UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

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WATER PROTECTION PROGRAM

Mr. John Hoke
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, Missouri 65102-0176

Dear Mr. Hoke:

This letter transmits the comments of the U.S. Environmental Protection Agency, Region 7, on Missouri's proposed rulemaking to the state's water quality standards (10 CSR 20-7.031) published on December 1, 2011, in the Missouri Register. On August 12, 2011, the EPA provided comments on the draft rulemaking that served as the basis for the Missouri Department of Natural Resources' Regulatory Impact Report. We understand that the public comment period on the current rulemaking closes on January 18, 2012. The EPA appreciates this opportunity to provide additional feedback on proposed changes in the WQS.

General Comments

(1) Some of the proposed changes are intended to provide for the extension of beneficial use designations to hundreds of additional water bodies in Missouri. Others establish a large number of new numeric WQ criteria, nearly all of which are consistent with guidance published by the EPA under Section 304(a) of the Clean Water Act. These proposed changes are noteworthy in their overall scope, and their adoption should help to ensure further improvements in water quality throughout Missouri. This rulemaking will move the state closer to the Clean Water Act's requirement to assign default uses and corresponding criteria to all waters of the United States in Missouri. We look forward to working with the Missouri Department of Natural Resources, the state's Clean Water Commission, and stakeholders to collaboratively address any waters of the U.S. that are not covered under this rule.

(2) To provide for the fullest possible use of the tabular information included in the WQS (particularly Tables G and H), we would encourage the MDNR to consider delineating water body segments on the basis of latitude and longitude and arranging water body entries by Hydrologic Unit Code and segment number. The development of an official set of maps, illustrating the location of water body segments listed in Tables G and H, likewise would make water body delineations and beneficial use designations more transparent to the public. We note that a new geospatial database is being developed by the MDNR with respect to beneficial use designations (10 CSR 20-7.031(2)(D); see comments below). We hope this effort will lead to the refinement of Tables G and H and to the publication of maps depicting the location of individual water body segments in Missouri.

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Specific Comments

(3) 10 CSR 20-7.031(1)(E)7 – This provision introduces a new stream classification, Class E (ephemeral). Previous references to "classified" and "unclassified" waters have been removed from the WQS. In paragraph 10 CSR 20-7.031(4)(I), deletion of the word "unclassified" could be interpreted as increasing the number of water bodies in Missouri exempted from the application of chronic criteria. The revised provision reads "Waters in mixing zones and waters which support aquatic life on an intermittent basis shall be subject to [a prohibition on acute toxicity]." However, Table H lists a number of intermittent (Class C) streams subject to both acute and chronic criteria. We would suggest that 10 CSR 20-7.031(1)(E)7 be amended to read "Waters in mixing zones and in Class E streams shall be subject to [a prohibition on acute toxicity]."

(4) 10 CSR 20-7.031(1)(F) – The phrase "recreationally important fish species" is used repeatedly in this regulation and represents a major consideration in the allocation of waters among the following aquatic life uses: general warm-water, cool-water, cold-water, and limited warm-water fisheries. Given the importance of this phrase to the implementation of the WQS, we believe it should be defined in 10 CSR 20-7.031(1).

(5) 10 CSR 20-7.031(1)(F)1.A – This provision applies the general warm-water fishery definition to "all Ozark Class C and P streams, all streams with 7Q10 flows of more than 0.1 cfs, all P1 streams, and all lakes so designated by this rule." However, some streams listed in Table H are designated for the cold water fishery use (e.g., Center Creek) or cool water fishery use (e.g., Pomme de Terre River) even though they are Ozark Class C or P systems or are characterized by 7Q10 flows greater than 0.1 cubic feet per second. Please explain this apparent discrepancy.

(6) 10 CSR 20-7.031(1)(V) – The definition for "variance" given in this provision should be revised in a manner that acknowledges (a) variances are time-limited, (b) they do not forgo the currently designated use and (c) they must be reviewed and approved by the EPA, consistent with CWA § 303(c). Variances must also be justified in accordance with 40 CFR 131.10(g).

(7) 10 CSR 20-7.031(2) – This new section addresses the designation of beneficial uses in some detail. However, it should explicitly acknowledge the need to protect downstream waters, pursuant to 40 CFR 131.10(b). We would recommend the inclusion of an additional paragraph in this section, containing the following language or similar language: "In designating the uses of a water body, and in establishing the appropriate criteria for those uses, the commission shall take into consideration the water quality goals of downstream waters and shall ensure that its water quality standards provide for attainment of the water quality standards of downstream waters."

(8) 10 CSR 20-7.031(2)(G) – This provision adopts a specific set of recreational Use Attainability Analysis protocols by reference, thus establishing with some certainty how recreational UAAs are performed in Missouri. In contrast, 10 CSR 20-7.031(2)(H) reads "UAA intended for aquatic life protection shall be performed in accordance with methods and procedures approved by the commission." We would recommend incorporating a reference to a specific set of aquatic life UAA protocols. It is our understanding that Missouri has made some progress in developing UAA procedures applicable to the aquatic life use. Please confirm whether or not this is the case and

provide an indication as to when the MDNR expects to adopt a specific set of aquatic life UAA protocols. As protocols of this kind are developed by the MDNR, please bear in mind that any procedure or revision constituting a change in (or affecting the implementation of) the Missouri WQS must be submitted to the EPA for review and approval.

(9) 10 CSR 20-7.031(2)(I) – This provision reads, in part, "any new effluent limitations for discharges affected by subsection (2)(A) of this rule shall be implemented within a reasonable time schedule for achieving full compliance, as described in a permit or other legally enforceable mechanism." However, any time allowed for compliance schedules must be consistent with the CWA and its implementing regulations. We would direct the MDNR's attention to 40 CFR 122.47, particularly the "when appropriate," "as soon as possible," and "interim dates" language found at 40 CFR 122.47(a), 122.47(a)(1), and 122.47(a)(3). In addition, the MDNR should consult the May 10, 2007, memorandum from James Hanlon, EPA, addressing compliance schedules for water quality-based effluent limitations in National Pollutant Discharge and Elimination System permits. This memorandum is available online at http://water.epa.gov/lawsregs/guidance/wetlands/upload/signed-hanlon-memo.pdf.

(10) 10 CSR 20-7.031(5) – This provision reads, in part, "The specific criteria shall apply to waters contained in the use designation dataset and Tables G and H of this rule." We would caution that the use designation dataset will carry regulatory weight only if (a) a specific version is clearly defined and adopted by reference in the WQS, (b) it is included with other WQS elements during the public review process, and (c) it receives the approval of the EPA. It is our understanding that the dataset will be used to track UAA-supported changes in beneficial use designations, thereby serving as an important tool during the triennial WQS review and revision process. Also, it is our understanding that the MDNR intends to clearly define the dataset to include all waters receiving the use designations set forth in 10 CSR 20-7.031(2)(A). Please clarify whether this is the MDNR's intention.

(11) 10 CSR 20-7.031(5)(A) – This provision reads, in part, "The maximum chronic toxicity criteria in Tables A1, A2, B2, and B3 shall apply to waters designated for the indicated uses given in the use designation dataset and Tables G and H." The significance of the word "maximum" in this sentence is unclear. Literally interpreted, it could signify the largest criteria represented in the referenced tables. We would suggest that "maximum" be deleted from the sentence. Also, the use designation dataset should be clearly defined, as articulated in the preceding paragraph.

(12) 10 CSR 20-7.031(5)(B)1 – This provision pertains to toxic substances and reads, in part, "Water contaminants shall not cause the criteria in Tables A1, A2, A3, B1, B2, and B3 to be exceeded." However, Table A3 refers to dissolved oxygen (not a "toxic substance") and also to minimum rather than maximum allowable concentrations. We note that Table A3 is addressed as a stand-alone paragraph in 10 CSR 20-7.031(5)(J). Therefore, we question the need to refer to this table in 10 CSR 20-7.031(5)(B)1.

(13) 10 CSR 20-7.031(5)(B)2.A.II – This provision indicates that acute and chronic criteria for metals (other than mercury) are expressed in the WQS as dissolved concentrations. However, the chronic criterion for selenium presented in Table A1 is expressed as a total metal concentration. To maintain consistency between this table and the textual portion of the WQS, we would recommend that the total (actually, the total recoverable) criterion for selenium (5 micrograms per liter) be converted to an equivalent dissolved concentration (4.6 µg/L) using the formula $CMC_{diss.} = 0.922(CMC_{tot.\ rec.})$. Such an action would be consistent with CWA § 304(a) guidance.

(14) 10 CSR 20-7.031(5)(B)6 – This provision reads "Metals criteria for which toxicity is hardness dependent are in equation format in Table A2." We would point out that the referenced table also contains (a) hardness- and sulfate-dependent criteria for chloride, (b) hardness- and chloride-dependent criteria for sulfate and (c) pH-dependent criteria for pentachlorophenol.

(15) 10 CSR 20-7.031(5)(I) – This provision reads, in part, "All streams and lakes shall conform to state and federal limits for radionuclides established for drinking water supply." We interpret this to mean that published maximum contaminant levels for radionuclides apply to all surface waters in Missouri other than wetlands. We note that published Maximum Contaminant Levels for non-radionuclide parameters have been included as Drinking Water Standards criteria in Table A1. To facilitate the application of 10 CSR 20-7.031(5)(I), and to enhance public transparency, a separate table presenting the MCLs for radionuclide parameters should be included in the WQS and referenced in this provision.

(16) 10 CSR 20-7.031(5)(M) – This provision deals with the development and application of WQ criteria for carcinogenic substances. It reads, in part, "Assumptions are two (2) liters of water and six and one-half (6.5) grams of fish consumed [per person] per day." Although this language has not changed appreciably from previous WQS, we would note that a value of 17.5 grams per person per day represents the 90th percentile (freshwater) fish consumption rate for adults in the United States (see Section 5.1.1.1, Table 4, in: U.S. EPA. March 2000. *Estimated Per Capita Fish Consumption in the United States*, Office of Water, Office of Science and Technology, Washington, DC). This consumption rate has been applied by the EPA as a national default value in the development of human health criteria for carcinogenic substances and non-carcinogenic substances alike (U.S. EPA. October 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000)*. Office of Water, Office of Science and Technology, Washington, DC). The EPA recommends applying this default consumption rate when developing criteria protective of sport anglers. A higher default consumption rate, 142.4 grams per day, should be applied when developing criteria protective of subsistence fishers. The EPA's methodology provides additional recommendations for other sensitive subpopulations, such as women of childbearing age and children younger than 14 years. Based on this information, the freshwater fish consumption rate given in the draft revised WQS (6.5 grams per person per day) should be increased to <u>at least</u> 17.5 grams per person per day.

(17) 10 CSR 20-7.031(11) – This provision reads, in part, "Compliance with new or revised [NPDES] or Missouri operating permit limitations based on criteria in this rule shall be achieved with all deliberate speed and in accordance with federal regulation…." It is unclear whether the phrase "criteria in this rule" is limited in its application to new or revised WQS established after 1977. While appropriate to restrict the application of compliance schedules to new permit limitations, application also must be restricted to new or revised WQS established after 1977. See *In the Matter of Star-Kist Caribe, Inc.*, 3 E.A.D. 172, 175, 177 (1990). Additionally, the EPA interprets the incorporation by reference of 40 CFR 122.47 to mean that all compliance schedules will be issued only "when appropriate" and "as soon as possible." Please confirm whether this is MDNR's intended interpretation.

(18) 10 CSR 20-7.031(12)(A) – This provision addresses the subject of variances and should be modified to acknowledge that (a) variances are time-limited and (b) their application does not forgo the applicable designated use or uses. We would recommend inserting the word "temporary" in front of the word "variance" so that the provision reads "The department may grant, to an applicant for an NPDES or Missouri operating permit, a temporary variance to a water quality-based effluent limitation or water quality standard found in the operating permit [emphasis added]." Also, we would suggest amending the second sentence in 10 CSR 20-7.031(12)(A)1 to read "A temporary variance does not affect, nor does it require the department to modify, any previously established standard, criterion, or designated use." Lastly, the word "must" rather than "shall" must be used in the second sentence of 10 CSR 20-7.031(12)(D).

(19) Table A1 – This table contains a rather large number of numeric criteria and would be more readily understandable if it included a descriptive title and, perhaps, footnotes. To maintain consistency between the table and the narrative information provided in 10 CSR 20-7.031(5)(B)2.A, the table should denote which criteria are expressed as dissolved concentrations and which are expressed as total recoverable concentrations. Additional comments concerning this table are provided below:

- Criteria for *E. coli* are referenced under the headings "other inorganic substances" and "chronic [criteria]." A separate table (or sub-table) should be provided for all bacteriological parameters and associated recreational criteria.

- "Nitrate-nitrogen" or "nitrate-N" should be substituted for the word "nitrates" in the first column of the table.

- The drinking water supply criterion given for meta-dichlorobenzene apparently does not correspond to any published MCL or health advisory level. Please identify any informational sources describing the scientific rationale for this criterion, and provide an explanation as to why the criterion is considered protective of the DWS use.

- The reference to "total trihaloacetic acids" should read "total haloacetic acids" (HAA5). The HAA5 category includes monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid.

- Nonylphenol is not listed in Table A1, even though the EPA has published acute and chronic criteria for this parameter. Please explain why nonylphenol has been omitted from this table.

- Table A1 presents acute and chronic criteria for phenol; however, aquatic life criteria have not been published for this parameter under § 304(a) of the CWA. Please identify any informational sources describing the scientific rationale for these criteria, and provide an explanation as to why the criteria are considered protective of the aquatic life use.

- A chronic criterion is presented in the table for aldrin, but this criterion applies to saltwater systems rather than inland waters.

- The DWS criterion given for carbaryl apparently does not correspond to any published MCL or health advisory value. Please identify any informational sources describing the scientific rationale for this criterion, and provide an explanation as to why the criterion is considered protective of the DWS use.

- The table does not contain DWS criteria for ammonia, boron, bromate, chloramine, chlorine, chlorine dioxide, chlorite, chloroform, endothall, endrin, ethylbenzene, manganese, methoxychlor, molybdenum, monochlorobenzene, nickel, perchlorate, pentachlorophenol, silver, strontium, styrene, tetrachloroethylene, trichloroethane (1,1,1,2-), 2,4,5-TP (Silvex), trichlorobenzene (1,2,4-), white phosphorus or zinc. However, MCLs, lifetime health advisory values, or both have been published by the EPA for each of these parameters. Please explain why these parameters have been omitted from the table.

(20) Table A2 – This table presents (a) hardness-dependent equations for the calculation of acute and/or chronic criteria for seven metals, (b) hardness- and chloride-dependent equations for the calculation of acute and chronic criteria for sulfate, (c) hardness- and sulfate-dependent equations for the calculation of acute and chronic criteria for chloride, and (d) pH-dependent equations for the calculation of acute and chronic criteria for pentachlorophenol. The table is rather complex and would be more readily understandable if it contained a descriptive title. Also, the equations presented for the seven metals are either somewhat out of date or incorporate values for constants that contain too many digits, thus inflating the implied degree of precision. For example, the value "-3.062490" in the acute equation for cadmium should be "-3.924" (i.e., replaced with the most recently published value) and the value "-4.704797" in the chronic equation for lead should be "-4.705" (i.e., rounded to the third decimal place). The most recent § 304(a) guidance for the seven metals can be found at: http://water.epa.gov/scitech/swguidance/standards/current/index.cfm. With respect to the sulfate criteria presented in Table A2, we note that no entry has been provided under the "CAS #" header. The applicable Chemical Abstracts Service number for the sulfate ion is 18785-72-3.

(21) Table A3 – This table presents the minimum allowable dissolved oxygen concentrations for cold-water, warm- water and cool-water fisheries. We believe this table would benefit from a descriptive header, as would all other tables included in the Missouri WQS.

(22) Table H – The fiscal note accompanying the draft revised WQS indicates that whole body contact use designations have been removed from 111 stream segments based on recent UAA findings. However, we count only 105 instances in the table where this appears to be the case. The EPA will defer any further comments on proposed changes in this table, pending review of the supporting UAAs. It is our understanding that the Metropolitan Saint Louis Sewer District and its consultants have submitted new information to the MDNR supporting the designation of a 28.6-mile segment of the Mississippi River for secondary contact recreation but not whole body contact recreation. We look forward to reviewing this information, along with the UAAs supporting the various changes made to Tables G and H.

The EPA appreciates the MDNR's continuing efforts to protect the waters of Missouri and to coordinate with stakeholders on proposed rulemakings of this kind. Thank you again for providing us this opportunity to comment on the proposed changes in the state's WQS. We look forward to working with you on this and future revisions of these regulations. If you would like to discuss the above comments in greater detail, please contact me at (913) 551-7821 or Bob Angelo of my staff at (913) 551-7060.

Sincerely,

Karen A. Flournoy

Karen A. Flournoy
Director
Water, Wetlands and Pesticides Division