



# Oxelia™

XYLEM'S FULLY INTEGRATED, OZONE-ENHANCED BIOLOGICALLY  
ACTIVE FILTRATION SYSTEM FOR SENSITIVE WATERS



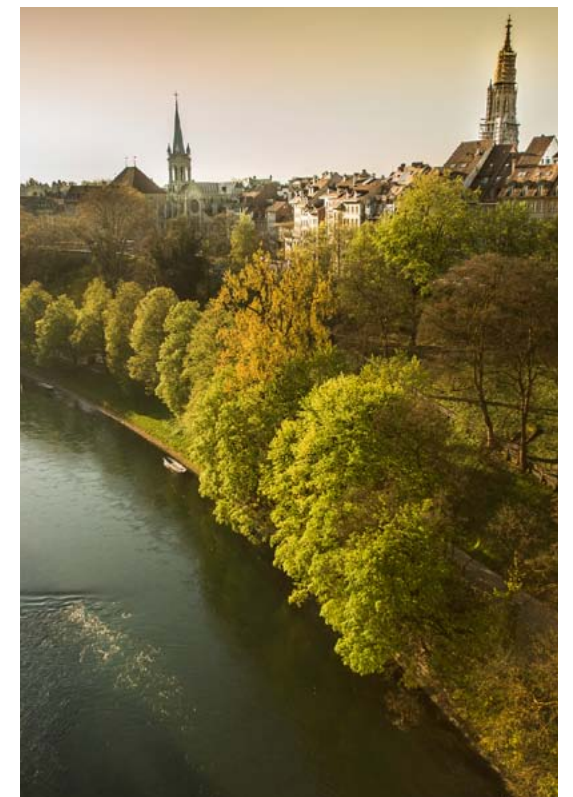
a xylem brand





# Across the globe, vital aquatic ecosystems are impacted by contaminants not adequately treated by conventional wastewater treatment systems.

These “emerging contaminants” or “contaminants of emerging concern” (CEC) include many classes of organic chemicals like pharmaceuticals, endocrine disruptors, personal care products, corrosion inhibitors, flame retardants, plastic stabilizers, herbicides and pesticides to name just a few. Though diverse, these chemicals have a few things in common. They are not substantially biodegraded in conventional wastewater treatment processes, passing through to surface waters from effluent discharges. In addition, they are known or suspected to impact aquatic life at extremely low concentrations, often fractions of a microgram or nanogram per liter.



## Worldwide research confirms cause for alarm.

Many governmental agencies and academic institutions worldwide are conducting research into the presence, transport, degradation and impacts of these contaminants. Initiatives in different European countries are working to gather data and develop lists of priority substances for which regulations, such as the European Union’s Water Framework Directive (WFD), might be developed. Public concerns over both health of water bodies and human health have encouraged many countries and utilities to begin drafting their own criteria to protect the vital aquatic environments within their jurisdictions. Switzerland already set removal of CEC as a top priority and has recently imposed advanced micropollutant treatment for waste waters in their federal water protection laws.

## Can your treatment process meet this? The Oxelia system by Leopold can.

Substance*	Effluent Quality
Carbamazepine	0.5 µg/l
Diclofenac	0.05 µg/l
Sulfamethoxazole	0.6 µg/l
Mecoprop-P	3.6 µg/l
Metoprolol	64 µg/l
Benzotriazole	30 µg/l
Ibuprofen	0.3 µg/l
Bisphenol A	1.5 µg/l
17-β-Estradiol	0.4 ng/L
17α-Ethynylestradiol	0.037 ng/L

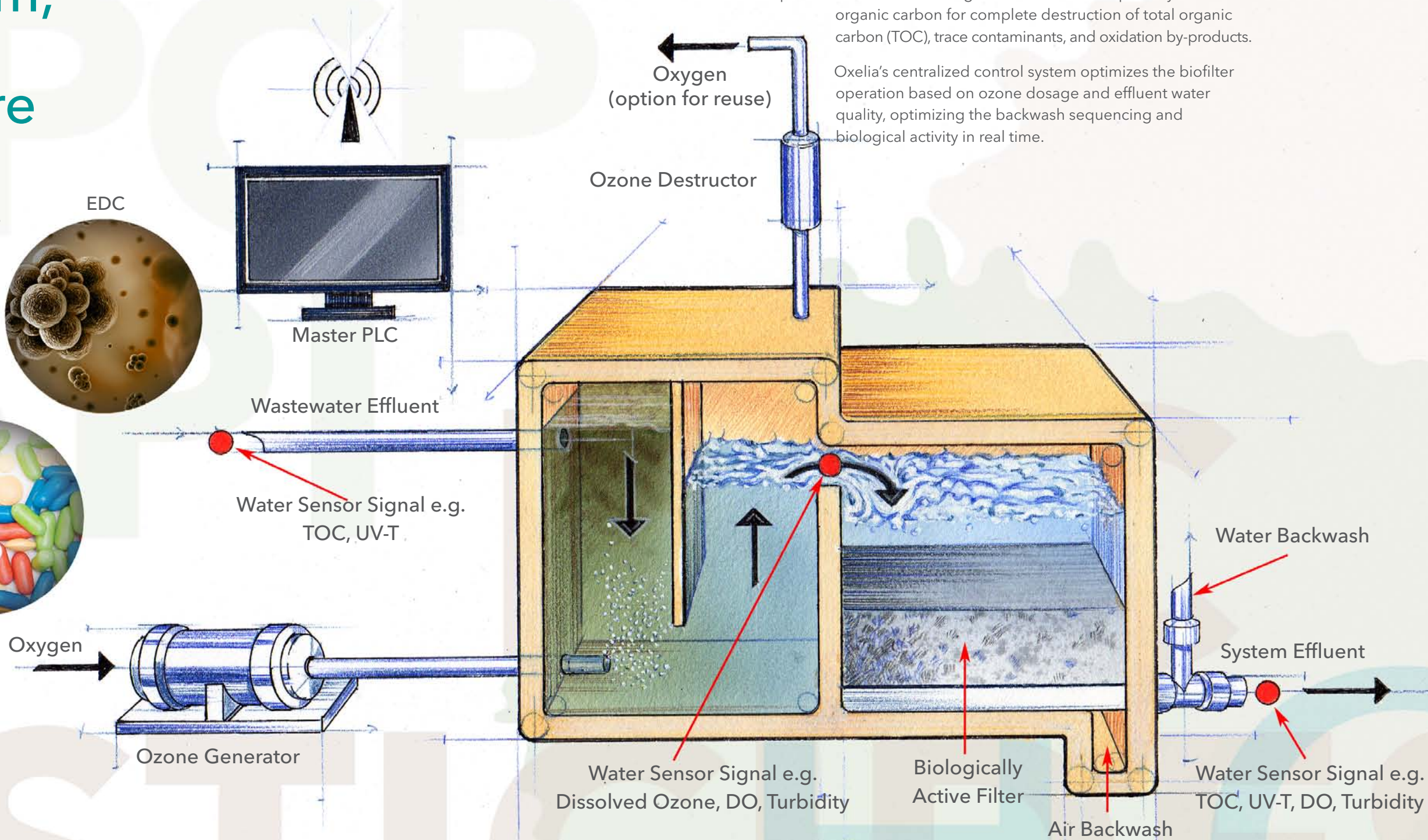
\*Proposals for Chronic Quality Criteria of Trace Organic Compounds  
Regulated in Switzerland. Status Dec. 2013

**Oxelia™**  
Serious protection  
for sensitive waters.



# With the Oxelia™ ozone-enhanced biologically active filtration system, dangerous compounds are destroyed.

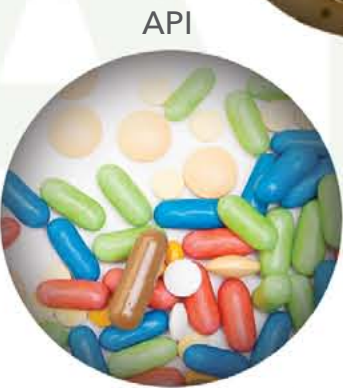
Unlike traditional wastewater treatment systems, the Leopold Oxelia multi barrier removal produces a cleaner and safer effluent (lower BOD, TOC, and suspended solids) by reducing pathogens and destroying difficult to treat pollutants. The result is an energy efficient and water efficient treatment system that reduces CEC to extremely low levels, protecting sensitive waters.



## How do we do it?

The Leopold Oxelia System combines the treatment synergy of ozone oxidation and biologically active filtration into a single process solution. How does this work exactly? Ozone oxidation breaks down recalcitrant organic carbon to make it biodegradable. Then, naturally occurring microbes attach to a fixed bed filter and provide free aerobic biological treatment of the partially oxidized organic carbon for complete destruction of total organic carbon (TOC), trace contaminants, and oxidation by-products.

Oxelia's centralized control system optimizes the biofilter operation based on ozone dosage and effluent water quality, optimizing the backwash sequencing and biological activity in real time.





# The highest quality at the lowest cost.

Compared to powdered activated carbon (PAC), the fast reaction power of ozone allows for significantly smaller reaction tanks while the biologically active filtration system is the same size or smaller than conventional sand filtration.

Lower investment costs.

Lowest operation costs.

Using the best online sensors and an innovative multi loop control system, the Leopold Oxelia system automatically adjusts and controls the combined ozone filter system to achieve treatment goals at the lowest possible operating costs.

Some treatment systems concentrate the CEC into a reject waste stream that can represent as much as 20% of total flow and requires additional special treatment. The Leopold Oxelia system produces a filter backwash of 1% to 3% of total flow that can be sent either back to the headworks or to solids handling systems, requiring no special treatment.

Water efficiency.

Less residual handling.

While PAC based treatment processes generate more residuals requiring disposal as excess sludge, the Leopold Oxelia system's filter backwash produces a minimal amount of solids that are easily managed by existing solids handling systems with no special treatment.

User friendly controls on one integrated platform provide operators with a complete picture of system operations, providing confidence and control to assure optimal performance.

Ease of operation.



Let us design an Oxelia™ system tailored to help you protect sensitive waters.

**Let our team help yours.** Xylem's process team, combining Leopold's filtration experts, Wedeco's ozonation experts, and YSI/WTW wastewater instrumentation experts will design the optimal system for your specific water application. They will construct the optimal configuration to reduce cost, risk, and complexity, providing a reliable and efficient solution platform, helping you protect sensitive waters.

**Retrofit of existing filter.** If your treatment plant has an existing filtration system, our Xylem experts can assist in retrofitting your existing structures with the necessary filtration components, ozone system and controls to convert your system into an Oxelia system, optimizing your system's performance while minimizing capital costs.

**Pilot testing available to demonstrate treatment.** Do you want to see how it will work on your water? Xylem's experts have decades of experience running pilot trials and are recognized partners in solving a broad range of customer problems on all types of water. We can pilot test with your water to demonstrate treatment, fine tuning the Leopold Oxelia design and control for optimal performance and assured compliance with lower risk.

- The Leopold Oxelia ozone-enhanced biologically active filtration system comes with a process guarantee that only a custom fit can provide. This guarantee assures compliance with application requirements and current regulations.
- Leopold filtration systems and Wedeco ozone systems have reliably served the industry for decades with thousands of installations worldwide. In all types of water, in all types of conditions, Xylem systems perform.
- Our client support is the best in the business. We'll be there with you on day one and for many years to come making sure you get the results you expect.
- With the ability to treat a broad array of CEC, the Leopold Oxelia system is equipped to take on more stringent regulations currently under consideration.

Sensitive  
waters must  
be protected.  
Let Xylem  
show you  
how.

The Oxelia™ system comes  
with Xylem's ultimate client  
support. **We guarantee it.**

For more information go to:  
[www.xylem.com/treatment/oxelia](http://www.xylem.com/treatment/oxelia)



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