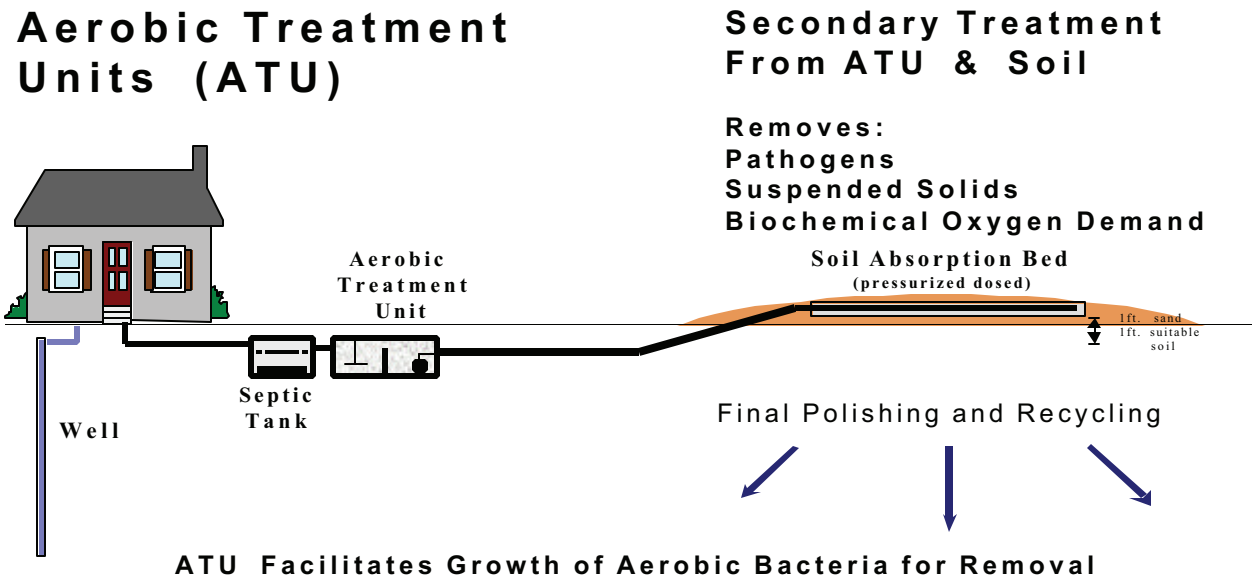
Aerobic Treatment Units (ATU)



ATU Facilitates Growth of Aerobic Bacteria for Removal of Pathogens, BOD, and Suspended Solids

Further Treatment is Achieved in the Soil Absorption Bed

An Aerobic Treatment Unit (ATU) is a self-contained unit that uses blowers or propellers to aerate the wastewater. They may also have filters to remove suspended solids. The additional electrical components are no more complicated than those commonly used in mound systems. An onsite sewage system that incorporates an ATU has either a septic tank or contains a septic compartment for solids separation, followed by the ATU, and a soil absorption bed.

ATUs are initially seeded with bacteria to provide a suspended medium for the growth of aerobic microorganisms that remove organic materials from the wastewater. Wastewater is dispersed to a soil absorption bed. Depending on the amount of treatment the wastewater receives in the ATU (quality of the effluent leaving the ATU), treatment required of the soil absorption bed will be reduced, providing the potential to reduce the size of this bed. Thus, ATUs can be used where there is insufficient soil for the standard 36 inch vertical separation to groundwater or bedrock. Since effluent from the ATU is an aerobic product with low concentrations of BOD, it can also be used to rehabilitate an existing soil absorption bed that is clogged with microbial biomass.

Solids must be periodically pumped from the septic tank and the pump chamber. The ATU unit itself must be pumped at regular intervals to maintain a balance in the microbial fauna. Events such as a prolonged disruption of electrical service could disrupt the balance and require the tank to be pumped, reactivated, and re-seeded. These units should be inspected by a professional every six months or whenever an alarm is activated.

Although the use of suspended media is relatively new for small scale onsite sewage systems, municipal plants have used suspended aerobic media for successful secondary wastewater treatment since the early 1900s. Under the current code, over 200 ATUs have been used in Wisconsin for approximately 10 years with currently approved systems, experimental systems and to rehabilitate existing systems. Tens of thousands of ATUs are in use nationwide in such states as Washington, Oregon, Massachusetts, Pennsylvania, Ohio, Illinois, and Texas. The proposed Comm 83 would allow systems that use ATUs with proven treatment capability to reduce the vertical separation of the soil absorption bed to 24 inches.