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Case study
Overbetuwe, Flygt 3069

Xylem's Flygt compact wastewater pump solves long-term clogging issues at pumping station in the Netherlands

Flygt technology cuts €8,500 from annual maintenance call out costs and drastically lowers energy usage

A wastewater pumping station in the Municipality of Overbetuwe in the Netherlands was experiencing extreme clogging issues due to excessive debris in the wastewater flow - a long-standing issue which the station was keen to address. Operators of the Platenmakerstraat station agreed to test a prototype of the Flygt 3069 Adaptive N hydraulic wastewater pump and the results were impressive, with weekly maintenance call outs quickly becoming a thing of the past.

The challenge

Located on Platenmakerstraat in the village of Elst in the Municipality of Overbetuwe, the Platenmakerstraat pumping station receives wastewater containing a significant amount of materials such as garments and personal sanitary items. The station includes a wastewater buffer system to prevent untreated sewage and rainwater overflowing into the nearby Linge River and causing environmental issues. This buffer system features a retention basin where excessive dirt that is carried in the water, is deposited. This means that rainwater flowing into the river does not carry rubbish with it which could contaminate the river system.

As a result of the challenging material carried in the sewage water, extreme and frequent clogging meant that the pump station operators had to unclog the pump almost every week.

Clog-free pumping

In an effort to solve this problem, the municipality agreed to trial a new compact wastewater pump from Xylem's Flygt brand. The Flygt 3069 pump was installed at the Platenmakerstraat station in November 2012.

Operators of the Platenmakerstraat station were seeking a pumping solution with a small footprint which would ensure maximum reliability and reduce energy consumption and unscheduled maintenance requirements.

Customer: Municipality of Overbetuwe

Challenge: To deliver clog-free pumping at the Platenmakerstraat pumping station where almost weekly clogging resulted in interruption to operations and costly maintenance call-outs

Offer: Flygt 3069, a compact wastewater pump featuring non-clog technology

Results:

- Consistent clog-free pumping with maintenance call outs dramatically reduced from approximately 50 per year to just one or two per annum
- Maintenance call out costs reduced by approximately €8,500 per year
- Energy consumption estimated to have been reduced by 40%

The Platenmakerstraat pumping station, Overbetuwe, Netherlands

The Flygt 3069 ensures maximum reliability due to the pump's Adaptive N self-cleaning technology which, as well as preventing clogging, reduces stress on the shaft, seals and bearings, and ensures sustainable, low energy use.

Normally, pumps will clog when solid objects pass through and run the risk of getting caught on one of the leading edges of the pump's impeller vane. Materials then slide towards the perimeter of the inlet and clog the system. With this technology, however, solid objects will instead slide along the tip of the impeller vane inside the relief groove. A guide pin in the insert ring pushes solid materials away from the center of the impeller, along the leading edge and out through the relief groove. The Adaptive N impeller moves axially upward if required, allowing solid material and debris to pass through smoothly.

Dramatic reduction in call outs and energy usage

Operators of the wastewater pumping station noted a significant improvement with the new solution. Clogging has reduced from an average of 50 times a year to just once or twice a year, reducing maintenance costs annually by €8,500. While energy consumption was not strictly measured during the trial, it is estimated that it was reduced by as much as 40% as the new pump replaced a vortex impeller; a more energy consuming impeller.

"I was amazed with the quality of pumping delivered by the prototype. The challenging nature of the wastewater meant that the pump had to work really hard – at times the pump operated non-stop for up to 72 hours - but it consistently delivered clog-free pumping throughout the three and a half years of the trial. During the entire length of the trial we had to unclog the pump a mere four or five times and that was due to large garments or soda tins being caught up in the wastewater flow"

Wim Hermsen, Outside Mechanic, Municipality of Overbetuwe

Xylem's Flygt 3069 with patented Adaptive N™ technology

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