

Flygt Conquers LPSS in Steep and Rocky Terrain

Leon PSS in West Virginia, USA

The town of Leon, West Virginia, founded in 1872, has recently installed its first central collection and treatment system. Its 160 residential homes had previously relied on old, failing septic systems and/or straight pipes that emptied directly into the Kanawha River, which empties into the Ohio River. Leon's new low pressure sewage system (LPSS) is the first of its kind in the US.

Project

Leon now has a branched network of residential grinder stations that are installed just below grade. At the heart of the system are several small but heavy-duty Flygt 3068 progressive cavity grinders, which are ideal for transporting residential wastewater through the rugged terrain of West Virginia.

“We chose the Flygt 3068 because of the challenging terrain and the need to closely control peak flows. Because of its rural location, long-term reliability of the pumping systems is critical to Leon's customers.”

The challenge of this project was combining traditional waste water transport with an LPSS application. To overcome that challenge, grinder pumps, which differentiate LPSS from other forms of wastewater transport, are used to reduce solid wastes into small particles that can then be moved easily through small diameter pipes, providing engineers, builders, developers, and homeowners the ability to overcome challenges like hilly terrain and high water tables that can make other systems unworkable or too costly.



This is the Flygt LPSS PC Grinder pump.

END USER: Individual home owners
CLIENT: The town mayor and Precision Pump and Valve Service, a Flygt distributor
ORDER DATE: Q4 2010
START DATE: Q1 2011
XYLEM'S ROLE: Manufacturer
XYLEM'S SCOPE:

Assist in providing a solution to current failing wastewater system. Design, manufacture, deliver, install, and commission twenty 24" diameter x 6-13 ft. depth simplex tanks, one 48" x 140 duplex PC grinder pump system for the elementary school, and three concrete duplex 3102, 3085, and 3107 lift stations.

Solution

In an LPSS, sewage from homes is emptied into residential simplex grinder stations, where the solid sewage is broken down. Monitoring devices attached to the grinder stations alert Xylem staff to upset conditions with the station. The reduced-density sewage is then pumped through small diameter pipes to the force main, which sends it to the wastewater treatment plant.

Result

Leon, West Virginia, has eliminated its need for septic tanks and leach fields by adding a closed system, a Flygt LPSS.

Flygt's LPSS offer several advantages over other wastewater transport alternatives. They are highly effective at a minimum depth, which reduces their toll on the environment and drastically reduces installation costs. When comparing lifecycle costs, an LPSS can be 50% less expensive than other types of systems. An LPSS can be built in a modular fashion, without having to change out pumps as the system expands. This allows for gradual development of new subdivisions or for replacing septic systems in steps rather than all at once.

“Pressure sewage systems provide highly effective wastewater transportation at a minimum depth, they minimize the toll of installation and operation on both the environment and the inconvenience to neighbors, and they are less expensive to install and maintain.”

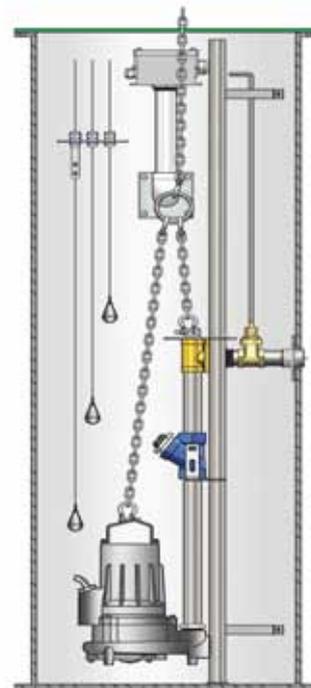
An LPSS from Xylem has the advantage of being time-tested all around the world. Many of the systems installed in the early 1980s are still in operation today. This is achieved through high-quality products, expert engineering, and solutions that are customized to each environment.



The Flygt LPSS systems are carefully designed to ensure a reliable wastewater transport for a variety of situations (e.g., different number of pumps in simultaneous operation).



This is the Flygt LPSS control panel.



The Flygt LPSS package consists of a PC grinder pump, check valve, level regulator, monitoring and control equipment. All components are designed for reliability, long life, and low life cycle cost.

[optional]

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