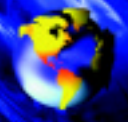




System Application



SMITH & LOVELESS INC.

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Florida County Re-Uses Wastewater from S&L Plants for Irrigation



Application Profile: Pinellas County, FL
S&L Equipment: Model R OXIGEST® WWTP
Installed: 1994



Pinellas County faced several design challenges as they studied expansion to the Pine Ridge Wastewater Treatment Plant. It needed a system that would allow enough room for future expansion. Rapid population increases because of numerous new housing starts were creating problems. Existing plants were exceeding their design loads, and prior treatment plant expansions were at capacity levels at the time they were brought online. A second concern was the treatment plant's close proximity to these housing developments. Limited space and visual harmony with the community were factors. A third factor was the ability to reuse the effluent for irrigating local area golf courses.

Pinellas County chose the Smith & Loveless Model R **NUTRIGEST®** Treatment System because of its operational configurations and its size range. The varietal treatment process options enabled the initial design to include considerations such as efficient land usage, site topography, existing equipment and piping layouts, future planned expansion, and local or regional regulatory requirements. It also incorporated auxiliary equipment such as grit chambers as well as advanced treatment such as filtration or phosphorus removal inside the tangeage.

The treatment capacity of the Pine Ridge Wastewater Treatment Plant increased from 120,000 GPD to 850,000 GPD. They also chose a second identical backup **NUTRIGEST®** plant for future expansion, complete with foundations, tertiary filters, pumps and piping. The plants include piping modifications, pond and pumping station construction and connection to existing force mains and facilities, plus the removal of the existing plant. These features eliminated expansion concerns and allowed for flexibility to meet the next design challenges.

Each of the plants include two complete concentric tanks, supported on a reinforced concrete foundation, and necessary division walls to ensure proper process operation. The inner circular wall and outer wall were divided into several treatment zones. These zones include contact and re-aeration compartments, a digester and a combination chlorine contact compartment/backwash compartment, which also contained four gravity cell filters.



*S&L provided two complete **NUTRIGEST®** wastewater treatment systems to allow for future considerations and effluent reuse for irrigating a nearby golf course. This **NUTRIGEST®** system contains multiple treatment zones, an inner secondary clarifier (lower left) and tertiary filter cells (lower right) which work to provide high-quality effluent.*

The four tertiary gravity cell filters were added to help produce a higher quality effluent, which was required so that the treated water could be used to water nearby golf courses. The design of these filters within the Model R's concentric zone also minimized both land use and construction costs. The plant's effluent is pumped into two large spray ponds that acted as effluent storage and water source for irrigation. The plant also featured a very unique and large 21' x 4' x 1-1/2" electrical control panel system. One of its many functions included regulating the flow of wastewater to one or both of the Model R plants.

Today, Pinellas County still has room for increased load, and alternates use between the two **NUTRIGEST®** plants for standard maintenance and operation inspections.

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Smith & Loveless Inc. System Innovators for global pumping, water and wastewater treatment