

WATER SYSTEM SERVICES

OPTIMIZING PIPELINE
INFRASTRUCTURE WITH
**TURNKEY TRENCHLESS
SOLUTIONS**



**NATIONAL WATER
MAIN CLEANING**

A Carylton Company

MISSION-CRITICAL FOR TODAY'S UTILITIES: **PROACTIVE PIPELINE MANAGEMENT**

It's a ticking time bomb: A water main bursting. A pipeline compromised. The results can be catastrophic. And the danger is only growing worse as water utilities deal with an aging water distribution infrastructure and ever-tighter budgets.

Averting crisis with turnkey trenchless solutions:



At National Water Main Cleaning, part of the Carylton Corporation, we understand what water utilities are facing. With over 50 years of experience employing trenchless technology, we work side-by-side with utilities and municipalities to deliver cost-effective, reliable turnkey solutions.



We have the tools, technologies and expertise to quickly determine what part of your clean water pipeline needs to be repaired or replaced. And, unlike companies that only do the diagnostics and make you look elsewhere to prepare the pipeline for assessment, National Water Main Cleaning has everything you need to complete the entire project.

Single-source, simpler process

National Water Main Cleaning is your go-to, start-to-finish resource for more efficient pipeline asset management. Our comprehensive 360° skill-set ensures:

- Less administration time
- Greater control
- No issues coordinating multiple vendors



RESTORATION

360° SOLUTION FOR PIPELINE INFRASTRUCTURE

What we
do:

ASSESS
INSPECT
CLEAN
RESTORE

What you
can do:

PREDICT
PREVENT
PROTECT
PRESERVE

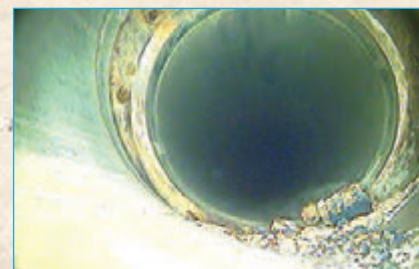
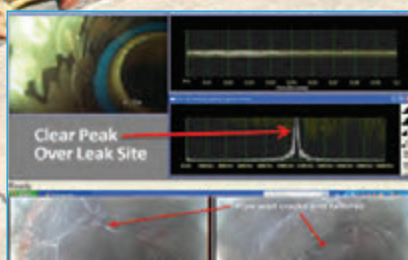
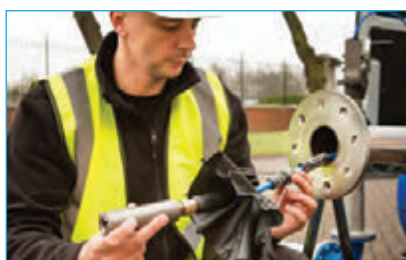
PIPELINE DIAGNOSTICS AND ASSESSMENT

GOING DEEP TO DELIVER ACTIONABLE INTELLIGENCE

To get into tight spaces deep underground, National Water Main Cleaning deploys unique inspection technologies designed to identify indicators of distress in pipeline infrastructure. Our pipeline condition assessment technologies give the pipeline owner the critical intel they need to make smart risk/reward decisions about infrastructure renewal.

Assessment data includes:

- Internal condition of the pipe
- Structural defects
- Leak detection
- Tuberculation or encrustation
- Operation of in-line valves
- Water quality and turbidity
- Pipe wall thickness





A full suite of assessment technologies*

Live Water Main Insertion

Provides Closed-Circuit TV (CCTV) views using high-powered sondes in either tethered or free-flowing options to pinpoint location coordinates

Three-step process gets to the source of the leak:

1. Visual Assessment (CCTV)
2. Acoustic Leak Detection (Hydrophone)
3. Precise Location (Sonde)

Remote Operated Vehicle (ROV)

Crawls pipeways to give an interior survey of pipeline condition

Digital Couponing

Assesses pipeline wall thickness without the need for excavation

External Wall Thickness Testing

- Ultrasonic
- Radiography

Coupon Extraction and Analysis

Provides material testing data

Transient Pressure Monitoring

Analyzes pipe wall fatigue

Geographic Information System (GIS) Mapping

Precise asset condition assessment mapping over long distances

GPS – Survey Grade

- Accurate location surveys of hydrants, valves, alignment, defect, taps and sonde locations
- X,Y,Z mapping of pipelines

*National Water Main Cleaning follows the Centre for the Advancement of Trenchless Technologies' standard for condition assessment coding.

CLEANING PIPES OPTIMIZES DIAGNOSTICS AND PERFORMANCE

There are five important reasons why it's critical to clean a pipeline:

1. Condition Assessments:

Prior to a condition assessment, it's critical to clean pipe build-up in order to insert internal pipe diagnostic tools.

2. Hydraulic Efficiencies:

Cleaning restores the hydraulic efficiencies of the pipe, improving carrying capacity.

3. Lower Pump Pressure:

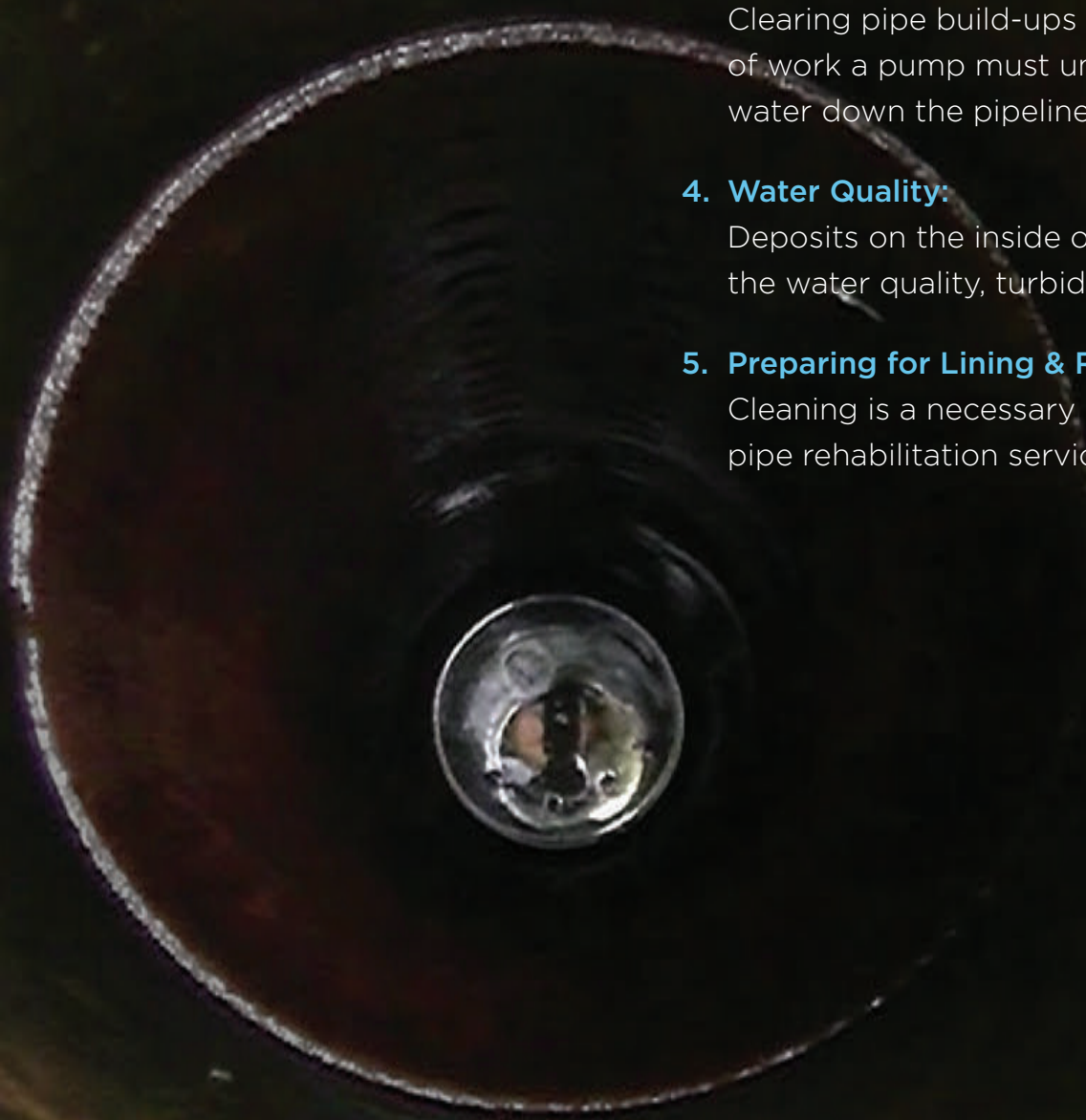
Clearing pipe build-ups reduces the amount of work a pump must undergo to transmit water down the pipeline.

4. Water Quality:

Deposits on the inside of a pipeline can affect the water quality, turbidity and taste.

5. Preparing for Lining & Repairs:

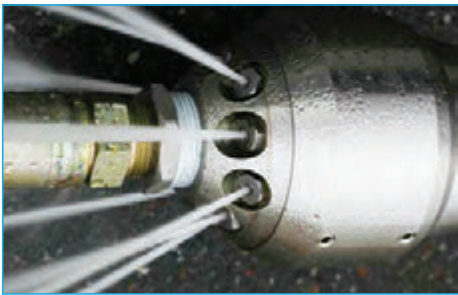
Cleaning is a necessary step prior to any pipe rehabilitation services.



Your choice of cleaning options

Whatever the application, National Water Main Cleaning has best-in-class cleaning technology to get pipelines clean—no matter how tough the deposits.

Jetting



Jetting is the process of using a high-pressured flow of water to scour the interior surface of a pipe to remove scale or other debris that's built up over time.

Key Jetting Benefits:

- Easier access planning with cut-ins
- Less water, especially if recycling water
- Track progress with hose length

Pigging

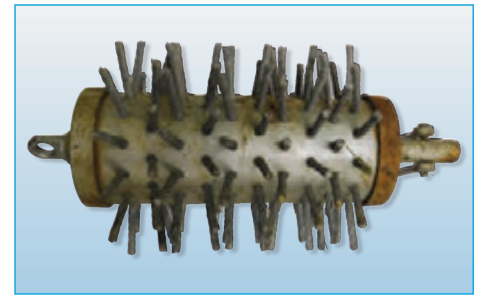


Pigging is a process that cleans and removes debris on the inside of the pipe using a device called a pig that's propelled through the pipeline by the normal water flow. Pigs are usually cylindrical or spherical to aid movement and cleaning efficiency.

Key Pigging Benefits:

- Less expensive equipment
- Ability to clean very long piping runs (up to a mile in one run)

Scraping



Scraping is a mechanical process in which a device is pushed or pulled through a pipeline to remove built-up deposits on the pipe wall. Because scraping cleans a pipe down to bare metal, this process should always be accompanied by a pipe lining method to prevent accelerated corrosion.

Key Scraping Benefits:

- Can remove the hardest of pipe deposits for long-term, effective cleaning
- Doesn't rely on water pressure or pipe flow

REVITALIZING AND RESTORING YOUR PIPELINE ASSETS

Extending the useful life of your pipeline infrastructure is a critical component of effective asset management. The National Water Main Cleaning team has deep expertise strengthening the pipe structure and repairing broken or leaking underground water lines.

Fold and Form Lining

This process allows for in-place rehabilitation without pipeline excavation. Fold and Form liners offer a flexible lining solution for trenchless rehabilitation of pressure pipes.

- Fold and Form liners are self-supporting and not bonded to the host pipe
- Liners reduce risk during installation and have a smaller environmental footprint
- Installation is a fairly simple process that involves using a winch to pull the liner through the existing host pipe from one pit to the other



Spray-On Lining

This service uses either a spray-on epoxy or pipe lining fabric soaked in epoxy to restore the potable water lines.

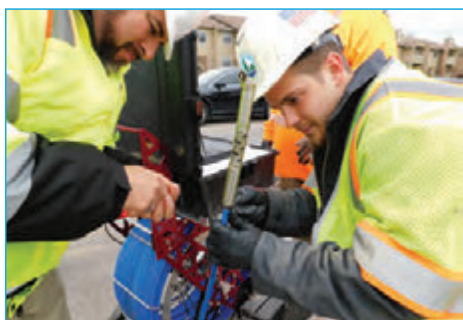
- Can be used to reline large diameter pipes up to 60"
- Does not require pipe excavation or above-ground street renovation





LOOK TO THE EXPERTS

LEADING THE WAY IN ENVIRONMENTAL INFRASTRUCTURE MAINTENANCE



From pipe diagnostics and assessment, to cleaning and rehabilitation, National Water Main Cleaning's total turnkey approach can help water utilities like yours predict and prevent water main asset failure and better plan for the future. We specialize in the inspection and planned maintenance of water mains, giving you the knowledge and data you need to optimally operate your system and prevent backups and breaks.

Guaranteed to get the job done right

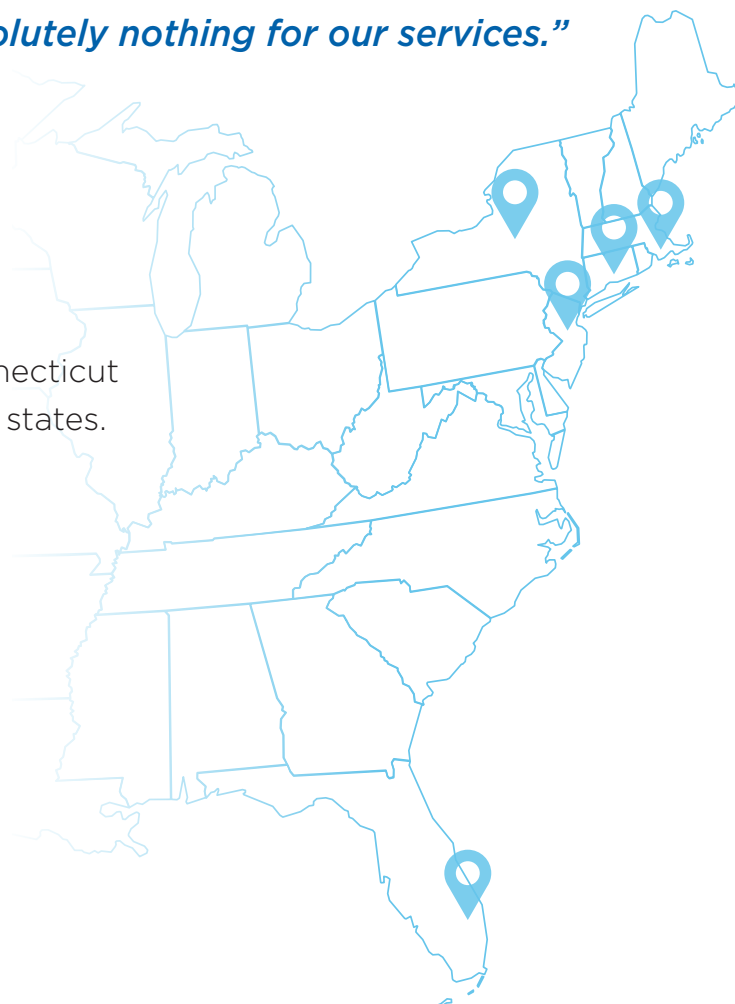
As part of the Caryl Corporation, a nationwide collection of 14 best-in-class companies, we have the resources and expertise to quickly, safely and correctly maintain your environmental infrastructure and back them with a guarantee that is unmatched in the industry:

"You must be satisfied or you pay absolutely nothing for our services."

Coast-to-coast capabilities

National Water Main Cleaning has offices in New Jersey, Massachusetts, New York, Connecticut and Florida with the ability to service all 50 states. Learn more and contact us by visiting:

www.nwmcc.com



NATIONAL WATER MAIN CLEANING

IS ONE OF THE CARYLON COMPANIES

The Carylon Corporation is the nation's leading expert in environmental infrastructure maintenance. Our best-in-class regional operating companies offer specialized services in sewer system maintenance, water supply maintenance and soil/sludge remediation to maintain critical environmental infrastructure.

Today, from locations throughout the United States, Carylon offers the most comprehensive environmental maintenance services.



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