



16”-36” Chimera Inspection Tool

- Potable Water & Raw Water
- Wastewater
- Industrial



Overview

[The Chimera Remote Field Testing \(RFT\) tool](#) in [PICA’s Advanced NDT service solution](#) is a high-resolution tool for inspecting water and wastewater pipelines for clients who need actionable information about the condition of their critical infrastructure. With the reliable details about the condition of their pipelines, asset owners can make informed decisions about repair, replacement, or life-extension options for their pipelines.

The Chimera tools employ an articulated mechanical design that gives them flexibility to navigate elbows. The hard diameter of each tool is slightly smaller than the ID of the pipe to allow for protrusions, lining, and scale. Centralizers maintain a uniform annulus between the tool and the pipe.



The tools can be directly loaded into the pipeline through a manhole or an open pit, or they can be inserted through a manhole in smaller modules and assembled inside the manhole chamber. The Chimera tools can either be tethered on both ends and winched through pipeline sections up to 6,000 feet or where conditions allow, they can be deployed in a free-swimming mode and travel longer distances between access points.

Project Snapshot

- Where: Central USA
- What: 30-inch DI Water Transmission Main inspection
- When: 2015
- How: Tethered over multiple sections
- Why: History of localized corrosion; client wanted prioritize repair, delaying full replacement
- Distance: 5 Miles



Details

The owner of a five-mile, 30-inch Ductile Iron transmission water main in Missouri identified the main as a priority for condition assessment. The pipeline has a history of localized corrosion and had been scheduled for replacement. PICA was brought in to perform a high-resolution direct condition assessment utilizing the Chimera inspection tool.

The pipeline was dewatered, divided into 12 sections (ranging in length from 470' to 3,400') and the inspection tool was pulled through each section using winches. A total of 1,040 pipe segments were analyzed, with information regarding wall loss indications' axial and circumferential location and defect depth provided. Certain areas were flagged for immediate repair, and verification work was performed to validate the results of the inspection report.

The customer determined that 10% of the main required replacement within 1-2 years, another 10% required replacement by 2019, and the remaining 80% could be replaced in 2025. Following this replacement schedule, the client estimated a savings of over \$1.8M after all inspection, construction and repairs costs were included, compared to the cost of an immediate full replacement.

