

WATER QUALITY GUIDANCE BRIEFING



Thursday, April 23
10:00am - 11:30am



Livestreamed
Briefing will be livestreamed
at the CAP website, similar to
Board meetings.

Send questions during this meeting to: questions@cap-az.com

Written comments, by June 25th, to: WQGuidanceDoc@cap-az.com

1 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

Agenda

- Welcome & Introductions—*Dent*
- Context & Background—*Seasholes*
- Review of Guidance Document—*Pagels*
- Questions—*All*
- Next Steps—*Dent*

Send questions during this meeting to: questions@cap-az.com

Written comments, by June 25th, to: WQGuidanceDoc@cap-az.com

2 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Context & Background

Ken Seasholes
Resource Planning & Analysis Manager

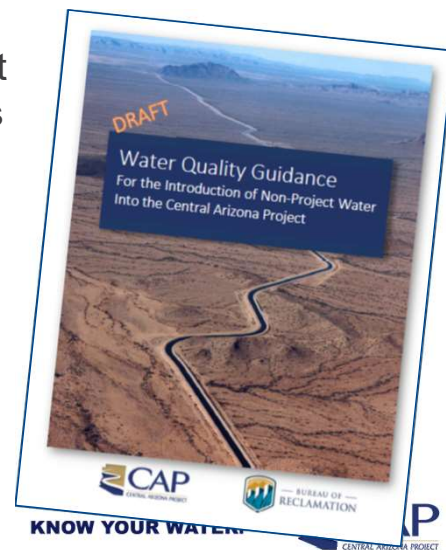
3 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Scope

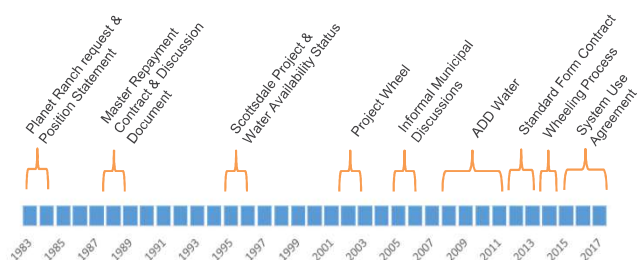
- The *Water Quality Guidance* document applies to non-Colorado River supplies that are physically discharged into the CAP system
 - Examples include: imported groundwater, surface water, and recovered water
 - Applies to both CAWCD and Reclamation Wheeling, and Firming Water if it is introduced into the system



4 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

Wheeling Non-Project Water

- There have been successive initiatives addressing aspects of wheeling, culminating in 2017 with the CAP System Use Agreement



SUA signing, February 2017

5 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Uniform Water Quality Standards

- Article 12.1 of the System Use Agreement codifies that CAWCD and Reclamation are to establish uniform water quality standards. That provision is also supported by language in Article 8.18 of the Master Repayment Contract

12. WATER QUALITY:

12.1 Reclamation and CAWCD shall establish uniform water quality standards for any Non-Project Water introduced into the CAP System.

6 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Water Quality Standards Task Force

- The adoption of standards would ultimately require action by the CAWCD Board, so establishing a Board Task Force helped ensure communication and engagement
- The Task Force also helped establish clear scope & objectives

Co-Chairs



Arboleda



Goddard



Graff



Hartdegen



Pickard

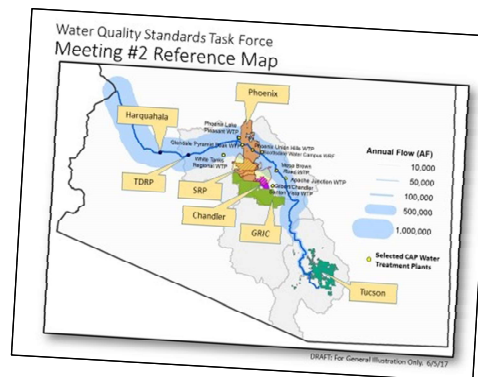
7 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Stakeholder Perspectives

- Initial Perspectives (2nd meeting; June 2017)
 - Ten back-to-back presentations
 - A range of perspectives and issues, but many common themes
 - Recognition of need & value of introducing new supplies
 - High value placed on overall quality and stability of the current CAP water supply



8 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Stakeholder Collaboration

- The Arizona Municipal Water Users Association (AMWUA) convened a diverse group of stakeholders that included water providers from the Phoenix and Tucson regions, along with Salt River Project and the Gila River Indian Community



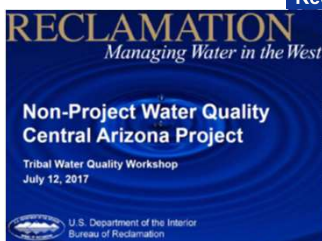
9 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.

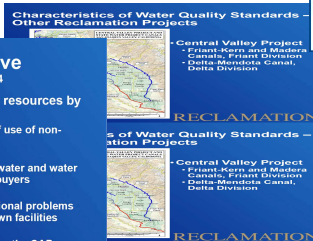


Tribal Engagement

- In addition to the CAWCD process, Reclamation engaged tribal communities directly, including a water quality workshop in 2017



Reclamation's Objective
 Reclamation Manual Policy WTR P04
 Improve management of water resources by
 increased reliability and efficiency of use of non-project water
 facilitating transfers of non-project water and water rights from willing sellers to willing buyers
 assisting users experiencing operational problems emergency situations with their own facilities
 maximizing the benefits received from the CAP



Potential Challenges for CAP and WQ - 8

- Acting on findings of interpretation of monitoring data

Long-Term Management/Protection of Water Quality Sources to GRIC

Gila River Indian Community

Water Quality Perspectives for CAP Transfers



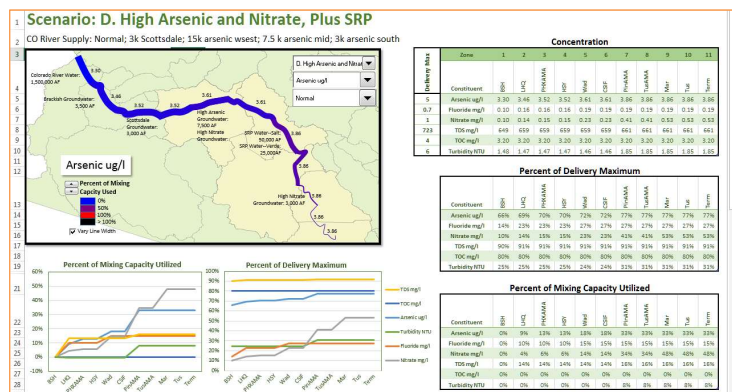
10 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Water Quality Modeling

- An interactive model was developed that allowed the impacts of proposed and hypothetical projects to be simulated
- The results provided confidence that a wide range of projects could be accommodated over a very long period of time



11 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Consensus Proposal

- Building on core elements from the Stakeholder Group, a Consensus Proposal was developed and approved by the WQ Task Force and CAWCD Board
 - Board approval on June 7, 2018
- The Consensus Proposal adopts a multi-faceted approach that includes:
 - Monitoring, Modeling and Data Sharing
 - Project Evaluation and Design
 - Numeric Standards
 - Project Approvals
 - Enforcement



12 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



Additional Constituents

- Following the adoption of the Consensus Proposal, additional work was needed to develop Introductory and Delivery Standards for a comprehensive suite of constituents, including:
 - Trace Metals
 - Common Inorganic Compounds
 - Nutrients
 - Pathogens
 - Industrial and Synthetic Compounds

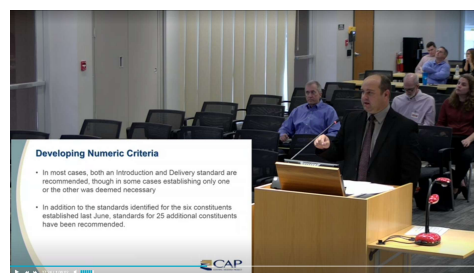
13 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

KNOW YOUR WATER.



More Consensus

- After approval of the Consensus Proposal, CAP staff and a stakeholder working group continued to work collaboratively on numeric standards for a broader list of constituents
 - Extensive technical work
 - Negotiation & compromise
- January 2019, the WQSTF approved the expanded list, concluding its work
 - The full Board approved the list in February 2019

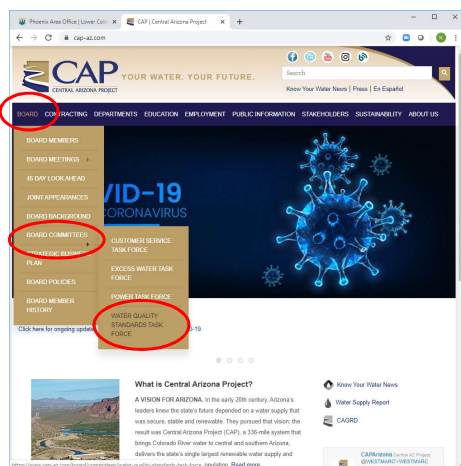


14 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

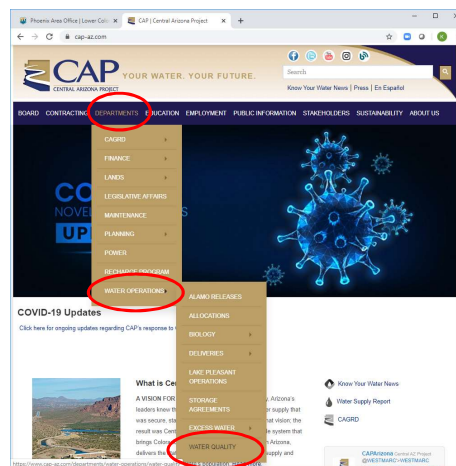
KNOW YOUR WATER.



Additional Information



15 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

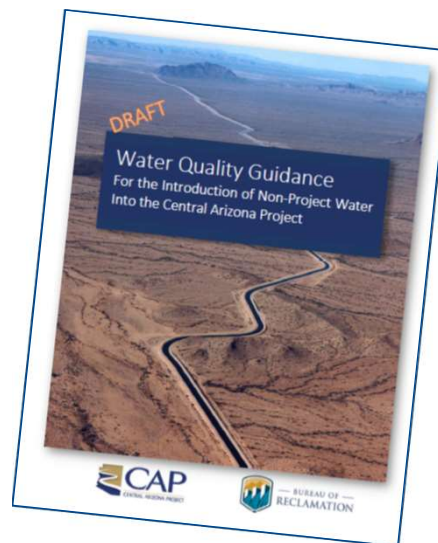


KNOW YOUR WATER.



Guidance Document

- “Intended to provide assistance to both those seeking to introduce Non-Project Water to the CAP System, and those reviewing such proposals in the course of administering the CAP System and related contracts.”



16 | WATER QUALITY GUIDANCE BRIEFING | 04.23.20

Review of Guidance Document

Phillip Pagels
Water Transmission Supervisor

Scott Bryan
Senior Biologist

17 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Background

- Water Transmission Group
 - Formed in 2018
- Expanded CAP Water Quality Program
 - Increased sampling
 - Water quality website
 - Data management
 - CAP System-wide water quality model
 - Improved collaboration and communication with CAP Water Users



<https://www.cap-az.com/departments/water-operations/water-quality>

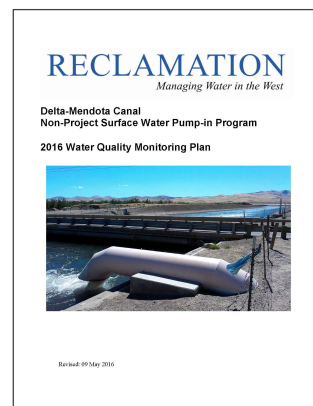
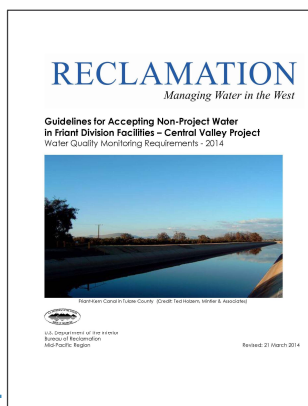
18 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Development of Guidance Document

- Internal development
 - CAP staff contributions
- External consultation
 - Appendix A
 - (Numeric water quality standards)
- Literature review
 - Existing Reclamation Non-Project Water Documents



19 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

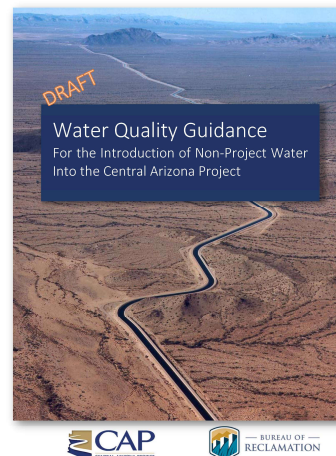
KNOW YOUR WATER.



Review of Guidance Document

Sections

1. Definitions
 2. Introduction
 3. Initial Analysis
 4. Operational Monitoring
 5. Reporting/Communication
 6. CAP System-wide Water Quality Modeling
 7. Enforcement
 8. Indemnification and Revisions
- Appendix A



KNOW YOUR WATER.



20 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

Definitions (Section 1)

- *Applicant* - means the person or organization that wishes to enter into an agreement with CAWCD and/or the United States to introduce Non-Project Water into the CAP System.
- *Delivery Standards* – means the maximum target numeric water quality standards, established by CAWCD and Reclamation, for water delivered by the CAP System.
- *Introduction Standards* – means the numeric water quality standards, established by CAWCD and Reclamation, which define the maximum allowable concentrations of constituents in Non-Project Water that is introduced into the CAP System.
- *Non-Project Water* – as defined in the System Use Agreement, and used herein means all water, including Recovered Water, other than Project Water. For the purposes of the System Use Agreement and this Guidance Document, the term Non-Project Water does not include Long-Term Storage Credits.

21 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Definitions (Section 1)

- *Verification Sample* – means a mandatory water quality sample collected pursuant to Section 7 herein after an exceedance of an Introduction Standard in an initial sample.
- *Water Quality Monitoring and Reporting Plan*— means a water quality monitoring and compliance agreement between CAWCD or Reclamation and a Wheeling Entity introducing Non-Project Water into the CAP System.
- *Wheeling* – means use of the CAP system to transport and deliver Non-Project Water.
- *Wheeling Entity* – means the person or organization that has entered into a CAWCD Wheeling Contract, Reclamation Wheeling Contract, Federal Arrangement, or Firming Agreement.

22 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Introduction (Section 2)

2.3. Establishment of Water Quality Standards

The water quality standards and related operational approaches in this document were developed by CAWCD and Reclamation with extensive engagement by the CAWCD Board of Directors, technical experts, and affected parties, including both Tribal contractors and M&I subcontractors. These processes spanned more than two years, and included multiple opportunities for public comment and involvement. Water quality data and information developed pursuant to this agreement will be available to both CAWCD and Reclamation.

The core of the adopted water quality approach is the establishment of numeric standards for a broad suite of constituents. These include Introduction Standards, which are fully enforceable at the point of discharge into the CAP System, and Delivery Standards, which serve as maximum reference levels for modeling the collective impacts after blending with Project water. In addition to input from stakeholders and experts, the historical CAP water quality data, laboratory Method Reporting Limits, recognized Federal and State contaminant levels, and model simulations for wide range of future scenarios were considered in developing these standards. The numeric standards are presented in Appendix A:

Introduction (Section 2)

2.4. Environmental Reviews

The Central Arizona Project is a federal facility, and Applicants proposing to introduce Non-Project Water into the CAP System must comply with all applicable environmental regulations, including the National Environmental Policy Act (NEPA). This Guidance Document does not alleviate the Applicant from satisfying any requirements of NEPA, but it is the intent of CAWCD and Reclamation that the provisions of this Guidance Document will assist in that process.

2.5. Guidance Document

This Guidance Document is intended to provide assistance to both those seeking to introduce Non-Project Water to the CAP System, and those reviewing such proposals in the course of administering the CAP System and related contracts. This Guidance Document does not create any legal right, entitlement, or cause of action. Proposals for introduction and delivery of Non-Project Water into the CAP System will be reviewed individually. Although this document can be used as a general guideline, CAWCD and Reclamation reserve the right to modify its contents at any time and waive specific provisions, if applicable.

Appendix A

- Numeric water quality standards
 - Broad suite of constituents adopted on February 7, 2019
- Appendix A
 - Organized constituents to align with Industry Standards
 - Organized in three tables
 - Table A-1: Characterized List
 - Table A-2: “Non-detect”
 - Table A-3: No available EPA approved test method

Introduction (Section 2)

Table A-1 - Includes identified priority constituents. Standards were developed for constituents with sufficient background data. If there was not adequate data to develop Standards, the constituent was labeled as “Characterize”. Standards will be established for these constituents after sufficient data collection and review.

Table A-2 – Includes primary and secondary EPA regulated contaminants, EPA unregulated contaminants, EPA recognized disinfection byproducts, and pathogens of concern that have rarely or never been found in the CAP. The Introduction and Delivery Standards are equivalent to the Method Reporting Limit (MRL) historically recognized by CAWCD.

Table A-3 – Includes constituents that have the potential to be detected, but are rare in most water supplies and there is currently no standard EPA analytical method for testing. Status of these constituents will be continually monitored and may be re-characterized at any time.

Table A-1

Table A-1. List of CAP Priority Constituents and their respective Introduction and Delivery standards. If there was not sufficient information to develop Standards, constituents were flagged for further evaluation (Characterize). In cases in which an Introduction Standard is listed as "TBD," testing will still be required, and if a supply exceeds the MRL, a temporary Introduction Standard will be set at the lesser of the current MCL (if available) or 3x the MRL. Temporary Introduction Standards will be refined as data becomes available. CAP 5 Year Averages designated with an ND either have not been detected or detected in less than 5% of samples. Dashes represent constituents that have not been tested by CAWCD in the past.

Constituent	Recommended Analytical Method	Units	Method Reporting Limit	Introduction Standard	Delivery Standard	CAP 5 Year Average (2015-2019)
Dissolved Oxygen	Field	mg/L		---	---	
pH	Field			6.5-9.5		
Temperature	Field	°F		---	---	
CAP Priority Contaminants - Characterize						
Alpha, Gross	EPA 900.0	pCi/l	3	TBD	Characterize	--
Aluminum, Total, ICAP	EPA 200.8	µg/l	20	TBD	Characterize	--

- Method Reporting Limit (MRL) – Comparable to EPA's Lowest Concentration Minimum Reporting Level (LCMRL)

27 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Table A-1 – Insufficient information to Characterize

Constituent	Recommended Analytical Method	Units	Method Reporting Limit	Introduction Standard	Delivery Standard	CAP 5 Year Average (2015-2019)
Dissolved Oxygen	Field	mg/L		---	---	
pH	Field			6.5-9.5		
Temperature	Field	°F		---	---	
CAP Priority Contaminants - Characterize						
Alpha, Gross	EPA 900.0	pCi/l	3	TBD	Characterize	--
Aluminum, Total, ICAP	EPA 200.8	µg/l	20	TBD	Characterize	--
Beryllium	EPA 200.8	µg/l	1	TBD	Characterize	ND
Beta, Gross	EPA 900.0	pCi/l	3	TBD	Characterize	--
Bromide	EPA 300.0	µg/l	5	TBD	Characterize	81.7
Cadmium	EPA 200.8	µg/l	0.5	TBD	Characterize	ND
Cobalt, Total	EPA 200.8	µg/l	2	TBD	Characterize	--
Germanium	EPA 200.8	µg/l	0.3	TBD	Characterize	--
Mercury	EPA 245.1	µg/l	0.2	TBD	Characterize	ND
Molybdenum	EPA 200.8	µg/l	2	TBD	Characterize	--
Nickel	EPA 200.8	µg/l	5	TBD	Characterize	ND
Nitrite	EPA 300.0	µg/l	0.05	TBD	Characterize	--
Potassium, Total, ICAP	EPA 200.7	µg/l	1	TBD	Characterize	4.9
Radium-226+228	GA Tech	pCi/l	1	TBD	Characterize	--
Strontium, ICAP	EPA 200.7	mg/l	0.01	TBD	Characterize	1.1
Vanadium	EPA 200.8	µg/l	3	TBD	Characterize	--

28 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Table A-2

Table A-2. List of primary and secondary EPA regulated Constituents, EPA unregulated Constituents, EPA recognized disinfection byproducts, and pathogens that are recognized as constituents of concern and are prohibited from introduction into the CAP System. These constituents have rarely or never been found in the CAP System, and therefore, Standards are equivalent to the Method Reporting Limit that has historically been utilized by CAWCD. CAP 5 Year Averages designated with an ND either have not been detected or detected in less than 5% of samples. Dashes represent constituents that have not been tested by CAWCD in the past.

Constituent	Recommended Analytical Method	Units	Method Reporting Limit	Introduction Standard	Delivery Standard	CAP 5 Year Average (2015-2019)
Regulated EPA Primary and Secondary Constituents						
1,1,1-Trichloroethane	EPA 524.2	µg/l	0.5	0.5	0.5	ND
1,1,2-Trichloroethane	EPA 524.2	µg/l	0.5	0.5	0.5	ND
1,1-Dichloroethylene	EPA 524.2	µg/l	0.5	0.5	0.5	ND
1,2,4-Trichlorobenzene	EPA 524.2	µg/l	0.5	0.5	0.5	ND

Table A-3

Table A-3. List of constituents for which there is currently no EPA approved analytical method. There is no requirement to test for the constituents at this time, however, this list will be re-evaluated periodically and constituents will be re-classified as needed.

Constituents	
1,3-Butadiene	Equilenin
17 alpha-estradiol	Erythromycin
2-Nonylphenol	Ethylene oxide
4,4'-Methylenedianiline	Ethylene thiourea
4-Nitrophenol (qualitative)	Hydrazine
Acephate	Legionella Pneumophila
Acetamide	Mestranol
Bensulfide	Methamidophos
Benzyl chloride	Nitrobenzene
Captan	Nitroglycerin
Chloramben	N-Methyl-2-pyrrolidone
Clethodim	N-nitrosodiphenylamine
Cumene hydroperoxide	Norethindrone (19-Norethisterone)
Crototoxins	Oxirane, methyl

Review of Guidance Document

Initial Analysis

- Water Quality Analysis
- Modeling

Questions

Operational Monitoring

- Proving Period
- Ongoing Monitoring Period

Questions

Reporting

- Test Results
- Annual Report

Questions

31 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



The diagram illustrates the 'Operational Monitoring' section of the guidance document. At the top, a horizontal flowchart shows three stages: 'Initial Analysis', 'Operational Monitoring' (highlighted with a red oval and a 'Reference' callout), and 'Reporting'. Below this, a list of topics is shown: 'Ongoing Monitoring' (with a red circle around '7.2.4' and a 'Section within Guidance Document' callout) and 'Exceedance' (with a red circle around '7.2.2'). A 'Summarized portion' callout points to a list item: 'Five days after receiving test results a second sample, Verification Sample, must be collected and reported to CAWCD within 48 hours after receipt of results^{5.2.1}'. A 'Directly from Guidance Document' callout points to a text box describing 'Tier 1' exceedance: 'Tier 1 – Exceedance occurred in the initial sample, but did not occur in the Verification Sample. Introduction of Non-Project Water can continue; however, CAWCD may require increased sampling frequency to verify that the irregularity is not re-occurring.' The footer of the diagram includes the text '34 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20', 'KNOW YOUR WATER.', and the CAP logo.

32 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Initial Analysis (Section 3)

- Purpose^{3.1}
- Water Quality^{3.4.1}
 - Groundwater
 - Surface Water
- Modeling^{3.4.2}
 - Introduction Standards
 - Delivery Standards

Initial Analysis

Operational Monitoring

Reporting



- Purpose^{3.1}

3.1. Purpose

The Initial Analysis is intended to allow CAWCD and Reclamation to have sufficient information to make a determination of the likely effect of introducing a proposed Non-Project Water source into the CAP System. This step occurs prior to the introduction of the Non-Project Water supply and includes use of the CAP System-wide Water Quality Model described in Section 6 to evaluate conformance with Delivery Standards.


Initial Analysis
Operational Monitoring
Reporting

- **Water Quality Analysis^{3.4.1}**
 - EPA physical sampling procedure^{3.4.1.1}
 - Laboratories must use approved EPA analytical methods for testing constituents and conform with Arizona Administrative Code ^{3.4.1.2}
 - Laboratories must be licensed by Arizona Department of Health Services^{3.4.1.2}
 - Chain of Custody^{3.4.1.3}

35 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.




Initial Analysis
Operational Monitoring
Reporting

- **Initial Analysis Sampling**
 - Groundwater^{3.4.1.4}
 - All wells must be sampled
 - Surface Water^{3.4.1.5}
 - Applicant must demonstrate the Introduction Standards can met for all times of the year.
 - Historical Sampling Information (one year minimum)
 - Quarterly (Table A-1)
 - Semi Annual (Table A-2)

36 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.




Initial Analysis
Operational Monitoring
Reporting

- Modeling
 - Introduction Standard^{3.4.2}
 - Applicant is responsible for demonstrating that Introduction Standard can be met, but CAWCD does not require the use of a specific model.
 - Groundwater
 - Include all wells contributing to the Non-project water source
 - Surface Water
 - Monthly time-step
 - Take into account seasonal water quality changes
 - Groundwater and Surface Water
 - Specific requirement will be outlined in advance

37 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Initial Analysis
Operational Monitoring
Reporting


- Modeling
 - Introduction Standard^{3.4.6}
 - Water Treatment

3.4.6. Water Treatment

If testing and modeling fail to demonstrate compliance with Introduction Standards, and a variance is not provided, then treatment may be required prior to introducing water into the CAP System. In this case, the Applicant must demonstrate that the treated water is acceptable for introduction. A comprehensive water treatment plan will be developed by the Applicant for approval by CAWCD. Testing and modeling of the treated water will be required similarly to groundwater procedures, but will be specifically determined by CAWCD on a case-by-case basis.

38 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Initial Analysis
Operational Monitoring
Reporting


- Modeling
 - Introduction Standard^{3.4.2}
 - Blending

For blending purposes, values of constituents that are reported by a laboratory as “non-detect” should be considered to be 50% of the Method Reporting Limit (MRL) as listed in Appendix A.

- Review and Verification^{3.4.3}
 - Meet with CAWCD to discuss lab test results and model output
 - Test results should be within the previous 12 months
 - Model must clearly demonstrate the Applicant will meet the Introduction Standards

39 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Initial Analysis
Operational Monitoring
Reporting


- Modeling
 - Delivery^{6.2}

6.2. Modeling
 The CAWCD Water Transmission Group will develop and maintain the CAP System-wide Water Quality Model. All modeling will be performed by CAWCD and shared with Reclamation results may be made available to Wheeling Entities and water users upon request.

As described in Section 3.4.4, the CAP System-wide Water Quality Model will be used in the Initial Analysis to determine if the proposed introduction of Non-Project Water will meet established Delivery Standards.

40 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.





Initial Analysis
Operational Monitoring
Reporting

- Modeling
 - Delivery^{6.2}
 - Exceedance of Modeled Delivery Standard^{3.4.5}

3.4.5. Exceedance of Modeled Delivery Standards

In the event that modeling during the Initial Analysis shows that the proposed Non-Project Water supply would meet the Introduction Standards, but would, in combination with all other previously approved Non-Project Water sources, result in an exceedance of one or more Delivery Standards, CAWCD and Reclamation will take steps to accommodate the proposed project. This may include reducing the relevant Introduction Standard(s) applicable to both the proposed and all previously approved Non-Project Water supply projects, provided CAWCD and Reclamation have first consulted with all affected parties and provided opportunities for alternative resolution.

41 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20



Initial Analysis
Operational Monitoring
Reporting

- Modifications to Non-Project Source Water

3.4.7. Modifications to Non-Project Source Supply

Any proposed changes to Non-Project Water sources (e.g., new or modified groundwater wells, changes in surface water diversions, changes in treatment processes, etc.) after the initial analysis phase must be reported to CAWCD and Reclamation. The proposed changes will require additional sampling, as described above, and, if applicable, a new blending model must be approved by CAWCD and Reclamation prior to implementation of the changes. The modified Non-Project supply must comply with all Standards. Modifications may result in additional water quality monitoring requirements and possible revisions to the CAWCD Wheeling Contract, Reclamation Wheeling Contract, Federal Arrangement, or Firing Agreement.


42 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

Initial Analysis Operational Monitoring Reporting


- **Summary**
 - ✓ Sufficient sampling has been collected of all proposed Non-Project Water sources
 - ✓ Applicant has demonstrated the proposed project can meet Introduction Standards
 - ✓ CAWCD has modeled the proposed project and Delivery Standards are met
 - ✓ Consultation with CAWCD to review test results and modeling have occurred


43 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER. 

Questions

44 |


KNOW YOUR WATER. 




Operational Monitoring (Section 4)

- Purpose^{4.1}
- Proving Period^{4.3.1}
 - Exceedance^{7.2.1} and Variance^{7.2.4.1}
 - Supply Classification^{4.3.2}
- Ongoing Monitoring^{7.2.4}
 - Exceedance^{7.2.2} and Variance^{7.2.4.2}

45 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER. 





- Purpose^{4.1}

4.1. Purpose

The goal of operational water quality monitoring is to collect essential data to establish/affirm baseline conditions for the introduced Non-Project Water during an initial Proving Period, and ensure continued compliance with Introduction Standards thereafter.

46 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER. 





- Proving Period^{4.3.1}

4.3.1. Proving Period

All water conveyed into the CAP System will require routine monitoring for a minimum of two years following initial introduction to determine the water classification and compliance monitoring frequency (Section 4.3.2). During that two year period, known as the “Proving Period”, constituents included in Tables A-1 will be sampled quarterly and constituents included in Table A-2 will be tested semi-annually. For Non-Project Water that requires treatment prior to introduction into the CAP System, additional sampling frequency and/or procedures may be required and will be determined by CAWCD and Reclamation. If more than twelve months have elapsed between the Initial Analysis in 3.4.1 and the beginning of the Proving Period, re-sampling of individual wells or source water is required to confirm original analysis.


47 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER. 



- Proving Period^{4.3.1}
- Exceedences^{7.2.1}
 - Five days after receiving test results a second sample, Verification Sample, must be collected
 - Verification Sample
 - Only constituents that exceed the Introduction Standard
 - Results reported to CAWCD with 48 hours of test results^{5.2.1}
 - Exceedance of Verification Sample requires prompt consultation with CAWCD
 - All exceedance will be reported to CAP water users^{7.2.3}

48 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER. 

Initial Analysis
Operational Monitoring
Reporting

- Proving Period^{4.3.1}
 - Variance^{7.2.4.1}
 - Short Term variance may be considered by CAWCD and Reclamation on a case-by-case basis if they meet the following:
 - Constituents are expected to stabilize by the end of the Proving Period
 - Modeling demonstrates that Delivery Standards will not be exceeded^{6.2}
 - Limits on variance
 - Apply on a constituent by constituent basis
 - No more than 150% of Introduction Standard
 - Not to exceed 24 months
 - CAWCD and Reclamation reserve the right to withdraw variance if progress to stabilize the constituent of concern is inadequate.

49 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

Initial Analysis
Operational Monitoring
Reporting

- Proving Period^{4.3.1}
 - Supply Classification^{4.3.2}
 - “Type A” – Below Delivery Standards
 - “Type B” – Complies with Introduction Standards
 - “Type C” – Requires treatment

“Type A” – Initial Analysis and Proving Period have demonstrated that the Non-Project Water source complies with Introduction Standards and is below Delivery Standards prior to mixing with the CAP water. For ongoing Compliance Monitoring, Type A water must be tested annually for the full list of constituents (Appendix A).

“Type B” – Initial Analysis and Proving Period have shown that the Non-Project source complies with Introduction Standards for each water quality constituent (Appendix A), but only meets Delivery Standards when mixed with CAP water (as predicted by modeling). For ongoing Compliance Monitoring, Type B water will be tested annually for the full list of constituents (Appendix A), however, exceedance constituents (those that exceed Delivery Standards) must be sampled quarterly. Operational data (e.g. flow data) may also be required.

“Type C” – Initial Analysis and Proving Period have shown that the Non-Project Water source requires treatment prior to introduction into the CAP canal. For Compliance Monitoring, Type C water will be tested annually for the full list of constituents (Appendix A). However, for exceedance constituents (those contributing to the reason for treatment), real-time or monthly sampling will be required to verify successful treatment. Real-time sampling will only be required for an exceedance constituent that can be effectively tested in real-time (e.g. turbidity). Operational data (e.g. flow data) may also be required.

50 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

Initial Analysis
Operational Monitoring
Reporting

- Operational Monitoring⁴

Table 1. Ongoing water quality sampling frequency for Non-Project Water. All waters are sampled quarterly and semi-annually for the first two years (Proving Period). Waters are then classified and sampled accordingly for Compliance Monitoring. All samples should be collected as close to the beginning of the designated month as possible.

Time Period	Water Types	Table A-1 Sampling	Table A-2 Sampling	Exceedance Constituent Sampling
Proving Period	All Introduced Non-Project Waters	Quarterly (Feb, May, Aug, Nov)	Semi-Annual (Feb, Aug)	Real-time or Monthly (Treated Water Only)
Compliance Monitoring Period	Type A Water	Annual (August)		N/A
	Type B Water			Quarterly (Feb, May, Aug, Nov)
	Type C Water			Real-time or Monthly

51 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.

Initial Analysis
Operational Monitoring
Reporting

- Ongoing Monitoring^{7.2.4}
 - Exceedance^{7.2.2}
 - Five days after receiving test results a second sample, Verification Sample, must be collected and reported to CAWCD within 48 hours after receipt of results^{5.2.1}

Tier 1 – Exceedance occurred in the initial sample, but did not occur in the Verification Sample. Introduction of Non-Project Water can continue; however, CAWCD may require increased sampling frequency to verify that the irregularity is not re-occurring.

52 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.

Initial Analysis
Operational Monitoring
Reporting

- Ongoing Monitoring^{7.2.4}
 - Exceedance^{7.2.2}
 - All exceedances will be reported to CAP water users^{7.2.3}

Tier 2 – Exceedance occurs in both the initial sample and the Verification Sample. Introduction of Non-Project Water must cease immediately and may not resume until an approved remedy can be implemented. Remedies may include, but are not limited to:

- The exceedance constituent(s) may require more frequent sampling (at the discretion of CAWCD Water Transmission),
- The Wheeling Entity may apply for a variance (Section 7.2.4.3),
- Modification of blending, exclusion of specific water source, treatment, etc.

If, at the time of cessation, the cumulative volume of Non-Project Water introduced by Wheeling Entity, after accounting for any applicable losses, exceeds the amount delivered by CAWCD to that point in time, CAWCD will continue to satisfy the Non-Project Water delivery schedule up to the point where the Wheeling Entity's delivered water, less applicable losses, is equal to the volume of introduced water. The Wheeling Entity must consult with CAWCD to determine availability of water to be delivered.

53 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.

Initial Analysis
Operational Monitoring
Reporting

- Ongoing Monitoring^{7.2.4}
 - Exceedance^{7.2.2}
 - Figure 1 – Flow Chart

```

graph TD
    A([Water Quality Sample  
(Wheeling Entity)]) --> B[/Provide test results to  
CAWCD Water  
Transmission within 48/]
    B --> C{Are Introductory  
standards  
exceeded?}
    C -- NO --> D[Continue prescribed sampling  
schedule]
    C -- YES --> E[Collect verification sample within 5  
days of receiving original test results]
    E --> F[/Provide test results to  
CAWCD Water  
Transmission within 48/]
    F --> G{Are Introductory  
standards  
exceeded?}
    G -- NO --> H[Tier 1  
Exceedance not found in verification  
sample; CAWCD may require  
additional sampling of exceedance  
constituents]
    G -- YES --> I[Tier 2  
Exceedance found in  
Verification Sample]
    I --> J[WHEELING ENTITY MUST STOP  
INTRODUCTION AND CONSULT  
WITH CAWCD]
    H --> D
    
```

54 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.

Initial Analysis
Operational Monitoring
Reporting

- Ongoing Monitoring^{7.2.4}
 - Variance^{7.2.4.2}


7.2.4.2 Variance - Ongoing Compliance Period

If unforeseen issues arise, CAWCD, with approval from Reclamation, may issue a temporary variance for a constituent(s) that exceeds Introduction Standards on a case-by-case basis, provided that:

- Delivery Standards, as predicted by the CAP System-wide Water Quality Model, are not exceeded, and
- The variance is for a fixed duration, not to exceed two years, and
- The variance applies only on a constituent-specific basis. The Non-Project Water shall meet all other applicable water quality standards for which a variance is not granted, and
- CAWCD and Reclamation expect that the issue requiring the variance will be resolved by the end of the variance period, and
- An increased frequency of sampling will be required.

55 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.




Initial Analysis
Operational Monitoring
Reporting

- Summary
 - ✓ 24 month Proving Period establishes a Non-Project Water supply classification:
 - ✓ “Type A” – Below Delivery Standards
 - ✓ “Type B” – Complies with Introduction Standards
 - ✓ “Type C” – Requires treatment
 - ✓ Supply classification establishes sampling frequency for Tables :
 - ✓ A1 – Characterized
 - ✓ A2 – “Non-detect
 - ✓ Processes in place to address an exceedance and a variance

56 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.



Questions

57 |

KNOW YOUR WATER.




Reporting/Communication (Section 5)

- Purpose^{5.1}
- Requirments^{5.2}
 - Records Retention
 - Operational Changes
 - Annual Report
- Reporting of Exceedances^{7.2.3}

58 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER.





Initial Analysis Operational Monitoring Reporting

- Purpose^{5.1}


5.1. Purpose


The goal of reporting/communication is to ensure that CAWCD has the necessary information to make critical decisions regarding Non-Project Water.

Specifically, communication between the Wheeling Entity and CAWCD will:

 - Provide water quality data for the CAP System-wide Water Quality Model
 - Allow for review of long-term sampling data and flag any exceedances or potential problem constituents
 - Provide a basis for enforcement (due to exceedance)
 - Alert CAWCD of changes in operation that may affect water quality
 - Provide a summary of activities in the form of an annual report

59 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20


KNOW YOUR WATER. 




Initial Analysis Operational Monitoring Reporting

- Requirements^{5.2}
 - Records Retention
 - Must be kept for five years
 - Operational Changes
 - Notification 14 days prior to operational change (ex. maintenance on wells) that may have water quality impacts
 - Annual Report
 - Submitted annually by March 31st
 - CAWCD will develop a standard format that will include: sampling activity, operational data and water quality data.

60 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER. 




- CAWCD Reporting of Exceedance^{7.2.3}

7.2.3. CAWCD Reporting of Exceedances

All verified (initial and Verification Sample) exceedances will be reported to CAP water users, including the categorization of the exceedance (Section 7.2.2) and the steps to remedy the exceedance. This notification will be provided electronically, either through direct communication or through a secure web site for authorized users.

61 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20


KNOW YOUR WATER. 

Revision^{8.2}

8.2. Revision

The Guidance Document is subject to periodic review and modification by CAWCD and Reclamation. CAWCD and Reclamation will review and seek comment on revisions no less frequently than every five years after the first introduction of Non-Project Water. CAWCD and Reclamation also reserve the right to make revisions of Introduction Standards pursuant to Section 3.4.5.

62 | REVIEW OF GUIDANCE DOCUMENT | 04.23.20

KNOW YOUR WATER. 

Questions

63 |

KNOW YOUR WATER.



Next Steps

Patrick Dent
Water Policy Director

64 |

KNOW YOUR WATER.

