

Hybrid System Increases Performance, Limits Sludge Production

Siemens Water Technologies' Omniflo® Interchange Sequencing Batch Reactor (ISBR) system combines the company's SBR technology with its Cannibal® solids reduction system. The system will be featured in the Siemens booth at WEFTEC '08.

The SBR system uses a fill-and-draw, non-steady state activated sludge process. One or more reactor basins are filled with wastewater during a discrete time period and then operated in a batch treatment mode. The system

Siemens' ISBR system has allowed a California wastewater treatment facility to minimize solids wasting to less than 0.1 lbs of biological solids per lb of BOD treated.



accomplishes equalization, aeration and clarification in a timed sequence – all in a single reactor basin. In a conventional continuous flow process, multiple structures are required to obtain the same treatment objectives.

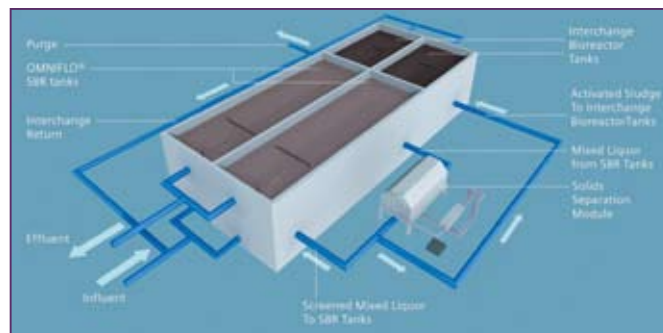
The Cannibal interchange bioreactor is at the heart of the ISBR process. The solids reduction process requires minimal aeration, and provides a non-aerobic environment. That environment selects for low-growth facultative bacteria and also stresses and conditions aerobic bacteria which, in turn, breaks down cells and increases biodegradability. The reactor's contents are interchanged back into the SBR process – into a non-aerobic cycle.

An option for secondary treatment and solids reduction, the ISBR system is suited for plants that have high solids handling costs, high energy costs and tight effluent requirements. It is also appropriate for applications where nitrification and denitrification are necessary.

System Benefits

The Omniflo ISBR system has an inherent biological nutrient removal (BNR) capa-

bility through the use of automated controls that provide optimum environments for each BNR reaction. It also produces a very



The Omniflo® ISBR system process flow.

high-quality effluent at varying flows and loadings with better control over microorganisms. The small footprint system produces a sludge yield of 0.05 to 0.30 lbs of biological solids per lb of BOD per day and, compared to a typical SBR system, provides increased flexibility as well as significant power savings.

Easily retrofitted into existing tanks, the system can remove non-biodegradable trash that can harm the electro-mechanical equipment over time.

Installing just an SBR system helps plants meet state nutrient removal limits. But adding a Cannibal system can also reduce energy costs associated with aerating

an aerobic digester, reduce the need for installing sludge handling equipment, and generally provide a more energy-efficient solution. Significant reductions in the amount of solids generated for disposal are also realized.

The Omniflo ISBR system also allows for a single integrated control system that optimizes plant performance and serves as a single point-of-contact for the overall process. The completely automated process also balances the operating conditions over the widely varying loads to help maintain effluent quality and minimize solids production.

To learn more about the ISBR system, visit the Siemens booth at WEFTEC or the company's website at www.siemens.com/isbr. **WW**

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