Environment Accounts and Statistics Division

Survey of Drinking Water Plants

Reporting years 2005, 2006, 2007

This document is confidential when completed.

Version française disponible

Correct pre-printed information, **if necessary**, using the corresponding boxes below:

C0001 Owner (legal name)

C0002 Operating Authority

C0003 Drinking water facility name

C0004 Prov./Terr. ID#

C0005 Last name of facility contact (owner)

C0006 First name of facility contact (owner)

C0007 Address

C0008 City

C0009 Province/Territory or State

C0010 Country

C0011 Postal code/Zip code

Please read before completing

Who should complete this questionnaire?

This survey of individual Drinking Water Plants should be completed by persons responsible for the facility treatment processes, facility costs and facility water quality data.

Survey Purpose

This survey collects detailed information concerning the quantity and quality of raw (source) and treated (finished) water processed by individual drinking water treatment plants in Canada, treatment systems used and associated treatment costs. These data will be used in the development of environmental statistics and indicators.

Return of Questionnaire(s)

Please return the completed questionnaire(s) to Statistics Canada within 60 days of receipt by mail, using the enclosed envelope. If you are unable to do so, call **1-888-820-1169** to inform us of the expected completion date. You can also fax it at 1-888-869-0972. Lost the return envelope, need help to complete your questionnaire? Call us at 1-888-820-1169.

Electronic Version of Survey Available

A version of this questionnaire that allows electronic data entry can be requested by faxing page two of the cover letter or contact us at 1-888-820-1169 or email: bsso@statcan.ca

Fax or Other Electronic Transmission Disclosure

Statistics Canada advises you that there could be a risk of disclosure during the facsimile or other electronic transmission. However, upon receipt, Statistics Canada will provide the guaranteed level of protection afforded to all information collected under the authority of the *Statistics Act*.

Multiple water facilities/sources

If there are multiple water facilities and/or sources associated with the facility name on the mailing label, complete this survey for the facility that provides the largest portion of water by volume with available data that reflects the combined raw water quality treated by the facility. Enter the name of the drinking water facility/source(s) above.

Authority

This survey is conducted under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S19. **COMPLETION OF THIS QUESTIONNAIRE IS A LEGAL REQUIREMENT UNDER THE STATISTICS ACT**.

Confidentiality

Statistics Canada is prohibited by law to divulge your information without your consent. Such consent may be provided if, for example, the reported data are already held in the public domain or if you do not require the data to be protected from disclosure. If this is the case for the data you report for this survey, you may consent to the public release of your data by signing the waiver at the bottom of this page.

Data-sharing Agreements

In an effort to reduce respondent burden, Statistics Canada has entered into an agreement with Environment Canada and Health Canada under Section 12 of the Statistics Act for sharing of information from this survey. The data are kept confidential and used for statistical or research purposes only and not for regulatory activities. These Section 12 agreements shall not apply if an authorized officer or person of your company objects in writing to the Chief Statistician and mails that letter to the Operations and Integration Division of Statistics Canada with the completed questionnaire.

FOR INFORMATION ONLY

Person primarily responsible for completing this questionnaire, if different from above:

C0012 Last name

C0013 First name

C0014 Title

C0015 Telephone number

C0016 Extension

C0017 Fax number

C0018 E-mail address

Waiver

Authorization to Release Data

I hereby give permission to the Chief Statistician to authorize the release of water quality data (raw/source and treated/finished), treatment processes, capital and operation & maintenance costs and plant location statistics (with the exception of intake coordinates) relating to this drinking water plant that have been provided through the **Survey of Drinking Water Plants** for the reference years 2005, 2006, 2007 for publication in 2008 or 2009. It is understood that this permission may be rescinded at any time prior to publication by telephoning the Environment Accounts and Statistics Division of Statistics Canada (613-951-0297) and then confirming the request by letter. This permission will continue to be in effect until such consent is withdrawn.

C0019 Signature

C0020 Name

(Please print name of authorized person)

C0021 Title

C0022 Organization

C0023 Date

4-2300-59.1: 2008-01-24 STC/SPE-291-75433

SECTION 1: WATER VOLUMES for reporting years 2005, 2006, 2007

INSTRUCTIONS

(i) Water volumes are to be reported in the units used at the drinking water facility; please check only one box and use this unit of measure throughout the questionnaire.

Line 1

C1000
1 ○ cubic metres
2 ○ Mega Litres (10^6 Litres)
3 ○ other *(specify)*
For gallons specify Imperial or US.
C1001

(ii) Report by month the quantity of "raw water" brought into this drinking water facility. Raw water is defined as source water introduced for the first time into this facility drawn from the environment.

(iii) Report by month the quantity of treated/finished water produced by this drinking water facility.

2 Are raw water volumes metered or estimated? ..... C1002 1 ○ metered 2 ○ estimated

3 Are treated/finished water volumes metered or estimated?..... C1003 1 ○ metered 2 ○ estimated

	2005		2006		2007	
	(ii) "raw water" volumes	(iii) treated/ finished water volumes	(ii) "raw water" volumes	(iii) treated/ finished water volumes	(ii) "raw water" volumes	(iii) treated/ finished water volumes
4 Jan.	C1004	C1017	C1030	C1043	C1056	C1069
5 Feb.	C1005	C1018	C1031	C1044	C1057	C1070
6 Mar.	C1006	C1019	C1032	C1045	C1058	C1071
7 Apr.	C1007	C1020	C1033	C1046	C1059	C1072
8 May	C1008	C1021	C1034	C1047	C1060	C1073
9 June	C1009	C1022	C1035	C1048	C1061	C1074
10 July	C1010	C1023	C1036	C1049	C1062	C1075
11 Aug.	C1011	C1024	C1037	C1050	C1063	C1076
12 Sept.	C1012	C1025	C1038	C1051	C1064	C1077
13 Oct.	C1013	C1026	C1039	C1052	C1065	C1078
14 Nov.	C1014	C1027	C1040	C1053	C1066	C1079
15 Dec.	C1015	C1028	C1041	C1054	C1067	C1080
16 **TOTAL**	C1016	C1029	C1042	C1055	C1068	C1081

Comments

C1082

FOR INFORMATION ONLY

SECTION 2: DRINKING WATER PLANT INFORMATION for 2005, 2006, 2007

INSTRUCTIONS

(i) For all volume data use the same units entered in Line 1 (production volumes are finished/treated water)

PLANT CAPACITY	2005	2006	2007
17 What is the capacity of this facility (maximum daily production volume)?	C2000	C2003	C2006
18 What was the maximum daily production volume recorded for each year?	C2001	C2004	C2007
19 What is the maximum daily volume of "raw water" permitted to be withdrawn? (Use volume prescribed in applicable permits to take water.)	C2002	C2005	C2008

20 Does this facility provide "raw water" (untreated) to other users? C2009 1 ◯ Yes 3 ◯ No

PLANT CLASSIFICATION *(classification of this facility for 2007)*

21 What would the classification of this facility be according to the criteria set out by the Association of Boards of Certification (ABC)[1] (www.abccert.org)?

	Class I	Class II	Class III	Class IV	Small system	Don't know
C2010	1 ◯	2 ◯	3 ◯	4 ◯	5 ◯	6 ◯

Note 1: ECO Canada refer to the ABC system in their final report "2005 National Occupational Guidelines for Canadian Water & Wastewater Operators" www.eco.ca

POPULATION SERVED	2005	2006	2007
22 What is the population served by this Drinking Water Plant?	C2011	C2012	C2013

Check the sources of information these data are based upon.

C2014
1 ◯ Specific study/analysis for this facility
2 ◯ Water billing accounts, count of connections/dwellings on system
3 ◯ Census data
4 ◯ Other *(specify)* C2015

PLANT LOCATION *(If lines 23 - 27 are the same as the address on page 1 indicate "same")*

Address Number	Street or Road Name	Street Type
C2016 23	C2017 24	C2018 25

Name of Township or Municipality	Postal Code
C2019 26	C2020 27

PLANT COORDINATES *(enter line 28 or 29)*

There are mapping websites and free software, such as Natural Resource Canada's "The Atlas of Canada; Toporama" and "Google Earth" that can assist you in finding coordinates in both decimal degrees and degrees, minutes, seconds.

28 Facility Coordinates (decimal degrees)

Latitude C2021 Longitude C2022

29 Facility Coordinates (deg. min. sec.)

Latitude C2023 *degrees minutes seconds* Longitude C2024 *degrees minutes seconds*

Comments

C2025

FOR INFORMATION ONLY

SECTION 3: SOURCE/RAW WATER INFORMATION for 2005, 2006, 2007

INSTRUCTIONS

(i) Indicate the percentage and type of source water (raw water) obtained for processing by this facility.

(ii) For groundwater, specify sources designated as Groundwater Under Direct Influence (GUDI) of surface water.

	SOURCE/RAW WATER TYPE	2005	2006	2007
30	Surface Water	C3000 %	C3003 %	C3006 %
31	Groundwater	C3001 %	C3004 %	C3007 %
32	Groundwater (GUDI)	C3002 %	C3005 %	C3008 %

	SOURCE/RAW WATER QUALITY	2005	2006	2007
33	Has taste and/or odour been identified as a source/raw water issue for this facility?	C3009 1 Yes 3 No	C3013 1 Yes 3 No	C3017 1 Yes 3 No
34	Were facility processes installed or specifically adjusted at least twice in each year to address taste and/or odour?	C3010 1 Yes 3 No	C3014 1 Yes 3 No	C3018 1 Yes 3 No
35	Has blue-green algae been identified as a source/raw water issue for this facility?	C3011 1 Yes 3 No	C3015 1 Yes 3 No	C3019 1 Yes 3 No
36	Were facility processes installed or specifically adjusted at least weekly for at least two months in each year, due to blue-green algae?	C3012 1 Yes 3 No	C3016 1 Yes 3 No	C3020 1 Yes 3 No

INSTRUCTIONS

Please be advised, intake coordinates will not be shared. This information will only be used to allocate data to the appropriate drainage basin.

(iii) Enter multiple intakes if applicable. For groundwater, an approximation that represents the well-field/aquifer that provides water to this facility is acceptable rather than locations of individual wells from the same well-field/aquifer.

	SOURCE WATER INTAKE LOCATION *(enter line 37 or 38)*	Intake No. 1	Intake No. 2	Intake No. 3
37	Source Water Intake (decimal degrees) Latitude	C3021	C3025	C3029
	Longitude	C3022	C3026	C3030
38	Source Water Intake (deg. min. sec.) Latitude	C3023 degrees minutes seconds	C3027 degrees minutes seconds	C3031 degrees minutes seconds
	Longitude	C3024 degrees minutes seconds	C3028 degrees minutes seconds	C3032 degrees minutes seconds

Comments

C3033

FOR INFORMATION ONLY

SECTION 4: WATER TREATMENT PROCESSES for 2005, 2006, 2007

INSTRUCTIONS

(i) If there is no treatment of the raw/source water indicate yes in line 39 and go to the next Section.
Note: disinfection only is a treatment process. **Review the entire list prior to making selections.**

39 No treatment (raw water conveyed for consumption) C4000 1 ◯ Yes 3 ◯ No

(ii) In the "Process Used" column indicate the applicable water treatment processes that are used in this facility prior to conveyance of finished/treated water.

	UNIT PROCESSES FOR WATER TREATMENT	PROCESS USED	Yes	No
40	Microscreening	C4001	1 ◯	3 ◯
41	Other pre-treatment *(specify)* C4002	C4003	1 ◯	3 ◯
42	Other pre-treatment *(specify)* C4004	C4005	1 ◯	3 ◯

(iii) For lines 43 and 44 indicate if the application of the disinfectant is for Primary, Secondary or both.

❶ Primary Disinfection - can be all applications of chlorine other than secondary disinfection.

❷ Secondary Disinfection - addition of chlorine to ensure presence of a disinfectant residual in the distribution system.

		PROCESS USED	Yes	No	Primary Disinfection ❶ Yes	Primary Disinfection ❶ No	Secondary Disinfection ❷ Yes	Secondary Disinfection ❷ No
	DISINFECTION/OXIDATION							
43	Chlorination (hypochlorites or chlorine gas)	C4006	1 ◯	3 ◯ ➡	C4007 1 ◯	3 ◯	C4008 1 ◯	3 ◯
44	Chlorine Dioxide	C4009	1 ◯	3 ◯ ➡	C4010 1 ◯	3 ◯	C4011 1 ◯	3 ◯
45	Chloramination	C4012	1 ◯	3 ◯				
46	UV irradiation	C4013	1 ◯	3 ◯				
47	Ozonation	C4014	1 ◯	3 ◯				
48	Application of potassium permanganate	C4015	1 ◯	3 ◯ ➡	*Note: indicate "no" if only used with greensand filtration system.*			
49	Other disinfection/oxidation reagents	C4016	1 ◯	3 ◯				
	CHEMICAL TREATMENT or ADDITION							
50	Fluoridation *(if 'yes' select those applied)*	C4017	1 ◯	3 ◯ ➡	C4018 *If 'yes' select those applied*: 1 ◯ sodium fluoride; 2 ◯ sodium silicofluoride; 3 ◯ hydrofluorosilicic acid; 4 ◯ ammonium silicofluoride			
51	Alkalinity adjustment for process control	C4019	1 ◯	3 ◯				
52	pH adjustment for process control	C4020	1 ◯	3 ◯				
53	Corrosion control - pH adjustment	C4021	1 ◯	3 ◯				
54	Corrosion control - alkalinity adjustment	C4022	1 ◯	3 ◯				
55	Corrosion control - inhibitors *(if 'yes' select those applied)*	C4023	1 ◯	3 ◯ ➡	C4024 *If 'yes' select those applied*: 1 ◯ Orthophosphates; 2 ◯ Polyphosphates; 3 ◯ Silicates; 4 ◯ Other			
	COAGULATION/FLOCCULATION & FILTER AID							
56	Coagulation - Aluminum based coagulant	C4025	1 ◯	3 ◯				
57	Coagulation - Ferric based coagulant	C4026	1 ◯	3 ◯				
58	Other Coagulant	C4027	1 ◯	3 ◯				
59	Enhanced Coagulation	C4028	1 ◯	3 ◯				
60	Flocculation	C4029	1 ◯	3 ◯				

continued on next page

FOR INFORMATION ONLY

SECTION 4: WATER TREATMENT PROCESSES for 2005, 2006, 2007 (continued)

			PROCESS USED	
			Yes	No
	CLARIFICATION/SEDIMENTATION			
61	Sedimentation - conventional, tube, plate or high rate	C4030	1	3
62	Dissolved air flotation (DAF) - conventional or high rate	C4031	1	3
63	Other Clarification - (sludge blanket, pulsed blanket, ballasted, solids contact or other)	C4032	1	3
	FILTRATION			
64	Filtration - Granular media (single, dual or triple media)	C4033	1	3
65	Granular activated carbon - used as part of filter media	C4034	1	3
66	Granular activated carbon - used as separate unit process	C4035	1	3
67	Filtration - membrane (microfiltration)	C4036	1	3
68	Filtration - membrane (ultrafiltration)	C4037	1	3
69	Filtration - cartridge/bag	C4038	1	3
70	Filtration - slow sand	C4039	1	3
	OTHER PROCESSES			
71	Aeration - transfer of oxygen or air to water	C4040	1	3
72	Air Stripping - contacting water with air to transfer contaminants to air	C4041	1	3
73	Lime Softening	C4042	1	3
74	Activated Alumina	C4043	1	3
75	Ion exchange	C4044	1	3
76	Sequestering	C4045	1	3
77	Greensand filtration	C4046	1	3
78	Powdered activated carbon	C4047	1	3
79	Reverse Osmosis or Nano filtration	C4048	1	3
80	Other processes *(specify)* C4049	C4050	1	3
81	Other processes *(specify)* C4051	C4052	1	3
82	Other processes *(specify)* C4053	C4054	1	3

83 Identify processes that were added/removed or used seasonally during the reporting period 2005, 2006, 2007.

C4055

FOR INFORMATION ONLY

SECTION 5: ANNUAL TREATMENT COSTS for 2005, 2006, 2007

INSTRUCTIONS

(i) Report annual costs in Canadian dollars for the calendar year (January-December)

(ii) Provide capital costs for the years 2005, 2006 and 2007 related to the acquisition and treatment of source/raw water. Do not include any costs associated with distribution.

Total capitalized costs should include money spent to add, expand or upgrade physical assets such as property, buildings, machinery and process equipment/infrastructure including capitalized costs related to waste treatment processes (i.e. backwash/sludge processing & residuals disposal). Include construction and engineering costs (site work, installation, retrofitting, contingencies, and contractor, engineering, legal, & related administrative fees) and indirect costs related to capital expenditures (housing, permitting, land, training, piloting, and education).

				Millions	Thousands	Hundreds	Cents
84	2005	CAPITAL EXPENDITURES	C5000	$	,	,	. X X
85	2006	CAPITAL EXPENDITURES	C5001	$	,	,	. X X
86	2007	CAPITAL EXPENDITURES	C5002	$	,	,	. X X

Comments regarding method of calculating Capital Expenditures

C5003

(iii) Provide Operation and Maintenance (O&M) costs for the years 2005, 2006 and 2007 related to the acquisition and treatment of source/raw water. Do not include any costs associated with distribution.

Total operation and maintenance costs should include materials (chemicals & replacement parts), labour (internal and external staff including lab personnel), energy, waste disposal and residuals handling, analytical/sampling costs and any associated administration and service costs directly related to O&M (consultants, contractors). Include O&M costs related to waste treatment processes (i.e. backwash/sludge processing & residuals disposal).

				Millions	Thousands	Hundreds	Cents
87	2005	O & M COSTS					
		Materials (chemicals & replacement parts)	C5004	$	,	,	. X X
		Labour (internal & external staff)	C5005	$	,	,	. X X
		Energy	C5006	$	,	,	. X X
		Total (including items not listed above)	C5007	$	,	,	. X X
88	2006	O & M COSTS					
		Materials (chemicals & replacement parts)	C5008	$	,	,	. X X
		Labour (internal & external staff)	C5009	$	,	,	. X X
		Energy	C5010	$	,	,	. X X
		Total (including items not listed above)	C5011	$	,	,	. X X
89	2007	O & M COSTS					
		Materials (chemicals & replacement parts)	C5012	$	,	,	. X X
		Labour (internal & external staff)	C5013	$	,	,	. X X
		Energy	C5014	$	,	,	. X X
		Total (including items not listed above)	C5015	$	,	,	. X X

Comments regarding method of calculating O & M COSTS

C5016

FOR INFORMATION ONLY

INSTRUCTIONS FOR TABLES IN SECTION 6 - SOURCE/RAW WATER QUALITY (on reverse)

FOR INFORMATION ONLY

FOR INFORMATION ONLY

SECTION 6: SOURCE (RAW) WATER QUALITY DATA for 2005, 2006, 2007

The purpose of this section is the compilation of water quality data comparable to the respective limits in Provincial/Territorial and/or Guidelines for Canadian Drinking Water Quality (GCDWQ). Water quality data submitted should be comparable (based on method of testing) to these guidelines where applicable.

STEP 1 In the tables RAW2005, RAW2006, RAW2007 provide the monthly number of samples (n), maximum, and average values for the core parameters identified for the source/raw water processed by this facility. n = the number of samples (enter "C" for monitoring frequencies of daily or more to indicate continuous monitoring). When calculating an average using low level data (not detected), use 1/2 the Reported Detection Limit (RDL) if there are some values above the RDL. If all values are not detectable report the average/maximum as "ND".

STEP 2 In the tables RAW2005, RAW2006, RAW2007 for each year include monthly water quality data for 7 additional (or more if relevant) source/raw water parameters. Select the additional parameters from the Water Quality Parameter Table in Appendix B that are monitored in your source/raw water that meet any of the following:

- have been identified as a concern specifically for your source/raw water
- require adjustment for operational considerations
- could act as a precursor to the formation of a disinfection by-product
- could pose or contribute to a human health risk
- significantly affect the aesthetics (taste/odour/appearance) of the drinking water
- exceeding or approaching a guideline/standard or site specific target (if applicable)
- have results above the detection limit

STEP 3 In the tables RAW2005, RAW2006, RAW2007 identify the data source for each parameter by entering the following codes

1 = laboratory generating the results is accredited by CAEAL, Standards Council of Canada or some other organization
2 = on-site/internal data supported by calibration and quality assurance/quality control protocols
3 = other sources

Note: Accreditation means in accordance with ISO 17025. CAEAL = Canadian Association of Environmental Analytical Laboratories. In Québec - Programme d'accréditation de laboratoires d'analyse environnmentale (PALAE)

STEP 4 For the parameters in the RAW2005, RAW2006, RAW2007 tables identify any site specific targets at your plant associated with these parameters (if applicable). Site specific targets could be concentration values to be achieved that are less than a guideline/standard value or possibly concentration limits established where a guideline/standard value does not exist.

STEP 5 ***For surface water only:*** Provide monthly water quality data for the parameters identified in STEP 5. Indicate if any of these parameters were selected in STEP 2.

SECTION 6: TABLE – RAW2005

STEP 5 ***For surface water only:***

In this table (RAW2005) provide monthly data for the following parameters. Enter an "x" beside any parameter selected in Step 2.

C6000 ○ pH
C6001 ○ Hardness
C6002 ○ Phosphorous
C6003 ○ Temperature
C6004 ○ Ammonia and/or Ammonium

STEP 1			STEP 3	STEP 4		RAW2005											
Parameter number [1]	Parameter name	Units [2]	Data source	Site Specific Targets		January	February	March	April	May	June	July	August	September	October	November	December
59a	Escherichia coli	cfu/ 100mL			*n*												
					Maximum												
					Average												
101a	Total coliforms	cfu/ 100mL			*n*												
					Maximum												
					Average												
108	Turbidity	NTU			*n*												
					Maximum												
					Average												
	Nitrate [3]				*n*												
					Maximum												
					Average												
	Nitrite [3]				*n*												
					Maximum												
					Average												
	Total Nitrate/Nitrite [3]				*n*												
					Maximum												
					Average												
103	Total organic carbon	mg/L			*n*												
					Maximum												
					Average												
68	Iron	mg/L			*n*												
					Maximum												
					Average												
72	Manganese	mg/L			*n*												
					Maximum												
					Average												

FOR INFORMATION ONLY

Notes: [1] *Select parameters as specified in the Water Quality Parameter Table in Appendix B (all parameters have an assigned number which must be entered in the first column).*
[2] *Report all results in the units specified for each parameter in the Water Quality Parameter Table in Appendix B.*
[3] *For Nitrogen parameters select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are mg/L as the species, or as mg/L-N.*

STEP 2

						January	February	March	April	May	June	July	August	September	October	November	December
					n												
					Maximum												
					Average												
					n												
					Maximum												
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FOR INFORMATION ONLY

*NOTE: USE **RAW2005 BLANK TABLE** ON **PAGE 21** IN APPENDIX A FOR ADDITIONAL DATA.*

SECTION 6: TABLE – RAW2006

STEP 5 ***For surface water only:***

In this table (RAW2006) provide monthly data for the following parameters. Enter an "x" beside any parameter selected in Step 2.

C6866 ○ pH
C6867 ○ Hardness
C6868 ○ Phosphorous
C6869 ○ Temperature
C6870 ○ Ammonia and/or Ammonium

STEP 1			STEP 3	STEP 4		RAW2006											
Parameter number [1]	Parameter name	Units [2]	Data source	Site Specific Targets		January	February	March	April	May	June	July	August	September	October	November	December
59a	Escherichia coli	cfu/ 100mL			*n*												
					Maximum												
					Average												
101a	Total coliforms	cfu/ 100mL			*n*												
					Maximum												
					Average												
108	Turbidity	NTU			*n*												
					Maximum												
					Average												
	Nitrate [3]				*n*												
					Maximum												
					Average												
	Nitrite [3]				*n*												
					Maximum												
					Average												
	Total Nitrate/Nitrite [3]				*n*												
					Maximum												
					Average												
103	Total organic carbon	mg/L			*n*												
					Maximum												
					Average												
68	Iron	mg/L			*n*												
					Maximum												
					Average												
72	Manganese	mg/L			*n*												
					Maximum												
					Average												

FOR INFORMATION ONLY

Notes: [1] *Select parameters as specified in the Water Quality Parameter Table in Appendix B (all parameters have an assigned number which must be entered in the first column).*
[2] *Report all results in the units specified for each parameter in the Water Quality Parameter Table in Appendix B.*
[3] *For Nitrogen parameters select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are mg/L as the species, or as mg/L-N.*

STEP 2

						January	February	March	April	May	June	July	August	September	October	November	December
					n												
					Maximum												
					Average												
					n												
					Maximum												
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FOR INFORMATION ONLY

*NOTE: USE **RAW2006 BLANK TABLE** ON **PAGE 22** IN APPENDIX A FOR ADDITIONAL DATA.*

SECTION 6: TABLE – RAW2007

STEP 5 ***For surface water only:***

In this table (RAW2007) provide monthly data for the following parameters. Enter an "x" beside any parameter selected in Step 2.

C7732 ○ pH
C7733 ○ Hardness
C7734 ○ Phosphorous
C7735 ○ Temperature
C7736 ○ Ammonia and/or Ammonium

STEP 1			STEP 3	STEP 4		RAW2007											
Parameter number [1]	Parameter name	Units [2]	Data source	Site Specific Targets		January	February	March	April	May	June	July	August	September	October	November	December
59a	Escherichia coli	cfu/ 100mL			*n*												
					Maximum												
					Average												
101a	Total coliforms	cfu/ 100mL			*n*												
					Maximum												
					Average												
108	Turbidity	NTU			*n*												
					Maximum												
					Average												
	Nitrate [3]				*n*												
					Maximum												
					Average												
	Nitrite [3]				*n*												
					Maximum												
					Average												
	Total Nitrate/Nitrite [3]				*n*												
					Maximum												
					Average												
103	Total organic carbon	mg/L			*n*												
					Maximum												
					Average												
68	Iron	mg/L			*n*												
					Maximum												
					Average												
72	Manganese	mg/L			*n*												
					Maximum												
					Average												

FOR INFORMATION ONLY

Notes: [1] *Select parameters as specified in the Water Quality Parameter Table in Appendix B (all parameters have an assigned number which must be entered in the first column).*
[2] *Report all results in the units specified for each parameter in the Water Quality Parameter Table in Appendix B.*
[3] *For Nitrogen parameters select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are mg/L as the species, or as mg/L-N.*

STEP 2

						January	February	March	April	May	June	July	August	September	October	November	December
					n												
					Maximum												
					Average												
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FOR INFORMATION ONLY

*NOTE: USE **RAW2007 BLANK TABLE** ON **PAGE 23** IN APPENDIX A FOR ADDITIONAL DATA.*

INSTRUCTIONS FOR TABLES IN SECTION 7 - TREATED/FINISHED WATER QUALITY (on reverse)

FOR INFORMATION ONLY

FOR INFORMATION ONLY

SECTION 7: TREATED (FINISHED) WATER QUALITY DATA for 2005, 2006, 2007

The purpose of this section is the compilation of water quality data comparable to the respective limits in Provincial/Territorial and/or Guidelines for Canadian Drinking Water Quality (GCDWQ). Water quality data submitted should be comparable (based on method of testing) to these guidelines where applicable.

STEP 1 In the tables TREATED2005, TREATED2006, TREATED2007 provide the monthly number of samples (n), maximum, and average values for the core parameters identified for the treated/finished water from this facility. n = the number of samples (enter "C" for monitoring frequencies of daily or more to indicate continuous monitoring). When calculating an average using low level data (not detected), use 1/2 the Reported Detection Limit (RDL) if there are some values above the RDL. If all values are not detectable report the average/maximum as "ND".

STEP 2 In the tables TREATED2005, TREATED2006, TREATED2007 for each year include monthly water quality data for the relevant "disinfectant residuals" and "disinfection by-products". Select these parameters from the Water Quality Parameter Table in Appendix B.

STEP 3 In the tables TREATED2005, TREATED2006, TREATED2007 for each year include monthly water quality data for 7 additional (or more if relevant) treated/finished water parameters. Select parameters from the Water Quality Parameter Table in Appendix B that are monitored in your treated/finished water that meet any of the following:

- have been identified as a concern specifically for your source/raw water
- must be controlled to protect public health
- significantly affect the aesthetics (taste/odour/appearance) of the drinking water
- could be created as a result of the treatment process (e.g. chlorate, or chlorite)
- could be introduced from the distribution or domestic plumbing systems (e.g. lead).
- exceeding or approaching a guideline/standard or site specific target (if applicable)
- have results above the detection limit

STEP 4 In the tables TREATED2005, TREATED2006, TREATED2007 identify the data source for each parameter by entering the following codes

1 = laboratory generating the results is accredited by CAEAL, Standards Council of Canada or some other organization
2 = on-site/internal data supported by calibration and quality assurance/quality control protocols
3 = other sources

Note: Accreditation means in accordance with ISO 17025. CAEAL = Canadian Association of Environmental Analytical Laboratories. In Québec - Programme d'accréditation de laboratoires d'analyse environnmentale (PALAE)

STEP 5 For the parameters in the TREATED2005, TREATED2006, TREATED2007 tables identify any site specific targets at your plant associated with these parameters (if applicable). Site specific targets could be concentration values to be achieved that are less than a guideline/standard value or possibly concentration limits established where a guideline/standard value does not exist.

SECTION 7: TABLE – TREATED2005

SAMPLING LOCATION OF TREATED/FINISHED WATER : **Are all the treated/finished water data in this table (TREATED2005) from samples taken at the treatment plant prior to distribution?** ..... C8598 1 ◯ Yes 3 ◯ No

If NO, identify the parameters that were sampled in the distribution system by checking this box for all C8599 ☐ *or by listing the parameters using the assigned number from the Water Quality Parameter Table in Appendix B.*

STEP 1			STEP 4	STEP 5		TREATED2005											
Parameter number [1]	Parameter name	Units [2]	Data source	Site Specific Targets		January	February	March	April	May	June	July	August	September	October	November	December
	Escherichia coli [3]				*n*												
					Maximum												
					Average												
	Total coliforms [3]				*n*												
					Maximum												
					Average												
108	Turbidity	NTU			*n*												
					Maximum												
					Average												
	Nitrate [4]				*n*												
					Maximum												
					Average												
	Nitrite [4]				*n*												
					Maximum												
					Average												
	Total Nitrate/Nitrite [4]				*n*												
					Maximum												
					Average												
68	Iron	mg/L			*n*												
					Maximum												
					Average												
72	Manganese	mg/L			*n*												
					Maximum												
					Average												

FOR INFORMATION ONLY

Notes:
1. *Select parameters as specified in the Water Quality Parameter Table in Appendix B (all parameters have an assigned number which must be entered in the first column).*
2. *Report all results in the units specified for each parameter in the Water Quality Parameter Table in Appendix B.*
3. *For "Escherichia coli" and "Total coliforms" select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are cfu/100mL, or Presence/Absence (P/A). If reporting P/A results use the maximum field for the number of tests showing "Present" and the average field for the number of tests showing "Absent".*
4. *For Nitrogen parameters select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are mg/L as the species, or as mg/L-N.*

STEP 2 & 3

						January	February	March	April	May	June	July	August	September	October	November	December
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FOR INFORMATION ONLY

*NOTE: USE **TREATED2005 BLANK TABLE** ON **PAGE 25** IN APPENDIX A FOR ADDITIONAL DATA.*

SECTION 7: TABLE – TREATED2006

SAMPLING LOCATION OF TREATED/FINISHED WATER : **Are all the treated/finished water data in this table (TREATED2006) from samples taken at the treatment plant prior to distribution?** ..... C9450 1 ◯ Yes 3 ◯ No

If NO, identify the parameters that were sampled in the distribution system by checking this box for all C9451 ☐ *or by listing the parameters using the assigned number from the Water Quality Parameter Table in Appendix B.*

STEP 1			STEP 4	STEP 5		TREATED2006											
Parameter number [1]	Parameter name	Units [2]	Data source	Site Specific Targets		January	February	March	April	May	June	July	August	September	October	November	December
	Escherichia coli [3]				*n*												
					Maximum												
					Average												
	Total coliforms [3]				*n*												
					Maximum												
					Average												
108	Turbidity	NTU			*n*												
					Maximum												
					Average												
	Nitrate [4]				*n*												
					Maximum												
					Average												
	Nitrite [4]				*n*												
					Maximum												
					Average												
	Total Nitrate/Nitrite [4]				*n*												
					Maximum												
					Average												
68	Iron	mg/L			*n*												
					Maximum												
					Average												
72	Manganese	mg/L			*n*												
					Maximum												
					Average												

FOR INFORMATION ONLY

Notes:
1. *Select parameters as specified in the Water Quality Parameter Table in Appendix B (all parameters have an assigned number which must be entered in the first column).*
2. *Report all results in the units specified for each parameter in the Water Quality Parameter Table in Appendix B.*
3. *For "Escherichia coli" and "Total coliforms" select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are cfu/100mL, or Presence/Absence (P/A). If reporting P/A results use the maximum field for the number of tests showing "Present" and the average field for the number of tests showing "Absent".*
4. *For Nitrogen parameters select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are mg/L as the species, or as mg/L-N.*

STEP 2 & 3

						January	February	March	April	May	June	July	August	September	October	November	December
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FOR INFORMATION ONLY

*NOTE: USE **TREATED2006 BLANK TABLE** ON **PAGE 26** IN APPENDIX A FOR ADDITIONAL DATA.*

SECTION 7: TABLE – TREATED2007

SAMPLING LOCATION OF TREATED/FINISHED WATER : **Are all the treated/finished water data in this table (TREATED2007) from samples taken at the treatment plant prior to distribution?** ..... C10302 1 ◯ Yes 3 ◯ No

If NO, identify the parameters that were sampled in the distribution system by checking this box for all C10303 ☐ *or by listing the parameters using the assigned number from the Water Quality Parameter Table in Appendix B.*

STEP 1			STEP 4	STEP 5		TREATED2007											
Parameter number [1]	Parameter name	Units [2]	Data source	Site Specific Targets		January	February	March	April	May	June	July	August	September	October	November	December
	Escherichia coli [3]				*n*												
					Maximum												
					Average												
	Total coliforms [3]				*n*												
					Maximum												
					Average												
108	Turbidity	NTU			*n*												
					Maximum												
					Average												
	Nitrate [4]				*n*												
					Maximum												
					Average												
	Nitrite [4]				*n*												
					Maximum												
					Average												
	Total Nitrate/Nitrite [4]				*n*												
					Maximum												
					Average												
68	Iron	mg/L			*n*												
					Maximum												
					Average												
72	Manganese	mg/L			*n*												
					Maximum												
					Average												

FOR INFORMATION ONLY

Notes:
1. *Select parameters as specified in the Water Quality Parameter Table in Appendix B (all parameters have an assigned number which must be entered in the first column).*
2. *Report all results in the units specified for each parameter in the Water Quality Parameter Table in Appendix B.*
3. *For "Escherichia coli" and "Total coliforms" select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are cfu/100mL, or Presence/Absence (P/A). If reporting P/A results use the maximum field for the number of tests showing "Present" and the average field for the number of tests showing "Absent".*
4. *For Nitrogen parameters select the correct parameter number in the Water Quality Parameter Table in Appendix B to indicate whether units are mg/L as the species, or as mg/L-N.*

STEP 2 & 3

						January	February	March	April	May	June	July	August	September	October	November	December
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					Maximum												
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FOR INFORMATION ONLY

*NOTE: USE **TREATED2007 BLANK TABLE** ON **PAGE 27** IN APPENDIX A FOR ADDITIONAL DATA.*

APPENDIX A

BLANK TABLES FOR SECTION 6 - SOURCE/RAW WATER QUALITY.

RAW2005 - PAGE 21

RAW2006 - PAGE 22

RAW2007 - PAGE 23

FOR INFORMATION ONLY

SECTION 6: TABLE – RAW2005

Parameter number	Parameter name	Units	Data source	Site Specific Targets		RAW2005											
						January	February	March	April	May	June	July	August	September	October	November	December
					n												
					Maximum												
					Average												
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FOR INFORMATION ONLY

SECTION 6: TABLE – RAW2006

Parameter number	Parameter name	Units	Data source	Site Specific Targets		RAW2006											
						January	February	March	April	May	June	July	August	September	October	November	December
					n												
					Maximum												
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FOR INFORMATION ONLY

SECTION 6: TABLE – RAW2007

Parameter number	Parameter name	Units	Data source	Site Specific Targets		RAW2007											
						January	February	March	April	May	June	July	August	September	October	November	December
					n												
					Maximum												
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FOR INFORMATION ONLY

APPENDIX A

BLANK TABLES FOR SECTION 7 - TREATED/FINISHED WATER QUALITY.

TREATED2005 - PAGE 25

TREATED2006 - PAGE 26

TREATED2007 - PAGE 27

FOR INFORMATION ONLY

SECTION 7: TABLE – TREATED2005

Parameter number	Parameter name	Units	Data source	Site Specific Targets		TREATED2005											
						January	February	March	April	May	June	July	August	September	October	November	December
					n												
					Maximum												
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FOR INFORMATION ONLY

SECTION 7: TABLE – TREATED2006

Parameter number	Parameter name	Units	Data source	Site Specific Targets		TREATED2006											
						January	February	March	April	May	June	July	August	September	October	November	December
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FOR INFORMATION ONLY

SECTION 7: TABLE – TREATED2007

Parameter number	Parameter name	Units	Data source	Site Specific Targets		TREATED2007											
						January	February	March	April	May	June	July	August	September	October	November	December
					n												
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FOR INFORMATION ONLY

APPENDIX B - WATER QUALITY PARAMETER TABLE

1. For each parameter selected ensure the assigned parameter number is entered in the first column of the RAW/TREATED TABLES.
2. Report all results in the units specified for each parameter in this table.
3. For Nitrogen parameters select the correct parameter number to indicate whether units are mg/L as the species, or as mg/L-N.
4. For "Escherichia coli" and "Total coliforms" select the correct parameter number to indicate whether units are cfu/100mL, or Presence/Absence (P/A).
   If reporting P/A results use the maximum field for the number of tests showing "Present" and the average field for the number of tests showing "Absent".
5. For other parameters enter "999" in the first column of the RAW/TREATED TABLES and provide the parameter name, applicable Chemical Abstracts Service (CAS) Number, and units.

No.	PARAMETER NAME	UNITS
1	1,1-Dichloroethylene	mg/L
2	1,2-Dichlorobenzene	mg/L
3	1,2-Dichloroethane	mg/L
4	1,4-Dichlorobenzene	mg/L
5	2,3,4,6-Tetrachlorophenol	mg/L
6	2,4,6-Trichlorophenol	mg/L
7	2,4-Dichlorophenol	mg/L
8	2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L
9	2-Methyl-4-chlorophenoxyacetic acid (MCPA)	mg/L
10	2-Methylisoborneol (MIB)	ng/L
11	Aldicarb	mg/L
12	Aldrin + dieldrin	mg/L
13	Alkalinity - Total (as $CaCO_3$)	mg/L
14	Aluminum	mg/L
15a	Ammonia (as Nitrogen)	mg/L-N
15b	Ammonia (as species)	mg/L
16a	Ammonium (as Nitrogen)	mg/L-N
16b	Ammonium (as species)	mg/L
17a	Ammonia/Ammonium-Total (as Nitrogen)	mg/L-N
17b	Ammonia/Ammonium-Total (as species)	mg/L
18	Antimony	mg/L
19	Arsenic	mg/L
20	Atrazine + metabolites	mg/L
21	Azinphos-methyl	mg/L
22	Barium	mg/L
23	Bendiocarb	mg/L
24	Benzene	mg/L
25	Benzo[a]pyrene	mg/L
26	Boron	mg/L
27	Bromate	mg/L
28	Bromide	mg/L
29	Bromodichloromethane (BDCM)	mg/L
30	Bromoxynil	mg/L
31	Cadmium	mg/L
32	Carbaryl	mg/L
33	Carbofuran	mg/L
34	Carbon tetrachloride	mg/L
35	Cesium-137	Bq/L
36	Chlorate	mg/L
37	Chloride	mg/L
38	Chlorine dioxide	mg/L
39	Chlorine residual - free	mg/L
40	Chlorine residual - total	mg/L
41	Chloramines - total (chlorine residual combined)	mg/L
42	Chlorite	mg/L
43	Chlorpyrifos	mg/L
44	Chromium	mg/L
45	Colour	TCU
46	Copper	mg/L
47	Cryptosporidium Parvum	org/100L
48	Cyanazine	mg/L
49	Cyanide	mg/L
50	Cyanobacterial toxins (microcystin-LR)	mg/L
51	Diazinon	mg/L
52	Dicamba	mg/L
53	Dichloromethane	mg/L
54	Diclofop-methyl	mg/L
55	Dimethoate	mg/L
56	Dinoseb	mg/L
57	Diquat	mg/L
58	Diuron	mg/L

No.	PARAMETER NAME	UNITS
59a	Escherichia coli (E. coli)	cfu/100ml
59b	Escherichia coli (E. coli) (Presence/Absence)	(P/A)
60	Ethylbenzene	mg/L
61	Fluoride	mg/L
62	Geosmin	ng/L
63	Giardia Lamblia	org/100L
64	Glyphosate	mg/L
65	Haloacetic Acids—Total (HAAs)	mg/L
66	Hardness (as $CaCO_3$)	mg/L
67	Iodine-131	Bq/L
68	Iron	mg/L
69	Lead	mg/L
70	Lead-210	Bq/L
71	Malathion	mg/L
72	Manganese	mg/L
73	Mercury	mg/L
74	Methoxychlor	mg/L
75	Methyl tertiary-butyl ether (MTBE)	mg/L
76	Metolachlor	mg/L
77	Metribuzine	mg/L
78	Monochlorobenzene	mg/L
79a	Nitrate (as Nitrogen)	mg/L-N
79b	Nitrate (as species)	mg/L
80a	Nitrite (as Nitrogen)	mg/L-N
80b	Nitrite (as species)	mg/L
81a	Nitrate/Nitrite-Total (as Nitrogen)	mg/L-N
81b	Nitrate/Nitrite-Total (as species)	mg/L
81c	Nitrogen (Total Kjeldahl)	mg/L
82	Nitrilotriacetic acid (NTA)	mg/L
83	Paraquat (as dichloride)	mg/L
84	Parathion	mg/L
85	Pentachlorophenol	mg/L
86	pH	no units
87	Phorate	mg/L
88	Phosphorus	mg/L
89	Picloram	mg/L
90	Radium-226	Bq/L
91	Selenium	mg/L
92	Simazine	mg/L
93	Sodium	mg/L
94	Strontium-90	Bq/L
95	Sulphate	mg/L
96	Sulphide (as H_2S)	mg/L
97	Temperature	°C
98	Terbufos	mg/L
99	Tetrachloroethylene	mg/L
100	Toluene	mg/L
101a	Total Coliforms	cfu/100ml
101b	Total Coliforms (Presence/Absence)	(P/A)
102	Total dissolved solids (TDS)	mg/L
103	Total organic carbon	mg/L
104	Trichloroethylene (TCE)	mg/L
105	Trifluralin	mg/L
106	Trihalomethanes-total (THMs)	mg/L
107	Tritium	Bq/L
108	Turbidity	NTU
109	Uranium	mg/L
110	Vinyl chloride	mg/L
111	Xylenes—total	mg/L
112	Zinc	mg/L
999	Other (provide Chemical Abstracts Service No.)	

Core parameter | Chlorine residual (disinfectant residuals) | Disinfection by-product

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