

CASE STUDY:

Banklick Pump Station, Kentucky, USA



Customer: Banklick Pump Station
Industry: Water Reclamation

Background

In the December 2004 edition of Heads Up we wrote about the successful installation and operation of the Headworks[®] Bar Screen at Northern Kentucky's Patton Street Pump Station. Shortly after that publication, Northern Kentucky Sanitation District No. 1 required a similar upgrade at their Banklick Pump Station not far from the first facility. Once again, the Headworks Bar Screen was the obvious solution.

Similar to Patton Street, Banklick PS required an extremely deep, true 180° vertical installation without a bottom bearing. The pump station's combination of sanitary and storm water flow brought large quantities of bulky solids which clogged and occasionally damaged pumps. Protecting the pumps while not removing the finer organics was the goal of the engineers responsible for the upgrade. This would require extremely fine openings with durable material.

Why Banklick chose Headworks

Unique to the Banklick PS project, though, was the geological makeup of the surrounding terrain. Design engineer David Shank of Burgess & Niple states, "until about 400 feet before the pump station the sewer is 20-25 feet deep ... [but during] the last 400 feet the ground level elevation rises sharply," which causes the pump station to be at a total depth of 47 feet. Additionally, approximately 50 feet of vertical lift up is then pumped into a gravity sewer. The station's 8 ft diameter and 47 ft deep wetwell manhole caused project engineers to produce two alternatives.

One option would have been to build a new facility downhill with a 25 ft deep screen. The chosen and more cost-effective alternative was to use the 8 ft manhole as the screen chamber, which avoided the nuisance and high costs of excavating in the midst of a municipal park. David Shank also noted, "Cost analysis showed the deep installation without a new deep structure to be about 20% cheaper."

Solution

Northern Kentucky SD Engineer Bob Wilson is extremely happy with the all stainless steel Headworks Bar Screen with 1" openings: "It came out nice. Although vertical screens are usually tougher to operate, the Bar Screen has had no problems."

