



CITY OF CHELFORD

PROJECT-AT-A-GLANCE

Duperon's FlexRake® Only IQ Screens expand the lifespan and provide updated technology to existing bar screens.

SITE:	<i>City of Chelford, TX Municipal Utility District Wastewater Treatment Plant</i>
EQUIPMENT:	<i>One (1) FlexRake® Only IQ</i>
INSTALLED:	<i>Summer 2021 & Winter 2022</i>

UPGRADED TECHNOLOGY EXTENDS LIFE OF DUPERON FLEXRAKE® SCREENS IN CHELFORD

The Chelford City Municipal Utility District (MUD) wastewater treatment plant, operated by SiEnvironmental, LLC, processes an average of 3.8 million gallons a day (MGD) for approximately 13,000 customers in the greater Houston area, with a peak capacity of 11.2 MGD and ultimate discharge to Lake Houston.

In 2011 and 2013, the plant replaced two antiquated climbing screens with FlexRake® screens from Duperon. The improved performance was immediate and long-lasting, persevering even through Hurricane Harvey in August of 2017, which saw 53 inches of rain fall in the Houston area over just three days. Having had such a positive experience with Duperon's equipment and customer service representatives, Chelford City MUD decided to upgrade them to Duperon's new FRO IQ rotational assembly.

FLEXRAKES GET A FACELIFT

The new FRO (FlexRake Only) IQ is designed for existing Duperon screens to expand capacity and capability, as well as improve wear resistance of the system without the cost or operational burdens of a new installation. Designed with a patent-pending sequence technology that delivers four times more debris removal, the FRO IQ enhances solids handling by sensing conditions and speeding up – or slowing down – to accommodate changing debris and flow in real time, automatically, without operator intervention.

Thanks to the use of more resilient materials and changes in the scraper geometry that include a new tooth profile, the new FRO IQ dramatically reduces the likelihood of damaged teeth and stones embedded in bar openings, a feature that is critically important with the increased frequency of high debris rain events.



To minimize downtime, the upgrades at Chelford City MUD were rolled out in phases, with one machine receiving the upgrade in July of 2021 and the other in February of 2022. And because Chelford City MUD opted to upgrade existing equipment rather than replace it, the client saved significantly on cost – about 40% less than what a total replacement would have cost. Duperon provided three technicians to assist onsite with installing the upgrades, and the company has been available around the clock for ongoing support.

FRO IQ UPGRADE DELIVERS PERFORMANCE

Right away following installation the client noticed a much more productive debris pickup rate, attributed to higher operating speed, innovative geometry and tooth profile of the redesigned scraper, and more resilient construction materials. The upgrade improved the system's ability to manage large debris and rapidly reengage the trailing scrapers, enhancing screen cleaning during large debris events. When large debris is presented at the screen, the links can disengage one or two scrapers as needed to remove that debris while the leading and trailing scrapers return to the engaged position.

In addition, the more robust drive head assembly now uses low-friction engineered polymer greaseless bearings and stronger, more corrosion-resistant steel, all of which reduce maintenance and downtime.

"Out of all the screens I've seen in my 39 years of being in this business, the Duperon screens are my favorite," said Ramon Castillas, SiEnvironmental. "These screens have made our lives easy, because they are operator friendly, low-maintenance, and if you keep them washed down, they'll work forever."



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ABOUT DUPERON

Duperon Corporation is the leader in innovative preliminary liquid/solids separation systems. For more than 35 years, Duperon has provided simple yet innovative solutions for a variety of screening and solids handling applications in the water and wastewater industry. Duperon technologies are designed and manufactured in Saginaw, Michigan.