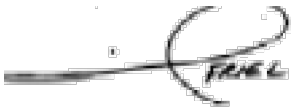
# 2020 Annual Water Summary Report

Prepared by:

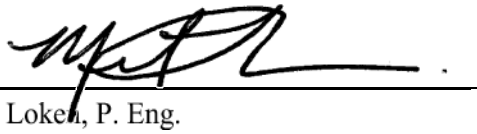


March 23 2021

Julie Friel — Date

Manager Water Treatment

Endorsed by:



March 23 2021

Michael Loken, P. Eng. — Date

Acting Director, Water/Wastewater Treatment & Compliance

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# Introduction

The production and delivery of potable water in Ontario is regulated by Ontario Regulation (O.Reg.) 170/03 governed by the Ministry of the Environment, Conservation and Parks (MECP) under the Safe Drinking Water Act (SDWA), 2002, S.O. 2002, c. 32.

The purpose of this summary report is to provide system owners and municipal council information to satisfy the regulatory reporting required under Schedule 22 titled *Summary Reports for Municipalities* of the O. Reg. 170/03 Drinking Water Systems.

The information within the report must cover the following topics of the previous calendar year from January 1st through to December 31st.

A list of orders that were not met, the duration and any corrective actions needed;

A brief description of the operations of the treatment systems;

Quantities and flow rates of the water supplied during the reporting period, including monthly averages and maximum daily flows and

A comparison of the quantities and flow to the rated capacities approved in the systems approval document the Municipal Drinking Water License (MDWL).

An Annual Water Quality Report, to fulfill Section 11 of Ontario Regulation 170/03, has been completed separately and details the drinking water quality of all of the CGS owned and operated drinking water systems. This annual report is available for viewing on the City of Greater Sudbury's website (https://www.greatersudbury.ca/live/water-and-wastewater-services/projects-plans-reports-and-presentations/drinking-water-quality-reports/) and notices were posted in local papers to inform the public and ensure access to a computer is available at any of the CGS Citizen Service Centers to for residents to view.

# SUMMARY

In the 2020 calendar year the City of Greater Sudbury (CGS) operated its Drinking Water Systems without exceeding any of the limits within the Municipal Drinking Water License. Surface water plants supplying the Sudbury Drinking Water Systems (DWS) operated at less than half of permitted levels with the Wanapitei Water Treatment Plant (WTP) averaging 44% and the David Street WTP utilizing 38% of their Permits to Take Water (PTTW). Ground water systems also operated below permitted levels; Blezard Valley Capreol DWS at 33%, Falconbridge DWS at 26%, Garson DWS at 17%, Onaping at 13%, and Dowling DWS with the lowest usage at 5% of its PTTW. During this year's calculations it was noted that there was a discrepancy in the database formula which gave higher usage percentages then actually was used last year. With this information we can conclude that we currently have an adequate source water budget.

Due to the critical importance of safe, reliable drinking water and the continuing improvements made to source water protection legislation, the City of Greater Sudbury continues to invest in our water works systems to perform critical upgrades and infrastructure renewal. It should not be assumed that these upgrades are the result of any detected incidents of poor water quality, as in most cases they are completed to reduce the risk of potable water contamination as deemed necessary through mandatory compliance known as the Statutory Standard of Care. The regulation stipulates that water works owners will continually monitor water works performance, source water quality, review levels of treatment versus current standards and emerging technologies. For example, this standard of care has been demonstrated through the following projects:

1. Removal of Iron and Manganese within the Blezard Valley Capreol system
   Though iron and manganese do not pose a direct health risk, they can cause some esthetically unpleasing issues to our customers at high levels of concentration. As such, the CGS is currently in the final design phase of implementing additional treatment steps to significantly reduce levels of these contaminants through additional treatment steps.
2. Addressing contaminant levels in the Garson Well Field
   Tetrachloroethylene, a harmful chemical, was detected at levels below half the provincial regulated limit within two of the source water within the Garson well field. Despite the levels being lower than permissible amounts, an Environmental Assessment (EA) is currently underway to determine the water servicing strategy for Garson due to the aging infrastructure and identification of potential ground water quality issues. The EA Process has reviewed various alternatives and a preferred

approach has been identified. Major stakeholders, including the Ministry of the Environment Conservation and Parks (MECP), have been notified of the study and a public consultation forum will be held in the very near future.

The MECP is responsible for the enforcement of regulations and conducts annual, announced and unannounced inspections of all of our facilities. Inspections "grading" has given the CGS water systems a 100% rating to date. We are still waiting for the final reports pertaining to the Wanapetei WTP (and David Street WTP sections of the Sudbury DWS as well as the Blezard Valley DWS.

As per regulatory requirement, 24 adverse water quality incident (AWQI) reports have been filled according to regulated requirements. Corrective actions were taken and issues were promptly rectified and reported to the MECP as well as the Public Health Sudbury District (PHSD) unit.

The Community Lead Testing Initiative was instilled in 2007 and falls under O. Reg. 170/03, Schedule 15.1. Although there have been challenges in garnering new volunteers for the program and restrictions due to COVID-19 isolations, CGS continued to meet sampling requirements. During the course of this biannual sampling; testing at 80 residential sites, 8 commercial sites and 30 distribution sites were completed. Lead residuals within our distribution systems ranged from a minimum of non-detection (a value below 0.1) to a maximum of 0.22 against the regulated requirement of 10 parts per billion (pbb). One residential site tested above the half limit of 5 ppb and was contacted by PHSD who in turn educated the home owner on steps to follow. Seeing that our water quality has proven not to be an issue; CGS was granted relief by MECP from lead testing in residential and commercial sites from all DWS with the exception of the sections fed by the David Street and Wanapetei plants within the Sudbury DWS. These sections must continue to be sampled not due to the quality of the water but to satisfy the section of the regulation stating minimum sampling requirement correlating to population served by specific systems. The City continues to sample the distribution water in each of the DWS and has shown no detection over 10 parts per billion. The city continues to provide corrosion control to its DWS that require the chemical treatment and this program has proven its success with the low lead laboratory results.

Water quality throughout system is monitored twenty-four hours a day 365 days a year. Regular sampling schedules are followed in accordance with O. Reg. 170/03 and our Municipal Drinking Water Licenses and Permits. The treated water is fluoridated to prevent tooth decay in all of City's systems as PHSD mandates this requirement.

## System Specific

Drinking Water Services within the City of Greater Sudbury is a combination of municipally-owned/operated utilities along with the supply of purchased potable water. The City of Greater Sudbury owns and operates two surface water treatment plants along with its distribution systems, six ground water treatment well fields along with their own distribution systems and one independent distribution system conveying purchased potable water from Vale's Vermilion Water Treatment Plant.

Table 1 - Overview of the City's Water Systems

| Drinking Water System | Type of Facility | Source of Water | Communities Served |
|---|---|---|---|
| Sudbury Drinking Water System - Wanapitei | Class IV Surface water conventional treatment plant and Class IV Distribution system | Wanapitei River | Sudbury, Coniston, Wanapitei, Markstay, Garson |
| Sudbury Drinking Water System - David | Class III Surface water Membrane Filtration Plant and Class II Distribution system | Ramsey Lake | Sudbury (West and South sections) |
| Sudbury Drinking Water System - Garson | Class I Wells and Class II Distribution system | Groundwater | Garson (east of Penman Dr.) |
| Dowling Drinking Water System | Class I Wells and Class I Distribution system | Groundwater | Dowling |
| Valley Drinking Water System | Class I Wells and Class II Distribution system | Groundwater | Valley East, Azilda, Chelmsford & Capreol |
| Falconbridge Drinking Water System | Class I Wells and Class II Distribution system | Groundwater | Falconbridge |
| Onaping /Levack Drinking Water System | Class I Wells and Class II Distribution system | Groundwater | Onaping & Levack |
| Vermilion Distribution System | Class II Distribution System | Vermilion River WTP Owned and Operated by Vale | Lively, Naughton, Whitefish, Copper Cliff, Walden Industrial Park |

## Sudbury Drinking Water System 210001111 - Wanapitei

The Sudbury DWS is comprised of three different water sources; the Wanapitei Water Treatment Plant (WTP), the David WTP and the Garson Well Field.

The Wanapitei WTP is a conventional surface plant located between Coniston and Wahnapitae. Its source water is from the Wanapitei River. The plant's rated capacity is 54,000 $m^3$/day and provides approximately sixty percent of the City of Greater Sudbury's potable water. The treatment process follows these steps:

Raw river water is screened through coarse and fine screens. Five pumps convey the raw water several kilometers to the plant for treatment.

At the plant, the raw water is initially disinfected by chlorination. The water's pH and alkalinity are controlled by the addition of lime. A flocculent chemical (Alum) is added to remove dissolved matter that is in suspension, which causes the matter to come out of solution and precipitate. Sedimentation is a separation by gravity of clarified water and sludge. The settled sludge waste is pumped to a nearby sewage lagoon for treatment and the clarified water is sent to four filters.

The filtration process is to remove smaller particles that tend not to settle. The filtration media is a mixture of silica sand and anthracite coal.

The filtered water flows into a reservoir where lime is added to adjust the final pH and alkalinity along with addition of a corrosion control chemical.

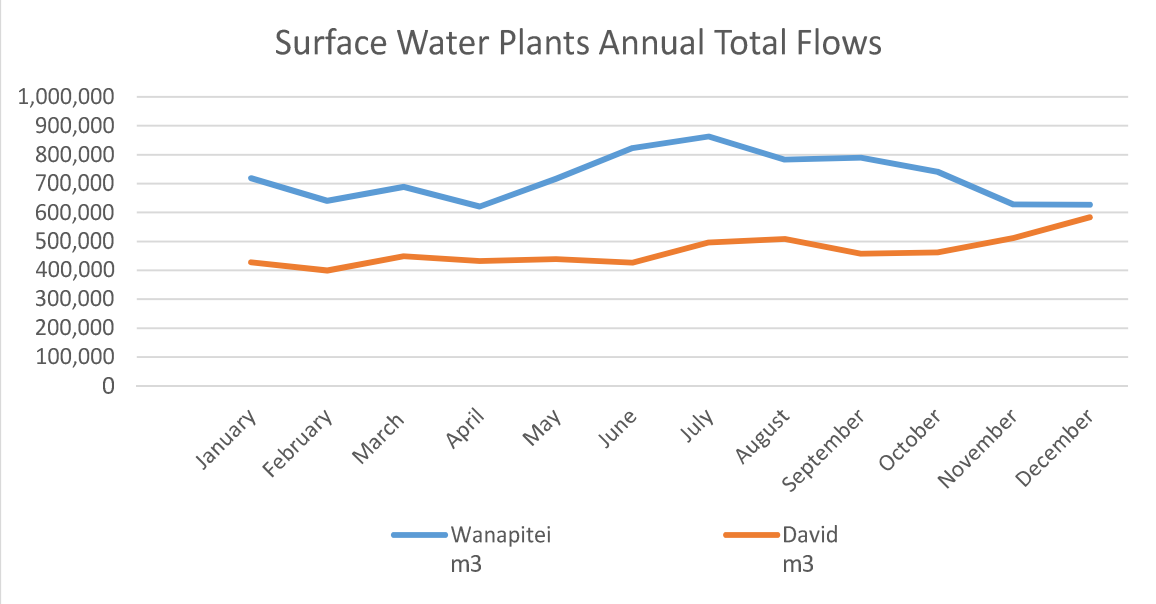
Chlorine is added at this stage to ensure final disinfection of finished water and to maintain a residual disinfectant within the distribution system.

The treated water is pumped through ultraviolet light disinfection units to provide extra inactivation of pathogens.

The treated water is pumped to the distribution system by six vertical turbine pumps and directs the water east towards the community of Markstay, west towards the community of Coniston, to the City of Greater Sudbury and the Ellis Reservoir.

### Non-Compliance with Act, Regulations, Order or Approvals

None to report for 2020.Annual Flow Summary




| Wanapitei WTP | | | | | | |
|---|---|---|---|---|---|---|
| | **Total Flow $m^3$** | **Average Daily Flow $m^3/d$** | **Maximum Daily Flow $m^3/d$** | **Peak Flow L/s** | **MDWL Maximum Flow $m^3/d$** | **% Capacity** |
| **January** | 718,636 | 23,182 | 26,041 | 397.6 | 54,000 | 43 |
| **February** | 640,447 | 22,084 | 23,610 | 349.4 | 54,000 | 41 |
| **March** | 689,069 | 22,228 | 24,324 | 363.8 | 54,000 | 41 |
| **April** | 620,668 | 20,689 | 22,162 | 421.4 | 54,000 | 38 |
| **May** | 716,493 | 23,113 | 29,946 | 690.7 | 54,000 | 43 |
| **June** | 822,626 | 27,421 | 35,760 | 456.0 | 54,000 | 51 |
| **July** | 862,982 | 27,838 | 32,258 | 414.0 | 54,000 | 52 |
| **August** | 782,976 | 25,257 | 27,890 | 465.3 | 54,000 | 47 |
| **September** | 789,386 | 26,313 | 29,397 | 440.7 | 54,000 | 49 |
| **October** | 741,544 | 23,921 | 26,338 | 410.3 | 54,000 | 44 |
| **November** | 628,420 | 20,947 | 25,001 | 416.9 | 54,000 | 39 |
| **December** | 627,011 | 20,226 | 21,480 | 308.9 | 54,000 | 37 |
| **Total** | 8,640,258 | | | | AVERAGE % | 44 |

## Sudbury Drinking Water System 220003537- David Street

Part of the Sudbury DWS the David St. WTP is a membrane ultra-filtration surface water treatment plant. The plant's rated capacity is 40,000 $m^3$/day and provides approximately forty percent of the City of Greater Sudbury's potable water.

The raw water intake is located approximately three hundred meters distance from the shores of Ramsey Lake. The treatment process follows these steps:

Raw lake water is screened through coarse screens and two strainers. The water is initially disinfected by chlorination. Four pumps directs the water to membrane tank for ultrafiltration. The filtration process removes particles 0.02 microns in size or larger. The filtered water flows into a reservoir. Chlorine is added at this stage to ensure final disinfection of finished water and to maintain a residual disinfectant within the distribution system. Fluoride is added to prevent tooth decay along with corrosion control chemical. The treated water is pumped through ultraviolet light disinfection units to provide extra inactivation of pathogens.

The treated water is pumped to the distribution system by four vertical turbine pumps and directs water to the south, west and downtown sections of the City of Greater Sudbury. Water from this plant is also used to fill the Ellis Reservoir.

### Non-Compliance with Act, Regulations, Order or Approvals

In 2020 the David system had 4 AWQIs. The first incident was a fluoride test of 1.54 mg/L when drinking water quality standard is a maximum of 1.50 mg/L. The fluoride feed pump was shut off and the system was allowed to decrease on its own. The second was a low chlorine residual in the distribution system tested at 0.03 mg/L when the standard is 0.05 mg/L. Per health unit directions the system hydrants were flushed and residuals were monitored until they returned to normal operating range. The third AWQI was a sodium result of 54 mg/L which is above the standard of 20 mg/L. The site was resampled and tested as per regulations. The last incident was a pressure lower than 20psi. Hydrants in the area were flushed, bacterial samples were taken and no adverse results were present.

## Annual Flow Summary

| David St. WTP | | | | | | |
|---|---|---|---|---|---|---|
| | Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 427,821 | 13,801 | 15,365 | 513.3 | 40,000 | 35 |
| **February** | 399,104 | 12,874 | 17,105 | 384.2 | 40,000 | 32 |
| **March** | 448,871 | 14,480 | 16,303 | 509.7 | 40,000 | 36 |
| **April** | 431,771 | 13,928 | 14,571 | 395.3 | 40,000 | 35 |
| **May** | 438,412 | 14,142 | 14,607 | 413.0 | 40,000 | 35 |
| **June** | 426,160 | 13,747 | 17,517 | 534.3 | 40,000 | 34 |
| **July** | 496,608 | 16,020 | 23,585 | 545.0 | 40,000 | 40 |
| **August** | 507,940 | 16,385 | 22,110 | 524.1 | 40,000 | 41 |
| **September** | 457,309 | 14,752 | 20,729 | 557.1 | 40,000 | 37 |
| **October** | 462,427 | 14,917 | 20,847 | 548.8 | 40,000 | 37 |
| **November** | 511,732 | 16,507 | 19,505 | 542.2 | 40,000 | 41 |
| **December** | 583,374 | 18,819 | 30,351 | 546.3 | 40,000 | 47 |
| **Total** | 5,591,530 | | | | AVERAGE % | 38 |

## Sudbury Drinking Water System 220003485 - Garson

The Garson water works is a groundwater system consisting of three wells, and servicing the community of Garson east of Penman Ave and O'Neil Dr East. The three wells are:

- Garson Well No. 1;
- Garson Well No. 2, and
- Garson Well No. 3.

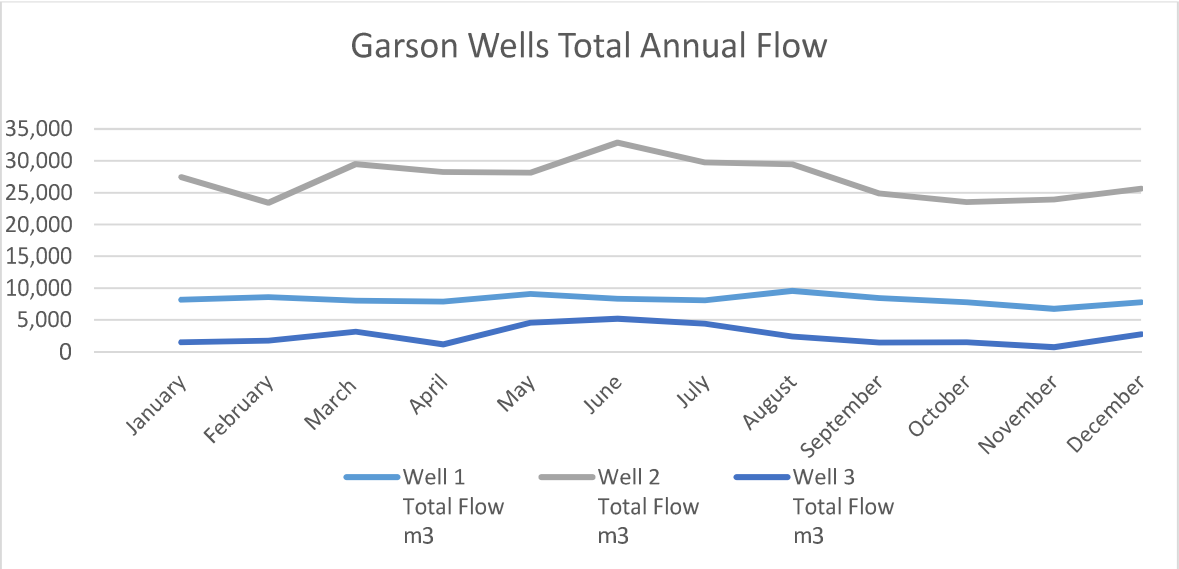
The system includes three vertical turbine well pumps, disinfection with sodium hypochlorite and fluoride injection as mandated by PHSD. The water is directly connected to the public distribution network. The distribution network extends from Skead Road at the north to Garson-Coniston Road at the south. The pipe network is connected to the water supply from Sudbury at the intersection of Falconbridge Road and O'Neil Drive West, therefore the community is serviced from the Sudbury Distribution system West of Penman Avenue. In the event that all of the three wells were to fail, the Garson system is connected to the Sudbury Distribution System by way of a pressure valve and would have water supplied from Sudbury.

In March 2001, a hydrogeological assessment was made of each of the wells which concluded that it is unlikely that any of them are under the direct influence of surface water. The raw water was therefore found to be in general conformance with the ODWS. Notwithstanding the historical good water quality, the aquifer used in the Garson well supply has a recharge area which includes the developed area of Garson. With direction and consultation from PHSD and the MECP, CGS committed to undertaking a groundwater monitoring program for tetrachloroethylene (TCE). Although TCE levels found during audit sampling are well below regulatory limits, the City is proactively sampling and monitoring these levels. In 2012 four monitoring wells were drilled in the area and sampling and graphing of results is completed regularly by staff to augment historical data and to ensure the safety of the water source and public. In 2017 CGS retained a consultant to provide feasibility options for treatment of TCE and the possibility of feeding this system directly from the two surface plants. We are currently in the research stage of this project and will be conducting an environmental assessment.

## Non-Compliance with Act, Regulations, Order or Approvals

Garson had one AWQI in 2020. A sodium test result was 67.7 mg/L and above the standard of 20 mg/L. Another sample was taken to ensure the result and the site will be monitored as per regulatory requirements.

## Annual Flow Summary



| Garson Well #1 | | | | | | |
|---|---|---|---|---|---|---|
| | Well 1 Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 8,179 | 264 | 519 | 17.4 | 1,572 | 17 |
| **February** | 8,574 | 296 | 556 | 15.7 | 1,572 | 19 |
| **March** | 8,047 | 260 | 494 | 15.5 | 1,572 | 17 |
| **April** | 7,863 | 262 | 313 | 15.8 | 1,572 | 17 |
| **May** | 9,069 | 293 | 616 | 15.4 | 1,572 | 19 |
| **June** | 8,343 | 278 | 471 | 17.4 | 1,572 | 18 |
| **July** | 8,095 | 261 | 505 | 16.1 | 1,572 | 17 |
| **August** | 9,558 | 308 | 400 | 15.6 | 1,572 | 20 |
| **September** | 8,461 | 282 | 440 | 40.0 | 1,572 | 18 |
| **October** | 7,788 | 251 | 524 | 16.4 | 1,572 | 16 |
| **November** | 6,744 | 225 | 475 | 16.4 | 1,572 | 14 |
| **December** | 7,795 | 251 | 460 | 16.1 | 1,572 | 16 |
| **Total** | 98,515 | | | | AVERAGE % | 17 |

| Garson Well #2 | | | | | | |
|---|---|---|---|---|---|---|
| | Well 2 Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 27,425 | 885 | 1,017 | 34.9 | 2,981 | 30 |
| **February** | 23,409 | 807 | 1,046 | 33.7 | 2,981 | 27 |
| **March** | 29,496 | 951 | 1,413 | 35.3 | 2,981 | 32 |
| **April** | 28,221 | 941 | 1,090 | 33.1 | 2,981 | 32 |
| **May** | 28,148 | 908 | 1,411 | 36.3 | 2,981 | 30 |
| **June** | 32,860 | 1,095 | 2,394 | 36.3 | 2,981 | 37 |
| **July** | 29,772 | 960 | 1,357 | 36.9 | 2,981 | 32 |
| **August** | 29,468 | 951 | 1,132 | 36.4 | 2,981 | 32 |
| **September** | 24,887 | 830 | 1,084 | 34.1 | 2,981 | 28 |
| **October** | 23,499 | 758 | 987 | 32.5 | 2,981 | 25 |
| **November** | 23,900 | 797 | 1,034 | 31.8 | 2,981 | 27 |
| **December** | 25,625 | 827 | 1,260 | 32.7 | 2,981 | 28 |
| **Total** | 326,710 | | | | AVERAGE % | 30 |

| Garson Well #3 | | | | | | |
|---|---|---|---|---|---|---|
| | Well 3 Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 1480 | 48 | 352 | 30.2 | 3,275 | 1 |
| **February** | 1767 | 61 | 529 | 28.5 | 3,275 | 2 |
| **March** | 3142 | 101 | 689 | 30.5 | 3,275 | 3 |
| **April** | 1136 | 38 | 309 | 27.9 | 3,275 | 1 |
| **May** | 4569 | 147 | 804 | 28.3 | 3,275 | 5 |
| **June** | 5211 | 174 | 733 | 34.0 | 3,275 | 5 |
| **July** | 4436 | 143 | 564 | 32.0 | 3,275 | 4 |
| **August** | 2421 | 78 | 367 | 34.3 | 3,275 | 2 |
| **September** | 1435 | 48 | 295 | 28.9 | 3,275 | 1 |
| **October** | 1524 | 49 | 275 | 30.6 | 3,275 | 2 |
| **November** | 717 | 24 | 326 | 34.0 | 3,275 | 1 |
| **December** | 2736 | 88 | 683 | 30.6 | 3,275 | 3 |
| **Total** | 30576 | | | | AVERAGE % | 3 |

## Dowling Wells and Distribution System 210001665

The water supply source for the Dowling wells is an unconfined aquifer of sand and gravel deposits located within the Onaping river watershed. Due to the unconfined nature of the soils and the proximity to the river, the MECP has characterized the water source as potentially groundwater under the direct influence of surface water (potentially GUDI).

Studies were conducted in 2002 with the resulting submission of a GUDI study on July 1, 2002. This study was reviewed and accepted by the MECP and as a result, both wells were deemed to be GUDI with effective in situ filtration. As such, additional treatment as ultraviolet irradiation was added to enhance disinfection to comply with the treatment requirements.

The water works includes two wells, a distribution network and an elevated water storage tank.

The treatment process follows these steps:

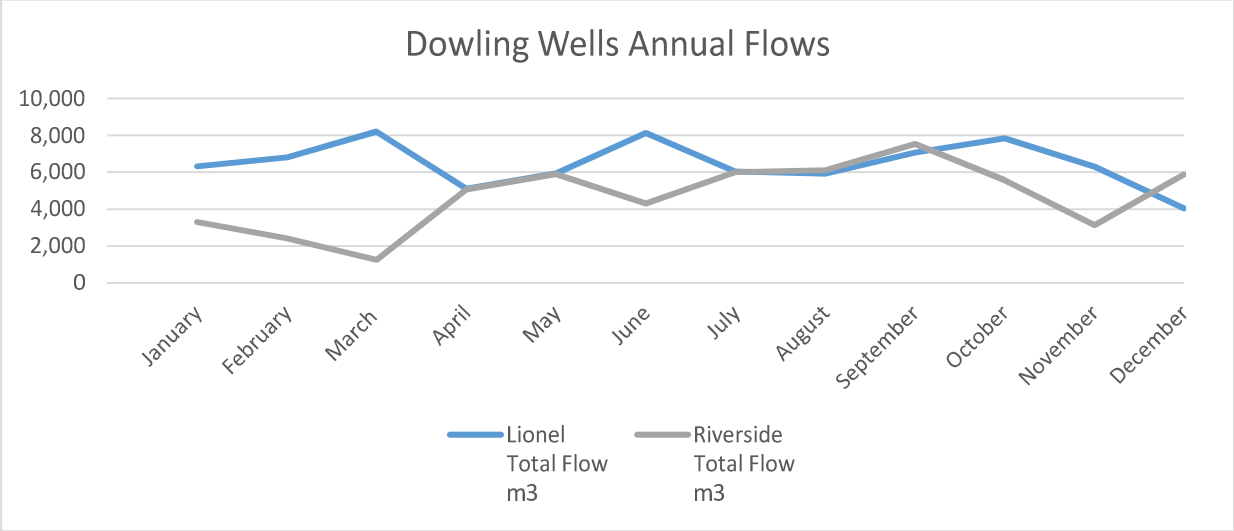
The system includes per well site, one well pump, disinfection with chlorine gas, ultraviolet irradiation along with fluoride injection as mandated by PHSD. The distribution network in Dowling has been

relatively reliable and is not exposed to as severe frost depths as other areas of the City. Further, the elevated water storage provides a measure of security to the water system in the event of power interruptions and watermain breaks.

## Non-Compliance with Act, Regulations, Order or Approvals

Dowling had two AWQIs in 2020. Sodium test results were both above the standard of 20 mg/L. Another sample was taken from each well to ensure the result and the site will be monitored as per regulatory requirements.

## Annual Flow Summary



| Lionel Well | | | | | | |
|---|---|---|---|---|---|---|
| | Lionel Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 6,316 | 204 | 453 | 24.3 | 3,640 | 6 |
| **February** | 6,804 | 219 | 456 | 24.7 | 3,640 | 6 |
| **March** | 8,202 | 265 | 538 | 24.3 | 3,640 | 7 |
| **April** | 5,095 | 164 | 532 | 24.7 | 3,640 | 5 |
| **May** | 5,933 | 191 | 566 | 80.0 | 3,640 | 5 |
| **June** | 8,127 | 262 | 637 | 24.3 | 3,640 | 7 |
| **July** | 6,046 | 195 | 535 | 24.3 | 3,640 | 5 |
| **August** | 5,915 | 191 | 514 | 23.9 | 3,640 | 5 |
| **September** | 7,062 | 228 | 577 | 24.3 | 3,640 | 6 |
| **October** | 7,849 | 253 | 567 | 24.7 | 3,640 | 7 |
| **November** | 6,308 | 203 | 529 | 24.7 | 3,640 | 6 |
| **December** | 4,041 | 130 | 517 | 24.3 | 3,640 | 4 |
| **Total** | 77,698 | | | | AVERAGE % | 6 |

| Riverside Well | | | | | | |
|---|---|---|---|---|---|---|
| | Riverside Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 3,295 | 106 | 392 | 34.6 | 3,640 | 3 |
| **February** | 2,403 | 78 | 386 | 34.2 | 3,640 | 2 |
| **March** | 1,245 | 40 | 465 | 33.8 | 3,640 | 1 |
| **April** | 5,076 | 164 | 502 | 34.6 | 3,640 | 4 |
| **May** | 5,908 | 191 | 505 | 35.9 | 3,640 | 5 |
| **June** | 4,299 | 139 | 583 | 33.8 | 3,640 | 4 |
| **July** | 6,007 | 194 | 672 | 33.8 | 3,640 | 5 |
| **August** | 6,118 | 197 | 514 | 33.4 | 3,640 | 5 |
| **September** | 7,532 | 243 | 727 | 34.2 | 3,640 | 7 |
| **October** | 5,569 | 180 | 511 | 34.6 | 3,640 | 5 |
| **November** | 3,131 | 101 | 470 | 34.6 | 3,640 | 3 |
| **December** | 5,887 | 190 | 521 | 33.8 | 3,640 | 5 |
| **Total** | 56,471 | | | | AVERAGE % | 4 |

## Blezard Valley/Capreol Drinking Water System-210000737

In 2010, the Blezard Valley and Capreol well supply systems were determined to be one single system as both of the systems are connected. As such one Municipal Drinking Water License and Works Permit has been assigned to the entire system. This report will identify the works by geographical area where appropriate.

The Blezard Valley portion of the system is a multi-well groundwater system servicing the communities of Hanmer, Blezard Valley, Val Therese, Val Caron, McCrea Heights, Azilda and Chelmsford. Eleven groundwater wells are situated throughout the Hanmer and Val Therese area. The communities are interconnected with distribution piping and the system feeds three water storage tanks located in Val Caron, Azilda and Chelmsford. This well field extends approximately 7.5 km (west to east) from Val Therese to Hanmer.

Some of the wells are located immediately adjacent to residential homes, commercial establishments and major arterial roadways. The water quality is beginning to show the effects of urbanization such as sodium residuals higher than the provincial standard. Public education sessions and bylaws have been implemented in attempts to mitigate the quality of source water.

The Blezard wells are:

- Kenneth;
- Deschenes;
- Philippe;
- Frost;
- Michelle;
- Notre Dame;
- Chenier;
- R, and;
- I

The treatment process follows these steps:

The system includes per well site, one well pump, disinfection with chlorine gas, ultraviolet irradiation along with fluoride injection as mandated by PHSD. The distribution network has been relatively reliable. It is to be noted that all the wells producing water are before the Val Caron tank. One trunk main feeds all the water production to the two other tanks.

I well has not been in use for some time. Raw water quality has shown elevated iron and manganese that compromises the esthetic quality of the water. Studies are currently being conducted on methods of removal in order to re-introduce the well into production in the future.

The Capreol Well portion of the system draws water from two wells to service the community of Capreol. The Capreol wells are:

- M, and;
- J.

The treatment process follows these steps:

The Capreol portion of the system is a multi-well groundwater system servicing the community of Capreol. They are situated on the east side of Greens Lake. Like the Dowling wells hydrogeological studies found these wells to be potentially GUDI with effective in situ filtration and as such required UV irradiation.

The system includes per well site, one vertical turbine well pump, disinfection with chlorine gas, ultraviolet irradiation, polyphosphate for corrosion control along with fluoride injection as mandated by PHSD.

Raw water quality has shown elevated iron and manganese that compromises the esthetic quality of the water. Removal of these parameters is expected to be available in 2022 as the design phase of a project to add additional treatment steps is underway.

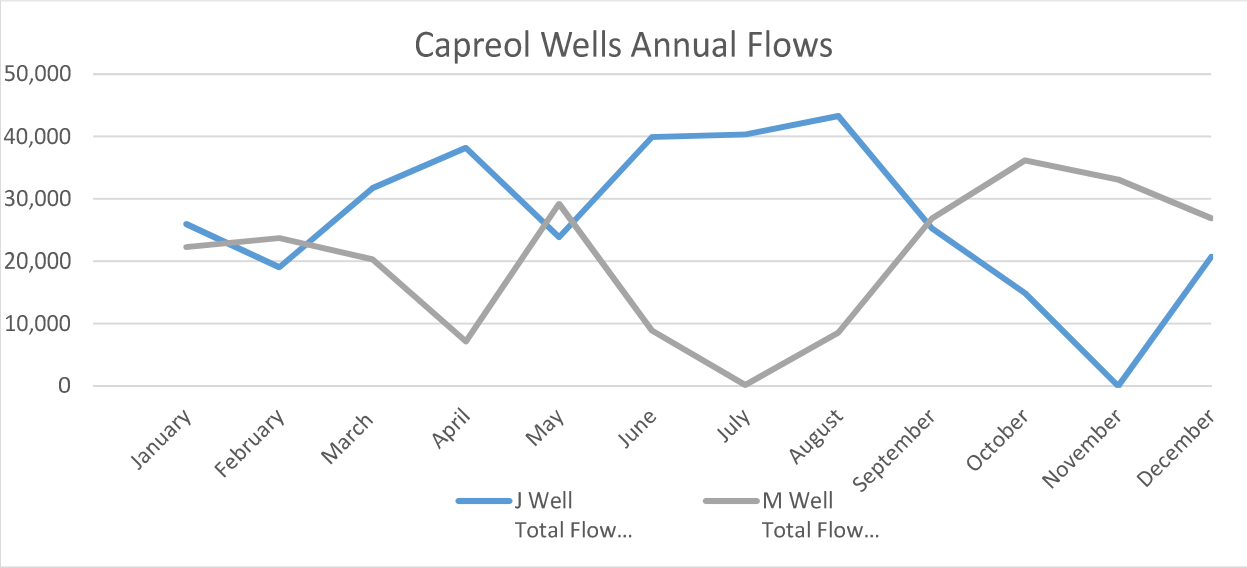
The Blezard Valley wells can supply water through the Capreol Boosters located onsite at the wells ensuring a continued water supply to the town of Capreol in the event the two wells are unavailable.

The distribution system in Capreol was developed in conjunction with the growth of industry in the area and, as such, some of the pipe network is relatively old. The frost depths in Capreol extend to extreme depths during cold winters, which impose additional stresses on the integrity of the system. A second water main was added to the distribution system from the well as a contingency.

## Non-Compliance with Act, Regulations, Order or Approvals

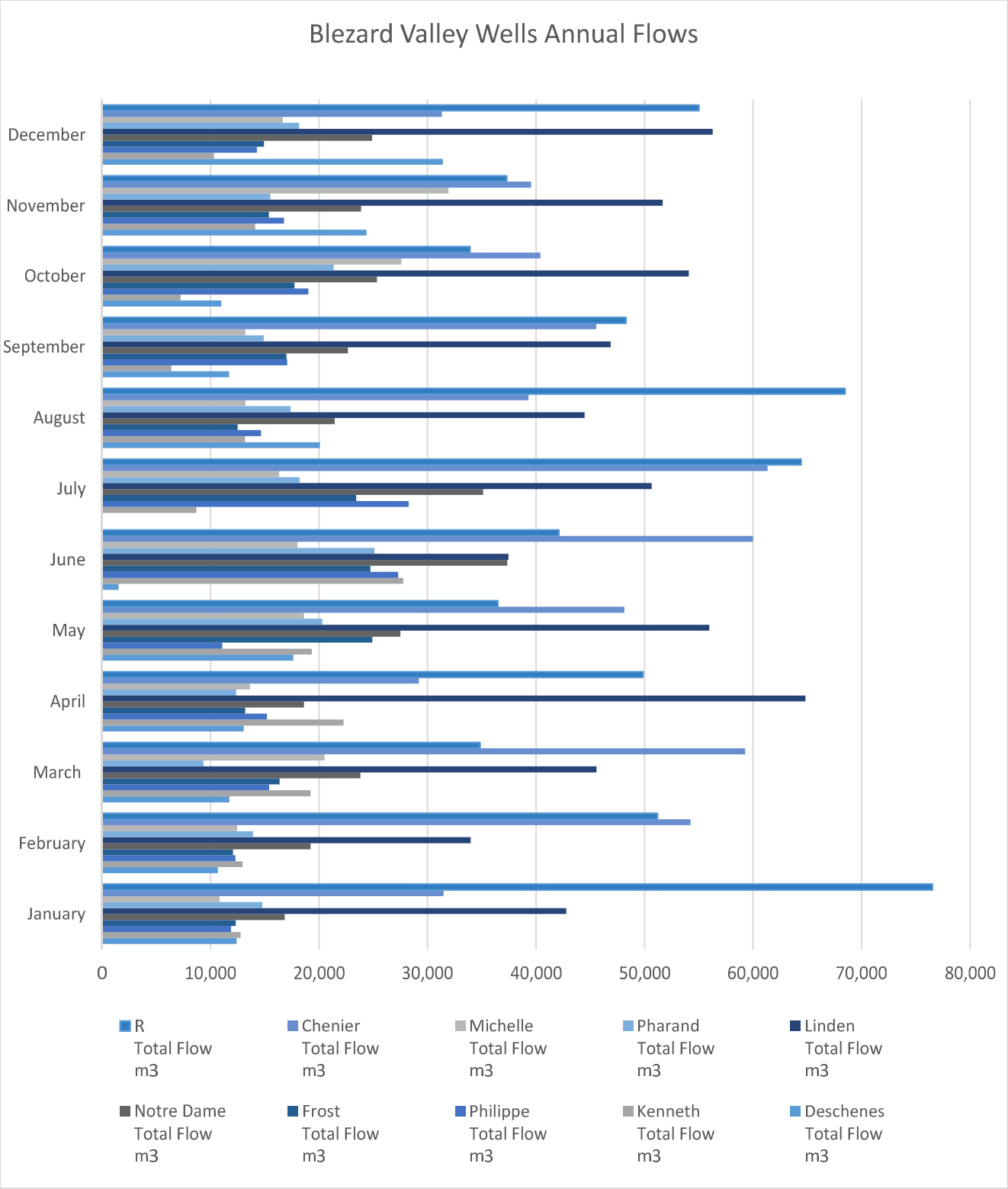
The Blezard Valley system had 13 AWQIs in 2020. Nine of the incidents were fluoride residuals higher than the standard of 1.50 mg/L measured while commissioning new chemical feed systems. The sites were flushed to waste and retested to ensure the fluoride residual was lowered before returning the well to production. Two of the incidents were due to pressures in the system falling below the recommended 20 psi in the distribution lines. The areas were tested for free chlorine residuals and bacterial samples were gathered. No adverse results were present. The last two were well sites that had sodium test results over the 20 mg/L standard. As per MECP and PHSD directions the sites were resampled and will be monitored.

## Annual Flow Summary




| "M" Well | | | | | | |
|---|---|---|---|---|---|---|
| | M Well Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 22,259 | 718 | 1,756 | 29.6 | 3,927 | 18 |
| **February** | 23,704 | 765 | 1,754 | 27.5 | 3,927 | 19 |
| **March** | 20,329 | 656 | 1,736 | 32.4 | 3,927 | 17 |
| **April** | 7,154 | 231 | 1,703 | 30.2 | 3,927 | 6 |
| **May** | 29,192 | 942 | 1,956 | 29.7 | 3,927 | 24 |
| **June** | 8,869 | 286 | 1,797 | 28.1 | 3,927 | 7 |
| **July** | 148 | 5 | 63 | 30.0 | 3,927 | 0 |
| **August** | 8,562 | 276 | 2,057 | 47.8 | 3,927 | 7 |
| **September** | 26,855 | 866 | 1,997 | 40.0 | 3,927 | 22 |
| **October** | 36,154 | 1,166 | 1,984 | 32.9 | 3,927 | 30 |
| **November** | 33,099 | 1,068 | 2,004 | 34.6 | 3,927 | 27 |
| **December** | 26,875 | 867 | 1,990 | 35.6 | 3,927 | 22 |
| **Total** | 243,202 | | | | AVERAGE % | 17 |

| "J" Well | | | | | | |
|---|---|---|---|---|---|---|
| | J Well Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 25,973 | 838 | 1,788 | 30.4 | 3,273 | 26 |
| **February** | 19,030 | 614 | 1,803 | 30.5 | 3,273 | 19 |
| **March** | 31,692 | 1,022 | 1,838 | 30.3 | 3,273 | 31 |
| **April** | 38,181 | 1,232 | 1,784 | 31.3 | 3,273 | 38 |
| **May** | 23,885 | 770 | 1,870 | 30.4 | 3,273 | 24 |
| **June** | 39,900 | 1,287 | 2,046 | 32.0 | 3,273 | 39 |
| **July** | 40,333 | 1,301 | 2,026 | 35.9 | 3,273 | 40 |
| **August** | 43,298 | 1,397 | 2,103 | 32.8 | 3,273 | 43 |
| **September** | 25,275 | 815 | 2,102 | 31.6 | 3,273 | 25 |
| **October** | 14,866 | 480 | 1,954 | 29.3 | 3,273 | 15 |
| **November** | 0 | 0 | 0 | 0.0 | 3,273 | 0 |
| **December** | 20,732 | 669 | 1,993 | 38.4 | 3,273 | 20 |
| **Total** | 323,166 | | | | AVERAGE % | 27 |


Blezard Valley Wells Annual Flows
December
November
October
September
August
July
June
May
April
March
February
January
0
10,000
20,000
30,000
40,000
50,000
60,000
70,000
80,000
R Total Flow m3
Chenier Total Flow m3
Michelle Total Flow m3
Pharand Total Flow m3
Linden Total Flow m3
Notre Dame Total Flow m3
Frost Total Flow m3
Philippe Total Flow m3
Kenneth Total Flow m3
Deschenes Total Flow m3

| Well "A" Deschene | | | | | | |
|---|---|---|---|---|---|---|
| | Deschenes Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 12,396 | 400 | 680 | 19.6 | 1,798 | 22 |
| **February** | 10,670 | 344 | 564 | 19.6 | 1,798 | 19 |
| **March** | 11,721 | 378 | 723 | 19.6 | 1,798 | 21 |
| **April** | 13,047 | 421 | 727 | 19.9 | 1,798 | 23 |
| **May** | 17,613 | 568 | 995 | 19.9 | 1,798 | 32 |
| **June** | 1,514 | 49 | 844 | 66.1 | 1,798 | 3 |
| **July** | 3 | 0 | 1 | 0.0 | 1,798 | 0 |
| **August** | 20,079 | 648 | 1,477 | 18.6 | 1,798 | 36 |
| **September** | 11,705 | 378 | 842 | 18.3 | 1,798 | 21 |
| **October** | 10,980 | 354 | 1,469 | 18.7 | 1,798 | 20 |
| **November** | 24,369 | 812 | 1,530 | 19.5 | 1,798 | 45 |
| **December** | 31,416 | 1,013 | 1,482 | 18.6 | 1,798 | 56 |
| **Total** | 165,511 | | | | AVERAGE % | 25 |

| Well "B" Kenneth | | | | | | |
|---|---|---|---|---|---|---|
| | Kenneth Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 12,772 | 412 | 882 | 23.4 | 2,288 | 18 |
| **February** | 12,935 | 417 | 808 | 23.4 | 2,288 | 18 |
| **March** | 19,223 | 620 | 1,469 | 23.6 | 2,288 | 27 |
| **April** | 22,256 | 718 | 1,960 | 23.9 | 2,288 | 31 |
| **May** | 19,322 | 623 | 1,455 | 24.0 | 2,288 | 27 |
| **June** | 27,773 | 896 | 1,952 | 85.0 | 2,288 | 39 |
| **July** | 8,688 | 280 | 1,253 | 23.4 | 2,288 | 12 |
| **August** | 13,175 | 425 | 1,405 | 23.6 | 2,288 | 19 |
| **September** | 6,384 | 206 | 1,762 | 23.8 | 2,288 | 9 |
| **October** | 7,233 | 233 | 651 | 23.7 | 2,288 | 10 |
| **November** | 14,117 | 455 | 1,502 | 23.5 | 2,288 | 20 |
| **December** | 10,311 | 333 | 1,507 | 23.1 | 2,288 | 15 |
| **Total** | 174,190 | | | | AVERAGE % | 20 |

| Well "C" Philippe | | | | | | |
|---|---|---|---|---|---|---|
| | Philippe Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 11887 | 383 | 698 | 24.8 | 2,288 | 17 |
| **February** | 12288 | 396 | 831 | 25.1 | 2,288 | 17 |
| **March** | 15388 | 496 | 1,011 | 24.4 | 2,288 | 22 |
| **April** | 15189 | 490 | 1,284 | 25.1 | 2,288 | 21 |
| **May** | 11080 | 357 | 1,040 | 25.3 | 2,288 | 16 |
| **June** | 27298 | 881 | 1,694 | 24.8 | 2,288 | 38 |
| **July** | 28255 | 911 | 1,913 | 24.7 | 2,288 | 40 |
| **August** | 14640 | 472 | 1,156 | 24.6 | 2,288 | 21 |
| **September** | 17051 | 550 | 1,061 | 25.1 | 2,288 | 24 |
| **October** | 19008 | 613 | 1,302 | 25.0 | 2,288 | 27 |
| **November** | 16761 | 541 | 1,248 | 24.9 | 2,288 | 24 |
| **December** | 14266 | 460 | 936 | 24.9 | 2,288 | 20 |
| **Total** | 203111 | | | | AVERAGE % | 24 |

| Well "D" Frost | | | | | | |
|---|---|---|---|---|---|---|
| | Frost Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 12,311 | 397 | 726 | 25.3 | 2,288 | 17 |
| **February** | 12,064 | 389 | 666 | 26.5 | 2,288 | 17 |
| **March** | 16,368 | 528 | 1,125 | 25.7 | 2,288 | 23 |
| **April** | 13,190 | 425 | 1,140 | 26.4 | 2,288 | 19 |
| **May** | 24,903 | 803 | 1,741 | 27.3 | 2,288 | 35 |
| **June** | 24,736 | 798 | 1,707 | 25.8 | 2,288 | 35 |
| **July** | 23,431 | 756 | 1,675 | 25.4 | 2,288 | 33 |
| **August** | 12,491 | 403 | 972 | 25.4 | 2,288 | 18 |
| **September** | 16,988 | 548 | 1,085 | 25.4 | 2,288 | 24 |
| **October** | 17,735 | 572 | 1,067 | 25.6 | 2,288 | 25 |
| **November** | 15,361 | 496 | 1,136 | 26.4 | 2,288 | 22 |
| **December** | 14,918 | 481 | 1,171 | 24.9 | 2,288 | 21 |
| **Total** | 204,495 | | | | AVERAGE % | 24 |

| Well "E" Notre Dame | | | | | | |
|---|---|---|---|---|---|---|
| | Notre Dame Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 16,839 | 543 | 1,148 | 34.2 | 3,105 | 17 |
| **February** | 19,222 | 620 | 1,776 | 36.6 | 3,105 | 20 |
| **March** | 23,802 | 768 | 2,696 | 35.8 | 3,105 | 25 |
| **April** | 18,620 | 601 | 1,421 | 34.8 | 3,105 | 19 |
| **May** | 27,495 | 887 | 1,657 | 34.5 | 3,105 | 29 |
| **June** | 37,351 | 1,205 | 2,643 | 35.3 | 3,105 | 39 |
| **July** | 35,110 | 1,133 | 2,730 | 35.5 | 3,105 | 36 |
| **August** | 21,433 | 691 | 1,513 | 34.6 | 3,105 | 22 |
| **September** | 22,665 | 731 | 1,365 | 35.3 | 3,105 | 24 |
| **October** | 25,325 | 817 | 1,756 | 35.7 | 3,105 | 26 |
| **November** | 23,861 | 770 | 1,555 | 35.2 | 3,105 | 25 |
| **December** | 24,877 | 802 | 2,144 | 36.5 | 3,105 | 26 |
| **Total** | 296,601 | | | | AVERAGE % | 26 |

| Well "F" Linden | | | | | | |
|---|---|---|---|---|---|---|
| | Linden Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 42788 | 1,380 | 2,981 | 38.5 | 3,269 | 42 |
| **February** | 33960 | 1,171 | 2,288 | 39.5 | 3,269 | 36 |
| **March** | 45582 | 1,470 | 2,093 | 38.7 | 3,269 | 45 |
| **April** | 64825 | 2,161 | 3,102 | 39.9 | 3,269 | 66 |
| **May** | 55964 | 1,805 | 3,103 | 40.4 | 3,269 | 55 |
| **June** | 37460 | 1,249 | 2,763 | 39.7 | 3,269 | 38 |
| **July** | 50656 | 1,634 | 3,053 | 38.4 | 3,269 | 50 |
| **August** | 44481 | 1,435 | 3,058 | 39.3 | 3,269 | 44 |
| **September** | 46881 | 1,563 | 3,082 | 44.1 | 3,269 | 48 |
| **October** | 54066 | 1,744 | 3,078 | 40.7 | 3,269 | 53 |
| **November** | 51669 | 1,722 | 3,016 | 40.8 | 3,269 | 53 |
| **December** | 56290 | 1,816 | 3,014 | 40.3 | 3,269 | 56 |
| **Total** | 584621 | | | | AVERAGE % | 49 |

| Well "G" Pharand | | | | | | |
|---|---|---|---|---|---|---|
| | Pharand Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 14,773 | 477 | 2,064 | 26.3 | 2,290 | 21 |
| **February** | 13,907 | 449 | 1,260 | 26.3 | 2,290 | 20 |
| **March** | 9,341 | 301 | 781 | 26.5 | 2,290 | 13 |
| **April** | 12,346 | 398 | 978 | 26.2 | 2,290 | 17 |
| **May** | 20,295 | 655 | 1,347 | 26.7 | 2,290 | 29 |
| **June** | 25,108 | 810 | 1,959 | 26.7 | 2,290 | 35 |
| **July** | 18,203 | 587 | 1,455 | 26.5 | 2,290 | 26 |
| **August** | 17,363 | 560 | 1,162 | 26.5 | 2,290 | 24 |
| **September** | 14,890 | 480 | 1,058 | 26.6 | 2,290 | 21 |
| **October** | 21,352 | 689 | 1,286 | 26.6 | 2,290 | 30 |
| **November** | 15,503 | 500 | 1,330 | 26.5 | 2,290 | 22 |
| **December** | 18,163 | 586 | 1,206 | 26.6 | 2,290 | 26 |
| **Total** | 201,242 | | | | AVERAGE % | 24 |

| Well "H" Michelle | | | | | | |
|---|---|---|---|---|---|---|
| | Michelle Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 10,835 | 350 | 953 | 30.1 | 2,290 | 15 |
| **February** | 12,446 | 401 | 674 | 24.8 | 2,290 | 18 |
| **March** | 20,507 | 662 | 1,642 | 24.9 | 2,290 | 29 |
| **April** | 13,635 | 440 | 829 | 85.0 | 2,290 | 19 |
| **May** | 18,604 | 600 | 1,154 | 25.1 | 2,290 | 26 |
| **June** | 17,994 | 580 | 1,247 | 25.0 | 2,290 | 25 |
| **July** | 16,323 | 527 | 1,359 | 30.3 | 2,290 | 23 |
| **August** | 13,204 | 426 | 1,049 | 27.5 | 2,290 | 19 |
| **September** | 13,213 | 426 | 958 | 61.4 | 2,290 | 19 |
| **October** | 27,572 | 889 | 1,939 | 30.5 | 2,290 | 39 |
| **November** | 31,931 | 1,030 | 1,980 | 29.9 | 2,290 | 45 |
| **December** | 16,650 | 537 | 1,234 | 30.1 | 2,290 | 23 |
| **Total** | 212,914 | | | | AVERAGE % | 25 |

| Well "Q" Chenier | | | | | | |
|---|---|---|---|---|---|---|
| | Chenier Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 31483 | 1,016 | 2,161 | 27.9 | 2,333 | 44 |
| **February** | 54230 | 1,870 | 2,161 | 27.6 | 2,333 | 80 |
| **March** | 59281 | 1,912 | 2,161 | 28.1 | 2,333 | 82 |
| **April** | 29202 | 973 | 1,754 | 27.8 | 2,333 | 42 |
| **May** | 48133 | 1,553 | 2,161 | 27.9 | 2,333 | 67 |
| **June** | 59984 | 1,999 | 2,162 | 27.9 | 2,333 | 86 |
| **July** | 61335 | 1,979 | 2,162 | 27.6 | 2,333 | 85 |
| **August** | 39305 | 1,268 | 2,075 | 27.3 | 2,333 | 54 |
| **September** | 45546 | 1,518 | 2,075 | 27.6 | 2,333 | 65 |
| **October** | 40405 | 1,303 | 2,075 | 27.5 | 2,333 | 56 |
| **November** | 39557 | 1,319 | 2,075 | 27.5 | 2,333 | 57 |
| **December** | 31322 | 1,010 | 2,075 | 27.6 | 2,333 | 43 |
| **Total** | 539780 | | | | AVERAGE % | 63 |

| Well "R" | | | | | | |
|---|---|---|---|---|---|---|
| | R Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 76,540 | 2,469 | 2,941 | 36.9 | 3,162 | 78 |
| **February** | 51,205 | 1,766 | 2,939 | 36.9 | 3,162 | 56 |
| **March** | 34,846 | 1,124 | 2,232 | 36.7 | 3,162 | 36 |
| **April** | 49,882 | 1,663 | 2,940 | 36.5 | 3,162 | 53 |
| **May** | 36,497 | 1,177 | 2,939 | 36.4 | 3,162 | 37 |
| **June** | 42,109 | 1,404 | 2,940 | 36.2 | 3,162 | 44 |
| **July** | 64,451 | 2,079 | 2,859 | 36.4 | 3,162 | 66 |
| **August** | 68,494 | 2,209 | 2,854 | 35.7 | 3,162 | 70 |
| **September** | 48,307 | 1,610 | 2,595 | 34.8 | 3,162 | 51 |
| **October** | 33,917 | 1,094 | 2,390 | 34.3 | 3,162 | 35 |
| **November** | 37,291 | 1,243 | 2,296 | 34.8 | 3,162 | 39 |
| **December** | 55,013 | 1,775 | 2,595 | 34.5 | 3,162 | 56 |
| **Total** | 598,549 | | | | AVERAGE % | 52 |

## Falconbridge Drinking Water System - 240000020

The Falconbridge well system consists of 3 drilled wells:

- Well 5;
- Well 6, and;
- Well 7.

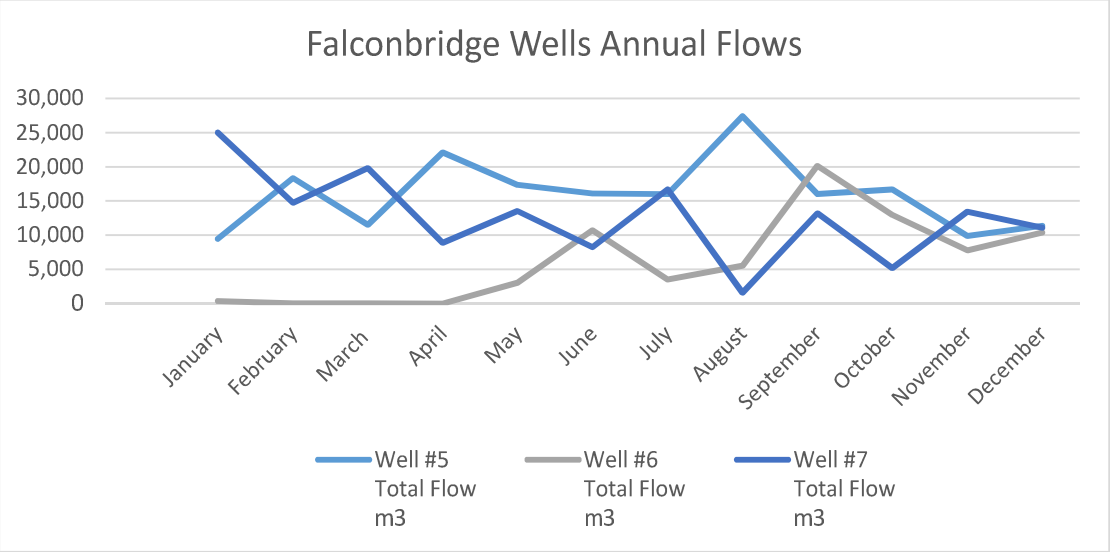
The treatment process follows these steps:

The system includes three submersible pumps, disinfection with chlorine gas, along with polyphosphate addition for corrosion control. The wells are located north of the Sudbury Airport. Water is supplied south to the town of Falconbridge, north to the Greater Sudbury Airport reservoir and to the Nickel Rim Mine tank. The City sells water to Glencore and two industrial clients along the south transmission line and fluoridates the water, as mandated by PHSD, before it enters the Falconbridge municipal distribution system.

### Non-Compliance with Act, Regulations, Order or Approvals

Falconbridge had three AWQIs in 2020. All three incidents were sodium test results over the 20 mg/L standard. The three well sites were resampled and will continue to be monitored.

## Annual Flow Summary




| Falconbridge | | | | | | |
|---|---|---|---|---|---|---|
| | Well #5 Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 9,451 | 305 | 1,129 | 15.6 | 1,417 | 22 |
| **February** | 18,323 | 591 | 1,148 | 15.3 | 1,417 | 42 |
| **March** | 11,501 | 371 | 1,070 | 15.7 | 1,417 | 26 |
| **April** | 22,076 | 712 | 1,167 | 15.5 | 1,417 | 50 |
| **May** | 17,344 | 559 | 1,122 | 15.5 | 1,417 | 39 |
| **June** | 16,076 | 519 | 1,265 | 15.5 | 1,417 | 37 |
| **July** | 16,019 | 517 | 1,199 | 15.5 | 1,417 | 36 |
| **August** | 27,399 | 884 | 1,203 | 15.7 | 1,417 | 62 |
| **September** | 16,022 | 517 | 1,260 | 15.7 | 1,417 | 36 |
| **October** | 16,718 | 539 | 1,181 | 15.8 | 1,417 | 38 |
| **November** | 9,854 | 318 | 1,111 | 15.4 | 1,417 | 22 |
| **December** | 11,374 | 367 | 1,163 | 15.5 | 1,417 | 26 |
| **Total** | 192,156 | | | | AVERAGE % | 36 |

| Falconbridge | | | | | | |
|---|---|---|---|---|---|---|
| | Well #6 Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 357 | 12 | 215 | 16.0 | 1,417 | 1 |
| **February** | 0 | 0 | 0 | 0.0 | 1,417 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **March** | 0 | 0 | 0 | 0.1 | 1,417 | 0 |
| **April** | 0 | 0 | 0 | 1.0 | 1,417 | 0 |
| **May** | 3,047 | 98 | 779 | 16.3 | 1,417 | 7 |
| **June** | 10,731 | 346 | 1,239 | 16.2 | 1,417 | 24 |
| **July** | 3,515 | 113 | 653 | 16.5 | 1,417 | 8 |
| **August** | 5,500 | 177 | 1,037 | 15.9 | 1,417 | 13 |
| **September** | 20,135 | 650 | 1,278 | 15.8 | 1,417 | 46 |
| **October** | 12,965 | 418 | 1,175 | 15.8 | 1,417 | 30 |
| **November** | 7,764 | 250 | 1,167 | 15.8 | 1,417 | 18 |
| **December** | 10,366 | 334 | 1,203 | 16.4 | 1,417 | 24 |
| **Total** | 74,379 | | | | AVERAGE % | 14 |

| **Falconbridge** | | | | | | |
|---|---|---|---|---|---|---|
| | **Well #7 Total Flow $m^3$** | **Average Daily Flow $m^3/d$** | **Maximum Daily Flow $m^3/d$** | **Peak Flow L/s** | **MDWL Maximum Flow $m^3/d$** | **% Capacity** |
| **January** | 25009 | 807 | 1,268 | 16.0 | 1,417 | 57 |
| **February** | 14731 | 475 | 1,227 | 16.2 | 1,417 | 34 |
| **March** | 19775 | 638 | 1,154 | 16.6 | 1,417 | 45 |
| **April** | 8899 | 287 | 1,193 | 16.7 | 1,417 | 20 |
| **May** | 13520 | 436 | 1,260 | 16.4 | 1,417 | 31 |
| **June** | 8227 | 265 | 1,207 | 16.8 | 1,417 | 19 |
| **July** | 16711 | 539 | 1,255 | 16.8 | 1,417 | 38 |
| **August** | 1572 | 51 | 477 | 17.1 | 1,417 | 4 |
| **September** | 13205 | 426 | 1,367 | 16.7 | 1,417 | 30 |
| **October** | 5159 | 166 | 1,369 | 16.8 | 1,417 | 12 |
| **November** | 13443 | 434 | 1,254 | 16.9 | 1,417 | 31 |
| **December** | 11085 | 358 | 1,213 | 17.0 | 1,417 | 25 |
| **Total** | 151336 | | | | AVERAGE % | 29 |

## Onaping/Levack Drinking Water System - 220003519

The Onaping/Levack system includes three drilled wells:

- Well 3;
- Well 4, and;
- Well 5.

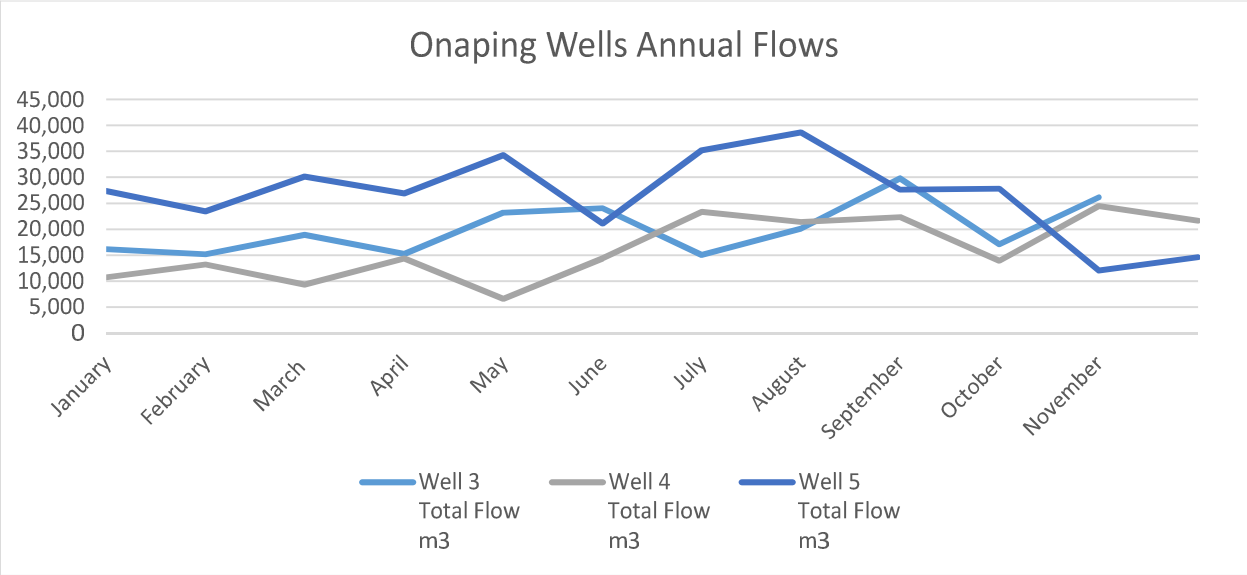
The treatment process follows these steps:

The system includes three pumps, disinfection with chlorine gas, sodium hydroxide for pH adjustment, polyphosphate addition for corrosion control along with fluoride injection. An elevated storage tank with re-chlorination capabilities, a Pressure Control/Booster building with stand-by power, a Pressure control facility on Fraser Crescent and the distribution piping complete the system. The City continues to monitor sodium on a monthly basis on the raw water due to high levels present in the aquifer caused by road salt as a major highway is above grade.

## Non-Compliance with Act, Regulations, Order or Approvals

Onaping had one AWQI in 2020. A test result for sodium was over the 20 mg/L standard. The site was resampled and will be monitored on a monthly basis per CGS municipal drinking water licence.

## Annual Flow Summary




| Onaping Wells | | | | | | |
|---|---|---|---|---|---|---|
| | Well 3 Total Flow $m^3$ | Average Daily Flow $m^3/d$ | Maximum Daily Flow $m^3/d$ | Peak Flow L/s | MDWL Maximum Flow $m^3/d$ | % Capacity |
| **January** | 16,159 | 521 | 1,972 | 36.3 | 5,184 | 10 |
| **February** | 15,204 | 490 | 2,157 | 34.8 | 5,184 | 9 |
| **March** | 18,926 | 611 | 2,123 | 34.5 | 5,184 | 12 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **April** | 15,267 | 492 | 2,179 | 34.9 | 5,184 | 10 |
| **May** | 23,217 | 749 | 2,243 | 35.3 | 5,184 | 14 |
| **June** | 24,027 | 775 | 2,435 | 35.3 | 5,184 | 15 |
| **July** | 15,056 | 486 | 2,656 | 35.1 | 5,184 | 9 |
| **August** | 20,138 | 650 | 2,727 | 34.5 | 5,184 | 13 |
| **September** | 29,804 | 961 | 2,727 | 36.1 | 5,184 | 19 |
| **October** | 17,116 | 552 | 2,109 | 35.0 | 5,184 | 11 |
| **November** | 26,130 | 843 | 2,312 | 35.0 | 5,184 | 16 |
| **December** | 21,281 | 686 | 2,233 | 37.9 | 5,184 | 13 |
| **Total** | 242,326 | | | | AVERAGE % | 13 |

| **Onaping Wells** | | | | | | |
|---|---|---|---|---|---|---|
| | **Well 4 Total Flow $m^3$** | **Average Daily Flow $m^3/d$** | **Maximum Daily Flow $m^3/d$** | **Peak Flow L/s** | **MDWL Maximum Flow $m^3/d$** | **% Capacity** |
| **January** | 10,718 | 346 | 1,854 | 30.3 | 5,184 | 7 |
| **February** | 13,182 | 425 | 1,950 | 30.5 | 5,184 | 8 |
| **March** | 9,358 | 302 | 2,029 | 30.4 | 5,184 | 6 |
| **April** | 14,379 | 464 | 1,984 | 30.7 | 5,184 | 9 |
| **May** | 6,589 | 213 | 2,015 | 30.3 | 5,184 | 4 |
| **June** | 14,388 | 464 | 2,281 | 30.5 | 5,184 | 9 |
| **July** | 23,377 | 754 | 2,494 | 30.3 | 5,184 | 15 |
| **August** | 21,409 | 691 | 2,392 | 30.0 | 5,184 | 13 |
| **September** | 22,339 | 721 | 2,409 | 30.0 | 5,184 | 14 |
| **October** | 13,949 | 450 | 2,230 | 30.1 | 5,184 | 9 |
| **November** | 24,459 | 789 | 2,262 | 30.2 | 5,184 | 15 |
| **December** | 21,638 | 698 | 2,062 | 30.2 | 5,184 | 13 |
| **Total** | 195,785 | | | | AVERAGE % | 10 |

| **Onaping Wells** | | | | | | |
|---|---|---|---|---|---|---|
| | **Well 5 Total** | **Average Daily Flow** | **Maximum Daily Flow** | **Peak Flow** | **MDWL Maximum Flow** | **% Capacity** |

| | Flow $m^3$ | $m^3/d$ | $m^3/d$ | L/s | $m^3/d$ | |
|---|---|---|---|---|---|---|
| **January** | 27400 | 884 | 1,964 | 53.2 | 5,184 | 17 |
| **February** | 23451 | 756 | 1,912 | 50.7 | 5,184 | 15 |
| **March** | 30133 | 972 | 2,111 | 50.5 | 5,184 | 19 |
| **April** | 26874 | 867 | 2,033 | 49.8 | 5,184 | 17 |
| **May** | 34273 | 1,106 | 2,574 | 50.0 | 5,184 | 21 |
| **June** | 21101 | 681 | 2,271 | 51.9 | 5,184 | 13 |
| **July** | 35212 | 1,136 | 3,139 | 51.2 | 5,184 | 22 |
| **August** | 38671 | 1,247 | 2,944 | 50.4 | 5,184 | 24 |
| **September** | 27599 | 890 | 3,059 | 51.2 | 5,184 | 17 |
| **October** | 27801 | 897 | 2,039 | 48.8 | 5,184 | 17 |
| **November** | 12067 | 389 | 2,199 | 36.5 | 5,184 | 8 |
| **December** | 14626 | 472 | 2,151 | 36.8 | 5,184 | 9 |
| **Total** | 319209 | | | | AVERAGE % | 17 |

## Vermilion Distribution System - 260006789

The Vermillion distribution system is a standalone distribution system that receives water from a "donor" system, as the City of Greater Sudbury purchases water from Vale, the owner of the Vermillion water treatment facility. Vale has responsibility for the treatment facility and must also comply with O. Reg. 170/03. The Vale water treatment facility is not the subject of this report.

CGS owns and operates the distribution network in the communities of Copper Cliff, Lively, Naughton, Whitefish and the Atikameksheng Anishnawbe Reserve. The system also includes the Walden Water Storage Tank and Walden Metering Chamber.

Water quality throughout the distribution systems is monitored through regular sampling in accordance with O. Reg. 170/03.

### Non-Compliance with Act, Regulations, Order or Approvals

None to report.