

# **CITY OF LONDON**

## **2021 DRINKING WATER SUMMARY REPORT**

***System Name:*** City Of London Drinking Water System

***System Rating:***

Water Distribution Subsystem Class IV

Water Treatment Subsystem Class II

Average Day Demand: 129.695 MLD

Peak Day Demand: 166.753 MLD (May 21, 2021)

Population Served: 400,000 (approx.)

Source Water: Surface Water (Lake Huron, Lake Erie)

Drinking Water System Number: 260004917

Municipal Drinking Water Licence: 006-101



**London**  
C A N A D A

***CONTACT INFO:***

Owner:

Corporation of the City of London

300 Dufferin Avenue, London, Ontario N6A 4L9

Contact: Mr. John Simon, P.Eng. Division Manager Water Operations

519-661-2489 ext. 4938

## **Table of Contents**

<b>Reporting Requirements .....</b>	<b>3</b>
<b>Water Budget.....</b>	<b>3</b>
<b>Impacts of Covid-19 on Operational Performance.....</b>	<b>3</b>
<b>Sampling &amp; Water Quality Monitoring.....</b>	<b>3</b>
<b>System Statistics and Major Events.....</b>	<b>8</b>
<b>Municipalities Receiving London Water .....</b>	<b>9</b>
<b>2020 Annual Report .....</b>	<b>11</b>
<b>2020 Summary of Water Pumpage .....</b>	<b>37</b>
<b>2020 Annual Report (EMPS – London).....</b>	<b>50</b>

## **Reporting Requirements**

Ontario Regulation 170/03 requires that municipalities prepare a Summary Report for their drinking-water system for the preceding calendar year and submit it to the members of the Municipal Council by March 31 of each year. This report, presented to Municipal Council's Civic Works Committee on February 1, 2022, fulfills that requirement.

O. Reg 170/03 also requires the preparation of an Annual Report on the operation of the drinking-water system to be made available to members of the public.

Before February 28, 2022, a copy of the 2021 Annual Report and Summary Report for the City of London's water works will be provided to the local office of the Ministry of the Environment, Conservation and Parks (MECP) as a courtesy for information purposes.

The Elgin-Middlesex Pumping Station (EMPS) is jointly owned by the St. Thomas Area Secondary Water Supply System, the Aylmer Area Secondary Water Supply System, and the City of London. EMPS is operated by the Ontario Clean Water Agency (OCWA). The Annual Report for the EMPS (London portion) was not yet available at the time of writing this report. Therefore, it will be provided to members of Council under separate memo prior to the reporting deadline of February 28, 2022.

## **Water Budget**

The 2020-2023 operating and capital budgets represent financial sustainability for Londoners, whereby annual rate increases are approximately the average of the Consumer Price Index (CPI) and the Non-Residential Building Construction Price Index (NRBCPI). The 2020-2023 water operating and capital budgets support four core business objectives:

- Compliance
- Financial Management
- Customer Service
- Best Management Practices

The total Water budget for 2021 was \$87.5 million, which includes long term infrastructure improvements. The Water Budget helps maintain London's advantage of a safe, clean, and secure water supply. The Water Service Area remains proactive in initiatives to ensure that this service continues to meet the demands and expectations of customers. Existing infrastructure requires ongoing renewal (replacement and rehabilitation) activities to manage the infrastructure gap, ensuring that future generations are not faced with a water system that is failing, unreliable, and expensive to maintain.

## **Impacts of Covid-19 on Operational Performance**

The novel coronavirus (COVID-19), throughout 2021, has continued to cause unprecedented interruption to the daily activities of individuals, businesses, and institutions around the world. The City of London has experienced significant challenges, and there remains considerable uncertainty. The future availability of supply of essential stock, inventory, supplies, and material is concerning; therefore, the Water

Service Area has already started taking steps to maintain product delivery. They are being closely monitored, with advanced procurement being implemented. The Water Service Area is an Essential Service that must maintain service continuity. Operationally throughout 2021, with all the impacts of Covid-19, the Water Service Area once again continued with “business-as-usual”, with only minor service level impacts seen on non-critical work processes.

### ***Staffing***

Throughout 2021, due to the impacts of the Covid-19 pandemic, adjustments were made to ensure continuity of service. Water Operations staff remained fully dedicated to the delivery of safe, reliable drinking water. During this time, staff continued modified work arrangements and environments, implemented new and updated existing procedures (ie. Corporate Health and Safety Standard Operating Guidelines) and worked diligently to ensure uninterrupted supply of this essential service.

### ***Business Continuity***

During the early stages of the pandemic new processes and procedures were established to provide business continuity. Water Operations staff implemented a “start of day” procedure that strictly offset the working times between Water Operations staff and other City operations staff by 30 minutes. In addition, Water Operations staff quickly implemented a rotational shift system, social distancing protocols, eliminated shared/grouped vehicle travel by providing staff with separate vehicles to travel to and from work sites, and ensured proper personal protective equipment was available and used consistently. All these efforts were put forth to minimize inter-staff contact. The continuation of these combined efforts enabled the continued safe and reliable operation of the water distribution system throughout 2021 and over the course of the pandemic to date.

### ***Budget***

Due to the Covid-19 pandemic, there have been cost increases to operational material and supplies. The Water Service Area has continued to work within allocated budgets. Water demand has continued to be strong and essentially unaffected by the pandemic. There were no major budget implications to the Water Service Area in 2021.

### ***Maintenance and Construction***

With the effects of the pandemic controlling and altering daily activities, the Water Operations Division continued to deliver essential water services. Water Operations Division and Water Engineering Division staff maintained, whenever possible, a “business-as-usual” level of service. Staff adapted to mandated requirements and found ways to continue their tasks and duties. The Corporation continued to provide support to staff by way of allocating necessary supplies, additional vehicles, sourcing and providing personal protective equipment.

### **Sampling & Water Quality Monitoring**

In 2021, the MECP required large municipal drinking water systems to test for 70 different organic, inorganic, and chemical parameters. The City of London’s water sampling regime includes monthly testing for microbiological indicators and chlorine residuals from 57 standard locations across the City, as well over 3,150 random grab samples. Analysis is also performed for up to 117 parameters, including organics,

inorganics, chemicals, pesticides, and metals at 13 standard locations around the City. This level of testing far exceeds the MECP's minimum sampling requirements.

London also has 10 locations throughout the City where continuous in-line sampling of chlorine residual and pH is monitored. Staff also perform approximately 4,000 additional chlorine tests each year related to construction and maintenance activities. These efforts help ensure that the water within the distribution system is always of high quality, completely safe to consume, and consistent for manufacturing processes.

## 2021 Water Quality Sampling Summary

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations	MAC Exceedance (Y/N)
				2021	
REGULATED INORGANICS					
Antimony	6	ug/L	0.09	0.9 - 0.9	No
Arsenic	25	ug/L	0.2	0.3 - 0.5	No
Barium	1000	ug/L	0.02	16.5 - 23.9	No
Boron	5000	ug/L	2	17 - 23	No
Cadmium	5	ug/L	0.003	0.003 <MDL	No
Chromium	50	ug/L	0.08	0.27 - 0.27	No
Fluoride	1.5	mg/L	0.06	0.07 - 0.93	No
Free Chlorine Residual	--	mg/L		0.22 - 1.28	No
Lead	10	ug/L	0.01	0.01 - 0.06	No
Mercury	1	ug/L	0.01	0.01 <MDL	No
Selenium	10	ug/L	0.04	0.13 - 0.16	No
Sodium	*20	mg/L	0.01	10.8 - 18.3	No
Uranium	20	ug/L	0.002	0.038 - 0.059	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations	MAC Exceedance (Y/N)
				2021	
REGULATED ORGANICS					
Atrazine	--	ug/L	0.01	0.02 - 0.04	No
Atrazine + N-dealkylated metabolites	5	ug/L	0.01	0.04 - 0.06	No
De-ethylated Atrazine	--	ug/L	0.01	0.01 - 0.02	No
Azinphos-methyl	20	ug/L	0.05	0.05 <MDL	No
Benzene	5	ug/L	0.32	0.32 <MDL	No
Benzo(a)pyrene	0.01	ug/L	0.004	0.004 <MDL	No
Bromoxynil	5	ug/L	0.33	0.33 <MDL	No
Carbaryl	90	ug/L	0.05	0.05 <MDL	No
Carbofuran	90	ug/L	0.01	0.01 <MDL	No
Carbon tetrachloride	5	ug/L	0.17	0.17 <MDL	No
Chlorpyrifos	90	ug/L	0.02	0.02 <MDL	No
Diazinon	20	ug/L	0.02	0.02 <MDL	No
Dicamba	120	ug/L	0.2	0.2 <MDL	No
1,2-Dichlorobenzene	200	ug/L	0.41	0.41 <MDL	No

1,4-Dichlorobenzene	5	ug/L	0.36	<b>0.36</b>	<b>&lt;MDL</b>	No
1,2-Dichloroethane	5	ug/L	0.35	<b>0.35</b>	<b>&lt;MDL</b>	No
Dichloromethane	50	ug/L	0.35	<b>0.35</b>	<b>&lt;MDL</b>	No
2,4-dichlorophenol	900	ug/L	0.15	<b>0.15</b>	<b>&lt;MDL</b>	No
2,4-dichlorophenoxyacetic acid (2,4-D)	100	ug/L	0.19	<b>0.19</b>	<b>&lt;MDL</b>	No
Diclofop-methyl	9	ug/L	0.4	<b>0.4</b>	<b>&lt;MDL</b>	No
Dimethoate	20	ug/L	0.06	<b>0.06</b>	<b>&lt;MDL</b>	No
Diquat	70	ug/L	1	<b>1</b>	<b>&lt;MDL</b>	No
Diuron	150	ug/L	0.03	<b>0.03</b>	<b>&lt;MDL</b>	No
Glyphosate	280	ug/L	1	<b>1</b>	<b>&lt;MDL</b>	No
Malathion	190	ug/L	0.02	<b>0.02</b>	<b>&lt;MDL</b>	No
MCPA	--	mg/L	0.00012	<b>0.00012</b>	<b>&lt;MDL</b>	No
Metolachlor	50	ug/L	0.01	<b>0.01</b>	<b>- 0.02</b>	No
Metribuzin	80	ug/L	0.02	<b>0.02</b>	<b>&lt;MDL</b>	No
Monochlorobenzene	80	ug/L	0.3	<b>0.3</b>	<b>&lt;MDL</b>	No
Paraquat	10	ug/L	1	<b>1</b>	<b>&lt;MDL</b>	No
Pentachlorophenol	--	ug/L	0.15	<b>0.15</b>	<b>&lt;MDL</b>	No
Phorate	2	ug/L	0.01	<b>0.01</b>	<b>&lt;MDL</b>	No
Picloram	190	ug/L	1	<b>1</b>	<b>&lt;MDL</b>	No
Polychlorinated Biphenyls (PCBs)	3	ug/L	0.04	<b>0.04</b>	<b>&lt;MDL</b>	No
Prometryne	1	ug/L	0.03	<b>0.03</b>	<b>&lt;MDL</b>	No
Simazine	10	ug/L	0.01	<b>0.01</b>	<b>&lt;MDL</b>	No
Terbufos	1	ug/L	0.01	<b>0.01</b>	<b>&lt;MDL</b>	No
2,3,4,6-tetrachlorophenol	100	ug/L	0.2	<b>0.2</b>	<b>&lt;MDL</b>	No
Triallate	230	ug/L	0.01	<b>0.01</b>	<b>&lt;MDL</b>	No
Trichloroethylene	50	ug/L	0.44	<b>0.44</b>	<b>&lt;MDL</b>	No
2,4,6-trichlorophenol	5	ug/L	0.25	<b>0.25</b>	<b>&lt;MDL</b>	No
Trifluralin	45	ug/L	0.02	<b>0.02</b>	<b>&lt;MDL</b>	No
Vinyl Chloride	2	ug/L	0.17	<b>0.17</b>	<b>&lt;MDL</b>	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations	MAC Exceedance (Y/N)
				2021	
NITRATES					
Nitrate (as nitrogen)	--	mg/L	0.006	0.033 - 0.566	No
Nitrate + Nitrite (as nitrogen)	--	mg/L	0.006	0.033 - 0.566	No
Nitrite (as nitrogen)	--	mg/L	0.003	0.005 - 1.7	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations	MAC Exceedance (Y/N)
				2021	

#### TRICHALOMETHANES & HALOACETIC ACIDS

Total Haloacetic Acids	--	ug/L	5.3	5.3 - 19.1	No
Dibromoacetic Acid	--	ug/L	2	2 <MDL	No
Dichloroacetic Acid	--	ug/L	2.6	2.6 - 14.3	No
Monobromoacetic acid	--	ug/L	2.9	2.9 <MDL	No
Monochloroacetic Acid	--	ug/L	4.7	4.7 <MDL	No
Trichloroacetic Acid	--	ug/L	5.3	5.3 - 7.1	No
Trihalomethanes (total)	--	ug/L	0.37	17 - 58	No
Bromodichloromethane	--	ug/L	0.26	5.5 - 13	No
Bromoform	--	ug/L	0.34	0.34 - 0.34	No
Chloroform	--	ug/L	0.29	8.6 - 40	No
Dibromochloromethane	--	ug/L	0.37	2 - 4.8	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations	MAC Exceedance (Y/N)
				2021	

#### MICROBIOLOGICAL

E. coli	0	cfu/100 mL	0	0 - 0	No
Total Coliform	0	cfu/100 mL	0	0 - 260	Yes
Heterotrophic Plate Count	N/A	cfu/1 mL	10	10 - 2000	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations	MAC Exceedance (Y/N)
				2021	

#### NON-REGULATED INORGANICS/ORGANICS

Alkalinity	--	mg/L as CaCO <sub>3</sub>	2	75 - 90	No
Aluminum	--	ug/L	1	14 - 51	No
Ammonia+Ammonium (N)	--	mg/L	0.04	0.04 <MDL	No
Calcium	--	mg/L	0.01	28.4 - 35.6	No
Chloride	--	mg/L	0.04	10 - 18	No
Cobalt	--	ug/L	0.004	0.004 - 0.01	No
Colour	--	TCU	3	3 - 4	No
Conductivity	--	uS/cm	2	237 - 307	No
Copper	--	ug/L	0.2	1.7 - 2.7	No
Cyanide	200.0	ug/L	2	2 <MDL	No
1,1-Dichloroethylene (vinylidene chloride)	14	ug/L	0.33	0.33 <MDL	No
Dissolved Organic Carbon	--	mg/L	1	1 - 2	No
Ethylbenzene	--	ug/L	0.33	0.33 <MDL	No
Hardness	--	mg/L as CaCO <sub>3</sub>	0.05	108 - 129	No

Iron	--	ug/L	7	<b>7</b> <MDL	No
Magnesium	--	mg/L	0.001	<b>8.92 - 9.77</b>	No
Manganese	--	ug/L	0.01	<b>0.15 - 0.36</b>	No
Nickel	--	ug/L	0.1	<b>0.1 - 0.4</b>	No
Nitrogen-Kjeldahl (N)	--	mg/L	0.05	<b>0.05 - 0.09</b>	No
Organic Nitrogen	--	mg/L	0.01	<b>0.05 - 0.09</b>	No
pH	--	no unit	0.05	<b>7.45 - 7.97</b>	No
Phosphorus	--	mg/L	0.003	<b>0.003</b> <MDL	No
Potassium	--	mg/L	0.009	<b>1.08 - 1.49</b>	No
Silicon; reactive silicate	--	mg/L	0.02	<b>1.03 - 2.05</b>	No
Silver	--	ug/L	0.05	<b>0.05</b> <MDL	No
Solids (Total Dissolved)	--	mg/L	30	<b>131 - 183</b>	No
Sulphate	--	mg/L	0.04	<b>25 - 33</b>	No
Sulphide	--	mg/L	6	<b>6</b> <MDL	No
Surr 1,2-Dichloroethane-d4	--	Surr Rec %	--	<b>115 - 115</b>	No
Surr 4-Bromofluorobenzene	--	Surr Rec %	--	<b>81 - 82</b>	No
Surr Decachlorobiphenyl	--	%	--	<b>90 - 93</b>	No
Tetrachloroethylene (perchloroethylene)	30	ug/L	0.35	<b>0.35</b> <MDL	No
Toluene	--	ug/L	0.36	<b>0.36</b> <MDL	No
Total Chlorine-Field	--	mg/L	--	<b>0.96 - 1.05</b>	No
2,4,5-TP (Silvex)	--	ug/L	0.18	<b>0.18</b> <MDL	No
Turbidity	1	NTU	0.1	<b>0.1 - 0.18</b>	No
Xylene (Total)	--	ug/L	0.43	<b>0.43</b> <MDL	No
m/p-xylene	--	ug/L	0.43	<b>0.43</b> <MDL	No
o-xylene	--	ug/L	0.17	<b>0.17</b> <MDL	No
Zinc	--	ug/L	2	<b>2 - 3</b>	No

In 2021, there were nine (9) adverse microbiological results out of 3,156 samples taken. Seven involved the detection of Total Coliform bacteria (ranging from 1 to 260 cfu/100 mL), two were the result of NDOG (No Data Overgrown). In each case, staff implemented the mandatory adverse response procedure, which included notifying the MECP and the Middlesex-London Health Unit, and immediately re-sampled at each location. The re-sample results revealed no adverse indicators.

In all instances it is highly unlikely that there were 'actual' water quality issues at these sites, as all adverse samples were identified as having free chlorine residuals which were well above the minimum acceptable level at the time of the sampling (ranging between 0.38 to 0.93 mg/L). E. coli and Coliform bacteria cannot survive in chlorinated water; therefore, it is suspected that post-sampling contamination occurred. The re-sampling results support this conclusion. The microbiological testing procedure is extremely sensitive; accidental sample contamination can occur through operator or laboratory error, despite the specific procedures and precautions being adhered to while processing samples.

## **System Statistics and Major Events**

During the period from January 1, 2021, through to December 31, 2021, a total of 47,334,160,000 litres of water were purchased, at a cost of \$27,223,484, from the Joint Water Boards and subsequently pumped into London via the Arva Pumping Station and



the London components within the Elgin Middlesex Pumping Station. Average day demand was 129,695,490 litres. Peak day consumption was down significantly from the 194,876,000 litres that occurred on July 6, 2020, the highest in a decade, to 166,753,000 on May 21, 2021, returning to within the normal range.

A summary of system pumpage can be found in the full version of the Summary Report. The data includes monthly average and maximum daily flows. These values are also compared to the rated flow rate capacities identified in London's Municipal Drinking Water Licence. There were no occurrences of flow rate exceedance during the specified time period.

Listed below are some 2021 statistics for the City of London Distribution System:

<b>Approximate Replacement Value of Drinking Water System</b>	<b>\$5,900,000,000</b>
<b>Number of Pumping Stations</b>	<b>9</b>
<b>Total Number of Water Services</b>	<b>&gt;120,000</b>
<b>Length of Watermain</b>	<b>1,635 km</b>
<b>Number of Watermain Breaks</b>	<b>77</b>
<b>Number of Water Service Leaks</b>	<b>286</b>

### **Municipalities Receiving London Water**

In the Municipality of Middlesex Centre, the villages of Arva, Ballymote, and Delaware continued to receive their drinking water under contract from the City of London during 2021. The Municipality of Middlesex Centre has been provided a copy of the Annual Report as per O. Reg 170/03.

Several residences within Central Elgin also continued to receive drinking water from the transmission watermain that supplies the City of London from the EMPS. For this reason, Central Elgin has also been provided a copy of the report.

# **2021 Annual Report (London)**



**London**  
CANADA



**Drinking Water System Number:** 260004917  
**Municipal Drinking-Water Licence:** 006-001  
**Drinking-Water System Name:** City of London Drinking Water System  
**Drinking-Water System Owner:** The Corporation of the City of London  
**Drinking-Water System Category:** Large Municipal Residential System  
**Period being reported:** January 1, 2021 to December 31, 2021

Does your Drinking-Water System serve more than 10,000 people? **Yes**

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

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

**City of London – City Hall**  
**Customer Service Division – 8<sup>th</sup> Floor**  
**(Public Service Information Area)**  
**300 Dufferin Avenue, London, ON**

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

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
Middlesex Centre Distribution System	260004202
Includes: Arva Waterworks	260004202
Ballymote Waterworks	260004202
Delaware Distribution System	260063323

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**

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

Public access/notice via the web: **Yes**  
Public access/notice via Government Office: **Yes**  
Public access/notice via a newspaper: **No**  
Public access/notice via Public Request: **Yes**  
Public access/notice via a Public Library: **No**  
Public access/notice via other method: **No**

**Describe your Drinking-Water System:**

There are two primary water supplies in the City of London. These are both surface water sources and are:

- Lake Huron Primary Water Supply System (LHPWSS)
- Elgin Area Primary Water Supply System (EAPWSS)



During 2021 the London-Elgin-Middlesex Booster Station was operated by a designated Operating Authority that being, Ontario Clean Water Agency. The annual report for the London-Elgin-Middlesex Booster Station was not available at the time this report was created and therefore, it will be provided under separate cover.

**List all water treatment chemicals used over this reporting period:**

- Liquid Chlorine
- Sodium Hypochlorite
- Fluorosilicic Acid (hydrofluorosilicic acid)

**Were any significant expenses incurred to?**

Large numbers of Water Service Leaks continue to dominate repair/remediation efforts. In excess of 280 water service leaks occurred in 2021, attributing to nearly a 6:1 ratio of water service leaks to water main breaks.



**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.**



Bacteriological Adverse							
Adverse Incident Date	Corrective Action	Corrective Action Date	Adverse Water Quality Indicator # (AWQI #)	Parameters			
				E. coli (cfu/100ml)	Total Coliform (cfu/100ml)	HPC / Background (cfu/1ml)	Free Cl2 (mg/L)
5-May-2021 <sup>1</sup>			153988	0	11	<10	0.88
	Resample	6-May-2021		0	0	<10	0.91
	Resample	6-May-2021		0	0	<10	0.91
	Resample	6-May-2021		0	0	<10	0.89
10-May-2021 <sup>2</sup>			154016	0	4	<10	0.88
	Resample	11-May-2021		0	0	<10	0.81
	Resample	11-May-2021		0	0	<10	0.88
	Resample	11-May-2021		0	0	<10	0.79
20-May-2021 <sup>3</sup>			154109	0	90	10	0.84
	Resample	21-May-2021		0	0	<10	0.77
	Resample	21-May-2021		0	0	<10	0.84
	Resample	21-May-2021		0	0	<10	0.80
21-May-2021 <sup>4</sup>			154112	0	1	<10	0.85
	Resample	22-May-2021		0	0	<10	0.78
	Resample	22-May-2021		0	0	<10	0.87
	Resample	22-May-2021		0	0	<10	0.78
15-Jun-2021 <sup>5</sup>			154317	NDOG	NDOG	NDOG	0.38
	Resample	16-Jun-2021		0	0	<10	0.84
	Resample	16-Jun-2021		0	0	<10	0.78
	Resample	16-Jun-2021		0	0	<10	0.88
	Resample	16-Jun-2021		0	0	<10	0.79
24-Jun-2021 <sup>6</sup>			154422	NDOG	NDOG	NDOG	0.93
	Resample	26-Jun-2021		0	0	<10	0.75
	Resample	26-Jun-2021		0	0	<10	0.74
	Resample	26-Jun-2021		0	0	<10	0.92
26-Aug-2021 <sup>7</sup>			155283	0	1	<10	0.75
	Resample	27-Aug-2021		0	0	<10	0.91
	Resample	27-Aug-2021		0	0	<10	0.84
	Resample	27-Aug-2021		0	0	<10	0.74
21-Sep-2021 <sup>8</sup>			155635	0	1	<10	0.59
	Resample	23-Sep-2021		0	0	<10	0.75
	Resample	23-Sep-2021		0	0	<10	0.75
	Resample	23-Sep-2021		0	0	<10	0.76
24-Nov-2021 <sup>9</sup>			156868	0	260	120	0.72
	Resample	25-Nov-2021		0	0	<10	0.42
	Resample	25-Nov-2021		0	0	<10	0.70
	Resample	25-Nov-2021		0	0	<10	0.56



## **Notes:**

**<sup>1</sup>Details:** A Total Coliform count of 11 per 100 mL was detected in a sample collected from 1617 Hyde Park Rd (Hyde Park Pumping Station).

**Corrective Action:** The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.88 mg/L for the original sample is indicative of a false positive.

**<sup>2</sup>Details:** A Total Coliform count of 4 per 100 mL was detected in a sample collected from 844 Commissioners Rd W (#3 Reservoir).

**Corrective Action:** The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.88 mg/L for the original sample is indicative of a false positive.

**<sup>3</sup>Details:** A Total Coliform count of 90 per 100 mL was detected in a sample collected from 5200 Highbury Ave S (Southeast Pumping Station).

**Corrective Action:** The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.84 mg/L for the original sample is indicative of a false positive.

**<sup>4</sup>Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from 5200 Highbury Ave S (Southeast Pumping Station).

**Corrective Action:** The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.85 mg/L for the original sample is indicative of a false positive.

**<sup>5</sup>Details:** A water sample collected from a sample line connected to the watermain on Addison Drive at Kaladar Dr. was reported as NDOGN(TC) and NDOGN(EC).

**Corrective Action:** The original site was immediately re-sampled on June 16, 2021, and samples were also taken at an upstream sites and two additional sites in the vicinity of the original site. Downstream sampling was not possible as the adverse site was at a dead-end. This sampling was repeated on June 18, 2021. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.38 mg/L for the original sample is indicative of a false positive.



**<sup>6</sup>Details:** A water sample collected from a sample line connected to the watermain on Whitehall Dr at Merlin Cr was reported as NDOGN(TC) and NDOGN(EC).

**Corrective Action:** The original site was immediately re-sampled on June 26, 2021, and samples were also taken at two upstream sites. Downstream sampling was not possible as the adverse site was at a dead-end. This sampling was repeated on June 28, 2021. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.93 mg/L for the original sample is indicative of a false positive

**<sup>7</sup>Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from 3502 Manning Dr.

**Corrective Action:** The original site was re-sampled the morning after the original adverse sample was collected, as part of the daily sampling routine. After receiving notice of the adverse samples, the original site was again re-sampled, and samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.75 mg/L for the original sample is indicative of a false positive.

**<sup>8</sup>Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from CW27 - 907 Maitland St. N. (Hydrant).

**Corrective Action:** The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.59 mg/L for the original sample is indicative of a false positive.

**<sup>9</sup>Details:** A Total Coliform count of 260 per 100 mL was detected in a sample collected from 3502 Manning Dr.

**Corrective Action:** The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results. Free chlorine concentration of 0.72 mg/L for the original sample is indicative of a false positive



**Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.**

	# of E. coli Samples Taken	Range of E. coli (cfu/100mL)	# of Total Coliform Samples Taken	Range of Coliform (cfu/100mL)	# of HPC / Background Samples	Range of HPC (cfu/1mL)
<b>Treated</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Distribution</b>	3156	0 - 0	3156	0 - 260	3156	<10 - 2000

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

	# of Grab Samples	Continuous Monitoring	Range of Results
Turbidity	4	N/A	0.1 - 0.2 NTU
Alkalinity	7	N/A	73 - 92 mg/L as CaCO <sub>3</sub>
Lead	5	N/A	<0.01 - 0.55 µg/L
Chlorine*	2548	87600	0.23 - 1.9 mg/L
Fluoride**	102	17520	0.07 - 0.82 mg/L

\*London has 10 locations with continuous online chlorine monitoring

\*\*Continuous online fluoride monitoring occurs at Arva and SERPs

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

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

**As outlined below, sampling was carried out for inorganic and organic parameters at the following sites: Arva Pumping Station and Southeast Reservoir and Pumping Station.**

**SITE: Arva Pumping Station - Treated Distribution**

**a) INORGANIC PARAMETERS (including lead, sodium, nitrate, nitrite, and fluoride)**

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Antimony	23/Jun/21	0.9 <MDL	ug/L	N
September 21, 2017	Arsenic	23/Jun/21	0.3	ug/L	N
September 21, 2017	Barium	23/Jun/21	16.5	ug/L	N
September 21, 2017	Boron	23/Jun/21	17	ug/L	N
September 21, 2017	Cadmium	23/Jun/21	0.003 <MDL	ug/L	N
September 21, 2017	Chromium	23/Jun/21	0.27	ug/L	N
September 21, 2017	Fluoride	6/Jan/21	0.52	mg/L	N
September 21, 2017	Fluoride	13/Jan/21	0.51	mg/L	N
September 21, 2017	Fluoride	20/Jan/21	0.55	mg/L	N
September 21, 2017	Fluoride	27/Jan/21	0.47	mg/L	N
September 21, 2017	Fluoride	3/Feb/21	0.60	mg/L	N
September 21, 2017	Fluoride	10/Feb/21	0.69	mg/L	N
September 21, 2017	Fluoride	17/Feb/21	0.52	mg/L	N
September 21, 2017	Fluoride	24/Feb/21	0.49	mg/L	N
September 21, 2017	Fluoride	3/Mar/21	0.52	mg/L	N
September 21, 2017	Fluoride	10/Mar/21	0.63	mg/L	N
September 21, 2017	Fluoride	17/Mar/21	0.52	mg/L	N
September 21, 2017	Fluoride	24/Mar/21	0.52	mg/L	N
September 21, 2017	Fluoride	31/Mar/21	0.58	mg/L	N
September 21, 2017	Fluoride	7/Apr/21	0.54	mg/L	N
September 21, 2017	Fluoride	14/Apr/21	0.50	mg/L	N
September 21, 2017	Fluoride	21/Apr/21	0.53	mg/L	N
September 21, 2017	Fluoride	28/Apr/21	0.55	mg/L	N
September 21, 2017	Fluoride	5/May/21	0.50	mg/L	N
September 21, 2017	Fluoride	12/May/21	0.57	mg/L	N
September 21, 2017	Fluoride	19/May/21	0.56	mg/L	N
September 21, 2017	Fluoride	26/May/21	0.51	mg/L	N
September 21, 2017	Fluoride	2/Jun/21	0.54	mg/L	N
September 21, 2017	Fluoride	9/Jun/21	0.54	mg/L	N
September 21, 2017	Fluoride	16/Jun/21	0.57	mg/L	N
September 21, 2017	Fluoride	23/Jun/21	0.53	mg/L	N
September 21, 2017	Fluoride	30/Jun/21	0.57	mg/L	N
September 21, 2017	Fluoride	7/Jul/21	0.72	mg/L	N
September 21, 2017	Fluoride	14/Jul/21	0.62	mg/L	N
September 21, 2017	Fluoride	21/Jul/21	0.52	mg/L	N

September 21, 2017	Fluoride	28/Jul/21	0.50	mg/L	N
September 21, 2017	Fluoride	4/Aug/21	0.58	mg/L	N
September 21, 2017	Fluoride	11/Aug/21	0.59	mg/L	N
September 21, 2017	Fluoride	18/Aug/21	0.63	mg/L	N
September 21, 2017	Fluoride	25/Aug/21	0.61	mg/L	N
September 21, 2017	Fluoride	1/Sep/21	0.55	mg/L	N
September 21, 2017	Fluoride	8/Sep/21	0.59	mg/L	N
September 21, 2017	Fluoride	15/Sep/21	0.55	mg/L	N
September 21, 2017	Fluoride	22/Sep/21	0.54	mg/L	N
September 21, 2017	Fluoride	29/Sep/21	0.52	mg/L	N
September 21, 2017	Fluoride	6/Oct/21	0.45	mg/L	N
September 21, 2017	Fluoride	13/Oct/21	0.46	mg/L	N
September 21, 2017	Fluoride	20/Oct/21	0.54	mg/L	N
September 21, 2017	Fluoride	27/Oct/21	0.52	mg/L	N
September 21, 2017	Fluoride	3/Nov/21	0.54	mg/L	N
September 21, 2017	Fluoride	10/Nov/21	0.54	mg/L	N
September 21, 2017	Fluoride	17/Nov/21	0.56	mg/L	N
September 21, 2017	Fluoride	24/Nov/21	0.54	mg/L	N
September 21, 2017	Fluoride	1/Dec/21	0.50	mg/L	N
September 21, 2017	Fluoride	8/Dec/21	0.58	mg/L	N
September 21, 2017	Fluoride	15/Dec/21	0.61	mg/L	N
September 21, 2017	Fluoride	22/Dec/21	0.51	mg/L	N
September 21, 2017	Fluoride	29/Dec/21	0.61	mg/L	N
September 21, 2017	Lead	15/Mar/21	0.01 <MDL	ug/L	N
September 21, 2017	Lead	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Lead	14/Sep/21	0.06	ug/L	N
September 21, 2017	Lead	7/Dec/21	0.02	ug/L	N
September 21, 2017	Mercury	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Nitrate (as nitrogen)	15/Mar/21	0.566	mg/L	N
September 21, 2017	Nitrate (as nitrogen)	23/Jun/21	0.341	mg/L	N
September 21, 2017	Nitrate (as nitrogen)	14/Sep/21	0.248	mg/L	N
September 21, 2017	Nitrate (as nitrogen)	7/Dec/21	0.49	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	15/Mar/21	0.566	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	23/Jun/21	0.341	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	14/Sep/21	0.248	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	7/Dec/21	0.49	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	15/Mar/21	0.003 <MDL	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	23/Jun/21	0.003 <MDL	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	14/Sep/21	0.003 <MDL	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	7/Dec/21	0.003 <MDL	mg/L	N
September 21, 2017	Selenium	23/Jun/21	0.13	ug/L	N
September 21, 2017	Sodium	23/Jun/21	10.8	mg/L	N
September 21, 2017	Uranium	23/Jun/21	0.059	ug/L	N

**b) ORGANIC PARAMETERS (including THM & HAA)**

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alachlor	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Atrazine	23/Jun/21	0.02	ug/L	N
September 21, 2017	Atrazine + N-dealkylated metabolites	23/Jun/21	0.04	ug/L	N
September 21, 2017	De-ethylated Atrazine	23/Jun/21	0.01	ug/L	N
September 21, 2017	Azinphos-methyl	23/Jun/21	0.05 <MDL	ug/L	N
September 21, 2017	Benzene	23/Jun/21	0.32 <MDL	ug/L	N
September 21, 2017	Benzo(a)pyrene	23/Jun/21	0.004 <MDL	ug/L	N
September 21, 2017	Bromoxynil	23/Jun/21	0.33 <MDL	ug/L	N
September 21, 2017	Carbaryl	23/Jun/21	0.05 <MDL	ug/L	N
September 21, 2017	Carbofuran	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Carbon tetrachloride	23/Jun/21	0.17 <MDL	ug/L	N
September 21, 2017	Chlorpyrifos	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Diazinon	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Dicamba	23/Jun/21	0.2 <MDL	ug/L	N
September 21, 2017	1,2-Dichlorobenzene	23/Jun/21	0.41 <MDL	ug/L	N
September 21, 2017	1,4-Dichlorobenzene	23/Jun/21	0.36 <MDL	ug/L	N
September 21, 2017	1,2-Dichloroethane	23/Jun/21	0.35 <MDL	ug/L	N
September 21, 2017	Dichloromethane	23/Jun/21	0.35 <MDL	ug/L	N
September 21, 2017	2,4-dichlorophenol	23/Jun/21	0.15 <MDL	ug/L	N
September 21, 2017	2,4-dichlorophenoxyacetic acid (2,4-D)	23/Jun/21	0.19 <MDL	ug/L	N
September 21, 2017	Diclofop-methyl	23/Jun/21	0.4 <MDL	ug/L	N
September 21, 2017	Dimethoate	23/Jun/21	0.06 <MDL	ug/L	N
September 21, 2017	Diquat	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Diuron	23/Jun/21	0.03 <MDL	ug/L	N
September 21, 2017	Glyphosate	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Malathion	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	MCPA	23/Jun/21	0.00012<MDL	mg/L	N
September 21, 2017	Metolachlor	23/Jun/21	0.02	ug/L	N
September 21, 2017	Metribuzin	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Paraquat	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Pentachlorophenol	23/Jun/21	0.15 <MDL	ug/L	N
September 21, 2017	Phorate	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Picloram	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Polychlorinated Biphenyls (PCBs)	23/Jun/21	0.04 <MDL	ug/L	N
September 21, 2017	Prometryne	23/Jun/21	0.03 <MDL	ug/L	N
September 21, 2017	Simazine	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Terbufos	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	2,3,4,6-tetrachlorophenol	23/Jun/21	0.2 <MDL	ug/L	N
September 21, 2017	Triallate	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Trichloroethylene	23/Jun/21	0.44 <MDL	ug/L	N
September 21, 2017	2,4,6-trichlorophenol	23/Jun/21	0.25 <MDL	ug/L	N
September 21, 2017	Trifluralin	23/Jun/21	0.02 <MDL	ug/L	N



September 21, 2017	Total Haloacetic Acids	15/Mar/21	5.3 <MDL	ug/L	N
September 21, 2017	Dibromoacetic Acid	15/Mar/21	2 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	15/Mar/21	4.9	ug/L	N
September 21, 2017	Monobromoacetic acid	15/Mar/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	15/Mar/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	15/Mar/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	23/Jun/21	6.4	ug/L	N
September 21, 2017	Dibromoacetic Acid	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	23/Jun/21	6.4	ug/L	N
September 21, 2017	Monobromoacetic acid	23/Jun/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	23/Jun/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	23/Jun/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	14/Sep/21	5.9	ug/L	N
September 21, 2017	Dibromoacetic Acid	14/Sep/21	2 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	14/Sep/21	5.9	ug/L	N
September 21, 2017	Monobromoacetic acid	14/Sep/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	14/Sep/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	14/Sep/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	7/Dec/21	6	ug/L	N
September 21, 2017	Dibromoacetic Acid	7/Dec/21	2 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	7/Dec/21	6	ug/L	N
September 21, 2017	Monobromoacetic acid	7/Dec/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	7/Dec/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	7/Dec/21	5.3 <MDL	ug/L	N
September 21, 2017	Trihalomethanes (total)	15/Mar/21	18	ug/L	N
September 21, 2017	Bromodichloromethane	15/Mar/21	5.5	ug/L	N
September 21, 2017	Bromoform	15/Mar/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	15/Mar/21	11	ug/L	N
September 21, 2017	Dibromochloromethane	15/Mar/21	2	ug/L	N
September 21, 2017	Trihalomethanes (total)	23/Jun/21	29	ug/L	N
September 21, 2017	Bromodichloromethane	23/Jun/21	8.4	ug/L	N
September 21, 2017	Bromoform	23/Jun/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	23/Jun/21	17	ug/L	N
September 21, 2017	Dibromochloromethane	23/Jun/21	3.8	ug/L	N
September 21, 2017	Trihalomethanes (total)	14/Sep/21	30	ug/L	N
September 21, 2017	Bromodichloromethane	14/Sep/21	8.5	ug/L	N
September 21, 2017	Bromoform	14/Sep/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	14/Sep/21	17	ug/L	N
September 21, 2017	Dibromochloromethane	14/Sep/21	4.2	ug/L	N
September 21, 2017	Trihalomethanes (total)	7/Dec/21	20	ug/L	N
September 21, 2017	Bromodichloromethane	7/Dec/21	6.4	ug/L	N
September 21, 2017	Bromoform	7/Dec/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	7/Dec/21	11	ug/L	N
September 21, 2017	Dibromochloromethane	7/Dec/21	2.4	ug/L	N
September 21, 2017	Vinyl Chloride	23/Jun/21	0.17 <MDL	ug/L	N



## c) NON-REGULATED INORGANIC/ORGANIC PARAMETERS

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alkalinity	23/Jun/21	75	mg/L as CaCO <sub>3</sub>	N
September 21, 2017	Aluminum	23/Jun/21	51	ug/L	N
September 21, 2017	Ammonia+Ammonium (N)	23/Jun/21	0.04 <MDL	mg/L	N
September 21, 2017	Calcium	23/Jun/21	28.4	mg/L	N
September 21, 2017	Chloride	23/Jun/21	10	mg/L	N
September 21, 2017	Cobalt	23/Jun/21	0.004 <MDL	ug/L	N
September 21, 2017	Colour	23/Jun/21	4	TCU	N
September 21, 2017	Conductivity	23/Jun/21	237	uS/cm	N
September 21, 2017	Copper	23/Jun/21	2.7	ug/L	N
September 21, 2017	Cyanide; total	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	1,1-Dichloroethylene (vinylidene chloride)	23/Jun/21	0.33 <MDL	ug/L	N
September 21, 2017	Dissolved Organic Carbon	23/Jun/21	1	mg/L	N
September 21, 2017	Ethylbenzene	23/Jun/21	0.33 <MDL	ug/L	N
September 21, 2017	Hardness	23/Jun/21	108	mg/L as CaCO <sub>3</sub>	N
September 21, 2017	Iron	23/Jun/21	7 <MDL	ug/L	N
September 21, 2017	Langelier's Index	23/Jun/21	-0.3	@ 20° C	N
September 21, 2017	Langelier's Index	23/Jun/21	-0.62	@ 4° C	N
September 21, 2017	Magnesium	23/Jun/21	8.92	mg/L	N
September 21, 2017	Manganese	23/Jun/21	0.36	ug/L	N
September 21, 2017	Monochlorobenzene	23/Jun/21	0.3 <MDL	ug/L	N
September 21, 2017	Nickel	23/Jun/21	0.1	ug/L	N
September 21, 2017	Nitrogen-Kjeldahl (N)	23/Jun/21	0.05 <MDL	mg/L	N
September 21, 2017	Organic Nitrogen	23/Jun/21	0.05 <MDL	mg/L	N
September 21, 2017	pH	23/Jun/21	7.97	No unit	N
September 21, 2017	pH-Field	23/Jun/21	7.95	no unit	N
September 21, 2017	Phosphorus	23/Jun/21	0.003 <MDL	mg/L	N
September 21, 2017	Potassium	23/Jun/21	1.08	mg/L	N
September 21, 2017	Silicon; reactive silicate	23/Jun/21	2.05	mg/L	N
September 21, 2017	Silver	23/Jun/21	0.05 <MDL	ug/L	N
September 21, 2017	Solids (Total Dissolved)	23/Jun/21	131	mg/L	N
September 21, 2017	Sulphate	23/Jun/21	25	mg/L	N
September 21, 2017	Sulphide	23/Jun/21	6 <MDL	ug/L	N
September 21, 2017	Surr 1,2-Dichloroethane-d4	23/Jun/21	115	Surr Rec %	N
September 21, 2017	Surr 4-Bromofluorobenzene	23/Jun/21	82	Surr Rec %	N
September 21, 2017	Surr Decachlorobiphenyl	23/Jun/21	93	%	N
September 21, 2017	Temperature-Field	23/Jun/21	16.6	celcius	N
September 21, 2017	Tetrachloroethylene (perchloroethylene)	23/Jun/21	0.35 <MDL	ug/L	N
September 21, 2017	Toluene	23/Jun/21	0.36 <MDL	ug/L	N
September 21, 2017	Total Chlorine-Field	23/Jun/21	0.96	mg/L	N
September 21, 2017	2-(2,4,5-Trichlorophenoxy)propanoic acid (2,4,5-TP)	23/Jun/21	0.18 <MDL	ug/L	N
September 21, 2017	Turbidity	23/Jun/21	0.1 <MDL	NTU	N
September 21, 2017	Turbidity-Field	23/Jun/21	0.18	NTU	N
September 21, 2017	Xylene (Total)	23/Jun/21	0.43 <MDL	ug/L	N



September 21, 2017	m/p-Xylene	23/Jun/21	0.43 <MDL	ug/L	N
September 21, 2017	o-xylene	23/Jun/21	0.17 <MDL	ug/L	N
September 21, 2017	Zinc	23/Jun/21	3	ug/L	N

**SITE: Southeast Reservoir and Pumping Station - Treated Distribution**
**a) INORGANIC PARAMETERS (including lead, sodium, nitrate, nitrite, and fluoride)**

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Antimony	23/Jun/21	0.9 <MDL	ug/L	N
September 21, 2017	Arsenic	23/Jun/21	0.5	ug/L	N
September 21, 2017	Barium	23/Jun/21	23.9	ug/L	N
September 21, 2017	Boron	23/Jun/21	23	ug/L	N
September 21, 2017	Cadmium	23/Jun/21	0.003 <MDL	ug/L	N
September 21, 2017	Chromium	23/Jun/21	0.27	ug/L	N
September 21, 2017	Fluoride	6/Jan/21	0.44	mg/L	N
September 21, 2017	Fluoride	13/Jan/21	0.45	mg/L	N
September 21, 2017	Fluoride	20/Jan/21	0.44	mg/L	N
September 21, 2017	Fluoride	27/Jan/21	0.37	mg/L	N
September 21, 2017	Fluoride	3/Feb/21	0.44	mg/L	N
September 21, 2017	Fluoride	10/Feb/21	0.40	mg/L	N
September 21, 2017	Fluoride	17/Feb/21	0.39	mg/L	N
September 21, 2017	Fluoride	24/Feb/21	0.38	mg/L	N
September 21, 2017	Fluoride	3/Mar/21	0.41	mg/L	N
September 21, 2017	Fluoride	10/Mar/21	0.44	mg/L	N
September 21, 2017	Fluoride	17/Mar/21	0.43	mg/L	N
September 21, 2017	Fluoride	24/Mar/21	0.43	mg/L	N
September 21, 2017	Fluoride	31/Mar/21	0.45	mg/L	N
September 21, 2017	Fluoride	7/Apr/21	0.44	mg/L	N
September 21, 2017	Fluoride	14/Apr/21	0.45	mg/L	N
September 21, 2017	Fluoride	21/Apr/21	0.45	mg/L	N
September 21, 2017	Fluoride	28/Apr/21	0.46	mg/L	N
September 21, 2017	Fluoride	5/May/21	0.45	mg/L	N
September 21, 2017	Fluoride	12/May/21	0.46	mg/L	N
September 21, 2017	Fluoride	19/May/21	0.49	mg/L	N
September 21, 2017	Fluoride	26/May/21	0.51	mg/L	N
September 21, 2017	Fluoride	2/Jun/21	0.48	mg/L	N
September 21, 2017	Fluoride	10/Jun/21	0.51	mg/L	N
September 21, 2017	Fluoride	16/Jun/21	0.50	mg/L	N
September 21, 2017	Fluoride	23/Jun/21	0.50	mg/L	N
September 21, 2017	Fluoride	30/Jun/21	0.51	mg/L	N
September 21, 2017	Fluoride	7/Jul/21	0.52	mg/L	N
September 21, 2017	Fluoride	14/Jul/21	0.57	mg/L	N
September 21, 2017	Fluoride	21/Jul/21	0.57	mg/L	N
September 21, 2017	Fluoride	28/Jul/21	0.57	mg/L	N
September 21, 2017	Fluoride	4/Aug/21	0.55	mg/L	N
September 21, 2017	Fluoride	11/Aug/21	0.64	mg/L	N
September 21, 2017	Fluoride	18/Aug/21	0.58	mg/L	N
September 21, 2017	Fluoride	25/Aug/21	0.58	mg/L	N





September 21, 2017	Fluoride	1/Sep/21	0.56	mg/L	N
September 21, 2017	Fluoride	8/Sep/21	0.58	mg/L	N
September 21, 2017	Fluoride	15/Sep/21	0.53	mg/L	N
September 21, 2017	Fluoride	22/Sep/21	0.53	mg/L	N
September 21, 2017	Fluoride	29/Sep/21	0.54	mg/L	N
September 21, 2017	Fluoride	6/Oct/21	0.54	mg/L	N
September 21, 2017	Fluoride	13/Oct/21	0.52	mg/L	N
September 21, 2017	Fluoride	20/Oct/21	0.52	mg/L	N
September 21, 2017	Fluoride	27/Oct/21	0.50	mg/L	N
September 21, 2017	Fluoride	3/Nov/21	0.49	mg/L	N
September 21, 2017	Fluoride	10/Nov/21	0.55	mg/L	N
September 21, 2017	Fluoride	17/Nov/21	0.49	mg/L	N
September 21, 2017	Fluoride	24/Nov/21	0.50	mg/L	N
September 21, 2017	Fluoride	1/Dec/21	0.47	mg/L	N
September 21, 2017	Fluoride	8/Dec/21	0.45	mg/L	N
September 21, 2017	Fluoride	15/Dec/21	0.44	mg/L	N
September 21, 2017	Fluoride	22/Dec/21	0.46	mg/L	N
September 21, 2017	Fluoride	29/Dec/21	0.48	mg/L	N
September 21, 2017	Lead	15/Mar/21	0.01 <MDL	ug/L	N
September 21, 2017	Lead	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Lead	22/Sep/21	0.01 <MDL	ug/L	N
September 21, 2017	Lead	7/Dec/21	0.01 <MDL	ug/L	N
September 21, 2017	Mercury	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Nitrate (as nitrogen)	15/Mar/21	0.33	mg/L	N
September 21, 2017	Nitrate (as nitrogen)	23/Jun/21	0.06	mg/L	N
September 21, 2017	Nitrate (as nitrogen)	22/Sep/21	0.03	mg/L	N
September 21, 2017	Nitrate (as nitrogen)	7/Dec/21	0.20	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	15/Mar/21	0.33	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	23/Jun/21	0.06	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	22/Sep/21	0.03	mg/L	N
September 21, 2017	Nitrate + Nitrite (as nitrogen)	7/Dec/21	0.20	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	15/Mar/21	0.003 <MDL	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	23/Jun/21	0.003 <MDL	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	22/Sep/21	0.003 <MDL	mg/L	N
September 21, 2017	Nitrite (as nitrogen)	7/Dec/21	0.003 <MDL	mg/L	N
September 21, 2017	Selenium	23/Jun/21	0.16	ug/L	N
September 21, 2017	Sodium	23/Jun/21	18.3	mg/L	N
September 21, 2017	Uranium	23/Jun/21	0.038	ug/L	N



## b) ORGANIC PARAMETERS (including THM & HAA)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alachlor	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Atrazine	23/Jun/21	0.04	ug/L	N
September 21, 2017	Atrazine + N-dealkylated metabolites	23/Jun/21	0.06	ug/L	N
September 21, 2017	De-ethylated Atrazine	23/Jun/21	0.02	ug/L	N
September 21, 2017	Azinphos-methyl	23/Jun/21	0.05 <MDL	ug/L	N
September 21, 2017	Benzene	23/Jun/21	0.32 <MDL	ug/L	N
September 21, 2017	Benzo(a)pyrene	23/Jun/21	0.004 <MDL	ug/L	N
September 21, 2017	Bromoxynil	23/Jun/21	0.33 <MDL	ug/L	N
September 21, 2017	Carbaryl	23/Jun/21	0.05 <MDL	ug/L	N
September 21, 2017	Carbofuran	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Carbon tetrachloride	23/Jun/21	0.17 <MDL	ug/L	N
September 21, 2017	Chlorpyrifos	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Diazinon	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Dicamba	23/Jun/21	0.2 <MDL	ug/L	N
September 21, 2017	1,2-Dichlorobenzene	23/Jun/21	0.41 <MDL	ug/L	N
September 21, 2017	1,4-Dichlorobenzene	23/Jun/21	0.36 <MDL	ug/L	N
September 21, 2017	1,2-Dichloroethane	23/Jun/21	0.35 <MDL	ug/L	N
September 21, 2017	Dichloromethane	23/Jun/21	0.35 <MDL	ug/L	N
September 21, 2017	2,4-dichlorophenol	23/Jun/21	0.15 <MDL	ug/L	N
September 21, 2017	2,4-dichlorophenoxyacetic acid (2,4-D)	23/Jun/21	0.19 <MDL	ug/L	N
September 21, 2017	Diclofop-methyl	23/Jun/21	0.4 <MDL	ug/L	N
September 21, 2017	Dimethoate	23/Jun/21	0.06 <MDL	ug/L	N
September 21, 2017	Diquat	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Diuron	23/Jun/21	0.03 <MDL	ug/L	N
September 21, 2017	Glyphosate	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Malathion	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	MCPA	23/Jun/21	0.00012<MDL	mg/L	N
September 21, 2017	Metolachlor	23/Jun/21	0.01	ug/L	N
September 21, 2017	Metribuzin	23/Jun/21	0.02 <MDL	ug/L	N
September 21, 2017	Paraquat	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Pentachlorophenol	23/Jun/21	0.15 <MDL	ug/L	N
September 21, 2017	Phorate	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Picloram	23/Jun/21	1 <MDL	ug/L	N
September 21, 2017	Polychlorinated Biphenyls (PCBs)	23/Jun/21	0.04 <MDL	ug/L	N
September 21, 2017	Prometryne	23/Jun/21	0.03 <MDL	ug/L	N
September 21, 2017	Simazine	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Terbufos	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	2,3,4,6-tetrachlorophenol	23/Jun/21	0.2 <MDL	ug/L	N
September 21, 2017	Triallate	23/Jun/21	0.01 <MDL	ug/L	N
September 21, 2017	Trichloroethylene	23/Jun/21	0.44 <MDL	ug/L	N
September 21, 2017	2,4,6-trichlorophenol	23/Jun/21	0.25 <MDL	ug/L	N
September 21, 2017	Trifluralin	23/Jun/21	0.02 <MDL	ug/L	N



September 21, 2017	Total Haloacetic Acids	15/Mar/21	6.40	ug/L	N
September 21, 2017	Dibromoacetic Acid	15/Mar/21	2.00 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	15/Mar/21	6.4	ug/L	N
September 21, 2017	Monobromoacetic acid	15/Mar/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	15/Mar/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	15/Mar/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	23/Jun/21	14.4	ug/L	N
September 21, 2017	Dibromoacetic Acid	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	23/Jun/21	8.9	ug/L	N
September 21, 2017	Monobromoacetic acid	23/Jun/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	23/Jun/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	23/Jun/21	5.5	ug/L	N
September 21, 2017	Total Haloacetic Acids	22/Sep/21	19.1	ug/L	N
September 21, 2017	Dibromoacetic Acid	22/Sep/21	2 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	22/Sep/21	12.9	ug/L	N
September 21, 2017	Monobromoacetic acid	22/Sep/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	22/Sep/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	22/Sep/21	6.2	ug/L	N
September 21, 2017	Total Haloacetic Acids	7/Dec/21	15.1	ug/L	N
September 21, 2017	Dibromoacetic Acid	7/Dec/21	2 <MDL	ug/L	N
September 21, 2017	Dichloroacetic Acid	7/Dec/21	9.3	ug/L	N
September 21, 2017	Monobromoacetic acid	7/Dec/21	2.9 <MDL	ug/L	N
September 21, 2017	Monochloroacetic Acid	7/Dec/21	4.7 <MDL	ug/L	N
September 21, 2017	Trichloroacetic Acid	7/Dec/21	5.8	ug/L	N
September 21, 2017	Trihalomethanes (total)	15/Mar/21	17	ug/L	N
September 21, 2017	Bromodichloromethane	15/Mar/21	5.5	ug/L	N
September 21, 2017	Bromoform	15/Mar/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	15/Mar/21	8.6	ug/L	N
September 21, 2017	Dibromochloromethane	15/Mar/21	2.7	ug/L	N
September 21, 2017	Trihalomethanes (total)	23/Jun/21	30	ug/L	N
September 21, 2017	Bromodichloromethane	23/Jun/21	9	ug/L	N
September 21, 2017	Bromoform	23/Jun/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	23/Jun/21	18	ug/L	N
September 21, 2017	Dibromochloromethane	23/Jun/21	3.6	ug/L	N
September 21, 2017	Trihalomethanes (total)	22/Sep/21	42	ug/L	N
September 21, 2017	Bromodichloromethane	22/Sep/21	11	ug/L	N
September 21, 2017	Bromoform	22/Sep/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	22/Sep/21	26	ug/L	N
September 21, 2017	Dibromochloromethane	22/Sep/21	4	ug/L	N
September 21, 2017	Trihalomethanes (total)	7/Dec/21	24	ug/L	N
September 21, 2017	Bromodichloromethane	7/Dec/21	7.2	ug/L	N
September 21, 2017	Bromoform	7/Dec/21	0.34 <MDL	ug/L	N
September 21, 2017	Chloroform	7/Dec/21	14	ug/L	N
September 21, 2017	Dibromochloromethane	7/Dec/21	2.7	ug/L	N
September 21, 2017	Vinyl Chloride	23/Jun/21	0.17 <MDL	ug/L	N



## c) NON-REGULATED INORGANIC/ORGANIC PARAMETERS

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alkalinity	23/Jun/21	90	mg/L as CaCO <sub>3</sub>	N
September 21, 2017	Aluminum	23/Jun/21	14	ug/L	N
September 21, 2017	Ammonia+Ammonium (N)	23/Jun/21	0.04 <MDL	mg/L	N
September 21, 2017	Calcium	23/Jun/21	35.6	mg/L	N
September 21, 2017	Chloride	23/Jun/21	18	mg/L	N
September 21, 2017	Cobalt	23/Jun/21	0.01	ug/L	N
September 21, 2017	Colour	23/Jun/21	3	TCU	N
September 21, 2017	Conductivity	23/Jun/21	307	uS/cm	N
September 21, 2017	Copper	23/Jun/21	1.7	ug/L	N
September 21, 2017	Cyanide; total	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	1,1-Dichloroethylene (vinylidene chloride)	23/Jun/21	0.33 <MDL	ug/L	N
September 21, 2017	Dissolved Organic Carbon	23/Jun/21	2	mg/L	N
September 21, 2017	Ethylbenzene	23/Jun/21	0.33 <MDL	ug/L	N
September 21, 2017	Hardness	23/Jun/21	129	mg/L as CaCO <sub>3</sub>	N
September 21, 2017	Iron	23/Jun/21	7 <MDL	ug/L	N
September 21, 2017	Langelier's Index	23/Jun/21	-0.26	@ 20° C	N
September 21, 2017	Langelier's Index	23/Jun/21	-0.58	@ 4° C	N
September 21, 2017	Magnesium	23/Jun/21	9.77	mg/L	N
September 21, 2017	Manganese	23/Jun/21	0.15	ug/L	N
September 21, 2017	Monochlorobenzene	23/Jun/21	0.3 <MDL	ug/L	N
September 21, 2017	Nickel	23/Jun/21	0.4	ug/L	N
September 21, 2017	Nitrogen-Kjeldahl (N)	23/Jun/21	0.09	mg/L	N
September 21, 2017	Organic Nitrogen	23/Jun/21	0.09	mg/L	N
September 21, 2017	pH	23/Jun/21	7.85	No unit	N
September 21, 2017	pH-Field	23/Jun/21	7.45	no unit	N
September 21, 2017	Phosphorus	23/Jun/21	0.003 <MDL	mg/L	N
September 21, 2017	Potassium	23/Jun/21	1.49	mg/L	N
September 21, 2017	Silicon; reactive silicate	23/Jun/21	1.03	mg/L	N
September 21, 2017	Silver	23/Jun/21	0.05 <MDL	ug/L	N
September 21, 2017	Solids (Total Dissolved)	23/Jun/21	183	mg/L	N
September 21, 2017	Sulphate	23/Jun/21	33	mg/L	N
September 21, 2017	Sulphide	23/Jun/21	6 <MDL	ug/L	N
September 21, 2017	Surr 1,2-Dichloroethane-d4	23/Jun/21	115	Surr Rec %	N
September 21, 2017	Surr 4-Bromofluorobenzene	23/Jun/21	81	Surr Rec %	N
September 21, 2017	Surr Decachlorobiphenyl	23/Jun/21	90	%	N
September 21, 2017	Temperature-Field	23/Jun/21	12.9	celcius	N
September 21, 2017	Tetrachloroethylene (perchloroethylene)	23/Jun/21	0.35 <MDL	ug/L	N
September 21, 2017	Toluene	23/Jun/21	0.36 <MDL	ug/L	N
September 21, 2017	Total Chlorine-Field	23/Jun/21	1.05	mg/L	N
September 21, 2017	2-(2,4,5-Trichlorophenoxy)propanoic acid (2,4,5-TP)	23/Jun/21	0.18 <MDL	ug/L	N
September 21, 2017	Turbidity	23/Jun/21	0.1 <MDL	NTU	N
September 21, 2017	Turbidity-Field	23/Jun/21	0.14	NTU	N



September 21, 2017	Xylene (Total)	23/Jun/21	0.43 <MDL	ug/L	N
September 21, 2017	m/p-Xylene	23/Jun/21	0.43 <MDL	ug/L	N
September 21, 2017	o-xylene	23/Jun/21	0.17 <MDL	ug/L	N
September 21, 2017	Zinc	23/Jun/21	2 <MDL	ug/L	N



## Summary of Inorganic/Organic parameters tested during this reporting period.

As outlined below, sampling was carried out for THM's & HAA's at 603 Wonderland Rd. S., 525 Crestwood Dr., 214 Rathowan St., 4318 Colonel Talbot Rd., and 950 East Springbank Gate.

**SITE: 603 Wonderland Rd. S. - Treated Distribution**

### b) ORGANIC PARAMETERS (HAA)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	15/Mar/21	6	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	15/Mar/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	15/Mar/21	6	ug/L	N
September 21, 2017	(Monobromoacetic acid)	15/Mar/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	15/Mar/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	15/Mar/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	23/Jun/21	7.8	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	23/Jun/21	7.8	ug/L	N
September 21, 2017	(Monobromoacetic acid)	23/Jun/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	23/Jun/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	23/Jun/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	14/Sep/21	5.3 <MDL	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	14/Sep/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	14/Sep/21	4	ug/L	N
September 21, 2017	(Monobromoacetic acid)	14/Sep/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	14/Sep/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	14/Sep/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	7/Dec/21	12.6	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	7/Dec/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	7/Dec/21	6.1	ug/L	N
September 21, 2017	(Monobromoacetic acid)	7/Dec/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	7/Dec/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	7/Dec/21	6.5	ug/L	N

**SITE: 525 Crestwood Dr. - Treated Distribution**

**b) ORGANIC PARAMETERS (HAA)**

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	15/Mar/21	13.8	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	15/Mar/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	15/Mar/21	7.3	ug/L	N
September 21, 2017	(Monobromoacetic acid)	15/Mar/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	15/Mar/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	15/Mar/21	6.5	ug/L	N
September 21, 2017	Total Haloacetic Acids	23/Jun/21	17	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	23/Jun/21	10.7	ug/L	N
September 21, 2017	(Monobromoacetic acid)	23/Jun/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	23/Jun/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	23/Jun/21	6.3	ug/L	N
September 21, 2017	Total Haloacetic Acids	14/Sep/21	5.3 <MDL	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	14/Sep/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	14/Sep/21	2.6 <MDL	ug/L	N
September 21, 2017	(Monobromoacetic acid)	14/Sep/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	14/Sep/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	14/Sep/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	7/Dec/21	13.8	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	7/Dec/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	7/Dec/21	7.2	ug/L	N
September 21, 2017	(Monobromoacetic acid)	7/Dec/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	7/Dec/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	7/Dec/21	6.5	ug/L	N

**SITE: 950 East Springbank Gate - Treated Distribution**
**b) ORGANIC PARAMETERS (HAA)**

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	16/Mar/21	6.4	ug/L	ug/L
September 21, 2017	(Dibromoacetic Acid)	16/Mar/21	2 <MDL	ug/L	ug/L
September 21, 2017	(Dichloroacetic Acid)	16/Mar/21	6.4	ug/L	ug/L
September 21, 2017	(Monobromoacetic acid)	16/Mar/21	2.9 <MDL	ug/L	ug/L
September 21, 2017	(Monochloroacetic Acid)	16/Mar/21	4.7 <MDL	ug/L	ug/L
September 21, 2017	(Trichloroacetic Acid)	16/Mar/21	5.3 <MDL	ug/L	ug/L
September 21, 2017	Total Haloacetic Acids	23/Jun/21	6.5	ug/L	ug/L
September 21, 2017	(Dibromoacetic Acid)	23/Jun/21	2 <MDL	ug/L	ug/L
September 21, 2017	(Dichloroacetic Acid)	23/Jun/21	6.5	ug/L	ug/L
September 21, 2017	(Monobromoacetic acid)	23/Jun/21	2.9 <MDL	ug/L	ug/L
September 21, 2017	(Monochloroacetic Acid)	23/Jun/21	4.7 <MDL	ug/L	ug/L
September 21, 2017	(Trichloroacetic Acid)	23/Jun/21	5.3 <MDL	ug/L	ug/L
September 21, 2017	Total Haloacetic Acids	14/Sep/21	14.3	ug/L	ug/L
September 21, 2017	(Dibromoacetic Acid)	14/Sep/21	2 <MDL	ug/L	ug/L
September 21, 2017	(Dichloroacetic Acid)	14/Sep/21	14.3	ug/L	ug/L
September 21, 2017	(Monobromoacetic acid)	14/Sep/21	2.9 <MDL	ug/L	ug/L
September 21, 2017	(Monochloroacetic Acid)	14/Sep/21	4.7 <MDL	ug/L	ug/L
September 21, 2017	(Trichloroacetic Acid)	14/Sep/21	5.3 <MDL	ug/L	ug/L
September 21, 2017	Total Haloacetic Acids	7/Dec/21	12.4	ug/L	ug/L
September 21, 2017	(Dibromoacetic Acid)	7/Dec/21	2 <MDL	ug/L	ug/L
September 21, 2017	(Dichloroacetic Acid)	7/Dec/21	6.9	ug/L	ug/L
September 21, 2017	(Monobromoacetic acid)	7/Dec/21	2.9 <MDL	ug/L	ug/L
September 21, 2017	(Monochloroacetic Acid)	7/Dec/21	4.7 <MDL	ug/L	ug/L
September 21, 2017	(Trichloroacetic Acid)	7/Dec/21	5.5	ug/L	ug/L



**SITE: Fire Hydrant at 214 Rathowan St. - Treated Distribution**
**b) ORGANIC PARAMETERS (THM & HAA)**

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	15/Mar/21	5.9	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	15/Mar/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	15/Mar/21	5.9	ug/L	N
September 21, 2017	(Monobromoacetic acid)	15/Mar/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	15/Mar/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	15/Mar/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	23/Jun/21	16.4	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	23/Jun/21	9.9	ug/L	N
September 21, 2017	(Monobromoacetic acid)	23/Jun/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	23/Jun/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	23/Jun/21	6.5	ug/L	N
September 21, 2017	Total Haloacetic Acids	14/Sep/21	5.3 <MDL	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	14/Sep/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	14/Sep/21	4.7	ug/L	N
September 21, 2017	(Monobromoacetic acid)	14/Sep/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	14/Sep/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	14/Sep/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	7/Dec/21	13.9	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	7/Dec/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	7/Dec/21	7.3	ug/L	N
September 21, 2017	(Monobromoacetic acid)	7/Dec/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	7/Dec/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	7/Dec/21	6.5	ug/L	N
September 21, 2017	Trihalomethanes (total)	15/Mar/21	19	ug/L	N
September 21, 2017	(bromodichloromethane)	15/Mar/21	6.2	ug/L	N
September 21, 2017	(bromoform)	15/Mar/21	0.34 <MDL	ug/L	N
September 21, 2017	(chloroform)	15/Mar/21	11	ug/L	N
September 21, 2017	(dibromochloromethane)	15/Mar/21	2.2	ug/L	N
September 21, 2017	Trihalomethanes (total)	23/Jun/21	41	ug/L	N
September 21, 2017	(bromodichloromethane)	23/Jun/21	10	ug/L	N
September 21, 2017	(bromoform)	23/Jun/21	0.34 <MDL	ug/L	N
September 21, 2017	(chloroform)	23/Jun/21	27	ug/L	N
September 21, 2017	(dibromochloromethane)	23/Jun/21	3.9	ug/L	N
September 21, 2017	Trihalomethanes (total)	14/Sep/21	35	ug/L	N
September 21, 2017	(bromodichloromethane)	14/Sep/21	9.2	ug/L	N
September 21, 2017	(bromoform)	14/Sep/21	0.34 <MDL	ug/L	N
September 21, 2017	(chloroform)	14/Sep/21	21	ug/L	N
September 21, 2017	(dibromochloromethane)	14/Sep/21	4.6	ug/L	N
September 21, 2017	Trihalomethanes (total)	7/Dec/21	24	ug/L	N
September 21, 2017	(bromodichloromethane)	7/Dec/21	7.2	ug/L	N



September 21, 2017	(bromoform)	7/Dec/21	0.34 <MDL	ug/L	N
September 21, 2017	(chloroform)	7/Dec/21	14	ug/L	N
September 21, 2017	(dibromochloromethane)	7/Dec/21	2.6	ug/L	N

**SITE: 4318 Colonel Talbot Rd. - Treated Distribution**

**b) ORGANIC PARAMETERS (THM & HAA)**

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	15/Mar/21	6.6	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	15/Mar/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	15/Mar/21	6.6	ug/L	N
September 21, 2017	(Monobromoacetic acid)	15/Mar/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	15/Mar/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	15/Mar/21	5.3 <MDL	ug/L	N
September 21, 2017	Total Haloacetic Acids	23/Jun/21	18.4	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	23/Jun/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	23/Jun/21	11.8	ug/L	N
September 21, 2017	(Monobromoacetic acid)	23/Jun/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	23/Jun/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	23/Jun/21	6.7	ug/L	N
September 21, 2017	Total Haloacetic Acids	22/Sep/21	14.9	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	22/Sep/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	22/Sep/21	7.8	ug/L	N
September 21, 2017	(Monobromoacetic acid)	22/Sep/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	22/Sep/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	22/Sep/21	7.1	ug/L	N
September 21, 2017	Total Haloacetic Acids	7/Dec/21	15.8	ug/L	N
September 21, 2017	(Dibromoacetic Acid)	7/Dec/21	2 <MDL	ug/L	N
September 21, 2017	(Dichloroacetic Acid)	7/Dec/21	10.2	ug/L	N
September 21, 2017	(Monobromoacetic acid)	7/Dec/21	2.9 <MDL	ug/L	N
September 21, 2017	(Monochloroacetic Acid)	7/Dec/21	4.7 <MDL	ug/L	N
September 21, 2017	(Trichloroacetic Acid)	7/Dec/21	5.6	ug/L	N
September 21, 2017	Trihalomethanes (total)	15/Mar/21	21	ug/L	N
September 21, 2017	(bromodichloromethane)	15/Mar/21	6.4	ug/L	N
September 21, 2017	(bromoform)	15/Mar/21	0.34 <MDL	ug/L	N
September 21, 2017	(chloroform)	15/Mar/21	11	ug/L	N
September 21, 2017	(dibromochloromethane)	15/Mar/21	3.2	ug/L	N
September 21, 2017	Trihalomethanes (total)	23/Jun/21	38	ug/L	N
September 21, 2017	(bromodichloromethane)	23/Jun/21	9.8	ug/L	N
September 21, 2017	(bromoform)	23/Jun/21	0.34 <MDL	ug/L	N
September 21, 2017	(chloroform)	23/Jun/21	25	ug/L	N
September 21, 2017	(dibromochloromethane)	23/Jun/21	3.7	ug/L	N
September 21, 2017	Trihalomethanes (total)	22/Sep/21	58	ug/L	N
September 21, 2017	(bromodichloromethane)	22/Sep/21	13	ug/L	N
September 21, 2017	(bromoform)	22/Sep/21	0.34 <MDL	ug/L	N
September 21, 2017	(chloroform)	22/Sep/21	40	ug/L	N
September 21, 2017	(dibromochloromethane)	22/Sep/21	4.8	ug/L	N
September 21, 2017	Trihalomethanes (total)	7/Dec/21	27	ug/L	N
September 21, 2017	(bromodichloromethane)	7/Dec/21	8	ug/L	N
September 21, 2017	(bromoform)	7/Dec/21	0.34 <MDL	ug/L	N



September 21, 2017	(chloroform)	7/Dec/21	16	ug/L	N
September 21, 2017	(dibromochloromethane)	7/Dec/21	2.9	ug/L	N

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

None.

## **2021 Summary of Water Pumpage**



**London**  
CANADA



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Friday	1/Jan/21	17,870	96,358	110,620
Saturday	2/Jan/21	19,933	91,628	111,674
Sunday	3/Jan/21	23,251	83,171	114,088
Monday	4/Jan/21	24,233	97,963	115,319
Tuesday	5/Jan/21	24,197	99,907	117,340
Wednesday	6/Jan/21	24,357	95,742	118,972
Thursday	7/Jan/21	23,608	91,283	120,303
Friday	8/Jan/21	24,022	95,794	124,438
Saturday	9/Jan/21	23,940	95,262	122,021
Sunday	10/Jan/21	23,891	94,794	118,121
Monday	11/Jan/21	24,958	94,891	116,129
Tuesday	12/Jan/21	<b>26,239</b>	<b>109,793</b>	115,851
Wednesday	13/Jan/21	25,754	87,946	115,278
Thursday	14/Jan/21	24,559	82,671	115,460
Friday	15/Jan/21	24,615	91,906	117,423
Saturday	16/Jan/21	24,868	84,940	117,249
Sunday	17/Jan/21	24,710	87,301	117,535
Monday	18/Jan/21	24,752	94,451	116,835
Tuesday	19/Jan/21	24,937	94,016	118,389
Wednesday	20/Jan/21	23,774	95,593	117,901
Thursday	21/Jan/21	21,799	94,998	119,616
Friday	22/Jan/21	21,790	103,218	119,484
Saturday	23/Jan/21	21,779	103,714	123,238
Sunday	24/Jan/21	21,787	105,399	120,873
Monday	25/Jan/21	21,725	95,169	117,232
Tuesday	26/Jan/21	21,688	88,560	118,253
Wednesday	27/Jan/21	21,778	91,616	121,962
Thursday	28/Jan/21	22,790	101,664	<b>127,047</b>
Friday	29/Jan/21	22,821	104,128	122,890
Saturday	30/Jan/21	23,090	104,448	120,774
Sunday	31/Jan/21	22,820	104,336	125,127
<b>January 2021 Monthly Max</b>		26,239	109,793	127,047
<b>January 2021 Monthly Average</b>		23,482	95,543	118,894
<b>January 2021 Total</b>		704,465	2,866,302	3,566,821



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Monday	1/Feb/21	22,929	100,352	122,605
Tuesday	2/Feb/21	22,972	99,169	122,817
Wednesday	3/Feb/21	23,790	99,466	123,820
Thursday	4/Feb/21	23,663	101,120	122,866
Friday	5/Feb/21	23,626	99,522	119,089
Saturday	6/Feb/21	23,714	95,666	119,944
Sunday	7/Feb/21	23,816	91,351	121,480
Monday	8/Feb/21	23,846	99,387	121,993
Tuesday	9/Feb/21	23,723	106,580	120,607
Wednesday	10/Feb/21	24,067	88,849	121,484
Thursday	11/Feb/21	24,139	95,632	125,634
Friday	12/Feb/21	24,143	96,816	122,988
Saturday	13/Feb/21	23,846	95,504	120,703
Sunday	14/Feb/21	22,065	99,264	119,300
Monday	15/Feb/21	23,626	103,856	120,718
Tuesday	16/Feb/21	<b>24,873</b>	96,416	121,627
Wednesday	17/Feb/21	23,895	95,344	123,410
Thursday	18/Feb/21	23,667	99,552	125,136
Friday	19/Feb/21	23,597	105,216	124,191
Saturday	20/Feb/21	23,671	91,120	123,698
Sunday	21/Feb/21	23,659	105,168	<b>126,459</b>
Monday	22/Feb/21	23,559	<b>107,713</b>	120,787
Tuesday	23/Feb/21	23,749	101,175	122,218
Wednesday	24/Feb/21	23,898	99,536	123,885
Thursday	25/Feb/21	23,729	99,034	124,454
Friday	26/Feb/21	23,804	99,402	123,093
Saturday	27/Feb/21	23,676	95,422	120,789
Sunday	28/Feb/21	23,740	98,767	123,183
<b>February 2021 Monthly Max</b>		24,873	107,713	126,459
<b>February 2021 Monthly Max</b>		23,696	98,800	122,464
<b>February 2021 Total</b>		663,482	2,766,399	3,428,979



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Monday	1/Mar/21	23,103	92,550	122,868
Tuesday	2/Mar/21	22,355	103,986	124,537
Wednesday	3/Mar/21	22,179	109,024	126,355
Thursday	4/Mar/21	22,285	104,032	126,204
Friday	5/Mar/21	22,433	104,704	126,122
Saturday	6/Mar/21	21,550	95,856	125,636
Sunday	7/Mar/21	21,687	108,800	<b>127,781</b>
Monday	8/Mar/21	22,949	<b>114,464</b>	125,462
Tuesday	9/Mar/21	22,946	100,687	124,760
Wednesday	10/Mar/21	20,651	98,794	124,293
Thursday	11/Mar/21	24,519	103,051	123,850
Friday	12/Mar/21	24,435	94,836	123,330
Saturday	13/Mar/21	24,046	98,718	123,215
Sunday	14/Mar/21	<b>24,621</b>	88,558	120,056
Monday	15/Mar/21	20,680	107,316	123,261
Tuesday	16/Mar/21	19,344	100,776	123,051
Wednesday	17/Mar/21	20,350	106,347	124,668
Thursday	18/Mar/21	19,299	100,390	123,071
Friday	19/Mar/21	19,427	107,325	124,723
Saturday	20/Mar/21	21,103	102,129	123,119
Sunday	21/Mar/21	19,397	107,119	126,438
Monday	22/Mar/21	22,900	98,263	123,531
Tuesday	23/Mar/21	23,972	99,216	123,639
Wednesday	24/Mar/21	22,585	100,031	122,841
Thursday	25/Mar/21	22,216	104,401	123,686
Friday	26/Mar/21	22,173	99,845	120,327
Saturday	27/Mar/21	23,677	94,887	118,902
Sunday	28/Mar/21	23,669	95,122	119,242
Monday	29/Mar/21	23,723	94,940	120,658
Tuesday	30/Mar/21	23,675	100,720	123,042
Wednesday	31/Mar/21	23,638	101,712	122,193
<b>March 2021 Monthly Max</b>		24,621	114,464	127,781
<b>March 2021 Monthly Average</b>		22,309	101,245	123,576
<b>March 2021 Total</b>		691,587	3,138,599	3,830,862





DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Thursday	1/Apr/21	23,669	99,488	120,338
Friday	2/Apr/21	23,669	95,264	120,737
Saturday	3/Apr/21	23,345	91,600	116,862
Sunday	4/Apr/21	23,066	91,984	120,574
Monday	5/Apr/21	23,628	99,952	123,355
Tuesday	6/Apr/21	23,650	104,208	123,687
Wednesday	7/Apr/21	23,556	103,984	125,623
Thursday	8/Apr/21	22,736	104,576	<b>126,410</b>
Friday	9/Apr/21	22,909	94,944	120,897
Saturday	10/Apr/21	22,943	100,400	126,162
Sunday	11/Apr/21	22,909	99,848	122,982
Monday	12/Apr/21	22,898	99,848	119,477
Tuesday	13/Apr/21	22,832	103,017	120,437
Wednesday	14/Apr/21	22,856	93,411	120,326
Thursday	15/Apr/21	23,084	92,644	117,419
Friday	16/Apr/21	23,068	93,529	117,161
Saturday	17/Apr/21	23,037	87,153	118,307
Sunday	18/Apr/21	23,046	98,389	121,210
Monday	19/Apr/21	22,170	98,207	116,318
Tuesday	20/Apr/21	17,887	110,709	116,533
Wednesday	21/Apr/21	17,811	89,390	118,926
Thursday	22/Apr/21	17,824	103,391	121,553
Friday	23/Apr/21	19,276	108,423	123,415
Saturday	24/Apr/21	21,941	103,515	125,005
Sunday	25/Apr/21	23,374	95,587	120,765
Monday	26/Apr/21	21,346	<b>121,182</b>	121,327
Tuesday	27/Apr/21	26,318	92,613	122,101
Wednesday	28/Apr/21	<b>27,949</b>	95,622	122,291
Thursday	29/Apr/21	23,617	99,160	118,227
Friday	30/Apr/21	24,147	91,604	119,306
<b>April 2021 Monthly Max</b>		27,949	121,182	126,410
<b>April 2021 Monthly Average</b>		22,685	98,788	120,924
<b>April 2021 Total</b>		680,561	2,963,642	3,627,730



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Saturday	1/May/21	24,120	91,289	123,860
Sunday	2/May/21	24,278	98,730	129,293
Monday	3/May/21	24,248	99,345	118,436
Tuesday	4/May/21	24,196	96,694	121,228
Wednesday	5/May/21	23,743	97,639	122,672
Thursday	6/May/21	23,830	102,174	124,424
Friday	7/May/21	23,823	101,168	121,206
Saturday	8/May/21	24,065	96,137	122,357
Sunday	9/May/21	24,055	102,106	120,618
Monday	10/May/21	22,324	101,856	125,055
Tuesday	11/May/21	23,278	100,848	124,709
Wednesday	12/May/21	19,086	104,736	128,215
Thursday	13/May/21	<b>27,557</b>	110,128	141,505
Friday	14/May/21	23,052	119,185	138,868
Saturday	15/May/21	23,746	115,312	142,717
Sunday	16/May/21	24,653	115,424	144,604
Monday	17/May/21	23,548	127,600	146,863
Tuesday	18/May/21	23,641	127,728	154,963
Wednesday	19/May/21	24,589	132,512	158,721
Thursday	20/May/21	19,629	140,176	163,731
Friday	21/May/21	17,136	<b>160,320</b>	<b>166,753</b>
Saturday	22/May/21	18,225	150,240	148,287
Sunday	23/May/21	16,342	139,712	154,693
Monday	24/May/21	16,500	117,760	155,621
Tuesday	25/May/21	16,470	147,264	159,084
Wednesday	26/May/21	11,878	135,520	139,562
Thursday	27/May/21	12,602	127,712	137,380
Friday	28/May/21	20,315	109,776	125,510
Saturday	29/May/21	21,254	96,368	131,740
Sunday	30/May/21	23,688	110,032	141,569
Monday	31/May/21	24,211	126,416	141,790
<b>May 2021 Monthly Max</b>		27,557	160,320	166,753
<b>May 2021 Monthly Average</b>		21,616	116,191	137,937
<b>May 2021 Total</b>		670,082	3,601,907	4,276,034



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Tuesday	1/Jun/21	24,354	114,262	152,216
Wednesday	2/Jun/21	24,110	130,518	143,117
Thursday	3/Jun/21	24,228	122,915	133,640
Friday	4/Jun/21	24,201	114,581	142,777
Saturday	5/Jun/21	24,003	123,005	156,423
Sunday	6/Jun/21	24,100	134,732	160,919
Monday	7/Jun/21	24,086	139,163	153,146
Tuesday	8/Jun/21	21,649	131,472	149,082
Wednesday	9/Jun/21	20,598	119,808	155,597
Thursday	10/Jun/21	23,258	139,200	<b>163,393</b>
Friday	11/Jun/21	23,225	<b>144,624</b>	159,628
Saturday	12/Jun/21	20,965	143,360	157,661
Sunday	13/Jun/21	16,503	135,872	154,180
Monday	14/Jun/21	21,476	112,496	143,611
Tuesday	15/Jun/21	24,390	127,696	151,542
Wednesday	16/Jun/21	24,126	133,088	157,307
Thursday	17/Jun/21	24,279	136,384	161,134
Friday	18/Jun/21	22,460	137,040	141,436
Saturday	19/Jun/21	22,407	113,472	141,463
Sunday	20/Jun/21	24,020	122,624	149,578
Monday	21/Jun/21	22,674	114,608	135,928
Tuesday	22/Jun/21	21,163	119,215	138,979
Wednesday	23/Jun/21	22,758	119,234	149,962
Thursday	24/Jun/21	22,792	130,497	155,218
Friday	25/Jun/21	22,897	130,063	140,172
Saturday	26/Jun/21	22,839	110,867	131,238
Sunday	27/Jun/21	25,469	100,186	138,444
Monday	28/Jun/21	25,589	111,259	149,712
Tuesday	29/Jun/21	<b>26,324</b>	122,609	144,984
Wednesday	30/Jun/21	22,100	117,064	144,112
<b>June 2021 Monthly Max</b>		26,324	144,624	163,393
<b>June 2021 Monthly Average</b>		23,101	125,064	148,553
<b>June 2021 Total</b>		693,043	3,751,914	4,456,599



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Thursday	1/Jul/21	21,416	121,533	135,857
Friday	2/Jul/21	21,412	120,524	132,492
Saturday	3/Jul/21	21,163	116,179	137,972
Sunday	4/Jul/21	21,368	125,076	147,386
Monday	5/Jul/21	22,024	<b>145,539</b>	160,893
Tuesday	6/Jul/21	21,799	140,176	<b>164,029</b>
Wednesday	7/Jul/21	21,784	123,376	148,026
Thursday	8/Jul/21	21,569	118,864	136,506
Friday	9/Jul/21	21,771	110,880	135,698
Saturday	10/Jul/21	21,556	111,408	129,805
Sunday	11/Jul/21	22,993	108,208	128,042
Monday	12/Jul/21	22,525	104,656	136,535
Tuesday	13/Jul/21	24,253	105,504	137,805
Wednesday	14/Jul/21	17,949	108,288	133,778
Thursday	15/Jul/21	<b>35,444</b>	131,888	155,940
Friday	16/Jul/21	23,510	121,984	135,847
Saturday	17/Jul/21	23,483	109,856	132,639
Sunday	18/Jul/21	23,452	118,016	147,213
Monday	19/Jul/21	23,179	131,365	144,980
Tuesday	20/Jul/21	23,174	118,086	146,207
Wednesday	21/Jul/21	23,095	121,605	147,047
Thursday	22/Jul/21	23,081	121,780	149,239
Friday	23/Jul/21	23,240	129,940	152,709
Saturday	24/Jul/21	23,147	122,145	132,373
Sunday	25/Jul/21	23,195	112,748	135,128
Monday	26/Jul/21	23,148	116,809	148,024
Tuesday	27/Jul/21	23,255	120,712	143,899
Wednesday	28/Jul/21	21,027	125,438	145,992
Thursday	29/Jul/21	23,457	106,819	138,075
Friday	30/Jul/21	23,042	104,984	138,188
Saturday	31/Jul/21	23,910	120,943	123,281
<b>July 2021 Monthly Max</b>		35,444	145,539	164,029
<b>July 2021 Monthly Average</b>		22,885	119,204	141,342
<b>July 2021 Total</b>		709,421	3,695,329	4,381,603



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Sunday	1/Aug/21	23,023	104,019	118,713
Monday	2/Aug/21	23,346	97,970	127,285
Tuesday	3/Aug/21	24,157	107,277	134,743
Wednesday	4/Aug/21	25,751	116,691	144,315
Thursday	5/Aug/21	25,651	122,591	147,113
Friday	6/Aug/21	23,253	122,695	143,005
Saturday	7/Aug/21	23,149	118,602	135,149
Sunday	8/Aug/21	23,368	109,725	134,568
Monday	9/Aug/21	26,677	104,697	146,148
Tuesday	10/Aug/21	22,191	106,828	134,970
Wednesday	11/Aug/21	25,640	115,195	136,167
Thursday	12/Aug/21	21,653	114,993	136,646
Friday	13/Aug/21	<b>27,112</b>	110,801	136,337
Saturday	14/Aug/21	21,623	112,444	125,486
Sunday	15/Aug/21	19,676	113,442	136,418
Monday	16/Aug/21	19,272	116,187	136,858
Tuesday	17/Aug/21	20,394	116,200	139,889
Wednesday	18/Aug/21	18,919	115,173	138,118
Thursday	19/Aug/21	18,799	118,046	145,069
Friday	20/Aug/21	21,404	123,512	147,704
Saturday	21/Aug/21	22,563	126,930	146,527
Sunday	22/Aug/21	22,407	127,553	143,664
Monday	23/Aug/21	22,449	123,939	150,895
Tuesday	24/Aug/21	23,081	122,864	<b>155,111</b>
Wednesday	25/Aug/21	22,981	131,569	153,973
Thursday	26/Aug/21	23,058	121,228	152,250
Friday	27/Aug/21	24,734	<b>138,749</b>	142,198
Saturday	28/Aug/21	22,989	126,181	139,037
Sunday	29/Aug/21	22,757	116,921	140,152
Monday	30/Aug/21	22,723	114,048	136,771
Tuesday	31/Aug/21	22,706	113,128	138,294
<b>August 2021 Monthly Max</b>		27,112	138,749	155,111
<b>August 2021 Monthly Average</b>		22,823	117,103	140,115
<b>August 2021 Total</b>		707,506	3,630,198	4,343,573



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Wednesday	1/Sep/21	22,509	112,847	<b>143,788</b>
Thursday	2/Sep/21	21,827	121,580	142,174
Friday	3/Sep/21	21,743	126,060	142,838
Saturday	4/Sep/21	21,855	126,164	140,141
Sunday	5/Sep/21	21,956	100,679	127,173
Monday	6/Sep/21	22,657	107,848	136,767
Tuesday	7/Sep/21	21,882	120,588	138,126
Wednesday	8/Sep/21	23,299	115,932	137,426
Thursday	9/Sep/21	22,847	112,825	136,552
Friday	10/Sep/21	22,874	112,818	135,985
Saturday	11/Sep/21	21,447	112,609	135,884
Sunday	12/Sep/21	17,415	105,104	134,666
Monday	13/Sep/21	14,038	120,781	130,600
Tuesday	14/Sep/21	13,900	126,409	137,279
Wednesday	15/Sep/21	14,647	126,669	134,409
Thursday	16/Sep/21	12,029	125,307	137,404
Friday	17/Sep/21	9,946	<b>126,716</b>	138,061
Saturday	18/Sep/21	10,276	121,337	135,595
Sunday	19/Sep/21	10,809	122,847	137,270
Monday	20/Sep/21	21,887	124,613	136,558
Tuesday	21/Sep/21	22,536	118,271	133,345
Wednesday	22/Sep/21	23,130	109,288	128,010
Thursday	23/Sep/21	23,354	102,276	128,311
Friday	24/Sep/21	23,427	106,886	131,450
Saturday	25/Sep/21	23,205	108,358	125,591
Sunday	26/Sep/21	17,453	100,402	129,374
Monday	27/Sep/21	19,651	102,838	132,847
Tuesday	28/Sep/21	28,113	106,558	131,933
Wednesday	29/Sep/21	<b>28,606</b>	108,938	132,497
Thursday	30/Sep/21	26,206	109,608	132,000
<b>September 2021 Monthly Max</b>		28,606	126,716	143,788
<b>September 2021 Monthly Average</b>		20,184	114,772	134,802
<b>September 2021 Total</b>		605,524	3,443,156	4,044,054



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Friday	1/Oct/21	25,771	109,504	131,967
Saturday	2/Oct/21	25,684	109,614	128,696
Sunday	3/Oct/21	25,142	99,420	126,740
Monday	4/Oct/21	23,381	95,058	125,179
Tuesday	5/Oct/21	24,690	100,926	127,376
Wednesday	6/Oct/21	20,728	108,676	129,991
Thursday	7/Oct/21	22,710	111,442	<b>133,091</b>
Friday	8/Oct/21	22,810	107,408	130,805
Saturday	9/Oct/21	22,986	99,952	125,691
Sunday	10/Oct/21	22,796	94,512	119,768
Monday	11/Oct/21	22,986	94,688	128,316
Tuesday	12/Oct/21	24,106	<b>112,420</b>	127,419
Wednesday	13/Oct/21	24,843	105,690	128,841
Thursday	14/Oct/21	25,103	97,002	126,715
Friday	15/Oct/21	25,365	89,700	124,978
Saturday	16/Oct/21	25,499	96,390	124,145
Sunday	17/Oct/21	25,644	98,508	125,490
Monday	18/Oct/21	25,578	109,680	126,777
Tuesday	19/Oct/21	25,545	106,784	128,649
Wednesday	20/Oct/21	<b>26,491</b>	108,756	128,343
Thursday	21/Oct/21	25,616	108,048	126,618
Friday	22/Oct/21	25,461	100,936	126,215
Saturday	23/Oct/21	25,505	99,528	122,265
Sunday	24/Oct/21	23,779	98,372	126,979
Monday	25/Oct/21	23,765	101,326	124,391
Tuesday	26/Oct/21	22,204	101,224	126,249
Wednesday	27/Oct/21	23,168	100,426	127,002
Thursday	28/Oct/21	22,705	98,760	129,062
Friday	29/Oct/21	23,035	97,166	123,475
Saturday	30/Oct/21	23,818	98,494	120,968
Sunday	31/Oct/21	23,881	101,016	120,455
<b>October 2021 Monthly Max</b>		26,491	112,420	133,091
<b>October 2021 Monthly Average</b>		24,219	101,981	126,537
<b>October 2021 Total</b>		750,795	3,161,426	3,922,654



DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Monday	1/Nov/21	24,099	100,806	121,626
Tuesday	2/Nov/21	23,861	97,464	122,223
Wednesday	3/Nov/21	23,730	97,050	123,452
Thursday	4/Nov/21	23,770	97,556	122,380
Friday	5/Nov/21	23,813	97,896	121,530
Saturday	6/Nov/21	23,795	97,050	119,678
Sunday	7/Nov/21	23,903	95,530	125,333
Monday	8/Nov/21	24,417	101,042	129,923
Tuesday	9/Nov/21	25,335	93,234	125,339
Wednesday	10/Nov/21	21,578	109,200	128,822
Thursday	11/Nov/21	23,758	114,272	128,687
Friday	12/Nov/21	20,038	108,768	126,764
Saturday	13/Nov/21	24,872	107,984	130,230
Sunday	14/Nov/21	22,311	108,416	128,393
Monday	15/Nov/21	19,003	108,480	126,853
Tuesday	16/Nov/21	24,223	92,656	<b>130,491</b>
Wednesday	17/Nov/21	22,099	92,128	121,805
Thursday	18/Nov/21	22,136	96,144	121,340
Friday	19/Nov/21	22,144	98,800	121,806
Saturday	20/Nov/21	22,012	104,720	118,947
Sunday	21/Nov/21	22,194	103,984	121,125
Monday	22/Nov/21	20,718	<b>116,372</b>	123,515
Tuesday	23/Nov/21	17,022	110,246	127,674
Wednesday	24/Nov/21	20,769	105,738	123,799
Thursday	25/Nov/21	16,647	99,300	115,947
Friday	26/Nov/21	<b>25,499</b>	97,612	125,773
Saturday	27/Nov/21	21,573	92,072	122,106
Sunday	28/Nov/21	20,718	106,836	119,206
Monday	29/Nov/21	22,184	100,128	122,020
Tuesday	30/Nov/21	22,209	100,110	121,145
<b>November 2021 Monthly Max</b>		25,499	116,372	130,491
<b>November 2021 Monthly Average</b>		22,348	101,720	123,931
<b>November 2021 Total</b>		670,430	3,051,594	3,717,933





DAY	DATE	SERPS PUMPAGE (m <sup>3</sup> )	ARVA PUMPAGE (m <sup>3</sup> )	TOTAL LONDON CONSUMPTION (m <sup>3</sup> )
Wednesday	1/Dec/21	22,406	91,156	122,208
Thursday	2/Dec/21	22,199	90,466	121,085
Friday	3/Dec/21	21,947	89,426	119,189
Saturday	4/Dec/21	28,317	98,570	119,108
Sunday	5/Dec/21	26,709	97,434	119,972
Monday	6/Dec/21	28,339	92,748	118,381
Tuesday	7/Dec/21	27,406	94,242	127,060
Wednesday	8/Dec/21	27,388	84,702	<b>127,986</b>
Thursday	9/Dec/21	26,359	104,336	120,999
Friday	10/Dec/21	25,418	95,728	118,440
Saturday	11/Dec/21	25,381	88,128	118,019
Sunday	12/Dec/21	26,772	88,096	120,392
Monday	13/Dec/21	25,101	96,144	118,539
Tuesday	14/Dec/21	23,403	<b>104,432</b>	118,590
Wednesday	15/Dec/21	23,258	90,860	119,079
Thursday	16/Dec/21	24,918	94,852	118,643
Friday	17/Dec/21	24,742	96,354	118,954
Saturday	18/Dec/21	25,962	88,108	117,565
Sunday	19/Dec/21	28,100	88,228	121,852
Monday	20/Dec/21	28,041	88,842	118,800
Tuesday	21/Dec/21	29,054	86,644	116,487
Wednesday	22/Dec/21	30,266	87,472	121,007
Thursday	23/Dec/21	<b>30,956</b>	84,752	117,850
Friday	24/Dec/21	27,250	89,992	112,169
Saturday	25/Dec/21	26,824	78,204	102,209
Sunday	26/Dec/21	26,207	74,218	106,626
Monday	27/Dec/21	26,054	77,716	108,280
Tuesday	28/Dec/21	26,051	88,706	110,698
Wednesday	29/Dec/21	26,188	93,568	109,609
Thursday	30/Dec/21	25,793	92,112	112,155
Friday	31/Dec/21	24,080	78,030	109,438
<b>December 2021 Monthly Max</b>		30,956	104,432	127,986
<b>December 2021 Monthly Average</b>		26,158	90,138	117,142
<b>December 2021 Total</b>		810,889	2,794,266	3,631,390

## **2020 Annual Report (EMPS – London)**





<b>Drinking-Water System Number:</b>	260004917
<b>Drinking-Water System Name:</b>	<b>Elgin Middlesex Pumping Station – City of London Distribution System</b>
<b>Drinking-Water System Owner:</b>	City of London
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2021 through 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 [X] No [ ]**

**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.**

City of London  
300 Dufferin Ave  
London, ON  
N6B 1Z2  
[www.london.ca](http://www.london.ca)

Elgin Area Primary Water Supply System  
Treatment Plant  
43665 Dexter Line, Union, ON

**Complete for all other Categories.**

**Number of Designated Facilities served:**

N/A

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

Yes [ ] No [ ]

**Number of Interested Authorities you report to:**

N/A

**Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?**

Yes [ ] No [ ]

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

**Systems that receive their drinking water directly from the London EMPS:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
City of London Distribution System	260004917

**Systems that receive their drinking water indirectly from the London EMPS:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
Municipality of Central Elgin	260004761



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

**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.**

☒ 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

☐ Public access/notice via other method \_\_\_\_\_

### **Describe your Drinking-Water System**

The Elgin Middlesex Pumping Station (EMPS) receives water from the Elgin Area Primary Water Supply System (EAPWSS), which is located to the east of Port Stanley. Water from the EAPWSS is pumped into the EAPWSS site reservoirs located at the EMPS. The total capacity of the 2 reservoirs is 54,600m<sup>3</sup>. Through various secondary water supply systems, the EMPS serves the Cities of London, St. Thomas, Town of Aylmer, Municipalities of Central Elgin, Malahide and Southwold.

The EMPS is a shared facility. Booster pumps are dedicated to directing water to the City of London, St. Thomas Secondary and/or Aylmer Area Secondary Water Supply Systems. The EMPS houses a surge facility to service the London transmission main.

Three pipelines exit the EMPS: one pipeline runs North along Highbury Avenue into the Southeast Reservoir Pumping Station (SERPS) to service the London distribution system, the second exits to the south of the EMPS property and extends West to service the St. Thomas Area Secondary Water Supply System; the third exits to the South, to Highway 3 and then runs in an Easterly direction to service the municipalities on the Aylmer Area Secondary Water Supply System.

### **List all water treatment chemicals used over this reporting period**

**No re-treatment of water directed into the London system took place at the EMPS in 2021.**

### **Were any significant expenses incurred to?**

☒ Install required equipment

☒ Repair required equipment

☐ Replace required equipment

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

- Installed a new mechanical surge relief system
- Surge tank internal re-coating and external touchups
- Repaired Compressors
- Cathodic Protection repairs

**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
N/A	N/A	N/A	N/A	N/A	N/A

**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 Results (CFU/100 mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)	Number of Heterotrophic Plate Count (HPC) Samples	Range of HPC Results (CFU/1 mL) (min #)-(max #)
Distribution	59	(0) – (0)	(0) – (0)	59	(0)-(<10)

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

Parameter	Number of Grab Samples (Continuous Monitoring)	Min	Max	Avg
Free Chlorine Residual (mg/L)	8760	0.41	1.26	0.86

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<b>THM</b> (NOTE: result value is based on one sample)	January 6, 2021 April 6, 2021 July 12, 2021 October 18, 2021	13 18 21 31	µg/L µg/L µg/L µg/L	NO
<b>THM Running Annual Average (RAA)</b>	2021	21	µg/L	NO
<b>HAA</b> (NOTE: result value is based on one sample)	January 6, 2021 April 6, 2021 July 12, 2021 October 18, 2021	ND 6.6 6.4 8.8	µg/L µg/L µg/L µg/L	NO
<b>HAA Running Annual Average (RAA)</b>	2021	7.3	µg/L	NO

ND = Non-detect