

STAR SEWER & WATER DISTRICT REDUCES CAKE HAULING COSTS WITH AN INNOVATIVE SCREW PRESS

STAR, ID

BACKGROUND

When it comes to population growth, the community of Star, Idaho, lives up to its name. According to the most recent Census Bureau American Community Survey, Star is the fastest growing city in Idaho. As new residents flood into the area from other regions, the Star Sewer & Water District (SSWD) municipal wastewater treatment infrastructure expansion has become a high priority. Currently, the plant processes approximately 1.25 million gallons per day at their Membrane Bioreactor (MBR) facility and that volume is trending up.

BUILDING ON A PROVEN SYSTEM

To keep pace with demand, in 2017 SSWD added a new screw press to their wastewater treatment plant to complement the existing system that was installed in 2009. With close to ten years of reliable service from their existing HUBER S-PRESS system, SSWD decided to add the latest generation HUBER Technology screw press, the Q-PRESS® 620.2. A key driving factor for the decision was the ease of maintenance offered by the new system. The split basket design of the Q-PRESS provides access to internal components without removing the auger. This is important, as the screw presses are on the second floor of the facility, without much room to remove the shaft for maintenance. With the Q-PRESS, staff can work on it in place.



HUBER Screw Press Q-Press® 620.2

PROJECT DATA

1x HUBER Screw Press
Q-PRESS® 620.2
Installation date: 2017
Star, ID

"We were happy with the S-Press and we wanted to stick with HUBER. Another driving factor was that the HUBER Q-PRESS is easier to maintain."

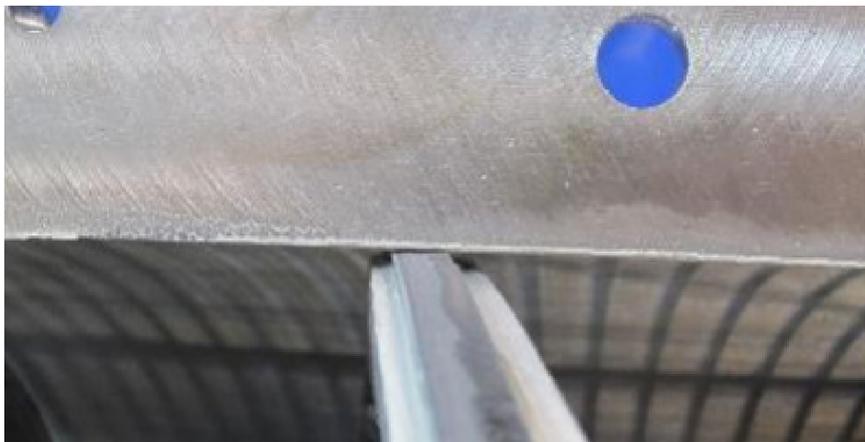
- Ken Vose, Wastewater Treatment Plant Manager, SSWD

"Given our experience, I have recommended the HUBER Q-PRESS® to colleagues in other communities. Recently, I got a call from the manager of a treatment plant at one of the large national parks asking about our experience with the HUBER presses. Park Service budgets are tight, but I advised him: 'If I were you, I would make a plea for the HUBER® Q-PRESS.'"

-Ken Vose, Wastewater Treatment Plant Manager, SSWD

NEW PERFORMANCE FEATURES

While SSWD was more than satisfied with the performance of the S-PRESS, the Q-PRESS offered even higher performance and efficiency for dewatering their MBR sludge.



New auger and sieve design

Key enhancements of the new machine include a new auger and sieve design that increases throughput and cake solids production as well as a washing system that delivers better cleaning with less water than previous models. Another important innovation is the patented Block Lip Wiper. Its unique design features a spring mechanism that maintains constant contact with the dewatering basket surface. Better wiper contact increases the machine's performance while extending the life of the wiper: up to five times the life of standard wipers. With the split basket design, the wiper can be replaced in less than half the time of the earlier model and significantly faster than bolt-and-clamp designs common to other presses, which can be difficult to align.

Despite these performance enhancements, the new screw press occupies roughly the same footprint as the original. Given the available space in that section of the plant, this was a crucial advantage.

"Where we realize cost savings with the Q-PRESS is reduced water weight in the roll-off," Vose says. "The more gallons we push through per roll-off load, means less that we have to run and fewer trips to the landfill."

- Ken Vose, Wastewater Treatment Plant Manager, SSWD

"Both units were running pretty hard. The performance of the S-PRESS was impressive. Of course, the Q-PRESS easily outperformed it,"

- Ken Vose, Wastewater Treatment Plant Manager, SSWD

PERFORMING A SIDE-BY-SIDE TEST

Once the new system was installed, SSWD conducted a side-by-side performance comparison with the existing system. The new Q-PRESS was operated at 40 gallons per minute, to gauge maximum performance, and at 65 gallons per minute, to measure performance at maximum throughput. The old system was operated at its nominal throughput of 30 gallons per minute. The performance of the S-PRESS continued to exceed expectations in the test. However, the Q-PRESS® easily outperformed it. At maximum throughput, the Q-PRESS handled 116% more solids than the S-PRESS, while producing slightly greater cake solids. At maximum performance, the Q-PRESS delivered a 33% increase in throughput while producing a 13.5% increase in cake solids. (see comparison table)

Criteria	S-PRESS	Q-PRESS® (max thput)	Q-PRESS® (max solids)
Hydraulic Throughput (GPM)	30	65 (116% increase)	40 (33% increase)
Solids Throughput (lb/hr)	210	455 (116% increase)	280 (33% increase)
Cake Solids (%)	18.5%	19% (2.7% increase)	21% (13.5% increase)

REDUCING HAULING COST

By increasing dewatering performance, the Q-PRESS delivers significant savings, primarily by reducing the amount of water weight in each ton of dewatered sludge. With the reduction in water, plant operations can place more solids in each load, resulting in less water weight to haul and fewer trips to the landfill.

Reducing hauling and landfill costs is a critical issue for the plant. Previously, SSWD contracted cake hauling to a vendor at a cost of about \$60,000 per year. In 2019, they purchased their own truck to reduce our hauling costs and increase control over our hauling operations. This has cut hauling costs by approximately 40%. The Q-PRESS contributes to these savings by improving cake solids production, which reduces overall disposal costs.

ROCK-SOLID RELIABILITY

Reliability of both the S-PRESS and the Q-PRESS has been exemplary...and they don't need babysitting. The presses are started up, checked to make sure flows and pressures are good, and then the operator can just walk away. The units are set to automatically shut down once a target gallon volume is reached. With the two HUBER screw presses in place, the plant is well positioned to meet the community's growing needs. The city has kicked off a \$30 million expansion project for its wastewater treatment facilities, with completion slated for January of 2022. Acquisition of the Q-PRESS was an early step in advance of the plant expansion this project and the facility fully expects that the presses will meet the city's needs for at least the next 15 years.

"The efficiency of the Q-PRESS gives us a very good cake production which helps reduce our hauling costs."

- Ken Vose, Wastewater Treatment Plant Manager, SSWD

"One of the reasons we appreciate HUBER products is that you don't have to babysit them. We start it up, check to make sure flows and pressures are good, and then we can just walk away."

- Ken Vose, Wastewater Treatment Plant Manager, SSWD



ABOUT HUBER TECHNOLOGY, INC.

Headquartered in Denver, North Carolina, HUBER Technology, Inc. operates a 206,000-square-foot state-of-the-art facility that houses offices, training centers, and advanced manufacturing capabilities. This enables us to design, produce, and deliver a wide range of wastewater treatment equipment, from dewatering screw press systems, headworks screens, grit handling, septage receiving, tertiary filtration and equipment and drying of biosolids equipment for use in the water and wastewater industry.



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For more information about the HUBER Screw Press Q-PRESS® please scan the QR code