Avoid Lead Contamination in Water in Minnesota

Water systems have been involved in monitoring water within households since the implementation of the federal Lead and Copper Rule in the early 1990s.

Lead is unusual among waterborne contaminants, in that, it is rarely present in water at its source. Instead, it works its way into water on the way to people's faucets through the home. Lead in a water system's distribution pipes can dissolve into the water as it passes through. Lead service line, connection water mains to people's houses, is another source. Inside the home, lead pipes and solder may contribute to lead contamination, especially since water often sits idle in these pipes while families are asleep or away from home at work and school.

While Minnesota's communities have had relatively few issues with lead contamination, a number of U.S. cities have had prominent lead contamination problems in recent years.

Problems Elsewhere

A change in chemical treatment had a major effect in Washington, D.C., in the early 2000s, causing corrosion in pipes and the subsequent discovery of lead levels in the city residents' water that was at least 83 times higher than the action level of 15 parts per billion. The issue was addressed with corrosion-control treatments to the water to prevent the leaching of lead in water from mains and fixtures, although problems have continued in the city.

In 2014 the city of Flint, Michigan, temporarily switched its water source from Lake Huron, supplied by the Detroit Water and Sewerage Department, to the Flint River, an inland source that can cause greater challenges for treating water than water that is from the Great Lakes. Flint treated the river water to make it safe, but the water reaching people's homes was corrosive. Water that's corrosive can allow water in lead service lines – which connect water mains to household plumbing – to absorb lead from the lead service lines and plumbing. The result can be significantly higher levels of lead in the water that people drink.

The Situation in Minnesota

In Minnesota, if a water system goes to a different source of water, even a new well, Minnesota Department of Health engineers will review the plans for treating the water and also examine corrosion – control methods that could be necessary to ensure that the water does not absorb materials such as lead and copper from pipes in the distribution system.

To avoid unintended consequences from source or treatment changes, any such changes by a water system require review and approval from the Minnesota Department of Health before they take effect; often, pilot studies are required as part of the review and approval. A new source of water and/or treatment change also brings about changes in the monitoring frequency required for the system for examining lead levels in the water.

MDH engineers also review water quality reports, which follow each round of sampling by a system. Based on these reports, engineers may issue recommendations to address any possibility that the water has the potential to absorb materials, which could include lead, from service lines and household plumbing.

In addition, MDH has a statewide system for laboratories to report blood-lead levels in patients; such reporting could trigger an immediate visit from a nurse. Lead can come from many sources besides water, and the biggest threat in Minnesota continues to be the nearly one million homes in the state that contain lead paint.

Minnesota's service connection fee (collected by water systems from customers and passed on to the Minnesota Department of Health) allows the state to pay for all compliance sampling, which assists in MDH's ability to promptly respond to drinking water quality issues across the state. The Health Department is able to see the sampling results before the water systems do; if there is a problem, MDH notifies the system, which can quickly begin corrective actions. Many states do it the opposite way: testing and data collection are done locally and reported to the state. The method in Minnesota allows for another early-warning system for contaminants in drinking water.

Any system in exceedance of the action level for lead must, among its corrective actions, provide ongoing public education to its customers.