- ***Municipal***
- ***US Military***
- ***Tribal – Native Lands***
- ***Private Developments***
- ***Resorts - Schools***
- ***Disaster Relief***




About USBF™

The Upflow Sludge Blanket Filtration (USBF™) technology is designed for municipal, industrial, and real estate development applications with hundreds of installations throughout North America, Europe and the Caribbean. The patented USBF™ technology with it's 30+ year track record, is considered to be one of the most affordable and effective wastewater treatment systems in the world today and was cited by the United Nations Industrial Development Organization (UNIDO) as "an important environmental process revolution".

The underlying strength of the technology is that it uses biological processes, including biological nutrient removal to meet new regulatory restrictions on nitrogen and phosphorus effluent content. The resulting compact bioreactor substantially reduces equipment size and costs, while achieving high quality treated effluent suitable for reuse in non-potable and industrial applications.

The University of California, Davis rated the USBF™ technology as the highest ranked biological treatment system out of almost seventy technologies reviewed. In 2006, *Frost & Sullivan* awarded the technology Packaged Wastewater Treatment Technology Leadership of the Year Award, and at the 2007 Environmental Industry Summit in California, ECOfluid won the Technology Merit Award from the *Environmental Business Journal*."

www.USBF.com

Municipal and Private Development Approaches

The USBF™ system is ideal for quick and cost-efficient plant expansion. A USBF™ plant capacity can range anywhere from 5,000 gpd to well over 3 MGD. Plants can be installed and operational in months rather than years without tying up your valuable capital. Clients need the flexibility, practicality and environmental security that exist with a USBF™ modular design.

With costly designs and mandated compliance issues casting a shadow over wastewater infrastructure, municipalities and government agencies may not be able to address all the uncertainties required for the most favorable economic and environmental solution. As a result, practical approaches are needed to resolve infrastructure upgrades. The USBF™ can meet or exceed CA Title 22 & Chesapeake Bay standards.

The cost of money coupled with challenges from a shrinking municipal bond market and expensive insurance coverage, make it difficult to meet financial obligations. The concept of "build it and they will come" no longer applies. All sectors of our economy are uncertain. As development and growth continue to slow, municipalities and sewer authorities need to spend their resources wisely. Wastewater treatment systems that offer modular designs allow for expansion when the market is stable and the need is certain. Adding capacity in incremental stages allows a community to allocate its dollars to other critical programs like parks, schools and police/fire. The luxury of pre-paying millions of dollars to sit on future capacity doesn't make good economic sense. It boils down to being fiscally responsible; making your money work for you, not vice-versa.

Risk Reduction for Municipality and Private Development

The federal government continues to place tighter and more stringent wastewater regulations on the backs of public and private wastewater systems. FOP helps clients comply with those regulations in a more cost-effective and timely manner than can be accomplished by themselves. Under the traditional scenario, the client is fully exposed to all of the liabilities inherent in operating a utility including operational risks, economic risks, force majeure risk and environmental risks. Our unique structuring options can serve as a means of managing some of these risks by placing the responsibility with our fully bonded program and esteemed industry partners.

Streamlined Process

FOP brings a combination of established technology and flexible economic approaches. Typically, normal procedures entail years of planning, engineering, marketing, committee and voter approvals, complicated RFP's and the challenges associated with bond financing for wastewater expansion. As a result, nearly all traditional options are priced well above the FOP Program. FOP's modular designs increase capacity in direct correlation to development needs. Most competing technologies that deliver the same daily capacity throughput with Title 22 and/or Chesapeake Bay quality discharge would require a more sizable capital investment. FOP plants can be approved and built in months rather than years. Our designs allow greater flexibility for clients requiring immediate capacity or phased-in expansion.

Managed Operating Costs & Efficiencies

By virtue of specializing in multiple services, our team has developed practices that will allow us to perform more efficiently than a typical municipality, who must divide its attention across a number of different functions like fire/police protection, schools, parks, roads, solid waste and other critical infrastructure. When needed, our bonded operators are completely focused on operating your specific wastewater facility. As a result, this undivided attention produces greater efficiency with respect to key cost components such as maintenance, equipment replacement, electricity (including a renewable energy component), chemicals, labor and long-term reliability. FOP places provisions in any operations contract to assure costs for repairing, upgrading and maintaining "inside the fence" infrastructure. In all cases, FOP works closely with the client or Authority to retain the services of their current plant employees.

Membrane Quality, Yet Simple, Reliable and Affordable

"The new USBF^{MF} configuration brings together the best of the biological and the membrane processes," says Justin Hebner. The result is a membrane quality effluent with significantly improved reliability, flexibility and simplicity of operation, and reduced capital and operating costs. No special pre-treatment is required, the biological treatment can be optimized for biological nutrient removal (and include chemical precipitation if desired), and the membrane energy input is kept low by the membranes design and by the fact that the TSS of effluent from the USBF™ is already less than 10 mg/l. Cleaning and maintenance is safe, easy and dry and there is no exposure to chemicals and sludge.

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