

BioBarrier® MBRs for decentralized treatment

The US company BioMicrobics' BioBarrier® MBR and HSMBR® (500-9000+ GPD [1800-34000 LPD] treatment capacity) can remove 99 percent of harmful pathogens from wastewater. The EN-12566-3-certified, packaged, domestic wastewater treatment MBR systems can make the most difficult sites usable and ideal even for direct discharge with no additional disinfection.

The BioBarrier MBR system is the first "Certified Water Reuse" System to achieve NSF/ANSI

Standard 350. This standard combines the current NSF Standard 40, class 1 for onsite systems (meeting applicable levels of treatment for the environment, i.e. subsurface discharge), NSF Standard 245 (meeting applicable levels of nitrogen reduction), and the point of use/point of entry (POU/POE) water quality standards for interior water usage or above surface discharge.

A third-party test shows the BioBarrier system exceeded the minimum treatment level

requirements: effluent quality of BOD <2 mg/L, TSS <2, ammonia <1, and reduces fecal coliform and E. coli: <10 CFU (colony forming units). Suspended aeration outside of the BioBarrier MBR module enables the solids to have more retention time in the tank to breakdown and the aerobic bacteria to consume the lesser bacteria, viruses, and organic material.

Current new construction and retrofit projects using the BioBarrier MBR technology in more than 12 US states and seven countries experiencing water scarcity include: single-family homes, multi-family properties, and commercial applications.

Bio-Microbics is a leading manufacturer of decentralized wastewater, stormwater, and water treatment systems. Its pre-engineered, pre-packaged, certified, "Fixed Integrated Treatment Technologies" (FITT®) are the result of decades of real world operating history and proven results that offer significant environmental benefits (www.biomicrobics.com).

Visit BioMicrobics, Inc. at the WEF Pavilion, Hall 2.2

Algae detection and analysis demonstrated

The US company Fluid Imaging Technologies plans to demonstrate the FlowCAM® high speed imaging particle analyzer, a system that provides continuous digital imaging and analysis of algae, plankton and microscopic particles in a fluid medium, at its booth (Hall 4.2, Booth 418) during Wasser Berlin.

FlowCAM is used to detect, identify, and quantify taste- and odor-causing algae, cyanobacteria, and invasive species in freshwater sources. Marine researchers use the analyzer to image, count, identify, and classify phytoplankton and zooplankton. FlowCAM obtains size, shape, fluorescence, and concentration statistics in a fraction of the time required by traditional microscopy. Companion VisualSpreadsheet® software uses automated pattern recognition technology to allow users to sort, filter, and classify particle and microscopic organism images interactively.

The FlowCAM®, first manufactured in 1999, was the first automated particle analysis instrument to use digital imaging for measuring size and shape of microscopic particles in a fluid medium. With applications in oceanographic research, municipal water, pharmaceutical formulations, chemicals, biofuels and many other markets, the company continues to lead the way in imaging particle analysis.

Visit Hall 4.2, Stand 418



HOBAS® jacking pipes gain foothold

Centrifugally cast GRP pipes have gained a firm foothold in trenchless technology, according to HOBAS. Since 1982 when the first project implemented with GRP jacking pipes and remote-controlled jacking machines was carried out as part of a research project in Hamburg, Germany, the company says the systems have proven their work in many trenchless projects worldwide. HOBAS manufactures jacking pipes for pressure as well as gravity applications with diameters ranging from 250 to 3600 mm.

HOBAS GRP Pipe Systems are made of unsaturated polyester resins (UP), chopped glass fiber (GF) and reinforcing mineral

materials. In a rotating mold, the pipe wall is built up layer by layer from the outside inwards. Once all the materials have been fed into the mold, the speed of rotation is increased. Spinning at a pressure of 30 to 70 bar presses the material against the mold wall, which removes the gas, compacts and cures it. The production process (centrifugal casting) ensures that the pipes are circular, the wall thickness uniform over the entire length, and that the material displays corresponding compressive strength properties for each individual project.

Given their high stiffness and smooth, almost non-absorbent

outer surface, CC-GRP pipes are also suitable for long drives, saving on intermediate stations and installation time. For the 2011 No-Dig Award winning project "Czajka" in Poland, for instance, pipes 3000 mm in diameter were jacked in sandy soil on a single 900-meter-long drive. Curved routes are no obstacle using the right material. For example, pressure-jacking pipes were pushed on a curve with a radius of 1000 meters beneath the River Rhine in Switzerland.

Three-dimensional chemical bonding of the resin enables the pipe to retain its stability in very warm environments. One of the benefits of composite

material technology is that the pipe's strength properties can be customized to suit the specific load directions required.

Visit Hall 1.2, Stand 415



The project River Enz culvert in Pforzheim, Germany received the German Society for Trenchless Technologies Gold Award in 2011.