IDNR Water Supply Rules Update

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Iowa PWS Rule Package

- Rules were adopted April 11, 2018 and became effective May 16, 2018
  - Groundwater Rule (GWR)
  - Lead & Copper Rule Short-term Revisions (LCR-STR)
  - Revised Total Coliform Rule (RTCR)
  - Additions from Stage 2 Disinfectants/Disinfection Byproducts Rule (Stage 2) & Long-term 2 Enhanced Surface Water Treatment Rule (LT2)
  - Analytical Methods
- Plus state rule changes
Iowa PWS Rule Package

- Rules went before ARRC again on May 8th; no questions or comments from legislators
- Rules and crosswalks were submitted to the Attorney General’s Office for review to certify that the rules were duly adopted and are enforceable.
- AG certification was received and the entire rules package was submitted to EPA with a request for primacy revision.
  - Package is reviewed by EPA program liaison and attorney. One package per Region is also reviewed by EPA Headquarters.
  - EPA already reviewed the rules and crosswalks so I don’t anticipate many questions.
Federal Rules

- There’s one Federal Register final rule with analytical methods to include in Iowa’s rules; otherwise, we’re current

- Perchlorate
  - NRDC has sued for date for proposed rule – by Oct. 2018; final rule by Dec. 2019
    - Nothing yet, per EPA Region 7

- Lead & Copper Long-term Revisions
  - Proposed rule in Feb. 2019
  - Will include some of the WIIN Act provisions

- Proposed federal lead rules related to the Reduction of Lead Act (percent allowable lead in fixtures)
  - Same as the effective statute for drinking water
  - Plus additional requirements
  - Proposed rule: January 17, 2017
  - Likely be incorporated or move along with the other LCR revisions
Supplemental Fluoride: Operational Control Range

- 7/13/18 FR: The Centers for Disease Control and Prevention (CDC) announced a proposed operational control range around optimal fluoride concentration in community water systems that adjust fluoride, and monthly adherence to that range.

- The proposed operational control range is $0.6 \text{ mg/L to } 1.0 \text{ mg/L as F}$. CDC bases this guidance on the following considerations:
  - Concentration of fluoride in water shown to prevent tooth decay, and
  - Ability of water systems to control variation in fluoride concentration.

- Optimal target remains at $0.7 \text{ mg/L as F}$
Boil vs. Bottled Water Advisory

- Use of boil water advisory happens when a situation exists where the microbial integrity of the water is put at risk, such as:
  - Uncontrolled turbidity exceedance (CFE >1)
  - Main break with pressure loss
  - Loss of residual disinfectant entering the system, when mandatory disinfection is required (SW/IGW or GW)

- If there is the potential for a contaminant to be in the water that could result in a harmful health effect if concentrated by boiling, a bottled water advisory should be used for drinking. Three examples:
  - Nitrate over 7 mg/L
  - Nitrite over 0.7 mg/L
  - Cyanotoxin such as microcystin, if an algal bloom is occurring or has recently occurred, and there’s no testing to know if toxin is present.
Sampling plans

- Four new RTCR/GWR sampling plans now available on the website – significant changes!!!
  - Encouraging systems to update their current plan
    - Quarterly bacteria at GW system
    - One per month bacteria at GW system
    - Two or more per month bacteria at GW system
    - Two or more per month bacteria at SW/IGW system
- All are available as Word .docx files which can be modified upon request
  - The files on the website are fillable (.pdf and .doc), but they can’t be modified.
- New SW/IGW MOR to be available soon
- New LCR sampling plan also to be available soon
Perfluorinated Compounds

- PFAS is the current acronym for per- and poly-fluoroalkyl substances
  - Encompasses thousands of compounds; PFOS, PFOA are two that have been in the news
  - Group of chemicals that have been used in many products as a water repellent, such as non-stick pans, stain repellents, boots, pizza boxes, etc.; in electronics, oil, and chrome plating industries; aqueous film-forming foam (AFFF) at airports for petroleum fires
  - Some of the compounds were included in the UCMR3
    - One detect in KS out of the R7 states (MO, NE, IA, KS) in UCMR3
      - 57 PWS sampled in Iowa; no detects.
      - KS has a system that’s been impacted that wasn’t on UCMR3
    - Testing to happen this year at two Iowa military facilities where foam was used; a third recently identified as a possibility
PFAS: Health and Ecology

- Substances are bioaccumulative
  - Persistent in environment
    - Do not degrade
    - Accumulates in the environment and in people
  - Highly mobile
  - Short-term exposure is considered a health risk
    - Known or suspected toxicity, especially for PFOS and PFOA
    - Very long half-lives (several years) in humans
  - Very low levels (ppt) cause problems
    - Current EPA health advisory: 0.00007 mg/L, or 70 ppt
    - Some, but not all, studies in humans with PFAS exposure have shown that certain PFAS may:
      ★ Affect growth, learning, and behavior of infants and older children
      ★ Interfere with ability to become pregnant
      ★ Interfere with the body’s natural hormones
      ★ Increase cholesterol levels; increase in cancer risk
      ★ Affect the immune system
      ★ Potential concern with pancreatic, thyroid, and liver function interference
UCMR4

- Unregulated Contaminant Monitoring Rule, 4th Round
- EPA is implementing in Iowa; DNR is assisting; sampling underway by systems (2018-2020)
  - All systems >10,000; selected small systems; each system samples for 1 year during a 3-year period
- Question about whether Br and TOC raw source water samples are required at all systems
  - A consecutive does not have to conduct Br and TOC. A 100% GW producing system does.
  - But, if a system is a SWP and also a producing GW, does it have to monitor on its GW side? Answer: No. That’s how EPA is choosing to implement.
- Risk communication
  - Recent EPA Regulatory Guidance includes how to communicate the results under UCMR4
- Planning for UCMR5 will start soon
Manganese (Mn)

- Manganese is a naturally occurring metal commonly found in Iowa’s geology
  - Often found along with dissolved iron in raw water
  - Concern in all of the northern U.S. states due to geology
- It’s included in the UCMR4
  - Concern from recent studies that show Mn can contribute to IQ deficit in infants/young children
  - Canada’s new ‘MCL’ is 0.10 mg/L
  - EPA’s health advisory is 0.30 mg/L for adults
    - Secondary MCL is 0.05 mg/L, but for aesthetic reasons
- We are recommending community and nontransient noncommunity systems take a finished water S/EP sample to see what they have,
  - If system is not a UCMR4 participant and doesn’t have a recent result.
    - Analyze at certified lab with detection limit of 0.01 mg/L as Mn or lower
    - Submit as a “Special”
Manganese by Aquifer in Iowa

Data from IDNR’s Ambient Groundwater Monitoring Program
Raw Water Manganese Levels

Data from IDNR’s Ambient Groundwater Monitoring Program
Legionella

- 2013-2014 CDC Morbidity and Mortality Weekly Report:
  - *Legionella* was responsible for 63% of waterborne disease outbreaks, 94% of hospitalizations, and 100% of deaths (17).
  - All outbreaks were associated with human-made water systems, including infrastructure intended for water storage or recirculation.
- Iowa: DNR has the PWS program, Dept. of Public Health has the public health and plumbing rules, and Dept. of Inspections and Appeals has medical facility inspections.
- 2014: Directive for Veterans Health Administration facilities to develop a mitigation plan
- 2017: Hospitals and nursing homes were required by Center for Medicare and Medicaid Systems (CMS) to develop a water management plan
  - CDC Toolkit available that meets the ASHRAE 188 standard
**Legionella**

- Hot topic in public drinking water because customers (such as hospitals and care facilities, huge hotels, etc.) are installing treatment to prevent/control *Legionella*
  - Chlorine dioxide is used as on-site treatment
  - That treatment, by itself, can be acutely hazardous if not operated properly. Currently regulated as both disinfectant and byproduct.

- If a customer meets the 25 people/60 days of the year definition of a PWS, it avoids regulation by meeting certain criteria.
  - One criterion is that the PWS has no treatment facilities
  - If treatment is added, facility becomes a regulated PWS

- Some states are developing regulations; regulating as consecutive, so only require distribution sampling and certified operator

- This fall we’ll be working on this issue.
- Nancy will go into *Legionella* in much more detail – this is just the PWS interest
Questions?

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Contact me to sign up for WS Listserv