96-722 ENR
Updated February 8, 1999

Safe Drinking Water Act Amendments of 1996: Overview of P.L. 104-182

Mary Tiemann
Specialist in Environmental Policy
Environment and Natural Resources Policy Division

Summary

The 104th Congress made extensive changes to the Safe Drinking Water Act (SDWA) with the Safe Drinking Water Act Amendments of 1996 (P.L. 104-182), bringing to a close a multi-year effort to amend a statute that was widely criticized as having too little flexibility, too many unfunded mandates, and an arduous but unfocused regulatory schedule. Among the many changes to the SDWA, the 1996 amendments added provisions to provide funding to communities for drinking water mandates, focus regulatory efforts on contaminants posing the greatest health risks, and add some flexibility to the regulatory process. Congress also added programs to: improve the capacity of public water systems to comply with drinking water regulations, prevent contamination of source waters, strengthen the science underlying drinking water regulations, and increase information provided to public water system customers. Authorizations for appropriations were extended through FY2003. This report, which will not be updated, reviews selected provisions of these amendments. (For a broader review of the SDWA, see CRS Report RL30022, *Environmental Laws: Summaries of Statutes Administered by the Environmental Protection Agency*.)

Overview of Selected Provisions

With the Safe Drinking Water Act Amendments of 1996, Congress acknowledged federal, state, and local experiences with the drinking water law, responded to emerging public health information and new scientific and regulatory concepts, and passed the most extensive drinking water amendments in a decade. Among the key provisions, P.L. 104-182 creates a new drinking water state revolving loan fund (DWSRF) program to help communities finance projects needed to comply with SDWA regulations. It establishes a process for selecting contaminants for regulation based on health risk and occurrence, gives EPA added flexibility to consider costs and benefits in setting most new standards and the authority to consider overall risk reduction, and includes schedules for regulating disinfectants and their by-products, microbial pathogens, radon, and arsenic. The law includes several provisions to build the capacity of small systems to comply with SDWA

regulations and allows states to grant these systems greater regulatory flexibility in certain circumstances. It imposes many new requirements on the states with new programs for source water assessment and protection, technical assistance, operator training, and small system capacity building. The amendments also require public water suppliers to issue annual reports to customers on contaminants found in their drinking water.

State Revolving Loan Funds

Between 1986 and 1996, the number of regulated contaminants grew from 23 to 83. EPA projected that the cost of complying with the regulations should not be significant for most households (which are served by large public water systems), but that costs could increase substantially for many of the households served by the nation's 52,000 small public water systems (PWSs). Prior to the 1996 Amendments, the SDWA provided no assistance to help communities meet the cost of complying with these mandates.

Congress responded to this concern by authorizing a drinking water state revolving loan fund (DWSRF) program to help systems finance projects needed to comply with SDWA regulations. Fashioned after the Clean Water Act SRF (CWSRF) program, Section 1452 authorizes EPA to make grants to states to capitalize DWSRFs, which states then use to make loans to public water systems. States must match 20% of the federal grant. Through FY2001, a Governor may transfer up to 33% of the grant to the CWSRF, or an equivalent amount from the CWSRF to the DWSRF. For FY1997, grants were allotted to states using the formula for distributing state PWS supervision grants; for subsequent years, grants must be allotted based on the results of a needs survey. Each state and the District of Columbia will receive at least 1% of the available funds.

DWSRFs may be used to provide loan and grant assistance for expenditures that EPA has determined will facilitate compliance or significantly further the Act's health protection objectives. States are required to make available 15% of their annual grant for loan assistance to systems that serve 10,000 or fewer persons. States may use up to 30% of their grant to provide grants or forgive loan principal for economically disadvantaged communities. Also, states may use a portion of funds for technical assistance and for source water protection, capacity development, and operator certification programs.

The law authorizes appropriations of $599 million for FY1994 and $1 billion per year for FY1995 through FY2003 for SRF capitalization grants. It directs EPA to reserve from the annual SRF appropriations: 0.33% for grants to several Trusts and Territories; $10 million for health effects research on drinking water contaminants; $2 million for the costs of monitoring for unregulated contaminants; and up to 2% for technical assistance. EPA may use 1.5% of funds each year for making grants to Indian Tribes and Alaska Native villages. Congress appropriated $1.275 billion for FY1997, $725 million for FY1998, and $775 million for FY1999 for this program. (For more information, see CRS Report 97-677, *Safe Drinking Water Act: State Revolving Fund Program*.)

Contaminant Selection and Regulatory Schedule

By the early 1990s, broad consensus had emerged that the Act's standard-setting schedule was overly ambitious and did not prioritize risks. EPA had missed numerous statutory deadlines, and many systems had difficulty complying with new rules on time.

EPA had regulated most of the initial 83 contaminants mandated by Congress in 1986 (excluding arsenic, sulfate and radionuclides) and only had proposed rules for microbial contaminants (especially *Cryptosporidium*) and 12 disinfectants and their byproducts (M/DBP rules) to meet the first '25 every 3 years' requirement. In general, EPA, states, and communities were overwhelmed by the statutory schedule, and many questioned the benefits of some of the regulations, given other contaminants of concern.

P.L. 104-182 made numerous changes to SDWA's standard-setting provisions (Section 1412). It revoked the mandate that EPA regulate 25 contaminants every 3 years, and established a process for EPA to select contaminants for regulatory consideration based on occurrence, health effects, and meaningful opportunity for health risk reduction. As of February 1998, EPA must publish, every 5 years, a list of contaminants that may warrant regulation. Starting in 2001, and every 5 years thereafter, EPA must determine whether or not to regulate at least 5 of the listed contaminants. The law directs EPA to evaluate contaminants that present the greatest health concern and to regulate contaminants that occur at concentration levels and frequencies of public concern. It also adopted in statute EPA's schedule for completing the M/DBP regulations.

Risk Assessment

EPA's risk assessment and cost-benefit analysis practices have been the subject of much debate in Congress. The law now requires EPA to use sound, peer-reviewed science in developing regulations and specifies how EPA must present health effects information to the public. When proposing a drinking water regulation, EPA now must prepare and seek comment on a health risk reduction and cost analysis. The analysis must include: the benefits and costs of alternative maximum contaminant levels (MCLs) or treatment techniques being considered, the incremental costs and benefits associated with each alternative MCL, the effects of the contaminant on the general population and sensitive subgroups, any increased health risks associated with compliance, and other factors. EPA may promulgate an interim standard without first preparing a benefit-cost analysis or making a determination as to whether the benefits of a regulation would justify the costs if the Agency determines that a contaminant presents an urgent threat to public health. The Act authorizes more than $39 million for each of fiscal years 1996 through 2003 for EPA to conduct studies, assessments and analyses in support of regulations.

Standard-Setting

The Act directs EPA to set a maximum contaminant level goal (MCLG) at a level at which no known or anticipated adverse health effects occur and allows an adequate margin of safety. EPA must then set an MCL as close to the MCLG as is "feasible" using the best technology available, taking costs into consideration. Legislative history has repeatedly directed EPA, when considering what is "feasible" to consider what is reasonably affordable for large metropolitan water systems. Because 80% of the population served by community water systems is served by large systems, this approach generally ensures that most people can receive high quality water at a reasonable cost. However, the remaining 20% of the population is served by small systems where economies of scale are absent, and compliance can impose high costs on households served by these systems.

An issue in the SDWA debate was that the law did not give EPA flexibility to select an MCL that was less stringent than "feasible" but that might provide very similar health protection at a substantially lower cost. Nor could EPA take into consideration whether treatment techniques used to control certain contaminants might actually increase the risk posed by other contaminants. (For example, public water systems use disinfectants, like chlorine, to kill microbial contaminants that can cause immediate illness; however, disinfection by-products may increase the long-term risk of cancer.)

To address this issue, P.L. 104-182 amends the Act's standard-setting provisions to allow EPA to consider overall risk reduction benefits when setting standards. EPA may set a standard at other than the feasible level if the feasible level would lead to an increase in health risks by increasing the concentration of other contaminants or by interfering with the treatment processes used to comply with other SDWA regulations. In such cases, the standards or treatment techniques must minimize the overall health risk. The authority to consider overall risk reduction benefits is particularly important to EPA in developing the M/DPB rules (for *Cryptosporidium* and disinfection by-products).

A further change is that EPA, when proposing a regulation, now must publish a determination as to whether or not the benefits of the standard justify the costs. If EPA determines that the benefits of a standard do not justify the costs, EPA may promulgate a standard that maximizes health risk reduction benefits at a cost that is justified by the benefits. EPA may not use this authority to set less stringent standards if the benefits experienced by persons served by large systems would justify the cost to these systems, unless the contaminant is found almost exclusively in small systems. Nor may EPA use this authority in developing the M/DBP regulations.

Congress also gave systems more time to comply with standards by extending the effective date for a new regulation from 18 months to 3 years after promulgation. Up to 2 additional years may be allowed if EPA (or a state in the case of an individual system) determines that the time is needed for capital improvements.

Arsenic, Sulfate and Radon. The 1996 amendments added specific provisions for arsenic, sulfate and radon rules, all of which were subject to court orders. EPA is now required to develop regulations for these contaminants using the new standard-setting procedures established by P.L. 104-182. For arsenic, EPA must adopt a research plan and issue a revised standard by January 1, 2001. For sulfate, EPA must include sulfate in the list of contaminants for which EPA must make a regulatory decision by August 6, 2001. If EPA decides to regulate sulfate, the rule must allow systems to use public education and bottled water as an alternative to centralized treatment. For radon, EPA has 4 years to set one standard using the process under this Act and an alternative standard that is no more stringent than the level equivalent to risks from radon in outdoor air; a state (or public water system) may adopt the alternative standard if it has an EPA-approved multimedia radon mitigation program.

Small Systems

Approximately 90% of all community water systems serve fewer than 3,300 persons. Many of these small systems may have difficulty affording treatment technologies needed to comply with new SDWA regulations. Another problem facing small systems is that they often lack the technical, managerial, and financial capacity to comply with

monitoring and other technical requirements. In addition to the SRF program and new standard-setting procedures, the 1996 amendments contain several other provisions intended to assist small systems and to improve their compliance capacity.

Technologies. Congress further revised the Act's standard-setting provisions to require EPA, when promulgating a regulation, to list any technology that achieves compliance and is affordable for small systems serving between 10,000 and 3,300 persons, 3,300 and 500 persons, and 500 and 25 persons. By August 6, 1997, EPA was required to list any technologies that meet the Enhanced Surface Water Treatment Rule for small systems. (See *Small System Compliance Technology List for the Surface Water Treatment Rule*" (EPA 815-R-97-002).) By August 6, 1998, EPA was required to list small system technologies that achieve compliance with existing regulations (see 63 *FR* 42032). If EPA does not list a small system compliance technology for a contaminant, the Agency must issue guidance or regulations describing the best treatment technologies (i.e., variance technologies) that EPA finds are available and affordable for small systems.

Variances. Revised Section 1415 provides for variances from standards or treatment requirements for small systems. States now may grant a variance to a system serving 3,300 or fewer persons if: the system cannot afford to comply (through treatment, an alternative source, or restructuring), the system installs a variance technology, and the terms of the variance ensure protection of human health. States may also grant variances for systems serving between 3,300 and 10,000 persons with EPA approval. Variances are not available for regulations concerning microbial contaminants or their indicators.

Other 1996 provisions also aim to increase the compliance capacity of small systems. Newly added Section 1420 directs states to adopt authority to ensure that as of October 1999, new systems demonstrate technical, managerial, and financial capacity to comply with SDWA regulations. Beginning in FY2001, EPA must withhold part of a state's SRF grant unless the state implements a capacity development strategy. Section 1420 also authorizes EPA to make grants to institutes of higher learning to establish small system technology assistance centers, and directs EPA to provide initial funding for one or more university-based environmental finance centers to assist state and local officials with capacity development. New Section 1419 directs EPA to publish guidelines specifying minimum standards for certification of system operators. States then have 2 years to adopt an operator certification program or forfeit 20% of their SRF grant. The law authorizes $30 million annually for EPA to provide grants to states for reimbursing training and certification costs of persons operating small systems. New Subsection 1442(e) authorizes $15 million annually for technical assistance to small systems.

Source Water Protection

In another significant change, P.L. 104-182 broadens the pollution prevention focus of the Act to embrace surface water, as well as ground water, protection. New Section 1453 directed EPA to publish, by August 1997, guidance for states to implement source water assessment programs. States are required to submit their programs to EPA for approval by February 1998. State then have 2 years to delineate boundaries of areas that provide source waters for public water systems and to identify (to the extent practical) the origins of contaminants in delineated areas to determine systems' susceptibility to contamination. States with approved assessment programs may adopt modified monitoring requirements to provide systems with permanent monitoring relief under new

Section 1418. Public water systems could be eligible for monitoring relief once an assessment in the delineated area is completed. States may use up to 10% of their FY1997 SRF capitalization grant for the source water assessment activities.

New Section 1454 authorizes a source water petition program based on voluntary partnerships between state and local governments. States may establish a program under which a community water system or local government may submit a petition to the state requesting assistance in developing a voluntary, local, incentive-based partnership to: 1) reduce the presence of contaminants in drinking water; 2) receive financial or technical assistance (from other state and federal programs); and 3) develop a long-term source water protection strategy. This section authorizes $5 million per year for grants to states to cover up to 50% of the costs of administering the petition program. States may use up to 10% of their annual SRF capitalization grant for the petition program, provided that no more than a total of 15% of the grant is used for source water and ground water protection programs and the capacity development strategy combined.

Monitoring

Revised Section 1445(a) provides for increased monitoring flexibility at the federal and state level. It directs EPA to review and, if necessary, revise existing monitoring requirements for at least 12 contaminants within 2 years. (EPA made no changes.) States may establish alternative monitoring requirements to provide interim monitoring relief for systems serving 10,000 or fewer persons for contaminants (excluding microbial contaminants, disinfection byproducts, or corrosion byproducts), if a contaminant is not detected in the first quarterly sample. States with approved source water assessment programs may adopt alternative monitoring requirements to provide permanent monitoring relief to qualified systems for chemical contaminants. State alternative monitoring programs must ensure compliance with, and enforcement of, regulations. The amendments also revise the monitoring program for unregulated contaminants. New Subsection 1445(g) directs EPA to establish a national drinking water database that includes information on the occurrence of regulated and unregulated contaminants in public water systems; these data can be used to inform and support regulatory decisions.

Other Provisions

P.L. 104-182 addresses other drinking water issues that have emerged in recent years. For example, the law requires states to adopt authority for administrative penalties for violations of state regulations, and requires systems to notify customers of violations with potential for serious health effects within 24 hours instead of 2 weeks. It strengthens requirements for the Food and Drug Administration to issue bottled water standards for contaminants regulated under SDWA, augments the new estrogenic substances screening program created under the Food Quality Protection Act (P.L. 104-170) to focus on substances found in drinking water, sets limits on the amount of lead that may leach from plumbing fixtures, and clarifies that federally owned systems are subject to federal, state, and local drinking water requirements. The law also authorizes water and wastewater grants for *colonias* and Alaska rural and native villages, and authorizes the transfer of the Washington (D.C.) Aqueduct to a regional authority. Finally, the 1996 amendments authorize a $50 million dollar per-year grant program for additional infrastructure and source water protection projects.