APPENDIX K:

IDEM'S RESPONSES TO COMMENTS ON THE INDIANA DRAFT 2024 303(D) LIST OF IMPAIRED WATERBODIES AND CONSOLIDATED ASSESSMENT AND LISTING METHODOLOGY (CALM)

U.S. EPA Comments on the IDEM 2024 draft Consolidated Assessment and Listing Methodology (CALM) and 303(d) List of Impaired Waterbodies, dated March 14, 2024.

IDEM received comments from U.S. EPA on 3/14/2024 regarding the 2024 draft CALM and 303(d) list which are summarized below. An Excel spreadsheet which was included with the U.S. EPA comments is included as Attachment 1 to Appendix K.

Comments related to an EPA review and analysis of ATTAINS data comparing the Final 2022 303(d) list and the Public Notice Draft of the 2024 303(d) list:

1. EPA notes that 109 Impairments for iron and lead identified by EPA and added to the 2022 Indiana 303(d) list by EPA, were removed from the 2024 Public Notice version of the 303(d) list and placed into categories 2 and 3 on the 2024 list. All but one of these delisting cite "*Data and/or information lacking to determine WQ status; original basis for listing was incorrect*" as the delisting reason. One previous category 5 listing from the 2022 list was placed into category 2 with no delisting reason provided at all. Unless IN has additional new information to support these delistings, then based on the reasons previously provided by EPA in 2022 when adding these impairments to the IN 303(d) list, EPA believes that IN has not provided sufficient justification for the delisting of these waterbodies and believes these impairments should be placed in Category 5 on the final IN 2024 303(d) list. However, if IN has based some or all of these 109 delistings on new data or information that was not previously known when the 2022 list was approved by EPA, please provide this data to EPA and/or provide additional discussion for EPA to consider during the final review. If no new/additional data or information exists, then EPA requests that the waterbodies in question remain in Category 5 on the final IN 2024 303(d) list. See Tab 1 of the accompanying workbook for a list of the 109 impairments in question.

   IDEM Response: *With regards to the Warm Water Aquatic Life Use, outside of Lake Michigan, Indiana does not have an adopted numeric criterion for Iron and does not believe that impairments can be made without applicable state criteria. IDEM remains open to discussion with EPA as they continue to consider this issue. A delisting reason of "Data and/or information lacking to determine WQ status; original basis for listing was incorrect" was added to the Iron parameter for AUID INW0561_03 – Flatrock River.*

2. EPA notes that three missing assessments for the Warm Water Aquatic Life Designated Uses appear to have been simply removed rather than reclassified. Please review the three impairments in the table below and reclassify as appropriate for the 2024 final 303(d) list. See also workbook Tab 2.

   IDEM Response: *In each of these instances (INP0943_T1009: Dissolved Oxygen; INP0981_T1010: Biological Integrity and Un-ionized Ammonia), the parameter was listed as impaired (Category 5) in the 2022 303(d) List of Impaired Waterbodies. Subsequent sampling showed that the impaired parameter was now meeting water quality standards. However, each of these AUID-parameter combinations was removed from ATTAINS when they should have been listed as "Meeting Criteria". Each of these parameters was reinstated into the correct AUID and the Delisting Reason, Parameter Status and Delisting Comment fields for the parameters were updated to reflect the current, un-impaired status (Category 2).*

3. 12 Impairments from the 2022 EPA approved Indiana 303(d) list from category 5 were moved into category 4(c). While 9 of these reclassifications cite "*Not caused by a pollutant (4c)*" as the delisting reason, 3 of the listings do not provide a delisting reason at all. EPA requests that a delisting reason be provided for these 3 delistings. See also workbook Tab 3.

   IDEM Response: *The three AUID-Parameter combinations (INW0886_T1004 – Dissolved Oxygen; ING0365_T1003 – Biological Integrity; INN0444_T1004 – Dissolved Oxygen) in question were reviewed and it was determined that they should be moved from Category 5 to Category 4C based on assessment of new sampling data collected during the 2021-2022 Coolwater Project. However, the data required to convey this information in ATTAINS had been incorrectly entered, resulting in the lack of a delisting reason. These three AUID-Parameter combinations were re-entered into ATTAINS and now display "Not caused by a pollutant (4c)" as the delisting reason.*

4. A category 5 impairment, INW0766_05-Warm Water Aquatic Life-DISSOLVED OXYGEN, on the 2022 IN 303(d) list is shown as being in category 3 on the public notice draft of the 2024 IN 303(d) list. However, no delisting reason is specified. EPA requests that a delisting reason be provided. See also workbook Tab 4.

   IDEM Response: *Review of this AUID-parameter combination showed that the listing in the 2022 303(d) List of Impaired Waterbodies was incorrect as the Warm Water Aquatic Life (WWAL) designated use status was listed as "Insufficient Information" (Category 3) while the Dissolved Oxygen (DO) parameter was listed as "Impaired" (Category 5). An impaired DO parameter should have also resulted in a WWAL designated use status of "Impaired". Review of this AUID indicated that the DO impairment was likely due to samples collected between 2000-03 in which 2/5 samples had DO values below the Water Quality Standard (WQS) of 4.0 mg/L (5/9/2001: 2.57 mg/L; 6/14/2002: 3.08 mg/L). A subsequent sample in 2015 was above the WQS but a single sample does not meet the data quality minimums for listing or delisting an impairment. The WWAL designated use status for this AUID was changed from "Insufficient Information" (Category 3) to "Not Supporting" (Category 5) to correspond to the impaired DO parameter.*

5. Three impairments were moved from Category 2 on the 2022 IN 303(d) list directly into category 4A on the Public Notice draft of the 2024 IN 303(d) list. The Action IDs associated to these changes point to older TMDLs. In reviewing the TMDL documentation, it is not clear that these AUIDs are covered by the TMDLs in question. Please review the associations to ensure they are correct and if so provide additional information explaining why they were associated to older TMDLs from 2006 and 2009 during the current 2024 cycle. See also workbook Tab 5.

   IDEM Response: Following assessment of IDEM 2018-2022 Fixed Station data, nutrient impairments were added to AUIDs INB0514_04 and INB01G2_02 based on co-occurrences of high percent dissolved oxygen saturation and high pH values during the same sampling event (see Table G-8 in Appendix G – Consolidated Assessment and Listing Methodology (CALM) for details on criteria used in nutrient assessments). The 2006 ***Wabash River Nutrient and Pathogen TMDL*** *document provided phosphorus and nitrate load allocations for AUIDs that comprise the Wabash River in Indiana and Illinois. Two of the Wabash River AUIDs included in this TMDL, INB0511_M1001 and INB01G1_M1018, were later re-indexed into AUIDs INB0514_04 and INB01G2_02,*

respectively. The new nutrient impairments for AUIDs INB0514_04 and INB01G2_02 were initially classified as Category 4A due to the pre-existing nutrient TMDLs. However, since these new nutrient impairments were derived from non-nutrient parameters (high dissolved oxygen percent saturation and pH values) and not from phosphorus or nitrate exceedances which were covered through by the TMDL, the appropriate classification for these nutrient impairments should be Category 5.

AUID INK0234_02 (Ryan Ditch) was originally assessed for the Recreational designated use in 2017 as "Fully Supporting" (Category 2) based on a five-sample E. coli geomean value of 97 cfu/100 ml (where the Indiana Water Quality Standard (WQS) is 125 cfu/100 ml). Further review of the individual samples showed that one sample was recorded as "> 2419.6 cfu/100 ml" indicating that the true E. coli concentration of that sample was higher than the method limit of 2419.6 cfu/100 ml for the Colilert sampling method used by IDEM Office of Water Quality. It is therefore possible that the true E. coli geomean for this sample was much higher than the observed value and exceeded Indiana WQS (this decision process is described in the 2024 CALM (Appendix G)). In these instances, samples which include an observed value of "> 2419.6 cfu/100 ml" are considered impaired, regardless of the geomean value. Ryan Ditch was included in the ***Kankakee/Iroquois River TMDL*** *which provided E. coli load allocations and was the basis for the initial classification of Category 4A. However, further review of this TMDL showed that Ryan Ditch was only used as a sample site for developing E. coli load allocations for the Iroquois River and a TMDL was not specifically developed for E. coli for this AUID. Based on this review, the appropriate classification for the E. coli impairment on AUID INK0234_02 is Category 5, not Category 4A.*

U.S EPA Comments related to the Consolidated Assessment and Listing Methodology:

6. EPA appreciates IDEM's efforts to assess waters for Public Water Supply designated use, and notes that additional coordination with ORSANCO may help to build consistency with the Ohio River assessments for drinking water use support.

   IDEM Response: *IDEM anticipates continued cooperation with ORSANCO in assessing the Public Water Supply designated use in the two Ohio River AUIDs (INH8_01 and INH8_08) which have been assigned this use. IDEM staff regularly coordinate with ORSANCO in determining appropriate sampling methodology and assessing the results of ORSANCO's Ohio River sampling programs.*

7. IDEM states that, *"During the 2024 Integrated Report cycle, all stream assessment units which were previously assigned a "Public Water Supply" designated use were re-evaluated. The PWS designated use was removed from all assessment units where an active or emergency drinking water intake was not located."* EPA asks whether or not this evaluation is expected to be repeated in future reporting cycles at a set frequency?

   IDEM Response: *The determination of surface waters used as drinking water intakes and assigned the "Public Water Supply" designated use is made through consultation with the IDEM Drinking Water branch. We anticipate that there will be future discussions (likely at least once during each IR cycle) between the IDEM Drinking Water and Watershed Assessment and Planning branches to determine if there have been changes to the number and location of facilities utilizing surface waters as sources of public drinking water.*

8. EPA appreciates IDEM's inclusion of groundwater systems under the influence of surface waters in the CALM, and asks how often IDEM expects that it will be identifying and assessing additional surface water for the potential to directly influence a public water supply well and designating such water for the Public Water Supply use?

   IDEM Response: *The determination of surface waters thought to be potentially impacting groundwater sources is made through consultation with the IDEM Drinking Water branch. We anticipate that there will be future discussions (likely at least once during each IR cycle) between the IDEM Drinking Water and Watershed Assessment and Planning branches to determine if there have been changes which would require addition or removal of the Public Water Supply designated use from specific AUIDs.*

9. Does IDEM anticipate it will have sufficient data to follow this methodology for identifying and designating additional Public Water Supply use waters in the future?

   IDEM Response: *Yes, IDEM anticipates that there will be sufficient data for continuing to refine the application of the Public Water Supply designated use for streams and lakes.*

10. Is IDEM using information from the water system Source Water Threat Minimization Response plans when identifying and designating additional Public Water Supply use water?

    IDEM Response: *The IDEM **Source Water Assessment Program (SWAP)** determines the susceptibility of drinking water sources to potential sources of contamination and includes both surface and groundwater sources. The public water systems which utilize these drinking water sources are then assigned a susceptibility determination which ranges from low to high. Drinking water susceptibility is not considered when determining if the Public Water Supply designated use should be applied to a waterbody, only the presence of an active or emergency drinking water intake or the potential for that waterbody to influence a groundwater drinking water source.*

U.S. EPA Comments related to the Public Noticed 303(d) Spreadsheet:

11. The spreadsheet posted for public notice only includes waters and assessment information related to impaired waters. It would be helpful to the public in evaluating the progress being made in assessing IN waters if data were also provided for waters and designated uses that have been assessed and found to be meeting water quality standards (Category 2), and waters for which the data available to conduct an assessment is not sufficient (Category 3).

    IDEM Response: *Indiana Code 13-18-2-3 requires IDEM to "prepare a list of impaired waters for the purpose of complying with federal regulations implementing Section 303(d) of the federal Clean Water Act (33 U.S.C. 1313(d))". The spreadsheet posted for public notice (the draft 303(d) List) only contains those waterbodies which have been assessed as impaired. The final version of the 303(d) list will be included as Appendix L of the Integrated Report. However, Appendix M of the Integrated Report (the Consolidated List) contains those waterbodies which have been assessed as Category 2 (Fully Supporting) and Category 3 (Not Assessed or Insufficient Information) in addition to the impaired waterbodies (Categories 4A, 4B, 4C, and 5).*

12. It would be helpful to the public in evaluating progress in developing TMDLs for the impaired waters listed if the year an impairment was first added to the 303(d) list, as well as the year a TMDL is expected to be completed, were also included in the public noticed documents.

    IDEM Response: *The U.S. EPA ATTAINS database requires a "Clean Water Act (CWA) 303(d) Priority Ranking" (High, Medium, or Low) or "Cycle Scheduled for TMDL" (Integrated Report cycle year) to be associated with each waterbody AUID that has been assessed as impaired. U.S. EPA has recently released an "**Expert Query**" tool that allows the public to search the ATTAINS database for this information. IDEM also maintains multiple **Non-Point Source program** webpages which contain information on **TMDLs** including **approved and in-progress TMDLs** and a **TMDL Story Map**. IDEM also maintains a **Watershed Management Plan (WMP) and TMDL Reports Search Tool (WATRS)** which allows users to search for TMDL projects across Indiana.*

Public Comments on the IDEM 2024 draft Consolidated Assessment and Listing Methodology (CALM) and 303(d) List of Impaired Waterbodies.

1. I would like to know why IRON is being removed. We have a terrible problem with iron in our water. Everything is ruined in my home that touches our community provided drinking water. Removing IRON from this list is very unhelpful. (2/15/2024)

   I also noticed that the pollution source was rarely listed in the 2022 document. And it is not included at all in the 2024 document. This should be required public information.

   IDEM Response: *Thank you for your comments on the removal of Iron impairments from the draft 2024 303(d) List of Impaired Waterbodies and pollution sources associated with impairments. Iron impairments were removed from the draft 2024 303(d) List as Indiana does not have an adopted numeric criterion for Iron and does not believe that impairments can be made without applicable state criteria. IDEM Water Quality Standards staff are in the process of researching an appropriate numeric criterion for Iron that would be applicable to Indiana rivers, streams and lakes. In general, the 303(d) List of Impaired Waterbodies provides assessments of data collected from IDEM surface waterbodies. Many drinking water facilities use groundwater wells as their sources of water; these wells are not assessed as part of the 303(d) listing process. However, if a drinking water facility utilizes a surface waterbody the river/stream segment or the lake where the drinking water intake is located will be assessed for the Public Water Supply designated use. If you are having an issue with Iron in drinking water provided by a Community Public Water System you may want to contact the facility directly or contact the IDEM Drinking Water branch.*

   With regards to the sources determined to be the likely cause of an impairment, the Notice of Public Comment document and draft 303(d) List of Impaired Waterbodies do not typically contain that information. However, once the Public Comment period has ended, the draft 303(d) List will be updated and tables containing the probable pollution sources for each waterbody type will be included in Appendix A of the final report.

2. I just saw a couple of things in the draft 2024 calm that I wanted to comment on:

   Under Ohio River Assessments, the paragraph starts out as:

   IDEM collaborates with the Ohio River Valley Water Sanitation Commission (ORSANCO) to conduct water quality assessments of the Ohio River reaches that border Indiana. ORSANCO is an interstate water pollution control agency for the Ohio River established through a compact agreement between member states and approved by Congress in 1948.

   This is true; however, Indiana has incorporated the terms of the compact into state statute at IC 13-29-2. It is the state statute that provides us the legal authority to abide by the terms of the compact. I would also reword the sentence-Congress approved the compact 1940.

   IDEM collaborates with the Ohio River Valley Water Sanitation Commission (ORSANCO) to conduct water quality assessments of the Ohio River reaches that border Indiana. ORSANCO is an interstate water pollution control agency for the Ohio River established in 1948 through a Congressionally approved interstate compact

between the member states. Indiana incorporated the terms of the compact into state law at Indiana Code 13-29-2.

Also, just before this Ohio River Assessments section, it states:

IDEM's methods for Ohio River Assessments, which are conducted in collaboration with the Ohio River Valley Sanitation Commission (ORSANCO),

The complete name for ORSANCO is the Ohio River Valley **Water** Sanitation Commission (2/8/2024)

IDEM Response: *IDEM appreciates comments on the Consolidated Assessment and Listing Methodology (CALM) and has incorporated these suggestions.*

3. The stream mile of 281 miles for the assessment in the link below seems too high. It is a small creek and should likely be 2.81 miles instead.

   COAL CREEK - UNNAMED TRIBUTARY

   Assessment Unit ID: INB0893_T1002

   https://mywaterway.epa.gov/waterbody-report/21IND/INB0893_T1002/2022 (2/14/2024)

   IDEM Response: *IDEM appreciates your comment on the correct size of a stream segment. Review of AUID INB0893_T1002 (Coal Creek – Unnamed Tributary) showed that this segment was intended to be 2.81 miles in length and not 281 miles; the length of this segment was corrected in ATTAINS.*

   In reviewing the length of AUID INB0893_T1002, an additional 11 AUIDS were identified as potentially larger than their true length. The correct size for each AUID was verified and the actual length for each was updated in ATTAINS.

AUID	Stream Name	Length in 2022 303(d) List	Length in 2024 303(d) List
INB0893_T1002	Coal Creek - Unnamed Tributary	281 miles	2.81 miles
INW08E7_T1002	Barn Run	50 miles	9.15 miles
INW0641_01	East Fork White Creek	50 miles	9.19 miles
INW08F5_01	Mud Creek	50 miles	2.35 miles
INB0893_T1007	Coal Creek - Unnamed Tributary	50 miles	5.25 miles
INN0434_T1012	Georgetown Creek - Unnamed Tributary	50 miles	5.6 miles
INA0446_01	Yellow Creek	50 miles	9.95 miles
INE0173_09	Little Sandy Creek	50 miles	3.36 miles

INW08D8_T1003	Lost River - Unnamed Tributary	50 miles	2.53 miles
INN0452_01	Indian Creek	50 miles	1.19 miles
INE0144_T1015	Lanman Run	50 miles	1.35 miles
INW08D3_06	Lick Creek	41.48 miles	4.48 miles

4. I reviewed Appendix L Tables today, and I believe there is a typo in the spelling of Pogues Run in the Assessment Unit Name. I see it spelled *Poques* Run. The *q* should be changed to a *g*. (2/1/2024)

   IDEM Response: *IDEM appreciates your comment on the correct spelling of a stream name. The Indiana 2022 Integrated Report Appendix L (Listing Tables) and Appendix M (Consolidated List) include two AUIDs named "Poques Run". These AUIDs (INW01C1_T1002 and INW01C1_T1003) were renamed "Pogues Run" in ATTAINS in May 2023 and are spelled correctly in the draft Indiana 2024 303(d) List of Impaired Waterbodies.*

Public Comments on Selenium Sampling and Assessments in the IDEM 2024 draft Consolidated Assessment and Listing Methodology (CALM) and 303(d) List of Impaired Waterbodies.

Due to issues and concerns raised regarding listing waters as impaired for selenium, IDEM will reevaluate and will not be listing the seven segments listed below as impaired for selenium in the 2024 303(d) list. Comments received by IDEM regarding these listings are included in Attachments 2 through 5.

AUID	Stream Name	Selenium Assessment in 2024 draft 303(d) List	Selenium Assessment in 2024 303(d) List
INB11P1028_00	Turtle Creek Reservoir	Not Supporting (Category 5)	Insufficient Information (Category 3)
INW01C5_04	White River (SSC)	Not Supporting (Category 5)	Insufficient Information (Category 3)
INW01C5_10	White River	Not Supporting (Category 5)	Insufficient Information (Category 3)
INW01E2_01	White River	Not Supporting (Category 5)	Insufficient Information (Category 3)
INW01E2_02	White River	Not Supporting (Category 5)	Insufficient Information (Category 3)
INW01E7_03	White River	Not Supporting (Category 5)	Insufficient Information (Category 3)
INW01E7_04	White River	Not Supporting (Category 5)	Insufficient Information (Category 3)
INW01E7_05	White River	Not Supporting (Category 5)	Insufficient Information (Category 3)

Attachment K-1: Excel spreadsheet developed by U.S. EPA which contains tables supporting comments made on the Indiana 2024 draft 303(d) list and CALM (*Attached as a separate document to the 2024 Integrated Report*)

Attachment K-2: Comments received from Citizens Energy Group regarding the Indiana 2024 draft 303(d) list and CALM.

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March 18, 2024

Via E-mail to: pmcmurra@idem.in.gov
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Integrated Report Coordinator
Indiana Department of Environmental Management
Office of Water Quality, Watershed Planning and Assessment Branch
100 North Senate Avenue
Indianapolis, IN 46204

RE: Comments of Citizens Energy Group
Notice of 2024 Section 303(d) List of Impaired Waters
Document #24-54 (ONA)

Dear Mr. McMurray:

Citizens Energy Group ("Citizens") respectfully offers the following comments on the Notice of 2024 Section 303(d) List of Impaired Waters (the "Notice"). These comments focus on IDEM's proposal to list seven (7) segments of the West Fork of the White River in Marion, Johnson, and Morgan counties for impairments of the warm water aquatic designated use related to *selenium in fish tissue*.

Citizens is a Public Charitable Trust that proudly serves safe and reliable natural gas, steam, chilled water, drinking water, and wastewater services to over 900,000 people in Central Indiana. Citizens supports protection of our watershed and believes that we play a critical role as a steward of these community assets. Citizens' Indianapolis wastewater utility is the largest in the state and the 12th largest in the U.S., providing essential public services to a mix of residential, commercial, and industrial customers in Central Indiana.

Citizens is nearing completion of the projects identified in its Combined Sewer Overflow Long Term Control Plan, a culmination of over twenty (20) years of work at a cost of over $2 billion. Citizens' Indianapolis drinking water utility is the largest in the state and relies on the West Fork of the White River as its primary source of supply for drinking water. Citizens encourages conservation and protection of the assets in our watershed for the betterment of our community and the citizens of central Indiana. Accordingly, Citizens works to maximize its resources to provide these services in a reliable, efficient, and environmentally protective manner.

For the multitude of reasons articulated below, IDEM has acted prematurely in the listing process with respect to the seven (7) segments of the West Fork of the White River in Marion, Johnson, and Morgan counties and, accordingly, Citizens objects to the proposed listing.

I. IDEM's Notice and Supporting Documentation *do not* Support a Selenium Impairment Determination for the West Fork of the White River.

Citizens has reviewed and analyzed IDEM's Notice, 2024 Consolidated Assessment and Listing Methodology ("2024 CALM"), and other[1] State and federal regulatory and policy documents. In addition to IDEM-specific documents, IDEM's assessment and Citizens' review are further supported by review and application of the United States Environmental Protection Agency's ("U.S. EPA") draft *Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion*[2] ("Draft TSD") and draft *Frequently Asked Questions: Implementing EPA's 2016 Selenium Criterion in Clean Water Act Sections 303(d) and 305(b) Assessment, Listing, and Total Maximum Daily Load Programs*[3] ("Draft FAQ"). Citizens' review has resulted in a conclusion that these documents and other supporting information directly contradict IDEM's assertion that the West Fork of the White River is impaired for selenium. As such, IDEM's request for 303(d) selenium listing should be rescinded until such time as IDEM is able to complete a proper selenium study in accordance with both State and federal regulatory and policy guidelines.

Citizens' detailed comments can be found in § II below and cover the following general positions.

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[1] In developing these comments, Citizens has relied in part on the following publicly available documents:

- Water Quality Monitoring Strategy 2017 – 2021, https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83258315&dDocName=83260120&Rendition=web&allowInterrupt=1&noSaveAs=1&fileName=83260120.pdf (March 6, 2017) (last accessed March 15, 2024) ("WQMS 2017-2021").
- Water Quality Monitoring Strategy 2022 – 2026, https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83524029&dDocName=83528034&Rendition=web&allowInterrupt=1&noSaveAs=1 (last accessed March 15, 2024) ("WQMS 2022-2026")
- IDEM's 2022 Consolidated Assessment and Listing Methodology, https://www.in.gov/idem/nps/files/ir_2022_apndx_g_calm_narrative.pdf (last accessed March 15, 2024) ("2022 CALM").
- IDEM's 2024 CALM, https://www.in.gov/idem/nps/files/wapb_2024_draft_calm_document.pdf (last accessed March 15, 2024); and
- Draft 2024 303(d) Listing Tables Containing Supporting Information for Changes Identified in the Notice of Comment Period, https://www.in.gov/idem/nps/files/wapb_2024_notice_comment_attachments_spreadsheet.xlsx (last accessed March 15, 2024) ("2024 Listing Tables").

[2] *Draft Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion*, EPA 823-D-21-002, https://www.epa.gov/system/files/documents/2021-10/selenium-fishtissue-tsd-draft-2021.pdf (October 2021).

[3] *Draft Frequently Asked Questions: Implementing EPA's 2016 Selenium Criterion in Clean Water Act Sections 303(d) and 305(b) Assessment, Listing, and Total Maximum Daily Load Programs,* EPA 823-D-21-004, https://www.epa.gov/system/files/documents/2021-10/selenium-faq-cwa305-draft-2021.pdf , (October 2021).

1. IDEM's Impairment Determination Relies on Data Gathered Prior to the Effective Date of IDEM's Final Rule and Prior to the Completion of Critical Public Notice and Comment Periods on Technical Guidance.

IDEM's proposed listing of selenium impairments in the West Fork of the White River is premature. Simply put, the documents and guidance relied on by IDEM in making its impairment determination were not through public comment at the time of IDEM's fish tissue sampling and those documents are still only published as draft documents. Accordingly, all the sample collection methods, standards and outcomes could still be subject to change. Until these U.S. EPA guidance documents are finalized and IDEM can update its Water Quality Monitoring Strategy accordingly, IDEM should not proceed with an impairment determination.

2. The Clean Water Act does not Require IDEM to Propose this Selenium Listing.

Section 305(b) of the federal Clean Water Act ("CWA"), 33 U.S.C. § 1315(b), requires states to provide a description of the water quality of all navigable waters of the State with an analysis of whether such waters are providing for the protection and propagation of a balanced population of shellfish, fish, and wildlife (*i.e.*, whether a stream is attaining its "designated use"). IDEM has established that all waters of the State will be capable of supporting a well-balanced warm water aquatic community.

If it is determined that such waters are not achieving their designated use, or where a water quality standard is not achieved, States must, under § 303(d) of the CWA, develop a combination of strategies, whether through more stringent point or non-point source controls in permits or through the Total Maximum Daily Load ("TMDL") program, needed for the protection of the watershed and to support attaining the designated use (or the highest available use).

IDEM's Notice has asserted that the West Fork of the White River is not attaining its designated use of being a "well-balanced warm water aquatic community" because of the presence of selenium; however, a review of IDEM's selenium data, detailed more thoroughly in § II.A.2 below, does not support this position.

3. Egg-Ovary Data Support a Conclusion of No Selenium Impairment.

IDEM has inappropriately and arbitrarily dismissed egg/ovary data collected from the common carp during the October 2021 sampling event conducted by IDEM. The 2016 Selenium Criterion Document and accompanying guidance make clear that the egg/ovary criterion element have primacy over all other criterion elements. Had IDEM considered this data as required, it would have found that a no selenium impairment decision was warranted.

4. IDEM has Misapplied U.S. EPA's 2016 Selenium Water Quality Criterion.

IDEM's interpretation and application of the criterion that applies each element to individual fish species separately, effectively ignores the hierarchy of the elements established by U.S. EPA within the selenium criterion which was also adopted as a water quality standard by the Indiana Environmental Rules Board.

5. The West Fork of the White River Should not be Considered Impaired as a Result of Selenium in Fish Tissue.

IDEM's decision to deem seven (7) segments of the West Fork of the White River impaired without conducting sampling on each of those segments is inappropriate and draws conclusions about waters that stretch over 20 river miles without sufficient supporting evidence. IDEM must conduct an appropriate and complete sampling event prior to making an impairment determination that will have significant and irreparable impacts on the regulated community.

6. The West Fork of the White River in Marion and Morgan Counties is not Appropriate Habitat for Sturgeon or Paddlefish.

Although sturgeon and paddlefish may have suitable habitat in various waters across the State, the West Fork of the White River is not one of them, and, thus, this waterbody should not be held to the more stringent selenium standard designed to protect those species. Relevant studies discussed in further detail below readily show that this waterbody does not consistently support the type of habitat (*e.g.,* water depth) needed to sustain these species.

II. Citizens' Detailed Comments to IDEM's Selenium Impairment Designation

A. IDEM's Impairment Determination Relies on Data Gathered Prior to the Effective Date of IDEM's Final Rule and Prior to the Completion of Critical Public Notice and Comment Periods on Technical Guidance

As an initial matter, IDEM's Environmental Rules Board adopted the revisions to the selenium water quality standard (WQS) on 8/11/2021. Those revisions were submitted to the Indiana Legislative Services Agency for publication in the *Indiana Register* on 11/5/2021. The final rule was not effective until 12/5/2021, roughly two full months after the October 2021 fish tissue sampling was conducted in the White River.

IDEM's proposed listing of selenium impairment in the West Fork of the White River is premature. Further, the chronology of IDEM's fish tissue sampling for selenium and the development of directly applicable guidance by U.S. EPA along with regulatory requirements for monitoring and analysis by IDEM raises serious questions about the data and procedures used by IDEM to collect and analyze the selenium fish tissue data for comparison with the selenium water quality standards.

At this same time, the suite of U.S. EPA's draft implementation guidance documents that IDEM seeks to rely upon had only just been issued for public comment. U.S. EPA issued its draft

implementation guidance documents in October 2021 with the comment period closing in January of 2022. It is critically important to note that, as of the writing of this comment letter, no final documents have been issued by U.S. EPA. The intended guidance that is to be provided to implementing agencies by these documents is therefore very much unsettled and likely subject to change in the future.

As stated above, the documents and guidance relied on by IDEM in making its impairment determination were not through public comment at the time of IDEM's October 2021 sampling and those relied-upon documents are still only published as drafts. Accordingly, all of the sample collection methods, standards and outcomes are subject to change. Given the potential impacts of the proposed impairment listing it is premature to move forward with the potential determination of an impairment for selenium and the development of a TMDL for the White River.

In 2016, U.S. EPA updated its national CWA section 304(a) recommended chronic aquatic life criterion for selenium in freshwater systems. IDEM's Water Quality Monitoring Strategy for the period 2017 – 2021 (dated 3/6/2017) did not anticipate or include revisions to the selenium water quality standards, nor that sampling for selenium in fish tissue would be conducted for purposes of assessing compliance with the revised selenium criterion. As such, stakeholders (like Citizens) had no opportunity to offer input into a monitoring plan for the assessment of selenium in fish tissue.

This is particularly troubling because in Section 4 of Draft TSD for fish tissue monitoring, U.S. EPA outlines the data assessment strategies that states should incorporate into their plan for assessing selenium in fish tissue pursuant to the revisions to the water quality criterion. Additionally, as described in the Draft TSD, U.S. EPA has not established approved methods for measuring selenium in fish tissue at this time. Accordingly, U.S. EPA implores states to minimize the considerable uncertainty inherent in selenium fish tissue sampling through,

> ". . . rigorous study design, clear data quality objectives, meticulous QA/QC protocols, and careful execution of the monitoring program in the field. Standardized methods should be followed in the field to ensure the appropriate samples (have been handled, preserved, and shipped according to protocol) are analyzed in the laboratory" *See Draft TSD at page 35.*

During meetings with IDEM Water Quality Assessment Branch staff, the October 2021 fish tissue sampling event that is sole basis for the proposed selenium impairment determination was described as a "field test" of IDEM's draft guidance document to establish site-specific bioaccumulation factors. Accordingly, IDEM has not yet refined its monitoring strategy to minimize the considerable uncertainty inherent in selenium fish tissue sampling. The Draft TSD also discusses the inherent problems that small and incomplete data sets represent and recommends potential statistical approaches to ensure data quality. In this case, there is only one sampling event; Citizens believes that single sampling event with limited results is a small and incomplete data set which may pose considerable uncertainty.

Given the magnitude of the economic impacts on the regulated community of the proposed impairment designation on the White River, moving forward with such limited *draft* guidance that remains open and subject to change is ill-advised and premature.

B. <u>IDEM Is Not Required to Propose This Impairment Listing Pursuant to Clean Water Act Section 305(b) and Section 303(d).</u>

As IDEM notes in Table 1 to the WQMS 2017 – 2021, there are numerous primary and secondary objectives supported through the water quality monitoring program, including:

- Water quality assessments pursuant to CWA § 305(b) to support the development of Indiana's Integrated Report to U.S. EPA; and,
- Development of Indiana's CWA § 303(d) List of Impaired Waters for Indiana's Integrated Report.

In Section 7.1 of the WQMS 2017-2021, IDEM describes how the water monitoring data collected are interpreted and used to meet the objectives defined in Table 1:

> "The data are compared to the narrative and numeric water quality criteria articulated in Indiana's water quality standards to *determine the extent to which the waterbody supports its designated uses.* Waters that fail to meet the designated use assessed are placed on the 303(d) List of Impaired waters." (Page 60. Emphasis added.)

At 327 IAC 2-1-3(a)(2), IDEM establishes as a designated use that all waters will be capable of supporting a *well-balanced*, warm water aquatic community.

Section 305(b) of the Clean Water Act requires States to provide the biennial report to U.S. EPA that includes an assessment of the designated uses. From 33 U.S. Code § 1315 that codified Section 305(b), § 1315(b)(1)(A) *requires a description of the water quality of all navigable waters in such State during the preceding year, with appropriate supplemental descriptions as shall be required to take into account seasonal, tidal, and other variations*, correlated with the quality of water required by the objective of this chapter (as identified by the Administrator pursuant to criteria published under section 1314(a) of this title) and the water quality described in subparagraph (B) of this paragraph. As well, pursuant to § 1315(b)(1)(B), States must provide *an analysis of the extent to which all navigable waters of such State provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife*, and allow recreational activities in and on the water.

Section 303(d) of the Clean Water Act requires that each State identify those waters within its boundaries for which effluent limitations are not stringent enough to implement any water quality standard that applies – in other words, make a list of where the water quality standard is not achieved. From that, States are obligated to develop a combination of strategies, whether through more stringent point or non-point source controls in permits or through the TMDL

program, needed for the protection of the watershed and to support attaining the designated use (or the highest available use).

In implementing its field monitoring program in 2021, on October 4-5, 2021, IDEM staff collected fish from the West Fork of the White River for the analysis of egg/ovary and tissue samples at five (5) locations: Southport Road, State Road (SR) 144, Henderson Bridge-CR 390, Catfish Porters Bait Shop, and Smokey Road[4]. Select data from three (3) sampling locations, Southport Road, SR 144 near Waverly, and Henderson Bridge-CR 390, are being used by IDEM as the basis of the proposed impairment inclusion on the § 303(d) list for seven (7) segments of the West Fork of the White River.

The fish collected by IDEM staff during the October 2021 field sampling event reflect a diverse collection of species at the five (5) locations sampled, including bluegill, catfish, smallmouth bass, drums, shiners, carp, river carpsuckers, and walleye. Thus, at least initially, it appears that the West Fork of the White River supports a well-balanced warm water aquatic community, although the stream segment SR 144 near Waverly was previously listed by IDEM for impairment of the warm water aquatic life use for biological integrity[5].

The next step taken by IDEM was to compare the data collected, both water column data from the fixed point monitoring stations and, in the case of the selenium in the fish tissue, against the water quality criteria adopted by the Environmental Rules Board on August 11, 2021, that became effective on December 5, 2021[6]. This step is necessary to ascertain whether the threshold outlined in § 303(d) is met, as effluent limitations must be stringent enough to support attainment of the water quality standard(s).

IDEM staff collected a total of ninety-eight (98) fish during the October 2021 sampling event on the West Fork of the White River in Marion, Johnson, and Morgan counties. In its Response to Public Comments[7] on the proposed selenium criterion, the U.S. EPA notes that selenium criterion is focused on protection of populations:

> "EPA has clarified that *the selenium criterion is focused on the protection of populations, not individuals.*" (See page 65. Emphasis added.)

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[4] In another matter, IDEM staff provided an Excel workbook containing all selenium fish tissue data to Citizens on January 10, 2023. A subset of that data is being used in this proceeding.
[5] Citizens acknowledges that Assessment Unit ID (AUID) INW01A6_03 in northeastern Marion County (the West Fork of the White River from I-465 to the oxbow) has also been previously for impairment of the warm water aquatic life use for biological integrity. https://mywaterway.epa.gov/waterbody-report/21IND/INW01A6_03/2022
[6] *See* LSA #20211201-IR-327140058FRA. http://iac.iga.in.gov/iac/irdin.pdf?din=20211201-IR-327140058FRA published December 1, 2021. Last accessed 14 March 2024.
7 EPA Response to Public Comments on the 2015 Draft Selenium Aquatic Life Ambient Water Quality Criterion. https://www.epa.gov/sites/default/files/2016-07/documents/selenium_freshwater_2016_response_to_comment.pdf Last accessed 12 December 2023.

With this proposal, IDEM makes a determination of impairment that it alleges warrants imposition of selenium limits based on fourteen (14) individual fish collected during the sampling event rather than considering the overall health of the population. Citizens disagrees with this determination. While the analytical data of select fish tissue samples for Smallmouth Bass (2 fish) and Longear Sunfish (12 fish) indicate individual exceedances of the selenium water quality standard for fish tissue, IDEM must consider whether the population is protected.

The totality of the fish tissue data from October 2021 supports a conclusion that, in the broader context, the population of Smallmouth Bass and Longear Sunfish *are* protected under current conditions. Based on the data in hand, it is inappropriate for IDEM to propose listing seven (7) segments of the West Fork of the White River as impaired for selenium in fish tissue – that is, that these segments of the river fail to support warm water aquatic life based on selenium in fish tissue. Additional data collection is needed before any conclusion to the contrary could be drawn.

C. <u>Valid Egg-Ovary Data Support a Conclusion of No Selenium Impairment.</u>

IDEM collected common carp egg/ovary samples in October 2021; *however*, IDEM arbitrarily discounted the importance of that analytical data by taking a position that the selenium criteria apply element-by-element, species-by-species. This interpretation of the standard is contrary to the selenium criterion itself as outlined in the Criterion Document. This interpretation also effectively ignores IDEM's Draft Guidance Document and U.S. EPA guidance.

U.S. EPA's interpretative Draft FAQ directly and unequivocally states that:

> "The water quality criterion elements for selenium are related through a hierarchy, with fish tissue criterion elements having primacy over water column criterion elements, and the egg-ovary criterion element having primacy **over <u>all</u> other criterion elements**. (See page 6.)

and

> "The fish egg-ovary criterion element supersedes the fish whole-body and/or muscle criterion element when both types of data are available." (See Note 4 to Table 2 on page 12.)

IDEM's arbitrary decision to willfully ignore the best available indicator of selenium impacts on the White River is a fatal flaw in the agency's impairment determination. This decision directly contradicts U.S. EPA guidance for the use and interpretation of multiple sources of selenium fish tissue data. U.S. EPA describes this in clear and concise terms in the Draft FAQ stating that,

> "… the national CWA section 304(a) recommended selenium criterion is structured such that the fish egg-ovary criterion element supersedes the fish whole-body and/or muscle criterion element. **Hence, if the results for fish egg-ovary criterion element and the fish whole-body and/or muscle criterion elements *do not agree*, the assessment for the fish tissue component should be based on the results for the fish egg-ovary criterion element.** (See Page 12.) (Emphasis supplied)

IDEM's decision to exclude and ignore common carp egg/ovary defies explanation and is the very definition of arbitrary[8]. Based on U.S. EPA's guidance, IDEM should have done the exact opposite by including the common carp egg/ovary data and, thereby, excluding the whole-body and/or muscle tissue data from other species collected during the October 2021 sampling event. IDEM should accept the common carp egg/ovary data collected during the October 2021 sampling event as evidence that the selenium criterion is met. Discarding these data leaves an incomplete and selective dataset that, per U.S. EPA, prioritizes lower quality data with regard to the analysis of selenium impacts on aquatic life.

IDEM discusses its position on the Assessment of Selenium for Aquatic Life Use starting on page G-14 of the 2024 CALM[9]. IDEM acknowledges the hierarchical nature of the elements in the revised selenium criterion and that fish egg/ovary results supersede fish whole-body/muscle results. IDEM also discusses fish with asynchronous spawning habits and notes that "...would make it difficult to sample a waterbody for egg/ovary tissue from multiple species during a single sampling event[.]" and goes on to say that "...sampling for the "worst case scenario" (i.e. the highest concentration of selenium in eggs/ovary) would require fish community sampling prior to or early in the spawning season, frequently during times of high stream flow which poses additional sampling hazards to field crews."

The spawning habits of the Common Carp are not fixed to a single season. As IDEM points out, certain fish species are asynchronous spawners and spawn multiple times throughout the season. The selenium loading in these fish, especially for a molluscivorous species like the Common Carp, is not only relevant, but is the best indicator that IDEM has to determine a potential selenium impairment. Thus, even if the Common Carp were not captured in the period following 2 months after the spring spawning season for this region, the egg/ovary data for the Common Carp collected during IDEM's October 2021 sampling event have critical value in the assessment of the selenium loading in the West Fork, White River.

In the Draft TSD, U.S. EPA offers the following comments regarding asynchronous spawners:

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[8] Black's Law Dictionary defines "arbitrary" as "a determination made without consideration of or regard for facts, circumstances, fixed rules, or procedures." Black's Law Dictionary 15(c) (11th ed. 2019).
[9] IDEM does not discuss selenium in the 2022 CALM.

> Given these concerns, EPA has the following recommendations when sampling female asynchronous spawners: 1) if the fish is too small to easily sample the egg-ovary tissue, the whole body should be sampled (including the eggs) and the selenium concentration should be compared to the whole-body criterion element; *2) if fish are sampled during the reproductive season and they are large enough to easily sample the egg-ovary tissue, this tissue should be sampled* (the 75% rule does not apply to egg-ovary composite samples, see section 2.2.1); and 3) muscle tissue should not be sampled during the reproductive season as selenium may be depleted from this tissue during this time.
>
> *The egg-ovary tissue criterion element has primacy over all other criterion elements of the selenium water quality criterion.* Most states and authorized tribes do not currently collect egg ovary tissue as part of their regular monitoring programs. EPA recognizes that many states and authorized tribes may not have the resources to augment their existing monitoring programs to include egg-ovary tissue collection. While egg-ovary remains the preferable tissue type, whole-body or muscle tissue samples can be used as an alternative. (Page 9, emphasis added.)

The egg/ovary data collected by IDEM from the Common Carp at the Southport Road bridge, at the SR 144 sampling location and the Catfish Porters Bait Shop, all collected on October 4, 2021, and the subsequent sample collected at Smokey Road on October 5, 2021, collectively indicate that the selenium loading in the West Fork of the White River, does not support a determination of *impairment*. As a molluscivorous species, Common Carp have the highest potential for bioaccumulation of selenium. Accordingly, Common Carp represent an ideal indicator of selenium in the aquatic ecosystem.

In the Criterion Document, U.S. EPA speaks to the bioaccumulation mechanism and the hierarchy of the individual elements, as well:

- From the Executive Summary of the Criterion Document: "[O]rganisms in aquatic environments exposed to selenium accumulate it primarily through their diets, and not directly through water (Chapman et al. 2010)."

- U.S. EPA goes on to state in the Executive Summary: "EPA recommends states and tribes adopt into their water quality standards a selenium criterion that expresses the four elements as a single criterion composed of multiple parts in a manner that explicitly affirms the primacy of the whole-body or muscle element over the water column elements, and the *egg-ovary element over any other element*. Adopting the fish whole-body or muscle tissue element into water quality standards ensures the protection of aquatic life when measurements from fish eggs or ovary are not available, and adopting the water column

element ensures protection when fish tissue measurements are not available." (Emphasis added.)

- On pages 145-146[10] of the Criterion Document, U.S. EPA discusses bioaccumulation and the food web, pointing out that: "As stated previously, the single largest step in tissue selenium accumulation in aquatic environments occurs at the base of the food web where algae and other microorganisms accumulate selenium from water (Orr et al. 2012; Stewart et al. 2010). Mollusks such as mussels and clams accumulate selenium to a much greater extent than planktonic crustaceans and insects due to higher ingestion rates of both particulate-bound (algae) and dissolved selenium from the water column through filter feeding, and these organisms have a lower selenium elimination rate (Luoma and Rainbow 2005). Thus, aquatic-dependent wildlife criteria for species that are primarily molluscivores may have concentrations of concern that are not protected by the 2016 selenium criterion elements found in this document."

As U.S. EPA highlights in the Criterion Document, the hierarchy of the elements within the criterion is intended to support an evaluation when one or more pieces of data (regarding the specific element) is not available – as echoed in 327 IAC 2-1-6(a)(4)(A), Footnote [2] to Table 6-1a. Because egg/ovary data are available from the IDEM sampling event, it is not necessary to look to the other elements of the criterion.

In this case, the Common Carp species has been extensively studied. IDEM found fish egg/ovary during the October 2021 sampling event, and it should not be excluded regardless if the fish is asynchronous or has a spawning season. U.S. EPA's selenium criterion, including the individual elements in the criterion, and the hierarchical approach that gives clear preference to egg/ovary data over any other fish tissue element or the water column number, are protective according to the available data.

D. <u>IDEM Has Misapplied U.S. EPA's 2016 Water Quality Criterion for Selenium.</u>

On page G-16 of the 2024 CALM document, IDEM states:

> "...an exceedance of the selenium criterion in any one of these species/length groupings at any time during the index period will result in an impairment of that AUID."

IDEM's application of the criterion -- applying each element to individual fish species separately -- effectively ignores the hierarchy of the elements established by U.S. EPA within the selenium criterion and as adopted as a Water Quality Standard[11] by the Indiana Environmental Rules Board. This is inappropriate and unsupported by the applicable regulations and guidance

[10] Pages 163 and 164 of 807 in the online PDF version of the Criterion Document
[11] *See* LSA #20211201-IR-327140058FR and 327 IAC 2-1-6(a)(4)(A).

from U.S. EPA. Specifically, in Footnote [2] to Table 6-1a, promulgating the selenium criteria at 327 IAC 2-1-6(a)(4)(A), IDEM states the following:

> [2] Egg or ovary supersedes any whole-body, muscle, or water column element when fish egg or ovary concentrations are measured.

In the Criterion Document, U.S. EPA provided its analysis and derivation for each of the elements (egg/ovary, whole body, muscle tissue, and water column) for the final selenium water quality criterion, documented each of the elements, and concluded that the hierarchy contained in the criterion is protective of the most sensitive species. U.S. EPA considered species-specific evaluations as part of this overall analysis - which ultimately led to the final U.S. EPA selenium criterion *that is, by design, not species-specific*. Table 1 of the Criterion Document also clearly states that egg/ovary data takes precedence when available and supersedes all other elements, without any species-specific attribution.

For example, in § 3.1.3.1 (page 48 of the Criterion Document), U.S. EPA states:

> …the 5th percentile projection yields an egg/ovary criterion element concentration of 15.1 mg Se/kg dw[12] egg/ovary, *lower than the most sensitive species tested*…. (Emphasis added).

In § 6.6 (page 146 of the Criterion Document), U.S. EPA goes on further to say:

> "The egg/ovary-based tissue criterion element of 15.1 mg Se/kg dw is based on a genus sensitivity distribution that used the most sensitive assessment endpoint observed in toxicity 148 tests, reproductive effects, and included fish species known to be sensitive to selenium (i.e., species from Salmonidae and Centrarchidae), as well as three endangered species (desert pupfish, rainbow trout and white sturgeon)."

These statements clearly demonstrate that the U.S. EPA selenium criterion for the egg/ovary element is meant to be protective of all fish species, as written.

In developing the selenium criterion, and, more importantly, in establishing the hierarchy of the individual elements within the criterion, U.S. EPA considered the various elements and made its determination based on the available data and empirical models. In concluding that egg/ovary data supersedes all other fish tissue data, U.S. EPA considered the totality of the data available to it. *Nowhere* in the main body of the Criterion Document does U.S. EPA indicate that the individual elements of the selenium water quality criterion must be applied species-by-species in a particular watershed, discounting the overall hierarchy established in the criterion. The

[12] Milligrams of selenium per kilogram dry weight of fish tissue

Criterion Document (at Appendix K) provides for consideration of an individual species as applied to a site-specific bioaccumulation factor (BAF); IDEM, however, has not used its data to derive a site-specific BAF, but rather is selectively using its data in an assessment of whether the waters are impaired. In doing so, IDEM has arbitrarily elected to ignore its best and most valuable data to evaluate a potential selenium impairment; the egg/ovary data that it collected.

Further supporting this assessment is U.S. EPA's derivation of the selenium criterion element for whole body (*see* § 3.1.3.2 in the Criterion Document) and muscle tissue (*see* § 3.1.3.3 in the Criterion Document) - elements derived to provide protection from adverse reproductive impacts. As with the egg/ovary element in the Criterion Document, each of these elements reflects the fifth (5^{th}) percentile value, intended to be protective of the most sensitive species assessed.[13]

Said another way, ***each of the individual elements was established based on the consideration of the aggregation of data from multiple species***. If the selenium criterion elements were intended to apply independently for each species, the standards would be different for each species, to reflect the inherent variability and tolerance of that particular species. The criterion recommended by U.S. EPA and adopted in Indiana did not establish species-specific requirements, nor are there factors or other means to adjust the individual elements of the selenium criterion to individual fish species.

On the contrary, U.S. EPA *intended* to create a one-size-fits-all criterion when, in determining the numeric value to apply, they assessed reproductive impacts and set the egg/ovary standard to be protective of the most sensitive species, then derived the remaining elements from that protective value. The selenium criterion (and each element comprising it) was developed to protect the whole aquatic community. As a result, IDEM must acknowledge the hierarchy of the individual elements in the selenium criterion when assessing the data available to it, just as U.S. EPA has:

> EPA used these distributions of water concentration values translated from the egg-ovary criterion element to derive chronic water column criterion element values for lentic and lotic aquatic systems. (Page 88 of the Criterion Document.)

Finally, in the Information Sheet[14] supporting the selenium rulemaking, IDEM acknowledges the hierarchy of the elements in the selenium criterion and that egg/ovary supersedes all other elements.

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[13] *See*, for example, this statement on Page 100 of the Criterion Document (page 117 of 807 in the PDF version): "[T]he magnitudes of the fish whole-body element and fish muscle elements are derived from the egg-ovary element coupled with data on concentration ratios among tissues." (Emphasis added.)

[14] IDEM Office of Water Quality. Selenium Criterion for Aquatic Life Information Sheet. May 2021. https://www.in.gov/idem/cleanwater/files/wqs_rulemaking_selenium_infosheet_20210501.pdf Last Accessed 12 December 2023.

Therefore, to the extent that IDEM has valid analytical results for selenium in fish tissue samples that demonstrate attainment with the most superior element in the Criterion Document, the egg/ovary element, the analytical results from limited data collected by IDEM stand as a demonstration that the selenium criterion, as adopted, is met. Thus, the impairment determination proposed is inappropriate and not supported by the available data.

E. <u>The West Fork of the White River Should Not Be Considered Impaired as a Result of Selenium in Fish Tissue.</u>

In proposing this listing, IDEM asserts that the West Fork of the White River is *impaired* insomuch as IDEM has interpreted the data to indicate that the warm water aquatic life designated use is not met as a result of selenium in fish tissue based on a single sampling event conducted by IDEM in October 2021. This conclusion relies on a spurious correlation with limited data that do not confirm, or even strongly indicate, a causal relationship. As previously noted, when IDEM developed its sampling plan for the 2017 – 2021 period, the revisions to the selenium water quality standard presented in the Criterion Document had not been presented to or adopted by the Environmental Rules Board for application in Indiana.

Moreover, IDEM has not considered the home ranges or migratory patterns of certain fish species that exhibited elevated tissue concentrations of selenium. In the Draft TSD, U.S. EPA notes:

> Along with sensitivity and bioaccumulation, it is also important to *consider how a species' habitat preferences, feeding regimes, and/or home ranges will affect their selenium exposure*. Species with smaller home ranges may be at risk of greater selenium exposure if the elevated selenium is localized to their home range or their prey's home range. Species with larger home ranges may not represent local selenium exposure. States and authorized tribes should target species with home ranges that closely match the site being evaluated, so that the fish reflect exposure to selenium at that particular site. (Page 21, emphasis added.)

Studies in Indiana[15] and Louisiana[16] have documented the home range of Longear Sunfish to range from 70 to 200 linear feet. Smallmouth Bass exhibit a larger home range than other Centrarchidae (sunfish) species, as this species is known to move as much as several kilometers a day.[17] This variability in home ranges and migratory patterns weighs against any conclusion that observed selenium concentrations are indicative of impairment in the stream segments noted

[15] Gerking, Shelby D. "Evidence for the Concepts of Home Range and Territory in Stream Fishes." Ecology 34, no. 2 (1953): 347–65. https://doi.org/10.2307/1930901.
[16] Wallus, R. and T.P. Simon. 2008. Reproductive Biology and Early Life History of Fishes in the Ohio River Drainage. Volume 6: Elassomatidae and Centrarchidae. CRC Press, Boca Raton, FL.
[17] Fishes of Wisconsin - Full view - UWDC - UW-Madison Libraries.

because of the distance this species can travel in each day. Further, the weight of evidence supports a conclusion that the population of these fish are protected in the current state.

IDEM's decision to "extrapolate" or make conclusions regarding stream segments where sampling did not occur erroneously disregards water column analytical data obtained from IDEM's fixed station monitoring stations and field sampling in the West Fork of the White River. Further, this is contrary to the logic presented in Table G-15 to the 2024 CALM.[18]

Analytical data from the fixed station monitoring site located at SR 144 in Waverly[19] does *not* indicate an exceedance of the selenium water column criterion for lotic systems in calendar years 2021 or 2022 (subsequent to the adoption of the revised water column standard for selenium and IDEM's single sampling event in October 2021). The same is true of data collected from the fixed station monitoring site at SR 39 in Martinsville. Additionally, water column samples collected in October 2021 at Henderson Bridge-CR 390 and Catfish Porters Bait Shop indicate that the water column element for dissolved selenium is met.

Citizens believes that IDEM has not followed the appropriate scientific and legal process for determining an impairment for the West Fork of the White River. Before IDEM can make a determination of *impairment*, the collection of additional data is warranted to better ascertain whether the limited data collected by IDEM in October 2021 is representative of the system and to confirm that in-stream conditions are protective of the warm water aquatic life population.

F. <u>The West Fork of the White River in Marion and Morgan Counties Is Not Appropriate Habitat for Sturgeon or Paddlefish.</u>

In the implementation of the selenium criteria promulgated 327 IAC 2-1-6(a)(4)(A), IDEM has stated its intent to manage all waters in the State of Indiana as habitat for shovelnose sturgeon (*Scaphirhynchus platorynchus*) and paddlefish (*Polyodon spathula*), imposing the more stringent of the two options for the selenium water quality criterion found in the referenced rule on all waters, including the West Fork of the White River. IDEM staff created a map, Watersheds Identified as Acipenseriformes Waters[20] that illustrates stream segments where these species are known or likely to occur. In addition, this map reflects a buffer at the watershed level defined by HUC 8[21] cataloguing unit. The majority of the Upper White River Watershed that includes portions of Morgan, Johnson, and Marion Counties affected by this proposed listing are identified as habitat for these fish based on this buffer.

Although sturgeon and paddlefish may have suitable habitat in certain waters in Indiana, such suitable habitat to support these fish is not likely to be found in the West Fork of the White

[18] *See page G-63 of the 2024 CALM* that describes the impairment status of particular segments depending on the availability and status of both water column and fish tissue data.
[19] Fixed Station WR-210
[20] https://www.in.gov/idem/cleanwater/files/wqs_rulemaking_selenium_sturgeon_waters.pdf. Mapped by Kayla Werbianskyj, OWQ. December 18, 2020. Last accessed 14 March 2024.
[21] *HUC* 8 refers to the *hydrologic unit code* system used by the U.S. Geological Survey to classify watersheds for inventory purposes.

River in Marion, Johnson, and northeastern Morgan Counties. These fish species prefer deeper waters, with the shovelnose sturgeon preferring habitat that is 2 – 7 meters in depth[22] and the paddlefish preferring large rivers with deep (greater than six (6) meters) water and a slow moving (less than 5 centimeters per second) current.[23] Contrary to these preferences, the West Fork of the White River in Marion, Johnson, and northeastern Morgan Counties experiences highly variable depths influenced by wet weather conditions[24]. This variation in depth means the river is not consistently deep enough to support permanent, suitable habitat for these fish.

In November 1992, the U.S. EPA released a report that assessed fish populations in the White River basin in Indiana.[25] The authors include in Table 12 (found on pages 62 - 65 of the PDF file) the Species list of taxa collected during sampling in 1990 and 1991. Most notably, neither sturgeon nor paddlefish were collected during this sampling event. In 2020, IDEM and other stakeholders (including the Indiana Department of Natural Resources) sampled the West Fork, White River as part of the 2020 White River Mainstem Project.[26] According to the Fish Community Sampling information provided in this report, there were no sturgeon or paddlefish in the stretch of the West Fork, White River that IDEM alleges to be influenced by discharges from the Southport AWT (i.e., that portion of the river from Southport Road to SR 39 in Martinsville).

Citizens believes that available data and information would support a determination by IDEM that the segment of the West Fork of the White River in Marion, Johnson, and northeastern Morgan Counties is *not* suitable habitat for either the sturgeon or paddlefish. Citizens requests that IDEM apply the selenium criterion outlined in Table 6-1b at 327 IAC 2-1-6(a)(4)(A) to these watersheds for purposes of Clean Water Act program implementation.

III. Conclusion

Citizens believes that additional data is necessary before IDEM can accurately assess whether the selenium water quality standard is attained in the West Fork of the White River.

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[22] https://animaldiversity.org/accounts/Scaphirhynchus_platorynchus/ Last accessed 12 December 2023
[23] https://animaldiversity.org/accounts/Polyodon_spathula/ Last accessed 12 December 2023
[24] Refer to stream gauge data maintained by the U.S. Geological Survey for the White River at Indianapolis Museum of Art (Gauge 03351201), the White River at Indianapolis (Gauge 03353000), the White River at Stout Gen. Stn. at Indianapolis (Gauge 03353611) and White River Near Centerton, IN (Gauge 03354000). Data available on the internet at https://nwis.waterdata.usgs.gov/in/nwis/uv/?referred_module=sw&county_cd=18097&county_cd=18109&site_tp_cd=OC&site_tp_cd=OC-CO&site_tp_cd=ES&site_tp_cd=LK&site_tp_cd=ST&site_tp_cd=ST-CA&site_tp_cd=ST-DCH&site_tp_cd=ST-TS&index_pmcode_00065=1&format=station_list&group_key=NONE&range_selection=date_range&begin_date=2020-12-06&end_date=2023-12-13&date_format=YYYY-MM-DD&rdb_compression=file&list_of_search_criteria=county_cd%2Csite_tp_cd%2Crealtime_parameter_selection. Last accessed 13 December 2023.
[25] Simon, T. P. 1992. Biological Criteria Development for Large Rivers with an Emphasis on an Assessment of the White River Drainage, Indiana. U.S. Environmental Protection Agency, Region V, Water Division, Water Quality Standards. Chicago, Illinois. EPA 905/R-92/006. Available on the internet at https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000COKL.PDF . Last accessed 13 December 2023.
[26] https://storymaps.arcgis.com/stories/3329a43505094393b573f0788e1933d7. Last accessed 12 December 2023.

Should you have questions or require additional information, please don't hesitate to reach out to me via e-mail at amciver@citizensenergygroup.com or by phone at (317) 927-4393.

Sincerely,

Ann W. McIver, QEP
Director, Environmental Stewardship
Citizens Energy Group

Enclosures

cc: Ms. Martha Clark Mettler, Assistant Commissioner, IDEM Office of Water Quality
Mr. Paul Higginbotham, Deputy Assistant Commissioner, IDEM Office of Water Quality

Attachment K-3: Comments received from Ecobat Resources California, Inc. regarding the Indiana 2024 draft 303(d) list and CALM.

ecobat
RESOURCES

March 18, 2024

Via First Class Mail & Electronic Mail (pmcmurra@idem.IN.gov)

Paul McMurray – Integrated Report Coordinator
Watershed Assessment and Planning Branch
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
MC65-40-2 SHADELAND
Indianapolis, Indiana 46204-2251

Re: Comments of Ecobat Resources California, Inc. on the Indiana Department of Environmental Management's 2024 Draft 303(d) List of Impaired Waters

Dear Mr. McMurray:

Ecobat Resources California, Inc. (f/k/a Quemetco, Inc.) ("Ecobat") appreciates the opportunity to file the following comments regarding the Indiana Department of Environmental Management's ("IDEM" or "Agency") draft 2024 303(d) List of Impaired Waters (the "303(d) List") and the Consolidated Assessment and Listing Methodology ("CALM") used to develop it. The comment period extends through March 18, 2024.

I. Ecobat's Interest and Background Information.

The draft 303(d) List includes adding waterbody impairment for the White River in Marion County to Category 5 based on IDEM's new assessment of selenium in fish tissue. This proposed listing will directly impact Ecobat. The Ecobat facility discharges from our pre-treatment plant under Industrial Discharge Permit No. 334104 to the CWA Authority, Inc. Belmont and Southport Advanced Wastewater Treatment Plant which in turn discharges to the West Fork of the White River. Therefore, any impairment listing for that receiving body will effect Ecobat.

Ecobat is a spent lead acid battery ("LAB") recycler operating a secondary lead smelter for the purpose of lead recycling. The Facility is located at 7870 West Morris Street in Indianapolis, Marion County, Indiana.

Ecobat serves an environmentally beneficial purpose as one of the few recyclers of spent LABs in the United States and producers of lead for use in new batteries and other industries (e.g., medical use). Incoming raw materials for Ecobat's secondary lead production process consist primarily of spent LABs. The batteries are fed to our battery wrecker where they are mechanically crushed and shredded. The solid components of the battery are separated for lead reclamation. The polypropylene plastic (battery case

material) is washed and shipped to a plastic recycler. The electrolyte is used in our wastewater treatment as part of elementary neutralization for pH adjustment. The main products include the production of refined lead and lead alloys and plastic chips. The lead that is recovered is then used to produce new lead-based batteries and other products utilized around the globe. As a leader in the lead battery recycling industry, Ecobat serves an important role, ensuring millions of used car batteries generated each year in the United States are safely recycled and not deposited in landfills or disposed of in countries with significantly lower environmental standards than ours.

Ecobat is fully committed to leading the industry in environmental standards. As just one example, when it comes to lead emissions, Ecobat was not content merely to meet the applicable environmental standard. Instead, Ecobat invested $25 to $30 million in state-of-the-art air pollution control technology called a Wet Electro-Static Precipitator, reduced already compliant facility lead emissions by 95%, and has advocated for *stricter* lead emissions limits across the industry. In fact, based on these efforts, Ecobat was awarded the Indianapolis Mayor's Sustainability Award in 2013 for the air category.

While Ecobat is proud to lead the industry in its commitment to protecting human health and the environment, Ecobat also believes impairment listings should be founded on sound scientific data. Here, the addition of the White River based on selenium in fish tissue appears to be based on a limited data set and this impairment added to the 303(d) list is not warranted. Currently, Ecobat's Industrial Discharge Permit does not include a selenium discharge limitation. Should this alleged impairment be added to the list, it follows that Ecobat's permit will necessarily change from having no selenium discharge limitation to one having a very stringent selenium discharge limitation. Ecobat will have little time to evaluate the full impact of this upon our operation and little time to prepare accordingly. Ecobat will be required to undertake considerable infrastructure upgrades and capital expense. Because including impairment of the White River based on selenium in the final 2024 303(d) list would impose potentially enormous requirements on Ecobat, it has a direct interest in this proposed listing.

II. Further Analysis is Required to Determine Whether the White River Should Be Considered Impaired for Selenium.

IDEM should gather additional data prior to listing the White River as impaired for selenium. Critical information does not yet exist with regard to selenium on which to base a finding of impairment. IDEM appears to be basing its proposed finding of impairment for selenium on a single sampling event conducted by IDEM in October 2021. In addition, IDEM is relying on *draft* EPA guidance to implement IDEM's rule related to sampling fish tissue. Finally, selenium is a naturally occurring element. Additional data gathering is needed over an extended time period to provide a better understanding of background selenium levels. Allowing for additional and proper monitoring and sampling will provide the necessary important information to guide further selenium impairment determinations.

As noted in more detail below, assessment and management of discharge is an ongoing, costly challenge for industry and its wastewater treatment operations. The potential costs associated with the proposed limits may be very significant, reaching into the millions of dollars based on a very limited dataset. Until there is more certainty in the best data, IDEM should refrain from adding an impairment listing for the White River for selenium and instead continue monitoring and conducting proper sampling to ensure the best most comprehensive data set possible on which to base future selenium decisions.

Ecobat encourages an approach that provides a fully developed scientific rationale using data collected over an extended time period to evaluate selenium. Ecobat is interested in working with IDEM and other key stakeholders to establish this data set and develop real, workable, scientifically-based solutions if necessary.

III. The Proposed Selenium Limitation Could Require Ecobat to Shut Down Resulting in Extensive Environmental Impact.

The proposed impairment listing based on selenium will have a significant impact on Ecobat operations. If the White River is considered impaired for selenium, the CWA Authority, Inc. would be required to take steps to address selenium in its effluent and will, in turn, require that Ecobat do the same. IDEM, however, has not taken into consideration the significant burdens and costs it will be adding to the broader regulated community with this proposed listing.

Addressing selenium in wastewater poses important and complex technological issues that need to be carefully considered. As an initial matter, critical information does not yet exist with regard to the technical feasibility for addressing selenium in wastewater. It is vital to the integrity of any selenium listing that there is sufficient time for industry to respond to the potential water quality concerns.

Based on currently estimates for *possible* treatment options, Ecobat likely would incur eight-figure costs in any effort to treat wastewater to address selenium. This proposed listing will place substantial additional burdens on Ecobat and others in the regulated community. Insufficient information exists as to the costs required by the selenium listing. Therefore, Ecobat recommends that IDEM defer the selenium finding to a later date when there is more certainty related to the data in order to manage this emerging issue with clarity and scientific support.

Ecobat has projected its capital expenditure costs related to new selenium measures in the range of $10 million to $15 million with unknown efficacy. If additional infrastructure is required beyond wastewater treatment technologies, costs will significantly exceed $15 million. Ecobat estimates that additional disposal costs could reach $300,000 - $400,000 annually. These capital cost estimates do not account for treatment equipment operating costs.

Should initial control/treatment equipment not remove selenium in sufficient quantity, Ecobat would be forced to shut down its operation until a solution is determined. As Ecobat currently employs over 300 employees, a plant shutdown would have a significant impact on the local economy. Equally important is the fact that Ecobat serves an environmentally beneficial purpose as one of the few recyclers of spent LABs in the United States and producers of lead for use in new batteries and other industries (e.g., medical use). The impact of an Ecobat shutdown to the supply chain, environment, and economy would be disastrous. While Ecobat is unequivocally committed to taking measures necessary to protect human health and the environment, given the massive financial impact, Ecobat urges IDEM to conduct a rigorous analysis of selenium levels.

Ecobat supports responsible, science-based, effective measures to address effluent issues. This is an ever-evolving concern for facility operators, including Ecobat. If the proposed selenium listing is finalized it will necessary impact Ecobat's Industrial Discharge Permit. Ecobat, however, requires time to determine the technical feasibility of addressing selenium in its effluent. Selenium is difficult to treat from a wastewater stream. Ecobat requires more time to determine the technical feasibility, cost, efficacy, and operational impacts of the proposed obligations related to selenium.

VIII. Conclusion

Ecobat appreciates the opportunity to submit these comments on the draft 2024 303(d) list of impaired waters. Ecobat appreciates IDEM's efforts on the issues of selenium and looks forward to working with IDEM on this important issue. Please feel free to call or e-mail if you have any questions, or if you would like any additional information concerning the issues raised in these comments.

Sincerely,

Mark D. Hoffman
Environmental Director
Ecobat Resources

Attachment K-4: Comments received from Hoosier Energy regarding the Indiana 2024 draft 303(d) list and CALM.

HOOSIER ENERGY

SUBMITTED ELECTRONICALLY MARCH 18, 2024
TO pmcmurra@idem.IN.gov.

March 18, 2024

RE: 2024 Draft 303(d) List of Impaired Waters
Paul McMurray – Integrated Report Coordinator
Watershed Assessment and Planning Branch
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
MC65-40-2 SHADELAND
Indianapolis, IN 46204-2251

Dear Mr. McMurray,

On February 1, 2024, the Indiana Department of Environmental Management (IDEM) published Indiana's draft 2024 Section 303(d) list of impaired waters and the Consolidated Assessment and Listing Methodology (CALM) used to develop it. This opened a 45-day public comment period, which ends on March 18, 2024. Hoosier Energy Rural Electric Cooperative, Inc. (Hoosier) and Hallador Power Company, LLC (Hallador) respectively submit these comments in response to this listing.

Hoosier, along with Hallador, have contracted with EA Engineering, Science, and Technology, Inc., PBC (EA) of Deerfield, Illinois, for biological and chemical monitoring of Turtle Creek Reservoir (TCR) for over 40 years. Given that extensive background of TCR, Hoosier and Hallador requested EA to prepare the attached comments, and they are incorporated by reference herein. The attached comments address the proposal to list TCR as impaired for selenium based on fish tissue concentrations. As set forth in the more detail in EA's comments, Hoosier and Hallador respectfully request that IDEM remove TCR from the selenium impairment listing. Data collected by Hoosier and Hallador over multiple years, including as recently as 2023, has demonstrated that there is no current impairment in the TCR. Additionally, we would note that Turtle Creek Reservoir is located in Sullivan County, Indiana, and not Warrick County, Indiana, as the Consolidated List states.

Hoosier and Hallador appreciate the opportunity to provide comments on the Section 303(d) listing and welcome any discussions with IDEM regarding the same.

* * *

Sincerely,

Angie Lee

Angie Lee
Manager, Environmental Services
Hoosier Energy REC, Inc.

J. Scott McGuire

Scott McGuire, P.E.
Senior Corporate Engineer,
Hallador Power Company LLC

Enclosure

EA Engineering, Science, and Technology, Inc., PBC

Comments on the Indiana Department of Environmental Management's 2024 Draft 303(d) List of Impaired Waters and Consolidated Assessment and Listing Methodology (CALM)

March 18, 2024

Introduction

Section 303(d) of the federal Clean Water Act requires states to provide a list of impaired waters to the United States Environmental Protection Agency (U.S. EPA). The 303(d) list is part of the more comprehensive Consolidated List that is submitted to U.S. EPA with the Indiana Integrated Water and Monitoring Assessment Report (IR) every two years. The IR and the Consolidated List are required by U.S. EPA under Section 305(b) of the Clean Water Act.

On 01 February 2024, the Indiana Department of Environmental Management (IDEM) published Indiana's draft 2024 303(d) list and the Consolidated Assessment and Listing Methodology (CALM) used to develop it for a 45-day public comment period, which ends 18 March 2024. IDEM has listed eight waterbodies for selenium impairment based on fish tissue concentrations that were not on the 2022 list, Turtle Creek Reservoir (TCR) being one of them. The majority of the data IDEM uses to develop the 303(d) list comes from their water quality monitoring programs.

The listing of TCR as selenium-impaired is presumably based on exceedances of IDEM's selenium fish tissue criterion element for muscle (skinless fillet), relying on data from IDEM studies conducted in TCR on a single day in fall 2014, nearly a decade ago and prior to the development of the draft guidance on fish tissue collection requirements for selenium assessment by IDEM (August 2021). In this isolated sampling event, composite samples for two sunfish species (Largemouth Bass and Bluegill) and Common Carp exceeded IDEM's adopted selenium fish tissue criterion element for muscle of 11.3 mg/kg dry weight (2.3 mg/kg wet weight). These data were available when IDEM published the 2022 Consolidated List, however, IDEM did not list TCR as impaired for selenium with that listing.

This isolated sampling event is not sufficient to support a selenium impairment conclusion. Since then, IDEM's selenium fish tissue criterion element for muscle was not exceeded for any composite samples submitted for analysis by IDEM personnel in 2018. Further, Hoosier Energy has collected fish tissue samples for selenium analysis in odd-numbered years (i.e., 2015, 2017, 2019, 2021, and 2023) with resulting fish tissue selenium concentrations below the IDEM criterion for muscle samples collected after 2017.

As indicated below, except for Bluegill (2015) and Common Carp (2017), all selenium concentrations in muscle since 2014 were at or below 2.3 mg/kg wet weight (equivalent to 11.3 mg/kg dry weight criteria for muscle tissue):

Species	2014[1]	2015[2]	2017[2]	2018[1]	2019[2]	2021[2]	2023[2]
Bluegill	**3.11**	**2.8**	2.0	1.99	1.6	1.6/1.5	1.7/1.6
Channel Catfish	1.75/2.01	1.4	1.4	1.45	0.7	0.6	0.9
Common Carp	**4.99**	-	**2.6**	0.83	1.7	1.5	1.3
Largemouth Bass	**2.87**	2.3	1.9	1.72/1.88	1.4	1.5	1.6

(1) Data collection by IDEM; (2) Data collection by Hoosier Energy/EA, and analyzed by Pace, Method EPA 6020, 6020B, and 3050B.

Not only have exceedances of the selenium muscle criterion for any species been non-existent since 2017, selenium concentrations in all species above have generally declined since 2014. In fact, based on bi-annual fish tissue sampling during annual biomonitoring conducted by Hoosier Energy/Hallador Power, selenium concentrations in muscle tissue have significantly and consistently declined for all composites. These biomonitoring studies with fish tissue sampling have been submitted to IDEM. Based on a cumulative review of the data, these recent data represent a steady-state/equilibrium condition as defined in IDEM's 2024 Consolidated Assessment and Listing Methodology (CALM):

> *The U.S. EPA criterion for selenium require "steady state" conditions at a site before fish egg/ovary or whole-body/muscle tissue can be used in determining impairments. "Steady state" is defined as "when the rates of chemical uptake and depuration are equal and tissue concentrations remain constant over time" for organisms and "conditions where sufficient time has passed after the introduction of a new or increasing discharge of selenium into a water body so that fish tissue concentrations of selenium are no longer increasing" for a sample location(U.S. EPA, 2021b draft).*
>
> *EPA estimates that the concentration of selenium in fish tissue will not reach steadystate for several months in lotic systems and longer time periods (e.g., 2–3 years) in lentic systems. Achievement of steady-state in an aquatic system also depends on the hydrodynamics of the aquatic system (particularly reservoirs with multiple riverine inputs), the location of the selenium input and the particular food web. EPA expects the time needed to achieve steady-state with new or increased selenium inputs to be site specific." (U.S. EPA, 2021b draft).*

Listing Turtle Creek Reservoir as Selenium-impaired is Inappropriate

1) No selenium exceedances for nearly a decade.

   Based on IDEM's CALM Table G-15 which presents impairment decisions for various scenarios in which fish assessments consist of fish tissue and/or water column data, no muscle exceedances for nearly a decade and water concentrations ranging below to slightly above the water column criterion 1.5 µg/l for lentic aquatic systems suggest **Scenario 2 = Waterbody Not Impaired for Selenium.**

2) The most recent data shows no exceedances.

U.S. EPA lists the following to be an acceptable reason for removing impairments from a state's 303(d) list of impaired waters: **New data indicates that the impairment no longer exists.** Clearly the data presented above supports this reasoning.

3) There are no population-level adverse effects.

Samples from two sunfish species (Largemouth Bass and Bluegill) and Common Carp, collected from TCR on a single day (10/8/2014) nearly a decade ago, exceeded IDEM's adopted muscle selenium element. These data **do not suggest population-level adverse effects, nor are they reflective of current conditions in TCR**. Muscle tissue samples collected by EA biologists since 2015 show virtually no exceedance of the muscle selenium element. USEPA notes that the selenium criterion is focused on the protection of populations (2016a):

This assessment... provides a basis for a criterion that will assure protection of populations of fish, amphibians, aquatic invertebrates, and plants (p. xii).

. . . the assessment endpoint for selenium is the protection of fish populations (p.17).

In addition to the fish tissue sampling conducted bi-annually, biomonitoring surveys assessing fish populations have been conducted annually at TCR for decades. Catch data suggest no selenium impairment or reproductive failure. For example, the Bluegill electrofishing Catch-Per-unit-Effort (CPE) in 2019/January 2020 was the second highest to date. Further, Common Carp catches have been within the range of recent years.

Conclusion

Based on the information provided above, Hoosier/Hallador respectfully requests that IDEM reconsider the listing of TCR for selenium impairment at this time. On the whole, interpretations based on both IDEM and EPA guidance support this reconsideration, and such reconsideration acknowledges the current equilibrium conditions to obtain representative results. The most recent data collected (post 2014) provides a more current assessment of the presence of selenium in TCR and supports the reconsideration. Further, catch data show healthy fish populations at TCR, demonstrating no selenium impairment. At the very least, Hoosier/Hallador requests that IDEM remove TCR from the draft 303(d) list until additional samples are collected from TCR (scheduled in 2024) to either support or refute their current draft assessment.

References

USEPA (United States Environmental Protection Agency). 2016. Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater 2016. EPA-R-13-001. USEPA Office of Water, Washington, DC.

U.S. Environmental Protection Agency. 2021. Frequently Asked Questions: Implementing EPA's 2016 Selenium Criterion in Clean Water Act Sections 303(d) and 305(b) Assessment, Listing, and Total Maximum Daily Load Programs. Draft. EPA 823-D-21-004. U.S. Environmental Protection Agency, Office of Water, Washington, DC.