



February 23, 2021

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
2020 Annual Report**

Vance,

Please find attached the 2020 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, 2021.

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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2020 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, 2020

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. \$9,250
 UV lamps approx. \$2,400
 VFD Relay board (Durham Well #2) \$2,080
 Chlorine sensor \$3,400
 Calibrations \$2,300
 UV #2 troubleshooting at Durham Well #1 \$826.44

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
Feb. 26/20	Loss of data	n/a	n/a	Reconnected wire to analyzer	Feb. 26/20

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)	53	0	0	n/a	n/a
Raw (well 2)	50*	0	0	n/a	n/a

Raw (well #2A)	53	0	0	n/a	n/a
Treated POE 1	53	0	0	53	0 - <10**
Treated POE 2	53	0	0	53	0 - <10**
Distribution	159	0	0	53	0 - <10**

*well offline in late Sept / early Oct. so no samples were collected

** changed labs towards the end of 2020. New lab reports an HPC detection limit of 10 counts

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	0.05-1.32	NTU
Turbidity – Well 2 Treated	8760	0.05-1.09	NTU
Chlorine – Well 1B Treated	8760	0.00-2.00	mg/L
Chlorine – Well 2 Treated	8760	0.16-2.00	mg/L
Chlorine - Distribution	473	0.68-1.54	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. 2020	97.0-100.0	% transmittance
December 1, 2009	UV transmittance (#2)	Jan-Dec. 2020	98.0-100.0	% 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. 4/20	ND	ND	-	mg/L	NO
Arsenic	Aug. 4/20	ND	ND	-	mg/L	NO
Barium	Aug. 4/20	0.017	0.014	-	mg/L	NO
Boron	Aug. 4/20	ND	0.013	-	mg/L	NO
Cadmium	Aug. 4/20	ND	ND	-	mg/L	NO
Chromium	Aug. 4/20	ND	ND	-	mg/L	NO
Lead-see summary below						
Mercury	Aug. 4/20	ND	ND	-	mg/L	NO
Selenium	Aug. 4/20	ND	ND	-	mg/L	NO
Sodium	Aug. 4/20	6.2	11.0	-	mg/L	NO
Uranium	Aug. 4/20	0.0017	0.0032	-	mg/L	NO
Fluoride	Aug. 15/16	0.18	0.61	-	mg/L	NO
Nitrite	Feb. 3/20	ND	ND	-	mg/L	NO
Nitrate	Feb. 3/20	1.25	0.87	-	mg/L	NO
Nitrite	May 12/20	ND	ND	-	mg/L	NO
Nitrate	May 12/20	1.15	0.87	-	mg/L	NO
Nitrite	Aug. 4/20	ND	ND	-	mg/L	NO

Nitrate	Aug. 4/20	1.26	0.88	-	mg/L	NO
Nitrite	Nov. 2/20	ND	ND	-	mg/L	NO
Nitrate	Nov. 2/20	1.14	0.78	-	mg/L	NO

Summary of Lead Results during this reporting period (Winter: Dec. 15/19-April 15/20; Summer: June 15-Oct. 15/20)

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	n/a	NO
Summer	n/a	n/a	n/a	NO

Only alkalinity testing was required in 2020

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. 4/20	ND	ND	µg/L	NO
Atrazine + N-dealkylated metabolites	Aug. 4/20	ND	ND	µg/L	NO
Azinphos-methyl	Aug. 4/20	ND	ND	µg/L	NO
Benzene	Aug. 4/20	ND	ND	µg/L	NO
Benzo(a)pyrene	Aug. 4/20	ND	ND	µg/L	NO
Bromoxynil	Aug. 4/20	ND	ND	µg/L	NO
Carbaryl	Aug. 4/20	ND	ND	µg/L	NO
Carbofuran	Aug. 4/20	ND	ND	µg/L	NO
Carbon Tetrachloride	Aug. 4/20	ND	ND	µg/L	NO
Chlorpyrifos	Aug. 4/20	ND	ND	µg/L	NO
Diazinon	Aug. 4/20	ND	ND	µg/L	NO
Dicamba	Aug. 4/20	ND	ND	µg/L	NO
1,2-Dichlorobenzene	Aug. 4/20	ND	ND	µg/L	NO
1,4-Dichlorobenzene	Aug. 4/20	ND	ND	µg/L	NO
1,2-Dichloroethane	Aug. 4/20	ND	ND	µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Aug. 4/20	ND	ND	µg/L	NO
Dichloromethane	Aug. 4/20	ND	ND	µg/L	NO
2-4 Dichlorophenol	Aug. 4/20	ND	ND	µg/L	NO

2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug. 4/20	ND	ND	µg/L	NO
Diclofop-methyl	Aug. 4/20	ND	ND	µg/L	NO
Dimethoate	Aug. 4/20	ND	ND	µg/L	NO
Diquat	Aug. 4/20	ND	ND	µg/L	NO
Diuron	Aug. 4/20	ND	ND	µg/L	NO
Glyphosate	Aug. 4/20	ND	ND	µg/L	NO
HAA	Q1-Q4 2020	<5.0 (distribution)		µg/L	NO
Malathion	Aug. 4/20	ND	ND	µg/L	NO
MCPA	Aug. 4/20	ND	ND	mg/L	NO
Metolachlor	Aug. 4/20	ND	ND	µg/L	NO
Metribuzin	Aug. 4/20	ND	ND	µg/L	NO
Monochlorobenzene	Aug. 4/20	ND	ND	µg/L	NO
Paraquat	Aug. 4/20	ND	ND	µg/L	NO
Pentachlorophenol	Aug. 4/20	ND	ND	µg/L	NO
Phorate	Aug. 4/20	ND	ND	µg/L	NO
Picloram	Aug. 4/20	ND	ND	µg/L	NO
Polychlorinated Biphenyls(PCB)	Aug. 4/20	ND	ND	µg/L	NO
Prometryne	Aug. 4/20	ND	ND	µg/L	NO
Simazine	Aug. 4/20	ND	ND	µg/L	NO
THM (NOTE: show latest annual average)	Q1-Q4 2020	4.73 (distribution)		µg/L	NO
Terbufos	Aug. 4/20	ND	ND	µg/L	NO
Tetrachloroethylene	Aug. 4/20	ND	ND	µg/L	NO
2,3,4,6-Tetrachlorophenol	Aug. 4/20	ND	ND	µg/L	NO
Triallate	Aug. 4/20	ND	ND	µg/L	NO
Trichloroethylene	Aug. 4/20	ND	ND	µg/L	NO
2,4,6-Trichlorophenol	Aug. 4/20	ND	ND	µg/L	NO
Trifluralin	Aug. 4/20	ND	ND	µg/L	NO
Vinyl Chloride	Aug. 4/20	ND	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
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:

Durham well #2 was off from Sept. 16 to Oct. 14 so the October monthly raw water turbidity sample was taken later than 40 days after the September sample, which is a violation of the monthly (20-40 days) requirement.

There was no MECP inspection in 2020

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	556	612	299	586	247	609
February	527	582	527	581	0.1	2.2
March	527	584	517	579	8.6	138
April	566	630	425	594	137	629
May	588	729	334	630	240	583
June	605	692	424	773	195	390
July	606	788	303	393	303	393
August	637	713	316	356	316	356
September	638	761	171	380	443	634
October	536	747	153	325	370	567
November	531	602	265	309	265	309
December	538	682	264	300	131	300
AVERAGE	571	n/a	332	n/a	232	n/a
MAXIMUM	-	788	-	773	-	634
SYSTEM CAPACITY	1469	1469	1469	1469	1469	1469
% CAPACITY	38.9%	53.6%	22.6%	52.6%	15.8%	43.2%