In Search of a Better Solution, South Dearborn's Dewatering Experience Leads to HUBER.

"The maintenance required on HUBER's Screw Press is a complete 180 from what is needed for the centrifuge to remain operational. HUBER's Screw Press maintenance requirements are at the most minimal, but there is nothing minimal about what happens when something goes wrong with the centrifuge. At 3000 rpm, every problem turns into a train wreck."
- Bill Neyer, South Dearborn Regional Sewer District Plant Superintendent

South Dearborn Regional Sewer District (SDRSD) has experience with three types of dewatering methods: the Belt Press, the Centrifuge and the Screw Press. Bill Neyer has been at SDRSD through it all and notes that it has been quite a learning process. After installing HUBER's Screw Press in March of 2015, the plant is becoming more operationally efficient.

Progression to Excellence

South Dearborn Regional Sewer District's (SDRSD) has anaerobic pre-digested sludge which is more difficult to dewater than primary sludge. About ten years ago, a belt press was the plant's primary dewatering method. This component performed the dewatering process, but only at an average rate. South Dearborn Regional Sewer District found that the belt press provided:

- Nothing but trouble when it came to anything other than routine maintenance issues.
- Nothing in the way of energy efficiencies.
- Nothing outstanding in lowering the water

> "I describe this method as sufficient but not efficient. The cake produced was not very dry, the process wasn't very lean or energy efficient and the component itself required a fair amount of maintenance."
>
> - Bill Neyer, South Dearborn Regional Sewer District Plant Superintendent

percentages in the sludge cake.

During 2006, SDRSD installed a centrifuge with expectations for improvements in the quality of its end product and energy efficiencies. What South Dearborn Regional Sewer District found was increases in:

- Cake solids
- Consumption of polymer
- Consumption of energy
- Maintenance necessary to keep equipment operational
- Amount of offline time for performing equipment maintenance

Because of the sharp increase in costs and increasing downtime associated with the centrifuge, the plant's board made a command decision to bring HUBER in to install a screw press.

The board believed the HUBER solution would lower the total cost of ownership for the plant's dewatering process.

Confidence in Improvements

The new screw press transformed operations in SDRSD's plant.

Superior Cake Quality: The screw press was predicted to produce 17% cake solids – and it did immediately. Going into the 3rd month after implementation, this figure climbed to 18%. SDRSD has predicted that within another month, that percentage will rise to 20% (expected maximum cake solids are 21 - 22%). As SDRSD makes tweaks to factors that aren't product controlled, such as polymer types and quantities, these percentages will continue to climb.

They were having issues with other components of the plant - 60 days prior to installing the screw press the digester boiler broke down and they STILL achieved 17% and now are climbing – they are about 18% - hope to achieve 20% by July 1st.

Energy savings: The screw press does its work using 3 horsepower. The predecessor centrifuge unit used in excess of 50 horsepower. Running a minimum of 50 hours per week produced a minimum $20K

> "Prior to installing the screw press, we were having issues with other components of the plant. Sixty days prior, our digester broke down. We weren't optimistic about what we might see since the new screw press would be presented with challenging circumstances from the start. To our delight, the unit immediately gave us the predicted 17%. We got the surrounding components straightened out and the percentage began to climb. We're excited about the changes that implementing the screw press has made in our plant."
>
> - Bill Neyer, South Dearborn Regional Sewer District Plant Superintendent

annual savings – just in electric power.

Maintenance reductions: Service intervals for preventive maintenance increased (which means SDRSD requires fewer maintenance sessions per year) and the downtime required for each session was reduced. Maintenance on the screw press was a fraction of the time required to do maintenance on the other equipment that SDRSD had used.

The centrifuge runs at 3000 rpm and can lock up and burn out before the operator can hit the emergency stop – even if he is inches away. HUBER's screw press operates at less than 3 rpm. It can be shut down in less than one rotation so further destruction can be prevented.

Lower labor rates: Out of 60 hours of run time,

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HUBER's Screw Press requires only 1 hour of operator interaction, the centrifuge requires 50 hours of operator interaction and the belt press, 30-35 hours of operator interaction.

Simplicity: HUBER's Screw Press is a far simpler

> "Every centrifuge has the potential for self-destructing. Nothing will cause parts to go flying like the 3000 rpm of a centrifuge. Screw presses just don't work that way."
>
> - Bill Neyer, South Dearborn Regional Sewer District Plant Superintendent

concept than the centrifuge. That reveals itself in set-up and implementation, day-to-day operation and maintenance. And that simplification translates into lower costs.

Total cost of ownership: From initial purchase, minimized difficulty for equipment installation, maintenance costs, energy costs, downtime and labor costs, HUBER weighs in well below most other equipment.

The Fit Factor

Cost was one factor to consider, but SDRSD was forced to find a solution that fit into the space available. Through-put per square foot was critical in the plant's effort to become as efficient as possible. HUBER's Screw Press impressively leveraged its

> "An operator in our area costs $60 - $90K when you include pay, benefits, vacation and medical. Looking at just that cost, you can get your investment back in just a few years."
>
> - Bill Neyer, South Dearborn Regional Sewer District Plant Superintendent

occupied space, doubling the throughput they realized with the centrifuge. In fact, SDRSD was able to put the screw press in and reserve space for an additional unit to accommodate increased production that they can predict in line with estimated population growth.

Superior Service

> "When HUBER came in, I had assumed we would have at least 2-3 days of downtime before getting actual production from out new unit. But to my amazement, a mere 2 hours after the HUBER technician arrived, our screw press was running and only 2 hours after that, cake was coming out. It wasn't perfect cake – but it only took 4 hours to produce cake! A couple of tweaks later and we had dry cake. When the centrifuge was set up it took a week to get any type of cake at all and another full day to get dry cake."
>
> - Bill Neyer, South Dearborn Regional Sewer District Plant Superintendent

Sales and delivery of SDRSD's screw press was efficient and smooth. Just two small items needed attention and HUBER fixed them immediately. The importance of this type of attention is easy to overlook, but HUBER's team understands that any time the plant isn't operating it is wasting money. Downtime can be a horrendous drain on financial resources and can impact their minimum and maximum production requirements.

Because every wastewater treatment plant is unique, equipment must be set up to fit traits and requirements on a case by case basis. HUBER prides itself on speed in getting plants set up and running. That means understanding each plant and programming its technology appropriately. In a single day, HUBER technicians had SDRSD's screw press producing cake. Even the control panel, which can be tricky, was near perfection – only requiring minimal tweaks.

HUBER serves the municipal and industrial wastewater treatment market with high quality liquid-solid separation technology. HUBER Technology offers the complete chain of screening, grit and sludge handling processes. The company is an original source manufacturer specializing in stainless steel fabrication of technologies for water and wastewater with proven experience and expertise with over 40,000 installations worldwide.

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