Disinfection
Double Team

The West Fraser Mills treatment system includes ultrafiltration, UV disinfection and softening.

Canadian mill installs UF & UV to meet disinfection needs

By Kim Sepkowski

West Fraser Mills in Williams Lake, British Columbia, Canada, received a demand order from the province's Workmen's Compensation Board to have potable, disinfected water available at all locations in its sawmill, including in the dust suppression misting system.

The dilemma was that even though the mill uses municipal water, its infrastructure is tied to an open-air 10,000-gal pond that is used to support its fire suppression needs. That means every time the fire pumps were turned on for their weekly test, they contaminated the water infrastructure with pond water. This was confirmed through periodic random testing, which always came up with positive results for *E. coli* and coliforms.

Treatment System Solution

The solution, developed by wastewater and potable water treatment solutions company Air & Water Environment Centre Inc., also located in Williams Lake, provides clean, potable water at all locations at all times, regardless of pond water contamination.

To accomplish this, the company first installed a twin 7-cu-ft water treatment system to remove hardness, iron and manganese from the water so that clean, soft water can be supplied to the dust suppression misting system. The system includes a Fusion 2-in. "heavy" commercial water softener unit, which has minimal servicing needs, as the designs of the valve and brining system keep those passageways clean. The twin alternating softener allows the facility to maximize the water being treated per cycle without having to worry about programming reserve amounts, which was critical in this case, as daily water usage can vary drastically.

The water then is passed through a Seccua UrSpring ultrafiltration (UF) system, which filters down to 0.2 µ, and into a UV Pure Hallett 30 water purification system, which kills 99.99% of any remaining bacteria.

Efficiency Benefits

Although water softeners are not often viewed as green products, West Fraser Mills' system offers several benefits that help make the site more environmentally friendly. The water- and salt-efficient system allows the site to minimize salt usage, which reduces operating costs. Because "calculated" reserve amounts do not need to be entered, the mill also is able reduce the amount of water used for regeneration. The mill has to remove its wastewater by pumper truck, so any reduction in wastewater is a plus.

The water purification system also helps reduce service needs and down time. The self-flushing UF system does not require manual servicing. With an estimated maximum flow rate of 27 gal per minute, it is critical to ensure the flow is not interrupted.

The quartz sleeve of the UV disinfection system includes a self-cleaning feature that reduces maintenance and downtime. It also includes a purge valve that flushes the system if it is at risk of overheating, which can potentially cause many issues for UV systems. According to Air & Water staff, the UV system's Crossfire technology reassures users that all "bugs" are eliminated, and because the system is low maintenance, fewer alarm calls occur. *wqp*

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