

Chopper Pumps Prevent Clogging During Storm Surges

The “new sewage”—raw sewage with floor wipes, hand wipes and miscellaneous plastics—has been causing non-clog sewage pump plugging problems for municipalities not just in the U.S., but around the world. Collections personnel who know this business have endless war stories of 3 a.m. calls because of one more set of clogged pumps. When this happens week after week, the challenges get old fast.

Jim Wilson, Vaughan Co.’s longtime local sales representative in northern Indiana, was reading the newspaper one morning when he saw an article about major maintenance problems at Independence Hill Conservancy District’s Taney Lift Station in Merrillville, Ind. The district had been spending too much money to keep the non-clog pumps in this packaged lift station unplugged. Wilson went to the district meeting to offer a solution. He suggested that he could provide three Vaughan chopper pumps for about the cost of one year’s maintenance. The alternative was a more costly screening and grinding system.

“Wipes, Swiffer [cloths] and other plastics would settle out in the lines to the station; then, during a storm surge, settled debris would break loose and overwhelm and plug the existing pumps. The problems have gotten much worse since about [the year] 2000. We often had plugging two or three times per week,” said Brian Smolar, chief operator for the district. The unplugging had been resolved by an outside maintenance organization at a cost of \$45,000 to \$48,000 per year over the past 10 years.

The original non-clog pumps were powered by 15-hp motors, but because the district wanted to increase the station’s capacity, new chopper pumps with 20-hp motors were proposed in May 2009 to produce more flow—750 gal per minute at 47 ft of total head. The district placed the order for three Model PE4P6CS pedestal chopper pumps in September 2009, and an engineering submittal was provided within two days.

The completed pumps and new motors were shipped in November 2009 and installed and started up by a local contractor by December. The total installation cost was about \$58,000.

The chopper pumps incorporate increases in efficiency and offer improved reliability when handling tough, stringy solids.

A few years after the startup of the retrofitted chopper pumps, Independence Hill Conservancy District no longer



needs the services of the outside maintenance company at the Taney Lift Station. “We made our money back on this investment, even if these three Vaughan pumps were to blow up right now. This investment made by the Independence Hill Conservancy District is likely to save its taxpayers hundreds of thousands of dollars in the long run,” Smolar said.

Non-clog sewage pump plugging on new sewage has become such an epidemic that many municipalities, such as Laguna Beach, Calif.; Centralia, Wash.; Waterford Township, Mich.; Deerfield, Ill.; Sevierville, Tenn.; and Newport, Tenn., have ongoing programs to replace as many of the pumps in their lift stations as possible with chopper pumps. Recent efficiency improvements to these pumps usually allow replacement of non-clog sewage pumps with no increase in motor size.

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