

Case Study

Reliable Headworks Screening = Process Efficiency



Vermillion OH WPCF

OVERVIEW

The City of Vermillion Ohio is located in Erie County along the shores of Lake Erie and bisected by the Vermillion River. The wastewater treatment plant serves a population of approximately 11,000. In addition, the plant accepts seven loads of septage per day with plans to increase their septage receiving capacity. The city has no combined sewers in the collection system. The Vermillion plant discharges directly into the Vermillion river at a park and boat launch about one mile inland from the lake. The outfall to the river is just upstream of a new canoe launch.

PROBLEM

A new Superintendent joined Vermillion in May of 2018. Almost immediately the superintendent was faced with a headworks problem. The old screen literally collapsed into the channel shortly after he arrived. All he knows was that it was a climber screen with 1-1/2" openings. The old screen barely collected a bucket of debris every few days.

The poor capture of the old headworks screen had created a second problem at the next stage of the process. The plant has six clarifiers and only two were operating. Operating was probably not accurate since they were covered with rags and scum, filled with grit and failing.

SOLUTION

Cleaning the two operating clarifiers was critical but replacing the headworks screen was even more critical. After evaluating several screen designs, the superintendent selected the Lock Link® Catenary-style MultiRake Bar Screen. This was a fast track, direct purchase by the plant. A contractor was hired to install the screen because the channel had to be



Vermillion River Outfall

Vermillion, OH



Channel modifications were required.

notched out so the rake would clear. Plus there was very little clearance to get the screen into the channel.

SCREEN SPECIFICATIONS

Peak Flow - 5 MGD
Average Flow - 2.7 MGD
Channel width: 42.5"
Channel depth: 56"
Angle: 75°
Bar Opening: 0.25"

RESULTS

The Vermillion plant is very pleased with the Lock Link® screen. The screen is well maintained and located in a heated building along with the grit extraction equipment.

Since the Lock Link was installed, the two clarifiers have been cleaned and are operating efficiently. They are about to rebuild a third clarifier which would allow them to accept more septage. The Superintendent purposely ordered the 0.25" bar spacing which he considers to be a fine screen. His goal was to capture as much debris as possible and not let it overload his clarifiers. The bucket has now been replaced with a 3 cubic yard dumpster which is emptied weekly.



Thanks to the Lock Link screen,
a 3 cubic yard dumpster replaced the bucket.