Presented below are water quality standards that are in effect for Clean Water Act purposes.

EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.

Implementation Guidelines for the State of Arizona Antidegradation Standard

R18-11-107. Antidegradation

A. The determination of whether there is any degradation of water quality in a navigable water shall be on a **pollutant by pollutant basis**.

Tier 1 B. The level of water quality **necessary to protect existing uses** shall be **maintained and protected**. No degradation of existing water quality is permitted in a navigable water where the existing water quality does not meet applicable water quality standards.

Tier 2 C. Where existing water quality in a navigable water is **better than applicable water quality standards**, the **existing water quality shall be maintained and protected**. The Director may allow **limited degradation** of existing water quality in such navigable waters, **except unique waters**, provided that the Department has held a **public hearing** on whether degradation should be allowed pursuant to the general public hearing procedures prescribed at R18-1-401 and R18-1-402 and the Director makes all of the following findings:

1. The level of water quality necessary to protect existing uses is fully protected.
2. The highest statutory and regulatory requirements for all new and existing point sources as set forth in the Clean Water Act are achieved.
3. All cost-effective and reasonable best management practices for nonpoint source control are implemented.
4. Allowing lower water quality is necessary to accommodate important economic or social development in the area in which the navigable water is located.

Tier 3 D. Existing water quality shall be maintained and protected in a navigable water that is classified as a unique water or that the Director has proposed for classification as a unique water pursuant to A.A.C. R18-11-112. The Director shall not allow limited degradation of a unique water pursuant to subsection (C) of this Section

EXECUTIVE SUMMARY

The State of Arizona antidegradation standard (R18-11-107) sets forth a three tiered approach to control discharges that may degrade the waters of the state. Tier 1 is the minimum protection that is provided to all waters of the state. It is the protection of existing uses that discharges must meet if: a) the water is classified a tier 1 water because it does not meet fishable/swimmable goals or b) the water is classified a tier 2 water but has satisfied the requirements of the review and public hearing process set forth at R18-11-107 (C)(1 thru 4). Tier 2 protection is given to all waters that have met the fishable/swimmable goals and are not listed as, or nominated for Tier 3 water status. Degradation of tier 2 waters may not take place unless the review and public hearing process has been satisfied. All waters of the state (except listed or nominated tier 3 waters) are assumed to be tier 2 waters until a determination of degraded ambient water quality is made. Tier 3 or unique waters are those listed at R18-11-112(E) and are protected against any change in water quality.

These antidegradation guidelines closely follow the model provided by Region 8 of the USEPA, with modifications to comply with Arizona water quality standards. In both documents a degradation can be defined as any discharge that: A)(Tiers 1&2)

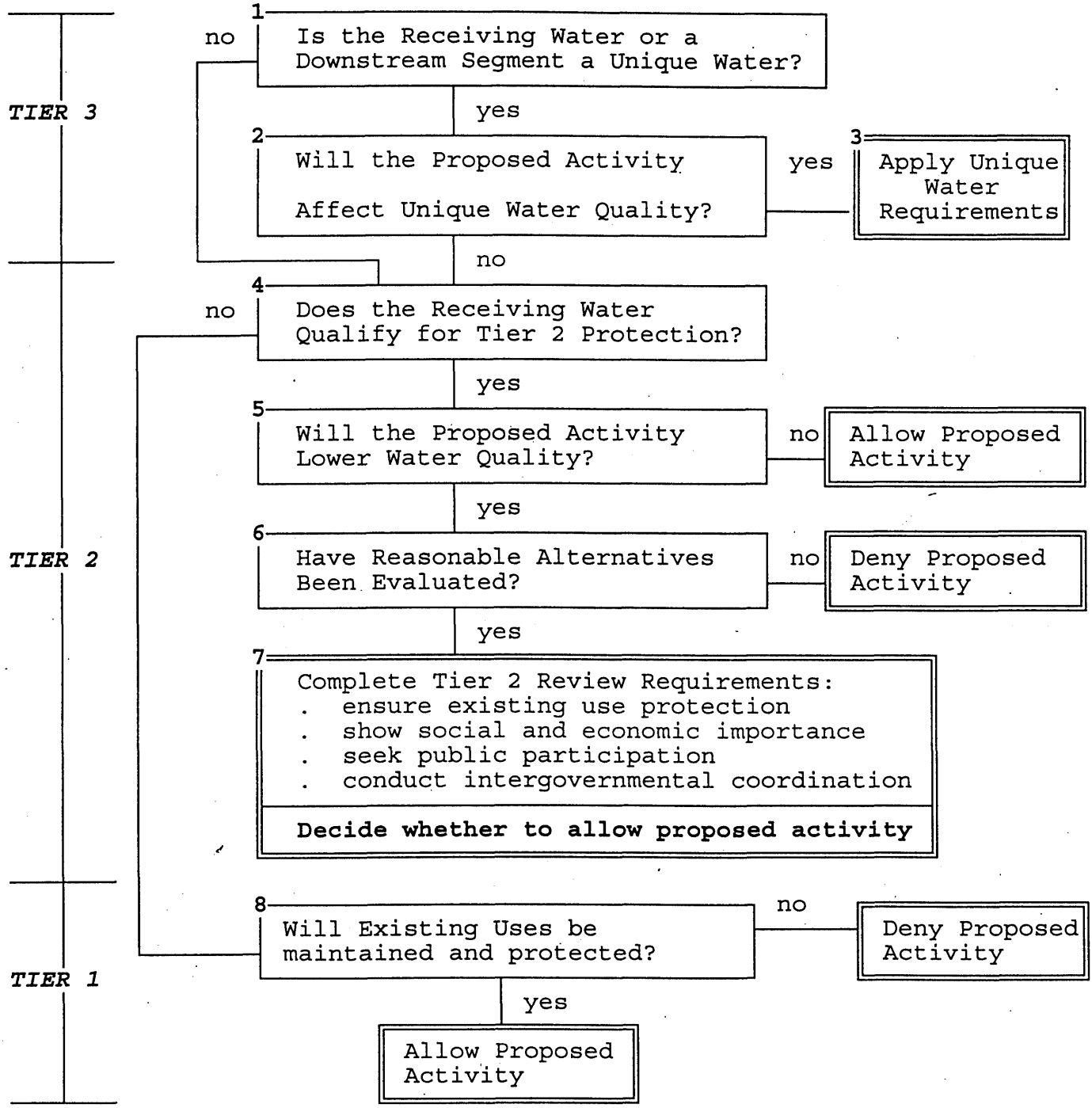
significantly increases the pollutant concentration or loading of receiving waters and, B)(Tier 3) changes the existing water quality. This definition and the provision at R18-11-107(A) which states that degradation will be considered on a pollutant by pollutant basis necessitates a characterization of the receiving water quality to determine the tier of protection and assimilative capacity for that waterbody.

At present, an antidegradation implementation guidance which fully addresses the antidegradation standard is not available. Because of this, no characterization of the receiving water takes place, and permits are written which allow significant increases in pollutant levels. **These increases in pollutant levels**, while still allowing the receiving waterbody to remain in compliance with numeric water quality standards, **may be degradations of existing water quality.** It is incumbent on the Department of Environmental Quality to more fully address all the provisions in the antidegradation standard when reviewing permit applications. This antidegradation review is not designed to prohibit discharges, but to comply with state standards and more fully address the Clean Water Act language at 40 CFR 131.12.

Despite the length of this document, the antidegradation review process is quite simple (see the flow chart on page 4). Once the receiving waterbody is characterized, and a tier of protection determined, the antidegradation review proceeds as per the antidegradation review worksheet contained in the appendix.

Figure 1

State Antidegradation Procedure



ANTIDEGRADATION IMPLEMENTATION PROCEDURE

Part I. INTRODUCTION

These antidegradation procedures provide detailed methods and guidance to be followed by the Arizona Department of Environmental Quality (the Department) in implementing the state antidegradation policy found at R18-11-107 and the federal antidegredation policy found at 40 CFR 131.12. In all cases, applicable technology and water quality-based requirements are to be implemented in combination with the antidegradation requirements described in this document.

Implementation of state and federal antidegradation requirements serves to promote the maintenance and protection of existing surface water quality. Under this program, all "waters of the state" are provided one of three levels of antidegradation protection. The level of protection that is provided to a specific segment depends upon a number of factors discussed in detail below. At a minimum, all waters are subject to a base level of protection (known as tier 1 or existing use protection); some waters may qualify only for this level of protection. Waters which have existing quality better than that needed to attain the fishable/swimmable goals receive Tier 2 protection and waters that have outstanding attributes such as high water quality or endangered species habitat may be eligible for protection as Unique waters (Tier 3). An antidegradation review is triggered whenever a ***regulated activity*** is proposed that may have some effect on surface water quality. Such activities are reviewed to determine, based on the level of antidegradation protection afforded to the affected waterbody segment, whether the proposed activity should be authorized. ***Point source discharges that do not require a permit are not exempt from the State of Arizona water quality standards and are thus not exempt from the antidegredation standard.***

This guidance has two principal components. First, key terms are defined and second, the procedures to be followed in completing an antidegradation review are presented. A copy of the antidegradation worksheet that the Department will use to document review findings is attached.

Part II. DEFINITIONS

An ***Antidegradation Review*** is the process by which the state determines that antidegradation requirements are satisfied for a given regulated activity that may have some effect on surface water quality.

Assimilative capacity is the increment of water quality (in terms of concentration), during the appropriate critical condition(s)), that is better than the applicable numeric criterion. (Example: Criterion = .5 μg/L, actual concentration = .2 μg/L, Assimilative capacity = .3 μg/L)

Bioaccumulative toxic substances are defined as substances with bioconcentration factors (BCFs) greater than 250.

Bioconcentration Factor (BCF) is the ratio of a substance's concentration in tissue versus its concentration in water in situations where the food chain is not exposed or contaminated. For nonmetabolized substances, it represents equilibrium partitioning between water and organisms.

Designated use means a use that is specified in water quality standards as a goal for the waterbody segment, whether or not it is currently being attained.

Existing use means a use that is actually attained in the water body on or after November 28, 1975, whether or not it is included in the water quality standards.

High quality water means a waterbody that meets the state's test of "high quality," which is discussed in paragraphs V(A)(1) and (2) of this guidance. In general, waters with existing quality that is better than necessary to support fishable/swimmable uses will be considered "high quality."

Unique Waters means a waterbody that meets the requirements set forth at R18-11-112 and has been designated as a Unique Waters in the state water quality standards

Reasonable Alternatives shall be identified based on case-specific information. Generally speaking, non-degrading or less-degrading pollution-control alternatives shall be considered reasonable where the costs of such alternatives are less than 110% of the costs of the pollution control measures associated with the proposed activity.

Regulated activity means any activity that requires a permit or a water quality certification pursuant to state or federal law (e.g., CWA § 402 NPDES permits, CWA § 404 dredge and fill permits, any activity requiring a CWA § 401 certification), any activity subject to nonpoint source control requirements or regulations, and any activity which is otherwise subject to state regulations that specify that the antidegradation review process is applicable. For purposes of this implementation procedure, the term "proposed activity" means a proposed activity that is also a regulated activity.

Significance will be determined on a case by case basis, weighing the statistical significance of any change and the possible risk associated with any change.

Trading means establishing upstream controls to compensate for new or increased downstream sources, resulting in maintained or improved water quality at all points, at all times, and for all parameters. Trading may involve point sources, nonpoint sources, or a combination of point and nonpoint sources.

Part III. THE ANTIDEGRADATION REVIEW PROCESS

The Department will conduct some level of antidegradation review for all regulated activities that have the potential to affect existing water quality. The specifics of the review will depend upon the waterbody segment that would be affected, the tier of antidegradation applicable to that waterbody segment, and the extent to which existing water quality would be degraded.

The sequence of steps to be completed by the Department in conducting an antidegradation review is presented in Figure 1. Only major antidegradation program requirements are represented in Figure 1. In conducting an antidegradation review, the first task that will be addressed by the Department is to determine which tier of antidegradation applies. This is accomplished, as described in detail below, based either on the antidegradation designation which has been assigned to the waterbody (i.e, where such a designation has been made) or on whether the existing quality of the segment is better than necessary to support "fishable/swimmable" uses.

Once the correct tier of requirements is identified, the Department determines whether authorizing the proposed activity would be consistent with state antidegradation requirements. The major conclusions of the Department's review are documented using an antidegradation review worksheet, a copy of which is attached to this implementation guidance. Based upon the review findings, a preliminary decision is made by the Department and subjected to intergovernmental coordination and public participation. Public participation occurs regardless of the outcome of the preliminary decision (i.e., if the proposed activity would be authorized or if it would be denied).

The Department then considers public comments and reaches a final decision regarding whether to authorize the proposed activity pursuant to the state antidegradation requirements. The substance and basis of the final decision by the Department is documented in the administrative record. Below, the procedures to be followed by the Department in reaching a preliminary decision under each tier of antidegradation are described in detail.

Part IV. TIER 3 PROCEDURES

A. Waters Qualifying for Unique Waters Protection

(1) Qualification Criteria. Segments will be subject to tier 3 protection requirements only where a Unique Waters designation has been assigned by the Department through the state rulemaking procedures. The factors to be considered in determining whether to assign a Unique Waters designation may include the following: 1.) The navigable water is of exceptional recreational or ecological significance because of its unique attributes, including but not limited to, attributes related to the geology, flora, fauna, water quality, aesthetic values or the wilderness characteristics of the navigable water. 2.) Threatened or endangered species are known to be associated with the navigable water and the existing water quality is essential to the maintenance and propagation of a threatened or endangered species or the navigable water provides critical habitat for a threatened or endangered species.

(2) Water Quality Requirements. Outstanding water quality is not a prerequisite for Unique Waters designation. The only requirement is that the segment have outstanding value as an aquatic resource meeting the guidelines at R18-11-112.

(3) Public Nomination. The public may nominate any state water for Unique Waters protection at any time by sending a written request to the following address: Water Quality Standards Unit, Department of Environmental Quality, 3033 North Central, Phoenix, Arizona 85012. The written request should Contain the following information:

1. A map and a description of the navigable water; 2.) A written statement in support of the nomination, including specific reference to the applicable criteria for unique waters classification as prescribed in subsection (D) of R18-11-112; 3.) Supporting evidence demonstrating that one or more of the applicable unique waters criteria prescribed in subsection (D) of R18-11-112 has been met; and 4.) Relevant water quality data.

B. Direct Sources to Unique Waters

(1) Prohibition on New or Expanded Sources. Any proposed activity that would result in a permanent new or expanded direct source of pollutants to any segment which has been designated as a Unique Water is prohibited. This prohibition applies to new sources, expansion of existing sources in which treatment levels are maintained, and expansion of existing sources in which treatment levels are increased to maintain existing pollutant loading levels. Regardless of effluent quality, any new or expanded direct source is prohibited.

C. Sources Upstream from Unique Waters

(1) No Change in Water Quality Allowed. Any proposed activity that would result in a permanent new or expanded indirect source of pollutants (i.e., an upstream source) to a Unique Waters segment is prohibited except where such source would have no effect on the existing quality of the downstream Unique Waters segment. Effects on Unique Waters water quality resulting from upstream sources will be determined based on appropriate techniques and best professional judgment. Factors that may be considered in judging whether Unique Waters quality would be affected include: (a) percent change in ambient concentrations predicted at the appropriate critical condition(s), (b) percent change in loadings (i.e., the new or expanded loadings compared to total existing loadings to the segment), (c) percent reduction in available assimilative capacity, (d) nature, persistence, and potential effects of the parameter, (e) potential for cumulative effects, and (f) degree of confidence in the various components of any modeling technique utilized (e.g., degree of confidence associated with the predicted effluent variability).

(2) Trading. A proposed activity that will result in a new or expanded upstream source may be allowed where the applicant agrees to implement or finance upstream controls of point or nonpoint sources sufficient to offset the water quality effects of the proposed activity. Where such trading occurs upstream of a Unique Waters segment, tier 3 requirements will be considered satisfied where the applicant can show that water quality at all points within the study area will be either maintained or improved. The Department will document the basis for the trade through a TMDL pursuant to CWA § 303(d) requirements. Such TMDLs will include an appropriate margin of safety. Such a margin of safety will address, in particular, the uncertainties associated with any proposed nonpoint source controls, as well as variability in effluent quality for point sources. See definition of trading in Part II.

(3) Information Requirements. The applicant may be required to provide information sufficient to evaluate the potential effects of the proposed activity on downstream Unique Waters. The information that will be required in a given situation will be identified on a case-by-case basis by the Department.

D. Temporary and Limited Effects

(1) Guidelines. A direct or upstream source that would result in a temporary and limited effect on Unique Waters water quality may be authorized. The decision regarding whether effects will be temporary and limited will be handled on a case-by-case basis. As a non-binding reference, activities with durations less than one month and resulting in less than a 5% change in ambient concentration will be deemed to have temporary and limited effects. Decisions on individual proposed activities may be based on the following factors: (a) length of time during which water quality will be lowered, (b) percent change in ambient concentrations, (c) parameters affected, (d) likelihood for long-term water quality benefits to the segment (e.g., as may result from dredging of contaminated sediments), (e) degree to which achieving applicable water quality standards during the proposed activity may be at risk, and (f) potential for any residual long-term influences on existing uses.

Part V. TIER 2 PROCEDURES

A. Waters Qualifying for Tier 2 Protection

(1) Qualification Factors. Decisions regarding whether a waterbody is "high quality" and subject to tier 2 protection requirements will be based on a best professional judgment of the overall quality and value of the segment. In general, waters with existing quality that is better than necessary to support fishable/swimmable uses will be considered "high quality" and subject to tier 2 requirements. The factors that may be considered in determining whether a segment satisfies the "high quality" test include the following: (a) existing aquatic life uses, (b) existing recreational or aesthetic uses, (c) existing water quality for all parameters (i.e., subject to the availability of monitoring data or other information for the segment, upstream segments, or for comparable segments), and (d) the overall value of the segment from an ecological and public use perspective. Note that attainment of both aquatic life (fishable) and recreational (swimmable) uses is not required in order to qualify as a "high quality" segment.

(2) Presumptive Applicability. **In general, it is presumed that a very large majority of state waters qualify for tier 2 protection.** However, there are some waters in the state where neither of the CWA fishable/swimmable goal uses are attained (see the State of Arizona 305 B report). It is the intent of these procedures to apply only existing use (tier 1) protection to such waters. 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 the goal uses (i.e., assimilative capacity does not exist for a number of parameters). It is the intent of these procedures to apply only existing use (tier 1) protection to such waters provided that there is no assimilative capacity for each of the parameters to be affected by the proposed activity.

(3) Criteria Exceedences. A difficult question that must be addressed by these procedures is whether occasional, historic or natural exceedences of one or more narrative or numeric water quality criteria constitutes nonattainment sufficient to preclude tier 2 protection. In waters where exceedences have occurred and continue to occur for one or more parameters, a judgment will be made based on the factors identified above and in consideration of information submitted by the applicant and by the public. As a general policy, tier 2 protection will be applied even where the criteria for some parameters are not always satisfied. (Note: exceedences caused by chronic **violations** by upstream activities may not be considered as grounds for Tier 1 designation)

(4) Information Requirements. The applicant may be required to provide monitoring data or other information about the affected waterbody to help determine the applicability of tier 2 requirements based on the "high quality" test. The information that will be required in a given situation will be identified on a case-by-case basis (See appendix for sample requirements). Because these procedures presume that tier 2 protection requirements will be applied, such information will typically be required of the applicant only where this presumption is in dispute. Such information may include recent ambient chemical, physical, and biological monitoring data sufficient to characterize, during the appropriate critical condition(s), the existing uses and the spatial and temporal variability of existing quality of the segment for the parameters that would be affected by the proposed activity.

(5) Characterizing Existing Quality. The Department will follow the applicable procedures used to characterize existing background quality that are used for purposes of developing Total Maximum Daily Loads. The characterization of existing background water quality should appropriately consider spatial and temporal variability. However, where background water column data are limited, the Department may conclude that a segment is "high quality" and subject to tier 2 protection based on ancillary data such as land use information, population and demographics, geology, presence of point or nonpoint sources, climatological data, or the health of the aquatic community.

B. Significant Degradation

(1) Overview. Once it is determined that tier 2 protection applies to a waterbody, the next step in the review process is to determine whether the degradation that will result from the proposed activity is significant enough to warrant further review (such as evaluation of alternatives). The factors to be addressed in judging the significance of the proposed activity are identified in paragraph (2)(below). Where the significance of the degradation associated with a proposed activity is in dispute, the factors identified in paragraph (2)(below) should also be the focal point of opposing views by the applicant or the public.

(2) Significance Factors. The likelihood that a proposed activity will pose significant degradation will be judged by the Department for all water quality parameters that would be affected by the proposed activity. Such significance judgments will be made on a parameter-by-parameter basis. **The Department will identify and eliminate from further review only those proposed activities that present insignificant threats to water quality. Proposed activities will be considered significant and subject to tier 2 requirements where significant degradation is projected for one or more water quality parameters.** Because determinations of significant degradation are most appropriately made based on case-specific information, these procedures do not provide rigid decision criteria for judging significant changes in water quality. Rather, significant degradation may be demonstrated with respect to any one (or a combination) of the following factors: (a) percent change in ambient concentrations predicted at the appropriate critical condition(s), (b) the difference, if any, between existing ambient quality and ambient quality that would exist if all point sources were discharging at permitted loading rates, (c) percent change in loadings (i.e., the new or expanded loadings compared to total existing loadings to the segment or, for existing facilities only, the proposed permitted loadings compared to the existing permitted loadings), (d) percent reduction in available assimilative capacity, (e) nature, persistence, and potential effects of the parameter, (f) potential for cumulative effects, (g) predicted impacts to aquatic biota, (h) degree of confidence in any modeling techniques utilized, and (i) the difference, if any, between permitted and existing effluent quality.

(i) Required Analyses. Based on one or more of the significance factors identified above, the Department may make determinations of significant degradation based on appropriate modeling techniques coupled with detailed characterization of the existing background water quality. However, determinations of significance need not be complicated, data-intensive, or resource-intensive. It is not the intent of these procedures to require detailed analyses to address each of the factors identified above. Where appropriate, determinations of significance may be based on simple analyses. For example, proposed activities may be judged as insignificant where: (a) available dilution exceeds 100:1, (b) the proposed activity would not result in a significant increase of loadings for any parameter, or (c) there is substantial potential for the proposed activity to result in a net long-term water quality benefit to the segment. Likewise, a significant increase in loadings for any given parameter may be the basis for concluding that significant degradation will occur.

(ii) Persistent Toxics. The significance of proposed new or expanded sources of bioaccumulative or other persistent toxic substances will be judged depending upon, for example, existing loadings of the substances to the segment from all sources. The Department's interpretation of monitoring data or other information indicating fish tissue or sediment accumulation of toxics in the watershed will be considered with respect to judging the significance of new or expanded sources of persistent toxic substances.

(3) General Guidelines. As a non-binding reference, proposed activities that would lower the ambient quality of any parameter by more than 5%, reduce the available assimilative capacity by more than 5%, or increase pollutant loadings to a segment by more than 5% will be presumed to pose significant degradation. The intent of this guideline is to establish a *de minimis* test of significance and to eliminate from further review only those proposed activities that will result in truly minor changes in water quality.

(4) By-passing the Significance Test. Where available information clearly indicates that reasonable non-degrading or less-degrading alternatives to lowering existing water quality exist, the Department may by-pass the significant degradation requirements and direct the applicant to demonstrate the necessity of the degradation pursuant to Part V(C) below.

(5) Trading. The Department may also conclude that a proposed activity will not pose significant degradation based upon the specifics of any upstream/downstream trading that has been agreed to by the project applicant. The Department will document the basis for the trade through a TMDL pursuant to CWA § 303(d) requirements. Such TMDLs will include an appropriate margin of safety. Such a margin of safety will address, in particular, the uncertainties associated with any proposed nonpoint source controls, as well as variability in effluent quality for point sources. See definition of trading in Part II.

(6) Information Requirements. The applicant may be required to provide monitoring data or other information about the affected waterbody and/or proposed activity to help determine the significance of the proposed degradation for specific parameters. The information that will be required in a given situation will be identified on a case-by-case basis. Because these procedures establish a fairly low threshold of significance, in many cases a large data base will not be necessary to determine that a proposed activity will result in significant degradation. The information required may include recent ambient chemical, physical, or biological monitoring data sufficient to characterize, during the appropriate critical condition(s), the spatial and temporal variability of existing background quality of the segment for the parameters that would be affected by the proposed activity, as well as the water quality that would result if the proposed activity were authorized. State TMDL procedures for characterizing existing water quality and projecting future water quality will be the basis for identifying needed information and interpreting available data.

(7) Determine Significance of Proposed Activity. Activities determined to be significant by the Department shall be subject to the tier 2 review requirements described below. If the Department determines that an activity will not pose significant degradation for any parameter, no further antidegradation tier 2 requirements shall apply; however, such activities must still meet all technology and/or water quality based control requirements or conditions of the permit or the water quality certification.

C. Evaluation of Alternatives to Lowering Water Quality

(1) Role of the Department. **The primary emphasis of the Department's tier 2 antidegradation reviews will be to determine whether reasonable non-degrading or less-degrading alternatives to allowing the proposed degradation are available.** The Department will first evaluate any alternatives analysis submitted by the applicant for consistency with the minimum requirements described below. If an acceptable analysis of alternatives was completed and submitted to the Department as part of the initial project proposal, no further evaluation of alternatives will be required of the applicant. If an acceptable alternatives analysis has not been completed, the Department will work with the project applicant to ensure that an acceptable alternatives analysis is developed.

(2) Role of the Applicant. The applicant of any proposed activity that would significantly lower water quality in a "high quality" segment is required to prepare an evaluation of alternatives. The evaluation is required, at a minimum, to provide substantive information pertaining to the costs and environmental impacts associated with the following alternatives: (a) pollution prevention measures (e.g., substitution of less toxic substances), (b) reduction in scale of the project, (c) water recycle or reuse, (d) process changes, (e) innovative treatment technology (e.g., land application of wastewater), (f) advanced treatment technology, (g) seasonal or controlled discharge options to avoid critical water quality periods, (h) improved operation and maintenance of existing treatment systems, and (i) alternative discharge locations.

(3) Preliminary Determination. Once the Department has determined that feasible alternatives to allowing the degradation have been adequately evaluated, the Department shall make a preliminary determination regarding whether reasonable non-degrading or less-degrading alternatives are available. This determination will be based primarily on the alternatives analysis developed by the project applicant, but may be supplemented with other information or data. As a nonbinding reference, non-degrading or less-degrading pollution control alternatives with costs that are less than 110% of the costs of the pollution control measures associated with the proposed activity shall be considered reasonable. If the Department determines that reasonable alternatives to allowing the degradation do not exist, the Department shall continue with the tier 2 review and document the substance and basis for that preliminary determination using the antidegradation review worksheet.

(4) If Reasonable Alternatives Exist. If the Department makes a preliminary determination that one or more reasonable alternatives to allowing the degradation exist, the Department will work with the project applicant to revise the project design. If a mutually-acceptable resolution cannot be reached, the Department will document the alternatives analysis findings and give public notice of a preliminary decision, based on antidegradation tier 2 requirements, to deny the activity.

(5) Role of Public. Based upon comments and information received during the public comment period, the Department may reverse its preliminary determination regarding the availability of reasonable alternatives to allowing the degradation.

D. Determination of Socio-Economic Importance

(1) Role of the Applicant. The applicant is required to demonstrate the social and economic importance of the proposed activity. The factors to be addressed in such a demonstration may include, but are not limited to, the following: (a) employment (i.e., increasing, or avoiding a reduction in employment), (b) increased production, (c) improved community tax base, (d) housing, and (e) correction of an environmental or public health problem.

(2) Role of the Department. Prior to authorizing any proposed activity that would significantly lower the water quality of a tier 2 water, the Department shall ensure that the proposed activity will provide important social or economic development in the area in which the waters are located. In making a preliminary determination, the Department will rely primarily on the demonstration made by the applicant. However, the Department may weigh the applicant's demonstration against counterbalancing socio-economic costs associated with the proposed activity, such as projected negative socio-economic effects on the community and the projected environmental effects (i.e., those determined in the significance and/or alternatives analysis decision processes).

(3) Additional Information Requirements. Where information available to the Department is not sufficient to make a preliminary determination regarding the socio-economic costs or benefits associated with the proposed activity, the Department may require the project applicant to submit specific items of information needed to support a determination of importance. The types of information required of the applicant will be determined on a case-by-case basis, but may include: (a) information pertaining to current aquatic life, recreational, or other waterbody uses, (b) information necessary to determine the environmental impacts that may result from the proposed activity, (c) facts pertaining to the current state of economic development in the area (e.g., population, area employment, area income, major employers, types of businesses), (d) government fiscal base, and (e) land use in the areas surrounding the proposed activity.

(4) Mitigation. The applicant may voluntarily submit a proposal to mitigate the adverse environmental effects of the proposed activity (e.g., in-stream habitat improvement, bank stabilization/upgraded riparian vegetation). Such mitigation plans should describe the proposed mitigation measures and the costs of such mitigation. **Such a mitigation plan will not release the Department from its obligation to require any reasonable non-degrading or less-degrading alternatives under Part V(C) of this procedure, nor will such plans have any effect on the effluent limitations to be included in any NPDES permit** (except possibly where a previously-completed mitigation project has resulted in an improvement in background water quality that affects the water quality-based limit). Such mitigation plans will be developed and implemented by the applicant as a means to further minimize the environmental effects of the proposed activity and to increase its socio-economic importance. It is anticipated that an effective mitigation plan may, in some cases, allow the state to conclude "importance" and to authorize proposed activities that could otherwise not be authorized pursuant to state antidegradation requirements. Mitigation plans should include criteria for determining success of the mitigation, legal commitment for follow-up monitoring and additional work (if necessary), and where practicable, a commitment to implement the mitigation before the project and water quality degradation is allowed.

(5) Preliminary Determination. Once the Department has reviewed available information pertaining to the socio-economic importance of the proposed activity, the Department shall make a preliminary determination regarding importance. If the Department determines that the proposed activity has social or economic importance in the area in which the affected waters are located, the Department shall continue with the tier 2 review and document the substance and basis for that preliminary determination using the antidegradation review worksheet.
(6) If Importance is Found Lacking. If the Department makes a preliminary determination that the proposed activity does not have social or economic importance in the area in which the affected waters are located, the Department will document that antidegradation review finding and give public notice of a preliminary decision, based upon antidegradation tier 2 requirements, to deny the proposed activity.

(7) Role of Public. Because the socio-economic importance of a proposed activity is a question best addressed by local interests, the Department will give particular weight to the comments submitted by local governments, land use planning authorities, and other local interests in determining whether the balancing of benefits and costs that was the basis for the Department's preliminary decision was appropriate. Based upon comments and information received during the public comment period, the Department may reverse its preliminary determination regarding the social or economic importance of a proposed activity.

E. Ensure Full Protection of Existing Uses

(1) See Part VI Tier 1 Procedures. Prior to authorizing any proposed activity that would significantly degrade a tier 2 water, the Department shall ensure that existing uses will be fully protected consistent with the Tier 1 implementation procedures provided below.

F. Ensure Implementation of State-Required Point and Nonpoint Source Controls

(1) Role Of the Department. Prior to authorizing any proposed activity that would significantly degrade a tier 2 water, the Department shall determine that compliance with state-required controls on all point and nonpoint sources in the zone of influence has been assured. The Department may conclude that such compliance has not been assured where facilities are in noncompliance with their NPDES permit limits. However, the existence of schedules of compliance for purposes of NPDES permit requirements will be taken into consideration in such cases. Where there are nonpoint sources that are regulated activities, the Department shall determine that any state-required controls or best management practices have been achieved or that a plan that assures such compliance has been developed.

(2) Preliminary Determination. Based upon available data or other information, the Department will make a preliminary determination regarding whether compliance with state-required controls on point and nonpoint sources in the zone of influence has been assured. If the preliminary determination is that such compliance has been assured, the Department shall continue with the tier 2 review and document the substance and basis for that preliminary determination using the antidegradation review worksheet.

(3) If Controls have not been Achieved. If the Department makes a preliminary determination that compliance with state-required point and nonpoint source controls has not been assured, the Department shall document that antidegradation review finding and give public notice of a preliminary decision, based upon tier 2 requirements, to deny the proposed activity.

(4) Role of Public. Based upon comments and information received during the public comment period, the Department may reverse its preliminary finding regarding the degree to which compliance with state-required point and nonpoint source controls has been assured.

Part VI. TIER 1 PROCEDURES

A. Waters Qualifying for Tier 1 Protection

(1) Waters Subject to Tier 1 Requirements. At a minimum, all waters are subject to tier 1 protection. Those which are only subject to tier 1 protection are those waters that have not been assigned a Unique Waters or High Quality antidegradation designation by the Department and that do not currently possess the overall water quality or value necessary to meet the "high quality" test (see Section V(A) of this implementation guidance). In general, tier 1-only waters are those segments where fishable/swimmable goal uses are not attained, or where assimilative capacity does not exist for any of the parameters that would be affected by the proposed activity.

B. Two Part Requirement

(1) Protect Water Quality and Uses. The state antidegradation policy requires that existing uses, and the water quality necessary to protect existing uses, shall be maintained and protected. This requirement contains two parts: (1) protection of existing uses, and (2) protection of the water quality necessary to maintain and protect existing uses (see C1 below).

C. Ensure Water Quality Necessary to Maintain and Protect Existing Uses

(1) Confirm that Designated Uses Address Existing Uses. Prior to authorizing any proposed activity, the Department shall ensure that water quality sufficient to protect existing uses fully will be achieved. An important decision that must be made by the Department is whether the waterbody currently supports, or has supported since November 28, 1975, an existing use that has more stringent water quality requirements than the currently designated uses. In making this decision, the Department will focus on whether a more protective designated use (i.e., based on the state use designations) should be assigned to the waterbody to reflect an existing use. Where the Department determines that the currently designated uses appropriately reflect the existing waterbody uses, the Department shall document that preliminary determination using the antidegradation review worksheet. In such cases, the water quality control requirements necessary to protect designated uses will be presumed to also protect existing uses fully.

(2) Where Designated Uses do not Address Existing Uses. This procedure presumes that designated uses appropriately address existing uses pursuant to state and federal requirements. Where this is not the case, a revision to state standards may be needed because, pursuant to the state and federal water quality standards regulations, designated uses are required to reflect, at a minimum, all attainable (including currently attained, or existing) uses. Where existing uses with more stringent protection requirements than currently designated uses are identified, the Department will ensure levels of water quality necessary to protect existing uses fully and, at the earliest opportunity, propose that appropriate revisions to the designated uses be adopted into the state water quality standards. However, the Department will not delay tier 1 protection pending the reclassification action.

(3) Require Water Quality Necessary to Protect Existing Uses. Where the Department determines that the waterbody currently supports, or has supported since November 28, 1975, an existing use that has more stringent water quality requirements than the currently designated uses, the Department shall identify the level of water quality necessary to protect existing uses fully for the parameters in question. The Department's estimate of the level of water quality required will be based on numeric state water quality criteria, narrative state criteria, and/or federal criteria guidance. In general, water quality sufficient to maintain and protect existing uses for the parameters in question will be assured using the same procedures that would have been followed had the water quality standards (i.e., uses and criteria) been appropriately assigned to begin with. The preliminary findings regarding existing uses and the level of water quality necessary to protect existing uses will be documented using the antidegradation review worksheet.

(4) Trading. A proposed activity that will result in a new or expanded source may also be allowed where the applicant agrees to implement or finance upstream controls of point or nonpoint sources sufficient to offset the water quality effects of the proposed activity. Where such trading occurs, tier 1 requirements will be considered satisfied where the applicant can show that the level of water quality necessary to protect existing uses fully will be achieved. The Department will document the basis for the trade through a TMDL pursuant to CWA § 303(d) requirements. Such TMDLs will include an appropriate margin of safety. Such a margin of safety will address, in particular, the uncertainties associated with any proposed nonpoint source controls, as well as variability in effluent quality for point sources. See definition of trading in Part II.

(5) Additional Information Requirements. The applicant may be required to provide monitoring data or other information about the affected waterbody to help determine whether designated uses also reflect existing waterbody uses or the level of water quality necessary to protect existing uses fully. The information that will be required in a given situation will be identified on a case-by-case basis. Because these procedures presume that designated uses reflect existing uses, such information will typically be required only where this presumption is in doubt, based on the information available to the Department. Where this presumption is in doubt, the applicant may be required to provide physical, chemical, or biological monitoring data or other information needed by the Department to identify and protect existing uses.

D. Ensure Full Protection of Existing Uses

(1) Presume that Applicable Criteria Will Protect Existing Uses. This procedure presumes that implementation of the water quality criteria established to protect ***designated uses*** will also incidentally protect ***existing uses***. However, situations may arise where a proposed (regulated) activity will impair or eliminate an existing use for reasons which cannot be tied to any applicable water quality criterion. For example, impacts to aquatic life habitat that may result from the discharge of "clean" sediment.

(2) Where Applicable Criteria Will Not Protect Existing Uses. Where the Department concludes that existing uses will be impaired by a regulated activity for reasons which cannot be tied to the applicable criteria, the Department will work with the project applicant to revise the project design such that existing uses will be maintained and protected. If a mutually-acceptable resolution cannot be achieved, the Department will document the basis for its preliminary determination regarding the loss or impairment of existing uses that will occur using the antidegradation review worksheet, identify appropriate control requirements, up to and including denial of the proposed activity, and public notice its preliminary decision. Where possible, such effects will be predicted based upon quantitative methods. In predicting effects, the Department will use all information submitted by the applicant, available modeling techniques, and best professional judgment based upon experience with similar types of projects, as appropriate.

(3) Where Loss or Impairment of Existing Uses is Not Predicted. Where the Department determines that implementation of the applicable water quality criteria will fully protect the existing uses, that finding will be documented using the antidegradation review worksheet.

DISCHARGES TO EPHEMERAL WATERS

A. Ephemeral waters directly tributary to Tier 3 waters

Any proposed activity that would result in a permanent new or expanded indirect source of pollutants (i.e., an upstream source) to a Unique Waters segment is prohibited except where such source would have no effect on the existing quality of the downstream Unique Waters segment. Effects on Unique Waters water quality resulting from upstream sources will be determined based on appropriate techniques and best professional judgment. Factors that may be considered in judging whether Unique Waters quality would be affected include: (a) percent change in ambient concentrations predicted at the appropriate critical condition(s), (b) percent change in loadings (i.e., the new or expanded loadings compared to total existing loadings to the segment), (c) percent reduction in available assimilative capacity, (d) nature, persistence, and potential effects of the parameter, (e) potential for cumulative effects, and (f) degree of confidence in the various components of any modeling technique utilized (e.g., degree of confidence associated with the predicted effluent variability).

B. Ephemeral waters tributary to all other waters

Antidegradation review parameters will be assigned on a case by case basis considering tributary language found at R18-11-104(D)

Part VII. DOCUMENTATION, PUBLIC REVIEW, AND INTERGOVERNMENTAL COORDINATION PROCEDURES

A. Documentation of Antidegradation Review Findings

(1) Antidegradation Worksheet. The Department will complete an antidegradation review for all proposed regulated activities that may have some effect on surface water quality. The findings of all antidegradation reviews will be documented using an antidegradation worksheet, a copy of which is attached to these procedures.

B. Public Review Procedures

(1) Follow State Requirements. The antidegradation review findings will be subjected to the state public participation requirements found at R18-1-401. A separate public notice for purposes of antidegradation need not be issued. For example, the antidegradation preliminary findings may be included in the public notice issued for purposes of an NPDES permit/§ 401 certification.

(2) Content of Public Notice. In preparing a public notice, the Department will, at a minimum: (a) outline the substance and basis of the state's antidegradation review conclusions, including the preliminary finding regarding whether to authorize the proposed activity, (b) request public input on particular aspects of the antidegradation review that might be improved based on public input (e.g., existing uses of the waterbody by the public, the preliminary determination on socio-economic importance), (c) provide notice of the availability of the antidegradation review worksheet, (d) provide notice of the availability of any introductory public information regarding the state antidegradation program, and (e) include a reference to the state antidegradation policy.

C. Intergovernmental Coordination Procedures

(1) Minimum Process. Upon request, the Department will provide copies of the completed antidegradation review worksheet and/or the public notice to state and federal government agencies along with a written request to provide comments by the public comment deadline.

APPENDIX

FIELD IDENTIFICATION OF ANTIDEGRADATION RULE VIOLATIONS

If it is suspected that a discreet discharge is causing a violation of the narrative antidegradation standard, the following steps should be taken.

I. Characterize the water quality of the receiving water.

A. An integrated sample should be taken upstream of the discharge, outside of the zone of influence of the discharge and of any nonpoint source runoff that may be coming from the activity or facility.

B. Locate any data from water samples taken upstream of the discharge (or downstream prior to discharge initiation) that could, within best professional judgement, characterize the ambient water quality.

II. Characterize the discharge.

A. An integrated sample should be taken of the discharge.

B. Describe the discharging facility or activity.

C. Type of permit (if required)

III. Characterize water quality downstream of the discharge.

A. An integrated sample should be taken downstream of the discharge, allowing enough distance for the discharge to mix, and carefully checking for insufficient mixing due to density differences between the discharge and the receiving water (check for color and conductivity differences).

IV. Determine if a violation of the antidegradation standard is taking place.

A. Calculate the percent change in concentration of constituent pollutants due to the discharge.

B. If long term data for the waterbody is available, ambient pollutant levels and pollutant levels due to discharge should be modeled.

C. An increase in the concentration of any listed priority pollutant (40 CFR Part 423 Appendix A) of 5% or more will be considered an action value and be pursued as a violation.

D. Any increases in non-priority pollutants which are listed at R18-11 Appendix A will be considered on a case by case basis when determining violation status.

ANTIDEGRADATION REVIEW CHECKLIST

I. Minimum required information to be supplied by applicant.

- Ambient water quality data for the receiving water including:

all STORET data for the segment where the proposed discharge will take place, for a period of five years prior to application;

all data from the Department not yet uploaded to STORET;

all pre-existing data will be submitted as raw data and as yearly means for each parameter at site within the segment.

data from three integrated surface water samples, each sample taken at at least two months and not more than three months intervals. Samples will be taken according to the "Handbook for the Sampling and Sample Preservation of Water and Wastewater" EPA 600/4-82-029 and "ADEQ Fixed Station Network Field Procedures" and analyzed for the following parameters: (list may be modified on a case by case basis)

Field measurements:
- pH
- dissolved oxygen
- turbidity
- specific conductivity
- temperature
- flow

Lab analytes:
- alkalinity
- hardness
- total dissolved solids
- ammonia
- nitrate
- phosphorus
- priority pollutant scan:
  - priority pollutant metals
  - organochlorine pesticides and PCBs
  - volatile organics
  - semi-volatile organics

any long term flow data from the segment where the proposed discharge will take place.

biocriteria samples taken 200 yards upstream and 200 yards downstream of where the proposed discharge will take place. Sampling protocols should be based on the "Rapid Bioassessment Protocols for use in Streams and Rivers, Benthic Macroinvertebrates and Fish", U.S. EPA, May 1989 and "The Development of Biological Criteria in Arizona, Phase I Study Plan, Water Quality Standards Unit, ADEQ, February 24,1992".

- Location of any Unique Waters within the segment or downstream of where the proposed discharge will take place.

- Any threatened or endangered species habitat located within the segment or downstream of where the proposed discharge will take place.

- A land use map for the segment where the proposed discharge will take place.

- A description of the natural features for the segment and adjacent land areas where the discharge will take place, in biological, chemical and physical terms.

- A description of the socio-economic activities for the segment where the discharge will take place, and adjacent land areas.

- A description of the proposed facility, including: purpose, service area, principal equipment/activities/structures.

- A description of any discharges and other residues/wastes that will be produced by the proposed facility.

- A description of all Best Management Practices that will be in place.

- Photographs of the segment to be affected by the discharge.

- Describe the applicable parts of all Federal and State laws (CWA and EQA), rules (CFR and AAC) and ADEQ policies related to controlling the discharge of pollutants and water quality management as it relates to the proposed facility.

ANTIDEGRADATION REVIEW WORKSHEET

1. Name of Reviewer: _____.
   Name of Receiving Water: _____.
   Basin: _____.
   Segment No.: _____.
   Stream Classification: _____.
   Other: _____.

2. Brief description of Proposed Activity:

   ID Number, if any:

3. Which tier(s) of antidegradation apply?

   ☐ Tier 3 - go to question 4

   ☐ Tier 2 - go to question 7

   ☐ Tier 1 - go to question 13

   ☐ Activity will not discharge to the waters of the state - go to 17

Tier 3 Questions

4. Will the proposed activity result in a permanent new or expanded source of pollutants directly to a Unique Water?

☐ yes - recommend denial of proposed activity.

☐ no

5. If the proposed activity will result in a permanent new or expanded source of pollutants to a segment *upstream* from a Unique Water, will the proposed activity affect water quality of a Unique Water (see IV(C)(1) of the implementation procedure)?

☐ yes - recommend denial of proposed activity

☐ no

Basis for conclusion:

6. If the proposed activity will result in a non-permanent new or expanded source of pollutants to a Unique Water or a segment upstream from a Unique Water segment, will the proposed activity result in "temporary and limited" effects on the water quality of a Unique Water (see IV(D)(1) of the implementation procedure)?

☐ yes

☐ no - recommend denial of proposed activity

Basis for conclusion:

Tier 2 Questions

7. Does the waterbody qualify for tier 2 protection as a result of a High Quality use designation by the Department (see V(A) of the implementation procedure)?

☐ yes

☐ no

If no, basis for conclusion that tier 2 applies:

8. Will the proposed activity result in significant degradation (see V(B) of the implementation procedure)?

☐ yes

☐ no - recommend approval of the proposed activity

☐ significance test by-passed due to availability of a reasonable less-degrading alternative

If significance test not by-passed, basis for conclusion:

9. Has the applicant completed an adequate evaluation of alternatives and demonstrated that there are not reasonable alternatives to allowing the degradation (see V(C) of the implementation procedure)?

☐ yes

☐ no - recommend denial of the proposed activity

If no, basis for conclusion:

10. Has the applicant demonstrated that the proposed activity will provide important socio-economic development in the area in which the affected waters are located (see V(D) of the implementation procedure)?

☐ yes

☐ no - recommend denial of the proposed activity

If no, basis for conclusion:

11. Will existing uses be fully protected consistent with the Tier 1 procedures outlined by questions 17 - 19 below (questions 17 - 19 must be completed)?

☐ yes

☐ no - recommend denial of the proposed activity

12. Have all state-required controls on point and nonpoint sources to the segment been achieved (see V(F) of the implementation procedure)?

☐ yes

☐ no - recommend denial of the proposed activity

Basis for conclusion:

Tier 1 Questions

13. The basis for concluding that tier 2 requirements do not apply is as follows (see VI(A)(1) of the implementation procedure):

14. Are there uses that exist or have existed since November 28, 1975 that have more stringent water quality protection requirements than the currently designated uses (see VI(C) of the implementation procedure)?

☐ yes

☐ no

If yes, basis for conclusion:

15. If the answer to question 17 was yes, what water quality criteria requirements will ensure protection of such existing uses (see VI(C) of the implementation procedure)?

Indicate parameters and applicable water quality criteria:

16. Will existing uses be fully maintained and protected (see VI(D) of the implementation procedure)?

☐ yes

☐ no (recommend denial of the proposed activity)

If no, basis for conclusion:

Preliminary Decision

17. Based on the above, can the proposed activity be authorized pursuant to the state antidegradation policy?

☐ yes

☐ no

Basis for conclusion:

Signature: X _____ Date: _____