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## Report: Local tap water meets federal standards, but could be better

By CAROLINE EGGERS [ceggers@bgdailynews.com](mailto:ceggers@bgdailynews.com) Nov 30, 2019

A raindrop hits the pavement Wednesday, October 30, 2019, in a Bowling Green parking lot.

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When we turn on the tap, water comes out. It's a simple luxury most of us can't imagine living without. But the processes behind receiving that tap water, and the myriad ways that our water sources can be affected, are complex.

Utilities extract water from surface and groundwater sources and pump it through various filtration systems, including the affordable and reliable method of chlorination. But there's a trade-off with this inexpensive chemical: There are byproducts considered harmful at certain concentrations, and there will be trace contaminants leftover post-filtration.

The Environmental Protection Agency set health-based, legal limits for 90 contaminants that encourage this filtration balance. But newer science suggests some of this data may be outdated, prompting a need for more stringent contaminant limits.

Across the 10-county Barren River region, utilities complied with the EPA's federal drinking water standards in recent years but possessed at least one contaminant at a level that exceeded health guidelines recommended by the Environmental Working Group, a Washington-based advocacy group that recently released its 2019 annual report on tap water.

At every utility, the total trihalomethanes, which are a byproduct of chlorine disinfectants, exceeded the nonprofit's recommended health guideline during the reporting period between April 2016 and March.

The levels ranged from 18.4 parts per billion in the Bonnieville Water District to 69.6 ppb at the Edmonton Water Department. The legal limit is 80 ppb, and EWG's recommended guideline is 0.15 ppb.

"If you disinfect with chlorine, and virtually everybody does, you will get some of these disinfectant byproducts," said Mike Gardner, water-wastewater systems manager for Bowling Green Municipal Utilities.

It's a common issue. In 2018 in Kentucky, there were 122 health-based drinking water violations. About 83 percent of the violations were due to elevated haloacetic acids, the other most common chlorine disinfectant, according to the Kentucky Division of Water's latest Annual Drinking Water Compliance Report, which did not identify any violations in the Barren River region.

Sediment, nutrients, bacteria and toxic substances, such as oil, pesticides and litter, affect watersheds. These contaminants enter the water supply from point sources such as an outflow from a pipe, tunnel or concentrated animal feeding operation, as well as nonpoint sources such as agricultural runoff, groundwater, roads, urban areas and the atmosphere.

Treatment plants can remove most of these contaminants. But the more that water needs to be treated, the more disinfectants have to be used. Heavy chlorination can lead to high haloacetic acids and trihalomethanes, which are potentially carcinogenic, according to the National Institutes of Health's National Toxicology Program.

“Everybody wants zero, but is it feasible to get to zero with all those contaminants?” said Dr. Jason Polk, an associate professor of geoscience at Western Kentucky University and director of the HydroAnalytical Lab. “As consumers of water, we could pay a premium to achieve zero. Instead of pennies on the gallon for water they could be paying dollars on the gallon.”

Utilities have to maintain a balance between adding enough chlorine to eliminate pollutants and bacterial risks without increasing disinfection product risks, which can be difficult to quantify as exposure is a long-term risk that might not manifest into a health problem for decades.

“We’re walking this tightrope,” Gardner said. “We live in the community. We drink the water. And so does our family, children, grandparents, neighbors. The last thing we want is something that can impact their health.”

Utilities also strive for balance to keep water as safe as possible for customers while keeping it affordable – and chlorine has historically been both affordable and reliable, according to John Dix, general manager for the Butler County Water System, Simpson County Water District and the Warren County Water District.

“You don’t want to make water unaffordable so that folks go back on wells,” Dix said.

There were several other contaminants identified in the report as exceeding EWG’s proposed health guidelines.

The utilities serving Hart County all had arsenic levels measuring 0.1 ppb, and in Butler County, the Morgantown Water System had arsenic levels of 0.467 ppb and the Butler County Water System had arsenic levels of 0.233 ppb. The EPA limit is 10 ppb, and EWG's recommended limit is 0.004.

"Arsenic is a scary topic, but our levels were well within the safety levels established," Dix said. This past year, arsenic was not detected in the Butler County Water System.

Many of the utilities had radium. Simpson County Water District had radium levels of 3 picocuries per liter (pCi/L), and several other utilities had 1.5 pCi/L. The legal limit is 5 pCi/L, and the EWG recommended limit is 0.05 pCi/L.

In recent years, technology improvements in the water testing industry have translated to the ability to detect more contaminants – such as per- and polyfluoroalkyl substances, commonly known as PFAS – and contaminants at much lower levels.

"With PFAS, we didn't know it was an issue until we had the technology to detect it," Polk said.

Globally, water quality issues affect both developing countries and wealthier nations. The U.S., for example, receives notices for the release of more than 1,000 new chemicals into the environment each year, according to recent World Bank report, which assembled the world's

largest database of water pollution and identified nitrogen, electrical conductivity and biological oxygen demand as three of the most common issues.

This problem grows more complex, transcending environmental science, health, hydrology and economics, with climate change, population growth and industrial production, according to the report.

“The scary part is the unknowns,” said Polk, who advised that people should push for more diligent science and research to set the safest levels possible.

In 1974, the EPA established the Safe Drinking Water Act from decades of studies. But since the toxic chemicals list hasn’t been updated in about 20 years, many health experts are pushing for new reviews with the latest science.

If the more recent science does prompt the EPA to update its standards, the local water utilities will comply, according to Dix.

“If limits are adjusted, we have to examine what the cost is, and we’re of course going to implement the means to meet that,” Dix said.

*– To view the Environmental Working Group’s full database and learn more, visit [ewg.org/tapwater](http://ewg.org/tapwater) and contact your local utility.*

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– Follow reporter Caroline Eggers on Twitter @eggersdailynews or visit [bgdailynews.com](http://bgdailynews.com).

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