

Hillsboro, OR sludge degritting system improves sludge quality & treatment capacity

Project Profile

Objective

Improve sludge quality to increase sludge treatment process performance. Facing limited space for headworks grit removal, the plant needed a **small footprint** grit removal solution.

Solution

The small footprint SlurryCup / Grit Snail sludge degritting system provided the performance needed in this challenging application.

Product profile

Rock Creek's SlurryCup / Grit Snail Advanced Sludge Degritting System

- Two (2) 42" (1 m) SlurryCup Units
- Two (2) 6 yd³/hr (4.6 m³/hr) Grit Snail Units
- 75 micron removal
- Plant flows 35 Mgal/d (1,530 L/s) Average and 160 Mgal/d (7,000 L/s) Peak

Situation

The Hillsboro, Oregon Rock Creek Advanced Wastewater Treatment Facility (AWWTF) lies in a suburb southeast of Portland. The facility serves the needs of a rapidly growing suburban community as well as nearby industrial giants like Intel and Nike.

This AWWTF is also designed to accommodate flows from the nearby Forest Grove and Hillsboro treatment plants as needed, typically during the dry season. This allows Clean Water Services, the agency that operates multiple treatment plants in the area, options to most effectively treat wastewater and recover by-products. After treatment, the plant discharges to the nearby Tualatin River.

A History of Severe Water Pollution

The Tualatin River, southwest of Portland, Oregon was originally called the "Sluggish River" by Native American

Tribes due to slow flows. These slow flows make river pollution particularly problematic, in the 1960's watershed condition was bad enough to force the state to issue a pollution-related building moratorium in the area.

By the 1970's, growth in population, industry, and agriculture in the region had led to extreme pollution problems, causing the Tualatin River to be the first in the state to fail EPA Clean Water Act pollution standards. In the 1970's local wastewater treatment consisted of six small and inefficient treatment plants that were struggling to meet the demands of a rapidly developing region.

In 1978, after decades of severe water pollution, Hillsboro Clean Water Service's Rock Creek wastewater treatment plant began operations. The plant was built to replace and consolidate flows from the six existing plants and improve the region's water quality.



Rock Creek AWWTF

Solution

In the early 2000's the area's population had continued to grow, and Rock Creek now required a major upgrade that also meant a major flow increase. The project also required additional primary clarification which would be installed in space that would have traditionally been used for headworks grit removal. However, there was an available location for a small footprint sludge dewatering solution.

System Advantages

- Over 90% removal of 75 µm particles (2.65 Specific Gravity)
- Removes as much as 20 times more grit than a cyclone / screw classifier
- First flush solids handling capacity minimizes grit loss
- Low organic content (< 20% VS) of classified grit, reduces volume going to disposal
- 60% total solids content
- Enclosed system improves odor control
- Significantly reduces O&M costs
- Hydro International sludge dewatering is a proven, tested technology with a long history of operation



Rock Creek's System During 2002 Installation

Outcome

CH2M Hill was selected as the consulting engineer to determine and design the most viable option for the plant that could fit into their available footprint. The plant and engineer evaluated various treatment technologies along with Hydro International's SlurryCup / Grit Snail sludge dewatering solution. CH2M Hill had previous experience with Hydro International's sludge dewatering solutions having designed a similar SlurryCup / Grit Snail system in Green Bay, Wisconsin.

For this rigorous application, the small footprint design, unparalleled performance, and the proven success at Green Bay led to the selection of a SlurryCup / Grit Snail sludge dewatering system. As a result of the most recent plant upgrade, Rock Creek has been able to optimize their Ostara process to help reverse water pollution in the Tualatin River. Now the plant discharges water so clean that it actually improves the river's aquatic ecosystems. Today over half a million people live within the Tualatin River watershed.



Grit Removed from Rock Creek's Sludge



Operating SlurryCup / Grit Snail System 16 Years After Installation

Learn more

To learn more about how sludge dewatering can improve sludge quality, visit hydro-int.com, search **SlurryCup™** or **Grit Snail®** online or contact us:

Americas

+1 (866) 615 8130
questions@hydro-int.com

Asia Pacific

+61 436 433 686
enquiries@hydro-int.com

Europe & RoW

+44 (0)1353 645700
enquiries@hydro-int.com

Middle East

+971 506 026 400
enquiries@hydro-int.com

hydro-int.com/contact