

## ZES Evaporator Systems

### Easy Operation, Low Maintenance, Quick Installation

A superior liquid waste disposal solution is here for treating landfill leachate or waste water process streams.

John Zink Hamworthy Combustion (JZHC) is pleased to offer an evaporator system with streamlined installation and low operation and maintenance requirements.

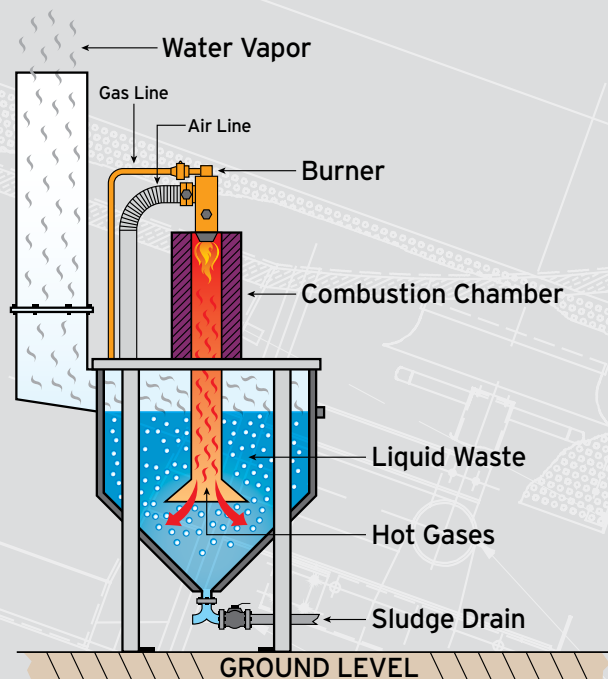
#### The Process

The liquid waste stream is fed to the evaporator vessel with a feed pump. The pump operates by level control for continuous, hands-free operation. Fuel gas (landfill gas or natural gas) is mixed with air needed for combustion in a burner and combustion chamber. The hot gases enter the evaporator vessel around 1600° F to heat the liquid waste inside the vessel. As the liquid boils, water vapor can be directly discharged into the atmosphere, or routed to a secondary combustion device, such as a John Zink Regenerative Thermal Oxidizer (RTO). The solids fall to the bottom of the vessel, forming sludge that is drained through an automated valve for further processing. During processing, a recycle line sends the remaining sludge back to the evaporator vessel for further evaporation. For leachate applications, the remaining solids can be collected for disposal back into the landfill. An adjustable cycle time can be entered for the sludge drain and pump, reducing the downtime associated for operator required maintenance, while effectively reducing waste stream volume by as much as 98%.

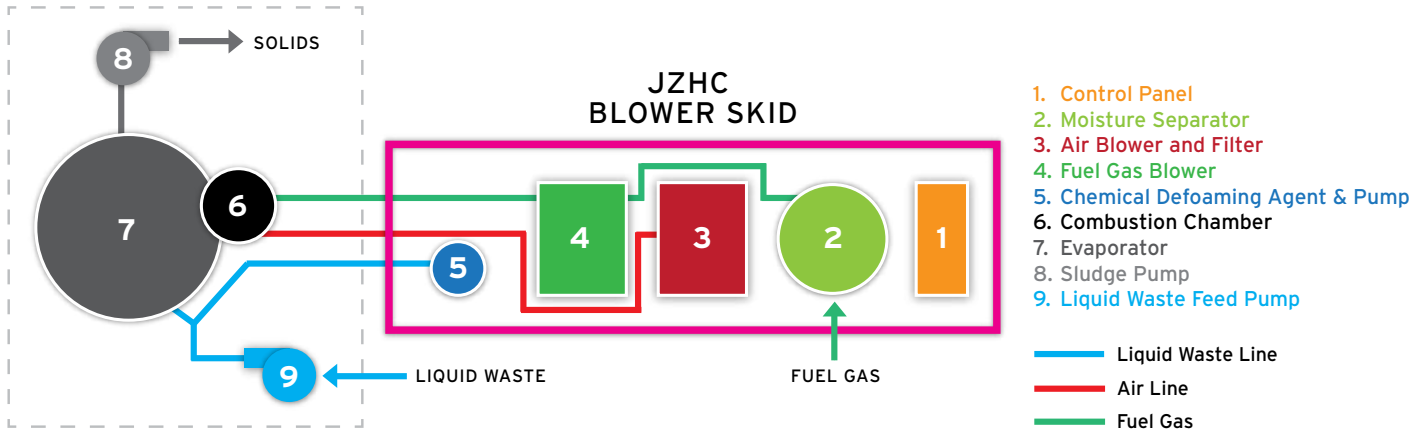
*Fully skid-mounted mobile system available for on-site demonstrations and quick deployment.*



*Low operation man-hours. Simple maintenance. Streamlined installation  
That's smart. That's JZHC.*



## JZHC EVAPORATOR SYSTEM



## Operational Data

MODEL	CAPACITY	REQUIRED GAS (NOMINAL)
ZES-05 (MOBILE UNIT)	5,000 gpd	3 MMBtu/hr (100 SCFM of standard landfill gas)
ZES-15	15,000 gpd	8 MMBtu/hr (290 SCFM of standard landfill gas)
ZES-30	30,000 gpd	15 MMBtu/hr (540 SCFM of standard landfill gas)
ZES-40	40,000 gpd	20 MMBtu/hr (770 SCFM of standard landfill gas)
ZES-50	50,000 gpd	30 MMBtu/hr (1100 SCFM of standard landfill gas)

## At A Glance

- + **Automated waste liquid evaporation:** Level controls turn the waste liquid feed pump on and off without an operator.
- + **Hassle-free draining:** A dual drain connection on the tank outlet streamlines by-product management (sludge mix of solids and liquids). The drain connection can be cleaned without removing any piping or pumps. The pump and valve for solids draining is automated based on operational parameters or a timer for easier operation.
- + **Fast installation:** The fuel gas blower, air blower, flame arrester, valves, moisture separator, chemical pump and drum, piping, and controls are all skid-mounted to offer a factory piped and wired, fully tested solution that's easy to install.
- + **The ZES-05:** Fully skid-mounted system for on-site demonstrations and quick deployment for smaller capacity waste stream treatment needs.
- + **Proven performance:** Achieve 98% destruction efficiencies of VOCs from the fuel gas (landfill gas or natural gas).
- + **RTO Option:** Pair with a John Zink Regenerative Thermal Oxidizer to eliminate the visible water vapor plume and recover heat.
- + **Extended cleaning intervals:** A washdown pump with injection nozzles keeps the waste liquid circulating at the bottom of the vessel to reduce solid build-up and extend time between cleanings.
- + **Safe, easy access:** A working ladder and platform allows the operator to maintain the unit without a manlift. A davit arm located above the mist eliminator lets the operator easily remove the pad for cleaning on the platform.
- + **Convenient testing:** An extended stack outlet and sample ports simplify emissions testing, if required.
- + **Low power requirements:** The largest unit (50,000 gpd) only requires a power feed of 250 amps.
- + **Reliable, easy-to-operate controls:** Operator touchscreen, PLC integrated with VFDs and all motor starters, skid mounted.
- + **24-hour parts & service at 800-755-4252:** Convenient, expert support with a team of dedicated service technicians strategically spread across the U.S. Preventative maintenance contracts are also available for continuous peace of mind.

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