

Michigan and the Safe Drinking Water Act: A Total Lack of Administrative Capacity

Byron A. Ellis



A state administrative capacity entails running the machinery of a political or economic system and translating political and collective will into actions through management and implementation that benefits all citizens within the state. With toxic lead in Flint's water, Michigan governmental officials, as well as the EPA, failed the citizens of Flint and demonstrated to the world the incompetence of government.

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of United States (U.S.) drinking water. Enacted in 1974, it is the main U.S. federal law that ensures the quality of drinking water and it contains information about public water systems (PWS).

A PWS is a water system for human consumption that uses pipes or other conveyances to deliver water to at least fifteen (15) service connections or regularly serving at least twenty-five (25) individuals. A PWS includes municipal water companies, homeowner associations, schools, businesses, campgrounds and shopping malls.

Under the SDWA, the EPA sets standards for drinking water quality and oversees states, localities, and water suppliers who implement those standards. The SDWA applies to every public water system (PWS) in the U.S.

The EPA defines three types of PWS: (1) community water systems (CWS), (2) non-transient non-community water systems (NTNCWS) and (3) transient non-community water system (TNCWS). TNCWSs are not subject to the lead and copper regulations.

The SDWA requires the EPA to determine the level of contaminants in drinking water at which no adverse health effects are likely to occur with an adequate margin of safety. These non-enforceable health goals, based solely on possible health risks, are maximum contaminant level goals (MCLGs). For most contaminants, the EPA sets an enforceable regulation called a maximum contaminant level (MCL) based on the MCLGs. MCLs are set as close to the MCLGs as possible, considering cost, benefits and the ability of PWSs to detect and remove contaminants using suitable treatment technologies.

"Primacy" agencies, such as state government agencies or EPA regional offices, provide oversight of PWSs, which are required to submit periodic monitoring reports to its primacy agency.

The National Primary Drinking Water Regulations (NPDWRs), or primary standards, are legally enforceable standards that apply to PWSs. Primary standards protect public health by limiting the levels of contaminants in drinking water. The EPA sets standards for approximately 90 contaminants and indicators in drinking water. Lead,

a toxic metal, used for many years in products found in and around homes is one of these contaminants. Lead frequently gets into drinking water by leaching from plumbing materials and fixtures as water moves through the distribution system.

Even at low levels, lead may cause a range of health effects including behavioral problems and learning disabilities. Children six (6) years old and under, including fetuses, are most at risk because of their developing brain.

A prohibition on lead in plumbing materials has been in effect since 1986 [40 CFR 141.43]. The lead ban, states that only “lead free” pipe, solder, or flux may be used in the installation or repair of (1) PWSs, or (2) any plumbing in a residential or non-residential facility providing water for human consumption, which is connected to a PWS.

However, the term “lead free” does not mean that plumbing is free from lead; rather, it means that solders and flux may not contain more than 0.2 percent lead, and that pipes and pipe fittings may not contain more than 8.0 percent lead. Faucets and other end use devices must be tested and certified against the National Standard Foundation (NSF)/American National Standards Institute (ANSI) Standard 61 to be considered “lead free.” Effective June 19, 1988, all states shall enforce this prohibition [§ 141.43].

The tap water monitoring protocol for lead and copper identifies sampling locations with lead service lines, lead interior plumbing, or copper pipes with lead solder. It is a requirement to monitor “high-risk” locations, whenever possible (versus collecting a random sample), to ensure the detection of high levels of lead or copper and that sites institute treatment that provides uniform and adequate levels of health protection throughout the distribution system. Lead and copper tap monitoring applies to all CWSs and NTNCWSs.

The EPA established a treatment technique rather than an MCL for lead and copper. A treatment technique is an enforceable procedure or level of technological performance which water systems must follow to ensure control of a contaminant. However, the lead testing protocol used by PWSs is aimed at identifying system-wide problems rather than problems at outlets in individual buildings.

The Lead and Copper rule (LCR) is a treatment technique regulation for lead that requires water systems to control the corrosiveness of the water. The regulation also requires systems to collect tap samples from sites served by the system that are more likely to have plumbing materials containing lead.

The LCR for PWSs establishes a lead action level of 15 ppb for one (1) liter samples taken by public water systems at high risk residences. If more than 10% of tap water samples exceed the lead action level of 15 ppb, water systems are required to take additional actions including [§ 141.80]:

- Taking further steps optimize their corrosion control treatment (for water systems serving 50,000 people that have not fully optimized their corrosion control).
- Educating the public about lead in drinking water and actions consumers can take to reduce their exposure to lead.
- Replacing the portions of lead service lines (lines that connect distribution mains to customers) under the water system's control.

Concentrations of copper in more than 10 percent of tap water samples collected during any monitoring period that is more than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L) also exceed the SDWA action level.

PWSs which include CWSs, NTNCWSs and TNCWSs must demonstrate that their water meets health based standards by periodically monitoring for the presence of specific contaminants; however, TNCWSs are not subject to the LCR. CWSs and NTNCWSs must deliver annual Consumer Confidence Reports to their customers by June 1, as provided in Subpart O of 40 CFR 141.151.

Approved analytical methods must be used when analyzing water samples to meet federal monitoring requirements or to demonstrate compliance with drinking water regulations. Laboratories that analyze these compliance samples must be certified by the EPA or the state. Each state drinking water office should be able to provide a list of the EPA certified state laboratories.

The 15 ppb and 1.3 mg/L action levels for lead and copper, respectively, in PWSs are therefore triggers for treatment rather than a health-based or exposure level.

Clearly, failure to follow the SDWA is an indication of gross negligence on the part Michigan and EPA administrators and can lead to dire lifetime behavioral problems and learning disabilities to children. Therefore, it is important to identify, monitor and setup potential compensatory schemes for all children subjected to the consumption of toxic lead in their water system.