SUMMERSIDE MUNICIPAL SERVICES
WATER SYSTEM REPORT
For the Year January - December 2008

Introduction

The City of Summerside has been Sampling its water system on a bi-weekly basis since the 1960's. In 2001 the City established its present policy for a standard practice to ensure that the drinking water quality for the City of Summerside Water Utility is maintained according to the Canadian Drinking Water Standards and any requirements of the Province. The Environmental Protection Act, Drinking Water and Wastewater Facility Operating Regulations is the Provincial legislation under which the requirement for sampling and reporting is required. These regulations became effective December 18, 2004. Another act governing the operation and maintenance of a water distribution system is the Atlantic Canada Guidelines for the Supply, Treatment, Storage, Distribution and Operation of Drinking Water Supply Systems.
The assessment of water quality monitoring results under the regulations shall be based on the recommendations in the most recent version of the Guidelines for Canadian Drinking Water Quality; or where no such guidelines exist, on the advice of the Chief Health Officer.

These guidelines cover the design of new systems, operation and maintenance of new and existing systems both small and large. One of the new regulations require the reporting of an annual summary report of the system water quality.

Summary

The City of Summerside Samples its water system on a bi-weekly basis for Bacteriological tests consisting of the following: Total Coliform DC, Escherichia Coli (e-Coli) and Background Growth bacteria. The frequency and quantity of these samples was set by Health Canada's Canadian Drinking Water Guidelines and the Province. The City takes 8 samples from the system on a bi-weekly basis plus a sample from each active well in the system. This gives a total of 24 samples per month with other samples taken as needed. The city has been divided into 8 Zones and this map is used for sampling the system, as per section 11 of the P.E.I. Environmental Protection Act. The City of Summerside Sample zone Map see figure 1.

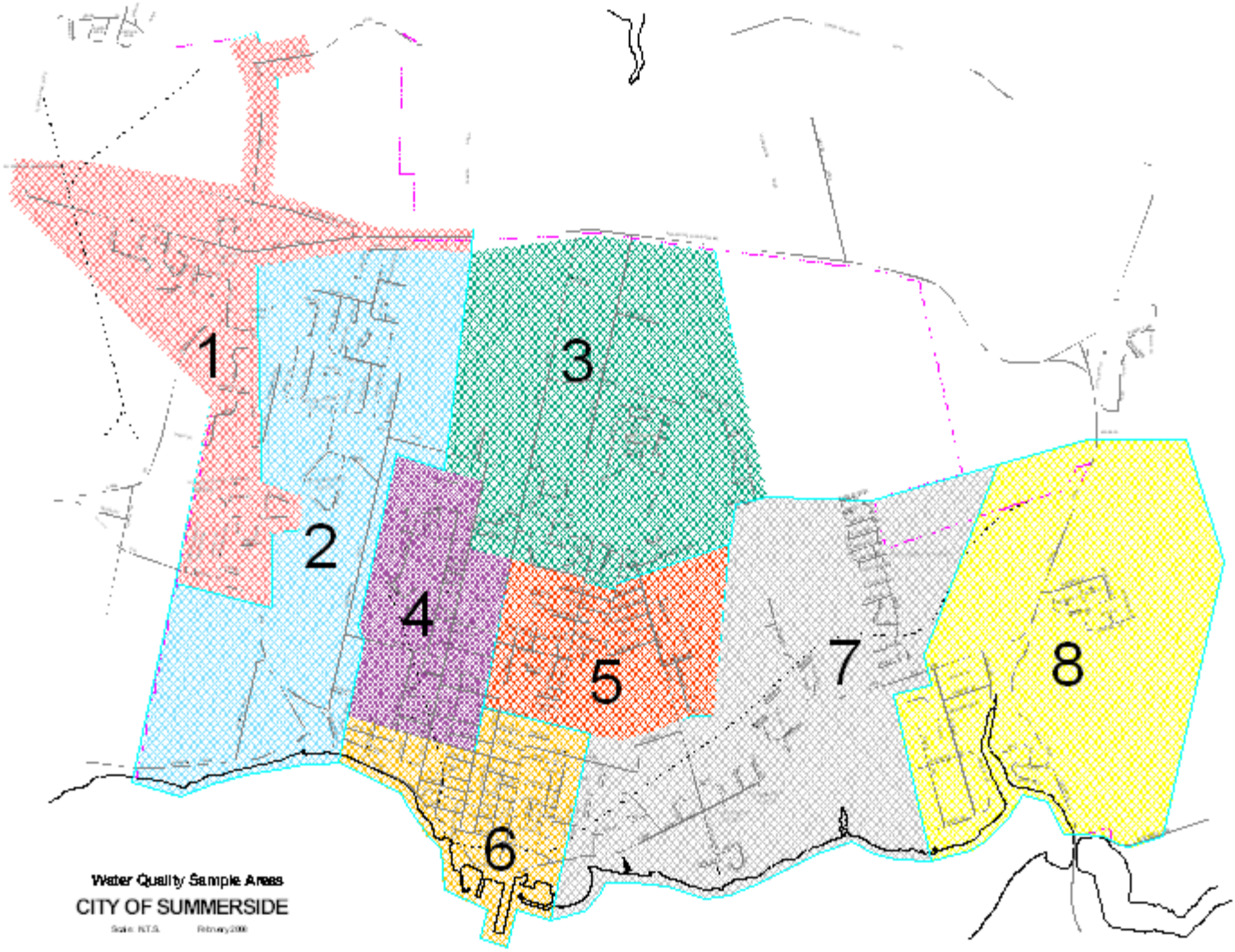

Figure 1

The City has made revision to its policy to report levels of Chlorine residual for each sample taken from the system and each well source in 2004. This residual is to be maintained at a minimum of 0.1 mg/l or more in the system under the Canadian Drinking Water Guidelines. The Water samples are sent to the P.E.I. Department of Environment Laboratory in Charlottetown where they are tested for Total Coliforms DC, Background Growth DC and E-Coli DC bacteria.

Water Distribution Chemistry / Sampling

In the year 2008, the City Municipal Services Operations department has continued to sample for Capital Projects adding to the cities water system this provides consistent testing procedures and results.

Over the 2008 year, we have taken a total of 323 water samples for bacteria testing.

Total samples taken 323

System and source well samples -- 291

- 3 (three) samples were taken at the request of Utility Customers,
- 4 (Four) samples had readings out of compliance, with the results below:

System and source well samples out of compliance for the system and source wells was 4 (Four).

System Samples out of compliance breakdown:

3 -samples Total Coliform count of >45 CFU/100ml to 1 CFU/100ml

1 - samples Background Growth of >30 CFU/100ml to low of 1 CFU/100ml

0 - samples E- Coli no readings out of compliance

Re- sampling was carried out immediately and results came back clear each time; with 0 CFU/100ml Total Coliform DC, 0 CFU/100ml Background Bacteria Growth, and 0 CFU/100ml E-Coli bacteria. For both system and Capital Project samples

Capital Projects - new water main testing -- 28

Total number of Samples out of compliance for the Capital Projects new water main testing was 12(Twelve).

Capital Projects samples out of compliance breakdown :

12 - samples Total Coliform count of >200 CFU/100ml to 1 CFU/100ml
and samples Background Growth of >30 CFU/100ml to 1 CFU/100ml

0 - samples E- Coli no readings out of compliance

.**Note:** The new or replacement water line for Capital projects put into service in the system until 2 consecutive days of clear samples are obtained. The governing standards are followed for flushing and disinfecting of the new line until water samples taken over two consecutive days show clear results.

The samples for each project vary to the number of points sampled due to configurations of the ppe and testing is continued until results of 0 mg/l total coliforms, 0 CFU/100ml Background Growth , and 0 CFU/100ml E-Coli bacteria has been achieved.

These system samples included all the supply wells for the system. The system water was considered suitable for potable use for all samples. (Note : CFU/100 ml means colony forming units of bacteria per 100 ml sample).

Source Water Wells Chemistry Analysis

All the active water supply wells for the city are sampled on a yearly basis and the results were within the Health Canada's Canadian Drinking Water Guidelines acceptable limits. These guidelines outline the common substances sampled on a yearly basis based on MAC (Maximum acceptable limits) or IMAC (Interim Maximum acceptable limits).

According to Health Canada's Canadian Drinking Water Guidelines source water is tested for

1.0 General Chemistry Test Source waters on yearly basis
2.0 Detailed Chemistry Test Source water on 3yr cycle or as needed

The Water System and its supply wells was sampled for chemistry , both General (yearly and carried out at the Dept. Of Energy, environment and Forestry labs in Charlottetown) and a more detailed chemistry is carried out as required by the Environmental Protection Act, Drinking Water and Wastewater Facility Operating Regulations act.(every 3 years by an accredited laboratories).This was carried out this August and the detailed results along with the yearly normal chemistries is detailed in a summary of Chemical analysis attached to this report.

General Chemistry

There were 92 samples taken for chemical analyses at the DOE lab in Charlottetown

83 were for Nitrate only testing
9 were for General chemistry on source wells

Detailed Chemistry

In August of 2007 the city sampled the active source wells for detailed chemistry including , testing for volatile , metals and hydrocarbons in water. 10 active wells were sampled (all active wells) This detailed chemistry is scheduled to be done again in 2010 as required by the Canadian Water Guidelines.

Nitrates Monitoring

The General Chemistry testing in 2006 showed an elevated nitrate amount of 10 mg/l (ppm) in Wilmot well #5.(note the current MAC(maximum acceptable limit) for Nitrate's is 10mg/l) The City carried out additional testing on all active water supply wells feeding the distribution system and only Wilmot well #5 showed elevated nitrates. Wilmot well #5 was put back on line in tandem with another Wilmot well of a lower nitrate concentration; after consultation with the Technical Service's department and The PEI Department of Environment . This changed the operation at the Wilmot wellfield wells and with continued bi-weekly sampling for nitrates in the distribution system the issue of nitrates in the distribution system is managed to be below the MAC of 10mg/l (ppm). The City continues to monitor the situation for any changes in nitrates level by continued sampling on bi-weekly basis. All samples are monitored by The PEI Department of Environment as their accreditedd lab processes all the Cities water samples.

Nitrates testing is carried out to continue to monitor the water system nitrate levels and each sample shown in the water chemistry summary published with this document on the City of Summerside's web site in municipal service section.

Chlorination of Water System

A chlorine residual was maintained in the water system ranging from a minimum of 0.05 mg/l to a maximum of 0.57 mg/l . The levels of chlorine residuals are checked on a regular basis and the chlorine pumps are maintained to have a consistent and constant residual of chlorine in the water system for public safety. The chlorine residual is checked on a regular basis to maintain the system at a level of 0.1 mg/l or higher. In an effort to have better control of the chlorine residuals in the distribution water system, the chlorine injection system has been set to maintain a 0.2 mg/l (ppm) residual chlorine in the distribution water system with a minimum of 0.1 mg/l(ppm) . The City has also budgeted resources into the chlorine system to have better safeties on the chlorine injection system and back-up systems to keep up to changing P.E.I. water and sewer regulations and Atlantic Canadian Water Guidelines. These changes were completed in early 2007.

Water System Capital Enhancements

The City is continuing to carry out modifications and repairs to the water system to continue and provide for quality and safe drinking water for its customers. Maintenance requirements on the existing system is performed regularly to provide better flow and safe quality water.

This year work was performed on several areas of the system under the Technical Service Departments capital works projects. Main replacement/ Extensions were carried out to sections of Cedar, Strong and Campbell Streets. To replace aging lines and improve system flow in theses areas .

Sections of Market and Notre Dame Streets under went service relocation to eliminate older and smaller mains to permit better flushing in this area. The areas involved were Market st between Duke and Cedar ;and Notre Dame St from Rufus st to Duke st.

The department sampled water for these new water mains for the following subdivision extensions of watermains at Murphy st and Wilmot Lane. This was to insure that these mains passed all bacteriological testing before being put into service.
These new waterlines were only put into service after passing 2 consecutive days of bacteriological samples showing clear. (0 Total Coliform DC, 0 Escherichia Coli (e-Coli) and 0 Background Growth.)

Conclusion

The City continues to maintain and operate the water supply system in compliance with the current acts and regulations to supply safe potable drinking water for utility customers. For questions regarding this report or the water distribution and supply system please contact the Director of Municipal Services at (902) 432-1272.

Information on The Atlantic Canada Water Guidelines and the P.E.I. Act can be seen on Provincial Government's web site (web address below);

http://www.gov.pe.ca/infopei/index.php3?number=1004345&lang=E
Information on Health Canada's Canadian Drinking Water Guidelines can be seen at Health Canada's web site (web address below);

http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/index_e.html
Information on Bacteriological parameters can be found on the P.E.I. Gov web site (web address below);

http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/index_e.html
Information on Chemical parameters can be found on the P.E.I. Gov web site (web address below):

http://www.gov.pe.ca/infopei/index.php3?number=43878&lang=E
or Health Canada's web site (web address below);

http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/index_e.html