

Replacing an Old Belt Filter Press with a State-Of-The-Art Screw Press Enhances Dewatering Efficiency



If you don't like doing a lot of maintenance and you don't have a lot of time to do tasks outside your normal routine, the Q-Press® is a great choice.

-Greg LeMahieu Plant Manager, Oostburg Wastewater Treatment Plant

No wastewater treatment plant lasts forever. When the Oostburg Wastewater Treatment Plant was constructed in 1981, it was built to a 20-year design life. By the mid-2010s, the plant was well past its “freshness date” and was operating above 80 percent of capacity. With residential and commercial use trending up, the Village of Oostburg requested in 2017 approval from the Wisconsin Department of Natural Resources for a multi-phased improvement plan. The first phase included a range of upgrades, including new dewatering equipment.

Out with the old

One piece of aging equipment was a particular source of headaches: a 1.5m (60") belt filter press (BFP) in service since 1981. The unit had a multitude of bearings that required continual maintenance. With no stainless steel components, severe corrosion was a constant issue despite spending two to three hours of cleaning after each run cycle. In addition, the unit was extremely noisy, requiring the use of hearing protection. Most critically, the BFP needed constant attention when running, requiring an operator to be on hand during the entire run cycle.

The decision was made to replace the BFP with the latest generation HUBER Technology screw press, the Q-PRESS® 620.2. The new unit was installed in May of 2019 in a project designed by Strand Associates, Inc. of Madison, Wisconsin. A successful pilot of the Q-PRESS in 2015 and a positive experience with a HUBER ROTAMAT® Rok4 vertical screen installed in 2010—the first such unit installed in Wisconsin—were key factors in going with the new screw press.

The installation on the existing mezzanine went smoothly the footprint of the screw press is approximately 2/3 that of the BFP it replaced. Elimination of large polymer mixing tanks and less piping also contributed to the smaller footprint.

Simplified operation and maintenance

An important reason for selecting the screw press was the ease of maintenance offered by the new system. The enclosed design, automated wash cycle,



and stainless steel components simplify cleaning and reduce the risk of corrosion. The patented Block Lip Wiper maximizes dewatering performance and can operate for years under normal use without replacement. When maintenance is required, the split basket design of the Q-PRESS provides easy access to internal components for servicing. The unit is also whisper quiet compared to the deafening BFP it replaced, making for a safer and more pleasant work environment.

"The Q-PRESS is just well-engineered equipment. Everything is easy to access. You don't have to pull a lot things apart to get at things."

- Greg LeMahieu, Plant Manager

More performance, less cost

The real question any plant operator is concerned with is productivity—does the new piece of equipment allow the plant to meet its operational goals more efficiently? Does it save time and money?

With the Q-PRESS, the answer is a resounding yes. Performance testing revealed improvements in

Criteria	BFP	Q-PRESS®	Increase
Hydraulic Throughput (GPM)	25	35	40%
Solids Throughput (lb/hr)	250	350	40%
Capture Rate (%)	<90%	97%	7%
Cake Solids (%)	11%	18%	7%

throughput, capture rate and cake production. The dramatic increase in cake solids had a major, positive impact on hauling costs. Previously, Oostburg would haul nearly three 30-yard dumpsters of cake per month for disposal. With the Q-PRESS, this has been reduced to less than 2 dumpsters per month—cutting hauling costs by more than 30%. Increasing the capture rate has reduced the amount of solids that needs to be reprocessed, further improving operational efficiency.

Hands-off operation

The Q-PRESS offers important automation features, including the ability to run on a pre-programmed schedule. This, along with the higher reliability and automation capability, allows dewatering operations to occur without an operator present. This not only

"The increased cake production with the Q-PRESS essentially eliminated a dumpster a month. That cut our hauling costs down to 2/3 of what it was."

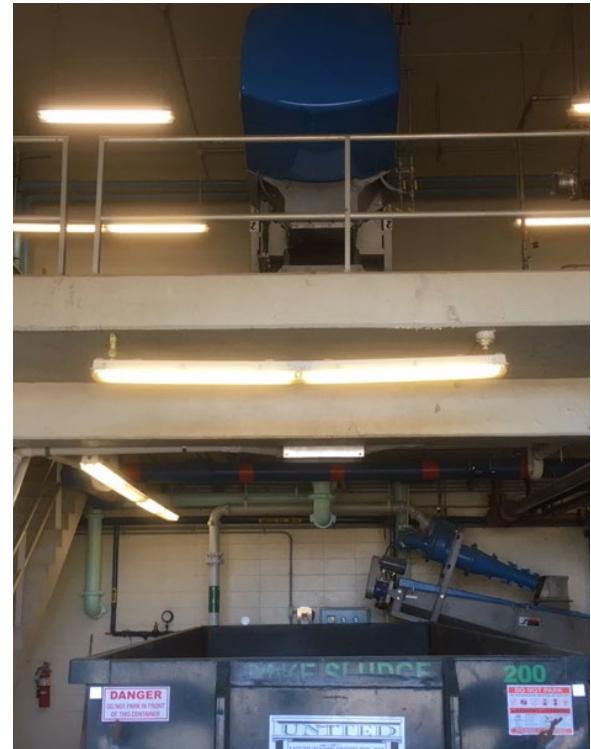
- Greg LeMahieu, Plant Manager

frees up the operator to attend to other tasks, but also allows longer dewatering cycles extending into hours when no staff is on-site.

Belt filter presses consume a lot of water. The Oostburg plant's BFP required at least 200 gallons per minute to enable continuous backwashing using final effluent. The Q-PRESS uses far less water, running a wash cycle every 30 minutes.

"The Q-PRESS is much quieter than our old belt filter press. I can now work around the Q-PRESS and talk on the phone."

- Greg LeMahieu, Plant Manager



Q-PRESS® 620.2 configuration with cake outfall to disposal dumpster below.

Like many smaller municipal wastewater treatment plants, the Oostburg facility is a one-person operation. Anything that can help improve operational efficiency and free up the operator's time and attention can is paramount. By increasing dewatering efficiency while reducing the maintenance workload, the HUBER Q-PRESS is making a positive financial impact that will serve the Village of Oostburg for many years to come.