

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Commission

REGULATION NO. 32 - CLASSIFICATIONS AND NUMERIC STANDARDS FOR ARKANSAS RIVER BASIN

5 CCR 1002-32

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

32.6 TABLES

(2) Abbreviations:

(c) Temporary Modification for Water + Fish Chronic Arsenic Standard

- (i) The temporary modification for chronic arsenic standards applied to segments with an arsenic standard of 0.02 µg/l that has been set to protect the Water + Fish qualifier is listed in the temporary modification and qualifiers column as As(ch)=hybrid.
- (ii) For discharges existing on or before 6/1/2013, the temporary modification is: As(ch)=current condition, expiring on 12/31/~~2021~~2024. Where a permit for an existing discharge is reissued or modified while the temporary modification is in effect, the division will include additional permit Terms and Conditions, which may include requirements for additional monitoring, source identification, and characterization of source control and treatment options for reducing arsenic concentrations in effluent.
- (iii) For new or increased discharges commencing on or after 6/1/2013, the temporary modification is: As(ch)=0.02-3.0 µg/l (Trec), expiring on 12/31/~~2021~~2024.
 - (a) The first number in the range is the health-based water quality standard previously adopted by the Commission for the segment.
 - (b) The second number in the range is a technology based value established by the Commission for the purpose of this temporary modification.
 - (c) Control requirements, such as discharge permit effluent limitations, shall be established using the first number in the range as the ambient water quality target, provided that no effluent limitation shall require an “end-of-pipe” discharge level more restrictive than the second number in the range.

32.63 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; DECEMBER 9, 2019 RULEMAKING; FINAL ACTION January 13, 2020; EFFECTIVE DATE JUNE 30, 2020

The provisions of C.R.S. 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402; provide the specific statutory authority for adoption of these regulatory amendments. The commission also adopted in compliance with 24-4-103(4) C.R.S. the following statement of basis and purpose.

BASIS AND PURPOSE

Pursuant to the requirements in the Basic Standards (at 31.7(3)), the commission reviewed the status of temporary modifications scheduled to expire before December 31, 2021 to determine whether the temporary modification should be modified, eliminated, or extended.

For the temporary modifications set to expire after the effective date of this hearing, the commission reviewed progress toward resolving the uncertainty in the underlying standard and/or the extent to which conditions are a result of natural or anthropogenic conditions, and evaluated whether the temporary modifications were still necessary.

A. Temporary Modifications for Standards Other than Arsenic

The commission took no action on the following temporary modification:

Middle Arkansas Segment 2 (COARMA02): temporary modifications of the acute and chronic temperature standards (expire 7/1/2021). Colorado Parks and Wildlife continues to make progress to resolve the uncertainty. The commission made no change to the expiration date, as the original time allotment was deemed adequate to resolve the uncertainty.

The commission deleted the following temporary modifications:

Upper Arkansas Segment 8b (COARUA08b): temporary modifications of the acute and chronic cadmium and zinc standards (expire 6/30/2020).

Iowa Gulch, segments 8a, 8b and 9: The commission adopted site-specific standards for cadmium and zinc based on the EPA recalculation procedure. The recalculation methodology provides revised hardness-based equations for acute and chronic cadmium and acute and chronic zinc for Segment 8a, and chronic cadmium and acute and chronic zinc for segments 8b and 9. These site-specific standards, which were developed using the most up-to-date cadmium and zinc toxicity databases (as of November 2019), are intended to protect at least 95% of the resident aquatic macroinvertebrate, planktonic, and fish communities in Iowa Gulch. These site-specific standards resolve the uncertainty in the underlying standards necessary to protect current and/or future uses, which was the basis for the temporary modifications for cadmium and zinc on Segment 8b.

The Black Cloud Mine, which is located in the upper portion of Iowa Gulch, ceased mining activities in 1999. Resurrection Mining Company began reclamation in 2009 and completed reclamation of the mine in 2014. Resurrection is continuing to collect and treat toe-drain water from the tailings pile in compliance with a consent decree. Those collected waters are transported to the Yak Water Treatment Plant, and the treated water is discharged to California Gulch. Resurrection maintains a permit to discharge treated toe-drain water to Iowa Gulch Segment 8b in the event that the Yak Water Treatment Plant is not operational.

The Use Attainability Analysis submitted by Resurrection demonstrated that aquatic macroinvertebrate populations in Iowa Gulch have macroinvertebrate multi-metric Index (MMI) scores above the attainment threshold, indicating that Iowa Gulch is attaining the designated aquatic life use. Fish diversity in Iowa Gulch is limited to one family (Salmonidae), therefore a second fish family was omitted from the recalculation procedure. Planktonic organisms, such as daphnids, copepods, and rotifers are present,

although primarily limited to the ponded areas in these segments. Other benthic crustaceans, such as the amphipod *Hyalella azteca*, are absent, consistent with reference streams (Rock Creek, Empire Gulch, and Big Union Creek) in which benthic crustaceans were also absent from sweep samples. Cadmium and zinc standards resulting from the recalculation procedure result in values that are sufficiently protective of the resident aquatic populations in Iowa Gulch.

Site-specific Standards Longevity Plan

Resurrection will provide information to the commission and division regarding updated zinc and cadmium toxicity studies and recalculated standards if warranted, as well as updated resident species lists and water quality information in Iowa Gulch to assist the commission in ensuring the site-specific standards remain appropriate in subsequent Regulation No. 32 reviews, pursuant to a longevity plan submitted by Resurrection.

B. Temporary Modifications for Arsenic

The temporary modification of the chronic arsenic standard, which applies to numerous segments with a standard of 0.02 µg/l to protect the Water + Fish use, was extended from 12/31/2021 to 12/31/2024. No changes were made to the temporary modification operative values at 32.6(2)(c). For discharges existing on or before 6/1/2013, the temporary modification remains at As(ch)=current condition and numeric effluent limits will be developed by the division using the division's implementation method (WQCD Exhibit L). For new or increased discharges that commence on or after 6/1/2013, the temporary modification remains at 0.02–3.0 µg/L (total recoverable). The extension provides time to resolve the uncertainty in the underlying standard for arsenic to protect human health. Significant uncertainty remains regarding the appropriate standard to protect the use and the extent to which ambient levels of arsenic are the result of natural or irreversible conditions. In addition, there is widespread instream non-attainment of the underlying standard and predicted or demonstrated compliance problems with permit limits based on the underlying standard, as demonstrated in the division's Prehearing Statement.

It is anticipated that the uncertainty regarding the appropriate underlying standard for arsenic to protect human health will be resolved by June 2024, with the adoption of new statewide arsenic use-based standards. The division presented (WQCD Exhibit E) a detailed plan to resolve the multifaceted uncertainty for arsenic. The plan includes conducting a field study to investigate the proportion of inorganic (versus total) arsenic in the tissue of fish collected from Colorado waters, deriving a bioaccumulation or bioconcentration factor for arsenic, appropriate for use in Colorado, and characterizing ambient levels of arsenic in surface waters and groundwater statewide. As discussed below, the division will also be gathering, through permit requirements, targeted data from facilities benefiting from the arsenic temporary modification (WQCD Exhibit D). These data will help the division to better understand the contribution of arsenic in effluent from permitted facilities to ambient levels of arsenic in Colorado waters and will inform the extent to which ambient levels of arsenic are the result of natural or irreversible conditions.

Effluent arsenic concentration data from facilities throughout the state demonstrate that many facilities will likely have issues meeting effluent limits based on the anticipated revised arsenic water quality standard to protect human health. As a result, there is a widespread need to make progress to understand sources of arsenic and options for source control and treatment. To ensure such progress is made, when implementing the "current condition" temporary modification in permits, the division will include additional permit Terms and Conditions, which may include requirements for additional monitoring, source identification, and characterization of source control and treatment options for reducing arsenic concentrations in effluent (WQCD Exhibit D). Under the duration of the temporary modification, facilities would not be required to implement facility improvements to meet a specified effluent limit; however, facilities may be required to evaluate arsenic source control and treatment options for their facility. For purposes of evaluating options to reduce arsenic concentrations in effluent, the arsenic treatment removal recognized in the 2013 Arsenic Rulemaking (3 µg/L) can be used as a point of reference until the uncertainty in the underlying standard is resolved. Implementation guidance for these requirements was included in WQCD Exhibit D. These requirements are reasonable and would not cause undue economic burden for facilities, but will ensure that progress is being made toward future attainment of the underlying

standards and protection of the classified uses. Implementation of these requirements would function to increase the amount of time facilities would have for long-term planning and encourage data collection that would facilitate implementation of the most appropriate source reduction and treatment options and selection of the most appropriate regulatory pathways once the new underlying standard is adopted for arsenic.

C. Implementation of Current Condition Temporary Modifications into Permits

Several parties to the hearing raised concerns regarding the implementation of current condition temporary modifications into permits, as described in WQCD Exhibit L. The commission was persuaded that the division has existing legal authority to proceed with implementation of these temporary modifications in the absence of a rule or policy addressing this specifically. However, the commission believes it would be beneficial to develop a policy, and therefore requested that the division work toward developing a division policy about how the division will proceed with implementing current condition temporary modifications into permits. The commission requested that the division report back to the commission next year, potentially as part of the division's annual update to the commission regarding the 10-Year Water Quality Roadmap, regarding what the division believes is a reasonable timeline and process for developing such a policy. The commission encouraged the division to continue with its current efforts at transparency and implementation of current condition temporary modifications consistent with the evidence presented in the rulemaking, including Exhibit L, into permits prior to the development of a policy.
