



Mississippi Street Siphon Concrete Chamber

La Crosse, Wisconsin, USA



Completion Date
OCTOBER 2013

Engineer
DIXON ENGINEERING

Contractor
WAPASHA CONSTRUCTION OF WINONA

Products
MEGAMIX II

Project Type
WASTEWATER COLLECTION & TREATMENT



A seemingly routine sewer rehabilitation project in La Crosse, WI created some challenging conditions for the local public works agency and its contractor.

During a routine inspection, engineers noted that the Mississippi Street siphon concrete chamber—a chamber that directs about one-third of the area's wastewater flow to the nearby Isle La Plume wastewater treatment plant—showed signs of significant deterioration from hydrogen sulfide (H₂S) gas build-

up. Concrete losses in some areas were as deep as 3 in. to 4 in. deep.

La Crosse Dept. of Public Works initiated a rehabilitation project to repair the 20 ft x 11 ft x 18 ft concrete chamber, replace flow control gates and construct a bypass pumping manhole. Site work included replacing the maintenance stairs to the chamber and re-landscaping the heavily sloped site. Wapasha Construction of Winona, Minn. was selected to complete the performance-based contract.



The initial specification called for concrete repair and installation of a polyurethane lining system and would include a 5 year guaranty of success. However, the team decided against the lining system because of the very damp conditions inside the chamber.

Working with the Dixon Engineering (inspection contractor), Wapasha recommended switching to a [crystalline waterproofing](#) material and resurfacing mortar that work with moisture to bond and cure properly without sacrificing the H₂S resistance.

The first step was to blast clean the concrete with high pressure water-based abrasive. Then Xypex [Megamix II](#) resurfacing mortar was installed at thicknesses ranging between 2 in. and 3 in.

James Orr, NACE inspector with Dixon Engineering, says, “The Mississippi siphon concrete chamber was in rough shape. I liked the fact that the Xypex Megamix II could be applied to a damp surface while allowing thicknesses of 2-in. to 3-in. of restorative mortar to be applied in one application.”

The rehabilitation project was complete in October 2013. Wapasha Construction will conduct annual inspections of the chamber for the next five years.