



Fact Sheet

Frequently Asked Questions: **Drinking Water Guidelines for PFOA and PFOS**

Background

Drinking water containing perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS) – and the larger family of per- and polyfluoroalkyl substances (PFAS) – has become an increasing concern due to the persistence of these chemicals in the environment and their tendency to accumulate in groundwater. Scientific studies indicate that exposure to PFOA and PFOS can lead to significant health effects such as cancer, immune system issues, liver and thyroid problems, and harm to a developing fetus or infant.

There are thousands of versions of PFAS with varying degrees of understanding of toxicity and environmental occurrence. Of all PFAS compounds, perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) have been the most extensively produced and studied.

In August 2019, the State Water Board's Division of Drinking Water (DDW) updated its guidelines for local water agencies to follow in detecting and reporting the presence of these chemicals in drinking water. The guidelines lower the notification levels from 14 parts per trillion (ppt) to 5.1 ppt for PFOA and from 13 ppt to 6.5 ppt for PFOS. These levels are based on updated health recommendations from the Office of Environmental Health Hazard Assessment (OEHHA), which is part of the California Environmental Protection Agency.

In addition to the updated notification levels, the State Water Board announced it has requested that OEHHA develop public health goals (PHGs) for both PFOA and PFOS, the next step in the process of establishing maximum contaminant levels in drinking water. Other chemicals in the broader group of per- and polyfluoroalkyl substances (PFAS) may be considered later, either individually or grouped, as data permits.

What is a notification level?

A notification level is a nonregulatory, precautionary health-based measure for concentrations of chemicals in drinking water that warrant notification and further monitoring and assessment. Public water systems are encouraged to test their water for contaminants with notification levels. If the systems test, they are required to report exceedances to their governing boards and are urged by the State Water Board to report this information to customers.

Establishing notification levels based on current health studies is an initial step toward setting regulatory standards for these chemicals in drinking water. The Water Board's investigation of a

broader group of PFAS chemicals in water systems and groundwater will help inform this process.

What is a response level?

A response level is a nonregulatory, precautionary health-based measure that is set higher than a notification level and represents a recommended level that water systems consider taking a water source out of service or provide treatment if that option is available to them.

While the State Water Board continues to assess the scope of contamination based on initial data reporting from the statewide assessment, the response levels for PFOA and PFOS remain at 70 parts per trillion for the total combined concentration of both contaminants, consistent with the U.S. Environmental Protection Agency's health advisory level. The response levels will be updated in the fall of 2019.

What is a public health goal?

A public health goal (PHG) is a level of a contaminant in drinking water that does not pose a significant health risk. A PHG reflects the risk from long-term exposure to a contaminant and should not be used to estimate risks from short-term or acute exposure. Developed by OEHHA, PHGs are not regulatory requirements, but instead represent non-mandatory goals.

What is a maximum contaminant level?

Maximum contaminant levels (MCLs) are health-protective drinking water standards to be met by public water systems. MCLs consider not only health risks from exposure to a chemical, but factors such as detectability and treatability, as well as costs of treatment to reduce a chemical's presence in drinking water. [Health & Safety Code §116365\(a\)](#) requires the State Water Board to establish a contaminant's MCL at a level as close to its PHG as is technically and economically feasible, placing primary emphasis on the protection of public health.

How do we establish maximum contaminant levels?

The first goal of the State Water Board is to establish an MCL as close as possible to the PHG. This is a complex task that involves consideration of many factors, including the following:

- What different contaminant levels are found throughout water systems in California?
- What are the population sizes that are being affected?
- What technology is available to treat our water?
- What is the cost of the treatment to treat and monitor our water?
- What amount of health benefit is achieved at each increment?

Establishing an MCL is a public process that follows the Administrative Procedures Act.

What are PFOA and PFOS used for and how am I exposed to them?

Part of a large family of chemicals known as per- and polyfluoroalkyl substances (PFAS), PFOA and PFOS were introduced in the 1940's and widely used in firefighting foams and in grease and stain-resistant, non-stick coatings in a variety of consumer products such as food paper packaging, carpets, furniture and cookware. The main route of exposure to PFOA and PFOS is through ingestion. While consumer products have been a large source of exposure to these chemicals for most people, drinking water has become an increasing concern due to the persistence of PFAS chemicals in the environment and their tendency to accumulate in groundwater. Groundwater contamination typically has been associated with an industrial

facility where these chemicals were manufactured or used in other products, such as airfields where the chemicals have been used for firefighting or in areas near landfills that accept items containing PFAS.

What are the potential health concerns caused by PFOA and PFOS in drinking water?

PFOA and PFOS are readily absorbed but not readily eliminated from the human body. Health effects associated with long-term exposure include harmful effects to a developing fetus or infant; harmful effects to the immune system, thyroid and liver; and cancer.

The notification levels are based on recommendations that provide a margin of protection against these health effects in sensitive populations. They are also established at concentrations associated with a low cancer risk over a lifetime of exposure. The risk would be lower once the contaminant is eliminated or reduced in the water supply. In addition to water, humans can be exposed to PFOA and PFOS through a variety of sources, including food, dust in homes and imported consumer products.

If a water system detects PFOA or PFOS in the source water, what is required to be done?

When chemicals are found at concentrations greater than their notification levels in drinking water that is provided to consumers, certain noticing requirements and recommendations apply. DDW recommends that the water system inform its customers and consumers about the presence of the chemical, and about health concerns associated with exposure to it.

To provide consumer notice, the utility may use its annual [Consumer Confidence Report](#), a separate mailing, or other method. DDW strongly recommends that a water system provide annual notification if a source that exceeds a notification level continues to be used.

When chemicals exceed their response levels in drinking water, DDW recommends that water systems consider taking a water source out of service or provide treatment if that option is available to them. Under Assembly Bill 756 (Cristina Garcia, Chapter 162, Statutes of 2019), drinking water sources with PFAS levels above the response level are either to be taken out of service or the water system must provide public notice of the exceedance level.

Are there efforts to investigate how much PFOA and PFOS is in our groundwater and drinking water?

From 2013 to 2015, the federal third Unregulated Contaminant Monitoring Rule required all large water systems (water systems serving over 10,000 people) to collect and analyze drinking water for PFOS and PFOA. In addition, some water systems serving fewer than 10,000 people reported approximately 400 drinking water results for PFOS and PFOA. Based on preliminary information from EPA, 63 water suppliers in the United States detected PFOA and PFOS in their drinking water supplies. Twenty-six of these water systems are located in California.

Targeted testing is underway to identify the extent of contamination of drinking water sources in California. Pursuant to Health and Safety Code section 116400, DDW has issued orders to public water systems requiring testing for PFOA, PFOS and certain other PFAS chemicals.

The first phase of testing focuses on systems that may be at risk for potential contamination due to their proximity to facilities known to use, produce, or store these PFAS chemicals, or because of proximity to a public water system whose water supply is contaminated by PFAS. A list of public water systems and sources that are required to be sampled can be found at [DDW PFOA PFOS](#)

AB 756 (Cristina Garcia, Chapter 162, Statutes of 2019) authorizes the State Water Board to more broadly order water systems to monitor for PFAS and report their detections.

Further information on PFAS can be found at www.waterboards.ca.gov/water_issues/programs/pfas/

How will results of the PFAS sampling be made public?

All chemical compounds required to be sampled by public water systems are to be included in the annual Consumer Confidence Report required by Health and Safety Code section 116455.

The State Water Board has also created a [user-friendly web portal](#) with a series of interactive maps accessible to the general public. The maps display the most current test data in a visual way and allow users to understand the geographical implications of these contaminants. A spreadsheet with the data is also available to the public.

As a public water system customer, how can I sample my water for PFAS?

Sampling and testing requires strict adherence to sampling procedures and care to avoid errors or misleading test results. DDW recommends you contact your water system for assistance. If the water system cannot assist you, DDW recommends using an accredited laboratory. ([Laboratory map](#))

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/PFOA_PFOS.html

https://www.waterboards.ca.gov/drinking_water/certlic/labs/

(These FAQs were last updated on Oct. 14, 2019)