



**OPTIONAL ANNUAL REPORT TEMPLATE**

<b>Drinking-Water System Number:</b>	220003332
<b>Drinking-Water System Name:</b>	Wheatley Drinking Water System
<b>Drinking-Water System Owner:</b>	Municipality of Chatham-Kent
<b>Drinking-Water System Category:</b>	Large Municipal
<b>Period being reported:</b>	January 1 – December 31, 2018

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No [ ]</b></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]</b></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>Chatham-Kent P.U.C. 325 Grand Ave. East P.O. Box 1191 Chatham, ON N7M 5L8</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">N/A</div> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</b></p> <p><b>Number of Interested Authorities you report to:</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">N/A</div> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</b></p>
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**List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:**

Drinking Water System Name	Drinking Water System Number
<i>Non Municipal Year Round Residential in Lakeshore:</i>	
1. 3 <sup>rd</sup> Concession Waterline Association	260086125
2. 3 <sup>rd</sup> &4 <sup>th</sup> Concession Waterline Association	260086203
3. KOA Waterline Association	260086138
4. Richardson Sideroad Waterline Association	260086190
5. Tecumseh Road Waterline Association	260086151
6. Tilbury Towline Waterline Association	260086164



<i>Non Municipal Year Round Residential in Chatham-Kent:</i>	
1. D & O Waterline Association	260091793
2. Mint Waterline Distribution System	260091767
<i>Small Drinking Water System in Lakeshore:</i>	
1. Cedar Inn Waterline Association	7680003593
<i>Large Municipal Year Round Residential in Leamington:</i>	
Leamington (Wheatley) Distribution System	260087048

**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 Wheatley Water Treatment Plant draws raw water from Lake Erie. Large debris is screened out of the raw water as it is drawn into the treatment plant. Chlorine is added at the raw intake to control the growth of zebra mussels within the intake pipe. The raw water then passes through a 35 micron microstrainer to remove algae and other fine particles. Aluminum Sulphate and Polymer are added to achieve more effective settling in the clarifier. Activated carbon is added in the clarifier and is primarily used to remove dissolved organic matter that causes taste, odor and color in drinking water. The water then passes through the gravity filters into the clearwell where it is disinfected with chlorine before being pumped into the distribution system. The distribution system pressure is regulated by an elevated storage tower in Wheatley with a capacity of 1454 m<sup>3</sup>. The elevated storage tower in the community of Tilbury has a capacity of 6181 m<sup>3</sup>.

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

1. Chlorine Gas
2. Sodium Hypochlorite
3. Aluminum Sulphate
4. Activated Carbon
5. Betz Dearborn Klar-Aid IC1179 (Polymer)



**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**

Chlorine Scales (new)	\$ 4,316
Replacement Chlorine Probe and Parts Raw Analyzer	4,073
Replacement head – flow meter	3,180
Valve positioner (replacement) for filter #3	1,933
6 inch spool for sanitary waste line	1,783
Annual generator maintenance	749
5 new turbidimeters and accessories	21,895
New radio equipment for SCADA dial ins	1,362
New HMI screen for monitoring tower and reservoir levels	4,300

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
September 18	Total Coliform	5	cfu/100ml	Flush, Resample	Sept 20
November 23	Total Coliform	60	cfu/100mL	Flush, Resample	Nov 23

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

	Number of Samples	Range of E.coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
<b>Raw</b>	52	0 - NDOGT	2 - NDOGT	0	N/A
<b>Point of Entry (Treated)</b>	52	0 - 0	0 - 0	52	<10 - 20
<b>Distribution</b>	587	0 - 0	0 - 5	587	<10 - 110

\*NDOGT – No Data Overgrown with Target Organisms



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

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	8760	0.017 – 0.910
Chlorine	8760	0.71 – 1.85
Fluoride (If the DWS provides fluoridation)	Not added	

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

*NOTE: Record the unit of measure if it is **not** milligrams per liter.*

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

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
MDWL 027-102: Pg. 12 Residue Management Table 3 Avg. Annual Limit: 25 mg/L	Total Solids	Jan 8	14	mg/L
		Feb 5	8	
		Mar 5	18	
		Apr 3	21	
		May 7	54	
		Jun 4	58	
		Jul (discharged to WHWW)		
		Aug 30	10	
		Sept 5	46	
		Annual Avg. Concentration		

\* As of Oct 2018, the Wheatley WTP Backwash Water is discharged via sanitary sewer to the Wheatley WPCP for treatment.

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

	Sample Date Feb 12/18	Sample Date May 7/18	Sample Date Sept 5/18	Sample Date Nov 19/18	Exceedances
Antimony – ug/L			< 0.50		No
Arsenic – ug/L			< 1.0		No
Barium – ug/L			20		No
Boron – ug/L			19		No
Cadmium – ug/L			< 0.10		No
Chromium – ug/L			< 5.0		No

Lead – ug/L	See Schedule 15.1 Summary				
Mercury – mg/L			< 0.0001		No
Selenium- ug/L			< 2.0		No
Sodium – mg/L	7.9	9.1	9.2	9.6	No
Uranium – ug/L			< 0.10		No
Fluoride – mg/L	0.12	< 0.10	< 0.10	0.11	No
Nitrate – mg/L	0.13	< 0.10	0.21	<0.10	No
Nitrite – mg/L	< 0.010	< 0.010	< 0.010	<0.010	No

**Summary of lead testing under Schedule 15.1 during this reporting period**

Location Type	Number of Samples	Range of Lead Results (ug/L) (min#) – (max #)	Number of Exceedances
Residential	0	0-0	None
Non Residential	0	0-0	None
Distribution	28	< 0.50 – 8.0	None

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

Parameter	Sample Date	Results Value	Unit of Measure	Exceedances
Alachlor	Sept 5	< 0.50	ug/L	No
Atrazine + N-dealkylated metabolites	Sept 5	< 1.0	ug/L	No
Azinphos - methyl	Sept 5	< 2.0	ug/L	No
Benzene	Sept 5	< 0.10	ug/L	No
Benzo(a)pyrene	Sept 5	< 0.0090	ug/L	No
Bromoxynil	Sept 5	< 0.50	ug/L	No
Carbaryl	Sept 5	< 5.0	ug/L	No
Carbofuran	Sept 5	< 5.0	ug/L	No
Carbon Tetrachloride	Sept 5	< 0.10	ug/L	No
Chlorpyrifos	Sept 5	< 1.0	ug/L	No
Diazinon	Sept 5	< 1.0	ug/L	No
Dicamba	Sept 5	< 1.0	ug/L	No
1,2 - Dichlorobenzene	Sept 5	< 0.20	ug/L	No
1,4 - Dichlorobenzene	Sept 5	< 0.20	ug/L	No
1,2 - Dichloroethane	Sept 5	< 0.20	ug/L	No
1,1- Dichloroethylene (vinylidenechloride)	Sept 5	< 0.10	ug/L	No
Dichloromethane	Sept 5	< 0.50	ug/L	No
2,4 - Dichlorophenol	Sept 5	< 0.25	ug/L	No
2,4 - Dichlorophenoxy acetic acid (2,4 -D)	Sept 5	< 1.0	ug/L	No
Diclofop - methyl	Sept 5	< 0.90	ug/L	No
Dimethoate	Sept 5	< 2.5	ug/L	No
Diquat	Sept 5	< 7.0	ug/L	No

Diuran	Sept 5	< 10	ug/L	No
Glyphosate	Sept 5	< 10	ug/L	No
Malathion	Sept 5	< 5.0	ug/L	No
Haloacetic Acids – sampled quarterly <b>Running Annual Average</b>	Feb 12 May 7 Aug 20 Sept 5 Nov 19	20 13 7.4 13 <u>6.2</u> <b>12</b>	ug/L	No
Metolachlor	Sept 5	< 0.50	ug/L	No
Metribuzin	Sept 5	< 5.0	ug/L	No
Monochlorobenzene (chlorobenzene )	Sept 5	< 0.10	ug/L	No
MPCA (2-Methyl-4-chlorophenoxyacetic acid)	Sept 5	< 10	ug/L	No
Paraquat	Sept 5	< 1.0	ug/L	No
Pentachlorophenol	Sept 5	< 0.50	ug/L	No
Phorate	Sept 5	< 0.50	ug/L	No
Picloram	Sept 5	< 5.0	ug/L	No
Polychlorinated Byphenyls (PCB)	Sept 5	< 0.05	ug/L	No
Prometryne	Sept 5	< 0.25	ug/L	No
Simazine	Sept 5	< 1.0	ug/L	No
Trihalomethanes – sampled quarterly (THM) <b>Running Annual Average</b>	Feb 12/18 May 7/18 May 7/18 Aug 20/18 Sept 5/18 Nov 19/18	32.7 32.5 39.2 61.6 70.7 44.9 <b>44.9</b>	ug/L	No
Terbufos	Sept 5	< 0.50	ug/L	No
Tetrachloroethylene (perchloroethylene)	Sept 5	< 0.10	ug/L	No
2,3,4,6 - Tetrachlorophenol	Sept 5	< 0.50	ug/L	No
Triallate	Sept 5	< 1.0	ug/L	No
Trichloroethylene	Sept 5	< 0.10	ug/L	No
2,4,6 - Trichlorophenol	Sept 5	< 0.50	ug/L	No
Trifluralin	Sept 5	< 1.0	ug/L	No
Vinyl Chloride	Sept 5	< 0.20	ug/L	No

**ADDITIONAL**

Parameter- POINT OF ENTRY	Sample Date Feb 12/18	Sample Date May 7/18	Sample Date Sept 5/18	Sample Date Nov 19/18
pH	7.66	7.61	7.33	7.36
HARDNESS – mg/L	100	120	120	110
ALKALINITY – mg/L	81	82	78	81
COLOUR - TCU	< 2	< 2	< 2	< 2
FLUORIDE – mg/L	0.12	< 0.10	< 0.10	0.11
ALUMINUM –mg/L	0.010	0.017	0.035	0.016

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

Parameter	Result Value	Unit of Measure	Date of Sample
None			

Summary of additional voluntary sampling and testing during this reporting period.

Parameter	Date Sampled	Results Value Raw	Results Value Point of Entry	Results Value Distribution	Units
Microcystin	May 28	0.161	<0.150	<0.150	ug/L
	Jun 4	<0.150	<0.150	<0.150	
	Jun 11	<0.150	<0.150	<0.150	
	Jun 18	<0.150	<0.150	<0.150	
	Jun 25	<0.150	<0.150	<0.150	
	July 3	<0.150	Broken Bottle	Broken Bottle	
	Jul 9	<0.150	<0.150	<0.150	
	Jul 16	<0.150	<0.150	<0.150	
	Jul 23	<0.150	<0.150	<0.150	
	Jul 30	<0.150	<0.150	<0.150	
	Aug 7	<0.150	<0.150	<0.150	
	Aug 13	<0.150	<0.150	<0.150	
	Aug 20	<0.150	<0.150	<0.150	
	Aug 27	0.196	0.391	0.461	
	Sept 4	<0.150	<0.150	<0.150	
	Sept 10	<0.150	<0.150	<0.150	
	Sept 17	<0.150	<0.150	<0.150	
	Sept 24	<0.150	<0.150	<0.150	
	Oct 1	<0.150	<0.150	<0.150	
	Oct 9	<0.150	<0.150	<0.150	
	Oct 15	<0.150	<0.150	<0.150	
	Oct 23	<0.150	<0.150	<0.150	
	Oct 29	<0.150	<0.150	<0.150	
	Nov 5	<0.150	<0.150	<0.150	
	Nov 13	<0.150	<0.150	<0.150	
	Nov 19	<0.150	<0.150	<0.150	
	Nov 26	<0.150	<0.150	<0.150	