

San Diego Defends Their Digester by Reducing Trash and Contaminants with the HUBER STRAINPRESS®



"The removal of contaminants or screenings, such as hair and fiber from raw sludge was crucial to ensuring maximum efficiency within our digesters and throughout our treatment process."
- Ted Taylor, Senior Plant Technology Supervisor

Because inadequate screening was allowing hair and fiber contaminants to work their way through its treatment process, The City of San Diego Public Utilities Department Wastewater Branch (the Branch) sought out sludge cleaning technology that they could integrate into their existing system. In an interview with Senior Plant Technology Supervisor, Ted Taylor, HUBER Technology learned how its sludge screening technology helped Ted and his crews realize benefits that reached far beyond simply reducing contaminants.

Background and Challenge:

The Branch noticed heating and mixing problems as well as a significant build-up of material at the bottom of its six digesters. It was discovered that this problem resulted from the inadequate screening of raw sludge. They were regularly cleaning a 10 to 15 foot layer of hair, plastic and grease from the top of the digester. These issues contributed to inadequate mixing within the digesters.

Faltering digester performance manifested in:

1. Reduced gas production.
2. Quality issues with end-product sludge.
3. Frequent need for cleaning and repair.

Accompanying the performance issues were maintenance difficulties that consumed significant repair technician hours and increased the department's replacement parts costs.

"STRAINPRESS® technology helps us reduce the burden on our pumps, our heat exchangers and our maintenance crews. We've significantly reduced costs that go along with these factors and we haven't even included cost reductions in plant energy use and saved downtime."

- Ted Taylor, Senior P.T. Supervisor

A STRAINPRESS® pilot was tested using temporary piping outside of the digesters. The success of the test resulted in an upgrade to the treatment plant that included the installation of the fully integrated STRAINPRESS® as feature of the plan.

Solution: Screening before Digestion

The Branch originally put 5 STRAINPRESS® units in place at its Point Loma facility. They were so beneficial that the existing units were upgraded and an additional unit purchased, bringing the Branch's grand total of STRAINPRESS® sludge screens to 6.

The STRAINPRESS® system screens sludge in-line without breaking line pressure. It is implemented within the existing structure to keep the process working very smoothly, and without interruption. Screenings are filtered out along the way. This advanced filtering and screening means equipment downstream is less prone to damage.

"We noticed stark increases in the performance of treatment equipment, such as the digesters, and increased efficiency across our entire process."

- Ted Taylor, Senior P.T. Supervisor

Less matted hair & fiber = Improved process efficiencies

With less contaminants making their way through the whole process, performance indicators immediately showed improvements.

Less matted hair & fiber = Less maintenance & repair

After the STRAINPRESS® implementation was complete, the maintenance team was able to reduce the frequency it cleans their twelve heat exchangers from monthly to once a quarter.

"A reduction from 12 to 4 may not sound like much, but when you multiply the frequency by our dozen exchangers it is significant. 144 yearly cleanings are reduced to 48 that is a tremendous 67% reduction in workload and costs."

- Ted Taylor, Senior P.T. Supervisor

Additionally, far fewer repairs are needed, resulting in decreased parts, labor saving, and less process downtime. For example: Chopper pumps are used to re-circulate sludge during the treatment process. Because almost all the screenings and fibers that were causing the problem at the chopper pumps are now extracted by the STRAINPRESS®, the chopper pump's life cycle has been extended.

Less matter hair & fiber = Higher quality end-product

The quantity and quality of the methane gas have greatly improved as well as the sludge end-product. Methane gas produced in the digesters is used to generate electricity. The Branch sells its surplus methane gas-derived energy (enough to supply 2000 homes per month) to the electric grid.

Sludge is pumped to the metro bio-solid facility and used in soil augmentation. Improving the quality of its sludge enables the Branch to keep its sludge end-product graded at the level required for soil additive use.

By putting six STRAINPRESS® In-Line Sludge Screen units in place, the Branch realized benefits far beyond digester efficiencies.

In addition to heightened performance, Ted and his crews have experienced:

- Reduced downtime.
- Reduced maintenance demand.
- Extended equipment life cycle.
- Fewer replacement parts.
- Higher quality sludge end-product.
- More efficient burning methane gas.

“Making sure that we do the best possible job in removing contaminant screenings before they reach the anaerobic digestion phase helps us maximize our potential for generating end-product. Without the STRAINPRESS® Sludgescleaner technology, we would not produce the quantity or the quality methane gas and soil additive that we produce from our biosolids today.”

- Ted Taylor, Senior P.T. Supervisor



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.