



CASE STUDY:

How Rowan University
Addressed Their Lead Problem
Using Bottle Filling Stations



After Flint, Michigan, shocked the country in 2015 with the severity of lead contamination in its drinking water supply, states and towns across the country have implemented testing and remediation programs in their schools to make sure the water is safe.

The lead problem is even more widespread than anyone anticipated, reaching not only K-12 public school systems, as in Flint, but colleges and universities as well.

[Rowan University](#) is a public university spread across three suburban campuses in Glassboro, Camden, and Stratford, New Jersey. Approximately 14,000 undergraduate students live and study there. When [lead was identified](#) in one classroom building on the Glassboro campus in 2016, the university spent more than a year deftly testing and remediating the problem. The university committed to complete transparency throughout the process.

Colleges and universities face different challenges and opportunities than local public school districts. This is their story.

Lead in Water at Colleges and Universities:

Lead is a neurotoxin that damages the health of young adults. The risks of lead exposure are generally most severe for young children, and news of lead contamination in children's school drinking water is a heartbreaking public health problem. The United States' National Institutes of Health recognizes lead as a "serious threat" to adults as well, as it accumulates slowly in our bodies and damages our neurological, gastrointestinal and reproductive systems.

There are no federal laws requiring higher education institutions to test for lead in drinking water. New Jersey does not require this testing either, so Rowan University had tested its on-campus daycare center for lead in drinking water annually, but had never sampled for lead in water in any other buildings. Lead in water usually comes from corrosion of water mains and plumbing within buildings, and contamination outside of the daycare center went unnoticed.

The Testing:

In July 2016, the Facilities Department received complaints of discolored water at Linden Hall. Curious, the team tested taps throughout the building for contaminants. The samples identified iron as the cause for discoloration. At the same time, they detected the presence of lead. University administrators knew that they needed to keep testing.

Testing proceeded in nearby buildings. As soon as those results came back in August 2016, the university contacted the New Jersey Department of Environmental Protection. Rowan University had a lead problem. With the help of the NJDEP, administrators notified the community and began to [develop a plan](#) to test the rest of campus.

The university moved quickly. It hired Pennoni, a certified consulting company, to assist with the testing plan. In the meantime, the staff took “grab” samples to simply detect the presence of lead without a certified lab test process. This gave an approximate idea of the scope of the problem.

Next, the real testing began, and it continued from November 2016 through September 2017. Contractors surveyed the plumbing of each building and tested every single potable water source, [following standard protocols](#). They analyzed more than 4,100 samples in total. They also tested some non-potable sources in order to map possible pathways of lead contamination throughout plumbing systems. The thorough approach provided safety and transparency.

Out of 43 buildings on campus, nine had test [results showing lead above action levels](#). These elevated levels ranged from just above 15 parts per billion to more than 2,000 ppb, exceeding 130 times the EPA action level. One sink in Willow Hall, a residential building, even tested at 10,100 ppb – an extremely hazardous level higher than was found in many Flint homes.

The tests were thorough enough to reveal three main sources of contamination: fixtures, brass backflow preventers and water mains.

The Response:

The administration committed to complete transparency even as the situation expanded. Joe Cardona, Vice President for University Relations, describes the initial response: “We had a phone bank set up that first night, an email line and a phone line. We handled it like it was an extreme crisis.”

Every affected fixture was disconnected from the water supply, and staff distributed bottled water to students. Between November 2016 and September 2017, roughly 400,000 bottles of water were distributed.



Rowan University assessed priorities for the response. The university's most pressing concern was to find an effective solution. Officials focused on not only removing current sources of lead, but also any possible chances for future lead contamination. Cost played a role as well; the university only had \$2 million available, and not enough money or time to replace each building's entire pipe system.

Rowan's remediation strategy included plumbing replacement and filtration. Within central plumbing systems, workers systematically removed water mains and backflow preventers and installed filters where appropriate. They also installed in-line ANSI/NSF-approved filters at point-of-use for all cold water sources in kitchens and sinks, even fixtures that did not have test results above EPA action levels, including 1,421 filters in residence halls alone.

Next, workers replaced the 96 affected drinking fountains with [Elkay](#) filtered bottle filling stations. Workers also fitted eight traditional drinking fountains with in-line filters. The bottle filling station filters are NSF certified to remove over 99% of lead. University staff also liked that the stations have LED light indicators that tell users whether the filter is still effective or needs to be changed (e.g., green, yellow and red lights), plus a counter that indicates how many 20 oz. plastic water bottles were saved from the trash by using the station.

The entire response to the contamination, from start to finish, cost \$1.2 million dollars. By the end, every fixture tested below 15 ppb, and most fixtures registered undetectable levels. The full testing results before and after the university's response can be found [here](#). Testing is the only way to find out if there are harmful amounts of lead in your water.

The Public Relations Challenge:

Transparency might not seem like an intuitive strategy, since there has been much bad press surrounding lead contamination in the past two years. Plus, Rowan University first discovered positive lead samples only weeks before the start of the school year in 2016 – not the happiest news for new incoming students and their parents. However, for Rowan University, transparency was a guiding principle for the process early on, as led by University President Ali Houshmand. According to Cardona, transparency has been Houshmand's signature throughout his tenure at the university. He believes that it cultivates trust among students and the community and keeps the university accountable. During a crisis, it was even more important to keep that trust, be truthful about what was going on, and calm people's anxieties.

Throughout the testing and remediation process, Rowan University maintained a water quality hotline, held public meetings with doctors and water quality experts, published test results online, and posted regular progress updates on the [university website](#).

Some students were so nervous about the contamination that they refused to shower. While that was an issue, the educational resources that the colleges provided were able to clear up misinformation and ensure safety.

By the end of the remediation process in September 2017, Cardona says that transparency turned out to be a positive public relations strategy for the university, as it showcased the lengths that the university went to in order to protect students.

It also brought the university population closer together. Cardona describes the effect as: "Challenges pull organizations together. When times get rough, everybody pulls in the same direction."



The Long-Term Plan:

In September 2017, President Houshmand announced that the university had successfully [completed remediation](#).

Though New Jersey law [does not require any testing of university water](#) for lead contamination, Rowan University is currently drafting an annual testing protocol that will include sampling of a certain number of taps per year.

The water quality hotline is still available, and community members are still able to contact officeofthepresident@rowan.edu with any questions or concerns.

What We Learned:

1. Test thoroughly and beyond what is legally required:

Neither federal nor New Jersey state regulations require colleges and universities to test for lead contamination in water. In May 2016, New Jersey Governor Chris Christie [passed a requirement](#) for 3,000 public schools across the state to begin testing their water for lead by fall 2016, made funding available to reimburse schools, and strengthened guidelines on school responses to children's lead exposure. The rule went into effect at the same time as Rowan University discovered lead contamination in Linden Hall. However, this legislation does not include colleges or universities. Rowan University's thorough testing after the first discoveries of lead contamination was critical to identifying and fully responding to the problem. Some fixtures showed much higher results than the fixtures right next to them, and the university could have missed poisonous outlets by only testing some of them. In addition, understanding lead levels near water mains and accessories like the backflow preventers helped the university understand where lead came from, and respond effectively.

2. Know the options:

Rowan University utilized two viable options for lead contamination: testing and replacing contaminated backflow preventers and water mains, and installing central and Elkay-brand point-of-use filtration. Identifying priorities was a key step for university responders. The goal of 100 percent effectiveness reassured parents, students and prospective students. Additionally, a \$2 million emergency response budget allowed the university responders to sift through the options and act accordingly. For more information about the options for remediating lead contamination of school drinking water, please read : ["How to Solve Your School's Lead in Water Problem."](#)

3. Be transparent and include community early in the process:

By making information available while following response best practices, the university increased community feelings of safety and trust throughout the response. By maintaining online records of test results, recent updates and frequently asked questions, the university saved time from fielding questions – which was a good idea given the thousands of students, employees, parents, prospective students, journalists, and even other universities who were curious about the university's water safety and response methodology. Other colleges and universities that are worried about lead contamination news potentially damaging admissions data or publicity can reference this case. Cardona even felt that the university's public image was better than before, though admissions data has yet to be released for the years following the initial lead discovery. Following these guidelines, Rowan University successfully returned safer water to its students. BeCause Water has learned from schools across the country and assisted with testing, fundraising, remediation, and awareness. For additional resources and information, please contact us at : support@becausewater.org.

Sources

[NPR, April 2016. "Lead-Laced Water In Flint: A Step-By-Step Look At The Makings Of A Crisis."](#)

[US EPA, National Service Center for Environmental Publications, 1989. "Lead Ban: Preventing the Use of Lead in Public Water Systems and Plumbing Used for Drinking Water."](#)

[US EPA. "Basic Information About Lead in Drinking Water."](#)

[USA TODAY, March 2016. "Got lead in your water? It's not easy to find out."](#)

[Water Research Center. "Special Report #3: Lead In Drinking Water – Is There Lead In My Drinking Water?"](#)

[Mayo Clinic. "Lead Poisoning Symptoms and Causes."](#)

[Pediatrics Journal, October 2005. "Lead Exposure in Children: Prevention, Detection, and Management."](#)

[Agency for Toxic Substances and Disease Registry, August 2007. "PUBLIC HEALTH STATEMENT: Lead."](#)

[US EPA. "Drinking Water Requirements for States and Public Water Systems: Lead and Copper Rule."](#)

[US EPA. "Consumer Confidence Reports \(CCR\)."](#)

[US Government Publishing Office, June 1991. "Title 40: Protection of Environment; Part 141: National Primary Drinking Water Regulations; Subpart 1: Control of Lead and Copper."](#)

[USA TODAY, March 2016. "Beyond Flint: Excessive lead levels found in almost 2,000 water systems across all 50 states."](#)

[Massachusetts Water Resources Authority. "What You Need to Know About Lead In Tap Water."](#)

[CNN, June 2016. "5,300 U.S. water systems are US authorities distorting tests to downplay lead content of water violation of lead rules."](#)

[Natural Resources Defense Council, June 2016. "Report: What's in Your Water? Flint and Beyond Analysis of EPA Data Reveals Widespread Lead Crisis Potentially Affecting Millions of Americans."](#)

[The Guardian, January 2016. "US authorities distorting tests to downplay lead content of water."](#)

[US EPA Office of Enforcement and Compliance Assurance, December 2009. "Memorandum: Drinking Water Enforcement Response Policy."](#)

[CNN, March 2016. "Flint water crisis lawsuits: 5 things to know."](#)

[BeCause Water Knowledge Base](#)

Written by BeCause Water for Elkay Manufacturing



ABOUT ELKAY

For more than 100 years, Elkay® Manufacturing has been making innovative products and providing exceptional customer care. Family owned since 1920, Elkay began by making residential butler and pantry sinks. Today, the company has grown to include faucets, foodservice fixtures, water delivery products and architectural millwork in addition to world-class sinks. We are proud to be America's No. 1 selling kitchen sink company, as well as a leading manufacturer of award-winning water delivery products, including the ezH2O® bottle filling station.

Like your family, Elkay has values and traditions that endure. We take pride in offering reliable products that inspire change and leave the world a better place for generations to come. Headquartered in Downers Grove, Illinois, Elkay is American owned and operated providing thousands of jobs that support our families and communities.

ELKAY™
ezH2O 