

# A Forward-Looking Investment: Laundry Execs Tout Ozone Systems

*While not a “magic bullet,” ozone is helping TR operators enhance productivity, quality and environmental compliance*



*Plant Supervisor Nino Velez oversees the ozone injection system (at left) at Clean Rentals Inc., a company specializing in uniforms and shop towels. Velez says the ozone system has improved wash quality, while saving on water and chemical use.*

By Jack Morgan

**E**ddie Natal quickly noticed a difference in the ink wipers he handles daily once his company, Clean Rentals Inc., installed an ozone system to treat their washwater and wastewater at the 65,000-square-foot plant in New Bedford, MA. “They come out a lot lighter,” said Natal, holding up a purple wiper his company processes for a commercial printer. “There’s less oil. It’s a big difference.”

Another Clean Rentals employee, Evelyn Menaïd, said she and some co-workers used to get skin irritations from handling the wipers, even after processing—but not any more, “It’s a lot better. I was one of the people that broke out a lot,” said Menaïd, pointing to her forearm.

## Wastewater

Other employees at the plant made similar comments. They said the wipers were lighter, cleaner smelling and less oily to the touch after processing than before the ozone machines were installed on the five 400-lb. washers used to process them. Mark Bodzioch, plant manager and co-owner of Clean Rentals, described ozone use as a “forward-looking” investment that is paying important dividends for his company. Among these are quality and efficiency gains, as well as a reduction in solid waste due to the ability of ozone to break down soil. “Now we have a system that’s ready for the 21<sup>st</sup> century,” said Bodzioch. “I’ve been in plants where they’ve got 1950s washers. It’s not likely they’re going to go with ozone.”

### No magic bullet

The consultant who installed the system for Clean Rentals doesn’t claim that using ozone—a compound comprised of three oxygen molecules—is a catchall solution for laundry problems. However, an efficient ozone application system

can help companies reduce processing times, improve the quality of laundered goods and meet increasingly strict environmental rules. “We feel that ozone is not the magic bullet that does everything,” the consultant says. “We think of ozone as a washroom enhancement. It makes the washroom chemicals work better and clean up the dirty water.” He added that ozone is not designed to supersede or replace washroom chemicals. In fact, collaboration between ozone and chemical companies is crucial to create synergies that can enhance washroom capabilities for customers.

Ozone is helpful in the laundry process because it helps break down soils into simpler compounds through oxidation, the consultant says. Ozone also destroys viruses, bacteria and many odors, leaving laundry fresher smelling. Ozone performs these feats through a process called “lysing,” which collapses bacteria from the inside. In addition to these “soft benefits,” ozone also provides “hard benefits,” such as savings on heat, chemicals, water, and wear and tear on fabric, the consultant adds. The ozone is not applied directly to clothing or linens in the wash cycle, where it could damage the fabric. And because ozone enables companies to shorten wash cycles, it helps reduce wear and tear on equipment, he says.

The system in use at Clean Rentals includes a diffusion filter on each of the five, 400-lb. washer extractors. There’s also a computer-controlled generator that produces ozone by firing electrical charges through dry, filtered air that’s virtually free of impurities.

The diffusion filters require routine cleaning, but Bodzioch described the overall system as a virtually “zero maintenance” operation. Installed nearly four years ago, Bodzioch says he’s had no problems that would require a service call. And because this is a closed system, there’s minimal risk of “off gassing” ozone into the atmosphere.

Bodzioch adds that the ozone treatment in the washroom is significantly enhancing productivity, particularly in dealing with heavy soil. The system was first

installed on two machines. Now it’s on five 400-lb. washers that process 60,000 lbs. of heavy soil laundry a week. The run time for wipers was reduced from two hours to 90 minutes because ozone aids in the process of cleaning. Other benefits include the elimination of odors in the plant, reduced wash temperatures and the ability to reuse nearly 100% of wash water.

“We know we’re saving more on chemicals, hot water and electricity,” says Bodzioch.

“We’re saving on labor. Anytime you can improve it for them they’re happy with it.” Customers like the quality improvements too, he said.

### Float test winner

During a visit to Clean Rentals earlier this year, *Textile Rental* conducted a “float test” to determine whether the wipers treated with ozone were coming out cleaner than before. The theory goes that the more residual oil there is in a wiper, the longer it will float in a bucket of clean water, since water and oil naturally separate. We tested a wiper that was not treated with ozone. It took roughly 90 seconds to sink. It also had a strong chemical odor. But the wiper that was cleaned using a formula that included ozone sank in less than 30 seconds. While this test may lack scientific rigor, it seems clear enough which wiper a customer would prefer.

### Investment payback

Naturally, the cost of installing ozone equipment is a factor a laundry must weigh in terms of its business strategy. Bodzioch estimated the value of the system he’s now using could cost a laundry roughly \$135,000. Though discounts may be available on equipment, that’s still a significant sum. And the average return on invest-



A section of the ozone injection system at Clean Rentals



Wastewater and wastewater are treated by this ozone system.



A satellite reader that allows employees to track the use of ozone in an individual washing machine.



Ozone is created here by shooting electricity through purified air.

## Wastewater

ment? Bodzioch estimated that the savings he's gaining in laundry resources, coupled with the quality improvements for customers and employees, translates into a full ROI in 2-3 years. He said some past efforts to incorporate ozone into laundry operations fell short of expectations. For that reason, TR operators may be reluctant to consider ozone again. However, with the savings and quality improvements available with ozone today, Bodzioch predicted more companies like his will begin making use of this technology. "If there isn't a lot of interest in the next 1.5-2 years, I would think that there would be a lot of shortsighted people."

### Wastewater compliance aid

While not all companies may be ready for the kind of investment Bodzioch has made in an ozone system for his washroom, ozone also can serve a more limited application. In one case, ozone was used successfully to help a laundry solve a compliance issue with a local

POTW. A couple of years ago, Chuck Dow of Acme Linenmaster Inc. of Hyannis, MA, said he received a notice from his POTW citing the presence of volatile organic compounds (VOCs) in his effluent wastewater. In response, Dow installed a "sidearm" pump system that injects ozone into the wash water used in a 400-lb. machine processing medium-to-heavy soil, specifically bar mops and aprons. By neutralizing unwanted chemicals in the wastewater, the

ozone fixed the problem, says Dow. He proudly held up a letter issued in February 2002 by the POTW confirming that the company's wastewater stream was now fully compliant with local limits on VOCs.

"All of the very heavy soil goes to that machine," says Dow of the washer equipped with the ozone system. "We get a good wash and it takes care of our problem." He adds that the quality of the finished goods is improved. "I think they look a little bit whiter and they smell nicer," says Dow. He's had the system in place for three years and has had few if any service problems. Washroom staff simply punch in their regular wash formulas and the side arm pump injects the ozone into the water at the appropriate time.

### Option for OPLs

As textile rental companies continue pursuing efforts to win business from OPLs, it's noteworthy that in some cases, these institutions are using ozone to improve washroom efficiency and quality.

Ed Van Coutren oversees laundry operations at the Hebrew Home of Greater Washington in Rockville, MD. This 558-bed nursing home and rehabilitation center serves roughly 1,200 people daily.

The home processes over 2 million lbs. of laundry annually. Nearly six years ago, Van Coutren needed additional washroom capacity, but had limited space available for expansion. Instead of buying additional machinery, Van Coutren decided instead to have a side arm pump-style ozone system installed on one machine. Eventually, he

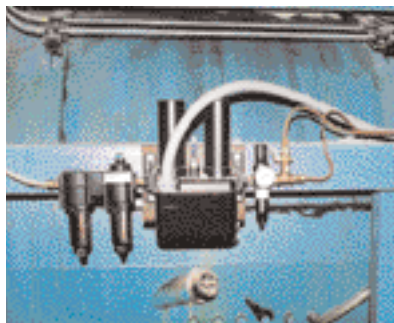
added ozone devices to four machines—450-, 350-, 250- and 125-lb. washers. The ozone system enabled Van Coutren to reduce wash times, thus significantly improving laundry throughput. "Here's the bottom line: I got a thousand more pounds a day," says Van Coutren, who praised the quality of laundered items treated with ozone. "The linen comes out and it doesn't smell like it was attacked by chemicals. The linen feels better," he says.



Acme Linenmaster 400-lb. washer with ozone "sidearm"



A close-up view of the ozone units on the Acme washer



A filtering system that removes moisture from the feed air for the ozone supply



Washing machine air feed supply

### Planning option

Each of the three laundry professionals cited above reported successful uses of ozone systems in settings ranging from heavy soil wipers to bar mops to healthcare linen—with a range of light to heavy soil. While no one claims ozone treatment alone is the magic ingredient for a successful laundry operation, these experiences indicate that modern ozone delivery systems are worth considering.

Bottom line? When properly applied, ozone helps break down soil, thus improving washroom efficiency, while reducing effluent wastes. There's also evidence that ozone helps eliminate odors and boosts the overall quality of laundered goods. In today's business environment, it's a given that customers expect textile rental operators to provide faster and better service. Operators also must live with the prospect of ever-tightening POTW rules. Given these realities, laundry managers may want to weigh whether ozone treatment makes sense as an element of their business strategy. TR



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