

# SOUNDING THE ALARM ON NON-REVENUE WATER AND RECAPTURING IT.

## Lost Water, Lost Money

It's bad enough when water loss happens naturally. With so little rainfall in 2007, the City of Atlanta came dangerously close to running out of water. Smaller towns in other drought-stricken areas had to truck in water for daily use.

When water is lost through *other* means – for example, a leaking pipe or incorrectly measured through outdated or faulty equipment – the problem is only compounded.

And unlike parched earth, which is easy to see, water lost from a buried main several feet below can go undetected for weeks, months, even years. A silent killer of revenue.

In the U.S. Southwest, where growing populations are straining already scarce water resources, water that *should* be there – but isn't accounted for – can lead to big losses in revenue. A 2006 study showed the estimated value of total water loss in Texas is between \$152 million and \$513 million a year.<sup>1</sup>

## The Best Protection is Detection

With its ARB® Utility Management Systems™, Neptune can not only give utilities more accurate readings – but can also help stem water loss through leak detection, tamper detection and reverse flow detection.

Neptune's innovative R900® radio frequency technology allows automatic transmission of crucial data, including water loss. Neptune's meter encoders – such as the E-Coder®R900i™, which integrates the R900 into the solid state E-Coder® register – make that data remarkably accurate; utilities routinely report read success levels above 99 percent.

## Sounding Off to Save Water

When combined with monitoring systems such as Permalog® leak noise loggers, R900 technology can transmit leak sound vibration information from water distribution mains and service connections, such as an alarm to signal a leak condition anywhere along the entire distribution system. In addition to the leak alert information transmitted via the R900, the Permalog unit has an integrated LED for manual inspection that flashes red to indicate a leak and green to indicate "no leak" status.

Enhanced output power allows the R900 to transmit the leak noise data from greater distances before it's collected using handheld, mobile or targeted fixed network data collectors. The data is then passed seamlessly into Neptune's Equinox™ software, where leak reports can prioritize leak surveys and correlation.

By combining the capabilities of the Permalog with the R900, the utility can now gather its leak monitoring data while reading its meters using Neptune's mobile AMR system. No need to purchase a separate reading system or send two crews to perform these functions.

Another benefit of combining the systems is the improvement in battery life. The battery of the typical Permalog can be expected to last five to seven years. By sharing power with the powerful D-cell battery in the R900, the battery life of the Permalog unit is expected to increase to ten to twelve years.

Not only can the leak noise be graphed, but E-Coder data indicating service leaks or reverse flow events can be correlated to main breaks and other distribution system events, helping to identify and resolve problems.

## Recovering the Revenue Stream

Water loss problems can be further broken down with Water Audit tools that have been developed by the American Water Works Association. The Water Audit method is used to determine the volume of losses throughout the system and by breaking these losses into their component parts, help identify the appropriate course of action for remediation.

Communities in water-scarce areas have recognized that difference, and some are taking strong measures to stop the flow of non-revenue water, requiring that building permits depend on the results of regular water audits.

Even in the Northeast, where water supplies are generally more reliable, the types of AMR technology and audit tools Neptune provides can help recapture non-revenue water. In older cities, aging infrastructure is a huge concern. By proactively identifying leaks and repairing old pipes, valves and meters, significant water and financial resources are saved.

Call it what you like: water sustainability, water conservation, water management. Communities have to address it – and with resources such as Neptune, what they find can be dramatic.

<sup>1</sup>Mathis, Mark, and McDonald, Brian. "An Analysis of Water Loss as Reported by Public Water Suppliers in Texas," Texas Water Development Board, 2006.



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