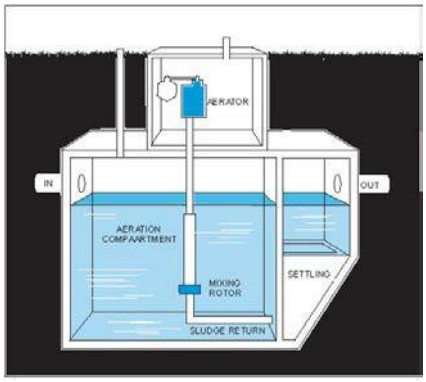
Aerobic Treatment Units

Aerobic systems treat wastewater using oxygen and bacteria that thrive in an oxygen-rich environment. The bacteria break down and digest the wastewater inside the aerobic treatment unit. Like most onsite systems, the wastewater is treated in stages. Some units include a pretreatment step to reduce the amount of solids (greases, oils, toilet paper, etc.), which can clog the unit and prevent effective treatment. The next stage is the actual wastewater treatment. Two aerobic primary systems have been adapted for onsite use: suspended growth and fixed film. Methods for final treatment include discharge to a soil absorption field, a sand filter, an evapotranspiration bed, or disinfection.

Aerobic wastewater treatment may be a good option when: the soil quality is not appropriate for a septic system; there is high groundwater or shallow bedrock; a higher level of treatment is required; a septic system has failed; and/or there is not enough land available for a septic system.

Advantages

- Can provide a higher level of treatment than a septic tank
- Provides an alternative for sites not suited for septic systems
- May extend the life of a drainfield and reduce its size



Disadvantages

- More expensive to operate than a septic system
- Requires electricity
- Includes mechanical parts that can break down
- Requires more frequent maintenance than a septic tank
- May release more nitrates to groundwater than a septic system

Costs

The cost of aerobic treatment units varies depending on factors such as design, size, location and operation and maintenance requirements. Costs for both suspended growth and fixed film systems of between 500 and 1,500 gallons per day are typically in the $4,400 to $15,900 cost range (adjusted to January 2020).

Common Suppliers

The demand for these units has led to a certification process by the National Sanitation Foundation. There are 37 manufactures that carry NSF Standard 40 (Individual Wastewater Treatment Plants) certification.
http://info.nsf.org/Certified/Wastewater/Listings.asp?TradeName=&Standard=040

Source:

- United States Environmental Protection Agency – Decentralized Systems Technology Fact Sheet September 2000, “Aerobic Treatment”
  https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=94001PP7.txt
- National Small Flows Clearinghouse – Pipeline Winter 1996 Issue, “Home Aerobic Wastewater Treatment: An Alternative to Septic Systems”
  http://www.nesc.wvu.edu/pdf/WW/publications/pipline/PL_WI96.pdf
- National Small Flows Clearinghouse – Pipeline Summer 2005 Issue, “Aerobic Treatment Units: An Alternative to Septic Systems “
  http://www.nesc.wvu.edu/pdf/WW/publications/pipline/PL_SU05.pdf