040101	Includes: South Branch Flint River and Whigville Creek	Water
040802040101-02	Rivers/Streams in HUC 040802040101	Includes: South Branch Flint River	Water
040802040102-01	Rivers/Streams in HUC 040802040102	Includes: Hunters Creek	Water
040802040102-02	Rivers/Streams in HUC 040802040102	Includes: Hunters Creek and Kintz Creek	Water
040802040103-01	Rivers/Streams in HUC 040802040103	Includes: Unnamed Tributary to the South Branch Flint River	Water
040802040103-02	Rivers/Streams in HUC 040802040103	Includes: Bishop Drain and Unnamed Tributary to Bishop Drain	Water
040802040103-03	Rivers/Streams in HUC 040802040103	Includes: Pine Creek	Water
040802040103-04	Rivers/Streams in HUC 040802040103	Includes: UNNAMED DRAINS, LAPEER TWP.	Water
040802040103-05	Rivers/Streams in HUC 040802040103	Includes: South Branch Flint River	Water
040802040103-06	Rivers/Streams in HUC 040802040103	Includes: South Branch Flint River	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802040103-07	Rivers/Streams in HUC 040802040103	Includes: South Branch Flint River	Water
040802040104-01	Rivers/Streams in HUC 040802040104	Includes: Farmers Creek	Water
040802040104-04	Rivers/Streams in HUC 040802040104	Includes: Farmers Creek and Poplar Creek	Water
040802040104-05	Rivers/Streams in HUC 040802040104	Includes: Mill Creek and Spring Bank Creek	Water
040802040104-06	Rivers/Streams in HUC 040802040104	Includes: South Branch Farmers Creek	Water
040802040105-01	Rivers/Streams in HUC 040802040105	Includes: Unnamed Tributaries to South Branch Flint River	Water
040802040105-02	Rivers/Streams in HUC 040802040105	Includes: South Branch Flint River	Water
040802040105-03	Rivers/Streams in HUC 040802040105	Includes: PLUM CREEK	Water
040802040106-01	Rivers/Streams in HUC 040802040106	Includes: Sand Hill Drain and South Branch Flint River	Water
040802040201-01	Rivers/Streams in HUC 040802040201	Includes: Cedar Creek and Elm Creek	Water
040802040202-02	Rivers/Streams in HUC 040802040202	Includes: Bottom Creek and North Branch Flint River	Water
040802040202-03	Rivers/Streams in HUC 040802040202	Includes: PLUM CREEK	Water
040802040202-04	Rivers/Streams in HUC 040802040202	Includes: Gravel Creek	Water
040802040203-01	Rivers/Streams in HUC 040802040203	Includes: Indian Creek	Water
040802040204-01	Rivers/Streams in HUC 040802040204	Includes: North Branch Flint River, Wilson Drain, North Branch Drain and Hobson Drain	Water
040802040205-01	Rivers/Streams in HUC 040802040205	Includes: Silver Creek and Squaw Creek	Water
040802040206-01	Rivers/Streams in HUC 040802040206	Includes: Evergreen Creek and Squaw Creek	Water
040802040207-01	Rivers/Streams in HUC 040802040207	Includes: North Branch Flint River and Fitch Drain	Water
040802040208-01	Rivers/Streams in HUC 040802040208	Includes: Forest Drain, Joslyn Drain, Kester Drain and North Branch Flint River	Water
040802040208-03	Rivers/Streams in HUC 040802040208	Includes: Crystal Creek	Water
040802040301-01	Rivers/Streams in HUC 040802040301	Includes: Kimball Drain, Lum Drain, and Unnamed Tributaries to Kimball Drain	Water
040802040302-01	Rivers/Streams in HUC 040802040302	Includes: Swartz Creek	Water
040802040303-01	Rivers/Streams in HUC 040802040303	Includes: Thread Creek and Zimmerman Branch	Water
040802040304-01	Rivers/Streams in HUC 040802040304	Includes: West Branch Swartz Creek, Hewitt Drain and Howland Drain	Water
040802040305-01	Rivers/Streams in HUC 040802040305	Includes: Swartz Creek and Seaver Drain	Water
040802040305-02	Rivers/Streams in HUC 040802040305	Includes: Indian Creek, Petry Branch and Dawe Drain	Water
040802040306-01	Rivers/Streams in HUC 040802040306	Includes: Thread Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802040307-01	Rivers/Streams in HUC 040802040307	Includes: Swartz Creek, Carman Creek, Gibson Drain and Sherwood Drain	Water
040802040307-02	Rivers/Streams in HUC 040802040307	Includes: Call Creek	Water
040802040401-01	Rivers/Streams in HUC 040802040401	Includes: Clute Drain, Flint River and Hemmingway and Whipple Drain	Water
040802040403-02	Rivers/Streams in HUC 040802040403	Includes: Flint River and Hasler Creek	Water
040802040404-01	Rivers/Streams in HUC 040802040404	Includes: Duck Creek and Kearsley Creek	Water
040802040405-01	Rivers/Streams in HUC 040802040405	Includes: Cartwright Drain, Kearsley Creek and Paddison Drain	Water
040802040406-01	Rivers/Streams in HUC 040802040406	Includes: Simon Branch	Water
040802040406-03	Rivers/Streams in HUC 040802040406	Includes: Black Creek	Water
040802040406-04	Rivers/Streams in HUC 040802040406	Includes: BURDICK DRAIN	Water
040802040407-01	Rivers/Streams in HUC 040802040407	Includes: Barden Branch, Butternut Creek and Jackson Branch	Water
040802040408-01	Rivers/Streams in HUC 040802040408	Includes: Chipmunk Creek and Kearsley Creek	Water
040802040408-02	Rivers/Streams in HUC 040802040408	Includes: Kearsley Creek	Water
040802050201-01	Rivers/Streams in HUC 040802050201	Includes: North Branch White Creek	Water
040802050202-01	Rivers/Streams in HUC 040802050202	Includes: Mud Creek and North Branch White Creek	Water
040802050203-01	Rivers/Streams in HUC 040802050203	Includes: South Branch White Creek	Water
040802050203-02	Rivers/Streams in HUC 040802050203	Includes: Alder Creek and South Branch White Creek	Water
040802050204-01	Rivers/Streams in HUC 040802050204	Includes: White Creek	Water
040802050204-02	Rivers/Streams in HUC 040802050204	Includes: North Branch White Creek	Water
040802050206-01	Rivers/Streams in HUC 040802050206	Includes: Sucker Creek	Water
040802050206-02	Rivers/Streams in HUC 040802050206	Includes: Cox Drain, Phelps Lake Drain, Sucker Creek and Voght Drain	Water
040802050209-01	Rivers/Streams in HUC 040802050209	Includes: Cass River and H-M Drain	Water
040802050209-02	Rivers/Streams in HUC 040802050209	Includes: Evergreen Creek	Water
040802050209-03	Rivers/Streams in HUC 040802050209	Includes: Moore Drain	Water
040802050301-01	Rivers/Streams in HUC 040802050301	Includes: Goodings Creek	Water
040802050302-01	Rivers/Streams in HUC 040802050302	Includes: Cole Creek and Perry Creek	Water
040802050303-01	Rivers/Streams in HUC 040802050303	Includes: Millington Creek	Water
040802050303-02	Rivers/Streams in HUC 040802050303	Includes: Cass River	Water
040900010101-02	Rivers/Streams in HUC 040900010101	Includes: Doggan Drain	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040900010102-02	Rivers/Streams in HUC 040900010102	Includes: MCMANUS DRAIN	Water
040900010103-01	Rivers/Streams in HUC 040900010103	Includes: Baerwolf Drain, Custer County Drain, Dwight Drain, Fye Drain, Kinney Drain, Stone Drain, Unnamed Tributaries to Custer County Drain, Unnamed Tributaries to Dwight Drain, Unnamed Tributaries to Fye Drain, and Unnamed Tributaries to Stone Drain	Water
040900010103-02	Rivers/Streams in HUC 040900010103	Includes: Berry Drain	Water
040900010105-01	Rivers/Streams in HUC 040900010105	Includes: Elk Creek, Hydorn Drain, Lapeer and Sanilac Drain, Scott Drain, Valley Center Drain, Varney Drain, Winters Drain, Witmer Drain, York Drain, Unnamed Tributaries to Elk Creek, Unnamed Tributaries to Lapeer and Sanilac Drain, Unnamed Tributaries to	Water
040900010106-01	Rivers/Streams in HUC 040900010106	Includes: Elk Creek, East Branch Speaker and Maple Valley Drain, Fletcher Drain, Bowers Drain, McGauley Drain, Shell Drain, Macklen Drain, Mullaney Drain and Weston Drain.	Water
040900010107-01	Rivers/Streams in HUC 040900010107	Includes: Elk Creek, McDonald Drain, Phillips Drain, Eagle Drain, Setter Drain, Welch Drain, and Unnamed Tributaries.	Water
040900010108-01	Rivers/Streams in HUC 040900010108	Includes: Elk Creek, Powers Drain, Elk Flynn and Maple Valley Drain, Jones Drain, Omard Drain, Smafield Drain, and Unnamed Tributaries.	Water
040900010109-01	Rivers/Streams in HUC 040900010109	Includes: Elk Creek, Beals and Fizzle Drain, Eggert Drain, Hale Drain, Severance Drain, Cummer Drain, Johns Barrett Drain, McElhinney Drain, Barr Drain, and Unnamed Tributaries.	Water
040900010110-01	Rivers/Streams in HUC 040900010110	Includes: Cork Drain, Engle Drain, French Drain, Hunt Drain, Potts Drain, Rickett Drain, Roskey Drain, Spring Creek Drain, Topping Drain, Unnamed Tributary to Cork Drain, Unnamed Tributaries to Engle Drain, Unnamed Tributaries to Potts Drain, Unnamed Trib	Water
040900010201-01	Rivers/Streams in HUC 040900010201	Includes: Black Creek, Jackson Creek, Lavell Drain, Livergood Drain, Robertson Drain, Unnamed Tributaries to Black Creek, Unnamed Tributaries to Jackson Creek, and Unnamed Tributaries to Lavell Drain	Water
040900010202-01	Rivers/Streams in HUC 040900010202	Includes: ELK CREEK	Water
040900010203-01	Rivers/Streams in HUC 040900010203	Includes: Eves Drain, Fueslin Drain, Hayes Drain, Jackson Drain, Silver Creek, Unnamed Tributaries to Eves Drain, Unnamed Tributaries to Jackson Drain, Unnamed Tributaries to Silver Creek, and Wilson Drain	Water
040900010204-01	Rivers/Streams in HUC 040900010204	Includes: Brant Lake Drain, Elk Lake Drain, Swamp Coners Drain, Unnamed Tributaries to Brant Lake Drain, Unnamed Tributaries to	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Elk Lake Drain, and Unnamed Tributary to Swamp Corners Drain	
040900010205-01	Rivers/Streams in HUC 040900010205	Includes: Elk Lake Creek, Madison Drain, North Branch Mill Creek, Stony Creek, Unnamed Tributaries to Madison Drain, Unnamed Tributaries to North Branch Mill Creek, and Unnamed Tributaries to Stony Creek	Water
040900010206-01	Rivers/Streams in HUC 040900010206	Includes: South Branch Mill Creek, Galley Drain, Kolb Drain, Sidel Drain, Franklin Drain, Mudcat Drain, Wendt Drain, Weitzig Drain, Jurn Drain, Bunde Drain, Brandy Drain, and Unnamed Tributaries.	Water
040900010207-01	Rivers/Streams in HUC 040900010207	Includes: Black Segate Reid Drain, Frasier Drain, Lynn Mussey Drain, South Branch Mill Creek, Unnamed Tributaries to Frasier Drain, Unnamed Tributaries to Lynn Mussey Drain, and Unnamed Tributaries to South Branch Mill Creek	Water
040900010208-01	Rivers/Streams in HUC 040900010208	Includes: Courter Drain, Flansburg Drain, North Branch Mill Creek, Root Drain, Unnamed Tributaries to Couter Drain, Unnamed Tributaries to North Branch Mill Creek, Unnamed Tributaries to Willoughby Drain, Watt Drain, and Willoughby Drain	Water
040900010209-01	Rivers/Streams in HUC 040900010209	Includes: Mill Creek, Sanilac and St. Clair Drain, Cole Drain, Downey Drain.	Water
040900010209-02	Rivers/Streams in HUC 040900010209	Includes: Mill Creek, Thompson Drain, Unnamed Tributaries.	Water
040900010209-03	Rivers/Streams in HUC 040900010209	Includes: MILL CREEK	Water
040900010209-04	Rivers/Streams in HUC 040900010209	Includes: Meharg Drain, Middleton Drain, Mill Creek, Unnamed Tributaries to Meharg Drain, and Unnamed Tributaries to Mill Creek	Water
040900010210-01	Rivers/Streams in HUC 040900010210	Includes: Mill Creek, Sheehy Drain, Thody Drain, and Unnamed Tributaries.	Water
040900010210-02	Rivers/Streams in HUC 040900010210	Includes: Mill Creek, White Drain, and Unnamed Tributaries.	Water
040900010212-01	Rivers/Streams in HUC 040900010212	Includes: MILL CREEK	Water
040900030108-34	Rivers/Streams in HUC 040900030108	Includes: Murphy Creek	Water
040900030110-05	Rivers/Streams in HUC 040900030110	Includes: Trout Creek	Water
040900030111-02	Rivers/Streams in HUC 040900030111	Includes: Galloway Creek, Galloway Drain, and Unnamed Tributaries to Galloway Creek	Water
040900030311-02	Rivers/Streams in HUC 040900030311	Includes: Miller Drain	Water
040900030312-02	Rivers/Streams in HUC 040900030312	Includes: McBride Drain, and Unnamed Tributary to McBride Drain	Water
040900050101-01	Rivers/Streams in HUC 040900050101	Includes: Big Lake, Huron River, and Unnamed Tributaries to	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Huron River	
040900050102-01	Rivers/Streams in HUC 040900050102	Includes: Haven Hill Lake Outlet, Huron River, Unnamed Tributaries to Brendel Lake ,Unnamed Tributary to Oxbow Lake, and Unnamed Tributaries to Huron River	Water
040900050102-09	Rivers/Streams in HUC 040900050102	Includes: Fox Lake Outlet, Hayes Creek, Huron River, and Straits Lakes Outlet	Water
040900050103-03	Rivers/Streams in HUC 040900050103	Includes: CONGDON DRAIN	Water
040900050103-04	Rivers/Streams in HUC 040900050103	Includes: NORTON CREEK	Water
040900050103-05	Rivers/Streams in HUC 040900050103	Includes: Unnamed Tributaries to Norton Creek	Water
040900050104-03	Rivers/Streams in HUC 040900050104	Includes: Pettibone Creek and Unnamed Tributary to Pettibone Creek	Water
040900050105-08	Rivers/Streams in HUC 040900050105	Includes: Huron River from Hubbell Pond outlet downstream to the Kent Lake inlet to include General Motors Road site.	Water
040900050106-01	Rivers/Streams in HUC 040900050106	Includes: Huron River and Unnamed Tributaries to Kent Lake	Water
040900050106-05	Rivers/Streams in HUC 040900050106	Includes: Huron River upstream of Dawson Road and Unnamed Tributaries to Huron River	Water
040900050107-01	Rivers/Streams in HUC 040900050107	Includes: WOODRUFF CREEK	Water
040900050107-03	Rivers/Streams in HUC 040900050107	Includes: Mann Creek, Unnamed Tributary near Proving Ground, and Unnamed Tributary to Sloan Lake	Water
040900050108-01	Rivers/Streams in HUC 040900050108	Includes: Blackwood Drain, Davis Creek, Novi Lyon Drain, Unnamed Tributaries to Blackwood Drain, and Unnamed Tributaries to Novi Lynn Drain	Water
040900050108-02	Rivers/Streams in HUC 040900050108	Includes: DAVIS CREEK	Water
040900050109-02	Rivers/Streams in HUC 040900050109	Includes: Unnamed Tributary Nichwagh Lake Outlet (Yerkes Drain)	Water
040900050110-01	Rivers/Streams in HUC 040900050110	Includes: Sandy Bottom Lake Outlet, Ten Mile Lake Outlet, Tobin Lake Outlet, Unnamed Tributary to Sandy Bottom Lake Outlet, Unnamed Tributary to Tobin Lake, and Unnamed Tributaries to Tobin Lake Outlet	Water
040900050110-02	Rivers/Streams in HUC 040900050110	Includes: Davis Creek, Lyon Lake Outlet, and Unnamed Tributary to Davis Creek	Water
040900050111-01	Rivers/Streams in HUC 040900050111	Includes: Maxfield Lake Outlet, South Ore Creek, Unnamed Tributary to Grubb Lake, and Unnamed Tributary South Ore Creek	Water
040900050111-05	Rivers/Streams in HUC 040900050111	Includes: SOUTH ORE CREEK	Water
040900050112-01	Rivers/Streams in HUC 040900050112	Includes: Huron River and Spring Mill Creek	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040900050112-02	Rivers/Streams in HUC 040900050112	Includes: Dibrova Lake Outlet, Huron River, Maltby Lake Outlet, and Ore Lake Outlet	Water
040900050201-01	Rivers/Streams in HUC 040900050201	Includes: Pleasant Lake Drain Tributary to Mill Creek	Water
040900050202-01	Rivers/Streams in HUC 040900050202	Wilkinson Drain at Old US-12	Water
040900050202-02	Rivers/Streams in HUC 040900050202	Includes: Letts Creek watershed tributary to the N. Fork Mill Creek.	Water
040900050203-01	Rivers/Streams in HUC 040900050203	Includes: Mill Creek, North Fork	Water
040900050204-01	Rivers/Streams in HUC 040900050204	Includes: Mill Creek and Unnamed Tributaries to Mill Creek	Water
040900050204-02	Rivers/Streams in HUC 040900050204	Includes: MILL CREEK	Water
040900050301-01	Rivers/Streams in HUC 040900050301	Includes: O Connor Creek, Unnamed Tributary to Horseshoe Lake, and Unnamed Tributary to O Connor Creek	Water
040900050301-03	Rivers/Streams in HUC 040900050301	Includes: Horseshoe Lake Drain from the Huron River confluence upstream to just upstream of the Northfield Township WWTP outfall.	Water
040900050301-05	Rivers/Streams in HUC 040900050301	Includes: Horseshoe Lake Drain from just upstream of the Northfield WWTP to the legal lake level weir Horseshoe Lake outlet.	Water
040900050302-01	Rivers/Streams in HUC 040900050302	Includes: ARMS CREEK	Water
040900050303-01	Rivers/Streams in HUC 040900050303	Includes: Honey Creek and Unnamed Tributary to Honey Creek	Water
040900050303-03	Rivers/Streams in HUC 040900050303	Includes: HONEY CREEK	Water
040900050304-01	Rivers/Streams in HUC 040900050304	Includes: Lowe Lake Drain, Portage Creek, Unnamed Tributaries to Lowe Lake, Unnamed Tributary near Morton Road, Unnamed Tributary to Nichols Lake, and Unnamed Tributary to Sharp Lake	Water
040900050304-02	Rivers/Streams in HUC 040900050304	Includes: PORTAGE CREEK	Water
040900050304-03	Rivers/Streams in HUC 040900050304	Includes: Portage Creek	Water
040900050305-01	Rivers/Streams in HUC 040900050305	Includes: Portage Creek	Water
040900050305-02	Rivers/Streams in HUC 040900050305	Includes: PORTAGE CREEK	Water
040900050305-03	Rivers/Streams in HUC 040900050305	Includes: UNADILLA STOCKBRIDGE DRAIN	Water
040900050306-01	Rivers/Streams in HUC 040900050306	Includes: North Lake Outlet, South Lake Outlet, Unnamed Tributary to Bruin Lake, Unnamed Tributaries to South Lake, and Unnamed Tributary to Snyder Lake	Water
040900050306-02	Rivers/Streams in HUC 040900050306	Includes: PORTAGE River, Livermore Creek	Water
040900050307-01	Rivers/Streams in HUC 040900050307	Includes: Bass Lake Outlet, Cordley Lake Outlet, Hay Creek, Huron River, Unnamed Tributaries to East Crooked Lake, Unnamed	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Tributaries to Hay Creek, and Unnamed Tributaries to Huron River	
040900050307-02	Rivers/Streams in HUC 040900050307	Includes: Huron River	Water
040900050307-03	Rivers/Streams in HUC 040900050307	Includes: PORTAGE CREEK	Water
040900050307-04	Rivers/Streams in HUC 040900050307	Includes: Bishop Lake Outlet, Chilson Creek, and Unnamed Tributary to Chilson Creek	Water
040900050307-05	Rivers/Streams in HUC 040900050307	Includes: Bass Lake Outlet, Hay Creek, Rush Lake Outlet, and Tioga Lake Outlet	Water
040900050309-02	Rivers/Streams in HUC 040900050309	Includes: Huron River	Water
040900050309-03	Rivers/Streams in HUC 040900050309	Includes: Huron River, Unnamed Tributary to Barton Pond, and Unnamed Tributaries to Huron River	Water
040900050309-04	Rivers/Streams in HUC 040900050309	Includes: Unnamed Tributaries to Bridgeway Lake and Green Oak Lake and Unnamed Tributary to Huron River	Water
040900050309-05	Rivers/Streams in HUC 040900050309	Includes: Honey Creek upstream from Huron River confluence to including all tributaries	Water
040900050309-06	Rivers/Streams in HUC 040900050309	Includes: Unnamed Tributary to Huron River	Water
040900050401-01	Rivers/Streams in HUC 040900050401	Includes: Nelson Drain, Unnamed Tributary to Nelson Drain, and Wagner Drain	Water
040900050401-02	Rivers/Streams in HUC 040900050401	Fleming Creek and tributaries	Water
040900050402-02	Rivers/Streams in HUC 040900050402	Includes: Travers Creek, tributary to Huron River	Water
040900050402-03	Rivers/Streams in HUC 040900050402	Includes: Unnamed Tributary to Huron River	Water
040900050402-04	Rivers/Streams in HUC 040900050402	Includes: Malletts Creek from Huron River confluence upstream to Brown Park Pond dam.	Water
040900050402-05	Rivers/Streams in HUC 040900050402	Includes: SWIFT RUN CREEK	Water
040900050402-06	Rivers/Streams in HUC 040900050402	Includes: Huron River and Malletts Creek headwaters, near Ann Arbor Saline Road, and tributary to the Huron River.	Water
040900050403-03	Rivers/Streams in HUC 040900050403	Includes: Huron River/Ford Lake Impoundment reach.	Water
040900050403-04	Rivers/Streams in HUC 040900050403	Includes: Huron River, Snidecar Drain, and Superior Number One Drain	Water
040900050404-01	Rivers/Streams in HUC 040900050404	Includes: WILLOW RUN DRAIN	Water
040900050404-04	Rivers/Streams in HUC 040900050404	Includes: Unnamed Tributaries to Belleville Lake and Unnamed Tributary near Rawsonville Road	Water
040900050405-01	Rivers/Streams in HUC 040900050405	Includes: Huron River, Bunton Drain, Griggs Drain, Head Drain, Hubbard Drain, Jewett Drain, Throop Number One Drain, Unnamed Tributaries to Griggs Drain, and Unnamed Tributaries to	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Throop Number One Drain	
040900050406-01	Rivers/Streams in HUC 040900050406	Includes: Adams Drain, Cass Drain, Groh Drain, Hand Drain, Hubert Drain, Morrison Drain, Odette Drain, Reiser Drain, Silver Creek, Smith Creek, Unnamed Tributaries to Morrison Drain, Unnamed Tributaries to Silver Creek, and Unnamed Tributaries to Smith Cr	Water
040900050406-02	Rivers/Streams in HUC 040900050406	Includes: Smith Creek, Reh Drain and Unnamed Tributaries to Smith Creek upstream of Van Horn Road.	Water
040900050406-03	Rivers/Streams in HUC 040900050406	Includes: Silver Creek from Woodruff Road upstream	Water
040900050406-04	Rivers/Streams in HUC 040900050406	Includes: Smith Creek from Silver Creek confluence upstream to - 02	Water
040900050407-01	Rivers/Streams in HUC 040900050407	Includes: WAGNER-PINK DRAIN	Water
040900050407-02	Rivers/Streams in HUC 040900050407	Includes: Huron River, Bancroft Noles Drain, Brook Drain, Hale Drain, Regan Drain, Vandecar Drain, Unnamed Tributary to Huron River, and Warner Drain	Water
040900050407-03	Rivers/Streams in HUC 040900050407	Includes: Huron River	Water
040900050407-04	Rivers/Streams in HUC 040900050407	Includes: Huron River	Water
040900050407-05	Rivers/Streams in HUC 040900050407	Includes: Baker and Green Drain, Port Creek, Unnamed Tributary to Port Creek, and Van Hountin Drain	Water
041000020206-03	Rivers/Streams in HUC 041000020206	Includes: Beaver Creek, Stevenson Drain, Harkness Drain, Slater Creek, Treat Drain, Cook Drain, and Unnamed Tributaries	Water
041000060101-01	Rivers/Streams in HUC 041000060101	Includes: BEAN CREEK	Water
041000060102-01	Rivers/Streams in HUC 041000060102	Includes: FISK DRAIN AND KEMPTON DRAIN	Water
041000060102-02	Rivers/Streams in HUC 041000060102	Includes: BRANCH CREEK	Water
041000060102-03	Rivers/Streams in HUC 041000060102	Includes: BEAN CREEK	Water
041000060102-04	Rivers/Streams in HUC 041000060102	Includes: BEAN CREEK	Water
041000060103-01	Rivers/Streams in HUC 041000060103	Includes: BEAN CREEK	Water
041000060104-01	Rivers/Streams in HUC 041000060104	Includes: POSEY LAKE AND SEELEY DRAIN	Water
041000060105-01	Rivers/Streams in HUC 041000060105	Includes: PRATVILLE DRAIN	Water
041000060105-02	Rivers/Streams in HUC 041000060105	Includes: LIME CREEK	Water
041000060105-03	Rivers/Streams in HUC 041000060105	Includes: LIME CREEK	Water
041000060105-04	Rivers/Streams in HUC 041000060105	Includes: DURFEE CREEK (DURFEE LAKE OUTLET)	Water
041000060106-01	Rivers/Streams in HUC 041000060106	Includes: BEAN CREEK	Water

AUID	Assessment Unit Name	Location Description	PCB Impairment
041000060106-02	Rivers/Streams in HUC 041000060106	Includes: BEAN CREEK	Water
041000060106-03	Rivers/Streams in HUC 041000060106	Includes: MEDINA DRAIN	Water
041000060201-01	Rivers/Streams in HUC 041000060201	Includes: BEAN CREEK	Water
041000060201-02	Rivers/Streams in HUC 041000060201	Includes: SILVER CREEK	Water
041000060204-01	Rivers/Streams in HUC 041000060204	Includes: UNNAMED TRIB TO MILL CREEK	Water
040201030304-01	TORCH LAKE	In the vicinity of the communities of Hubbell and Lake Linden.	Fish
040201030307-08	PORTAGE LAKE	Vicinity of Houghton and Hancock.	Fish
040202010101-05	Rivers/Streams in HUC 040202010101	Includes: Silver Lead Creek and West Branch Chocoday River	Fish
040203000001-02	SISKIWIT LAKE	Isle Royale.	Fish
040301100107-02	GOOSE LAKE	SE of Neganee and Ishpeming.	Fish
040400010201-01	Rivers/Streams in HUC 040400010201	Includes: Beaverdam Creek and Dowling Creek	Fish
040400010202-01	Rivers/Streams in HUC 040400010202	Includes: East Branch Galien River and Judy Lake Drain	Fish
040400010203-01	Rivers/Streams in HUC 040400010203	Includes: Blue Jay Creek and Galien River	Fish
040400010204-01	Rivers/Streams in HUC 040400010204	Includes: Spring Creek	Fish
040400010206-01	Rivers/Streams in HUC 040400010206	Includes: Deer Creek	Fish
040400010206-02	Rivers/Streams in HUC 040400010206	Includes: South Branch Galien River and Squaw Creek	Fish
040400010207-01	Rivers/Streams in HUC 040400010207	Includes: Galien River	Fish
040400010207-02	Rivers/Streams in HUC 040400010207	Includes: Kirktown Creek	Fish
040400010207-03	Rivers/Streams in HUC 040400010207	Includes: Galien River	Fish
040400010208-01	Rivers/Streams in HUC 040400010208	Includes: Galien River	Fish
040500010403-03	UNION LAKE	Vicinity of Union City u/s of Dunk Rd. dam.	Fish
040500010503-02	BARTON LAKE	SW of Vicksburg.	Fish
040500012405-05	MAPLE LAKE	Vicinity of Paw Paw.	Fish
040500012603-02	LAKE CHAPIN	Vicinity of Berrien Springs.	Fish
040500020208-01	Rivers/Streams in HUC 040500020208	Includes: Merriman Lake Outlet, Bangor Impoundment, School Section Lake Outlet, South Branch Black River, and Unnamed Tributaries to South Branch Black River	Fish
040500020209-01	Rivers/Streams in HUC 040500020209	Includes: South Branch Black River and Unnamed Tributaries to South Branch Black River	Fish
040500020210-01	Rivers/Streams in HUC 040500020210	Includes: South Branch Black River and Unnamed Tributaries to South Branch Black River	Fish

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500020211-01	Rivers/Streams in HUC 040500020211	Includes: Black River	Fish
040500020408-01	LAKE MACATAWA	Vicinity of Holland (Park and Holland Twps.).	Fish
040500030408-02	CERESCO IMPOUNDMENT	Vicinity of Ceresco u/s of 12 Mile Road.	Fish
040500030507-04	GULL LAKE	Vicinity of Midland Park, Yorkville and MSU's Kellogg Biological Station.	Fish
040500030509-02	MORROW POND	Located in the vicinity of Galesburg (36th Street) and Comstock.	Fish
040500030702-01	FENNER LAKE	NW of Martin (T2N, R11W, S15).	Fish
040500030811-03	HAMILTON IMPOUNDMENT (RABBIT RIVER)	Vicinity of Hamilton at M-40.	Fish
040500040703-02	MOORES PARK IMPOUNDMENT	Vicinity of Lansing from the Moores Park Dam u/s to Waverly Road.	Fish
040500060311-03	MORRISON LAKE	S. of Rt. 96 due S. of Saranac.	Fish
040500060507-07	REEDS LAKE	Vicinity of E. Grand Rapids.	Fish
040601010509-05	PERE MARQUETTE LAKE	Vicinity of Ludington.	Fish
040601010904-01	WHITE LAKE	Vicinity of Montague and Whitehall.	Fish
040601011010-01	Rivers/Streams in HUC 040601011010	Includes: BLACK CREEK	Fish
040601011011-01	Rivers/Streams in HUC 040601011011	Includes: BLACK CREEK	Fish
040601011011-03	MONA LAKE	Tributary to Lake Michigan.	Fish
040601020101-02	HIGGINS LAKE	Vicinity of Roscommon.	Fish
040601020104-02	HOUGHTON LAKE	Vicinity of Houghton Lake, Houghton Heights and Prudenville.	Fish
040601020904-05	HESS LAKE	SE of Newaygo.	Fish
040601020905-03	FREMONT LAKE	SHERIDAN TWP., near city of Fremont (T12N, R14W, S2,3,4,9,10,11)	Fish
040601021003-01	BEAR LAKE	Tributary to Muskegon Lake located north of Muskegon Lake, Laketon Twp.	Fish
040601030705-01	MANISTEE LAKE	East of Manistee, Filer Twp.	Fish
040601040103-04	NORTH LAKE LEELANAU	Vicinity of Leland.	Fish
040601040302-03	GREEN LAKE	Vicinity of Interlochen.	Fish
040601040305-03	CRYSTAL LAKE	Vicinity of Benzonia and Beulah.	Fish
040601040402-01	GLEN LAKE	South of Glen Arbor.	Fish
040601040405-02	PORTAGE LAKE	Vicinity of Onekama.	Fish
040601050205-01	Rivers/Streams in HUC 040601050205	Includes: Boyne River, Moyer Creek and South Branch Boyne River	Fish

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601050207-01	LAKE CHARLEVOIX	Vicinity of Boyne City.	Fish
040601050305-01	TORCH LAKE	Vicinity of Eastport.	Fish
040601050404-02	ELK LAKE	Vicinity of Elk Rapids.	Fish
040700070609-04	VAN ETTEN LAKE	NE of Wurtsmith Air Force Base.	Fish
040801010105-02	Rivers/Streams in HUC 040801010105	Includes: Tawas River	Fish
040801010411-01	Rivers/Streams in HUC 040801010411	Includes: Saverine Creek and Unnamed Tributaries to Saverine Creek	Fish
040801010412-01	Rivers/Streams in HUC 040801010412	Includes: Rifle River and Unnamed Tributaries to Rifle River	Fish
040801010412-03	Rivers/Streams in HUC 040801010412	Includes: Rifle River	Fish
040801010502-01	Rivers/Streams in HUC 040801010502	Includes: Old Channel (Rifle River) and Unnamed Tributaries to Old Channel (Rifle River)	Fish
040801020106-04	Rivers/Streams in HUC 040801020106	Includes: Unnamed Tributary to Kawkawlin River	Fish
040801020106-05	TOBICO MARSH (WETLAND)	NE of Kawkawlin.	Fish
040801030110-02	Rivers/Streams in HUC 040801030110	Includes: Sebewaing River	Fish
040802010408-03	SANFORD LAKE	NW of Midland at Sanford.	Fish
040802020312-03	ALMA IMPOUNDMENT	Impoundment of the Pine River in the vicinity of Alma.	Fish
040802020403-04	ST. LOUIS IMPOUNDMENT	St. Louis Impoundment of Pine River in the vicinity of St. Louis.	Fish
040802030104-02	THOMPSON LAKE	Vicinity of Howell.	Fish
040802030108-08	LAKE PONEMAH	NW of Fenton.	Fish
040802030109-05	LOBDELL LAKE	2 miles SW of Linden (Argentine Twp.).	Fish
040802040306-03	THREAD LAKE	Upstream of Rt. 475. Vicinity of Flint.	Fish
040802040403-05	HOLLOWAY RESERVOIR	NE of Richfield Center (Flint area).	Fish
040802040408-03	KEARSLEY RESERVOIR	Flint River confluence just u/s of Western Road.	Fish
040802050208-02	CARO IMPOUNDMENT	Vicinity of Caro u/s.	Fish
040900010114-03	CROSWELL IMPOUNDMENT (BLACK RIVER)	Black River in the vicinity of Croswell (Croswell Impoundment u/s to the confluence of Elk Cr.).	Fish
040900010302-01	Rivers/Streams in HUC 040900010302	Includes: Apply Drain, Campbell Drain, Cowhy Drain, Green Drain, Johnson Drain, Moore Creek, Parker Drain, Riley-Wales Drain, South Branch Pine River, Unnamed Tributaries to Apply Drain, Unnamed Tributaries to Campbell Drain, Unnamed Tributaries to Johns	Fish
040900010303-01	Rivers/Streams in HUC 040900010303	Includes: Smiths Creek from Pine River confluence upstream to	Fish

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Palms Road	
040900010304-01	Rivers/Streams in HUC 040900010304	Includes: Big Creek, Holland Drain, London Drain, Nelson Drain, Pine River, Unnamed Tributaries to Big Creek, Unnamed Tributaries to Holland Drain, Unnamed Tributaries to Nelson Drain, Unnamed Tributaries to Pine River, and Wolvin Drain	Fish
040900010305-01	Rivers/Streams in HUC 040900010305	Includes: Big Hand Drain, Dawson Drain, Mackley Drain, Rattle Run, Sheldon Drain, Tinsman Drain, Unnamed Tributary to Dawson Creek, Unnamed Tributary to Mackley Drain, and Unnamed Tributaries to Rattle Run	Fish
040900010306-01	Rivers/Streams in HUC 040900010306	Includes: Angel Creek, Barringer Drain, Bowman Drain, Brandywine Creek, Jordan Creek, Moak Drain, Pine River, Wolf Drain, Unnamed Tributaries to Jordan Creek, Unnamed Tributaries to Moak Drain, and Unnamed Tributaries to Pine River	Fish
040900030103-08	MACEDAY LAKE	Vicinity of Waterford.	Fish
040900040203-09	NEWBURGH LAKE	Middle River Rouge impoundment in the vicinity of Plymouth.	Fish
040900040203-10	Phoenix Lake	Rouge River, Middle Branch	Fish
040900050101-04	PONTIAC LAKE	NW of Pontiac in the headwaters of the Huron River.	Fish
040900050111-03	WOODLAND LAKE	N. of Brighton.	Fish
040900050301-02	WHITMORE LAKE	Vicinity of Whitmore Lake.	Fish
040900050309-01	BARTON POND	Impoundment of Huron River in vicinity of Barton Hills (suburb of Ann Arbor). From dam u/s to Conrail RR bridge crossing.	Fish
040900050403-01	UNNAMED LAKE	S. of Ford Lake in the NE corner of Sec. 26, T3S, R7E (Textile Road and Burton Road).	Fish
040900050403-02	Ford Lake	Impoundment of the Huron River located between the cities of Ypsilanti and Romulus.	Fish
040900050404-02	Belleville Lake	Ypsilanti, MI.	Fish
041000010308-01	Rivers/Streams in HUC 041000010308	Includes: Ottawa River	Fish
040301080408-01	Rivers/Streams in HUC 040301080408	Includes: Black Creek and Sturgeon River	Fish and water
040301080705-01	Rivers/Streams in HUC 040301080705	Includes: Fumee Creek and Menominee River	Fish and water
040301080706-01	Rivers/Streams in HUC 040301080706	Includes: Menominee River	Fish and water
040301080706-02	Rivers/Streams in HUC 040301080706	Includes: White Creek and Unnamed Tributary to Menominee River	Fish and water
040301080707-01	Rivers/Streams in HUC 040301080707	Includes: Brandts Creek, Carlson Creek, Harter Creek, Menominee River, Mullen Creek and Seynor Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040301080707-02	Rivers/Streams in HUC 040301080707	Includes: Faithorn Creek	Fish and water
040301080708-01	Rivers/Streams in HUC 040301080708	Includes: Bird Creek, Blom Creek, DeHaas Creek, Hammond Brook and Pemene Creek	Fish and water
040301080710-01	Rivers/Streams in HUC 040301080710	Includes: Goodman Brook, Kading Creek and Menominee River	Fish and water
040301080710-02	Rivers/Streams in HUC 040301080710	Includes: Miscauna Creek	Fish and water
040301080711-02	Rivers/Streams in HUC 040301080711	Includes: Menominee River, Rosebush Creek and Sawbridge Creek	Fish and water
040301080712-01	Rivers/Streams in HUC 040301080712	Includes: Menominee River	Fish and water
040301080805-01	Rivers/Streams in HUC 040301080805	Includes: Hugos Brook, Little Cedar River and Little Kelley Creek	Fish and water
040301080902-01	Rivers/Streams in HUC 040301080902	Includes: Longrie Creek and Shakey River	Fish and water
040301080906-01	Rivers/Streams in HUC 040301080906	Includes: Menominee River	Fish and water
040301080907-01	Rivers/Streams in HUC 040301080907	Includes: Harding Creek, Phillips Creek and Woods Creek	Fish and water
040301080908-01	Rivers/Streams in HUC 040301080908	Includes: Koss Creek and Menominee River	Fish and water
040301080908-02	Rivers/Streams in HUC 040301080908	Includes: Burke Creek	Fish and water
040301080909-01	Rivers/Streams in HUC 040301080909	Includes: Menominee River	Fish and water
040301080913-01	Rivers/Streams in HUC 040301080913	Includes: Chappee Creek, Menominee River, Pine Creek and Sobiesky Creek	Fish and water
040400010101-01	Rivers/Streams in HUC 040400010101	Includes: Lake Michigan Shoreline from Bridgman to Saint Joseph	Fish and water
040500010101-01	Rivers/Streams in HUC 040500010101	Includes: Unnamed Tributaries to Allen Lake, Berry Lake, Carpenter Lake, Hemlock Lake, Lime Lake, Long Lake, Look Lake, Paw Paw Lake, Round Lake, and Suckey Lake	Fish and water
040500010102-01	Rivers/Streams in HUC 040500010102	Includes: South Branch Hog Creek from UnNamed Tributary downstream of US 12 upstream to Carpenter Lake, including Little Hog Creek and all tributaries.	Fish and water
040500010103-01	Rivers/Streams in HUC 040500010103	Includes: Tallahassee Creek from Mud Lake confluence upstream to headwaters.	Fish and water
040500010104-01	Rivers/Streams in HUC 040500010104	Includes: Unnamed Tributaries to Coldwater Lake, East Long Lake, Little Coldwater Lake, and Wright Lake	Fish and water
040500010105-01	Rivers/Streams in HUC 040500010105	Includes: Unnamed Tributaries to Archer Lake, Bartholemew Lake, Marble Lake, Middle Lake, and Wright Lake	Fish and water
040500010105-04	Rivers/Streams in HUC 040500010105	Includes: Fisher Creek from Marble Lake confluence upstream to headwaters.	Fish and water
040500010106-01	Rivers/Streams in HUC 040500010106	Includes: Sauk River and tributaries from South Lake confluence upstream to Marble Lake.	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500010107-01	Rivers/Streams in HUC 040500010107	Includes: Coldwater River and tributaries from South lake confluence upstream to Coldwater Lake and Lake of the Woods.	Fish and water
040500010108-01	Rivers/Streams in HUC 040500010108	Includes: Cold Creek (Mud Creek) and tributaries from North Lake confluence upstream to headwaters.	Fish and water
040500010109-01	Rivers/Streams in HUC 040500010109	Includes: South Branch Hog Creek and tributaries (Bagley & Bowen Creek) from confluence with North Branch Hog Creek upstream to UnNamed Tributary downstream of US 12.	Fish and water
040500010110-01	Rivers/Streams in HUC 040500010110	Includes: Hog Creek and tributaries from Coldwater River confluence upstream to confluence of North and South Branches of Hog Creek.	Fish and water
040500010110-02	Rivers/Streams in HUC 040500010110	Includes: North Branch Hog Creek and tributaries from Hog Creek confluence upstream to headwaters.	Fish and water
040500010111-01	Rivers/Streams in HUC 040500010111	Includes: Coldwater River and all tributaries, except Hog Creek and Cold Creek, from St Joseph River confluence upstream to the inlet of South Lake.	Fish and water
040500010201-01	Rivers/Streams in HUC 040500010201	Includes: Beebe Creek and all tributaries from Impoundment upstream of Lake Pleasant Road to headwaters.	Fish and water
040500010202-01	Rivers/Streams in HUC 040500010202	Includes: Beebe Creek and all tributaries from St. Joseph River confluence upstream to Impoundment at Lake Pleasant Road.	Fish and water
040500010203-01	Rivers/Streams in HUC 040500010203	Includes: Boot Lake Outlet, Fourth Lake Outlet, and Unnamed Tributary to Baw Beese (First) Lake	Fish and water
040500010203-02	Rivers/Streams in HUC 040500010203	Includes: St Joseph River from Beebe Creek confluence upstream to Mill Pond in Hillsdale.	Fish and water
040500010203-05	Rivers/Streams in HUC 040500010203	Includes: Baw Beese (First) Lake Outlet, King Lake Outlet, and Unnamed Tributary to King Lake	Fish and water
040500010204-01	Rivers/Streams in HUC 040500010204	Includes: Unnamed Tributaries to Middle Sand Lake, North Sand Lake, and South Land Lake	Fish and water
040500010204-02	Rivers/Streams in HUC 040500010204	Includes: Sand Creek and tributaries from St. Joseph River confluence upstream to North Sand Lake.	Fish and water
040500010205-01	Rivers/Streams in HUC 040500010205	Includes: Saint Joseph River and all tributaries, except Sand Creek, from Soap Creek upstream to unNamed Tributary upstream of Sterling Road.	Fish and water
040500010205-02	Rivers/Streams in HUC 040500010205	Includes: Soap Creek from St.Joseph River confluence upstream to headwaters.	Fish and water
040500010205-03	Rivers/Streams in HUC 040500010205	Includes: Saint Joseph River from UnNamed Trib upstream of Sterling Road upstream to Beebe Creek.	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500010206-01	Rivers/Streams in HUC 040500010206	Includes: St. Joseph River and all tributaries from Clarendon Drain upstream to Soap Creek.	Fish and water
040500010207-01	Rivers/Streams in HUC 040500010207	Includes: Tekonsha Creek and tributaries from St. Joseph River confluence upstream to headwaters.	Fish and water
040500010208-01	Rivers/Streams in HUC 040500010208	Includes: St Joseph River and all tributaries, except Tekonsha Creek, from UnNamed Trib upstream of 13 Mile Rd upstream to Clarendon Drain.	Fish and water
040500010209-01	Rivers/Streams in HUC 040500010209	Includes: St Joseph River and all tributaries from Coldwater River confluence upstream to UnNamed Trib upstream of 13 Mile Road.	Fish and water
040500010301-01	Rivers/Streams in HUC 040500010301	Includes: Nottawa headwaters upstream of Nottawa Lake (Goose Pond Drain, Nottawa Drain, Unnamed Tributary to Klingaman Lake, Unnamed Tributary to Nottawa Drain, and Unnamed Tributary to Nottawa Lake).	Fish and water
040500010302-01	Rivers/Streams in HUC 040500010302	Includes: Nottawa Creek and all tributaries from Mud Creek (included) confluence upstream to Nottawa Lake.	Fish and water
040500010303-01	Rivers/Streams in HUC 040500010303	Includes: Alder Creek and all tributaries from Nottawa Creek confluence upstream to headwaters.	Fish and water
040500010304-01	Rivers/Streams in HUC 040500010304	Includes: Unnamed Tributaries to Pine Creek	Fish and water
040500010304-02	Rivers/Streams in HUC 040500010304	Includes: Pine Creek and all tributaries from Nottawa Creek confluence upstream to headwaters.	Fish and water
040500010305-01	Rivers/Streams in HUC 040500010305	Includes: Bear Creek and all Tributaries from Nottawa Creek confluence upstream to headwaters.	Fish and water
040500010306-02	Rivers/Streams in HUC 040500010306	Includes: Nottawa Creek and all tributaries, except Pine and Bear Creeks, from St. Joseph River confluence upstream to Athens.	Fish and water
040500010306-03	Rivers/Streams in HUC 040500010306	Includes: Nottawa Creek and all tributaries, except Alder Creek, from Athens upstream to Mud Creek confluence.	Fish and water
040500010401-01	Rivers/Streams in HUC 040500010401	Includes: Swan Creek and all tributaries from County Drain # 30 confluence upstream to headwaters.	Fish and water
040500010402-01	Rivers/Streams in HUC 040500010402	Includes: Little Swan Creek and all tributaries from St. Joseph River confluence upstream to headwaters.	Fish and water
040500010403-01	Rivers/Streams in HUC 040500010403	Includes: St Joseph River and all tributaries from Kilbourn Drain (included) upstream to Coldwater River confluence.	Fish and water
040500010404-01	Rivers/Streams in HUC 040500010404	Includes: Swan Creek and all tributaries, except Little Swan Creek from St. Joseph River confluence upstream to Long Lake inlet.	Fish and water
040500010404-05	Rivers/Streams in HUC 040500010404	Includes: Swan Creek from Long Lake inlet upstream to UnNamed Trib just upstream of Branch/St Joseph County Line.	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500010404-06	Rivers/Streams in HUC 040500010404	Includes: Swan Creek and all tributaries from UnNamed Trib upstream of Branch/St.Joseph Co. Line upstream County Drain #30.	Fish and water
040500010405-01	Rivers/Streams in HUC 040500010405	Includes: St Joseph River and all tributaries from Swan Creek confluence upstream to Kilbourn Drain	Fish and water
040500010406-01	Rivers/Streams in HUC 040500010406	Includes: Ainsley Drain, McCauley Drain, and Unnamed Tributary near Covey Road	Fish and water
040500010406-02	Rivers/Streams in HUC 040500010406	Includes: St Joseph River and all tributaies from Nottawa Creek confluence upstream to Swan Creek	Fish and water
040500010501-01	Rivers/Streams in HUC 040500010501	Includes: Portage River and all tributaries from Indian Lake confluence upstream to headwaters.	Fish and water
040500010502-01	Rivers/Streams in HUC 040500010502	Includes: Headwaters of Gourdneck Creek and Lake connections	Fish and water
040500010502-08	Rivers/Streams in HUC 040500010502	Includes: Gourdneck Creek from Austin Lake Drain upstream to Gourdneck Lake outlet.	Fish and water
040500010503-03	Rivers/Streams in HUC 040500010503	Includes: Gourdneck and Portage Creeks and tributary from Barton Lake inlet upstream to Austin Lake Drain	Fish and water
040500010503-04	Rivers/Streams in HUC 040500010503	Includes: Portage Creek from Portage River confluence upstream to Barton Lake. Also includes UnNamed Trib to Barton Lake	Fish and water
040500010504-01	Rivers/Streams in HUC 040500010504	Includes: Bear Creek and tributaries from Portage Lake confluence upstream to headwaters	Fish and water
040500010505-01	Rivers/Streams in HUC 040500010505	Includes: Sagamaw Lake inlet and outlet from Indian Lake confluence upstream to headwaters	Fish and water
040500010505-03	Rivers/Streams in HUC 040500010505	Includes: Dorrance Creek and tributaries from Indian Lake confluence upstream to headwaters	Fish and water
040500010505-04	Rivers/Streams in HUC 040500010505	Includes: Portage River and all tributaries, except Portage Creek, from Portage Lake confluence upstream to Indian Lake	Fish and water
040500010506-03	Rivers/Streams in HUC 040500010506	Includes: Goose Lake Drain from Portage River confluence upstream to headwaters.	Fish and water
040500010506-04	Rivers/Streams in HUC 040500010506	Includes: Garman Foster Drain from Portage River confluence upstream to headwaters.	Fish and water
040500010506-05	Rivers/Streams in HUC 040500010506	Includes: Portage River and all tributaries, except Goose Lake Drain and Garman Foster Drain, from St. Joseph River confluence upstream to Portage Lake.	Fish and water
040500010601-01	Rivers/Streams in HUC 040500010601	Includes: Flowerfield Creek and all tributaries from upstream of Unnamed trib, upstream of YZ Ave, upstream to headwaters	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500010602-01	Rivers/Streams in HUC 040500010602	Includes: Unnamed Tributary to Flowerfield Creek	Fish and water
040500010603-01	Rivers/Streams in HUC 040500010603	Includes: Unnamed Tributaries to Rocky River Headwaters	Fish and water
040500010603-02	Rivers/Streams in HUC 040500010603	Includes: Rocky River from Sheldon Creek upstream to headwaters, also includes UnNamed Trib from Marcellus.	Fish and water
040500010604-01	Rivers/Streams in HUC 040500010604	Includes: Flowerfield Creek from Rocky River confluence upstream to Spring Creek and Spring Creek upstream to headwaters	Fish and water
040500010605-02	Rivers/Streams in HUC 040500010605	Includes: Rocky River from Flowerfield Creek confluence upstream to Sheldon Creek	Fish and water
040500010605-04	Rivers/Streams in HUC 040500010605	Includes: Sheldon Creek from from Rocky confluence upstream to headwaters.	Fish and water
040500010605-05	Rivers/Streams in HUC 040500010605	Includes: FOUR COUNTY DRAIN and tributaries from Rocky River confluence upstream to headwaters.	Fish and water
040500010606-01	Rivers/Streams in HUC 040500010606	Includes: Rocky River and tributaries from St. Joseph River confluence upstream to Flowerfield Creek.	Fish and water
040500010701-01	Rivers/Streams in HUC 040500010701	Includes: Prairie River and all tributaries from UnNamed Trib upstream of Bowers Road upstream to headwaters	Fish and water
040500010702-01	Rivers/Streams in HUC 040500010702	Includes: Prairie River and all tributaries from UnNamed Trib upstream of US 12 (Chicago Rd) upstream to UnNamed Trib upstream of Bowers Road.	Fish and water
040500010703-01	Rivers/Streams in HUC 040500010703	Includes: Stewart Lake Creek and Unnamed Tributaries to Prairie River upstream & downstream of Burr Oak	Fish and water
040500010703-02	Rivers/Streams in HUC 040500010703	Includes: Prairie River (only) from Stewart Lake Drain upstream to UnNamed Trib east of Burr Oak.	Fish and water
040500010703-03	Rivers/Streams in HUC 040500010703	Includes: Prairie River (only) from UnNamed Trib east of Burr Oak upstream to UnNamed Trib upstream of US 12 (Chicago Rd).	Fish and water
040500010704-01	Rivers/Streams in HUC 040500010704	Includes: Bryant Lake Outlet, Perrin Lake Outlet, Unnamed Tributaries to Prairie River, and Unnamed Tributaries to Eight Foot Lake, Fish Lake, Grey Lake, Hawkins Lake, and Omena Lake	Fish and water
040500010704-03	Rivers/Streams in HUC 040500010704	Includes: Prairie River (only) from Lake Templene upstream to Stewart Lake Drain	Fish and water
040500010705-01	Rivers/Streams in HUC 040500010705	Includes: Spring Creek and all tributaries from UnNamed Trib upstream of M-66 to headwaters.	Fish and water
040500010705-02	Rivers/Streams in HUC 040500010705	Includes: Spring Creek and all tributaries from Prairie River confluence upstream to UnNamed Tributary upstream of M-66.	Fish and water
040500010706-01	Rivers/Streams in HUC 040500010706	Includes: Unnamed Tributary to Prairie River just upstream of Lake	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Templene	
040500010706-04	Rivers/Streams in HUC 040500010706	Includes: Prairie River from Spring Creek confluence upstream to second UnNamed Trib upstream of Filmore Road.	Fish and water
040500010707-01	Rivers/Streams in HUC 040500010707	Includes: Prairie River from St. Joseph River confluence upstream to Spring Creek	Fish and water
040500010801-01	Rivers/Streams in HUC 040500010801	Includes: Follette Creek and Little Fawn River	Fish and water
040500010805-01	Rivers/Streams in HUC 040500010805	Includes: UnNamed Tributary to Fawn River	Fish and water
040500010805-02	Rivers/Streams in HUC 040500010805	Includes: Fawn River and all tributaries from Hinebaugh Drain upstream to Indiana line.	Fish and water
040500010806-01	Rivers/Streams in HUC 040500010806	Includes: INDIANA WATERBODIES	Fish and water
040500010806-02	Rivers/Streams in HUC 040500010806	Includes: Fawn River	Fish and water
040500010806-03	Rivers/Streams in HUC 040500010806	Includes: Unnamed Tributary to Fawn River	Fish and water
040500010806-04	Rivers/Streams in HUC 040500010806	Includes: Fawn River and all tributaries in Michigan in this AUID south and east of Surgis.	Fish and water
040500010807-01	Rivers/Streams in HUC 040500010807	Includes: Fawn River	Fish and water
040500010807-02	Rivers/Streams in HUC 040500010807	Includes: Fawn River and all Tributaries in Michigan, including Nye Drain, in this AUID southwest of Sturgis.	Fish and water
040500010807-03	Rivers/Streams in HUC 040500010807	Includes: Fawn River	Fish and water
040500010808-01	Rivers/Streams in HUC 040500010808	Includes: Sherman Mill Creek and all tributaries from Fawn River confluence upstream to headwaters	Fish and water
040500010809-01	Rivers/Streams in HUC 040500010809	Includes: Fawn River and all tributaries, except Sherman Mill Creek, from St. Joseph River confluence upstream to Pickerel Lake outlet.	Fish and water
040500010901-01	Rivers/Streams in HUC 040500010901	Includes: Little Portage Creek and all tributaries from UnNamed Tributary downstream of X Avenue upstream to headwaters.	Fish and water
040500010902-01	Rivers/Streams in HUC 040500010902	Includes: Little Portage Creek and all tributaries from St. Joseph River confluence upstream to UnNamed tributary downstream of X Avenue.	Fish and water
040500010903-01	Rivers/Streams in HUC 040500010903	Includes: St Joseph River from Sturgis Dam Impoundment upstream to Little Portage Creek	Fish and water
040500010903-02	Rivers/Streams in HUC 040500010903	Includes: St Joseph River from Little portage Creek upstream to Nottawa Creek	Fish and water
040500010904-01	Rivers/Streams in HUC 040500010904	Includes: St Joseph River from Pigeon River upstream to Fawn River	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500010904-03	Rivers/Streams in HUC 040500010904	Includes: St Joseph River From Prairie River upstream to Portage River	Fish and water
040500011107-01	Rivers/Streams in HUC 040500011107	Includes: Pigeon River and all tributaries in Michigan from St. Joseph River confluence upstream to Indiana stateline.	Fish and water
040500011301-01	Rivers/Streams in HUC 040500011301	Includes: Mill Creek and all tributaries, including Profile Lake Drain, from UnNamed Tributary downstream of Profile Lake Drain upstream to headwaters.	Fish and water
040500011302-01	Rivers/Streams in HUC 040500011302	Includes: Mill Creek and all tributaries from St. Joseph River confluence upstream to and including UnNamed Tributary downstream of Profile Lake Drain	Fish and water
040500011303-01	Rivers/Streams in HUC 040500011303	Includes: Trout Creek and all tributaries, including Mud Creek, from Indiana stateline upstream to headwaters.	Fish and water
040500011304-01	Rivers/Streams in HUC 040500011304	Includes: St Joseph River from Mill Creek upstream to Fawn River confluence, includes Black Run.	Fish and water
040500011304-02	Rivers/Streams in HUC 040500011304	Includes: St Joseph River from Pigeon River upstream to Mill Creek	Fish and water
040500011305-01	Rivers/Streams in HUC 040500011305	Includes: All in INDIANA	Fish and water
040500011305-02	Rivers/Streams in HUC 040500011305	Includes: St Joseph River from Indiana stateline upstream to Pigeon River	Fish and water
040500011401-01	Rivers/Streams in HUC 040500011401	Includes: Christiana Creek and all tributaries from Diamond Lake Drain upstream to headwaters.	Fish and water
040500011402-01	Rivers/Streams in HUC 040500011402	Includes: Christiana Creek and all tributaries from Painter lake inlet upstream to and including Diamond Lake Drain	Fish and water
040500011403-01	Rivers/Streams in HUC 040500011403	Includes: Christiana Creek from Indiana stateline upstream to Christiana Lake, includes tributary to Juno Lake.	Fish and water
040500012001-01	Rivers/Streams in HUC 040500012001	Includes: Township Ditch from Indiana stateline upstream to headwaters.	Fish and water
040500012003-01	Rivers/Streams in HUC 040500012003	Includes: Unnamed Tributaries from Indiana stateline upstream to headwaters (tribs are east and west of Kessington Road)	Fish and water
040500012004-01	Rivers/Streams in HUC 040500012004	Includes: UnNamed Tributary to Simonton Lake in Indiana, from Indiana stateline upstream to headwaters.	Fish and water
040500012201-01	Rivers/Streams in HUC 040500012201	Includes: Cobus Creek and Gast Ditch from Indiana stateline upstream to headwaters. Streams are southeast of Edwardsburg.	Fish and water
040500012206-01	Rivers/Streams in HUC 040500012206	Includes: Judy Creek	Fish and water
040500012207-01	Rivers/Streams in HUC 040500012207	Includes: Saint Joseph River	Fish and water
040500012208-01	Rivers/Streams in HUC 040500012208	Includes: Saint Joseph River	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500012209-01	Rivers/Streams in HUC 040500012209	Includes: Brandywine Creek	Fish and water
040500012209-02	Rivers/Streams in HUC 040500012209	Includes: Brandywine Creek	Fish and water
040500012210-01	Rivers/Streams in HUC 040500012210	Includes: Saint Joseph River	Fish and water
040500012301-01	Rivers/Streams in HUC 040500012301	Includes: Dowagiac Drain, Red Run, Unnamed Tributaries to Dowagiac Drain, and Unnamed Tributary to Lake of the Woods	Fish and water
040500012301-02	Rivers/Streams in HUC 040500012301	Includes: Dowagiac River	Fish and water
040500012301-04	Rivers/Streams in HUC 040500012301	Includes: Lake of the Woods Drain	Fish and water
040500012302-01	Rivers/Streams in HUC 040500012302	Includes: Priest Lake Outlet and Silver Creek	Fish and water
040500012303-01	Rivers/Streams in HUC 040500012303	Includes: DOWAGIAC CREEK	Fish and water
040500012304-01	Rivers/Streams in HUC 040500012304	Includes: Dowagiac Creek	Fish and water
040500012305-01	Rivers/Streams in HUC 040500012305	Includes: Dowagiac River	Fish and water
040500012305-02	Rivers/Streams in HUC 040500012305	Includes: Osborn Drain	Fish and water
040500012305-03	Rivers/Streams in HUC 040500012305	Includes: Unnamed Tributary to Dowagiac River	Fish and water
040500012306-01	Rivers/Streams in HUC 040500012306	Includes: Pokagon Creek	Fish and water
040500012307-01	Rivers/Streams in HUC 040500012307	Includes: Dowagiac River	Fish and water
040500012307-02	Rivers/Streams in HUC 040500012307	Includes: Dowagiac River	Fish and water
040500012307-03	Rivers/Streams in HUC 040500012307	Includes: Peavine Creek and Unnamed Tributaries to Peavine Creek	Fish and water
040500012308-01	Rivers/Streams in HUC 040500012308	Includes: Unnamed Tributary to McKinzie Creek	Fish and water
040500012308-02	Rivers/Streams in HUC 040500012308	Includes: McKinzie Creek	Fish and water
040500012308-03	Rivers/Streams in HUC 040500012308	Includes: Dowagiac River	Fish and water
040500012308-04	Rivers/Streams in HUC 040500012308	Includes: McKinzie Creek	Fish and water
040500012401-01	Rivers/Streams in HUC 040500012401	Includes: Gates Extension Drain, Lawton Drain and South Branch Paw Paw River	Fish and water
040500012402-01	Rivers/Streams in HUC 040500012402	Includes: East Branch Paw Paw River	Fish and water
040500012403-01	Rivers/Streams in HUC 040500012403	Includes: North Branch Paw Paw River	Fish and water
040500012403-03	Rivers/Streams in HUC 040500012403	Includes: Campbell Creek	Fish and water
040500012404-01	Rivers/Streams in HUC 040500012404	Includes: Brandywine Creek and North Extension Drain	Fish and water
040500012405-01	Rivers/Streams in HUC 040500012405	Includes: South Branch Paw Paw River from the Three Mile Lake Drain confluence to 60th Avenue, including Three Mile Lake Drain	Fish and water
040500012405-06	Rivers/Streams in HUC 040500012405	Includes: South Branch Paw Paw River upstream to 60th Avenue	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500012405-08	Rivers/Streams in HUC 040500012405	Includes: South Branch Paw Paw River downstream to Three Mile Lake Drain	Fish and water
040500012405-09	Rivers/Streams in HUC 040500012405	Includes: Eagle Lake Drain	Fish and water
040500012406-01	Rivers/Streams in HUC 040500012406	Includes: North Branch Paw Paw River and Paw Paw River	Fish and water
040500012406-02	Rivers/Streams in HUC 040500012406	Includes: Hayden Creek and Unnamed Tributary to Hayden Creek	Fish and water
040500012501-02	Rivers/Streams in HUC 040500012501	Includes: Brush Creek, Red Creek and White Creek	Fish and water
040500012502-01	Rivers/Streams in HUC 040500012502	Includes: Carter Creek and Paw Paw River	Fish and water
040500012503-03	Rivers/Streams in HUC 040500012503	Includes: Mud Lake Drain, Unnamed Tributaries to Mud Lake Drain, and Unnamed Tributaries to Sassafras Lake and Van Auken Lake	Fish and water
040500012504-02	Rivers/Streams in HUC 040500012504	Includes: Hog Creek	Fish and water
040500012504-03	Rivers/Streams in HUC 040500012504	Includes: Paw Paw River	Fish and water
040500012505-02	Rivers/Streams in HUC 040500012505	Includes: Paw Paw Lake Outlet, Unnamed Tributaries to Little Paw Paw Lake and Paw Paw Lake	Fish and water
040500012506-01	Rivers/Streams in HUC 040500012506	Includes: Mill Creek	Fish and water
040500012506-02	Rivers/Streams in HUC 040500012506	Includes: Mill Creek	Fish and water
040500012507-01	Rivers/Streams in HUC 040500012507	Includes: Paw Paw River and Ryno Drain	Fish and water
040500012507-02	Rivers/Streams in HUC 040500012507	Includes: Pine Creek from the Paw Paw River confluence upstream to 66th Avenue.	Fish and water
040500012507-03	Rivers/Streams in HUC 040500012507	Includes: Pine Creek from 66th Ave upstream to headwaters.	Fish and water
040500012508-01	Rivers/Streams in HUC 040500012508	Includes: Blue Creek and Yellow Creek	Fish and water
040500012508-02	Rivers/Streams in HUC 040500012508	Includes: Granger Drain and Paw Paw River	Fish and water
040500012509-01	Rivers/Streams in HUC 040500012509	Includes: Paw Paw River	Fish and water
040500012509-02	Rivers/Streams in HUC 040500012509	Includes: Ox Creek	Fish and water
040500012509-03	Rivers/Streams in HUC 040500012509	Includes: Paw Paw River and Sand Creek	Fish and water
040500012601-01	Rivers/Streams in HUC 040500012601	Includes: Clear Lake Outlet and Unnamed Tributary to Clear Lake Outlet	Fish and water
040500012601-02	Rivers/Streams in HUC 040500012601	Includes: McCoy Creek	Fish and water
040500012602-01	Rivers/Streams in HUC 040500012602	Includes: Saint Joseph River and Spring Valley Drain	Fish and water
040500012604-02	Rivers/Streams in HUC 040500012604	Includes: Eau Claire Extension Drain	Fish and water
040500012604-03	Rivers/Streams in HUC 040500012604	Includes: Farmers Creek	Fish and water
040500012604-04	Rivers/Streams in HUC 040500012604	Includes: Farmers Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500012604-05	Rivers/Streams in HUC 040500012604	Includes: Lemon Creek	Fish and water
040500012605-01	Rivers/Streams in HUC 040500012605	Includes: Pipestone Creek	Fish and water
040500012605-02	Rivers/Streams in HUC 040500012605	Includes: Pipestone Creek	Fish and water
040500012606-01	Rivers/Streams in HUC 040500012606	Includes: Love Creek	Fish and water
040500012606-02	Rivers/Streams in HUC 040500012606	Includes: Love Creek and Saint Joseph River	Fish and water
040500012607-01	Rivers/Streams in HUC 040500012607	Includes: Hickory Creek, Lemon Creek and North Branch Hickory Creek	Fish and water
040500012608-02	Rivers/Streams in HUC 040500012608	Includes: Saint Joseph River	Fish and water
040500012608-03	Rivers/Streams in HUC 040500012608	Includes: BIG MEADOW DRAIN	Fish and water
040500012608-05	Rivers/Streams in HUC 040500012608	Includes: Unnamed Tributary to Lake Michigan (Saint Joseph)	Fish and water
040500020302-01	Rivers/Streams in HUC 040500020302	Includes: Unnamed Tributary to Bass Creek and Unnamed Tributary to Pigeon River	Fish and water
040500020302-02	Rivers/Streams in HUC 040500020302	Includes: BLENDON AND OLIVE DRAIN (PIGEON RIVER HEADWATERS)	Fish and water
040500030101-01	Rivers/Streams in HUC 040500030101	Includes: Unnamed Tributaries to Farewell Lake	Fish and water
040500030102-01	Rivers/Streams in HUC 040500030102	Includes: SPRING ARBOR & CONCORD DRAIN	Fish and water
040500030203-01	Rivers/Streams in HUC 040500030203	Includes: Unnamed Tributary near Hanover Road	Fish and water
040500030203-03	Rivers/Streams in HUC 040500030203	Includes: Beaver Creek and Unnamed Tributaries to Beaver Creek	Fish and water
040500030203-04	Rivers/Streams in HUC 040500030203	Includes: Conger Drain and Unnamed Tributary to Conger Drain	Fish and water
040500030204-03	Rivers/Streams in HUC 040500030204	Includes: Swains Lake Drain	Fish and water
040500030301-01	Rivers/Streams in HUC 040500030301	Includes: Duck Lake Outlet and Unnamed Tributary to Narrow Lake	Fish and water
040500030301-02	Rivers/Streams in HUC 040500030301	Includes: Battle Creek Drain from Hoggle & Miller Drain (included) upstream to Narrow Lake Outlet	Fish and water
040500030302-01	Rivers/Streams in HUC 040500030302	Includes: Battle Creek River from UnNamed Tributary (included) upstream of Brookfield Road to Battle Creek Drain confluence with Hoggle & Miller Drain. Includes Relaid Mills Drain and all other tributaies in reach.	Fish and water
040500030303-01	Rivers/Streams in HUC 040500030303	Includes: Big Creek and all tributaries to headwaters upstream from confluence with Battle Creek River.	Fish and water
040500030304-01	Rivers/Streams in HUC 040500030304	Includes: State & Indian Creek Drain from confluence with Indian Creek south of S Drive upstream to headwaters.	Fish and water
040500030305-01	Rivers/Streams in HUC 040500030305	Includes: Indian Creek and tributaries from confluence with Battle Creek River upstream to State & Indian Creek Drain just south of S	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Drive	
040500030306-01	Rivers/Streams in HUC 040500030306	Includes: Battle Creek River and tributaries from Spicerville Hwy (west) upstream to tributary upstream of Brookfield Road	Fish and water
040500030306-02	Rivers/Streams in HUC 040500030306	Includes: Battle Creek River and tributaries from Indian Creek (not included) upstream to Spicerville Hwy	Fish and water
040500030307-01	Rivers/Streams in HUC 040500030307	Includes: Battle Creek River all tributaries from and including the tributary in the northwest corner of the City of Bellevue upstream to Indian Creek	Fish and water
040500030307-02	Rivers/Streams in HUC 040500030307	Includes: Townline Brook Drain from Battle Creek River confluence upstream to headwaters.	Fish and water
040500030308-01	Rivers/Streams in HUC 040500030308	Includes: Battle Creek River and tributaries from and including Ackley Creek upstream to tributary in City of Bellevue.	Fish and water
040500030308-03	Rivers/Streams in HUC 040500030308	Includes: Ackley Creek	Fish and water
040500030309-01	Rivers/Streams in HUC 040500030309	Includes: Battle Creek River and Tributaries from second UnNamed Tributary (included) downstream of Burrows Road upstream to Ackley Creek.	Fish and water
040500030310-01	Rivers/Streams in HUC 040500030310	Includes: Wanadoga Creek and all tributaries upstream of Ellis Creek confluence to headwaters.	Fish and water
040500030310-02	Rivers/Streams in HUC 040500030310	Includes: Ellis Creek and all tributaries upstream of Wanadoga Creek confluence.	Fish and water
040500030311-01	Rivers/Streams in HUC 040500030311	Includes: Wanadoga Creek and one UnNamed Tributary from Crooked Creek confluence upstream to Ellis Creek.	Fish and water
040500030311-02	Rivers/Streams in HUC 040500030311	Includes: Wanadoga Creek from Battle Creek River confluence upstream to Crooked Creek confluence.	Fish and water
040500030311-03	Rivers/Streams in HUC 040500030311	Includes: Crooked Brook Creek and tributaries upstream from confluence with Wanadoga Creek to headwaters.	Fish and water
040500030312-01	Rivers/Streams in HUC 040500030312	Includes: Battle Creek River from near Fruin Corners, just upstream of the City of Battle Creek, to the second tributary downstream of Burrows Road.	Fish and water
040500030312-02	Rivers/Streams in HUC 040500030312	Includes: Battle Creek River from Kalamazoo River confluence upstream to Fruin Corners area.	Fish and water
040500030401-01	Rivers/Streams in HUC 040500030401	Includes: South Branch Rice Creek and tributaries from tributary upstream of 29 Mile Road to headwaters.	Fish and water
040500030402-01	Rivers/Streams in HUC 040500030402	Includes: South Branch Rice Creek and tributaries from confluence with North Branch Rice Creek upstream to and including tributary upstream of 29 Mile Road.	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500030403-01	Rivers/Streams in HUC 040500030403	Includes: North Branch Rice Creek from Prairie Lake outlet upstream including all tributaries to headwaters.	Fish and water
040500030403-03	Rivers/Streams in HUC 040500030403	Includes: North Branch Rice Creek from confluence with South Branch Rice Creek upstream to Prairie Lake outlet.	Fish and water
040500030404-01	Rivers/Streams in HUC 040500030404	Includes: Wilder Creek and all tributaries from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030405-01	Rivers/Streams in HUC 040500030405	Includes: Rice Creek from Kalamazoo River confluence upstream North and South Branch split.	Fish and water
040500030405-02	Rivers/Streams in HUC 040500030405	Includes: Eaton and Baker Drain from confluence with Rice Creek upstream to headwaters	Fish and water
040500030407-03	Rivers/Streams in HUC 040500030407	Includes: Bear Creek from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030407-04	Rivers/Streams in HUC 040500030407	Includes: Talmadge Creek from Enbridge impact zone downstream to Kalamazoo River.	Fish and water
040500030407-05	Rivers/Streams in HUC 040500030407	Includes: Squaw Lake Drain and tributaries from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030407-06	Rivers/Streams in HUC 040500030407	Includes: Talmadge Creek from Enbridge impact zone upstream.	Fish and water
040500030408-01	Rivers/Streams in HUC 040500030408	Includes: Kalamazoo River from Dickinson Creek confluence upstream to Squaw Lake Drain(excluding the Ceresco Impoundment)	Fish and water
040500030408-03	Rivers/Streams in HUC 040500030408	Includes: Unnamed Tributary to Ceresco Impoundment	Fish and water
040500030408-04	Rivers/Streams in HUC 040500030408	Includes: Easterly Dibble Drain from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030408-05	Rivers/Streams in HUC 040500030408	Includes: Pigeon Creek from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030408-06	Rivers/Streams in HUC 040500030408	Includes: Crooked Creek from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030409-01	Rivers/Streams in HUC 040500030409	Includes: Severence Creek from Graham Lake upstream to headwaters.	Fish and water
040500030409-02	Rivers/Streams in HUC 040500030409	Includes: Harper Creek and all tributaries upstream from Minges Brook confluence. Includes Barnum Creek upstream to Graham Lake.	Fish and water
040500030410-01	Rivers/Streams in HUC 040500030410	Includes: Minges Brook from Kalamazoo River confluence upstream to headwaters. Includes all tributaries except Brickyard Creek and Harper Creek.	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500030410-02	Rivers/Streams in HUC 040500030410	Includes: Brickyard Creek from Minges Brook confluence upstream to headwaters.	Fish and water
040500030411-01	Rivers/Streams in HUC 040500030411	Includes: Dickinson Creek from Kalamazoo River confluence upstream to headwaters. East of Battle Creek.	Fish and water
040500030411-02	Rivers/Streams in HUC 040500030411	Includes: Willow Creek and Unnamed Tributary from Hall Lake.	Fish and water
040500030411-03	Rivers/Streams in HUC 040500030411	Includes: Kalamazoo River from Battle Creek River confluence upstream to Dickinson Creek.	Fish and water
040500030501-01	Rivers/Streams in HUC 040500030501	Includes: Wabascon Creek headwaters upstream of Taylor Lake.	Fish and water
040500030501-02	Rivers/Streams in HUC 040500030501	Includes: Wabascon Creek and tributaries from Foster Lake upstream to Taylor Lake	Fish and water
040500030502-01	Rivers/Streams in HUC 040500030502	Includes: Wabascon Creek and tributaries from Kalamazoo River confluence upstream to Foster Lake.	Fish and water
040500030503-01	Rivers/Streams in HUC 040500030503	Includes: Tributaries to the Kalamazoo River from Custer Drive upstream to the Battle Creek River confluence.	Fish and water
040500030503-02	Rivers/Streams in HUC 040500030503	Includes: Tributaries to the Kalamazoo River between Custer Drive and the Battle Creek River, excluding Wabascon Creek.	Fish and water
040500030503-03	Rivers/Streams in HUC 040500030503	Includes: Kalamazoo River from Wabascon Creek upstream to the Battle Creek River confluence.	Fish and water
040500030504-01	Rivers/Streams in HUC 040500030504	Includes: Sevenmile Creek from Kalamazoo River confluence upstream to Spring Brook confluence	Fish and water
040500030504-02	Rivers/Streams in HUC 040500030504	Includes: Sevenmile Creek and tributary upstream from Spring Brook confluence to headwaters.	Fish and water
040500030504-03	Rivers/Streams in HUC 040500030504	Includes: Spring Brook from confluence with Seven Mile Creek upstream to headwaters.	Fish and water
040500030505-01	Rivers/Streams in HUC 040500030505	Includes: Augusta Creek and tributaries upstream from Hamilton Lake outlet confluence to headwaters (Fair & Little Gilkey lake).	Fish and water
040500030506-01	Rivers/Streams in HUC 040500030506	Includes: Augusta Creek and tributaries from Kalamazoo River confluence upstream to and including Hamilton Lake Outlet	Fish and water
040500030507-01	Rivers/Streams in HUC 040500030507	Includes: Unnamed Tributary to Gull Lake, Prairieville Creek	Fish and water
040500030507-06	Rivers/Streams in HUC 040500030507	Includes: Gull Creek from Kalamazoo River confluence upstream to Gull Lake.	Fish and water
040500030508-01	Rivers/Streams in HUC 040500030508	Includes: Kalamazoo River tributaries from Gull Creek upstream to Wabascon Creek Confluence.	Fish and water
040500030508-05	Rivers/Streams in HUC 040500030508	Includes: Unnamed Tributary to Kalamazoo River in Ft. Custer.	Fish and water
040500030508-07	Rivers/Streams in HUC 040500030508	Includes: Kalamazoo River (only-no tributaries) from Gull Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		upstream to Wabascon Creek Confluence.	
040500030508-08	Rivers/Streams in HUC 040500030508	Includes: Eagle Creek	Fish and water
040500030509-01	Rivers/Streams in HUC 040500030509	Includes: Kalamazoo River tributaries from Morrow Pond Dam upstream to Gull Creek.	Fish and water
040500030509-03	Rivers/Streams in HUC 040500030509	Includes: Kalamazoo River from Morrow Pond Dam upstream to Gull Creek (Morrow Pond is excluded).	Fish and water
040500030601-01	Rivers/Streams in HUC 040500030601	Includes: Comstock Creek from Kalamazoo River confluence upstream to Campbell Lake.	Fish and water
040500030601-02	Rivers/Streams in HUC 040500030601	Includes: Comstock Creek from Campbell Lake upstream to headwaters.	Fish and water
040500030602-01	Rivers/Streams in HUC 040500030602	Includes: West Fork Portage Creek from Portage Creek confluence upstream to headwaters (Fish Camp Pond).	Fish and water
040500030603-01	Rivers/Streams in HUC 040500030603	Includes: Portage Creek from Hampton Lake upstream to headwaters.	Fish and water
040500030603-03	Rivers/Streams in HUC 040500030603	Includes: Portage Creek headwater area downstream of Hampton Lake and tributary in Gourdneck State Game Area.	Fish and water
040500030603-04	Rivers/Streams in HUC 040500030603	Includes: Portage Creek from West Fork Portage Creek confluence upstream to tributary downstream of Hampton Lake.	Fish and water
040500030603-05	Rivers/Streams in HUC 040500030603	Includes: Axtell Creek	Fish and water
040500030604-02	Rivers/Streams in HUC 040500030604	Includes: Davis Creek from Kalamazoo River confluence to Cork Street	Fish and water
040500030604-03	Rivers/Streams in HUC 040500030604	Includes: Davis Creek from Cork Street upstream	Fish and water
040500030605-01	Rivers/Streams in HUC 040500030605	Includes: Spring Brook and tributaries from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030606-04	Rivers/Streams in HUC 040500030606	Includes: Arcadia Creek	Fish and water
040500030607-03	Rivers/Streams in HUC 040500030607	Includes: Unnamed Tributary to Kalamazoo River downstream of Kalamazoo at the Kalamazoo Nature Center	Fish and water
040500030607-04	Rivers/Streams in HUC 040500030607	Includes: Silver Creek from Kalamazoo River confluence upstream to headwaters	Fish and water
040500030607-05	Rivers/Streams in HUC 040500030607	Includes: Unnamed Tributary to Kalamazoo River (Chart Creek)	Fish and water
040500030701-11	Rivers/Streams in HUC 040500030701	Includes: Barlow Lake Outlet, Cobb Lake Outlet, Fawn Lake Outlet, Mill Pond Outlet, and Unnamed Tributaries to Baker Lake, Boot Lake, Chief Noonday Lake, Gun Lake, Payne Lake, and Williams Lake	Fish and water
040500030702-02	Rivers/Streams in HUC 040500030702	Includes: Lake Sixteen Outlet downstream to Fenner Lake	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500030702-03	Rivers/Streams in HUC 040500030702	Includes: Fenner Creek from Gun River confluence upstream to Fenner Lake.	Fish and water
040500030702-04	Rivers/Streams in HUC 040500030702	Includes: Greggs Brook and tributaries from Gun River confluence upstream to headwaters	Fish and water
040500030702-05	Rivers/Streams in HUC 040500030702	Includes: Gun River from Orangeville Creek confluence upstream to Gun Lake.	Fish and water
040500030702-06	Rivers/Streams in HUC 040500030702	Includes: Gun River and all tributaries, except Fenner Creek and Greggs Brook, from Culver Drain (included) upstream to and including Orangeville Creek.	Fish and water
040500030702-07	Rivers/Streams in HUC 040500030702	Includes: Orangeville Creek from Mill Pond upstream to Fish Lake	Fish and water
040500030702-09	Rivers/Streams in HUC 040500030702	Includes: Unnamed Tributary to Gun River and Unnamed Tributaries to Adams Lake, Crystal Lake, Fish Lake, Horseshoe Lake, and Lime Lake	Fish and water
040500030703-01	Rivers/Streams in HUC 040500030703	Includes: Gun River and tributaries from Kalamazoo River confluence upstream to Culver Drain	Fish and water
040500030801-01	Rivers/Streams in HUC 040500030801	Includes: GREEN LAKE CREEK	Fish and water
040500030801-02	Rivers/Streams in HUC 040500030801	Includes: Tollenbar Drain	Fish and water
040500030802-01	Rivers/Streams in HUC 040500030802	Includes: Rabbit River and Hooker and Harvey Drain.	Fish and water
040500030803-02	Rivers/Streams in HUC 040500030803	Includes: Miller Creek	Fish and water
040500030803-04	Rivers/Streams in HUC 040500030803	Includes: Miller Creek	Fish and water
040500030804-01	Rivers/Streams in HUC 040500030804	Includes: Bear Creek	Fish and water
040500030805-01	Rivers/Streams in HUC 040500030805	Includes: Rabbit River	Fish and water
040500030805-02	Rivers/Streams in HUC 040500030805	Includes: Buskirk Creek	Fish and water
040500030805-03	Rivers/Streams in HUC 040500030805	Includes: Silkirk Creek and other tributaries to the Rabbit River.	Fish and water
040500030806-02	Rivers/Streams in HUC 040500030806	Includes: Red Run	Fish and water
040500030806-03	Rivers/Streams in HUC 040500030806	Includes: Dorr and Byron Drain and Unnamed Tributaries to Dorr and Byron Drain	Fish and water
040500030807-01	Rivers/Streams in HUC 040500030807	Includes: Little Rabbit River	Fish and water
040500030808-01	Rivers/Streams in HUC 040500030808	Includes: Rabbit River	Fish and water
040500030808-02	Rivers/Streams in HUC 040500030808	Includes: Pigeon and Fiest Creek	Fish and water
040500030809-01	Rivers/Streams in HUC 040500030809	Includes: Black Creek	Fish and water
040500030810-02	Rivers/Streams in HUC 040500030810	Includes: Silver Creek	Fish and water
040500030810-03	Rivers/Streams in HUC 040500030810	Includes: Miller Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500030810-04	Rivers/Streams in HUC 040500030810	Includes: Unnamed Tributaries to Rabbit River	Fish and water
040500030811-01	Rivers/Streams in HUC 040500030811	Includes: Rabbit River	Fish and water
040500030811-05	Rivers/Streams in HUC 040500030811	Includes: Lohman Drain, Lugten Drain, Unnamed Tributaries to Lohman Drain, and Unnamed Tributaries to Rabbit River	Fish and water
040500030901-01	Rivers/Streams in HUC 040500030901	Includes: Pine Creek and tributaries from Baseline Creek confluence upstream to headwaters including Sand Creek.	Fish and water
040500030902-02	Rivers/Streams in HUC 040500030902	Includes: Base Line Creek and tributaries from Pine Creek confluence upstream to headwaters (lakes)	Fish and water
040500030903-01	Rivers/Streams in HUC 040500030903	Includes: Pine Creek and tributaries from Kalamazoo River confluence upstream to Baseline Creek.	Fish and water
040500030904-02	Rivers/Streams in HUC 040500030904	Includes: Miner Creek and tributaries, except School Section Brook, from Schnable Brook confluence upstream to headwaters or Miner Lake.	Fish and water
040500030904-03	Rivers/Streams in HUC 040500030904	Includes: School Section Brook and tributaries from Miner Creek confluence upstream to headwaters.	Fish and water
040500030904-04	Rivers/Streams in HUC 040500030904	Includes: Schnable Brook and tributaries, except Miner Creek, from Kalamazoo River confluence upstream to headwaters	Fish and water
040500030904-05	Rivers/Streams in HUC 040500030904	Includes: Unnamed Tributaries to Miner Lake	Fish and water
040500030905-01	Rivers/Streams in HUC 040500030905	Includes: Osgood Drain from Kalamazoo River confluence upstream to Osgood Lake.	Fish and water
040500030907-02	Rivers/Streams in HUC 040500030907	Includes: Dumont Creek and tributaries from Kalamazoo River confluence upstream to Dumont Lake.	Fish and water
040500030907-03	Rivers/Streams in HUC 040500030907	Includes: Rossman Creek and tributaries from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030907-05	Rivers/Streams in HUC 040500030907	Includes: Tributaries upstream of Dumont Lake	Fish and water
040500030908-04	Rivers/Streams in HUC 040500030908	Includes: Swan Creek and tributaries from Swan Creek Pond upstream to headwaters.	Fish and water
040500030908-07	Rivers/Streams in HUC 040500030908	Includes: Swan Creek from Kalamazoo River confluence upstream to Swan Creek Pond.	Fish and water
040500030909-03	Rivers/Streams in HUC 040500030909	Includes: Sand Creek and tributaries from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030909-04	Rivers/Streams in HUC 040500030909	Includes: Unnamed Tributary to isolated Unnamed Lake	Fish and water
040500030910-01	Rivers/Streams in HUC 040500030910	Includes: Mann Creek and tributaries from Kalamazoo River confluence upstream to headwaters.	Fish and water
040500030912-02	Rivers/Streams in HUC 040500030912	Includes: Goshorn Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500040101-01	Rivers/Streams in HUC 040500040101	Includes: Unnamed Tributary to Willow Creek and Unnamed Tributaries to Little Wolf Lake and Wolf Lake	Fish and water
040500040102-01	Rivers/Streams in HUC 040500040102	Includes: Grass Lake Drain, Unnamed Tributaries to Grass Lake Drain, Unnamed Tributaries to Center Lake, Grass Lake, Leoni Millpond, and Tims Lake	Fish and water
040500040103-01	Rivers/Streams in HUC 040500040103	Includes: North Branch Grand River from confluence with Main Branch of Grand River to Center Lake outlet, and Unnamed Tributary to Little Olcott Lake	Fish and water
040500040103-05	Rivers/Streams in HUC 040500040103	Includes: Unnamed Tributary to Gilletts Lake	Fish and water
040500040104-01	Rivers/Streams in HUC 040500040104	Includes: Grand River	Fish and water
040500040105-01	Rivers/Streams in HUC 040500040105	Includes: Grand River and Sharp Creek	Fish and water
040500040106-01	Rivers/Streams in HUC 040500040106	Includes: Grand River	Fish and water
040500040106-03	Rivers/Streams in HUC 040500040106	Includes: Grand River	Fish and water
040500040201-01	Rivers/Streams in HUC 040500040201	Includes: Cahaogan Creek	Fish and water
040500040202-01	Rivers/Streams in HUC 040500040202	Includes: Portage River	Fish and water
040500040203-01	Rivers/Streams in HUC 040500040203	Includes: Thornapple Creek	Fish and water
040500040204-01	Rivers/Streams in HUC 040500040204	Includes: Honey Creek and Portage River	Fish and water
040500040205-01	Rivers/Streams in HUC 040500040205	Includes: Batteese Creek	Fish and water
040500040206-01	Rivers/Streams in HUC 040500040206	Includes: Batteese Creek and Portage River	Fish and water
040500040207-01	Rivers/Streams in HUC 040500040207	Includes: Portage River and Wildcat Creek	Fish and water
040500040208-01	Rivers/Streams in HUC 040500040208	Includes: Huntoon Creek	Fish and water
040500040209-01	Rivers/Streams in HUC 040500040209	Includes: Grand River, Pleasant Lake Drain, Shaw Branch, Western Creek and Whitney Drain	Fish and water
040500040210-01	Rivers/Streams in HUC 040500040210	Includes: Albrow Creek and Grand River	Fish and water
040500040210-02	Rivers/Streams in HUC 040500040210	Includes: Albrow Creek	Fish and water
040500040301-01	Rivers/Streams in HUC 040500040301	Includes: Sandstone Creek	Fish and water
040500040302-01	Rivers/Streams in HUC 040500040302	Includes: Mackey Brook and Sandstone Creek	Fish and water
040500040303-01	Rivers/Streams in HUC 040500040303	Includes: Sandstone Creek	Fish and water
040500040304-01	Rivers/Streams in HUC 040500040304	Includes: North Onondaga Drain	Fish and water
040500040305-01	Rivers/Streams in HUC 040500040305	Includes: Otter Creek and Spring Brook	Fish and water
040500040306-01	Rivers/Streams in HUC 040500040306	Includes: Spring Brook and Willow Creek	Fish and water
040500040307-01	Rivers/Streams in HUC 040500040307	Includes: Booth Drain and Spring Brook	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500040307-02	Rivers/Streams in HUC 040500040307	Includes: Spring Brook	Fish and water
040500040308-01	Rivers/Streams in HUC 040500040308	Includes: Grand River and Spring Brook	Fish and water
040500040308-02	Rivers/Streams in HUC 040500040308	Includes: Grand River	Fish and water
040500040401-01	Rivers/Streams in HUC 040500040401	Includes: Red Cedar River	Fish and water
040500040401-02	Rivers/Streams in HUC 040500040401	Includes: Red Cedar River	Fish and water
040500040402-01	Rivers/Streams in HUC 040500040402	Includes: Middle Branch Red Cedar River	Fish and water
040500040403-01	Rivers/Streams in HUC 040500040403	Includes: Red Cedar River	Fish and water
040500040403-02	Rivers/Streams in HUC 040500040403	Includes: Red Cedar River	Fish and water
040500040404-01	Rivers/Streams in HUC 040500040404	Includes: West Branch Red Cedar River	Fish and water
040500040405-01	Rivers/Streams in HUC 040500040405	Includes: West Branch Red Cedar River	Fish and water
040500040405-02	Rivers/Streams in HUC 040500040405	Includes: West Branch Red Cedar River	Fish and water
040500040406-01	Rivers/Streams in HUC 040500040406	Includes: Kalamink Creek	Fish and water
040500040407-01	Rivers/Streams in HUC 040500040407	Includes: Red Cedar River	Fish and water
040500040407-02	Rivers/Streams in HUC 040500040407	Includes: Wolf Creek	Fish and water
040500040407-03	WOLF CREEK	From Morrice Road upstream to headwaters.	Fish and water
040500040408-01	Rivers/Streams in HUC 040500040408	Includes: Doan Creek	Fish and water
040500040409-01	Rivers/Streams in HUC 040500040409	Includes: Dietz Creek	Fish and water
040500040410-01	Rivers/Streams in HUC 040500040410	Includes: Doan Creek and Doan Deer Creek	Fish and water
040500040411-01	Rivers/Streams in HUC 040500040411	Includes: Red Cedar River and Sullivan Creek	Fish and water
040500040411-02	Rivers/Streams in HUC 040500040411	Includes: Red Cedar River	Fish and water
040500040411-03	Rivers/Streams in HUC 040500040411	Includes: Squaw Creek	Fish and water
040500040501-01	Rivers/Streams in HUC 040500040501	Includes: Deer Creek	Fish and water
040500040502-01	Rivers/Streams in HUC 040500040502	Includes: Sloan Creek	Fish and water
040500040502-02	Rivers/Streams in HUC 040500040502	Includes: Sloan Creek	Fish and water
040500040503-01	Rivers/Streams in HUC 040500040503	Includes: Unnamed Tributary to Red Cedar River	Fish and water
040500040503-02	Rivers/Streams in HUC 040500040503	Includes: Deer Creek	Fish and water
040500040503-03	Rivers/Streams in HUC 040500040503	Includes: Coon Creek and Red Cedar River	Fish and water
040500040504-01	Rivers/Streams in HUC 040500040504	Includes: Pine Lake Outlet	Fish and water
040500040505-01	Rivers/Streams in HUC 040500040505	Includes: Mud Creek	Fish and water
040500040506-01	Rivers/Streams in HUC 040500040506	Includes:Talmadge Drain and Sycamore Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500040506-04	Rivers/Streams in HUC 040500040506	Includes: Cook and Thorburn Drain from Cedar Lake upstream	Fish and water
040500040507-01	Rivers/Streams in HUC 040500040507	Includes: Banta Drain and Sycamore Creek	Fish and water
040500040508-01	Rivers/Streams in HUC 040500040508	Includes: Herron Creek	Fish and water
040500040508-02	Rivers/Streams in HUC 040500040508	Includes: Red Cedar River	Fish and water
040500040508-03	Rivers/Streams in HUC 040500040508	Includes: Red Cedar River	Fish and water
040500040601-01	Rivers/Streams in HUC 040500040601	Includes: Looking Glass River	Fish and water
040500040602-01	Rivers/Streams in HUC 040500040602	Includes: Grub Creek and Looking Glass River	Fish and water
040500040603-02	Rivers/Streams in HUC 040500040603	Includes: Osborn Creek and Looking Glass River	Fish and water
040500040603-03	Rivers/Streams in HUC 040500040603	Includes Perry Drain No. 2 and Austin Drain (Kellogg Drain)	Fish and water
040500040604-01	Rivers/Streams in HUC 040500040604	Includes: Buck Branch and Vermilion Creek	Fish and water
040500040604-02	Rivers/Streams in HUC 040500040604	Includes: Vermilion Creek and its tributaries downstream to Hidden Lake	Fish and water
040500040605-03	Rivers/Streams in HUC 040500040605	Includes: Looking Glass River and Vermilion Creek	Fish and water
040500040606-02	Rivers/Streams in HUC 040500040606	Includes: Looking Glass River	Fish and water
040500040607-01	Rivers/Streams in HUC 040500040607	Includes: Looking Glass River and Mud Creek	Fish and water
040500040608-01	Rivers/Streams in HUC 040500040608	Includes: Remy Chandler Drain and Unnamed Tributaries to Remy Chandler Drain	Fish and water
040500040609-01	Rivers/Streams in HUC 040500040609	Includes: Ives Drain and Looking Glass River	Fish and water
040500040609-03	Rivers/Streams in HUC 040500040609	Includes: Clise Drain	Fish and water
040500040610-01	Rivers/Streams in HUC 040500040610	Includes: Looking Glass River, Prairie Creek, and Watson and Summers Drain.	Fish and water
040500040611-01	Rivers/Streams in HUC 040500040611	Includes: Looking Glass River and Husted and Landenberg Drain	Fish and water
040500040612-02	Rivers/Streams in HUC 040500040612	Includes: Looking Glass River, McCausey Branch, and Kramer Drain	Fish and water
040500040701-01	Rivers/Streams in HUC 040500040701	Includes: Columbia Creek	Fish and water
040500040702-01	Rivers/Streams in HUC 040500040702	Includes: Grand River	Fish and water
040500040702-02	Rivers/Streams in HUC 040500040702	Includes: Harris Drain, Skinner Extension Drain and Spicer Creek	Fish and water
040500040703-01	Rivers/Streams in HUC 040500040703	Includes: Grand River upstream of Waverly Rd	Fish and water
040500040703-03	Rivers/Streams in HUC 040500040703	Includes: Grand River	Fish and water
040500040704-01	Rivers/Streams in HUC 040500040704	Includes: Unnamed Tributaries to the Grand River	Fish and water
040500040704-02	Rivers/Streams in HUC 040500040704	Includes: Carrier Creek	Fish and water
040500040704-03	Rivers/Streams in HUC 040500040704	Includes: Grand River downstream of Waverly Rd, extending to	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		confluence of Carrier Creek	
040500040705-01	Rivers/Streams in HUC 040500040705	Includes: Miller Creek	Fish and water
040500040705-02	Rivers/Streams in HUC 040500040705	Includes: Grand River	Fish and water
040500040705-03	Rivers/Streams in HUC 040500040705	Includes: Sandstone Creek	Fish and water
040500040706-01	Rivers/Streams in HUC 040500040706	Includes: Grand River	Fish and water
040500040706-03	Rivers/Streams in HUC 040500040706	Includes: Frayer Creek and Grand River	Fish and water
040500040707-01	Rivers/Streams in HUC 040500040707	Includes: Sebewa Creek, Winchell and Union Drains	Fish and water
040500040708-01	Rivers/Streams in HUC 040500040708	Includes: Sebewa Creek	Fish and water
040500040709-01	Rivers/Streams in HUC 040500040709	Includes: Grand River	Fish and water
040500040710-02	Rivers/Streams in HUC 040500040710	Includes: Goose Creek	Fish and water
040500050101-01	Rivers/Streams in HUC 040500050101	Includes: Maple River and Spring Brook	Fish and water
040500050102-01	Rivers/Streams in HUC 040500050102	Includes: Bear Creek and Coon Creek	Fish and water
040500050103-01	Rivers/Streams in HUC 040500050103	Includes: Alder Creek and Alder Creek Drain	Fish and water
040500050103-02	Rivers/Streams in HUC 040500050103	Includes: Alder Creek Drain	Fish and water
040500050104-01	Rivers/Streams in HUC 040500050104	Includes: Little Maple River	Fish and water
040500050104-02	Rivers/Streams in HUC 040500050104	Includes: Little Maple River	Fish and water
040500050105-01	Rivers/Streams in HUC 040500050105	Includes: Unnamed Tributaries to Maple River	Fish and water
040500050105-02	Rivers/Streams in HUC 040500050105	Includes: Maple River	Fish and water
040500050105-03	Rivers/Streams in HUC 040500050105	Includes: Maple River	Fish and water
040500050201-01	Rivers/Streams in HUC 040500050201	Includes: Baker Creek and Wise Creek	Fish and water
040500050202-01	Rivers/Streams in HUC 040500050202	Includes: Maple River	Fish and water
040500050202-02	Rivers/Streams in HUC 040500050202	Includes: Maple River	Fish and water
040500050202-03	Rivers/Streams in HUC 040500050202	Includes: Maple River	Fish and water
040500050203-01	Rivers/Streams in HUC 040500050203	Includes: Bear Creek	Fish and water
040500050204-01	Rivers/Streams in HUC 040500050204	Includes: Halterman Creek	Fish and water
040500050204-02	Rivers/Streams in HUC 040500050204	Includes: Ferdon Creek and Maple River	Fish and water
040500050204-03	Rivers/Streams in HUC 040500050204	Includes: Maple River	Fish and water
040500050205-01	Rivers/Streams in HUC 040500050205	Includes: Unnamed Tributaries to Pine Creek	Fish and water
040500050205-02	Rivers/Streams in HUC 040500050205	Includes: Newark Drain	Fish and water
040500050205-03	Rivers/Streams in HUC 040500050205	Includes: River Styx	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500050205-04	Rivers/Streams in HUC 040500050205	Includes: Pine Creek	Fish and water
040500050206-01	Rivers/Streams in HUC 040500050206	Includes: Knowles Drain, North Shade Drain, and Unnamed Tributaries to North Shade Drain	Fish and water
040500050207-01	Rivers/Streams in HUC 040500050207	Includes: Pine Creek	Fish and water
040500050207-02	Rivers/Streams in HUC 040500050207	Includes: Pine Creek	Fish and water
040500050207-03	Rivers/Streams in HUC 040500050207	Includes: Otter Creek	Fish and water
040500050208-01	Rivers/Streams in HUC 040500050208	Includes: Maple River	Fish and water
040500050208-02	Rivers/Streams in HUC 040500050208	Includes: Collier Creek and Maple River	Fish and water
040500050301-01	Rivers/Streams in HUC 040500050301	Includes: Holland Lake Outlet and Unnamed Tributaries to Lampman Lake, Mitchell Lake, Rosa Lake, Twin Lakes, and Twin Stone Lakes	Fish and water
040500050301-04	Rivers/Streams in HUC 040500050301	Includes: West Branch Fish Creek	Fish and water
040500050302-01	Rivers/Streams in HUC 040500050302	Includes: Fish Creek	Fish and water
040500050303-01	Rivers/Streams in HUC 040500050303	Includes: Unnamed Tributary to Fish Creek	Fish and water
040500050304-01	Rivers/Streams in HUC 040500050304	Includes: Butternut Creek	Fish and water
040500050305-02	Rivers/Streams in HUC 040500050305	Includes: Fish Creek	Fish and water
040500050305-03	Rivers/Streams in HUC 040500050305	Includes: Fish Creek	Fish and water
040500050306-01	Rivers/Streams in HUC 040500050306	Includes: Fifield Creek	Fish and water
040500050306-02	Rivers/Streams in HUC 040500050306	Includes: Fish Creek and Stoughton Creek	Fish and water
040500050306-03	Rivers/Streams in HUC 040500050306	Includes: Stoughton Creek	Fish and water
040500050401-01	Rivers/Streams in HUC 040500050401	Includes: Stony Creek	Fish and water
040500050401-02	Rivers/Streams in HUC 040500050401	Includes: Stony Creek	Fish and water
040500050402-01	Rivers/Streams in HUC 040500050402	Includes: Bad Creek	Fish and water
040500050403-01	Rivers/Streams in HUC 040500050403	Includes: Hamilton Drain, Holden Drain and Stony Creek	Fish and water
040500050404-01	Rivers/Streams in HUC 040500050404	Includes: Muskrat Creek and Tibbetts Drain	Fish and water
040500050405-01	Rivers/Streams in HUC 040500050405	Includes: Kloeckner and Fuller Creek and Stony Creek	Fish and water
040500050406-01	Rivers/Streams in HUC 040500050406	Includes: Stony Creek	Fish and water
040500050406-02	Rivers/Streams in HUC 040500050406	Includes: Lost Creek	Fish and water
040500050406-03	Rivers/Streams in HUC 040500050406	Includes: Stony Creek	Fish and water
040500050501-01	Rivers/Streams in HUC 040500050501	Includes: Unnamed Tributaries to North Swargart Creek	Fish and water
040500050501-02	Rivers/Streams in HUC 040500050501	Includes: Kneeland Branch and South Fork Hayworth Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500050502-01	Rivers/Streams in HUC 040500050502	Includes: Unnamed Tributaries to Hayworth Creek	Fish and water
040500050502-02	Rivers/Streams in HUC 040500050502	Includes: Hayworth Creek	Fish and water
040500050502-03	Rivers/Streams in HUC 040500050502	Includes: Doty Brook	Fish and water
040500050503-01	Rivers/Streams in HUC 040500050503	Includes: Hayworth Creek	Fish and water
040500050503-02	Rivers/Streams in HUC 040500050503	Includes: Peet Creek	Fish and water
040500050503-03	Rivers/Streams in HUC 040500050503	Includes: Cox Drain and Unnamed Tributary to Cox Drain	Fish and water
040500050504-01	Rivers/Streams in HUC 040500050504	Includes: Maple River	Fish and water
040500050505-01	Rivers/Streams in HUC 040500050505	Includes: Maple River	Fish and water
040500060101-01	Rivers/Streams in HUC 040500060101	Includes: Black Creek	Fish and water
040500060102-01	Rivers/Streams in HUC 040500060102	Includes: Stony Creek	Fish and water
040500060102-02	Rivers/Streams in HUC 040500060102	Includes: Unnamed Tributary to Sixth Lake	Fish and water
040500060103-01	Rivers/Streams in HUC 040500060103	Includes: Brimmer Creek, Flat River, Horseshoe Creek, Townline Creek and Wolf Creek	Fish and water
040500060103-02	Rivers/Streams in HUC 040500060103	Includes: Unnamed Tributary to Little Penny Lake	Fish and water
040500060104-01	Rivers/Streams in HUC 040500060104	Includes: Flat River	Fish and water
040500060104-02	Rivers/Streams in HUC 040500060104	Includes: Unnamed Tributary to Flat River	Fish and water
040500060105-02	Rivers/Streams in HUC 040500060105	Includes: Flat River	Fish and water
040500060106-01	Rivers/Streams in HUC 040500060106	Includes: Black Creek	Fish and water
040500060107-01	Rivers/Streams in HUC 040500060107	Includes: Clear Creek	Fish and water
040500060108-01	Rivers/Streams in HUC 040500060108	Includes: Coopers Creek	Fish and water
040500060108-02	Rivers/Streams in HUC 040500060108	Includes: Butternut Creek	Fish and water
040500060108-03	Rivers/Streams in HUC 040500060108	Includes: Coopers Creek	Fish and water
040500060109-01	Rivers/Streams in HUC 040500060109	Includes: Flat River	Fish and water
040500060201-01	Rivers/Streams in HUC 040500060201	Includes: Beaver Dam Creek and Wabasis Creek	Fish and water
040500060201-03	Rivers/Streams in HUC 040500060201	Includes: Wabasis Creek	Fish and water
040500060201-04	Rivers/Streams in HUC 040500060201	Includes: Beaver Dam Creek	Fish and water
040500060202-01	Rivers/Streams in HUC 040500060202	Includes: Unnamed Tributary to Dickerson Lake	Fish and water
040500060202-05	Rivers/Streams in HUC 040500060202	Includes: Dickerson Creek	Fish and water
040500060203-01	Rivers/Streams in HUC 040500060203	Includes: Dickerson Creek	Fish and water
040500060203-02	Rivers/Streams in HUC 040500060203	Includes: TRIBUTARY TO DICKERSON CREEK	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500060204-01	Rivers/Streams in HUC 040500060204	Includes: Unnamed Tributary to Dickerson Creek and Unnamed Tributary to Long Lake	Fish and water
040500060205-01	Rivers/Streams in HUC 040500060205	Includes: Dickerson Creek	Fish and water
040500060206-01	Rivers/Streams in HUC 040500060206	Includes: Flat River	Fish and water
040500060206-02	Rivers/Streams in HUC 040500060206	Includes: Flat River	Fish and water
040500060207-01	Rivers/Streams in HUC 040500060207	Includes: Seely Creek	Fish and water
040500060207-04	Rivers/Streams in HUC 040500060207	Includes: Seely Creek	Fish and water
040500060208-01	Rivers/Streams in HUC 040500060208	Includes: Flat River	Fish and water
040500060209-01	Rivers/Streams in HUC 040500060209	Includes: Flat River	Fish and water
040500060209-02	Rivers/Streams in HUC 040500060209	Includes: Page Creek	Fish and water
040500060301-01	Rivers/Streams in HUC 040500060301	Includes: Libhart Creek	Fish and water
040500060302-01	Rivers/Streams in HUC 040500060302	Includes: Libhart Creek	Fish and water
040500060302-02	Rivers/Streams in HUC 040500060302	Includes: Ayers Branch and Little Libhart Creek	Fish and water
040500060302-03	Rivers/Streams in HUC 040500060302	Includes: Libhart Creek	Fish and water
040500060303-01	Rivers/Streams in HUC 040500060303	Includes: Bacon Creek and Prairie Creek	Fish and water
040500060304-01	Rivers/Streams in HUC 040500060304	Includes: Prairie Creek	Fish and water
040500060304-02	Rivers/Streams in HUC 040500060304	Includes: Prairie Creek	Fish and water
040500060305-01	Rivers/Streams in HUC 040500060305	Includes: Unnamed Tributary to Prairie Creek and Unnamed Tributary near Meade Road	Fish and water
040500060306-01	Rivers/Streams in HUC 040500060306	Includes: Prairie Creek	Fish and water
040500060307-01	Rivers/Streams in HUC 040500060307	Includes: Grand River	Fish and water
040500060308-01	Rivers/Streams in HUC 040500060308	Includes: Sessions Creek	Fish and water
040500060308-03	Rivers/Streams in HUC 040500060308	Includes: Sessions Creek	Fish and water
040500060308-04	Rivers/Streams in HUC 040500060308	Includes: Sessions Creek	Fish and water
040500060309-01	Rivers/Streams in HUC 040500060309	Includes: Bellamy Creek, Grand River and Tibbetts Creek	Fish and water
040500060309-02	Rivers/Streams in HUC 040500060309	Includes: Bellamy Creek	Fish and water
040500060310-01	Rivers/Streams in HUC 040500060310	Includes: Grand River	Fish and water
040500060310-02	Rivers/Streams in HUC 040500060310	Includes: Crooked Creek	Fish and water
040500060310-03	Rivers/Streams in HUC 040500060310	Includes: Red Creek	Fish and water
040500060310-04	Rivers/Streams in HUC 040500060310	Includes: Timberland Creek	Fish and water
040500060311-01	Rivers/Streams in HUC 040500060311	Includes: Leary Drain, Unnamed Tributary to Morrison Lake, and	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Unnamed Tributary near Clarksville Road	
040500060311-02	Rivers/Streams in HUC 040500060311	Includes: Lake Creek and Little Creek	Fish and water
040500060312-01	Rivers/Streams in HUC 040500060312	Includes: Grand River	Fish and water
040500060312-02	Rivers/Streams in HUC 040500060312	Includes: Toles Creek	Fish and water
040500060313-01	Rivers/Streams in HUC 040500060313	Includes: Grand River	Fish and water
040500060313-02	Rivers/Streams in HUC 040500060313	Includes: Lee Creek	Fish and water
040500060313-03	Rivers/Streams in HUC 040500060313	Includes: Unnamed Tributary to Grand River	Fish and water
040500060313-04	Rivers/Streams in HUC 040500060313	Includes: Unnamed Tributary to Grand River	Fish and water
040500060401-02	Rivers/Streams in HUC 040500060401	Includes: Rogue River (Ransom Creek)	Fish and water
040500060401-04	Rivers/Streams in HUC 040500060401	Includes: Hickory Creek	Fish and water
040500060402-01	Rivers/Streams in HUC 040500060402	Includes: Duke Creek	Fish and water
040500060402-02	Rivers/Streams in HUC 040500060402	Includes: Duke Creek and Forest Creek	Fish and water
040500060402-03	Rivers/Streams in HUC 040500060402	Includes: White Creek	Fish and water
040500060402-04	Rivers/Streams in HUC 040500060402	Includes: Frost Creek	Fish and water
040500060403-01	Rivers/Streams in HUC 040500060403	Includes: Walter Creek	Fish and water
040500060403-02	Rivers/Streams in HUC 040500060403	Includes: Spring Creek	Fish and water
040500060403-03	Rivers/Streams in HUC 040500060403	Includes: Rogue River	Fish and water
040500060404-01	Rivers/Streams in HUC 040500060404	Includes: Nash Creek	Fish and water
040500060405-02	Rivers/Streams in HUC 040500060405	Includes: Ball Creek	Fish and water
040500060405-05	Rivers/Streams in HUC 040500060405	Includes: Rogue River	Fish and water
040500060406-02	Rivers/Streams in HUC 040500060406	Includes: Cedar Creek and Unnamed Tributary to Cedar Creek	Fish and water
040500060406-03	Rivers/Streams in HUC 040500060406	Includes: Little Cedar Creek	Fish and water
040500060407-01	Rivers/Streams in HUC 040500060407	Includes: Rogue River	Fish and water
040500060407-02	Rivers/Streams in HUC 040500060407	Includes: Unnamed Tributary near US 131	Fish and water
040500060408-01	Rivers/Streams in HUC 040500060408	Includes: Becker Creek	Fish and water
040500060408-03	Rivers/Streams in HUC 040500060408	Includes: Stegman Creek	Fish and water
040500060408-04	Rivers/Streams in HUC 040500060408	Includes: Shaw Creek	Fish and water
040500060408-05	Rivers/Streams in HUC 040500060408	Includes: Rogue River and Unnamed Tributary to Rogue River	Fish and water
040500060408-06	Rivers/Streams in HUC 040500060408	Includes: Barkley Creek	Fish and water
040500060408-07	Rivers/Streams in HUC 040500060408	Includes: Rum Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500060501-01	Rivers/Streams in HUC 040500060501	Includes: Bear Creek and Waddell Creek	Fish and water
040500060501-02	Rivers/Streams in HUC 040500060501	Includes: Armstrong Creek, Bear Creek and Stout Creek	Fish and water
040500060502-01	Rivers/Streams in HUC 040500060502	Includes: Bear Creek and Grand River	Fish and water
040500060502-02	Rivers/Streams in HUC 040500060502	Includes: Honey Creek	Fish and water
040500060502-03	Rivers/Streams in HUC 040500060502	Includes: Egypt Creek	Fish and water
040500060502-04	Rivers/Streams in HUC 040500060502	Includes: Unnamed Tributary to Grand River	Fish and water
040500060502-05	Rivers/Streams in HUC 040500060502	Includes: Sunny Creek	Fish and water
040500060503-01	Rivers/Streams in HUC 040500060503	Includes: Unnamed Tributary to Mill Creek	Fish and water
040500060503-02	Rivers/Streams in HUC 040500060503	Includes: Strawberry Creek	Fish and water
040500060503-03	Rivers/Streams in HUC 040500060503	Includes: Mill Creek	Fish and water
040500060503-04	Rivers/Streams in HUC 040500060503	Includes: Mill Creek	Fish and water
040500060504-01	Rivers/Streams in HUC 040500060504	Includes: Brandywine Creek and Indian Mill Creek	Fish and water
040500060504-02	Rivers/Streams in HUC 040500060504	Includes: Indian Mill Creek	Fish and water
040500060505-01	Rivers/Streams in HUC 040500060505	Includes: Unnamed Tributaries to Plaster Creek	Fish and water
040500060505-02	Rivers/Streams in HUC 040500060505	Includes: Plaster Creek	Fish and water
040500060506-01	Rivers/Streams in HUC 040500060506	Includes: Echo Lake Outlet and Unnamed Tributary to Unnamed Lake	Fish and water
040500060506-02	Rivers/Streams in HUC 040500060506	Includes: Little Plaster Creek, Plaster Creek and Whisky Creek	Fish and water
040500060507-01	Rivers/Streams in HUC 040500060507	Includes: Grand River	Fish and water
040500060507-02	Rivers/Streams in HUC 040500060507	Includes: York Creek	Fish and water
040500060507-03	Rivers/Streams in HUC 040500060507	Includes: Scott Creek	Fish and water
040500060507-04	Rivers/Streams in HUC 040500060507	Includes: Lamberton Creek	Fish and water
040500060507-05	Rivers/Streams in HUC 040500060507	Includes: LAMBERTON CREEK	Fish and water
040500060507-06	Rivers/Streams in HUC 040500060507	Includes: Grand River	Fish and water
040500060508-01	Rivers/Streams in HUC 040500060508	Includes: Buck Creek and Sharps Creek	Fish and water
040500060509-01	Rivers/Streams in HUC 040500060509	Includes: East Branch Rush Creek	Fish and water
040500060509-02	Rivers/Streams in HUC 040500060509	Includes: East Branch Rush Creek	Fish and water
040500060510-01	Rivers/Streams in HUC 040500060510	Includes: Unnamed Tributary to Buck Creek	Fish and water
040500060510-02	Rivers/Streams in HUC 040500060510	Includes: Buck Creek and Pine Hill Creek	Fish and water
040500060511-01	Rivers/Streams in HUC 040500060511	Includes: Rush Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500060511-02	Rivers/Streams in HUC 040500060511	Includes: Rush Creek	Fish and water
040500060511-04	Rivers/Streams in HUC 040500060511	Includes: Unnamed Tributary to Rush Creek	Fish and water
040500060512-01	Rivers/Streams in HUC 040500060512	Includes: Grand River	Fish and water
040500060512-02	Rivers/Streams in HUC 040500060512	Includes: Unnamed Tributary to Grand River	Fish and water
040500060512-03	Rivers/Streams in HUC 040500060512	Includes: Grand River	Fish and water
040500060601-03	Rivers/Streams in HUC 040500060601	Includes: North Branch Crockery Creek, west of Newaygo Rd.	Fish and water
040500060601-04	Rivers/Streams in HUC 040500060601	Includes: North Branch Crockery Creek	Fish and water
040500060601-05	Rivers/Streams in HUC 040500060601	Includes: North Branch Crockery Creek, east of Newaygo Rd	Fish and water
040500060602-01	Rivers/Streams in HUC 040500060602	Includes: Crockery Creek	Fish and water
040500060602-04	Rivers/Streams in HUC 040500060602	Includes: Unnamed Tributary to Crockery Creek	Fish and water
040500060602-05	Rivers/Streams in HUC 040500060602	Includes: Crockery Creek and Ovidhall Lake Creek	Fish and water
040500060602-06	Rivers/Streams in HUC 040500060602	Includes: Crockery Creek	Fish and water
040500060603-01	Rivers/Streams in HUC 040500060603	Includes: Crockery Creek	Fish and water
040500060603-02	Rivers/Streams in HUC 040500060603	Includes: Rio Grande Creek	Fish and water
040500060604-01	Rivers/Streams in HUC 040500060604	Includes: Crockery Creek	Fish and water
040500060604-02	Rivers/Streams in HUC 040500060604	Includes: Crockery Creek	Fish and water
040500060605-01	Rivers/Streams in HUC 040500060605	Includes: Brandy Creek and Crockery Creek	Fish and water
040500060701-01	Rivers/Streams in HUC 040500060701	Includes: East Fork Sand Creek and Unnamed Tributaries to East Fork Sand Creek	Fish and water
040500060702-01	Rivers/Streams in HUC 040500060702	Includes: Sand Creek	Fish and water
040500060703-01	Rivers/Streams in HUC 040500060703	Includes: Sand Creek	Fish and water
040500060704-01	Rivers/Streams in HUC 040500060704	Includes: Beaver Creek, Deer Creek and Little Deer Creek	Fish and water
040500060705-03	Rivers/Streams in HUC 040500060705	Includes: Ottawa Creek	Fish and water
040500060706-01	Rivers/Streams in HUC 040500060706	Includes: Bass Creek	Fish and water
040500060707-01	Rivers/Streams in HUC 040500060707	Includes: Bass Creek, Bass River and Little Bass Creek	Fish and water
040500060707-02	Rivers/Streams in HUC 040500060707	Includes: Bear Creek	Fish and water
040500060708-01	Rivers/Streams in HUC 040500060708	Includes: Grand River, not including tributaries	Fish and water
040500060708-02	Rivers/Streams in HUC 040500060708	Includes: Tributaries to Grand River	Fish and water
040500060709-01	Rivers/Streams in HUC 040500060709	Includes: Unnamed Tributaries to Pottawattomie Bayou	Fish and water
040500060710-01	Rivers/Streams in HUC 040500060710	Includes: Norris Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500060711-02	Rivers/Streams in HUC 040500060711	Includes: Beckwith Brook, Stevens Creek, Vincent Creek and Willow Hill Creek	Fish and water
040500060711-03	Rivers/Streams in HUC 040500060711	Includes: Norris Creek	Fish and water
040500060712-02	Rivers/Streams in HUC 040500060712	Includes: Black Creek, Grand River and Lloyd Bayou	Fish and water
040500070101-01	Rivers/Streams in HUC 040500070101	Includes: Butternut Creek	Fish and water
040500070102-01	Rivers/Streams in HUC 040500070102	Includes: Thornapple River	Fish and water
040500070102-02	Rivers/Streams in HUC 040500070102	Includes: Unnamed Tributary to Butternut Creek	Fish and water
040500070103-01	Rivers/Streams in HUC 040500070103	Includes: Sharp Drain, Thornapple Drain, and Unnamed Tributaries to Thornapple Drain	Fish and water
040500070104-01	Rivers/Streams in HUC 040500070104	Includes: Little Thornapple River	Fish and water
040500070105-01	Rivers/Streams in HUC 040500070105	Includes: Thornapple River	Fish and water
040500070105-02	Rivers/Streams in HUC 040500070105	Includes: Thornapple River	Fish and water
040500070201-01	Rivers/Streams in HUC 040500070201	Includes: Thornapple River	Fish and water
040500070201-03	Rivers/Streams in HUC 040500070201	Includes: Darken and Boyer Drain, Cole Wright Helms Drain, and Unnamed Tributaries to Darken and Boyer Drain	Fish and water
040500070202-01	Rivers/Streams in HUC 040500070202	Includes: Lacey Creek and Unnamed Tributary near Carlisle Highway	Fish and water
040500070202-02	Rivers/Streams in HUC 040500070202	Includes: Lacey Creek	Fish and water
040500070203-01	Rivers/Streams in HUC 040500070203	Includes: Thornapple River	Fish and water
040500070203-02	Rivers/Streams in HUC 040500070203	Includes: Thompson Creek	Fish and water
040500070204-01	Rivers/Streams in HUC 040500070204	Includes: Hayon Creek and Shanty Brook	Fish and water
040500070205-01	Rivers/Streams in HUC 040500070205	Includes: Quaker Brook	Fish and water
040500070206-01	Rivers/Streams in HUC 040500070206	Includes: Scipio Creek	Fish and water
040500070206-02	Rivers/Streams in HUC 040500070206	Includes: Thornapple River	Fish and water
040500070207-01	Rivers/Streams in HUC 040500070207	Includes: Mud Creek	Fish and water
040500070208-01	Rivers/Streams in HUC 040500070208	Includes: Gravel Brook, Hagar Creek and Mud Creek	Fish and water
040500070209-01	Rivers/Streams in HUC 040500070209	Includes: High Bank Creek	Fish and water
040500070209-02	Rivers/Streams in HUC 040500070209	Includes: Mud Creek	Fish and water
040500070209-03	Rivers/Streams in HUC 040500070209	Includes: High Bank Creek and Thornapple River	Fish and water
040500070210-03	Rivers/Streams in HUC 040500070210	Includes: Cedar Creek, Kellie Creek and North Branch Cedar Creek	Fish and water
040500070211-03	Rivers/Streams in HUC 040500070211	Includes: Thornapple River	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500070301-01	Rivers/Streams in HUC 040500070301	Includes: Tupper Creek	Fish and water
040500070302-01	Rivers/Streams in HUC 040500070302	Includes: Little Thornapple River and Woodland Creek	Fish and water
040500070303-01	Rivers/Streams in HUC 040500070303	Includes: Coldwater River, Kart Creek and Messer Brook	Fish and water
040500070303-02	Rivers/Streams in HUC 040500070303	Includes: Coldwater River	Fish and water
040500070304-01	Rivers/Streams in HUC 040500070304	Includes: Duck Creek	Fish and water
040500070304-02	Rivers/Streams in HUC 040500070304	Includes: Duck Creek	Fish and water
040500070305-01	Rivers/Streams in HUC 040500070305	Includes: Kilgus Branch	Fish and water
040500070305-02	Rivers/Streams in HUC 040500070305	Includes: Pratt Lake Creek	Fish and water
040500070305-03	Rivers/Streams in HUC 040500070305	Includes: Pratt Lake Creek	Fish and water
040500070306-01	Rivers/Streams in HUC 040500070306	Includes: Bear Creek	Fish and water
040500070306-02	Rivers/Streams in HUC 040500070306	Includes: Bear Creek	Fish and water
040500070307-01	Rivers/Streams in HUC 040500070307	Includes: Clarke and Bunker Drain and Unnamed Tributaries to Clarke and Bunker Drain	Fish and water
040500070307-02	Rivers/Streams in HUC 040500070307	Includes: Coldwater River	Fish and water
040500070307-03	Rivers/Streams in HUC 040500070307	Includes: Coldwater River	Fish and water
040500070401-01	Rivers/Streams in HUC 040500070401	Includes: Fall Creek	Fish and water
040500070402-01	Rivers/Streams in HUC 040500070402	Includes: Thornapple River	Fish and water
040500070402-02	Rivers/Streams in HUC 040500070402	Includes: Thornapple River	Fish and water
040500070402-03	Rivers/Streams in HUC 040500070402	Includes: Butler Creek	Fish and water
040500070402-04	Rivers/Streams in HUC 040500070402	Includes: Pratt Creek and Unnamed Tributary to Pratt Creek	Fish and water
040500070403-01	Rivers/Streams in HUC 040500070403	Includes: Glass Creek	Fish and water
040500070404-01	Rivers/Streams in HUC 040500070404	Includes: Thornapple River	Fish and water
040500070405-01	Rivers/Streams in HUC 040500070405	Includes: Duncan Lake Outlet and Wilson Drain	Fish and water
040500070405-03	Rivers/Streams in HUC 040500070405	Includes: Hanna Lake Outlet and Unnamed Tributary to Hanna Lake	Fish and water
040500070405-04	Rivers/Streams in HUC 040500070405	Includes: Duncan Creek	Fish and water
040500070406-01	Rivers/Streams in HUC 040500070406	Includes: Hill Creek and Thornapple River	Fish and water
040500070406-02	Rivers/Streams in HUC 040500070406	Includes: Bassett Creek and Turner Creek	Fish and water
040500070407-01	Rivers/Streams in HUC 040500070407	Includes: Thornapple River	Fish and water
040500070407-02	Rivers/Streams in HUC 040500070407	Includes: Krafts Lake Outlet	Fish and water
040500070407-03	Rivers/Streams in HUC 040500070407	Includes: McCords Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040500070407-04	Rivers/Streams in HUC 040500070407	Includes: UNNAMED TRIBUTARY TO THORNAPPLE RIVER	Fish and water
040500070408-01	Rivers/Streams in HUC 040500070408	Includes: Thornapple River	Fish and water
040500070408-02	Rivers/Streams in HUC 040500070408	Includes: UNNAMED TRIBUTARY TO THORNAPPLE	Fish and water
040500070408-03	Rivers/Streams in HUC 040500070408	Includes: Unnamed Tributary to Thornapple River upstream of Gerald Ford Airport	Fish and water
040601010301-01	Rivers/Streams in HUC 040601010301	Includes: Ewing Creek and McDuffee Creek	Fish and water
040601010302-01	Rivers/Streams in HUC 040601010302	Includes: Little South Branch Pere Marquette River	Fish and water
040601010303-02	Rivers/Streams in HUC 040601010303	Includes: Baker Creek, Blood Creek and Middle Branch Pere Marquette River	Fish and water
040601010304-01	Rivers/Streams in HUC 040601010304	Includes: Little South Branch Pere Marquette River and Pease Creek	Fish and water
040601010304-02	Rivers/Streams in HUC 040601010304	Includes: Little South Branch Pere Marquette River	Fish and water
040601010304-03	Rivers/Streams in HUC 040601010304	Includes: Unnamed Rivers/Streams in HUC 040601010304	Fish and water
040601010401-01	Rivers/Streams in HUC 040601010401	Includes: Beaver Creek	Fish and water
040601010401-02	Rivers/Streams in HUC 040601010401	Includes: Beaver Creek	Fish and water
040601010401-03	Rivers/Streams in HUC 040601010401	Includes: Beaver Creek and South Beaver Creek	Fish and water
040601010401-04	Rivers/Streams in HUC 040601010401	Includes: Tributary to Beaver Creek	Fish and water
040601010402-01	Rivers/Streams in HUC 040601010402	Includes: Tank Creek	Fish and water
040601010402-02	Rivers/Streams in HUC 040601010402	Includes: West Michigan Creek	Fish and water
040601010402-03	Rivers/Streams in HUC 040601010402	Includes: Bear Creek	Fish and water
040601010402-04	Rivers/Streams in HUC 040601010402	Includes: Winnepesaug Creek	Fish and water
040601010402-05	Rivers/Streams in HUC 040601010402	Includes: Big South Branch Pere Marquette River	Fish and water
040601010403-01	Rivers/Streams in HUC 040601010403	Includes: Cedar Creek and Triple Lakes Creek	Fish and water
040601010404-01	Rivers/Streams in HUC 040601010404	Includes: Freeman Creek and Unnamed Tributaries to Freeman Creek	Fish and water
040601010404-02	Rivers/Streams in HUC 040601010404	Includes: Big South Branch Pere Marquette River	Fish and water
040601010405-01	Rivers/Streams in HUC 040601010405	Includes: Allen Creek	Fish and water
040601010405-02	Rivers/Streams in HUC 040601010405	Includes: WOODY CREEK	Fish and water
040601010405-03	Rivers/Streams in HUC 040601010405	Includes: Big South Branch Pere Marquette River and Ruby Creek	Fish and water
040601010406-01	Rivers/Streams in HUC 040601010406	Includes: Big South Branch Pere Marquette River	Fish and water
040601010406-02	Rivers/Streams in HUC 040601010406	Includes: Carr Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601010501-01	Rivers/Streams in HUC 040601010501	Includes: Baldwin River, Cole Creek, North Branch Cole Creek and South Branch Cole Creek	Fish and water
040601010502-01	Rivers/Streams in HUC 040601010502	Includes: Sanborn Creek	Fish and water
040601010503-02	Rivers/Streams in HUC 040601010503	Includes: Baldwin River and Bray Creek	Fish and water
040601010503-03	Rivers/Streams in HUC 040601010503	Includes: Sanborn Creek	Fish and water
040601010504-01	Rivers/Streams in HUC 040601010504	Includes: Pere Marquette River	Fish and water
040601010504-02	Rivers/Streams in HUC 040601010504	Includes: Danaher Creek and Jenks Creek	Fish and water
040601010504-05	Rivers/Streams in HUC 040601010504	Includes: Pere Marquette River	Fish and water
040601010505-01	Rivers/Streams in HUC 040601010505	Includes: Sweetwater Creek	Fish and water
040601010505-02	Rivers/Streams in HUC 040601010505	Includes: Pere Marquette River	Fish and water
040601010505-03	Rivers/Streams in HUC 040601010505	Includes: Kinney Creek	Fish and water
040601010505-05	Rivers/Streams in HUC 040601010505	Includes: Pere Marquette River	Fish and water
040601010506-01	Rivers/Streams in HUC 040601010506	Includes: Pere Marquette River, not including tributaries	Fish and water
040601010506-02	Rivers/Streams in HUC 040601010506	Includes: Pere Marquette River	Fish and water
040601010506-03	Rivers/Streams in HUC 040601010506	Includes: Weldon Creek	Fish and water
040601010506-04	Rivers/Streams in HUC 040601010506	Includes: Weldon Creek	Fish and water
040601010507-01	Rivers/Streams in HUC 040601010507	Includes: Unnamed Tributary to Pere Marquette River	Fish and water
040601010507-02	Rivers/Streams in HUC 040601010507	Includes: Black Creek and Hatting Creek	Fish and water
040601010507-03	Rivers/Streams in HUC 040601010507	Includes: Pere Marquette River	Fish and water
040601010508-01	Rivers/Streams in HUC 040601010508	Includes: Pere Marquette River	Fish and water
040601010508-02	Rivers/Streams in HUC 040601010508	Includes: Swan Creek	Fish and water
040601010508-03	Rivers/Streams in HUC 040601010508	Includes: India Creek	Fish and water
040601010508-04	Rivers/Streams in HUC 040601010508	Includes: Pere Marquette River	Fish and water
040601010509-01	Rivers/Streams in HUC 040601010509	Includes: Pere Marquette River upstream from Pere Marquette Highway, and Swanson Creek	Fish and water
040601010509-02	Rivers/Streams in HUC 040601010509	Includes: Lichte Creek	Fish and water
040601010509-03	Rivers/Streams in HUC 040601010509	Includes: Mosquito Creek	Fish and water
040601010509-04	Rivers/Streams in HUC 040601010509	Includes: Saint Clair Creek	Fish and water
040601010509-06	Rivers/Streams in HUC 040601010509	Includes: Pere Marquette River from the Lake Michigan confluence upstream to Pere Marquette Highway	Fish and water
040601020902-02	Rivers/Streams in HUC 040601020902	Includes: Bigelow Creek and Cold Creek	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040601020903-01	Rivers/Streams in HUC 040601020903	Includes: Muskegon River excluding 1 mile stretch below Croton Dam	Fish and water
040601020903-05	Rivers/Streams in HUC 040601020903	Includes: Muskegon River from Croton dam downstream 1 mile	Fish and water
040601020904-01	Rivers/Streams in HUC 040601020904	Includes: Fourmile Creek and Muskegon River	Fish and water
040601020904-02	Rivers/Streams in HUC 040601020904	Includes: Brooks Creek	Fish and water
040601020905-04	Rivers/Streams in HUC 040601020905	Includes: Brooks Creek and Cow Creek	Fish and water
040601020906-01	Rivers/Streams in HUC 040601020906	Includes: Greenwood Creek and Muskegon River	Fish and water
040601020906-02	Rivers/Streams in HUC 040601020906	Includes: Sand Creek	Fish and water
040601020906-03	Rivers/Streams in HUC 040601020906	Includes: Minnie Creek	Fish and water
040601020906-04	Rivers/Streams in HUC 040601020906	Includes: Minnie Creek	Fish and water
040601021004-10	Rivers/Streams in HUC 040601021004	Includes: West Branch Ruddiman Creek and North Branch Ruddiman Creek	Fish and water
040700060605-02	Rivers/Streams in HUC 040700060605	Includes: Fall Creek and Thunder Bay River	Fish and water
040801020206-03	Rivers/Streams in HUC 040801020206	Includes: Kawkawlin River and Millpond Drain	Fish and water
040802010408-01	Rivers/Streams in HUC 040802010408	Includes: Tittabawassee River and Varity Creek	Fish and water
040802010408-02	Rivers/Streams in HUC 040802010408	Includes: Black Creek	Fish and water
040802010601-01	Rivers/Streams in HUC 040802010601	Includes: Carrol Creek Drain	Fish and water
040802010602-01	Rivers/Streams in HUC 040802010602	Includes: Grass Creek and Sturgeon Creek	Fish and water
040802010603-01	Rivers/Streams in HUC 040802010603	Includes: Unnamed Tributary to Newell Drain	Fish and water
040802010603-02	Rivers/Streams in HUC 040802010603	Includes: Branch Number Two, Jacobs Drain, Miller Drain, Newell Drain and Sturgeon Creek	Fish and water
040802010604-01	Rivers/Streams in HUC 040802010604	Includes: Tittabawassee River upstream from 460 feet downstream of Poseyville Road	Fish and water
040802010604-02	Rivers/Streams in HUC 040802010604	Includes: Averill Creek, Prairie Creek, and Tittabawassee River	Fish and water
040802010604-03	Rivers/Streams in HUC 040802010604	Includes: Tittabawassee River downstream from 460 feet downstream of Poseyville Road	Fish and water
040802010605-01	Rivers/Streams in HUC 040802010605	Includes: Bullock Creek, Duncan Drain, Kneeland Drain, and Unnamed Tributaries to Bullock Creek	Fish and water
040802010606-01	Rivers/Streams in HUC 040802010606	Includes: Tittabawassee River	Fish and water
040802010606-02	Rivers/Streams in HUC 040802010606	Includes: Tittabawassee River	Fish and water
040802010606-03	Rivers/Streams in HUC 040802010606	Includes: Lingle Drain, Sarle Drain, Shaffner Drain, Brown and Mills Drain	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802010607-01	Rivers/Streams in HUC 040802010607	Includes: Tittabawassee River	Fish and water
040802010607-02	Rivers/Streams in HUC 040802010607	Includes: Tributaries to the Tittabawassee River	Fish and water
040802020207-02	Rivers/Streams in HUC 040802020207	Includes: Chippewa River	Fish and water
040802020207-03	Rivers/Streams in HUC 040802020207	Includes: Chippewa River	Fish and water
040802020207-04	Rivers/Streams in HUC 040802020207	Includes: Chippewa River	Fish and water
040802020207-05	Rivers/Streams in HUC 040802020207	Includes: Cedar Creek	Fish and water
040802020501-01	Rivers/Streams in HUC 040802020501	Includes: Chippewa River and Mission Creek	Fish and water
040802020502-01	Rivers/Streams in HUC 040802020502	Includes: Parcher Drain and Salt Creek	Fish and water
040802020503-01	Rivers/Streams in HUC 040802020503	Includes: Childs Creek and Salt Creek	Fish and water
040802020504-01	Rivers/Streams in HUC 040802020504	Includes: Onion Creek and Potter Creek	Fish and water
040802020504-02	Rivers/Streams in HUC 040802020504	Includes: Potter Creek	Fish and water
040802020505-01	Rivers/Streams in HUC 040802020505	Includes: Black Creek, Salt Creek and Thrasher Creek	Fish and water
040802020506-01	Rivers/Streams in HUC 040802020506	Includes: Little Salt Creek	Fish and water
040802020506-02	Rivers/Streams in HUC 040802020506	Includes: Little Salt Creek	Fish and water
040802020507-01	Rivers/Streams in HUC 040802020507	Includes: Little Salt Creek and Turkey Creek	Fish and water
040802020508-01	Rivers/Streams in HUC 040802020508	Includes: Chippewa River	Fish and water
040802020508-02	Rivers/Streams in HUC 040802020508	Includes: Chippewa River	Fish and water
040802020508-03	Rivers/Streams in HUC 040802020508	Includes: Chippewa River	Fish and water
040802020508-04	Rivers/Streams in HUC 040802020508	Includes: Chippewa River	Fish and water
040802030101-02	Rivers/Streams in HUC 040802030101	Includes: Marion And Genoa Drain	Fish and water
040802030102-01	Rivers/Streams in HUC 040802030102	Includes: Sprague Creek	Fish and water
040802030104-01	Rivers/Streams in HUC 040802030104	Includes: Bogue Creek	Fish and water
040802030111-01	Rivers/Streams in HUC 040802030111	Includes: Shiawassee River	Fish and water
040802030205-01	Rivers/Streams in HUC 040802030205	Includes: Maple River and Shiawassee River	Fish and water
040802030205-02	Rivers/Streams in HUC 040802030205	Includes: Scribner Drain and Unnamed Tributaries to Scribner Drain	Fish and water
040802030206-02	Rivers/Streams in HUC 040802030206	Includes: Shiawassee River	Fish and water
040802030207-01	Rivers/Streams in HUC 040802030207	Includes: Unnamed Tributary to Shiawassee River	Fish and water
040802030207-02	Rivers/Streams in HUC 040802030207	Includes: Shiawassee River	Fish and water
040802030208-04	Rivers/Streams in HUC 040802030208	Includes: Shiawassee River	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802030301-01	Rivers/Streams in HUC 040802030301	Includes: Bad River and Brady Creek	Fish and water
040802030302-01	Rivers/Streams in HUC 040802030302	Includes: Limbocker Creek	Fish and water
040802030303-01	Rivers/Streams in HUC 040802030303	Includes: South Fork Bad River	Fish and water
040802030304-01	Rivers/Streams in HUC 040802030304	Includes: Griffus Creek and Lamb Creek	Fish and water
040802030309-01	Rivers/Streams in HUC 040802030309	Includes: Bad River and Shad Creek	Fish and water
040802030310-01	Rivers/Streams in HUC 040802030310	Includes: South Fork Bad River	Fish and water
040802030313-01	Rivers/Streams in HUC 040802030313	Includes: Bad River, Eagle Creek, Little Eagle Creek, Shiawassee River, Soap Run and South Fork Bad River	Fish and water
040802030410-03	Rivers/Streams in HUC 040802030410	Includes: Shiawassee River	Fish and water
040802030410-06	Rivers/Streams in HUC 040802030410	Includes: Shiawassee River	Fish and water
040802040303-07	Rivers/Streams in HUC 040802040303	Includes: Thread Creek	Fish and water
040802040402-01	Rivers/Streams in HUC 040802040402	Includes: Hasler Creek	Fish and water
040802040403-01	Rivers/Streams in HUC 040802040403	Includes: Flint River and unnamed tributaries	Fish and water
040802040403-03	Rivers/Streams in HUC 040802040403	Includes: Flint River and Henry Drain	Fish and water
040802040409-01	Rivers/Streams in HUC 040802040409	Includes: Flint River	Fish and water
040802040409-02	Rivers/Streams in HUC 040802040409	Includes: Flint River	Fish and water
040802040409-03	Rivers/Streams in HUC 040802040409	Includes: POWERS-CULLEN DRAIN	Fish and water
040802040409-04	Rivers/Streams in HUC 040802040409	Includes: Parker Scothan Drain	Fish and water
040802040409-09	Rivers/Streams in HUC 040802040409	Includes: Clark Drain, Flint River, Riegle Drain and Zufelt Drain	Fish and water
040802040410-01	Rivers/Streams in HUC 040802040410	Includes: Flint River	Fish and water
040802040410-02	Rivers/Streams in HUC 040802040410	Includes: Gilkey Creek	Fish and water
040802040501-01	Rivers/Streams in HUC 040802040501	Includes: Cole Creek	Fish and water
040802040501-02	Rivers/Streams in HUC 040802040501	Includes: Flint River	Fish and water
040802040501-03	Rivers/Streams in HUC 040802040501	Includes: Mud Creek	Fish and water
040802040501-05	Rivers/Streams in HUC 040802040501	Includes: Pirnie Creek	Fish and water
040802040502-01	Rivers/Streams in HUC 040802040502	Includes: Flint River	Fish and water
040802040502-02	Rivers/Streams in HUC 040802040502	Includes: Brent Creek and Freeman Drain	Fish and water
040802040503-01	Rivers/Streams in HUC 040802040503	Includes: Brent Run	Fish and water
040802040504-01	Rivers/Streams in HUC 040802040504	Includes: Armstrong Creek	Fish and water
040802040504-02	Rivers/Streams in HUC 040802040504	Includes: Flint River	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802040505-01	Rivers/Streams in HUC 040802040505	Includes: Misteguay Creek and Crawford Creek	Fish and water
040802040506-01	Rivers/Streams in HUC 040802040506	Includes: Misteguay Creek and Rush Creek	Fish and water
040802040506-02	Rivers/Streams in HUC 040802040506	Includes: Rush Creek	Fish and water
040802040506-03	Rivers/Streams in HUC 040802040506	Includes: Onion Creek	Fish and water
040802040507-01	Rivers/Streams in HUC 040802040507	Includes: Misteguay Creek and Porter Creek	Fish and water
040802040508-01	Rivers/Streams in HUC 040802040508	Includes: Northwood Creek	Fish and water
040802040509-01	Rivers/Streams in HUC 040802040509	Includes: Misteguay Creek, Mitchell Creek and Northwood Creek	Fish and water
040802040510-01	Rivers/Streams in HUC 040802040510	Includes: Benjamin Run, Parker Creek and Pine Run	Fish and water
040802040511-01	Rivers/Streams in HUC 040802040511	Includes: Alexander Drain, Bogart Drain, Hutchinson And Young Drain, Silver Creek and Silver Creek Drain	Fish and water
040802040512-01	Rivers/Streams in HUC 040802040512	Includes: Bortle Drain, Misteguay Creek and Pattee Creek	Fish and water
040802040513-01	Rivers/Streams in HUC 040802040513	Includes: Atwell Drain, Flint River, Pitch Creek and Spring Brook Drain	Fish and water
040802040513-02	Rivers/Streams in HUC 040802040513	Includes: Flint River	Fish and water
040802050101-01	Rivers/Streams in HUC 040802050101	Includes: South Branch Cass River	Fish and water
040802050102-01	Rivers/Streams in HUC 040802050102	Includes: Carter Drain and Unnamed Tributaries to Carter Drain	Fish and water
040802050102-02	Rivers/Streams in HUC 040802050102	Includes: Duff Creek and South Branch Cass River	Fish and water
040802050103-01	Rivers/Streams in HUC 040802050103	Includes: South Branch Cass River	Fish and water
040802050104-01	Rivers/Streams in HUC 040802050104	Includes: Argyle Drain, Carson Drain, Hartel Drain, Middle Branch Cass River and Sanderson Drain	Fish and water
040802050105-01	Rivers/Streams in HUC 040802050105	Includes: Hawksworth Drain, Kramp Drain, McIntyre Drain, Middle Branch Cass River, Swan Drain and Wheeler Drain	Fish and water
040802050106-01	Rivers/Streams in HUC 040802050106	Includes: South Branch Cass River and Stony Creek	Fish and water
040802050106-02	Rivers/Streams in HUC 040802050106	Includes: Ryder Drain and Turtle Creek	Fish and water
040802050106-03	Rivers/Streams in HUC 040802050106	Includes: Beaver Creek, Kirby Drain, Middle Branch Cass River, South Branch Cass River, Tank Drain and Temple Drain	Fish and water
040802050107-01	Rivers/Streams in HUC 040802050107	Includes: Brown Drain, Osentoski Branch, Schiestel Drain and South Fork Cass River	Fish and water
040802050108-01	Rivers/Streams in HUC 040802050108	Includes: North Branch Cass River	Fish and water
040802050109-01	Rivers/Streams in HUC 040802050109	Includes: North Branch Cass River and Sanilac Huron Creek	Fish and water
040802050110-01	Rivers/Streams in HUC 040802050110	Includes: Greenman Creek and South Branch Cass River	Fish and water
040802050205-01	Rivers/Streams in HUC 040802050205	Includes: Cass River	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
040802050207-01	Rivers/Streams in HUC 040802050207	Includes: Cass River	Fish and water
040802050207-02	Rivers/Streams in HUC 040802050207	Includes: Butternut Creek, Cass River, and Tributaries to the Cass River	Fish and water
040802050208-01	Rivers/Streams in HUC 040802050208	Includes: Cass River	Fish and water
040802050304-01	Rivers/Streams in HUC 040802050304	Includes: Carpenter Branch, Dead Creek and Zehender Drain	Fish and water
040802050304-02	Rivers/Streams in HUC 040802050304	Includes: Dead Creek	Fish and water
040802050305-01	Rivers/Streams in HUC 040802050305	Includes: Cass River, not including tributaries.	Fish and water
040802050305-03	Rivers/Streams in HUC 040802050305	Includes: Cass River	Fish and water
040802050305-04	Rivers/Streams in HUC 040802050305	Includes: Unnamed trib to the Cass River, east of Frankenmuth	Fish and water
040802050305-05	Rivers/Streams in HUC 040802050305	Includes: Coles Creek and Unnamed Tributaries to the Cass River	Fish and water
040802050306-01	Rivers/Streams in HUC 040802050306	Includes: Cass River	Fish and water
040802050306-03	Rivers/Streams in HUC 040802050306	Includes: Cass River	Fish and water
040802060101-01	Rivers/Streams in HUC 040802060101	Includes: Cheboyganing Creek, Richville Drain, Rousch Drain, Sheboygan Drain, Tinglan Drain, Unnamed Tributaries to Cheboyganing Creek, Unnamed Tributaries to Richville Drain, Unnamed Tributaries to Rousch Drain, and Unnamed Tributaries to Sheboygan Drain	Fish and water
040802060102-01	Rivers/Streams in HUC 040802060102	Includes: Blumfield Creek, Cool Creek, Unnamed Tributaries to Blumfield Creek, and Unnamed Tributaries to Cool Creek	Fish and water
040802060103-02	Rivers/Streams in HUC 040802060103	Includes: Unnamed Tributaries to Weaver Drain and Weaver Drain	Fish and water
040802060202-01	Rivers/Streams in HUC 040802060202	Includes: Kochville Drain, Unnamed Tributaries to Kochville Drain, and Unnamed Tributaries to Saginaw River	Fish and water
040802060203-01	Rivers/Streams in HUC 040802060203	Includes: Armon Drain, Branch Number Three, Colmubia Drain, Dutch Creek, Kochville and Frankenlust Drain, Squaconning Creek, Unnamed Tributaries to Dutch Creek, Unnamed Tributaries to North Branch Kochville and Frankenlust Drain, and Unnamed Tributaries t	Fish and water
040900010101-01	Rivers/Streams in HUC 040900010101	Includes: Black River, Darlington Drain, Lloyd Drain, Unnamed Tributaries to Black River, Unnamed Tributaries to Darlington Drain, and Unnamed Tributaries to Lloyd Drain	Fish and water
040900010102-01	Rivers/Streams in HUC 040900010102	Includes: Black River, Grandy Drain, Pelton Drain, Thompson Drain, Unnamed Tributaries to Black River, and Unnamed Tributary to Grandy Drain	Fish and water
040900010104-01	Rivers/Streams in HUC 040900010104	Includes: Black River, Nicol Drain, Smith Drain, Unnamed	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Tributaries to Nicol Drain, Unnamed Tributaries to Smith Drain, and Unnamed Tributary to Wilkins Drain	
040900010111-01	Rivers/Streams in HUC 040900010111	Includes: Elk Creek, Recor Drain, Meyers Drain, Alexander Drain, Methven Drain, Watertown State Drain, Lynch Drain, Smalldon Drain, Parks Drain, Mullen Drain, Colbough Drain.	Fish and water
040900010112-01	Rivers/Streams in HUC 040900010112	Includes: Black River, Gordon Drain, McPherson Drain, Shrapnell Drain, Unnamed Tributaries to Black River, and Unnamed Tributaries to Shrapnell Drain	Fish and water
040900010112-02	Rivers/Streams in HUC 040900010112	Includes: CARSONVILLE DRAIN	Fish and water
040900010113-01	Rivers/Streams in HUC 040900010113	Includes: Arnot Creek, Black River, Freeman Drain, Kelly Creek, Kelly Drain, Papst Drain, Unnamed Tributaries to Black River, Unnamed Tributaries to Freeman Drain, Unnamed Tributaries to Kelly Creek, Unnamed Tributaries to Kelly Drain, Unnamed Tributaries	Fish and water
040900010114-01	Rivers/Streams in HUC 040900010114	Includes: Arnot Creek, Black River, Mills Creek, Unnamed Tributaries to Arnot Creek, Unnamed Tributaries to Black River, and Unnamed Tributaries to Mills Creek	Fish and water
040900010114-02	Rivers/Streams in HUC 040900010114	Includes: Black River and Unnamed Tributaries to Black River	Fish and water
040900010114-04	Rivers/Streams in HUC 040900010114	Includes: Black River	Fish and water
040900010211-01	Rivers/Streams in HUC 040900010211	Includes: Black River, Mason Drain, Plum Creek, Unnamed Tributaries to Black River, Unnamed Tributaries to Mason Drain, and Unnamed Tributaries to Plum Creek	Fish and water
040900010211-02	Rivers/Streams in HUC 040900010211	Includes: Plum Creek, Pohly Drain, Engles Drain, and Unnamed Tributaries to Plum Creek	Fish and water
040900010213-01	Rivers/Streams in HUC 040900010213	Includes: Black River, Glyshaw Drain, O Dette Drain, Unnamed Tributaries to Black River	Fish and water
040900010214-01	Rivers/Streams in HUC 040900010214	Includes: Black River, Brandymore Drain, Howe Drain, Price Drain, Stocks Creek, Unnamed Tributaries to Black River, Unnamed Tributaries to Brandymore Drain, Unnamed Tributaries to Howe Drain, and Unnamed Tributaries to Stocks Creek	Fish and water
040900010214-02	Rivers/Streams in HUC 040900010214	Includes: Black River	Fish and water
040900050402-01	Rivers/Streams in HUC 040900050402	Includes: GEDDES POND (HURON RIVER) AND ALLEN CREEK	Fish and water
041000020101-01	Rivers/Streams in HUC 041000020101	Includes: GOOSE CREEK	Fish and water
041000020102-02	Rivers/Streams in HUC 041000020102	Includes: Briggs Lake Creek, Kedron Drain, Little Stony Lake Outlet, Mud Lake Outlet, Plum Brook Drain, River Raisin, Stony Lake	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Outlet, Unnamed Tributary to Mercury Lake, Unnamed Tributary to Mud Lake, Unnamed Tributary to Pickerel Lake, Unnamed Tributary	
041000020103-01	Rivers/Streams in HUC 041000020103	Includes: Bessey Lake Outlet, River Raisin, Sweezy Lake Outlet, and Unnamed Tributaries to River Raisin	Fish and water
041000020103-02	Rivers/Streams in HUC 041000020103	Includes: River Raisin	Fish and water
041000020104-01	Rivers/Streams in HUC 041000020104	Includes: Fay Lake Outlet, River Raisin, Unnamed Tributary to Fay Lake, and Unnamed Tributary to River Raisin	Fish and water
041000020105-01	Rivers/Streams in HUC 041000020105	Includes: River Raisin	Fish and water
041000020105-02	Rivers/Streams in HUC 041000020105	Includes: River Raisin and Unnamed Tributaries to River Raisin	Fish and water
041000020106-01	Rivers/Streams in HUC 041000020106	Includes: Honey Lake Outlet, Iron Creek, Jordon Lake Outlet, Mud Lake Outlet, and Unnamed Tributary to Lower Lake	Fish and water
041000020107-01	Rivers/Streams in HUC 041000020107	Includes: Evans Creek, Lamkin Drain, Taylor Creek, and Unnamed Tributaries to Evans Creek	Fish and water
041000020108-01	Rivers/Streams in HUC 041000020108	Includes: River Raisin and Unnamed Tributaries to River Raisin	Fish and water
041000020108-02	Rivers/Streams in HUC 041000020108	Includes: Dillingham Creek, River Raisin, and Unnamed Tributaries to River Raisin	Fish and water
041000020201-01	Rivers/Streams in HUC 041000020201	Includes: Hazen Creek, Stoddard Drain, Unnamed Tributaries to Hazen Creek, and Unnamed Tributaries to Stoddard Drain	Fish and water
041000020202-01	Rivers/Streams in HUC 041000020202	Includes: Cadmus Drain, Harrison Drain, Nash Drain, South Branch River Raisin, Stony Creek, Unnamed Tributary to Harrison Drain, and Unnamed Tributaries to South Branch River Raisin	Fish and water
041000020203-01	Rivers/Streams in HUC 041000020203	Includes: Wolf Creek, Black Creek, Fisk Drain, and Unnamed Tribs	Fish and water
041000020204-01	Rivers/Streams in HUC 041000020204	Includes: Squaw Creek, Wolf Creek, Unnamed Tributaries to Erin Lake, and Unnamed Tributaries to Squaw Creek	Fish and water
041000020204-03	Rivers/Streams in HUC 041000020204	Includes: WOLF CREEK	Fish and water
041000020205-01	Rivers/Streams in HUC 041000020205	Includes: Porter Drain and South Branch River Raisin	Fish and water
041000020205-02	Rivers/Streams in HUC 041000020205	Includes: Savage Drain and South Branch River Raisin	Fish and water
041000020206-01	Rivers/Streams in HUC 041000020206	Includes: South Branch River Raisin	Fish and water
041000020206-02	Rivers/Streams in HUC 041000020206	Includes: EAST SIDE DRAIN	Fish and water
041000020302-01	Rivers/Streams in HUC 041000020302	Includes: Bear Creek	Fish and water
041000020302-02	Rivers/Streams in HUC 041000020302	Includes: Bear Creek	Fish and water
041000020302-03	Rivers/Streams in HUC 041000020302	Includes: Camp Drain, J B Drain, Hudson Lake from the outlet upstream to include Bear Creek, Hennings Drain, Tucker Drain, and	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		Unnamed Tribs	
041000020302-05	Rivers/Streams in HUC 041000020302	Includes: Baker and May Drain, Hoadley Drain, and Unnamed Tributaries to Baker and May Drain	Fish and water
041000020302-06	Rivers/Streams in HUC 041000020302	Includes: Rice Lake Drain	Fish and water
041000020303-01	Rivers/Streams in HUC 041000020303	Includes: Black Creek, Nile Ditch, Abbott Drain, Hall Drain, Nelson Drain, Knapp Drain, Raymond Drain, and Unnamed Tribs	Fish and water
041000020304-01	Rivers/Streams in HUC 041000020304	Includes: Bear Creek and Unnamed Tributaries to Bear Creek	Fish and water
041000020305-01	Rivers/Streams in HUC 041000020305	Includes: BLACK CREEK	Fish and water
041000020306-01	Rivers/Streams in HUC 041000020306	Includes: Big Meadow Drain, Grinnel Drain, Bixby Drain, and Unnamed Tribs	Fish and water
041000020306-02	Rivers/Streams in HUC 041000020306	Includes: Unnamed Tributary to Big Meadow Drain	Fish and water
041000020306-03	Rivers/Streams in HUC 041000020306	Includes: Big Meadow Drain	Fish and water
041000020307-01	Rivers/Streams in HUC 041000020307	Includes: River Raisin upstream to Blissfield.	Fish and water
041000020307-02	Rivers/Streams in HUC 041000020307	Includes: Bay Drain, River Raisin upstream of Blissfield, Unnamed Tributaries to River Raisin, Floodwood Creek, Unnamed Tributaries to Floodwood Creek, and Unnamed Tributaries to River Raisin	Fish and water
041000020308-01	Rivers/Streams in HUC 041000020308	Includes: River Raisin	Fish and water
041000020308-02	Rivers/Streams in HUC 041000020308	Includes: Camp Drain, Unnamed Tributary to Camp Drain, and Unnamed Tributaries to River Raisin	Fish and water
041000020309-01	Rivers/Streams in HUC 041000020309	Includes: Ash Drain, Fry Drain, Isley Drain, Little River Raisin, Miller Drain, Pope Drain, Swamp Raisin Creek, Unnamed Tributaries to Little River Raisin, Unnamed Tributaries to Swamp Raisin Creek, Westgate Drain, and Woodruff Brook	Fish and water
041000020310-01	Rivers/Streams in HUC 041000020310	Includes: River Raisin	Fish and water
041000020310-02	Rivers/Streams in HUC 041000020310	Includes: Dunlap Drain, Miller Drain, River Raisin, Roe Drain, Russell Drain, Stacy Drain, Unnamed Tributaries to Russell Drain, and Unnamed Tributary to Stacy Drain.	Fish and water
041000020401-01	Rivers/Streams in HUC 041000020401	Includes: Columbia Lake Outlet, Joslin Lake Outlet, Saline River, Unnamed Tributaries to Columbia Lake, and Unnamed Tributaries to Saline River	Fish and water
041000020402-01	Rivers/Streams in HUC 041000020402	Includes: Birkle Lake Outlet, Saline River, Unnamed Tributary to Birkle Lake, Unnamed Tributaries to Saline River, Unnamed Tributaries to Wood Outlet Drain, and Wood Outlet Drain	Fish and water
041000020403-01	Rivers/Streams in HUC 041000020403	Includes: Koch Warner Drain, Pittsfield Number Five Drain, Saline	Fish and water

AUID	Assessment Unit Name	Location Description	PCB Impairment
		River, and Unnamed Tributary to Saline River	
041000020404-01	Rivers/Streams in HUC 041000020404	Includes: MACON CREEK	Fish and water
041000020405-01	Rivers/Streams in HUC 041000020405	Includes: Coats Drain, Dibble Drain, Schreeder Brook, South Branch Macon Creek, Springbrook Drain, Sutton Drain, Unnamed Tributary to Schreeder Brook, Unnamed Tributaries to South Branch Macon Creek, and Unnamed Tributary to Sutton Drain	Fish and water
041000020406-01	Rivers/Streams in HUC 041000020406	Includes: Bear Swamp Creek, Center Creek, Cone Drain, Leet Weidner Drain, Nolan Engle Drain, Unnamed Tributary to Bear Swamp Creek, and Unnamed Tributaries to Center Creek	Fish and water
041000020407-01	Rivers/Streams in HUC 041000020407	Includes: MACON CREEK	Fish and water
041000020408-01	Rivers/Streams in HUC 041000020408	Includes: Macon Creek, Leppleman Drain, Middle Branch Macon Creek, Richardson Drain, and Unnamed Tribs	Fish and water
041000020408-02	Rivers/Streams in HUC 041000020408	Includes: North Branch Macon Creek	Fish and water
041000020409-01	Rivers/Streams in HUC 041000020409	Includes: Saline River	Fish and water
041000020409-02	Rivers/Streams in HUC 041000020409	Includes: Bear Creek, Beaver Meadow Drain, Saline River, Sherman Wilson Drain, Unnamed Tributaries to Bear Creek, and Unnamed Tributaries to Bear Creek	Fish and water
041000020409-03	Rivers/Streams in HUC 041000020409	Includes: Ella Lee Lake Outlet, Saline River, Unnamed Tributary to Ella Lee Lake, and Unnamed Tributary to Saline River	Fish and water
041000020410-01	Rivers/Streams in HUC 041000020410	Includes: Barnaby Drain, Brost Drain, Brown Drain, Burdeau Drain, Karm Drain, Mason Run, Middle Branch Willow Run, Moore Drain, North Branch Willow Run, River Raisin, Sietz Drain, Unnamed Tributary to River Raisin, and Willow Run	Fish and water
041000020410-02	Rivers/Streams in HUC 041000020410	Includes: River Raisin and Unnamed Tributary to River Raisin	Fish and water

APPENDIX B.

**PCB TMDL QUESTIONS AND COMMENTS RESPONSE DOCUMENT
FROM THE PUBLIC MEETING ON FEBRUARY 6, 2013,
AND PUBLIC COMMENT PERIOD JANUARY 14-FEBRUARY 19,
2013**

DEQ Response Document for
Statewide Polychlorinated Biphenyl
Total Maximum Daily Load

QUESTIONS:

- 1) Would there be an opportunity to call in for this meeting?
Ms. Amy Berglund, U. P. Regional Representative, Office of U.S. Senator Carl Levin

- 2) I just received the notice regarding a meeting in Lansing on the Total Maximum Daily Load (TMDL) for Polychlorinated biphenyls (PCBs). Will there be access to the meeting via conference call? I'd like to participate, but I'm reluctant to travel in February.
Mr. George Beck, Environmental Services, Lac Vieux Desert Tribe

- 3) I would like to enroll in the PCB TMDL Webinar, as I cannot attend the meeting tomorrow. Can you please let me know the details?
Ms. Lisa M. Tomlinson, Associate Project Manager, Arcadis U.S., Inc.

DEQ RESPONSE:

Please see below for the Webinar registration for the PCB TMDL Public Meeting.

Join us for a Webinar on February 6, 2013

Reserve your Webinar seat now at:

(The link provided was broken and has been removed.)

The Michigan Department of Environmental Quality (MDEQ) is proposing a TMDL for inland water bodies impacted by atmospheric deposition of PCBs throughout the state. PCBs are a class of synthetic, chlorinated organic chemicals that were produced mainly for their excellent insulating capabilities and chemical stability. The United States Environmental Protection Agency (USEPA) banned production of PCBs in 1979 due to their toxic properties, and this class of chemicals was ultimately phased out of new uses in 1983. PCBs have been shown to cause a variety of adverse health effects, notably cancer in animals. Non-cancer effects include impacts to the nervous, immune, reproductive, and endocrine systems, among other adverse effects. PCBs concentrate in the fatty tissues of organisms and bioaccumulate in living tissues. Thus, despite the United States ban of PCB production, PCBs remain in the environment in soil, water, air, animal tissue, and vegetation. PCB concentrations in water and fish tissue have been declining since the early 1990s; however, numerous water bodies in the state remain impaired due to PCBs that continue to be found in fish tissue and water.

The MDEQ is developing a statewide TMDL as required under Section 303(d) of the federal Clean Water Act, which requires a TMDL to be written for water bodies not meeting Michigan's water quality standards (WQS). The purpose of the TMDL is to gather data, identify problems, and develop appropriate goals and reasonable assurance that will work toward restoring the designated uses to the water bodies.

Information Covered at this Public Meeting: The development of the TMDL, the TMDL process, and associated activities. The Webinar will provide the ability to review PowerPoint slides on your computer and listen to audio through your telephone or computer during the public meeting.

Title: PCB TMDL Public Meeting Webinar

Date: Wednesday, February 6, 2013

Time: 1:00 PM - 4:00 PM EST

After registering you will receive a confirmation e-mail containing information about joining the Webinar.

QUESTION:

- 4) Could you help shed some light on where we are headed with this issue and what it means for lakes across Michigan, especially in the UP?

Ms. Kendra Everett, Legislative Aide for Senator Casperson via Ms. Maggie Datema, Legislative Liaison, DEQ

DEQ RESPONSE:

In regards to the Draft Statewide PCB TMDL:

This statewide PCB TMDL was created to address reductions necessary to meet WQS for inland lakes and streams in Michigan. The production of PCBs has been banned since 1979; therefore, we are now dealing with the remaining PCBs in soil, water, air, animal tissue, and vegetation. The greatest source of PCBs is due to atmospheric deposition where pollutants are transferred from air to water through processes such as absorption or volatilization.

Section 303(d) of the federal Clean Water Act and the USEPA's Water Quality Planning and Management Regulations (Title 40 of the Code of Federal Regulations [CFR] Part 130) requires states to develop TMDLs for all Category 5 water bodies that are not meeting WQS for a specific pollutant. These water bodies are included on a state's Section 303(d) list. The TMDL process establishes the allowable loadings of a pollutant to a water body based on the relationship between pollution sources and water quality conditions of a water body. This allowable loading represents the maximum quantity of a pollutant that the water body can receive without exceeding WQS. The TMDL process provides states with the basis for establishing water quality-based controls, which provide the pollutant reductions necessary for a water body to attain WQS.

- This Draft PCB TMDL addresses inland lakes and streams throughout Michigan to show what reductions are needed to meet WQS. These target reductions provide the MDEQ with a current snapshot of PCBs in the system today and establish a goal for PCB reduction in the future. This TMDL will provide a reference to document future decreases of PCBs in the system. There will be a separate Great Lakes TMDL created to address PCBs in those water bodies in the future.*
- Currently, the MDEQ has a Fish Contaminant Monitoring Program to assess the concentration of PCBs in fish tissue. This program will continue to assess PCBs in fish tissue and will track PCB contaminant trends in fish tissue over time. No additional testing is proposed or planned due to this PCB statewide TMDL.*
- The PCB TMDL document shows nine facilities with PCB point source loads through the National Pollutant Discharge Elimination System (NPDES). No changes are proposed to the permitted PCB effluent concentrations with this PCB TMDL document.*
- The proposed PCB TMDL reductions will come from atmospheric contributions. There has been a decline in atmospheric deposition of PCBs due to the ban on the*

manufacture and use of PCBs. The proposed atmospheric reductions will occur due to the cleanup of legacy sites through the Areas of Concern, Superfund sites, and the USEPA National Priorities List. In addition, PCBs are prohibited from being delivered to a landfill for disposal and thus reduce volatilization.

QUESTION:

- 5) I wondered if there are particular business sectors that have been identified as "important stakeholders" in relation to PCBs, or if my company is included as a stakeholder because of involvement with other TMDLs in the past?

Mr. Brian Gasiorowski, Environmental Director, Lafarge U.S.

DEQ RESPONSE:

The MDEQ has two divisions involved in the PCB TMDL, which are the Air Quality Division and Water Resources Division. For the most part, organizations, companies, and groups that had past involvement with TMDLs were included in this stakeholder list.

QUESTIONS:

- 6) Some questions I would have for the implementation phase of the TMDL:

- Is the MDEQ considering any additional actions to encourage accelerated phase out of PCB materials still in service in transformers, capacitors, and ballasts? I'm especially interested in lamp ballasts since Minnesota disposal records for VSQGs show schools are still disposing of PCB ballasts. (Plus, as I understand it, federal rules allow a small amount of PCB ballasts to be disposed of in regular solid waste so it's possible to "bleed" ballasts into solid waste all year if you've got a bunch of them.)
- Is the MDEQ considering any strategies to reduce the release of inadvertent PCBs (i.e., PCBs created by manufacturing or use of products such as paint and pigment and found by Hornbuckle and others in urban air studies) that may be making their way into the water?
- Is the MDEQ looking at the potential release of PCBs in recycled paper product manufacturing, use, and disposal (see this testimony to ECOS from a recycle mill: <http://srrttf.org/wp-content/uploads/2012/08/IEP-Talking-Points.pdf>) and this Huffington Post article describing ECOS' subsequent PCB resolution passed in September last year. http://www.huffingtonpost.com/bart-mihailovich/pcb-environment-regulation_b_1840853.html

Ms. Carrie Lohse-Hanson, Minnesota Pollution Control Agency

DEQ RESPONSE:

R 324.11514 of Part 115, Solid Waste Management, of the NREPA, was amended by 2004 PA 34 to prohibit PCBs from being delivered to a landfill for disposal, and also prohibits a landfill owner or operator from permitting the disposal of PCBs in their landfill. Michigan regulations now require the use of uniform hazardous waste manifests for all regulated shipments of PCB waste as required in Part 147, PCB Disposal, of the NREPA as per the current Operational Memos 121-4 and 147-1. The MDEQ will continue to monitor fish contaminants to see trends in fish tissue levels. Atmospheric PCB monitoring will continue through the Great Lakes IADN Program with Master Stations on each of the five Great Lakes. The MDEQ did not directly address the release of

inadvertent PCBs through paints, pigments, or recycling; however, these items would be accounted for in atmospheric sources.

QUESTION:

- 7) Several Allied Paper Portage Creek Kalamazoo River Superfund Site landfills have been or are being remediated with covers. These covers generally incorporate vent layers which provide restricted venting of the underlying PCB contaminated soils to the atmosphere. The landfills are a) Kings Highway in Kalamazoo, which is under MDEQ control; Willow/A Site in Kalamazoo, 12th Street in Plainwell and Bryant Mill in Kalamazoo under the control of USEPA. Except for the Bryant Mill site, all USEPA landfills are completed or near completion in 2013. Any air sampling of cover, vented landfills is unknown.

Mr. Robert Whitesides, Kalamazoo River Watershed Council

DEQ RESPONSE:

Based on evaluations that have been conducted, neither the USEPA nor MDEQ has required additional evaluation of the PCBs volatilizing from either the land-based operable units (the landfills) or from the extensive floodplains themselves. The USEPA is in charge of air monitoring sampling at these sites. We acknowledge that not much is known about volatilization of PCBs that are re-exposed to the atmosphere; however, Michael Berkhoff (312-353-8983) from the USEPA, Region 5, can provide more information on this topic.

QUESTION:

- 8) The Allied Paper Portage Creek Kalamazoo River Superfund Site includes large areas of impounded water in relatively shallow reservoirs, primarily Lake Allegan behind Calkins Bridge Dam, and the impoundment behind Allegan City Dam, that are likely to remain unchanged. Impoundments behind Otsego City, Otsego Township and Trowbridge Dams, which are likely to be removed currently have smaller, but significant surface areas. In addition to surface area that provides atmospheric volatilization potential, PCB contaminated soils formerly submerged sediments on impoundment bottoms, are likely to volatilize PCB to the atmosphere. When the Otsego City, Otsego Township and Trowbridge Dams are removed additional former impoundment sediments will be exposed to atmospheric volatilization.

It is unknown if any air sampling has been performed over the existing impoundments or uplands formerly submerged in impoundments. Responsibility for such monitoring and subsequent controls is likely to be through the Potentially Responsible Parties at the direction of the USEPA.

Mr. Robert Whitesides, Kalamazoo River Watershed Council

DEQ RESPONSE:

Thank you for your comments and questions. Past cleanup at remediation sites have demonstrated that volatilization to the atmosphere is minimal. For example, in the 1999 sediment cleanup efforts for the Fox River in Wisconsin, based on a mass balance study the PCBs that were volatilized during remediation were only 0.4% of the total PCBs

removed. Please also see Question 9 below for more details on the King Highway Superfund Site.

QUESTION:

- 9) Georgia Pacific supports MDEQ's recognition of the impact of air deposition on stream impairment and its understanding of the critical role that reduction in air deposition plays in achieving WQS.

Georgia Pacific would like to respectfully note that the Georgia-Pacific King Highway Superfund site (Permit No. MIU990018), referenced in Table 10 "PCB Point Source Loads" on page 38, is a closed and capped landfill. The following link to the USEPA's Web site indicates that this permit expired on September 30, 2003, and that there were no recorded discharges from May 2000 to the expiration of the permit:

(The link provided was broken and has been removed). Additionally, the USEPA-Plainwell Dam SF (Permit No. MIU990028), referenced in Table 10, was associated with the Plainwell No. 2 Dam Time Critical Removal Action which was completed in 2010, and that permit has also been terminated.

If you have any questions on our comments, please contact Mr. Garry Griffith (734.735.0780) or me.

Mr. Traylor Champion, Vice President, Environmental Affairs, Georgia-Pacific LLC

DEQ RESPONSE:

Thank you for the information and the references regarding these two facilities. After further review within MDEQ databases, it is noted that Georgia-Pacific King Highway Superfund site (Permit No. MIU990018) and USEPA-Plainwell Dam SF (Permit No. MIU990028) are no longer discharging and will be removed from Table 10. The Waste Load Allocation is now 1.48E-06.

Questions during the public meeting February 6, 2013

QUESTION:

- 10) Are there any water bodies in Michigan with PCB fish consumption advisories where atmospheric deposition is considered the sole source?

Mr. Benjamin Uvaas, Wisconsin DNR

MDEQ RESPONSE:

The impairment does not assign 100% contribution to atmospheric sources. These atmospheric sources have been identified as the primary or dominant source. The way the impairments are listed, it does not say that they are the only source, it just says that they are the dominant source.

QUESTION:

- 11) How is existing legacy contamination factored into the lake trout atmospheric to body content ratio?

Mr. Benjamin Uvaas, Wisconsin DNR

MDEQ RESPONSE:

In the Draft PCB TMDL, Table 5 shows the water bodies that had lake trout data and the water bodies that were used to calculate the threshold coefficient. To our knowledge, none of these water bodies were sites that had significant legacy contamination. The water bodies are primarily in the northern Lower Peninsula including Crystal Lake, Elk Lake, Glen Lake, Green Lake, North Lake Leelanau, Siskiwit Lake, and Torch Lake. The reductions of atmospheric PCBs will need to come through the cleanup of legacy sites, this statewide PCB TMDL, and the future Great Lakes TMDL.

QUESTION:

- 12) When do you expect to include the Great Lakes and connecting rivers in the process?
Mr. George Beck, Environmental Services, Lac Vieux Desert Tribe

MDEQ RESPONSE:

Currently, the Great Lakes and connecting waters PCB TMDL is on the TMDL schedule for 2015: However, realistically, we need to collaborate with our fellow Great Lakes states. That will require the Great Lakes states to jointly determine how and when we can best move forward given each states unique monetary and staff resources. The next step would be submitting one request from all the states to the USEPA to assist with the Great Lakes TMDL for PCBs. Most likely, development of the Great Lakes and connecting waters TMDL will be rescheduled, and will not occur in 2015. More information will likely be included in the next Water Quality and Pollution Control Integrated Report, which is scheduled for completion in 2014.

QUESTION:

- 13) What is the standard used to determine if a water body is impaired by PCBs?
Ms. Ankita Mandelia, Michigan Technological University

MDEQ RESPONSE:

Two numeric water quality criteria exist for PCBs. The water quality criterion to protect wildlife, 0.12 ng/L, is used to assess whether the wildlife component of the indigenous aquatic life and wildlife designated use is being protected. The wildlife water quality criterion is the maximum ambient water concentration of a substance at which adverse effects are not likely to result in population-level impacts to mammalian and avian wildlife populations from lifetime exposure through drinking water, and aquatic food supply, using the methodology specified in R 323.1057(3) of the Part 4 Rules. The human health water quality criterion, 0.026 ng/L for PCBs, is used to assess whether the fish consumption designated use is being protected. The human health water quality criterion is the maximum ambient water concentration of a substance at which a lifetime of exposure from either drinking the water, consuming fish from the water, or conducting water-related recreation activities will represent a plausible upper bound risk of contracting cancer of 1 in 100,000 using the exposure assumptions and methodology specified in R 323.1057(4) of the Part 4 WQS. Any time a water column concentration is measured above the human health water quality criterion, a site is considered impaired.

The second way for a water body to be impaired is for there to be fish consumption advisory, which automatically puts the water body on the impaired waters list. There are different thresholds for different consumption advisories. Table 3 in the draft PCB TMDL lists the various PCB levels and fish tissue required to drive the fish consumption advisories.

QUESTION:

- 14) To clarify, is the assumption behind this TMDL that no point sources of PCBs to water occur in Michigan?

Ms. Ankita Mandelia, Michigan Technological University

MDEQ RESPONSE:

No, this is not the assumption. In the presentation as well as the draft PCB TMDL, there is a Waste Load Allocation assigned to point sources. There are existing point source discharges of PCBs to the waters of the state with permits or substantive requirement documents. The list of these facilities is in Table 10 of the draft PCB TMDL.

QUESTION:

- 15) How will progress on this TMDL be evaluated for the water bodies that do not contain lake trout?

Ms. Ankita Mandelia, Michigan Technological University

MDEQ RESPONSE:

The selection of a numeric fish tissue target requires the selection of a fish tissue residue value, an appropriate fish species, and a statistical level at which to base compliance with the TMDL once reductions of environmental PCB concentrations have been made. Load reductions in PCBs required by the TMDL are based on the decrease of PCB concentrations in fish tissue that is necessary to meet a fish tissue residue value of 0.023 mg/kg in the 90th percentile of an appropriate fish species. Achieving the target level for the 90th percentile of the most impacted fish species ensures that the overwhelming majority of species in lower trophic levels will meet the target level. Lake trout were used as the target to define the required loading percentage or reduction percentage (94%). The state conducts routine fish contaminant monitoring of all species. As the state continues fish contaminant monitoring, we will sample a variety of fish, including lake trout. This monitoring will allow us to track reductions of the PCB levels for all species.

QUESTION:

- 16) I just want to make sure I understand that given the current situation that we have with PCB levels in fish tissue, that most of that is attributed to atmospheric deposition. Sources of atmospheric deposition are decreasing over time as well as PCB concentrations in fish tissue. It is going to be a part of the TMDL for inland lakes and water bodies that there is no other action than the continued monitoring.

Unknown Participant from the Public Meeting

MDEQ RESPONSE:

This is correct; however, a few clarifications include: This TMDL only covers inland waters where air deposition is the primary source. There are nine PCB point source facilities identified in the TMDL that are meeting NPDES permit requirements. No changes are proposed to the permitted PCB effluent concentrations with this PCB TMDL document. Remediation efforts at legacy sites (which are not covered in this TMDL) will continue. These efforts, in combination with observed declines in PCB concentrations that are occurring due to the 1979 production ban, should ensure continued declines in air deposition, thus the decrease in fish tissue levels.

QUESTION:

- 17) Is there an expectation that stormwater discharges would be limited for PCBs?
Ms. Carrie Lohse-Hanson, Minnesota Pollution Control Agency

MDEQ RESPONSE:

The point source load consists of regulated wastewater and stormwater discharges (including permitted municipal separate storm sewer system (MS4) discharges). Storm water regulated under the NPDES storm water program is traditionally considered to be a point source. However, information from NPDES regulated storm water discharges is not detailed enough to estimate PCB loadings for specific outfalls. Since loading to storm water is primarily from atmospheric sources, the storm water load is implicitly included in the nonpoint source load. Michigan has a well-developed program to address and control storm water pollution through the implementation of best management practices as required by the Clean Water Act. Any PCBs in storm water that are not addressed by reductions in atmospheric sources implemented in accordance with this TMDL will be addressed by state municipal and industrial storm water permit regulations.