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Regulating Drinking Water Contaminants: EPA PFAS Actions

The U.S. Environmental Protection Agency's (EPA) efforts to address the presence of per- and polyfluoroalkyl substances (PFAS) in drinking water has been the focus of increased congressional attention. Over the past decade, EPA has been evaluating several PFAS under the Safe Drinking Water Act (SDWA) to determine whether national drinking water regulations may be warranted. EPA has not issued SDWA regulations for any PFAS but has taken other actions to address PFAS in drinking water.

The 116th Congress has held hearings and passed legislation directing EPA and other departments and agencies to take a range of actions to address PFAS contamination. In February 2019, EPA issued a PFAS Action Plan (EPA 823R18004), which discusses EPA's efforts to address PFAS under multiple environmental laws. This In Focus outlines the agency's activities to address PFAS using SDWA authorities and reviews related legislative actions.

Background

PFAS include thousands of diverse chemicals, some of which have been used for decades in an array of industrial, commercial, and U.S. military applications. The chemical characteristics of PFAS have led to the use of various PFAS for an array of purposes such as fighting fuel-based fires and for processing and manufacturing numerous commercial products (e.g., stain-resistant and waterproof fabrics, nonstick cookware, and food containers).

The two PFAS most frequently detected in drinking water are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). (U.S. manufacturers have phased out the production and most uses of PFOA and PFOS.) In 2016, EPA reported that PFOA and/or PFOS were detected in at least one public water system in 24 states. Four other PFAS were also detected in some systems.

SDWA provides EPA with several authorities to address unregulated contaminants in drinking water supplies and sources. As briefly discussed below, these include the authority to issue health advisories, regulate contaminants in public water supplies, and issue enforcement orders in certain emergency circumstances.

Drinking Water Health Advisories

SDWA authorizes EPA to issue health advisories for contaminants that are not regulated under the act (42 U.S.C. §300g-1(b)(1)(F)). Health advisories provide information on health effects, testing methods, and treatment techniques for unregulated contaminants of concern. They also include nonenforceable levels to help water suppliers and others address contaminants that lack federal (or state) drinking water standards. In 2016, EPA issued Lifetime Health Advisory levels for PFOA and PFOS in drinking water at

70 parts per trillion (ppt) separately or combined. EPA developed these advisory levels to protect the most sensitive population groups, with a margin of protection, over a lifetime of daily exposure.

Regulating Contaminants Under SDWA

SDWA authorizes EPA to regulate contaminants in water provided by public water systems and specifies a multistep process for evaluating contaminants to determine whether a national primary drinking water regulation is warranted (42 U.S.C. §300g-1). The process includes identifying contaminants of potential concern, assessing health risks, collecting occurrence data (and developing any necessary test methods), and making determinations as to whether a national drinking water regulation is warranted.

To make a positive determination to regulate a contaminant, SDWA directs EPA to find the following: (1) a contaminant may have an adverse health effect; (2) it is known to occur or there is a substantial likelihood that it will occur in water systems at a frequency and at levels of public health concern; and (3) in the sole judgment of the EPA administrator, regulation of the contaminant presents a meaningful opportunity for reducing health risks. Below is an overview of each step and related EPA efforts regarding the assessment of specific PFAS.

Contaminant Selection

Every five years, EPA is required to publish a list of contaminants that are known or anticipated to occur in public water systems and may warrant regulation under the act (42 U.S.C. §300g-1(b)). In 2009, EPA placed PFOA and PFOS on the third such contaminant candidate list (CCL 3) for evaluation (74 *Federal Register* 51850). In November 2016, EPA issued CCL 4, which carried over many CCL 3 contaminants, including PFOA and PFOS, for further evaluation (81 *Federal Register* 81103).

Monitoring for Unregulated Contaminants

To generate nationwide occurrence data for unregulated contaminants, SDWA directs EPA to promulgate, every five years, an unregulated contaminant monitoring rule (UCMR) that requires water systems operators to test for no more than 30 contaminants (42 U.S.C. §300j-4). EPA generally requires monitoring by operators of all public water systems that serve more than 10,000 persons, plus a representative sample of smaller systems. (Roughly, 82% of the U.S. population is provided water from public water systems that serve more than 10,000 individuals.)

In 2012, EPA issued the UCMR 3, requiring roughly 5,000 water systems to monitor for six PFAS—including PFOA and PFOS—between January 2013 and December 2015. According to EPA, 63 water systems (1.3%) serving an

estimated 5.5 million individuals detected PFOA and/or PFOS at levels above EPA’s health advisory level of 70 ppt (separately or combined).

Regulatory Determinations

SDWA requires EPA to make a regulatory determination—a determination of whether or not to promulgate a national primary drinking water regulation—for at least five contaminants every five years.

In selecting contaminants for regulatory determinations, SDWA directs EPA to prioritize those that present the greatest health concern while considering a contaminant’s effects on subgroups that may be at greater risk of adverse health impacts from exposure to a contaminant (e.g., infants, pregnant women). EPA is required to publish a preliminary determination and seek public comment before finalizing a determination.

In 2016, EPA included PFOA and PFOS on its “short list” of contaminants identified for regulatory determinations in CCL 4 (81 *Federal Register* 81103). EPA expected to propose preliminary regulatory determinations for PFOA and PFOS by the end of 2019, followed by final determinations by 2021.

Developing Drinking Water Regulations

If the EPA administrator determines to regulate a substance, EPA is required to propose a rule within 24 months and promulgate a drinking water regulation within 18 months after the proposal. EPA may extend the deadline for up to nine months (42 U.S.C. §300g-1(b)(1)).

For each regulation, EPA is required to establish a nonenforceable maximum contaminant level goal (MCLG) at a level at which no known or anticipated adverse health effects occur, with an adequate margin of safety. For each contaminant covered by the regulation, EPA generally specifies a maximum contaminant level (MCL)—an enforceable standard applicable to public water suppliers. SDWA directs EPA to set the MCL as close to the MCLG as is “feasible” using best available technology or other means available, taking costs into consideration. SDWA requires that regulations include analytical methods and feasible treatment methods that public water systems can use to monitor for contaminants and comply with the MCL. They also include monitoring and reporting requirements (42 U.S.C. §300f(1), §300g-1).

Emergency Powers

SDWA authorizes EPA to take actions it deems necessary to abate an imminent and substantial endangerment to public health from a contaminant (regulated or unregulated) that is present in or likely to enter a public water system or an underground source of drinking water (42 U.S.C. §300i). This authority is available if state and local authorities have not acted. EPA actions may include issuing orders requiring persons who caused or contributed to the endangerment to provide alternative water supplies or to treat contamination, among other actions. Since 2002, EPA has used this authority to require responses to PFOA and/or PFOS contamination of water supplies associated with four sites, including three Department of Defense (DOD) sites.

MCLs and Remedial Actions

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or “Superfund”), MCLs may be considered in selecting remedial actions for releases of hazardous substances, pollutants, and other contaminants (42 U.S.C. §9621(d)). However, CERCLA establishes liability only for releases of hazardous substances. No PFAS has been designated as a hazardous substance. In the 116th Congress, several bills (e.g., H.R. 535 and S. 638) would direct EPA to designate PFAS as hazardous substances under CERCLA. The National Defense Authorization Act for Fiscal Year 2020 (P.L. 116-92), Section 316, expands DOD responsibility for response actions to include PFAS and other pollutants or contaminants but does not establish CERCLA liability for these chemicals. (See CRS Report R45986, *Federal Role in Responding to Potential Risks of Per- and Polyfluoroalkyl Substances (PFAS)*.)

PFAS Action Plan: Drinking Water

EPA’s Action Plan identifies additional efforts related to evaluating PFAS for potential regulation. Among others, EPA is developing new analytical test methods to support UCMR monitoring of more PFAS and at lower levels. (EPA has validated test methods for 29 PFAS.) The agency is also developing PFAS toxicity information and providing more information about PFAS treatment techniques and costs.

Legislation in the 116th Congress

In the 116th Congress, numerous bills would address PFAS through various authorities and agencies. P.L. 116-92 (H.Rept. 116-333) includes multiple PFAS provisions, primarily regarding DOD, but several involve EPA and other federal agencies. P.L. 116-92, Title LXXIII, includes several PFAS drinking water provisions. Section 7311 requires EPA to add to UCMR 5 all PFAS or categories of PFAS with validated test methods. Section 7312 establishes a grant program within the Drinking Water State Revolving Fund to assist water systems in addressing emerging contaminants with an emphasis on PFAS. Section 7312 authorizes appropriations of \$100 million annually for FY2020-FY2024 for this purpose.

On January 10, 2020, the House passed H.R. 535, a broad PFAS bill with several SDWA amendments. The bill would direct EPA to promulgate drinking water regulations for PFAS (with standards for at least PFOS and PFOA) within two years. H.R. 535 would establish a drinking water regulatory process and schedule specifically for PFAS. It would direct EPA to issue a health advisory within a year of finalizing a toxicity value for a single PFAS or class of PFAS. Among other bills, several would direct EPA to issue final or interim regulations for all or some PFAS, authorize grants for systems and/or households to treat PFAS, and/or increase PFAS monitoring. For further discussion of PFAS drinking water bills and EPA actions, see CRS Report R45793, *PFAS and Drinking Water: Selected EPA and Congressional Actions*.

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