

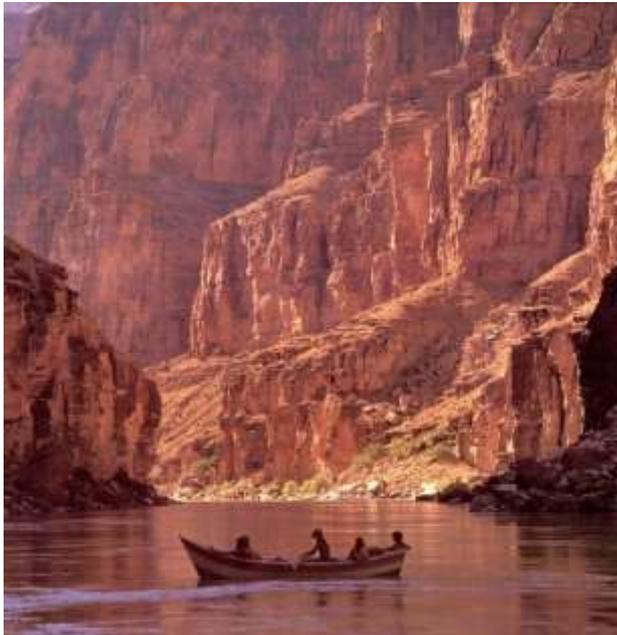
Arizona's Surface Water Quality Standards

**Triennial Review 2018
Stakeholder Session #1**

What is a Triennial Review?

CWA requires states to:

- review and revise water quality standards (WQS),
- every three years,
- includes public participation.



Standards shall Consist of:

1. Designated uses
2. Criteria to protect those uses
3. Antidegradation policy



Standards shall:

- Protect at least:
 - Public water supplies,
 - Fish and wildlife,
 - Recreation,
 - Agriculture,
 - Industry, and
 - Navigation



(ADEQ has established specific designated uses to address AZ conditions)

Narrative Standards:

- “Free from” standards:
 - Describe desired goal
 - “...free from toxic pollutants...”
- Generalized categories
 - Broad category pollutants
 - New chemicals with little data
 - Pollutants not easily characterized



Three main types of numeric standards:

Human Health



Aquatic and Wildlife



Agriculture



- Four **human health** designated uses
- Four **aquatic and wildlife** designated uses
- Two **agricultural** designated uses

EPA Recommended Criteria

States must explain and support any decision not to protect a “de facto use” or adopt an EPA criteria



USFWS assures protection of T&E species

EPA may disapprove state standards and issue its own instead



- May – Stakeholder comments/suggestions
- Mid May – Begin drafting standards package
- Mid July – Draft Standards and rules available for review
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- April 2019 – Rules Effective



Questions?

Appendix B: Surface Waters & Designated Uses



Appendix B Update

- Appendix B Stakeholder Workgroup
- Technical corrections

APPENDIX B. SURFACE WATERS AND DESIGNATED USES

(Coordinates are from the North American Datum of 1983 (NAD83). All latitudes in Arizona are north and all longitudes are west, but the negative signs are not included in the Appendix B table. Some web-based mapping systems require a negative sign before the longitude values to indicate it is a west longitude.)

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife				Human Health				Agricultural	
				A&Wc	A&Ww	A&We	A&Wedw	FBC	PBC	DWS	FC	AgI	AgL
BW	Alamo Lake	34°14'06"/113°35'00"	Deep		A&Ww			FBC			FC		AgL
BW	Big Sandy River	Headwaters to Alamo Lake			A&Ww			FBC			FC		AgL
BW	Bill Williams River	Alamo Lake to confluence with Colorado River			A&Ww			FBC			FC		AgL
BW	Blue Tank	34°40'14"/112°58'17"			A&Ww			FBC			FC		AgL
BW	Boulder Creek	Headwaters to confluence with unnamed tributary at 34°41'13"/113°03'37"		A&Wc				FBC			FC		AgL
BW	Boulder Creek	Below confluence with unnamed tributary to confluence with Burro Creek			A&Ww			FBC			FC		AgL
BW	Burro Creek (OAW)	Headwaters to confluence with Boulder Creek			A&Ww			FBC			FC		AgL
BW	Burro Creek	Below confluence with Boulder Creek to confluence with Big Sandy River			A&Ww			FBC			FC		AgL
BW	Carter Tank	34°52'27"/112°57'31"			A&Ww			FBC			FC		AgL
BW	Conger Creek	Headwaters to confluence with unnamed tributary 34°45'15"/113°05'46"		A&Wc				FBC			FC		AgL
BW	Conger Creek	Below confluence with unnamed tributary to confluence with Burro Creek			A&Ww			FBC			FC		AgL
BW	Copper Basin Wash	Headwaters to confluence with unnamed tributary 34°28'12"/112°35'33"		A&Wc				FBC			FC		AgL
BW	Copper Basin Wash	Below confluence with unnamed tributary to confluence with Skull Valley Wash				A&We			PBC				AgL
BW	Cottonwood Canyon	Headwaters to Bear Trap		A&Wc				FBC			FC		AgL

- Topic of interest at the initial stakeholder meeting, summer 2017
- Workgroup Membership:
 - AZ Game & Fish
 - AZ Mining Association
 - Everest Holdings/Homebuilders Association
 - City of Mesa
 - City of Phoenix
 - City of Tempe
 - Fennemore Craig
 - Pima County
 - Salt River Project
 - Sierra Club



- Charter document
- Four topics:
 1. How can ADEQ improve stream reach descriptions, lake categories, or designated uses (DU) to be more accurate?
 2. Should ADEQ add “impaired” waters or AZPDES receiving waters?
 3. Should ADEQ add federally promulgated Fish Consumption designated uses to be consistent 40 CFR 131.31?
 4. How can ADEQ clarify the Tributary Rule?

Topic #1: How can ADEQ improve stream reach descriptions, lake categories, or designated uses to be more accurate?

- Discussion:
 - Definition of surface water
 - Request for Appendix B layer in eMaps online
- Consensus: Structure & scope warrant revisions



Topic #2: Should ADEQ add “impaired” waters or AZPDES receiving waters?

- Discussion on Impaired waters:
 - Intermittent vs. ephemeral definition
 - Arnett Creek
- Recommendations for Impaired waters:
 - “Impaired” waters do not need to be listed in Appendix B unless there’s a designated use besides those provided by Tributary rule



Topic #2: Should ADEQ add AZPDES receiving waters?

- Discussion on AZPDES receiving waters:
 - Applies only to Individual permits
 - Incongruity between A&Wedw applied to permitted discharges but some streams listed as A&We
 - Quantity & frequency of EDW flows important for determining which designated use applies
 - What happens when a permit is closed out
 - DU changes by Use attainability analyses
 - Tributary rule doesn't apply to EDWs
 - Permittees need to know which DU applies
 - Lengths of EDW reaches recorded
- Recommendation for AZPDES receiving waters:
 - Waters with AZPDES Individual permits should be listed in Appendix B for clarity as to what are the applicable designated uses.

Topic #3: Should ADEQ add federally promulgated Fish Consumption DU

Discussion:

- History of lack of Fish Consumption use on some waterbodies in Appendix B

Recommendations:

- Fish Consumption use has already been added to Appendix B waters where applicable & EPA regulation is now obsolete.
- ADEQ should request that EPA initiate action to rescind that rule



Topic #4: How can ADEQ clarify the Tributary Rule?

Discussion:

- Stream channels are tributaries if they have a bed, banks and ordinary high water mark and connect to downstream waters
- Background & current status of federal definition of WOTUS
- Certain agricultural practices are exempted from water quality standards under current definitions

Recommendation:

- Waterbodies should be listed when there are designated uses not covered by Tributary rule
- Tributary Rule language does not need modification at this time



- Waterbody names & reach descriptions
- Designated uses
- Additions
- Removals
- GIS layers





Questions?



R18-11-120

ENFORCEMENT

- This “enforcement” rule indicates how compliance will be shown for purposes of a compliance action.
- It has existed since before ADEQ had AZPDES primacy and was last amended in 2002 (see 8 A.A.R. 1264).
- The rule has not been used in a compliance action in recent history in the Water Quality Division.
- It’s unclear how, when, or whether this rule applies to facilities given the applicability of other programs to determine compliance with standards (e.g. AZPDES).



Questions?



R18-11-114

MIXING ZONES

- Stakeholders have requested a review of 114(H) Mixing Zone Requirements
 - Length of the mixing zone should be determined on site-specific conditions, not prescribed in rule
 - Examine use of zone of passage and zone of initial dilution- “rapid and complete” vs “incomplete mixing”
- ADEQ contractor is review our mixing zone rule, other states rules and EPA guidance



Questions?



R18-11-115 & Appendix C

SITE SPECIFIC STANDARDS

- Not approved by EPA from 2016 rulemaking:
 - R18-11-115(B)(5) – adaptive process language
 - Appendix C site specific standards for copper in:
 - Bright Angel Wash
 - Transept Canyon





Questions?



R18-11-122

VARIANCES

- In 2015 EPA promulgated a final rule: see 80 Fed. Reg. 51020, 51035 (Aug. 21, 2015) ([link here](#))
- Time-limited, for specific pollutants, and applicable to a particular permittee or water body segment.
- Must be issued as a water quality standard
- States must submit supporting documentation:
 - why variance is needed,
 - how it represents the highest attainable condition,
 - justify term and requirements
- May not lower the quality of currently attaining waters



Questions?

What do you think?

1. What are the **values**, the overarching benefit, that you want to see reflected in this rulemaking?
2. What **criteria** do you suggest to implement and realize those values?





OTHER TOPICS?



Please send additional topics and comments by:

May 17, 2018

to

WaterQualityStandards@azdeq.gov



Arizona's Surface Water Quality Standards

**Triennial Review 2018
Stakeholder Session #2**

- May – Stakeholder comments/suggestions
- Mid May – Begin drafting standards package
- Mid July – Draft Standards and rules available for review
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APPENDIX A

Three main types of numeric standards:

Human Health



Aquatic and Wildlife



Agriculture



- Four **human health** designated uses
- Four **aquatic and wildlife** designated uses
- Two **agricultural** designated uses

Risk estimation x Body weight
Consumption rate



- EPA databases
 - IRIS: Reference dose/cancer slope factor
 - Maximum Contaminant Levels (MCL)
- ATSDR
 - Minimal Risk Levels (MRL)

II.A. Evidence for Human Carcinogenicity

II.A.1. Weight-of-Evidence Characterization

Classification — A; human carcinogen

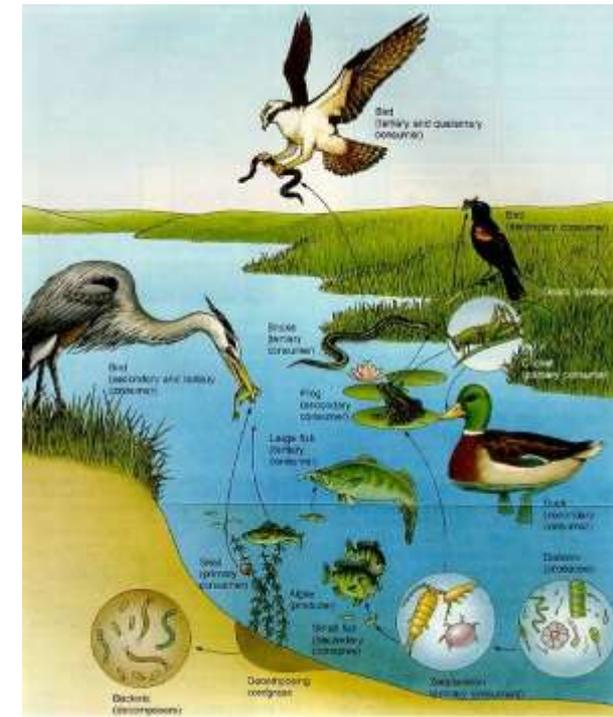
Basis — based on sufficient evidence from human data. An increased lung cancer mortality was observed in multiple human populations exposed primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Toxicity Protectiveness



Data used for A&W standards:

- National Criteria Documents
- EPA's Ecotox database.
- Use specific species lists (where available)
 - Data sources often incomplete



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.
M	M	S	L	M	M	L	L	L	L

Source:
2013 EPA criteria
document



Media	Fish Tissue		Water Column
Matrix	Egg/Ovary ¹	Fish Whole Body or Muscle ²	Monthly Average
Concentration	15.1 mg/Kg (dw ³)	8.5 mg/Kg whole body (dw ³)	Lentic: 1.5 µg/L (T)
		11.3 mg/Kg Filet (dw ³)	Lotic: 3.1 µg/L (T)
Duration	Instantaneous	Instantaneous	30 days
Frequency	Not to be exceeded	Not to be exceeded	Not more than once in three years on average

1. Egg/Ovary supersedes any whole-body, muscle, or water column element when fish egg/ovary concentrations are measured.
2. Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured.
3. Dry weight



2016 EPA criteria
document

Cadmium						
A&Wc		A&Ww		A&Wedw		A&Weph
Acu	Chr	Acu	Chr	Acu	Chr	Acu
S+	L	L	M	L	M	M

2016 EPA criteria
document



[Justification for Changes AppA Tox Show5 3 18.xlsx](#)

APPENDIX A BACK-UP



Questions?



R18-11-109(F)

NUTRIENTS

- In 2016 TR ADEQ limited the applicability of the nutrient standards to the streams 10 listed waters and their perennial tributaries
 - 2016 Preamble Language
 - ADEQ proposes to limit the applicability of these standards to discharges that actually impact the surface water
 - Any tributary of a listed surface water would be included in the nutrient standard if the source discharging to the tributary has the reasonable potential to impact the listed surface water based on consideration of the factors listed

- 109(f) Nutrient criteria. The following are water quality standards for total phosphorus and total nitrogen (expressed in milligrams per liter (mg/L)) that apply to the surface waters listed below. A minimum of 10 samples, each taken at least 10 days apart in a consecutive 12-month period, are required to determine a 90th percentile. Not more than 10 percent of the samples may exceed the 90th percentile value listed below. The Director will apply these water quality standards for total phosphorus and total nitrogen to a surface water listed below, ~~and~~ The Director may apply these standards to any source discharging to a tributary (ephemeral, intermittent, effluent dependent water, or perennial) of the surface waters listed below, as 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



Questions?

What do you think?

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2. What **criteria** do you suggest to implement and realize those values?





OTHER TOPICS?



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Arizona's Surface Water Quality Standards

**Triennial Review 2018
Stakeholder Session #3**

- May – Stakeholder comments/suggestions
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R18-11-112

OUTSTANDING ARIZONA WATERS



OUTSTANDING ARIZONA WATERS WORKGROUP SUMMARY

- Outstanding Arizona Waters (OAWs) were identified as a topic of interest at the initial stakeholder meeting.
- Workgroup members were chosen based on interest being indicated at the initial meeting, and on the goal of having a range of interests represented.
- Membership included representatives from:
 - Arizona Game and Fish
 - AZ Mining Association
 - Cienga Watershed Partnership
 - the Community Water Coalition
 - National Park Service
 - Pima County
 - Rosemont Mining Co, and
 - the Sierra Club

Project Scope:

How can ADEQ define “good water quality” (R18-11-112(D)(3)) more clearly to avoid confusion in determining whether a water is eligible for OAW consideration?

Once a water has become an OAW what action should be undertaken to ensure that it is being maintained and protected as a Tier 3 water under R18-11-107(D)?

What actions should ADEQ take if data shows that water quality is degrading in or if impairment status is determined on a water that is listed as an OAW?

Should ADEQ consider modifying the flow-regime based OAW eligibility requirements in this rulemaking? If so, what changes are recommended by the workgroup, and why?

How can ADEQ define “good water quality” (R18-11-112(D)(3)) more clearly to avoid confusion in determining whether a water is eligible for OAW consideration?

■ **Discussion Points:**

- Should “good” water quality be a requirement at all?
- How much data is necessary to determine “good” water quality?
- Should stormwater exceedances prohibit water quality from being considered “good”?

■ **Non-consensus Recommendations Summary:**

- Strike requirement for good water quality
- Revise existing language to clarify that good water quality means that the uses for which it is being nominate are protected based on available information at the time of nomination
- Require nominated waters to be supported by sampling results in multiple locations and over all seasons and flow conditions that cover a range of parameters sufficient to ensure all applicable standards are being met
- If a water is designated based on data limited to certain flow conditions, Tier-3 antidegradation requirements should only apply at those same flow conditions

Question #2:

Once a water has become an OAW what action should be undertaken to ensure that it is being maintained and protected as a Tier 3 water under R18-11-107(D)?

Potential solutions discussed (non-consensus**; some solutions policy/procedure versus rule):**

- ADEQ requiring that nominees provide enough data with the nomination to establish baseline water quality by which anti-degradation requirements could be measured
- ADEQ assuming responsibility for establishing the water quality baseline either upon nomination, or after an OAW has been designated.
 - At a minimum, prioritize what data is needed to establish baseline to allow other entities to conduct monitoring adequate to establish baseline water quality.
- Discovery of sources of degradation should trigger additional monitoring by ADEQ.
- ADEQ should share best management practices recommendations with land managers/land owners.

Recommendations Summary (ADEQ – no position papers submitted for this topic):

- OAWs should be protected following the criteria provided in R18-11-107.01(C) (*Antidegradation*).
- ADEQ should establish a schedule for monitoring OAWs post-designation, perhaps with varying levels (eg. waters with known or suspected sources of degradation would be a higher priority for monitoring).

What actions should ADEQ take if data shows that water quality is degrading in or if impairment status is determined on a water that is listed as an OAW?

■ **Consensus Points:**

- If degradation is suspected in an OAW, ADEQ should prioritize monitoring
- If an OAW becomes impaired post designation it should be considered as a high priority for TMDL development or alternative restoration action

■ **Non-consensus Recommendations Summary**

- If water quality in an OAW is determined to be degraded based on reliable and sufficient sampling, declassification as an OAW should be an option
- ADEQ should not declassify a degraded OAW, for the following reasons:
 - Declassification would result in reduced antidegradation protection
 - Declassification would remove aforementioned monitoring, TMDL and restoration prioritization that an OAW would have
 - Depending on the pollutant causing impairment, the uses for which the water was nominated may not be impacted
 - Declassification of impairments could incentivize polluters to intentionally compromise water in an OAW
 - Automatic declassification of impaired water memorialized in rule could result in lack of public process, when initial listing *are* subject to public process

Question #4:

Should ADEQ consider modifying the flow-regime based OAW eligibility requirements in this rulemaking? If so, what changes are recommended by the workgroup, and why?

■ Discussion Points:

- Form 1981 to 2002, flow regime was not used to determine OAW eligibility
- In 2002, rule amended to refer to “perennial” waters; also when “free flowing condition” and “good water quality” requirements were added
 - Modeled on similar Federal Wild and Scenic Rivers criteria
- In 2009, rule further amended to include intermittent waters

■ Non-Consensus Recommendations Summary:

- Remove flow regime from eligibility criteria entirely
 - Flow data not always available; concern that dewatering activities may be incentivized; impacts of drought and climate change on flow regime; exceptional rec or ecological significance requirements already ensure that current flow regime (whatever it may be) is sufficient to support those uses.
- Retain the current wording; no changes
- Revert to limiting eligibility to perennial waters
 - OAW classification results in stringent Tier 3 anti-degradation requirements and should be limited to narrow circumstances so as to not inappropriately restrict economic development and otherwise authorized land uses



Questions?



R18-11-107; R18-11-113

ANTIDEGRADATION & EFFLUENT-DEPENDENT WATERS

- Workgroup convened in November 2017 to address concerns raised by stakeholders and provide input to ADEQ
- 10 members (8 non- ADEQ)
- Five topic questions discussed to fulfill charter
 - “ADEQ requests this workgroup to provide technical recommendations that ensure that ADEQ’s Antidegradation Rule and Effluent Dependent Waters (EDW) definition and application is clear, concise and is adequate to protect against the degradation of surface water quality consistent with the Federal Clean Water Act.”

- Is the current Antidegradation Rule consistent with Federal Clean Water Act? If not, what changes should be made to correct the inconsistencies?
- Recommendation: The workgroup consensus is that Arizona Administrative Code Title 18, Chapter 11, Sections 107 and 107.01 are consistent with the Federal Clean Water Act and no changes are necessary.

- ADEQ is proposing that the Baseline Characterization section (R18-11-107.01 (B)(3)(c)) be renumbered to R18-11-107.01 (B)(2) with the subsequent sections being renumbered. Do work group members anticipate any adverse impacts or risks associated with this change?
- Recommendation: The workgroup consensus is that renumbering current Baseline Characterization language to 3(a) from 3(c) would be appropriate rather than renumbering it to (B)(2). Renumbering the section will allow for the rule to follow the process steps required under a Tier 2 Antidegradation Review.

- ADEQ is proposing that the temporary impacts to OAWs language found in R18-11-107.01 (C)(4) be moved to its own section (5) and clarify that the temporary impacts cannot be “regularly occurring”. Do work group members anticipate any adverse impacts or risks associated with this change?
- Recommendation: No consensus was reached by workgroup members regarding allowable temporary impacts outside of the 404/401 program. The group did agree that temporary impacts are “not regularly occurring”

- How can the definition of an “effluent dependent water” (EDW) (R18-11-101 (17)) be changed to provide greater clarity to its applicability?
- Recommendation: No consensus was reached by the group related to a specific language change. However, the majority of members suggested that the definition should be revised to describe how infrequent discharges may not create an effluent dependent water

- Does the definition of “wastewater” (R18-11-101 (48)) clearly limit the applicability of an effluent dependent water? If not, how should the definition be changed?
- The work group agreed that defining wastewater by what is not does not provide clarity. The group provided suggestions that ADEQ will consider:
 - Replace “Wastewater” with “Wastewater Effluent”
 - Define as “effluent from a sewage or industrial wastewater treatment facility and does not include:...”

Suggestions and Questions



What do you think?

1. What are the **values**, the overarching benefit, that you want to see reflected in this rulemaking?
2. What **criteria** do you suggest to implement and realize those values?





OTHER TOPICS?



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May 17, 2018

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