



ANNUAL REPORT

Drinking-Water System Number:	220003421
Drinking-Water System Name:	Windsor Utilities Commission
Drinking-Water System Owner:	City of Windsor
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	Calendar Year 2010

<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 [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</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>City of Windsor – City Hall 350 City Hall Square Windsor ON N9A 6S1</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <input type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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
Town of LaSalle, Ontario	220004402
Town of Tecumseh, Ontario	260004969

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 _____

Describe your Drinking-Water System

The Windsor Utilities Commission water treatment facilities employs screening, pre-chlorination (on an as needed basis), pH adjustment (utilizing CO₂), primary disinfection (utilizing ozone), coagulation, flocculation, sedimentation, dual-media filtration with post chlorination and fluoridation to treat raw water obtained from the Detroit River. The water treatment plant also treats sedimentation sludge and backwash water utilizing coagulation, flocculation and sedimentation followed by centrifugal dewatering with the cake being shipped to landfill for disposal.

Treated water from the plant is routed to an on-site reservoir and subsequently pumped into the distribution system from two pumping stations that are co-located nearby the water treatment facilities. Water from the pumping stations satisfies demand for the greater Windsor area including the communities of Tecumseh and LaSalle. A remote reservoir and pumping station provides a re-chlorination facility (using sodium hypochlorite) to provide system pressure and flow to the south-west portion of the city, while a centrally located water tower, provides pressure and flow control to the downtown core.

The drinking water system is monitored at various locations, both at the water treatment and pumping stations as well as throughout the transmission system via a Supervisory Control and Data Acquisition (SCADA) system.

List all water treatment chemicals used over this reporting period

Chlorine gas
Carbon dioxide (CO₂)
Ozone (generated on-site)
Polyaluminum chloride (PaCl)
Hydrofluosilicic acid
Filter aid cationic 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

Replacement of #3 High lift motor and variable frequency drive.

Complete replacement of all filter media in four (4) filter beds.

Replacement of Medium/Low Voltage motor control centres and associated wiring for J.F. Cook and A.J. Brian pump stations.

Plant wide paging system upgrade.

SCADA system hardware and software upgrade.

Installed 22 new public-use fire hydrants and associated appurtenances.

Replaced 105 existing public-use fire hydrants.

**Installed approximately 15.95 km of watermains <300 mm
and 1.43 km of watermains >300 mm.**

Replaced 3,765 water meter units ranging in size from 5/8" to 10".



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
Sep 04, 2009	None - AWQI 91067 (AK-02) broken 16 inch feedermain, no customers affected			New 16 inch watermain installed	Mar 05, 2010
Jan 26	Lead – AWQI 93257	10.4	ug/L	Flushed, resampled with additional samples up and downstream	Feb 03
Mar 09	None – AWQI 93814 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Mar 15
Mar 15	None – AWQI 93904 broken water service between man & curb stop			Health Unit issued BWA, repaired, flushed, resampled	Mar 19
Mar 29	None - AWQI 94102 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Apr 18
Apr 09	None – AWQI 94257 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Apr 14
Apr 13	None - AWQI 94314 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Apr 19
Apr 14	None - AWQI 94325 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Apr 19
Apr 20	None - AWQI 94402 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Apr 28
Apr 22	Lead – AWQI 94444 – hydrant	66.2	ug/L	Flushed, resampled with additional samples up and downstream	May 04
Apr 23	None – AWQI 94464 broken 4 inch watermain			Health Unit issued BWA, repaired, flushed, resampled	Apr 29
May 05	None – AWQI 94577 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	May 17
May 05	None – AWQI 94578 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	May 21
May 06	None - AWQI 94608 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	May 12
May 10	None - AWQI 94660 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	May 17
May 12	None - AWQI 94682 two compromised fire hydrant connections			No BWA issued as no customers affected	May 17
May 14	None – AWQI 94730 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	May 21
May 20	None – AWQI 94816 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	May 31
May 26	None – AWQI 94908 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	May 31
May 28	None – AWQI 95003 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jun 04
May 28	None - AWQI 95004 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jun 04
Jun 04	Free Chlorine – AWQI 95133	0.00	mg/L	Flushed and resampled	Jun 04

Jun 07	None – AWQI 95169 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jun 10
Jun 09	None – AWQI 95267 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jun 14
Jun 14	None – AWQI 95324 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jun 18
Jun 16	None – AWQI 95364 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Aug 30
Jun 16	None - AWQI 95375 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jun 21
Jul 22	None - AWQI 96438 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jul 28
Jul 22	None - AWQI 96449 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jul 26
Jul 22	None - AWQI 96473 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jul 29
Jul 23	None – AWQI 96508 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Jul 29
Jul 27	None – AWQI 96595 damaged water service between main & property line			Health Unit issued BWA	On going
Jul 28	None – AWQI 96661 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Aug 03
Jul 28	Free chlorine – AWQI 96667	0.04	mg/L	Flushed & resampled	Jul 28
Aug 03	None – AWQI 96807 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Aug 10
Aug 05	None - AWQI 96881 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Aug 10
Aug 07	Coliform – AWQI 96955	1	/100 mL	Flushed & resampled	Aug 09
Aug 11	Free chlorine - AWQI 97084	0.00	mg/L	Flushed & resampled	Aug 11
Aug 13	None – AWQI 97187 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Aug 23
Aug 25	Free chlorine – AWQI 97532	0.00	mg/L	Flushed & resampled	Aug 25
Sep 01	Free chlorine – AWQI 97710	0.03	mg/L	Flushed & resampled	Sep 01
Sep 01	Free chlorine – AWQI 97732	0.02	mg/L	Flushed & resampled	Sep 01
Sep 02	None – AWQI 97751 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Sep 13
Sep 08	Free chlorine – AWQI 97865	0.01	mg/L	Flushed & resampled	Sep 08
Sep 23	None – AWQI 98250 damaged water service between main & curb stop			Health Unit issued BWA, repaired, flushed, resampled	Oct 12

Sep 30	None – AWQI 98385 damaged water service between main & curb stop			Health Unit issued BWA, repaired, flushed, resampled	Oct 21
Oct 05	None – AWQI 98462 damaged watermain			Health Unit issued BWA, repaired, flushed, resampled	Oct 08
Oct 12	None – AWQI 98566 damaged water service between main & curb stop			Health Unit issued BWA, repaired, flushed, resampled	Oct 18
Oct 28	None – AWQI 98872 damaged water service between main & property line			Health Unit issued BWA, repaired, flushed, resampled	Nov 10
Oct 28	None – AWQI 98890 damaged water service between main & building			Health Unit issued BWA, repaired, flushed, resampled	Nov 08
Nov 05	None – AWQI 99015 damaged watermain			Health Unit issued BWA, repaired, flushed, resampled	Nov 12
Nov 10	Coliform – AWQI 99095 – resample of AWQI 99015	1	/100 mL	already under BWA, flushed & resampled	Nov 12
Nov 11	Coliform – AWQI 99104 – resample of AWQI 99095	3	/100 mL	already under BWA, flushed and resampled	Nov 12
Nov 18	None – AWQI 99160 damaged water service between main & building			Health Unit issued BWA, repaired, flushed, resampled	Nov 22
Nov 30	None – AWQI 99265 damaged water service between main & building			Health Unit issued BWA, repaired, flushed, resampled	Dec 06
Dec 02	Turbidity – AWQI 99288	1.303	NTU	Repaired & resampled	Dec 03
Dec 17	Bromate – AWQI 99449 – four sample stations	0.012 0.012 0.011 0.012	mg/L	Resampled immediately after receiving lab report	Dec 20

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 #)
Raw	247	0 – 440	0 – 11500	247	10 - 30000
Treated	2138	0 – 0	0 – 0	1160	0 – 650
Distribution	2455	0 - 2	0 - 1	1678	0 – 380



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	0.03 – 0.14
Chlorine	8760	1.05 – 1.68
Fluoride (If the DWS provides fluoridation)	8760	0.52 – 0.75

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	Date Sampled	Result	Unit of Measure
5129-64CP7J	Bromate – Treated	Jan – Dec	<3 – 11	ppb
5129-64CP7J	Bromate – Distribution	Jan – Dec	<3 – 12	ppb
5129-64CP7J	Suspended Solids – (composite)	Jan – Dec	2.2 – 37.9	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	Oct 4 2010	0.0002	mg/L	
Arsenic	Oct 4 2010	0.0005	mg/L	
Barium	Oct 4 2010	0.0178	mg/L	
Boron	Oct 4 2010	0.017	mg/L	
Cadmium	Oct 4 2010	0.000008	mg/L	
Chromium	Oct 4 2010	<0.0005	mg/L	
Lead	Oct 4 2010	<0.00002	mg/L	
Mercury	Oct 4 2010	<0.00002	mg/L	
Selenium	Oct 4 2010	<0.001	mg/L	
Sodium	Oct 4 2010	0.00769	mg/L	
Uranium	Oct 4 2010	0.000065	mg/L	
Fluoride	Dec 2010	0.63	mg/L	
Nitrite	Oct 4 2010	<0.005	mg/L	
Nitrate	Oct 4 2010	0.228	mg/L	

*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	252	0.03 – 40.10	30
Distribution	73	0.05 – 10.40	1

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	Oct 4 2010	<0.00002	mg/L	
Aldicarb	Oct 4 2010	<0.00001	mg/L	
Aldrin + Dieldrin	Oct 4 2010	<0.00001	mg/L	
Atrazine + N-dealkylated metabolites	Oct 4 2010	0.00001	mg/L	
Azinphos-methyl	Oct 4 2010	<0.00002	mg/L	
Bendiocarb	Oct 4 2010	<0.00001	mg/L	
Benzene	Oct 4 2010	<0.00032	mg/L	
Benzo(a)pyrene	Oct 4 2010	<0.000004	mg/L	
Bromoxynil	Oct 4 2010	<0.00033	mg/L	
Carbaryl	Oct 4 2010	<0.00001	mg/L	
Carbofuran	Oct 4 2010	<0.00001	mg/L	
Carbon Tetrachloride	Oct 4 2010	<0.00016	mg/L	
Chlordane (Total)	Oct 4 2010	<0.00001	mg/L	
Chlorpyrifos	Oct 4 2010	<0.00002	mg/L	
Cyanazine	Oct 4 2010	<0.00003	mg/L	
Diazinon	Oct 4 2010	<0.00002	mg/L	
Dicamba	Oct 4 2010	<0.00020	mg/L	
1,2-Dichlorobenzene	Oct 4 2010	<0.00041	mg/L	
1,4-Dichlorobenzene	Oct 4 2010	<0.00036	mg/L	
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Oct 4 2010	<0.00001	mg/L	
1,2-Dichloroethane	Oct 4 2010	<0.00035	mg/L	
1,1-Dichloroethylene (vinylidene chloride)	Oct 4 2010	<0.00033	mg/L	
Dichloromethane	Oct 4 2010	<0.00035	mg/L	
2-4 Dichlorophenol	Oct 4 2010	<0.00015	mg/L	
2,4-Dichlorophenoxy acetic acid (2,4-D)	Oct 4 2010	<0.00019	mg/L	
Diclofop-methyl	Oct 4 2010	<0.00040	mg/L	
Dimethoate	Oct 4 2010	<0.00003	mg/L	
Dinoseb	Oct 4 2010	<0.00036	mg/L	



Diquat	Oct 4 2010	<0.001	mg/L	
Diuron	Oct 4 2010	<0.00003	mg/L	
Glyphosate	Oct 4 2010	<0.006	mg/L	
Heptachlor + Heptachlor Epoxide	Oct 4 2010	<0.00001	mg/L	
Lindane (Total)	Oct 4 2010	<0.00001	mg/L	
Malathion	Oct 4 2010	<0.00002	mg/L	
Methoxychlor	Oct 4 2010	<0.00001	mg/L	
Metolachlor	Oct 4 2010	<0.00001	mg/L	
Metribuzin	Oct 4 2010	<0.00002	mg/L	
Monochlorobenzene	Oct 4 2010	<0.00030	mg/L	
Paraquat	Oct 4 2010	<0.001	mg/L	
Parathion	Oct 4 2010	<0.00002	mg/L	
Pentachlorophenol	Oct 4 2010	<0.00015	mg/L	
Phorate	Oct 4 2010	<0.00001	mg/L	
Picloram	Oct 4 2010	<0.00025	mg/L	
Polychlorinated Biphenyls(PCB)	Oct 4 2010	<0.00004	mg/L	
Prometryne	Oct 4 2010	<0.00003	mg/L	
Simazine	Oct 4 2010	<0.00001	mg/L	
THM (NOTE: show latest annual average) Q1 10 0.0047 Q2 10 0.007 Q3 10 0.016 Q4 10 0.012		Avg. 0.0099	mg/L	
Temephos	Oct 4 2010	<0.00001	mg/L	
Terbufos	Oct 4 2010	<0.00001	mg/L	
Tetrachloroethylene	Oct 4 2010	<0.00035	mg/L	
2,3,4,6-Tetrachlorophenol	Oct 4 2010	<0.00014	mg/L	
Triallate	Oct 4 2010	<0.00001	mg/L	
Trichloroethylene	Oct 4 2010	<0.00043	mg/L	
2,4,6-Trichlorophenol	Oct 4 2010	<0.00025	mg/L	
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Oct 4 2010	<0.00022	mg/L	
Trifluralin	Oct 4 2010	<0.00002	mg/L	
Vinyl Chloride	Oct 4 2010	<0.00017	mg/L	

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
Bromate (Distribution)	7	ug/L	Oct 6 2010
Bromate (Distribution)	7	ug/L	Oct 6 2010
Bromate (Distribution)	6	ug/L	Oct 6 2010
Bromate (Distribution)	6	ug/L	Oct 6 2010
Bromate (Treated)	6	ug/L	Nov 4 2010
Bromate (Treated)	11	ug/L	Dec 8 2010



Bromate (Distribution)	12	ug/L	Dec 8 2010
Bromate (Distribution)	12	ug/L	Dec 8 2010
Bromate (Distribution)	7	ug/L	Dec 8 2010
Bromate (Distribution)	12	ug/L	Dec 8 2010
Bromate (Distribution)	7	ug/L	Dec 8 2010
Bromate (Treated)	6	ug/L	Dec 17 2010
Bromate (Distribution)	8	ug/L	Dec 17 2010
Bromate (Distribution)	8	ug/L	Dec 17 2010
Bromate (Distribution)	7	ug/L	Dec 17 2010
Bromate (Distribution)	7	ug/L	Dec 17 2010
Bromate (Distribution)	7	ug/L	Dec 17 2010