

MONITORING

H2O MONITORING – A wireless Monitoring Technology that Withstands the Harshest Weather Conditions

APPLICATION: Reverse Osmosis

LOCALISATION: Chambord, QC

MISE EN SERVICE: 2019

PROJECT CHALLENGES

The municipality of Chambord in the Lac-Saint-Jean region operates its drinking water treatment plant on the outskirts of town. The underground basin, which is used as a reservoir for drinking water supply, is located in the forest at a distance of 2.5 km from the plant. As there is no power supply at this remote location, employees need to go down to the site to monitor the water level. Since access is difficult, they rely on all-terrain vehicles or snowmobiles to reach the reservoir, which makes the process more time-consuming.

The Quebec government requires all municipalities to provide a report on night-time water consumption levels. The Chambord municipality is thus required to monitor the water level in the forest basin. To this end, a municipal employee is assigned the task of manually measuring water levels over a two-hour period. These measurements are typically taken between 3 a.m. and 5 a.m.

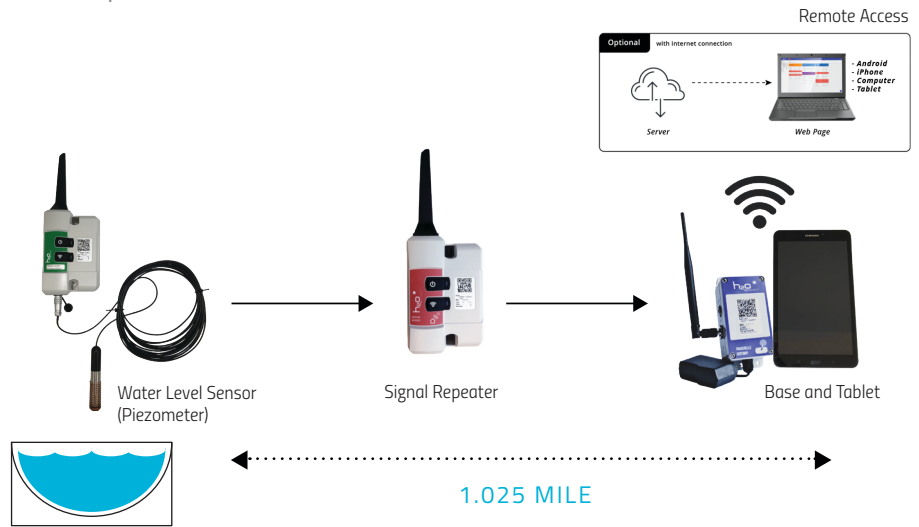
WIRELESS H2O MONITORING TECHNOLOGY

The H2O MONITORING technology is a wireless sensor system that uses radio waves to transmit data. The patented SpiderMesh communication network uses low-energy LPWAN technology for long-term connectivity. All data captured by the system's various sensors is transmitted by radio waves back to the base station in the main building. No subscription is required, and there are no fees associated with the system. The data is accessible on the dedicated tablet computer, without the need for a cellular network or an Internet connection. The system can be accessed remotely via a Web application using a Wi-Fi connection.



SOLUTION

A piezometer-type H2O MONITORING sensor has been installed in the forest water reservoir. The sensor is powered by three D-type batteries, which provide approximately two years' worth of wireless connectivity. The probe, placed at the bottom of the reservoir, measures the water level and sends the readings directly to the rest of the network. The base of the system was installed at City Hall. Only one signal repeater was needed to ensure connectivity between the water tank and City Hall (1.65 km). With an Internet access point in the municipal building, the H2O MONITORING system could be connected to the Web portal, thereby enabling remote access to all data. The water treatment plant operators therefore have direct access using the plant computer and their smartphones. Furthermore, personalized text message alarms automatically notify them if a problem occurs.



RESULTS

With remote access to water level readings from the reservoir, the plant operators no longer have to travel to the forest, which saves them a significant amount of time. Moreover, the data continuously recorded by the H2O MONITORING system generates highly accurate graphs that are then used in the night-time water level reports required by the government.

