TOWN OF NEWMARKET
Community Services
Public Works Services Department
905-953-5300, ext. 2550
publicworks@newmarket.ca

2008 ANNUAL WATER QUALITY REPORT

Ontario's Drinking Water Systems Regulation (0.Reg. 170/03), made under the Safe Drinking Water Act, 2002 requires that the owner of a municipal drinking water system prepare an annual report on the operation of the system and the quality of its water.

Regulation (0.Reg. 170/30) requires that for the year 2008 the annual report will consist of quality reports dated from January 1, 2008 to December 31, 2008.

Reports are available for viewing on the Town's website, www.newmarket.ca, at the counter of the Town of Newmarket Operations Centre, 623 Timothy Street, and at the Community Services Commission, Engineering Services Department in the Municipal Offices at 395 Mulock Drive, Newmarket, Ontario. Annual water quality reports are also published by the Region of York on their website, which can be found at www.york.ca.

Any questions related to the Town's water system, this Report, or any water quality issue may be directed to the Overall Responsible Operator, Bill Wilson, Water/Wastewater Supervisor, Public Works Services Department at 905-953-5300 ext. 2553, or by email at bwilson@newmarket.ca or by mail to:

Town of Newmarket Operations Centre
623 Timothy Street
Newmarket, ON
L3Y 1R3

The Town of Newmarket owns and maintains the Town's distribution network, which is comprised of approximately 287 kilometers of watermain, 2457 mainline valves, 2376 fire hydrants, and 23,348 metered water services.

Our source of water is primarily ground water supplied from wells owned and operated by the Region of York. In 2008, surface water from Lake Ontario was introduced as a supplement to our underground aquifer. Approximately 4% of this surface water is being conveyed from the Town of Aurora through three interface connections along our southern boundary. The purpose of this introduction is to decrease the demand on the underground aquifer and provide additional security by having a second supply source to supplement the needs of our rapidly growing community. Regional storage reservoirs located throughout the Town provide additional storage and fire protection. Certified operators licensed by the Province of Ontario through the Ministry of Environment maintain the water distribution system of the Town of Newmarket.

Water treatment for the Town of Newmarket is provided by the Region of York through the process of chloramination (adding chlorine and ammonia).

The York-Durham Regional Environmental Laboratory in Pickering, an accredited laboratory registered with the Canadian Association of Environmental Analytical Laboratories (CAEAL), is under contract with the Town of Newmarket for water quality analysis of all water samples sent to them. This accredited laboratory meets or exceeds the stringent microbiology parameters that are in place for all drinking water systems in today's society.

Water samples are collected at various locations in town through the use of sample stations. This practice assures that samples are being drawn at locations which represent all points of the distribution system.

Newmarket's sampling numbers fall within the Provincial guidelines servicing populations of 100,000 or fewer. These guidelines require that a minimum of 8 samples per month plus one sample per 1,000 people be taken. At a population of 78,606 as determined from Statistics Canada the Town was required to take a minimum of 86 monthly samples in 2008. Newmarket is currently averaging 102 samples monthly, resulting in an average of 25 samples being taken per week.

*The Town's sampling program searches for any adverse conditions that may be in the water drawn from the test sites (sample stations). Newmarket's water sample results have historically been excellent. On rare occasion, where a presence of bacteria or other adverse condition is detected, re-testing is carried out to determine if the presence of bacteria was a result of the testing procedure or of the water quality. Regardless of the result, town staff immediately employs corrective actions. This would include flushing of the system and additional samples being taken both upstream and downstream of the suspected area. Any other measures would be at the direction of the Ministry of Environment Spills Action Centre and/or the Medical Officer of Health as stated in **0.Reg. 170/03** under the Ontario's Drinking Water Protection Regulation.*

MICROBIOLOGICAL PARAMETERS

Microbiological	Regulated Limit	Number of Samples	Sampling Dates	Number of Detectable Results	Samples Exceeding Limit	Explanation
*Total coliforms MPN / 100 mL	0 MAC	1174	Jan. 1 – Dec. 31, 2008	2	2	*AWQI#**83479**, #**85829**. Reported to SAC&MOH. Flush, resample. Presence of TC no longer detected. Resolved.
**E. Coli and/or Fecal MPN / 100 mL	0 MAC	1174	Jan. 1 – Dec. 31, 2008	0	0	n/a

VOLATILE ORAGANICS

	Regulated Limit	Number of Samples	Sampling Dates	Number of Detectable Results	Samples Exceeding Limit	Explanation
Trihalomethanes mg/L	.01 mg/L	4	Jan. 1– Dec. 31, 2008	4	0	Samples taken every 90 days.

INORGANICS - LEAD

	Regulated Limit	Number of Samples	Sampling Dates	Number of Detectable Results	Samples Exceeding Limit	Explanation
Residential Samples-Lead (mg/L)	0.010 mg/L *(*samples of private plumbing are classed as non-regulatory by the MOE)*	81	*January 7 – March 3, 2008*	77	0	n/a
		84	*June23 – November 3, 2008*	84	2	* Both came back within regulated standard after resamples.
Non-Residential Samples – Lead (mg/L)	0.010 mg/L *(*samples of private plumbing are classed as non-regulatory by the MOE)*	8	*January 7 – March 3, 2008*	8	0	n/a
		12	*June23 – November 3, 2008*	12	2	* Both came back within regulated standard after resamples.
Distribution Samples – Lead (mg/L)	0.010 mg/L *(*regulatory samples. All/any exceedances must be reported under standard Notice of Adverse Test Results)*	39	*January 7 – March 3, 2008*	37	0	n/a
		46	*June23 – November 3, 2008*	46	1	*AWQI #84818 reported to SAC&MOH. Flush, resample. Results within regulated standard. Resolved.

DISINFECTANT RESIDUAL MONITORING

	Minimum Regulated Limit	Number of Samples	Number of Detectable Results	Range	Exceedances
Combined Chlorine	0.25 mg/L	1801	1801	0.21-2.15mg/L	1

Microbiological characteristics

Total Coliforms

- *Coliform indicator organisms are generally harmless bacteria that live naturally in the intestines of humans. They are also found in plants, soil, air, water and warm-blooded animals. Their presence indicates the possibility of germ contamination.*

E. coli and/or Fecal Coliform

- *Escherichia Coli (E. coli) or other fecal coliform is a bacterium present in fecal matter and prevalent in sewage. These bacteria forms, called intestinal pathogens, have caused several food-borne and water-borne outbreaks of disease, and must not be present in the water supply*.

Trihalomethanes (THM)

- *Trihalomethanes are the most widely occurring synthetic organisms found in chlorinated drinking water. The principal source of trihalomethanes in drinking water is the action of chlorine with naturally occurring organics (precursors) left in the water after filtration.*

The maximum acceptable concentration (MAC) for trihalomethanes (THMS) in drinking water is 0.1 mg/L based on a four quarter moving annual average of test results (samples to be drawn every 90 days).

Lead

- *The maximum acceptable concentration (MAC) for lead in drinking water is 0.010 mg/l (10 ug/L). Lead is sampled annually in the distribution system at a point representing the maximum residence time.*

***Please refer to the York Region Water Quality Report @ *www.york.ca* for more detailed information on treated water quality in Newmarket.**

Exceedances

2008/08/26 (AWQI #83176)

- Hydrant fronting 669 Chaleur Place
- Adverse combined residual (Result was 0.21 mg/L)
- Regulated minimum standard is 0.25mg/L.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed system at various locations both upstream and downstream. Achieved combined residual of 1.60mg/L at hydrant fronting 669 Chaleur Place.
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2008/08/27.

2008/09/02 (AWQI #83479)

- Sample Station #21 (Grace @ Prospect St.)
- Laboratory detected presence (in P/A Test) of Total Coliforms.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed/Sampled location of original adverse, as well as one location upstream, and one location downstream. All 3 samples came back with an absence (in P/A Test) of Total Coliforms.
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2008/09/09.

2008/10/14 (AWQI #84818)

- Sample Station #22 (opposite 918 Janette St.)
- Lead exceedance (Result was 0.0203 mg/L)
- Regulated standard is 0.01 mg/L.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Resampled (as directed) on 2008/10/20. Results came back within regulated standard (0.0023mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2008/11/04.

2008/12/15 (AWQI #85829)

- Sample Station #21 (Grace @ Prospect St.)
- Laboratory detected presence (in P/A Test) of Total Coliforms.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed/Sampled location of original adverse, as well as one location upstream, and one location downstream. All 3 samples came back with an absence (in P/A Test) of Total Coliforms.
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2008/12/19.

***note:* the two adverse findings at SS-21 (AWQI #85829, & AWQI #83479) were determined to be as a result of the connection point of the Sample Station. It was installed on a 20' long, 6" diameter hydrant leg, and therefore, not an accurate representation of the watermain servicing the public. Water in this hydrant leg sits stagnant for long periods of time when hydrant is not in use. Sample Station has been abandoned as of 2008/12/18 as per decision by Water/Wastewater Supervisor, confirmed by a Senior Public Health Inspector with Region of York Medical Officer of Health.