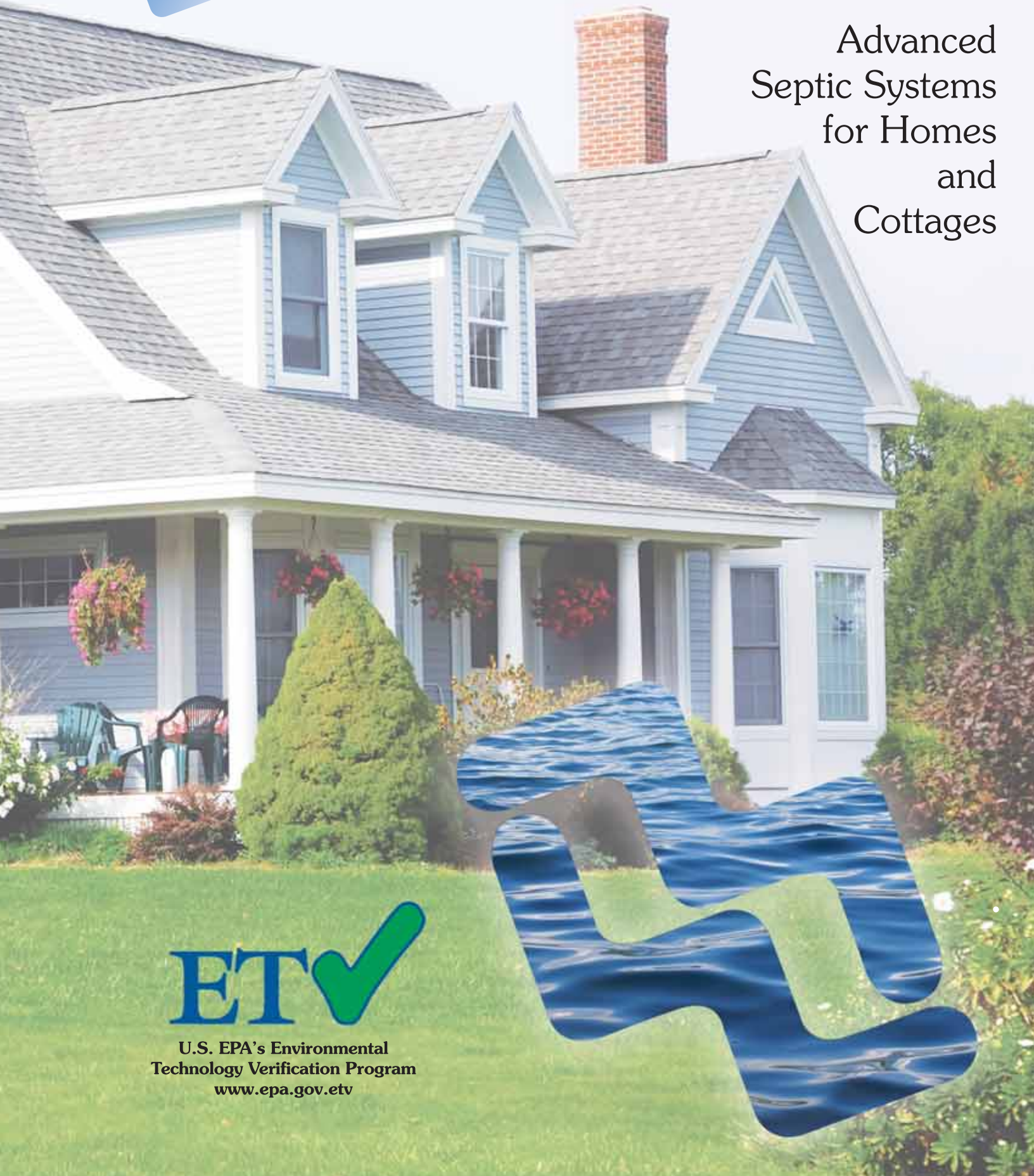
Waterloo Biofilter Systems Inc.

on-site wastewater treatment

Advanced Septic Systems for Homes and Cottages



ETV

U.S. EPA's Environmental
Technology Verification Program
www.epa.gov.etv

Is Yours a Waterloo?

Developed at the University of Waterloo in Ontario, the Waterloo Biofilter® is an advanced septic system ideal for use in individual homes and cottages. Since 1991 the Waterloo Biofilter has proven itself to be the most reliable wastewater treatment system available. The key to its success is the engineered filter medium that is optimized to be stable over long periods of time, accept very high loading rates without plugging, provide an aerobic treatment environment passively, and absorb wastewater thereby increasing retention time and treatment levels.

Waterloo Biofilter filter medium provides an ideal environment for beneficial bacteria to thrive and degrade contaminants found in wastewater

Advantage	Waterloo Biofilter	Other Technologies
Permanent Filter Medium	Filter medium is warranted to last 20 years and will likely last much longer	Can require periodic replacement of filter medium at your cost, significantly increasing the cost of ownership
Energy Efficient	Uses less electricity than a recirculating sand filter, and in some cases can be dosed by siphon eliminating all electrical needs	Can require huge amounts of electricity to operate, significantly increasing the cost of ownership
Cold Weather Performance	Engineered in Canada with proven performance treating sewage year-round in the Canadian climate	Rely on testing during summer months only or heat sewage to achieve treatment levels
Small Footprint	Compact nature requires less area for installation, minimizes mounding and tree removal, and allows you to increase the use of your property	Require larger disposal beds increasing costs, reducing flexibility, and reducing potential uses of your property
Wide Product Selection	Offers numerous system configurations each with their own unique advantages	Offer less choice in finding a solution suited to your individual property and preferences
Nitrogen Removal	Removes up to 65% of Total Nitrogen, helping to protect lakes and source waters	Remove less or no Nitrogen contributing to algae blooms, fish kills and potential health problems
No Air Compressor	Provides an aerobic treatment environment passively without the need for forced aeration	Can require the use of loud, high-maintenance, high-energy air compressors and diffusers
No Activated Sludge	Provides aerobic treatment without producing activated sludge	Can produce activated sludge that must periodically (typically annually) be pumped out or treatment levels fall dramatically

Engineered & Manufactured in Canada!

Waterloo Biofilters are known in the onsite industry for their outstanding treatment consistency, longevity, low power consumption and Nitrogen removal capabilities.

Blends into Your Garden

Modular and very lightweight, **Flat Bed Biofilters**™ follow the natural contours of your land for a pleasing and easily landscaped installation. Flat Beds are ideal for cottages and can be dosed with an electricity-free siphon pump where site elevation allows.

Smallest Footprint

Ideal for small lots, minimizing raised mounds, and minimizing tree removal, **Cedar Shed Biofilters**™ naturally blend in with a rural setting. These discrete systems can be located away from your house as the Shed itself contains no electrical equipment.

Below Ground and Out of Sight

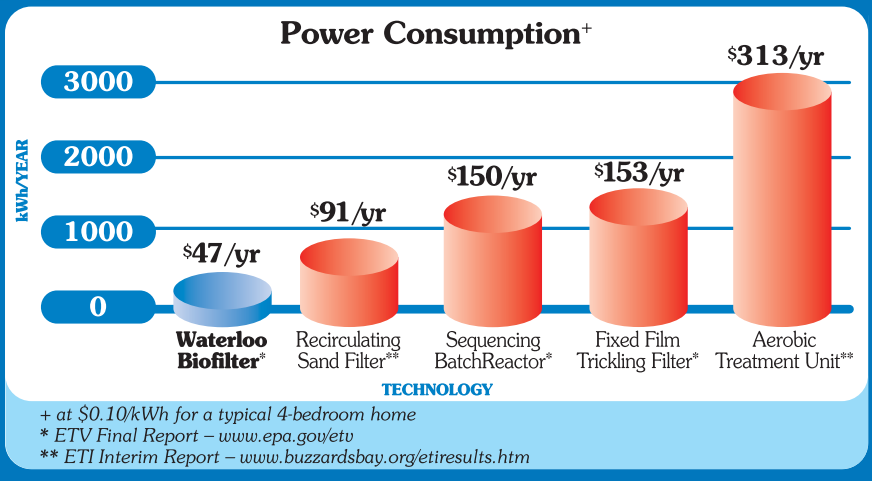
FRP Biofilter™ systems are completely below ground and can be scaled up for use with any size home. Configured for enhanced Nitrogen removal, FRP systems are ideal for environmentally sensitive areas, high water tables, and clay soils.

Commercial Applications

Waterloo Biofilters are routinely used for larger commercial sewage treatment projects. The Waterloo Biofilter system at Whiteshell Provincial Park (pictured) was awarded the 2011 Manitoba Award of Excellence in Environmental Consulting Engineering.

Our permanent filter medium comes with a **20 Year Warranty!**

Waterloo Biofilters use very little energy; up to 85% less power than aeration technologies using air compressors!



+ at $0.10/kWh for a typical 4-bedroom home
** ETV Final Report – www.epa.gov/etv*
*** ETI Interim Report – www.buzzardsbay.org/etiresults.htm*

A Waterloo Biofilter® is the ideal septic solution for your home or cottage

Waterloo Biofilters provide a permanent combination of biological treatment and physical filtration of wastewater not matched by any other treatment technology. Our unique and patented process uses a filter medium that is highly resistant to clogging, has the highest surface area-to-volume ratio in the industry, and is warranted to last at least 20 years!

Designed to work in even the most difficult sites, Waterloo Biofilters are the ideal solution for clay soils, bedrock, high water table, small lots, remote locations, and environmentally sensitive areas. Waterloo Biofilters work like a low-pressure membrane, providing a physical barrier that wastewater must pass through for treatment before entering the environment. Even when the power supply is interrupted, the Waterloo Biofilter's design ensures no untreated sewage enters the environment, so you can feel confident you are protecting your family, your property, and your water supplies from contamination.

Time-Proven Technology

The Waterloo Biofilter has been proven in many thousands of installations across North America since 1991. No other technology can match the Waterloo Biofilter's:

- Very low energy usage
- Few moving parts & low maintenance requirements
- Tertiary quality treatment even in very cold climates
- High level of Nitrogen removal
- Aesthetically pleasing impact on your property

No other septic system preserves the value of your property by naturally blending in with your site like a Waterloo Biofilter. The small footprint of a Waterloo Biofilter increases the flexibility of your property and helps to minimize unsightly raised mounds and tree removal.

Other benefits of the Waterloo Biofilter include:

- The lowest long-term operating costs
- One of the best warranties in the industry
- Easily handles surge flows and seasonal use
- Quickly recovers from system abuse or neglect
- Air filters block potential odours

The Choice is Clear Is Yours a Waterloo?

Third Party Cold Weather Testing Results

Environmental Technology Initiative[1]

	Waterloo Biofilter	Removal
$cBOD_5$	8 mg/L	95%
TSS	4 mg/L	98%
NH_4-N	0.5 mg/L	98%
TN	14 mg/L	59%

[1] US EPA Twenty-four month cold weather testing program installed in triplicate

Environmental Technology Verification[2]

	Waterloo Biofilter	Removal
$cBOD_5$	7 mg/L	96%
TSS	5 mg/L	97%
NH_3-N	0.7 mg/L	97%
TKN	1.6 mg/L	96%
TN	13 mg/L	65%

[2] US EPA & NSF Fourteen month cold weather testing program

Waterloo Biofilter Shallow Area Bed Testing[3]

	Waterloo Biofilter + Shallow Area Bed	Removal
Fecal Coliforms	<1 cfu/100 mL	>99.999%

[3] Buzzards Bay Test Facility Report

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