



# 2023 SCHEDULE 22 SUMMARY REPORT

THORNTON (GLEN AVENUE)  
DRINKING WATER SYSTEM

For the period of  
January 1<sup>st</sup>, 2023 to December 31<sup>st</sup>, 2023

Prepared for the Corporation of the Township of Essa by the Ontario Clean Water Agency





This report was prepared in accordance with the requirements of [O.Reg 170/03, Schedule 22, Summary Reports for Municipalities](#) for the following system and reporting period:

<b>Drinking-Water System Number:</b>	220006945
<b>Drinking-Water System Name:</b>	Thornton (Glen Avenue) Drinking Water System
<b>Drinking-Water System Owner:</b>	The Corporation of the Township of Essa
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2023 – December 31, 2023

## 1. Issue(s) of Non-Compliance

A Ministry of Environment, Conservation and Parks (MECP) Drinking Water System Inspection was conducted on May 11, 2023 for the period covering June 1, 2022 to May 11, 2023. On September 29, 2023 the Inspection Report was issued and an Inspection Summary Rating Record (IRR) of 100% was received.

The following is a summary of non-compliances noted in the MECP Inspection Report, as well as the duration and the measures that were taken to correct the non-compliance. If any self-reported non-compliances were included in the inspection report, they will be noted in Table 1.

**Table 1. Non-Compliances and Corrective Actions noted in the 2022/2023 MECP Inspection Report**

Non-Compliance(s)	Duration	Required Actions & Corrective Actions
N/A	N/A	N/A

The following table (Table 2) is a summary of any incidents that the Operating Authority interpreted as instances where any requirements of the Act, the regulations, the system's approval, drinking water works permit (DWWP), municipal drinking water licence (MDWL), and any orders applicable were not met. The Operating Authority reported the following incidents to the MECP and confirmation of whether the incidents are considered non-compliances are noted in the MECP Inspection Report and included in Table 1.

**Table 2. Self-Reported Incidents and Corrective Actions for the Reporting Period**

Incident	Duration	Corrective Actions
<ul style="list-style-type: none"> <li>Non-Compliance with O.Reg 170/03, Schedule 6 - Operational Checks – Chlorine Residual</li> <li>Operations staff reviewed monthly data sheets and it was observed due to operational oversight that one (1) of the seven required weekly distribution free chlorine</li> </ul>	October 2 to October 13  and  October 23 to November 17	<ul style="list-style-type: none"> <li>Verbal and written notification of non-compliance was provided on November 20, 2023 to the MECP</li> <li>OCWA immediately reviewed regulatory requires with operational staff following the incident</li> <li>Additional, follow-up training was provided to Operations staff on O.Reg 170/03, Schedule 7,</li> </ul>

Incident	Duration	Corrective Actions
residuals was missed each week during the weeks of October 2 to 13, 2023 and between October 23 to November 17, 2023		Operational Checks on January 18, 2024 <ul style="list-style-type: none"> <li>• Since the incident, OCWA has been routinely taking the required amount of distribution free chlorine residuals as required under O.Reg 170/03, Schedule 7.</li> <li>• No further actions required by MECP.</li> </ul>

For information on any Adverse Water Quality Incident(s) that may have occurred during the reporting period, please refer to the Thornton (Glen Avenue) Drinking Water System Annual Report (Section 11).

## 2. Assessment of Flowrates and Quantity of Water Supplied

The following tables (Table 3 to 13) summarize the quantities and flowrates of water supplied during the reporting period, including monthly averages and maximum daily flows as well as a comparison to the rated capacity and flowrates approved in the system’s approval, DWWP or MDWL.

As required by the MDWL, regulatory flow measuring devices are checked/verified and where necessary calibrated. These checks/verifications/calibrations are performed annually by a third party to ensure the flow measuring devices are within acceptable deviation limits.

### 2.1 Treated Water

<b>Municipal Drinking Water License (MDWL):</b>	118-101 (Issue Number: 4)
<b>Allowable Rated Capacity:</b>	1,540 m <sup>3</sup> /day
<b>Allowable Flowrate into Treatment System:</b>	17.82 L/s

As per the MDWL, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the listed rated capacity. However, the MDWL allows a system to be operated temporarily at a maximum daily volume and/or a maximum flowrate above the values set out in the MDWL for the purposes of fighting a large fire or for the maintenance of the drinking water system.

**Table 3. Treated Water Annual and Monthly Average and Maximum Flows with Comparison to Rated Capacity and Total Volume for 2023**

Treated Water Flow					
Timeframe	Average Flow (m <sup>3</sup> /day)	Percent of Rated Capacity	Maximum Flow (m <sup>3</sup> /day)	Percent of Rated Capacity	Total Volume (m <sup>3</sup> )
January	292.43	18.99%	361.43	23.47%	9,065.18
February	297.41	19.31%	342.95	22.27%	8,327.45
March	296.21	19.23%	371.38	24.12%	9,182.44
April	339.85	22.07%	879.41	57.10%	10,195.44
May	476.96	30.97%	871.04	56.56%	14,785.91
June	698.05	45.33%	1,067.74	69.33%	20,672.21
July	526.04	34.16%	754.82	49.01%	16,307.39
August	489.74	31.80%	662.57	43.02%	15,182.06
September	478.75	31.09%	704.89	45.77%	14,362.46
October	418.22	27.16%	819.57	53.22%	12,964.72
November	335.26	21.77%	426.91	27.72%	10,057.74
December	346.15	22.48%	409.53	26.59%	10,730.54
<b>2023</b>	<b>415.51</b>	<b>26.98%</b>	<b>1,067.74</b>	<b>69.33%</b>	<b>151,833.54</b>

A review of flow information for the reporting period indicates that the Thornton drinking water system operated within the rated capacity specified in the MDWL (1,540 m<sup>3</sup>/day), for the maximum treated volume of treated water that flows from the treatment subsystem to the distribution system.

**Table 4. Treated Water Annual and Monthly Maximum Flowrates for 2023**

Treated Water Maximum Flowrate	
Timeframe	Maximum Flowrate (L/sec)
January	10.4
February	9.70
March	52.6
April	72.0
May	73.8
June	33.5
July	49.2
August	57.2
September	47.9
October	77.4
November	10.3
December	17.7
<b>2023</b>	<b>77.4</b>

A summary of flowrates of water that flows out of the Thornton treatment subsystem to the distribution system can be found in the above table. A summary of flowrates of water that flows into the Thornton treatment subsystem can be found in Tables 6, 8, 10 and 12.

## 2.2 Raw Water

<b>Permit to Take Water Number (PTTW):</b>	0113-A4LMPV
<b>Allowable Maximum Raw Water Volume - Well #1:</b>	522.72 m <sup>3</sup> /day
<b>Allowable Maximum Raw Water Flowrate - Well #1:</b>	363 L/min (6.05 L/sec)
<b>Allowable Maximum Volume of Raw Water - Well #2:</b>	522.72 m <sup>3</sup> /day
<b>Allowable Maximum Raw Water Flowrate – Well #2:</b>	363 L/Min (6.05 L/sec)
<b>Allowable Maximum Volume of Raw Water - Well #3:</b>	492.48 m <sup>3</sup> /day
<b>Allowable Maximum Raw Water Flowrate – Well #3:</b>	342 L/min (5.70 L/sec)
<b>Allowable Maximum Volume of Raw Water - Well #4:</b>	328.32 m <sup>3</sup> /day
<b>Allowable Maximum Raw Water Flowrate – Well #4:</b>	228 L/min (3.80 L/sec)
<b>Allowable Maximum Combined Raw Water Volume from Well #1, Well #2, Well #3 and Well #4</b>	1,540.00 m <sup>3</sup> /day

As per the PTTW, water shall only be taken from the specified source(s) and at the rates and amounts taken as specified in the permit. Notwithstanding the totals identified above for each well, the maximum combined taking per day from Well #1, #2, #3 and #4 is limited to 1,540,000 litres (1,540.0 m<sup>3</sup>/day). The PTTW also stipulates that wells #3 and #4 shall not be operated simultaneously. The system is design so that well #3 and well #4 cannot physical run at the same time, an internal lockout mechanism has been installed to lock out one well when the other well is running.

**Table 5. Raw Water (Well #1) Monthly Average, Maximum Flow and Total Volume for 2023**

<b>Raw Water Flow – Well #1</b>					
<b>Timeframe</b>	<b>Average Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Maximum Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Total Volume (m<sup>3</sup>)</b>
January	76.80	14.69%	207.70	39.73%	2,380.69
February	87.42	16.72%	194.28	37.17%	2,447.69
March	91.86	17.57%	198.09	37.90%	2,847.60
April	103.78	19.85%	363.21	69.48%	3,113.51
May	132.54	25.36%	436.31	83.47%	4,108.85
June	234.14	44.79%	472.07	90.31%	7024.29
July	140.07	26.80%	417.76	79.92%	4,342.21
August	160.93	30.79%	382.52	73.18%	4,988.74
September	164.57	31.48%	407.26	77.91%	4,937.06
October	123.63	23.65%	382.24	73.13%	3,832.43
November	94.22	18.02%	206.64	39.53%	2,826.71
December	102.45	19.60%	235.53	45.06%	3,175.84
<b>2023</b>	<b>126.03</b>	<b>24.11%</b>	<b>472.07</b>	<b>90.31%</b>	<b>46,025.62</b>

A review of flow information for the reporting period indicates that the system operated within the PTTW maximum allowable daily raw water volume for Well #1 (522.72 m<sup>3</sup>/day).

**Table6. Raw Water (Well #1) Annual and Monthly Average and Maximum Flowrates for 2023**

<b>Raw Water Flowrate – Well #1</b>		
<b>Timeframe</b>	<b>Average Flowrate (L/sec)</b>	<b>Maximum Flowrate (L/sec)</b>
January	3.25	6.00
February	3.85	6.50 <sup>6A</sup>
March	6.04	6.40 <sup>6A</sup>
April	3.57	6.30 <sup>6A</sup>
May	3.67	6.40 <sup>6A</sup>
June	4.16	6.10 <sup>6A</sup>
July	3.26	6.30 <sup>6A</sup>
August	3.87	6.20 <sup>6A</sup>
September	4.02	6.40 <sup>6A</sup>
October	3.54	6.40 <sup>6A</sup>
November	3.66	6.40 <sup>6A</sup>
December	3.49	6.30 <sup>6A</sup>
<b>2023</b>	<b>3.79</b>	<b>6.50<sup>6A</sup></b>

A review of flow information for the reporting period indicates:

- <sup>6A</sup>February to December - flowrate exceedances were a result of instantaneous well pump starts. Maximum flowrates exceedances for all months were 0.05-0.45 L/sec higher than the allowable flowrates (6.05 L/sec). The average monthly flowrate for each reporting month was below the allowable maximum rate.

**Table 7. Raw Water (Well #2) Monthly Average, Maximum Flow and Total Volume for 2023**

Raw Water Flow – Well #2					
Timeframe	Average Flow (m <sup>3</sup> /day)	Percent of Allowable Volume	Maximum Flow (m <sup>3</sup> /day)	Percent of Allowable Volume	Total Volume (m <sup>3</sup> )
January	103.29	19.76%	228.98	43.81%	3,201.98
February	94.33	18.05%	224.70	42.99%	2,641.26
March	124.41	23.80%	243.29	46.54%	2,737.07
April	109.90	21.02%	295.92	56.61%	3,296.88
May	170.52	32.62%	478.73	91.58%	5,286.04
June	209.85	40.15%	475.96	91.05%	6,295.53
July	187.26	35.82%	462.93	88.56%	5,805.18
August	138.08	26.42%	383.67	73.40%	4,280.53
September	133.20	25.48%	405.90	77.65%	3,996.03
October	134.29	25.69%	334.77	64.04%	4,163.07
November	112.51	21.52%	254.03	48.60%	3,375.40
December	110.55	21.15%	248.21	47.48%	3,427.20
<b>2023</b>	<b>135.68</b>	<b>25.96%</b>	<b>478.73</b>	<b>91.58%</b>	<b>48,506.17</b>

A review of flow information for the reporting period indicates that the system operated within the PTTW maximum allowable daily raw water volume for Well #2 (522.72 m<sup>3</sup>/day).

**Table 8. Raw Water (Well #2) Annual and Monthly Average and Maximum Flowrates for 2023**

Raw Water Flowrate – Well #2		
Timeframe	Average Flowrate (L/sec)	Maximum Flowrate (L/sec)
January	2.87	5.60
February	2.58	5.63
March	5.57	5.59
April	3.03	5.61
May	3.71	5.53
June	3.93	5.47
July	2.96	5.53
August	1.98	5.41
September	2.32	5.39
October	3.29	5.46
November	3.09	5.69
December	2.61	5.42
<b>2023</b>	<b>3.05</b>	<b>5.69</b>



A review of flow information for the reporting period indicates that the system operated within the PTTW maximum allowable raw water flowrate for Well #2 (6.05 L/sec).

**Table 9. Raw Water (Well #3) Monthly Average, Maximum Flow and Total Volume for 2023**

<b>Raw Water Flow – Well #3</b>					
<b>Timeframe</b>	<b>Average Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Maximum Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Total Volume (m<sup>3</sup>)</b>
January	57.47	11.67%	153.73	31.22%	1,781.57
February	65.91	13.38%	146.46	29.74%	1,845.54
March	113.31	23.01%	149.40	30.34%	2,152.89
April	73.21	14.87%	269.01	54.62%	2,196.31
May	88.66	18.00%	319.40	64.86%	2,748.44
June	139.50	28.33%	451.86	91.75%	4,185.13
July	101.62	20.63%	305.31	61.99%	3,150.15
August	117.94	23.95%	280.05	56.87%	3,656.23
September	114.98	23.35%	297.63	60.43%	3,334.37
October	92.51	18.79%	279.76	56.81%	2,867.89
November	70.16	14.25%	159.31	32.35%	2,104.82
December	73.95	15.02%	174.00	35.33%	2,292.38
<b>2023</b>	<b>92.44</b>	<b>18.77%</b>	<b>451.86</b>	<b>91.75%</b>	<b>32,315.72</b>

A review of flow information for the reporting period indicates that the system operated within the PTTW maximum allowable daily raw water volume for Well #3 (492.48 m<sup>3</sup>/day)

**Table 10. Raw Water (Well #3) Annual and Monthly Average and Maximum Flowrates for 2023**

<b>Raw Water Flowrate – Well #3</b>		
<b>Timeframe</b>	<b>Average Flowrate (L/sec)</b>	<b>Maximum Flowrate (L/sec)</b>
January	2.14	5.60
February	2.39	5.60
March	4.48	5.80 <sup>10A</sup>
April	2.21	5.50
May	1.83	5.80 <sup>10A</sup>
June	2.02	5.30
July	1.97	5.80
August	2.56	5.70
September	2.45	5.70
October	2.15	6.00 <sup>10A</sup>
November	2.25	6.30 <sup>10A</sup>
December	2.27	5.80 <sup>10A</sup>
<b>2023</b>	<b>2.31</b>	<b>6.30<sup>10A</sup></b>

A review of flow information for the reporting period indicates that the system operated within the PTTW maximum allowable raw water flowrate for Well #3 (5.70 L/sec), with the exception of:

- <sup>10A</sup>March, May, October, November and December, 2023 - flowrate exceedances were a result of instantaneous at well pump starts. Maximum flowrate exceedance were only 0.10 to 0.60 L/sec higher than the allowable flowrates (5.70 L/sec). The average monthly flowrates for each reporting month were below the allowable maximum rate.

**Table 11. Raw Water (Well #4) Monthly Average, Maximum Flow and Total Volume for 2023**

<b>Raw Water Flow – Well #4</b>					
<b>Timeframe</b>	<b>Average Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Maximum Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Total Volume (m<sup>3</sup>)</b>
January	54.87	16.71%	122.49	37.31%	1,700.94
February	49.75	15.15%	118.25	36.02%	1,392.96
March	90.31	27.51%	128.09	39.01%	1,444.88
April	52.96	16.13%	154.51	47.06%	1,588.74
May	85.24	25.96%	248.87	75.80%	2,642.58
June	105.58	32.16%	247.80	75.48%	3,167.26
July	97.09	29.57%	243.80	74.26%	3,009.85
August	72.79	22.17%	202.36	61.63%	2,256.56
September	69.83	21.27%	200.55	61.08%	2,095.00
October	67.78	20.64%	179.69	54.73%	2,101.33
November	58.36	17.78%	133.02	40.52%	1,750.81
December	59.20	18.03%	130.94	39.88%	1,835.12
<b>2023</b>	<b>71.98</b>	<b>21.92%</b>	<b>248.87</b>	<b>75.80%</b>	<b>24,986.03</b>

A review of flow information for the reporting period indicates that the system operated within the PTTW maximum allowable daily raw water volume for Well #4 (328.32 m<sup>3</sup>/day).

**Table 12. Raw Water (Well #4) Annual and Monthly Average and Maximum Flowrates for 2023**

<b>Raw Water Flowrate – Well #4</b>		
<b>Timeframe</b>	<b>Average Flowrate (L/sec)</b>	<b>Maximum Flowrate (L/sec)</b>
January	1.54	4.50
February	1.40	4.70
March	2.99	4.40 <sup>12A</sup>
April	1.46	4.30 <sup>12A</sup>
May	1.68	4.50 <sup>12A</sup>
June	1.54	4.40 <sup>12A</sup>
July	1.59	4.20 <sup>12A</sup>
August	1.24	3.80
September	1.26	4.10 <sup>12A</sup>
October	1.50	4.80 <sup>12A</sup>
November	1.45	4.70 <sup>12A</sup>
December	1.42	3.80
<b>2023</b>	<b>1.52</b>	<b>4.80<sup>12A</sup></b>

A review of flow information for the reporting period indicates that the system operated within the PTTW maximum allowable raw water flowrate for Well #4 (3.80 L/sec) with the exception of:

- <sup>12A</sup>January, February, March, April, May, June, July September, October, November- flowrate exceedances were a result of instantaneous at well pump starts. Maximum flowrate exceedance were only 0.20 to 1.00 L/sec higher than the allowable flowrates (3.80 L/sec). The average monthly flowrates for each reporting month were below the allowable maximum rate.

**Table 13. Combined Well (Well #1, Well #2, Well #3 and Well #4) Annual and Monthly Flow and Annual Volume for 2023**

<b>Combined Well Flow (Well #1, Well #2, Well #3 and Well #4)</b>					
<b>Timeframe</b>	<b>Average Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Maximum Flow (m<sup>3</sup>/day)</b>	<b>Percent of Allowable Volume</b>	<b>Total Volume (m<sup>3</sup>)</b>
January	292.43	18.99%	361.43	23.47%	9,065.18
February	297.41	19.31%	342.95	22.27%	8,327.45
March	296.21	19.23%	371.38	24.12%	9,182.44
April	339.85	22.07%	879.41	57.10%	10,195.44
May	476.96	30.97%	871.04	56.56%	14,785.91
June	698.05	45.33%	1,067.74	69.33%	20,672.21
July	526.04	34.16%	754.82	49.01%	16,307.39
August	489.74	31.80%	662.57	43.02%	15,182.06
September	478.75	31.09%	704.89	45.77%	14,362.46
October	418.22	27.16%	819.57	53.22%	12,964.72
November	335.26	21.77%	426.91	27.72%	10,057.74
December	346.15	22.48%	409.53	26.59%	10,730.54
<b>2023</b>	<b>415.51</b>	<b>26.98%</b>	<b>1,067.74</b>	<b>69.33%</b>	<b>151,833.54</b>

A review of the flow information for the reporting period indicates that the system operated within the PTTW maximum allowable daily taking of water from the taking of water from all wells identified (1,540 m<sup>3</sup>/day).