



Full-scale test as basis for selection of a new decanter centrifuge

Horsens Vand Wastewater treatment plant, Horsens, Danmark

Case Story



The Danish municipal wastewater treatment plant Horsens Vand A/S has for its central treatment plant invested in a new Alfa Laval ALDEC G3 decanter, which increases the dry solids content in sludge for disposal by 4-6%. This gives an annual saving of EUR 100,000 – 130,000 on the costs for disposal of sludge.

At Horsens Vand A/S, where 10 million m³ wastewater are cleaned every year, the costs for disposal of sludge is a very significant item in the budget. This is both due to the decision to avoid spreading sludge onto areas of special interest for drinking water, and the fact that the area also has a lot of agricultural land that is not suited for accepting sludge. In fact, the price for disposal of biosolids is so high that an increase of dry solids content in the dewatered sludge of just 1% means savings for Horsens Vand of approx. DKK 200,000 (approx. EUR 25,000) on an annual basis.

“Based on our disposal costs, it has always been a given for us to focus on reaching as high a percentage of dry solids content as possible in the sludge that we have to dispose of,” says Operational Manager Erling Nielsen, Horsens Vand. “And because our old decanter had to be replaced, we decided to make optimal sludge dewatering performance a major priority when selecting a new decanter.”

Project manager Jørgen Ebbesen was given the task of finding the most suitable decanter for the job. Reflecting on this challenge, he states: “We know that there is a huge difference in the sludge from one wastewater treatment plant to another. So even if different decanter manufacturers can all present really great references from other installations, this is no guarantee that the same results can be achieved at our facility. That’s why we decided to consult with 3 different suppliers in order to arrange for a full-scale test with their decanters, to achieve the best possible basis for making the final choice.”

The newest decanter is the best investment

One of the suppliers was Stjernholm A/S, a Danish contractor specialised in water and waste treatment who collaborates with Alfa Laval in marketing their decanters on the Danish market. Managing Director Kaj Stjernholm from Stjernholm A/S was naturally very pleased to get the call from Horsens Vand.

“A series of new features means that the new Alfa Laval ALDEC G3 decanter has a higher acquisition cost than its predecessor, but in our opinion, it’s also significantly more efficient. So we jumped at the opportunity to demonstrate that the new decanter is better value,” he explains. “We’ve had a fantastic collaboration with Horsens Vand throughout the entire project, and naturally we are delighted that our promise about the efficiency of the ALDEC G3 decanter holds up in reality and that we were therefore chosen as their supplier.”

“Based on a two-month full-scale test in the autumn of 2014 and the subsequent continuous operation at our facility, we know that we can achieve a dry matter content of at least 28-29% in our dewatered sludge with a polymer consumption of 13-15 kg/t/dry matter. This can be compared to a dry matter content of approx. 24% using the decanter we had before. So in addition to the energy savings we realise through the new Alfa Laval ALDEC G3 decanter, we - and ultimately our customers - also see annual savings of between DKK 800,000 and 1 million (approx. EUR 100 – 130,000) with the current prices for sludge disposal,” says Operational Manager Erling Nielsen from Horsens Vand. “Although it is obviously still too early to say anything about the on-going costs for maintenance of the decanter, we have no doubt that we have made a very wise investment,” he concludes.



A full-scale test setup is labour-intensive, but by far the most effective basis for a decision. The new generation of Alfa Laval decanters, ALDEC G3, uses less energy than its predecessor, resulting in greater savings over the long term.

Project manager Jørgen Ebbesen and operational manager Erling Nielsen inspect the ALDEC decanter system’s output, dewatered sludge with a dry solids content of minimum 28-29%.



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How to contact Alfa Laval

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