



# UNION WATER SUPPLY SYSTEM SUMMARY REPORT 2023

Made under Schedule 22 of Ontario Regulation 170/03, a regulation made under the Safe Drinking Water Act, 2002

## EXPLANATION

Schedule 22 of Ontario Regulation 170/03, a regulation made under the Safe Drinking Water Act, 2002 requires that a large municipal residential drinking-water system that is owned by a municipality, municipal board or municipal corporation must provide to its councillors or board members a Summary Report on various aspects of the system before March 31<sup>st</sup> of the following year. The Union Water Supply System is classed as a large municipal residential drinking-water system and is therefore subject to Schedule 22.

## THE SUMMARY REPORT MUST CONTAIN THE FOLLOWING:

- Requirements of the Safe Drinking Water Act, 2002 that the system failed to meet during 2023
- Any requirements of the regulations made under the Safe Drinking Water Act, 2002 that the system failed to meet in 2023
- Any condition of the drinking-water system's drinking water works permit or municipal drinking water license that the system failed to meet during 2023
- Any order that the system failed to meet in 2023, the duration of any such failure and any measures that were taken to correct such failure.
- A summary of the quantities and flow rates of water supplied by the drinking-water system by monthly average and maximum daily flow rates and instantaneous peak flow rates.
- A comparison of actual flow rates with rated capacity and flow rates in the systems approval

A drinking-water system that supplies water to another drinking water system must provide a copy of the Summary Report to that system's owner by March 31<sup>st</sup> of the year following the year covered in the Summary Report.

The sections below detail the occasions on which the Union Water Supply System (UWSS) and the connected municipal water systems failed to meet the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders in 2023.

## UNION WATER SUPPLY SYSTEM (UWSS)

The following provides details of occurrences where the UWSS was not in compliance with the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders.

### ***Non-Compliance Item:***

There was one (1) instance of non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Union Water Supply System:

- Low pressure event in the distribution system, caused by storm event. Outage caused loss of communications and the Kingsville Water Tower eventually emptied. Event took place on August 24, 2023 between 3:30 am and 4:30 am. Pressure dropped below 20 psi for 66 minutes. A precautionary boil water advisory was put into place on the morning of August 24th, 2024 for water users within the Kingsville Water tower service area. This was conducted in consultation with the Windsor Essex County Health Unit (WECHU). OCWA operations staff collected samples from the distribution system in the affected area and submitted the samples to an accredited laboratory for bacteriological testing. Laboratory results for these samples were returned late afternoon of August 25th, 2023 with negative results for Total Coliforms and E. coli. Based on these results, WECHU agreed to lift the boil water advisory for the affected area.

## LEAMINGTON WATER DISTRIBUTION SYSTEM

### ***Non-Compliance Item:***

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Leamington Distribution System that is supplied by the Union Water Supply System.

## KINGSVILLE WATER DISTRIBUTION SYSTEM

### ***Non-Compliance Item:***

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Kingsville Distribution System that is supplied by the Union Water Supply System.

## ESSEX WATER DISTRIBUTION SYSTEM

### ***Non-Compliance Item:***

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Essex Distribution System that is supplied by the Union Water Supply System.

## LAKESHORE WATER DISTRIBUTION SYSTEM

### ***Non-Compliance Item:***

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Lakeshore Distribution System that is supplied by the Union Water Supply System.

## SUMMARY OF THE QUANTITIES

The following sections provide information in regard to the Union Water Supply System's Permit to Take Water, issued under Ontario Regulation 387/04 and Drinking Water License issued under the Safe Drinking Water Act, 2002. Information includes the following:

- Flow Rates of Water
- Monthly Average
- Maximum Daily Flows
- Daily Instantaneous Peak Flow Rates

## PERMIT TO TAKE WATER

The Union Water Supply System operated under Permit to Take Water (PTTW) Number 0816-9T9SVT, which expires January 31<sup>st</sup>, 2025. The PTTW has the following flow conditions:

- Maximum Allowable Amount Taken per Minute (Litres/Min) 113,650
- Maximum Allowable Amount Taken Per Day (Litres/Day) 163,656,000

The maximum amounts of raw water taken during 2023 (see Table 1 below) are as follows:

- Maximum Amount Taken per Minute in 2023 (Litres/Min) 88,844
- Maximum Amount Taken Per Day in 2023 (Litres/Day) 115,662,000

The system did not exceed the PTTW limits in 2023.

## DRINKING WATER LICENCE

The UWSS operates under Municipal Drinking Water Licence 041-101; issue Number 7 which has been issued for the period July 18, 2021 to July 17, 2024. The Certificate of Approval and licence had the following condition:

- The drinking water system shall not be operated to exceed 124,588 m<sup>3</sup>/d (27.4 MIGD) on any calendar day, conveyed from the treatment system to the distribution system.
- The maximum daily volume of water pumped into the distribution system was 108,676m<sup>3</sup> (23.91 MIGD).

Tables 1A through 3B below provide the monthly average, maximum and peak flows for raw and treated water for the Union Water Supply System.

TABLE 1A						
2023 RAW WATER TAKING FROM LAKE ERIE IN METRIC UNITS						
	Maximum Allowed Flow Rate (m3/Day)	Average Flow (m3/Day)	Maximum Flow (m3/Day)	Maximum Flow (Litres/Day)	Maximum Allowed Flow Rate (Litres/Minute)	Peak Flow (Litres/Minute)
January	163,656	42,504.48	49,749.00	49,749,000	113,650	41,084
February	163,656	47,846.75	58,115.00	58,115,000	113,650	48,234
March	163,656	61,248.29	75,668.00	75,668,000	113,650	59,645
April	163,656	61,651.73	80,244.00	80,244,000	113,650	68,845
May	163,656	77,170.74	106,759.00	106,759,000	113,650	88,844
June	163,656	83,022.30	115,662.00	115,662,000	113,650	88,708
July	163,656	76,728.81	97,729.00	97,729,000	113,650	80,424
August	163,656	72,192.10	95,129.00	95,129,000	113,650	85,586
September	163,656	73,200.67	88,528.00	88,528,000	113,650	79,145
October	163,656	60,178.81	78,684.00	78,684,000	113,650	68,621
November	163,656	52,407.83	65,680.00	65,680,000	113,650	62,677
December	163,656	38,499.94	45,625.00	45,625,000	113,650	54,314

TABLE 1B						
2023 RAW WATER TAKING FROM LAKE ERIE IN IMPERIAL UNITS						
	Maximum Allowed Flow Rate (MGD)	Average Flow (MGD)	Maximum Flow (MGD)	Maximum Allowed Flow Rate (Gallons/Minute)	Peak Flow (Gallons/Minute)	
January	36.00	9.35	10.94	25,000	9,037	
February	36.00	10.52	12.78	25,000	10,610	
March	36.00	13.47	16.64	25,000	13,120	
April	36.00	13.56	17.65	25,000	15,144	
May	36.00	16.98	23.48	25,000	19,543	
June	36.00	18.26	25.44	25,000	19,513	
July	36.00	16.88	21.50	25,000	17,691	
August	36.00	15.88	20.93	25,000	18,826	
September	36.00	16.10	19.47	25,000	17,410	
October	36.00	13.24	17.31	25,000	15,095	
November	36.00	11.53	14.45	25,000	13,787	
December	36.00	8.47	10.04	25,000	11,947	

TABLE 2A

## 2023 TREATED WATER FLOW INTO DISTRIBUTION SYSTEM IN METRIC UNITS

		<b>Maximum Allowed Flow Rate (m3/Day)</b>	<b>Average Daily Flow (m3/Day)</b>	<b>Maximum Daily Flow (m3/Day)</b>	<b>Peak Instantaneous Flow (Litres/Second)</b>	
	<b>January</b>	124,588	39,183	47,039	907	
	<b>February</b>	124,588	44,216	50,368	1,217	
	<b>March</b>	124,588	50,777	60,295	1,332	
	<b>April</b>	124,588	58,633	77,233	1,506	
	<b>May</b>	124,588	74,985	105,072	1,768	
	<b>June</b>	124,588	80,101	108,676	1,748	
	<b>July</b>	124,588	71,461	88,099	1,900	
	<b>August</b>	124,588	66,820	87,607	1,726	
	<b>September</b>	124,588	67,972	82,557	1,563	
	<b>October</b>	124,588	55,406	71,008	1,368	
	<b>November</b>	124,588	43,440	52,313	1,047	
	<b>December</b>	124,588	38,525	46,015	979	

TABLE 2B

## 2023 TREATED WATER FLOW INTO DISTRIBUTION SYSTEM IN IMPERIAL UNITS

		<b>Maximum Allowed Flow Rate (MGD)</b>	<b>Average Daily Flow (MGD)</b>	<b>Maximum Daily Flow (MGD)</b>	<b>Peak Instantaneous Flow (Gallons/Second)</b>	
	<b>January</b>	27.4	8.62	10.35	199	
	<b>February</b>	27.4	9.73	11.08	268	
	<b>March</b>	27.4	11.17	13.26	293	
	<b>April</b>	27.4	12.90	16.99	331	
	<b>May</b>	27.4	16.50	23.12	389	
	<b>June</b>	27.4	17.62	23.91	384	
	<b>July</b>	27.4	15.72	19.38	418	
	<b>August</b>	27.4	14.70	19.27	380	
	<b>September</b>	27.4	14.95	18.16	344	
	<b>October</b>	27.4	12.19	15.62	301	
	<b>November</b>	27.4	9.56	11.51	230	
	<b>December</b>	27.4	8.48	10.12	215	

TABLE 3A

## 2023 TREATED FLOW TO LOCAL MUNICIPALITIES IN METRIC UNITS

	<u>Leamington</u>		<u>Kingsville</u>		<u>Essex</u>		<u>Lakeshore</u>	
	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)
<b>January</b>	690,894	22,287	430,377	13,883	73,940	2,385	54,962	1,773
<b>February</b>	699,975	24,137	444,613	15,331	62,313	2,149	47,837	1,650
<b>March</b>	870,883	28,093	574,918	18,546	88,356	2,850	52,618	1,697
<b>April</b>	911,393	30,380	620,896	20,697	84,347	2,812	49,584	1,653
<b>May</b>	1,343,652	43,344	862,049	27,808	114,547	3,695	72,992	2,355
<b>June</b>	1,397,026	46,568	855,690	28,523	103,126	3,438	77,452	2,582
<b>July</b>	1,319,391	42,561	764,680	24,667	80,570	2,599	65,369	2,109
<b>August</b>	1,228,808	39,639	729,012	23,517	75,038	2,421	61,883	1,996
<b>September</b>	1,138,387	37,946	723,264	24,109	68,797	2,293	59,305	1,977
<b>October</b>	1,058,497	34,145	613,341	19,785	73,230	2,362	60,326	1,946
<b>November</b>	793,903	26,463	403,918	13,464	61,713	2,057	54,111	1,804
<b>December</b>	707,304	22,816	386,549	12,469	66,340	2,140	57,682	1,861
<b>Total</b>	<b>12,160,113</b>	<b>33,198</b>	<b>7,409,307</b>	<b>20,233</b>	<b>952,317</b>	<b>2,600</b>	<b>714,121</b>	<b>1,950</b>

TABLE 3B								
2023 TREATED FLOW TO LOCAL MUNICIPALITIES IN IMPERIAL UNITS								
	<u>Leamington</u>		<u>Kingsville</u>		<u>Essex</u>		<u>Lakeshore</u>	
	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)
<b>January</b>	151,975,434	4.90	94,669,705	3.05	16,264,526	0.52	12,089,950	0.39
<b>February</b>	153,972,975	5.31	97,801,187	3.37	13,706,944	0.47	10,522,669	0.36
<b>March</b>	191,567,479	6.18	126,464,280	4.08	19,435,603	0.63	11,574,342	0.37
<b>April</b>	200,478,433	6.68	136,578,026	4.55	18,553,746	0.62	10,906,955	0.36
<b>May</b>	295,562,120	9.53	189,624,271	6.12	25,196,817	0.81	16,055,995	0.52
<b>June</b>	307,302,759	10.24	188,225,486	6.27	22,684,549	0.76	17,037,058	0.57
<b>July</b>	290,225,446	9.36	168,206,085	5.43	17,722,922	0.57	14,379,170	0.46
<b>August</b>	270,299,972	8.72	160,360,222	5.17	16,506,052	0.53	13,612,357	0.44
<b>September</b>	250,410,133	8.35	159,095,838	5.30	15,133,224	0.50	13,045,276	0.43
<b>October</b>	232,836,789	7.51	134,916,159	4.35	16,108,348	0.52	13,269,865	0.43
<b>November</b>	174,634,246	5.82	88,849,539	2.96	13,574,962	0.45	11,902,756	0.40
<b>December</b>	155,585,129	5.02	85,028,893	2.74	14,592,760	0.47	12,688,266	0.41
<b>Total</b>	<b>2,674,850,916</b>	<b>7.30</b>	<b>1,629,819,691</b>	<b>4.45</b>	<b>209,480,455</b>	<b>0.57</b>	<b>157,084,660</b>	<b>0.43</b>