

Managing Discolouration to Enhance Customer Experience

In recent years, UK water utilities have made significant advancements in decreasing the number of customers reporting water discolouration. Despite these efforts, discolouration remains one of the main areas of customer dissatisfaction.

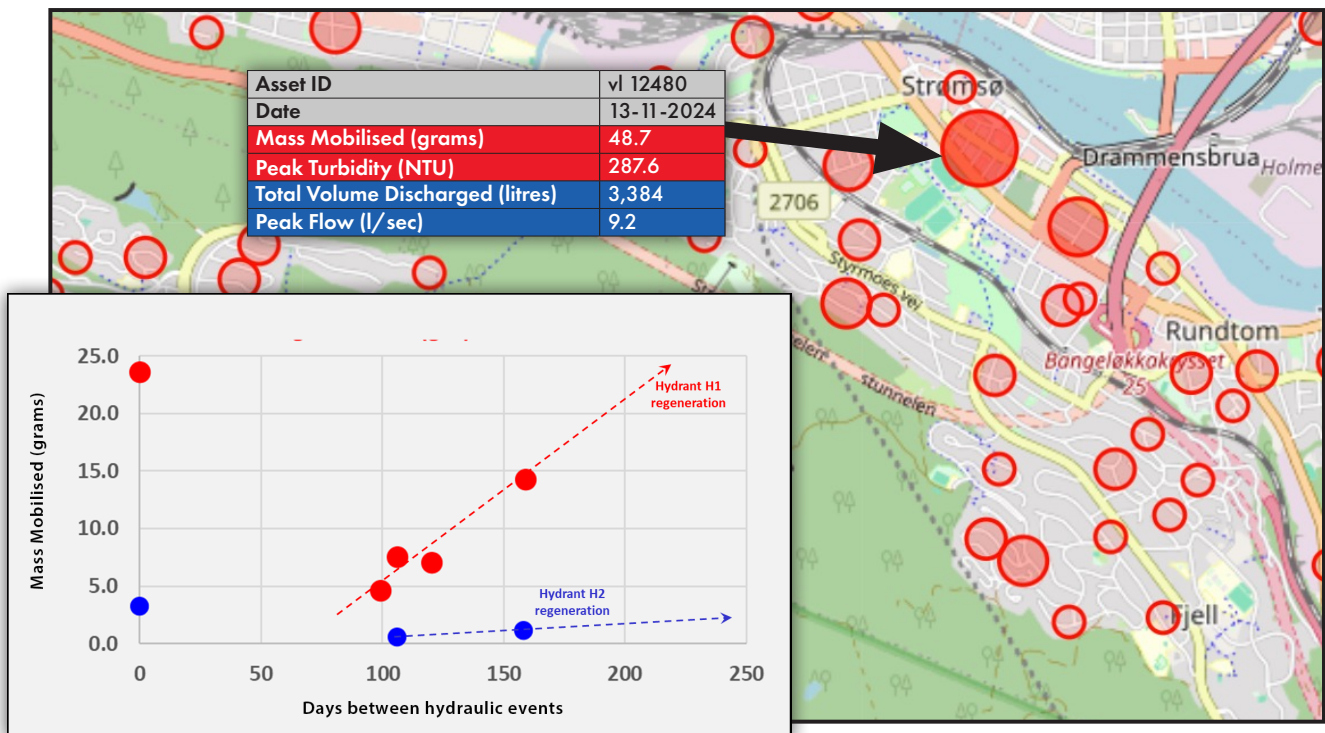
The reliance on lagging indicators, such as customer complaints and water quality non-compliance, creates a reactive management approach, often leaving utilities to address issues only after they've already impacted customers. A more proactive approach to managing discolouration based on the cleanliness of their networks can lead to improved customer satisfaction, delivery efficiencies and operational outcomes.



Challenge

The least cost approach to manage discolouration is to elevate flows to mobilise the material that has accumulated in water pipelines. The challenge for Asset Managers is to determine where within their diverse networks to elevate flows and how frequently should they return to prevent material regeneration.

TSI support Asset Managers by converting the flow induced turbidity data obtained from the field and present this as a single Mass Mobilised metric. If this mass was mobilised during any random transient event, it is likely that this will result in discolouration contacts. The metric is used to assess the rate of regeneration, as shown below.

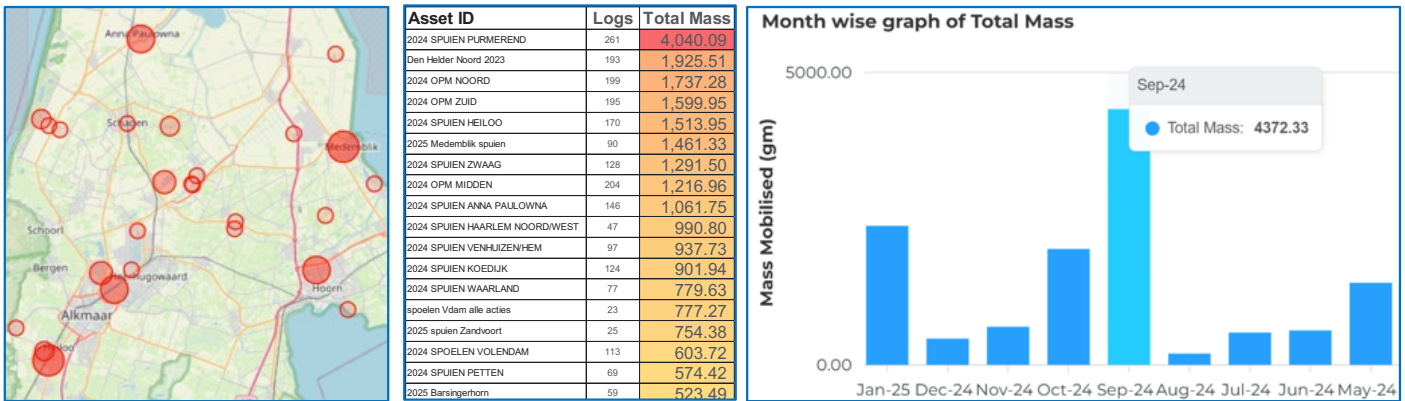


The map shown above is a screen grab from the Spatial Map in AquaVault Plus. The colour and size of the circles indicates greatest Mass Mobilised. The graph (bottom-left) shows Mass Mobilised and Days between hydraulic event. This gives us an indication of the rate of material regenerated.

Data Management

One of the key challenges faced by utilities is the complexity of merging flow and turbidity datasets. AquaVault Plus simplifies this process, providing Asset Managers with clean, actionable data. AquaVault Plus also enables utilities to retrieve relevant data quickly and efficiently, eliminating the time-consuming task of manually sorting through vast datasets.

AquaVault Plus presents the data collected in spatial, tabular and graphical format providing Asset Managers with intelligence without the need for data cleansing. As such reports are available in a near real-time environment, Asset Managers can make instant evidence-based decisions without waiting for data from the field to be downloaded, cleansed, merged and formatted for report presentation.



Screen grabs taken from AquaVault show spatial (left), tabular (middle) and graphical (right) formats of presenting data.

The data presented is transmitted from the field via Bluetooth collected from Flowmaster_PFT, a robust solution integrating flow, pressure, and turbidity measurement into a single, easy-to-use device. Subject to network connectivity, the data is available for review in AquaVault Plus in near real-time.

“ PWN’s Endorsement: “Our collaboration with TSI has been a game-changer. Their technology, the Flowmaster_PFT, along with the AquaVault platform, has facilitated a giant leap towards our digital transformation goals. We confidently endorse TSI for any water utility intent on navigating the currents of modernization with a reliable and innovative partner.” **”**

Benefits

- Efficiency** - Significant data administrative efficiency, saving an estimated 120 hours a year per Analyst
- Significant field team data processing efficiency, saving up to 180 hours a year per Field Team
- Intelligence** - Ability to assess regeneration period of accumulated material
- Delivery resources can focus on pipelines with the greatest regeneration
- The 1- second resolution of data identifies the source of the accumulated material in the local network
- Reporting** - Easy retrieval of historic records
- Reports for use in Regulatory Reporting (e.g. water use of Leakage calculation)
- Operations** - Supports proactive rather than reactive management approach to minimise customer complaints
- If least cost approach is unsuccessful, provides the evidence for higher cost mitigation measures
- Supports development of fast-tracking strategies to enhance customer experience

In conclusion, Flowmaster_PFT and AquaVault Plus provide water utilities with the tools they need to manage the risk of water discolouration more effectively. Shifting from a reactive to a proactive approach in managing water discolouration risks, utilities can improve both operational efficiency and customer satisfaction, addressing potential discolouration incidents before they affect customers by leveraging real-time data rather than waiting for performance issues to escalate.



Flowmaster_PFT a robust solution integrating flow, pressure, and turbidity measurement into a single, easy-to-use device.



AquaVault Plus provides asset managers with a dashboard view that helps improve their understanding of the cleanliness of their networks, the regeneration of material within it and helps identify areas of concern in the network.