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## SUFFOLK STRUVITE RECOVERY FACILITY PROJECT



**Winner:**

**Suffolk Struvite Recovery Facility Project**  
Water & Wastes Digest (WWD)

**WINNER: Suffolk Struvite Recovery Facility Project**



The Hampton Roads Sanitation District (HRSD) Nansemond Treatment Plant, located in Suffolk, Va., need an alternative to sidestream treatment of nutrient-rich dewatering recycle streams, and to eliminate struvite buildup in pipes and equipment. The nutrient-rich recycle streams impact the treatment plant by placing additional loading on the biological nutrient removal (BNR) system and consume plant capacity.

HRSD evaluated several sidestream processes and decided to utilize a new and innovative green technology known as Pearl Process developed and patented by Ostara Nutrient Recovery Technologies Inc. The process was designed to recover phosphorous, which is a valuable and dwindling resource. It creates a slow-release fertilizer product that is in high demand. Ostara is contracted to purchase all material produced at the facility and is responsible to market and sell the product to distributors throughout the U.S. Proceeds from the sale of the product offsets production costs. As a result, the facility will improve overall reliability of BNR system, eliminate chemical and solids handling costs for sidestream treatment and reduce the downtime and maintenance associated with the struvite buildup throughout the digestion and dewatering operations at the plant. Project challenges included the design and construction of a fully automated struvite recovery facility (SRF) in six months using a Private-Public Education and Infrastructure Act (PPEA) procurement model at a municipal wastewater treatment facility. This was HRSD's first project to use the PPEA procurement model. The project was required to be cost neutral on a capital and O&M basis. According to Nansemond Plant Manager William J. Balzer, P.E.: "Permitting of the facility was complicated by requirements for wetlands delineation by the Army Corps of Engineers. Fabrication of the reactors and procurement of the equipment with tight lead times in an economic recession presented many challenges to meeting the project schedule. The treatment plant currently uses an Emerson Distributed Control System, which seamlessly interfaces with the SRF automation over a modbus protocol." The project was started on Nov. 22, 2009, and finish date was May 27, 2010.

**Location:** Suffolk, Va.  
**Owner:** Hampton Roads Sanitation District  
**Designers:** Hazen and Sawyer; Ostara Nutrient Recovery Technologies Inc.  
**Contractors:** Mid Eastern Builders; Systems East Instrumentation; Kirby Mechanical, Suffolk Iron Works  
**Cost:** \$5.46 million  
**Size:** 110,000 gpd; 6,450 sq ft



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