Drinking Water Bipartisan Infrastructure Law (BIL) Emerging Contaminants (EC) Funding Options

January 31st, 2023

United States Environmental Protection Agency

Office of Water

Speakers

- **Keelan Baldwin**, Drinking Water State Revolving Fund – EPA HQ
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- **Theresa Enright**, SRF Coordinator – Iowa Department of Natural Resources
- **Lindsey Jones**, Senior Program Administrator – Water Infrastructure Finance Authority of Arizona

Addressing Emerging Contaminants with the Drinking Water State Revolving Fund

United States Environmental Protection Agency

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BIL Implementation Key Priorities

- Increase investment in disadvantaged communities
- Make rapid progress on lead service line replacement
- **Address PFAS and emerging contaminants**
- Resilience, climate, One Water innovation
- Support American workers and renew the water workforce
- Cultivate domestic manufacturing

Available State Revolving Fund (SRF) Funding in the BIL

Appropriation	FY 2022 ($)	FY 2023 ($)	FY 2024 ($)	FY 2025 ($)	FY 2026 ($)	Five Year Total ($)
CWSRF General Supplemental	1,902,000,000	2,202,000,000	2,403,000,000	2,603,000,000	2,603,000,000	**11,713,000,000**
CWSRF Emerging Contaminants	100,000,000	225,000,000	225,000,000	225,000,000	225,000,000	**1,000,000,000**
DWSRF General Supplemental	1,902,000,000	2,202,000,000	2,403,000,000	2,603,000,000	2,603,000,000	**11,713,000,000**
DWSRF Emerging Contaminants	800,000,000	800,000,000	800,000,000	800,000,000	800,000,000	**4,000,000,000**
DWSRF Lead Service Line Replacement	3,000,000,000	3,000,000,000	3,000,000,000	3,000,000,000	3,000,000,000	**15,000,000,000**

DWSRF BIL Fund Eligibilities

Emerging Contaminants/PFAS Funds

For a project or activity to be eligible for funding under this appropriation,

1. it must be otherwise DWSRF eligible, and
2. the primary purpose must be to address emerging contaminants in drinking water with a focus on perfluoroalkyl and polyfluoroalkyl substances (PFAS).

Projects that address any contaminant listed on any of EPA's Contaminant Candidate Lists are eligible (i.e., CCL1 – CCL5).

Not Eligible: Projects for which the primary purpose is to address contaminant(s) with a National Primary Drinking Water Regulation (with PFAS exception).

DWSRF Emerging Contaminants Examples

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

- 11Cl-PF3OUdS
- 8:2FTS
- 4:2FTS
- 6:2FTS
- ADONA
- 9Cl-PF3ONS
- HFPO-DA (GenX)
- NFDHA
- PFEESA
- PFMPA
- PFMBA
- PFBS
- PFBA
- PFDA
- PFDoA
- PFHpS
- PFHpA
- PFHxS
- PFHxA
- PFNA
- PFOS
- PFOA
- PFPeS
- PFPeA
- PFUnA
- NEtFOSAA
- NMeFOSAA
- PFTA
- PFTrDA

DWSRF Emerging Contaminants Examples

- Perchlorate
- Strontium
- Manganese
- 1,4-Dioxane
- Tungsten
- *Naegleria fowleri* (brain-eating amoeba)
- Cyanotoxins
  - Microcystin(s)
  - Cylindrospermopsin
  - Anatoxin(s)
  - Saxitoxin(s)
- Lithium
- *Legionella pneumophila*
- Disinfection byproducts (DBPs)
  - Chlorate
  - Formaldehyde

DWSRF BIL Fund Flexibilities and Requirements

Emerging Contaminants/PFAS Funds

- States do not have to provide a match for these funds.
- States have the flexibility to take set-asides from this appropriation to support activities related to emerging contaminants.
- States have the flexibility to craft single assistance agreements (e.g., loans or grants) that contain multiple types of construction components and activities.
- States must provide 100% of the capitalization grant amount, net of set-asides taken, as additional subsidization in the form of principal forgiveness and/or grants.
- At least 25% of these funds must go to disadvantaged communities (as defined by the state) or public water systems serving fewer than 25,000 people.

DWSRF BIL Emerging Contaminants Project and Activity Examples

From the DWSRF Infrastructure Fund

- Constructing a new treatment facility or upgrading an existing treatment facility to address emerging contaminants
- Developing a new source (i.e., replacement well) that addresses an emerging contaminant issue (water rights purchases must still meet the criteria in the Class Deviation for Water Rights).
- Consolidating with another water system that does not have emerging contaminants present or has removal capability.
- Planning and designing projects.
- Pilot testing for treatment alternatives.
- Creating a new community water system to address unsafe drinking water provided by individual (i.e., privately-owned) wells or surface water sources.

DWSRF BIL Emerging Contaminants Project and Activity Examples

From the DWSRF set-asides

- Technical assistance to public water systems to diagnose or address emerging contaminant problems.
- Project pre-development activities (such as determining if/where there is a problem).
- Project planning, preliminary engineering, and design.
- Funding state staff who are working on emerging contaminants oversight.
- Incorporating training on emerging contaminants into state operator certification materials.
- Test kits/laboratory equipment for systems to test for emerging contaminants and training to use equipment.
- Pilot testing and studies on improving public water system operation.
- Source water protection activities (e.g., developing source water protection plans, well abandonment, etc.).
- Conducting initial, special (non-routine/non-compliance) monitoring to establish a baseline understanding of an emerging contaminant or operation of newly-used technology.

FAQs on DWSRF BIL Emerging Contaminants Eligibilities

How does a state determine whether particular components of projects are eligible for the BIL Emerging Contaminant pot of funding?

If the project component is integral to the emerging contaminant purpose of the project, then expenses related to that component may be drawn from the BIL EC pot of money.

FAQs on DWSRF BIL Emerging Contaminants Eligibilities

Must there be evidence that emerging contaminants exist in the water to receive the funds from the BIL DWSRF emerging contaminants pot? For example, if a water system wants to add PFAS treatment as a preventative measure, is this eligible?

Preventative-focused projects are eligible under these BIL funding pots. However, these projects should rank lower on Project Priority Lists than those projects addressing present contamination.

More Information

- **DWSRF**: https://www.epa.gov/dwsrf
  - https://www.epa.gov/dwsrf/state-dwsrf-website-and-contacts
- **BIL**: https://www.epa.gov/infrastructure
  - https://www.epa.gov/dwsrf/frequent-questions-about-bil-state-revolving-funds
- **Tribal Drinking Water**: https://www.epa.gov/tribaldrinkingwater

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BIL Emerging Contaminants for Small or Disadvantaged Communities Grant Program (EC-SDC)

United States Environmental Protection Agency

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BIL Emerging Contaminants for Small or Disadvantaged Communities Grant Program (EC-SDC)

- **Who is eligible?**
  - **Disadvantaged Community** is determined by the state under section 1452(d)(3) of SDWA or may become a disadvantaged community as a result of carrying out a project or activity under the grant program. Each state has different criteria.
  - **Small Community** is one that has a population of less than 10,000 individuals that lacks the capacity to incur debt sufficient to finance a project or activity [SDWA Section 1459A(c)(2)(B)].
- **How much is eligible?**
  - $5 billion is appropriated to the BIL-EC-SDC grant program for FY2022-2026
  - $1 billion for each fiscal year
- **What ECs are eligible?**
  - The primary purpose must be to address emerging contaminants in drinking water with a focus on perfluoroalkyl and polyfluoroalkyl substances (PFAS).
  - Projects that address any contaminant listed on any of EPA's Contaminant Candidate Lists are eligible (i.e., CCL1 – CCL5).

BIL Emerging Contaminants for Small or Disadvantaged Communities Grant Program (EC-SDC)

Anticipated Funding Availability Timeline:

- **February 2023** – Announce FY22 and FY23 state and territories, and tribal allotments.
- **February 2023** – Announce implementation document for state and territories, and tribal projects and activities.
- **Late Spring 2023** – Anticipate first awards following EPA approval of workplans.
- Under the BIL Appropriations Act (H.R.3864), this grant funding does not require a cost share/match.

More Information

- **EC - SDC**: https://www.epa.gov/dwcapacity/emerging-contaminants-ec-small-or-disadvantaged-communities-grant-sdc
  - **Regional and State Contacts:** https://www.epa.gov/dwcapacity/contacts-emerging-contaminants-ec-small-or-disadvantaged-communities-grant-sdc
- **BIL**: https://www.epa.gov/infrastructure

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Tribal BIL Funding for Emerging Contaminants in Drinking Water

United States Environmental Protection Agency

Office of Water

Tribal BIL Funding for Emerging Contaminants in Drinking Water

	Drinking Water Infrastructure Grants – Tribal Set Aside Emerging Contaminants Funds (tribal set aside from DWSRF)	Emerging Contaminants in Small or Disadvantaged Communities – Tribal Set-Aside
Total funding available for tribes	$16 million per year for FY22 – FY26	$20 million per year for FY22 – FY26
Program status	• Existing DWIG-TSA guidelines (2013) apply to this funding • EPA Regional Offices began administering funds in mid-2022.	• Implementation guidelines currently under development • Grant program anticipated to launch in 2023, funds will be administered by EPA Regional Offices.
Eligible entities	Any federally recognized tribe or the state of Alaska. Projects can be implemented through Interagency Agreements with IHS	Any public water system serving federally recognized tribes; only water systems serving a community of **less than 10,000 individuals** are eligible. Projects can be implemented through Interagency Agreements with IHS
Eligible Activities	Same as DWSRF Emerging Contaminants Eligible Activities	Same as EC-SDC Grant Program Eligible Activities

More Information

- **Tribal Drinking Water Programs**: https://www.epa.gov/tribaldrinkingwater/
- **Drinking Water Infrastructure Grants – Tribal Set Aside (DWIG-TSA)**: https://www.epa.gov/tribaldrinkingwater/drinking-water-infrastructure-grants-tribal-set-aside-program
  - **EPA Regional Contacts:** https://www.epa.gov/tribaldrinkingwater/regional-tribal-drinking-water-coordinators

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EPA's Contaminant Candidate List (CCL)

Emerging Contaminants Funding Webinar

January 31, 2023

Presented by: Office of Water's

Kesha Forrest and Nicole Tucker

Disclaimer :

"The views expressed in this presentation are those of the author(s) and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency."

Agenda

- The statutory and regulatory background for Contaminant Candidate Lists (CCLs)
- A history of previous CCLs
- An overview of the CCL 5's chemical and microbial processes
- CCL References/Resources

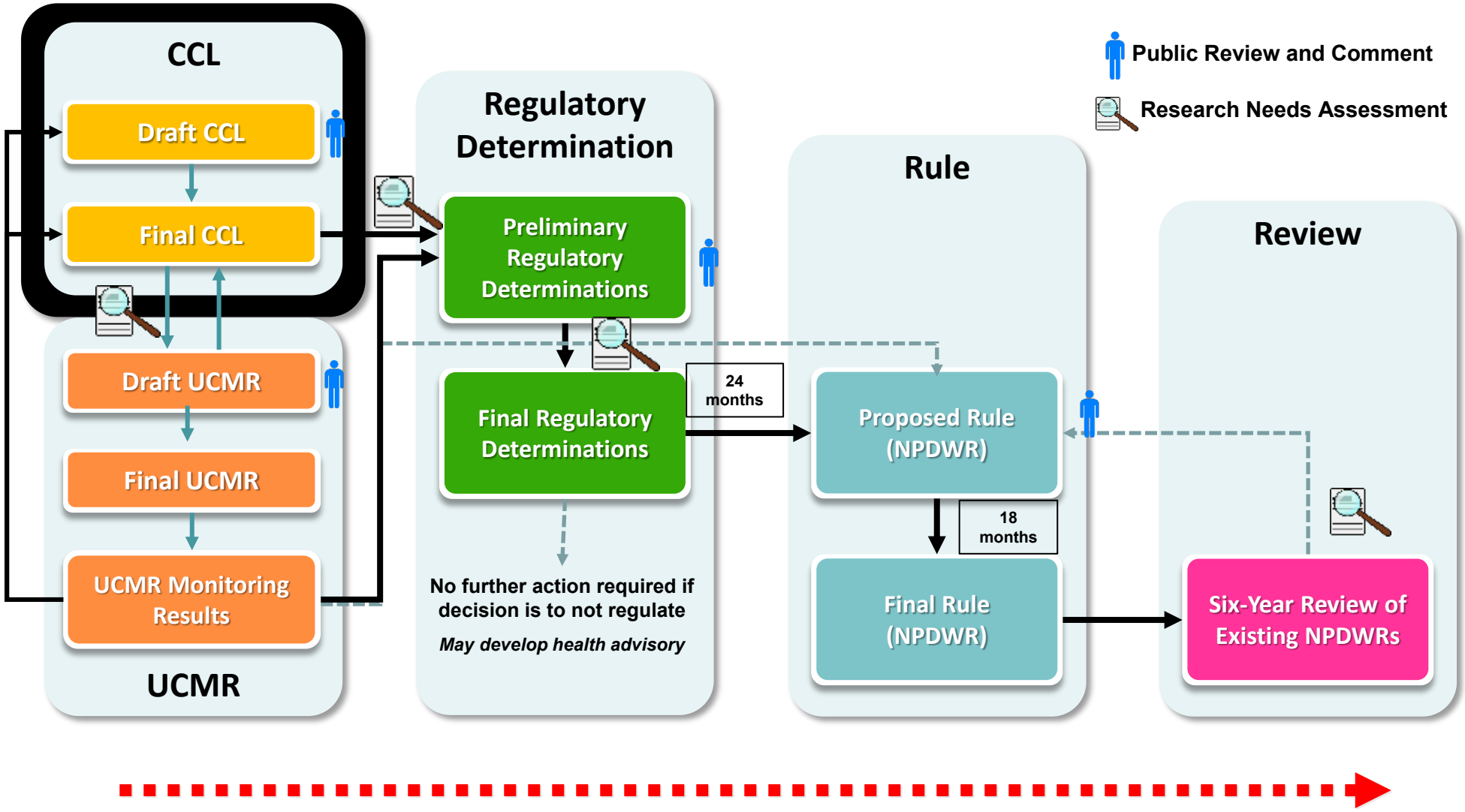
Contaminant Candidate List (CCL) Statutory Requirements

- 1996 Safe Drinking Water Act (SDWA) Amendments require the U.S. Environmental Protection Agency (EPA) to:
  - Publish a list of contaminants (the CCL) every 5 years that are not subject to any proposed or promulgated National Primary Drinking Water Regulation (NPDWR), which are known or anticipated to occur in public water supplies and may require regulation.
- In developing the list, SDWA also specifies that EPA:
  - Consider substances listed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).
  - Consult with the scientific community including the Science Advisory Board (SAB).
  - Provide an opportunity for public comment.

CCL Goals and Objectives

- The goal of the CCL is to identify contaminants that are known or anticipated to occur in public water systems and are not currently subject to EPA drinking water regulations. Contaminants listed on the CCL may require future regulation under SDWA.
- The objective of the CCL is to identify contaminants with the highest potential for drinking water exposures and the potential for the greatest public health concern.
- EPA uses the CCL to prioritize research and data collection efforts (e.g., occurrence data collection under the Unregulated Contaminant Monitoring Rule (UCMR)) to help the agency determine whether it should regulate a specific contaminant.
- Additionally, the CCL also informs the research community of data gaps in health effects and occurrence for the listed contaminants and encourages further research of these contaminants.

General Flow of SDWA Regulatory Processes



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

Past CCLs

- **CCL 1 – 60 contaminants**
- **CCL 2 – 51 contaminants**
  - Upon making negative regulatory determinations for 9 of the 60 contaminants on CCL 1, EPA carried forward the remaining 51 contaminants to CCL 2.
- **CCL 3 – 116 contaminants**
  - EPA developed a multi-step process based on recommendations by the National Academy of Science's National Research Council and the National Drinking Water Advisory Council (NDWAC).
- **CCL 4 – 109 contaminants**
  - EPA chose an abbreviated process that carried forward CCL 3 contaminants (minus those with regulatory determinations). In addition, the agency evaluated any new data for those contaminants with previous negative regulatory determinations from CCL 1 or CCL 2 for potential inclusion on the CCL 4.

CCL 5

- **CCL 5 - 81 contaminants or contaminant groups listed**
  - Contaminants from a universe of chemicals used in commerce, pesticides, biological toxins, disinfection byproducts, and waterborne pathogens.
    - **66 chemicals**
    - **3 chemical groups**:
      - a group of PFAS chemicals
      - a group of cyanotoxins (including but not limited to: anatoxin-a, cylindrospermopsin, microcystins, and saxitoxin)
      - a group of disinfection byproducts (DBPs)
    - **12 Microbial contaminants**
      - 8 bacteria
      - 3 viruses
      - 1 protozoan

CCL 5

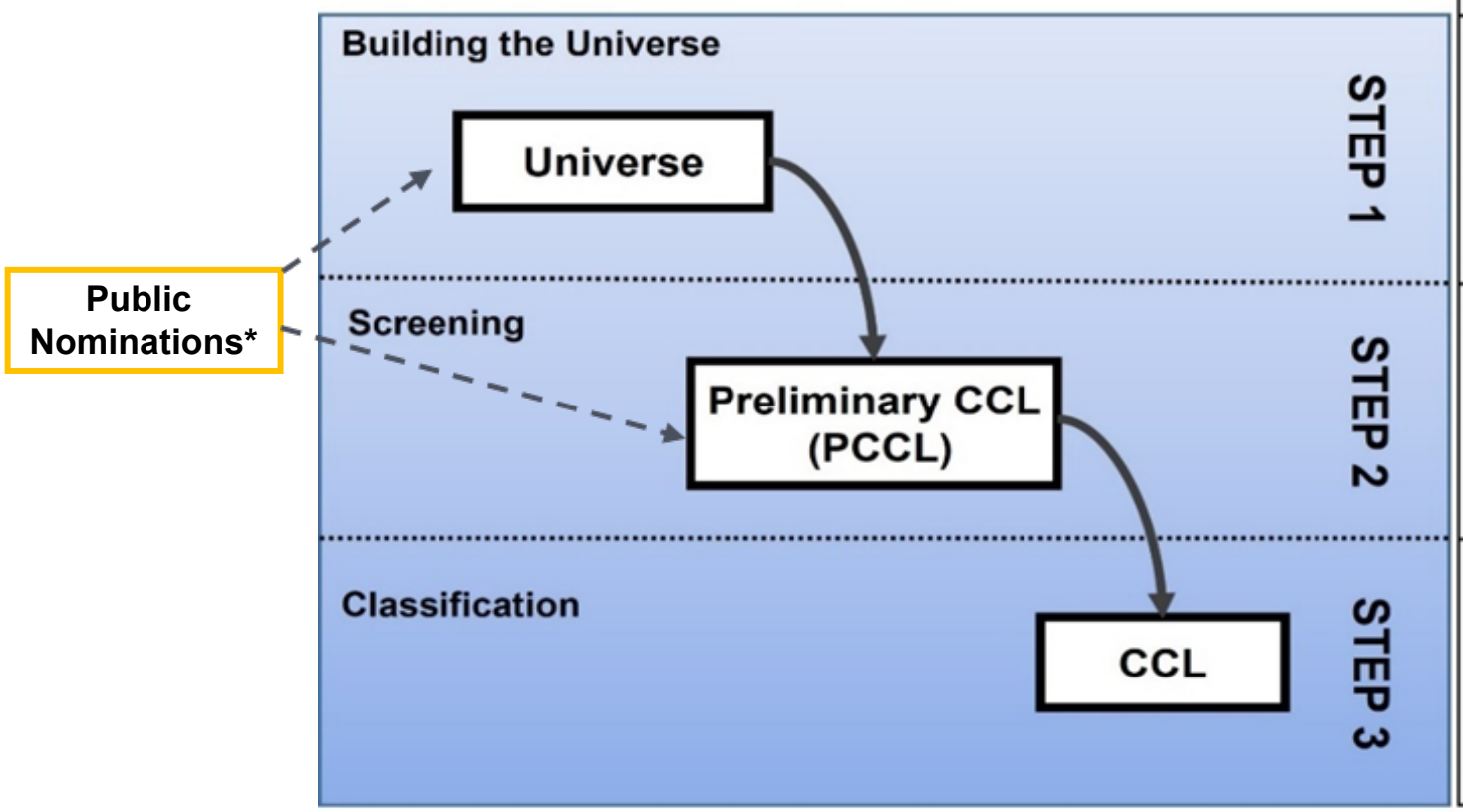
Chemicals				
1,2,3-Trichloropropane	Boron	Diuron	Molybdenum	Tebuconazole
1,4-Dioxane	Bromoxynil	Ethalfluralin	Norflurazon	Terbufos
17-alpha ethynyl estradiol	Carbaryl	Ethoprop	Oxyfluorfen	Thiamethoxam
2,4-Dinitrophenol	Carbendazim (MBC)	Fipronil	Permethrin	Tri-allate
2-Aminotoluene	Chlordecone (Kepone)	Fluconazole	Phorate	Tribufos
2-Hydroxyatrazine	Chlorpyrifos	Flufenacet	Phosmet	Tributyl phosphate
Nonylphenol	Cobalt	Fluometuron	Phostebupirim	Trimethylbenzene (1,2,4-)
6-Chloro-1,3,5-triazine-2,4-diamine	Deethylatrazine	Iprodione	Profenofos	Tris(2-chloroethyl) phosphate (TCEP)
Acephate	Desisopropyl atrazine	Lithium	Propachlor	Tungsten
Acrolein	Desvenlafaxine	Malathion	Propanil	Vanadium
alpha-Hexachlorocyclohexane (alpha-HCH)	Diazinon	Manganese	Propargite	
Anthraquinone	Dicrotophos	Methomyl	Propazine	
Bensulide	Dieldrin	Methyl tert-butyl ether (MTBE)	Propoxur	
Bisphenol A	Dimethoate	Methylmercury	Quinoline	

Chemical Groups
Cyanotoxins
Disinfection byproducts (DBPs)
Per- and polyfluoroalkyl substances (PFAS)

Bacteria	
Campylobacter jejuni	*Mycobacterium abscessus*
Escherichia coli (O157)	*Mycobacterium avium*
Helicobacter pylori	*Pseudomonas aeruginosa*
Legionella pneumophila	*Shigella sonnei*

Protozoa	Viruses
Naegleria fowleri	Adenoviruses
	Caliciviruses
	Enteroviruses

Generalized CCL 5 Development Process



	Number of Chemical Contaminants	Number of Microbial Contaminants
STEP 1	~22,000	1,435
STEP 2	275	35
STEP 3	66 individual + 3 groups	12

CCL 5 Overview

- **Public Nominations**
  - October – December 2018 – EPA requested public nominations for unregulated chemical and microbial contaminants to be considered for potential inclusion on the CCL 5.
  - Nominated contaminants included chemicals used in commerce, pesticides, disinfection byproducts, pharmaceuticals, naturally occurring elements, biological toxins, and waterborne pathogens.

- **Published a Draft CCL**
  - July 2021 – EPA published the Draft CCL 5 in the Federal Register for public comment. The comment period closed on September 17, 2021. The agency received fifty-four (54) unique comment letters.

- **Consult with the Science Advisory Board**
  - January–July 2022–Science Advisory Board (SAB) held meetings augmented for CCL 5.

- **Published Final CCL 5**
  - Published November 14, 2022.

CHEMICAL SELECTION PROCESS

Step 1: Building the Chemical Universe

- Identified and assessed data sources
  - Assessed - relevance, redundancy, completeness, and retrievability

- Extracted relevant data elements (i.e., unique toxicological or occurrence information such as reference doses, finished water detection rates, etc.)
  - Prioritized data elements most relevant to drinking water exposure

- Assigned unique contaminant identifiers (i.e., CompTox DTXSIDs)

- Added supplemental data from EPA's CompTox Chemical Dashboard

Step 2: Screening the Universe to PCCL- Developing the Screening System

- Established health effects and occurrence data elements for screening
- Established a scoring rubric for health effects and occurrence data elements and assigned screening points accordingly
- Calculated a screening score (sum of health effects and occurrence screening points) for each chemical

Step 2: Screening the Universe to PCCL- Selecting the PCCL

- Selected top-scoring chemicals based on Screening Score for inclusion on the PCCL

- Added nominated chemicals for inclusion on the PCCL

- The following contaminants were excluded from the PCCL:
  - Chemicals with recent and/or preliminary Regulatory Determinations
  - Canceled pesticides that are not persistent in water based on biodegradation rate, end-of-use date, recent monitoring data
    - 26 canceled pesticides were assessed for persistence
      - 5 were included in the PCCL 5
      - 21 were excluded from further consideration

Step 2: Screening the Universe to PCCL cont.

Chemical Category		Number of Chemicals	Total Count
Highest scoring chemicals (screened from the Universe)		252	275 (PCCL)
(+)	Added public nominated chemicals (not screened)	53	
(-)	Excluded chemicals with Regulatory Determinations	9	
(-)	Excluded canceled, non-persistent pesticides	21	

Step 3: Classification of PCCL Chemicals to Select the CCL 5

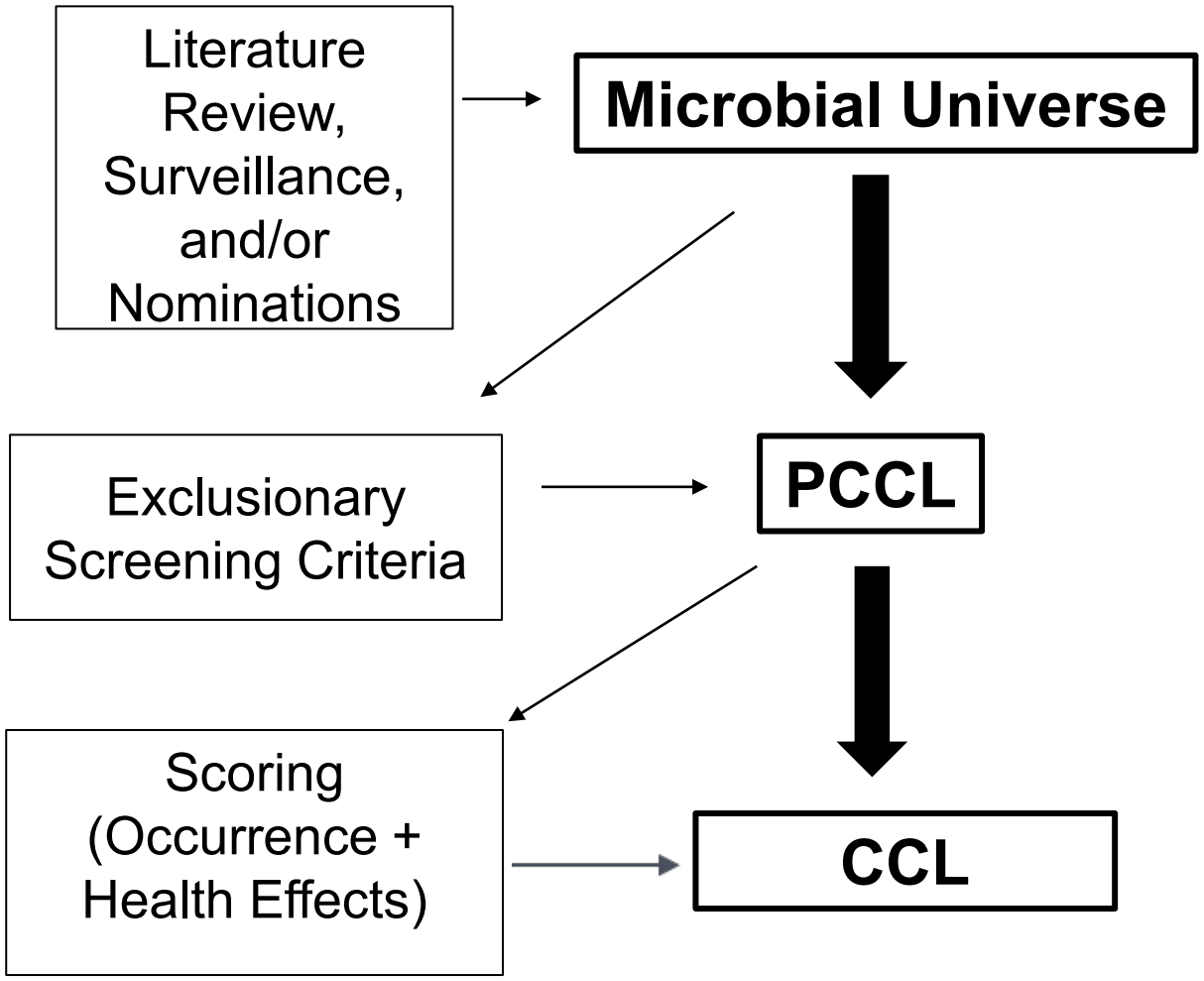
- Conducted literature searches
  - Excluded publicly nominated chemicals with no occurrence data
- Developed Chemical Contaminant Information Sheets (CIS)
  - Calculated health concentrations, final hazard quotient (fHQ), and attribute scores for prevalence, magnitude, potency and severity
- Evaluated the PCCL chemicals within evaluation teams of EPA scientists (also referred to as “chemical evaluators”)
- Recommended chemicals for inclusion in CCL5

Step 3: Classification of PCCL Chemicals to Select the CCL 5 (cont.)

- Of the 214 PCCL chemicals evaluated by the EPA scientists
  - 66 chemicals were recommended for listing
  - 35 chemicals were not previously listed on CCL
  - 148 chemicals were not recommended for listing
- 3 groups were identified as priorities and concerns for drinking water under other EPA efforts were also included on the CCL 5
  - 1 group of perfluoroalkyl and polyfluoroalkyl substances (PFAS)
  - 1 group of cyanotoxins (including but not limited to: anatoxin-a, cylindrospermopsin, microcystins, and saxitoxin)
  - 1 group of disinfection byproducts (DBPs)


MICROBIAL SELECTION PROCESS

Microbial CCL Process



Step 2: Screening the Microbial Universe to PCCL

- 12 criteria for selecting the Microbial PCCL
  - Criterion 1: Anaerobes (microbes that cannot survive in oxygenated environments
  - Criterion 2: Fastidious or obligate intracellular pathogens (environmental survival in water implausible
  - Criterion 3: Pathogens exclusively transmitted by direct or indirect contact with blood or body fluids (including sexually transmitted diseases)
  - Criterion 4: Pathogens transmitted by vectors
  - Criterion 5: Microflora indigenous to the gastrointestinal tract, skin and mucous membranes
  - Criterion 6: Pathogens transmitted solely by respiratory secretions.
  - Criterion 7: Pathogens whose life cycle is incompatible with drinking water transmission
  - Criterion 8: Pathogens where drinking water-related transmission is not implicated
  - Criterion 9: Natural habitat is in the environment without epidemiological evidence of drinking water-related disease and without evidence of drinking water-related nosocomial infection.
  - Criterion 10: Pathogens not endemic to North America
  - Criterion 11: A genus and species or serotype may be chosen to represent a group of closely related organisms
  - Criterion 12: Current taxonomy does not support the classification listed by Taylor et al. (2001)

Step 3: PCCL Microbes to Select the CCL

Microbial Scoring Protocol for PCCL

$$\text{Total Score} = \text{Highest Score b/w WBDO and Occurrence} + \left(\text{General Population Health Score} + \text{Highest Sensitive Subpopulation Health Score} \right) \times 5/14$$

- Highest possible WBDO score = 5
- Highest possible Occurrence score = 3
- Highest possible Health score = 14 (7 +7)

Summary of CCL 5: Microbes

- Out of 35 PCCL microbes evaluated by subject matter experts, 12 microbes were listed
- The CCL 5 includes:
  - 8 bacteria (*Campylobacter jejuni, Escherichia coli (O157), Helicobacter pylori, Legionella pneumophila, Mycobacterium abscessus, Mycobacterium avium, Pseudomonas aeruginosa*, and *Shigella sonnei*)
  - 3 viruses (Adenovirus, Caliciviruses, Enteroviruses)
  - 1 protozoan (*Naegleria fowleri*)

- The CCL 5 includes two microbes not listed on any previous CCL:
  - *Pseudomonas aeruginosa*
  - *Mycobacterium abscessus*

Overview of Microbes on Past CCLs

Microbe Name	CCL 1 (1998) 10 microbes	CCL 2 (2005) 9 microbes	CCL 3 (2009) 12 microbes	CCL 4 (2016) 12 microbes	CCL 5 (2022) 12 microbes
Acanthamoeba	X				
Adenoviruses	X	X	X	X	X
Aeromonas hydrophila	X	X			
Caliciviruses	X	X	X	X	X
Campylobacter jejuni			X	X	X
Coxsackieviruses	X	X			
Cyanobacteria	X	X			
Echoviruses	X	X			
Escherichia coli (0157)			X	X	X
Enterovirus			X	X	X
Helicobacter pylori	X	X	X	X	X
Hepatitis A virus			X	X	
Legionella pneumophila			X	X	X
Mycobacterium avium	X	X	X	X	X
Naegleria fowleri			X	X	X
Pseudomonas aeruginosa					X
Salmonella enterica			X	X	
Shigella sonnei			X	X	X
Microspordia	X	X			
Mycobacteria abscessus					X

References

For more information on the CCL 5 process and previous CCLs, please visit:
https://www.epa.gov/ccl

For CCL 5 Support Documents, please visit:
https://www.epa.gov/ccl/ccl-5-technical-support-documents

- Technical Support Document for the Final Fifth Contaminant Candidate List (CCL 5) - Chemical Contaminants (pdf) (EPA 815-R-22-002)
- Technical Support Document for the Final Fifth Contaminant Candidate List (CCL 5) - Contaminant Information Sheets (pdf) (EPA 815-R-22-003)
- Technical Support Document for the Final Fifth Contaminant Candidate List (CCL 5) - Microbial Contaminants (pdf) (EPA 815-R-22-004)

For a list of PFAS included on CCL 5, please visit:
https://comptox.epa.gov/dashboard/chemical-lists/CCL5PFAS

Questions?

THANK YOU!

FOR ANY FURTHER INQUIRES, PLEASE CONTACT:

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STATE REVOLVING FUND (SRF)

Investing in Iowa's Water

Funding PFAS/EC Projects

SRF STATE REVOLVING FUND

IOWA FINANCE AUTHORITY

DNR

INVESTING IN IOWA'S WATER

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Information contained in this presentation is conceptual and has not been through public review and comment

SRF STATE REVOLVING FUND

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Iowa's Approach

- Assemble a BIL implementation planning team
- Identify Iowa's priority PFAS/EC issues
- Make funding eligibility decisions based on data and facts
- Incorporate DAC definition
- Use the resources of the base SRF program to further the funding

SRF STATE REVOLVING FUND

Planning Team

- SRF Program Managers
- SRF Finance
- PWSS Operations Staff
- DW Engineers & Staff
- DNR Leadership
- Program Legal Staff
- EJ40 Legal Staff

SRF STATE REVOLVING FUND

Other PFAS information

- A DNR internal steering committee (air-land-water) has developed a PFAS action plan

- https://www.iowadnr.gov/Environmental-Protection/PFAS

https://www.iowadnr.gov/Environmental-Protection/PFAS

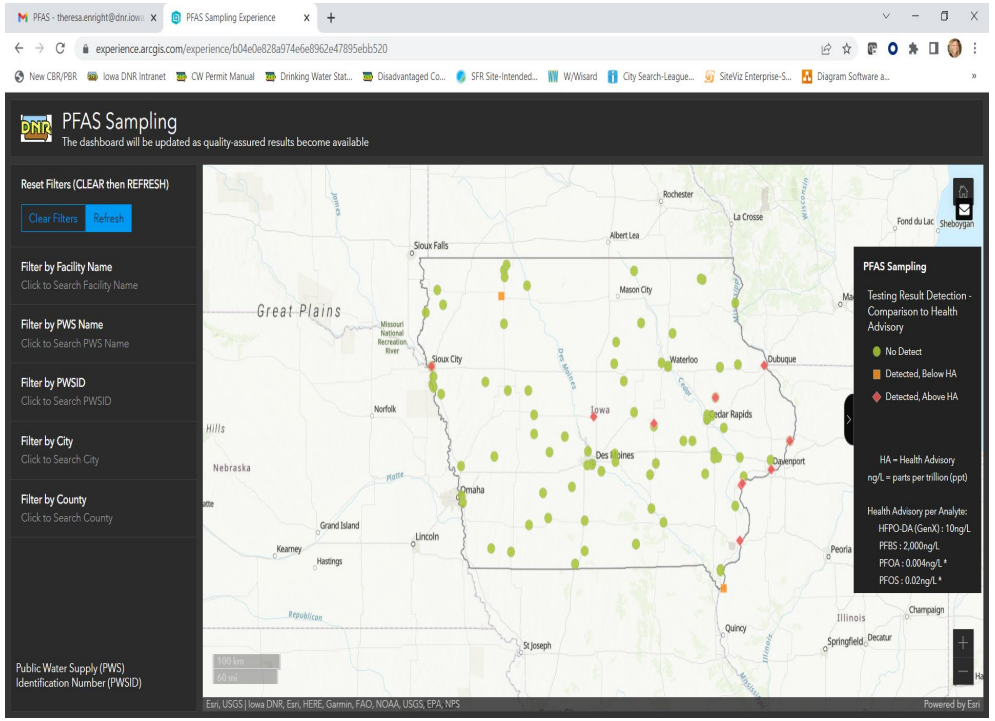
Drinking Water PFAS Sampling Documents

- Iowa Strategy for Sampling Public Drinking Water Facilities PDF
- Iowa Public Drinking Water Sampling Plan and SOP PDF
- Iowa Water Supply PFAS Protocol PDF
- Iowa Contaminated Sites PFAS Protocol PDF
- PFAS and Private Wells PDF

Comments on any of these documents can be sent to PFAS@dnr.iowa.gov.

Iowa Department of Natural Resources, Iowa's PFAS Fact Sheet PDF

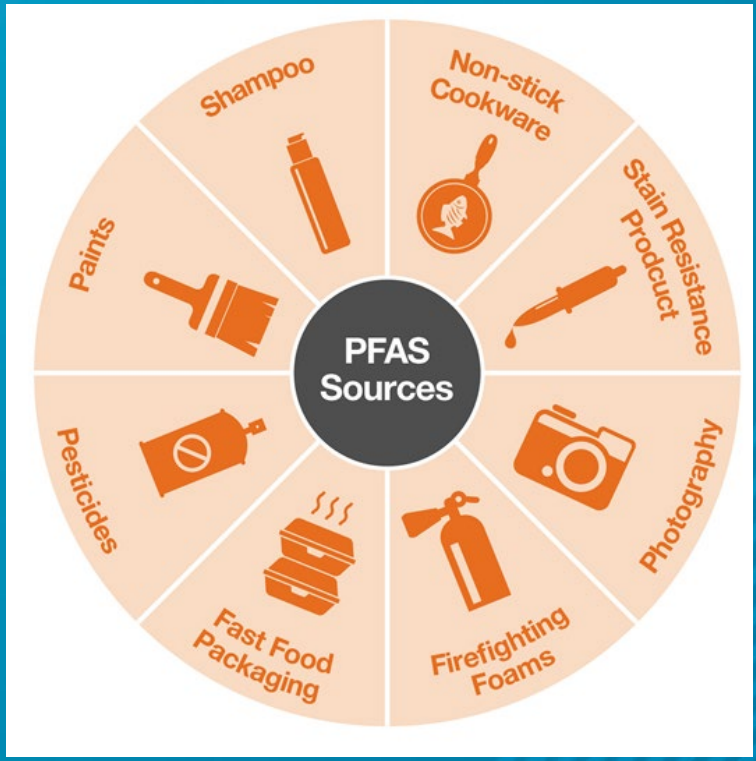
Iowa DNR PFAS Sampling Interactive Dashboard and Map



PFAS questions and comments can be sent to:

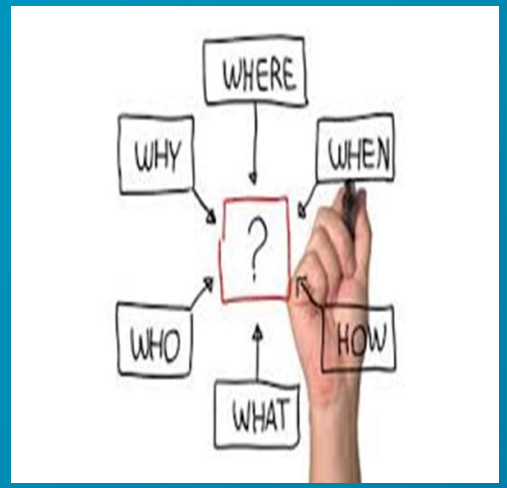
PFAS@dnr.iowa.gov

Iowa's Priorities



SRF STATE REVOLVING FUND

Funding Eligibility
Data and Facts



Data:

- PFAS in raw and finished water
- Manganese in raw and finished water

Funding Facts:

- Only PFAS and contaminants listed on EPA's CCL 1-5 qualify
- 100% of DWSRF PFAS/EC funding must be issued as additional subsidy
- 25% of funds to DAC or PWS serving fewer than 25,000 persons

SRF STATE REVOLVING FUND

Funding Eligibility
Priority Projects

- Priority project ranking and associated loan forgiveness percentages will be categorized by:

Detection levels of PFAS in raw water and finished water

	PFAS (ppt)[1]	%
Finished Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
Raw Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
	1 In parts per trillion. PFOA and PFOS are ranked at Minimum Reporting Level. Gen X and PFBS are ranked at final HA level.	

SRF STATE REVOLVING FUND

Funding Eligibility
Priority Projects

- Priority project ranking and associated loan forgiveness percentages will be categorized by:

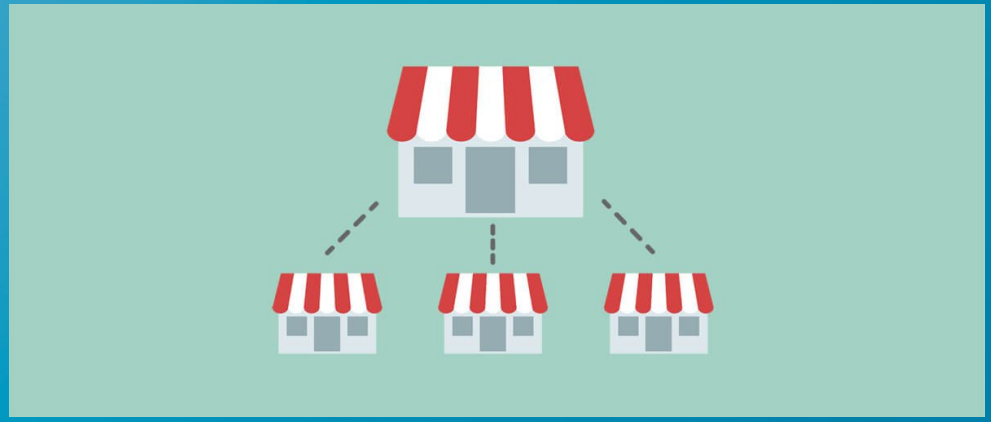
Detection levels of Non-PFAS Health Advisories in raw water and finished water

	Non-PFAS Health Advisories (HA) that are on EPA's Contaminant Candidate Lists 1-5	%
Finished Water	≥ HA level	
	≥ 50% of HA level	
Raw Water	Individual raw water source/s ≥ HA level	

SRF STATE REVOLVING FUND

Funding Eligibility
Priority Projects

- Connection projects will receive an extra % LF
  - Project reviewers must verify in PFAS/EC connection projects that connection parent (system being connected to) does not have a PFAS/EC detection



SRF STATE REVOLVING FUND

Funding Eligibility
Incorporating DAC

Socioeconomic Assessment Worksheet

Fiscal Year 2023

Instructions

Enter or select each community that makes up the utility's service area in the blue boxes below, along with the corresponding percent of population served (must equal 100%). A weighted average for each metric will be calculated and assigned points.

Example, a utility serving three communities with a combined population of 50,000 may look like this:

	City A	City B	City C	Total
Population	25,000	15,000	10,000	50,000
Weighted Percent	50.00%	30.00%	20.00%	100.00%

Percent of Population Served:	*100.00%*					*100.00%*	
Enter or Select Communities:	Dubuque					Total Service Area *(Wtd. Avg.)*	Points
1 Median Household Income (MHI)	*$54,234*					$54,234	1
2 Percent Below Poverty Level	*15.9%*					15.9%	2
3 Percent Receiving Public Assistance or SNAP	*13.0%*					13.0%	1
4 Percent Receiving Supplemental Security Income	*4.2%*					4.2%	1
5 Unemployment Rate (Primary County 12 mo avg)	*3.5%*					3.5%	2
6 Percent Not in Labor Force	*34.3%*					34.3%	1
7 Percent over Age 65	*18.0%*					18.0%	1
8 Population Trend (2010-2020)	*3.5%*					3.5%	0
9 Percent with High School Diploma or Less	*7.7%*					7.7%	1
10 Percent of Vacant Homes (excl. Seasonal and Vacation)	*8.8%*					8.8%	1
11 Percent Housing Cost Burdened (>= 30% of Income)	*25.6%*					25.6%	2
12 Percent Minority	*12.3%*					12.3%	2
13 Social Vulnerability Index (Primary County)	*61.22*					61.22	1
14 Assessed Valuation/Capita	*$80,988*					$80,988	0
15 Outstanding Debt/Capita	*$4,072*					$4,072	0
						TOTAL	16
Percent Households Below 200% Federal Poverty Level	*31.4%*					*31.4%*	
Lowest Quintile Income (Upper Bound)*	*$22,406*					*$22,406*	

** Some communities are too small to have reliable LQI data. In such cases, the second-lowest quintile limit is used.*

	Point Range	Principal Forgiveness
Low	0-10	0%
Moderate-Low	11-15	15%
Moderate	16-20	20%
Moderate-High	21-25	25%
High	26-30	30%

Socioeconomic Assessment Tool – Determining Disadvantaged Status

https://www.iowasrf.com/infrastructure-bill-funding-opportunities/

SRF STATE REVOLVING FUND

Funding Eligibility

Loan Principal Forgiveness Formula

SRF STATE REVOLVING FUND

Funding Eligibility

- Any eligible project can receive LF but if not a qualified Disadvantaged Community (DAC) applicant, they will receive 0% LF for the Socioeconomic Assessment Score

Example 1 – Borrower A

	PFAS (ppt)[1]	%
Finished Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
Raw Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
	1 In parts per trillion. PFOA and PFOS are ranked at Minimum Reporting Level. Gen X and PFBS are ranked at final HA level.	

	Point Range	Principal Forgiveness
Low	0-10	0%
Moderate-Low	11-15	15%
Moderate	16-20	20%
Moderate-High	21-25	25%
High	26-30	30%

30 % + 25 % = 55 %

Disadvantaged Community

Example 1 – Borrower B

	PFAS (ppt)[1]	%
Finished Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
Raw Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
	1 In parts per trillion. PFOA and PFOS are ranked at Minimum Reporting Level. Gen X and PFBS are ranked at final HA level.	

30 % 0% 30 %

Not a Disadvantaged Community

SRF STATE REVOLVING FUND

Example 2 – Borrower A

	PFAS (ppt)[1]	%
Finished Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
Raw Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
	1 In parts per trillion. PFOA and PFOS are ranked at Minimum Reporting Level. Gen X and PFBS are ranked at final HA level.	

	Point Range	Principal Forgiveness
Low	0-10	0%
Moderate-Low	11-15	15%
Moderate	16-20	20%
Moderate-High	21-25	25%
High	26-30	30%

60 % + 25 % = 85 %

Disadvantaged Community
+
Connection Project

SRF STATE REVOLVING FUND

INVESTING IN IOWA'S WATER
www.iowasrf.com

Example 2 – Borrower B

	PFAS (ppt)[1]	%
Finished Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
Raw Water	PFOA ≥ 4	
	PFOS ≥ 4	
	Gen X ≥ 10	
	PFBS ≥ 2,000	
	1 In parts per trillion. PFOA and PFOS are ranked at Minimum Reporting Level. Gen X and PFBS are ranked at final HA level.	

60 % + 0% = 60 %

Not a Disadvantaged Community
+
Connection Project

SRF STATE REVOLVING FUND

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Use of Base SRF Resources

- LF may need to be capped per project/applicant
- Assistance agreements will include a combination of additional subsidization (loan principal forgiveness) and repayable financing

Structuring Assistance Agreements

Example 1 - Borrower 1

Project Cost: $1,000,000

Total Loan Amount:	$1,000,000
PFAS/EC Fund	*$550,000*
DWSRF Fund	*$450,000*
Principal Forgiveness:	($550,000) = 55% project cost
Final Repayment:	$450,000

Disadvantaged Community

Questions?

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SRF STATE REVOLVING FUND

WATER INFRASTRUCTURE
FINANCE AUTHORITY OF ARIZONA

Opportunities for DWSRF Emerging Contaminant Fund

City of Tucson, AZ – Case Study

January 2023

Lindsey Jones

Water Infrastructure Finance Authority

Senior Program Administrator

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Tucson's Drinking Water System

- Tucson Water's northern service area has been limited in capacity and redundancy due to the presence of 1,4-dioxane and PFAS discovered in nine wells.
- Concentrations are above the current health advisories set by the EPA and above operational targets established by Tucson Water.
- The area is currently served by a 42" line which has become a single point of failure without the wells available for supply.

PFAS Lawsuit

TOP STORY

Tucson, Marana sue 3M, 4 other companies over water contaminants

Joe Ferguson Nov 8, 2018 Updated Jan 10, 2020

"The city of Tucson and the town of Marana are suing five companies to pay for the removal of toxic and possibly cancer-causing chemicals found in some area water wells. The lawsuit asks for unspecified damages against 3M and other companies that manufactured, marketed and sold a firefighting foam that contained chemical compounds commonly known as PFCs, PFAs and PFOAs.

Davis-Monthan Air Force Base, like other bases around the country, used these compounds in firefighting foam for more than four decades — from 1971 until last year."

PFAS Levels in Wells

The wells were taken out of service on the following dates:

- Wells Z-002A on March 9, 2016.
- Wells Z-014B and Y-001B on September 22, 2016.
- Wells Z-005A, Z-015A and Z-013A on September 19, 2016.
- Wells A-053A and A-057B on July 18, 2018.

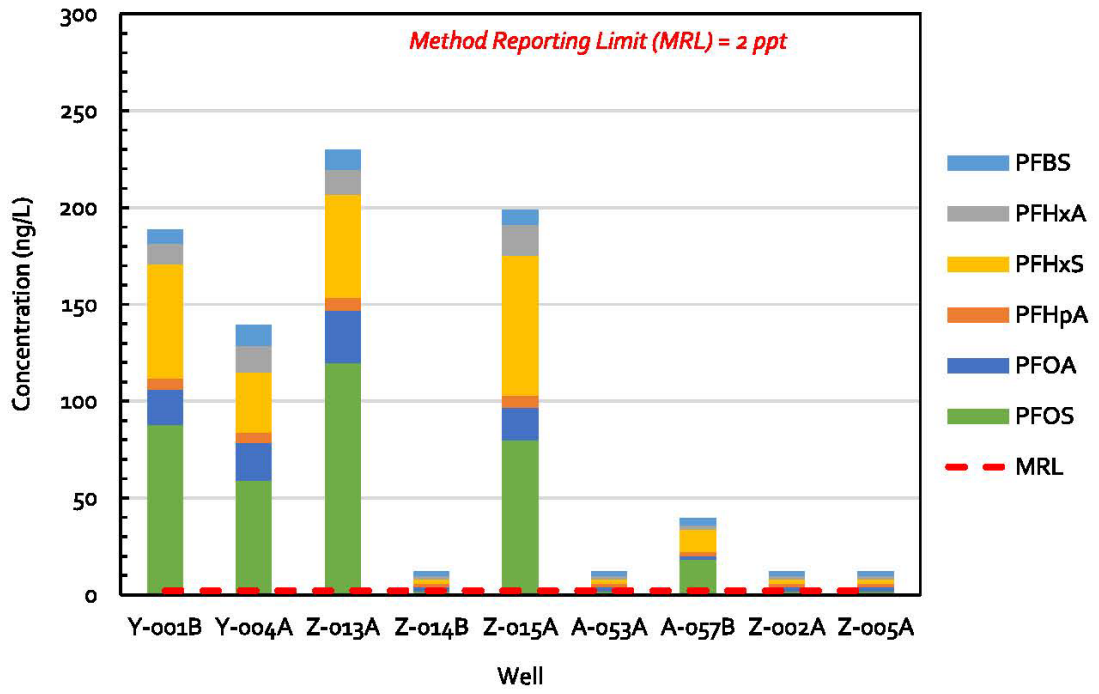


Figure 1 PFAS Speciation for NW Area Wells Removed from Service

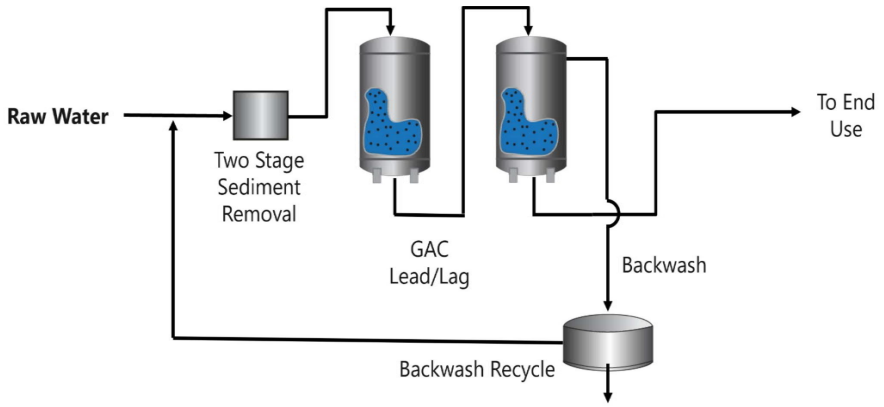
Table 6 Average Concentration of Individual Wells and the Cluster Blends

Cluster	Well/Blend	Flow (gpm)	PFOS + PFOA + PFHxS + PFHpA (ppt)(1)	1,4-dioxane (ppb)(2)	TCE (ppb)(3)
Northern	Y-004A	935	114.8	0.98	<0.5
	Y-001B	740	171.1	0.66	<0.5
	Blend	**1,675**	**139.7**	**0.84**	**<0.5**
Central	Z-013A	800	206.8	1.39	<0.5
	Z-014B	900	<2	<0.1	<0.5
	Z-015A	900	175.2	0.42	<0.5
	Blend	**2,600**	**124.3**	**0.48**	**<0.5**
Southern	A-053A	243	<2	<0.1	<0.5
	A-057B	558	29.9	<0.1	<0.5
	Z-002A	558	<2	<0.1	2.5
	Z-005A	400	<2	0.18	<0.5
	Blend	**1,759**	**9.5**	**0.04**	**0.65**

Notes:
(1) MRL for PFAS is 2 ppt.
(2) MRL for 1,4-dioxane is 0.1 ppb.
(3) MRL for TCE is 0.5 ppb.
Abbreviations:
PFOA = perfluorooctanoic acid; PFOS = perfluorooctanesulfonic acid; PFHxS = perfluorohexanesulfonic acid;
PFHpA = perfluoroheptanaonic aid; MRL= Method Reporting Limit; ppt = parts per trillion; ppb = parts per billion

Proposed Project

- The proposed improvements include providing centralized treatment of wells clustered based on geographic location (north, central, and south).
- A total of three clusters of wells (nine wells in total) were evaluated for treatment: north, central, and south.
- Treatment facilities at the central and south clusters would provide the greatest benefit to the system and are the only two clusters included in the WIFA loan request.
- The central treatment facility will treat three wells for 1,4-dioxane and PFAS with ultraviolet light – hydrogen peroxide advanced oxidation (UV-AOP) process for removal of 1,4-dioxane and granular activated carbon for PFAS.
- The southern treatment facility would treat four wells for PFAS with granular activated carbon for PFAS.



NORTHERN CLUSTER - CENTRALIZED TREATMENT AT Y-001B (UV AOP + GAC LEAD/LAG)

Legend

- Parcels
- GAC Pressure Contactor Footprint
- UVAOP Building
- Bag Filter Footprint
- Desanders
- GAC Backwash Tank
- Purge Tank
- New Raw Water Pipeline
- GAC Contacted Water
- GAC Backwash Supply
- GAC Backwash Waste
- Backwash Recycle
- New Gate
- New Pavement

100.0 0 50.00
Feet

Pima County GIS

This map is static output from an internet mapping site and no warranty is expressed or implied as to the accuracy, reliability, currency or completeness of the data, and is for reference only

Notes:

August 2022

Potential Problems

- Low additional subsidy available compared to overall cost:
  - Arizona's DWSRF Emerging Contaminant Capitalization Grant = $13.5M
  - Tucson's Project = $60M w/$10M in loan forgiveness
  - Potential for large pre-payment
- Build America Buy America Act requirements

WATER INFRASTRUCTURE
FINANCE AUTHORITY OF ARIZONA

Thank You

www.azwifa.gov

Facebook.com/WIFAAZ

Twitter.com/WIFAfunding

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Thank you!
Questions?

United States Environmental Protection Agency

Office of Water