



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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December 8, 2011

Ref: 8EPR-EP

Peter Butler, Chair
Water Quality Control Commission
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Subject: EPA Action on Additional 2010 Revisions to the
Basic Standards and Methodologies for Surface Waters

Dear Mr. Butler:

The U.S. Environmental Protection Agency (EPA) has completed its review of revisions to the Basic Standards and Methodologies for Surface Waters (Regulation #31) adopted by the Colorado Water Quality Control Commission (Commission). The revisions were adopted on August 9, 2010, with an effective date of January 1, 2011. The submission letter included an Opinion of the Attorney General certifying that the standards were duly adopted pursuant to State law. Receipt of the revised standards on August 24, 2010, initiated EPA's review pursuant to Section 303(c) of the Clean Water Act (CWA or the Act).

In a previous EPA action letter dated August 4, 2011, the Agency approved some of the revisions received on August 24, 2010, and took no action on other revisions. EPA has now completed its review of certain additional revisions and the purpose of today's letter is to notify you of our action on those additional revisions.

We wish to commend and thank the Water Quality Control Division (WQCD or the Division) for their hard work in support of the 2010 revisions to Regulation #31. These efforts included:

- reviewing a wide range of issues and alternatives during the three years (2007-2009) leading up to the rulemaking action;
- collaborating with a work group that included representatives from the regulated community, the environmental community, the Colorado Division of Wildlife, and EPA;

- developing supporting analyses and rationale for each of the Division's rulemaking proposals;
- responding to formal comments submitted during the rulemaking process, which in several cases resulted in important modifications to the Division's proposal; and
- commenting on the third party rule changes proposed by the Colorado Mining Association and the Colorado Wastewater Utility Council.

CLEAN WATER ACT REVIEW REQUIREMENTS

CWA § 303(c)(2) requires States and authorized Indian Tribes to submit new and revised water quality standards to EPA for review. EPA is required to review and approve or disapprove the revised standards pursuant to CWA § 303(c)(3). The Region's goal has been, and will continue to be, to work closely and collaboratively with States and authorized Tribes throughout the standards revision process so that submitted revisions can be approved by EPA.

TODAY'S ACTION

Today the Region is disapproving certain revisions to Regulation #31 received by EPA on August 24, 2010, and taking no action on the revisions pertaining to discharger-specific variances. The rationale for EPA's action is briefly outlined below and discussed in detail in Enclosure 1.

Today's letter applies only to water bodies in the State of Colorado, and does not apply to waters that are within Indian Country, as defined in 18 U.S.C. § 1151. Today's letter is not intended as an action to approve or disapprove water quality standards applying to waters within Indian Country. EPA, or authorized Indian Tribes, as appropriate, will retain responsibilities for water quality standards for waters within Indian Country.

ENDANGERED SPECIES ACT REQUIREMENTS

Today's disapproval of certain water quality standards revisions will have no effect on listed or proposed endangered or threatened species or designated critical habitat and is otherwise not subject to ESA consultation. As a result, for the revisions addressed today, no consultation with the U.S. Fish and Wildlife Service is required.

DISAPPROVED STANDARDS

Recognizing that EPA is required¹ to review and act on new and revised standards, the Region worked closely with the WQCD throughout the pre-rulemaking and rulemaking processes. We attended work group meetings, discussed issues with appropriate Division staff, coordinated EPA's review with Agency experts, and communicated EPA's position regarding issues of concern and alternatives that would meet CWA requirements. The Region did not just identify problems, we collaborated with the Division and stakeholders to understand each topic, review alternatives, and develop proposed solutions. This approach allowed for resolution of EPA issues and concerns on most topics, including the revisions approved by EPA's August 4, 2011 action letter.

Unfortunately, on a few issues, revisions were adopted that do not comply with CWA requirements. New and revised standards that are disapproved today are summarized below and discussed in Enclosure 1. The enclosure also identifies the changes needed to assure compliance with the requirements of the CWA and EPA's regulation.

- Section 31.7(3)(a)(ii)(C) (Temporary Modifications). EPA disapproves 31.7(3)(a)(ii)(C), which was adopted to authorize temporary modifications for individual segments where "there is significant uncertainty regarding the timing of implementing attainable source controls or treatment." EPA's disapproval action is based on its conclusion that the new provision does not comply with the CWA and EPA's implementing water quality standards regulation (40 C.F.R. Part 131). Please note, however, that in situations where the Commission and Division envisioned adoption of temporary modifications pursuant to 31.7(3)(a)(ii)(C) for individual segments, there are several useful alternative regulatory tools that that may be appropriate and that would serve the same (or similar) function, including permit compliance schedules, discharger-specific variances, and temporary modifications based on either 31.7(3)(a)(ii)(A) or (B).
- Section 31.8(2)(b)(i)(C) (Antidegradation). EPA disapproves 31.8(2)(b)(i)(C), as revised in 2010. This revised provision would have authorized Use Protected designations² for segments that meet the 31.5 definition of "effluent-dependent stream" or "effluent-dominated stream." EPA concludes the revised provision is not consistent with the 40 C.F.R. § 131.12(a)(2) requirement to maintain and protect water quality where "the quality of the waters" exceed levels necessary to support propagation of fish, shellfish,

¹ CWA § 303(c)(2) and 40 C.F.R. § 131.21.

² Under Colorado's antidegradation rule, antidegradation reviews are not required for segments with a Use Protected designation.

and wildlife and recreation in and on the water. However, the previously-approved version of 31.8(2)(b)(i)(C), and the previously-approved segment-specific use protected designations based on 31.8(2)(b)(i)(C), will remain in effect until EPA approves a change, deletion, or addition, or until EPA promulgates a more stringent water quality standard. (40 C.F.R. § 131.21(e)). We also acknowledge the flexibility available to Colorado for assigning Use Protected designations, provided the eligibility criteria are based on metrics that describe or relate to “the quality of the waters.” For example, Colorado may continue to assign Use Protected designations based on the other eligibility criteria in 31.8(2)(b), each of which is based on review of water quality conditions in the segment. Colorado may also consider adoption of new eligibility criteria based on water quality considerations.

- Molybdenum Table Value (Agriculture). EPA disapproves the 300 µg/L molybdenum table value for the protection of agriculture uses. EPA concludes the new table value is not consistent with the 40 C.F.R. § 131.11(a)(1) requirement to adopt criteria that protect designated uses based on sound scientific rationale. However, there are several options for resolving the disapproval issue. For example, as discussed in Enclosure 1, EPA supports nearly all aspects of the derivation methodology used by Colorado, with the exception of one assumption that is easily corrected.
- Nitrate and Arsenic Table Values (Water Supply). EPA disapproves the nitrate and arsenic table values for protection of water supply uses, as revised in 2010. These table values are modified by footnotes which authorize the Division to exclude effluent limits from discharge permits if water supply uses are designated but not “actual.” EPA’s understanding is that the footnotes also affect CWA § 303(d) listing decisions. Based on the level of protection provided, EPA concludes the nitrate and arsenic table values are inconsistent with 40 C.F.R. § 131.11, which requires States to adopt criteria that protect the designated use, whether or not the use is an “actual” use. However, the previously-approved versions of these table values, and the previously-approved segment-specific numeric standards based on these table values, will remain in effect until EPA approves a change, deletion, or addition, or until EPA promulgates a more stringent water quality standard. (40 C.F.R. § 131.21(e)). Colorado may consider several alternatives including:
 - revised nitrate and arsenic table values and numeric standards that protect designated uses based on sound scientific rationale;
 - removal of water supply use classifications consistent with 40 C.F.R. § 131.10(g); and
 - revisions to the Colorado mixing zone rule as it pertains to discharges within (or upstream from) segments with a water supply classification, provided the revisions ensure protection of the use classification.

EPA acknowledges that this action leaves in effect, for purposes of federal law, antidegradation, nitrate, and arsenic provisions that have the same shortcomings as the revised provisions disapproved today. EPA also acknowledges that it made a mistake when it approved the previous versions of these provisions. Rather than approve the revised versions (which have the same flaws as the previous versions), we believe the appropriate action is for EPA to disapprove the provisions as revised in 2010 and proceed to work with Colorado to resolve the underlying issues.

PROVISIONS EPA IS NOT ACTING ON TODAY

EPA takes no action on the new and revised provisions relating to discharger-specific variances. New and revised provisions in this category include:

- Section 31.7. Overview (portions that relate to discharger-specific variances)
- Section 31.7(4). Granting, Extending and Removing Variances to Numeric Standards – Effective January 1, 2013
- Section 31.14 (17). (Permit Actions that Implement Discharger-Specific Variances)

CONCLUSION

EPA Region 8 acknowledges and very much appreciates that all previous EPA disapproval actions have been resolved by completing a Colorado rulemaking action, thereby avoiding the need for EPA promulgation of water quality standards. We are hopeful of resolving today's disapprovals in similar fashion, and look forward to working with the Division to review alternatives. The enclosure identifies options for resolving each disapproval issue. If you have any questions concerning this letter, the most knowledgeable person on my staff is David Moon and he can be reached at (303) 312-6833.

Sincerely,



Carol L. Campbell
Assistant Regional Administrator
Office of Ecosystems Protection and Remediation

Enclosure

ENCLOSURE 1:
RATIONALE FOR THE U.S. EPA REGION 8 ACTION ON REVISIONS TO THE BASIC
STANDARDS AND METHODOLOGIES FOR SURFACE WATERS

Today's EPA action letter addresses certain revisions to Colorado water quality standards adopted by the Water Quality Control Commission (Commission) on August 9, 2010, and received by EPA on August 24, 2010. Today's action addresses the revisions not acted upon in EPA's August 4, 2011 action letter. This enclosure provides a summary of the major revisions and a rationale for the action taken by EPA. The discussion below is organized as follows:

- I. New Section 31.7(3)(1)(a)(ii)(C) - Temporary Modifications
- II. Revised Section 31.8(2)(b)(i)(C) - Antidegradation
- III. New Molybdenum Table Value Standard for Agriculture Protection
- IV. Revised Nitrate and Arsenic Table Value Standards for Water Supply Protection
- V. Revisions For Which EPA Is Taking No Action

I. SECTION 31.7(3)(1)(a)(ii)(C). (TEMPORARY MODIFICATIONS BASED ON SIGNIFICANT UNCERTAINTY REGARDING THE TIMING OF CONTROLS OR TREATMENT)

EPA disapproves new Section 31.7(3)(a)(ii)(C) in its entirety. The provision would have authorized temporary modifications in situations where "there is significant uncertainty regarding the timing of implementing attainable source controls or treatment." EPA concludes the adopted approach does not comply with the CWA and EPA's implementing water quality standards regulation (40 C.F.R. Part 131).

Discussion

New Section 31.7(3)(a)(ii)(C) provides that temporary modifications are authorized "where there is significant uncertainty regarding the timing of implementing attainable source controls or treatment." It was adopted with a sunset provision indicating that it is repealed effective January 1, 2013. EPA's review considered: (1) whether the new provision complies with the CWA and EPA's implementing regulation, and (2) how the Division responded to the concerns raised by EPA during the State rulemaking process.

Is the New Provision Consistent with the CWA and EPA's Implementing Regulation?

EPA is not aware of any language in the CWA, EPA's regulation, or EPA guidance supporting State authority to adopt temporary modifications where there is "significant uncertainty regarding the timing of implementing attainable source controls or treatment." Although Section 131.13 of EPA's regulation recognizes State discretion to adopt general policies, including variance policies, guidance issued by EPA over the years has been consistent that State authority to adopt variances is limited to situations where removal of the designated use is also authorized.

EPA requirements and guidance applicable to variances are relevant because of the many similarities between temporary modifications and variances. Temporary modifications are similar to waterbody variances because both approaches: (1) temporarily modify the WQS for a particular segment and all discharges to that segment, (2) retain the underlying WQS as the long-term goal, (3) include an expiration date, and (4) impose interim water quality requirements that apply until the expiration date.

EPA guidance has long been explicit that State discretion to adopt variances is limited to situations where it can be demonstrated that attainment of the designated use is not feasible. Highlights of EPA’s guidance on variances have included the following:

“EPA believes that it is important for the public to understand that while the adoption of these policies is optional, if adopted they are subject to EPA review and approval. EPA will continue to include a discussion of mixing zones, low flows, variance and other general program policies in a guidance document, as has been done since 1975.”

Revisions to WQS Regulation, Appendix A – Response to Public Comments, 48 Federal Register 51411. November 8, 1983.

“State variance procedures, as part of State water quality standards, must be consistent with the substantive requirements of 40 C.F.R. 131. EPA has approved State-adopted variances in the past and will continue to do so if:...the State demonstrates that meeting the standard is unattainable based on one or more of the grounds outlined in 40 C.F.R. § 131.10(g) for removing a designated use...”

EPA WQS Handbook, page 5-12, EPA-823-B-94-005a, August 1994.

“EPA has approved State and Tribal use of variances when the individual variance is included in State or Tribal water quality standards, each variance is subject to the same public review as other changes in water quality standards, the State or Tribe demonstrates that meeting the standard is unattainable based on one or more of the grounds listed in 40 C.F.R. § 131.10(g) for removing a designated use, existing uses are protected, the variance secures the highest level of water quality attainable short of achieving the standard and the State or Tribe demonstrates that advanced treatment and alternative effluent control strategies have been considered...”

Advanced Notice of Proposed Rulemaking, WQS Regulation, 63 Federal Register 36759, July 7, 1998.

A key EPA expectation for variances is that adoption should be contemplated and authorized only where the designated use is demonstrated to be unattainable based on one of the use removal factors outlined in 40 C.F.R. § 131.10(g). Several of the 131.10(g) factors pertain to anthropogenic disturbances that cannot be remedied and that preclude attainment of the designated use. However, unlike new Section 31.7(3)(a)(ii)(C), none of the 131.10(g) factors pertain to the “timing of implementing attainable source controls or treatment.”

EPA believes Section 31.7(3)(a)(ii)(C) would authorize temporary modifications in situations where attaining the designated use is feasible, given sufficient time. For this reason, EPA believes Section 31.7(3)(a)(ii)(C) would authorize temporary modifications in situations beyond those contemplated in the EPA rule at 40 C.F.R. § 131.10(g), and that there is nothing in the CWA, EPA’s regulation, or EPA guidance supporting State authority to adopt temporary modifications where there is “significant uncertainty regarding the timing of implementing attainable source controls or treatment.” Accordingly, EPA concludes the new provision does not comply with the CWA and EPA’s implementing water quality standards regulation.

Division Responses to Concerns Raised by EPA During the State Rulemaking Process

In our April 14, 2010 responsive pre-hearing statement, Region 8 expressed concern that the proposed “third condition” was ambiguous and not well justified by the supporting information submitted by the Division. EPA identified three specific concerns:

- 1) the “timing of implementing controls” appears to be an issue that should be addressed in a permit compliance schedule (and not by temporarily modifying a numeric standard);
- 2) situations where relief from water quality-based effluent limitations (WQBELs) is justified by facility-specific information should be addressed by adopting discharger-specific variances, so that relief is provided only to dischargers that are deserving of such relief, and not to other dischargers on the segment that are operating under different circumstances; and
- 3) application of Section 31.14(15)(a) would postpone development and issuance of a WQBEL compliance schedule during the period when the temporary modification is in effect.

In rebuttal, the Division responded to EPA’s concerns and provided the following comment:

“Revised Proposal: After review of the information submitted in Responsive Prehearing Statements, the Division has decided that the third condition confuses the distinction between temporary modifications and discharger-specific variances. This provision was drafted before the discharger-specific variance provisions were fully developed. After re-consideration of the entire package, the Division now believes a temporary modification is not the appropriate tool to address these facility/treatment situations. However, there is considerable concern about how facility-centered issues will be addressed before the variance provisions become effective on January 1, 2013. Therefore, the Division is now proposing to retain the third condition only through December 31, 2012.”

EPA interprets this comment by the Division as an admission that either a compliance schedule or a discharger-specific variance (and not a temporary modification) is the appropriate approach in circumstances described by Section 31.7(3)(a)(ii)(C). EPA is concerned that Section 31.7(3)(a)(ii)(C) was nevertheless adopted by the Commission. EPA is concerned the new provision is not authorized by the CWA or EPA’s implementing regulation (40 C.F.R. Part 131). EPA is also concerned that the interim

solution (to allow temporary modifications anyway) would not limit relief to only those dischargers deserving of relief, thereby increasing the risk that designated uses will be impaired.

The Division’s rebuttal included two examples of situations where temporary modifications pursuant to the third condition are warranted until January 1, 2013. The first example concerned a stormwater discharge:

“One is in the case of non-traditional point sources, such as Municipal Separate Storm Sewer Systems (“MS4”). In the case of *E. coli* exceedances, it is not known if, when or how the MS4 can attain the standard given the significant natural sources (e.g., waterfowl) and potentially expensive infrastructure replacement needs. The Division had thought that a temporary modification could be a useful tool that would recognize the uncertainty associated with meeting the underlying standard.

In this case, the Division believes that it would be more appropriate to use a long compliance schedule that would appropriately incorporate milestones and ensure that incremental progress is made.

Regarding this example, EPA disagrees that a temporary modification based on the factor described in 31.7(3)(a)(ii)(C) is consistent with the requirements of the CWA and EPA’s implementing regulation. Even if a situation similar to the example arises prior to the January 1, 2013 sunset date, and even if there are timing issues regarding implementation of controls or treatment to meet the *E. coli* WQBEL, the uncertainty would be a facility-specific issue (is the *E. coli* WQBEL feasible to attain and if so, when?) that must be addressed with a permit compliance schedule or discharger-specific variance. As discussed in the May 10, 2007 EPA Memorandum, “Compliance Schedules for Water Quality-Based Effluent Limits in NPDES Permits,” compliance schedules can be established that extend beyond the term of a single permit, provided the WQBEL will be achieved as soon as possible.³ EPA notes that if there is significant uncertainty regarding the appropriate *E. coli* numeric standard for the segment (is the numeric standard attainable under natural conditions?) and the requirements for adopting a temporary modification are met, the Commission could consider whether it is appropriate to adopt a temporary modification pursuant to 31.7(3)(a)(ii)(A) or (B).

The second example identified by the Division concerned mercury:

Another example would be a traditional point source with a non-traditional pollutant, such as a municipal discharge with a very low effluent limit for mercury. Even with source control (dental amalgam separators) removal efficiencies may not be adequate for compliance with the underlying standard.

Regarding this example, EPA disagrees that a temporary modification based on 31.7(3)(a)(ii)(C) is consistent with the requirements of the CWA and EPA’s implementing

³ May 10, 2007 EPA Memorandum “Compliance Schedules for Water Quality-Based Effluent Limits in NPDES Permits” from James A. Hanlon to Alexis Strauss (Hanlon Memo)

regulation. In this situation, the issue is whether, and if so when, facility-specific removal efficiencies can be achieved that would be adequate to achieve the WQBEL. Even if a situation arises prior to January 1, 2013, regarding the timing of controls or treatment necessary to meet mercury WQBELs, the issue must be addressed with a permit compliance schedule or discharger-specific variance, and not by temporarily modifying the numeric standard for the segment. EPA notes that if there is significant uncertainty regarding the appropriate mercury numeric standard for the segment, and the requirements for adopting a temporary modification are met, the Commission could consider whether it is appropriate to adopt a temporary modification pursuant to 31.7(3)(a)(ii)(A) or (B).

Regarding EPA’s third concern - the relationship between 31.7(3)(a)(ii)(C) and 31.14(15)(a) - the Division’s rebuttal statement clarified that 31.14(15)(a) would not apply to temporary modifications established under 31.7(3)(a)(ii)(C). This clarified approach was adopted by the Commission. The adopted provision specifies that where temporary modifications are adopted pursuant to Section 31.7(3)(a)(ii)(C), permits may include compliance schedules to achieve WQBELs during the term of the temporary modification. By contrast, Section 31.14(15)(a) provides that permits implementing temporary modifications pursuant to Section 31.7(3)(a)(ii)(A) and (B) “will not” include a compliance schedule to achieve the WQBEL (this is to allow for resolution of the significantly uncertain standard prior to imposing a compliance schedule).

An important question regarding temporary modifications pursuant to Section 31.7(3)(a)(ii)(C) is whether any such compliance schedules are developed to achieve a WQBEL based on the underlying numeric standard, or another ambient target judged by the Division to be achievable with “attainable source controls or treatment.” In reviewing this issue, EPA considered the requirements of Section 31.7(3)(c):

“Regional wastewater management plans (208 plans) and plan updates, discharge permits, wasteload allocations, planning, design, and construction of new enlarged, or improved facilities, management practices, and other water quality controls and actions shall be geared toward fully attaining the classified use and underlying numeric standard and assist in eliminating the need for the temporary modification, in a manner consistent with the provisions of subsection 31.14.” (underline added).

EPA finds this language to be ambiguous. For example, it is not clear whether a permit that is “geared toward” attaining the underlying numeric standard must include a WQBEL based on achieving the underlying standard. If such WQBELs are required, EPA does not see a purpose for adopting a temporary modification (or for adopting new Section 31.7(3)(a)(ii)(C)). If permits must include WQBELs based on achieving the underlying standard whether or not a 31.7(3)(a)(ii)(C) temporary modification is adopted, there does not seem to be any reason to adopt such a temporary modification. While EPA agrees that permits must include WQBELs if required by 40 C.F.R. Part 122 requirements, and that WQBELs should be achieved as soon as possible, we are concerned that 31.7(3)(a)(ii)(C) and 31.7(3)(c) are ambiguous regarding the process and decision criteria to be used by the Division to determine the “attainable source controls or treatment” and the WQBELs. EPA notes that the Division was silent on this issue in

their May 12, 2010 rebuttal statement. EPA believes that there must be a purpose for adopting 31.7(3)(a)(ii)(C), and the purpose may be to authorize a permit with a relaxed WQBEL that does not protect the use classification.

If the purpose of a temporary modification under 31.7(3)(a)(ii)(C) is to authorize a relaxed WQBEL that is not based on achieving the underlying standard, EPA is concerned that the approach requires the Division (not the Commission) to make an attainability decision in the context of a permit action. Such attainability decisions are appropriately based on a use attainability analysis or similar site-specific study and made by the Commission in a WQS rulemaking hearing. For example, in the *E. coli* and mercury situations discussed above, EPA is concerned that a 31.7(3)(a)(ii)(C) temporary modification would authorize the Division to issue a relaxed WQBEL. Rather than basing the WQBEL on what is necessary to protect the use classification, EPA is concerned that the WQBEL could instead reflect a Division permit writer's evaluation of what is attainable in the receiving water under natural conditions (because of waterfowl) or with "attainable source controls or treatment."

In addition, EPA is concerned that 31.7(3)(a)(ii)(C) would address a facility-specific question by providing relief to all contributing dischargers to the segment. EPA agrees with the Statement of Basis and Purpose adopted by the Commission, which included the following regarding 31.7(3)(a)(ii)(C):

"The third condition, significant uncertainty regarding the timing of implementing attainable source controls or treatment, will be repealed on 1/1/2013. The Commission believes that that this type of uncertainty is better addressed through the discharger-specific variance provisions which will become effective on that date."

Conclusion

EPA's regulation at 40 C.F.R. § 131.13 provides that States may, at their discretion, include in their State standards, policies generally affecting their application and implementation and that "such policies are subject to EPA review and approval." Today EPA disapproves the general policy described in new Section 31.7(3)(a)(ii)(C). EPA concludes that the adopted approach does not comply with the CWA and EPA's implementing WQS regulation. There is nothing in EPA's regulation or guidance supporting State authority to adopt temporary modifications (or waterbody variances) where there is "significant uncertainty regarding the timing of implementing attainable source controls or treatment." Another factor considered by EPA is that legitimate facility-specific feasibility issues must be addressed in a manner that provides relief only to the single discharger deserving of such relief, and not to other dischargers on the segment that are operating under different circumstances. Finally, EPA is concerned that 31.7(3)(a)(ii)(C) and 31.7(3)(c) are ambiguous regarding the process and decision criteria to be used by the Division in determining WQBELs, and that WQBELs on segments with temporary modifications pursuant to 31.7(3)(a)(ii)(C) would not protect designated uses. The Commission can resolve EPA's disapproval by deleting Section 31.7(3)(a)(ii)(C). Colorado also retains its discretion to pursue a variety of alternatives to 31.7(3)(a)(ii)(C) temporary modifications,

including permit compliance schedules, discharger-specific variances, or temporary modifications based on either 31.7(3)(a)(ii)(A) or (B).

II. SECTION 31.8(2)(B)(i)(C). (EFFLUENT-DOMINATED AND EFFLUENT-DEPENDENT STREAMS)

EPA disapproves 31.8(2)(b)(i)(C), as revised in 2010. This revised provision would have authorized Use Protected designations⁴ for segments that meet the 31.5 definition of “effluent-dependent stream” or “effluent-dominated stream.” Although EPA approved 31.8(2)(b)(i)(C) when it was first adopted in 2005, EPA has re-evaluated the provision, as revised in 2010, pursuant to its CWA § 303(c)(2)(A) mandatory duty. EPA concludes the provision is not consistent with the 40 C.F.R. § 131.12(a)(2) requirement to maintain and protect water quality where “the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water” and is therefore disapproving the provision pursuant to CWA § 303(c). However, the previously-approved version of 31.8(2)(b)(i)(C), and the previously-approved segment-specific use protected designations based on 31.8(2)(b)(i)(C), will remain in effect until EPA approves a change, deletion, or addition, or until EPA promulgates a more stringent water quality standard. (40 C.F.R. § 131.21(e)).

Discussion

The federal requirements applicable to State antidegradation policies are found in EPA’s water quality standards regulation at 40 C.F.R. § 131.12. The EPA regulation requires that State antidegradation policies must provide for protection of existing uses (Section 131.12(a)(1)), high quality waters (Section 131.12(a)(2)), and outstanding national resource waters (Section 131.12(a)(3)). Pursuant to Section 131.12(a)(2), a State policy must require maintenance and protection of water quality where “the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water” (underline added).

Consistent with the plain language of the Section 131.12(a)(2) requirement, EPA’s interpretation is that State decision criteria for the purpose of determining which waters/parameters are subject to antidegradation review requirements must be based on metrics that describe or relate to “the quality of the waters.”

Section 31.8(2)(b)(i)(C) of the Basic Standards regulation establishes a rebuttable presumption that Use Protected designations are appropriate for segments that meet the definition of effluent-dependent stream or effluent-dominated stream; rebuttal of the presumption must be based on a showing that the segment should be undesignated, and subject to the protection provided by the antidegradation review process, based on the water body's “public resource value and ecological significance.” EPA’s concern is that 31.8(2)(b)(i)(C) results in

⁴ Under Colorado’s Antidegradation rule, antidegradation reviews are not required for segments with a Use Protected designation.

adoption of Use Protected designations based on flow conditions (and the proportion of flow that derives from a wastewater discharge) and not based on water quality conditions.

The provision allowing the Commission to decide that a segment should be reviewable based on “public resource value and ecological significance” is not driven by water quality conditions. In the one situation where this provision was applied, the Commission’s decision was based not on water quality but rather on ecological significance as evidenced by the presence of native fish species including flannelmouth sucker and juvenile roundtail chub.⁵ Accordingly, the provision is helpful but it does not remedy the fundamental problem that there is no water quality basis for categorically presuming Use Protected designations are appropriate for effluent-dependent and effluent-dominated streams.

The revisions to Section 31.8(2)(b)(i)(C) adopted by the Commission on August 9, 2010, were as follows:

- (C) The water body ~~is~~was an effluent-dominated or effluent-dependent stream during the period 2000-2009, except that the Commission may determine that the water body should be undesignated, and subject to the protection provided by the antidegradation review process, based on the water body's public resource value and ecological significance.

The revisions provide that determinations must be based on flow conditions during 2000-2009. Although a similar provision was adopted in 2005 with EPA approval (in a letter dated October 17, 2005), the 2010 changes to 31.8(2)(b)(i)(C) are substantive and trigger EPA’s mandatory duty to review and approve or disapprove the revised standard. CWA § 303(c)(2)(A) provides that:

“Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the Administrator.”

EPA considers 31.8(2)(b)(i)(C) to be a revised standard that requires EPA approval or disapproval. The scope of EPA’s review included re-evaluation of the information that was submitted to EPA regarding the State’s 2005 conclusion that a Use Protected designation is presumptively appropriate for effluent-dependent and effluent-dominated streams.

EPA disapproves the State’s approach (a Use Protected designation is presumed to be appropriate) because it is not based on metrics that describe or relate to “the quality of the waters.” 40 C.F.R. § 131.12(a)(2). Supporting information submitted by the Division (in 2005 and 2010) did not include water quality data or a water quality analysis demonstrating that a categorical exclusion from antidegradation review requirements is appropriate for effluent-dependent and effluent-dominated streams.

⁵ In the 2008 review of the classifications and standards for the Lower Colorado River Basin (Regulation #37), the WQCC determined that reviewable status was appropriate for Lower Coal Canyon Creek based on the ecological significance of the stream as habitat for juvenile roundtail chub and flannelmouth sucker. The Colorado Division of Wildlife has identified roundtail chub as a species of special concern.

EPA’s April 14, 2010 comment letter expressed concern that 31.8(2)(b)(i)(C) does not comply with federal requirements:

“The WQU is concerned that neither the proposed revision nor existing Section 31.8(2)(b)(i)(C) is consistent with the Section 131.12(a)(2) federal requirement to maintain and protect water quality where “the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.”... Importantly, Colorado has not provided water quality data or analyses demonstrating that the water quality of effluent-dependent and effluent-dominated streams does not exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water. In the absence of such data and analyses, there is no technical basis for the categorical presumption that Use Protected designations are appropriate, and no basis for the Region to approve the proposed revision.”

In its rebuttal statement, the Division responded to EPA’s concerns regarding 31.8(2)(b)(i)(C) as follows:

“In 2005, the Division proposed revisions to this provision to clarify the conditions in which a discharge can be part of the criteria for a use-protected designation. The Division proposed that “effluent-dominated” and “effluent-dependent” water segments would be designated use-protected. The reasoning was that such waters are, by definition, those where the majority of the flow consists of treated wastewater for the majority of the time. The Division believed that, as a matter of policy, it is reasonable to assume that such waters are not appropriately treated as “high quality,” i.e., better than necessary to protect fishable and swimmable uses. The Commission adopted the revisions and EPA approved them.”

EPA interprets this response as an acknowledgement that the Division is unable to categorically demonstrate that water quality conditions in effluent-dependent and effluent-dominated streams are less than those necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water. Instead, Colorado’s argument is that as a policy matter, States have discretion to decide that a Use Protected designation is appropriate for such waters, regardless of water quality conditions.

EPA disagrees. The Agency interprets 40 C.F.R. § 131.12(a)(2) as requiring that State decision criteria (for the purpose of determining which waters/parameters are subject to antidegradation review requirements) must be based on metrics that describe or relate to “the quality of the waters.” It is not reasonable to interpret the requirement as allowing States the discretion to establish decision criteria based on other factors (e.g., the proportion of ambient flow that derives from a wastewater discharge).

Conclusion

EPA disapproves Section 31.8(2)(b)(i)(C), as revised in 2010. EPA concludes the provision is not consistent with the 40 C.F.R. § 131.12(a)(2) requirement to maintain and protect

water quality where “the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.” However, the previously-approved version of 31.8(2)(b)(i)(C), and any previously approved use protected designations based on this provision, will remain in effect until EPA approves a change, deletion or addition or until EPA promulgates a more stringent water quality standard. (40 C.F.R. § 131.21(e)).

The Commission may resolve the disapproval by deleting 31.8(2)(b)(i)(C) or replacing it with a provision that provides for assignment of Use Protected designations based on metrics that describe or relate to “the quality of the waters.” Colorado also retains its discretion to pursue adoption of Use Protected designations based on the approved eligibility criteria in 31.8(2)(b), each of which is based on review of water quality conditions in the segment.

III. MOLYBDENUM TABLE VALUE FOR AGRICULTURE USE PROTECTION

EPA disapproves the new 300 µg/L molybdenum table value standard for protection of agriculture uses classifications. EPA’s principal concern is that the new table value assumes that livestock will receive supplemental copper in feed. This assumption is important because increased copper exposure means that cattle can tolerate more molybdenum exposure, and results in derivation of a less-stringent table value standard. Because the supplemental copper assumption is not well supported and results in a less stringent table value, EPA concludes the new agriculture table value is not consistent with the 40 C.F.R. § 131.11(a)(1) requirement to adopt criteria that protect designated use based on sound scientific rationale. We are especially concerned regarding: (1) the level of protection that will be achieved where operators do not, in fact, provide supplemental copper, and (2) the potential that high quality waters may be degraded to levels that require operators to provide supplemental copper.

Discussion

EPA’s water quality standards regulation requires States to adopt water quality criteria that protect designated uses based on sound scientific rationale (40 C.F.R. § 131.11(a)(1)). Regarding derivation of a table value standard to protect livestock watering uses, EPA recognizes that it is necessary to make several exposure-related assumptions. Similar to derivation of table values to protect human health, EPA interprets Section 131.11(a)(1) as requiring that table values for protection of livestock be derived in a reasonably conservative manner, such that in the absence of site-specific data, the table value can be applied to individual segments with confidence that the agriculture use classification will be protected.

The Commission adopted a 300 µg/L molybdenum table value standard for protection of the agriculture use classification by revising Table III in Section 31.16 of the Basic Standards regulation. The standard includes a 75 µg/L margin of safety and was derived using the following assumptions and equation:

Copper concentration in forage (Cu _{forage}):	7000 µg/kg
Molybdenum concentration in forage (Mo _{forage}):	500 µg/kg
Forage intake rate (Forage _{intake}):	6.8 kg/day
Copper concentration in water (Cu _{water}):	8 µg/L
Water intake rate (Water _{intake}):	55 L/day
Copper supplementation in feed (Cu _{sup}):	48,000 µg/day
Cu:Mo exposure ratio (Cu:Mo Safe Ratio):	4
Margin of safety:	75 µg/L

$$\text{TVS} = \frac{\text{Cu}_{\text{forage}} \times \text{Forage}_{\text{intake}} + \text{Cu}_{\text{water}} \times \text{Water}_{\text{intake}} + \text{Cu}_{\text{sup}}}{\text{Cu:Mo Safe Ratio}} - (\text{Mo}_{\text{forage}} \times \text{Forage}_{\text{intake}})$$

$$\text{TVS} = \frac{\text{Water}_{\text{intake}}}{\text{Water}_{\text{intake}}}$$

$$\text{TVS} = \frac{7000 \mu\text{g/kg} \times 6.8 \text{ kg/day} + 8 \mu\text{g/L} \times 55 \text{ L/day} + 48,000 \mu\text{g/day}}{4} - (500 \mu\text{g/kg} \times 6.8 \text{ kg/day})$$

$$\text{TVS} = \frac{55 \text{ L/day}}{55 \text{ L/day}}$$

$$\begin{aligned} \text{TVS} &= 375 \mu\text{g/L} \\ &- 75 \mu\text{g/L (margin of safety)} \\ &= \mathbf{300 \mu\text{g/L}} \end{aligned}$$

EPA supports this derivation methodology, with the exception of the assumed copper supplementation in feed (i.e., the term Cu_{sup}). In its February 10, 2010 public notice of proposed rulemaking, March 17, 2010 proponent’s pre-hearing statement, and May 12, 2010 rebuttal statement (responding to responsive comments), the Division acknowledged that its proposal was based on achieving a 4:1 Cu:Mo exposure ratio, but did not provide notice that its proposed table value assumed supplemental copper in feed. Notice from the Division that its proposal assumed supplemental copper was provided on May 24, 2010, when the following sur-rebuttal comments were distributed by the Division:

“The table value assumes that the safe copper to molybdenum ratio is 4:1, and a copper supplementation rate of 48 mg/day. The assumed rate of copper supplementation is not atypical for Colorado, and many operators find it

necessary to provide copper supplements because native forage is commonly copper deficient or other parameters such as sulfur or molybdenum interfere with copper uptake. However, not all operators provide copper supplements and table values typically do not assume anthropogenic mitigation.”

Where livestock receive supplemental copper in feed, the amount of molybdenum that can be tolerated is increased. This means that assuming supplemental copper results in derivation of a less-stringent table value standard. If no copper supplementation is assumed, and all other assumptions are held constant including the margin of safety, the calculated table value becomes 82 µg/L. If the 75 µg/L margin of safety is excluded, the table value becomes 157 µg/L (this value was proposed by Region 8 as an alternative during the June 2010 rulemaking hearing). If no copper supplementation is assumed, the Cu:Mo exposure ratio is changed to 6:1 (which the Division presented as the “ideal” exposure ratio), and the margin of safety is dropped, the calculated table value becomes 84 µg/L.

EPA is concerned that 300 µg/L is not a protective table value standard. For example, EPA is concerned that livestock which do not, in fact, receive supplemental copper would not be protected against the effects of molybdenosis if the water provided to the livestock had a molybdenum concentration of 300 µg/L. The Division's May 24, 2010 sur-rebuttal statement conceded that "not all operators provide copper supplementation and table values typically do not assume anthropogenic mitigation."

In addition, EPA is concerned that a 300 µg/L table value might - over time - allow for new discharges of molybdenum that would degrade ambient water quality conditions such that if livestock watering were to become a future use, the degraded ambient water quality would necessitate that operators provide supplemental copper.

Conclusion

EPA concludes the new molybdenum table value standard for protection of the agriculture use classification was not derived in a reasonably conservative manner, such that in the absence of site-specific data, it can be applied with confidence that the use classification will be protected. EPA also concludes the adopted table value standard is inconsistent with 40 C.F.R. § 131.11, which requires States to adopt water quality criteria that protect the designated use. Accordingly, the table value standard is disapproved.

The Commission can resolve the disapproval by adopting a replacement table value standard that complies with 40 C.F.R. § 131.11(a)(1). Colorado retains its discretion to adopt molybdenum table values and/or numeric standards for individual segments based on sound scientific rationale. In the upcoming round of basin reviews, for segments where adoption of a numeric standard for molybdenum is determined to be appropriate, EPA recognizes that the Division and Commission have flexibility to consider factual site-specific information such as current ambient molybdenum concentrations and exposure information including copper supplementation practices. Accordingly, numeric standards for individual segments, including standards higher, lower, or equal to the disapproved table value, may be considered based on site-specific information. New and revised molybdenum standards for individual water body

segments are also subject to EPA review. EPA’s review would focus on whether such new/revised numeric standards protect the use classification based on sound scientific rationale, in accordance with 40 C.F.R. § 131.11.

IV. NITRATE AND ARSENIC TABLE VALUES FOR WATER SUPPLY PROTECTION

EPA disapproves the nitrate and arsenic table values for protection of the water supply use classification in Table II and Table III, respectively, as revised in 2010. These table values are modified by footnotes which authorize the Division to exclude water quality-based effluent limits (WQBELs) from discharge permits on segments with a water supply classification if water supply is not an “actual” use (e.g., if “a reasonable level of inquiry demonstrates that there is no actual domestic water supply use of the waters in question or of hydrologically connected ground water”). Although the table value footnotes address calculation of limits to be included in discharge permits, EPA understands that the footnotes also affect Colorado’s approach to identifying impaired waters pursuant to CWA § 303(d). EPA concludes the table values are inconsistent with 40 C.F.R. § 131.11(a)(1), which requires States to adopt water quality criteria that protect the designated use based on sound scientific rationale, whether or not the use is an “actual” use. However, the previously-approved versions of these table values (and footnotes), and the previously-approved segment-specific numeric standards based on these table values, will remain in effect until EPA approves a change, deletion, or addition, or until EPA promulgates a more stringent water quality standard. (40 C.F.R. § 131.21(e)).

Discussion

The revisions to the Table II nitrate footnote (4) and the Table III arsenic footnote (14) are as follows:

- (4) ~~A combined total of nitrite and nitrate at the point of intake to the domestic water supply shall not exceed 10 mg/l. The nitrate limit shall be calculated to meet the relevant standard in accordance with the provisions of Section 31.10 of this regulation, unless:~~
 - a. ~~The permittee provides documentation that a reasonable level of inquiry demonstrates that there is no actual domestic water supply use of the waters in question or of hydrologically connected ground water, or~~
 - b. ~~The combined total of nitrate plus nitrite at the point of intake to the domestic water supply will not exceed 10 mg/l as demonstrated through modeling or other scientifically supportable analysis~~

- (14) ~~Applies at the point of water supply intake. The arsenic limit shall be calculated to meet the relevant standard in accordance with the provisions of Section 31.10 of this regulation unless:~~
 - a. ~~The permittee provides documentation that a reasonable level of inquiry demonstrates that there is no actual domestic water supply use of the waters in question or of hydrologically connected ground water, or~~

b. The arsenic concentration at the point of intake to the domestic water supply will not exceed the standard as demonstrated through modeling or other scientifically supportable analysis.

The revisions trigger EPA’s mandatory duty to review and approve or disapprove the provision. Section 303(c)(2)(A) provides that:

“Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the Administrator.”

Accordingly, EPA considers both table values (including their footnotes) to be a “revised standard” that requires EPA approval or disapproval. The scope of EPA’s review included re-evaluation of how the table values are implemented to protect the water supply use classification.

EPA’s disapproval action is based partly on its concern that the table values authorize the Division to exclude WQBELs from permits, for discharges of nitrate and/or arsenic to segments with a water supply classification, if water supply is not an actual use (e.g., if “a reasonable level of inquiry demonstrates that there is no actual domestic water supply use of the waters in question or of hydrologically connected ground water”). Regardless of the concentrations of nitrate and arsenic in the discharge, the table values authorize issuance of permits that do not include limits for the protection of water supply uses on some segments where a water supply use classification has been assigned.

The revised table value footnotes provide that discharge effluent limits shall be calculated to meet the standard at the edge of the regulatory mixing zone, with two exceptions. The first exception applies where it is demonstrated that there is no actual domestic water supply use of the waters in question or of hydrologically connected ground water. Where this demonstration is made, effluent limits are not to be included in the permit. EPA is concerned this approach allows excessive discharges of nitrate and arsenic to some segments with a water supply use classification and undermines attempts to preserve high quality source waters for future use.

In addition, EPA understands that the footnotes affect decisions by the Division and Commission when identifying waters impaired by nitrate and arsenic pursuant to CWA § 303(d) (i.e., in situations where water supply is a designated use but not an actual use). Our understanding is that listing decisions are affected because including waters on the Section 303(d) list would trigger development of total maximum daily loads (TMDLs) and wasteload allocations (WLAs). Completing these analyses would have limited value if WLAs cannot be implemented via WQBELs in discharge permits (per the table values). Thus, the table values also result in decisions to exclude segments with a water supply use classification from the Section 303(d) list, regardless of the ambient levels of nitrate and arsenic and whether such levels are protective of water supply uses.

Based on the level of protection provided, and considering that the table values affect the development of discharge permits, 303(d) lists, TMDLs, and WLAs, EPA concludes the nitrate and arsenic table values do not protect the water supply use classification in all cases and are inconsistent with the CWA and EPA’s implementing regulation.

Nothing in the CWA or EPA’s implementing regulation suggests that water quality criteria may be conditioned such that they apply only to protection of “actual” uses of a waterbody. Instead, Section 131.11(a)(1) of the regulation requires adoption of water quality criteria to protect designated uses based on sound scientific rationale. Designated uses establish the goals for a waterbody. Designated uses are defined in Section 131.3(f) of the EPA regulation as “those uses specified in water quality standards for each water body or segment whether or not they are being attained” (underline added). In the 1998 Advance Notice of Proposed Rulemaking (ANPRM) for the Part 131 water quality standards regulation, EPA stated that “designated uses focus on the attainable condition while existing uses focus on the past or present condition.”⁶

Accordingly, designated uses may or may not be attained in the waterbody based on present water quality conditions and actual usage. For example, a use such as water supply may be designated even where there is no present usage of the waterbody for that purpose. An important reason for doing this is to maintain and protect water quality conditions for future use. In situations where water supply use is designated, but is not an “existing use” as defined by 40 C.F.R. § 131.3(e),⁷ and the Commission believes that continued protection of ambient water quality for water supply purposes is not appropriate, an alternative that might be acceptable is to remove the water supply classification. Such proposals must be consistent with EPA requirements that apply to removal of a designated use. See 40 C.F.R. § 131.10.

Conclusion

EPA disapproves the nitrate table value in Table II and the arsenic table value in Table III, as revised in 2010. EPA concludes these table values, as modified by the footnotes, are inconsistent with 40 C.F.R. § 131.11(a)(1), which requires States to adopt water quality criteria that protect the designated use based on sound scientific rationale, whether or not the use is an “actual” use. The Commission may resolve the disapproval by deleting the footnotes or adopting replacement footnotes that comply with federal requirements. Colorado retains its discretion to review and revise (1) water supply use classifications for individual segments, (2) nitrate and arsenic numeric standards for the protection of such use classifications based on sound scientific rationale, and (3) the Colorado mixing zone rule in Section 31.10 of the Basic Standards regulation.

In situations where the water supply use classification is assigned but there is no actual water supply use, and a discharge has reasonable potential to cause or contribute to an exceedance for nitrate or arsenic, EPA recommends development of effluent limits consistent with the State’s mixing zone rule at Section 31.10 of the Basic Standards regulation. This approach would protect the water supply use classification consistent with EPA requirements.

⁶ Advance Notice of Proposed Rulemaking for the Part 131 water quality standards regulation, July 7, 1998, 63 Fed.1 Reg. 36742.

⁷ 40 C.F.R. § 131.3(e) defines *existing uses* as those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.

In situations where the water supply use classification is assigned, there is also an actual water supply use, and the Commission has concerns about developing discharge permits consistent with Colorado's approved mixing zone rule, EPA recommends that the Division work with stakeholders to review alternatives that EPA could support. One option might be to review and revise the State's mixing zone policy at 31.10, and develop an analysis - explaining and defending the mixing zones that would result - for review by the public and EPA. EPA suggests that the analysis evaluate several alternatives including options that would maintain a protective buffer zone upstream of the point of intake. If this option is pursued, a rationale should be developed and presented to the public that explains the mixing zone approaches that were evaluated. Please note that any such proposal would also have to explain how the water supply use classification will be protected in situations where there is no actual water supply use.

V. REVISIONS FOR WHICH EPA IS TAKING NO ACTION

Provisions Relating to Discharger-Specific Variances

Today EPA takes no action on the new and revised provisions relating to discharger-specific variances. Specific provisions EPA is not acting on include the following:

- Section 31.7. Overview (portions that relate to discharger-specific variances)
- Section 31.7(4). Granting, Extending and Removing Variances to Numeric Standards – Effective January 1, 2013
- Section 31.14 (17). (Permit Actions that Implement Discharger-Specific Variances)

EPA notes that the new discharger-specific variance policy in 31.7(4) was adopted with a January 1, 2013 delayed effective date. EPA intends to participate in the work group process to develop implementation guidance for discharger-specific variances. The Agency anticipates that its action regarding the new and revised provisions relating to discharger-specific variances will be informed by the content of the discharger-specific variance implementation guidance.