WATER & WASTES DIGEST

2007 Reference Guide

The Product News Source of the Water/Wastewater Field

Industry Outlook for 2007
13 In-Depth Application Stories
WWD’s Top 20 Products
Detailed Product Compendium
A Toast to Success

Reliability high on Alaskan brewery's dewatering requirements

Nearly any expansion of a process entails chess-like considerations—where to add space, what equipment to install, how to arrange it, when it will pay back and how it will impact the waste stream. But when the plant is located in an extremely remote area, advanced planning and reliable equipment take on added significance.

Such is the case with the Alaskan Brewing Co., which in 1986 became the first U.S. brewery in Alaska. Winning more than 50 awards for its bottled beer since opening, the company's rapid growth called for the addition of a 100-barrel brewhouse in 1995. A year later, an automated keg line was added for filling stainless steel "sanny" kegs, which combined with a new bottling line added in 2001, provided sufficient capacity for the company to serve the entire West Coast.

Beer making begins with cooking grains. Between batches, the brew vessels must be cleaned and rinsed.

"As production grew, a lot more grain was going down the drains and into the wastewater system's settling tanks," said Plant Manager Curtis Holmes. "A pump on the bottom of the tank pulled off waste sludge, but the bigger grain kernels settled down to the bottom of the tank and packed in densely, bonding with the sludge and setting up like concrete. The mass could be pumped with difficulty, but sometimes the combination would jam the pump. Then we would need to service and reinstall the pump."

The problem was resolved with a Centri-Sifter centrifugal dewatering screen from Kason Corp., installed in the waste stream between the brew vessels and the treatment plant.

As solids-laden wastewater flows into the screener, a full-length, low-pitch auger moves the material longitudinally into and through an inclined cylindrical screen. Helical paddles rotating within the screen generate centrifugal forces that accelerate the liquid and fines through the screen apertures and onto the interior wall of the screening chamber. The paddles, which never contact or scrape the inside of the screen, also serve to break up soft agglomerates. The variable-incline design of the unit increases the dwell time of material within the chamber and, accordingly, the amount of liquid removed from the solids, which are ejected through the open end of the screen cylinder and transferred to the brewery's waste grain dryer.

Helping remove solids

Currently, the brewery produces about 500,000 bottles of beer per week, generating roughly 6,000 gal of wastewater from the brewhouse vessels from which the Centri-Sifter screener removes about 800 lb of solids. The Alaskan brewery dewatering screener is equipped with 200-micron screens that operate without particulate "blinding," according to Holmes.

To determine the appropriate screen size, the brewery drained a prescribed volume of slurry from a brew vessel, allowed the heavier solids to settle and drew off a measured amount of liquid. The solids-laden material remaining was frozen and shipped overnight to the Kason laboratory, where liquid was added to reconstitute the slurry.

The procedure served to keep the solids wet, maintain its structure and allow the lab to conduct tests with greater accuracy than if dry, uncooked grains had been provided. The Centri-Sifter screener's design made installation a simple "plug-and-play" operation, which saved Alaskan Brewing Co. some additional capital.

For more information, write in 1115 on this issue's Reader Service Card.