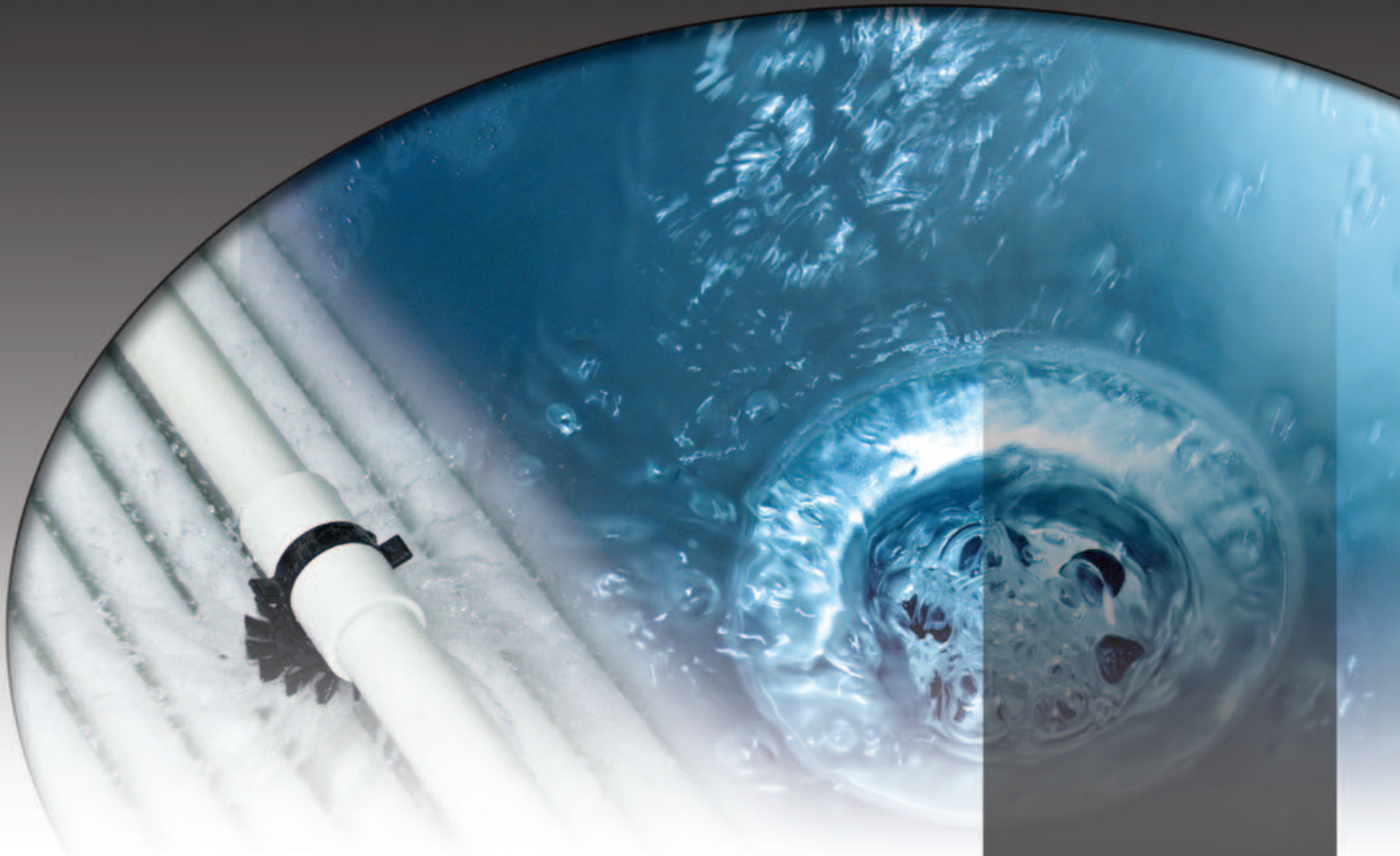


**AdvanTex**<sup>®</sup> Treatment Systems

# **AX-Greywater**

Manufactured by **Orenco Systems**<sup>®</sup>, Inc.



## **Greywater Treatment Systems For Subsurface Irrigation and Water Re-Use**

**Orenco Systems**<sup>®</sup>, Inc.

814 Airway Avenue, Sutherlin, Oregon, USA 97479  
Toll-Free: 800-348-9843 • +1-541-459-4449 • [www.orenco.com](http://www.orenco.com)

### **Re-Use Applications:**

- Irrigation
- Wetlands, ponds, lakes
- Toilet-flushing
- Vehicle washing
- Industrial cooling, processing
- Fire suppression
- Dust control
- Groundwater recharge

# AdvanTex® - AX-Greywater

## When They Choose to Build Sustainably, They Choose Us

The Audubon Centers in Los Angeles and Phoenix. The Environmental Learning Centers in Puget Sound and San Francisco. The EcoVillage at Currumbin, in Australia. The Resort at Esther's Island, off Nantucket.

The developers of all these award-winning, environmentally-focused projects chose Orenco's AdvanTex® Textile Filters to treat **blackwater** to such high levels that it's used for subsurface irrigation or further disinfected for other non-potable re-use.

Developers are also choosing Orenco's AdvanTex Textile Filters for the much easier job of treating and disinfecting **greywater** for non-potable re-use.



The Audubon Education Center in Debs Park, Los Angeles, won city approval to go "off the sewer grid" so it could capture, treat, and re-use wastewater with an AdvanTex Textile Treatment System (visible inside the traffic circle at the Center's entry). Pumps are solar-powered and effluent is disinfected and re-used for irrigation. This facility earned the first-ever Platinum LEED rating issued by the Green Building Council.



The EcoVillage at Currumbin, along the Gold Coast of Australia, uses AdvanTex® Textile Treatment Systems coupled with physical barrier micro-filtration, UV irradiation, and chlorine disinfection to produce water for non-potable uses that meets and exceeds Queensland EPA guidelines for Class A+ recycled water. The EcoVillage has won numerous international awards, including "World's Best Environmental Development."



The off-the-grid EcoCenter at Heron's Head Park in San Francisco includes an above-ground, indoor AdvanTex Textile Treatment System followed by a constructed wetland and UV disinfection. Treated water is recycled for landscape irrigation. The U.S. EPA honored the EcoCenter with its 2010 Environmental Justice Achievement Award.

### AdvanTex Textile Treatment Systems

AX20: 500 gpd\*  
7.5' x 3' x 2.5'  
(2.3 x 0.9 x 0.8 m)

AdvanTex AX20-RT: 500 gpd\*  
8.5' x 5' x 6'  
(2.3 x 1.5 x 1.8 m)

AdvanTex AX100: 2,500 gpd\*  
16' x 8' x 3.5'  
(4.9 x 2.4 x 1.0 m)

AdvanTex AX-Max: 2,500 - 7,500 gpd\*  
14' - 42' x 7' x 8'  
(4.3 - 12.8 x 2.1 x 2.4 m)

Prepackaged.  
No recirc tank required.



Prepackaged.  
No recirc tank required.



# AdvanTex® - AX-Greywater

## A Natural, Energy-Efficient Greywater Solution

Orenco has supplied AdvanTex® Textile Filters for greywater treatment at home and abroad. Most recently, the Boy Scouts of America selected AdvanTex to treat the greywater from 117 shower facilities at its new 10,000-acre (4047 ha) "Jamboree" campground at the Summit Bechtel Family National Scout Reserve in West Virginia, to re-use for toilet flushing. This large greywater system, which began construction in Spring 2011, will ultimately save a quarter million gallons (948 m<sup>3</sup>) of potable water per day.



*Some 50,000 scouts will be learning outdoor skills at the 2013 National Scout Jamboree ... the first to be held at the Boy Scout's new and permanent Jamboree site in West Virginia, near the New River Gorge. The Jamboree site is installing hundreds of Orenco's AdvanTex AX-RT treatment systems to recycle the camp's greywater.*

Halfway 'round the world, AdvanTex filters are treating greywater at multiple projects in Australasia, including elder care facilities in Victoria and Tasmania (see back page) and a large commercial building in the Australian Capital Territory.

AdvanTex Textile Filter units come in a range of sizes, from 20 sq ft (1.86 m<sup>2</sup>) of textile treatment media in a 7.5' x 3' (2.3 m x 0.9 m) tank for smaller flows, up to 275 sq ft (25.5 m<sup>2</sup>) of textile treatment media in a 42' x 7' (12.8 m x 2.1 m) tank for larger flows.

### All AdvanTex units ...

- use physical filtration and natural, biological processes to reduce bacteria
- are highly energy efficient, using less than 2 kWh per 1000 treated gallons (3785 L)
- are monitored and controlled by remote telemetry
- are modular and can be installed in multi-unit arrays
- are easy to operate and maintain
- are made in the U.S.A.

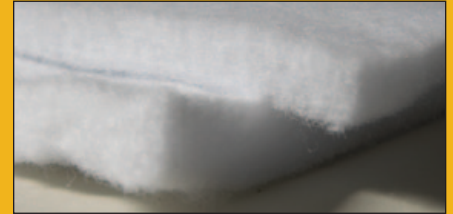
*This AdvanTex AX-Max, plus hundreds of AX20-RTs, are being installed to treat greywater at the Boy Scouts' new 10,000-acre (4047 ha) Jamboree campground.*



\*Design average hydraulic loading rates are based on blackwater or septic tank effluent. Greywater hydraulic loading rates may be double, depending on organic, inorganic, and hydraulic loading characteristics.

## Benefits

- Containerized, fully plumbed
- Capable of meeting stringent effluent limits
- Portable, versatile, and compact
- Above-ground or in-ground installation
- Easy to set; simple to operate
- Low energy usage



### Textile Treatment Media

*The treatment medium is a uniform, engineered textile. AdvanTex textile is easy to clean and allows average loading rates as high as 50 gpd/ft<sup>2</sup> (2000 L/day/m<sup>2</sup>).*



### Effluent Distribution

*High-quality, low horsepower pumps micro-dose the treatment media at regular intervals, and proprietary spin nozzles efficiently distribute the effluent, optimizing treatment.*



### Telemetry Controls

*Orenco's telemetry-enabled control panels use a dedicated phone line or ethernet connection, ensuring 24/7 monitoring and real-time remote control.*



*Touchscreens serve as a handy user interface for telemetry controls.*



# AdvanTex® - AX-Greywater

## Carefully Engineered by Orenco

Orenco Systems has been researching, designing, manufacturing, and selling leading-edge products for decentralized wastewater treatment systems since 1981. The company has grown to become an industry leader, with about 250 employees and 300 points of distribution in North America, Australasia, Europe, Africa, and Southwest Asia. Our systems have been installed in more than 60 countries around the world.

Orenco maintains an environmental lab and employs dozens of civil, electrical, mechanical, and manufacturing engineers, as well as wastewater treatment system operators. Orenco's technologies are based on sound scientific principles of chemistry, biology, mechanical structure, and hydraulics. As a result, our research appears in numerous publications and our engineers are regularly asked to give workshops and trainings.

# Orenco®

814 Airway Avenue  
Sutherlin, OR 97479 USA  
T: 800-348-9843  
T: 541-459-4449  
F: 541-459-2884

[www.orenco.com](http://www.orenco.com)  
[www.orenco.com/sales/choose\\_a\\_system/](http://www.orenco.com/sales/choose_a_system/)

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## More Project Briefs

AdvanTex® Textile Filters offer a reliable, affordable, scalable, and energy-efficient solution for treating both blackwater and greywater.

### Warracknabeal Hospital Aged Care Facility, Victoria, and St. Ann's Verve Village, Tasmania

Both these elder-care facilities "down under" are using AdvanTex filters to treat greywater, followed by UV disinfection. After disinfection, the treated water is used for landscape irrigation, with excess water diverted to the local sewer system. Warracknabeal, a \$19 million (AU) campus providing support services and beds for 60 residents, was installed in March, 2008. It is designed for 10,000 litres per day (2642 gpd) peak flow, using a single AdvanTex AX100. St. Ann's Verve Village is being built in stages, with 8-10 two-person housing units, each using a single AX20 for treating greywater, followed by disinfection. The first unit was installed in October, 2011.



Greywater is cleaned for re-use with an AdvanTex Textile Filter, manufactured by Orenco.

### On the Drawing Board

AdvanTex Textile Filters have been specified for high-profile, highly-sustainable projects awaiting funding:

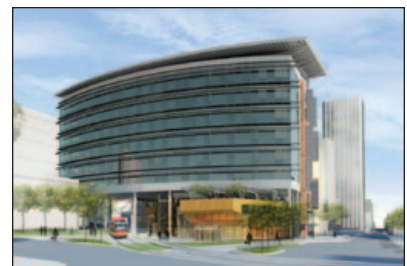
#### Camp Emerald Bay, Catalina Island, California

Featured on the cover of the August 2011 issue of *Plumbing Engineer* magazine, this Boy Scout Camp serving 7,000 campers a year is raising funds for a wastewater treatment upgrade that could reduce potable water demand by up to 50%. The proposed design incorporates AdvanTex treatment in combination with constructed wetlands, UV disinfection, and rainwater harvesting to flush toilets and irrigate landscaping. [www.plumbingengineer.com/aug\\_11/greywater\\_feature.php](http://www.plumbingengineer.com/aug_11/greywater_feature.php)



#### Oregon Sustainability Center

A consortium of sustainability-oriented non-profits, together with the Oregon University System and the City of Portland, are planning a "net-zero" hub for green research and commerce in downtown Portland. AdvanTex Textile Filters have been proposed to treat blackwater, followed by wetlands filtration and disinfection for toilet-flushing.



[www.oregonsustainabilitycenter.org/](http://www.oregonsustainabilitycenter.org/)

### For More Information

To view a one-minute video of how AdvanTex Textile Filters work, go to [www.orenco.com/corporate/technical\\_resources/videos.cfm](http://www.orenco.com/corporate/technical_resources/videos.cfm) and click on the "How it works" link under "AdvanTex Treatment Systems."

To find out how to earn LEED credits with AdvanTex technologies, go to [www.orenco.com/systems/sustainable.cfm](http://www.orenco.com/systems/sustainable.cfm) and click on "AdvanTex for LEED" under "LEED Resources."