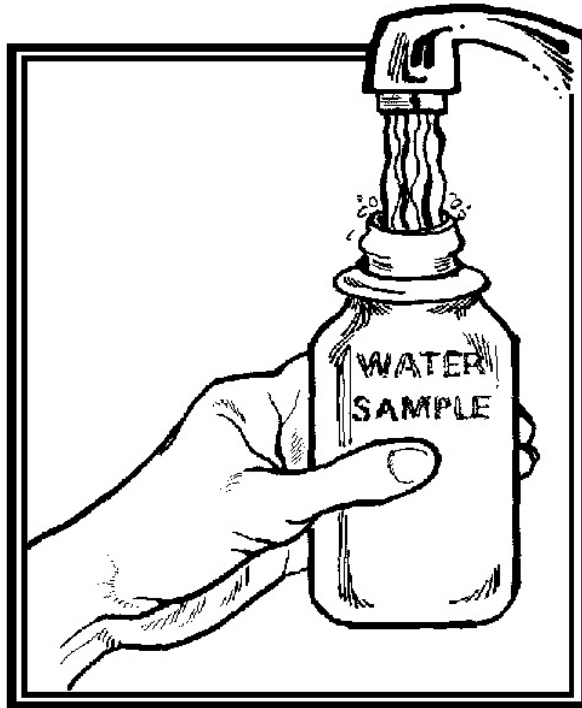




**Environment,
Labour and Justice**

Environment Division

Water Sample Collection and Analysis



Small and Very Small Public Water Supply Systems

December 2011

Introduction

Accurate testing of drinking water is crucial to maintaining the health and safety of all those who rely on this resource. To protect Islanders (and our visitors) and to detect any possible contamination of water at the earliest possible time, operators of public and semi-public water systems should follow the sampling and testing methods outlined in this document. These sampling and testing methods will help you meet the requirements of the Drinking Water and Wastewater Facility Operating Regulations.

It is vital that owners / operators collect samples for testing in the volumes required by the Department of Environment, Labour and Justice, using the bottles provided by the department's laboratory. Failure to follow procedures may lead to tests that are delayed, or possibly refused, and may compromise your ability to show that you are delivering the quality of drinking water required by law.

To make sure that testing is carried out properly, the Department of Environment, Labour and Justice+

6 strongly recommends that this document be kept on hand, with sampling equipment and in vehicles used to gather water samples. Proper sampling is the front line in guaranteeing the safety of the customers who rely on Prince Edward Island's water supply systems.

A copy of the Drinking Water and Wastewater Facility Operating Regulations can be viewed on the PEI Government web page at:

<http://www.gov.pe.ca/law/regulations/pdf/E&09-04.pdf>



Regulatory Requirements

Drinking Water Quality Monitoring

The regulations specify **minimum** sampling requirements for drinking water systems. These are minimum requirements only, and depending on water system design and size, **common sense may suggest additional sampling activity.**

Small System

- Bacteria: -Total coliform / E.coli sampling from each well and at least two sites in the distribution system (home or business) on a quarterly basis (i.e. once every three months while you are in operation)
- Chemistry: - sample each well for general chemistry once every year
- sample each well for detailed chemistry once every 5 years
-

Drinking Water Samples

Total coliform / E.coli bacteria

Fresh samples are required
250 mL sterile plastic bottle
Store at 0 - 10°C
24 hour maximum holding time

Bottle (A)
250 mL



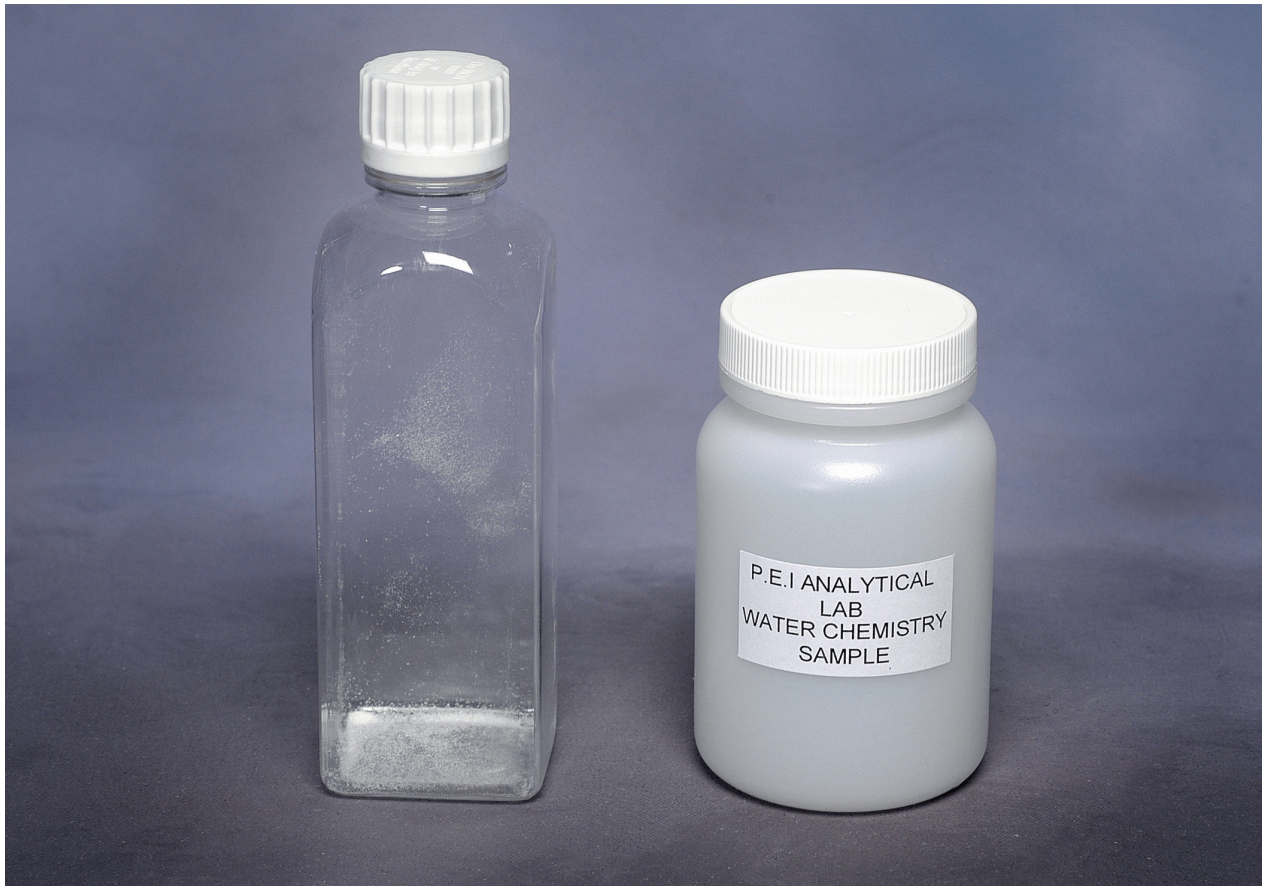
General Chemistry

Fresh samples are required
250 mL plastic bottle
Store at 0 - 10°C
24 hour maximum holding time

Bottle (B)
250 mL



Sample Bottles



A

B

- A** 250 mL sterile plastic bottle pre-treated with sodium thiosulfate, used for collection of treated or untreated drinking water samples for analysis for total coliform / E.coli bacteria
- B** 250 mL plastic bottle used for collection of water samples for chemistry analysis

Definitions

“Detailed Chemistry” means a detailed chemical analysis of a drinking water quality sample for the chemicals listed in section 2 of Schedule C of the *Environmental Protection Act Drinking Water and Wastewater Facility Operating Regulations*.

“Escherichia coli (E. coli)” refers to one of the species of bacteria in the faecal coliform group. It is found in large numbers in the gastrointestinal tract and feces of humans and warm-blooded animals. Its presence is considered indicative of fresh faecal contamination, and it is used as an indicator organism for the presence of less easily detected pathogenic bacteria (*similar to faecal coliform - typically used in assessment of drinking water*).

“General Chemistry” means a general chemical analysis of a drinking water quality sample for the chemicals listed in section 1 of Schedule C of the *Environmental Protection Act Drinking Water and Wastewater Facility Operating Regulations*.

“Total Coliform” are a group of bacteria found in soil, on vegetation and in large numbers in the intestine of warm-blooded animals, including humans. Water is not a natural medium for coliform organisms and their presence in water is indicative of some type of contamination. Most coliform bacteria are not disease-causing organisms, but they serve as an indicator of the sanitary conditions of the water supply.

Request Forms for Water Sample Analysis

The requirements for completion of requisition forms for water sample analysis are as follows:

- I. **Print neatly.**
- II. Sample date and time **must** be entered.
- III. Sampler's **full name** and **contact phone number** must be entered.
- IV. Use full names (versus initials) for sample identification. Make sure that you use the proper name and correct spelling.
- V. Sample location should be the **specific place** where the sample was collected (Example: Well, kitchen tap, etc.). Further information to identify the sample location should be entered in the field notes section.
- VI. The "**Client Information**" section of the form **must** be completed.
- VII. The "Notes" section of the form should be used for specific information relative to the sample that the owner / sampler feels is important to the analysis and should appear on the printed report (i.e. specific sample point such as kitchen tap, reason for sampling, etc).
- VIII. Complete form as indicated on attached "**SAMPLE FORM**" - Page 6 of this document.
- IX. If the water sample is taken from a well that **is not** being used, this should be clearly noted.

Further Recommendations for Drinking Water Sampling

- A. **Sample early in the week** (i.e. don't sample on Friday unless in the case of an emergency).
- B. **Do not** sample from a single site (we recommend a minimum of two samples).
- C. If you collect a sample from the **well** be sure to collect a sample from **at least one location on the system (home, cottage, etc)**.



Request for Drinking Water Analysis Drinking Water Supply Utility (Systems supporting five or more locations)

Sections A, B and C MUST be completed in full. Please print.

A) Analysis Requested		Laboratory Use Only	
<input checked="" type="checkbox"/> Bacteria <input type="checkbox"/> Chemical Other (please specify): _____		LIMS #:	
Sample Date: <u>25/2/11</u> (dd/mm/yy) Sample Time: <u>9:30</u> (hour) <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m. Is this a tourist establishment? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Date Rec.:	Time Rec.:
Sampler's Name: <u>Red Green</u>		Lab Tech:	S or NS:
Sampler's Telephone: <u>902-393-1234</u>			
B) Sample Information			
Name of Utility: Possum Lake Executive Cottages			
Name of Facility: Possum Lake Executive Cottages			
Sample location (civic address): Cottage #1		Sample Point: Kitchen tap	
Community: Possum Lake		Cl Residual _____ mg/L	
Is this line <input checked="" type="checkbox"/> in service or <input type="checkbox"/> out of service? <u>Check one.</u>			
C) Client Information (results to be sent to)			
Name: Possum Lake Executive Cottages		Attention (if required):	
Mailing Address: PO Box 52			
		Community: Possum Lake PE	
Postal Code: C1C 2V3		Telephone: 902-393-1234	
Notes (specific sample point, other applicable information)			
Routine water sample			

Samples must be delivered to an Access PEI Centre by 3:30 p.m. (12 noon on Fridays) on the same day you take the sample.
Check the reverse side for a drop-off site near you.

Laboratory Use							
Type	Total Coliform	E.coli	B. G.	Ps. Aeruginosa	Faecal Coliforms	HPC	Other
Result							
Technician							
Total Coliform, E.coli, B.G. Ps. Aeruginosa, Staphylococcus spp. - CFU/100 mL; HPC - CFU/1 mL							

Personal information on this form is collected under section 31 (c) of the *Freedom of Information and Protection of Privacy Act* R.S.P.E.I. 1988, c. F-15.01 as it relates directly to and is necessary for a request for water analysis and will be used for the purpose of contacting the client and maintaining departmental records. If you have any questions about this collection of personal information, you may contact the Director of Water Management Division, 11 Kent Street, Jones Building, Charlottetown, PE C1A 7N8 (902) 368-5044.

Water Sample Collection Procedure

There are two analysis bottles available:

- **Bacteria Analysis** – The bottle for bacteria analysis is a sterile clear plastic bottle with a tamper-evident cap. This bottle contains sodium thiosulfate which is a white powder that neutralizes any chlorine which may be present in a sample.
- **Chemistry Analysis** – The bottle for chemistry analysis is a white plastic 250 ml bottle with a white cap.

Please use the appropriate bottle(s) for the type of analysis which is being requested. The PEI Analytical Laboratories staff reserves the right to refuse samples collected in bottles not supplied by the lab, samples with an odour of chlorine, or samples containing foreign material.

For both types of analysis, use the following guidelines for sample collection:

1. Select an indoor faucet, if possible, to take the sample.
2. Remove the strainer from the tap, if present, and let the cold water run at full flow for five minutes; then back off the flow to a steady slow stream.
3. Remove the cover and fill the bottle to the neck or the fill line, being careful not to touch it to the faucet. Also, please ensure that you do not touch the inside of the cap as this will contaminate the sample. Once the sample is collected from the tap, **it must be kept below 10°C during storage and transport.**
4. Complete the Request Form for Drinking Water Analysis for Drinking Water Supply Utility on the reverse of this instruction sheet. **Deliver the sample to the Microbiology Laboratory or an Access PEI Centre by 3:30 p.m. (12 noon on Fridays)** on the same day you take the sample. Check the schedule below to see what days samples are picked up at your local Access PEI site.

Depending on the type of analysis being requested, notification time for the results will vary. Bacteria sample results are typically available within a few days. A printed report will be mailed out.

There will be a charge for the Drinking Water Analysis according to the following schedule:

Bacteria \$27.50 + GST (\$1.38) = \$28.88

Includes: Total coliform and E. coli

Chemistry \$55 + GST (\$2.75) = \$57.75

Includes: Barium, Cadmium, Calcium, Chloride, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Nitrate, pH, Phosphorous, Potassium, Sodium, Sulphate, Zinc, Alkalinity

Periodic sampling of your water, especially for bacteria, can help detect potential problems with your well. If, however, you suspect your well has become contaminated, it is recommended that you boil your water or use an alternate source of water until sample results indicate that it is safe.

If you have any questions, please call 368-5044 or toll-free **1-866-368-5044**.

Drinking Water Sample Drop-off Sites					
Access PEI Site	Monday	Tuesday	Wednesday	Thursday	Friday
O'Leary	•	•	•	•	•
Tignish		•			
Alberton		•			
Wellington		•			
Summerside	•	•	•	•	•
Charlottetown (<i>Riverside Drive</i>)	•	•	•	•	•
Souris		•	•	•	
Montague	•		•		•
Microbiology Laboratory (16 Fitzroy Street, Charlottetown)	•	•	•	•	•
Cavendish VIC (seasonal – May to September)	•	•	•	•	•

IMPORTANT

Transportation of samples to the lab is the responsibility of the sampler. Samples must be properly packaged and labeled to ensure proper preservation and safe delivery.

**Note: Hold samples at 0 - 10°C during transport.
 Maximum holding times for each type of analysis are
 stated, but the fresher the sample, the more accurate the
 results.**

It is not necessary to call for results. If there is a problem, you will be contacted.

**PEI ANALYTICAL LABORATORIES
5TH FLOOR, SULLIVAN BLDG.
16 FITZROY ST.
CHARLOTTETOWN PE**