PICA

Pipeline Inspection and Condition Analysis Corporation

PICA's Head Office

4909 – 75 Avenue
Edmonton, AB T6B 2S3 Canada
1.800.661.0127
info@picacorp.com
www.picacorp.com

PICA Corporation

Pipeline **I**nspection and **C**ondition **A**nalysis

PICA is a part of the Russell Group. Russell NDE has been building In-Line Inspection Tools for over 35 years and is a pioneer in the industry. PICA is the service branch for the Russell tools and is responsible for inspecting Water, Wastewater and Slurry Pipelines

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Municipal Pipeline Asset Management

PICA Services

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Large Toolbox for Condition Assessment

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PICA Services

Asset Management - Meeting the Challenge

Objective: To explore the use of advanced pipe condition assessment technologies in achieving your infrastructure management needs.

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PICA Deliverables

- proven advanced technology
- pipe condition surveys: fast and reliable
- enhanced asset management planning ability
- proactive system repair or rehabilitation knowledge
- maximizing use of capital improvement funds
- improved pipe life cycle and performance

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The “Real” Deliverables

- improved water customer service performance
- efficient use of water, energy, manpower, $
- improved risk control - all management levels
- enhanced regulatory compliance & recognition
- substantial operations and capital cost savings

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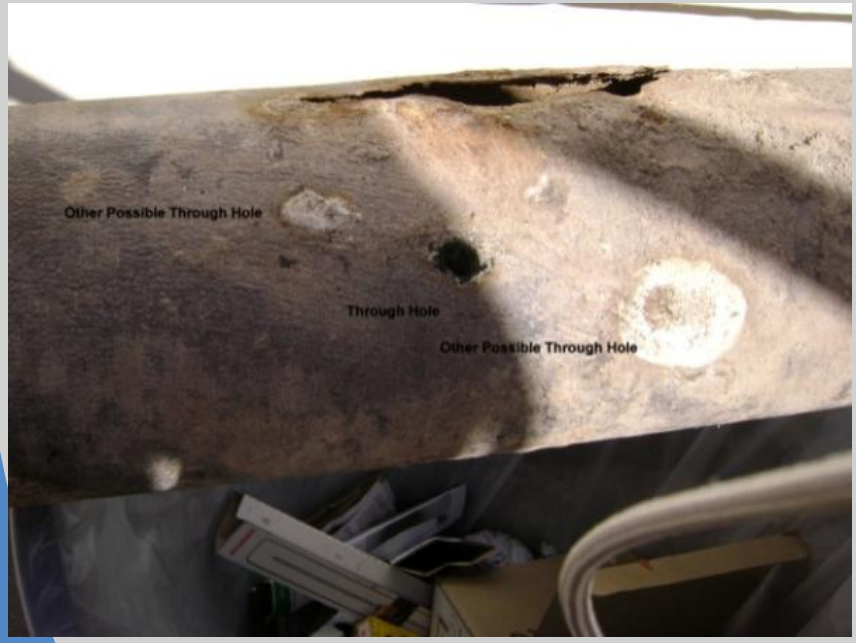
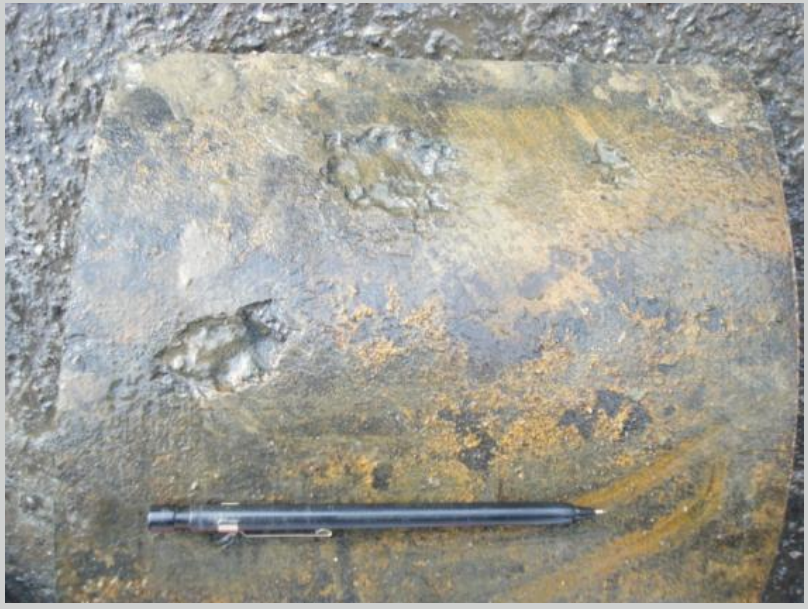
Why Condition Assessment?

- Focus on Infrastructure that is reaching its lifespan
- Decisions when to repair a pipe – avoid too early, avoid too late
- PICA can help to make decisions on when to fix a pipe





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Why Condition Assessment?

Replacing a pipe too early

• Consider a 30 year old pipe. Is it time to replace? 75 years old? 100 years old?

•Pipes interact with their environments differently due to material and manufacturing process; high levels of moisture or corrosive soil; and, deeply submerged or under heavy stress? These factors and many more contribute to each pipe's longevity.

•Some 30 year old pipes are dangerously near the end of their useful life, while some 100 year old pipes are still going strong. Replacing a 100 year old pipe that is still in good condition wastes money that could be spent on those 30 year old pipes.

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Why Condition Assessment?

Replacing a pipe too late

What happens when you wait too long to replace a pipe? It's not hard to guess that the consequences are very costly, both monetarily and socially.

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Why “Direct” Condition Assessment?

•Direct measurement of remaining wall thickness is the only reliable way of assessing the true condition of a pipe. It is an essential component of any Asset Management Plan.

•It allows for more accurate long-term budgeting. You can find leaks before they happen and help prevent massive fissures and bursts.

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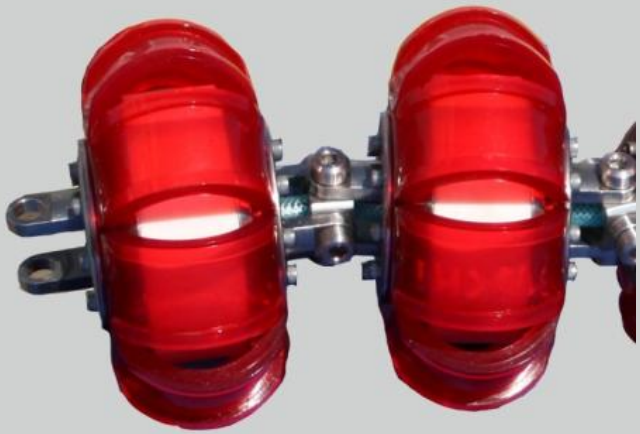
Typical HydraSnake Tool

The HydraSnake Advantage

•PICA's Condition Assessment Program utilizes the HydraSnake and other In-Line Inspection tools to help you discover your infrastructure's durability.

•The ability to make informed decisions regarding repair, rehabilitation or replacement allows budgets to be stretched further.



Decisions can now be based on the **ACTUAL CONDITION OF THE PIPE**, not just speculation.

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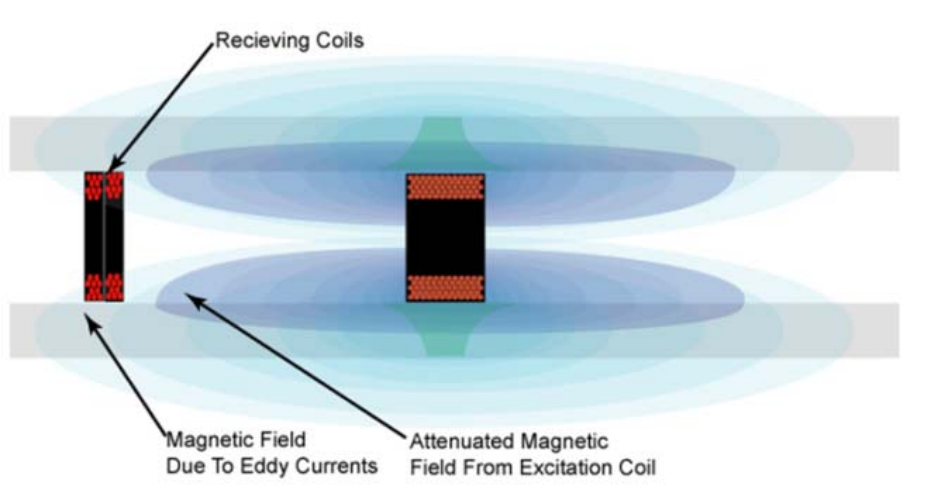
Large Canadian Cities have embraced PICA technology

The HydraSnake Tool

•The HydraSnake is an electromagnetic In-Line Inspection tool that uses Remote Field Technology (RFT) to directly measure the remaining wall thickness of pipelines.



•The tool is equipped with an exciter module that emits an AC electromagnetic field.

•This field energy passes through the pipe wall, travels along the longitudinal axis, re-enters the pipe and is received by a detector array.

•Each detector in the array measures the wall thickness, creating a colour map of the pipe integrity.

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The HydraSnake Tool Capabilities

•The tool itself is rugged and reliable. Its flexible design allows the HydraSnake to navigate a wide array of pipe features: 90° elbows, tees, valves, sleeves, and more.

Detects:

- Corrosion
- Wall Thinning
- Cracks
- Pitting
- Graphitization
- Valves, Elbows, Tees
- Flanges, bends
- Stressed areas

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HydraSnake Tool Applications:

- PICA's clientele include operators of:
  - Water lines
  - Wastewater lines
  - Firewater lines
  - Cooling water lines

- Whether the pipe is lined or scaled, the HydraSnake is still able to deliver high-quality data.

- For use in ferrous pipe:
  - Cast Iron
  - Ductile Iron
  - Steel

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The HydraSnake Inspection Process (for distribution mains)

STEP 1: Prepare the Line

- Replace the Hydrant with Hydrant Adapter
- Isolate the pipeline to be inspected
- Swabs and Balls are sent through the line to help remove scale and prove safe passage of the tool
- The pipe wall does NOT need to be perfectly clean for the HydraSnake to be successful.

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Typical Watermain Condition

HydraSnake can tolerate this much scale

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The HydraSnake Inspection Process (for distribution mains)

STEP 2: Load the HydraSnake

- A hydrant adapter allows the tool to be inserted into the line
- Trenchless access to the line saves clients time and money
- The tool is attached to the winchline and the odometer is set to zero

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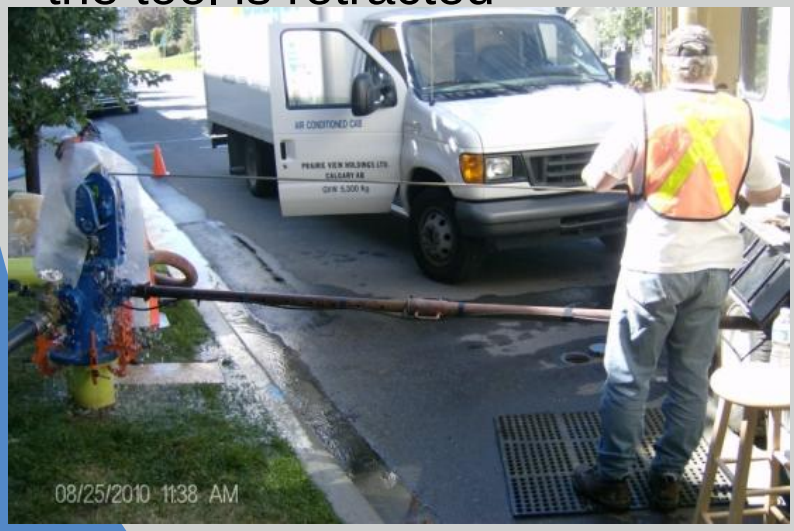
The HydraSnake Inspection Process (for distribution mains)

STEP 3: Inspect the Line

- Water is used to propel the tool down to the far end of the inspection area
- Upon reaching the end, the water flow is switched off, the winch is engaged and the inspection begins as the tool is retracted



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The HydraSnake Inspection Process (for distribution mains)

STEP 4: Download Data

- The HydraSnake is removed from the hydrant adapter
- The tool's data is download onto a computer, where analysis can begin
- Flush the line, test the water and demobilize

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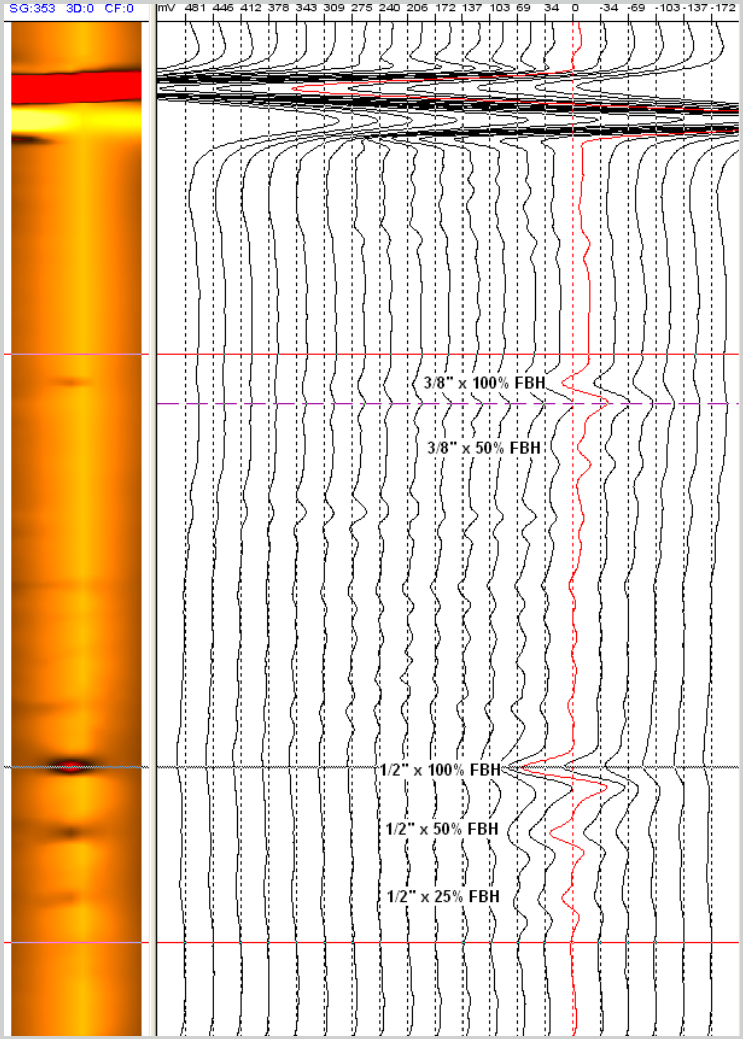
The HydraSnake Inspection Process (for distribution mains)

STEP 5: Analysis

- PICA takes the data from the inspection and uses its analysis program, AdeptPro, to analyze the pipe that was inspected.
- The analysis is presented in a user-friendly format, helping clients make informed decisions regarding replacement, repair or rehabilitation



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Past HydraSnake Projects – "PICA Around the World"

The HydraSnake technology has been used around the world. Some locations of previous inspections include:

- Canada
- U.S.A
- Australia
- New Zealand
- Holland
- U.K.
- Norway
- China

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Past HydraSnake Projects

PICA's work with The City of Calgary provides a good overview of a typical inspection project.

Project Schedule: 2 weeks
Total distance inspected: > 4 km
Longest inspection: 835 m
Pipe Diameter: 6" nominal
Pipe Material: Cast Iron, Ductile Iron

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The SeeSnake

PICA offers a range of non-tethered (“free-swimming”) In-Line Inspection tools. One such tool is the SeeSnake.

The SeeSnake is an excellent tool for inspections over longer distances.

- Longest Run to date: 27 km
  - The SeeSnake is a free-swimming tool, not limited by the length of a winchline
- Tool sizes: 4” to 28”
- Applications: Water Mains, Force Mains, Fire Water lines, Slurry lines. Transmission lines.

6” SeeSnake™

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A SeeSnake Tool is prepared for launch into a Potable Water Main in Hong Kong
Dec 2010

See Snake Fabrication

Tools are designed and manufactured in Canada

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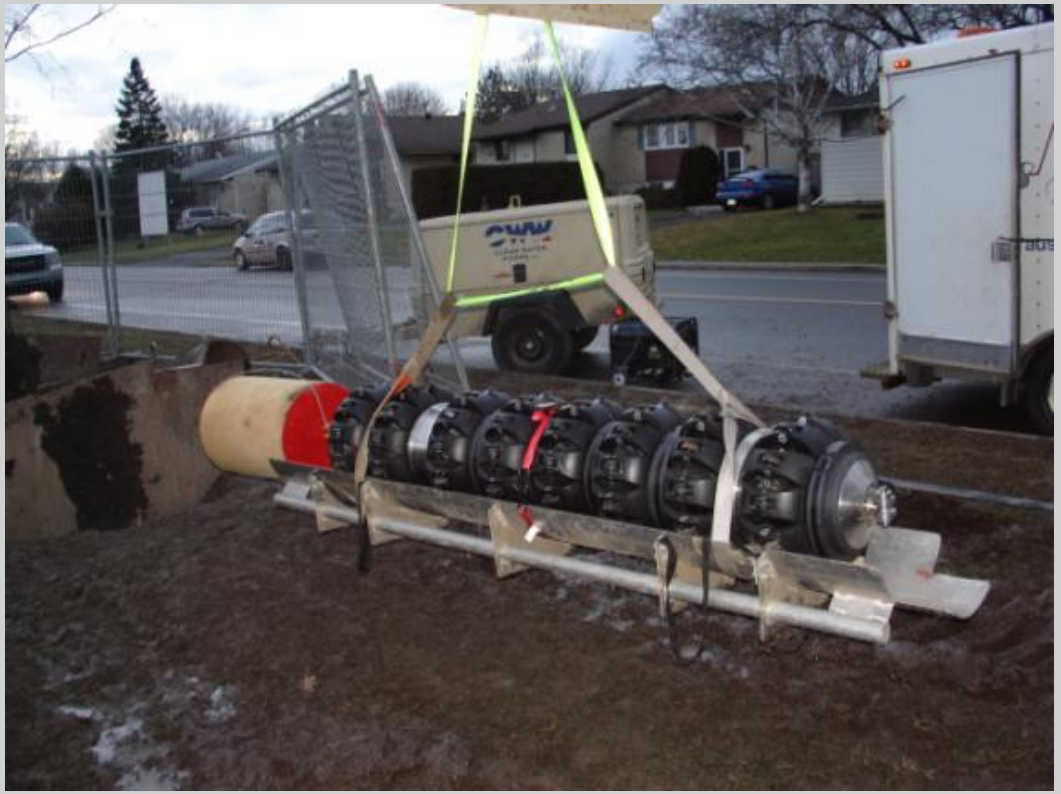
Force Main Inspection in Ottawa



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Conclusions:

•Direct Condition Assessment (DCA) is an essential component of a pipeline asset management plan.

•HydraSnake and SeeSnake Tools can provide cost effective direct condition assessment.

•Effective decisions start with the best information

•If you are not using DCA, how do you know if you are replacing too soon?

Why not let PICA help you to make informed decisions …

Thank you! ….. Questions?

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