Focus filtration p6 & separation

New self-cleaning water filter protects equipment
Self-cleaning filter is engineered specifically to protect industrial processing equipment from the damages of river water and well water dears. This new high-flow filter provides 100-1,000 micron retention with superior performance and increased efficiency. The unique design has an optimized configuration to help improve productivity and reduce costly maintenance and downtime. The filter is specifically engineered to handle water and all the challenges that water filtration can bring to industrial manufacturing. Featuring up to 90 percent less clogging, convenient inline installation and no dynamic seals, this low-maintenance filter offers total enclosure for all moving parts and an easy access modular design.

Eaton Filtration
800-656-3344, www.filtration.eaton.com
Write in 710

Heat exchanger heats, cools free-flowing solids
Heat exchanger heats or cools powders and bulk solids and combines the two sciences of indirect heat transfer and mass flow of bulk solids. The combination of technologies makes the unit environmentally friendly. The system also does not require large volumes of air to operate. Instead, it lets gravity do the work to greatly reduce power consumption. For more information on Heat Exchangers, go to page 29.

Bulkflow Technologies Ltd.
403-254-3500, www.bulkflow.com
Write in 711

Elastomeric expansion joints for wastewater plants
General service elastomeric expansion joints are ideal for new construction projects, water and wastewater treatment plants and power generation facilities. The unit features a neoprene tube and cover that offers excellent oil and abrasion resistance while also protecting the forces from many environmental elements. The neoprene construction makes the unit compatible with a wide range of media. Model 104G. For more information on Water & Wastewater, go to page 12.

Garlock Sealing Technologies
www.garlock.com
Write in 712

Feature article

Michigan-based Petrosin Farms established a juice processing operation in 2000. Today, the operation processes five million gallons of juice each year. For nine months of the year, the system operates 24/7 and filters three 15,000-gallon batches of apple juice each day. At the core of the apple juice processing facility is its filtration system. Petrosin needed a filtration system that would meet its high flow demands. To learn which filtration system Petrosin implemented, turn to page 38.

Guided wave level sensor with ATEX, CSA approvals
ATEX and CSA certifications are now available for the company's guided wave radar continuous level measurement product line, allowing the benefits of guided wave radar technology to be extended to areas where hazardous and explosive vapors and dust exist worldwide. The continuous level measurement device uses TDR (time domain reflectometry) principles where radar pulses are focused to the material surface by the unit's waveguide, typically a helix or spiral rod and the time-of-flight of the pulse reflection back to the instrument electronics is directly related to the empty distance in the vessel and the material level. For more information on Level Measurement, go to page 16.

Monitor Technologies
www.monitortech.com
Write in 713

www.processingmagazine.com
DEWATERED down BEER

A screener helps an Alaskan brewer meet its high dewatering demands

Nearly any expansion of a process entails chew-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 takes on added significance.

Such is the case with the Alaskan Brewing Company, which in 1986 became the first US 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 brew house in 1995. A year later, an automated keg line was added for filling stainless steel “Smookey” kgs 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. According to Plant Manager Curtis Holmes, as production grew, “too more grain was going down the drains and into the wastewater systems settling tank.” 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 pushed in densely, binding with the
The problem was resolved with an inclined Centri-Sifter® centrifugal dewatering screener from Kason Corporation, Millburn, NJ, installed in the waste stream between the brew vessels and the treatment plant. As solids-laden wastewater flows into the screen, a full-length, low-pitch auger moves the material longitudinally into and through an inclined cylindrical screen. Helical paddles rotating within the screen create 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 breakup soft agglomerates. The variable-inclined 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.

The brewery decided on a rotary drum screeners due to the lowbound of their chain drives and their large size, which would have precluded access needed for maintenance in the restricted installation space.

Currently, the brewery produces about 500,000 bottles of beer per week, generating roughly 6,000 gallons of wastewater from the brewhouse vessels from which the Centri-Sifter screener removes about 800 pounds of solids. This “saves us a lot of headaches with our wastewater plant,” says Holmes.

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.

Brewing beer in the last American frontier may seem romantic, but the Juneau location incurs logistical challenges. The 2700 square mile city and borough of Juneau has a population of over 31,000, and the pure water from the surrounding icefields and glaciers is ideal for beer production; however, the ice also blocks road access to major highways leading to the rest of Alaska and beyond. Shipments are transported mostly by water and typically depart from Seattle on a barge that docks in Juneau every five days, so supplies and equipment must be ordered two to three weeks in advance. And the weather always has the last word.

The Centri-Sifter screeners design made installation a simple “plug-and-play” operation, which saved Alaskan Brewing Company some additional capital. “We did our own install,” remarks Holmes. “We very rarely have crews come up — housing costs are prohibitive, especially if the project is large. And since Juneau doesn’t have a large industrial base to begin with, if someone comes up but leaves some tool back at the office, they’re just out of luck.” Not that folks aren’t willing to come up and help out, notes Holmes, although the offers always seem to coincide with summer, when the fishing is best... a pastime that offers good in-hand with a good beer.

Kason Corporation
www.kason.com