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Seeing Green

The seeds of green infrastructure
sprout across America's urban landscapes

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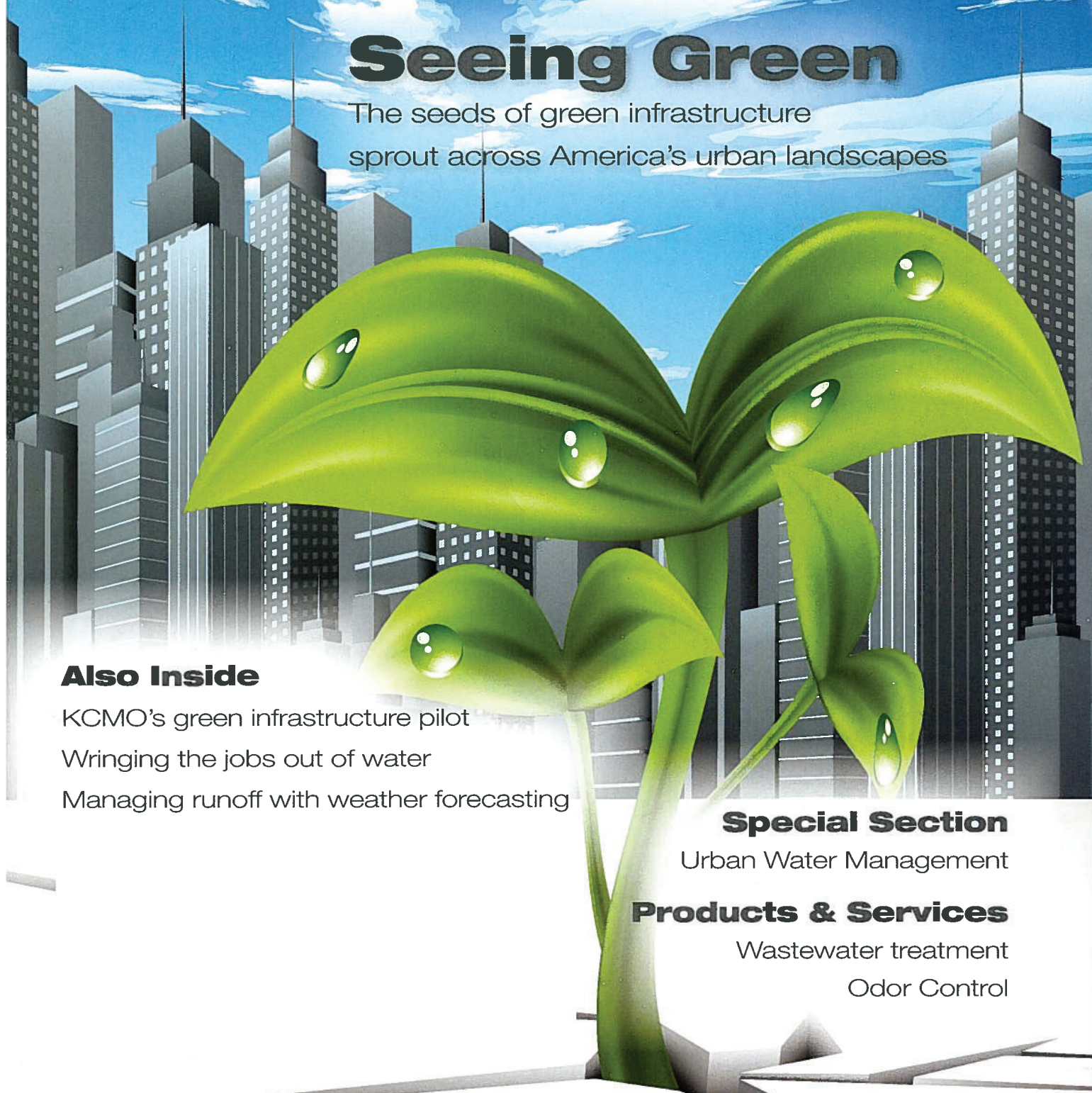
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Odor Control



Sludge Pumping

System helps WWTP reduce equipment costs

Progressing cavity pump system lowers maintenance costs and reduces downtime for Savannah's dewatered sludge application

In 1998 the City of Savannah, GA, purchased two hydraulically driven reciprocating piston pumps (HDRPPs) and an open throat hopper to handle the transfer of dewatered sludge cake from the dewatering press through an 80-foot pipeline to an incinerator to be burned. The HDRPPs were required to handle pumping up to 50 gallons per minute of sludge containing 20% solids at up to 250 psi. These pumps were in service until 2007.

The City of Savannah contacted Moyno in 2006 about providing an alternative to the HDRPPs for the dewatered sludge transfer application. Moyno recommended the 2000 HS System to help improve pump performance, reduce maintenance downtime and cost, and eliminate the need for hydraulic pumps, hoses and other related equipment.

The Moyno system features an integral hopper with a twin-screw auger feeder and a specially designed progressing cavity pump for high solids sludge cake transfer.

Two core components of the progressing cavity pump, the rotor and the stator, provide the pumping action. The rotor has a helical shape machined from high-strength steel, while the stator has an internal helix molded of abrasion-resistant elastomer permanently bonded to the inside of an alloy steel tube. The stator always has one more helix than the rotor to facilitate the progressing cavity pumping action.

As the rotor turns within the stator, cavities are formed which progress from the suction to the discharge end of the pump, conveying the pumped fluid. The continuous seal line between the rotor and the stator helices keeps the fluid moving steadily at a fixed flow rate proportional to the pump's rotational speed.

Moyno provided two 6-stage HS Systems that completely replaced



The new sludge pumping system includes an integral hopper with a twin-screw auger feeder and a progressing cavity pump.

the previously installed HDRPPs. The new pumps were installed using the city's existing control system and piping footprint, minimizing cost. Variable frequency drives (VFD) were also supplied by Moyno engineers to help the City of Savannah control the speed and performance of the pumps.

RESULTS

Since replacing the HDRPPs, the City of Savannah has seen a significant reduction in operating costs and maintenance downtime. The Moyno pumps run slower and more efficiently than the HDRPPs with operation control managed by the VFDs to optimize performance. The pumping system change allowed the city to eliminate two hydraulic units and two water lubrication systems that had been required for the piston pump seals in the old system. Two motors were also eliminated.

WW

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