



The Third Unregulated Contaminant Monitoring Rule (UCMR 3)

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Presentation Overview

- Statutory background
- UCMR in the regulatory process
- Structure of UCMR 3
 - Lists 1, 2 and 3
 - Monitoring schedule
 - Reporting results
- How UCMR data are used
- Additional resources



Statutory Background

- Safe Drinking Water Act enacted in 1974
 - Authorized EPA to set enforceable health standards (National Primary Drinking Water Regulations) for contaminants in drinking water
 - Outlined a sound science approach to NPDWR development that required consideration of:
 - Occurrence Data
 - Health Effects Data
 - Cost Benefit Analysis



Statutory Background

- 1986 Amendments
 - Established Unregulated Contaminant Monitoring (UCM) Program
 - EPA chemical Phased Regulations: Phase I, II, and V
 - States managed UCM Program through primacy
 - PWSs must monitor except those serving <150 service connections
 - Repeat monitoring every 5 years
 - Reported data used for setting drinking water standards
 - Total 84 contaminants monitored, of which 48 remained unregulated by 1999



Statutory Background

- 1996 Amendments revised the UCM program
 - No more than 30 contaminants per 5-year cycle
 - Promulgate regulations establishing criteria for monitoring program
 - Unregulated Contaminant Monitoring Regulation (UCMR)
 - monitoring frequency & schedule varied based on population served, source of supply, and contaminants likely to be found
 - representative sample of systems serving <10,000
 - EPA funds testing/analytical costs for small systems
 - Analytical results placed in National Drinking Water Contaminant Occurrence Database (NCOD)
 - Public notification of results



Statutory Background

- 1996 Amendments also directed:
 - Contaminant Candidate List (CCL):
 - Identify unregulated contaminants of public health concern that are known or anticipated to occur in public water systems and may require regulation
 - Determine whether to regulate the contaminants on the list based on three criteria (Regulatory Determination)
 - Six Year Review:
 - Review regulations for regulated contaminants every six years



Requirements for Regulatory Determination

- Decide whether to regulate at least 5 contaminants on the CCL with a drinking water standard every 5 years
- Must consider these three criteria for the contaminant:
 - 1) *May have an adverse effect on the health of persons;*
 - 2) *Known to occur or substantial likelihood that the contaminant will occur in PWSs with a frequency and at levels of public health concern; and*
 - 3) *In the sole judgment of the Administrator, regulation presents a meaningful opportunity for health risk reduction for persons served by PWSs*



Outcome of Regulatory Determination

- No Determination
 - Insufficient data to assess the 3 statutory criteria
- To Regulate
 - Meet all 3 statutory criteria
 - Begin process to develop drinking water regulation
- Not to Regulate
 - Any one of the 3 statutory criteria is not met
 - Do not develop drinking water regulation
 - Consider health advisory as a non-regulatory option
 - If new health or occurrence information becomes available, consider for next CCL and regulatory determination process



Factors in Regulation Development

- Characterization of health risk (mode of action, sensitive populations, etc.)
- Relative contribution from drinking water to overall exposure to contaminant
- Available reliable analytic methods
- Feasibility and cost of treatment

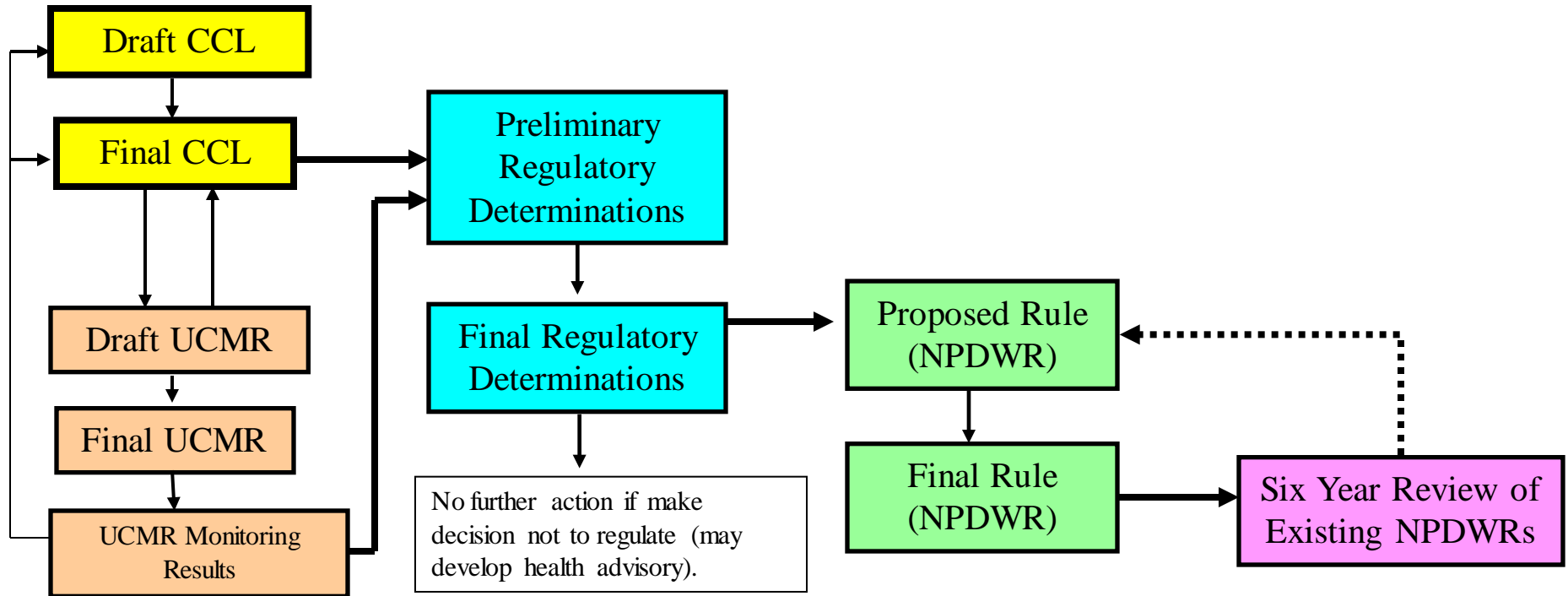


Objectives of UCMR Program

- Collect occurrence data for suspected drinking water contaminants that do not have health-based standards set under SDWA
 - Contaminants of concern that are known to occur or may occur in finished drinking water
- Occurrence information is used to:
 - Estimate population exposure in support of the Administrator's determination of whether (or not) to regulate a contaminant
 - Guide the development of subsequent Contaminant Candidate List (CCL)



Regulatory Process



At each stage, need increased specificity and confidence in the type of supporting data used (e.g. health and occurrence).



UCMR Program Structure

- EPA directly implements the rule
 - States can participate through voluntary Partnership Agreements
- Samples must be analyzed at EPA-approved laboratories
- Uses mostly new or enhanced analytical methods
- Data reported for large system by laboratories to SDWARS
 - Large PWS review, approve, submit data
 - Data then available for State review
 - Approved data entered into NCOD
- EPA stores small system data in separate database
 - EPA reports data to PWSs and states
 - Small PWSs review data before posted to NCOD
- EPA pays for sample collection/analysis costs for small PWSs



UCMR Program Structure (cont)

Tiered Monitoring

Assessment Monitoring (List 1)

- Employs commonly used analytical techniques
- To obtain national occurrence data

Screening Survey (List 2)

- Uses more recently developed analytical techniques
- To develop a preliminary assessment of national occurrence that may be difficult to monitor at the larger scale of Assessment Monitoring

Pre-Screen Testing (List 3)

- Uses newly developed specialized methods
- To determine if contaminants exist in targeted PW Ss with most vulnerable conditions



UCMR Program Structure (cont)

Nationally Representative Sample

Assessment Monitoring (List 1)

- CWS & NTNCW serving >10,000 must monitor
- A statistical sample of 800 small systems serving $\leq 10,000$

Screening Survey (List 2)

- A statistical sample of 300 large and small systems (UCMR1 only)
- Starting with UCMR 2, a statistical sample of 800 systems serving $\leq 100,000$ (starting cycle 2) plus all serving $> 100,000$

Pre-Screen Testing (List 3)

- No nationally representative sample
- States select most vulnerable systems



Time Line of UCMR 3 Activities

2012	2013	2014	2015	2016
<p>Pre-monitoring Implementation</p> <ul style="list-style-type: none"> • Lab Approval • Notifications • SDWARS Registration <ul style="list-style-type: none"> • Inventory • Schedule 	<p style="text-align: center;">Sampling and Reporting Period</p> <p>One consecutive 12-month period during January 2013 - December 2015 (monitoring can span more than one calendar year, as long as conducted during a consecutive 12-month period).</p>			<p>Post-monitoring Phase</p> <ul style="list-style-type: none"> • Complete Resampling • Conclude Data Reporting • Finalize NCOD • Continue Enforcement



UCMR 3 System Applicability

Assessment Monitoring (List 1 Contaminants)		
<i>System Type</i>	<i>Systems Serving > 10,000</i>	<i>Systems Serving ≤ 10,000</i>
CWS & NTNCWS	All systems (~4,200)	800 randomly selected systems
TNCWS	No requirements	No requirements
Screening Survey (List 2 Contaminants)		
<i>System Type</i>	<i>Systems Serving > 10,000</i>	<i>Systems Serving ≤ 10,000</i>
CWS & NTNCWS	All systems (~410) serving more than 100,000, and ~320 randomly selected systems serving 10,001 to 100,000	480 randomly selected systems
TNCWS	No requirements	No requirements
Pre-Screen Testing (List 3 Contaminants)		
<i>System Type</i>	<i>Systems Serving > 1,000</i>	<i>Systems Serving ≤ 1,000</i>
CWS, TNCWS & NTNCWS	No requirements	800 randomly selected systems



UCMR 3 List 1 Contaminants

Assessment Monitoring: List 1 Contaminants	MRL (µg/L)
Volatile Organic Compounds – EPA Method 524.3	
chloromethane (methyl chloride)	0.2
bromomethane (methyl bromide)	0.2
chlorodifluoromethane (HCFC-22)	0.08
bromochloromethane (halon 1011)	0.06
1,1-dichloroethane	0.03
1,2,3-trichloropropane	0.03
1,3-butadiene	0.1
Synthetic Organic Compound – EPA Method 522	
1,4-dioxane	0.07

EPA will pay for all analytical and shipping costs associated with List 1 monitoring at small systems ($\leq 10,000$). 17



UCMR 3 List 1 Contaminants

Assessment Monitoring: List 1 Contaminants	MRL (µg/L)
Perfluorinated Compounds– EPA Method 537	
perfluorooctane sulfonic acid (PFOS)	0.04
perfluorooctanoic acid (PFOA)	0.02
perfluorononanoic acid (PFNA)	0.02
perfluorohexane sulfonic acid (PFHxS)	0.03
perfluoroheptanoic acid (PFHpA)	0.01
perfluorobutanesulfonic acid (PFBS)	0.09
Oxyhalide Anion – EPA Method 300.1; SM 4110D; ASTM D658-08	
chlorate	20



UCMR 3 List 1 Contaminants

Assessment Monitoring: List 1 Contaminants	MRL (µg/L)
Metals – EPA Method 200.8; SM 3125; ASTM D5763-10	
cobalt	1
molybdenum	1
strontium	0.3
vanadium	0.2
chromium	0.2
Chromium-6 – EPA Method 218.7	
chromium-6	0.03

EPA will pay for all analytical and shipping costs associated with List 1 monitoring at small systems ($\leq 10,000$).



UCMR 3 List 2 Contaminants

Screening Survey: List 2 Contaminants	MRL ($\mu\text{g/L}$)
Hormones – EPA Method 539	
17- β -estradiol	0.0004
17- α -ethynylestradiol (ethinyl estradiol)	0.0009
16- α -hydroxyestradiol (estriol)	0.0008
equilin	0.004
estrone	0.002
testosterone	0.0001
4-androstene-3,17-dione	0.0003

EPA will pay for all analytical and shipping costs associated with List 2 monitoring at small systems ($\leq 10,000$).



UCMR 3 List 3 Contaminants

Pre-Screen Testing: List 3 Contaminants	Detection Assay
Microbiological Contaminants – EPA Method 1615	
enterovirus	Cell culture; qPCR
norovirus	qPCR
Microbiological Indicators	
total coliforms	
<i>E. coli</i>	
<i>Enterococci</i>	
bacteriophage	
aerobic spores	

EPA will collect the samples from List 3 sampling locations, and will pay for all analytical and shipping costs associated with viruses and indicators at these small systems ($\leq 1,000$).



Monitoring Schedule

- PWSs must monitor during a consecutive 12-month period between 2013 – 2015
- EPA established a monitoring schedule for all PWSs
- Frequency of monitoring according to source
 - **Surface water and “ground water under the direct influence of surface water”** – must monitor quarterly during their 12-month schedule (sample three months apart)
 - **Ground water** – must monitor twice a year during their 12-month schedule (sample five to seven months apart)



UCMR 3 Sampling Locations

Contaminant Type	Sampling Location Type
Assessment Monitoring: List 1 Contaminants	
Volatile Organic Compounds	EPTDS
Synthetic Organic Compound (1,4-dioxane)	EPTDS
Perfluorinated Compounds	EPTDS
Oxyhalide Anion (chlorate)	EPTDS and DSMRT
Metals	EPTDS and DSMRT
Chromium-6	EPTDS and DSMRT
Screening Survey: List 2 Contaminants	
Hormones	EPTDS
Pre-Screen Testing: List 3 Contaminants	
Viruses	EPTDS



UCMR 3 Data Reporting

- **Samples must be analyzed by EPA-approved laboratories**
 - EPA-approved laboratories will be listed on the UCMR Website at:
<http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/laboratories.cfm>
- **Within 120 days of sample collection**
 - Laboratories post data to SDWARS
- **Within 60 days of lab posting data**
 - PWSs review and approve the data
 - If the PWS has not taken action after 60 days, the data are considered approved and ready for State and EPA review



CCR and PN Requirements

- Water systems monitoring under UCMR 3 should also be aware of related requirements:
 - Consumer Confidence Reports

Suggested explanation of monitoring:

Unregulated contaminants are those that don't yet have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard.

More information on CCR requirements:

US EPA <http://water.epa.gov/lawsregs/rulesregs/sdwa/ccr/index.cfm>

– Public Notifications

- <http://water.epa.gov/lawsregs/rulesregs/sdwa/publicnotification/upload/PNrevisedPNHandbookMarch2010.pdf>



EPA Use of UCMR 3 Data

- EPA will update the data set quarterly in the National Contaminant Occurrence Database (NCOD)
 - www.epa.gov/safewater/databases/ncod/index.html
- Data will continue to be added and may be corrected upon further review
 - Use caution when interpreting the data before the dataset is complete (mid-late 2016)
- UCMR 3 is one of the primary sources of occurrence and exposure information the agency will use to develop regulatory determinations for contaminants of concern



History of UCMR

- UCMR 1 - 2001-2005
 - 26 contaminants
- UCMR 2 - 2007-2011
 - 25 contaminants
- UCMR 3 - 2012-2016
 - 29 contaminants
 - Plus total chromium



UCMR1 (2001-2005)

Contaminant	CCL2 Regulatory Determination
Perchlorate	Regulate (2/11/2011) – off of CCL Reg det cycle
2,4-dinitrotoluene	Not regulate; update Health Advisory; encourage states to consider site-specific measures, guidance
2,6-dinitrotoluene	Not regulate; update Health Advisory; encourage states to consider site-specific measures, guidance
DCPA mono/di-acid degradate	Not regulate; update Health Advisory; encourage states to consider site-specific measures, guidance
4,4-DDE	Not regulate; encourage states to consider site-specific measures, guidance
EPTC	Not regulate
Fonofos	Not regulate
Terbacil	Not regulate



UCMR2 (2007-2011)

Data being evaluated under CCL3 Regulatory Determination

Nitrosamines

NDMA

NDEA

NPYR

NDBA

NMEA

NDPA

Insecticide & Insecticide Degradate

Dimethoate

Terbufos sulfone

Flame Retardants

BDE-47

BDE-99

BDE-153

BDE-100

HBB

Explosives

TNT

1,3-dinitrobenzene

RDX

Acetanilide Herbicides Parent and Degradates

Acetochlor

Acetochlor ESA

Acetochlor OA

Alachlor

Alachlor ESA

Alachlor OA

Metolachlor

Metolachlor ESA

Metolachlor OA



UCMR 3 Contacts

- UCMR Questions?
 - UCMR Message Center: (800) 949-1581
 - Email: UCMR3@glec.com
- Safe Drinking Water Questions?
 - Safe Drinking Water Hotline: (800) 426-4791
- CDX/SDWARS Help?
 - CDX helpdesk: (888) 890-1995
 - Email:

To...	<input type="text" value="epacdx@csc.com"/>
Cc...	<input type="text"/>
Subject:	<input type="text" value="UCMR 3 SDWARS Help"/>



UCMR 3 Contacts

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More Information

UCMR 3 Web Pages:

<http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/>

- Links to:
 - Basic Information
 - Laboratories
 - Methods & Contaminants
 - Reporting

Unregulated Contaminant Monitoring Rule 3 (UCMR 3)

[UCMR 3 Home](#)

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The third Unregulated Contaminant Monitoring Rule (UCMR 3) was signed by EPA Administrator, Lisa P. Jackson on April 16, 2012. As finalized, UCMR 3 will require monitoring for 30 contaminants using EPA and/or consensus organization analytical methods during 2013–2015. Together EPA, States, laboratories and public water systems (PWSs) will participate in UCMR 3.

Federal Register Notice

[Final Revisions to the Unregulated Contaminant Monitoring Rule \(UCMR 3\) for Public Water Systems, May 2, 2012](#)

The UCMR design divides contaminants into three types of monitoring. UCMR 3 includes monitoring under each of the three lists, as follows: