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Regulating Drinking Water Contaminants: EPA PFAS Actions

Detections of per- and polyfluoroalkyl substances (PFAS) in drinking water supplies and uncertainty about potential health effects associated with exposure to PFAS have increased congressional attention to the U.S. Environmental Protection Agency's (EPA) efforts to address these substances in public water supplies. 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 various actions to address PFAS contamination.

In the 116th Congress, bills have been introduced to direct EPA to issue drinking water regulations for PFAS and to take other actions to address these emerging contaminants.

In February 2019, EPA issued a PFAS Action Plan (EPA 823R18004), which identifies EPA's actions to address PFAS under multiple environmental statutes. This In Focus outlines the agency's PFAS-related actions using SDWA authorities, with particular focus on the process for evaluating contaminants for regulation under SDWA.

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. Common products manufactured with the use of PFAS have included non-stick cookware, food wrapper coatings, waterproof and stain-resistant fabrics, and firefighting foams. Historically, the two PFAS produced in the largest quantities were 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 and that 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 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 non-enforceable levels to help water suppliers and others address contaminants that lack federal (or state) drinking water standards. In 2016, EPA established health advisory

levels for PFOA and PFOS in drinking water at 70 parts per trillion (ppt) (separately or combined). These levels are intended to protect the most sensitive subpopulations, with a margin of safety, over a lifetime of exposure. They replaced provisional advisory levels EPA issued in 2009 for these PFAS.

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 evaluation process includes identifying contaminants of potential concern, assessing health risks, collecting occurrence data (and developing reliable analytical methods necessary to do so), and making determinations as to whether a national drinking water regulation is warranted for a contaminant.

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 Administrator, regulation of the contaminant presents a meaningful opportunity for reducing health risks. Below is a description 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 SDWA (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). SDWA 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 population is served by water systems with U.S. populations of 10,000 or more.) UCMRs set a minimum reporting level (MRL) for each contaminant. MRLs are not

health based; rather, they establish concentrations for reporting and data collection purposes.

In 2012, EPA issued the UCMR 3, requiring some 5,000 public water systems to monitor for six PFAS—including PFOA and PFOS—between January 2013 and December 2015. PFOA was detected in 117 of these water systems at levels above the PFOA MRL of 20 ppt, and PFOS was detected in 95 of the systems at concentrations above the PFOS MRL of 40 ppt. PFOA was detected in 13 (0.3%) systems at levels above EPA’s health advisory level of 70 ppt. PFOS was detected in 46 (0.9%) systems above 70 ppt. EPA did not require monitoring for any PFAS in UCMR 4.

Regulatory Determinations

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

In selecting contaminants for a regulatory determination, SDWA directs EPA to prioritize those that present the greatest public health concern while considering a contaminant’s health effects on specified subgroups of the population who may be at greater risk of adverse health impacts due to exposure to a contaminant (e.g., infants, children, pregnant women). SDWA directs EPA to publish a preliminary determination and seek public comment prior to publishing a final regulatory determination decision.

In 2016, EPA included PFOA and PFOS on its “short list” of contaminants identified for regulatory determinations in CCL 4 (81 *Federal Register* 81103).

Developing Drinking Water Regulations

Once the Administrator determines to regulate a contaminant, EPA is required to propose a rule within 24 months and promulgate a “national primary drinking water regulation” within 18 months after the proposal. SDWA authorizes EPA to extend the deadline to publish a final rule for up to nine months, by notice in the *Federal Register*.

For each regulation, EPA is required to establish a non-enforceable 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 is required to specify a maximum contaminant level (MCL)—an enforceable standard for a contaminant in public water supplies. SDWA directs EPA to set the MCL as close to the MCLG as is “feasible” using best available technology, treatment techniques, 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 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 to address both regulated and unregulated contaminants if state and local authorities have not acted. Actions may include issuing orders requiring persons who caused or contributed to the endangerment to provide alternative water supplies or to treat contamination, etc. 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 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. However, CERCLA establishes liability only for releases of hazardous substances. No PFAS is designated as a hazardous substance (42 U.S.C. 9621(d)).

PFAS Action Plan: Drinking Water

In addition to the actions described above, EPA’s Action Plan identifies other ongoing and proposed actions related to evaluating PFAS for potential regulation under SDWA. Several pending actions are outlined below:

- EPA continues to evaluate PFOA and PFOS to determine whether regulation is warranted and intends to propose regulatory determinations by the end of 2019.
- EPA is developing new analytical test methods to support monitoring of more PFAS and at lower levels. (EPA has validated test methods for 18 PFAS.)
- Using new test methods, EPA plans to include other PFAS in the next unregulated contaminant monitoring rule (UCMR 5) in 2020 to assess their occurrence.

EPA also plans to develop an interactive map on potential PFAS sources and occurrence, expand toxicity information, and update its drinking water treatability database to provide information about treatment effectiveness and costs for various PFAS, among other actions.

Legislation in the 116th Congress

In the 116th Congress, bills have been introduced directing EPA to address PFAS under several environmental laws. Among drinking water related bills, S. 1473 and H.R. 2377 would direct EPA to issue a drinking water regulation with an MCL for PFAS. H.R. 2800 would expand monitoring for PFAS in drinking water. Several bills—including S. 611, H.R. 1417, H.R. 2533, and H.R. 2570—would authorize grants for public water systems and/or households to treat PFAS in drinking water. S. 1251 would require federal agencies to coordinate on emerging contaminants research, among other provisions. H.R. 1976 and S. 950 would direct the U.S. Geological Survey to conduct nationwide sampling of water and soil for PFAS, among other provisions. Other bills would address PFAS at U.S. military installations or designate PFAS as a hazardous substance under CERCLA, among other purposes.

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