



STANDARD CARE OF TRAINING

Town of Niagara-on-the-Lake

WORLD HEALTH ORGANIZATION

The World Health Organization estimates that about one half of the world's hospital beds are occupied by people ill from contaminated drinking water, and about 1.5 million deaths are directly attributed to drinking water annually.

Some of the potential health hazards from consuming contaminated drinking water are;

- ▶ Cholera
- ▶ Dysentery
- ▶ Hepatitis A
- ▶ Intestinal Worms
- ▶ Malaria
- ▶ Polio
- ▶ Typhoid Fever

OMWA – ONTARIO MUNICIPAL WATER ASSOCIATION

President's Message, winter 2018

Fake news and water governance

It may be the norm for election campaigns at every level for candidates or their followers to stretch the truth, but in the last few years, this has become dangerously exaggerated. Especially on social media, fake news or 'alternate facts' spread very rapidly, leaving voters confused as to what the truth is about with any issue.

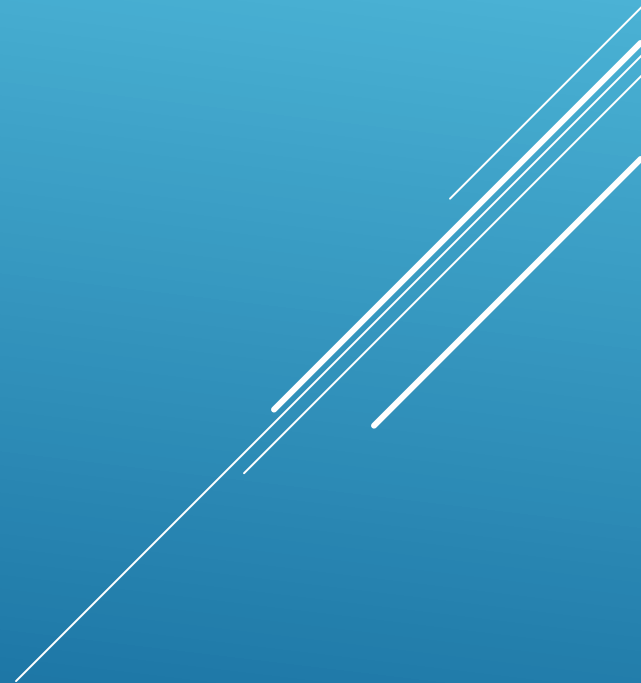
When it comes to water governance, that's not simply inconvenient: it can be dangerous and life-threatening. And for elected officials who have come to office not knowing or understanding the facts about their water services and safety, it can lead to bad policy decisions and personal liability.

For elected officials, being fully educated in the responsibilities and requirements under the Safe Drinking Water Act (2002) is crucial to avoiding not simply problems, but severe penalties for failure to do their due diligence as required by provincial law. And under the Standard of Care in the Act, elected officials are *personally* responsible for their municipality's water.

Walkerton E Coli Disaster



FLINT MICHIGAN WATER CRISIS



1987 CARROLL COUNTY, GEORGIA

- Between January 12 and February 7, 1987, approximately 13,000 of the 65,000 residents of the county suffered intestinal illness caused by the cryptosporidium parasite in the municipal drinking water system.
- Cryptosporidium is characterized by watery diarrhea, stomach cramps or pain, dehydration, nausea, vomiting and fever.
- Symptoms typically lasted for 1–4 weeks.

1993 MILWAUKEE, WISCONSIN

- Between March 23 and April 8, 1993, approximately 403,000 of the 880,000 residents supplied by one of the treatment plants suffered intestinal illness caused by the cryptosporidium parasite in the municipal drinking water system.
- There were also about 100 deaths, mostly among the elderly and immune deficient.
- The estimated cost associated was \$96.2 million.

2000 WALKERTON, ONTARIO

- **The 2000 Walkerton Outbreak of waterborne gastroenteritis was the result of a contamination to the water supply with E. coli bacteria.**
- **The contamination sickened more than 2000 people and resulted in 7 deaths.**
- **Two town officials eventually pleaded guilty and were sentenced to jail time and fines. Victim compensation costs totaled \$72 million.**

2001 NORTH BATTLEFORD, SASKATCHEWAN

- In the spring of 2001, about 7,000 people suffered from vomiting, diarrhea and high fever when the parasite cryptosporidium seeped into their drinking water.
- There were no deaths directly attributed to the incident. The municipality settled out of court to provide victim compensation costs of \$3.2 million.

2014 FLINT, MICHIGAN

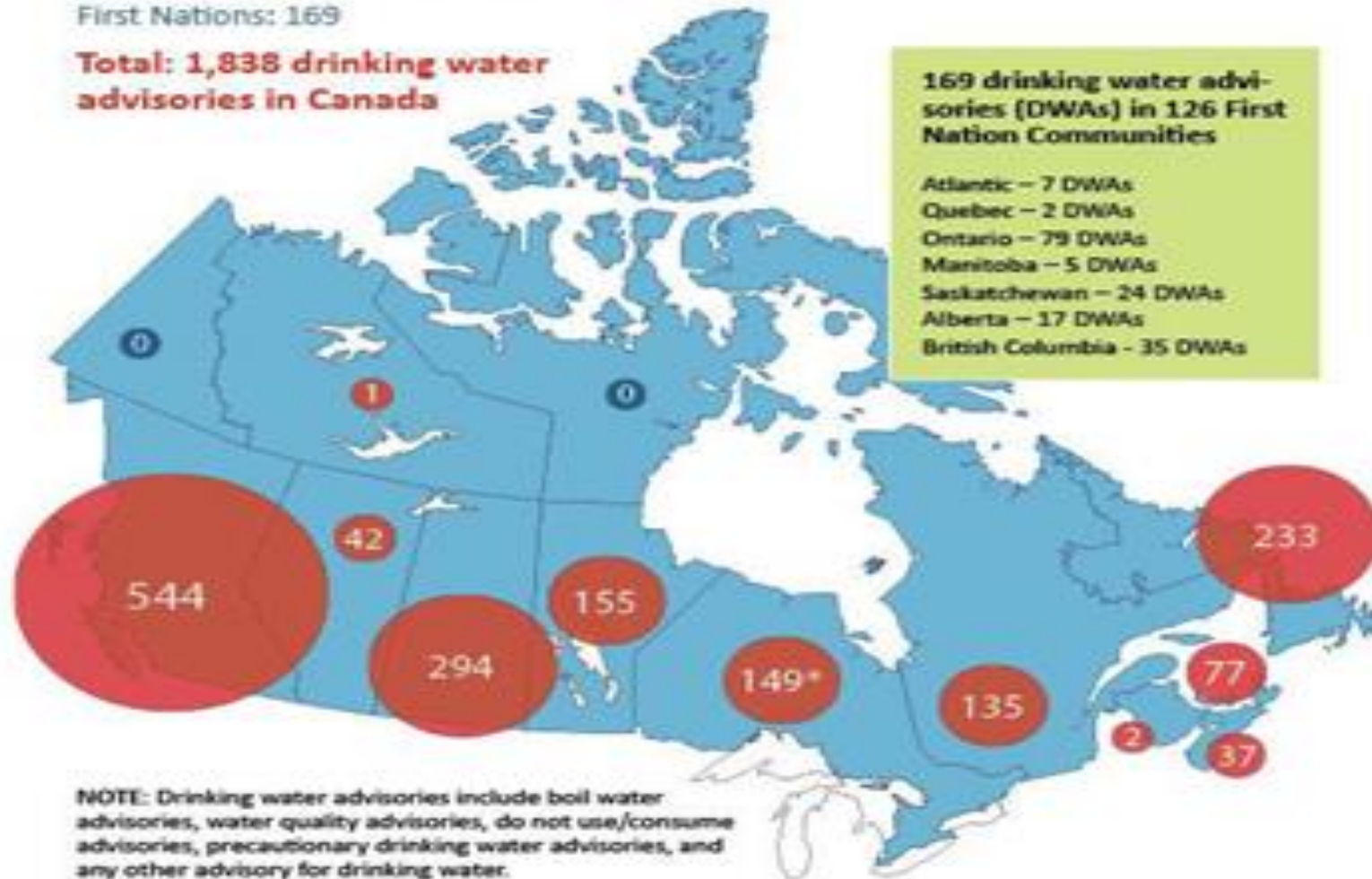
- In 2014 the drinking water source for the city of Flint, Michigan was changed from Lake Huron and the Detroit River to the Flint River as a cost saving measure. Due to insufficient treatment, lead leached from water pipes into the drinking water exposing over 100,000 residents. After studies proved the lead contamination a federal state of emergency was declared in January 2016.
- To date 14 officials are facing criminal charges and a multitude of law suites are underway. The total cost estimates range between \$400 million to \$300 billion.

Drinking water advisories by jurisdiction

Provinces and territories: 1,669

First Nations: 169

Total: 1,838 drinking water advisories in Canada



NOTE: Drinking water advisories include boil water advisories, water quality advisories, do not use/consume advisories, precautionary drinking water advisories, and any other advisory for drinking water.

*Information for Ontario only includes Boil Water Advisories.

NIAGARA-ON-THE-LAKE'S DRINKING WATER SYSTEMS

- *The Town of NOTL owns and operates two separate drinking water systems. The Niagara on the Lake Water Distribution System is classified as a Large Municipal Residential Drinking Water System and the Bevan Heights Water Distribution System is classified as a Small Municipal Residential System.*
- **The Region of Niagara through it's Decew Treatment Plant in St. Catharines and it's Niagara Falls Water Treatment Plant, produces and supplies treated drinking water to the Town's systems through transmission mains. In turn water is distributed to approximately 7,000 consumers in town through approximately 200 km of Town owned water mains. The Town's distribution system also contains approximately 1350 fire hydrants and 1320 main line valves.**
- **The amount of water the Town purchases from the Region annually is almost 3 million cubic meters. This water enters the Town in five locations. Water received from Niagara Falls enters Queenston at the Niagara River Parkway, St. Davids at Portage/Four Mile Creek Road, and at Mewburn/Concession 6 Road. Water received from St. Catharines enters the Town through mains under the Welland Canal near the Glendale bridge and another near the Homer bridge.**

*Drinking Water Quality
Management System*

Policy



The Town of Niagara-on-the-Lake owns and operates the Niagara-on-the-Lake Distribution System and the Bevan Heights Distribution System. The Town is committed to:

- W**orking to ensure legislative compliance with the Safe Drinking Water Act and all applicable regulations;
- A**cting quickly to resolve any issues relating to drinking-water quality;
- T**aking all steps necessary to provide safe drinking-water to Town customers;
- E**stablishing open and effective communication with Town water consumers;
- R**eviewing and continually improving its Drinking-Water Quality Management System.



PERMITS, LICENSES AND ACCREDITATION

- The Town's Drinking Water Works Permits and Municipal Drinking Water Licenses were all renewed by application in 2015. New permits and licenses were issued to the Town in 2018 to update/replace the existing ones to comply with the new version of the Standard which came into effect in 2017.
- All municipal licenses are valid for a period of 5 years and both of the Town's Licenses expiry date is March 15, 2020. Since the license renewal process requires extensive detailed information to be submitted and reviewed, the process generally takes about six months. As such, the Town's license renewal application will be submitted on or about September 14 this year.
- As part of our permit and licensing requirements, our Quality Management System must be fully accredited through one of the external accreditation agencies. Accreditation must be maintained and renewed every 3 years.
- After another re-accreditation audit conducted in 2018, the Town received a new Certificate of Accreditation which is valid until May 19, 2021.

SAFE DRINKING WATER ACT, 2002

PROMPTED BY JUSTIC O'CONNOR'S RECOMMENDATIONS FROM
THE WALKERTON INQUIRY

- **REQUIRES;**
- All water systems to be appropriately licensed
- All water systems to be accredited (3rd Party)
- All water operators must be appropriately licensed
- Mandatory annual audits, inspections and reporting
- Specific sampling, testing and laboratory requirements based on size/population
- MOECC has authority for inspections, investigations, orders, fines, charges
- **SET FINES;**
- For Individuals (first offence) up to \$4,000,000 per day and up to 5 years prison time
- For Corporations – up to \$10,000,000 per day
- Maximum fines are for an offence resulting in drinking water health hazard

LEGISLATED REQUIREMENTS INCLUDE

O. Reg 170/03 – Drinking Water Systems

- Disinfection type(s) and levels
- Sampling parameters, frequency and operational checks
- Reporting requirements

O. Reg 128/04 – Operators

- Licensing required for system type and class
- Training/retraining and renewal requirements

O. Reg 169/03 – Drinking Water Quality Standards

- Disinfection type (chlorine) residuals
- Microbiological (E. coli, Total Coliforms, HTP)
- Chemical (PH, Alkalinity, Lead, THM's, HAA's)

O. Reg 457/07 – Financial Plans

- To ensure all municipal drinking water systems are financially sustainable
- Must be approved by Council and updated prior to license renewal

STANDARD OF CARE (S.19, SDWA)

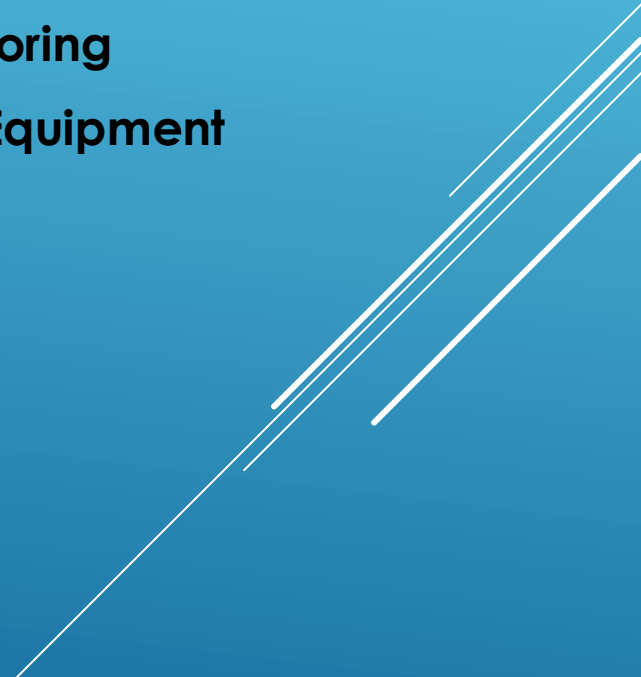
Came into effect January 1, 2013 - Owners Shall;

- Exercise a level of care, diligence and skill expected of a reasonably prudent person
 - Act honestly, competently and with integrity to ensure safety of the users of the
 - municipal drinking water system.
 - The Standard of Care allows owners to rely in good faith on the expertise of professionals and allows the owners to delegate some oversight responsibilities to staff.
 - The Standard of Care applies not only to Council but also applies to every person who oversees operating authority of the system(s), and every person who has decision making authority affecting the system(s)
-
- **However, Council maintains overall responsibility and accountability!**

DRINKING WATER QUALITY MANAGEMENT STANDARD

- The DWQMS is a legislated part of the Safe Drinking Water Act, 2002
- Outlined through the Operational Plan - it consists of 21 Elements
- Covers sets of policies, procedures and objectives
- Directly controls our activities as they relate to drinking water quality
- Must demonstrate conformity through the auditing and inspection processes
- Annual Reporting
 - Annual reports for each drinking water system must be submitted and available to the public
 - An Annual Summary Report must be submitted to Council (March)
 - Operational Plan must be endorsed by Council each time a new Council is elected or when there are any “significant” changes to the plan

DRINKING WATER QUALITY MANAGEMENT SYSTEM ELEMENTS

- 1. Quality Management System**
 - 2.. Quality Management System Policy**
 - 3. Commitment and Endorsement**
 - 4. Quality Mangement System Representative**
 - 5. Document and Records Control**
 - 6. Drinking Water System Process Description**
 - 7. Risk Assessment**
 - 8. Risk Assessment Outcomes**
 - 9. Organizational Structures, Roles, Responsibilities and Authorities**
 - 10. Competencies**
 - 11. Personnel Coverage**
 - 12. Communications**
 - 13. Essential Services and Supplies**
 - 14. Review and Provision of Infrastructure**
 - 15. Infrastructure Maintenance, Rehabilitation and Renewal**
 - 16. Sampling, Testing and Monitoring**
 - 17. Measurement & Recording Equipment Calibration & Maintenance**
 - 18. Emergency Management**
 - 19. Internal Audits**
 - 20. Management Review**
 - 21. Continual Improvement**
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ACCREDITATION

- Two external accreditation bodies are designated by the *MOECP* – Ministry of the Environment, Conservation and Parks
- For Niagara-on-the-Lake, the accreditation body used is - *SAI Global*
- SAI Global conducts a minimum of one audit per year for each of the Town's Drinking Water Systems
- Every three years an additional is conducted for Re-Accreditation
- The Niagara-on-the-Lake's Town systems were re-accredited in 2018



CERTIFICATE OF ACCREDITATION

This is to certify that the following operating authority:

The Corporation of the Town of Niagara-on-the-Lake

3 Lorraine Street, P.O. Box 100 Virgil, Ontario L0S 1T0 Canada

operates a

Quality Management System

which conforms with the requirements of

DRINKING WATER QUALITY MANAGEMENT STANDARD VERSION 2 - 2017

for the following scope of accreditation

Full Scope - Entire DWQMS

Certificate No.: CERT-0122012
File No.: 1631963
Issue Date: August 8, 2018

Original Certification Date: May 22, 2013
Certification Effective Date: August 3, 2018
Certification Expiry Date: May 19, 2021

Kevin Goodwin
General Manager Technical Services
SAI Global Assurance



DWQMS



Accredited by:
GMI-NAI Canada Limited (SAI Global), 20 Carlton Court, Suite 200, Toronto, Ontario M9W 7K6 Canada. This registration is subject to the SAI Global
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SAI GLOBAL
INFORM. INSPIRE. IMPROVE.

DRINKING WATER QUALITY MANAGEMENT SYSTEM REPRESENTATIVE (QMS REP)

The Quality Management Representative is the general communications contact for;

- **Consumers**
- **Suppliers & Contractors (including laboratories)**
- **Staff, Management and the Owner**
- **Region**
- **Accreditation body**
- **Ministry of Environment, Conservation and Parks (MOECP)**
- **Responsible for all matters related to regulatory compliance of the Drinking Water Systems**
- **Member and working participant of;**
- **Regional DWQMS Working Group (with Niagara Region and all local area municipalities)**
- **Provincial – Municipal Water/Wastewater Regulatory Committee**

OWNER'S RESPONSIBILITIES

The Owner for the Town's Drinking Water Systems is the Lord Mayor and Council

Some of the Owner's Responsibilities include;

- Support Top Management and the Operating Authority
- Set water rates
- Ensure adequate staff and resources
- Infrastructure investment
- Endorsement of the Operational Plan
- Emergency preparedness
- Commitment to continual improvement of the DWQMS