

# NORTHUMBRIAN WATER SUCCESSFULLY TRIALS LEAKNAVIGATOR



## THE CHALLENGE

Northumbrian Water, serving 2.7 million people in north-east England, aims to reduce leakage by 8% in AMP8 (2025-30) and 55% by 2050. Their 2024 Water Resources Management Plan highlights innovation and new technology for faster leak detection. To prepare for AMP8, the company is conducting feasibility studies and trials, including one with Ovarro, to guide future leak detection investments.

In November 2023, Northumbrian Water partnered with technology company Ovarro to trial LeakNavigator, an end-to-end, fixed-network leak detection service. The three-month trial covered the Fish Quay district metered area (DMA) in the town of North Shields, which serves nearly 1,400 properties via 17km of water main. Northumbrian Water set a target for the trial to achieve a historic nightline minimum of 7.6m<sup>3</sup>/h, maintaining this level after project completion.

## THE SOLUTION

The LeakNavigator package includes a fully-managed analytics platform, Ovarro's Enigma leak noise logger and expert leakage analysis. It identifies points of interest (PoIs) and alerts technicians via a mobile app, reducing in-house data analysis.

In Northumbrian Water's trial, 36 Enigma3-BB and Enigma3hyQ loggers were installed, known for their ease of deployment and effectiveness on plastic pipes. The Enigma3hyQ fits on hydrants or valves, while the Enigma3-BB installs in meter boxes, improving network access. Following additional training, technicians quickly increased leak detection, particularly on difficult-to-detect plastic pipes.

Five sizeable leaks were found during the trial, with a conversion rate of 80%. They included a major leak found on an 8-inch (203mm) PVC water main.



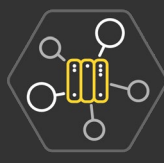
Enigma3BB with Hydrophone



WATER



MONITORING  
& CONTROL



RTU'S



# RESULTS

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Northumbrian Water's normal detection techniques for the DMA had not found the leak, which was estimated to have been running for approximately 12 months. Flow data shows the leak was losing at least 5.5l/sec water, which is 475 m<sup>3</sup>/day, and would have amounted to 171 megaliters over 12 months.



“The purpose of the Ovarro trial was to understand what our options are to deliver leakage reduction in AMP8 and to explore the feasibility of permanent logging. For us, the technology was quick to deploy and proven to work, delivering excellent results.

Andrew Blenkarn - Northumbrian Water's technical policy manager



## OPERATIONAL BENEFITS

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A second large leak was found on a business customer's private pipe. Once both leaks had been repaired, the target nightline figure was achieved, and as of July 2024, had been sustained. Andrew Blenkarn, Northumbrian Water's technical policy manager, said: “I was particularly impressed that it found the big leak on the PVC main, which would not have been found otherwise. Leakage had been increasing for a while in this area and the leak had not been picked up by normal methods.

“Overall, we got down to the historic minimum level we were aiming for and had confidence that if any leaks did break-out in future, we would have been able to respond to them quickly, if the loggers were kept in.

“As leakage gets more difficult to drive down, permanent logging, particularly on plastic, becomes more of a viable option for the future. For Northumbrian Water, leakage will remain a big focus, and this is just the start of our efforts to drive down levels in AMP8.”

## KEY DELIVERABLES

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- LeakNavigator achieved leakage reduction targets successfully
- Five significant leaks were detected.
- Loggers improved detection on plastic pipes.
- Technician training enhanced leak identification speed.
- Historic nightline minimum target was
- Major leaks undetected by traditional methods.
- Permanent logging considered for future use.
- Trial supports long-term leakage reduction goals.

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