

Providing safe and reliable water is American Water's business. We are recognized as an industry leader and work cooperatively with the U.S. Environmental Protection Agency so that implementation of existing drinking water standards and development of new regulations will produce benefits for our customers.



PFAS

WHAT ARE PFAS?

Per- and Polyfluoroalkyl substances (PFAS) are a large group of manufactured organic chemicals that are used in a variety of products for their nonstick properties (e.g., Teflon, Scotchgard), as well as in industrial applications such as firefighting. Aqueous Film Forming Foam (AFFF) usage at military bases and airports are sources of PFAS in drinking water supplies near those locations.

From the Unregulated Contaminant Monitoring Rule 3 (UCMR3), perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) were detected in numerous public water systems. PFOA has been phased out of production, but replacement compounds, such as "GenX," have been developed and are increasingly being detected in the environment. There are thousands of PFAS compounds.

The compounds have most commonly been detected in groundwater, but have also been detected at elevated concentrations in surface waters.

WHAT ARE THE ISSUES I MAY HAVE HEARD ABOUT?

PFAS have been linked to various toxicological issues and are highly persistent in the environment. The U.S. Environmental Protection Agency (EPA) has set a non-enforceable Health Advisory Level of 70 nanograms per liter or parts per trillion (ppt) for combined PFOA and PFOS. New Jersey was the first state to set a maximum contaminant level (MCL) for

This is one of the most rapidly changing landscapes in drinking water contamination. We have invested time and effort on our own independent research, as well as engaging with other experts in the field to understand PFAS occurrence, fate and transport in the environment. We are also actively assessing treatment technologies that can effectively remove PFAS from drinking water, because we believe that investment in research is critical for addressing this issue.

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perfluorononanoic acid (PFNA) (13 ng/L). Additional states have proposed MCLs or have set guidance levels. The EPA released a PFAS Action Plan in February 2019, but is not expected to make a preliminary decision on whether they will seek to establish an MCL until the end of 2019.

HAS AMERICAN WATER HAD TO ADDRESS PFOA IN THE PAST?

Yes. We have successfully addressed PFOA in the past. Here are two examples:

- **Picatinny Arsenal, NJ:** Water samples that were taken in January 2018 at Picatinny Arsenal by our Military Services



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FOR MORE INFORMATION

For more information, customers can contact the US Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Group detected levels of PFOA and PFOS that, when combined, exceeded the EPA's health advisory limits. American Water made recommendations to quickly remove PFOA/PFOS contaminants and were awarded a contract in April 2018 to install a temporary Granular Activated Carbon (GAC) system within 90 days. The American Water-led team kept the project ahead of schedule, completing the design, permitting, implementation, construction and treatment in just 38 days. Sample results were returned that showed PFOA/PFOS were at non-detect levels across the system, highlighting the effectiveness of the GAC treatment system.

- **Nut Plains, CA:** In October 2015, test results for combined PFOS and PFOA exceeded the EPA's health advisory limits. California American Water applied for grant funding for PFOS/PFOA treatment in July 2016, and in March 2017, the notice to proceed on construction of a treatment plant was issued. Four months later, California American Water learned that it was denied state grant funding for PFOA/PFAS due to lack of state guidance on the contaminant. However, the company continued with construction, and in September 2017, California American Water placed its new PFAS treatment unit on Nut Plains Drive in Rancho Cordova into operation.

WHAT IS AMERICAN WATER DOING TO ADDRESS PFAS AND PROTECT OUR CUSTOMERS?

- American Water has a cross-functional team focused on the scientific and regulatory framework related to PFAS

detection and emerging technologies for removal.

- Selecting the most efficient and cost-effective PFAS removal process(es) is strongly dependent on background water matrix composition and targeted PFAS. American Water's engineering and research teams continually conduct studies to evaluate new monitoring and treatment technologies.
- We are piloting ion exchange resins along side granular activated carbon (GAC) to compare PFAS removal and media performance.
- American Water's research group is actively involved in externally-funded projects related to the detection, occurrence and removal of PFAS.
- American Water continues to improve analytical method detection limits for PFAS.
- GAC has been installed to remove PFAS compounds from five locations that have elevated source water levels.

EXPERTISE

Our Central Laboratory, located in Belleville, IL, is an EPA accredited lab with high throughput, fast turnaround time, and expanded capability for PFAS. The Central Laboratory is NELAC certified to perform EPA method 537 that includes 14 PFAS compounds at reporting limits of 5 ng/L and method detection limits of 2 ng/L. A revision to method 537.1 is underway that will add four additional compounds. In addition, our in-house team of research scientists and engineers is actively involved in two major studies being funded by external agencies that will evaluate method modifications to hopefully expand the number of compounds we can effectively measure.



HOW AMERICAN WATER HAS CONTRIBUTED TO THE BODY OF SCIENCE ON PFAS

American Water is active in several external collaborations that are helping us stay at the forefront of regulatory and monitoring strategies:

- American Water staff are members of the technical advisory workgroup for Safe Drinking Water Act Processes and New Contaminants of the American Water Works Association, which has been actively contributing to the fast-paced changes related to detection and regulatory strategies for PFAS.
- American Water experts frequently collaborate with state and federal regulators in departments of environmental protection, EPA, CDC, American Water Works Association, Water Research Foundation, universities and other organizations to better understand issues related to PFAS and public health.
- American Water is a utility participant in the Water Research Foundation project, entitled "Investigation of Treatment Alternatives for Short-Chain Poly and Perfluoroalkyl Substances."
- American Water is using new analytical capabilities in our research labs to determine which of our systems may be impacted by short chain and next generation PFAS compounds.