



UCMR5: What to Expect

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Overview of this presentation



- 1) Past UCMR's and their effects on compliance testing.
- 2) UCMR5 Information and Requirements
- 3) Questions and Answers

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UCMR Purpose



“To collect occurrence data for contaminants suspected to be present in drinking water but don’t have health-based standards set under the Safe Drinking Water Act (SDWA).”*

- **Drinking water occurrence information is used to support future regulatory actions to protect public health.**
- **Public will benefit from information about whether or not unregulated contaminants are present in their drinking water.**

***EPA Fact Sheet EPA 815-F-12-003**

UCMR Process



Unregulated Contaminant Monitoring Rule

Negotiated agreement on how DW parameters are regulated

- **Contaminant Candidate List (CCL) – Parameters with known or suspected health effects that may be regulated in the future**
- **Occurrence Data – UCMR**
- **Treatment Feasibility**
 - **Technologically Possible**
 - **Economically Reasonable**

UCMR1 History



- **Samples collected between 2001-2003**
- **26 Contaminants targeted. (2 Lists)**
- **Major contaminants now present on some SDWA state lists:**
 - **4,4'-DDE (a product of DDT; insecticide)**
 - **MTBE (octane enhancer in unleaded gas)**
 - **Nitrobenzene (used in drugs, herbicides, & dyes)**
 - **Perchlorate (oxygen additive in solid fuel propellant)**

UCMR2 History



- **Samples collected between 2008 – 2010**
- **25 Contaminants targeted. (2 Lists)**
- **2 priority compounds, 5 flame retardants, 3 explosives, 3 parent herbicides, 6 herbicide degradates, 6 nitrosamines**
- **Major contaminants now present on some state SDWA lists:**
 - **Alachlor (herbicide to control broadleaf weeds)**
 - **Metolachlor (herbicide used for wide variety of weeds)**
 - **Nitrosamines**

UCMR3 History



- **Samples collected between 2013-2015**
- **30 Contaminants targeted. (28 chemicals and 2 viruses)**
- **7 VOC's, 1 SOC, 6 Metals, 1 Anion, 6 PFC's, 7 Hormones, 2 Viruses (some methods are dropped by labs)**
 - **1,2,3-TCP (cleaning & degreasing solvent; pesticides)**
 - **1,1-dichloroethane (solvent / fumigant)**
 - **1,4 Dioxane (stabilizer for chlorinated solvents)**
 - **PFC's (now called PFAS & we know all about them)**

UCMR4 History



- **Samples collected between 2018-2020**
- **30 Contaminants targeted. (2 metals, 9 pesticides, 3 Brominated HAA's, 3 alcohols, 3 semi-volatiles, 2 indicators) 10 Microcystins (Surface Water Systems only)**
- **Samples were collected from sources, entry points, and the distribution system.**

What is a part per trillion (ppt)?



- 1 postage stamp in the area of the city of Dallas
- 1 inch in 16 million miles (600 times around the Earth)
- 1 second in 520 centuries
- 1 flea on 360 million elephants
- 1 grain of sugar in an Olympic sized swimming pool
- Most PFAS compounds can reported to 2.0 ppt

UCMR5 Timeline of Activities



2022	2023	2024	2025	2026
Pre-sampling Activity by EPA <ul style="list-style-type: none"> • Manage Lab Approval Program • Organize Partnership Agreements and State Monitoring Plans • Begin PWS SDWARS registration/inventory • Review GWRMP submittal • Conduct outreach/trainings 	Sampling Period			Post-sampling Activity
	EPA Implementation Activities			
	<ul style="list-style-type: none"> • Provide compliance assistance • Implement small system monitoring • Post data quarterly to NCOD 			PWSs, Laboratories <ul style="list-style-type: none"> • Complete resampling, as needed • Conclude data reporting
	PWS Sample Collection; Laboratory Analysis; Reporting			EPA <ul style="list-style-type: none"> • Complete upload of UCMR 5 data to NCOD
	<ul style="list-style-type: none"> • All large systems serving more than 10,000 people; • All small systems serving between 3,300 and 10,000 people; • 800 small systems serving fewer than 3,300 people 			

UCMR5 Scope



Assessment Monitoring: 30 Contaminants & Methods	25 PFAS compounds by EPA Method 533 4 PFAS compounds by EPA Method 537.1 Lithium by EPA Method 200.7, SM 3120 B (2017), SM 3120 B-99 (1999), or ASTM D1976-20
Very Small Systems (25 – 3,299)	800 randomly selected surface water (SW), ground water under the direct influence of surface water (GWUDI), and ground water (GW) systems. (EPA paying as long as funds are available.)
Small Systems (3,300 – 10,000)	All SW, GWUDI, and GW systems (~5,100) (EPA paying as long as funds are available.)
Large Systems (10,001 and over)	All SW, GWUDI, and GW systems (~4,400)

EPA UCMR5 Contract for Small Systems



800 Very Small Systems + ~5,100 Small Systems

Testing will last all three years as long as the government has the funding.

- **Eurofins Eaton Analytical, LLC – South Bend (IN)**
- **Eurofins Eaton Analytical, LLC – Monrovia (CA)**
- **Babcock Laboratories, Inc (CA)**
- **Weck Analytical Environmental Services, Inc (CA)**
- **Northern Lake Service, Inc (WI)**
- **Eastex Environmental Labs (TX)**

29 PFAS for UCMR5 (2023-2025)



533	PFBA	PFPeA	PFHxA	PFHpA	PFOA
	PFNA	PFDA	PFUnA	PFDoA	PFBS
	PFPeS	PFHxS	PFHpS	PFOS	PFEESA
	4:2 FTS	6:2 FTS	8:2 FTS	HFPO-DA*	ADONA
	9Cl- PF3ONS	11Cl- PF3OUdS	PFMBA	PFMPA	NFDHA
537.1	NEtFOSAA	NMeFOSAA	PFTTrDA	PFTeDA	

UCMR5 Sampling Highlights



- **Anticipating a total of ~10,300 systems**
- **Samples collected during 2023-2025**
- **Sampling schedules are located on the EPA CDX (Central Data Exchange) website**
- **All samples along with field reagent blanks (FRBs) are to be collected at entry points to the distribution system (EPTDS). (No SR or DS this time.)**
- **SW, GUDI, MX systems sample 4 times (~3 months apart).**
- **GW systems sample 2 times (5-7 months apart).**
- **Systems must assign the following Sample Event (SE) codes:**
 - SE1 & SE2 represent the the 1st and 2nd sampling periods for all water types.
 - SE3 & SE4 represent the 3rd and 4th sampling periods for SW, GU, and MX sources only.

UCMR5 Sampling Highlights (Cont'd)



- **FRBs are to be extracted and analyzed only if the associated field sample has detects above the reporting limit. (See next slide.)**
- **Within 90 days of sample collection: Laboratories post monitoring results to EPA's electronic reporting system, SDWARS.**
- **Within 30 days of lab posting data: PWSs serving more than 10,000 people may review and approve data.**

UCMR5 Reporting Limits



- **2 PFAS compounds - RL of 2.0 ppt**
- **12 PFAS compounds - RL of 3.0 ppt (-HxS, -HpA, -DA)**
- **5 PFAS compounds - RL of 4.0 ppt (-OA, -OS, -NA)**
- **6 PFAS compounds - RL of 5.0 ppt (GenX)**
- **1 PFAS compound – RL of 6.0 ppt**
- **1 PFAS compound – RL of 7.0 ppt**
- **1 PFAS compound – RL of 8.0 ppt**
- **1 PFAS compound – RL of 20.0 ppt**

UCMR5 Conclusions



- EPA Methods 537.1 is one of two current methods commonly used for drinking water analyses. (It is also used for all aqueous matrices.)
- EPA Method 533 is only suitable for finished drinking waters or pristine non-potable water. (Some states offer certification for this method. In northeast: NJ, NY, PA)
- Careful attention should be given to Field Sample / Field Reagent Blank bottles to avoid possible issues with data.
- UCMR5 PFAS Method Reporting Limits are equal to or slightly higher than the current laboratory MRLs.

Drinking Water PFAS Regulations



- USEPA
 - 2013-2015 UCMR3 for 6 PFAS with MRLs of 10-90 ng/L by EPA Method 537
 - Health Advisories (2016): PFOA/PFOS or PFOA + PFOS = 70 ng/L
 - 2023-2025 UCMR5 for 29 PFAS with MRLs of 2-20 ng/L by EPA Methods 537.1 and 533
 - MCLs for PFOA & PFOS? Maybe very soon.
- States with DW Regulations as of August 2022
 - Established MCLs: MA, ME, MI, NH, NJ, NY, VT
 - Established NLs: CA, WA
 - Health Advisory: CT
 - Guidance Levels: CO, DE, MD, MN, NC, NV, OH
- Examples
 - Individual PFAS NJ MCLs: PFNA = 13 ng/L, PFOA = 14 ng/L, PFOS = 13 ng/L
 - Sum of PFAS MA MCL: PFOA + PFHxS + PFOS + PFHpA + PFNA + PFDA = 20 ng/L

Shipping Instructions



- If samples are being sent directly to the testing lab, make sure they are overnighted to the testing lab.
- Maximum temperature of samples can be 10 degrees C within 48 hours of collection
- If samples not received within 48 hours, then sample temp must be 6 degrees or less.
- Maximum hold time to start analysis is 14 days for method 537.1, 28 days for method 533, and 45 days for Lithium.

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Any Questions?



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