



City of Ottawa

Lemieux Island Water Purification Plant - 2014 Drinking Water Quality

physical, microbiological, chemical, & radiological test results

Physical

Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
Colour	TCU	721	2.3	5.0 (A)
Turbidity	NTU	724	0.01	5.0 (A)
Temperature	degree C	724	9.6	15.0 (A)
Conductivity	m-mhos/cm	11	144	
UV254 absorbance	abs/cm	4	0.065	
Total Dissolved Solids	mg/L	11	90	500 (A)

Microbiological

Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
Total Coliforms	cfu/100mL	1385	0	0
E.coli	cfu/100mL	1385	0	0
Heterotrophic Plate Count (HPC)	cfu/mL	198	< 10	500 (O)
Cryptosporidium	#/100 L	10	0	
Giardia	#/100 L	10	0	

Chemical - general

Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
pH	log ₁₀	724	9.32	6.5 - 8.5 (O)
Alkalinity	mg/L CaCO ₃	722	31	30 - 500 (A)
Bromate	mg/L	4	<	0.01
Bromide	mg/L	4	0.017	
Calcium	mg/L	11	8.5	
Chlorate	mg/L	4	0.10	1.0
Perchlorate	mg/L	3	<	
Chloride	mg/L	10	5.4	250 (A)
Chlorine (total)	mg/L	724	2.00	0.25 - 3.00
Chlorite	mg/L	4	<	1.0
Cyanide	mg/L	4	<	0.2
Fluoride	mg/L	722	0.70	1.5
Magnesium	mg/L	11	2.2	
Potassium	mg/L	11	0.65	
Silicate	mg/L SiO ₂	4	2.49	
Sodium	mg/L	12	16.4	20, 200 (A)
Sulphate	mg/L	10	26.4	500 (A)
Total Hardness**	mg/L CaCO ₃	11	30.3	80 - 100 (A)
Calcium Hardness**	mg/L CaCO ₃	11	21.3	
Magnesium Hardness**	mg/L CaCO ₃	11	9.0	
Ammonia	mg/L N	723	<	
Total Kjeldahl Nitrogen	mg/L N	11	0.35	
Organic Nitrogen**	mg/L N	11	0.35	0.15 (A)
Nitrate	mg/L N	10	0.19	10.0
Nitrite	mg/L N	10	<	1.0
Phosphates	mg/L	4	0.0022	
Phosphorus (total)	mg/L	4	0.005	
Dissolved Organic Carbon	mg/L	11	3.3	5.0 (A)
Dissolved Inorganic Carbon	mg/L	4	5.7	
Langelier's Index**	log ₁₀	11	-1.7	
C-T Disinfection**	mg/L-min	724	154.6	
Log Giardia Disinfection**	log ₁₀	724	7.8-log	min 0.5-log
Log Virus Disinfection**	log ₁₀	724	>10-log	min 3.0-log



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Chemical - inorganic metals

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Aluminum	mg/L	11	0.0675	0.100 (O)
Antimony	mg/L	11	<	0.006
Arsenic	mg/L	9	0.0002	0.010 ² / 0.025 ³
Barium	mg/L	11	0.0139	1.0
Beryllium	mg/L	11	<	
Bismuth	mg/L	11	<	
Boron	mg/L	11	0.0065	5.0
Cadmium	mg/L	11	<	0.005
Chromium	mg/L	11	0.0002	0.05
Chromium VI	mg/L	11	0.00005	
Cobalt	mg/L	11	<	
Copper	mg/L	11	0.0014	1.0 (A)
Iron	mg/L	11	0.0027	0.3 (A)
Lead	mg/L	11	<	0.010
Manganese	mg/L	11	0.0020	0.05 (A)
Mercury	mg/L	11	<	0.001
Molybdenum	mg/L	11	<	
Nickel	mg/L	11	0.0004	
Selenium	mg/L	8	<	0.010
Silver	mg/L	11	<	
Strontium	mg/L	11	0.0404	
Thallium	mg/L	11	<	
Tin	mg/L	11	<	
Titanium	mg/L	11	<	
Tungsten	mg/L	11	<	
Uranium	mg/L	11	<	0.02
Vanadium	mg/L	11	0.0002	
Zinc	mg/L	11	<	5.0 (A)
Zirconium	mg/L	11	<	

Chemical - radiological

Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
Gross-Alpha Radioactivity	Bq/L	50	< 0.01	0.50
Gross-Beta Radioactivity	Bq/L	52	0.04	1.00
Tritium	Bq/L	52	4.0	7000

Chemical - disinfection by-products

Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
Chloroform	µg/L	11	34.8	
Bromodichloromethane	µg/L	11	3.6	
Dibromochloromethane	µg/L	11	0.5	
Bromoform	µg/L	11	<	
Total Trihalomethanes (TTHMs) ¹	µg/L	11	45.5	100.0
Monochloroacetic Acid	µg/L	11	1.4	
Monobromoacetic Acid	µg/L	11	<	
Dichloroacetic Acid	µg/L	11	16.1	
Dibromoacetic Acid	µg/L	11	<	
Trichloroacetic Acid	µg/L	11	15.8	
Bromochloroacetic Acid	µg/L	11	2.2	
Bromodichloroacetic Acid	µg/L	11	2.0	
Chlorodibromoacetic Acid	µg/L	11	<	
Tribromoacetic Acid	µg/L	11	<	
Total Haloacetic Acids (HAA5)	µg/L	11	33.2	80.0 ²
Iodoacetic Acid	µg/L	4	<	
Total Haloacetic Acids (HAA9)	µg/L	11	37.4	



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Chemical - organics				
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1,1,1-Trichloroethane	µg/L	4	<	
1,1,2,2-Tetrachloroethane	µg/L	4	<	
1,1,2-Trichloroethane	µg/L	4	<	
1,1-Dichloroethane	µg/L	4	<	
1,1-Dichloroethylene	µg/L	4	<	14.0
1,2-Dibromoethane	µg/L	4	<	
1,2-Dichlorobenzene	µg/L	4	<	200, 3.0(A)
1,2-Dichloroethane	µg/L	4	<	5.0
1,2-Dichloroethylene - cis	µg/L	4	<	
1,2-Dichloroethylene - trans	µg/L	4	<	
1,2-Dichloropropane	µg/L	4	<	
1,3-Dichlorobenzene	µg/L	4	<	
1,3-Dichloropropene - cis	µg/L	4	<	
1,3-Dichloropropene - trans	µg/L	4	<	
1,4-Dichlorobenzene	µg/L	4	<	5.0, 1.0(A)
2,2 -Dichloropropanoic Acid	µg/L	4	0.35	
2,3,4,6-Tetrachlorophenol	µg/L	4	<	100.0, 1.0(A)
2,4,5-Trichlorophenoxyacetic Acid (2,4,5-T)	µg/L	4	<	280.0
2,4,6-Trichlorophenol	µg/L	4	<	5.0, 2.0(A)
2,4-Dichlorophenol	µg/L	4	<	900, 0.3(A)
2,4-Dichlorophenoxyacetic Acid (2,4-D)	µg/L	4	<	100.0
Alachlor	µg/L	4	<	5.0
Aldicarb	µg/L	4	<	9.0
Aldrin	µg/L	4	<	
Aldrin + Dieldrin	µg/L	4	<	0.7
Atrazine	µg/L	4	<	
Atrazine +N -dealkylated metabolites	µg/L	4	<	5.0
Azinphos-methyl	µg/L	4	<	20.0
Bendiocarb	µg/L	4	<	40.0
Benzene	µg/L	4	<	5.0
Benzo(a)pyrene	µg/L	4	<	0.01
Bromoxynil	µg/L	4	<	5.0
Carbaryl	µg/L	4	<	90.0
Carbofuran	µg/L	4	<	90.0
Carbon Tetrachloride	µg/L	4	<	5.0
Chlordane - alpha	µg/L	4	<	
Chlordane - gamma	µg/L	4	<	
Chlordane - total	µg/L	4	<	7.0
Chloroethylene (monochloroethylene)	µg/L	4	<	
Chlorpyrifos	µg/L	4	<	90.0
Cyanazine	µg/L	4	<	10.0
DDD - para, para	µg/L	4	<	
DDE- para, para	µg/L	4	<	
DDT - ortho, para	µg/L	4	<	
DDT - para, para	µg/L	4	<	
DDT + metabolites	µg/L	4	<	30.0
De-ethylated Atrazine	µg/L	4	<	
Diazinon	µg/L	4	<	20.0
Dicamba	µg/L	4	<	120.0
Dichloroacetonitrile	µg/L	4	<	
Dichloromethane	µg/L	4	<	50.0
Diclofop - methyl	µg/L	4	<	9.0
Dieldrin	µg/L	4	<	
Di-isopropylether	µg/L	4	<	
Dimethoate	µg/L	4	<	20.0
Dinoseb	µg/L	4	<	10.0
Diquat	µg/L	4	<	70.0
Diuron	µg/L	4	<	150.0
Ethylbenzene	µg/L	4	<	140.0, 1.6(A)



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Chemical - organics				
Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
Geosmin	µg/L	4	<	
Glyphosate	µg/L	4	<	280.0
Heptachlor	µg/L	4	<	
Heptachlor + Heptachlor Epoxide	µg/L	4	<	3.0
Heptachlor Epoxide	µg/L	4	<	
Hexachlorocyclohexane (Lindane)	µg/L	4	<	4.0
Malathion	µg/L	4	<	190.0
MCPA	µg/L	4	<	100.0
Methoxychlor	µg/L	4	<	900.0
Methyl-tert -Butyl ether	µg/L	4	<	15.0 (A)
Metolachlor	µg/L	4	<	50
Metribuzin	µg/L	4	<	80
Microcystin ⁴	µg/L	2	<	1.5
Monochlorobenzene	µg/L	4	<	80.0, 30.0(A)
N - Nitrosodi - n - propylamine	µg/L	1	<	
N - Nitrosodibutylamine	µg/L	1	<	
N - Nitrosodiethylamine	µg/L	1	<	
N - Nitrosodimethylamine (NDMA)	µg/L	5	0.0015	0.009 ³ / 0.040 ²
N - Nitrosomethylethylamine	µg/L	1	<	
N - Nitrosomorpholine	µg/L	1	<	
N - Nitrosopiperidine	µg/L	1	<	
N - Nitrosopyrrolidine	µg/L	1	<	
Nitrotriacetic Acid	µg/L	4	<	400.0
Oxychlorane	µg/L	4	<	
Paraquat	µg/L	4	<	10.0
Parathion	µg/L	4	<	50.0
Pentachlorophenol	µg/L	4	<	60.0, 30.0(A)
Phorate	µg/L	4	<	2.0
Picloram	µg/L	4	<	190.0
Polychlorinated Byphenyls (PCB's)	µg/L	4	<	3.0
Prometryne	µg/L	4	<	1.0
Simazine	µg/L	4	<	10.0
Styrene	µg/L	4	0.23	
Temephos	µg/L	4	<	280.0
Terbufos	µg/L	4	<	1.0
Tetrachloroethylene	µg/L	4	<	30.0
Toluene	µg/L	4	<	60.0, 24.0 (A)
Triallate	µg/L	4	<	230.0
Trichloroethylene	µg/L	4	<	5.0
Trifluralin	µg/L	4	<	45.0
Vinyl Chloride	µg/L	4	<	2.0
Xylene - meta & para	µg/L	4	<	
Xylene - ortho	µg/L	4	<	
Xylene - total	µg/L	4	<	90.0, 20.0(A)
2,3,7,8,-Tetra-Dibenzo-p-Dioxin	µg/L	1	<	
1,2,3,7,8,-Penta-Dibenzo-p-Dioxin	µg/L	1	<	
1,2,3,4,7,8,-Hexa-Dibenzo-p-Dioxin	µg/L	1	<	
1,2,3,6,7,8,-Hexa-Dibenzo-p-Dioxin	µg/L	1	<	
1,2,3,7,8,9-Hexa-Dibenzo-p-Dioxin	µg/L	1	<	
1,2,3,4,6,7,8,-Hepta-Dibenzo-p-Dioxin	µg/L	1	<	
2,3,7,8-Tetra-Dibenzofuran	µg/L	1	<	0.000015
1,2,3,7,8,-Penta-Dibenzofuran	µg/L	1	<	
2,3,4,7,8,-Penta-Dibenzofuran	µg/L	1	<	
1,2,3,4,7,8,-Hexa-Dibenzofuran	µg/L	1	<	
1,2,3,6,7,8,-Hexa-Dibenzofuran	µg/L	1	<	
2,3,4,6,7,8,-Hexa-Dibenzofuran	µg/L	1	<	
1,2,3,7,8,9,-Hexa-Dibenzofuran	µg/L	1	<	
1,2,3,4,6,7,8-Hepta-Dibenzofuran	µg/L	1	<	



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Chemical - organics				
Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
1,2,3,4,7,8,9,-Hepta-Dibenzofuran	µg/L	1	<	
Total Tetrachlorodibenzo-p-Dioxins	µg/L	1	<	
Total Pentachlorodibenzo-p-Dioxins	µg/L	1	<	
Total Hexachlorodibenzo-p-Dioxins	µg/L	1	<	
Total Heptachlorodibenzo-p-Dioxins	µg/L	1	<	
Total Octachlorodibenzo-p-Dioxins	µg/L	1	<	
Total Tetrachlorodibenzofurans	µg/L	1	<	
Total Pentachlorodibenzofurans	µg/L	1	<	
Total Hexachlorodibenzofurans	µg/L	1	<	
Total Heptachlorodibenzofurans	µg/L	1	<	
Total Octachlorodibenzofuran	µg/L	1	<	
2,3,7,8-TCDD Toxicity Equivalents	TEQ/L	1	<	0.000015

Chemical - pharmaceuticals & personal care products ⁶				
Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
1,7-Dimethylxanthine	µg/L	4	<	
10-Hydroxy-Amitriptyline	µg/L	4	<	
17a-Dihydroequilin	µg/L	4	<	
17a-Estradiol	µg/L	4	<	
17a-Ethinylestradiol	µg/L	4	<	
17b-Estradiol	µg/L	4	<	
Acetaminophen	µg/L	4	<	
Albuterol	µg/L	4	0.0025	
Amitriptyline	µg/L	4	<	
Amlodipine	µg/L	4	<	
Amphetamine	µg/L	4	<	
Androstenedion	µg/L	4	<	
Androsterone	µg/L	4	<	
Atenolol	µg/L	4	<	
Atorvastatin	µg/L	4	<	
Azithromycin	µg/L	4	<	
Benzafibrate	µg/L	4	<	
Benzoylecgonine	µg/L	4	<	
Betamethasone	µg/L	4	<	
Bis-phenyl A ⁵	µg/L	1	0.0005	
Caffeine	µg/L	4	0.0053	
Carbamezepine	µg/L	4	0.0001	
Clotrimazole	µg/L	4	0.0014	
Cotinine	µg/L	4	<	
Deet	µg/L	4	<	
Diphenhydramine	µg/L	4	<	
Enrofloxacin	µg/L	4	<	
Erythromycin	µg/L	4	<	
Fluoxetine	µg/L	4	<	
Indomethacin	µg/L	4	<	
Ketoprofen	µg/L	4	<	
Metformin	µg/L	4	0.0237	
Miconazole	µg/L	4	<	
Norfloxacin	µg/L	4	<	
Ofloxacin	µg/L	4	<	
Oxolinic Acid	µg/L	4	<	
Pentoxifylline	µg/L	4	<	
Roxithromycin	µg/L	4	<	
Sulfachloropyridazine	µg/L	4	<	
Sulfadiazine	µg/L	4	<	
Sulfadimethoxine	µg/L	4	<	
Sulfamerazine	µg/L	4	<	
Sulfamethazine	µg/L	4	<	



Chemical - pharmaceuticals & personal care products⁶

Test Parameter	units	number of tests	Lemieux treated water results	Drinking water standard*
Sulfamethizole	µg/L	4	<	
Sulfamethoxazole	µg/L	4	<	
Sulfathiazole	µg/L	4	<	
Trimethoprim	µg/L	4	<	

Glossary and notes:

reported values represent average concentrations measured in treated water

< indicates less than detection limit

mg/L = milligram per Litre = part per million (ppm)

µg/L = microgram per Litre = part per billion (ppb)

*Ontario Drinking Water Standards O.Reg.169/03 and/or Health Canada Guidelines for Canadian Drinking Water Quality

*Drinking water standards are health-based MAC (Maximum Acceptable Concentration) values, unless otherwise noted

(A) indicates aesthetic objective, not health related but may affect taste, odour, or appearance

(O) indicates an operational guideline, to ensure efficient treatment and distribution system operation

¹ reported value is an average of the maximum result observed in the distribution system in each quarter

² Health Canada Drinking Water Guideline only

³ Ontario Drinking Water Quality Standard only

⁴ microcystin (algal toxin) results from 2013 data

⁵ Bisphenyl A (BPA) result from 2013 testing by Health Canada study

⁶ Pharmaceutical & Personal care product results from Britannia Treated water

**calculated parameter based on individual analytes

*** The lead values reported do not include the Ontario Ministry of Environment Community Lead Testing Program results