Performance Audit

Safety of Non-Municipal Drinking Water

// Independent Auditor's Report

Office of the Auditor General of Ontario

SPECIAL REPORT 2025

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1.0 Audit at a Glance

// Why We Did This Audit

- Contaminated drinking water can cause gastrointestinal illnesses and other potentially serious health effects, which may result in significant economic costs due to hospitalizations, doctor visits, lost work days and other related costs. As demonstrated by the Walkerton crisis, the consequences of Ontarians drinking unsafe water can be deadly.
- Nearly 3 million Ontario residents, as well as many businesses and other facilities, get their water from non-municipal drinking-water supplies.
- Non-municipal drinking-water supplies are not subject to the same requirements as municipal supplies. Some non-municipal systems that deliver drinking-water supplies are overseen by the Ministry of the Environment, Conservation and Parks (MECP), subject to a standard set of rules. Other systems are overseen by the Ministry of Health (MOH), through site-specific requirements set by the Public Health Units (PHUs). Private wells (from groundwater) and private intakes (from surface water) that serve five or fewer homes are the least regulated type of drinking-water supply.

// Our Conclusion

Reported test results provide a high level of assurance of the safety of Ontario's tested drinking water. Over 98% of all samples taken from non-municipal drinking-water systems over the past decade have met the Ontario Drinking Water Quality Standards.

This assurance, however, does not extend to all non-municipal drinking water because not all water is tested. Private wells and intakes, which are not considered to be drinking-water systems, have no testing requirements and are not included in the test results noted above. Drinking-water systems, which do have testing requirements, are generally not required to test for all contaminants. In addition, not all system owners test their water as required.

We found that MECP and MOH, in conjunction with the agencies they oversee, did not collectively have effective processes and systems in place to:

- oversee all non-municipal drinking-water systems, including inspecting systems at the required frequency, and ensure their compliance with applicable legislation, regulations and policies;
- educate users of private wells and intakes about the availability of water testing and the risks of not testing or treating their drinking water; and
- identify and manage all health risks related to non-municipal drinking water.

98%+

of all samples taken from non-municipal drinking-water systems over the past decade have met the Ontario Drinking Water Quality Standards

We also found that MECP did not have complete and accurate data on private wells. MOH did not fully measure, evaluate and publicly report on progress against its drinking-water program outcomes.

The ministries have accepted all 17 recommendations.

// What We Found

Some Small Drinking-Water Systems Have Not Been Identified, Assessed and Inspected by PHUs, Posing a Public Health Risk

- PHUs are responsible for overseeing small drinking-water systems. These are non-municipal systems that serve six or more seasonal residences or a public facility, such as a hotel, restaurant or church.
- We found that PHUs did not have effective means to identify small drinking-water systems that have not properly self-reported. Unreported systems are not inspected or assessed for risk by a public health inspector, and therefore drinking-water risks may go undetected.
- For a place to be considered a public facility, it must meet the definition in regulation. One of the listed types of public facilities in the regulation is “a place that operates primarily for the purpose of providing overnight accommodation to the travelling public.” MOH has not provided clear guidance on whether non-municipal drinking-water supplies for short-term rentals, such as homes or cottages booked through online rental platforms, are to be considered public facilities and therefore regulated by PHUs. Because of this, visitors to short-term rentals may drink or cook with water from an unregulated water supply that may or may not have been tested by the owner, thus creating a potential health risk.

- MOH requires PHUs to inspect low- and moderate-risk small drinking-water systems at least once every four years, and to inspect high-risk systems at least once every two years. However, we found that 17 (52%) of the 33 PHUs with small drinking-water systems in their region did not inspect all systems as required, with some PHUs noting inspection backlogs dating back over five years. Twelve of the PHUs with an inspection backlog attributed the backlog to staffing and/or resource challenges.

» **Recommendations 2, 3 and 4**

Many Owners of Small Drinking-Water Systems Did Not Sample Their Water as Required, and PHUs Rarely Enforced Compliance

- Owners of small drinking-water systems must sample and test their water at frequencies based on a PHU's risk assessment. We analyzed the data from five PHUs, which collectively regulate 1,660 small drinking-water systems, and found that 932 systems (56%) had missed at least one sample in the past five years. We found that 20% of the 932 systems had missed an entire year of samples, and 5% had missed multiple years.

56%
of 1,660 small drinking-water systems missed at least one sample in past five years

- We found that PHUs rarely used their enforcement powers to address issues of non-compliance. In the past five years, PHUs issued fines to the owners and operators of 11 (1%) of the 932 non-compliant systems. Nine of 10 PHUs with an enforcement backlog reported that budget or staffing constraints limited enforcement efforts. A lack of enforcement of water testing could lead to risks to water safety.

» **Recommendation 6**

MECP Has Effective Processes to Monitor and Enforce Compliance With Sampling Requirements, But Lacks Capacity to Regularly Inspect All MECP-Regulated Non-Municipal Systems

- MECP oversees non-municipal drinking-water systems that serve six or more year-round residences or a designated facility. Designated facilities are places such as schools, hospitals or nursing homes that serve people who may be more vulnerable to illness.

- We found that MECP has effective processes to monitor operators' compliance with sampling requirements. MECP uses laboratory testing data to generate a quarterly report to assess operator compliance with sampling and testing requirements.

- We also found that MECP takes steps to promptly address non-compliance when identified, and has processes to target repeat violators.

- However, we found that 34% of systems regulated by MECP had not been inspected in more than five years, and 9% had not been inspected in more than seven years. One of the systems that had not been inspected in more than seven years serves a community college that provides drinking water to 2,500 people. Inspections provide an important safeguard to pre-emptively identify and mitigate drinking-water issues that could pose a health risk.
- An internal MECP review found that the number of MECP inspections of non-municipal drinking-water systems declined 45% between 2012/13 and 2019/20. This occurred after MECP expanded the workloads of its water compliance officers to include additional responsibilities, such as inspecting municipal sewage and stormwater systems.

» **Recommendation 9**

34%
of MECP-regulated systems had not been inspected in over five years

9%
had not been inspected in over seven years

Many Private Well Owners Do Not Test Their Drinking Water

- About 1.3 million Ontarians rely on private wells for their drinking water. With little regulation and oversight of private wells, the Province's free water testing has played an important role for those Ontarians by helping to identify potentially unsafe drinking water.
- Despite the availability of free testing, less than one-third of Ontarians who rely on private wells tested their water within the past 12 months. A 2024 study attributed the low test rates to a lack of awareness about both the risks of drinking untested water and the availability of water-testing services.
- We found that there is no province-wide program focused on increasing awareness of the availability of free water testing and of the risks of not testing drinking water.
- Some cottages and other seasonal residences use private intakes for their drinking water, but there is little data on how often owners of these supplies test their water.

» **Recommendations 11 and 12**

~1.3 million
Ontarians get their drinking water from private wells

35%
of water samples from private wells and intakes from 2003 to 2022 tested positive for indicators of bacterial contamination

MECP Does Not Review Well Records for Completeness and Accuracy or for Compliance with Well Construction Requirements

- While owners of private wells are responsible for their own drinking water, MECP is responsible for regulating the construction, maintenance and decommissioning of wells in Ontario. This includes maintaining a database of well records.
- An internal MECP report estimated that roughly half of all submitted well records are incomplete or inaccurate. Our review of well records submitted over the past 10 years similarly found that records were often missing key information.
- We also found that, at the time of our audit, MECP had a backlog of 73,800 well records not fully processed and uploaded into the Ministry's wells database.

195,232
well records were submitted to MECP over the past 10 years

54,931
were missing information about well usage

73,800
were not fully processed as of August 2024

- Complete well records and an up-to-date database are important because they provide information that MECP needs for its oversight of wells. They also can provide a history of information for new well owners to manage their drinking water.
- MECP staff do not review submitted well records to verify whether the work performed complies with the required technical specifications. This creates a risk that MECP will fail to identify improperly constructed wells, which increases the risk of water-safety issues.

» **Recommendation 13**

Potentially Hundreds of Thousands of Abandoned Wells Have Never Been Properly Decommissioned

- Despite legal requirements to properly decommission wells that are not used or maintained, landowners do not always do so. Owners may be unaware of abandoned wells on their property and their legal obligations, or they may be unwilling to pay for decommissioning.
- Agriculture and Agri-Food Canada estimated in 2012 that there were likely about 730,000 abandoned wells in Ontario. As of August 2024, MECP's wells database had 108,000 records of decommissioned wells, suggesting that there may still be hundreds of thousands of abandoned wells that have not been decommissioned.
- Abandoned wells that are not properly decommissioned can create a pathway for contaminants to enter groundwater and potentially contaminate drinking-water sources in the area.

» **Recommendation 14**

MECP Has Not Fully Assessed the Feasibility of Applying Source Water Protection to Non-Municipal Sources

- Source water protection is the process of protecting water sources, such as lakes, rivers or groundwater reserves, that supply drinking water. Our Office's 2014 audit on source water protection recommended that MECP consider the feasibility of requiring source water protection plans to include private wells and intakes.
- In 2021, MECP assessed the feasibility of including non-municipal drinking water into its existing source water protection framework. The draft report concluded that it would be too costly and burdensome. However, MECP's feasibility assessment did not consider other more limited-scope measures that could still improve source water protections for non-municipal drinking water.

» **Recommendation 15**

Private Well Owners Are Not Being Notified of Potential Threats to Their Source Water

- In the last five years, MECP sent out 115 notifications to PHUs stating that chemicals that can pose serious health risks, such as arsenic and uranium, were found in groundwater in the PHU's region at levels that exceed the Ontario Drinking Water Quality Standards.
- Of the 26 PHUs that had received exceedance notifications, only four reported that they had informed private well owners about the potential chemicals in their water. PHUs told us they lacked information to identify who may be affected, and/or lacked staff experts that could assess and determine the level of risk to private well users.

» **Recommendation 16**

115
exceedance notifications were sent by MECP to PHUs in the last five years for chemicals that can pose serious health risks

4 of 26
PHUs informed private well owners about potential chemicals in their water

2.0 Background

2.1 Safe Drinking Water

Ontario is fortunate to have enormous supplies of fresh water, including hundreds of thousands of lakes, rivers and streams (known as surface water), as well as large reserves of below-ground water. Clean water is one of the critical necessities of life, essential for drinking, food preparation, bathing and other uses. The United Nations recognizes access to safe water as a basic human right and one of the 17 United Nations Sustainable Development Goals adopted by world leaders in 2015.

Water quality can be affected by various pollutants (see **Figure 1**), such as sewage from septic systems, industrial chemicals from spills, or runoff or infiltration of animal manure or fertilizer from farms or lawns. Water quality may also be affected by chemicals, such as arsenic or uranium, that are naturally present in the local soil, rocks or water. At high enough levels, such chemicals may make water unsafe to drink.

Figure 1: Examples of Threats to Drinking Water and Their Potential Health Impacts
Prepared by the Office of the Auditor General of Ontario

Threat	Potential Health Impacts	Examples of Sources
Microbiological contaminants (bacteria, viruses and parasites)		
***E. coli* bacteria**	Although most strains are harmless, some can cause gastrointestinal illness (nausea, vomiting, diarrhea), as well as lead to more serious issues such as kidney failure, stroke or even death.	Sewage from septic systems; animal/wildlife manure.
Enteric viruses	Gastrointestinal illness; less commonly, can cause respiratory symptoms, central nervous system infections, liver infections and muscular syndromes.	Sewage from septic systems.
Chemical contaminants		
Arsenic	Stomach pain, vomiting, diarrhea, muscle pain and skin rashes with high levels of short-term exposure. Various types of cancer with long-term exposure.	Naturally occurring in the soil, released through soil erosion, mining or other industrial activities.

(*Figure 1 continued*)

Threat	Potential Health Impacts	Examples of Sources
Barium	Kidney damage with long-term, high-concentration exposure.	Naturally occurring element found in various minerals.
Benzene	Increased risk of cancer with long-term exposure.	Oil tank leaks; fuel spills.
Lead	Affects brain development and cognitive functioning, especially in infants and children; increased blood pressure and kidney dysfunction in adults.	Corrosion of plumbing systems, such as pipes, fittings or service connections.
Nitrate	Blue baby syndrome (methaemoglobinemia) for bottle-fed infants, and impacts to thyroid glands.	Fertilizers; animal manure; sewage.
Sodium	Excessive intake can aggravate chronic heart failure.	Road salt; sewage.
Tritium	Cancer of the lung, breast, thyroid, bone, digestive organs and skin; leukemia.	Emissions from nuclear reactors.
Uranium	Chronic exposure may affect the kidneys.	Naturally occurring in many different minerals; emissions from nuclear industry, burning coal.

2.1.1 Impacts of Unsafe Drinking Water

Contaminated drinking water can have potentially serious health effects, as well as result in significant economic costs due to hospitalizations, doctor visits, lost work days and other related costs.

For example, Public Health Ontario (PHO) modelling estimated that, for Ontario in 2016, approximately 9,600 emergency room visits, 1,100 hospitalizations and 30 deaths could be attributable to microbiological contamination (bacteria, viruses and parasites) in water.

While PHO has estimated the overall burden of microbiological contamination on the province's health-care system, it is challenging to connect individual cases to a specific water supply or to accurately calculate the true number of cases. Many people do not seek medical care for mild symptoms, and may not link their illness to drinking water, assuming it is due to contaminated food.

Health impacts from chemicals in drinking water can be even harder to track or estimate, as they can come from long-term exposure, making causal links difficult to identify.

These challenges of tracing illnesses back to drinking-water supplies hamper efforts to accurately estimate the total public health impacts attributable to unsafe drinking water.

2.2 Regulation of Drinking Water in Ontario

2.2.1 Ontario's Tiered Regulatory Framework

Ontario's regulatory framework for drinking water was largely born out of a deadly drinking-water tragedy that occurred in Walkerton, Ontario in 2000 (see **Figure 2**), and the inquiry and recommendations made to prevent such a tragedy from reoccurring. Following the inquiry, the Province introduced new laws to protect drinking-water safety, but not all legal requirements apply to all drinking-water supplies.

Municipal residential drinking-water systems, which serve a little over 80% of Ontario's population, and therefore have the highest potential impact on public health if they fail, are regulated most stringently. Municipal residential systems generally have the strictest requirements for sampling, testing, treatment, operator training and inspection frequency. Most municipal systems are also subject to additional protections through their inclusion in source water protection plans. Such plans are developed to protect the water sources used to supply municipal drinking water.

Non-municipal drinking-water supplies are subject to different rules than municipal supplies, such as for testing, treatment, training and inspection frequency. These supplies are also generally excluded from

Figure 2: The Walkerton Contaminated Drinking-Water Incident

Prepared by the Office of the Auditor General of Ontario based on the findings and conclusions in Justice O'Connor's Report of the Walkerton Inquiry (2002)

The Original Cause

In May 2000, after days of heavy rain, cow manure from a farm in Walkerton, Ontario, washed into a groundwater well and contaminated the town's water supply with a deadly strain of *E. coli* bacteria as well as *Campylobacter* bacteria.

Exacerbating Causes

The operators of the drinking-water system, who lacked training and expertise and who had improperly operated the system for years, failed to adequately treat the water with chlorine, as well as failed to promptly detect the bacteria through testing. When the operators did discover the problem, they concealed it, even after residents started to fall ill.

The Impact

The incident resulted in 65 hospitalizations, over 2,300 cases of gastrointestinal illness and seven deaths. Many of those who survived suffered long-term health effects. The tangible economic impact of the incident was estimated to be over $64.5 million.

The Response

A public inquiry, led by Justice Dennis O'Connor, examined the causes of the incident and identified failings at virtually every step of the drinking-water process. Accordingly, Justice O'Connor made 121 recommendations to strengthen protections at every step, from source water protection to treatment, testing, response protocols and, finally, distribution.

Ontario's source water protection plans. Non-municipal drinking-water supplies are divided into different types, with each type regulated differently (see **Figure 3**).

Figure 3: Types of Non-Municipal Drinking-Water Supplies by Oversight Responsibility
Prepared by the Office of the Auditor General of Ontario

Potential public health impact (from highest to lowest)

Type of Supply	Who it Serves	# in Ontario (as of March 2024)
MECP under the *Safe Drinking Water Act, 2002*		
Year-round residential system	A residential community[1] that is occupied year-round, such as apartments, condominiums, townhouses, private subdivisions (homes or cottages), trailer parks and campgrounds.	**461**
System serving a designated facility	A facility that serves people who are more vulnerable to illness, such as child-care centres, schools, camps, seniors' homes, hospitals, health-care facilities and homeless shelters.	**1,355**
MOH under the *Health Protection and Promotion Act*		
Small drinking-water system (two types):		**~10,000**
» **Seasonal residential system**	A residential community[1] that is occupied seasonally,[2] such as cottages, trailer parks and campgrounds.	
» **Public facility system**	A facility that serves the public (other than a designated facility[3]), such as hotels, motels, resorts, bed and breakfasts, restaurants, gas stations, churches and community centres.	
Owners are responsible for their own drinking water[4]		
Private well (from a groundwater source)	Five or fewer private residences (commonly for a single residence).	**~ 500,000**
Private intake (from a lake, river or stream)	Five or fewer private residences.	**Unknown[5]**

1. A residential community is defined as six or more residences.
2. Closed for at least 60 consecutive days per year.
3. If a system serves a designated facility, it is regulated by MECP.
4. Owners are responsible for their own drinking water, but MECP regulates the construction, maintenance and abandonment of wells under the Wells Regulation under the *Ontario Water Resources Act*.
5. Estimated < 1% of primary residences, but also serves seasonal residences such as cottages.

This subdivision is based on several factors, including the supply's potential public health impact, considering:

- **The number of users it serves:** A water supply that serves more people has a greater potential impact on public health if it fails compared to one that serves fewer people. For example, a system that serves many homes, or that serves a public facility that may be frequented by many visitors, has a greater potential to impact public health than a system that serves a few homes.
- **The vulnerability of users it serves:** A water supply that serves children, seniors or sick patients, who are more vulnerable to waterborne illnesses, has a higher potential for public health impacts.

~3 million Ontarians
rely on non-municipal drinking-water supplies

Non-municipal drinking-water supplies serve almost 20% of the population, or nearly 3 million Ontarians, as well as some businesses and other facilities, mostly in rural, semi-rural or remote communities.

2.2.2 Split Oversight of Non-Municipal Drinking-Water Supplies

Ontario's primary law regulating the treatment, testing and distribution of drinking water is the *Safe Drinking Water Act, 2002*. When the Province first passed this law in 2002, MECP was given sole responsibility for regulating all drinking-water systems under this act.

In 2007, based on recommendations from Ontario's Advisory Council on Drinking Water Quality and Testing Standards, the Province transferred oversight for the small drinking-water systems to MOH and local PHUs. Inspectors working in the PHUs were considered to be better positioned to:

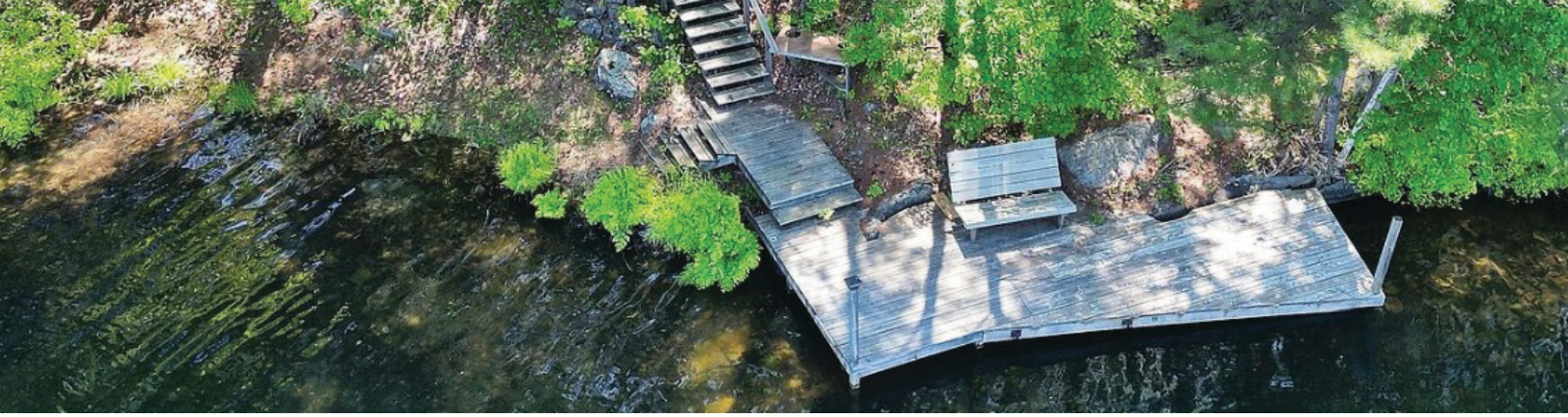
- inspect the approximately 10,000 systems dotted across the province;
- directly reach and explain the regulatory requirements to the regulated community; and
- evaluate the health risks of these systems and determine the requirements each system needed.

In 2008, the Province introduced a new site-specific, risk-based approach for small drinking-water systems. This change was intended to alleviate some of the burden for owners of small systems, who had been struggling to apply the previous one-size-fits-all requirements to their generally less-complex systems, while maintaining drinking-water safety.

As a result, non-municipal drinking-water supplies in Ontario are now divided into three tiers, with oversight split between the two ministries under two laws, as follows (see **Figure 3**):

- **Systems that supply water to six or more year-round homes or a designated facility** continue to be regulated by MECP, subject to a standard suite of requirements under the *Safe Drinking Water Act, 2002*.
- **Small drinking-water systems**, which serve six or more seasonal residences or a public facility, are regulated by MOH and the PHUs under the *Health Protection and Promotion Act*, each with customized risk-based requirements.
- **Private wells** (from groundwater) and **private intakes** (from surface water such as lakes or rivers), which are supplies that each serve five or fewer homes and no public facility, are subject to the least regulation and oversight. There are no requirements for owners of private wells or intakes to either treat or test their drinking water. In this report, private wells and intakes are not considered drinking-water systems.

While owners of private wells are responsible for their own drinking water, MECP regulates the construction, maintenance and abandonment of wells through the Wells Regulation under the *Ontario Water Resources Act*. MECP does not regulate private intakes, and advised our Office that it discourages their use for drinking water.



2.3 Roles and Responsibilities

2.3.1 MECP

Under the *Safe Drinking Water Act, 2002*, MECP has the following roles and responsibilities that relate to non-municipal drinking water:

- Regulating and inspecting non-municipal year-round residential drinking-water systems and systems serving a designated facility.
- Setting drinking-water quality standards for all drinking water in Ontario.
- Licensing and inspecting all Ontario laboratories that perform drinking-water tests.
- Annually reporting on the overall performance of all drinking-water systems, including both MECP- and MOH-regulated systems, as well as reporting on other drinking-water related topics, such as health hazards and emerging trends.

As noted in **Section 2.2.2**, MECP is also responsible for regulating the construction, maintenance and abandonment of wells under the *Ontario Water Resources Act*.

2.3.2 MOH and PHUs

Under the *Health Protection and Promotion Act*, MOH sets the policy direction and requirements for delivery of public health programs. Local boards of health, through their PHUs, are responsible for meeting these requirements and delivering public health programs and services, including the drinking-water programs, within their geographic borders. Each local board of health is accountable to MOH.

Each PHU has a medical officer of health who reports to the local board of health. PHU duties are generally carried out by public health inspectors. Inspectors may work on other public health programs in addition to drinking water, such as recreational water or food safety.

With respect to drinking water, PHUs are responsible for:

- Overseeing small drinking-water systems: PHUs are to conduct risk assessments and inspections, enforce regulations and provide education to system owners.
- Issuing drinking-water advisories: When a board of health is made aware of an incident that may affect water quality, it assesses whether to issue a drinking-water advisory to keep the

public safe. This responsibility applies to all drinking-water systems, whether regulated by MOH or MECP.

- Education and outreach to owners of private wells and intakes: PHUs are directed to provide information to members of the public on how they can safely manage their own drinking-water supplies, and to help increase awareness of the risks of waterborne illnesses from unsafe drinking water.

At the time of our audit, Ontario had 34 local PHUs. However, as there are no small drinking-water systems or private wells within the Toronto PHU, our audit focused on the other 33 PHUs. At the time of our audit, there were 63 full-time equivalent public health inspectors that performed drinking-water related duties across the 33 PHUs.

MOH provides roughly 70% of the PHUs' total funding for water-safety programs; the remaining 30% comes from the local municipalities. MOH also provides oversight and direction to the PHUs. The Ontario Public Health Standards, published by MOH, set out the minimum programs and services that PHUs are required to provide under the *Health Protection and Promotion Act*.

2.3.3 PHO

PHO, a board-governed agency accountable to MOH, operates Ontario's 11 public health laboratories. These laboratories perform free bacterial water testing for individuals who rely on private drinking-water supplies, such as private wells and intakes. At the time of our audit, PHUs operated 195 locations across Ontario where private well and intake users can drop off water samples. PHUs then send the samples to a PHO laboratory for testing.

As well, the *Ontario Agency for Health Protection and Promotion Act, 2007*, requires PHO to "provide scientific and technical advice and support" to the Government of Ontario and the health-care system, as requested.

2.3.4 Federal and First Nations Governments

The federal government and First Nations share primary responsibility for providing safe drinking water in First Nations communities. The federal government provides funding through Indigenous Services Canada to develop, operate and maintain water-treatment facilities in these communities. MECP works with Indigenous Services Canada to provide technical support for First Nations drinking-water projects. MECP has also provided some funding for source water protection.

The scope of this audit does not include First Nations' drinking water, as this is an area of shared responsibility between the federal government and First Nations communities. However, this is a critically important issue. First Nations communities are disproportionately affected by drinking-water quality issues. As of March 2025, there were 23 active long-term drinking-water advisories impacting 22 First Nations communities in Ontario.

3.0 Audit Objective and Scope

Our audit objective was to assess whether MECP and MOH, in conjunction with PHO and the local PHUs, collectively have effective processes and systems in place to support reliable and equitable access to safe non-municipal drinking water across the province by:

- overseeing non-municipal drinking-water systems, private wells and private intakes, and their compliance with applicable legislation, regulations and policies;
- identifying and managing risks to the health and safety of Ontarians related to non-municipal drinking water; and
- measuring, evaluating and publicly reporting on the safety of Ontario's non-municipal drinking water.

Our audit scope focused on non-municipal drinking-water supplies within provincial jurisdiction. This included provincial programs and responsibilities related to private wells and intakes and non-municipal drinking-water systems. Drinking water in First Nations communities was outside the scope of this audit. (For a federal audit of this topic, see the Auditor General of Canada's 2021 report, *Access to Safe Drinking Water in First Nations Communities – Indigenous Services Canada*.) Municipal drinking-water supplies were also outside the scope of this audit.

For more details, see our **Audit Criteria**, **Audit Approach** and **Audit Opinion**.

4.0 What We Found

4.1 Water Quality Standards and Water Testing

MECP has established, by regulation, the Ontario Drinking Water Quality Standards. This regulation sets out the maximum allowable concentrations for over 150 contaminants based on health risks.

Every owner of a drinking-water system, including municipal and non-municipal systems regulated by MECP or MOH, is required to sample the drinking water at a prescribed frequency. The owners are then required to get the water sample tested by a licensed laboratory to ensure it meets the standards for the specific set of contaminants prescribed for that system.

4.1.1 Over 90% of the Ontario Drinking Water Quality Standards Meet or Are Stricter Than Federal Guidelines

Health Canada publishes the Canadian Drinking Water Quality Guidelines, which set out recommended concentration limits for drinking-water contaminants based on the most up-to-date scientific research.

Our review of the Ontario Drinking Water Quality Standards found that, for the 54 substances for which both Ontario and Health Canada have concentration limits, 93% of the standards are the same or more stringent than Health Canada's guidelines. Ontario's limits were the same for 40 substances, more stringent for 10 substances, and less stringent for four others.

The Ontario Drinking Water Quality Standards also contain 96 standards for which Health Canada does not have a corresponding guideline. Many of these standards are for less common substances, and most non-municipal drinking-water systems are not required to test for them.

4.1.2 MECP Has Not Informed the Public About Its Response to Expert Advice on the Ontario Drinking Water Quality Standards for 18 Contaminants

MECP staff with scientific expertise review the Ontario Drinking Water Quality Standards regularly. The Province also has an advisory committee of experts in health and water treatment, called the Advisory Council on Drinking Water Quality and Testing Standards (Council), that reviews research related to drinking-water safety. The Council reviews Health Canada's guidelines and provides the Minister with advice on whether to amend Ontario's standards in light of updated federal guidelines. Under the *Safe Drinking Water Act, 2002*, the Minister must consider all Council advice. Where MECP decides to amend a standard, it is required under the *Environmental Bill of Rights, 1993* to post the proposed amendment on the Environmental Registry of Ontario for public consultation.

We found that MECP provides information to the public about the Council's advice through the Minister's Annual Report on Drinking Water but is not fully transparent on how it is responding to this advice.

Since 2017, the Council has provided the Minister with advice on the standards for 18 different contaminants based on updated federal guidelines. The Council advised MECP to retain Ontario's existing standards for 11 contaminants, adopt a new standard for two contaminants, make one standard less stringent, and make four standards more stringent.

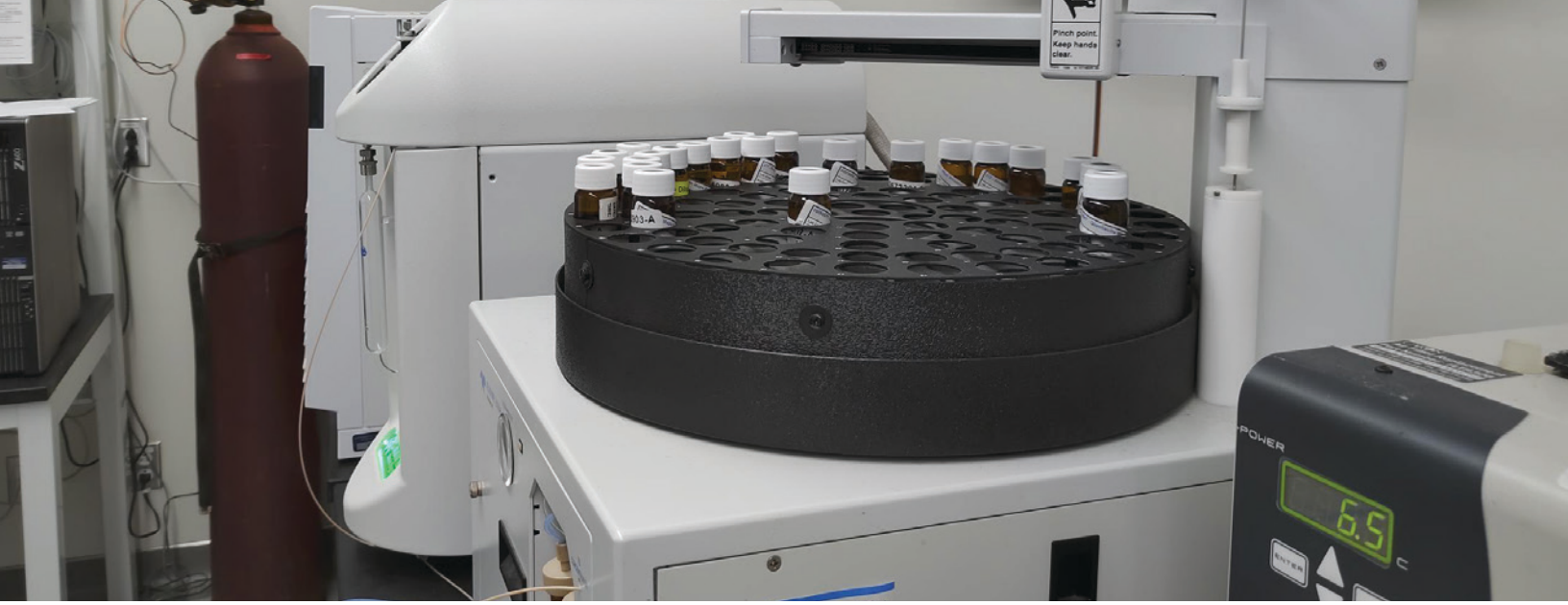
We found that MECP staff experts have reviewed all of the Council's advice and have provided internal briefings. However, MECP has provided little information to the public about the status of the Ministry's consideration of this advice or work being done in response. As a result, the public has no way of knowing whether MECP has made a decision to retain a standard, or whether the Council's advice is still under consideration.

Some of these contaminants are of high public interest. For example, 1,4-dioxane is a synthetic chemical that can leak from landfills and cause cancer. Exposure to lead can negatively affect neurological development and behaviour, and cause increased blood pressure or kidney problems. The primary source of lead in drinking water is from lead service lines, which are pipes that link a house to the main water supply, typically in municipal drinking-water distribution systems (which are outside the scope of this audit).

Recommendation 1

We recommend that MECP explore ways to enhance its reporting to the public on all advice provided by the Advisory Council on Drinking Water Quality and Testing Standards, the status of MECP's considerations of the advice provided, and any work conducted or decisions made as a result.

For the auditee's response, see **Recommendations and Auditee Responses**.



4.1.3 Over 98% of Drinking-Water Tests from Non-Municipal Systems Met Standards, But Tests Do Not Cover All Drinking Water or All Contaminants

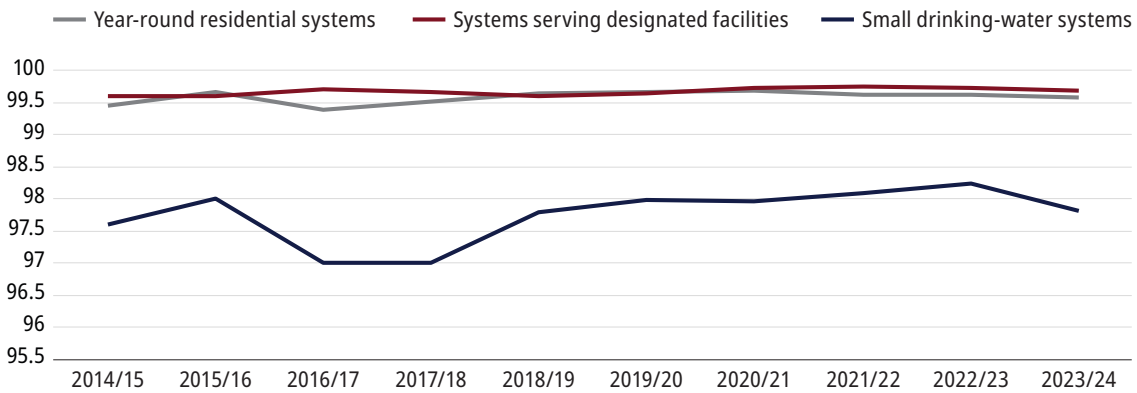
MECP reports annually on the overall results of the test samples received from municipal and non-municipal drinking-water systems in Ontario. Over the past decade, 98.7% of all tests from non-municipal systems met the Ontario Drinking Water Quality Standards. As seen in **Figure 4**, in 2023/24 (the most recent year):

- **99.68%** of tests from systems serving designated facilities met the standards;
- **99.57%** of tests from year-round residential systems met the standards; and
- **97.81%** of tests from small drinking-water systems met the standards.

These results for non-municipal systems are slightly lower than for municipal systems, where 99.87% of tests met the standards.

Figure 4: Percentage of Drinking-Water Tests That Met the Ontario Drinking Water Quality Standards for All Non-Municipal System Types (2014/15–2023/24)

Source of data: MECP



If a test result exceeds an allowable concentration in a standard, it is deemed an adverse water quality incident (AWQI). The system operator and testing laboratory must report any identified AWQI to the local PHU. The PHU must then assess whether the AWQI presents a potential health risk, and if so, the PHU may issue a drinking-water advisory to notify users.

In 2022/23 (the most recent data), PHUs issued 136 drinking-water advisories for non-municipal systems, affecting roughly 1% of all regulated non-municipal systems. As shown in **Figure 5**, 89% of these were boil water advisories due to bacterial contamination, 6% were do not drink or use advisories due to chemical contamination, and the remaining 5% were health information advisories.

Figure 5: Number of Drinking-Water Advisories, by Type, Issued for Non-Municipal Drinking-Water Systems, April 1, 2022 to March 31, 2023

Prepared by the Office of the Auditor General of Ontario

Type of Advisory	Example of Contamination That Would Trigger the Advisory	Purpose of Advisory	# Issued	% of Total Advisories
Health information	A chemical such as sodium or fluoride is found at a level that exceeds the drinking-water standard.	To notify community users of the exceedance and the recommended measures that can be taken to reduce exposure.	**7**	**5**
Boil water	Unacceptable microbiological levels of *E. coli* or total coliforms.	To notify users that they must boil their water to render it safe for use.	**121**	**89**
Do not drink	A chemical such as lead or nitrates is found at a level that exceeds the drinking-water standard.	To notify users when action(s) other than boiling the water is required to protect users. This may require some type of filtration and/or chemical or non-chemical treatment.	**7**	**5**
Do not use	Chemical contaminants such as trichloroethylene are found in the water.	To notify users that boiling or other treatments are inadequate to make the water safe for use. The operator or operating authority may also notify users of an alternate source of water, or provide one for them.	**1**	**1**

Note: Irrespective of the action taken related to an advisory, the PHUs have the authority to issue a direction or order under the *Health Protection and Promotion Act*, detailing what actions must be taken by the drinking-water system operator to provide water to users that is safe to drink.

Test results provide a high level of assurance that the vast majority of Ontario's tested drinking water is safe. However, this assurance does not extend to all non-municipal drinking water, as not all drinking water, and not all contaminants, are tested:

- **Some drinking-water systems do not test their water as required.** MECP's annual reports include the results of those systems that sampled and tested their water as required. They do not capture systems that failed to comply with the sampling requirements. Systems that have not complied with testing requirements increase the risk that unsafe drinking water may go undetected. See **Section 4.2.5** for our findings and recommendations related to non-compliance with testing.

- **There are no testing requirements for private residential wells and intakes.** The reported test results include drinking-water systems only. They do not include results on the quality of water from private wells or intakes, which supply drinking water to roughly 10% of all Ontario households. See **Section 4.4** for our findings and recommendations related to water testing for private wells and intakes.

- **The tests do not comprehensively cover all contaminants.** The testing requirements for each type of system are based on risk and vary accordingly. The most common testing requirements are for bacteria such as *E. coli*. Systems that serve designated facilities or year-round residences are required to test regularly for bacteria, and less frequently for either 58 or 60 chemicals, respectively. Small drinking-water systems are typically only required to test for bacteria, but may be directed by their local PHU to test for additional chemicals based on the individual risk assessment for that system. For example, a PHU might direct a system near a gas station to also test for benzene.

Without comprehensive testing, other protective measures, as recommended throughout the remainder of this report, are particularly important to protect drinking water. For example, see **Sections 4.6** and **4.7** for our recommendations related to protecting sources of drinking water and monitoring health data to identify potential risks from drinking water.

4.2 MOH Oversight of Small Drinking-Water Systems

As shown in **Figure 3**, MOH is responsible for establishing the drinking-water regulations and guidelines for small drinking-water systems under the *Health Protection and Promotion Act*. These are systems that serve seasonal residences or public facilities. Each PHU is responsible for overseeing the small drinking-water systems within its region, in accordance with MOH's act, regulations and guidelines.

Each PHU's responsibilities for overseeing small drinking-water systems include:

- Maintaining an inventory of systems in its region.
- Assessing the risk of the systems and, based on the risk assessment, prescribing site-specific operating requirements related to sampling, testing, treatment and operator training.
- Monitoring compliance with sampling and testing requirements, performing routine inspections of systems to monitor compliance with operating requirements and enforcing compliance with all requirements.

4.2.1 PHUs Lack Effective Processes for Identifying Unregistered Small Systems, Posing Potential Public Health Risks

We found that some small drinking-water system owners do not notify the PHUs of the existence and operation of their system as required by regulation. Over the past five years, 20 PHUs have collectively found approximately 260 unregistered systems.

Over the past five years, 20 PHUs have collectively found approximately 260 unregistered systems.

We also found that PHUs do not have effective means to identify systems in their jurisdictions that have not properly self-reported. Unreported systems are not inspected or assessed by a public health inspector, posing potential public health risks as they may not meet safety requirements.

Owners of new small drinking-water systems are required to notify their local medical officer of health (in practice, the PHU) before supplying water. This notification prompts a public health

inspector to conduct a risk assessment of the system and issue a directive with risk-based requirements intended to ensure the water is safe for consumption. Owners of new systems are not permitted to supply water to the public until they have received written permission from the medical officer of health.

Owners of new small systems are not permitted to supply water to the public until they have received written permission from their local medical officer of health.

PHUs told us that the primary reason for the lack of notification was that owners were not aware of their duty to report to the PHU.

In 2024, during the course of our audit, MOH created a new webpage with information and updated fact sheets about operating small drinking-water systems. We note that this webpage and its resources are only informative to system owners who are made aware of them. MOH does not have a provincial program to make small drinking-water system owners aware of the webpage or owners' reporting requirements.

To address this gap, some PHUs have developed processes to help identify unregistered systems. In our survey of the 33 PHUs, 11 (33%) reported that they receive some help from municipal staff in finding unregistered systems. For instance, some municipalities inform PHUs about new establishments that might have a small drinking-water system when the municipality receives an application for a new business licence.

The remaining 22 (67%) of PHUs reported that they do not receive help from municipal staff. Some of these PHUs have used other less formal and less efficient methods, such as coming across advertisements for new businesses or responding to complaints. Other PHUs have no processes for finding unregistered systems. Without effective processes in place, more unregistered systems likely remain unidentified.

We also found that PHUs rarely use enforcement tools, such as fines from tickets or court prosecutions, to address failures to notify them. Of the 20 PHUs that identified unregistered systems, 15 (75%) reported not taking any enforcement actions in response to the failure to notify them about the systems.

Recommendation 2

We recommend that MOH work with PHUs to:

- develop and implement initiatives to make small drinking-water system owners aware of the requirement to notify the local PHU before supplying water to the public; and
- examine mechanisms for PHUs to better identify unregistered small drinking-water systems.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.2.2 Lack of MOH Guidance on Drinking-Water Supplies for Short-Term Rentals May Create a Potential Public Health Risk

We found that MOH has not provided clear guidance or direction to PHUs on whether non-municipal drinking-water supplies for short-term rentals, such as homes or cottages booked through online rental platforms, are covered under MOH regulations. Consequently, each PHU independently decides whether to treat them as small drinking-water systems, which are regulated, or as private wells or intakes, which are not regulated. As a result, drinking-water supplies in short-term rentals are subject to different levels of water safety and oversight depending on their location in the province.

A regulation under the *Health Protection and Promotion Act* requires PHUs to regulate drinking-water systems that serve a "public facility." The regulation states that a public facility includes "a place that operates primarily for the purpose of providing overnight accommodation to the travelling public." Ambiguity over the term "primarily" creates uncertainty about the inclusion of certain short-term rentals. For instance, there is no clear threshold for what number of rental days would trigger a property, such as a cottage, to be classified as a "public facility."

The use of short-term rentals has grown significantly over the past decade, increasing the need for clarity of this issue. For example, in the Muskoka Region, the market share of short-term rentals in the accommodation sector increased from 19% in 2017 to 44% in 2021. In the Algonquin Park, Muskoka and Parry Sound Region, there were an estimated 3,181 short-term rentals in 2024, a 15% increase from the previous year.

One PHU sought MOH guidance in 2023 on whether drinking-water supplies serving short-term rentals fall under the regulation, but MOH did not provide a clear direction in its response. MOH stated that its policy has been for PHUs to include bed-and-breakfasts as small drinking-water systems. However, for short-term rentals, MOH stated that "as a site-specific risk-based program, there is not one approach" to regulating them. MOH stated that public health inspectors are responsible for determining if each supply should be regulated as a small drinking-water system.

Some PHUs have sought independent legal opinions on regulating drinking-water supplies in short-term rentals, resulting in conflicting advice, as well as extra legal costs. In March 2024, one PHU received a legal opinion concluding that short-term rentals can be subject to the small drinking-water system regulation depending on the amount of time and space in the premises that is used by the owner versus the travelling public. Conversely, another PHU was advised that these supplies should not be subject to the small drinking-water system regulation, in part because it is impractical to determine when short-term rentals are being used by the owner or rented out to the public.

We asked the 33 PHUs if they considered drinking-water supplies to short-term rentals as small drinking-water systems; 10 (30%) reported that they do, 19 (58%) do not and the other four (12%) were undecided. Without a consistent approach to regulating these supplies, visitors to unregulated accommodations may drink or cook with water from uninspected and untested water supplies, creating a potential public health risk.

Without a consistent approach to regulating these supplies, visitors to unregulated accommodations may drink or cook with water from uninspected and untested supplies.

We also found that a key factor in PHUs' determination about whether to regulate supplies to short-term rentals was concerns about workload. In our survey, 20 (61%) of the 33 PHUs stated that they lack sufficient staff to regulate small drinking-water systems.

Regulating short-term rentals would add workload to the PHUs. For instance, one PHU identified, based on municipal licensing information, that its region may have about 500 drinking-water supplies serving short-term rentals. This PHU currently inspects about 570 systems and already has a backlog of 300 initial risk assessments. Of the 19 PHUs that do not regulate short-term rentals, 13 reported resource limitations as a factor for why they do not, and 11 also cited a lack of MOH guidance as the reason for not regulating short-term rental supplies.

Recommendation 3

We recommend that MOH, in consultation with PHUs and short-term rental platforms:

- explore and develop options for clear provincial direction on when drinking-water supplies in short-term rental properties are regulated as small drinking-water systems under the *Health Protection and Promotion Act*, which would enable PHUs to require testing of the drinking water; and
- if the direction is to not regulate drinking-water supplies in short-term rental properties as small drinking-water systems, assess the need to develop requirements for owners of short-term rental properties to notify renters that the water is not regulated and whether the water has been tested.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.2.3 Less Than Half of PHUs Met Inspection Frequency Requirements for Small Drinking-Water Systems

MOH requires that PHUs perform routine inspections of small drinking-water systems to ensure water safety. Inspections assess compliance with requirements for operator training, water treatment and system maintenance. This includes assessing compliance with any issued directives, which remain in effect even if ownership changes.

The inspection frequency is based on the PHU's initial risk assessment. Low- and moderate-risk systems must be inspected at least once every four years, whereas high-risk systems require inspections at least once every two years. As of March 2023, of the roughly 10,000 regulated small drinking-water systems, 80% were categorized by PHUs as low risk, 12% as moderate risk and 8% as high risk.

33
PHUs have small drinking-water systems in their region

52%
have not inspected all systems as required

We found that 17 (52%) of the 33 PHUs with small drinking-water systems in their region have not inspected all systems as required. These PHUs reported that they had accumulated inspection backlogs. Eight of these 17 PHUs reported backlogs dating back over five years, with one reporting a small drinking-water system in eastern Ontario that has been due for inspection since 2010. Three PHUs also reported inspection backlogs for over 50% of their entire inventory.

In our survey, 12 (71%) of the 17 PHUs with an inspection backlog attributed the backlog to staffing and/or resource challenges. Thirteen also reported that the COVID-19 pandemic contributed to their inspection backlog.

PHUs noted that drinking-water inspections can be very time consuming. Some reported average times of over eight hours for an inspection, including the onsite visit, travel to and from the site, and follow-up work. Resource issues were a particular concern in Northern Ontario, where six of the PHUs with inspection backlogs are located. These PHUs reported needing costly flight or boat access to reach certain sites and experiencing staff shortages.

Recommendation 4

We recommend that MOH work with PHUs to:

- assess the extent of and reasons for any inspection backlogs, including resources and costs; and
- consider and develop strategies to ensure that all PHUs can deliver on their responsibilities to inspect small drinking-water systems at the required frequency.

For the auditee's response, see **Recommendations and Auditee Responses**.

Source: Walkerton Clean Water Centre

4.2.4 Inconsistent Training for Inspectors May Pose Public Health Risks

Public health inspectors are required to inspect and assess small drinking-water systems for risks. We found that public health inspectors across the province have varying levels of training to implement these responsibilities.

Inconsistent training could mean that inspectors may not inspect and assess all systems equally, creating potential risks for Ontarians who rely on small drinking-water systems. For example, if an inspector were to fail to identify a drinking-water threat, such as a nearby septic tank, this would affect how they complete the risk assessment tool. This could result in underrating a system's risk, and subjecting it to fewer conditions and less frequent inspections.

Public health inspectors hold a Certificate in Public Health Inspection (Canada), which is a national certification intended to broadly meet public health inspection needs. Thirty-two of the 33 PHUs told us that the national certification process was inadequate to prepare staff to inspect and assess the risk of small drinking-water systems and enforce requirements.

32 of the 33 PHUs told us that the national certification process was inadequate to prepare staff to inspect and assess the risk of small drinking-water systems and enforce requirements.

The Walkerton Clean Water Centre (WCWC), a provincial government agency, delivers supplemental training for public health inspectors about small drinking-water systems. MOH recommends, but does not require, that inspectors receive this training. Training is particularly important because 16 (48%) of the 33 PHUs reported that, in order to adapt to shortages of experienced staff, they have been moving away from drinking-water specialists and instead spreading the workload across generalist inspectors or using temporary inspectors or students.

When we surveyed the 33 PHUs about their inspectors' training, 18 (55%) reported that at least one of their inspectors who oversees small drinking-water systems had not taken the WCWC training. Of the 18 PHUs, six (33%) reported that at least half of their inspectors had not taken the training.

One-third of the PHUs stated that the inaccessibility of WCWC courses, including the cost, frequency and location of courses, was a barrier or challenge for them. Although PHUs reported mitigating actions, such as in-house training and job shadowing, they specifically noted that they would like the WCWC training to be more accessible, including through online training.

WCWC informed us that the location of its inspector training is based on need and requests. We obtained the inspector training calendar from WCWC for the last five years. We found that WCWC offered, on average, four courses per year. There were no online inspector training sessions and no courses in the four northernmost PHUs, which include 25% of active small drinking-water systems in Ontario; inspectors from two of these four PHUs travelled south to Sudbury to attend training.

In our survey, 14 PHUs told us that a lack of accessible WCWC training also presented an issue for operators of small drinking-water systems. When a public health inspector conducts a risk assessment, the inspector may direct the operator to take specific courses to ensure they have the knowledge and skills to sample, treat and test the water, and maintain and operate the system to provide a safe water supply. If training is not accessible, this requirement cannot be met.

As with the inspector training, this issue was greater in the north. Northern PHUs reported that WCWC rarely offers training in Northern Ontario for small drinking-water system operators, and that the in-person format can be difficult for northern residents. There is no online offering for the main operator training recommended by MOH.

Recommendation 5

We recommend that MOH take the lead to work with the WCWC to improve the accessibility and uptake of training sessions to meet the needs of both public health inspectors and small drinking-water system operators.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.2.5 Many Small Drinking-Water System Owners Do Not Comply with Sampling Requirements

Every owner of a small drinking-water system must sample the water and have it tested to ensure it meets the Ontario Drinking Water Quality Standards for the specific contaminants set out in a PHU directive. Public health inspectors prescribe the frequency of sampling for each system based on MOH guidance and the results of a risk assessment of the system. For example, for systems that have no history of test results for their water, MOH recommends sampling every week for high-risk systems that do not treat their water, and every three months for low-risk systems that do treat their water.

We analyzed the sampling compliance data from five PHUs spread across the province, which collectively regulate 1,660 small drinking-water systems. We found that 932 (56%) of these systems had missed at least one sample in the past five years. Further, 185 (20%) of the 932 systems had missed an entire year of samples, while 43 systems (5%) had missed sampling for multiple years.

4.2.6 Flaws in MOH's IT System Hinder PHUs' Ability to Monitor Sampling Compliance

We found that MOH's information technology (IT) system does not enable PHUs to effectively monitor system operators' compliance, or non-compliance, with sampling requirements.

Public health inspectors are required to enter the sampling requirements for each small drinking-water system into the Risk Categorization Tool (RCat), a MOH web-based application. PHUs are to monitor sampling compliance at least every three months.

A separate MOH application, called the Laboratory Results Management Application (LRMA), is used by laboratories to submit test results. LRMA then compares the sampling requirements from RCat against the test results to produce sampling compliance reports. In this way, LRMA is supposed to enable PHUs to track whether small drinking-water systems are complying with sampling requirements.

However, we found that LRMA's compliance reports are inaccurate. These inaccuracies are due to several shortcomings in RCat and LRMA, including:

- Some PHUs are unable to enter into RCat all sampling frequencies or different sampling frequencies for different parts of the system.
- There are problems tracking sampling compliance of seasonal systems in LRMA, as operators are not required to sample when their systems are closed. While PHUs are required to enter the opening and closing dates of seasonal systems into RCat, system owners do not always notify PHUs of these dates, creating inaccuracies.
- System owners may notify PHUs about the dates via multiple means (email, fax, mail or phone), making it inefficient for PHUs to maintain up-to-date information in RCat.

Without accurate reports, PHUs cannot rely on LRMA's reporting features to effectively fulfill their duty to monitor sampling compliance. Instead, PHUs must verify each small drinking-water system's sampling history in LRMA. While PHUs can still monitor compliance by manually comparing samples submitted against sampling requirements, this is less efficient and results in some PHUs monitoring compliance less frequently.

Upon request from our Office, eight of the 33 PHUs were unable to provide sampling compliance data. Three PHUs stated that capacity constraints prevented them from providing the data. Three acknowledged that they were not monitoring within the required three-month interval.

4.2.7 Enforcement Efforts Are Too Costly for PHUs and Rarely Used

Public health inspectors have enforcement powers, with progressive enforcement tools, to address issues of non-compliance. As appropriate, inspectors may:

- issue a verbal or written warning;
- issue a Health Hazard Order, which can require an owner or operator to take specified actions, such as close a facility, perform specific work or cease supplying water;
- issue a ticket, which carries a set fine ranging from $45 to $295 per offence; or
- for more serious issues, commence a prosecution, which upon conviction, carries higher fines of up to $5,000 for an individual, or up to $25,000 for a corporation, for each day or part of a day on which the offence occurs or continues.

We found that inspectors issued tickets to the owner or operator of 1% (11) of the 932 systems that we identified as non-compliant with the sampling requirement (see **Section 4.2.5**). We also found that inspectors did not consistently send even a warning (the lowest enforcement action) to offenders, even if they were repeat offenders. For example, a system serving a fishing and hunting lodge in Northern Ontario missed four years of samples in five years without receiving a warning or fine. In the same PHU, two systems missed three years of samples in five years and did not receive a warning, fine or even a routine inspection during that period.

We found that PHUs did not utilize the stronger enforcement tools because they were too costly or used too many resources. Nine of the 10 PHUs with enforcement backlogs told us that not having a dedicated enforcement budget or sufficient staff capacity limited enforcement efforts. For example, three PHUs with enforcement backlogs reported that their cost of issuing tickets exceeded the fines levied, which are capped at $295.

We found that PHUs did not utilize the stronger enforcement tools because they were too costly or used too many resources.

Four PHUs reported enforcement costs of over $10,000 each in the past five years. One PHU reported that prosecuting a small drinking-water system operator (a trailer park in Northumberland County with improper water treatment, among other issues) cost $71,000 in fees for legal counsel, plus additional costs for staff time and vehicle mileage. Despite the offender being fined $10,000 and ordered to pay the PHU's legal fees, the PHU ultimately only received a settlement of $22,000, resulting in a significant out-of-pocket expense for the PHU.

We note that, in contrast to the enforcement tools available to PHUs, MECP has implemented administrative monetary penalties as a less resource-intensive tool to improve enforcement rates within its ministry. These penalties do not require court proceedings, and can be more severe for violators than fines from tickets. For example, administrative penalties for spills with significant impacts can be up to $100,000 per day. At the time of our audit, MECP was planning to expand the use of this enforcement tool to include violations under the *Safe Drinking Water Act, 2002*.

Recommendation 6

We recommend that MOH:

- assess and resolve issues with the Laboratory Results Management Application and Risk Categorization Tool information systems, including exploring a more efficient way for operators to report opening and closing dates for small drinking-water systems, so that these systems provide reliable data on sampling compliance; and
- collaborate with PHUs to develop a comprehensive plan, including exploring alternative, cost-effective enforcement tools (such as monetary penalties), to better enforce small drinking-water system operators' compliance with sampling requirements.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.2.8 MOH Does Not Track Outcomes for Its Drinking-Water Program

MOH's Ontario Public Health Standards set out mandatory minimum program outcomes for each program delivered by PHUs. For the drinking-water program, the standards set out eight program outcomes, including: timely and effective detection and response to drinking-water contaminants; mitigation of waterborne illnesses; and safe operation of small drinking-water systems. The standards also include a list of indicators to assess the outcomes for several of MOH's public health programs, but none relate to its drinking-water program.

We found that MOH is not tracking progress against the eight drinking-water program outcomes. This lack of tracking means that MOH is unaware of whether all PHUs are holding system owners and operators accountable to the requirements to safely operate their drinking-water systems, in accordance with program outcomes.

4.2.9 MOH Does Not Verify PHU Performance on Drinking-Water Program

In the absence of outcome indicators, such as percentage of systems that pass inspections, MOH has instead developed activity (output) indicators, such as number of inspections, that PHUs are to report on. We found that MOH does not verify that all PHUs respond, nor verify the information provided.

For instance, MOH periodically requests that boards of health attest to conducting routine inspections of small drinking-water systems. In 2022 (the most recent attestation), 23 (70%) of the 33 boards of health attested to meeting this requirement; six (18%) reported that they did not meet this requirement, and four (12%) did not respond to the attestation request. MOH did not verify the attestations nor follow up with the PHUs that had either not responded or not met the requirements.

Although 97% of PHUs reported in 2022 that they responded to 100% of their AWQIs within 24 hours, we found that only one actually tracked its response times. Without tracking, both MOH and PHUs lack the means to verify the accuracy of this reporting.

PHUs are also required to periodically attest to the percentage of AWQIs they responded to within 24 hours. When an AWQI is reported, the PHU must initiate a response within 24 hours of being advised. The PHU must determine whether an advisory should be issued, and may direct the system owner on corrective actions that should be taken. Although 97% of PHUs reported in 2022 that they responded to 100% of their AWQIs within this time frame, we found that only one PHU actually tracked its response times. Without tracking, both MOH and PHUs lack the means to verify the accuracy of this reporting.

We also found that MOH's IT system that tracks AWQIs does not allow MOH to verify this indicator. There is no field to record a response time or the corrective action required, preventing PHUs and MOH from being able to track whether inspectors are responding to AWQIs in a timely manner.

Recommendation 7

We recommend that MOH:

- review and update the current indicator framework in the Ontario Public Health Standards to ensure that public health outcomes related to safe drinking water are measured effectively;
- implement processes for following up with PHUs that do not respond to requests for attestations or performance reports on indicators; and
- periodically verify the PHUs' reported performance with respect to these indicators.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.2.10 MOH's IT Systems Do Not Meet PHU or Ministry Needs

MOH has three main IT systems that support its drinking-water program: RCat, LRMA and the Drinking Water Advisory Reporting System (DWARS) (see **Glossary** for a brief explanation of each IT system). We found significant flaws in these IT systems that create inefficiencies for PHUs and make it more difficult to track outcomes for MOH's drinking-water program.

For example, as noted in **Section 4.2.6**, constraints in LRMA and RCat limit PHUs' ability to monitor system operators' compliance with sampling requirements. As noted in **Section 4.2.9**, constraints in LRMA limit MOH's ability to track response times for AWQIs. In a third example, we found that the lack of linkages between DWARS, where drinking-water advisories are recorded, and LRMA, where AWQIs are recorded, limits MOH's ability to track the use of advisories in response to AWQIs.

PHO has also noted IT challenges. In a 2019 PHO survey of public health inspectors, respondents reported problems using RCat during risk assessments. The respondents noted that the system times out too quickly, forcing users to log back in multiple times, and that it frequently freezes or crashes, leading to data loss. They also noted that RCat fails to capture important details, such as different required sampling frequencies for different parts of the small drinking-water system.

We found that these challenges continue. In our 2024 survey of the 33 PHUs, 21 (64%) reported challenges with RCat. For example, some noted that it can be time-consuming and difficult to use for routine risk assessments. In addition, 20 (61%) of PHUs reported challenges with LRMA, and eight (24%) reported challenges with DWARS.

In our 2024 survey of the 33 PHUs, 21 (64%) reported challenges with the RCat IT system.

MOH hired a consultant to assess the effectiveness of its various IT systems, including the IT systems for its drinking-water program. The consultant's findings, presented in January 2023, mirrored many of our findings. The consultant found that MOH's IT systems often do not meet the PHUs' needs, can be difficult to use, and have limited data-sharing and reporting capabilities.

A consultant found that MOH's IT systems often do not meet the PHUs' needs, can be difficult to use, and have limited data-sharing and reporting capabilities.

As a result of these IT constraints, PHUs often develop their own local solutions, at their own expense, to address gaps and challenges. These local solutions result in multiple different systems (including paper-based ones) to capture data. The consultant found that these practices led to inconsistent data, challenges in data sharing, and increased workloads and costs.

At the time of our audit, MOH was pursuing funding and approvals for IT modernization, including items that could help address identified deficiencies.

Recommendation 8

We recommend that MOH:

- in collaboration with PHUs, analyze limitations of the IT systems that support MOH's drinking-water program; and
- explore and develop options for a plan, with timelines, to modernize the drinking-water related IT systems, so that they address identified limitations and meet MOH's and the PHUs' tracking and data-sharing needs.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.3 MECP Oversight of Year-Round Residential Systems and Systems Serving Designated Facilities

As shown in **Figure 3**, under the *Safe Drinking Water Act, 2002*, MECP is responsible for regulating non-municipal drinking-water systems that serve year-round residences and designated facilities.

As regulator, MECP has established various requirements for these systems, including requirements for the proper installation, maintenance and disinfection of treatment equipment; requirements for mandatory training and certification for system operators; and sampling and testing requirements for specific contaminants (microbiological, chemical and lead) at specified frequencies.

MECP water compliance officers are responsible for inspecting and enforcing compliance with all of these requirements.

4.3.1 One-Third of MECP-Regulated Non-Municipal Systems Were Not Inspected at All Over a Five-Year Period

We found that MECP applies a risk-based approach to planning its annual inspection work for non-municipal drinking-water systems, but it does not have a formal target that requires inspections of these systems within a specified time frame. Some MECP staff told us there was an informal goal of inspecting systems every three to five years, although several staff stated that even five years is too long between inspections and represents undue risk. By comparison, as noted in **Section 4.2.3**, PHUs are required to inspect high-risk small drinking-water systems every two years and low- or moderate-risk systems every four years.

To select which systems to inspect in any given year, the Ministry considers various risk-based factors. These include the date and results of a system's last inspection, its sampling compliance and its history of water quality incidents. Using this approach, some higher-risk systems may be inspected multiple times in a five-year period. For example, if a compliance officer finds a deficiency during an inspection, that system must be re-inspected within a year. Conversely, lower-risk systems may not be inspected at all in this time period.

In an internal review conducted in 2023, MECP concluded that 20% of non-municipal systems in 2019/20 had not been inspected in more than six years. In our own audit work, we found that, at the end of the 2023/24 inspection cycle, 34% had not been inspected in over five years, and 9% had not been inspected in over seven years.

Many of the drinking-water systems that had not been inspected in over five years each supply water to over a hundred people. One of the systems that had not been inspected for over seven years serves a community college that, while deemed lower risk by MECP, provides drinking water to 2,500 people.

Many of the drinking-water systems that had not been inspected in over five years each supply water to over a hundred people.

While prioritizing MECP inspection resources toward higher-risk systems is an appropriate approach, even systems deemed to be lower risk should be periodically inspected to ensure they are operating properly. Inspections allow compliance officers to independently sample a system's water, verify operator training and check whether a system is operating in accordance with its approved design. In this way, inspections provide an important safeguard to pre-emptively identify and mitigate issues that could pose a health and safety risk before they affect users at the tap.

4.3.2 MECP Inspections of Non-Municipal Drinking-Water Systems Decreased Following Reorganization

A 2023 MECP internal review identified that the number of MECP inspections of non-municipal drinking-water systems in 2019/20 (the most recent data before the pandemic affected inspection rates) was 45% lower than in 2012/13. The review indicated that the decrease was the result of additional responsibilities having been transferred to water compliance officers in 2013, without additional resources.

Under the *Safe Drinking Water Act, 2002*, municipal drinking-water systems must be inspected annually. Given this legal requirement, and the greater potential impact on public health if one of these large municipal drinking-water systems fails, these inspections are the top priority for provincial water compliance officers. These officers must fulfill their other responsibilities in whatever time remains in their schedule after municipal inspections are completed.

Prior to 2013, these officers' only other responsibility was inspecting non-municipal drinking-water systems. In 2013, following an internal MECP reorganization, water compliance officers' workloads were expanded. Officers took on the responsibility for responding to well complaints, inspecting municipal sewage and stormwater systems, and responding to spills from these systems.

MECP's 2023 internal review also examined the need to improve efficiencies across all inspection areas. Staff put forward suggestions to improve the efficiencies of internal processes for inspections of municipal drinking-water systems, which would free up time for inspections of non-municipal drinking-water systems. While the number of MECP inspections of

32%

decrease in MECP inspections of non-municipal drinking-water systems between 2012/13 and 2023/24

non-municipal drinking-water systems in 2023/24 was higher than in 2019/20 (the year before COVID-19), it remained 32% lower than in 2012/13. As of the time of our audit, MECP had not implemented any of the initiatives identified by staff.

Recommendation 9

We recommend that MECP:

- implement measures and efficiencies to further increase the rate of MECP inspections of non-municipal drinking-water systems; and
- set and meet formal inspection policies and targets for non-municipal drinking-water systems that it regulates.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.3.3 MECP Tracks Compliance with Sampling Requirements and Takes Steps to Address Non-Compliances

Operators of MECP-regulated systems are required to sample their water and have it tested by a licensed laboratory for microbiological contaminants at least once a month or more, depending on the system's treatment equipment and whether it serves a designated facility or year-round residences. We found that MECP had effective processes for tracking compliance with this requirement and for promptly addressing non-compliance.

From 2019/20 to 2023/24, there were, on average, 57 cases indicating non-compliance with the sampling requirements per quarter across the province.

On a quarterly basis, a drinking-water assessment specialist within MECP generates a report of the water-testing data submitted by the testing laboratories. The purpose of the quarterly report is to determine whether system operators have complied with their microbiological sampling requirements. If test results are missing for a system for an entire quarter, the specialist follows up with the system operator to confirm the non-compliance and remedy as needed. If the operator fails to follow the specialist's direction and remains non-compliant, the case is referred to a water compliance officer and prioritized for further follow-up and possible inspection.

We reviewed the quarterly reports from 2019/20 to 2023/24 (excluding the period during the COVID-19 pandemic) to determine whether MECP followed up on non-compliant system operators. During this time, there were, on average, 57 cases indicating non-compliance with the sampling requirements per quarter across the province.

We found that MECP took steps to resolve these issues. MECP was able to promptly bring almost all systems back into compliance, except for three systems that remained non-compliant with

sampling requirements for all five years we reviewed, from 2019/20 to 2023/24 (see **Figure 6**). MECP has taken multiple steps over the years to try to bring these three systems into compliance, including inspecting the systems and issuing an order to one. At the time of our audit, all three remained non-compliant with their sampling as well as multiple other requirements, and were operating under a drinking-water advisory.

Although three systems represent just 0.2% of the total 1,816 non-municipal drinking-water systems serving year-round residences and designated facilities, any system that is not testing its drinking water for bacterial contamination poses a public health risk.

Figure 6: MECP-Regulated Non-Municipal Drinking-Water Systems That Did Not Meet Sampling Requirements for at Least Five Years, April 1, 2019 to March 31, 2024

Source of data: MECP

Location	Community Served	# of People Served	Date of Last Sample
Sudbury	Trailer park	35	June 2016
Sault Ste. Marie	Subdivision	40	No record of any sampling
Sudbury	Trailer park	40	February 2019

4.3.4 MECP Is Enhancing Its Processes to Address Repeat Non-Compliance

We found that MECP takes steps to escalate serious issues of non-compliance. We also found that, in March 2024, during our audit, MECP implemented a procedure to more effectively and consistently focus its compliance and enforcement efforts on repeat violators.

According to MECP's procedures, if an issue of non-compliance is identified at an MECP-regulated system, the water compliance officer is to work with the system operator to resolve the issue if it is not severe and there is a good compliance history. If a non-compliance is serious, the water compliance officer may use various tools, including issuing an order or referring the matter to MECP's Environmental Investigations and Enforcement Branch.

In 2023/24, MECP water compliance officers detected 217 deficiencies at 62 MECP-regulated, non-municipal drinking-water systems. A deficiency is a violation of the *Safe Drinking Water Act, 2002* or its regulations that poses a drinking-water health hazard. In response, MECP issued an order in four cases, posted a notice of violation in three cases and referred three drinking-water systems to investigations. MECP determined that the operators of the remaining systems voluntarily brought their systems into compliance.

In 2023/24, MECP water compliance officers detected 217 deficiencies at 62 MECP-regulated, non-municipal drinking-water systems.

Over the past five years, there were 14 convictions related to MECP-regulated systems, which resulted in fines totalling $84,150. The two most common convictions were for failing to have a properly trained person operate the system, and failing to collect and submit the required samples. The case that resulted in the largest fines, totalling $33,000, was against the former owner and the former operator of a drinking-water system that served a mobile home park near Thunder Bay with 66 homes and approximately 150 residents. This case resulted in multiple convictions, including failing to ensure the required water treatment equipment was provided and failing to ensure sampling requirements were met.

The two most common convictions were for failing to have a properly trained person operate the system, and failing to collect and submit the required samples.

In March 2024, during our audit, MECP implemented an updated strategy across all compliance programs to flag individuals or companies with a repeated pattern of non-compliance for a more targeted follow-up. MECP's goal is to effectively identify repeat violators across the province, and to focus compliance and enforcement efforts on these higher-risk individuals and companies, including drinking-water owners and operators.

4.3.5 Recent Science Raises Questions About the Advisability of MECP's Treatment Exemption

Generally, all MECP-regulated drinking-water systems are required to provide treatment to prevent or inactivate bacterial contamination. Under the *Safe Drinking Water Act, 2002*, a non-municipal year-round residential drinking-water system, such as a trailer park, may be exempted from the usual requirement to treat its drinking water if it meets specific criteria. We found that recent scientific research suggests that there are risks associated with this exemption.

As of May 2024, 38 year-round residential drinking-water systems were operating pursuant to this exemption. Collectively, these systems, which serve apartments, condominiums, trailer parks and campgrounds, supply drinking water to about 2,000 people.

To qualify for a treatment exemption, a non-municipal year-round residential drinking-water system must use groundwater, and must test its water supply every month without detecting bacterial contaminants such as *E. coli* for 12 consecutive months. Once exempted, the system operator must continue to test its untreated water monthly and its distributed water weekly. If these contaminants are detected, the exemption no longer applies.

Supplying untreated drinking water can present risks to the users of these year-round systems. Recent scientific research suggests that the criteria for the exemption may not be sufficient to offset the added risk of not treating water. For example, a 2019 Health Canada study indicated that

a negative bacterial test does not necessarily mean there are no harmful viruses in the untreated groundwater. Numerous other academic studies have similarly confirmed that the absence of bacterial contaminants determined through periodic testing alone does not guarantee that the untreated water is safe.

In 2020, internal MECP documents noted the risks associated with this exemption. In 2021, MECP staff began work to determine the number of drinking-water systems holding the treatment exemption and the potential impact on such systems if the exemption were removed. Staff completed this work in 2024. During our audit, MECP staff were exploring options and evaluating next steps to address these risks.

Recommendation 10

We recommend that MECP:

- create outreach materials outlining exemption requirements and information about the risks of supplying and consuming untreated drinking water, and deliver them to owners, operators and users of drinking-water systems with treatment exemptions; and
- assess whether any regulatory amendments are needed to minimize the risks of not treating drinking water on the basis of periodic bacterial testing.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.4 Supports for Users of Private Drinking-Water Wells and Intakes

About 1.3 million Ontarians rely on private wells for their drinking water. While few primary residences in Ontario obtain their drinking water from private intakes (from lakes, rivers and streams), some seasonal residences, such as cottages, rely on private intakes.

Unlike both municipal and non-municipal drinking-water systems, there are no requirements for owners of private wells and intakes to treat or test their water unless the water is made available to the public. As a result, owners of private wells and intakes may choose if and how they treat and test their water. Private wells and intakes are also not proactively inspected by provincial inspectors, and are not included in the source water protection plans applied to municipal drinking water (see **Section 4.6**).

To help reduce the risks of unsafe drinking water, the Province, through PHO, provides free drinking-water testing for individuals who rely on private drinking-water supplies, such as private wells and intakes, to test for bacterial contamination such as *E. coli*. The annual budget provided by the Province for PHO's free water testing services is $1.5 million, although actual expenditures are typically lower, averaging $1.3 million per year. If individuals want to test for chemicals in their drinking water, such as lead or sodium, they must use a private laboratory at their own expense.

4.4.1 Over One-Third of Private Well Samples Tested Positive for Bacteria, Highlighting Importance of Water Testing

With little regulation and oversight for private wells and intakes, PHO's free water testing has provided an important role for Ontarians who rely on these sources by helping to identify potentially unsafe drinking water. Water testing helps detect contamination and deter consumption of unsafe drinking water, which can reduce illnesses and their associated health costs from doctor visits and hospitalizations.

Almost four million samples from private wells and intakes were submitted to PHO laboratories from 2003 to 2022, averaging about 200,000 samples tested per year. PHO labs detected indicators of bacterial contamination in 35% of these samples. This represents an average of about 62,500 positive test results per year.

Of the positive tests, 67% showed more serious contamination, such as *E. coli* bacteria or evidence of actual fecal contamination in the sample. For this level of contamination, PHO advises the well users that the drinking water may be considered unsafe to drink.

The other 33% of positive tests showed low levels of non–*E. coli* bacteria. PHO does not interpret these samples from private wells and intakes as unsafe to drink. PHO advises these well users that "no significant bacterial contamination was found."

We note that samples from municipal or non-municipal drinking-water systems with any bacterial contamination are considered unsafe under the Ontario Drinking Water Quality Standards. Similarly, 10 of the other 12 Canadian provinces and territories consider private well water with any indication of bacterial contamination to be unsafe to drink. Ontario's less stringent threshold for bacteria that is applied to private wells and intakes dates back to 1990, when it was first established by MECP.

Ontario is not unique in offering free bacterial testing for private wells. Alberta, Prince Edward Island, Newfoundland and Labrador, and Yukon also provide this service to the public. Some Canadian jurisdictions, such as Alberta and Prince Edward Island, also offer free or subsidized testing for certain chemical contaminants.

4.4.2 Lack of Awareness of Risks and of the Availability of Free Water Testing Contributes to Many Private Well Users Not Testing Their Drinking Water

We found that, while thousands of private wells users make use of Ontario's free water testing program each year (see **Section 4.4.1**), many more private well users do not test their water even once a year. A number of studies have attributed the low test rates to a lack of awareness about both the risks of drinking untested water and the testing services. For private intakes, there is less data available on test frequency by owners.

While various government organizations provide educational materials to help owners of private wells and intakes safely supply water (see **Section 4.4.3**), we found that there is no province-wide program focused on increasing awareness of the availability of free

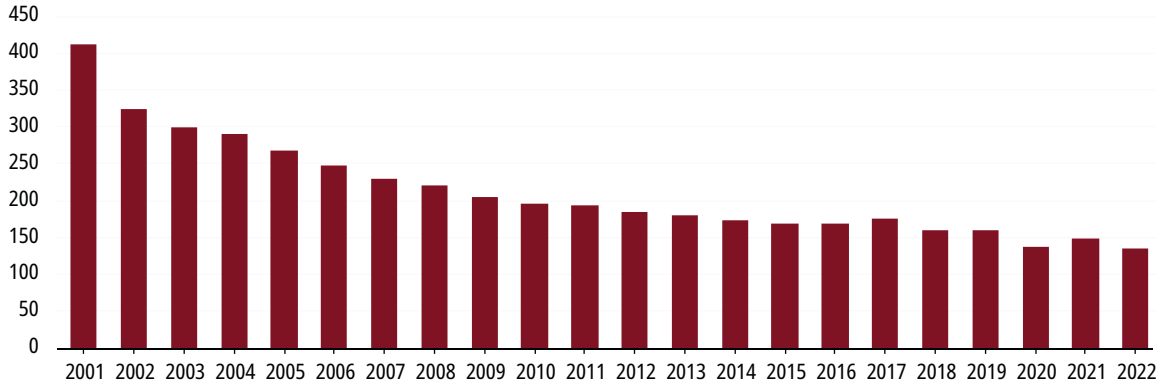
water testing and of the risks of not testing drinking water. Increased education and outreach to users of private wells and intakes could increase uptake of the Province's water testing and reduce the risks of Ontarians drinking unsafe water.

Various studies have found low rates of private well water testing in Ontario. A 2021 Statistics Canada survey found that less than one-third (32%) of Ontario households that rely on private wells had tested their water in the previous 12 months. A 2020 joint study by Queen's University and PHO found that only 28% of well owners in Ontario had submitted at least one water sample to a PHO laboratory in a five-year period (2012–2016). Low test rates have also been corroborated by some individual PHUs.

We also found that test rates for wells have been dropping over the past two decades. According to internal data, the number of annual private well water samples submitted to PHO for testing declined 67% between 2001 and 2022 (see **Figure 7**). This downward trend was observed in almost all PHUs across the province.

Figure 7: Number of Samples from Private Drinking-Water Supplies Submitted to PHO's Laboratories for Testing, 2001–2022 (000s)

Source of data: PHO



Note: PHO's laboratories test water samples from both private wells and private intakes. PHO does not ask submitters to provide details about the type of drinking-water source; however, private wells comprise the majority of private drinking-water supplies in Ontario.

A 2024 joint study by Queen's University and PHO found several reasons why private well owners do not test their well water, which can be grouped into two main issues:

- **Lack of awareness of the risks of not regularly testing the water:** For example, some well owners concluded that a previous good test result, even from years ago, meant that their water was safe to drink. Water quality can change over time, and a test result is just a snapshot of the water quality at that moment. Some owners did not see the need for testing or treatment because they had not become ill after drinking their water. And some owners believed frequent testing was not necessary if their wells appeared to be in good physical shape.
- **Lack of awareness of availability of testing:** Some owners did not know how or where to collect and submit water samples.

Low test rates for private wells is troubling, as private wells are subject to less oversight. Some public health studies suggest that users of private wells are more at risk of waterborne illnesses than users of municipal water systems. According to a 2021 Statistics Canada survey, 40% of private well owners in Ontario do not treat their water, making the lack of water testing even riskier.

According to a 2021 Statistics Canada survey, 40% of private well owners in Ontario do not treat their water, making the lack of water testing even riskier.

In the absence of a province-wide awareness program, some PHUs are adopting innovative approaches to try to increase test rates. For example, one PHU has launched a pilot program (still under development) to boost testing rates by enabling well owners to fill out their information and receive their test results online. The online system then encourages regular testing by sending automated reminder emails to well owners and allows them to track their well's performance over time.

Recommendation 11

We recommend that MOH take the lead to:

- collaborate with MECP to review the definition of "unsafe to drink" to ensure that the threshold for bacteria in private wells and intakes is sufficiently protective of human health; and
- collaborate with PHO to develop and implement a plan, including through the exploration of innovative approaches, to raise awareness about the risks of consuming water that has not been frequently tested, and about the availability of free microbiological testing for private well and intake owners and users in Ontario.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.4.3 Inconsistent and Duplicative Education and Information for Owners of Private Wells and Intakes

We found that various government organizations provide similar information and educational materials to help owners of private wells and intakes in Ontario supply safe drinking water. This duplication of effort has created inefficiencies in government resources. We also found inconsistencies in the materials, which could lead to confusion and varied safe water practices across the province.

In Ontario, information for supplying safe drinking water is provided to owners of private wells and intakes through various government organizations, including:

- **PHUs**, which are mandated by the Ontario Public Health Standards to provide information on safe management practices to private citizens who operate their own drinking-water supplies. Educational materials are posted on PHU websites for public access.
- **PHO**, which publishes some information on well water testing and disinfection.
- **MECP**, which has developed a two-page information package that well contractors are to give to well owners after working on a well. It provides general information and resources on maintenance and water testing. Additional well information, including a comprehensive technical best management practice manual, is available on MECP's website. MECP also operates a public help desk to answer well-related questions.
- **Ontario Ministry of Agriculture, Food and Agribusiness (OMAFA)**, which has created a series of educational guides for farmers and rural residents on private groundwater supplies.

Our analysis of educational materials found a significant overlap in the content. Basic information on safe drinking water is largely uniform, except for small regional administrative differences, which suggests an opportunity for it to be standardized by a central expert organization.

We also found that six PHUs had produced different well water-testing videos, and five had created distinct private water well manuals. The content of all of these was similar enough to suggest that a centralized effort could use resources more efficiently.

Our analysis of the educational materials also found inconsistencies in the testing advice provided to well owners. For instance, we found that the recommended frequency for well water testing differed depending on the organization providing the advice.

Our analysis of the educational materials found inconsistencies in the testing advice provided to well owners.

While PHO advises testing well water "often" and "frequently," our review of materials posted by the PHUs found they provide varying advice. Among the PHUs, 17 advise testing at least three times a year, one advises testing four times a year, seven recommend regular or frequent testing, two give different frequencies for dug and

drilled wells, and six gave no advice. OMAFA recommends that test frequency be based on factors that affect the quality and stability of well water, such as spring melts.

Recommendation 12

We recommend that MOH take the lead to work with all the other parties, including MECP, OMAFA, PHO and the PHUs, to undertake a review of educational materials for private wells and intakes (including best practices, guides and videos) to identify opportunities to improve consistency and minimize duplicative work.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.5 MECP Oversight of Well Construction and Abandonment

Under the *Ontario Water Resources Act* and Regulation 903 (Wells Regulation), MECP is responsible for regulating the construction, maintenance and decommissioning (plugging and sealing) of wells. As the regulator, MECP has established:

- **Technical specifications** for well structures, such as for the well depth and the thickness of the well casing, which are set out in the Wells Regulation.
- **Licensing requirements**, including education, work experience, training and insurance requirements for well contractors (the individuals or companies that are in the business of constructing wells) and well technicians (who are employed by contractors to conduct the actual labour on wells).
- **Well record requirements** whenever a well is constructed or altered. The well contractor or technician who conducts the work is required to complete a well record and provide a copy to both the well owner and MECP. When a well is decommissioned, the person decommissioning the well is required to submit a well record to notify MECP. The well record contains important information about the well, including its location, status (such as newly constructed or decommissioned), how it was constructed (such as dug, drilled or bored) and its technical specifications.

MECP's Water Well and Municipal Industrial Strategy for Abatement Reporting Unit (Wells Unit) receives all submitted well records, reviews licence applications for well contractors and technicians, and provides support to well contractors, technicians and the public.

Wells provide direct access to groundwater. If improperly constructed, maintained or abandoned, wells can create a pathway for pollutants to enter and contaminate the groundwater. We estimate, based on data from various sources, that there are about 500,000 active drinking-water wells across the province. These wells are primarily used to supply non-municipal drinking water as most municipal systems rely on surface water from lakes or rivers instead.

4.5.1 MECP Does Not Have Complete and Accurate Data on Wells

We found that MECP does not have complete and accurate data on the number, location and types of active wells in Ontario. This is partly because there is an unknown number of wells that were constructed before MECP brought in well record requirements, which began in 1944 but did not apply to all wells until 1984. Information on wells prior to 1984 may not be available.

In addition, we found that MECP does not have effective systems in place to review and resolve errors in the well records that are submitted to its Wells Unit. We identified a range of issues that contributed to inefficiencies and gaps in MECP's well information, including:

- **Well contractors do not always complete all fields in the well records.** An internal MECP report estimated that roughly half of all submitted well records are incomplete or inaccurate. Our own review of information in the wells database similarly found that records were often missing key information. For example, well contractors are required to indicate what the well is to be used for, such as for supplying drinking water, monitoring or irrigation. We found that 28% of well records submitted over the past 10 years (2013/14 to 2022/23) were missing the required information about well usage (see **Figure 8**).

Figure 8: Usage of Wells, as Indicated in Well Records (2013/14–2022/23)

Source of data: MECP

	#	%
Monitoring or test hole	87,068	45
Not indicated (left blank)	54,931	28
Private drinking-water supply	47,567	24
Other*	5,666	3
Total well records	**195,232**	100

* Other includes wells used for the purposes of livestock, irrigation, industrial, commercial, cooling, dewatering, or municipal or non-municipal drinking-water systems.

- **MECP relies on an outdated wells database.** MECP's wells database, which is over 30 years old, does not have the functionality to automatically flag gaps and errors, nor to enable staff to easily track such information. For example, our analysis of information in MECP's wells database identified at least 72 instances in which multiple well records for the same private drinking-water well cited different

locations, in some cases hundreds of kilometres apart. Our analysis was conducted by cross-referencing different datasets, as MECP's database does not have the ability to automatically identify such types of inaccuracies.

- **MECP's Wells Unit is unable to review all submitted records for completeness and accuracy.** MECP receives, on average, about 24,000 well records per year. Ministry staff advised us that, while they do attempt to verify and correct the accuracy of information, such as the well's location, cited in each well record, staff capacity to do so is limited.

- **Most well contractors continue to submit paper-based well records.** The use of paper-based forms creates inefficiencies, as MECP staff must manually process each one. After receiving a paper-based record, MECP staff electronically scan and upload this copy of the record into the database. Staff then enter some key information, such as the contractor name and well location, into the database. The rest of the information, such as construction details, is not immediately entered. As of August 2024, MECP had a backlog of 73,800 well records that had not yet been fully processed. MECP receives some well records electronically, which are uploaded into the wells database. This not only avoids the need for staff to manually input data, but also helps to improve the completeness of MECP's database because all mandatory fields must be completed before a contractor can submit an electronic form. MECP told us that contractors prefer using the paper-based, rather than the electronic, form.

Complete and accurate well information is important to enable MECP to effectively oversee and inspect wells. Accurate well information is also important for new homeowners during land transfers, and to help owners, contractors and technicians when maintaining or altering a well. Conversely, incomplete and inaccurate information about wells hinders MECP from effectively delivering programs; it also affects the delivery of PHU programs that are intended to protect well users (see **Section 4.6.2**).

In 2023, MECP hired external consultants to identify challenges faced by the Wells Unit. The consultants identified many of the same issues discussed above. During our audit, MECP was procuring an IT solution to address the identified challenges.

4.5.2 MECP Does Not Review Information in Well Records to Assess Compliance

We found MECP staff do not review the submitted well records to ensure that each well construction, alteration or decommissioning, as reported in the well records, complies with the technical specifications in the Wells Regulation. MECP staff may review well records for compliance with the regulation in response to a well complaint.

We were told by MECP that the staff receiving the records are not trained in well construction methods and therefore would be unable to conduct such a technical review. Also, as noted in

Section 4.5.1, the Ministry has a large backlog of well records to be processed, preventing staff from reviewing forms when submitted.

This lack of a technical review creates a risk that MECP will fail to identify improperly constructed wells. It also limits MECP's ability to prosecute violations that are identifiable through the well records.

For example, in August 2014, a well construction problem was brought to MECP's attention through a complaint by a well owner. MECP staff subsequently reviewed other records from wells constructed by the same contractor and referred the case for investigation. Through the investigation, MECP determined in June 2016 that numerous wells appeared to have been constructed improperly and recommended that a case be launched against the contractor for improper construction. However, because the contractor had submitted well records in January 2014, MECP decided not to lay charges, partly because it could be deemed to have known of the violations the moment it received the records, but the two-year statute of limitations meant that MECP could not prosecute.

Recommendation 13

We recommend that MECP:

- develop and implement a plan to clear the backlog of submitted well records by inputting the outstanding information into the wells database;
- develop and implement new processes to flag missing or inaccurate information in well records to improve the reliability and accuracy of MECP's information on wells; and
- develop and implement an IT system that enables MECP staff to manage and track information on wells in an effective, reliable and timely manner.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.5.3 Potentially Hundreds of Thousands of Abandoned Wells Have Never Been Properly Decommissioned

Many now-abandoned wells were built before recordkeeping requirements began in 1944. This makes it challenging for MECP to accurately determine the number of abandoned wells. Agriculture and Agri-Food Canada estimated in 2012 that there were likely about 730,000 abandoned wells in Ontario, based on typical rural settlement patterns and historical well use on rural properties. As of August 2024, MECP's wells database had 108,000 records of decommissioned wells. This suggests that there may still be hundreds of thousands of abandoned wells that have not been decommissioned (that is, plugged and sealed).

Abandoned wells that have not been properly decommissioned pose a risk to drinking water by creating a potential pathway for contaminants to enter the groundwater.

In Ontario, property owners are legally required to properly decommission wells that are not used or maintained, but there are various reasons a property owner might not do so. An owner may:

- be unaware of the presence or location of a well if it is hidden by plant growth or built structures;
- not know that they are required to decommission the well;
- not see the need to have the well decommissioned; or
- not be willing to pay for decommissioning, which could be costly depending on the circumstances.

Abandoned wells that have not been properly decommissioned pose a risk to drinking water by creating a potential pathway for contaminants to enter the groundwater.

Some conservation authorities and municipalities have provided subsidies to assist with decommissioning costs. For example, the City of Hamilton provides landowners with up to $1,000 per well to decommission abandoned private wells (with a limit of two wells per property), while Halton Region covers 50% of the cost, up to $1,000.

MECP has also provided some funding for well decommissioning in the past. Between 2007 and 2011, as part of a program to fund actions to protect municipal drinking-water sources, MECP helped fund the decommissioning of about 740 wells. Other provinces, such as Saskatchewan and Manitoba, also provide funding to property owners to properly decommission unused wells.

Recommendation 14

We recommend that MECP explore and implement options, such as education, to increase the number of properly decommissioned abandoned wells.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.6 Source Water Protection

Source water protection is the process of protecting a water source (such as a lake, river or groundwater reserve) that is used to supply drinking water.

While water testing and treatment are important steps for detecting and addressing drinking-water contaminants, source water protection adds a pre-emptive layer of defence by trying to prevent contamination or supply issues in the first place. It includes proactively identifying potential risks and taking actions to reduce, control or eliminate these risks. A preventative approach can not only increase protection, but also help avoid future costs to treat contamination or, in worse cases, find a new source of drinking water.

Source water protection adds a pre-emptive layer of defence by trying to prevent contamination or supply issues in the first place.

Ontario's *Clean Water Act, 2006*, administered by MECP, sets out extensive source water protection requirements for municipal drinking-water sources that are within a source protection area. This act sets out a process for local committees to undertake assessments of the potential risks to the sources of each municipal drinking-water supply in a source protection area, and then to develop source protection plans to address those threats.

The Province has several laws that regulate pollutants, such as manure, septic sewage, home heating fuel and pesticides, to help reduce risks to drinking water. The *Clean Water Act, 2006* established additional powers and tools that the local committees could use to address these and other risks, including enhanced powers to restrict, regulate or prohibit site-specific activities or land uses. For example, a source protection plan might prohibit a new waste disposal site near a water intake, or create a septic system inspection program to reduce risks from sewage contamination.

4.6.1 MECP Has Not Fully Assessed the Feasibility of Applying Source Water Protection Measures to Non-Municipal Sources

We found that MECP has not fully assessed the feasibility of different approaches to improve source water protections for Ontarians on non-municipal drinking-water supplies, beyond assessing the feasibility of including these supplies in the *Clean Water Act, 2006* framework.

Given the costs, resources and time that would be required to complete intensive source protection planning for every single drinking-water supply across Ontario, the Province initially focused the program on municipal drinking-water systems, which typically serve more people and therefore pose a higher public health risk.

The *Clean Water Act, 2006* allows municipalities, or the Minister, to include a non-municipal drinking-water system or a First Nations drinking-water system in a source protection plan, but no non-municipal systems have been included. While municipal source protection plans may help protect any non-municipal sources in the area covered by a plan, the nearly 3 million Ontarians who rely on non-municipal supplies do not benefit from the full source water protections under this act.

The nearly 3 million Ontarians who rely on non-municipal supplies do not benefit from the full source water protections under the *Clean Water Act, 2006*.

Our audit on Source Water Protection from our *2014 Annual Report* recommended that MECP consider the feasibility of requiring source protection plans to identify and address risks to sources of water that supply private wells and intakes. In response to this recommendation, in 2021, MECP staff completed a feasibility assessment and drafted a report. However, as of December 2024, the report had not been finalized or approved by the Minister or shared publicly.

The draft report concluded that mandating the inclusion of non-municipal drinking-water supplies, including private wells and intakes, under the *Clean Water Act, 2006* would impose additional costs and burdens on landowners, businesses, municipalities, conservation authorities and the Province.

The draft report also concluded that the impact may be disproportionate to the benefit, given that there are other existing tools to protect water sources. The draft report proposed to not include private wells and intakes in the source water protection framework at that time.

The draft report proposed to instead develop best practices for source water protection. In February 2022, MECP published a best practices document for source water protection on its website. The document includes guidance for owners of all non-municipal drinking-water supplies on how to identify and assess risks to a drinking-water source, and how to reduce or manage these risks.

We noted that these best practices are voluntary, and owners of non-municipal drinking-water supplies may not want to voluntarily spend money to conduct risk assessments or implement measures to control identified risks. In addition, owners may be unaware of these best practices, or lack the technical knowledge and skills to properly conduct a risk assessment.

MECP has provided funding to partners to promote awareness of the best practices, as well as funding to help communities implement the best practices through collectively assessing risks to their drinking-water sources, and developing action plans to address them. For example, in 2024, MECP provided funding to the Federation of Ontario Cottagers' Associations for a source water protection project in the Kawartha Lakes.

Beyond the best practices, MECP's assessment did not consider the feasibility of implementing other options to improve protections for non-municipal drinking-water supplies, such as:

MECP's assessment did not consider the feasibility of implementing other options to improve protections for non-municipal drinking-water supplies.

- additional tools to encourage owners of non-municipal supplies to adopt best practices;
- a risk-based approach that provides source water protections for non-municipal supplies that serve higher-risk populations, such as retirement homes and child-care centres; or
- additional tools to control the most significant risks to all non-municipal drinking-water sources, such as septic systems and fuel tanks.

We conducted a jurisdictional scan and found no Canadian provinces or territories that have applied a full source water protection framework to non-municipal supplies. We identified, however, some approaches from other jurisdictions that address components of source water protection that might be explored.

For example, the United Kingdom requires local authorities to conduct a risk assessment for all non-municipal water supplies every five years; operators are then required to develop action plans to reduce and control the key threats identified. The service is also provided upon request to owners of private wells.

Adopting this approach in Ontario and applying it to water supplies that serve higher-risk populations, such as retirement homes, health-care facilities and schools, could be a step toward expanding drinking-water protection for more Ontarians.

Lastly, MECP could leverage all of the work done by source protection committees to identify the tools most commonly used to manage the most significant threats in municipal drinking-water supplies, and to consider ways to expand these tools to non-municipal drinking-water supplies.

Recommendation 15

We recommend that MECP:

- complete an updated feasibility assessment of potential measures to increase source water protections for non-municipal drinking-water supplies; and
- based on the outcome of the assessment, consider whether any measures are suitable for implementation, and consult with the public on any policy proposals.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.6.2 Owners of Private Wells Are Not Being Notified of Potential Threats to Their Source Water

Ontario operates the Provincial Groundwater Monitoring Network Program, a program that collects baseline information on the quantity and quality of groundwater through a network of over 450 monitoring wells. The program also tests for a variety of chemicals in these groundwater sources. Some of these chemicals could pose a health risk if consumed in high quantities.

Recognizing the risk of chemicals in drinking water, when a groundwater test from a monitoring well exceeds the Ontario Drinking Water Quality Standards, MECP is to notify the relevant PHU pursuant to an MECP protocol. In addition, PHUs help raise awareness amongst private well owners of the importance of maintaining and testing their wells for chemicals.

In the last five years (April 1, 2019, to March 31, 2024), MECP sent out 115 exceedance notifications to PHUs for chemicals that can have serious health impacts, such as arsenic, barium, boron, uranium, nitrates, nitrites or selenium.

In the last five years, MECP sent out 115 exceedance notifications to PHUs for chemicals that can have serious health impacts, such as arsenic, barium, boron, uranium, nitrates, nitrites or selenium.

According to the MECP protocol, MECP should then conduct a hydrogeological study and hold a meeting with the relevant PHU to discuss the study findings and potential next steps. Next steps may include the PHUs notifying owners of private wells in the area of an exceedance and advising them on how to reduce their risk of consuming unsafe drinking water.

We found that, for the 115 exceedances in the five-year period, only one meeting was held between MECP and a PHU. This meeting was to discuss the risk of arsenic in a monitoring well. MECP advised us that, despite the protocol, its practice was to rely on PHUs to take the lead in identifying if a meeting was needed. In August 2024, during our audit, MECP updated its protocol to state that it is the responsibility of the PHU to initiate a meeting if the PHU deems it to be necessary.

In our survey of the 26 PHUs that had received exceedance notifications, only four reported that they had informed private well owners about potential chemicals in their water over the past five years. PHUs said the reasons they may not notify private well owners include a lack of information to identify who may be affected, and a lack of staff experts, such as hydrogeologists, that could assess and determine the level of risk to private well users from the groundwater chemicals.

Many of the MECP notices during this period were for populated areas with numerous drinking-water wells. Some areas received repeated notices, indicating ongoing water-quality issues rather than isolated incidents. For example, MECP issued five notices for excess uranium in one monitoring well and six notices for excess nitrates and/or nitrites in another monitoring well in one region. Similarly, MECP issued five notices for excess arsenic in one monitoring well in another region. All three of these monitoring wells had private drinking-water wells within a one-kilometre

radius; one had 41 private drinking-water wells within a one-kilometre radius, 10 of which were within 500 metres and two within 250 metres.

PHO has a mandate to provide scientific expertise and technical assistance to support informed and evidence-based decisions on public health. We note that, as part of this mandate, PHO could play a role helping PHUs assess when an exceedance is a health risk. PHO has already created a map, based on data published by MECP, that displays chemical concentrations in untreated groundwater and surface water across the province. The **map**, which is online and publicly available, was last updated in 2018.

PHO could play a role helping PHUs assess when an exceedance is a health risk.

Separately, MECP has mapped the location of many wells in Ontario, although the information is incomplete (see **Section 4.5.1**). These maps could be updated and combined to identify the private drinking-water sources at risk from chemicals.

Recommendation 16

We recommend that PHO take the lead, working with MECP, to provide support to PHUs to ensure they have the information they need to assess the health risk of chemical exceedances, so that they can identify when they need to notify owners of private wells that may be at risk of drinking-water threats.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.7 Investigation of Health Risks and Trends from Drinking Water

4.7.1 Health Risks from Drinking Water May be Overlooked Given Limited Analysis

Under MOH's Ontario Public Health Standards, PHUs are responsible for analyzing the patterns, causes, risk factors and trends of diseases and illnesses associated with drinking water. This work is known as epidemiological analysis.

We found that 20 (or 61%) of the 33 PHUs were not undertaking this work, and that MOH does not provide direction on what work is required or track what work has been completed. This creates a risk that drinking-water threats that cause illness or disease may go undetected.

Epidemiological analysis increases the chance that a health risk from drinking water is detected, so that actions can be taken to address the risk. For example, through epidemiological analysis, a PHU may be able to identify a cluster of illnesses in an area and trace the cause back to a specific water source; or PHUs could identify a previously unknown connection between an illness and a particular contaminant.

We asked the 33 PHUs to provide us with their epidemiological work related to drinking water for the past five years. Nine (27%) provided no evidence of such work. A further 11 (33%) provided only a document listing the number of gastrointestinal illnesses reported in their area, but with no analysis of trends or risk factors.

Only 13 (39%) of 33 PHUs had conducted some analysis related to drinking water, using the data from the provincial health information database.

Only 13 (39%) of PHUs had conducted some analysis related to drinking water, using the data from the provincial health information database. For instance, two PHUs had analyzed cases of reported gastrointestinal illness in their area and identified where private drinking-water supplies were a risk factor; this information could be used to target interventions. Another PHU mapped clusters of reported gastrointestinal illnesses to identify regional trends over time, which could help identify vulnerable regions.

PHUs told us that the obstacles to conducting such analysis include a lack of training and resources, a lack of information on private wells (see **Section 4.5.1**) and private intakes needed to identify patterns and vulnerable populations, and a provincial health information database that is outdated and hard to use.

At a provincial level, PHO's mandate includes leading or supporting activities related to illness surveillance. However, PHO confirmed to us that it does not conduct routine epidemiological analysis of provincial trends in health risks related to drinking water.

Recommendation 17

We recommend that MOH take the lead, while working with PHO, to develop and share minimum requirements, best practices and data analysis tools to help PHUs conduct epidemiological analysis related to drinking water.

For the auditee's response, see **Recommendations and Auditee Responses**.

4.8 MECP Oversight of Drinking-Water Testing Laboratories

We found that MECP oversees drinking-water testing laboratories as required. In Ontario, only licensed laboratories are authorized to perform drinking-water tests. MECP is responsible for issuing these licences. As of July 2024, 48 laboratories were licensed to perform drinking-water tests in Ontario, including 11 PHO laboratories, as well as ministry, municipal, academic and privately run laboratories. These laboratories are required to renew their licences every five years.

Specialized MECP laboratory inspectors are required to fully inspect all licensed laboratories at least twice per year, with one in every two inspections unannounced. The inspectors are also required to conduct a renewal inspection prior to renewing a licence. We reviewed the inspection data for the past five years and found full compliance with the inspection requirements. We also reviewed the renewals data and confirmed that all renewal inspections were conducted, and licences were renewed, within the required timeline.

In 2018, MECP launched a pilot project to conduct virtual inspections, such as through audio or video calls, document review and video/photographic assessments. The project was expanded during the COVID-19 pandemic. In October 2023, MECP formalized a procedure for inspectors to determine whether a laboratory is eligible to receive a virtual inspection. As part of the procedure, inspectors must complete a form to ensure only those laboratories that meet all criteria receive a virtual inspection.

From September 2023 to March 2024, MECP conducted 24 virtual inspections. We reviewed all forms for these inspections and found that each was completed and assessed as required.

Recommendations and Auditee Responses

Recommendation 1

We recommend that MECP explore ways to enhance its reporting to the public on all advice provided by the Advisory Council on Drinking Water Quality and Testing Standards, the status of MECP's considerations of the advice provided, and any work conducted or decisions made as a result.

MECP Response

MECP accepts that transparency in government decision-making is important and will report on advice received from the Advisory Council on Drinking Water Quality and Testing Standards through the Minister's Annual Report on Drinking Water.

Recommendation 2

We recommend that MOH work with PHUs to:

- develop and implement initiatives to make small drinking-water system owners aware of the requirement to notify the local PHU before supplying water to the public; and
- examine mechanisms for PHUs to better identify unregistered small drinking-water systems.

MOH Response

MOH agrees with the recommendation and will work with the PHUs to make small drinking-water system owners aware of their notification requirements, and to examine mechanisms for PHUs to better identify unregistered small drinking-water systems.

Recommendation 3

We recommend that MOH, in consultation with PHUs and short-term rental platforms:

- explore and develop options for clear provincial direction on when drinking-water supplies in short-term rental properties are regulated as small drinking-water systems under the *Health Protection and Promotion Act*, which would enable PHUs to require testing of the drinking water; and

- if the direction is to not regulate drinking-water supplies in short-term rental properties as small drinking-water systems, assess the need to develop requirements for owners of short-term rental properties to notify renters that the water is not regulated and whether the water has been tested.

MOH Response

MOH agrees with the recommendation. The Ministry acknowledges the need for a consistent approach to drinking-water supplies at short-term rental properties and will explore options to prevent illness from drinking water at short-term rental properties, such as notification through rental platforms to inform potential users if the water is not regulated and whether the water has been tested.

Recommendation 4

We recommend that MOH work with PHUs to:

- assess the extent of and reasons for any inspection backlogs, including resources and costs; and
- consider and develop strategies to ensure that all PHUs can deliver on their responsibilities to inspect small drinking-water systems at the required frequency.

MOH Response

MOH agrees with the recommendation, and that inspections are an important safeguard to mitigate issues that could pose a health and safety risk. The Ministry agrees to assess the extent of and reasons for any inspection backlogs, including resources and costs; and will work with the local PHUs to explore strategies to inspect small drinking-water systems based on assessed risk.

Recommendation 5

We recommend that MOH take the lead to work with the WCWC to improve the accessibility and uptake of training sessions to meet the needs of both public health inspectors and small drinking-water system operators.

MOH Response

MOH agrees with the recommendation. MOH will continue to work with the WCWC to improve the accessibility and uptake of training sessions to meet the needs of both public health inspectors and small drinking-water system operators.

Recommendation 6

We recommend that MOH:

- assess and resolve issues with the Laboratory Results Management Application and Risk Categorization Tool information systems, including exploring a more efficient way for operators to report opening and closing dates for small drinking-water systems, so that these systems provide reliable data on sampling compliance; and
- collaborate with PHUs to develop a comprehensive plan, including exploring alternative, cost-effective enforcement tools (such as monetary penalties), to better enforce small drinking-water system operators' compliance with sampling requirements.

MOH Response

MOH agrees with the recommendation. MOH is committed to assessing and resolving issues with our Laboratory Results Management Application and Risk Categorization Tool information systems. Additionally, MOH will collaborate with PHUs to further develop a comprehensive plan, exploring alternative, cost-effective enforcement tools to enhance compliance with sampling requirements for small drinking-water systems.

Recommendation 7

We recommend that MOH:

- review and update the current indicator framework in the Ontario Public Health Standards to ensure that public health outcomes related to safe drinking water are measured effectively;
- implement processes for following up with PHUs that do not respond to requests for attestations or performance reports on indicators; and
- periodically verify the PHUs' reported performance with respect to these indicators.

MOH Response

MOH agrees with the recommendation. The Ministry is committed to reviewing the current indicator framework in the Ontario Public Health Standards related to all public health outcomes, including safe drinking water. MOH is also committed to strengthening accountability reporting with PHUs to ensure timely and appropriate follow up and verification of information reported by PHUs through accountability reports.

Recommendation 8

We recommend that MOH:

- in collaboration with PHUs, analyze limitations of the IT systems that support MOH's drinking-water program; and
- explore and develop options for a plan, with timelines, to modernize the drinking-water related IT systems, so that they address identified limitations and meet MOH's and the PHUs' tracking and data-sharing needs.

MOH Response

MOH agrees with the recommendation and will explore developing options, in collaboration with PHUs, to analyze and address the limitations of the IT systems supporting the drinking-water program.

Recommendation 9

We recommend that MECP:

- implement measures and efficiencies to further increase the rate of MECP inspections of non-municipal drinking-water systems; and
- set and meet formal inspection policies and targets for non-municipal drinking-water systems that it regulates.

MECP Response

MECP agrees that inspections are an important safeguard to mitigate issues that could pose a health and safety risk. The Ministry accepts this recommendation and will review and consider implementing the initiatives put forward to improve the procedural efficiencies of municipal drinking-water system inspections.

The Ministry sets inspection targets each fiscal year during planning using risk-based criteria, which includes a maximum frequency between inspections. Once MECP has implemented procedural efficiencies, the Ministry agrees to review current criteria to decrease the length of time between non-municipal drinking-water systems inspections.

Recommendation 10

We recommend that MECP:

- create outreach materials outlining exemption requirements and information about the risks of supplying and consuming untreated drinking water, and deliver them to owners, operators and users of drinking-water systems with treatment exemptions; and
- assess whether any regulatory amendments are needed to minimize the risks of not treating drinking water on the basis of periodic bacterial testing.

MECP Response

MECP accepts this recommendation and will develop outreach materials and deliver them to owners and operators of drinking-water systems, who can then share them with the users of their systems.

The Ministry will evaluate how to best address the risks of allowing a treatment exemption and whether proposing regulatory amendments is needed.

Recommendation 11

We recommend that MOH take the lead to:

- collaborate with MECP to review the definition of "unsafe to drink" to ensure that the threshold for bacteria in private wells and intakes is sufficiently protective of human health; and
- collaborate with PHO to develop and implement a plan, including through the exploration of innovative approaches, to raise awareness about the risks of consuming water that has not been frequently tested, and about the availability of free microbiological testing for private well and intake owners and users in Ontario.

MOH Response

MOH agrees with the recommendation. The Ministry will collaborate with MECP to review the definition of "unsafe to drink" to ensure that the threshold for bacteria in private wells and intakes is sufficiently protective of human health.

MOH will also collaborate with PHO to explore innovative approaches, to raise awareness about the risks of consuming water that has not been frequently tested, and about the availability of free microbiological testing for private well and intake owners and users in Ontario.

Recommendation 12

We recommend that MOH take the lead to work with all the other parties, including MECP, OMAFA, PHO and the PHUs, to undertake a review of educational materials for private wells and intakes (including best practices, guides and videos) to identify opportunities to improve consistency and minimize duplicative work.

MOH Response

MOH agrees with the recommendation. The Ministry will work with all the other parties, including MECP, OMAFA, PHO and the PHUs, to undertake a review of educational materials for private wells and intakes to consider potential opportunities for improving consistency and duplication.

Recommendation 13

We recommend that MECP:

- develop and implement a plan to clear the backlog of submitted well records by inputting the outstanding information into the wells database;
- develop and implement new processes to flag missing or inaccurate information in well records to improve the reliability and accuracy of MECP's information on wells; and
- develop and implement an IT system that enables MECP staff to manage and track information on wells in an effective, reliable and timely manner.

MECP Response

MECP accepts the recommendation to address the backlog of well records. The importance of maintaining complete and current records for effective oversight is understood. The Ministry will consider how to best address the backlog of submitted well records.

MECP acknowledges the need to enhance the reliability and accuracy of well record information. The Ministry will continue to emphasize the importance and awareness of accurate well record submission in informative interactions between Wells Helpdesk, Ministry compliance staff and Ministry-licensed professionals. The Ministry will also consider how to best improve the accuracy of information.

MECP recognizes the need for an IT system to manage and track well information effectively and reliably. In order to address this need, the Ministry is working on a Wells Modernization IT project to design an automated IT system for licensing, well tags and well records.

Recommendation 14

We recommend that MECP explore and implement options, such as education, to increase the number of properly decommissioned abandoned wells.

MECP Response

MECP accepts this recommendation and will explore potential measures, including education, to encourage the proper decommissioning of abandoned wells.

Recommendation 15

We recommend that MECP:

- complete an updated feasibility assessment of potential measures to increase source water protections for non-municipal drinking-water supplies; and
- based on the outcome of the assessment, consider whether any measures are suitable for implementation, and consult with the public on any policy proposals.

MECP Response

MECP accepts this recommendation and will update, where appropriate, its existing feasibility assessment of potential measures to enhance source water protections for non-municipal drinking-water supplies. The Ministry will also consider, where appropriate, whether any identified measures are suitable for implementation, consulting publicly on any resulting policy proposals.

Recommendation 16

We recommend that PHO take the lead, working with MECP, to provide support to PHUs to ensure they have the information they need to assess the health risk of chemical exceedances, so that they can identify when they need to notify owners of private wells that may be at risk of drinking-water threats.

PHO Response

PHO accepts the recommendation and will, in co-ordination with MECP, support PHUs with the information needed to assess the health risk of chemical exceedances related to private wells.

Recommendation 17

We recommend that MOH take the lead, while working with PHO, to develop and share minimum requirements, best practices and data analysis tools to help PHUs conduct epidemiological analysis related to drinking water.

MOH Response

MOH agrees with this recommendation. The Ministry acknowledges the importance of providing clarity and information to support local PHUs in conducting epidemiological analysis of surveillance data to meet requirements under the Ontario Public Health: Requirements for Programs, Services and Accountability Standards.

Audit Criteria

In planning our work, we identified the audit criteria we would use to address our audit objective (outlined in **Section 3**). These criteria were established based on a review of applicable legislation, policies and procedures, internal and external studies, and best practices. Senior management at MECP and MOH (on behalf of PHUs and PHO) reviewed and agreed with the suitability of our objectives and associated criteria:

1. MOH, in conjunction with local PHUs, and MECP have operational requirements (including sampling, testing and treatment), as well as operator training requirements, for all non-municipal drinking-water systems that are risk-based and aligned with best practices.

2. Inspections of non-municipal drinking-water systems are timely and risk-based, and conducted by appropriately trained inspectors.

3. MOH, through local PHUs, and MECP take consistent and timely enforcement actions to address non-compliance issues by owners and operators of non-municipal drinking-water systems.

4. Complete, accessible and consistent information on best practices, as well as on the availability of water testing and on any drinking-water threats identified by the MECP or a local PHU, is provided to owners of private wells and intakes across the province to ensure the safety of their drinking water.

5. MECP and MOH, in conjunction with PHO, work together to ensure that there are accessible drinking-water laboratory testing services available for all Ontarians to assess the safety of their non-municipal drinking-water supplies.

6. MECP and MOH, in conjunction with local PHUs, respond to adverse water-quality incidents in accordance with legislated and policy requirements.

7. Information systems and databases are secure and able to provide timely, accurate and complete information on non-municipal drinking water, and are used to inform decision-making and oversight.

8. Performance of programs related to non-municipal drinking water are monitored, evaluated and publicly reported on, and corrective actions are taken if issues are identified.

Audit criteria applicable to MECP only:

9. MECP oversees the construction, maintenance and abandonment of private wells in a manner that minimizes drinking-water health risks.

10. MECP has processes to identify the key threats to source water for non-municipal drinking-water supplies, and, working with other ministries, develops processes to minimize these threats.

11. MECP inspects laboratories that conduct drinking-water tests in accordance with applicable requirements, and ensures laboratories promptly address any issues of non-compliance.

Audit Approach

We conducted our audit between January 2024 and October 2024. We obtained written representation from each ministry's management that, effective March 18, 2025, they had provided us with all the information they were aware of that could significantly affect the findings or the conclusion of this report.

As part of our audit work, we:

- interviewed relevant staff from both ministries, as well as met with staff from seven PHUs;
- surveyed 33 PHUs (all PHUs except Toronto) on a range of issues about their practices and processes;
- reviewed documents from both ministries, including websites, policies, procedures and guidelines, to gain an understanding of program requirements;
- analyzed data on inspections, enforcement and compliance, AWQIs and drinking water advisories, to determine whether inspections were being conducted and advisories being issued as required;
- analyzed data on well records to assess the quality, completeness and accuracy of the information in the forms and MECP's database;
- analyzed data and information on private well water testing from PHO to assess education efforts and accessibility of laboratory services; and
- attended inspections of both MECP- and MOH-regulated systems, as well as an inspection of a drinking-water testing laboratory, to observe the inspections.

We also met with external stakeholders and subject-matter experts, including those representing the Association of Public Health Inspectors of Ontario, the Canadian Environmental Law Association, the Federation of Ontario Cottagers' Associations, Green Communities Canada, Health Canada, the Ontario Drinking Water Advisory Committee, the Ontario Ground Water Association, Public Health Ontario, the Walkerton Clean Water Centre, and experts from the University of Guelph, Queen's University and the University of Waterloo.

Audit Opinion

To the Honourable Speaker of the Legislative Assembly:

We conducted our work for this audit and reported on the results of our examination in accordance with the Canadian Standards on Assurance Engagements 3001—*Direct Engagements* issued by the Auditing and Assurance Standards Board of the Chartered Professional Accountants of Canada. This included obtaining a reasonable level of assurance.

The Office of the Auditor General of Ontario applies Canadian Standards on Quality Management and, as a result, maintains a comprehensive system of quality management that includes documented policies and procedures with respect to compliance with rules of professional conduct, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Professional Conduct of the Chartered Professional Accountants of Ontario, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our conclusions.

March 31, 2025

Shelley Spence, FCPA, FCA, LPA
Auditor General
Toronto, Ontario

Acronyms

Acronym	Definition
AWQI	Adverse water quality incident
DWARS	Drinking Water Advisory Reporting System
LRMA	Laboratory Results Management Application
MECP	Ministry of the Environment, Conservation and Parks
MOH	Ministry of Health
OMAFA	Ontario Ministry of Agriculture, Food and Agribusiness
PHO	Public Health Ontario
PHU	Public Health Unit
RCat	Risk Categorization Tool
WCWC	Walkerton Clean Water Centre

Glossary

Term	Definition
Adverse water quality incident (AWQI)	A test result where a concentration (such as for *E. coli*) exceeds the Ontario Drinking Water Quality Standards, or where an observation (such as a broken pipe) signals a potential problem that may affect drinking-water safety; does not necessarily mean users are at risk of becoming ill, but rather that there is a potential problem that requires investigation and, if needed, corrective action.
Designated facility	A facility that serves people who are more vulnerable to illness, such as child-care centres, schools, camps, seniors' homes, hospitals, health-care facilities and homeless shelters.
Drinking water advisory	A notification issued by a PHU to potential water users when a PHU has determined that a water supply poses a risk to health if consumed or used.
Drinking Water Advisory Reporting System (DWARS)	Ministry of Health database used by PHUs to record drinking-water advisories and the actions operators take to address them.
Drinking water testing	Testing conducted to detect whether there are contaminants in the water that may cause health problems.
Drinking water treatment	The process to remove or inactivate contaminants that may pose a health risk. Treatment processes vary widely depending on the purity of the source water and the size and type of the water supply. Treatment processes typically include a disinfection stage (such as adding chlorine) to remove bacteria and viruses. Some systems also use filters to remove other contaminants. More complex systems may include additional screening and chemical treatment processes to remove even more contaminants.
Laboratory Results Management Application (LRMA)	Ministry of Health database used by laboratories to upload test results for small drinking-water systems; also used by public health inspectors to monitor small drinking-water system operators' compliance with sampling requirements and to track adverse water quality incidents.
Public Health Units (PHUs)	Local agencies that provide health programs and services to members of their respective communities according to the Ontario Public Health Standards. They are one of three pillars of Ontario's public health system, along with MOH and PHO.
Risk Categorization Tool (RCat)	MOH tool that helps public health inspectors conduct risk assessments for small drinking-water systems; inspectors record information in RCat about each system, including sampling requirements. Contains a list of all small drinking-water systems in Ontario along with their risk categorization.
Small drinking-water system	The term used by the Province for drinking-water systems that serve seasonal residences or public facilities.
Source water protection	Actions taken to keep potential contaminants, such as manure, sewage, fuel and chemicals, away from a drinking-water source.

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of Ontario

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Ce document est également disponible en français.