

Measuring and Predicting Water Flows in Ølgod

Ølgod Tekniske Værker

INDUSTRY
Water & Wastewater

Story

Detailed information about pressure, retention time and flow directions are important for water utilities in order to maintain and optimize a water distribution network. Visibility of Ølgod's network was very limited, which meant it was difficult to scale the process equipment appropriately to optimize and develop the network.

Solution

Ølgod selected Aquis Water Network Management, a hydraulic modeling software, and now obtains accurate and timely information on water pressure, flow and direction in the network from Aquis Water Network Management. The advanced software is able to provide all the information needed in the daily operation as well as for any emergency situation.

Results

- Ability to prioritize and take corrective actions to prevent or mitigate service disruptions
- Ability to trace the source of contamination and determine how far the contamination has traveled in the network in the case of a pollution
- Ability to identify which consumers are affected and provide immediate warning via SMS to them
- Deliver water that meets required levels of services and maintain high safety margins for consumers
- Planning of maintenance and expansion work on the water network is now easier and more economical

ØLGOD TEKNISKE VÆRKER, Denmark –

Aquis Water Network Management helps Ølgod predict the changing directions of the water flow in its ring-connected water supply network. This otherwise inaccessible information serves as a great advantage towards the maintenance and expansion work required on the water distribution network as it provides a holistic view of the current status of the water pressure and flow in all the pipes.

“We are a serious utility and there is no doubt that Aquis Water Network Management is a good investment that helps us ensure the quality of our services and improve consumer safety,” says Henrik Linding Jessen, Engineer at Ølgod Tekniske Værker, which supplies water and heating to consumers in Ølgod.

“We did not know enough about our network and prior to experiencing the potential of Aquis Water Network Management, we considered installing a number of measuring wells so that we could obtain a more detailed picture of water quantity, pressure and flow in the various pipes in the system. A meter well could cost around 7,000 Euro, which compared to Aquis Water Network Management, is a much more expensive investment and does not provide nearly as much information as we have now.”

“Aquis Water Network Management increases the safety of our consumers and ensures we have detailed information of the water quality we deliver. While it is not a must that we use Aquis Water Network Management, it is a huge advantage to have it.”

Henrik Linding Jessen,
Engineer at Ølgod Tekniske Værker

The Challenge

Detailed information about pressure, retention time and flow directions are important for water utilities in order to maintain and optimize a water distribution network. Ølgod's approximately 150 kilometers of pipeline is ring-connected, which means it is not possible to know which way the water flows. Visibility of Ølgod's network was very limited, which meant it was difficult to scale the process equipment appropriately to optimize and develop the network.

Before Aquis Water Network Management was implemented, operators had to access the physical pipe itself to place a special ultrasound device for a whole week in order to determine the direction and quantity of water for that particular pipe. Determination of the water flow direction is especially important in connection with a water contamination incident where consumers need to be notified quickly.

Selecting a Cost-effective and Long-term Solution

To address the challenges, Ølgod selected Aquis Water Network Management, a hydraulic modeling software. Aquis Water Network Management's advanced calculation models are created based on historical and real-time consumption data, as recorded by Ølgod's SCADA system.

As part of the implementation, consumer types such as household, agriculture and industrial were categorized and their typical 24-hour consumption data analyzed. With the daily reported data from 15 electronic meters placed at the consumers' points, the calculations are even more precise.

Data

- Network: 150 km (~93 miles)
- Consumers: 2,050
- Loss: 4% Non-Revenue Water
- Max. daily capacity: 200 m³/h (~52,800 gallon/h)
- Production per year: 420,000 m³ (~110 million gallon)

Detailed and Accurate Information Now Available

Ølgod now obtains accurate and timely information on water pressure, flow and direction in the network. In the case of a contamination, Ølgod is able to know where the water to the consumer is coming from and accurately determine where to look for the source of contamination.

"Without a system like Aquis Water Network Management, you are groping in the dark when it comes to assessing the dispersal direction of a contaminant or analyzing the source of contamination," says Henrik Linding Jessen.

Aquis Water Network Management has been a cost-effective modeling software for Ølgod in prioritizing and taking corrective actions to prevent or mitigate service disruptions.

For more information about Aquis Water Network Management Water Management Software, please visit aveva.com

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