

Colorado Antidegradation Review Process

Issue: Use Protected Designation

WQCD Primer Question: What should be done to address the concerns about the process and criteria for determining whether a water body should have its use protected status removed?

Concerns:

Changes in 2005 to criteria for Use Protected designation are causing significant numbers of segments to convert from Use Protected to Reviewable. This action will increase the number of NPDES permit renewals containing antidegradation-based effluent limits that are more restrictive than effluent limits based upon water quality standard (WQBELs).

NPDES and pretreatment permitting requirements apply multiple layers of safety factors that result in effluent discharge levels far more stringent than necessary to protect water quality standards. This means that successive permitting over the years likely will continually reduce the allowable concentration and increase the assimilative capacity. Consequently, even without application of antidegradation, assimilative capacity is preserved. This aspect of the water quality program, along with its associated costs to industrial and POTW dischargers, should be recognized.

Recommendations:

Amend Regulation 31.5 Definitions so that “effluent dependent and effluent dominated streams” are defined on the basis of dry stream bed conditions above or immediately below the discharge point historically and the low flow used for permitting purposes. Delete the current determination of effluent dominance based upon 8 of the last 10 years of stream flow.

Add a definition of “Use Protected” to clarify that it is not an impaired segment but one in which the chemical and physical conditions as a whole do not indicate that there is sufficient assimilative capacity that would justify conducting the review process.

Clarify that Use Protected applies where physical habitat limitations, sediment impacts, hydrologic regime, stream channelization, urban flood flows, or other human caused impacts exist that are not able to be corrected in the next 20 years. This determination should support a conclusion that the assimilative capacity is not sufficient to justify application of the public review process and effluent limits more restrictive than WQBELs.

Clarify that Reviewable Designation is a determination that there is sufficient assimilative capacity to support the public review process to justify degradation of current quality. This clarification will reduce WQCD workload.

Additional supporting documentation and analysis, including specific recommendations for rule language, follow.

Issue: Use Protection Designation

Supporting Documentation and Analysis

Colorado uses the “designational” approach for determining which water bodies are subject to the antidegradation process. This type of approach was recently upheld by the U.S. Court of Appeals for the Sixth Circuit (*Kentucky Waterways Alliance v. Johnson*, 540 Fed. 3d 466 (2008)). Additional information concerning that court decision is attached.

Originally, all warm water class 2 streams were given the “Use Protected” designation, which meant that effluent limits were set at the levels necessary to protect water quality standards. This approach reflected an understanding that warm water class 2 streams had limited habitat, few species, warm waters, high sediment loads, little stream flow, etc. It was determined that preservation of assimilative capacity was unnecessary, because habitat posed a greater limit on protection of aquatic life than water quality. Overall, water quality was not significantly better than necessary to justify the public review process to support significant degradation of assimilative capacity up to the water quality standards.

As part of the 2005 changes to the Basic Standards, the presumption that warm water class 2 was Use Protected was made rebuttable at a lower threshold. Thus, if only 2 of 12 parameters exceeded “table value standards” then the presumption did not apply, and the “Reviewable” designation applied, unless proponents proved that other conditions justified the Use Protected designation. Those other conditions included a showing that the water body was “effluent-dominated or effluent-dependent,” or that “the presence of substantial natural or irreversible human-induced pollution for parameters other than those listed in 31.8(2)(b)(i)(B)...[was such that] the quality of the waters in question should not be considered better than necessary to support aquatic class 1 and/or recreation Class P uses.” See attachment for 2005 Statement of Basis and Purpose.

The consequence of the 2005 changes in the Basic Standards is that many more streams will convert from Use Protected to Reviewable designation and significantly increase the number of permits likely subject to antidegradation review. For example, the Division is proposing 70 segments in the South Platte River Basin convert from Use Protected to Reviewable. It remains to be seen whether such reviews will result in effluent limits other than what would have been derived within a Use Protected designation.

Similarly, the Fountain/Monument Creek Use Protected designation was recently removed, because the number of parameters exceeding table values had shrunk to less than 2 and the Commission determined that the streams were not effluent dominated, as defined in the regulation, despite having effluent limits based upon low flows in which the effluent volume was far greater than the instream flows and the effluent clearly dominated the streams. The designation process is inconsistent with the permitting process. While for permitting purposes the effluent dominates Fountain and Monument Creeks, for the designational decision, the majority of the flow has to be greater than instream flow the majority of the time in 8 of 10 years. Two unusually wet years with long precipitation summers prevented the effluent

dominance. Yet a majority of the time during the 10 year period, it was effluent dominated. As a matter of permitting, Whole Effluent Toxicity Testing is based upon the ration of effluent to stream flow as reflected in the In-stream Waste Concentrations (IWCs). Permits for discharges to Fountain and Monument Creeks had IWCs evidencing effluent dominance. During the hearing process, the commission also rejected the evidence that the natural and human aggravated high sediment loading, high and flashy storm event hydrologic regimes, and other habitat conditions were not sufficient to limit the designation to a Use Protected designation.

Revisions are herein proposed to the Basic Standards to make the designation criteria consistent with permitting criteria, to clarify decision criteria and to clarify burdens of going forward. These revisions were proposed at the November 2008 Issues Scoping Hearing for the Basic Standards Triennial Review.

PROPOSED REVISIONS TO REGULATION 31:

Section 31.5 Definitions:

“Effluent-Dependent Stream” means a stream that HISTORICALLY HAS BEEN DRY without the presence of wastewater effluent, but has continuous or periodic flows for all or a portion of its reach, PARTICULARLY FROM THE POINT OF DISCHARGE TO THE NEXT MAJOR TRIBUTARY, as a result of the discharge of treated wastewater.

“Effluent-Dominated Stream” means a stream that would be intermittent or perennial without the presence of wastewater effluent whose flow for the majority of the time is primarily attributable to the discharge of treated wastewater (i.e., greater than 50 percent of the flow consists of treated wastewater FOR THE 30 LOWEST STREAM FLOW DAYS IN A 3 YEAR PERIOD AS USED IN THE LAST PERMIT RENEWAL OR FOR A NEW PERMIT ISSUANCE, OR SUCH SHORTER PERIOD WITH REPRESENTATIVE DATA, FOR THAT PORTION OF THE REACH FROM THE POINT OF DISCHARGE TO THE NEXT MAJOR TRIBUTARY.

“USE PROTECTED” MEANS A DESIGNATION THAT THE EXISTING USE IS ATTAINED, THAT WATER QUALITY STANDARDS ARE MOSTLY ATTAINED, BUT THE ASSIMILATIVE CAPACITY (DEFINED BY THAT INCREMENT BETWEEN CURRENT QUALITY AND THE STANDARD) IS NOT SUFFICIENT TO JUSTIFY APPLICATION OF EFFLUENT LIMITS TO MAINTAIN CURRENT STREAM CONDITIONS OR IMPOSITION OF THE REVIEW PROCESS TO AUTHORIZE CONSUMPTION OF ANY PORTION OF THAT INCREMENT UP TO THE STANDARDS. INSUFFICIENCY OF THE ASSIMILATIVE CAPACITY SHALL BE DETERMINED CONSIDERING THE WATER QUALITY PRESENT DURING THE 30 DAY/3 YEAR LOW FLOW IMMEDIATELY DOWNSTREAM OF THE MIXING ZONE IN COMPARISON TO THE WATER QUALITY STANDARDS. INSUFFICIENCY OF THE ASSIMILATIVE CAPACITY SHALL BE BASED UPON CONSIDERATION OF THE PARAMETERS LIKELY TO BE SUBJECT TO PERMIT LIMITS, AS WELL AS THOSE PARAMETERS NOT OTHERWISE WITH PERMIT LIMITS AND THE OVERALL IMPACTS OF HUMAN

CAUSED OR NATURAL CONDITIONS THAT LIMIT THE IMPORTANCE OF ASSIMILATIVE CAPACITY IN OPTIMIZING FULLFILLMENT OF THE USE.

Section 31.8 Antidegradation

(2)(b) Use-Protected Designation:

(ii) In addition, waters may be designated use-protected even though none of the preceding criteria apply if the Commission determines that due to the presence of substantial natural or irreversible human-induced pollution for parameters other than those listed in section 31.8(2)(b)(i)(B) the quality of the waters should not be considered TO HAVE ASSIMILATIVE CAPACITY SUFFICIENT TO REQUIRE MAINTAINING CURRENT LEVELS. SUCH LIMITED ASSIMILATIVE CAPACITY SHALL BE DETERMINED BY CONSIDERING THE PHYSICAL HABITAT LIMITATIONS, SEDIMENT IMPACTS, HYDROLOGIC REGIME, STREAM CHANNELIZATION, URBAN FLOOD FLOWS, OR OTHER HUMAN CAUSE IMPACTS NOT LIKELY CORRECTIBLE IN THE NEXT 20 YEARS.

(2)(b)(iv) WHERE THE COMMISSION PROPOSES CHANGES OF ANY STREAM SEGMENTS DESIGNATED “USE PROTECTED” TO “REVIEWABLE,” THE DIVISION HAS THE BURDEN OF GOING FORWARD WITH EVIDENCE TO DEMONSTRATE THAT NONE OF THE CRITERIA FOR SUPPORTING USE PROTECTED APPLY.

2(c) REVIEWABLE DESIGNATION

THESE ARE WATERS DESIGNATED BY THE COMMISSION AS HAVING SUFFICIENT ASSIMILATIVE CAPACITY TO WARRANT APPLICATION OF MEASURES TO MAINTAIN CURRENT WATER QUALITY AND TO ALLOW REDUCTION IN CURRENT ASSIMILATIVE CAPACITY ONLY AFTER PUBLIC REVIEW PROCESSES JUSTIFY THE NECESSITY OF THE REDUCTION AND THAT IT IS FOR ACCOMODATING IMPORTANT SOCIAL AND ECONOMIC DEVELOPMENT.

Attachment: Court Approval of the Designational Approach

The Sixth Circuit Court of Appeals in *Kentucky Waterways Alliance v. Johnson*, 540 Fed. 3d 466 (6th Cir.), recently upheld the designational approach for identifying whether waters should be subject to Tier II protection. The Court stated:

The EPA's CWA-implementing regulations require States to ensure that waters whose quality "exceed[s] levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water" receive Tier II protection, i.e., their existing high water quality must be maintained and protected unless it is demonstrated that a lowering of water quality is necessary to accommodate important economic or social development. 40 CFR 131.12(a)(2). However, as the EPA itself has publically noted in its advance notice of proposed rule-making, "the regulation does not include specific guidelines for identifying [these] high quality waters." Water Quality Standards Regulation, 63 Fed. Reg. 36,742, 36,782 (proposed July 7, 1998) (to be codified at 40 CFR pt. 131). Instead, "States and Tribes have developed various ways to identify their [T]tier [II] waters. *Id.*

These "approaches for identifying high quality waters fall into two basic categories: (1) pollutant-by-pollutant approaches, and (2) water body-by-water body approaches." *Id.* Under the pollutant-by-pollutant approach ..., "the State makes a classification for each pollutant in a given water body." *Ohio Valley Environmental Coalition v. Horinko*, 279 F. Supp. 2d 732, 747 (S.D.W. Va. 2003). The Water body is then given Tier II protection against those pollutants for which "water quality is better than applicable criteria." Water Quality Standards Regulation, 63 Fed. Reg. at 36,782....

Under the water body-by-water body approach (also known as the designational approach), States "weigh a variety of factors to judge a water body segment's overall quality." Water Quality Standards Regulation, 63 Fed. Reg. at 36,782. Tier II classification is then "based on the overall quality of the water body segment, not on individual pollutants." ... Under this approach, assimilative capacity for a given pollutant may not be subject to [Tier II] protection if, overall, the segment is not deemed "high quality." Water Quality Standards Regulation, 63 Fed. Reg. at 36,782.

The water-by-water body approach, on the other hand, allows for a weighted assessment of chemical, physical, biological, and other information (e.g., unique ecological or scientific attributes)." *Id.* at 36,783.

ATTACHMENT: 2005 STATEMENT OF BASIS AND PURPOSE (Section 31.44)

One previously automatic basis for a use-protected designation was the existence of a class 2 aquatic life classification for the water segment. The record demonstrates that in fact there are segments with a class 2 aquatic life classification that have water quality better than the aquatic life and recreation use table value criteria. The revisions adopted eliminate the presence of a cold-water aquatic life classification as a basis for a use-protected designation. The Commission determined that there is no substantial evidence of a correlation between cold water class 2 aquatic life classifications and poor water quality.

For warm water class 2 streams, the Commission modified the provision regarding application of a use-protected designation. The presence of a warm water class 2 classification will still be a presumptive basis for applying a use-protected designation; however, that presumption can be overcome based on the provisions of new subsection 31.8(2)(b)(iii) if the water quality test in that subsection is met. That is, if there is data showing better-than-table-value water quality for at least 10 of 12 indicator water quality parameters and the segment is not listed, and does not qualify for listing, for two or more pollutants for exceedance of chronic or 30-day standards, the aquatic life class 2 classification will not be a basis for a use-protected designation.

The Commission also revised the provisions of subsection 31.8(2)(b)(i)(C). This subsection provided that a segment would not be designated use-protected if its quality was maintained better than standards solely because a point source discharger was achieving treatment levels better than required by law. This provision was never utilized to apply a use-protected designation and discussions with interested parties indicated confusion regarding how the previous language was intended to be interpreted. The Commission revised this subsection to provide that “effluent-dependent” and “effluent-dominated” water segments generally will be designated use-protected. Because such waters are, by definition, those where the majority of the flow consists of treated wastewater for the majority of the time, the Commission has determined as a matter of policy that it is reasonable to assume that in most instances such waters will not maintain water quality significantly better than table value standards for the majority of pollutants. Of course, the quality of these waters will continue to be protected for their designated uses. The Commission added definitions of the flow regimes “effluent dependent stream”, “effluent dominated stream”, and “ephemeral stream” in section 31.5.

The Commission anticipates that the revised 31.8(2)(b)(i)(C) generally will result in use protected designations for most effluent dominated and effluent dependent water bodies. Parties advocating that a segment should be use-protected because it is effluent dependent or effluent dominated will need to provide flow data that documents that one of these definitions is met. However, the Commission cannot conclude, based on the limited evidence presented in this rulemaking, that use protected designations are necessarily appropriate for all effluent-dependent and effluent-dominated waters. Instead, the Commission has determined that it is appropriate to allow flexibility to make decisions for effluent dependent and effluent dominated waters based on the water body's public resource value and ecological significance. The Commission expects to apply this provision considering factors such as representative existing water quality data, information regarding the effects of nonpoint sources on water quality, the extent to which existing point source loads are less than allowed under current discharge permits, existing uses of the water by the public, the location of the water body, and ecological attributes. The purpose of allowing this flexibility is to recognize that: (1) numeric standards have been established for a large number of parameters, (2) in all effluent dependent and effluent dominated waters, assimilative capacity exists for some of those parameters, and (3) maintenance and protection of that assimilative capacity may be appropriate and desirable.

Finally, the Commission revised subsection 31.8(2)(b)(ii). This subsection was created to provide for the possibility of a use-protected designation where a segment may have poor water quality for parameters other than those considered in the 12-parameter test in subsection 31.8(2)(b)(i)(B). The Commission has revised this provision to clarify that if there is poor water quality for one or more of those 12 parameters

in addition to poor water quality for other parameters, the cumulative water quality conditions can be considered in determining whether to apply a use-protected designation. The Commission also notes that a portion of the existing language in subsection 31.8(2)(b)(ii), which is not being changed in this rulemaking, provides that “substantial natural or irreversible human-induced pollution” may be a basis for a Commission determination that a use-protected designation is appropriate. The term “pollution” is defined in the Colorado Water Quality Control Act more broadly than the term “pollutant” and can include any “alteration of the physical, chemical, biological, and radiological integrity of water”. Therefore, the Commission intends this provision to allow non-chemical water quality conditions to be taken into account in a site-specific determination that the quality of particular waters does not “exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water” and therefore does not warrant the extra protection provided by the antidegradation review process.