

CASE STUDY

Water meter Zalaapáti

WIRELESS DATA COLLECTION MONITORING SYSTEM WITH ON-LINE MONITORING

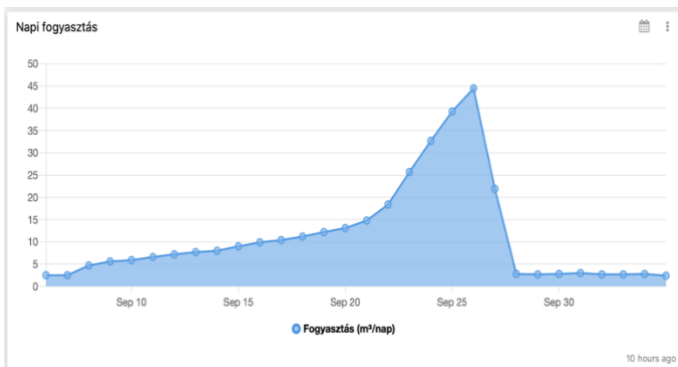
SQM smart meters are suitable for monitoring the consumption of a water meter. They can show hourly consumption, daily consumption, current consumption for the month and current consumption of the year up to date.

These readings, which can be monitored online or via the mobile app, allow you to check the status of the system at any time and quickly detect certain faults such as leaks or, in some cases, pipe breakage.

In such cases, the daily consumption graph is the most revealing, as it shows the increase in consumption and the nature of the increase.

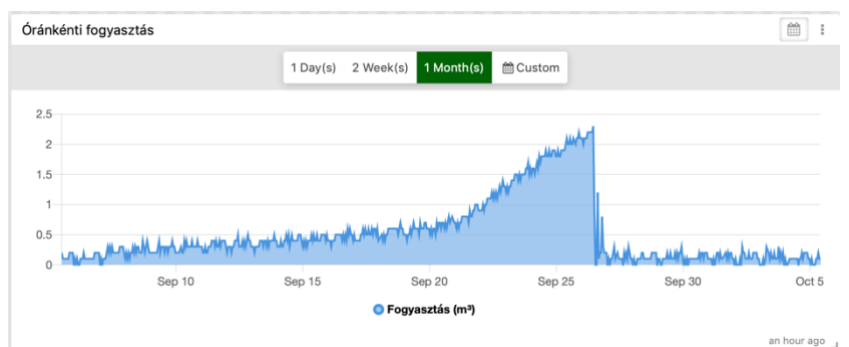
FACTS AND DATA

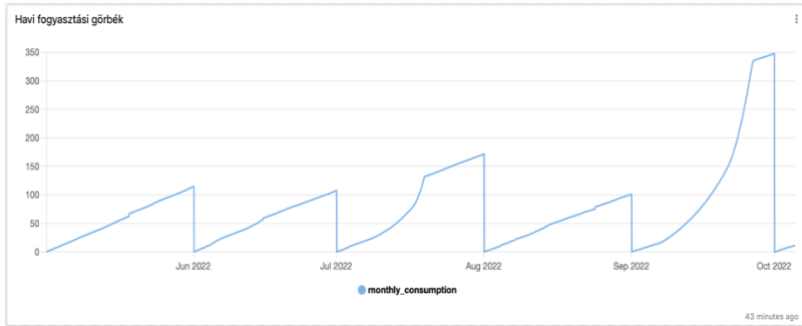
Buyer: Zalavíz Zrt.	Population served: 1700 people
Area: Zalaapáti	Year of construction:
Result: WS IoT Quantity monitoring	Year of install: 2021



This graph shows that normally the constant daily consumption starts to increase linearly at the beginning. At this point, it is assumed that there is only a leakage in the failed pipeline and only a part of the water is lost. The crack in the pipeline is usually widened by the high water pressure and the loss in that section increases steadily. After a while, the nature of the increase changes from linear to exponential, which is likely to occur when the pipe is broken and the water flows unrestricted into the surrounding soil.

This phenomenon can be observed not only in daily but also in hourly consumption values. It can be seen that the maximum value before the breakage was repaired was 2.3 m³/hour, i.e. the amount of water consumed in one hour was higher than the amount consumed in a full day under normal operating conditions. Such a leak, often leads to a broken pipe with a very significant loss of water. The monthly consumption curve shows how much such a failure can increase the amount of water used per month.



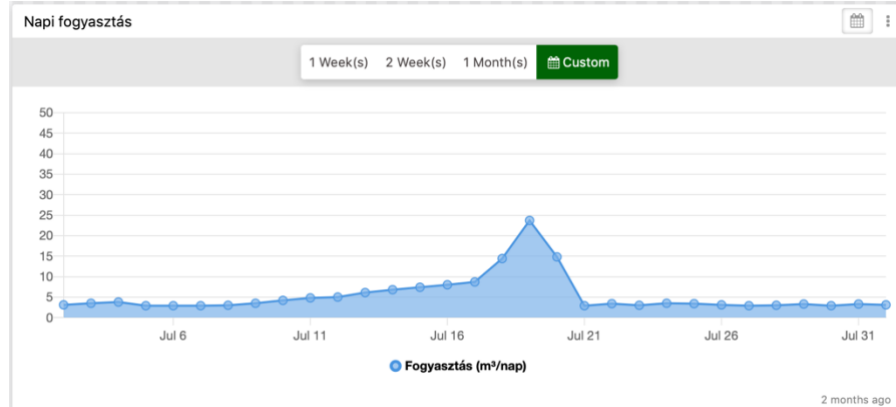


The graph shows that the amount of water consumed increased steadily in the months of May, June and August, with a consumption of about 100 m³ per month in the municipality. In September, on the other hand, consumption was 350 m³, of which about 250 m³ was lost due to a burst pipe.

The curve shows that a similar phenomenon occurred earlier in July, with a linear increase in the amount of water used in the first few days of the month, and then an exponential increase in the curve when a fault occurred.

Consumption figures at the time also show that consumption has increased significantly.

The maximum was on 18.07.2022 when consumption was 23.7 m³ in one day. This value is already almost 10 times the daily value



for normal operation. This fault was quickly rectified by the technicians so that water losses were minimised. On a monthly basis, this failure also caused significant water losses, but far less than in September. The amount of water used in July was 171.8 m³, which represents an excess of about 50-70% compared to normal operating conditions. In this case, the loss due to run-off could have been about 70 m³, which is also a lot, but a fraction of the 250 m³ in

September. This shows how important it is to detect and repair faults quickly, because water losses can increase several times over in a few days, easily exceeding the total monthly water consumption of a municipality.

September, 2022