

Boil Water Advisories

Clean and Safe Drinking Water
Workshop

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Agenda

- **Introduction**
- **Triggers of a BWA**
- **BWA Reasoning**
- **Authority to Issue**
- **Areas of Responsibility**
- **Standard Reasons for Issuing Boil Water Advisories**
- **Lifting a BWA**
- **Conclusion**

Introduction

- **Murphy's law**
 - "Anything that can go wrong, will go wrong".
 - Anything mechanical will fail
 - Anything organic will survive
- BWA's will have to be called at some point. It is inevitable.

Introduction

What is a Boil Water Advisory (BWA)

- Community Alert that the water system is not at a standard equal to the Canadian Drinking Water Guidelines
- Advises the population to protect themselves by placing barriers to infection / intoxication (Boiling Water)

Introduction

- Issued by an area Environmental Health Officer (EHO) when conditions dictate a BWA is necessary

Triggers of a BWA

- Conditions for a BWA
 - Positive bacterial sample results that are confirmed with an upstream and downstream re-sample or resample is not possible
 - 10% of samples are positive (for larger populations)
 - Low or high disinfectant levels
 - Disease outbreak suspected or linked to a water system

Triggers of a BWA

- No disinfection present
- Gross contamination of the source supply (may issue a non-consumption order if boiling is ineffectual)
- Municipality calls a BWA

BWA Reasoning

- “I’ve drank that water my whole life and never had a problem!”
 - BWA’s are not targeted at the “Prime of life” population
 - BWA’s target the **immunocompromised**
 - Infants
 - Elderly
 - Chronic Diseases
 - Transplants, chemo, medications
 - Pregnant Women

BWA Reasoning

- “Understanding the true cause of waterborne disease allowed for development of effective water treatment and distribution, mainly by filtration and disinfection (chlorination). The resulting public health benefits have been enormous. Cutler and Miller (2004) estimate that in the early 20th century **clean water was responsible for nearly half of the total mortality reduction, three-quarters of the infant mortality reduction and nearly two-thirds of the child mortality reduction** observed in major US cities.” -*C.D. Howe Institute* - STEVE E. HRUDEY

Authority to Issue

HEALTH AND COMMUNITY SERVICES ACT

- **§5.** Every health officer, inspector or other person designated by the minister or authorized by the chief medical health officer may enter into and go upon a building, structure or land in the exercise of a power or the performance of a duty under this Act or the regulations and may make those orders and give those directions with regard to the structural alteration of the building or structure, the elimination of existing or potential insanitary conditions, or with respect to another matter that he or she considers advisable in the interest of the public health.

Authority to Issue

Sanitation Regulations under the Public Health Act (H&CS Act)

- Water supply

§12. (1) A water supply system intended to be used as a source of water for human consumption shall be located, designed, constructed and maintained as specified by the inspector.

Areas of Responsibility

- EHO
 - Surveillance (with the aid of water techs)
 - Interpretation of samples
 - Data entry and tracking
 - Troubleshooting
 - Reporting
 - Municipalities, Regional Health, Municipal Affairs, Health and Community Services, Environment
 - Public education

Areas of Responsibility

- Municipality
 - Alert the community, phone, radio, TV, Email
 - Hospitals, Personal care homes, food service establishments, daycares.
 - Post the BWA information where visitors to the community can see it

Standard Reasons for Issuing Boil Water Advisories

Water supply has no disinfection system	A
Chlorination system is turned off by the operator, due to taste or other aesthetic considerations.	B1
Chlorination system is turned off by operator, due to perceived health risks.	B2
Chlorination system is turned off by operator, due to lack of funds to operate.	B3
Disinfection system is off due to maintenance or mechanical failure.	C1

Standard Reasons for Issuing Boil Water Advisories

Disinfection system is off due to lack of chlorine or other disinfectant.	C2
Water distribution system is undergoing maintenance or repairs.	D1
A cross connection is discovered in the distribution system.	D2
Inadequately treated water was introduced into the system due to fire flows, flushing operations, minor power outage or other pressure loss.	D3

Standard Reasons for Issuing Boil Water Advisories

Water entering the distribution system or facility, after a minimum 20 minute contact time does not have a free chlorine residual of at least 0.3 mg/l or equivalent CT value.	E1
No free chlorine residual detected in the water distribution system.	E2
Insufficient residual disinfectant in water system primarily disinfected by means other than chlorination.	E3
Total coliform detected AND repeat samples can not be taken as required	F2T
Escherichia coli (E. coli) detected AND repeat samples can not be taken as required	F2E

Standard Reasons for Issuing Boil Water Advisories

Total coliforms detected and confirmed in repeat sample.	F3
Escherichia coli (E.coli) detected in an initial sample's) is considered extensive and the water system has other known problems.	F4
Escherichia coli (E.coli) detected and confirmed in repeat sample.	F5
Viruses detected (eg, Hepatitis A, Norwalk).	F6
Protozoa detected (eg, Giardia, Cryptosporidium).	F7

Standard Reasons for Issuing Boil Water Advisories

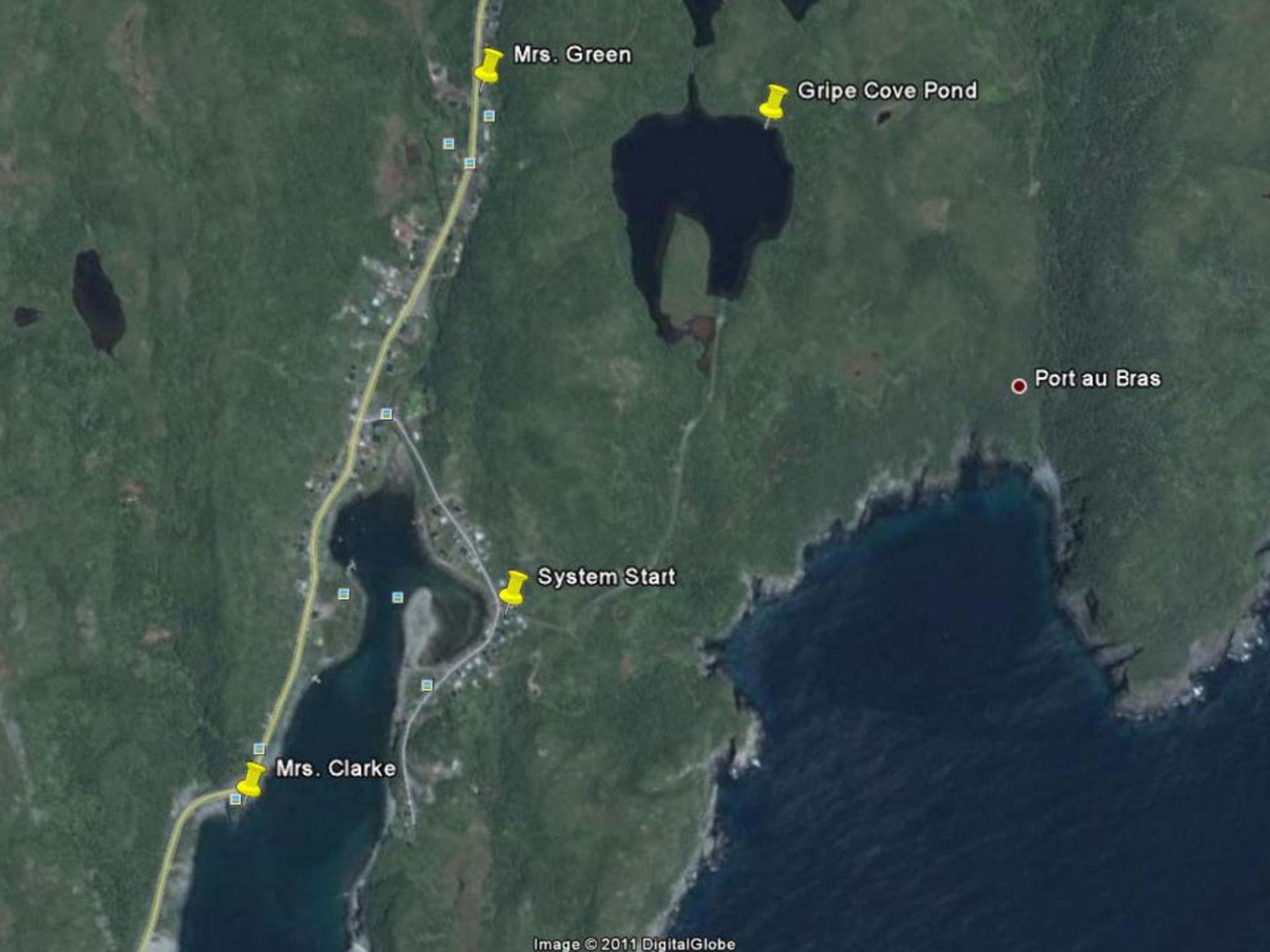
Water supply system integrity compromised due to disaster (e.g. contamination of water source from flooding, gross contamination, major power failure, etc.).	G
Waterborne disease outbreak in the community.	H

Removing a BWA

- BWA cannot be lifted until the system is functioning at the accepted standard
- For systems with design or adhoc issues BWA's will not be lifted until the infrastructure is corrected (contact tanks, CT value, flow control, Maintenance)
- Duplicate conformation required

Removing a BWA

- When conditions that caused the BWA are corrected then the lifting process can begin:
 - 2 full sample sets representing the full system.
 - Ex. Small system = 4 samples/month
 - To lift a BWA, 8 samples have to be all clear
 - Any positives and the BWA continues



Mrs. Green

Gripe Cove Pond

Port au Bras

System Start

Mrs. Clarke

Questions?

Thank You