

TURNING THE TIDE: HOW SHEPHERDSTOWN WWTP OVERCAME HIGH COSTS, OUTDATED EQUIPMENT & SEASONAL SURGES WITH SMARTER SLUDGE DEWATERING

BACKGROUND AND CHALLENGES

The Shepherdstown Wastewater Treatment Plant processes 0.700 MGD (million gallons per day) of municipal wastewater. The process was upgraded to an SBR (Sequencing Batch Reactor) type system with membrane filtration for the final effluent. This produces a significant volume of sludge requiring dewatering before disposal. The plant faced multiple challenges, including:

- higher plant costs and lower plant capacity due to a low capture rate, and an inefficient dewatering process that lead to higher disposal costs;
- frequent mechanical failures with outdated belt filter presses, increasing maintenance expenses;
- high polymer consumption, adding to operational costs;
- limited automation, requiring significant operator involvement; and
- seasonal flows due to a local university population representing over 1/3 of the flow to the facility.

SOLUTIONS PROVIDED BY HUBER TECHNOLOGY, INC.

The HUBER Q-PRESS® 620.2 Screw Press is a high-performance dewatering system designed for low energy consumption and maximum solids capture. Key advantages of the solution include:

- Higher dry solids (DS) content: Achieved 18 - 20% DS, significantly reducing sludge volume
- Low energy and polymer usage: 20% lower power consumption compared to traditional dewatering methods
- Fully enclosed and odor-free operation: Improved working conditions for plant staff
- Automated and continuous operation: Reduced manual intervention and increased efficiency, allowing unattended operation over a 24-hour period

PROJECT DATA

Client: Sheperdstown
Wastewater Treatment Plant

Location: Sheperdstown, WV

Project Type: Sludge
Dewatering Optimization

HUBER Technology, Inc.
Solution: HUBER Screw
Press Q-Press® 620.2

Completion Date: 2023



IMPLEMENTATION & EXECUTION

- Q3 2022: Removal of old rotary presses and site preparation
- Q2 2023: Installation of HUBER Q-PRESS® 620.2 and integration with existing sludge handling systems
- Q2 2023: Commissioning, operator training and system optimization

Working with plant operators early in the planning stages gave HUBER the insight to provide a solution targeting their pain points, including tying their existing conveyor and lime system into the control package. This helped ensure a seamless integration to their operation.

RESULTS & BENEFITS

Performance Improvements:

- ✓ 17% reduction in sludge hauling costs due to higher solids content.
- ✓ Reduced polymer consumption lowering chemical expenses.
- ✓ Lower energy use, leading to operational savings.
- ✓ Higher capture rate, lowering plant treatment costs and increasing plant capacity.
- ✓ Higher throughput than guaranteed, lowering manpower costs.

Operational and Environmental Gains:

- ✓ Consistent, automated dewatering, freeing up operators for higher-value tasks.
- ✓ Odor control and improved workplace environment with enclosed system design.
- ✓ Lower carbon footprint, aligning with the plant's sustainability goals.

"[The HUBER Q-PRESS] makes our life easier with its ability to set the flow or hours desired for operation. We can let it run unattended the entire period without any worries. If necessary, we have operated the unit overnight unattended with no concerns."

— Ken Shipley, Manager, Shepherdstown Wastewater Treatment Plant



CONCLUSION

The implementation of the HUBER Q-PRESS® 620.2 has dramatically improved sludge dewatering efficiency at the Shepherdstown Wastewater Treatment Plant. With lower operating costs, improved environmental performance, and enhanced automation, the facility is now well-equipped to meet future regulatory and operational challenges.



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