

Pressurised Pipe Assessment Educational Training



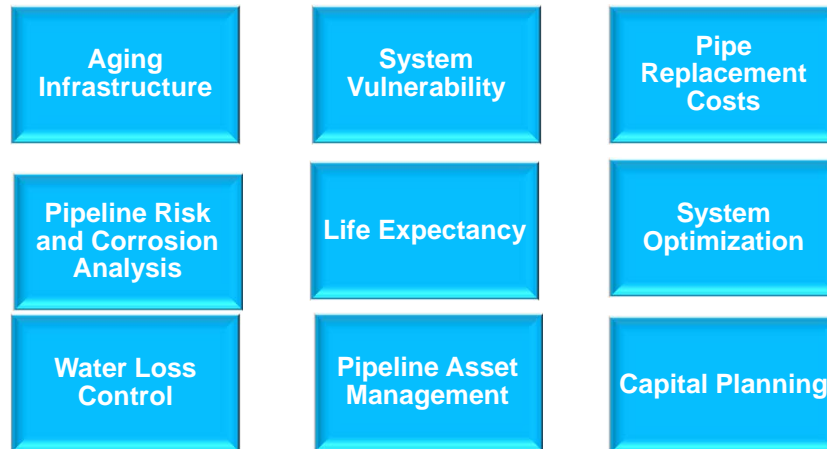
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I need your attention so please - LISTEN



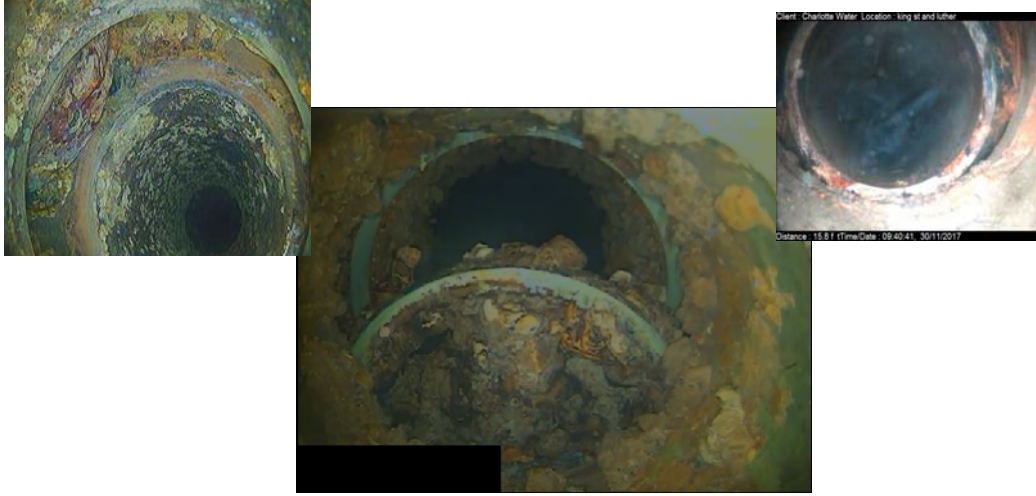
Pipeline Diagnostics Key Drivers That Need Solutions



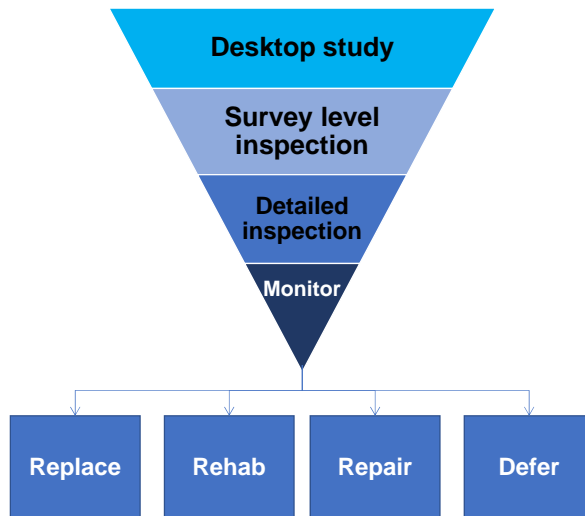
Benefits of Pipeline Inspection

- Visual Pipe Wall Condition Assessment
- Leak Detection – All pipe materials
- Line Location – Non Metallic Pipe – no tracer wire
- Access through existing system assets
- Verification of Pipe Type and Condition
- Verify Valve Operation and Position
- Valve Location
- Hydrant Lateral Inspections
- Pre and post rehabilitation verification
- Pipe Wall Thickness
- Screening tool for a higher resolution
- CIP Prioritization
- Capital Expenditure Decisions
- Informed remediation strategy
- No interruption to supply
- Location of Corrosion

A PICTURE IS WORTH A THOUSAND WORDS



Pipe Diagnostics Process



In Line Leak Detection

That can be performed with this technology



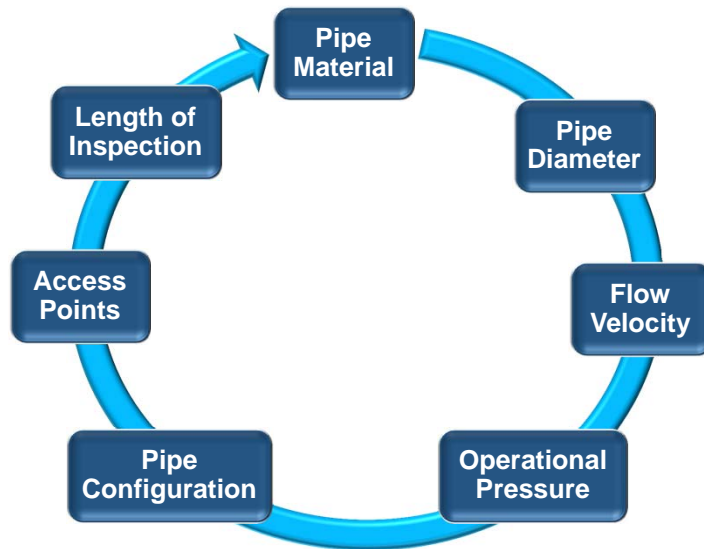
- All Pipe Materials
- All Pipe Diameters (15psi)
- Complex Situations (River crossings/Railroads/Highways)
- No limitations caused by:
 - Non Metallic Pipe
 - Larger Diameter Pipe (15psi)
 - Excessive Ambient Noise
 - Unavailable appurtenances
 - Air Pockets
 - Pipe Material Changes
 - Outside radio interference (Power Lines)
 - Distance between access points

Understanding the Client

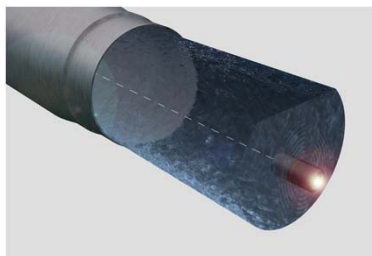
- High Incidence of Leakage
- Complex Environment
- Critical Pipes
- Unknown Pipe Location
- Restricted Flow Conditions
- Low Operational Pressure
- Corrosion Condition
- Inconsistent Pipe Materials
- Location of valves
- Valve Status
- Compromised Fire Flows
- Suspected Blockages
- Customer Complaints/Negative Media
- Inaccurate GIS records
- Replacement Costs



Understanding Your Clients System



Pipeline Diagnostics Types of Insertions



Untethered

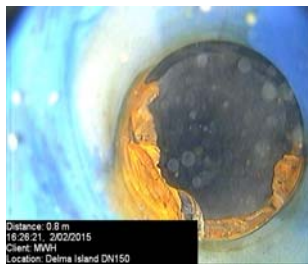


Tethered

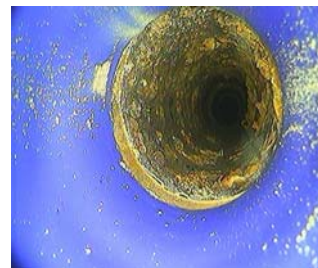
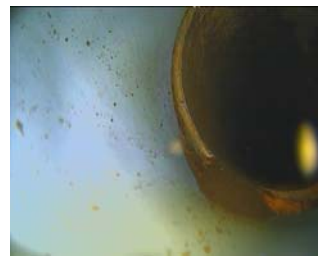
Tethered Inspection

Advantages	Disadvantages
Increased Operational Control	Cable length does not equal inspection distance
Real Time Inspection	Tuberculation
Ability to focus on points of interest	Bends/Laterals
Reduced risk	Elevation Changes
Sonde – Accurate leak location/pipe tracing on non metallic	Obstructions
One access point	Butterfly Valves
	Multiple Insertion Points
	Flow must be optimum along inspection

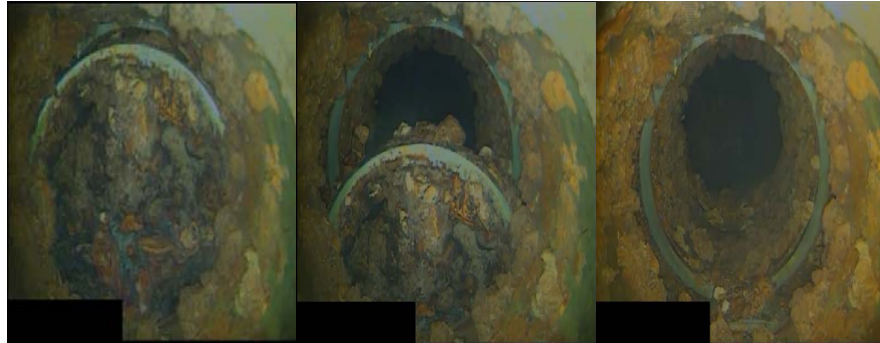
Pipeline Diagnostics



- Valve & Pipe Corrosion
- Pipe Material Changes
- Identification of unknown assets
- Illegal Connections



Pipeline Diagnostics Valve Status Verification



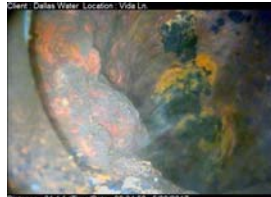
Closed

Partially Open

Open

Pipe Diagnostics Example Pipe Defects

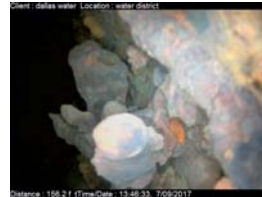
(8-in CI Pipe)



Offset @ Lateral Iso Valve



Exposed Joint @ Tee



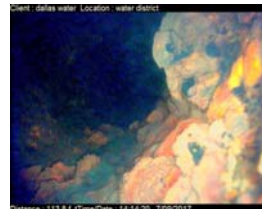
Excessive Tuberculation



Tuberculation @ Tee



Mainline Tuberculation



Stop Survey – Too Small

Pipe Diagnostics Example Pipe Defects

(8-in Cast Iron)



6-in Hydrant Lateral



8-in Mainline



8-in Mainline Hea



Unknown Obstruction

Target Markets



Water Utilities
Municipal
Private

Campus Environments

Military/Navy Bases
Universities
Hospitals
Airports



Industrial

Chemical Plants
Oil Refineries
Power Plants
Natural Gas





**Its not always what you say you can GUARANTEE but what
you say you can actually DO**





QUESTIONS?

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