

Waste Water Woes

The county spent \$4.3 million on lawsuits to avoid improving Maui's wastewater infrastructure—and it looks like they're going to have to do it anyway

By Jack Truesdole

Located about half a mile from the ocean, the Lahaina injection wells inject treated wastewater about 200 feet underground into an aquifer where it mixes with groundwater and flows horizontally and vertically toward the ocean. Tracer dye studies tracked the output to the waters off Kahului Beach Park, where researchers and advocates claimed it damaged the reef ecosystem. In 2012, the Hawaii Wildlife Fund, the Sierra Club's Maui chapter, the Surf Rider Foundation, and the West Maui Preservation Association—represented by Earthjustice—sued Maui County for what they considered water quality violations and the consequent threat that contaminated waters posed to oceangoers' health.

For much of the past decade, the legal battle over the Lahaina injection wells consumed the island's attention as the county appealed it at each step up to the U.S. Supreme Court. The county claimed that its four injection wells in West Maui would not need Clean Water Act permits because the wells' pollution reached the ocean indirectly via groundwater. The high court rejected the argument, with Justice Stephen Breyer calling it "an absolute road map for people who want to avoid the point-source regulations. All we do is we just cut off the pipes or whatever, five feet from the ocean." Altogether, the county spent \$4.3 million on legal fees and claimed that, "Saying the course with the U.S. Supreme Court proceeds out county, our taxpayers and allows the County to continue to manage its recycled water disposal in the most environmentally responsible way available and feasible."

The case returned to Hawaii's district court, where Judge Susan Okamoto ruled this July that, "The discharge from the County's injection wells into the groundwater and ultimately into the ocean is a functional equivalent of a direct discharge" and requires a National Pollution Discharge Elimination System (NPDES) permit.



In early September, the state Department of Health warned of "high bacteria levels" at the Cove in Khei.

But the case continued on. The county council stopped funding private lawyers in this case, so Maui County was left with the sole legal representation of its Corporation Counsel, which requested that the judge reconsider in August. Among other arguments, the Corporation Counsel wrote that the ruling "exposes customers for reclaimed wastewater use to potential NPDES permit liability." The judge then reaffirmed the court's decision in October. The county could appeal to the Ninth Circuit Court of Appeals, restarting the cycle.

But why all the litigation over four injection wells in Lahaina when the county operates 14 others and there are plenty more private ones? "Because the spousak wheel gets the grease," Steve Paraboli, a former superintendent of the county's Wastewater Reclamation Division, said. Citizens grew worried about what they considered environmental degradation from the Lahaina wells, and researchers published studies that supported their concerns, he explained. While the injection wells in Lahaina became the talk of the island, Maui's other wells needed into the unincorporated Council Member Kelly King said, "It's Ma'aloa. It's Khei."

The Environmental Protection Agency designated Ma'aloa Beach as "impaired" body of water in a 2000 report. King, who represents South Maui, said that the nearly two dozen injection wells serving the condominium at Ma'aloa have taken their toll. "It's really pollution's talking about it," she said. The Ma'aloa injections wells are

privately owned and operated by the condo, according to the county. The EPA report falls short of assigning a cause, claiming "no probable sources of impairment identified for this waterbody." The "impairments" listed were nitrate, nitrite, nitrous oxide, and enterococcus—an indicator of fecal material in the water. Enterococcus can also indicate bacteria, viruses, and protozoa that may cause disease, sickness, and infections of the eyes, ears, respiratory tract, and skin, according to the EPA.

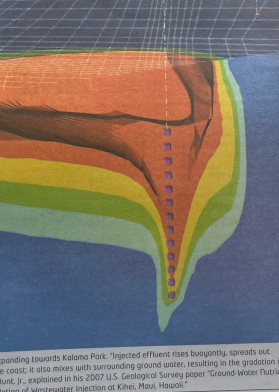
Assigning the cause of localized ocean pollution to specific injection wells is tricky—perhaps sufficiently so that the Supreme Court had to weigh in on it. The EPA has deemed other Maui bodies of water "impaired," even when a wastewater treatment plant is nowhere nearby. Honouliuli Bay on the Hana Highway, for example, is designated "impaired" because of enterococcus, although only the Ko'olau Forest Reserve site marks it. While various spots on Khei's coast are marked "impaired" for other reasons like nitrate, nitrite, nitrous oxide, and turbidity, the Cove, marked of the Khei wastewater treatment plant, had its own high bacteria advisory issued as recently as September, due to enterococcus. But what caused the recent high bacteria advisory was difficult to trace. "The last high count at Cove Park was unfortunately not linked to anything obviously altered in, for example, low salinity, very high turbidity, high wave activity, etc.," Meghan Daler, an Environmental Water Specialist with the Clean Water Branch of the state Department of Health, wrote in an email. "For example, when we have big swell events, we can get elevated counts in places where the ocean tides and anything that is in the vegetation." The bacteria count, what "often" results from "a sewage spill incident."

It was a curious email to receive, since Daler was the same researcher who identified wastewater effluent in the ocean near injection wells in a 2010 paper. Macroalgal blooms in Maui's coastal waters "only occur in areas of substantial anthropogenic nutrient input, sources of which include wastewater effluent via injection wells, leaking cesspools and agricultural fertilizers," Daler, then a researcher in the University of Hawaii's Department of Botany, wrote. "Effluent was detected in areas proximal to the Wastewater Reclamation Facilities (WWRF) operating Class V injection wells in Lahaina, Khei

and Kahului," she wrote. But in an October email, Daler clarified, "The injected wastewater from the Khei WWRF is treated with UV dye study for the Lahaina injection wells showed that wastewater took 9 to 10 months to reach the coast."

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A model of a Khei injection well's plume expanding towards Kaloa Park. "Injected effluent rises buoyantly, spreads out near the top of the caprock, and flows to the coast. It also mixes with surrounding ground water, resulting in the gradient in effluent concentration shown," Charles D. Hunt, Jr., explained in his 2007 U.S. Geological Survey paper "Ground Water Plume Flux to Coastal Waters and Numerical Simulation of Wastewater Injection at Khei, Maui, Hawaii."

"If enterococci was in the wastewater it would likely not survive that long of a travel time, so it is very unlikely that the Khei WWRF was the source for the recent high enterococci count at Cove Park," she wrote. There are potential solutions. A common refrain from those outraged about the pollution is that all that injected water could be put to better use. As is, Maui County claims to recycle 22 percent of wastewater, reusing it to irrigate agricultural land and golf courses and to fight fires. "More wastewater could be reused if there were additional pipeline infrastructure available," the county's website states.

Ridge to Reefs, a nonprofit, and Sustainable Ventures Solutions began three "nature-based" projects in Khei to purify wastewater this summer, the Maui News reported. The groups are planting vetiver grass, using a "denitrifying bio-reactor," and constructing a vegetation-lined basin on a small scale first to determine costs at scale. The problem, according to Paraboli, is that the county has been wastewater "as a water disposal nuisance rather than a water resource opportunity." As climate change exacerbates drought on Maui, wastewater reuse could mitigate some of those effects. "People flush the toilet everyday," Paraboli said. "It's through proof."

In the meantime, a wastewater reclamation facility is being planned for Central Maui to accommodate Waikapu and parts of Wailea, according to council member King. "It's planned for '23 or '24 to get started. You know how things go, it'll probably be '25," King said. "But they're not including Ma'aloa. So we need to do something for Ma'aloa." It remains to be seen how the permitting of the Lahaina wells will be resolved and implemented. "The county has been saying for several administrations that facing the problem would be so expensive that they want proof of the problem," De Maie said. "I think the buck has to stop with the mayor." (Mayor Michael Victoria) a spokesperson, Brian Perry, did not respond to a call requesting comment. □