



Surface Water Treatment Rules Training WWQ-PCA, October 25, 2023

Presentation Outline

Surface Water Treatment Rule (SWTR) Topics:

- When to contact EPA immediately (for SWTRs)
- Acrylamide / epichlorohydrin reporting requirements



When am I required to notify EPA under the SWTRs (separate from normal monthly reporting)?



- Chlorine residual at the entry point to the distribution system drops below <0.2 mg/L
 - Will be added to 2024 Monitoring Requirements language
- You exceed the max allowable turbidity for your filtration type at the combined filter effluent turbidity monitoring location
 - Will be added to 2024 Monitoring Requirements language
- You exceed the individual filter effluent turbidity trigger for your system size and type
- You are planning a change in treatment (emergency or routine)
- There is a documented waterborne disease outbreak in your system
- Any situation that may be a potential emergency

#1: Chlorine residual at the point of entry to the distribution system drops below <0.2 mg/L

- This must be reported to EPA by the end of the next business day.
- The system must include:
 - The time this occurred and whether or not the residual was restored to at least 0.2 mg/L within 4 hours.
- If the system is $<3,300$ population and is collecting grab samples for chlorine residual, the frequency of collection must be increased to a minimum of once every 4 hours until the chlorine is restored to >0.2 mg/L.
- If the chlorine residual is <0.2 mg/L for more than 4 hours, it is a treatment technique violation of the SWTRs. Prolonged events may require Tier 1 notice.

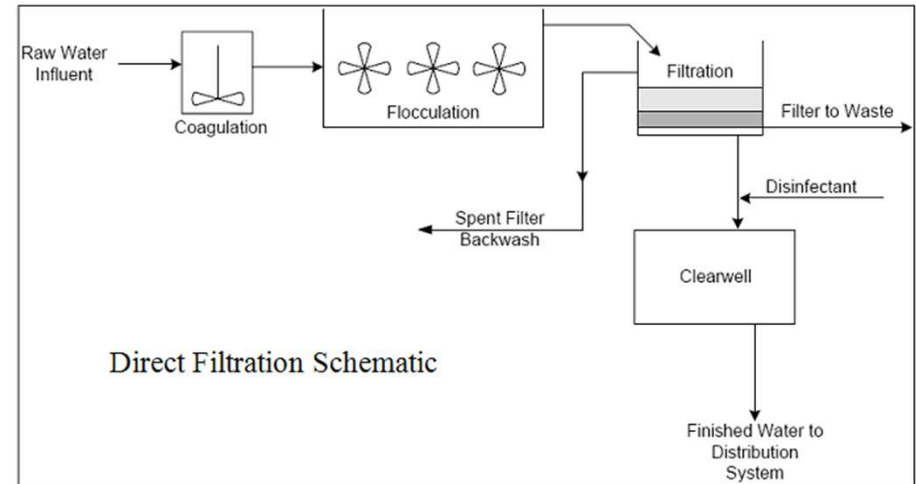
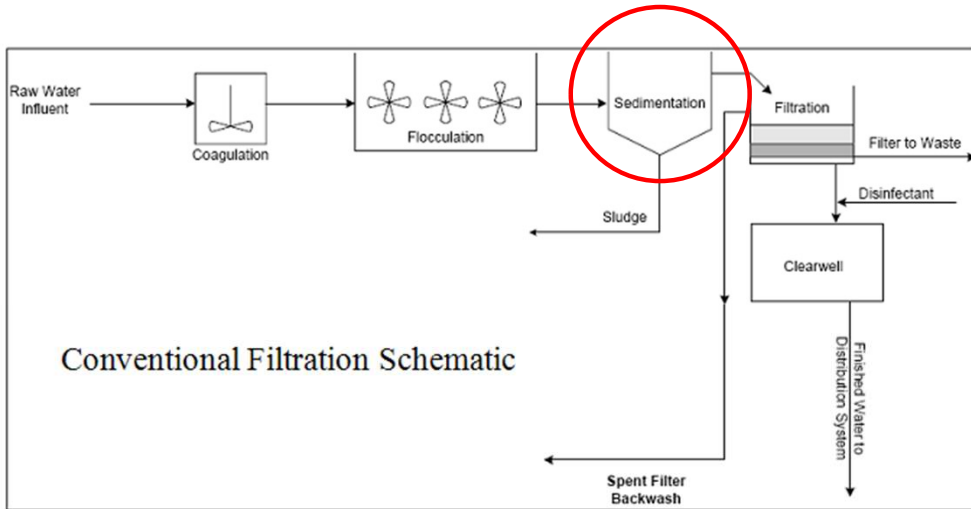


#2: You exceed the max allowable turbidity for your filtration type at the combined filter effluent turbidity monitoring location

- This exceedance must be reported by the end of the next business day.
- You must report the following to EPA:
 - Time and date of exceedance.
 - Maximum turbidity recorded.
 - Duration of time above the maximum turbidity limit.
 - Any measures taken to prevent the high turbidity water from reaching the public.
 - Any information that may qualify or invalidate the high results
- Failure to report the high turbidity could result in an automatic requirement to distribute tier 1 public notice (i.e. boil order)
- Tier 1 public notice may be required in some other situations

Filtration Type	Your max allowable CFE turbidity is:
Conventional Filtration	1 NTU
Direct Filtration	1 NTU
Membrane Filtration	1 NTU
Bag or Cartridge Filtration	5 NTU
Slow sand or diatomaceous earth filtration	5 NTU
Other alternative filtration (example, precoat with perlite)	Max turbidity set during demonstration of performance

Filtration Types – Conventional vs Direct Filtration



#3: You exceed the individual filter effluent turbidity trigger for your system size and type

Filtration Type	Your max individual filter effluent turbidity is:	You must report this exceedance to EPA within:
Conventional or direct filtration >10,000 population	0.5 NTU	A filter profile must be produced within 7 days unless an obvious reason for the exceedance can be reported. Additional requirements apply for exceedances >1.0 NTU or >2.0 NTU.
Conventional or direct filtration <10,000 population	1.0 NTU	Report by the 10 th of the following month. If an exceedance occurs in three consecutive months, a self assessment of the filter is required within 14 days. Exceedances above 2.0 NTU trigger additional requirements.
Membrane Filtration	0.15 NTU	The system must immediately initiate a direct integrity test to verify membrane integrity
All other filtration types (bags / cartridges, slow sand, diatomaceous earth, other alternative filtration)	No individual filter effluent turbidity limits apply	Not applicable

#4: You are planning a change in treatment

- Changes in treatment include:
 - Significant changes to disinfection practices (for example, a switch from chlorine to chloramines as a secondary disinfectant).
 - Adding or replacing a treatment chemical, including changes in coagulant type or manufacturer.
 - Initiating recycling of filter backwash water, thickener supernatant, or liquids from dewatering processes.
 - Additions of new treatment processes or changes to existing processes.
 - This includes use of a different cartridge or bag filter than what is in use currently.
- Some changes in treatment require EPA approval prior to implementing.
- Some changes in treatment require a WY DEQ construction permit prior to implementing.
- Some changes in treatment have associated ongoing reporting requirements.
- Some changes in treatment might increase the monitoring frequency for other regulated contaminants (lead and copper, etc).

#5: Waterborne disease outbreak or another situation occurs that may be an emergency

- If you are informed of a waterborne disease outbreak, it must be reported to the EPA by the end of the next business day.
- You should report any other situation that may be a potential emergency to EPA.
 - Example, loss of coagulant feed at a surface water treatment plant
- Bottom line – if you're not sure, just call or e-mail EPA.



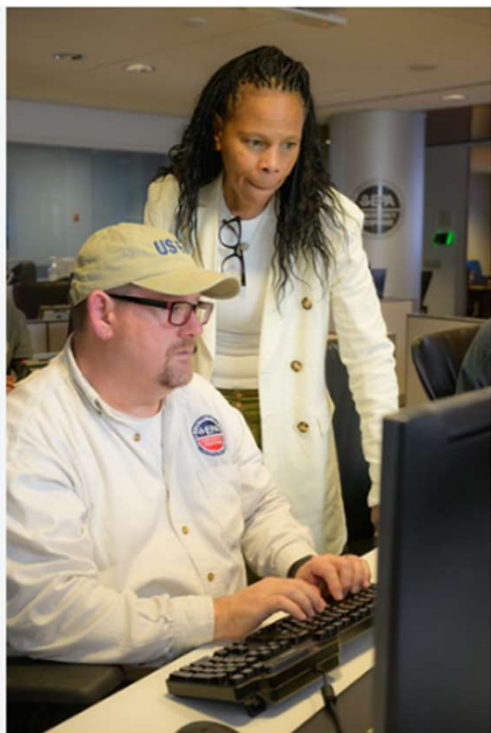
Acrylamide / Epichlorohydrin Reporting Requirements

What are acrylamide and epichlorohydrin?

- Both chemicals are impurities generated during the manufacturing process of polymers.
- Both chemicals are probable human carcinogens.
- EPA regulates these two chemicals through limiting the allowable dose of water treatment chemicals that contain these chemicals.
- Regulations are contained in 40 CFR 141.111



What are the 141.111 Requirements?



- Each public water system must certify annually in writing to the State (using third party or manufacturer's certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified as follows:
- Acrylamide = 0.05% dosed at 1 ppm (or equivalent)
- Epichlorohydrin = 0.01% dosed at 20 ppm (or equivalent)
- Certifications can rely on manufacturers or third parties, as approved by the State.

How do I know if I am using a chemical that contains acrylamide or epichlorohydrin?

- This information should be available from your chemical manufacturer and/or distributor.
- You can also check the NSF website for this information ([nsf.org](https://www.nsf.org)).
 - All chemicals added during the water treatment process, or with high potential of being in contact with drinking water, must have an NSF 60 certification.
 - The NSF 60 listing has a max use level. This max use level ensures compliance with 141.111 requirements (among other requirements).
 - If a product contains acrylamide, it is designated with a “PC” in the NSF listing.
 - If a product contains epichlorohydrin, it is designated with a “PY” in the NSF listing.

Polyacrylamide[PC]

Trade Designation

AB 9230

Product Function

Coagulation & Flocculation

Max Use

1mg/L

[PC] Polyacrylamide Products Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

What does EPA Region 8 require?

- EPA Region 8 disinvested in 141.111 compliance for many years.
- In the 2024 monitoring and reporting requirements, systems with coagulants that appear to contain acrylamide or epichlorohydrin will receive a message indicating that an annual report for calendar year 2023 is required.
- These systems will receive a separate e-mail (probably from me directly) with a reporting form that assesses compliance with the 141.111 requirements based on the NSF max use level for the product and the system's reported maximum dose of the product during calendar year 2023.
- Systems will not be required to report the percent monomer (which is typically proprietary and difficult to obtain) unless the summed ratio of NSF 60 max use level and product max use indicates potential non-compliance.



Questions?

Jake Crosby, [crosby.jake @epa.gov](mailto:crosby.jake@epa.gov) or 303.312.6389