



February 24, 2020

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

Attention: Sherry Batten, Chief Administrative Officer

**RE: Chalk River Drinking Water System  
2019 Annual Report**

Dear Sherry,

Please find attached the 2019 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, 2020.

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

Sincerely,

VEOLIA WATER CANADA INC.

A handwritten signature in black ink, appearing to read "G Prangley", written over a white rectangular area.

Greg Prangley  
Project Manager

c. Veolia Canada Chalk River operations



## 2019 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 Drinking Water System |
| Drinking-Water System Owner:    | Town of Laurentian Hills          |
| Drinking-Water System Category: | Large Municipal Residential       |
| Period being reported:          | January 1 – December 31, 2019     |

| 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 checked="" type="checkbox"/> Yes <input 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.<br>MUNICIPAL OFFICE<br>Town Office – Pt. Alexander<br>#34465 Hwy 17 | Number of Designated Facilities served: n/a<br>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?

N/A

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

|   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> Public access/notice via the web        | <input type="checkbox"/> Public access/notice via Municipal Office | <input type="checkbox"/> Public access/notice via a newspaper  |
| <input checked="" 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 source of the Chalk River Drinking Water system 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 – PAX-XL  
 Coagulant aid – Polymer  
 Disinfection – Sodium Hypochlorite  
 Fluoridation – Hydroflousilic acid

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

Calibrations (all equipment) \$5.4K

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 |
|---------------|-----------|--------|-------|-------------------|------------------------|
| None          |           |        |       |                   |                        |

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<br>(min #) - (max #) | Range of Total Coliform Results<br>(min #) - (max #) | Number of HPC Samples | Range of HPC Results<br>(min #) - (max #) |
|--------------|-------------------|--|--|-----------------------|---|
| Raw          | 53                | 0-7  | 2 – 68   | NA                    | NA  |
| Treated      | 53                | 0  | 0  | 53                    | <2-4                                      |
| Distribution | 159               | 0  | 0  | 53                    | <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<br>(min #) – (max #) | Units |
|---|------------------------|---------------------------------------|-------|
| Filter Effluent Turbidity-Filter #1         | 8760                   | 0.04-0.70                             | NTU   |
| Filter Effluent Turbidity-Filter #2         | 8760                   | 0.01-0.34                             | NTU   |
| Chlorine-POE (Tower)                        | 8760                   | 0.46-1.65                             | mg/L  |
| Fluoride (If the DWS provides fluoridation) | 8760                   | 0.43-0.96                             | mg/L  |

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 | Range of Results | Unit of Measure |
|---------------------------------|-----------|--------------|------------------|-----------------|
| None                            |           |              |                  |                 |

**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 23/19   | ND           | mg/L            | No         |
| Arsenic                | Jan 23/19   | 0.0002       | mg/L            | No         |
| Barium                 | Jan 23/19   | 0.007        | mg/L            | No         |
| Boron                  | Jan 23/19   | ND           | mg/L            | No         |
| Cadmium                | Jan 23/19   | ND           | mg/L            | No         |
| Chromium               | Jan 23/19   | ND           | mg/L            | No         |
| Lead-see results below |             |              |                 |            |
| Mercury                | Jan 23/19   | ND           | µg/L            | No         |
| Selenium               | Jan 23/19   | ND           | mg/L            | No         |
| Sodium                 | Jan 24/18   | 22.0         | mg/L            | Yes        |
| Uranium                | Jan 23/19   | ND           | mg/L            | No         |
| Fluoride               | Jan 24/18   | 0.5          | mg/L            | No         |
| Nitrite                | Jan 23/19   | <0.1         | mg/L            | No         |
| Nitrate                | Jan 23/19   | <0.1         | mg/L            | No         |
| Nitrite                | Apr 24/19   | <0.1         | mg/L            | No         |
| Nitrate                | Apr 24/19   | 0.1          | mg/L            | No         |
| Nitrite                | July 24/19  | <0.1         | mg/L            | No         |
| Nitrate                | July 24/19  | <0.1         | mg/L            | No         |
| Nitrite                | Oct. 9/19   | <0.1         | mg/L            | No         |
| Nitrate                | Oct. 9/19   | <0.1         | mg/L            | No         |

**Summary of Lead Results during this reporting period (Winter: Dec. 15/18-April 15/19; Summer: June 15-Oct. 15/19)**

| Sampling Period | Range of Results (µg/L) from Residential Samples (# of Samples taken) | Non-residential locations | Distribution System | Any Adverse Water Quality Incidents? |
|-----------------|---|---------------------------|---------------------|--------------------------------------|
| Winter          | 0.23-54.3 (14)  | 1.88-4.52 (2)             | 0.11-0.14 (3)       | NO                                   |
| Summer          | 0.39-115 (14)   | 2.17-2.51 (2)             | <0.02-0.37 (9)      | NO                                   |

\*two samples taken per residential and non-residential address

**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 23/19   | ND           | µg/L            | No         |
| Atrazine + N-dealkylated metabolites | Jan 23/19   | ND           | µg/L            | No         |
| Azinphos-methyl                      | Jan 23/19   | ND           | µg/L            | No         |
| Benzene                              | Jan 23/19   | ND           | µg/L            | No         |
| Benzo(a)pyrene                       | Jan 23/19   | ND           | µg/L            | no         |

|   |            |      |      |                                   |
|---|------------|------|------|-----------------------------------|
| Bromoxynil  | Jan 23/19  | ND   | µg/L | No                                |
| Carbaryl  | Jan 23/19  | ND   | µg/L | No                                |
| Carbofuran  | Jan 23/19  | ND   | µg/L | No                                |
| Carbon Tetrachloride                                  | Jan 23/19  | ND   | µg/L | No                                |
| Chlorpyrifos  | Jan 23/19  | ND   | µg/L | No                                |
| Diazinon  | Jan 23/19  | ND   | µg/L | No                                |
| Dicamba   | Jan 23/19  | ND   | µg/L | No                                |
| 1,2-Dichlorobenzene                                   | Jan 23/19  | ND   | µg/L | No                                |
| 1,4-Dichlorobenzene                                   | Jan 23/19  | ND   | µg/L | No                                |
| 1,2-Dichloroethane                                    | Jan 23/19  | ND   | µg/L | No                                |
| 1,1-Dichloroethylene<br>(vinylidene chloride)         | Jan 23/19  | ND   | µg/L | No                                |
| Dichloromethane                                       | Jan 23/19  | ND   | µg/L | No                                |
| 2,4-Dichlorophenol                                    | Jan 23/19  | ND   | µg/L | No                                |
| 2,4-Dichlorophenoxy acetic<br>acid (2,4-D)            | Jan 23/19  | ND   | µg/L | No                                |
| Diclofop-methyl                                       | Jan 23/19  | ND   | µg/L | No                                |
| Dimethoate  | Jan 23/19  | ND   | µg/L | No                                |
| Diquat  | Jan 23/19  | ND   | µg/L | No                                |
| Diuron  | Jan 23/19  | ND   | µg/L | No                                |
| Glyphosate  | Jan 23/19  | ND   | µg/L | No                                |
| HAA (will become a regulatory<br>requirement in 2020) | Q1-Q4 2019 | 69.2 | µg/L | N/A (limit will be<br>80 in 2020) |
| Malathion   | Jan 23/19  | ND   | µg/L | No                                |
| MCPA  | Jan 23/19  | ND   | mg/L | N/A                               |
| Metolachlor   | Jan 23/19  | ND   | µg/L | No                                |
| Metribuzin  | Jan 23/19  | ND   | µg/L | No                                |
| Monochlorobenzene                                     | Jan 23/19  | ND   | µg/L | No                                |
| Paraquat  | Jan 23/19  | ND   | µg/L |                                   |
| Pentachlorophenol                                     | Jan 23/19  | ND   | µg/L | No                                |
| Phorate   | Jan 23/19  | ND   | µg/L |                                   |
| Picloram  | Jan 23/19  | ND   | µg/L | No                                |
| Polychlorinated<br>Biphenyls(PCB)                     | Jan 23/19  | ND   | µg/L | No                                |
| Prometryne  | Jan 23/19  | ND   | µg/L | No                                |
| Simazine  | Jan 23/19  | ND   | µg/L | No                                |
| THM<br>(NOTE: show latest annual<br>average)          | Q1-Q4 2019 | 70.5 | µg/L | No                                |
| Terbufos  | Jan 23/19  | ND   | µg/L | No                                |

|                           |           |    |      |    |
|---------------------------|-----------|----|------|----|
| Tetrachloroethylene       | Jan 23/19 | ND | µg/L | No |
| 2,3,4,6-Tetrachlorophenol | Jan 23/19 | ND | µg/L | No |
| Triallate                 | Jan 23/19 | ND | µg/L | No |
| Trichloroethylene         | Jan 23/19 | ND | µg/L | No |
| 2,4,6-Trichlorophenol     | Jan 23/19 | ND | µg/L | No |
| Trifluralin               | Jan 23/19 | ND | µg/L | No |
| Vinyl Chloride            | Jan 23/19 | 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 2019  | 70.5         | 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 |
|-------------|------------------|---------------|
| None        | n/a              | n/a           |

### System Capability Assessment

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

| Month                  | Average Flow | Maximum      | Max. Instantaneous Flow (L/s) |
|------------------------|--------------|--------------|-------------------------------|
| January                | 307          | 435          | 10.6                          |
| February               | 304          | 406          | 10.4                          |
| March                  | 287          | 419          | 9.4                           |
| April                  | 295          | 420          | 10.4                          |
| May                    | 298          | 524          | 8.5                           |
| June                   | 394          | 538          | 11.7                          |
| July                   | 483          | 623          | 12.2                          |
| August                 | 432          | 572          | 10.8                          |
| September              | 342          | 437          | 10.0                          |
| October                | 304          | 413          | 11.1                          |
| November               | 335          | 415          | 10.1                          |
| December               | 328          | 435          | 10.3                          |
| <b>AVERAGE</b>         | <b>343</b>   | <b>n/a</b>   | <b>-</b>                      |
| <b>MAXIMUM</b>         | <b>-</b>     | <b>623</b>   | <b>12.2</b>                   |
| <b>SYSTEM CAPACITY</b> | <b>1987</b>  | <b>1987</b>  | <b>23L/s</b>                  |
| <b>% CAPACITY</b>      | <b>17.2%</b> | <b>31.4%</b> | <b>-</b>                      |