





The Pearland Reflection Bay Water Reclamation Facility in Pearland, Texas, will recycle runoff and treat effluent water in the plant process for usable processed/washed/sealed water. Introducing this system in 2019 will save the community thousands of gallons of non-potable water for the future and provide treatment capacity for the next seven to 10 years for this Houston suburb.

PHOTO: COURTESY OF PLW WATERWORKS/WEBBER

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## Water/Wastewater Today III

# Transforming Traditional Treatment

Water utilities evolve to embrace resource recovery leadership

By Linda Mastaglio

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# The World Standard in Concrete Waterproofing by Crystallization

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Concrete  
(Untreated)



Xypex Crystallization  
(Initiated)



Xypex Crystallization  
(Mature)

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## Massive Water System Upgrades Underway in Spokane

The city of Spokane, Wash., is completing major upgrades to its Riverside Park Water Reclamation Facility. This upgrade will include next level of treatment (NLT) technology, which includes a filtration system that will greatly improve the quality of effluent released into the Spokane River. The city currently treats about 34 million gallons of wastewater every day through the existing plant.

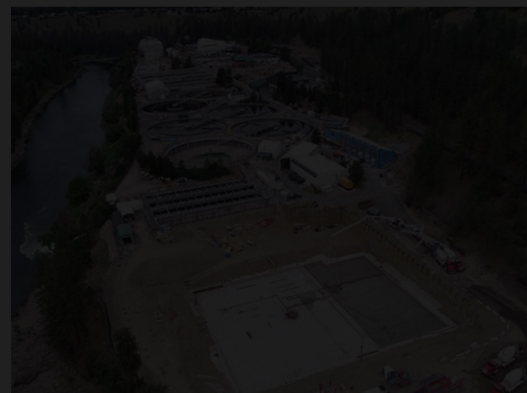
This project is the largest upgrade at the plant since 1970. Completion is forecasted for 2020.

The city is using a general contractor/construction manager (GC/CM) process, which required state agency approval for implementation. Using this approach as opposed to a traditional design-bid-build process allowed the city to select a GC/CM early in the process to assist in evaluating the preliminary design and help ensure its constructability.

Washington state law allows this process when its use is appropriate for a complex project at an occupied facility that must remain operable throughout construction.

MWH Constructors (MWHC) and Slayden Construction Group, an MWHC company, formed a joint venture to lead this project. Pall Water was selected as the membrane technology vendor, following a pilot of two different microfiltration systems.

“The NLT upgrade will improve the health of the Spokane River by increasing phosphorus removal from the effluent from 90% to 99%, which in turn will help the oxygen levels in Lake Spokane, creating a more suitable environment for aquatic life,” says Michael Haarmann, vice president and district director with MWHC. The system will also remove greater amounts of heavy metals, such as PCBs and other pollutants, and treat the wastewater to



Upon completion of the project, the facility will be capable of treating peak flows of 100 mgd.

a Class A standard to provide reuse for irrigation, dust control and industrial processes, enhancing wetlands and recharging groundwater supplies.

The upgrade is part of the city's integrated clean water plan, which provides more than \$300 million in system upgrades and improvements. ♦

PHOTO: COURTESY OF MWH CONSTRUCTORS

## Sewer Lift Station Protected With Crystalline Waterproofing

Wastewater treatment for the new Roaring Fork Club expansion project in Basalt, Colo., will be provided by the Basalt Sanitation District using a gravity sewer extension.



A 14-ft-tall, cast-in-place lift station is protected from a hostile hydrogen sulfide environment and microbial-induced corrosion using Xypex Bio-San C500, a dual-protection admixture.

The 383-acre private club is expanding its facilities with 13 new, larger cabins as well as a 43-unit employee village. A key component of the project is a 14-ft-tall, cast-in-place lift station requiring approximately 42 cu yds of ready-mix concrete.

Sopris Engineering specified Xypex Bio-San C500, a new dual-protection admixture, to protect the lift station from an expected hostile hydrogen-sulfide environment, microbial-induced corrosion and varying pH levels. According to Sopris Design Engineer Paul Rutledge, the firm would previously have considered an epoxy coating for the interior of the lift station; however, that option is no longer its first choice.

“With Xypex crystalline waterproofing with Bio-San C500 antimicrobial, the protection becomes an inherent part of the structure,” Rutledge says. “It not only heals cracks and stops leakage, but it also inhibits slime growth. By using the Xypex Bio-San, we eliminated the need for any supplemental coatings inside or out. We also eliminated the need to coordinate with a separate coatings contractor and any delays or special preparation that might have been required. This protection is built into the structure and eliminates a lot of concerns.” ♦

PHOTO: COURTESY OF XYPEX