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February 24, 2016

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

**Attention: Ken Gould, Public Works Manager**

**RE: Neustadt Drinking Water System  
2015 Annual Report**

Ken,

Please find attached the 2015 Annual Operations Report for the Neustadt 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, 2016.

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, Canadian Contract Services Group

cc. AW Canada West Grey Operations

## 2015 ANNUAL REPORT FOR WATER SYSTEMS

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

Drinking-Water System Number:	220002147
Drinking-Water System Name:	Neustadt 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, 2015

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. Municipality of West Grey Grey Road #4 Durham, ON N0G 2V0	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
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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 checked="" type="checkbox"/> Public access/notice via other method INCLUDED WITH TAX NOTICE

#### Describe your Drinking Water System

<p>Three GUDI wells: Well No. 2 with a submersible pump capable of delivering 10.6 L/s; Well No. 3 with a submersible pump capable of delivering 6.1 L/s; and Well No. 1 with a submersible pump capable of delivering 3.2 L/s. Pumping station No. 2 transfers flow monitored raw water from Well No. 2 and Well No. 3 (each well with online turbidity meters) to Well No. 1 pumphouse. Well No. 1 pumphouse contains the treatment equipment, including, but not limited to, flow meters, sodium hypochlorite disinfection system (primary disinfection), UV disinfection system, cartridge filters, online chlorine and</p>
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turbidity analyzers, low level alarms and auto dialer.

There is a water tower with a volume of 1200m<sup>3</sup>. It is equipped with an on-line chlorine analyzer. Post chlorinators are in place to booster chlorine levels leaving the tower, if required.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite 12%

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

No significant expenses in 2015

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 (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw Well #1	54*	0	0	n/a	n/a
Raw Well #2	54*	0	0-34	n/a	n/a
Raw Well #3	54*	0	0-2	n/a	n/a
Treated (POE)	54*	0	0	54	0-2
Distribution	102**	0	0	51	0-1

\*three extra well, POE samples collected in May

\*\*samples during week of Sept. 28 not delivered to lab in time. See Non-compliance section

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 - Treated	4860	0.03-2.16*	NTU
Chlorine-Treated	4860	0.58-1.30	mg/L
Chlorine - Distribution	416	0.57-1.16	mg/L
Fluoride (If the DWS provides fluoridation)	NA	NA	

\* High POE (Treated) turbidity events did not exceed regulations for duration (>15min)

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	2015 (monthly)	97.0-99.0	% transmittance

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

Parameter	Sample Date	Result Value POE	Distribution	Unit of Measure	Exceedance
Antimony	Aug 4/15	ND	-	mg/L	NO
Arsenic	Aug 4/15	0.0026	-	mg/L	NO
Barium	Aug 4/15	0.12	-	mg/L	NO
Boron	Aug 4/15	0.019	-	mg/L	NO
Cadmium	Aug 4/15	ND	-	mg/L	NO
Chromium	Aug 4/15	ND	-	mg/L	NO
Lead-see results below					
Mercury	Aug 4/15	ND	-	mg/L	NO
Selenium	Aug 4/15	ND	-	mg/L	NO
Sodium	Aug 4/15	5.5	-	mg/L	NO
Uranium	Aug 4/15	0.00039	-	mg/L	NO
Fluoride	Nov. 14/11	1.2	-	mg/L	NO
Nitrite	Feb 17/15	<0.02	-	mg/L	NO
Nitrate	Feb 17/15	<0.2	-	mg/L	NO
Nitrite	May 11/15	<0.01	-	mg/L	NO
Nitrate	May 11/15	<0.1	-	mg/L	NO
Nitrite	Aug 8/15	<0.01	-	mg/L	NO
Nitrate	Aug 8/15	<0.1	-	mg/L	NO
Nitrite	Nov. 16/15	<0.01	-	mg/L	NO
Nitrate	Nov. 16/15	<0.1	-	mg/L	NO

**Summary of Lead Results during this reporting period (Winter: Dec. 15/14-April 15/15; Summer: June 15-Oct. 15/15)**

Sampling Period	Range of Results (µg/L) from Residential Samples (# of Samples taken)	Non-residential locations (µg/L)	Distribution System (µg/L)	Any Adverse Water Quality Incidents?
Winter	n/a	n/a	ND (1)	NO
Summer	n/a	n/a	1.5 (1)	NO

As per O. Reg 170/03 Schedule 15.1-5, residential lead sampling is no longer required

**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	Aug 4/15	ND	µg/L	NO
Aldicarb	Aug 4/15	ND	µg/L	NO
Aldrin + Dieldrin	Aug 4/15	ND	µg/L	NO
Atrazine + N-dealkylated metabolites	Aug 4/15	ND	µg/L	NO
Azinphos-methyl	Aug 4/15	ND	µg/L	NO
Bendiocarb	Aug 4/15	ND	µg/L	NO
Benzene	Aug 4/15	ND	µg/L	NO

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

Benzo(a)pyrene	Aug 4/15	ND	µg/L	NO
Bromoxynil	Aug 4/15	ND	µg/L	NO
Carbaryl	Aug 4/15	ND	µg/L	NO
Carbofuran	Aug 4/15	ND	µg/L	NO
Carbon Tetrachloride	Aug 4/15	ND	µg/L	NO
Chlordane (Total)	Aug 4/15	ND	µg/L	NO
Chlorpyrifos	Aug 4/15	ND	µg/L	NO
Cyanazine	Aug 4/15	ND	µg/L	NO
Diazinon	Aug 4/15	ND	µg/L	NO
Dicamba	Aug 4/15	ND	µg/L	NO
1,2-Dichlorobenzene	Aug 4/15	ND	µg/L	NO
1,4-Dichlorobenzene	Aug 4/15	ND	µg/L	NO
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Aug 4/15	ND	µg/L	NO
1,2-Dichloroethane	Aug 4/15	ND	µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Aug 4/15	ND	µg/L	NO
Dichloromethane	Aug 4/15	ND	µg/L	NO
2,4 Dichlorophenol	Aug 4/15	ND	µg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug 4/15	ND	µg/L	NO
Diclofop-methyl	Aug 4/15	ND	µg/L	NO
Dimethoate	Aug 4/15	ND	µg/L	NO
Dinoseb	Aug 4/15	ND	µg/L	NO
Diquat	Aug 4/15	ND	µg/L	NO
Diuron	Aug 4/15	ND	µg/L	NO
Glyphosate	Aug 4/15	ND	µg/L	NO
Heptachlor + Heptachlor Epoxide	Aug 4/15	ND	µg/L	NO
Lindane (Total)	Aug 4/15	ND	µg/L	NO
Malathion	Aug 4/15	ND	µg/L	NO
Methoxychlor	Aug 4/15	ND	µg/L	NO
Metolachlor	Aug 4/15	ND	µg/L	NO
Metribuzin	Aug 4/15	ND	µg/L	NO
(Mono)chlorobenzene	Aug 4/15	ND	µg/L	NO
Paraquat	Aug 4/15	ND	µg/L	NO
Parathion	Aug 4/15	ND	µg/L	NO
Pentachlorophenol	Aug 4/15	ND	µg/L	NO
Phorate	Aug 4/15	ND	µg/L	NO
Picloram	Aug 4/15	ND	µg/L	NO
Polychlorinated Biphenyls(PCB)	Aug 4/15	ND	µg/L	NO
Prometryne	Aug 4/15	ND	µg/L	NO
Simazine	Aug 4/15	ND	µg/L	NO
THM (NOTE: show latest annual average)	Q1 - Q4 2015	10.3	µg/L	NO
Temephos	Aug 4/15	ND	µg/L	NO
Terbufos	Aug 4/15	ND	µg/L	NO
Tetrachloroethylene	Aug 4/15	ND	µg/L	NO
2,3,4,6-Tetrachlorophenol	Aug 4/15	ND	µg/L	NO
Triallate	Aug 4/15	ND	µg/L	NO
Trichloroethylene	Aug 4/15	ND	µg/L	NO
2,4,6-Trichlorophenol	Aug 4/15	ND	µg/L	NO
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Aug 4/15	ND	µg/L	NO

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

Trifluralin	Aug 4/15	ND	µg/L	NO
Vinyl Chloride	Aug 4/15	ND	µg/L	NO

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
Fluoride	Nov. 14/11	1.2	mg/L	1.5

## 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:

- 1.) The owner was not maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials  
**Actions Required:** Repair cap on production well  
**Actions Taken:** Well cap tightened and locked
  
- 2.) The record system did not allow the reader to unambiguously identify the person who made the logbook entry  
**Actions Required:** ensure that anyone making an entry into the logbook shall do so in a manner that permits the person to be unambiguously identified as the maker of the entry, including legible details of the log entry subject matter
  
- 3) Sample analysis was missed during the week of September 28, 2015 due to a shipping/delivery error. Letter on file from lab indicating the error. Now have automatic lab notifications sent out when samples arrive at lab.

System Capability Assessment								
Comparison of Flow Rates (m <sup>3</sup> /d):								
Month	Average Flow	Maximum Flow	Well 1 Avg Flow	Well 1 Max Flow	Well 2 Avg Flow	Well 2 Max Flow	Well 3 Avg Flow	Well 3 Max Flow
January	106.2	149	17.0	48.0	51.8	130	37.4	101
February	131.5	222	21.6	55.0	68.2	222	47.4	133
March	149.9	267	18.1	52.0	92.5	267	39.4	119
April	131.7	261	19.2	61.0	68.3	261	44.1	130
May	134.8	317	18.9	92.0	71.2	236	45.9	225
June	117.6	144	23.0	53.0	52.4	120	42.3	94.0
July	126.1	172	20.4	60.0	70.5	172	36.2	102
August	108.1	156	23.6	58.0	42.0	113	42.1	98.0
September	104.7	132	16.8	48.0	57.5	126	30.9	84.0
October	102.2	139	17.2	48.0	57.4	139	30.8	83.0
November	110.1	156	18.8	59.0	58.9	138	32.7	101
December	109.8	202	23.2	63.0	52.6	202	42.0	117
<b>AVERAGE</b>	119.3		19.8		61.9		39.2	
<b>MAXIMUM</b>	-	317	-	92.0	-	267	-	225

SYSTEM CAPACITY	916	916						
% CAPACITY	13.0%	34.6%						

\*Due to rounding, the sum of the monthly well average totals may not equal the total average flow

Each well pump is set to a certain flow rate to maintain compliance with C of A and PTTW. The Maximum Instantaneous flow rates (L/s) for each well pump are as follows:

Well	Max flow rate (L/s)	Approved limit (L/s)
Well #1	2.2	3.2
Well #2	9.0	10.6
Well #3	6.0	6.1