



TOWN OF NEWMARKET

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

2009 ANNUAL WATER QUALITY REPORT

Ontario's Drinking Water Systems Regulation (O.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 (O.Reg. 170/30) requires that for the year 2009 the annual report will consist of quality reports dated from January 1, 2009 to December 31, 2009.

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, Supervisor of Water/Wastewater Operations, Public Works Services Department at 905-953-5300 ext. 2553, 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 water distribution network, which is comprised of approximately 287 kilometers of watermain, 2457 mainline valves, 2376 fire hydrants, and 25,876 metered water services.

Our source of water is primarily ground water supplied from wells owned and operated by the Region of York. In 2009, surface water from Lake Ontario was introduced as a supplement to our underground aquifer. Approximately 20% of our water supply is blended water (ground/surface water) 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.

Newmarket's vision: A community well beyond the ordinary

395 Mulock Drive, P.O. Box 328, STN MAIN NEWMARKET, ON L3Y 4X7
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VISIT OUR WEB SITE AT: www.newmarket.ca

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 80,854 as determined from Statistics Canada the Town was required to take a minimum of 88 monthly samples in 2009. Newmarket is currently averaging 92 samples monthly, resulting in an average of 23 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 adverse condition was a result of the sampling procedure or of the water quality itself. Regardless of the result, town staff immediately employs corrective actions. This would include flushing of the system and additional samples/tests being carried out 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

Parameter	Regulated Limit	Number of Samples	Sampling Dates	Number of Detectable Results	Samples Exceeding Limit	Reported Exceedances
Heterotrophic Plate Count / HPC	*no current standards	571	January 12 – December 8, 2009	68	0	n/a
Total coliforms (MPN / PA)	0 MAC	1189	January 1 – December 31, 2009	0	0	n/a
Escherichia coli / E. coli (MPN / PA)	0 MAC	1189	Jan. 1 – Dec. 31, 2009	0	0	n/a

ORGANICS

Parameter	Regulated Limit	Number of Samples	Sampling Dates	Number of Detectable Results	Samples Exceeding Limit	Reported Exceedances
Bromodichloromethane	*no current standards	5	01/13/2009 04/07/2009 06/23/2009 09/14/2009 12/08/2009	5	0 (avg. 0.417mg/L)	n/a
Bromoform	(one of the four trihalomethanes that make up the total trihalomethanes) (TTHMs)	5	01/13/2009 04/07/2009 06/23/2009 09/14/2009 12/08/2009	5	0 (avg. 0.0006mg/L)	n/a
Calcium	*no current standards	15	09/03/2009 09/09/2009	15	0 (avg. 40.427mg/L)	n/a
Total Trihalomethanes (TTHM)	0.100 mg/L	5	01/13/2009 04/07/2009 06/23/2009 09/14/2009 12/08/2009	5	0 (avg. 0.013 mg/L)	n/a

INORGANICS

Parameter	Regulated Limit	Number of Samples	Sampling Dates	Number of Detectable Results	Samples Exceeding Limit	Reported Exceedances
Alkalinity (total as CaCO ₃)	Operational Guideline 30-500 mg/L	99	January 5 – October 15, 2009	99	0 (avg. 185.646mg/L)	n/a
Ammonia (total, as N)	*no current standards	15	09/03/2009 09/09/2009	15	0 (avg. 0.417mg/L)	n/a
Chloride	Aesthetic Objective (AO) 250mg/L	15	09/03/2009 09/09/2009	15	0 (avg. 14.267mg/L)	n/a
Chloroform	(one of the four trihalomethanes that make up the total trihalomethanes)	5	01/13/2009 04/07/2009 06/23/2009 09/14/2009 12/08/2009	5	0 (avg. 0.0052mg/L)	n/a

	(TTHMs)					
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INORGANICS (cont'd)

Parameter	Regulated Limit	Number of Samples	Sampling Dates	Number of Detectable Results	Samples Exceeding Limit	Reported Exceedances
Conductivity	*no current standards	15	09/03/2009 09/09/2009	15	0 (avg. 400.200 microS/cm)	n/a
Conductivity (computed)	*no current standards	15	09/03/2009 09/09/2009	15	0 (avg. 412.933 microS/cm)	n/a
Dibromochloromethane	(one of the four trihalomethanes that make up the total trihalomethanes) (TTHMs)	5	01/13/2009 04/07/2009 06/23/2009 09/14/2009 12/08/2009	5	0 (avg. 0.0030 mg/L)	n/a
Fluoride	1.5mg/L	15	09/03/2009 09/09/2009	15	0 (avg. 0.191 mg/L)	n/a
Hardness (total, as CaCO ₃)	Operational Guideline 80-100 mg/L	15	09/03/2009 09/09/2009	15	15 (avg. 170.467 mg/L)	*80-100 mg/L is an operational guideline only. These exceedances are non-reportable.
Lead (total) Distribution System Samples	0.01mg/L	97	January 5- October 15, 2009	97	6 (avg. 0.0029mg/L)	*see Reported Exceedances #1, 2, 4, 5, 6, 10.
Lead (total) Residential / Non-Residential Samples	0.01mg/L	340	January 5- October 15, 2009	340	0 (avg. 0.0006 mg/L)	n/a
Magnesium (total)	*no current standards	15	09/03/2009 09/09/2009	15	0 (avg. 16.880 mg/L)	n/a
Nitrate (as N)	10 mg/L (as nitrogen)	15	09/03/2009 09/09/2009	15	0 (avg. 0.050 mg/L)	n/a
Nitrite (as N)	1.0 mg/L (as nitrogen)	15	09/03/2009 09/09/2009	15	0 (avg. 0.010 mg/L)	n/a
o-Phosphate (as P)	*no current standards	15	09/03/2009 09/09/2009	3	0 (avg. 0.010 mg/L)	n/a
pH	Operational Guideline 6.5 - 8.5	26	September 3 – December 13, 2009	26	0 (avg. 7.741)	n/a
Potassium (total)	*no current standards	15	09/03/2009 09/09/2009	15	0 (avg. 1.071 mg/L)	n/a
Sodium (total)	Aesthetic Objective (AO) 200mg/L Indicator of Adverse Quality 20 mg/L	15	09/03/2009 09/09/2009	15	5 (avg. 18.24 mg/L)	*see Reported Exceedance #11 *see notes on Sodium in Drinking Water at end of report
Sulphate	Aesthetic Objective (AO) 500mg/L	15	09/03/2009 09/09/2009	15	0 (avg. 5.190 mg/L)	n/a

Total dissolved solids / TDS (computed)	Aesthetic Objective (AO) 500mg/L	15	09/03/2009 09/09/2009	15	0 (avg. 206.333 mg/L)	n/a
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DISINFECTANT RESIDUAL MONITORING

Parameter	Minimum Regulated Limit	Number of Samples	Number of Detectable Results	Range	Reported Exceedances
Chloramines (as combined chlorine)	0.25mg/L	3066	January 1 – December 31, 2009	0.01–2.15mg/L	*see Reported Exceedances # 3, 7, 8, 9, 12, 13, 14, 15, 16, 17, 18.

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

Reported Exceedances

1. 2009/01/27 (AWQI #86262)

- Sample location: Sample Station 22 (opp. 918 Janette St.)
- Lead exceedance (Result was 0.0689 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.
- Flushed this sample station, and resampled as directed on 2009/01/28. Results came back within regulated standard (0.0022mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/02/02.

2. 2009/02/02 (AWQI #86372)

- Sample location: Sample Station 20 (opp. 124 Skelton St.)
- Lead exceedance (Result was 0.0182 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.
- Flushed this sample station, and resampled as directed on 2009/02/02. Results came back within regulated standard (0.0005mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/02/11.

3. 2009/06/26 (AWQI #88807)

- Sample location: Hydrant fronting 161 Sawmill Valley Drive
- Adverse combined residual (Result was 0.01 mg/L)
- Regulated standard is 0.25 mg/L.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed this water main, and re-tested as directed on 2009/06/26. Results came back within regulated standard (0.81mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/06/27.

4. 2009/07/13 (AWQI #89352)

- *Sample location: Sample Station 07 (Armitage Drive @ Cody Cres.)*
- *Lead exceedance (Result was 0.014 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.*
- *Flushed this sample station, and resampled as directed on 2009/07/13. Results came back within regulated standard (0.0007mg/L).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/07/24.*

5. 2009/07/29 (AWQI #90022)

- *Sample location: Sample Station 03 (fronting 837 Legge Crt)*
- *Lead exceedance (Result was 0.0174 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.*
- *Flushed this sample station, and resampled as directed on 2009/07/29. Results came back within regulated standard (0.0007mg/L).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/08/05.*

6. 2009/07/29 (AWQI #90023)

- *Sample location: Sample Station 04 (adj.531 Davis Drive)*
- *Lead exceedance (Result was 0.0116 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.*
- *Flushed this sample station, and resampled as directed on 2009/07/29. Results came back within regulated standard (0.0007mg/L).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/08/05.*

7. 2009/07/30 (AWQI #90097)

- *Sample location(s): hydrant opp. 540 Bristol Rd. / hydrant fronting 511 Main St. North (actually 511 Jim Barber Crt.)*
- *Adverse combined residual (Results were 0.03mg/L, and 0.19mg/L respectively)*
- *Regulated standard is 0.25 mg/L.*
- *Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.*
- *Flushed watermain in both areas, and re-tested as directed on 2009/07/30. Results came back within regulated standard (0.41mg/L, and 0.59mg/L respectively).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/07/31.*

8. 2009/08/05 (AWQI #90233)

- *Sample location: hydrant – Main St. N. @ London Rd.*
- *Adverse combined residual (Result was 0.15mg/L)*
- *Regulated standard is 0.25 mg/L.*
- *Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.*

- Flushed watermain, and re-tested as directed on 2009/08/05. Results came back within regulated standard (0.35mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/08/05.

9. 2009/08/07 (AWQI #90314)

- Sample location: hydrant opp. 544 Bristol Rd.
- Adverse combined residual (Result was 0.19mg/L)
- Regulated standard is 0.25 mg/L.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed watermain, and re-tested as directed on 2009/08/07. Results came back within regulated standard (0.50mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/08/13.

10. 2009/08/20 (AWQI #90635)

- Sample location: Sample Station 20 (opp. 124 Skelton St.)
- Lead exceedance (Result was 0.0113 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.
- Flushed this sample station, and resampled as directed on 2009/08/20. Results came back within regulated standard (0.0007mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/09/10.

11. 2009/09/08 (AWQI #91105)

- Sample location(s): Sample Station 01 (225 Harry Walker Pkwy S) / Sample Station 03 (fronting 837 Legge Crt.) / Sample Station 22 (opp. 918 Janette St.)
- Sodium exceedance. (Results were 20.7 mg/L, 20.7mg/L, and 20.8mg/L respectively)
- Regulated standard is 20mg/L.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed all 3 sample stations, and resampled as directed on 2009/09/09. 2 results came back slightly above regulated standard once again. (21.2mg/L, 19.1mg/L, 21.3mg/L respectively).
- No further sampling required at this point, as directed by the Medical Officer of Health. Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/10/01.
- ****please see notes referencing Sodium in drinking Water Systems at end of this report.**

12. 2009/09/18 (AWQI #91318)

- Sample location: hydrant fronting 669 Chaleur Place
- Adverse combined residual (Result was 0.23mg/L)
- Regulated standard is 0.25 mg/L.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed watermain, and re-tested as directed on 2009/09/18. Results came back within regulated standard (0.27mg/L).
- Re-checked this location 2009/09/19 (0.57mg/L); 2009/09/20 (0.55mg/L)
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/09/21.

13. 2009/10/19 (AWQI #91904)

- *Sample location: hydrant fronting 18100 Yonge St.*
- *Adverse combined residual (Result was 0.08mg/L)*
- *Regulated standard is 0.25 mg/L.*
- *Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.*
- *Flushed watermain, and re-tested as directed on 2009/10/19. Results came back within regulated standard (0.85mg/L).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/10/20.*

14. 2009/11/08 (AWQI #92265)

- *Sample location: hydrant opp. 186 Coleridge Drive*
- *Adverse combined residual (Result was 0.24mg/L)*
- *Regulated standard is 0.25 mg/L.*
- *Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.*
- *Flushed watermain, and re-tested as directed on 2009/11/08. Results came back within regulated standard (0.58mg/L).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/11/08.*

15. 2009/11/09 (AWQI #92276)

- *Sample location: hydrant opp. 186 Coleridge Drive*
- *Adverse combined residual (Result was 0.22mg/L)*
- *Regulated standard is 0.25 mg/L.*
- *Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.*
- *Flushed watermain, and re-tested as directed on 2009/11/09. Results came back within regulated standard (0.69mg/L).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/11/09.*

16. 2009/12/02 (AWQI #92585)

- *Sample location: hydrant fronting 18100 Yonge St.*
- *Adverse combined residual (Result was 0.19mg/L)*
- *Regulated standard is 0.25 mg/L.*
- *Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.*
- *Flushed watermain, and re-tested as directed on 2009/12/02. Results came back within regulated standard (0.76mg/L).*
- *Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/12/02.*

17. 2009/12/06 (AWQI #92656)

- *Sample location: hydrant fronting 18100 Yonge St.*
- *Adverse combined residual (Result was 0.06mg/L)*
- *Regulated standard is 0.25 mg/L.*
- *Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.*

- Flushed watermain, and re-tested as directed on 2009/12/06. Results came back within regulated standard (0.51mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/12/06.

18. 2009/12/07 (AWQI #92660)

- Sample location: hydrant opp. 186 Coleridge Drive
- Adverse combined residual (Result was 0.17mg/L)
- Regulated standard is 0.25 mg/L.
- Exceedance was reported to Region of York Medical Officer of Health, as well as Ministry of the Environment Spills Action Centre.
- Flushed watermain, and re-tested as directed on 2009/12/07. Results came back within regulated standard (0.80mg/L).
- Resolution notice issued to MOE Spills Action Centre and Region of York Medical Officer of Health 2009/12/07.

****re: SODIUM**

“All natural waters contain some sodium. The guidelines for Canadian Drinking Water Quality and Ontario Drinking Water Standards set an aesthetic objective of 200mg/L. Sodium concentrations above 200mg/L may alter the taste of water.

The Ontario Drinking Water Systems Regulation 170/03 under the Safe Drinking Water Act requires reporting to the local Medical Officer of Health when sodium levels in public drinking water exceed 20mg/L or more. At this point, the local Medical Officer of Health informs local physicians, as such information is intended to help persons on sodium-restricted diets control their sodium intake.”

York Region Community and Health Services factsheet – “Sodium in Drinking Water”

Please follow link for more information:

http://www.york.ca/Services/Water/Water+Quality/Sodium_New.htm