

WQSTF Agenda Number 2

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MEETING DATE: May 10, 2018

AGENDA ITEM: Discussion and Possible Consideration of Action to Approve
Consensus Proposal for Water Quality Standards

RECOMMENDATION:

Staff recommends that the Water Quality Standards Task Force recommend that the Board of Directors approve the Consensus Proposal for Water Quality Standards.

FINANCIAL IMPLICATIONS:

Impact on Budget: None

Impact on Reserves: None

Impact on Rates: No impact on recharge rates

LINKAGE TO STRATEGIC PLAN, POLICY, STATUTE OR GUIDING PRINCIPLE:

- CAWCD 2016 Board of Directors Strategic Plan
 - Water Supply—Optimize reliability and sustainability of CAP water supply

PREVIOUS BOARD ACTION/ACTIVITY:

- May 24, 2017 – Water Quality Standards Task Force meeting (“Overview & Context”)
- June 6, 2017 – Water Quality Standards Task Force meeting (“Review of Standards and Operations”)
- September 12, 2017 — Water Quality Standards Task Force meeting (“Stakeholders’ Proposal”)
- February 8, 2018 — Water Quality Standards Task Force meeting (“Process Update and Revised Stakeholder Proposal”)

ISSUE SUMMARY/DESCRIPTION:

On Monday, May 7th, CAP Staff and a core set of representatives from the Water Quality Stakeholders Group arrived at a Consensus Proposal for Water Quality Standards for non-Project Water introduced into the CAP system. Organizations represented at the meeting included AMWUA, Phoenix, Scottsdale, Chandler, Tucson, Metro Water, Gila River Indian Community, and SRP. The Bureau of Reclamation also attended the meeting. The key elements of the Consensus Proposal were shared with the full Stakeholder Group on May 8th.

The Consensus Proposal builds on the elements of the CAP Staff Proposal that was posted for public review in advance of the April 3, 2018 Task Force meeting (cancelled for lack of a quorum). In addition to the modifications made at the May 7th meeting, the Consensus Proposal incorporates perspectives shared by stakeholders in other meetings with CAP Staff that were held since the last meeting of the Water Quality Standards Task Force. The Consensus Proposal makes the following modifications to the Staff Proposal:

- The water quality standards will be reviewed more frequently—every five years, starting after the first introduction of non-Project Water
- CAP will pursue a more robust water quality monitoring program to establish a refined baseline before projects begin, and to comprehensively evaluate the effects of introduced supplies
- Groundwater projects will have a startup phase to allow water quality to stabilize before full compliance with Introduction Standards
- Introduction Standards for Nitrate and TDS are changed (10 µg/l and 1150 PPM, respectively), but other Introduction Standards are unchanged, and the Delivery Standards remain as proposed by the Stakeholders

The Consensus Proposal contains the essential elements of a framework that can be further developed with numeric standards for additional constituents and greater implementation detail. Staff and stakeholders have expressed a desire and commitment to proceed with that additional work.

SUGGESTED MOTION:

I move that the Water Quality Standards Task Force Recommend that the Board of Directors approve the Consensus Proposal for Water Quality Standards.

Attachment

Consensus Recommendation for Water Quality Standards



Water Quality Standards Task Force
May 10, 2018

Consensus Proposal

- The core element of the Consensus Proposal is the table of Delivery Standards developed by the Stakeholder Group last summer, and which has remained unchanged

| Priority Constituents | Point of Delivery Standards |
|-----------------------|-----------------------------|
| Arsenic ug/l | 5 |
| Fluoride mg/l | 0.7 |
| Nitrate mg/l | 1 |
| TDS mg/l | 723 |
| TOC mg/l | 4 |
| Turbidity NTU | 6 |



Consensus Proposal

- The Delivery Standards were developed by those most affected by water quality, and they reflect a combination of historic variation of the CAP supply, and the capabilities of surface water treatment processes and soil-aquifer treatment
- The key question has been *how* to stay within those bounds while considering equity, flexibility, certainty, risk, cost, etc.



A Comprehensive Approach

The Consensus Proposal adopts the multi-faceted approach from the April 3, 2018 CAP Staff Proposal* that includes:

1. Monitoring, Modeling and Data Sharing
2. Project Evaluation and Design
3. Numeric Standards
4. Project Approvals
5. Enforcement

*Publicly posted in advance of the Task Force meeting (cancelled for lack of a quorum)



Differences from the Staff Proposal

- Based on extensive feedback and discussion, the Consensus Proposal incorporates a number of modifications to the Staff Proposal:
 - The water quality standards will be reviewed more frequently—every five years, starting after the first introduction of non-Project Water
 - CAP will pursue a more robust water quality monitoring program to establish a refined baseline before projects begin, and to comprehensively evaluate the effects of introduced supplies



Differences from Staff Proposal

- Groundwater projects will have a startup phase to allow water quality to stabilize before full compliance with Introduction Standards
- Introduction Standards for Nitrate and TDS are changed (10 µg/l and 1150 PPM, respectively), but other Introduction Standards are unchanged, and the Delivery Standards remain as proposed by the Stakeholders

| Constituent | Consensus Proposal |
|-------------|--------------------|
| Arsenic | 10 |
| Fluoride | 4 |
| Nitrate | 10 |
| TDS | 1150 |
| TOC | 6 |
| Turbidity | 9 |



Conclusions

- CAP Staff support the modifications and believe the Consensus Proposal provides a high degree of protection for the Project Water supply, while allowing non-Project Water supplies to be introduced in a cost-effective manner
- Additional collaborative work will be necessary to add detail to the Proposal, and to set numeric standards for a full suite of constituents



4/3/18 CAP Staff Proposal with Consensus Proposal Modifications



YOUR WATER. YOUR FUTURE.

1. Monitoring, Modeling and Data Sharing

A. Enhanced Reporting and Data Coordination *[This section to be expanded to include establishment of a refined baseline before projects begin, and comprehensive evaluation of the effects of introduced supplies]*

- Ongoing support for CAP's WQ program
- Enhanced tools to model WQ impacts
- Annual presentation of WQ information to the Board & stakeholders
- Facilitation of data sharing among current users

B. Mandatory Monitoring of Non-Project Supply

- Parties introducing supply pay all costs (*SUA §12.2; Standard Form Wheeling Contract §10.2*)
- Monitoring requirements tailored to each project based on project-specific factors (e.g., size, concentrations, location, etc.)



2. Project Evaluation and Design

A. Project Evaluation—Mandatory technical evaluation of the interaction of introduced supply with existing supply (chemical & physical properties)

[This section will be expanded to more explicitly address any operational impacts that a project could have on the CAP system]

- Applies regardless of water quality
- May involve modeling, testing, etc.
- Parties introducing supply pay all costs

B. Project Design

- Required “Inside the Fence” sampling point
- May require multiple “turn-in” points to minimize localized effects
- Introduction of supply may be required to be proportional to CAP flow
 - CAP operations will NOT be adjusted for non-Project WQ



3. Numeric Standards

A. Excluded Constituents—*Things that cannot be present in non-Project supplies*

- Measured at point of introduction
- Set at defined non-detect levels
- Applied on an ongoing basis, and fully enforceable
- Initial proposal from Stakeholder group includes PFOA/PFAA, perchlorate, and cyanide
 - Expanded list to be developed with Stakeholder input



3. Numeric Standards

B. Delivery Standards—*Quality of comingled water at CAP turnouts*

- As proposed by Stakeholder Group
 - Expanded list to be developed with Stakeholder input

| Priority Constituents | Point of Delivery Standards |
|-----------------------|-----------------------------|
| Arsenic ug/l | 5 |
| Fluoride mg/l | 0.7 |
| Nitrate mg/l | 1 |
| TDS mg/l | 723 |
| TOC mg/l | 4 |
| Turbidity NTU | 6 |

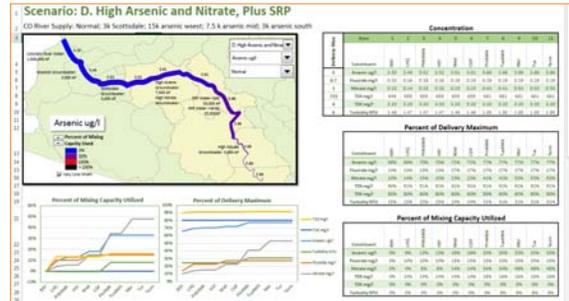
- Highly protective of existing quality
 - Within historic range and/or twice as stringent as the National Drinking Water standards



3. Numeric Standards

B. Delivery Standards—*continued*

- Applied during evaluation phase of a proposed project, based on a shortage-reduced CAP supply of 1 MAF, and inclusion of all other approved projects
- Standard is a basis for project denial or modification, but it is NOT a guarantee of a specific water quality delivered by CAP



3. Numeric Standards

C. Introduction Standards—*Quality of the Non-Project Water supply*

- Measured at point of introduction
- Standard based on multiple factors—considered for each constituent
 - Equity; flexibility; certainty; risk; margin of safety; public acceptance; likely sources; mixing capacity; geography; cost; existing standards; operational factors
- Applied on an ongoing basis, and fully enforceable



3. Numeric Standards

C. Introduction Standards—*continued*

| Constituent | "Mixing Band" | Lower in South? | Treatment Cost | CAP Operational Concerns | Public Accept | Primary MCL | Current CAP | "Buildout Average" | "Delivery Max" | Introduction Standards | | | Comments & Considerations |
|-------------|---------------|-----------------|----------------|--------------------------|---------------|-------------|-------------|--------------------|----------------|------------------------|----------------------|----------------------|---------------------------|
| | | | | | | | | | | Central AZ Proposal | Southern AZ Proposal | CAP Staff Proposal | |
| Arsenic | Tight | Yes | High | None | Low | 10 | 3.3 | 8.9 | 5 | 31 | 6.5 | 10 | MCL and Public Acceptance |
| Fluoride | Very Tight | Yes | High | None | High | 4 | 0.1 | 2.1 | 0.7 | 5.8 | 0.91 | 4 | Cost and MCL |
| Nitrate | Tight | No | High | High | Moderate | 10 | 0.1 | 3.0 | 1 | 28 | 1.3 | 5-10 | Operational concerns |
| TDS | Moderate | Yes | Very High | Low | Moderate | None | 649 | 887 | 723 | 1800 | 940 | 950 -1150 | Cost and Stakeholder #s |
| TOC | Moderate | Yes | Moderate | Low | Unknown | None | 3.2 | 5.8 | 4 | None | None | 6 | 150% of Delivery Max |
| Turbidity | Moderate | Yes | Moderate | Moderate | Unknown | Not Numeric | 1.5 | 16.2 | 6 | None | None | 9 | 150% of Delivery Max |



3. Numeric Standards

D. Re-evaluation of Standards

- ✦ The lesser of every 10 years, or 100 kAF of approved projects **Every 5 years, starting after the first introduction of non-Project Water**
 - Constituents can be added to the Excluded Constituent list more frequently



4. Project Approvals

A. Approval by CAWCD and/or Reclamation

- Provides opportunity to consider overall merits of a project
 - Note, not all projects are subject to CAWCD approval

B. NEPA Compliance

- Required for each project due to federal ownership of CAP system

C. [AZPDES Permitting?]

- [General Use Permit?]



5. Enforcement

A. CAP has full contractual enforcement authority

- Party introducing supply is responsible for compliance (*SUA §12.2*)
- Required indemnification (*SUA §12.3*)

B. CAP will have operational control

- Inspection of facilities and remote shut-off capability

C. CAP will establish operating procedures for addressing exceedances, missing data, etc.

- The 'burden of proof' will be on the party introducing supply





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~~DRAFT Report and Discussion on Staff Recommendation to the~~ **Consensus Proposal on Water Quality Standards**

CAP Staff and Stakeholders view water quality standards for non-Project Water as part of a multi-faceted approach that includes:

1. **Monitoring, Modeling and Data Sharing** *[This section to be expanded to include establishment of a refined baseline before projects begin, and comprehensive evaluation of the effects of introduced supplies]*
 - a. **Enhanced Reporting and Data Coordination**
 - i. Ongoing support for CAP's WQ program
 - ii. Enhanced tools to model WQ impacts
 - iii. Annual presentation of WQ information to the Board & stakeholders
 - iv. Facilitation of data sharing among current users
 - b. **Mandatory Monitoring of Non-Project Supply**
 - i. Parties introducing supply pay all costs (*SUA §12.2; Standard Form Wheeling Contract §10.2*)
 - ii. Monitoring requirements tailored to each project based on project-specific factors (e.g., size, concentrations, location, etc.)

2. **Project Evaluation and Design**
 - a. **Project Evaluation**—*Mandatory technical evaluation of the interaction of introduced supply with existing supply (chemical & physical properties) [This section will be expanded to more explicitly address any operational impacts that a project could have on the CAP system]*
 - i. Applies regardless of water quality
 - ii. May involve modeling, testing, etc
 - iii. Parties introducing supply pay all costs
 - b. **Project Design**
 - i. "Inside the Fence" sampling point
 - ii. May require multiple "turn-in" points to minimize localized effects
 - iii. Introduction of supply may be required to be proportional to CAP flow
 - CAP operations will **not** be adjusted for non-Project WQ

3. Numeric Standards

a. Excluded Constituents—*Things that cannot be present in non-Project supplies*

- i. Measured at point of introduction
- ii. Set at defined non-detect level
- iii. Applied on an ongoing basis, and fully enforceable
- iv. Initial proposal from Stakeholder group includes PFOA/PFAA, perchlorate, and cyanide
 - Expanded list to be developed with Stakeholder input

b. Delivery Standards—*Quality of comingled water delivered at CAP turnouts*

- i. As proposed by Stakeholder Group
 - Expanded list to be developed with Stakeholder input

| Priority Constituents | Proposed Standard | units |
|-----------------------|-------------------|-------|
| Arsenic | 5 | µg/l |
| Fluoride | 0.7 | mg/l |
| Nitrate | 1 | mg/l |
| TDS | 723 | mg/l |
| TOC | 4 | mg/l |
| Turbidity | 6 | NTU |

- ii. Highly protective of existing quality
 - Within historic range and/or twice as stringent as the National Drinking Water standards
 - Applied during evaluation phase of a proposed project, based on a shortage-reduced CAP supply of 1 MAF, and inclusion of all other approved projects
 - Standard is a basis for project denial or modification, but it is **not** a guarantee of a specific water quality delivered by CAP

c. Introduction Standards—Quality of the Non-Project Water supply

- i. Measured at point of introduction
- ii. Standard based on multiple factors—considered for each constituent
 - Equity; flexibility; certainty; risk; margin of safety; public acceptance; likely sources; mixing capacity; geography; cost; existing standards; operational factors
- iii. Applied on an ongoing basis, and fully enforceable

| Priority Constituents | Proposed Standard | units |
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| Arsenic | 10 | µg/l |
| Fluoride | 4 | mg/l |
| Nitrate | 5 10 | mg/l |
| TDS | 950 1150 | mg/l |
| TOC | 6 | mg/l |
| Turbidity | 9 | NTU |

d. Re-evaluation of Standards

- i. ~~The lesser of every 10 years, or 100 kAF of approved projects~~ **Every 5 years, starting after the first introduction of non-Project Water**
 - Constituents can be added to the Excluded Constituent list more frequently

4. Project Approvals

a. Approval by CAWCD and/or Reclamation

- i. Provides opportunity to consider overall merits of a project
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b. NEPA Compliance

- i. Required for each project due to federal ownership of CAP system

c. [AZPDES Permitting?]

- i. [General Use Permit?]

Order Review

~~4/3/2018~~ 5/10/2018

5. Enforcement

- a.** CAP has full contractual enforcement authority
 - i.* Party introducing supply is responsible for compliance (*SUA §12.2*)
 - ii.* Required indemnification (*SUA §12.3*)
- b.** CAP will have operational control
 - i.* Inspection of facilities and remote shut-off capability
- c.** CAP will establish operating procedures for addressing exceedances, missing data, etc.
 - i.* Burden of 'proof' on party introducing supply