

**APPENDIX C:
METADATA AND DEFINITIONS**

DATABASE MANAGER

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IDEM uses U.S. EPA's Assessment and Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS) to store and manage its water quality assessment information including its Clean Water Act (CWA) Sections 305(b) assessments, 303(d) listing decisions, and 314 trend and trophic data for Indiana lakes.

This metadata document contains a list of all files included in IDEM's 2024 Integrated Report and the information necessary to understand the cause and source information in the Integrated Report tables and other information provided in the report.

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Table C-1: Files included with Indiana’s 2024 Integrated Report submittal.

File Name	Description
IN_IR2024_Narrative.pdf	Adobe Acrobat file containing the narrative portion of Indiana's 2024 Integrated Report.
IN_IR2024_Appendix A_Tables.pdf	Adobe Acrobat file containing the tables for the 2024 Integrated Report.
IN_IR2024_Appendix B_Figures.pdf	Adobe Acrobat file containing figures for the 2024 Integrated Report.
IN_IR2024_Appendix C_Metadata.pdf	Adobe Acrobat file containing filenames of all attachments and appendices and metadata needed to translate information used in ATTAINS.
IN_IR2024_Appendix D_Status of Category 4 Waters.pdf	Adobe Acrobat file containing information regarding impairment status of Category 4 waters.
IN_IR2024_Appendix E_TMDL Priorities.pdf	Adobe Acrobat file containing IDEM's TMDL 2024-2026 development priorities.
IN_IR2024_Appendix F_MARL Schedule.pdf	Adobe Acrobat file containing IDEM's CWA Sections 305(b) and 303(d) water quality monitoring, assessment, reporting, and listing (MARL) schedule
IN_IR2024_Appendix G_CALM.pdf	Adobe Acrobat file containing IDEM's Consolidated Assessment and Listing Methodology for the 2024 cycle.
IN_IR2024_Appendix H_Comprehensive ALUS & RECR.pdf	Adobe Acrobat file containing IDEM's comprehensive statewide water quality assessments based on probabilistic monitoring results.
IN_IR2024_Appendix I_Trend & Trophic Status.pdf	Adobe Acrobat file containing IDEM's Clean Water Act Section 314 assessments of lake trends and trophic state.
IN_IR2024_Appendix J_303d NOC Narrative.pdf	Adobe Acrobat file containing the narrative portion of the public notice for the draft 2024 303(d) list (the Notice of Comment (NOC)).
IN_IR2024_Appendix K1_Response to Comments.pdf	Adobe Acrobat file containing IDEM's response to U.S. EPA and public comments on the draft 2024 303(d) list and CALM.
IN_IR2024_Appendix K2_Response to Comments.xlsx	Microsoft Excel file containing tables associated with U.S. EPA comments on the draft 2024 303(d) list

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File Name	Description
IN_IR2024_Appendix L_Listing Tables.xlsx	MS Excel file containing tables to support Indiana’s finalized 303(d) listing, including the finalized 303(d) list, Category 4 waters, and all changes made for the 2024 cycle.
IN_IR2024_Appendix M_Consolidated List.xlsx	MS Excel file containing Indiana’s 2024 Consolidated List (Categories 1-5).

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Table C-2: Uses in ATTAINS that represent those designated and other uses for which IDEM makes water quality assessments.

ATTAINS Use Name	IDEM Definition
Full Body Contact	Applies to Recreational Use assessments (Human Health or Aesthetics) of all waters outside the Great Lakes Basin (327 IAC 2-1-3(a)(1)).
Warm Water Aquatic Life	Applies to Aquatic Life Use assessments of warm waters outside the Great Lakes Basin (327 IAC 2-1-3(a)(2)).
Human Health and Wildlife	Applies to Fish Consumption Use assessments of waters outside the Great Lakes Basin conducted pursuant to the water quality goals identified in 327 IAC 2-1-1.5 and 327 IAC 2-1-6(a)(2).
Public Water Supply	Applies to Public Water Supply Use assessments of surface waters outside the Great Lakes Basin used as source waters for public water supply (327 IAC 2-1-3(a)(3)) and surface waters found to have a direct influence on a public water supply well (see IDEM's Consolidated Assessment and Listing Methodology).
Limited Use	Applies to waters outside the Great Lakes Basin designated for Limited Use (the inability to fully support aquatic life) in 327 IAC 2-1-11(a) and/or designated for CSO wet weather limited use (an amended recreational use designation) in 327 IAC 2-1.1-2(a).
Great Lakes Warm Water Aquatic Life	Applies to Aquatic Life Use assessments of warm waters within the Great Lakes Basin (327 IAC 2-1.5-5(a)(2)).
Outstanding State Resource Waters	Applies to assessments of waters designated as Outstanding State Resource Waters (OSRW) in 327 IAC 2-1-11(b) (downstate), 327 IAC 2-1.5-9(b) (Great Lakes basin), and 327 IAC 2-1.3-3(d) (antidegradation standards).

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Table C-3: ATTAINS parameters IDEM may use to describe impairments to Indiana waters and the uses to which they apply (aquatic life use includes warm water aquatic life uses and salmonid waters). Not all of these parameters are currently in use in Indiana’s data set.

ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Acrolein	Concentration of Acrolein exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Acrylonitrile	Concentration of Acrylonitrile exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Aldrin	Concentration of Aldrin exceeds Indiana water quality standards for aquatic life use anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Ammonia Nitrogen	Concentration of Ammonia Nitrogen exceeds Indiana’s water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	No	No
Antimony - Total	Concentration of Total Antimony exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Arsenic, Trivalent - Dissolved (Arsenic III)	Concentration of Dissolved Trivalent Arsenic (also known as Arsenic III) exceeds Indiana’s water quality standards for aquatic life use support anywhere in the state (327 IAC 2-1-6 or 327 2-1.5-8) and/or concentration of Total Trivalent Arsenic (Arsenic III) exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Barium - Total	Concentration of Total Barium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Benzene	Concentration of Benzene exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No
Benzidine	Concentration of Benzidine exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Beryllium - Total	Concentration of Total Beryllium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-11-6(a)).	No	No	Yes	No
Biological Integrity	The benthic macroinvertebrate and/or fish communities indicate an impairment of aquatic life use based on the assessment methods provided in IDEM's Consolidated Assessment and Listing Methodology (CALM).	No	Yes	No	No
Bis (2-Chloroethyl) Ether (Dichloroethyl Ether)	Concentration of Bis (2-Chloroethyl) Ether (also known as Dichloroethyl Ether) exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Cadmium - Dissolved	Concentration of Dissolved Cadmium exceeds Indiana's water quality standards for aquatic life use support anywhere in the state (327 IAC 2-1-6 or 327 2-1.5-8) and/or concentration of Total Cadmium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-11-6(a)).	No	Yes	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Carbon Tetrachloride	Concentration of Carbon Tetrachloride exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Chlordane - Total	Concentration of Total Chlordane exceeds Indiana water quality standards for public water supply in source waters anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Chloride - Total	Concentration of Total Chloride exceeds Indiana water quality standards for aquatic life use and/or public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Chlorine, Residual (chlorine demand)	Concentration of Intermittent Total Residual Chlorine exceeds Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	No	No
Chlorobenzene (Monochlorobenzene))	Concentration of Chlorobenzene (also known as Monochlorobenzene) exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No
Chloroform	Concentration of Chloroform exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Chlorpyrifos	Concentration of Chlorpyrifos exceeds Indiana water quality standards for aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	No	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Chromium, Hexavalent - Dissolved (Chromium VI)	Concentration of Dissolved Hexavalent Chromium (Chromium VI) exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Chromium, Trivalent - Dissolved (Chromium III)	Concentration of Dissolved Trivalent Chromium (Chromium III) exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Copper - Dissolved	Concentration of Dissolved Copper exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Cyanide - Total	Concentration of Total Cyanide exceeds Indiana water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or concentration of either or both Chlorine Amenable Cyanide and Free Cyanide (also known as Weak Acid Dissociable) exceed Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
DDT (Dichlorodiphenyl-trichloroethane)	Concentration of DDT (Dichlorodiphenyltrichloroethane) exceeds Indiana water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and Indiana's water quality standards for aquatic life use support in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Dibutyl Phthalate	Concentration of Dibutyl Phthalate exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Dichlorobenzene (mixed isomers)	Concentration of Dichlorobenzenes (all isomers) exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Dieldrin	Concentration of Dieldrin exceeds Indiana’s water quality standards for aquatic life use support and/or for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Dimethyl Phthalate	Concentration of Dimethyl Phthalate exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Dioxin (including 2,3,7,8-TCDD)	Concentration of Dioxin (including 2,3,7,8-TCDD) exceeds Indiana’s water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the concentration exceeds the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for fish consumption for the Ohio River.	No	No	Yes	Yes
Dissolved Oxygen	Dissolved Oxygen concentration exceeds Indiana’s water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for aquatic life use in the Ohio River.	No	Yes	No	No
Endosulfan (Hexachlorocyclopentadiene)	Concentration of Endosulfan (also known as Hexachlorocyclopentadiene) (sum of all isomers) exceeds Indiana water quality standards for public water supply and/or aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Endrin	Concentration of Endrin exceeds Indiana water quality standards for aquatic life use anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
<i>Escherichia coli</i> (<i>E. coli</i>)	Concentration of <i>Escherichia coli</i> (<i>E. coli</i>) bacteria exceed the levels identified in IDEM's Consolidated Assessment and Listing Methodology (CALM) for recreational use assessments.	Yes	No	No	No
Ethylbenzene	Concentration of Ethylbenzene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Fluoranthene	Concentration of Fluoranthene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Fluoride	Concentration of Fluoride exceeds Indiana water quality standards for aquatic life use anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Harmful Algal Blooms	Concentration of Cylindrospermopsis and/or Microcystin-LR in source waters exceed the benchmarks provided in Indiana's Consolidated Assessment and Listing Methodology (CALM) for water quality assessments of public water supply.	No	No	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Heptachlor	Concentration of Heptachlor exceeds Indiana water quality standards for aquatic life use and/or for public water supply in waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Hexachlorobenzene	Concentration of Hexachlorobenzene exceeds Indiana’s water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No
Hexachlorobutadiene	Concentration of Hexachlorobutadiene exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Hexachloroethane	Concentration of Hexachloroethane exceeds Indiana’s water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No
Isophorone	Concentration of Isophorone exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Lead - Dissolved	Concentration of Dissolved Lead exceeds Indiana’s water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Mercury in Fish Tissue	The trophic level-weighted geometric mean concentration of total and/or methylmercury exceeds the benchmark criterion specified in IDEM’s Consolidated Assessment and Listing Methodology (CALM) for fish consumption assessments.	No	No	No	Yes

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Mercury - Dissolved	The concentration of Dissolved Mercury exceeds Indiana's water quality standards for aquatic life use in waters within the Great Lakes Basin (327 IAC 2-1.5-8). Does not apply to waters outside the Great Lakes Basin.	No	Yes	No	No
Mercury - Total	The concentration of Total Mercury exceeds Indiana's water quality standards for aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6) and/or the concentration of Total Mercury exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Methylene Chloride (Dichloromethane)	Concentration of Methylene Chloride (also known as Dichloromethane) exceeds Indiana's water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8).	No	No	Yes	No
Methylmercury - Total	Total Methylmercury exceeds Indiana water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8(b))	No	No	Yes	No
Nickel - Dissolved	Concentration of Dissolved Nickel exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or concentration of Total Nickel exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Nitrate/Nitrite (Nitrite + Nitrate as N)	Concentration of Nitrogen (Nitrate + Nitrite) exceeds Indiana water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Nitrobenzene	Concentration of Nitrobenzene exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Nitrogen (Nitrite)	Concentration of Nitrogen (Nitrite) exceeds Indiana water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No
Nutrients	Two or more of the nutrient benchmarks identified in IDEM’s Consolidated Assessment and Listing Methodology (CALM) for aquatic life use are exceeded on the same day.	No	Yes	No	No
Parathion	Concentration of Parathion exceeds Indiana water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	No	No
PCBs in Fish Tissue	Concentration of PCBs in Fish Tissue exceeds the benchmark criterion specified in IDEM’s Consolidated Assessment and Listing Methodology (CALM) for fish consumption assessments.	No	No	No	Yes
Pentachlorobenzene	Concentration of Pentachlorobenzene exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Pentachlorophenol (PCP)	Concentration of Pentachlorophenol (PCP) exceeds Indiana water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Ph	pH value exceeds Indiana water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	No	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Phenol	Concentration of Phenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Phosphorus - Total	Total Phosphorus concentration combined with Chlorophyll a results exceed the benchmarks for recreational use support (aesthetics) provided in IDEM's Consolidated Assessment and Listing Methodology.	Yes	No	No	No
Polychlorinated Biphenyls - Total (PCBs)	Concentration of Total Polychlorinated Biphenyls (PCB) (sum of all congeners) exceed Indiana water quality standards for public water supply in source waters anywhere in the state (327 IAC 2-11-6(a) or 327 IAC 2-1.5-8) and/or for aquatic life use in waters outside of the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Polycyclic Aromatic Hydrocarbons (PAHs)	Concentration of Polycyclic Aromatic Hydrocarbons (PAHs) exceed Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6); includes Benzo(a)pyrene.	No	No	Yes	No
Selenium - Dissolved	Concentration of Dissolved Selenium exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	No	No
Selenium - Total	Concentration of Total Selenium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Silver - Dissolved	Concentration of Dissolved Silver exceeds Indiana’s water quality standards for aquatic life use support and/or concentration of Total Silver exceeds Indiana water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6); Not applicable to waters within the Great Lakes Basin.	No	Yes	Yes	No
Sulfate	Sulfate concentration exceeds Indiana’s water quality standards for aquatic life use and/or for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
Temperature	Temperature exceeds Indiana’s water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for aquatic life use in the Ohio River.	No	Yes	No	No
Tetrachloroethylene	Concentration of Tetrachloroethylene exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Thallium - Total	Concentration of Total Thallium exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6(a)).	No	No	Yes	No
Toluene	Concentration of Toluene exceeds Indiana’s water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No
Total Dissolved Solids (TDS)	Concentration of Total Dissolved Solids (TDS) exceeds Indiana’s water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
Toxaphene	Concentration of Toxaphene exceeds Indiana water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	Yes	Yes	No
Trichloroethylene (Trichloroethene, TCE)	Concentration of Tetrachloroethylene (also known as Trichloroethene or TCE) exceeds Indiana’s water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	No	Yes	No
Vinyl Chloride	Concentration of Vinyl Chloride exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
Zinc - Dissolved	Concentration of Dissolved Zinc exceeds Indiana’s water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).	No	Yes	Yes	No
1,1,1-Trichloroethane	Concentration of 1,1,1-Trichloroethane exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
1,1,2,2-Tetrachloroethane	Concentration of 1,1,2,2-Tetrachloroethane exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1- 6).	No	No	Yes	No
1,1,2-Trichloroethane	Concentration of 1,2-Trichloroethane exceeds Indiana’s water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
1,1-Dichloroethylene	Concentration of 1,1-Dichloroethylene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
1,2,4,5-Tetrachlorobenzene	Concentration of 1,2,4,5-Tetrachlorobenzene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
1,2-Dichloroethane	Concentration of 1,2-Dichloroethane exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
2,4,5-Trichlorophenol	Concentration of 2,4,5-Trichlorophenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
2,4,6-Trichlorophenol	Concentration of 2,4,6-Trichlorophenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
2,4-Dichlorophenol	Concentration of 2,4-Dichlorophenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No
2,4-Dimethylphenol	Concentration of 2,4-Dimethylphenol exceeds Indiana's water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8).	No	No	Yes	No
2,4-Dinitrophenol	Concentration of 2,4-Dinitrophenol exceeds Indiana's water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8).	No	No	Yes	No

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ATTAINS Parameter Name	IDEM Definition	Full Body Contact	Aquatic Life Use	Public Water Supply	Human Health & Wildlife
2,4-Dinitrotoluene	Concentration of 2,4-Dinitrotoluene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).	No	No	Yes	No

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Table C-4: ATTAINS sources that IDEM may use to describe the sources and/or activities suspected of driving water quality impairments. Not all of these sources are currently in use in Indiana’s data set. Rather, this list represents the subset of all potential sources available in ATTAINS that Indiana might use.

ATTAINS Source Name	IDEM Definition
Agriculture	
Agriculture	Agriculture can represent a wide array of potential agriculture-related sources. Agriculture is used when either land-use analysis or impairment point to some type of agriculture being the source, but a specific type of agriculture could not be identified.
Crop Production with Subsurface Drainage	Impacts from pollutants such as nutrients and agrichemicals entering surface waters through agricultural tiles draining cropland.
Confined Animal Feeding Operations – CAFOS (Point Source)	Runoff or direct discharge from a permitted feeding operation in violation of the permit.
Confined Animal Feeding Operations (NPS)	Pollution resulting from inappropriate land application of manure from permitted confined feeding operations.
Livestock (Grazing or Feeding Operations)	Insufficient information exists to specifically identify a particular type of animal feeding operation. Includes grazing and unpermitted animal feeding operations. May also include confined feeding operations (CFOs) unless a permitted facility is identified. If the suspected source is land application of wastes from a permitted CFO, <i>Confined Animal Feeding Operations (NPS)</i> applies. In Indiana, CFOs are zero-discharge permits. If suspected source is a runoff or a direct discharge from a permitted feeding operation, <i>Confined Animal Feeding Operations – CAFOS (Point Source)</i> applies.
Unrestricted Cattle Access	Impacts resulting from unrestricted cattle access; includes pathogen-related impairments and impacts to aquatic communities such as destruction of aquatic habitat, streambank instability and erosion.
Construction	
Highways, Roads, Bridges, Infrastructure (New Construction)	New construction involving infrastructure (roads, bridges, pipelines, etc.); does not include construction of residential development or construction of other types of buildings (see <i>Site Clearance (Land Development or Redevelopment)</i>).

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ATTAINS Source Name	IDEM Definition
Site Clearance (Land Development or Redevelopment)	Impacts from residential and/or industrial construction activities within or outside municipal boundaries; includes new construction or redevelopment in existing urbanized areas; does not include construction of highways, roads, bridges, or other infrastructure (see <i>Highways, Roads, Bridges, Infrastructure (New Construction)</i>).
Ground Water Loadings	
Contaminated Groundwater	Impacts from contaminants leaching into surface waters from the underlying groundwater.
Habitat alterations (not directly related to hydromodification)	
Habitat Modification – other than Hydromodification	Habitat modification has taken place, but a more specific type of habitat modification could not be identified. This code should not be used in combination with <i>Loss of Riparian Habitat</i> , which identifies more specifically the type of habitat modifications driving impairment.
Loss of Riparian Habitat	Impacts resulting from removal of the riparian habitat including vegetation, snags, undercut banks, etc.; May include legal drain maintenance when such maintenance results in the removal of riparian habitat.
Hydrologic Alteration	
Channelization	Indicates impacts from modifications to the channel width, depth, or shape, including straightening of the channel; may include legal drain maintenance where maintenance activities alter the stream channel width, depth or shape.
Dam or Impoundment	An existing structure either upstream or downstream of the impairment that creates an impoundment resulting in impacts to dissolved oxygen and/or biological communities. Includes fish community impacts related to structures such as culverts or beaver dams that limit fish passage.
Industrial	
Industrial Point Source Discharge	Impacts resulting from end-of-pipe discharges from National Pollutant Discharge Elimination System (NPDES) PDES-permitted industrial facilities; does not apply to thermal impacts from NPDES facilities (see <i>Industrial Thermal Discharges</i>).
Industrial Thermal Discharges	Thermal Impacts resulting from end-of-pipe discharges from NPDES-permitted industrial facilities; does not apply to other types of impacts from industrial NPDES-permitted discharge (see <i>Industrial Point Source Discharge</i>).

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ATTAINS Source Name	IDEM Definition
Land application/waste sites/tanks	
Discharges from Biosolids (Sludge) Storage, Application or Disposal	Impacts from inadequate handling or land application of biosolids (sludge) derived from publicly owned treatment works (POTW) wastewater treatment systems.
Salt Storage Sites	Impacts resulting from runoff from stockpiles and/or use of sand/salt mixtures in urban areas used for winter ice removal on roads and bridges.
Legacy/Historical Pollutants	
CERCLA NPL (Superfund) Sites	Pollution related to releases or discharges from waste sites on the federal National Priority List (NPL) developed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (commonly known as Superfund).
Contaminated Sediments	Impacts related to elevated levels of pollutants in sediments.
Municipal Discharges/Sewage	
Combined Sewer Overflows	Impacts from combined sewer overflows (CSOs); applies only to recreational use or aquatic life use impairments downstream of CSOs.
Illicit Connections/Hook-ups to Storm Sewers	Illicit connections to storm sewers in urban or semi-urban areas served by sanitary sewers; source generally applied to impairments in urban areas; does not include straight pipes or tie-ins to agricultural drainage tiles (see <i>Sewage Discharges in Unsewered Areas</i>).
Municipal Point Source Discharges	Impacts resulting from end-of-pipe discharges from publicly owned treatment works (POTWs).
Municipal Point Source Impacts from Inadequate Industrial/Commercial Pretreatment	Impacts resulting from inadequate pretreatment of industrial/commercial wastes before they are introduced into sanitary sewer systems connected to POTWs. Impacts can include wastewater treatment plant upsets, line blockages and other symptoms associated with sanitary sewer overflows (SSOs).

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ATTAINS Source Name	IDEM Definition
Package Plant or Other Permitted Small Flows Discharges	Impacts from NPDES-permitted semi-public facilities including treatment systems for small communities or rural schools that often operate only intermittently.
Sanitary Sewer Overflows (Collection System Failures)	Impacts resulting from a pump station or lift station overflow or a sewer line break.
Septage Disposal	Pollution from spills or other inappropriate handling of septage hauled from domestic or other onsite treatment systems.
Sewage Discharges in Unsewered Areas	Impacts from failing septic systems, straight pipes and domestic wastewater system tie-ins to agricultural tiles.
Natural/Wildlife	
Drought-Related Impacts	Drought episodes, which in some cases can last several years, can deplete water supplies, and accentuate pollution problems affecting human and ecological health.
Natural Sources	Natural Sources can represent one or a combination of factors that are natural occurring, and no other potential sources can be identified; applies to impairments suspected to be driven entirely by factors natural occurring; does not apply in combination with other source codes.
Other	
Sources Outside State Jurisdiction or Borders	Sources Outside State Jurisdiction or Borders. The source of the impairment is beyond the borders of the State. Therefore, the state has no jurisdiction over the management of that source.
Upstream Source	Applies to impairments where the source is attributable in part or whole to sources upstream of the boundaries of the assessment unit.
Recreation and tourism (non-boating)	
Golf Courses	Pollution effects (usually nutrient-related) from operation of golf course facilities.
Resource Extraction	

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ATTAINS Source Name	IDEM Definition
Coal Mining Discharges (Permitted)	Impacts from coal mining activities subject to NPDES industrial permitting (usually general permits); applies only to active mining operations in new or previously mined areas, not from inactive and/or abandoned mines.
Impacts from Abandoned Mine Lands (Inactive)	Legacy impacts from inadequately reclaimed surface or underground mines (including strip mines); may be applied to historic coal or other mineral mining operations resulting in releases of cyanide, heavy metals, and acid generated from mine waste (also known as acid mine drainage).
Silviculture (Forestry)	
Silviculture Activities	Pollution from aspects of forest harvesting including both registered and non-registered operations.
Spills/Dumping	
Illegal Dumps or Other Inappropriate Waste Disposal	Impacts from illegal dumping and other inappropriate disposal of solid wastes or other wastes that may contain conventional or hazardous pollutants that can degrade aquatic habitats or otherwise impair aesthetic amenities.
Unknown	
Source Unknown	Applied when insufficient data exists at the time of assessment to identify a source; associated primarily with fish tissue impairments, biological community impairments, and chemistry impairments not typically associated with non-point sources.
Unspecified Nonpoint Source	
Non-Point Source	Source is unknown, but there are no permitted point sources upstream.
Urban-Related Runoff/Stormwater	
Unspecified Urban Stormwater	Generalized Impacts from stormwater in urban areas. IDEM applies this code only to aquatic life use impairments. Recreational use impairments driven by stormwater in urban areas with no CSOs upstream are keyed to <i>Urban-Related Runoff/Stormwater</i> . Recreational use impairments in which CSOs are located upstream are keyed to <i>Combined Sewer Overflows</i> .
Wastes from Pets	Pathogen-related pollution impacts from pet wastes in urbanized areas where contaminants can enter storm sewers or otherwise introduce pollutants into receiving waters.

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ATTAINS Source Name	IDEM Definition
Wet Weather Discharges (Non-point Source)	Applied only to recreational use impairments in urban areas during or after wet weather events where a specific point source could not be identified. Does not apply to recreational use impairments downstream of CSOs (see <i>Combined Sewer Overflows</i>) or aquatic life use impairments (see <i>Unspecified Urban Stormwater</i>).
Yard Maintenance	Pollution from lawns, gardens, and other plantings on private residences or other areas around dwellings and buildings with areas in horticultural plantings.

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Table C-5: ATTAINS method codes that IDEM may use to describe the nature of the data used in assessments.

ATTAINS Method Code	ATTAINS Method Name	IDEM Definition
150	Monitoring Data More Than 5 Years Old	Applies to fish tissue assessments, which are based on data spanning an index period of 12 years.
210	Fixed Station Physical/Chemical Monitoring (Conventional Pollutants Only)	Used for aquatic life use assessments based on physical/chemistry data that does not include results for toxicants (e.g. dissolved metals, free cyanide, and ammonia) collected by IDEM at its fixed station monitoring sites. If the data set includes toxicants, Code 230 applies.
220	Non-Fixed Station Physical/Chemical Monitoring (Conventional Pollutant Only)	Used for aquatic life use assessments based on physical/chemistry data that does not include results for toxicants (e.g. dissolved metals, free cyanide, ammonia) collected by IDEM at its probabilistic or targeted monitoring sites. If the data set includes toxicants, Code 240 applies.
230	Fixed Station Physical/Chemical (Conventional plus Toxic Pollutants)	Used for aquatic life use assessments based on physical/chemistry data that includes results for toxicants (e.g. dissolved metals, free cyanide, and ammonia) collected by IDEM at its fixed station sites. If the data set does not include toxicants, Code 210 applies.
240	Non-Fixed Station Physical/Chemical (Conventional + Toxicants)	Used for aquatic life use assessments based on physical/chemistry data that includes results for toxicants (e.g. dissolved metals, free cyanide, ammonia) collected by IDEM at its probabilistic or targeted monitoring sites. If the data set does not include toxicants, Code 220 applies.
260	Fish Tissue Analysis	Used for fish consumption assessments based on fish tissue data collected by IDEM.
270	PWS Chemical Monitoring (Ambient Water)	Used for assessments of public water supply (PWS) based on chemistry results from ambient water sample(s) collected at a facility's intake and/or from the raw water tap within the facility. Code applies to such data collected by IDEM and/or data provided to IDEM by the facility and quality assured by IDEM through its External Data Framework (EDF).
320	Benthic Macroinvertebrate Surveys	Used for aquatic life use assessments based on the results of benthic macroinvertebrate community surveys conducted by IDEM with or without corresponding fish community and/or primary producer survey results.

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ATTAINS Method Code	ATTAINS Method Name	IDEM Definition
330	Fish Surveys	Used for aquatic life use assessments based on the results of fish community surveys conducted by IDEM with or without corresponding macroinvertebrate community and/or primary producer survey results.
340	Primary Producer Surveys (Phytoplankton/Periphyton/Macro Phyton)	Used for aquatic life use assessments based on the results of primary producer surveys conducted by IDEM with or without corresponding fish and/or macroinvertebrate community survey results.
360	Habitat Assessment	Used for aquatic life use assessments in which habitat surveys were used to augment assessments. All biological monitoring conducted by IDEM includes habitat assessments. However, assessments are never based solely on habitat results.
420	Water column surveys (e.g., Fecal coliform)	Used for assessments of recreational use (human health) based on <i>E. coli</i> data collected by IDEM at its probabilistic or targeted monitoring sites. For assessments based on external data submitted through the External Data Framework (EDF), use Code 830 if those data were provided by volunteers and Code 860 if provided by an external agency/organization (e.g. a municipality).
450	PWS Pathogen Monitoring (Finished Water)	Used for assessment of public water supply (PWS) based on the results of a facility's Level 1 and/or Level 2 assessments performed in accordance with the Revised Total Coliform Rule (RTCR), which are triggered based on results from finished water samples.
720	Biosurveys of Multiple Taxonomic Groups (e.g., fish/ invertebrates/algae)	Used in addition to codes 320, 330 and 340 to indicate that two or more taxonomic groups were collected on a single visit to a site.
830	Bacteriological water column sampling by quality-assured volunteers	Used for stream assessments based on <i>E. coli</i> bacteriological data provided by individuals/organizations and quality assured through IDEM's External Data Framework (EDF). Includes data provided by Hoosier Riverwatch Program volunteers.
850	(Ambt.) Discharger self-monitoring data	Used for assessments based on ambient monitoring data provided by permittees and quality-assured through IDEM's External Data Framework (EDF).

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ATTAINS Method Code	ATTAINS Method Name	IDEM Definition
860	Other Agencies/Organizations Provided Monitoring Data	Used for all Ohio River mainstem assessments based on data and information collected by ORSANCO but not submitted through the External Data Framework (EDF). Assessments made with ORSANCO data are conducted in collaboration with Compact member states.
910	Physical/Chemical ALUS (Discrepancy Among Different Data Types)	Used for aquatic life use assessments in which the physical/chemical data indicates impairment but biological data for one/more assemblages indicates full support.
915	Biological Community ALUS (Discrepancy Among Different Assemblages)	Used for aquatic life use assessments in which the biological data for one assemblage indicates impairment but results for another indicate full support.
920	Biological ALUS (Discrepancy Among Different Data Types)	Used for aquatic life use assessments in which the biological data for one/more assemblages indicates impairment but chemistry data indicates full support.
925	Habitat ALUS (Discrepancy Among Different Data Types)	Used for aquatic life use assessments in which the biological data for one/more assemblages indicates impairment but their corresponding Qualitative Habitat Evaluation Index (QHEI) scores are greater than or equal to 51 indicating good habitat conditions.

Table C-6: User-defined fields in ATTAINS.

Flag	Description
IIFA – PCB	Used to indicate where data are available but insufficient for assessment; applied only to fish tissue data.
IIFA – HG	Used to indicate where data are available but insufficient for assessment; applied only to fish tissue data.
AESTHETICS	Used to distinguish recreational use for aesthetics (chlorophyll a, phosphorus, etc.) versus recreational use for human health (E. coli).
NOT ATTAINABLE	Applies to aquatic life use assessments on limited use waters.
PARTIAL	A relict impairment transferred from the ADBv1; flag will be eliminated when questionable assessment is resolved through database QAQC.
QAQC-RI	Need to map verify that this reach exists. May have been reindexed and not properly retired.
QAQC	QAQC needed for one/more assessments related to this AUID

Table C-7: Common abbreviations used in comment fields in ATTAINS.

Abbreviation	Definition
ALUS	Aquatic Life Use
BM	Benchmarks
BMP	Best Management Practice
BPJ	Best Professional Judgment
CAFO	Confined Animal Feeding Operation
CFO	Confined Feeding Operation
CFU	Colony Forming Units
CSO	Combined Sewer Overflow
DO	Dissolved Oxygen
D/S	Downstream
DW	Drinking Water or Dry Weight
EPA or U.S. EPA	U.S. Environmental Protection Agency
FCA	Fish Consumption Advisory
FISH	Fish consumption
FS	Fully Supporting
FWS or USFWS	U.S. Fish and Wildlife Service
GM	Geometric Mean
HD	Hester-Dendy sampling method (macroinvertebrates)
HG	Mercury
HW	Headwater
IBI	Fish community Index of Biotic Integrity
IDEM	Indiana Department of Environmental Management
KICK	Kick sampling method (macroinvertebrates)
mHAB	Multi-habitat sampling method (macroinvertebrates)
mIBI	Macroinvertebrate Index of Biotic Integrity
MS	Mainstem

Abbreviation	Definition
N or N+N	Nitrogen or Nitrogen as N+N
NA	Not Assessed or Not Applicable
NH ₃	Ammonia
NPS	Nonpoint Source
NS	Not Supporting (impaired)
PCBs	Polychlorinated Biphenyls
POTW	Publicly Owned Treatment Works
PWS	Public Water Supply
QHEI	Qualitative Habitat Evaluation Index
RECR	Recreational use
RSD	Regional Sewer District
SSO	Sanitary Sewer Overflow
TP	Total Phosphorus
U/S	Upstream
USGS	U.S. Geological Survey
WAA	Weighted Arithmetic Average
WS	Watershed
WTP or WWTP	Wastewater Treatment Plant
WW	Wet Weight