



# WATER TREATMENT PLANT ISSUES

In an effort to keep our residents informed, The Town of Pouch Cove would like to share the following information from the report received by the designer of the Water Treatment Plant ("WTP"):

## CHANGES IN WATER SOURCE

During the design process of the Water Treatment Plant ("WTP") in 2017, samples from the water source (ie. pond) were obtained and the WTP was designed and installed under the assumption that all iron and manganese in the feed water (ie. water source) were in the completely oxidized form, as shown in various samples obtained at the time.



From 2017 to date, water samples have been taken routinely and based on the levels presented, the required adjustments were made.

As of October 31, 2023, there is a presence of metals at levels and in a form that was not indicated or available when the original technical proposal was prepared. Approximately two-thirds of the total iron is present in the dissolved form and approximately half of the total manganese is present in the dissolved form. Due to the increase of dissolved forms of iron and manganese in the pond since installation, our WTP is not equipped to filter such metals and we are experiencing an increase in cartridge filter replacement and nano filter fouling that was not anticipated.

## SILT DENSITY TESTING



The increase of dissolved forms of iron and manganese were confirmed through Silt Density Index (SDI) testing that was recently performed at the WTP. Samples for SDI were taken before the media filter, after the media filter and after the cartridge. The nano filters require SDI feed conditions to the membranes to be less than 3.0 in order to achieve stable performance of the NF system. All SDI sampling results were greater than 6.

Due to the presence of dissolved iron and manganese in the feed water, modifications to the WTP are required to improve conditions to the existing filters and nano filter system.

## RECOMMENDED CORRECTIVE MEASURES

After extensive consultation, recommendations have been given for the following corrective measures:



### 1. Implement pre-chlorination on the feed to the plant:

Due to the presence of dissolved iron and manganese, pre-chlorination of the feed to the plant is required. A new sodium hypochlorite dosing skid will be needed for pre-chlorination.

### 2. Dose sodium bisulfite prior to the nano filter system:

In order to protect the nano filter membranes from oxidant (ie. chlorine), sodium bisulfite dosing ahead of the nano filters is required to rid any residual chlorine. A new sodium bisulfite dosing skid will be needed.

### 3. Increased media filters backwashing using water with a higher chlorine concentration:

To help performance of the media filters, it is recommended to increase the frequency of routine backwashing as well as the use of chlorinated water for the backwash supply at a higher chlorine dose to better maintain biostatic conditions. As a starting point, it is recommended to backwash the media filters four to six times per day with the higher chlorine dose.

## SUMMARY

The Town is currently reviewing the recommended corrective measures as quickly and efficiently as possible. We understand this is not ideal but would like to remind residents that we are residents too. We are diligently working towards the best solution and will update residents as frequently as possible.

As well, the Town would like to clarify to residents that the issues at the WTP have to do with the plants inability to filter/clean the water. There is no issue with the ability to meet current or future development demands.

If any residents have questions and/or concerns, please reach out to the Town Hall, email Conrad Freake, Chief Administrative Officer, at [cao@pouchcove.ca](mailto:cao@pouchcove.ca) or contact a member of Council using the contact information on the Town's website.