



Gina Thompson <gina.thompson@wyo.gov>

Water Quality Rules, Chapter 12, Water and Waste Advisory Board Meeting comment

1 message

noreply@smartcomment.com <noreply@smartcomment.com>

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To: kahn.lisa@epa.gov

Bcc: gina.thompson@wyo.gov

Thank you for your comments on the Water Quality Rules, Chapter 12, Water and Waste Advisory Board Meeting. Your comments have been received.

Name: Lisa Kahn

Address: 1595 Wynkoop St

City: Denver

Province: Colorado

Postal Code: 80202

Email: kahn.lisa@epa.gov

Submitted By: EPA Region 8

Water Quality Rules, Chapter 12, Water and Waste Advisory Board Meeting

Attachment(s):

EPA Comments on WDEQ Proposed Ch12 - final Dec 2021.docx

WDEQ Proposed Chapter 12 Regulation: EPA Region 8 Comments

December 6, 2021

All comments are based on WQR Proposed Chapter 12 clean (003)

EPA's major concerns are listed in the first section, followed by a set of recommendations

Issues of concern that may result in water system noncompliance with EPA's National Primary Drinking Water Regulations implemented by EPA Region 8

1. WDEQ Citation: Line 771 – Section 10 (t)(ii)

Concern: This section does not require instantaneous flow monitoring for plants with a maximum daily flow of less than 50,000 gpd.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. Instantaneous flow monitoring allows systems to conduct inactivation calculations to demonstrate that adequate log reduction of viruses and Giardia are consistently achieved.

Suggested remedy for the concern:

Suggest requiring all surface water treatment plants to conduct instantaneous flow monitoring, regardless of maximum daily design flow.

2. WDEQ Citation: Line 777 – Section 10 (v)

Concern: This section requires a continuous finished water turbidimeter for plants with a capacity of 500,000 gpd or more.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. 2018 Ten States Standards requires a continuous turbidimeter on each filter for rapid rate gravity filter plants with 3 or more filters (4.3.1.10), diatomaceous earth filters treating surface water (4.3.3.10), direct filtration plants with 3 or more filters (4.3.5.5), and continuous indirect integrity monitoring at membrane plants (4.11). These individual filter turbidity monitoring requirements appear to apply regardless of the filter flow rate, which is appropriate. The referenced finished water continuous turbidimeter requirement appears to apply to all plants, irrespective of filtration type, which is also appropriate. It would help if this continuous turbidity monitoring requirement was designated for the combined filter effluent monitoring location versus the finished water. These two locations can be different (the finished water monitoring location is often downstream of the clearwell or contact basin; the combined filter effluent turbidity monitoring location should be after the flow from all of the individual filters combines and prior to any water storage or post-filtration chemical addition).

Suggested remedy for the concern:

EPA requires monitoring of the combined filter effluent turbidity to assess compliance with the regulatory turbidity limits, not the finished water turbidity. Suggest requiring a continuous combined filter effluent turbidimeter, either in lieu of or in addition to the finished water turbidimeter.

3. WDEQ Citation: Line 1255 – Section 12 (b)(j), Line 1372 – Section 12(j)(j)(a), Line 1491 – Section 12(x)(A)(l), Line 1829 – Section 12 (m)

Concern: EPA regulations cite turbidity in NTU, whereas the Chapter 12 regulations reference turbidity values in TU. Also, EPA cites a maximum turbidity of 10 NTU for slow sand feed water as a potential significant deficiency in the current version of the sanitary survey form. Line 1372 references a maximum slow sand feed water turbidity of 50 TUs. Line 1491 references a maximum feed water quality for diatomaceous earth filtration of 25 TU. This also appears to be relatively high, although EPA does not have any significant deficiency language that specifies maximum feed water turbidity for diatomaceous earth filters.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. There is a discrepancy between the allowable feed water turbidity for slow sand filtration in Chapter 12 and EPA significant deficiency language. The turbidity units referenced in Chapter 12 are in a different unit than the one referenced in the National Primary Drinking Water Regulations (NPDWRs).

Suggested remedy for the concern:

Suggest using units of NTU for all turbidity references, and also suggest lowering the maximum allowable feed water turbidity for both slow sand filters and diatomaceous earth filters to 10 NTU.

4. WDEQ Citation: Line 1536 - Table 3, 12-34, Section 12 (j)(ii)(A)

Concern:

The required contact times in the table are after the appropriate baffling factor has been applied to the reactor, not before. This is implied in the Chapter 12 language, but the language is confusing (it references use of a 0.1 baffling factor, unless a higher factor is demonstrated; this is appropriate but does not clarify that the times in the table are after the baffling factor is applied, not before). In addition, 2018 10 States Standards indicates in Section 2.9 that “plants treating surface water and ground water under the direct influence of surface water should have the capability to monitor and record turbidity, free chlorine residual, water temperature, and pH at locations necessary to evaluate adequate CT disinfection, and other important process control variables as determined by the reviewing authority. Continuous monitoring and recording may be required.” This language indicates “should” and not “must”.

2018 10 States Standards also says at 4.4.3a that for chlorine residual test equipment, “it is recommended that all systems, as a minimum, use an instrument with a digital readout.” Use of a chlorine analyzer with a digital readout is recommended, not required. It then says at 4.4.3e that “systems that rely on chlorination for inactivation of bacteria or other microorganisms present in the source water shall have continuous chlorine analyzers and other equipment that automatically shut down the facility when chlorine residuals are not met unless otherwise approved by the reviewing authority.” The multiple references in 10 States Standards are confusing and possibly contradictory. It appears that some small systems may be allowed to use color wheel type devices for chlorine residual monitoring instead of digital instruments, which EPA Region 8 does not recommend and has specifically disallowed in some cases due to monitoring and reporting problems.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is to inactivation and monitoring requirements associated with the Surface Water Treatment Rules.

Suggested remedy for the concern:

More clearly specify that the contact time requirements in Table 3 are after the baffling factor has been applied to the reactor, not before. Also consider adding a requirement that all plants treating surface water and GWUDI have the capability to monitor the free chlorine residual using a handheld analyzer with a digital readout (or continuous analyzer, if required based on population served or design flow), water temperature, and pH at locations necessary to evaluate adequate CT and verify that adequate inactivation is being consistently achieved. The pH and temperature can be grab samples in most cases, but the system needs to have the appropriate monitoring equipment to be able to collect and analyze the samples.

5. WDEQ Citation: Line 1544 - 12-35, Section 12 (k)(i)

Concern:

This section lists the required influent water quality analysis for UV reactor design but does not specify a monitoring frequency. It is assumed that the monitoring frequency is the same as what is required in Section 9 (e)(ii)(A). These parameters can be highly variable in surface water, two samples in different seasons may not adequately capture the variability.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is to UV inactivation requirements for microbial reduction compliance.

Suggested remedy for the concern:

In order to fully capture the anticipated range in UV transmittance in the UV feed water, suggest setting a minimum monitoring time period for the UV supply water for systems with surface water and /or GWUDI sources of one year, with a minimum frequency of weekly. The UV transmittance of a true GW source should not have significant variation, so the existing language seems appropriate for systems with GW sources.

6. WDEQ Citation: Line 1549 - Section 12. Treatment (k)(i)(B)

Concern:

Reference to UV Transmittance does not include the path length and does not reference possible seasonality.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is to UV system design and operation, which is associated with Surface Water Treatment Rule microbial treatment requirements.

Suggested remedy for the concern:

Include a reference to monitoring the UV Transmittance (UVT) at 254 nm and a 1 cm path length. Include a reference to capturing the range in UV transmittance of the influent water over a 12 month period, and consider requiring a buffer between the minimum validated UVT of the reactor, and the minimum observed UVT. This is particularly important in situations where a system has limited ability to treat the water to increase the UVT.

7. WDEQ Citation: Line 1594 - Section 12. Treatment (k)(ii)(N)

Concern:

Suggest removing the reference to NSF / ANSI Standard 55 at this location. This standard is for POE / POU UV applications only. For microbial reduction credit, EPA Region 8 has only allowed use of reactors with this certification for very small systems (40 gallons per minute or less). In the location this standard is currently referenced in the text, it appears to be applied to all UV reactors, of any size. In addition, if a small UV reactor (equal to or less than 40 gpm) has not undergone validation testing that meets the requirements of the EPA UV Disinfection Guidance Manual, it must have the NSF Standard 55A certification (the 55A certification is validated to deliver a 40 mJ/cm² dose, there is also a 55B certification in NSF Standard 55 that is not adequate for the unit to receive microbial reduction credit under the SWTRs because the dose and monitoring requirements are not stringent enough).

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is to UV system design and operation, which is associated with Surface Water Treatment Rule microbial treatment requirements.

Suggested remedy for the concern:

Suggest removing the reference to NSF Standard 55 from this section. Refer specifically to NSF Standard 55A for any references to this standard, and only reference it as an option for small UV units (equal to or less than 40 gpm production rate).

8. WDEQ Citation: Line 1600 - Section 12. Treatment (k)(iii)(A)

Concern:

RED is the "Reduction Equivalent Dose" (currently says Reduced Equivalent Dose). The UV Disinfection Guidance Manual defines the RED as: "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." The "calculated dose" is the RED calculated using the dose-monitoring equation that was developed during validation testing. The "validated dose" is the "calculated dose" adjusted by the appropriate validation factor. The "required dose" is the UV dose needed in mJ/cm² to achieve the target log inactivation for the target pathogen. In general, the validated dose is compared to the required dose to determine if adequate inactivation is being achieved. It appears that the RED references in this section of Chapter 12 may be incorrect.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is to UV system design and operation, which is associated with Surface Water Treatment Rule microbial treatment requirements.

Suggested remedy for the concern:

Suggest providing a definition for all UV dose terms cited in the regulation for clarity, definitions are included in the EPA UV Disinfection Guidance Manual. Suggest changing the reference to RED at line 1600 to "a validated dose that meets or exceeds the required dose" and line 1603 to "minimum required validated dose used for system design". Suggest changing the reference to RED in line 1623 to "validated dose that meets or exceeds the required dose".

9. WDEQ Citation: Line 1852 - Section 12. Treatment (m)(iii)

Concern:

This section designates a minimum applied feed rate for ozone of 15 mg/L when it is used for taste and odor control. This appears to be a very high dose. The one surface water system in WY that uses ozone for primary disinfection typically maintains an initial ozone residual (at the front of their reactor) of less than 1 mg/L. At this level, the system is marginally able to maintain bromate levels below the MCL.

Why this is a concern:

This could result in some systems not complying with the Disinfection Byproduct Rules. Ozone forms bromate which is a regulated disinfection byproduct. It appears that the specified minimum applied ozone feed rate is much higher than the doses typically used, and could result in bromate levels that exceed the MCL.

Suggested remedy for the concern:

Suggest lowering the minimum applied feed rate for ozone to something lower than the value specified.

10. WDEQ Citation: Line 1897 - Section 12. Treatment (p)(i)(B)

Concern:

This section currently indicates that bag and cartridge filters shall demonstrate at least a 2-log removal of particles size 1 micron and above. The LT2ESWTR requires a 1-log demonstration buffer for these types of filters because they cannot be challenge tested (i.e. they would need to demonstrate a 3-log removal of 1 micron size particles during challenge testing to be awarded a 2-log removal credit for Giardia and Cryptosporidium).

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is associated with microbial removal credits awarded to the filtration technology under the NPDWR.

Suggested remedy for the concern:

Change the reference to require demonstration of at least a 3-log removal of particles size 1 micron and above with an associated log reduction credit of 2-logs for Giardia and Cryptosporidium.

11. WDEQ Citation: Line 1900 - Section 12. Treatment (p)(i)(C)

Concern:

This section references the Membrane Filtration Guidance Manual, Chapter 3 for challenge testing requirements of bag and cartridge filters. Removal efficiency for bag and cartridge filtration should be determined through challenge testing as outlined in the LT2ESWTR Toolbox Guidance Manual, Chapter 8. The current reference in this section of Chapter 12 is for membrane filtration, not bag and cartridge filters.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is to an EPA guidance document and is associated with microbial removal credits awarded to the filtration technology under the NPDWR.

Suggested remedy for the concern:

Change the challenge testing requirements reference in this section to the LT2ESWTR Toolbox Guidance Manual, Chapter 8. Also consider adopting the NSF 419 standard for bag and cartridge filter challenge testing requirements.

12. WDEQ Citation: Line 1927 - Section 12. Treatment (p)(viii)

Concern:

This section requires surface water or GWUDI systems using bag or cartridge filter technology to provide at minimum disinfection that meets 0.5 log Giardia inactivation. The SWTR requires SW and GWUDI systems to achieve a minimum reduction credit for Giardia of 3-logs. EPA Region 8 awards bag and cartridge filters that meet the challenge testing requirements a 2-log Giardia removal credit. The remaining 1.0 log Giardia reduction credit must be achieved through disinfection. This section should require minimum Giardia disinfection credit of 1.0 log for bag or cartridge filter systems.

Why this is a concern:

This is a potential conflict between EPA and DEQ requirements and could result in some systems not complying with the SWTRs. This reference is related to treatment compliance with the NPDWRs.

Suggested remedy for the concern:

Increase the disinfection treatment requirement for bag and cartridge filtration to 1.0 log Giardia.

13. WDEQ Citation: Line 2117 - Section 14. Pumping Facilities (i)(i)

Concern:

This section requires air release valves on pumping facilities where the pipe crown is dropped in elevation. There were no specific requirements for discharge height or #24 mesh screen on the air release valve discharge pipe at this location, or elsewhere in Chapter 12 or 2018 Ten States Standards.

Why this is a concern and how is it related to our authority as the primacy agency for WY or Why we support.

This is a potential conflict between EPA and DEQ requirements. EPA requires installation of #24 mesh screen on air release / vacuum relief valve discharge piping at pump stations in the current version of the sanitary survey form.

Suggested remedy for the concern:

A reference to the discharge pipe requirements for air release / vacuum relief valves on finished water lines that requires 1) an 8 inch minimum air gap and 2) #24 mesh at the discharge should be included.

14. WDEQ Citation: Section 11, (f) line start 1157

Concern:

Region 8 believes that a “one size fits-all” approach to “spring” development is unrealistic. Without an understanding the true source/type of groundwater that is to be developed, the installation of liners, diversion ditches and fences may be counterproductive and provide a false sense of security for protecting the water source. If the collection structure is placed in uncharacterized soil or highly fractured rock without knowing the type of aquifer the groundwater exists in, then diversionary ditches, liners, and fences will not be viable because the time of travel (which is utilized to estimate

filtration potential) is unknown, especially if the water that is developed is associated with a discernable surface water drainage. If a liner is placed in granular soil without secure anchoring points such as high plastic clays, over time the liner is capable of moving, folding or otherwise prevented from its designed purpose. A diversionary ditch will lessen the depth to the aquifer and therefore reduce filtration of the vertical recharge to the collection structure. In addition, ground water from a recharge zone outside of the immediate spring development site may be a source of GWUDI or other contaminants. The absence of a visible contaminant source near the spring development area does not guarantee that these shallow ground water sources will not become contaminated.

In Wyoming, EPA Region 8 has the authority to determine the water source type – either Groundwater or Ground Water under the Direct Influence of Surface Water (GWUDI) - once the source has been developed under 40 C.F.R. Section 1412(b)(7) for the purpose of compliance with the National Primary Drinking Water Regulations. The Ten State Standards recommend that ground water sources that are not wells (e.g. “infiltration lines”) be considered GWUDI unless they can demonstrate otherwise and should be considered only if wells are not feasible (TSS 3.2.6.4 p.30). It is unclear if this aspect of the Ten States Standards is being adopted by WDEQ.

Suggested remedy for the concern:

Suggest that WDEQ’s regulations more clearly define sources for ground water development that are not wells, and require source monitoring prior to development to reduce the risk of developing GWUDI or contaminated water. Ideally, “spring” water daylights at ground surface through some artesian pressure produced by a cohesive confining layer such as “hard pans” (caliche, iron deposits), high plastic clays, or competent bedrock. It is important to be able to differentiate competent bedrock from highly fractured bedrock caused by weathering or by structural processes such as tectonic forces. The length, breadth and thickness of the confining layer needs to be determined and considered to ensure that the layer is physically able to protect the water source that will be developed. This will allow for the potential “clean capture” of the water, as the confining layer will protect the aquifer’s vertical recharge ability. EPA also recommends that the recharge area should be identified.

EPA Recommendations:

1. **WDEQ Citation:** Line 187 – Section 6(b)(iii) and (iv)

Concern: This section appears to allow use of alternative treatment technologies not directly covered under the Chapter 12 regulations based on a theoretical evaluation of the design that demonstrates a reasonable probability that the technology will meet the design objectives.

Why this is a concern:

This seems like a fairly low standard for use of new / novel treatment technologies. These technologies could be used for microbial reduction credit under the Surface Water Treatment Rules.

Suggested remedy for the concern:

Suggest for facilities producing finished water for consumption, that data for a full-scale, comparable installation or a pilot-plant (outlined in b(i) and b(ii)) be required, instead of only a theoretical evaluation.

2. WDEQ Citation: Line 519 – Section 9 (e)(ii)(A)

Concern: This section requires water systems that are collecting water quality data for surface water sources to conduct two water quality sampling events, one during spring runoff and one during late summer or early fall low flow.

Why this is a concern:

Two sampling events may not capture the expected seasonal variability of some water quality parameters.

Suggested remedy for the concern:

Suggest increasing the sample frequency for some water quality parameters that are expected to be highly variable (examples include turbidity, TOC / DOC, and UV transmittance).

3. WDEQ Citation: Line 774 – Section 10 (u)

Concern: This section requires an alarm for high effluent turbidity and chlorine leaks when chlorine gas is used.

Why this is a concern:

A low chlorine residual at the plant effluent is also a potential emergency situation, reportable to EPA.

Suggested remedy for the concern:

Suggest also requiring systems to have a low chlorine residual alarm, where a continuous chlorine analyzer is required (2018 Ten States Standards Section 4.4.3 requires a continuous chlorine analyzer at facilities with a capacity of 0.5 MGD or greater, or that serve a population greater than 3,300, which is appropriate).

4. WDEQ Citation: Line 1542 - 12-35, Section 12 (k)

Concern:

Do both GW and SW/GWUDI systems have to comply with the same UV requirements, or should this indicate that these requirements only apply to SW or GWUDI systems using the UV for microbial treatment credit (and also GW systems using UV for 4 log virus treatment)? Some small systems may want to add UV for extra treatment, and not for microbial reduction credit to meet SWTR or GWR pathogen reduction requirements.

Why this is a concern:

In this case, the WY DEQ requirements appear to be more stringent than the EPA Region 8 requirements. This reference is to UV inactivation requirements for microbial reduction compliance.

Suggested remedy for the concern:

Suggest specifying which UV requirements apply to all systems, and which are specific to systems using the UV treatment for microbial reduction credit under the Surface Water Treatment Rules or Ground Water Rule.

5. WDEQ Citation: Line 1632 - Section 12. Treatment (k)(iv)(B)

Concern:

This section requires validation according to the EPA UV Disinfection Guidance Manual for all UV reactors, regardless of size. EPA Region 8 has allowed certification to the NSF 55A standard in lieu of full compliance with the EPA UV Disinfection Guidance Manual as an option for small UV reactors (40 gpm or less). EPA Region 8 has also allowed use of reactors that meet the DVGW (German) and ONORM (Austrian) standards.

Why this is a concern:

In this case, the WY DEQ requirements appear to be more stringent than the EPA Region 8 requirements. This reference is to UV system design and operation, which is associated with Surface Water Treatment Rule microbial treatment requirements.

Suggested remedy for the concern:

Suggest allowing certification to NSF Standard 55A (for small UV units, less than or equal to 40 gpm) or the DVGW or ONORM standards. If NSF Standard 55A is allowed, consider including specific requirements for use of a reactor that has the NSF55A certification only (i.e. lamp age counter/ alarm, automatic fail safe solenoid valve that shuts off flow when power is lost or dose is low, etc).

6. WDEQ Citation: Line 1692 - Section 12. Treatment (k)(vi)(B)

Concern:

This section requires all UV reactors to monitor UV transmittance. EPA Region 8 has not required all reactors to monitor UV transmittance, only reactors that use a dose monitoring strategy that requires UV transmittance as an input.

Why this is a concern:

This reference is to UV system design and operation, which is associated with Surface Water Treatment Rule microbial treatment requirements.

Suggested remedy for the concern:

Suggest only requiring UV transmittance monitoring for systems that use the calculated dose monitoring strategy. EPA Region 8 has not required systems to monitor the UV transmittance for the intensity set point dose monitoring strategy, or for small reactors that are certified to the NSF 55A standard. UV feed water monitoring conducted prior to UV unit installation must indicate that the range of UV transmittance values in the UV feed water are within the validated operation range of the reactor (with a buffer between the two values recommended).

7. WDEQ Citation: Line 1871 - Section 12. Treatment (o)

Concern:

This section looks correct, however, there is an NSF standard for membranes and bags / cartridge filtration that is comprehensive and incorporates the requirements of the Membrane Filtration Guidance Manual. Consider referencing the NSF 419 standard for both membranes and bags / cartridges.

Why this is a concern:

This reference is to an EPA guidance document and is associated with microbial removal credits awarded to the filtration technology under the NPDWR.

Suggested remedy for the concern:

Consider incorporating the NSF 419 standard for membrane filtration requirements.

8. WDEQ Citation: Line 1910 - Section 12. Treatment (p)(iii)

Concern:

This section requires evaluation of bag and cartridge filters under NSF / ANSI 53. Suggest referencing NSF / ANSI 419 (which is specifically for “Public Drinking Water Equipment Performance – Filtration”).

Why this is a concern:

This reference is to an EPA guidance document and is associated with microbial removal credits awarded to the filtration technology under the NPDWR.

Suggested remedy for the concern:

Remove the NSF 53 reference and change it to NSF 419 and/or the EPA LT2ESWTR Toolbox Guidance Manual, Chapter 8.

9. WDEQ Citation: Line 1223 - Section 11. Source Development (f) (vi)

Concern:

“The spring collection site shall be equipped to disinfect water prior to distribution and shall include sampling ports before and after the disinfection application point.”

Why this is a concern:

Groundwater sources in WY are currently not required to disinfect the water. It is not clear whether this section is requiring disinfection or just requiring disinfection equipment to be present (and not operating) for spring sources.

Suggested remedy for the concern:

Clarify this sentence to make clear if operational disinfection will be required for spring sources.

10. WDEQ Citation: Section 7 Permits, Permit Processes and Record Keeping

Concern:

The proposed Chapter 12 regulations do not require applicants to submit as-constructed record drawings to Wyoming DEQ after a permitted project is constructed. It is acknowledged that statements of completion are described with each general and individual permit issued; however, Chapter 12 should formalize and require this as-built verification process.

Why this is a concern:

Requiring submittal of as-built drawings would help to ensure that projects are built in accordance with the permitted design and plans and specifications. EPA has observed several water facilities that were not constructed according to the permit, resulting in EPA identifying significant deficiencies that must be corrected.

Suggested remedy for the concern: Add a citation requiring all permitted construction projects to provide an engineer’s certification to Wyoming DEQ and require the registered professional engineer to provide documentation to Wyoming DEQ that the project was constructed according to the permit requirements.

11. WDEQ Citation: Section 11(e) Designs that include groundwater source development should comply with the following requirements.

Concern: The proposed regulations do not require the installation of a raw water groundwater sample tap for each individual groundwater well source.

Why this is a concern:

The NPDWRs require collection of a triggered source water sample at each groundwater source when a routine total coliform positive sample result is positive. The raw water sample must be collected before treatment or storage and represent the quality of the groundwater source, to identify if the contamination originates in the source water or in the distribution system. Starting in 2022, EPA will be requiring a dedicated source sample tap to be installed for all groundwater sources. This sample tap will allow the water system to quickly and effectively evaluate the groundwater sources when contamination indicators exist in the distribution system.

Suggested remedy for the concern: Add language requiring all groundwater sources to provide a raw water sample tap that represents the water quality for the individual groundwater sources, which may include wells, springs or infiltration galleries.

12. WDEQ Citation: Section 11, (e)(ii)(A) Table 1 ((line 900) and 2 (line 907)

Concern: EPA appreciates the proposed regulations' increase of the minimum setback distance between a ground water source and an absorption field by size. It would be helpful to clarify under what circumstances consideration of a larger setback may be needed.

Suggested remedy for the concern: Provide additional guidance either within the regulations or separately. Situations where additional distance may be prudent include where fractured rock, solution channels, or highly transmissive alluvial aquifers are present. Subsurface study, as in (e)(ii)(C), may be of value in these situations as well. Determination of aquifer properties may also help to evaluate their potential use as a water supply.