Arizona's Surface Water Quality Standards

Triennial Review Proposal
September 12 & 14, 2018

ADEQ
Arizona Department
of Environmental Quality

Agency Is Not Proposing Modifications to:

- Outstanding Arizona Waters
- Effluent dependent waters definition or applicability
- Selenium Standard
- Substantive Appendix B listings
- Surface water definition

Agency Proposes Modifications to:

- 101. Definition
- 107. Antidegradation
- 109. Numeric Water Quality Standards
- 114. Mixing Zone
- 115. Site Specific Standard
- 120. Enforcement
- 122. Variances
- Appendix A Numeric Water Quality Standard
- Appendix B Surface Waters and Designated Uses
- Appendix C Site Specific Standards

R18-11-101 Definitions

Definition name	Changes	Related rule subject	Description
Complete Mixing	Add	Mixing Zone	Mixing zone ends at the point that complete mixing occurs, therefore, adding a new definition to ensure it is clear where this boundary is
Critical Flow Conditions (for discharge and receiving water)	Modify and add	Mixing Zone	Need to update this definition to account for flows to factor into mixing zone calculations
Zone of Initial Dilution	Add	Mixing Zone	New definition to align with mixing zone modifications
Zone of Passage	Repeal	Mixing Zone	It will not be used in the modified rule for mixing zones
Variance	Add	Variances	For clarity as variance is not defined
Highest attainable condition	Add	Variances	This is a new EPA term under variances rule (40 CFR 131.14) reflected in R18-11-122
Pollutant Minimization Program	Add	Variances	This is a new EPA term under variances rule (40 CFR 131.14) reflected in R18-11-122
Reference condition	Modify	Biocriteria	To clarify what the Department means by “a set of ecological measurements” and to clarify how the Department establishes the reference condition

R18-11-107 Antidegradation

Changes:

- Renumber current Baseline Characterization language from 3(c) to 3(a)
- Clarify that the temporary impacts referred to in R18-11-107.01(C)(4) are “not regularly occurring.”

Reason for the change :

- Recommendations from the Antidegradation and Effluent Dependent Waters Workgroup
- Align the rule and the process that would be followed in a Tier 2 Antidegradation review

R18-11-109 Numeric Water Quality – E.coli

Changes:

A. E. coli bacteria. The following water quality standards for Escherichia coli (E. coli) are expressed in colony forming units per 100 milliliters of water (cfu / 100 ml) or as a Most Probable Number (MPN):

E. coli	**FBC**	**PBC**
Geometric mean (minimum of four samples in 30 days)	126	126
~~Single sample maximum~~ **Statistical threshold value**	**410** ~~235~~	**576** ~~575~~

Reason for the change :

- In November 2012, USEPA issued revised recreational water quality criteria, which this change will align with.

R18-11-109 Water Quality – Nutrients

Changes:

F. Nutrient criteria. …The Director will apply these water quality standards for total phosphorus and total nitrogen to ~~a~~ the surface ~~water~~ waters listed below, including to perennial tributaries, as listed. ~~, and~~ The Director may also apply these total phosphorus and total nitrogen standards to any source discharging to ~~a~~ any tributary (ephemeral, intermittent, effluent dependent water, or perennial) of the surface waters listed below, if necessary to protect nutrient water quality in the listed surface water, based on the volume, frequency, magnitude and duration of the discharge, and distance to the downstream surface water listed below…

Reason for the change :

- Clarify the language to address an inconsistency in application of nutrient criteria to specific streams

R18-11-114. Mixing Zones

Changes:

- Remove explicit length limit (500m) of mixing zone, and
- Remove the requirement that mixing zone provide for 50% cross-sectional area of zone of passage
- Add function/performance based narrative criteria instead of fixed numeric
- Added definitions - Complete Mixing; Critical Flow Conditions , Zone of Initial Dilution

Reason for the change:

- Provide more flexibility in making permit decisions
- Ensure that there is no acute toxicity in a mixing zone

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R18-11-115. Site Specific Standards

Changes:

- Repeal the natural adaptive clause in R18-11-115(B)(5)

Reason for the change:

- EPA disapproved the clause in 2016

R18-11-120. Enforcement

Changes:

- Modifications clarify the rule only applies to non-permitted discharges.

Reason for the changes:

- It is a holdover from pre-AZPDES era
- Enforcement rule does not apply to AZPDES

R18-11-122. Variances

Changes:

- Modified to align with requirements in 40 CFR 131.14
- Various modifications and additions (including definitions)

Reason for the change:

- Current rule is no longer in compliance with federal law

Appendix A. Numeric Water Quality Standards

Ten Designated Uses, 2300 different standards

Changes:

- ❑ New criteria to be added - **18**
- ❑ Corrections/additions in Table 1 - **160**
  - ❖ More Stringent - **89**
  - ❖ Less Stringent - **48**
  - ❖ New Standard - **54**

Reason for the changes:

- The tables have not been updated thoroughly since 2009
- Upon review, revision needed to align with federal criteria

Appendix A. Numeric Water Quality Standards

Changes:

Ammonia
Table 11 & 12 modified and 5 new tables

Chromium III, Copper, Lead
Corrected rounding errors (Tables 2-6)

Cadmium
App A Table 2 and 3 Cadmium data modifications

Reason for changes:

- New EPA recommended criteria

Photograph by Terry L. Myers, December 2007

Appendix B – Surface waters & designated uses

Changes:

Non-substantive

- Corrections of 55 waterbody names
- Clarifications of 47 descriptions/locations
- Remove two waterbodies listed in error
- Added one Salt River segment which was omitted in the 2016 rule revision

Reason for the changes:

- Technical corrections to Appendix B

Appendix C

Changes:

- Two Grand Canyon site specific standards removed due to EPA disapproval
  - ✓ Bright Angel Wash
  - ✓ Transept Canyon

- Selenium unit typo error correction
  - ✓ Yuma East Wetlands

Reason for the changes:

- EPA disapproval
- Technical correction

Triennial Review Schedule

Please provide your informal written comments on the draft rule no later than:

September 28, 2018

to

WaterQualityStandards@azdeq.gov

Draft rule can be found at:

http://www.azdeq.gov/draft-and-proposed-rule-water-quality-division

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BACK UP

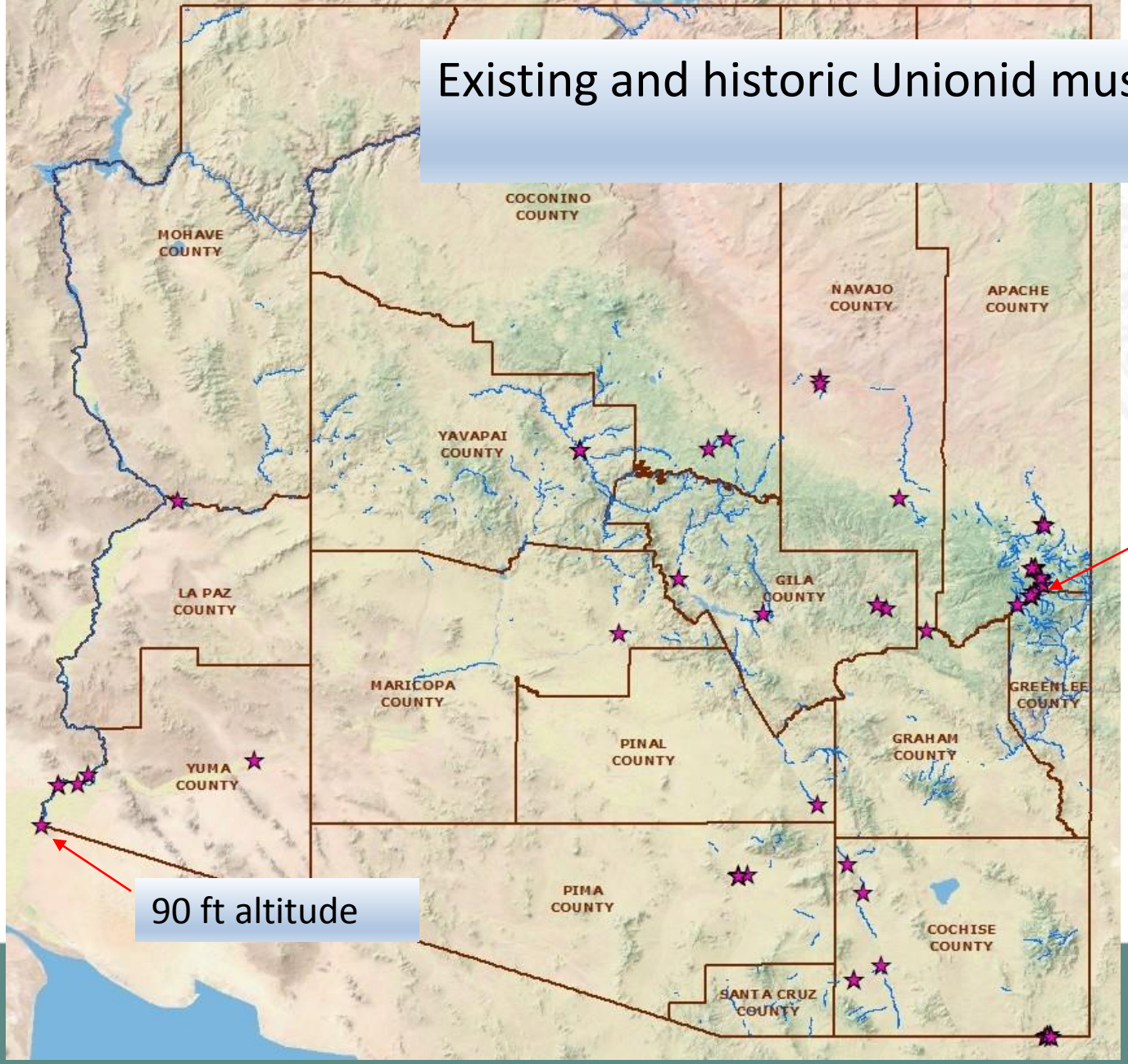
Appendix A. Numeric Water Quality Standards

Selenium - No Changes

- New/modified EPA criteria in 2016 included fish tissue/water column hierarchy, implementation of which is complex and unsettled
- At present the US EPA implementation guidance documents are still being modified
- ADEQ standards are still protective of the water column until the implementation of EPA criteria is more settled

Existing and historic Unionid mussel locations

-Meyers, 2009



8500 ft altitude

90 ft altitude

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A&Ww and A&Wc:

- Unionidae will be assumed to be present unless:
  - a study is performed demonstrating that they are absent and there is no historic evidence of their presence, or
  - Hydrologic modification has altered the flow regime in a way that would prevent their reestablishment

Ammonia

Ammonia									
A&W Cold/Unionid		A&Wc		A&W Warm/Unionid		A&Ww		A&Wedw	
Acute	Chron.	Acute	Chron.	Acute	Chron.	Acute	Chron.	Acute	Chron.
More		Same	Less	More		Less		Less	

Source:
2013 EPA criteria document

A&Wedw:

-Since EDWs, by definition, were ephemeral prior to the discharge of effluent, the assumption will be that Unionid mussels are not present

- 142 AzPDES individual permits
  - Only 18 discharge to perennial waters

Cadmium

Cadmium						
A&Wc		A&Ww		A&Wedw		A&Weph
Acu	Chr	Acu	Chr	Acu	Chr	Acu
More	Less	Less	More	Less	More	More

2016 EPA 304(a) criteria document