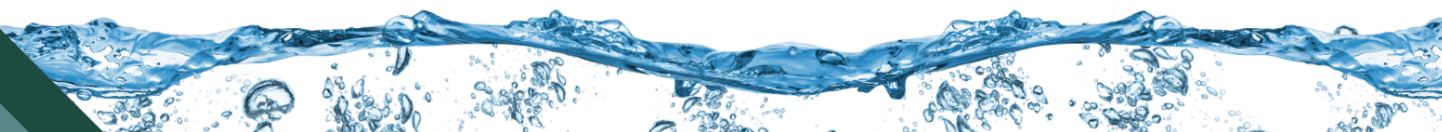


Arizona Department of Environmental Quality Agency PFAS Strategy

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1.0 Introduction

1.1 Background

In 2009, the United States Environmental Protection Agency (US EPA) released its first provisional health advisories for per- and polyfluoroalkyl substances (PFAS), which included advisory levels for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). Since that time, the advisory levels were lowered multiple times and expanded to include perfluorobutane sulfonic acid (PFBS) and hexafluoropropylene oxide dimer acid (HFPO-DA, commonly referred to as GenX). After proposing a National Primary Drinking Water Regulation (NPDWR) in March 2023, the final rule was published in April 2024. The rule establishes enforceable maximum contaminant levels (MCLs) for six PFAS in drinking water; PFOA, PFOS, GenX, perfluorononanoic acid (PFNA), and perfluorohexane sulfonic acid (PFHxS) as contaminants with individual MCLs, and mixtures containing two or more of GenX, PFNA, PFHxS and PFBS using a hazard index MCL to account for the combined and co-occurring levels of these PFAS in drinking water.

PFAS have known impacts to human health and the environment, yet PFAS are unique from many other contaminants in Arizona due to a combination of their widespread occurrence, anthropogenic source, and very low proposed regulatory levels. As such, decisions made about how and when to incorporate PFAS into Arizona Department of Environmental Quality (ADEQ) programs may have significant impacts on the agency's resources.

As federal regulations are finalized, ADEQ must ensure that all applicable federal laws are followed. ADEQ recognizes that a consistent decision-making process is needed for determining the appropriate resources to allocate for PFAS initiatives within the agency. This strategy document will help guide ADEQ staff in making replicable decisions regarding the use of agency resources for PFAS-related issues during the time when new federal regulations are being proposed and finalized.

1.2 Federal Approach

The US EPA has developed and is implementing a PFAS Strategic Roadmap to address PFAS at the national level. The goals of this roadmap are to invest in PFAS research, pursue a comprehensive approach to prevent PFAS from entering the environment, and to accelerate the cleanup of PFAS contamination. In April 2024, EPA achieved two major milestones as part of their roadmap when they finalized the PFAS National Primary Drinking Water Regulation and designated PFOA and PFOS as hazardous substances under the Comprehensive Environmental Response,

Compensation, and Liability Act (CERCLA). Additional regulations expected to impact ADEQ in the next 1-4 years include, at a minimum, the listing of certain PFAS as hazardous constituents, and the issuance of final aquatic life ambient water quality criteria.

1.3 Prior ADEQ Actions

ADEQ had taken a number of actions to address PFAS even before the agency’s comprehensive PFAS strategy was developed. Beginning in 2018, ADEQ conducted several limited screening efforts to understand the scope of PFAS impacts in Arizona. This screening has included drinking water, groundwater, wastewater, and biosolids. Additional actions were taken where ADEQ leadership determined that there was a substantial risk of human exposure. Some actions taken prior to the development of ADEQ’s PFAS strategy included:

- Targeted screening of drinking water systems not included for sampling under US EPA’s Third Unregulated Contaminant Monitoring Rule (UCMR),
- Site characterization and remediation of PFAS threatening the City of Tucson’s Central Wellfield,
- Limited state-wide screening of wastewater and biosolids from wastewater treatment plants,
- Limited investigation of PFAS detections along the Santa Cruz River near Marana,
- PFAS sampling related to the emergency response to the Tempe Town Lake train derailment,
- Limited sampling at select Water Quality Assurance Revolving Fund (WQARF) Sites,
- Summary of available information related to Federal Aviation Administration (FAA) Part 139 airports in Arizona and potential receptors,
- Notification and sampling of private wells near confirmed contamination at the Tucson International Airport Area Superfund Site,
- Notification and sampling of private wells near confirmed contamination north of Davis-Monthan Air Force Base, and
- Notification and sampling of private wells near confirmed contamination in Forbing Park, near Prescott.

In January 2023, ADEQ began an expanded drinking water sampling effort that includes all anticipated regulated systems in the state that are not included in UCMR 5. This effort was undertaken to continue the agency’s focus on reducing and eliminating drinking water exposures. This and other actions taken by the agency largely after a PFAS strategy was developed, are detailed in Section 3.0.

2.0 ADEQ PFAS Strategy

From April 25-27, 2023, ADEQ leadership met with key stakeholders from across the agency to develop a comprehensive PFAS strategy to guide PFAS-related decision making in the agency. Prior to the meeting, staff compiled relevant information, including a survey of internal stakeholder expectations. ADEQ also attempted to better understand the voice of the customer by reaching out to representatives of select drinking water providers. Stakeholder responses were considered during the strategy development process and were recorded in the meeting documentation.

2.1 Guiding Principles

ADEQ leadership outlined several principles that should be considered when making decisions about PFAS. These principles have guided the development of this PFAS strategy. No priority was assigned to these principles and agency actions should satisfy the greatest number of these principles as possible.

- The agency PFAS approach needs to balance PFAS efforts with ADEQ’s other, non-PFAS responsibilities
- All PFAS-related activities should comply with established rule and statute
- The agency should prioritize PFAS exposure in public drinking water systems
- Wherever possible, the agency should maximize the use of funding specifically allocated to PFAS and should leverage PFAS funding to simultaneously address non-PFAS problems
- The agency should use its authority to address imminent and substantial dangers to public health or welfare or the environment*

*Imminent and substantial danger (e.g. 49-287 E) will be defined by a combination of factors including the expected concentration, duration of exposure, scale of exposure, and whether the exposed population is economically disadvantaged (e.g. 49-282.06 C). This decision will be left to the discretion of agency leadership.

2.2 Strategy Goals

The PFAS strategy seeks to achieve several goals. These goals will be updated as necessary to reflect the latest developments in the science and regulation of PFAS:

1. *Make decisions in a replicable and consistent way across all sections of the agency and be consistent with rule and statute.*

Each program will align activities to be consistent with the strategy. Human and fiscal resources will be prioritized in a way that seeks to limit human exposure to PFAS, while also balancing the agency's many important responsibilities. The agency will have a consistent message to external stakeholders such as water providers, water users, and other government agencies.

2. *Incorporate equity and equality into decision making and communications.*

Effective risk communication and community engagement will be an integral part of all PFAS activities with the goal of empowering communities to make informed decisions. ADEQ's PFAS communications and decision-making will also consider impacts to disadvantaged communities.

3. *Maximize the benefit of federal and state PFAS funding for Arizona*

Significant federal funding is being made available to Arizona to help address PFAS issues. PFAS-specific state funding has also been allocated to ADEQ. While balancing other agency priorities, ADEQ will seek to acquire and put to beneficial use as much PFAS-specific funding as possible to help Arizona communities. Wherever possible, ADEQ will use this funding to simultaneously solve non-PFAS problems affecting human health and the environment.

4. *Strategically implement federal PFAS regulations within the agency's existing programs*

Final federal regulations will be promptly incorporated into Arizona rules as appropriate, and ADEQ programs will ensure that all applicable federal laws are followed. Where possible, programs will consider existing agency responsibilities when prioritizing new PFAS activities in an effort to achieve the most effective use of agency resources and ensure that staff time is not overallocated. Stakeholder engagement is critical to ensure that program changes are successful and sustainable.

Prior to final federal PFAS regulations being issued by EPA, ADEQ's goals had included limiting the diversion of resources to PFAS from other agency priorities. Because some programs will now be required to address PFAS under federal law, the agency does not always have the same flexibility in decision-making. However, as stated above, ADEQ will still consider existing responsibilities wherever possible when prioritizing PFAS activities.

2.3 Strategic Elements

Based on the principles and goals outlined above, ADEQ has developed a strategy to address PFAS during the period in which new federal regulations continue to be proposed and finalized. The ADEQ PFAS strategy includes a focus on three key elements: healthy drinking water, equity and engagement, and strategic implementation of new federal regulations.

ADEQ's PFAS strategy key elements

 HEALTHY DRINKING WATER Provide resources and technical assistance to drinking water systems; focus cleanup efforts on drinking water exposures	 EQUITY AND ENGAGEMENT Actively engage with communities across Arizona on PFAS issues and consider equity when prioritizing resources	 STRATEGIC IMPLEMENTATION Promptly incorporate new federal PFAS regulation into existing state programs while actively engaging with stakeholders
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2.3.1 Healthy Drinking Water

The agency has prioritized the need for healthy drinking water for all Arizona citizens. ADEQ is conducting comprehensive sampling to ensure that all public water systems regulated for PFAS under the final NPDWR are sampled as soon as possible. Through this program, systems are saving significant sampling costs and are being notified of PFAS detections much earlier than if they had waited until they are required to sample under the federal regulations. For those systems with PFAS concentrations higher than the EPA's final limits, ADEQ is helping with expanded testing, evaluation of potential solutions, and mitigation assistance. With many systems across the nation facing similar challenges, the agency will continue its work to ensure Arizona's drinking water providers are well-positioned to meet the new PFAS limits.

Wherever possible, ADEQ will leverage available funding to simultaneously address other, non-PFAS-related drinking water challenges. These challenges may include the

need to upgrade infrastructure, mitigate other contaminants, and increase system redundancy.

2.3.2 Equity and Engagement

Effective risk communication and community engagement will be an integral part of all PFAS activities with the goal of empowering communities to make informed decisions. ADEQ will implement a number of key strategies to ensure that communities and community leaders are informed of ADEQ activities and can provide feedback to the agency as necessary. The approach includes a focus on messaging, the website, and data sharing, along with an effort to proactively visit and speak with community leaders such as county boards of supervisors.

Communications and decision-making will be conducted in a manner that considers the principle of equity. Impacts to economically disadvantaged communities will be a factor used in determining the prioritization of resources.

2.3.3 Strategic Implementation

ADEQ will promptly incorporate final federal PFAS regulations into its rules as appropriate and will not delay the implementation of new federal regulations within its programs. ADEQ programs will ensure that all applicable federal laws are followed. When final PFAS regulations require a program to undertake new PFAS activities, the activities should be prioritized along with existing responsibilities. This will help to ensure that agency resources are used effectively and staff time is not overallocated.

Stakeholder engagement is critical to ensure that program changes are successful and sustainable. Wherever possible, stakeholders should be consulted when considering substantial changes to existing programs.

3.0 Strategy Implementation

3.1 PFAS Strategy Actions

A number of agency PFAS initiatives have been taken and will continue under this strategy. These include the following:

1. Public Water System PFAS Mitigation

Comprehensive public water system testing is being conducted to ensure that all regulated water systems are tested for PFAS as soon as possible, and those impacted are prioritized for mitigation assistance. This effort continues the agency's focus on reducing and eliminating drinking water exposures. The program helps to ensure that federal and state funding for PFAS is put to its

maximum beneficial use by using up to \$3 million in federal Safe Drinking Water Act funds for sampling and technical assistance, while assisting water providers in obtaining federal grant funding as necessary.

2. Ambient Groundwater Monitoring

As part of ADEQ’s statutory requirement to monitor new and existing contaminants in Arizona’s groundwater, ADEQ is conducting ambient groundwater monitoring for PFAS. This sampling is part of an existing initiative within the agency. Adding PFAS to the list of analytes may help to identify contamination that could affect drinking water.

3. Ambient Surface Water Monitoring

ADEQ consultants include PFAS during the collection of ambient surface water quality data at select locations across Arizona. These data are used to better understand the distribution of PFAS in Arizona surface waters and are publicly available through the EPA’s Water Quality Portal.

4. Aqueous Film-Forming Foam (AFFF) Take-back and Replace

In fiscal year 2023, ADEQ conducted an AFFF take-back and replace pilot program to assist fire departments throughout Arizona with the disposal and replacement of PFAS-containing firefighting foams. This project used allocated funding to prevent additional contamination of drinking water resources by replacing and safely disposing of 9,910 gallons of PFAS-containing AFFF.

5. Central Tucson PFAS Project

In 2020, ADEQ began a PFAS investigation and remediation effort near Davis Monthan Air Force Base in Central Tucson based on the Director’s determination of an imminent and substantial danger to human health. PFAS concentrations in groundwater had been detected up to four orders of magnitude higher than US EPA’s proposed MCLs, threatening the drinking water supply for Arizona’s second largest metropolitan area. Since the start of the project, the US Air Force has begun funding operations and maintenance of the remediation effort. Continuing this project helps to maximize the use of federal funding, while protecting an important drinking water supply for the City of Tucson. This work earned the 2022 National Groundwater Association Groundwater Remediation Project Award.

6. Tucson International Airport Area Superfund Site (TIAA)

At TIAA, ADEQ has actively partnered with EPA and Tucson Water to prevent PFAS from impacting drinking water supplies. The Tucson Airport Remediation Project (TARP), the primary groundwater treatment system at the site, had produced approximately 8% of the drinking water supply for the City of Tucson but was not designed to treat PFAS. When significant PFAS concentrations were detected in the TARP wellfield, the state of Arizona provided \$2M to allow TARP effluent to be used for non-potable uses. The Governor’s office then approved the use of approximately \$25M in federal funding through the American Rescue Plan Act (ARPA) to design and construct PFAS-specific treatment at TARP. The ARPA funds are administered by ADEQ and will ensure the system is once again capable of producing drinking water for the City.

7. Federal Sites

At several federal sites, EPA has provided funding for ADEQ to assist with PFAS sampling and investigation efforts. ADEQ will continue to assist EPA with these efforts to use federal funding to accelerate cleanup of drinking water aquifers.

8. University Partnerships

ADEQ provides technical direction on several PFAS-oriented research projects using a number of different funding sources. Several PFAS-oriented research projects were recently begun in areas identified by ADEQ: ASU is determining a better way to dispose of brine from water treatment using reverse osmosis, to regenerate and reuse PFAS treatment media, and facilitating a better understanding of whether PFAS and other emerging contaminants in biosolids can enter our food production system. Also, ADEQ is working with a team of researchers from the University of Arizona and Northern Arizona University to research advanced sensing and PFAS remediation technologies through a grant provided by the Arizona Board of Regents. ADEQ may look to future grants or university partnerships to assist with performing necessary PFAS research in areas where agency resources are limited.

3.2 Communication and Engagement

ADEQ’s strategy for engagement has four primary goals:

1. Ensure residents are informed about known exposures to PFAS in drinking water
2. Increase residents’ general awareness of PFAS so they can make informed decisions

3. Collaborate with county public health departments and elected officials to jointly address public concerns
4. Coordinate efforts with other organizations that are involved in PFAS engagement activities

Implementation of the engagement strategy will allow messaging to have a common purpose and be appropriately tailored to specific audiences.

3.3 Engagement with State Partners

ADEQ will proactively engage with other state agencies, where appropriate, to achieve the goals outlined in this strategy. Interactions with other agencies may be necessary to engage with communities and ensure that the public feels empowered to make informed decisions. Collaboration between state agencies may also help to ensure healthy drinking water, for example, by working collaboratively with the Arizona Department of Health Services to address impacts to private wells.

3.4 Data Management

It is important that ADEQ collects and preserves PFAS data in a rigorous manner, with an emphasis on quality control and quality assurance. Maintaining accurate and accessible data is essential for ensuring that ADEQ can make consistent, science-based decisions and prioritize effective communication and engagement. An agency PFAS Quality Assurance Program Plan (QAPP) has been developed and all ADEQ programs should follow the QAPP when collecting PFAS data. The Office of Environmental Excellence (OEE) and the Geographic Information Systems (GIS) team should be informed of all sampling activities to help ensure that all necessary data is collected and properly preserved for the purpose of mapping and analysis. As an example, the emphasis on collecting and maintaining robust, accessible datasets allowed ADEQ to be one of the first states in the nation to publicly display drinking water PFAS sampling results on its website with a direct comparison to the new EPA drinking water rule.

3.5 Change Management

PFAS science and regulations are changing rapidly and it is therefore necessary to ensure that ADEQ's PFAS strategy continues to reflect the latest developments. Regular PFAS strategy meetings are held with agency leadership on a monthly basis and these meetings will serve as a method to ensure the strategy incorporates any new developments. At a minimum, the strategy will be revisited each time there is a newly proposed or finalized federal regulation that will impact Arizona.

4.0 Timeline and Conclusions

This PFAS strategy is intended to provide guidance during the period in which new federal PFAS regulations continue to be proposed and finalized. During this period, uncertainty remains regarding exactly, how, when, and if proposed regulations will be finalized and implemented. As federal regulations are finalized, regulated PFAS will be incorporated into ADEQ's existing programs and will be adopted into the Arizona Administrative Code as necessary.

ADEQ will review the PFAS strategy annually and after any new PFAS regulations are finalized to determine if changes are necessary. Existing meetings such as the PFAS strategy meeting and monthly managers meetings will be used to disseminate information related to the ADEQ PFAS strategy and provide significant updates to managers and staff.