

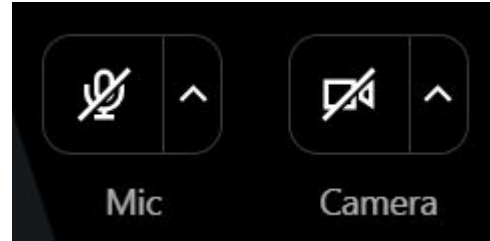


Engineering Bulletin 10
Chapter 2: Sources Development & Construction

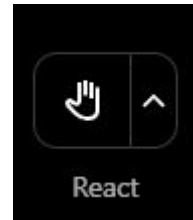
May 7, 2026

Online Tools

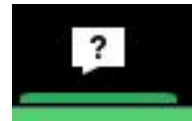
Muted (bottom, middle)



Raise hands (bottom, left)



Use the Question Tool (top, right)



Agenda

- Welcome and Housekeeping
- Team Introduction
- MDCR (Minimum Design Criteria Rule) Project High Level Update
- Topic Introduction: EB 10 Chapter 2: Sources and Construction
- What Have We Heard Thus Far?
- Open Discussion
- Closeout and Next Steps



Tips for a Good Meeting

- Share from your experience and perspective
- Please listen when others are speaking
- Allow space for all to participate
- Be generous
- We ask that all present be respectful and kind.



We believe that following these will lead to good outcomes and increased participation

MDCR High Level Update

Key Benefits:

- Updating engineering rules from 1978 standards
- Consolidating Bulletin 8 and Bulletin 10 into one Minimum Design Criteria (MDC) document
- Improve clarity and ensure public health protections
- Gathering stakeholder input before drafting new rules
- New rules expected to be finalized in 2028



EB 10 Chapter 2: Source Development and Construction

Surface Water

- Source Development
- Source Construction

Groundwater and Wells

- Groundwater Development
- Well Construction Requirements

Springs

- Spring Construction Requirements

Other Source Development and Construction

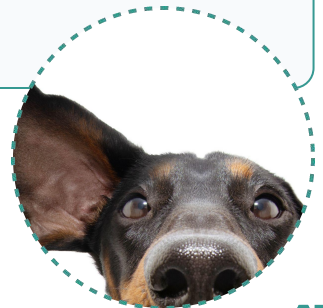
- Groundwater Under the Direct Influence of Surface Water (A.A.C. R18-4-212)
- New Source Analysis
- Other Sources



What Have We Heard Thus Far?

Outdated Terminology and Department References

- Please update the outdated terms (e.g., semi-public water systems) and all agency references (e.g., ADEQ instead of AZ Department of Health Services and ADWR instead of State Land Department).



What Have We Heard Thus Far?

- **Groundwater and Well Construction Updates**

- Do you support increasing rigor of well construction (e.g., should sampling interval be 5 feet geologic sampling intervals instead of 10 feet?)
- Should we include more specificity or explanation regarding what components must be NSF-certified?
 - Right now anything that comes into contact with the water must be NSF-certified, including sanitary seals, but we received feedback that it is not clear.
- Should “dug wells” be prohibited? (i.e., should ADEQ require modification for older systems that have them? Currently they’re potentially allowed for certain geological conditions.)



What Have We Heard Thus Far?

- **Clear Distinction between Surface Water vs. Groundwater Requirements**

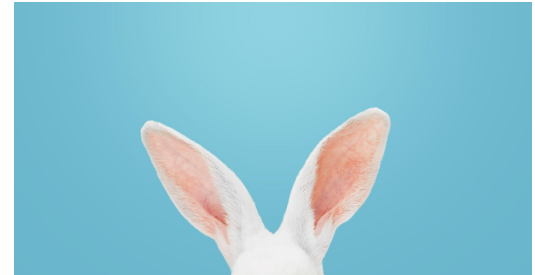


- How can we best separate the design criteria of surface water from groundwater well or springs?

What Have We Heard Thus Far?

Considerations for Groundwater Under the Direct Influence of Surface Water

- What specific construction and Microscopic Particle Analysis (MPA) monitoring criteria should be required for wells sited within 500 feet of a flowing body of water?



What Have We Heard Thus Far?

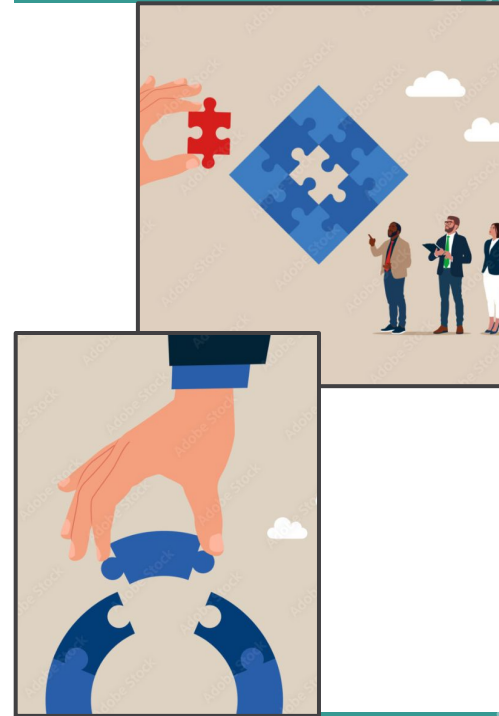


Updating Source Approval Process and Pathogen Testing

- What water quality analyses/testing would be required for a new source and an old source?

Identified Gaps

- Dams
 - Arizona Water Commission was replaced by Arizona Department of Water Resources (ADWR)
- Intake structures
 - Expand to address subsurface intakes and bank filtration
 - Add chemical treatment guidance
- Well construction
 - Add schematic figures to highlight key design details
- Source water
 - Add a section discussing management and treatment strategies for surface water



Open Discussion

Tips for a good discussion:

- Questions to consider to revise minimum design criteria for each subtopic.
- Raise your hand or write a question or comment in chat regarding the topic.
- Each topic will have 10 minutes to discuss or comment. We will return to topics that need more discussion, now or in the future.
- Focus on big picture.
- What needs to be added, removed, clarified from EB10?



Open Discussion



Surface Water

- Source Development
- Source Construction



Groundwater & Wells

- Groundwater Development
- Well Construction Requirements



Springs

- Spring Construction Requirements

Other Source Development and Construction

- Groundwater Under the Direct Influence of Surface Water (A.A.C. R18-4-212)
- New Source Analysis
- Other Sources



Focused discussion of relevant topics currently not included in EB10

- Groundwater Under the Direct Influence of Surface Water (A.A.C. R18-4-212)
- New Source Analysis
- Other Sources (e.g., AWP)



Groundwater Under the Direct Influence of Surface Water

- What has been your experience, if any, with GUDI, and how have those experiences shaped your interactions with ADEQ regarding this issue?
- What specific criteria or guidance should be considered when incorporating the GUDI rule (A.A.C. R18-4-212) into the new MDC?
- What specific construction and Microscopic Particle Analysis (MPA) monitoring criteria should be required for wells sited near a flowing body of water?
- What is the maximum distance that a well is located from a flowing body of water that should require the MPA?
- What other criteria should be required to analyze the influence of surface water on groundwater?

Spring Construction Requirements

- What critical design and siting considerations for springs that should be added to the MDC?
- What construction criteria are needed for spring site preparation, enclosures, and appurtenances to ensure source protection?
- What specific requirements for protection (especially regarding surface water influence) and disinfection should be established for springs?



New Source Analysis (NSA)

- How effectively does the NSA serve its purpose of ensuring new source adequacy and safety, and what improvements are needed?
- Should the NSA be different for groundwater versus surface water or GUDI?
- What additional tests should be done for surface water or GUDI or for a system modification?



New Source Analysis (NSA) Cont'd.

- How long should a sampling analysis be viable to demonstrate that a PWS is designed adequately for a NEW source water?
 - *e.g., sampling was conducted 10 years prior in the well, but the well is only now being proposed as a source to a drinking water system*
 - Why do you suggest this?
 - What are the scientific justifications?
 - What are the practical justifications?



Existing or Re-Activated Source Testing

- What are your recommendations for resampling sources when a system is making modifications using an existing source or is re-activating a source?
 - *This is not NSA testing, although the terminology is used sometimes, this is data that the engineer reviewers need to ensure that on day one of operation, the modified system will reliably and consistently meet MCLs and other SDWA requirements, including corrosion or to identify interference issues. See A.A.C. R18-5-505(D).*
 - Total Coliform?
 - Nitrates/Nitrites?
 - IOCs/acutes?



Groundwater Source Development

- How should the discussion for determining safe yield from a well be updated? Should it be the same as what's currently in Bulletin 10?
- What updates are necessary for the definition of well types — gravel or drilled wells — and their corresponding source protection requirements? (pages 2-9 to 2-13)



Well Construction Requirements

- What specific design criteria do you recommend for protecting the upper terminal of a well, especially for sites prone to flooding? Is the current criteria to protect wells lacking?
- For the following elements, what specific revisions or new criteria do you recommend?
 - grouting (including gravel pack protective depths)
 - screens
 - plumbness and alignment
 - water level measurement
 - capping
 - fencing
 - blasting/chemical conditioning
 - disinfection
 - observation wells
 - abandoned wells
 - recharged wells



Surface Water Source Development

What criteria or best practices should be added for source protection, controlled catchments, and the development of specific sources like ponds/lakes, surface streams, and irrigation canals?



- a. CONTROLLED CATCHMENT. A controlled catchment is a defined surface area such as a roof or paved area from which runoff is collected.

It should only be used for small applications where groundwater is inaccessible or of such poor quality that it cannot be used for domestic use. A properly located and constructed controlled catchment and cistern, augmented by adequate filtration and disinfection facilities, can provide safe drinking water.

The following precautions shall be taken to prevent contamination to any controlled catchment: (1) fencing to prevent unauthorized entrance by man or animals, and (2) an intercepting drainage ditch with a raised curb around the catchment area to prevent the mixture of undesirable surface drainage and controlled runoff.

Surface Water Source Development

Should criteria for determining safe yield remain the same as what is currently in EB10? See p. 2-8 of EB10. What methods or considerations should be included for analyzing drought conditions?

4. SAFE YIELD. The safe yield of the water source shall be sufficient to supply the total water requirements (demands) of a community with due regard to all pertinent planning criteria within the region in which the supply must be developed.

The safe yield of a surface water supply is defined as the quantity of water that can be provided on a continuous basis under the full range of hydrologic conditions that might reasonably be expected to occur during the life of the project. Yield considerations include climate, rainfall, runoff, evaporation, infiltration reservoir storage capacity, the area-versus-capacity relationship, drainage area size, sedimentation, minimum drawdown limitations, and various other considerations will affect a surface water source's performance and hydrologic effectiveness.



Surface Water Source Development

What criteria or best practices should be added for source protection, controlled catchments, and the development of specific sources like ponds/lakes, surface streams, and irrigation canals?



Surface Water Source Development

What revisions do you recommend for flood protection requirements for surface water reservoirs and structures?



5. FLOOD PROTECTION. All surface water reservoirs and structures shall be protected from a 100 year return frequency runoff condition, or be designed to either remain operational or isolated from the system during such a condition. For semi-public water systems, the requirement may be waived by the Department.

Information on flood zones may be available from sources such as the U.S. Army Corps of Engineers, the Department of Housing and Urban Development, or county or local flood control districts, or may have to be developed for the specific project.

Surface Water Source Construction

- What specific design issues and modern practices (such as subsurface intakes and bank filtration) should be incorporated into the criteria for intake structures and systems?
 - In what instances should or may chemicals be added at the source?
 - Are there other practices that should be implemented at the source?
- What additional requirements are needed to address operational and environmental hazards that intake structures are subject to?



Surface Water Source Construction

Should the MDC clarify or update criteria related to construction techniques like cribbing for surface water sources?

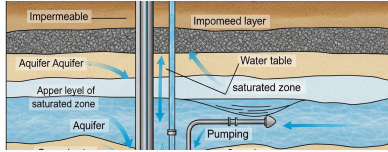
A cribbing is usually constructed around the structure to protect it. Cribbing may range from concrete blocks for a small structure, to a rock filled timber cribbing for a large structure. Aggregate contained by a curb may be placed around the conduit end, or port as a stabilizing measure. Horizontal beams tied into the cribbing may also serve as stabilizing members. A screen shall be placed over the port to prevent debris from entering the system. (Refer also to Chapter 4, Pretreatment for screen criteria.)

EB 10 Chapter 2: Source Development & Construction



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Other Source Development and Construction

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Any other
questions or
comments?



Your Voice Matters!

Take our survey and visit our site to keep up with our project progress.



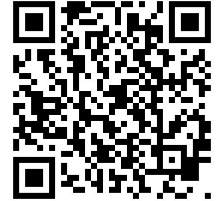
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Finding MDCR Webpage from the ADEQ Homepage (azdeq.gov)



Click on the “Laws/Rules/Policy” tab.



Laws/Rules/Policies

Click “View” under Active Rulemakings
([azdeq.gov/active-rulemakings](https://www.azdeq.gov/active-rulemakings))



Active Rulemakings

ADEQ maintains a list of active rulemakings | [View >](#)

Under the Water Quality subheading, click
on “View” next to Minimum Design Criteria
for Public Water Systems



Water Quality

- Drinking Water Rule Updates to Conform to Federal Requirements | [View >](#)
- [Minimum Design Criteria for Public Water Systems](#) | [View >](#)
- Nonpoint Source Discharges: Remediation of Abandoned Hardrock Mines. In:

Minimum Design Criteria for Public Water Systems and Related Infrastructure

Revised On: Feb. 10th, 2026 - 08:49 am

Summary:

ADEQ intends to update its public water system design and application process rules in 18 A.A.C. 5, Article 5, Minimum Design Criteria for Public Water Systems.

- Article 5: Minimum Design Criteria for Public Water Systems | [View Article 5 >](#)

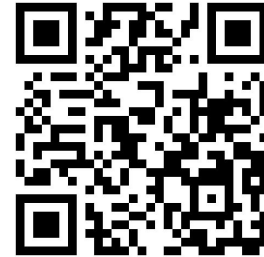
ADEQ's rules for public water system Minimum Design also include Engineering Bulletins 8 and 10 via incorporation by reference in A.A.C. R18-5-502:

- Engineering Bulletin 8 — Disinfection of Water Systems | [View Bulletin 8 >](#)
- Engineering Bulletin 10 — Guidelines for the Construction of Water Systems | [View Bulletin 10 >](#)

The Minimum Design Criteria Guidelines (Engineering Bulletin 10) and rules for public water systems and related infrastructure in Article 5 currently reflect engineering standards and practices from 1978. The rules and incorporated technical requirements will be updated to reflect current industry standards and practices.

← Rulemaking Website

azdeq.gov/rulemaking/minimum-design-criteria



More information and content to come (e.g., external survey).

Join our upcoming virtual engagement sessions!

1.



**Sources &
Assessments**

Today!

2.



**Pumping and
Storage Tanks**

6/9/2026

3.



3. Treatment

7/16/2026

4.



**4. Disinfection
and Distribution**

8/13/2026

5.



**Project Process
and Exemptions**

9/1/2026

Thank You!

MDCR Team:

- Matthew Olson
- Sara Dekkiche
- Heidi Welborn
- Stephanie Huang
- Hafez Ahmed
- Nicole Rubenstein