

# PORT WILLIAMS TREATMENT PLANT

## Case Study

**LOCATION:**

Port Williams,  
Nova Scotia, Canada

**SOURCE TYPE:**

Groundwater

**PARAMETER:**

Nitrate (NO<sub>3</sub>)

**APPLICATION:**

Well blending  
optimization

**SYSTEM:**

Real Nitrate sensor  
with Real Controller Pro  
and Real clean system



PORT WILLIAMS  
ENSURES  
**NITRATE  
COMPLIANCE**  
USING REAL NITRATE  
MONITORING SYSTEM

## NITRATE ISSUES? NO PROBLEM WITH RELIABLE MONITORING AND SOLID STRATEGY

The Village of Port Williams is a thriving agricultural community in Nova Scotia, Canada. Like many agricultural communities, long-term fertilizer application to the land has led to elevated levels of nitrate in groundwater. Nevertheless, the local water supply plant continuously produces high quality drinking water. With a reliable nitrate monitoring system from Real Tech and a solid management strategy, the plant is securing water quality for their community.

## Overcoming Nitrate Contamination

The Village of Port Williams has long been aware of the challenges and risks associated with nitrate in drinking water. The local water supply plant has been effectively managing nitrate in their groundwater supplies for decades, maintaining compliance with Health Canada's maximum acceptable concentration (MAC) of 45 mg/L nitrate (NO<sub>3</sub>) or 10 mg/L nitrate-nitrogen (NO<sub>3</sub>-N).

The plant uses five (5) groundwater supply wells that are blended to produce finished water below the MAC for nitrate. Joe Keddy, Superintendent of Public Works, has been successfully operating the water supply plant for over seven (7) years and describes nitrate as one of the highest priority water quality parameters they monitor.



"It makes all the difference for us to access direct support when we need it and service our nitrate analyzer onsite to minimize downtime. Real Tech's service has been next level in helping us achieve that" said Keddy



## Making Informed Decisions Every Day

Real-time nitrate data is essential for the success of their operations and for this job, the plant relies on a nitrate analyzer from Real Tech. The Real Nitrate analyzer is set up to continuously monitor the inlet and outlet of their tower and communicates directly with the local SCADA system for high visibility of current nitrate concentrations.

The task of efficiently blending high nitrate wells with low nitrate wells can be challenging. The Real Nitrate analyzer is a tool Keddy references multiple times daily and uses to make informed decisions on how to run his system. "Knowing the current nitrate level tells me how much water to run from one supply well versus another to get the finished results we need" said Keddy "The Real Nitrate analyzer is easy to operate and gives us this much needed information reliably". In addition to aiding with process control, monitoring the outlet of the tower provides Keddy with final assurance and peace of mind that water quality meets expectations before distribution to the community.

## Long-term Source Water Protection

In combination with daily hands-on management, the village has also implemented a source water protection strategy to mitigate the risks associated with nitrate contamination in drinking water. As part of their strategy, the village acquires land around their supply wells. This has allowed them to create a buffer zone that prevents migration of leached nitrate into their groundwater supplies. This initiative, in combination with other practices, has resulted in a slow but steady decrease in groundwater nitrate levels and has created a very positive outlook for the community's future water supplies.

## Summary

The Village of Port Williams proactive approach to nitrate management has resulted in a continuous supply of high-quality drinking water. Closely monitoring nitrates everyday with the Real Nitrate analyzer has enabled Keddy to operate his system effectively. Being a small utility, he also appreciates the accessibility to support for his instrument. "It makes all the difference for us to access direct support when we need it and service our nitrate analyzer onsite to minimize downtime. Real Tech's service has been next level in helping us achieve that" said Keddy.

**"I would highly recommend Real Tech to anyone in need of a nitrate analyzer".**

Keddy has strong confidence his nitrate analyzer will continue to provide accurate and reliable data to help him manage nitrate effectively, securing water quality for his community.

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