

Coldwater Takes Preventative Action Against Odors and Corrosion

Aerisa's technology creates a safer, healthier working environment in water resource reclamation through removing odors, inhibiting corrosion, and preventing future control failure.

The Odor Situation

No one expects a wastewater treatment plant to smell like an aromatherapy boutique, but for those who don't work in the water-reclamation industry, the odor can come as a shock.

"I've had visitors plug their noses and say, 'Oh my gosh. How do you even work around this?'" says Ken Dey, superintendent for the Coldwater Water Resource Reclamation Facility in Coldwater Township, Michigan. "They would refuse to go in the building."



AerSupply with Ionizer Section

This doesn't happen anymore — not since the Coldwater facility installed Aerisa's ionization technology. In fact, Dey says, when members of the Coldwater Board of Public Utilities toured the plant's new headworks building, they were struck by the absence of foul odor.

"Board members who had been to the plant before just couldn't believe the difference between the old headworks facility and the new one. They were really impressed — no one plugged their nose."

The Coldwater plant has much at stake with its new headworks building. The facility, Coldwater's second headworks, was built specifically to accommodate a sizeable new pork processing plant owned by Clemens Food Group. Clemens selected Coldwater Township for its new plant primarily because the community was willing to expand its wastewater capacity. The Clemens plant, which delivered 800 fulltime jobs to the area amid much fanfare, processes up to 10,000 hogs a day.

"They send me a million gallons of water a day," Dey says. Clemens has the capacity to pretreat its water, but any malfunction in the pretreatment process would ratchet up the pressure on Coldwater. "If that were ever to upset," Dey says, "there would be an influx of high organic and odorous water. Containing that odor was a big concern to us."

An even bigger concern for Coldwater: protecting its equipment, particularly the electrical controls, from corrosion.

The Corrosion Situation

The failure of a single controller can spell disaster, disrupting the complex system of motors, grinders, nozzles, conveyer belts, and augers that work to screen out trash, rocks, sticks, and other debris.

"All that is automated by several different controllers and timers," says Dey. "If a screen stops running, you have a short amount of time before water comes pouring through and trash starts backing up in the headworks room, coming down the storm drain, and out of the garage door."

Dey knows first-hand what that's like. Coldwater's original headworks, built in 1999, began to experience corrosion of its metal structures and electrical controls around the 10-year mark. "We had a backflow preventer made of copper and brass that went completely black from H₂S infiltrating the room," Dey recalls.

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Challenges

- Ongoing odor complaints from plant visitors and board members
- Sizable water intake due to accommodating large processing plant
- Control failure due to corroding metal structures and electrical equipment



AERWAVE 5550

Aerisa Solution

- Eliminated odors within hours of installation
- Customized solution treats 4,500 CFM of makeup air — ideal for 1,000,000 gallons per day facility
- Provided capital, installation and operational savings for Coldwater's new headworks facility
- Safeguards new facility from future corrosion by reducing hydrogen sulfide gases



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After a while, Dey says, one controller after another would go. "While we would try to track what went wrong, all hell would break loose, and we'd have to call in extra manpower to suck up the debris off the floor."

Control failure is impossible to predict, as controls corroded by hydrogen sulfide can fail without notice. The tiny microchips and wires that govern the machinery are encased inside a box inside a panel, "so it's not like you can see rust on them," Dey says. "It's like out of sight, out of mind."

Out of the blue, Dey would find himself fielding overnight emergency calls. "Controls tend to go at 2 a.m. on a holiday weekend," he says, "not at 1 p.m. on a Wednesday." Corrosion became such a problem that Coldwater was forced to spend \$20,000 to upgrade the controls in its original headworks facility. So, when Coldwater Township landed the Clemons pork plant, those in charge of the wastewater facility weren't about to risk future corrosion.



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"Aerisa is a 'shield' against future corrosion of equipment and against odors that could come from any failure of the Clemons pre-treatment system."

Ken Dey, superintendent for Coldwater Water Resource Reclamation Facility

An Innovative Solution

A Coldwater engineer, who'd seen bipolar ionization technology in action at another facility, urged the plant to invest in Aerisa technology for the new headworks building. Haluk Bafrafi, Aerisa's director of municipal sales, led the charge in providing Coldwater a customized ionization solution that treats 4,500 CFM of makeup air, ideal for 1,000,000 gallons per day facility such as Coldwater.

"We wanted this new headworks building to be a benchmark in terms of air quality for wastewater treatment facilities," says Bafrafi. "Our solution not only eradicated the odor immediately, but it will also have long-term benefits such as energy savings, safeguarding the plant from serious malfunctions, and decreasing costs on equipment maintenance."

Dey says the Aerisa team did a stellar job presenting the system to the Coldwater staff. "They presented it in layman's terms so that operators who don't have a science background could understand why it works. They made sure our whole staff was there and didn't leave until all questions were answered."

The Results

Dey calls Aerisa — which treats odorous and corrosive compounds inside the building rather than in an outside vessel — a "shield" against future corrosion of its equipment and against odors that could come from any failure of the Clemons pre-treatment system. So far, Dey says, "the system is working as advertised."



About Aerisa: Aerisa manufactures bipolar ionization technology that results in dramatic air quality improvements in a wide array of markets including industrial, institutional, commercial and residential. Aerisa successes are found in the most demanding applications, such as wastewater treatment, food processing, casino, athletic, and transportation. Contact Aerisa at 1-877-4-AERISA (237472) or visit www.aerisa.com.