From: Switzer, Barbara <Barbara.Switzer@york.ca> on behalf of Regional Clerk <ClerkGeneralLine@york.ca>
Sent: Monday, March 28, 2022 2:30 PM
Subject: Regional Council Decision - 2021 Drinking Water Systems Report
Attachments: 2021 Drinking Water Systems Report.pdf

On March 24, 2022 Regional Council made the following decision:

1. The Regional Clerk circulate this report to the Clerks of the local municipalities, City of Toronto, Region of Peel and the Ontario Chief Drinking Water Inspector (Ministry of the Environment, Conservation and Parks).

The original staff report is attached for your information.

Please contact David Szeptycki, Director of Strategy and Innovation at 1-877-464-9675 ext. 75723, or Beth Weir, Director of Operations, Maintenance and Monitoring at 1-877-464-9675 ext. 75340 if you have any questions with respect to this matter.

Regards,

Christopher Raynor | Regional Clerk, Regional Clerk's Office, Corporate Services
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The Regional Municipality of York | 17250 Yonge Street | Newmarket, ON L3Y 6Z1
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Our Mission: **Working together to serve our thriving communities – today and tomorrow**

The Regional Municipality of York

Committee of the Whole
Environmental Services
March 3, 2022

Report of the Commissioner of Environmental Services

2021 Drinking Water Systems Report

1. Recommendation

The Regional Clerk circulate this report to the Clerks of the local municipalities, City of Toronto, Region of Peel and the Ontario Chief Drinking Water Inspector (Ministry of the Environment, Conservation and Parks).

2. Summary

This report and attachments satisfy Council reporting requirements for water quantity, quality and compliance in Ontario Regulation 170/03 – Drinking Water Systems and supports Council in meeting its standard of care requirements under the *Safe Drinking Water Act, 2002* (the Act).

Key Points:

- In 2021, 100% of 16,639 laboratory analyzed samples and over 99.99% of 40 million continuous monitoring analyzer readings were within regulated standards and confirm York Region's high quality drinking water. All adverse results were addressed and reported. Additional information on 2021 adverse results is in Attachment 1
- In 2021, all Ministry of the Environment, Conservation and Parks inspections of the Region's drinking water systems scored 100%. Additional information on 2021 calendar year inspections is in Attachment 2
- York Region received perfect scores in the Chief Drinking Water Inspector's Annual Report Card for the Province's 2020-2021 fiscal year, with 100% for water samples meeting Ontario's drinking water quality standards and inspections
- Drinking water systems operated within permitted volume and capacity limits. Additional information is in the Water Volume and Capacity section of this report and in Attachment 3
- Environmental Services implements advanced systems monitoring, controls, and a multi-barrier approach to protect drinking water and public health

3. Background

York Region complies with the *Safe Drinking Water Act, 2002* to protect public health through drinking water

The Ministry of the Environment, Conservation and Parks (the Ministry) regulates municipal drinking water systems in Ontario. The Act was developed to address factors that led to the Walkerton tragedy. As a result, Ontario now has some of the safest drinking water in the world.

The Act requires municipalities to report annually on drinking water. It also imposes a standard of care upon Municipal Council members. Councillors are required to exercise the level of care, diligence and skill regarding oversight of municipal drinking water system that a reasonably prudent person would be expected to exercise. This includes ensuring the protection and safety of users of municipal drinking water systems. Council protects people in their communities by ensuring financial sustainability, asset management, risk mitigation and continual improvement of the Region's water systems.

This report summarizes 2021 calendar year drinking water systems information with further details in the attachments as follows:

- Reported adverse water quality events and corrective actions (Attachment 1)
- Ministry inspection findings and corrective actions (Attachment 2)
- Performance data for each drinking water system (Attachment 3)
- Monetary expenses for each drinking water system (Attachment 4)

York Region partners with Public Health, its nine local municipalities, and neighbouring municipalities to provide safe drinking water

Within York Region, water is delivered through a two-tiered water system. The Region operates and maintains 15 drinking water supply systems, which provide water to all nine local municipalities. Our local municipal partners maintain their distribution systems to distribute high quality water to residents and businesses. Each local municipality is similarly required to report annually on its drinking water systems.

Environmental Services and York Region Public Health maintain a 24/7 response system to address potential water quality issues. Public Health assesses potential health impacts from reported adverse water quality test results. No follow-up corrective actions were ordered by Public Health in 2021 including no boil water or drinking water avoidance advisories due to water quality concerns. Procedures are in place to ensure close cooperation with Public Health, local municipalities and the Ministry to ensure effective communications while protecting public health water quality concerns.

Despite COVID-19, Environmental Services, our local municipalities and Region Public Health continue to provide safe and uninterrupted water and wastewater services to York

Region residents and businesses. These unprecedented times underscore the direct link water and wastewater services play in supporting our communities' public health by providing reliable, safe and clean drinking water

Multi-barrier approach to risk management protects drinking water systems and public health

A multi-barrier approach proactively protects drinking water and promotes quality and safety, while informing preventative and corrective actions when required. Elements of this approach include Source Water Protection, sustainable asset management, training and licencing of operators, operational strategies, Drinking Water Quality Management Standard, system audits, a strict Provincial Inspection and Enforcement Program, and research that anticipates and proactively prepares the Region for future water quality and operational challenges. The 2021 Research and Innovation Update memo, also on this agenda, provides more information on research activities undertaken to support the department's service delivery.

Source Protection Program prevents contamination of Ontario's drinking water

York Region's Drinking Water Source Protection Program continues to identify, mitigate, and report current and future threats to drinking water sources as required by the *Clean Water Act, 2006*. Continued focus areas include:

- Requiring proposed developments in vulnerable areas to plan carefully ensuring safety of our immediate and long-term drinking water supply, including completing proactive monitoring and mitigation activities

- Source Water Protection Incentive Program, which encourages and supports businesses to make changes to protect drinking water sources

- Working together with the Province, local and neighbouring municipalities, and Conservation Authorities to align our programs and plans to ensure consistent, effective and successful protection of all sources of drinking water

In 2022, York Region's Source Water Protection Program will continue to serve the community through these focus areas. Implementation efforts are documented and reported to the Province as required by the *Clean Water Act, 2006*.

Provincially mandated training provides staff with required knowledge to sustain high performing water systems

York Region continues to deliver a fulsome training program complete with relevant virtual and in-person training, abiding by all COVID-19 restrictions and Public Health protocols. This training program is tailored to ensure that operators receive required provincially standardized education and that on-the-job training translates regulatory requirements into operational practice. Training equips staff to manage drinking water systems competently and efficiently in compliance with applicable licence requirements and best practices.

Drinking Water Quality Management Standard helps drive continual improvement

The Region adheres to a statutory quality management standard that protects public health through consistent practices for managing and operating water systems, and by proactively identifying and mitigating risks. The standard requires an approach to identifying and resolving inefficiencies through process and procedure improvements. The 2021 Integrated Management System Update Report provides more information.

Provincial inspections and enforcement assess compliance

York Region facilities are inspected annually by the Ministry to confirm compliance with regulations, licenses, permits and Ministry procedures. Staff maintains a positive working relationship with regulators to identify and mitigate risks identified in our watersheds and systems.

York Region's data management practices continue to evolve in terms of producing information and insights. Online instruments and comprehensive sampling generate billions of data points about the performance of our drinking water systems. Over the past five years, staff have iteratively developed automated data analysis processes that save staff time by comparing process data against regulated limits for reporting. These automated tools flag reporting data exceeding regulated limits and prompt staff to follow up on details as appropriate. Empowering staff with the right tools, technology and training allows them to gain insights into the data, which supports our industry-leading drinking water operations.

Comprehensive data management practices also enable sharing of meaningful datasets on the Region's website. An interactive report at york.ca/drinkingwater provides an effective way to learn about the Region's drinking water systems. The complete dataset may also be downloaded from the Region's Open Data site. Easy to access data supports Council's Strategic Plan Objective of "Maintaining public confidence in Regional government" and the Vision 2051 goal of "Open and Responsive Governance".

4. Analysis

WATER QUALITY

All 2021 laboratory samples met regulatory limits exemplifying York Region's safe high-quality drinking water

Our comprehensive sampling program includes regulatory, in-house and research samples in response to operational needs and regulatory changes. In 2021, the York-Durham Environmental Laboratory performed 16,639 water quality tests for York Region's drinking water systems. 100% of all samples collected and analyzed by the laboratory in 2021 were within regulated limits and standards.

Table 1 summarizes laboratory analyzed water quality test results reported as adverse water quality events in 2021. The laboratory initiates a notification process when sample analysis

indicates a parameter requires reporting. Staff responded to each adverse test result, performed and reported on all corrective actions. There were no risks to public health because of these adverse events.

Attachment 1 summarizes all reported adverse water quality events.

Table 1

Adverse Water Quality Events
Reported from Laboratory Analyzed Samples in 2021

Parameter, Drinking Water System (DWS) and Number of Occurrences	Summary of Reported Sample Results and Corrective Actions Taken
Sodium • Holland Landing DWS (1) • Keswick DWS (1) • Queensville DWS (1) • Stouffville DWS (1) • York DWS (1)	Sodium levels between 20.8 and 32.9 mg/L were reported in April at North Maple Reservoir, Holland Landing Well 2, Sharon/Queensville Wells 3-4, Stouffville Wells 1-2 and Keswick Woodbine Ave Elevated Tank. The reporting requirement for sodium is once every 57 months for results exceeding 20 mg/L. Health Canada's guideline for sodium in drinking water is an aesthetic taste objective of 200 mg/L. Operators resampled these facilities to confirm sodium levels and notified York Region's Medical Officer of Health.

The five sodium results in Table 1 were above the reporting threshold of 20 mg/L, prompting notification to York Region's Medical Officer of Health and the Ministry. The threshold for sodium is not a compliance limit or regulated standard; it ensures that residents on sodium restricted diets have information about sodium levels in their drinking water. Sodium is found naturally in surface and groundwater as it is present in most rocks and soils across Southern Ontario. Typical background groundwater sodium concentrations in York Region range from 3 to 46 mg/L.

Continuous monitoring analyzers and online equipment safeguard drinking water delivered to residents

In addition to sampling conducted by operators, 376 online analyzers continuously monitored system performance, creating an estimated 40 million water quality records in 2021. Online analyzers continuously monitor several water quality parameters, including chlorine residual, which is an indicator of disinfection level. Analyzers and other online equipment are calibrated regularly by trained staff.

Highly sensitive analyzers monitor water quality at all times and automatically stop water production if a concern is detected. The Region's Remote Operations Centre monitors the system 24/7 and dispatches field operators to respond to alarms or unusual trends and perform corrective actions as required. These systems and processes greatly reduce the risk of non-potable water entering the drinking water system.

Real-time monitoring system and analyzer readings showed compliance with regulatory limits for water safety parameters

Of the 40 million analyzer readings in 2021, staff reported 14 adverse water quality events. Most events self-corrected or needed minor equipment adjustments. Operators confirmed drinking water safety through onsite tests and restarting facility operation. There was no risk to public health because of these adverse events.

Table 2 summarizes the continuously monitored analyzer readings reported as adverse water quality events in 2021. Attachment 1 summarizes all reported adverse water quality events.

Table 2
Adverse Water Quality Events
Reported from Continuous Monitoring Analyzer Readings in 2021

Parameter, Drinking Water System (DWS) and Number of Occurrences	Summary of Reported Sample Results and Corrective Actions Taken
High Chlorine Level • Aurora DWS (1) • Schomberg DWS (6) • York DWS (1)	• Adverse events in Schomberg DWS were the result of our application of chlorination in the allowable upper range to achieve optimal water quality within the distribution system • High chlorine residual events resulted from temporary, minor equipment or process errors • Corrective actions for high chlorine levels include collecting grab samples and recalibrating analyzers
Filtration Performance • Georgina DWS (1)	• High turbidity reading resulted from temporary process error • Corrective actions included collecting grab samples and restoring facility to normal operation

Parameter, Drinking Water System (DWS) and Number of Occurrences	Summary of Reported Sample Results and Corrective Actions Taken
High Fluoride Level • Georgina DWS (5)	• Fluoride is continuously monitored at Georgina Water Treatment Plant, where it is applied within optimal range recommended by the Medical Officer of Health • When alarms trigger for fluoride readings above operational limits, the facility immediately stops directing water to the distribution system • Operator will backflush system to prevent the treated water from leaving facility and ensure correct fluoride dose

2021 CALENDAR YEAR MINISTRY INSPECTIONS

In 2021, all drinking water system inspections scored 100%

In the 2021 calendar year, all Ministry inspections scored 100%. There were 15 inspections completed for the Region's drinking water systems. All worker health and safety protocols related to COVID-19 were adhered-to during inspections. There were no non-compliance findings in 2021; Ministry staff included four administrative best management practice recommendations, which staff have implemented. Attachment 2 outlines the 2021 calendar year inspection results.

CHIEF DRINKING WATER INSPECTOR 2020-2021 RATINGS

York Region received top scores in the Ontario Chief Drinking Water Inspector's 2020-2021 Annual Report

Ontario's Chief Drinking Water Inspector releases an annual report, which rates all regulated drinking water systems in Ontario. Reporting timelines are based on the Ministry's previous fiscal year from April 1, 2020 to March 31, 2021. York Region along with the City of Toronto and Peel Region, which supply the majority of York Region's drinking water, received high scores. Table 3 outlines the scores for GTA municipalities.

Table 3

Ministry of the Environment, Conservation and Parks
2020-2021 Chief Drinking Water Inspector's Annual Report Scores

Municipality	Inspection Rating (%)*	Water Quality Tests Meeting Standards (%)*
York Region	**100.00**	**100.00**
Durham Region	100.00	99.93
City of Toronto	100.00	99.89
Halton Region	99.68	99.94
Peel Region	97.51	99.99
Provincial Average	98.51	99.82

*Average of scores for all drinking water systems within the municipality

York Region achieved an overall inspection rating of 100% in the Chief Drinking Water Inspector's Report. Details on 2020 inspections and sample results are found in the 2020 Drinking Water Systems report to Council dated April 8, 2021.

York Region achieved an overall sample compliance rating of 100% in the Chief Drinking Water Inspector's Report for laboratory analyzed samples meeting the requirements of O.Reg.169/03: Ontario Drinking Water Quality Standards. This regulation sets out standards for a total of 151 microbiological, chemical and radiological parameters. Details on 2020 adverse water quality incidents are found in the 2020 Drinking Water Systems report to Council dated April 8, 2021.

Historically, York Region has scored very well in the Chief Drinking Water Inspector's Report, often scoring above the Provincial average, with combined inspection and test result averages ranging between 99.17% (2017/2018) and 100.00% (2020/2021) over the previous five years.

WATER VOLUME AND CAPACITY

All drinking water systems operated within permitted water volume and capacity limits

In 2021, York Region's drinking water systems operated within their maximum daily and monthly average withdrawal limits.

York Region continues to maintain compliance with:

- The *Safe Drinking Water Act, 2002* and its regulations
- Terms and conditions of the Region's Permits to Take Water and supply agreements with the City of Toronto and Peel Region
- Permitted Intra-Basin Transfer volumes for water taken from (and returned to) Lake Ontario for communities in the Lake Huron watershed

York Region continues to ensure sufficient drinking water capacity for the Region's growing population. Attachment 3 illustrates important data about the amount of water taken from each water source. This data informs decision making regarding long-term, reliable water sourcing and servicing. Maximum permitted volumes support forecasted population growth to 2051. Long-term water demands will be refined in the updated Water and Wastewater Master Plan, which is currently underway.

5. Financial

Effective and comprehensive asset management is critical to delivering reliable and sustainable water services

York Region delivers high quality drinking water in a safe and cost-effective manner. In December 2021, the Environmental Services 2022 budget and operating outlook submissions were approved. In addition to funding for maintaining assets that are wholly owned and maintained by York Region, many projects are cost-shared with Peel Region and the City of Toronto. These investments support long-term drinking water security and supply. Effective asset and infrastructure management is critical to the Region's ability to deliver services that sustain our growing communities. The approved 2022 Capital and Operating Budgets share information on how water and wastewater assets are funded.

In September 2021, Council approved 2022-2027 water rates and reserve adjustments that will bring the Region to full cost recovery while supporting intergenerational equity and debt reduction. One of the key features of full cost pricing is fully funding asset management work to ensure our systems continually remain in a state of good repair and perform optimally.

York Region invested $22.1 million in 2021 to maintain and improve drinking water systems

The Drinking Water Systems regulation requires water utility owners to "describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment."

In 2021, York Region invested $22.1 million installing, repairing or replacing equipment used to treat, store and deliver safe drinking water. This is a small cost compared to water asset replacement cost of $2.3 billion; this investment demonstrates the importance of routine maintenance to maximize asset performance and minimize costs. Environmental Services

has budgeted $436 million for water system rehabilitation over the next 10 years. These rate-supported costs are funded through the Environmental Services water budget, as approved annually by Council. These expenses do not include operational costs or salaries and are summarized in Attachment 4.

Drinking tap water is the financially and environmentally responsible choice

Tap water is affordable compared to bottled water, and our municipal water is highly regulated and constantly monitored. Bottled water sales continue to grow, and recent statistics show bottled water has surpassed the consumption of other commercially available beverages. The cost of bottled water is significant compared to tap water. For example, spending $1 on bottled water can buy the equivalent of over 600 bottles worth of tap water. Bottled water also generates plastic waste that is difficult to recycle and additional costs from packaging and transportation. Drinking tap water is the financially and environmentally responsible thing to do.

6. Local Impact

York Region and its nine local municipalities work together to distribute high quality drinking water

Water quality standards are maintained through collaboration between York Region and the nine local municipalities. Although ownership and operation of the water systems is two-tiered, the Region and the local municipalities coordinate operation of highly efficient and integrated systems to provide safe and uninterrupted water supply to our shared customers.

Regional staff meet quarterly with each local municipality to collaboratively discuss, coordinate and resolve operational issues. This continued partnership with local municipalities has resulted in numerous operational strategies to deliver high quality water to our residents.

Each local municipality is independently rated by the Ministry on its local distribution system inspections and drinking water quality test results.

7. Conclusion

York Region's drinking water systems must comply with strict provincial regulations to keep drinking water safe. In 2021, all laboratory samples met compliance limits and no non-compliances were identified through Ministry inspections, confirming the excellent performance of York Region's drinking water systems. The ongoing excellence of our drinking water systems is supported through continual improvement initiatives including data management work.

This report and attachments satisfy the Council reporting requirements in Ontario Regulation 170/03 – Drinking Water Systems and support Council in meeting statutory standard of care requirements under the *Safe Drinking Water Act, 2002*. The drinking water quality and

systems data, posted on york.ca/opendata and on york.ca/drinkingwater, satisfy the public-facing water quality and systems information reporting requirements under the Act. It demonstrates the Region's commitment to operational excellence through continual improvement, while also fulfilling our obligation to communicate performance to Council, stakeholders and the public. Council demonstrates due diligence required for decision-making under their statutory standard of care by reviewing and considering the information contained in this report when exercising decision-making authority.

For more information on this report, please contact David Szeptycki, Director of Strategy and Innovation at 1-877-464-9675 ext. 75723, or Beth Weir, Director of Operations, Maintenance and Monitoring at 1-877-464-9675 ext. 75340. Accessible formats or communication supports are available upon request.

Recommended by: **Erin Mahoney, M. Eng.**
Commissioner of Environmental Services

Approved for Submission: **Bruce Macgregor**
Chief Administrative Officer

February 9, 2022
Attachments (4)
eDOCS #13596224

2021 SUMMARY OF ADVERSE WATER QUALITY INCIDENTS AND CORRECTIVE ACTIONS

The Ministry of Environment, Conservation and Parks and the York Region Medical Officer of Health were satisfied with corrective actions taken for all events in the summary below and had no further direction.

Ansnorveldt DWS

There were no adverse water quality incidents for this drinking water system.

Aurora Sub-System (York Drinking Water System)

Incident Description	Date	Test Result	Corrective Action
Combined Chlorine Residual > 4.0 mg/L (Regulatory Relief Sites)	Nov 6	5.00 mg/L	Operator attended site, restored facility to normal operation.

Ballantrae-Musselman's Lake Drinking Water System

There were no adverse water quality incidents for this drinking water system.

Georgina Drinking Water System

Incident Description	Date	Test Result	Corrective Action
Filter Performance	Feb 2	>0.1 NTU	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
Fluoride > 1.5 mg/L	Jan 26	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.
	Mar 24	1.89 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.
	Jun 4	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.
	Jun 7	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.
	Aug 26	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.

Holland Landing Sub-System (York Drinking Water System)

Incident Description	Date	Test Result	Corrective Action
Sodium > 20.0 mg/L	Apr 15	21.9 mg/L	Operator attended site. Resample taken.

Keswick Sub-System (York Drinking Water System)

Incident Description	Date	Test Result	Corrective Action
Sodium > 20.0 mg/L	Apr 7	32.9 mg/L	Operator attended site. Resample taken.

King City Sub-System (York Drinking Water System)

There were no adverse water quality incidents for this drinking water system.

Kleinburg Sub-System (York Drinking Water System)

There were no adverse water quality incidents for this drinking water system.

Mount Albert Drinking Water System

There were no adverse water quality incidents for this drinking water system.

Newmarket Sub-System (York Drinking Water System)

There were no adverse water quality incidents for this drinking water system.

Nobleton Drinking Water System

There were no adverse water quality incidents for this drinking water system.

Schomberg Drinking Water System

Incident Description	Date	Test Result	Corrective Action
Combined Chlorine Residual > 3.0 mg/L	Feb 21	3.10 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
	Mar 30	3.66 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
	Apr 24	3.04 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
	May 30	3.12 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
Combined Chlorine Residual > 4.0 mg/L (Regulatory Relief Sites)	Sep 9	4.48 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
	Sep 10	4.10 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.

Sharon/Queensville Sub-System (York Drinking Water System)

Incident Description	Date	Test Result	Corrective Action
Sodium > 20.0 mg/L	Apr 21	22.0 mg/L	Operator attended site. Resample taken.

Stouffville Sub-System (York Drinking Water System)

Incident Description	Date	Test Result	Corrective Action
Sodium > 20.0 mg/L	Apr 7	26.3 mg/L	Operator attended site. Resample taken.

York Drinking Water System: Markham, Richmond Hill, Vaughan

Incident Description	Date	Test Result	Corrective Action
Combined Chlorine Residual > 3.0 mg/L	Feb 24	3.75 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
Sodium > 20.0 mg/L	Apr 14	20.8 mg/L	Operator attended site. Resample taken.

Accessible formats or communication supports are available upon request.
Contact Corporate Communications at 1-877-464-9675 ext. 71234
or yrcorporatecommunications@york.ca

2021 SUMMARY OF INSPECTION FINDINGS AND CORRECTIVE ACTIONS

System Name and Inspection Date	Inspection Score (%)	Summary of Findings and Corrective Actions
Municipality: **Aurora**		
Aurora DWS October 26, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **East Gwillimbury**		
Queensville DWS March 1, 2021	100	No non-compliance findings and two best management practice recommendations from this inspection: • Minor discrepancy between equipment installed onsite and the facility permit. Equipment onsite removed to align with permit and documentation was updated as appropriate. • Procedure for collecting water samples did not specify how to make corrections to digital sample custody forms. Staff reviewed the process and updated instructions to assist staff.
Mount Albert DWS November 10, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.

System Name and Inspection Date	Inspection Score (%)	Summary of Findings and Corrective Actions
Municipality: **Georgina**		
Georgina DWS January 14, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Keswick DWS March 15, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **King**		
Ansnorveldt DWS January 15, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
King City DWS March 8, 2021	100	No non-compliance findings and one best management practice recommendation from this inspection: • Ministry was not notified of a York Region staffing change using the correct form. A routine task was created to submit this type of change using the correct form.
King City DWS November 1, 2021	100	No non-compliance findings and one best management practice recommendation from this inspection: • A routine facility logbook entry was missing the time of arrival for the Operator-in-Charge. The entry was later improperly amended to include this information. The logbook procedure was updated to clarify record keeping best practices and staff were re-trained.

System Name and Inspection Date	Inspection Score (%)	Summary of Findings and Corrective Actions
Ansnorveldt DWS November 16, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **Vaughan**		
Kleinburg DWS January 27, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **Whitchurch-Stouffville**		
Stouffville DWS February 4, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Stouffville DWS October 19, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Ballantrae-Musselman's Lake DWS October 27, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **Markham, Richmond Hill, Vaughan**		
York DWS March 29, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.
York DWS October 28, 2021	100	No non-compliance findings or best management practice recommendations from this inspection.

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Contact Corporate Communications at 1-877-464-9675 ext. 71234 or
yrcorporatecommunications@york.ca

eDOCS #13596241

2021 PERFORMANCE DATA SUMMARIES FOR YORK REGION'S DRINKING WATER SYSTEMS (DWS)

2021 Water Quality & Capacity Summary
Ansnorveldt DWS

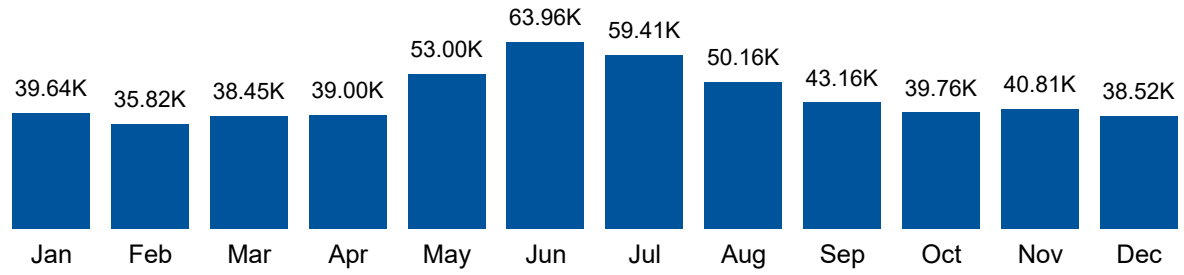
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Ansnorveldt DWS.

Chlorine	Fluoride	Sodium	Lead
1.51 mg/L	0.25 mg/L	41 mg/L	Not Detected (<0.0005 mg/L)

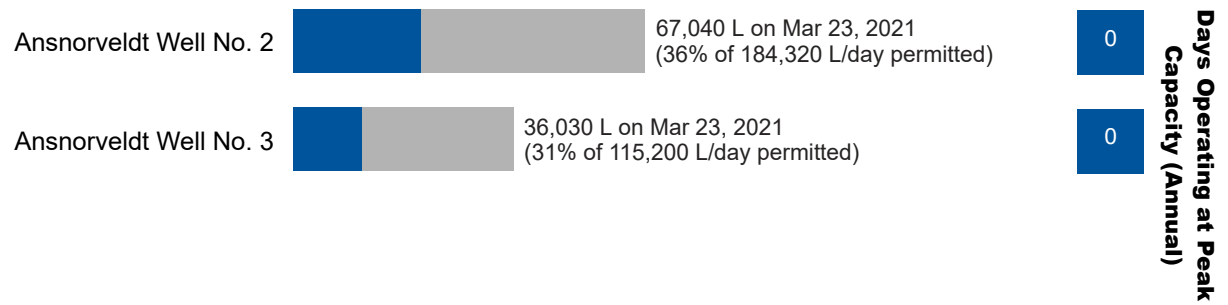
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Ansnorveldt DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Aurora DWS

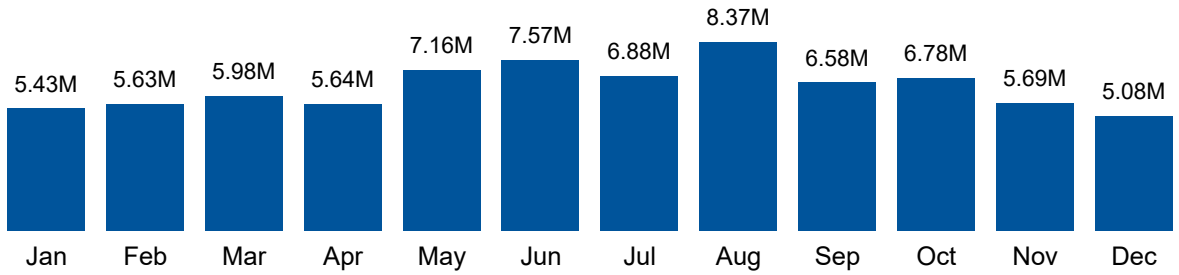
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Aurora DWS.

Chlorine	Fluoride	Sodium	Lead
2.65 mg/L	0.37 mg/L	15 mg/L	Not Detected (<0.0005 mg/L)

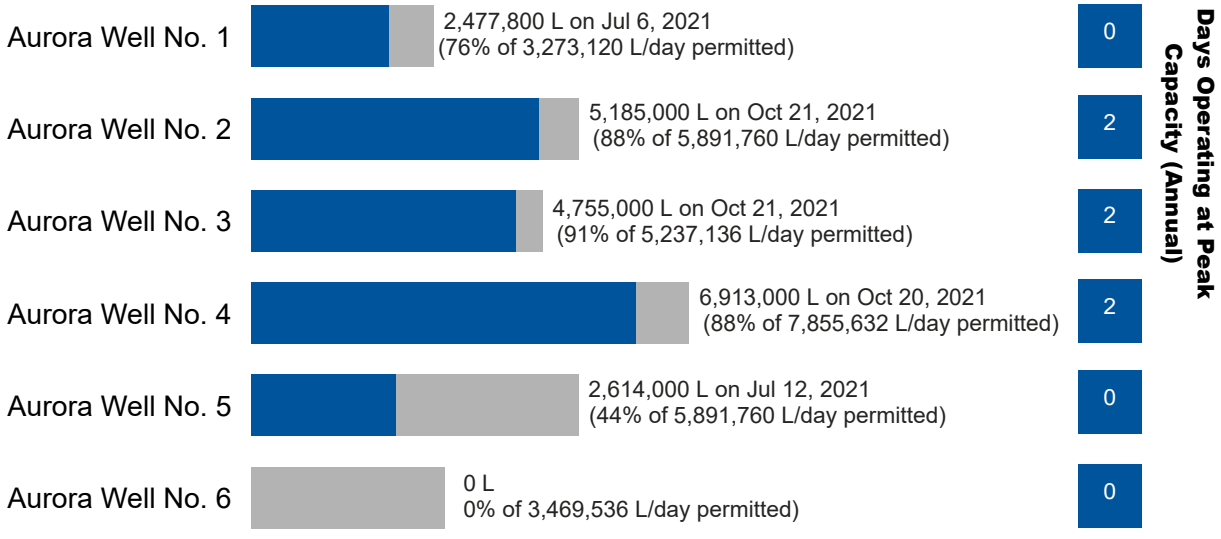
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Aurora DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Ballantrae/Musselman's Lake DWS

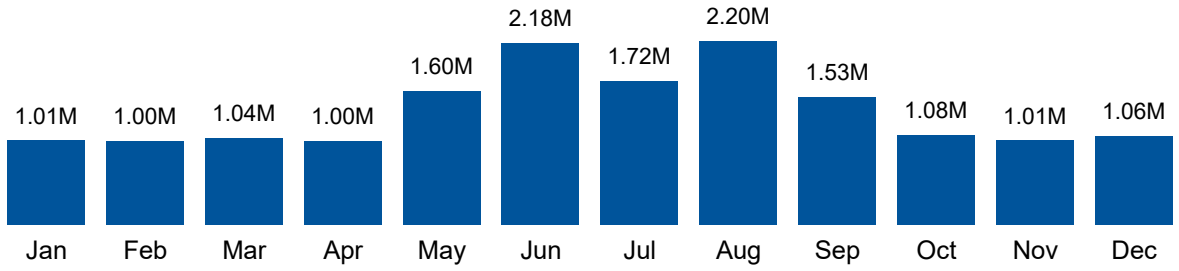
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Ballantrae/Musselman's Lake DWS.

Chlorine	Fluoride	Sodium	Lead
1.56 mg/L	0.08 mg/L	12 mg/L	Not Detected (<0.0005 mg/L)

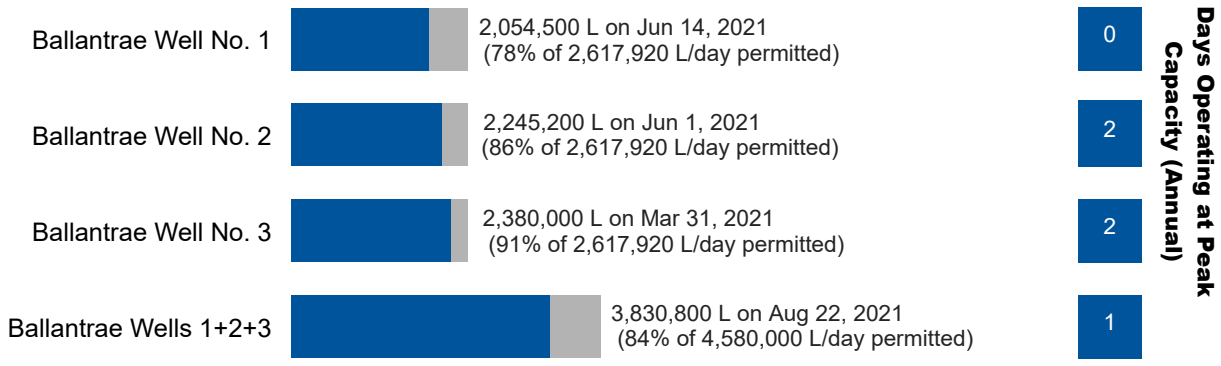
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Ballantrae/Musselman's Lake DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Georgina DWS

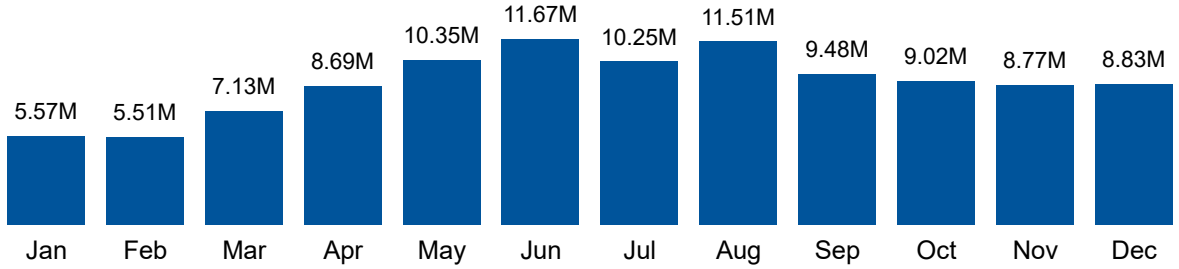
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Georgina DWS.

Chlorine	Fluoride	Sodium	Lead
1.65 mg/L	0.68 mg/L	33 mg/L	Not Detected (<0.0005 mg/L)

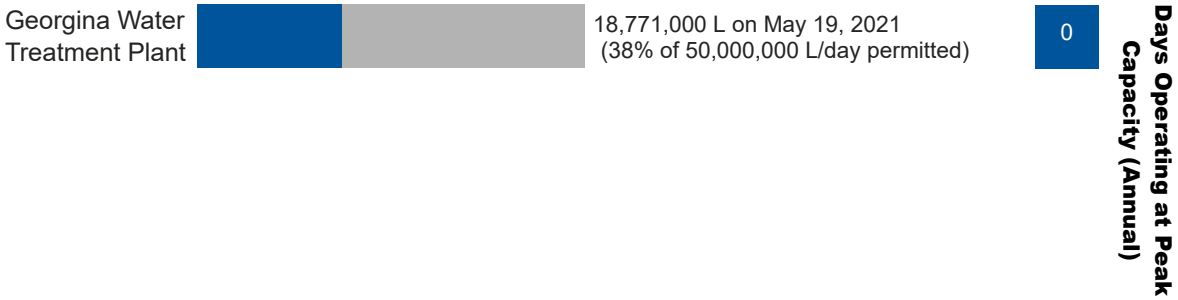
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Georgina DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Holland Landing DWS

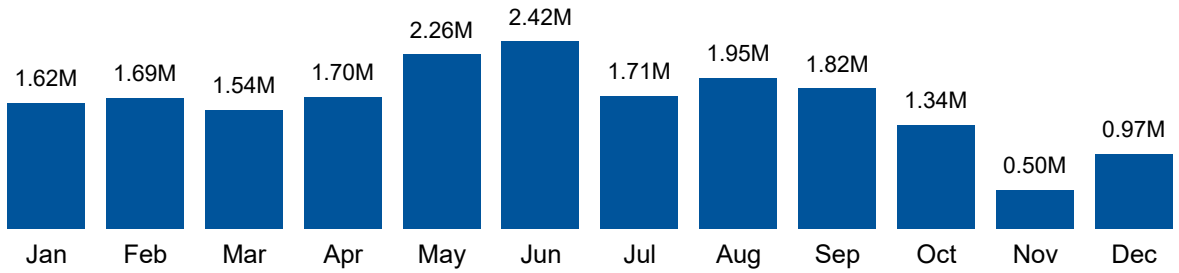
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Holland Landing DWS.

Chlorine	Fluoride	Sodium	Lead
2.54 mg/L	0.21 mg/L	20 mg/L	Not Detected (<0.0005 mg/L)

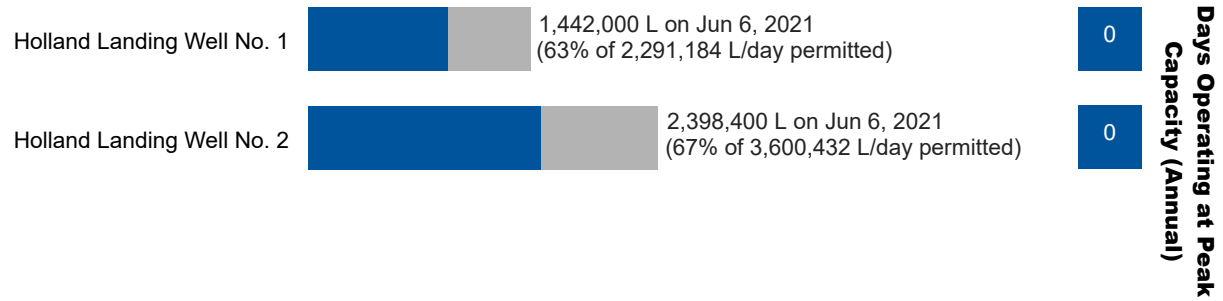
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Holland Landing DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Keswick DWS

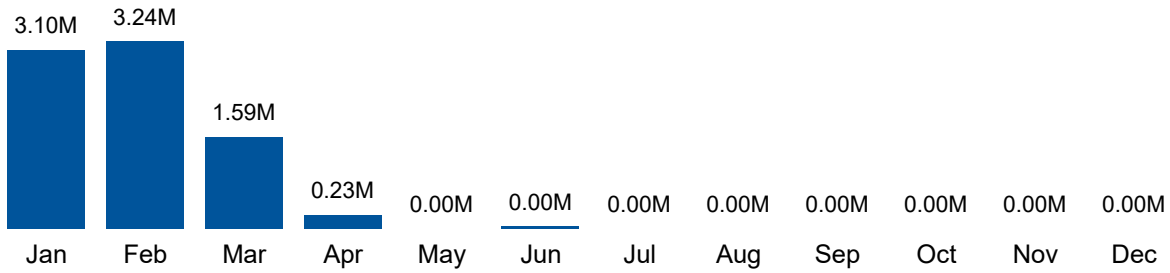
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Keswick DWS.

Chlorine	Fluoride	Sodium	Lead
1.32 mg/L	0.60 mg/L	33 mg/L	Not Detected (<0.0005 mg/L)

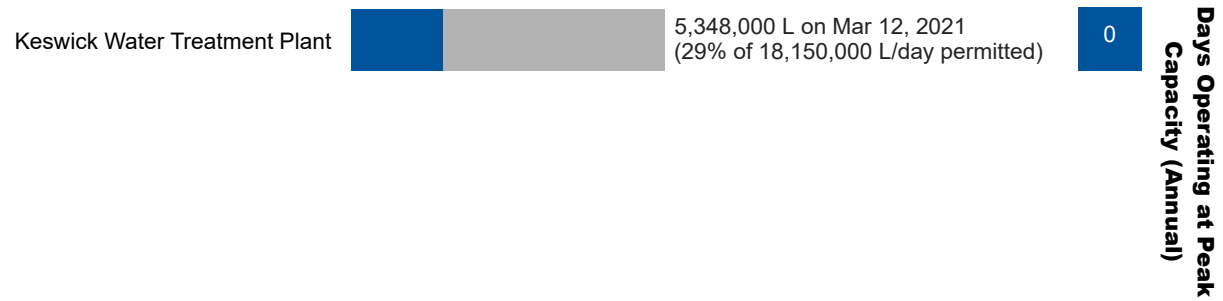
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Keswick DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
King City DWS

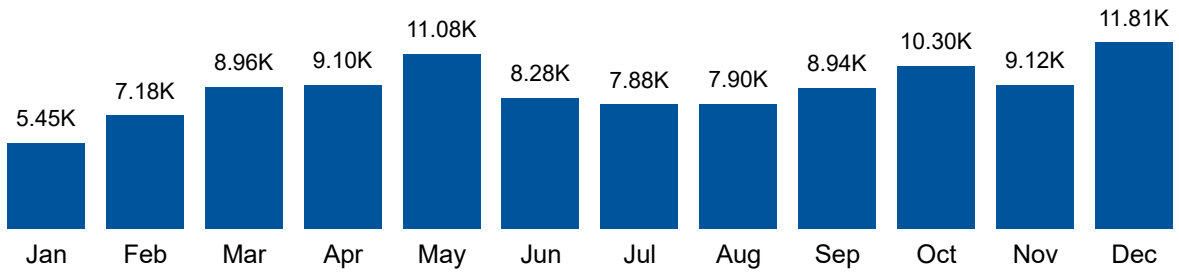
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from distribution facilities in the King City DWS.

Chlorine	Fluoride	Sodium	Lead
1.97 mg/L	0.58 mg/L	20 mg/L	Not Detected (<0.0005 mg/L)

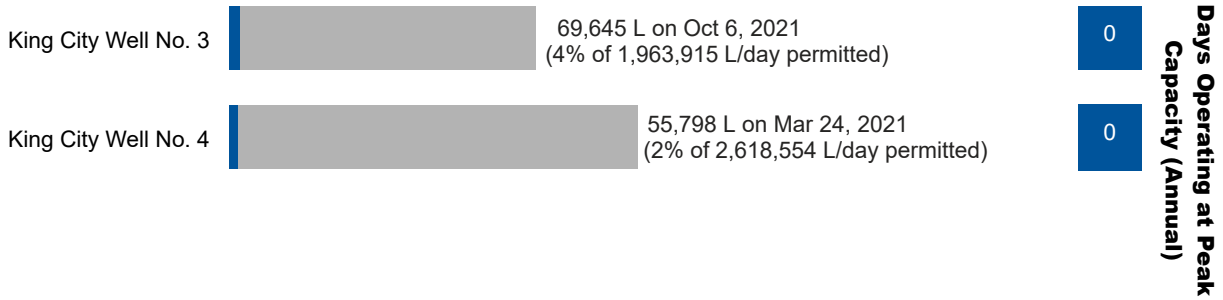
System Monthly Average Flow

The following chart shows the average flow of water withdrawn from wells to maintain standby availability in litres per day (L/day) each month in the King City DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Kleinburg DWS

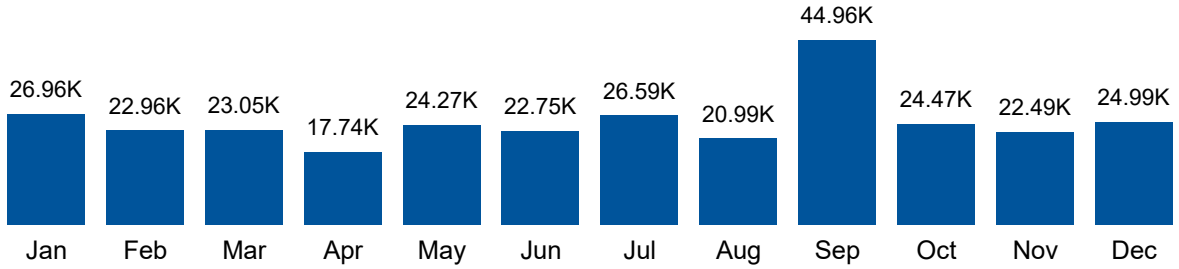
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from distribution facilities in the Kleinburg DWS.

Chlorine	Fluoride	Sodium	Lead
1.87 mg/L	0.58 mg/L	18 mg/L	Not Detected (<0.0005 mg/L)

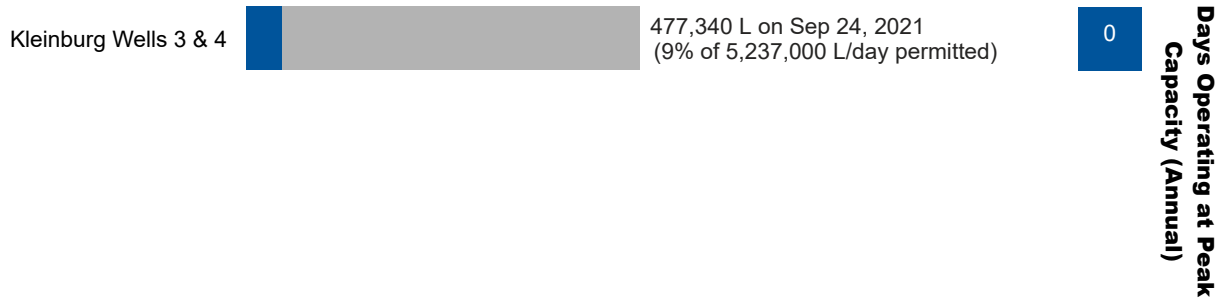
System Monthly Average Flow

The following chart shows the average flow of water withdrawn from wells to maintain standby availability in litres per day (L/day) each month in the Kleinburg DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Mount Albert DWS

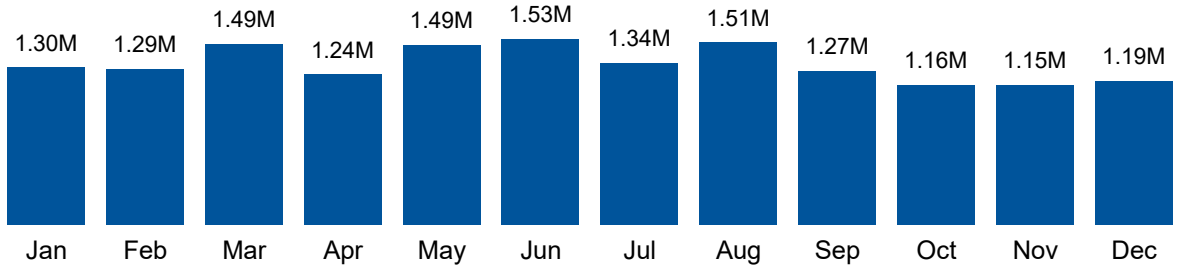
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Mount Albert DWS.

Chlorine	Fluoride	Sodium	Lead
1.60 mg/L	0.06 mg/L	12 mg/L	Not Detected (<0.0005 mg/L)

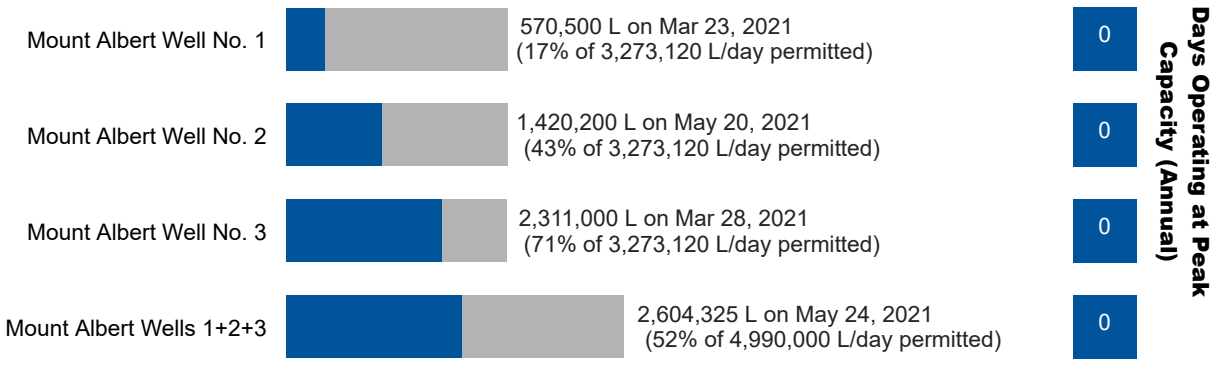
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Mount Albert DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Newmarket DWS

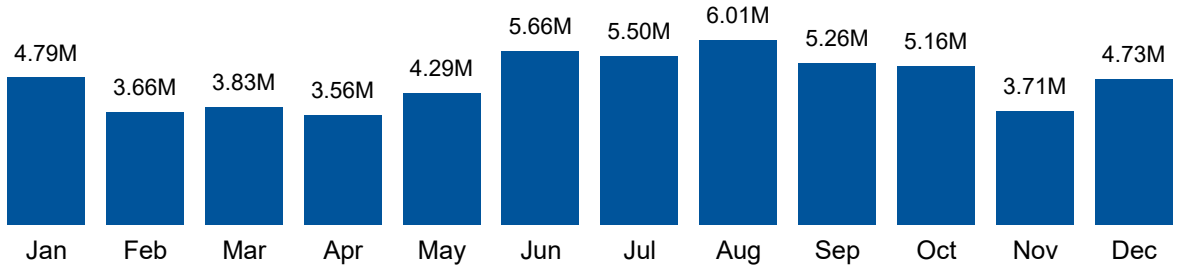
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Newmarket DWS.

Chlorine	Fluoride	Sodium	Lead
2.60 mg/L	0.33 mg/L	18 mg/L	Not Detected (<0.0005 mg/L)

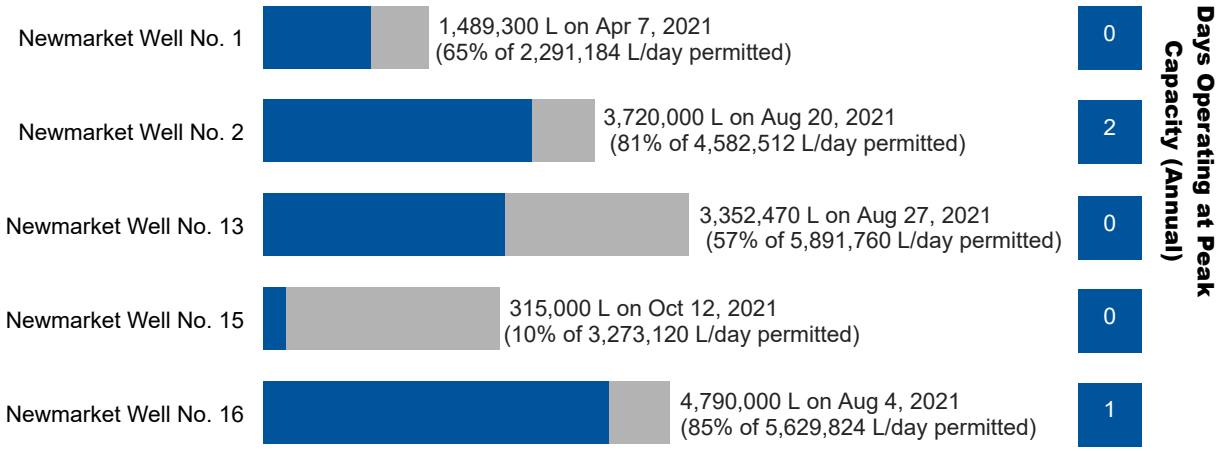
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Newmarket DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Nobleton DWS

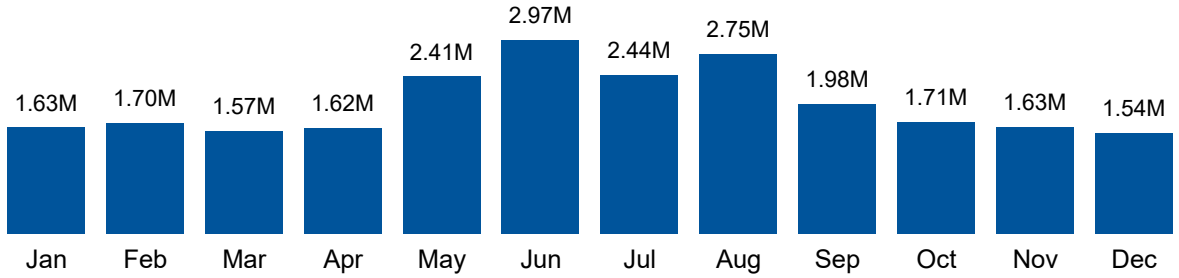
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Nobleton DWS.

Chlorine	Fluoride	Sodium	Lead
1.61 mg/L	0.12 mg/L	16 mg/L	Not Detected (<0.0005 mg/L)

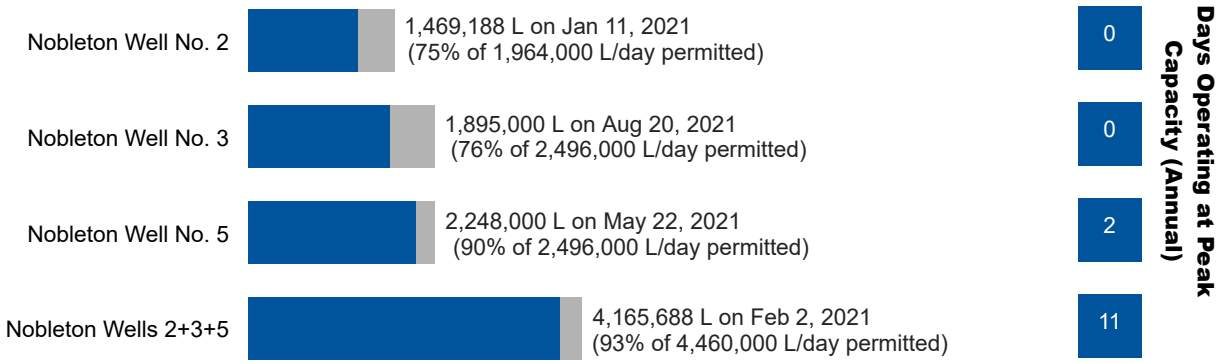
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Nobleton DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Schomberg DWS

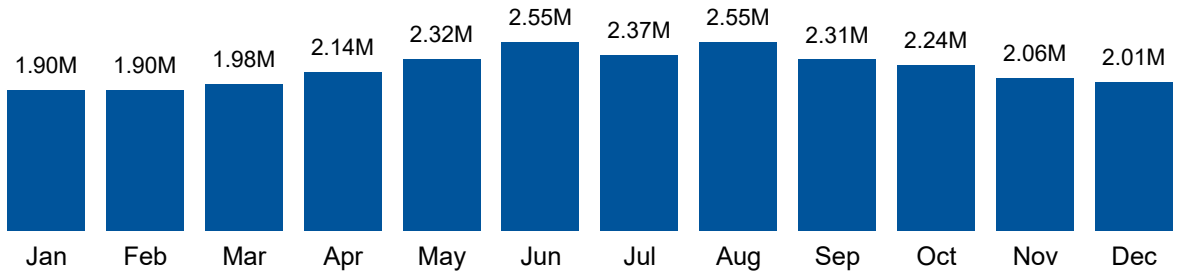
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Schomberg DWS.

Chlorine	Fluoride	Sodium	Lead
2.51 mg/L	0.16 mg/L	20 mg/L	Not Detected (<0.0005 mg/L)

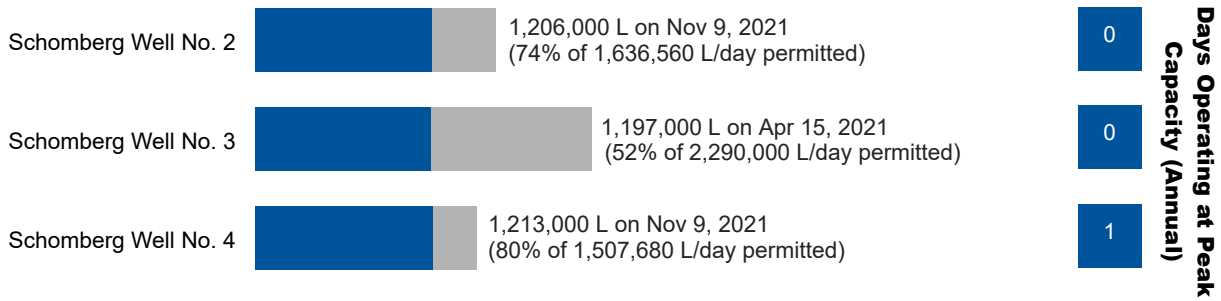
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Schomberg DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Sharon/Queensville DWS

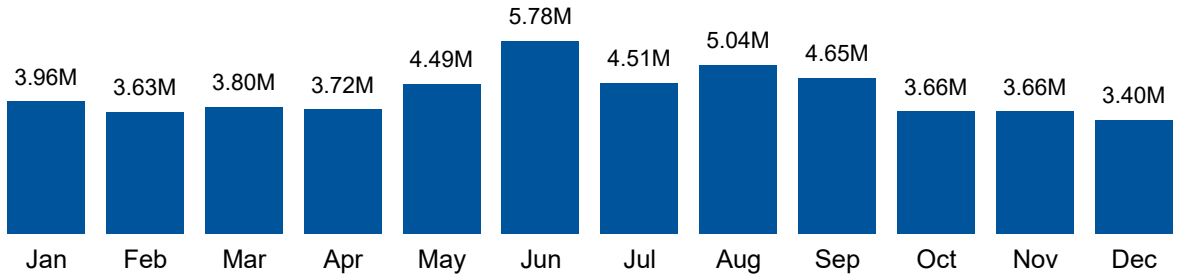
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Sharon/Queensville DWS.

Chlorine	Fluoride	Sodium	Lead
2.42 mg/L	0.21 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

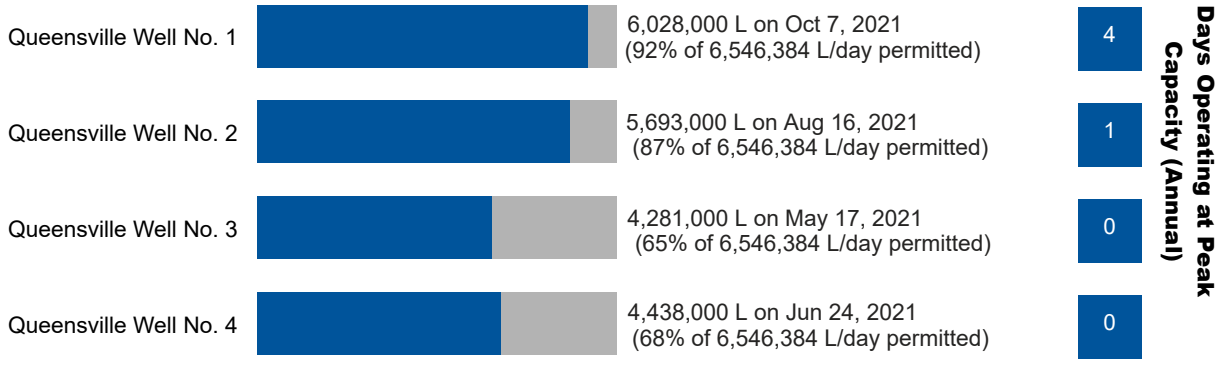
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Sharon/Queensville DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary
Stouffville DWS

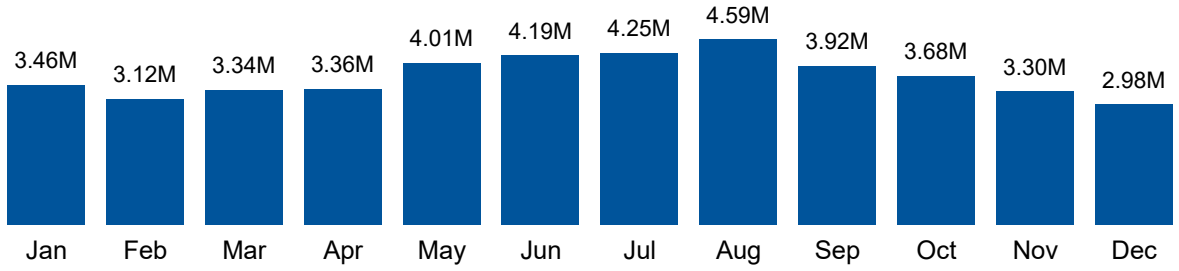
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Stouffville DWS.

Chlorine	Fluoride	Sodium	Lead
1.57 mg/L	0.11 mg/L	44 mg/L	Not Detected (<0.0005 mg/L)

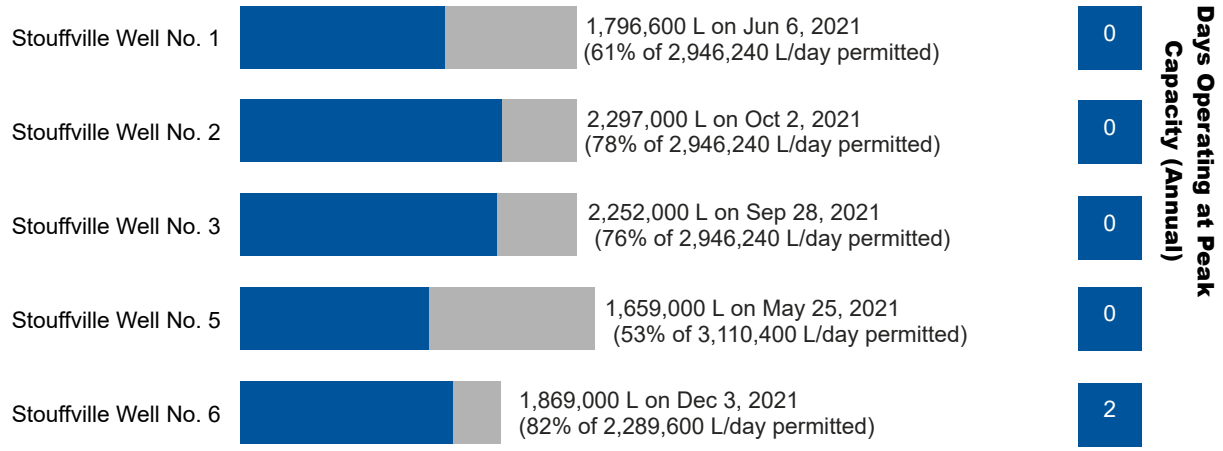
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Stouffville DWS.



Permitted and Actual Maximum Daily Withdrawal

The following chart shows the maximum volume of water withdrawn in a single day from each water supply facility (blue bar) compared to the maximum withdrawal permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted withdrawal).



2021 Water Quality & Capacity Summary

York DWS Vaughan | Richmond Hill | Markham

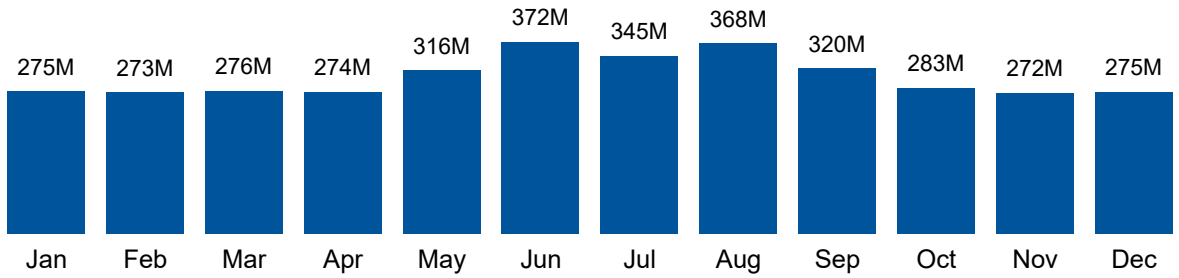
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from distribution facilities in the York DWS.

Chlorine	Fluoride	Sodium	Lead
1.68 mg/L	0.61 mg/L	16 mg/L	Not Detected (<0.0005 mg/L)

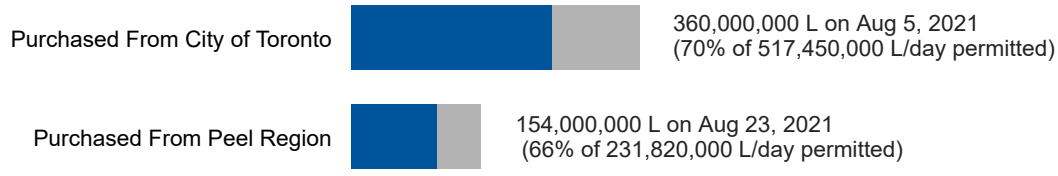
System Monthly Average Flow

The following chart shows the monthly average consumption in million litres per day of purchased Lake Ontario water.



Permitted and Actual Maximum Daily Withdrawal

The City of Toronto and Peel Region supply water to York Region under water supply agreements. The following chart shows the maximum volume of water purchased from each municipality in a single day (blue bar) compared to the maximum flow permitted under the applicable water supply agreement (grey bar).



Accessible formats or communication supports are available upon request. Contact Corporate Communications at 1-877-464-9675 ext. 71234 or yrcorporatecommunications@york.ca

eDOCS #13596252

2021 SUMMARY OF EXPENSES TO INSTALL, REPAIR OR REPLACE REQUIRED EQUIPMENT

This summary fulfills reporting requirement under *Ontario Regulation 170/03 – Drinking Water Systems* to summarize any major expenses incurred to install, repair or replace required equipment. Operating costs are not reflected in these totals.

Drinking Water System	Description of Monetary Expenses	Total
Municipality: **Aurora**		
Aurora Drinking Water Sub-System	Treatment facility upgrades, watermain replacement, standby power generator replacement, new well installation, well rehabilitation and maintenance, valve chamber upgrades, general maintenance and repairs	$1,281,428
Municipality: **East Gwillimbury**		
Holland Landing Drinking Water Sub-System	Well rehabilitation, electrical upgrades, general maintenance and repairs	$804,259
Mount Albert Drinking Water System	Well rehabilitation and maintenance, general maintenance and repairs	$93,823
Sharon-Queensville Drinking Water Sub-System	Treatment facility upgrades, well rehabilitation and maintenance, general maintenance and repairs	$362,845
Municipality: **King**		
Ansnorveldt Drinking Water System	General maintenance and repairs	$16,944

Drinking Water System	Description of Monetary Expenses	Total
King City Drinking Water Sub-System	Treatment facility upgrades, elevated tank repairs and upgrades, well rehabilitation and maintenance, general maintenance and repairs	$302,346
Nobleton Drinking Water System	Treatment facility upgrades, well rehabilitation and maintenance, general maintenance and repairs	$308,633
Schomberg Drinking Water System	Well rehabilitation and maintenance, general maintenance and repairs	$205,026
Municipality: **Newmarket**		
Newmarket Drinking Water Sub-System	Well rehabilitation and maintenance, watermain repair, new water meter chamber installation, elevated tank repairs and upgrades, SCADA upgrades, valve chamber upgrades, general maintenance and repairs	$1,641,475
Municipality: **Georgina**		
Georgina Drinking Water System	Treatment plant rehabilitation, general maintenance and repairs	$2,218,811
Keswick Drinking Water Sub-System	Treatment plant upgrades, general maintenance and repairs	$1,149,458
Municipality: **Whitchurch-Stouffville**		
Ballantrae-Musselman's Lake Drinking Water System	Treatment facility upgrades, elevated tank repairs and upgrades, well rehabilitation and maintenance, general maintenance and repairs	$804,940

Drinking Water System	Description of Monetary Expenses	Total
Stouffville Drinking Water Sub-System	Treatment facility upgrades, elevated tank upgrades, well rehabilitation and maintenance, general maintenance and repairs	$903,397
Municipality: **Markham, Richmond Hill, Vaughan**		
Kleinburg Drinking Water Sub-System	Well rehabilitation and maintenance, general maintenance and repairs	$73,413
York Drinking Water System	Standby power generator and fuel tank installation and upgrades, reservoir rehabilitation and upgrades, elevated tank rehabilitation and upgrades, valve chamber repairs and upgrades, watermain installation and rehabilitation, general maintenance and repairs	$11,904,978
Total:		**$22,071,776**

Accessible formats or communication supports are available upon request.
Contact Corporate Communications at 1-877-464-9675 ext. 71234 or
yrcorporatecommunications@york.ca

eDOCS #13596259