APPENDIX D:

STATUS OF CATEGORY 4 WATERS

STATUS OF CATEGORY 4 WATERS AS OF INDIANA'S 2018 INTEGRATED REPORT SUBMITTAL ON AUGUST 17, 2018

In accordance with U.S. EPA guidance (U.S. EPA 2001, 2005, 2006, 2009, 2011, 2013, 2015, and 2017), Indiana's Category 4 waters are identified in Indiana's Consolidated List, which is included in Indiana's 2018 Integrated Monitoring and Assessment Report, Appendix I. Category 4 consists of impairments for which a Total Maximum Daily Load (TMDL) is not required. The subcategories of Indiana's Category 4 list are described below:

- Category 4A consists of impairments for which a TMDL has been approved by U.S. EPA and is expected to result in attainment of all applicable water quality standards (WQS).
- Category 4B consists of impairments for which other pollution control requirements are expected to result in the attainment of the WQS in a reasonable period of time.
- Category 4C consists of impairments that are not caused by a pollutant and as such, do not require a TMDL.

Categories 4 and 5 of IDEM's Consolidated List together provide the most comprehensive assessment of impairment of Indiana waters to date. With each 303(d) listing cycle, U.S. EPA requests an update on the status of Indiana's Category 4 waters to facilitate tracking of all known impairments. These impairments and their current status are discussed in the following sections.

CATEGORY 4A IMPAIRMENTS

Category 4A consists of impairments for which a TMDL has been approved by U.S. EPA and is expected to result in attainment of all applicable WQS. IDEM's progress in TMDL development since the 2016 cycle is discussed in the Notice of Comment Period for the draft 2018 303(d) list and in this appendix of the 2018 Integrated Report. This appendix provides a comprehensive update on all TMDLs approved to date and the impairments they cover. With the submittal of its 2018 Integrated Report, IDEM has developed a total of two thousand seven hundred seventy eight (2,778) TMDLs, which have been approved by U.S. EPA.

The impairments addressed by these TMDLs can be found in the listing tables provided in Appendix I. Table D-1 provides a list of all TMDLs approved to date and a key for their corresponding impairments in Appendix A I. which also identifies any changes made as a result of reindexing to the assessment units previously listed in Category 4A. This information appears in the columns with updated assessment unit IDs (AUIDs) and names where applicable. IDEM's methods for developing TMDL "crosswalks" – ensuring the accurate application of previously approved TMDLs on AUIDs that were reindexed AUIDs to their corresponding new AUIDs required the agency to first develop a quality-assured, comprehensive segmentation tracking record, which IDEM has dubbed its "Finalized HR Segmentation Tracking Table". IDEM's development of both its finalized segmentation tracking record and its TMDL crosswalks are described below.

DEVELOPMENT OF IDEM'S MASTER SEGMENTATION TRACKING TABLE

Indiana completed the development of its new, statewide high resolution (HR) Reach Index in late 2015. However, a number of changes occurred over the course of this work, which necessitated a thorough quality assurance (QA) review of the new, high resolution Reach Index, including

- IDEM's decision to use watersheds delineated by 12-digit hydrologic unit codes (HUCs) instead of 14-digit HUCs for its watershed planning and implementation programs and TMDL development.
- IDEM's decision to use a catchment approach to indexing at high resolution, grouping smaller, connected streams within a 12-digit HUC into smaller-scale catchment AUIDs as opposed to assigning a unique AUID to every individual stream in the watershed.
- Transition from using the Reach Indexing Tool developed by U.S. EPA to the Hydrologic Event Management tool provided by the U.S. Geological Survey.

IDEM began its QA review of the HR Reach Index in 2016 and completed it in late 2017. The goal of this work was to verify that indexing rules were correctly and consistently applied by different indexers throughout the project and the changes described above, to check for AUIDs from previous cycles that should have been retired, to identify and correct other errors, and to incorporate some additional elements into the database table in the Reach Index geospatial data set to facilitate tracking of AUID changes through every IR cycle.

In each previous IR cycle, IDEM submitted individual tables to U.S. EPA to allow tracking of impairments on AUIDs that were reindexed in that cycle. Now, with the completion of IDEM's QA review of its HR Reach Index and the value-added changes the agency has made to the database table included in the data set, the HR Reach Index now provides a complete and map-verified segmentation tracking record for the entire state – a single reliable record for the purposes of resolving questions regarding the impairment status of any AUID now and in any previous cycle.

The finalized HR Reach Index was quality-assured with the same, high resolution NHD data set used in its development. This work was conducted within a Geographic Information Systems (GIS) mapping program. Flowlines were imported into a GIS map using the USGS Hydro Event Management (HEM) tool, which was developed specifically for working with the NHD. The Quality assurance review involved two processes, which were undertaken simultaneously in the GIS map:

- Addition of value-added attributes to allow for comprehensive and quality-assured segmentation tracking.
- Map verification of reach indexing to ensure indexing rules were correctly and consistently and to identify other errors in the data set.

The Indiana Reach Index is a geospatial data file that includes a database file (DBF). The DBF contains geospatial attributes for every AUID in the Reach Index, which allows them to be displayed on a map, and other attributes such as names, sizes, the watersheds in which they are located, etc. Working with GIS software, IDEM was able to add additional attribute fields to the DBF to provide the information necessary for tracking segmentation changes across all cycles. This was accomplished by by adding the Reach Index files for all previous cycles into the map and spatially successively joining them to create a single, comprehensive Reach Index file, which combines the data for features in different layers of the map based on their proximity to each other. For example, joining the 2006 Reach Index to the 2002 Reach Index combines the attributes for each AUID for each cycle, making it easy to identify those AUIDs that were changed from one cycle to the next through reach indexing. While spatial joins are generally reliable, they can produce some error making map verification critical to ensure the accuracy of the segmentation tracking information in the DBF.

In addition to ensuring the accuracy of the segmentation tracking attributes of the Reach Index, map verification also served to identify errors in the data such as inconsistency in how re-indexing rules were applied, AUIDs that were supposed to be permanatnly retired after reindexed but were inadvertently "recycled", typos, etc.

IDEM's process for map verification involved a visual examination of the map for each and every reach in the index for consistency and appropriate segmentation. This was accomplished by super-imposing the data set onto topographic maps and aerial photographs so that surrounding land use could be visualized. In addition to examining the surrounding landuse, each catchment was surveyed for potential pollutant inputs (including point and nonpoint sources), as well as indicators of habitat changes that could impact biology. In most cases, it was found that the AUIDs were correctly assigned while in other cases, it was determined that additional reindexing was necessary to correct one or more errors. This process was completed by a single staff person to ensure the most consistency possible in the application of reach indexing decision rules.

Once the map verification was complete, IDEM exported a copy of the DBF file to create a separate, stand-alone segementation tracking table – IDEM's Finalized HR Segmentation Tracking Table – while leaving the geospatial file for the Reach Index intact. The DBF file was then revised to eliminate unnecessary information and resaved as a Microsoft Excel file, which now serves as IDEM's AUID "List of Record" and which provides a quality-assured, comprehensive segmentation tracking record for all cycles.

DEVELOPMENT OF IDEM'S TMDL CROSSWALKS

The ability to track changes in segmentation as a result of reach indexing is important to ensuring that any available water quality assessment information for a given AUID is correctly transferred to the new AUID(s) to which it applies. This includes impairment information identified in Category 5 (Indiana's 303(d) list of impaired waters) and impairments identified in Category 4, (those for which a TMDL is not required). particularly those for which TMDLs have been approved and which appear in Categroy 4A.

While the same process of "crosswalking" impairments from their original AUID to their new AUID(s) applies to all impairments, this discussion will focus specifically on Category 4 impairments and Category 4A, in particular. For Category 4A, it is important to illustrate IDEM's crosswals for U.S. EPA and the public that the TMDLS approved by U.S. EPA have been correctly applied to the impairments for which they were developed. This was accomplished by extracting from the Finalized HR Segmentation Tracking Table the reach indexing records for all AUIDs with one/more approved TMDLs to provide a quality-assured means of tracking all the changes in segmentation of each approved TMDL to the correct, finalized AUID. IDEM relied primarily on U.S. EPA's approval document (referred to on IDEM's TMDL website as the "decision document") for each TMDL report to identify all of the original AUIDs and impairments for which TMDLs were approved.

The result of this work appears in Table D-2, which can be used to trace each approved TMDL through each cycle in which reindexing occurred to its finalized AUID. Table D-1 reflects IDEM's reach indexing efforts starting with the original Reach Index developed for the 2002 cycle. Re-indexing began during the 2006 cycle and continued through 2014. For the 2016 cycle, IDEM used the 2014 HR Reach Index while it conducted its quality assurance review, which was completed for the 2018 cycle.

Table D-1: TMDLs approved as of IDEM's submittal of its 2018 Integrated Report.

TMDL Key	IR Cycle	Approval Date	TMDL Document Title
1	2002	3/5/2001	Dissolved Oxygen and Ammonia TMDL Development for Kokomo Creek, Indiana: Final
2	2006	3/1/2004	Trail Creek *Escherichia Coli* TMDL Report
3	2006	3/31/2004	Fall Creek TMDL Study
4	2006	3/31/2004	Pleasant Run and Bean Creek TMDL Study
5	2006	3/31/2004	White River TMDL Study
6	2006	4/9/2004	West Fork White River, Muncie to Hamilton-Marion County Line TMDL for *E. coli* Bacteria: TMDL Report
7	2006	7/21/2004	Total Maximum Daily Load for *Escherichia coli* (*E. coli*) for the St. Joseph River, Elkhart and St. Joseph Counties
8	2006	9/1/2004	Lake Michigan Shoreline TMDL for *E. coli* Bacteria
9	2006	9/27/2004	Salt Creek *E. coli* TMDL
10	2006	12/13/2004	Total Maximum Daily Load (TMDL) for *Escherichia coli* (*E. coli*) for the Prairie Creek Watershed, Daviess County
11	2006	1/28/2005	Little Calumet and Portage Burns Waterway TMDL for *E. coli* Bacteria
12	2006	3/28/2005	Total Maximum Daily Load for *Escherichia coli* (*E. coli*) for the Lower Eel River Watershed Clay, Owen, Greene, Vigo, and Sullivan Counties
13	2006	3/31/2005	Total Maximum Daily Load for *Escherichia coli* (*E. coli*) For the Upper Mill Creek Watershed, Hendricks, Putnam, Morgan, and Owen Counties
14	2006	4/5/2005	Total Maximum Daily Load for *Escherichia coli* (*E. coli*) for the Kessinger Ditch Watershed, Knox County
15	2006	4/29/2005	Total Maximum Daily Load (TMDL) for *Escherichia coli* (*E. coli*) for the First Creek Watershed, Martin, Daviess, and Greene Counties

TMDL Key	IR Cycle	Approval Date	TMDL Document Title
16	2006	7/19/2005	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Indian Creek Watershed, Morgan and Johnson County
17	2006	7/21/2005	Total Maximum Daily Load for *Escherichia coli* (*E. coli*) for the Middle West Fork White River Watershed, Morgan, Owen, and Greene Counties
18	2006	9/22/2005	Total Maximum Daily Load for *Escherichia coli* (*E. coli*) for the Flatrock-Haw Creek Watershed in Henry, Fayette, Rush, Decatur, Shelby, and Bartholomew Counties
19	2006	3/1/2006	Total Maximum Daily Load for *Escherichia coli* (*E. coli*) for the Lambs Creek Watershed, Morgan County
20	2008	4/2/2006	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Beanblossom Creek Watershed, Brown and Monroe Counties
21	2008	6/8/2006	Total Maximum Daily Load for *Escherichia coli (E. coli)* For the Plummer Creek Watershed, Greene County
22	2008	7/31/2006	Total Maximum Daily Load for *E. coli* Impairment Big Blue River Watershed, Henry and Rush Counties
23	2008	8/3/2006	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Richland Creek Watershed, Greene, Monroe, and Owen Counties
24	2008	8/21/2006	Total Maximum Daily Load for *E. coli* Impairment St. Marys River Watershed and Maumee River, Adams and Allen Counties
25	2008	9/22/2006	Total Maximum Daily Load for Impaired Biotic Communities and Nutrients for the Blue Creek/Habegger Ditch and Yellow Creek Watersheds, Adams County
26	2008	9/22/2006	Wabash River Nutrient and Pathogen TMDL Development: Public Review Draft
27	2008	5/14/2007	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Sugar Creek Watershed, Hancock, Henry, Johnson, Madison, and Shelby Counties
28	2008	7/16/2007	Limberlost Creek Watershed Sediment and Nutrient TMDL Development: Public Review Draft
29	2008	7/26/2007	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the East Fork Whitewater River Watershed, Wayne, Union, Fayette, and Franklin Counties
30	2008	8/16/2007	Total Maximum Daily Load for *Escherichia coli (E. coli)* West Fork White River (WFWR) Owen County Tributary Watershed - Owen, Greene, and Monroe Counties
31	2010	4/23/2008	Duck Creek, Pipe Creek, Killbuck Creek, and Stony Creek TMDLs for *E. coli* Bacteria: Final TMDL Report
32	2010	7/31/2008	South Fork Wildcat Creek Watershed Pathogen, Sediment, and Nutrient TMDL Development
33	2012	4/2/2009	Final Total Maximum Daily Load for *Escherichia coli* (*E. coli*) For the West Fork Whitewater Watershed, Randolph, Wayne, Fayette, Henry, and Franklin Counties
34	2010	9/29/2009	Total Maximum Daily Load Report for the Kankakee/Iroquois Watershed: Final
35	2012	9/24/2010	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Upper Wildcat Creek Watershed, Howard, Tipton, Grant, and Madison Counties
36	2012	9/24/2010	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Middle Fork Wildcat Creek Watershed, Clinton, Carroll, Tippecanoe, and Howard Counties

TMDL Key	IR Cycle	Approval Date	TMDL Document Title
37	2012	9/24/2010	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Lower Wildcat Creek Watershed, Carroll, Clinton, Howard, Tippecanoe, and Tipton Counties
38	2012	9/20/2010	Total Maximum Daily Load for *Escherichia coli (E. coli)* for the Galena River Watershed, La Porte and St. Joseph Counties
39	2012	9/7/2011	Total Maximum Daily Load for *Escherichia coli (E. coli)* in the Highland-Pigeon Creek Watershed and Total Phosphorous for Hurricane Creek, Gibson, Pike, Vanderburgh, Posey, and Warrick Counties
40	2012	9/30/2011	Total Maximum Daily Load for *Escherichia coli (E. coli)* in the Cicero Creek Watershed, Hamilton, Tipton, Boone and Clinton Counties
41	2012	9/20/2011	Total Maximum Daily Load for *Escherichia coli (E. coli)* in the Upper White River Headwaters Watershed in Randolph, Delaware, and Henry Counties
42	2012	9/7/2012	Total Maximum Daily Load for Escherichia coli (E. coli) and Impaired Biotic Communities (IBC) in the Salt Creek Watershed in Porter County
43	2014	9/20/2012	Pigeon River Watershed Total Maximum Daily Load Study for E. Coli and Impaired Biotic Community (IBC)
44	2014	9/20/2013	*Escherichia coli* and Impaired Biotic Community Total Maximum Daily Load Report for the Big Raccoon Creek Watershed
45	2014	9/20/2013	*Escherichia coli (E. coli)* Total Maximum Daily Load Report for the Otter Creek Watershed
46	2016	7/14/2014	*Escherichia coli (E. coli)* Total Maximum Daily Load Report for the Lower Big Blue River Watershed
47	2016	9/26/2014	Total Maximum Daily Load Report for the Deep River-Portage Burns Watershed
48	2016	9/30/2015	Total Maximum Daily Load for the Southern Whitewater River Watershed
49	2018	2/24/2017	Total Maximum Daily Load Report for the Upper Mississinewa River Watershed
50	2018	9/15/2017	Total Maximum Daily Load Report for the South Fork Blue River Watershed
51	2018	10/26/2017	St. Joseph River Watershed Indiana TMDLs

CATEGORY 4B IMPAIRMENTS

Category 4B consists of impairments for which other pollution control requirements are expected to result in the attainment of the WQS in a reasonable period of time. As of 2010, IDEM's Category 4B list contains a total of ten (10) impairments. IDEM did not add any impairments to Category 4B for the 2016 cycle.

IDEM originally placed the impairments identified in Table D-2 in Category 4B in 2002 based on evidence that the electric generating facilities discharging to these waters were responsible for the thermal impairments identified. The facilities in question have NPDES permits for with thermal discharge limits based on site-specific standards and have contested this decision based on annual reports they had submitted indicating no detrimental effects from their discharges. As a result of this apparently contradictory information, IDEM determined that that additional study was needed to determine whether the monitoring and reporting requirements under section 316(a) were sufficient to ensure a well balanced aquatic community of waters outside the mixing zone.

Through an Interagency Agreement with IDEM, the U.S. Fish and Wildlife Service developed a report entitled, "Evaluation and Assessment of Fish Assemblages Near Electric Generating Facilities: with Emphasis on Review of Discharge Submitted Data, Development of the Standard Operation Procedures, and Traveling Zone Assessment." The objectives of this study were:

- To evaluate the information submitted by the thermal discharge permittees for compliance with 316(a) requirements;
- To develop standard methods that would provide industrial contractors specific protocols for use in meeting permit monitoring requirements for their heated effluents;
- To conduct traveling zone studies of discharge relationships from selected thermal generating facilities, including specifically two of the three facilities to which the above impairments were attributed.

IDEM reviewed the results of this study and determined that additional monitoring and reporting requirements were necessary under Section 316(a) of the Clean Water Act (CWA) and Indiana Administrative Code 327 IAC 5-7 to ensure a well balanced aquatic community of waters outside the mixing zone. In 2006 and 2007, IDEM renewed permits for most electric generating facilities, which included additional conditions that require the permittees to submit a new 316(a) demonstration/variance request with the renewal application for their next NPDES permit cycle. In order to be granted a 316(a) variance, these facilities must include a site-specific biological study plan in their request that demonstrates that the variance will not result in biological impairment outside the mixing zone.

IDEM recently developed a guidance for permittees requesting a 316(a) thermal limits variance in their NPDES permit: "*Guidance for Conducting a Demonstration as a Requirement of a 316(a) Alternative Thermal Effluent Limitation Request*". This document contains the guidance necessary for

completing an application for alternative thermal effluent limitations, a Type I, II, or III Demonstration, and sampling and monitoring consistent with associated standard operating procedures. A demonstration for alternative thermal effluent limitations, in accordance with section 316(a) of the CWA and 327 IAC 5-7, should provide IDEM with adequate information to establish alternative thermal effluent limitations that will ensure the protection and propagation of a Balanced, Indigenous Community (BIC) in and on the waters into which a thermal discharge is made. IDEM's guidance document is currently under internal (IDEM/U.S. EPA) review. In the meantime until IDEM begins full implementation of its approach to issuing 316(a) thermal variances, when NPDES permits with existing 316(a) thermal variances come up for renewal, IDEM is adding year round alternative thermal limits (if they do not already exist) to the permit until a complete revised 316(a) application can be submitted and evaluated.

With regard specifically to Turtle Creek Reservoir, IDEM did not renew the 316(a) thermal variance the Hoosier Energy – Merom Generating Station NPDES Permit at the time the permit was up for renewal (December 22, 2010). The facility was instead given a three-year schedule of compliance to meet the thermal water quality standards found in rule but were unsuccessful. The facility entered into an Agreed Order that was adopted on December 30, 2013. The Agreed Order requires the facility to submit a 316(a) study plan for review and comment in the spring of 2014.

Table D-2: Category 4B impairments attributed to electrical generating facility discharges.

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID (ORIGINAL)	ASSESSMENT UNIT NAME (ORIGINAL)	ASSESSMENT UNIT AUID (UPDATED)	ASSESSMENT UNIT NAME (UPDATED)	CAUSE OF IMPAIRMENT
LOWER WABASH	51201081602	VERMILLION	INB08E1_M1050	WABASH RIVER - CAYUGA GEN STA TO MILL CR	INB08G2_01	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201081603	VERMILLION	INB08E6_M1022	WABASH RIVER – MILL CR TO BELOW LTL VERMILLION R	INB08G3_01	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201110605	VIGO	INB1145_M1003	WABASH RIVER	INB1165_03	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201110604	VIGO	INB1142_M1025	WABASH RIVER - WABASH GEN STA TO LOST CREEK	INB1164_02	WABASH RIVER	TEMPERATURE
LOWER WABASH	05120111150020	SULLIVAN	INB11P1028_00	TURTLE CREEK RESERVOIR	NA	NA	IMPAIRED BIOTIC COMMUNTIES
LOWER WABASH	05120111150020	SULLIVAN	INB11P1028_00	TURTLE CREEK RESERVOIR	NA	NA	TEMPERATURE

Table D-3 identifies Category 4B impairments attributed to other sources. These waters were placed on in Category 4B in 2004. The identified impairments were attributed to the Picnic Wood Wastewater Treatment Plant, owned by LMH Utilities Corporation and are presently being addressed through IDEM's NPDES program. While the plant continues to have sporadic issues related to maintenance problems, it has maintained an

approximately 95% compliance record since the original enforcement case was closed in 1996. In addition, LMH Utilities Corporation completed upgrades to its facility in late 2007, and IDEM inspectors report no recent enforcement issues. It is anticipated that these upgrades will result in the attainment of water quality standards within a few years. However, these impairments will remain in Category 4B through the 2018 303(d) listing cycle to allow time for biological communities to recover and for IDEM to conduct the monitoring necessary to verify that their impairment no longer exists.

Table D-3: Category 4B impairments attributed to other sources.

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID (ORIGINAL)	ASSESSMENT UNIT NAME (ORIGINAL)	ASSESSMENT UNIT AUID (UPDATED)	ASSESSMENT UNIT NAME (UPDATED)	CAUSE OF IMPAIRMENT
OHIO RIVER TRIBUTARIES	50902030304	DEARBORN	INV0338_T1023	SALT FORK CREEK	INV0334_T1005	SALT FORK CREEK (DOWNSTREAM OF TURKEY FORK)	IMPAIRED BIOTIC COMMUNTIES
OHIO RIVER TRIBUTARIES	50902030304	DEARBORN	INV0338_T1023	SALT FORK CREEK	INV0334_T1005	SALT FORK CREEK (DOWNSTREAM OF TURKEY FORK)	CHLORIDES
OHIO RIVER TRIBUTARIES	50902030304	DEARBORN	INV0338_T1038	CAMP GROUND BRANCH	INV0334_T1004	TURKEY FORK	IMPAIRED BIOTIC COMMUNTIES
OHIO RIVER TRIBUTARIES	50902030304	DEARBORN	INV0338_T1038	CAMP GROUND BRANCH	INV0334_T1004	TURKEY FORK	CHLORIDES

CATEGORY 4C IMPAIRMENTS

IDEM did not add any impairments to Category 4C for the 2016 cycle. To date, Category 4C consists of twenty five (25) impairments that are not caused by a pollutant and as such, do not require a TMDL. These are impairments resulting from stressors for which a load cannot be calculated. Category 4C impairments and their sources are shown in Table D-4. Although a TMDL is not required for these impairments, IDEM may conduct additional monitoring on these waters through its rotating basin monitoring schedule.

Table D-4: Indiana's Category 4C impairments.

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID (ORIGINAL)	ASSESSMENT UNIT NAME (ORIGINAL)	ASSESSMENT UNIT AUID (UPDATED)	ASSESSMENT UNIT NAME (UPDATED)	CAUSE OF IMPAIRMENT	SOURCE OF IMPAIRMENT
UPPER WABASH	51201070102	TIPTON	INB0714_00	MUD CREEK	INB0712_02	BROAD CREEK	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER WABASH	51201070102	TIPTON	INB0714_T1001	ROSS DITCH	INB0712_T1002	BROAD CREEK – UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER WABASH	51201070102	TIPTON	INB0714_T1002	NORTH CREEK	INB0712_T1001	NORTH CREEK	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER WABASH	51201070102	TIPTON	INB0714_T1003	OFF DITCH	INB0712_T1001	NORTH CREEK	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER WABASH	51201070102	TIPTON	INB0714_T1004	POLE DITCH	INB0712_T1001	NORTH CREEK	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER ILLINOIS	71200020204	JASPER	INK0236_01	CARPENTER CREEK (REMINGTON, IN)	INK0224_01	CARPENTER CREEK	DISSOLVED OXYGEN	NATURAL SOURCES (NATURALLY INTERMITTENT FLOWS)
EAST FORK WHITE	51202080805	LAWRENCE	INW0897_00	LITTLE SALT CREEK-BREWER BRANCH	INW0885_01	LITTLE SALT CREEK	DISSOLVED OXYGEN	NATURAL SOURCES (NATURALLY INTERMITTENT FLOWS)
EAST FORK WHITE	51202080805	LAWRENCE	INW0897_00	LITTLE SALT CREEK-BREWER BRANCH	INW0885_T1001	LITTLE SALT CREEK – UNNAMED TRIBUTARY	DISSOLVED OXYGEN	NATURAL SOURCES (NATURALLY INTERMITTENT FLOWS)
EAST FORK WHITE	51202081103	MARTIN	INW08D7_T1060	BUZZARD RUN	INW08B3_T1009	BUZZARD RUN	DISSOLVED OXYGEN	NATURAL SOURCES (NATURALLY INTERMITTENT FLOWS)

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID (ORIGINAL)	ASSESSMENT UNIT NAME (ORIGINAL)	ASSESSMENT UNIT AUID (UPDATED)	ASSESSMENT UNIT NAME (UPDATED)	CAUSE OF IMPAIRMENT	SOURCE OF IMPAIRMENT
GREAT LAKES	40400010509	PORTER	INC0143_T1010	BURNS DITCH	INC0159_01	BURNS DITCH	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATIONS (BANK/SHORELINE MODIFICATION OR DESTABILIZATION)
GREAT LAKES	40400010509	PORTER	INC0143_T1090	BURNS DITCH	INC0159_01	BURNS DITCH	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATIONS (BANK/SHORELINE MODIFICATION OR DESTABILIZATION)
PATOKA	51202090405	DUBOIS	INP0947_T1025	OUTLET OF HUNTINGBURG CITY LAKE	INP0945_T1001	HUNTINGBURG LAKE OUTLET	OTHER HABITAT ALTERATIONS	HYDROMODIFICATION (CHANNELIZATION)
PATOKA	51202090503	PIKE CO	INP0953_T1065	LITTLE FLAT CREEK	INP0953_T1005	LITTLE FLAT CREEK	OTHER HABITAT ALTERATIONS	HABITAT MODIFICATIONS OTHER THAN HYDROMODIFICATION
PATOKA	51202090503	PIKE CO	INP0953_T1065	LITTLE FLAT CREEK	INP0953_T1005	LITTLE FLAT CREEK	SILTATION	HABITAT MODIFICATION (REMOVAL OF RIPARIAN VEGETATION AND BANK/SHORELINE MONDIFICATION OR DESTABILIZATION)
PATOKA	51202090503	PIKE CO	INP0953_T1065	LITTLE FLAT CREEK	INP0953_T1006	LITTLE FLAT CREEK	OTHER HABITAT ALTERATIONS	HABITAT MODIFICATIONS OTHER THAN HYDROMODIFICATION
PATOKA	51202090503	PIKE CO	INP0953_T1065	LITTLE FLAT CREEK	INP0953_T1006	LITTLE FLAT CREEK	SILTATION	HABITAT MODIFICATION (REMOVAL OF RIPARIAN VEGETATION AND BANK/SHORELINE MONDIFICATION OR DESTABILIZATION)
UPPER WABASH	51201010703	WELLS	INB0184_00	ROCK CREEK - MIDDLE	INB0173_01	ROCK CREEK	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATION (LOSS OF RIPARIAN HABITAT)
UPPER WABASH	51201010704	HUNTINGTON	INB0186_00	ROCK CREEK - LOWER MIDDLE	INB0174_01	ROCK CREEK	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATION (LOSS OF RIPARIAN HABITAT)
GREAT LAKES	51201030507	GRANT	INB0356_T1001	LITTLE CREEK	INB0357_T1003	LITTLE CREEK	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID (ORIGINAL)	ASSESSMENT UNIT NAME (ORIGINAL)	ASSESSMENT UNIT AUID (UPDATED)	ASSESSMENT UNIT NAME (UPDATED)	CAUSE OF IMPAIRMENT	SOURCE OF IMPAIRMENT
UPPER ILLINOIS	71200010402	LA PORTE	INK0137_00	KINGSBURY CREEK	INK0142_01	KINGSBURY CREEK	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (FLOW REGULATION OR MODIFICATION)
UPPER ILLINOIS	71200010308	MARSHALL	INK015D_00	DAUSMAN DITCH - BROCK/ BORDER DITCHES	INK0138_01	UNSICKER-CRAIG DITCH	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER ILLINOIS	71200010308	MARSHALL	INK015D_00	DAUSMAN DITCH - BROCK/ BORDER DITCHES	INK0138_T1003	BROCK DITCH	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER ILLINOIS	71200010308	MARSHALL	INK015D_00	DAUSMAN DITCH - BROCK/ BORDER DITCHES	INK0138_T1004	BORDER DITCH	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
UPPER ILLINOIS	71200010308	MARSHALL	INK015D_00	DAUSMAN DITCH - BROCK/ BORDER DITCHES	INK0138_T1005	PORTER DITCH	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION)
OHIO RIVER TRIBUTARIES	51201010206	JEFFERSON	INN0139_T1030	DRY FORK	INN0126_T1003	DRY FORK	IMPAIRED BIOTIC COMMUNITIES	NATURAL SOURCES (NATURALLY INTERMITTENT FLOWS)
OHIO RIVER TRIBUTARIES	51402010908	SPENCER	INE01E9_T1049	UNNAMED TRIB E.F. PIGEON CR	INE0198_T1025	LITTLE PIGEON CREEK, EAST FORK – UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (DAM CONSTRUCTION)
OHIO RIVER TRIBUTARIES	51402010908	SPENCER	INE01E9_T1049	UNNAMED TRIB E.F. PIGEON CR	INE0198_T1026	LITTLE PIGEON CREEK, EAST FORK – UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (DAM CONSTRUCTION)
GREAT LAKES	41000030701	DEKALB	INA0391_T1078	JOHN DIEHL DITCH HEADWATERS	INA0371_01	DIEHL DITCH	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATIONS (BANK/SHORELINE MODIFICATION OR DESTABILIZATION)
GREAT LAKES	41000030701	DEKALB	INA0391_T1078	JOHN DIEHL DITCH HEADWATERS	INA0371_02	DIEHL DITCH	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATIONS (BANK/SHORELINE MODIFICATION OR DESTABILIZATION)

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID (ORIGINAL)	ASSESSMENT UNIT NAME (ORIGINAL)	ASSESSMENT UNIT AUID (UPDATED)	ASSESSMENT UNIT NAME (UPDATED)	CAUSE OF IMPAIRMENT	SOURCE OF IMPAIRMENT
GREAT LAKES	41000030701	DEKALB	INA0391_T1078	JOHN DIEHL DITCH HEADWATERS	INA0371_T1002	DIEHL DITCH – UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATIONS (BANK/SHORELINE MODIFICATION OR DESTABILIZATION)
GREAT LAKES	41000030701	DEKALB	INA0391_T1078	JOHN DIEHL DITCH HEADWATERS	INA0371_T1003	DIEHL DITCH – UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	HABITAT MODIFICATIONS (BANK/SHORELINE MODIFICATION OR DESTABILIZATION)
PATOKA	51202090201	DUBOIS	INP0933_T1064	UNNAMED TRIB D/S BRIEDENBAGH LAKE	INP0921_03	HALL CREEK	OTHER HABITAT ALTERATIONS	HYDROMODIFICATION (CHANNELIZATION)
PATOKA	51202090201	DUBOIS	INP0933_T1064	UNNAMED TRIB D/S BRIEDENBAGH LAKE	INP0921_03	HALL CREEK	IMPAIRED BIOTIC COMMUNITIES	HYDROMODIFICATION (CHANNELIZATION) & HABITAT MODIFICATIONS (REMOVAL OF RIPARIAN VEGETATION)
PATOKA	51202090201	DUBOIS	INP0933_T1064	UNNAMED TRIB D/S BRIEDENBAGH LAKE	INP0921_03	HALL CREEK	SILTATION	HYDROMODIFICATION (CHANNELIZATION) & HABITAT MODIFICATIONS (REMOVAL OF RIPARIAN VEGETATION)

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