

2021 ANNUAL REPORT

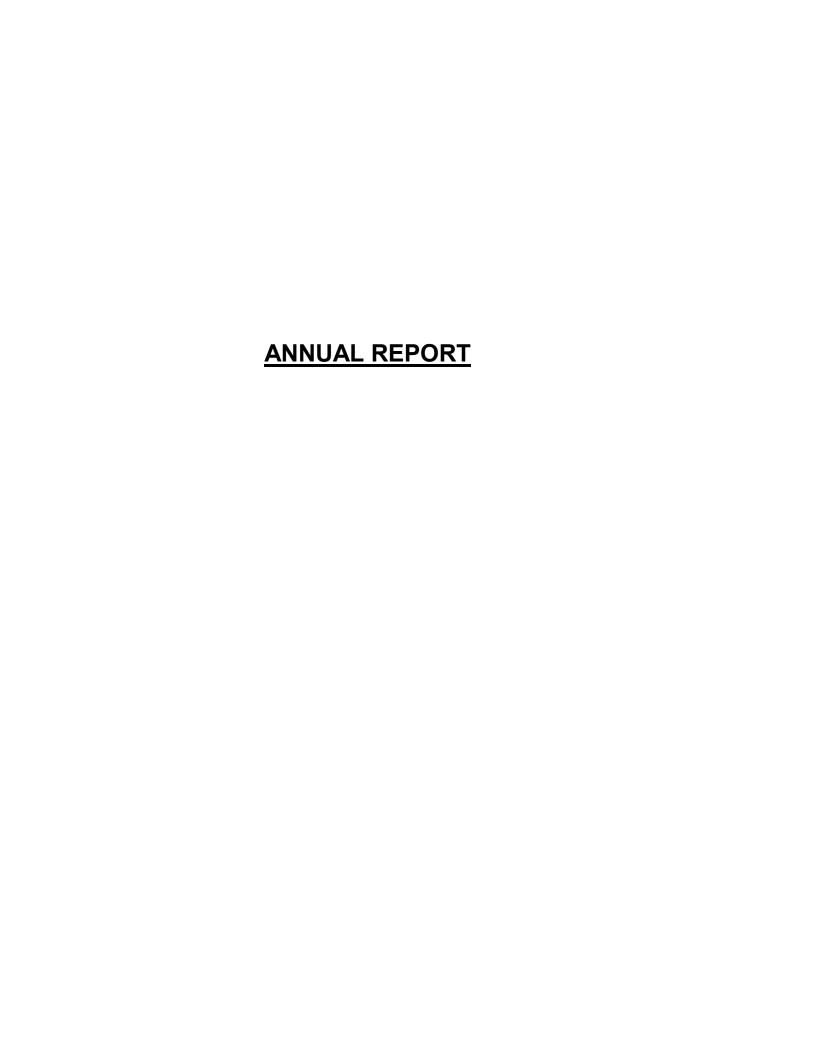
WATERWORKS # 22 000 3047

As per Section 11 and schedule 22 of O. Reg. 170/03

Reference Index

2021 Annual Report

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OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number: Drinking-Water System Name: Drinking-Water System Owner: Drinking-Water System Category: Period being reported: 22 000 3047

Cochrane Well Supply

The Corporation of the Town of Cochrane

Large Municipal Residential System

January 1, 2021 to December 31, 2021

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [] No [x]

Is your annual report available to the public at no charge on a web site on the Internet?

Yes [x] No []

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Infrastructure Services 92 Second Street Cochrane Ontario P0L 1C0

Complete for all other Categories.

Number of Designated Facilities served:

4

Did you provide a copy of your annual report to all Designated Facilities you serve?

Yes [x] No []

Number of Interested Authorities you report to: 0

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [x] No []

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

j =	
Drinking Water System Name	Drinking Water System Number

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [] No []

Indicate how you notified system users that your annual report is available, and is free of charge.

Ontario Drinking-Water Systems Regulation O. Reg. 170/03

[x] Public access/notice via the web	
[] Public access/notice via Government Office	
[] Public access/notice via a newspaper	
[] Public access/notice via Public Request	
[] Public access/notice via a Public Library	
[x] Public access/notice via other method <u>message on Water/Wastewater bill</u>	

Describe your Drinking-Water System

The water treatment works relies on groundwater from 3 wells, each with a capacity of 45.3 litres per second. The maximum flow for each well cannot exceed 50 liters per second. The wells are located at the east side of Water Plant Road, Lot 19, Concession 1, in the Town of Cochrane, next to the Plant. While the population of Cochrane is about 5,500, the Plant has the capacity of delivering 8,000 cubic meters per day.

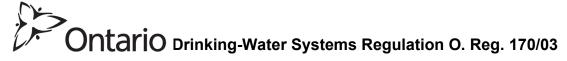
The treatment process was designed to remove high iron content, manganese and hardness present in the raw water supplied that is produced by the three wells. "Lime Softening" is the process that is used. First, hydrated lime (calcium hydroxide) is added to the water. This increases the pH of the water causing the calcium carbonate, iron and manganese to precipitate out of the water. Most of the precipitated particles settle out in the two clarifiers. Then carbon dioxide is added in re-carbonation tanks to reduce the pH to normal levels with the dual media filters used to filter out any remaining particles. The finished water is now stored in an interconnected twin-celled in-ground clear well/ reservoir that has a capacity of 2,300 cubic meters. Three high-lift pumps, each rated at 83.4 liters per second are used to pump the water into the Town's distribution system. On the other side of town, a 2,700 cubic meters elevated storage tank provides gravity flow to the town. This storage is used during peak demand times in the day, and is available to provide the very high flow rates that could be required by the fire department in case of a large fire. The plan and storage tank (tower) have complete automatic control and alarm systems that notify the operator of any problems. The plant also has an emergency diesel generator that allows water to be treated and pumped in the event of a power outage. Cochrane Water & Wastewater Services employs the services of Accuracy Environmental Laboratories Ltd. for all testing of water samples. Accuracy also sub-contracts some of these samples to other laboratories who provide the required testing as per Regulation 170/03. All laboratories employed for Town of Cochrnae water testing are accredited:

Testmark Laboratories 100 Wilson Avenue Timmins Ontario P4N 2S9 (705) 531-1121

Testmark Laboratories 1470 Government Rd. W. Box 426 Kirkland Lake, ON P2N 3J1 (705) 642-3361

Caduceon Environmental Labs 40 Camelot Drive Ottawa, ON K2G 5X1 (613) 228-1145

Maxxam Analytics



6740 Campobello Rd. Mississauga, ON L5N 2L8 (905) 817-5751

	I	ist	all	water	treatment	chemicals	used	over this	reporting	period
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Chlorine Gas – Disinfection

Sodium Bicarbonate – Flocculation/ Coagulation

Hydrated Lime – Softening process

Sodium Silicate – Flocculation / Coagulation

Carbon Dioxide - pH Adjustment

Were any significant expenses incurred to?

[] Install required equipment

[x] Repair required equipment

[x] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

Repaired Bin Activator

Change Hose inside Lime Pump # 1

Replaced 3 rotork Valve

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03,

during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	156	0-0	0-0	0	
Treated	52	0-0	0-0	52	0-10
Distribution	260	0-0.059	0-0	260	0-70

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the

period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity	8760	0-1.43	NTU

NOTE: For continuous monitors use 8760 as the number of samples.



Chlorine	8760	0-4.99	Mg/L	
Fluoride (If the				
DWS provides				
fluoridation)				

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	September 28, 2021	< 0.5	ug/L	No
Arsenic	September 28, 2021	< 1	ug/L	No
Barium	September 28, 2021	7	ug/L	No
Boron	September 28, 2021	24	ug/L	No
Cadmium	September 28, 2021	< 0.1	ug/L	No
Chromium	September 28, 2021	< 2	ug/L	No
*Lead	2021	0.7	ug/L	No
Mercury	September 28, 2021	< 0.1	ug/L	No
Selenium	September 28, 2021	< 0.2	ug/L	No
Sodium	July 25, 2019	23,700	ug/L	Yes
Uranium	September 28, 2021	<1	ug/L	No
Fluoride	July 16, 2019	0.064	mg/L	No
Nitrite	Nov 16, 2021	< 0.05	mg/L	No
Nitrate	Nov 16, 2021	< 0.05	mg/L	No

^{*}only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

T (* TD	N. 1 C	D et ID I	TT 1, 6	N. 1 C
Location Type	Number of	Range of Lead Results	Unit of	Number of



	Samples	(min#) – (max #)	Measure	Exceedances
Plumbing	Exempt			
Distribution	Exempt	0.10-2.9	Ug/L	None

Summary of Organic parameters sampled during this reporting period or the most

recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Septemb er 28, 2021	<0.248	Ug/L	No
Atrazine + N-dealkylated metobolites	Septemb er 28, 2021	<0.248	Ug/L	No
Azinphos-methyl	Septemb er 28, 2021	<0.186	Ug/L	No
Benzene	Septemb er 28, 2021	<0.2	Ug/L	No
Benzo(a)pyrene	Septemb er 28, 2021	<0.01	Ug/L	No
Bromoxynil	Septemb er 28, 2021	<0.12	Ug/L	No
Carbaryl	Septemb er 28, 2021	<2	Ug/L	No
Carbofuran	Septemb er 28, 2021	<4	Ug/L	No
Carbon Tetrachloride	Septemb er 28, 2021	<0.2	Ug/L	No
Chlorpyrifos	Septemb er 28, 2021	<0.186	Ug/L	No
Diazinon	Septemb er 28, 2021	<0.186	Ug/L	No
Dicamba	Septemb er 28, 2021	<0.105	Ug/L	No



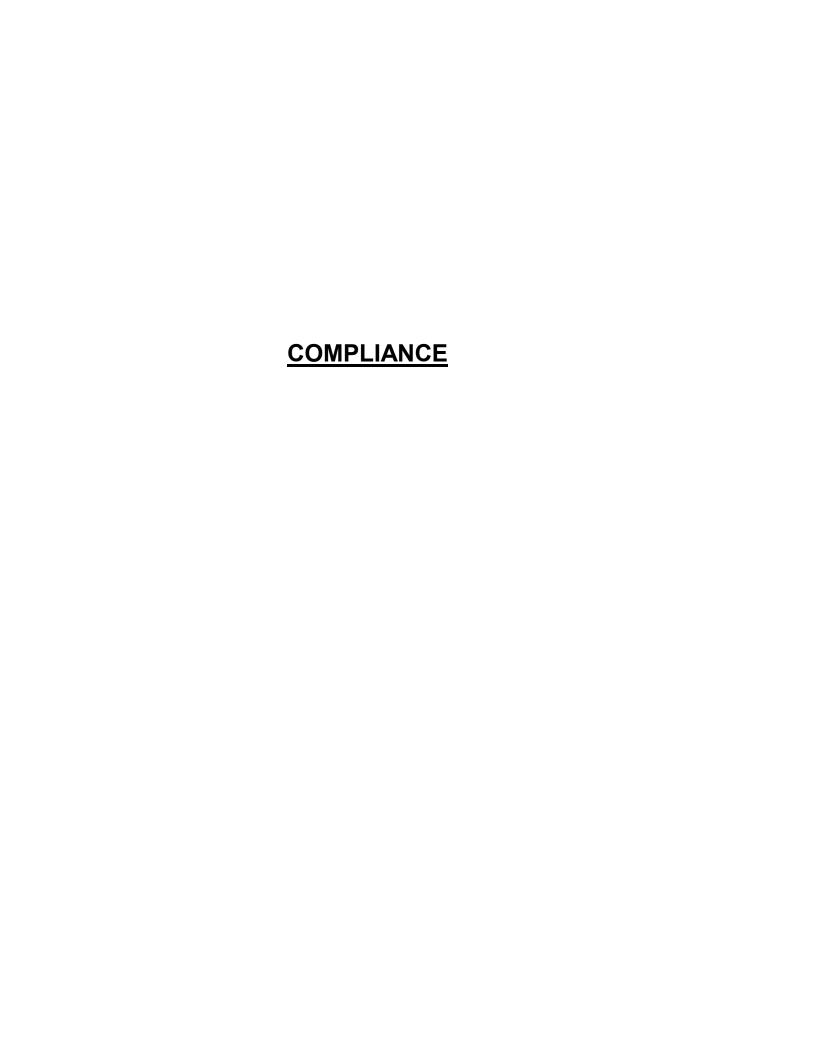
1,2-Dichlorobenzene	Septemb er 28,	<0.5	Ug/L	No
1,4-Dichlorobenzene	2021 Septemb er 28, 2021	<0.5	Ug/L	No
1,2-Dichloroethane	Septemb er 28, 2021	<0.5	Ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Septemb er 28, 2021	<0.5	Ug/L	No
Dichloromethane	Septemb er 28, 2021	<5	Ug/L	No
2-4 Dichlorophenol	Septemb er 28, 2021	<0.2	Ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Septemb er 28, 2021	<0.452	Ug/L	No
Diclofop-methyl	Septemb er 28, 2021	<0.151	Ug/L	No
Dimethoate	Septemb er 28, 2021	<0.186	Ug/L	No
Diquat	Septemb er 28, 2021	<0.7	Ug/L	No
Diuron	Septemb er 28, 2021	<10	Ug/L	No
Glyphosate	Septemb er 28, 2021	<20	Ug/L	No
Malathion	Septemb er 28, 2021	<0.186	Ug/L	No
Metolachlor	Septemb er 28, 2021	<0.124	Ug/L	No
Metribuzin	Septemb er 28, 2021	<0.124	Ug/L	No
Paraquat	Septemb er 28, 2021	<0.3	Ug/L	No

Ontario Drinking-Water Systems Regulation O. Reg. 170/03

Pentachlorophenol	Septemb <0.3 er 28, 2021		Ug/L	No
Phorate	Septemb <0.124 er 28, 2021		Ug/L	No
Picloram	Septemb <0.105 er 28, 2021		Ug/L	No
Prometryne	Septemb < 0.0619 er 28, 2021		Ug/L	No
Simazine			Ug/L	No
THM (NOTE: show latest annual average)	2021	46.275	Ug/L	No
Terbufos	Septemb er 28, 2021	<0.124	Ug/L	No
Tetrachloroethylene	Septemb er 28, 2021	<0.5	Ug/L	No
2,3,4,6-Tetrachlorophenol	Septemb er 28, 2021	<0.3	Ug/L	No
Triallate	Septemb er 28, 2021	<0.124	Ug/L	No
Trichloroethylene	Septemb er 28, 2021	<0.5	Ug/L	No
2,4,6-Trichlorophenol	Septemb er 28, 2021	<0.2	Ug/L	No
Trifluralin	Septemb er 28, 2021	<0.124	Ug/L	No
Vinyl Chloride	Septemb er 28, 2021	<0.1	Ug/L	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

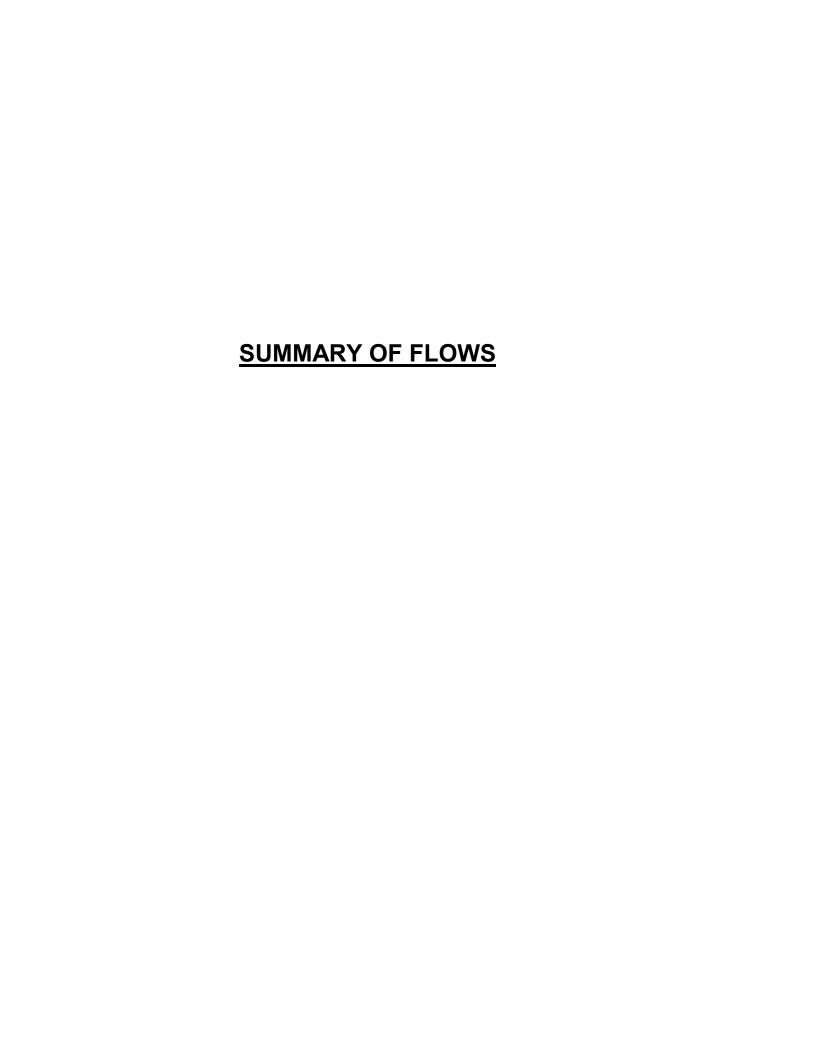
Parameter	Result Value	Unit of Measure	Date of Sample



COMPLIANCE

To the best of our knowledge, the Cochrane Water Treatment Plant is in compliance with all regulatory requirements as outlined in the Drinking Water Works Permit, Municipal Drinking Water License, Permit to Take Water and Ontario Regulation 170/03.

In 2021, the Cochrane Water Treatment Plant did not receive a Ministry of Environment, Conservation and Parks annual inspections.



Summary of Flows

This report is prepared to comply with Schedule 22 section 3(1) of Reg 170/03 of the SDWA

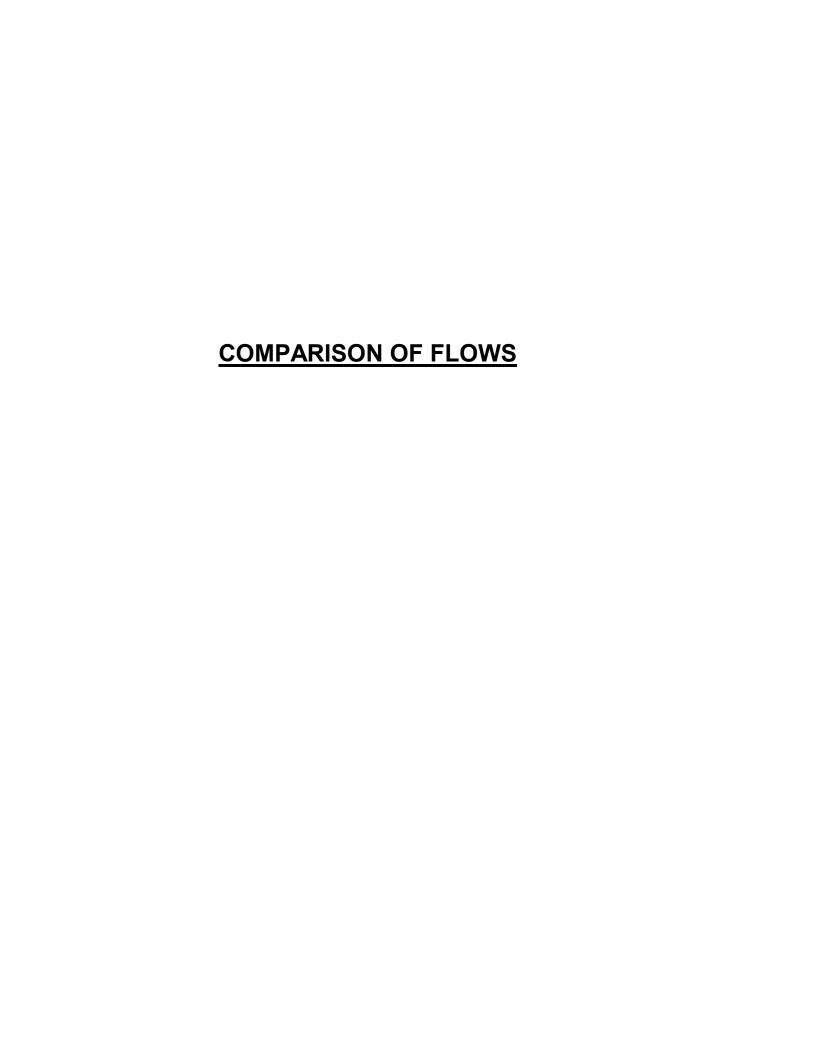
(3) 1. A Summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.

TREATED WATER

Month	Daily Average	Maximum Daily
	In m ³	Flow in L/s
January	1,320	80.2
February	1,474	79.8
March	1,401	76.9
April	1,377	77.6
May	1,386	80.3
June	1,467	79.1
July	1,394	89.3
August	1,494	84.0
September	1,442	79.0
October	1,494	81.1
November	1,468	79.2
December	1,430	77.4
Total Average	1,429	80.33

RAW WATER

Month	Daily Average		
	In m ³		
January	1,451		
February	1,619		
March	1,548		
April	1,526		
May	1,530		
June	1,582		
July	1,522		
August	1,613		
September	1,639		
October	1,695		
November	1,620		
December	1,559		
Total Average	1,575		



Comparison of the Summary of Flows

This report is prepared to comply with Schedule 22 section 3(2) of Reg 170/03 of the SDWA

(3) 2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license.

2021 Total Flow

Month	Raw Water Total Monthly	Treated Water Total
	Flow In m ³	Monthly Flow In m ³
January	44,981.2	40,914.3
February	45,329.9	41,284.9
March	47,981.0	43,432.3
April	45,794.5	41,297.6
May	47,432.1	42,952.7
June	47,470.1	44,008.9
July	47,175.4	43,211.3
August	50,002.1	46,301.9
September	49,158.8	43,274.5
October	52,536.3	46,323.3
November	48,604.5	44,031.7
December	48,335.9	44,314.7
Total	574,801.80	521,348.10

Item	2021	2020	2019	2018
Avg. Raw Water Day Flow m³/day	1,575	1,542	1, 792	1, 559
Design Capacity m ³ /day	7,856.60	7,856.60	7,856.60	7,856.60
% (Avg. day/design capacity)	20%	19.62%	22.81%	19.84%

Comparison of the Summary of Flows continued

The Total Flow (raw water) in 2021 was 574,801.8 m³, which represents 20.55 % of the total capacity for the year. The average daily flow in 2021 was 1,575 m³ which is only 20 % of design. The approved plant treatment capacity of 7,856m³/day was not exceeded during this period. The daily peak flow of 6,000L/s was not exceeded. The operating level of the plant is set at approximately 40 L/s with one of our 3 wells operating at a time.

The aquifer continues to perform within expectations and there is no concern at this time on the continued performance. Each of the wells #5,6 and 7 are drilled to a depth of 45 to 50 meters and equipped with a submersible well water pump with a rated capacity of 45.3 L/s at a TDH of 32.3 meters, pitless adapter, sanitary well seal, air line and supply line to the water treatment plant. The wells were last inspected by Lotowater Technical Services Inc. on December 5, 2014 and the recommendations were completed in October 2015. We also conducted a Raw Water Assessment in June 2015. Well #5 pump was replaced in 2019 by International Water Supply. The Elevated Tank was drained and cleaned for inspection on September 10, 2019. International Water Supply has started the inspection of the wells in 2021 but due to COVID they were not completed, they will be returning in 2022 to complete inspections.

Based on available records the draw downs of each well is measured monthly and documented. Draw downs were reported as being for Well # 5 - 8 to 10 meters, Well # 6 - 13 to 18 meters and Well # 7 - 2 to 3 meters.