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February 23, 2011

Corporation of the Town of Laurentian Hills  
34465 Highway #17, R.R.#1  
Deep River, Ontario  
K0J 1P0

**Attention: Wayne Kirby, Chief Administrative Officer**

**RE: Chalk River Drinking Water System  
2010 Annual Report**

Dear Wayne,

Please find attached the 2010 Annual Operations Report for the Chalk River drinking water system, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31 and meets the requirement of being prepared by February 28 of this year.

Please ensure that a copy of this report is given, without charge, to every person who requests a copy. In addition, please make certain that effective steps are taken to advise residents that copies of the report are available, and of how a copy can be obtained.

Finally, as per Schedule 22 of O. Reg. 170/03, please ensure that a copy of the report is given to the members of municipal council no later than March 31, 2011.

If you have any questions regarding the report, we would be pleased to address them and you should contact the undersigned accordingly.

Sincerely,

AMERICAN WATER CANADA CORP.

Greg Prangley  
Project Manager, Ontario Regional Projects

c. AWC Chalk River operations

## 2010 ANNUAL REPORT FOR WATER SYSTEMS

### Part 1 – ANNUAL REPORT (as required by O. Reg. 170/03, Section 11)

Drinking-Water System Number:	210000666
Drinking-Water System Name:	Chalk River Water Treatment Plant
Drinking-Water System Owner:	Town of Laurentian Hills
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 – December 31, 2010

Complete if your Category is Large Municipal Residential or Small Municipal Residential	Complete for all other Categories	
Does your Drinking-Water System serve more than 10,000 people? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Designated Facilities served:	N/A
Is your annual report available to the public at no charge on a web site on the Internet? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Did you provide a copy of your annual report to all Designated Facilities you serve? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. <b>MUNICIPAL OFFICE</b> Town Office – Pt. Alexander #34465 Hwy 17	Number of Designated Facilities served:	N/A
	Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? <input type="checkbox"/> Yes <input type="checkbox"/> No	

#### 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?

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#### Indicate how you notified system users that your annual report is available, and is free of charge.

<input type="checkbox"/> Public access/notice via the web	<input checked="" type="checkbox"/> Public access/notice via Government Office	<input type="checkbox"/> Public access/notice via a newspaper
<input type="checkbox"/> Public access/notice via Public Request	<input type="checkbox"/> Public access/notice via a Public Library	<input type="checkbox"/> Public access/notice via Other Method

#### Describe your Drinking Water System

The water supply source for the Chalk River Water Treatment Plant is Corry Lake. Raw water is screened from the lake before being pumped to the water plant for treatment. The water treatment process includes chemically-assisted coagulation, flocculation and settling within a solids contact clarifier followed by filtration through sand and anthracite filters. Filtered water is then disinfected using liquid chlorine. Fluoride is then added to the treated water. Water is pumped into the elevated water storage tower for disinfection contact time and then flows out to the distribution system.

List all water treatment chemicals used over this reporting period

pH adjustment – Soda Ash  
 Primary Coagulant – PHAS (Pre Hydroxylated Aluminum Sulphate)  
 Coagulant aid – Polymer  
 Disinfection – Sodium Hypochlorite  
 Fluoridation – Hydrofluosilic acid

Please provide a brief description and a breakdown of monetary expenses incurred

Camera of line and watermain repairs ~\$14K  
 Water Tower painting ~\$10.6K

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	Units	Corrective Action	Corrective Action Date

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 Results (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw	52	0 – 23	<2 – 100	NA	NA
Treated	52	0	0	52	<2-30
Distribution	156	0	<1 - 0	156	<2-4

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 #)	Units
Filter Effluent Turbidity-Filter #1	8760	0.0-2.0*	NTU
Filter Effluent Turbidity-Filter #2	8760	0.0-2.0*	NTU
Chlorine-POE	8760	0.41-2.00	mg/L
Fluoride (If the DWS provides fluoridation)	8760	0.0-2.0	mg/L

\*These are values as read by the SCADA system; however, there were no instances of water entering the distribution system that exceeded 1.0NTU as per the Regulation. These high values are generated during power fluctuations/failures and calibrations. When turbidity exceeds this limit (i.e. during filter backwash cycles), the water generated is sent to waste. These issues should be rectified by the SCADA system upgrades currently under way

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

**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 26/10	ND	mg/L	No
Arsenic	Jan 26/10	0.0002	mg/L	No
Barium	Jan 26/10	0.009	mg/L	No
Boron	Jan 26/10	ND	mg/L	No
Cadmium	Jan 26/10	ND	mg/L	No
Chromium	Jan 26/10	ND	mg/L	No
Lead-see results below				
Mercury	Jan 26/10	ND	µg/L	No
Selenium	Jan 26/10	ND	mg/L	No
Sodium	Jan 26/10	19.3	mg/L	NA
Uranium	Jan 26/10	ND	mg/L	No
Fluoride	Jan 26/10	0.6	mg/L	No
Nitrite	Jan 26/10	<0.1	mg/L	No
Nitrate	Jan 26/10	0.1	mg/L	No
Nitrite	Apr 30/10	<0.1	mg/L	No
Nitrate	Apr 30/10	0.2	mg/L	No
Nitrite	Jul 27/10	<0.1	mg/L	No
Nitrate	Jul 27/10	0.1	mg/L	No
Nitrite	Oct 26/10	<0.1	mg/L	No
Nitrate	Oct 26/10	0.1	mg/L	No

**Summary of Lead Results during this reporting period (Winter: Dec. 15/09-April 15/10; Summer: June 15-Oct. 15/10)**

Sampling Period	Range of Results (µg/L) from Residential Samples (# of Samples taken)	Non-residential locations	Distribution System	Any Adverse Water Quality Incidents?
Winter	Not required during this period	N/A	N/A	N/A
Summer	Not required during this period	N/A	N/A	N/A

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Jan 26/10	ND	µg/L	No
Aldicarb	Jan 26/10	ND	µg/L	No
Aldrin + Dieldrin	Jan 26/10	ND	µg/L	No
Atrazine + N-dealkylated metabolites	Jan 26/10	ND	µg/L	No
Azinphos-methyl	Jan 26/10	ND	µg/L	No
Bendiocarb	Jan 26/10	ND	µg/L	No
Benzene	Jan 26/10	ND	µg/L	No
Benzo(a)pyrene	Jan 26/10	ND	µg/L	No
Bromoxynil	Jan 26/10	ND	µg/L	No
Carbaryl	Jan 26/10	ND	µg/L	No
Carbofuran	Jan 26/10	ND	µg/L	No
Carbon Tetrachloride	Jan 26/10	ND	µg/L	No
Chlordane (Total)	Jan 26/10	ND	µg/L	No
Chlorpyrifos	Jan 26/10	ND	µg/L	No
Cyanazine	Jan 26/10	ND	µg/L	No
Diazinon	Jan 26/10	ND	µg/L	No
Dicamba	Jan 26/10	ND	µg/L	No
1,2-Dichlorobenzene	Jan 26/10	ND	µg/L	No
1,4-Dichlorobenzene	Jan 26/10	ND	µg/L	No

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

Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan 26/10	ND	µg/L	No
1,2-Dichloroethane	Jan 26/10	ND	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 26/10	ND	µg/L	No
Dichloromethane	Jan 26/10	ND	µg/L	No
2-4 Dichlorophenol	Jan 26/10	0.8	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 26/10	ND	µg/L	No
Diclofop-methyl	Jan 26/10	ND	µg/L	No
Dimethoate	Jan 26/10	ND	µg/L	No
Dinoseb	Jan 26/10	ND	µg/L	No
Diquat	Jan 26/10	ND	µg/L	No
Diuron	Jan 26/10	ND	µg/L	No
Glyphosate	Jan 26/10	ND	µg/L	No
Heptachlor + Heptachlor Epoxide	Jan 26/10	ND	µg/L	No
Lindane (Total)	Jan 26/10	ND	µg/L	No
Malathion	Jan 26/10	ND	µg/L	No
Methoxychlor	Jan 26/10	ND	µg/L	No
Metolachlor	Jan 26/10	ND	µg/L	No
Metribuzin	Jan 26/10	ND	µg/L	No
Monochlorobenzene	Jan 26/10	ND	µg/L	No
Paraquat	Jan 26/10	ND	µg/L	No
Parathion	Jan 26/10	ND	µg/L	No
Pentachlorophenol	Jan 26/10	ND	µg/L	No
Phorate	Jan 26/10	ND	µg/L	No
Picloram	Jan 26/10	ND	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan 26/10	ND	µg/L	No
Prometryne	Jan 26/10	ND	µg/L	No
Simazine	Jan 26/10	ND	µg/L	No
THM (NOTE: show latest annual average)	Q1-Q4 2010	75.3	µg/L	No
Temephos	Jan 26/10	ND	µg/L	No
Terbufos	Jan 26/10	ND	µg/L	No
Tetrachloroethylene	Jan 26/10	ND	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan 26/10	ND	µg/L	No
Triallate	Jan 26/10	ND	µg/L	No
Trichloroethylene	Jan 26/10	ND	µg/L	No
2,4,6-Trichlorophenol	Jan 26/10	ND	µg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan 26/10	ND	µg/L	No
Trifluralin	Jan 26/10	ND	µg/L	No
Vinyl Chloride	Jan 26/10	ND	µg/L	No

ND= non-detect

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

Parameter	Sample Date	Result Value	Unit of Measure	ODWS Criteria
Total THM	Q1-Q4 2010	75.3	µg/L	100 µg/L

## Part 2 – SUMMARY REPORT (as required by O. Reg. 170/03, Schedule 22)

### Non-Compliance with Legislations, Regulations, Approvals & Orders

During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility's approval, save and except for the following:

Requirement	Actions Required	Actions Taken
Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of the Reg (throughout 2010)	This issue is being addressed by the Owner, operating authority and a consultant that will update the existing system to enable compliance. This work will be completed during plant upgrades in Feb./Mar. 2011	Upgrades to be completed by Spring 2011

### System Capability Assessment

#### Comparison of Flow Rates (m<sup>3</sup>/d):

Month	Average Flow	Maximum Flow	Max. Instantaneous Rate (L/s)
January	311	470	21.3
February	317	400	18.8
March	339	445	30.5
April	409	856	26.5
May	557	1120	20.3
June	463	743	20.1
July	501	769	24.9
August	418	734	19.8
September	336	490	19.8
October	337	473	19.8
November	348	528	19.8
December	334	509	19.8
<b>AVERAGE</b>	<b>352</b>	<b>n/a</b>	<b>-</b>
<b>MAXIMUM</b>	<b>557</b>	<b>1120</b>	<b>-</b>
<b>SYSTEM CAPACITY</b>	<b>1987</b>	<b>1987</b>	<b>23L/s</b>
<b>% CAPACITY</b>	<b>17.7%</b>	<b>56.4%</b>	<b>-</b>

Exceedances of the maximum instantaneous were the result of 2 high lift pumps turning on