



SAAE Volta Redonda, Brazil

# Reducing Leaks in Brazil with AI-Aided Insights

How SAAE Volta Redonda uses Flowless' AI-aided insights to manage water loss

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recommended that leak managers consider establishing targeted leak reduction goals that are achievable based on the UARL metrics and to continually monitor these parameters to adapt strategies proactively. Would you like to explore more details on these trends or focus on a particular data point?






## From Raw Data to Actionable Insights: Tech Transition in Volta Redonda

Towards the end of 2024, we partnered with the water utility in Volta Redonda, Brazil to help address rising water losses in one of their most problematic zones—Aterrado III. Nearly third of the water flowing to that zone was being lost, and the team had no reliable way to see when or why it was happening.


We provided the utility with real-time pressure and flow monitoring, along with a simple platform to help their team make sense of the data. They didn't need new infrastructure or a larger workforce, just the tools to see clearly and act faster.

With visibility in place, their team was able to reduce losses, make pressure adjustments with confidence, and respond to leaks before they got worse.

The result: less losses, more control, and a shift toward data-led operations all driven by the holistic efforts of SAAE Volta Redonda's.



**SAAE Volta Redonda Cuts  
Water Losses by 1,260  
m<sup>3</sup>/Month, With Zero  
Additional Manpower**







## The Problem

Leaks were rising, pressure was unstable, and the team couldn't act fast enough.

Aterrado III was one of the highest-loss zones in Volta Redonda's water network. Nearly %31 of the water entering the zone wasn't reaching customers. Most of it was leaking silently, no visible bursts, no immediate alarms. Just steady, daily losses.

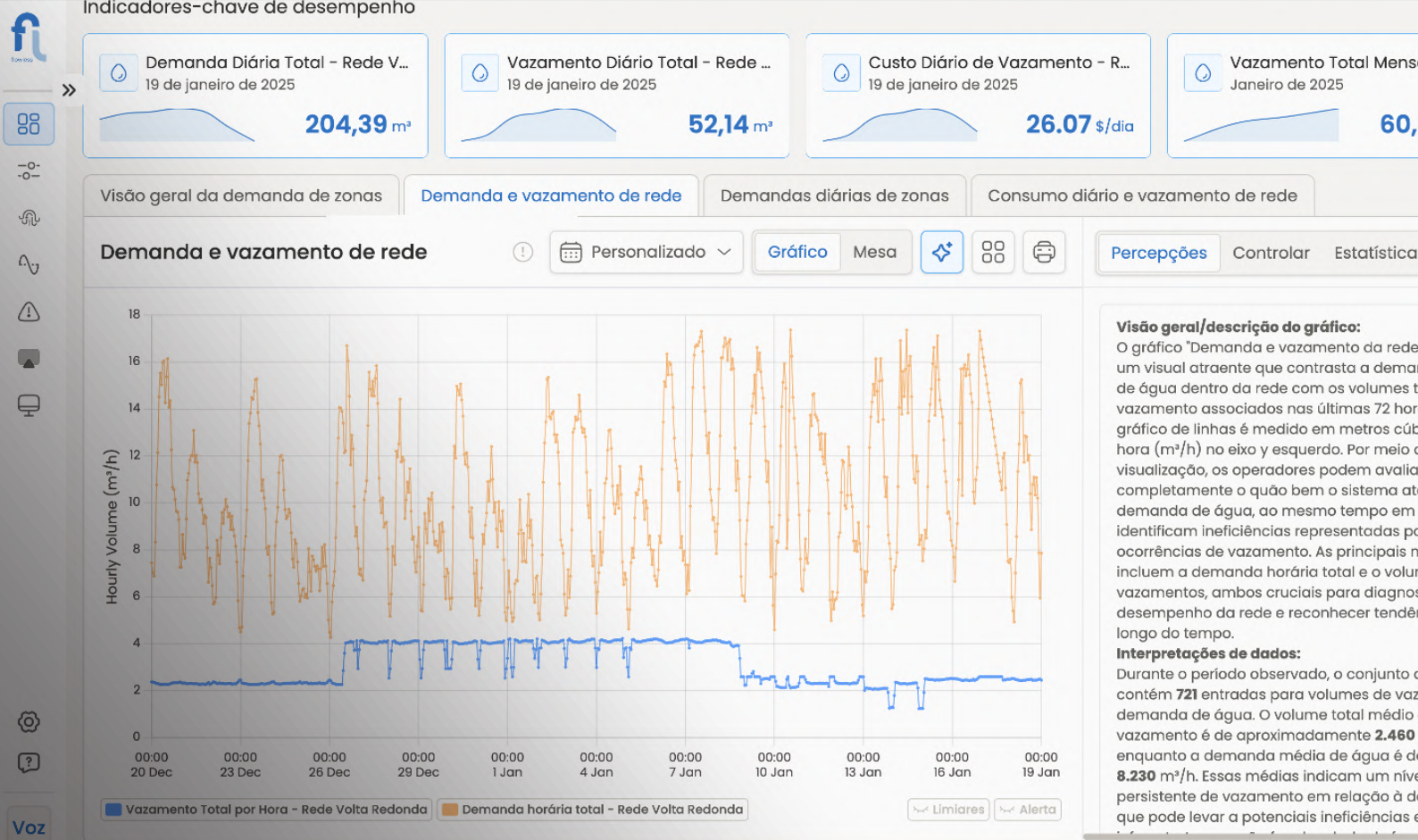
The team suspected that fluctuating pressure was making the problem worse, especially at night when demand dropped and pressure spiked. But without real-time pressure data, they couldn't be sure. There was no way to track how pressure behaved hour by hour, or how it was affecting leak volume.

Instead, they relied on routine checks, delayed customer complaints, and field crews responding after the fact. Pressure settings were based on trial and error. Leak continued to flow, and despite everyone's best efforts, SAAE Volta Redonda needed to find the solution.

They didn't need a full system overhaul, but they did need visibility. They needed to know what was happening inside the pipes, in real time, so they could act faster and stop wasting water.

The team had the experience. What they lacked was the insights to move with confidence.





## Data + AI = Tangible Impact!

SAAE partnered with Flowless to give its team the tools needed to manage leaks more effectively. Instead of adding staff or changing systems, the goal was to help the existing team act faster and with more confidence.

### What SAAE Did, & How Flowless Helped:

- ✓ Monitored pressure & flow in real-time using new sensors integrated with existing SCADA systems
- ✓ Used MNF-based analytics to quantify leaks
- ✓ Tested pressure scenarios safely in a digital twin model before applying changes in the field
- ✓ Adjusted pressure settings based on AI-generated insights to reduce unnecessary system stress
- ✓ Tracked the impact using automated dashboards and reports, without increasing field work

Flowless provided the platform, analytics, and training. But it was SAAE's operations team that applied the insights and delivered the impact.



# THE PARTNER THAT KEPT THINGS FLOWING

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As Flowless deployed its leak management solution at SAAE Volta Redonda, VIRTUOUS played a key role in making it work on the ground.

As Flowless' local partner in Brazil, VIRTUOUS worked closely with the utility to support setup, integration, and day-to-day coordination.

Their team helped connect the platform to existing systems, troubleshoot technical issues, and make sure the utility staff had what they needed to use the tools effectively.

With VIRTUOUS involved, we had fewer delays, fewer gaps, and a smoother path from installation to impact.



# The Process That Worked

Small steps, steady progress, real results.

From the first assessment in November to clear results by mid-January, the utility moved fast.

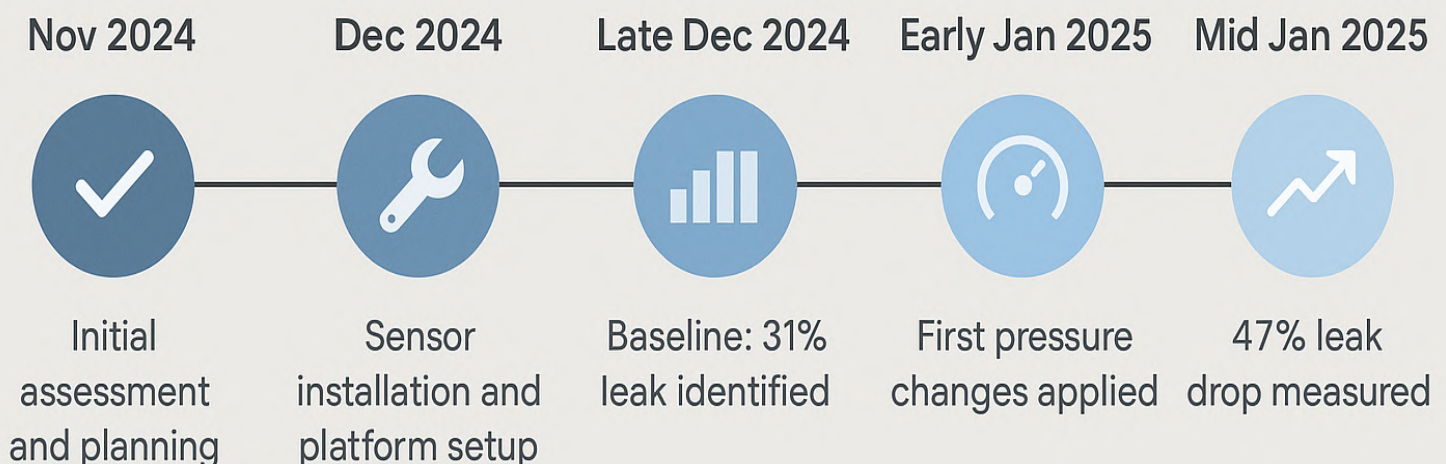
After installing sensors and connecting them to the Flowless platform in December, the team gathered baseline data showing %31 water loss in Aterrado III.

Within two weeks of applying targeted pressure adjustments in early January, daily leaks dropped by nearly half.

No extra staff, no major infrastructure changes just better visibility, quicker decisions, and measurable improvement.

## What Happened, When

From first installation to real impact — all in under two months.





## What Comes After Early Wins

SAAE Volta Redonda builds on what works, with better insight & long-term planning.

The results so far are solid, and the team doesn't stop there. They use what's already in place to keep improving operations across more of the network.

- ✓ They expand pressure monitoring and leak detection to new zones in 2025.
- ✓ More local staff use the Flowless platform directly and adjust pressure settings as needed.
- ✓ Monthly reports track pressure, leak volume, and savings to support decision-making.
- ✓ The team starts using data trends to plan maintenance before failures happen.

This next phase focuses on scale, not complexity. The tools stay simple. The team stays in control.





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## Let's Keep Solving Water Problems Together.

This case study shows what's possible when you have the tools to act. If you're ready to manage water smarter, we're here to help you do it with clarity not complexity.

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