



February 14, 2020

Municipality of West Grey
402813 Grey Road 4
RR#2
Durham, ON
N0G 1R0

Attention: Vance Czerwinski, Direct of Infrastructure and Public Works

**RE: Durham Drinking Water System
2019 Annual Report**

Vance ,

Please find attached the 2019 Annual Operations Report for the Durham 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 at least a copy of the Summary 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".

Greg Prangley
Project Manager

Veolia North America

80 Birmingham St
Hamilton, ON L8L 6W5

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2019 ANNUAL REPORT FOR WATER SYSTEMS

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

Drinking-Water System Number:	220001771
Drinking-Water System Name:	Durham Drinking Water System
Drinking-Water System Owner:	Municipality of West Grey
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 website 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. Municipality of West Grey 402813 Grey Road #4 Durham, ON NOG 1R0	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?

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 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

Well No. 1B Pumphouse

A GUDI well, 300mm diameter and 77 m deep equipped with a VFD submersible well pump rated at 17 L/s at a TDH of 71-133 m. The pumphouse enclosure building is 4.9 m x 3.1 m x 3.3 m high and houses the water treatment equipment including, but not limited to, flow meters, UV disinfection system, cartridge filters, sodium hypochlorite disinfection system, online chlorine and turbidity analyzers, low level alarms, autodialer and backup diesel generator.

Well No. 2 Pumphouse

A GUDI well, 300mm diameter and 74.7 m deep equipped with a VFD submersible well pump rated at 17 L/s at a TDH of 75-139 m. The pumphouse contains the water treatment equipment including, but not limited to, flow meters, UV disinfection system, cartridge filters, sodium hypochlorite disinfection system, online chlorine and turbidity analyzers, low level alarms, autodialer and backup power source available.

Well #2A is located just outside the well#2 pumphouse. It is a 250mm diameter well about 68m deep. The variable speed submersible pump has a capacity of 1134L/min. The capacity of the wellhouse has not changed.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite 12% v/v

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

Cartridge filters approx. \$11,000
 UV lamps \$2,300
 UV sensor \$2,320
 Misc. incidentals ~\$1,000

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	Units	Corrective Action	Corrective Action Date
Aug. 6/19	1,4 dichlorobenzene	7.04	µg/L	Resample and test	Aug. 13/19

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 (well 1B)	51*	0	0	n/a	n/a
Raw (well 2)	52	0	0	n/a	n/a
Raw (well #2A)	52	0	0	n/a	n/a
Treated POE 1	51*	0	0	51*	0-1
Treated POE 2	52	0	0	52	0-1

Distribution	156	0	0	52	0-2
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*no samples taken on May 7 due to well #1B being taken out of service

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
Turbidity – well 1B Treated	8760	0.01-1.54	NTU
Turbidity – Well 2 Treated	8760	0.03-2.00	NTU
Chlorine – Well 1B Treated	8760	0.00-2.00	mg/L
Chlorine – Well 2 Treated	8760	0.36-2.00	mg/L
Chlorine - Distribution	471	0.71-1.66	mg/L

There were no instances of untreated water being delivered into the distribution system. Well pumps automatically shut off when chlorine levels drop below a preset value, or if Turbidity exceeds 1.0NTU for 10 minutes. SCADA system reads all values, even when well pumps are off or equipment service is being conducted

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
December 1, 2009	UV transmittance (#1B)	Jan-Dec. 2019	96.0-100.0	% transmittance
December 1, 2009	UV transmittance (#2)	Jan-Dec. 2019	92.0-100.0	% transmittance

Summary of Inorganic parameters tested during this reporting period or the most recent sample results						
Parameter	Sample Date	Result Value POE 1	Result Value POE 2	Distribution	Unit of Measure	Exceedance
Antimony	Aug. 6/19	ND	ND	-	mg/L	NO
Arsenic	Aug. 6/19	ND	ND	-	mg/L	NO
Barium	Aug. 6/19	0.017	0.014	-	mg/L	NO
Boron	Aug. 6/19	0.012	0.016	-	mg/L	NO
Cadmium	Aug. 6/19	ND	ND	-	mg/L	NO
Chromium	Aug. 6/19	ND	ND	-	mg/L	NO
Lead-see summary below						
Mercury	Aug. 6/19	ND	ND	-	mg/L	NO
Selenium	Aug. 6/19	ND	ND	-	mg/L	NO
Sodium	Aug. 6/19	6.0	11.0	-	mg/L	NO
Uranium	Aug. 6/19	0.0016	0.0032	-	mg/L	NO
Fluoride	Aug. 15/16	0.18	0.61	-	mg/L	NO
Nitrite	Feb 19/19	ND	ND	-	mg/L	NO
Nitrate	Feb 19/19	1.20	0.91	-	mg/L	NO
Nitrite	May 13/19	ND	ND	-	mg/L	NO
Nitrate	May 13/19	1.15	0.70	-	mg/L	NO
Nitrite	Aug. 6/19	ND	ND	-	mg/L	NO
Nitrate	Aug. 6/19	1.11	0.85	-	mg/L	NO
Nitrite	Dec. 3/19	ND	ND	-	mg/L	NO
Nitrate	Dec. 3/19	1.24	0.71	-	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	n/a	n/a	<0.50-0.77 (2)	NO
Summer	n/a	n/a	<0.50 (2)	NO

Summary of Organic parameters sampled during this reporting period or the most recent sample results					
Parameter	Sample Date	Result Value POE 1	Result Value POE 2	Unit of Measure	Exceedance
Alachlor	Aug. 6/19	ND	ND	µg/L	NO
Atrazine + N-dealkylated metabolites	Aug. 6/19	ND	ND	µg/L	NO
Azinphos-methyl	Aug. 6/19	ND	ND	µg/L	NO
Benzene	Aug. 6/19	ND	ND	µg/L	NO
Benzo(a)pyrene	Aug. 6/19	ND	ND	µg/L	NO
Bromoxynil	Aug. 6/19	ND	ND	µg/L	NO
Carbaryl	Aug. 6/19	ND	ND	µg/L	NO
Carbofuran	Aug. 6/19	ND	ND	µg/L	NO
Carbon Tetrachloride	Aug. 6/19	ND	ND	µg/L	NO
Chlorpyrifos	Aug. 6/19	ND	ND	µg/L	NO
Diazinon	Aug. 6/19	ND	ND	µg/L	NO
Dicamba	Aug. 6/19	ND	ND	µg/L	NO
1,2-Dichlorobenzene	Aug. 6/19	ND	ND	µg/L	NO
1,4-Dichlorobenzene	Aug. 6/19	ND	ND	µg/L	NO
1,2-Dichloroethane	Aug. 6/19	ND	ND	µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Aug. 6/19	ND	ND	µg/L	NO
Dichloromethane	Aug. 6/19	ND	ND	µg/L	NO
2-4 Dichlorophenol	Aug. 6/19	ND	ND	µg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug. 6/19	ND	ND	µg/L	NO
Diclofop-methyl	Aug. 6/19	ND	ND	µg/L	NO
Dimethoate	Aug. 6/19	ND	ND	µg/L	NO

Diquat	Aug. 6/19	ND	ND	µg/L	NO
Diuron	Aug. 6/19	ND	ND	µg/L	NO
Glyphosate	Aug. 6/19	ND	ND	µg/L	NO
HAA (comes into effect Jan. 1/20)	Q1-Q4 2019	ND (distribution)		µg/L	N/A
Malathion	Aug. 6/19	ND	ND	µg/L	NO
MCPA	Aug. 6/19	ND	ND	mg/L	NO
Metolachlor	Aug. 6/19	ND	ND	µg/L	NO
Metribuzin	Aug. 6/19	ND	ND	µg/L	NO
Monochlorobenzene	Aug. 6/19	ND	ND	µg/L	NO
Paraquat	Aug. 6/19	ND	ND	µg/L	NO
Pentachlorophenol	Aug. 6/19	ND	ND	µg/L	NO
Phorate	Aug. 6/19	ND	ND	µg/L	NO
Picloram	Aug. 6/19	ND	ND	µg/L	NO
Polychlorinated Biphenyls(PCB)	Aug. 6/19	ND	ND	µg/L	NO
Prometryne	Aug. 6/19	ND	ND	µg/L	NO
Simazine	Aug. 6/19	ND	ND	µg/L	NO
THM (NOTE: show latest annual average)	Q1-Q4 2019	3.78 (distribution)		µg/L	NO
Terbufos	Aug. 6/19	ND	ND	µg/L	NO
Tetrachloroethylene	Aug. 6/19	ND	ND	µg/L	NO
2,3,4,6-Tetrachlorophenol	Aug. 6/19	ND	ND	µg/L	NO
Triallate	Aug. 6/19	ND	ND	µg/L	NO
Trichloroethylene	Aug. 6/19	ND	ND	µg/L	NO
2,4,6-Trichlorophenol	Aug. 6/19	ND	ND	µg/L	NO
Trifluralin	Aug. 6/19	ND	ND	µg/L	NO
Vinyl Chloride	Aug. 6/19	ND	ND	µg/L	NO

ND = Non-Detect

List any Inorganir Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinkiater Quality Standards.

Parameter	Sample Date	Result Value	Unit of Measure	ODWS Criteria
None				

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:

None. There were zero non-compliances noted throughout 2019

Month	Average Flow Well #1B	Maximum Flow Well #1B	Average Flow Well #2	Maximum Flow Well #2	Average Flow Well #2A	Maximum Flow Well #2A
January	686	875	204	513	291	518
February	675	751	0	0	490	545
March	681	801	0	4.6	518	605
April	584	689	0	21.1	499	833
May	413	580	329	542	344	728
June	555	629	216	313	332	572
July	589	688	0	0	580	686
August	559	657	0	0	554	655
September	562	649	0	0	560	646
October	520	581	0	0	512	574
November	520	598	88.0	544	438	563
December	569	609	51.2	350	517	631
AVERAGE	576	n/a	74.7	n/a	470	n/a
MAXIMUM	-	875	-	544	-	833
SYSTEM CAPACITY	1469	1469	1469	1469	1469	1469
% CAPACITY	39.2%	59.6%	5.1%	37.0%	32.0%	56.7%

* several issues throughout 2019 of well #2 causing issues with filter plugging. Well was left off for significant periods