

Missouri Clean Water Commission
Department of Natural Resources
Lewis and Clark State Office Building
LaCharrette/Nightingale Conference Rooms
1101 Riverside Drive
Jefferson City, Missouri 65102

November 6, 2013

**Clean Water Commission Adoption of the Order of Rulemaking for
10 CSR 20-7.015 Effluent Regulations**

Issue: The Department is presenting the proposed Order of Rulemaking for 10 CSR 20-7.015 Effluent Regulations, for adoption by the Commission.

Background: The Department held several stakeholder meetings to discuss various options for this rule amendment. The primary purposes of the rulemaking include 1) updating bacteria limits and monitoring requirements, 2) clarifying language regarding the definition of treatment plant bypasses to align with federal language, 3) requiring quarterly effluent monitoring of nutrient concentrations for large wastewater facilities, 4) providing clarification regarding whole effluent toxicity testing, 5) allowing for electronic reporting, 6) including provisions for developing limits with regard to various situations like impaired waters, alternative limits during high flows, and the use of local stream data to adjust limits, 7) reducing monitoring frequency for facilities that consistently comply with effluent limits, 8) eliminating schedules to comply phosphorus limits for discharges to Table Rock and Taneycomo Lake because the dates have already passed, 9) requiring limits for the discharge of nitrates that may impact specific drinking water wells, 10) specifying that permits may include schedules of compliance in accordance with federal regulations, and 11) reorganizing and clarifying several elements of the rule.

Recommended Action: Adoption of the proposed Order of Rulemaking amending 10 CSR 20-7.015.

Suggested Motion Language: I move the Commission adopt the proposed Order of Rulemaking for 10 CSR 20-7.015.

List of Attachments:

- Proposed Order of Rulemaking with Response to Comments and Revised Fiscal Note

**Title 10–DEPARTMENT OF NATURAL RESOURCES
DIVISION 20–Clean Water Commission
Chapter 7–Water Quality**

ORDER OF RULEMAKING

By the authority vested in the Clean Water Commission under section 644.026, RSMo 2000, the Clean Water Commission amends a rule as follows:

10 CSR 20– 7.015 is amended

A notice of proposed rulemaking containing the text of the proposed amendment was published in the *Missouri Register* on June 17, 2013 (38 MoReg 913-938). Those sections with changes are reprinted here. This proposed amendment would become effective thirty (30) days after publication in the *Code of State Regulations*.

SUMMARY OF COMMENTS: A public hearing on this proposed rule amendment was held September 11, 2013, and the public comment period ended September 18, 2013. At the public hearing, staff of the Water Protection Program explained the proposed amendment. Oral testimony was provided by Roger Walker (Regulatory Environmental Group for Missouri), Phillip Walsack (Missouri Public Utility Alliance), Kevin Perry (Regulatory Environmental Group for Missouri), Robert Brundage (Newman, Comley, & Ruth), and Trent Stober (HDR). Written comments were provided by Elke Boyd (Shafer, Kline & Warren, Inc.), Paul Calamita (Association of Missouri Cleanwater Agencies), Robert Brundage (Newman, Comley & Ruth), Karen Flournoy (U.S. Environmental Protection Agency), Susan Myers (Metropolitan St. Louis Sewer District), and Roger Walker (Regulatory Environmental Group for Missouri).

COMMENT #1: The U.S. Environmental Protection Agency (EPA) commented that paragraph (1)(A)2. addresses discharges to lakes and reservoirs and uses the term “normal full pool.” The term is also used in subsection (3)(A) and subparagraph (9)(B)1.C. It is unclear whether the term refers to conservation pool, flood pool, or some other volume. EPA recommends defining “normal full pool.”

RESPONSE AND EXPLANATION OF CHANGE: For clarity, the term “normal full pool” has been changed to “conservation pool.” Conservation pool is a term that is more commonly used to indicate the specified amount of water held in a reservoir dedicated to water storage.

COMMENT #2: EPA raised a concern about the term “maximum” in section (2). Section (2) establishes technology-based effluent limits for discharges to the Missouri and Mississippi Rivers. However, additional limits may apply as well, such as those based on Total Maximum Daily Loads (TMDLs) or Water Quality-Based Effluent Limits (WQBELs) or others. It would be wise to avoid misinterpretation of the term “maximum” because these other limits may apply. Further, EPA raised the issue of wastewater discharges from drinking water treatment plants. Technology-based effluent limits must be developed on a case-by-case basis, using the factors for best professional

judgment set forth in Sections 301(b)(2) and 304 (b) of the Clean Water Act (CWA) and in 40 CFR § 125.6 under authority of Section 401(a)(1) of the CWA, for industries in which no specific federal effluent limit guidelines have been promulgated. In addition, EPA noted that WQBELs must be protective of Missouri's narrative water quality criteria at 10 CSR 20-7.031(5)(E) through (H).

RESPONSE AND EXPLANATION OF CHANGE: To clarify that the requirements of section (9) apply to all discharges, language has been added in each of the sections that establish technology-based limits (sections (2) through (8)) noting that the requirements of section (9) also apply. In paragraph 9(A)3. a phrase was added to clarify that technology-based limits must be developed on a case-by-case basis for all facilities in which a federal effluent limit guideline has not been developed.

COMMENT #3: EPA raised a concern about the applicability of Missouri's regulations with regard to stormwater. Paragraph (9)(A)6. references Missouri's stormwater regulation (10 CSR 20-6.200) as one of the paths by which effluent limits are set. However, 10 CSR 20-6.200 is only applicable to all waters listed as L1, L2, and L3 in Table G and P, P1, and C in Table H of 10 CSR 20-7.031. At issue are the waters that are not listed in these tables, but are still considered "Waters of the State" as fully defined in 10 CSR 20-7.031. The 10 CSR 20-7.031 definition includes a phrase that references all waters of the United States. The department cannot forego regulation of stormwater discharges to these waters at issue and the regulations must support attainment of the general criteria in all wastes of the U.S. located in Missouri.

RESPONSE: The department has begun the process of amending 10 CSR 20-6.200 Stormwater Regulations. The department intends to propose amending 10 CSR 20-6.200 so that all waters of the U.S. will be applicable.

COMMENT #4: Mr. Brundage commented that subsection (4)(B) prescribes effluent limits for losing streams only in cases where it is allowed by the department and suggests removing a phrase that could potentially be at odds with the Antidegradation provisions found in the Water Quality Standards regulation.

RESPONSE AND EXPLANATION OF CHANGE: The phrase has been removed and the sentence has been reworded as suggested.

COMMENT:#5: The Metropolitan St. Louis Sewer District (MSD) and the Missouri Public Utility Alliance (AMCA) provided comments regarding the use of the federal definition for "bypass" and advocated for removal of the definition. Both commenters cite the recent "Iowa League of Cities" United States Eighth Circuit Court of Appeals case. In that case the Court found that EPA may regulate pollutant levels in a wastewater stream that is directly discharged into waters of the U.S. through a point source and that EPA is not authorized to regulate the pollutant levels in a facility's internal waste streams. The Court also concluded that regulations on pollutants and flows internal to the plant exceed EPA's statutory authority. Adopting the definition of "bypass" into this regulation is contrary to the "Iowa League of Cities" decision, and it is illegal and unnecessary. MSD added that if the definition of "bypass" is retained, language should be added to make it clear that the department does not intend to regulate the pollutant levels in a facility's internal waste stream.

Mr. Stober provided testimony in support of the proposed rule language that adopts the federal definition of bypass. This is the “law of the land” and it appears that we are getting more and more clarifications regarding how to interpret this area of regulation as we move ahead.

EPA also provided comments regarding the bypass reporting requirements found in subsection (9)(G) noting that the definition of “bypass” is generally consistent with the federal regulation, however, the language does not address the minimum content requirements for bypass reports. This omission could be remedied by referencing 40 CFR § 122.41(j)(3). In addition, EPA noted that the proposed rule allows Publicly-Owned Treatment Works (POTWs) to report bypasses that occur during storm water inflow and infiltration events on their discharge monitoring reports. This is inconsistent with the federal requirements in 40 CFR § 122.41(l).

RESPONSE AND EXPLANATION OF CHANGE: Language in paragraph (9)(G)1. has been modified as a result of these comments. The decision in the “Iowa League of Cities” case was focused on the question of whether blending constituted a bypass. Blending is the term used to describe the practice of combining a partially treated wastewater stream with one that receives full treatment prior to discharge. The “Iowa League of Cities” decision makes it clear that blending is acceptable, but there are other forms of bypass that were not considered in the case. An example would be an overflow of a primary clarifier in a manner such that a discharge to waters of the state occurred. For this reason, the definition of “bypass” has been retained. It has been modified, however, to make it clear that blending is acceptable.

The department did consider removing the definition of “bypass” from the rule, but has concluded that this would not be appropriate. Even in light of the “Iowa League of Cities” decision, some bypasses should continue to be prohibited.

The department has revised bypass reporting language to make it clear that unanticipated bypasses that occur at POTWs during storm water inflow and infiltration events can report them on their discharge monitoring reports, but only if the bypass does not result in violations of permit limits, or conditions which may endanger human health or the environment.

COMMENT #6: EPA provided a number of comments regarding effluent limits for bacteria. The rule retains year-round disinfection for all discharges to losing streams. In light of the concurrently proposed water quality standards rule (10 CSR 20-7.031), numeric criteria will be extended to many additional streams within the State. This has the potential to drastically increase the number of discharges to streams that have specific designated uses. Does the department plan to evaluate the losing or gaining status of all of these new streams, and if so, will these findings be incorporated in future revisions of Table J in 10 CSR 20-7.031?

EPA noted that the proposed short-term *E. coli* limits for dischargers to waters designated as Whole Body Contact A or B are precisely five times the State’s water quality standards. It appears that these limits may not derive from or comply with the applicable water quality standards. EPA considers this provision to constitute new or revised water quality standards that EPA must approve before becoming effected for Clean Water Act purposes. However, if the state can explain how the short-term limits were derived and show how these comply with the applicable bacteria criteria, then EPA may not view or act on this as a new or revised water quality standard.

EPA also noted that there were incorrect references subparagraphs (9)(D)6.B., C., and D. In addition, EPA provided a comment and question regarding how compliance with short-term bacteria limits will be assessed for facilities that have reduced sampling frequencies (those facilities that have design flows of less than 100,000 gallons per day).

MSD also provided comments regarding short-term bacteria limits. For discharges designated for Whole Body Contact A and B the department has determined that short-term effluent limits of five times the water quality standard are protective of beneficial uses. However, this same logic (applying a factor of five) has not been applied to waters designated for Secondary Contact Recreational. MSD requests that the short-term limit for Secondary Contact Recreational be established at 5,670 colony forming units per 100 milliliters.

AMCA noted that language in subparagraph (9)(B)1.G. contained a minor, but significant error. The language specifies that less than 10 percent of samples can exceed the 126 daily maximum value. But EPA's national criteria specify that no more than 10 percent can. This change needs to be made in both the rule, and the fiscal note. AMCA raised another issue with regard to the fiscal note. In the fiscal note the department stated that disinfection systems are designed for complete kill or inactivity. This is incorrect. The vast majority of systems yield detectable (albeit very low) levels of bacteria. The sentence should be removed or revised to indicate that complete kill or inactivity is a performance goal but not a design criterion of modern disinfection systems.

RESPONSE AND EXPLANATION OF CHANGE: The department intends to continue with the task of evaluating the losing/gaining status of streams in which there is a discharge. This will be an ongoing task for all of the waters expected to be newly designated as fishable/swimmable. The State conducts these evaluations and the data is added to Missouri's losing stream data base or listing. At every triennial review Table J in 10 CSR 20-7.031 is updated to reflect these findings.

Missouri's bacteria water quality standards have been established and approved by EPA. These standards are based on the geometric mean averaged over an entire recreational season (April 1 through October 31). EPA issued an interim objection to permits written based solely on the water quality standard because the permit did not contain average weekly limits as required by federal regulation (40 CFR 122.45(d)). Given the need for short-term limits, the Missouri Clean Water Commission directed staff to apply the same multiplier that had been used for the old form of the bacteria standard (fecal coliform). This decision was based on the judgment that this multiplier would be appropriate. During discussions with EPA concerning the interim objection EPA provided a statistical approach to try and develop a more quantitative way to develop short-term limits. The approach made a number of assumptions that were not rigorously defensible. The proposed short-term limits are not intended to serve as new water quality criteria; they were only developed to meet the need to have short-term limits in permits. The goal of the short term limits is to be protective of the long term water quality standard.

Since January 2011 the department has been applying these short-term limits and there is no evidence to show that they are not protective. It is important to remember that in addition to the short-term limits, the seasonal limits also apply. With regard to how compliance with the bacteria limits will be determined, the proposed regulation speaks for itself. For compliance with the seasonal effluent limit, all of the sample results for each calendar month are geometrically averaged and compared to the counts prescribed in 10 CSR 20-7.031(4)(C). This is conservative because the

water quality criteria are based on the geometric mean of an entire season, not the calendar month that was incorporated into the rule. For short-term limits compliance is determined by comparing the geometric mean of all of the samples taken in a particular week with the short-term limits prescribed in (9)(B)1.E. This comparison can be made after a monthly, quarterly, or even annual discharge monitoring report is received from the permit holder. In addition, permit holders are required by standard conditions in every permit to report noncompliance within five days of them becoming aware of the noncompliance. It is through this reporting requirement that the department is able to address noncompliance in a timely manner. Again, these short-term *E. coli* limits are in no way intended to serve as water quality standards on their own. The intention of these short-term limits is to be protective of the long-term water quality criteria. This approach for applying short-term limits was developed through considerable stakeholder involvement; and based on the experience over the last thirty-two months the department strongly asserts that these values are appropriate and protective of designated uses. The incorrect rule references EPA noted were corrected prior to publication of the proposed rule.

The department does not intend to apply the same multiplier for short-term *E. coli* limits for discharges to waters designated as Secondary Contact Recreational. Part of the reasoning for this decision is that the five times multiplier was never applied under the previous water quality standard for bacteria, fecal coliform. The other reason is that the performance goal of disinfection systems is complete kill or inactivity. Very high *E. Coli* counts, such as the suggested 5,670 are indicative of a system that is failing to properly disinfect or that there is so much inflow that the disinfection system is overwhelmed. Values this high are also not acceptable because of the potential risk or perceived risk to those recreating on the waters so designated.

Language has been changed as suggested by AMCA regarding the error in subparagraph (9)(B)1.G. AMCA's suggested corrections to the fiscal note on this issue have also been changed, as well as the changes regarding the fact that complete kill and inactivity are performance goals rather than strict design criteria.

COMMENT #7: Mr. Brundage provided a comment regarding paragraph (8)(A)3. This paragraph says that the department may set Biological Oxygen Demand and Total Suspended Solids limits based on past performance based on past performance that exceeded effluent limits. This creates a disincentive and discourages wastewater treatment operators from striving to achieve the best treatment possible. If they do, they may be penalized by receiving future limits that are more stringent and face periodic violations despite the fact that water quality is being protective. Mr. Brundage recommends that this paragraph be deleted.

RESPONSE: Federal regulations (40 CFR 133.105(f)) state that permitting authorities shall require more stringent limitations for existing facilities if, based on an analysis of past performance, it is determined that the treatment works could achieve more stringent limitations. The same federal regulation also states that the permitting authority shall require more stringent limitations for new facilities if the design, geography, and climatic conditions of the facility would enable the treatment works to achieve more stringent limitations. This element has been in Missouri's Effluent Regulation since at least 1999. No changes have been made as a result of this comment.

COMMENT #8: EPA provided comments regarding the proposed return of the allowable pH range of wastewater discharges from 6.5-9.0 to 6-9. These changes comport with the applicable federal

regulations for toxicity-based effluent limits (40 CFR §§122.44(d) and 135.105). However, effluent limits must contain the more stringent of the applicable technology-based effluent limits or the applicable WQBELs. The WQBELs for pH are derived from 10 CSR 20-7.031(5)(E), which establishes the ambient pH range as 6.5 to 9.0. This water quality-based pH range, as currently worded, applies to all waters of the State, including mixing zones and zones of initial dilution. This effectively requires discharges to comply with the pH criterion at the end-of-pipe. The department may wish to consider revising 10 CSR 20-7.031(5)(E) to provide for a wiser application of the pH criterion at the edge of the mixing zone. Such a change to the State's water quality standards must be submitted and approved by EPA before becoming effective for Clean Water Act purposes. The Regulatory Environmental Group for Missouri (REGFORM) provided testimony in favor of the proposed changes regarding the pH range.

RESPONSE: A review of the language in 10 CSR 7.031(5)(E) confirms that the water quality-based pH range applies to all waters of the State and therefore effectively requires compliance with the pH water quality criterion at the end-of-pipe. The department intends to revisit this in the next revision of the water quality standards regulation (10 CSR 20-7.031).

COMMENT #9: EPA raised a concern about language in paragraph (9)(A)7. regarding effluent limits that are required as a result of legal agreements or formal variances. EPA stressed that legal agreements between discharges and the department or Clean Water Commission may be used to justify more stringent effluent limits, but be less stringent than otherwise required in the remaining paragraphs of subsection (9)(A). EPA noted that the opening sentence in subsection (9)(A) begs the question: how could any effluent established under the variance provision ((9)(A)7.) constitute the most protective limit. EPA suggests removing the reference to variances in paragraph (9)(A)7. EPA also commented that subsection (9)(A) states that the most protective limits within the list of that subsection apply. However, in other portions of the rule such as (8)(A)3.C. it is not clear that the limitations established in (9)(A) apply.

RESPONSE AND EXPLANATION OF CHANGE: Rule language in subsection (9)(A) has been modified to make it clear that the most protective limits apply. The reference to variances from water quality standards has been relocated to the introduction and language has been added to make it clear that variances must be approved by both the Clean Water Commission and EPA. Changes have also been made in sections (2), (3), (4), (6), (7), and (8) to make it clear that the limits in section (9) may also apply.

COMMENT #10: EPA provided comments concerning the use of flow-variable WQBELs as proposed in subparagraph (9)(A)2.B. Although EPA supports the application of both tiered and seasonal fixed limits in permits, these limits present significant regulatory and environmental drawbacks. EPA noted that flow tiered limits may provide an incentive to store wastewater and meter out partially treated effluent according to prevailing stream flow, potentially leading to an overall increase in pollutants discharged. This is particularly true of nutrients because some receiving waters may act as nutrient sinks and higher pollutant loads may accelerate eutrophication and interfere with nutrient reduction strategies. The development of Total Maximum Daily Loads would be complicated by flow-variable permit limits. Traditionally, the dilution provided by higher flows has been allotted primarily to nonpoint pollution sources. Another issue related to flow-variable permits is that continuous stream flow monitoring and continuous effluent quality and magnitude monitoring would need to be done for self-monitoring and reporting purposes. Facilities with flow-variable limits would also have to be designed and constructed so that rapid

operational adjustments can be made in response to stream flow changes. Facility adjustments that lag behind stream flow changes could greatly increase the risk of non-compliance with permit limits. Another concern is the prevention of bottom deposits. These can form when stream flows are no longer sufficient to suspend and transport solids. The State would be expected to develop best professional judgment-based technological limits to address this. Many in-stream pollutant concentrations correlate with stream flow rates. Some water quality criteria may be approached or even exceeded during high flow events, and the State would need to account for this during the development of flow-variable WQBELs. Hardness generally exhibits an inverse relationship with stream flow, so the lowest hardness levels occur during the largest runoff events. Flow-variable permit limits for hardness-dependent metals would need to reflect this fact. Another difficulty with flow-variable permit limits involves the consideration of Antidegradation and anti-backsliding considerations. For these and other reasons EPA strongly discourages the department from incorporating a flow-variable WQBEL provision. MSD strongly supports the use of alternate receiving water mixing flows for developing flow-variable permits outlined in paragraph (9)(A)2. However, the proposed wording does not allow existing facilities to increase pollutant loading beyond that currently achieved unless supported by an approved TMDL. This means that an expanding plant could incur additional, significant costs, even if the expanded discharge can be shown to meet water quality standards in the receiving water. MSD recommends elimination of that requirement. MSD suggested revised language.

RESPONSE AND EXPLANATION OF CHANGE: The department shares many of EPA's concerns and recognizes some of the barriers and difficulties in the application of flow-tiered limits. Because of these difficulties and the ongoing expenses associated with them, the department expects that very few applicants will seek to avail themselves of this provision. When they do, the department will need to work through the issues that EPA has raised and consider the individual situation. With regard to MSD's concern, the language has been revised to clarify that flow-variable limits shall not allow the discharge to increase pollutant loading only in cases in which the existing discharger is not expanding or constructing a new facility.

COMMENT #11: EPA raised a concern with regard to subparagraph (9)(D)7. which requires quarterly nutrient monitoring at facilities that discharge more than 100,000 gallons per day. EPA supports the incorporation of this new provision, with the following caveats: (1) nutrient monitoring should not be restricted to a duration of five years in instances where total nitrogen and phosphorus limits are required in a permit, and (2) that those facilities that discharge less than 100,000 gallons per day should not be categorically exempted because there may be situations in which effluent monitoring may be necessary to ensure compliance with water quality standards. EPA also noted that pursuant to 40 CFR § 122.21(j)(4)(iii) permit applications for POTWs must include a minimum of three samples and that all applicants with a design flow greater than or equal to 100,000 gallons per day must sample and analyze for the pollutants listed in appendix J, table 1, of this regulation. If the State chooses, the federal regulatory language, which applies to nutrients and other pollutants, may be built into the permit document.

MSD noted that subsection (9)(B) is titled Bacteria and Nutrient Limits, which refers to placeholder for future nutrient limits in paragraph (9)(B)2. However, nutrients limits are specifically established in other locations of the rule, such as subsection (3)(C).

RESPONSE AND EXPLANATION OF CHANGE: Language has been revised in paragraph (9)(D)7. to give the department the authority to impose ongoing or more frequent nutrient

monitoring for cases in which nutrient limits have been imposed or in cases in which compliance with water quality standards needs to be ensured. In addition, the term “statewide” has been inserted into subsection (9)(B) and paragraphs (9)(B)2. and (9)(B)7. to distinguish between statewide nutrient requirements and those imposed for the specific protection of Table Rock Lake and Lake Taneycomo.

COMMENT #12: EPA noted that paragraph (9)(A)5. of the rule introduces several new terms associated Antidegradation effluent limits. These terms include “no degradation effluent limits,” “minimally degrading effluent limits,” and “preferred alternative effluent limits.” Given the significance of these terms in the Antidegradation review process, these terms should be specifically defined in rule. MSD provided specific rule language that eliminated the direct use of these terms, and instead referred generically to limits derived through the Antidegradation review process.

RESPONSE AND EXPLANATION OF CHANGE: The purpose of paragraph (9)(A)5. is to clarify the State’s authority to develop effluent limits based on Antidegradation. MSD’s suggested language does this without using the terms that EPA recommended the State define. Therefore, the regulation has been revised as suggested by MSD.

COMMENT #13: Mr. Brundage raised a concern about paragraph (4)(B)6. which imposes nitrate limits if the discharge may impact specific drinking water wells. Mr. Brundage suggests that nitrate limits only be imposed when nitrates are known to impact a well. He also questioned directly imposing the ten milligram per liter nitrate limit because it does not factor in degradation of that pollutant or dilution. Permit writers should be allowed to impose higher nitrate limits to account for the fate and transport, so long as water from the drinking water well meets the ten milligram per liter concentration standard. EPA noted that the wording of this provision suggests that nitrate limits will not protect undeveloped aquifers that may be used as a future drinking water source.

RESPONSE: The department acknowledges the technical difficulties of predicting when a wastewater discharge will impact water used as a drinking water source. The approach suggested by Mr. Brundage, however, would not be prudent. Waiting until the department knows that a well has been impacted by nitrates in a wastewater discharge would risk the human health protections provided by the standard. And once contaminated, remediation is likely difficult and expensive. At the other end of the spectrum is the application of nitrate limits in all cases in an effort to protect all undeveloped aquifers, without consideration of degradation or dilution. The alternative to both extremes is to only require nitrate limits in setting where the permit writer has concerns about the size of the discharge, its proximity to drinking water wells, and a concern that the geological conditions may allow the discharge to affect the quality of the well water. This allows applicants and permit writers consider the specific setting and base the imposition of limits on the best technical reasoning available. As a matter of practice, limits will be imposed if there is a reasonable expectation that a discharge may impact a specific well, and the proposed language has been maintained to reflect that approach.

COMMENT #14: AMCA provided a comment regarding minimum monitoring frequencies. In several places the language authorizes the department to reduce the minimum monitoring frequencies for dischargers that can demonstrate consistent compliance. This flexibility should be

extended to each section where minimum frequencies are expressed. Example locations include (1)(A)4., (5)(B)4., and (6)(D).

RESPONSE AND EXPLANATION OF CHANGE: The rule has been revised to allow for reduced monitoring frequencies as suggested by AMCA. Revisions were made in subparagraph (5)(B)1.B. and part (6)(A)4.A.(II).

COMMENT #15: EPA commented about subsection (9)(C) regarding provisions for schedules of compliance. As proposed the language requires 1) all compliance schedules must be comport with 10 CFR § 122.47, 2) all schedules must set forth interim requirements and the dates for their achievement, and 3) permit holders must notify the department of adherence to or departure from the specified interim and final dates of compliance. In addition, the proposed rule allows the department to modify a schedule of compliance. To ensure that compliance schedules in Missouri comport with the federal regulations, paragraph (9)(C)2. must specify that the time between interim dates shall not be allowed to exceed one year (except in the case of a schedule for compliance with standards for sewage sludge use and disposal, when the time between interim dates shall not exceed six months. Also, paragraph (9)(C)4. must reference or reiterate language in the federal regulation which states that good cause must exist for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy.

AMCA noted that there are several locations in the proposed rule that reference the availability of compliance schedules. AMCA suggests the addition references to the availability of compliance schedules in sections (2) and (3), and provided suggested rule language.

RESPONSE AND EXPLANATION OF CHANGE: A sentence has been added to paragraph (9)(C)2. as suggested by EPA to specify that the time between interim dates shall not be allowed to exceed one year with the exception of compliance with standards for sewage sludge use and disposal. Language was also added to paragraph (9)(C)4. to reflect the federal requirement that permits schedules can be modified for cause as suggested by EPA. Additional reference to the availability of compliance schedules were added in subparagraphs (2)(A)3.C., (3)(A)1.C., (8)(A)3.C., and subsection (4)(B).

COMMENT #16: EPA raised a concern about paragraph (2)(C)2. and other locations in the rule [(3)(B)2., (4)(C)2., (5)(B)2., (6)(A)4.B., and (8)(B)2.] that say that sampling frequency shall be representative of the discharge during the period sampling covers. Existing regulatory language requiring facilities to monitor on a regular evenly-spaced schedule has been removed. To improve clarity, the regulation should define the term “representative sampling,” either through insertion of a new definition or by referencing the applicable section of the National Pollutant Discharge Elimination System permit writers’ manual and/or the federal regulations at 40 CFR § 122.48.

RESPONSE AND EXPLANATION OF CHANGE: For clarity’s sake, the following definition of “representative sample” was added in subsection (1)(A): a small quantity whose characteristics represent the whole. To be representative of characteristics over time, samples should be spread evenly over the entire period.

COMMENT #17: Mr. Brundage commented in support of the proposed language in subsection (7)(A). This subsection regulates subsurface discharges, and required compliance with ground water protection criteria at a point ten feet under the release point. This ten-foot distance was

arbitrary and not science based. Typically, a drinking water aquifer is first encountered at a far greater depth than ten feet below the surface. The ten foot compliance approach does not account for the fact that pollutants often undergo further degradation, biological treatment, or dispersion before entering a ground water aquifer used for drinking water purposes. For these reasons Mr. Brundage supports the proposed amendment that allows an alternative compliance point based on site-specific considerations.

RESPONSE: The department appreciates the support; no changes were made as a result of this comment.

COMMENT #18: EPA provided comments regarding the difference between site specific effluent limits and site specific criteria. Site specific limits and site specific criteria are different regulatory constructs and are subject to different review and approval requirements. Site specific criteria constitute water quality standards and must be approved by EPA prior to implementations. Site specific effluent limits do not constitute water quality standards and often can be issued independently by the delegated permit authority. For example, site specific limits for some metals are based, in part, on the hardness of the receiving water. Site specific criteria represent ambient water quality goals; site specific limits represent an available mechanism for attaining those goals. Water quality standards can be structured in a manner that effectively expands the independence of the permitting authority in the issuance of site specific limits. Paragraph 10 CSR 20-7.031(5)(S)2. adopts the EPA guidance "Streamlined Water-Effects Ratio Procedure for Discharges of Copper (EPA-822-R-01-005, March 2001). Because of this adoption the department is able to apply Water-Effects Ratios in the development of effluent limits. However, other forms of site-specific criteria will still need to be submitted to, and approved by, EPA on a case-by-case basis prior to becoming effective for Clean Water Act Purposes.

RESPONSE AND EXPLANATION OF CHANGE: Language in subparagraph (9)(A)2.A. has been revised to eliminate the list of examples of site specific effluent limits. The language also requires that site specific limits must only be developed if the water quality standards regulation (10 CSR 20-7.031) specifically provides for them.

COMMENT #19: REGFORM provided a number of comments related to Whole Effluent Toxicity (WET) testing, as proposed in subsection (9)(L). The proposed language requires WET testing to be performed by individuals who are properly trained referencing 10 CSR 20-6.010(8)(A)4. as the authority to require this training. This reliance is misplaced because 10 CSR 20-6.010(8)(A)4. does not mention or reference the use of properly trained individuals to perform WET tests. In fact, 10 CSR 20-6.010(8)(A)2. is far more generic and essentially requires that personnel be certified in accordance with all applicable state law or regulations. REGFORM recommends modifying paragraph (9)(L) 1. to require that WET tests be conducted in accordance with 40 CFR Part 136 methods and delete the requirement that WET tests must be performed by individuals who are properly trained.

The proposed rule requires all WET tests to be performed using multiple dilution tests (subparagraphs (9)(L)2.A. and B.). REGFORM advocates for more flexibility to allow case-by-case considerations. The federal reference method allows both single dilution and multiple dilution tests. The intent of WET testing is to determine whether the criterion for toxicity is being maintained in a receiving water at the allowable effluent concentration. In situations where a discharge is well-characterized or the system is not complex, this determination can be made with a

single dilution test. REGFORM views the requirement for multiple dilution testing as more prescriptive than federal regulations and believes that this will add compliance costs where not necessary warranted. The federal regulations do not require multiple dilution tests under all circumstances and REFORM requests that the reference to multiple dilution series tests be deleted or modified to allow regulatory flexibility on a case-by-case basis. Multiple dilution tests are approximately 40 percent more expensive than single dilution tests. If a single dilution test fails then the department could require the discharger to follow up with an accelerated multiple series dilution test.

REGFORM noted that paragraph (9)(L)3. requires permits to include WET test limits in cases where there is reasonable potential to cause or contribute to an excursion from the narrative water quality standards. This provision is inappropriate given there are more specific criteria established at 10 CSR 20-7.031(3)(I) and (4). REGFORM requests removal of this portion of the rule.

The draft regulations in subparagraph (9)(L)4.B. references the use of only two species: *Pimephales promelas* (a fathead minnow) and *Ceriodaphnia dubia* (a water flea). This is more restrictive than EPA regulations which include a list of additional species that may be considered. REGFORM believes that there are situations that warrant the use of alternative species and that species already recognized by EPA should be available without additional department approval. REGFORM provided substitute rule language for this subparagraph. It is important to remember that *Ceriodaphnia dubia* may not be representative in all cases for permittees in Missouri because it is not a species found in many areas of the State. The proposed language does include a provision by which alternative species could be used, but REGFORM recommended that a direct reference to follow the 40 CFR 163 methods.

REGFORM noted that subparagraph (9)(L)4.C. requires the use of toxic units. Toxic units are one option provided for in federal guidance. A second option is percent efficient at the critical dilution. REFORM recommends that both options be made available, but neither should be made a regulatory requirement.

For a number of reasons, REGFORM strongly opposes the requirement proposed in subparagraph (9)(L)4.D. to submit the complete lab report for each WET test performed by a facility. First, it is not clear why a complete lab report is always necessary since the form used by the department already includes all of the needed information. Second, these documents are often quite large, may be too big to electronically scan and thus will likely need to be photocopied and mailed to the department. This requirement would be burdensome, time consuming, and will generate a tremendous amount of paper files that the department will have to manage. Third, facilities that must perform toxicity identification evaluations and toxicity reduction evaluations often conduct a large number of WET tests. Given the investigative nature of these evaluations, these WET tests are frequently not identical to a permittee's WET permit conditions, making department review difficult. Fourth, facilities will be subject to potential Clean Water Act enforcement if a submittal inadvertently omits part of the expected submittal. Finally, any potential refinements to the WET tests procedures or policies will be difficult to do if these are codified in rule because of the laborious nature of rule revisions. REGFORM recommends that the language be changed to state that lab reports must be made available to the department upon request. As a second less desirable

alternative, the rule could be revised to require complete lab reports only from permittees that fail WET tests.

REGFORM notes that subparagraph (9)(L)4.D. requires permittees to complete and submit the department's form for each WET test performed. REGFORM does not oppose submitting the necessary information. REGFORM takes issue when the reporting requirement is overly burdensome, inefficient, and of questionable value. There are numerous known shortcomings associated with the Form MO-780-1899. It is ill suited for the purpose of summarizing the results from WET tests in general and chronic WET tests in particular. Several, but not all, of the form's shortcomings include the form's imposition of sampling requirements not justified in a permit's Fact Sheet, the requirement that facilities must rely on others to fill out certain data fields, the lack of clear instructions, poor formatting, and the fact that the form was not designed to summarize chronic results. Regarding this last point, the form requires over 230 individual data fields to be entered by a facility for a two species chronic WET test. Therefore, absent a commitment from the department to appropriately revise the form, REGFORM strongly opposes the codification of a requirement to use the form.

REGFORM commented about the term "allowable effluent concentration." It is not defined in regulation and it is used in both the regulation and it is frequently used in permits. REGFORM recommends that the term be defined in a manner similar to how it is defined in EPA guidance.

REGFORM reasserted their position that it would be more cost effective, less confusing, and equally protective of the environment if state regulations closely tracked federal regulations and guidance. REGFORM provided specific rule language for the entire subsection (9)(L) for the department's consideration.

Mr. Brundage supports REGFORM's comments concerning the WET testing requirements. He provided testimony reinforcing REGFORM's comments regarding the requirement for multiple dilution tests, the reliance on toxic units, and recommended that the rule be changed to allow flexibilities afforded under the federal regulations.

Mr. Stober testified in support of the concept of establishing clear WET test requirements.

EPA also provided comments regarding the WET test provisions of the proposed rule. EPA noted that subparagraph (9)(L)4.A. says that facilities which discharge to "cold water sport fisheries" may be required to perform WET tests using *Oncorhynchus mykiss* (rainbow trout) instead of the fathead minnow. The phrase "cold water sport fisheries" is vague, and the department may wish to retain the option of requiring this species for discharges into either cold water or cool water habitats as defined in 10 CSR 20-7.031. EPA notes that correspondence with the Missouri Department of Conservation shows that rainbow trout sometimes live in cool water reaches of streams by sheltering in the small in-channel spring upwellings that maintain water temperatures in the cool water range.

EPA further commented that subparagraph (9)(L)4.A. requires a dilution series for a WET test that shall be a set of proportional effluent dilutions based on an allowable effluent concentration. EPA recommends that the rule be revised to require the use of a standard dilution series (100 percent, 50

percent, 25 percent, etc.), except in special circumstances. The purpose of the WET test is to characterize toxicity through a standardized method of representative monitoring. Variable dilution series require special calculations on the part of the permit writer, a custom set of dilutions in the laboratory, and test specific statistical calculations. It would be best to use standardized, reproducible, approaches to create meaningful and comparable data sets.

For clarity's sake, EPA also suggested that a number of terms be specifically defined and provided example definitions based on federal guidance documents.

Lastly, AMCA commented about the opening sentence of subsection (9)(L) of the proposed rule, stating that it is not correct. Since it is not necessary for the rule AMCA recommends that it be removed.

RESPONSE AND EXPLANATION OF CHANGE: In response to REGFORM's suggestion, the requirement that WET testing be performed by properly trained individuals has been removed. Although the federal WET test reference method allows for both single and multiple dilution tests, the rule is not being modified to allow for single dilution WET testing. EPA no longer considers solely using single dilution WET tests as a sufficient implementation of the WET test permit requirement. More importantly, multiple dilution WET testing allows for a calculation of toxic units. Using the toxic unit approach, the department can make quantitative demonstrations that many or most discharges do not have reasonable potential to exceed limits. By making this demonstration the WET test requirement can be removed in future permits. Using the metric of percent efficient at the critical dilution will not allow the department to remove the WET test requirement in future permits. The department believes that this will provide a significant cost savings over time. In addition, when toxicity is identified, a single dilution test does provide the permittee or the regulatory agency sufficient information about the problem which could delay remediation of the problem. The water quality standards rule (10 CSR 20-7.031) does provide specific numeric criteria for toxicity, but WET tests are needed to determine the toxicity of the whole effluent, not singular pollutants. The reference to multiple and single dilution in 10 CSR 20-7.031 applies in-stream to the attainment of the narrative toxicity criteria as it pertains to the fishable use designation. The requirements related to the effluent regulation are end of pipe requirements, so the WET tests serve to evaluate the whole effluent to assure that the narrative toxicity requirement is met. Therefore, the language concerning narrative criteria in paragraphs (9)(L)3. and 4. have been retained. In addition, no changes have been made as a result of REGFORM's comments concerning species selection. In most tests the *Pimephales promelas* (a fathead minnow) and *Ceriodaphnia dubia* (a water flea) are appropriate representative organisms, and they have been chosen as default organisms among other reasons for consistency sake. The proposed rule allows for alternative species when appropriate. In response to REGFORM's comments regarding the requirement to submit WET test lab reports, a minor language change was made in subparagraph (9)(L)4.D. The requirement to provide WET test lab reports has been retained. Review of WET test lab reports allows the agency to identify the use of inappropriate WET test methods. Some passing WET tests pass because of an inappropriate action, such as filtering or aeration, whereby the toxicity was eliminated before the test was completed. Revising the WET test forms is a task that will be completed upon revision of the rule. Moving to a toxic unit basis may streamline the reporting process. As suggested by REGFORM, the definition of "allowable effluent concentration" has been added to subsection (1)(A). Regarding the replacement rule language suggested by REGFORM, no changes have been incorporated; the

proposed rule better serves the purpose of providing predictability and consistency. In response to EPA's comment regarding the use of the vague phrase "cold water sport fishery," language was modified in subparagraph (9)(L)4.B. to change the phrase to "cold-water fishery" to directly align with the provisions of 10 CSR 20-7.031 and the definition provided therein. Although rainbow trout sometimes live in cool water habitats, it is not the intent of the department to require WET tests using *Oncorhynchus mykiss* (rainbow trout) for discharges to water designated as cool-water fisheries. No changes were made to the rule as a result of EPA's suggestion that the rule specify a specific dilution series. The department applies a standard dilution series requirement in permits by the use of template language, and this has been demonstrated to be protective as well as practical. In dilution series must bracket the expected concentration of effluent in the receiving stream after mixing considerations, and specifying a dilution series in the regulation removes the permit writer's flexibility to appropriately configure the dilution series. In response to AMCA's comment regarding the need for the opening sentence of subsection (9)(L), it has been removed. And lastly, in response to EPA's suggestion to add definitions, several of their suggested definitions have been added to subsection (9)(A). These include definitions for Acute Toxicity Test, Chronic Toxicity Test, Toxic Unit, Toxic Unit – Acute, and Toxic Unit – Chronic.

COMMENT # 20: EPA provided comments regarding paragraph (9)(A)4. This paragraph provides for the development of effluent limits as prescribed under a TMDL. EPA notes that federal regulations at 40 CFR § 122.44(d)(1)(vii) require the permitting authority to ensure that (a) the level of water quality to be achieved by WQBELs is derived from, and complies with, all applicable water quality standards and (b) WQBELs developed to protect narrative water quality criterion, a numeric water quality criterion, or both, are "consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant 40 CFR 130.7." The proposed language notes that TMDL limits may be based on technological feasibility and practicability or in accordance with a TMDL implementation plan if one has been developed. Professional opinions and judgment related to technological feasibility and practicability cannot negate or override these federal regulatory requirements. Additionally, under 40 CFR §§ 130.7(c)(1) and (d)(1), EPA is obligated to review, and to approve or disapprove, TMDLs but not their associated implementation plans. TMDL implementation plans cannot serve as a basis for excluding wasteload allocations in National Pollutant Discharge Elimination System permits. EPA also commented that the first sentence in paragraph (9)(A)4. refers to "specific" pollutants whereas the applicable federal regulation addresses pollutants (40 CFR § 130.7(c)(1)(ii)), and asked that the word "specific" be removed. Mr. Brundage also commented regarding this section, sharing his support for the proposed language in paragraph (9)(A)4. As proposed the language would allow the consideration of appropriate schedules, the technological feasibility and practicality when establishing TMDL-based limits.

RESPONSE AND EXPLANATION OF CHANGE: As a result of these comments paragraph (9)(A)4. has been revised. Considerations of technological feasibility and practicality and the application of TMDL implementation plans all serve as implementation flexibilities afforded under federal regulation, but the final effluent limits themselves cannot be based on these flexibilities. The revised language reflects these flexibilities while requiring the final limits to directly reflect the TMDL. The rule has also been revised to reflect EPA's suggestion to remove the word "specific" in the first sentence of paragraph (9)(A)4.

COMMENT #21: Ms. Elke Boyd provided comments noting that several regulation references were not correct. These references were both internal to 10 CSR 20-7.015 and external to 10 CSR 20-7.031.

RESPONSE AND EXPLANATION OF CHANGE: The references have all been reviewed and corrected.

COMMENT #22: EPA commented about subparagraph (9)(B)1.D. noting that the reference to the bacteria standard in the water quality standards rule (10 CSR 20-7.031) is incorrect. EPA also asks that the department provide a scientific rationale for the two-mile separation threshold applied in this subparagraph.

RESPONSE AND EXPLANATION OF CHANGE: The references have all been reviewed and corrected; please refer to the previous comment and response. No changes were made to the rule as a result of the comment concerning the two-mile separation threshold. The department has used a two-mile threshold for several years. This threshold serves to extend “swimmable” protection to waters that are not designated for this protection, but are tributary to waters that have been so designated. It has been assumed that discharges located farther than two miles upstream from a water designated for whole body contact will not generally impair the whole body contact use. This is because of the natural decay processes of those organisms and the expected mixing and dilution that occur. As a matter of practice, the two-mile separation threshold will apply to very few, if any, facilities upon adoption of the 1:100,000 scale National Hydrography Dataset for classifying the “fishable/swimmable” waters of the State in the concurrent water quality standards rule amendment (10 CSR 20-7.031).

COMMENT #23: MPUA provided testimony regarding the “bypass” provisions. The fiscal note does not address the costs associated with bypassing. Even though the State is proposing to adopt the federal definition, there are significant costs associated with this action. MPUA estimates that the cost of removing outfall 002, as required in the previous rule revision, will be about \$700 million. This is significant for those fifty-five cities that are directly affected. This figure doesn’t account for the other 800 cities that may be affected.

RESPONSE: The department acknowledges that many communities face significant financial burdens in complying with the federal bypass provisions. However, these costs must be born regardless of state regulations; the federal regulations apply regardless. One of the goals of this rulemaking is to align Missouri clean water regulations with the federal regulations. By doing this Missouri facilities can comply with State rules at the same time as federal. No changes were made to the rule as a result of this comment.

COMMENT #24: AMCA noted that a sentence in paragraph (1)(A)4. was nonsensical and recommended that it be removed. This sentence adds nothing to the rule and is not legally required. It may conflict with the permit shield provisions of state law. This is a non-substantive change.

RESPONSE AND EXPLANATION OF CHANGE: This sentence no longer serves a purpose and has been removed.

10 CSR 20-7.015 Effluent Regulations.

(1) Designations of Waters of the State.

(A) Definitions.

1. Acute Toxicity Test — a test used to determine the concentration of an effluent that causes an adverse effect (usually death) in a group of test organisms during a short-term exposure.
2. Allowable Effluent Concentration — the concentration of a toxicant or the parameter toxicity in the receiving water after mixing, sometimes referred to as the receiving water concentration or the in-stream waste concentration.
3. Chronic Toxicity Test — A short-term test, usually ninety-six (96) hours or longer in duration, in which sub-lethal effects such as reduced growth or reproduction rates are measured in addition to lethality.
4. Representative sample — a small quantity whose characteristics represent the whole. To be representative of characteristics over time, samples should be spread evenly over the entire period. For permitting purposes representative sampling shall be consistent with 40 CFR Part 122.48.
5. Toxic Unit — a measure of effluent toxicity generally expressed as acute toxicity unit or chronic toxicity unit. The larger the toxicity unit, the greater the toxicity.
6. Toxic Unit – Acute — one-hundred (100) times the reciprocal of the effluent concentration that causes fifty (50) percent of the organisms to die in an acute toxicity test.
7. Toxic Unit – Chronic — one-hundred (100) times the reciprocal of the highest effluent concentration that causes no observable effect on the test organism in a chronic toxicity test.

(B) For the purpose of this rule, the waters of the state are divided into the following categories:

1. The Missouri and Mississippi Rivers (section (2) of this rule);
2. Lakes and reservoirs, including natural lakes and any impoundments created by the construction of a dam across any waterway or watershed. An impoundment designed for or used as a disposal site for tailings or sediment from a mine or mill shall be considered a wastewater treatment device and not a lake or reservoir. Releases to lakes and reservoirs include discharges into streams one-half (1/2) stream mile (.80 km) before the stream enters the lake as measured to its conservation pool (section (3) of this rule);
3. A losing stream is a stream which distributes thirty percent (30%) or more of its flow through natural processes such as through permeable geologic materials into a bedrock aquifer within two (2) miles flow distance downstream of an existing or proposed discharge. Flow measurements to determine percentage of water loss must be corrected to approximate the seven (7)-day Q10 stream flow. If a stream bed or drainage way has an intermittent flow or a flow insufficient to measure in accordance with this rule, it may be determined to be a losing stream on the basis of channel development, valley configuration, vegetation development, dye tracing studies, bedrock characteristics, geographical data, and other geological factors. Only discharges which in the opinion of the Missouri Department of

Natural Resources (department) reach the losing section and which occur within two (2) miles upstream of the losing section of the stream shall be considered releases to a losing stream. A list of known losing streams is available in the Water Quality Standards, 10 CSR 20-7.031 Table J—Losing Streams. Other streams may be determined to be losing by the department (section (4) of this rule);

4. Metropolitan no-discharge streams. These streams and the limitations on discharging to them are listed in Table F of 10 CSR 20-7.031 Water Quality Standards;
 5. Special streams— Outstanding National Resource Waters and Outstanding State Resource Waters, as listed in Tables D and E of 10 CSR20-7.031 (section (6) of this rule);
 6. Subsurface waters in aquifers (section (7) of this rule); and
 7. All other waters except as noted in paragraphs (1)(B)1.–6. of this rule (section (8) of this rule).
- (C) Sections (2) through (8) of this rule establish requirements for discharges to the waters specified in these sections, and the requirements of section (9) of this rule apply to all discharges. The requirements of this rule do not apply to stormwater discharges; effluent limits for stormwater discharges are prescribed in 10 CSR 20-6.200 Storm Water Regulations.
- (2) Effluent Limitations for the Missouri and Mississippi Rivers. In addition to the requirements of section (9) of this rule, the following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source, or wastewater treatment facility.
- (A) Discharges from wastewater treatment facilities which receive primarily domestic waste or from publicly-owned treatment works (POTWs) shall undergo treatment sufficient to conform to the following limitations:
1. Biochemical Oxygen Demand⁵ (BOD₅) and Total Suspended Solids (TSS) equal to or less than a monthly average of thirty milligrams per liter (30 mg/L) and a weekly average of forty-five milligrams per liter (45 mg/L);
 2. pH shall be maintained in the range from six to nine (6–9) standard units;
 3. Exceptions to paragraphs (2)(A)1. and 2. of this rule are as follows:
 - A. If the facility is a wastewater lagoon, the TSS shall be equal to or less than a monthly average of eighty milligrams per liter (80 mg/L) and a weekly average of one hundred twenty milligrams per liter (120 mg/L) and the pH shall be maintained above six 6.0, and the BOD₅ shall be equal to or less than a monthly average of forty-five milligrams per liter (45 mg/L) and a weekly average of sixty-five milligrams per liter (65 mg/L);
 - B. If the facility is a trickling filter plant the BOD₅ and TSS shall be equal to or less than a monthly average of forty-five milligrams per liter (45 mg/L) and a weekly average of sixty-five milligrams per liter (65 mg/L);
 - C. Where the use of effluent limitations set forth in this section is known or expected to produce an effluent that will endanger or violate water quality, the department will set specific effluent limitations for

individual dischargers to protect the water quality of the receiving streams. When a waste load allocation is conducted for a stream or stream segment, all permits for discharges in the study area shall be modified to reflect the limits established in the study in accordance with any applicable compliance schedule;

- D. The department may require more stringent limitations than authorized in paragraphs (2)(A)1. and 2. and subparagraphs (2)(A)3.A., B., and C. of this rule under the following conditions:
- (I) If the facility is an existing facility, the department may set the BOD5 and TSS limits based upon an analysis of the past performance, rounded up to the next five milligrams per liter (5 mg/L) range; and
 - (II) If the facility is a new facility, the department may set the BOD5 and TSS limits based upon the design capabilities of the plant considering geographical and climatic conditions;
 - (a) A design capability study has been conducted for new lagoon systems. The study reflects that the effluent limitations should be BOD5 equal to or less than a monthly average of forty-five milligrams per liter (45 mg/L) and a weekly average of sixty-five milligrams per liter (65 mg/L) and TSS equal to or less than a monthly average of seventy milligrams per liter (70 mg/L) and a weekly average of one hundred ten milligrams per liter (110 mg/L).
 - (b) A design capability study has been conducted for new trickling filter systems and the study reflects that the effluent limitations should be BOD5 and TSS equal to or less than a monthly average of forty milligrams per liter (40 mg/L) and a weekly average of sixty milligrams per liter (60 mg/L);
4. Sludges removed in the treatment process shall not be discharged. Sludges shall be routinely removed from the wastewater treatment facility and disposed of or used in accordance with a sludge management practice approved by the department; and
5. When the wastewater treatment process causes nitrification which affects the BOD5 reading, the permittee can petition the department to substitute carbonaceous BOD5 in lieu of regular BOD5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD5 at five milligrams per liter (5 mg/L) less than the regular BOD5 in the operating permit.
- (B) The suspended solids which are present in stream water and which are removed during treatment may be returned to the same body of water from which they were taken, along with any additional suspended solids resulting from the treatment of water to be used as public potable water or industrial purposes using essentially the same process as a public water treatment process. This includes the solids that are

removed from potable waters that are withdrawn from wells located in the alluvial valley of the Missouri and Mississippi Rivers.

(C) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that shall require, at a minimum, one (1) wastewater sample per year for each fifty thousand (50,000) gallons per day (gpd) of effluent, or fraction thereof, except that—
 - A. Point sources that discharge less than twenty-five thousand (25,000) gpd may only be required to submit an annual report;
 - B. The department may establish less frequent sampling requirements for point sources that produce an effluent that does not exhibit high variability and consistently complies with the applicable effluent limit; and
 - C. Sludge sampling will be established in the permit.
2. Sampling frequency shall be representative of the discharge during the period the sampling covers (daily, weekly, monthly, seasonally, etc.).
3. Sample types shall be as follows:
 - A. Samples collected from lagoons may be grab samples;
 - B. Samples collected from mechanical plants shall be twentyfour (24)-hour composite samples, unless otherwise specified in the operating permit; and
 - C. Sludge samples will be grab samples unless otherwise specified in the operating permit.
4. The monitoring frequency and sample types stated in subsection (2)(C) of this rule are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site-specific informational needs of the department.

(3) Effluent Limitations for the Lakes and Reservoirs.

(A) In addition to the requirements of section (9) of this rule, the following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source, or wastewater treatment facility to a lake or reservoir designated in 10 CSR 20-7.031 as L2 and L3 which is publicly owned. Releases to lakes and reservoirs include discharges into streams one-half (1/2) stream mile (.80 km) before the stream enters the lake as measured to its conservation pool.

1. Discharges from wastewater treatment facilities which receive primarily domestic waste or from POTWs shall undergo treatment sufficient to conform to the following limitations:
 - A. BOD5 and TSS equal to or less than a monthly average of twenty milligrams per liter (20 mg/L) and a weekly average of thirty milligrams per liter (30 mg/L);
 - B. pH shall be maintained in the range from six to nine (6–9) standard units;
 - C. Where the use of effluent limitations set forth in section (3) of this rule are reasonably expected to exceed applicable water quality standards, the department may either—conduct waste load allocation

studies in order to arrive at a limitation which protects the water quality of the state or set specific effluent limitations for individual dischargers to protect the water quality of the receiving streams. When a waste load allocation study is conducted for a stream or stream segment, all permits for discharges in the study area shall be modified to reflect the limits established in the waste load allocation study in accordance with any applicable compliance schedule;

- D. Sludges removed in the treatment process shall not be discharged. Sludges shall be routinely removed from the wastewater treatment facility and disposed of or used in accordance with a sludge management practice approved by the department; and
 - E. When the wastewater treatment process causes nitrification which affects the BOD5 reading, the permittee can petition the department to substitute carbonaceous BOD5 in lieu of regular BOD5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD5 at five milligrams per liter (5 mg/L) less than the regular BOD5 in the operating permit.
- (B) Monitoring Requirements.
- 1. The department will develop a wastewater and sludge sampling program based on design flow that will require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—
 - A. Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;
 - B. The department may establish less frequent sampling requirements for point sources that produce an effluent that does not exhibit high variability and consistently complies with the applicable effluent limit; and
 - C. Sludge sampling will be established in the permit.
 - 2. Sampling frequency shall be representative of the discharge during the period the sampling covers (daily, weekly, monthly, seasonally, etc.).
 - 3. Sample types shall be as follows:
 - A. Samples collected from lagoons may be grab samples;
 - B. Samples collected from mechanical plants shall be twentyfour (24)-hour composite samples, unless otherwise specified in the operating permit; and
 - C. Sludge samples shall be grab samples unless otherwise specified in the operating permit.
 - 4. The monitoring frequency and sample types stated in paragraphs (3)(B)1. through 3. of this rule are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site-specific informational needs of the department.
- (C) For lakes designated in 10 CSR 20- 7.031 as L1, which are primarily used for public drinking water supplies, there will be no discharge into the watersheds above these lakes from domestic or industrial wastewater sources regulated by these rules. Discharges from potable water treatment plants, such as filter wash, may be

permitted. Separate storm sewers will be permitted, but only for the transmission of storm water. Discharges permitted prior to the effective date of this requirement may continue to discharge so long as the discharge remains in compliance with its operating permit.

- (D) For lakes designated in 10 CSR 20- 7.031 as L3 which are not publicly owned, the discharge limitations shall be those contained in section (8) of this rule.
 - (E) In addition to other requirements in this section, discharges to Lake Taneycomo and its tributaries between Table Rock Dam and Power Site Dam (and excluding the discharges from the dams) shall not exceed five tenths milligrams per liter (0.5 mg/L) of phosphorus as a monthly average. Discharges meeting both the following conditions shall be exempt from this requirement:
 - 1. Those permitted prior to May 9, 1994; and
 - 2. Those with design flows of less than twenty-two thousand five hundred (22,500) gpd. All existing facilities whose capacity is increased would be subject to phosphorus limitations. The department may allow the construction and operation of interim facilities without phosphorus control provided their discharges are connected to regional treatment facilities with phosphorus control not later than three (3) years after authorization. Discharges in the White River basin and outside of the area designated above for phosphorus limitations shall be monitored for phosphorus discharges, and the frequency of monitoring shall be the same as that for BOD5 and TSS, but not less than annually. The department may reduce the frequency of monitoring if the monitoring data is sufficient for water quality planning purposes.
 - (F) In addition to other requirements in this section, discharges to Table Rock Lake watershed, defined as hydrologic units numbered 11010001 and 11010002, shall not exceed five-tenths milligrams per liter (0.5 mg/L) of phosphorus as a monthly average except those existing discharges with design flows of less than twenty-two thousand five hundred (22,500) gpd permitted prior to November 30, 1999, unless the design flow is increased.
- (4) Effluent Limitations for Losing Streams.
- (A) Discharges to losing streams shall be permitted only after other alternatives including land application, discharge to a gaining stream, and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.
 - (B) In addition to the requirements of section (9) of this rule, each permits for a discharge from a wastewater treatment facility to a losing stream, shall be written using the limitations contained in subsections (4)(B) and (C) of this rule in accordance with any applicable compliance schedule. Discharges from private wastewater treatment facilities which receive primarily domestic waste, industrial sources that treat influents containing significant amounts of organic loading, or POTWs permitted under this section shall undergo treatment sufficient to conform to the following limitations:
 - 1. BOD5 equal to or less than a monthly average of ten milligrams per liter (10 mg/L) and a weekly average of fifteen milligrams per liter (15 mg/L);

2. TSS equal to or less than a monthly average of fifteen milligrams per liter (15 mg/L) and a weekly average of twenty milligrams per liter (20 mg/L);
3. pH shall be maintained in the range from six to nine (6–9) standard units;
4. All chlorinated effluent discharges to losing streams or within two (2) stream miles flow distance upstream of a losing stream shall also be dechlorinated prior to discharge;
5. Sludges removed in the treatment process shall not be discharged. Sludges shall be routinely removed from the wastewater treatment facility and disposed of or used in accordance with a sludge management practice approved by the department;
6. When the wastewater treatment process causes nitrification which affects the BOD5 reading, the permittee can petition the department to substitute carbonaceous BOD5 in lieu of regular BOD5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD5 at five milligrams per liter (5 mg/L) less than the regular BOD5 in the operating permit; and
7. For situations in which nitrates in a discharge can be reasonably expected to impact specific drinking water wells, the concentration of nitrates in the discharge shall be limited to an average monthly limit of ten milligrams per liter (10 mg/L) as nitrogen and a maximum daily limit of twenty milligrams per liter (20 mg/L). Applicants may conduct a study in the same manner as the Missouri Risk-Based Corrective Action Technical Guidance published in 2006 to determine if nitrate limits are necessary to protect groundwater. In such cases, applicants shall submit a study plan for approval prior to the study, and submit all findings as part of their permit application.

(C) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that shall require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—
 - A. Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;
 - B. The department may establish less frequent sampling requirements for point sources that produce an effluent that does not exhibit high variability and consistently complies with the applicable effluent limit; and
 - C. Sludge samples will be established in the permit.
2. Sampling frequency shall be representative of the discharge during the period the sampling covers (daily, weekly, monthly, seasonally, etc.).
3. Sample types shall be as follows:
 - A. Samples collected from lagoons and recirculating sand filters may be grab samples;
 - B. Samples collected from mechanical plants shall be twentyfour (24)-hour composite samples, unless otherwise specified in the operating permit; and

- C. Sludge samples shall be a grab sample unless otherwise specified in the operating permit.
 - 4. The monitoring frequency and sample types stated in paragraphs (4)(C) 1. through 3. of this rule are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site-specific informational needs of the department.
- (5) Effluent Limitations for Metropolitan No-Discharge Streams.
 - (A) Discharge to metropolitan no-discharge streams is prohibited, except as specifically permitted under the Water Quality Standards 10 CSR 20-7.031 and noncontaminated storm water flows.
 - (B) Monitoring Requirements.
 - 1. The department will develop a wastewater and sludge sampling program based on design flow that shall require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—
 - A. Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;
 - B. Point sources that discharge more than one point three (1.3) mgd will be required, at a minimum, to collect fifty-two (52) wastewater samples per year. The department may establish less frequent sampling requirements for point sources that produce an effluent that does not exhibit high variability and consistently complies with the applicable effluent limit; and
 - C. Sludge sampling will be established in the permit.
 - 2. Sampling frequency shall be representative of the discharge during the period the sampling covers (daily, weekly, monthly, seasonally, etc.).
 - 3. Sample types shall be as follows:
 - A. Samples collected from lagoons may be grab samples;
 - B. Samples collected from mechanical plants shall be twentyfour (24)-hour composite samples, unless otherwise specified in the operating permit; and
 - C. Sludge samples shall be a grab sample unless otherwise specified in the operating permit.
 - 4. The monitoring frequency and sample types stated in paragraphs (5)(B)1. through 3. of this rule are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site-specific informational needs of the department.
- (6) Effluent Limitations for Special Streams.
 - (A) Limits for Outstanding National Resource Waters as listed in Table D of 10 CSR 20-7.031 and Drainages Thereto.
 - 1. In addition to the requirements of section (9) of this rule, the following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source, or wastewater treatment facility to waters included in this section.
 - 2. Discharges from wastewater treatment facilities, which receive primarily domestic waste, or from POTWs are limited as follows:

- A. New releases from any source are prohibited;
 - B. Discharges from sources that existed before June 29, 1974, or if additional stream segments are placed in this section, discharges that were permitted at the time of the designation will be allowed.
3. Industrial, agricultural, and other non-domestic contaminant sources, point sources, or wastewater treatment facilities which are not included under subparagraph (6)(A)2.B. of this rule shall not be allowed to discharge. Agrichemical facilities shall be designed and constructed so that all bulk liquid pesticide nonmobile storage containers and all bulk liquid fertilizer nonmobile storage containers are located within a secondary containment facility. Dry bulk pesticides and dry bulk fertilizers shall be stored in a building so that they are protected from the weather. The floors of the buildings shall be constructed of an approved design and material(s). At an agrichemical facility, all transferring, loading, unloading, mixing, and repackaging of bulk agrichemicals shall be conducted in an operational area. All precipitation collected in the operational containment area or secondary containment area as well as process generated wastewater shall be stored and disposed of in a no-discharge manner.
4. Monitoring requirements.
- A. The department will develop a wastewater and sludge sampling program based on design flow that will require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—
 - (I) Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;
 - (II) Point sources that discharge more than one point three (1.3) mgd will be required at a minimum to collect fifty-two (52) wastewater samples per year. The department may establish less frequent sampling requirements for point sources that produce an effluent that does not exhibit high variability and consistently complies with the applicable effluent limit;
 - (III) Sludge sampling will be established in the permit.
 - B. Sampling frequency shall be representative of the discharge during the period the sampling covers (daily, weekly, monthly, seasonally, etc.).
 - C. Sample types shall be as follows:
 - (I) Samples collected from lagoons may be grab samples;
 - (II) Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and
 - (III) Sludge samples shall be a grab sample unless otherwise specified in the operating permit.
 - D. The monitoring frequency and sample types stated in subparagraphs (6)(A)4.A. through C. of this rule are minimum requirements. The permit writer shall establish monitoring frequencies and sampling

types to fulfill the site-specific informational needs of the department.

- (B) Limits for Outstanding State Resource Waters as listed in Table E of 10 CSR 20-7.031.
 - 1. Discharges shall not cause the current water quality in the streams to be lowered.
 - 2. Discharges will be permitted as long as the requirements of paragraph (6)(B)1. of this rule are met and the limitations in section (8) of this rule are not exceeded.
- (7) Effluent Limitations for Subsurface Waters.
 - (A) No person shall release any water into aquifers, store or dispose of water in a way which causes or permits it to enter aquifers either directly or indirectly unless it meets the requirements of section (9) of this rule and it meets the appropriate groundwater protection criteria set in 10 CSR 20-7.031, Table A at a point ten feet (10') under the release point, or other compliance point based on site specific considerations, except as provided in subsections (7)(E) and (F) of this rule. The permit writer shall review the complete application and other data to determine which parameter to include in the permit.
 - (B) No wastewater shall be introduced into sinkholes, caves, fissures, or other openings in the ground which do or are reasonably certain to drain into aquifers except as provided in section (4) of this rule.
 - (C) All abandoned wells and test holes shall be properly plugged or sealed to prevent pollution of subsurface waters, as per the requirements of the department.
 - (D) Where any wastewater treatment facility or any water contaminant source or point source incorporates the use of land treatment systems which allows or can reasonably be expected to allow wastewater effluents to reach the aquifer. Compliance with subsection (7)(A) of this rule shall be determined by a site-specific monitoring plan.
 - (E) The effluent limitations specified in subsection (7)(A) of this rule shall not apply to facilities designed and constructed to meet department design criteria provided these designs have been reviewed and approved by the department. The department has the right to require monitoring, reporting, public notice, and other information as deemed appropriate. This exemption may be revoked by the department should any monitoring indicate an adverse effect on a beneficial water use or if the numeric criteria in the Water Quality Standards are being exceeded.
 - (F) Any person not included in subsection (7)(E) of this rule who releases, stores, or disposes of water in a manner which results in releases of water to an aquifer having concentrations in excess of one (1) or more parameter limitations provided in subsection (7)(A) of this rule may be allowed to resample for purposes of verification of the excess. At their discretion, persons may demonstrate, at the direction of the department, that the impact on the water quality in the aquifer is negligible on the beneficial uses. The demonstration shall consider, at a minimum, the following factors:
 - 1. Site geology;
 - 2. Site geohydrology;
 - 3. Existing and potential water uses;

4. Existing surface water and groundwater quality;
5. Characteristics of wastes or wastewater contained in facilities; and
6. Other items as may be required by the department to assess the proposal.
 - A. Demonstrations conducted under 10 CSR 25-18.010 shall be reviewed by the department in accordance with such rules. If the demonstrations show that the impact on groundwater quality will not result in an unreasonable risk to human health or the environment, alternate effluent limitations will be established by the department.
 - B. All other demonstrations shall be reviewed by the department. If the demonstrations show that the impact on groundwater quality will not result in an unreasonable risk to human health or the environment, alternate effluent limitation(s) will be proposed by the department and presented to the Clean Water Commission for approval. The Clean Water Commission has the right to require monitoring, reporting, public notice, and other information as deemed appropriate in the approval of the alternate limitation for one (1) or more parameters from subsection (7)(A) of this rule. The Clean Water Commission may hold a public hearing to secure public comment prior to final action on an alternate limitation.
 - C. No alternate limitations will be granted which would impair beneficial uses of the aquifer or threaten human health or the environment.
 - D. Alternate limitations may be revoked by the department should any monitoring indicate an adverse effect on a beneficial water use or violations of the alternate limitation.

(8) Effluent Limitations for All Waters, Except Those in Paragraphs (1)(B)1.–6. of This Rule. In addition to the requirements of section (9) of this rule, the following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source, or wastewater treatment facility.

- (A) Discharges from wastewater treatment facilities which receive primarily domestic waste or POTWs shall undergo treatment sufficient to conform to the following limitations:
1. BOD5 and TSS equal to or less than a monthly average of thirty milligrams per liter (30 mg/L) and a weekly average of fortyfive milligrams per liter (45 mg/L);
 2. pH shall be maintained in the range from six to nine (6–9) standard units;
 3. The limitations of paragraphs (8)(A)1. and 2. of this rule will be effective unless an alternate limitation will not cause violations of the Water Quality Standards or impairment of the uses in the standards. When an Antidegradation Review has been completed for new or expanded discharges, the following alternate limitation may also be allowed:
 - A. If the facility is a wastewater lagoon, the TSS shall be equal to or less than a monthly average of eighty milligrams per liter (80 mg/L) and a weekly average of one hundred twenty milligrams per liter (120 mg/L) and the pH shall be maintained above six (6.0) and the BOD5 shall be equal to or less than a monthly average of forty-five

- milligrams per liter (45 mg/L) and a weekly average of sixty-five milligrams per liter (65 mg/L);
- B. If the facility is a trickling filter plant, the BOD5 and TSS shall be equal to or less than a monthly average of forty-five milligrams per liter (45 mg/L) and a weekly average of sixty-five milligrams per liter (65 mg/L);
 - C. Where the use of effluent limitations set forth in section (8) of this rule is known or expected to produce an effluent that will endanger water quality, the department will set specific effluent limitations for individual dischargers to protect the water quality of the receiving streams. When a waste load allocation study is conducted for a stream or stream segment, all permits for discharges in the study area shall be modified to reflect the limits established in the waste load allocation study in accordance with any applicable compliance schedule; and
 - D. The department may require more stringent limitations than authorized in paragraphs (8)(A)1. and 2. and subparagraphs (8)(A)3.A., B., and C. of this rule under the following conditions:
 - (I) If the facility is an existing facility, the department may set the BOD5 and TSS limits based upon an analysis of the past performance, rounded up to the next five milligrams per liter (5 mg/L) range; and
 - (II) If the facility is a new facility the department may set the BOD5 and TSS limits based upon the design capabilities of the plant considering geographical and climatic conditions:
 - (a) A design capability study has been conducted for new lagoon systems. The study reflects that the effluent limitations should be BOD5 equal to or less than a monthly average of forty-five milligrams per liter (45 mg/L) and a weekly average of sixty-five milligrams per liter (65 mg/L) and TSS equal to or less than a monthly average of seventy milligrams per liter (70 mg/L) and a weekly average of one hundred ten milligrams per liter (110 mg/L); or
 - (b) A design capability study has been conducted for new trickling filter systems and the study reflects that the effluent limitations should be BOD5 and TSS equal to or less than a monthly average of forty milligrams per liter (40 mg/L) and a weekly average of sixty milligrams per liter (60 mg/L);
4. Sludges removed in the treatment process shall not be discharged. Sludges shall be routinely removed from the wastewater treatment facility and disposed of or used in accordance with a sludge management practice approved by the department; and
5. When the wastewater treatment process causes nitrification which affects the BOD5 reading, the permittee can petition the department to substitute

carbonaceous BOD5 in lieu of regular BOD5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD5 at five milligrams per liter (5 mg/L) less than the regular BOD5 in the operating permit.

(B) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that will require, at a minimum, one (1) wastewater sample per year for each fifty thousand (50,000) gpd of effluent, or fraction thereof, except that—
 - A. Point sources that discharge less than twenty-five thousand (25,000) gpd may only be required to submit an annual report;
 - B. The department may establish less frequent sampling requirements for point sources that produce an effluent that does not exhibit high variability and consistently complies with the applicable effluent limit; and
 - C. Sludge sampling will be established in the permit.
2. Sampling frequency shall be representative of the discharge during the period the sampling covers (daily, weekly, monthly, seasonally, etc.).
3. Sample types shall be as follows:
 - A. Samples collected from lagoons may be grab samples;
 - B. Samples collected from mechanical plants shall be twentyfour (24)-hour composite samples, unless otherwise specified in the operating permit; and
 - C. Sludge samples shall be a grab sample unless otherwise specified in the operating permit.
4. The monitoring frequency and sample types stated in paragraphs (8)(B)1. through 3. of this rule are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site-specific informational needs of the department.

(9) General Conditions.

- (A) Establishing Effluent Limitations. Unless a formal variance from water quality standards have been approved by the Clean Water Commission and the U.S. Environmental Protection Agency, operating permits as required under 10 CSR 20-6.010(5) shall include, if applicable, the most protective limits set forth as follows:
1. Technology-based effluent limits and standards based on specific requirements under sections (2) through (8) of this rule;
 2. Water quality-based effluent limits based on a waste load allocation in accordance with federal regulations (40 CFR 122.44(d)(1)), which would address pollutants that have a reasonable potential to cause or contribute to an excursion above Water Quality Standards established in 10 CSR 20-7.031.
 - A. Local effluent and receiving water data may be used to develop site specific effluent limits provided the department determines that this data is representative and 10 CSR 7.031 provides for their development.

- B. Water quality-based effluent limitations incorporating mixing zones and zones of initial dilution as provided for in 10 CSR 20-7.031(5)(A)4.B. may be based on stream flows other than critical low-flow conditions, if the following conditions are met:
 - (I) The limits are protective of critical low-flow conditions, as well as higher flow conditions;
 - (II) In the case of existing discharges which are not expanding their design flow or reconstructing their facility, flow-variable limits shall not allow the discharge to increase its pollutant loading from levels it has previously been able to achieve, unless supported by a waste load allocation as part of an approved Total Maximum Daily Load (TMDL); and
 - (IV) The permit shall require in-stream flow measurements and methods to determine compliance;
 - 3. Effluent limit guidelines or standards that have been federally promulgated under Sections 301, 304, 306, 307, 318, and 405 of the Clean Water Act and case-by-case determinations of technology-based effluent limitations under section 402(a)(1) of the Clean Water Act;
 - 4. Effluent limits prescribed for pollutants under a TMDL, as required under Section 303(d)(1)(C) of the Clean Water Act, necessary to achieve water quality standards, including permit limits in lieu of a TMDL. TMDL waste load allocations shall be placed in permits at renewal, and in subsequent renewals as needed. Permits may include schedules of compliance and, if developed, follow TMDL implementation plans or other flexibilities so long as they are allowed by federal regulation. The department may reopen existing permits to implement TMDL requirements;
 - 5. Effluent limits that are developed through the Antidegradation review process, provided there is reasonable potential to exceed these limits;
 - 6. Effluent limits prescribed for stormwater discharges as required under 10 CSR 20-6.200 Storm Water Regulations; and
 - 7. Effluent Limits that are required as a result of legal agreements between dischargers and the department or the Clean Water Commission, or as otherwise required or allowed by law.
- (B) Bacteria and Statewide Nutrient Limits. Operating Permits as required under 10 CSR 20-6.010(5) shall include, if applicable, the following bacteria and nutrient limits:
- 1. Bacteria. The following water quality *Escherichia coli* (*E. coli*) discharge limits apply:
 - A. Discharges to stream segments designated in Table H of 10 CSR 20-7.031 for whole body contact recreation and secondary contact recreation shall not exceed the water quality *E. coli* counts established in subsection (5)(C) of 10 CSR 20-7.031;
 - B. Discharges to lakes designated as whole body contact recreational or secondary contact recreational in Table G of 10 CSR 20-7.031 shall not exceed the water quality *E. coli* counts established in subsection (5)(C) of 10 CSR 20-7.031;

- C. Discharges to privately-owned lakes classified as L3, as defined in subsection (1)(F) of 10 CSR 20-7.031, that are designated as whole body contact recreational or secondary contact recreational in Table G of 10 CSR 20-7.031 shall not exceed the water quality *E. coli* counts established in subsection (5)(C) of 10 CSR 20-7.031. Discharges include releases into streams one-half (1/2) stream mile (.80 km) before the stream enters the lake as measured to its conservation pool;
 - D. Discharges located within two (2) miles upstream of stream segments or lakes designated for whole body contact recreational or secondary contact recreational in Tables H and G of 10 CSR 20-7.031 shall not exceed the water quality *E. coli* counts established in subsection (5)(C) of 10 CSR 20-7.031 for the receiving stream segment or lake designated for those uses;
 - E. Short-term *E. coli* limits. During the recreation season, discharges to waters designated for whole body contact "A" as defined in part (1)(C)2.A.(I) of 10 CSR 20-7.031 shall be limited to six hundred thirty (630) colony forming units per one hundred (100) milliliters (ml) expressed as a weekly geometric mean for POTWs and as a daily maximum for non-POTWs. During the recreation season, discharges to waters designated for whole body contact "B" as defined in part (1)(C)2.A.(II) of 10 CSR 20-7.031 shall be limited to one thousand thirty (1,030) colony forming units per one hundred (100) ml expressed as a weekly geometric mean for POTWs and as a daily maximum for non-POTWs. During the recreation season, discharges to waters designated for secondary contact recreational as defined in paragraph (1)(C)9. of 10 CSR 20-7.031 shall be limited to one thousand one hundred thirty-four (1,134) colony forming units per one hundred (100) ml expressed as a weekly geometric mean for POTWs and as a daily maximum for non-POTWs. For the entire calendar year, discharges to waters that are defined by paragraph (1)(B)3. of this rule as losing streams shall be limited to one hundred twenty-six (126) colony forming units per one hundred (100) ml expressed as a daily maximum;
 - F. As an alternative to the limits prescribed in subparagraphs (9)(B)1.A. through E. of this rule, the department may allow permit applicants to conduct a study to develop *E. coli* limits that reflect pathogen decay. Prior to conducting this study applicants shall submit a quality assurance project plan for approval prior to the study, and submit all findings as part of their permit application; and
 - G. Notwithstanding the bacteria limits prescribed in paragraphs (9)(1)A. through F. of this rule, discharges to losing streams shall be considered in compliance so long as no more than ten (10) percent of samples exceed one-hundred twenty-six (126) colony forming units per one hundred (100) ml daily maximum; and
2. Nutrients. Reserved for Statewide Nutrient Effluent Limits.

(C) Schedules of Compliance.

1. Compliance with new or revised National Pollutant Discharge Elimination System (NPDES) or Missouri operating permit limitations shall be achieved and in accordance with the federal regulation 40 CFR Part 122.47, "Schedules of Compliance," May 15, 2000, as published by the Office of the Federal Register, National Archives and Records Administration, Superintendent of Documents, Pittsburgh, PA 15250-7954, which is hereby incorporated by reference and does not include later amendments or additions.
2. If any permit allows a time for achieving final compliance from the date of permit issuance, the schedule of compliance in the permit shall set forth interim requirements and the dates for their achievement. The time between interim dates shall not exceed one (1) year, except that in the case of a schedule for compliance with standards for sewage sludge use and disposal, the time between interim dates shall not exceed six months.
3. Within fourteen (14) days following each interim date and the final date of compliance, the permittee shall provide the department with written notice of the permittee's compliance or noncompliance with the interim or final requirement for the dates.
4. A compliance schedule may be modified if the department determines good cause exists such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonable remedy. Applicants may request a modification by providing appropriate justification. In no case shall the compliance schedule be modified to extend beyond an applicable statutory deadline.

(D) Monitoring, Analysis, and Reporting.

1. All construction and operating permit holders shall submit reports at intervals established by the permit or at any other reasonable intervals required by the department. The monitoring and analytical schedule shall be as established by the department in the operating permit.
2. The analytical and sampling methods used must conform to the following reference methods unless alternates are approved by the department:
 - A. *Standard Methods for the Examination of Waters and Wastewaters* (14, 15, 16, 17, 18, 19, 20, and 21st Edition), published by the Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314;
 - B. *Water Testing Standards, Vol. 11.01 and 11.02*, published by American Society for Testing and Materials, West Conshohocken, PA 19428;
 - C. *Methods for Chemical Analysis of Water and Wastes* (EPA- 600/4-79-020), published by the Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 54202; and
 - D. *NPDES Compliance Sampling Inspection Manual*, (EPA-305-X-04-001), published by Environmental Protection Agency, Office of Enforcement and Compliance Assurance 1200 Pennsylvania Avenue, N.W., Washington, DC 20460 (July 2004).

3. Sampling and analysis by the department to determine violations of this regulation will be conducted in accordance with the methods listed in paragraph (9)(D)2. of this rule or any other approved by the department. Violations may be also determined by review of the permittee's self-monitoring reports. Analysis conducted by the permittee or his/her laboratory shall be conducted in such a way that the precision and accuracy of the analyzed results can be determined.
4. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in the permit, the permittee shall provide the department with the following information, with the next discharge monitoring report as required under subsection (9)(D) of this rule:
 - A. A description of the discharge and cause of noncompliance;
 - B. The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and
 - C. The steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.
5. In the case of any discharge subject to any applicable toxic pollutant effluent standard under Section 307(a) of the federal Clean Water Act, the information required by paragraph (9)(D)4. of this rule regarding a violation of this standard shall be provided within twenty-four (24) hours from the time the owner or operator of the water contaminant source, point source, or wastewater treatment facility becomes aware of the violation or potential violation. This information may be provided via an electronic web-based system developed by the department, provided it is available. If this information is provided orally, a written submission covering these points shall be provided within five (5) working days of the time the owner or operator of the water contaminant source, point source, or wastewater treatment facility becomes aware of the violation.
6. Bacteria Monitoring for Disinfection.
 - A. For systems that have a design capacity of greater than one hundred thousand (100,000) gpd, a minimum of one (1) sample shall be collected for *E. coli* analysis each calendar week during the recreational season from April 1 through October 31. Compliance with the *E. coli* water quality standard established in subsection (5)(C) of 10 CSR 20-7.031 shall be determined each calendar month by calculating the geometric mean of all of the samples collected each calendar month. Compliance with the short-term *E. coli* limits established in subparagraph (9)(B)1.E. of this rule shall also be determined.
 - B. For systems that discharge to stream segments that are defined by paragraph (1)(B)3. as losing streams and have a design capacity of greater than one hundred thousand (100,000) gpd, a minimum of one (1) sample shall be collected for *E. coli* analysis each calendar week all year. Compliance with the *E. coli* water quality standard

established in subsection (5)(C) of 10 CSR 20-7.031 and with the short term *E. coli* limits established in subparagraph (9)(B)1.E. of this rule shall also be determined.

- C. For systems that have a design capacity of one hundred thousand (100,000) gpd or less, the sampling frequency for *E. coli* analysis shall be in accordance with the wastewater and sludge sampling program based on the design flow which is dependent upon the receiving water category as listed in subsection (1)(B) of this rule. Compliance with the *E. coli* water quality standard established in subsection (5)(C) of 10 CSR 20-7.031 shall be determined each calendar month by calculating the geometric mean of all of the samples collected each calendar month. Compliance with the short-term *E. coli* limits established in subparagraph (9)(B)1.E. of this rule shall also be determined.
- 7. Statewide Monitoring for Nutrients. Point sources that have the design capacity of greater than one hundred-thousand (100,000) gpd that typically discharge nitrogen and phosphorus shall collect and analyze a minimum of one (1) effluent sample each calendar quarter for one (1) permit cycle or up to (5) five years if the first permit term is less than five (5) years. The samples shall be analyzed for total nitrogen and total phosphorus using EPA approved test methods. This provision shall not limit the department from imposing ongoing or more frequent monitoring in permits that impose effluent limits for total nitrogen or total phosphorus or in situations in which monitoring is appropriate to ensure compliance with water quality standards. The quarterly monitoring frequency for total phosphorus does not apply to dischargers that are subject to the specific lake limits and monitoring requirement specified under subsections (3)(E) and (F) of this rule.
- (E) Dilution Water. Dilution of treated wastewater with cooling water or other less contaminated water to lower the effluent concentration to limits required by an effluent regulation of the Clean Water Law shall not be an acceptable means of treatment.
- (F) Compliance with New Source Performance Standards.
 - 1. Except as provided in paragraph (9)(F)2. of this rule, any new water contaminant source, point source, or wastewater treatment facility on which construction commenced after October 18, 1972, or any new source, which meets the applicable promulgated new source performance standards before the commencement of discharge, shall not be subject to any more stringent new source performance standards or to any more stringent technology-based standards under subsection 301(b)(2) of the federal Clean Water Act for the shortest of the following periods:
 - A. Ten (10) years from the date that construction is completed;
 - B. Ten (10) years from the date the source begins to discharge process or other nonconstruction related wastewater; or
 - C. The period of depreciation or amortization of the facility for the purposes of section 167 or 169 (or both) of the *Internal Revenue Code* of 1954.

2. The protection from more stringent standards of performance afforded by paragraph (9)(F)1. of this rule does not apply to—
 - A. Additional or more stringent permit conditions which are not technology based, for example, conditions based on water quality standards or effluent standards or prohibitions under Section 307(a) of the federal Clean Water Act; and
 - B. Additional permit conditions controlling pollutants listed as toxic under Section 307(a) of the federal Clean Water Act or as hazardous substances under Section 311 of the federal Clean Water Act and which are not controlled by new source performance standards. This exclusion includes permit conditions controlling pollutants other than those identified as hazardous where control of those other pollutants has been specifically identified as the method to control the hazardous pollutant.
- (G) Bypass. Bypass means the intentional diversion of waste streams from any portion of a treatment facility. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. Subsection (9)(G) of this rule does not prohibit blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge.
1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (9)(G)3. and 4. of this rule.
 2. Notice.
 - A. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the department, if possible at least ten (10) days before the date of the bypass.
 - B. Unanticipated bypass. The permittee shall notify the department by telephone within twenty-four (24) hours and follow with a written report within five (5) days from the time the permittee becomes aware of the circumstances of all bypasses or shutdowns that result in a violation of permit limits or conditions and which may endanger human health or the environment. The twenty-four (24) hour and five (5) day reports may be provided via an electronic web-based system developed by the department, provided it is available, or by facsimile machine. POTWs that bypass during storm water inflow and infiltration events need only report on their discharge monitoring reports so long as the bypass does not result in violations of permit limits or conditions or endanger human health or the environment.
 3. Prohibition of bypass. Bypass is prohibited, and the department may take enforcement action against a permittee for bypass, unless:

- A. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - B. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - C. The permittee submitted notices as required under paragraph (9)(G)2. of this rule.
4. The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three (3) conditions listed in paragraph (9)(G)3. of this rule.
- (H) Sludge facilities shall meet the applicable control technology for sewage sludge treatment, use, and disposal as published by the EPA in 40 CFR 503 and applicable state standards and limitations published in 10 CSR 20 and 10 CSR 80. Where there are no standards available or applicable, or when more stringent standards are appropriate to protect human health and the environment, the department shall set specific limitations in permits on a case-by-case basis using best professional judgment.
- (I) Industrial, agricultural, and other nondomestic water contaminant sources, point sources, or wastewater treatment facilities which are not included under subsections (2)(B) or (8)(B) of this rule—
- 1. These facilities shall meet the applicable control technology currently effective as published by the EPA in 40 CFR 405–471. Where there are no standards available or applicable, the department shall set specific parameter limitations using best professional judgment. pH shall be maintained in the range from six to nine (6–9) standard units, except that discharges of uncontaminated cooling water and water treatment plant effluent may exceed nine (9) standard units, but may not exceed ten and one-half (10.5) standard units, if it can be demonstrated that the pH will not exceed nine (9) standard units beyond the regulatory mixing zone; and
 - 2. Agrichemical facilities shall be designed and constructed so that all bulk liquid pesticide nonmobile storage containers and all bulk liquid fertilizer nonmobile storage containers are located within a secondary containment facility. Dry bulk pesticides and dry bulk fertilizers shall be stored in a building so that they are protected from the weather. The floors of the buildings shall be constructed of an approved design and material(s). At an agrichemical facility, the following procedures shall be conducted in an operational area: all transferring, loading, unloading, mixing, and repackaging of bulk agrichemicals. All precipitation collected in the operational containment area or secondary containment area as well as process generated wastewater shall be stored and disposed of in a no-discharge manner or treated to meet the applicable control technology referenced in paragraph (9)(I)1. of this rule.

- (J) Implementation Schedule for Protection of Whole Body Contact and Secondary Contact Recreation.
1. For discharges to water bodies designated for whole body contact and secondary contact recreational use prior to July 1, 2012, in 10 CSR 20-7.031, permits shall insure compliance with effluent limits to protect whole body contact and secondary contact recreation by no later than December 31, 2013, unless the permittee presents an evaluation sufficient to show that disinfection is not required to protect one (1) or both designated recreational uses, or a UAA demonstrates that one (1) or both designated recreational uses are not attainable in the classified waters receiving the effluent.
 2. For discharges to water bodies designated for whole body contact and secondary contact recreational use after June 30, 2012, in 10 CSR 20-7.031, permits shall include schedules of compliance to meet bacteria limits in accordance with subsection (9)(C) of this rule.
- (K) Temporary Suspension of Accountability for Bacteria Standards during Wet Weather. The accountability for bacteria standards may be temporarily suspended for specific discharges when conditions contained in paragraphs (9)(K)1. through 3. of this rule are met.
1. No existing recreational uses downstream of the discharge will be impacted during the period of suspension as confirmed through a water quality review for reasonable potential for downstream impacts and a UAA performed in accordance with the *Missouri Recreational Use Attainability Analysis Protocol* approved by the Missouri Clean Water Commission.
 2. The period of suspension must be restricted to the defined wet weather event that corresponds to the period when recreational uses are unattainable. The period must be determinable at any time by the discharger and the general public (such as from stream depth or flow readings or other stream conditions on which publicly accessible records are kept).
 3. The suspension shall be subject to public review and comment, Missouri Clean Water Commission approval, and EPA approval before becoming effective and shall be contained as a condition in a discharge permit or other written document developed through public participation.
- (L) Whole Effluent Toxicity (WET) Test. The following are permit requirements for acute and chronic WET tests.
1. WET tests are required under 10 CSR 20-6.010(8)(A)4. are to be conducted according to the methods prescribed in 40 CFR 136.3.
 2. Test Types.
 - A. Acute WET tests shall be a multiple dilution series, static, non-renewal test to determine the degree at which acute forty-eight to ninety-six hour (48–96 hour) exposure to the effluent is acutely toxic to aquatic life expressed in species survival.
 - B. Chronic WET test shall be a multiple dilution series, static, renewal test to determine the degree at which chronic (sub lethal) exposure to the effluent is toxic to aquatic life or affects an alternative endpoint such as species reproduction and/or growth. Duration of chronic WET tests shall be established according to 40 CFR 136.3

Identification of test procedures, promulgated as of July 1, 2011, is hereby incorporated by reference in this rule, as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington, DC 20408. This rule does not incorporate any subsequent amendments or additions.

3. **Applicability.** WET test type and frequency shall be determined and expressed in permits by the department. At permit issuance or reissuance, the department will use valid and representative data to establish on a case-by-case basis, whether an existing discharge causes, has the reasonable potential to cause, or contributes to an excursion from the narrative water quality criteria. Where the department concludes that a discharge has the reasonable potential to contribute to an excursion from the narrative water quality criteria, as established in 10 CSR 20- 7.031 the permit will include WET limits. If the department determines the facility has no reasonable potential to violate water quality standards, WET testing may be removed, or if more information is required, WET testing may be retained at a reduced frequency. WET test applicability for NPDES permits shall be fully addressed in the permit factsheet.
4. **Specifications.**
 - A. A dilution series shall be established in the permit for WET test. The dilution series shall be a set of proportional effluent dilutions based on an Allowable Effluent Concentration (AEC).
 - B. All WET tests shall be performed with *Pimephales promelas* (a fathead minnow) and *Ceriodaphnia dubia* (a water flea), except facilities which discharge to receiving streams designated as cold-water fisheries. Facilities which discharge to receiving streams designated as cold-water fisheries may be required to perform WET tests using *Oncorhynchus mykiss* (rainbow trout) instead of the fathead minnow. Other test species for which test methods are provided in 40 CFR 136.3 may be approved by the department on a case-by-case basis provided the species are appropriately sensitive and representative. Alternative species (not included in 40 CFR 136.3) shall be approved in accordance with the procedures in 40 CFR 136.4. Application for alternate test procedures, promulgated as of July 1, 2011, is hereby incorporated by reference in this rule, as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington, DC 20408. This rule does not incorporate any subsequent amendments or additions.
 - C. A Toxic Unit (TU) water quality based limit shall be established in the permit for WET test where the department concludes that a discharge has the reasonable potential to cause or contribute to an excursion from the narrative water quality criteria as established in 10 CSR 20-7.031(4)(D). The TU limit shall be determined in accordance with 40 CFR 122.44(d)(1)(v) and utilizing the methods established in Technical Support Document For Water Quality-based

Toxics Control (March 1991, EPA, EPA/505/2-90-001) and documented in the factsheet. Exceedance of a TU limit shall be a WET test failure.

D. Upon completion of a WET test the lab report and department form as referenced in the permit shall be submitted by the permittee to the department within the timeframe established by the permit.

- (10) Control of Combined Sewer Overflows (CSOs). The permitting and control of CSOs shall conform to EPA's CSO Control Policy, EPA Number 830/B-94-001 (published by EPA April 19, 1994, at 59 Fed. Reg. 18688) as referenced by Section 402 (q) of the Clean Water Act, 33 USC 1342(q). The CSO Control Policy is hereby incorporated by reference, without any later amendments or additions. This document is available by writing to U.S. Environmental Protection Agency, Office of Water Resource Center, Mail Code RC-4100T, 1200 Pennsylvania Avenue NW, Washington, DC 20460 or upon request from the Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, PO Box 176, Jefferson City, MO 65102-0176. Effluent monitoring commitments for CSOs shall be addressed in the long term control plans required under EPA's CSO Control Policy.

FISCAL NOTE

PRIVATE COST

I. RULE NUMBER

Rule Number and Name	<i>10 CSR 20-7.015 Effluent Regulations</i>
Type of Rulemaking	<i>Proposed Rule Amendment</i>

II. SUMMARY OF FISCAL IMPACT

Estimate of the number of entities by class which would likely be affected by the adoption of the proposed rule:	Classification by types of the business entities which would likely be affected:	Estimate in the aggregate as to the cost of compliance with the rule by the affected entities:
Approximately 300 facilities	Private domestic and industrial wastewater treatment facilities	\$102,600

Affected Agency or Political Subdivision	Estimated Cost of Compliance in the Aggregate*
Private wastewater treatment facilities, Nutrient Monitoring required for one permit term	\$115,600
Private wastewater treatment facilities, Whole Effluent Toxicity (WET) Testing (large & medium facilities)	\$212,000
Private wastewater treatment facilities, Nitrate Monitoring	(\$225,000)
TOTAL	\$102,600 *Cost of Compliance in the Aggregate

* Aggregate cost of compliance is calculated by summing the annual costs in the worksheet tables from 2013 through 2018 for private domestic and industrial wastewater treatment facilities

* 3% inflation

III. WORKSHEET

In summary, the revisions to 10 CSR 20-7.015 *Effluent Regulations* will:

1. Update bacteria limits and monitoring requirements;

2. Revise language regarding “bypasses” to align with federal definition;
3. Require quarterly effluent monitoring of nutrient concentrations at large wastewater treatment facilities;
4. Provide clarification regarding whole effluent toxicity testing requirements;
5. Allow for electronic reporting via web-based systems (once available);
6. Include provisions for developing effluent limits with regard to several situations such as discharges to impaired waters, tiered limits which allow higher discharge concentrations during higher stream flow rates, and the use of local stream data to adjust effluent limits;
7. Reduce monitoring frequency for facilities that consistently comply with effluent limits;
8. Eliminate schedule to comply with phosphorus effluent limits for discharges to Table Rock Lake and Lake Tanycomo because the dates have already passed;
9. Require limits for the discharge of nitrates that may impact specific drinking water wells;
10. Specify that operating permits may include schedules of compliance in accordance with federal regulations;
11. Revert to pH effluent limits that were in a previous version of the regulation;
12. Allow alternate compliance points for discharges to subsurface waters; and
13. Reorganize and clarify several elements of the rule.

Summary of Costs						
Nutrient Monitoring	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
	\$3,000	\$9,200	\$15,800	\$22,800	\$30,200	\$34,600
FY2013 through FY2018	Nutrient Monitoring, multi-year aggregate total = \$115,600					
<p>52 private facilities will collect and analyze 4 samples each year to analyze for total nitrogen and phosphorus at a total cost of \$143 per sample = \$29,744. Operating permits are issued with 5-year terms, and the new monitoring requirements will only be incorporated into permits as they are renewed. Nutrient monitoring will only be required for one permit term, and will be discontinued in future operating permits. During the first full year it is assumed that one-fifth of the facilities will have permits up for renewal. Only one-half of the first year season falls within FY2013. Each year the analytical costs are estimated to increase by 3% for inflation.</p> <p>Therefore the FY2013 costs are estimated as: $\\$29,744 * (1/5) * (1/2) = \\$3,000$ (Results rounded to nearest \$100)</p> <p>For FY2014, an additional one-fifth of the facilities will have monitoring incorporated into their operating permit: $\\$3,000*(1.03) + (52)*(4)*(1/5) *(\\$143)*(1.03)^1 = \\$9,200$</p> <p>For FY2015, an additional one-fifth of the facilities will have monitoring incorporated into their permit: $\\$9,200*(1.03) + (52)*(4)*(1/5) *(\\$143)*(1.03)^2 = \\$15,800$</p> <p>For FY2016, an additional one-fifth of the facilities will have monitoring incorporated into their permit: $\\$15,800*(1.03) + (52)*(4)*(1/5) *(\\$143) * (1.03)^3 = \\$22,800$</p> <p>For FY2017, an additional one-fifth of the facilities will have monitoring incorporated into their permit: $\\$22,800*(1.03) + (52)*(4)*(1/5) *(\\$143)*(1.03)^4 = \\$30,200$</p> <p>For FY2018, the remaining facilities will have monitoring incorporated into their permit: $\\$30,200*(1.03) + (52)*(4)*(1/5) *(1/2)*(\\$143)*(1.03)^5 = \\$34,600$</p>						

Whole Effluent Toxicity (WET) Tests	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
	\$32,800	\$33,700	\$34,800	\$35,800	\$36,900	\$38,000
FY2013 through FY2018	Whole Effluent Toxicity, multi-year aggregate total = \$212,000					
<p>5 large private facilities (annual test) and 287 medium private facilities (one test every five years) will conduct WET tests at \$500 per test. Five percent additional testing is assumed because of potential industrial concerns at facilities that have industrial or commercial customers.</p> <p>$[(5) + (20\%)(287)](1.05) * (\\$500) = \\$32,800$ per year. Each year the analytical costs are estimated to increase by 3% for inflation.</p>						
Reduced Nitrate Monitoring	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
	(\$34,800)	(\$35,800)	(\$36,900)	(\$38,000)	(\$39,200)	(\$40,300)
FY2013 through FY2018	Reduced Nitrate Monitoring, multi-year aggregate total = (\$225,000)					
<p>232 private facilities are currently required to monitor for nitrates. It is assumed that monitoring at half of these facilities will no longer be required. Monthly monitoring is assumed at a cost of \$25 per analysis. Each year the analytical costs are estimated to increase by 3% for inflation.</p> <p>$(232) * (1/2) * (12) * (25) = \\$34,800$ savings per year.</p>						
Upgrades for disinfection and ammonia treatment: please see Additional Considerations # 1 and Water Quality Standards, 10 CSR 20-7.031, fiscal notes	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
	—	—	—	—	—	—
Subtotal aggregates**	\$1,000	\$7,100	\$13,700	\$20,600	\$27,900	\$32,300
Multi-Year Aggregate Total = \$102,600						

**Rounded to the nearest hundred

Additional Considerations

1. Update for bacteria limits and monitoring requirements

In a concurrent rulemaking (10 CSR 20-7.031), many new waters are being designated for whole body contact. Prior to this proposed amendment, facilities that discharge to waters that are currently designated for whole body contact (A) & (B) and secondary contact recreational are required to disinfect and to meet long-term seasonal bacteria limits. In addition, facilities that discharge to losing streams are required to disinfect and meet daily limits.

Subparagraph (9)(B)1.E. establishes short-term bacteria limits; weekly average limits for Publicly-Owned Treatment Works (POTWs) and maximum daily limits for private facilities. Short-term limits are a federal requirement. The performance goal for effluent disinfection systems is complete kill or inactivity. These systems are constructed based on the peak flow of each facility, so the Department would not expect there to be costs associated with meeting short-term bacteria limits during typical operations for facilities that are already required to disinfect.

It is important to note that the bacteria limits for losing streams is being amended to state that discharges to losing streams shall be considered in compliance so long as no more than ten (10) percent of samples exceed one-hundred twenty-six (126) colony forming units per one hundred (100) ml daily maximum. This should eliminate some costs associated with continuous compliance. Even with this change the Department does expect a few of these facilities to have occasional difficulties meeting the short-term limits that may require some action. Typically these problems will arise during extreme wet weather events or during times in which a particular treatment plant experiences an upset. In some cases these problems may be addressed by improved operations. But some facilities may choose to modify their chlorination systems, add ultraviolet treatment capacity, or perhaps even build or expand basins to provide additional flow equalization. To accurately reflect any one facility's costs, an industrial engineering evaluation with detailed estimates of several work packages, combined with the work of price analysts and cost accountants, including prescriptions to address the treatment and collection system of each facility are needed.

A major element of the concurrent rulemaking for 10 CSR 20-7.031, Water Quality Standards, is the designation of considerably more waters as fishable and swimmable. The range of costs associated with the designation of these waters was developed in this concurrent rulemaking. Associated costs to designate these waters greatly surpasses the relatively minor costs associated with implementing short-term limits. For additional information regarding assumptions and the calculations please refer to the concurrent rulemaking published June 17, 2013. In many cases associated costs have already been incurred with respect to capital costs, operations and maintenance, upgrading facilities to meet both ammonia and bacteria limits at appropriate locations, adding disinfection and/or, replacement or upgrade of treatment plants to meet ammonia limits. Please refer to the fiscal note associated with the concurrent revision to 10 CSR 20-7.031.

2. Revise language regarding “bypasses” to align with federal definition

The existing rule language regarding bypasses is imprecise and includes incidents in which wastewater does not receive full treatment at the wastewater treatment plant, either because sanitary sewers overflow or because water is routed around treatment units in the wastewater treatment plant. The industry commonly refers to water that escapes sanitary sewers as Sanitary Sewer Overflows (SSOs), and in practice these should not be referred to as “bypasses.”

The amendment will serve to change the definition of bypass to align it with the federal definition. This will standardize and correct commonly used terminology, and it is intended to reduce confusion by aligning state requirements with federal. Utilizing the federal language will allow dischargers to concern themselves with meeting the existing federal requirements and eliminate concerns about how state rules may differ.

Because the rule essentially adopts existing federal requirements, there are no additional fiscal impacts to consider. Until recently, some stakeholders shared the opinion that the U.S. Environmental Protection Agency (EPA) had changed their interpretation regarding “bypassing,” and so the choice to align

Missouri's rule with the federal rule would result in implementation costs related to those changed interpretations. In particular, EPA had determined by policy that blending was considered bypassing. Blending is generally a diversion of peak wet-weather flows around biological treatment units and combining effluent from all processes prior to discharge from a permitted outfall. The discharge must still meet effluent limits. However, on March 25, 2013, the U.S. Eight Circuit Court of Appeals invalidated EPA's policy regarding blending (*Iowa League of Cities vs. Environmental Protection Agency*). The Court found that these EPA policies were functionally binding, and as such, they were subject to the notice and comment requirements, and since EPA did not engage in notice and comment procedures prior to issuing these policies, the court vacated them.

In summary, the amendment substantially adopts the federal definition of bypass and therefore there are no cost considerations.

3. Require quarterly effluent monitoring of nutrient concentrations at large wastewater treatment facilities

An online survey of costs for analyzing a wastewater sample for total nitrogen ranged from \$42 to \$85 and total phosphorus ranged from \$21 to \$58. The higher costs estimates (\$85 plus \$58 = \$143 per sample) are used. According to the *Missouri Clean Water Information System (MoCWIS)*, there are approximately 52 private wastewater treatment facilities that have a design of 100,000 gallons per day or greater. The rule will require quarterly sampling.

However, this requirement will be implemented through operating permits. Operating permit terms are five years. Please see the summary table for information on fiscal impact for future years. Nutrient monitoring are one-time costs required in the permit's term.

4. Provide clarification regarding whole effluent toxicity testing requirements

Whole effluent toxicity (WET) testing requirements have been included in operating permits for several years, so many private wastewater treatment facilities have already been incurring these costs. For the purposes of this fiscal note, however, the figures presented will estimate the total cost of WET testing. The current permitting approach is to require annual WET tests for all facilities that have a design flow of one million gallons per day or more (large facilities). For facilities that have design flows less than 22,500 gallons per day, WET testing is generally not required. For medium-sized facilities (design greater than 22,500 gallons per day and less than one million gallons per day) the general permitting policy is to require one WET test per permit cycle, which is typically once every five years.

In addition to these general flow guidelines, WET tests may be required for small private facilities in which the department has toxicity concerns. An example might be a very small community that has an industrial source that discharges to the plant. Toxicity concerns from industrial sources may also indicate the need for more frequent WET testing.

According to the *Missouri Clean Water Information System (MoCWIS)*, there are approximately 5 private wastewater treatment facilities that have a design flow of one million gallons per day and there are 287 medium sized private facilities. For the purposes of this fiscal note it is assumed that the "one test per permit cycle" WET tests are distributed so that twenty percent of the facilities are incurring the testing expense each year because of the five-year permit cycle. In addition, the estimate for the total number of tests has been increased by five percent to account for the additional tests that may be required to address concerns that industrial sources may be contributing to toxicity.

A survey of several WET test providers in Missouri indicates that the cost of a WET test ranges from \$300 to \$600. For the purpose of this fiscal note the cost was assumed to be \$500.

$[(5 \text{ large POTWs}) + (20\%)(287 \text{ medium POTWs})] \times (1.05) \times (\$500) = \$32,800$ per year in FY2013

It is expected that the testing may indicate toxicity problems at a few facilities. It is not possible to know how many facilities will discover toxicity, nor is it possible to estimate the costs associated with a toxicity identification evaluation and subsequent toxicity reduction evaluation. Although expected to be relatively rare, there is the possibility that the failure of a series of WET tests may lead to the need for a facility to develop a toxicity reduction strategy. This fiscal note does not attempt to estimate these costs.

Lastly, the number of WET tests is expected to begin to diminish in the future. The overwhelming majority of facilities are expected to show that their effluent is not causing toxicity. With enough data it can be shown that there is no reasonable potential to expect effluent toxicity, and in those cases operating permits can include less frequent WET testing requirements.

5. Allow for electronic reporting via web-based systems (once available)

The existing regulation requires 24-hour reporting by phone followed by a five-day written report for all bypasses. Private wastewater systems are also expected to report Sanitary Sewer Overflows in a similar manner, and the standard conditions document that accompanies all operating permits is being revised to reflect this. The Department has developed an electronic reporting system, which is in the process of being improved and refined. The regulation is being amended to allow the reporting to be done electronically. This is expected to be more convenient and direct, and may save expense for some entities that report.

6. Include provisions for developing effluent limits with regard to several situations such as discharges to impaired waters, tiered limits which allow higher discharge concentrations during higher stream flow rates, and the use of local stream data to adjust effluent limits

These provisions are expected to marginally reduce costs to private wastewater treatment facilities. The current rule requires operating permits to be modified when a TMDL is finalized; the amendment allows these changes to be done during permit renewal so long as an urgent remedy is not necessary. Flow tiered limits will allow the Department to issue operating permits that have higher effluent limits during times when there is higher flows in the stream available for mixing. The use of local stream data, such as in-stream hardness for the development of less stringent site specific metals effluent limits likely cost less to meet while still protecting the stream's uses. Again, all of these provisions tend to allow for less stringent limits, and therefore are expected to result in a minor reduction in costs to private facilities.

7. Reduce monitoring frequency for facilities that consistently comply with effluent limits

Subparagraphs (2)(C)1.B., (3)(B)1.B., (4)(C)1.B., and (8)(B)1.B. allow operating permits to be written with reduced monitoring frequency of certain pollutants for facilities that have demonstrated their ability to routinely meet permit limits. It is impossible to predict how many facilities will have monitoring results that will lead to a conclusion that less monitoring is necessary, but this should certainly result in a cost savings for dozens of facilities.

8. Eliminate schedule to comply with phosphorus effluent limits for discharges to Table Rock Lake and Lake Tanycomo because the dates have already passed

This amendment to Subsection (3)(F) will eliminate schedules that have already passed. The schedules involved complying with phosphorus limits in the effected watersheds. There are no costs or cost savings associated with this change.

9. Require limits for the discharge of nitrates that may impact specific drinking water wells

For some time some operating permit writers have been including nitrate limits at the end of pipe in all operating permits that discharge to losing streams and in cases of subsurface wastewater disposal. The purpose of these limits is to protect aquifers for use as a source of drinking water. The approach of requiring nitrate limits in all settings is not prudent because in most cases it is very unlikely that drinking water wells will be affected at a level worthy of concern. The prudent approach is for operating permit writers to include a nitrate limits only in settings in which a concern exists regarding a particular well. The decision will be based on the size of the discharge, its proximity to the drinking water wells, and a concern that the geological conditions may allow the discharge to affect the quality of the well water.

According to the Missouri Clean Water Information System (MoCWIS), there are approximately 232 private wastewater treatment facilities or industrial facilities that are currently required to monitor for nitrates. Without evaluating each situation, for the purposes of this fiscal note, it is assumed that half of these facilities will not have to continue monitoring for nitrates because of this rule change. An online survey of the costs for analyzing a wastewater sample for nitrates ranged from \$24 to \$30. For the purposes of this fiscal note the analysis cost is assumed to be \$25 and the monitoring frequency is monthly.

$(232)(1/2)(\$25)(12) = (\$34,800)$ savings in FY2013

10. Specify that operating permits may include schedules of compliance in accordance with federal regulations

Existing language in Section (10) of 10 CSR 20-7.031 *Water Quality Standards* references the federal regulation regarding schedule of compliance (40 CFR 122.47). This amendment will relocate the schedule of compliance language from the Water Quality Standards rule into this rule. There are no fiscal ramifications from moving the location of this provision.

11. Revert to pH effluent limits that were in a previous version of the regulation

During the previous revision to the Effluent Regulation the pH range was revised from (6 to 9) to (6.5 to 9.0). This change was made as a result of a response to a comment from the U.S. Environmental Protection Agency. The purpose of this change was to align the Effluent Regulation with the Water Quality Standards rule. However, the Regulatory Impact Report (RIR) for this previous rulemaking did not address the costs associated with this change because the change was made subsequent to the RIR process during the response to comments phase of the rulemaking. In addition, the fiscal note did not address the costs.

Department is proposing to revise the pH portions of the rule to read as it did prior to the last revision, meaning the rule will require effluent to have a pH range of 6 to 9. The Department does not expect there to be any fiscal impact to returning to the previous pH range.

12. Allow alternate compliance points for discharges to subsurface waters

The existing rule requires facilities that have subsurface discharges to meet their effluent limits at a point ten feet below the surface. The purpose of specifying the “ten foot” compliance point was to allow compliance to be determined at some point below the surface but prior to typical entry into the aquifer. The proposed amendment will allow alternative compliance depths provided it is appropriate for the setting. Although not common, it is expected that a few facilities may see a marginal savings because they may not have to treat wastewater to quite as low a concentration prior to release. Because the savings are expected to be quite marginal and relatively rare, for the purposes of this fiscal note this change is assumed to have no fiscal impact.

13. Reorganize and clarify several elements of the rule

Rule reorganization and clarification is not expected to result in any fiscal impacts.

V. ASSUMPTIONS

The duration of the proposed rule is indefinite. There is no sunset clause. Costs imposed by the proposed rule for monitoring and wet tests are shown on an annual basis in the table summaries. The total estimated cost of compliance in the aggregate, for all private and domestic wastewater treatment facilities, is \$102,600 through 2018.

The proposed amendment will cost private wastewater treatment facilities (domestic and industrial) in the aggregate \$1,000 in fiscal year 2013, \$7,100 in fiscal year 2014, \$13,700 in fiscal year 2015, \$20,600 in fiscal year 2016, \$27,900 in fiscal year 2017, and \$32,300 in fiscal year 2018. The costs associated with nutrient monitoring for nitrogen and phosphorus are expected to decrease after 2018 as many facilities will have completed their monitoring obligation within their specific permit terms. The costs associated with whole effluent toxicity testing, or WET Tests, after 2018 are expected to decline significantly in future years as most facilities will demonstrate that their effluent is not toxic and monitoring can be reduced or eliminated. The savings for nitrate are a result of reduced monitoring frequency and, are expected to continue into future years.

Total aggregate cost savings for nitrate monitoring are expected to be \$40,300 in FY2018 due to reduced monitoring and, beyond with reduced monitoring and on-going compliance.

FISCAL NOTE

PUBLIC COST

I. RULE NUMBER

<i>Rule Number and Name:</i>	10 CSR 20-7.015 <i>Effluent Regulations</i>
<i>Type of Rulemaking:</i>	Proposed Amendment

II. SUMMARY OF FISCAL IMPACT

Affected Agency or Political Subdivision	Estimated Cost of Compliance in the Aggregate*
Publicly Owned Treatment Works (POTWs) Nutrient Monitoring required for one permit term (municipalities, sewer districts, and other public utilities)	\$891,400
Publicly Owned Treatment Works (POTW) Whole Effluent Toxicity (WET) Testing (large & medium size municipalities, sewer districts, and other public utilities)	\$876,200
Publicly Owned Treatment Works (POTW) Nitrate Monitoring	(\$79,500)
TOTAL	\$1,688,100 *Cost of Compliance in the Aggregate

*Aggregate costs of compliance is calculated by summing the annual costs in the worksheet tables in III from 2013 through 2018 for POTW, nutrient, wet test and nitrates

*3% inflation

III. Worksheet

In summary, the revisions to 10 CSR 20-7.015 *Effluent Regulations* will:

1. Update bacteria limits and monitoring requirements;
2. Revise language regarding “bypasses” to align with federal definition;
3. Require quarterly effluent monitoring of nutrient concentrations at large wastewater treatment facilities;
4. Provide clarification regarding whole effluent toxicity testing requirements;
5. Allow for electronic reporting via web-based systems (once available);
6. Include provisions for developing effluent limits with regard to several situations such as discharges to impaired waters, tiered limits which allow higher discharge concentrations during higher stream flow rates, and the use of local stream data to adjust effluent limits;
7. Reduce monitoring frequency for facilities that consistently comply with effluent limits;
8. Eliminate schedule to comply with phosphorus effluent limits for discharges to Table Rock Lake and Lake Tanycomo because the dates have already passed;

9. Require limits for the discharge of nitrates that may impact specific drinking water wells;
10. Specify that operating permits may include schedules of compliance in accordance with federal regulations;
11. Revert to pH effluent limits that were in a previous version of the regulation;
12. Allow alternate compliance points for discharges to subsurface waters; and
13. Reorganize and clarify several elements of the rule.

Summary of Costs						
Nutrient Monitoring	FY2013*	FY2014*	FY2015*	FY2016*	FY2017*	FY2018*
	\$23,000	\$71,100	\$122,000	\$175,900	\$232,900	\$266,500
FY2013 through FY2018	Nutrient Monitoring, multi-year aggregate total = \$891,400					
<p>402 Publicly-Owned Treatment Works (POTWs) will collect and analyze 4 samples each year to analyze for total nitrogen and phosphorus at a total cost of \$143 per sample = \$229,944. Operating permits are issued with 5-year terms, and the new monitoring requirements will only be incorporated into permits as they are renewed. Nutrient monitoring will only be required for one permit term, and will be discontinued in future operating permits. During the first full year it is assumed that one-fifth of the POTWs will have permits up for renewal. Only one-half of the first year falls within FY2013. Each year the analytical costs are estimated to increase by 3% for inflation.</p> <p>Therefore the FY2013 costs are estimated as: $\\$229,944 * (1/5) * (1/2) = \\$23,000$ (Results rounded to \$100)</p> <p>For FY2014, an additional one-fifth of the POTWs will have monitoring incorporated into their operating permit: $[(\\$23,000)*(1.03) + (402)*(4)*(1/5) *(\\$143)*(1.03)] = \\$71,100$</p> <p>For FY2015, an additional one-fifth of the POTWs will have monitoring incorporated into their permit: $[(\\$71,100*(1.03) + ((402)*(4)*(1/5) *(\\$143)*(1.03)^2)] = \\$122,000$</p> <p>For FY2016, an additional one-fifth of the POTWs will have monitoring incorporated into their permit: $[(\\$122,000*(1.03) + ((402)*(4)*(1/5) *(\\$143) * (1.03)^3)] = \\$175,900$</p> <p>For FY2017, an additional one-fifth of the POTWs will have monitoring incorporated into their permit: $[(\\$175,900)*(1.03) + ((402)*(4)*(1/5) *(\\$143)*(1.03)^4)] = \\$232,900$</p> <p>For FY2018, the remaining POTWs will have monitoring incorporated into their permit: $[(\\$232,900)*(1.03) + ((402)*(4)*(1/5) * (1/2) *(\\$143)*(1.03)^5)] = \\$266,500$</p>						
Whole Effluent Toxicity (WET) Tests	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
	\$135,500	\$139,500	\$143,700	\$148,000	\$152,500	\$157,000
FY2013 through FY2018	Whole Effluent Toxicity, multi-year aggregate total = \$876,200					
<p>142 large POTWs (annual test) and 580 medium-sized POTWs (one test every five years) will conduct WET tests at \$500 per test. Five percent additional testing is assumed because of additional tests required for facilities that have industrial customers. $[(142) + (20%)*(580)]*(1.05) *(\\$500) = \\$135,500$ per year. Each year the analytical costs are estimated to increase by 3% for inflation.</p>						
Reduced Nitrate Monitoring	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
	(\$12,300)	(\$12,700)	(\$13,000)	(\$13,400)	(\$13,800)	(\$14,300)

FY2013 through FY2018	Reduced Nitrate Monitoring, multi-year aggregate = (\$79,500)					
82 facilities are currently required to monitor for nitrates. It is assumed that monitoring at half of these facilities will no longer be required. Monthly monitoring is assumed at a cost of \$25 per analysis. Each year the analytical costs are estimated to increase by 3% for inflation. (82) * (1/2) * (12) * (25) = \$12,300 savings per year.						
Upgrades for disinfection and ammonia treatment: please see Additional Considerations #1 below and, Water Quality Standards, 10 CSR 20-7.031, fiscal notes	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
	—	—	—	—	—	—
Subtotal aggregates**	\$146,200	\$197,900	\$252,700	\$310,500	\$371,600	\$409,200
Multi-Year Aggregate Total = \$1,688,100						

**Rounded to the nearest hundred

Additional Considerations

1. Update bacteria limits and monitoring requirements

In a concurrent rulemaking (10 CSR 20-7.031), many new waters are being designated for whole body contact. Prior to this proposed amendment, facilities that discharge to waters that are currently designated for whole body contact (A) & (B) and secondary contact recreational are required to disinfect and to meet long-term seasonal bacteria limits. In addition, facilities that discharge to losing streams are required to disinfect and meet daily limits.

Subparagraph (9)(B)1.E. establishes short-term bacteria limits; weekly average limits for Publicly-Owned Treatment Works (POTWs) and maximum daily limits for private facilities. Short-term limits are a federal requirement. The performance goal for effluent disinfection systems is complete kill or inactivity. These systems are constructed based on the peak flow of each facility, so the Department would not expect there to be costs associated with meeting short-term bacteria limits during typical operations for facilities that are already required to disinfect.

It is important to note that the bacteria limits for losing streams is being amended to state that discharges to losing streams shall be considered in compliance so long as no more than ten (10) percent of samples exceed one-hundred twenty-six (126) colony forming units per one hundred (100) ml daily maximum. This should eliminate some costs associated with continuous compliance. Even with this change the Department does expect a few of these facilities to have occasional difficulties meeting the short-term limits that may require some action. Typically these problems will arise during extreme wet weather events or during times in which a particular treatment plant experiences an upset. In some cases these problems may be addressed by improved operations. But some facilities may choose to modify their chlorination systems, add ultraviolet treatment capacity, or perhaps even build or expand basins to provide additional flow equalization. To accurately reflect any one facility's costs, an industrial engineering evaluation with

detailed estimates of several work packages, combined with the work of price analysts and cost accountants, including prescriptions to address the treatment and collection system of each facility are needed.

A major element of the concurrent rulemaking for 10 CSR 20-7.031, Water Quality Standards, is the designation of more waters as fishable and swimmable. The range of costs associated with the designation of these waters is developed in the concurrent rulemaking. The associated costs to designate these waters greatly surpasses the relatively minor costs associated with implementing short-term limits. For additional information regarding assumptions and calculations please refer to the concurrent rulemaking published June 17, 2013. In many cases associated costs have already been incurred with respect to capital costs, operations and maintenance and the upgrading of facilities to meet both ammonia and bacteria limits at appropriate locations, adding disinfection and/or, replacement or upgrade of treatment plants to meet ammonia limits. Please refer to the public fiscal note associated with the concurrent revision to 10 CSR 20-7.031.

2. Revise language regarding “bypasses” to align with federal definition

The existing rule language regarding bypasses is imprecise and includes incidents in which wastewater does not receive full treatment at the wastewater treatment plant, either because sanitary sewers overflow or because water is routed around treatment units in the wastewater treatment plant. The industry commonly refers to water that escapes sanitary sewers as Sanitary Sewer Overflows (SSOs), and in practice, these should not be referred to as “bypasses.”

The current amendment to 10 CSR 20-7.015 will serve to change the definition of bypass to align it with the federal definition. This will standardize and correct commonly used terminology, and it is intended to reduce confusion by aligning state requirements with federal. Utilizing the federal language will allow dischargers to concern themselves with meeting the existing federal requirements and eliminate concerns about how state rules may differ.

Because the rule essentially adopts existing federal requirements, there are no additional fiscal impacts to consider. Until recently, some stakeholders shared the opinion that the U.S. Environmental Protection Agency (EPA) had changed their interpretation regarding “bypassing,” and so the choice to align Missouri’s rule with the federal rule would result in implementation costs related to those changed interpretations. In particular, EPA had determined by policy that blending was considered bypassing. Blending is generally a diversion of peak wet-weather flows around biological treatment units and combining effluent from all processes prior to discharge from a permitted outfall. The discharge must still meet effluent limits. However, on March 25, 2013, the U.S. Eight Circuit Court of Appeals invalidated EPA’s policy regarding blending (*Iowa League of Cities vs. Environmental Protection Agency*). The Court found that these EPA policies were functionally binding, and as such, they were subject to the notice and comment requirements, and since EPA did not engage in notice and comment procedures prior to issuing these policies, the court vacated them.

In summary, the amendment substantially adopts the federal definition of bypass and therefore there are no cost considerations.

3. Require quarterly effluent monitoring of nutrient concentrations at large wastewater treatment facilities

One online survey of the costs for analyzing a wastewater sample for total nitrogen ranged from \$42 to \$85 and total phosphorus ranged from \$21 to \$58. The higher costs estimates (\$85 plus \$58 = \$143 per sample) are used. According to the Missouri Clean Water Information System (MoCWIS), there are approximately 402 POTWs that have a design of 100,000 gallons per day or greater. The rule will require quarterly sampling.

However, this requirement will be implemented through operating permits. Operating permit terms are five years. Nutrient monitoring will only be required for one permit term, once the facility completes the required monitoring.

4. Provide clarification regarding whole effluent toxicity testing requirements

Whole effluent toxicity (WET) testing requirements have been included in operating permits for several years; so many POTWs have already been incurring these costs. For the purposes of this fiscal note, however, the figures presented will estimate the total cost of WET testing. The current permitting approach is to require annual WET tests for all facilities that have a design flow of one million gallons per day or more (large POTWs). For facilities that have design flows less than 22,500 gallons per day, WET testing is generally not required. For medium-sized facilities (design greater than 22,500 gallons per day and less than one million gallons per day) the general permitting policy is to require one WET test per permit cycle, which is typically once every five years.

In addition to these general flow guidelines, WET tests may be required for small POTWs in which the department has toxicity concerns. An example might be a very small community that has an industrial source that discharges to the plant. Toxicity concerns from industrial sources may also indicate the need for more frequent WET testing.

According to the Missouri Clean Water Information System (MoCWIS), there are approximately 142 POTWs that have a design flow of one million gallons per day and there are 580 medium sized POTWs. For the purposes of this fiscal note it is assumed that the “one test per permit cycle” WET tests are distributed so that twenty percent of the facilities are incurring the testing expense each year because of the five-year permit cycle. In addition, the estimate for the total number of tests has been increased by five percent to account for the additional tests that may be required to address concerns that industrial sources may be contributing to toxicity.

A survey of several WET test providers in Missouri indicates that the cost of a WET test ranges from \$300 to \$600. For the purpose of this fiscal note the cost was assumed to be \$500.

$[(142 \text{ large POTWs}) + (20\%)(580 \text{ medium POTWs})](1.05) * (\$500) = \$135,500 \text{ in FY 2013}$

It is expected that the testing may indicate toxicity problems at a few facilities. It is not possible to know how many facilities will discover toxicity, nor is it possible to estimate the costs associated with a toxicity identification evaluation and subsequent toxicity reduction evaluation. Although expected to be relatively rare, there is the possibility that the failure of a series of WET tests may lead to the need for a facility to develop a toxicity reduction strategy. This fiscal note does not attempt to estimate these costs.

Lastly, the number of WET tests is expected to begin to diminish in the future. The overwhelming majority of facilities are expected to show that their effluent is not causing toxicity. With enough data it can be

shown that there is no reasonable potential to expect effluent toxicity, and in those cases operating permits can include less frequent WET testing requirements.

5. Allow for electronic reporting via web-based systems (once available)

The existing regulation requires 24-hour reporting by phone followed by a five-day written report for all bypasses. POTWs are also expected to report Sanitary Sewer Overflows in a similar manner, and the standard conditions document that accompanies all operating permits is being revised to reflect this. The Department has developed an electronic reporting system, which is in the process of being improved and refined. The regulation is being amended to allow the reporting to be done electronically. This is expected to be more convenient and direct, and may save expense for some entities that report.

6. Include provisions for developing effluent limits with regard to several situations such as discharges to impaired waters, tiered limits which allow higher discharge concentrations during higher stream flow rates, and the use of local stream data to adjust effluent limits

These provisions are expected to marginally reduce costs to POTWs. The current rule requires operating permits to be modified when a TMDL is finalized; the amendment allows these changes to be done during permit renewal so long as an urgent remedy is not necessary. Flow tiered limits will allow the Department to issue operating permits that have higher effluent limits during times when there is higher flows in the stream available for mixing. The use of local stream data, such as in-stream hardness for the development of less stringent site specific metals effluent limits likely cost less to meet while still protecting the stream's uses. Again, all of these provisions tend to allow for less stringent limits, and therefore are expected to result in a minor reduction in costs to POTWs.

7. Reduce monitoring frequency for facilities that consistently comply with effluent limits

Subparagraphs (2)(C)1.B., (3)(B)1.B., (4)(C)1.B., and (8)(B)1.B. allow operating permits to be written with reduced monitoring frequency of certain pollutants for facilities that have demonstrated their ability to routinely meet permit limits. It is impossible to predict how many facilities will have monitoring results that will lead to a conclusion that less monitoring is necessary, but this should certainly result in a cost savings for dozens of facilities.

8. Eliminate schedule to comply with phosphorus effluent limits for discharges to Table Rock Lake and Lake Tanycomo because the dates have already passed

This amendment to Subsection (3)(F) will eliminate schedules that have already passed. The schedules involved complying with phosphorus limits in the effected watersheds. There are no costs or cost savings associated with this change.

9. Require limits for the discharge of nitrates that may impact specific drinking water wells

For some time some operating permit writers have been including nitrate limits at the end of pipe in all operating permits that discharge to losing streams and in cases of subsurface wastewater disposal. The purpose of these limits is to protect aquifers for use as a source of drinking water. The approach of requiring nitrate limits in all settings is not prudent because in most cases it is very unlikely that drinking water wells will be affected at a level worthy of concern. The prudent approach is for operating permit writers to include a nitrate limits only in settings in which a concern exists regarding a particular well. The

decision will be based on the size of the discharge, its proximity to the drinking water wells, and a concern that the geological conditions may allow the discharge to affect the quality of the well water.

According to the Missouri Clean Water Information System (MoCWIS), there are approximately 82 POTWs that are currently required to monitor for nitrates. Without evaluating each situation, for the purposes of this fiscal note, it is assumed that half of these facilities will not have to continue monitoring for nitrates because of this rule change. An online survey of the costs for analyzing a wastewater sample for nitrates ranged from \$24 to \$30. For the purposes of this fiscal note the analysis cost is assumed to be \$25 and the monitoring frequency is monthly.

$(82)(1/2)(\$25)(12) = \$12,300$ in savings in FY2013

10. Specify that operating permits may include schedules of compliance in accordance with federal regulations

Existing language in Section (10) of 10 CSR 20-7.031 *Water Quality Standards* references the federal regulation regarding schedule of compliance (40 CFR 122.47). This amendment will relocate the schedule of compliance language from the Water Quality Standards rule into this rule. There are no fiscal ramifications from moving the location of this provision.

11. Revert to pH effluent limits that were in a previous version of the regulation

During the previous revision to the Effluent Regulation the pH range was revised from (6 to 9) to (6.5 to 9.0). This change was made as a result of a response to a comment from the U.S. Environmental Protection Agency. The purpose of this change was to align the Effluent Regulation with the Water Quality Standards rule. However, the Regulatory Impact Report (RIR) for this previous rulemaking did not address the costs associated with this change because the change was made subsequent to the RIR process during the response to comments phase of the rulemaking. In addition, the fiscal note did not address the costs.

Department is proposing to revise the pH portions of the rule to read as it did prior to the last revision, meaning the rule will require effluent to have a pH range of 6 to 9. The Department does not expect there to be any fiscal impact to returning to the previous pH range.

12. Allow alternate compliance points for discharges to subsurface waters

The existing rule requires facilities that have subsurface discharges to meet their effluent limits at a point ten feet below the surface. The purpose of specifying the “ten foot” compliance point was to allow compliance to be determined at some point below the surface but prior to typical entry into the aquifer. The proposed amendment will allow alternative compliance depths provided it is appropriate for the setting. Although not common, it is expected that a few facilities may see a marginal savings because they may not have to treat wastewater to quite as low a concentration prior to release. Because the savings are expected to be quite marginal and relatively rare, for the purposes of this fiscal note this change is assumed to have no fiscal impact.

13. Reorganize and clarify several elements of the rule

Rule reorganization and clarification is not expected to result in any fiscal impacts.

IV. ASSUMPTIONS

The duration of the proposed rule is indefinite. There is no sunset clause. Costs imposed by the proposed rule for each monitoring and wet tests are shown on an annual basis. The total estimated cost of compliance in the aggregate for all publicly owned treatment works, POTWs, is \$1,688,100 through FY2018.

The proposed amendment will cost public entities in the aggregate \$146,200 in fiscal year 2013, \$197,900 in fiscal year 2014, \$252,700 in fiscal year 2015, \$310,500 in fiscal year 2016, \$371,600 in fiscal year 2017, and \$409,200 in fiscal year 2018. The costs associated with nutrient monitoring for nitrogen and phosphorus are expected to decrease after 2018 as facilities will have completed their monitoring obligation within their specific permit terms. The costs associated with whole effluent toxicity testing, or WET Tests, after 2018, while expected to continue, will be significantly reduced in future years as most facilities will demonstrate that their effluent is not toxic and monitoring can be reduced or eliminated. The savings for nitrate are a result of reduced monitoring frequency and, are expected to continue into future years.

Total cost aggregate savings for nitrate monitoring will result in annual savings \$14,300 in FY2018 due to reduced monitoring and, beyond with on-going compliance.

It has been assumed that these changes will not require a staffing increase for the State.