

This article is the first of a series the Town of Pictou will be releasing on drinking water. The next release will focus on costs. **FOR MORE DETAILED INFORMATION ON WATER UPGRADES VISIT THE TOWN WEBSITE AT: WWW.TOWNOFPICTOU.CA**

WHY IS THERE DISCOLOURED (BROWN) WATER?

The Town's water is produced from 13 wells located in different areas. The untreated (raw) water contains very high levels of naturally present iron and manganese. Our raw water contains manganese in dissolved form.....the water appears clear.

When chlorine is added, it interacts with the manganese dropping it out of solution. This causes the manganese to appear as brown/dark specks or particles.

WHY IS DISCOLOURATION OCCURRING MORE FREQUENTLY?

In recent years Nova Scotia Environment has required increased levels of chlorine in public water systems to ensure the water is properly disinfected.

More chlorine added means more manganese is dropped out of solution deposited onto pipe walls. A change in water pressure, velocity or direction can dislodge the manganese causing a discoloration event. For example, opening a fire hydrant or when a water pipe breaks.



New Pictou fire hydrant as part of the aged infrastructure replacement plan

WHY DO WE HAVE DISCOLOURED WATER EVENTS WHILE OTHER COMMUNITIES DO NOT?

Raw water in other communities may not have manganese at the high levels experienced in Pictou. Their water system may also have filters that remove the manganese from the untreated water before it is chlorinated.

WHY DOES THE TOWN FLUSH HYDRANTS?

The Town needs to operate hydrants to ensure they are in working order – ready for use in the event of fire. The Town also flushes hydrants to control manganese buildup.

Flushing hydrants/lines will cause discoloured/brown water. During discoloured water events, do not open your hot water taps. Opening a hot water tap during these events will draw discoloured water into your hot water tank. A build-up of manganese in your hot water tank can cause discoloured water within your home or place of business. It is recommended that you flush your hot water tank in accordance to your manufacturer's instruction.

WHY IS WATER DISCOLOURATION WORSE IN CERTAIN AREAS OF TOWN?

The 13 wells are located in different areas of Town. Some of the wells contain more manganese than others. In certain areas of Town, the distribution lines are not connected to other lines, i.e., the line is not part of a system loop but stops at the end of a street or run of pipe. Manganese is more likely to settle on the walls of pipes that are not looped.

WHY IS THE TOWN INSTALLING WATER METERS BEFORE FIXING THE DISCOLOURATION PROBLEM?

The water volume the Town withdraws from the local aquifer is regulated. The provincially issued withdrawal permit only allows for the pumping of a fixed amount of water. This is to ensure that the amount of water pumped does not exceed the natural recharge ability of the local aquifer.

At certain times, the Town approaches the maximum allowable withdrawal rate from certain wells. Meters serve two basic functions. First, they will assist the Town in reducing water loss (waste do to leaks). Second, it has been proven in other communities that the water use is reduced when residents are metered.

The filtration system noted above will be regularly cleaned through a backwash process. The Town does not want backwash water requirements to use up the limited amount of water available. The Town is also experiencing growth. By reducing water production, wastage and usage consumption by metering, water will be available to these new homes.

OVER

Town of Pictou

Drinking Water Upgrades

Questions & Answers

WHAT IS TOWN DOING TO FIX THE DISCOLOURATION PROBLEM?

Two things – referred to as Phase 1 and Phase 2:

Phase 1:

Based on professional engineering advice the Town has:

- Installed a new main transmission line connecting a series of nine wells together allowing for more consistent blend of raw water.
- Installed and is about to put into service, a new well in the Town wellfield.
- In the process of decommissioning wells that are very high in manganese. The supply from these wells will be replaced by the new well.
- The Town has purchased municipal grade ultraviolet disinfection systems for the wells and water tower. Additionally, automated monitoring systems have been purchased for installation at each of the wells and water tower. This equipment should be installed and be fully operational by early summer.
- While the Town expects the above measures will reduce the amount of discoloured water, it will not eliminate discolouration and brown water events.

Phase 2:

- The Town has engaged professional engineers to plan for the installation of a centralized water treatment/filtration plant (pre-design).
- The Town is currently waiting for a Provincial/Federal cost-sharing program. Given the small number of customers in Pictou, government cost-sharing is required to make the upgrades economically affordable.



Construction of new Pictou Well #15

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Chlorine contact pipe; part of Pictou wellhead upgrades

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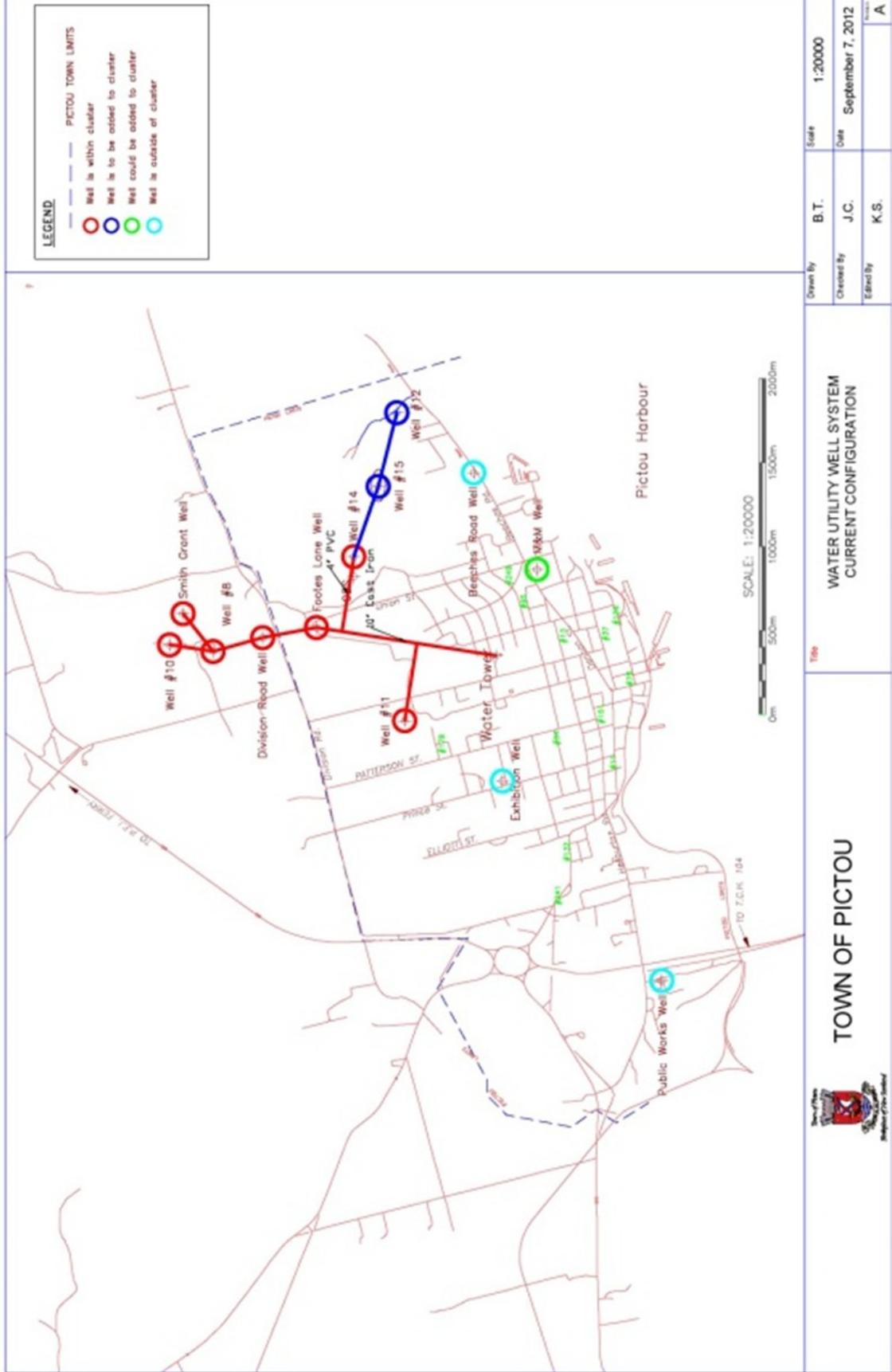
WILL THE TOWN BILL ON METERED RATES BEFORE THE DISCOLOURATION PROBLEM IS RESOLVED?

- Public water utilities in Nova Scotia are regulated by the Nova Scotia Utility and Review Board. The Board has the final say on water rates and how the Town issues its bills.
- Town Council will strongly request that the Board not require metered billing until water discolouration has been resolved and continue to use flat billing.
- The Town will include a metering report in the same billing envelope to let residents know what the bill would have been under metered rates. This information will allow residents to deal with any leaks they may have in their homes and address water conservation in advance of metered billing.

OVER

Drinking Water Upgrades

Pictou's Water System as of 2012



LEGEND

- PICTOU TOWN LIMITS
- Well is within cluster
- Well is to be added to cluster
- Well could be added to cluster
- Well is outside of cluster

 TOWN OF PICTOU	WATER UTILITY WELL SYSTEM CURRENT CONFIGURATION		Drawn By B. T.	Scale 1:20000
	Title		Checked By J. C.	Date September 7, 2012
			Edited By K. S.	Revision A