



## **Bayside Drinking Water System**



## **2010 Annual and Summary Report**



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**PUBLIC WORKS & ENVIRONMENTAL  
SERVICES**

**2010 Annual & Summary Report  
Bayside Drinking Water System  
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*2010 Annual & Summary Report  
Bayside Drinking Water System  
Annual Report*

Drinking-Water System Number: **220008079**  
Drinking-Water System Name: **Bayside Drinking Water System**  
Drinking-Water System Owner: **The Corporation of the City of Quinte West**  
Drinking-Water System Category: **Large Municipal Residential System**  
Period being reported: **January 1, 2010-December 31, 2010**

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

**No**

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

**Yes** – please visit [www.quintewest.ca](http://www.quintewest.ca)

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

City Hall  
7 Creswell Drive  
Trenton, ON, K8V 5R6

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

Not applicable.

**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:



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**Describe your Drinking-Water System**

The Bayside Water Treatment plant drafts water via a gravity raw water intake pipe, 404 m long extending approximately 370 m into the Bay of Quinte. This conventional chemically assisted filtration plant has a rated capacity of 11,360 m<sup>3</sup>/day. Processes used at the filtration plant include flocculation, sedimentation, Dual-Media filtration, and Granular-Activated Carbon adsorption filtration. The disinfection system consists of a sodium hypochlorite solution injected into the GAC transfer/storage well which has a total usable volume of 1,960 m<sup>3</sup>. The Bayside WTP injects fluoride into the potable water before water is pumped into the distribution system via two vertical turbine high lift pumps. The elevated water storage tower has an operating capacity of 6,050 m<sup>3</sup>, and is located approximately 150 m west of Montrose Road. The Bayside WTP services approximately 3000 people in the Bayside community, in addition to part of CFB Trenton.

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

- Hydrofluosilic Acid (Fluoride solution)
- Aluminum Sulphate (alum)
- Sodium Hypochlorite

**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:**

- New Supervisory Control and Data Acquisition (SCADA) system programming and installation
- Replaced two fluoride Pumps
- Plant Intake Cleaned
- Relocated Chlorine injection point for process control
- Replaced GAC Inlet valve
- Repaired three sluice gate valves in raw water intake
- Serviced generator
- Cleaned underground fuel storage tank
- MCC Cabinets serviced and cleaned
- Drinking Water Quality Management System implementation; *this led to the City being one of the first in the area to receive Full Scope DWQMS Accreditation and receive the new Drinking Water Licensing and Drinking Water Works Permits.*



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**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 (mm/dd/yy)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (mm/dd/yy)
07/16/10	Rated Capacity	For a period of approx. 23 hr and 21 min. Dual Media filter #1 ran at 70 L/s which is approx. 5 L/s above the C of A rated capacity of 65.75 L/s.	L/s	The flow meter was repaired, filter flow operating normally after repair. No further action was required. No indication of any water quality issues were noted.	07/16/10
08/13/10	Fluoride	Fluoride spike to 1.58 mg/L lasted approx. 10 min. on August 12, 2010. This was noticed during the 72 hour trend review of the online Fluoride analyzer results.	mg/L	Exceedance was due to ongoing SCADA upgrades at the plant. No further action required by Health Unit	08/13/10
09/17/10	Turbidity	Online turbidimeter for filter #1 failed from 0904 hrs – 1307 hrs. (Sensor Fail)	NTU	Turbidimeter was repaired by operations staff as soon as failure noticed. No further action required as all processes were running normally	09/17/10
09/30/10	Continuous Chemically assisted filtration not completed	Alum pump determined to have problems at 1337 hrs. Alum dosage approx. 1/3 of normal dosage. Filter ran for approx. 7 hrs from time of suspected pump malfunction.	mg/L dosage	Plant was shut down upon observation of problem with alum pump. Back-up alum pump put in service; dosing verified. Plant started back up while filtering to waste. Turbidity remained within allowable limits during incident. No further action required.	10/01/10



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**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	0-44	0-1360	--	--
<b>Treated</b>	52	0-0	0-0	52	0-2
<b>Distribution</b>	133	0-0	0-0	53	0-60

**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 #)
<b>Turbidity *</b>	8760	0.01-1.999
<b>Chlorine</b>	8760	1.50-4.09
<b>Distribution Chlorine</b>	8760	0.45-3.10
<b>Fluoride **</b>	8760	0.00-1.58

*\* Until July 2010, the Bayside WTP did not have the capability of reporting a MIN turbidity reading on the daily reports. Up until July, the Min result reported is the Min value per month for the Average daily turbidities. In addition, the Max value reported occurred mainly during filter start-up, and never lasted more than 15 minutes.*

*\*\*See above for report made in respect of Fluoride spike. In addition, for a period of approximately 8 days in July, the fluoride system was shut down during the SCADA switchover.*



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

*As per C of A # 7170-7U7PX4: Issued August 28, 2009; and  
Municipal Drinking Water Licence # 163-104:*

**Residue Management – Lagoon Effluent**

Date	Suspended Solids Result (mg/L)
Jan 5	9
Feb 16	2
Mar 2	2
Apr 6	3
May 4	2
Jun 8	2
Jul 6	2
Aug 3	10
Sep 7	5
Oct 5	3
Nov 2	23
Dec 7	2

**\*Annual average suspended solids concentration discharged to Bay of Quinte = 5.42 mg/L**

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

Parameter	Sample Date (mm/dd/yy)	Result Value	Unit of Measure	Exceedance
<b>Antimony</b>	02/09/10	0.02	ug/L	No
<b>Arsenic</b>	02/09/10	0.4	ug/L	No
<b>Barium</b>	02/09/10	31.1	ug/L	No
<b>Boron</b>	02/09/10	7.9	ug/L	No
<b>Cadmium</b>	02/09/10	0.003	ug/L	No
<b>Chromium</b>	02/09/10	0.5	ug/L	No
<b>Mercury</b>	02/09/10	0.02	ug/L	No
<b>Selenium</b>	02/09/10	1	ug/L	No
<b>Sodium</b> – Next sample due August 2014 as per O. Reg. 170/03 s.13-8	08/11/09	10.4	mg/L	No
<b>Uranium</b>	02/09/10	0.053	ug/L	No
<b>Fluoride</b>	<i>See above for online Fluoride monitoring results</i>			
<b>Nitrate</b>	Feb 9 May 11 Aug 10 Nov 9	0.302 0.013 0.082 0.079	mg/L	No
<b>Nitrite</b>	Feb 9 May 11 Aug 10 Nov 9	0.005 0.005 0.005 0.005	mg/L	No



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**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
Plumbing – Non residential	As per O. Reg. 170/03 S. 15.1-5 <i>Reduced Sampling</i> , the City is not required to complete another round of Lead testing until <b>March 2012</b>		
Plumbing – Residential			
Distribution			

**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	02/09/10	0.02	ug/L	No
Aldicarb	02/09/10	0.01	ug/L	No
Aldrin + Dieldrin	02/09/10	0.01	ug/L	No
Atrazine + N-dealkylated metabolites	02/09/10	0.01	ug/L	No
Azinphos-methyl	02/09/10	0.02	ug/L	No
Bendiocarb	02/09/10	0.01	ug/L	No
Benzene	02/09/10	0.32	ug/L	No
Benzo(a)pyrene	02/09/10	0.004	ug/L	No
Bromoxynil	02/09/10	0.33	ug/L	No
Carbaryl	02/09/10	0.01	ug/L	No
Carbofuran	02/09/10	0.01	ug/L	No
Carbon Tetrachloride	02/09/10	0.16	ug/L	No
Chlordane (Total)	02/09/10	0.01	ug/L	No
Chlorpyrifos	02/09/10	0.02	ug/L	No
Cyanazine	02/09/10	0.03	ug/L	No
Diazinon	02/09/10	0.02	ug/L	No
Dicamba	02/09/10	0.20	ug/L	No
1,2-Dichlorobenzene	02/09/10	0.41	ug/L	No
1,4-Dichlorobenzene	02/09/10	0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	02/09/10	0.01	ug/L	No
1,2-Dichloroethane	02/09/10	0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	02/09/10	0.33	ug/L	No
Dichloromethane	02/09/10	0.35	ug/L	No
2-4 Dichlorophenol	02/09/10	0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	02/09/10	0.19	ug/L	No
Diclofop-methyl	02/09/10	0.40	ug/L	No
Dimethoate	02/09/10	0.03	ug/L	No
Dinoseb	02/09/10	0.36	ug/L	No

<b>Diquat</b>	02/09/10	1	ug/L	No
<b>Diuron</b>	02/09/10	0.03	ug/L	No
<b>Glyphosate</b>	02/09/10	6	ug/L	No
<b>Heptachlor + Heptachlor Epoxide</b>	02/09/10	0.01	ug/L	No
<b>Lindane (Total)</b>	02/09/10	0.01	ug/L	No
<b>Malathion</b>	02/09/10	0.02	ug/L	No
<b>Methoxychlor</b>	02/09/10	0.01	ug/L	No
<b>Metolachlor</b>	02/09/10	0.01	ug/L	No
<b>Metribuzin</b>	02/09/10	0.02	ug/L	No
<b>Monochlorobenzene</b>	02/09/10	0.30	ug/L	No
<b>Paraquat</b>	02/09/10	1	ug/L	No
<b>Parathion</b>	02/09/10	0.02	ug/L	No
<b>Pentachlorophenol</b>	02/09/10	0.15	ug/L	No
<b>Phorate</b>	02/09/10	0.01	ug/L	No
<b>Picloram</b>	02/09/10	0.25	ug/L	No
<b>Polychlorinated Biphenyls(PCB)</b>	02/09/10	0.04	ug/L	No
<b>Prometryne</b>	02/09/10	0.03	ug/L	No
<b>Simazine</b>	02/09/10	0.01	ug/L	No
<b>THM (NOTE: show latest annual average)</b>	02/09/10	<b>96</b>	<b>ug/L</b>	<b>No</b>
<b>Temephos</b>	02/09/10	0.01	ug/L	No
<b>Terbufos</b>	02/09/10	0.01	ug/L	No
<b>Tetrachloroethylene</b>	02/09/10	0.35	ug/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	02/09/10	0.14	ug/L	No
<b>Triallate</b>	02/09/10	0.01	ug/L	No
<b>Trichloroethylene</b>	02/09/10	0.43	ug/L	No
<b>2,4,6-Trichlorophenol</b>	02/09/10	0.25	ug/L	No
<b>2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)</b>	02/09/10	0.22	ug/L	No
<b>Trifluralin</b>	02/09/10	0.02	ug/L	No
<b>Vinyl Chloride</b>	02/09/10	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 last Sample
THM	96	ug/L	Nov. 9, 2010



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**Summary Report – O. Reg. 170/03 Schedule 22 Requirement**

Under Schedule 22 of O. Reg. 170/03, the Ministry of Environment requires that a copy of the Safe Drinking Water Act, regulations, the system’s approvals, and any order that the system failed to meet at any time during the reporting period be provided to the members of the municipal council.

The following is a list of the Acts and Regulations which have been provided to municipal council electronically:

- ✚ The Safe Drinking Water Act, 2002
- ✚ O. Reg. 128/04 – Certification of Drinking Water Operators
- ✚ O. Reg. 169/03 – Ontario Drinking Water Quality Standards
- ✚ O. Reg. 170/03 – Drinking Water Systems (Please see ‘Application of Schedules’ table below for applicable schedules pertinent to Large Municipal Residential Systems)
- ✚ O. Reg. 188/07 – Licensing of Municipal Drinking Water Systems
- ✚ O. Reg. 242/05 – Compliance and Enforcement
- ✚ O. Reg. 248/03 – Drinking Water Testing Services
- ✚ Procedure for Disinfection of Drinking Water in Ontario
  
- ✚ The systems Certificate of Approval # 7170-7U7PX4
- ✚ Drinking Water Works Permit # 163-204; Issue Date: December 6, 2010
- ✚ Municipal Drinking Water Licence # 163-104; Issue Date: December 6, 2010
- ✚ Permit to Take Water (PTTW) # 4214-68CMDB

TABLE  
**Application of schedules**  
**O. Reg. 170/03**

Item	Drinking Water Systems	Applicable Schedules				
		Treatment	Operational Checks, Sampling and Testing	Adverse Test Results and Other Problems	Reports	Chemical Testing Parameters
1.	Large municipal residential systems	1, 4	6, 7, 10, 13, 15.1	16, 17	22	23, 24

O. Reg. 170/03, s. 4; O. Reg. 247/06, s. 2; O. Reg. 399/07, s. 1.

\* Please note that the Act and Regulations provided have potentially been amended since these documents were saved electronically. For the most current and up to date consolidated laws, please visit [www.e-laws.gov.on.ca](http://www.e-laws.gov.on.ca).



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## **PUBLIC WORKS & ENVIRONMENTAL SERVICES**

### **2010 Annual & Summary Report Bayside Drinking Water System Summary Report**

For 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 during this reporting period, please refer to the table on page 3 of this Report. In addition there were six incidents involving fluoride spikes which occurred between 2008 and 2009 that had to be reported in 2010. These fluoride spikes were referenced in the 2009 annual report as they occurred during that year.



**Summary of Quantities and Flow Rates**

<b>Raw Water - PTTW limit of 11, 365 m<sup>3</sup>/d</b>			
<b>Month</b>	<b>Monthly Average Flow (m<sup>3</sup>)</b>	<b>Max Daily Flow (m<sup>3</sup>)</b>	<b>Total Monthly Flow (m<sup>3</sup>)</b>
January	4,033	4,543	125,015
February	3,558	3,958	99,634
March	3,464	4,075	107,395
April	3,281	4,061	98,427
May	3,677	4,984	113,991
June	3,916	5,314	117,474
July	3,915	5,921	121,357
August	3,390	4,819	105,090
September	3,153	4,468	94,585
October	3,256	6,317	100,945
November	2,830	3,751	84,891
December	2,758	3,641	85,513
<b>Total Raw Water Flow 2010 -</b>			<b>1,254,316</b>
<b>Treated Water - Rated Capacity of 11, 360 m<sup>3</sup>/d</b>			
<b>Month</b>	<b>Monthly Average Flow (m<sup>3</sup>)</b>	<b>Max Daily Flow (m<sup>3</sup>)</b>	<b>Total Monthly Flow (m<sup>3</sup>)</b>
January	3,623	4,058	112,326
February	3,128	3,697	87,571
March	2,998	3,835	92,943
April	2,584	3,381	77,524
May	3,133	4,323	97,124
June	3,301	4,144	99,038
July	3,175	5,074	98,429
August	2,977	3,824	92,281
September	2,560	3,384	76,810
October	2,604	5,809	80,724
November	2,344	3,195	70,317
December	2,208	3,001	68,442
<b>Total Treated Water Flow 2010 -</b>			<b>1,053,526</b>
<b>Comparison of Quantities and Flow Rates for Treated Water</b>			
Actual Annual Average Daily Treated Flow (m <sup>3</sup> )=		2,886	25.4 % of Rated Capacity
Actual Max Treated Water Daily flow (m <sup>3</sup> ) =		5,809	51.1 % of Rated Capacity



**Public Works and Environmental Services**  
**2010 Annual and Summary Reports**  
**Bayside Drinking Water System**  
 Summary Report - Comparison Quantities & Flows

**Bayside Historical Treated Water Flows**

Year	Average Daily Flow (m <sup>3</sup> /d)	Max Daily Flow (m <sup>3</sup> /d)	Month of Max Daily Flow
2005	2,811	4,900	July
2006	2,635	7,110	July
2007	2,601	4,540	August
2008	2,924	15,060	December
2009	2,942	4,275	September
2010	2,886	5,809	October

