CASE STUDY

Vortex Flow™

Cost Savings over Chemicals – St. Robert

The City of St. Robert, Missouri made the decision to install a new state-of-the-art sewer system. The goal was to use fewer lift stations and more gravity-based linear feet in order to move 50% of the city's sewage. "The new system has 13,000 linear feet of 16" sewer main and 25% of it is gravity-based," stated Jeff

> **"The upside of this is the greater portion of your line you have gravity-based, the less maintenance you'll have."**
>
> Jeff Medows, Project Engineer

Medows of C.M. Archer Group. "We have reduced the city's lift stations to just two and that's better for the people of St. Robert. The upside of this is the greater portion of your line you have gravity-based, the less maintenance you'll have," Medows said.

PROFILE

PROJECT
No. 6 Lift Station
City of St. Robert, Missouri

CONTACT
Steve Long
Public Works Foreman,
City of St. Robert

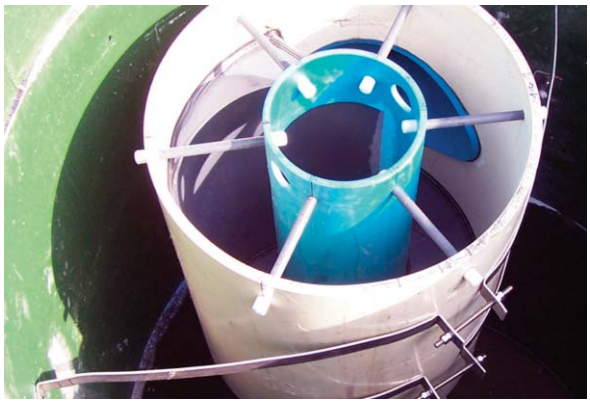
ENGINEER
Jeff Medows, P.E.
C.M. Archer Group, P.C.

CONTRACTOR
Installed by municipality

INSTALLATION
One Vortex Flow Insert
Type: Force Main
(construction & installation)
Flow Range: 0.48 – 3.65 MGD
Peak Flow: 3.17 MGD
VFI Design: 32" Top Form, 6' Drop

However, the challenge of a gravity-based system is how to oxygenate the sewage and control odor and corrosion. The cost of adding chemicals – $140,000 in the first year and $35,000 annually, would negate any cost savings achieved by eliminating the pumps. Public Works Foreman Steve Long had recalled seeing an alternative device, the Vortex Flow Insert.

"I saw this system in a magazine that I picked up at a conference," Long said. "It's gravity-driven." A Vortex Flow Insert uses the wastewater's own flow energy to suppress the turbulence which releases the noxious gases. By installing one Vortex Flow unit, the municipality was able to save the money it would have spent on adding chemicals to manage the H_2S emissions.



The system features a 32" top form with a 6' drop and is designed for a peak flow of 3.17 MGD. "It's a new green technology," Medows said. "It's the first one in the state of Missouri. None other like it."