ATTACHMENT 3

From:	Kathy Arnold
To:	Jason W. Sutter
Subject:	Fwd: AMA comments on Davidson Canyon OAW
Date:	Thursday, January 5, 2017 11:30:13 AM
Attachments:	4649_001.pdf ATT00001.htm 4648_001.pdf ATT00002.htm

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Katherine Ann Arnold, PE
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Begin forwarded message:

> **From:** Kathy Arnold <kathy.arnold@hudbayminerals.com>
> **Date:** January 5, 2017 at 10:42:58 AM MST
> **To:** Trevor Baggiore <tb4@azdeq.gov>
> **Cc:** Patrick Cunningham <pcunningham@azhighground.com>
> **Subject: AMA comments on Davidson Canyon OAW**
>
> Trevor
> As we discussed, here are AMA's comments on the original listing for Davidson Canyon.
>
> Kathy
>
> **Katherine Ann Arnold, PE**
> Director of Environment
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Sydney Hay
President

November 26, 2008

Via E-mail (william.hylen@azdoa.gov)

William Hylen, Esq.
Governor's Regulatory Review Council
100 N. 15th Avenue
Suite 402
Phoenix, AZ 85007

Re: GRRC Consideration of Proposed Final Rules Submitted By ADEQ Relating to Water Quality Standards for Surface Waters, A.A.C. Title 18, Chapter 11, Article 1 (R-08-1204)

Dear Mr. Hylen:

The Arizona Mining Association ("AMA") submitted substantial comments on selected aspects of ADEQ's proposed surface water quality standards rulemaking, published at 14 A.A.R. 1281 (April 25, 2008). The AMA has recently become aware that this rule is currently scheduled to be heard by the Governor's Regulatory Review Council ("GRRC") at its December 2 meeting.

Request for Delay in GRRC Consideration of Proposed Rule

The AMA requests that GRRC defer its consideration on this rulemaking for 60 days in order to allow interested parties time to review and analyze this lengthy and complex rulemaking.

The text of the rule was made available on ADEQ's web site in mid-November. However, this has allowed inadequate time (fewer than 10 business days) between the date the rule text was made available and the scheduled date of the GRRC hearing, and an even shorter time before written comments are presumptively due to GRRC (which I understand is 6 days before the hearing, pursuant to A.A.C. R1-6-111(D)). These already inadequate time frames are compressed even further by the Thanksgiving holiday. In the case of a trade association like AMA, where disparate members must coordinate to develop association comments, these short time frames make it difficult if not impossible to adequately review the lengthy (400+ pages) rule package and determine whether and to what extent comments to GRRC are appropriate, and then to draft such comments.

The AMA therefore respectfully requests that GRRC postpone its review of ADEQ's rules revising Arizona's surface water quality standards to its February 2009 meeting date, in order to allow the AMA and other interested parties to carefully review the revisions made to the proposed rule, the revised economic impact statement, and the Department's responses to the numerous substantial comments received on the proposal.

In the event that the request for a delay in consideration is not granted, the AMA provides the following list of potential concerns that it has identified to date in its ongoing review of the rule package. The AMA's comments on the proposed rule (dated June 4, 2008) are attached and will be referred to rather than repeated in the balance of this letter.

Potential Issues in Final Rule

1. Jurisdictional Scope: Despite the AMA's (and other parties') comments, ADEQ retained with no substantive change the previous definition of "surface water," which is found in the proposal at A.A.C R18-11-101(41).[1] This definition is inconsistent with recent United States Supreme Court jurisprudence and therefore with the governing Arizona statute as well.

ADEQ's authority to adopt surface water quality standards in this rulemaking is predicated on A.R.S. § 49-221(A), which requires ADEQ to adopt standards for all "navigable waters." Navigable waters are defined as "waters of United States" pursuant to the Clean Water Act ("CWA"), 33 U.S.C. § 1362(7). The scope of the water quality standards program is thus coextensive with federal CWA jurisdiction over waters of the United States.[2]

ADEQ's definition of "surface water" includes any "ephemeral stream" with the potential to affect interstate or foreign commerce. See A.A.C. R18-11-101(41)(c). The phrase "ephemeral stream" does not appear in the corresponding definition of "waters of the United States" adopted by EPA and the Army Corps of Engineers, which implement the Clean Water Act. See 33 C.F.R. § 328.3; 40 C.F.R. § 122.2. Thus, the ADEQ definition is on its face broader than corresponding federal definitions, despite the statutory mandate that the standards apply only to navigable waters under the CWA.

Furthermore, the U.S. Supreme Court decision in *Rapanos v. United States*, 547 U.S. 715 (2006) casts doubt on the authority to regulate any water with any potential affect on interstate commerce under the CWA. The five justices concurring in the decision in that case suggested that CWA jurisdiction requires either that water be present on a reasonably permanent basis or that a water have a significant nexus with a traditional navigable water. ADEQ's definition of "surface water" does not reflect these restrictions in any fashion, despite the fact that ADEQ's statutory authority is intended to be co-extensive with federal regulatory authority.

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[1] Citations to the water quality standards rules are to the provisions as they are worded and numbered in the final rule package submitted to GRRC.

[2] ADEQ has discretionary authority to adopt standards for waters that do not constitute navigable waters, pursuant to A.R.S. § 49-221(B), but has never proposed doing so.

ADEQ's response to these comments is essentially that the *Rapanos* decision arose out of a wetlands case and that it therefore has no relevance to a state's adoption of surface water quality standards as required by the CWA. (Response to comments #3 through #9.) This ignores the fact that there is a single definition of "navigable waters" in the CWA and that term is used in the section requiring states to adopt water quality standards (33 U.S.C. § 1313(c)(2)) as well the section governing the Section 404 program (33 U.S.C. § 1344). Moreover, the *Rapanos* decision has already been widely used by courts analyzing CWA jurisdiction outside the Section 404 context. See, e.g., *Northern California River Watch v. City of Healdsburg*, 496 F.3d 993 (9th Cir. 2007) (applying *Rapanos* in a NPDES permitting case). Under ADEQ's logic, it presumably can adopt (and perhaps even enforce) water quality standards for ephemeral washes even though no Section 404 permit is needed to discharge dredged or fill material into those washes.

In short, ADEQ has provided an inadequate legal basis for retaining its current definition of "surface waters" and has failed to adequately respond to significant comments on this important point. As such, this definition should not be approved by GRRC pursuant to A.R.S. § 41-1052(C)(5) & (6).

2. Davidson Canyon as an Outstanding Arizona Water: The AMA made several comments regarding the proposed classification of a portion (approximately 3.2 miles) of Davidson Canyon as an outstanding Arizona water ("OAW"). See A.A.C. R18-11-112(G)(21). The AMA has concerns with the manner in which ADEQ responded to several of its comments.

(a) In order to qualify as an OAW, the water in question water must have good water quality, which is defined as quality that meets or is better than applicable surface water quality standards. See A.A.C. R18-11-112(C)(3). In its comments, the AMA pointed out that there is very little sampling data for many core water parameters, especially metals. For example, there appears to be only a single sample analyzing any metal other than arsenic. With respect to that single sample, the practical quantitation limits ("PQL") reported by the lab, which represents the lowest level at which the lab was able to quantify the amount of the pollutant present, were well above applicable surface water quality standards. (See pages 4-6 of the June 4, 2008 comments.)

For example, selenium (a common pollutant in Arizona surface waters) was reported as non-detect, but with a PQL of 100 ug/l. The governing surface water quality standard for selenium is 2 ug/l. Failure to detect selenium at a level 50 times higher than the applicable standard in the single available sample does not demonstrate the "good water quality" necessary to support the use of the designation. Other metals where the PQL was above the applicable water quality standard include lead, antimony, arsenic, beryllium, cadmium, copper and zinc.

In the preamble to the final rule, ADEQ recited portions of the AMA comment, but did not include or respond to the comments that few samples were available or that the PQLs for the available data were for some parameters above applicable water quality standards (often substantially so). In its response, ADEQ merely stated that none of the available water quality data indicate the existence of water quality problems or exceedances of applicable water quality standards. (Response to comment #94) This response does not address in any fashion the AMA comment that the lab results were not adequate to measure down to the water quality standard

and thus demonstrate that the requisite good water quality is present. The Department therefore did not adequately address the AMA's comment on this critical aspect of the proposal to designate Davidson Canyon as an OAW, as required by A.R.S. § 41-1052(C)(6).

(b) In its comments, the AMA also noted that one of the three segments of Davidson Canyon proposed as an OAW (from the confluence with the unnamed tributary at 31°59'32.5"/110°38'43.5" to the unnamed spring at 32°00'54"/110°38'54") is classified as an ephemeral wash in Appendix B to the rulemaking. An ephemeral water cannot qualify as an OAW. See A.A.C. R18-11-112(D) (OAW must be perennial or intermittent).

In its response to comments, ADEQ stated that the entire lower stretch of Davidson Canyon (including all three proposed listed segments) should be described as a spatially intermittent stream and that the stretch as a whole should be considered intermittent and thus eligible for classification as an OAW. The Department further noted that it had previously classified as OAWs waters with ephemeral reaches. The Department cited only Cienega Creek as an example. Cienega Creek, however, has not been segmented to include an ephemeral-only stretch, unlike Davidson Canyon (which does have such a stretch). See Appendix B. The fact that a portion of Davidson Canyon is classified as ephemeral disqualifies that stretch from being included within the OAW designation.

3. Economic Analysis: The AMA has several concerns with the economic impact analysis included with the final rule package:

(a) On page 79 in the preamble, ADEQ states: "The Department is aware of a few mining claims in the area that would face limitations on discharging to Davidson Canyon or to any of its tributaries." The Department does not elaborate on that statement, but goes on to simply say that it is "unclear" what economic costs a potential discharger to these new OAWs would bear. The AMA provided a comment that the proposed Rosemont project, a copper mining and processing project, will be located along washes that ultimately (via several connections) are tributary to Davidson Canyon, although the project is located over ten miles away from the designated reaches. The AMA also provided a specific instance of a cost already being incurred based on ADEQ's denial of *de minimus* AZPDES general permit coverage for well water discharges based merely on the proposed listing of a portion of Davidson Canyon as a OAW, despite the lengthy distance between the Rosemont site and the designated portions of Davidson Canyon. ADEQ has not acknowledged this cost (approximately $75,000 to date) in its economic impact analysis, nor has it attempted in any way to identify or quantify potential impacts to the Rosemont project despite its awareness of the project.

(b) The AMA expressed a concern that the designation of Davidson Canyon could be used by some in an attempt to stop the Rosemont project (a goal clearly referenced in some public comment supporting the designation). The Department did not directly respond to this comment as it relates to Rosemont, but did include a general statement that public comments on the potential costs of the rulemaking present an "apparent worst case scenario" (page 79). The Department then suggested that parties may have legal options to delay or minimize the impacts of new or revised standards, including variances and compliance schedules. It is not clear that

this generic discussion constitutes a good faith effort to assess potential costs of the Davidson Canyon designation, particularly since ADEQ has clearly signaled that restrictions on land use in the watershed (including possible limits on mining) resulting from an OAW designation can be considered in determining whether to designate a qualifying water as an OAW. See 8 A.A.R. at 1303. This concern is particularly acute because ADEQ has not explained how the "no degradation" standard will be implemented, and because of the lack of quality data reflecting existing conditions in Davidson Canyon (as discussed above).

(c) With respect to mining generally, ADEQ has included a new discussion (pages 88-92) of potential economic impacts. This discussion was not included in the proposal and thus the AMA had no opportunity to comment on it at that time. The discussion indicates that many mines would utilize storage and evaporation options, which is true. However, most mines have a storm water discharge permit of some sort (individual or general). The second portion of the new discussion addresses two possible treatment options being used in the electric utility industry that ADEQ believes could be transferred to mining (brine concentrators and reverse osmosis). It is not clear whether these systems would be useful in the case of storm water at mines, which is an episodic discharge of varying rates and qualities. Moreover, it is unclear if the cost estimates provided by ADEQ ($8.4 million for reverse osmosis, $9.365 million for brine concentrator) are on a per-facility basis or a cumulative basis. The mining-specific economic cost analysis is thus of questionable accuracy.

Please contact me should you have any questions on these comments. The AMA has not determined whether it will request the opportunity to provide oral comments at the December 2, 2008 hearing.

Sincerely,

Arizona Mining Association

Sydney Hay
President

Enclosure: Copy of AMA comments on proposed rule (June 4, 2008)

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Sydney Hay
President

June 4, 2008

Via Electronic Mail (conard.shirley@azdeq.gov)

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Re: Comments of Arizona Mining Association on Proposed Revisions to Surface Water Quality Standards

Dear Ms. Conard:

This letter constitutes the comments of the Arizona Mining Association ("AMA") on ADEQ's proposed revisions to the surface water quality standards rules, published at 14 A.A.R. 1281 (April 25, 2008). Some comments also relate to draft implementation procedures developed for some of the narrative standards, but because these were made available in their current form only within the last two weeks and because they are not specifically referenced in the rule, the AMA's review time with respect to these documents was limited.

AMA is a non-profit business league comprised of entities engaged in mining and mineral processing in Arizona. Its members include: ASARCO LLC; BHP Copper Inc.; Carlota Copper Company; Chemical Lime; Drake Stone Products; Freeport-McMoRan Copper & Gold, Inc.; Peabody Energy; Resolution Copper Company; Rosemont Copper Company; Swallow Mining, LLC. In 2006, the member companies produced 65% of the nation's newly-mined copper, along with significant amounts of associated byproducts (gold, silver, molybdenum), and had an estimated direct and indirect impact on the Arizona economy of $4.7 billion. AMA members typically possess individual or general AZPDES permits, and periodically obtain Section 404 permits requiring Section 401 certification from ADEQ. Because of these activities, among others, AMA members have a keen interest in all aspects of the surface water quality standards, including designated uses, narrative and numeric standards, antidegradation, and other provisions. AMA and its member companies have been active participants in all recent triennial reviews.

The AMA supports the comments submitted by the Surface Water Quality Standards Coalition ("Coalition"). We will endeavor to not simply reiterate those comments, but rather to raise additional points and/or highlight issues of particular importance to AMA members.

Comments

Jurisdictional Issues: As reflected in the existing and proposed definition of "surface water," the standards in A.A.C. R18-11-101 *et seq.* are intended to apply to waters of the United States as that term is defined pursuant to the Clean Water Act ("CWA"). As ADEQ is aware, the extent of CWA jurisdiction is uncertain after the decision of the United States Supreme Court in *Rapanos v. United States*, 547 U.S. 715 (2006). Subsequent to that decision, EPA and the Corps of Engineers issued guidance entitled "Clean Water Act Jurisdiction Following the U.S. Supreme Court's decision in *Rapanos v. United States & Carabell v. United States* (June 2007) (the "Guidance"). Pursuant to the Guidance "traditional navigable waters" ("TNWs"), reasonably permanent tributaries of TNWs, and other tributaries with a "significant nexus" to TNWs remain regulated under the CWA. By contrast, swales or erosional features (*e.g.*, small washes characterized by low volume, infrequent, or short duration flow) are generally not considered jurisdictional.

In a state such as Arizona, where many "waters" are ephemeral washes, the Guidance may result in some waters previously considered jurisdictional no longer being so considered. In fact, ADEQ has expressed its concern that the Guidance could be interpreted as eliminating CWA protections for non-perennial waters, which it estimates at 96% of all stream miles in Arizona. *See* letter from Stephen Owens to Benjamin Grumbles (December 5, 2007) and written testimony of Joan Card before the U.S. Senate Environment and Public Works Committee (April 9, 2008). Although the AMA believes it is exceedingly unlikely that the Guidance would be interpreted to eliminate jurisdiction over 96% of stream miles in Arizona, we believe it equally unlikely that *Rapanos* has no significance whatsoever on CWA jurisdiction in Arizona. At this point, it is simply too early to tell what the ultimate ramifications of the decision and the Guidance will be in Arizona. For example, the agencies have not yet fully identified the extent of TNWs within the state, nor clearly defined how the presence or absence of a "significant nexus" to such TNWs will be measured.

The AMA believes that the triennial review needs to account for this jurisdictional uncertainty. Currently, the definition of "surface water" is actually broader on its face than the corresponding EPA and Corps definitions (*e.g.*, by specifically including "ephemeral" streams in the "other waters" category), and ADEQ has not proposed any changes to that definition. *See* A.A.C. R18-11-101(43)(c). The blanket inclusion of ephemeral streams is unwarranted, particularly after *Rapanos*. Including a definition that is based on federal regulatory definitions that are themselves in doubt after *Rapanos* is equally unwarranted. Although the AMA believes that the current definition of "surface water" is overbroad in light of *Rapanos*, we are also aware of the possibility of federal legislation that will potentially expand CWA jurisdiction to or beyond pre-*Rapanos* levels (*i.e.*, the "Clean Water Restoration Act of 2007").

In light of the foregoing, the AMA suggests that the most efficient way to address the issue in the triennial review is as follows: (1) modify the definition of "surface water" to simply provide that a surface water means a "navigable water" as that is the term is defined in A.R.S. § 49-201(22), since "navigable water" is the term used in the governing statutes, specifically A.R.S. §§ 49-221(A) (authority to adopt surface water quality standards) & 49-255(2) (definition of "discharge" for AZPDES program); and (2) add language clarifying that the designated uses in Appendix B apply "if and to the extent that each listed water or reach constitutes a surface water."[1]

The advantage of this approach is that it allows maximum flexibility. To the extent that the current understanding of "waters of the United States" expands or contracts as a result of agency guidance, court decisions or federal legislation, the standards would adjust accordingly and would not require revision. It also avoids ADEQ having to undertake the virtually impossible task of doing a reach-by-reach review of every water currently listed in Appendix B to determine whether it constitutes a TNW, a reasonably permanent tributary to a TNW, or a water with a significant nexus to a TNW.

The AMA recognizes that ADEQ has authority to adopt surface water quality standards for non-navigable waters pursuant to A.R.S. § 49-221(B), but the Department has not proposed doing so and any such proposal would need to be accompanied by a separate analysis of the economic, social and environmental costs and benefits associated with any such standards. Absent such a proposal and accompanying analysis, the AMA believes that the approach suggested above is the most logical one given the current climate of uncertainty.

Effluent Dependent Waters Provisions: Non-Applicability to Storm Water Discharges: The proposed revisions to the definition of "effluent-dependent water" (A.A.C. R18-11-101(17)) would delete the term "treated" before "wastewater-," which is itself an undefined term. ADEQ has stated on numerous occasions in stakeholder meetings that the provisions of proposed A.A.C. R18-11-113(D)-(E) are not intended to apply to storm water discharges (i.e., that storm water is not wastewater), but that intent is not clearly expressed in the proposed rule language. In the existing rule, use of the qualifier "treated" before "wastewater" makes it clear that storm water is not included, but removal of that qualifier could create uncertainty. Any final EDW rule should make clear in the text of the rule itself (not merely the preamble) that its provisions do not apply to discharges of storm water or discharges of non-storm water that are authorized by an applicable storm water permit, such as the construction or multi-sector general industrial permits. The AMA also supports the Coalition comment that these provisions should not apply to discharges authorized under ADEQ's de minimus general permit.

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[1] The tributary rule (A.A.C.R. 18-11-105) already applies on its face only to a "surface water" and so would not need to be modified if the changes to the definition of "surface water" outlined above were adopted. Absent those or similar changes, however, the tributary rule would be subject to challenge by virtue of its apparent classification of every single tributary as a regulated "water of the United States" under the CWA.

Outstanding Arizona Waters; Proposed Designation of Davidson Canyon: The AMA has several comments on this provision generally, and on the proposed listing of Davidson Canyon in particular. With respect to the rule generally:

(a) The AMA concurs with the Coalition's comment that the proposed new definition of outstanding Arizona water ("OAW") at A.A.C. R18-11-101(28) suggests that waters may qualify as OAWs even without being classified by rule, which is inconsistent with the text of A.A.C. R18-11-112(A). The AMA supports the Coalition's suggested revision to that definition.

(b) ADEQ has proposed extending potential OAW status to intermittent waters, not just perennial waters. ADEQ has provided no explanation or rationale whatsoever for this change, and in fact does not even note the change in the preamble discussion of the rules. Given that the Department in the last triennial review adopted the requirement that OAWs must be perennial waters and emphasized repeatedly that intermittent waters were not eligible for listing, this unexplained change in course is puzzling. See 8 A.A.R. at 1299, 1302 (preamble statements) & 1421 (rule change imposing requirement a water be perennial in order to be eligible for designation).

The lack of explanation makes it very difficult to comment on this aspect of the proposal. Nevertheless, given the broad and vague definition of "intermittent" waters found in the rules (those flowing continuously at certain times of the year), and the fact that intermittent waters, unlike ephemeral and effluent dependent waters, are not specifically identified in Appendix B, the AMA is concerned that this proposal potentially dramatically expands the universe of OAWs in Arizona. Rather than protecting only the truly unique and rare waters in the State, this proposal moves toward allowing OAW status to be conferred anywhere water is sometimes present, even if infrequently. This is not, and never has been, the intent of the unique water (now OAW) program.

Moreover, given the potentially draconian consequences of OAW designation (primarily the imposition Tier 3 antidegradation provisions forbidding any change in water quality, which has enormous land use implications), this proposal could have significant ramifications on a statewide basis. Given the potentially dramatic limits on land use activities stemming from an OAW designation, such designation should be limited to perennial waters exhibiting one of the specified characteristics and not extended to the much broader and less well-defined category of intermittent waters.

Only one of the proposed two new OAWs is identified as intermittent - Davidson Canyon. The other potential explanation for the inclusion of intermittent waters in the rule is to facilitate the listing of this particular water. However, even if intermittent waters are properly deemed eligible for OAW status, there are problems with the proposed designation:

(c) Davidson Canyon is subdivided into four reaches in Appendix B. It appears that the lower three reaches are intended for designation as an OAW (although there is some uncertainty over the scope of the proposed designation, as noted below). However, it has not been

adequately demonstrated that these segments qualify for listing even under the revised criteria set forth in the proposed rule.

The second (uppermost) segment proposed for OAW designation (from the unnamed spring at 31°59'00"/110° 38' 46" to confluence with unnamed tributary at 31°59'32.5"/110°38'43.5") may not possess the requisite "good water quality" required under proposed A.A.C. R18-11-112(D)(3) (i.e., water that meets or is better than applicable surface water quality standards). The nominating petition includes water quality data from four events, the most extensive (and the most recent) sampling being from February 3, 2005. The three earlier events (in 2002 and 2003) sampled only general water quality parameters and did not sample for most metals (with the exception of arsenic). The February 3, 2005 sampling event was the only one to analyze for a wider range of metals. In this event, it appears that samples were collected just below the unnamed spring marking the beginning of the second reach of Davidson Canyon (i.e., at the top of the first reach proposed for OAW designation). Designated uses for that reach are A&W (warm water), fish consumption, full body contact and agricultural livestock watering.

Results for most metals were reported as non-detect, but this data is actually not very informative as it does not appear that the analytical techniques used were sensitive enough to allow meaningful comparison to applicable standards. Based on the lab reports, the relevant PQLs were in many cases above the applicable water quality standards, in some cases significantly so, meaning that water quality cannot be accurately assessed despite the reported "non-detect" results. For example, the PQL for selenium (100 ug/l) is 50 times higher than the applicable surface water quality standard of 2 ug/l (the chronic standard for the aquatic and wildlife (warm water) use). Moreover, the water quality standard for selenium is expressed for total selenium, but the sampling was only for the dissolved fraction, making the results even less helpful. Likewise, the lead PQL of 150 ug/l is 10 times higher the most stringent applicable standard (15 ug/l for the FBC use), and again the standard is expressed as total whereas the sampling was only for the dissolved fraction. In addition to lead and selenium, other parameters where the PQL for the February 2005 analysis is above the most stringent applicable standard are antimony, arsenic, beryllium, cadmium, copper and zinc.

This data is insufficient to demonstrate with any certainty that the uppermost stretch of Davidson Canyon proposed for OAW classification possesses the "good water quality" necessary for such designation. The lowermost reach proposed for OAW designation (from the unnamed spring at 32°00'54"/110°38'54" to Cienega Creek) likewise lacks sufficient data to accurately assess water quality. No sample was collected there in February 2005, so the only available data is three samples from 2002-03 of major anions/cations and a few other parameters. Most metals have not been analyzed for even once. In the preamble to the 2002 final rules, ADEQ stressed the importance of adequate data to establish existing water quality and implement Tier 3 antidegradation protection as a practical matter. 8 A.A.R. at 1300. Although not data provided in support of the nomination does demonstrate the existence of water quality problems, it is insufficient to allow an evaluation of overall existing water quality.

The middle reach of Davidson Canyon proposed for OAW designation (the third of four delineated in Appendix B) extends from the confluence with the unnamed tributary at 31°59'32.5"/110°38'43.5" to the unnamed spring at 32°00'54"/110°38'54". No water quality results appear to have been provided for this reach of the Creek. However, the reach is listed in Appendix B of both the current and proposed rules as ephemeral. As an ephemeral reach, it cannot qualify for OAW designation under the current or proposed rules. It therefore should be removed from the proposal.

(d) The listing criteria for OAW designation (A.A.C. R18-11-112(D)) make clear that it is the attributes of the surface water that should determine whether listing is appropriate. As noted above, the water quality data regarding Davidson Canyon is not conclusive. Moreover, the preamble (as well as the nomination and supporting letters) focuses heavily on preservation of the area as a local corridor for wildlife migration, particularly as a means for wildlife to cross I-10. The AMA does not question this characterization, but believes it is irrelevant with respect to the question of classifying Davidson Canyon as an OAW. The areas adjacent to the surface water presumably provide that migration corridor today, even without OAW status, and there is no suggestion that the wildlife corridor functions of these areas would be diminished by *any* change in water quality (i.e., that Tier 3 antidegradation protection is needed to preserve the wildlife corridor). It is not clear why Tier2 II antidegradation protection (requiring that all standards be met and, as proposed, that important social or economic benefits be demonstrated through a public process if more than 20% of assimilative capacity is proposed to be taken up by a discharge) would be insufficient to protect the functioning of the existing migration corridor. In short, classification of Davidson Canyon as an OAW is not essential to one of the primary stated purported benefits of the designation.

Similarly, the recreation benefits cited in the nominating petition are hiking, biking and birdwatching in the vicinity of the surface water. These are benefits of the surrounding land, not the surface water itself – no mention is made of boating, swimming, fishing or other water-based recreation. It is therefore unclear why these recreational uses require imposition of Tier 3 antidegradation protection for the nearby surface water, or why Tier 2 protection would not be sufficient to allow those uses to continue.

The preamble also states that the stream provides habitat for "threatened and endangered species or species of concern identified by the U.S. Fish and Wildlife Service, including the lowland leopard frog and the long fin dace." 14 A.A.R. at 1288. These species are not listed as threatened or endangered, nor are they candidates for listing.[2] The phrase "species of concern" does not appear to have any legal significance or definition. The two species identified are priority vulnerable species under the Sonoran Desert Conservation Plan, but that County-specific plan should not alone be sufficient to elevate a water to status as an outstanding *Arizona* resource water.[3]

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[2] The candidate species list is available online at http://ecos.fws.gov/tess_public/SpeciesReport.do?listingType=C

[3] One of the stated goals of the Sonoran Desert Conservation Plan is to "maintain or improve the status of unlisted species whose existence *in Pima County* is vulnerable" (italics added). This highlights the County-specific nature of the Plan.

For all the foregoing reasons, the AMA questions whether Davidson Canyon meets the criteria for listing set forth in A.A.C. R18-11-112(D).

(e) More generally, the AMA is concerned that the proposed OAW designation may be driven more by a desire to limit land use in the vicinity (even if not directly adjacent to the reaches proposed for OAW designation) than by anything else. An internal ADEQ memorandum[4] notes that "[w]ildlife habitat and migration corridors in larger ecosystem processes benefit when landscapes are less fractionated and connectivity between segments is maintained." This is likely true, but has little or nothing to do with the characteristics of the surface water itself, and everything to do with controlling land uses in the vicinity of that water. Some public comments in support of the nomination are even more explicit about the reasons for the nomination. For example, a comment letter from Lainie Levick (November 17, 2005), after stating that the classification of Buehman Canyon Creek as an OAW "protected it from the threat of a copper mine," goes on to note that Davidson Canyon is also "threatened by various mining proposals."

OAW designations unquestionably have a limiting effect on land use in the area of the designation (because of Tier 3 antidegradation protections, limits on use of some general permits, etc.), and such designations should be judiciously made and limited to situations where the truly unique characteristics of a surface water require it. In other words, the land use restrictions that flow from an OAW designation should be the *result of* an otherwise appropriate designation, not the *reason for* such a designation. The nomination of Davidson Canyon appears to be an example of the latter approach.

Land use decisions are best made at the local level, not indirectly via state rulemaking. In fact, in this case, such decisions *are* being made at the local level. Pima County already controls much land around the reaches proposed for designation, and is purchasing private lands and trust land grazing leases in the area in order to augment the Cienega Valley Reserve system.[5] Thus, the nomination of the Creek as an OAW is unnecessary to prevent the "fragmentation" of the area and its loss of function as a wildlife corridor.

(f) The potential impact on nearby land uses is relevant in another respect. Tier 3 antidegradation protection prohibits any change in water quality, even if all standards are met, which for the reasons noted above has a significant limiting influence on potential land use in the area (e.g., some activities may be precluded, others may be ineligible for a general permit). These results have economic implications that were not even mentioned in the draft economic impact analysis included with the proposed rule. For example, an AMA member (Rosemont

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[4] Memorandum of Sam Rector to Steve Pawlowski, *The Nomination of Davidson Canyon Creek as a Unique Water* (April 24, 2006).

[5] See letter from C. H. Huckelberry, Pima County Administrator, to Steve Pawlowski (February 4, 2005).

Copper) was denied coverage under the de minimus general permit for well development water discharge on the basis of the proposed OAW designation of Davidson Canyon, even though the proposed mine (and the proposed points of discharge) are in excess of 10 miles away from the closest upstream portion of the proposed designation (and are located on a tributary, not Davidson Canyon itself). This decision alone has led Rosemont to incur an estimated $75,000 or more in additional costs (i.e., costs to utilize water trucks and other measures to avoid any discharge).[6] Clearly, there are economic impacts that ADEQ has not considered relating to the proposed designation.

Moreover, if the designation were to be used in an attempt to block a mining operation from ever opening, as is clearly the intent of at least some of the proponents of the designation, then the costs imposed by the designation are potentially enormous.[7] In short, if ADEQ proceeds with the proposed designation, it must make a good faith effort to assess the probable costs of the designation in light of potential limits on activity in the watershed, as required by A.R.S. § 41-1052(C). See also 8 A.A.R. at 1303 (identifying as a factor that ADEQ can use in exercising its discretion concerning whether to designate a qualifying water as unique the social and economic impact of Tier 3 antidegradation protection, such as: limits on existing or new point sources, restrictions on land use in the watershed (including possible limits on mining), stricter § 401 certification requirements, and impact on private property rights, including the potential for regulatory takings).

(g) The proposed listing of Davidson Canyon is confusing. As noted above, Davidson Canyon is subdivided into four reaches in Appendix B. The first reach is defined as "headwaters to unnamed spring at 31°59'00"/110°38'46". However, the proposed listing in A.A.C. R18-11-112(G)(22) reads as follows: "Davidson Canyon, from its headwaters at the unnamed spring at 31°59'00"/110°38'46" to its confluence with Cienega Creek." The specified latitude and longitude mark the end of the first (headwater) segment, not its commencement. The nominating petition sought OAW designation only for the lower three reaches and not the upper (headwater) reach. We presume ADEQ intended to propose the same thing. If any OAW listing is finalized for Davidson Canyon, which the AMA does not believe is appropriate for the reasons outlined above, ADEQ needs to be more clear in identifying the delineated segment.

Selenium Criteria: (a) The AMA supports the removal of acute water quality criteria for selenium for aquatic and wildlife uses for the reasons outlined in the proposal (i.e., repeal of the EPA § 304(a) criteria recommendations on which Arizona's acute criteria were predicated).

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[6] The only alternative to this approach would have been to attempt to secure an individual AZPDES permit, which likely would have taken six months to a year based on licensing time frame requirements for individual AZPDES permits. This delay would have been more costly to Rosemont Copper than the cost of proceeding as it has done.

[7] In addition to the previously cited letter of support, see also the Vail Sun article entitled *Huckelberry Responds to Forest Service* (March 17, 2008). In that article, it is stated that Pima County is considering "other plans of attack" to stop Rosemont's proposed mine and that the proposed OAW designation is one of the options being considered. Mr. Huckelberry is the County Administrator for Pima County, which is the entity proposing the OAW designation.

(b) The AMA strongly supports the comments of HAF Inc., on behalf of the Pinal Creek Group, requesting that ADEQ conform the chronic selenium standard of 2 ug/l to EPA's § 304(a) criteria recommendation of 5 ug/l, possibly in conjunction with monitoring of fish tissue to determine if sediment is actually bioaccumulating in biota in those waters where the 5 ug/l criterion is being exceeded in the water column. An approach like this would help reduce the number of waters incorrectly identified as impaired because of very low selenium levels that may stem from natural conditions or out-of-state sources, or waters where selenium is not to bioaccumulation in tissue, which the U.S. Fish and Wildlife Service has indicated is the primary concern when dealing with selenium. (On that latter point, the AMA notes that ADEQ has not identified identified selenium as a persistent bioaccumulative pollutant in A.A.C. R18-11-114(K) and specifically rejected a request to do so in the 2002 triennial review, see 8 A.A.R. at 1389.) Given that mining operations are of necessity located in areas with high mineralization, this issue is of great concern to AMA members.

Applicability of New Narrative Biological Standard Implementation Procedures: On their face, the new implementation procedures ("IPs") associated with the narrative biological integrity criterion apply to any wadeable perennial stream with a cold water or warm water aquatic life use designation (i.e., any water that is not ephemeral or EDW). See proposed A.A.C. R18-11-108.01(A). However, the draft implementation procedures themselves (p. 3) include additional applicability factors that are not, but should be, specified in the rule. These criteria are: (1) presence of fast-flowing riffle or run habitat; (2) water is not dominated by bedrock or travertine; and (3) sampling occurs during the spring index period. The rule should make clear that these factors must be present in order to assess compliance with the biological criterion. Failure to do so could result in the criterion being applied to waters that will not be able to meet it because of factors not considered in developing the implementation procedures (for example, at least if they are considered wadeable and perennial, the tunnel and lined channel at the Asarco Ray Mine,, which currently – and somewhat paradoxically - carry an aquatic life (warm water) use designation).

Applicability of New Narrative Bottom Deposits Standard Implementation Procedures: A similar issue applies to the new IPs for the bottom deposits narrative standard. The standard applies on its face to any wadeable, perennial stream. See proposed A.A.C. R18-11-108.02(A). The draft IPs make clear that the standard only makes sense in the context of riffle and run habitat, as that is the environment in which high sediment can adversely affect benthic macroinvertebrates and other organisms using stream bottoms (e.g., fish laying eggs). This should be made explicit clear in the applicability section of the rule (R18-11-108.02(A)). Absent such clarification, the procedures could be applied to a "water" such as the tunnel and lined channel at the Asarco Ray Mine (which as noted above carry an aquatic life designation), even though those areas lack riffle or run habitat and thus logically should not be subject to these IPs.

New "Rubbish" Narrative Standard: The proposed new standard prohibiting refuse and similar materials being placed in surface waters or on their banks (proposed A.A.C. R18-11-108(D)) suffers from numerous problems. (1) The proposed standard is awkwardly worded,

starting out as a "free from" standard but ending with the words "or onto its banks," which do not fit with anything preceding that phrase. (2) ADEQ admits that this is intended as a "tool to prevent dumping," see 14 A.A.R. at 1287. As such, it is best addressed in the solid waste rules currently in process at ADEQ, not the water quality standards. (3) To the extent the standard applies to the "banks" of surface waters, such areas are likely outside the jurisdictional surface waters and thus are not subject to surface water quality standards. (4) Such a provision is unnecessary, as dumping of refuse or solid waste today is likely in violation not only of the AZPDES program, but also the APP program and the existing solid waste rules. There is no "gap" that needs to be filled by adopting a new standard. (5) The standard, if adopted, could have unintended (and undesirable) consequences; for example, it could be construed to prohibit the use of waste rock or overburden from a mine site in any capacity in bank stabilization efforts.

For all these reasons, this proposed new standard should not be adopted.

Proposed New Discharge Prohibitions: The proposed rule includes a complete prohibition on discharges of wastewater to four washes upgradient of the Ak-Chin Indian Reservation. See proposed A.A.C. R18-11-123(A)(2)-(5). The preamble provides no explanation whatsoever of the basis for this complete ban on discharges to these ephemeral washes, although it can be inferred that it is in response to the wishes of the Tribe.

There are several issues with this proposal. First, as noted above, it is unclear what is meant by "wastewater," so the precise scope of the proposal is difficult to discern, especially given ADEQ's complete lack of explanation for the proposal.

Second, and of greater concern, the legal basis for these proposed prohibitions is unclear, and ADEQ provides no explanation in the preamble. Insofar as the AMA is aware, the Tribe has not been granted status to be treated as a state for CWA purposes, and thus has not adopted EPA-approved standards that ADEQ is honoring. Absent that status, we are aware of nothing in the CWA or Title 49 that authorizes ADEQ to simply ban discharges to select waters (presupposing that these are jurisdictional waters at all after *Rapanos*) merely due to the wishes of a downstream entity. The Act and its implementing regulations require states to designate uses and adopt standards to protect those uses, which ADEQ has done. Having done that, ADEQ would not appear to have authority to ban discharges that comply fully with those standards and uses, merely because of the wishes of a downstream entity on the water in question. The four washes in question could not be classified as OAWs because they are ephemeral, but ADEQ is offering what is in some senses an even greater degree of protection to these ephemeral washes (a discharge ban, regardless of effect on water quality), with no explanation whatsoever of the basis for the ban.

Third, ADEQ has made no attempt to quantify the economic costs of these discharge prohibitions. Presumably, planned wastewater treatment plants in the vicinity would be prohibited from any discharge whatsoever into the washes, and would have to find an alternate method of effluent handling. It is unclear how existing discharges, if any, would be affected. There is unquestionably a cost involved in making these waters "off-limits" to any discharges of

wastewater, which ADEQ has not even acknowledged the existence of, much less attempted to quantify.

The AMA is extremely concerned about the precedent set by these new discharge prohibitions and how that precedent could apply in the future, by ADEQ's failure to offer any explanation whatsoever for the proposal, and by the lack of apparent legal authority for ADEQ to ban certain discharges outright. The proposed discharge prohibitions should be removed from the final rules.

Antidegradation Issues: The AMA has several comments on various aspects of the proposed changes and additions to the antidegradation rules:

(a) The AMA fully supports the Coalition comments on antidegradation, particularly the comment that antidegradation review should apply only to new or modified discharges (i.e., increased or new pollutant loadings), not to renewals of existing permits with no changes (or to aspects of an existing discharge that will not be changed). To the best of the AMA's knowledge, that is how EPA and neighboring states implement antidegradation reviews. The AMA does not even understand how an antidegradation review of an existing discharge would be conducted, especially given that applicable standards likely would have changed over the life of the discharge (making analysis of assimilative capacity in the past a moving target).

(b) The AMA also agrees with the Coalition that the language in proposed A.A.C. R18-11-107.01(C)(1), applying Tier 3 antidegradation protection to any tributary to an OAW, is overbroad. This provision potentially greatly expands the universe of Tier 3 protection, since a single OAW may have numerous direct tributaries and those tributaries may not possess the characteristics of the OAW. Moreover, not every activity in a direct tributary will affect an OAW. The expansion of Tier 3 protection, and the requirement to demonstrate no impact on the OAW as a result of activities occurring in a direct tributary (proposed A.A.C. R18-11-107.01(C)(3)), should apply only to activities occurring within a reasonable proximity of the nearest reach designated as an OAW.

(c) Antidegradation review for Section 404 permits involving the discharge of fill material should focus on the effect of the fill on water quality in surface waters outside the area of fill. In one sense, the fill itself could be considered degradation, but such activities have been explicitly authorized under Section 404 of the CWA if the relevant regulations are complied with (Corps regulations, EPA's Section 404(b)(1) guidelines). This is how antidegradation reviews have been conducted in the past, but with the significantly expanded rule language on this topic, this point should be explicitly stated in the rule language itself.

(d) The provision requiring individual antidegradation review of general permit authorizations for activities that "may affect" an OAW or an impaired water (proposed A.A.C. R18-11-107.01(F)) is vague and overly broad (e.g., for impaired waters, the provision should be limited to activities discharging the pollutant for which the water is listed).

Use of Draft Implementation Procedure Guidance Documents: It is not clear how ADEQ intends to utilize the draft IP guidance documents made available a few weeks before the comment deadline on the proposal. The proposed rule text does not mention the guidance documents or incorporate them by reference. As such, they must be considered only non-binding documents. This should be clarified in the final rule or preamble.

In addition, we note that these documents include for the first time suggestions on how the IPs and new narrative standards should be used in making impaired water determinations. It should be clarified that these suggestions are just that, and that the new narrative standards should not be used in making impaired water determinations until the impaired water identification rules themselves are revised to explain how impairment will be assessed. See A.R.S. § 49-232(C)(4).

Economic Impact Analysis: It is admittedly difficult to quantify costs and benefits of environmental rulemakings. However, ADEQ must make at least a good faith effort to demonstrate that the proposed benefits of the rule exceed its costs. See A.R.S. §§ 41-1052(C)(3) & (H). Specifically, with respect to private business, ADEQ must prepare a cost benefit analysis that addresses the "probable costs and benefits to businesses directly affected by the proposed rule making, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the proposed rule making." See A.R.S. §§ 41-1055(B)(3)(c). If adequate data is not reasonably available, ADEQ must "explain the limitations of the data and the methods that were employed in the attempt to obtain the data and . . . characterize the probable impacts in qualitative terms." See A.R.S. §§ 41-1055(C).

In this case, ADEQ's entire analysis of the proposed costs of the rule on private business consists of three sentences that concede that businesses such as mines, utilities and private wastewater treatment plants "may be directly affected by this rulemaking" because changes in standards may affect their discharge permits. See 14 A.A.R. at 1333. No attempt is made to quantify or even explain in qualitative terms these costs, or explain why data is not reasonably available. The analysis cannot be deemed to rise to the level of a good faith effort.

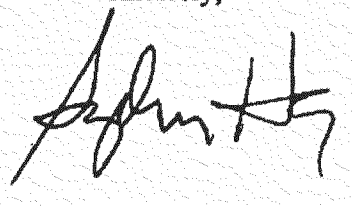
The AMA can readily identify at least four manners in which private businesses could face increased costs based on these proposed rules: (1) the proposal to apply EDW criteria to discharges to ephemeral washes will require many discharge to meet stringent chronic aquatic life criteria for the first time; (2) as noted above, the proposed OAW designation of Davidson Canyon has already imposed costs on at least one entity, and the designation could impose potentially far greater costs in the future based on Tier 3 antidegradation requirements; (3) also as noted above, the ban on wastewater discharges to four ephemeral washes upgradient of the Ak-Chin Indian Reservation (this presumably was adopted in light of specific concerns with one or more existing or proposed discharges, so some cost information on the effects of the ban should be obtainable by ADEQ); and (4) the general tightening of numeric water quality criteria

contained in the rule[8] and the adoption of new implementation procedures for narrative criteria, including the new biological criterion.

The foregoing is not intended to be an exclusive summary of the potential increased costs, just an identification of some of the more obvious cases of increased costs that could be imposed by the proposed rule. These costs are likely to be significant, and while they are not easy to quantify, ADEQ is legally obligated to do more than acknowledge in three sentences that some such costs may exist. The economic impact analysis must be substantially expanded to satisfy ADEQ's statutory duties.

Thank you for the opportunity to comment on these important proposed rules. Please contact us if you have questions on any of these comments.

Sincerely,



Sydney Hay
President

2070601

[8] For example: (1) the methodology change that will result in PBC criteria being set generally equal to FBC criteria, which will result in more stringent human health criteria for ephemeral streams (equal to those applicable to perennial waters); (2) the increase in assumed fish consumption rates, which results in more stringent criteria for the fish consumption use; and (3) use of a relative source contribution factor of 20% for the human health uses.

NOTICES OF FINAL RULEMAKING

The Administrative Procedure Act requires the publication of the final rules of the state's agencies. Final rules are those which have appeared in the *Register* first as proposed rules and have been through the formal rulemaking process including approval by the Governor's Regulatory Review Council or the Attorney General. The Secretary of State shall publish the notice along with the Preamble and the full text in the next available issue of the *Register* after the final rules have been submitted for filing and publication.

NOTICE OF FINAL RULEMAKING

TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 11. DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY STANDARDS

[R08-427]

PREAMBLE

1. Sections Affected	Rulemaking Action
R18-11-101	Amend
R18-11-102	Amend
R18-11-107	Amend
R18-11-107.01	New Section
R18-11-108	Amend
R18-11-108.01	New Section
R18-11-108.02	New Section
R18-11-108.03	New Section
R18-11-109	Amend
R18-11-110	Amend
R18-11-111	Amend
R18-11-112	Amend
R18-11-113	Amend
R18-11-114	Amend
R18-11-115	New Section
R18-11-116	Amend
R18-11-117	Amend
R18-11-118	Amend
R18-11-121	Amend
R18-11-122	Amend
R18-11-123	Amend
Appendix A	Amend
Table 1	Repeal
Table 1	New Section
Table 2	Repeal
Table 2	New Section
Table 3	Amend
Table 4	Amend
Table 5	Amend
Table 6	Renumber
Table 6	New Table
Table 7	Amend
Table 8	Amend
Table 9	Renumber
Table 9	Amend
Table 10	Renumber
Table 10	Amend
Table 11	Renumber
Table 11	Amend
Table 12	Renumber
Table 12	Amend

Table 13	Renumber
Table 13	Amend
Table 14	Renumber
Table 14	Amend
Table 15	Renumber
Table 15	Amend
Table 16	Amend
Table 17	Amend
Table 18	Repeal
Table 18	Renumber
Table 18	Amend
Table 19	Renumber
Table 19	New Table
Table 20	Amend
Table 21	Renumber
Table 21	Amend
Table 22	Renumber
Table 22	Amend
Table 23	Renumber
Table 23	Amend
Table 24	Renumber
Table 24	Amend
Table 25	Renumber
Table 25	Amend
Table 26	Renumber
Table 26	Amend
Appendix B	Amend
Appendix C	New Appendix

2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statutes: A.R.S. §§ 49-202(A), 49-203(A)(1), 49-221, 49-222

Implementing statutes: A.R.S. §§ 49-221, 49-222

3. The effective date of the rules:

January 31, 2009

4. A list of all previous notices appearing in the *Register* addressing the final rulemaking:

Notice of Rulemaking Docket Opening: 14 A.A.R. 897, March 28, 2008

Notice of Proposed Rulemaking: 14 A.A.R. 1281, April 25, 2008

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

Name:	Shirley J. Conard
Address:	Department of Environmental Quality 1110 W. Washington St., 5415A-1 Phoenix, AZ 85007
Telephone:	(602) 771-4632 (Metro-Phoenix area) or 1-800-234-5677, 4632 (other areas)
Fax:	(602) 771-4528
E-mail:	conard.shirley@azdeq.gov

6. An explanation of the rules, including the agency's reasons for initiating the rulemaking:

GENERAL EXPLANATION OF THIS RULEMAKING

Section 303(c) of the Clean Water Act requires all states to, where appropriate, adopt and revise water quality standards at least once every three years. States must preserve and protect the quality of navigable waters and adopt surface water quality standards by considering the following factors:

1. The protection of the public health and the environment;
2. The uses that have been made, are being made, or with reasonable probability may be made of the waters;
3. The provisions and requirements of the Clean Water Act, the Safe Drinking Water Act, and their implementing regulations;

4. The degree to which standards for one category of water could cause violations of standards for other hydrologically-connected water categories (for example, the Department must consider the degree to which surface water quality standards could cause violations of aquifer water quality standards);
5. Guidelines, action levels, or numeric criteria adopted or recommended by the U.S. Environmental Protection Agency (EPA) or any other federal agency; and
6. Any unique, physical, biological, or chemical properties of the waters.

A.R.S. § 49-222 authorizes the Department to adopt surface water quality standards that assure water quality, if attainable, that provides for protecting the public health and welfare; to develop standards to enhance the quality of water in Arizona; and to take into consideration the use and value of water for public water supplies, the propagation of fish and wildlife, and recreational, agricultural, industrial, and other purposes.

The Department is charged with adopting numeric surface water standards that establish numeric limits on the concentrations of each of the 126 toxic pollutants listed by EPA under § 307 of the Clean Water Act. In adopting numeric water quality standards, the Department may consider:

1. The effect of local water quality characteristics on the toxicity of pollutants;
2. The varying sensitivities of local affected aquatic populations to these pollutants; and
3. The extent to which the natural flow of the stream is perennial, intermittent, effluent-dependent, or ephemeral.

While the Department may consider these site-specific factors in establishing water quality standards for ephemeral waters and effluent-dependent waters, any water quality standard adopted must be consistent with the requirements of the Clean Water Act.

Section 303(c) of the Clean Water Act provides the basis in federal law for Arizona's surface water quality standards program. The key elements are:

1. A water quality standard is defined as consisting of the designated beneficial uses of a water body and water quality criteria necessary to support the designated uses;
2. The following minimum beneficial uses must be considered when establishing surface water quality standards under the Clean Water Act: 1) public water supply; 2) the propagation of fish, shellfish, and wildlife; 3) recreation; 4) agricultural uses; 5) industrial uses; and 6) navigation;
3. Arizona's water quality standards must protect public health and welfare, enhance the quality of water, and serve the purposes of the Clean Water Act;
4. The surface water quality standards rules must be reviewed at least once every three years using a process that includes public participation; and
5. A process exists for EPA review of the surface water quality standards adopted by the Department.

EPA requires that the Department specify appropriate uses to be achieved and protected in Arizona's surface waters. These designated uses include domestic water source (DWS), fish consumption (FC), full body contact recreation (FBC), partial body contact recreation (PBC), aquatic and wildlife (cold water) (A&Wc), aquatic and wildlife (warm water) (A&Ww), aquatic and wildlife (effluent-dependent water) (A&Wedw), aquatic and wildlife (ephemeral water) (A&We), agricultural irrigation (AgI), and agricultural livestock watering (AgL). Individual surface waters in Arizona and their respective designated uses are listed in Appendix B of this rulemaking.

The surface water quality standards for downstream surface waters must be considered when establishing designated uses for upstream waters. The Department must ensure that the water quality standards that are adopted for upstream water bodies also provide for the attainment and maintenance of the water quality standards for downstream waters. This concept is stated in R18-11-104(F).

The Department must adopt water quality criteria that are sufficient to protect water quality for the designated uses of Arizona's surface waters. Water quality criteria, numeric criteria, and narrative criteria must be based on a sound scientific rationale and must contain sufficient parameters or constituents to protect each designated use.

The Department has discretionary authority under 40 CFR 131.13 to include general policies that affect the application and implementation of the surface water quality standards in the rules. The Department has used this authority to adopt a mixing zone rule at R18-11-114, a variance rule at R18-11-122, and site specific standards in R18-11-115.

How Surface Water Quality Standards Impact Pollution Control in Arizona

Surface water quality standards are essential elements of several important water quality management programs including: Arizona Pollutant Discharge Elimination System (AZPDES) permitting; the § 305(b) water quality assessment and § 303(d) impaired water listing; and total maximum daily load (TMDL) programs.

AZPDES Permit Program

Surface water quality standards are used to regulate point source discharges of pollutants under the AZPDES permit program authorized under § 402 of the Clean Water Act. When technology-based permit limits required by the Clean Water Act are not sufficiently stringent to meet the applicable water quality standards, the Clean Water Act requires the development of more stringent, water quality-based effluent limits (WQBELs) in the AZPDES permit that are designed to ensure that the applicable surface water quality standards are met. The surface water quality standards rules play a critical role in the development of every AZPDES permit and provide the regulatory basis for the development of WQBELs which affect the levels of treatment that a discharger may be required to provide to control the discharge of pollutants to surface waters in Arizona.

Section 305(b) Water Quality Assessment and § 303(d) Impaired Water Listing

Section 305(b) of the Clean Water Act establishes a process to develop and report information on the quality of Arizona's surface waters. The Department developed a program to monitor surface waters within its boundaries, and a biennial report describing the status of water quality in Arizona rivers, streams, lakes, and reservoirs was prepared and submitted to EPA. The § 305(b) water quality assessment process is the primary means by which the Department evaluates whether water bodies in Arizona are meeting surface water quality standards, that progress has been made in maintaining and restoring surface water quality, and the extent of remaining water quality problems. The surface water quality standards play a central role in the § 305(b) water quality assessment process by providing the benchmarks used to assess water quality status. The surface water quality standards also provide the basis for the identification of water quality-limited or impaired waters in Arizona. Under § 303(d) of the Clean Water Act, the Department identifies and lists impaired waters that do not meet one or more of the surface water quality standards. The Clean Water Act requires the Department to develop total maximum daily load analyses (TMDLs) to restore water quality in those impaired waters.

Total Maximum Daily Load (TMDL) Program

Under § 303(d) of the Clean Water Act, the Department is required to develop TMDL analyses for impaired water bodies that do not meet one or more surface water quality standards. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet surface water quality standards. The TMDL allocates that amount among the point and non-point sources in the watershed that discharge the pollutant of concern. A TMDL analysis starts with the identification of the pollutant(s) of concern and the surface water quality standards that must be attained to protect designated uses. A TMDL establishes a pollutant "budget" which is implemented through other Department water quality management programs such as the AZPDES permit program and the § 319 Non-Point Source Program. The ultimate goal of a TMDL is the restoration of water quality so that an impaired water attains applicable surface water quality standards.

Other Department Water Quality Management Programs That Depend on Surface Water Quality Standards

Section 319 of the Clean Water Act requires the Department to identify surface waters in Arizona that, without additional controls to control non-point sources of pollution cannot be reasonably expected to attain or maintain applicable water quality standards or the goals and requirements of the Clean Water Act. Management measures and best management practices (BMPs) are the primary mechanisms in § 319 of the Act to enable achievement of surface water quality standards. The Department administers the Water Quality Improvement Grant program that provides financial assistance to projects that control the discharge of pollutants to surface waters from non-point sources with a goal of achieving applicable water quality standards.

Under § 401 of the Clean Water Act, the Department may grant, condition, or deny water quality certification for a federally permitted or licensed activity that may result in a discharge to a surface water in Arizona. Congress intended that states use the § 401 water quality certification process to ensure that no federal license or permit is issued that would violate state-adopted water quality standards. The surface water quality standards that are the subject of this rulemaking are the basis for the § 401 water quality certification process. If the Department grants water quality certification for a federal license or permit, it is in effect saying that the regulated activity will not result in a violation of a surface water quality standard. The Department also may place conditions on § 401 certification to ensure compliance with the surface water quality standards. The Department may deny certification if an applicant for a federal permit or license has not demonstrated that the regulated activity will be protective of applicable water quality standards. If the Department denies water quality certification, the federal permitting or licensing agency is prohibited from issuing the permit or license. The Department conducts § 401 water quality certifications for a variety of federal programs including the § 404 dredge-and-fill permit program administered by the U.S. Army Corps of Engineers, permits for construction of new or expanded airport facilities regulated by the Federal Aviation Administration, and some power plants regulated by the Federal Energy Regulatory Commission (e.g., hydroelectric power plants).

Public Participation

An important element of the surface water quality standards review process is the involvement of those who may be affected by water quality standards decisions. Section 303(c) of the Clean Water Act requires that the Department hold at least one public hearing during the rulemaking process to consider changes to the standards. A.R.S. § 49-208 requires that the Department ensure adequate public participation in the development of new or revised surface water quality standards.

The Department invites the active involvement of citizens with an interest in surface water quality issues, the regulated community who may be affected by the state's water quality standards decisions, and federal, state, and local agencies and governments, including Indian tribes, who may have a stake in the outcome of the rulemaking process. The Department has, over the last several years, gone well beyond the minimum requirements for public participation in this rulemaking, holding numerous workshops and public meetings to discuss water quality standards issues, including the following:

June 4, 2008	Oral proceeding, Phoenix
May 19, 2008:	Oral proceeding, Tucson
April 25, 2008	Notice of Proposed Rulemaking re-published in *Arizona Administrative Register*
April 4, 2008	Notice of Proposed Rulemaking Published in *Arizona Administrative Register*
September 21, 2007	Stakeholder Meeting on R18-11-113(E) in Phoenix
September 13, 2007	Stakeholder meeting: Biocriteria
August 30, 2007	Stakeholder meeting: Narrative nutrient standard IPs
August 8, 2007	Stakeholder meeting in Phoenix to discuss final draft WQS rules
June, 12, 2007	Discussion of the Pinto Creek site-specific standard, Miami area
April 7, 2006	Meeting with PAG Environmental Protection Advisory Committee
March 2006	Discussion of the Yuma East Wetlands project, Yuma, Arizona
February 28, 2007	Informal stakeholder meeting
February 8, 2006	Stakeholder meeting re: Permit Flexibility R18-11-113(E)
November 29, 2005:	Stakeholder meeting re: Permit Flexibility R18-11-113(E)
November 16, 2005	Stakeholder meeting: Narrative Bottom Deposits Implementation Procedures
November 10, 2005	Informal stakeholder meeting: Biocriteria & Narrative Nutrient Standard Implementation
October-November, 2005	Informal stakeholder meetings on preliminary draft rules
August, 2005	ADEQ published preliminary draft rules for informal comment
July 18, 2005	Meeting with U.S. Fish & Wildlife Service
April 5, 2005	Kick-off meeting in Tucson
March 2005	Kick-off meeting in Phoenix
December 17, 2004	Stakeholder meeting: Antidegradation Implementation
July, 2004	Published request for input on rule issues
June 29, 2004	Stakeholder meeting: Antidegradation Implementation
November 25, 2003	Stakeholder meeting: Antidegradation Implementation

EPA Review of Arizona's Surface Water Quality Standards

The Department is required to submit new and revised water quality standards to the Region 9 Administrator of the EPA for review. The Department must submit final surface water quality standards rules to the Regional Administrator within 30 days of the date of the filing of the final rules with the Office of the Secretary of State. At that time, EPA Region 9 will review the rules to determine whether they are consistent with the requirements of the Clean Water Act and EPA's Water Quality Standards Regulation at 40 CFR 131.

The EPA review of the surface water quality standards rules consists of the following determinations:

1. Whether the designated uses are consistent with the requirements of the Clean Water Act;
2. Whether Arizona's surface water quality standards that do not include designated uses specified in § 101(a)(2) of the Clean Water Act are based upon appropriate technical and scientific data and analyses;
3. Whether the water quality criterion adequately maintains and protects water quality for the designated uses;
4. Whether the legal procedures were followed for adopting the surface water quality standards rules; and
5. Whether the surface water quality standards rules meet EPA minimum requirements specified in 40 CFR 131.6.

After completing the review, the EPA Regional Administrator may approve (in whole or in part), disapprove (in whole or in part), or conditionally approve (in whole or in part) Arizona's surface water quality standards. If the Regional Administrator makes the decision to approve (in whole or in part) the rulemaking, the decision must be made within 60 days of the date of receiving a complete submittal of the surface water quality standards rules and supporting documentation.

If the Regional Administrator determines that the surface water quality standards rules are inconsistent with the requirements of the Clean Water Act or federal water quality standards regulations, the Regional Administrator must disapprove the rules (in whole or in part) within 90 days of receiving the complete submittal of the surface water quality standards rules.

If the Regional Administrator disapproves a water quality standard, EPA must notify the Department in a letter that includes a statement of the reasons for the disapproval and specify the revisions that must be adopted to obtain full EPA approval of the surface water quality standards. Under § 303(c)(4) of the Clean Water Act, EPA may federally promulgate water quality standards if the Regional Administrator disapproves a water quality standard and the Department does not adopt the necessary revisions as specified by EPA. A state-adopted standard that EPA disapproves remains in effect until either: 1) The Department adopts the necessary revisions through the rulemaking process, or 2) EPA promulgates a federal water quality standard to supersede the disapproved water quality standard.

SECTION BY SECTION EXPLANATION OF THE RULES

R18-11-101. Definitions

This rulemaking makes minor, conforming, and editorial changes to the following definitions: "acute toxicity," "agricultural irrigation," "agricultural livestock watering," "annual mean," "aquatic and wildlife (cold water)," "Aquatic and wildlife (effluent-dependent water)," "Aquatic and wildlife (warm water)," "aquatic and wildlife (warm water)," "domestic water source," "ephemeral water," "existing use," "full-body contact," "intermittent water," "mixing zone," "oil," "perennial water," "pollutant," "practical quantitation limit," and "surface water."

The rulemaking combines all abbreviated terms (acronyms) with their defined counterparts.

The following are new terms used within the rulemaking and have been added to this Section: "Arizona Pollutant Discharge Elimination System (AZPDES)," "assimilative capacity," "critical flow condition," "deep lake," "reference condition," "regulated discharge," "riffle habitat," "run-habitat," "significant degradation," and "wadeable."

The rulemaking adds the five lake categories, "deep lake," "igneous lake," "sedimentary lake," "shallow lake," and "urban lake," identified in the narrative nutrient standard criteria rule at R18-11-108.03.

The term "outstanding Arizona water (OAW)," replaces the term "unique waters."

The rulemaking revises the term "effluent-dependent water" to clarify that effluent-dependent water is surface water that consists of point source discharges of wastewater to ephemeral water. The current definition states that effluent-dependent water consists of "discharges of treated wastewater." "Wastewater" is a broader term than "treated wastewater." For example, the "point source discharge of wastewater" would include the point source discharge of untreated cooling water from a power plant to ephemeral water. The revision clarifies that "point source discharge of wastewater" does not mean a point source discharge of stormwater.

The terms "National Pollutant Discharge Elimination System," "recreational uses," and "unique water" are no longer used and have been deleted from this Article. The term "ninetieth percentile" is still used within this Article, but only within R-18-11-109, therefore the term has been defined within that Section.

R18-11-102. Applicability

This Section has been reorganized and revised for clarity.

The following two new provisions in subsection (B) have been added to clarify the scope of the surface water quality standards rules:

1. Subsection (B)(3) makes clear that surface water quality standards do not apply to man-made cooling ponds if they are created outside of what would otherwise be considered a "surface water" or a "water of the United States."
2. Subsection (B)(4) makes clear that the surface water quality standards rules do not apply to surface waters located on Indian lands as Arizona does not have jurisdiction in Indian Country.

R18-11-107. Antidegradation

Federal water quality standards regulations require the Department to adopt a statewide antidegradation policy and identify the methods for implementing the policy. Both federal and state antidegradation policies establish a three-tiered framework of antidegradation protection to maintain and protect existing water quality. This framework is established in this rulemaking.

The basic purpose of the Tier 1 antidegradation policy is to maintain and protect existing water quality in Arizona's surface waters and to ensure that applicable surface water quality standards are attained.

Tier 2 maintains and protects existing water quality in Arizona's "high quality" surface waters by allowing the degradation of existing water quality in high quality surface water only under certain circumstances. This rule language is modeled on the federal Tier 2 regulation that applies to "high quality" surface waters with water quality that exceeds levels necessary to support the propagation of fish, shellfish, wildlife, and recreation in and on the water.

Tier 3 maintains and protects existing water quality in outstanding Arizona waters (OAWs). Currently, there are 20 OAWs that have been classified in rule. Two new OAWs have been added in this rulemaking.

Editorial changes have been made to this Section for clarity.

R18-11-107.01 Antidegradation Criteria

Federal water quality standards regulations require the Department to adopt a statewide antidegradation policy and to identify the methods for implementing the policy. Arizona's first statewide antidegradation policy at R18-11-107 was adopted in 1985. Although Arizona has had a statewide antidegradation policy in rule for more than 20 years, the Department has not identified methods for implementing the policy in rule. R18-11-107.01 is a new Section that satisfies the federal mandate to identify methods for implementing antidegradation. R18-11-107.01 is supported by a detailed guidance document entitled, "Antidegradation Implementation Procedures," Arizona Department of Environmental Quality (July 2007).

This Section contains the antidegradation criteria for each of the three tiers, and for reviews of general permits, § 404 dredge-and-fill permits, and AZPDES stormwater permits.

The antidegradation implementation procedures rule applies to "regulated discharges," defined at R18-11-101(35).

R18-11-108. Narrative Water Quality Standards

Narrative water quality standards are qualitative statements of desired water quality. The narrative water quality standards supplement the numeric water quality standards for specific pollutants and provide an important regulatory tool to maintain and protect the aesthetic qualities of Arizona's surface waters.

This rulemaking adds a new narrative standard in subsection (D), which is a tool to prevent dumping in Arizona surface waters by making it an enforceable water quality standard; and a new narrative standard in subsection (E), which implements the third prong of the primary goal of the Clean Water Act, to restore and maintain the chemical, physical, and biological integrity of the nation's waters.

R18-11-108.01. Narrative Biological Criteria

This Section implements the new biocriterion in R18-11-108(E) by providing the objective criteria for determining if the narrative biocriterion standard is being met. In the past, the Department has implemented a chemically-based water quality standards program that has focused almost exclusively on the maintenance and protection of the chemical integrity of Arizona's surface waters. However, a chemically-based water quality standards program alone cannot identify or adequately address all water quality problems that may result in impairment of the biological integrity of the state's surface waters. Biocriteria can detect water quality problems that a chemically-based water quality standards program may miss or underestimate. Biocriteria are valuable tools because they directly measure the biological condition of surface waters.

The biocriteria are based on the idea that the structure and function of aquatic biological communities provide important information about the overall quality of Arizona's surface waters and attainment of aquatic life designated uses. Existing biological communities in relatively pristine or minimally impacted surface waters in Arizona that have been subjected to little or no anthropogenic disturbance provide the best available examples of biological integrity. Measurements of the attributes, structure and function of the biological communities in minimally impacted surface waters provide the basis for establishing reference conditions that can be used to evaluate the biological condition of surface waters that have been subjected to relatively greater amounts of disturbance.

R18-11-108.02. Narrative Bottom-Deposits Criteria

This new Section implements R18-11-108(A)(1), which requires that surface waters "be free from pollutants in amounts or combinations that... settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life." This narrative standard, commonly referred to as the "narrative bottom deposits standard," is intended to prevent excessive sedimentation and siltation in amounts that adversely affect aquatic life. Clean stream bottom substrates are essential for the health of many fish and benthic macroinvertebrate communities. Habitat degradation occurs when key stream habitat components such as spawning gravels and cobble surfaces are covered by fine sediment, decreasing inter-gravel oxygen transfer, and reducing or eliminating the quality and quantity of pool and interstitial habitat for fish, benthic macroinvertebrates, and algae. Excessive sediment and siltation adversely alters these habitats, suffocates fish eggs, and disrupts both aquatic communities and the food web dynamics.

This Section prescribes the objective criteria that will be used to determine whether there is a violation of the narrative bottom-deposits standard. Using separate criteria for warm and cold water streams, the Department will use the percentage of fine sediments in the riffle habitats of wadeable, perennial cold-water streams and the percentage of fine sediments in all stream habitats of wadeable, perennial warm-water streams to determine compliance with the narrative bottom deposits standard. The fine sediment thresholds are based on the scientific literature on sedimentation and siltation of streams.

R18-11-108.03. Narrative Nutrients Criteria

R18-11-108(A)(6) states that surface waters shall not contain pollutants in amounts or concentrations that cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses. This subsection is often called the "narrative nutrients standard" because it is intended to regulate nutrients that cause excessive growth of algae and plants in surface waters (e.g., total nitrogen and total phosphorus). This narrative nutrient standard is intended to address water quality problems associated with nutrient over-enrichment and accelerated rates of eutrophication of Arizona's lakes and reservoirs.

The narrative nutrient criteria and matrix in this new Section provide the objective criteria that will be used to determine whether there is a violation of the narrative nutrients standard at subsection (A)(6). The Department will use the chlorophyll-*a* criterion as the primary endpoint in combination with the other matrix variables for assessing support of aquatic and wildlife designated use with regard to nutrients in lakes and reservoirs that are listed in Appendix B and classified for application of the matrix (e.g., urban lake, deep lake).

R18-11-109. Numeric Water Quality Standards

This Section prescribes numeric water quality standards for bacteria, pH, temperature, suspended sediment concentration, dissolved oxygen, and nutrients.

The single sample maximum nitrate criterion of 10 mg/L that applies to the San Pedro River from Curtiss to Benson prescribed in R18-11-109(F)(10) has been repealed. The site-specific criterion of 10 mg/L is the same as the National Primary Drinking Water Maximum Contaminant Level for nitrate promulgated by EPA under the Safe Drinking Water Act. It is also the numeric criterion that the Department adopts to maintain and protect water quality for the domestic water source (DWS) designated use. The designated uses for the San Pedro River from Curtiss to Benson do not include a DWS designated use. DWS is not an existing or designated use of this reach of the San Pedro River. The most stringent numeric water quality standard for nitrate that currently applies to this reach of the San Pedro River is the full body contact recreation (FBC) criterion. The numeric FBC criterion for nitrate is 2,240 mg/L. Department research on the origin of current site-specific criterion of 10 mg/L shows that the source of the current standard appears to be a report prepared in September, 1985 by the Arizona Department of Environmental Health Services (ADHS), "San Pedro and Santa Cruz Rivers: Nutrient Standards Review." In this report, ADHS recommended that a single sample maximum nitrate standard of 10 mg/L be adopted for the San Pedro River because incidental ingestion of nitrate-enriched water during water-based recreation and consumption of alluvial groundwater further downstream could present a public health risk. The current FBC criterion of 2,240 mg/L in the surface water quality standards rules will protect public health from incidental ingestion of water associated with full body contact recreation.

The Department has repealed the numeric nutrient standards for four lakes (Roosevelt, Apache, Canyon, and Saguaro) under this Section and will apply the new narrative nutrient standard to protect these waterbodies.

R18-11-110. Salinity Standards for the Colorado River

This Section contains the salinity standards for the Colorado River as approved by the Colorado River Salinity Control Forum, which was formed in 1973 by the seven Colorado river basin states to develop standards and a basin-wide plan of implementation. The rulemaking updates the incorporation by reference.

R18-11-111. Analytical Methods

This Section contains the analytical methods that are necessary to determine compliance with a water quality standard.

Minor editorial changes have been made to this Section and statutory citations have been updated and added to allow the use of EPA-approved methods for analysis of water and wastewater.

R18-11-112. Outstanding Arizona Waters

This Section establishes the criteria for classifying a water as an outstanding Arizona water. The phrase "outstanding Arizona water" parallels EPA's term and more adequately describes the type of surface water intended to be protected under the Tier 3 antidegradation policy.

The reference to "unique waters" has been replaced throughout this rulemaking with "outstanding Arizona water (OAW)" to make the rule consistent with the terminology used in the federal antidegradation rule at 40 CFR 131.12 when referring to Tier 3 waters. 40 CFR 131.12 refers to "outstanding national resource waters" in the Tier 3 federal antidegradation policy and provides the highest level of antidegradation protection to them.

Davidson Canyon has been added to the list of OAWs. Davidson Canyon was nominated by the Pima County Regional Flood Control District and the Pima Association of Governments (PAG) Watershed Planning Department. Davidson Canyon contains perennial and intermittent reaches, is in a free-flowing condition, and the water quality data provided by PAG indicates that water quality is good. Davidson Canyon possesses attributes that make it of exceptional recreational and ecological significance. Davidson Canyon is one of the largest drainages in the Cienega Corridor and to Cienega Creek, which is already classified as an OAW. Davidson Canyon provides one of the most important wildlife migration corridors in Southern Arizona, linking the Santa Rita Mountains to the Rincon Mountains. The stream provides important riparian habitat for diverse flora and fauna, including priority vulnerable species listed under the Sonoran Desert Conservation Plan and threatened and endangered species or species of concern identified by the U.S. Fish & Wildlife Service, including the lowland leopard frog and the longfin dace. The Department notes that the nominated reach of Davidson Canyon, associated water rights, and surrounding lands are being acquired by Pima County as part of the Sonoran Desert Conservation Plan. The OAW classification of Davidson Canyon is consistent with and provides support for Pima County's conservation management goals and policies for this important riparian area.

Fossil Creek, a tributary of the Verde River, has been added to the list of OAWs. Fossil Creek was nominated for OAW classification by the Grand Canyon Chapter of the Sierra Club and others. Fossil Creek is perennial, in a free-