

# TOWN OF MACKLIN

## Drinking Water Quality and Compliance

### Introduction

The Water Security Agency and the Ministry of Environment requires that at least once each year waterworks owners provide notification to consumers of the quality of water produced and supplied as well as information on the performance of the waterworks in submitting samples as required by a Minister's Order or Permit to Operate a waterworks. The following is a summary of the Town of Macklin water quality and sample submission compliance record for the 2019 Calendar year time period. This report was completed on April 13, 2020. Readers should refer to Water Security Agency's Municipal Drinking Water Quality Monitoring Guidelines, November 2002, EPB 202 for more information on minimum sample submission requirements and the meaning of type of sample. Permit requirements for a specific waterworks may require more sampling than outlined in the department's monitoring guidelines. If consumers need more information on the nature and significance of specific water tests, for example, "what is the significance of Selenium in a water supply", more detailed information is available from: [http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index\\_e.html](http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index_e.html).

### Water Quality Standards

#### Bacteriological Quality

Parameter/Location	Limit	Regular Samples Required	Regular Samples Submitted	# of Positive Regular Submitted (%)
Total Coliform and Background Bacteria	0 Organisms/100ml Less than 200/100ml	52	52	0

#### Water Disinfection-

##### Chlorine Residual in Distribution System for Test Results Submitted with Bacteriological Samples

Parameter	Minimum Limit	Total Chlorine Residual Range	Free Chlorine Residual Range	# Tests Required	# Tests Submitted	# Adequate Chlorine (%)
Chlorine Residual	.01 mg/L free OR .05 mg/L total	0.70 mg/L	0.35 mg/L	52	52	100

##### Water Disinfection – Free Chlorine Residual for Water Entering Distribution System from Waterworks Records- From Water

#### Treatment Plant Records

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests not meeting Requirements
Free Chlorine Residual	at least .01	0.45 mg/L	365	0

A minimum of .01 milligrams per litre (mg/L) free chlorine residual is required for water entering the distribution system. Tests are normally performed on a daily basis by the waterworks operator and are to be recorded in operation records. This data includes the number of free chlorine residual tests performed, the overall range of free chlorine residual (highest and lowest recorded values) and the number of tests and percentage of results not meeting the minimum requirement of .01 mg/L free chlorine residual.

#### Turbidity – From Water Treat Plant Records

Parameter	Limit (NTU)	Test Level Range	# Tests Not Meeting Requirements	Maximum Turbidity (NTU)	# Tests Required	# Tests Performed
Turbidity	1.0 NTU	0.15 NTU	0	0.3 NTU	365	365

### Chemical – Health Category

All waterworks serving less than 5000 persons are required to submit water samples for SE's Chemical Health category once every 2 years. The Chemical Health category includes analysis for arsenic, barium, boron, cadmium, chromium, fluoride, lead, nitrate, selenium and uranium.

The last sample for Chemical Health analysis was submitted on April 09, 2019. Sample results indicated that the provincial drinking water quality standards were not exceeded.

<u>Parameter</u>	<u>Limit MAC(mg/L)</u>	<u>Limit IMAC(mg/L)</u>	<u>Sample Result(s)</u>	
Arsenic	0.025		0.00026	*Results Expressed as average values for communities or waterworks that fluoridate drinking water supplies or those with elevated concentrations of fluoride or nitrates.
Barium	1.0		0.0891	
Boron		5.0	0.161	
Cadmium	0.005		0.00005	
Chromium	0.05		0.00010	
Fluoride ( avg.* )	1.5		0.28	
Lead	0.01		0.00050	
Nitrate (avg.* )	45.0		<0.5	
Selenium	0.01		<0.0005	
Uranium	0.02		0.00002	
Zinc	5.0		0.0030	

### General Chemical

<u>Parameter</u>	<u>Aesthetic Objectives * (mg/L)</u>	<u>Sample Results (average)</u>
Alkalinity	<500	277
Bicarbonate	No Objective	339
Calcium	No Objective	50
Carbonate	No Objective	<5.0
Chloride	<250	12.8
Conductivity	No Objective	580
Hardness	<800	204
Magnesium	<200	19.2
PH	No Objective	8.07
Sodium	<300	54.6
Sulphate	<500	28.8
Total Dissolved Solids	<1500	314

All waterworks services less than 5000 persons are required to submit water samples for SE's General Chemical category once every two years if a ground water source and once per three months every second year if a surface water or blended surface/groundwater source. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as CaCO<sub>3</sub>), magnesium, sodium, sulphate and total dissolved solids.

The last sample for General Chemical analysis was submitted on April 9, 2019.

\*Objectives apply to certain characteristics of or substances found in water for human consumptive or hygienic use. The presence of these substances will affect the acceptance of water by consumers and/or interfere with the practice of supplying good quality water. Compliance with drinking water aesthetic objectives is not mandatory as these objectives are in the range where they do not constitute a health hazards. The aesthetic objectives for several parameters (including hardness as CaCO<sub>3</sub>, magnesium, sodium and total dissolved solids) consider regional differences in drinking water sources and quality.