

### PROJECT OVERVIEW

Like most major cities, Houston has a system of aging pipes and other infrastructure that needs to be repaired. Over the past several years, Houston has installed nearly 10,000 linear feet of GeoSpray AMS to address corroded reinforced concrete pipe (RCP) as part of its sewer infrastructure renewal program.

RCP is generally vulnerable to Microbial-Induced Corrosion (MIC), a process that converts via microbes hydrogen sulfide gas into sulfuric acid. The acid works to corrode the crown of the pipe above the waterline.

One such section of pipe, approximately 165 linear feet in length and 60 inches in diameter, terminates at the Northwest Wastewater Treatment Plant (WWTP) and runs 25 feet directly below the White Oak Bayou. The pipe was in extremely poor condition with exposed rebar for most of the length and several locations with gushing water infiltration.

This specific project was also jointly observed by the U.S. Environmental Protection Agency (EPA) and Battelle Memorial Institute of Columbus, Ohio, under Task Order 01 of Contract No. EP-C-11-038 as part of the EPA's Aging Water Infrastructure Research Program.

### SOLUTION

A bypass system consisting of two 16-inch HDPE pipes was constructed to control and divert the flow around the damaged pipe section. The pipe was then inspected by CCTV to provide the asset owner an assessment of the existing conditions. Once the assessment was completed, major infiltration was stopped using a chemical grout. The GeoSpray lining operation took a total of four days, and the entire project was conducted over a period of 11 days. A two-inch thick coating was sprayed along the entire 160-foot section over the course of the first three spraying days, and then an additional one-inch coating was sprayed the entire length of the pipe on the final spraying day. The resulting pipe was then sprayed with the GeoSpray AMS post-coat solution to enhance the already highly chemical resistant liner.

### PROJECT DETAILS

**Location:** Houston, TX

**Application:** RCP Sanitary Sewer

**Client:** City of Houston

**Installation:** May 2013

**Installer:** Inland Pipe Rehab, LLC



Sanitary sewer after one pass of GeoSpray mortar.



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### CASE STUDY:

## RCP Sanitary Sewer Houston, TX

### RESULTS

The pipe was put back into service one day after the final spraying of GeoSpray AMS post-coat. The city of Houston continues to use GeoSpray as the preferred cost effective solution for repair of its large diameter sewer pipes.

“The independent evaluation of the [GeoSpray] technology showed it is a technically viable structural alternative to traditional repair and replace methods,” said Ariamalar Selvkaumar, Ph.D., P.E., from the US EPA.



Sanitary sewer after completed GeoSpray mortar application.



Water infiltration in several locations.



Close-up of sanitary sewer after GeoSpray application.



Sanitary sewer after initial pass.



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