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Compliance Problems Undermine EPA's Drinking Water Program

Statement of
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Environment, Energy, and Natural Resources Subcommittee
Committee on Government Operations
House of Representatives

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to be here today to discuss our report on implementation of the Safe Drinking Water Act program by the Environmental Protection Agency (EPA), the states, and the nation's public water supply systems.[1] The report examined (1) the extent to which community water systems have complied with requirements for monitoring water supplies and meeting drinking water standards, (2) the effectiveness of state and EPA enforcement efforts to ensure compliance with these requirements, and (3) the impacts of new drinking water requirements, mandated by the 1986 amendments to the Safe Drinking Water Act.

In summary, Mr. Chairman, we found that many water systems, particularly smaller systems, are violating requirements for monitoring water quality and meeting drinking water standards. Based on our detailed review of enforcement cases in six states, we found that states' and EPA's enforcement actions, intended to deter such violations and return systems to compliance, often fall short of EPA's program requirements and are frequently ineffective in achieving their objectives. The implementation of new and more stringent regulatory requirements stemming from the 1986 amendments probably will make compliance more difficult to achieve and enforcement problems more difficult to resolve.

The remainder of my statement discusses our findings in more detail. However, before I begin, I would like to briefly provide some background about the nation's drinking water and EPA's Safe Drinking Water Act program.

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[1] Drinking Water: Compliance Problems Undermine EPA Program As New Challenges Emerge (GAO/RCED-90-127, June 8, 1990).

BACKGROUND

Most Americans take the availability of safe drinking water supplies for granted. However, although improved treatment practices and drinking water regulations have virtually eliminated such diseases as typhoid and cholera and have reduced the incidence of other debilitating diseases, some waterborne disease outbreaks continue to occur. In addition, public health and environmental officials have become increasingly concerned about a proliferation of man-made chemical contaminants found in drinking water supplies. Many of these contaminants have been linked to cancer, birth defects, and other serious health problems.

To protect the public from these risks, the Safe Drinking Water Act, enacted in 1974, required EPA to establish (1) water quality standards or treatment techniques for contaminants that could adversely affect human health and (2) requirements for monitoring the quality of drinking water supplies and for ensuring the proper operation and maintenance of water systems. In 1986 Congress amended the act to significantly increase the number of contaminants to be regulated, strengthen EPA's enforcement authority, and establish various other requirements. All but two states have assumed "primacy," or responsibility, for managing the program at the local level.

In implementing the program, EPA and the states rely heavily on community water systems to demonstrate compliance with the program's requirements by periodically collecting water samples and having them tested in an approved laboratory. The test results are then reported to the state, which analyzes the data to determine the water systems' compliance with monitoring requirements and water quality standards. The state, in turn, reports identified violations to EPA.

If a violation occurs, the state is responsible for taking enforcement action against the water system. The state gives priority to systems in "significant noncompliance"--a designation based on the frequency and/or magnitude of violations. EPA is responsible for enforcing cases when the state does not act.

MANY WATER SYSTEMS ARE NOT COMPLYING WITH MONITORING REQUIREMENTS AND DRINKING WATER STANDARDS

While EPA reports generally show that community water systems are complying with drinking water requirements, we found that the extent of compliance is considerably overstated. Deficiencies exist in how violations are detected and reported at each level in the regulatory process, from the time a system samples its water supply to the time EPA records the system's compliance status in its national data base.

At the water system level, some violations are probably going undetected because of sampling errors by water system operators. In addition, EPA and state program managers identified instances of intentional falsification of test results.

Sampling errors occur when water system operators either take or test water samples incorrectly. Sample collectors must follow specific detailed procedures to obtain accurate test results. However, EPA and state program managers expressed concern about the sampling technique of operators and the accuracy of the test results. For the most part, the program managers attributed potential problems to the inadequate training of operators, the lack of full-time operators, or the high turnover among operators at small water systems. For example, according to one EPA manager from a region where approximately 75 percent of the water systems serve 500 people or fewer, small systems have the most difficulty attracting trained operators and all too often, the person who

takes the samples and performs other tasks is "whoever happens to be around."

EPA and state officials also cited as a cause of sampling errors by operators the increasingly technical drinking water regulations and sample collection procedures. The officials indicated that sampling errors will probably increase as more contaminants are regulated under the 1986 amendments to the Safe Drinking Water Act.

A second problem at the water system level is the potential for deliberate falsification of compliance data or manipulation of the test itself to produce the desired result. While the extent of this problem is unknown, we found that falsifying data and manipulating test results are relatively easy to accomplish, and ample evidence exists that the practices are occurring.

One way to falsify compliance data is to ensure "good" test results by taking samples from sources known to be free of contamination. Another technique is to eliminate any contamination before the sample is tested. For example, in the case of microbiological tests, boiling or microwaving the sample will kill bacteria, as will rinsing the container with chlorine prior to collection of the sample. Where system operators are responsible for testing the sample in addition to collecting it, as in the case of turbidity, they can simply write in plausible test results without ever actually testing their water.

While most EPA and state officials we interviewed stated they do not believe data falsification is extensive, they all cited cases in which such activities had been detected or were strongly suspected. For example, program managers in all six states we visited had identified cases in which reported turbidity results were questionable. When Oklahoma officials investigated one such case, the water system operator admitted that he was not testing

the water as required; he said that his predecessor told him to take a water sample, "hold it up to the light, and if it looks pretty clear, give it a .3." He was also told not to report, under any circumstances, a result over 1, the drinking water standard.

How often data falsification occurs is unclear because most states do not actively seek it out. While some states have undertaken modest efforts to detect such problems, few have a systematic program to identify and investigate potential data falsification. We believe that EPA needs to encourage these types of efforts because the incentives for falsifying data will increase as water systems are required to comply with the broader and more stringent requirements in the 1986 amendments to the Safe Drinking Water Act. Our report recommends that EPA evaluate the extent of data falsification and provide guidance to the states on how best to discourage these practices and on how to detect them when they do occur.

At the state level, EPA studies, based on regional offices' periodic assessments of the accuracy with which states report violations, disclosed that (1) some identified violations are not reported to EPA and (2) some states have adopted policies suspending or restricting certain EPA monitoring requirements. In our review of the studies--conducted by all 10 EPA regional offices covering 38 states, Puerto Rico, and the Virgin Islands--we found that to the extent EPA identified reporting errors by the states, an overwhelming proportion involved the underreporting of violations. For example, in 25 states, over 75 percent of all microbiological reporting errors involved underreporting.

According to the studies, a major factor contributing to underreporting is state and regional policies that revise or suspend certain monitoring requirements. As a result of these policies, water systems are not performing all required tests, and monitoring violations are not being reported to EPA. In some

instances, states may present a compelling case why such policies are warranted. Nevertheless, such policies undermine a program that relies primarily on adherence to published regulatory requirements. In addition to encouraging noncompliance, these policies also lead to statistics that mislead EPA managers and the public into believing that required monitoring is being conducted and that compliance is being achieved. To correct the problem, our report recommends that EPA evaluate the policies and determine, within the constraints of the Safe Drinking Water Act, whether existing regulations should be modified. Once EPA evaluates the policies, it should ensure that the states enforce the regulations.

At the federal level, EPA lacks key data needed to determine water systems' compliance. In addition to identifying reporting problems, the aforementioned EPA studies disclosed that some states did not have systems to track compliance with some monitoring requirements and thus could not determine whether monitoring violations had occurred. Without this information, EPA is unable to determine accurate compliance rates for many contaminants.

PROGRAMS THAT COULD IMPROVE COMPLIANCE ARE NOT FULLY IMPLEMENTED

States employ a variety of quality assurance activities designed to improve water system operations and compliance with the Safe Drinking Water Act. We looked at two such activities--operator certification programs and sanitary surveys--and found that they are not fully implemented. Moreover, financial constraints are leading many states to cut back on sanitary surveys and other quality assurance activities.

Operator certification programs can help ensure that water systems are operated and maintained by qualified individuals, sampling techniques are properly employed, and drinking water

regulations are met. Although EPA does not require states to have operator certification programs, 45 states have mandatory operator certification programs, and 2 others have voluntary programs, according to information from the Association of Boards of Certification. However, we identified two major problems concerning the applicability of and compliance with state operator certification requirements.

Data collected by the association and EPA indicate that (1) at least 11 states exempt systems serving 500 people or fewer from having certified operators and (2) other states use different criteria, such as the number of service connections, to exempt small water systems. These exemptions are significant because over 60 percent of all community water systems nationwide serve 500 people or fewer. On the basis of our interviews with state program managers, water systems' compliance with operator certification requirements varies considerably from state to state. For example, in both Oklahoma and Washington, state officials told us that over 90 percent of the community water systems have certified operators, while in Vermont, the state program manager estimates that fewer than 5 percent have certified operators.

Another important quality assurance tool is a comprehensive inspection of a water system called a sanitary survey. In addition to being overall reviews of the facilities and their operations, sanitary surveys provide states an opportunity to reduce the potential for sampling error by operators and falsified test results. For example, states may sample and test the water, observe the system operators' sampling and testing procedures, and/or review sample collection procedures to ensure the operators understand them.

EPA regulations require states to have a program for conducting sanitary surveys in order to obtain primacy. Despite this requirement and the acknowledged benefits of the surveys, we

found that state sanitary survey programs vary widely in both frequency and content and that resource constraints are substantially affecting many of these programs. While some states appear to have comprehensive sanitary survey programs, other states have programs that are either less comprehensive or that have been discontinued altogether as a result of recent cutbacks in resources and the additional work load stemming from the 1986 amendments to the Safe Drinking Water Act.

Our review suggests that better compliance by water systems could be achieved through more consistent implementation of operator certification and sanitary survey programs. Our report recommends that EPA promote the use of these and other quality assurance programs. Specifically, we believe that EPA should provide minimum criteria for state operator certification programs and, in the case of sanitary surveys, clarify its ambiguous policy on whether such surveys are required and encourage states to implement survey programs more consistently.

ENFORCEMENT EFFORTS ARE INADEQUATE TO DETER NONCOMPLIANCE

EPA counts on enforcement as a primary means of deterring program violations and returning violating systems to compliance. EPA policy requires states to take "timely and appropriate" enforcement action against significant noncompliers (SNC) and, to that end, has established criteria for determining appropriate actions and time frames. In reviewing 95 SNC enforcement cases, involving 75 water systems in six states, we found that states took timely and appropriate action about 25 percent of the time. More importantly, state enforcement actions were often ineffective in returning SNCs to compliance, or did so only after lengthy delays. Indeed, one of the more striking observations to be made about the 95 enforcement cases we reviewed is the length of time many of the water systems have remained in significant

noncompliance. In 46 of the cases, systems had been in significant noncompliance for over 4 years, and in 31 of these 46 cases, systems remained so as of February 1990.

There is no single explanation for why some water systems remain in significant noncompliance for years. However, ineffective enforcement by states and EPA is clearly an important contributing factor in the delays in resolving some of these cases. In some instances, the states postponed appropriate enforcement action until long after serious compliance problems were first identified. For example, one system had not tested its water for any contaminants since June 1980, but the state's first enforcement action did not occur until October 1987. Of greater concern, a number of enforcement actions that did meet the EPA criteria had little or no effect in returning systems to compliance. We found this to be particularly true for civil referrals, which EPA counts as appropriate regardless of whether they are filed in court. Seven of the 12 civil referrals in our enforcement case reviews had not been filed as of September 1989. Significantly, in only one of the 7 cases where referrals were not filed had the water system returned to compliance. Finally, when state actions were delayed or ineffective, EPA rarely stepped in and exercised its own enforcement authority.

Our report makes a number of recommendations to improve EPA's and states' enforcement. For example, to increase the prospect that state enforcement actions will return violating systems to compliance, we recommended that the Administrator direct EPA regions to examine whether states relying on civil referrals have the resources and commitment needed within the state drinking water program office and the attorney general's office to ensure that such referrals will be acted upon. We also recommended that EPA expand its enforcement efforts when states do not act, or when state actions are ineffective in achieving compliance.

Nevertheless, while improving enforcement will address some of the long-term compliance problems in the drinking water program, this is by no means a complete solution. Some SNCs present intractable problems that an enforcement action may not cure--regardless of whether the action meets EPA enforcement criteria. For one thing, enforcement does not alleviate problems in financing corrective actions, particularly for small water systems. For example, in one of our review cases, a water system serving 125 people had to make major improvements costing over $200,000 to comply with state and federal drinking water regulations. According to the state program manager, although the system received partial funding from the Farmers Home Administration, its financial condition was such that three members of the water board had to take out a personal loan to pay for the $2,000 construction permit. Another difficult issue, found primarily at small water systems, arises when state regulators cannot identify a system owner against whom to take enforcement action and system users are unwilling to take responsibility.

COMPLIANCE AND ENFORCEMENT PROBLEMS WILL PROBABLY WORSEN AS PROGRAM DEMANDS INCREASE

As problematic as compliance and enforcement already are, they may become more so in coming years as EPA establishes new standards and other requirements for water systems. As required by the 1986 amendments to the Safe Drinking Water Act, EPA has issued or proposed many new regulations that will significantly increase program responsibilities for states and nearly all of the nation's 58,000 community water systems. Although the actual impacts of the new requirements will not be known until all new regulations become effective, states and water systems are expected to incur enormous financial costs and face difficult new challenges in achieving compliance and enforcing requirements.

Under the 1986 amendments, water systems must adhere to more stringent requirements for water treatment, monitoring, and reporting. According to EPA officials, many systems will have to install new equipment or modernize their infrastructure (i.e., their distribution, storage, treatment, laboratory, and monitoring facilities) to comply with some of the new standards, particularly the new filtration requirement. EPA estimates that compliance will cost water systems about $2.5 billion annually. Although compliance with the new drinking water requirements is expected to affect water systems of all sizes, small systems, which already account for more than 90 percent of current drinking water violations, will have greater difficulties because they lack the necessary financial and technical resources. EPA officials expect that the addition of new drinking water requirements will only exacerbate compliance problems for small systems.

The 1986 amendments also increased responsibilities for state drinking water programs. Among these new responsibilities are (1) identifying and classifying water systems requiring filtration, (2) implementing a lead and copper corrosion control program, (3) performing assessments of systems' vulnerability to contamination, and (4) expanding laboratory capabilities to handle the significant increase in regulated contaminants. According to a survey conducted by EPA and the Association of State Drinking Water Administrators, state officials also expect increased enforcement responsibilities if water systems do not get additional resources to implement new and existing program requirements.

The survey also concluded that states will need over $185 million between 1987 and 1992 for onetime start-up costs to begin implementing many of the new requirements, and after 1992, will need approximately $152 million annually. This is in addition to a $34 million funding shortfall that states said they have in trying to comply with existing program requirements.

Faced with resource shortages of this magnitude, some states may have to shift their work priorities or further limit some program activities--including enforcement, laboratory testing, and sanitary surveys--to implement the existing and new requirements. Such forecasts are particularly disturbing in light of our findings that more consistent use of such activities is central to any effort to improve compliance and better protect public health from contaminated drinking water.

Recognizing the states' and water systems' need for increased resources, EPA has examined alternative financing mechanisms--such as fees, taxes, bonds, and penalties--as a way of generating additional revenues for state drinking water programs. In addition, the agency has developed a "Mobilization Strategy" to encourage state and local governments, water systems, and private organizations to use creative approaches to find additional resources for state and local drinking water programs. The strategy includes, among other things, helping operators of small systems understand the new drinking water requirements, providing training and technical assistance through a variety of existing networks, and assisting the systems in obtaining additional resources from larger systems and private organizations. The strategy also encourages generating support for the higher water rates needed to pay for system improvements by informing the public of the health risks associated with contaminated drinking water.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, Mr. Chairman, we found substantial evidence that (1) violations of drinking water requirements are probably going undetected and unreported by water systems and (2) identified violations are going unreported by states to EPA. Although states have a number of quality assurance measures at their disposal that would alleviate these compliance problems, financial constraints are leading many to curtail these measures. We also found that,

for the cases we reviewed, states' and EPA's enforcement actions have often been ineffective in deterring violations and in returning violating systems to compliance. Finally, as the demands of the drinking water program increase under new regulations, compliance will be more difficult to achieve and enforcement problems more difficult to resolve.

As indicated in my statement, our report makes a variety of recommendations to EPA to improve water systems' compliance through such actions as (1) encouraging more consistent use of state-sponsored operator certification and training programs in order to reduce errors by operators, (2) improving internal controls to detect and deter intentional falsification of sampling data, and (3) encouraging more consistent implementation by states of sanitary survey programs. As stated earlier, we also made a number of recommendations to improve compliance through better enforcement by the states and EPA.

While some of these recommendations call for a more efficient and effective use of existing resources, there is little question that additional resources will be needed to increase water testing, perform sanitary surveys, train operators, and perform a variety of other activities needed to ensure the safety of the nation's drinking water. While EPA's alternative financing efforts are by no means a complete solution to the shortfall in resources, our work suggests that these efforts offer some hope that vital program activities can be funded.

Mr. Chairman, this concludes my prepared statement. I would be glad to respond to any questions that you or members of the Subcommittee might have.