

Improving Operations and Water Quality with Remote Monitoring

Eagle Lake First Nation — Dryden, Ontario
 Ochiichagwe’Babigo’Ining Ojibway Nation; Dalles First Nation — Kenora, Ontario
 Iskatewizaagegan First Nation; Shoal Lake #39 First Nation — Shoal Lake, Ontario
 Wabaseemoong Independent First Nation — Kenora, Ontario

THE SITUATION

The search for a new technology to reduce boil water advisories

A lack of continuous monitoring of water quality poses a serious challenge for many communities with aging treatment plants. Such was the case for the Ochiichagwe’babigo’ining Water Treatment Plant and Eagle Lake Water Treatment Plant in northwestern Ontario, which were not equipped with remote monitoring technology and were unable to provide round-the-clock operations staff at the facilities.

“Since operators were not always onsite, there were some water quality issues that went unnoticed until an operator went to the plant in person,” says Barry Strachan, Technical Services Officer at Bimose Tribal Council. “For this reason, we knew that having good, consistent information about the plant operations could help us continually provide good quality water to our customers.”

As the public health risks grew, the Chiefs from the Bimose Tribal Council collectively decided that a solution was needed to better manage the water treatment plants in Ochiichagwe’Babigo’Ining Ojibway Nation and Eagle Lake First Nation.

OCWA’S RESPONSE

Innovative, cloud-based remote monitoring

After the Bimose Tribal Council secured funding through Indigenous and Northern Affairs Canada (INAC), it reached out to OCWA to assess the two water treatment plants and recommend a solution that would help operators remotely monitor water quality.

Based on its assessment, OCWA recommended a mobile monitoring system that connects to the existing supervisory control and data acquisition (SCADA) systems and uploads data to a cloud-based application. This “Internet of Things” (IoT)-based solution enables operators to access data remotely and track changes in plant operations so that they can identify and respond to issues more quickly.

“We have had a great experience working with OCWA’s staff,” Strachan says. “They did a great job at understanding our needs for the project and worked collaboratively with us to develop customized solutions for each water treatment plant.”



In the first phase of the project, OCWA led the installation and set-up of the IoT solution at the water treatment plants in Ochiichagwe'Babigo'Ining Ojibway Nation and Eagle Lake First Nation. OCWA also worked with the communities to optimize the systems after they went live in September 2017 and trained the operators until they were comfortable using the new technology independently.

"We're very happy with OCWA's solution. The user interface provides our operators with data in a consistent way for multiple water treatment plants," Strachan says. "This is valuable for us since our staff manage 11 water treatment plants. Within just a few months of starting the pilot project, we decided to install the remote monitoring system at four more treatment plants located in Iskatewizaagegan First Nation, Wabaseemoong Independent First Nation, Wabauskang First Nation and Wabigoon Lake Ojibway Nation."

THE IMPACT

Proactive risk management

"The technology is powerful because its real-time data helps our operators anticipate water quality issues before they become a problem," Strachan says. "We're using the information it provides to make better operational decisions, like making sure that the reservoirs are at optimal levels and ensuring that plant process controls are running smoothly."



We've noticed that OCWA's solution has had a positive impact on water quality over the last few months."

— Barry Strachan, Technical Services Officer at Bimose Tribal Council

The remote monitoring system installed by OCWA tracks chlorine levels, turbidity, and reservoir levels for each water treatment plant and uploads the data in real time. The data logging also produces trends that help operators make adjustments to each water treatment process and ensure that the treatment plants consistently provide clean, safe water.

"We've noticed that OCWA's solution has had a positive impact on water quality over the last few months," Strachan says. "The number of boil water advisories has gone down overall in the communities where the technology has been installed. We're looking forward to understanding more about how this solution can help First Nations communities permanently end boil water advisories."

Once this pilot project is complete, the Bimose Tribal Council will pursue funding to install OCWA's IoT solution in four more water and wastewater facilities: Asubpeeschoseewagong First Nation, Lac des Mille Lacs First Nation, Obashkaandagaang First Nation and Shoal Lake #40 First Nation.



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