

A Simple, Effective Strategy For Preventing Clogs

Municipal wastewater treatment plant operators face significant operational and financial challenges from a surge in clogs. Wipes that have been marketed as flushable, but don't necessarily break down, are increasingly ending up in the waste stream. And with the heightened sense of cleanliness related to COVID-19, consumers are using more wipes than ever, as well as personal protective equipment which is not meant to be tossed in toilets.

Even the most technologically advanced pumps, whether designed to handle large solids or chop solids down to a manageable size, aren't equipped to deal with the surge in unusual materials being tossed into toilets.

The growing clog problem is stretching human resources at water utilities — many of which are already on tight budgets with skeleton crews — by generating even more calls to clear pumps and implement workarounds. At the same time, pumps running inefficiently are causing electricity expenses to skyrocket while also wearing faster so they are becoming more prone to breakdowns.

Wastewater treatment plant operators are doing everything they can to keep up, but the problem isn't going away any time soon. The proper mechanical solutions, however, can help mitigate the problem and make their lives easier.

Grinders Now Offer Wipes-Specific Cutters

Installing grinders, which condition the solids so pumps can run efficiently, is a relatively simple and cost-effective solution to implement at pump stations,



especially compared to the purchase of expensive mechanical screening and the use of archaic trash baskets. Grinders offer a great deal of customization and flexibility. They are available in multiple sizes based on flow characteristics, feature customizable cutter configurations, and can be installed almost anywhere, including wall-mounted in wet wells, fitted into channels, and dropped in-line. The most advanced grinder systems can now even be equipped with special cutters designed to tackle the wipes problem.

JWC Environmental, for example, has developed its Wipes Ready® cutting technology that is now an option on its sewage grinders.

Wipes Ready is a suite of technologies designed to capture wipes in the waste stream and shred them into small pieces

that will not reweave into ragballs in sewage systems. Wipes Ready technology generates small pieces that stay in suspension, which sewage pumps can easily handle. The combination of the serrated cutters and knurled spacers cuts wipes in two directions. The result is smaller particles that are unlikely to reweave downstream. By comparison, conventional two-shafted grinders make long strips out of wipes, which can reweave into ropes that cause problems for sewage pumps.

Another solution to long-term clogging issues is available at the local government level through the creation of amendments to zoning and development regulations. A growing number of municipalities, for example, are requiring larger impact operations such as assisted care facilities and e-commerce/logistics centers to condition solids in the wastewater stream

before sending them through the sanitary sewer line.

This minimizes the impact of sites that accommodate large numbers of people while absolving the utility of the responsibility for purchasing and maintaining a grinder. A pre-engineered manhole that includes a grinder — such as JWC’s Muffin Monster Manhole, or M3 — is available for commercial entities to address these types of zoning regulations by simply being lowered into a hole and tied into gravity-fed sewer lines.

Case Studies

At the Santa Margarita Water District in California, pump clogging hadn’t been an issue since the JWC Channel Monster

was installed in the ‘90s. However, a few years ago when the composition of the influent became heavily loaded with disposable wipes, the pumps began to lose efficiency. This forced operators to run all four pumps instead of the staggered schedule of two pumps at a time to which the district had been accustomed.

In addition to the heavier electric load, unplanned shutdowns for de-ragging were costing the district an acre-foot of reclaimed water production per month, and the labor costs added up to about \$15,000 per year. Safety concerns with clearing the clogs were also mounting.

District officials decided to upgrade the

facility’s Channel Monster grinder with the new JWC Wipes Ready perforated drum configuration. Not only did this cost significantly less than purchasing a new set of pumps, it helped the pumps run much more efficiently and cut energy costs by more than \$75,000 annually.

At Virginia Beach, VA, the municipal water system found itself dealing with a pump station that was running its pumps as much as 12 hours daily because of inefficiencies. The pumps also needed frequent de-ragging. In the two-year period after a JWC 30K In-Line Muffin Monster grinder was installed, the pump run times have dropped to less than 2 hours per day and the station did not need a de-ragging. ■