

*Issue #2: Baseline Water Quality***Oklahoma (from Tt 2009 Report)**

Oklahoma uses the waterbody-by-waterbody approach, and lists which waters are considered “high quality,” i.e., those to be protected from new sources of degradation unless an alternatives analysis and socioeconomic justification is developed. The state reportedly has sufficient water quality data to determine baseline water quality for conducting antidegradation reviews – it does not accept data collected by volunteers but will consider those collected by public agencies. There is no allowance for de minimis levels of pollution from regulated activities discharging into Tier 2 waters.

South Carolina (from Tt 2009 Report)

South Carolina adopted the parameter-by-parameter approach, and considers baseline water quality for Tier 3 ONRWs and Tier 2.5 Outstanding Resource Waters (state ORWs) to be existing water quality as characterized at the time of waterbody classification. The state lists specific discharge types that are banned for ONRWs and ORWs, but allows those discharges upstream of protected waters if modeling indicates there will be no measurable impact within the ONRW and ORW segments downstream. South Carolina has strict policies regarding water quality data collection, monitoring, and assessment, and conducts probabilistic sampling to determine overall trends. The state lists specific options – including land application of the effluent – to be considered for alternatives analyses, which must be considered and documented by dischargers. CWA Section 208 area waste planning is still conducted in the state. Specific economic and social factors to be considered when proposing to degrade Tier 2 waters are listed.

Minnesota (from Tt 2009 Report)

Minnesota, a state that was sued for failing to apply antidegradation requirements to MS4 stormwater permits, uses the parameter-by-parameter approach. The state is currently revising and strengthening its stormwater rules to reflect current EPA recommendations and recent lawsuit rulings. The state assumes a waterbody is Tier 2 water by default, including impaired waters. Minnesota is including increased flow as a potentially degrading parameter under the new rules, since it can affect aquatic habitat. Baseline water quality information is collected by multiple entities, including state entities and dischargers, in some cases. Minnesota specifies use of the USACE CWA Section 404 permit “avoidance/minimization/mitigation” hierarchy in conducting antidegradation review alternatives analyses. Reviews are applied to general permits when they are developed and when they are applied to specific activities subject to permit coverage. Minnesota will adjust baseline water quality upward if there are improvements in water quality.

Kentucky (from Tt 2009 Report)

Information on Kentucky’s program was provided by the attorney that successfully sued the state for failing to implement its antidegradation policies in accordance with EPA provisions. Kentucky also places most waters in the Tier 2 category, but does so under a waterbody-by-waterbody framework. The state does not include impaired waters in Tier 2 unless they’re impaired for mercury – this ensures that state lakes are protected. Kentucky has undertaken efforts to develop antidegradation requirements for general permits, including stormwater and other general permits. Discussions are ongoing regarding the use of a de minimis standard for minor discharges and how to deal with the incremental loss of assimilative capacity due to multiple activities that cumulatively consume available assimilative capacity for pollutants of concern. Another issue is the protection of waterbody uses vs. the protection of numeric criteria only – i.e., there might be cases where uses are degraded significantly, but measurable changes in water quality criteria parameters might be minimal. In other cases, criteria limits might not adequately protect uses – this is more a uses/criteria issue than an antidegradation issue, but it does affect the antidegradation implementation approach.

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Arizona (2008)

Federal and state law requires that surface waters be protected from discharges that might degrade water quality. To implement this requirement, it is necessary to identify antidegradation protection levels, or tiers, appropriate to each surface water. The state antidegradation rule, R18-11-107, delineates three tiers of protection for Arizona surface waters. These tiers are applied on a pollutant-by-pollutant basis. Under this approach, surface water quality might degrade for one or more pollutants of concern but be unaffected for other pollutants. Degradation may be further described as minimal (consumption of less than 20% of the assimilative capacity for a pollutant of concern) or significant (consumption of 20% or more of the assimilative capacity for a pollutant). Minimal degradation is permitted under the antidegradation rule and does not trigger comprehensive Tier 2 antidegradation review requirements. Significant degradation triggers the comprehensive Tier 2 antidegradation implementation procedures described below. The tiered protection levels are applied as follows:

Tier 1 –Applies to all surface waters as a minimum level of protection and requires that the level of water quality necessary for existing uses be maintained and protected. ADEQ interprets Tier 1 as requiring that water quality standards be achieved. Tier 1 prohibits further degradation of existing water quality where a pollutant of concern does not meet applicable water quality standards. Tier 1 applies as the default protection level for all surface waters, including intermittent waters, ephemeral waters, effluent dependent waters, canals, and impaired waters on the §303(d) list for the pollutants that resulted in the surface water being listed on the §303(d) list.

Tier 2 – Applies to high quality, perennial surface waters, i.e., where existing water quality is better than applicable water quality standards. Tier 2 requires that existing high water quality be maintained, but allows limited degradation. Tier 2 prohibits significant degradation unless a review of reasonable alternatives and social and economic considerations justifies a lowering of water quality. Tier 2 is the default protection level for all perennial waters.

Tier 3 – Applies only to Outstanding Arizona Waters identified in R18-11-112. Tier 3 prohibits any lowering of water quality in an Outstanding Arizona Water unless it is short-term, as determined by ADEQ on a case-by-case basis.

Where a perennial surface water is listed on the state’s §303(d) impaired waters list for one or more pollutants, and where existing water quality for other parameters is better than water quality standards, the surface water will be afforded Tier 1 and Tier 2 protection on a pollutant-by-pollutant basis. That is, Tier 1 protection for the pollutants not meeting water quality standards and Tier 2 protection for pollutants that are equal to or better than water quality standards. Tier 3 protection will be afforded for all pollutants of concern in an Outstanding Arizona Water. **Where a perennial water has not been listed as an impaired water or as an Outstanding Arizona Water, the presumed antidegradation protection level is Tier 2 for all pollutants of concern.**

For Tier 2 protection, determinations regarding the significance of degradation are based on baseline water quality (BWQ) and the relative change in water quality projected to result from the discharge under review. In general, BWQ, as discussed in Chapter 4, defines existing water quality for purposes of antidegradation reviews. BWQ can be established for perennial surface waters through monitoring and water quality assessments conducted by ADEQ, regulated entities, or by others. It is important to note that BWQ for any surface

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water may be re-evaluated if monitoring indicates a general trend towards water quality improvement.

It is important to understand that baseline water quality is fixed. When a perennial surface water is characterized for the purposes of establishing baseline water quality (BWQ), that characterization serves as the point of reference for future antidegradation reviews for that surface water unless BWQ is updated by ADEQ to reflect changes in water quality. The allowance for up to a 20 percent reduction in assimilative capacity for any pollutant of concern (i.e., “significant degradation”) is calculated from BWQ at the time an application to discharge is submitted to ADEQ. Also, ADEQ has established a 50% cumulative cap on the consumption of assimilative capacity calculated from the time BWQ is determined originally. Any consumption of assimilative capacity greater than a 50% cumulative cap on the use of available assimilative capacity is considered to be significant degradation. If a regulated discharge consumes more than 20% of available assimilative capacity for a pollutant or exceeds the 50% cumulative cap, the regulated discharge would be required to conduct an alternatives analysis and demonstrate “important economic or social development” if allowances are sought to further reduce assimilative capacity. If such demonstrations are made, ADEQ may allow consumption of additional assimilative capacity as long as intergovernmental and public participation processes are followed and water quality standards are not violated.

Degradation is generally assumed to be significant if a discharge results in the reduction of a surface water’s *assimilative capacity* for any pollutant of concern by 20 percent or more during critical flow conditions or the discharge consumes any percentage of assimilative capacity beyond 50% of the total available assimilative capacity. If the level of degradation is estimated to be less than 20 percent and the 50% cumulative cap is not exceeded— i.e., not significant – and existing uses are maintained, the antidegradation review process is complete and the applicant may proceed with permitting. Details on the antidegradation review process for waters protected under each tier – including degradation assessment, alternatives analysis, and social and economic impacts evaluation – are outlined in the following chapters. Appendix A, Antidegradation Review Flow Chart, provides an overview of the Tier 1, 2, and 3 review processes.

West Virginia (2008)

§60-5-4. Tier 1 Protection.

4.1. Existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

4.2. Tier 1 protection applies to all waters of the state. A water segment shall be afforded Tier 1 protection where the level of water quality is not sufficient to support recreation and wildlife and the propagation and maintenance of fish and other aquatic life, or where the water quality meets but does not exceed levels necessary to support recreation and wildlife and the propagation and maintenance of fish and other aquatic life.

4.3. In determining whether a water segment is afforded only Tier 1 protection, the agency will focus on whether the water segment is meeting or failing to meet minimum uses.

4.4. The Secretary will consider whether a water segment is listed on the state's 303(d) impaired waters list, but where the parameter(s) for which the water segment is listed does not result in that water segment's failure to attain minimum uses and where all other parameters exceed the quality necessary to support recreation and wildlife and the propagation and maintenance of fish and other aquatic life, the water segment will be afforded Tier 2 protection. Where the parameter(s) for which the

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water segment is listed does result in failure to attain minimum uses, such as **an** acid mine drainage-impacted water segment, that water segment will be afforded only Tier 1 protection.

4.5. All water segments listed on the state's 303(d) impaired waters list will be afforded only Tier 1 protection for the parameter(s) that resulted in the water segment being listed.

4.6. There also may be waters in the state where one or both of the fishable/swimmable uses are attained, but existing water quality is not "better than necessary" to support those uses (i.e., assimilative capacity does not exist for any of the parameters that would be affected by the proposed activity). Tier 1 protection is appropriate for such a water segment.

4.7. Where existing uses of the water body are impaired, there shall be no lowering of the water quality with respect to the parameters of concern that are causing the impairment. The agency shall consider nomination of such water body for the 303(d) list of water quality-impaired streams.

4.8. Where a proposed activity will result in a new or expanded discharge that would otherwise prevent attainment of an existing use in a water subject to Tier 1 protection, the applicant may be allowed to satisfy antidegradation review requirements by implementing or financing upstream controls of point or nonpoint sources sufficient to offset the water quality effects of the proposed activity from the same parameters and insure an improvement in water quality as a result of the trade. The basis of the trade will be documented and will be consistent with the trading assessment procedure that has been approved by the Secretary. A trade may be made between more than one stream segment where removing a discharge in one stream segment directly results in improved water quality in another stream segment. In addition, **(1)** the effluent trade must be for the same parameter; **(2)** where uncertainty exists regarding the effluent trade, an adequate margin of safety will be required; **(3)** dischargers cannot claim offsets for water quality improvements that are required or will occur irrespective of the proposed new or expanded discharge; and **(4)** the trade must be enforceable.