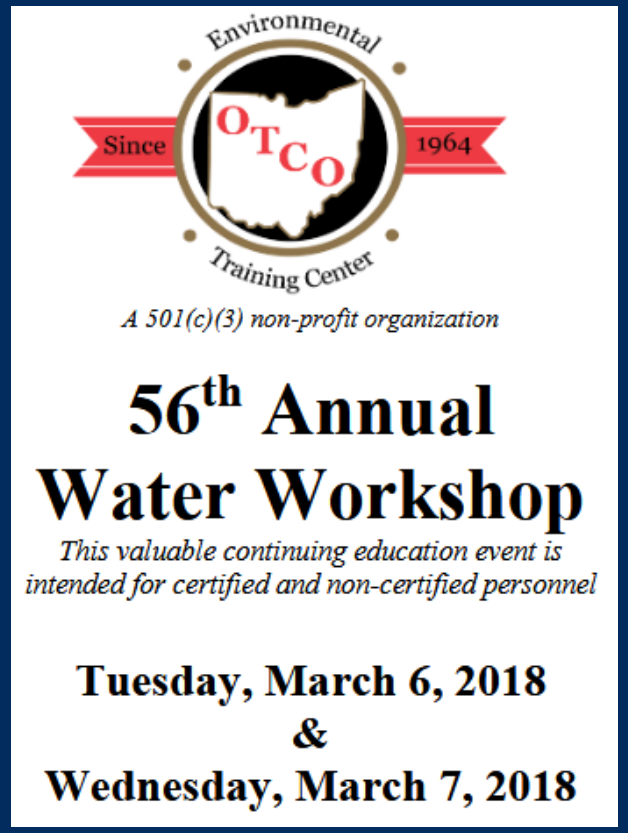
Unregulated Contaminant Monitoring Rule (UCMR4) - A Utility Perspective



Jeffrey Kauffman
March 7, 2018
jkauffman@delcowater.com

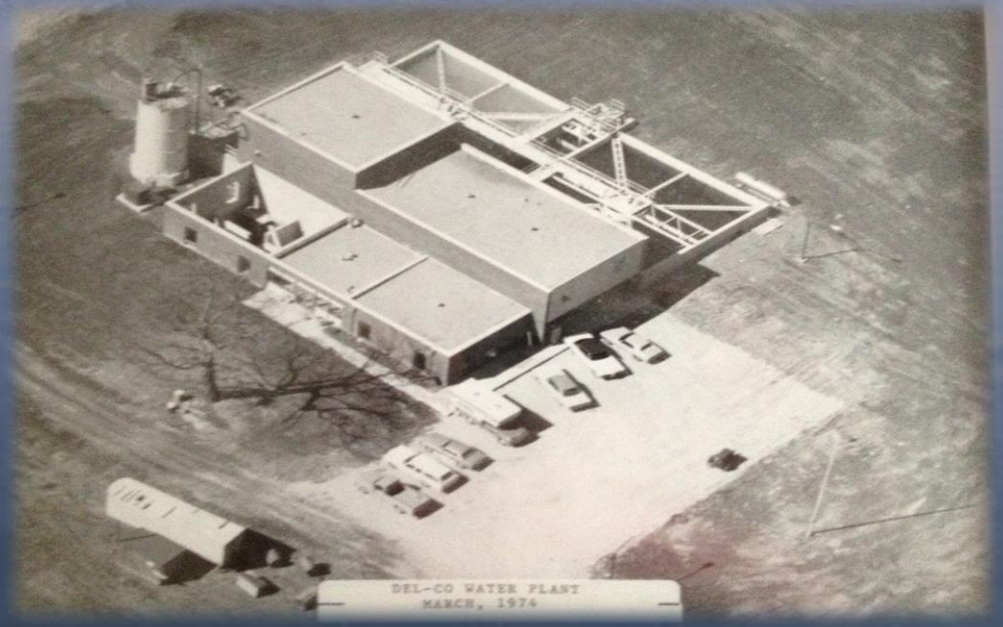
DELCO WATER COMPANY

Opening Remarks

- Del-Co Water Company Background
- UCMR History
- UCMR4 Specifics & Del-Co's Efforts
- Concurrent Monitoring & Customer Education
- Closing Remarks

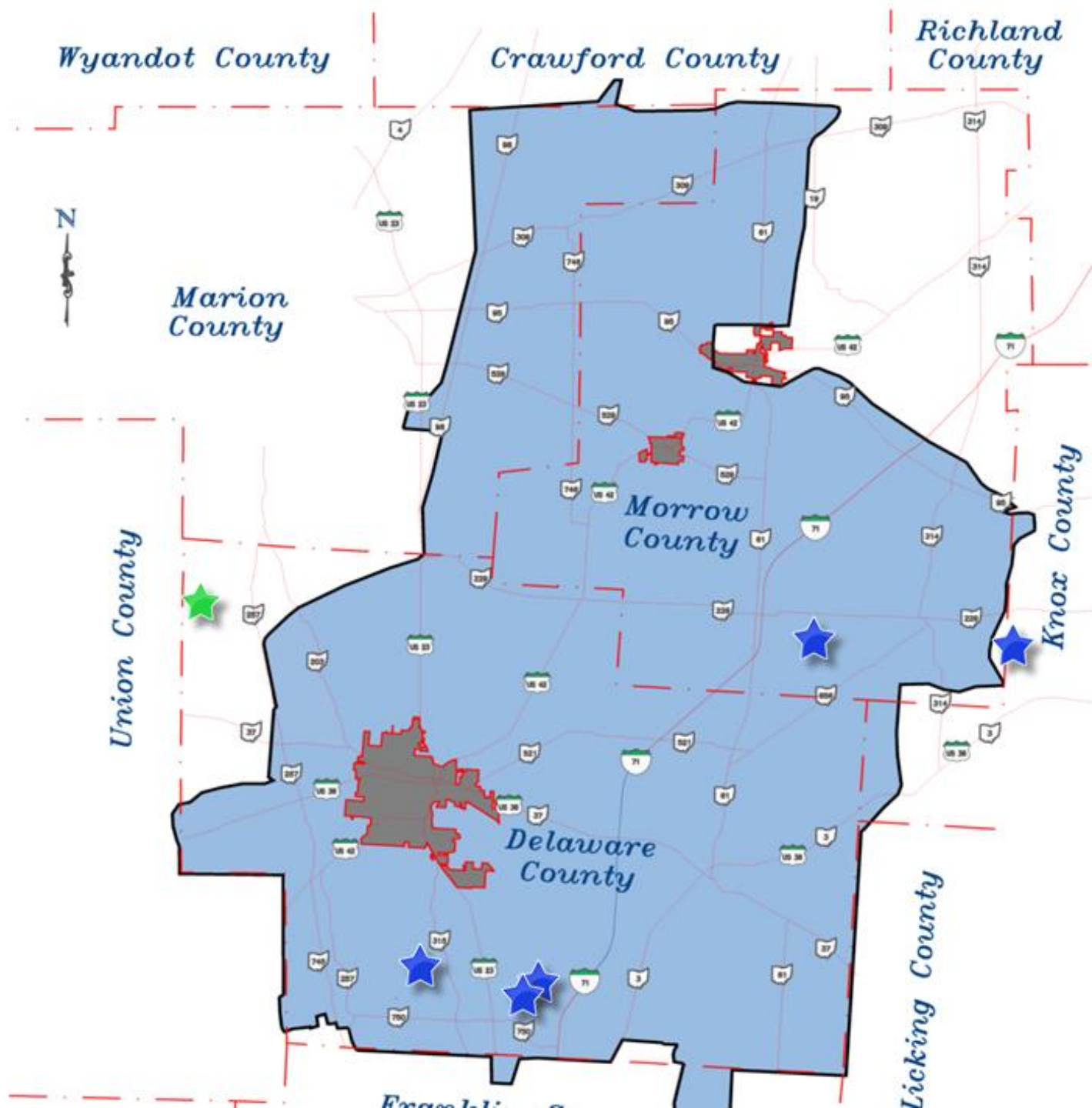
Del-Co General Information

- Member owned 501 (c) Not-for-Profit Corporation
- Served 1st customer in 1974
- Largest 'Rural' System in Ohio
- 8th largest PWS
- Customers = 47,000
- Population = 145,000



Del-Co System

- 4 Treatment Plants
- 800 Sq. Mi. Service Area
- 1850 Miles of Pipeline
- 30 Elevated Tanks
- 18 Booster Stations
- Serve 7 Counties
- 7 Off-stream Reservoirs

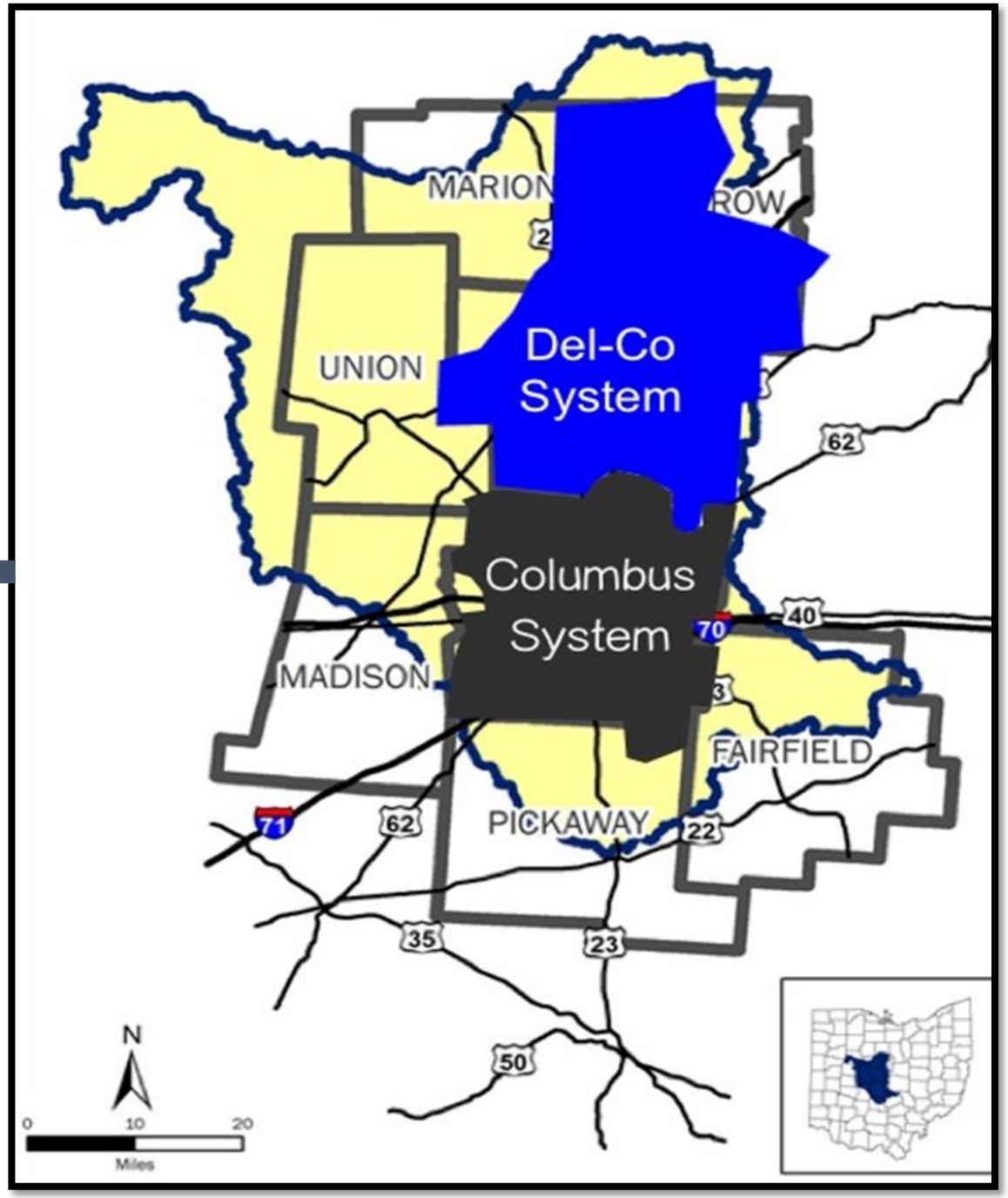


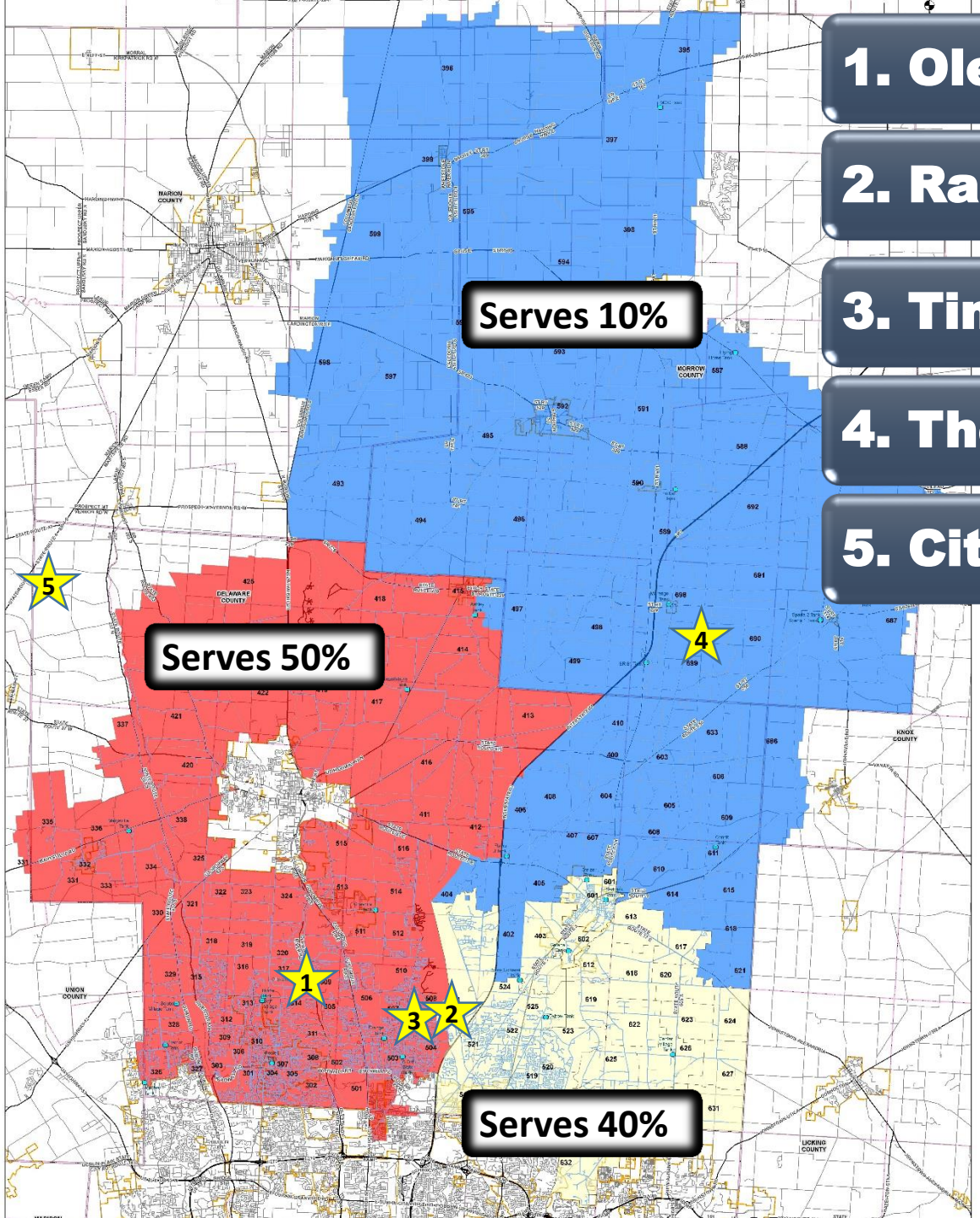
DEL-CO WATER COMPANY

800 miles²
Pop 145,000
1850 mi pipelines
4 water treatment plants
11 MGD
High seasonal peak

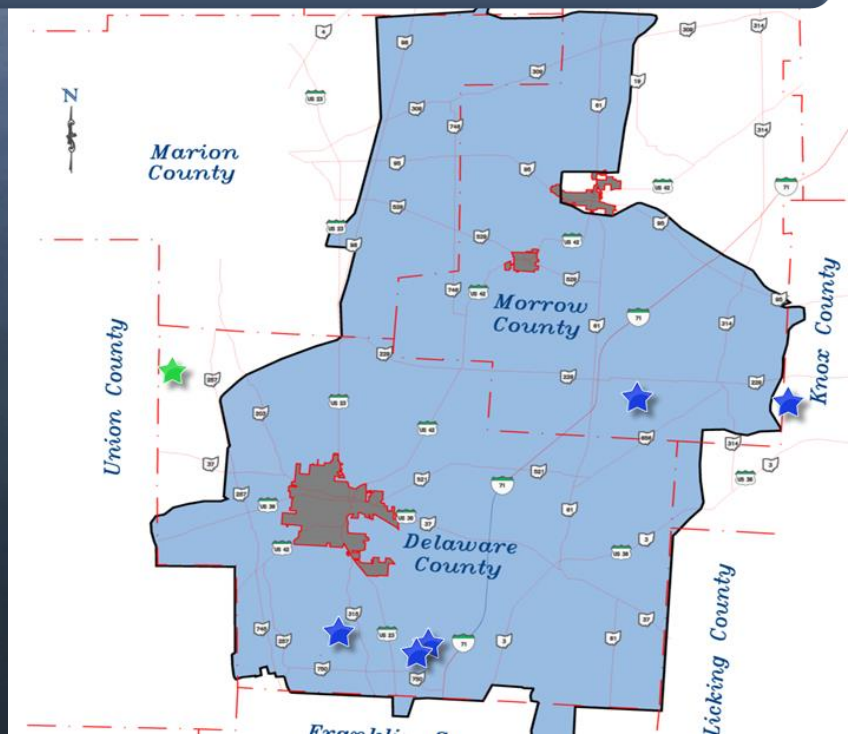
THE CITY OF COLUMBUS
ANDREW J. GINTHER, MAYOR
DEPARTMENT OF PUBLIC UTILITIES

400 miles²
Pop 1,200,000
3600 mi pipelines
3 water treatment plants
140 MGD
Moderate seasonal use





1. Olentangy Plant / Reservoirs
2. Ralph E. Scott Plant
3. Timothy F. McNamara Plant / Reservoirs
4. Thomas E. Steward Plant
5. City Columbus/Del-Co Upground Reservoir



Olentangy Plant

- Source: Olentangy & Scioto River
- 4 Off-stream reservoirs (1.6 billion)
- Capacity: 19.2 MGD
- Upgraded soon to 28.8 MGD
- Supplies 50% of Del-Co customers

Ralph Scott Plant

- Source: Alum Creek
- 2 Off-stream reservoirs
- Capacity: 6.6 MGD
- Supplies 40% of Del-Co customers

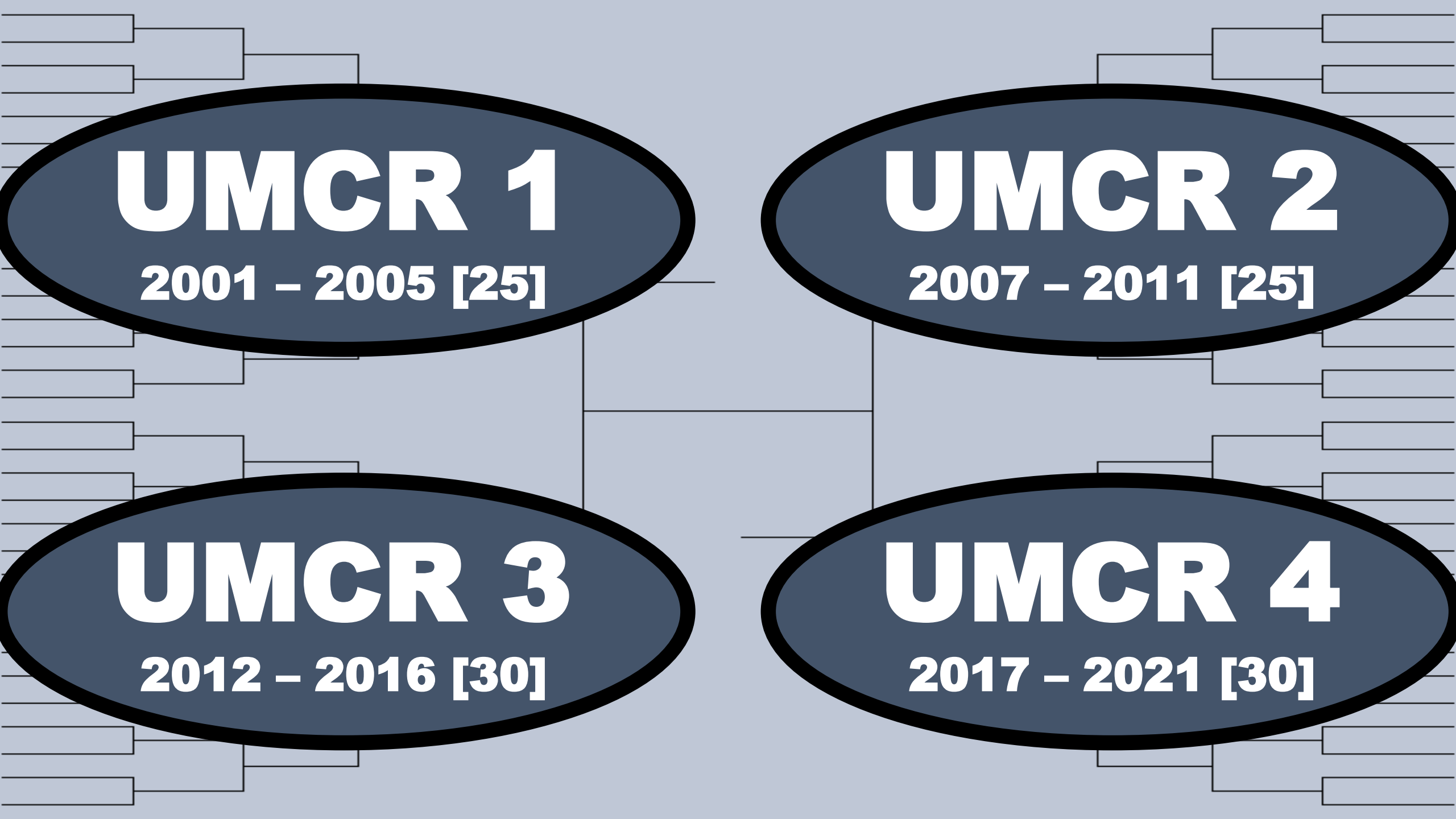
Timothy McNamara Plant

- Source: Alum Creek
- 2 Off-stream reservoirs
- Capacity: 4.0 MGD
- Peak Plant for increased demand

Thomas Steward Plant

- Source: 4 Groundwater Wells
- Capacity: 6.0 MGD
- Supplies 10% of Del-Co customers

UCMR Background & Rationale


UMCR 1
2001 – 2005 [25]
UMCR 2
2007 – 2011 [25]
UMCR 3
2012 – 2016 [30]
UMCR 4
2017 – 2021 [30]

Contaminant Candidate List (CCL)

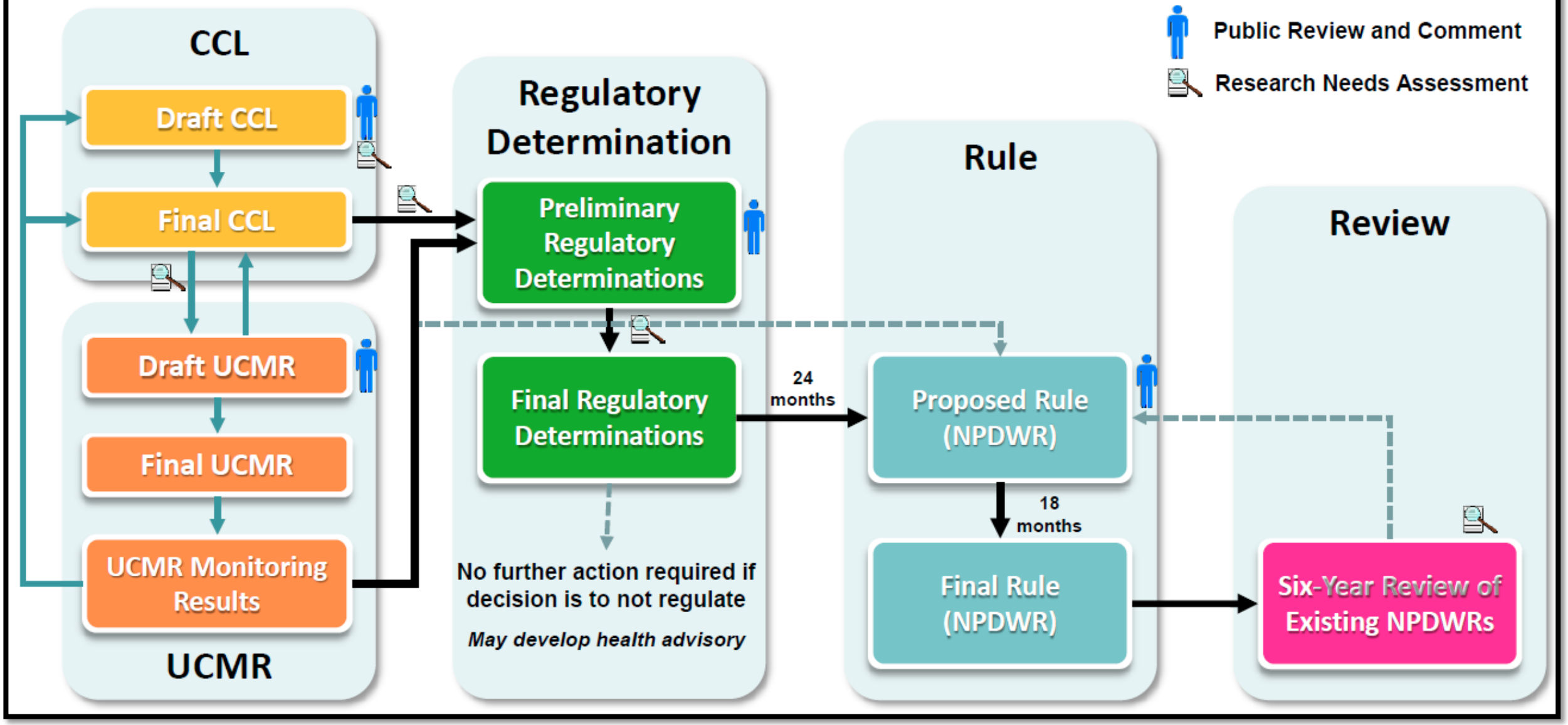
UCMR

The 1996 SDWA Amendments provided for:

Regulatory Determinations (RD)

6 Year Review of NPDWRs

General Flow of SDWA Regulatory Processes



Reference: USEPA (2017). *SDWARS for PWSs (UCMR4): Public Meeting and Webinar.*

UCMR4 Specifics

- Monitoring, Timelines, Analytes, Reporting

Del-Co's Efforts

- 4 WTPs, Scheduling, Analyses, Reporting


Who will be monitoring

UCMR 4 Applicability to PWSs: Assessment Monitoring Design (List 1)

System Size (# of people served)	10 Cyanotoxins	20 Additional Chemicals*	Total # of Systems per Size Category
Small systems (25 – 10,000)	800 randomly selected SW or GWUDI systems	800 randomly selected SW, GWUDI and GW systems	1,600
Large systems** (10,001 and over)	All SW or GWUDI systems (1,987)	All SW, GWUDI and GW systems (4,292)	4,292
TOTAL	2,787	5,092	5,892

Reference: USEPA (2017). *SDWARS for PWSs (UCMR4): Public Meeting and Webinar.*

Monitoring Timeline

2017	2018	2019	2020	2021
Pre-monitoring Implementation • Continuation of Lab Approval • PWS SDWARS registration/ notification/ inventory • PAs, SMPs, SSIs, LSIs • GWRMP submittal • Outreach/trainings	**Assessment Monitoring List 1 Contaminants** **Implementation Activities** • Assist PWSs with compliance • Implement small system monitoring • Post data quarterly to NCOD **Reporting and analysis of data** • All large systems serving more than 10,000 people • 800 SW and GWUDI small systems serving 10,000 or fewer people for cyanotoxins • 800 small systems serving 10,000 or fewer people for the 20 additional contaminants			**Post-monitoring Phase** • Complete resampling • Conclude data reporting • Finalize NCOD • Continued enforcement

Reference: USEPA (2017). *SDWARS for PWSs (UCMR4): Public Meeting and Webinar.*

Monitoring Parameters

- 30 Analytes
- Assessment Monitoring 1 – Metals, Pesticides, Alcohols & SVOCs
- Assessment Monitoring 2 – HAAs & Indicators
- Assessment Monitoring 3 - Cyanotoxins

Assessment Monitoring (Metals, Pesticides, Alcohols, SVOCs)

Metals: EPA Method 200.8, ASTM D5673-10, SM 3125[3]

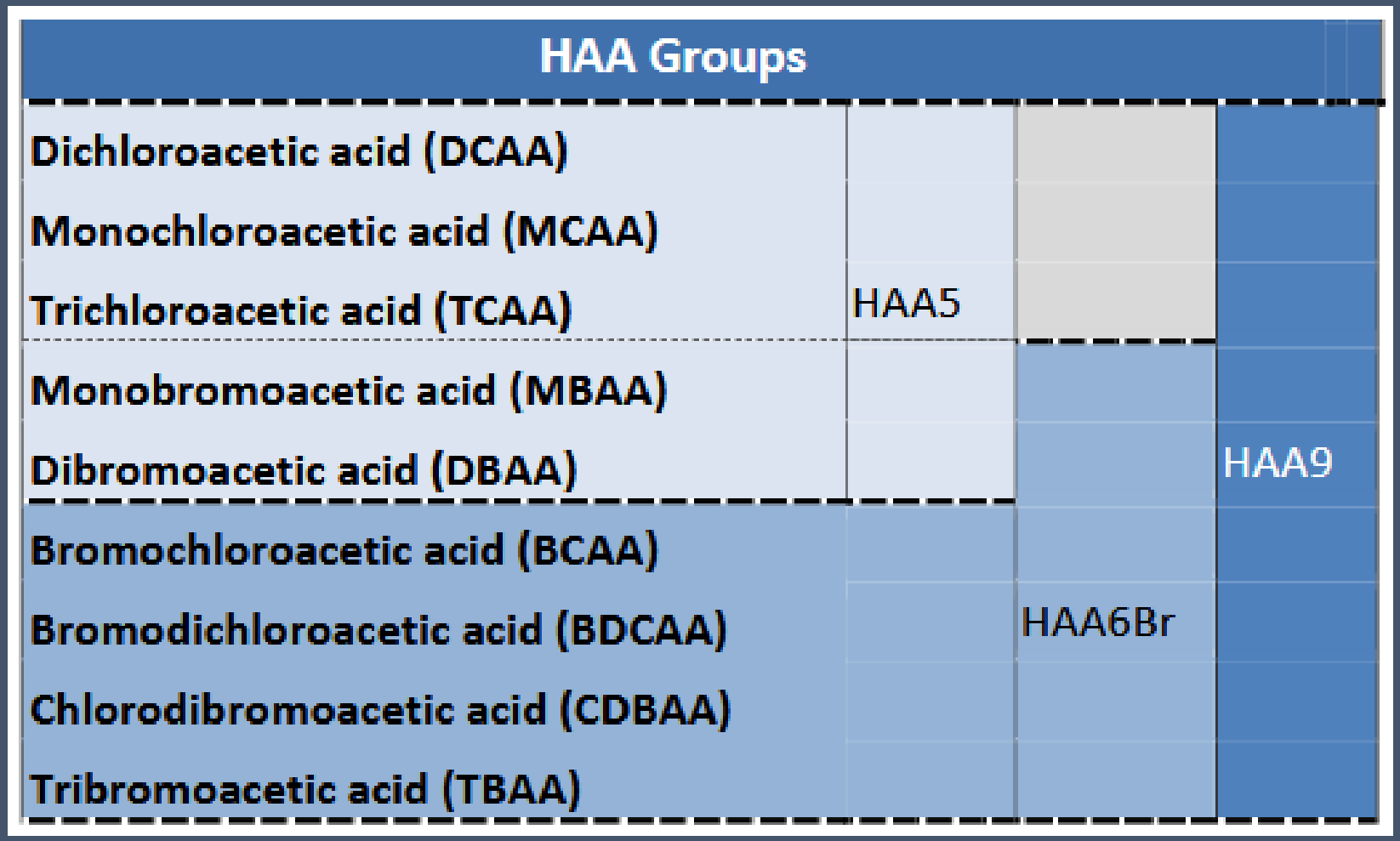
Contaminant	CASRN[1]	MRL[2] (µg/L)	Additional Information
germanium	7440-56-4	0.3	Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications
manganese	7439-96-5	0.4	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient

Pesticides and a Pesticide Manufacturing Byproduct: EPA Method 525.3

Contaminant	CASRN[1]	MRL[2] (µg/L)	Additional Information
alpha-hexachlorocyclohexane	319-84-6	0.01	Component of benzene hexachloride (BHC); formerly used as an insecticide
chlorpyrifos	2921-88-2	0.03	Organophosphate; used as an insecticide, acaricide and miticide
dimethipin	55290-64-7	0.2	Used as an herbicide and plant growth regulator
ethoprop	13194-48-4	0.03	Used as an insecticide
oxyfluorfen	42874-03-3	0.05	Used as an herbicide
profenofos	41198-08-7	0.3	Used as an insecticide and acaricide
tebuconazole	107534-96-3	0.2	Used as a fungicide
total permethrin (cis- & trans-)	52645-53-1	0.04	Used as an insecticide
tribufos	78-48-8	0.07	Used as an insecticide and cotton defoliant

Reference: https://www.epa.gov/sites/production/files/2017-03/documents/ucmr4-fact-sheet-additional-contaminants.pdf

AM2 – HAAs and Indicators



Indicators

- TOC
- Bromide (Raw Samples)

Reference: https://www.epa.gov/sites/production/files/2017-03/documents/ucmr4-fact-sheet-haas.pdf

AM3 – Cyanotoxins

Contaminant	CASRN[1]	MRL[2] (µg/L)	Method
"total microcystins"	N/A	0.3	EPA 546
microcystin-LA	96180-79-9	0.008	EPA 544
microcystin-LF	154037-70-4	0.006	EPA 544
microcystin-LR	101043-37-2	0.02	EPA 544
microcystin-LY	123304-10-9	0.009	EPA 544
microcystin-RR	111755-37-4	0.006	EPA 544
microcystin-YR	101064-48-6	0.02	EPA 544
nodularin	118399-22-7	0.005	EPA 544
anatoxin-a	64285-06-9	0.03	EPA 545
cylindrospermopsin	143545-90-8	0.09	EPA 545

Reference: https://www.epa.gov/sites/production/files/2017-03/documents/ucmr4-fact-sheet-cyanotoxins.pdf

Reporting Data Elements

Data Elements

EPA will collect the following data elements in SDWARS 4, an updated version of the data reporting system used in previous UCMR actions.

Public Water System Identification (PWSID) Code	Sampling Point Identification Code	Sample Collection Date	Analysis Batch Identification Code	Laboratory Identification Code
Public Water System Name	Sampling Point Name	Sample Identification Code	Analysis Date	Sample Event Code
Public Water System Facility Identification Code	Sampling Point Type Code	Contaminant	Sample Analysis Type	
Public Water System Facility Name	Disinfectant Type	Analytical Method Code	Analytical Results–Sign	
Public Water System Facility Type	Treatment Information	Extraction Batch Identification Code	Analytical Result-Measured Value	
Water Source Type	Disinfectant Residual Type	Extraction Date	Additional Value	

Reporting Data Elements

Data Elements

EPA will collect the following data elements in SDWARS 4, an updated version of the data reporting system used in previous UCMR actions.

Public Water System Identification (PWSID) Code	Sampling Point Identification Code	Sample Collection Date	Analysis Batch Identification Code	Laboratory Identification Code
Public Water System Name	Sampling Point Name	Sample Identification Code	Analysis Date	Sample Event Code
Public Water System Facility Identification Code	Sampling Point Type Code	Contaminant	Sample Analysis Type	**Bloom Occurrence**
Public Water System Facility Name	Disinfectant Type	Analytical Method Code	Analytical Results–Sign	**Cyanotoxin Occurrence**
Public Water System Facility Type	Treatment Information	Extraction Batch Identification Code	Analytical Result-Measured Value	**Indicator of Possible Bloom – Treatment**
Water Source Type	Disinfectant Residual Type	Extraction Date	Additional Value	**Indicator of Possible Bloom – Source Water Quality Parameters**

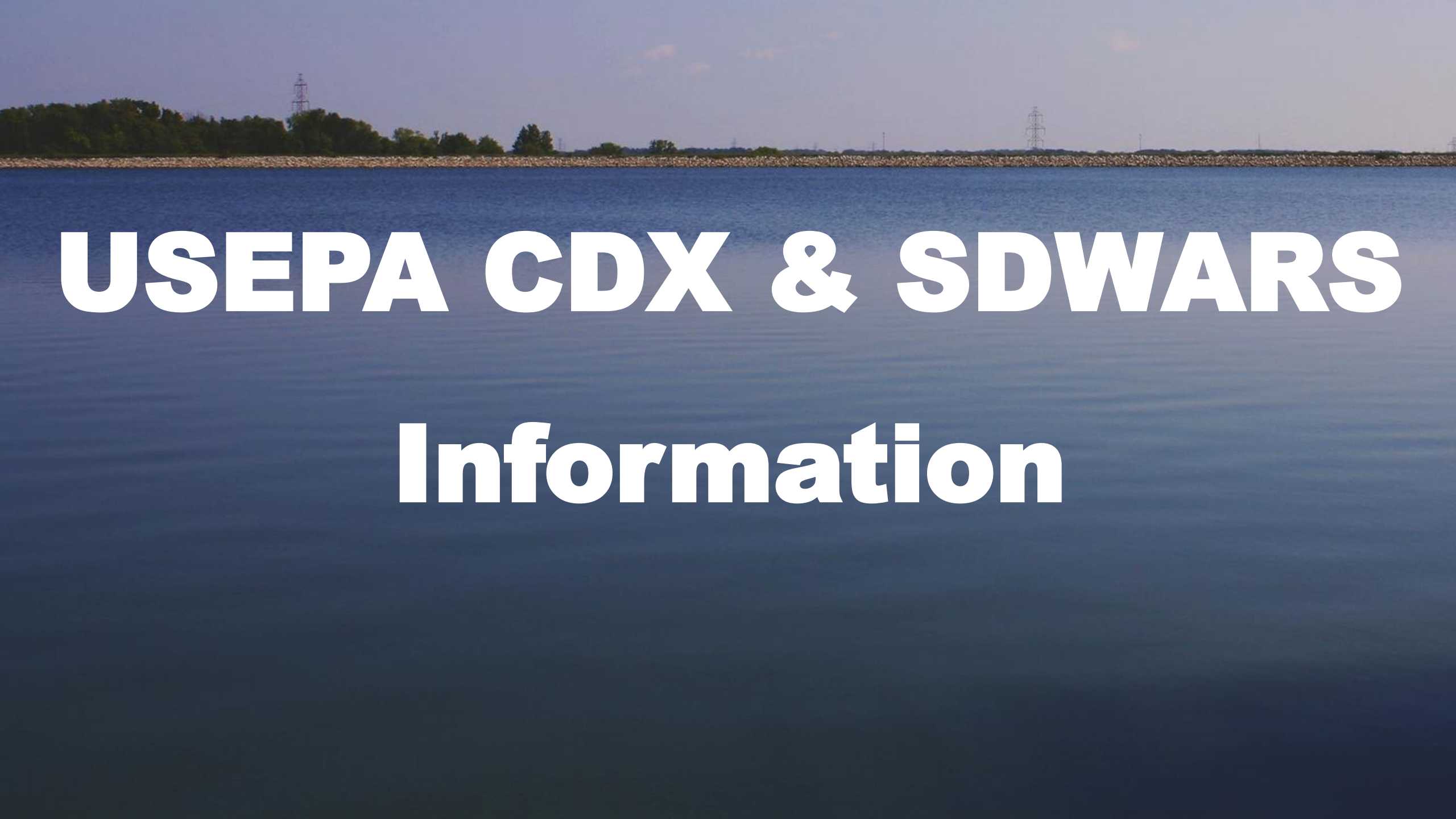
Del-Co Considerations

- Lab Selection
- Seasonal WTP
- Sampling Schedule Change

Laboratories Approved by EPA to Support UCMR 4

These laboratories met the application and Proficiency Testing (PT) criteria for the fourth Unregulated Contaminant Monitoring Rule (UCMR 4) Laboratory Approval Program for the Assessment Monitoring (AM) methods indicated. These laboratories can analyze UCMR 4 samples using only those methods next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to meet the method and program quality control requirements will be permanently removed from the list.

Laboratory Name	AM 1 Metals	AM 1 Pesticides	AM 1 SVOCs[1]	AM 1 Alcohols	AM 2 HAAs[2]	AM 3 Cyanotoxins	AM 3 Cyanotoxins	AM 3 Cyanotoxins
Accurate Environmental Labs	EPA 200.8	EPA 525.3	EPA 530	EPA 541	EPA 552.3	EPA 544	EPA 545	EPA 546
Advanced Water Quality Assurance Laboratory	EPA 200.8	EPA 525.3	EPA 530	EPA 541	EPA 552.3	-	-	-
Alloway Environmental Testing	-	EPA 525.3	EPA 530	EPA 541	-	-	-	EPA 546
ALS - Middletown	EPA 200.8	EPA 525.3	EPA 530	EPA 541	EPA 552.3	-	-	EPA 546
American Water Central Laboratory	EPA 200.8	EPA 525.3	EPA 530	EPA 541	EPA 552.3	EPA 544	EPA 545	EPA 546
Anatek Labs, Inc.	EPA 200.8	-	EPA 530	EPA 541	EPA 552.3	-	-	-
Aqua Pennsylvania, Inc.	EPA 200.8	-	-	-	-	-	-	-
Arkansas Department of Health Public Health Laboratory	EPA 200.8	-	-	-	EPA 552.3	-	-	-
Babcock Laboratories, Inc.	EPA 200.8	EPA 525.3	EPA 530	EPA 541	EPA 552.3	EPA 544	EPA 545	EPA 546


USEPA CDX & SDWARS
Information

EPA United States Environmental Protection Agency

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CDX Central Data Exchange

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Password

Show Password

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Forgot your User ID?

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Welcome

Welcome to the Environmental Protection Agency (EPA) Central Data Exchange (CDX) - the Agency's electronic reporting site. The Central Data Exchange concept has been defined as a central point which supplements EPA reporting systems by performing new and existing functions for receiving legally acceptable data in various formats, including consolidated and integrated data.

EPA United States Environmental Protection Agency

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CDX Central Data Exchange

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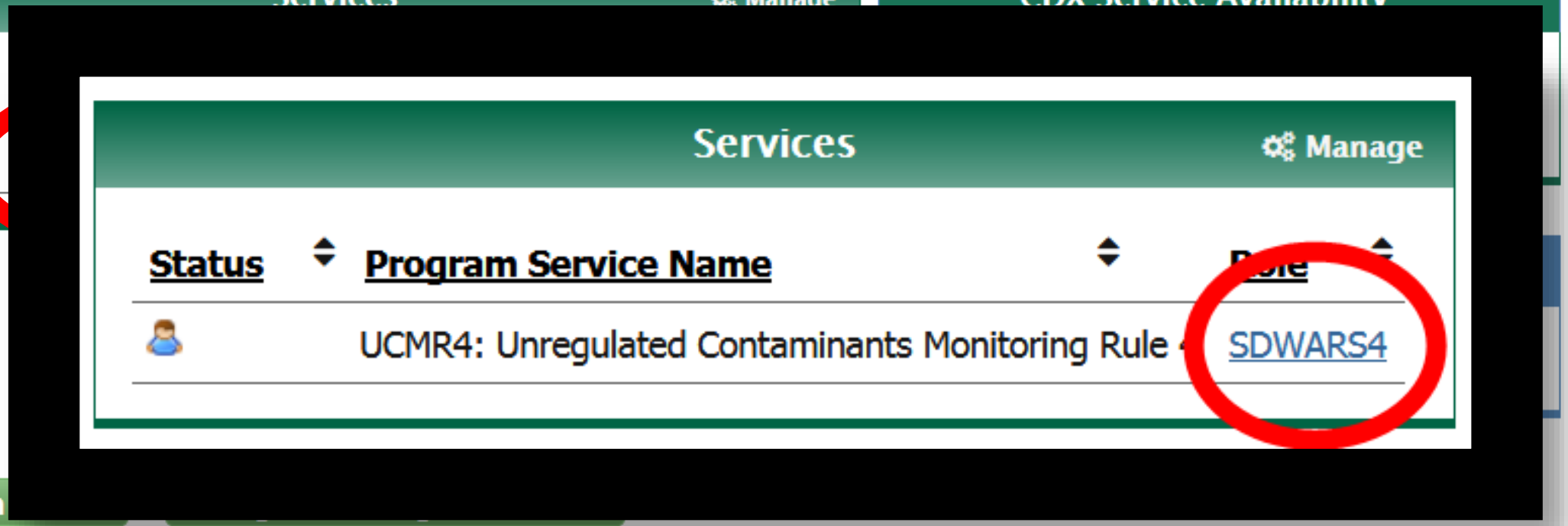
Services — Manage

CDX Service Availability

Status

Add Program



PWS Home

Use the left menu to: **Review Data**, **Nominate User**, report **Contacts**, input **Inventory** or **Zip Codes**, or check/edit **Schedule**.

PWS
- Contacts
- Inventory
- Schedule/Data Elements
- Review Data
- Zip Code
- Nominate User
- Notification Letter
- Need Help?
- SDWARS4 Sitemap

MyCDX

ICR#:	2192.08
OMB#:	2040-AF49
PWS ID:	OH2101412
PWS Name:	Delaware County Water Company, Inc.
System Size:	large (> 10,000)
Monitoring Requirements:	Assessment Monitoring for Metals, Pesticides, Alcohols, and SVOCs Assessment Monitoring for HAAs Assessment Monitoring for cyanotoxins

Contacts

Official	Jeffrey Kauffman
Technical	Spencer Sheldon

CDX

PWS

- Contacts
- Inventory
- Schedule/Data Elements
- Review Data
- Zip Code
- Nominate User
- Notification Letter
- Need Help?
- SDWARS4 Sitemap

MyCDX

MyCDX > PWS Home > Contacts

PWS Contacts

All PWSs must have an "Official" contact defined as the administrative representative for the PWS and a "Technical" contact that may be contacted as an alternate representative. Specify additional contacts as "Other" contact types. Edit or delete these contacts using the appropriate links any time you experience changes in personnel. Click **Add Contact** to include a contact. Click the **edit** icon to revise the information for that contact. Click the **delete** icon to remove that contact.

Add Contact

Contact Name	Contact Email	Affiliation/Organization	Contact Type	Actions
Jeffrey Kauffman	jkauffman@delcowater.com	Del-Co Water Company, Inc.	Official	
Spencer Sheldon	ssheldon@delcowater.com	Del-Co Water Company Inc.	Technical	

CDX

PWS

- Contacts
- Inventory
- Schedule/Data Elements
- Review Data
- Zip Code
- Nominate User
- Notification Letter
- Need Help?
- SDWARS4 Sitemap

MyCDX

Designate and Review Your Inventory

If you wish to load your inventory from SDWARS3, click **Upload/Import Inventory** drop-down and select **Import Inventory from SDWARS3** . You will be able to select which locations will get loaded. Click either the **Facility ID** or **Sample Point ID** to edit the inventory you specified. Click **Add Facility** or **Add SP to Existing Facility** to add inventory. You must click **Save Changes** for the information to be added to the database. (more...)

Note: Please ensure all required sample locations for UCMR4 are included in your inventory below. This includes all entry points to the distribution system and for those PWSs monitoring HAAs, their Stage 2 Disinfectants and Disinfection Byproducts Rule distribution system sites and intake(s) prior to treatment. An intake sample is not required for a consecutive connection (100% purchased).

To have inventory removed from the list, please contact the UCMR Sampling Coordinator and provide your PWSID, the affected facility ID & name and, if necessary, the sample point ID & name as well as the reason for removal.

› **Filter by...**

Add Facility | Add SP to Existing Facility

Facility ID: 01412 ***Facility Name:*** **Surface Water Sources** ***Facility Type:*** **IN** ***Water Type:*** **SW**

Sampling Required	*Sample Point ID*	*Sample Point Name*	*Sample Point Type*
Yes	RS004	Olentangy Raw Water Sample Tap	SR
Yes	RS003	Alum Creek Raw Water Sample Tap	SR
Yes	RS001	TF McNamara Raw Water Sample Tap	SR

CDX

PWS

- Contacts
- Inventory
- Schedule/Data Elements
- Review Data
- Zip Code
- Nominate User
- Notification Letter
- Need Help?
- SDWARS4 Sitemap

MyCDX

Review Your Schedule and Enter Data Elements

Click the date specified for each Sample Event (SE) to enter the data elements for that location. Data element responses can be copied from a previous SE. AM1 monitoring requirements can enter comments. AM2 monitoring requirements can enter comments for Source (SR) locations and/or comments, disinfectant types, disinfectant residuals and treatment information for Distribution System (DS) locations. AM3 monitoring requirements can enter comments, disinfectant types, cyanotoxin information and treatment information.

› **Filter by...**

Monitoring Requirement: AM3

Facility ID: **53875** ***Facility Name:*** **Olentangy WTP** ***Facility Type:*** **TP** ***Water Type:*** **SW**

Sample Point ID	*Sample Point Name*	*Sample Point Type*	*SEC1*	*SEC2*	*SEC3*	*SEC4*	*SEC5*	*SEC6*	*SEC7*	*SEC8*
EP001	Entry Point to Dist. System	EP	Jun 2018, wk 1	Jun 2018, wk 3	Jul 2018, wk 1	Jul 2018, wk 3	Aug 2018, wk 1	Aug 2018, wk 3	Sep 2018, wk 1	Sep 2018, wk 3

CDX

PWS

- Contacts
- Inventory
- Schedule/Data Elements
- Review Data
- Zip Code
- Nominate User
- Notification Letter
- Need Help?
- SDWARS4 Sitemap

MyCDX

Review Data

You can search using the laboratory's **Sample ID** or by conducting an **Advanced Search**. The **Sample ID** search function allows you to look for a specific laboratory Sample ID.

The **Advanced Search** function lets you limit your search by using one or more of the checkboxes under the **Advanced Search** section. Both the Collection Start and End Date must be in the MM/DD/YYYY format.

Click **Search** to display up to 250 analytical results. If your search exceeds 250 results, you must refine your search criteria to limit the array of data. Or click **Download Results** to export all the data of your specified search.

Sample ID

OR

Advanced Search

Inventory

PWS Select PWS

Facility Select Facility

Sample Point Select Sample Point

Method Select Method

EPA United States Environmental Protection Agency

CDX

- PWS
  - Contacts
  - Inventory
  - Schedule/Data Elements
  - Review Data
  - Zip Code

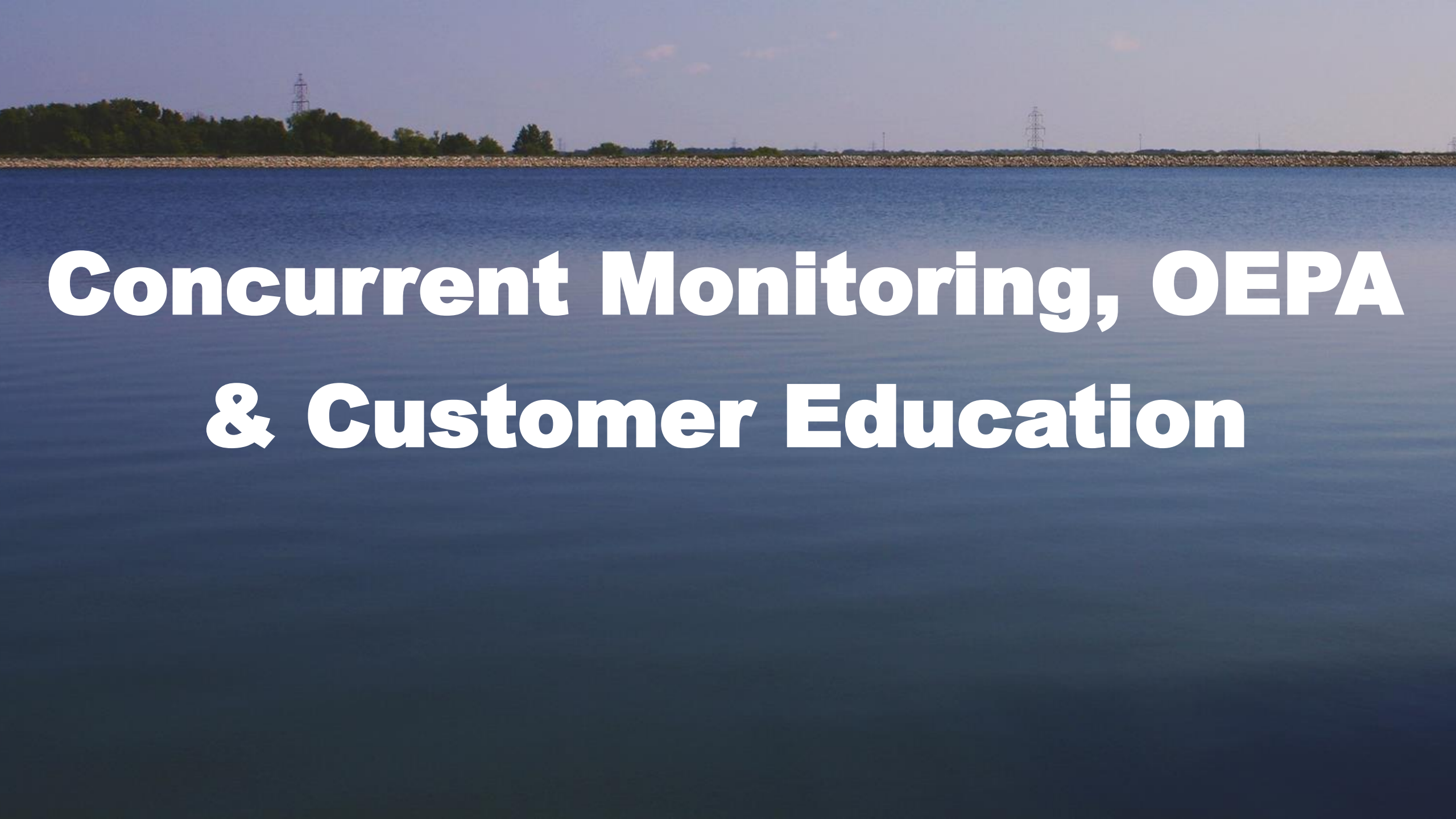
MyCDX > PWS Home > Zip Codes

Zip Codes

Click **Add Zip Codes** to add a zip code(s). Click **Delete Zip Codes** to remove one or more selected zip codes.

Add Zip Codes

	Zip Code
No zip codes have been added.	



Concurrent Monitoring, OEPA & Customer Education

Ohio Environmental Protection Agency

Spigot News

A Newsletter for Ohio's Public Drinking Water Systems

THE FOURTH CYCLE OF THE UNREGULATED CONTAMINANT MONITORING RULES

The 1996 Safe Drinking Water Act (SDWA) Amendments require that, once every five years, U.S. EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems (PWSs). The fourth Unregulated Contaminant Monitoring Rule (UCMR4) was published in the Federal Register on Dec. 20, 2016. This cycle of UCMR will run from 2017 to 2021 with monitoring occurring in 2018-2020[1].

All systems with a population greater than 10,000 must conduct UCMR4 monitoring, and U.S. EPA has randomly selected 1,600 systems with a population less than 10,000 to monitor as well. U.S. EPA pays for all analytical costs associated with UCMR4 monitoring. Great Lakes Environmental Center should have contacted these systems to complete inventory assessments and coordinate monitoring. Large systems must monitor and fund the analytical costs themselves. These systems can access their monitoring schedule and inventory lists through the ***Central Data Exchange (CDX)***[2]. To generate a full schedule, the PWS must upload inventory data into CDX. Systems on reduced monitoring for disinfection byproducts should only enter data for the sites used on their current reduced monitoring schedule. Monitoring will begin in 2018 so PWSs are urged to log into CDX to verify monitoring schedules and upload inventory before Dec. 29, 2017.

As this is the beginning of a new cycle of UCMR4, PWSs selected for monitoring should familiarize themselves with UCMR4 contaminants, their sample schedules, and verify their inventory data to assure correct sample locations are utilized. More information about UCMR4 can be found on U.S. EPA's ***webpage***[3]. Systems may also contact Great Lake Environmental Center's UCMR message center at 1-800-949-1581 with questions. General questions about UCMR4 in can also be directed to Ohio EPA's Emilie Eskridge by email (***Emilie.Eskridge@epa.ohio.gov***) or phone at (614) 644-2752.

[1]Fourth Unregulated Contaminant Monitoring Rule. (2017, July 11). Retrieved September 15, 2017, from *epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule*

[2] *cdx.epa.gov/*

[3] *epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule*

Cyanotoxins

- Ohio EPA required monitoring
- Health Advisory Levels (HAL) – 10 day HAL
  - 0.3 μg/L – at risk populations
  - 1.6 μg/L – all individuals
- UCMR Monitoring
  - Biweekly for 4 months
- CCR Inclusion
- Customer Education

Manganese

- Ohio EPA required monitoring
- Health Advisory Levels (HAL) – 10 day HAL
  - 0.3 mg/L – at risk populations
  - 1.0 mg/L – all individuals
- UCMR Monitoring
- CCR Inclusion
- Customer Education

Environmental Working Group Reports

Del-Co Water Company Inc.

Population served: 141,407

Radium average: 0.525 pCi/L

Click here to see system data.

Source: EWG's Tap Water Database, 2010-2015 dataset. Compiled from state data and the U.S. EPA Safe Drinking Water Information System.

Environmental Working Group Reports

Closing Remarks

- UCMR provides valuable data
- Detections will increase
- Customer Education is Key
- Tap Water is Safe

Questions ????

A 501(c)(3) non-profit organization

56th Annual Water Workshop

This valuable continuing education event is intended for certified and non-certified personnel

Tuesday, March 6, 2018
&
Wednesday, March 7, 2018

Jeff Kauffman
March 7, 2018
jkauffman@delcowater.com

DELCO WATER COMPANY