

Part III Form 2
Section 11. ANNUAL REPORT. - 2005

Drinking - Water System Number:	220000460
Drinking - Water System Name:	North Bay Water Treatment Plant/Distribution System
Drinking - Water System Owner:	Corporation of the City of North Bay
Drinking - Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2005 to December 31, 2005

<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 []</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 []</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; text-align: center;"> <p>www.cityofnorthbay.ca</p> <p>&</p> <p>6th Floor, North Bay City Hall Engineering and Environmental Services 200 McIntyre Street East North Bay, Ontario</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>This Section does not apply to North Bay</p> <p>Number of Designated Facilities served: <input style="width: 100px;" 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 style="width: 100px;" 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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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
N/A	

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 [] N/A

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

Water is drawn from Delaney Bay of Trout Lake at a depth of 21.5 meters, 300 meters from shore. Water treatment takes place at the North Bay Water Treatment Plant located at 248 Lakeside Drive, North Bay. Treatment consists of coarse screening and disinfection using UV irradiation and chlorination. Water pH is adjusted using soda ash and fluoride is added prior to distribution. The North Bay water distribution system has 5 pressure zones and 3 water storage facilities. Storage facilities are Ellendale High Lift Reservoir and Pumping Station (4 MIG), Birchs Road Standpipe (2 MIG) and CFB Reservoir (0.4 MIG). A Valve Chamber located at Judge Avenue separates Pressure Zones 1 and 1A, below the North Bay escarpment. Pumping stations located at Gormanville/College Drive and at the Ellendale High Lift Reservoir pressurize Pressure Zones 2 and 3 located above the North Bay escarpment. Zone 4 located in the vicinity of the North Bay Airport is pressurized by a pumping station at the CFB Reservoir. The City of North Bay is the owner of the system with treatment, storage and pumping facilities operated by the Ontario Clean Water Agency. The water distribution system is operated and maintained by the City's Sewer and Water Department.

North Bay's water system serves a population of 53,000. North Bay's water taking permit limits withdrawals from Trout Lake to 79,500 m³/day and 920 L/sec. The North Bay Water Treatment Plant is fully automated and can be run remotely through a SCADA (Supervisory Control and Data Acquisition) system operated by Ontario Clean Water Agency. All key processes are fully alarmed. Raw and treated water turbidity, as well as treated water free chlorine, pH, fluoride and flow are continuously monitored and recorded. Post chlorination occurs at Ellendale High Lift Reservoir, Judge Avenue Valve Chamber, CFB Reservoir and Birches Road Standpipe. An aggressive monitoring program is in place to ensure that drinking water supplied to all customers meet or exceed all provincial standards and guidelines. All adverse water quality events detected in 2005 are listed on page 3 below.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite (Chlorine), Soda Ash, Hydrofluosilicic Acid (Fluoride)

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 in 2005

<u>Project Description:</u>	<u>Cost in 2005</u>
Completion of Design of New North Bay Water Filtration Plant	\$ 750,000
Environmental Assessment to add Storage for Zone 4 (CFB North Bay)	\$ 25,000
Repairs to CFB Reservoir internal piping/foot valves	\$ 10,000
Inspection of Birchs Road Standpipe/Repair of Cathodic Protection	\$ 35,000
New automatic backup generator at Judge Ave Valve Chamber	\$ 20,000
New automatic backup generator at Birchs Road Standpipe	\$ 20,000
SCADA Upgrades for Water System	\$ 15,000
Repair Trunk Watermain Valve – Ski Club Road	\$ 50,000
Repairs to Trunk Watermains – Lakeside Drive (3 repairs)	\$ 30,000
Looping on Coreen Crescent	\$ 25,000
New Watermain on Marshall Avenue (cost of water portion only)	\$ 200,000
Premier Road 4 inch Watermain elimination program (water only)	\$ 100,000
New Post Chlorination System at Ellendale Reservoir was automated	\$ 5,000

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
Apr 6/05	GBP ¹	> 200	CFU	Resample	Apr 7/2005
May 5/05	GBP	> 200	CFU	Resample & Flush	May 6/2005
May 30/05	Turbidity - bubbles	6.0	NTU	Flush Sample Line	May 30/2005
June 1/05	Fluoride	1.57	Mg/L	SSD ² + Repair Electrode	June 1/2005
July 10/05	Flow ³	> 920	L/sec	Confirmed Disinfection	July 10/2005
July 18/05	Turbidity - bubbles	6.0	NTU	Flush Sample Line	July 18/2005
Sept 28/05	GBP	> 200	CFU	Resample & Flush	Sept 29/2005
Sept 28/05	Total Coliform	17	CFU	Resample & Flush	Sept 29/2005

1. General Background Population
2. System Shut Down and issue was reported resolved on June 1st – fluoride system was off line for about 2 weeks until a new probe was received and installed.
3. Flow exceeding Water Taking Permit maximum instantaneous allowable was reported pursuant to Schedule 16 Section 4 - Duty to Report other Observations - O. Reg. 170/03. Operators immediately confirmed that disinfection Log Removal Values were maintained during the flow spike.

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 or GBP Samples	Range of HPC Results (min #)-(max #)
Raw	52	0 - 4	1 - 116	GBP - 52	14 - >200
Treated	52	0 - 0	0 - 0	GBP - 52	0 - 2
Distribution	953	0 - 0	0 - 17	GBP - 953	0 - >200

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 (Raw)	8760	0.27 - 6.0 NTU
Chlorine (Treated) (Free Residual)	8760	0.50 - 2.0 mg/L
Chlorine (Distribution) (Free Residual)	8760	0.05 – 2.20 mg/L
Fluoride (Treated) North Bay provides Fluoridation	8760	0 – 1.57 mg/L
UV Dose	8760	44 – 96 mj/cm ²

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

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
N/A				

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	Jan 25, 2005	< 0.001*	mg/L	No
Arsenic	Jan 25, 2005	<0.0014*	mg/L	No
Barium	Jan 25, 2005	0.014	mg/L	No
Boron	Jan 25, 2005	0.007	mg/L	No
Cadmium	Jan 25, 2005	< 0.001*	mg/L	No
Chromium	Jan 25, 2005	0.0019	mg/L	No
Lead ^t	Jan 25, 2005	<0.0022*	mg/L	No
Mercury	Jan 25, 2005	< 0.0001*	mg/L	No
Selenium	Jan 25, 2005	< 0.0016*	mg/L	No
Sodium	Jan 25, 2005	12.0	mg/L	No
Uranium	Jan 25, 2005	< 0.0016*	mg/L	No
Fluoride	Jan 25, 2005	0.7	mg/L	No
Nitrite	Jan 25, 2005	< 0.1*	mg/L	No
Nitrate	Jan 25, 2005	0.2	mg/L	No

* The number denotes the minimum detection limit of the instrument used to measure the parameter and the reading was less than the minimum detection limit.

^t The City of North Bay studied 10 separate sites at the extreme ends of the distribution system to discover the most likely site to have elevated Lead levels. A total of 40 samples were taken in 2005 with the highest reading being 5.6 µg/L.

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	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Aldicarb	Jan 25, 2005	<5.0 (BDL)*	µg/L	No
Aldrin + Dieldrin	Jan 25, 2005	<0.012 (BDL)*	µg/L	No
Atrazine + N-dealkylated metabolites	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Azinphos-methyl (Guthion)	Jan 25, 2005	<2.0 (BDL)*	µg/L	No
Bendiocarb	Jan 25, 2005	<2.0 (BDL)*	µg/L	No
Benzene	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Benzo(a)pyrene	Jan 25, 2005	<0.01 (BDL)*	µg/L	No
Bromoxynil	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Carbaryl	Jan 25, 2005	<5.0 (BDL)*	µg/L	No
Carbofuran	Jan 25, 2005	<5.0 (BDL)*	µg/L	No
Carbon Tetrachloride	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Chlordane (Total)	Jan 25, 2005	<0.012 (BDL)*	µg/L	No
Chlorpyrifos	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Cyanazine	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Diazinon	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Dicamba	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
1,2-Dichlorobenzene	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
1,4-Dichlorobenzene	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan 25, 2005	<0.024 (BDL)*	µg/L	No
1,2-Dichloroethane	Jan 25, 2005	<0.5 (BDL)*	µg/L	No

1,1-Dichloroethylene (vinylidene chloride)	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Dichloromethane	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
2-4 Dichlorophenol	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Diclofop-methyl	Jan 25, 2005	<0.9 (BDL)*	µg/L	No
Dimethoate	Jan 25, 2005	<2.5 (BDL)*	µg/L	No
Dinoseb	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Diquat	Jan 25, 2005	<7.0 (BDL)*	µg/L	No
Diuron	Jan 25, 2005	<10.0 (BDL)*	µg/L	No
Glyphosate	Jan 25, 2005	<10.0 (BDL)*	µg/L	No
Heptachlor + Heptachlor Epoxide	Jan 25, 2005	<0.012 (BDL)*	µg/L	No
Lindane (Total)	Jan 25, 2005	<0.006 (BDL)*	µg/L	No
Malathion	Jan 25, 2005	<5.0 (BDL)*	µg/L	No
Methoxychlor	Jan 25, 2005	<0.024 (BDL)*	µg/L	No
Metolachlor	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Metribuzin	Jan 25, 2005	<5.0 (BDL)*	µg/L	No
Monochlorobenzene	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Paraquat	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Parathion	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Pentachlorophenol	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Phorate	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Picloram	Jan 25, 2005	<5.0 (BDL)*	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan 25, 2005	<0.05 (BDL)*	µg/L	No
Prometryne	Jan 25, 2005	<0.25 (BDL)*	µg/L	No
Simazine	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
THM: 2004 Four Quarter Annual Average at Clarion Resort**	Jan 25, May 25, Aug 24, Dec 31	77.88	µg/L	No
THM: 2004 Four Quarter Annual Ave. at Canadore Aviation Campus**	Jan 25, Jun 10, Aug 24, Jan 19/06	73.0	µg/L	No
Temphos	Jan 25, 2005	<10.0 (BDL)*	µg/L	No
Terbufos	Jan 25, 2005	<0.7 (BDL)*	µg/L	No
Tetrachloroethylene	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
Triallate	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Trichloroethylene	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
2,4,6-Trichlorophenol	Jan 25, 2005	<0.5 (BDL)*	µg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Trifluralin	Jan 25, 2005	<1.0 (BDL)*	µg/L	No
Vinyl Chloride	Jan 25, 2005	<0.2 (BDL)*	µg/L	No

* The number denotes the minimum detection limit of the instrument used to measure the parameter and the reading was less than the minimum detection limit.

** A previous study identified that the Clarion Resort at 201 Pinewood Park Drive and the Canadore Aviation Centre at 55 Aviation Avenue are the sites most likely to have elevated THM's in the North Bay Distribution system. Fourth quarter result were not taken at 55 Aviation Avenue and thus 4th quarter re-sampling was resampled in January 2006 and have been included in both sample results reported.

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
THM ¹	92	µg/L	May 25, 2005
THM	111	µg/L	May 25, 2005
THM	66.4	µg/L	August 24, 2005
THM	80.5	µg/L	August 24, 2005
THM	68.7	µg/L	December 31, 2005
Lead	5.6	µg/L	May 25, 2005
Fluoride	86.4	mg/L	January 2, 2005
Fluoride	76.0	mg/L	January 3, 2005
Fluoride	76.0	mg/L	January 4, 2005
Fluoride	76.0	mg/L	February 5, 2005
Fluoride	77.0	mg/L	February 6, 2005
Fluoride	77.0	mg/L	February 10, 2005
Fluoride	1.57	mg/L	June 1, 2005

1. Trihalomethanes

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)

For More Information Please Contact:

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After March 31, 2006, a Summary Report, which will elaborate on the above information, as prepared under Schedule 22 of O. Reg. 170/03 will be available for viewing at:

**6th Floor, North Bay City Hall
 200 McIntyre Street East
 North Bay, Ontario
 Engineering & Environmental Services Office**