

Overview

AdvanTex[®] Treatment Systems



Orenco's AdvanTex[®] Treatment Systems are an innovative technology for onsite treatment of wastewater. The heart of the System is the AdvanTex filter, a sturdy, watertight fiberglass basin filled with an engineered textile material. This lightweight, highly absorbent textile material treats a tremendous amount of wastewater in a small space. That's because textile has a very large surface area for biological breakdown of wastewater components – about five times greater than that of an equivalent volume of sand. Yet the AdvanTex filter has a very small footprint.

System Performance

Orenco Systems[®] has been researching, designing, testing, and selling a variety of textile filters for about seven years. Approximately 2,000 textile filters have been installed throughout the United States and Canada, on sites ranging from federal demonstration projects to university testing facilities, single-family homes, commercial properties, and community systems.

Unlike other wastewater treatment technologies, the AdvanTex Treatment System provides consistent, reliable wastewater treatment, even during "peak flow" conditions. The AdvanTex Treatment System includes a processing tank and a control panel with a programmable dosing timer. So it discharges small amounts of treated wastewater, regularly, throughout the day.

AdvanTex treats residential-strength waste to better than "secondary" standards. Effluent can be used for drip or subsurface irrigation, or discharged to shallow, inconspicuous trenches. It can also be discharged to fine-grained polishing filters for coliform removal and water reuse.

Third-Party Performance Verification

AdvanTex Treatment Systems have undergone lengthy performance testing to ANSI and ANSI/NSF standards. This third party testing (NSF Final Report, April 2002) of treatment performance recorded a maximum 30-day arithmetic mean of 8 mg/L for CBOD₅ and 6 mg/L for suspended solids. Over the six-month course of the evaluation, the average effluent CBOD₅ was 5 mg/L, and the average effluent suspended solids was 4 mg/L.

System Benefits

Significantly smaller land area is required for the AdvanTex Treatment System than is required for sand and gravel filters. That's because textile has demonstrated the capacity to support microbial populations that can treat filtered processing tank effluent at greater hydraulic loading rates. In fact, loading rates for AdvanTex Treatment Systems are typically 5-20 times higher than for sand filters. In addition, reductions in drainfield size are often permitted with AdvanTex Treatment Systems. Moreover, textile is lightweight, making it ideal for prepackaging and shipping, which simplifies installation and reduces costs.

Applications

The AdvanTex Treatment System is ideal for...

- New construction
- System upgrades and repairs
- Pretreatment of moderately high-strength waste
- Wherever typical secondary treatment standards suffice

AdvanTex® -AX Filters Overview, cont.

System Operation and Maintenance

AdvanTex is easy to service, easy to clean, and generates virtually no troublesome activated sludge. Like most advanced technologies, the AdvanTex Treatment System requires regular maintenance. As a condition of warranty, property owners must purchase a service contract from a certified third party provider.

The AdvanTex Treatment System includes a VeriComm® telemetry control panel with a web-based monitoring system, supervised by the System's service provider. Alarm notifications are automatically sent to the service provider's e-mail capable device. Messages are resent until the condition has been cleared. As a back-up, the VeriComm control panel also has an audible alarm. And the System is sized to allow for a minimum of 24 hours of wastewater storage (at average daily flows). That means an operator can provide service to the system during normal working hours, regardless of when an alarm occurs.

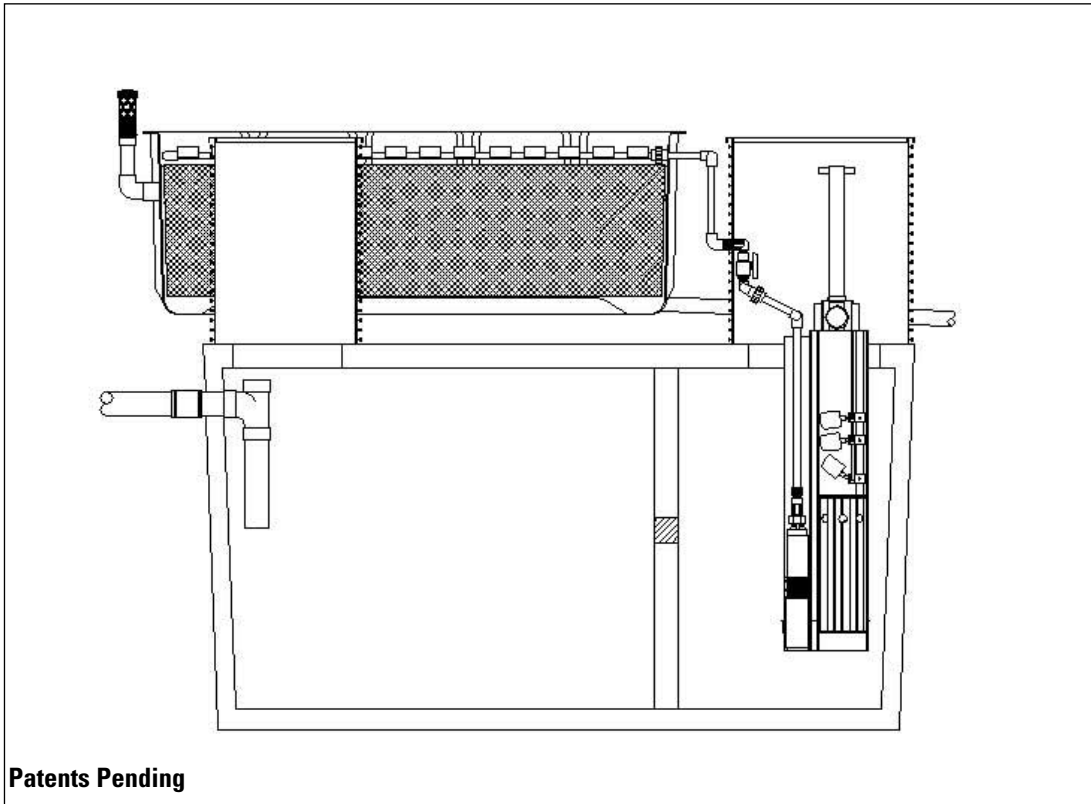
The AdvanTex System's pumps typically run 30-60 minutes per day, so AdvanTex uses very little power . . . an average of \$1.25-2.50 per month (based on the national average of eight cents per kilowatt hour). Compare that to power costs of up to \$20-\$60 per month for many "activated sludge" aerobic treatment units.

Treatment Methodology

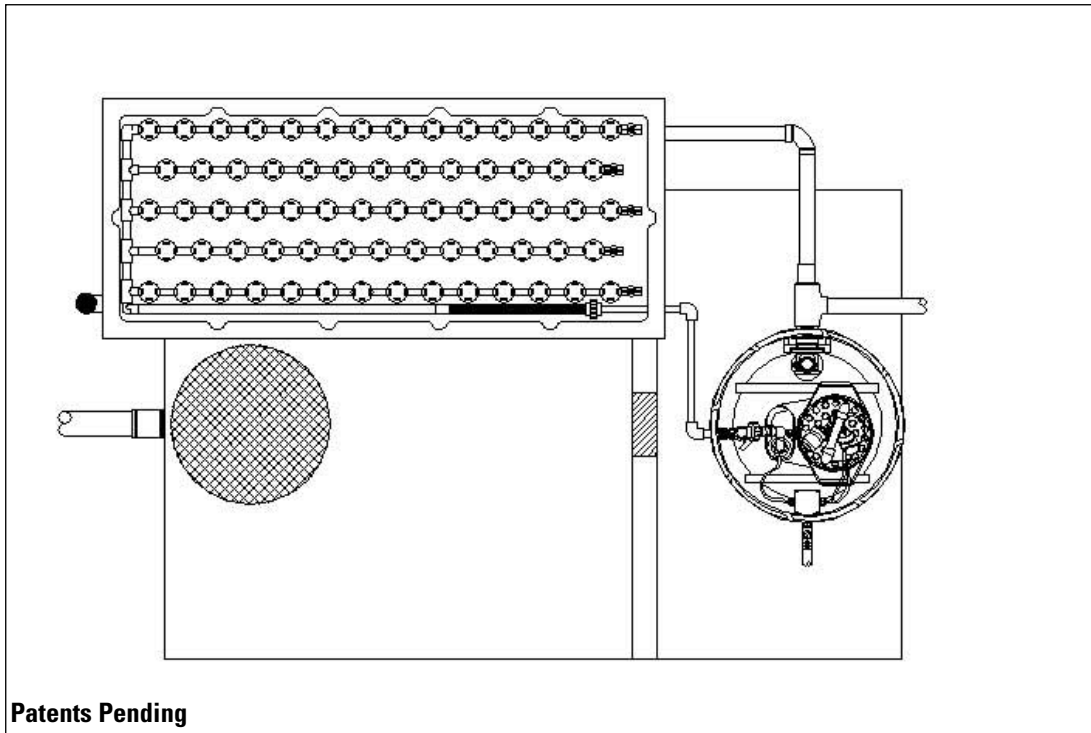
The AdvanTex Treatment System works just like a recirculating sand filter: a reliable, proven technology that Orenco's engineers have helped to perfect over the past 20 years. While the treatment process is similar, the proprietary treatment module is more efficient.

In an AdvanTex Treatment System, wastewater percolates through the textile media, whose complex fiber structure provides tremendous water-holding capacity and offers an extremely large surface area for biomass attachment. A visible biological film normally develops on the filter medium within a few days. BOD₅ and TSS reductions occur almost immediately.

AdvanTex® -AX Filters Overview, cont.



Side View of a Typical AdvanTex® Treatment System



Top View of a Typical AdvanTex® Treatment System