

REPLACING 20-YEAR-OLD DUCTILE IRON WITH FUSIBLE PVC® PIPE

Town of Stevensville, Maryland Cox Creek Force Main Project

Overview

The Queen Anne’s County Maryland Sanitary District recently completed an improvement project for an existing 16-inch force main. Replacement of the existing pipe included a new 24-inch pipe installation under Cox Creek using horizontal directional drilling (HDD) methodology. Cox Creek is an environmentally sensitive waterway that feeds into the Chesapeake Bay and is part of the Chesapeake Bay watershed.

The Cox Creek crossing was necessary to replace a failing 16-inch ductile iron pipe that had succumbed to corrosion after only 20 years of service. Queen Anne’s County also took the opportunity to expand the capacity of the system with a 24-inch pipeline, since the area has seen significant growth in the last decade.

Fusible PVC® pipe was competitively bid against high-density polyethylene (HDPE) pipe of an equivalent flow and pressure class for the HDD installation. The Queen Anne’s County engineers chose to limit material options to Fusible PVC® pipe and HDPE due to the corrosive conditions that caused the premature pipe failure of the 16-inch ductile iron. Queen Anne’s County engineers utilized 30-inch DR 11 HDPE and the hydraulically equivalent 24-inch DR 18 Fusible PVC® pipe for the flow and pressure requirements of the force main.

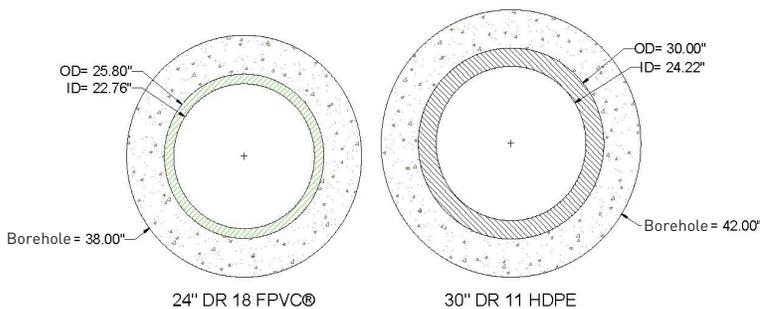


Assembled Fusible PVC® pipe staged along MD 18 (Main St., Stevensville, Maryland)

Pipeline Details and Project Summary

Project:	Cox Creek Force Main Project
Location:	Stevensville, Maryland
Length and Pipe Size:	1,160 LF 24-inch DR 18 Fusible PVC® pipe
Pressure Test:	225 psi
Installation:	Horizontal directional drill
Owner:	Queen Anne's County Sanitary District
Engineer:	McCrone Inc.
Contractor/ Driller:	Drill-Tech Incorporated

Bore cross-section comparison of the hydraulically equivalent Fusible PVC® pipe v. HDPE pipe for the project



Drill-Tech Incorporated, a leading HDD contractor in the mid-Atlantic region with decades of experience, won the competitively bid contract. The bid included connections to the existing pipe. Fusible PVC® pipe is compatible with standard ductile iron mechanical joint fittings and provided significant cost savings at the reconnection locations. These savings along with the borehole savings for the installation were especially clear on this project because the contractors were required to provide separate pricing for the Fusible PVC® pipe and HDPE pipe alternates. Not only was Fusible PVC® pipe less expensive than HDPE, it also allowed the county to maintain consistency with the AWWA C900 PVC piping that they already have in their system.

This project demonstrates the steadily increasing use of HDD as a means to cross sensitive areas with utility installations. HDD and Fusible PVC® pipe were effective at minimizing disruptions to the creek and the surrounding wetlands. With the increasing number of experienced drilling contractors, engineers and end users regularly specifying HDD methods, HDD construction and Fusible PVC® pipe have become an economic alternative for more and more projects.

“Fusible PVC® pipe performed well on the project and is performing well today (five years later).”

*Joe Haxton, Utilities Manager
Queen Ann's County Sanitary District*

“By using Fusible PVC® pipe, we were able to downsize the borehole significantly. This was a great cost advantage on the project.”

*Mike Kalvaitas, President
Drill-Tech Incorporated*



Fusion set up for Fusible PVC® pipe



Bore path under Cox Creek along MD 18



Preparing the insertion pit for the Fusible PVC® pipe at the end of the borehole

Underground Solutions, Inc. provides infrastructure technologies for water, wastewater and power cable conduit applications. Underground Solutions' Fusible PVC® pipe products, including Fusible C-900® pipe and FPVC® pipe, utilize patented technology to produce a fused monolithic, fully-restrained, gasket-free, leak-free piping system ideal for trenchless (horizontal directional drilling, pipe bursting and sliplining) or conventional "open-cut" installations and are available in 4-inch to 36-inch diameters. The combination of standard fittings and lower weight with higher flow for a given pressure class versus other thermoplastic pipes ensures that Fusible PVC® pipe brings greater economy to most pipeline projects.



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