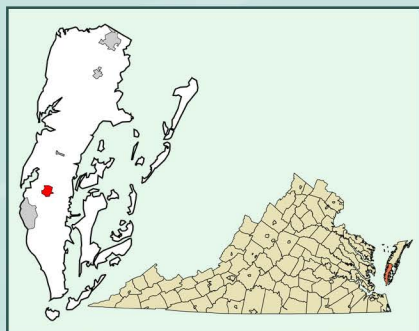


Bayview Community: Bayview Revitalization Project

BETTER WATER. BETTER WORLD.

PROJECT OVERVIEW:



LOCATION: Cheriton, VA
Northampton County, 23316, USA

PROJECT NAME: Bayview Revitalization Project

FACILITY SIZE:

80 houses, 40 rental units.
158 acres.

INSTALLATION YEAR:

2003

TREATMENT

CAPACITY: 27,000 GPD

SYSTEM

SPECIFICATIONS:

MicroFAST Treatment Units

PROJECT ENGINEER:

John Warwick, Arcadis Engineering

DISTRIBUTOR:

Mike Burch, Nature Works, Inc.

DEVELOPER: Bayview

Citizens for Social Justice

EQUIPMENT USED:

- (3) MicroFAST® 9.0
(9,000 GPD each) Each unit has its own 5.0 H.P blower.



Bayview Rural Village

Wastewater treatment system lifts up community and changes the life of its residents.

This once impoverished town, which sits on Virginia's Eastern Shore, now called the Bayview Rural Village was the site of a major redevelopment project that changed the lives of many. In October 2003, several Bayview residents finally experienced what most Americans take for granted; a home with heat, flushing toilets, and running water.

THE CHALLENGE

The Bayview Revitalization Project replaced housing and utility infrastructure in one of Virginia's poorest communities. Prior to redevelopment, the community consisted of poorly maintained and substandard housing with poor to non-existent sanitary facilities, consisting mostly of outhouses, and no commercial facilities. Most drinking water came from shallow wells contaminated by surface water and nearby pit privies.

THE SOLUTION

Low operation and maintenance were paramount for a community that could only afford to pay a \$25 per month service charge. Warwick sought a design that was simple in its operation and maintenance. Knowing that Bayview residents would not have the money for repairs and knowing that manpower and low operation and maintenance were extremely important factors in the Bayview Rural Village project, Arcadis went with the MicroFAST® system.

SYSTEM DESIGN

The community sanitation system consists of septic tank effluent pump systems conveying wastewater to a main pump station located on the east side of State Road 684. The main pump station discharged the combined flow to a concrete splitter box, dividing the flow evenly to three MicroFAST® 9.0 wastewater treatment units. Each MicroFAST 9.0 unit has the ability to treat the residential strength wastewater at 9,000 gallons per day for a combined treatment capacity of 27,000 GPD.

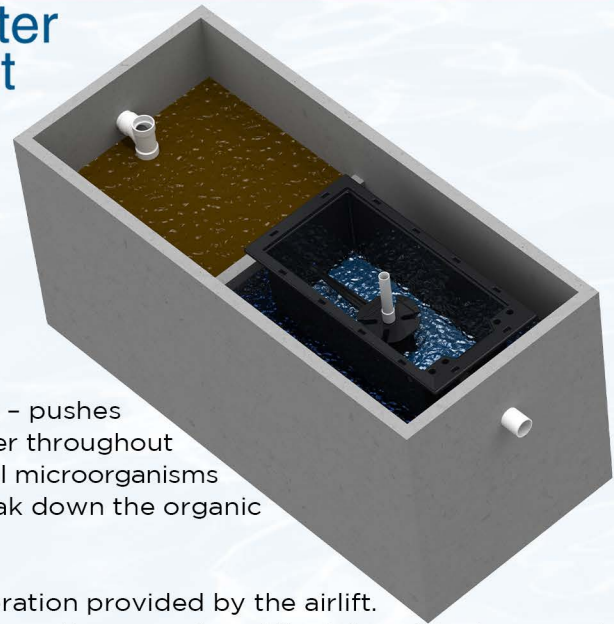
The effluent from the MicroFAST unit complies with the Virginia Department of Health Treatment Level 2 (TL-2), which requires BOD and TSS averaging less than 30mg/L each. According to the Eastern Shore Department of Health, there is no current nitrogen, ammonia or phosphorus limit to receiving drainfields. There is a nitrate limit of 5mg/L at the boundary edge of the drainfields and above the water table. The drainfield uses low pressure pipe dispersal. A later phase for 10 additional homes added a MicroFAST 4.5 (4,500 GPD treatment unit)

The entire system is monitored by wireless technology through internet access, allowing the user to know the systems functions at any time and eliminating unnecessary labor. Because of the FAST® system's flexible design, the units can be turned on or off as water flow increases or decreases.

SIMPLE. LOW COST. ROBUST.

MicroFAST[®] wastewater treatment systems

The MicroFAST[®] system is an advanced wastewater treatment system that uses Fixed Activated Sludge Treatment (FAST) to break down organic material and nutrients in wastewater. A treatment tank containing the MicroFAST module receives wastewater from the facility and is typically placed after a primary settling tank or septic tank. The MicroFAST module contains blocks of fixed media and a patented airlift device placed inside a rectangular liner.



An above-grade blower – the only moving part in the treatment process – pushes air into the airlift, which produces robust recirculation of oxygenated water throughout the submerged media. The oxygenated water supports the growth of useful microorganisms on the surface of the media. These attached growth microorganisms break down the organic material in the wastewater.

Microbial growth on the media surface is sloughed off by the vigorous aeration provided by the airlift. The excess solids settle out of the media to the bottom of the tank, where they are stored for intermittent removal. Treated effluent leaves the MicroFAST module through a built-in baffle into the receiving environment.



The Bayview wastewater collection and treatment system was placed in service in 2003 at the same time as the water system. The original plan called for the Bayview Committee to provide maintenance of the system, but an effective program never materialized. From 2003 to 2009, the WWTP received very little attention, but continued to operate smoothly. That in itself is a testament to the simplicity of the engineering, design, and the robustness of the FAST[®] treatment process. In 2009, Northampton County took over maintenance and began a catch-up program.

ABOUT BIO-MICROBICS, INC.

With a worldwide emphasis on environmental concerns and improving water quality, Bio-Microbics manufactures proven wastewater and storm water treatment systems for decentralized communities and commercial properties. Ideal for concrete, fiberglass, steel, or plastic tanks, the simple, pre-engineered, modular design of our popular Bio-Microbics wastewater treatment systems deliver consistent high performance. Successfully used for over 35 years, the advanced FAST (Fixed Activated Sludge Treatment) technology is installed in municipal, industrial, marine, commercial and residential properties located around the globe.



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