

# Hamilton business turns waste into drinkable water

Courtesy Journal News, By Mike Rutledge, Staff Writer

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HAMILTON —



WEL Enterprise CEO Katrina Eckard waited to demonstrate her waste-cleaning machine, at right, while officials spoke about the potential her company and others have to eliminate pollution and waste.

Like magic, Katrina Eckard and some helpers turned pungent-smelling beer-making bi-products into drinkable water in about five minutes last week before dozens of witnesses at Municipal Brew Works.

First, Eckard, the CEO of [WEL Enterprise](#), and others put the brown waste liquid from the beer-making at Municipal Brew Works into a slim blue metal box, about five feet tall, which had a switch on the front and liquid-holding containers on each side.

“We want to be there to make a difference, and it’s not just about enriching ourselves,” said WEL’s chief engineer, Douglas LaFever. “It’s about completing the relationship between industry and regulatory bodies, so that we can clean up the water, and the industry doesn’t feel they’re continually penalized, and the environmental (regulators) don’t feel they’re an enemy to industry.”

Flowing into the machine, Eckard said, were “the worst streams coming out of the brewery,” including caustics, acids, other chemicals, yeasts and solids, along with cleaning wastes.

“I’m actually going to drink this water when it comes out the other end,” Eckard promised as the sludge began to be processed.

The water is so clean, Eckard explained after drinking the output, that breweries theoretically could recycle the salvaged water into new beer.

“We can create a water profile with this machine for potable water, which is drinking water,” Eckard said. “It’s completely pure (or), we can make it just for your industrial process. We can literally generate whatever kind of water you want out of this treatment.”

Salts and minerals also can be added, to match the kind coming out of the tap, she said later. But she noted few breweries are likely to do that, because, “a lot of times they’ll want a certain kind of water, which has magnesium and sodium, so it would be more expensive to build a system for that.”

“But they are fully capable” of matching the tap water, she said.

WEL Enterprise CEO Katrina Eckard waited to demonstrate her waste-cleaning machine, at right, while officials spoke about the potential her company and others have to eliminate pollution and waste. MIKE RUTLEDGE/STAFF Staff Writer

WEL Enterprise is a company being assisted by the city of Hamilton’s Hamilton Mill incubator program and by the region’s [new Pipeline H2O program](#), which was unveiled in September in Over-the-Rhine. That program also is based at Hamilton Mill, which is located in the city’s former municipal at 20 High St., and just upstairs from Municipal Brew Works. WEL plans to soon build a water-cleaning system in the basement below Municipal Brew Works that can turn its bi-products into clean water and fertilizer.

Rahul Bawa, who is chairman of both Hamilton Mill and Pipeline, attended the demonstration and said WEL Enterprise is a good example of clean-technology- and water-related startups in the expanded Greater Cincinnati region.

“WEL Enterprise is a classic example of that (startup) ecosystem actually working,” Bawa said. “She (Eckard) is part of the incubator. We’ve been mentoring her a lot through our network.”

Entrepreneurs are the kind of innovators “that we need — not just at the Hamilton Mill, but in our economy,” Bawa said. “This is really the start for WEL, and they’ve done a lot of hard work. One of the things I keep telling Katrina is, ‘That’s good, but the hard work’s still going to be going for a while.’”

Dave Foulkes, an environmental specialist in the Ohio Environmental Protection Agency’s Office of Compliance Assistance and Pollution Prevention, also attended the presentation after learning several months ago about work being done by WEL Enterprise.

Foulkes’ office, unlike most of the OEPA, works on non-regulatory issues, and instead seeks to help companies and industries minimize their waste, use sustainable materials and save money by doing things more efficiently.

“The craft microbrewery industry is growing across the nation, as we can see here, and a craft brewery has a unique set of waste streams and potential challenges,” Foulkes said. For instance, waste from micro-breweries “is very nutrient-rich, and can challenge municipal wastewater treatment plants.”

Since 2015, the OEPA has been providing assistance to micro-breweries across the state.

Foulkes' office "is interested in learning more about water-recovery systems being demonstrated," he said. "Minimizing waste from any process is an idea that Ohio EPA supports, and we salute WEL Enterprise's efforts to address this issue in the brewery sector."

WEL has a provisional patent that covers water reclamation for 20 industries. Among parts of the economy WEL hopes to help are meat-packing, cheese-processing, steel-making, as well as municipal sewage-treatment plants.

Before wading into all those areas, Eckard and WEL plan to tweak their system by installing a cleansing process in the basement beneath [Municipal Brew Works](#) in coming months.

One thing WEL does, LaFever said, is run a computer simulation that shows companies exactly how much they can save by using the company's reclamation systems that let them recycle their water to drinking quality and also turning their bi-products into fertilizer, saving them significant disposal costs.

"We are so excited about having all of y'all here, and having WEL Enterprise here," the micro-brew's head brewer, Sean Willingham, told observers before the demonstration. "Just to have the ability to save the environment, save the infrastructure, that's huge."

"We're going to be hopefully the first place, right now, to get things done, to save the environment, save the (sewage-treatment) infrastructure, and save the brewing industry," Willingham said. "I truly believe that."

Ryan Welsh, principal engineer in the Greater Cincinnati Metropolitan Sewer District's Engineering Management Division, which has been working with WEL, said, "When we see something like this that has this much potential to make an impact, it's really exciting."

WEL hopes to work with industries worldwide, helping them in two main ways:

Its processes can recycle water that normally would flow down the drain for reuse, even by breweries that want to use it to make beer (saving them significant water charges). Also, by converting highly toxic solids into useful products, its processes can save companies significant charges they now must pay to sewage plants to treat the waste.

Even if breweries across the region didn't have to pay surcharges for the waste they send to sewage plants, said Welsh, who lives in Ross Township and attended the demonstration, "Just from the water conservation perspective, I think this technology has a lot of potential to be a game-changer."