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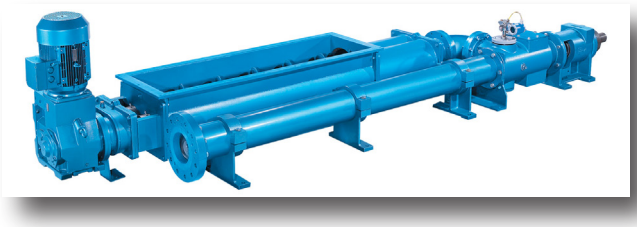
CUSTOMER TESTIMONIAL

Waste Water Treatment Facility Reduces Equipment Costs and Improves Productivity with the Moyno 2000 HS System



The City of Savannah replaced costly piston pumps for their dewatered sludge application and are enjoying the benefits of lower maintenance costs and reduced downtime.

The Situation

In 1998 the City of Savannah purchased two hydraulically driven reciprocating piston pumps (HDRPPs) and an open throat hopper to handle the transfer of their 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 for a five year period until 2007.

During this time period, the city incurred significant recurring maintenance costs and extremely noisy operating equipment. Each HDRPP required the replacement of two poppet valves on each pump every six months. Each set of two poppet valves cost up to $7,500 per replacement.

The cause of the HDRPP poppet valve failures was difficult to diagnose, the timing of their failure was extremely unpredictable, and their repair was time consuming and costly. Poppet failures required the pump to be shut down for 24 hours, the hydraulic unit to be shut off, and lines drained to replace the broken part. The unreliable performance and unplanned downtime were unacceptable to the City of Savannah, causing them to look for an alternative solution.

The Solution

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

The Moyno 2000 HS System features an integral hopper with a twin-screw auger feeder and specially designed progressing cavity pump for high solids sludge cake transfer. In a Moyno 2000 HS System, the pumping action of the hydraulically driven piston pumps is replaced by the pumping action of the two core components of the progressing cavity pump, the rotor and the stator.

The rotor has a helical shape precision machined from high-strength steel, while the stator

has an internal helix molded of tough, 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 System pumps that completely replaced the previously installed HDRPPs. The Moyno HS System pumps were installed using the city's existing control system and piping footprint, eliminating the need for additional new equipment. Variable frequency drives (VFD) were also supplied by Moyno engineers to help the City of Savannah control the speed and performance of the pumps.

The Result

Since replacing the HDRPPs with the Moyno 2000 HS System, the City of Savannah has seen significant reductions in operating costs and maintenance downtime. The Moyno pumps run slower and more efficiently than the HDRPPs as a result of the Moyno provided VFD solution.

The Moyno HS system pumps fit seamlessly into the existing piping infrastructure to easily transfer the sludge cake to the incinerator feed for burn off. The Moyno solution also eliminated costly HDRPP equipment including:

- Two required Hydraulic units
- Two Water Lubrication Systems which are required for piston pump seals
- Two motors (2 per piston pump, 1 per HS System)

The City of Savannah was spending on average $30,000 per year and $150,000 in a 5 year period on replacement poppet valves for their HDRPPs. In the same 5 year period since 2007, the City of Savannah has only spent $35,000 in total on replacement parts between the two Moyno 2000 HS systems. When combined with the intial capital investment savings of a new Moyno 2000 HS system, typically 2/3 less than a HDRPP, the Moyno solution not only solved the city of Savannah's operational issues, but also economically justified the switch in technology.

The Moyno 2000 HS System solution has been so successful that, according to the Maintenance Supervisor, "Everyone in the plant prefers the Moyno HS pump to the HDRPPs. We now have peace-of-mind knowing the Moyno pumps will just work without worry." The Operations Superintendent at the City of Savannah also states, "I prefer the Moyno HS System over the HDRPPs because of less replacement parts, ease of operation, and greater reliability."

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