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Case study
Inline leak inspection

Safeguarding water supplies with SmartBall®

Town of The Blue Mountains tackles the hidden challenge of water loss with inline leak inspection services.

The Town of The Blue Mountains is an adventure hub in southwestern Ontario, Canada where hills meet tranquil shores. This fast-growing community must fulfill the water demands of a population that triples in size during peak seasons. To support growth and seasonal tourism, the town is not only increasing the capacity of their system but also optimizing its performance.

In 2020, real water loss in the town's network peaked at 27 percent. Leaks were undermining the town's critical water conservation efforts. Recognizing the urgency of the issue, the town is deploying innovative solutions to combat water loss and ensure a sustainable water supply.

The challenge

The Town of The Blue Mountains operates about 150 kilometers of water mains. One of the most critical pipelines in their network is a 350- to 400-millimeter trunk water main made of PVC and ductile iron pipe. This pipeline is essential for providing both drinking water and firefighting capabilities to the eastern part of town. With limited storage in the eastern area, a significant failure could have catastrophic outcomes for the community's safety and water supply.

Following the shoreline of Nottawasaga Bay, the pipeline runs within 1 kilometer or less of the water along much of its route. Leaks can easily escape detection as water seeps directly into the bay without surfacing. Compounding the challenge, traditional leak detection methods have proven insufficient due to the pipeline's depth. These factors underscored the need for an advanced solution that locates leaks with precision.

The solution

To address these challenges, the Town of The Blue Mountains partnered with Xylem to perform an inline leak inspection with the SmartBall® platform. The tool listens for leaks and air pockets using acoustic technology. Unlike traditional above-ground listening devices or acoustic correlators, SmartBall operates within the pipeline, positioning it closer to the source of potential leaks. The tool provides highly accurate insights, typically locating leaks within 1.8 meters.

Client
Town of The Blue Mountains

Challenge
Address water loss by locating hard-to-find leaks on a critical water main

Solution
SmartBall® inline leak inspection

Result
Pinpointed four leaks in under seven hours, helping to safeguard the town's infrastructure and water supplies

> “Detecting leaks in deeply buried pipelines near the shoreline has posed a unique challenge for us. With SmartBall, we were able to address water loss more efficiently and more accurately.”

Rob Gilchrist, Water Supervisor at Town of The Blue Mountains

SmartBall insertion at the pump station

In just under seven hours, Xylem successfully inspected a 9.6-kilometer section of the trunk water main. Leveraging existing access points, the team inserted the tool into the pipeline at a pump station and extracted it from a hydrant.

Xylem tracked the free-swimming SmartBall throughout the inspection, enabling just-in-time closure of multiple offtakes along the pipeline. Remote tracking also improved safety by minimizing the need for personnel to work in the right-of-way of a busy highway.

This efficient and non-invasive approach enabled the town to assess the trunk main without disrupting water service. Compared to traditional methods, the inspection provided significantly more accurate results using fewer staff hours.

The results

SmartBall identified four leaks contributing to the town’s water loss. The tool also detected three acoustic anomalies — sounds that resemble a leak but aren’t definitive. When a local residence reported low water pressure, the town investigated and determined that one of these anomalies was, in fact, a leak on a service connection between the curb stop and private lateral.

The inspection results provide critical insight into the water main’s condition. Leak detection is an effective screening approach, especially for smaller transmission mains made of plastic and metallic pipe like Blue Mountains’ trunk water main.

Repairing the leaks will protect the main from future failures. Additionally, reducing water loss will lower the cost to deliver water, conserve energy, and keep Blue Mountains’ system secure. This proactive approach bolsters the resilience of critical infrastructure and water supplies for residents and seasonal visitors alike.

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Let’s Solve Water