

An Overview of the Unregulated Contaminant Monitoring Rule – Current and Future Cycles

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1996 SDWA Amendments

- Changed the process of developing and reviewing National Primary Drinking Water Regulations (NPDWRs)
- New Process Includes:
 - Candidate Contaminant List
 - Unregulated Contaminant Monitoring Rule
 - Regulatory Determination
 - Six-year review



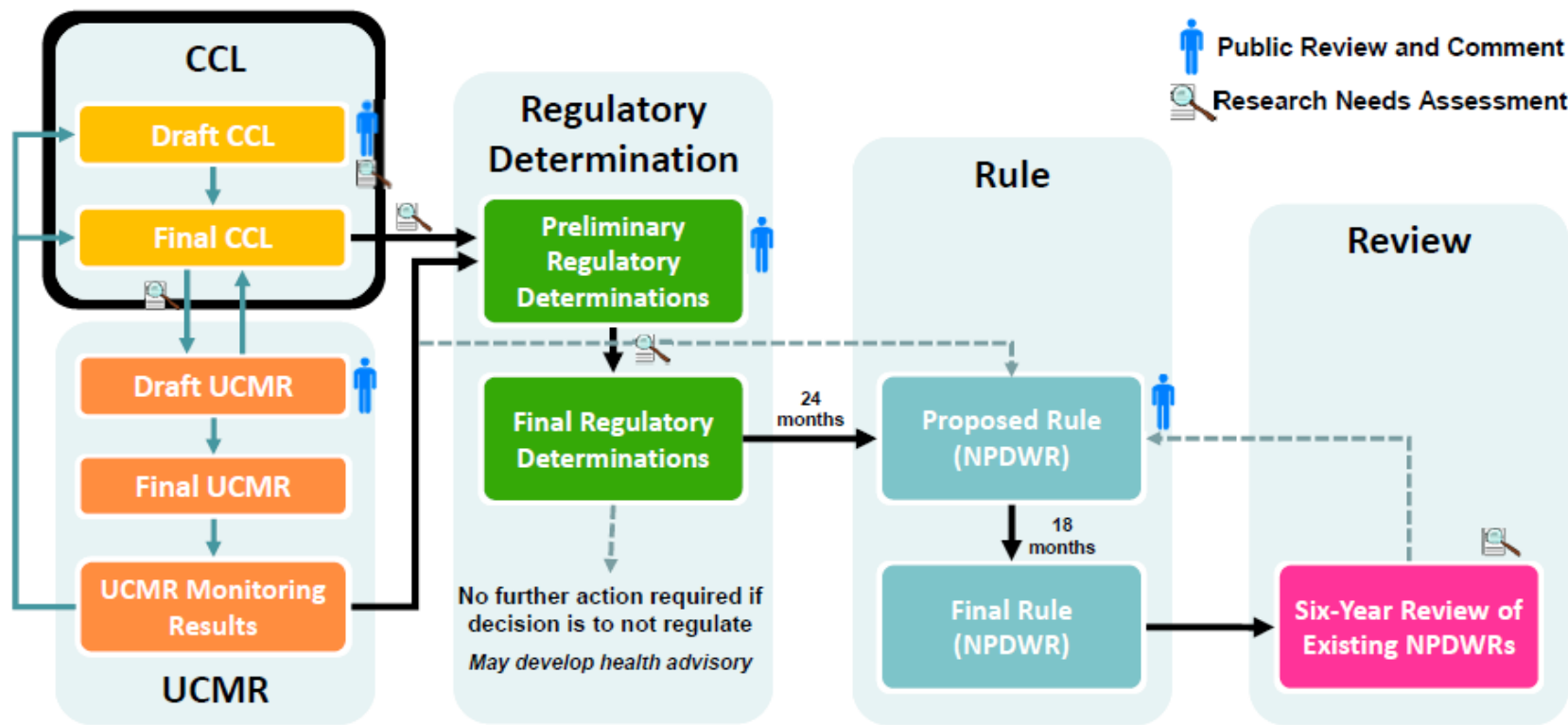
What is UCMR?

- Unregulated Contaminant Monitoring Rule
- Collect data for contaminants that are suspected to be present in drinking water but don't have health-based standards
- Occurrence data are collected
 - Is the contaminant there?
 - Who is affected and how much?

What is UCMR?

- The 1996 Safe Water Drinking Amendment required:
 - Monitoring no more than 30 contaminants every five years
 - Monitoring at all large systems and at representative sample of PWS serving less than 10,000 people, including non-community PWSs
 - Storing analytical results in the National Contaminant Occurrence Database (NCOD)

General Flow of SWDA Regulatory Process



Increased specificity and confidence in the type of supporting data used (e.g., health, occurrence, treatment) is needed at each stage

What is the CCL?

- Contaminant Candidate List
 - SDWA 1412(b)(1)(B)
- Identifies priority contaminants for regulatory decision making and information
- UCMR contaminant selection is based on the CCL



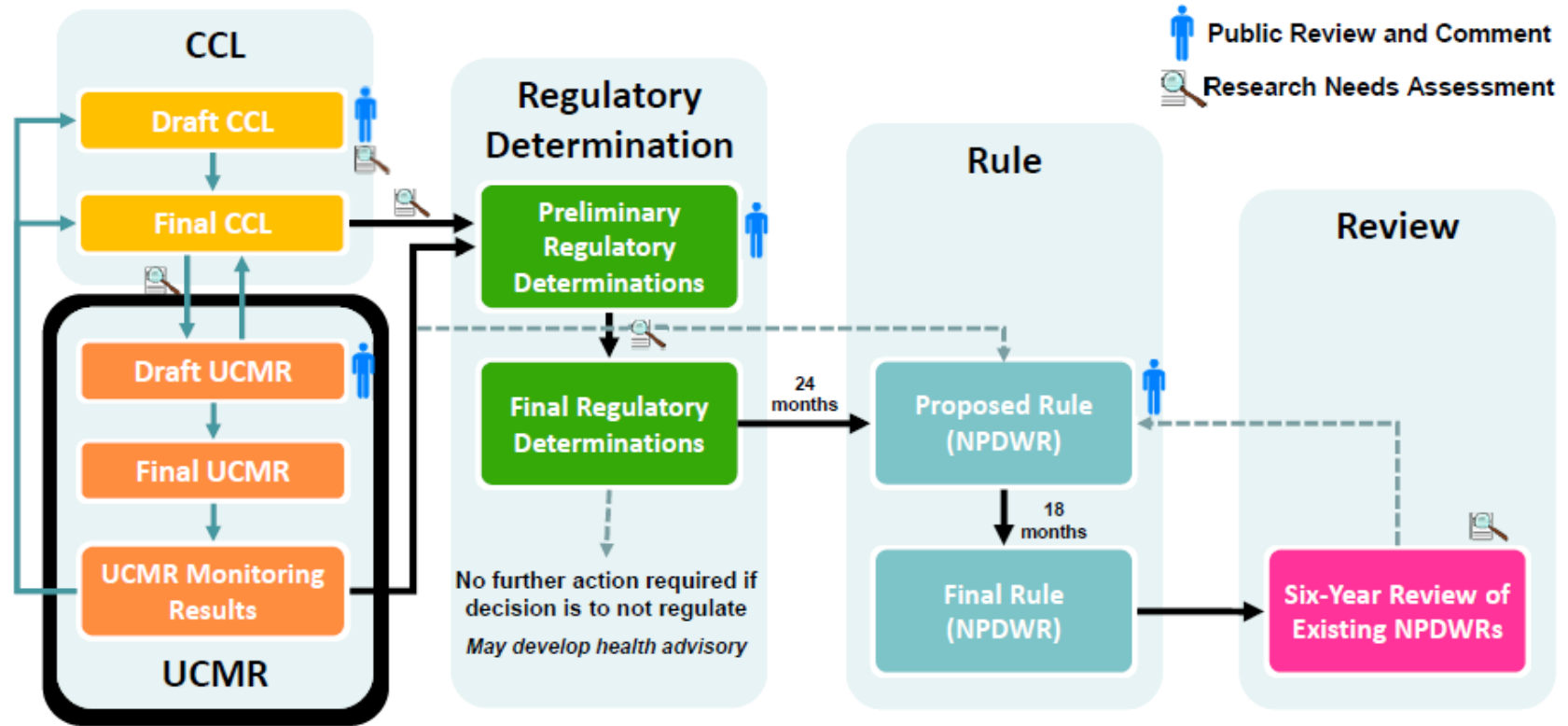
What is the CCL?

- Contaminants that:
 - Not regulated by the National Primary Drinking Water Regulations
 - Known or anticipated to occur at public water systems
 - May warrant regulation under the Safe Water Drinking Act

Draft CCL 5

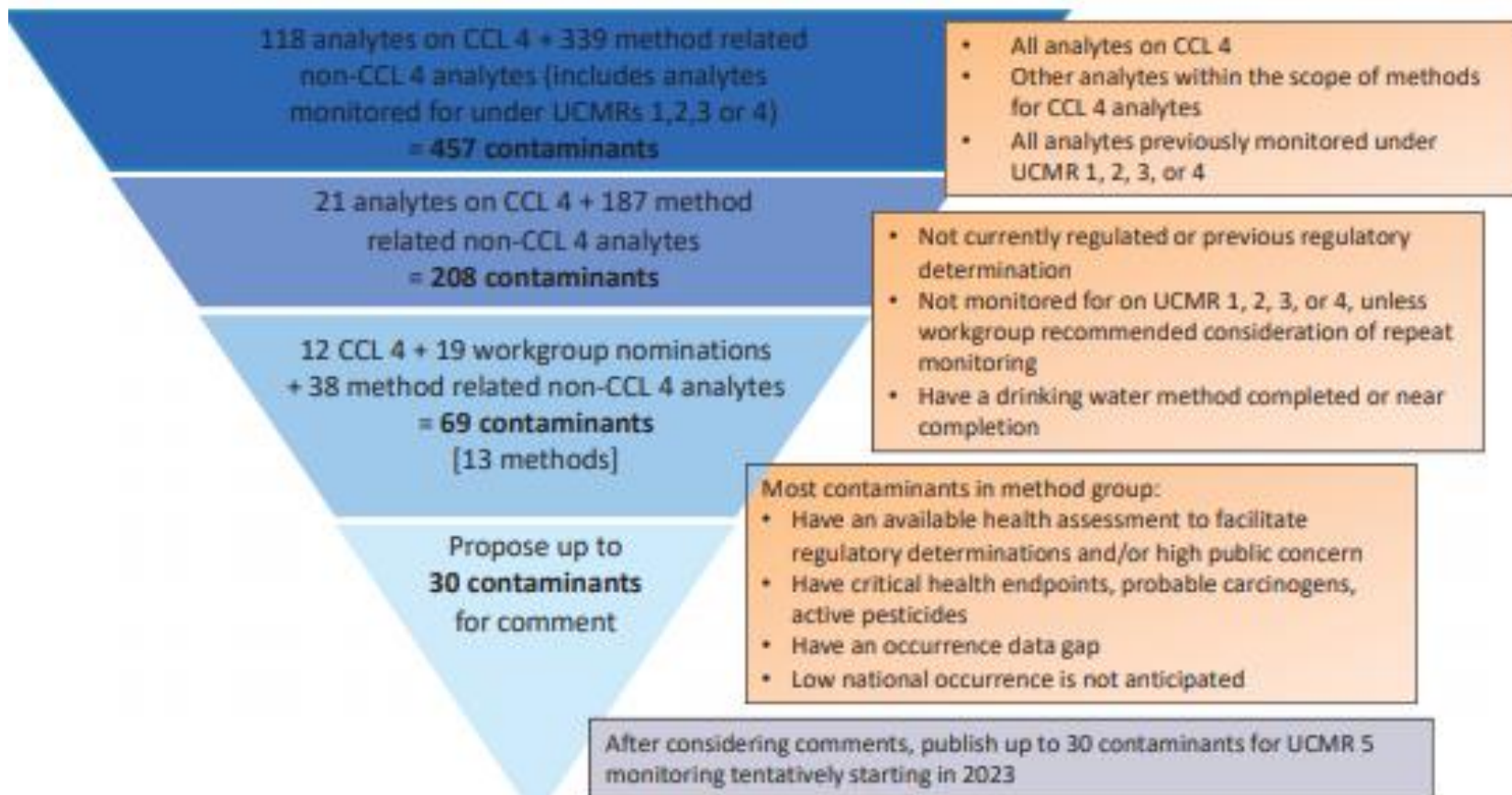
- Released July 19, 2021
- Contains:
 - 66 Chemicals
 - 3 Chemical groups
 - PFAS
 - Cyanotoxins
 - DBPs
 - 12 Microbes
- CCL 5 can be found at: www.epa.gov/ccl/contaminant-candidate-list-5-ccl-5
- Comments due September 17, 2021

General Flow of SWDA Regulatory Process



Increased specificity and confidence in the type of supporting data used (e.g., health, occurrence, treatment) is needed at each stage

How are contaminants picked?



Regulatory Determinations

- Every 5 years a regulatory determination is issued
 - Negative determination? No action
 - Positive determination? 24 months to make a rule
- Meeting the criteria for regulatory determinations:
 - May have adverse effect on health
 - Known to occur or is likely to occur in PWS with frequency and at levels of public health concern
 - Presents a meaningful opportunity for health risk reductions

History of UCMR

| UCMR Cycle Years | |
|------------------|-----------|
| UCMR1 | 2002-2006 |
| UCMR2 | 2007-2011 |
| UCMR3 | 2012-2016 |
| UCMR4 | 2017-2021 |
| UCMR5 | 2022-2026 |

Timeline of UCMR

| Year 1 | Year 2-4 | Year 5 |
|--|--|--|
| <p>Pre-monitoring Implementation</p> <ul style="list-style-type: none"> • Continuation of Lab Approval • PWS SDWARS registration/notification/Inventory • PAs, SMPs, SSIs, LSIs • GWRMP submittal • Outreach/trainings | <p>Monitoring</p> <p style="text-align: center;">← Implementation Activities →</p> <ul style="list-style-type: none"> • Assist PWSs with compliance • Implement small system monitoring • Post data quarterly to NCOD <p>Reporting and analysis of data</p> <ul style="list-style-type: none"> • All PWSs serving 3,300 or more people • Representative sample of small PWSs serving fewer than 3,300 people | <p>Post-monitoring Phase</p> <ul style="list-style-type: none"> • Complete resampling, as needed • Conclude data reporting • Finalize NCOD • Compliance assistance/enforcement, as needed |

Who Participates?

PWS Serving > 10,000 people

- All instructions, contact information, and monitoring schedules can be found on SDWARS
- Provide inventory information for each sampling location
- Monitor the contaminants per schedule
- Must sample and have analyzed
- Reviews own data
- Pays for analysis

PWS Serving < 10,000 people

- Collect samples using sampling kits following sampling instructions and monitoring schedule
- Returns sample kits to US EPA Contract Lab
- USEPA arranges sample analysis and will review results
- Recommend reviewing results in SDWARS
- US EPA pays for analysis

Ohio PWS Role

- Review and approve results within 60 days* of analysis
 - If PWS doesn't respond, the results are approved
 - Difficult to contest results after that



Ohio PWS Role

- All PWS must issue a PN about the availability of their results the year(s) they sampled
- Communities with detections must report those detections in their CCR

TABLE OF UNREGULATED CONTAMINANTS

| Contaminants (Units) | Sample Year | Average Level Found | Range of Detections |
|---------------------------------|-------------|---------------------|---------------------|
| Manganese (ppb) | 2018 | 0.624 | 0.45-0.88 |
| Haloacetic Acids (HAA5) (ppb) | 2018 | 55.1 | 41.2-65.3 |
| Haloacetic Acids (HAA9) (ppb) | 2018 | 62.1 | 43.1-74.1 |
| Haloacetic Acids (HAA6Br) (ppb) | 2018 | 57.3 | 42.1-67.3 |

- Non-community systems must issue a tier 3 PN

Ohio EPA Role

- Ohio EPA offers supportive role
 - Partnership agreement to determine roles/requirement of the state
 - Assists US EPA with questions and contacts for sampling
 - Regularly reviews data that is delivered to our systems and compares it to reference values or any known health values

Putting Values in Context

- Many different types of health-based values
 - Enforceable vs non-enforceable
 - No adverse effects
 - Different factors considered
- Difficult for the general public to differentiate
 - Can cause communication challenges
- None established for most UCMR candidates

What the L is this?

MCLG

- Determined for individual contaminant
- No adverse health effects
- Non-enforceable
- Aspirational goal

MCL

- Health Based
- Technology
- Cost
- Residual risk

HAL

- Non-enforceable
- Non-regulatory
- Provide technical information
- Several levels

Reference Concentration

- Health Based
- Provide context for UCMR detections
- Non-enforceable
- Non-Regulatory

MRL

- Based on analytical capabilities
- Not Health Based

Communicating Results

- UCMR risk communication is difficult
 - Is there Health based value?
 - Not a compliance program
 - Different audiences
 - Little guidance from US EPA



Communicating Results

- Ways to explain UCMR
 - It's a part of the regulatory process – the beginning
 - Answers 2 questions
 - Does it impact drinking water?
 - How much of the population is impacted?
 - Not meant to be used like compliance data
 - Reference concentrations are current benchmark
 - Health values are set conservatively
 - Risk comes from 3 aspects
 - Dose
 - Duration
 - Frequency

Communicating Results

- Ask for help or guidance if needed
 - Ohio EPA can help
 - Find resources
 - Provide CCR guidance
 - Connect PWS with US EPA
- It's important to stay on top of results
 - Allows PWS to gather resources and communicate more effectively
 - Transparency builds trust

UCMR 4 – Current Status

| UCMR 4 - Cycle Years | | | | |
|----------------------|----------|------|------|---------|
| 2017 | 2018 | 2019 | 2020 | 2021 |
| Set Up | Sampling | | | Wrap Up |

- Summary Information from US EPA
 - Released Quarterly
 - Available at www.epa.gov/dwucmr/data-summary-fourth-unregulated-contaminant-monitoring-rule

UCMR 4 – Ohio Systems Participating



Total PWS Sampled 205

- By Size
 - 158 Large PWS (>10,000 pop)
 - 47 Small PWS (<10,000 pop)
- By Source
 - 119 Surface Water Systems
 - 86 Ground Water Systems

UCMR 4 – Sampled Contaminants

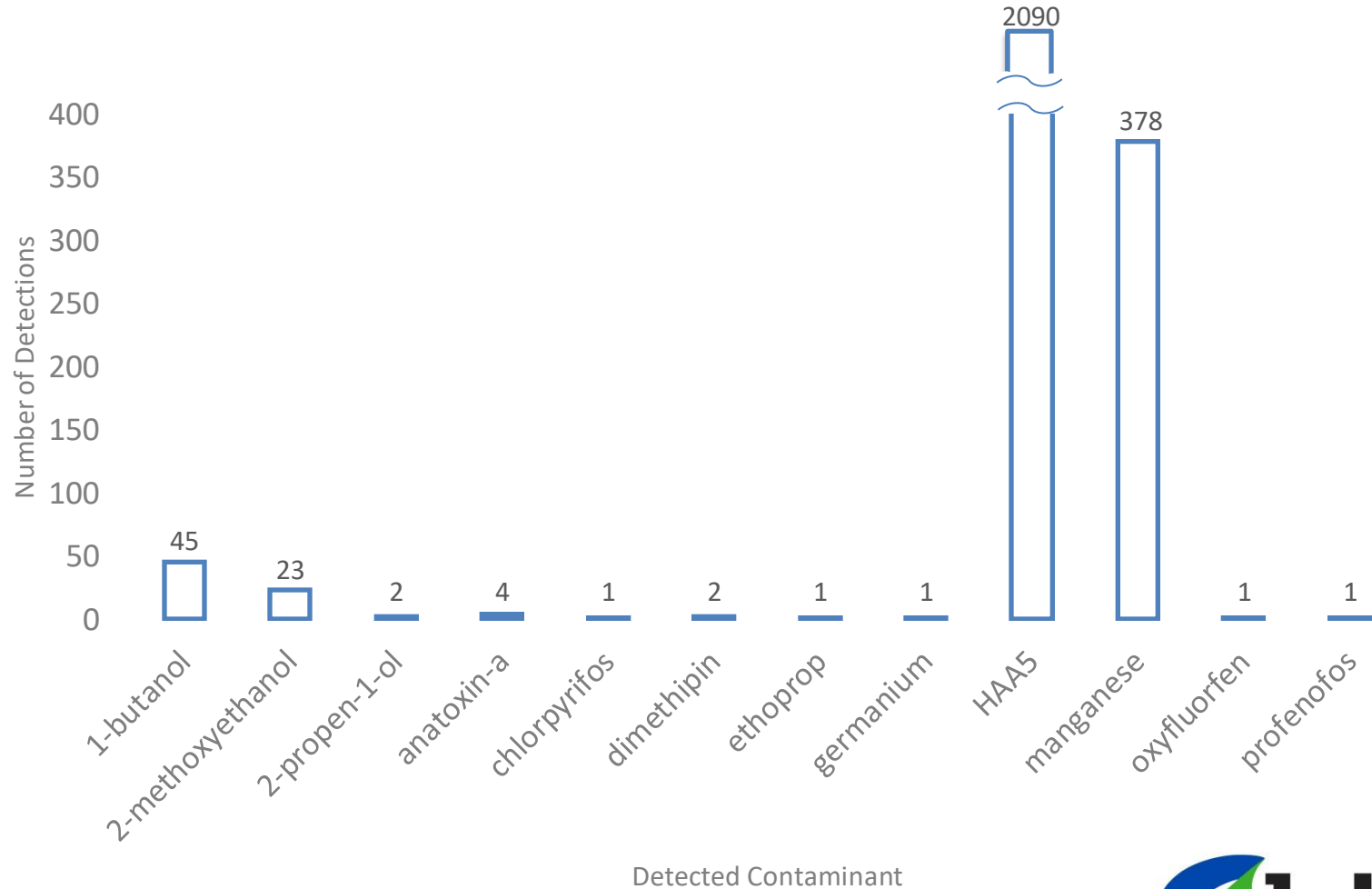
10 Cyanotoxins (Nine Cyanotoxins and One Cyanotoxin Group)

| | | | | |
|--------------------|----------------|----------------|--------------------|----------------|
| total microcystins | microcystin-LA | microcystin-RR | microcystin-LF | microcystin-YR |
| microcystin-LR | microcystin-LY | nodularin | cylindrospermopsin | anatoxin-a |

20 Additional Contaminants

| | | | | |
|---------------|------------------|----------------------------------|-------------|---------------|
| germanium | manganese | alpha-hexachlorocyclohexane | profenofos | chlorpyrifors |
| tebuconazole | dimethipin | total permethrin (cis- & trans-) | ethoprop | tribufos |
| oxyfluorfen | HAA5 | HAA6Br | HAA9 | 1-butanol |
| 2-propen-1-ol | 2-methoxyethanol | butylated hydroxyanisole | o-toluidine | quinoline |

UCMR 4 – Detected Contaminants



UCMR 5 – What's Next?

- Legislation Impacting UCMR
 - AWIA (2018)
 - Adds PWS Between 3300 and 10,000
 - National Defense Auth. Act (2019)
 - Requires sampling of all PFAS
 - Does not count towards 30 contaminants
- Pre-Publication Proposal
 - Released Feb 22, 2021
 - www.epa.gov/dwucmr/pre-publication-proposed-revisions-unregulated-contaminant-monitoring-rule-ucmr-5-public

| | | |
|----------------------|------|----------|
| UCMR 5 - Cycle Years | 2022 | Set Up |
| | 2023 | |
| | 2024 | Sampling |
| | 2025 | |
| | 2026 | Wrap Up |

UCMR 5 Proposed Contaminants

29 Per- and Polyfluoroalkyl Substances (PFAS)

EPA Method 533

| | |
|--|--|
| 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) | 4,8-dioxa-3H-perfluorononanoic acid (ADONA) (537.1) |
| 1H, 1H, 2H, 2H-perfluorohexane sulfonic acid (4:2 FTS) | Hexafluoropropylene oxide dimer acid (HFPO-DA) (537.1) |
| 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) | Perfluorobutanesulfonic acid (PFBS) (537.1) |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | Perfluorodecanoic acid (PFDA) (537.1) |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | Perfluorododecanoic acid (PFDoA) (537.1) |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | Perfluoroheptanoic acid (PFHpA) (537.1) |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | Perfluorohexanoic acid (PFHxA) (537.1) |
| Perfluorobutanoic acid (PFBA) | Perfluorohexanesulfonic acid (PFHxS) (537.1) |
| Perfluoroheptanesulfonic acid (PFHpS) | Perfluorononanoic acid (PFNA) (537.1) |
| Perfluoropentanesulfonic acid (PFPeS) | Perfluorooctanesulfonic acid (PFOS) (537.1) |
| Perfluoropentanoic acid (PFPeA) | Perfluorooctanoic acid (PFOA) (537.1) |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) (537.1) | Perfluoroundecanoic acid (PFUnA) (537.1) |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS) (537.1) | |

PFAS Analytes Unique to Method 537.1

| | |
|---|------------------------------------|
| N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | Perfluorotetradecanoic acid (PFTA) |
| N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | Perfluorotridecanoic acid (PFTrDA) |

One Metal/Pharmaceutical

EPA Method 200.7

lithium

UCMR 5 – Sampling Structure

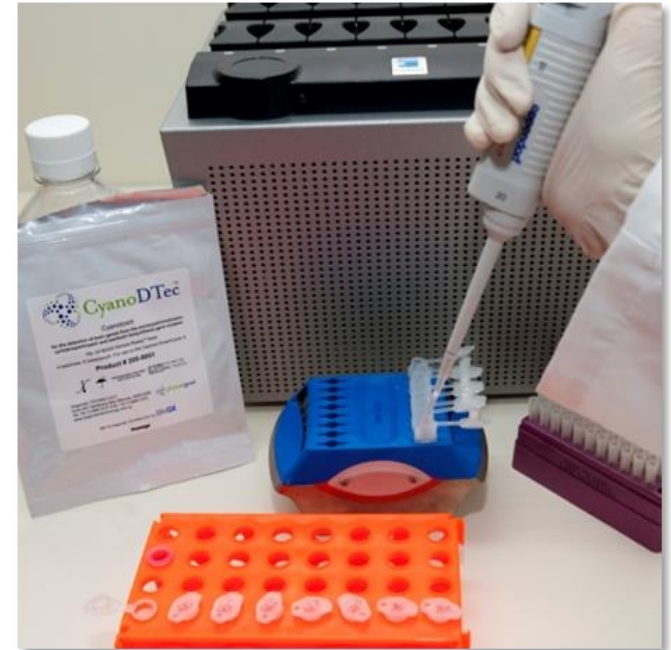
- All Large PWS (10,001 pop and over)
 - Self funded
 - Can request schedule changes
 - Approve data
- All PWS between 3,300 – 10,000pop
 - Pending Funding and Lab Capacity
 - US EPA Funded
 - Part of AWIA Amendments
- 800 Small PWS under 3,300 – Randomly Selected
 - ES EPA Funded

UCMR 5 – Sampling Structure

- Sampling Structure
 - GW Systems:
 - 2 samples in a year period (5-7 months apart)
 - SW Systems:
 - 4 samples 3 months apart in a year (Quarterly)
- Large Systems – Coordinate with their lab
- Small Systems – Sent kits from US EPA

UCMR 5 – Major Changes

- Shortened Reporting Times
 - Laboratory reporting 120 days to 90 days
 - PWS Approval 60 days to 30 days
- The addition of Small Systems over 3,300 pop. (AWIA)
 - UCMR 4: 41 Small PWS
 - UCMR 5: 162 + representative sample of small PWS
- Inclusion of all measurable PFAS (NDAA)



Why so much PFAS?

- Lots of federal movement on PFAS
 - Positive Regulatory Determination for PFOA and PFOS
 - Feds have 2 years to propose NPDWR for PFOA/PFOS
 - Additional 18 months to finalize rule
 - PFAS as a group have been added to Draft CCL5
 - Interim Guidance for Destroying and Disposing of PFAS (2020)
 - Interim Ground Water Clean-up Guidance (2020)

State of Ohio PFAS Action Plan

- State of Ohio PFAS Action Plan release 2019
 - Objectives
 - Gather Sampling data from Ohio PWSs
 - Assist private systems with guidelines and resources
 - Establish action levels
 - Develop and disseminate educational materials
 - Implement long term preventative measures
 - Joint effort by Ohio EPA and ODH
 - 6 PFAS sampled
 - Included all C and NTNC PWS

State of Ohio PFAS Action Plan – PFAS Sampled

| PFAS Chemicals* | PFOA | PFOS | GenX | PFBS | PFHxS | PFNA |
|--|----------------------------------|----------------------------------|-------|----------|-------|------|
| Action Level in parts per trillion (ppt) | >70 single or combined with PFOS | >70 single or combined with PFOA | > 700 | >140,000 | > 140 | > 21 |

*PFOA (Perfluorooctanoic Acid), PFOS (perfluorooctane Sulfonate), GenX (HFPO dimer acid), PFBS (perfluorobutanesulfonic acid), PFHxS (perfluorohexane sulfonic acid), and PFNA (perfluorononanoic acid).

- Action Level
 - A level of concentration of a contaminant that when exceeded warrants remedial action

State of Ohio PFAS Action Plan - Results

| PWS Facilities Sampled | Initial Samples, EP and RW | Facilities with PFAS Detections in Finished Water | Facilities with Non-Detections in Finished Water |
|------------------------|----------------------------|---|--|
| | | 5.6% | 94.4% |
| 1,562 | 2,910 | 87 | 1475 |

- Results found at pfas.ohio.gov

State of Ohio PFAS Action Plan vs PFAS in UCMR 5

Ohio PFAS Action Plan

- Sampled All C and NTNC Primary DW Producers in Ohio
- MRL's 5ppt for PFOS, PFOA, PFBS, PFHxS and PFNA; 25 ppt for Gen x
- Included 6 PFAS contaminants
- Established action levels

UCMR 5

- Samples all C and NTNC systems >3300 population including consecutive systems
- Lower MRLs
- Includes 29 PFAS contaminants
- Reference Concentrations and HALS not established for many PFAS

How do I Prepare?

Evaluate if your system will participate

- Am I operating a system over 3300 population?

Familiarize yourself with the process

- What will be required of my system?
- How do I access my results?
- How often should I review them?
- How and when do I put them in my CCR?

Familiarize yourself with the contaminants

- Do I know enough about them to communicate effectively to my management, government officials, and the public?
- Does my system have any previous data on these contaminants?

Look for Guidance

- Guidance will be offered both from Ohio EPA and US EPA

Questions?

Ohio EPA | Division of Drinking and Ground Waters

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