



Union Water Supply System

P.O. Box 340, 1615 Union Avenue, Ruthven, Ontario, N0P 2G0

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www.unionwater.ca

SENT BY: EMAIL

February 07, 2018

Municipality of Leamington

111 Erie St. N.

Leamington, Ontario

N8H 2Z9

Attention: Mr. Peter Neufeld, Chief Administrative Officer

Town of Kingsville

2021 Division Road North

Kingsville, Ontario

N9Y 2Y9

Attention: Ms. Peggy Van Mierlo-West, Chief Administrative Officer

Town of Essex

33 Talbot Street South

Essex, Ontario

N8M 1A8

Attention: Ms. Donna Hunter, Chief Administrative Officer

Town of Lakeshore

419 Notre Dame Street

Belle River, Ontario

N0R 1A0

Attention: Mr. Tom Touralias, Chief Administrative Officer

RE: Union Water Supply System Annual Report for 2017 in accordance with Section 11 O. Reg. 170/03

At its meeting on February 21, 2017, the Joint Board of Management of the UWSS will be receiving the Annual Report for 2017 prepared in accordance with Section 11 of O. Reg. 170/03. By this letter and as required by O. Reg. 170/03 I am providing the owners of the drinking water systems that obtain water from the UWSS with a copy of the UWSS Annual Report for 2017.

I request that you do the following:

1. Provide each member of your municipal council with the report on or before February 28, 2018.
2. Provide a copy of the report to anyone who requests it, free of charge (Section 11 (8) O. Reg. 170/03) (Copies will also be made available free of charge at the Ruthven WTP).

3. Post a copy of the report on your municipal website (Section 11(10), O. Reg. 170/03).
4. Include a notice that the report is available at your municipal office and at the Ruthven Water Treatment Plant in any newsletter or other notice that you issue to your residents (Section 11(9.1) O. Reg. 170/03).

Please call me if you have any questions.

Yours truly,



Rodney Bouchard, Manager
Union Water Supply System Joint Board of Management
kmj

CC: Robert Sharon, Shannon Belleau, Nelson Carvalho, Andrew Plancke, Kevin Girard, Chris Nepszy, Andy Graf, John Kehoe, Tom Kissner, Nelson Cavacas, Dale Dillen, Ken Penney, Dave Jubenville

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Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Annual Performance Report

Union Area Water Supply System

Drinking Water System # 210000853

2017

Prepared for the Corporation of the Town of Kingsville, the Corporation of the Town of Essex,
the Town of Lakeshore & the Municipality of Leamington

By the Ontario Clean Water Agency
Ken Penney
Process & Compliance Technician
kpenney@ocwa.com
519-326-4447



ANNUAL REPORT

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Drinking-Water System Number: | 210000853 |
| Drinking-Water System Name: | Union Area Water Supply System |
| Drinking-Water System Owner: | Union Area Water Supply System Joint Board of Management (Municipality of Leamington, Town of Kingsville, Town of Essex, Town of Lakeshore) |
| Drinking-Water System Category: | Large Municipal Residential |
| Period being reported: | 01-January-2017 to 31-December-2017 |

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p><i>Union Water Treatment Plant P.O. Box 340, 1615 Union Ave., Ruthven, Ont. N0P 2G0</i></p> </div> | <p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [<input type="checkbox"/>] No [<input type="checkbox"/>]</p> <p>Number of Interested Authorities you report to: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [<input type="checkbox"/>] No [<input type="checkbox"/>]</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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 |
|----------------------------|------------------------------|
| Municipality of Leamington | 220004992 |
| Town of Kingsville | 220003403 |
| Town of Essex | 220003680 |
| Town of Lakeshore | 260004995 |



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 [X] 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: Municipal Offices**

Describe your Drinking-Water System

The Union Water Treatment Plant (UWTP) is a chemically assisted conventional filtration plant, which draws water from Lake Erie.

The UWTP supplies potable water to the Town of Kingsville, Municipality of Leamington, a portion of the Town of Essex and a portion of the Town of Lakeshore with an estimated service population of 65,000.

The treatment process includes chemically assisted up-flow clarification, filtration with dual media filters, primary disinfection using chlorine gas and secondary disinfection using chloramination.

Seasonally, the UWTP uses sodium hypochlorite at its intakes to control Zebra Mussel formation.

There are also four water towers and a booster/storage station located on the Union Water Supply System.

List all water treatment chemicals used over this reporting period

Zebra Mussel Control:

- Sodium Hypochlorite – (Seasonal)

Clarification Chemicals:

- DelPAC – Coagulant
- Hyper+Ion 1090 – Coagulant
- Magnafloc LT22S (polymer) - Coagulant Aid
- Powdered Activated Carbon – Taste and Odor Control

Filtration:

- Cat-Floc 8103 Plus (polymer) – Filter Aid (Seasonal)

Disinfection:

- Primary: Chlorine Gas
- Secondary: Aqua Ammonia & Chlorine (to form chloramines)

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

| Item | Cost |
|-------------------------------------------------------------------------|------------------|
| Low Lift Pump #2 Major Maintenance | \$51,507 |
| Low Lift Generator/Electrical Upgrades | \$9,404 |
| Treatment Plant Electrical Upgrades | \$10,429 |
| Clarifier #2 valve upgrade | \$2,580 |
| Clarifier #3 Blow Off Valve and Turbine Gear Box | \$8,473 |
| Clarifier #3 Turbine VFD | \$2,219 |
| Treatment Plant Building Upgrades - New floor in old microstrainer room | \$20,332 |
| Perimeter fencing upgrades - Treatment Plant and Cottam Booster | \$5,694 |
| Filter Meter Replacements | \$18,100 |
| Filter Media Replacement -Filters 5 and 7 | \$122,034 |
| Turbidity Meter Replacements | \$25,225 |
| Filter Turbidity Meters - New | \$9,543 |
| Chlorine Analyzer Replacements | \$18,269 |
| Ammonia Storage Tank Level Transmitter | \$3,777 |
| Chlorine Feed Room - New Heater | \$1,593 |
| High Lift Pump #3 Rehabilitation | \$31,539 |
| High Lift Compressor #1 Replacement | \$11,719 |
| Window Replacements - Treatment Plant | \$24,046 |
| Essex Water Tower Rehabilitation Project | \$19,131 |
| Master Water Meter Replacements/Upgrades | \$56,595 |
| SCADA System Upgrade | \$29,167 |
| Total Capital Works/Major Maintenance | \$481,375 |

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 | Incident description | Corrective Action | AWQI # | Corrective Action Date |
|-----------------|----------------------|--------------------------|--------|------------------------|
| October 7, 2017 | Loss of coagulant | Re-initialized coagulant | 137144 | October 10, 2017 |

Note: Corrective action Date is Date of resolution.

Microbiological testing is done under Schedule 10 of Regulation 170/03, during this reporting period.

| | Number of Samples | Range of Ecoli Or Fecal Results (min #)-(max #) (ct/100 mL) | Range of Total Coliform Results (min #)-(max #) (ct/100 mL) | Number of HPC Samples | Range of HPC Results (min #)-(max #) (ct/mL) |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-----------------------|----------------------------------------------|
| Raw | 52 | 2 - 56 | 14 - 400 | 0 | N/A |
| Treated | 52 | 0 - 0 | 0 - 0 | 52 | <10 - 30 |
| Distribution | Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995). | | | | |

Operational testing is done under Schedule 7 of Regulation 170/03 during the period Covered by this annual report.

| | Number of Grab Samples | Range of Results (min #)-(max #) |
|---------------------------------------------|------------------------|----------------------------------|
| Turbidity | 8760 | 0.02 – 1.96 NTU |
| Chlorine - Free | 8760 | 1.51 – 2.28 mg/L |
| Fluoride (If the DWS provides fluoridation) | N/A | N/A |

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

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

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: (Suspended Solids) | Date Sampled | Result | Unit of Measure |
|-----------------------------------------------------------------------------|----------------------------------|-----------------|--------|-----------------|
| 09- June- 2017 Municipal Drinking Water Licence Number: 041-101 | North Settling Pond | Jan 03/17 | <3.0 | mg/L |
| | North Settling Pond | Jan 30/17 | <3.0 | mg/L |
| | North Settling Pond | Feb 06/17 | 3.0 | mg/L |
| | North Settling Pond | Mar 06/17 | <3.0 | mg/L |
| | South Settling Pond | Mar 06/17 | <3.0 | mg/L |
| | North Settling Pond | April 03/17 | <3.0 | mg/L |
| | North Settling Pond | May 01/17 | <3.0 | mg/L |
| | North Settling Pond | June 05/17 | <3.0 | mg/L |
| | North Settling Pond | July 04/17 | <3.0 | mg/L |
| | North Settling Pond | Aug 08/17 | <3.0 | mg/L |
| | North Settling Pond | Sept 05/17 | <3.0 | mg/L |
| | South Settling Pond | Oct 02/17 | 6.0 | mg/L |
| | North Settling Pond | Oct 02/17 | <3.0 | mg/L |
| | South Settling Pond | Nov 06/17 | <3.0 | mg/L |
| | North Settling Pond | Nov 06/17 | <3.0 | mg/L |
| South Settling Pond | Dec 04/17 | <3.0 | mg/L | |
| Limit 25.0 mg/L | | Annual Average: | 3.2 | mg/L |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|------------------------------|-------------------|--------------|-----------------|------------|
| Antimony | January 10, 2017 | 0.12 | ug/L | No |
| Arsenic | January 10, 2017 | 0.4 | ug/L | No |
| Barium | January 10, 2017 | 16.0 | ug/L | No |
| Boron | January 10, 2017 | 18.0 | ug/L | No |
| Cadmium | January 10, 2017 | 0.019 | ug/L | No |
| Chromium | January 10, 2017 | 0.82 | ug/L | No |
| *Lead | n/a | | | |
| Mercury | January 10, 2017 | 0.01 | ug/L | No |
| Sodium | January 10, 2017 | 7.60 | mg/L | No |
| Selenium | January 10, 2017 | 0.12 | ug/L | No |
| Uranium | January 10, 2017 | 0.141 | ug/L | No |
| Fluoride | January 10, 2017 | 0.13 | mg/L | No |
| Nitrite (N) | December 27, 2017 | < 0.1 | mg/L | No |
| Nitrate (N) | December 27, 2017 | 0.5 | mg/L | No |
| Nitrite + Nitrate (N) | December 27, 2017 | 0.5 | mg/L | No |
| Ammonia (N) - Total | December 27, 2017 | 0.25 | mg/L | No |

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period

(Applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

| Location Type | Number of Samples | Range of Lead Results (min#) – (max #) | Number of Exceedances |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------|
| Plumbing | Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995). | | |
| Distribution | Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995). | | |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|------------|
| Alachlor | January 10, 2017 | 0.02 | ug/L | No |
| Atrazine + N-dealkylated metabolites | January 10, 2017 | 0.01 | ug/L | No |
| Atrazine | January 10, 2017 | 0.01 | ug/L | No |
| Azinphos-methyl | January 10, 2017 | 0.05 | ug/L | No |
| Benzene | January 10, 2017 | 0.32 | ug/L | No |
| Benzo(a)pyrene | January 10, 2017 | 0.004 | ug/L | No |
| Bromoxynil | January 10, 2017 | 0.33 | ug/L | No |
| Carbaryl | January 10, 2017 | 0.05 | ug/L | No |
| Carbofuran | January 10, 2017 | 0.01 | ug/L | No |
| Carbon Tetrachloride | January 10, 2017 | 0.16 | ug/L | No |
| Chlorpyrifos | January 10, 2017 | 0.02 | ug/L | No |
| Desethyl atrazine | January 10, 2017 | 0.01 | ug/L | No |
| Diazinon | January 10, 2017 | 0.02 | ug/L | No |
| Dicamba | January 10, 2017 | 0.20 | ug/L | No |
| 1,2-Dichlorobenzene | January 10, 2017 | 0.41 | ug/L | No |
| 1,4-Dichlorobenzene | January 10, 2017 | 0.36 | ug/L | No |
| 1,2-Dichloroethane | January 10, 2017 | 0.35 | ug/L | No |
| 1,1-Dichloroethene (vinylidene chloride) | January 10, 2017 | 0.33 | ug/L | No |
| Dichloromethane | January 10, 2017 | 0.35 | ug/L | No |
| 2-4 Dichlorophenol | January 10, 2017 | 0.15 | ug/L | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | January 10, 2017 | 0.19 | ug/L | No |
| Diclofop-methyl | January 10, 2017 | 0.40 | ug/L | No |
| Dimethoate | January 10, 2017 | 0.03 | ug/L | No |
| Diquat | January 10, 2017 | 1.0 | ug/L | No |
| Diuron | January 10, 2017 | 0.03 | ug/L | No |
| Glyphosate | January 10, 2017 | 1.0 | ug/L | No |
| HAA (NOTE: show latest annual average) | Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995). | | | |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|------------|
| Malathion | January 10, 2017 | 0.02 | ug/L | No |
| MCPA | January 10, 2017 | 0.12 | ug/L | No |
| Metolachlor | January 10, 2017 | 0.01 | ug/L | No |
| Metribuzin | January 10, 2017 | 0.02 | ug/L | No |
| Monochlorobenzene | January 10, 2017 | 0.3 | ug/L | No |
| Paraquat | January 10, 2017 | 1.0 | ug/L | No |
| Pentachlorophenol | January 10, 2017 | 0.15 | ug/L | No |
| Phorate | January 10, 2017 | 0.01 | ug/L | No |
| Picloram | January 10, 2017 | 1.0 | ug/L | No |
| Polychlorinated Biphenyls(PCB) | January 10, 2017 | 0.04 | ug/L | No |
| Prometryne | January 10, 2017 | 0.03 | ug/L | No |
| Simazine | January 10, 2017 | 0.01 | ug/L | No |
| THM (NOTE: show latest annual average) | Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995). | | | |
| Terbufos | January 10, 2017 | 0.01 | ug/L | No |
| Tetrachloroethylene | January 10, 2017 | 0.35 | ug/L | No |
| 2,3,4,6-Tetrachlorophenol | January 10, 2017 | 0.20 | ug/L | No |
| Triallate | January 10, 2017 | 0.01 | ug/L | No |
| Trichloroethylene | January 10, 2017 | 0.44 | ug/L | No |
| 2,4,6-Trichlorophenol | January 10, 2017 | 0.25 | ug/L | No |
| Trifluralin | January 10, 2017 | 0.02 | ug/L | No |
| Vinyl Chloride | January 10, 2017 | 0.17 | ug/L | No |

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 | | | |