

2008 ANNUAL KENTVILLE WATER QUALITY REPORT



"Providing clean, clear, safe drinking water to our customers"

OUR MISSION

The Kentville Water Commission is committed to providing high quality water and service to our valued customers. Up to 1.1 mil gallons of ground water is treated and balanced each day and distributed to some 2900 customers, one quarter of those who live in the County of Kings.

MEMBERS OF THE COMMISSION

The Commission is comprised of a Chairman (Mayor), three Town Councilors, one County Councilor, a member of the Kentville volunteer Fire department, and a Citizen appointee.

WATER SOURCE

The new Kentville Water System was completed in July 2002 at a cost of \$4.5 million dollars. All customers are supplied with water from the west end well field. A total of seven wells provide more than the quantity necessary and two additional wells are available for future production.

The well field is protected through Land Use Bylaws and Zoning in both the Town of Kentville and the County of Kings. The well field is divided onto several zones and restrictions are placed based on the possible pollution travel time.

Six monitoring wells have been installed around the wellfield in locations that will detect possible pollutants before they reach the well heads. The NS Dept of Environment and Labour also has a monitoring well within the wellfield.

QUALITY & TESTING

The water which is provided is treated and balanced to provide good quality, medium soft water, with low levels of chlorine and fluoride. Fluoride is added to the treated water to reduce dental cavities, particularly among children. Also as a corrosion control, sodium hydroxide is added to increase the naturally low pH of the water. Water Commission operators test on a daily basis at several locations within the system and serviced area for levels of pH, turbidity, chlorine, fluoride and alkalinity. Weekly, samples from several locations are tested at the Valley Regional Hospital for the presence or absence of bacteria. Semi-annually all sources of supply are analyzed by an independent laboratory for parameters outlined in the Canadian Drinking Water Guidelines. Quarterly tests are taken for corrosion, aluminum, trihalomethanes, and lead.

CHEMICAL & PHYSICAL TESTING RESULTS

Chemical and Physical Testing is done twice each year. The next table shows the makeup of our water based on latest tests results based on the average results of all seven wells.

March 2008		CD Water Guidelines		
INORGANIC TESTS	AVERAGE	MAC & IMAC	AO	UNIT
Alkalinity	75-101	500		mg/L
Aluminum	ND	0.1		mg/L
Antimony	ND	0.006		mg/L
Arsenic	ND	0.025		mg/L
Barium	31.7	1000		ug/L
Bicarbonate	47			mg/L
Boron	5.57	5000		ug/L
Cadmium	ND	0.005		mg/L
Calcium	34 - 42	200		mg/L
Carbon	<0.05			mg/L
Carbonate	<1		<250	mg/L
Chloride	80-188	250.0		mg/L
Chromium	ND	0.05		mg/L
Colour	<5	15.0		mg/L
Conductivity	410	n/a		uS/cm
Copper	< 0.002 - 0.008		<1.0	mg/L
Fluoride		1.5		mg/L
Hardness	105 - 129		<200	mg/L
Hydrocarbons	ND			
Iron	0.009 – 0.010		<0.3	mg/L
Langlier Index	-0.23 – +0.05			mg/L
Lead	ND	0.01		mg/L
Magnesium	4.8 – 6.0	150		mg/L
Manganese	<0.002		<0.05	mg/L
Mercury	ND	0.001		mg/L
Nickel	<0.002			mg/L
Nitrate	1.27 – 1.42	10.0		mg/L
Pesticides & Herbi- cides	ND			
pH	8.3 – 8.4		6.5-8.5	mg/L
Phosphorous	0.03			mg/L
Potassium	1.8 – 3.4	n/a		mg/L
Selenium	ND	10		ug/L
Silica	11			mg/L
Silver	<0.0005			mg/L
Sodium	49 - 138		<200	mg/L
Sulfate	10 - 15		<500	mg/L
Thallium		n/a		mg/L
THM's	ND	100		ppb
Turbidity	<0.3	1.0	<5	mg/L
Uranium	<0.09	20		ug/L
Zinc	<0.005		<5	mg/L

CD Canadian Drinking, Water Guidelines

MAC - Maximum Acceptable Concentration. The Guidelines for Canadian Drinking Water Quality (GCDWQ) recommend maximum acceptable concentrations of contaminants that affect human health.

IMAC - Interim Maximum Acceptable Concentration. The Guidelines for Canadian Drinking Water Quality (GCDWQ) recommend maximum acceptable concentrations (MACs) of contaminants that affect human health. Where the recommended MAC is less than can be reliably measured or achieved by existing water treatment technology, an "interim MAC" is developed and a recommendation is made to improve existing analytical or water treatment methods.

AO – Aesthetic Objective apply to certain substances or characteristics of drinking water that can affect its acceptance by consumers or interfere with practices for supplying quality water

n/a – not applicable

ND – not detectible

mg/l – milligrams per litre

ug/l – microgram per litre

uS/cm – microsiemens per centimetre

THM's - The current Canadian drinking water quality guideline for THMs is 100 parts per billion (ppb) or micrograms per litre ($\mu\text{g/l}$). The guideline is based on an annual running average of quarterly samples to account for seasonal variations. THM levels are generally highest in the summer and lowest in the winter.

BACTERIA TESTING

Total Coliform Bacteria (TC):

Testing for bacteria after disinfection confirms the effectiveness of the disinfection process. Total coliform bacteria, E Coli, serve as indicators of an environment that may be susceptible to contamination. The source of bacteria, after initial disinfection, can be re-growth of bacteria from suspended materials in water pipes or intrusion into the distribution system from a water main break or backflow event.

Total Coliform Bacteria & E.Coli Test results		
2007	# of Samples	Positive TC/EC
January	24	0
February	24	0
March	30	0
April	24	0
May	24	0
June	30	0
July	24	0
August	30	0
September	24	0
October	24	0
November	30	0
December	24	0
TOTAL	312	0

MONTHLY FLOW RATES

Total amount of water pumps from all seven west end wells.

2007	Imperial gallons
January	26,968,990
February	24,392,849
March	26,024,582
April	24,609,082
May	26,832,286
June	29,669,185
July	34,465,729
August	28,308,209
September	26,284,731
October	26,851,079
November	24,444,684
December	24,232,573
TOTAL	323,083,979

SUMMARY

In summary, the Kentville Water Commission through treatment provides excellent quality water. Long term strategies of flushing, cleaning, rehabilitation and replacement of aging distribution systems will help to ensure that the same quality water enter the system that will be delivers to the customer's tap.

Additional information on drinking water quality is available from the Health Canada web site: www.hc-sc.gc.ca.

For specific information contact the Kentville Water Department:

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