







in nephelometric turbidity units (NTU). Under O.Reg. 170/03 turbidity in groundwater is not reportable however turbidity should be < 1 NTU at the treatment plant and < 5 NTU in the distribution system. A summary of the monitoring results for 2021 is provided in the table below.

<i>Parameter &amp; Location</i>	<i>Monitoring Frequency</i>	<i>Range of Results (Min – Max) and Average</i>
Chlorine residual in distribution (mg/L)	Continuous	(0.48 – 3.80) 1.17
<b>Thornton WTF after treatment</b>		
Chlorine mg/L	Continuous	(0.94 – 1.54) 1.29
Turbidity NTU	Continuous	(0.01 – 4) 0.03
<b>Southside WTF after treatment</b>		
Chlorine mg/L	Continuous	(0.49 – 1.69) 1.24
Turbidity NTU	Continuous	(0.02 – 3.93) 0.05
<b>Sutherland WTF after treatment</b>		
Chlorine mg/L	Continuous	(0.19– 2.36) 1.13
Turbidity NTU	Continuous	(0.05 – 2.38) 0.09
<b>Trillium Line WTF after treatment</b>		
Chlorine mg/L	Continuous	(0.51 – 3.06) 1.27
Turbidity NTU	Continuous	(0.03 – 5) 0.06

### 4.3. Ultra Violet (UV) Disinfection

Supply wells that have been classified as being GUDI require “enhanced disinfection” through ultra violet light (UV) followed by chlorination. A minimum UV dosage of 40 mJ/cm<sup>2</sup> is maintained to inactivate any microorganisms that may be present from contact with surface water. Insufficient dosage of UV lasting more than 10 minutes must be reported as inadequate disinfection. There were no occurrences of inadequate UV disinfection in 2021.

## 5. WATER QUANTITY

Continuous monitoring of flow rates from supply wells into the treatment system and from the facility into the distribution system is required by O.Reg. 170/03. The Municipal Drinking Water License and Permit to Take Water issued by the MECP regulate the amount of water that can be utilized over a given time period. A summary of the 2021 flows are provided in the Table below and presented graphically in Appendix B.

<i>Flow Summary</i>	<i>Quantity</i>
Permit to Take Water Limit	57,775 m <sup>3</sup> /d
Municipal Drinking Water License Limit	56,325 m <sup>3</sup> /d
2021 Average Daily Flow	14,692 m <sup>3</sup> /d
2021 Maximum Daily Flow	22,147 m <sup>3</sup> /d
2021 Average Monthly Flow	446,876 m <sup>3</sup>
2021 Total Amount of Water Supplied	5,362,512 m <sup>3</sup>

A review of the available supply capacity and the anticipated growth forecasted for the community indicates that the system has sufficient capacity over the 20 year planning horizon.

Firm Capacity of this system is rated at 45,533 m<sup>3</sup>/day. Firm Capacity is defined as the removal of the highest producing well in an emergency or operational / maintenance situation. This system comprises of 11 supply wells, six of which are GUDI. The GUDI wells contribute 30,772 m<sup>3</sup>/day of the Firm Capacity.

## 6. NON-COMPLIANCE FINDINGS AND ADVERSE RESULTS

This section documents any known incidents of non-compliance or adverse results and the associated correction actions taken to resolve the issue. Non-compliance issues are typically identified by either the Operating Authority or the MECP Drinking Water Inspectors. The issues and associated required actions are documented by the Inspectors in the system's Annual Inspection Report. All non-compliance issues are investigated, corrective actions taken and documented using the County's Drinking Water Quality Management System (DWQMS) procedures.

### 6.1. Non-Compliance Findings

The annual MECP inspection took place in September 2021. There were no non-compliance findings and the Inspection Report rating was 100%.

### 6.2. Adverse Results

Any adverse results from bacteriological, chemical samples or observations of operational conditions that indicate adverse water quality are reported as required and corrective actions are taken. There were two adverse or reportable occurrences in 2021. A summary of these events and their corrective actions can be found in the table below.

Incident / Date	Corrective Action	Resolution / Date
<b>Treated Water Sample with Chemistry Exceedance</b>		
August 24, 2021  Sodium of 73 mg/L taken at the Sutherland WTF.	Reported result and a second sample was collected for confirmation.	Re-sample result was confirmed (93.5 mg/L) September 7, 2021. The results were discussed with Southwestern Public Health who will update health advisory information for area residents.
<b>Treated or Distribution Water Sample with Positive Test for <i>E. Coli</i> or <i>Total Coliform Bacteria</i></b>		
June 30, 2021  2 TC cfu/100mL in a treated distribution sample result. The free chlorine at the time the sample was 1.25 mg/L	Reported and resamples were taken.	Resample results acceptable July 2, 2021.

## APPENDIX A: SUMMARY OF CHEMICAL RESULTS

### UNDERSTANDING CHEMICAL TEST RESULTS

The following tables summarize the laboratory results of the chemical testing the County is required to complete. Different types of parameters are required to be tested for at different frequencies as noted below. Explanations on the health impacts of these parameters can be found in the MECP document [https://cvc.ca/wp-content/uploads/2011/03/std01\\_079707.pdf](https://cvc.ca/wp-content/uploads/2011/03/std01_079707.pdf) PSIB4449e01 titled "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines".

Results are shown as concentrations with units of either milligrams per litre (mg/L) or micrograms per litre (ug/L). 1 mg/L is equal to 1000 ug/L. The Maximum Acceptable Concentration (MAC) is the highest amount of a parameter that is acceptable in Municipal drinking water and can be found in the MECP Drinking Water Standards. The Method Detection Limit (MDL) is the lowest amount to which the laboratory can confidently measure. A result of "ND" stands for "Not Detected" and means that the concentration of the chemical is lower than the laboratory's equipment is capable of measuring. In the event that some samples results are ND, and other results are above the MDL, the value of the MDL will be used in place of the ND where an average result must be calculated. Where all collected samples are ND the average sample result will be assumed to be ND.

Nitrate and nitrite samples are normally required every 3 months of operation. Weekly nitrate sampling is required at the Thornton WTF.

<i>Parameter &amp; Location</i>	<i>Result Range Min – Max (mg/L)</i>	<i>Average Result (mg/L)</i>	<i>MAC (mg/L)</i>	<i>MDL (mg/L)</i>
<b>Nitrite</b>			1.0	0.003
Thornton WTF	ND – 0.010	0.05		
Southside WTF	ND	ND		
Sutherland WTF	ND	ND		
Trillium Line WTF	ND – 0.003	0.003		
<b>Nitrate</b>			10.0	0.006
Thornton WTF	4.44 – 6.73	5.84		
Southside WTF	4.28 – 5.10	4.76		
Sutherland WTF	0.01 – 0.013	0.01		
Trillium Line WTF	1.97 – 2.08	2.04		

Trihalomethane (THM) and total Haloacetic Acids (HAA) are by-products of the disinfection process. The samples are required every 3 months from the distribution system.

<i>Parameter</i>	<i>Annual Average</i>	<i>Result Value (ug/L)</i>	<i>MAC (ug/L)</i>	<i>MDL (ug/L)</i>
Trihalomethane (THM)	2021	8.2	100	0.37
Haloacetic Acids (HAA)	2021	ND	80	5.3

The following Table summarizes the most recent test results for Sodium and Fluoride. Testing and reporting any adverse results is required every 5 years.

<i>Parameter &amp; Location</i>	<i>Sample Date</i>	<i>Result Value (mg/L)</i>	<i>MAC (mg/L)</i>	<i>MDL (mg/L)</i>
<b>Sodium</b>			20.0*	0.01
Thornton WTF	May 27, 2019	14.4		
Southside WTF	March 12, 2018	17.0		
Sutherland WTF	August 16, 2021 +	83.3 +		
Trillium Line WTF	August 16, 2021	16.9		
<b>Fluoride</b>			1.5**	0.06
Thornton WTF	May 27/19	0.27		
Southside WTF	Mar 12/18	0.41		
Sutherland WTF	August 16, 2021	0.98		
Trillium Line WTF	August 17, 2021	0.41		

\*Sodium levels between 20 – 200 mg/L must be reported every 5 years.

\*\*Natural levels of fluoride between 1.5 – 2.4 mg/L must be reported every 5 years.

+ average result, the date indicates the date the first sample was taken

The following table summarizes the most recent results for the Lead Testing Program. Lead samples are taken every 3 years. Levels of alkalinity and pH are monitored twice per year in the distribution system to ensure water quality is consistent and does not facilitate leaching of lead into the water.

<i>Parameter</i>	<i>Result Range (Min - Max)</i>	<i>Number of Samples</i>	<i>Acceptable Level</i>
Distribution Alkalinity	248 – 290	8	30 – 500mg/L
Distribution pH	7.28 - 7.58	8	6.5 – 8.5
Distribution Lead 2021	0.08 – 1.32	8	10 ug/L MAC

The following Table summarizes the most recent test results for Schedule 23. Testing is required annually for GUDI wells at Thornton.

<i>Parameter</i>	<i>Result (ug/L) Thornton WTF November 22, 2021</i>	<i>MAC (ug/L)</i>	<i>MDL (ug/L)</i>
Antimony	ND	6	0.09
Arsenic	0.3	10	0.2
Barium	52.7	1000	0.02
Boron	14	5000	2
Cadmium	ND	5	0.003
Chromium	0.30	50	0.08
Mercury	ND	1	0.01
Selenium	0.39	5	0.04
Uranium	0.737	20	0.002

The following Table summarizes the most recent test result for Schedule 23. Testing is required every 3 years for secure, Non-GUDI wells at Southside, Sutherland and Trillium Line.

<i>Parameter</i>	<i>Result (ug/L) Trillium Line WTF February 19, 2019</i>	<i>Result (ug/L) Southside WTF November 29, 2019</i>	<i>Result (ug/L) Sutherland WTF June 7, 2021</i>	<i>MAC (ug/L)</i>	<i>MDL (ug/L)</i>
Antimony	ND	ND	ND	6	0.09
Arsenic	0.4	0.2	0.4	10	0.2
Barium	60.9	44.7	172	1000	0.02
Boron	9	41	77	5000	2
Cadmium	0.004	ND	ND	5	0.003
Chromium	ND	0.28	0.21	50	0.08
Mercury	ND	ND	ND	1	0.01
Selenium	0.16	0.26	ND	5	0.04
Uranium	1.07	0.690	0.142	20	0.002

The following Table summarizes the Organic parameters in Schedule 24 sampled during this reporting period or the most recent sample results. Testing is required annually for GUDI wells at Thornton.

<i>Parameter</i>	<i>Result (ug/L) Thornton WTF November 22, 2021</i>	<i>MAC (ug/L)</i>	<i>MDL (ug/L)</i>
Alachlor	ND	5	0.02
Atrazine + N-dealkylatedmetabolites	ND	5	0.01
Azinphos-methyl	ND	20	0.05
Benzene	ND	1	0.32
Benzo(a)pyrene	ND	0.01	0.004
Bromoxynil	ND	5	0.33
Carbaryl	ND	90	0.05
Carbofuran	ND	90	0.05
Carbon Tetrachloride	ND	2	0.17
Chlorpyrifos	ND	90	0.02
Diazinon	ND	20	0.02
Dicamba	ND	120	0.20
1,2-Dichlorobenzene	ND	200	0.41
1,4-Dichlorobenzene	ND	5	0.36
1,2-Dichloroethane	ND	5	0.35
1,1-Dichloroethylene (vinylidene chloride)	ND	14	0.33
Dichloromethane	ND	50	0.35
2-4 Dichlorophenol	ND	900	0.15
2,4-Dichlorophenoxy acetic acid (2,4-D)	ND	100	0.19
Diclofop-methyl	ND	9	0.40
Dimethoate	ND	20	0.06

<i>Parameter</i>	<i>Result (ug/L) Thornton WTF November 22, 2021</i>	<i>MAC (ug/L)</i>	<i>MDL (ug/L)</i>
Diquat	ND	70	1
Diuron	ND	150	0.03
Glyphosate	ND	280	1
Malathion	ND	190	0.02
2-methyl-4chlorophenoxyacetic acid (MCPA)	ND	100	0.12
Metolachlor	ND	50	0.01
Metribuzin	ND	80	0.02
Monochlorobenzene	ND	80	0.30
Paraquat	ND	10	1
Pentachlorophenol	ND	60	0.15
Phorate	ND	2	0.01
Picloram	ND	190	1
Polychlorinated Biphenyls(PCB)	ND	3	0.04
Prometryne	ND	1	0.03
Simazine	ND	10	0.01
Terbufos	ND	1	0.01
Tetrachloroethylene	ND	10	0.35
2,3,4,6-Tetrachlorophenol	ND	100	0.20
Triallate	ND	230	0.01
Trichloroethylene	ND	5	0.44
2,4,6-Trichlorophenol	ND	5	0.25
Trifluralin	ND	45	0.02
Vinyl Chloride	ND	1	0.17

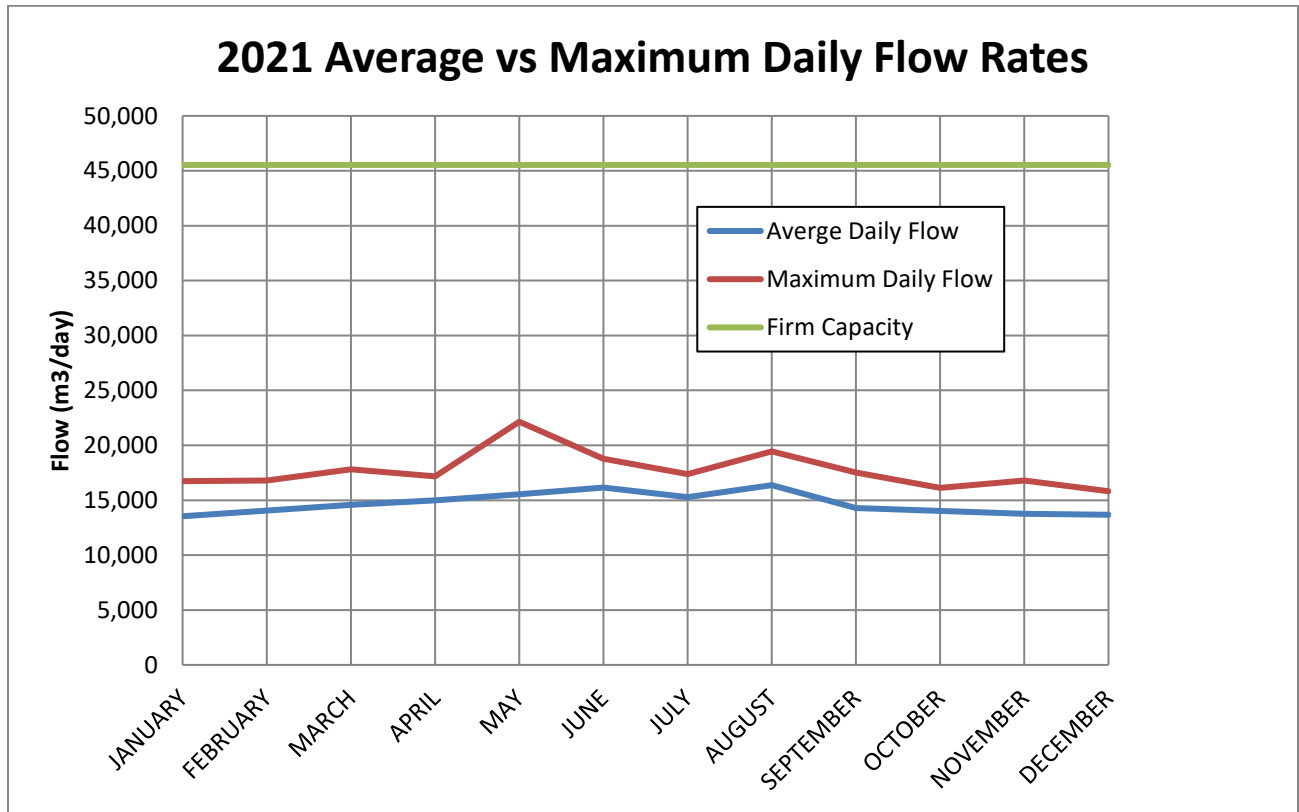
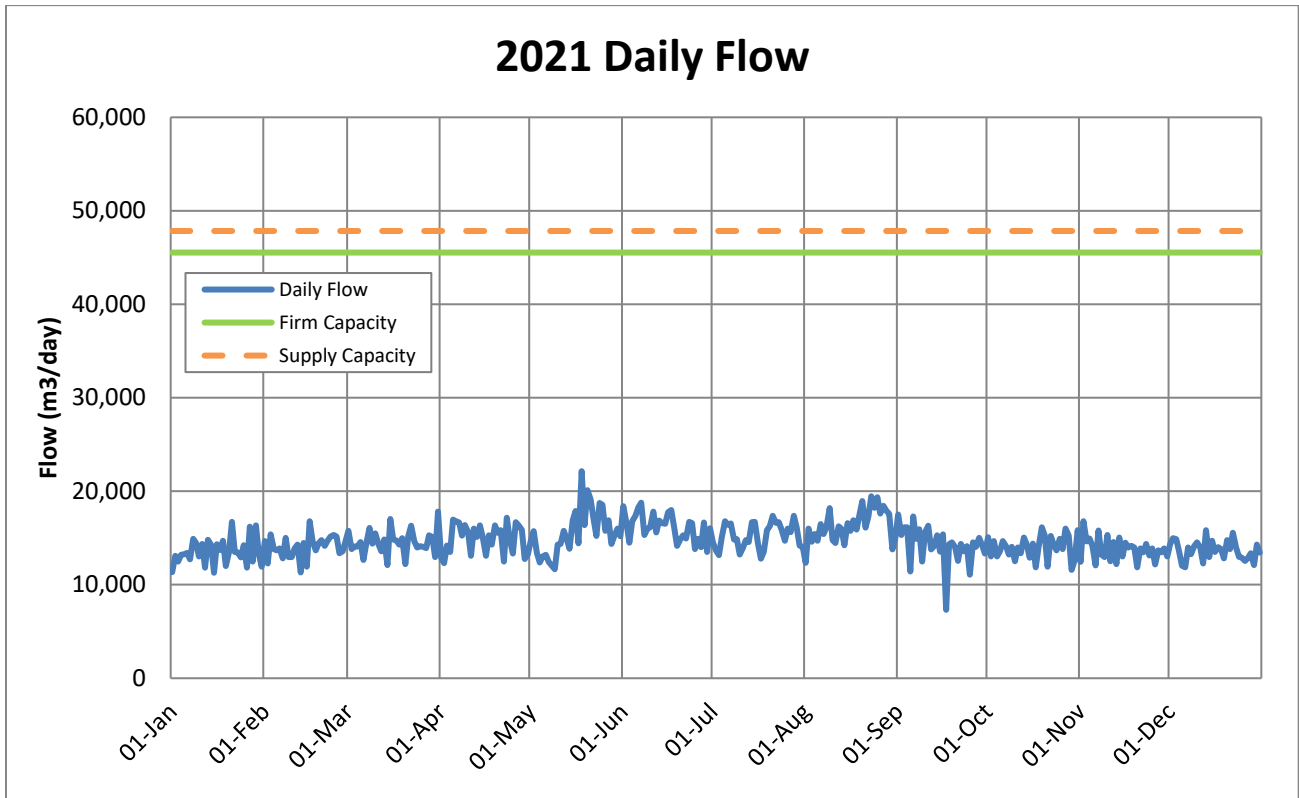
The following Table is a summary of Organic parameters in Schedule 24 sampled during this reporting period or the most recent sample results. Testing is required annually every 3 years for secure, Non-GUDI wells at Southside, Sutherland and Trillium Line.

<i>Parameter</i>	<i>Result (ug/L) Trillium Line WTF February 19, 2019</i>	<i>Result (ug/L) Southside WTF November 29, 2019</i>	<i>2019 MDL (ug/L)</i>	<i>Result (ug/L) Sutherland WTF June 7, 2021</i>	<i>2021MDL (ug/L)</i>	<i>MAC (ug/L)</i>
Alachlor	ND	ND	0.02	ND	0.02	5
Atrazine + N-dealkylatedmetabolites	ND	ND	0.01	ND	0.01	5
Azinphos-methyl	ND	ND	0.02	ND	0.05	20
Benzene	ND	ND	0.32	ND	0.32	1
Benzo(a)pyrene	ND	ND	0.004	ND	0.004	0.01
Bromoxynil	ND	ND	0.33	ND	0.33	5
Carbaryl	ND	ND	0.01	ND	0.05	90
Carbofuran	ND	ND	0.01	ND	0.01	90
Carbon Tetrachloride	ND	ND	0.16	ND	0.17	2
Chlorpyrifos	ND	ND	0.02	ND	0.02	90
Diazinon	ND	ND	0.02	ND	0.02	20
Dicamba	ND	ND	0.20	ND	0.20	120
1,2-Dichlorobenzene	ND	ND	0.41	ND	0.41	200
1,4-Dichlorobenzene	ND	ND	0.36	ND	0.36	5
1,2-Dichloroethane	ND	ND	0.35	ND	0.35	5
1,1-Dichloroethylene (vinylidene chloride)	ND	ND	0.33	ND	0.33	14
Dichloromethane	ND	ND	0.35	ND	0.35	50
2-4 Dichlorophenol	ND	ND	0.15	ND	0.15	900
2,4-Dichlorophenoxy acetic acid (2,4-D)	ND	ND	0.19	ND	0.19	100
Diclofop-methyl	ND	ND	<b>0.40</b>	ND	0.40	9
Dimethoate	ND	ND	0.03	ND	0.06	20
Diquat	ND	ND	1	ND	1	70
Diuron	ND	ND	0.03	ND	0.3	150



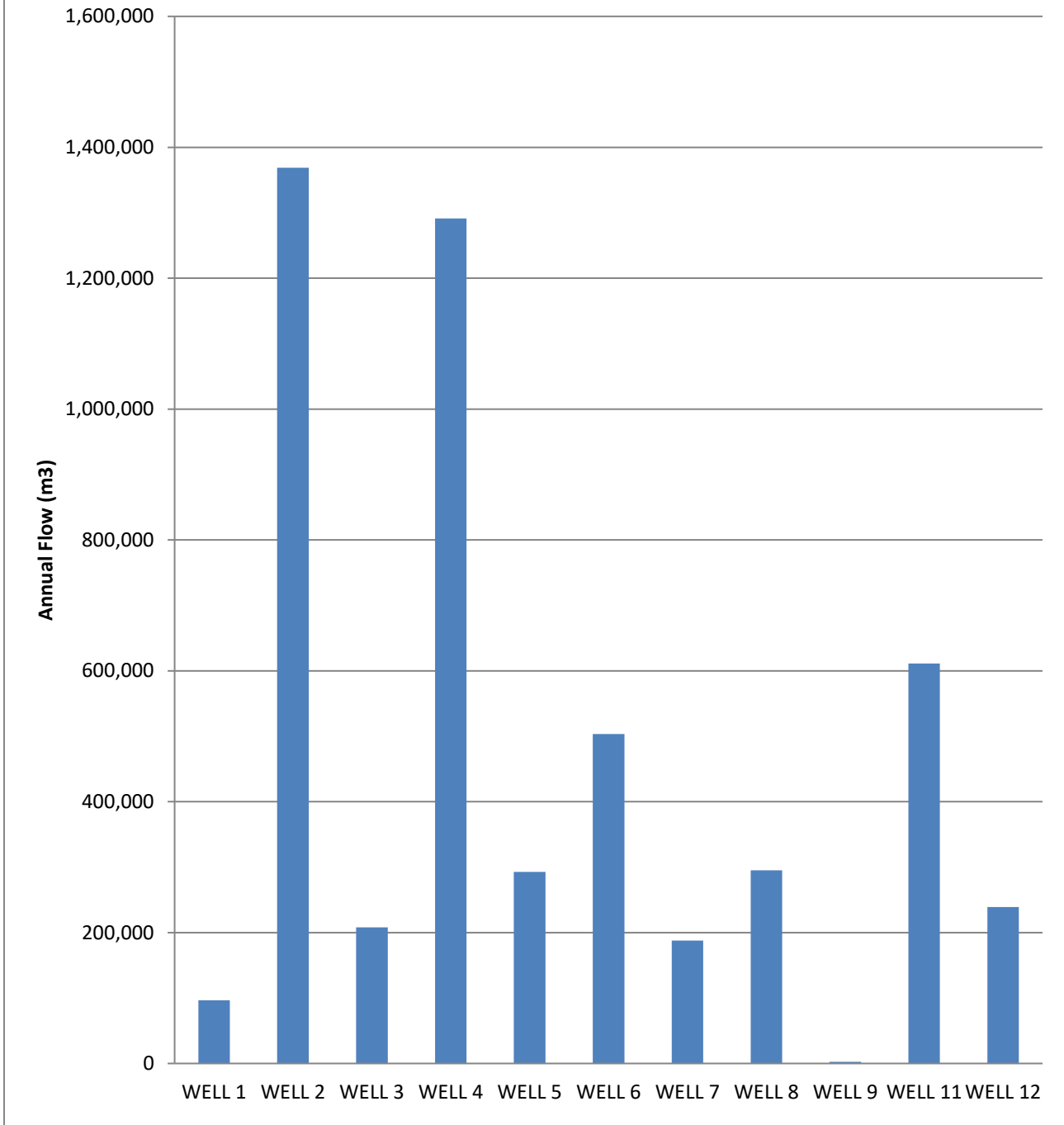
<i>Parameter</i>	<i>Result (ug/L) Trillium Line WTF February 19, 2019</i>	<i>Result (ug/L) Southside WTF November 29, 2019</i>	<i>2019 MDL (ug/L)</i>	<i>Result (ug/L) Sutherland WTF June 7, 2021</i>	<i>2021MDL (ug/L)</i>	<i>MAC (ug/L)</i>
Glyphosate	ND	ND	1	ND	1	280
Malathion	ND	ND	0.02	ND	0.02	190
2-methyl-4chlorophenoxyacetic acid (MCPA)	ND	ND	0.12	ND	0.12	100
Metolachlor	ND	ND	0.01	ND	0.01	50
Metribuzin	ND	ND	0.02	ND	0.02	80
Monochlorobenzene	ND	ND	0.30	ND	0.30	80
Paraquat	ND	ND	1	ND	1	10
Pentachlorophenol	ND	ND	0.15	ND	0.15	60
Phorate	ND	ND	0.01	ND	0.01	2
Picloram	ND	ND	1	ND	1	190
Polychlorinated Biphenyls(PCB)	ND	ND	0.04	ND	0.04	3
Prometryne	ND	ND	0.03	ND	0.03	1
Simazine	ND	ND	0.01	ND	0.01	10
Terbufos	ND	ND	0.01	ND	0.01	1
Tetrachloroethylene	ND	ND	0.35	ND	0.35	10
2,3,4,6-Tetrachlorophenol	ND	ND	0.14	ND	0.20	100
Triallate	ND	ND	0.01	ND	0.01	230
Trichloroethylene	ND	ND	0.44	0.85	0.44	5
2,4,6-Trichlorophenol	ND	ND	0.14	ND	0.25	5
Trifluralin	ND	ND	0.02	ND	0.02	45
Vinyl Chloride	ND	ND	0.17	ND	0.17	1

**APPENDIX B: WATER QUANTITY SUMMARY**



**Woodstock Firm Capacity 45,533 m³/day**  
**Woodstock Water Supply Capacity 47,842 m³ /day**

## 2021 Total Production per Well (m3)



**Woodstock Firm Capacity 45,533 m<sup>3</sup>/day**  
**Woodstock Water Supply Capacity 47,842 m<sup>3</sup> /day**