

## Sludge Buildup and Aerator Blockage Solved



The District of Kitimat, British Columbia, a pristine coastal community with 10,000 residents, is located at the head of the Douglas Channel and the Kitimat River. The area is a major salmon spawning corridor, supporting a large sports fishing industry. For both ecological and economic reasons, any facility discharging wastewater into the river must be mindful of strict discharge regulations. No one is more aware of this than the management of the Kitimat Wastewater Treatment Plant.

Recently, the plant, which treats 2.6MGD and handles peak flows of 7.3 MGD, was faced with an emergency upgrade. A barminutor, installed in the 1970's as a bar screen and grinder, had rusted and developed holes, allowing rags, wood, rocks and other debris to pass through unimpeded. The debris not

only caused blockages and clogs in the aerators but also contributed to the build up of sludge in the lagoon. The facility's management was determined to install a more efficient system and end the chronic problems. After carefully reviewing their options, they chose the Dimminutor® Turbo Design Channel Disintegrator from **Franklin Miller** (USA).

"We originally planned to buy one Dimminutor®," said Wayne Sussbauer, Technical Services Manager. "The size of the unit was important because we needed to be sure it could handle peak flows and not require a head differential that would cause the upstream channel to overflow back into the wet well and subsequently untreated effluent into the river. Based on assessment, we decided that two units would do a better job of meeting peak flows and minimizing the probability of an overflow." The Dimminutor® comminutors were placed side by side in two existing channels. "With the supplied frames they were easily installed into the existing headworks units," commented Sussbauer. "This was a consideration in the purchase."

In Kitimat, effluent flows by gravity to a wet well. It is then pumped up by three screw pumps into the headworks where the two Dimminutor® comminutors are located. All the wastewater solids are finely ground before entering an aerated lagoon. The treated effluent is then discharged into the river. According to Sussbauer, installation of the Dimminutor® units has made a noticeable difference. "They play a key role in protecting the aerators from clogging, reducing the need for maintenance and enhancing the treatment process."

The Dimminutor® offers effective, automatic screening and disintegrating of wastewater solids in straight through channels and wet wells. This powerful unit reduces plastics, wood, rags and other solids to fine bits, improving the reliability of pumps and other downstream equipment.

The unit employs a smooth, continuously rotating design with high torque. As its three bi-directional rotary cutters intermesh at close clearance with stationary cutters, solids are finely reduced to a size small enough to pass through a sizing screen. With no gaps or openings between the screen and cutters, output is controlled and complete reduction assured.

The Dimminutor® has an intrinsically open design to handle high flow rates with low head-loss. This unit is extremely easy to maintain and features individually replaceable cutters, oil lubrication and a simple rotary design requiring no auxiliary diverter screens. A unique, cantilevered design eliminates seals or bearings near the gritty channel floor. Every component of the unit is constructed for precision and long life.

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