



Media Release

WASTEWATER CONCENTRATOR USES WASTE HEAT TO LOWER TREATMENT COSTS

By Scott Jenkins | December 1, 2017

<http://www.chemengonline.com/wastewater-concentrator-uses-waste-heat-lower-treatment-costs/>

Landfill leachate and other challenging wastewaters incur rising treatment and disposal costs. Technology developed by Heartland Water Technology, Inc. (Hudson, Mass.; www.heartlandtech.com) can lower costs for treating wastewater by slashing wastewater volumes by 95% or more, using waste heat as an energy source, and reducing maintenance costs and downtime associated with more traditional evaporation technologies.

The Heartland Concentrator works as a direct-contact evaporator where hot air is mixed vigorously with wastewater in Heartland's proprietary Low Momentum-High Turbulence (LM-HT) process. The LM-HT process routes air through a liquid-gas-phase mixing process, creating enormous surface area for heat transfer. By using hot air directly, the Heartland Concentrator eliminates the need for heat exchangers to transfer energy into wastewater, thereby eliminating the largest cost and the biggest maintenance and reliability headache in traditional brine concentrators.

The Heartland Concentrator also features Flex-Heat capability, which allows the unit to be powered by waste heat from a number of sources, including biogas flares and exhaust from gas turbines or reciprocating engines. It can also be configured to use multiple waste heat sources simultaneously (for example, a hybrid option using heat from both an engine and a flare). When the Heartland Concentrator is used in conjunction with a gas turbine or reciprocating engine, the resulting combined heat and power (CHP, or cogeneration) solution has the added benefit of creating combined thermal efficiencies of 80% or more, the company says.



“Conventional wastewater processing for landfill leachate can cost anywhere from \$0.07/gal to upwards of \$0.20–0.30/gal,” notes Marek Herrmann-Nowosielski, the company’s senior vice president of Product Management. “Using Heartland’s proprietary concentrator system, we can cut costs to \$0.04/gal, and for large volumes, even less.”

To date, Heartland has installed its technology in 11 locations in the U.S., treating not only landfill leachate, but also power-plant fluegas-desulfurization water to zero-liquid discharge, and brine concentration for produced water in the oil-and-gas industry.