

Drinking Water Board Packet

November 13, 2018

Agenda



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Drinking Water Board
Betty Naylor, *Chair*
Roger G. Fridal, *Vice-Chair*
Brett Chynoweth
Jeff Coombs
Tage Flint
Eric Franson, P.E.
Alan Matheson
David Stevens, Ph.D.
Kristi Bell
Marie E. Owens, P.E.
Executive Secretary

DRINKING WATER BOARD MEETING
November 13, 2018 – 1:00 pm
Multi Agency State Office Building – Board Room 1015
195 North 1950 West
Salt Lake City, Utah 84116

Marie Owens' Cell Phone #: (801) 505-1973

1. Call to Order
2. Roll Call – Marie Owens
3. Election of Board Chairman & Vice Chairman
4. Approval of the Minutes:
 - A. August 28, 2018
 - B. October 12, 2018
5. Financial Assistance Committee Report
 - A. Status Report – Michael Grange
 - B. Project Priority List – Michael Grange
6. Rulemaking Process
 - A. Authorization to Adopt Cross Connection Control Rules - Gary Rager
 - i. 309-105-12: Cross Connection Control
 - ii. 309-305: Cross Connection Control and Backflow Prevention Certification
 - B. Authorization to Begin to Amend Revised Total Coliform Rule (RTCR) – Jennifer Yee
 - i. 309-100-9: Administration: Drinking Water Program
 - ii. 309-105-4: Administration: General Responsibilities of Public Water Systems
 - iii. 309-110-4: Administration: Definitions
 - iv. 309-200: Monitoring and Water Quality: Drinking Water Standards
 - v. 309-210-8: Monitoring and Water Quality: Distribution System Monitoring Requirements
 - vi. 309-211: Monitoring and Water Quality: Distribution System – Total Coliform Requirements
 - vii. 309-215-10&16: Monitoring and Water Quality: Treatment Plant Monitoring Requirements
 - viii. 309-220-4: Monitoring and Water Quality: Public Notification Requirements
 - ix. 309-225-4: Monitoring and Water Quality: Consumer Confidence Reports

- C. Update of Ongoing Rulemaking Activities
 - i. Improvement Priority System (IPS) – Jennifer Yee
 - ii. Water Operator Certification - Michael Grange
 - iii. Public Water System Identification – Colt Smith
 - iv. Minimum Sizing Requirements - Nathan Lunstad

- 7. Rural Water Association Report – Dale Pierson

- 8. Open Board Discussion – Betty Naylor
 - A. Public Comment Period
 - B. Board Training Schedule
 - i. Roles/Responsibilities/Ethics/Code of Conduct – January 2019
 - ii. State Revolving Fund (SRF) – February 2019

- 9. Directors Report
 - A. Legislative Updates
 - B. Enforcement Report
 - C. Enforcement Procedure Discussion
 - D. Other

- 10. Other

- 11. Next Board Meeting:
 - Date: Tuesday, January 15, 2019
 - Time: 1:00 pm
 - Place: Multi Agency State Office Building
Board Room - 1015
195 North 1950 West
Salt Lake City, Utah 84116

- 12. Adjourn

In compliance with the American Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human Resources, at: (801) 297-3828, TDD (801) 903-3978, at least five working days prior to the scheduled meeting.

Agenda Item

4(A)



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF DRINKING WATER
Marie E. Owens, P.E.
Director

Drinking Water Board
Betty Naylor, *Chair*
Roger G. Fridal, *Vice-Chair*
Brett Chynoweth
Jeff Coombs
Tage Flint
Eric Franson, P.E.
Brad Johnson
David Stevens, Ph.D.
Marie E. Owens, P.E.
Executive Secretary

DRINKING WATER BOARD MEETING

August 28, 2018 – 2:15 pm

Davis Conference Center – Zephyr Room

1651 North 700 West

Layton, Utah 84041

DRAFT MINUTES

1. Call to Order

Betty Naylor, Board Chairman called the meeting to order at 2:15 p.m. Each Board member present provided a brief introduction of themselves and the area of expertise they represent.

2. Roll Call

Board Members present: Betty Naylor, Tage Flint, Eric Franson, Brad Johnson, Brett Chynoweth, and David Stevens.

Division Staff present: Marie Owens, Hayley Shaffer, Michael Grange, Lisa Nelson, Heather Bobb, Bernie Clark, Gary Rager, Jennifer Yee, and Colt Smith.

3. Approval of the Minutes:

A. July 13, 2018

Betty Naylor noted one correction to page 5 of the minutes which indicated the February 2019 meeting will be held in Layton. This item will be corrected to reflect the meeting will be held in St. George.

- Brett Chynoweth moved to approve the minutes contingent upon the noted correction. David Stevens seconded. The motion was carried unanimously by the Board.

4. Financial Assistance Committee Report

A. Status Report – Michael Grange

Michael Grange, Technical Assistance Section Manager with the Division of Drinking Water (DDW, the Division) reported as of July 31, 2018, there is a negative balance in the State SRF fund of \$86,000. This amount includes the proposed project allocations on the Board agenda for Aurora City for just over \$4 million; however they have requested to withdraw their application at this time and reevaluate the possibility of doing the project in phases, instead of all at once as originally planned. He reported between now and July 31, 2019 another \$2.2 million will be added to the State fund for a total of about \$2 million.

Michael reported as of July 31, 2018, there is approximately \$57.5 million in the Federal SRF fund. This amount includes the proposed project allocations on the Board agenda for West Corinne Water Company and Central Utah Water Conservancy District. He continued stating over the course of the next year, an additional \$30.7 million will be added to the fund, for a total of about \$88.3 million. He informed the Board staff is currently working on a number of projects to finalize loans and closing of those that have previously been authorized.

B. Project Priority List – Michael Grange

Michael Grange reported West Corinne Water Company is being added to the Project Priority List with 24.3 points. Their project consists of the rehabilitation of a spring and replacement of a transmission line. Division staff recommends the Board approve the updated Project Priority List as presented, with the addition of West Corinne Water Company.

- Tage Flint moved to approve the updated Project Priority List. Brett Chynoweth seconded. The motion was carried unanimously by the Board.

C. SRF Applications

i. STATE:

a) Aurora City – Lisa Nelson

Betty Naylor reiterated Aurora City has chosen to withdraw their State SRF funding application at this time.

ii. FEDERAL:

a) West Corinne – Lisa Nelson

Representing West Corinne was Brandon Nielsen, Chad Hardy, and Cary McFarland

Lisa Nelson informed the Board West Corinne is requesting \$500,000 in financial assistance to fund redevelopment of their Main Spring and installation of approximately 3,500-linear feet of 8-inch water line.

The MAGI is 102% of the State's MAGI and with the proposed funding package, the average water bill would be approximately \$43 per month, or 1.15% of the local MAGI. West Corinne is also bringing \$53,000 in local contribution for this request. Division Staff recommends the Board authorize a loan of \$500,000 with 2.5% Hardship Grant Fee (in lieu of interest) for 20 years to West Corinne Water Company.

West Corinne President, Chad Hardy, provided a brief overview of the water system to the Board. He reported a stream on one end of the system has not had any repairs since the 1950's, and is in need of refurbishment. He stated this project will also allow for the ability to capture additional water with the upgrades to the system. Betty Naylor asked if this would cause any issues with the existing water rights to complete this project. Mr. Hardy replied this would not be an issue and the Water Company has adequate rights to move forward.

Tage Flint asked if the points were related to the spring. Marie Owens replied she reviewed the IPS report for this water system and they are intentionally being proactive to ensure there is enough water in the right season. She informed the Board there are no deficiency points associated with this spring, and the system is in full compliance with their sampling.

Betty Naylor asked if residents have been able to provide public comment on the proposed \$9 per month rate increase. Mr. Hardy replied they have not at this point, however the annual meeting will be held in February when the increase will be announced and will allow for public comment at that time.

Tage Flint asked if Corinne is incorporated. Mr. Hardy replied the city itself is incorporated. He informed the Board West Corinne Water Company provides services from Brigham City to just outside Tremonton, with approximately 375 miles of pipe and roughly 600 plus connections.

Brett Chynoweth asked how the system is able to handle over 600 connections with such a low average monthly water bill. Mr. Hardy replied there have been regular discussions in their Board meetings to increase rates in order to keep up with the growing demand on the system.

David Stevens asked if most of the system's customers are residential or commercial. Mr. Hardy replied the bulk of their customer base is residential with a few commercial, and some agriculture connections.

- David Stevens moved to authorize a \$500,000 loan at 2.5% Hardship Grant Fee (in lieu of interest) for 20 years to West Corinne Water Company. Tage Flint seconded. The motion was carried unanimously by the Board.

b) Central Utah Water Conservancy District – Duchesne – Lisa Nelson

Representing Central Utah Water Conservancy District was Clyde Watkins, David Pitcher, Patrick Carlson, and Shawn Lambert

Lisa Nelson informed the Board Central Utah Water Conservancy District (CUWCD) is requesting \$3,100,000 in financial assistance to fund the construction of an algal straining facility at its Duchesne Valley Water Treatment Plant (DVWTP). She continued, stating the treatment plant treats water from the Starvation Reservoir which is subject to high rates of algal growth. This in turn diminishes the plants ability operate causing a reduction in production due to the clogging of filters.

Lisa Nelson explained the plant provides water to multiple entities, and therefore, the financial analysis was based on a weighted average of the MAGI's and current water bills. Given this, the weighted MAGI exceeds the Board's affordability criteria. This is the basis for the subsidy in the form of reduced interest and an extended term. CUWCD is also bringing \$606,000 in local contribution for this request. Division Staff recommends the Board authorize a loan of \$3,100,000 with 1.5% Hardship Grant Fee (in lieu of interest) for 30 years to Central Utah Water Conservancy District.

David Pitcher with CUWCD expressed his appreciation to the Board for accepting application for this project. He informed the Board this plant was originally built to be a regional water treatment plant for Duchesne County that maintained direct filtration. He continued, stating the algal bloom events have become increasingly larger, overall demand has increased, and this project would allow for a more reliable water source leaving the plant.

Betty Naylor asked for an estimated number of those that will be served by this project. David Pitcher responded it will impact about 15,000 people when all of the communities are combined, as it is a sole source for some and a supplemental source for others.

David Stevens stated his appreciation to CUWCD for being proactive in handling the algae problem. He asked if the algae issue is seen as a long-term ongoing issue, and if this is another step in controlling the growth, along with nutrient control. David Pitcher replied this has been an ongoing issue to raise awareness around watersheds and through coordination with the local health department, buffers around the reservoir and its tributaries have been successfully established. He continued, informing the Board that both agriculture and oil production are important to this area and there must be a balance maintained. He stated the technology being presented for this project has been piloted for effectiveness and has proven to be successful.

David Stevens suggested the proposed 30 year loan will far outlive the equipment and asked what the operation and maintenance (O&M) plan is to keep it in working conditions. David Pitcher replied the O&M costs will become a part of the treatment plant's overall costs and the capital expenses will be dispersed to the local customer agencies. It is anticipated the valves and actuators will need to be replaced on average every 10 years.

Tage Flint asked if the adjusted MAGI is for the local area as opposed to the whole CUWCD service area. Lisa Nelson confirmed that is the case.

- Tage Flint moved to authorize a \$3,100,000 loan at 1.5% Hardship Grant Fee (in lieu of interest) for 30 years to Central Utah Water Conservancy District. Brett Chynoweth seconded. The motion was carried unanimously by the Board.

Tage Flint asked CUWCD for a tour of the project once it is complete.

5. Rural Water Association Report – Dale Pierson

Dale Pierson with Rural Water Association of Utah (RWAU) thanked the Drinking Water Board for holding the August meeting at the RWAU fall conference. He reported each year this conference continues to grow and there are about 390 in attendance this year.

Marie Owens thanked RWAU staff members for their constant involvement and coordination with the recent emergency response management and presence with the water systems providing technical assistance. Dale Pierson also thanked DDW staff, specifically Ryan Dearing, for all of the efforts in coordination and communication.

6. Open Board Discussion – Betty Naylor

A. Introduction of New Governor Appointment Drinking Water Board Member

Betty Naylor introduced the newly appointed Drinking Water Board member, Kristi Bell. Kristi was in attendance and expressed her eagerness to join the Board. Marie Owens informed members the Senate is scheduled to confirm appointments on October 17 and Kristi will be able to be a voting member of the Board by the November meeting.

7. Authorization to Begin Rulemaking to Amend Cross Connection Control Rules

A. R309-105-12: Cross Connection Control – Gary Rager

Bernie Clark, Environmental Scientist III with DDW provided additional handouts to Board members that were not provided in the original packets for this and the following agenda item.

Gary Rager, Environmental Scientist III with DDW provided a brief overview of the Rule at hand. He explained this rule covers the Cross Connection Control (CCC) Program for water systems, including their responsibilities. He proceeded to explain the proposed amendments suggested to this Rule, including the mandate of all community water systems to have a designated Plan Administrator to properly implement their CCC program.

Marie Owens informed the Board there is an alternative plan to consider as this is a new requirement and will have an impact based on the fiscal analysis. The alternative plan will phase in the new requirement of having a designated Plan Administrator to help lessen the burden for community water systems.

Tage Flint asked if the Plan Administrator and Tester can be the same person so long as they have certifications in both. Marie replied yes, they can be the same person for both.

Betty Naylor asked what the benefits to these changes will be to which Bernie replied it will increase staff training, reduce incidence of backflow related issues, and have one person designated as the Plan Administrator.

Brett Chynoweth expressed concern over a water system not having enough staff or resources to implement the new requirements. Bernie replied these changes will only impact community water systems. Both Non-community and non-community transient systems will be exempt from this change, at the discretion of the Division Director.

Marie added it is one thing to have a program, but another to have a person designated to be responsible for the program. She continued, stating the purpose is to ensure the plan is indeed being implemented, as well as clarify what a “trained individual” is by maintaining certification and re-certification for monitoring and consistency.

Bernie reviewed the proposed amendment is not expected to result in costs or savings to the state budget, small businesses, or other persons. The amendment would however increase costs for local governments that own or operate community water systems that do not currently employ a Cross Connection Control Administrator.

The question was raised as to the direction the Division Staff would recommend. Marie Owens suggested she would be inclined to be in favor of the alternative, which would allow water systems to phase into the new requirements.

- Eric Franson made a motion to authorize to begin rulemaking to amend R309-105-12 based on the suggested amendments to the alternative version of the handout provided during the meeting, and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin. David Stevens seconded. The motion was carried unanimously by the Board.

B. R309-305: Cross Connection Control and Backflow Prevention Certification – Gary Rager

Gary Rager provided a brief overview of the rule at hand. He explained this rule covers the CCC and Backflow Certifications, the CCC Commission, and how fees are paid to become certified.

Brett Chynoweth asked for clarification, stating previously a person would need to be trained in Backflow 101 and the amended rule would now require certification. Gary responded this will be true going forward. Marie Owens also responded that the current rule requires every water system to have a “trained individual” that resulted in many questions related to what this actually means. This amendment is to reduce confusion for water systems as well as remove a designated testing service provider. Operators will have the ability to pay and test through any approved third party administrator once the amendment is implemented. Fees then paid to DDW will only be for the Division’s costs, eliminating third party fees.

Betty Naylor asked if the Administrator, as defined in the Rule, is required to complete certification annually, whereas the Tester must complete certification every three (3) years and the reasoning behind this difference. Gary replied the Administrator and Tester are based on

two different programs. The Administrator will be allowed to take the test one time, and re-certify annually through CEUs. If however a person needs to be certified as a Tester as well, they will need to complete both certifications requirements. CCC and Backflow related CEUs toward certification will also be approved for water operator CEUs.

Bernie informed the Board based on the fiscal analysis; there are no expected costs or savings associated with these amendments to the state budget, local government, or small businesses. The amendment will result in minor cost savings for individuals certified as CCC Administrators and Backflow Assembly Testers.

After review and discussion of the proposed amendments, division staff recommends that the Board authorize to begin rulemaking to amend R309-305 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

- Brett Chynoweth made a motion to authorize to begin rulemaking to amend R309-305 based on the suggested amendments to the additional handout provided during the meeting, and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin. David Stevens seconded. The motion was carried unanimously by the Board.

8. Director's Report

A. Public Water System Definition Rule Review

Marie Owens invited Bret Randall with the Attorney General's Office up to discuss these upcoming changes. She informed the Board we are anticipating this to be on the October Board meeting agenda to review as a formal Rule change, and the Division would like as much feedback on the changes prior to the formal comment period. She explained this has been a two-year process starting with the last Division Director and has included various stakeholder involvement.

Bret explained the handouts and process for the amended rules and its intended purpose to address a number of chronic issues with administration and enforcement the Division has had without a good solution, as well as reduce ambiguity. He reviewed this is about the sixth version that has come about from the various stakeholder group. He reiterated Marie's request to solicit comments and feedback prior to the formal Rulemaking process is implemented in October.

Bret informed the Board one of the biggest issues right now is resolving the issue of how to accurately calculate population numbers, especially when it comes to entities such as campgrounds. The amendments have created some guidance on how to make this equitable and allow flexibility for the Division Director as well as the District Engineers surveying and monitoring these systems.

The other major addition to the Rule change includes systems that are Federally run. He explained that in general, a state does not hold jurisdiction over a federal system, however this is not applicable in drinking water systems and there is a waiver of sovereign immunity applied to these systems. He continued stating the EPA requires as a part of the state program,

a state is allowed to exert jurisdiction to the same extent as any state-run system. Again, this section is simply to codify the current Rule.

Bret then moved to section 100-5 which will also codify current practice in a written form. He explained there are issues with how to deal with prospective systems in deciding whether or not they are a public water system. The Rule will define if any developer goes to a land use authority requesting development approval, they will become a public water system from the beginning if reasonably expected and the Director will exert jurisdiction over that system with respect to engineering and plan approval. The goal of this section is to eliminate a developer installing sub-standard infrastructure for future development. However, requirements for testing and monitoring will not be implemented until population is reached creating a bifurcation. This will help guide and direct the county and land use authority reviewing building permits.

Bret explained in section 100-6 this was also amended to reduce ambiguity among population numbers. Because of this, many buildings would qualify as a public water system, however there is not enough staff or resources to monitor these systems, who are also receiving their water from an approved water system. Because of their low risk, the state will consider them “permit by rule”. These systems must not have any complex treatment, large quantities of water storage, must abide by all plumbing codes, etc. and will automatically be considered permit by rule. If, however, there is an issue with any of these systems, the Director may implement monitoring as applicable to these systems. Any system can apply to be a permit by rule and will be at the Director’s discretion to approve or deny these requests.

Betty Naylor asked if there is an appeal process. Bret Randall stated that indeed there is an appeal process to any of these decisions and are considered permitting actions, falling under the same appeal process.

Brett then provided an overview of 100-7 and 100-8 that go together and have some overlap in regard to bulk metering. This Rule states if there is a new bulk meter installed, the delivering system will be responsible for the receiving system unless one of three things happen: 1) the receiving system becomes its own water system, 2) the receiving system is permitted by rule, or 3) the receiving system is not a public water system under the Rule. The idea is to ensure the delivering system is paying attention to those systems behind a bulk meter, and the various issues that arise from these meters.

Marie Owens stated the staff recognizes there is an appropriate use for bulk meters and these changes are to prevent new community water systems from hiding behind a bulk meter with nobody taking responsibility for these systems.

Tage Flint asked if this is retailer vernacular and not applicable to wholesale systems. Bret Randall agreed that indeed, if this is one water system to another water system through a bulk meter, it does not apply and is not an issue. Tage asked if the current definition is sufficient. Bret suggested they speak offline and obtain feedback to determine if this section should be defined further for clarification. He stated this section is also appealable and defensible in court.

Marie explained sections 14, 15, and 16 are all changes to terminology suggested by EPA to be more in line with theirs for variances and exceptions in order to maintain primacy.

Bret asked the Board who else they suggest these changes are brought before in order to solicit feedback. Marie informed the Board this discussion will also be brought before the Utah League of Cities and Towns and the Utah Water Taskforce, formerly the Executive Water Taskforce.

Tage Flint commended staff for encouraging stakeholder input prior to taking to formal Rulemaking.

David Stevens commented he is in favor of any rule changes that clarify and prevent systems from building insufficient infrastructure.

Eric Franson disclosed he has also been on this committee to revise the public water system definition and a lot of time and work has been dedicated to improving this rule and will help resolve real life issues. Along with this, Marie stated the committee has been careful not to create unintended consequences with these changes.

B. Revised Total Coliform Rule (RTCR) Review

Marie Owens invited Jennifer Yee, Environmental Coordinator with the Division of Drinking Water to briefly describe the proposed changes to this Rule that was enacted in April 1, 2016 to maintain primacy over this rule. It is anticipated, based on EPA's turnaround time, to be brought before the Board for official Rulemaking at the November meeting.

Jennifer provided a description of the proposed changes including the reference to the State Lab's rules which will be eliminated in the revised rule and instead a reference will be made to EPA's rules. Various definitions, dates, and references will be recommended for change. She informed there will be no reduced monitoring proposed by the state of Utah, and therefore will be removed from the Rule entirely.

C. Legislative Interim Committee Updates

Marie reviewed with the Board the recent legislative tour involving the Utah Natural Resources Agriculture and Environment Committee members touring various sites and hearing from many experts in the water industry on topics they had previously asked to have addressed. Board members were given copies of the white papers from the tour consisting of those created solely by the Division, those created solely by the Division of Water Quality, and those that were created as a joint effort between the two Divisions.

Marie reviewed the white paper related to extraterritorial jurisdiction, as this one may be the least familiar to the Board, explaining its importance to this legislative committee. Marie provided a brief explanation of how the subcommittee came about and offered the Board a more in-depth review of the status at their request.

D. Other

There were no other items to discuss.

9. Other

Betty Naylor reminded Board members the next meeting will be held in Midway at the American Water Works Association – Intermountain Section (AWWA-IMS) Conference. She reported this is a three-day conference and members are welcome to attend, however must be registered. Betty asked members to contact Hayley Shaffer for registration and travel arrangements.

10. Next Board Meeting:

Date: Friday, October 12, 2018
Time: 2:00 pm
Place: Zermatt Resort
Grindelwald Room (2nd Floor)
784 Resort Drive
Midway, Utah 84049

11. Adjourn

- Betty Naylor moved to adjourn the meeting. The motion was carried unanimously by the Board.

The meeting adjourned at 4:15 p.m.

Agenda Item

4(B)



State of Utah

GARY R. HERBERT
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SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
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Executive Secretary

DRINKING WATER BOARD TRAINING

October 12, 2018 – 2:00 pm
Grindelwald Room (2nd Floor)
784 Resort Drive
Midway, Utah 84049

DRAFT MINUTES

1. Call to Order

Betty Naylor, Board Chairman called the training to order at 2:00 p.m.

2. Roll Call

Board Members present: Betty Naylor, Roger Fridal, Tage Flint, Eric Franson, David Stevens, and appointed, not yet confirmed member, Kristi Bell.

Division Staff present: Marie Owens, Ying Ying Macauley, Hayley Shaffer, Michael Grange, and Lisa Nelson.

Marie Owens introduced Alane Boyd with the American Water Works Association Intermountain Section (AWWA-IMS) to those in attendance and thanked her for her willingness to facilitate the Board training.

Alane thanked the Drinking Water Board for holding the training at this year's conference. She expressed her appreciation to Division staff for their assistance working on the water audit program, and stated her willingness to provide a presentation to the Board once the audit is complete.

3. Overview of Utah's Rulemaking Process

Marie introduced the Division's Assistant Director, Ying Ying Macauley, who provided the following training to the Board. (See attached presentation titled "Rulemaking Process").

4. Roles, Responsibilities, and Authorities

- Drinking Water Board
- Division of Drinking Water
- Office of Administrative Rules (OAR)
- US EPA

5. Rulemaking Examples

- Cross Connection Control Rules
- Revised Total Coliform Rules
- Public Water System Identification Rule

6. Next Board Meeting:

Date: Tuesday, November 13, 2018
Time: 1:00 pm
Place: Multi-Agency State Office Building
Room 1015
195 North 1950 West
Salt Lake City, Utah 84116

7. Adjourn

- Betty Naylor moved to adjourn the training. The motion was carried unanimously by the Board.

The training adjourned at 3:00 p.m.



UTAH DEPARTMENT of
ENVIRONMENTAL QUALITY
**DRINKING
WATER**

Rulemaking Process

October 12, 2018



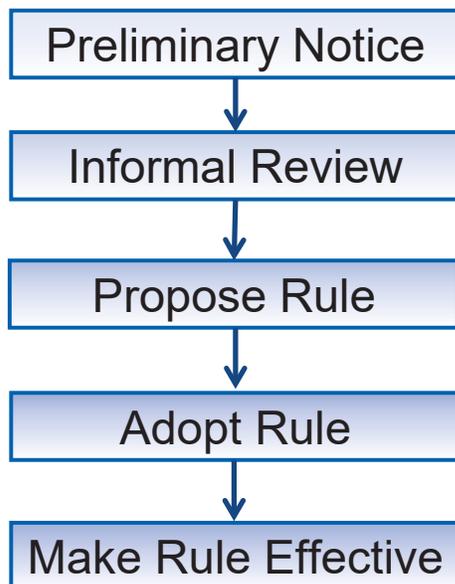
Today's Topics

1. Overview of Utah's Rulemaking Process
2. Roles, Responsibilities and Authorities
 - **Drinking Water Board (DWB)**
 - Division of Drinking Water (DDW)
 - Office of Administrative Rules (OAR)
 - US Environmental Protection Agency (EPA)
3. Rulemaking Examples
 - Cross Connection Control Rules
 - Revised Total Coliform Rule (RTCR)
 - Public Water System Identification Rule

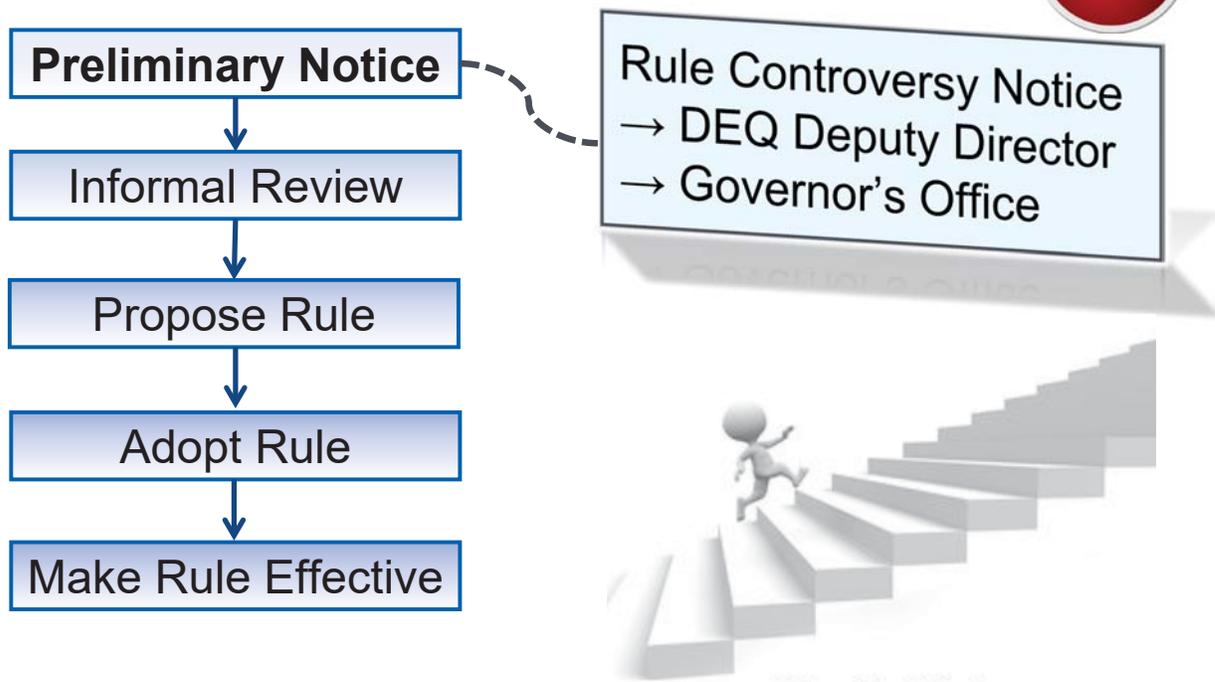
Overview of Rulemaking Process



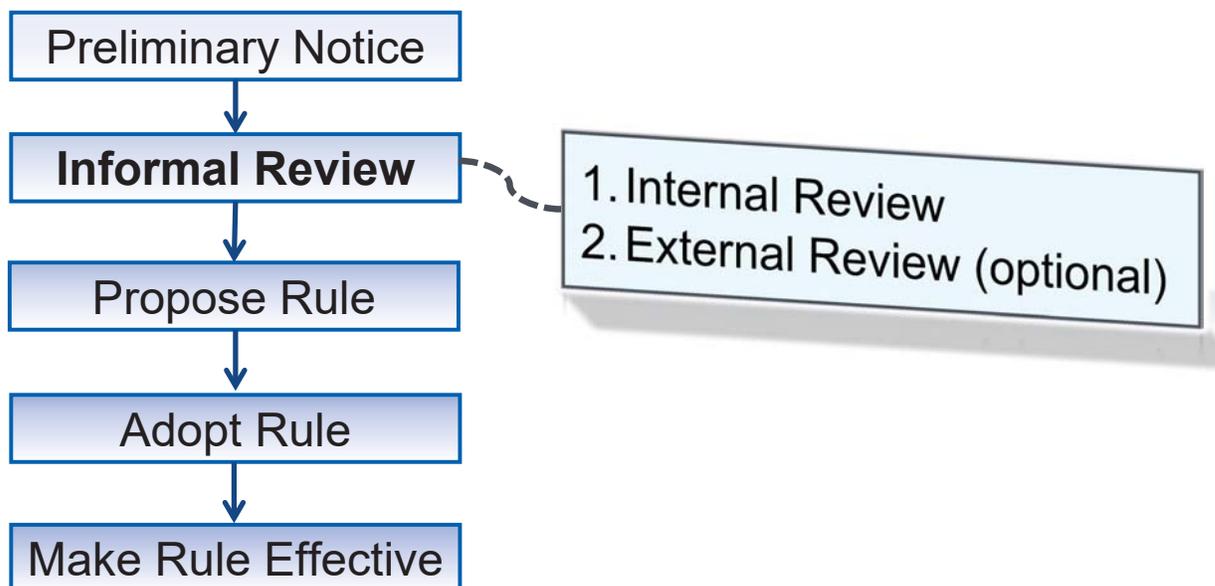
Utah Rulemaking Process



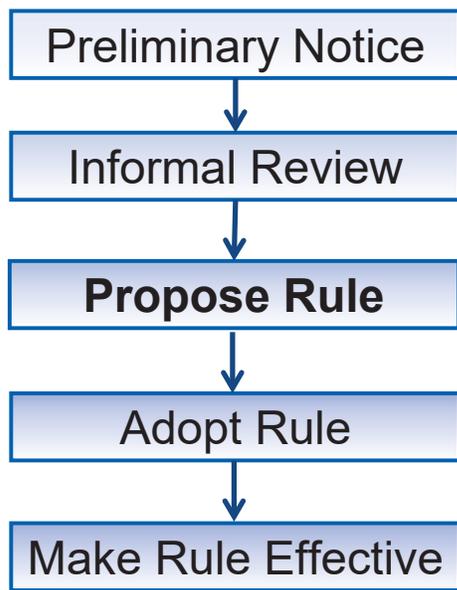
Utah Rulemaking Process



Utah Rulemaking Process

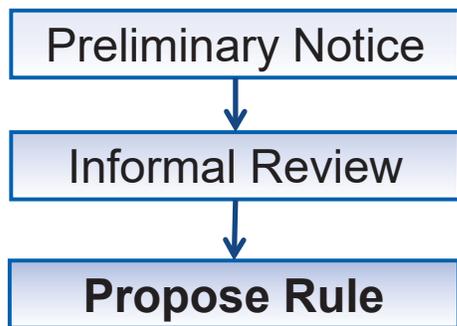


Utah Rulemaking Process



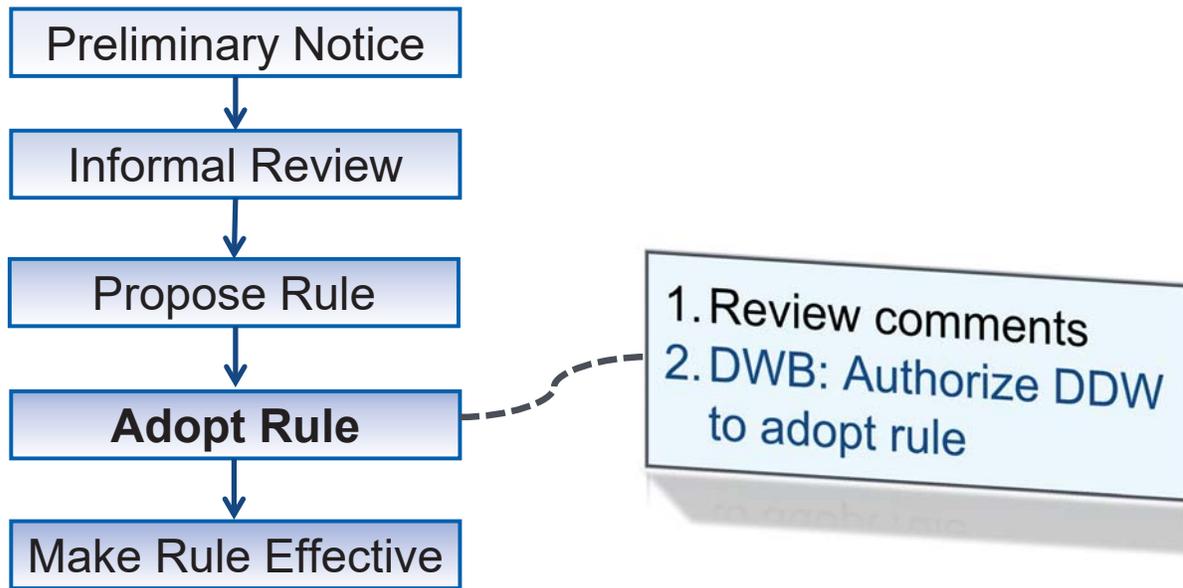
1. Prepare "Drinking Water Board (DWB) packet"
2. DWB: Authorize DDW to initiate rulemaking
3. File proposed rule with Office of Administrative Rules (OAR)
4. Publish in Utah Bulletin
5. Start the 30-day public comment period

Utah Rulemaking Process

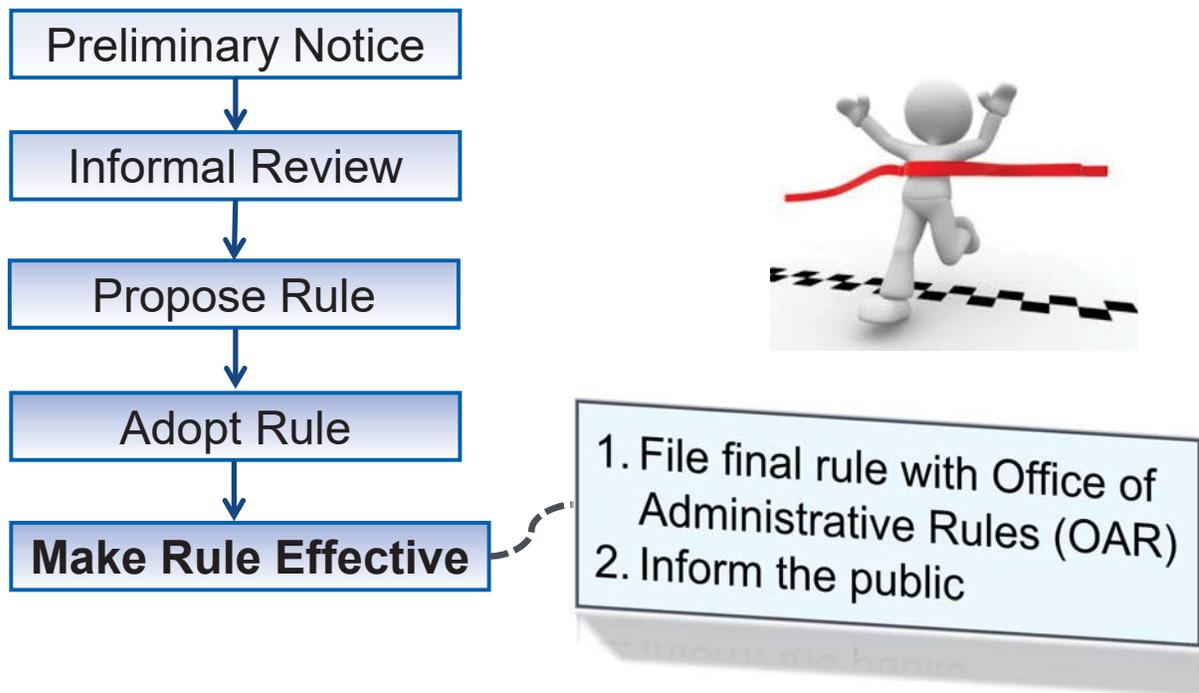


NEW	Propose Rule					
	DWB Packet (incl. Fiscal Analysis)	DWB Mtg: Begin Rule-making	Rule Analysis - DDW Director	Rule Analysis - DEQ Director	File Proposed Rule w/ OAR	Utah State Bulletin

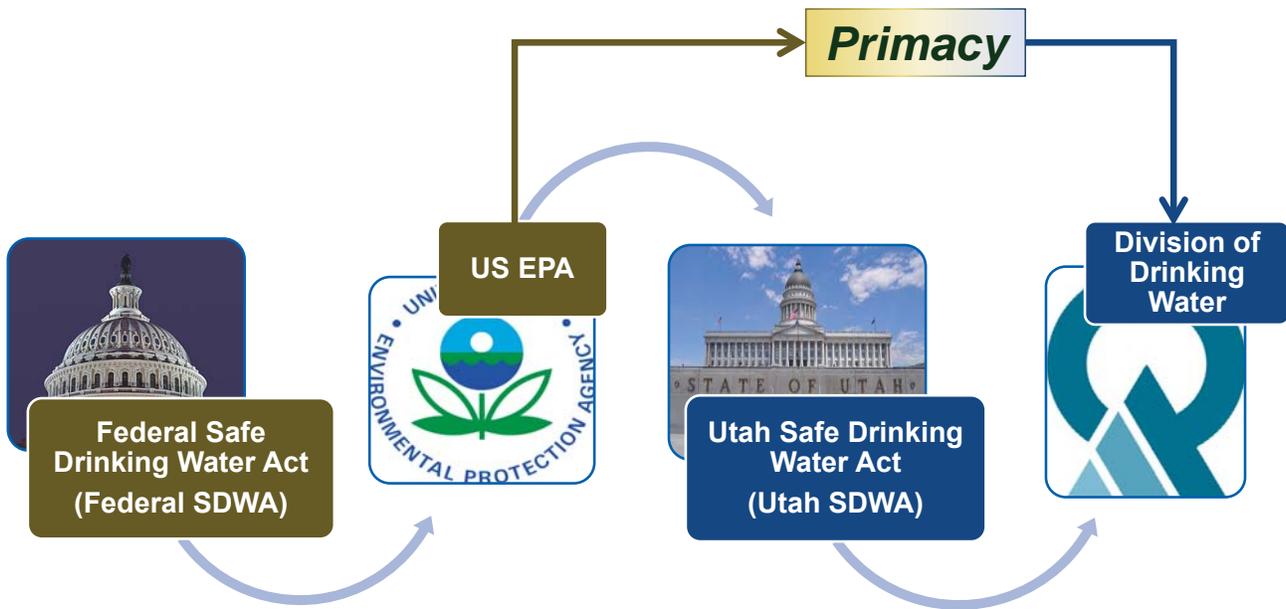
Utah Rulemaking Process



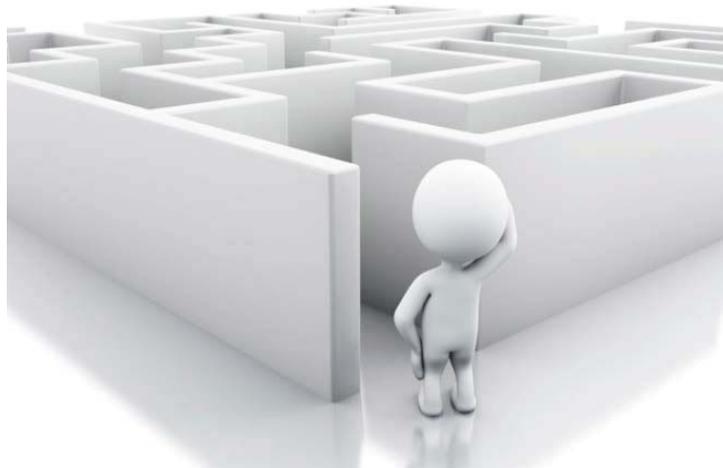
Utah Rulemaking Process



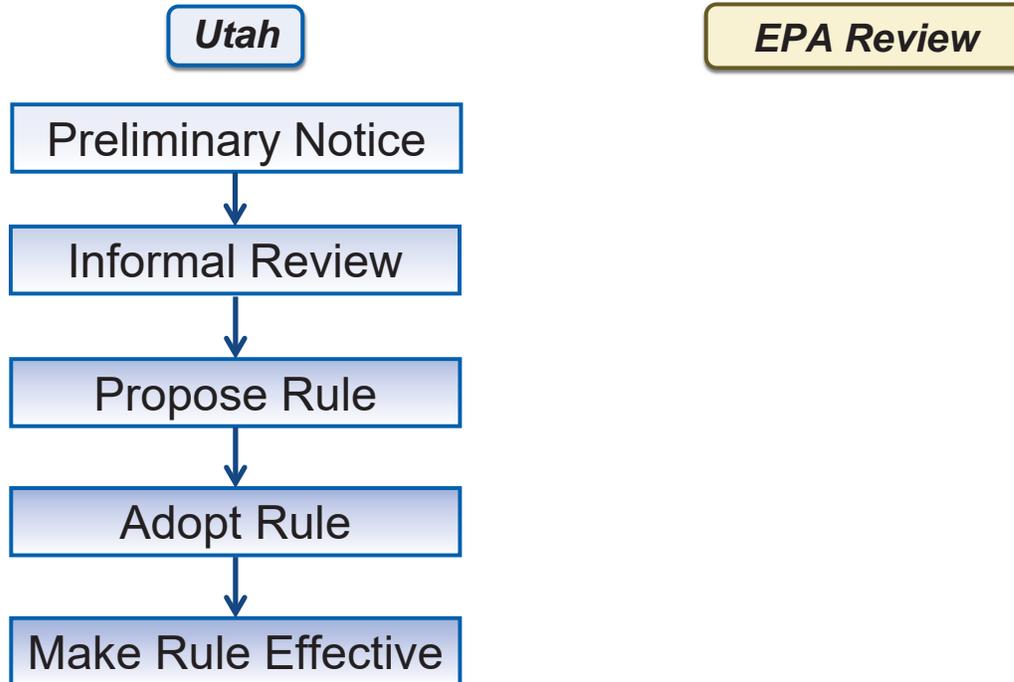
Safe Drinking Water Act – Primacy



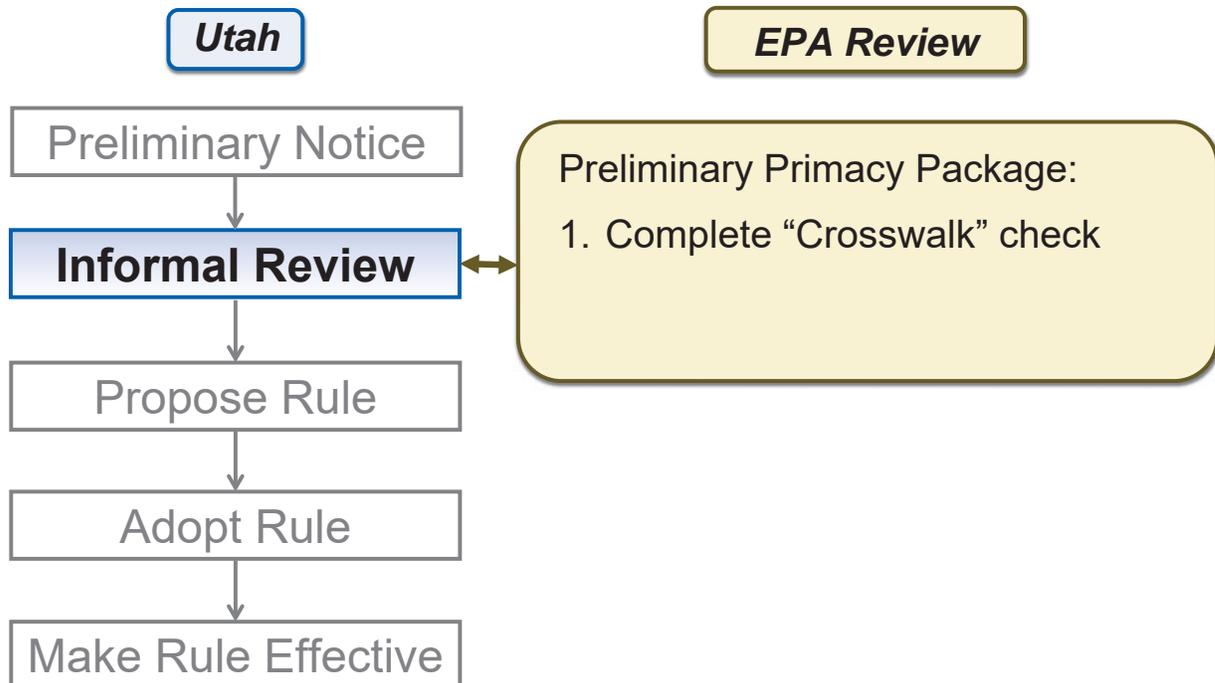
Rulemaking Involving Primacy Rules



Rulemaking Process – Primacy Rules



Rulemaking Process – Primacy Rules

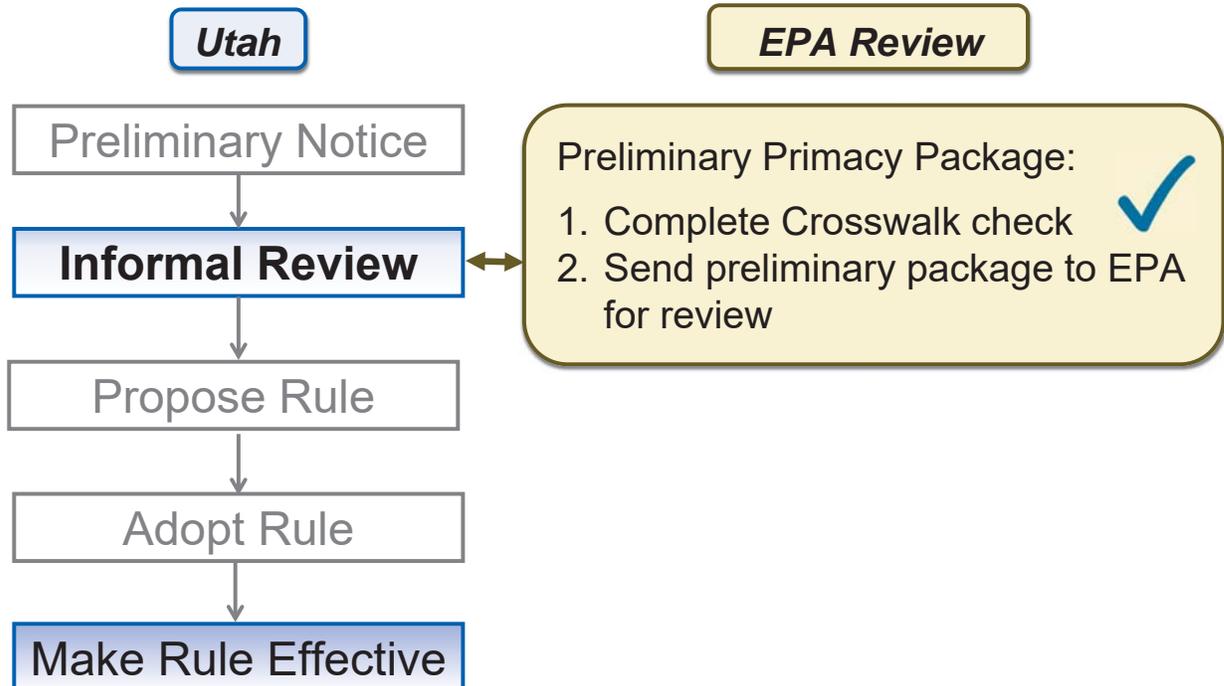


“Crosswalk” Example in Primacy Package

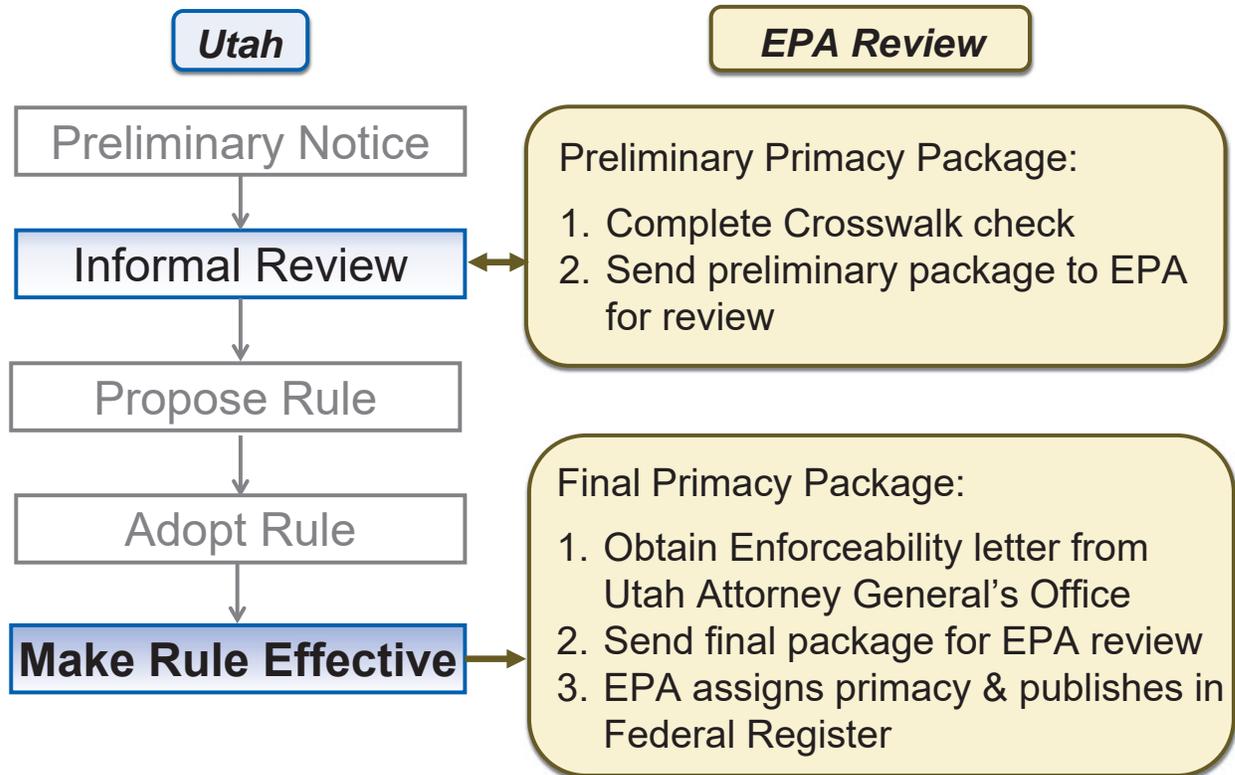
Summary of Federal Requirement	Federal Citation	State Citation	Difference
SUBPART C MONITORING AND ANALYTICAL REQUIREMENTS			
§ 141.30 TOTAL TRIHALOMETHANES SAMPLING, ANALYTICAL AND OTHER REQUIREMENTS.			
Section 141.30 is removed.	§ 141.30		
SUBPART D REPORTING AND RECORD KEEPING			
§ 141.32 PUBLIC NOTIFICATION.			
Section 141.32 is removed and reserved.	§ 141.32		
' 141.33 RECORD MAINTENANCE			
Records of microbiological analyses and turbidity analyses made pursuant to this part shall be kept for not less than 5 years.	' 141.33(a)	R3	
Copies of monitoring plans developed pursuant to this part shall be kept for the same period of time as the records of analyses taken under the plan are required to be kept under paragraph (a) of this section, except as specified elsewhere in this part.	' 141.33(f)	R3	



Rulemaking Process – Primacy Rules



Rulemaking Process – Primacy Rules



Today's Topics

1. Overview of Utah's Rulemaking Process
2. Roles, Responsibilities and Authorities
 - **Drinking Water Board (DWB)**
 - Division of Drinking Water (DDW)
 - Office of Administrative Rules (OAR)
 - US Environmental Protection Agency (EPA)
3. Rulemaking Examples
 - Cross Connection Control Rules
 - Revised Total Coliform Rule (RTCR)
 - Public Water System Identification Rule

Drinking Water Board

Utah Code 19-4-104. Powers of Board.

(1)(a) The board may make rules in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act



- Authorize DDW to initiate rulemaking
- Authorize DDW to adopt the rule

Utah Division of Drinking Water

Utah Administrative Code R309
Environmental Quality, Drinking Water



- Administer Utah's Public Drinking Water Rules (R309-100 through 800)
- Maintain Utah's primacy to implement Safe Drinking Water Act

Utah Office of Administrative Rules



Utah Code Title 63 G. General Government.

Chapter 3. Utah Administrative Rulemaking Act

- Administer Utah Administrative Rulemaking Act
- Establish rulemaking schedule and guidelines
- Maintain the official records of all adopted rules

US Environmental Protection Agency



Federal Safe Drinking Water Act

- Administer Federal Safe Drinking Water Act
- Provide oversight of Utah's primacy

Today's Topics

1. Overview of Utah's Rulemaking Process
2. Roles, Responsibilities and Authorities
 - Drinking Water Board (DWB)
 - Division of Drinking Water (DDW)
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 - US Environmental Protection Agency (EPA)
3. Rulemaking Examples
 - Cross Connection Control Rules
 - Revised Total Coliform Rule (RTCR)
 - Public Water System Identification Rule

Cross Connection Control Rules

- R309-105-12: Amend existing rule
- R309-305: Repeal & reenact



Rule Information		Preliminary Notice	Informal Review				Propose Rule					Adopt Rule	Make Rule Effective	
Rule No.	Rule Description	Rule Controversy Notice to DEQ Deputy Director	Internal Review Start	Internal Review End	External Review Start	External Review End	DWB Mtg: Begin Rule-making	File Proposed Rule w/ OAR	Utah State Bulletin Pub.	30-Day Comm. Start	30-Day Comm. End	DWB Mtg: Adopt Rule	File Final Rule w/ OAR	Rule Effective Date
R309-105-12	Cross Connection Control	10/2/18	4/1/18	8/10/18	N/A	N/A	8/28/18	9/14/18	10/1/18	10/1/18	10/31/18	11/13/18		
R309-305	Cross Connection Control & Backflow Technicians	10/2/18	4/1/18	8/10/18	N/A	N/A	8/28/18	9/14/18	10/1/18	10/1/18	10/31/18	11/13/18		

If no substantial comments

If receiving substantial comments → “Change to Proposed Rule”

EPA Revised Total Coliform Rule (RTCR)

Affecting a Total of 9 Utah Rules

Rule Information		Preliminary Notice	Informal Review				Propose Rule					Adopt Rule	Make Rule Effective	
Rule No.	Rule Description	Rule Controversy Notice to DEQ Deputy Director	Internal Review Start	Internal Review End	External Review Start	External Review End	DWB Mtg: Begin Rule-making	File Proposed Rule w/ OAR	Utah State Bulletin Pub.	30-Day Comm. Start	30-Day Comm. End	DWB Mtg: Adopt Rule	File Final Rule w/ OAR	Rule Effective Date
R309-100, 105-4, 110, 200, 211, 210, 215, 220, and 225	Administration: DW Program	10/2/18	9/27/18				11/13/18	11/15/18	12/1/18	12/1/18	1/2/19	1/15/19		

Preliminary Primacy Package		
Complete Crosswalk	Send Prel. Package to EPA	Expected EPA Review Completion
	5/1/18	Completed

Final Primacy Package			
AG Enforceability Letter	Final Package Sent to EPA	Expected EPA Review Completion	Primacy Assignment & CFR Publication

Utah's PWS Identification Rule (R309-100)

Affecting Utah's Primacy

Rule Information		Preliminary Notice	Informal Review				Propose Rule					Adopt Rule	Make Rule Effective	
Rule No.	Rule Description	Rule Controversy Notice to DEQ Deputy Director	Internal Review Start	Internal Review End	External Review Start	External Review End	DWB Mtg: Begin Rule-making	File Proposed Rule w/ OAR	Utah State Bulletin Pub.	30-Day Comm. Start	30-Day Comm. End	DWB Mtg: Adopt Rule	File Final Rule w/ OAR	Rule Effective Date
R309-100	Administration: DW Program	10/2/18	10/1/18	10/5/18	N/A	N/A	1/15/19	10/15/18	11/1/18	11/1/18	12/3/18			

Long walks start with one step.

Preliminary Primacy Package		
Complete Crosswalk	Send Prel. Package to EPA	Expected EPA Review Completion
	10/8/18	

Final Primacy Package			
AG Enforceability Letter	Final Package Sent to EPA	Expected EPA Review Completion	Primacy Assignment & CFR Publication

Current Trend of Rulemaking Processes

Utah & EPA

- ✓ Adding New Steps
- ✓ More Oversight
- ✓ More Complex
- ✓ More Manpower
- ✓ More Time-Consuming



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Division of Drinking Water
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Agenda Item

5(A)

DIVISION OF DRINKING WATER
STATE LOAN FUNDS
AS OF October 31, 2018

SUMMARY		
	Total State Fund:	\$15,539,216
	Total State Hardship Fund:	\$1,511,049
	Subtotal:	\$17,050,265
LESS AUTHORIZED	Less:	
	Authorized Loans & Closed loans in construction:	\$15,299,000
	Authorized Hardship:	\$807,150
	Subtotal:	\$16,106,150
	Total available after Authorized deducted	\$944,115
PROPOSED	Proposed Loan Project(s):	\$172,000
	Proposed Hardship Project(s):	\$0
	Subtotal:	\$172,000
AS OF:		
October 31, 2018	TOTAL REMAINING STATE LOAN FUNDS:	\$68,216
	TOTAL REMAINING STATE HARDSHIP FUNDS:	\$703,899

(see Page 2 for details)

(see Page 2 for details)

Total Balance of ALL Funds: \$772,115

Projected Receipts Next Twelve Months: and Sales Tax Revenue	
Annual Maximum Sales Tax Projection	\$3,587,500
Less State Match for 2018 Federal Grant	(\$2,221,400)
Less State Match for 2019 Federal Grant	(\$2,221,400)
Less Appropriation to DDW	(\$834,100)
Less Board Administration Fees	(\$159,000)
SUBTOTAL Sales Tax Revenue including adjustments:	-\$1,848,400
Payment:	
Interest on Investments (Both Loan and Hardship Accounts)	\$360,000
Principal payments	\$2,835,254
Interest payments	\$742,195
Total Projections:	\$2,089,049

Total Estimated State SRF Funds Available through 10-31-2019	\$2,861,163
--	--------------------

**DIVISION OF DRINKING WATER
STATE LOAN FUNDS
PROJECTS AUTHORIZED BUT NOT YET CLOSED
AS OF October 31, 2018**

Community	Loan #	Cost Estimate	Date Authorized	Date Closed/Anticipated	Authorized Funding		
					Loan	Grant	Total
Grantsville 1.5% int, 20 yrs	3S249	3,500,000	Mar-18	Oct-18	3,500,000		3,500,000
Ephraim 1% int, 20 yrs	3S251	1,422,905	Mar-18		1,145,000	127,150	1,272,150
Laketown 1.5% int @ 30 yrs	3S248	1,863,636	May-18		1,110,000	0	1,110,000
Pleasant Grove 2% int, 20 yrs	3S255	2,300,000	May-18	Jan-19	2,300,000	0	2,300,000
Mtn Regional-Community Wtr 2% 20 yr	3S254	2,600,000	Jul-18	Nov-18	2,600,000	0	2,600,000
Aurora City 0.75% int 30 yrs	3S258	4,228,000	Aug-18		3,804,000	424,000	4,228,000
Subtotal Loans and Grants Authorized					14,459,000	551,150	15,010,150
PLANNING LOANS / GRANTS IN PROCESS							
							0
Circleville	3S260P	40,000	Aug-18	Sep-18	40,000		40,000
Enoch City	3S256P	27,500	Jul-18	Jul-18		27,500	27,500
Mayfield	3S1693P	13,500	Oct-18	Nov-18		13,500	13,500
Paragonah	3S257P	10,000	Jul-18	Aug-18		10,000	10,000
					40,000	51,000	91,000
CLOSED LOANS (partially disbursed)							
Daggett Co - Dutch John 0% int 30 yrs	3S216	1,020,000	Jan-15	Feb-16	0	100,000	100,000
Henrieville	3S241	345,000	Aug-16	Nov-16	0	105,000	105,000
Mutton Hollow Imp Dist 2% int 30 yr	3S253	2,060,000	Jul-18	Sep-18	800,000		800,000
							0
							0
Subtotal Planning Loans/Grants Auth					800,000	205,000	1,005,000
Total authorized or closed but not yet funded					\$15,299,000	\$807,150	\$16,106,150
PROPOSED PROJECTS for OCTOBER 2018							
							0
							0
Fairview 2.5% int 20 yrs	3S259	172,000			172,000		172,000
							0
							0
Total Proposed Projects					172,000	0	172,000

**DIVISION OF DRINKING WATER
STATE LOAN FUNDS
AS OF October 31, 2018**

	5235	5240	
	Loan	Interest	
	Funds	(use for Grants)	Total
Cash:	\$15,539,216	\$1,511,049	\$17,050,265
Less:			
Loans & Grants authorized but not yet closed (schedule attached)	(14,499,000)	(602,150)	(15,101,150)
Loans & Grants closed but not fully disbursed (schedule attached)	(800,000)	(205,000)	(1,005,000)
Proposed loans & grants	(172,000)	0	(172,000)
Administrative quarterly charge for entire year	(159,000)		(159,000)
Appropriation to DDW	(834,100)		(834,100)
FY 2018 Federal SRF 20% match	(2,221,400)		(2,221,400)
FY 2019 Federal SRF 20% match	(2,221,400)		(2,221,400)
	(5,367,684)	703,899	(4,663,785)
Projected repayments during the next twelve months			
Thru 10-31-2019			
Principal	2,835,254		2,835,254
Interest		742,195	742,195
Projected annual investment earnings on invested cash balance		360,000	360,000
Sales Tax allocation thru Oct-31-2019	3,587,500		3,587,500
Total	\$1,055,070	\$1,806,094	\$2,861,163
* All interest is added to the Hardship Fee account.			

DIVISION OF DRINKING WATER
FEDERAL SRF
AS OF October 31, 2018

FIRST ROUND FUND		FEDERAL SECOND ROUND FUND		Hardship Fund
1997 thru 2017 SRF Grants		Principal Repayments	Earnings on Invested Cash Balance	Total:
Net Federal SRF Grants:	\$169,738,751	Principal (P):	\$56,437,779	\$1,195,121
Total State Matches:	\$39,050,300	Interest (I):	\$16,520,750	
Closed Loans:	-\$201,582,651	Total P & I:	\$72,958,529	
Total Grant Dollars:	\$7,206,400			\$1,574,197

SUMMARY	
Total Federal State Revolving Fund:	\$81,360,050
Total Federal Hardship Fund:	\$1,574,197
Subtotal:	\$82,934,247
LESS	
AUTHORIZED & PARTIALLY DISBURSED	
Less:	
Authorized & Partially Disbursed Closed Loans:	\$13,984,336
Authorized Federal Hardship:	\$384,064
Subtotal:	\$14,368,400
	(see Page 2 for details)
PROPOSED	
Proposed Federal Project(s):	\$0
Proposed Federal Hardship Project(s):	\$0
Subtotal:	\$0
	(see Page 2 for details)

AS OF:	October 31, 2018	TOTAL REMAINING LOAN FUNDS:	\$67,375,714
		TOTAL REMAINING HARDSHIP FUNDS:	\$1,190,134

Total Balance of ALL Funds after deducting proposed actions: \$68,565,847

Projected Receipts thru November 1, 2019	
2019 Fed SRF Grant	\$8,200,000
2019 State Match	\$2,221,400
Interest on Investments	\$1,698,000
Principal Payments	\$6,609,203
Interest	\$1,309,520
Hardship & Technical Assistance fees	\$279,548
	\$0
Total:	\$20,317,671

} Receive 60% in January

Total Estimated Federal SRF Funds Available through: 11/01/2019 **\$88,883,518**

DIVISION OF DRINKING WATER
FEDERAL SRF LOAN FUNDS
AS OF October 31, 2018

	Loan Funds 1st Round	Loan Payments			TOTAL
		2nd Round		Hardship Fund	
		Principal	Interest		
Federal Capitalization Grants and State 20% match thru 2015	\$208,789,051				
Earnings on Invested 1st Round Funds			1,195,121		
Repayments (including interest earnings on 2nd round receipts)		56,437,779	16,520,750	1,574,197	284,516,898
Less:					
Closed loans and grants	-201,582,651				-201,582,651
SUBTOTAL of Funds Available	\$7,206,400	\$56,437,779	\$17,715,871	\$1,574,197	\$82,934,247
Loans & Grants authorized but not yet closed or fully disbursed	-10,300,000	-3,419,500	-264,836	-384,064	-14,368,400
SUBTOTAL of Funds Available less Authorized	-\$3,093,600	\$53,018,279	\$17,451,035	\$1,190,134	\$68,565,847
Future Estimates:					
Proposed Loans/Grants for current board package	0			0	0
SUBTOTAL of Funds Available less Proposed Loans & Grants	-\$3,093,600	\$53,018,279	\$17,451,035	\$1,190,134	\$68,565,847
PROJECTIONS THRU November-2019					
	0				
2017 SRF Capitalization Grant (Loan Portion)	8,200,000				
2017 SRF Capitalization State Match	2,221,400				
Projected repayments & revenue during the next twelve months		6,609,203	1,309,520	279,548	8,198,271
Projected annual investment earnings on invested cash balance		1,320,000	348,000	30,000	1,698,000
TOTAL	\$7,327,800	\$60,947,481	\$19,108,555	\$1,499,682	\$88,883,518

Agenda Item 5(B)

Project Priority List
Presented to the Drinking Water Board
November 13, 2018

DRINKING WATER BOARD
PACKET FOR PROJECT PRIORITY LIST

There are no new projects being added to the project priority list

Agenda Item

6(A)(i)

Drinking Water Board – November 13, 2018

Amend R309-105-12

R309-105-12

Cross Connection Control

Presented to the Drinking Water Board

November 13, 2018

**DRINKING WATER BOARD PACKET
(Final adoption of rule amendment)**

HISTORY/CONTEXT:

On August 28, 2018, the Drinking Water Board authorized the Utah Division of Drinking Water staff to begin rule making for amendments to R309-105-12.

The proposed amendments require all community water systems to have a certified Cross Connection Control Administrator on staff or on contract. The amendments also correct cross connection control terminology.

The proposed rule amendment was filed with the Office of Administrative Rules on September 15, 2018. The rule amendment was published in the Utah Bulletin and open to 30 day public comment beginning October 1, 2018. This public comment period was also announced on the Division of Drinking Water website. As of October 25, 2018, no substantive comments have been received.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division of Drinking Water staff recommends that the Drinking Water Board adopt the amendments to R309-105-12 and authorize the Division of Drinking Water to make the amended rule effective.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendments effective in January of 2019.

R309-105-12. Cross Connection Control.

(1) The water supplier shall not allow a connection to his system which may jeopardize its quality and integrity. Cross connections are not allowed unless controlled by an approved and properly operating backflow prevention assembly or device. The requirements of the International Plumbing Code and its amendments as adopted by the Department of Commerce shall be met with respect to cross connection control and backflow prevention.

(2) Each water system shall have a functioning cross connection control program. The program shall consist of five designated elements documented on an annual basis. The elements are:

(a) a legally adopted and functional local authority to enforce a cross connection control program (i.e., ordinance, bylaw or policy);

(b) providing public education or awareness material or presentations;

(c) an individual with adequate training in the area of cross connection control or backflow prevention;

(i) Community water systems serving a population of 500 or greater shall have a certified Cross Connection Control Program Administrator by December 31, 2020. Refer to R309-305 for specific requirements.

(ii) Community water systems serving a population less than 500 shall have a certified Cross Connection Control Program Administrator by December 31, 2022. Refer to R309-305 for specific requirements.

(iii) Non-transient non-community and transient non-community water systems may be required to have a certified Cross Connection Control Program Administrator at the Director's discretion.

(d) written records of cross connection control activities, such as, backflow assembly inventory; and

(e) test history and documentation of on-going enforcement (hazard assessments and enforcement actions) activities.

(3) Suppliers shall maintain, as proper documentation, an inventory of each pressure atmospheric vacuum breaker, spill resistant pressure vacuum breaker, double check valve, reduced pressure zone principle assembly, and high hazard air gap used by their customers, and a service record for each such assembly.

(4) Backflow prevention assemblies shall be in-line serviceable (repairable), in-line testable and have approval through third party approval agencies to be used within a public drinking water system. Third party approval shall consist of any combination of two approvals, laboratory or field, performed by a recognized testing organization which has demonstrated competency to perform such tests.

(5) Backflow prevention assemblies shall be inspected and tested at least once a year, by an individual certified for such work as specified in R309-305. Suppliers shall maintain, as proper documentation, records of these inspections. This testing responsibility may be borne by the water system or the water system management may require that the customer having the backflow prevention assembly be responsible for having the assembly tested.

(6) Suppliers serving areas also served by a pressurized irrigation system shall prevent cross connections between the two. Requirements for pressurized irrigation systems are outlined in Section 19-4-112 of the Utah Code.

KEY: drinking water, watershed management

Date of Enactment or Last Substantive Amendment: November 8, 2017

Notice of Continuation: March 13, 2015

Authorizing, and Implemented or Interpreted Law: 19-4-104

Agenda Item

6(A)(ii)

Drinking Water Board – November 13, 2018

Repeal and Reenact R309-305

DRINKING WATER BOARD PACKET
(Final adoption of rule)

HISTORY/CONTEXT:

On August 28, 2018, the Drinking Water Board authorized the Utah Division of Drinking Water staff to begin rule making for the proposed repeal and reenactment of R309-305.

The repeal and reenactment of R309-305 changes the title of the rule to more accurately match the content, renames the classifications within the Cross Connection Certification Program to match the classifications in use, restructures the Cross Connection Control Commission section, and changes requirements for application, training, and examination for certifications within the Cross Connection Certification Program.

The proposed rule repeal and reenactment was filed with the Office of Administrative Rules on September 15, 2018. The rule repeal and reenactment was published in the Utah Bulletin and open to 30 day public comment beginning October 1, 2018, and ending October 31, 2018. This public comment period was also announced on the Division of Drinking Water website. As of October 25, 2018, no substantive comments have been received.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division of Drinking Water staff recommends that the Drinking Water Board adopt the proposed repeal and reenactment of R309-305 and authorize the Division of Drinking Water to make the reenacted rule effective.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the reenactment effective in January of 2019.

R309-305 Cross Connection Control and Backflow Prevention Certification.

R309-305-1 Purpose.

The purpose of this rule is to:

- (1) adopt standards for the training, examination, and certification of persons engaged in:
 - (a) administration of cross connection control programs for public water systems;
 - (b) repair and testing of backflow prevention assemblies at public water systems; and
 - (c) instruction or examination monitoring for backflow assembly tester certification.
- (2) establish certification fee requirements; and
- (3) establish the Cross Connection Control Commission and its responsibilities.

R309-305-2 Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(4)(a) of the Utah Code and in accordance with 63G-3 of the same, known as the Administrative Rulemaking Act.

R309-305-3 Definitions.

- (1) Definitions for certain terms used in this rule are given in R309-110.
- (2) In addition to terms defined in R309-110:
 - (a) “Accredited Agency” means a third party organization approved by the Cross Connection Control Commission to provide written and performance examinations for Backflow Assembly Tester certification;
 - (b) “Backflow Assembly Tester” means a person certified under this rule to conduct testing of backflow prevention assemblies;
 - (c) “Backflow Proctor/Trainer” means a person qualified to instruct cross connection control certification courses and to act as a proctor or exam monitor for cross connection control certification examinations;
 - (d) “Cross Connection Control Program Administrator” means a person certified under this rule to administer a cross connection control program for a public drinking water system;

(e) “Performance examination” means a closed-book, hands-on demonstration of an applicant’s ability to conduct an accurate field test of backflow assemblies; and

(f) “Written examination” means a closed-book examination for record to determine the competency and ability of an applicant to understand the requirements.

R309-305-4 Cross Connection Control Commission.

(1) Cross Connection Control Commission Organization and Members

(a) The Director may establish a Cross Connection Control Commission.

(b) The Commission shall consist of seven members representing the following sectors:

(i) One member who represents community water systems.

(ii) One member who represents the plumbing trade and is a licensed Journeyman Plumber.

(iii) One member who represents the mechanical trade contractors.

(iv) One member who represents the non-union plumbing and mechanical contractors and plumbers.

(v) One member who represents small public water systems.

(vi) One member who represents Backflow Assembly Testers and Cross Connection Control Program Administrators and is certified as either.

(vii) One member who represents plumbing inspection officials and is a licensed plumbing inspector.

(c) Commission members shall be appointed by the Director. The Director may consider or accept nominations made by entities representing specific sectors.

(2) Cross Connection Control Commission Responsibilities

(a) The Cross Connection Control Commission may:

(i) advise the Director concerning the training, examination, and certification of persons engaged in cross connection control and backflow prevention for public water systems;

(ii) review findings and recommend to the Director suspension or revocation of certificates; and

(iii) review and accept certification training courses.

(3) Cross Connection Control Commission Operations

(a) Each appointed Commission member shall serve a two-year term.

(b) The Commission shall annually elect, at a minimum, a chairperson and a vice chairperson to conduct the business of the Commission.

(c) The Commission shall meet at least twice a year.

(d) Four members shall be present to constitute a quorum to conduct the Commission's business.

(e) A vote by a majority of the members present shall be required for the Commission to take an action.

R309-305-5 Secretary to the Cross Connection Control Commission.

(1) The Director shall appoint a Secretary to the Commission.

(2) The Secretary's responsibilities may include:

(a) coordinating the Commission's business;

(b) bringing pertinent issues before the Commission;

(c) being a liaison between the Commission and persons certified under this rule, public water systems, and the public;

(d) maintaining records to implement and enforce the requirements of this rule;

(e) coordinating nominations to the Commission;

(f) coordinating and reviewing public water system cross connection control programs and training and certifications in the cross connection control and backflow prevention program;

(g) processing applications for certification and renewals;

(h) investigating and verifying all complaints against or concerning certified Backflow Assembly Testers, Cross Connection Control Program Administrators, and Backflow

Proctor/Trainers, and inform the Director regarding any enforcement actions that are being recommended by the Commission;

(i) administering examinations; and

(j) making recommendations to the Director regarding cross connection control certifications.

R309-305-6 Cross Connection Control and Backflow Prevention Certifications.

(1) Two types of certification may be obtained by persons engaged in cross connection control or backflow prevention for public water systems:

(a) Cross Connection Control Program Administrator; and

(b) Backflow Assembly Tester.

(2) To obtain either of the above certifications, a person must comply with the training and examination requirements specified in the following sections.

R309-305-7 Cross Connection Control Program Administrator Certification.

(1) Application for a Certificate.

(a) To obtain a Program Administrator Certificate, a person shall:

(i) complete a certification course of at least 18 hours, including examination time, approved by the Cross Connection Control Commission;

(ii) pass a written examination accepted by the Cross Connection Control Commission by correctly answering 70% or more of the questions;

(iii) submit a complete application to the Director; and

(iv) pay the required fee.

(b) A Program Administrator Certificate issued by the Director is valid for one year from the date of issuance.

(c) A Program Administrator Certificate may be renewed annually by meeting the renewal requirements below.

(2) Certificate Renewal.

(a) A Program Administrator Certificate may be renewed:

- (i) for a period of one year; and
- (ii) an unlimited number of times.

(b) To renew a certificate, a person shall:

- (i) complete a minimum of 0.6 Continuing Education Units (CEU's) annually;
- (ii) submit evidence of CEU's completed to the Commission Secretary; and
- (iii) pay the required fee.

(c) Continuing Education Units shall:

- (i) be specific to cross connection control or backflow prevention; and
- (ii) be approved by the Commission Secretary.

(3) Certificate Expiration.

(a) A Program Administrator Certificate expires if a person fails to fulfill the requirements to maintain the certification.

(4) Program Administrator Responsibilities.

(a) A person with a valid Program Administrator Certificate may perform the following specifically regarding cross connection control and backflow prevention:

- (i) review plans and designs for compliance;
- (ii) investigate and assess hazards;
- (iii) inspect facilities for compliance;
- (iv) enforce local laws, codes, rules, and policies; and
- (v) provide technical assistance.

(b) A Program Administrator may test a backflow assembly only for the purpose of assuring that proper testing techniques are being used within a water system's jurisdiction.

(5) Program Administrator Certificate Restrictions.

A person with a valid Program Administrator Certificate may not perform the following specifically regarding a backflow prevention assembly:

- (a) test, maintain, or repair the assembly for the purpose of legally documenting the operational status of the assembly; or
- (b) perform a test for record demonstrating compliance of the assembly with required standards.

R309-305-8 Backflow Assembly Tester Certification.

(1) Application for a Certificate.

- (a) To obtain a Backflow Assembly Tester Certificate, a person shall:
 - (i) complete a certification course accepted by the Cross Connection Control Commission;
 - (ii) pass a written examination offered by an Accredited Agency accepted by the Cross Connection Control Commission;
 - (iii) successfully demonstrate competence and ability in a performance examination offered by an Accredited Agency accepted by the Cross Connection Control Commission for the testing of:
 - (A) a pressure vacuum breaker assembly,
 - (B) a spill resistant pressure vacuum breaker assembly,
 - (C) a double check valve assembly, and
 - (D) a reduced pressure principal backflow prevention assembly;
 - (iv) submit a complete application, including a valid certificate issued by an Accredited Agency accepted by the Cross Connection Control Commission, to the Commission Secretary; and
 - (v) pay the required fee.
- (b) A Backflow Assembly Tester Certificate issued by the Director is valid for three years from the date of issuance.
- (c) A Backflow Assembly Tester Certificate may be renewed by meeting the renewal requirements below.

(2) Certificate Renewal.

(a) A Backflow Assembly Tester Certificate may be renewed:

(i) for a period of three years; and

(ii) an unlimited number of times.

(b) To renew a certificate, a person shall:

(i) complete the written and performance examination requirements of R309-305-8(1)(a)(ii) and (iii);

(ii) submit a renewal application; and

(iii) pay the required fee.

(3) Certificate Expiration.

(a) A Backflow Assembly Tester Certificate expires if a person fails to complete the certificate renewal requirements of R309-305-8(2).

(b) A Backflow Assembly Tester with an expired certificate may not test, maintain, or repair a backflow assembly for the purpose of legally documenting the operational status of the assembly.

(4) Backflow Assembly Tester Obligations.

(a) A person with a valid Backflow Assembly Tester Certificate shall:

(i) notify the Division of Drinking Water, local health department, and the appropriate public water system of any backflow incident as soon as possible and within eight hours of discovery;

(ii) notify the appropriate public water system of a failing backflow prevention assembly within five days;

(iii) ensure that acceptable and approved procedures are used for testing, repairing, and maintaining a backflow prevention assembly;

(iv) report backflow prevention assembly test results to the appropriate public water system within 30 days;

(v) include, on the test report form, any materials or replacement parts used to repair or to perform maintenance on a backflow prevention assembly;

(vi) ensure that the quality of a replacement part is equal to or greater than the quality of the part originally supplied within the backflow prevention assembly and is supplied only by the assembly manufacturer or its agent;

(vii) perform each test and be responsible for the competency and accuracy of all testing and reporting;

(viii) ensure that Backflow Assembly Tester certification is current;

(ix) be equipped with and competent in the use of all tools, gauges, and equipment necessary to properly test, repair, and maintain a backflow prevention assembly; and

(x) be responsible for any additional licensure.

(5) Backflow Assembly Tester Restrictions.

A person with a valid Backflow Assembly Tester Certificate may not change the design, material, or operational characteristics of the assembly during any repair or maintenance.

R309-305-9 Proctor/Trainer for Backflow Assembly Tester Qualifications.

A proctor or trainer for Backflow Assembly Tester Certification shall maintain a current proctor certificate issued by an Accredited Agency accepted by the Cross Connection Control Commission.

R309-305-10. Certification Suspension and Revocation.

(1) A certificate may be suspended or revoked for unacceptable or unprofessional conduct, including:

(a) acting in disregard for public health or safety;

(b) engaging in activities beyond the scope of certification;

(c) misinterpreting or falsifying figures or reports concerning backflow prevention assembly or test results;

(d) failing to notify proper authorities of a known backflow incident, as required by R309-305-8(4)(a)(i);

(e) failing to notify proper authorities of a failed backflow prevention assembly within five days, as required by R309-305-8(4)(a)(ii);

(f) installing or repairing a backflow prevention assembly that is not certified; or

(g) implementing a change in the design, material, or operational characteristics of a certified backflow prevention assembly thereby invalidating the backflow assembly certification.

(2) The Commission Secretary shall investigate unprofessional or unacceptable conduct.

(3) The Commission shall evaluate the investigation findings and make a recommendation to the Director regarding certification suspension or revocation.

(4) The Commission Secretary shall notify a person in writing of the Commission's recommendation if certification is being considered for suspension or revocation.

(5) The Director may suspend or revoke a certificate based on the Commission's recommendation.

R309-305-11. Certification Fees.

(1) Certification fees shall be:

(a) paid by the applicant to the Division of Drinking Water prior to issuance or renewal of a certificate according to the Department of Environmental Quality fee schedule; and

(b) used for administering the Cross Connection Control and Backflow Prevention Certification program.

(2) Certification fees are non-refundable.

KEY: drinking water, cross connection control, backflow assembly tester

Date of Enactment or Last Substantive Amendment: November 13, 2013

Notice of Continuation: March 22, 2010

Authorizing, and Implemented or Interpreted Law: 19-4-104(4)(a); 63G-3

Agenda Item

6(B)(i)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-100-9, *Administration: Drinking Water Program - Variances*, by amending the rule:

1) Add clarifying language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

This rule section covers variances. The amendment adds in missing federal rule language and adds in a reference to the Code of Federal Regulations.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-100-9 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-100. Administration: Drinking Water Program.

R309-100-9. Variances.

(1) Variances to the requirements of R309-200 of these rules may be granted by the Board to water systems which, because of characteristics of their raw water sources, cannot meet the required maximum contaminant levels despite the application of best technology and treatment techniques available as listed in Title 40 CFR Part 141, as published on July 1, 2018 (taking costs into consideration).

(2) The variance will be granted only if doing so will not result in an unreasonable risk to health.

(3) No variance from the maximum contaminant level for total coliforms are permitted.

(4) No variance from the minimum filtration and disinfection requirements of R309-525 and R309-530 will be permitted for sources classified by the Director as directly influenced by surface water.

(6) Within one year of the date any variance is granted, the Board shall prescribe a schedule by which the water system will come into compliance with the maximum contaminant level in question. The requirements of Section 1415 of the Federal Safe Drinking Water Act, PL 104-182, are hereby incorporated by reference. The Board shall provide notice and opportunity for public hearing prior to granting any variance or determining the compliance schedule. Procedures for giving notice and opportunity for hearing will be as outlined in 40 CFR Section 142.44.

(7) Variances or exemptions from certain provisions of these regulations may be granted pursuant to Sections 1415 and 1416 of the Federal Safe Drinking Water Act and Subpart K of Part 142 (for small system variances) by the entity with primary enforcement responsibility, except that variances or exemptions from the MCLs for total coliforms and E. coli and variances from any of the treatment technique requirements of Subpart H of Part 141 may not be granted.

(a) As provided in 40 CFR 142.304(a), small system variances are not available for rules addressing microbial contaminants, which would include Subparts H, P, S, T, W, and Y of Part 141.

Agenda Item

6(B)(ii)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-105-4, *Administration: General Responsibilities of Public Water Systems - General*, by amending the rule:

1) Delete and move language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The language in this rule section has been moved to R309-200-4.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-105-4 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to move and add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-105. Administration: General Responsibilities of Public Water Systems.

R309-105-4. General.

(1) Water suppliers are responsible for the quality of water delivered to their customers. In order to give the public reasonable assurance that the water which they are consuming is satisfactory, the Board has established rules for the design, construction, water quality, water treatment, contaminant monitoring, source protection, operation and maintenance of public water supplies.

~~[(2) For compliance monitoring required by R309-200 through 215, public water systems must use a laboratory certified by the Utah Public Health Department in accordance with R444-14-4. The Federal Safe Drinking Water Act requires each analyte to be analyzed by a specific method. These methods are described in the July 1, 1992 through 2015, editions of 40 CFR Parts 141, 142, and 143 (Safe Drinking Water Act).]~~

Agenda Item

6(B)(iii)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-110-4, *Administration: Definitions - Definitions*, by amending the rule:

1) Delete language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The definition being removed is not a part of Utah's adoption of the RTCR.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-110-4 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to remove language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-110. Administration: Definitions.

R309-110-4. Definitions.

As used in R309:

"Action Level" means the concentration of lead or copper in drinking water tap samples (0.015 mg/l for lead and 1.3 mg/l for copper) which determines, in some cases, the corrosion treatment, public education and lead line replacement requirements that a water system is required to complete.

"AF" means acre foot and is the volume of water required to cover an acre to a depth of one foot (one AF is equivalent to 325,851 gallons).

"Air gap" The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, catch basin, plumbing fixture or other device and the flood level rim of the receptacle. This distance shall be two times the diameter of the effective opening for openings greater than one inch in diameter where walls or obstructions are spaced from the nearest inside edge of the pipe opening a distance greater than three times the diameter of the effective openings for a single wall, or a distance greater than four times the diameter of the effective opening for two intersecting walls. This distance shall be three times the diameter of the effective opening where walls or obstructions are closer than the distances indicated above.

"ANSI/NSF" refers to the American National Standards Institute and NSF International. NSF International has prepared at least two health effect standards dealing with treatment chemicals added to drinking water and system components that will come into contact with drinking water, these being Standard 60 and Standard 61. The American National Standards Institute acts as a certifying agency, and determines which laboratories may certify to these standards.

"Approval" unless indicated otherwise, shall be taken to mean a written statement of acceptance from the Director.

"Approved" refers to a rating placed on a system by the Division and means that the public water system is operating in substantial compliance with all the Rules of R309.

"Average Yearly Demand" means the amount of water delivered to consumers by a public water system during a typical year, generally expressed in MG or AF.

"AWWA" refers to the American Water Works Association located at 6666 West Quincy Avenue, Denver, Colorado 80235. Reference within these rules is generally to a particular Standard prepared by AWWA and which has completed the ANSI approval process such as ANSI/AWWA Standard C651-92 (AWWA Standard for Disinfecting Water Mains).

"Backflow" means the undesirable reversal of flow of water or mixtures of water and other liquids, gases, or other substances into

the distribution pipes of the potable water supply from any source. Also see backsiphonage, backpressure and cross-connection.

"Backpressure" means the phenomena that occurs when the customer's pressure is higher than the supply pressure, This could be caused by an unprotected cross connection between a drinking water supply and a pressurized irrigation system, a boiler, a pressurized industrial process, elevation differences, air or steam pressure, use of booster pumps or any other source of pressure. Also see backflow, backsiphonage and cross connection.

"Backsiphonage" means a form of backflow due to a reduction in system pressure which causes a subatmospheric or negative pressure to exist at a site or point in the water system. Also see backflow and cross-connection.

"Bag Filters" are pressure-driven separation devices that remove particle matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside.

"Bank Filtration" is a water treatment process that uses a well to recover surface water that has naturally infiltrated into ground water through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s).

"Best Available Technology" (BAT) means the best technology, treatment techniques, or other means which the Director finds, after examination under field conditions and not solely under laboratory conditions, are available (taking cost into consideration). For the purposes of setting MCLs for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon for all these chemicals except vinyl chloride. Central treatment using packed tower aeration is also identified as BAT for synthetic organic chemicals.

"Board" means the Drinking Water Board.

"Body Politic" means the State or its agencies or any political subdivision of the State to include a county, city, town, improvement district, taxing district or any other governmental subdivision or public corporation fo the State.

"Breakpoint Chlorination" means addition of chlorine to water until the chlorine demand has been satisfied. At this point, further addition of chlorine will result in a free residual chlorine that is directly proportional to the amount of chlorine added beyond the breakpoint.

"C" is short for "Residual Disinfectant Concentration."

"Capacity Development" means technical, managerial, and financial capabilities of the water system to plan for, achieve, and maintain compliance with applicable drinking water standards.

"Cartridge filters" are pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

"cfs" means cubic feet per second and is one way of expressing flowrate (one cfs is equivalent to 448.8 gpm).

"Class" means the level of certification of Backflow Prevention Technician (Class I, II or III).

~~["Clean compliance history" means a record of no MCL violations; and no coliform treatment technique trigger exceedances or treatment technique violations.]~~

"Coagulation" is the process of destabilization of the charge (predominantly negative) on particulates and colloids suspended in water. Destabilization lessens the repelling character of particulates and colloids and allows them to become attached to other particles so that they may be removed in subsequent processes. The particulates in raw waters (which contribute to color and turbidity) are mainly clays, silt, viruses, bacteria, fulvic and humic acids, minerals (including asbestos, silicates, silica, and radioactive particles), and organic particulate.

"Collection area" means the area surrounding a ground-water source which is underlain by collection pipes, tile, tunnels, infiltration boxes, or other ground-water collection devices.

"Combined distribution system" is the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

"Commission" means the Operator Certification Commission.

"Community Water System" (CWS) means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

"Compliance cycle" means the nine-year calendar year cycle during which public water systems must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle began January 1, 1993 and ends December 31, 2001; the second begins January 1, 2002 and ends December 31, 2010; the third begins January 1, 2011 and ends December 31, 2019.

"Compliance period" means a three-year calendar year period within a compliance cycle. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period ran from January 1, 1993 to December 31, 1995; the second from January 1, 1996 to December 31, 1998; and the third is from January 1, 1999 to December 31, 2001.

"Comprehensive Performance Evaluation" (CPE) is a thorough review and analysis of a treatment plant's performance-based

capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. For purposes of compliance with these rules, the comprehensive performance evaluation must consist of at least the following components: Assessment of plant performance; evaluation of major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability of comprehensive technical assistance; and preparation of a CPE report.

"Confirmed SOC contamination area" means an area surrounding and including a plume of SOC contamination of the soil or water which previous monitoring results have confirmed. The area boundaries may be determined by measuring 3,000 feet horizontally from the outermost edges of the confirmed plume. The area includes deeper aquifers even though only the shallow aquifer is the one contaminated.

"Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion of the filtration area in which discrete bacterial colonies can not be distinguished.

"Consecutive system" is a public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system or one or more consecutive systems.

"Contaminant" means any physical, chemical biological, or radiological substance or matter in water.

"Continuing Education Unit" (CEU) means ten contact hours of participation in, and successful completion of, an organized and approved continuing education experience under responsible sponsorship, capable direction, and qualified instruction. College credit in approved courses may be substituted for CEUs on an equivalency basis.

"Conventional Surface Water Treatment" means a series of processes including coagulation, flocculation, sedimentation, filtration and disinfection resulting in substantial particulate removal and inactivation of pathogens.

"Controls" means any codes, ordinances, rules, and regulations that a public water system can cite as currently in effect to regulate potential contamination sources; any physical conditions which may prevent contaminants from migrating off of a site and into surface or ground water; and any site with negligible quantities of contaminants.

"Corrective Action" refers to a rating placed on a system by the Division and means a provisional rating for a public water system not in compliance with the Rules of R309, but making all the necessary changes outlined by the Director to bring them into compliance.

"Corrosion inhibitor" means a substance capable of reducing the corrosiveness of water toward metal plumbing materials, especially

lead and copper, by forming a protective film on the interior surface of those materials.

"Credit Enhancement Agreement" means any agreement entered into between the Board, on behalf of the State, and an eligible water system for the purpose of providing methods and assistance to eligible water systems to improve the security for and marketability of drinking water project obligations.

"Criteria" means the conceptual standards that form the basis for DWSP area delineation to include distance, ground-water time of travel, aquifer boundaries, and ground-water divides.

"Criteria threshold" means a value or set of values selected to represent the limits above or below which a given criterion will cease to provide the desired degree of protection.

"Cross-Connection" means any actual or potential connection between a drinking (potable) water system and any other source or system through which it is possible to introduce into the public drinking water system any used water, industrial fluid, gas or substance other than the intended potable water. For example, if you have a pump moving non-potable water and hook into the drinking water system to supply water for the pump seal, a cross-connection or mixing may lead to contamination of the drinking water. Also see backsiphonage, backpressure and backflow.

"Cross Connection Control Program" means the program administered by the public water system in which cross connections are either eliminated or controlled.

"Cross Connection Control Commission" means the duly constituted advisory subcommittee appointed by the Board to advise the Board on Backflow Technician Certification and the Cross Connection Control Program of Utah.

"CT" or "CT_{calc}" is the product of "residual disinfectant concentration" (C) in mg/l determined before or at the first customer, and the corresponding "disinfectant contact time" (T) in minutes, i.e., "C" x "T." If a public water system applies disinfectant at more than one point prior to the first customer, the summation of each CT value for each disinfectant sequence before or at the first customer determines the total percent inactivation or "Total Inactivation Ratio." In determining the Total Inactivation Ratio, the public water system must determine the residual disinfectant concentration of each disinfection sequence and corresponding contact time before any subsequent disinfection application point(s).

"CT_{req'd}" is the CT value required when the log reduction credit given the filter is subtracted from the (3-log) inactivation requirement for Giardia lamblia or the (4-log) inactivation requirement for viruses.

"CT_{99.9}" is the CT value required for 99.9 percent (3-log) inactivation of Giardia lamblia cysts. CT_{99.9} for a variety of disinfectants and conditions appear in Tables 1.1-1.6, 2.1, and 3.1

of Section 141.74(b)(3) in the code of Federal Regulations (also available from the Division).

"Designated person" means the person appointed by a public water system to ensure that the requirements of their Drinking Water Source Protection Plan(s) for ground water sources and/or surface water sources are met.

"Desired Design Discharge Rate" means the discharge rate selected for the permanent pump installed in a public drinking water well source. This pumping rate is selected by the water system owner or engineer and can match or be the same rate utilized during the constant rate pump test required by R309-515 and R309-600 to determine delineated protection zones. For consideration of the number of permanent residential connections or ERC's that a well source can support (see Safe Yield) the Director will consider 2/3 of the test pumping rate as the safe yield.

"Detectable residual" means the minimum level of free chlorine in the water that the analysis method is capable of detecting and indicating positive confirmation.

"Direct Employment" means that the operator is directly compensated by the drinking water system to operate that drinking water system.

"Direct Filtration" means a series of processes including coagulation and filtration, but excluding sedimentation, resulting in substantial particulate removal.

"Direct Responsible Charge" means active on-site control and management of routine maintenance and operation duties. A person in direct responsible charge is generally an operator of a water treatment plant or distribution system who independently makes decisions during normal operation which can affect the sanitary quality, safety, and adequacy of water delivered to customers. In cases where only one operator is employed by the system, this operator shall be considered to be in direct responsible charge.

"Director" means the Director of the Division of Drinking Water.

"Disadvantaged Communities" are defined as those communities located in an area which has a median adjusted gross income which is less than or equal to 80% of the State's median adjusted gross income, as determined by the Utah State Tax commission from federal individual income tax returns excluding zero exemptions returns.

"Discipline" means type of certification (Distribution or Treatment).

"Disinfectant Contact Time" ("T" in CT calculations) means the time in minutes that it takes water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration ("C") is measured. Where only one "C" is measured, "T" is the time in minutes that it takes water to move from the point of disinfectant application to a point before or at where

residual disinfectant concentration ("C") is measured. Where more than one "C" is measured, "T" is (a) for the first measurement of "C," the time in minutes that it takes water to move from the first or only point of disinfectant application to a point before or at the point where the first "C" is measured and (b) for subsequent measurements of "C," the time in minutes that it takes for water to move from the previous "C" measurement point to the "C" measurement point for which the particular "T" is being calculated. Disinfectant contact time in pipelines must be calculated by dividing the internal volume of the pipe by the maximum hourly flow rate through that pipe. Disinfectant contact time within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

"Disinfection" means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents (see also Primary Disinfection and Secondary Disinfection).

"Disinfection profile" is a summary of daily *Giardia lamblia* inactivation through the treatment plant.

"Distribution System" means the use of any spring or well source, distribution pipelines, appurtenances, and facilities which carry water for potable use to consumers through a public water supply. Systems which chlorinate groundwater are in this discipline.

"Distribution System Manager" means the individual responsible for all operations of a distribution system.

"Division" means the Utah Division of Drinking Water, who acts as staff to the Director and is also part of the Utah Department of Environmental Quality.

"Dose-monitoring Strategy" is the method by which a UV reactor maintains the required dose at or near some specified value by monitoring UV dose delivery. Such strategies must include, at a minimum, flow rate and UV intensity (measured via duty UV sensor) and lamp status. They sometimes include UVT and lamp power. Two common Dose-monitoring Strategies are the UV Intensity Setpoint Approach and the Calculated Dose Approach.

(1) The "UV Intensity Setpoint Approach" relies on one or more "setpoints" for UV intensity that are established during validation testing to determine UV dose. During operations, the UV intensity as measured by the UV sensors must meet or exceed the setpoint(s) to ensure delivery of the required dose. Reactors must also be operated within validated operation conditions for flow rates and lamp status. In the UV Intensity Setpoint Approach, UVT does not need to be monitored separately. Instead, the intensity readings by the sensors account for changes in UVT. The operating strategy can be with either a single setpoint (one UV intensity setpoint is used for all validated flow rates) or a variable setpoint (the UV intensity setpoint is determined using a lookup table or equation for a range of flow rates).

(2) The "Calculated Dose Approach" uses a dose-monitoring equation to estimate the UV dose based on operating conditions

(typically flow rate, UV intensity, and UVT). The dose-monitoring equation may be developed by the UV manufacturers using numerical methods; or the systems use an empirical dose-monitoring equation developed through validation testing. During reactor operations, the UV reactor control system inputs the measured parameters into the dose-monitoring equation to produce a calculated dose. The system operator divides the calculated dose by the Validation Factor (see the 2006 Final UV Guidance Manual Chapter 5 for more details on the Validation Factor) and compares the resulting value to the required dose for the target pathogen and log inactivation level.

"Dose Equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission of Radiological Units and Measurements (ICRU).

"Drinking Water" means water that is fit for human consumption and meets the quality standards of R309-200. Common usage of terms such as culinary water, potable water or finished water are synonymous with drinking water.

"Drinking Water Project" means any work or facility necessary or desirable to provide water for human consumption and other domestic uses which has at least fifteen service connections or serves an average of twenty-five individuals daily for at least sixty days of the year and includes collection, treatment, storage, and distribution facilities under the control of the operator and used primarily with the system and collection, pretreatment or storage facilities used primarily in connection with the system but not under such control.

"Drinking Water Project Obligation" means any bond, note or other obligation issued to finance all or part of the cost of acquiring, constructing, expanding, upgrading or improving a drinking water project.

"Drinking Water Regional Planning" means a county wide water plan, administered locally by a coordinator, who facilitates the input of representatives of each public water system in the county with a selected consultant, to determine how each public water system will either collectively or individually comply with source protection, operator certification, monitoring (including consumer confidence reports), capacity development (including technical, financial and managerial aspects), environmental issues, available funding and related studies.

"Dual sample set" is a set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of conducting an IDSE under R309-210-9 and determining compliance with the TTHM and HAA5 MCLs under R309-210-10.

"Duty UV Sensors (or Duty Sensors)" are on-line sensors installed in the UV reactor and continuously monitor UV intensity during UV equipment operations.

"DWSP Program" means the program to protect drinking water source protection zones and management areas from contaminants that may have an adverse effect on the health of persons.

"DWSP Zone" means the surface and subsurface area surrounding a ground-water or surface water source of drinking water supplying a PWS, over which or through which contaminants are reasonably likely to move toward and reach such water source.

"Emergency Storage" means that storage tank volume which provides water during emergency situations, such as pipeline failures, major trunk main failures, equipment failures, electrical power outages, water treatment facility failures, source water supply contamination, or natural disasters.

"Engineer" means a person licensed under the Professional Engineers and Land Surveyors Licensing Act, 58-22 of the Utah Code, as a "professional engineer" as defined therein.

"Enhanced coagulation" means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

"Enhanced softening" means the improved removal of disinfection byproduct precursors by precipitative softening.

"Equalization Storage" means that storage tank volume which stores water during periods of low demand and releases the water under periods of high demand. Equalization storage provides a buffer between the sources and distribution for the varying daily water demands. Typically, water demands are high in the early morning or evening and relatively low in the middle of the night. A rule-of-thumb for equalization storage volume is that it should be equal to one average day's use.

"Equivalent Residential Connection" (ERC) is a term used to evaluate service connections to consumers other than the typical residential domicile. Public water system management is expected to review annual metered drinking water volumes delivered to non-residential connections and estimate the equivalent number of residential connections that these represent based upon the average of annual metered drinking water volumes delivered to true single family residential connections. This information is utilized in evaluation of the system's source and storage capacities (refer to R309-510).

"Existing ground-water source of drinking water" means a public supply ground-water source for which plans and specifications were submitted to the Division on or before July 26, 1993.

"Existing surface water source of drinking water" means a public supply surface water source for which plans and specifications were submitted to the Division on or before June 12, 2000.

"Filtration" means a process for removing particulate matter from water by passage through porous media.

"Filter profile" is a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

"Financial Assistance" means a drinking water project loan, credit enhancement agreement, interest buy-down agreement or hardship grant.

"Finished water" is water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals).

"Fire Suppression Storage" means that storage tank volume allocated to fire suppression activities. It is generally determined by the requirements of the local fire marshal, expressed in gallons, and determined by the product of a minimum flowrate in gpm and required time expressed in minutes.

"First draw sample" means a one-liter sample of tap water, collected in accordance with an approved lead and copper sampling site plan, that has been standing in plumbing pipes at least 6 hours and is collected without flushing the tap.

"Flash Mix" is the physical process of blending or dispersing a chemical additive into an unblended stream. Flash Mixing is used where an additive needs to be dispersed rapidly (within a period of one to ten seconds). Common usage of terms such as "rapid mix" or "initial mix" are synonymous with flash mix.

"Floc" means flocculated particles or agglomerated particles formed during the flocculation process. Flocculation enhances the agglomeration of destabilized particles and colloids toward settleable (or filterable) particles (flocs). Flocculated particles may be small (less than 0.1 mm diameter) micro flocs or large, visible flocs (0.1 to 3.0 mm diameter).

"Flocculation" means a process to enhance agglomeration of destabilized particles and colloids toward settleable (or filterable) particles (flocs). Flocculation begins immediately after destabilization in the zone of decaying mixing energy (downstream from the mixer) or as a result of the turbulence of transporting flow. Such incidental flocculation may be an adequate flocculation process in some instances. Normally flocculation involves an intentional and defined process of gentle stirring to enhance contact of destabilized particles and to build floc particles of optimum size, density, and strength to be subsequently removed by settling or filtration.

"Flowing stream" is a course of running water flowing in a definite channel.

"fps" means feet per second and is one way of expressing the velocity of water.

"G" is used to express the energy required for mixing and for flocculation. It is a term which is used to compare velocity gradients or the relative number of contacts per unit volume per second made by suspended particles during the flocculation process. Velocity gradients G may be calculated from the following equation: $G = \text{square root of the value}(550 \text{ times } P \text{ divided by } u \text{ times } V)$. Where: P = applied horsepower, u = viscosity, and V = effective volume.

"GAC10" means granular activated carbon filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 used as a best available technology for compliance with R309-210-10 MCLs under R309-200-5(3)(i)(A) shall be 120 days.

"GAC20" means granular activated carbon filter beds with an empty-bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every 240 days.

"Geologist" means a person licensed under the Professional Geologist Licensing Act, 58-76 of the Utah Code, as a "professional geologist" as defined therein.

"Geometric Mean" the geometric mean of a set of N numbers $X_1, X_2, X_3, \dots, X_N$ is the Nth root of the product of the numbers.

"gpd" means gallons per day and is one way of expressing average daily water demands experienced by public water systems.

"gpm" means gallons per minute and is one way of expressing flowrate.

"gpm/sf" means gallons per minute per square foot and is one way of expressing flowrate through a surface area.

"Grade" means any one of four possible steps within a certification discipline of either water distribution or water treatment. Grade I indicates knowledge and experience requirements for the smallest type of public water supply. Grade IV indicates knowledge and experience levels appropriate for the largest, most complex type of public water supply.

"Gross Alpha Particle Activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

"Gross Beta Particle Activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

"ground water of high quality" means a well or spring producing water deemed by the Director to be of sufficiently high quality that no treatment is required. Such sources shall have been designed and constructed in conformance with these rules, have been tested to

establish that all applicable drinking water quality standards (as given in rule R309-200) are reliably and consistently met, have been deemed not vulnerable to natural or man-caused contamination, and the public water system management have established adequate protection zones and management policies in accordance with rule R309-600.

"ground water of low quality" means a well or spring which, as determined by the Director, cannot reliably and consistently meet the drinking water quality standards described in R309-200. Such sources shall be deemed to be a low quality ground water source if any of the conditions outlined in subsection R309-505-8(1) exist. Ground water that is classified "UDI" is a subset of this definition and requires "conventional surface water treatment" or an acceptable alternative.

"Ground Water Source" means any well, spring, tunnel, adit, or other underground opening from or through which ground water flows or is pumped from subsurface water-bearing formations.

"Ground Water Under the Direct Influence of Surface Water" or "UDI" or "GWUDI" means any water beneath the surface of the ground with significant occurrence of insects or other macro organisms, algae, or large-diameter pathogens such as Giardia lamblia, or Cryptosporidium, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence will be determined for individual sources in accordance with criteria established by the Director. The determination of direct influence may be based on site-specific measurements of water quality and/or documentation of well or spring construction and geology with field evaluation.

"Haloacetic acids"(five) (HAA5) mean the sum of the concentrations in mg/L of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.

"Hardship Grant" means a grant of monies to a political subdivision that meets the drinking water project loan considerations whose project is determined by the Board to not be economically feasible unless grant assistance is provided. A hardship grant may be authorized in the following forms:

(1) a Planning Advance which will be required to be repaid at a later date, to help meet project costs incident to planning to determine the economic, engineering and financial feasibility of a proposed project;

(2) a Design Advance which will be required to be repaid at a later date, to help meet project costs incident to design including, but not limited to, surveys, preparation of plans, working drawings, specifications, investigations and studies; or

(3) a Project Grant which will not be required to be repaid.

"Hardship Grant Assessment" means an assessment applied to loan recipients. The assessment shall be calculated as a percentage of principal. Hardship grant assessment funds shall be subject to the requirements of UAC R309-700 for hardship grants.

"Hotel, Motel or Resort" shall include tourist courts, motor hotels, resort camps, hostels, lodges, dormitories and similar facilities, and shall mean every building, or structure with all buildings and facilities in connection, kept, used, maintained as, advertised as, or held out to the public to be, a place where living accommodations are furnished to transient guests or to groups normally occupying such facilities on a seasonal or short term basis.

"Hydrogeologic methods" means the techniques used to translate selected criteria and criteria thresholds into mappable delineation boundaries. These methods include, but are not limited to, arbitrary fixed radii, analytical calculations and models, hydrogeologic mapping, and numerical flow models.

"Inactivation" means, in the context of UV disinfection, a process by which a microorganism is rendered unable to reproduce, thereby rendering it unable to infect a host.

"Initial compliance period" means the first full three-year compliance period which begins at least 18 months after promulgation, except for contaminants listed in R309-200-5(3)(a), Table 200-2 numbers 19 to 33; R309-200-5(3)(b), Table 200-3 numbers 19 to 21; and R309-200-5(1)(c), Table 200-1 numbers 1, 5, 8, 11 and 18, initial compliance period means the first full three-year compliance after promulgation for systems with 150 or more service connections (January 1993-December 1995), and first full three-year compliance period after the effective date of the regulation (January 1996-December 1998) for systems having fewer than 150 service connections.

"Intake", for the purposes of surface water drinking water source protection, means the device used to divert surface water and also the conveyance to the point immediately preceding treatment, or, if no treatment is provided, at the entry point to the distribution system.

"Interest Buy-Down Agreement" means any agreement entered into between the Board, on behalf of the State, and a political subdivision, for the purpose of reducing the cost of financing incurred by a political subdivision on bonds issued by the subdivision for drinking water project costs.

"Labor Camp" shall mean one or more buildings, structures, or grounds set aside for use as living quarters for groups of migrant laborers or temporary housing facilities intended to accommodate construction, industrial, mining or demolition workers.

"Lake / reservoir" refers to a natural or man made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

"Land management strategies" means zoning and non-zoning controls which include, but are not limited to, the following: zoning

and subdivision ordinances, site plan reviews, design and operating standards, source prohibitions, purchase of property and development rights, public education programs, ground water monitoring, household hazardous waste collection programs, water conservation programs, memoranda of understanding, written contracts and agreements, and so forth.

"Land use agreement" means a written agreement, memoranda or contract wherein the owner(s) agrees not to locate or allow the location of uncontrolled potential contamination sources or pollution sources within zone one of new wells in protected aquifers or zone one of surface water sources. The owner(s) must also agree not to locate or allow the location of pollution sources within zone two of new wells in unprotected aquifers and new springs unless the pollution source agrees to install design standards which prevent contaminated discharges to ground water. This restriction must be binding on all heirs, successors, and assigns. Land use agreements must be recorded with the property description in the local county recorder's office. Refer to R309-600-13(2)(d).

Land use agreements for protection areas on publicly owned lands need not be recorded in the local county recorder office. However, a letter must be obtained from the Administrator of the land in question and meet the requirements described above.

"Large water system" for the purposes of R309-210-6 only, means a water system that serves more than 50,000 persons.

"Lead free" means, for the purposes of R309-210-6, when used with respect to solders and flux refers to solders and flux containing not more than 0.2 percent lead; when used with respect to pipes and pipe fittings refers to pipes and pipe fittings containing not more than 8.0 percent lead; and when used with respect to plumbing fittings and fixtures intended by the manufacturer to dispense water for human ingestion refers to fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. 300 g-6(e).

"Lead service line" means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.

"Legionella" means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.

"Level 1 assessment" means an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. It is conducted by the system operator or owner. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where

appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

"Level 2 assessment" means an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. A Level 2 assessment provides a more detailed examination of the system (including the system's monitoring and operational practices) than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. It is conducted by an individual approved by the State, which may include the system operator. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system. The system must comply with any expedited actions or additional actions required by the State in the case of an E. coli MCL violation.

"Locational running annual average (LRAA)" is the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

"Major Bacteriological Routine Monitoring Violation" means that no routine bacteriological sample was taken as required by R309-210-5(1).

"Major Bacteriological Repeat Monitoring Violation" - means that no repeat bacteriological sample was taken as required by R309-210-5(2).

"Major Chemical Monitoring Violation" - means that no initial background chemical sample was taken as required in R309-515-4(5).

"Management area" means the area outside of zone one and within a two-mile radius where the Optional Two-mile Radius Delineation Procedure has been used to identify a protection area.

For wells, land may be excluded from the DWSP management area at locations where it is more than 100 feet lower in elevation than the total drilled depth of the well.

For springs and tunnels, the DWSP management area is all land at elevation equal to or higher than, and within a two-mile radius, of the spring or tunnel collection area. The DWSP management area also includes all land lower in elevation than, and within 100 horizontal feet, of the spring or tunnel collection area. The elevation datum to be used is the point of water collection. Land may also be excluded from the DWSP management area at locations where it is separated from the ground water source by a surface drainage which is lower in elevation than the spring or tunnel collection area.

"Man-Made Beta Particle and Photon Emitters" means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, "NBS Handbook 69," except the daughter products of thorium-232, uranium-235 and uranium-238.

"Master Plan" (or "System Capacity and Expansion Report") means a organized plan addressing the present and future demands that will be placed on a public drinking water system by expanding into undeveloped areas or accepting additional service contracts. As a minimum a satisfactory master plan must contain the following elements:

(a) A listing of sources including: the source name, the source type (i.e., well, spring, reservoir, stream etc.) for both existing sources and additional sources identified as needed for system expansion, the minimum reliable flow of the source in gallons per minute, the status of the water right and the flow capacity of the water right.

(b) A listing of storage facilities including: the storage tank name, the type of material (i.e., steel, concrete etc.), the diameter, the total volume in gallons, and the elevation of the overflow, the lowest level (elevation) of the equalization volume, the fire suppression volume, and the emergency volume or the outlet.

(c) A listing of pump stations including: the pump station name and the pumping capacity in gallons per minute. Under this requirement one does not need to list well pump stations as they are provided in requirement (a) above.

(d) A listing of the various pipeline sizes within the distribution system with their associated pipe materials and, if readily available, the approximate length of pipe in each size and material category. A schematic of the distribution piping showing node points, elevations, length and size of lines, pressure zones, demands, and coefficients used for the hydraulic analysis required by (h) below will suffice.

(e) A listing by customer type (i.e., single family residence, 40 unit condominium complex, elementary school, junior high school, high school, hospital, post office, industry, commercial etc.) along with an assessment of their associated number of ERC'S.

(f) The number of connections along with their associated ERC value that the public drinking water system is committed to serve, but has not yet physically connected to the infrastructure.

(g) A description of the nature and extent of the area currently served by the water system and a plan of action to control addition of new service connections or expansion of the public drinking water system to serve new development(s). The plan shall include current number of service connections and water usage as well as land use projections and forecasts of future water usage.

(h) A hydraulic analysis of the existing distribution system along with any proposed distribution system expansion identified in (g) above.

(i) A description of potential alternatives to manage system growth, including interconnections with other existing public drinking water systems, developer responsibilities and requirements, water rights issues, source and storage capacity issues and distribution issues.

"Maximum Contaminant Level" (MCL) means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

"Maximum residual disinfectant level" (MRDL) means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. For chlorine and chloramines, a PWS is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than or equal to the MRDL. For chlorine dioxide, a PWS is in compliance with the MRDL when daily samples are taken at the entrance to the distribution system and no two consecutive daily samples exceed the MRDL. MRDLs are enforceable in the same manner as MCLs pursuant to UT Code S 19-4-104. There is convincing evidence that addition of a disinfectant is necessary for control of waterborne microbial contaminants. Notwithstanding the MRDLs listed in R309-200-5(3), operators may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system to a level and for a time necessary to protect public health to address specific microbiological contamination problems caused by circumstances such as distribution line breaks, storm runoff events, source water contamination, or cross-connections.

"Maximum residual disinfectant level goal" (MRDLG) means the maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MRDLGs are

non-enforceable health goals and do not reflect the benefit of the addition of the chemical for control of waterborne microbial contaminants.

"Medium-size water system" for the purposes of R309-210-6 only, means a water system that serves greater than 3,300 and less than or equal to 50,000 persons.

"Membrane filtration" is a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes that common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

"Metropolitan area sources" means all sources within a metropolitan area. A metropolitan area is further defined to contain at least 3,300 year round residents. A small water system which has sources within a metropolitan system's service area, may have those sources classified as a metropolitan area source.

"MG" means million gallons and is one way of expressing a volume of water.

"MGD" means million gallons per day and is one way of expressing average daily water demands experienced by public water systems or the capacity of a water treatment plant.

"mg/L" means milligrams per liter and is one way of expressing the concentration of a chemical in water. At small concentrations, mg/L is synonymous with "ppm" (parts per million).

"Minor Bacteriological Routine Monitoring Violation" means that not all of the routine bacteriological samples were taken as required by R309-210-5(1).

"Minor Bacteriological Repeat Monitoring Violation" means that not all of the repeat bacteriological samples were taken as required by R309-210-5(2).

"Minor Chemical Monitoring Violation" means that the required chemical sample(s) was not taken in accordance with R309-205 and R309-210.

"Modern Recreation Camp" means a campground accessible by any type of vehicular traffic. The camp is used wholly or in part for recreation, training or instruction, social, religious, or physical education activities or whose primary purpose is to provide an outdoor group living experience. The site is equipped with permanent buildings for the purpose of sleeping, a drinking water supply under pressure, food service facilities, and may be operated on a seasonal or short term basis. These types of camps shall include but are not limited to privately owned campgrounds such as youth camps, church camps, boy or girl scout camps, mixed age groups, family group camps, etc.

"Near the first service connection" means one of the service connections within the first 20 percent of all service connections that are nearest to the treatment facilities.

"Negative Interest" means a loan having loan terms with an interest rate at less than zero percent. The repayment schedule for loans having a negative interest rate will be prepared by the Board.

"New ground water source of drinking water" means a public supply ground water source of drinking water for which plans and specifications are submitted to the Division after July 26, 1993.

"New surface water source of drinking water" means a public supply surface water source of drinking water for which plans and specifications are submitted to the Division after June 12, 2000.

"New Water System" means a system that will become a community water system or non-transient, non-community water system on or after October 1, 1999.

"Non-Community Water System" (NCWS) means a public water system that is not a community water system. There are two types of NCWS's: transient and non-transient.

"Non-distribution system plumbing problem" means a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which a coliform-positive sample was taken.

"Nonpoint source" means any diffuse source of contaminants or pollutants not otherwise defined as a point source.

"Non-Transient Non-Community Water System" (NTNCWS) means a public water system that regularly serves at least 25 of the same nonresident persons per day for more than six months per year. Examples of such systems are those serving the same individuals (industrial workers, school children, church members) by means of a separate system.

"Not Approved" refers to a rating placed on a system by the Division and means the water system does not fully comply with all the Rules of R309 as measured by R309-400.

"NTU" means Nephelometric Turbidity Units and is an acceptable method for measuring the clarity of water utilizing an electronic nephelometer (see "Standard Methods for Examination of Water and Wastewater").

"Off-specification" means a UV facility is operating outside of the validated operating conditions, for example, at a flow rate higher than the validated range or a UVT below the validated range).

"Operator" means a person who operates, repairs, maintains, and is directly employed by a public drinking water system.

"Operator Certification Commission" means the Commission appointed by the Board as an advisory Commission on public water system operator certification.

"Operating Permit" means written authorization from the Director to actually start utilizing a facility constructed as part of a public water system.

"Optimal corrosion control treatment" for the purposes of R309-210-6 only, means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations.

"Package Plants" refers to water treatment plants manufactured and supplied generally by one company which are reportedly complete and ready to hook to a raw water supply line. Caution, some plants do not completely comply with all requirements of these rules and will generally require additional equipment.

"PCBs" means a group of chemicals that contain polychlorinated biphenyl.

"Peak Day Demand" means the amount of water delivered to consumers by a public water system on the day of highest consumption, generally expressed in gpd or MGD. This peak day will likely occur during a particularly hot spell in the summer. In contrast, some systems associated with the skiing industry may experience their "Peak Day Demand" in the winter.

"Peak Hourly Flow" means the maximum hourly flow rate from a water treatment plant and utilized when the plant is preparing disinfection profiling as called for in R309-215-14(2).

"Peak Instantaneous Demand" means calculated or estimated highest flowrate that can be expected through any water mains of the distribution network of a public water system at any instant in time, generally expressed in gpm or cfs (refer to section R309-510-9).

"Person" means an individual, corporation, company, association, partnership; municipality; or State, Federal, or tribal agency.

"Picocurie" (pCi) means that quantity of radioactive material producing 2.22 nuclear transformations per minute.

"Plan Approval" means written approval of contract plans and specifications for any public drinking water project which have been submitted for review prior to the start of construction pursuant to R309-105-6 and R309-500-6.

"Plant intake" refers to the works or structures at the head of a conduit through which water is diverted from a source (e.g., river or lake) into the treatment plant.

"Plug Flow" is a term to describe when water flowing through a tank, basin or reactors moves as a plug of water without ever dispersing or mixing with the rest of the water flowing through the tank.

"Point of Disinfectant Application" is the point where the disinfectant is applied and water downstream of that point is not subject to re-contamination by surface water runoff.

"Point of Diversion"(POD) is the point at which water from a surface source enters a piped conveyance, storage tank, or is otherwise removed from open exposure prior to treatment.

"Point-of-Entry Treatment Device" means a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

"Point-of-Use Treatment Device" means a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

"Point source" means any discernible, confined, and discrete source of pollutants or contaminants, including but not limited to any site, pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, animal feeding operation with more than ten animal units, landfill, or vessel or other floating craft, from which pollutants are or may be discharged.

"Political Subdivision" means any county, city, town, improvement district, metropolitan water district, water conservancy district, special service district, drainage district, irrigation district, separate legal or administrative entity created under Title 11, Chapter 13, Interlocal Cooperation Act, or any other entity constituting a political subdivision under the laws of Utah.

"Pollution source" means point source discharges of contaminants to ground or surface water or potential discharges of the liquid forms of "extremely hazardous substances" which are stored in containers in excess of "applicable threshold planning quantities" as specified in SARA Title III. Examples of possible pollution sources include, but are not limited to, the following: storage facilities that store the liquid forms of extremely hazardous substances, septic tanks, drain fields, class V underground injection wells, landfills, open dumps, landfilling of sludge and septage, manure piles, salt piles, pit privies, drain lines, and animal feeding operations with more than ten animal units.

The following definitions are part of R309-600 and clarify the meaning of "pollution source:"

(1) "Animal feeding operation" means a lot or facility where the following conditions are met: animals have been or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12 month period, and crops, vegetation forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility. Two or more animal feeding operations under common ownership are considered to be a single feeding operation if they adjoin each other, if they use a common area, or if they use a common system for the disposal of wastes.

(2) "Animal unit" means a unit of measurement for any animal feeding operation calculated by adding the following numbers; the number of slaughter and feeder cattle multiplied by 1.0, plus the

number of mature dairy cattle multiplied by 1.4, plus the number of swine weighing over 55 pounds multiplied by 0.4, plus the number of sheep multiplied by 0.1, plus the number of horses multiplied by 2.0.

(3) "Extremely hazardous substances" means those substances which are identified in the Sec. 302(EHS) column of the "TITLE III LIST OF LISTS - Consolidated List of Chemicals Subject to Reporting Under SARA Title III," (EPA 550-B-96-015). A copy of this document may be obtained from: NCEPI, PO Box 42419, Cincinnati, OH 45202. Online ordering is also available at <http://www.epa.gov/ncepihom/orderpub.html>.

"Potential contamination source" means any facility or site which employs an activity or procedure which may potentially contaminate ground or surface water. A pollution source is also a potential contamination source.

"ppm" means parts per million and is one way of expressing the concentration of a chemical in water. At small concentrations generally used, ppm is synonymous with "mg/l" (milligrams per liter).

"Practical Quantitation Level" (PQL) means the required analysis standard for laboratory certification to perform lead and copper analyses. The PQL for lead is .005 milligrams per liter and the PQL for copper is 0.050 milligrams per liter.

"Presedimentation" is a preliminary treatment process used to remove gravel, sand and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

"Primary Disinfection" means the adding of an acceptable primary disinfectant or ultraviolet light irradiation during the treatment process to provide adequate levels of inactivation of bacteria and pathogens. The effectiveness is measured through "CT" values, and the "Total Inactivation Ratio," and the ultraviolet light dose. Acceptable primary disinfectants are, chlorine, ozone, ultraviolet light, and chlorine dioxide (see also "CT" and "CT_{99.9}").

"Principal Forgiveness" means a loan wherein a portion of the loan amount is "forgiven" upon closing the loan. The terms for principal forgiveness will be as directed by R309-705-8, and by the Board.

"Project Costs" include the cost of acquiring and constructing any drinking water project including, without limitation: the cost of acquisition and construction of any facility or any modification, improvement, or extension of such facility; any cost incident to the acquisition of any necessary property, easement or right of way; engineering or architectural fees, legal fees, fiscal agent's and financial advisors' fees; any cost incurred for any preliminary planning to determine the economic and engineering feasibility of a proposed project; costs of economic investigations and studies, surveys, preparation of designs, plans, working drawings, specifications and the inspection and supervision of the construction of any facility; interest accruing on loans made under this program

during acquisition and construction of the project; and any other cost incurred by the political subdivision, the Board or the Department of Environmental Quality, in connection with the issuance of obligation of the political subdivision to evidence any loan made to it under the law.

"Protected aquifer" means a producing aquifer in which the following conditions are met:

(1) A naturally protective layer of clay, at least 30 feet in thickness, is present above the aquifer;

(2) the PWS provides data to indicate the lateral continuity of the clay layer to the extent of zone two; and

(3) the public supply well is grouted with a grout seal that extends from the ground surface down to at least 100 feet below the surface, and for a thickness of at least 30 feet through the protective clay layer.

"Public Drinking Water Project" means construction, addition to, or modification of any facility of a public water system which may affect the quality or quantity of the drinking water (see also section R309-500-6).

"Public Water System" (PWS) means a system, either publicly or privately owned, providing water through constructed conveyances for human consumption and other domestic uses, which has at least 15 service connections or serves an average of at least 25 individuals daily at least 60 days out of the year and includes collection, treatment, storage, or distribution facilities under the control of the operator and used primarily in connection with the system, or collection, pretreatment or storage facilities used primarily in connection with the system but not under his control (see 19-4-102 of the Utah Code Annotated). All public water systems are further categorized into three different types, community (CWS), non-transient non-community (NTNCWS), and transient non-community (TNCWS). These categories are important with respect to required monitoring and water quality testing found in R309-205 and R309-210 (see also definition of "water system").

"Raw Water" means water that is destined for some treatment process that will make it acceptable as drinking water. Common usage of terms such as lake or stream water, surface water or irrigation water are synonymous with raw water.

"Recreational Home Developments" are subdivision type developments wherein the dwellings are not intended as permanent domiciles.

"Recreational Vehicle Park" means any site, tract or parcel of land on which facilities have been developed to provide temporary living quarters for individuals utilizing recreational vehicles. Such a park may be developed or owned by a private, public or non-profit organization catering to the general public or restricted to the organizational or institutional member and their guests only.

"Reference UV Sensors (or Reference Sensors)" are off-line calibrated UV sensors that are used to assess the duty UV sensors' performance and to determine UV sensor uncertainty.

"Regional Operator" means a certified operator who is in direct responsible charge of more than one public drinking water system.

"Regionalized Water System" means any combination of water systems which are physically connected or operated or managed as a single unit.

"Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem" (mrem) is 1/1000 of a rem.

"Renewal Course" means a course of instruction, approved by the Subcommittee, which is a prerequisite to the renewal of a Backflow Technician's Certificate.

"Repeat compliance period" means any subsequent compliance period after the initial compliance period.

"Replacement well" means a public supply well drilled for the sole purpose of replacing an existing public supply well which is impaired or made useless by structural difficulties and in which the following conditions are met:

(1) the proposed well location shall be within a radius of 150 feet from an existing ground water supply well; and

(2) the PWS provides a copy of the replacement application approved by the State Engineer (refer to Section 73-3-28 of the Utah Code).

"Required Dose" is the UV dose required for a certain level of log inactivation. Required doses are set forth by the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and R309-215-15(19)(d)(i) Table 215-5 the UV Dose Table.

"Required reserve" means funds set aside to meet requirements set forth in a loan covenant/bond indenture.

"Residual Disinfectant Concentration" ("C" in CT calculations) means the concentration of disinfectant, measured in mg/L, in a representative sample of water.

"Restricted Certificate" means that the operator has qualified by passing an examination but is in a restricted certification status due to lack of experience as an operator.

"Roadway Rest Stop" shall mean any building, or buildings, or grounds, parking areas, including the necessary toilet, hand washing, water supply and wastewater facilities intended for the accommodation of people using such facilities while traveling on public roadways. It does not include scenic view or roadside picnic areas or other parking areas if these are properly identified

"Routine Chemical Monitoring Violation" means no routine chemical sample(s) was taken as required in R309-205, R309-210 and R309-215.

"Safe Yield" means the annual quantity of water that can be taken from a source of supply over a period of years without depleting the source beyond its ability to be replenished naturally in "wet years".

"Sanitary defect" means a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.

"Sanitary Seal" means a cap that prevents contaminants from entering a well through the top of the casing.

"scfm/sf" means standard cubic foot per minute per square foot and is one way of expressing flowrate of air at standard density through a filter or duct area.

"Seasonal system" means a non-community water system that is not operated as a public water system on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

"Secondary Disinfection" means the adding of an acceptable secondary disinfectant to assure that the quality of the water is maintained throughout the distribution system. The effectiveness is measured by maintaining detectable disinfectant residuals throughout the distribution system. Acceptable secondary disinfectants are chlorine, chloramine, and chlorine dioxide.

"Secondary Maximum Contaminant Level" means the advisable maximum level of contaminant in water which is delivered to any user of a public water system.

"Secretary to the Subcommittee" means that individual appointed by the Director to conduct the business of the Subcommittee.

"Sedimentation" means a process for removal of solids before filtration by gravity or separation.

"Semi-Developed Camp" means a campground accessible by any type of vehicular traffic. Facilities are provided for both protection of site and comfort of users. Roads, trails and campsites are defined and basic facilities (water, flush toilets and/or vault toilets, tables, fireplaces or tent pads) are provided. These camps include but are not limited to National Forest campgrounds, Bureau of Reclamation campgrounds, and youth camps.

"Service Connection" means the constructed conveyance by which a dwelling, commercial or industrial establishment, or other water user obtains water from the supplier's distribution system. Multiple dwelling units such as condominiums or apartments, shall be considered to have a single service connection, if fed by a single line, for the purpose of microbiological repeat sampling; but shall be evaluated by the supplier as multiple "equivalent residential connections" for the purpose of source and storage capacities.

"Service Factor" means a rating on a motor to indicate an increased horsepower capacity beyond nominal nameplate capacity for occasional overload conditions.

"Service line sample" means a one-liter sample of water collected in accordance with R309-210-6(3)(b)(iii), that has been standing for at least 6 hours in a service line.

"Significant deficiencies" means defects in design, operation, or maintenance, or a failure or defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the Director determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

"Single family structure" for the purposes of R309-210-6 only, means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

"Small water system" means a public water system that serves 3,300 persons or fewer.

"Specialist" means a person who has successfully passed the written certification exam and meets the required experience, but who is not in direct employment with a Utah public drinking water system.

"Stabilized drawdown" means that there is less than 0.5 foot of change in water level measurements in a pumped well for a minimum period of six hours.

"Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

"SOCs" means synthetic organic chemicals.

"Stabilized Drawdown" means the drawdown measurements taken during a constant-rate yield and drawdown test as outlined in subsection R309-515-14(10)(b) are constant (no change).

"Stock Tight" means a type of fence that can prevent the passage of grazing livestock through its boundary. An example of such fencing is provided by design drawing 02838-3 titled "Cattle Enclosure" designed by the U.S. Department of the Interior, Bureau of Land Management, Division of Technical Services (copies available from the Division).

"Subcommittee" means the Cross Connection Control Subcommittee.

"Supplier of water" means any person who owns or operates a public water system.

"Surface Water" means all water which is open to the atmosphere and subject to surface runoff (see also section R309-515-5(1)). This includes conveyances such as ditches, canals and aqueducts, as well as natural features.

"Surface Water Systems" means public water systems using surface water or ground water under the direct influence of surface water as a source that are subject to filtration and disinfection (Federal SWTR subpart H) and the requirements of R309-215 "Monitoring and Water Quality: Treatment Plant Monitoring Requirements."

"Surface Water Systems (Large)" means public water systems using surface water or ground water under the direct influence of surface water as a source that are subject to filtration and disinfection and

serve a population of 10,000 or greater (Federal SWTR subpart P and L) and the requirements of R309-215 "Monitoring and Water Quality: Treatment Plant Monitoring Requirements."

"Surface Water Systems (Small)" means public water systems using surface water or ground water under the direct influence of surface water as a source that are subject to filtration and disinfection and serve a population less than 10,000 (Federal SWTR subpart L, T and P (sanitary survey requirements)) and the requirements of R309-215 "Monitoring and Water Quality: Treatment Plant Monitoring Requirements."

"Susceptibility" means the potential for a PWS (as determined at the point immediately preceding treatment, or if no treatment is provided, at the entry point to the distribution system) to draw water contaminated above a demonstrated background water quality concentration through any overland or subsurface pathway. Such pathways may include cracks or fissures in or open areas of the surface water intake, and/or the wellhead, and/or the pipe/conveyance between the intake and the water distribution system or treatment.

"SUVA" means Specific Ultraviolet Absorption at 254 nanometers (nm), an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV_{254}) (in m^{-1}) by its concentration of dissolved organic carbon (DOC) (in mg/L).

"System with a single service connection" means a system which supplies drinking water to consumers via a single service line.

"T" is short for "Contact Time" and is generally used in conjunction with either the residual disinfectant concentration (C) in determining CT or the velocity gradient (G) in determining mixing energy GT.

"Target Log Inactivation" means the specific log inactivation the PWS wants to achieve for the target pathogen using UV disinfection. The target log inactivation is driven by requirements of the Surface Water Treatment Rule (SWTR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), and the log removal/inactivation requirements in R309-215-15, and the Groundwater Rule.

"Ten State Standards" refers to the Recommended Standards For Water Works, 1997 by the Great Lakes Upper Mississippi River Board of State Public Health and Environmental Managers available from Health Education Services, A Division of Health Research Inc., P.O. Box 7126, Albany, New York 12224, (518)439-7286.

"Time of travel" means the time required for a particle of water to move in the producing aquifer from a specific point to a ground water source of drinking water. It also means the time required for a particle of water to travel from a specific point along a surface water body to an intake.

"Total Inactivation Ratio" is the sum of all the inactivation ratios calculated for a series of disinfection sequences, and is indicated or shown as: "Summation sign $(CT_{calc})/(CT_{req'd})$." A total inactivation ratio equal to or greater than 1.0 is assumed to provide the required inactivation of Giardia lamblia cysts. $CT_{calc}/CT_{99.9}$ equal to 1.0 provides 99.9 percent (3-log) inactivation, whereas CT_{calc}/CT_{90} equal to 1.0 only provides 90 percent (1-log) inactivation.

"Too numerous to count" (TNTC) means that the total number of bacterial colonies exceeds 200 on a 47 mm diameter membrane filter used for coliform detection.

"Total Organic Carbon" (TOC) means total organic carbon in mg/L measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

"Total Trihalomethanes" (TTHM) means the MCL for trihalomethanes. This is the sum of four of ten possible isomers of chlorine/bromine/methane compounds, all known as trihalomethanes (THM). TTHM is defined as the arithmetic sum of the concentrations in micro grams per liter of only four of these (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) rounded to two significant figures. This measurement is made by samples which are "quenched," meaning that a chlorine neutralizing agent has been added, preventing further THM formation in the samples.

"Training Coordinating Committee" means the voluntary association of individuals responsible for environmental training in the state of Utah.

"Transient Non-Community Water System" (TNCWS) means a non-community public water system that does not serve 25 of the same nonresident persons per day for more than six months per year. Examples of such systems are those, RV park, diner or convenience store where the permanent nonresident staff number less than 25, but the number of people served exceeds 25.

"Treatment Plant" means those facilities capable of providing any treatment to any waterserving a public drinking water system. (Examples would include but not be limited to disinfection, conventional surface water treatment, alternative surface water treatment methods, corrosion control methods, aeration, softening, etc.).

"Treatment Plant Manager" means the individual responsible for all operations of a treatment plant.

"Trihalomethanes" (THM) means any one or all members of this class of organic compounds.

"Trihalomethane Formation Potential" (THMFP) - these samples are collected just following disinfection and measure the highest possible TTHM value to be expected in the water distribution system. The formation potential is measured by not neutralizing the disinfecting agent at the time of collection, but storing the sample seven days at

25 degrees C prior to analysis. A chlorine residual must be present in these samples at the end of the seven day period prior to analysis for the samples to be considered valid for this test. Samples without a residual at the end of this period must be resampled if this test is desired.

"Turbidity Unit" refers to NTU or Nephelometric Turbidity Unit.

"Two-stage lime softening" is a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

"UDI" means under direct influence (see also "Ground Water Under the Direct Influence of Surface Water").

"Uncovered finished water storage facility" is a tank, reservoir, or other facility used to store water that will undergo no further treatment to reduce microbial pathogens except residual disinfection and is directly open to the atmosphere.

"Unprotected aquifer" means any aquifer that does not meet the definition of a protected aquifer.

"Unregulated Contaminant" means a known or suspected disease causing contaminant for which no maximum contaminant level has been established.

"Unrestricted Certificate" means that a certificate of competency issued by the Director when the operator has passed the appropriate level written examination and has met all certification requirements at the discipline and grade stated on the certificate.

"UV Dose" means the UV energy per unit area incident on a surface, typically reported in units of mJ/cm^2 or J/m^2 . The UV dose received by a waterborne microorganism in a reactor vessel accounts for the effects on UV intensity of the absorbance of the water, absorbance of the quartz sleeves, reflection and refraction of light from the water surface and reactor walls, and the germicidal effectiveness of the UV wavelengths transmitted. The following terms are related to UV dose:

(1) "Reduction Equivalent Dose (RED)" means the UV dose derived by entering the log inactivation measured during full-scale reactor testing into the UV dose-response curve that was derived through collimated beam testing. RED values are always specific to the challenge microorganism used during experimental testing and the validation test conditions for full-scale reactor testing.

(2) "Required Dose" means the UV dose in units of mJ/cm^2 needed to achieve the target log inactivation for the target pathogen. The required dose is specified in the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR).

(3) "Validated Dose" means the UV dose in units of mJ/cm^2 delivered by the UV reactor as determined through validation testing. The validated dose is compared to the Required Dose to determine log inactivation credit.

(4) "Calculated Dose" - the RED calculated using the dose-monitoring equation that was developed through validation testing.

"UV Facility" means all of the components of the UV disinfection process, including (but not limited to) UV reactors, control systems, piping, valves, and building (if applicable).

"UV Intensity" means the UV power passing through a unit area perpendicular to the direction of propagation. UV intensity is used to describe the magnitude of UV light measured by UV sensors in a reactor or with a radiometer in bench-scale UV experiments.

"UV Reactor" means the vessel or chamber where exposure to UV light takes place, consisting of UV lamps, quartz sleeves, UV sensors, quartz sleeve cleaning systems, and baffles or other hydraulic controls. The UV reactor also includes additional hardware for monitoring UV dose delivery; typically comprised of (but not limited to): UV sensors and UVT monitors.

"UV Reactor Validation" is experimental testing to determine the operating conditions under which a UV reactor delivers the dose required for inactivation credit of *Cryptosporidium*, *Giardia lamblia*, and viruses.

"UV Transmittance (UVT)" is a measure of the fraction of incident light transmitted through a material (e.g., water sample or quartz). The UVT is usually reported for a wavelength of 254 nm and a pathlength of 1-cm. If an alternate pathlength is used, it should be specified or converted to units of cm^{-1} .

"Validation Factor" - an uncertainty term that accounts for the bias and uncertainty associated with UV validation testing.

"Validated Operating Conditions" - the operating conditions under which the UV reactor is confirmed as delivering the dose required for LT2ESWTR inactivation credit. These operating conditions must include flow rate, UV intensity as measured by a UV sensor, and UV lamp status. The term "Validated Operating Conditions" is also commonly referred to as the "validated range" or the "validated limits."

"Virus" means a virus of fecal origin which is infectious to humans.

"Waterborne Disease Outbreak" means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system, as determined by the appropriate local or State agency.

"Watershed" means the topographic boundary that is the perimeter of the catchment basin that contributes water through a surface source to the intake structure. For the purposes of surface water DWSP, if the topographic boundary intersects the state boundary, the state boundary becomes the boundary of the watershed.

"Water Supplier" means a person who owns or operates a public drinking water system.

"Water System" means all lands, property, rights, rights-of-way, easements and related facilities owned by a single entity, which are deemed necessary or convenient to deliver drinking water from source to the service connection of a consumer(s). This includes all water rights acquired in connection with the system, all means of conserving, controlling and distributing drinking water, including, but not limited to, diversion or collection works, springs, wells, treatment plants, pumps, lift stations, service meters, mains, hydrants, reservoirs, tanks and associated appurtenances within the property or easement boundaries under the control of or controlled by the entity owning the system.

In accordance with R309, certain water systems may be exempted from monitoring requirements, but such exemption does not extend to submittal of plans and specifications for any modifications considered a public drinking water project.

"Wellhead" means the physical structure, facility, or device at the land surface from or through which ground water flows or is pumped from subsurface, water-bearing formations.

"Wholesale system" is a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

"Zone of Influence" corresponds to area of the upper portion of the cone of depression as described in "Groundwater and Wells," second edition, by Fletcher G. Driscoll, Ph.D., and published by Johnson Division, St. Paul, Minnesota.

Agenda Item

6(B)(iv)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-200, *Monitoring and Water Quality: Drinking Water Standards*, by amending the rule:

1) Add clarifying language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The amendment adds in missing federal rule language and adds in a reference to the Code of Federal Regulations.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-200 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-200. Monitoring and Water Quality: Drinking Water Standards.

R309-200-1. Purpose.

The purpose of this rule is to set forth the water quality and drinking water standards for public water systems.

R309-200-2 Authority.

R309-200-3 Definitions.

R309-200-4 General.

R309-200-5 Primary Drinking Water Standards

(1) Inorganic Contaminants

(2) Lead and Copper

(3) Organic Monitoring.

(4) Radiological Chemicals.

(5) Turbidity.

(6) Microbiological quality

(7) Disinfection

R309-200-6 Secondary Drinking Water Standards.

R309-200-7 Treatment Techniques and Unregulated Contaminants.

R309-200-8 Approved Laboratories.

R309-200-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104 of the Utah Code and in accordance with 63G-3 of the same, known as the Administrative Rulemaking Act.

R309-200-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.

R309-200-4. General.

(1) Maximum contaminant levels (MCLs) and treatment techniques are herein established for those routinely measurable substances which may be found in water supplies. "Primary" standards and treatment techniques are established for the protection of human health. "Secondary" regulations are established to provide guidance in evaluating the aesthetic qualities of drinking water.

(2) The applicable "Primary" standards and treatment techniques shall be met by all public drinking water systems. The "Secondary" standards are recommended levels which should be met in order to avoid consumer complaint.

(3) The methods used to determine compliance with these maximum contaminant levels and treatment techniques are given in R309-205 through R309-215. ~~[Analytical techniques which shall be followed in making the required determinations shall be as given in 40 CFR 141 as published on July 1, 2008 by the Office of the Federal Register.]~~ Utah Division of Drinking Water adopts by reference the analytical methods

incorporated in 40 CFR Parts 141, 142, and 143 as published on July 1, 2018.

~~[(4) Unless otherwise required by the Director, the effective dates on which new analytical methods shall be initiated are identical to the dates published in 40 CFR 141 on July 1, 2008 by the Office of the Federal Register.]~~

~~[(5)](4)~~ If the water fails to meet these minimum standards, then certain public notification procedures shall be carried out, as outlined in R309-220. Water suppliers shall also keep analytical records in their possession, for a required length of time, as outlined in R309-105-17.

R309-200-5. Primary Drinking Water Standards.

(1) Inorganic Contaminants.

(a) The maximum contaminant levels (MCLs) for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, sodium, thallium and total dissolved solids are applicable to community and non-transient non-community water systems.

(b) The MCLs for nitrate, nitrite, and total nitrate, nitrite and sulfate are applicable to community, non-transient non-community, and transient non-community water systems.

(c) The maximum contaminant levels for inorganic chemicals are listed in Table 200-1.

TABLE 200-1
PRIMARY INORGANIC CONTAMINANTS

Contaminant	Maximum Contaminant Level
1. Antimony	0.006 mg/L
2. Arsenic	0.010 mg/L
	(see Note 5 below)
3. Asbestos	7 Million Fibers/liter (longer than 10 um)
4. Barium	2 mg/L
5. Beryllium	0.004 mg/L
6. Cadmium	0.005 mg/L
7. Chromium	0.1 mg/L
8. Cyanide (as free Cyanide)	0.2 mg/L
9. Fluoride	4.0 mg/L
10. Mercury	0.002 mg/L
11. Nickel	--- (see Note 1 below)
12. Nitrate	10 mg/l (as Nitrogen) (see Note 4 below)
13. Nitrite	1 mg/L (as Nitrogen)
14. Total Nitrate and Nitrite	10 mg/L (as Nitrogen)
15. Selenium	0.05 mg/L

16. Sodium	---	(see Note 1 below)
17. Sulfate	1000 mg/L	(see Note 2 below)
18. Thallium	0.002 mg/L	
19. Total Dissolved Solids	2000 mg/L	(see Note 3 below)

NOTE:

(1) No maximum contaminant level has been established for nickel and sodium. However, these contaminant shall be monitored and reported in accordance with the requirements of R309-205-5(3).

(2) If the sulfate level of a public (community, NTNC and non-community) water system is greater than 500 mg/L, the supplier shall satisfactorily demonstrate that:

(a) No better quality water is available, and

(b) The water shall not be available for human consumption from commercial establishments.

In no case shall the Director allow the use of water having a sulfate level greater than 1000 mg/L.

(3) If TDS is greater than 1000 mg/L, the supplier shall satisfactorily demonstrate to the Director that no better water is available. The Director shall not allow the use of an inferior source of water if a better source of water (i.e. lower in TDS) is available.

(4) In the case of a non-community water systems which exceed the MCL for nitrate, the Director may allow, on a case-by-case basis, a nitrate level not to exceed 20 mg/L if the supplier can adequately demonstrate that:

(a) such water will not be available to children under 6 months of age as may be the case in hospitals, schools and day care centers; and

(b) there will be continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effect of exposure in accordance with R309-220-12; and

(c) the water is analyzed in conformance to R309-205-5(4); and

(d) that no adverse health effects will result.

(5) The maximum contaminant level for arsenic is 0.05 mg/L until January 23, 2006. The MCL of 0.010 mg/L is effective for the purposes of compliance on January 23, 2006.

(2) Lead and copper.

(a) The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with R309-210-6(3) is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(b) The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with R309-210-6(3) is

greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

(c) The 90th percentile lead and copper levels shall be computed as follows:

(i) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(ii) above is the 90th percentile contaminant level.

(iv) For water systems serving fewer than 100 people that collect 5 samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

(v) For a public water system that has been allowed by the Director to collect fewer than five samples in accordance with R309-210-6(3)(c), the sample result with the highest concentration is considered the 90th percentile value.

(3) Organic Contaminants.

The following are the maximum contaminant levels for organic chemicals. For the purposes of R309-100 through R309-R309-605, organic chemicals are divided into three categories: Pesticides/PCBs/SOCs, volatile organic contaminants (VOCs) and total trihalomethanes.

(a) Pesticides/PCBs/SOCs - The MCLs for organic contaminants listed in Table 200-2 are applicable to community water systems and non-transient, non-community water systems.

TABLE 200-2
PESTICIDE/PCB/SOC CONTAMINANTS

Contaminant	Maximum Contaminant Level
1. Alachlor	0.002 mg/L
2. Aldicarb	(see Note 1 below)
3. Aldicarb sulfoxide	(see Note 1 below)
4. Aldicarb sulfone	(see Note 1 below)
5. Atrazine	0.003 mg/L
6. Carbofuran	0.04 mg/L
7. Chlordane	0.002 mg/L

8. Dibromochloropropane	0.0002 mg/L
9. 2,4-D	0.07 mg/L
10. Ethylene dibromide	0.00005 mg/L
11. Heptachlor	0.0004 mg/L
12. Heptachlor epoxide	0.0002 mg/L
13. Lindane	0.0002 mg/L
14. Methoxychlor	0.04 mg/L
15. Polychlorinated biphenyls	0.0005 mg/L
16. Pentachlorophenol	0.001 mg/L
17. Toxaphene	0.003 mg/L
18. 2,4,5-TP	0.05 mg/L
19. Benzo(a)pyrene	0.0002 mg/L
20. Dalapon	0.2 mg/L
21. Di(2-ethylhexyl)adipate	0.4 mg/L
22. Di(2-ethylhexyl)phthalate	0.006 mg/L
23. Dinoseb	0.007 mg/L
24. Diquat	0.02 mg/L
25. Endothall	0.1 mg/L
26. Endrin	0.002 mg/L
27. Glyphosate	0.7 mg/L
28. Hexachlorobenzene	0.001 mg/L
29. Hexachlorocyclopentadiene	0.05 mg/L
30. Oxamyl (Vydate)	0.2 mg/L
31. Picloram	0.5 mg/L
32. Simazine	0.004 mg/L
33. 2,3,7,8-TCDD (Dioxin)	0.00000003 mg/L

Note 1: The MCL for this contaminant is under further review, however, this contaminant shall be monitored in accordance with R309-205-6(1).

(b) Volatile organic contaminants - The maximum contaminant levels for organic contaminants listed in Table 200-3 apply to community and non-transient non-community water systems.

TABLE 200-3
VOLATILE ORGANIC CONTAMINANTS

Contaminant	Maximum Contaminant Level
1. Vinyl chloride	0.002 mg/L
2. Benzene	0.005 mg/L
3. Carbon tetrachloride	0.005 mg/L
4. 1,2-Dichloroethane	0.005 mg/L
5. Trichloroethylene	0.005 mg/L
6. para-Dichlorobenzene	0.075 mg/L
7. 1,1-Dichloroethylene	0.007 mg/L

8.	1,1,1-Trichloroethane	0.2 mg/L
9.	cis-1,2-Dichloroethylene	0.07 mg/L
10.	1,2-Dichloropropane	0.005 mg/L
11.	Ethylbenzene	0.7 mg/L
12.	Monochlorobenzene	0.1 mg/L
13.	o-Dichlorobenzene	0.6 mg/L
14.	Styrene	0.1 mg/L
15.	Tetrachloroethylene	0.005 mg/L
16.	Toluene	1 mg/L
17.	trans-1,2-Dichloroethylene	0.1 mg/L
18.	Xylenes (total)	10 mg/L
19.	Dichloromethane	0.005 mg/L
20.	1,2,4-Trichlorobenzene	0.07 mg/L
21.	1,1,2-Trichloroethane	0.005 mg/L

(c) Disinfection Byproducts and Disinfectant Residuals:

(i) Community and Non-transient non-community water systems. Surface Water systems serving 10,000 or more persons shall comply with this section beginning January 1, 2002. Surface water systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water shall comply with this section beginning January 1, 2004.

(A) Compliance with the disinfection byproduct MCLs listed in Table 200-4 shall be determined by the procedures listed in R309-210-8(6) until the date specified by system size listed in R309-210-10(1)(c) at which time compliance shall be determined utilizing LRAA as specified in R309-210-10(1)(d).

(ii) Transient non-community water systems. Surface water systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant shall comply with the chlorine dioxide MRDL beginning January 1, 2002. Surface water systems serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant shall comply with the chlorine dioxide MRDL beginning January 1, 2004.

(iii) The maximum contaminant levels (MCLs) for disinfection byproducts are listed in Table 200-4.

TABLE 200-4
DISINFECTION BYPRODUCTS

DISINFECTION BYPRODUCT	MCL (mg/L)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060
Bromate	0.010
Chlorite	1.0

(iv) The maximum residual disinfectant levels (MRDLs) are listed in Table 200-5.

TABLE 200-5
MAXIMUM RESIDUAL DISINFECTANT LEVELS

DISINFECTANT RESIDUAL	MRDL (mg/L)
Chlorine	4.0 (as Cl ₂)
Chloramines	4.0 (as Cl ₂)
Chlorine dioxide	0.8 (as ClO ₂)

(v) Control of Disinfectant Residuals. Notwithstanding the MRDLs listed in Table 200-5, systems may increase residual disinfectant levels in the distribution system of chlorine or chloramines (but not chlorine dioxide) to a level and for a time necessary to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm run-off events, source water contamination events, or cross-connection events.

(vi) A system that is installing GAC or membrane technology to comply with this section may apply to the Director for an extension of up to 24 months past the dates in paragraph (c)(i) of this section, but not beyond December 31, 2003. In granting the extension, the Director shall set a schedule for compliance and may specify any interim measures that the system shall take. Failure to meet the schedule or interim treatment requirements constitutes a violation of Utah Public Drinking Water Rules.

(4) Radiologic Chemicals.

(a) Compliance dates. Compliance dates for combined radium-226 and -228, gross alpha particle activity, gross beta particle and photon radioactivity, and uranium: Community water systems shall comply with the MCLs listed in paragraphs (b), (c), (d), and (e) of this section beginning December 8, 2003 and compliance shall be determined in accordance with the requirements of this sub-section (4) and R309-205-7. Compliance with reporting requirements for the radionuclides under R309-220 and R309-225 is required on December 8, 2003.

(b) Combined radium-226 and -228. The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/L. The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.

(c) Gross alpha particle activity (excluding radon and uranium). The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/L.

(d) The MCL for beta particle and photon radioactivity.

(i) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year (mrem/year).

(ii) Except for the radionuclides listed in Table 200-6, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents shall be calculated on the basis of 2 liters per day drinking water intake using the 168 hour data list in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. Copies of this document are available from the National Technical Information Service, NTIS ADA 280 282, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800-553-6847. Copies may be inspected at the Division of Drinking Water offices. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem/year.

TABLE 200-6
MAN-MADE RADIONUCLIDE CONTAMINANTS

Average Annual Concentrations Assumed to Produce:
A Total Body or Organ Dose of 4 mrem/yr

Radionuclide	Critical organ	pCi per liter
Tritium	Total body	20,000
Strontium-90	Bone Marrow	8

(e) The MCL for uranium. The maximum contaminant level for uranium is 30 ug/L.

(5) TURBIDITY

(a) All public water systems using surface water or ground water under the direct influence of surface water shall provide treatment consisting of both disinfection, as specified in R309-200-5(7)(a), and filtration treatment which complies with the requirements of paragraph (i), (ii) or (iii) of this section.

(i) Conventional filtration treatment or direct filtration.

(A) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's combined filtered effluent water shall be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month, measured as specified in R309-200-4(3) and R309-215-9.

(B) The turbidity level of representative samples of a system's combined filtered effluent water shall at no time exceed 1 NTU, measured as specified in R309-200-4(3) and R309-215-9.

(C) A system that uses lime softening may acidify representative samples prior to analysis using a protocol approved by the Director.

(ii) Filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration. A public water system may use a filtration technology not listed in paragraph (i) or (iii) of this section if it demonstrates to the Director, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of R309-200-7, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts, and the Director approves the use of the filtration technology. For each approval, the Director will set turbidity performance requirements that the system shall meet at least 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts. The turbidity level of representative samples shall at no time exceed 5.0 NTU for any treatment technique, measured as specified in R309-215-9(1)(c) and (d)

(iii) The turbidity limit for slow sand filtration and diatomaceous earth filtration shall be less than or equal to 1.0 NTU in at least 95 percent of the measurements taken each month, measured as specified in R309-215-9(1)(c) and (d). For slow sand filtration only, if the Director determines that the system is capable of achieving 99.9 percent removal and inactivation of *Giardia lamblia* cysts at some turbidity level higher than 1.0 NTU in at least 95 percent of the measurements, the Director may substitute this higher turbidity limit for that system. The turbidity level of representative samples shall at no time exceed 5.0 NTU for any treatment technique, measured as specified in R309-215-9(1)(c) and (d).

(c) Ground water sources not under the direct influence of surface water:

(i) The following turbidity limit applies to community water systems only.

(ii) The limit for turbidity in drinking water from ground water sources not under the direct influence of surface sources is 5.0 NTU based on an average for two consecutive days pursuant to R309-205-8(3).

(6) MICROBIOLOGICAL QUALITY

(a) The maximum contaminant level (MCL) for microbiological contaminants for all public water systems is:

(i) For a system that collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.

(ii) For a system that collects fewer than 40 samples per month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.

(b) A system is in compliance with the MCL for E. coli for samples taken under the provisions of R309-211 unless any of the conditions identified in paragraphs (b)(i) through (b)(iv) of this section occur. For purposes of the public notification requirements in R309-220, violation of the MCL may pose an acute risk to health.

(i) The system has an E. coli-positive repeat sample following a total coliform-positive routine sample.

(ii) The system has a total coliform-positive repeat sample following an E. coli-positive routine sample.

(iii) The system fails to take all required repeat samples following an E. coli-positive routine sample.

(iv) The system fails to test for E. coli when any repeat sample tests positive for total coliform.

(c) A public water system must determine compliance with the MCL for E. coli in paragraph (b) of this section for each month in which it is required to monitor for total coliforms.

(7) DISINFECTION

Continuous disinfection is recommended for all water sources. It shall be required of all ground water sources which do not consistently meet standards of bacteriologic quality. Surface water sources or ground water sources under direct influence of surface water shall be disinfected and continuously monitored for disinfection residual during the course of required conventional complete treatment for systems serving greater than 3,300 people. Disinfection shall not be considered a substitute for inadequate collection or filtration facilities.

Successful disinfection assures 99.9 percent inactivation of Giardia lamblia cysts and 99.99 percent inactivation of enteric viruses. Both filtration and disinfection are considered treatment techniques to protect against the potential adverse health effects of exposure to Giardia lamblia, viruses, Legionella, and heterotrophic bacteria in water. Minimum disinfection levels are set by "CT" values as defined in R309-110.

(a) Each public water system that provides filtration treatment shall provide disinfection treatment as follows:

(i) The disinfection treatment shall be sufficient to ensure that the total treatment processes of the system achieve at least 99.9 percent (3-log) inactivation and/or removal of Giardia lamblia cysts and at least 99.99 percent (4-log) inactivation and/or removal of viruses, as determined by the Director.

(ii) The residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than 4 hours.

(iii) The residual disinfectant concentration in the distribution system, measured as combined chlorine or chlorine dioxide, cannot be undetectable in more than 5 percent of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

$V = ((c + d + e) / (a + b)) \times 100$ where:

a = number of instances where the residual disinfectant concentration is measured;

b = number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

c = number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

d = number of instances where no residual disinfectant concentration is detected and where HPC is greater than 500/ml;

e = number of instances where the residual disinfectant concentration is not measured and HPC is greater than 500/ml.

(b) If the Director determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in ~~[Heterotrophic Plate Count (Pour Plate Method) as set forth in the latest edition of Standard Methods for the Examination of Water and Wastewater, 1985, American Public Health Association et al. (Method 907A in the 16th edition) and that the system is providing adequate disinfection]~~ R309-200-4(3) and that the system is providing adequate disinfection in the distribution system, the requirements of R309-200-5(7)(a)(iii) do not apply.

(c) If a system utilizes a combination of sources, some surface water influenced (requiring filtration and disinfection treatment) and others deemed ground water (not requiring any treatment, even disinfection), the Director may, based on site-specific considerations, allow sampling for residual disinfectant or HPC at locations other than those specified by total coliform monitoring required by R309-211.

R309-200-6. Secondary Drinking Water Standards for Community, Non-Transient Non-Community and Transient Non-Community Water.

The Secondary Maximum Contaminant Levels for public water systems deals with substances which affect the aesthetic quality of drinking water. They are presented here as recommended limits or ranges and are not grounds for rejection. The taste of water may be unpleasant

and the usefulness of the water may be impaired if these standards are significantly exceeded.

TABLE 200-7
SECONDARY INORGANIC CONTAMINANTS

Contaminant	Level
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 Color Units
Copper	1 mg/L
Corrosivity	Non-corrosive
Fluoride	2.0 mg/L (see Note below)
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 Threshold Odor Number
pH	6.5-8.5
Silver	0.1 mg/L
Sulfate	250 mg/L (see Note below)
TDS	500 mg/L (see Note below)
Zinc	5 mg/L

Note: Maximum allowable Fluoride, TDS and Sulfate levels are given in the Primary Drinking Water Standards, R309-200-5(1). They are listed as secondary standards because levels in excess of these recommended levels will likely cause consumer complaint.

R309-200-7. Treatment Techniques and Unregulated Contaminants.

(1) The Board has determined that the minimum level of treatment as described in R309-525 and R309-530 herein or its equivalent is required for surface water sources and ground water contaminated by surface sources.

(2) For all public water systems which use surface water or ground water under the direct influence of surface water, R309-200, 215, 505, 510, 520, 525 and 530 establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella, Cryptosporidium, and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(a) at least 99.9 percent (3-log) removal and/or inactivation of Giardia lamblia cysts between a point where the raw water is not subject to re-contamination by surface water runoff and a point downstream before or at the first customer;

(b) at least 99.99 percent (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to re-contamination by surface water runoff and a point downstream before or at the first customer.

(c) At least 99 percent (2-log) removal of Cryptosporidium between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer.

(d) Compliance with the profiling and benchmark requirements under the provisions of R309-215-14.

(3) No MCLs are established herein for unregulated contaminants; viruses, protozoans and other chemical and biological substances. Some unregulated contaminants shall be monitored for in accordance with 40 CFR 141.40.

R309-200-8. Approved Laboratories.

(1) For the purpose of determining compliance, samples may be considered only if they have been analyzed by the State of Utah primacy laboratory or a laboratory certified by the Utah State Health Laboratory. However, measurements for pH, temperature, turbidity and disinfectant residual, daily chlorite, TOC, UV254, DOC and SUVA may, under the direction of the direct responsible charge operator, be performed by any water supplier or their representative.

(2) All samples shall be marked either: routine, repeat, check or investigative before submission of such samples to a certified lab. Routine, repeat, and check samples shall be considered compliance purposes samples.

(3) All public water systems shall either: contract with a certified laboratory to have the laboratory send all compliance purposes sample results, with the exception of Lead/Copper data, to the Division of Drinking Water, or shall inform the Division of Drinking Water that they intend to forward all compliance purposes samples to the Division. Each public water system shall furnish the Division of Drinking Water a copy of the contract with their certified laboratory or inform the Division in writing of the public water system's intent to forward the data to the Division.

(4) All sample results can be sent either electronically or in hard copy form.

KEY: drinking water, quality standards, regulated contaminants

Date of Enactment or Last Substantive Amendment: May 1, 2016

Notice of Continuation: March 13, 2015

Authorizing, and Implemented or Interpreted Law: 19-4-104

Agenda Item

6(B)(v)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-210-8, *Monitoring and Water Quality: Distribution System Monitoring Requirements – Disinfection Byproducts – State 1 Requirements*, by amending the rule:

1) Add clarifying language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The amendment adds in missing federal rule language and updates a State rule reference.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-210-8 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-210. Monitoring and Water Quality: Distribution System Monitoring Requirements.

R309-210-8. Disinfection Byproducts - Stage 1 Requirements.

(1) General requirements. The requirements in this sub-section establish criteria under which community and non-transient non-community water systems that add a chemical disinfectant to the water in any part of the drinking water treatment process, shall modify their practices to meet MCLs and MRDLs in R309-200-5(3)(c) and meet treatment technique requirements in R309-215-12 and 13. The requirements of this sub-section also establish criteria under which transient non-community water systems that use chlorine dioxide shall modify their practices to meet MRDLs for chlorine dioxide in R309-200-5(3)(c).

(a) Compliance dates.

(i) Community and Non-transient non-community water systems. Surface water systems serving 10,000 or more persons must comply with this section beginning January 1, 2002. Surface water systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this section beginning January 1, 2004.

(ii) Transient non-community water systems. Surface water systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this section beginning January 1, 2002. Surface water systems serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this section beginning January 1, 2004.

(b) Systems must take all samples during normal operating conditions.

(c) Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, with approval from the Director.

(d) Failure to monitor in accordance with the monitoring plan required under paragraph (5) of this section is a monitoring violation.

(e) Failure to monitor will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs.

(f) Systems may use only data collected under the provisions of this section or the federal Information Collection Rule, (40 CFR, Part 141, Subpart M) to qualify for reduced monitoring.

(2) Monitoring requirements for disinfection byproducts.

(a) TTHMs and HAA5s

(i) Routine monitoring. Systems must monitor at the frequency indicated in the following:

(A) If a system elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system.

(B) Surface water systems serving at least 10,000 persons shall take four water samples per quarter per treatment plant. At least 25 percent of all samples collected each quarter shall be at locations representing maximum residence time. The remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods.

(C) Surface water systems serving from 500 to 9,999 persons shall take one water sample per quarter per treatment plant at a locations representing maximum residence time.

(D) Surface water systems serving fewer than 500 persons shall take one sample per year per treatment plant during month of warmest water temperature at a location representing maximum residence time. If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets reduced monitoring criteria in paragraph (2)(a)(v) of this section.

(E) Systems using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons shall take one water sample per quarter per treatment plant at a locations representing maximum residence time.

(F) Systems using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons shall take one sample per year per treatment plant during month of warmest water temperature at a location representing maximum residence time. If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the

distribution system, until the system meets criteria in paragraph (2)(a)(v) of this section for reduced monitoring.

(ii) Systems may reduce monitoring, except as otherwise provided, if the system has monitored for at least one year and is in accordance with the following paragraphs. Any Surface water system serving fewer than 500 persons may not reduce its monitoring to less than one sample per treatment plant per year.

(A) A surface water system serving at least 10,000 persons which has a source water annual average TOC level, before any treatment, of less than or equal to 4.0 mg/L and has a TTHM annual average of less than or equal to 0.040 mg/L and has a HAA5 annual average of less than or equal to 0.030 mg/L may reduce monitoring to one sample per treatment plant per quarter at a distribution system location reflecting maximum residence time.

(B) A surface water system serving from 500 to 9,999 persons which has a source water annual average TOC level, before any treatment, of less than or equal to 4.0 mg/L and has a TTHM annual average of less than or equal to 0.040 mg/L and has a HAA5 annual average of less than or equal to 0.030 mg/L may reduce monitoring to one sample per treatment plant per year at a distribution system location reflecting maximum residence time during the month of warmest water temperature.

(C) A system using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons that has a TTHM annual average of less than or equal to 0.040 mg/L and has a HAA5 annual average of less than or equal to 0.030 mg/L may reduce monitoring to one sample per treatment plant per year at a distribution system location reflecting maximum residence time during the month of warmest water temperature.

(D) A system using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons that has a TTHM annual average of less than or equal to 0.040 mg/L and has a HAA5 annual average of less than or equal to 0.030 mg/L for two consecutive years or has a TTHM annual average of less than or equal to 0.020 mg/L and has a HAA5 annual average of less than or equal to 0.015mg/L for one year may reduce monitoring to one sample per treatment plant per three year monitoring cycle at a distribution system location reflecting maximum residence time during the month of warmest water temperature, with the three-year cycle beginning on January 1 following the quarter in which the system qualifies for reduced monitoring.

(iii) Monitoring requirements for source water TOC in order to qualify for reduced monitoring for TTHM and HAA5 under paragraph (2)(a)(ii) of this section, surface water systems not monitoring under the provisions of paragraph (d) of this section must take monthly TOC samples every 30 days at a location prior to any treatment, beginning April 1, 2008 or earlier, if specified by the Director. In addition

to meeting other criteria for reduced monitoring in paragraph (2)(a)(ii) of this section, the source water TOC running annual average must be equal to or less than 4.0 mg/L (based on the most recent four quarters of monitoring) on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5 under paragraph (2)(a)(ii) of this section, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.

(iv) Systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for systems which must monitor quarterly) or the result of the sample (for systems which must monitor no more frequently than annually) is no more than 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively. Systems that do not meet these levels must resume monitoring at the frequency identified in paragraph (2)(a)(i) of this section in the quarter immediately following the monitoring period in which the system exceeds 0.060 mg/L or 0.045 mg/L for TTHM or HAA5, respectively. For systems using only ground water not under the direct influence of surface water and serving fewer than 10,000 persons, if either the TTHM annual average is greater than 0.080 mg/L or the HAA5 annual average is greater than 0.060 mg/L, the system must go to the increased monitoring identified in paragraph (2)(a)(i) of this section in the quarter immediately following the monitoring period in which the system exceeds 0.080 mg/L or 0.060 mg/L for TTHMs or HAA5 respectively.

(v) Systems on increased monitoring may return to routine monitoring if, after at least one year of monitoring their TTHM annual average is less than or equal to 0.060 mg/L and their HAA5 annual average is less than or equal to 0.045 mg/L.

(vi) The Director may return a system to routine monitoring when appropriate to protect public health.

(b) Chlorite. Community and non-transient non-community water systems using chlorine dioxide, for disinfection or oxidation, must conduct monitoring for chlorite.

(i) Routine monitoring.

(A) Daily monitoring. Systems must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the system must take additional samples in the distribution system the following day at the locations required by paragraph (2)(b)(ii) of this section, in addition to the sample required at the entrance to the distribution system.

(B) Monthly monitoring. Systems must take a three-sample set each month in the distribution system. The system must take one sample at each of the following locations: near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any

additional routine sampling must be conducted in the same manner (as three-sample sets, at the specified locations). The system may use the results of additional monitoring conducted under paragraph (2)(b)(ii) of this section to meet the requirement for monitoring in this paragraph.

(ii) Additional monitoring. On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the system is required to take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

(iii) Reduced monitoring.

(A) Chlorite monitoring at the entrance to the distribution system required by paragraph (2)(b)(i)(A) of this section may not be reduced.

(B) Chlorite monitoring in the distribution system required by paragraph (2)(b)(i)(B) of this section may be reduced to one three-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under paragraph (2)(b)(i)(B) of this section has exceeded the chlorite MCL and the system has not been required to conduct monitoring under paragraph (2)(b)(ii) of this section. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken monthly in the distribution system under paragraph (2)(b)(i)(B) of this section exceeds the chlorite MCL or the system is required to conduct monitoring under paragraph (2)(b)(ii) of this section, at which time the system must revert to routine monitoring.

(c) Bromate.

(i) Routine monitoring. Community and nontransient noncommunity systems using ozone, for disinfection or oxidation, must take one sample per month for each treatment plant in the system using ozone. Systems must take samples monthly at the entrance to the distribution system while the ozonation system is operating under normal conditions.

(ii) Reduced monitoring.

(A) Until March 31, 2009, systems required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly bromide measurements for one year. The system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based upon representative monthly measurements. If the running annual average source water bromide concentration is greater

than or equal to 0.05 mg/L, the system must resume routine monitoring required by paragraph (2)(c)(i) of this section in the following month.

(B) Beginning April 1, 2009, systems may no longer use the provisions of paragraph (2)(c)(ii)(A) of this section to qualify for reduced monitoring. A system required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's running annual average bromate concentration is equal to or less than 0.0025 mg/L based on monthly bromate measurements under paragraph (2)(c)(i) of this section for the most recent four quarters, with samples analyzed using Method 317.0 Revision 2.0, 326.0 or 321.8. If a system has qualified for reduced bromate monitoring under paragraph (2)(c)(ii)(A) of this section, that system may remain on reduced monitoring as long as the running annual average of quarterly bromate samples is less than or equal to 0.0025 mg/L based on samples analyzed using Method 317.0 Revision 2.0, 326.0 or 321.8. If the running annual average bromate concentration is greater than 0.0025 mg/L, the system must resume routine monitoring required by (2)(c)(i) of this section.

(3) Monitoring requirements for disinfectant residuals.

(a) Chlorine and chloramines.

(i) Routine monitoring. Community and ~~[nontransient]~~non-transient ~~[nonecommunity]~~non-community water systems that use chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in R309-211. Systems that use surface water may use the results of residual disinfectant concentration sampling conducted in R309-215-10(4), in lieu of taking separate samples. [The Director may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph (a)(1) of this section, may be measured in lieu of residual disinfectant concentration.]

(ii) In addition, ground water systems shall take the following readings at each facility a minimum of three times a week: the total volume of water treated; the type and amount of disinfectant used in treating the water (clearly indicating the weight if gas feeders are used, or the percent solution and volume fed if liquid feeders are used); and the setting of the rotometer valve or injector pump. Surface water systems may use the results of residual disinfectant concentration sampling conducted under R309-215-10(3) for systems which filter, in lieu of taking separate samples.

(iii) Reduced monitoring. Monitoring may not be reduced.

(b) Chlorine Dioxide.

(i) Routine monitoring. Community, nontransient noncommunity, and transient noncommunity water systems that use chlorine dioxide for disinfection or oxidation must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system must take samples in the distribution system the following day at the locations required by paragraph (3)(b)(ii) of this section, in addition to the sample required at the entrance to the distribution system.

(ii) Additional monitoring. On each day following a routine sample monitoring result that exceeds the MRDL, the system is required to take three chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the system must take three samples as close to the first customer as possible, at intervals of at least six hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the system must take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

(iii) Reduced monitoring. Chlorine dioxide monitoring may not be reduced.

(4) Bromide. Systems required to analyze for bromate may reduce bromate monitoring from monthly to once per quarter, if the system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly measurements for one year. The system must continue bromide monitoring to remain on reduced bromate monitoring.

(5) Monitoring plans. Each system required to monitor under this section must develop and implement a monitoring plan. The system must maintain the plan and make it available for inspection by the Director and the general public no later than 30 days following the applicable compliance dates in R309-210-8(1)(a). All Surface water systems serving more than 3300 people must submit a copy of the monitoring plan to the Director no later than the date of the first report required under R309-105-16(2). The Director may also require the plan to be submitted by any other system. After review, the Director may require changes in any plan elements. The plan must include at least the following elements.

(a) Specific locations and schedules for collecting samples for any parameters included in this subpart.

(b) How the system will calculate compliance with MCLs, MRDLs, and treatment techniques.

(c) If approved for monitoring as a consecutive system, or if providing water to a consecutive system, the Director may modify the monitoring requirements treating the systems as a single distribution system, however, the sampling plan shall reflect the entire distribution system of all interconnected systems.

(6) Compliance requirements.

(a) General requirements.

(i) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average. Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine compliance with MRDLs for chlorine and chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

(ii) All samples taken and analyzed under the provisions of this section shall be included in determining compliance, even if that number is greater than the minimum required.

(iii) If, during the first year of monitoring under R309-210-8, any individual quarter's average will cause the running annual average of that system to exceed the MCL, the system is out of compliance at the end of that quarter.

(b) Disinfection byproducts.

(i) TTHMs and HAA5.

(A) For systems monitoring quarterly, compliance with MCLs in R309-200-5(3)(c) shall be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected by the system as prescribed by R309-210-8(2)(a).

(B) For systems monitoring less frequently than quarterly, systems demonstrate MCL compliance if the average of samples taken that year under the provisions of R309-210-8(2)(a) does not exceed the MCLs in R309-200-5(3)(c). If the average of these samples exceeds the MCL, the system shall increase monitoring to once per quarter per treatment plant and such a system is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation at the end of that quarter. Systems required to increase monitoring frequency to quarterly monitoring shall calculate compliance by including the sample which triggered the increased monitoring plus the following three quarters of monitoring.

(C) If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL,

the system is in violation of the MCL and shall notify the public pursuant to R309-220, in addition to reporting to the Director pursuant to R309-105-16.

(D) If a PWS fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(ii) Chlorite. Compliance shall be based on an arithmetic average of each three sample set taken in the distribution system as prescribed by R309-210-8(2)(b)(i)(B) and (2)(b)(ii). If the arithmetic average of any three sample sets exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to R309-220, in addition to reporting to the Director pursuant to R309-105-16.

(iii) Bromate. Compliance shall be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average of all samples taken during the month) collected by the system as prescribed by R309-210-8(2)(c). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to R309-220, in addition to reporting to the Director pursuant to R309-105-16. If a PWS fails to complete 12 consecutive months' monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(c) Disinfectant residuals.

(i) Chlorine and chloramines.

(A) Compliance shall be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system under R309-210-8(3)(a). If the average covering any consecutive four-quarter period exceeds the MRDL, the system is in violation of the MRDL and shall notify the public pursuant to R309-220, in addition to reporting to the Director pursuant to R309-105-16.

(B) In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance shall be determined by including together all monitoring results of both chlorine and chloramines in calculating compliance. Reports submitted pursuant to R309-105-16 shall clearly indicate which residual disinfectant was analyzed for each sample.

(ii) Chlorine dioxide.

(A) Acute violations. Compliance shall be based on consecutive daily samples collected by the system under R309-210-8(3)(b). If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one (or more) of the three samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL and shall notify

the public pursuant to the procedures for acute health risks in R309-220-5. Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system will also be considered an MRDL violation and the system shall notify the public of the violation in accordance with the provisions for acute violations under R309-220-5 in addition to reporting the Director pursuant to R309-105-16.

(B) Nonacute violations. Compliance shall be based on consecutive daily samples collected by the system under R309-210-8(3)(b). If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and shall take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and will notify the public pursuant to the procedures for nonacute health risks in R309-220-6 in addition to reporting to the Director pursuant to R309-105-16. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the system shall notify the public of the violation in accordance with the provisions for nonacute violations under R309-220-6 in addition to reporting to the Director pursuant to R309-105-16.

Agenda Item

6(B)(vi)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-211, *Monitoring and Water Quality: Distribution System – Total Coliform Requirements*, by amending the rule:

1) Add clarifying language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The amendment adds in missing federal rule language and corrects state rule references.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-211 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-211. Monitoring and Water Quality: Distribution System -- Total Coliform Requirements.

R309-211-1. Purpose.

The purpose of this rule is to outline the total coliform monitoring, MCL, and treatment technique requirements for public water systems. This rule applies to all public drinking water systems as specified herein.

R309-211-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104 of the Utah Code and in accordance with 63G-3 of the same, known as the Administrative Rulemaking Act.

R309-211-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.

R309-211-4. General Monitoring Requirements for All Public Water Systems.

(1) Sample siting plans.

(a) Systems must develop a written sample siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system. These plans are subject to Director review and revision. Systems must collect total coliform samples according to the written sample siting plan. Monitoring required by R309-211-5, 6 and 7 may take place at a customer's premise, dedicated sampling station, or other designated compliance sampling location. Routine and repeat sample sites and any sampling points necessary to meet the requirements of R309-215-16 must be reflected in the sampling plan.

(b) Systems must collect samples at regular time intervals throughout the month, except that systems that use only ground water and serve 4,900 or fewer people may collect all required samples on a single day if they are taken from different sites.

(c) Systems must take at least the minimum number of required samples even if the system has had an E. coli MCL violation or has exceeded the coliform treatment technique triggers in R309-211-8(1).

(d) A system may conduct more compliance monitoring than is required by this rule to investigate potential problems in the distribution system and use monitoring as a tool to assist in uncovering problems. A system may take more than the minimum number of required routine samples and must include the results in calculating whether the coliform treatment technique trigger in R309-211-8(1)(a)(i) and (ii) has been exceeded only if the samples are

taken in accordance with the existing sample siting plan and are representative of water throughout the distribution system.

(e) Systems must identify repeat monitoring locations in the sample siting plan. Unless the provisions of paragraphs (1)(e)(i) or (1)(e)(ii) of this section are met, the system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system must still take all required repeat samples. However, the Director may allow an alternative sampling location in lieu of the requirement to collect at least one repeat sample upstream or downstream of the original sampling site. Except as provided for in paragraph (1)(e)(ii) of this section, systems required to conduct triggered source water monitoring under R309-215-16(2) must take ground water source sample(s) in addition to repeat samples required under ~~[this]~~ this rule.

(i) Systems may propose repeat monitoring locations to the Director that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan. The system must design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The Director may modify the SOP or require alternative monitoring locations as needed.

(ii) Ground water systems serving 1,000 or fewer people may propose repeat sampling locations to the Director that differentiate potential source water and distribution system contamination (e.g., by sampling at entry points to the distribution system). A ground water system with a single well required to conduct triggered source water monitoring may, with written Director approval, take one of its repeat samples at the monitoring location required for triggered source water monitoring under R309-215-16(2)(a) if the system demonstrates to the Director's satisfaction that the sample siting plan remains representative of water quality in the distribution system. If approved by the Director, the system may use that sample result to meet the monitoring requirements in both R309-215-16(2)(a) and this section.

(A) If a repeat sample taken at the monitoring location required for triggered source water monitoring is E. coli-positive, the system has violated the E. coli MCL and must also comply with R309-215-16(2)(a)(iii). If a system takes more than one repeat sample at the monitoring location required for triggered source water

monitoring, the system may reduce the number of additional source water samples required under R309-215-16(2)(a)(iii) by the number of repeat samples taken at that location that were not E. coli-positive.

(B) If a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring under R309-215-16(2)(a), and more than one repeat sample is E. coli-positive, the system has violated the E. coli MCL and must also comply with R309-215-16(3)(a)(i).

(C) If all repeat samples taken at the monitoring location required for triggered source water monitoring are E. coli-negative and a repeat sample taken at a monitoring location other than the one required for triggered source water monitoring is E. coli-positive, the system has violated the E. coli MCL, but is not required to comply with R309-215-16(2)(a)(iii).

(f) The Director may review, revise, and approve, as appropriate, repeat sampling proposed by systems under paragraphs (1)(e)(i) and (ii) of this section. The system must demonstrate that the sample siting plan remains representative of the water quality in the distribution system. The Director may determine that monitoring at the entry point to the distribution system (especially for undisinfected ground water systems) is effective to differentiate between potential source water and distribution system problems.

(2) Special purpose samples. Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, must not be used to determine whether the coliform treatment technique trigger has been exceeded. Repeat samples taken pursuant to R309-211-7 are not considered special purpose samples, and must be used to determine whether the coliform treatment technique trigger has been exceeded.

(3) Invalidation of total coliform samples. A total coliform-positive sample invalidated under this paragraph (3) of this section does not count toward meeting the minimum monitoring requirements of this subpart.

(a) The Director may invalidate a total coliform-positive sample only if the conditions of paragraph (3)(a)(i), (ii), or (iii) of this section are met.

(i) The laboratory establishes that improper sample analysis caused the total coliform-positive result.

(ii) The Director, on the basis of the results of repeat samples collected as required under R309-211-7(1), determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. The Director cannot invalidate a sample on the basis of repeat sample results unless all repeat sample(s) collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected at a location other than the original tap are total coliform-negative (e.g., a Director cannot invalidate a total

coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the system has only one service connection).

(iii) The Director has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. In this case, the system must still collect all repeat samples required under R309-211-7(1), and use them to determine whether a coliform treatment technique trigger in R309-211-8 has been exceeded. To invalidate a total coliform-positive sample under this paragraph, the decision and supporting rationale must be documented in writing, and approved and signed by the supervisor of the Director who recommended the decision. The Director must make this document available to EPA and the public. The written documentation must state the specific cause of the total coliform-positive sample, and what action the system has taken, or will take, to correct this problem. The Director may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.

(b) A laboratory must invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the Presence-Absence (P-A) Coliform Test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The system must continue to re-sample within 24 hours and have the samples analyzed until it obtains a valid result. The Director may waive the 24-hour time limit on a case-by-case basis. Alternatively, the Director may implement criteria for waiving the 24-hour sampling time limit to use in lieu of case-by-case extensions.

(4) A public water system that uses inadequately treated surface water or inadequately treated ground water under the direct influence of surface water (R309-200 and R309-215) shall collect and analyze for total coliforms at least one sample each day the turbidity level of the source water, measured as specified in R309-200-4(3), exceeds 1 NTU. This sample shall be collected near the first service connection from the source. The system shall collect the sample within 24 hours of the time when the turbidity level was first exceeded. The sample shall be analyzed within 30 hours of collection. Sample results from this coliform monitoring shall be included in determining total coliform compliance for that month. The Director may extend the 24 hour limitation if the system has a logistical problem that is beyond

the system's control. In the case of an extension the Director shall specify how much time the system has to collect the sample.

R309-211-5. Routine Monitoring Requirements for Water Systems Serving 1,000 or Fewer People.

(1) General.

(a) The provisions of this section apply to water systems serving 1,000 or fewer people.

(b) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and E. coli analytical requirements in R309-211-7.

(c) Once all monitoring required by this section and R309-211-7 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in R309-211-8 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by R309-211-8.

(2) Monitoring frequency for total coliforms. The monitoring frequency for total coliforms is one sample/month.

(3) Seasonal systems.

(a) All seasonal systems must demonstrate completion of a Director-approved start-up procedure, which may include a requirement for startup sampling prior to serving water to the public.

(b) A seasonal system must monitor every month that it is in operation.

(c) The Director may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.

~~[(4) Additional routine monitoring the month following a total coliform positive sample. Systems must collect at least three routine samples during the next month, except that the Director may waive this requirement if the conditions of paragraph 5(4)(a), (b), or (c) of this section are met. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations under R309-211-8(1).~~

~~(a) The Director may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the Director, or an agent approved by the Director, performs a site visit before the end of the next month in which the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the Director to determine whether additional monitoring and/or any corrective action is needed. The Director cannot approve an employee~~

~~of the system to perform this site visit, even if the employee is an agent approved by the Director to perform sanitary surveys.~~

~~(b) The Director may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the Director has determined why the sample was total coliform positive and has established that the system has corrected the problem or will correct the problem before the end of the next month in which the system serves water to the public. In this case, the Director must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the Director who recommends such a decision, and make this document available to the EPA and public. The written documentation must describe the specific cause of the total coliform positive sample and what action the system has taken and/or will take to correct this problem.~~

~~(c) The Director may not waive the requirement to collect three additional routine samples the next month in which the system provides water to the public solely on the grounds that all repeat samples are total coliform negative. If the Director determines that the system has corrected the contamination problem before the system takes the set of repeat samples required in R309-211-7, and all repeat samples were total coliform negative, the Director may waive the requirement for additional routine monitoring the next month.]~~

R309-211-6. Routine Monitoring Requirements for Public Water Systems Serving More Than 1,000 People.

(1) General.

(a) The provisions of this section apply to public water systems serving more than 1,000 persons.

(b) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and E. coli analytical requirements in R309-211-7.

(c) Once all monitoring required by this section and R309-211-7 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in R309-211-8 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by R309-211-8.

(d) Seasonal systems.

(i) Beginning April 1, 2016, all seasonal systems must demonstrate completion of a Director-approved start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public.

(ii) The Director may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.

(2) Monitoring frequency for total coliforms. The monitoring frequency for total coliforms is based on the population served by the system, as follows:

TABLE 211-1

Total Coliform Monitoring Frequency for Public Water Systems

Population served	Minimum number of samples per month
25 to 1,000	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

R309-211-7. Repeat Monitoring and E. coli Requirements.

(1) Repeat monitoring.

(a) If a sample taken under R309-211-5 though R309-211-6 is total coliform-positive, the system must collect a set of repeat samples within 24 hours of being notified of the positive result. The system must collect no fewer than three repeat samples for each total coliform-positive sample found. The Director may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. Alternatively, the Director may implement criteria for the system to use in lieu of case-by-case extensions. In the case of an extension, the Director must specify how much time the system has to collect the repeat samples. The Director cannot waive the requirement for a system to collect repeat samples in paragraphs (1)(a) through (1)(c) of this section.

(b) The system must collect all repeat samples on the same day, except that the Director may allow a system with a single service connection to collect the required set of repeat samples over a three-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.

(c) The system must collect an additional set of repeat samples in the manner specified in paragraphs (1)(a) through (1)(c) of this section if one or more repeat samples in the current set of repeat samples is total coliform-positive. The system must collect the additional set of repeat samples within 24 hours of being notified of the positive result, unless the Director extends the limit as provided in paragraph (1)(a) of this section. The system must continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in R309-211-8(1) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the Director. If a trigger identified in R309-211-8 is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.

(d) After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.

(e) Results of all routine and repeat samples taken under R309-211-5 through R309-211-7 not invalidated by the Director must be used to determine whether a coliform treatment technique trigger specified in R309-211-8 has been exceeded.

(2) *Escherichia coli* (*E. coli*) testing.

(a) If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine if E. coli are present. If E. coli are present, the system must notify the Director by the end of the day when the system is notified of the test result, unless the system is notified of the result after the Director office is closed and the Director does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the Director before the end of the next business day.

(b) The Director has the discretion to allow a system, on a case-by-case basis, to forgo E. coli testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is E. coli-positive. Accordingly, the system must notify the Director as specified in paragraph (2)(a) of this section and the provisions of R309-200-5(6)(b) apply.

R309-211-8. Coliform Treatment Technique Triggers and Assessment Requirements for Protection Against Potential Fecal Contamination.

(1) Treatment technique triggers. Systems must conduct assessments in accordance with paragraph (2) of this section after exceeding treatment technique triggers in paragraphs (1)(a) and (1)(b) of this section.

(a) Level 1 treatment technique triggers.

(i) For systems taking 40 or more samples per month, the system exceeds 5.0% total coliform-positive samples for the month.

(ii) For systems taking fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same month.

(iii) The system fails to take every required repeat sample after any single total coliform-positive sample.

(b) Level 2 treatment technique triggers.

(i) An E. coli MCL violation, as specified in R309-211-9(1).

(ii) A second Level 1 trigger as defined in paragraph (1)(a) of this section, within a rolling 12-month period, unless the Director has determined a likely reason that the samples that caused the first Level 1 treatment technique trigger were total coliform-positive and has established that the system has corrected the problem.

(2) Requirements for assessments.

(a) Systems must ensure that Level 1 and 2 assessments are conducted in order to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. Level 2 assessments must be conducted by parties approved by the Director.

(b) When conducting assessments, systems must ensure that the assessor evaluates minimum elements that include review and identification of inadequacies in sample sites; sampling protocol; sample processing; atypical events that could affect distributed water

quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., small ground water systems); and existing water quality monitoring data. The system must conduct the assessment consistent with any Director directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

(c) Level 1 Assessments. A system must conduct a Level 1 assessment consistent with Director requirements if the system exceeds one of the treatment technique triggers in paragraph (1)(a) of this section.

(i) The system must complete a Level 1 assessment as soon as practical after any trigger in paragraph (1)(a) of this section. In the completed assessment form, the system must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The assessment form may also note that no sanitary defects were identified. The system must submit the completed Level 1 assessment form to the Director within 30 days after the system learns that it has exceeded a trigger.

(ii) If the Director reviews the completed Level 1 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the Director must consult with the system. If the Director requires revisions after consultation, the system must submit a revised assessment form to the Director on an agreed-upon schedule not to exceed 30 days from the date of the consultation.

(iii) Upon completion and submission of the assessment form by the system, the Director must determine if the system has identified a likely cause for the Level 1 trigger and, if so, establish that the system has corrected the problem, or has included a schedule acceptable to the Director for correcting the problem.

(d) Level 2 Assessments. A system must ensure that a Level 2 assessment consistent with Director requirements is conducted if the system exceeds one of the treatment technique triggers in paragraph (1)(b) of this section. The system must comply with any expedited actions or additional actions required by the Director in the case of an E. coli MCL violation.

(i) The system must ensure that a Level 2 assessment is completed by the Director or by a party approved by the Director as soon as practical after any trigger in paragraph (1)(b) of this section. The system must submit a completed Level 2 assessment form to the Director within 30 days after the system learns that it has exceeded a trigger. The assessment form must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any

corrective actions not already completed. The assessment form may also note that no sanitary defects were identified.

(ii) The system may conduct Level 2 assessments if the system has staff or management with the certification or qualifications specified by the Director unless otherwise directed by the Director.

(iii) If the Director reviews the completed Level 2 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the Director must consult with the system. If the Director requires revisions after consultation, the system must submit a revised assessment form to the Director on an agreed-upon schedule not to exceed 30 days.

(iv) Upon completion and submission of the assessment form by the system, the Director must determine if the system has identified a likely cause for the Level 2 trigger and determine whether the system has corrected the problem, or has included a schedule acceptable to the Director for correcting the problem.

(3) Corrective Action. Systems must correct sanitary defects found through either Level 1 or 2 assessments conducted under paragraph (2) of this section. For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the Director in consultation with the system. The system must notify the Director when each scheduled corrective action is completed.

(4) Consultation. At any time during the assessment or corrective action phase, either the water system or the Director may request a consultation with the other party to determine the appropriate actions to be taken. The system may consult with the Director on all relevant information that may impact on its ability to comply with a requirement of this subpart, including the method of accomplishment, an appropriate timeframe, and other relevant information.

R309-211-9. Violations.

(1) E. coli MCL Violation. A system is in violation of the MCL for E. coli when any of the conditions identified in paragraphs (1)(a) through (1)(d) of this section occur.

(a) The system has an E. coli-positive repeat sample following a total coliform-positive routine sample.

(b) The system has a total coliform-positive repeat sample following an E. coli-positive routine sample.

(c) The system fails to take all required repeat samples following an E. coli-positive routine sample.

(d) The system fails to test for E. coli when any repeat sample tests positive for total coliform.

(2) Treatment technique violation.

(a) A treatment technique violation occurs when a system exceeds a treatment technique trigger specified in R309-211-8(1) and then fails to conduct the required assessment or corrective actions within the timeframe specified in R309-211-8(2) and (3).

(b) A treatment technique violation occurs when a seasonal system fails to complete a Director-approved start-up procedure prior to serving water to the public.

(3) Monitoring violations.

(a) Failure to take every required routine or additional routine sample in a compliance period is a monitoring violation.

(b) Failure to analyze for E. coli following a total coliform-positive routine sample is a monitoring violation.

(4) Reporting violations.

(a) Failure to submit a monitoring report or completed assessment form after a system properly conducts monitoring or assessment in a timely manner is a reporting violation.

(b) Failure to notify the Director following an E. coli-positive sample as required by R309-211-7(2)(a) in a timely manner is a reporting violation.

(c) Failure to submit certification of completion of Director-approved start-up procedure by a seasonal system is a reporting violation.

R309-211-10. Invalidation of a Total Coliform Sample.

The invalidation of a total coliform sample result can be made only by the Administrator in accordance with Section 141.21(c)(1)(i), (ii), or (iii) or by the certified laboratory in accordance with R309-211-4(3), with the Administrator acting as the Director.

R309-211-11. Reporting and Recordkeeping.

(1) Reporting.

(a) E. coli.

(i) A system must notify the Director by the end of the day when the system learns of an E. coli MCL violation, unless the system learns of the violation after the Director's office is closed and the Director does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the Director before the end of the next business day, and notify the public in accordance with R309-220.

(ii) A system must notify the Director by the end of the day when the system is notified of an E. coli-positive routine sample, unless the system is notified of the result after the Director's office is closed and the Director does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the Director before the end of the next business day.

(b) A system that has violated the treatment technique for coliforms in R309-211-8 must report the violation to the Director no

later than the end of the next business day after it learns of the violation, and notify the public in accordance with R309-220.

(c) A system required to conduct an assessment under the provisions of R309-211-8 of this part must submit the assessment report within 30 days. The system must notify the Director in accordance with R309-211-8(3) when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.

(d) A system that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the Director within 10 days after the system discovers the violation, and notify the public in accordance with R309-220.

(e) A seasonal system must certify, prior to serving water to the public, that it has complied with the Director-approved start-up procedure.

(2) Recordkeeping.

(a) The system must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under R309-211-8 for Director review. This record must be maintained by the system for a period not less than five years after completion of the assessment or corrective action.

(b) The system must maintain a record of any repeat sample taken that meets Director's criteria for an extension of the 24-hour period for collecting repeat samples as provided for under R309-211-7(1)(a).

KEY: drinking water, distribution system monitoring, total coliform, compliance determinations

Date of Enactment or Last Substantive Amendment: May 1, 2016

Authorizing, and Implemented or Interpreted Law: 19-4-104

Agenda Item

6(B)(vii)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-215-10 and -16, *Monitoring and Water Quality: Treatment Plant Monitoring Requirements – Residual Disinfectant and – Groundwater Rule*, by amending the rule:

1) Add clarifying language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The amendment adds in missing federal rule language and corrects state rule references.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-215-10 & -16 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-215. Monitoring and Water Quality: Treatment Plant Monitoring Requirements.

R309-215-10. Residual Disinfectant.

Treatment plant management shall continuously monitor disinfectant residuals and report the following to the Division within ten days after the end of each month that the system serves water to the public, except as otherwise noted:

(1) For each day, the lowest measurement of residual disinfectant concentration in mg/L in water entering the distribution system, except that if there is a failure in the continuous monitoring equipment, grab sampling every 4 hours may be conducted in lieu of continuous monitoring, but for no more than 5 working days following the failure of the equipment. Systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies listed in Table 215.2 below:

TABLE 215-2

RESIDUAL GRAB SAMPLE FREQUENCY	
System size by population	Samples/day
Less than 500	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

Note: The day's samples cannot be taken at the same time. The sampling intervals are subject to Director's review and approval.

(2) The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/L and when the Division was notified of the occurrence. The system shall notify the Division as soon as possible, but no later than by the end of the next business day. The system also shall notify the Division by the end of the next business day whether or not the residual was restored to at least 0.2 mg/L within four hours.

(3) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to R309-211 and R309-210-8(3)(a)(i):

(a) number of instances where the residual disinfectant concentration is measured;

(b) number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

(c) number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

(d) number of instances where no residual disinfectant concentration is detected and where HPC is greater than 500/ml;

(e) number of instances where the residual disinfectant concentration is not measured and HPC is greater than 500/ml;

(f) for the current and previous month the system serves water to the public, the value of "V" in the formula, $V = ((c+d+e)/(a+b)) \times 100$, where a = the value in sub-section (a) above, b = the value in sub-section (b) above, c = the value in sub-section (c) above, d = the value in sub-section (d) above, and e = the value in sub-section (e) above.

(4) The residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as the total coliforms are sampled as specified in R309-211. The State may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the Director determines that such points are more representative of treated (disinfected) water quality within the distributions system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph R309-200-4(3), may be measured in lieu of residual disinfectant concentration.

R309-215-16. Groundwater Rule.

(1) Applicability: This subpart applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment. For the purposes of this subpart, "ground water system" is defined as any public water system meeting this applicability, including consecutive systems receiving finished ground water.

(a) General requirements: Systems subject to this subpart must comply with the following requirements:

(i) Sanitary survey information requirements for all ground water systems as described in R309-100-7.

(ii) Microbial source water monitoring requirements for ground water systems that do not treat all of their ground water to at least 99.99 percent (4-log) treatment of viruses (using inactivation, removal, or an Director-approved combination of 4-log virus inactivation and removal) before or at the first customer as described in R309-215-16(2).

(iii) Treatment technique requirements, described in R309-215-16(3), that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under R309-215-16(2), or that have significant deficiencies

that are identified by the Director or that are identified by EPA under SDWA section 1445. A ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this subpart must implement one or more of the following corrective action options: correct all significant deficiencies; provide an alternate source of water; eliminate the source of contamination; or provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer.

(b) Ground water systems that provide at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer are required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in R309-215-16(3)(b).

(c) If requested by the Director, ground water systems must provide the Director with any existing information that will enable the Director to perform a hydrogeologic sensitivity assessment. For the purposes of this subpart, "hydrogeologic sensitivity assessment" is a determination of whether ground water systems obtain water from hydrogeologically sensitive settings.

(d) Compliance date: Ground water systems must comply, unless otherwise noted, with the requirements of this subpart beginning December 1, 2009.

(2) Ground water source microbial monitoring and analytical methods.

(a) Triggered source water monitoring.

(i) General requirements. A ground water system must conduct triggered source water monitoring if the conditions identified in paragraphs (a)(i)(A) and (a)(i)(B) of this section exist.

(A) The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source; and

(B) The system is notified that a sample collected under R309-211 is total coliform-positive and the sample is not invalidated under R309-211-10.

(ii) Sampling Requirements. A ground water system must collect, within 24 hours of notification of the total coliform-positive sample, at least one ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected under R309-211, except as provided in paragraph (a)(ii)(B) of this section.

(A) The Director may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the ground water source water sample within 24 hours due to circumstances beyond its control.

In the case of an extension, the Director must specify how much time the system has to collect the sample.

(B) If approved by the Director, systems with more than one ground water source may meet the requirements of this paragraph (a)(ii) by sampling a representative ground water source or sources. Systems must submit for Director approval a triggered source water monitoring plan that identifies one or more ground water sources that are representative of each monitoring site in the system's sample site plan under R309-211- 4(1) and that the system intends to use for representative sampling under this paragraph.

(C) A ground water system serving 1,000 or fewer people may use a repeat sample collected from a ground water source to meet both the requirements of ~~[R309-211-7(1)]~~R309-211 and to satisfy the monitoring requirements of paragraph (a)(ii) of this section for that ground water source only if the Director approves the use of E. coli as a fecal indicator for source water monitoring under this paragraph (a) and approves the use of a single sample for meeting both the triggered source water monitoring requirements in this paragraph (a) and the repeat monitoring requirements in R309-211-7. If the repeat sample collected from the ground water source is E.coli positive, the system must comply with paragraph (a)(iii) of this section.

(iii) Additional Requirements. If the Director does not require corrective action under R309-215-16(3)(a)(ii) for a fecal indicator-positive source water sample collected under paragraph (a)(ii) of this section that is not invalidated under paragraph (c) of this section, the system must collect five additional source water samples from the same source within 24 hours of being notified of the fecal indicator-positive sample.

(iv) Consecutive and Wholesale Systems.

(A) In addition to the other requirements of this paragraph (a), a consecutive ground water system that has a total coliform-positive sample collected under R309-211 must notify the wholesale system(s) within 24 hours of being notified of the total coliform-positive sample.

(B) In addition to the other requirements of this paragraph (a), a wholesale ground water system must comply with paragraphs (a)(iv)(B)(I) and (a)(iv)(B)(II) of this section.

(I) A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under R309-211-5 and 6 is total coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under paragraph (a)(ii) of this section and analyze it for a fecal indicator under paragraph ~~[+e)]~~(b) of this section.

(II) If the sample collected under paragraph (a)(iv)(B)(I) of this section is fecal indicator-positive, the wholesale ground water system must notify all consecutive systems served by that ground water source of the fecal indicator source water positive within 24 hours

of being notified of the ground water source sample monitoring result and must meet the requirements of paragraph (a)(iii) of this section.

(v) Exceptions to the Triggered Source Water Monitoring Requirements. A ground water system is not required to comply with the source water monitoring requirements of paragraph (2)(a) of this section if either of the following conditions exists:

(A) The Director determines, and documents in writing, that the total coliform-positive sample collected under R309-211-5 and 6 is caused by a distribution system deficiency; or

(B) The total coliform-positive sample collected under R309-211-5 and 6 is collected at a location that meets Director criteria for distribution system conditions that will cause total coliform-positive samples.

(b) Assessment Source Water Monitoring. If directed by the Director, ground water systems must conduct assessment source water monitoring that meets Director-determined requirements for such monitoring. A ground water system conducting assessment source water monitoring may use a triggered source water sample collected under paragraph (a)(ii) of this section to meet the requirements of paragraph (b) of this section. Director-determined assessment source water monitoring requirements may include:

(i) collection of a total of 12 ground water source samples that represent each month the system provides ground water to the public,

(ii) collection of samples from each well unless the system obtains written Director approval to conduct monitoring at one or more wells within the ground water system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting,

(iii) collection of a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used,

(iv) analysis of all ground water source samples in accordance with R309-210-4(1) and R309-200-4(3) for the presence of E. coli, enterococci, or coliphage,

(v) collection of ground water source samples at a location prior to any treatment of the ground water source unless the Director approves a sampling location after treatment, and

(vi) collection of ground water source samples at the well itself unless the system's configuration does not allow for sampling at the well itself and the Director approves an alternate sampling location that is representative of the water quality of that well.

(c) Invalidation of a fecal indicator-positive ground water source sample.

(i) A ground water system may obtain Director invalidation of a fecal indicator-positive ground water source sample collected under paragraph (a) of this section only under the conditions specified in paragraphs (c)(i)(A) and (B) of this section.

(A) The system provides the Director with written notice from the laboratory that improper sample analysis occurred; or

(B) The Director determines and documents in writing that there is substantial evidence that a fecal indicator-positive ground water source sample is not related to source water quality.

(ii) If the Director invalidates a fecal indicator-positive ground water source sample, the ground water system must collect another source water sample under paragraph (a) of this section within 24 hours of being notified by the Director of its invalidation decision and have it analyzed for the same fecal indicator using the analytical methods in paragraph (c) of this section. The Director may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Director must specify how much time the system has to collect the sample.

(d) Sampling location.

(i) Any ground water source sample required under paragraph (a) of this section must be collected at a location prior to any treatment of the ground water source unless the Director approves a sampling location after treatment.

(ii) If the system's configuration does not allow for sampling at the well itself, the system may collect a sample at a Director-approved location to meet the requirements of paragraph (a) of this section if the sample is representative of the water quality of that well.

(e) New Sources. If directed by the Director, a ground water system that places a new ground water source into service after November 30, 2009, must conduct assessment source water monitoring under paragraph (b) of this section. If directed by the Director, the system must begin monitoring before the ground water source is used to provide water to the public.

(f) Public Notification. A ground water system with a ground water source sample collected under paragraph (a) or (b) of this section that is fecal indicator-positive and that is not invalidated under paragraph (d) of this section, including consecutive systems served by the ground water source, must conduct public notification under R309-220-5.

(g) Monitoring Violations. Failure to meet the requirements of paragraphs (a)-(f) of this section is a monitoring violation and requires the ground water system to provide public notification under R309-220-7.

(3) Treatment technique requirements for ground water systems.

(a) Ground water systems with significant deficiencies or source water fecal contamination.

(i) The treatment technique requirements of this section must be met by ground water systems when a significant deficiency is

identified or when a ground water source sample collected under R309-215-16(2)(a)(iii) is fecal indicator-positive.

(ii) If directed by the Director, a ground water system with a ground water source sample collected under R309-215-16(2)(a)(ii), R309-215-16(2)(a)(iv), or R309-215-16(2)(b) that is fecal indicator-positive must comply with the treatment technique requirements of this section.

(iii) When a significant deficiency is identified at a public water system that uses both ground water and surface water or ground water under the direct influence of surface water, the system must comply with provisions of this paragraph except in cases where the Director determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or ground water under the direct influence of surface water.

(iv) Unless the Director directs the ground water system to implement a specific corrective action, the ground water system must consult with the Director regarding the appropriate corrective action within 30 days of receiving written notice from the Director of a significant deficiency, written notice from a laboratory that a ground water source sample collected under R309-215-16(2)(a)(iii) was found to be fecal indicator-positive, or direction from the Director that a fecal indicator-positive collected under R309-215-16(2)(a)(ii), R309-215-16(2)(a)(iv), or R309-215-16(2)(b) requires corrective action. For the purposes of this subpart, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the Director determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

(v) Within 120 days (or earlier if directed by the Director) of receiving written notification from the Director of a significant deficiency, written notice from a laboratory that a ground water source sample collected under R309-215-16(2)(a)(iii) was found to be fecal indicator-positive, or direction from the Director that a fecal indicator-positive sample collected under R309-215-16(2)(a)(ii), R309-215-16(2)(a)(iv), or R309-215-16(2)(b) requires corrective action, the ground water system must either:

(A) have completed corrective action in accordance with applicable Director plan review processes or other Director guidance or direction, if any, including Director-specified interim measures; or

(B) be in compliance with a Director-approved corrective action plan and schedule subject to the conditions specified in paragraphs (a)(v)(B)(I) and (a)(v)(B)(II) of this section.

(I) Any subsequent modifications to a Director-approved corrective action plan and schedule must also be approved by the Director.

(II) If the Director specifies interim measures for protection of the public health pending Director approval of the corrective action plan and schedule or pending completion of the corrective action plan, the system must comply with these interim measures as well as with any schedule specified by the Director.

(vi) Corrective Action Alternatives. Ground water systems that meet the conditions of paragraph (a)(i) or (a)(ii) of this section must implement one or more of the following corrective action alternatives:

(A) correct all significant deficiencies;

(B) provide an alternate source of water;

(C) eliminate the source of contamination; or

(D) provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

(vii) Special notice to the public of significant deficiencies or source water fecal contamination.

(A) In addition to the applicable public notification requirements of R309-220-5, a community ground water system that receives notice from the Director of a significant deficiency or notification of a fecal indicator-positive ground water source sample that is not invalidated by the Director under R309-215-16(2)(d) must inform the public served by the water system under R309-225-5(8) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The system must continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the ground water source is determined by the Director to be corrected under paragraph (a)(v) of this section.

(B) In addition to the applicable public notification requirements of R309-220-5, a non-community ground water system that receives notice from the Director of a significant deficiency must inform the public served by the water system in a manner approved by the Director of any significant deficiency that has not been corrected within 12 months of being notified by the Director, or earlier if directed by the Director. The system must continue to inform the public annually until the significant deficiency is corrected. The information must include:

(I) The nature of the significant deficiency and the date the significant deficiency was identified by the Director;

(II) The Director-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and

(III) For systems with a large proportion of non-English speaking consumers, as determined by the Director, information in the appropriate language(s) regarding the importance of the notice or a

telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.

(C) If directed by the Director, a non-community water system with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under paragraph (a)(vii)(B) of this section.

(b) Compliance monitoring.

(i) Existing ground water sources. A ground water system that is not required to meet the source water monitoring requirements of this subpart for any ground water source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source before December 1, 2009, must notify the Director in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for the specified ground water source and begin compliance monitoring in accordance with paragraph (b)(iii) of this section by December 1, 2009. Notification to the Director must include engineering, operational, or other information that the Director requests to evaluate the submission. If the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source, the system must conduct ground water source monitoring as required under R309-215-16(2).

(ii) New ground water sources. A ground water system that places a ground water in service after November 30, 2009, that is not required to meet the source water monitoring requirements of this subpart because the system provides at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source must comply with the requirements of paragraphs (b)(ii)(A), (b)(ii)(B) and (b)(ii)(C) of this section.

(A) The system must notify the Director in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source. Notification to the Director must include engineering, operational, or other information that the Director requests to evaluate the submission.

(B) The system must conduct compliance monitoring as required under R309-215-16(3)(b)(iii) of this subpart within 30 days of placing the source in service.

(C) The system must conduct ground water source monitoring under R309-215-16(2) if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

(iii) Monitoring requirements. A ground water system subject to the requirements of paragraph (b)(i) or (b)(ii) of this section must monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:

(A) Chemical disinfection.

(I) Ground water systems serving greater than 3,300 people. A ground water system that serves greater than 3,300 people must continuously monitor the residual disinfectant concentration using analytical methods specified in R444-14-4 at a location approved by the Director and must record the lowest residual disinfectant concentration each day that water from the ground water source is served to the public. The ground water system must maintain the Director-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. If there is a failure in the continuous monitoring equipment, the ground water system must conduct grab sampling every four hours until the continuous monitoring equipment is returned to service. The system must resume continuous residual disinfectant monitoring within 14 days.

(II) Ground water systems serving 3,300 or fewer people. A ground water system that serves 3,300 or fewer people must monitor the residual disinfectant concentration using analytical methods specified in R444-14-4 at a location approved by the Director and record the residual disinfection concentration each day that water from the ground water source is served to the public. The ground water system must maintain the Director-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. The ground water system must take a daily grab sample during the hour of peak flow or at another time specified by the Director. If any daily grab sample measurement falls below the Director-determined residual disinfectant concentration, the ground water system must take follow-up samples every four hours until the residual disinfectant concentration is restored to the Director-determined level. Alternatively, a ground water system that serves 3,300 or fewer people may monitor continuously and meet the requirements of paragraph (b)(iii)(A)(I) of this section.

(B) Membrane filtration. A ground water system that uses membrane filtration to meet the requirements of this subpart must monitor the membrane filtration process in accordance with all Director-specified monitoring requirements and must operate the membrane filtration in accordance with all Director-specified compliance requirements. A ground water system that uses membrane

filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when:

(I) The membrane has an absolute molecular weight cut-off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log removal of viruses;

(II) The membrane process is operated in accordance with Director-specified compliance requirements; and

(III) The integrity of the membrane is intact.

(C) Alternative treatment. A ground water system that uses a Director-approved alternative treatment to meet the requirements of this subpart by providing at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer must:

(I) Monitor the alternative treatment in accordance with all Director-specified monitoring requirements; and

(II) Operate the alternative treatment in accordance with all compliance requirements that the Director determines to be necessary to achieve at least 4-log treatment of viruses.

(c) Discontinuing treatment. A ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the Director determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of R309-215-16(2) of this subpart.

(d) Failure to meet the monitoring requirements of paragraph (b) of this section is a monitoring violation and requires the ground water system to provide public notification under R309-220-7.

(4) Treatment technique violations for ground water systems.

(a) A ground water system with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Director) of receiving written notice from the Director of the significant deficiency, the system:

(i) Does not complete corrective action in accordance with any applicable Director plan review processes or other Director guidance and direction, including Director specified interim actions and measures, or

(ii) Is not in compliance with a Director-approved corrective action plan and schedule.

(b) Unless the Director invalidates a fecal indicator-positive ground water source sample under R309-215-16(2)(d), a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Director) of meeting

the conditions of R309-215-16(3)(a)(i) or R309-215-16(3)(a)(ii), the system:

(i) Does not complete corrective action in accordance with any applicable Director plan review processes or other Director guidance and direction, including Director-specified interim measures, or

(ii) Is not in compliance with a Director-approved corrective action plan and schedule.

(c) A ground water system subject to the requirements of R309-215-16(3)(b)(iii) that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a Director-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source is in violation of the treatment technique requirement if the failure is not corrected within four hours of determining the system is not maintaining at least 4-log treatment of viruses before or at the first customer.

(d) Ground water system must give public notification under R309-220-6 for the treatment technique violations specified in paragraphs (a), (b) and (c) of this section.

(5) Reporting and recordkeeping for ground water systems.

(a) Reporting. In addition to the requirements of R309-105-16, a ground water system regulated under this subpart must provide the following information to the Director:

(i) A ground water system conducting compliance monitoring under R309-215-16(3)(b) must notify the Director any time the system fails to meet any Director-specified requirements including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours. The ground water system must notify the Director as soon as possible, but in no case later than the end of the next business day.

(ii) After completing any corrective action under R309-215-16(3)(a), a ground water system must notify the Director within 30 days of completion of the corrective action.

(iii) If a ground water system subject to the requirements of R309-215-16(2)(a) does not conduct source water monitoring under R309-215-16(2)(a)(v)(B), the system must provide documentation to the Director within 30 days of the total coliform positive sample that it met the Director criteria.

(b) Recordkeeping. In addition to the requirements of R309-105-17, a ground water system regulated under this subpart must maintain the following information in its records:

(i) Documentation of corrective actions. Documentation shall be kept for a period of not less than ten years.

(ii) Documentation of notice to the public as required under R309-215-16(3)(a)(vii). Documentation shall be kept for a period of not less than three years.

(iii) Records of decisions under R309-215-16(2)(a)(v)(B) and records of invalidation of fecal indicator-positive ground water source samples under R309-215-16(2)(d). Documentation shall be kept for a period of not less than five years.

(iv) For consecutive systems, documentation of notification to the wholesale system(s) of total-coliform positive samples that are not invalidated under R309-211-10. Documentation shall be kept for a period of not less than five years.

(v) For systems, including wholesale systems, that are required to perform compliance monitoring under R309-215-16(3)(b):

(A) Records of the Director-specified minimum disinfectant residual. Documentation shall be kept for a period of not less than ten years.

(B) Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the Director-prescribed minimum residual disinfectant concentration for a period of more than four hours. Documentation shall be kept for a period of not less than five years.

(C) Records of Director-specified compliance requirements for membrane filtration and of parameters specified by the Director for Director-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours. Documentation shall be kept for a period of not less than five years.

KEY: drinking water, surface water treatment plant monitoring, disinfection monitoring, compliance determinations

Date of Enactment or Last Substantive Amendment: May 1, 2016

Notice of Continuation: March 13, 2015

Authorizing, and Implemented or Interpreted Law: 19-4-104

Agenda Item

6(B)(viii)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-220-4, *Monitoring and Water Quality: Public Notification Requirements – General Public Notification Requirements*, by amending the rule:

1) Add clarifying language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The amendment adds in a reference to the Code of Federal Regulations.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-220-4 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-220. Monitoring and Water Quality: Public Notification Requirements.

R309-220-4. General Public Notification Requirements.

(1) Violation Categories and Other Situations Requiring a Public Notice:

Each owner or operator of a public water system (community water systems, non-transient non-community water systems, and transient non-community water systems) must give notice for all violations of these rules and for other situations, as listed below. The term "UPDWR violations" is used in this subpart to include violations of the maximum contaminant level (MCL), maximum residual disinfection level (MRDL), treatment technique (TT), monitoring requirements, and testing procedures contained in R309-100 through R309-215.

(a) UPDWR Violations:

(i) Failure to comply with an applicable maximum contaminant level (MCL) or maximum residual disinfectant level (MRDL).

(ii) Failure to comply with a prescribed treatment technique (TT).

(iii) Failure to perform water quality monitoring, as required by the drinking water regulations.

(iv) Failure to comply with testing procedures as prescribed by a drinking water regulation.

(b) Variance and Exemptions Under R309-10 and R309-11.

(i) Operation under a variance or an exemption.

(ii) Failure to comply with the requirements of any schedule that has been set under a variance or exemption.

(c) Special Public Notices

(i) Occurrence of a waterborne disease outbreak or other waterborne emergency.

(ii) Exceedance of the nitrate MCL by non-community water systems (NCWS), where granted permission by the Director under R309-200-5(1)(c), Table 200-1, note (4)(b).

(iii) Exceedance of the secondary maximum contaminant level (SMCL) for fluoride.

(iv) Availability of unregulated contaminant monitoring data.

(v) Other violations and situations determined by the Director to require a public notice under this subpart.

(2) Definition of Public Notice Tiers:

Public notice requirements are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in paragraph (1) of this section are determined by the tier to which it is assigned. Each tier is defined below:

(a) Tier 1 public notice -- required for UPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.

(b) Tier 2 public notice -- required for all other UPDWR violations and situations with potential to have serious adverse effects on human health.

(c) Tier 3 public notice -- required for all other UPDWR violations and situations not included in Tier 1 and Tier 2.

(3) Required Distribution of Notice

(a) Each public water system must provide public notice to persons served by the water system, in accordance with this rule. Public water systems that sell or otherwise provide drinking water to other public water systems (i.e., to consecutive systems) are required to give public notice to the owner or operator of the consecutive system; the consecutive system is responsible for providing public notice to the persons it serves.

(b) If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Director may allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. Permission by the Director for limiting distribution of the notice must be granted in writing.

(c) A copy of the notice must also be sent to the Director, in accordance with the requirements under R309-105-16.

(4) Utah Division of Drinking Water adopts 40 CFR, Part 141, Subpart Q, Appendix A and B as published on July 1, 2018.

Agenda Item

6(B)(ix)

DRINKING WATER BOARD PACKET
(to begin rulemaking, changes to proposed rules)

PROPOSAL:

We propose to make the following minor changes to R309-225-4, *Monitoring and Water Quality: Consumer Confidence Reports – General Requirements*, by amending the rule:

1) Add clarifying language missed during the Revised Total Coliform Rule (RTCR) adoption in 2016. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

HISTORY/CONTEXT:

The amendment adds in a reference to the Code of Federal Regulations.

DIVISION STAFF/DIRECTOR RECOMMENDATION:

Division staff recommends that the Board authorize it to begin rulemaking to amend R309-225-4 and to file the proposed rule amendment with the Office of Administrative Rules for publication in the Utah State Bulletin.

IMPLEMENTATION SCHEDULE:

The Division anticipates making the amendment effective in January of 2019. The schedule for starting the rulemaking process is as follows:

1. Drinking Water Board Authorizes Rulemaking to Amend Rule – November 13, 2018
2. File Proposed Rule Amendment with Office of Administrative Rules – November 15, 2018
3. Begin 30-Day Comment Period (Utah State Bulletin Publication) – December 1, 2018
4. End 30-Day Comment Period – January 2, 2019
5. Return to Drinking Water Board – January 15, 2019

COST ESTIMATE:

The proposed amendment is not expected to result in costs or savings to the state budget, local governments, or small businesses.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
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Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
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Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, the minor change is to add clarifying language missed during the Revised Total Coliform Rule adoption in 2016, which has been implemented from April 1, 2016 on. This is a federal rule Utah is required to adopt per the primacy agreement with US EPA and has no additional requirements.

The head of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

****"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.**

R309. Environmental Quality, Drinking Water.

R309-225. Monitoring and Water Quality: Consumer Confidence Reports.

R309-225-4. General Requirements.

(1) This rule applies only to community water systems.

(2) Effective dates.

(a) Each existing community water system must deliver its first report by October 19, 1999, its second report by July 1, 2000, and subsequent reports by July 1 annually thereafter. The first report must contain data collected during, or prior to, calendar year 1998 as prescribed in R309-225-5(4)(c). Each report thereafter must contain data collected during, or prior to, the previous calendar year.

(b) A new community water system must deliver its first report by July 1 of the year after its first full calendar year in operation and annually thereafter.

(c) A community water system that sells water to another community water system must deliver the applicable information required in R309-225-5 to the buyer system:

(i) no later than April 19, 1999, by April 1, 2000, and by April 1 annually thereafter or

(ii) on a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

(3) Utah Division of Drinking Water adopts 40 CFR, Part 141, Subpart O, Appendix A as published on July 1, 2018.

Agenda Item

6(C)(i)

DRINKING WATER BOARD PACKET
Improvement Priority System (IPS)

Reasons for Rule Revision

- Need to align point values and ensure that risk to public health is the driver.
- Need to check alignment with the Federal rating process so Utah water systems do not end up on EPA's radar before DDW's.
- Emphasizes the importance of resolving Significant Deficiencies; improves response and resolution of Significant Deficiencies.
- Avoid credit points masking violations and deficiencies.
- Simplify the rule and future rule updates by adopting the violation and deficiency tables.
- Clarify Director discretion to escalate risks to public health.

Key Provisions of the Rule Change

- Streamlines and simplifies. The point values for various deficiencies and violations are being grouped, clearly explained, and placed in a reference table format.
- Will prompt action by systems that were previously okay with carrying points.
- Provides framework for escalating enforcement with systems not correcting significant deficiencies in the allotted timeframe.
- Creates standardized points (5, 15, 25, 50, 100, & 200).
- Violation and Deficiency tables simplify the adoption of and future updates to the rule.

Agenda Item

6(C)(ii)

DRINKING WATER BOARD PACKET
Water Operator Certification

Reasons for Rule Revision

- Existing rule is outdated
- Existing rule is not in complete compliance with Federal OpCert Program Guidelines
- Parts of the rule are vague or incomplete

Key Provisions of the Rule Change

- Rearrange the rule to follow a more logical order
- Update Continuing Education Unit (CEU) providers
- Update CEU requirements
- Update complexity criteria for treatment plants
- Develop complexity criteria for distribution systems
- Redefine measures for selecting Operator Certification Commission members
- Redefine and clarify Operator Certification Commission Secretary duties

Agenda Item

6(C)(iii)

DRINKING WATER BOARD PACKET
Public Water System Identification

Reasons for Rule Revision

- There are current gaps in public health within bulk meter systems.
- There is uncertainty within the regulated community about what constitutes a bulk-meter system.
- Prospective systems create after-the-fact compliance issues.

Key Provisions of the Rule Change

- Creation of prospective system type with regulatory guidelines.
- Defines a bulk-meter system and sets a default definition of a terminus.
- Permits by rule all existing bulk meter public drinking water systems that present a low-risk to public health.
- Provides a framework for water systems and the Division of Drinking Water to regulate new-bulk meter water systems.
- Incorporates Safe Drinking Water Act language stating the Division's regulatory authority over federal systems.
- Creates standardized methods for calculating campground and recreational populations.
- Encourages land use authority and local health departments to work with the Division of Drinking Water on identifying new bulk-meter water systems.

Agenda Item

6(C)(iv)

DRINKING WATER BOARD PACKET
Minimum Sizing Requirements

Reasons for Rule Revision

- Revisions to Utah Code 19-4-104 and 19-4-114 became effective in July of 2018.
- Revisions to the statute require the Division to revise the current minimum sizing rule (R309-510) to implement the new requirements accordingly.

Key Provisions of the Rule Change

- The revised statute imposes new requirements on public water systems to collect and report water use data to the state of Utah and specify the type of data that are required to be reported. R309-510 will be modified to be consistent with the statute requirements.
- The rule change will require system-specific source and storage minimum sizing requirements replacing current statewide standards in phases.
- System-specific requirements will be based on:
 - a. Water use data submitted by Community Water Systems as required in Utah Code 19-4, or
 - b. An engineering study (historical or comparable data may be included).

Agenda Item

7

DRINKING WATER BOARD PACKET
Rural Water Association Report

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Curt Ludvigson – Development Specialist 6

Rural Water Association of Utah

Drinking Water Board Report - Activities Overview

Employee/Position: Terry Smith - Management Technician

Report Date Range: 08/09/2018 - 10/26/2018

August

Onsite:

- 08/13/2018 - I met with the Tropic Town city council to discuss rates and go over how to use the water rate/budget spreadsheet I had created in order to determine how much revenue was required from water sales, how to adjust budget line items, etc. The council requested some additional analysis in helping them determine what they should charge for commercial accounts, which I did by comparing the residential ERC vs commercial usage.

Offsite:

- 08/10 - 08/16, Working on Tropic Town rate and budget analysis
- 08/16, The Toquerville City town clerk contacted me asking if I would revise the rate model I created for them last year with the latest customer data. I imported the customer accounts and updated the model to reflect the method I now use to solve for water sale after entering revised budget figures.
- 8/20 - 8/22, Dutch John rate model and budget calculation. Daggett County is seeking to turn management of the town's water and wastewater system over to the town. In doing so, they need to arrive at an accurate line-item budget, adequate rates, etc. Using water sales data from the past two years, I created a spreadsheet that allows them to do a "what if" analysis of usage vs rates, in order to arrive at how much revenue they can anticipate, and a budget worksheet to arrive at a revenue figure/goal.

September

Onsite:

- 09/05 - Taught EPA's System Sustainability class in Richfield City
- 09/19 - Met with the Cornish Town board members to go over water usage analysis, ERC calculations. They asked if I would also include an analysis of their usage compared to water rights currently held.
- 09/20 - Met with the Oakley City town clerk to go over the rate/budget model that I had created in order to familiarize her with how it works and receive suggestions as to what more they might like to have included within the calculations
- 9/21 - As per their request, I met with Snake Creek personnel to assist them during a Sanitary Survey. Helped them with their Cross Connection program deficiencies, emergency response plan, etc.

Offsite:

- 9/6 - Online meeting with Dutch John personnel and board members to go over rate model and demonstrate how to use it, etc.
- 09/10 - Ongoing, As time allows, working on rate/budget model for Oakley City.
- 9/11 - 9/17, working on Cornish Town water usage/ERC evaluation spreadsheet.
- 9/25 - Ongoing, working on water usage (ERC) vs source analysis for Teasdale Town.

October

Onsite:

- Met with Toquerville Treasurer - went over budget/rate model spreadsheet and discussed possible rate scenarios that would help them achieve budget
- Advised the city of Mapleton as to what equipment would work best to disinfect a well. Met with them onsite and helped them hook the equipment up, calculate feed rate, etc.
- Assisted the town of Meadow in replacing chlorination equipment. Inspected current piping in the chlorination room and advised how to best replace.
- Assisted the town of New Harmony in rebuilding their pressure sustaining valve for their chlorinator.
- Helped with setup and training - Operator Certification course in North SLC
- Helped in training at the Water Conservation Certification training - DNR office

Offsite:

- Assisting Teasdale SSD in determining water sufficiency
- Worked on expanding my water operator calculator (online spreadsheet)
- Began creating a CT Calc disinfection training presentation

Rural Water Association of Utah

Drinking Water Board Report - Activities Overview

Employee/Position: BRIAN PATTEE, Compliance Circuit Rider

Report Date Range: August 8th 2018- October 26th 2018

August 8th thru August 31st

Onsite/or Direct contact with Operator:

- 8-13 Fire Emergency Updates - review Maps sent by DDW
- 8-28 Big Water – advised on IPS violation, referred to DDW at Conf.
- 8-30 Bristlecone – Called operator and advised to contact DDW for CA guidance.
- 8-31 Cedarview Montwell – Review of Emergency Response Plan Request by System

Offsite:

- 8-20,27 Daniels Summit , Working with DDW to resolve violations.
- 8-21 Weber Basin Job Corps- Sanitary Survey pre review request by system .
- 8-21 Croydan – Reviewed Bac T sample site plan as per Jake Wood RWAU
- 8-24 JNB Marine – Source Protection follow up with Mike Osborn RWAU
- 8-28 Last Chance Ski Ranch – Inactive System , request for onsite assessment by DDW

September 1st thru September 26th

Onsite/or direct Contact with Operator:

- 9-11 Cross Connection Control Training –Systems who attended ; Logan City, Duchesne City, Clinton City, Utah County, Cool Springs, Pinon Forest ,Kaysville , Uintah highlands, Salt Lake City Corp. Washington County School District.
- 9-13 Valle Del Padre – System contacted needed resources for CCC program, provided links for him.
- 9-12,19, Grassy Mtn. UDOT Rest Stops- DDW request to assist, Contact with Vendor , schedule to instruct their staff and assist.
- 9-19 Cross Connection control Staffing – Stuart Withers JWO Engineering, Advised Staffing for System in Utah County.
- 9-25 Charleston – System Review of IPS , while on phone. Janet

Offsite:

- 9-19 Daniels Summit – ongoing DDW assist to address system violation. Scheduled onsite visit with System for next week.
- 9- 21 Cornish – review IPS violations as per Terry S. email, schedule follow up with myself or RWAU Jake Wood.
- 9-25 Lake Rockport Estates – Follow up on IPS violations have been resolved.

September 27th thru October 26th

Onsite/or direct Contact with Operator:

- 9-27 Daniels Summit -- Cross Connection Program Book Assist setting up. Bac T sample Site Plan Assistance.

- 10-10 Wasatch Mtn. State Park / Little Deer Creek Camp ---- Met with Tracy assisted with Compliance Issues , Sample site plan, Chlorine Residual Reporting.
- 10- 11 Daniels Summit -- Instructed Owner on Spring Compliance Violations, Conducted Cross Connection Hazard Assessment of Lodge and Restaurant area .
- 10 – 15 Grassy Mtn. Rest Stop / Wendover Rest Stop – Met with UDOT contractor at Grassy Mtn. Instructed their Staff on Cross Connection Control and Source Protection .
- 10- 24 Cottonwood Cove (Murray) Met with system to discuss their being a regulated System and what they need as far as Sampling , Operator Certification , and all compliance issues.

Offsite:

- 10-10 Riggrup Egg Farm / Krishna/Notch --- E mail with the operator of these 3 systems concerning help with Cross Connection Program
- 10 – 10 Ogden City -- Spoke with Russ Monson , he had questions about one of his operators getting tutoring for Operator certification exam .
- 10- 17 Lakeview Water – took call from Spencer King and advised him on a question about a landowner wanting to plant trees next to his water reservoir.
- 10- 12/18 Bristlecone -- worked with operator via phone and PC , on CCC program , sample site plan .
- 10- 22 Daniels Summit – Conversed with Owner via Phone and PC sending pictures to DDW of corrected violations .
- 10- 23 Eagle Mountain – Scheduled meeting for Tech assistance to Instruct them on setting up their Cross Connection Program .

In addition to the above activities during this time frame, I have been reviewing by request of DDW, Operator Certification Rule Change, Cross Connection Control Rule Change, and asked to be on Sanitary Survey Improvement Committee.



RURAL WATER ASSOCIATION OF UTAH

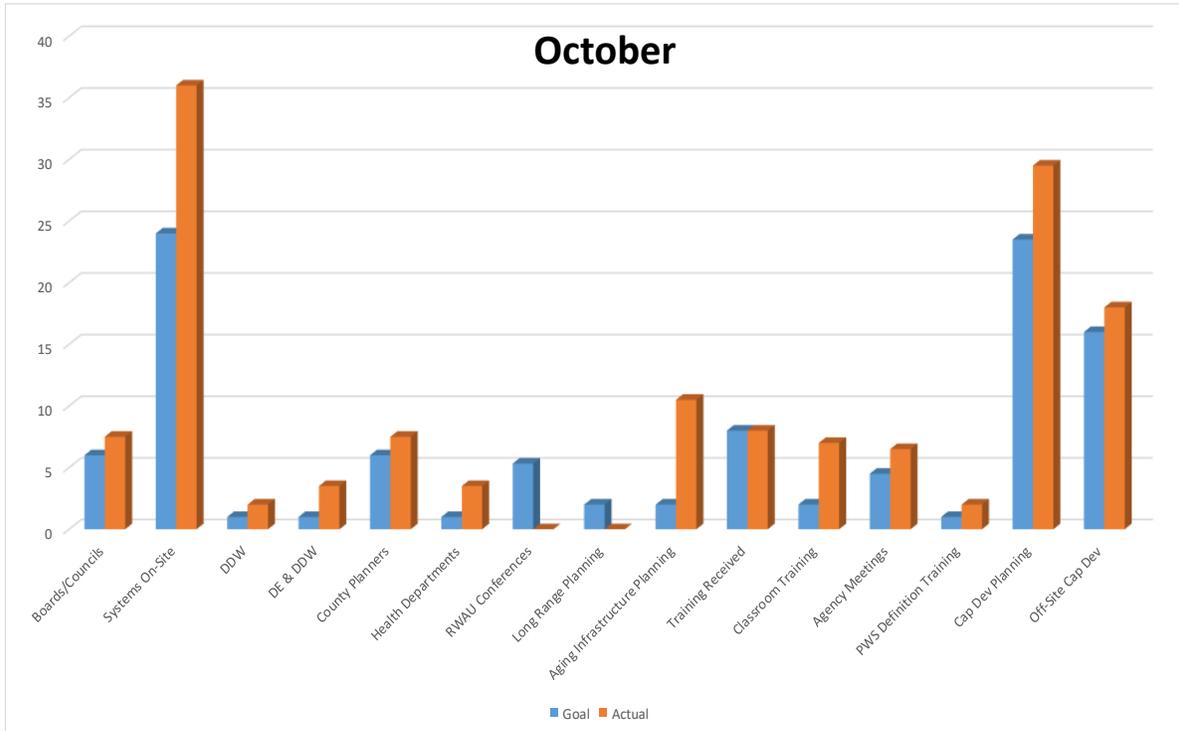
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Drinking Water Board Report

Development Contract

June 2018 – May 2023

RWAU Employee: Curtis Ludvigson



Work Performed	Goal	Actual
Boards/Councils	6	7.5
Systems On-Site	24	36
DDW	1	2
DE & DDW	1	3.5
County Planners	6	7.5
Health Departments	1	3.5
RWAU Conferences	5.33	0
Long Range Planning	2	0
Aging Infrastructure Planning	2	10.5
Training Received	8	8
Classroom Training	2	7
Agency Meetings	4.5	6.5
PWS Definition Training	1	2
Cap Dev Planning	23.5	29.5
Off-Site Cap Dev	16	18
Total	103.33	141.5



RURAL WATER ASSOCIATION OF UTAH

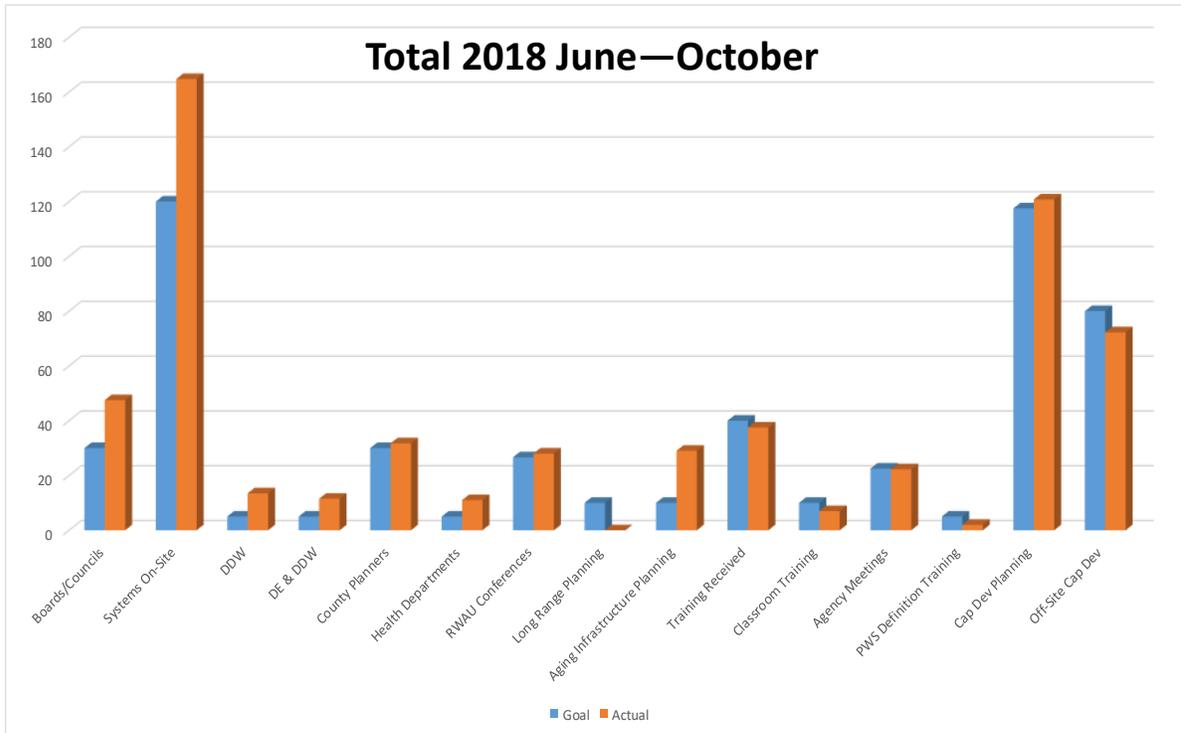
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Drinking Water Board Report

Development Contract

June 2018 – May 2023

RWAU Employee: Curtis Ludvigson



Work Performed	Goal	Actual
Boards/Councils	30	47.5
Systems On-Site	120	164.75
DDW	5	13.5
DE & DDW	5	11.5
County Planners	30	31.75
Health Departments	5	11
RWAU Conferences	26.65	28
Long Range Planning	10	0
Aging Infrastructure Planning	10	29
Training Received	40	37.5
Classroom Training	10	7
Agency Meetings	22.5	22.25
PWS Definition Training	5	2
Cap Dev Planning	117.5	120.75
Off-Site Cap Dev	80	72.25
Total	516.65	598.75



RURAL WATER ASSOCIATION OF UTAH

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On-Site Assistance & Work Performed

Axtell SSD	Funding Applications, Engineering Needs, RFP
Moroni	Budgeting, Loan Applications, RFP, Aging Infrastructure Training
Fairview	Loan Applications, RFP
Fayette	Council Training, Master Planning, Ordinance Review
Ephraim	Evaluation of Projects and prioritizing, Funding Application
Henrieville	Income Survey
Tropic	Income Survey
Loa	RFP, Project Funding, Aging Infrastructure
Bicknell	Ordinance Review, Rates Review, Rural Development Funding
Tabiona	Ordinance Updates, Master Planning
Duchesne	Budget and Rates Review
Johnson Water	Review of Resolutions and Discuss Annexation, Aging Infrastructure Training
Cedarview/ Montwell	Project Funding options, Master Planning and Development Ordinances
Neola	Discussed Aging Infrastructure, Budget Review, Resolutions Update
Uintah	MAGI & MHI Training, Needed Projects and Funding Options

Agency & Other Meetings

Entity	Hours
Division of Drinking Water	2.0
Rural Development	3.0
Division of Water Quality	1.5

Agenda Item

9(B)

Pre-Enforcement Update: October 5, 2018

PWS ID	PWS Name	PWS Type	Pop Served	IPS Pts	Rating	Rating Date
Corrective Action Systems						
UTAH15033	EAST CANYON RESORT	Non-Community	120	-29	Corrective Action	10/2/2018
UTAH16009	GREENWICH WATER ASSOCIATION	Community	60	120	Corrective Action	9/6/2018
UTAH22098	BRYANT S. HINCKLEY SCOUT RAN	Non-Community	300	10	Corrective Action	8/21/2018
UTAH25072	LAKE SHORE WARD	Non-Community	750	30	Corrective Action	8/21/2018
UTAH03009	LEWISTON CITY	Community	2078	22	Corrective Action	8/21/2018
UTAH12002	MONA TOWN WATER SYSTEM	Community	1400	35	Corrective Action	8/21/2018
UTAH25179	RIGTRUP EGG FARM PROCESSING	Non-Transient	35	19	Corrective Action	8/21/2018
UTAH25084	TIBBLE FORK RECREATIONAL HOI	Non-Community	150	-5	Corrective Action	8/21/2018
UTAH25132	WILLOW PARK	Non-Community	202	105	Corrective Action	8/21/2018
UTAH15038	TAGGARTS GRILL	Non-Community	60	8	Corrective Action	2/6/2018
UTAH26023	STORM HAVEN RESIDENTS	Community	125	61	Corrective Action	11/28/2017
UTAH07070	REID RANCH	Non-Community	30	65	Corrective Action	3/13/2017
UTAH29050	EAGLES TRAILERPARK	Non-Community	200	40	Corrective Action	2/21/2017
UTAH25077	RIVERBEND GROVE, INC.	Non-Community	25	198	Corrective Action	12/13/2016
UTAH22112	CHRISTMAS MEADOWS CABINS	Non-Community	50	5	Corrective Action	10/4/2016
UTAH21050	LIZARD BENCH WATER ASSOCIAT	Community	63	20	Corrective Action	8/18/2016
UTAH26049	SWISS ALPINE WATER CO	Community	300	90	Corrective Action	4/14/2016
UTAH14068	LIQUA DRY, INC	Non-Transient	35	-5	Corrective Action	3/9/2016
UTAH25013	GOSHEN TOWN WATER SYSTEM	Community	925	166	Corrective Action	3/8/2016
UTAH20063	PALISADES WATER COMPANY	Community	51	0	Corrective Action	2/18/2016
UTAH19079	BLUE MOUNTAIN RANCH RECREA	Non-Community	200	-30	Corrective Action	9/3/2015
UTAH26044	PINE HOLLOW WATER COMPAN	Non-Community	109	46	Corrective Action	8/11/2015
UTAH22064	THE NOTCH	Non-Community	31	25	Corrective Action	8/5/2015
UTAH25129	LINCOLN BEACH	Non-Community	32	158	Corrective Action	1/15/2015
UTAH22104	LAKE ROCKPORT ESTATES	Community	200	-20	Corrective Action	10/30/2013
UTAH15027	ROUND VALLEY COUNTRY CLUB	Non-Community	25	17	Corrective Action	11/13/2012
UTAH26073	DIAMOND HILLS ASSOCIATION	Non-Community	125	256	Corrective Action	1/14/2010
Not Approved Systems						
UTAH22025	CAMP STEINER	Non-Community	300	94	Not Approved	9/27/2018
UTAH03005	CORNISH TOWN WATER SYSTEM	Community	270	243	Not Approved	9/27/2018
UTAH18172	COTTONWOOD COVES, INC.	Community	250	355	Not Approved	9/27/2018
UTAH22072	ECHO RESORT	Non-Community	915	122	Not Approved	9/27/2018
UTAH25011	FAIRFIELD CULINARY WATER SYS	Community	120	140	Not Approved	9/27/2018
UTAH07017	IRON MINE CAMPGROUND	Non-Community	90	87	Not Approved	9/27/2018
UTAH25133	JEHOVAHS WITNESS CHURCH	Non-Community	100	163	Not Approved	9/27/2018
UTAH07055	UPPER STILLWATER CAMPGROU	Non-Community	320	115	Not Approved	9/27/2018
UTAH19037	WIND WHISTLE CAMPGROUND	Non-Community	39	130	Not Approved	9/27/2018
UTAH07023	YELLOWSTONE CAMPGROUND	Non-Community	25	230	Not Approved	9/27/2018
UTAH25023	BRICKERHAVEN SUBDIVISION	Non-Community	150	251	Not Approved	9/5/2018
UTAH02078	M & J TRAILER HOME COMMUNI	Community	20	224	Not Approved	8/20/2018
UTAH23065	DUGWAY WARD	Non-Community	175	105	Not Approved	6/14/2018
UTAH09069	PARADISE RV PARK	Non-Community	120	156	Not Approved	6/14/2018
UTAH13039	ZION FRONTIER RESORT	Non-Community	25	62	Not Approved	6/4/2018
UTAH13032	BRYCE-ZION CAMPGROUND	Non-Community	170	70	Not Approved	3/15/2018
UTAH26061	CAMP ROGER YMCA	Non-Community	210	95	Not Approved	3/15/2018
UTAH10014	CANYONLANDS FIELD	Non-Transient	145	115	Not Approved	3/15/2018
UTAH28026	HOLLOW MOUNTAIN	Non-Community	102	88	Not Approved	3/15/2018
UTAH09074	LAKE FRONT ESTATES	Non-Community	25	116	Not Approved	3/15/2018
UTAH25035	WILDWOOD SUBDIVISION	Non-Community	162	68	Not Approved	3/15/2018
UTAH26042	LITTLE DEER CREEK CAMP	Non-Community	60	40	Not Approved	11/1/2017
UTAH22078	PINECLIFF CAMP	Non-Community	75	21	Not Approved	11/1/2017
UTAH09077	BRISTLECONE	Non-Community	180	198	Not Approved	9/12/2017
UTAH23075	PENNEYS GRILL LLC	Non-Community	27	10	Not Approved	9/12/2017
UTAH10033	SORREL RIVER RANCH WATER	Non-Transient	155	143	Not Approved	7/26/2017
UTAH22117	BRIDGE HOLLOW WATER ASSOCI	Community	60	76	Not Approved	6/7/2017
UTAH18140	CARDIFF A.P.O.	Non-Community	83	65	Not Approved	5/11/2017
UTAH08048	LILA CANYON MINE	Non-Transient	300	220	Not Approved	5/11/2017
UTAH20056	CAMPERWORLD - MT PLEASANT	Non-Community	2	20	Not Approved	2017-04-27
UTAH11043	OLD MEADOWS WATER CO.	Community	48	384	Not Approved	4/18/2017
UTAH10034	SUN ARCHVIEW LLC	Non-Community	506	35	Not Approved	4/18/2017

PWS ID	PWS Name	PWS Type	Pop Served	IPS Pts	Rating	Rating Date
UTAH22094	PARK CITY MOUNTAIN RESORT	Non-Community	1050	120	Not Approved	11/3/2016
UTAH03076	SHERWOOD HILLS RESORT	Non-Transient	50	223	Not Approved	11/3/2016
UTAH06008	WEBER BASIN JOB CORPS	Community	230	15	Not Approved	6/15/2016
UTAH09034	BEAR PAW LAKEVIEW RESORT	Non-Community	80	226	Not Approved	3/31/2016
UTAH12004	EUREKA TOWN	Community	760	64	Not Approved	3/31/2016
UTAH13054	RANCH AT ZION	Non-Community	201	62	Not Approved	11/19/2015
UTAH15001	CROYDON PIPELINE CORPORATI	Community	92	-5	Not Approved	7/7/2015
UTAH23028	DELLE AUTO TRUCK STOP	Non-Community	29	123	Not Approved	6/29/2015
UTAH26074	SOAPSTONE SUMMER HOMES	Non-Community	110	68	Not Approved	4/3/2014
UTAH02069	SUNSET PARK WATER CO.	Community	44	35	Not Approved	5/29/2013
UTAH26071	DANIELS SUMMIT ESTATES	Non-Community	58	40	Not Approved	1/31/2011
UTAH26047	DEER CREEK WALLSBURG BAY	Non-Community	550	122	Not Approved	11/6/2007
UTAH09053	SKOOTS CREEK SUBDIVISION	Non-Community	82	19	Not Approved	12/15/2004
UTAH09084	JNB MARINE	Non-Community	36	35	Not Approved	9/17/2002
UTAH07061	VALLE DEL PADRES SUBDIV	Non-Transient	98	122	Not Approved	6/10/1999

Deadlines Update:10/26/2018

Administrative Orders

Water System	IPS Points	ETT Points	Rating and Date
UTAH07039 CAMPERWORLD-LAKESIDE	45	6	NA- 7/2018
UTAH10033 SORREL RIVER RANCH	143	4	NA- 07/2017
UTAH22008 MARION	100	13	A- 9/2018
UTAH26071 DANIELS SUMMIT ESTATES	35	7	NA- 1/2011
UTAH11043 OLD MEADOWS	364	15	NA- 4/2017

Corrective Action /Enforcement Orders

Water System	IPS Points	ETT Points	Rating and Date
UTAH03006 THE COVE	203	5	A-07/2016
UTAH25013 GOSHEN	176	11	CA-03/2016
UTAH25004 SPRING LAKE	301	13	A-08/1990
UTAH02078 M & J TRAILER PARK	224	9	NA-08/2018
UTAH26049 SWISS ALPINE	90	0	CA-04/2016
UTAH13032 BRYCE ZION CAMPGROUND	90	10	NA-03/2018
UTAH22117 BRIDGE HOLLOW	76	9	NA-06/2017
UTAH2214 OAKRIDGE	25	0	A-01/2018
UTAH22104 LAKE ROCKPORT	-10	15	CA-10/2013
UTAH06010 SOUTH WEBER	62	1	A-03/1980
UTAH23028 DELLE AUTO	143	6	NA-06/2015
UTAH25023 BRICKERHAVEN	276	11	NA-09/2018

Corrective Action Plan

Water System	IPS Points	ETT Points	Rating & Date
UTAH22064 THE NOTCH	45	1	CAP-08/2015
UTAH15038 TAGGARTS GRILL	8	5	CAP-02/2016
UTAH26023 STORM HAVEN	121	0	CAP- 11/2017
UTAH25072 LAKE SHORE WARD	50	0	CAP-08/2018
UTAH25132 WILLOW PARK	125	10	CAP-08/2018
UTAH12002 MONA TOWN	15	7	CAP-08/2018
UTAH25084 TIBBLE FORK	-5	0	CAP-08/2018
UTAH22098 BRYANT S HINCKLEY	35	6	CAP-08/2018
UTAH03009 LEWISTON	22	0	CAP-08/2018
UTAH16009 GREENWICH WATER	120	8	CAP-08/2018
UTAH15033 EAST CANYON	-9	0	CAP-10/2018
UTAH25179 RIGTRUP	39	1	CAP-08/2018
UTAH19079 BLUE MOUNTAIN RANCH	-10	0	CAP-09/2015
UTAH25146 EAGLES TRAILER PARK	70	10	CAP-02/2017
UTAH25129 LINCOLN BEACH	178	8	CAP-01/2015
UTAH07070 REID RANCH	55	1	CAP-03/2017

Agenda Item

9(C)

Effective 7/21/2018

19-4-104 Powers of board.

(1)

(a) The board may make rules in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act:

- (i) establishing standards that prescribe the maximum contaminant levels in any public water system and provide for monitoring, record-keeping, and reporting of water quality related matters;
- (ii) governing design, construction, operation, and maintenance of public water systems;
- (iii) granting variances and exemptions to the requirements established under this chapter that are not less stringent than those allowed under federal law;
- (iv) protecting watersheds and water sources used for public water systems;
- (v) governing capacity development in compliance with Section 1420 of the federal Safe Drinking Water Act, 42 U.S.C. Sec. 300f et seq.; and

(vi) for a community water system failing to comply with the reporting requirements under Subsections (1)(c)(iv) and (v):

- (A) establishing fines and penalties, including posting on the division's web page those community water systems that fail to comply with the reporting requirements; and
- (B) allowing a community water system, in lieu of penalties established under Subsection (1)(a)(vi)(A), to enter into a corrective action agreement with the division that requires compliance and establishes a compliance schedule approved by the director.

(b) The board may:

(i) order the director to:

- (A) issue orders necessary to enforce the provisions of this chapter;
- (B) enforce the orders by appropriate administrative and judicial proceedings; or
- (C) institute judicial proceedings to secure compliance with this chapter;

(ii)

(A) hold a hearing that is not an adjudicative proceeding relating to the administration of this chapter; or

(B) appoint hearing officers to conduct a hearing that is not an adjudicative proceeding; or

(iii) request and accept financial assistance from other public agencies, private entities, and the federal government to carry out the purposes of this chapter.

(c) The board shall:

(i) require the submission to the director of plans and specifications for construction of, substantial addition to, or alteration of public water systems for review and approval by the board before that action begins and require any modifications or impose any conditions that may be necessary to carry out the purposes of this chapter;

(ii) advise, consult, cooperate with, provide technical assistance to, and enter into agreements, contracts, or cooperative arrangements with state, federal, or interstate agencies, municipalities, local health departments, educational institutions, and others necessary to carry out the purposes of this chapter and to support the laws, ordinances, rules, and regulations of local jurisdictions;

(iii) develop and implement an emergency plan to protect the public when declining drinking water quality or quantity creates a serious health risk and issue emergency orders if a health risk is imminent;

(iv) require a community water system serving a population of 500 or more to annually collect accurate water use data, described in Subsection (6), and annually report that data to the Division of Water Rights;

(v) require a certified operator, or a professional engineer performing the duties of a certified water operator, to verify by certification or license number the accuracy of water use data reported by a public water system, including the data required from a community water system under Subsection (1)(c)(iv); and

(vi) meet the requirements of federal law related or pertaining to drinking water.

- (2)
- (a) The board may adopt and enforce standards and establish fees for certification of operators of any public water system.
 - (b) The board may not require certification of operators for a water system serving a population of 800 or less except:
 - (i) to the extent required for compliance with Section 1419 of the federal Safe Drinking Water Act, 42 U.S.C. Sec. 300f et seq.; and
 - (ii) for a system that is required to treat its drinking water.
 - (c) The certification program shall be funded from certification and renewal fees.
- (3) Routine extensions or repairs of existing public water systems that comply with the rules and do not alter the system's ability to provide an adequate supply of water are exempt from the provisions of Subsection (1)(c)(i).
- (4)
- (a) The board may adopt and enforce standards and establish fees for certification of persons engaged in administering cross connection control programs or backflow prevention assembly training, repair, and maintenance testing.
 - (b) The certification program shall be funded from certification and renewal fees.
- (5) A board member may not speak or act for the board unless the board member is authorized by a majority of a quorum of the board in a vote taken at a meeting of the board.
- (6)
- (a) The water use data required to be collected in Subsection (1)(c)(iv) shall include peak day source demand, average annual demand, the number of equivalent residential connections for retail service, and the quantity of non-revenue water.
 - (b) The division may, by rule, establish:
 - (i) other types of water use data required to be collected in addition to that listed in Subsection (6)(a); and
 - (ii) alternative methods for calculating the water use data listed in Subsection (6)(a).

Repealed and Re-enacted by Chapter 5, 2018 Special Session 2

19-4-109 Violations -- Penalties -- Reimbursement for expenses.

(1) Any person that violates any rule or order made or issued pursuant to this chapter is subject to a civil penalty of not more than \$1,000 per day for each day of violation. The board may assess and make a demand for payment of a penalty under this section by directing the director to issue a notice of agency action under Title 63G, Chapter 4, Administrative Procedures Act.

(2)

(a) Any person that willfully violates any rule or order made or issued pursuant to this chapter, or that willfully fails to take any corrective action required by such an order, is guilty of a class B misdemeanor and subject to a fine of not more than \$5,000 per day for each day of violation.

(b) In addition, the person is subject, in a civil proceeding, to a penalty of not more than \$5,000 per day for each day of violation.

(3)

(a) Except as provided in Subsection (3)(b), all penalties assessed and collected under the authority of this section shall be deposited in the General Fund.

(b) The department may reimburse itself and local governments from money collected from civil penalties for extraordinary expenses incurred in environmental enforcement activities.

(c) The department shall regulate reimbursements by making rules that:

(i) define qualifying environmental enforcement activities; and

(ii) define qualifying extraordinary expenses.

Amended by Chapter 360, 2012 General Session

Current News

DRINKING WATER BOARD PACKET
Current News

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Utah just experienced its driest year since scientists have kept records

By: Brian Maffly, The Salt Lake Tribune; October 10, 2018; sltrib.com

<https://www.sltrib.com/news/environment/2018/10/10/utah-just-experienced-its/>

Since official weather records have been kept, Utah has never experienced a year with as little precipitation as it did in 2018 and only one previous year registered higher average temperatures. That's according to the National Oceanic and Atmospheric Administration (NOAA), which compiles climate data and presents it in state-by-state maps that ranks states' years for temperatures and precipitation dating back to 1895.

For the water year that ended Sept. 30, Utah led the nation in terms of its relative dryness over the past 123 years. When it came to hot weather, the Beehive State trailed only neighbors Colorado, Arizona and New Mexico. The impact can be seen in plunging levels of these states' reservoirs, disappearing streams and toxic algal blooms. Lake Powell is less than half full, as are many of Utah's largest reservoirs.

"The desert Southwest getting hotter faster than the global average has to do with the lack of moisture in the desert," said Brian McInerney, a Salt Lake City-based hydrologist with the National Weather Service. "You can assimilate this to someone who is exercising. If they drank enough water, they are perspiring. Then they quit sweating and go into heat prostration."

The data released by NOAA's National Centers for Environmental Information show the Four Corners region is feeling the brunt of climate change, experiencing a double whammy of drought and heat.

"The weather pattern over the Western U.S. contributes to this because high pressure has been increasing since 1980. That is indicated by a lack of storms and this hot weather in the summer," said McInerney. "It's climate change. This has been going on in earnest since 1980. This is nothing new and now it's hitting home. We waited too long to really get after this and now our window of opportunity to stop this is closing rapidly."

Scientists blame global warming trends on mounting accumulations of carbon dioxide in the atmosphere. A new report by the United Nations' Intergovernmental Panel on Climate Change says the environmental impacts are piling up faster than anticipated. If greenhouse-gas emissions continue at the present rate, the Earth will warm by as much as 2.7 degrees Fahrenheit by 2040, leading to even more intense drought in places and coastal cities getting swamped by rising sea levels.

For Utah, it could mean a dangerous reduction in mountain snowpacks and the demise of a world-class ski industry. What was considered a dry season in the past can be considered "normal" now.

“We have seen one good water year for every five bad ones,” said Josh Palmer, spokesman for the Utah Division of Water Resources. “One good year won’t get us out of the problem. From a climate standpoint, it’s more important than ever we conserve.”

Drought is currently taking its biggest toll in Utah’s southeastern corner where the Colorado Plateau is experiencing the driest conditions on record, prompting some counties to declare emergencies and to seek relief for agricultural producers.

The water around a Utah uranium mine is growing more polluted. What does it mean for the nearby town?

By: Emma Penrod, The Salt Lake Tribune; October 21, 2018; sltrib.com

<https://www.sltrib.com/pb/news/environment/2018/10/21/ute-tribal-members-living>

There once was a time when the children of White Mesa played outdoors without their parents fearing for their health.

But for as long as Yolanda Badback can remember, the remote town in southeastern Utah has worried about the smell emanating from the plant to the north and the trucks that signal the plant's awakening after periods of dormancy.

"I see the trucks that go in and out every day now," Badback said. "I don't know what they're hauling, but they go in and out."

Badback is more familiar with the White Mesa uranium mill than many within her community. As a child, she tagged along with her uncle and longtime critic of the mill, Norman Begay, as he went to meetings in his quest to understand what the mill was doing and whether it was safe to live just over 5 miles downwind of such an operation. She later picked up where her uncle left off, searching for answers among confusing, and sometimes conflicting, information state, tribal and company officials have to offer.

"I've been going to these meetings for a long while," she said. "I don't trust them anymore." The mill's current owners, Colorado-based Energy Fuels Resources, tout the plant as one of the last capable of milling ore into purified uranium. As such, they say, the mill is a critical national asset — an argument they've leveraged to garner political support for the shrinking of Bears Ears National Monument and for tariffs on imported uranium.

But the Ute Mountain Ute Tribe — White Mesa is a part of the reservation — watches the polluted groundwater beneath the mill with growing concern, though state officials insist the pollution comes from other sources.

The contaminated water appears to be moving toward the town, said Scott Clow, environmental programs director for the tribe, and concentrations of potentially harmful substances such as heavy metals are on the rise. The acidity of the groundwater has increased. And state regulators, Clow said, don't appear to share the tribe's interest in addressing the pollution.

At this point, Clow said, "I think it would be the tribe's preference that the facility shut down. But that's a big ask there." So instead, the tribe has focused on persuading the mill's owners to phase out some of its older waste facilities, which they believe are more prone to leaking. There's one problem: Records from a yearslong court battle indicate that the newer waste-holding facilities, which are not in use currently, may have been built improperly.

As of now, the town's drinking water remains clean, but Clow worries unchecked pollution will jeopardize the tribe's relationship to its ancestral home.

"The mill has been there for 38 years now, and that's a pretty short window of time compared to how long the tribe was there before," he said, "and how long the tribe is going to be there after the mill, and all of that contamination."

In fall 2009, second-generation mine excavator Mark Kerr scored a gig at the White Mesa mill. The job involved the construction of a 40-acre tailings cell, a sort of retention pond Kerr described as a "giant bathtub in the ground" in which the mill would store its waste product. At nearly \$5 million, the contract was a midsize project for Kerr's company, KGL Associates. But the company was in financial trouble and struggling to make payroll.

"It was a nice job," Kerr said. "We wanted the job."

They wanted the job badly enough, transcripts from a later lawsuit suggest, that Kerr likely shaved his bid to razor-thin margins to undercut competitors' prices.

At first, the job seemed to go as planned. The mill's engineering contractor, Geosyntec Consultants, had laid out what seemed to be a pretty straightforward process: Kerr's company was to remove the topsoil for later applications, blast a 40-foot-deep hole in the ground, and then clear away the majority of the debris, leaving at least 3 feet of dirt to line and smooth the bottom of the cell.

About six months in, Kerr received notice from Geosyntec that all the loose debris from the blasting needed to be removed "at no cost to the [mill's] owner," according to a May 5 memo. "And I refused," Kerr said, estimating that the free rock removal could have cost his company somewhere between \$400,000 and \$800,000. "I said we're following the specs. ... That's when further blowups started happening."

Kerr continued to argue with the mill's owners and consultants about compensation. The engineers, as Kerr and staff he had on site recall, repeatedly insisted that all loose rock must be removed. If not, Kerr said they told him, the gaps between the rocks could collapse under the weight of the cell when it was filled with water and eventually waste.

Two weeks later, Kerr received a second memo from Geosyntec. He could leave the loose rock in place, but, "to provide a firm and unyielding surface," the memo states, Kerr's employees must compact the rock by wetting it down and driving over it repeatedly with heavy machinery. Again, this memo said the work should be done "at no additional cost."

Kerr proceeded as directed, but his previous arguments with the engineers weighed on him. A cave-in beneath the cell could puncture the liner that, like a kitchen trash bag, prevents waste from leaking. But unlike a plastic trash bin, the excavated "bathtub" Kerr built would allow liquid waste to escape, potentially polluting the groundwater beneath the mill site. How could he be sure this rock compaction would prevent the mill's "trash" from poking a hole in the liner?

He began peppering Geosyntec staff with questions via email and through the company's standard request for information forms. Where is the documentation proving this methodology is safe and effective? Does this meet the requirements of the mill's operating permits? Do state regulators know about these changes?

Instead of answers, Kerr received a letter from Geosyntec's attorneys objecting to his use of the request for information process and asking him to "revise or rescind" his questions. "It is not our experience to be cross-examined on the grounds of an engineering determination by means of an [sic] request for information," the letter states.

Kerr's company walked off the job a few months after the dispute began, leaving at least 4 acres of the cell covered in loose rock. By August 2010, he said, KGL Associates was broke.

The mill's current owners, Energy Fuels Resources, consider Kerr's claims "completely unfounded" but did not answer specific questions.

"KGL is a disgruntled former contractor who walked off the job, owes us a lot of money, and simply appears to be harassing us," the company's spokesman, Curtis Moore, said in an email. Kerr, Curtis said, is expressing "sour grapes" after losing a \$4 million lawsuit.

That series of court actions began when subcontractors sued the mill for nonpayment, causing the mill to sue Kerr's KGL.

According to the mill's complaint, Kerr's company not only walked away from the project without paying its subcontractors, but also failed to comply with requested changes to the cell, which resulted in construction defects.

A court arbitrator ultimately concluded that Kerr owed the mill nearly \$4 million in damages, plus attorney fees. And the arbitrator found that the mill's decision to withhold payment from Kerr was justified, given his company's poor performance, which forced Energy Fuels to hire a second contractor to complete and correct KGL's work, including, Curtis said, the 4 acres Kerr claims remain unfinished.

However, the court laid the blame for any environmental contamination related to the cell's poor construction at the feet of both parties. "The contamination issue is one of shared fault," the arbitrator concluded.

Kerr repeatedly appealed until he ran out of money. The judgment against him stands, though his concerns about the excavation remain.

As his case wound through the courts, Kerr began contacting the state Division of Radiation Control. Division engineers, he hoped, would have documentation to prove that the mill had made significant changes to his original job specs. But, in a late 2011 letter, the division told him only that the mill's engineers had not notified the state of changes in their excavation plan — probably because the changes weren't considered significant.

Next, Kerr approached the federal Nuclear Regulatory Commission, which conducted a brief investigation and determined his fears were partially substantiated: State regulators needed more stringent requirements when there were changes in construction specifications. The NRC reassured Kerr, however, that Utah had promised to tighten its reporting requirements.

The NRC concluded that the change did not appear to pose a safety concern. According to the agency, state regulators assured federal overseers that their review of the cell's quality had taken the new excavation methods into account. To Kerr, this assertion flew in the face of the state's written letter to him that the changes were not reported to the Division of Radiation Control.

A review of the state's records shows a quality assurance report produced by Geosyntec that describes several changes to the cell's design, but the change in excavation specifications is not mentioned. And current division leadership continues to hold the position originally stated to Kerr. Any changes were probably deemed by the on-site engineers — including a state engineer — to be insignificant.

“We haven't seen any issues with the tailings cell since,” said Phil Goble, who oversees the radioactive materials section within the now-combined Utah Division of Waste Management and Radiation Control.

That's not necessarily the way environmental officials with the Ute Mountain Ute tribe see it. They point to state-collected data that show “a fair amount” of fluid escapes the new cells' liners and enters a leakage containment system. The fluid has been pumped out and hasn't entered the environment, but the leaks leave tribal authorities wary.

Even with superior liner technology, “it's still releasing fluids,” Clow said. “So when we hear that the three legacy cells north of it, which have ... inferior liners, that those can't possibly be leaking, it doesn't seem to make sense.”

The White Mesa mill sits atop several plumes of groundwater contaminated with heavy metals, including uranium and other concerning pollutants. The pollution predates the construction of the new tailings cells — including the cell Kerr excavated, which is not currently in use. But the contamination is spreading toward the White Mesa community, Clow said, and concentrations of some pollutants are increasing.

The state holds that the contaminants aren't coming from the mill — or, at least, that there isn't proof the tailings cells have leaked. The groundwater contains chloroform, which, if consumed, can cause damage to the brain, liver and kidneys, from a metals-testing operation that once operated on the mill site. Employees there used to put the chloroform down the drain, where it entered an unlined septic system that ultimately leaked into the groundwater, Goble said.

A separate plume of nitrates, a class of acidic salts that in certain circumstances may cause cancer, beneath the mill does appear to be a result of what Goble described as “poor housekeeping within the mill.” But it didn't come from the tailings cells, he said.

And the overall increase of acidity in the water below White Mesa — that’s not coming from the waste cells, either, Goble said, because it occurs in groundwater both uphill and downhill from the cells.

But Clow remains concerned about the rising concentrations of heavy metals, especially those that don’t occur naturally in the White Mesa area.

One of the issues in trying to tie the pollution to the mill, Clow said, is that neither the state nor the tribe — which maintains its own test wells to monitor groundwater independently — has the historic data necessary to make the case that the metals do not occur naturally in the groundwater.

To their credit, Clow said, state scientists have conducted detailed studies and data reviews to try to determine what the area’s background levels may be. Baselines based on these analyses have been established. But when the amount of pollution exceeds the baselines, Clow said, the state has simply invalidated its own baselines and establishes new ones, rather than attempt to regulate the mill.

“The concentrations just go up, and then that’s what they call background,” Clow said, “and that’s where we tend to diverge from the state’s interpretation.”

Asked whether state regulators have revised background levels at White Mesa, Goble explained a legal process by which Energy Fuels could request to have the background information tied to the mill revised. He indicated Energy Fuels has initiated this process, but did not elaborate.

A 2013 letter to Energy Fuels shows the Division of Radiation Control agreed to revise several background levels for groundwater at the site, including the benchmark for uranium. According to the letter, the amount of uranium in the groundwater had increased gradually, but the division agreed with the company that the increase was the result of natural causes.

The tribe also diverges from Utah officials’ assessment of the health risk posed by the contamination. State officials have repeatedly argued that the contaminated water is not used by the tribe — that the community of White Mesa draws its drinking water from a deeper source that remains clean.

While it’s true that the town wells draw from the cleaner, deeper water, Clow said, the tribe worries the drinking water supply could, eventually, become contaminated. And tribal members do use springs fed by the shallow aquifer for traditional ceremonies.

“The statement that the tribe doesn’t use the water ... is patently false,” he said. “The tribe was there for centuries before anyone else, and so they have traditionally used those springs and seeps, and collected plants for food and medicine on White Mesa, and harvested animals around White Mesa.”

Clow holds that the town of White Mesa, which predated the mill, will surely outlast the operation — and therefore that the mill should be more concerned about potential impacts for

thousands of years to come. But the town may not be such a permanent fixture. Its 2010 population of 242 has decreased by half since that tally, according to U.S. Census data. Despite being a lifelong resident, Badback said she sees no future there for her three sons. “I encourage my kids to go forward, go out,” she said. “I don’t want them to be stuck in White Mesa.”

While environmental issues are part of her rationale, the town’s economic hardships and poor living conditions also factor in. According to 2016 U.S. Census figures, just 49 percent of the town’s adults are employed; Badback herself is without work. Her own living conditions are better than most, she said — she stays in a five-bedroom house with nine immediate and extended family members. At night, three people sleep in an outbuilding with electricity but no running water.

When the mill first arrived in White Mesa, company officials touted it as a job creator, Badback said. But the mill has only ever employed a handful of tribal members, she said, and the work is unsteady, with frequent layoffs.

Even if there were jobs, Badback said, she would never allow her sons to work at the mill. Her oldest recently moved to New Mexico to find work, and her middle child will soon join him. Though she would have liked to leave the town as a youth, Badback said she stayed because her grandparents did not speak English and needed an interpreter. She became a caretaker for her mother, who had been the family breadwinner, and then she had children of her own.

These days she’s absorbed with trying to educate her neighbors about the mill. She holds community workshops and leads annual protests. But not everyone in town supports her, citing the civic facilities such as a community recreation center that the mill has donated and its unfulfilled promises about jobs.

Badback doesn’t buy it. Instead, she helps organize surveys to evaluate the health of White Mesa children.

“We only live one time; when we go, we’re not going to come back,” she said. “Our health is more important than a building. A building can stand for many years.”

Guest opinion: Lead poisoning still threatens Utah's children

By: Claudia Fruin, Deseret News; October 24, 2018; deseretnews.com

<https://www.deseretnews.com/article/900038594/guest-opinion-lead-poisoning-still-threatens-utahs-children.html>

Oct. 22-28 is National Lead Poisoning Prevention Week. Today we know there is no safe level of lead in the body. Although the risk of lead poisoning has decreased significantly since the 1970s, when the Environmental Protection Agency banned the use of lead in paint and slowly phased out the use of lead in gasoline, the Flint, Michigan, water crisis has reminded us that lead is still a threat.

Not only did the lead-tainted drinking water triple the number of children with lead poisoning, leaving them with an uncertain future, a new study shows a 12 percent decrease in Flint's fertility rate and a 58 percent increase in fetal death during the time Flint River water was used. If the risk to children and pregnant women is not alarming enough, a recent study in *The Lancet* shows that low-level lead poisoning in U.S. adults is likely a significant cause of cardiovascular disease and death. This risk is about 10 times higher than previously believed and may contribute to 400,000 U.S. deaths a year.

Why is it still important to screen and test for lead exposure? In Utah, the most current data show that 2.1 percent of our estimated 260,000 children ages 5 years and younger have an elevated blood lead level. This translates to an estimated 5,500 preschool age children at risk for lowered IQ scores, ADHD, behavior and learning disorders as well as hearing loss and kidney disease. Lead poisoning usually goes unrecognized except at high levels, it is cumulative and it affects nearly every organ system. Lead can cross the placenta and affect a baby's health before it is born. Lead exposure can come through air, food, water, dust and soil.

Peeling and dust from lead-based paint in buildings built before 1978 is still the major source of lead poisoning in the U.S. Other risks include living near a mining, refinery or smelting facility, being a refugee or immigrant, using drinking water from old pipes or having a hobby that includes working with lead such as fishing or shooting. Lead stays permanently in the soil and is present in air pollution. The only way to know if a child has been exposed is by a blood test.

Two years ago, our state formed a Utah Lead Coalition to increase blood lead testing, data gathering and community education on the harms of lead exposure. This coalition is comprised of more than 20 state and private partners. We have obtained three grants to enhance our efforts. In August 2017, we were able to change our state's previous definition of elevated blood lead from 10µg/dL to comply with the CDC's recommended standard of $\geq 5\mu\text{g/dL}$. This means that the number of Utah children with lead poisoning will increase.

Our state currently does not require blood lead testing of all children, and the data show that only 3 percent of children are being tested and reported. Lead poisoning is preventable. Make sure your health care provider is screening and testing your child for lead exposure and poisoning.

Plans to tap more Bear River water raise concerns downstream

By: Leia Larsen, Standard-Examiner; October 28, 2018; standard.net

https://www.standard.net/news/environment/plans-to-tap-more-bear-river-water-raise-concerns-downstream/article_ee3d191e-3cf9-56eb-9c49-57f2e7130b9b.html

The Bear: Life and Death of a Western River Chapter III — Harvest

Between two bends in the Bear River, not far from where his great-great grandparents' first homestead, Joel Ferry built a gathering place for his community.

The site used to be a cattle feed lot. Now it's a pumpkin patch, complete with hay bale mazes, corn cob slingshots and slides. Tall trees and willows grow along the banks of the Bear. Autumn sunsets flush the Wellsville Mountains to the east with alpenglow.

"I thought, 'You know, this is a neat place. Let's do something better than what we have. Let's change and be better stewards,'" Ferry said. "It's a celebration of harvest."

Ferry farms thousands of acres at the Bear's end, just before the river's mouth at Great Salt Lake. For 120 years and five generations, his family has harvested water from the river to yield crops and cattle, to contribute to the Corrine community.

But as Utah communities grow and policymakers look to harvest more Bear River water to meet future needs, farmers like Ferry have concerns.

"For my kids, I want there to be good jobs here so they can enjoy this and don't have to move somewhere else," he said. "It's an awesome place to live, but it does put demands on the system."

Joel Ferry examines an ear of feed corn grown on his farm near Corrine on Oct. 1, 2018. Ferry's family has been farming along the edge of the Bear River in Utah for five generations. Ferry jokingly describes himself as a "duck farmer" since he has converted some of his farmland into wetlands and manages his property for waterfowl benefits.

Utah's population is projected to double in the next 50 years, to nearly 6 million people by 2065. Two-thirds of that growth will come from Utahns having children, according to the University of Utah's Kem C. Gardner Policy Institute demographic projections. Utah is currently the third-fastest growing state in the U.S.

Utah is dry, however, which has planners turning to the Bear River for relief. The tri-state Bear River Compact grants Utah up to 220,000 acre-feet of Bear River water each year, water it hasn't yet tapped.

In 1991, the Legislature directed the Utah Division of Water Resources to begin developing that share, divvying it up among four counties — 60,000 acre-feet each to Box Elder and Cache counties and 100,000 acre-feet to urban areas served by the Weber Basin and Jordan Valley water districts.

Ferry is running for a seat in Utah's House District 1. He's watching the development closely. "Water's going to become more and more important, more and more difficult to manage," he said. "Something's got to give."

Ten miles of the Bear River run through Ferry's family property, which he manages with his father and uncle.

He talks about how the river weaves its way through everyone living and working in the watershed. He trusts the hundreds of irrigators and canal companies upstream to only use their share. When there's a shortage, everyone takes their cut.

"We all use Bear River water, we're all interconnected. We all benefit or are negatively impacted by the actions of others," he said.

It's a 500 mile-long community threaded together by water.

With more development, however, the thread could snap.

A combine and truck harvest corn on the Ferry farm near Corrine on Oct. 1, 2018. Joel Ferry's ranch and feed land is irrigated by water from the final stretch of the Bear River before it makes its way into the Great Salt Lake.

Some of Ferry's century-old water rights are only valid at high river flows, which is why he's worried about the state's plans for the Bear.

"The more dams that go on the river, the less those flows happen and my rights are basically worthless," he said. "The river used to flood all the time. Now it never does."

In the Bear River's lowlands, where Ferry farms, temperatures are high and precipitation is scarce. This past season was bad — no measurable rain for 100 days.

"We were bone dry here," he said. "The system is designed to anticipate a rain storm here and there to take the edge off. That never happened."

June was especially hard for Box Elder farmers, Ferry said, because so many were drawing on the canals to irrigate thirsty plants like wheat and corn.

"Everybody's wanting their water and there wasn't enough capacity in the system to handle it," he said. "It will be really tough (next year) if we have another dry winter like we did."

Joel Ferry is reflected in an irrigation canal on his farm near Corrine on Oct. 1, 2018. Ferry waters his land through a network of small canals and ditches that divert water out of the Bear River.

Like most farmers on the watershed, Ferry flood irrigates his fields. While flooding might seem inefficient for such a parched area, it has benefits.

Ferry enjoys the thousands of ibis, ducks and geese that come to eat bugs and rest and croon in chorus — flocks he said he wouldn't see if he used sprinklers.

"When we flood irrigate, all the return flows will collect into drainages. Then we use those drainages to make duck ponds, feed sloughs, stock watering ponds. Eventually, they return back into Bear River," he said.

Ferry also uses his water rights to cultivate waterfowl habitat. He added public angler access to the Bear through his land. As an avid duck hunter, Ferry sees recreation as another vibrant part of life in Box Elder County.

"I look at the Bear River and it's our birthright. Why can't development come here and we use the water here?" Ferry said. "Because once it's gone, it's gone. They're not making anymore water."

On the other side of the Wellsville Mountains, Cache Water District Manager Nathan Daus has his own perspective of the watershed. He agrees harvesting the Bear River is inevitable, but he's OK with piping some of the basin's water to urban Wasatch Front counties to the south.

"If we don't send the water there, they'll send the growth here. That's the way I see it," he said. That's not to say Cache County isn't experiencing growth of its own.

On the eastern edge of the valley, Bear River tributaries pour from the Bear River Range — Blacksmith Fork, the Little Bear and Logan River. That's also where communities are ballooning, like Nibley, North Logan and Hyde Park.

In the past two years, the east side of the county added two new high schools to keep pace. Much of the county remains blanketed by agriculture, however, which inextricably tied to the county's economy and reliable sources of water. And on the west side of the valley, next to the Wellsvilles, water is scarce.

"A lot of people think as we develop agricultural ground there will be this huge surplus in water for the county," Daus said. "There is a lot of ground being converted to development. But that doesn't really result in a surplus of water."

Around 106,000 acres of cropland in the county are irrigated. Another 70,000 acres of farmland in the valley aren't irrigated. Those non-irrigated lands without water rights are mostly located on the county's edges and foothills. They're lands a recent county Water Master Plan identified as desirable for new homes.

"As that ground develops, we're immediately at a shortage," Daus said.

Climate change is fueling more complications. Forecasters warn of a Bear River Basin where more water falls as rain instead of snow. Dausgs said that makes Cache Valley's water supply all the more unpredictable.

"If we do go that direction, we're going to (need) more storage just to function how we do now," he said.

Voters approved formation of the Cache Water District two years ago to make sure the valley had a voice in state water planning, a voice that won't be drowned out by water districts in the Weber Basin and Jordan Valley.

"You can't say 'We're going to run out of water three years from now, let's build a dam.' It's a long process," Dausgs said. "Planning now and planning early can put (Bear River development) off even longer."

Ferry, too, said he's looking beyond what he can see today.

He spent \$10,000 (with matching funds from the U.S. Natural Resource Conservation Service) this year to regrade and rebuild a 600-foot stretch where the Bear River kept loading with sediment, eating into his ground.

He placed 30 acres under a conservation easement in 2016 and plans to add more so much his property will remain farmland.

"I'm not just looking at what's in front of me. It'll be good for my kids, my grandkids. Every penny I make I invest back in my farm," he said.

He's also running for a legislative seat, in part, to make sure the agricultural way of life is preserved.

Yellow-headed blackbirds fly over feeding cattle on the Ferry farm near Corrine on Oct. 1, 2018. The birds are one of many species that lives in the wetlands surrounding the Bear River.

"Agriculture is really tough right now. Commodities are low, there are trade wars going on," he said. "That's part of the reason big farms get bigger and the little guy, the next generation, doesn't come back."

The cost of fuel is up. The cost of fertilizer is up. So is the cost of land. That's why Ferry has branched out and added pumpkin patches and duck hunting ponds to his operation — for alternative revenue streams.

He knows not all of his five children will be able to work the farm when they're grown, but he wants to make sure his Box Elder community gleans enough benefits from Utah's growth that they have a reason to stay.

Many of those benefits, he said, will come from careful management of the Bear River.

"It's a terminal river. The Bear stays here, it ends here," he said. "It sustains life, it brings life and it's our way of life. It's part of who we are. It deserves to be loved and cared for."