

IDNR Water Supply Rules Update



SHL Lab Symposium,
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Water Supply Engineering
Section



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



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Pages 1603 to 1829 include ARC 3563C to ARC 3575C and ARC 3577C to ARC 3592C

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 mg/L to 1.0 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 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.



Instructions:

Attached is a model sampling plan for a public water supply that is required to collect one

Sampling plans

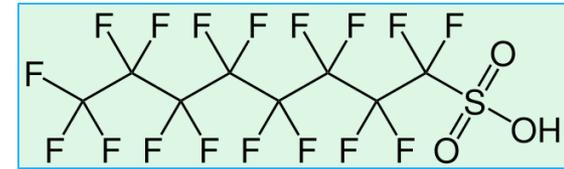
- Four new RTCR/GWR sampling plans now available on the website – significant changes!!!
 - 💧 Encouraging systems to update their current plan
 - ▶ Quarterly bacteria at GW system
 - ▶ One per month bacteria at GW system
 - ▶ Two or more per month bacteria at GW system
 - ▶ Two or more per month bacteria 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

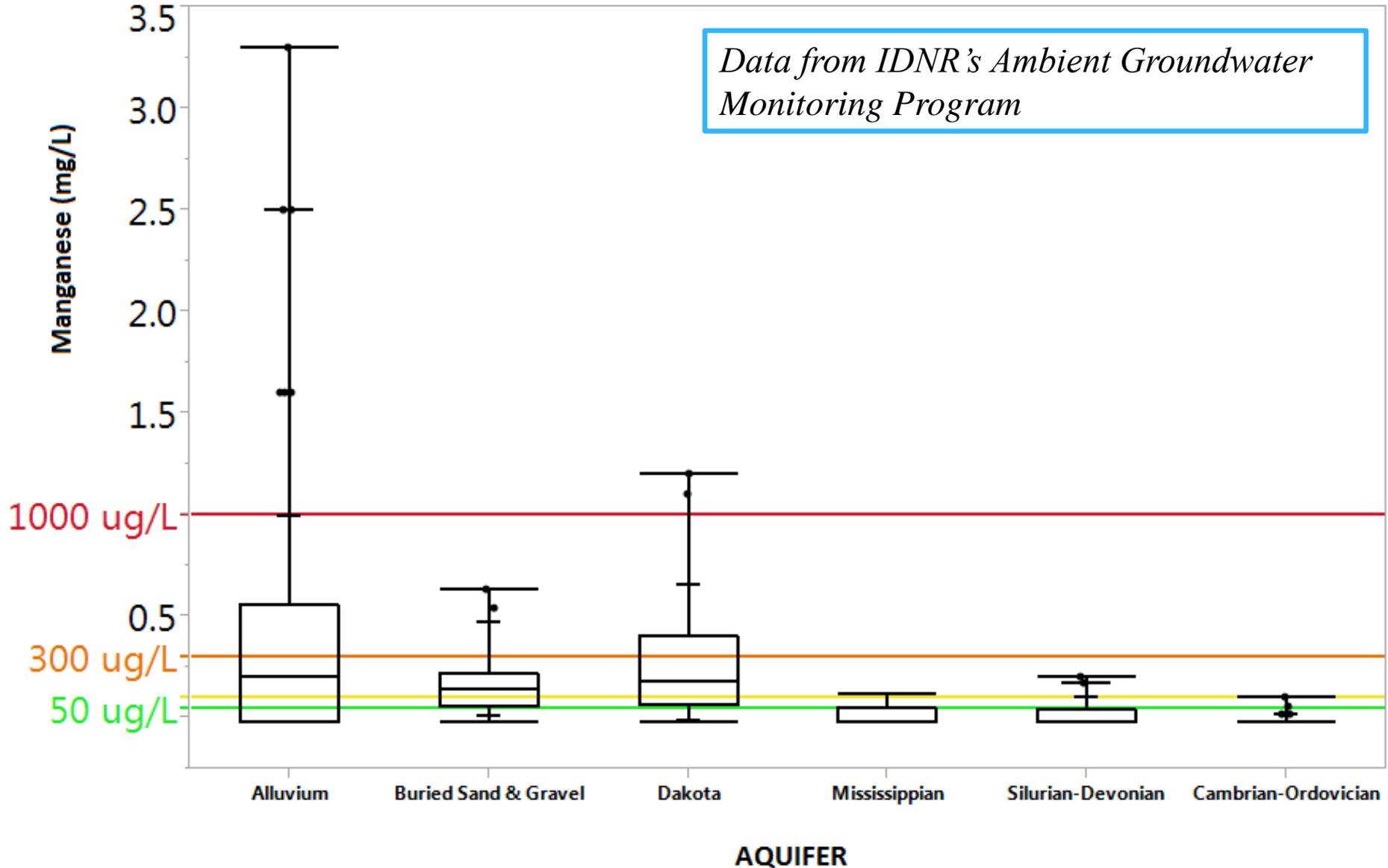
- Unregulated Contaminant Monitoring Rule, 4th Round
- EPA is implementing in Iowa; DNR is assisting; sampling underway by systems (2018-2020)
 - All systems >10,000; selected small systems; each system samples for 1 year during a 3-year period
- Question about whether Br and TOC raw source water samples 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



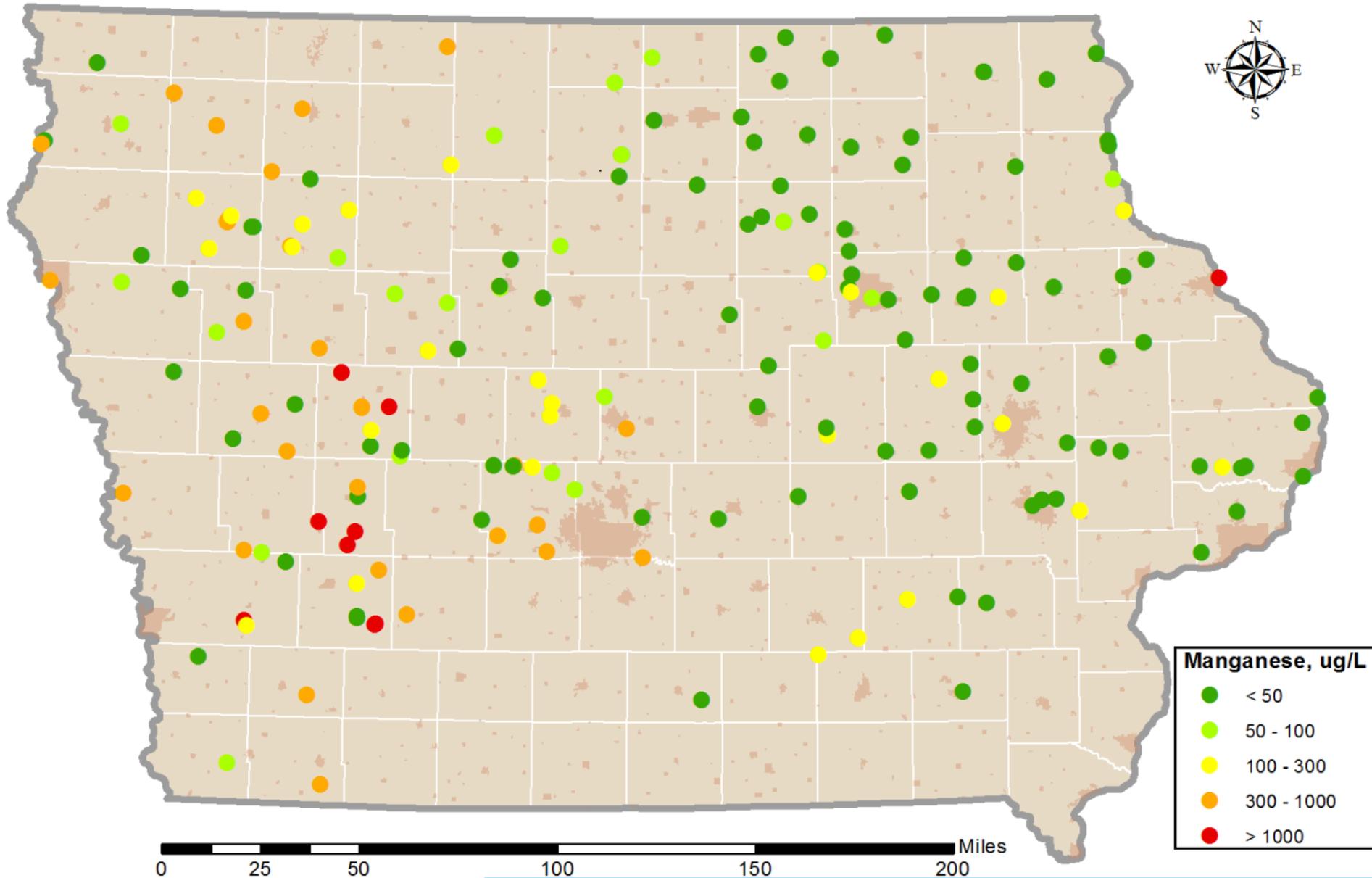
Manganese (Mn)

- 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

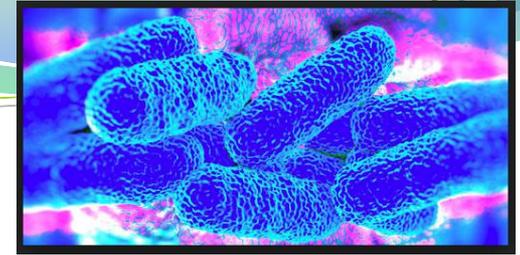


Raw Water Manganese Levels



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

