Annual Drinking Water Quality and Compliance Report 2008

Ministry of Government Services
Whitespruce Centre
Yorkton, Saskatchewan

Introduction

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 ***Whitespruce Centre*** water quality and sample submission compliance record for the ***January 2008 to December 31, 2008*** time period.

For more information on minimum sample submission requirements and the meaning of type of sample, please refer to **"Municipal Drinking Water Quality Monitoring Guidelines, November 2002, EPB 202"**. 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/hecs-sesc/water/dwgsup.htm**.

The documentation in this report is based on site log books, Saskatchewan Provincial Laboratory and SRC Analytical Laboratories testing. Copies of all records are available on site or the contact information at the end of this report..

This report was completed on ***March 1, 2009***.

Water Quality Standards

Bacteriological Quality:

Parameter/Location	Limit	Regular Samples Required	Regular Samples Submitted	# of Positive Regular Submitted (%)
Total Coliform	0 Organisms/100 mL	**17**	**24**	**1 (<1%)**
Background Bacteria	Less than 200/100 mL			

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

Parameter	Minimum Limit	Free Chlorine Residual Range	Total Chlorine Residual Range	Average Free Chlorine (mg/)	Average Total Chlorine (mg/L)
Chlorine Residual	0.1 mg/L free 0.5 mg/L total	**0.16 > 0.81**	**0.24 > 0.97**	**0.45**	**0.55**

Water Disinfection - Free Chlorine Residual for Water Entering Distribution System from Waterworks Records-From Water Treatment Plant Records

A minimum of 0.1 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 0.1 mg/L free chlorine residual.

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests Not Meeting Requirements
Free Chlorine Residual	**> 0.1**	**0.16 > 1.06**	**364**	**0**

Turbidity

Turbidity is an important indicator of water treatment process efficiency from both health and aesthetic perspectives. A waterworks producing water for human consumptive use is required to meet standards set out in it's operating permit. A waterworks using groundwater and serving less than 5000 people must have a turbidity of less than 1.0 NTU.

From Water Treatment Plant Records

Parameter	Limit (NTU)	Test Level Range	# Tests Not Meeting Requirements	Maximum Turbidity (NTU)	# Tests Required	# Tests Performed
Turbidity	< 1.0	**0.02 > 0.84**	**0**	**0.84**	**364**	**364**

Chemical Analysis

Health Category

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

The ***Whitespruce Permit to Operate*** was issued in ***2008***, the next sample for Chemical Health analysis is required in ***2010.*** The last sample results indicated that there were no exceedences to provincial drinking water quality standards**.**

Parameter	Limit MAC (mg/L)	Limit IMAC (mg/L)	Sample Result(s)	# Samples Exceeding Limit	
Arsenic		0.025	**0.0012**	**0**	* Results expressed
Barium	1.000		**0.1400**	**0**	as average values
Boron		5.0	**0.0200**	**0**	for communities or
Cadmium	0.005		**0.0001**	**0**	waterworks that
Chromium	0.050		**0.0005**	**0**	fluoridate drinking
Fluoride (avg*)	1.500		**0.1300**	**0**	water supplies or
Lead	0.010		**0.0005**	**0**	those with elevated
Nitrate (avg.*)	45.000		**1.6000**	**0**	concentrations of
Seleniuum	0.010		**0.0007**	**0**	fluoride or nitrates.
Uranium	0.020		**0.0047**	**0**	

General Category

All waterworks serving less than 5000 persons are required to submit water samples for General Chemical category ***once every two (2) years*** if a ground water source. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as $CaCO_3$), magnesium, sodium, sulphate and total dissolved solids.

The ***Whitespruce Permit to Operate*** was issued in ***2008***, the next sample for General Chemical analysis is required in ***2010.*** The last sample results indicated that there were no exceedences to provincial drinking water quality standards**.**

Parameter	Aesthetic Objectives * (mg/L)	Sample Results (average)	# Samples Required	# Samples Submitted
Alkalinity	500	**242.00**	**1**	**1**
Bicarbonate	No Objective	**295.00**	**1**	**1**
Calcium	No Objective	**68.00**	**1**	**1**
Carbonate	No Objective	**<1**	**0**	**0**
Chloride	250	**8.00**	**1**	**1**
Conductivity	No Objective	**554.00**	**1**	**1**
Hardness	800	**277.00**	**1**	**1**
Magnesium	200	**26.00**	**1**	**1**
PH	No Objective	**7.80**	**1**	**1**
Sodium	300	**10.00**	**1**	
Sulphate	500	**51.10**	**1**	**1**
Total dissolved Solids	1500	**464.00**	**1**	**1**

*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.

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

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(306) 787-6332

Copies of this report are available at:

https://watermon.spm.gov.sk.ca/