Drinking Water Quality and Compliance
Annual Notice to Consumers of Yorkton

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 City of Yorkton water quality and sample submission compliance records for January 1-December 31, 2019 time period. This report was completed on June 12, 2020. Readers should refer to Saskatchewan Water Security Agency's Municipal Drinking Water Quality Monitoring Guidelines, June 2015, EPB 502 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

Water Quality Standards
Bacteriological Quality

Regular Parameter/Location (%)	Limit	Regular Samples Required	Regular Samples Submitted	# of Positive Submitted
Total Coliform	0 Organisms/100 mL	156	156	0
E. coli	0 Organisms/100 mL	156	156	0
Background Bacteria	Less than 200/100 mL	156	156	0

Water Disinfection – Chlorine Residual in Distribution System for Test Results Submitted with Bacteriological Samples

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests Not Meeting Requirements
Chlorine Residual	0.1 mg/L free OR 0.5 mg/L total	0.46-1.85	156	0

Water Disinfection – Free Chlorine Residual for Water Entering Distribution System – From Water Treatment Plant Records

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests Not Meeting Requirements
Free Chlorine Residual	at least 0.1	0.22-1.54	Continuous	0

Turbidity

Parameter	Limit (NTU)	Test Level Range	# Tests Not Meeting Requirements	Turbidity (NTU)	# Tests Required	# Tests Performed
Turbidity	1.0	0.05-0.89	0		0	Continuous

Chemical – Health Category

All waterworks serving 5000 persons or more are required to submit water samples for Saskatchewan Environment's "Chemical Health" based on population size. The "Chemical Health" category includes analysis for arsenic, barium, boron, cadmium, chromium, fluoride, lead, nitrate, selenium and uranium. Samples for "Chemical Health" analysis were submitted on September 10, 2019. Sample results indicated that the provincial drinking water quality standards were not exceeded.

Parameter	Limit MAC (mg/L)	Limit IMAC (mg/L)	Sample Results	# Samples Exceeding Limit	# Samples Required	# Samples Submitted
Arsenic	0.010		0.001	0	1	1
Barium	1.0		0.079	0	1	1
Boron		5.0	0.11	0	1	1
Cadmium	0.005		<0.00001	0	1	1
Chromium	0.05		<0.0005	0	1	1
Fluoride (avg.*)	1.5		0.19	0	1	1
Lead	0.01		<0.0001	0	1	1
Nitrate (avg.*)	45.0		0.4	0	1	1
Selenium	0.01		<0.0001	0	1	1
Uranium	0.02		0.0035	0	1	1

* Results expressed as average values for communities or waterworks which fluoridate drinking water supplies or those with elevated concentrations of fluoride or nitrates.

General Chemical

Parameter	Aesthetic Objectives * (mg/L)	Sample Results (average)	#Samples Required	#Samples Submitted
Alkalinity	500	<1	2	2
Bicarbonate	No Objective	417	2	2
Calcium	No Objective	136	2	2
Carbonate	No Objective	<1	2	2
Chloride	250	37	2	2
Conductivity	No Objective	1270	2	2
Hardness	800	578	2	2
Magnesium	200	58	2	2
PH	No Objective	7.93	2	2
Sodium	300	68	2	2
Sulphate	500	330	2	2
Total dissolved Solids	1500	930	2	2

All waterworks serving more than 5000 persons are required to submit water samples for the General Chemical category as per their operating permit. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as $CaCO_3$), magnesium, sodium, sulphate and total dissolved solids.

Sample results indicated that there were no exceedences of the provincial aesthetic objectives for the General Chemical category.

*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 $CaCO_3$, magnesium, sodium and total dissolved solids) consider regional differences in drinking water sources and quality.

Chemical – Pesticides

All waterworks serving 5000 persons or more are required to submit water samples for Saskatchewan Environment's "Pesticides" category. The frequency of sample submission depends on the number of persons supplied by the waterworks. The "Pesticides" category includes analysis for atrazine, bromoxynil, carbofuran, chlorpyrifos, dicamba, 2,4-D, diclofop-methyl, dimethoate, malathion, pentachlorophenol, picloram and trifluralin.

Samples for pesticide analysis were submitted on July, 2017. Sample results indicated that the provincial drinking water quality standards were not exceeded.

Parameter	Limit MAC (mg/L)	Limit IMAC (mg/L)	Sample Result	# Samples Exceeding MAC/IMAC	#Samples Required	# Samples Submitted
Atrazine		0.005	<0.0002	0	1	1
Bromoxynil		0.005	<0.002	0	1	1
Carbofuran	0.09		<0.0002	0	1	1
Chlorpyrifos	0.09		<0.0002	0	1	1
Dicamba	0.12		<0.001	0	1	1
2,4-D*		0.1	<0.001	0	1	1
Diclofop-methyl	0.009		<0.001	0	1	1
Dimethoate		0.2	<0.005	0	1	1
Malathion	0.19		<0.0002	0	1	1
Pentachlorophenol	0.06		<0.0005	0	1	1
Picloram		0.19	<0.001	0	1	1
Trifluralin		0.045	<0.0002	0	1	1

Chemical – Cyanide and Mercury

Parameter	Limit MAC (mg/L)	Sample Results	# Samples Exceeding MAC	# Samples Required	# Samples Submitted
Cyanide	0.2	0.001	0	1	1
Mercury	0.001	0.000003	0	1	1

Chemical – Synthetic Organic Chemicals

All waterworks serving 5000 persons or more are required to submit water samples for Saskatchewan Environment's "Synthetic Organic Chemicals" category. The frequency of sample submission depends on the number of persons supplied by the waterworks. The "Synthetic Organic Chemicals" category includes analysis for Benzene, Benzo(a)pyrene, Carbon tetrachloride, 1,2-Dicholorbenzene, 1,4-Dicholorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, Dichloromethane, 2,4-Dichlorophenol, Monochlorobenzene, 2,3,4,6-Tetrachlorophenol, Trichloroethylene, 2,4,6-Trichlorophenol and Vinyl Chloride.

Samples for synthetic organic chemicals were submitted on (*insert dates*). Sample results indicated that the provincial drinking water quality standards were not exceeded *.*

Parameter/Location	Limit MAC	Limit IMAC	Sample Result(s)	# Samples Exceeding Limit	# Samples Required	# Samples Submitted
Benzene		0.005	<0.0005	0	1	1
Benzo(a)pyreme		0.00001	<0.00001	0	1	1
Carbon Tetrachloride	0.005		<0.0002	0	1	1
Dichlorobenzene, 1,4	0.005		<0.0005	0	1	1
Dichloroethylene, 1,1	0.014		<0.0005	0	1	1
Dichloromethane		0.05	<0.0005	0	1	1
Dichlorophenol, 2,4	0.9		<0.0002	0	1	1
Monochlorobenzene	0.08		<0.0005	0	1	1

Tetrachlorophenol, 2,3,4,6		0.1	<0.0001	0	1	1
Trichloroethylene		0.05	<0.0005	0	1	1
Trichlorophenol, 2,4,6	0.005		<0.002	0	1	1
Vinyl Chloride	0.002		<0.0005	0	1	1

More information on water quality and sample submission performance may be obtained from:

City of Yorkton
Telephone: 306-828-2470
Web: www.yorkton.ca